# CLOSURE REPORT
# FOR
# HAZARDOUS WASTE MANAGEMENT UNIT 7

**RADFORD ARMY AMMUNITION PLANT**
**RADFORD, VIRGINIA**
**EPA ID No. VA1210020730**

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## EXECUTIVE SUMMARY

This document presents the results of closure activities performed in support of clean closure of Hazardous Waste Management Unit 7 (HWMU-7) located at the Radford Army Ammunition Plant (Radford AAP, EPA ID No. VA1210020730) in Radford, Virginia. The closure activities were conducted in accordance with the Closure Plan Amendment for Hazardous Waste Management Unit 7 (Closure Plan Amendment), which was approved by the Virginia Department of Environmental Quality (VDEQ) in correspondence dated September 27, 2011, as part of the Class 3 Permit Modification for the ***Final Hazardous Waste Management Post-Closure Care Permit for Hazardous Waste Management Units (HWMUs) 5, 7, 10, and 16*** (Permit). This Closure Report documents the activities performed in support of clean closure of the residual material contained within the Unit as well as the underlying soil. In addition, the Closure Report includes an evaluation of groundwater monitoring data to determine the Unit's eligibility for clean closure for groundwater. With the attainment of clean closure for the residual material, soil, and groundwater, Radford AAP seeks to end post-closure care for HWMU-7.

The results of subsurface investigations conducted at HWMU-7 indicate that concentrations of inorganic hazardous constituents of concern (HCOC) detected in the residual material are less than their respective Facility-Wide Background concentrations. Furthermore, no organic HCOCs were detected in the residual material samples. Therefore, the residual material contained within HWMU-7 meets the requirements for clean closure as defined in the Closure Plan Amendment.

Concentrations of organic and inorganic HCOCs were detected in a limited number of samples collected from the clay liner and native soils underlying the Unit. In accordance with the Closure Plan Amendment, clean closure of the clay liner and native soils beneath HWMU-7 was demonstrated using a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of soil samples to background levels. The results of the risk-based assessment indicate that the total cancer risk across all exposure pathways for the soils underlying the Unit for a residential adult is below the risk goal of total cumulative carcinogenic risk of $1 \times 10^{-4}$, and the risk from any individual carcinogen is below $1 \times 10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential adult is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0. The total cancer risk across all exposure pathways in the soils for a residential child is below the risk goal of total cumulative carcinogenic risk of $1 \times 10^{-4}$; however, the risk from one individual carcinogen (Aroclor-1254 via ingestion) is greater than $1 \times 10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential child is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0. However, data validation indicated that the Aroclor-1254 concentrations – which were only detected in samples collected during February 2004 – may be overestimated and inappropriate for use due to inadequate quality control data. Furthermore, based on the uncertainties inherent in this risk assessment, the total cumulative carcinogenic and non-carcinogenic risks were calculated using conservative assumptions that are highly protective. Therefore, the soils beneath the Unit meet the requirements for clean closure by risk-based assessment per the approved Closure Plan Amendment.

Based on the results of the clean closure evaluation, hazardous waste constituents are not present in groundwater at HWMU-7 at concentrations greater than their respective GPS or have

been demonstrated to be derived from a source other than the Unit to the satisfaction of the VDEQ. Therefore, HWMU-7 has not adversely affected groundwater at the site. As a result, Radford AAP has met the requirements in the approved Closure Plan Amendment for clean closure of groundwater.

The closure activities conducted in accordance with the Closure Plan Amendment indicate that the residual material, underlying soil, and groundwater at HWMU-7 meet the requirements for clean closure. Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the requirements of the Permit until certifications for clean closure of soil and groundwater at the Unit have been issued by the VDEQ. Radford AAP anticipates that certifications for clean closure of soil and groundwater will trigger the reduction of the post-closure care period and signify the completion of post-closure care, thereby terminating the post-closure care period for HWMU-7.

## 1.0 INTRODUCTION

Radford Army Ammunition Plant (Radford AAP; EPA ID No. VA1210020730) prepared this Closure Report for Hazardous Waste Management Unit 7 (HWMU-7) to document closure activities performed at the Unit in 2002 and 2004 in support of clean closure of the residual material within the Unit as well as the underlying soil. In addition, the Closure Report includes an evaluation of groundwater monitoring data to determine the Unit's eligibility for clean closure for groundwater. The Closure Report was prepared in accordance with the Closure Plan Amendment for HWMU-7, which was approved by the VDEQ in correspondence dated September 27, 2011, as part of the Class 3 Permit Modification for the *Final Hazardous Waste Management Post-Closure Care Permit for Hazardous Waste Management Units (HWMUs) 5, 7, 10, and 16* (Permit) and incorporated within Permit Attachment 1, Appendix C. A copy of the Closure Plan Amendment for HWMU-7 is included (on CD-ROM) in **Appendix A**. Copies of relevant project correspondence are included (on CD-ROM) in **Appendix B**.

## 1.1 PURPOSE AND OBJECTIVE

The purpose of the Closure Report is to document the activities that were performed to demonstrate that HWMU-7 does not contain characteristically hazardous wastes and does not contain hazardous constituents at concentrations that pose a risk to human health and the environment. Accordingly, the objective of this report is to evaluate whether the previous closure activities were successful and that the Unit no longer meets the definition of a hazardous waste unit. Therefore, post-closure monitoring at the Unit is no longer warranted.

This Closure Report provides documentation of the procedures and data gathering efforts conducted to attain clean closure for HWMU-7 in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR), 9 VAC 20-60-12, et seq., and with the requirements of the Resource Conservation and Recovery Act (RCRA) as presented in Title 40 of the Code of Federal Regulations (CFR). With the attainment of clean closure for soil and groundwater, Radford AAP seeks to end the post-closure care period for HWMU-7.

## 1.2 UNIT DESCRIPTION

HWMU-7 is a former unlined holding and neutralization basin located on the floodplain of the New River. The location of HWMU-7 is 37°11'12" N latitude and 80°33'15" W longitude, and is shown on the site location map included as **Figure 1**. A Site Plan for HWMU-7 is illustrated in **Figure 2**. Intermittent drainages are located to the north and south of the Unit, and the New River is located approximately 225 feet to the west of the Unit.

When HWMU-7 was in operation, the impoundment measured approximately 90 feet wide by 160 feet long by 12 feet deep (side slope at 2:1). The resulting maximum capacity of the Unit was 566,131 gallons (75,685 cubic feet or 2,803 cubic yards).

The closed HWMU-7 consists of a mound measuring approximately 90 feet wide by 160 feet long by 7 feet high, with a bottom elevation of approximately 1,711.1 feet above msl and a top elevation of approximately 1,718.3 feet above msl. Based on the results of the 2002 and 2004 closure activities (subsurface investigations), it appears that HWMU-7 is capped with a composite liner consisting of (from top to bottom):

- Vegetative cover.
- 1 foot to 1.5 feet of topsoil.
- 1.25 feet to 2 feet of clay.
- 0.5 foot to 1.5 feet of sand (drainage layer; $10^{-3}$ cm/sec permeability).
- 30-mil PVC membrane liner.

The 30-mil PVC membrane liner is underlain by the neutralized residual material. The residual material in turn is underlain by a clay liner ranging in thickness from 1.75 feet to 3 feet throughout most of the Unit. At the northern end of the Unit, the neutralized residual material is underlain by native soils.

## 1.3 UNIT HISTORY

### 1.3.1 Operational History

HWMU-7 was put into operation in 1972. During operation, influent into HWMU-7 included spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. The wastes were characteristically hazardous as corrosive (EPA I.D. No. D002). The acidic waste waters were both nitric ($NO_3$) and sulfuric ($SO_4$) in origin with a pH ranging from 1.5 to 1.6 and a dominant constituent of mixed acids. The waste caustics were also corrosive in characteristic (pH >12.5), resulting in an EPA designation of D002. The dominant constituent of the caustic wastes was sodium hydroxide. The relative abundance of both waste streams was less than 1 percent. As the primary function of the Unit was to neutralize high and low pH influents, the Unit could be interpreted to meet the criteria of a T31 – Neutralization Treatment Unit under the RCRA Treatment, Storage, and Disposal (TSD) Handling Codes designation system.

During a hydrographic survey conducted in December 1984, the thickness of accumulated sediments (primarily residues of lime precipitation) in HWMU-7 was measured at approximately five feet. According to Radford AAP personnel, no waste stream from the NC-line was ever discharged to HWMU-7. Therefore, no reactive wastes were likely present in HWMU-7. According to EP toxicity analyses conducted on the lagoon influent water and sediment, several heavy metals were detected in low concentrations (i.e., nonhazardous). The pH of the lagoon water was 11.4 when the analysis was conducted, which was also classified as nonhazardous. However, as the pH of the lagoon's influent was known to fluctuate (below 2.0 and above 12.5), the wastewater was classified as a corrosive substance. The results of the EP toxicity analyses conducted on the lagoon water and sediment are presented below. The samples collected from the lagoon water and sediment indicate that heavy metals were not present at concentrations that would classify the wastes as hazardous.

| EP Toxicity Parameter | Lagoon Water Concentration | Sediment Concentration |
|---|---|---|
| pH | 11.4 s.u. | NA |
| Arsenic | ND | ND |
| Barium | ND | 0.33 mg/l |
| Cadmium | 0.016 mg/l | 0.027 mg/l |
| Chromium | ND | 0.73 mg/l |
| Lead | ND | 0.58 mg/l |
| Mercury | ND | ND |
| Selenium | ND | ND |
| Silver | ND | 0.027 mg/l |

ND: Non-detect.

### 1.3.2 Unit Closure and Post-Closure Care

Radford AAP ceased operation of HWMU-7 in 1986 and closed the Unit in 1989 in accordance with the VDEQ-approved Closure Plan dated May 1988. At the time of closure, HWMU-7 was drained of all waters, the residual material was treated in-place with flyash and cement kiln dust to achieve a target pH range of 6.3 and 10.5, and the basin was filled with the residual material and stone and capped. No waste has been processed through HWMU-7 since it was closed. A copy of the May 1988 Closure Plan and the certification of closure are included in the Closure Plan Amendment (on CD-ROM) in **Appendix A**.

The May 1988 Closure Plan (**Appendix A**) documents the closure performance standards, environmental assessment of closure methods, and justifications of in-place closure that were used for HWMUs 5, 7, and 16. The four major sections of the May 1988 Closure Plan are discussed below:

**Waste Characterization/Maximum Waste Inventory** – Includes physical descriptions of HWMUs 5, 7, and 16, along with detailed descriptions of each Unit's functions.

**Construction Procedure** – Details basic closure construction procedures and the methods by which wastes and contaminated soils were handled during closure construction. Additional specific or unique information regarding site preparation, demolition cleanup, soil treatment, soil sampling and soil sample analysis is included.

**Soil Treatment** – Includes special instructions for soil treatment prior to and during closure. Presents the two objectives of the soil treatment program: 1) to neutralize acidic sediments and soils, and 2) to solidify soft subsoils for greater manageability. The objectives were accomplished by using pH as a guide for acidity and by testing compressive strength. Also describes procedures including but not limited to: cover system analysis, drain installation, backfill, grading, drainage control, performance evaluation, and certification of closure.

**Post-Closure Care and Groundwater Monitoring** – Presents basic procedures for groundwater monitoring, inspections, maintenance, and contingency activities for the

Units. Also includes engineering specifications for construction procedures, standards to be used, testing requirements, construction submittals, materials to be used, quality controls, unsatisfactory materials, and specific special construction instructions.

Certifications of closure for HWMUs 5, 7, and 16 were submitted to the VDEQ in letters dated October 26, 1989 and January 4, 1990. Following closure, Radford AAP monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the May 1988 Closure Plan. HWMU-7 was classified as an interim status Unit until the VDEQ issued the ***Post-Closure Permit for Hazardous Waste Management Unit 7*** (issued October 30, 1999; effective date November 30, 1999); the VDEQ subsequently revised the ***Post-Closure Permit***, and issued the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** (Permit) on October 4, 2002. Since 1999, Radford AAP has performed quarterly monitoring of HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the ***Post-Closure Permits***, as appropriate. In correspondence dated June 14, 2007, the VDEQ modified the Permit to change the groundwater monitoring frequency from quarterly to semiannual.

## 2.0 CLOSURE PERFORMANCE STANDARDS

HWMU-7 is a closed hazardous waste surface impoundment. The Closure Performance Standards, as presented in 40 CFR 264.111, specify that the owner/operator of a hazardous waste surface impoundment must close the Unit in a manner that:

(a) Minimizes the need for further maintenance; and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

(c) Complies with the closure requirements of this subpart, including but not limited to the requirements of 40 CFR 264.228.

In 1989, HWMU-7 was closed in accordance with the closure requirements of 40 CFR 264.111 and 264.228. The Unit was closed with residual material left in-place as detailed in the VDEQ-approved Closure Plan dated May 1988. The Closure Plan Amendment documented procedures to achieve clean closure for HWMU-7 thereby ending the post-closure care period for the Unit. Such a process is allowed by 40 CFR 264.117(a)(2), which states:

> "…any time during the post-closure period for a particular unit, the Director may, in accordance with the permit modification procedures in parts 124 and 270:
> (i) Shorten the post-closure care period applicable to the hazardous waste management unit…if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure)."

The purpose of this Closure Report is to document closure procedures that were performed in accordance with the closure performance standards as outlined in the Closure Plan Amendment (**Appendix A**).

## 3.0 CLOSURE PROCEDURES

### 3.1 UNIT CLOSURE OVERVIEW

In 1989, Radford AAP closed HWMU-7 in accordance with the VDEQ-approved Closure Plan for the Unit dated May 1988. HWMU-7 was an unlined holding and neutralization basin that received spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. At the time of closure, HWMU-7 was drained of all liquids, the residual material was treated in-place with flyash and cement kiln dust to achieve a target pH range of 6.3 and 10.5, and the basin was filled with the residual material and stone and capped. Following closure, Radford AAP monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the May 1988 Closure Plan. HWMU-7 was classified as an interim status Unit until the VDEQ issued the ***Post-Closure Permit for Hazardous Waste Management Unit 7*** (issued October 30, 1999; effective date November 30, 1999); the VDEQ subsequently revised the ***Post-Closure Permit***, and issued the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** (Permit) on October 4, 2002. From October 1999 to the present, Radford AAP has monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the ***Post-Closure Permits***, as appropriate.

In October and November 2002, Radford AAP conducted subsurface investigations to determine the nature and extent of the residual material contained in closed HWMUs 5 and 7, respectively. Radford AAP intended to implement source removal activities in 2003 in support of clean closures for both Units. However, the laboratory analytical data collected during the subsurface investigations indicated that the residual material in the Units was not hazardous by characteristic; therefore, Radford AAP chose to pursue clean closure of the Units while leaving the residual material in-place. Radford AAP submitted the results of the subsurface investigations to the VDEQ in the ***Field Investigation Report and Risk Assessment for Units 5 and 7*** (March 2003). In correspondence to Radford AAP dated June 25, 2003 (**Appendix B**), the VDEQ indicated that in order for Radford AAP to continue pursuing clean closure for HWMU-7, a revised Closure Plan that included procedures and standards for clean closure must be submitted for the Unit. The VDEQ indicated that the revised Closure Plan must be prepared in accordance with the Draft Guidance Manual for Closure Plans and Post-Closure Plans (Draft Guidance) dated September 28, 2001.

In the June 25, 2003 correspondence, the VDEQ indicated that Radford AAP must sample the soil and liner material (if any) beneath the residual material to determine whether the soil and liner material meet the clean closure standards listed in the Draft Guidance. In February 2004, Radford AAP conducted a subsurface investigation to evaluate the soil and liner material beneath the residual material contained in closed HWMU 7. All subsurface investigation activities were conducted in accordance with the June 25, 2003 correspondence and the procedures specified in the Closure Plan Amendment.

A Closure Plan Amendment for HWMU 7 was submitted to VDEQ in February 2004. Based on subsequent VDEQ comments and discussions, three revisions of the document were submitted following the initial submittal in February 2004, with the final submittal in June 2007. VDEQ concurred with the June 2007 Closure Plan Amendment for HWMU-7 and determined

the information contained therein to be technically adequate in correspondence dated October 31, 2007, with incorporation of VDEQ comments presented in a VDEQ memorandum dated September 14, 2007 (**Appendix B**).

In a meeting between the VDEQ and Radford AAP on January 23, 2008, the VDEQ indicated that the Closure Plan Amendment for HWMU-7 would receive final approval until the public comment period was complete; however, Radford AAP could submit the Closure Report for HWMU-7 for preliminary VDEQ review as soon as the Closure Report was complete. A Closure Report including all the analytical results for the 2002 and 2004 subsurface samples was submitted to the VDEQ under a cover letter dated May 14, 2008. The May 2008 Closure Report was prepared in accordance with the June 2007 Closure Plan with incorporation of the VDEQ comments presented in the VDEQ memorandum dated September 14, 2007, which was deemed technically adequate by the VDEQ. Following receipt of the May 2008 Closure Report, the VDEQ indicated that it would not review the Closure Report until after the Closure Plan Amendment received final approval.

In March 2010, the VDEQ requested the 2007 Closure Plan Amendment for HWMU-7 be revised to reflect changes made to the groundwater monitoring program since 2007, and to incorporate all soil analytical data collected from the Unit to-date. Radford AAP revised the Closure Plan Amendment for HWMU-7 in accordance with the following:

- Draft Guidance Manual for Closure Plans and Post-Closure Plans (Draft Guidance) dated September 28, 2001;
- VDEQ correspondence dated June 25, 2003;
- VDEQ Notice of Deficiencies dated June 7, 2004;
- Radford AAP Response to Comments dated September 14, 2004;
- Teleconference between VDEQ and Radford AAP on January 18, 2007;
- VDEQ e-mail correspondence dated January 18, 2007 and January 25, 2007;
- VDEQ memorandum dated September 14, 2007;
- VDEQ correspondence dated October 31, 2007; and
- VDEQ e-mail correspondence dated March 2, 2010, March 9, 2010, and March 10, 2010.

Based on the March 2010 VDEQ request, Radford AAP submitted a revised Closure Plan Amendment to the VDEQ in July 2010. The July 2010 Closure Plan Amendment for HWMU-7 superseded the previous Closure Plan Amendment submitted in June 2007. In correspondence dated September 27, 2011, the VDEQ approved the Closure Plan Amendment for HWMU-7 as part of the Class 3 Permit Modification for the Permit. The Closure Plan Amendment for HWMU-7 was incorporated within Permit Attachment 1, Appendix C of the Permit. A copy of the Closure Plan Amendment for HWMU-7 is included (on CD-ROM) in **Appendix A**. Copies of relevant project correspondence are included (on CD-ROM) in **Appendix B**.

## 3.2 2002 SUBSURFACE INVESTIGATION

The 2002 subsurface investigation serves as a previous study for the purpose of providing generator knowledge regarding the residual material contained in the Unit. The results of the 2002 subsurface investigation were used to assist with the development of the Hazardous

Constituents of Concern (HCOC) list for the Unit. Additionally, the samples collected in the 2002 subsurface investigation are used to support the Clean Closure Evaluation to the extent possible. A copy of the *Field Investigation Report and Risk Assessment for Units 5 and 7* is included in the Closure Plan Amendment (**Appendix A**). Subsurface investigation activities were conducted in accordance with the procedures specified in the Closure Plan Amendment.

### 3.2.1 Investigation Procedures

On November 1, 2002, Draper Aden Associates advanced 16 soil borings at HWMU-7 using a track-mounted Geoprobe® rig. The boring locations are illustrated in **Figure 2**. The borings were located in a pattern to best determine the horizontal and vertical extent of the residual material in the Unit. Nine borings were advanced within the Unit boundaries, and six borings were advanced around the perimeter just outside of the Unit boundaries. One additional boring was advanced approximately 30 feet topographically upgradient from the Unit for the collection of a background soil sample (7GP-16). Soil samples were collected continuously throughout each of the borings. The differentiation between residual material and native soil was based on visual observation. The borings were backfilled with bentonite upon completion.

The nine borings located within HWMU-7 were advanced through the cap system and residual material and into the clay bottom liner; four of the borings were advanced through the clay liner and into native soils. The boring logs are presented in **Appendix C**.

Draper Aden Associates collected the background soil sample (7GP-16 [3'-4']) plus seven randomly-selected soil samples from the 16 borings for laboratory analysis for the USEPA Target Analyte List (TAL) inorganic compounds and for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. Data validation was conducted using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes – Physical and Chemical Methods, USEPA SW-846, 3rd Edition – Final Update I, II/IIA, and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). The laboratory analytical data and data validation reports are presented (on CD-ROM) in **Appendix D**.

### 3.2.2 Material Profile of HWMU-7

The nine borings located within the HWMU-7 boundaries (7GP-1, 7GP-2, 7GP-3, 7GP-5, 7GP-6, 7GP-8, 7GP-9, 7GP-10, and 7GP-11; **Figure 2**) were advanced to depths ranging from 12 to 20 feet below ground surface (bgs). The nine borings encountered a layer of topsoil approximately 1 foot to 1.5 feet thick, which was underlain by yellow-brown sandy clay ranging in thickness from 1.25 feet to 2 feet. The yellow-brown sandy clay in turn was underlain by light gray sand (drainage layer) ranging in thickness from 0.50 foot to 1.5 feet. The 30-mil PVC liner was encountered beneath the drainage sand layer. The PVC liner was underlain by yellow-brown silty sand with green, compacted residual material. The thickness of the residual material ranged from 5 feet to 8.5 feet. The residual material in turn was underlain by red-brown to yellow-brown sandy clay ranging in thickness from 1.75 feet to 3 feet. Borings 7GP-5, 7GP-6,

7GP-8, 7GP-10, and 7GP-11 were terminated in the sandy clay. Borings 7GP-1, 7GP-2, and 7GP-9 penetrated the sandy clay and encountered dark gray fine sand and silt with round gravel; the dark gray sand and silt exhibited an aquatic odor. The red-brown to yellow-brown sandy clay was not encountered in boring 5GP-3; the dark gray sand and silt was encountered beneath the residual material at a depth of 9.5 feet bgs in boring 7GP-3. A geologic cross-section of HWMU-7 is included as **Figure 3**.

Five of the six borings located around the perimeter of HWMU-7 (7GP-7, 7GP-12, 7GP-13, 7GP-14, and 7GP-15) were advanced to a depth of 4 feet bgs each; boring 7GP-4 was advanced to a depth of 8 feet bgs. Brown sand was encountered in each of the perimeter borings, and dark gray fine sand and silt with round gravel was encountered at a depth of 7.75 feet bgs in boring 7GP-4. No residual material was encountered in the six perimeter borings.

Boring 7GP-16 was located approximately 30 feet topographically upgradient from HWMU-7 for the collection of a background soil sample. Boring 7GP-16 was advanced to a depth of 4 feet. Brown sand was encountered in boring 7GP-16.

### 3.2.3 Soil Sample Collection and Analytical Results

On November 1, 2002, Draper Aden Associates randomly collected eight soil samples from the 16 borings advanced at HWMU-7. The eight samples and the material from which they were collected are listed below:

- 7GP-1 (1-3') cap material (clay and sand above the PVC membrane);
- 7GP-2 (8-12') residual material;
- 7GP-2 (13.5-14.5') base clay (beneath the residual material);
- 7GP-3 (10-11') native soil (beneath the Unit);
- 7GP-4 (3-4') soil adjacent to the Unit;
- 7GP-5 (6-11') residual material;
- 7GP-8 (5-8') residual material; and
- 7GP-16 (3-4') background soil.

Aliquots of the eight soil samples were submitted to Severn Trent Laboratories of North Canton, Ohio for analysis for the USEPA Target Analyte List (TAL) inorganic compounds. Separate aliquots of the eight soil samples were submitted to Lancaster Laboratories of Lancaster, Pennsylvania for analysis for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. The laboratory analytical data and data validation reports are presented (on CD-ROM) in **Appendix D**. A summary of the TAL inorganic constituents and the TCL organic constituents detected in the eight soil samples from HWMU-7 is presented in **Table 1**. Please note that **Table 1** contains only those detected constituents that are defined as hazardous constituents in 40 CFR 261 Appendix VIII and in 40 CFR 264 Appendix IX; the non-hazardous TAL inorganic constituents detected (aluminum, calcium, iron, magnesium, manganese, and potassium) are not included in **Table 1**.

As shown in **Table 1**, 13 hazardous TAL inorganic constituents were detected in the cap material, residual material, bottom clay liner, native soil, adjacent soil, and background soil. The concentrations of hazardous TAL inorganic constituents detected in the samples of residual material are comparable to the hazardous TAL inorganic constituent concentrations detected in the samples of the cap material, bottom clay liner, native soil, adjacent soil, and background soil. Only three TCL organic constituents were detected in two of the eight soil samples from HWMU-7. The pesticide 4,4'-DDD was detected in bottom clay liner sample 7GP-2 (13.5-14.5') at a concentration of 0.0035 mg/kg. In native soil sample 7GP-3 (10-11'), the pesticide 4,4'-DDE and the semi-volatile compound n-nitrosodiphenylamine were detected at concentrations of 0.0035 mg/kg and 0.75 mg/kg, respectively. No other TCL organic constituents (including polychlorinated biphenyls [PCBs]) were detected in any of the November 2002 soil samples (including the residual material samples) collected at HWMU-7.

## 3.3 2004 SUBSURFACE INVESTIGATION

In correspondence dated June 25, 2003, the VDEQ indicated that Radford AAP must sample the soil and liner material (if any) beneath the residual material to determine whether the soil and liner material meet the clean closure standards listed in the VDEQ *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (Draft Closure Guidance). In February 2004, Radford AAP conducted subsurface investigations to evaluate the soil and liner material beneath the residual material contained in closed HWMU-7. Subsurface investigation activities were conducted in accordance with the June 25, 2003 correspondence and the procedures specified in the Closure Plan Amendment (**Appendix A**).

### 3.3.1 Investigation Procedures

On February 17, 2004, Draper Aden Associates advanced eight (8) soil borings at HWMU-7 using a track-mounted Geoprobe® rig. The boring locations (7GP-17 through 7GP-24) are illustrated in **Figure 2**. The borings were advanced through the clay liner beneath HWMU-7 and into the underlying native soils. The boring logs are presented in **Appendix C**. A geologic cross-section of HWMU-7 is included as **Figure 3**. Soil samples were collected continuously throughout each of the borings. Draper Aden Associates collected a total of eight (8) soil samples (one sample from each boring) from the native soils and clay liner immediately beneath the residual material for laboratory analysis for the USEPA TAL inorganic compounds and for the TCL organic compounds. The borings were backfilled with bentonite upon completion.

The laboratory analytical results were subjected to Level IV data validation. Data validation was conducted using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes – Physical and Chemical Methods, USEPA SW-846, 3rd Edition – Final Update I, II/IIA, and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). The laboratory analytical data and data validation reports are presented (on CD-ROM) in **Appendix D**.

### 3.3.2 Soil Sample Collection and Analytical Results

The eight soil samples collected on February 17, 2004, and the material from which they were collected are listed below:

- 7GP-17 (11') bottom clay liner/native soil;
- 7GP-18 (14') bottom clay liner;
- 7GP-19 (14') native soil;
- 7GP-20 (14.5') bottom clay liner/native soil;
- 7GP-21 (13.5') bottom clay liner;
- 7GP-22 (13') native soil;
- 7GP-23 (12.5') native soil; and
- 7GP-24 (14') bottom clay liner.

Each of the February 2004 soil samples was collected at depths greater than six inches beneath the bottom of the residual material contained within HWMU-7. Aliquots of the eight soil samples were submitted to Severn Trent Laboratories of North Canton, Ohio for analysis for the USEPA Target Analyte List (TAL) inorganic compounds. Separate aliquots of the eight soil samples were submitted to Lancaster Laboratories of Lancaster, Pennsylvania for analysis for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. The laboratory analytical data and data validation reports are presented (on CD-ROM) in **Appendix D**. A summary of the TAL inorganic constituents and the TCL organic constituents detected in the eight February 2004 soil samples is presented in **Table 1**, along with the results from the November 2002 subsurface investigation. Please note that **Table 1** contains only those detected constituents that are defined as hazardous constituents in 40 CFR 261 Appendix VIII and in 40 CFR 264 Appendix IX; the non-hazardous TAL inorganic constituents detected (aluminum, calcium, iron, magnesium, manganese, and potassium) are not included in **Table 1**.

As shown in **Table 1**, 11 hazardous TAL inorganic constituents were detected in the bottom clay liner and native soil samples. The concentrations of hazardous TAL inorganic constituents detected in the bottom clay liner and native soil samples are comparable to the hazardous TAL inorganic constituent concentrations detected in the November 2002 samples of residual material, cap material, bottom clay liner, native soil, adjacent soil, and background soil.

Four TCL organic constituents were detected in seven of the eight soil samples collected from the bottom clay liner and/or native soils. The volatile compound toluene was detected in bottom clay liner/native soil sample 7GP-20 (14.5') at a concentration of 0.006 mg/kg. The semi-volatile compound bis(2-ethylhexyl)phthalate was detected in bottom clay liner sample 7GP 21 (13.5') at a concentration of 1 mg/kg, and in bottom clay liner/native soil sample 7GP-17 (11') at a concentration of 0.56 mg/kg. The semi-volatile compound n-nitrosodiphenylamine was detected in bottom clay liner samples 7GP-18 (14') and 7GP-21 (13.5') at concentrations of 2.1 mg/kg and 2.8 mg/kg, respectively; in bottom clay liner/native soil samples 7GP-17 (11') and 7GP-20 (14.5') at concentrations of 3.5 mg/kg and 3.0 mg/kg, respectively; and in native soil samples 7GP-19 (14'), 7GP-22 (13'), and 7GP-23 (12.5') at concentrations of 0.9 mg/kg, 3.3 mg/kg, and 3.4 mg/kg, respectively. Furthermore, n-nitrosodiphenylamine was detected in duplicate native soil sample 7GP-22-22 (13') at a concentration of 4.3 mg/kg.

The PCB compound Aroclor-1254 was detected in bottom clay liner samples 7GP-18 (14') and 7GP-21 (13.5') at concentrations of 0.18 mg/kg and 0.5 mg/kg, respectively; in bottom clay liner/native soil samples 7GP-17 (11') and 7GP-20 (14.5') at concentrations of 0.34 mg/kg and 0.35 mg/kg, respectively; and in native soil samples 7GP-19 (14'), 7GP-22 (13'), and 7GP-23 (12.5') at concentrations of 0.53 mg/kg, 0.38 mg/kg, and 0.4 mg/kg, respectively. Furthermore, Aroclor-1254 was detected in duplicate native soil sample 7GP-22-22 (13') at a concentration of 0.33 mg/kg. However, review of the laboratory analytical data package indicated that the laboratory did not perform a five-point initial calibration for the detected aroclors. Additionally, the laboratory did not spike the laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) samples with PCBs. Therefore, the detected Aroclor-1254 concentrations may be overestimated and inappropriate for use due to the limited availability of quality control data.

No other TCL organic constituents were detected in any of the soil samples collected from the bottom clay liner and/or native soils.

## 3.4 GROUNDWATER INVESTIGATIONS

As stated previously, Radford AAP has monitored groundwater at HWMU-7 in accordance with the procedures specified in the Unit's Permits from October 1999 to the present. In accordance with the Closure Plan Amendment, clean closure for groundwater at HWMU-7 may be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPSs) for the Unit. If a groundwater constituent is detected at a concentration that is greater than the GPS, the concentration will be compared to background. HWMU-7 can receive clean closure for groundwater if all constituents are either below GPS or, if any constituents are above GPS, below background.

## 4.0 CLEAN CLOSURE EVALUATION FOR RESIDUAL MATERIAL AND SOIL

As stipulated in the VDEQ-approved Closure Plan Amendment, Radford AAP may achieve clean closure for HWMU-7 with the residual material remaining in-place provided that samples of the residual material as well as soil and any liner material immediately beneath the residual material meet the clean closure standards listed in the VDEQ Draft Closure Guidance, which include:

- Analytical non-detection;
- Comparison to background; and/or
- Risk assessment in accordance with *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

In order for Radford AAP to achieve clean closure of HWMU-7 with the residual material remaining in-place, the VDEQ indicated that Radford AAP must demonstrate that the residual material meets the clean closure standards. Because of possible mixing, the top six inches of clay or native soil directly underneath the residual material was included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material was included with the residual material. Therefore, closure procedures addressing the residual material included all materials from six inches beneath to six inches above the residual material.

As indicated in the Closure Plan Amendment, the residual material remaining in-place in HWMU-7 must meet the clean closure standards for the HCOCs specified in the Closure Plan Amendment. In November 2002 and February 2004, Radford AAP conducted subsurface investigations to determine the nature and extent of the residual material contained in closed HWMU-7 and to assess the native soils and clay liner immediately beneath the residual material. In order to comply with the clean closure standards, individual samples of the residual material, clay liner, and native soils were analyzed for HCOCs and compared to background data from the vicinity of the Unit, the facility-wide background values (for inorganic constituents; included in the Closure Plan Amendment in **Appendix A**), and risk-based concentrations (USEPA Region 3 or equivalent) for residential soil. The boring logs for the November 2002 and February 2004 soil borings are included in **Appendix C**. Laboratory analytical results and data validation reports for the residual material and soil samples are included (on CD-ROM) in **Appendix D**.

Detected inorganic HCOCs were compared to the inorganic constituent background values established during the August/September 2001 Facility-Wide Background Study conducted by the IT Corporation (a copy of which is included in the Closure Plan Amendment in **Appendix A**). No TCL organic compounds were detected in the background soil samples collected during the August/September 2001 Facility-Wide Background Study; therefore, comparisons to background concentrations will not be possible for any organic HCOCs detected in the clay liner and native soils beneath HWMU-7.

Clean closure of the clay liner and native soils beneath HWMU-7 was demonstrated by a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of soil samples to background levels. In this way, Radford AAP demonstrates that the concentrations of HCOCs detected in the clay liner and native soils do not

pose an unacceptable level of risk to human health and the environment. The risk assessment was conducted in accordance with the VDEQ document titled *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

## 4.1 HAZARDOUS CONSTITUENTS OF CONCERN

As discussed in Section 5.1 of the Closure Plan Amendment (**Appendix A**), the HCOC list for HWMU-7 was developed based on the following:

a. The results of analyses of lagoon water and sediment in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly/semiannual groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 3 of the Permit, as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

c. Hazardous constituents detected in soil samples collected from within and HWMU-7 during the November 2002 and February 2004 subsurface investigations at the Unit.

The HCOC list for HWMU-7 was included as Table 2 of the Closure Plan Amendment, and the HCOCs are also listed in **Table 1** of this Closure Report. The HCOCs were used to determine whether the residual material within the Unit and the bottom clay liner and underlying native soils meet the clean closure standards listed in the VDEQ Draft Closure Guidance.

## 4.2 CLEAN CLOSURE EVALUATION FOR RESIDUAL MATERIAL

During the November 2002 subsurface investigation, three (3) samples of the residual material were submitted for laboratory analyses for TAL inorganic constituents and TCL organic constituents. As shown in **Table 1**, only 10 hazardous TAL inorganic constituents (i.e., HCOCs) were detected in the three residual material samples. No other inorganic HCOCs and no organic HCOCs were detected in the three residual material samples.

In accordance with Section 8.1 of the Closure Plan Amendment (**Appendix A**), achievement of clean closure for the residual material within HWMU-7 may be demonstrated by comparing the concentrations of inorganic HCOCs in the material to the inorganic constituent background values established during the August/September 2001 Facility-Wide Background Study conducted by the IT Corporation (a copy of which is included in the Closure Plan Amendment in **Appendix A**). The 95% UTLs calculated by the IT Corporation for the inorganic constituents detected in the background soil samples from the Main Manufacturing Area are included in **Table 1**. As shown in **Table 1**, none of the inorganic HCOC concentrations detected in the residual material samples were greater than their respective Facility-Wide Background concentrations. Furthermore, no organic HCOCs were detected in the residual material samples. Therefore, the residual material contained within HWMU-7 meets the requirements for clean closure.

## 4.3 CLEAN CLOSURE EVALUATION FOR SOIL

During the November 2002 and February 2004 subsurface investigations, a total of ten (10) samples of the bottom clay liner and/or underlying native soil were submitted for laboratory analyses for TAL inorganic constituents and TCL organic constituents. Each of the 10 soil samples was collected at depths greater than six inches beneath the bottom of the residual material contained within HWMU-7. As shown in **Table 1**, 13 inorganic HCOCs and six (6) organic HCOCs were detected in the bottom clay liner and/or underlying native soil samples. No other inorganic or organic HCOCs were detected in the 10 samples of the bottom clay liner and/or underlying native soil.

### 4.3.1 Comparison to Background

As shown in **Table 1**, the concentrations of 9 of the inorganic HCOCs detected in the bottom clay liner and/or underlying native soil samples (arsenic, chromium, cobalt, copper, lead, nickel, thallium, vanadium, and zinc) were less than their respective Facility-Wide Background concentrations. Two inorganic HCOCs (barium and beryllium) were detected in the bottom clay liner and/or underlying native soil samples at concentrations greater than their respective Facility-Wide Background concentrations. The two remaining inorganic HCOCs – selenium and cyanide – do not have Facility-Wide Background concentrations, nor were they detected in Unit-specific background sample 7GP-16 (3-4') (**Table 1**). Therefore, the concentrations of selenium and cyanide detected in the bottom clay liner and/or underlying native soil samples were greater than background. Additionally, no organic compounds were detected during the August and September 2001 Facility-Wide Background Study, and no TCL organic compounds were detected in Unit-specific background sample 7GP-16 (3-4'). Therefore, the concentrations of the six organic HCOCs – toluene, bis(2-ethylhexyl)phthalate, n-nitrosodiphenylamine, 4,4'-DDD, 4,4'-DDE, and Aroclor-1254 – detected in the bottom clay liner and/or underlying native soil samples were greater than background.

### 4.3.2 Risk-Based Closure Evaluation

Clean closure of the clay liner and native soils beneath HWMU-7 may be demonstrated by a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of soil sample constituent concentrations to background levels. Only those constituents that did not pass the non-detection and background clean-closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation. Therefore, only barium, beryllium, selenium, cyanide, toluene, bis(2-ethylhexyl)phthalate, n-nitrosodiphenylamine, 4,4'-DDD, 4,4'-DDE, and Aroclor-1254 are included in the risk-based evaluation for the clay liner and native soils beneath HWMU-7. Barium selenium, cyanide, and toluene are classified as non-carcinogenic compounds. Beryllium, bis(2-ethylhexyl)phthalate, and Aroclor-1254 are classified as non-carcinogenic compounds and as carcinogenic compounds. N-nitrosodiphenylamine, 4,4'-DDD, and 4,4'-DDE are classified as carcinogenic compounds.

#### 4.3.2.1 Comparison to Risk-Based Concentrations (Residential Screen)

A comparison of the maximum detected concentrations of barium, beryllium, selenium, cyanide, toluene, bis(2-ethylhexyl)phthalate, n-nitrosodiphenylamine, 4,4'-DDD, 4,4'-DDE, and

Aroclor-1254 to their respective residential risk-based levels is presented in **Table 2**. The maximum detected concentrations of the eight constituents were compared to the regional screening level (RSL) for residential soil as well as to the soil screening level (SSL) for transfer from soil to air or groundwater as presented in the November 2011 *USEPA Region 3, 6, and 9 Regional Screening Levels for Chemical Contaminants at Superfund Sites*.

As shown in **Table 2**, the maximum detected concentrations of barium, selenium, n-nitrosodiphenylamine, and Aroclor-1254 were greater than their respective residential risk-based levels. The maximum detected concentrations of beryllium, cyanide, toluene, bis(2-ethylhexyl)phthalate, 4,4'-DDD, and 4,4'-DDE were less than their respective residential risk-based levels. However, in accordance with VDEQ risk assessment guidance, all of these ten constituents were retained for site-specific quantitative risk assessment due to detection above their respective background concentrations.

#### 4.3.2.2 Exposure Assessment

**Table 3** presents a site conceptual exposure model evaluating the potential exposure routes and media for the Unit and the receptors which may be exposed. For the purposes of this risk assessment, a residential scenario (adult and child) is assumed to present the most conservative assessment of risk. Furthermore, exposure to soil via dermal, ingestion, and inhalation pathways are the only exposure routes considered in this risk assessment. Groundwater is not being considered due to the fact that the HCOC concentrations detected in groundwater at the Unit are less than GPS or have been demonstrated to not be derived from the Unit to the satisfaction of VDEQ. Surface water is not being considered due to the fact that constituent concentrations within the groundwater discharging to the nearest surface water body (the New River; approximately 225 feet west of the Unit) are less than the GPS or have been demonstrated to not be derived from the Unit to the satisfaction of VDEQ. Sediment is not being considered due to the fact that the soil in question is encountered at depths greater than 11 feet below soil and/or residual material that meets the requirements for clean closure (see Section 4.2 of this Closure Report).

For the purposes of this risk assessment, the maximum detected concentrations of barium (279 mg/kg), beryllium (1.5 mg/kg), selenium (4.1 mg/kg), cyanide (0.69 mg/kg), toluene (0.006 mg/kg), bis(2-ethylhexyl)phthalate (1 mg/kg), n-nitrosodiphenylamine (4.3 mg/kg), Aroclor-1254 (0.53 mg/kg), 4,4'-DDD (0.0035 mg/kg), and 4,4'-DDE (0.0025 mg/kg) were used as the conservative (overly protective) estimation of the exposure point concentrations.

Chemical-specific chronic daily intake levels were calculated for the eight constituents of concern in soil for each receptor group (residential adult and residential child) and for each exposure pathway (dermal, ingestion, and inhalation). These calculations are presented in **Appendix E**. The exposure estimates are expressed as a mass of chemical per unit body weight per unit time (e.g., mg/kg-day). Chemical intakes were estimated by multiplying the exposure point concentrations by intake factors based on exposure factors presented in VDEQ and USEPA guidance documents. The references for each of the exposure factors are provided in **Appendix E**.

#### 4.3.2.3 Toxicity Assessment

Toxicity factors for the eight constituents of concern have been obtained from the USEPA Regions 3, 6, and 9 RSL table. The toxicity factors for the eight constituents of concern are included in **Appendix E**. For bis(2-ethylhexyl)phthalate and Aroclor-1254, which have both carcinogenic and non-carcinogenic toxicity factors, the toxicity assessment was conducted for both carcinogenic and non-carcinogenic effects.

#### 4.3.2.4 Risk Characterization

Cancer risks and non-cancer hazard quotients were estimated for each receptor group (residential adult and residential child; **Tables 4** and **5**, respectively) via each exposure pathway (dermal, ingestion, and inhalation) in soil. For bis(2-ethylhexyl)phthalate and Aroclor-1254, which have both carcinogenic and non-carcinogenic toxicity factors, the risk characterization was conducted for both carcinogenic and non-carcinogenic effects.

As shown in **Table 4**, the total cancer risk across all exposure pathways in soil for a residential adult is $1.00 \times 10^{-6}$, which is below the risk goal of total cumulative carcinogenic risk of $1 \times 10^{-4}$, and the risk from no individual carcinogen is greater than $1 \times 10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential adult is $6.12 \times 10^{-2}$, which is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0.

As shown in **Table 5**, the total cancer risk across all exposure pathways in soil for a residential child is $1.67 \times 10^{-6}$, which is below the risk goal of total cumulative carcinogenic risk of $1 \times 10^{-4}$; however, the risk from one individual carcinogen (Aroclor-1254) is greater than $1 \times 10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential child is $5.34 \times 10^{-1}$, which is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0.

#### 4.3.2.5 Uncertainty Analysis

Uncertainties inherent in this risk assessment are as follows:

- The maximum detected concentrations of barium (279 mg/kg), beryllium (1.5 mg/kg), selenium (4.1 mg/kg), cyanide (0.69 mg/kg), toluene (0.006 mg/kg), bis(2-ethylhexyl)phthalate (1 mg/kg), n-nitrosodiphenylamine (4.3 mg/kg), Aroclor-1254 (0.53 mg/kg), 4,4'-DDD (0.0035 mg/kg), and 4,4'-DDE (0.0025 mg/kg) were used as the exposure point concentrations. This may tend to over-estimate the risk to both residential receptor groups (adult and child).

- The soil containing barium and beryllium at concentrations greater than Facility-Wide Background as well as concentrations of selenium, cyanide, toluene, bis(2-ethylhexyl)phthalate, n-nitrosodiphenylamine, 4,4'-DDD, 4,4'-DDE, and Aroclor-1254 is encountered at depths greater than 11 feet below soil and/or residual material that meets the requirements for clean closure. Radford AAP intends to leave this soil in-place. Therefore, the exposure assessment based on a residential population

potentially exposed by dermal, ingestion, and inhalation pathways is an over-estimation of the risk presented by the soil remaining in-place.

- The risk from one individual carcinogen (Aroclor-1254) for a residential child was calculated to be $1.62 \times 10^{-6}$, the majority of which was comprised by the ingestion exposure pathway (calculated to be $1.16 \times 10^{-6}$, which is marginally greater than the risk threshold of $1 \times 10^{-6}$ for an individual carcinogen). As stated previously, the risk from Aroclor-1254 was calculated using the maximum detected concentration (0.53 mg/kg). Using the average Aroclor-1254 concentration of 0.38 mg/kg (calculated from all of the detected Aroclor-1254 concentrations) the cancer risk from Aroclor-1254 for a residential child across all exposure pathways was calculated to be $1.16 \times 10^{-6}$, the majority of which was comprised by the ingestion exposure pathway (calculated to be $8.33 \times 10^{-7}$, which is less than the risk threshold of $1 \times 10^{-6}$ for an individual carcinogen) (**Table 6**).

- The soil containing the Aroclor-1254 concentrations is encountered at depths greater than 11 feet below ground surface, thus the chance of exposure to this soil via any pathway and the duration of any exposure would be minimal. Therefore, any realistic risk presented by this soil would be well below acceptable thresholds.

- Additional discussions with the data validation specialist regarding the Aroclor-1254 data for the February 2004 soil samples indicated that the February 2004 Aroclor-1254 data may be overestimated and inappropriate for use due to the limited availability of quality control data are suspect due to inadequate quality control data. Specifically, a five-point initial calibration was not performed for the detected aroclors; also, the LCS and MS/MSD samples were not spiked with PCBs. Aroclor-1254 concentrations were not detected in any of the samples collected during the November 2002 subsurface investigation, including the two bottom clay liner/native soil samples collected in November 2002. As a result, the February 2004 Aroclor-1254 concentrations used in this risk assessment may be an overestimation and therefore may be inappropriate for use.

## 4.4 RESULTS OF CLEAN CLOSURE EVALUATION FOR RESIDUAL MATERIAL AND SOIL

None of the inorganic HCOC concentrations detected in the residual material samples were greater than their respective Facility-Wide Background concentrations. Furthermore, no organic HCOCs were detected in the residual material samples. Therefore, the residual material contained within HWMU-7 meets the requirements for clean closure as defined the Closure Plan Amendment.

The total cancer risk across all exposure pathways for the soils underlying the Unit for a residential adult is $1.00 \times 10^{-6}$, which is below the risk goal of total cumulative carcinogenic risk of $1 \times 10^{-4}$, and the risk from any individual carcinogen is below $1 \times 10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential adult is $6.12 \times 10^{-2}$, which is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0. The total cancer risk across all exposure pathways in the soils for a residential child is $1.67 \times 10^{-6}$, which is below

the risk goal of total cumulative carcinogenic risk of 1 x $10^{-4}$; however, the risk from one individual carcinogen (Aroclor-1254) is greater than 1 x $10^{-6}$. The total non-cancer hazard quotient across all exposure pathways in soil for a residential child is 5.34 x $10^{-1}$, which is below the risk goal of a total cumulative non-carcinogenic hazard index of 1.0. Based on the uncertainties inherent in this risk assessment, the total cumulative carcinogenic and non-carcinogenic risks were calculated using conservative assumptions that are highly protective. Furthermore, data validation indicated that the Aroclor-1254 concentrations – which were only detected in samples collected during February 2004 – may be overestimated and inappropriate for use due to the absence of quality control data. Therefore, the soils beneath the Unit meet the requirements for clean closure by risk-based assessment.

## 5.0 CLEAN CLOSURE EVALUATION FOR GROUNDWATER

As the residual material and underlying soils at HWMU-7 meet the clean closure standards specified by the VDEQ, Radford AAP is presenting a demonstration of clean closure for groundwater at HWMU-7 as part of this Closure Report in accordance with the Closure Plan Amendment. The groundwater at HWMU-7 is currently monitored in accordance with the requirements of the Permit, as modified in the VDEQ-approved Class 3 Permit Modification dated September 27, 2011. The latest potentiometric surface map (Fourth Quarter 2011) is included as **Figure 4**.

As stipulated in the Closure Plan Amendment, clean closure for groundwater at HWMU-7 may be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPS) for the Unit. For the HCOCs that are included in the semiannual Groundwater Compliance Monitoring List for HWMU-7 (Permit Attachment 3, Appendix E), the clean closure evaluation focuses on groundwater analytical data collected during Fourth Quarter 2011 (**Appendix F**). Those HCOCs that are not included in the semiannual Groundwater Compliance Monitoring List for HWMU-7 (with the exception of Aroclor-1254) are included in the Annual Groundwater Sampling Constituent List (Permit Attachment 1, Appendix I) for the Unit; therefore, the clean closure evaluation for those constituents focuses on groundwater analytical data collected during Second Quarter 2011 (**Appendix F**). Groundwater at HWMU-7 is not monitored for Aroclor-1254; however, an evaluation of the potential for Aroclor-1254 migration to groundwater is included in this clean closure evaluation (Section 5.5, below).

If a groundwater constituent is detected at a concentration that is greater than the GPS, the concentration will be compared to the calculated site-specific background concentration. HWMU-7 may receive clean closure for groundwater if no constituents are greater than GPS or, if any constituents are greater than GPS, the constituents are below background. With the exception of total cobalt, the GPS for HWMU-7 are based on USEPA Maximum Contaminant Levels (MCLs) for drinking water or on VDEQ-derived Alternate Concentration Limits (ACLs) for constituents without MCLs. The approved Class 3 Permit Modification dated September 27, 2011 reduced the GPS for total cobalt at HWMU-7 from the previous VDEQ-calculated ACL of 156.65 µg/L to the site-specific background concentration of 5 µg/L due to the reduction of the VDEQ-calculated ACL to 4.695 µg/l.

As requested in VDEQ correspondence dated September 14, 2007, Radford AAP statistically recalculated the background concentration values for the constituents listed in the Unit's Compliance groundwater monitoring program using the data from Second Quarter 2003 through Second Quarter 2007 (**Appendix G**). Additionally, the VDEQ revised the GPS for HWMU-7 in the approved Closure Plan Amendment dated September 27, 2011; the revised GPS are included in **Appendix H**. The updated background concentration values and GPSs are also included in the analytical data summary tables in **Appendix F**.

### 5.1 CONSTITUENTS NOT DETECTED ABOVE QUANTITATION LIMITS

As summarized in **Appendix F**, the following HCOCs that are included in the semiannual Groundwater Compliance Monitoring List for HWMU-7 (Permit Attachment 3,

Appendix E) were not detected in groundwater at concentrations greater than their respective quantitation limits (QLs) during Fourth Quarter 2011. The QLs for these constituents are less than or equal to their respective GPS.

| HCOC | QL (µg/L) | Background (µg/L) | USEPA MCL (µg/L) | VDEQ ACL (µg/L) | GPS (µg/L) |
|---|---|---|---|---|---|
| Arsenic | 10 | 10 | 10 | | 10 |
| Cadmium | 1 | 1 | 5 | | 5 |
| Copper | 5 | 5 | 1,300 | | 1,300 |
| Lead | 1 | 1 | 15 | | 15 |
| Selenium | 10 | 10 | 50 | | 50 |
| Silver | 2 | 2 | | 78.25 | 78.25 |
| Thallium | 1 | 1 | 2 | | 2 |
| Cyanide | 20 | 20 | 200 | | 200 |
| Bis(2-ethylhexyl)phthalate | 6 | 6 | 6 | | 6 |
| 2,4-Dinitrotoluene | 10 | 10 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 10 | 10 | | 15.65 | 15.65 |

Notes:
USEPA MCL, when available, supersedes VDEQ ACL.
VDEQ ACL: VDEQ-calculated Alternate Concentration Limit, January 31, 2011.

Additionally, the following HCOCs that are not included in the semiannual Groundwater Compliance Monitoring List for HWMU-7 but are included in the Annual Groundwater Sampling Constituent List (Permit Attachment 1, Appendix I) for the Unit were not detected in groundwater at concentrations greater than their respective QLs during Second Quarter 2011 (**Appendix F**). The QLs for these constituents are less than or equal to their respective drinking water standards (USEPA MCLs or VDEQ-calculated ACLs).

| HCOC | QL (µg/L) | USEPA MCL (µg/L) | VDEQ ACL (µg/L) |
|---|---|---|---|
| Antimony | 1 | 6 | |
| Beryllium | 1 | 4 | |
| Mercury | 2 | 2 | |
| Butyl benzyl phthalate | 10 | | 35.39 |
| 2,4-Dinitrophenol | 10 | | 31.2 |
| 4-Nitrophenol | 10 | | n/a |
| N-Nitrosodiphenylamine | 5 | | 13.72 |
| 4,4-DDD | 0.05 | | 0.28 |
| 4,4-DDE | 0.05 | | 0.20 |
| Toluene | 1 | 1,000 | |

Notes:
USEPA MCL, when available, supersedes VDEQ ACL.
VDEQ ACL: VDEQ-calculated Alternate Concentration Limit, January 31, 2011.
n/a: There is no USEPA MCL or VDEQ-calculated ACL for 4-Nitrophenol.

## 5.2 CONSTITUENTS DETECTED ABOVE QUANTITATION LIMITS

As summarized in **Appendix F**, no organic HCOCs were detected at concentrations equal to or greater than their respective QLs in groundwater at HWMU-7 during Second Quarter 2011 and Fourth Quarter 2011. Of the inorganic HCOCs monitored in groundwater at HWMU-7, only the following five were detected at concentrations greater than their respective QLs during Fourth Quarter 2011.

- **Barium**
  Barium was detected in every well at the Unit, including upgradient background well 7W12B, at concentrations greater than the QL of 10 µg/l but less than the GPS of 2,000 µg/l. Barium is naturally occurring and is consistently detected in groundwater across the Radford AAP facility.
- **Chromium**
  Chromium was detected only in upgradient background well 7W12B at a concentration greater than the QL of 5 µg/l but less than the GPS of 100 µg/l. Chromium was not detected at concentrations greater than the QL of 5 µg/l in the downgradient wells at the Unit.
- **Cobalt**
  Cobalt was detected in plume well 7W13 at a concentration of 11.7 µg/l, which is greater than the QL and GPS of 5 µg/l. Cobalt was not detected at concentrations greater than the QL of 5 µg/l in the other wells at the Unit. (The results of a VDEQ-approved alternate source demonstration (ASD) for cobalt are discussed in Section 5.3, below.)
- **Nickel**
  Nickel was detected in point of compliance (POC) well 7WCA at a concentration greater than the QL of 10 µg/l but less than the GPS of 313 µg/l. Nickel was not detected at concentrations greater than the QL of 10 µg/l in the other wells at the Unit.
- **Zinc**
  Zinc was detected in every well except plume well 7W9C at concentrations greater than the QL of 10 µg/l but less than the GPS of 4,695 µg/l. Zinc was not detected at a concentration greater than the QL of 10 µg/l in plume well 7W9C.

## 5.3 COMPARISON TO GROUNDWATER PROTECTION STANDARDS

As stipulated in the Closure Plan Amendment, clean closure for groundwater at HWMU-7 may be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the GPS for the Unit. As shown in **Appendix F** and discussed above, cobalt was the only HCOC detected in groundwater at a concentration greater than its GPS. No other HCOCs that are included in the Permit groundwater monitoring lists for HWMU-7 were detected at concentrations greater than their respective GPS or drinking water standards (current USEPA MCLs and VDEQ ACLs) during the most recent groundwater monitoring event.

During Fourth Quarter 2011, total cobalt was detected in plume monitoring well 7W13 at a concentration of 11.7 µg/l, which is greater than the site-specific background concentration of 5 µg/l and the revised GPS of 5 µg/l; however, the total cobalt concentration detected in plume monitoring well 7W13 is consistent with previous concentrations detected in this well. During teleconferences on November 9, 2011 and November 17, 2011, the VDEQ recommended Radford AAP submit an alternate source demonstration (ASD) for total cobalt concentrations detected in groundwater at HWMU-7. Radford AAP submitted the ASD to the VDEQ on December 15, 2011. The results of the ASD concluded that the total cobalt concentrations

observed in groundwater at HWMU-7 are derived from ambient, naturally-occurring and naturally variable sources. The VDEQ concurred with the conclusions and approved the ASD in correspondence dated January 5, 2012, stating that the facility is not required to remediate cobalt in groundwater at HWMU-7. Copies of the December 15, 2011 ASD and the January 5, 2012 VDEQ approval letter re included (on CD-ROM) in **Appendix I**.

## 5.4 ALTERNATE SOURCE DEMONSTRATION FOR ADDITIONAL DETECTED CONSTITUENTS

Chloroform, which is not an HCOC for HWMU-7, was detected at low concentrations in upgradient well 7W12B (3 µg/l) and in POC wells 7WCA and 7W11B (both less than the QL of 1 µg/l) during Second Quarter 2011. Chloroform was first detected at low concentrations in upgradient well 7W12B and POC well 7W11B during Third Quarter 2006. As required by the Permit, chloroform is analyzed as part of annual monitoring for the constituents listed in the Annual Groundwater Sampling Constituent List (Permit Attachment 1, Appendix I). Historical information regarding operations at HWMU-7 prior to closure indicates that the wastes processed through the Unit did not contain chloroform, and chloroform was not detected in soil samples collected within, under, and around HWMU-7 during field investigations in 2002 and 2004. A number of drinking water supply lines are located upgradient of HWMU-7 and have been in service since Radford AAP became operational in 1940. Based on the age and location of the lines, the documented presence of chloroform in the drinking water, and the lack of chloroform in the wastes processed through the Unit, chloroform concentrations detected in wells 7W11B and 7W12B are attributable to leakage from the water lines rather than a release from unit HWMU-7. Radford AAP prepared an ASD for chloroform at HWMU-7, which was received by the VDEQ on January 31, 2007. The VDEQ concurred with the ASD in a letter dated June 14, 2007. Therefore, chloroform is not an HCOC for HWMU-7, and the detection of chloroform at low concentrations (less than the USEPA of 80 µg/l for trihalomethanes) does not affect the clean closure evaluation for groundwater at the Unit. Copies of the ASD for chloroform and the VDEQ approval letter are included (on CD-ROM) in **Appendix B**.

## 5.5 EVALUATION OF POTENTIAL FOR AROCLOR-1254 MIGRATION TO GROUNDWATER

Aroclor-1254 was detected in soil samples collected beneath HWMU-7 in February 2004. The groundwater at HWMU-7 is not analyzed for Aroclor-1254 under the Post-Closure Care Permit for the Unit. However, an evaluation of the potential for migration of Aroclor-1254 from the soil beneath the Unit to groundwater is discussed below:

- As shown in **Table 2**, the maximum Aroclor-1254 concentration detected in soil (0.53 mg/kg) is nearly two orders of magnitude greater than the soil screening level (SSL) soil to groundwater DAF 1. It should be noted that the maximum selenium and n-nitrosodiphenylamine concentrations detected in soil were greater than their SSL DAF 1 by one order of magnitude and two orders of magnitude, respectively. Neither selenium nor n-nitrosodiphenylamine have been detected in groundwater at HWMU-7 (**Appendix F**).

- Aroclor-1254 has a high binding capacity with soils; when released to soil, the PCB congeners present in Aroclor 1254 become tightly adsorbed to the soil particles. Generally, Aroclor-1254 does not leach significantly in most aqueous soil systems. The average molecular weight (327) for Aroclor-1254 is heavier than the molecular weights for n-nitrosodiphenylamine (198.23) and selenium (78.96); therefore, Aroclor-1254 would be expected to have a low mobility compared to n-nitrosodiphenylamine and cyanide. As stated previously, neither n-nitrosodiphenylamine nor selenium have been detected in groundwater at HWMU-7 (**Appendix F**).

- The risk from Aroclor-1254 in soil for a residential child was calculated to be 1.62 x $10^{-6}$, which is marginally greater than the risk threshold of 1 x $10^{-6}$ for an individual carcinogen. However, the soil containing the Aroclor-1254 concentrations is encountered at depths greater than 11 feet below ground surface and over 14 feet above the average water table, thus the chance of exposure to this soil via any pathway and the duration of any exposure would be minimal. Therefore, any realistic risk presented by the Aroclor-1254 concentrations detected in soil would be well below acceptable thresholds.

- As stated previously, discussions with the data validation specialist regarding the Aroclor-1254 data for the February 2004 soil samples indicated that the February 2004 Aroclor-1254 data are suspect due to inadequate quality control data. Specifically, a five-point initial calibration was not performed for the detected aroclors; also, the LCS and MS/MSD samples were not spiked with PCBs. Aroclor-1254 concentrations were not detected in the two bottom clay liner/native soil samples collected during the November 2002 subsurface investigation. Therefore, the February 2004 Aroclor-1254 concentrations used in this evaluation may overestimated and inappropriate for use.

Based on the above evaluation, the potential for migration of Aroclor-1254 from the soil beneath HWMU-7 to groundwater is considered to be minimal.

## 5.6 RESULTS OF CLEAN CLOSURE EVALUATION FOR GROUNDWATER

Based on the results of the clean closure evaluation, hazardous waste constituents are not present in groundwater at HWMU-7 at concentrations greater than their respective GPS or have been demonstrated to be derived from a source other than the Unit to the satisfaction of the VDEQ. Therefore, HWMU-7 has not adversely affected groundwater at the site. As a result, Radford AAP has met the criteria in the approved Closure Plan Amendment for clean closure for groundwater.

## 6.0 CONCLUSIONS

The closure activities conducted in accordance with the Closure Plan Amendment indicate that the residual material, underlying soil, and groundwater at HWMU-7 meet the requirements for clean closure. Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the requirements of the Permit until certifications for clean closure of soil and groundwater at the Unit have been approved by the VDEQ. Radford AAP anticipates that certifications for clean closure of soil and groundwater will trigger the reduction of the post-closure care period and signify the completion of post-closure care, thereby terminating the post-closure care period for HWMU-7.

## 7.0 CERTIFICATION OF CLOSURE

Radford AAP certifies that HWMU-7 has been closed in accordance with the specifications in the VDEQ-approved Closure Plan Amendment for the Unit.

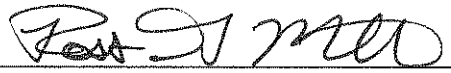
> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

The required Owner/Operator Certification of Closure is contained in the attached transmittal letter.

Draper Aden Associates certifies that HWMU-7 has been closed in accordance with the specifications in the VDEQ-approved Closure Plan Amendment for the Unit.

*Prepared by:*

Name: Ross G. Miller, Senior Project Geologist

Signature: 

Company: Draper Aden Associates

Address: 2206 South Main Street

City/State/Zip: Blacksburg, Virginia 24060-6600

*Virginia Professional Engineer Certification:*

I certify that I have prepared or supervised/evaluated preparation of the attached report, that it has been prepared in accordance with industry standards and practices, and that the information contained herein is truthful and accurate to the best of my knowledge.

Name: Srikanth Nathella, P.E., Program Manager

Signature:

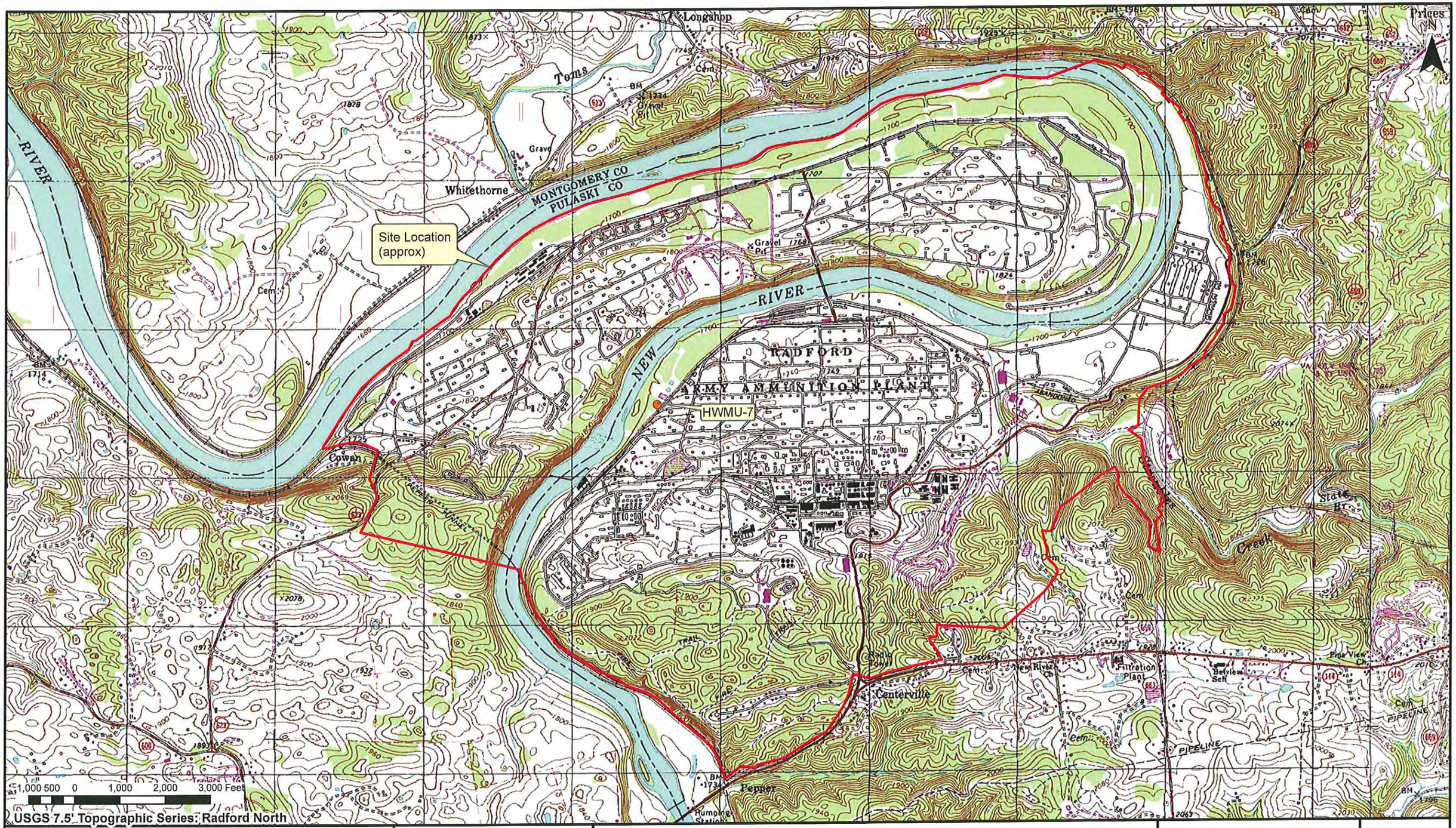
Virginia Professional Certification Type and Number: P.E. - VA 0402 035307

Company: Draper Aden Associates

Address: 2206 South Main Street

City/State/Zip: Blacksburg, Virginia 24060-6600

**FIGURES**




USGS 7.5' Topographic Series: Radford North

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Richmond, VA
Charlottesville, VA
Hampton Roads, VA

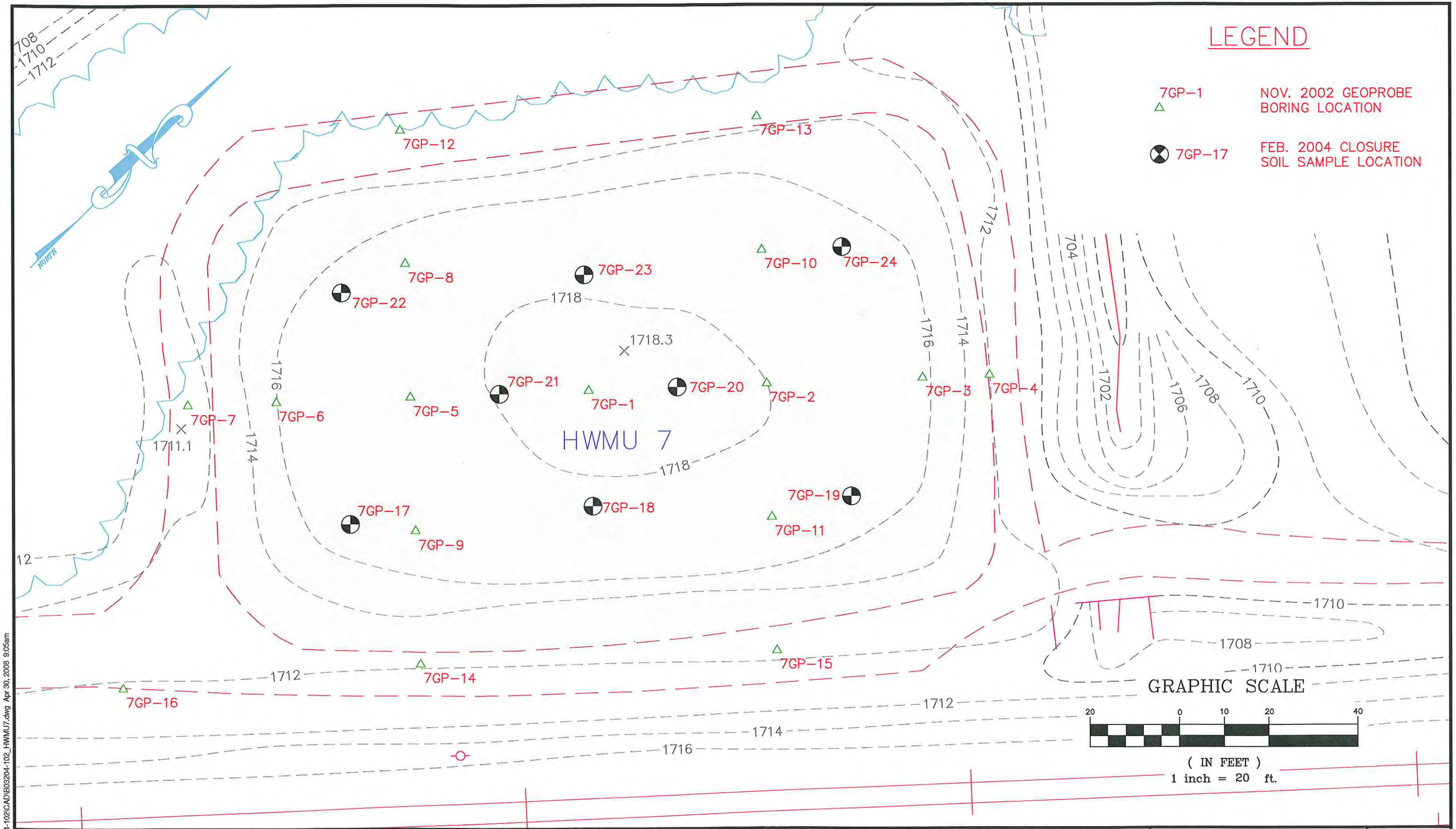
| | |
|---|---|
| DESIGNED | LCL |
| DRAWN | KKD |
| CHECKED | MDL |
| DATE | 08-27-07 |

**Site Location Map**
**Radford Army Ammunition Plant**
**Montgomery County, Virginia**

SCALE 1" = 2000'

PLAN NO. B03204-04

FIGURE 1




P:\B03\200\B03204\B03204-102\CADB03204-102_HWMU7.dwg Apr 30, 2008 9:05am


**Draper Aden Associates**
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Charlottesville, VA
Raleigh-Durham, NC

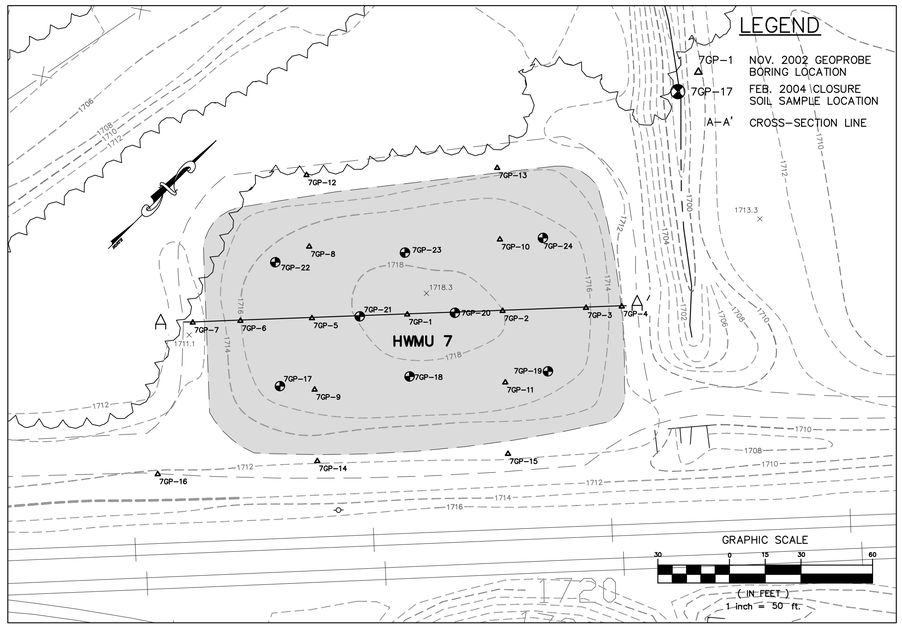

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

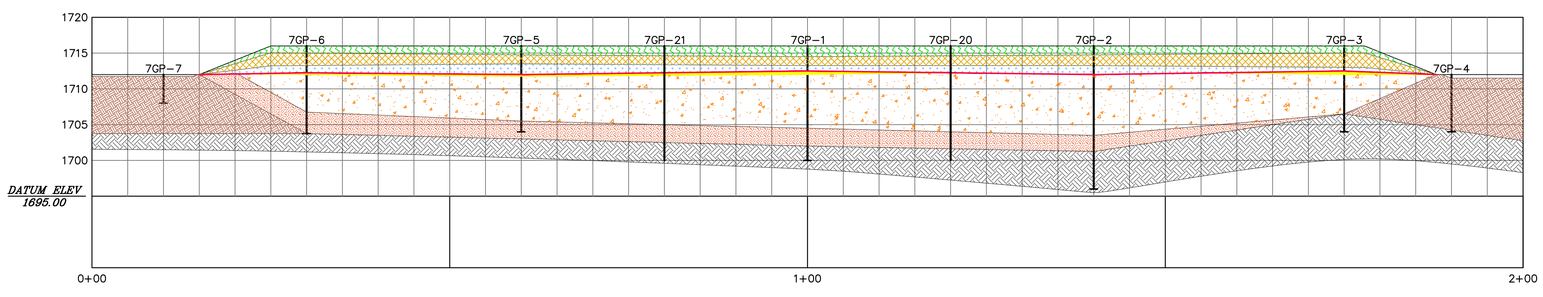
SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 2




HWMU – 7
CROSS–SECTION
A–A'




## LEGEND

- BROWN FINE SILTY SAND (TOPSOIL)
- YELLOW–BROWN FINE TO COARSE SANDY CLAY
- LIGHT GRAY FINE TO COARSE SAND
- 30 MIL. PVC LINER
- YELLOW–BROWN MICACEOUS FINE SILTY SAND
- RESIDUAL MATERIAL FROM CLEAN–UP ACTIVITIES
- RED–BROWN MICACEOUS FINE SANDY CLAY
- BROWN FINE SOIL (NATIVE)
- DARK GRAY FINE SAND AND SILT (NATIVE)

VERTICAL SCALE: 1"= 10'
HORIZONTAL SCALE: 1"= 10'
NO VERTICAL EXAGGERATION

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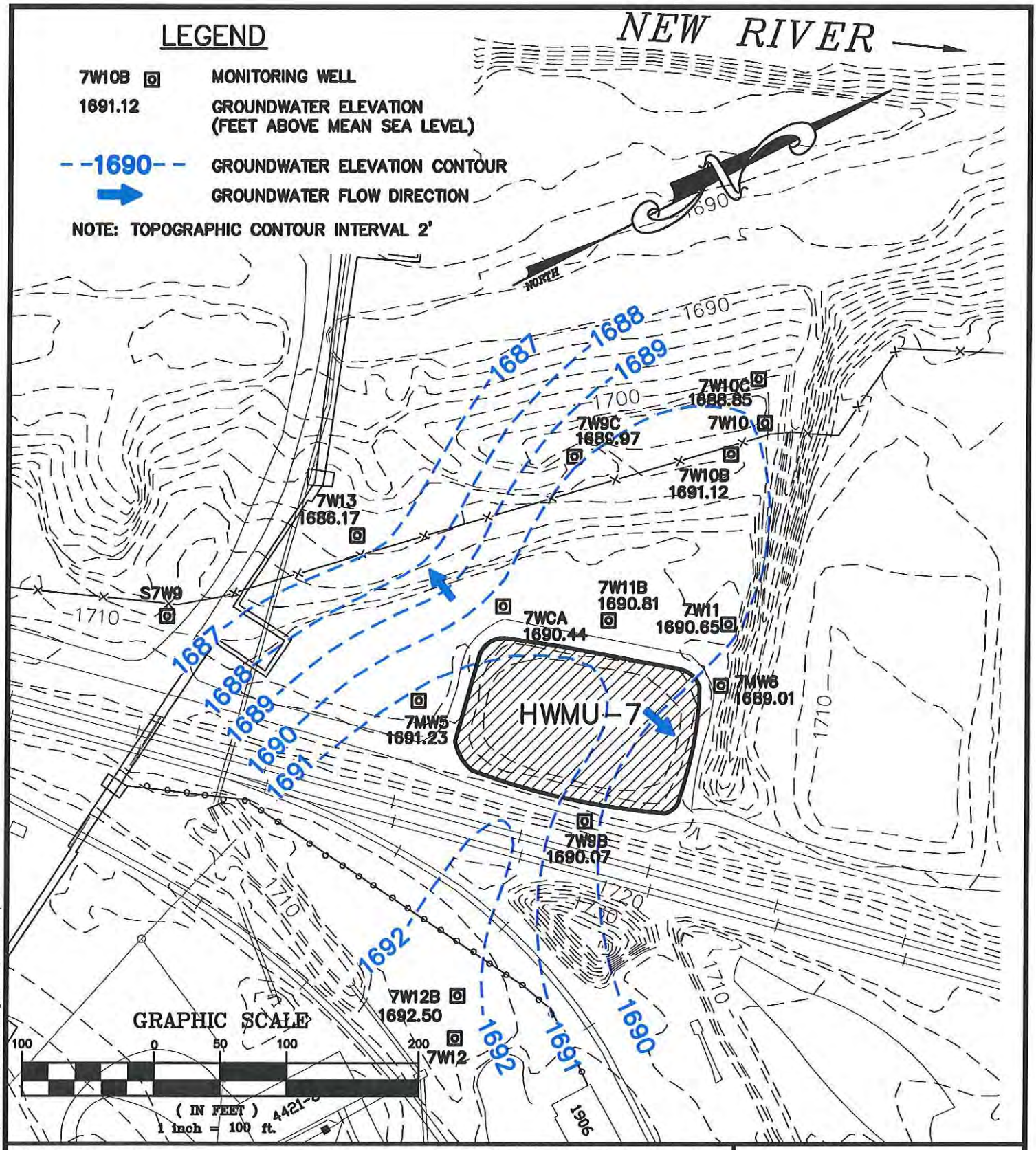
Charlottesville, VA
Raleigh-Durham, NC

# CROSS SECTION A - A'
# HAZARDOUS WASTE MANAGEMENT UNITS 5 & 7
# RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS

| | |
|---|---|
| DESIGNED BY: | MAC |
| DRAWN BY: | KKD |
| CHECKED BY: | |
| SCALE: | 1" = 10' |
| DATE: | 02/21/2008 |
| PROJECT NUMBER: | B03204-122 |

FIGURE 3




HWMU-7 POTENTIOMETRIC SURFACE MAP (4TH QUARTER 2011)

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B03204-122


Draper Aden Associates

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Richmond, VA
Charlottesville, VA
Hampton Roads, VA


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DLD |
| CHECKED | SN |
| DATE | 01/31/12 |

FIGURE 4

P:\B03200\B03204\B03204-122\CAD\B03204-122_HWMU-7 4th Quarter.dwg Jan 31, 2012 3:39pm

# TABLES

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HCOC CONCENTRATIONS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Antimony | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | Butylbenzylphthalate | 2,4-Dinitrophenol | 2,4-Dinitrotoluene | 2,6-Dinitrotoluene | 4-Nitrophenol (p-Nitrophenol) | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | -- | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 0.154 | 93.2 | -- | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **UNIT BACKGROUND SAMPLE LOCATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-16 (3-4') | 11/01/02 | ~ | ~ | 106 | ~ | 11.5 | ~ | 5.1 | 5.4 | ~ | 7.7 | ~ | ~ | ~ | 15.4 | 39.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **CAP MATERIAL SAMPLE** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-1 (1-3') | 11/01/02 | ~ | 3.8 | 66.9 | 0.7 | 24.1 | 11.5 | 22.8 | 8.1 | ~ | 13.5 | ~ | ~ | ~ | 28 | 17.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **RESIDUAL MATERIAL SAMPLES** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (8-12') | 11/01/02 | ~ | 2.7 | 40.9 | 1.2 | 22 | 12.5 | 22 | 2.8 | ~ | 21.6 | ~ | ~ | ~ | 21.1 | 15 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-5 (6-11') | 11/01/02 | ~ | 3.5 | 55.6 | ~ | 22.8 | ~ | 10 | 11 | ~ | 7.2 | ~ | ~ | ~ | 60.6 | 24.2 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-8 (5-8') | 11/01/02 | ~ | 2.4 | 55 | ~ | 20.1 | ~ | 12.7 | 10.3 | ~ | 8.5 | ~ | ~ | ~ | 61.8 | 28.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (13.5-14.5') | 11/01/02 | ~ | 3.1 | 70.9 | 0.84 | 22.5 | 16.2 | 14.2 | 13.6 | ~ | 11.4 | ~ | ~ | ~ | 57.7 | 32.6 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 0.0035 | ~ | ~ | ~ |
| 7GP-18 (14') | 02/17/04 | ~ | 2.7 | 59.3 | ~ | 23.2 | 8.2 | 10.6 | 8.9 | ~ | 8.3 | ~ | ~ | ~ | 50 | 26.6 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 2.1 | ~ | ~ | 0.18 | ~ |
| 7GP-21 (13.5') | 02/17/04 | ~ | 2.8 | 79.6 | ~ | 23.3 | 23.6 | 12.8 | 12.4 | ~ | 9.4 | ~ | ~ | 1.4 | 55.9 | 32.5 | ~ | 1 | ~ | ~ | ~ | ~ | ~ | 2.8 | ~ | ~ | 0.5 | ~ |
| 7GP-24 (14') | 02/17/04 | ~ | 2.1 | 101 | ~ | 20.1 | 11.7 | 11.5 | 9.2 | ~ | 12.6 | ~ | ~ | 1.7 | 39.2 | 62.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER/NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-17 (11') | 02/17/04 | ~ | 26.4 | 244 | ~ | 45.6 | 10.4 | 36.3 | 120 | ~ | 28.1 | 3.1 | ~ | 2.1 | 46 | 165 | ~ | 0.56 | ~ | ~ | ~ | ~ | ~ | 3.5 | ~ | ~ | 0.34 | ~ |
| 7GP-20 (14.5') | 02/17/04 | ~ | 8.3 | 114 | ~ | 75.3 | 6.6 | 15.7 | 66.5 | ~ | 15.5 | ~ | ~ | 1.3 | 43.2 | 46.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 3 | ~ | ~ | 0.35 | 0.006 |

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HCOC CONCENTRATIONS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Antimony | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | Butylbenzylphthalate | 2,4-Dinitrophenol | 2,4-Dinitrotoluene | 2,6-Dinitrotoluene | 4-Nitrophenol (p-Nitrophenol) | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | -- | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 0.154 | 93.2 | -- | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-3 (10-11') | 11/01/02 | ~ | 26.1 | 229 | 1.5 | 32.8 | 8.1 | 23.2 | 35.1 | ~ | 15.9 | 3.5 | ~ | ~ | 42.1 | 33.8 | 0.69 | ~ | ~ | ~ | ~ | ~ | ~ | 0.75 | ~ | 0.0025 | ~ | ~ |
| 7GP-19 (14') | 02/17/04 | ~ | 30.5 | 273 | ~ | 38.4 | 8.7 | 28 | 95.3 | ~ | 18.9 | 3.7 | ~ | 2.1 | 50.6 | 39.4 | ~ | 0.47 | ~ | ~ | ~ | ~ | ~ | 0.9 | ~ | ~ | 0.53 | ~ |
| 7GP-22 (13') | 02/17/04 | ~ | 21 | 211 | ~ | 38.4 | 8.1 | 23.7 | 109 | ~ | 19 | 2.5 | ~ | 1.8 | 42.7 | 39.9 | ~ | 0.88 | ~ | ~ | ~ | ~ | ~ | 3.3 | ~ | ~ | 0.38 | ~ |
| 7GP-22-22 (13') (Field Duplicate) | 02/17/04 | ~ | 29.8 | 279 | ~ | 41.6 | 9.1 | 29.9 | 104 | ~ | 19.8 | 4.1 | ~ | 2.1 | 49.2 | 39 | ~ | 0.52 | ~ | ~ | ~ | ~ | ~ | 4.3 | ~ | ~ | 0.33 | ~ |
| 7GP-23 (12.5') | 02/17/04 | ~ | 21.4 | 221 | ~ | 61.4 | 8.3 | 26 | 236 | ~ | 25.6 | 2.7 | ~ | 2.3 | 42.7 | 43.3 | ~ | 0.6 | ~ | ~ | ~ | ~ | ~ | 3.4 | ~ | ~ | 0.4 | ~ |
| **SOIL ADJACENT TO UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-4 (3-4') | 11/01/02 | ~ | ~ | 69.2 | ~ | 10.1 | ~ | 5.1 | 5.8 | ~ | 6.3 | ~ | ~ | ~ | 14 | 35 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |

NOTES:
HCOC: Hazardous Constituents of Concern. Based on 1981 analyses of lagoon water and sediment; Permit-defined quarterly groundwater monitoring constituents (as revised); and November 2002 analyses of residual material and soil samples.
*: Additional TCL organic constituent detected during the February 2004 Field Investigation.
~: Not detected above the Limit of Quantitation (LOQ).
Facility-Wide Background concentrations from Table 3 of the *Amended Closure Plan* (Appendix A of the *Closure Report*).

**TABLE 2**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SOIL SAMPLE CONSTITUENT CONCENTRATIONS GREATER THAN BACKGROUND COMPARED TO RESIDENTIAL RISK-BASED LEVELS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| | | Res. Risk-Based Levels | | | | |
|---|---|---|---|---|---|---|
| Constituents Exceeding Background Concentrations | CAS No. | SSL Soil to Groundwater 1 DAF mg/kg | Regional Screening Level (RSL) Residential mg/kg | C/N | Maximum Soil Concentration mg/kg | Constituent Exceeds Residential Risk-Based Levels? |
| TAL Inorganics | | | | | | |
| Barium | 7440-39-3 | 8.20E+01 | 1.50E+04 | N | 2.79E+02 | **yes** |
| Beryllium | 7440-41-7 | 3.20E+00 | 1.60E+02 | CN | 1.50E+00 | no |
| Cyanide | 57-12-5 | 2.00E+00 | 1.60E+03 | N | 6.90E-01 | no |
| Selenium | 7782-49-2 | 2.60E-01 | 3.90E+02 | N | 4.10E+00 | **yes** |
| TCL Volatile Organic Compounds (VOCs) | | | | | | |
| Toluene | 108-88-3 | 6.90E-01 | 5.00E+03 | N | 6.00E-03 | no |
| TCL Semivolatile Organic Compounds (SVOCs | | | | | | |
| bis-(2-Ethylhexyl)phthalate | 117-81-7 | 1.40E+00 | 3.50E+01 | CN | 1.00E+00 | no |
| N-Nitrosodiphenylamine | 86-30-6 | 5.70E-02 | 9.90E+01 | C | 4.30E+00 | **yes** |
| TCL Polychlorinated Biphenyls (PCBs) | | | | | | |
| Aroclor-1254 | 11097-69-1 | 8.80E-03 | 2.20E-01 | ! CN | 5.30E-01 | **yes** |
| TCL Pesticides | | | | | | |
| 4,4'-DDD | 72-54-8 | 6.60E-02 | 2.00E+00 | C | 3.50E-03 | no |
| 4,4'-DDE | 72-55-9 | 4.60E-02 | 1.40E+00 | C | 2.50E-03 | no |

SSL 1 DAF and Residential RBC from USEPA Regions 3, 6, and 9 Regional Screening Levels for Chemical Contaminants at Superfund Sites. Current RSL Table dated November 2011.

C - Carcinogen; N - Non-carcinogen.

! - Noncarcinogenic RBC < carcinogenic RBC @ THQ=0.1 in accordance with EPA Region 3 guidance.

**Although certain constituent concentrations were less than residential risk-based levels, all constituents listed in this table were retained for risk assessment due to detection above background.**

**Note: The average Aroclor-1254 concentration calculated from the eight samples in which Aroclor-1254 was detected is 0.38 mg/kg (3.80E-01 mg/kg).**

**TABLE 3**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SITE CONCEPTUAL EXPOSURE MODEL - SELECTION OF EXPOSURE PATHWAYS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Medium | Exposure Medium | Receptor Population | Receptor Age | Exposure Route | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|
| Soil | Soil | Resident | Adult | Dermal | Selected. Most coservative assessment of risk. |
| | | | | Ingestion | Selected. Most coservative assessment of risk. |
| | | | Child | Dermal | Selected. Most coservative assessment of risk. |
| | | | | Ingestion | Selected. Most coservative assessment of risk. |
| | Air | | Adult | Inhalation | Selected. Most coservative assessment of risk. |
| | | | Child | Inhalation | Selected. Most coservative assessment of risk. |
| | Soil | Trespasser/Visitor | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | Child | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | Adult | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | Child | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Soil | Construction Worker | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Soil | Commercial/ Industrial | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| Sediment | Sediment | Recreational/ Trespasser | Adult | Dermal | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | Child | Dermal | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | Aquatic Organisms | | Adult | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | Child | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |

**TABLE 3**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SITE CONCEPTUAL EXPOSURE MODEL - SELECTION OF EXPOSURE PATHWAYS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Medium | Exposure Medium | Receptor Population | Receptor Age | Exposure Route | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|
| Groundwater | Groundwater | Resident | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Shower Air | | Adult | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Building Air | | Adult | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Groundwater | Construction Worker | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Air | | | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Groundwater | Commercial/ Industrial | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Building Air | | | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| Surface Water | Surface Water | Recreational/ Trespasser | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Aquatic Organisms | | Adult | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |

**TABLE 4**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Adult**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.01E-06 | 4.9E-03 | 4.94E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 2.34E-07 | 1.4E-02 | 3.28E-09 | 5.47E-07 | 2.0E-02 | 2.73E-05 |
| | 4,4'-DDD | 3.50E-03 | 8.20E-10 | 2.4E-01 | 1.97E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 5.86E-10 | 3.4E-01 | 1.99E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 1.74E-07 | 2.0E+00 | 3.48E-07 | 4.06E-07 | 2.0E-05 | 2.03E-02 |
| | Toluene | 6.00E-03 | | | | 9.84E-10 | 8.0E-02 | 1.23E-08 |
| | Barium | 2.79E+02 | | | | 1.52E-05 | 2.0E-01 | 7.62E-05 |
| | Beryllium | 1.50E+00 | | | | 8.20E-08 | 2.0E-03 | 4.10E-05 |
| | Cyanide | 6.90E-01 | | | | 3.77E-08 | 2.0E-02 | 1.89E-06 |
| | Selenium | 4.10E+00 | | | | 2.24E-07 | 5.0E-03 | 4.48E-05 |
| (Total) | | | | | **3.56E-07** | | | **2.05E-02** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 2.52E-06 | 4.9E-03 | 1.24E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 5.87E-07 | 1.4E-02 | 8.22E-09 | 1.37E-06 | 2.0E-02 | 6.85E-05 |
| | 4,4'-DDD | 3.50E-03 | 2.05E-09 | 2.4E-01 | 4.93E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.47E-09 | 3.4E-01 | 4.99E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 3.11E-07 | 2.0E+00 | 6.22E-07 | 7.26E-07 | 2.0E-05 | 3.63E-02 |
| | Toluene | 6.00E-03 | | | | 8.22E-09 | 8.0E-02 | 1.03E-07 |
| | Barium | 2.79E+02 | | | | 3.82E-04 | 2.0E-01 | 1.91E-03 |
| | Beryllium | 1.50E+00 | | | | 2.05E-06 | 2.0E-03 | 1.03E-03 |
| | Cyanide | 6.90E-01 | | | | 9.45E-07 | 2.0E-02 | 4.73E-05 |
| | Selenium | 4.10E+00 | | | | 5.62E-06 | 5.0E-03 | 1.12E-03 |
| (Total) | | | | | **6.44E-07** | | | **4.05E-02** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 3.70E-10 | 2.6E-06 | 9.61E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 8.60E-11 | 2.4E-06 | 2.06E-16 | 2.01E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 3.01E-13 | 6.9E-05 | 2.08E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.15E-13 | 9.7E-05 | 2.09E-17 | | | |
| | Aroclor-1254 | 7.81E-10 | 4.56E-11 | 5.7E-04 | 2.60E-14 | 1.06E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 3.12E-07 | 5.00E+00 | 6.24E-08 |
| | Barium | 2.79E+02 | | | | 5.60E-08 | 5.00E-04 | 1.12E-04 |
| | Beryllium | 1.50E+00 | 1.29E-10 | 2.4E-03 | 3.10E-13 | 3.01E-10 | 2.00E-05 | 1.50E-05 |
| | Cyanide | 6.90E-01 | | | | 1.38E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 8.23E-10 | 2.00E-02 | 4.11E-08 |
| (Total) | | | | | **3.37E-13** | | | **1.27E-04** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.00E-06** | | | **6.12E-02** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 1.73E-08 |
| bis(2-Ethylhexyl)phthalate | 1.15E-08 |
| 4,4'-DDD | 6.90E-10 |
| 4,4'-DDE | 6.98E-10 |
| Aroclor-1254 | 9.70E-07 |
| Beryllium | 3.10E-13 |

**TABLE 5**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Child**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.32E-06 | 4.9E-03 | 6.47E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 3.07E-07 | 1.4E-02 | 4.30E-09 | 3.58E-06 | 2.0E-02 | 1.79E-04 |
| | 4,4'-DDD | 3.50E-03 | 1.07E-09 | 2.4E-01 | 2.58E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 7.67E-10 | 3.4E-01 | 2.61E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 2.28E-07 | 2.0E+00 | 4.55E-07 | 2.66E-06 | 2.0E-05 | 1.33E-01 |
| | Toluene | 6.00E-03 | | | | 6.44E-09 | 8.0E-02 | 8.05E-08 |
| | Barium | 2.79E+02 | | | | 9.99E-05 | 2.0E-01 | 4.99E-04 |
| | Beryllium | 1.50E+00 | | | | 5.37E-07 | 2.0E-03 | 2.68E-04 |
| | Cyanide | 6.90E-01 | | | | 2.47E-07 | 2.0E-02 | 1.24E-05 |
| | Selenium | 4.10E+00 | | | | 1.47E-06 | 5.0E-03 | 2.94E-04 |
| (Total) | | | | | **4.67E-07** | | | **1.34E-01** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 4.71E-06 | 4.9E-03 | 2.31E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 1.10E-06 | 1.4E-02 | 1.53E-08 | 1.28E-05 | 2.0E-02 | 6.39E-04 |
| | 4,4'-DDD | 3.50E-03 | 3.84E-09 | 2.4E-01 | 9.21E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.74E-09 | 3.4E-01 | 9.32E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 5.81E-07 | 2.0E+00 | 1.16E-06 | 6.78E-06 | 2.0E-05 | 3.39E-01 |
| | Toluene | 6.00E-03 | | | | 7.67E-08 | 8.0E-02 | 9.59E-07 |
| | Barium | 2.79E+02 | | | | 3.57E-03 | 2.0E-01 | 1.78E-02 |
| | Beryllium | 1.50E+00 | | | | 1.92E-05 | 2.0E-03 | 9.59E-03 |
| | Cyanide | 6.90E-01 | | | | 8.82E-06 | 2.0E-02 | 4.41E-04 |
| | Selenium | 4.10E+00 | | | | 5.24E-05 | 5.0E-03 | 1.05E-02 |
| (Total) | | | | | **1.20E-06** | | | **3.78E-01** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 2.08E-10 | 2.6E-06 | 5.41E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 4.83E-11 | 2.4E-06 | 1.16E-16 | 5.64E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 1.69E-13 | 6.9E-05 | 1.17E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.21E-13 | 9.7E-05 | 1.17E-17 | | | |
| | Aroclor-1254 | 7.81E-10 | 2.56E-11 | 5.7E-04 | 1.46E-14 | 2.99E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 8.77E-07 | 5.00E+00 | 1.75E-07 |
| | Barium | 2.79E+02 | | | | 1.11E-05 | 5.00E-04 | 2.22E-02 |
| | Beryllium | 1.50E+00 | 7.25E-11 | 2.4E-03 | 1.74E-13 | 8.46E-10 | 2.00E-05 | 4.23E-05 |
| | Cyanide | 6.90E-01 | | | | 3.89E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 2.31E-09 | 2.00E-02 | 1.16E-07 |
| (Total) | | | | | **1.89E-13** | | | **2.22E-02** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.67E-06** | | | **5.34E-01** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 2.95E-08 |
| bis(2-Ethylhexyl)phthalate | 1.96E-08 |
| 4,4'-DDD | 1.18E-09 |
| 4,4'-DDE | 1.19E-09 |
| Aroclor-1254 | 1.62E-06 |
| Beryllium | 1.74E-13 |

**TABLE 6**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Child**
**Special: Use of Average Detected Aroclor-1254 concentration instead of maximum**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.32E-06 | 4.9E-03 | 6.47E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 3.07E-07 | 1.4E-02 | 4.30E-09 | 3.58E-06 | 2.0E-02 | 1.79E-04 |
| | 4,4'-DDD | 3.50E-03 | 1.07E-09 | 2.4E-01 | 2.58E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 7.67E-10 | 3.4E-01 | 2.61E-10 | | | |
| | Aroclor-1254 (avg) | 3.80E-01 | 1.63E-07 | 2.0E+00 | 3.26E-07 | 1.90E-06 | 2.0E-05 | 9.52E-02 |
| | Toluene | 6.00E-03 | | | | 6.44E-09 | 8.0E-02 | 8.05E-08 |
| | Barium | 2.79E+02 | | | | 9.99E-05 | 2.0E-01 | 4.99E-04 |
| | Beryllium | 1.50E+00 | | | | 5.37E-07 | 2.0E-03 | 2.68E-04 |
| | Cyanide | 6.90E-01 | | | | 2.47E-07 | 2.0E-02 | 1.24E-05 |
| | Selenium | 4.10E+00 | | | | 1.47E-06 | 5.0E-03 | 2.94E-04 |
| (Total) | | | | | **3.38E-07** | | | **9.65E-02** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 4.71E-06 | 4.9E-03 | 2.31E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 1.10E-06 | 1.4E-02 | 1.53E-08 | 1.28E-05 | 2.0E-02 | 6.39E-04 |
| | 4,4'-DDD | 3.50E-03 | 3.84E-09 | 2.4E-01 | 9.21E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.74E-09 | 3.4E-01 | 9.32E-10 | | | |
| | Aroclor-1254 (avg) | 3.80E-01 | 4.16E-07 | 2.0E+00 | 8.33E-07 | 4.86E-06 | 2.0E-05 | 2.43E-01 |
| | Toluene | 6.00E-03 | | | | 7.67E-08 | 8.0E-02 | 9.59E-07 |
| | Barium | 2.79E+02 | | | | 3.57E-03 | 2.0E-01 | 1.78E-02 |
| | Beryllium | 1.50E+00 | | | | 1.92E-05 | 2.0E-03 | 9.59E-03 |
| | Cyanide | 6.90E-01 | | | | 8.82E-06 | 2.0E-02 | 4.41E-04 |
| | Selenium | 4.10E+00 | | | | 5.24E-05 | 5.0E-03 | 1.05E-02 |
| (Total) | | | | | **8.73E-07** | | | **2.82E-01** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 2.08E-10 | 2.6E-06 | 5.41E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 4.83E-11 | 2.4E-06 | 1.16E-16 | 5.64E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 1.69E-13 | 6.9E-05 | 1.17E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.21E-13 | 9.7E-05 | 1.17E-17 | | | |
| | Aroclor-1254 (avg) | 5.60E-10 | 1.84E-11 | 5.7E-04 | 1.05E-14 | 2.14E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 8.77E-07 | 5.00E+00 | 1.75E-07 |
| | Barium | 2.79E+02 | | | | 1.11E-05 | 5.00E-04 | 2.22E-02 |
| | Beryllium | 1.50E+00 | 7.25E-11 | 2.4E-03 | 1.74E-13 | 8.46E-10 | 2.00E-05 | 4.23E-05 |
| | Cyanide | 6.90E-01 | | | | 3.89E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 2.31E-09 | 2.00E-02 | 1.16E-07 |
| (Total) | | | | | **1.85E-13** | | | **2.22E-02** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.21E-06** | | | **4.01E-01** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 2.95E-08 |
| bis(2-Ethylhexyl)phthalate | 1.96E-08 |
| 4,4'-DDD | 1.18E-09 |
| 4,4'-DDE | 1.19E-09 |
| Aroclor-1254 | 1.16E-06 |
| Beryllium | 1.74E-13 |

# APPENDICES (CD-ROM)

## APPENDIX A

### CLOSURE PLAN AMENDMENT FOR HAZARDOUS WASTE MANAGEMENT UNIT 7

## APPENDIX B

### CORRESPONDENCE

- **VDEQ Correspondence dated June 25, 2003**
- **VDEQ Correspondence dated June 7, 2004**
- **Radford AAP Correspondence dated September 17, 2004**
- **Meeting Minutes – VDEQ and Radford AAP January 18, 2007 Teleconference**
- **VDEQ E-Mail Correspondence dated January 18, 2007**
- **VDEQ E-Mail Correspondence dated January 25, 2007**
- **HWMU-7 Chloroform ASD, received by VDEQ January 31, 2007**
- **VDEQ Chloroform ASD Approval Letter dated June 14, 2007**
- **VDEQ Memorandum dated September 14, 2007**
- **VDEQ Correspondence dated October 31, 2007**
- **Meeting Minutes – VDEQ and Radford AAP January 23, 2008 Meeting**
- **VDEQ E-Mail Correspondence dated March 2, 2010, March 9, 2010, and March 10, 2010**
- **VDEQ Class 3 Permit Modification Approval Letter dated September 27, 2011**

## APPENDIX C

### BORING LOGS

## APPENDIX D

### RESIDUAL MATERIAL AND SOIL SAMPLE LABORATORY ANALYTICAL RESULTS AND DATA VALIDATION REPORTS FOR HWMUS 5 AND 7

### OCTOBER/NOVEMBER 2002 SUBSURFACE INVESTIGATION
### FEBRUARY/MARCH 2004 SUBSURFACE INVESTIGATION

# APPENDIX E

## CHRONIC DAILY INTAKE CALCULATIONS; TOXICITY FACTORS

TABLE A
VALUES USED FOR DAILY INTAKE CALCULATIONS - DERMAL ABSORPTION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Dermal |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
DAD=CS x ABS x IF
Intake Factor Equation:
IF=SA x CF x AF x EF x ED x 1/BW x 1/AT

| | |
|---|---|
| DAD [n-Nitrosodiphenylamine (carcinogen)] = | 1.01E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 2.34E-07 |
| DAD [4,4-DDD (carcinogen)] = | 8.20E-10 |
| DAD [4,4-DDE (carcinogen)] = | 5.86E-10 |
| DAD [Aroclor-1254 (carcinogen)] = | 1.74E-07 |
| DAD [Aroclor-1254 (non-carcinogen)] = | 4.06E-07 |
| DAD [Toluene (non-carcinogen)] = | 9.84E-10 |
| DAD [Barium (non-carcinogen)] = | 1.52E-05 |
| DAD [Beryllium (non-carcinogen)] = | 8.20E-08 |
| DAD [Cyanide (non-carcinogen)] = | 3.77E-08 |
| DAD [Selenium (non-carcinogen)] = | 2.24E-07 |
| DAD [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 5.47E-07 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| DAD | Dermally Absorbed Dose | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| AF | Soil to Skin Adherence Factor | mg/cm^2 | 0.07 | EPA, 2001 | | |
| ABS | Absorption Factor | unitless | Chemical | EPA, 1995 | | |
| | | | Specific | and EPA, 2001 | | |
| ABS (n-Nitrosodiphenyl.) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (bis(2-Ethylhexyl)phthalate) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (4,4-DDD) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (4,4-DDE) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (Aroclor 1254) | Absorption Factor | unitless | | | 1.40E-01 | EPA, 2001 |
| ABS (Toluene) | Absorption Factor | unitless | | | 3.00E-02 | EPA, 1995 |
| ABS (Barium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Beryllium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Cyanide) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Selenium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| SA | Skin Surface Area Available | cm2/day | 5,700 | EPA, 2001 | | |
| | for Contact | | (3) | | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 2.34E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 5.47E-06 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1995= Assessing Dermal Exposure from Soil. Region III. Office of Superfund Programs. EPA/903-K-95-003.
EPA, 2001= RAGS E, Chapter 3


(1) Based on soil-to-skin adherence data presented in U. S. EPA (2001) for a "utility worker".
(2) Represents face, hands, forearms, lower legs and feet
(3) Represents the face, hands, and forearms for workers; face hands, forearms and lower legs for resident adults.
**Note the following AFs from RAGS E for site specific scenarios:**

| | |
|---|---|
| groundskeeper | AF=0.1 |
| construction worker | AF=0.3 |
| utility worker | AF=0.9 |

TABLE B
VALUES USED FOR DAILY INTAKE CALCULATIONS - DERMAL ABSORPTION - RESIDENTIAL CHILD
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Dermal |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:
DAD=CS x ABS x IF
Intake Factor Equation:
IF=SA x CF x AF x EF x ED x 1/BW x 1/AT

| | |
|---|---|
| DAD [n-Nitrosodiphenylamine (carcinogen)] = | 1.32E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 3.07E-07 |
| DAD [4,4-DDD (carcinogen)] = | 1.07E-09 |
| DAD [4,4-DDE (carcinogen)] = | 7.67E-10 |
| DAD [Aroclor-1254 (carcinogen)] = | 2.28E-07 |
| DAD [Aroclor-1254 (non-carcinogen)] = | 2.66E-06 |
| DAD [Toluene (non-carcinogen)] = | 6.44E-09 |
| DAD [Barium (non-carcinogen)] = | 9.99E-05 |
| DAD [Beryllium (non-carcinogen)] = | 5.37E-07 |
| DAD [Cyanide (non-carcinogen)] = | 2.47E-07 |
| DAD [Selenium (non-carcinogen)] = | 1.47E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 3.58E-06 |
| DAD [Aroclor-1254 - avg (carcinogen)] = | 1.63E-07 |
| DAD [Aroclor-1254 - avg (non-carcinogen)] = | 1.90E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| DAD | Dermally Absorbed Dose | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| AF | Soil to Skin Adherence Factor | mg/cm^2 | 0.2 | EPA, 2001 | | |
| ABS | Absorption Factor | unitless | Chemical Specific | EPA, 1995 and EPA, 2001 | | |
| ABS (n-Nitrosodiphenyl.) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (bis(2-Ethylhexyl)phthalate) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (4,4-DDD) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (4,4-DDE) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (Aroclor 1254) | Absorption Factor | unitless | | | 1.40E-01 | EPA, 2001 |
| ABS (Toluene) | Absorption Factor | unitless | | | 3.00E-02 | EPA, 1995 |
| ABS (Barium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Beryllium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Cyanide) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Selenium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| SA | Skin Surface Area Available for Contact | cm2/day | 2,800 (2) | EPA, 2001 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 3.07E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 3.58E-05 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1995= Assessing Dermal Exposure from Soil. Region III. Office of Superfund Programs. EPA/903-K-95-003.
EPA, 2001= RAGS E, Chapter 3


(1) Based on soil-to-skin adherence data presented in U. S. EPA (2001) for a "utility worker".
(2) Represents face, hands, forearms, lower legs and feet
(3) Represents the face, hands, and forearms for workers; face hands, forearms and lower legs for resident adults.

**Note the following AFs from RAGS E for site specific scenarios:**

| | |
|---|---|
| groundskeeper | AF=0.1 |
| construction worker | AF=0.3 |
| utility worker | AF=0.9 |

TABLE C
VALUES USED FOR DAILY INTAKE CALCULATIONS - INGESTION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Ingestion |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CS x IF
Intake Factor Equation:
IF= IR-S x FI x EF x ED x CF x 1/BW x 1/AT

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 2.52E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 5.87E-07 |
| CDI [4,4-DDD (carcinogen)] = | 2.05E-09 |
| CDI [4,4-DDE (carcinogen)] = | 1.47E-09 |
| CDI [Aroclor-1254 (carcinogen)] = | 3.11E-07 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 7.26E-07 |
| CDI [Toluene (non-carcinogen)] = | 8.22E-09 |
| CDI [Barium (non-carcinogen)] = | 3.82E-04 |
| CDI [Beryllium (non-carcinogen)] = | 2.05E-06 |
| CDI [Cyanide (non-carcinogen)] = | 9.45E-07 |
| CDI [Selenium (non-carcinogen)] = | 5.62E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 1.37E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| IR-S | Ingestion Rate - Soil | mg/day | 100 | EPA,1991 | | |
| FI | Fraction Ingested from source | unitless | 1 | EPA, 1991 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 5.87E-07 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 1.37E-06 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

TABLE D

VALUES USED FOR DAILY INTAKE CALCULATIONS - INGESTION - RESIDENTIAL CHILD

HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Ingestion |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:

CDI = CS x IF

Intake Factor Equation:

IF= IR-S x FI x EF x ED x CF x 1/BW x 1/AT

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 4.71E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 1.10E-06 |
| CDI [4,4-DDD (carcinogen)] = | 3.84E-09 |
| CDI [4,4-DDE (carcinogen)] = | 2.74E-09 |
| CDI [Aroclor-1254 (carcinogen)] = | 5.81E-07 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 6.78E-06 |
| CDI [Toluene (non-carcinogen)] = | 7.67E-08 |
| CDI [Barium (non-carcinogen)] = | 3.57E-03 |
| CDI [Beryllium (non-carcinogen)] = | 1.92E-05 |
| CDI [Cyanide (non-carcinogen)] = | 8.82E-06 |
| CDI [Selenium (non-carcinogen)] = | 5.24E-05 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 1.28E-05 |
| CDI [Aroclor-1254 - avg (carcinogen)] = | 4.16E-07 |
| CDI [Aroclor-1254 - avg (non-carcinogen)] = | 4.86E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| IR-S | Ingestion Rate - Soil | mg/day | 200 | EPA,1991 | | |
| FI | Fraction Ingested from source | unitless | 1 | EPA, 1991 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 1.10E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 1.28E-05 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

TABLE E
VALUES USED FOR DAILY INTAKE CALCULATIONS - INHALATION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Air |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Inhalation |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CA x IF
Intake Factor Equation:
IF = IR-A x EF x ED x ET x 1/BW x 1/AT
CA Estimation:
CA = CS / PEF

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 3.70E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 8.60E-11 |
| CDI [4,4-DDD (carcinogen)] = | 3.01E-13 |
| CDI [4,4-DDE (carcinogen)] = | 2.15E-13 |
| CDI [Aroclor-1254 (carcinogen)] = | 4.56E-11 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 1.06E-10 |
| CDI [Toluene (non-carcinogen)] = | 3.12E-07 |
| CDI [Barium (non-carcinogen)] = | 5.60E-08 |
| CDI [Beryllium (carcinogen)] = | 1.29E-10 |
| CDI [Beryllium (non-carcinogen)] = | 3.01E-10 |
| CDI [Cyanide (non-carcinogen)] = | 1.38E-10 |
| CDI [Selenium (non-carcinogen)] = | 8.23E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 2.01E-10 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CA | Chemical Concentration in Air | mg/m^3 | (1, 2) | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| PEF | Particulate Emission Factor | m^3/kg | 1.36E+09 | EPA (1) | | |
| VF | Volatilization Factor, Soil to Air | m^3/kg | | | 5.25E+03 | calculated |
| IR-A | Inhalation Rate | m^3/hour | 0.83 | EPA, 1991 | | |
| EF | Exposure Frequency | days/year | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| ET | Exposure Time | hours/day | 24 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | m3/kg-day | 1.17E-01 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | m3/kg-day | 2.73E-01 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

EPA, 1999= EPA Region III Risk-Based Concentration Table: Technical Background Information


(1) Air concentrations may be estimated by applying the particulate emission factor (PEF) or volatilization factor (VF) to soil concentrations as described in Soil Screening Guidance: Technical Background Document. U. S. EPA, Office of Solid Waste and Emergency Response. May 1996. (EPA/540/R-95/128) and Soil Screening Guidance: User's Guide. U.S.EPA, Office of Solid Waste and Emergency Response. April 1996. (EPA/540/R-96/018).

(2) Indoor air concentrations for volatiles may be estimated with the Johnson and Etinger Model.

TABLE F
VALUES USED FOR DAILY INTAKE CALCULATIONS - INHALATION - RESIDENTIAL CHILD
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD army AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Air |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Inhalation |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CA x IF
Intake Factor Equation:
IF = IR-A x EF x ED x ET x 1/BW x 1/AT
CA Estimation:
CA = CS / PEF

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 2.08E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 4.83E-11 |
| CDI [4,4-DDD (carcinogen)] = | 1.69E-13 |
| CDI [4,4-DDE (carcinogen)] = | 1.21E-13 |
| CDI [Aroclor-1254 (carcinogen)] = | 2.56E-11 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 2.99E-10 |
| CDI [Toluene (non-carcinogen)] = | 8.77E-07 |
| CDI [Barium (non-carcinogen)] = | 1.11E-05 |
| CDI [Beryllium (carcinogen)] = | 7.25E-11 |
| CDI [Beryllium (non-carcinogen)] = | 8.46E-10 |
| CDI [Cyanide (non-carcinogen)] = | 3.89E-10 |
| CDI [Selenium (non-carcinogen)] = | 2.31E-09 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 5.64E-10 |
| CDI [Aroclor-1254 - avg (carcinogen)] = | 1.84E-11 |
| CDI [Aroclor-1254 - avg (non-carcinogen)] = | 2.14E-10 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CA | Chemical Concentration in Air | mg/m^3 | (1, 2) | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| PEF | Particulate Emission Factor | m^3/kg | 1.36E+09 | EPA (1) | | |
| VF | Volatilization Factor, Soil to Air | m^3/kg | | | 5.25E+03 | calculated |
| IR-A | Inhalation Rate | m^3/hour | 0.5 | EPA, 1999 | | |
| EF | Exposure Frequency | days/year | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| ET | Exposure Time | hours/day | 24 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | m3/kg-day | 6.58E-02 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | m3/kg-day | 7.67E-01 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1999= EPA Region III Risk-Based Concentration Table: Technical Background Information


(1) Air concentrations may be estimated by applying the particulate emission factor (PEF) or volatilization factor (VF) to soil concentrations as described in Soil Screening Guidance: Technical Background Document. U. S. EPA, Office of Solid Waste and Emergency Response. May 1996. (EPA/540/R-95/128) and Soil Screening Guidance: User's Guide. U.S.EPA, Office of Solid Waste and Emergency Response. April 1996. (EPA/540/R-96/018).
(2) Indoor air concentrations for volatiles may be estimated with the Johnson and Etinger Model.

# APPENDIX F

## GROUNDWATER MONITORING RESULTS
## SECOND QUARTER 2011 – FOURTH QUARTER 2011

# *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
# *Radford Army Ammunition Plant, Radford, Virginia*
## *Upgradient well = 7W12B*
## *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Antimony** | | | | | | *CAS #* | | 7440-36-0 |
| Second Quarter 2011 | U | U | U | U | 1 | - | 1 | 6020A |
| **Arsenic** | | | | | | *CAS #* | | 7440-38-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 10 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 10 | 10 | 10 | 6020A |
| **Barium** | | | | | | *CAS #* | | 7440-39-3 |
| Second Quarter 2011 | 31.1 | 17.3 | 27.1 | 26.7 | 10 | 2000 | 41 | 6020A |
| Fourth Quarter 2011 | 32.2 | 14.8 | 24.6 | 52.8 | 10 | 2000 | 41 | 6020A |
| **Beryllium** | | | | | | *CAS #* | | 7440-41-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 6020A |
| **Cadmium** | | | | | | *CAS #* | | 7440-43-9 |
| Second Quarter 2011 | U | U | U | U | 1 | 5 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 5 | 1 | 6020A |
| **Chromium** | | | | | | *CAS #* | | 7440-47-3 |
| Second Quarter 2011 | 5.3 | U | U | U | 5 | 100 | 9.9 | 6020A |
| Fourth Quarter 2011 | 5.62 | U | U | U | 5 | 100 | 9.9 | 6020A |
| **Cobalt** | | | | | | *CAS #* | | 7440-48-4 |
| Second Quarter 2011 | U | U | 3.73 J | 1.49 J | 5 | 5 | 5 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 5 | 5 | 5 | 6020A |
| **Copper** | | | | | | *CAS #* | | 7440-50-8 |
| Second Quarter 2011 | 3.15J | 3.46 J | 1.9 J | U | 5 | 1300 | 5 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 5 | 1300 | 5 | 6020A |
| **Lead** | | | | | | *CAS #* | | 7439-92-1 |
| Second Quarter 2011 | U | U | U | U | 1 | 15 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 15 | 1 | 6020A |
| **Mercury** | | | | | | *CAS #* | | 7439-97-6 |
| Second Quarter 2011 | U | U | U | U | 2 | - | 2 | 7470A |
| **Nickel** | | | | | | *CAS #* | | 7440-02-0 |
| Second Quarter 2011 | U | 2.05 J | 10.7 | U | 10 | 313 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | 10.3 | U | 10 | 313 | 10 | 6020A |
| **Selenium** | | | | | | *CAS #* | | 7782-49-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 50 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 10 | 50 | 10 | 6020A |
| **Silver** | | | | | | *CAS #* | | 7440-22-4 |
| Second Quarter 2011 | U | U | U | U | 2 | 78.25 | 2 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 2 | 78.25 | 2 | 6020A |
| **Thallium** | | | | | | *CAS #* | | 7440-28-0 |
| Second Quarter 2011 | U | U | U | U | 1 | 2 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 2 | 1 | 6020A |
| **Tin** | | | | | | *CAS #* | | 7440-31-5 |
| Second Quarter 2011 | U N | U N | U N | U | 20 | - | | 6010C |
| **Vanadium** | | | | | | *CAS #* | | 7440-62-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 6020A |
| **Zinc** | | | | | | *CAS #* | | 7440-66-6 |
| Second Quarter 2011 | 7.78J | 6.7 J | 6.07 J | 3.3 J | 10 | 4695 | 10.9 | 6020A |
| Fourth Quarter 2011 | 12.1J | 13.3 J | 72.3 J | 22.3 J | 10 | 4695 | 10.9 | 6020A |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Cyanide** | | | | | | | *CAS #* | 57-12-5 |
| Second Quarter 2011 | U | U | U | U | 20 | 200 | 20 | 9012A |
| Fourth Quarter 2011 | U | U | U | U | 20 | 200 | 20 | 9012A |
| **Sulfide** | | | | | | | *CAS #* | Q1314 |
| Second Quarter 2011 | U J | U J | U J | U J | 3000 | - | | 9034 |
| **Total Recoverable Phenolics** | | | | | | | *CAS #* | C-020 |
| Second Quarter 2011 | U | U N | U | U N | 50 | - | | 9066 |
| **Acenaphthene** | | | | | | | *CAS #* | 83-32-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acenaphthylene** | | | | | | | *CAS #* | 208-96-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acetone** | | | | | | | *CAS #* | 67-64-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Acetonitrile** | | | | | | | *CAS #* | 75-05-8 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Acetophenone** | | | | | | | *CAS #* | 98-86-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Acetylaminofluorene** | | | | | | | *CAS #* | 53-96-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acrolein** | | | | | | | *CAS #* | 107-02-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 25 | - | | 8260B |
| **Acrylonitrile** | | | | | | | *CAS #* | 107-13-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Aldrin** | | | | | | | *CAS #* | 309-00-2 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Allyl chloride** | | | | | | | *CAS #* | 107-05-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **4-Aminobiphenyl** | | | | | | | *CAS #* | 92-67-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Aniline** | | | | | | | *CAS #* | 62-53-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Anthracene** | | | | | | | *CAS #* | 120-12-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Aramite** | | | | | | | *CAS #* | 140-57-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzene** | | | | | | | *CAS #* | 71-43-2 |
| Second Quarter 2011 | 0.1 J | U | U | U | 1 | - | | 8260B |
| **Benzo[a]anthracene** | | | | | | | *CAS #* | 56-55-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[b]fluoranthene** | | | | | | | *CAS #* | 205-99-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[k]fluoranthene** | | | | | | | *CAS #* | 207-08-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[ghi]perylene** | | | | | | | *CAS #* | 191-24-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo(a)pyrene** | | | | | | | *CAS #* | 50-32-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **1,4-Benzenediamine** | | | | | | | *CAS #* | 106-50-3 |
| Second Quarter 2011 | U J | U J | U J | U J | 7.5 | - | | 8270D |
| **Benzyl alcohol** | | | | | | | *CAS #* | 100-51-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **alpha-BHC** | | | | | | | *CAS #* | 319-84-6 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **beta-BHC** | | | | | | | *CAS #* | 319-85-7 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **delta-BHC** | | | | | | | *CAS #* | 319-86-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **gamma-BHC** | | | | | | | *CAS #* | 58-89-9 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **bis(2-Chloroethoxy)methane** | | | | | | | *CAS #* | 111-91-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Chloroethyl)ether** | | | | | | | *CAS #* | 111-44-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Chloro-1-methylethyl)ether** | | | | | | | *CAS #* | 108-60-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Ethylhexyl)phthalate** | | | | | | | *CAS #* | 117-81-7 |
| Second Quarter 2011 | U | U | U | U | 5 | 6 | 6 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 6 | 6 | 6 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 6 | 6 | 6 | 8270D |
| **Bromobenzene** | | | | | | | *CAS #* | 108-86-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromochloromethane** | | | | | | | *CAS #* | 74-97-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromodichloromethane** | | | | | | | *CAS #* | 75-27-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromoform** | | | | | | | *CAS #* | 75-25-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **4-Bromophenyl phenyl ether** | | | | | | | *CAS #* | 101-55-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **n-Butyl alcohol** | | | | | | | *CAS #* | 71-36-3 |
| Second Quarter 2011 | U | U | U | U | 50 | - | | 8260B |
| **tert-Butyl alcohol** | | | | | | | *CAS #* | 75-65-0 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **n-Butylbenzene** | | | | | | | *CAS #* | 104-51-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **sec-Butylbenzene** | | | | | | | *CAS #* | 135-98-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **tert-Butylbenzene** | | | | | | | *CAS #* | 98-06-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Butyl benzyl phthalate** | | | | | | | *CAS #* | 85-68-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Carbon disulfide** | | | | | | | *CAS #* | 75-15-0 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Carbon tetrachloride** | | | | | | | *CAS #* | 56-23-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chlordane** | | | | | | | *CAS #* | 57-74-9 |
| Second Quarter 2011 | U | U | U | U | 0.8 | - | | 8081B |
| **p-Chloroaniline** | | | | | | | *CAS #* | 106-47-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Chlorobenzene** | | | | | | | *CAS #* | 108-90-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chlorobenzilate** | | | | | | | *CAS #* | 510-15-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **p-Chloro-m-cresol** | | | | | | | *CAS #* | 59-50-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Chloroethane** | | | | | | | *CAS #* | 75-00-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chloroform** | | | | | | | *CAS #* | 67-66-3 |
| Second Quarter 2011 | 3 | U | 0.8 J | 0.6 J | 1 | - | | 8260B |
| **2-Chloroethyl vinyl ether** | | | | | | | *CAS #* | 110-75-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 20 | - | | 8260B |
| **2-Chloronaphthalene** | | | | | | | *CAS #* | 91-58-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Chlorophenol** | | | | | | | *CAS #* | 95-57-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **4-Chlorophenyl phenyl ether** | | | | | | | *CAS #* | 7005-72-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Chloroprene** | | | | | | | *CAS #* | 126-99-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **2-Chlorotoluene** | | | | | | | *CAS #* | 95-49-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **4-Chlorotoluene** | | | | | | | *CAS #* | 106-43-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chrysene** | | | | | | | *CAS #* | 218-01-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Cyclohexane** | | | | | | | *CAS #* | 110-82-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4-Dichlorophenoxyacetic acid** | | | | | | | *CAS #* | 94-75-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8151A |
| **4,4'-DDD** | | | | | | | *CAS #* | 72-54-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **4,4'-DDE** | | | | | | | *CAS #* | 72-55-9 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **4,4'-DDT** | | | | | | | *CAS #* | 50-29-3 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Diallate** | | | | | | | *CAS #* | 2303-16-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Dibenz(a,h)anthracene** | | | | | | | *CAS #* | 53-70-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Dibenzofuran** | | | | | | | *CAS #* | 132-64-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dibromochloromethane** | | | | | | | *CAS #* | 124-48-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dibromo-3-chloropropane** | | | | | | | *CAS #* | 96-12-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dibromoethane** | | | | | | | *CAS #* | 106-93-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Di-n-butyl phthalate** | | | | | | | *CAS #* | 84-74-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,2-Dichlorobenzene** | | | | | | | *CAS #* | 95-50-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,3-Dichlorobenzene** | | | | | | | *CAS #* | 541-73-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,4-Dichlorobenzene** | | | | | | | *CAS #* | 106-46-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **3,3'-Dichlorobenzidine** | | | | | | | *CAS #* | 91-94-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **trans-1,4-Dichloro-2-butene** | | | | | | | *CAS #* | 110-57-6 |
| Second Quarter 2011 | U J | U J | U J | U J | 10 | - | | 8260B |
| **Dichlorodifluoromethane** | | | | | | | *CAS #* | 75-71-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloroethane** | | | | | | | *CAS #* | 75-34-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dichloroethane** | | | | | | | *CAS #* | 107-06-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloroethene** | | | | | | | *CAS #* | 75-35-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **trans-1,2-Dichloroethene** | | | | | | | *CAS #* | 156-60-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4-Dichlorophenol** | | | | | | | *CAS #* | 120-83-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,6-Dichlorophenol** | | | | | | | *CAS #* | 87-65-0 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **1,2-Dichloropropane** | | | | | | | *CAS #* | 78-87-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,3-Dichloropropane** | | | | | | | *CAS #* | 142-28-9 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,2-Dichloropropane** | | | | | | | *CAS #* | 594-20-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloropropene** | | | | | | | *CAS #* | 563-58-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **cis-1,3-Dichloropropene** | | | | | | | *CAS #* | 10061-01-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **trans-1,3-Dichloropropene** | | | | | | | *CAS #* | 10061-02-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Dieldrin** | | | | | | | *CAS #* | 60-57-1 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Diethyl ether** | | | | | | | *CAS #* | 60-29-7 |
| Second Quarter 2011 | U | U | U | U | 12.5 | - | | 8260B |
| **Diethyl phthalate** | | | | | | | *CAS #* | 84-66-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **O,O-Diethyl O-2-pyrazinyl** | | | | | | | *CAS #* | 297-97-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dimethoate** | | | | | | | *CAS #* | 60-51-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dimethyl ether** | | | | | | | *CAS #* | 115-10-6 |
| Second Quarter 2011 | U | U | U | U | 12.5 | - | | 8260B |
| **p-(Dimethylamino)azobenzene** | | | | | | | *CAS #* | 60-11-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **7,12-Dimethylbenz[a]anthracene** | | | | | | | *CAS #* | 57-97-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **3,3'-Dimethylbenzidine** | | | | | | | *CAS #* | 119-93-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **a,a-Dimethylphenethylamine** | | | | | | | *CAS #* | 122-09-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 15 | - | | 8270D |
| **2,4-Dimethylphenol** | | | | | | | *CAS #* | 105-67-9 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Dimethyl phthalate** | | | | | | | *CAS #* | 131-11-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **m-Dinitrobenzene** | | | | | | | *CAS #* | 99-65-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **4,6-Dinitro-o-cresol** | | | | | | | *CAS #* | 534-52-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,4-Dinitrophenol** | | | | | | | *CAS #* | 51-28-5 |
| Second Quarter 2011 | U J | U J | U J | U J | 10 | - | | 8270D |
| **2,4-Dinitrotoluene** | | | | | | | *CAS #* | 121-14-2 |
| Second Quarter 2011 | U | U | 0.974 J | U | 10 | 31.3 | 10 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 10 | 31.3 | 10 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 10 | 31.3 | 10 | 8270D |
| **2,6-Dinitrotoluene** | | | | | | | *CAS #* | 606-20-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 15.65 | 10 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 10 | 15.65 | 10 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 10 | 15.65 | 10 | 8270D |
| **Dinoseb** | | | | | | | *CAS #* | 88-85-7 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **Di-n-octyl phthalate** | | | | | | | *CAS #* | 117-84-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,4-Dioxane** | | | | | | | *CAS #* | 123-91-1 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **Diphenylamine** | | | | | | | *CAS #* | 86-30-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Disulfoton** | | | | | | | *CAS #* | 298-04-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Endosulfan I** | | | | | | | *CAS #* | 959-98-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Endosulfan II** | | | | | | | *CAS #* | 33213-65-9 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Endosulfan sulfate** | | | | | | | *CAS #* | 1031-07-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Endrin** | | | | | | | *CAS #* | 72-20-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Ethyl acetate** | | | | | | | *CAS #* | 141-78-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Endrin aldehyde** | | | | | | | *CAS #* | 7421-93-4 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Ethanol** | | | | | | | *CAS #* | 64-17-5 |
| Second Quarter 2011 | U | U | U | U | 250 | - | | 8260B |
| **Ethylbenzene** | | | | | | | *CAS #* | 100-41-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Ethyl methacrylate** | | | | | | | *CAS #* | 97-63-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Ethyl methanesulfonate** | | | | | | | *CAS #* | 62-50-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Ethylene oxide** | | | | | | | *CAS #* | 75-21-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 100 | - | | 8260B |
| **Famphur** | | | | | | | *CAS #* | 52-85-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Fluoranthene** | | | | | | | *CAS #* | 206-44-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Fluorene** | | | | | | | *CAS #* | 86-73-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Heptachlor** | | | | | | | *CAS #* | 76-44-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Heptachlor epoxide** | | | | | | | *CAS #* | 1024-57-3 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Hexachlorobenzene** | | | | | | | *CAS #* | 118-74-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Hexachlorobutadiene** | | | | | | | *CAS #* | 87-68-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Hexachlorocyclopentadiene** | | | | | | | *CAS #* | 77-47-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Hexachloroethane** | | | | | | | *CAS #* | 67-72-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Hexachlorophene** | | | | | | | *CAS #* | 70-30-4 |
| Second Quarter 2011 | U | U | U | U | 40 | - | | 8270D |
| **Hexachloropropene** | | | | | | | *CAS #* | 1888-71-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **2-Hexanone** | | | | | | | *CAS #* | 591-78-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Indeno[1,2,3-cd]pyrene** | | | | | | | *CAS #* | 193-39-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isobutyl alcohol** | | | | | | | *CAS #* | 78-83-1 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **Isodrin** | | | | | | | *CAS #* | 465-73-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isophorone** | | | | | | | *CAS #* | 78-59-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isopropylbenzene** | | | | | | | *CAS #* | 98-82-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Isopropylether** | | | | | | | *CAS #* | 108-20-3 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **4-Isopropyltoluene** | | | | | | | *CAS #* | 99-87-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Isosafrole** | | | | | | | *CAS #* | 120-58-1 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **Kepone** | | | | | | | *CAS #* | 143-50-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methacrylonitrile** | | | | | | | *CAS #* | 126-98-7 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Methapyrilene** | | | | | | | *CAS #* | 91-80-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methoxychlor** | | | | | | | *CAS #* | 72-43-5 |
| Second Quarter 2011 | U | U | U | U | 0.25 | - | | 8081B |
| **Bromomethane** | | | | | | | *CAS #* | 74-83-9 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chloromethane** | | | | | | | *CAS #* | 74-87-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **3-Methylcholanthrene** | | | | | | | *CAS #* | 56-49-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Butanone** | | | | | | | *CAS #* | 78-93-3 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Iodomethane** | | | | | | | *CAS #* | 74-88-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Methyl methacrylate** | | | | | | | *CAS #* | 80-62-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Methyl methane sulfonate** | | | | | | | *CAS #* | 66-27-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Methylnaphthalene** | | | | | | | *CAS #* | 91-57-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methyl parathion** | | | | | | | *CAS #* | 298-00-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **4-Methyl-2-pentanone** | | | | | | | *CAS #* | 108-10-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **2-Methylphenol** | | | | | | | *CAS #* | 95-48-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **3 & 4-Methylphenol** | | | | | | | *CAS #* | 106-44-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Methyl tert-butyl ether** | | | | | | | *CAS #* | 1634-04-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Dibromomethane** | | | | | | | *CAS #* | 74-95-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Methylene chloride** | | | | | | | *CAS #* | 75-09-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Naphthalene** | | | | | | | *CAS #* | 91-20-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,4-Naphthoquinone** | | | | | | | *CAS #* | 130-15-4 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **1-Naphthylamine** | | | | | | | *CAS #* | 134-32-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Naphthylamine** | | | | | | | *CAS #* | 91-59-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **o-Nitroaniline** | | | | | | | *CAS #* | 88-74-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **m-Nitroaniline** | | | | | | | *CAS #* | 99-09-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **p-Nitroaniline** | | | | | | | *CAS #* | 100-01-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Nitrobenzene** | | | | | | | *CAS #* | 98-95-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **o-Nitrophenol** | | | | | | | *CAS #* | 88-75-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **p-Nitrophenol** | | | | | | | *CAS #* | 100-02-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | 20 | 8270D |
| **4-Nitroquinoline-1-oxide** | | | | | | | *CAS #* | 56-57-5 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **N-Nitrosodi-n-butylamine** | | | | | | | *CAS #* | 924-16-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodiethylamine** | | | | | | | *CAS #* | 55-18-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodimethylamine** | | | | | | | *CAS #* | 62-75-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodiphenylamine** | | | | | | | *CAS #* | 86-30-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodipropylamine** | | | | | | | *CAS #* | 621-64-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosomethylethylamine** | | | | | | | *CAS #* | 10595-95-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosomorpholine** | | | | | | | *CAS #* | 59-89-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **N-Nitrosopiperidine** | | | | | | | *CAS #* | 100-75-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosopyrrolidine** | | | | | | | *CAS #* | 930-55-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **5-Nitroso-o-toluidine** | | | | | | | *CAS #* | 99-55-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Parathion** | | | | | | | *CAS #* | 56-38-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachlorobenzene** | | | | | | | *CAS #* | 608-93-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachloroethane** | | | | | | | *CAS #* | 76-01-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Pentachloronitrobenzene** | | | | | | | *CAS #* | 82-68-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachlorophenol** | | | | | | | *CAS #* | 87-86-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Phenacetin** | | | | | | | *CAS #* | 62-44-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Phenanthrene** | | | | | | | *CAS #* | 85-01-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Phenol** | | | | | | | *CAS #* | 108-95-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Phorate** | | | | | | | *CAS #* | 298-02-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Picoline** | | | | | | | *CAS #* | 109-06-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pronamide** | | | | | | | *CAS #* | 23950-58-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1-Propanol** | | | | | | | *CAS #* | 71-23-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 100 | - | | 8260B |
| **2-Propanol** | | | | | | | *CAS #* | 67-63-0 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Propionitrile** | | | | | | | *CAS #* | 107-12-0 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **n-Propylbenzene** | | | | | | | *CAS #* | 103-65-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Pyrene** | | | | | | | *CAS #* | 129-00-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pyridine** | | | | | | | *CAS #* | 110-86-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Safrole** | | | | | | | *CAS #* | 94-59-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Silvex** | | | | | | | *CAS #* | 93-72-1 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **Styrene** | | | | | | | *CAS #* | 100-42-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Sulfotep** | | | | | | | *CAS #* | 3689-24-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2,4,5-Trichlorophenoxyacetic acid** | | | | | | | *CAS #* | 93-76-5 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **1,2,4,5-Tetrachlorobenzene** | | | | | | | *CAS #* | 95-94-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,1,1,2-Tetrachloroethane** | | | | | | | *CAS #* | 630-20-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2,2-Tetrachloroethane** | | | | | | | *CAS #* | 79-34-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Tetrachloroethene** | | | | | | | *CAS #* | 127-18-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Tetrahydrofuran** | | | | | | | *CAS #* | 109-99-9 |
| Second Quarter 2011 | U | U | U | U | 25 | - | | 8260B |
| **2,3,4,6-Tetrachlorophenol** | | | | | | | *CAS #* | 58-90-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Toluene** | | | | | | | *CAS #* | 108-88-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **o-Toluidine** | | | | | | | *CAS #* | 95-53-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Toxaphene** | | | | | | | *CAS #* | 8001-35-2 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8081B |
| **1,2,3-Trichlorobenzene** | | | | | | | *CAS #* | 87-61-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2,4-Trichlorobenzene** | | | | | | | *CAS #* | 120-82-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,1-Trichloroethane** | | | | | | | *CAS #* | 71-55-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2-Trichloroethane** | | | | | | | *CAS #* | 79-00-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Trichloroethene** | | | | | | | *CAS #* | 79-01-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Trichlorofluoromethane** | | | | | | | *CAS #* | 75-69-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4,5-Trichlorophenol** | | | | | | | *CAS #* | 95-95-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,4,6-Trichlorophenol** | | | | | | | *CAS #* | 88-06-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **1,2,3-Trichloropropane** | | | | | | | *CAS #* | 96-18-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2-Trichloro-1,2,2-Trifluoroethane** | | | | | | | *CAS #* | 76-13-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **O,O,O-Triethyl phosphorothioate** | | | | | | | *CAS #* | 126-68-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,2,4-Trimethylbenzene** | | | | | | | *CAS #* | 95-63-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **1,3,5-Trimethylbenzene** | | | | | | | *CAS #* | 108-67-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **sym-Trinitrobenzene** | | | | | | | *CAS #* | 99-35-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Vinyl acetate** | | | | | | | *CAS #* | 108-05-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Vinyl chloride** | | | | | | | *CAS #* | 75-01-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Xylenes (Total)** | | | | | | | *CAS #* | 1330-20-7 |
| Second Quarter 2011 | U | U | U | U | 3 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|

**Definitions:**

***The following definitions apply to results reported for Appendix IX monitoring events.***
***All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit.
**UA** denotes not detected at or above the adjusted detection limit.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes groundwater protection standard.

***The following definitions apply to results reported for non-Appendix IX monitoring events.***
***All non-Appendix IX monitoring results for compliance wells are reported to at or above the quantitation limit.***

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes groundwater protection standard.

Notes:
**-Appendix IX Groundwater Monitoring Events**:
***Third Quarter 2003, Second Quarter 2004, Second Quarter 2005, Third Quarter 2006, Second Quarter 2007, Second Quarter 2008, Second Quarter 2009, Second Quarter 2010, Second Quarter 2011***
All Appendix IX results evaluated and reported to detection limit.
-9/29/2003: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA (copper and zinc). Verification results reported in this table for copper and zinc.
-6/21-22/2004: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA. Verification results reported in this table for chloroform (7W12B).
-3/23/2005: Verification sampling event for 7MW6. Verification results reported in this table for bis(2-ethylhexyl)phthalate).
-7/26/2005: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA (ethyl acetate), 7W11B (beta-BHC), and 7MW6 (alpha-BHC). All Verification results reported as not detected. Verification results reported.
-Sept 2006: Verification sampling event for 7W12B and 7W11B 3Q2006 for chloroform. Initial results reported in this table for chloroform (7W11B,
-July 17, 2008: Verification sampling event for 7W13 arsenic and cobalt. 7W9C cobalt
-June 11, 2009, Verification sampling event for 7MW6 Diethyl ether. Analyte not detected. Verification results reported.

## *Target Analyte Monitoring Results At or Above Permit Quantitation Limit*
## *HWMU 7 Plume Monitoring Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

***All Results in ug/L.*** ***Upgradient well = 7W12B***

| *Analyte/Quarter* | *7W12B Q* | *7W9C Q* | *7W10B Q* | *7W10C Q* | *7W13 Q* | *QL* | *Background* | *GPS* | *Method* | *CAS #* |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arsenic** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 10 | 6020A | 7440-38-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 10 | 6020A | 7440-38-2 |
| **Barium** | | | | | | | | | | |
| Second Quarter 2011 | 31.1 | 21.2 | 57.5 | 42.7 | 14.5 | 10 | 41 | 2000 | 6020A | 7440-39-3 |
| Fourth Quarter 2011 | 32.2 | 18.3 | 59.7 | 45 | 14.7 | 10 | 41 | 2000 | 6020A | 7440-39-3 |
| **Cadmium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 5 | 6020A | 7440-43-9 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 5 | 6020A | 7440-43-9 |
| **Chromium** | | | | | | | | | | |
| Second Quarter 2011 | 5.3 | U | U | U | U | 5 | 9.9 | 100 | 6020A | 7440-47-3 |
| Fourth Quarter 2011 | 5.62 | U | U | U | U | 5 | 9.9 | 100 | 6020A | 7440-47-3 |
| **Cobalt** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | 9.41 | 5 | 5 | 5 | 6020A | 7440-48-4 |
| Fourth Quarter 2011 | U | U | U | U | 11.7 | 5 | 5 | 5 | 6020A | 7440-48-4 |
| **Copper** | | | | | | | | | | |
| Second Quarter 2011 | 3.15 J | U | U | U | U | 5 | 5 | 1300 | 6020A | 7440-50-8 |
| Fourth Quarter 2011 | U | U | U | U | U | 5 | 5 | 1300 | 6020A | 7440-50-8 |
| **Lead** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 15 | 6020A | 7439-92-1 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 15 | 6020A | 7439-92-1 |
| **Nickel** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 313 | 6020A | 7440-02-0 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 313 | 6020A | 7440-02-0 |
| **Selenium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 50 | 6020A | 7782-49-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 50 | 6020A | 7782-49-2 |
| **Silver** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 2 | 2 | 78.25 | 6020A | 7440-22-4 |
| Fourth Quarter 2011 | U | U | U | U | U | 2 | 2 | 78.25 | 6020A | 7440-22-4 |
| **Thallium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 2 | 6020A | 7440-28-0 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 2 | 6020A | 7440-28-0 |
| **Zinc** | | | | | | | | | | |
| Second Quarter 2011 | 7.78 J | U | U | U | U | 10 | 10.9 | 4695 | 6020A | 7440-66-6 |
| Fourth Quarter 2011 | 12.1 J | U J | 17.4 J | 10.2 J | 10.6 J | 10 | 10.9 | 4695 | 6020A | 7440-66-6 |
| **Cyanide** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 20 | 20 | 200 | 9012A | 57-12-5 |
| Fourth Quarter 2011 | U | U | U | U | U | 20 | 20 | 200 | 9012A | 57-12-5 |
| **bis(2-Ethylhexyl)phthalate** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 5 | 6 | 6 | 8270D | 117-81-7 |
| Fourth Quarter 2011 | U | U | U | U | U | 6 | 6 | 6 | 8270D | 117-81-7 |
| **2,4-Dinitrotoluene** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 31.3 | 8270D | 121-14-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 31.3 | 8270D | 121-14-2 |
| **2,6-Dinitrotoluene** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 15.65 | 8270D | 606-20-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 15.65 | 8270D | 606-20-2 |



*See last page of this report for definitions.*

## *Target Analyte Monitoring Results At or Above Permit Quantitation Limit*
## *HWMU 7 Plume Monitoring Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

***All Results in ug/L.*** ***Upgradient well = 7W12B***

| *Analyte/Quarter* | *7W12B Q* | *7W9C Q* | *7W10B Q* | *7W10C Q* | *7W13 Q* | *QL* | *Background* | *GPS* | *Method* | *CAS #* |
|---|---|---|---|---|---|---|---|---|---|---|

**Definitions:**

***All plume monitoring well results reported to at or above the permit quantitation limit except for the upgradient well during the Appendix IX monitoring Event. During the Appendix IX monitoring event, results for the upgradient well are reported to the detection limit.***

**Q** Denotes data validation qualifier.
**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**UN** Denotes analyte concentration is less than the quantiation limit and five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number. **GPS** Denotes groundwater protection standard.

Notes:
-January 2005: Verification sampling event for 7MW13 4Q2004 arsenic. Verification results reported in this table for arsenic (7W13).
-March 2006: Verification sampling event for 7MW13 1Q2006 arsenic. Verification results reported in this table for arsenic (7W13).
-July 2006: Verification sampling event for 7MW13 2Q2006 arsenic. Verification results reported in this table for arsenic (7W13).
-Sept 2006: Verification sampling event for 7W12B 3Q2006 chloroform. Initial results reported in this table for chloroform (7W12B).
-July 17, 2007: Verification sampling event for 7W13 arsenic-verification event result reported, highest of four quadruplicate results, 7W13 cobalt-original result reported.. 7W9C cobalt- Verification result reported.

-Dec 17, 2008: Verification sampling event for 7W13 . cobalt- Original result reported.
-June 28, 2010 - Verification sampling event for 7W13 . cobalt- Original result reported.
Also, verification sampling event for 7W13 . cobalt- verification result reported.
-Dec 16, 2010 - Verification sampling event for 7W13 . arsenic- Verification result reported.
- June 27, 2011 - Verification sampling event for 7MW6 benzene and diethyl ether and 7W11B - Benzene - Verification result reported.



***See last page of this report for definitions.***

# APPENDIX G

## CONSTITUENT BACKGROUND VALUES FOR THE COMPLIANCE GROUNDWATER MONITORING PROGRAM

# CONSTITUENT BACKGROUND VALUES
# FOR THE
# COMPLIANCE GROUNDWATER MONITORING PROGRAM

## HWMU-7
## RADFORD ARMY AMMUNITION PLANT
## RADFORD, VIRGINIA

**Prepared for:**

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Radford Army Ammunition Plant
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February 2008
DAA Job No. B03204-122

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## RADFORD ARMY AMMUNITION PLANT – HWMU-7
### CALCULATION OF CONSTITUENT BACKGROUND VALUES

Draper Aden Associates recalculated background values for the plume monitoring well constituents of the groundwater monitoring program for Hazardous Waste Management Unit No. 7 (HWMU-7) located at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia. Background values were calculated for all plume monitoring well constituents.

The background values for HWMU-7 plume monitoring well constituents were calculated using the analytical data for upgradient well 7W12B using data from Second Quarter 2003 through Second Quarter 2007 (available most recent data with one exception-cyanide includes 4th Quarter 2007 data). Inter-well upper prediction limits (UPL) were calculated on the background data for the target parameters in accordance with the facility permit and VHWMR (40 CFR 264.97(h)). Where applicable, the background value calculations were based on site-wide 95% confidence, 95% coverage upper prediction intervals. The calculated background values for all target constituents are listed on **Table 1**.

### Background Data and Background Value Calculations

The constituents listed below were 100% non-detected (<LOQ) in the background well. The background values for these constituents were established as equal to their quantitation limits (QL).

| Background Value = Quantitation Limit (QL) | | | | |
|---|---|---|---|---|
| **Constituent** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **Background Value (µg/l)** |
| Antimony | 17 | 100 | 1 | 1 |
| Arsenic | 17 | 100 | 10 | 10 |
| Cadmium | 17 | 100 | 1 | 1 |
| Cobalt | 17 | 100 | 5 | 5 |
| Copper | 16 | 100 | 5 | 5 |
| Lead | 17 | 100 | 1 | 1 |
| Mercury | 17 | 100 | 2 | 2 |
| Nickel | 17 | 100 | 10 | 10 |
| Selenium | 17 | 100 | 10 | 10 |
| Silver | 17 | 100 | 2 | 2 |
| Thallium | 17 | 100 | 1 | 1 |
| Cyanide | 18 | 100 | 20 | 20 |
| Bis(2-ethylhexyl)phthalate | 17 | 100 | 6 | 6 |
| Butyl benzyl phthalate | 17 | 100 | 10 | 10 |
| 2,4-Dinitrophenol | 17 | 100 | 10 | 10 |
| 2,4-Dinitrotoluene | 17 | 100 | 10 | 10 |
| 2,6-Dinitrotoluene | 17 | 100 | 10 | 10 |
| p-Nitrophenol | 17 | 100 | 10 | 10 |

Non-parametric prediction intervals were computed for the constituents for which the data from upgradient well 7W-12B satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

Only one result for zinc was reported above its LOQ. The reported result (10.9 µg/l) is the NUPL for zinc. The non-parametric prediction limit computation for chromium is presented in **Appendix A**.

| **Background Value = UPL of Non-parametric Prediction Interval (NUPL)** | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **NUPL (µg/l)** | **Background Value (µg/l)** |
| Chromium | 17 | 12 | 5 | 9.9 | 9.9 |
| Zinc | 14 | 93 | 10 | 10.9 | 10.9 |

The following constituent (barium) exhibited normally distributed background data with less than 0% non-detects. One sided parametric prediction interval was computed on the background data for barium. The background value for barium was set as equal to its UPL. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. The background and relevant statistical data for barium is summarized below. The prediction interval computation is presented in **Appendix A**.

| **Background Value = UPL of one-sided Prediction Interval** | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **UPL (µg/l)** | **Background Value (µg/l)** |
| Barium | 17 | 0 | 10 | 41.0 | 41.0 |

# TABLE 1

## HWMU-7
## CALCULATED BACKGROUND VALUES

| Constituent | Background Value (µg/l unless otherwise noted) |
|---|---|
| Antimony | 1 |
| Arsenic | 10 |
| Barium | 41.0 |
| Cadmium | 1 |
| Chromium | 9.9 |
| Cobalt | 5 |
| Copper | 5 |
| Lead | 1 |
| Mercury | 2 |
| Nickel | 10 |
| Selenium | 10 |
| Silver | 2 |
| Thallium | 1 |
| Zinc | 10.9 |
| Cyanide | 20 |
| Bis(2-ethylhexyl)phthalate | 6 |
| Butyl benzyl phthalate | 10 |
| 2,4-Dinitrophenol | 10 |
| 2,4-Dinitrotoluene | 10 |
| 2,6-Dinitrotoluene | 10 |
| p-Nitrophenol | 10 |

# APPENDIX A

## HWMU-7
## BACKGROUND VALUE CALCULATIONS
## STATISTICAL COMPUTATIONS FOR BARIUM AND CHROMIUM

**RAAP-HWMU-7 - Background Calculation - December 2007**

17-Dec-07

Y2K Correction dates are as shown in table below.

| Actual Event | | | Date Used in Stat Software |
|---|---|---|---|
| 2003-Qtr2 | | | 8/1/1999 |
| 2003-Qtr3 | | | 8/2/1999 |
| 2003-Qtr4 | | | 8/3/1999 |
| 2004-Qtr1 | | | 8/4/1999 |
| 2004-Qtr2 | | | 8/5/1999 |
| 2004-Qtr3 | | | 8/6/1999 |
| 2004-Qtr4 | | | 8/7/1999 |
| 2005-Qtr1 | | | 8/8/1999 |
| 2005-Qtr2 | | | 8/9/1999 |
| 2005-Qtr3 | | | 8/10/1999 |
| 2005-Qtr4 | | | 8/11/1999 |
| 2006-Qtr1 | | | 8/12/1999 |
| 2006-Qtr2 | | | 8/13/1999 |
| 2006-Qtr3 | | | 8/14/1999 |
| 2006-Qtr4 | | | 8/15/1999 |
| 2007-Qtr1 | | | 8/16/1999 |
| 2007-Qtr2 | | | 8/17/1999 |

**Notes:**

1) Background data was computed for all target constituents using the 2Q 2003 - 2Q 2007 data for background well 7W12B. Background data was 100% <LOQ for all target parameters except barium, chromium and zinc. Zinc had only one reported result > LOQ.

Statistical computations using GRITS/STAT V5.0 performed only for barium and chromium, as applicable.

Normality Tests

Report Printed: 12-17-2007 16:02

Facility:RAAPHWMU7 Haz. Waste Unit 7 - RAAP

Address:

City:Radford ST:VA Zip:24141
County:MONTGOMERY

Contact:
Phone:( ) -

Permit Type:Detection

Constituent:Ba Barium, total

CAS Number: 7440-39-3
MCL: 0.000 ppb
ACL: 0.000 ppb
Detect Limit: 2.000 ppb

Start Date:Aug 01 1999
End Date:Aug 17 1999

Normality Test on Observations for wells listed below:

Well:7W12B Position:Upgradient Observations:17

| Scale | Minimum | Maximum | Mean | Std Dev |
|---|---|---|---|---|
| Original: | 32.800 | 39.800 | 36.253 | 1.875 |
| Log: | 3.490 | 3.684 | 3.589 | 0.052 |

Pooled Statistics
Observations: 17

| Statistic | Original Scale | Log Scale |
|---|---|---|
| Mean: | 36.253 | 3.589 |
| Std Dev: | 1.875 | 0.052 |
| Skewness: | -0.019 | -0.150 |
| Kurtosis: | -0.236 | -0.251 |
| Minimum: | 32.800 | 3.490 |
| Maximum: | 39.800 | 3.684 |
| CV: | 0.052 | 0.014 |

Shapiro-Wilk Statistics

| Scale | Test Statistic | 5% Critical Value | 1% Critical Value |
|---|---|---|---|
| Original: | 0.9602 | 0.8920 | 0.8510 |

| | | | |
|---|---|---|---|
| Log: | 0.9592 | 0.8920 | 0.8510 |

* Indicates statistically significant evidence of non-normality.
GRIT/STAT Version 5.0

**Parametric Prediction Interval**
Report Printed December 17,2007



Facility:Haz. Waste Unit 7 - RAAP
Parameter:Barium, total(CAS Number:7440-39-3)

**ONE-TAILED UPPER PARAMETRIC PREDICTION INTERVAL**

| | |
|---|---|
| Observations (n): | 17 |
| Shapiro-Wilk (W): | 0.9602 |
| Critical W,$\alpha$=0.01: | 0.8510 |
| Mean: | 36.253 ppb |
| Std Dev: | 1.875 ppb |
| DF: | 16 |
| Conf. Level (1-$\alpha$): | 0.9500 |
| Future Samples (k): | 4 |
| $t_{\left[1-\frac{\alpha}{k}\right]}$: | 2.4729 |
| Kappa: | 2.5446 |
| UL: | 41.024 ppb |
| LL: | -$\infty$ |

Normality Tests

Report Printed: 12-17-2007 16:05

Facility:RAAPHWMU7 Haz. Waste Unit 7 - RAAP

Address:

City:Radford ST:VA Zip:24141
County:MONTGOMERY

Contact:
Phone:( ) -

Permit Type:Detection

Constituent:Cr Chromium, total

CAS Number: 7440-47-3
MCL: 0.000 ppb
ACL: 0.000 ppb
Detect Limit: 1.000 ppb

Start Date:Aug 01 1999
End Date:Aug 17 1999

Normality Test on Observations for wells listed below:

Well:7W12B Position:Upgradient Observations:17

| Scale | Minimum | Maximum | Mean | Std Dev |
|---|---|---|---|---|
| Original: | 0.500 | 9.900 | 6.612 | 2.648 |
| Log: | -0.693 | 2.293 | 1.672 | 0.909 |

Pooled Statistics
Observations: 17

| Statistic | Original Scale | Log Scale |
|---|---|---|
| Mean: | 6.612 | 1.672 |
| Std Dev: | 2.648 | 0.909 |
| Skewness: | -1.317* | -2.191* |
| Kurtosis: | 1.110 | 3.139 |
| Minimum: | 0.500 | -0.693 |
| Maximum: | 9.900 | 2.293 |
| CV: | 0.401 | 0.543 |

Shapiro-Wilk Statistics

| Scale | Test Statistic | 5% Critical Value | 1% Critical Value |
|---|---|---|---|
| Original: | 0.8293* | 0.8920 | 0.8510 |

| | | | |
|---|---|---|---|
| Log: | 0.5707* | 0.8920 | 0.8510 |

* Indicates statistically significant evidence of non-normality.
GRIT/STAT Version 5.0

**Nonparametric Prediction Interval**
Report Printed December 17,2007



Facility:Haz. Waste Unit 7 - RAAP
Parameter:Chromium, total(CAS Number:7440-47-3)

**ONE-TAILED UPPER PARAMETRIC PREDICTION INTERVAL**

Observations (n): 17
Conf. Level (1-α): ~~94.440%~~ N/A

UL: 9.900 ppb
LL: 0.000

*Report Produced by GRITS/STAT 5.01*

# APPENDIX H

## GROUNDWATER PROTECTION STANDARDS FOR HWMU-7
## (PERMIT ATTACHMENT 3, APPENDIX G)

**GROUNDWATER PROTECTION STANDARDS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | USEPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Arsenic, total | 6020 | 10 | 10 | 10 | | 10 |
| Barium, total | 6020 | 10 | 41 | 2,000 | | 2,000 |
| Cadmium, total | 6020 | 1 | 1 | 5 | | 5 |
| Chromium, total | 6020 | 5 | 9.9 | 100 | | 100 |
| Cobalt, total | 6020 | 5 | 5 | | 4.695 | 5 |
| Copper, total | 6020 | 5 | 5 | 1300 | | 1300 |
| Lead, total | 6020 | 1 | 1 | 15* | | 15* |
| Nickel, total | 6020 | 10 | 10 | | 313 | 313 |
| Selenium, total | 6020 | 10 | 10 | 50 | | 50 |
| Silver, total | 6020 | 2 | 2 | | 78.25 | 78.25 |
| Thallium, total | 6020 | 1 | 1 | 2 | | 2 |
| Bis (2-ethylhexyl) phthalate | 8270 | 10 | 6 | 6 | | 6 |
| 2,4-Dinitrotoluene | 8270 | 10 | 10 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270 | 10 | 10 | | 15.65 | 15.65 |
| Cyanide | 9010 | 20 | 20 | 200 | | 200 |
| Zinc | 6020 | 10 | 10.9 | | 4695 | 4695 |

**NOTES:**

**PQL:** Practical Quantitation Limits.

**Background:** Recalculated Background in December 2007.

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (web: http://water.epa.gov/drink/contaminants/index.cfm#Primary; June 2, 2010). * - Action Level. Subject to change without notice as directed by VDEQ.

**VDEQ ACL:** VDEQ Alternate Concentration Limit, Jan -2009. Subject to change without notice as directed by VDEQ.

**Please Note:** The VDEQ-approved Class 3 Permit Modification dated September 27, 2011 for the Final Permit removed the following constituents from the Compliance Groundwater Monitoring List and GPS List for HWMU-7: antimony, mercury, zinc, butyl benzyl phthalate, 2,4-dinitrophenol, and 4-nitrophenol.

**APPENDIX I**
**(CD-ROM)**

**HWMU-7 COBALT ASD, DECEMBER 15, 2011**
**VDEQ COBALT ASD APPROVAL LETTER, JANUARY 5, 2012**

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
*Street address:* 629 East Main Street, Richmond, Virginia 23219
*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482


January 5, 2012

Ms. Paige Holt, Ph.D., PE
Environmental Manager
Alliant Techsytems Inc.
Radford Army Ammunition Plant
State Route 114; P.O. Box 1
Radford, VA 24143-0100

**VIA ELECTRONIC MAIL**

**RE:** Alternate Source Demonstration for Cobalt in monitoring wells 7WCA and 7W13
HWMU #7, Radford Army Ammunition Plant, Radford, Virginia
Radford Army Ammunition Plant, Radford, VA
EPA ID# VA1210020730

Dear Ms. Holt:

The above-noted Alternate Source Demonstration (ASD) investigation, submitted on behalf of Radford Army Ammunition Plant, by Alliant Techsystems Inc., dated December 2011, has been reviewed for technical content and consistency with the requirements of 40 CFR 264.99.(i). The need to submit an ASD was triggered by an exceedance of the Cobalt Groundwater Protection standard reported to the Department for monitoring wells 7WCA and 7W13.

As defined under 40 CFR 264.99.(i), the Alternate Source Demonstration (ASD) report must show one of the following in order to obtain approval:

1) The contamination was caused by natural variation in groundwater.
2) The contamination was a result of an error in field sampling.
3) The contamination was the result of an error in lab analysis.
4) The SSI contamination was result of an error in statistical analysis.

The ASD report focused on proving the applicability of item #1 by presenting a statistical trend analysis that shows no increasing trends of total cobalt concentrations in groundwater, presenting data showing that cobalt is widely observed at significant concentrations in non-waste derived materials and native soils at the site, and providing data that shows cobalt present at similar levels in other upgradient wells serving other waste management units at the site. The report concluded that the total cobalt

concentrations observed in groundwater monitoring wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable trace elements in the aquifer matrix, and not from a temporally-varying source such as a release from the closed hazardous waste management unit (HWMU-7).

Based on the above discussion and the body of evidence presented to the Department, the content of the ASD is determined to be sufficient to meet the Regulatory criteria for approval and as a result, the facility does not have to remediate the cobalt GPS exceedances observed in wells 7WCA and 7W13. Please note that future exceedances of the GPS for Cobalt noted in 7WCA and 7W13 will not require the submittal of a separate ASD unless the monitoring results reveal a change in site conditions that may indicate a release from HWMU-7. Please make sure that this approval is reflected in future correspondence to the Department where appropriate.

If you have any additional technical questions, you may contact me at 276-676-4867 or by email at Vincent.Maiden@deq.virginia.gov.

Sincerely,

Vincent A. Maiden
Office of Remediation Programs

cc: Jutta Schneider, File – DEQ CO
Aziz Farahmand, DEQ-BRRO
Andrea Barbieri, EPA Region II (3LC50)
Jeremy Flint, ATK
Jim McKenna, US Army
Loretta Powers, ATK

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HCOC CONCENTRATIONS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Antimony | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | Butylbenzylphthalate | 2,4-Dinitrophenol | 2,4-Dinitrotoluene | 2,6-Dinitrotoluene | 4-Nitrophenol (p-Nitrophenol) | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | -- | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 0.154 | 93.2 | -- | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **UNIT BACKGROUND SAMPLE LOCATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-16 (3-4') | 11/01/02 | ~ | ~ | 106 | ~ | 11.5 | ~ | 5.1 | 5.4 | ~ | 7.7 | ~ | ~ | ~ | 15.4 | 39.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **CAP MATERIAL SAMPLE** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-1 (1-3') | 11/01/02 | ~ | 3.8 | 66.9 | 0.7 | 24.1 | 11.5 | 22.8 | 8.1 | ~ | 13.5 | ~ | ~ | ~ | 28 | 17.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **RESIDUAL MATERIAL SAMPLES** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (8-12') | 11/01/02 | ~ | 2.7 | 40.9 | 1.2 | 22 | 12.5 | 22 | 2.8 | ~ | 21.6 | ~ | ~ | ~ | 21.1 | 15 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-5 (6-11') | 11/01/02 | ~ | 3.5 | 55.6 | ~ | 22.8 | ~ | 10 | 11 | ~ | 7.2 | ~ | ~ | ~ | 60.6 | 24.2 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-8 (5-8') | 11/01/02 | ~ | 2.4 | 55 | ~ | 20.1 | ~ | 12.7 | 10.3 | ~ | 8.5 | ~ | ~ | ~ | 61.8 | 28.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (13.5-14.5') | 11/01/02 | ~ | 3.1 | 70.9 | 0.84 | 22.5 | 16.2 | 14.2 | 13.6 | ~ | 11.4 | ~ | ~ | ~ | 57.7 | 32.6 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 0.0035 | ~ | ~ | ~ |
| 7GP-18 (14') | 02/17/04 | ~ | 2.7 | 59.3 | ~ | 23.2 | 8.2 | 10.6 | 8.9 | ~ | 8.3 | ~ | ~ | ~ | 50 | 26.6 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 2.1 | ~ | ~ | 0.18 | ~ |
| 7GP-21 (13.5') | 02/17/04 | ~ | 2.8 | 79.6 | ~ | 23.3 | 23.6 | 12.8 | 12.4 | ~ | 9.4 | ~ | ~ | 1.4 | 55.9 | 32.5 | ~ | 1 | ~ | ~ | ~ | ~ | ~ | 2.8 | ~ | ~ | 0.5 | ~ |
| 7GP-24 (14') | 02/17/04 | ~ | 2.1 | 101 | ~ | 20.1 | 11.7 | 11.5 | 9.2 | ~ | 12.6 | ~ | ~ | 1.7 | 39.2 | 62.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER/NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-17 (11') | 02/17/04 | ~ | 26.4 | 244 | ~ | 45.6 | 10.4 | 36.3 | 120 | ~ | 28.1 | 3.1 | ~ | 2.1 | 46 | 165 | ~ | 0.56 | ~ | ~ | ~ | ~ | ~ | 3.5 | ~ | ~ | 0.34 | ~ |
| 7GP-20 (14.5') | 02/17/04 | ~ | 8.3 | 114 | ~ | 75.3 | 6.6 | 15.7 | 66.5 | ~ | 15.5 | ~ | ~ | 1.3 | 43.2 | 46.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 3 | ~ | ~ | 0.35 | 0.006 |

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HCOC CONCENTRATIONS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Antimony | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | Butylbenzylphthalate | 2,4-Dinitrophenol | 2,4-Dinitrotoluene | 2,6-Dinitrotoluene | 4-Nitrophenol (p-Nitrophenol) | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | -- | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 0.154 | 93.2 | -- | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-3 (10-11') | 11/01/02 | ~ | 26.1 | 229 | 1.5 | 32.8 | 8.1 | 23.2 | 35.1 | ~ | 15.9 | 3.5 | ~ | ~ | 42.1 | 33.8 | 0.69 | ~ | ~ | ~ | ~ | ~ | ~ | 0.75 | ~ | 0.0025 | ~ | ~ |
| 7GP-19 (14') | 02/17/04 | ~ | 30.5 | 273 | ~ | 38.4 | 8.7 | 28 | 95.3 | ~ | 18.9 | 3.7 | ~ | 2.1 | 50.6 | 39.4 | ~ | 0.47 | ~ | ~ | ~ | ~ | ~ | 0.9 | ~ | ~ | 0.53 | ~ |
| 7GP-22 (13') | 02/17/04 | ~ | 21 | 211 | ~ | 38.4 | 8.1 | 23.7 | 109 | ~ | 19 | 2.5 | ~ | 1.8 | 42.7 | 39.9 | ~ | 0.88 | ~ | ~ | ~ | ~ | ~ | 3.3 | ~ | ~ | 0.38 | ~ |
| 7GP-22-22 (13') (Field Duplicate) | 02/17/04 | ~ | 29.8 | 279 | ~ | 41.6 | 9.1 | 29.9 | 104 | ~ | 19.8 | 4.1 | ~ | 2.1 | 49.2 | 39 | ~ | 0.52 | ~ | ~ | ~ | ~ | ~ | 4.3 | ~ | ~ | 0.33 | ~ |
| 7GP-23 (12.5') | 02/17/04 | ~ | 21.4 | 221 | ~ | 61.4 | 8.3 | 26 | 236 | ~ | 25.6 | 2.7 | ~ | 2.3 | 42.7 | 43.3 | ~ | 0.6 | ~ | ~ | ~ | ~ | ~ | 3.4 | ~ | ~ | 0.4 | ~ |
| **SOIL ADJACENT TO UNIT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7GP-4 (3-4') | 11/01/02 | ~ | ~ | 69.2 | ~ | 10.1 | ~ | 5.1 | 5.8 | ~ | 6.3 | ~ | ~ | ~ | 14 | 35 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ |

NOTES:
HCOC: Hazardous Constituents of Concern. Based on 1981 analyses of lagoon water and sediment; Permit-defined quarterly groundwater monitoring constituents (as revised); and November 2002 analyses of residual material and soil samples.
*: Additional TCL organic constituent detected during the February 2004 Field Investigation.
~: Not detected above the Limit of Quantitation (LOQ).
Facility-Wide Background concentrations from Table 3 of the *Amended Closure Plan* (Appendix A of the *Closure Report*).

**TABLE 2**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SOIL SAMPLE CONSTITUENT CONCENTRATIONS GREATER THAN BACKGROUND COMPARED TO RESIDENTIAL RISK-BASED LEVELS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| | | Res. Risk-Based Levels | | | | |
|---|---|---|---|---|---|---|
| Constituents Exceeding Background Concentrations | CAS No. | SSL Soil to Groundwater 1 DAF mg/kg | Regional Screening Level (RSL) Residential mg/kg | C/N | Maximum Soil Concentration mg/kg | Constituent Exceeds Residential Risk-Based Levels? |
| TAL Inorganics | | | | | | |
| Barium | 7440-39-3 | 8.20E+01 | 1.50E+04 | N | 2.79E+02 | **yes** |
| Beryllium | 7440-41-7 | 3.20E+00 | 1.60E+02 | CN | 1.50E+00 | no |
| Cyanide | 57-12-5 | 2.00E+00 | 1.60E+03 | N | 6.90E-01 | no |
| Selenium | 7782-49-2 | 2.60E-01 | 3.90E+02 | N | 4.10E+00 | **yes** |
| TCL Volatile Organic Compounds (VOCs) | | | | | | |
| Toluene | 108-88-3 | 6.90E-01 | 5.00E+03 | N | 6.00E-03 | no |
| TCL Semivolatile Organic Compounds (SVOCs | | | | | | |
| bis-(2-Ethylhexyl)phthalate | 117-81-7 | 1.40E+00 | 3.50E+01 | CN | 1.00E+00 | no |
| N-Nitrosodiphenylamine | 86-30-6 | 5.70E-02 | 9.90E+01 | C | 4.30E+00 | **yes** |
| TCL Polychlorinated Biphenyls (PCBs) | | | | | | |
| Aroclor-1254 | 11097-69-1 | 8.80E-03 | 2.20E-01 | ! CN | 5.30E-01 | **yes** |
| TCL Pesticides | | | | | | |
| 4,4'-DDD | 72-54-8 | 6.60E-02 | 2.00E+00 | C | 3.50E-03 | no |
| 4,4'-DDE | 72-55-9 | 4.60E-02 | 1.40E+00 | C | 2.50E-03 | no |

SSL 1 DAF and Residential RBC from USEPA Regions 3, 6, and 9 Regional Screening Levels for Chemical Contaminants at Superfund Sites. Current RSL Table dated November 2011.

C - Carcinogen; N - Non-carcinogen.

! - Noncarcinogenic RBC < carcinogenic RBC @ THQ=0.1 in accordance with EPA Region 3 guidance.

**Although certain constituent concentrations were less than residential risk-based levels, all constituents listed in this table were retained for risk assessment due to detection above background.**

**Note: The average Aroclor-1254 concentration calculated from the eight samples in which Aroclor-1254 was detected is 0.38 mg/kg (3.80E-01 mg/kg).**

**TABLE 3**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SITE CONCEPTUAL EXPOSURE MODEL - SELECTION OF EXPOSURE PATHWAYS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Medium | Exposure Medium | Receptor Population | Receptor Age | Exposure Route | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|
| Soil | Soil | Resident | Adult | Dermal | Selected. Most coservative assessment of risk. |
| | | | | Ingestion | Selected. Most coservative assessment of risk. |
| | | | Child | Dermal | Selected. Most coservative assessment of risk. |
| | | | | Ingestion | Selected. Most coservative assessment of risk. |
| | Air | | Adult | Inhalation | Selected. Most coservative assessment of risk. |
| | | | Child | Inhalation | Selected. Most coservative assessment of risk. |
| | Soil | Trespasser/Visitor | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | Child | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | Adult | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | Child | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Soil | Construction Worker | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Soil | Commercial/ Industrial | Adult | Dermal | Excluded. Risk assessment focusing on most conservative population (residential) |
| | | | | Ingestion | Excluded. Risk assessment focusing on most conservative population (residential) |
| | Air | | | Inhalation | Excluded. Risk assessment focusing on most conservative population (residential) |
| Sediment | Sediment | Recreational/ Trespasser | Adult | Dermal | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | Child | Dermal | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | Aquatic Organisms | | Adult | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |
| | | | Child | Ingestion | Excluded. Soils greater than background are >11 ft in depth; no transport by surface water to deposit as sediment |

**TABLE 3**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**SITE CONCEPTUAL EXPOSURE MODEL - SELECTION OF EXPOSURE PATHWAYS**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Medium | Exposure Medium | Receptor Population | Receptor Age | Exposure Route | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|
| Groundwater | Groundwater | Resident | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Shower Air | | Adult | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Building Air | | Adult | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Groundwater | Construction Worker | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Air | | | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Groundwater | Commercial/ Industrial | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Building Air | | | Inhalation | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| Surface Water | Surface Water | Recreational/ Trespasser | Adult | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Dermal | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | Aquatic Organisms | | Adult | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |
| | | | Child | Ingestion | Excluded. Groundwater concentrations less than GPS or not derived from Unit per VDEQ-approved ASDs |

**TABLE 4**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Adult**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.01E-06 | 4.9E-03 | 4.94E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 2.34E-07 | 1.4E-02 | 3.28E-09 | 5.47E-07 | 2.0E-02 | 2.73E-05 |
| | 4,4'-DDD | 3.50E-03 | 8.20E-10 | 2.4E-01 | 1.97E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 5.86E-10 | 3.4E-01 | 1.99E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 1.74E-07 | 2.0E+00 | 3.48E-07 | 4.06E-07 | 2.0E-05 | 2.03E-02 |
| | Toluene | 6.00E-03 | | | | 9.84E-10 | 8.0E-02 | 1.23E-08 |
| | Barium | 2.79E+02 | | | | 1.52E-05 | 2.0E-01 | 7.62E-05 |
| | Beryllium | 1.50E+00 | | | | 8.20E-08 | 2.0E-03 | 4.10E-05 |
| | Cyanide | 6.90E-01 | | | | 3.77E-08 | 2.0E-02 | 1.89E-06 |
| | Selenium | 4.10E+00 | | | | 2.24E-07 | 5.0E-03 | 4.48E-05 |
| (Total) | | | | | **3.56E-07** | | | **2.05E-02** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 2.52E-06 | 4.9E-03 | 1.24E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 5.87E-07 | 1.4E-02 | 8.22E-09 | 1.37E-06 | 2.0E-02 | 6.85E-05 |
| | 4,4'-DDD | 3.50E-03 | 2.05E-09 | 2.4E-01 | 4.93E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.47E-09 | 3.4E-01 | 4.99E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 3.11E-07 | 2.0E+00 | 6.22E-07 | 7.26E-07 | 2.0E-05 | 3.63E-02 |
| | Toluene | 6.00E-03 | | | | 8.22E-09 | 8.0E-02 | 1.03E-07 |
| | Barium | 2.79E+02 | | | | 3.82E-04 | 2.0E-01 | 1.91E-03 |
| | Beryllium | 1.50E+00 | | | | 2.05E-06 | 2.0E-03 | 1.03E-03 |
| | Cyanide | 6.90E-01 | | | | 9.45E-07 | 2.0E-02 | 4.73E-05 |
| | Selenium | 4.10E+00 | | | | 5.62E-06 | 5.0E-03 | 1.12E-03 |
| (Total) | | | | | **6.44E-07** | | | **4.05E-02** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 3.70E-10 | 2.6E-06 | 9.61E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 8.60E-11 | 2.4E-06 | 2.06E-16 | 2.01E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 3.01E-13 | 6.9E-05 | 2.08E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.15E-13 | 9.7E-05 | 2.09E-17 | | | |
| | Aroclor-1254 | 7.81E-10 | 4.56E-11 | 5.7E-04 | 2.60E-14 | 1.06E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 3.12E-07 | 5.00E+00 | 6.24E-08 |
| | Barium | 2.79E+02 | | | | 5.60E-08 | 5.00E-04 | 1.12E-04 |
| | Beryllium | 1.50E+00 | 1.29E-10 | 2.4E-03 | 3.10E-13 | 3.01E-10 | 2.00E-05 | 1.50E-05 |
| | Cyanide | 6.90E-01 | | | | 1.38E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 8.23E-10 | 2.00E-02 | 4.11E-08 |
| (Total) | | | | | **3.37E-13** | | | **1.27E-04** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.00E-06** | | | **6.12E-02** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 1.73E-08 |
| bis(2-Ethylhexyl)phthalate | 1.15E-08 |
| 4,4'-DDD | 6.90E-10 |
| 4,4'-DDE | 6.98E-10 |
| Aroclor-1254 | 9.70E-07 |
| Beryllium | 3.10E-13 |

**TABLE 5**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Child**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.32E-06 | 4.9E-03 | 6.47E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 3.07E-07 | 1.4E-02 | 4.30E-09 | 3.58E-06 | 2.0E-02 | 1.79E-04 |
| | 4,4'-DDD | 3.50E-03 | 1.07E-09 | 2.4E-01 | 2.58E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 7.67E-10 | 3.4E-01 | 2.61E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 2.28E-07 | 2.0E+00 | 4.55E-07 | 2.66E-06 | 2.0E-05 | 1.33E-01 |
| | Toluene | 6.00E-03 | | | | 6.44E-09 | 8.0E-02 | 8.05E-08 |
| | Barium | 2.79E+02 | | | | 9.99E-05 | 2.0E-01 | 4.99E-04 |
| | Beryllium | 1.50E+00 | | | | 5.37E-07 | 2.0E-03 | 2.68E-04 |
| | Cyanide | 6.90E-01 | | | | 2.47E-07 | 2.0E-02 | 1.24E-05 |
| | Selenium | 4.10E+00 | | | | 1.47E-06 | 5.0E-03 | 2.94E-04 |
| (Total) | | | | | **4.67E-07** | | | **1.34E-01** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 4.71E-06 | 4.9E-03 | 2.31E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 1.10E-06 | 1.4E-02 | 1.53E-08 | 1.28E-05 | 2.0E-02 | 6.39E-04 |
| | 4,4'-DDD | 3.50E-03 | 3.84E-09 | 2.4E-01 | 9.21E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.74E-09 | 3.4E-01 | 9.32E-10 | | | |
| | Aroclor-1254 | 5.30E-01 | 5.81E-07 | 2.0E+00 | 1.16E-06 | 6.78E-06 | 2.0E-05 | 3.39E-01 |
| | Toluene | 6.00E-03 | | | | 7.67E-08 | 8.0E-02 | 9.59E-07 |
| | Barium | 2.79E+02 | | | | 3.57E-03 | 2.0E-01 | 1.78E-02 |
| | Beryllium | 1.50E+00 | | | | 1.92E-05 | 2.0E-03 | 9.59E-03 |
| | Cyanide | 6.90E-01 | | | | 8.82E-06 | 2.0E-02 | 4.41E-04 |
| | Selenium | 4.10E+00 | | | | 5.24E-05 | 5.0E-03 | 1.05E-02 |
| (Total) | | | | | **1.20E-06** | | | **3.78E-01** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 2.08E-10 | 2.6E-06 | 5.41E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 4.83E-11 | 2.4E-06 | 1.16E-16 | 5.64E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 1.69E-13 | 6.9E-05 | 1.17E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.21E-13 | 9.7E-05 | 1.17E-17 | | | |
| | Aroclor-1254 | 7.81E-10 | 2.56E-11 | 5.7E-04 | 1.46E-14 | 2.99E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 8.77E-07 | 5.00E+00 | 1.75E-07 |
| | Barium | 2.79E+02 | | | | 1.11E-05 | 5.00E-04 | 2.22E-02 |
| | Beryllium | 1.50E+00 | 7.25E-11 | 2.4E-03 | 1.74E-13 | 8.46E-10 | 2.00E-05 | 4.23E-05 |
| | Cyanide | 6.90E-01 | | | | 3.89E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 2.31E-09 | 2.00E-02 | 1.16E-07 |
| (Total) | | | | | **1.89E-13** | | | **2.22E-02** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.67E-06** | | | **5.34E-01** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 2.95E-08 |
| bis(2-Ethylhexyl)phthalate | 1.96E-08 |
| 4,4'-DDD | 1.18E-09 |
| 4,4'-DDE | 1.19E-09 |
| Aroclor-1254 | 1.62E-06 |
| Beryllium | 1.74E-13 |

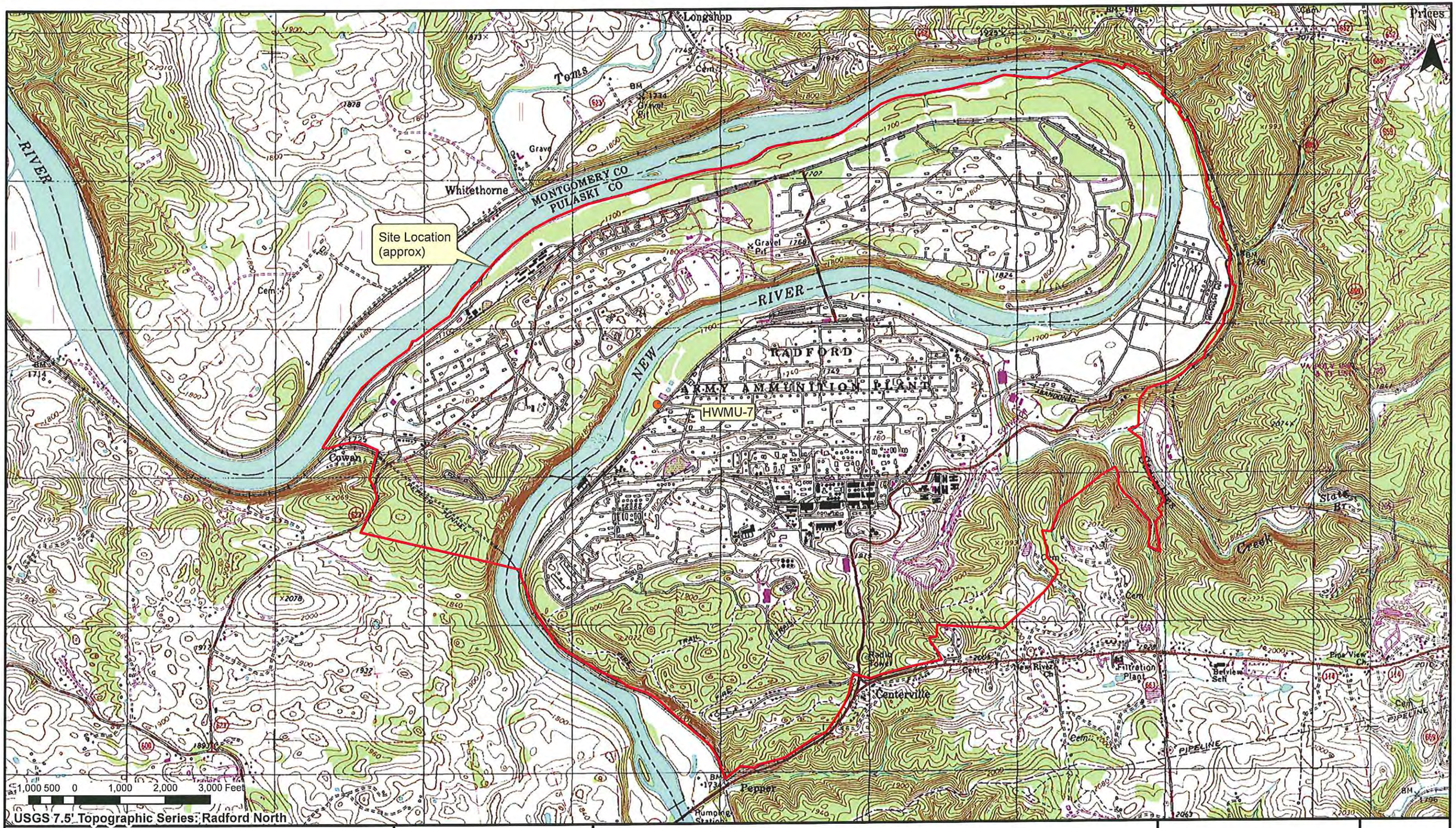
**TABLE 6**
**CALCULATION OF NON-CANCER HAZARDS AND CANCER RISKS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

**Medium: Soil**
**Receptor Population: Current/Future Resident**
**Receptor Age: Child**
**Special: Use of Average Detected Aroclor-1254 concentration instead of maximum**

| Exposure Route | Chemical of Potential Concern | Exposure Point Concentration | Intake (Cancer) mg/kg-day | Slope Factor (SF) 1/(mg/kg-day) | Cancer Risk (SF x Intake) | Intake (Non-Cancer) mg/kg-day | Reference Dose (Rfd) mg/kg-day | Hazard Quotient (Intake/Rfd) Unitless |
|---|---|---|---|---|---|---|---|---|
| **Dermal** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 1.32E-06 | 4.9E-03 | 6.47E-09 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 3.07E-07 | 1.4E-02 | 4.30E-09 | 3.58E-06 | 2.0E-02 | 1.79E-04 |
| | 4,4'-DDD | 3.50E-03 | 1.07E-09 | 2.4E-01 | 2.58E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 7.67E-10 | 3.4E-01 | 2.61E-10 | | | |
| | Aroclor-1254 (avg) | 3.80E-01 | 1.63E-07 | 2.0E+00 | 3.26E-07 | 1.90E-06 | 2.0E-05 | 9.52E-02 |
| | Toluene | 6.00E-03 | | | | 6.44E-09 | 8.0E-02 | 8.05E-08 |
| | Barium | 2.79E+02 | | | | 9.99E-05 | 2.0E-01 | 4.99E-04 |
| | Beryllium | 1.50E+00 | | | | 5.37E-07 | 2.0E-03 | 2.68E-04 |
| | Cyanide | 6.90E-01 | | | | 2.47E-07 | 2.0E-02 | 1.24E-05 |
| | Selenium | 4.10E+00 | | | | 1.47E-06 | 5.0E-03 | 2.94E-04 |
| (Total) | | | | | **3.38E-07** | | | **9.65E-02** |
| **Ingestion** | | **mg/kg** | | | | | | |
| | N-nitrosodiphenylamine | 4.30E+00 | 4.71E-06 | 4.9E-03 | 2.31E-08 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 1.10E-06 | 1.4E-02 | 1.53E-08 | 1.28E-05 | 2.0E-02 | 6.39E-04 |
| | 4,4'-DDD | 3.50E-03 | 3.84E-09 | 2.4E-01 | 9.21E-10 | | | |
| | 4,4'-DDE | 2.50E-03 | 2.74E-09 | 3.4E-01 | 9.32E-10 | | | |
| | Aroclor-1254 (avg) | 3.80E-01 | 4.16E-07 | 2.0E+00 | 8.33E-07 | 4.86E-06 | 2.0E-05 | 2.43E-01 |
| | Toluene | 6.00E-03 | | | | 7.67E-08 | 8.0E-02 | 9.59E-07 |
| | Barium | 2.79E+02 | | | | 3.57E-03 | 2.0E-01 | 1.78E-02 |
| | Beryllium | 1.50E+00 | | | | 1.92E-05 | 2.0E-03 | 9.59E-03 |
| | Cyanide | 6.90E-01 | | | | 8.82E-06 | 2.0E-02 | 4.41E-04 |
| | Selenium | 4.10E+00 | | | | 5.24E-05 | 5.0E-03 | 1.05E-02 |
| (Total) | | | | | **8.73E-07** | | | **2.82E-01** |
| **Inhalation** | | **mg/m3** | **Exposure Concentration (Cancer) mg/m3** | **Inhalation Unit Risk (IUR) 1/(mg/m3)** | | **Exposure Concentration (Noncancer) mg/m3** | **Reference Concentration (RfC) mg/m3** | |
| | N-nitrosodiphenylamine | 6.33E-09 | 2.08E-10 | 2.6E-06 | 5.41E-16 | | | |
| | bis(2-Ethylhexyl)phthalate | 1.00E+00 | 4.83E-11 | 2.4E-06 | 1.16E-16 | 5.64E-10 | none available | na |
| | 4,4'-DDD | 3.50E-03 | 1.69E-13 | 6.9E-05 | 1.17E-17 | | | |
| | 4,4'-DDE | 2.50E-03 | 1.21E-13 | 9.7E-05 | 1.17E-17 | | | |
| | Aroclor-1254 (avg) | 5.60E-10 | 1.84E-11 | 5.7E-04 | 1.05E-14 | 2.14E-10 | none available | na |
| | Toluene | 6.00E-03 | | | | 8.77E-07 | 5.00E+00 | 1.75E-07 |
| | Barium | 2.79E+02 | | | | 1.11E-05 | 5.00E-04 | 2.22E-02 |
| | Beryllium | 1.50E+00 | 7.25E-11 | 2.4E-03 | 1.74E-13 | 8.46E-10 | 2.00E-05 | 4.23E-05 |
| | Cyanide | 6.90E-01 | | | | 3.89E-10 | none available | na |
| | Selenium | 4.10E+00 | | | | 2.31E-09 | 2.00E-02 | 1.16E-07 |
| (Total) | | | | | **1.85E-13** | | | **2.22E-02** |
| **Total Across All Exposure Routes/Pathways** | | | | | **1.21E-06** | | | **4.01E-01** |

**Cumulative Risk (Dermal, Ingestion, and Inhalation) for Individual Carcinogenic Constituents:**

| | |
|---|---|
| N-nitrosodiphenylamine | 2.95E-08 |
| bis(2-Ethylhexyl)phthalate | 1.96E-08 |
| 4,4'-DDD | 1.18E-09 |
| 4,4'-DDE | 1.19E-09 |
| Aroclor-1254 | 1.16E-06 |
| Beryllium | 1.74E-13 |




USGS 7.5' Topographic Series: Radford North

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Hampton Roads, VA

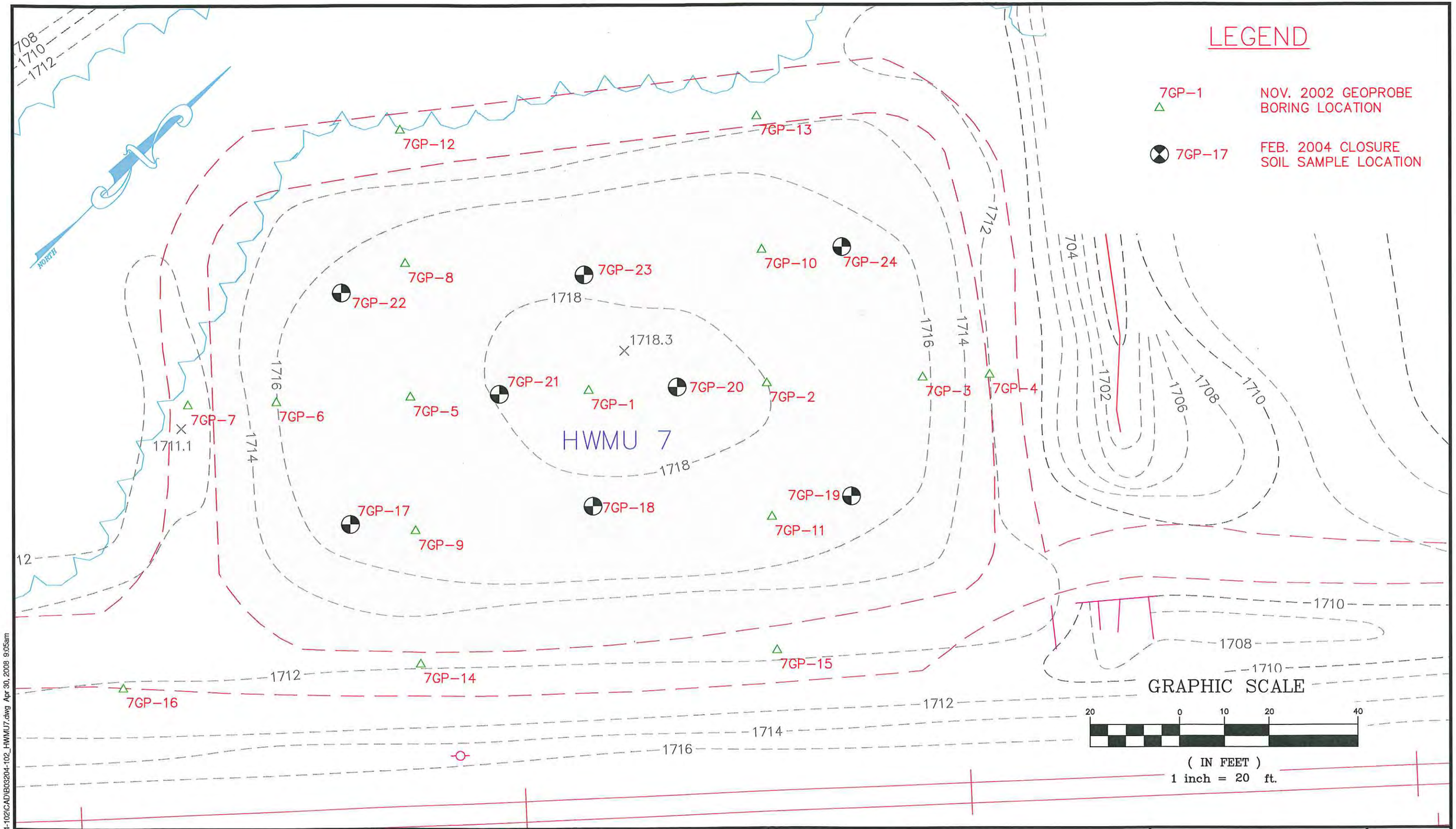
| | |
|---|---|
| DESIGNED | LCL |
| DRAWN | KKD |
| CHECKED | MDL |
| DATE | 08-27-07 |

**Site Location Map**
**Radford Army Ammunition Plant**
**Montgomery County, Virginia**

SCALE 1" = 2000'

PLAN NO. B03204-04

FIGURE 1




P:\B03\200\B03204\B03204-102\CADB03204-102_HWMU7.dwg Apr 30, 2008 9:05am


**Draper Aden Associates**
Engineering ♦ Surveying ♦ Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC

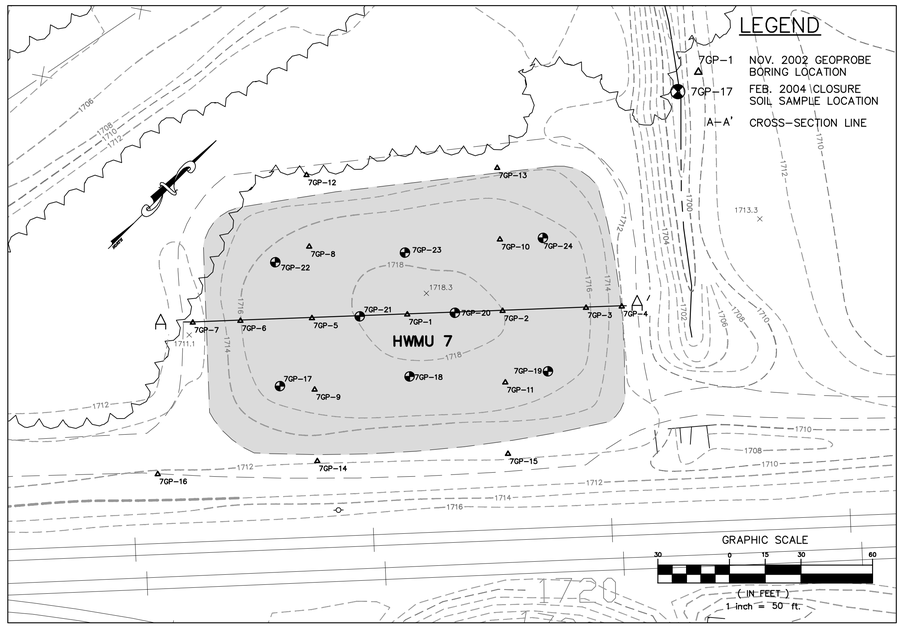

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

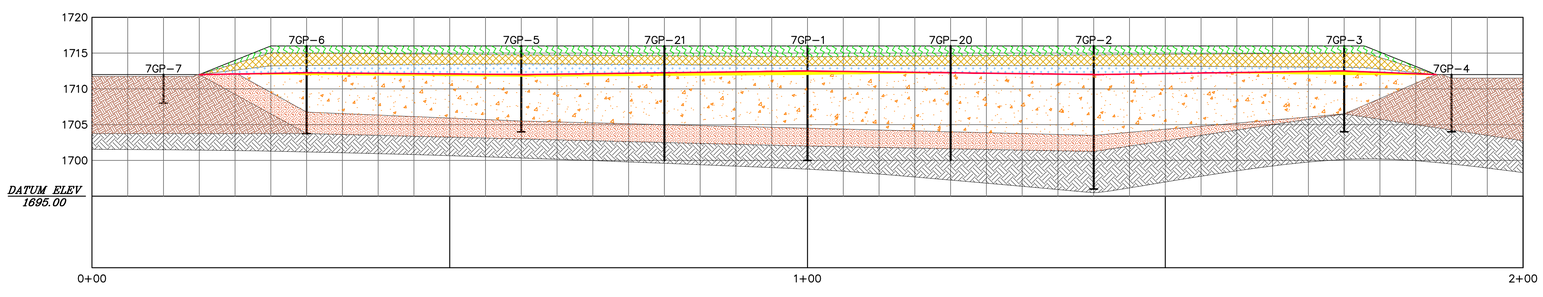
SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 2




HWMU – 7
CROSS–SECTION
A–A'




## LEGEND

- BROWN FINE SILTY SAND (TOPSOIL)
- YELLOW–BROWN FINE TO COARSE SANDY CLAY
- LIGHT GRAY FINE TO COARSE SAND
- 30 MIL. PVC LINER
- YELLOW–BROWN MICACEOUS FINE SILTY SAND
- RESIDUAL MATERIAL FROM CLEAN–UP ACTIVITIES
- RED–BROWN MICACEOUS FINE SANDY CLAY
- BROWN FINE SOIL (NATIVE)
- DARK GRAY FINE SAND AND SILT (NATIVE)

VERTICAL SCALE: 1"= 10'
HORIZONTAL SCALE: 1"= 10'
NO VERTICAL EXAGGERATION

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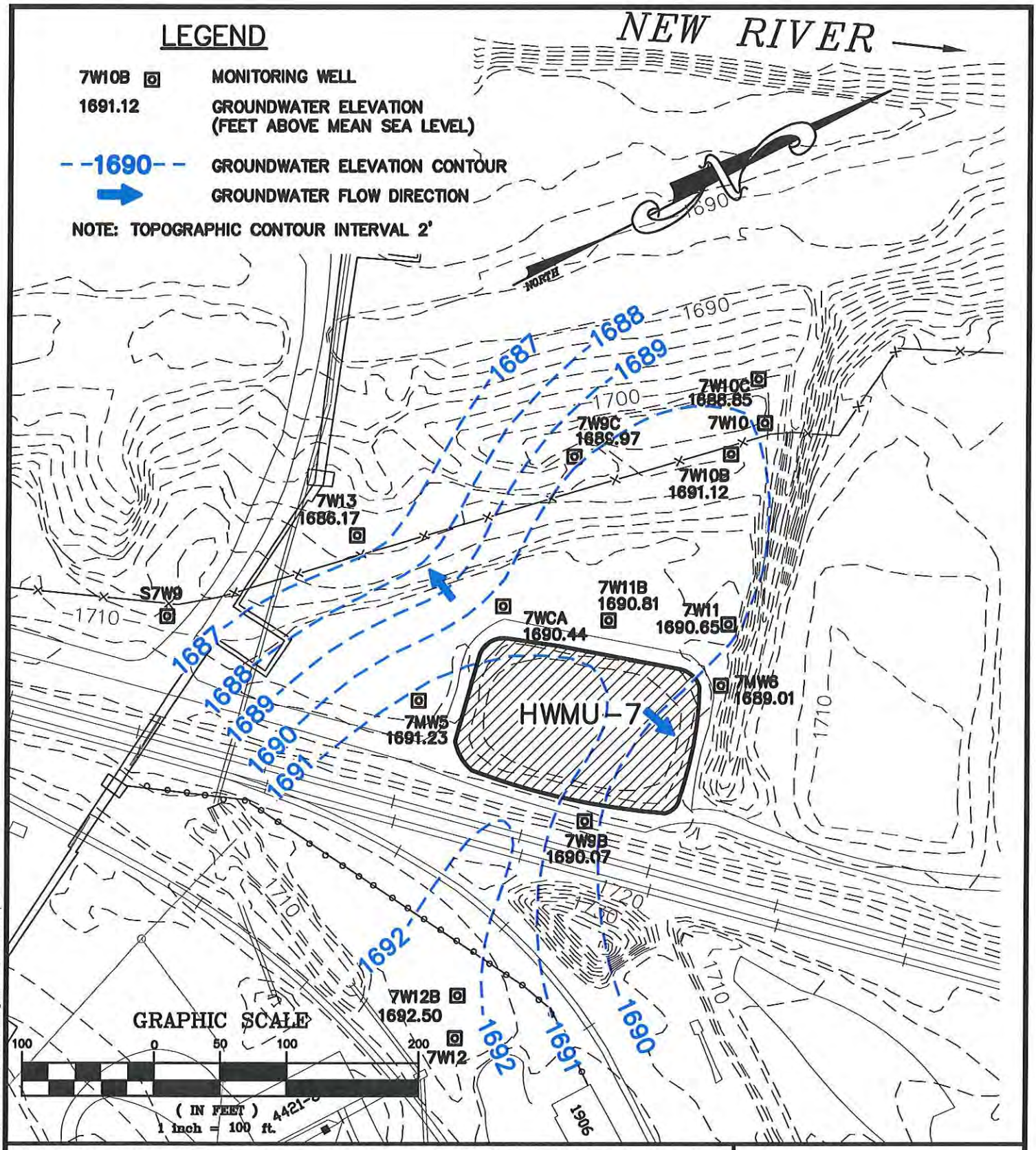
Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC

# CROSS SECTION A - A'
# HAZARDOUS WASTE MANAGEMENT UNITS 5 & 7
# RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS

| | |
|---|---|
| DESIGNED BY: | MAC |
| DRAWN BY: | KKD |
| CHECKED BY: | |
| SCALE: | 1" = 10' |
| DATE: | 02/21/2008 |
| PROJECT NUMBER: | B03204-122 |

FIGURE 3




HWMU-7 POTENTIOMETRIC SURFACE MAP (4TH QUARTER 2011)

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B03204-122


Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DLD |
| CHECKED | SN |
| DATE | 01/31/12 |

FIGURE 4

P:\B03200\B03204\B03204-122\CAD\B03204-122_HWMU-7 4th Quarter.dwg Jan 31, 2012 3:39pm

# CLOSURE PLAN AMENDMENT

**HAZARDOUS WASTE MANAGEMENT UNIT 7**

**RADFORD ARMY AMMUNITION PLANT**
**RADFORD, VIRGINIA**
**EPA ID No. VA1210020730**

**Submitted to:**

Virginia Department of Environmental Quality
Office of Waste Permitting
629 East Main Street
Richmond, Virginia 23219
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**Submitted by:**

Alliant Techsystems Inc.
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**Revised July 26, 2010**

Prepared By:

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DAA Project Number: B03204-122

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Field Investigation Report and Risk Assessment for Hazardous Waste Management Units 5 and 7 (March 2003) (CD-ROM)
Residual Material and Soil Sample Laboratory Analytical Results and Data Validation Reports for HWMUs 5 and 7 – February 2004 Subsurface Investigation (CD-ROM)
Facility-Wide Background Study Report (December 2001) (CD-ROM)
EPA and VDEQ Correspondence Regarding Use of Facility-Wide Background Study Report (2001 – 2004) (CD-ROM)
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Appendix C Excavation Plan (February 2007) (CD-ROM)
Appendix D Example Chain-of-Custody Form (CD-ROM)
Appendix E VDEQ Risk Assessment Guidance (CD-ROM)

# 1.0 INTRODUCTION

## 1.1 PROJECT OVERVIEW

In 1989, Radford Army Ammunition Plant (Radford AAP; EPA ID No. VA1210020730) closed Hazardous Waste Management Unit 7 (HWMU-7) in accordance with the Virginia Department of Environmental Quality (VDEQ) approved Closure Plan for the Unit dated May 1988. HWMU-7 was an unlined holding and neutralization basin that received spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. At the time of closure, HWMU-7 was drained of all liquids, the residual material was treated in-place with flyash and cement kiln dust to achieve a target pH range of 6.3 and 10.5, and the basin was filled with the residual material and stone and capped. Following closure, Radford AAP monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the May 1988 Closure Plan. HWMU-7 was classified as an interim status Unit until the VDEQ issued the ***Post-Closure Permit for Hazardous Waste Management Unit 7*** (effective date October 30, 1999); the VDEQ subsequently revised the October 1999 ***Post-Closure Permit***, and issued the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** (October 4, 2002). From October 1999 to the present, Radford AAP has monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the ***Post-Closure Permits***, as appropriate. In correspondence dated June 14, 2007, the VDEQ modified the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** to change the groundwater monitoring frequency from quarterly to semiannually.

In October and November 2002, Radford AAP conducted subsurface investigations to determine the nature and extent of the residual material contained in closed HWMUs 5 and 7. Radford AAP intended to implement source removal activities in 2003 in support of clean closures for both Units; the results of the subsurface investigations would be used in the preparation of Closure Plan Amendments for both Units. However, the laboratory analytical data collected during the subsurface investigations indicated that the residual material in the Units was not hazardous by characteristic; therefore, Radford AAP chose to pursue clean closure of the Units while leaving the residual material in-place. Radford AAP submitted the results of the subsurface investigations to the VDEQ in the ***Field Investigation Report and Risk Assessment for Units 5 and 7*** (March 2003). In correspondence to Radford AAP dated June 25, 2003, the VDEQ indicated that in order for Radford AAP to continue pursuing clean closure for HWMUs 5 and 7, revised Closure Plans that include procedures and standards for clean closure must be submitted for each Unit. The VDEQ indicated that the revised Closure Plans must be prepared in accordance with the ***Draft Guidance Manual for Closure Plans and Post-Closure Plans*** (***Draft Guidance***) dated September 28, 2001. Closure Plan Amendments for HWMUs 5 and 7 were submitted to VDEQ in June 2007. VDEQ concurred with the Closure Plan Amendment for HWMU-7 and found the information contained therein to be technically adequate in correspondence dated October 31, 2007, with incorporation of VDEQ comments presented in a VDEQ memorandum dated September 14, 2007.

In correspondence dated June 25, 2003, the VDEQ indicated that Radford AAP must sample the soil and liner material (if any) beneath the residual material to determine whether the soil and liner material meet the clean closure standards listed in the ***Draft Guidance***. In February 2004, Radford AAP

conducted subsurface investigations to evaluate the soil and liner material beneath the residual material contained in closed HWMUs 5 and 7. All subsurface investigation activities were conducted in accordance with the June 25, 2003 correspondence and the procedures specified in the Closure Plan Amendment. The analytical results for the February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7.

In March 2010, the VDEQ requested the 2007 Closure Plan Amendment for HWMU-7 be revised to reflect changes made to the groundwater monitoring program since 2007, and to incorporate all soil analytical data collected from the Unit to-date. Radford AAP revised the Closure Plan Amendment for HWMU-7 in accordance with the following:

- *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (*Draft Guidance*) dated September 28, 2001;
- VDEQ correspondence dated June 25, 2003;
- VDEQ Notice of Deficiencies dated June 7, 2004;
- Radford AAP Response to Comments dated September 14, 2004;
- Teleconference between VDEQ and Radford AAP on January 18, 2007;
- VDEQ e-mail correspondence dated January 18, 2007 and January 25, 2007;
- VDEQ memorandum dated September 14, 2007;
- VDEQ correspondence dated October 31, 2007; and
- VDEQ e-mail correspondence dated March 2, 2010, March 9, 2010, and March 10, 2010.

Copies of all correspondence are included in **Appendix A (CD-ROM)**.

This July 2010 Closure Plan Amendment for HWMU-7 supersedes the previous Closure Plan Amendment submitted in June 2007.

## 1.2 PURPOSE AND OBJECTIVE

The purpose of the Closure Plan Amendment is to define the activities that will be performed to demonstrate that HWMU-7 does not contain characteristically hazardous wastes, and does not contain hazardous constituents at concentrations that pose a risk to human health and the environment. Accordingly, the objective of this plan is to perform those activities necessary to demonstrate that the previous closure activities were successful, and that the Unit no longer meets the definition of a hazardous waste unit. Therefore, the act of post-closure monitoring at the Unit will no longer be warranted. The Closure Plan Amendment will provide documentation of all procedures and data gathering efforts necessary to attain clean closure for HWMU-7 in compliance with the Virginia Hazardous Waste Management Regulations (VHWMR), 9 VAC 20-60-12, et seq., and with the requirements of the Resource Conservation and Recovery Act (RCRA) as presented in Title 40 of the Code of Federal Regulations (CFR). With the attainment of clean closure for soil and groundwater, Radford AAP will seek to end the post-closure care period for HWMU-7.

## 2.0 CLOSURE PERFORMANCE STANDARDS

HWMU-7 is a closed hazardous waste surface impoundment. The Closure Performance Standards, as presented in 40 CFR 264.111, specify that the owner/operator of a hazardous waste surface impoundment must close the Unit in a manner that:

(a) Minimizes the need for further maintenance; and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

(c) Complies with the closure requirements of this subpart, including but not limited to the requirements of 40 CFR 264.228.

In 1989, HWMU-7 was closed in accordance with the closure requirements of 40 CFR 264.111 and 264.228. The Unit was closed with residual material left in-place as detailed in the VDEQ-approved Closure Plan dated May 1988. The goal of the Closure Plan Amendment is to provide a means for Radford AAP to achieve clean closure for HWMU-7 thereby ending the post-closure care period for the Unit. Such a process is allowed by 40 CFR 264.117(a)(2), which states:

> "…any time during the post-closure period for a particular unit, the Director may, in accordance with the permit modification procedures in parts 124 and 270:
> (i) Shorten the post-closure care period applicable to the hazardous waste management unit…if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure)."

## 2.1 CLEAN CLOSURE FOR SOIL

During a teleconference between Radford AAP and VDEQ on January 18, 2007 (**Appendix A**), the VDEQ indicated that clean closure may be achieved for HWMU-7 with the residual material remaining in-place if samples of the residual material do not exceed the clean closure standards listed in the VDEQ ***Draft Closure Guidance***. In addition, the VDEQ indicated that the soil and any liner material immediately beneath the residual material must be sampled to determine whether it meets the clean closure standards listed in the ***Draft Guidance***, which include analytical non-detection, comparison to background, and/or risk assessment in accordance with ***"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"*** as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

Based on the January 18, 2007 teleconference, it is Radford AAP's understanding that the residual material remaining in-place in HWMU-7 must meet the clean closure standards for the

Hazardous Constituents of Concern (HCOCs) specified in this Closure Plan Amendment. In order to comply with the clean closure standards, individual samples of the residual material must be analyzed for the HCOCs.

## 2.2 CLEAN CLOSURE FOR GROUNDWATER

The groundwater at HWMU-7 currently is monitored in accordance with the requirements of the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002). In the event that the residual material and underlying soils at HWMU-7 meet the clean closure standards specified by the VDEQ, Radford AAP will attempt to demonstrate clean closure for groundwater at HWMU-7 as well. Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPSs) for the Unit. The GPSs for HWMU-7 are based on USEPA Maximum Contaminant Levels (MCLs) for drinking water or on VDEQ-derived Alternate Concentration Limits (ACLs) for constituents without MCLs. Due to the fact that Radford AAP is an industrial facility with no users of groundwater, comparison of HWMU-7 groundwater data to residential drinking water standards will provide the most conservative assessment of risk. If a groundwater constituent is detected at a concentration that is greater than the GPS, the concentration will be compared to background. HWMU-7 can receive clean closure for groundwater if all constituents are either at or below GPS or, if any constituents are above GPS, at or below background.

Chloroform was detected at low concentrations in upgradient well 7W12B during Third Quarter 2006, Second Quarter 2007, and Second Quarter 2009, in compliance well 7W11B during Third Quarter 2006 and Second Quarter 2009, in compliance well 7MW6 during Second Quarter 2009, and in compliance well 7WCA during Second Quarter 2009. Chloroform was analyzed as part of annual monitoring in accordance with 40 CFR 264 Appendix IX as required by the permit. Historical information regarding operations at HWMU-7 prior to closure indicates that the wastes processed through the Unit did not contain chloroform. Chloroform was not detected in soil samples collected within, under, and around HWMU-7 during field investigations in 2002 and 2004. However, a number of drinking water supply lines are located upgradient of HWMU-7, and some of these lines have been in service since Radford AAP became operational in 1940. Drinking water used at Radford AAP has been monitored for Disinfectant By-Products (DBPs) since 2004 and contains confirmed concentrations of chloroform. Since some of the water lines upgradient of HWMU-7 have been in use for 60 years it is not unusual that chronic leaks have occurred. Based on the age and location of the lines, the documented presence of chloroform in the drinking water, and the lack of chloroform in the wastes processed through the unit, chloroform detected in wells 7W11B and 7W12B is attributable to leakage from the water lines rather than a release from unit HWMU-7. An Alternate Source Demonstration (ASD) for chloroform at HWMU-7 was submitted to VDEQ on January 9, 2007. VDEQ concurred with the ASD in a letter dated June 14, 2007.

Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002) until approvals of clean closure of soil and groundwater at

HWMU-7 have been issued by the DEQ **and contingent upon the condition that the permit language allows a cessation of groundwater monitoring upon approval of clean closure of soils and groundwater**. **A Class 3 modification of the Radford's post-closure care permit would be required to reduce the post-closure period in accordance with 40 CFR § 270.42, Appendix I - Section E.3. In accordance with 40 CFR § 264.120, Certification of post-closure completion statements by Radford AAP (owner/operator) and the independent professional engineer registered in the Commonwealth of Virginia must be submitted to the DEQ for review and approval prior to approval of the closure of the groundwater and soils linked to HWMU #7.**

**The justifiable Class 3 modification is required to shorten the HWMU #7 post-closure period. The Class 3 modification could facilitate the end of the post closure period to coincide with the same date as the DEQ's approval of the soils and groundwater closure of the HWMU #7 portion of the post-closure permit. Alternately, and not requiring a permit modification, the HWMU #7 portion of the permit could be allowed to terminate upon permit expiration if clean closure is approved for soil and groundwater prior to permit expiration.**

In the event that HWMU-7 attains clean closure for soil, but does not attain clean closure for groundwater, Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002). However, clean closure for soil would indicate that the original closure activities conducted in 1989 were clearly successful and that the residual material left in-place does not represent hazardous waste. Therefore, corrective action in the form of source removal would have occurred with the closure activities conducted in 1989. In accordance with 40 CFR 264.100(f), Radford AAP proposes that groundwater monitoring at HWMU-7 would cease in the event that the GPSs are not exceeded for a period of three (3) consecutive years following the attainment of clean closure for soil.

## 2.3 CLOSED IN-PLACE

In the unlikely event that HWMU-7 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the Unit will remain in post-closure care in accordance with the *Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16* (October 4, 2002). Radford AAP will retain the option to demonstrate clean closure in the future by excavation and removal of the residual material.

## 3.0 RADFORD AAP FACILITY DESCRIPTION

### 3.1 LOCATION

The Radford AAP is located in the mountains of southwestern Virginia within Pulaski and Montgomery Counties. The installation consists of two noncontiguous areas - the Radford Unit (or Main Section) and the New River Ammunition Storage Area Unit. The Main Section is located approximately 4 miles northeast of the city of Radford, approximately 10 miles west of Blacksburg, and 47 miles southwest of Roanoke, Virginia. The New River Unit is located approximately 6 miles west of the Main Section, near the town of Dublin, Virginia. All uses of the terms "Radford AAP" or "the Facility" in this document refer to the Main Section only.

The Radford AAP is situated in one of a series of narrow valleys typical of the Valley and Ridge physiographic province of the Appalachian Highland Region of North America. Oriented in a northeast-southwest direction, the valley is approximately 25 miles long. The valley has a width of approximately eight miles at the southwest end and narrows to approximately two miles at the northeast end. The Radford AAP lies along the New River in the relatively narrow northeast corner of the valley. The maximum elevation at Radford AAP is 2,225 feet above mean sea level (msl) in the southeast corner and the minimum elevation is approximately 1,675 feet above msl along the New River at the northern property boundary.

The Radford AAP is divided by the New River into two areas (**Figure 1**). The southern area, which comprises approximately two-thirds of Radford AAP, is called the "Main Plant Area." The remaining northern one-third section is called the "Horseshoe Area," and is located within the meander of the New River. The entire Radford AAP is secured by artificial barriers to prevent unknowing or unauthorized entry. The Facility perimeter is surrounded by a six-foot chain link fence with three-strand barbed wire top guard. The access gates and perimeter fencing at the Radford AAP are posted with no trespassing signs. The signs are posted in sufficient number so as to be seen from any approach to the restricted portions of the property.

Forty three (43) Solid Waste Management Units (SWMUs) and eight (8) HWMUs are located in both the Main Plant Area and the Horseshoe Area (**Figure 2**). This ***Amended Closure Plan*** is specifically for HWMU-7. As shown on **Figure 2**, HWMU-7 is located in the Main Plant Area.

### 3.2 HISTORY

The Radford AAP is a government-owned, contractor-operated (GOCO) military industrial installation supplying solvent and solventless propellant grains and trinitrotoluene (TNT) explosives. From its inception as a GOCO installation in 1940 until 1995, the Radford AAP was operated by Hercules Incorporated. On March 6, 1995, Alliant Techsystems, Inc. bought Hercules Incorporated and took over operation of the Radford AAP.

Construction of the Radford AAP production facility began in 1940 with the impending participation of the United States in World War II, and the determination by Congress of a need for increased ammunition production facilities. Initially, Radford AAP consisted of two distinct

areas - a smokeless-powder plant (Radford Ordnance Works [ROW]) and a bag-manufacturing and loading plant for artillery, cannon, and mortar projectiles (New River Ordnance Works [NROW]). These two production facilities were operated separately from 1940 to 1945. Late in 1945, ROW was designated as the Radford Arsenal, and NROW was designated as a subpost. By January 1950, NROW was made an integral part of the Radford Arsenal and no longer considered a subpost. The arsenal was renamed Radford Ordnance Plant in 1961 and was finally redesignated as the Radford AAP in August 1963 (U.S. Army Toxic and Hazardous Materials Agency [USATHAMA], 1984).

Expansion of both ROW and NROW continued throughout World War II. Late in 1945, the Radford Unit was placed on standby status. The following year, the nitric acid area of the plant was reactivated to produce ammonium nitrate fertilizer, an activity that continued until 1949 under contract with Hercules Powder Company (later Hercules Incorporated). In September 1945, the NROW was declared surplus; but in April 1946, the magazine areas were changed from surplus to standby status. Between December 1946 and January 1948, large parcels of the NROW plant manufacturing area were sold (USATHAMA, 1984). These parcels were excess land holdings that had never been used for production purposes.

Between 1952 and 1958, Goodyear Aircraft Corporation of Akron, Ohio was contracted to manufacture component parts used in missile production at the Radford AAP. The close coordination required between Goodyear and Hercules resulted in Goodyear moving its assembly and coating operations to Radford AAP. In 1958, Hercules took over the Goodyear operations at the Plant (USATHAMA, 1984). Since 1968, Radford AAP has produced TNT on an intermittent basis.

## 3.3 RESPONSIBILITY

Based on discussions with Facility personnel, the general responsibilities assigned to the Radford AAP have not changed from those outlined by USATHAMA (1976). These include:

- Manufacturing of explosives and propellants;
- Handling and storage of strategic and critical materials as directed for other government agencies;
- Operation and maintenance, as directed, of active facilities in support of current operations. Maintenance and/or lay-away, in accordance with Ammunition Procurement and Supply Agency instructions, of standby facilities, including any machinery and packaged lines received from industry, in such conditions as will permit rehabilitation and resumption of production within the time limitations prescribed;
- Receipt, surveillance, maintenance, renovation, demilitarization, salvage, storage, and issue of assigned Field Service Stock and industrial stock as required or directed;

- Procurement, receipt, storage, and issue of necessary supplies, equipment, components, and essential materials;

- Mobilization planning, including review and revision of plant as required;

- Custodial maintenance and administrative functions of subinstallations; and

- Support services for tenants.

These responsibilities are met through the efforts of the operating contractor, Alliant Techsystems Inc. The Administrative Contracting Officer (ACO) and his staff provide technical assistance and administer the contracts with the civilian operating contractors. Radford AAP provides logistics support for tenant activities such as the U.S. Army Research, Development and Acquisition Information Systems Agency, (USARDAISA) which is charged with performing data processing activities during peacetime.

## 3.4 INDUSTRIAL OPERATIONS

From 1941 to the present, the principal end-products produced at Radford AAP have been single-base and multi-base propellants, and cast and solventless propellants. In the manufacture of these products, oleum (concentrated sulfuric acid), nitric acid, nitroglycerine (NG), and nitrocellulose are used. Since 1968, Radford AAP has produced TNT on an intermittent basis.

HWMU-7 is a former unlined holding and neutralization basin associated with the management and treatment of spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water.

# 4.0 HAZARDOUS WASTE MANAGEMENT UNIT 7

## 4.1 UNIT DESCRIPTION

HWMU-7 is a former unlined holding and neutralization basin located on the floodplain of the New River. The location of HWMU-7 is 37°11'12" N latitude and 80°33'15" W longitude. A Site Plan for HWMU-7 is illustrated in **Figure 3**. Intermittent drainages are located to the north and south of the Unit, and the New River is located approximately 225 feet to the west of the Unit.

When HWMU-7 was in operation, the impoundment measured approximately 90 feet wide by 160 feet long by 12 feet deep (side slope at 2:1). The resulting maximum capacity of the Unit was 566,131 gallons (75,685 cubic feet or 2,803 cubic yards). The closed HWMU-7 consists of a mound measuring approximately 90 feet wide by 160 feet long by 7 feet high, with a bottom elevation of approximately 1,711.1 feet above msl and a top elevation of approximately 1,718.3 feet above msl. The closed HWMU-7 is capped with a composite liner consisting of (from top to bottom):

- vegetative cover;
- 1 foot to 1.5 feet of topsoil;
- 1.25 feet to 2 feet of clay;
- 0.5 foot to 1.5 feet of sand (drainage layer; $10^{-3}$ cm/sec permeability); and
- a 30-mil PVC membrane liner.

The 30-mil PVC membrane liner is underlain by the neutralized residual material. The residual material in turn is underlain by a clay liner ranging in thickness from 1.75 feet to 3 feet throughout most of the Unit. At the northern end of the Unit, the neutralized residual material is underlain by native soils.

## 4.2 UNIT HISTORY

### 4.2.1 Operational History

HWMU-7 was put into operation in 1972. During operation, influent into HWMU-7 included spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. The wastes were characteristically hazardous as corrosive (EPA I.D. No. S04). The acidic waste waters were both nitric ($NO_3$) and sulfuric ($SO_4$) in origin with a pH ranging from 1.5 to 1.6 and a dominant constituent of mixed acids. The waste caustics were also corrosive in characteristic (pH >12.5), resulting in a similar EPA designation of D002. The dominant constituent of the caustic wastes was sodium hydroxide. The relative abundance of both waste streams was less than 1 percent. As the primary function of the Unit was to neutralize high and low pH influents, the Unit could be interpreted to meet the criteria of a T31 – Neutralization treatment unit under the RCRA Treatment, Storage and Disposal (TSD) Handling Codes designation system.

During a hydrographic survey conducted in December 1984, the thickness of accumulated sediments (primarily residues of lime precipitation) in HWMU-7 was measured at approximately 5 feet. According to Radford AAP personnel, no waste stream from the NC-line was ever discharged to HWMU-7. Therefore, no reactive wastes were likely present in HWMU-7. According to EP toxicity analyses conducted on the lagoon influent water and sediment, several heavy metals were detected in low concentrations (i.e., nonhazardous). The pH of the lagoon water was 11.4 when the analysis was conducted, which was also classified as nonhazardous. However, as the pH of the lagoon's influent was known to fluctuate (below 2.0 and above 12.5), the wastewater was classified as a corrosive substance. The results of the EP toxicity analysis conducted on the lagoon water and sediment are presented below. The samples collected from the lagoon water and sediment indicate that heavy metals were not present in concentrations that would classify the wastes as hazardous.

| EP Toxicity Parameter | Lagoon Water Concentration | Sediment Concentration |
|---|---|---|
| pH | 11.4 s.u. | ND |
| Arsenic | ND | ND |
| Barium | ND | 0.33 mg/l |
| Cadmium | 0.016 mg/l | 0.027 mg/l |
| Chromium | ND | 0.73 mg/l |
| Lead | ND | 0.58 mg/l |
| Mercury | ND | ND |
| Selenium | ND | ND |
| Silver | ND | 0.027 mg/l |

ND: Non-detect.

### 4.2.2 Unit Closure and Post-Closure Care

Radford AAP ceased operation of HWMU-7 in 1986 and closed the Unit in 1989 in accordance with the VDEQ-approved Closure Plan dated May 1988. At the time of closure, HWMU-7 was drained of all waters, the residual material was treated in-place with flyash and cement kiln dust to achieve a target pH range of 6.3 and 10.5, and the basin was filled with the residual material and stone and capped. No waste has been processed through HWMU-7 since it was closed. A copy of the May 1988 Closure Plan and the certification of closure are included (on CD-ROM) in **Appendix B**.

The May 1988 Closure Plan (**Appendix B**) documents the closure performance standards, environmental assessment of closure methods, and justifications of in-place closure that were used for HWMUs 5, 7, and 16. The four major sections of the May 1988 Closure Plan are discussed below:

**Waste Characterization/Maximum Waste Inventory** – Includes physical descriptions of HWMUs 5, 7, and 16, along with detailed descriptions of each Unit's functions.

**Construction Procedure** – Details basic closure construction procedures and the methods by which wastes and contaminated soils were handled during closure construction. Additional specific or unique information regarding site preparation, demolition cleanup, soil treatment, soil sampling and soil sample analysis is included.

**Soil Treatment** – Includes special instructions for soil treatment prior to and during closure. Presents the two objectives of the soil treatment program: 1) to neutralize acidic sediments and soils, and 2) to solidify soft subsoils for greater manageability. The objectives were accomplished by using pH as a guide for acidity, and by testing compressive strength. Also describes procedures including but not limited to: cover system analysis, drain installation, backfill, grading, drainage control, performance evaluation, and certification of closure.

**Post-Closure Care and Groundwater Monitoring** – Presents basic procedures for groundwater monitoring, inspections, maintenance, and contingency activities for the Units. Also includes engineering specifications for construction procedures, standards to be used, testing requirements, construction submittals, materials to be used, quality controls, unsatisfactory materials, and specific special construction instructions.

Certifications of closure for HWMUs 5, 7, and 16 were submitted to the VDEQ in letters dated October 26, 1989 and January 4, 1990. Following closure, Radford AAP monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the May 1988 Closure Plan. HWMU-7 was classified as an interim status Unit until the VDEQ issued the *Post-Closure Permit for Hazardous Waste Management Unit 7* (effective date October 30, 1999); the VDEQ subsequently revised the October 1999 *Post-Closure Permit*, and issued the *Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16* (October 4, 2002). Since 1999, Radford AAP has monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the *Post-Closure Permits*, as appropriate.

### 4.2.3 October/November 2002 Field Investigation

In October and November 2002, Radford AAP conducted subsurface investigations to determine the nature and extent of the residual material contained in closed HWMUs 5 and 7. Radford AAP intended to implement source removal activities in 2003 in support of clean closures for both Units; the results of the subsurface investigations would be used in the preparation of amended Closure Plans for both Units. Samples of the residual material within and the soil surrounding the Units were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds and for the USEPA Target Compound List (TCL) organic compounds. In addition, composite samples of the residual material for both Units were submitted for waste characterization analysis in accordance with 40 CFR 261 Subpart C – Characteristics of Hazardous Waste.

A summary of the hazardous TAL inorganic constituents and the TCL organic constituents detected in the soil and residual material samples from HWMU-7 during the October/November 2002 Field Investigation is presented in **Table 1**. As shown in **Table 1**, only TAL inorganic constituents were detected in the samples of the residual material; no TCL organic constituents were detected in any of the residual material samples. Three TCL organic constituents were detected in the base clay and native soil beneath the residual material. The waste characterization analytical results for the composite sample of residual material from HWMU-7 indicated that the residual material was not hazardous by characteristic. Based on the

analytical results for the soil and residual material samples, Radford AAP chose to pursue clean closure of HWMU-7 while leaving the residual material in-place. Radford AAP submitted the results of the subsurface investigations and risk assessment to the VDEQ in the *Field Investigation Report and Risk Assessment for Units 5 and 7* (March 2003). A copy of the March 2003 *Field Investigation Report* is included (on CD-ROM) in **Appendix B**.

### 4.2.4 February 2004 Subsurface Investigation

In correspondence dated June 25, 2003, the VDEQ indicated that Radford AAP must sample the soil and liner material (if any) beneath the residual material to determine whether the soil and liner material met the clean closure standards listed in the VDEQ *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (*Draft Guidance*). In February 2004, Radford AAP conducted subsurface investigations to evaluate the soil and liner material beneath the residual material contained in closed HWMU-7. Subsurface investigation activities were conducted in general accordance with the June 25, 2003 correspondence and the procedures specified in the Closure Plan Amendment.

A summary of the hazardous TAL inorganic constituents and the TCL organic constituents detected in the February 2004 soil samples is presented in **Table 1** along with the data from the October/November 2002 Field Investigation. Each of the February 2004 soil samples was collected at depths greater than six inches beneath the bottom of the residual material contained within HWMU-7. As shown in **Table 1**, 11 hazardous TAL inorganic constituents and 4 TCL organic constituents were detected in the bottom clay liner and native soil samples collected during the February 2004 subsurface investigation. The laboratory analytical data and data validation reports for the February 2004 soil samples are presented (on CD-ROM) in **Appendix B**. The analytical results for February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7. The analytical results for the February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7.

## 5.0 OVERVIEW OF CLOSURE PROCEDURES

The Closure Plan Amendment presents the procedures for collection and evaluation of additional data that will be used to demonstrate clean closure for HWMU-7 in compliance with the VDEQ correspondence (**Appendix A**), and with the Virginia Hazardous Waste Management Regulations (VHWMR) and RCRA as presented in 40 CFR Part 264.

The Closure Plan Amendment *Plan* includes the following options for closure:

Option 1: Clean closure with the residual material remaining in-place can be successfully demonstrated in accordance with the clean closure standards.

Option 2: Clean closure cannot be achieved with the residual material remaining in-place. The Unit will remain closed with the residual material in-place in accordance with the VDEQ-approved May 1988 Closure Plan, and the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). Radford AAP will retain the option to attempt to demonstrate clean closure in the future by excavation and removal of the residual material.

Option 3: Clean closure cannot be achieved with the residual material remaining in-place. The residual material will be excavated and transported off-site for disposal. Composite sample(s) of the excavated material will be submitted for waste characterization analyses to determine the proper disposal method (hazardous vs. non-hazardous). Following excavation, confirmation samples will be collected to document sufficient removal of residual material. The procedures and criteria that will be used to document clean closure by removal are defined in Section 5.4 of this plan. Should the material in the Unit be excavated and disposed of, the work will be performed in accordance with the Excavation Plan, which is included in **Appendix C (CD-ROM)**.

The closure plan may be amended in the future at the request of Radford AAP in accordance with 40 CFR 264.112.

## 5.1 HAZARDOUS CONSTITUENTS OF CONCERN (HCOC)

The HCOC list for HWMU-7 will be developed based on the following:

a. The results of analyses of lagoon water and sediment in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 3 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents, and as proposed by the VDEQ in March 2010; and

c. Hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation and the subsequent 2004 subsurface investigation.

The HCOCs will be used to determine whether the soil and liner material beneath the Unit meet the clean closure standards listed in the VDEQ *Draft Guidance*.

In 1981, analyses of lagoon water and sediment collected from HWMU-7 indicated the presence of inorganic constituents at concentrations below levels defined as hazardous by the EP Toxicity test. Specifically, cadmium was detected in the lagoon water sample at a concentration of 0.016 mg/l; no other inorganic constituents were detected in the lagoon water sample. Barium, cadmium, chromium, lead, and silver were detected in the sediment sample at concentrations of 0.33 mg/l, 0.027 mg/l, 0.73 mg/l, 0.58 mg/l, and 0.027 mg/l, respectively. In addition, the sediment sample was analyzed for arsenic, mercury, and selenium; concentrations of these constituents were not detected in the sediment sample.

In correspondence dated June 14, 2007, the VDEQ modified the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** to change the groundwater monitoring frequency from quarterly to semiannually. In March 2010, the VDEQ proposed revisions to the quarterly (now semiannual) groundwater monitoring list for HWMU-7 presented in Appendix E of Permit Attachment 3 of the Final Permit. As revised by the VDEQ, the semiannual groundwater monitoring list for HWMU-7 consists of the following constituents:

| | | |
|---|---|---|
| Arsenic, total | Copper, total | Thallium, total |
| Barium, total | Lead, total | Bis (2-ethylhexyl) phthalate |
| Cadmium, total | Nickel, total | 2,4-Dinitrotoluene |
| Chromium, total | Selenium, total | 2,6-Dinitrotoluene |
| Cobalt, total | Silver, total | Cyanide, total |

During the 2002 Field Investigation at HWMU-7, samples of the residual material and surrounding soils were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds, and for the USEPA Target Compound List (TCL) organic compounds. The following hazardous constituents (as listed in 40 CFR Part 261 Appendix VIII) were detected in the samples:

| | | | |
|---|---|---|---|
| Arsenic | Chromium | Cyanide | N-Nitrosodiphenylamine |
| Barium | Lead | 4,4-DDD | |
| Beryllium | Nickel | 4,4-DDE | |

During the February 2004 subsurface investigation at HWMU-7, samples of the soil and liner material beneath the residual material were analyzed for the TAL inorganic compounds and for the TAL organic compounds. Two additional TCL organic compounds (toluene and Aroclor-1254) were detected during the February 2004 subsurface investigation and added to the HCOC list for the Unit. The analytical results for the February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7.

**The HCOC list for HWMU-7 is included as Table 2.**

Interpretation of the VDEQ *Draft Closure Guidance* indicates that Radford AAP need only analyze for the HCOC list. In an effort to remain consistent with the detection requirements of the facility-wide federal RCRA Corrective Action Permit, Radford AAP proposes to sample for a list of constituents (the TAL/TCL list) that includes the HCOCs for this Unit. In doing so, Radford AAP is demonstrating their pro-active and conservative approach to environmental compliance. Radford AAP realizes that if additional constituents detected using this expanded list of constituents are not represented on the proposed HCOC list (which contains all previously detected compounds), Radford AAP may prepare a demonstration to show that their presence is due to an alternate source or laboratory contamination. Alternatively, Radford AAP will be required to add those detected constituents to the HCOC list for the Unit. This "belt and suspenders" approach provides a level of protection that far exceeds the minimum requirements of the closure process.

## 5.2 SOIL SAMPLE COLLECTION AND ANALYSIS

In the June 25, 2003 correspondence, the VDEQ indicated that Radford AAP must sample the soil and liner material (if any) beneath the residual material to determine whether the soil and liner material meet the clean closure standards listed in the *Draft Guidance*. In accordance with this Closure Plan Amendment and VDEQ June 25, 2003 correspondence, a total of eight (8) soil samples were collected from the native soils and clay liner immediately beneath the residual material in February 2004. To facilitate soil sample collection, eight (8) soil borings were advanced through the clay liner beneath HWMU-7 and into the underlying native soils using a track-mounted Geoprobe® rig. The soil samples were submitted for laboratory analysis for the TAL inorganic compounds and for the TCL organic compounds.

Data validation was conducted using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes – Physical and Chemical Methods, USEPA SW-846, 3rd Edition – Final Update I, II/IIA, and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). Analytical results for the February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7.

## 5.3 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

In correspondence dated June 14, 2007, the VDEQ modified the *Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16* to change the groundwater monitoring frequency from quarterly to semiannually. The groundwater at HWMU-7 is sampled in accordance with the procedures specified in the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002).

## 5.4 CLEAN CLOSURE EVALUATION

### 5.4.1 Residual Material

In order for Radford AAP to achieve clean closure of HWMU-7 with the residual material remaining in-place, the VDEQ indicated that Radford AAP must demonstrate that the residual material does not exceed the clean closure standards. Because of possible mixing, the top six inches of clay or native soil directly underneath the residual material will be included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material will be included with the residual material. Therefore, closure procedures addressing the residual material must included all materials from six inches beneath to six inches above the residual material.

The 2002 Field Investigation serves as a previous study for the purpose of providing generator knowledge regarding the residual material contained in the Unit. The results of the October/November 2002 Field Investigation indicated only 16 TAL inorganic constituents were detected in the residual material samples; no TCL organic constituents were detected in the residual material samples. The results of the 2002 Field Investigation will be used to assist with the development of the HCOC list for the Unit. Additionally, the samples collected in the 2002 Field Investigation may be used to support the Clean Closure Demonstration to the extent possible.

If excavation of the Unit is planned, composite samples will be analyzed by TCLP to demonstrate compliance with the land disposal (LDR) treatment standards specified in 40 CFR 268 Subpart D.

### 5.4.2 Soil Samples

As stated in Section 5.2, eight (8) soil samples were collected from the native soils and clay liner immediately beneath the residual material in February 2004; the analytical results for these soil samples will be presented and evaluated in the Closure Report for HWMU-7. In the event that the soil sample analytical results indicate non-detection for all HCOCs, the clay liner and native soils beneath HWMU-7 will be considered to meet the clean closure decontamination standard. In the event that HCOCs are detected in the soil samples, Radford AAP may demonstrate clean closure by either: 1) statistical comparison of the soil sample HCOC concentrations to the background HCOC concentrations or 2) a risk assessment evaluation of the HCOCs present in the soil samples.

Detected inorganic HCOCs will be compared to the inorganic constituent background values established during the August/September 2001 Facility-Wide Background Study conducted by the IT Corporation (**Appendix B**). No TCL organic compounds were detected in the background soil samples collected during the August/September 2001 Facility-Wide Background Study; therefore, comparisons to background concentrations will not be possible for any organic HCOCs detected in the clay liner and native soils beneath HWMU-7.

Clean closure of the clay liner and native soils beneath HWMU-7 may be demonstrated by a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of soil samples to background levels. In this way, Radford AAP may attempt to demonstrate that the concentrations of HCOCs detected in the clay liner and native soils do not pose an unacceptable level of risk to human health and the environment. The risk assessment will be conducted in accordance with the VDEQ documents titled *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

### 5.4.3 Groundwater

Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPSs) for the Unit. If a groundwater constituent is detected at a concentration that is greater than the GPS, the concentration will be compared to background. HWMU-7 can receive clean closure for groundwater if all constituents are either below GPS or, if any constituents are above GPS, below background.

## 6.0 CLOSURE SAMPLING AND ANALYSIS PLAN–SOIL

In the June 25, 2003 correspondence (**Appendix A**), the VDEQ indicated that the soil and any liner material immediately beneath the residual material must be sampled to determine whether it meets the clean closure standards listed in the *Draft Guidance*. The residual material in HWMU-7 is underlain by a clay liner ranging in thickness from 1.75 feet to 3 feet throughout most of the Unit. At the northern end of the Unit, the residual material is underlain by native soils.

This Closure Sampling and Analysis Plan (SAP) for soil samples has been developed to ensure high quality of the sampling results, to verify the analytical results, and to assess any analytical error. This SAP is consistent with USEPA SW-846 (Test Methods for Evaluating Solid Waste, 3rd Edition, November 1986, as updated). All procedures detailed in this SAP will be followed when soil sampling occurs.

### 6.1 SOIL SAMPLE COLLECTION PROCEDURES

In order to meet the requirements of the VDEQ and in accordance with the Closure Plan Amendment, a total of eight (8) soil samples were collected from the native soils and clay liner immediately beneath the residual material in February 2004. To facilitate soil sample collection, eight (8) soil borings were advanced through the clay liner beneath HWMU-7 and into the underlying native soils. The boring locations are illustrated in **Figure 4**. A stratified grid-based sampling approach was used to accurately characterize the horizontal and vertical extent of the residual material. Eight sample locations were evenly spaced across the Unit to provide a representative evaluation of the entire Unit. Results of the soil sampling event conducted in February 2004 will be included in the Closure Report for HWMU-7.

The soil borings were advanced using a track-mounted Geoprobe® rig. The Geoprobe® system utilizes direct-push technology to facilitate sample collection. At each boring location, soil core samples were collected continuously using a four-foot long, 1.5-inch diameter piston-type sampler. Each soil core sample was collected and retained in a non-reactive acetate liner within the four-foot sampler. Following sample collection, the acetate liner was split longitudinally to expose the soil core, which was visually inspected and classified in the field by a geologist. Visual observation allowed for the differentiation between residual material, the clay liner, and native soils. The depth below ground surface of the contact between the residual material, clay liner, and native soils was recorded for each boring and plotted on a map using in-field triangulation with a known point. Schematic cross sections of the Unit were compiled from the data. As the sample collection device passed through the residual material, bottom liner, and subsoils, there was potential for cross-contamination from the residual material to the subsoils. Therefore, subsoil samples were collected from the undisturbed center of the cores to minimize potential cross-contamination.

A total of eight (8) soil samples were collected from the native soils and clay liner encountered in the eight (8) soil borings. The soil samples were submitted for laboratory analysis for the TAL inorganic compounds and for the TCL organic compounds. The laboratory analytical results were subjected to Level IV data validation.

In order to achieve clean closure, the facility must meet one of the decontamination standards in accordance with Section 3.13 of the VDEQ *Guidance Manual for Closure Plans and Post-Closure Plans for Hazardous Waste Management Facilities*. The decontamination standards are as follows:

1. **Analytical Non-Detection** – The concentrations of HCOCs in the compliance samples are below the method detection limits (MDLs) for the analytical test methods presented in Section 6.7.

2. **Comparison to Background Levels using Statistical Methods** – The concentrations of HCOCs in the compliance samples are below or not statistically different from the background sample levels using the appropriate statistical methods and performance standards specified in VDEQ guidance.

3. **Risk Assessment Standards and Criteria** – The concentrations of the HCOCs in the compliance samples are at levels that meet the acceptable risk-based performance standards (i.e., the HCOCs do not pose an unacceptable risk to human health or the environment) using the *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

As an alternative, if clean closure standards are not met, Radford AAP may choose to excavate and dispose of the material within the Unit in accordance with Section 3.15.1 of the VDEQ *Draft Closure Guidance*. Should the material be excavated and disposed, the work will be performed in accordance with the Excavation Plan, which is included on CD-ROM in **Appendix C**.

### 6.1.1 Sample Containers and Preservation

Soil sample containers consisted of pre-cleaned, 16-ounce, glass jars equipped with Teflon-lined lids. The containers were prepared prior to sampling by the contract laboratory in accordance with the procedures for appropriate analytical method as specified in SW-846. After collection, the soil samples were placed in a cooler chilled to approximately $4^{o}$ C and sealed with a custody seal for shipment to the analytical laboratory under chain-of-custody.

All soil sample containers were packed in a cooler chilled to approximately $4^{o}$ C with ice as soon as they were collected. Upon the completion of activities at the Unit, the coolers were packed with additional ice and sealed with a custody seal for transport to the contract laboratory. The samples were shipped to the laboratory by common carrier.

### 6.1.2 Sample Label and Seal

Each sample was assigned a unique identification number. The sample identification number included symbols/numbers to indicate the following information:

- the name of the Facility,
- the name of the closure Unit from which the sample is collected,
- the depth from which the sample is collected, and
- the laboratory analyses associated with the sample.

The sample labels displayed the sample identification number, the sampling date and time, the initials of the sampler, the preservative(s) used (if any), and the type of analytical test. All sample containers were labeled in advance of or at the time of sampling. The sample information was printed on the label in a legible manner. The identification on the label, as described above, was sufficient to enable cross reference with the analytical laboratory logbook.

Labels were affixed to sample containers prior to or at the time of sampling and were filled out at the time of collection.

Before the sample was packed into the sample shipping container, or before the sample left the custody of sampling personnel, a sample custody seal was affixed over the lid/cap of the sample container in a manner that it is necessary to break the seal to open the sample container. The seal included the following information:

- Sample identification number (this number must be identical with the number on the sample label).
- Name of sampler.
- Date and time of sampling.

All entries were printed in waterproof ink.

### 6.1.3 Sample Packaging and Shipping

Sample packaging and shipping complied with the U.S. Postal Service regulations, Department of Transportation regulations, Virginia regulations governing transportation of hazardous materials, if applicable, and USEPA SW-846 (Chapter 9).

When the sample containers were shipped to the laboratory, a minimum of two custody seals were placed on the shipping container in such a way that the shipping containers could not be opened in transport without breaking the seal. In addition, the shipping sample containers were sealed with strapping tape in a manner that the shipping container could not be opened without cutting through the tape.

In the event that final receipt by the laboratory of any shipping container or sample bottle indicated evidence of compromised sample integrity, the laboratory QA/QC officer or his/her representative would have notified the operator within 24 hours of receipt. Subsequent to

notification, sample integrity would have been evaluated and appropriate actions would have been taken to assure representative samples. Sample integrity determinations and needs for additional actions would have been conducted, if necessary, according to QA/QC guidance from USEPA SW-846. Resampling would have been conducted if determined necessary.

## 6.2 FIELD DOCUMENTATION

Sampling events that occurred during the closure activities were recorded in a field notebook. All pertinent sampling and field survey information were recorded in the logbook. All logs are kept in a waterproof, bound notebook with numbered pages. All entries were printed in waterproof ink. No pages were or will be removed. Corrections were made, where necessary, by drawing a single line through the incorrect data and initializing and dating the correction that was made to the side of the error. Entries in the logbook contain at a minimum the following information:

- Location of sampling point.
- Name and address of field contact.
- Type of sample (i.e., soil).
- Number and volume of samples taken.
- Purpose of sampling (i.e., closure activities).
- Description of sampling point and sampling methodology.
- Date and time of collection.
- Parameters for analysis.
- Sample identification number.
- Sample distribution and transport method (i.e., name of laboratory, name of courier).
- Field observations.
- Any field measurements taken (i.e., pH, conductivity).
- Appearance of the samples.
- Relevant field conditions.
- Signatures of personnel responsible for observations.

## 6.3 CHAIN-OF-CUSTODY DOCUMENTATION

The soil sampling program incorporates a chain-of-custody program to track the route and handlers of the soil samples. The monitoring of sample possession from field sampling to laboratory analysis is important in the event that unexpected lab results occur and the security of transportation is evaluated. This documentation contains several records and logs that assist in the quality control of the program.

The chain-of-custody record was filled out for the Unit and accompanied the samples to the contract laboratory. The completed form was returned to Radford AAP with the analyses for each Unit. An example chain-of-custody form is included on CD-ROM in **Appendix D**. The sample possession was established from time of collection to the time of analysis. This record contains the following information:

- Sample identification and location.
- Signature of sampler.
- Date and time of sampling.
- Sample type.
- Well identification.
- Number of containers.
- Required analysis.
- Signatures of person(s) involved in possession.
- Times and dates of possession.
- Method of transportation.
- Statement for packing on ice.
- Temperature during shipment (minimum and maximum).
- Internal temperature upon arrival at laboratory.

The chain-of-custody form was forwarded to the laboratory with the samples. As a precaution against this record being lost or altered, the sampling personnel retained a copy of the chain-of-custody form documenting all information up until the first change of sample custody.

A sample analysis request sheet can further clarify the samples for each requested constituent. This additional check sheet was utilized. This sheet sent along with the samples contained the following information:

- Name of person receiving samples.
- Laboratory sample number.
- Date of sample receipt.
- Analysis to be performed.
- Internal temperature during shipping.

## 6.4 DECONTAMINATION

All downhole probing tools were decontaminated prior to initiating field activities, between each boring, and prior to demobilization from the Site using a non-phosphate detergent/distilled water solution wash followed by a distilled water rinse. The Geoprobe® sample collection system used dedicated, disposable acetate liners for each sample collected in order to prevent cross-contamination; therefore, no reusable equipment came into contact with the samples. In the event that future site activities require the use of reusable sampling equipment, the following decontamination procedures for reusable equipment have been established per the VDEQ *Draft Closure Guidance* and are as follows.

- Between soil samples and sampling locations, material were physically removed from the sampling equipment with brushes or water.
- Then, equipment was washed using a non-phosphorous detergent/distilled water solution followed by a distilled water rinse.
- If constituents to be analyzed included trace metals, the equipment were rinsed with a 10% nitric acid solution followed by a distilled water rinse.

- If samples were analyzed for trace organics, the equipment were rinsed with a pesticide grade solvent followed by a distilled water rinse.
- Following decontamination, the equipment was allowed to air-dry completely.

## 6.5 BORING ABANDONMENT

Upon completion of the borings and collection of the necessary samples, each borehole was sealed with a bentonite slurry to the ground surface. The geosynthetic layer within the cap for HWMU-7 was penetrated by the Geoprobe® borings. However, due to the fact that laboratory analytical data collected during previous subsurface investigations indicated that the residual material in HWMU-7 was not hazardous by characteristic, no additional measures were taken to repair the geosynthetic layer within the cap.

## 6.6 DISPOSITION OF INVESTIGATION-DERIVED WASTE

All rinsate water that was generated during decontamination activities was collected in containers and subsequently emptied into the Biological Wastewater Treatment Plant at Radford AAP.

The soil cuttings and waste Geoprobe® sample collection sleeves were containerized within a steel drum and staged at a central location on-site pending proper disposal.

## 6.7 ANALYTICAL PROCEDURES

Aliquots of the eight soil samples were submitted to Severn Trent Laboratories of North Canton, Ohio, for analysis for the USEPA Target Analyte List (TAL) inorganic compounds. Separate aliquots of the eight soil samples were submitted to Lancaster Laboratories of Lancaster, Pennsylvania for analysis for the USEPA Target Compound List (TCL) organic compounds.

The analytical methods set forth in USEPA SW-846 (Test Methods for Evaluating Solid Waste, latest edition) were used to analyze all constituents. Recommended analytical methods and associated quantitation limits are listed in **Table 2**. Lancaster Laboratories used Statement of Work OLM03.2 for analysis of TCL organic constituents for sampling performed at the Unit in 2002. The Statement of Work OLM04.3 was published in March 2003. For consistency, Statement of Work OLM03.2 was used for the additional sampling conducted in support of this Closure Plan Amendment. Results of the 2004 sampling event will be presented in the HWMU-7 Closure Report.

Radford AAP realizes that the VDEQ *Draft Closure Guidance* recommends the use of methods that achieve the lowest possible detection limits for clean closure documentation. While in theory the use of those methods may provide marginally lower detections than methods used in standard professional practice of analysis, they are inherently not definitive, by definition, and have significant limitations with respect to reliability, validity and reproducibility. Appendix III to 40 CFR Part 261 – *Chemical Analysis Test Methods* references the use of SW-846 in the selection of test methods. Chapter 2 of SW-846, Section 2.2.5 – *Detection and*

*Monitoring* recommends the use of the ***most practical*** methods approved for detection. All of the analytical methods proposed by Radford AAP are considered the most practical and robust methods and are specifically approved for detection monitoring.

Additionally, many nationally accredited commercial laboratories do not routinely provide these methods for entire standard parameter lists. For example, Lancaster Laboratories only offers method 8021B for the suite of compounds that includes Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX). Analysis of a full Volatile Organic Compound list for soil using method 8021B would constitute a research level effort, thereby more than tripling the cost. Additionally, many units at Radford AAP have been closed under the federal RCRA Corrective Action Permit for the entire facility using the methods proposed here. Using similar methods provides a consistent approach with respect to decision making at the facility and interpretation of the intent of RCRA. Accordingly, Radford AAP proposes to use the following methods:

- Analysis by SW-846 Method 6010B (ICP-trace) generally provides detection and quantitation limits comparable to SW-846 7000 series methods. In general, ICP-trace analysis is preferred since the method is subject to less interferences and potential false positives. Radford AAP requests the use of Method 6010B.

- Analysis by SW-846 Method 8021B typically achieves lower detection and quantitation limits for select chlorinated and aromatic volatiles. However, use of SW-846 Method 8260B is preferred due to the reliability associated with target analyte identification (less potential for false positives). In many cases, laboratory specific detection limits for Method 8260B analytes may be comparable to Method 8021B. Radford AAP requests the use of Method 8260B.

- Analysis by SW-846 Method 8330 is subject to interferences and potential false positives. For this project, use of SW-846 Method 8270C is preferred due to the reliability associated with target analyte identification (less potential for false positives). As well, Lancaster Laboratories' specific detection and quantitation limits for Method 8270C analytes 2,4- and 2,6-dinitrotoluene are lower than Method 8330. Radford AAP requests the use of Method 8270C.

The above noted methods are reliable, cost-effective and can generate data to support clean closure demonstration at this facility. Therefore, RFAAP respectfully requests the use of SW-846 Methods 6010B, 8260B and 8270C for this project.

Data validation was conducted using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes – Physical and Chemical Methods, USEPA SW-846, 3rd Edition – Final Update I, II/IIA, and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002).

## 6.8 QUALITY ASSURANCE/QUALITY CONTROL

During sample collection and analysis, Radford AAP and the laboratories performing the analytical testing followed quality assurance and quality control (QA/QC) procedures consistent with chapter one of SW-846, 3rd Edition, November 1986, as updated.

The appropriate QA/QC samples, sample data, laboratory data, and laboratory QA/QC control procedures specified within the Closure Plan Amendment will be discussed and summarized in the Closure Report as it pertains to the demonstration of closure. All of the QA/QC laboratory data will be included with all other field and sampling data and will be provided in an appendix of the Closure Report.

### 6.8.1 Field QA/QC Program

The field QA/QC program is designed to ensure the reliability and validity of the field data gathered as part of the Closure soil sampling program. The field QA/QC program consists of routine collection and analysis of trip and equipment blanks and blind duplicates.

For each day of soil sampling, one trip blank was filled with laboratory-grade reagent water in the laboratory that was selected to conduct the TCL organic compounds analyses. The trip blank was analyzed only for the same volatile organic compounds for which the soil samples will be analyzed. The trip blank accompanied the sampling kit, in the transport cooler, at all times. A minimum of one trip blank per cooler per day of sampling accompanied the samples collected for TCL organic compounds analyses.

No non-dedicated equipment was used during the February/March 2004 sampling event. Therefore, no equipment blanks were collected. However, if any non-dedicated equipment is used in any subsequent sampling activities, equipment blanks will be collected to monitor the decontamination of any non-dedicated equipment that may be used in the sampling process. The equipment blank will be prepared by filling the sampling device with laboratory-grade reagent water and transferring the water from the sampling device to the sample containers. Any equipment blank(s) will be analyzed for the same constituents for which the soil samples and residual material samples are being analyzed. One equipment blank will be collected during each day of soil sampling at HWMU-7. A minimum of one equipment blank per day of sampling will be collected in the event that non-dedicated equipment is used during the sampling process.

One field duplicate sample was collected during each day of soil sampling at HWMU-7. The field duplicate was analyzed for the TAL inorganic and TCL organic constituents. The field duplicate was collected by simultaneously aliqouting a sample into separate containers. The containers for field duplicates were labeled as such. A minimum of one field duplicate sample per day of sampling was collected at the Unit.

The occurrence of constituents in blank samples may serve to qualify the results presented by the laboratory. Additional blanks or duplicate samples may be prepared and

analyzed to address specific, unanticipated conditions. Resampling and reanalysis may be required in certain cases depending on project objectives.

### 6.8.2 Laboratory QA/QC Program

The contract laboratories performing the analytical testing followed quality assurance and quality control (QA/QC) procedures consistent with chapter one of SW-846, 3rd Edition, November 1986, as updated. Copies of the Severn Trent Laboratories Quality Assurance Plan and of the Lancaster Laboratories Quality Assurance Plan are included (on CD-ROM) in **Appendix B**.

Each contract laboratory kept a logbook to document the processing steps that were applied to each soil sample. All sample preparation techniques and instrumental methods were identified in this logbook. The results of the analysis of all quality control samples were identified specific to each batch of soil samples analyzed. The logbook also included the time, date, and name of person who performed each processing step.

Dilution during analyses has a major impact on the overall quality and usability of the soil sample data. Large dilution factors may mask hazardous constituents that are present at low concentrations, which may result in constituent concentrations not being identified completely. Therefore, when multiple analyses using sequential dilutions were required, the results from these multiple analyses were reported.

In addition to the trip and equipment blanks and blind duplicates collected for the field QA/QC program, the laboratory shall prepared and analyzed at least one matrix spike for each sampling batch or every 20 samples. The laboratory shall also prepared and analyzed either one matrix duplicate or matrix spike duplicate for each analytical method employed. Sufficient sample volume was collected in the field so that the laboratory could prepare the matrix spike and matrix spike duplicate. MS/MSDs were prepared and analyzed at a frequency of one MS/MSD per sampling batch or 20 samples (whichever was more frequent) per matrix type.

## 6.9 HEALTH AND SAFETY PLAN

During the soil sample collection activities, health and safety requirements as per 29 CFR Parts 1910.120 were followed by all personnel present at the Site. All contractors adopted, as a minimum, the Radford AAP Facility Health and Safety Plan (HASP). The Radford AAP HASP outlines the minimum health and safety requirements for the facility. The contractors assured that all personnel entering the Site had all appropriate health and safety training required by the Occupational Safety and Health Administration (OSHA) and USEPA, and that all requirements of the HASP were implemented.

## 7.0 CLOSURE SAMPLING AND ANALYSIS PLAN–GROUNDWATER

The groundwater at HWMU-7 continues to be sampled in accordance with the procedures specified in the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002). Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPSs) for the Unit.

## 8.0 CLEAN CLOSURE STANDARDS

## 8.1 CLEAN CLOSURE STANDARDS FOR RESIDUAL MATERIAL

In the June 25, 2003 correspondence (**Appendix A**), the VDEQ indicated that clean closure may be achieved for HWMU-7 with the residual material remaining in-place if samples of the residual material meet the clean closure standards outlined in the VDEQ *Draft Closure Guidance*.

During the October/November 2002 Field Investigation, three (3) samples of the residual material were submitted for laboratory analyses for TAL inorganic constituents and TCL organic constituents. As shown in **Table 1**, only 10 hazardous TAL inorganic constituents were detected in the three residual material samples. No TCL organic constituents were detected in the three residual material samples.

Achievement of clean closure for the residual material at HWMU-7 will be demonstrated by comparing the concentrations of HCOCs in the material to one of the following clean closure standards, as appropriate:

1. **Analytical Non-Detection** – The concentrations of HCOCs in the compliance samples are below the method detection limits (MDLs) for the analytical test methods presented in Section 6.7.

2. **Comparison to Background Levels using Statistical Methods** – The concentrations of HCOCs in the compliance samples are below or not statistically different from the background sample levels using the appropriate statistical methods and performance standards specified in VDEQ *Draft Closure Guidance*.

3. **Risk Assessment Standards and Criteria** – The concentrations of the HCOCs in the compliance samples are at levels that meet the acceptable risk-based performance standards (i.e., the HCOCs do not pose an unacceptable risk to human health or the environment) using the *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

As an alternative, if clean closure standards are not met, Radford AAP may choose to excavate and dispose of the material within the Unit in accordance with Section 3.15.1 of the VDEQ *Draft Closure Guidance*. Should the material be excavated and disposed, the work will be performed in accordance with the Excavation Plan, which is included in **Appendix C**. If excavation of Unit 7 is planned, composite samples will be analyzed by TCLP to demonstrate compliance with LDRs.

## 8.2 CLEAN CLOSURE STANDARDS FOR SOIL

In the June 25, 2003 correspondence, the VDEQ indicated that the soil and any liner material immediately beneath the residual material at HWMU-7 must be sampled to determine

whether they meet the clean closure standards listed in the *Draft Guidance*. In accordance with the *Draft Guidance*, achievement of clean closure for soils at HWMU-7 will be demonstrated by comparing the concentrations of hazardous constituents of concern (HCOCs) in subsurface soil samples to one of the following three clean closure standards, as appropriate:

1. **Analytical Non-Detection** – The concentrations of HCOCs in the compliance samples are below the method detection limits (MDLs) for the analytical test methods presented in Section 6.7.

2. **Comparison to Background Levels using Statistical Methods** – The concentrations of HCOCs in the compliance samples are below or not statistically different from the background sample levels using the appropriate statistical methods and performance standards specified in VDEQ *Draft Closure Guidance*.

3. **Risk Assessment Standards and Criteria** – The concentrations of the HCOCs in the compliance samples are at levels that meet the acceptable risk-based performance standards (i.e., the HCOCs do not pose an unacceptable risk to human health or the environment) using the *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ.

As an alternative, if clean closure standards are not met, Radford AAP may choose to excavate and dispose of the material within the Unit in accordance with Section 3.15.1 of the VDEQ *Draft Closure Guidance*. Should the material be excavated and disposed, the work will be performed in accordance with the Excavation Plan, which is included in **Appendix C**.

### 8.2.1 Hazardous Constituents of Concern

In order for Radford AAP to achieve clean closure for HWMU-7, all hazardous waste or HCOCs must be removed from the Unit to levels such that direct contact with any parts of the Unit or with any HCOCs that remain after closure will not pose a threat to human health and/or the environment, nor adversely impact any environmental media in excess of the VDEQ-established exposure levels. The HCOCs for HWMU-7 are listed in **Table 2**.

### 8.2.2 Analytical Non-Detection

In the event that the soil sample analytical results indicate non-detection for all of the HCOCs analyzed using the test methods and detection limits presented in Section 6.7, the specific sample locations exhibiting the non-detects will be deemed to be uncontaminated. Should all soil sample analytical results indicate non-detection for all HCOCs, then the soils at HWMU-7 will be considered to meet the clean closure decontamination standard.

In the event that HCOCs are detected in the soil samples, Radford AAP may demonstrate clean closure by either: 1) statistical comparison of the soil sample HCOC concentrations to the

background HCOC concentrations, or 2) a risk assessment evaluation of the HCOCs present in the soil samples.

### 8.2.3 Comparison to Background

#### 8.2.3.1 Establishment of Background Concentrations

In August and September 2001, the IT Corporation conducted a Facility-Wide Background Study at the Main Manufacturing Area and the New River Unit of Radford AAP in accordance with a USEPA Region III-approved Work Plan. A copy of the ***Radford Army Ammunition Plant Facility-Wide Background Report*** (December 2001) is included (on CD-ROM) in **Appendix B**. As stated in the ***Facility-Wide Background Report***, the primary objective of the study was to collect soil samples representative of background conditions to establish a baseline for inorganic constituents of concern at Radford AAP. Sampling locations were positioned in tree stands to ensure associated soil samples were representative of areas that had not been affected by previous site activities or releases. Wherever possible, background sample locations were placed in tree stands estimated to predate potential construction activity at each location. The background soil samples were analyzed for the USEPA TAL inorganic compounds and for the USEPA TCL organic compounds. No TCL organic compounds were detected in the background soil samples.

Following the collection and analysis of the background soil samples, IT Corporation initially calculated facility-wide point estimates for the background soil data as confidence limits. As a result of discussions with the USEPA and VDEQ, the final facility-wide point estimates for the background soil data were calculated as tolerance limits. The use of tolerance limits rather than confidence limits evolved from comments questioning the use of the 95% upper confidence limit (UCL) as the point estimate for the background value. The 95% UCL was originally included in the Facility-Wide Background Study as a general point of reference. A confidence interval is used for comparisons within a single population. A compliance data set is then typically compared to a known standard. Using the 95% UCL as a single point comparison or background value, however, is likely to result in classifying many chemicals as greater than background when they are not. These misclassifications would be due to the 95% UCL representing an estimate of the mean. Such misclassifications could occur as often as 50% of the time. A tolerance limit is used for comparisons of similar but distinct populations. A concentration range is defined from a background data set, within which a large proportion of compliance data should fall with high probability. Therefore, it was recommended that a 95% upper tolerance limit (UTL) be developed in the Background Study for use as point-by-point comparisons.

Radford AAP has established the validity of the December 2001 Facility-Wide Background Report with the VDEQ and USEPA Region III, and has substantial documentation regarding VDEQ and USEPA Region III approval of the study and its use as a screening tool for soils at the facility. Specifically, Radford AAP has utilized the data from the Facility-Wide Background Report to the satisfaction of the VDEQ and USEPA Region III in the Site Screening Document for SWMU-6, in the Soil Screening Reports for SWMUs 8 and 36, and in the draft RCRA Facility Investigation Report for SWMU-58. (Copies of the VDEQ and USEPA Region

III approval letters for the above-referenced documents are included on CD-ROM in **Appendix B**.)

With respect to Section 3.11.3 of the *Draft Closure Guidance*, which indicates that background soils and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit, please note that the VDEQ provided the following comment regarding the background soil data presented in the draft Facility-Wide Background Report on September 10, 2001:

> *"Given the conditions of mixed surface and subsurface soils at the potentially contaminated sites, it is recommended that the background data for both surface and subsurface soils be combined for each element to determine the 95% UTL to be used in conjunction with the USEPA Region III RBCs for human health risk screening, and with various ecological screening data for ecological screening purposes. This will not only simplify the screening process, but will add power to the statistical comparison and prevent the unnecessary, and costly, carrying forward of naturally occurring elements into the full-fledged risk assessment process."*

Therefore, it is Radford AAP's opinion that the soil samples analyzed in support of the Facility-Wide Background Study should be of sufficient quantity to meet the requirements of the *Draft Closure Guidance* to provide background inorganic constituent concentrations for HWMU-7. Correspondence regarding use of the Facility-Wide Background Study is included on CD-ROM in **Appendix B**.

#### 8.2.3.2 Comparison to Background – Inorganic Constituents

The 95% UTLs calculated by the IT Corporation for the inorganic constituents detected in the background soil samples from the Main Manufacturing Area are summarized in **Table 3**. These facility-wide background values, in conjunction with the Unit-specific background concentrations detected in the sample from boring 7GP-16 during the October/November 2002 Field Investigation (**Table 1**), will be used in the initial comparisons to background for any inorganic HCOCs detected in the soil samples obtained from the clay liner and native soils beneath HWMU-7. If the concentration of every inorganic HCOC in a soil sample is below the appropriate UTL, that sampling location will be deemed to be uncontaminated for inorganic constituents. If the concentration of any inorganic HCOC in a soil sample exceeds its respective UTL, Radford AAP may attempt to demonstrate that the concentrations of the inorganic HCOCs detected in the clay liner and/or native soils beneath HWMU-7 do not pose an unacceptable risk to human health and the environment.

#### 8.2.3.3 Comparison to Background – Organic Constituents

No TCL organic compounds were detected in the background soil samples collected during the August and September 2001 Facility-Wide Background Study. In addition, no TCL organic compounds were detected in the Unit-specific background sample collected from boring 7GP-16 during the October/November 2002 Field Investigation. Therefore, comparisons to background concentrations will not be possible for any organic HCOCs detected in the clay liner

and/or native soils beneath HWMU-7. If any organic HCOCs are detected in the clay liner and/or native soils beneath HWMU-7, Radford AAP may attempt to demonstrate that the detected organic HCOCs concentrations do not pose an unacceptable risk to human health and the environment.

### 8.2.4 Risk Assessment

Clean closure of the clay liner and native soils beneath HWMU-7 may be demonstrated by a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of soil samples to background levels. Radford AAP may propose to demonstrate that the concentrations of hazardous constituents detected and remaining in the clay liner and native soils do not pose an unacceptable level of risk to human health and the environment. The risk assessment will be conducted in accordance with the VDEQ documents titled *"Guidance for Development of Health Based Cleanup Goals Using Decision Tree/Risk Exposure and Analysis Modeling System (REAMS) Program, 1994, and Risk Based Methodology,"* as amended by the VDEQ, along with other risk-based guidance provided by the VDEQ. Only those constituents that did not pass the non-detection and background clean-closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation.

A copy of the VDEQ Risk Assessment Guidance is provided on CD-ROM in **Appendix E**. The risk assessment protocol detailed in **Appendix E** includes risk formulas for both residential and occupational/industrial exposure scenarios. As stated in the Risk Assessment Guidance, a residential exposure scenario initially will be assumed for the purpose of attempting to document unrestricted closure of the soil. If the risk for potential residential exposure does not exceed the performance standards, unrestricted closure of soil will be documented/accepted. If the site cannot be clean closed for residential use, then the option to pursue restricted closure (commercial/industrial) will be exercised. Use of the commercial/industrial exposure scenario to demonstrate clean closure will require Radford AAP to enact a deed restriction that eliminates the possibility of future residential use of the site. The requirements for establishing such a deed restriction are detailed in the VDEQ document "*Guidelines for Developing Health-Based Cleanup Goals Using Risk Assessment at A Hazardous Waste Site Facility for Restricted Industrial Use*," dated June 1995 (included in **Appendix E**).

The Risk Exposure and Analysis Modeling System (REAMS) Program requires fate and transport modeling in the event that HCOCs remain in soils at the Unit. The fate and transport modeling used in REAMS is necessary to demonstrate that the HCOCs remaining in soils should not result in contamination of the groundwater underneath the Unit above acceptable risk-based levels.

## 8.3 CLEAN CLOSURE STANDARDS FOR GROUNDWATER

The groundwater at HWMU-7 currently is monitored in accordance with the requirements of the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* (October 4, 2002). In the event that the residual material and underlying soils at HWMU-7 meet the clean closure standards specified by the VDEQ, Radford

AAP will attempt to demonstrate clean closure for groundwater at HWMU-7 as well. Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the most recent groundwater sample analytical results at the time that the Closure Report is prepared to the Groundwater Protection Standards (GPSs) for the Unit. The GPSs for HWMU-7 are based on USEPA Maximum Contaminant Levels (MCLs) for drinking water or on VDEQ-derived Alternate Concentration Limits (ACLs) for constituents without MCLs. Due to the fact that Radford AAP is an industrial facility with no users of groundwater, comparison of groundwater data to residential drinking water standards will provide the most conservative assessment of risk. If a groundwater constituent is detected at a concentration that is greater than the GPS, the concentration will be compared to background. HWMU-7 can receive clean closure for groundwater if all constituents are either at or below GPS or, if any constituents are above GPS, at or below background.

Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* until approvals for clean closure of soil and groundwater at HWMU-7 have been issued by the VDEQ **and contingent upon the condition that the permit language allows a cessation of groundwater monitoring upon approval of clean closure of soils and groundwater**. **A Class 3 modification of the Radford's post-closure care permit would be required to reduce the post-closure period in accordance with 40 CFR § 270.42, Appendix I - Section E.3. In accordance with 40 CFR § 264.120, Certification of post-closure completion statements by the Radford AAP (owner/operator) and the independent professional engineer registered in the Commonwealth of Virginia must be submitted to the DEQ for review and approval prior to approval of the closure of the groundwater and soils linked to HWMU #7.**

**The justifiable Class 3 modification is required to shorten the HWMU #7 post-closure period. The Class 3 modification could facilitate the end of the post closure period to coincide with the same date as the DEQ's approval of the soils and groundwater closure of the HWMU #7 portion of the post-closure permit. Alternately, and not requiring a permit modification, the HWMU #7 portion of the permit could be allowed to terminate upon permit expiration if clean closure is approved for soil and groundwater prior to permit expiration.**

## 9.0 CLOSURE COST ESTIMATE AND FINANCIAL ASSURANCE

40 CFR Subpart H (Financial Requirements) specifies the requirements for cost estimates and financial assurance for closure and post-closure care (40 CFR 264.140 through 264.151). The following is directly cited from § 264.140(c):

> "States and the Federal government are exempt from the requirements of this subpart."

Radford AAP is a federal government installation; therefore, HWMU-7, and all other HWMUs at the Radford AAP, are exempt from the requirements of 40 CFR 264 Subpart H.

## 10.0 SCHEDULE FOR CLOSURE

HWMU-7 received certification for closure with waste in place in 1990 and is currently in the Compliance Period, which extends until October 30, 2017. The sampling activities outlined in this Closure Plan Amendment constitute additional closure activities in support of clean closure of HWMU-7. Based on generator knowledge and previous studies, Radford AAP has determined that residual material contained in HWMU-7 is not a hazardous waste as defined in 40 CFR Part 261. Radford AAP completed the additional sampling activities in accordance with the Closure Plan Amendment and VDEQ correspondence dated June 25, 2003, in February 2004. The analytical results for the February 2004 soil samples will be presented and evaluated in the Closure Report for HWMU-7.

In correspondence to the VDEQ dated August 9, 2007, Radford AAP submitted a Class 3 permit modification for the Post-Closure Care Permit for HWMUs 5, 7, 10, and 16. This Closure Plan Amendment will be subject to public notice as part of the Class 3 permit modification. Final approval of the Closure Plan Amendment is contingent upon the VDEQ's decision to grant or deny the Class 3 permit modification request after conclusion of the 45-day public comment period. Upon approval of the Class 3 permit modification, Radford AAP will prepare and submit the Closure Report for HWMU-7. The Closure Report will include a clean closure evaluation for soil and groundwater at the Unit. Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* until approvals for clean closure of soil and groundwater at HWMU-7 have been issued by the VDEQ **and contingent upon the condition that the permit language allows a cessation of groundwater monitoring upon approval of clean closure of soils and groundwater**. **A Class 3 modification of the Radford's post-closure care permit would be required to reduce the post-closure period in accordance with 40 CFR § 270.42, Appendix I - Section E.3. In accordance with 40 CFR § 264.120, Certification of post-closure completion statements by the Radford AAP (owner/operator) and the independent professional engineer registered in the Commonwealth of Virginia must be submitted to the DEQ for review and approval prior to approval of the closure of the groundwater and soils linked to HWMU #7.**

**The justifiable Class 3 modification is required to shorten the HWMU #7 post-closure period. The Class 3 modification could facilitate the end of the post closure period to coincide with the same date as the DEQ's approval of the soils and groundwater closure of the HWMU #7 portion of the post-closure permit. Alternately, and not requiring a permit modification, the HWMU #7 portion of the permit could be allowed to terminate upon permit expiration if clean closure is approved for soil and groundwater prior to permit expiration.**

In the event that clean closure is not achieved, HWMU-7 will remain in post-closure care in accordance with the Final Permit (October 4, 2002). If Radford AAP chooses to demonstrate clean closure by removal at a future date, additional closure schedule information will be submitted.

## 11.0 CLOSURE PLAN AMENDMENT

Future amendments to the Closure Plan will be conducted in accordance with the requirements of the regulations under 40 CFR 264.112. These regulations specify the following requirements:

1. The written notification or request to the Director of the VDEQ must include a copy of the amended closure plan for review and approval.

2. The owner or operator must submit a written notification or a modification request to the Director of the VDEQ to authorize a change in the approved closure plan whenever the following occurs:

   i. Changes in operating plans or facility design affect the closure plan.

   ii. There is a change in the expected year of closure.

   iii. In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

3. The owner or operator must submit a written request for a permit modification including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no later than 30 days after an unexpected event has occurred which has affected the closure plan.

   If an unexpected event occurs during the partial or final closure period, the owner or operator must request a modification no later than 30 days after the unexpected event.

   The Director will approve, disapprove, or modify the amended plan in accordance with the procedures in parts 124 and 270.

4. In accordance with the authority under 40 CFR 264.112(c)(4), the Director may request modifications to the closure plan under the conditions described in 40 CFR 264.112(c)(2).

## 12.0 CERTIFICATION OF CLOSURE

Radford AAP and an independent professional engineer, registered in the Commonwealth of Virginia, will both certify that HWMU-7 has been closed in accordance with the specifications in this Closure Plan. The certification statements will be in accordance with 40 CFR 270.11 – Signatories to Permit Applications and Reports. The certifications will be made by an authorized person described in 40 CFR 270.11(a), or by a duly authorized representative of that person as delineated in 40 CFR 270.11(b).

The certification of closure by the Radford AAP and the professional engineer will be in accordance with the requirements of 40 CFR 270.11(d), and will be signed, dated, include the title of the person certifying the closure, and include the certification text that is specified within the regulations as follows:

> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

The certification of closure will be submitted by registered mail to the VDEQ within 60 days of completion of closure within the Closure Report (within 240 days after initiation of closure).

Prior to signing the closure certification statement, the engineer will review all procedures, systems, analytical data, laboratory reports, QA/QC Plan, QA/QC procedures, QA/QC data, calculations, statistical analyses, and risk-based assessment evaluations, criteria, and conclusions. The engineer's review also will include a determination that appropriate closure plan procedures and systems, including QA/QC procedures, have been followed and observed in the closure activities at the site and by the contracted laboratory, and that the appropriate equations have been correctly applied and calculated as specified in the closure plan and appropriate guidance documents of the EPA and the VDEQ. In addition, prior to certification of closure, the engineer's review will verify demonstration that the data verifies that the decontamination standards of the Closure Plan have been achieved, and that the facility has been closed in accordance with the closure performance standards of the Closure Plan.

## 13.0 CLOSURE REPORT

In accordance with 40 CFR 264.115 – Certification of Closure, a Closure Report will be submitted to the Director of the VDEQ to provide documentation supporting the certification of closure and to demonstrate that HWMU-7 has been closed in accordance with the procedures, criteria, decontamination standards, and performance standards of the Closure Plan Amendment. The Closure Report will provide sufficiently detailed and summary information for the following items, as applicable, which demonstrate that the closure decontamination standards have been achieved, and that the facility has been closed in accordance with the closure performance standards of the Closure Plan: closure procedures, decontamination procedures, hazardous waste inventory disposal, closure generated waste disposal, manifests of all wastes, sampling procedures, sampling analytical test data, laboratory reports, the QA/QC plan and procedures, QA/QC data, calculations, statistical analyses of the data, risk-based assessment calculations, model evaluations, results, and conclusions. The Closure Report also will include the certification of closure statements of Radford AAP and the independent professional engineer registered in the Commonwealth of Virginia.

The Closure Report will be submitted within 90 days of approval of the August 2007 Class 3 permit modification for the Post-Closure Care Permit for HWMUs 5, 7, 10, and 16**.** Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the *Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16* until approvals for clean closure of soil and groundwater at HWMU-7 have been issued by the VDEQ **and contingent upon the condition that the permit language allows a cessation of groundwater monitoring upon approval of clean closure of soils and groundwater**. **A Class 3 modification of the Radford's post-closure care permit would be required to reduce the post-closure period in accordance with 40 CFR § 270.42, Appendix I - Section E.3. In accordance with 40 CFR § 264.120, Certification of post-closure completion statements by the Radford AAP (owner/operator) and the independent professional engineer registered in the Commonwealth of Virginia must be submitted to the DEQ for review and approval prior to approval of the closure of the groundwater and soils linked to HWMU #7.**

**The justifiable Class 3 modification is required to shorten the HWMU #7 post-closure period. The Class 3 modification could facilitate the end of the post closure period to coincide with the same date as the DEQ's approval of the soils and groundwater closure of the HWMU #7 portion of the post-closure permit. Alternately, and not requiring a permit modification, the HWMU #7 portion of the permit could be allowed to terminate upon permit expiration if clean closure is approved for soil and groundwater prior to permit expiration.**

In the event that HWMU-7 attains clean closure for soil, but does not attain clean closure for groundwater, Radford AAP will continue to monitor groundwater at HWMU-7 in accordance with the Final Permit (October 4, 2002). In this case, groundwater monitoring at HWMU-7 will cease (and the post-closure care period for the Unit will be reduced) in the event that the GPSs are not exceeded for a period of three (3) consecutive years following the attainment of clean closure for soil, in accordance with 40 CFR 264.100(f).

In the unlikely event that HWMU-7 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the VDEQ-approved May 1988 Closure Plan included in the Final Permit (October 4, 2002) will serve as the Contingent Closure Plan for the Unit in accordance with 40 CFR 264.225(c)(1), and the Unit will remain in post-closure care in accordance with the Final Permit. Radford AAP will retain the option to demonstrate clean closure in the future by excavation and removal of the residual material.

**FIGURES**

# TABLES

# TABLE 2

| HAZARDOUS WASTE MANAGEMENT UNIT 7<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Zinc | 6010B | 2 | 1.3 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Butyl benzyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrophenol | 8270C | 2.4 | 0.8 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 4 Nitrophenol | 8270C | 1 | 0.2 | mg/kg |
| N-Nitrosodiphenylamine | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| 4,4-DDE | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| Cyanide | 9012A | 0.5 | 0.5 | mg/kg |
| Toluene | 8260B | 0.006 | 0.001 | mg/kg |
| Aroclor-1254 | 8082 | 0.1 | 0.02 | mg/kg |

Notes:

Actual sample quantitation and detection limits will be adjusted based on dry weight.

Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

## APPENDICES (CD-ROM)

## APPENDIX A – CORRESPONDENCE

- **VDEQ Correspondence dated June 25, 2003 and June 7, 2004**
- **Radford AAP Correspondence dated September 17, 2004**
- **Meeting Minutes – VDEQ and Radford AAP January 18, 2007 Teleconference**
- **VDEQ E-Mail Correspondence dated January 18, 2007 and January 25, 2007**
- **VDEQ Memorandum dated September 14, 2007**
- **VDEQ Correspondence dated October 31, 2007**
- **VDEQ E-Mail Correspondence dated March 2, 2010, March 9, 2010, and March 10, 2010**

## APPENDIX B – SUPPORTING DOCUMENTATION

- **CLOSURE PLAN FOR UNITS 5, 7, AND 16 (MAY 1988)**
- **FIELD INVESTIGATION REPORT AND RISK ASSESSMENT FOR HAZARDOUS WASTE MANAGEMENT UNITS 5 AND 7 (MARCH 2003)**
- **RESIDUAL MATERIAL AND SOIL SAMPLE LABORATORY ANALYTICAL RESULTS AND DATA VALIDATION REPORTS FOR HWMUS 5 AND 7 (FEBRUARY 2004)**
- **FACILITY-WIDE BACKGROUND STUDY REPORT (DECEMBER 2001)**
- **EPA AND VDEQ CORRESPONDENCE REGARDING USE OF FACILITY-WIDE BACKGROUND STUDY REPORT (2001 – 2004)**
- **SEVERN TRENT LABORATORIES QUALITY ASSURANCE PLAN**
- **LANCASTER LABORATORIES QUALITY ASSURANCE PLAN**

## APPENDIX C – EXCAVATION PLAN

## APPENDIX D – EXAMPLE CHAIN-OF-CUSTODY FORM

## APPENDIX E – VDEQ RISK ASSESSMENT GUIDANCE

# TABLE 2

| HAZARDOUS WASTE MANAGEMENT UNIT 7<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Zinc | 6010B | 2 | 1.3 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Butyl benzyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrophenol | 8270C | 2.4 | 0.8 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 4 Nitrophenol | 8270C | 1 | 0.2 | mg/kg |
| N-Nitrosodiphenylamine | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| 4,4-DDE | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| Cyanide | 9012A | 0.5 | 0.5 | mg/kg |
| Toluene | 8260B | 0.006 | 0.001 | mg/kg |
| Aroclor-1254 | 8082 | 0.1 | 0.02 | mg/kg |

Notes:

Actual sample quantitation and detection limits will be adjusted based on dry weight.

Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HAZARDOUS TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Nickel | Selenium | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 93.2 | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | |
| **UNIT BACKGROUND SAMPLE LOCATION** | | | | | | | | | | | | | | | | | | | | |
| 7GP-16 (3-4') | 11/01/02 | ~ | 106 | ~ | 11.5 | ~ | 5.1 | 5.4 | 7.7 | ~ | ~ | 15.4 | 39.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **CAP MATERIAL SAMPLE** | | | | | | | | | | | | | | | | | | | | |
| 7GP-1 (1-3') | 11/01/02 | 3.8 | 66.9 | 0.7 | 24.1 | 11.5 | 22.8 | 8.1 | 13.5 | ~ | ~ | 28 | 17.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **RESIDUAL MATERIAL SAMPLES** | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (8-12') | 11/01/02 | 2.7 | 40.9 | 1.2 | 22 | 12.5 | 22 | 2.8 | 21.6 | ~ | ~ | 21.1 | 15 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-5 (6-11') | 11/01/02 | 3.5 | 55.6 | ~ | 22.8 | ~ | 10 | 11 | 7.2 | ~ | ~ | 60.6 | 24.2 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-8 (5-8') | 11/01/02 | 2.4 | 55 | ~ | 20.1 | ~ | 12.7 | 10.3 | 8.5 | ~ | ~ | 61.8 | 28.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER** | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (13.5-14.5') | 11/01/02 | 3.1 | 70.9 | 0.84 | 22.5 | 16.2 | 14.2 | 13.6 | 11.4 | ~ | ~ | 57.7 | 32.6 | ~ | ~ | ~ | 0.0035 | ~ | ~ | ~ |
| 7GP-18 (14') | 02/17/04 | 2.7 | 59.3 | ~ | 23.2 | 8.2 | 10.6 | 8.9 | 8.3 | ~ | ~ | 50 | 26.6 | ~ | ~ | 2.1 | ~ | ~ | 0.18 | ~ |
| 7GP-21 (13.5') | 02/17/04 | 2.8 | 79.6 | ~ | 23.3 | 23.6 | 12.8 | 12.4 | 9.4 | ~ | 1.4 | 55.9 | 32.5 | ~ | 1 | 2.8 | ~ | ~ | 0.5 | ~ |
| 7GP-24 (14') | 02/17/04 | 2.1 | 101 | ~ | 20.1 | 11.7 | 11.5 | 9.2 | 12.6 | ~ | 1.7 | 39.2 | 62.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER/NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | |
| 7GP-17 (11') | 02/17/04 | 26.4 | 244 | ~ | 45.6 | 10.4 | 36.3 | 120 | 28.1 | 3.1 | 2.1 | 46 | 165 | ~ | 0.56 | 3.5 | ~ | ~ | 0.34 | ~ |
| 7GP-20 (14.5') | 02/17/04 | 8.3 | 114 | ~ | 75.3 | 6.6 | 15.7 | 66.5 | 15.5 | ~ | 1.3 | 43.2 | 46.1 | ~ | ~ | 3 | ~ | ~ | 0.35 | 0.006 |

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HAZARDOUS TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Nickel | Selenium | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | 64.5 | 176 | 1.3 | 82.8 | 118 | 41.4 | 256 | 93.2 | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- |
| Sample Location / Date | | | | | | | | | | | | | | | | | | | |
| **NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | |
| 7GP-3 (10-11') 11/01/02 | 26.1 | 229 | 1.5 | 32.8 | 8.1 | 23.2 | 35.1 | 15.9 | 3.5 | ~ | 42.1 | 33.8 | 0.69 | ~ | 0.75 | ~ | 0.0025 | ~ | ~ |
| 7GP-19 (14') 02/17/04 | 30.5 | 273 | ~ | 38.4 | 8.7 | 28 | 95.3 | 18.9 | 3.7 | 2.1 | 50.6 | 39.4 | ~ | 0.47 | 0.9 | ~ | ~ | 0.53 | ~ |
| 7GP-22 (13') 02/17/04 | 21 | 211 | ~ | 38.4 | 8.1 | 23.7 | 109 | 19 | 2.5 | 1.8 | 42.7 | 39.9 | ~ | 0.88 | 3.3 | ~ | ~ | 0.38 | ~ |
| 7GP-22-22 (13') (Field Duplicate) 02/17/04 | 29.8 | 279 | ~ | 41.6 | 9.1 | 29.9 | 104 | 19.8 | 4.1 | 2.1 | 49.2 | 39 | ~ | 0.52 | 4.3 | ~ | ~ | 0.33 | ~ |
| 7GP-23 (12.5') 02/17/04 | 21.4 | 221 | ~ | 61.4 | 8.3 | 26 | 236 | 25.6 | 2.7 | 2.3 | 42.7 | 43.3 | ~ | 0.6 | 3.4 | ~ | ~ | 0.4 | ~ |
| **SOIL ADJACENT TO UNIT** | | | | | | | | | | | | | | | | | | | |
| 7GP-4 (3-4') 11/01/02 | ~ | 69.2 | ~ | 10.1 | ~ | 5.1 | 5.8 | 6.3 | ~ | ~ | 14 | 35 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |

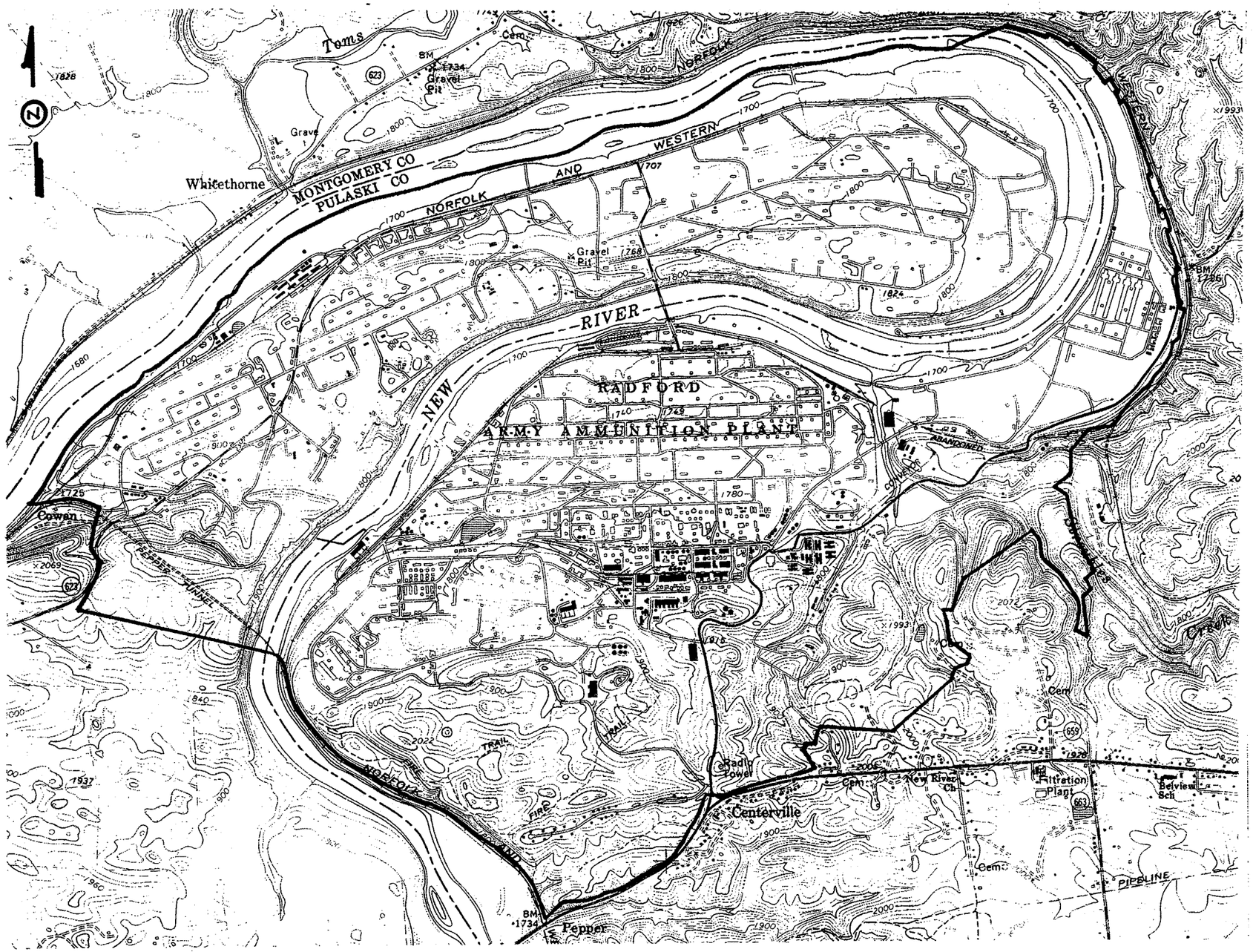
NOTES:
*: Additional TCL organic constituent detected during the February 2004 Field Investigation.
~: Not detected above the Limit of Quantitation (LOQ).
Facility-Wide Background concentrations from Table 3 of the *Amended Closure Plan* (Appendix A of the *Closure Report*).

**TABLE 3**

FACILITY-WIDE BACKGROUND CONCENTRATIONS
SUBSURFACE SOIL - MAIN MANUFACTURING AREA
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| CONSTITUENT | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|
| Aluminum | 22/22 | 8,710 | 47,900 | 21,223 | 0.517 | Lognormal | 56,307 |
| Arsenic | 20/22 | 1.2 | 35.9 | 7.73 | 1.16 | Lognormal | 64.5 |
| Barium | 19/22 | 25.2 | 155 | 71.5 | 0.623 | Normal | 176 |
| Beryllium | 11/22 | 0.79 | 5.3 | 1.01 | 1.16 | Neither | 1.3 |
| Cadmium | 12/22 | 0.57 | 2.5 | 0.778 | 0.805 | Lognormal | 3.33 |
| Chromium | 22/22 | 10.8 | 75.8 | 32.3 | 0.427 | Lognormal | 82.8 |
| Cobalt | 16/22 | 6.8 | 94.3 | 18.3 | 1.33 | Lognormal | 118 |
| Copper | 22/22 | 3.3 | 34.4 | 17 | 0.611 | Normal | 41.4 |
| Iron | 22/22 | 14,300 | 67,700 | 32,595 | 0.352 | Normal | 59,560 |
| Lead | 22/22 | 5.6 | 256 | 31.3 | 1.84 | Neither | 256 |
| Manganese | 22/22 | 39.4 | 1,760 | 428 | 0.939 | Lognormal | 3,143 |
| Mercury | 10/22 | 0.038 | 0.27 | 0.0729 | 0.865 | Neither | 0.154 |
| Nickel | 22/22 | 4.8 | 94.2 | 20.4 | 1.01 | Lognormal | 93.2 |
| Thallium | 12/22 | 1.4 | 5 | 1.76 | 0.729 | Neither | 2.61 |
| Vanadium | 22/22 | 27 | 114 | 61.9 | 0.329 | Normal | 110 |
| Zinc | 22/22 | 14.7 | 598 | 112 | 1.28 | Lognormal | 674 |

NOTES:
Source: *Radford Army Ammunition Plant Facility-Wide Background Study* , IT Corporation, December 2001.
All units in mg/kg.

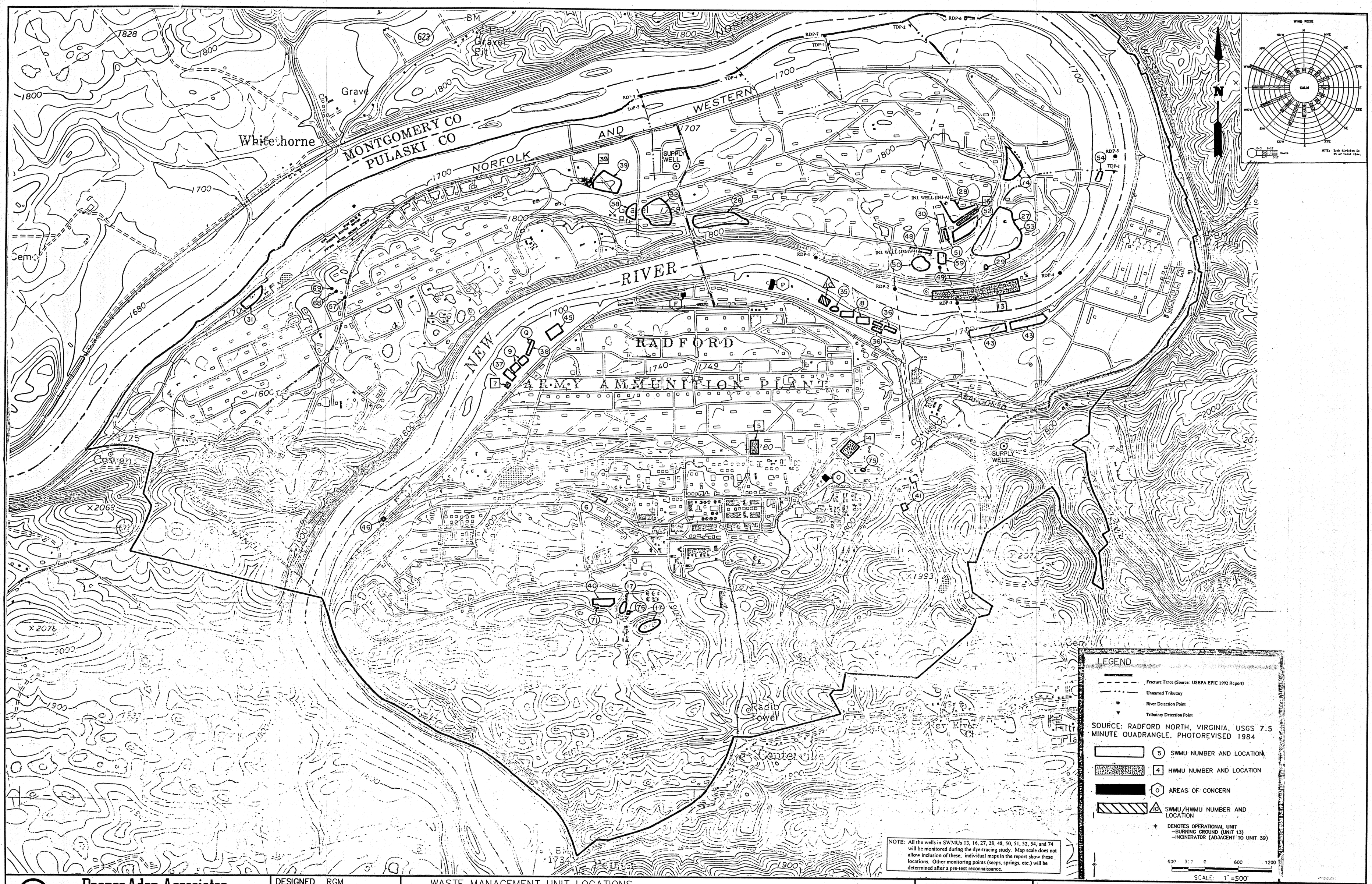



LEGEND

——— PROPERTY LINE

APPEND.DWG

| | | | |
|---|---|---|---|
| **Draper Aden Associates**<br>CONSULTING ENGINEERS<br>Blacksburg, Virginia – Richmond, Virginia – Nashville, Tennessee | DESIGNED RGM<br>DRAWN JFF<br>CHECKED AEK<br>DATE 6–11–97 | SITE LOCATION MAP<br>RADFORD ARMY AMMUNITION PLANT<br>MONTGOMERY COUNTY, VIRGINIA | SCALE: 1" = 2000'<br>PLAN NO. | FIGURE 1 |




**Draper Aden Associates**
CONSULTING ENGINEERS
Blacksburg, Virginia – Richmond, Virginia – Nashville, Tennessee

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | JFF |
| CHECKED | AEK |
| DATE | 6–10–97 |

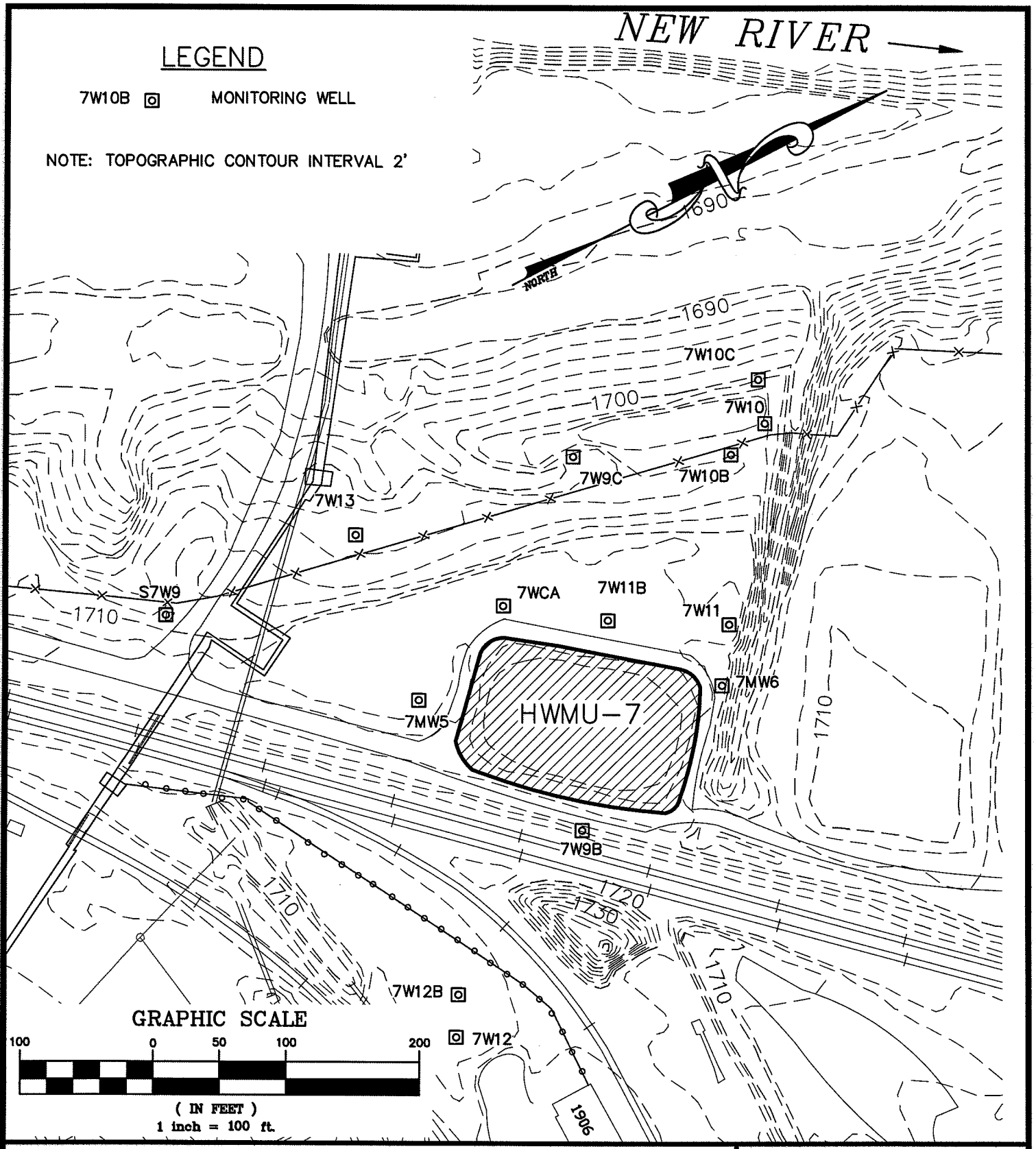
WASTE MANAGEMENT UNIT LOCATIONS
# RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS:
REV. 8-24-99

SCALE: 1" = 500'

PLAN № T–7774–00

FIGURE 2




HWMU-7 SITE PLAN

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B02271-01


**Draper Aden Associates**

Engineering ♦ Surveying ♦ Environmental Services

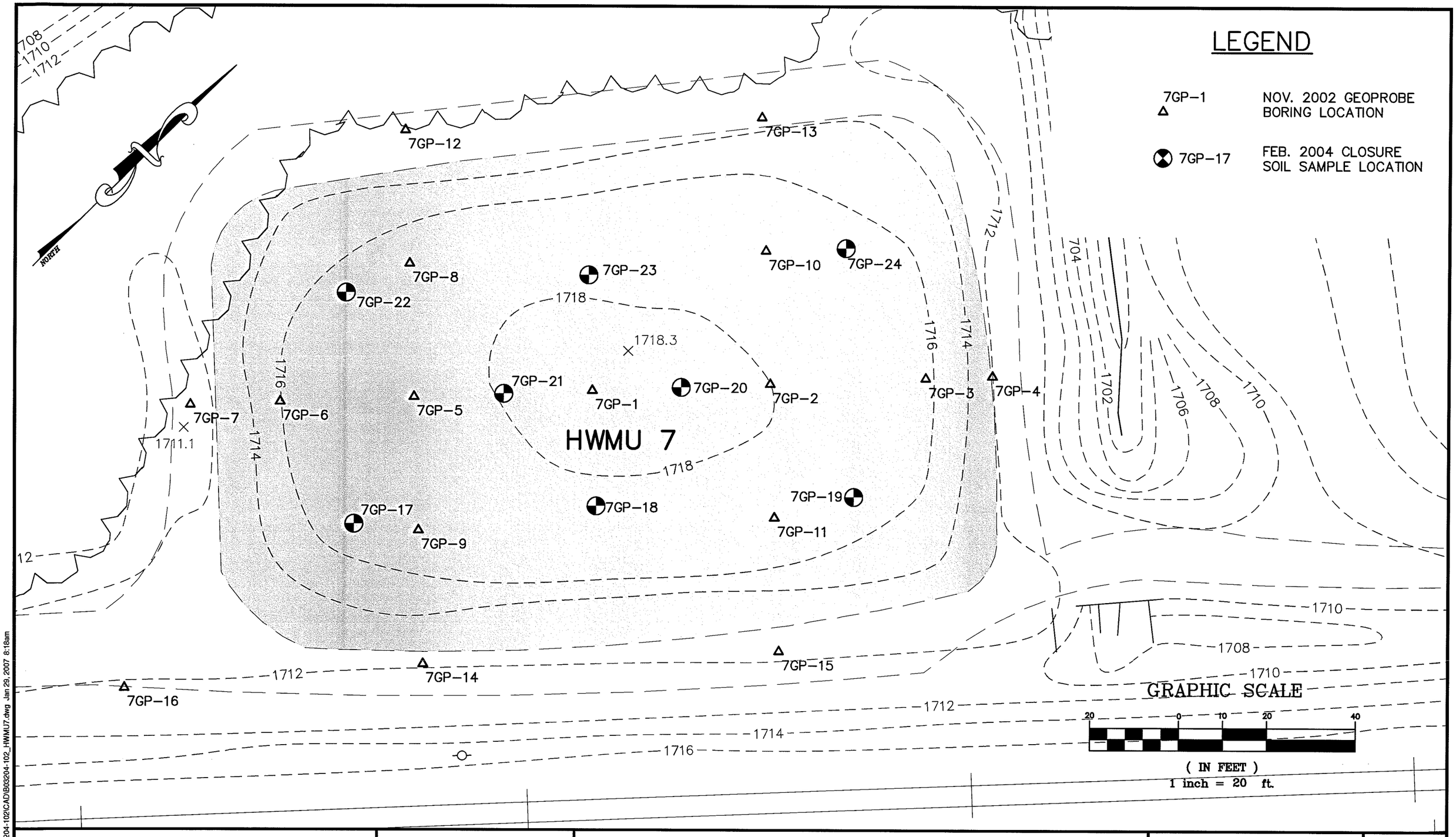
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | AEK |
| DATE | 01/16/04 |

FIGURE 3

\\Bbg-archive\archive\B02\200\B02271\B02271-01\CAD\271-01\dwg\B03204-01_HWMU-7_SITE.dwg Oct 30, 2006 11:53am




P:\B03200\B03204\B03204-102\CAD\B03204-102_HWMU7.dwg Jan 29, 2007 8:18am

**Draper Aden Associates**
Engineering ♦ Surveying ♦ Environmental Services
2206 South Main Street, Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA · Charlottesville, VA · Raleigh-Durham, NC

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 4

Draper Aden Associates
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# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project Name:** | Radford AAP HWMUs 5 and 7 Closure Plans | **Project Number:** | B03204-102 |
| | | **Date:** | January 18, 2007 |
| **Meeting Location:** | Radford AAP | **Time:** | 11:00 am |
| **Minutes by:** | L. Livingston | | |
| **In Attendance:** | VDEQ – Matt Stepien, Hassan Vakili, Erich Weissbart, Fuxing Zhou, Jim Cutler, Sonal Iyer<br>Army – Jim McKenna<br>ATK – Bill Glover, Jeremy Flint<br>DAA – Mike Lawless, Ross Miller, Lori Livingston | | |
| **cc:** | | | |

Alliant Techsystems Inc. (ATK) called a meeting with the Virginia Department of Environmental Quality (VDEQ) to discuss the Amended Closure Plans submitted for Hazardous Waste Management Units (HWMUs) 5 and 7 at the Radford Army Ammunition Plant (Radford AAP) in November 2006.

- Bill Glover of ATK explained that the amended plans were submitted to pick up where the project was left in 2004. Draft plans were sent to VDEQ to assist in review of the plans and to demonstrate how VDEQ's June 7, 2004 comments would be addressed.
- Matt Stepien has reviewed the plan for HWMU-5 based on Garwin Eng's comments dated June 2004 and ATK's response dated September 2004. Matt Stepien did not review the plan for HWMU-7 as he did not receive it. **Bill Glover forwarded a copy of the Amended Closure Plan for HWMU-7 to Matt Stepien in the afternoon of January 18, 2007.**
- Discussion regarding the HWMU-5 Amended Closure Plan was as follows. VDEQ comments and a summary of discussion are included. Radford AAP action items are included in bold.
  - Comment 2: Individual samples must meet clean closure performance standards. If clean closure performance standards are not met, a composite sample must be compared to Land Disposal Regulations (LDRs). Detailed discussion of LDRs as previously required by VDEQ confuses the process. **The closure plans will be revised to state that LDRs must be met only when clean closure performance standards cannot be achieved and removal is planned. Detailed discussion of LDRs will be removed.**
  - Comments 9 and 14: Additional discussion of decontamination standards for the HWMU-5 and for equipment used during removal should be incorporated to address potential excavation of the Unit. Standards are discussed in Section 3.13 of the VDEQ Closure Guidance. **Discussion of decontamination standards will be added.**
  - Comment 9: Sentence stating "Prior to excavation, soil samples will be collected to determine the volume of material to be excavated" should be removed. **This language will be removed.**
  - Comment 12: The Hazardous Constituents of Concern (HCOC) list should include all constituents that were handled in HWMU-5, that were detected in soil samples collected in 2002, that are included in the quarterly groundwater monitoring list, and that were listed in the 1988 Closure Plan. Constituents that are naturally occurring do not need to be included on the HCOC list. If a constituent is detected underneath the Unit and is not in the residual material, a



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Charlottesville ◆ Hampton Roads ◆ Richmond

demonstration can be prepared to indicate that its presence is due to an alternate source or laboratory contamination. Section 3.7.1 of the VDEQ Closure Guidance may be used as a reference. **The HCOC list will be reviewed, and language discussing the origin of the HCOC list will be included.**

- Comment 17: The report should include a provision to require decontamination of equipment if non-dedicated sampling equipment is used. **Language will be added to indicate that, if equipment is reused, the equipment will be decontaminated in accordance with the Closure Guidance.**
- Comment 26: Sentence stating "Should all soil samples be uncontaminated for inorganic constituents in this manner, the soil will have met the clean closure decontamination standard for inorganic constituents" should be removed. **This language will be removed.**
- Comments 29 and 30: The closure activity schedule needs to be more detailed. Section 3.20 of the VDEQ Closure Guidance can be used as a reference. **The schedule will be revised based on the guidance.** Also, there was discussion about which type of permit modification will be required for the Amended Closure Plans and closure. **VDEQ will review the permit modification requirements, and Matt Stepien will call or e-mail Bill Glover.**
- Groundwater Comments: VDEQ stated that all groundwater data collected from each Unit should be used to demonstrate clean closure rather than only the data from the quarter when soil samples were collected. If a groundwater constituent is detected at a concentration that is greater than the Groundwater Protection Standard (GPS), the concentration should be compared to background. The Units can receive clean closure for groundwater if all constituents are either below GPS or, if any constituents are above GPS, below background. **The groundwater sections will be revised to reflect these changes.** There have been no GPS exceedances at HWMU-7. **A revised Alternate Source Demonstration (ASD) will be prepared for trichloroethene (TCE) at HWMU-5.**

- Based on our discussion regarding comments at HWMU-5, VDEQ suggested that the Closure Plan for HWMU-7 be updated and revised in accordance with our discussion regarding comments for HWMU-5. **The plans will be revised accordingly. Bill Glover brought any significant differences in the plans for both units to Matt Stepien's attention when he forwarded the HWMU-7 plan to the VDEQ.**
- The meeting concluded at approximately noon.

ATK
ALLIANT TECHSYSTEMS

Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24141
USA

September 17, 2004

Mr. Garwin Eng
Hazardous Waste Permitting
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Subject: Response to Comments HWMUs 5 and 7
Radford Army Ammunition Plant
Radford, Virginia
EPA ID#: VA1210102073O

Dear Mr. Eng:

Enclosed are the responses to your comments concerning the Closure of HWMUs 5 & 7.

If you have any questions or concerns, please contact Jerry Redder at 540/639-7536.

Sincerely,

C. A. Jake, Environmental Manager
Alliant Ammunition and Powder Company LLC

c: Aziz Farahmand, DEQ-WCRO

Coordination: J. McKenna

bc: Administrative File
J. McKenna, ACO Staff
John Tesner, Baltimore CoE
J. J. Redder
Ross Miller, Draper Aden Associates
Env. File

04-815-141
JJRedder

**RESPONSE TO COMMENTS**
**CLOSURE PLAN AMENDMENTS**
**HAZARDOUS WASTE MANAGEMENT UNITS 5 AND 7**
**RADFORD ARMY AMMUNITION PLANT**
**PERMIT NO. VA1210020730**

This document has been prepared to serve as a guide for the response to the Virginia Department of Environmental Quality (VDEQ) letter to the Radford Army Ammunition Plant (Radford AAP) dated June 7, 2004, regarding the Closure Plan Amendments for Units 5 and 7 – Notice of Deficiencies. In that letter (signed by Mr. Garwin Eng), 39 individual comments were presented; these comments are addressed in this Response to Comments. The comments have been reproduced in full within this guide to provide a convenient context for the responses. The following presents Radford AAP's response to each comment.

## Hazardous Waste Management Unit 5 (HWMU-5)

1. *Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Closure Plan Amendment, HWMU 5 (Plan-HWMU 5). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan-HWMU 5.*

**Response to Comment 1**

When a revision is made as the result of a particular comment, corresponding revisions will be made in all applicable sections of the Amended Closure Plan.

2. *The Plan-HWMU 5 indicates that the RFAAP will attempt to achieve clean closure without removing any wastes or potentially contaminated equipment and subsoils. Several sections of the Plan-HWMU 5 state that in order to leave the residual material in-place (i.e., meet clean closure standards), the residual material will need to meet only the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 268. Please be advised that this is incorrect, and the Department apologizes for any confusion that the wording in its June 25, 2003 letter may have caused.*

*In order to prevent any further confusion, the following clarification is provided. At closure, all contamination, i.e., wastes, equipment, structures, soils, and groundwater (for certain types of units), must be removed or decontaminated to clean closure standards (see Section 3.13 of the Department's Draft Guidance Manual for Closure Plans and Post-Closure Plans; September 28, 2001). In addition, all hazardous wastes must meet the 40 CFR 268 LDRs treatment standards prior to land disposal. Since the residual material is actually hazardous waste from the surface impoundment, it must meet both the clean closure standards as well as the LDRs treatment standards in order to remain in-place.*

**Response to Comment 2**

Based on the June 22, 2004 teleconference between Radford AAP and the VDEQ, it is Radford AAP's understanding that the residual material remaining in-place in HWMU-5 must meet the clean closure standards as well as the 40 CFR 268.48 land disposal restrictions (LDRs) universal treatment standards for the Hazardous Constituents of Concern (HCOCs) specified in the Amended Closure Plan. In order to comply with the clean closure standards, individual samples of the residual material will be analyzed for the HCOCs. In order to comply with the LDRs universal treatment standards, a composite sample of the residual material will be analyzed for the HCOCs (please note: the LDRs universal treatment standards for inorganic constituents are based on TCLP results; therefore the inorganic HCOC analyses for the residual material composite sample will be conducted using TCLP). Based on the June 22, 2004 teleconference, it is Radford AAP's understanding that analysis of a composite sample of the residual material for the LDRs universal treatment standards is sufficient, as the LDRs are based on waste disposal criteria, and composite samples are acceptable for waste characterization purposes. In effect, if Radford AAP were to have placed the residual waste material that is present in HWMU-5 into HWMU-5 as a disposal action, they would have demonstrated compliance with the LDRs by conducting a composite sample on the containerized waste. Therefore Radford AAP feels that the composite sample of in-place residual material to demonstrate compliance with the LDRs is more representative and appropriate than discreet samples.

3. *1.1, paragraph 3, 1st sentence - Pursuant to the March 12, 2004 telephone conference with Mr. J. J. Redder of your staff, no amendments to the Post-Closure Care Plan-HWMU 5 are being made at this time. Please delete all references to the Post-Closure Care Plan throughout this document.*

**Response to Comment 3**

All references to amendment of the Post-Closure Care Plan will be removed from the Amended Closure Plan.

4. *3.1, paragraph 4 - This paragraph should refer to HWMU-5.*

**Response to Comment 4**

The reference will be changed to HWMU-5.

5. *4.2.1, paragraph 1, 6th sentence - The previous use of and the process code currently listed in EPA's RCRAInfo database for HWMU-5 is Surface Impoundment Storage (S04). If RFAAP wishes to modify the process code for this unit, a revised Part A Permit Application may be submitted.*

**Response to Comment 5**

In order to maintain consistency with the RCRAInfo database, the process code for HWMU-5 specified in Section 4.2.1, paragraph 1, 6th sentence will be changed to "S04."

6. *4.2.1, paragraph 2, 2nd sentence - This sentence should be revised to read "...similar streams were tested..."*

**Response to Comment 6**

The referenced sentence will be revised accordingly.

7. *4.2.4, paragraph 2, 1st sentence - This sentence should refer to HWMU-5.*

**Response to Comment 7**

The reference will be changed to HWMU-5.

8. *4.2.4, paragraph 2, 6th sentence - This states that the residual material does not pose a threat to human health or the environment. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.*

**Response to Comment 8**

The referenced sentence will be removed.

9. *5.0 - This section provides procedures for collecting samples and evaluating the results to confirm clean closure. However, no procedures are provided in the event that wastes or potentially contaminated equipment, structures, and soils must be removed in order to achieve clean closure. As such, this Plan-HWMU 5 appears to indicate that under no circumstances will any materials be removed. If this is the case, please clearly state this in the Plan-HWMU 5. If this is not the case, procedures for decontamination by removal should be provided.*

**Response to Comment 9**

The Amended Closure Plan will be revised to include the following options for closure:

Option 1: Clean closure with the residual material remaining in-place can be successfully demonstrated, in accordance with the clean closure standards and the LDRs universal treatment standards.

Option 2: Clean closure cannot be achieved with the residual material remaining in-place. The Unit will remain closed with the residual material in-place in accordance with the VDEQ-approved May 1988 Closure Plan, and the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). Radford AAP will retain the option to attempt to demonstrate clean closure in the future by excavation and removal of the residual material.

Option 3: Clean closure cannot be achieved with the residual material remaining in-place. The residual material will be excavated and transported off-site for disposal.

Prior to excavation, soil samples will be collected to determine the volume of material to be excavated. Composite sample(s) of the excavated material will be submitted for waste characterization analyses to determine the proper disposal method (hazardous vs. non-hazardous). Following excavation, confirmation samples will be collected to ensure removal of all contaminated materials. The procedures and criteria that will be used to document clean closure by removal will be fully defined in Section 5.0 of the Amended Closure Plan.

The Amended Closure Plan also will include the statement that the closure plan may be amended in the future at the request of Radford AAP in accordance with 40 CFR 264.112.

**10.** *5.3.1 - The residual material shall include everything above the bottom liner (including any sand and rip-rap) and below any clean material placed on top of the residual material. The bottom six (6) inches of clean material contacting the residual material shall be included with the residual material because of possible mixing with the residual material during its placement. Therefore, closure procedures addressing the residual material must include all materials above the bottom liner up to the first six inches of clean material placed above the residual material.*

**Response to Comment 10**

Radford AAP concurs with this definition of the residual material. This definition of the residual material will be included in Section 5.3.1 of the Amended Closure Plan.

**11.** *5.3.1 - This section indicates that the samples taken during the 2002 Field Investigation results will be used to demonstrate that clean closure can be achieved with the residual materials remaining in-place. As such, please note that the 2002 Field Investigation must meet all of the requirements (e.g., constituent list, number of samples, sample locations, field and laboratory methodologies, QA/QC, etc.) specified in the final approved closure plan amendment. Therefore, the Field Investigation Report and Risk Assessment for Units 5 and 7 submitted March 5, 2003 has not been reviewed as to its adequacy for the closure of HWMU-5.*

**Response to Comment 11**

The 2002 Field Investigation serves as a previous study for the purpose of providing generator knowledge regarding the residual material contained in the Unit. The results of the 2002 Field Investigation will be used to assist with the development of the HCOC list for the Unit. Additionally, the samples collected in the 2002 Field Investigation may be used to support the Clean Closure Demonstration to the extent possible.

**12.** *5.3.2, paragraph 1 - As stated in Section 3.7.1 of the Closure Guidance, the list of hazardous constituents of concern (HCOCs) is developed as part of the closure plan, that is, prior to beginning closure procedures. For the purposes of closure under RCRA, the HCOC list must include the following:*

*a. all hazardous waste constituents that were handled at the unit (this list may be found in approved closure plan);*

*b. all groundwater monitoring constituents that have been detected above background levels; and*

*c. any other hazardous constituents detected in the course of other investigations at the unit.*

*Please provide the HCOC list and an explanation as to why each constituent was included. Also, any other hazardous constituents (in addition to those constituents included above) detected during the course of closure activities shall be included in the list of HCOCs for the unit.*

**Response to Comment 12**

The HCOC list for HWMU-5 will be developed based on the following:

a. The results of the analysis of influent water in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 2 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

c. Any hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation.

In 1981, an analysis of influent water collected during low flow conditions indicated the presence of inorganic constituents at concentrations below levels defined as hazardous by the EP Toxicity test. Specifically, cadmium, chromium, and mercury were detected in the influent water sample at concentrations of 0.029 mg/l, 0.20 mg/l, and 0.020 mg/l, respectively. In addition, the influent water sample was analyzed for arsenic, barium, lead, selenium, and silver; concentrations of these constituents were not detected.

The quarterly groundwater monitoring list for HWMU-5, as presented in Appendix E of Permit Attachment 2 of the Final Permit (October 4, 2002), was developed in accordance with procedures specified by the VDEQ. As directed by the VDEQ during development of the January 2002 Permit Modification for the Draft Final Permit, Radford AAP carefully reviewed the groundwater monitoring data for HWMU-5 from First Quarter 1996 through Fourth Quarter 2001 in order to determine whether any constituents in the Unit's then-current groundwater monitoring list (as presented in the August 1999 GWQAR) were consistently <u>not</u> detected. Any constituents that had never been detected within the groundwater at the Unit were not included in the proposed Compliance Monitoring Constituent List presented in the January 2002 Permit Modification document. The VDEQ directed Radford AAP to follow this procedure in order to avoid the need to remove non-detected constituents later during the duration of the active permit. (Please note: in accordance with the May 19, 1999 agreement between the VDEQ and Radford AAP, pre-1996 groundwater analytical data were not to be used for regulatory decisions. Prior to 1996, the analytical data were generated from several different laboratories. In many cases, the analytical reports did not include detection limits. In several instances, different analytical methods were used during different quarters, resulting in noticeable variations in the reported

detection limits and practical quantitation limits. The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result, and as agreed with the VDEQ, any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 2 of the Final Permit, the quarterly groundwater monitoring list for HWMU-5 consists of the following constituents:

| | | |
|---|---|---|
| Antimony, total | Nickel, total | 1,2-Dichloroethane |
| Arsenic, total | Selenium, total | Methylene chloride |
| Barium, total | Silver, total | Toluene |
| Beryllium, total | Thallium, total | Trichloroethene |
| Cadmium, total | Vanadium, total | Xylenes, total |
| Cobalt, total | Zinc, total | Bis (2-ethylhexyl) phthalate |
| Copper, total | Acetone | Diethyl phthalate |
| Lead, total | 2-Butanone | 2,4-Dinitrotoluene |
| Mercury, total | Chloroform | 2,6-Dinitrotoluene |

In addition, the following additional constituents have been detected in the groundwater at HWMU-5 during annual monitoring for the constituents listed in 40 CFR Part 264 Appendix IX: chromium, 2-nitroaniline, 4-nitroaniline, and nitrobenzene. As a result, these constituents have been added to the quarterly groundwater monitoring list for HWMU-5.

During the 2002 Field Investigation at HWMU-5, samples of the residual material and surrounding soils were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds, and for the USEPA Target Compound List (TCL) organic compounds. The following hazardous constituents (as listed in 40 CFR Part 261 Appendix VIII) were detected in the samples:

| | | | |
|---|---|---|---|
| Arsenic | Beryllium | Lead | Nickel |
| Barium | Chromium | Mercury | 4,4-DDD |

The hazardous constituents detected in the samples of the residual material and surrounding soil, as well as the inorganic constituents detected in the 1981 influent water sample, are included in the quarterly groundwater monitoring list for HWMU-5 (with the exception of 4,4-DDD). Therefore, the HCOC list for HWMU-5 will be the same as the current quarterly groundwater monitoring list for the Unit, plus 4,4-DDD.

Interpretation of the closure guidance indicates that Radford AAP need only analyze for the HCOC list. In an effort to remain consistent with the detection requirements of the facility-wide federal RCRA Corrective Action Permit, Radford AAP proposes to sample for a list of constituents (the TAL/TCL list) that includes the HCOCs for this Unit. In doing so, Radford AAP is demonstrating their pro-active and conservative approach to environmental compliance. Radford AAP realizes that if any constituents detected using this expanded list of constituents are not represented on the proposed HCOC list (which contains all previously detected compounds), Radford AAP will be required to add those detected constituents to the HCOC list for the Unit. This "belt and suspenders" approach provides a level of protection that far exceeds the minimum requirements of the closure process.

**13.** *8.2.3 - This section states that the levels of inorganics found during the development of the Radford Army Ammunition Plant Facility-Wide Background Report (December 2001) will be used as background. Section 3.11.3 of the Closure Guidance indicates that background soils and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit. In addition, background samples must be collected in a manner identical to that of the closure samples and must comply with all Quality Assurance/Quality Control (QA/QC) procedures of the final approved closure plan. Not all of the Facility-Wide Background samples appear to meet these requirements. Please provide additional information concerning the Facility-Wide Background samples to determine which samples may meet the Closure Guidance requirements for background samples. Please note that if a large enough (minimum of eight) subset of the Facility-Wide Background samples does not meet the Closure Guidance requirements, additional background samples will need to be collected.*

**Response to Comment 13**

Radford AAP has established the validity of the December 2001 Facility-Wide Background Report with the VDEQ and USEPA Region III, and has substantial documentation regarding VDEQ and USEPA Region III approval of the study and its use as a screening tool for soils at the facility. Specifically, Radford AAP has utilized the data from the Facility-Wide Background Report to the satisfaction of the VDEQ and USEPA Region III in the Site Screening Document for SWMU-6, in the Soil Screening Reports for SWMUs 8 and 36, and in the draft RCRA Facility Investigation Report for SWMU-58 (copies of the VDEQ and USEPA Region III approval letters for the above-referenced documents are included in Appendix A of this Response to Comments).

With respect to Section 3.11.3 of the Closure Guidance, which indicates that background soils and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit, please note that the VDEQ provided the following comment regarding the background soil data presented in the draft Facility-Wide Background Report on September 10, 2001:

*"Given the conditions of mixed surface and subsurface soils at the potentially contaminated sites, it is recommended that the background data for both surface and subsurface soils be combined for each element to determine the 95% UTL to be used in conjunction with the USEPA Region III RBCs for human health risk screening, and with various ecological screening data for ecological screening purposes. This will not only simplify the screening process, but will add power to the statistical comparison and prevent the unnecessary, and costly, carrying forward of naturally occurring elements into the full-fledged risk assessment process."*

Therefore, it is Radford AAP's opinion that the soil samples analyzed in support of the Facility-Wide Background Study should be of sufficient quantity to meet the requirements of the Closure Guidance to provide background inorganic constituent concentrations for HWMU-5.

14. *6.1, paragraph 1 - Per Section 3.11.1 of the Closure Guidance, different sampling approaches are used to address differences in unit types, distributions or contamination, and assumptions concerning the unit. It appears that eight (8) samples locations shall be evenly spaced across the unit. Provide the rationale for this sampling approach. In addition, describe how decontamination by removal (if needed) will be conducted in light of this sampling approach (see Comment 8 above).*

**Response to Comment 14**

A stratified grid-based sampling approach is proposed to accurately characterize the horizontal and vertical extent of the residual material. Eight sample locations shall be evenly spaced across the Unit to provide a representative evaluation of the entire Unit.

15. *6.1, paragraph 2 - Because the sample collection device will pass through the residual material then the bottom liner and subsoils, there is a potential for cross-contamination from the residual material to the subsoils. Therefore, the Department recommends collecting subsoil samples from the undisturbed center of the cores to minimize possible cross-contamination.*

**Response to Comment 15**

This procedure will be specified in Section 6.1, paragraph 2.

16. *6.1, paragraph 2, 2nd sentence - Section 4.2.1 states that the unit is lined with a 60-mil Hypalon liner. This liner must meet clean closure standards if RFAAP is to achieve clean closure without removal of wastes and potentially contaminated equipment, structures, and soils. However, the proposed sample collection method may not collect a sufficient amount of the liner material for analyses (i.e., at most, a 1.5 inch diameter circle if the sample is able to collect any at all). Please describe how sufficient samples of the liner will be collected.*

**Response to Comment 16**

Recent investigations indicate that the 60-mil liner is not present beneath HWMU-5.

17. *6.4 - Section 3.11.5 of the Closure Guidance recommends additional rinses after sampling for metals and organic constituents. Please revise this section accordingly.*

**Response to Comment 17**

The Geoprobe sample collection system uses dedicated, disposable acetate liners for each sample collected. Therefore, decontamination using additional rinses between sample collection will not be required.

18. *6.7 - This section states that samples will be analyzed for Target Analyte List (TAL) and Target Compound List (TCL) constituents. However, the list of constituents provided in Table 2 does not include all TCL constituents. Please explain why certain TCL constituents were excluded.*

**Response to Comment 18**

The laboratory selected for the analyses (Lancaster Laboratories) uses statement of work OLM03.2 for the analysis of TCL organic constituents. This is the list that was presented in the Amended Closure Plan.

***19.*** *6.7, paragraph 2, last sentence - Specify what criteria against which the data will be validated (e.g., CLP Functional Guidelines, SW-846 QA-QC criteria, etc.).*

**Response to Comment 19**

Section 6.7, paragraph 2 will be revised to specify the following: "Data validation will be conducted using summary tables and raw data provided by the analyzing laboratory. Data validation will be conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002)."

***20.*** *6.8.1 - In addition to indicating the total expected quantity of each type of QA/QC sample that will be collected, state the minimum collection frequency of each type of QA/QC sample (e.g., one trip blank/cooler/day of sampling).*

**Response to Comment 20**

The following minimum collection frequency of each type of QA/QC sample will be specified in Section 6.8.1:

"A minimum of one trip blank per cooler per day of sampling will accompany the samples collected for TCL organic compounds analyses."

"A minimum of one equipment blank per day of sampling will be collected in the event that non-dedicated equipment is used during the sampling process."

"A minimum of one field duplicate sample per day of sampling will be collected at the Unit."

***21.*** *6.8.1, paragraph 3, 3rd and 5th sentences - Both of these appear to refer to constituents for which the equipment blank(s) will be analyzed. Please clarify these confusing sentences.*

**Response to Comment 21**

The 5th sentence of Section 6.8.1, paragraph 3 will be removed. The 3rd sentence of Section 6.8.1, paragraph 3 will be revised to read: "Any equipment blank(s) will be analyzed for the same constituents for which the soil samples and residual material samples are being analyzed."

22. *6.8.1, paragraph 5, 1st sentence - Data shall be qualified appropriately if contamination is found in QA/QC blanks, however, such blank contamination may not be used to "invalidate" data.*

**Response to Comment 22**

Section 6.8.1, paragraph 5 will be revised to read: "The occurrence of constituents in blank samples may serve to qualify the results presented by the laboratory. Additional blanks or duplicate samples may be prepared and analyzed to address specific, unanticipated conditions. Re-sampling and re-analysis may be required in certain cases depending on project objectives.

23. *6.8.2, paragraph 4 - Matrix spike/matrix spike duplicates (MS/MSD) shall be prepared and analyzed at a frequency of one MS/MSD per sampling batch or 20 samples (whichever is more frequent) per matrix type.*

**Response to Comment 23**

This statement will be added to the referenced section.

24. *8.1, paragraph 4, 2nd sentence - Per Section 3.11.1 of the Closure Guidance, composite samples are not acceptable for demonstrating achievement of clean closure standards.*

**Response to Comment 24**

Radford AAP concurs with this statement. Based on the June 22, 2004 teleconference between Radford AAP and the VDEQ, it is Radford AAP's understanding that in order to comply with the clean closure standards, individual samples of the residual material must be analyzed for the HCOCs. However, it is also Radford AAP's understanding that a composite sample is sufficient for demonstrating compliance with the LDRs universal treatment standards.

25. *8.2.1, last sentence - This appears to refer to HWMU 7 by mistake. Please clarify or correct.*

**Response to Comment 25**

The referenced sentence will be clarified.

26. *8.2.3.2 - This section states that if all inorganic results do not exceed the background concentrations, then "that sampling location will be deemed uncontaminated." It further states that if all sampling locations are uncontaminated then "the soil will have met the clean closure decontamination standard." Please be advised that these statements are not correct. In order to meet the background clean closure standard, sampling results of **all** HCOCs (not just inorganics) must not exceed detection limits or background. Please revise accordingly.*

**Response to Comment 26**

The referenced section will be revised to read as follows: "If the concentration of every inorganic HCOC in a soil sample is below the appropriate UTL, that sampling location will be deemed to be uncontaminated for inorganic constituents. Should all soil samples be uncontaminated for inorganic constituents in this manner, the soil will have met the clean closure decontamination standard for inorganic constituents."

27. *8.2.4 - Only those constituents that did not pass the non-detection and background clean closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation.*

**Response to Comment 27**

Radford AAP concurs with this statement. This statement will be included in Section 8.2.4 of the Amended Closure Plan.

28. *10.0, 2nd sentence - This states that the residual material left in-place is not a hazardous waste. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.*

**Response to Comment 28**

The referenced sentence will be revised to read as follows: "Based on generator knowledge and previous studies, Radford AAP has determined that the residual material contained in HWMU-5 is not a hazardous waste as defined in 40 CFR Part 261."

29. *10.0 - Please revise the schedule pursuant to Comment 3 above.*

**Response to Comment 29**

The schedule will be revised by removing references to the Post-Closure Care Plan.

It is Radford AAP's understanding that the VDEQ wants Radford AAP to submit a Closure Report and a Class II Permit Modification at the same time, and that the VDEQ will review both documents together. Assuming that approval for clean closure is obtained, Radford AAP will then submit a request to shorten the Post-Closure Care Period. If the request to shorten the Post-Closure Care Period is approved, the Final Permit will be modified accordingly.

30. *10.0 - Please provide additional details concerning closure activities. Enough detail should be provided to allow tracking of the progress of closure. In addition, contingent closure activities (such as those described in paragraph 4 of Section 13.0) must be included in the closure schedule.*

**Response to Comment 30**

The following closure schedule will be included in Section 10.0:

| CLOSURE ACTIVITY | TIMEFRAME FOR COMPLETION |
|---|---|
| Radford AAP:<br>Submittal of Amended Closure Plan | 30 days from VDEQ approval of Response to Comments |
| VDEQ:<br>Review and Approval of Amended Closure Plan | 90 days from submittal |
| Radford AAP:<br>Soil and Groundwater Sampling;<br>Submittal of Closure Report (with Class II Permit Modification if clean closure is demonstrated) | 90 days from VDEQ approval of Amended Closure Plan |
| VDEQ:<br>Review and Approval of Closure Report;<br>Review and Approval of Class II Permit Modification (if clean closure is certified) | 120 days from submittal |

In the event that clean closure is not achieved, the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). If Radford AAP chooses to demonstrate clean closure by removal, additional closure schedule information will be submitted.

31. *13.0, paragraph 3, 2nd and 3rd sentences - These are not correct. Please remove these sentences.*

**Response to Comment 31**

The referenced sentences will be removed.

32. *13.0, paragraph 4 - Pursuant to 40 CFR 264.225(c)(1), a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided in the event that clean closure cannot be achieved.*

**Response to Comment 32**

Section 13.0, paragraph 4 will be revised to read as follows: "In the unlikely event that HWMU-5 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the VDEQ-approved May 1988 Closure Plan included in the Final Permit (October 4, 2002) will serve as the Contingent Closure Plan for the Unit in accordance with 40 CFR 264.225(c)(1), and the Unit will remain in post-closure care in accordance with the Final Permit."

33. *Table 2 - This list does not contain a complete list of HCOCs (see Comment 12 above) for HWMU 5.*

**Response to Comment 33**

In accordance with **Response to Comment 12**, Table 2 will be revised as follows:

**TABLE 2**

| HAZARDOUS WASTE MANAGEMENT UNIT 5<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Vanadium | 6010B | 5 | 0.066 | mg/kg |
| Zinc | 6010B | 2 | 1.3 | mg/kg |
| Acetone | 8260B | 0.02 | 0.007 | mg/kg |
| 2-Butanone | 8260B | 0.01 | 0.004 | mg/kg |
| Chloroform | 8260B | 0.005 | 0.001 | mg/kg |
| 1,2-Dichloroethane | 8260B | 0.005 | 0.001 | mg/kg |
| Methylene chloride | 8260B | 0.005 | 0.002 | mg/kg |
| Toluene | 8260B | 0.005 | 0.001 | mg/kg |
| Trichloroethene | 8260B | 0.005 | 0.001 | mg/kg |
| Xylenes, total | 8260B | 0.005 | 0.001 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Diethyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 2-Nitroaniline | 8270C | 0.4 | 0.04 | mg/kg |
| 4-Nitroaniline | 8270C | 0.4 | 0.08 | mg/kg |
| Nitrobenzene | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |

Notes:
Actual sample quantitation and detection limits will be adjusted based on dry weight.
Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

**34.** *Table 2 - Section 8.2.2 of the Plan-HWMU 5 states that, initially, RFAAP will attempt to demonstrate clean closure by analytical non-detection and comparison to background (for detected HCOCs). Section 3.9 of Closure Guidance recommends using the analytical methods with the lowest quantitation limits for each HCOC when demonstrating clean closure at these standards. Specifically:*

- *SW-846 Methods 7000 Series typically achieve lower detection and quantitation limits than Method 6010 for inorganics;*
- *SW-846 Method 8021B typically achieves lower detection and quantitation limits that Method 8260 for many chlorinated and aromatic volatiles; and*
- *SW-846 Method 8330 typically achieves lower detection and quantitation limits than Method 8270 for 2,4- and 2,6-dinitrotoluene.*

*Please review the achievable detection and quantitation limits with your laboratory and revise table 2 accordingly.*

**Response to Comment 34**

Radford AAP realizes that the closure guidance document recommends the use of methods that achieve the lowest possible detection limits for clean closure documentation. While in theory the use of those methods may provide marginally lower detections than methods used in standard professional practice of analysis, they are inherently not definitive, by definition, and have significant limitations with respect to reliability, validity and reproducibility. Appendix III to 40 CFR Part 261 – *Chemical Analysis Test Methods* references the use of SW-846 in the selection of test methods. Chapter 2 of SW-846, Section 2.2.5 – *Detection and Monitoring* recommends the use of the *most practical* methods approved for detection. All of the analytical methods proposed by Radford AAP are considered the most practical and robust methods and are specifically approved for detection monitoring.

Additionally, many nationally accredited commercial laboratories do not routinely provide these methods for entire standard parameter lists. For example, Lancaster Laboratories only offers method 8021B for the suite of compounds that includes Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX). Analysis of a full Volatile Organic Compound list for soil using method 8021B would constitute a research level effort, thereby more than tripling the cost. Additionally, many units at Radford AAP have been closed under the federal RCRA Corrective Action Permit for the entire facility using the methods proposed here. Using similar methods provides a consistent approach with respect to decision making at the facility and interpretation of the intent of RCRA. Accordingly, Radford AAP proposes to use the following methods:

- Analysis by SW-846 Method 6010B (ICP-trace) generally provides detection and quantitation limits comparable to SW-846 7000 series methods. In general, ICP-trace analysis is preferred since the method is subject to less interferences and potential false positives. Radford AAP requests the use of Method 6010B.

- Analysis by SW-846 Method 8021B typically achieves lower detection and quantitation limits for select chlorinated and aromatic volatiles. However, use of SW-846 Method 8260B is preferred due to the reliability associated with target analyte identification (less potential for false positives). In many cases, laboratory specific detection limits for

Method 8260B analytes may be comparable to Method 8021B. Radford AAP requests the use of Method 8260B.

- Analysis by SW-846 Method 8330 is subject to interferences and potential false positives. For this project, use of SW-846 Method 8270C is preferred due to the reliability associated with target analyte identification (less potential for false positives). As well, Lancaster Laboratories' specific detection and quantitation limits for Method 8270C analytes 2,4- and 2,6-dinitrotoluene are lower than Method 8330. Radford AAP requests the use of Method 8270C.

The above noted methods are reliable, cost-effective and can generate data to support clean closure demonstration at this facility. Therefore, RFAAP respectfully requests the use of SW-846 Methods 6010B, 8260B and 8270C for this project.

## Hazardous Waste Management Unit 7 (HWMU-7)

1. *Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Amended Closure Plan (Plan). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan.*

**Response to Comment 1**

When a revision is made as the result of a particular comment, corresponding revisions will be made in all applicable sections of the Amended Closure Plan.

2. *Because of the similarity between the Closure Plan Amendments for HWMUs 5 and 7, the comments provided for the Plan-HWMU 5 also apply to the Plan-HWMU 7 with the exception of comments 4, 6, 7, 10, 16, 25, 32, and 33. Although some of the paragraph and sentence numbers referenced for Plan-HWMU 5 do not exactly match those for Plan-HWMU7, the working is close enough such that referring back to the text of Plan-HWMU 5 should resolve any discrepancies.*

**Response to Comment 2**

The sections in the Amended Closure Plan for HWMU-7 that are similar to those in the Amended Closure Plan for HWMU-5 that require revision will be addressed accordingly.

3. *5.3.1 - Section 6.0 indicates that the unit is underlain by a clay liner and native soils. Because of possible mixing, the top six inches of clay or native soils directly beneath the residual material shall be included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material shall be included with the residual material. Therefore, closure procedures addressing the residual material must include all materials from six inches beneath to six inches above the residual material.*

**Response to Comment 3**

Radford AAP concurs with this definition of the residual material. This definition of the residual material will be included in Section 5.3.1 of the Amended Closure Plan.

4. *13.0, paragraph 4 - Since this unit does not meet the 40 CFR 264.221(a) liner requirements, a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided.*

**Response to Comment 4**

Section 13.0, paragraph 4 will be revised to read as follows: "In the unlikely event that HWMU-5 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the VDEQ-approved May 1988 Closure Plan included in the Final Permit (October 4, 2002) will serve as the Contingent Closure Plan for the Unit in accordance with 40 CFR 264.225(c)(1), and the Unit will remain in post-closure care in accordance with the Final Permit."

5. *Table 2 - Please verify that all applicable HCOCs for HWMU 7 (see Comment 12 for the Plan-HWMU 5, above) are included in this list.*

**Response to Comment 5**

The HCOC list for HWMU-7 will be developed based on the following:

a. The results of analyses of lagoon water and sediment in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 3 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

c. Any hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation.

In 1981, analyses of lagoon water and sediment collected from HWMU-7 indicated the presence of inorganic constituents at concentrations below levels defined as hazardous by the EP Toxicity test. Specifically, cadmium was detected in the lagoon water sample at a concentration of 0.016 mg/l; no other inorganic constituents were detected in the lagoon water sample. Barium, cadmium, chromium, lead, and silver were detected in the sediment sample at concentrations of 0.33 mg/l, 0.027 mg/l, 0.73 mg/l, 0.58 mg/l, and 0.027 mg/l, respectively. In addition, the sediment sample was analyzed for arsenic, mercury, and selenium; concentrations of these constituents were not detected in the sediment sample.

The quarterly groundwater monitoring list for HWMU-7, as presented in Appendix E of Permit Attachment 3 of the Final Permit (October 4, 2002), was developed in accordance with procedures specified by the VDEQ. As directed by the VDEQ during development of

the January 2002 Permit Modification for the Draft Final Permit, Radford AAP carefully reviewed the groundwater monitoring data for HWMU-7 from First Quarter 1996 through Fourth Quarter 2001 in order to determine whether any constituents in the Unit's then-current groundwater monitoring list (as presented in the September 1999 Post-Closure Care Permit for HWMU-7) were consistently not detected. Any constituents that had never been detected within the groundwater at the Unit were not included in the proposed Compliance Monitoring Constituent List presented in the January 2002 Permit Modification document. The VDEQ directed Radford AAP to follow this procedure in order to avoid the need to remove non-detected constituents later during the duration of the active permit. (Please note: in accordance with the May 19, 1999 agreement between the VDEQ and Radford AAP, pre-1996 groundwater analytical data were not to be used for regulatory decisions. Prior to 1996, the analytical data were generated from several different laboratories. In many cases, the analytical reports did not include detection limits. In several instances, different analytical methods were used during different quarters, resulting in noticeable variations in the reported detection limits and practical quantitation limits. The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result (and as agreed with the VDEQ), any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 3 of the Final Permit, the quarterly groundwater monitoring list for HWMU-7 consists of the following constituents:

| | | |
|---|---|---|
| Antimony, total | Mercury, total | 2,4-Dinitrophenol |
| Arsenic, total | Nickel, total | 2,4-Dinitrotoluene |
| Barium, total | Selenium, total | 2,6-Dinitrotoluene |
| Cadmium, total | Silver, total | 4-Nitrophenol |
| Chromium, total | Thallium, total | Cyanide, total |
| Cobalt, total | Bis (2-ethylhexyl) phthalate | |
| Lead, total | Butyl benzyl phthalate | |

In addition, copper has been detected in the groundwater at HWMU-7 during annual monitoring for the constituents listed in 40 CFR Part 264 Appendix IX. As a result, copper has been added to the quarterly groundwater monitoring list for HWMU-7.

During the 2002 Field Investigation at HWMU-7, samples of the residual material and surrounding soils were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds, and for the USEPA Target Compound List (TCL) organic compounds. The following hazardous constituents (as listed in 40 CFR Part 261 Appendix VIII) were detected in the samples:

| | | | |
|---|---|---|---|
| Arsenic | Chromium | Cyanide | N-Nitrosodiphenylamine |
| Barium | Lead | 4,4-DDD | |
| Beryllium | Nickel | 4,4-DDE | |

As a result, Table 2 will be revised as follows:

## TABLE 2

| HAZARDOUS WASTE MANAGEMENT UNIT 7<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Butyl benzyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrophenol | 8270C | 2.4 | 0.8 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 4 Nitrophenol | 8270C | 1 | 0.2 | mg/kg |
| N-Nitrosodiphenylamine | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| 4,4-DDE | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| Cyanide | 9012A | 0.5 | 0.5 | mg/kg |

Notes:

Actual sample quantitation and detection limits will be adjusted based on dry weight.

Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

# APPENDIX A

# VDEQ AND USEPA REGION III CORRESPONDENCE

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

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*Mailing address:* P.O. Box 10009, Richmond, Virginia 23240
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Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482


February 21, 2001

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: SWMU 6 Sampling Results Report
Radford Army Ammunition Plant
Radford, Virginia, January 2001

Dear Mr. McKenna:

Thank you for the opportunity to review the above referenced document. There is only one minor comment at this time.

- Page ii, first full paragraph, second sentence – I believe that there is a typographical error and that the intent was to state that aluminum detections were above residential RBCs and below industrial RBCs.

As an additional note, I have forwarded the soil background study to our staff statistician for additional review. Please contact me at 804-698-4143 if you have any questions.

Very truly,

Sharon Wilcox

Sharon Skutle Wilcox
Office Of Remediation Programs

cc: Robert Thompson, Region III, U.S.EPA
Durwood Willis, CO
Norm Auldridge, WCRO
Aziz Farahmand, WCRO
c Jerry Redder, ATK

27 l

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

June 12, 2001

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 6
Draft *Site Screening Document* submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's revised draft Site Screening *Sampling Results Report* for soil sampling at SWMU 6, located at the Radford Army Ammunition Plant (RFAAP). Based upon our review, the revised draft *Sampling Results Report* is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the schedule contained within Section 7, Figure 11 of the *Sampling Results Report* is now considered final and is henceforth incorporated into the Permit, via the Installation Action Plan.

copy in 27l

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA
Sharon Wilcox, VDEQ-CERCLA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

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October 7, 2003

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Work Plan Addendum No. 18, SWMU 41
Soil Screening Report SWMU 8
Soil Screening Report SWMU 36

Dear Mr. McKenna:

Thank you for providing the staff the opportunity to review and comment on the referenced documents. The staff has the following comments:

Work Plan Addendum No. 18, SWMU 41

Figure 1-16. The symbol for soil boring in the legend (closed black circle) does not correspond to the symbol used in the figure (open circle). Also, Table 1-9 indicates that soil samples SB 6, 7 and 8 will be taken outside Area B, while the figure clearly shows the samples to be within the inferred boundary line.

Figure 1-15. Table 1-9 indicates that soil samples SB 3, 4 and 5 will be taken outside Area A, while Figure 1-15 shows the samples within the inferred boundary line. Please explain.

Soil Screening Reports SWMUs 8 and 36

There are no additional comments on the Soil Screening Reports for SWMUs 8 and 36.

Please do not hesitate to contact Jennifer Jones, 804-698-4328, or myself if you have questions concerning these comments.

Sincerely,

Durwood Willis

Durwood Willis
Federal Facilities Program Manager

CC: Norman L. Auldridge, VDEQ - WCRO

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

May 3, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMUs 8 and 36
Draft *Soil Screening Report*
Review of the Army's 2/6/04 response to EPA's 12/11/03 comment letter

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the Radford Army Ammunition Plant (RFAAP). Outlined below, please find EPA's comments based upon that review:

***EPA General Comment 2***

2. As concluded in Section 5.0 of the Report, the soil screening at Solid Waste Management Units (SWMUs) 8 and 36 indicated the presence of "selected targeted constituents." However, it is concluded in this section that "point comparisons of the discrete data to Residential RBCs [risk-based concentrations], Industrial RBCs, and

RFAAP background did not indicate a potential to human health." There are potential flaws in this conclusion, among them:

- The screening process was not completed in accordance with the RFAAP *Site Screening Process* (SSP [October 26, 2001]). At this stage, the chemicals of potential concern (COPCs) should have been identified (COPC identification step in Section 6.1.1.1 of the SSP). Based on the data presented in the report, it appears manganese, lead, mercury, zinc, and antimony are the COPCs.

***RFAAP Response***

In order to achieve the project objectives of assessing for the presence or absence of hazardous constituents in soil and characterizing site materials for RCRA characteristics, particular elements enumerated in the RFAAP SSP were used to perform qualitative risk screening for the SWMUs 8 and 36 Soil Screening. There was no intent within the Report to identify COPCs for purposes of conducting an RFI risk assessment, thus the screening process for SWMUs 8 and 36 did not follow every element within the SSP developed at RFAAP for Site Screening Areas.

**EPA review**

Please note that the SSP, as envisioned, is not conducive towards the elimination of process steps within the SSP. It is not a "pick and choose" methodology. Either the SSP process is followed or it isn't. In the future, please follow the SSP process. The central questions that need to be answered BY THIS REPORT are: (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. The Report generally answers these questions, but not in a direct approach. Additionally, in the future, please differentiate between those soil constituents which exceed the residential RBC and background and those soil constituents which exceed the industrial RBC and background values. This is important in determining whether or not the site will need long-term monitoring, i.e. whether waste is left in-place. The conclusions section of the report should address this in future SSP documents.

***EPA General Comment 2 continued***

- No cumulative risk screening was conducted in accordance with the SSP. This evaluation includes uncertainty analysis of the cumulative risk screening. As the vertical and horizontal extent of contamination of all the chemicals detected in soil is not fully characterized, whether the data generated from this soil screening is sufficient to conduct a cumulative risk assessment will also need to be demonstrated.

***RFAAP Response***

The objectives of the Soil Screening did not include full characterization of the site for completion of a cumulative risk assessment. Characterization of the site, if necessary, will take place at some time after treatment activities cease at these locations.

**EPA review**

It is important to note that defining the full nature and extent of contamination is NOT part of the SSP, but is the function of the RFI. The uncertainty section of the SSP basically acknowledges this. The function of the SSP is to determine whether or not there has been a release at the site. To accomplish this, a proposed number of samples contained in an approved Work Plan is sufficient. Thus, the central questions that need to be answered revolve around (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. Defining nature and extent is left to the RFI phase, if needed.

***EPA General Comment 2 continued***

• Some potential exposure pathways were not evaluated. According to the conceptual site models (CSMs) presented in Figures 2-4 and 2-5, the potential impact from soil to groundwater and eventually surface water exists. However, the Report does not evaluate chemical migration of contaminants from soil to groundwater as required by the SSP. The SSP requires use of USEPA's *Soil Screening Guidance* (USEPA, 1996) as a source of information when conducting comparison to soil screening levels (SSLs). The Report did not compare soil concentrations to the USEPA Region 3 SSLs listed on the RBC Table. Based on the data provided in the Report, several metals (e.g., arsenic, chromium, manganese, vanadium, etc.) exceed their respective SSLs at dilution attenuation factor (DAF) 20.

***RFAAP Response***

The report will be revised to include a comparison of soil concentrations to the USEPA Region 3 soil to groundwater SSLs at DAF 20 listed on the most recent RBC Table.

**EPA review**

The Army's response is acceptable. However, in the future, please include the SSL screening in the text of the screening section of the report. Please note that the SSL screening was not discussed in Section 4 of the report.

***EPA comment 2 continued***

• In the Summary (Section 4.4) of the Report, only those metals with concentrations exceeding both the RBCs and the background concentrations are noted. Other metals that exceeded one or more screening criteria are dismissed

because their concentrations did not exceed the site background values. The risk conclusions, thus, consider only those metals noted in Section 4.4. At this stage, it appears inappropriate to eliminate metals from the risk assessment based solely on a comparison to background or ambient levels. In order to provide a more complete characterization of potential risks associated with exposures at the site, metals that exceed risk-based screening concentrations should not be excluded from quantitative consideration in the risk assessment. The contribution to the overall risk due to metals with high background concentrations should be presented in a risk characterization (EPA. 2002. *Role of Background in the CERCLA Cleanup Process.* Office of Solid Waste and Emergency Response. OSWER 9285.6-0P. April 26).

***RFAAP Response***

Per previous agreement with USEPA, investigations performed prior to WPA 016 would be allowed to screen out COPCs based on background comparison. Work at SWMUs 8 and 36 was performed under WPA 015. Also, please refer to the response to specific USEPA comment 18 below regarding the presentation of data for constituents exceeding relevant screening criteria but not their inorganic constituent background point estimates.

**EPA review**

The Army's response is acceptable.

This concludes EPA's review of the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the RFAAP. All Army responses to EPA's December 11, 2003 letter were determined to be acceptable. The above comments reflect a need for refinement in the submittal of SSP documents in the future.

Based upon our review, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is now considered final.

Based upon the above, please submit a draft *SWMU Decision Document* for SWMU 8 and 36, separately, to EPA for review. Please bear in mind the comments outlined above when preparing the text of the draft *SWMU Decision Documents.*

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burn
Director

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5 August 03

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Draft SWMU 58 RCRA Facility Investigation Report

Dear Mr. McKenna:

This office has reviewed the Draft SWMU 58 RCRA Facility Investigation Report and concurs with the findings. This office has no comments at this time. Please forward a copy of the final document, preferably on CD, when it is available.

If you have any questions, please do not hesitate to call.

Sincerely,

Mark S. Leeper
RPM

cc: Mr. Robert G. Thomson – EPA Region III
Mr. Garwin Eng – VDEQ - CO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 24, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

Carolyn A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 58
Rubble Pile
Document submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army's (Army's) March 2004 response to EPA's September 18, 2003 review comments pertaining to the draft *RCRA Facility Investigation Report* (RFI) for SWMU 58, located at the Radford Army Ammunition Plant (RFAAP). Based upon that review, EPA finds the Army's March 2004 response to be acceptable.

Given the above, the referenced draft *RCRA Facility Investigation Report* (RFI) is conditionally approved by EPA, provided that EPA's comments are satisfactorily addressed in the final RFI Report. Please forward two copies of the final SWMU 58 RFI Report to EPA for review and approval.

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

## Lori Livingston

**From:** Glover, William [William.Glover@ATK.COM]
**Sent:** Thursday, January 18, 2007 4:32 PM
**To:** Mike Lawless; Flint, Jeremy; Janet Frazier; Lori Livingston; Ross Miller
**Subject:** FW: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

**Importance:** High

**Attachments:** Glover, William.vcf

Glover, William.vcf
(643 B)

Here is the answer to copies, and additional comment. Please review and give me your opinion on his comment!

William D. Glover, REM, CPG, PhD, CHMM
Compliance Engineer
RFAAP
Route 114, P.O. Box 1
Radford, VA 24143
540-639-7635
540-639-8109

-----Original Message-----
From: Stepien,Matthew [mailto:mmstepien@deq.virginia.gov]
Sent: Thursday, January 18, 2007 3:28 PM
To: Glover, William
Cc: Flint, Jeremy; Vakili,Hassan
Subject: RE: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc
Importance: High

Bill,

3-hard copies would work and 1-electronic.

I was reviewing the comments and I saw one that I overlooked that should not be a problem to address, I hope!

Comment #34, Table 2
The Detection Limit of the SW-846 method that RFAAP chooses to use should be below the Risk and/or Background #. If both methods provide a Detection Limit that is below the risk and/or background # than either one can be used. Example:
Background for constituent x: 5 ug/mg
Detection Limit using 8260B: 3 ug/mg
Detection Limit using 8021B: 1 ug/mg

In this case you can use either one 8260 or 8021.

I will have a definite answer for you early next week on the Class Determination. I am off tomorrow but will be in the office all of next week. Thanks for the conference call and information and let me know if you have any other questions.

Thanks,

Matthew M. Stepien
VDEQ Office of Hazardous Waste Permitting direct dial: (804) 698-4026
fax: (804) 698-4234
mmstepien@deq.virginia.gov

-----Original Message-----
From: Glover, William [mailto:William.Glover@ATK.COM]
Sent: Thursday, January 18, 2007 12:49 PM
To: Stepien,Matthew
Subject: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

<<RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc>> Matt how many copies of the final CP do you require for submittal, hard copy vs CD electronic? Section #13 4th paragraph is comment #4 of 5 which was different from No. 5 comment.s
The message is ready to be sent with the following file or link attachments:

RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

## Lori Livingston

**From:** Glover, William [William.Glover@ATK.COM]
**Sent:** Thursday, January 25, 2007 2:51 PM
**To:** Janet Frazier; Lori Livingston; Mike Lawless; Ross Miller
**Subject:** FW: HWMU-7 Review
**Attachments:** Glover, William.vcf

Ok Guys, lets go forward now quickly. Do we need any meeting or conference call now?

William D. Glover, REM, CPG, PhD, CHMM
Compliance Engineer
RFAAP
Route 114, P.O. Box 1
Radford, VA 24143
540-639-7635
540-639-8109

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**From:** Stepien,Matthew [mailto:mmstepien@deq.virginia.gov]
**Sent:** Thursday, January 25, 2007 2:49 PM
**To:** Glover, William; Flint, Jeremy
**Cc:** Vakili,Hassan
**Subject:** HWMU-7 Review

Good Afternoon Bill,

I completed my review of HWMU-7. All of the comments made on HWMU-5 during our 1-18-07 conference shall be addressed in HWMU-7 as well. In particular:

- References made to the LDRs throughout Closure Plan
- Section 5.0, option 3
- Section 5.3.2, HCOC list, also where did the interpretation of the closure guidance "belt and suspenders" approach disappear too? This paragraph was in the HWMU-5 report but not HWMU-7? That said lets just be sure to have a comprehensive HCOC list in both plans.
- Section 6.7, see my Jan. 18, 2007 email comment

These were the main areas of discussion but as stated above all comments made on HWMU-5 that apply to HWMU-7 shall be addressed.

Please submit the comments discussed during our 1-18-07 conference call and 1-18-07 email, with RFAAP's responses in letter format similar to the ***September 17, 2004 Response to Comments HWMUs 5 and 7 letter*** from RFFAP to the Department.

Any questions feel free to call or email me. Also, when you get a chance please call Erich Weissbart (804-698-4393) to discuss the HWMU-5 ASD for TCE.

Thanks and have a good day,

**Matthew M. Stepien**
VDEQ Office of Hazardous Waste Permitting
direct dial: (804) 698-4026
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mmstepien@deq.virginia.gov

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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June 7, 2004

Ms. C. A. Jake
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24141

**Re: Radford Army Ammunition Plant (RFAAP), Radford, VA**
**EPA ID No. VA1210020730**
**Closure Plan Amendments for Units 5 and 7 – Notice of Deficiencies**[1]
(Unit 5/S04; Unit 7/S04)

Dear Ms. Jake:

The Department of Environmental Quality, Office of Waste Permitting (the Department) has reviewed your February 20, 2004 request to amend the closure plan for Units 5 and 7. The Groundwater Monitoring portions of the proposed amendments is being reviewed by the Department's hydrogeology staff, and comments will be provided under separate cover.

Please provide responses to the enclosed comments within ninety (90) days of receipt of this letter. If you have questions, please contact me at (804) 698-4131 or by e-mail at gweng@deq.virginia.gov.

Sincerely,

Garwin W. Eng
Environmental Engineer Senior
Office of Waste Permitting

[1] PCCP
Notice of Deficiency – Closure Plan/CL320

# NOTICE OF DEFICIENCIES
## Closure Plan Amendment, Hazardous Waste Management Unit 5
## Radford Army Ammunition Plant (RFAAP)

Comments are referenced by section, paragraph (counting from the beginning of the section), and sentence (counting from the beginning of the paragraph).

1. Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the *Closure Plan Amendment, HWMU 5* (*Plan-HWMU 5*). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the *Plan-HWMU 5*.

2. The *Plan-HWMU 5* indicates that RFAAP will attempt to achieve clean closure without removing any wastes or potentially contaminated equipment and subsoils. Several sections of the *Plan-HWMU 5* state that in order to leave the residual material in-place (i.e., meet clean closure standards), the residual material will need to meet only the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 268. Please be advised that this is incorrect, and the Department apologizes for any confusion that the wording in its June 25, 2003 letter may have caused.

   In order to prevent any further confusion, the following clarification is provided. At closure, all contamination, i.e., wastes, equipment, structures, soils, and groundwater (for certain types of units), must be removed or decontaminated to clean closure standards (see Section 3.13 of the Department's *Draft Guidance Manual for Closure Plans and Post-Closure Plans*; September 28, 2001). In addition, all hazardous wastes must meet the 40 CFR 268 LDRs treatment standards prior to land disposal. Since the residual material is actually the hazardous waste from the surface impoundment, it must meet both the clean closure standards as well as the LDRs treatment standards in order to remain in-place.

3. 1.1, paragraph 3, 1st sentence – Pursuant to the March 12, 2004 telephone conference with Mr. J. J. Redder of your staff, no amendments to the Post-closure Care *Plan-HWMU 5* are being made at this time. Please delete all references to the Post-closure Care Plan throughout this document.

4. 3.1, paragraph 4 – This paragraph should refer to HWMU-5.

5. 4.2.1, paragraph 1, 6th sentence – The previous use of and the process code currently listed in EPA's RCRAInfo database for HWMU-5 is Surface Impoundment Storage (S04). If RFAAP wishes to modify the process code for this unit, a revised Part A Permit Application may be submitted.

6. 4.2.1, paragraph 2, 2nd sentence – This sentence should be revised to read "... similar waste streams were tested..."

7. 4.2.4, paragraph 2, 1st sentence – This sentence should refer to HWMU-5.

8. 4.2.4, paragraph 2, 6th sentence – This states that the residual material does not pose a threat to human health or the environment. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.

9. 5.0 – This section provides procedures for collecting samples and evaluating the results to confirm clean closure. However, no procedures are provided in the event that wastes or potentially contaminated equipment, structures, and soils must be removed in order to achieve clean closure. As such, this *Plan-HWMU 5* appears to indicate that under no circumstances will any materials be removed. If this is the case, please clearly state this in the *Plan-HWMU 5*. If this is not the case, procedures for decontamination by removal should be provided.

10. 5.3.1 – The residual material shall include everything above the bottom liner (including any sand and rip-rap) and below any clean material placed on top of the residual material. The bottom six (6) inches of the clean material contacting the residual material shall be included with the residual material because of possible mixing with the residual material during its placement. Therefore, closure procedures addressing the residual material must include all materials above the bottom liner up to the first six inches of clean material placed above the residual material.

11. 5.3.1 – This section indicates that the samples taken during the 2002 Field Investigation results will be used to demonstrate that clean closure can be achieved with the residual materials remaining in-place. As such, please note that the 2002 Field Investigation must meet all of the requirements (e.g., constituent list, number of samples, sample locations, field and laboratory methodologies, QA/QC, etc.) specified in the final approved closure plan amendment. Therefore, the *Field Investigation Report and Risk Assessment for Units 5 and 7* submitted March 5, 2003 has not been reviewed as to its adequacy for the closure of HWMU-5.

12. 5.3.2, paragraph 1 – As stated Section 3.7.1 of the *Closure Guidance*, the list of hazardous constituents of concern (HCOCs) is developed as part of the closure plan, that is, prior to beginning closure procedures. For the purposes of closure under RCRA, the HCOC list must include the following:
    a. all hazardous waste constituents that were handled at the unit (this list may be found in the approved closure plan);
    b. all groundwater monitoring constituents that have been detected above background levels; and
    c. any other hazardous constituents detected in the course of other investigations at the unit.

    Please provide the HCOC list and an explanation as to why each constituent was included. Also, any other hazardous constituents (in addition to those constituents included above) detected during the course of closure activities shall be included in the list of HCOCs for the unit.

13. 8.2.3 – This section states that the levels of inorganics found during the development of the *Radford Army Ammunition Plant Facility-Wide Background Report* (December 2001) will be used as background. Section 3.11.3 of the *Closure Guidance* indicates that background soil and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit. In addition, background samples must be collected in a manner identical to that of the closure samples and must comply with all Quality Assurance/Quality Control (QA/QC) procedures of the final approved closure plan. Not all of the *Facility-Wide Background* samples appear to meet these requirements. Please provide additional information concerning the *Facility-Wide Background* samples to determine which samples may meet the *Closure Guidance* requirements for background samples. Please note that if a large enough (minimum of eight) subset of the *Facility-Wide Background* samples does not meet the *Closure Guidance* requirements, additional background samples will need to be collected.

14. 6.1, paragraph 1 – Per Section 3.11.1 of the *Closure Guidance*, different sampling approaches are used to address differences in unit types, distributions of contamination, and assumptions concerning the unit. It appears that eight (8) sample locations shall be evenly spaced across the unit. Provide the rationale for this sampling approach. In addition, describe how decontamination by removal (if needed) will be conducted in light of this sampling approach (see Comment 9 above).

15. 6.1, paragraph 2 – Because the sample collection device will pass through the residual material then the bottom liner and subsoils, there is a potential for cross-contamination from the residual material to the subsoils. Therefore, the Department recommends collecting subsoil samples from the undisturbed center of the cores to minimize possible cross-contamination.

16. 6.1, paragraph 2, 2nd sentence – Section 4.2.1 states that the unit is lined with a 60-mil Hypalon liner. This liner must meets clean closure standards if RFAAP is to achieve clean closure without removal of wastes and potentially contaminated equipment, structures, and soils. However, the proposed sample collection method may not collect a sufficient amount of the liner material for analyses (i.e., at most, a 1.5 inch diameter circle if the sampler is able to collect any at all). Please describe how sufficient samples of the liner will be collected.

17. 6.4 – Section 3.11.5 of the *Closure Guidance* recommends additional rinses after sampling for metals and organic constituents. Please revise this section accordingly.

18. 6.7 – This section states that samples will be analyzed for Target Analyte List (TAL) and Target Compound List (TCL) constituents. However, the list of constituents provided in Table 2 does not include all TCL constituents. Please explain why certain TCL constituents were excluded.

19. 6.7, paragraph 2, last sentence – Specify what criteria against which the data will be validated (e.g., CLP Functional Guidelines, SW-846 QA/QC criteria, etc.).

20. 6.8.1 – In addition to indicating the total expected quantity of each type of QA/QC sample that will be collected, state the minimum collection frequency of each type of QA/QC sample (e.g., one trip blank/cooler/day of sampling).

21. 6.8.1, paragraph 3, 3rd and 5th sentences – Both of these appear to refer to constituents for which the equipment blank(s) will be analyzed. Please clarify these confusing sentences.

22. 6.8.1, paragraph 5, 1st sentence – Data shall be qualified appropriately if contamination is found in QA/QC blanks, however, such blank contamination may not be used to "invalidate" data.

23. 6.8.2, paragraph 4 – Matrix spike/matrix spike duplicates (MS/MSD) shall be prepared and analyzed at a frequency of one MS/MSD per sampling batch or 20 samples (whichever is more frequent) per matrix type.

24. 8.1, paragraph 4, 2nd sentence – Per Section 3.11.1 of the *Closure Guidance*, composite samples are not acceptable for demonstrating achievement of clean closure standards.

25. 8.2.1, last sentence – This appears to refer to HWMU 7 by mistake. Please clarify or correct.

26. 8.2.3.2 – This section states that if all inorganic results do not exceed the background concentrations, then "that sampling location will be deemed to be uncontaminated." It further states that if all sampling locations are uncontaminated, then "the soil will have met the clean closure decontamination standard." Please be advised that these statements are not correct. In order to meet the background clean closure standard, sampling results for **all** HCOCs (not just inorganics) must not exceed detection limits or background. Please revise accordingly.

27. 8.2.4 – Only those constituents that did not pass the non-detection and background clean closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation.

28. 10.0, 2nd sentence – This states that the residual material left in-place is not a hazardous waste. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.

29. 10.0 – Please revise the schedule pursuant to Comment 3 above.

30. 10.0 – Please provide additional details concerning closure activities. Enough detail should be provided to allow tracking of the progress of closure. In addition, contingent closure activities (such as those described in paragraph 4 of Section 13.0) must be included in the closure schedule.

31. 13.0, paragraph 3, 2nd and 3rd sentences – These are not correct. Please remove these sentences.

32. 13.0, paragraph 4 – Pursuant to 40 CFR 264.228(c)(1), a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided in the event that clean closure cannot be achieved.

33. Table 2 – This list does not contain a complete list of HCOCs (see Comment 12 above) for HWMU 5.

34. Table 2 – Section 8.2.2 of the *Plan-HWMU 5* states that, initially, RFAAP will attempt to demonstrate clean closure by analytical non-detection and comparison to background (for detected HCOCs). Section 3.9 of *Closure Guidance* recommends using the analytical methods with the lowest quantitation limits for each HCOC when demonstrating clean closure to these standards. Specifically:
    - SW-846 Methods 7000 Series typically achieve lower detection and quantitation limits than Method 6010 for inorganics;
    - SW-846 Method 8021B typically achieves lower detection and quantitation limits than Method 8260 for many chlorinated and aromatic volatiles; and
    - SW-846 Method 8330 typically achieves lower detection and quantitation limits than Method 8270 for 2,4- and 2,6-dinitrotoluene.

    Please review achievable detection and quantitation limits with your laboratory and revise Table 2 accordingly.

**NOTICE OF DEFICIENCIES**
**Closure Plan Amendment, Hazardous Waste Management Unit 7**
**Radford Army Ammunition Plant (RFAAP)**

Comments are referenced by section, paragraph (counting from the beginning of the section), and sentence (counting from the beginning of the paragraph).

1. Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Amended Closure Plan (Plan). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan.

2. Because of the similarity between the *Closure Plan Amendments* for HWMUs 5 and 7, the comments provided for the *Plan-HWMU 5* also apply to the *Plan-HWMU 7* with the exception of Comments 4, 6, 7, 10, 16, 25, 32, and 33. Although some of the paragraph and sentence numbers referenced for *Plan-HWMU 5* do not exactly match those for *Plan-HWMU 7*, the wording is close enough such that referring back to the text of *Plan-HWMU 5* should resolve any discrepancies. Additional comments specific to the *Plan-HWMU 7* are provided below.

3. 5.3.1 – Section 6.0 indicates that the unit is underlain by a clay liner and native soils. Because of possible mixing, the top six inches of clay or native soils directly beneath the residual material shall be included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material shall be included with the residual material. Therefore, closure procedures addressing the residual material must include all materials from six inches beneath to six inches above the residual material.

4. 13.0, paragraph 4 – Since this unit does not meet the 40 CFR 264.221(a) liner requirements, a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided.

5. Table 2 – Please verify that all applicable HCOCs for HWMU 7 (see Comment 12 for the *Plan-HWMU 5*, above) are included in this list.

LTR # 05-31
Rec'd 07-01-2003
C: Jake
Kedron
Dioria
McKenna
Env File

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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Secretary of Natural Resources

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June 25, 2003

Ms. C. A. Jake
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24141

**Re: Radford Army Ammunition Plant (RFAAP), Radford, VA**
**EPA ID No. VA1210020730**
**Field Investigation Report and Risk Assessment for Units 5 and 7[1]**
(Unit 5/S04; Unit 7/S04)

Dear Ms. Jake:

The Department of Environmental Quality, Office of Waste Permitting (the Department) has reviewed the *Field Investigation Report and Risk Assessment for Units 5 and 7* (*Report*) submitted with your correspondence of March 5, 2003. According to previous discussions and correspondence, RFAAP will attempt to remove the sources of contamination by achieving clean closure at the units. RFAAP had originally planned to revise the closure plans for HWMUs 5 and 7 based upon the results of the initial investigative sampling. Since, RFAAP believes the sampling results may already show that concentrations of contaminants are not a risk to human health or the environment, the *Report* provides a risk assessment instead of revised closure plans.

The May 27, 1988 approved closure plans for HWMUs 5 and 7 provided for closure only by landfilling (i.e., wastes in-place and capping). Therefore, if RFAAP wishes to continue pursuing clean closure of the capped units, revised closure plans that include procedures and standards for clean closure must be submitted. To assist with the revising the closure plans, an electronic copy of

[1] PCCP
Permit Event Code/NA

the Department's *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (*Draft Guidance*), September 28, 2001 has been provided to Mr. J. Redder of your staff.

Concerning the *Field Investigation Report and Risk Assessment for Units 5 and 7*, the Department is providing the following comments:

1) The closure requirements for hazardous waste surface impoundments of 40 CFR 264.228(a)(1) requires the removal or decontamination of "contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate." Therefore, in order to demonstrate clean closure of these units, the soil and liner material immediately beneath the wastes must be sampled as well to determine if they meet clean closure standards.
2) EPA Region III Risk-Based Concentration (RBC) and Soil Screening Levels (SSLs) are not appropriate clean closure standards. Refer to Section 3.13 of the *Draft Guidance* for the requirements of all acceptable clean closure standards (i.e., analytical non-detection, background, and risk-based).
3) If RFAAP intends to demonstrate that clean closure may be achieved with wastes in-place, every sample of waste must not exceed the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 286, Subpart D.

In addition to the above comments, the Department recommends that the revised closure plans include more than one option for meeting clean closure standards (e.g., no removal of wastes or soils, excavation and removal of contaminated materials, etc.) in order to minimize the need for future revisions. Please submit the revised closure plans within ninety (90) calendar days calendar of receipt of this letter.

The Department has also received the Professional Geologist's certification submitted with your correspondence of April 30, 2003. However, as indicated in comment 5 of the Department's October 18, 2002 letter, 40 CFR 264.115 requires that the certification be signed by an independent Professional Engineer registered in the Commonwealth of Virginia. Please provide the P.E. certification within thirty (30) calendar days of receipt of this letter.

If you have questions, please contact me at (804) 698-4131 or by e-mail at gweng@deq.state.va.us.

Sincerely,

Garwin W. Eng
Environmental Engineer Senior
Office of Waste Permitting

c: Robert N. Davie, III
Radford Army Ammunition Plant
SMARF-OP, P. O. Box 2
Radford, Virginia 24141-0099

Robert G. Thomson – EPA Region III (3HS13)
Aziz Farahmand – WCRO, DEQ
Leslie A. Romanchik – DEQ
Mark S. Leeper – DEQ
Howard F. Freeland – DEQ
Central Hazardous Waste File

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

Memorandum

**TO:** Matthew Stepien
Environmental Engineer Sr.

**THROUGH:** Jutta Schneider
Hazardous Waste/Groundwater Manager

**FROM:** Fuxing Zhou
Environmental Specialist II

**DATE:** September 14, 2007

**SUBJ:** Closure Plan Amendment for HWMU 7
Radford Army Ammunition Plant, Radford; EPA ID# VA1210020730

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I have completed the review of the groundwater portions of the "Closure Plan Amendment for HWMU 7", dated June 2007.

The "Closure Plan Amendment" presents closure plans for both soil and groundwater, including general background, closure procedures and standards, sampling and analysis plan, and closure report requirements. The groundwater portions of the plan, including the references to the ASD for chloroform approved by the Department on June 14, 2007, are appropriate and should be approved.

As Radford AAP indicates in the cover letter of the August 9, 2007, Class 3 Permit Modification, the Department never forwarded any comments regarding the groundwater monitoring portions of the Amended Closure Plans to Radford AAP, even though the Department had indicated that the groundwater comments would be sent to Radford AAP under separate cover. There are a few issues pertaining to groundwater that Radford AAP should address in the closure report. These are outlined below.

**REPORTING REQUIREMENTS -- UPDATING GPSs and BACKGROUND VALUES** (Section 5.4.3)

A summary table for the groundwater monitoring data (concentrations) to date should be included in the closure report. Using the groundwater monitoring data collected to date, the Permittee should statistically recalculate the **background concentration values** and,

where applicable, update their **GPSs** for the constituents in the Compliance Monitoring List (Appendices E, F and G in Permit Attachment 3). An updated background concentration table should be submitted to replace Appendix E in Permit Attachment 3 with the closure report. In its review of the closure report, the Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

**Copper** was added to the constituent list following Third Quarter 2003 and **zinc** was added to the constituent list following Second Quarter 2004. These two metals have no current background values. Using the groundwater monitoring data collected to date, the Permittee should statistically establish the background concentration values for copper and zinc. These values will be added to the background concentrations and GPS table (Appendices F and G in Permit Attachment 3). The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

To facilitate this process, an updated GPS table is attached. Please note that MCLs and ACLs have been updated since the Permit issuance: the current MCL for Arsenic is 10 µg/l and Cobalt and 4-Nitrophenol currently have no ACLs, resulting in the GPSs for Cobalt and 4-Nitrophenol based on background and PQL concentration, respectively. The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the groundwater sample analytical results collected to date to the updated Groundwater Protection Standards (GPSs) for the unit. HWMU-7 can receive clean closure for groundwater if all constituents are below their corresponding GPSs and clean closure for soils has been approved.

**PERMIT DATE** (Sections 2.2; 7.0 and 8.3)

The closure report should reflect the following: the original permit for unit 7 was issued on October 30, 1999,with an effective date of November 30, 1999. One consolidated Permit for HWMUs 5, 7, 10 and 16 was issued on October 4, 2002, and modified on June 14, 2007 (Class 1 modification to change monitoring frequency). The compliance period begins when the owner initiates a compliance monitoring program, which is the effective date of the original Permit. The current compliance period, therefore, continues until November 30, 2017, not October 30, 2017, if Radford AAP is not engaged in a corrective action program.

**CONTINUING GW MONITORING** (Sections 2.2, 5.3, 8.3 and 10.0)

The closure report should reflect the following: currently the groundwater at HWMU-7 is sampled and analyzed semiannually, not quarterly, in accordance with the requirements of the consolidated Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7, 10, and 16 modified June 14, 2007.

## APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | EPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Antimony, total | 6010B, 6020 | 3 | 30 | 6 | | 30 |
| Arsenic, total | 6010B, 6020 | 10 | 2 | 10/~~50~~ | | 10/~~50~~ |
| Barium, total | 6010B, 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6010B, 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6010B, 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6010B, 6020 | 7 | 17 | | ~~313~~ | 17/~~313~~ |
| Copper, total | 6010 | 80 | ?? | 1300 | | ?? |
| Lead, total | 6010B, 6020 | 1 | 12.13 | 15* | | 15* |
| Mercury, total | 7470A, 7471A | 1 | 0.4 | 2 | | 2 |
| Nickel, total | 6010B, 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 7740 | 10 | 58 | 50 | | 50 |
| Silver, total | 6010B, 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6010B, 6020 | 1 | 8 | 2 | | 2 |
| Zinc, total | 6010 | 20 | ?? | | 4695 | ?? |
| Bis (2-ethylhexyl) phthalate | 8270C | 10 | 9 | 6 | | 6 |
| Butyl benzyl phthalate | 8270C | 10 | 5 | | 3,130 | 3,130 |
| 2,4-Dinitrophenol | 8270C | 50 | 11 | | 31.3 | 31.3 |
| 2,4-Dinitrotoluene | 8270C | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270C | 10 | 0.1 | | 15.65 | 15.65 |
| 4-Nitrophenol | 8270C | 50 | 9 | | ~~125.2~~ | 50/~~125.2~~ |
| Cyanide | 9010B, 9012A | 40 | 5 | 200 | | 200 |

Notes:

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 10th, 2007). Current MCL for Arsenic is 10 µg/l.

**Background:** Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998), except copper and zinc. Please calculate the background values for copper and zinc using analytical data for upgradient well 7W12B to-date.

**DEQ ACL:** VA DEQ Alternate Concentration Limit, April 2007. Cobalt and 4-Nitrophenol currently have no ACLs.

**GPS:** Pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7) the GPSs for constituents monitored for HWMU-7 is based on background concentration from the upgradient well 7W12B and USEPA Maximum Contaminant Level (MCL) for drinking water or VDEQ-derived Alternate Concentration Level (ACL), if no MCL promulgated, whichever is higher.

received
11-5-07

07-150

# COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

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David K. Paylor
Director

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Suspense Date: 12/18/07

October 31, 2007

Ms. Paige Holt
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

Re: **Hazardous Waste Class 3 Permit Modification Request – Review Response**
**Post-Closure Care Permit – Hazardous Waste Management Units (HWMUs) 5, 7, 10, & 16; Open Burning Ground (OBG) Permit – HWMU 13**
**Radford Army Ammunition Plant, Radford, VA**
**EPA ID No. VA1210020730**

Dear Ms. Holt:

The Virginia Department of Environmental Quality, Office of Hazardous Waste (the Department) received the Class 3 permit modification request for the *Post-Closure Care Permit – Hazardous Waste Management Units (HWMUs) 5, 7, 10, & 16; and Open Burning Ground (OBG) Permit – HWMU 13,* associated with Radford Army Ammunition Plant (RFAAP) located in Radford, Virginia. RFAAP's Class 3 permit modification request was received by the Department on August 13, 2007. The Department has completed a review of the *Permit Modification Summary* and corresponding attachments included with the Class 3 permit modification request and has provided the following comments:

Item 1: The Department has reviewed the Closure Plan Amendment (CPA) for HWMU-7, revised June 2007, and concurs that the information presented in the CPA is technically adequate. Final approval of the CPA is contingent upon the Director's decision to grant or deny the Class 3 permit modification request after conclusion of the 45-day public comment period. Should the Director approve the Class 3 permit modification; at that time RFAAP will be advised to prepare and submit a Closure Report for HWMU-7. The Department's groundwater staff has provided comments included in Enclosure 1 to assist in the Closure Report preparation.

Item 2: The Department's groundwater staff has reviewed the Alternate Source Demonstration (ASD) for HWMU-5 and has provided a summary of that review in Enclosure 2. The Department has determined that the ASD does not provide sufficient information to demonstrate that the trichloroethene (TCE) present in the groundwater near HWMU-5 is from an alternate source. Therefore, upon receipt of this letter, RFAAP is advised to submit to the Director a permit modification to establish a corrective action program meeting **40 CFR Part 264.100** requirements within 180 days for HWMU-5.

Item 3: In the Permit Modification Summary, Item 3, RFAAP states, "RFAAP is requesting that DEQ review the data that RFAAP will submit to DEQ and incorporate the recommended reductions in monitoring constituents in the revised permit." RFAAP is advised to submit the referenced data to the Department for review.

Item 4: The Department's groundwater staff has reviewed the Constituent Background Values for the Compliance Groundwater Monitoring Program and Module V – Groundwater Compliance Monitoring Plan. Comments and revisions to Module V, Groundwater Compliance Monitoring, are provided in Enclosure 3.

Item 5: The Department's groundwater staff has reviewed the Source Area Evaluation Sampling and Analysis Plan (SAP) in support of the Open Burning Ground Corrective Action Plan and has provided a summary of that review in Enclosure 4. The Department has provided the following comments in addition to the summary in Enclosure 4.

Section 2.3, Soil Sample Selection Criteria, page 5: The following soil sample selection criteria should be utilized for both VOC and perchlorate analysis. At each boring location a 6" soil sample shall be collected at the interface of the fill material soils and underlying native soil (base of former burn pit), as well as a 6" sample of the native soil just above the water table. If there are no obvious differences between the burn pits fill material and the native soil, and the base of the former burn pit cannot be determined, then the first 6" soil sample will be collected at the first confining layer of soils or clay. If contamination is evident from a single boring, based on PID readings as well as visual and olfactory observations, then additional soil samples will be taken every 6' in the soil boring. If no obvious signs of contamination are observed in a boring, then only the two above-mentioned soil samples shall be taken.

Section 3.6, Disposition of Investigation Derived Waste, page 10: Disposition of Investigation Derived Waste should be in accordance with the Department's Guidance on the Handling of Investigation Derived Waste (IDW). Please include a reference to this guidance in Section 3.6. For your convenience the above-referenced guidance has been included in Enclosure 5.

Item 6: RFAAP has sufficiently established that no constituents were detected at concentrations above the Soil Monitoring Program (SMP) Action Limits (ALs). Based on this information, the Department concurs with RFAAP to decrease the soil sampling frequency from semiannually to annually.

The Department does not concur with RFAAP to cease random sampling at the northern and southern OBG boundaries (NB-1, NB-2, SB-1, and SB-2), at the berm located on the southeast side of the site (Berm-1), and in the center of the sediment pond (Pond-1). Although no ALs were exceeded, some constituents were detected well above their reporting limit (RL) at these locations. In particular, lead exhibited concentrations to warrant continual monitoring in these locations. RFAAP is advised to continue sampling these locations annually.

RFAAP requested eight Constituents of Potential Concern (COPC) to be removed from the monitoring events that were not detected above ALs in any of the 2005 through 2007 soil monitoring events. These eight constituents include antimony, benzoic acid, dibenzofuran, di-n-octyl phthalate, nickel, nitroglycerin, pyrene, and zinc. The Department concurs with removing seven of the eight constituents from the sampling events with the one exception being nitroglycerin. Although nitroglycerin did not exceed its AL, the concentrations exhibited warrant its inclusion on the COPC list.

Should the Director approve the Class 3 permit modification; at that time RFAAP will be advised to implement the above-mentioned changes and to submit a revised SMP to be incorporated into the Open Burning Grounds Permit.

Item 7: At their earliest convenience, the facility is advised to contact the Department in order to schedule a meeting between John Lowe of CH2MHill (representing RFAAP) and Sanjay Thirunagari, the Department's Office of Waste Technical Support Manager.

Please review and address each comment within forty-five (45) days of your receipt of this letter. If you have any questions regarding the information presented in this letter, please contact me at (804) 698-4026 or you may e-mail me at mmstepien@deq.virginia.gov.

Sincerely,

Matthew M. Stepien

Matthew M. Stepien
Environmental Engineer Senior
Office of Hazardous Waste

Attachments:

Enclosure 1 – Comments on HWMU-7 Closure Report Preparation
Enclosure 2 – Summary of Alternate Source Demonstration Review for HWMU-5
Enclosure 3 – Comments and Revisions to Module V, Groundwater Compliance Monitoring
Enclosure 4 – Comments on Alternate Source Demonstration Review for the OBG
Enclosure 5 – Guidance on the Handling of Investigation Derived Waste (IDW)

cc: Robert N. Davie, III
Radford Army Ammunition Plant
SMARF-OP, P. O. Box 2
Radford, Virginia 24141-0099

Tom Uybarreta – EPA Region III (3WC21)
Aziz Farahmand – DEQ, WCRO
Leslie A. Romanchik – DEQ, CO (w/o attachments)
Jutta Schneider – DEQ, CO
Fuxing Zhou – DEQ, CO
Sanjay Thirunagari – DEQ, CO (w/o attachments)
Sonal Iyer – DEQ, CO (w/o attachments)
Julia King-Collins – DEQ, CO (w/o attachments)
Central Hazardous Waste File

# ENCLOSURE 1

## Comments on HWMU-7 Closure Report Preparation

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

Memorandum

**TO:** Matthew Stepien
Environmental Engineer Sr.

**THROUGH:** Jutta Schneider
Hazardous Waste/Groundwater Manager

**FROM:** Fuxing Zhou
Environmental Specialist II

**DATE:** September 14, 2007

**SUBJ:** Closure Plan Amendment for HWMU 7
Radford Army Ammunition Plant, Radford; EPA ID# VA1210020730

---

I have completed the review of the groundwater portions of the "Closure Plan Amendment for HWMU 7", dated June 2007.

The "Closure Plan Amendment" presents closure plans for both soil and groundwater, including general background, closure procedures and standards, sampling and analysis plan, and closure report requirements. The groundwater portions of the plan, including the references to the ASD for chloroform approved by the Department on June 14, 2007, are appropriate and should be approved.

As Radford AAP indicates in the cover letter of the August 9, 2007, Class 3 Permit Modification, the Department never forwarded any comments regarding the groundwater monitoring portions of the Amended Closure Plans to Radford AAP, even though the Department had indicated that the groundwater comments would be sent to Radford AAP under separate cover. There are a few issues pertaining to groundwater that Radford AAP should address in the closure report. These are outlined below.

**REPORTING REQUIREMENTS -- UPDATING GPSs and BACKGROUND VALUES** (Section 5.4.3)

A summary table for the groundwater monitoring data (concentrations) to date should be included in the closure report. Using the groundwater monitoring data collected to date, the Permittee should statistically recalculate the **background concentration values** and,

where applicable, update their **GPSs** for the constituents in the Compliance Monitoring List (Appendices E, F and G in Permit Attachment 3). An updated background concentration table should be submitted to replace Appendix E in Permit Attachment 3 with the closure report. In its review of the closure report, the Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

**Copper** was added to the constituent list following Third Quarter 2003 and **zinc** was added to the constituent list following Second Quarter 2004. These two metals have no current background values. Using the groundwater monitoring data collected to date, the Permittee should statistically establish the background concentration values for copper and zinc. These values will be added to the background concentrations and GPS table (Appendices F and G in Permit Attachment 3). The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

To facilitate this process, an updated GPS table is attached. Please note that MCLs and ACLs have been updated since the Permit issuance: the current MCL for Arsenic is 10 µg/l and Cobalt and 4-Nitrophenol currently have no ACLs, resulting in the GPSs for Cobalt and 4-Nitrophenol based on background and PQL concentration, respectively. The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the groundwater sample analytical results collected to date to the updated Groundwater Protection Standards (GPSs) for the unit. HWMU-7 can receive clean closure for groundwater if all constituents are below their corresponding GPSs and clean closure for soils has been approved.

**PERMIT DATE** (Sections 2.2; 7.0 and 8.3)

The closure report should reflect the following: the original permit for unit 7 was issued on October 30, 1999,with an effective date of November 30, 1999. One consolidated Permit for HWMUs 5, 7, 10 and 16 was issued on October 4, 2002, and modified on June 14, 2007 (Class 1 modification to change monitoring frequency). The compliance period begins when the owner initiates a compliance monitoring program, which is the effective date of the original Permit. The current compliance period, therefore, continues until November 30, 2017, not October 30, 2017, if Radford AAP is not engaged in a corrective action program.

**CONTINUING GW MONITORING** (Sections 2.2, 5.3, 8.3 and 10.0)

The closure report should reflect the following: currently the groundwater at HWMU-7 is sampled and analyzed semiannually, not quarterly, in accordance with the requirements of the consolidated Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7, 10, and 16 modified June 14, 2007.

## APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | EPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Antimony, total | 6010B, 6020 | 3 | 30 | 6 | | 30 |
| Arsenic, total | 6010B, 6020 | 10 | 2 | 10/~~50~~ | | 10/~~50~~ |
| Barium, total | 6010B, 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6010B, 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6010B, 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6010B, 6020 | 7 | 17 | | ~~313~~ | 17/~~313~~ |
| Copper, total | 6010 | 80 | ?? | 1300 | | ?? |
| Lead, total | 6010B, 6020 | 1 | 12.13 | 15* | | 15* |
| Mercury, total | 7470A, 7471A | 1 | 0.4 | 2 | | 2 |
| Nickel, total | 6010B, 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 7740 | 10 | 58 | 50 | | 50 |
| Silver, total | 6010B, 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6010B, 6020 | 1 | 8 | 2 | | 2 |
| Zinc, total | 6010 | 20 | ?? | | 4695 | ?? |
| Bis (2-ethylhexyl) phthalate | 8270C | 10 | 9 | 6 | | 6 |
| Butyl benzyl phthalate | 8270C | 10 | 5 | | 3,130 | 3,130 |
| 2,4-Dinitrophenol | 8270C | 50 | 11 | | 31.3 | 31.3 |
| 2,4-Dinitrotoluene | 8270C | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270C | 10 | 0.1 | | 15.65 | 15.65 |
| 4-Nitrophenol | 8270C | 50 | 9 | | ~~125.2~~ | 50/~~125.2~~ |
| Cyanide | 9010B, 9012A | 40 | 5 | 200 | | 200 |

Notes:

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 10th , 2007). Current MCL for Arsenic is 10 µg/l.

**Background:** Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998), except copper and zinc. Please calculate the background values for copper and zinc using analytical data for upgradient well 7W12B to-date.

**DEQ ACL:** VA DEQ Alternate Concentration Limit, April 2007. Cobalt and ~~4-~~ Nitrophenol currently have no ACLs.

**GPS:** Pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7) the GPSs for constituents monitored for HWMU-7 is based on background concentration from the upgradient well 7W12B and USEPA Maximum Contaminant Level (MCL) for drinking water or VDEQ-derived Alternate Concentration Level (ACL), if no MCL promulgated, whichever is higher.

## Ross Miller

**From:** Flint, Jeremy [Jeremy.Flint@ATK.COM]
**Sent:** Wednesday, March 10, 2010 4:21 PM
**To:** Janet Frazier; Kathy Olsen; Mike Lawless; Ross Miller
**Subject:** FW: RAAP Class 3 Mod
**Attachments:** Attachment 3 Unit 7 Appendix G - GPSs (3-2-10).doc; Attachment 3 Unit 7 Appendix E - GW Comp Mon (3-2-10).doc.pdf

Thank You
Jeremy Flint
Lead Compliance Engineer
Environmental Affairs Department
Alliant Techsystems Inc.
P.O. Box 1
Radford, VA 24143
Phone: 540 - 639 - 7668
Fax: 540 - 639 - 8109
***"Together Everyone Accomplishes More." (TEAM)***

**From:** Stepien, Matthew (DEQ) [mailto:Matthew.Stepien@deq.virginia.gov]
**Sent:** Wednesday, March 10, 2010 1:46 PM
**To:** Flint, Jeremy
**Subject:** RE: RAAP Class 3 Mod

New lists for HWMU-7

<<Attachment 3 Unit 7 Appendix G - GPSs (3-2-10).doc>> <<Attachment 3 Unit 7 Appendix E - GW Comp Mon (3-2-10).doc.pdf>>

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

---

**From:** Stepien, Matthew (DEQ)
**Sent:** Wednesday, March 10, 2010 9:33 AM
**To:** 'Flint, Jeremy'
**Subject:** RE: RAAP Class 3 Mod

I modified Module III and will work on the Mod III table today. I need the other stuff below from you all before I can wrap this up.

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

---

**From:** Stepien, Matthew (DEQ)
**Sent:** Tuesday, March 09, 2010 2:59 PM
**To:** 'Flint, Jeremy'
**Cc:** McKenna, Jim
**Subject:** RAAP Class 3 Mod

Hey Jeremy,

I reviewed the CD you provided me and still need the following.

- These are the maps I needed for Module V:

  Figure V.A.1 OBG/HWMU-13 Geological Cross Section Location Map

  Figure V.A.2 OBG/HWMU-13 Geological Cross Section Figures

  Figure V.A.3 OBG/HWMU-13 Groundwater Monitoring (wells) System Map

  Figure V.A.4 OBG/HWMU-13 Groundwater Elevation Contour Maps (4th and 2nd Quarters 2006) I have these

- You haven't provided me with anything for Module III. Am I to assume you want me to make the updates to the Table and text?

- Also I didn't notice the items below addressed in the Closure Plan for HWMU-7. The Closure Plan you provided was never updated appropriately and should also be updated with any new gw and/or soil analytical data collected from over the years.

Let me know if we need to further discuss. Thanks,

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

**From:** Stepien, Matthew (DEQ)
**Sent:** Tuesday, March 02, 2010 4:28 PM
**To:** 'Flint, Jeremy'
**Subject:** RAAP HWMU - 5 Closure Plan

Hey Jeremy,

I did notice some things that need revised in the Closure Plan (not sure if I am looking at most current version June 2007).

**#1) Page 14 – These are being updated with permit mod**

The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result (and as agreed with the VDEQ), any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 3 of the Final Permit, **the quarterly groundwater monitoring list for HWMU-7** consists of the following constituents:

Antimony, total Mercury, total 2,4-Dinitrophenol

Arsenic, total Nickel, total 2,4-Dinitrotoluene

Barium, total Selenium, total 2,6-Dinitrotoluene

Cadmium, total Silver, total 4-Nitrophenol

Chromium, total Thallium, total Cyanide, total

Cobalt, total Bis (2-ethylhexyl) phthalate

Lead, total Butyl benzyl phthalate

**#2) Page 35 – Schedule for Closure is incorrect. As part of Class 3 mod we are public noticing the Closure Plan. If it is approved then we will review report and approve closure (see January 2008 meeting summary)**

## 10.0 SCHEDULE FOR CLOSURE

HWMU-7 received certification for closure with waste in place in 1990 and is currently in the Compliance Period, which extends until October 30, 2017. The sampling activities outlined in this *Amended Closure Plan* constitute additional closure activities in support of clean closure of HWMU-7. Based on generator knowledge and previous studies, Radford AAP has determined that residual material contained in HWMU-7 is not a hazardous waste as defined in 40 CFR Part 261. Radford AAP completed the additional sampling activities in accordance with the *Amended Closure Plan* and VDEQ correspondence dated June 25, 2003, in February/March 2004.

It is Radford AAP's understanding that the VDEQ wants Radford AAP to submit a Closure Report and Class III Permit Modification at the same time and that the VDEQ will review both documents together. A Closure Report will be submitted within 90 days of approval of the *Amended Closure Plan.* A Class III Permit Modification will be submitted with the Closure Report if clean closure is demonstrated.

In the event that clean closure is not achieved, HWMU-7 will remain in post-closure care in accordance with the Final Permit (October 4, 2002). If Radford AAP chooses to demonstrate clean closure by removal at a future date, additional closure schedule information will be submitted.

Let me know how you are coming along, things are pretty much ready for Hassan's review on our end.

Thanks,

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

ATTACHMENT 3, UNIT 7

# APPENDIX E

## GROUNDWATER COMPLIANCE MONITORING (QUARTERLY) CONSTITUENT AND REQUIRED ANALYTICAL METHOD LIST

| Analyte | METHOD | PQL (ug/l) | MDL (ug/l) |
|---|---|---|---|
| Arsenic, total | 6020 | 10 | 2 |
| Barium, total | 6020 | 10 | 1 |
| Cadmium, total | 6020 | 1 | 0.2 |
| Chromium, total | 6020 | 5 | 1 |
| Cobalt, total | 6020 | 5 | 1 |
| Copper | | 5 | 1 |
| Lead, total | 6020 | 1 | 0.2 |
| Nickel, total | 6020 | 10 | 2 |
| Selenium, total | 6020 | 10 | 3 |
| Silver, total | 6020 | 2 | 0.2 |
| Thallium, total | 6020 | 1 | 0.2 |
| Bis(2-ethylhexyl)phthalate | 8270 | 10 | 0.54 |
| 2,4-Dinitrotoluene | 8270 | 10 | 0.5 |
| 2,6-Dinitrotoluene | 8270 | 10 | 0.46 |
| Cyanide, total | 9010 | 20 | 4 |

Notes:

ug/l = micrograms per liter
PQL = Practical Quantitation Limit
MDL = Method Detection Limit

All methods are as described in EPA's SW-846, Test Methods in support of the RCRA program, December 3, 2008. Web site: http://www.epa.gov/epawaste/hazard/testmethods/index.htm. Single samples are required for each parameter and constituent during each sampling event. Alternate SW-846 Methods may be approved by the Department if the request is in writing and submitted at least 30 days prior to the sample collection event. Proposed alternate methods shall achieve the same practical quantitation limit/estimated quantitation limit (or lower) as the specified method.

*ATTACHMENT 3*
*UNIT 7*

# *APPENDIX G*

# *GROUNDWATER PROTECTION STANDARDS (GPS)*

DRAFT

**Attachment 3**

# APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | USEPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Arsenic, total | 6020 | 10 | 2 | 50 | | 50 |
| Barium, total | 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6020 | 5 | 17 | | 313 | 313 |
| Copper | 6020 | 5 | | 1300 | | 1300 |
| Lead, total | 6020 | 1 | 12.13 | 15* | | 15* |
| Nickel, total | 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 6020 | 10 | 58 | 50 | | 50 |
| Silver, total | 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6020 | 1 | 8 | 2 | | 2 |
| Bis (2-ethylhexyl) phthalate | 8270 | 10 | 9 | 6 | | 6 |
| 2,4-Dinitrotoluene | 8270 | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270 | 10 | 0.1 | | 15.65 | 15.65 |
| Cyanide | 9010 | 20 | 5 | 200 | | 200 |

Notes:

**EPA MCL**: Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 11, 2009). * - Action Level. Subject to change without notice as directed by DEQ.

**Background**: Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998).

**DEQ ACL**: VA DEQ Alternate Concentration Limit, Jan -2009. Subject to change without notice as directed by DEQ.

DRAFT

COMMONWEALTH of VIRGINIA

DEPARTMENT OF WASTE MANAGEMENT
11th Floor, Monroe Building
101 N. 14th Street
Richmond, VA 23219
(804) 225-2667

MAY 27 1988

CERTIFIED-RETURN
RECEIPT REQUESTED

G. J. Savitske
Lieutant Colonel, Ordinance Corps
COMMANDING OFFICER
Radford Army Ammunition Plant
Radford, Virginia 24140

RE Closure Plans
(HWM #5, #7, #16)
EPA ID# VA121002730

Dear Colonel Savitske,

Enclosed, please find a copy of the Approved Closure plans developed for Hazardous Waste Management Units #5, #7, and #16. The approved plans are essentially the same as those plans submitted to our office dated November 1986 with the agreed to changes detailed in your letter dated May 11, 1988. Please note that the completion date of closure must be 180 days from the date of this letter.

Should you have any questions, please contact Kevin Greene at (804) 225-2466.

Sincerely,

Karol A. Akers
Technical Services Chief
Division of Technical Services

Enclosure

DATES OF INSPECTIONS
RADFORD ARMY AMMUNITION PLANT
HAZARDOUS WASTE SITES #5, 7 AND 16

| Date | Sites Inspected |
|---|---|
| 09/19/88 through 10/14/88 | All sites<br>Each working day<br>by Professional Engineer |
| 09/19/88 | HWM 5 and 16 |
| 09/29/88 | HWM 16 |
| 10/19/88 | HWM 5 and 16 |
| 10/27/88 | HWM 5 and 16 |
| 11/28/88 | HWM 5, 7 and 16 |
| 12/06/88 | HWM 7, clay liner and synthetic liner |
| 06/05/89 | HWM 5, 7 and 16 |

Job No. 11074

OLVER INCORPORATED
Consulting Engineers · Environmental Laboratories
1116 South Main Street Blacksburg, Virginia 24060 (703) 552-5548

October 26, 1989

Mr. Kevin L. Greene
Geologist
Division of Technical Services
Department of Waste Management
101 North 14th Street, 11th Floor
Richmond, Virginia 23219

Re: Radford Army Ammunition Plant,
Closure Certification, HWM 5, 7
and 16 EPA, ID # VA1210020730

Dear Kevin:

This letter is to provide certification to the Department of Waste Management that the above three (3) referenced sites were closed in accordance with the approved closure plan, dated May 27, 1988. Olver Incorporated had a professional engineer on-site from September 19, 1988, through October 14, 1988 during every day that the contractor worked and throughout the entire length that the contractor was on the referenced project sites. Additional inspections were accomplished on each of the harzardous waste management units on the dates indicated in the attached table. All inspection trips meet the requirements of the closure plan.

I trust that this letter is adequate to certify from the professional engineer's standpoint that these three sites have been closed in accordance with the approved closure plan.

If you should have any questions concerning these closures, please do not hesitate to contact me.

Sincerely,

Robert M. Roberts
Vice President

RMR/tle

Enclosure

cc: Mr. Patrick J. Golden, Radford Army Ammunition Plant,
Building 449, Radford, Virginia

OLVER
INCORPORATED
Consulting Engineers · Environmental Laboratories
1116 South Main Street Blacksburg, Virginia 24060 (703) 552-5548

January 3, 1990

Mr. Patrick J. Golden
Corps of Engineers
Radford Army Ammunition Plant
Radford, VA 24141

Re: Radford Army Ammunition Plant, Job No. 11074

Dear Pat:

Enclosed please find a copy of the letter that I have re-written to satisfy the Department of Waste Management concerning certification of Hazardous Waste Management Units 5, 7 and 16. Mr. Greene was concerned that Mr. Murray of our office was the professional engineer on site during the actual construction work and not myself, and asked that the letter be amended to reflect this. I did not have a problem with this request and revised the letter accordingly.

If you should have any questions concerning this matter, please do not hesitate to contact me.

Sincerely,

Robert M. Roberts, P.E.
Vice President

RMR/ma

Enclosure

OLVER
INCORPORATED
Consulting Engineers · Environmental Laboratories
1116 South Main Street Blacksburg, Virginia 24060 (703) 552-5548

January 4, 1990

Mr. Kevin L. Greene, Geologist
Division of Technical Services
Department of Waste Management
101 North 14th Street, 11th Floor
Richmond, VA 23219

Re: Radford Army Ammunition Plant, Closure Certification; HWM 5, 7, and 16, EPA ID No. VA1210020730, Job No. 11074

Dear Kevin:

This letter is to provide certification to the Department of Waste Management that the three above-referenced sites were closed in accordance with the approved closure plan dated May 27, 1988. Olver Incorporated had a professional engineer, Kevin Murray, on site from September 19, 1988, through October 14, 1988, which was every day that the contractor worked, and throughout the entire length of time that the contractor was on the referenced project sites. Additional inspections were accomplished on each of the hazardous waste management units on the dates indicated in the table previously sent to you. All inspection trips met the requirements of the closure plan. I have reviewed all of Mr. Murray's notes and memoranda concerning the above-referenced project and, as he no longer works for Olver Incorporated, I am certifying that the work was completed in conformance with the approved closure plan.

If you should have any questions concerning this matter, please do not hesitate to contact me.

Sincerely,

Robert M. Roberts, P.E.
Vice President

RMR/ma

cc: Mr. Patrick J. Golden, Radford Army Ammunition Plant

Closure Performance Standards

The closure performance standards, as presented in the Virginia Hazardous Waste Regulations (10.6.B), require that the owner or operator of a hazardous waste disposal facility shall close the facility in a manner that:

- o minimizes the need for further maintenance, and
- o controls, minimizes or eliminates to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall or waste decomposition products to the ground or surface waters or to the atmosphere.

The escape of contaminants to the environment occurs primarily through migrating water and, to a limited extent, migrating gas. At the Radford AAP hazardous waste management sites, the generation and migration of gas is not expected due to the nature of the wastes disposed. Therefore, the aforementioned closure standards can be met by effectively isolating the hazardous wastes from migrating water in the subsurface environment. Since hazardous waste facilities should be situated above the fluctuating groundwater table, as is the case for the Radford AAP hazardous waste management facilities, the lateral groundwater flow would not be directly responsible for the migration of contaminants in the groundwater. Thus, the primary components of the Closure Plan include a final cover system to minimize the percolation of rainwater into the waste material and, if applicable, a leachate collection system to prevent the leachate from migrating downward to the groundwater table. Post-closure care requirements emphasize maintaining the integrity of the waste containment system (especially the final cover) and monitoring groundwater (10.6.I)

The in-place closure method is selected for the closure of HWM facilities HWM 5, HWM 7, and HWM 16. HWM 16 will be closed with all waste material remaining in place and a final cover system and post-closure care will be provided. The closure of surface impoundments (HWM 5 and HWM 7) involves the draining of all liquids, removal of wastes and contaminated materials, a limited extent of sediment/subsoil treatment, and backfilling. As a result of recent groundwater monitoring, it was confirmed that groundwater in the vicinity of HWM 5 and HWM 7 has been contaminated. Although not directly confirmed by sampling and analysis, it is believed, based on the confirmed groundwater contamination, that the subsoil underneath these surface impoundments is likely to be contaminated to a certain degree. Therefore, a final cover system and post-closure care will also be required for HWM 5 and HWM 7. This section provides an environmental assessment associated with the closure of the HWM facilities with wastes and/or contaminated subsoil remaining in place.

## In-Place Closure of Surface Impoundments

The presence of contaminated soil in the closed surface impoundment is considered to be a potential source of future groundwater contamination by contaminants released over a long period of time. At the Radford site, however, the potential for future groundwater contamination from the in-situ contaminated soil should be insignificant. This is based on several factors as listed below:

- The major source of groundwater contamination, liquids in the surface impoundments, will not be present after closure of these facilities;

- The remaining source of groundwater contamination, the soil interstitial water having a low pH and possible elevated concentrations of minerals and metals, is very limited in quantity;

- Elevated metals in the groundwater would be likely to be adsorbed to the soil once the low pH of the groundwater has been neutralized by dilution, and would therefore not be detectable at a great distance from the source; and,

Further evaluations of the contaminated subsoil as related to groundwater quality at the specific site are provided herein.

SECTION 2

# WASTE CHARACTERIZATION/MAXIMUM WASTE INVENTORY

Presented in this section is a waste characterization discussion for each of the HWM facilities (Nos. 5, 7, and 16) that are to be closed at the Radford AAP. This discussion is on information collected regarding past waste disposal practices at the HWM facilities and analytical data from sampling/analysis efforts previously performed.

## 2.1 HAZARDOUS WASTE MANAGEMENT FACILITY NO. 5

HWM 5 is a surface impoundment serving as a holding basin for runoff, spill and washdown waters from an acid tank farm. HWM 5 has been in service since the mid-70's. The impoundment is approximately 160 feet by 90 feet at the crest elevation of the dike, and is approximately 6 feet deep with side slopes of 2 to 1. The depth of the acidic water is normally 2 to 4 feet for a total volume of about 140,000 to 300,000 gallons. The maximum waste inventory is 524,557 gallons. The bottom of the impoundment was lined in 1981 with Hypalon of 60 mils in thickness. The liner is covered with about 12 inches of sand,

and the sides are covered with approximately 6 inches of sand and 6 inches of granite riprap. The compatibility of the Hypalon liner with the acidic water has been rated as "good" according to a previous report (Wyss et al, September 1980).

The effluent from HWM 5 is discharged to an equalization basin, HWM 4. The effluent is conveyed via a subsurface gravity pipe. The effluent from HWM 4 is treated by lime slurry neutralization and allowed to settle in SWM 8 prior to discharged to the New River under NPDES permit No. VA0000248.

Process wastewater containing low concentrations of nitrocellulose (NC) was previously conveyed to HWM 5 from the acid screen house located on-site at the Radford AAP. In the fall of 1983, this practice was discontinued and the pipe conveying this waste stream was relocated.

An analysis of influent water taken during low flow in 1981 indicated that the influent wastewater contained concentrations of several heavy metals below levels defined as hazardous by the EP Toxicity test. These results are presented in Table 1. Although non-hazardous by EP toxicity, the lagoon water is classified as a hazardous waste because of its low pH. The pH of the influent when tested in 1981 was 1.5 (corrosive wastes are those with pH below 2.0 or above 12.5).

The accumulated solids that have settled in HWM 5 have not been sampled and analyzed to determine if contaminants (heavy metals) are present. No other data on the lagoon's influent are available to determine the extent of contamination at HWM 5.

Analytical testing to determine the concentration of NC in the accumulated solids at HWM 5 has not been conducted to date. Several other acid waste lagoons that receive similar waste streams have been tested to determine the concentration of NC in their accumulated solids. Microscopic examination of sludge samples from these lagoons found NC in concentrations of less than one percent. According to reactivity test criteria, sludges containing less than 26 percent NC are non-reactive when NC is the only reactive constituent present. Analyses for other explosive materials including nitroglycerin and dinitroglycerin showed very low NC concentrations (nondetectable, or less than one percent) in the lagoon sludges. These results indicate that it is unlikely that the solids in HWM 5 are reactive since very low concentrations of NC were found in other waste lagoons that are used for similar purposes at the Radford AAP.

## 2.2 HAZARDOUS WASTE MANAGEMENT FACILITY NO. 7

The dimensions of HWM 7 measured at the top of the impoundment are approximately 160' x 90' and the side slopes are 2 to 1. The depth is approximately 12 feet and has a maximum

waste inventory of 566,131 gallons. The impoundment serves as a holding and neutralization basin for spills, rainwater, and washdown waters from acid tank farms in the Oleum Plant Area. The drainage from the dikes is conveyed through a twelve inch underground gravity sewer to the impoundment. Typical daily flows are variable ranging from almost zero to several hundred gallons per minute during a rainstorm.

Waste caustic is hauled to the lagoon by a tank truck and mixed with the acidic wastewater for neutralization. The wastes are mixed by two air diffusers. The neutralized effluent from HWM 7 is pumped to an unlined holding basin (No. 7A) prior to being discharged to SWM9 for settling. In some cases, however, the effluent from HWM 7 is discharged via a temporary surface pipe system directly to SWM9. After settling, the effluent from SWM9 is discharged to the New River under NPDES Permit No. VA 000024E.

The HWM 7 influent contains waste sulfuric acid and caustics from the production of oleum. According to EP toxicity analyses conducted on the lagoon water and sediment, several heavy metals were detected but in very low concentrations (i.e., non-hazardous). The pH of the lagoon water was 11.4 when the analysis was conducted, which is also classified as non-hazardous. However, the pH of the lagoon's influent is known to fluctuate (below 2.0 and above 12.5), thereby classifying the wastewater as a corrosive substance. These analytical results

TABLE 1

HAZARDOUS WASTE MANAGEMENT SITE NO. 5
RESULTS OF ANALYSIS OF INFLUENT WASTE SAMPLE TAKEN DURING LOW FLOW

| Parameter | Measurement |
|---|---|
| pH | 1.5 |
| As | Not Detected (ND) |
| Ba | ND |
| Cd | 0.029 mg/l |
| Cr | 0.20 mg/l |
| Pb | ND |
| Hg | 0.020 mg/l |
| Se | ND |
| Ag | ND |

Source: USAEHA, December 1981

TABLE 2

HAZARDOUS WASTE MANAGEMENT FACILITY NO. 7
RESULTS OF ANALYSIS OF LAGOON WATER
AND SEDIMENT SAMPLES

| Parameter | Lagoon Water | Sediment |
|---|---|---|
| pH | 11.4 | -- |
| As | Not Detected | ND |
| Ba | ND | 0.33 mg/l |
| Cd | 0.016 mg/l | 0.027 mg/l |
| Cr | ND | 0.73 mg/l |
| Pb | ND | 0.58 mg/l |
| Hg | ND | ND |
| Se | ND | ND |
| Ag | ND | 0.027 mg/l |

Source: USAEHA, December 1981

TABLE 4

SUMMARY DESCRIPTION OF WASTES DISPOSED IN HWM 16

| Waste[a] | Rate of Generation[a] (tons/yr) | Physical[a] Form | Hazard Description | EPA Hazard[a] Number |
|---|---|---|---|---|
| Ash from waste propellant incineration | unknown | solid | reactive, non-EP toxic[a] | D003 |
| Residue from waste propellant burning | unknown | solid | reactive, EP toxic[a] | D003 D008 |
| Residue from explosive contaminated waste burning | 200 | solid | reactive[a] | D003 |
| SAR area fume burner ash | 0.1 | solid | EP toxic[a] | D006, D007 |
| Sludge from neut. of SAR process water | unknown | sludge | nonhazardous[a] | -- |
| Sludge from neut. of nitro-cellulose mfg acid process water | unknown | sludge | nonhazardous[b] | -- |
| Sludges from Bioplant, Building 470, and NG 2 Pretreatment Building 9410 | 50 | sludge | non-hazardous[c,d,e] | -- |

a
b USAEHA (December 1981)
c Ewing (15 January 1982)
d Everett (19 March 1982)
e Everett (10 November 1982)
Jenrette (18 November 1983)

TABLE 3

SUMMARY DESCRIPTION OF WASTES THAT ARE OPEN-BURNED
PRIOR TO DISPOSAL IN HWM 16

| WASTE | PHYSICAL FORM | HAZARD DESCRIPTION | EPA HAZARD NUMBER |
|---|---|---|---|
| Nitrocellulose | Solid | Reactive | D003 |
| Laboratory explosive wastes | Solid, Liquid | Corrosive | D002 |
| Waste propellant | Solid | Reactive | D003 |
| NG slums | Sludge | Reactive | D003 |
| Explosive contaminated waste | Solid | Reactive | D003 |

Source: USAEHA, December 1981

4.3.1 The landfill has been used for the disposal of the following Hazardous Waste from November 1980 until August 1986:

a) 3898 Tons of ash from the burning of waste explosives and explosives contaminated material. This material is hazardous because of toxicity from low levels of lead and chromium.

b) 545 tons of waste water treatment sludges which was considered hazardous by definition because they are K-044 and K-045 listed wastes. Results of reactivity tets have indicated that this material is not reactive.

c) 6 tons of asbestos which is no longer considered a hazardous waste.

d) The following laboratory chemicals:

| P.D. No. | Date | Quantity | Material |
|---|---|---|---|
| 80-83 | 9-19-80 | 58 lbs. | Lead Salicylate |
| 80-100 | 11-3-80 | 550 lbs. | Sulfur |
| 80-108 | 11-18-80 | 500 lbs. | Sulfur |
| 81-3 | 1-7-81 | 250 lbs. | Nitrodiphenylamine |
| 81-7 | 2.2-81 | 76 lbs. | Carbolac |
| 81-7 | 2-2-81 | 25 lbs. | Alum. Powder |
| 81-8 | 2-2-81 | 100 lbs. | Potassium Nitrate |
| 81-14 | 2-11-81 | 400 lbs. | Cryolite |
| 81-34 | 4-2-81 | 650 lbs. | Diphenylamine |
| 81-43 | 4-27-81 | 15 lbs. | Chromium Nitrate Crystals |
| 81-57 | 5-27 | 500 lbs. | Sulfur |
| 81-74 | 7-8-81 | 450 lbs. | Cryolite Synthetic |
| 83-07 | 1-10-83 | 100 lbs. | Magnesium Oxide |
| 89-10 | 1-19-83 | 200 lbs. | Charcoal |
| 83-15 | 2-3-83 | 1.1 lb. | Ferrous Ammonium Sulfate |
| 83-25 | 2-14-83 | 1 lb. | Phenolphthalein Powder |
| | | 3 bottles | Ferrous Ammonium Sulfate |
| 83-48 | 4-15-83 | 150 lbs. | Ethyl cellulose Flakes |
| 83-72 | 6-6-83 | 1.1 lb. | Ferrous Ammonium Sulfate |
| 83-76 | 6-13-83 | 3.0 lbs. | Barium Perchlorate |
| | | 0.5 lbs. | Lead Dioxide |
| | | 0.5 lbs. | Lead Nitrate |
| 83-89 | 7-5-83 | 21 lbs. | Carbon Black |
| 83-119 | 9-27-83 | 220 lbs. | Potassium Sulfate |
| 82-67 | 8-10-82 | 3 bottles | Tetra Bromethane |
| | | 17 bottles | Stabilizer Sol. Ph 4 |
| | | 11 bottles | Sodium Methoxide |
| | | 9 bottles | Chlorobenzene |
| 82-77 | 8-26-82 | 120 bottles | Yellow Ink |
| 82-86 | 10-1-82 | 1,195 EA | Combat Meals |
| 82-107 | 12-8-82 | 2 bottles | Alkalinity #1, Reagent #1 |
| | | 2 bottles | Alkalinity #2, Reagent #2 |
| | | 2 bottles | Buffer Salt Ph 7.2 Mixture |
| | | 2 rolls | Cotton Aseptic, Absorbent |

| P.O. No. | Date | Quantity | Material |
|---|---|---|---|
| | | 54 gals. | Diubutyl Phthalate |
| | | 2 bottles | 1,3-Diphenylguanidine |
| | | 2 Ea. | Mannitol-MP 166-67 |
| | | 2 bottles | Mercuric Chloride |
| | | 1 bottle | Morpholine |
| | | 2 bottles | #2 Absorbing Reagent |
| | | 2 bottles | Nitrilotriethanol MP 20-22 DEG |
| | | 2 bottles | Sodium Sulfate Anhydrous |
| | | 1 lot | Perchloric Acid 70-72 %C |
| | | 3 pks. | Perfluorelastomer |
| | | 2 bottles | phosphorous Pentoxide Powder |
| | | 1 lbs. | Potassium Sulfate Powder |
| | | 3 lbs. | Sodium Acetate, Crystals |
| | | 3 bottles | Sodium Citrate, Crystals |
| | | 1 lb. | Sodium Cobaltinitrate Powder |
| | | 1 bottle | Sodium Methoxide |
| | | 2 bottles | Sodium Oxalate Standard |
| | | 6 lbs. | Stearic Acid |
| | | 1 lot | Sucrose Rea Cry |
| | | 4 gals. | Tetrahydrofuran |
| | | 1 lot | Thymol blue B Indicator Solution |
| | | 9 bottles | Triphenyl Phosphate |
| | | 1 lb. | Uranyl Acetate |
| | | 1 bottle | Zinc Metal Dust |
| | | 4 pks. | Total Count Millipore Filters |

4.3.2 The materials that have been disposed in this landfill should not pose a health or safety hazard because they have been covered with earth and the proposed construction does not require that the waste be disturbed. If any unusual conditions are encountered, the Operating Contractor should be notified.

are presented in Table 2.

As with HWM 5, the accumulated solids in HWM 7 have not been analyzed to determine if reactive constituents are present. However, according to Radford AAP personnel, wastewater discharged to HWM 7 in the past in the form of washdown water from the acid tank farm did not contain NC. It is unlikely that NC is present in concentrations that could render the solids reactive, however, a sample will be taken to determine if NC Fines are present.

## 2.3 HAZARDOUS WASTE MANAGEMENT FACILITY NO. 16

The Radford AAP generates a variety of wastes that are disposed in the on-site hazardous waste landfill trench (HWM 16). Presented in Table 3 is a list of the reactive and corrosive materials that are ultimately disposed in HWM 16 following treatment. The waste materials presented are generated from Radford AAP activities including the incineration of waste propellants, and disposal of laboratory waste chemicals and materials.

As of December 1984, Approximately 4200 cubic yards of waste had been disposed in the landfill. Presented in Table 4 is a summary of the wastes disposed in HWM 16. It should be noted that the ash from waste propellant incineration and residue from explosive contaminated waste burning are listed as reactive

wastes. This information is based on the assumption that residues from the treatment of reactive wastes are considered reactive hazardous waste until proven otherwise (USAEHA, 1981). Since HWM 16 began disposal operations in 1980, wastes characterized as reactive (Table 3) were incinerated or open burned prior to disposal in the landfill to render them non-reactive. Reactivity test methods including thermal stability, unconfined burning, No. 8 blasting cap and the impact test were used to analyze potentially reactive sludges prior to disposal in HWM 16. This testing determined that the landfilled sludges were non-reactive. Presently, these sludges are not disposed in the landfill. Based on the analysis by the Radford AAP laboratory utilizing the USEPA approved reactivity testing methods (i.e., Bureau of Mines Gap Test and Deflagration Detonation Transition (DOD) Test), ash and residues from the incineration and open burning of waste propellants were also non-reactive. The ash and residues that were analyzed and found to be non-reactive are similar to the wastes landfilled prior to reactivity testing performed using the USEPA approved methods.

Presented in Table 3 are EP toxicity results for several ash residues disposed in HWM 16. These analytical results indicate that with the exception of lead in the propellant burning ground ash, none of the residues contain concentrations of heavy metals that would classify the waste as hazardous (USAEHA, 1981). However, this determination is based on one sampling event conducted in 1981 and may not be representative of the waste

residues presently disposed in the landfill. According to Radford personnel, various laboratory waste chemicals and materials were also disposed in HWM 16. A sampling and analysis program will be conducted during the closure of HWM 16 to further document the nature of wastes in HWM 16.

# SECTION
# CONSTRUCTION PROCEDURE

This section describes the construction procedure for the closure of the Radford AAP hazardous waste management facilities. Included in this closure plan are the hazardous waste lagoons (HWM 5 and HWM 7) and the hazardous waste landfill (HWM 16).

## OVERVIEW OF CLOSURE CONSTRUCTION

All Radford AAP HWM facilities are to be closed with hazardous wastes (HWM 16) and/or contaminated subsoils (HWM 5 and HWM 7) in place. Initial site preparation tasks, such as neutralization of impoundment liquids and flashing of the potentially NC-laden sediments in HWM 5 will be performed by Radford AAP (Hercules, Inc.) because of safety concerns associated with acidic liquids and reactive compounds.

Closure construction for the surface impoundments (HWM 5 and HWM 7) involves demolition of appurtenant structures, treatment of subsoil and sediments, sampling/analysis, backfilling and cover system installation.

Closure construction for the hazardous waste landfill (HWM 16) includes leachate drain installation and cover system installation. The final cover system, the most important component in the closure of the hazardous waste facilities with waste in place, consists of: one foot of topsoil with grass cover; one foot of cover soil; one foot of drainage sand layer; a 30-mil PVC membrane liner; and a two-foot thick clay liner.

SITE PREPARATION

Site preparation includes all activities to be performed by Radford AAP (Hercules, Inc.) prior to initiation of closure construction by the contractor. These activities primarily consist of the handling of liquids and solids in the surface impoundments after the influent is diverted and the surface impoundments can be closed. Details of site specific activities are summarized as follows:

HWM 5

Following the completion of the bypass pipeline, the acidic water be diverted to the new pipeline and the impoundment will be ready for closure. The following site preparation activities will be performed by Radford AAP:

- Lower the liquid level in HWM 5 to a practical minimum via the existing effluent line.
- Flush the old influent pipe, manholes, stainless steel trough and granite riprap on the side slopes with a weak sodium hydroxide solution and water. Once acidic residues on these materials and structures are neutralized and flushed with water, they can be reused, buried in place, or disposed of in the on-site dumps in accordance with all applicable state, local, and federal requirements.
- Allow the sodium hydroxide solution to soak into the sediment and cover sand for the impoundment thereby neutralizing acidic liquids. Additional sodium hydroxide may have to be added if the quantity used for flushing of pipes and other materials is not sufficient.

- Drain the neutralized liquid and allow excess liquid in low spots to dry.

- Sample and test the bottom sediment for reactivity. If the sediment is reactive, remove and flash all bottom solids (sand and sediments) to destroy NC fines at the open burning ground. Store the sand near HWM 5 for use as backfill material.

HWM 7

Following the completion of the bypass pipeline, the acidic water will be diverted to the new pipeline and the impoundment would be ready for closure. The following will be performed by Hercules:

- Flush the old influent pipe (from the diversion point to the discharge outlet) and manhole with a weak sodium hydroxide solution and water.

- Add lime slurry to the lagoon wastewater and mix using the air diffusers until the wastewater in the lagoon is neutralized.

- Remove the air diffuser pipes and flash prior to disposal at the open burning ground. The pipes may be recycled as scrap metal or disposed of in the non-combustible dump.

- Drain neutralized (Ph between 5 and 9) wastewater to SWM 9 and allow the bottom of the impoundment to dry.

HWM 16

No site preparation work is needed for HWM 16.

## 2.3 DEMOLITION AND CLEANUP

HWM 5

The demolition and cleanup activities for HWM 5 include the following:

- Remove all the appurtenant structures including the trough, manhole, influent pipe, decant pipe and guard rails. The influent pipe sections not affected by the construction activities at the HWM 5 site may remain in place after plugging both ends with concrete. If there is any indication that the underground piping has leaked, it will be reported to the USEPA. The concrete and clay pipe will be disposed at the non-combustible dump and the metallic material hauled to the

contaminated waste incinerator (solid waste incinerator) for handling by Hercules.

- Remove the riprap on the side slopes of the impoundment and stockpile near the HWM 5 site for later use. If this material is determined to be contaminated it will be underlain with a liner when it is stockpiled. This will be used for the perimeter of the cover system for HWM 5 and HWM 7. The estimated volume of riprap from HWM 5 is about 190 cubic yards.

- Remove the cover sand on the bottom and on the side slopes and use later as backfill material in HWM 5. The cover sand on the side slopes does not need flashing. The total volume of sand from HWM 5 is estimated at about 450 cubic yards (290 CY from the bottom and 160 CY from the slopes).

- Remove the Hypalon liner, cut into pieces and later dispose of in HWM 5 as part of backfilling. Save 20 one-foot by one-foot coupons for performance evaluation by COE.

- Remove the trough support columns and foundations.

HWM 7

The demolition and cleanup activities at the HWM 7 site involve the removal of all the appurtenant structures such as guard rails, influent pipe, concrete pad, and effluent (3-inch stainless steel) pipe. If there is any indication that the underground piping has leaked, it will be reported to the USEPA. The concrete and clay pipe will be disposed at the non-combustible dump and the metallic material hauled to the contaminated waste (solid waste) incinerator for handling by Hercules. The influent pipe outside of the closure construction area may remain in place after plugging both ends with concrete.

HWM 16

No demolition and cleanup activities are required for HWM 16. However, the leachate drain system will be operational prior to installation of final cover.

The soil sampling program should be conducted prior to backfilling and cover system installation. Due to the access problem and the need to confirm the effect of subsoil treatment, sampling at the HWM 5 and HWM 7 sites will be done after soil treatment.

A summary of the sampling and analysis program to be conducted is provided in Table 3. At each of the surface impoundment sites HWM 5 and HWM 7, three borings will be drilled within each impoundment. Each boring will be advanced and three soil samples, the first sample in the treated zone and the next two samples in the untreated zone, will be collected. Samples will be analyzed for pH and heavy metals. The boring holes shall be plugged prior to initiation of backfilling.

TABLE 3

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

| | HWM 5 | HWM 7 |
|---|---|---|
| Number of borings | 3 | 3 |
| Bottom elevation of boring | 1759 | 1691 |
| Number of samples per boring and sample elevations | 3 at 1769, 1765 and 1759 | 3 at 1700, 1694 and 1961 |
| Analytical parameters | pH and EP toxicity heavy metals | pH and EP toxicity heavy metals |

SECTION

SOIL TREATMENT

## QUALITY CONTROL PARAMETERS

The objective of the soil treatment is two-fold: neutralizing the acidic sediment/subsoil and solidifying the soft subsoil. Neutralization of the subsoil is to minimize the future groundwater contamination which can be caused by mobilization of soluble metals from soils in acidic water. Solidification of the soft subsoil will aid in providing a stable foundation for backfilling of the surface impoundments and subsequent cover system installation. To assure the quality of the soil treatment work, therefore, the treated material will be tested for two key parameters: soil pH and compressive strength.

The pH of the natural soils at the site is slightly higher than 5. The target pH of the treated material is set between 6.3 and 10.5, and the target unconfined compressive strength of the HWM 7 sediment is 1500 pounds per square foot upon 14 days of curing. Based on the limited laboratory test performed for sediment/subsoil from HWM 7, 82 pounds of reagent (one part cement kiln dust and three part flyash) per cubic foot of sediment/subsoil will be required for the strength requirement. However, the resultant pH may be higher than the upper limit of 10.5 at this mix ratio. Although no laboratory test was performed for the subsoil of HWM 5, it is anticipated that 15 percent by weight of reagent (lime kiln dust) would be required due to the past operational characteristics of HWM 5 (i.e., no liner prior to 1981). The contractor selected for the closure construction will perform a pilot test to develop an optimum mix design to satisfy both pH and strength requirements. Quality control to achieve the target pH and strength begins with control of reagent application rate. (Appendix E )

## CONTROL OF REAGENT APPLICATION RATE

U.S. Gypsum at Kimballton, Virginia, the most likely lime kiln dust supplier because of its proximity to the site, can supply about 25 tons of lime kiln dust a day. To control the application rate of lime kiln dust at HWM 5, a section of the impoundment bottom will be first prepared, and the amount of lime kiln dust required for the section will be blown out of the pneumatic truck. Since about 80 tons of reagent is required for HWM 5, a truck load of reagent (20 tons) may be used for a 6-inch lift of the entire impoundment area. In this approach, there is no need for reagent storage and the application rate will be adequate as long as the reagent is uniformly spread over the entire area.

The source of cement kiln dust for HWM 7 sediment treatment would be Lonestar Cement in Culverdale, Virginia, about 45 miles from the site. There will be sufficient quantity of the material available for use at HWM 7. For a section of HWM 7 to be treated, flyash needed for the section will be first hauled and dumped in the impoundment. Next, the clamshell will be used to pick up and spread flyash over the area to be treated. Then, the required amount of cement kiln dust will be blown into the impoundment prior to initiation of mixing with the clamshell.

## FIELD pH CONTROL

Upon completion of the soil treatment on each section or lift, field pH tests will be performed to confirm the pH of the treated soil. The soil pH can be measured in accordance with ASTM G 51 or the procedures described herein. An electrometric type pH meter, buffer solutions, small glass beakers, balance glass pipette, glass stirrer rod and distilled water are needed to perform field soil pH tests.

Calibration of pH Meter: To calibrate the pH meter, use a standard buffer solution of pH 7 and set the meter at pH 7. Then set the manual temperature compensator at the temperature of the buffer. Use a standard buffer of pH 4 to check the instrument's accuracy at pH 4. If neccessary, adjust the reading to pH 4 with the temperature

compensator knob. Repeat the above procedure until the meter reading agrees with both buffer pHs.

Determination of pH:

1) Using a scale or balance, weigh a 5 g sample of air-dry soil into a beaker suitable for shaking.

2) With automatic pipette, add 5 ml of distilled water to the beaker.

3) Shake, or mix thoroughly for 5 to 10 seconds.

4) Let stand for 10 minutes.

5) Insert the electrodes into the container and stir the soil suspension by swirling the electrodes slightly.

6) Read the pH immediately on the calibrated pH meter.

Corrective Action: If the test results do not meet the target pH, the section or entire area will be reworked by mixing with additional reagent or buffer material. The details of the corrective action will be developed after the Contractor's pilot test.

FIELD COMPRESSIVE STRENGTH CONTROL

HWM 5 has been operated with a Hypalon liner since 1981. In the absence of continuous liquid infiltration, the subsoil at HWM 5 impoundment would have a moisture content and compressive strength similar to the surrounding soils. The condition of the impoundment bottom, during the soil treatment and backfilling operations, would be sufficient to support earthwork equipment. However, 14 day unconfined compressive strength shall be preformed as detailed for HWM #7.

HWM 7 is an unlined lagoon and has allowed continuous infiltration of liquids and sediment buildup. The bottom of the impoundment is very

soft and cannot support earthwork equipment. During the soil treatment task at HWM 7, therefore, it is necessary to attain a minimum strength of the treated soil prior to the initiation of backfilling. Thus, a 14-day unconfirmed compressive strength of 1,500 pounds per square foot (PSF) is chosen as a target compressive strength.

For field quality control, both moisture content and unconfined compression test (ASTM 2166) will be used to determine the field strength of the treated soil. Details of the field quality control procedures are presented in the specifications. (Appendix E, pg 2D-3 )

COVER SYSTEM ANALYSIS

Proposed Cover System

The proposed cover system consists of several components to ensure its performance. The basic components of the cover system and their functions are:

- A grass-covered surface to prevent erosion of the cover soil and to promote evapotranspiration of moisture from the soil. The slope of the proposed surface ranges from three to eleven percent depending on the surrounding topography.

- One foot of topsoil and one foot of cover soil to support the growth of grass and to protect the underlying PVC liner.

- A one-foot sand drainage layer with a permeability no less than $10^{-3}$ cm/sec. This layer will promote drainage of any infiltrated water.

- A primary liner consisting of 30-mil PVC membrane to prevent infiltration of surface water into the subsoil or wastes within the closed facilities.

- A clay liner to serve as a bedding layer for the PVC liner and as a secondary liner in case of primary liner failure. The thickness of the compacted clay liner will be two feet and the compacted liner soil will meet the permeability requirement of $10^{-7}$ cm/sec or less.

Additional features associated with the cover system include:

- A riprap perimeter (for HWM 5 and HWM 7) designed to do the following: protect the slope against erosion; promote drainage of the cover soil layer; clearly mark the extent of the closed facility; and deter accidental vehicle or personnel access.

- A filter fabric between the riprap and the cover soil (for HWM 5 and HWM 7). This is necessary to prevent internal erosion (piping) of the cover soil into the riprap zone.

- Drainage swales to divert surface flows around and away from the containment area.

- A leachate drain system (HWM 16 only) consisting of a drain pipe and a leachate collection sump. The leachate drain system will minimize escape of hazardous waste constituents should any leachate be formed in the landfill.

Design Standards

The general design criteria for the final cover system are contained in the Virginia Hazardous Waste Regulations ( 10.13.K ) and (10.10.I ) . It is specifically required that the permeability of the cover liner material be less than or equal to the permeability of any bottom liner system or natural subsoils present. Since only natural subsoils (treated with lime kiln dust at the HWM 5 and HWM 7 sites and recompacted to form a clay liner at the HWM 16 site) are present at these facilities, the minimum requirement for cover liner material with respect to the permeability would be a soil liner compacted out of selected on-site soil (e.g., clay). If a synthetic membrane liner were used, the minimum thickness required by Virginia regulations would be 20 mil. For the proposed cover system, however, a 30-mil synthetic liner (PVC) on a compacted clay liner is recommended for maximum performance.

A sand drainage layer, with a permeability of no less than $10^{-3}$ cm/-sec, is often recommended above the low permeability barrier (Department of Army, 1984). The drainage layer would promote drainage of water infiltrating through cover soil layers. Thus, all hazardous waste facilities (HWM 5, HWM 7 and HWM 16) will be closed with a drainage layer as part of their cover system.

LEACHATE DRAIN INSTALLATION

A leachate drain system will be installed at the last section of HWM 16. This is intended to facilitate removal of the leachate should any leachate form within the landfill.

The bottom of the trench must be compacted prior to installation of the leachate drain system. The pipe section placed within the cover system will be perforated and embedded in gravel wrapped with a filter cloth to facilitate drainage function without clogging. The drain pipe will be extended by unperforated sections to the leachate collection sump. (Appendix G)

BACKFILL AND GRADING

Surface Impoundments

The surface impoundments (HWM 5 and HWM 7) will be backfilled after soil treatment and sampling are completed. Sand and Hypalon liner removed from HWM 5 will be disposed of in HWM 5 as part of backfilling. HWM 6 will be backfilled after removing three feet of soft subsoil in the ponded area. The backfill material will be excavated from the designated borrow pits, and adjusted for the optimum moisture content (i.e., spraying water or drying as needed). Materials designated as Strata B and B1 will be used for common fill. Materials from Strata A and A1 will be stockpiled for use in secondary soil liner construction. The backfill material should be compacted within two percent of the optimum moisture content to no less than 95 percent of the maximum dry density as determined in accordance with ASTM D-698, Method A. The optimum moisture content and the maximum dry density for each soil stratum from the borrow pits are summarized in the Geotechnical Report (Schnabel, 1985). (Appendix F )

The general grading plans for HWM 5, and HWM 7 are provided in Construction Plan. Within the limit of the cover system installation, the backfill and compaction will be performed to the grade indicated in the plan minus the thickness of the cover system. The areas beyond the limit of the cover system installation will be graded as indicated in the plans. The relevant sections applicable to the backfill and grading of the surface impoundment sites are also provided in the Construction Plan.

The previously filled section of HWM 16 has been compacted and graded flush with the surrounding area. Prior to the cover system installation, the existing soil cover will be recompacted after scarification and moisture adjustment.

## COVER SYSTEM INSTALLATION

The cover system consists of a 2-foot secondary soil liner, a 30-mil PVC liner, one-foot drainage layer, one-foot soil cover, and one-foot topsoil and grass cover. The additional elements of the cover system include riprap slope protection and a filter cloth underneath the riprap to prevent piping of the cover soil along the perimeter of HWM 5 and HWM 7.

The secondary soil liner will be compacted to a minimum of 95% of the maximum dry density per ASTM D-698 at a moisture content 2 to 5 percent wet of optimum. The PVC liner will be installed on the secondary soil liner. The drainage layer, consisting of one foot of sand, should have a permeability no less than $10^{-3}$ cm/sec. The common fill material (classified as SM) excavated from the designated borrow pit will be used for the specified one-foot of cover soil. Topsoil will be imported from a local supplier. After placing the topsoil, the perimeter slope protection with filter fabric will be installed and seeding will follow. Details of the material quality and construction methods for each cover system component are described in the Specifications.

## VEGETATION

The entire cover area and other disturbed areas will be seeded to establish grass covers. Drainage swales are also to be seeded to minimize channel erosion. The existing access roads and pads will not be vegetated to provide access for maintenance and inspection during the post-closure period. The total area of vegetation is estimated at about four acres. Selection of species, fertilizer, soil pH adjustment and seeding application will be made in accordance with the Specifications. The vegetated area will be watered until full grass cover is established. The contractor will be responsible for watering until seed germination occurs.

Clay Liner

It is recommended by the Army (TM 5-814-7) that a clay liner with a permeability not exceeding $10^{-7}$ cm/sec be provided underneath the primary synthetic liner. Portions of site soils from the borrow areas met this permeability requirement when tested after recompaction in the laboratory. Specifically, it was recommended that, to meet this permeability requirement, clayey soils from Strata A and A1 be compacted at a moisture content three to four percent above the optimum to 95 percent of maximum dry density per ASTM D-698, Method A (Schnabel, January 1985). Since meeting the moisture range of one percent in the field condition is impractical, a moisture range of two to five percent above the optimum may be used for field compaction control. (Appendix A )

Drainage Layer

The drainage sand material must meet two performance criteria:

- The drainage sand should be coarse enough to meet the permeability requirement of no less than $1 \times 10^{-3}$ cm/sec and to allow adequate drainage of infiltrated rainwater.

- The drainage sand should meet the filter criteria (i.e., not too coarse) to prevent internal erosion (piping) of cover soil and subsequent clogging of the drainage layer.

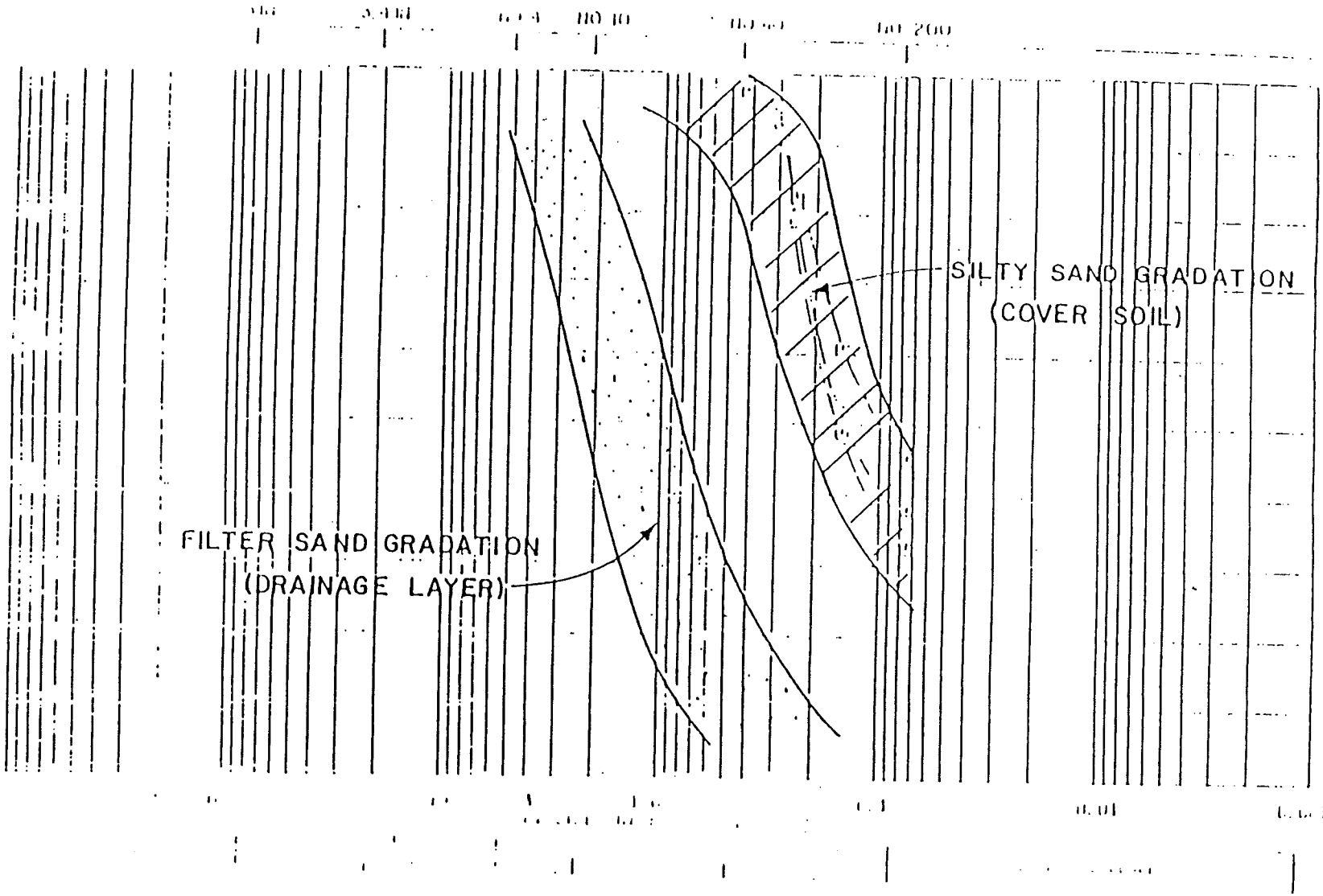
To satisfy these two conflicting requirements, the range of sand gradation necessary to meet the filter criteria was developed first and then narrowed down to meet the permeability requirement.

The cover soil is to be obtained from Stratum B of the borrow pit and classified as silty sand (SM) by the Unified Soil Classification System. The gradation envelope of this cover soil is shown in Figure 1. The filter gradation criteria are:

1. $$\frac{D_{15}\ (\text{filter})}{D_{85}\ (\text{soil})} < 5 < \frac{D_{15}\ (\text{filter})}{D_{15}\ (\text{soil})}$$

2. $$\frac{D_{50}\ (\text{filter})}{D_{50}\ (\text{soil})} \leq 25$$

The first criterion requires the filter material to have a $D_{15}$ no larger than 1 mm while the lower limit can not be determined because of




DRAINAGE SAND
GRADATION REQUIREMENT

FIGURE 1

SCHNABEL ENGINEERING ASSOCIATES
P.C.
CONSULTING GEOTECHNICAL ENGINEERS

January 11, 1985

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Fairfax, Virginia 22030

Attn: Mr. Mel Hockenbury, P.E.

Subject: Contract V84482, Borrow Site Investigation for Closure of Hazardous Waste Management Facilities, Radford Army Ammunition Plant, Radford, Virginia

Gentlemen:

Submitted herewith are fourteen copies of our report for the above referenced project in accordance with our agreement dated October 8, 1984.

The study included inspection of test borings performed by others and preparation of a geotechnical engineering study for this project. The study included evaluation of test borings, geologic, soil test and project data to develop the following:

1. Estimated subsoil conditions and groundwater levels with the area investigated.

2. Recommendations regarding availability of site borrow materials for use as common fill and cap liner fill.

3. Recommendations for placement and compaction of borrow materials.

Detailed quantity estimates, plans, and services in connection with horizontal or vertical lines and grades were not included in this study.

Soil samples will be held until June 30, 1985 and will then be disposed of unless further disposition is requested.

We appreciate the opportunity to be of service for this project. Please do not hesitate to contact either of the undersigned if clarification is needed for any aspect of this report.

Very truly yours,

SCHNABEL ENGINEERING ASSOCIATES, P.C.

Raymond A. DeStephen, P.E.
Commonwealth of Virginia

Ray E. Martin, Ph.D., P.E.
Commonwealth of Virginia

RAD:REM:maj

BORROW SITE INVESTIGATION
CLOSURE OF HAZARDOUS WASTE MANAGEMENT FACILITIES
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

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| 5. | Evaluation of Borrow Material | 9 |
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Appendix A

Summary of Soil Laboratory Tests
- Gradation Test Curves (27)
- Compaction Test Curves (6)
- Permeability vs Compacted Moisture Content (4)

Appendix B

Subsurface Exploration Data
- General Notes for Test Boring Logs
- Identification of Soil Samples
- Test Boring Locations and Elevations
- Test Boring Logs, B-1 thru B-3, B-6 thru B-18, and B-19
- Test Boring Location Plan, Sheets B-1 and B-2

## 1. CONCLUSIONS AND RECOMMENDATIONS

Based on the information contained herein, the following summary of conclusions and recommendations is presented:

1. Soils within the investigated borrow areas located on Sheet 1 consist of alluvial silty clays (CL), clayey silts (ML and MH) to clayey silty sands (SM). The silty clay soils have been designated Strata A and A1 while the remaining soil types have been designated Strata B and B1.

2. Strata A and A1 soils meeting the requirements specified herein are considered suitable for use as compacted cap liner material, but will have to be compacted within a narrow range of moisture contents to achieve a permeability of $1.0 \times 10^{-7}$ cm/sec.

3. Limited quantities of cap liner material were encountered at both borrow sites as outlined on Sheets B-1 and B-2, with estimated quantities of 4700 cy at Borrow Site 1 and 1200 cy at Borrow Site 2.

4. Strata B and B1 soils may be used as common fill to backfill lagoons and to provide a topsoil/cover layer above the clay cap. Vast quantities of these materials are available at each borrow site.

5. Common fill and cap liner fill should be placed and compacted to the specification requirements described herein. Both fills should be tested by the Geotechnical Engineer to verify conformance with these requirements.

6. Presently natural moisture contents range from 1.9 to 6.7 percent above optimum. Moisture conditioning will be required for proper compaction of fill, and construction delays should be expected if earthwork proceeds during the wet winter months.

We have prepared this report in accordance with generally accepted geotechnical engineering practice and make no other warranties, either expressed or implied, as to the professional advice provided under the terms of our agreement and included in this report.

## 2. SITE LOCATION AND DESCRIPTION OF BORROW AREAS

Three acid waste lagoons designated HWM-5, -6, and -7, and a landfill designated HWM-16 located within the Radford Army Ammunition Plant, Radford, Virginia are to be closed in accordance with Resource Conservation and Recovery Act requirements. The lagoons are surface impoundments typically about 10 ft deep. Contents are generally a mixture of rainfall, runoff and spent sulfuric and nitric acid.

This study includes investigation of potential plant site borrow soils to be used as common fill and cap material during closure. Two sites were considered as potential borrow sources. These borrow sites, designated Borrow Site 1 and Borrow Site 2, are located within the magazine area within the peninsula formed by the New River at the north end of the plant site. Borrow site locations are shown on the Site Location Map, Sheet 1.

Borrow Site 1 is an extension of the presently used borrow area which is south of an adjacent to building 1937. The unexcavated portion of the site is a 4.5 acre grass covered site and slopes gently downward to the south, with surface grades varying from about El 1893 to El 1878.

Borrow Site 2, located northwest and adjacent to HWM-16 consists of about 1.5 acres. This site was also grass covered but was being covered with a thin lift of fill during our site investigation. This site is fairly level with surface grades varying only from about El 1833.5 to El 1837.5.

## 3. SUBSURFACE INVESTIGATION

Eighteen soil test borings were drilled within the borrow areas by Ayers and Ayers, Inc., Richmond, Virginia on November 14 through 16, 1984 under our continuous inspection. Test boring logs are included in Appendix B along with the Test Boring Location Plans, Sheets B-1 and B-2. Borings B-4, B-5 and B-19 were deleted and Boring B-11A was added during the subsurface exploration program. Discussion of drilling methods are also included in Appendix B. Estimated subsurface profiles are included at the end of this section of the text. Based on the test boring data, the following generalized subsoil strata are present:

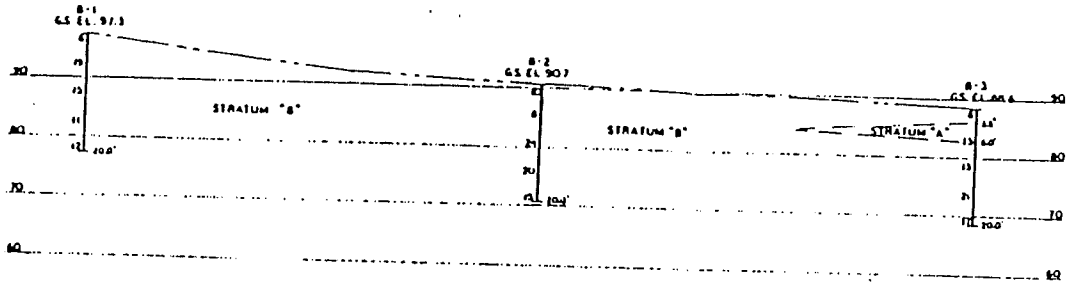
| | | |
|---|---|---|
| Stratum A1: | From the ground surface to depths of 0.7 to 3 ft | Brown fine to medium sandy silty clay, FILL and PROBABLE FILL (CL); medium to very stiff consistency (N = 4 to 17) |
| Stratum B1: | From the ground surface to depths of 1 to 3 ft | Brown fine sandy clayey silt (ML) and fine to coarse silty sand, trace gravel (SM), FILL; firm density (N = 8 to 17) |
| Stratum A: | From the ground surface and below Strata A1 and B1 to depths of 3 to 14 ft | Brown sandy SILTY CLAY, with mica (CL); medium to very stiff consistency (N = 6 to 20) |

| | | |
|---|---|---|
| Stratum B: | Below and interbedded with Stratum A to the maximum depth of penetration, 20 ft | Brown and red-brown fine sandy CLAYEY SILT, with mica (ML to MH); fine to medium SAND, trace gravel (SM) and fine silty clayey SAND, with mica (SC); loose to very compact (N = 6 to 45) |

The above N values indicate the low and high Standard Penetration Test resistances encountered in a particular layer as determined from the number of blows required to drive a 2 inch O.D., 1-3/8 inch I.D. sampling spoon one foot using a 140 pound hammer falling 30 inches. This test is conducted after seating the sampler six inches in the bottom of the hole according to ASTM D-1586.

Four to eighteen inches of topsoil were encountered at the test boring locations. The soils of Strata A1 and B1 represent fill and probable fill materials placed during previous site development. Stratum A1 soils classify CL while Stratum B1 consists of clayey silts and sands classifying ML, CL-ML, MH, SC and SM. The soils of Strata A and B represent alluvial soil deposits of Recent to Pleistocene geologic age.

No groundwater was encountered in any of the test borings during sampling. All test borings were dry upon completion. No long-term readings were made as test borings were backfilled upon completion for safety.

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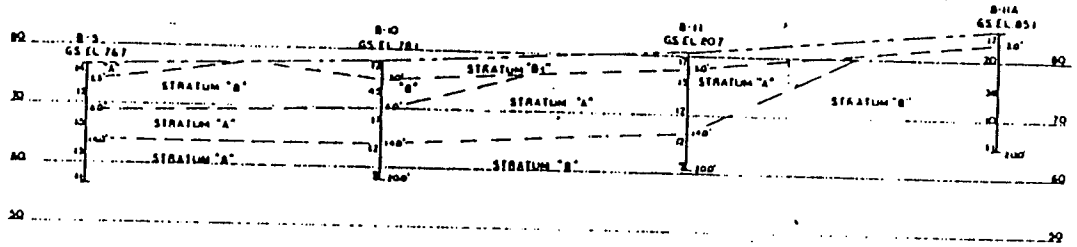


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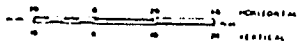


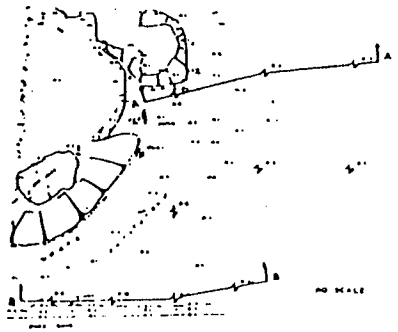


## GENERAL NOTES

1. NUMBERS TO THE LEFT OF THE BORING COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 2 INCH O. D., 1 3/8 INCH SAMPLING SPOON 12 INCHES USING A 140 LB. HAMMER FALLING 30 INCHES.
2. ESTIMATED GROUNDWATER LEVEL INDICATED BY ▽. THESE LEVELS ARE ONLY ESTIMATES FROM AVAILABLE DATA AND MAY VARY WITH PRECIPITATION, POROSITY OF SOIL, SITE TOPOGRAPHY, ETC.
3. G.S. = GROUND SURFACE  * UNDISTURBED SAMPLE
4. TEST BORINGS DRILLED BY AYERS AND AYERS, RICHMOND, VIRGINIA.
5. THIS DRAWING CONTAINS INTERPRETATION OF TEST BORING DATA AND SHOULD NOT BE USED AS PART OF THE CONTRACT DOCUMENTS.
6. THESE PROFILES WERE DEVELOPED BY INTERPOLATION BETWEEN WIDELY SPACED BORINGS. ONLY AT THE BORING LOCATIONS SHOULD THEY BE CONSIDERED AS AN APPROXIMATELY ACCURATE REPRESENTATIVE AND THEN ONLY TO THE DEGREE IMPLIED BY THE NOTES ON THE BORING LOGS.
7. TEST BORINGS INSPECTED BY SCHNABEL ENGINEERING ASSOCIATES.

## STRATA DESCRIPTIONS

Stratum A-1: Brown fine to medium sandy silty clay, FILL and PASSABLE FILL (CL); medium to very stiff consistency (N = 4 to 17)

Stratum A: Brown sandy SILTY CLAY, with silt (CL); medium to very stiff consistency (N = 6 to 20)

Stratum B-1: Brown fine sandy clayey silt (ML) and fine to coarse silty sand, trace gravel (SM), FILL; firm density (N = 8 to 17)

Stratum B: Brown and red-brown fine sandy CLAYEY SILT, with silt (ML to MH); fine to medium SAND, trace gravel (SM) and fine SILTY CLAYEY SAND, with silt (SC); loose to very compact (N = 8 to 63)

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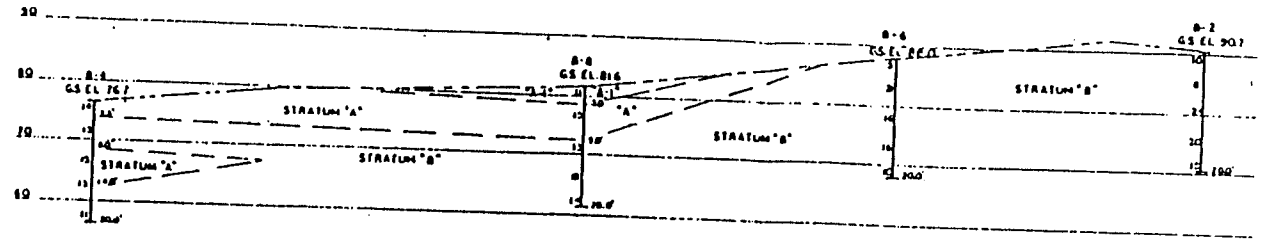
CLOSURE OF NAVY FACILITIES, RADFORD AAP

RADFORD VIRGINIA

ESTIMATED SUBSURFACE PROFILES

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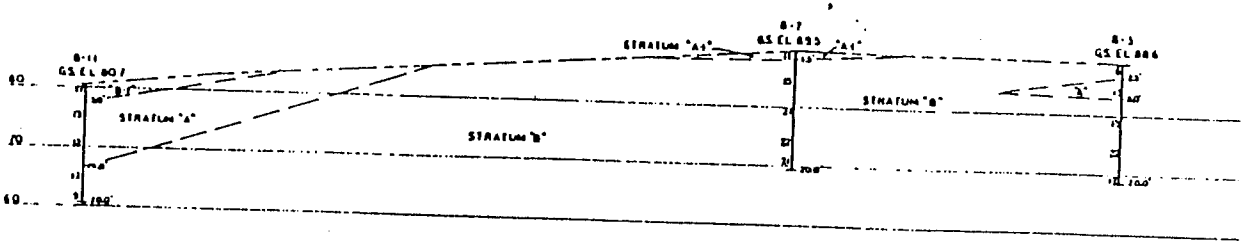


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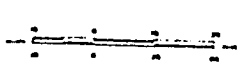

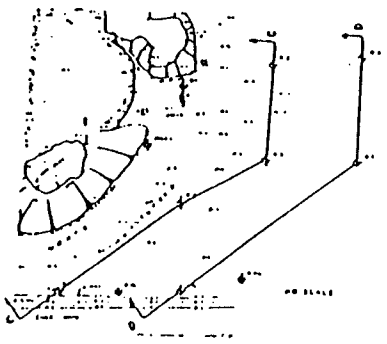

SEE SHEET 2 FOR STRATA DESCRIPTIONS

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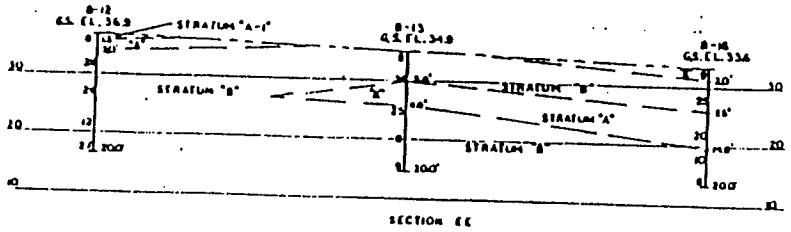
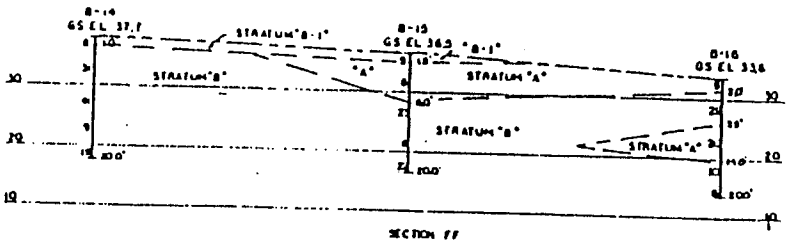
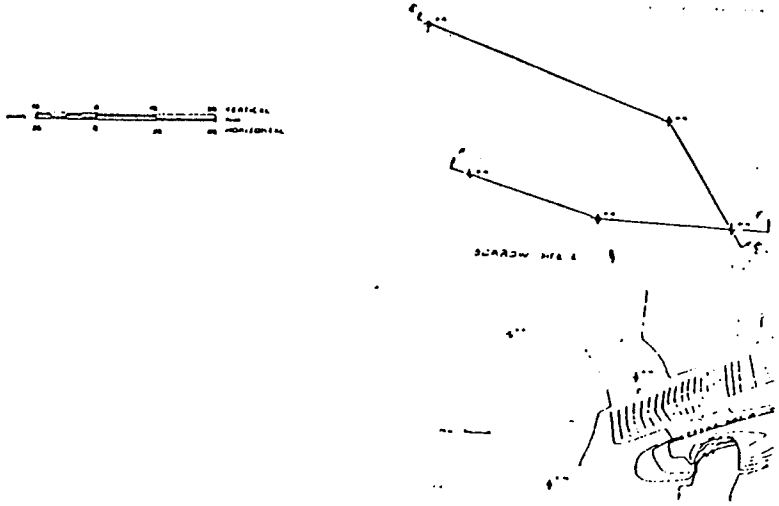
CLOSURE OF HWM FACILITIES, RADFORD AAP

RADFORD, VIRGINIA

ESTIMATED SUBSURFACE PROFILES



NOTE: SEE SHEET 2 FOR STRATA DESCRIPTIONS

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CLOSURE OF HWM FACILITIES, RADFORD AAP

RADFORD, VIRGINIA

ESTIMATED SUBSURFACE PROFILES

## 4. SOIL LABORATORY TESTING

### a. Laboratory Testing and Procedures

Soil classification tests, compaction tests, and permeability tests were performed in accordance with applicable ASTM methods. Soil classifications are in accordance with the Unified Soils System, ASTM D-2487. Soil descriptions are in accordance with the "Identification of Soils" included in Appendix B.

Classification tests, including grain size analyses and Atterberg Limits testing, were performed on 79 jar samples taken from borings drilled within the borrow areas. Atterberg limits and percent fines passing the No. 200 sieve were also performed on six bulk samples, along with compaction and permeability tests. Standard Proctor Compaction tests were performed in accordance with ASTM D-698, Method A.

Falling head permeability tests were performed in accordance with EM 1110-2-1906 on samples compacted to 95 percent of maximum dry density when remolded at moisture contents of about +3 and -3 percent of optimum moisture for Strata A and A1 soils. Following compaction, samples were saturated with deaired water and deaired utilizing a vacuum pressure of 22 psi. Tests were conducted following saturation by subjecting the sample to a column of water with total excess head of 14 ft. Several readings were taken on each sample over a period of 24 hours. Calculations were made based on the falling head method.

### b. Laboratory Test Results

The results of the soil laboratory testing are included on the Summary and graphs of Appendix A. Based on the permeability test

results the soils were divided into four strata: Strata A and A1, representing materials classifying CL; and Strata B and B1, representing materials generally classifying ML, MH, SM and SC. The general soil characteristics of these strata are summarized below:

Stratum A and A1: Fine sandy silty clay, with mica (CL)

Soils of these strata are generally of low to medium plasticity with Liquid Limits varying from 20 to 43 and Plasticity Indices from 10 to 26. The coarse fraction of these materials vary from fine graded to fine to medium graded. The percent fine material by weight passing the No. 200 sieve varies from 51 to 72 percent.

Standard Proctor Compaction tests and falling head permeability tests performed on remolded samples resulted in the following values.

| Sample | Classification | % Passing No. 200 Sieve | Optimum Moisture (%) | Max (pcf) | Permeability (cm/sec) (+3%) | Permeability (cm/sec) (-3%) |
|---|---|---|---|---|---|---|
| B-3/2.5-6' | CL | 54 | 19.7 | 105.0 | $1.0 \times 10^{-7}$ | $9.0 \times 10^{-5}$ |
| B-8/5-10' | CL | 55 | 17.5 | 106.7 | $1.6 \times 10^{-7}$ | $2.9 \times 10^{-6}$ |
| B-13/5-10' | CL | 54 | 20.3 | 104.4 | $7.7 \times 10^{-8}$ | $1.6 \times 10^{-5}$ |

The compacted permeability values are very low, all on the order of $10^{-7}$ cm/sec. Permeability test values performed on the samples when compacted dry of optimum were also low, as expected, but were relatively higher under this as indicated. Permeability vs compaction moisture content plots are indicated in Appendix A.

Strata B and B1: Fine sandy clayey silt (ML and MH), fine silty sand (SM)

Soils of these strata vary from non-plastic to low to medium plastic with Liquid Limits of 20 to 67 and Plasticity Indices of 2 to 30. A wider variation occurred in the fine-grained portion of these samples with the percent fines passing the No. 200 sieve ranging from 21 to 83 percent.

Compaction tests and permeability tests performed on three samples compacted wet of optimum resulted in the following values:

| Sample | Classification | % Passing No. 200 Sieve | Optimum Moisture (%) | Max (pcf) | Permeability (cm/sec) |
|---|---|---|---|---|---|
| Bulk 1 | SM | 46 | 20.8 | 101.5 | $6.2 \times 10^{-7}$ |
| B14/2-7' | ML | 65 | 20.8 | 100.6 | $3.4 \times 10^{-7}$ |
| B18/3-7' | MH | 66 | 23.4 | 99.0 | $3.0 \times 10^{-6}$ |

Permeability values for the Stratum B soils were also very low, but were greater than $1.0 \times 10^{-7}$ cm/sec. The compaction moisture content also was not as significant in effecting the permeability of this material. A graph of permeability vs moisture content is included in Appendix A for sample B18/3-7'.

## 5. EVALUATION OF BORROW MATERIAL

### Cap Liner Material

Borrow material from Sites 1 and 2 was evaluated for use as common fill and as cap liner material. Suitable cap liner material is considered to have a permeability, $k = 1 \times 10^{-7}$ cm/sec or less. Suitable cap liner material was encountered at both borrow sites in limited quantity.

Cap liner material should consist of silty clays classified CL in accordance with the Unified Soils System, ASTM D-2487 with minimum Plasticity Index of 10 and maximum particle size of 1.0 inch. Soil of Strata A and A1 meet this criteria and may be utilized as cap liner material when suitably placed and compacted.

In order to achieve the permeability requirement, the placement moisture content must be controlled during construction. Cap liner material should be placed in maximum 8 inch horizontal loose lifts and should be compacted to at least 95 percent of maximum dry density per ASTM D-698. Moisture content at compaction should be between 3 and 4 percent above optimum moisture content in order to achieve the required permeability. Placement moisture content will be more important than dry density in achieving permeability results. A sheepsfoot roller is recommended due to its efficiency in compacting this type of material and because a kneading compaction will result in a lower permeability than was achieved in the laboratory utilizing standard compaction procedures.

Usable cap liner material has been identified within a triangular-shaped area along the south end of Borrow Site 1 as

shown on Sheet B-1. Cap liner material is concentrated within this zone to have an average thickness of about eight feet. Stratum B overburden thicknesses in this area vary from three to eight feet. Cap liner mateial is represented by Strata A and A1 as shown on the subsurface profiles at the end of Section 3. Available cap liner material is estimated at 4700 cy from Borrow Site 1.

Cap liner material is also available from Borrow Site 2. Usable quantities occur in the area shown on Sheet B-2. This material occurs at a depth of 1.5 to 7.5 with average thickness of about six feet.

Common Fill

Strata B and B-1 soils may be used as common fill for backfilling the existing acid lagoons, and as topsoil cover material above the proposed liner. Topsoil stripped from the borrow site should be stockpiled so that it may be used within the final lift of the topsoil/cover.

Strata B and B1 soils classifying ML, CL-ML, MH, SC, and SM may be utilized as common fill. Common fill should be placed in horizontal lifts not exceeding 12 inches in loose thickness, and should be compacted to at least 95 percent of maximum dry density per ASTM D-698. No limits on the compaction moisture content will be necessary although the required density will be easiest to achieve when placed at a moisture content between +3 and -3 percent of optimum moisture.

In order to facilitate compaction, an initial thick base lift may be placed with a maximum lift thickness of 24 inches. This initial lift should be compacted to at least 90 percent of maximum dry density in accordance with the same standard. Cap liner performance may be affected by settlement of the fill following placement of common fill, as specified above, including the initial lift.

## 6. CONSTRUCTION CONSIDERATIONS

Some construction dewatering to remove ponded water from the fill areas should be assumed following storm events. It will be important to maintain fill surfaces free of water and to avoid prolonged saturation in order to prevent disturbance. Site drainage will also be important during placement of the cap liner. Any fill soils which have been placed and later weakened due to saturation and disturbance should be removed as directed by the Geotechnical Engineer.

Earthwork performed during the wet and freezing winter months is likely to encounter delays since the on-site soils are highly susceptible to moisture changes and will be difficult to compact during wet weather. The natural moisture content of the borrow soils ranged from 1.9 to 6.7 percent above optimum moisture at the time of our investigation. In addition, moisture conditioning will be required for placement of the cap liner so that compaction within the specified moisture range can be achieved.

Surface drainage should be maintained within borrow areas to prevent ponding of water. Final grading and seeding should be provided to prevent erosion. Any cut slope made adjacent to the paved road along the south edge of Borrow Site 1 should be no greater than 2H:1V. Top of slope should be no closer than five feet from the edge of pavement.

SECTION 2C

LEACHATE COLLECTION AND SEEPAGE DRAIN SYSTEMS

1. APPLICABLE PUBLICATION: The American Society for Testing and Materials (ASTM) publication listed below forms a part of this specification to the extent referenced. The publication is referred to in the text by the basic designation only.

D 2729 83 Polyvinyl Chloride (PVC) Sewer Pipe and Fittings

2. SUBMITTALS:

2.1 PVC Pipe: The Contractor shall submit a certificate provided by the manufacture of the PVC pipe and fittings attesting that the PVC material meets all requirements of ASTM D 2729.

2.2 Drum Overpack Container: A 55-gallon drum overpack container, approved by the Department of Transportation (DOT) for salvage containers, shall be used as the leachate collection sump. The Contractor shall submit a certificate provided by the manufacturer of the drum overpack container attesting that the container meets all DOT requirements.

3. DELIVERY AND STORAGE OF MATERIALS: Materials shall be delivered, stockpiled and stored so as not to be buried or damaged.

4. MATERIALS:

4.1. Polyvinyl Chloride (PVC) Pipe: PVC pipe shall conform to ASTM D 2729 standards.

4.2 Perforations in PVC Pipe: Perforations in PVC pipe shall conform to ASTM D 2729 standards.

4.3 Gravel: For the leachate collection system of HWM 16, gravel drainage material shall be provided around the six-inch PVC pipe as indicated. Gravel material shall be provided as specified in SECTION: EARTHWORK.

4.4 Drainage Sand: Drainage sand to be used around the gravel drain shall be the drainage sand material as defined in SECTION: EARTHWORK.

4.5 Filter Fabric: Filter fabric shall be as specified in SECTION: FILTER FABRIC.

4.6 Leachate Collection Sump: A DOT approved, drum overpack container shall be used for the leachate collection sump.

5. PROTECTION FROM EXPOSURE TO SUN: Prior to and during installation, PVC pipe shall not be exposed to direct sunlight for more than 14 days.

6. INSTALLATION:

6.1 Pipe Installation: PVC pipes shall be laid to true grades and alignment with a continuous fall in the direction of flow and shall be of the size and length as indicated. Bells of pipe sections shall face upgrade. Interior of pipe shall be cleaned free of soil or debris before being laid. Any length that has had its grade or joints disturbed shall be removed and relaid

The open end of the initial upgradient section of PVC drain pipe shall be capped to prevent intrusion of gravel. The drain pipe shall be daylighted with cement concrete encasement as shown.

6.2 Filter Fabric: Installation of filter fabric shall be as specified in SECTION: FILTER FABRIC.

6.3 Leachate Collection Sump Installation: The container shall be installed as indicated. The container shall be placed on a level foundation. A hole shall be provided to install a six-inch PVC inlet pipe. After the connection is complete it shall be calked or sealed as recommended by the manufacturer of the container to provide a water tight seal.

SECTION 2I

TURF

PART 1 - GENERAL

1. APPLICABLE PUBLICATIONS: The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1 Federal Specification (Fed. Spec.):

O-F-241d — Fertilizers, Mixed, Commercial.

1.2 US Department of Agriculture Federal Seed Act of August 9, 1939:

53 Stat. 1275 — Rules and Regulations.

1.3 American Society for Testing and Materials (ASTM) Publications:

D 977-84 — Emulsified Asphalt.

D 2028-76 (R 1981) — Cutback Asphalt (Rapid-Curing Type).

2. TOPSOIL SOURCE INSPECTION: The source of topsoil shall be approved by the Contracting Officer to determine the acceptability of the topsoil prior to shipment to the jobsite.

3 SUBMITTALS:

3.1 Certificates of Compliance and Certified Laboratory Test Reports for non-Government furnished material: Before delivery, certificates of compliance shall be submitted certifying that materials meet the requirements specified. Where such certification requires a laboratory test, the test shall be certified by an independent laboratory and reported as part of the certificate of compliance. Certified copies of the reports for the following materials shall be submitted:

a. Off-Site Topsoil - for pH, salts, potash, and phosphorus.

b. Soil Conditioners - for classification of total nitrogen, moisture, ash and organic matter, sand content, and pH.

3.2 Maintenance Instructions: Written instructions for year-round care of installed turf shall be furnished.

4. DELIVERY AND STORAGE:

4.1 Soil conditioners shall be delivered to the site in the original, unopened containers bearing the manufacturer's guaranteed chemical analysis, and name. In lieu of containers, soil conditioners may be furnished in bulk, and a certificate from the manufacturer indicating the above information shall accompany each delivery.

4.2 Lime and fertilizer shall be delivered to the site in bags or other containers, each fully labeled, conforming to the applicable state fertilizer laws, and bearing the name, trademark, and warranty of the producer.

4.3 Seed, fertilizer, lime and soil conditioners shall be kept in dry storage away from contaminants, insects and rodents.

## PART 2 - PRODUCTS

5. MATERIALS:

5.1 Seed shall be certified to be the latest season's crop and shall be delivered in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures and pure live seed. Seed shall be labeled in conformance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable state

seed laws. Seed shall be inspected by the Virginia Crop Improvement Association and must bear an official "Certified Seed" label. Seed that has become wet, moldy, or otherwise damaged will not be acceptable. On-site seed mixing will not be allowed unless approved by the Contracting Officer. Seed mixtures shall be proportioned by weight as follows:

| Application Conditions | Seeding Mixture | Percentage of Seed | Percentage of Pure Live Seed | Application Rate per Acre |
|---|---|---|---|---|
| Fall/Spring | Tall fescue | 80 | 82.5 | |
| | Kentucky bluegrass | 20 | 68.0 | 200 lbs. |
| Summer | Tall Fescue | 50 | 82.5 | |
| | Ladino clover | 10 | 82.5 | |
| | Red clover | 10 | 82.5 | |
| | Korean lespedeza | 15 | 82.5 | |
| | Annual ryegrass | 15 | 83.3 | 80 lbs. |
| Slopes | Crown vetch | 50 | 61.8 | |
| | Perenial ryegrass | 40 | 83.3 | |
| | Redtop | 10 | 76.5 | 40 lbs. |

For summer seeding after May 1, use 10 lbs/A german miller or 2 lb/A weeping lovegrass in place of annual ryegrass or redtop. After May 15, omit Korean lespedeza and increase red clover to 20% of mixture. Application shall be as indicated in the application section.

5.2 Topsoil: Topsoil shall be obtained by the Contractor from the approved source and shall be free of any admixture of subsoil, foreign matter, objects larger than one inch in any dimension, toxic substances, clay lumps, and any material or substance that may be harmful to plant growth. The pH range shall be 5.3 to 6.0. Topsoil that does not meet this pH range shall be amended by the addition of pH adjusters, at a rate recommended based on soil tests.

5.3 pH Adjusters:

5.3.1 Agricultural limestone shall have a minimum calcium carbonate equivalent of 90 percent and shall be ground to such a fineness that at

least 90 percent will pass a 10-mesh sieve and at lease 50 percent will pass a 60-mesh sieve. Coarser materials will be acceptable provided they pass the 10-mesh sieve and the specified rates of application are increased in linear proportion to the quantities passing the 60-mesh sieve where zero passage indicates doubling the application rate.

5.3.2 Other liming material shall have a minimum calcium carbonate equivalent of 80 percent and shall be crushed to such a fineness that at least 90 percent will pass an 8-mesh sieve and at least 80 percent will pass a 10-mesh sieve.

5.4 Soil Conditioner: In order to modify the texture, structure, or drainage characteristics of the soil located within the limit of seeding but not part of the cover system, thoroughly rotted sawdust shall be used for soil conditioning. Sawdust shall have 6 lbs of nitrogen added to each cubic yard and shall be free of stones, sticks, and toxic substances.

5.5 Fertilizer: Fertilizer shall be commercial grade, free flowing, uniform in composition and shall conform to applicable State and Federal regulations. Granular fertilizer shall conform to Fed. Spec. O-F-241, Type I, Level B, with a minimum of ten percent nitrogen content, and shall bear the manufacturer's guaranteed statement of analysis. Fertilizer shall be used for all areas located within the limits of seeding.

5.6 Mulch: Mulch shall be straw or hay mulch, tacked with asphalt; straw or hay mulch fixed in place with disk land packers or disk harrows; or fiber mulch applied simultaneously with grass seed and fertilizer by the use of hydroseeding machinery. Mulch shall be used for all areas within the limits of seeding.

5.6.1 Straw shall be stalks from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material. Straw shall be in an air-dry condition and suitable for placing with blower equipment.

5.6.2 Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowing, free from noxious weeds, mold, or other objectionable material. Hay shall be in an air-dry condition and suitable for placing with blower equipment.

5.6.3 Wood cellulose fiber for use with hydraulic application of grass seed and fertilizer shall consist of specially prepared wood cellulose fiber or a combination of wood cellulose and recycled newsprint fibers, processed to contain no growth or germination-inhibiting factors and dyed an appropriate color to facilitate visual metering of the application of materials. On an air-dry weight basis, the wood cellulose fiber shall contain a maximum of 12 percent moisture, plus or minus 3 percent at the time of manufacture. The combination of wood cellulose and recycled newsprint fibers shall contain a maximum of 10 percent moisture plus or minus 3 percent at the time of manufacture. The pH range for either mix shall be between 4.5 and 6.5. The wood cellulose fiber shall be manufactured so that:

a. After addition and agitation in slurry tanks with fertilizers, grass seeds, water, and other approved additives, the fibers in the material will become uniformly suspended to form a homogenous slurry.

b. When hydraulically sprayed on the ground, the material will form a blotterlike cover impregnated uniformly with grass seed.

c. The cover will allow the absorption of moisture and allow rainfall or applied water to percolate to the underlying soil. Shrinkage after wetting shall not exceed 20 percent of the surface area.

5.7 Asphalt Adhesive: Asphalt adhesive for application with stray or haymulch shall be cutback asphalt conforming to ASTM D 2028, designation RC-70, or emulsified asphalt conforming to ASTM D 977, Grade SS-1.

5.3 Water: Water shall not contain elements toxic to plant life.

PART 3 - EXECUTION

6. SITE PREPARATION:

6.1 Tillage: The soil shall be tilled to a depth for at least 4 inches except on slopes steeper than 2 horizontal to 1 vertical where tillage depth shall be 2 inches. Tillage shall be accomplished by plowing, disking, harrowing, roto-tilling or other approved operations until the condition of the soil is acceptable. The work shall be performed only during periods when beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed by the Contracting Officer. Undulations or irregularities in the surface shall be leveled before the next specified operations.

6.3 Application of Soil Conditioner: The soil conditioner shall be applied onto the soil in one inch layers or at a rate of 134 cubic yards per acre. Urea (46-0-0) shall be applied over the sawdust at a rate of 200 lbs per acre. The soil conditioner shall then be incorporated into the soil with the fertilizer to a depth of at least 4 inches and may be incorporated as part of the tillage operation. Immediately before seeding, the soil shall be restored to an even condition. Soil conditioner shall not be used for the cover system.

7. APPLICATION:

7.1 Seeding Seasons and Conditions: Seeding shall not be applied when the ground is frozen, snow covered, during droughts, high winds, excessive moisture, or in an unsatisfactory condition for seeding. Seeding shall be done within the following dates:

| Application Condition | Seeding Date |
|---|---|
| Fall/Spring | 3/15 - 5/1 and 8/15 - 10/1 |

| | |
|---|---|
| Summer | 5/1 - 8/15 |
| Slopes | 3/15 - 5/1 and 8/15 - 10/1; for 5/1-8/15 use summer seed application. |

Summer seed application may be used for Fall and Spring conditions.

7.2 Seeding:

7.2.1 Seed shall be broadcast uniformly by approved sowing equipment at the rate designated in Paragraph 5.1. One half of the seed shall be sown in one direction, and the remainder shall be sown at right angles to the first sowing. The seed shall be covered to a maximum depth of 1/4 inch by means of spike-tooth harrow, cultipaker, or other approved device. Seed shall not be broadcast when winds are above 10 miles per hour.

7.2.2 Drill seeding shall be accomplished using approved equipment such as cultipaker seeders and grass seed drills. The seed shall be drilled uniformly to an average depth of 1/4 inch.

7.2.3 When hydroseeding, the seed, fertilizer, and approved mulch material shall be mixed in the required amount of water to produce a homogeneous slurry and then uniformly applied under pressure at the rate specified in Paragraphs 5 and 6. Wood cellulose mulch shall be added after the seed and fertilizer have been thoroughly mixed and shall be applied at the rate of 1000 pounds per acre (dry weight). Lime, if applied hydraulically, shall be a single, separate operation.

7.2.4 Immediately after seeding, the entire area shall be rolled with a roller not exceeding 90 pounds for each foot of roller width, and the soil moistened with water. If seeding is performed with a cultipacker-type seeder or if seed is applied in combination with hydromulching, rolling will be required.

7.2.5 Mulch shall be spread uniformly in a continuous blanket, using 1-1/2 tons per acre. Mulch shall be spread by hand or by a manure spreader, a modified grain combine with straw-spreader attachment, a blower-type mulch spreader, or a blower-type spreader so equipped that straw or hay will be ejected simultaneously with asphalt adhesive or other suitable equipment. Mulching shall be started at the windward of relatively flat areas, or at the upper part of a steep slope, and continued uniformly until the area is covered. The mulch shall not be bunched. Immediately following spreading, the mulch shall be anchored to the soil by applying an asphalt adhesive. When asphalt adhesive is to be applied to a previously placed mulch or on slopes and embankments, application shall be by spraying at the rate of 10 to 13 gallons per 1,000 square feet. When applying straw and asphalt simultaneously, SS-1 emulsion with penetration between 150-200 shall be used, and shall be applied with the straw at the rate of 150 gallons of emulsion per ton of straw. If the emulsion is further diluted at the ratio of 60 parts of emulsion to 40 parts of water, the diluted emulsion shall be applied with the straw at the rate of 250 gallons of emulsion per ton of straw. The adhesive-coated mulch shall be applied evenly over the surface so that the depth and thickness of the mulch will be approximately uniform throughout the treated area and sunlight will not be completely excluded from penetration to the ground surface. The adhesive-coated mulch shall be applied at the rate of 1-1/2 tons per acre.

7.3 Fertilizer: Fertilizer shall be applied at a rate of 1000 pounds per acre, 10-20-10. Fertilizers shall be incorporated into the soil to a depth of at least 4 inches and may be incorporated as part of the tillage operation.

7.4 Temporary Winter Cover: When the completion schedule of the work under the contract requires a delay in the seeding operations due to the limitation dates above, the areas not yet seeded or which do not have a vegetative cover shall be seeded immediately with a temporary winter grass. Temporary winter cover planting shall include the application of 1/2 the amounts of fertilizer specified with the remaining 1/2 to be

included with the permanent seeding operations. The areas to be seeded to a temporary winter cover shall be thoroughly tilled prior to seeding in the same manner as specified for the permanent seeding. Areas which have been provided with temporary winter cover shall be thoroughly tilled and turfed with permanent species.

8. PROTECTION OF SEEDED AREAS: Immediately after seeding, the area shall be protected against traffic until final acceptance.

9. TURF ESTABLISHMENT PERIOD:

9.1 Length of Period: The turf establishment period will be in effect for 3 months or until the turf has been mowed three times, whichever is longer.

9.2 Proper Stand of Turf: A proper stand of turf is defined as a minimum of 100 grass plants per square foot and where no gaps larger than 4 inches in diameter occur anywhere in the turfed area. Any seeded areas that do not meet this criteria, shall be reseeded at the Contractor's expense.

9.3 Maintenance During the Establishment Period:

9.3.1 The turfed area shall be mowed to a height of 3 inches whenever the average height becomes 4 inches. The clippings shall be removed. Mowing shall be done with sharp equipment on dry grass and firm soil.

9.3.2 The turf shall be watered at such intervals and at such a rate that wilting, puddling, and runoff do not occur.

9.3.3 The turf shall be fertilized after the first month of growth applying 0.50 pounds of available nitrogen per 1,000 square feet, and again in 3 weeks using the same mix.

10. FINAL ACCEPTANCE: Final inspection and acceptance will be at the end of the turf establishment period. Acceptance will be based upon a satisfactory stand of turf as defined in paragraph TURF ESTABLISHMENT PERIOD.

1.4 Calculations showing drainage swales can handle RUN-OFF

U. S. ARMY
HUNTSVILLE DIVISION, CORPS OF ENGINEERS

| SUBJECT: Radford AAP Closure of Acid Waste Lagoons and Hazardous Waste Landfill | COMPUTED BY: C. Robert Britton | DATE: 20 May 87 |
|---|---|---|
| | CHECKED BY: | (205) 895-5240 DATE: |

Problem: Provide Calculations showing that the drainage swales at each unit can handle estimated runoff from a 25-year storm event.

$Q = CIA$

$C = .8$

$I = 5$ in/hr

Area = Amount of land Area drained into swale. More than 1 swale may drain each Lagoon, This Area may not be actual size of Lagoon.

Calculate Q

1. HWM 5

Area = .103 Ac.

$Q = (.8)(5)(.103) = .412$ cfs

3. HWM 7

Area = ~~(.028)~~ .028 Ac

$Q = (.8)(5)(.028) = .112$ cfs

4. HWM 16

Area = ~~.201 Ac~~ .526 Ac

$Q = (.8)(5)$ ~~(.201)~~ (.526) Acre = ~~.804 cfs~~ 2.104

## HWM # 5

$$V \Rightarrow \frac{1.486}{N} R^{2/3} S^{1/2}$$

$Q \Rightarrow .412$ CFS ANTICIPATED FLOW FROM DESIGN STORM.

$$V \Rightarrow \frac{1.486}{.025} \times 1.05^{2/3} \times .025^{1/2}$$

$$V \Rightarrow 59.44 \times 1.03 \times .16$$

$$V \Rightarrow 9.79$$

$$Q = VA$$

$$Q \Rightarrow 9.79 \times 4 = 39.6 \text{ CFS}$$

$39.6 \text{ CFS} > .412 \text{ CFS}$

$\therefore$ DRAINAGE IS ADEQUATE

AREA OF CHANNEL = 30 SF

# HWM = 7

$Q \Rightarrow$ 1.12 ANTICIPATED FLOW FROM DESIGN STD

$$V \Rightarrow \frac{1.486}{.025} \times (1.34)^{\frac{2}{3}} \times (.014)^{\frac{1}{2}}$$

$$V \Rightarrow 59.44 \times 1.215 \times .118$$

$V \Rightarrow 8.52$ CFS

$Q = VA$

$Q = (8.52\,CFS)(14) \Rightarrow 119.8$ CFS

DITCH IS CAPABLE OF HANDLING

$119.3\,CFS > 1.12\,CFS$

$\therefore$ DRAINAGE IS ADEQUATE

# HWM #16

$Q \Rightarrow$ 2.104 CFS

ANTICIPATED FLOW FROM DESIGN STORM

$$V \Rightarrow \frac{1.486}{.025} \times (.533)^{2/3} \times (.071)^{1/2}$$

$$V \Rightarrow (59.44) \times (.660) \times (.266)$$

$V =$ 10.43

$Q = VA$

$Q =$ (10.43 X 16.5) $=$ 166.96

Ditch CAPABLE OF HANDLING 166.96CFS

166 > 2.104CFS

∴ DRAINAGE SWALE IS ADEQUATE

Drainage Control

At the HWM 5 and HWM 7 sites, external drainage is well controlled by existing features (e.g., roads, ditches, culverts and pipes) and no run-on is anticipated. Runoff from the closed facilities will be routed to peripheral drainage swales. Since the drainage areas for these drainage swales are very small (no more than one-half acre), these swales should be able to handle flows without any potential threat to the cover system.

Due to the natural drainage patterns found in the vicinity of HWM 16, there are no existing controlled drainage systems with the exception of a depressed area located northeast of the site, which drains through an existing 18-inch RCP. Runoff from the proposed cover area and immediate vicinity will be routed by drainage swales around the closed facility to the existing depressed area where it will drain through the existing 18-inch RCP. The pipe capacity necessary to handle a 25-year storm event under the new contour conditions was checked using the rational formula as described in the Virginia Erosion and Sediment Control Handbook (VSWCC, 1980). The peak discharge to the 18-inch RCP was calculated to be approximately 6.2 cfs for the 25-year storm event based on a drainage area of approximately 10 acres. The capacity of the existing 18-inch RCP is sufficient to discharge a flow rate of 12 cfs. Therefore, the pipe capacity is sufficient for drainage of surface waters in the vicinity of HWM 16.

## Performance Evaluation

To determine more completely the adequacy of the proposed cover system, an additional evaluation was made to ensure the performance of the proposed cover system under various environmental and climatic conditions.

### Frost Action

If the impermeable liner material is within the depth of frost penetration, the freezing soil could apply a high stress to the liner and cause an excessive deformation of the liner, which eventually might lead to the failure of the liner system. The depth of frost penetration in the Radford area is about 15 inches (Figure 12 from Lutton, 1980). Since the thickness of the cover soil above the PVC liner is 36 inches, frost penetration should not reach the soil layer supporting the membrane liner.

### Erosion Potential

The erosion potential can be evaluated by the Universal Soil Loss Equation (USLE) which is a convenient and widely accepted method. The USLE gives average annual soil loss as the product of six erosion-related factors. The equation is:

$$A = R\,K\,L\,S\,C\,P$$

where A = average annual soil loss, in tons/acre
R = rainfall and runoff erosivity index
K = soil erodibility factor, tons/acre
L = slope-length factor
S = slope-steepness factor
C = cover/management factor
P = practice factor

U. S. ARMY
HUNTSVILLE DIVISION, CORPS OF ENGINEERS

| SUBJECT: | COMPUTED BY: | DATE |
|---|---|---|
| Closure of Acid Waste Lagoons and Hazardous Waste Landfill | C. Robert Brittain | 13 Nov 87 |
| | CHECKED BY: 205 895-5244 | Sheet 1 of 3 |

USDA universal soil loss equation

$A = RKLSCP$

A = Average annual soil loss in tons/acre

R = rainfall and runoff erosivity index

K = soil erodibility factor, tons/acre

L = slope-length factor

S = slope steepness factor

C = cover-management factor

P = Practice factor

HWM 5 $R = 175$ $K = .48$ $C = .01$ $P = 1$

$A = (175)(.48)(1.48)(.01)(1) = \underline{1.24}$ OK $\leq$ 2 Tons/acre/year

Calculate LS factor

Use 25' Segment

| | | Track 6 factor | | | |
|---|---|---|---|---|---|
| Upper Cap — | 22% | = | .13 | × .58 | = .075 |
| Middle Cap — | 44% | = | .23 | × 1.06 | = .244 |
| Lower Cap — | 24% | = | 3 | × 1.37 | = 4.11 |

LS factor $= 4.43/3 = \underline{1.48}$

SUBJECT: Closure of Acid Waste Lagoons and Brandon's Waste Landfill

COMPUTED BY: C. Robert Button (205) 895-5240
CHECKED BY:

DATE: 13 Nov 18
Sheet 2 of 3

## HWM 7

R = 135 K = .48 C = .01 P = 1

A = (135)(.48)(.89)(.01)(1) = .748 < 2 Tons/acre/yr OK

Calculate LS Facto

USE 25' Segment of Slope Cap

| | | | LS Factor | | |
|---|---|---|---|---|---|
| Upper | — | 4% | .23 | × .58 | = .133 |
| Middle | — | 6% | .34 | × 1.06 | = .360 |
| Lower | — | 15.23% | 1.6 | × 1.37 | = 2.19 |

2.68/3 = .89

U. S. ARMY
HUNTSVILLE DIVISION, CORPS OF ENGINEERS

| SUBJECT | COMPUTED BY | DATE |
|---|---|---|
| Closure of Solid Waste Lagoons and Hazardous Waste Land Fill | C. Robert Bailey (205) 895-5240 | 13 Nov 85 |
| | CHECKED BY | SHEET 3 of 3 |

HWM 16

R = 135 K = .48 C = .01 P = 1

A = (135)(.48)(2.12)(.01)(1) = 1.38 < 2 Tons/Acre/yr. OK

Calculate LS Factor

USE 50' Segments

| | Slope Cmp | LS Factor |
|---|---|---|
| Upper - 3% | .23 | × .58 = .133 |
| Middle - 8% | .70 | × 1.06 = .742 |
| Lower - 24% | 4.0 | × 1.37 = 5.48 |
| | | 6.35/3 = 2.12 |

SCHEDULE

Within 180 days after the approval of the closure plan, the owner/operator and Independent Professional Engineer will certify that closure was completed in accordance with the approved closure plan.

CERTIFICATION OF CLOSURE

The Professional Engineer shall be present at each unit at the following frequencies.

a) Twice during the construction of the clay cap

b) Once during the installation of the PVC liner

c) Once when closure is completed

Test results showing desired permeability has been achieved, optimum fly ash/limedust mix at HWM #7, and a schedule of these submissions as well as for A - C above will be submitted to the Department of Waste Management.

DEPARTMENT OF THE ARMY
RADFORD ARMY AMMUNITION PLANT
CALLER SERVICE 2
RADFORD, VIRGINIA 24141-0298

REPLY TO ATTENTION OF

September 16, 1987

Office of Chief Engineer

Mr. Kevin L. Greene
Division of Technical Services
Virginia Department of Waste Management
11th Floor, Monroe Building
101 N. 14th Street
Richmond, Virginia 23219

Dear Mr. Greene:

In reference to your July 22, 1987, letter, enclosed is RAAP's response to the Virginia Department of Waste Management comments on closure plans for hazardous waste management (HWM) units 5, 7 and 13. We regret the delay in submitting this information to you.

As discussed with Mr. Wayne King (U.S. Army Engineer Division, Huntsville) and Ms. Shelley Barker (RAAP), the information on HWM unit 16 will be submitted as it becomes available.

If you have any further questions or comments, please contact Ms. Shelley Barker, AC 703 639-8482.

Sincerely,

Todd E. Blose
Captain, Ordnance Corps
Acting Commander

Enclosure

Copy Furnished:

Mr. Jim Morris, Hercules Inc., RAAP, Radford, VA 24141-0299 (w/encl)

RADFORD AAP CLOSURE PLANS

RESPONSE TO STATE OF VIRGINIA COMMENTS

1. Reference

a. Borrow Site Investigation for Closure of Hazardous Waste Management Facilities, Radford AAP, Radford, Virginia, Schnabel Engineering Associates, Richmond, Virginia, January 1985.

b. Geotechnical Engineering Study HWM-5, HWM-6, HWM-7 Tank Sites Radford Army Ammunition Plant, Radford, Virginia, Schnabel Engineering Associates, Richmond, Virginia, July 1985.

c. Results of Sludge Bench Test HWM-7, Radford AAP, Radford, Virginia. Engineering Science, Fairfax, Virginia, June 1986.

d. Closure of Hazardous Waste Lagoons and Hazardous Waste Landfill, Radford Army Ammunition Plant, Radford, Virginia.

e. Soil Mechanics Lambe, T.W., Whitman, R.V., Wiley and Sons, 1969.

f. Soil Mechanics, Perloff W.H., Baron W., Wiley and Sons, 1976.

2. The references in paragraph 1 contain the Geotechnical Data and methods for the determination of bearing strengths of stabilized sludges, bearing capacity of the impoundment fill material, settlement of the foundation and, ultimately, the estimated settlement of the impoundment cap, as shown in the following sections. The item numbers in the following sections correspond to the RCRA Part B Permit requirements and Regulator's comment designations.

3 Item I-1e(1) (b) HWM-5

3.1 Waste Stabilization

3.2 Although stated in the Closure Plans, the construction documents (Ref D) do not specify the equipment or methods for mixing the soil and reagent. The "Results Spec" used in the contract documents requires the Contractor to compact the soil - lime kiln dust mixture to a percentage of the maximum possible density as specified in section Earthwork. Also see section Sediment and Subsoil Treatment.

3.3 Bearing Capacity of Structural Fills - HWM-5:

3.3.1 Soil Data -

Common Structural Fill: Loose to dense, sandy clayey silts and fine silty sand

Subsoils at HWM-5: Medium dense fine sand

Use bearing capacity factors for loose materials.

($N_c$ - 0 $N_\gamma$ - 5 $N_q$ - 8 For bearing strength calculations.

Df - $d_\gamma$ d - depth of soil removed B - width of cap

3.3.2 Beneath the Cap

Depth - $D_f$ - 5', Unit Weight - 110 pcf (assumed)

Bearing Capacity - Qult - $CN_c + D_fN_q$ - 1/2 $BN_\gamma$

- 0 + __ + 1/2 (60) (5) (110)

- 16,500 psf

Cap Loading - 5(110) - 550 psf

3.3.3 What the Bottom of the Impoundment Can Support

(1) Assume since impoundment is empty Df - 0

(2) Weight of native soil is 110 psf - $\gamma$

Qult - 0 + 0 + 1/2 (60) (5)(110)

- 16,500 psf

Backfill + Cap Loading - (110) (15) - 1650 psf

3.3.4 Note that the above calculations are very conservative, since the parameters are for loose soils rather than compacted, medium dense to dense soils.

3.4 Item I - 1e(6) Settlement and Subsidence - HWM-5

3.4.1 Settlement in compacted fills - HWM-5.

From Figure 1, Consolidation Data obtained for fine sandy clayey silts (which is typical for the common structural fill materials and also corresponds to the soils at the elevation of the impoundment bottom):

The settlement in the compacted fill produced by five feet of cap material is as follows:

Original Load = 5 x 110 = 550 psf

Applied Load = 5 x 110 = 550 psf

Strain from Figure 1 for 550 psf to 1050 psf = 0.018 - 0.0009 = 0.009%

Settlement = H X strain

= 10 x .009

= .09 Feet

= 1.08 inches say 1.1 inches

3.4.2 Settlement in the foundation soils.

For the soil stratum extending to 20 feet below the impoundment -

Initial loading = 10' x 110 pcf = 1100 psf

Applied Loading, say 15' x 110 pcf = 1550 psf

Strain from 1100 psf to 2650 psf (Figure 2)

= .027 - 0.016 = 0.011%

Settlement in the first 20 feet below the lagoon

= 20 (0.011)

= .22 feet

= 2.64 inches

3.4.3 Performance of the 5-foot thick cap will not be adversely affected by settlement totaling only 1.5 inches for both the fill material and the 20' of foundation soils below the impoundment.

Item 3.e(1)(b) HWM-7

4.1. Waste Stabilization, Bearing Strength, and Settlement Data was submitted March 1987.

4.2. Bearing Capacity of Structural Fills at HWM-7

Fill materials will be similar to these discussed in Paragraph 3.3.

4.3. Bearing Capacity of Foundations

Data obtained from borings in the vicinity of HWM-7 indicate the subsoils consist of loose to medium dense silty sand, and sandy clayey silts.

Use Bearing Capacity Factors $N_c = 0$ $N_\gamma = 5$ $N_q = 8$

Depth of Cap = 5 Feet, $\gamma = 110$ pcf

Depth of Common Fill = 8 Feet, $\gamma = 110$ pcf

Depth of Stabilized Waste = 7 Feet, $\gamma = 100$ pcf

$$q_{ult} = cN_c + [28\ psf]\ N_q + 1/2\ BN_\gamma$$

$$q_{ult} = 0 + [(110)(5) + (110)(8) + (100)(7)]8 + 1/2\ (60)(5)$$

$$q_{ult} = 0 + 17,040 + 150 = 17,190\ psf$$

Overburden Loading = 2,130 psf

5. Item I - 1e(6) Settlement and Subsidence - HWM-7

5.1. Settlement of Structural Fill Material

Settlement due to five feet of cap materials and eight foot layer of structural fill is as follows:

Initial Loading = 4(110) = 440 psf = 0.22 tsf

Cap Loading = 5(110) = 550 psf = 0.28 tsf

Final Loading = 9(110) = 980 psf = 0.50 tsf

Strain from 0.50 tsf to 0.22 tsf (From Figure 1)

= 0.0125 - 0.008 = 0.0045%

Settlement = H X Strain

= 8(.0045)

= 0.04 Feet

= 0.43 Inches

5.2. Settlement of Stabilized Sludges -

Information on Settlement of Stabilized Sludges was previously submitted March 1987. Settlement was estimated to be 3.4 inches.

5.3. Settlement of Foundation Soils

For the soil stratum extending to 20 feet below the impoundment:

At the mid layer initial loading

= 10 X 110 psf = 1100 psf = 0.55 tsf

Applied loading from backfill, cap and stabilized waste

= 2130 psf = 1.07 tsf

Final loading = 0.55 + 1.07 = 1.62 tsf

Strain (From Figure 2)

= 0.029 - 0.016 = 0.013%

Settlement = H X Strain

= 20(0.013)

= 0.26 feet = 3.12 inches

5.4. The cap at HWM-7 will experience only very minor settlement after completion. The silt and sand structural backfills and subsoils usually compress very rapidly during filling and compaction operations. Very little long term settlement is expected. The above figures indicate the performance of the cap will not be adversely affected by settlement of the foundation, stabilized sludges or common structural backfill.

6. Comments on HWM-16

Below are calculations based on very conservative estimates using loose sand. These calculations are to be used only a "worst case" estimation for HWM #16.

Bearing Capacity of Fill

$(N_c = 0,\ N = 5,\ N_q = 8)$

$D_f = 14$ ft  Unit Weight = 110

Bearing Capacity = qult = $CN_c + D_fN_q + 1/2\ BN_+$

= $0 + (14)(8) + 1/2(60)(5)(110)$

= $112 + 16{,}500$

= 16,612 psf

CAP Loading

$(5)(110) = 550$ psf

550 psf < 16,612 psf

What Bottom of Landfill Can Support

(19 ft)(110 psf) = 2090 psf

Settlement in compacted fill

Original Load = (5)(110) = 550 psf

Applied Load = (5)(110) = 550 psf

Strain from figure 1 for 550 psf to 1100 psf

.018 - .009 = .009%

Settlement = (Height)(Strain)

(10)(.009) = .09 ft

= 1.08 inches say 1.1 inches

Settlement in foundation soils

Initial Loading - (14)(110 pcf) - 1540

Applied Loading - (19)(110 pcf) - 2090

Strain from 1540 psf to 2090 psf (Figure 2)

.023 - .019 - .004%

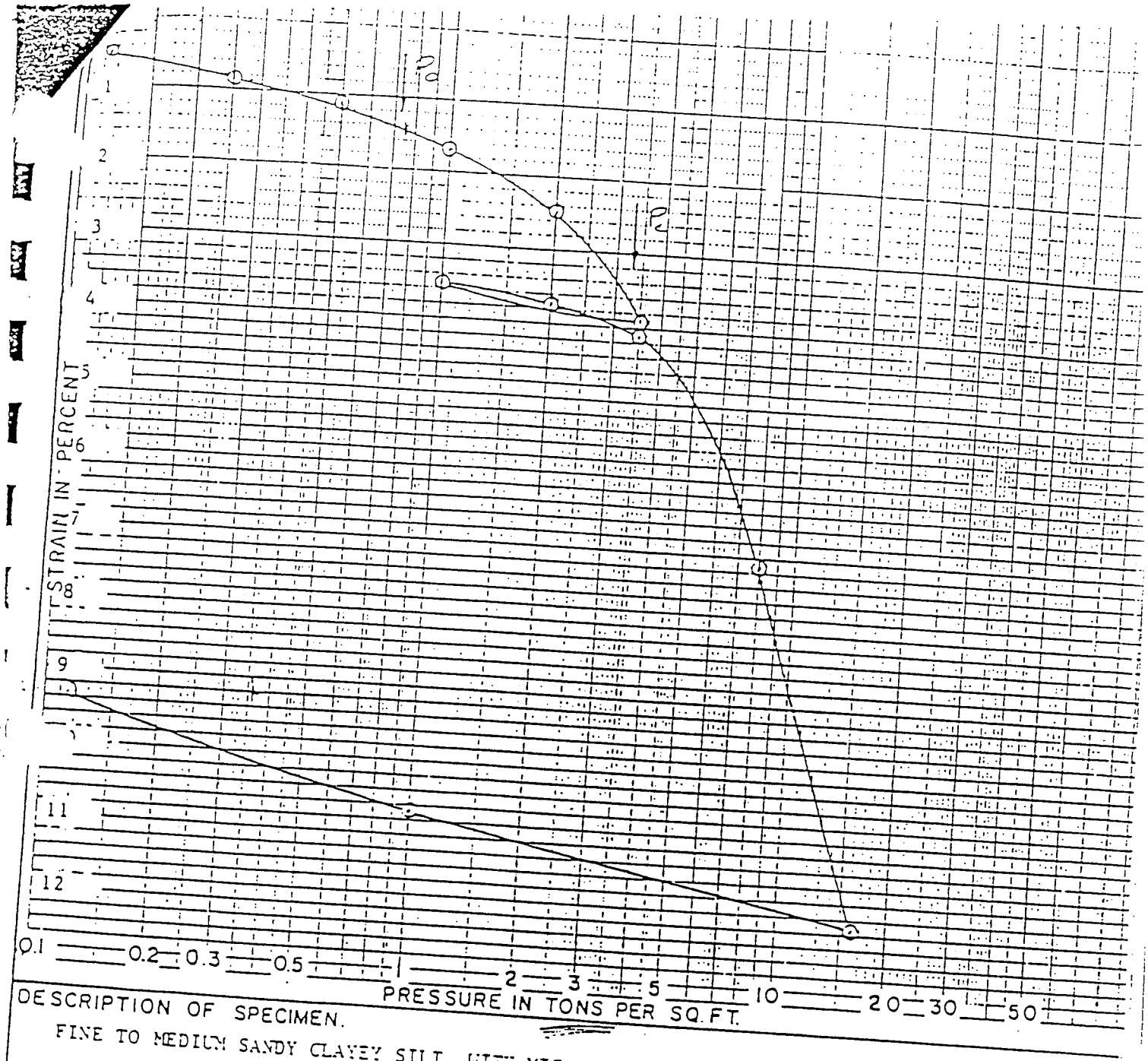
Settlement in first 20 feet

(20)(.004) - .08 feet

- .96 inches

Say 1 inch

Performance of the 5-foot cap will cause an estimated settlement for both the material and 20 feet of foundation soils of 2.1 inches.




DESCRIPTION OF SPECIMEN.
FINE TO MEDIUM SANDY CLAYEY SILT, WITH MICA - BROWN

Figure 1

CLASSIFICATION: ML STRATUM DESIGNATION: B

| | |
|---|---|
| DIAMETER OF SPECIMEN (in.) | 2.50 |
| INITIAL THICKNESS OF SPECIMEN (in.) | 1.00 |
| INITIAL VOID RATIO, $e_o$ | 0.74 |
| PROBABLE PRECONSOLIDATION STRESS (tsf) $P_c$ | 4.3 |
| APPROXIMATE OVERBURDEN STRESS (tsf) $P_o$ | 0.73 |
| COMPRESSION RATIO; FROM 8 TO 16 (tsf) | 0.59 |
| RECOMPRESSION INDEX; FROM 8 TO 16 (tsf) | 0.276 |
| COMPRESSION RATIO; FROM 1 TO 2 (tsf) | 0.006 |
| RECOMPRESSION INDEX; FROM 1 TO 2 (tsf) | 0.010 |

SCHNABEL ENGINEERING ASSOCIATES

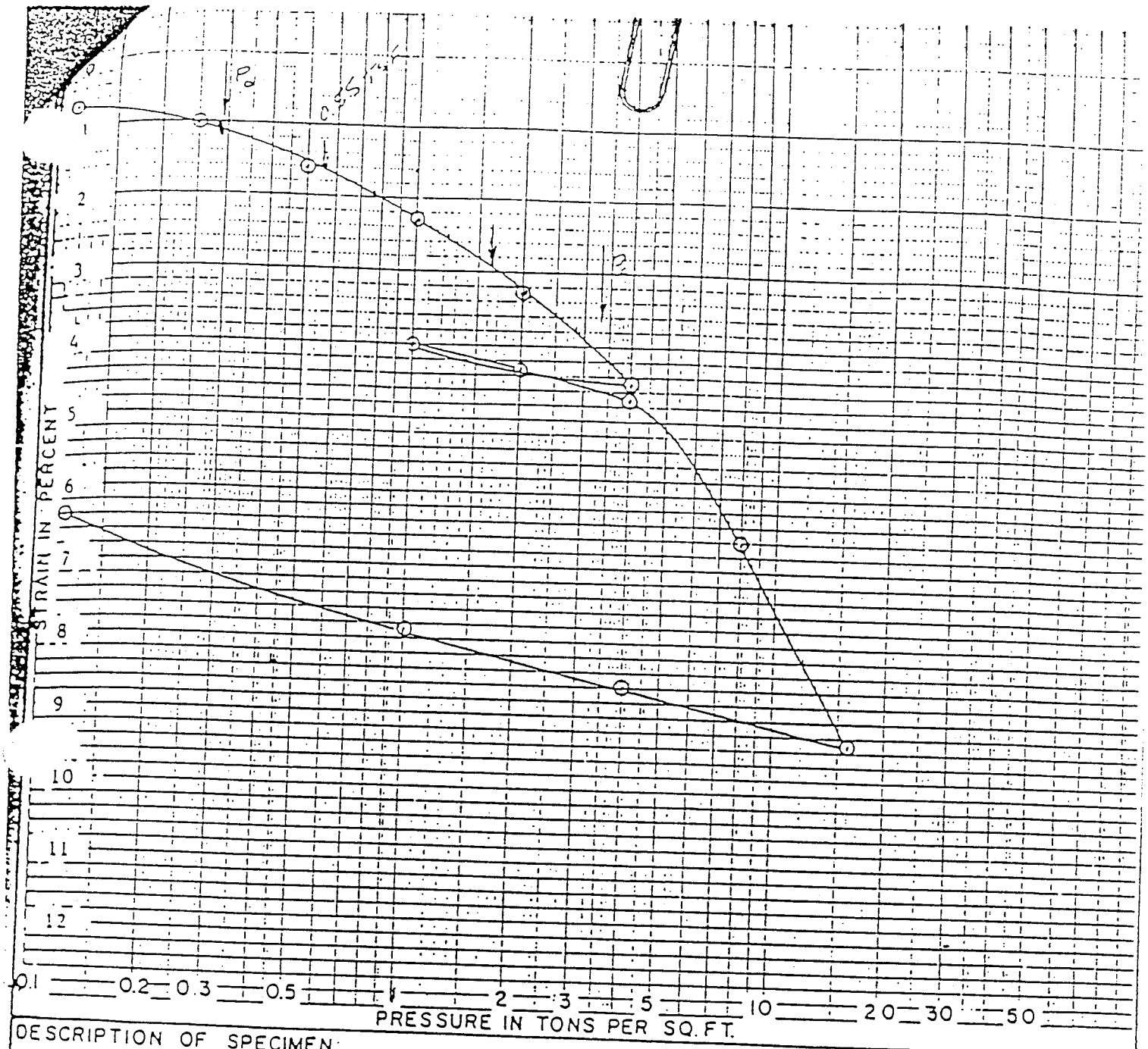
CONSOLIDATION TEST

BORING NO.: B-28 DEPTH: 12'-14'

PROJECT:
CLOSURE OF HWM FACILITIES
RADFORD AAP, VIRGINIA

DATE 7-24-85

CONTRACT NO. V86482




DESCRIPTION OF SPECIMEN:

FINE SANDY CLAYEY SILT - BROWN

FIGURE 2

CLASSIFICATION: CL-ML STRATUM DESIGNATION: A

| | |
|---|---|
| DIAMETER OF SPECIMEN (in.) | 2.50 |
| INITIAL THICKNESS OF SPECIMEN (in.) | 1.00 |
| INITIAL VOID RATIO, $e_o$ | 0.53 |
| PROBABLE PRECONSOLIDATION STRESS (tsf) Pc | 3.3 |
| APPROXIMATE OVERBURDEN STRESS (tsf) Po | 0.29 |
| CRESSION RATIO; FROM 8 TO 16 (tsf) | 0.089 |
| PRESSION INDEX; FROM 8 TO 16 (tsf) | 0.136 |
| RECOMPRESSION RATIO; FROM 1 TO 2 (tsf) | 0.008 |
| [illegible] FROM 1 TO 2 (tsf) | 0.013 |

SCHNABEL ENGINEERING ASSOCIATES

CONSOLIDATION TEST

BORING NO.: B-36 DEPTH: 4.5'-6.5'

PROJECT:

CLOSURE OF HWY FACILITIES

RADFORD AAP, VIRGINIA

DATE 7-24-85

CONTRACT NO. V84482

DRAINAGE AND DEWATERING:

General: Drainage and dewatering shall consist of the control of surface water, regardless of origin, nature or quantity, flowing toward and tending to collect in fills, backfills, or excavations. This water shall be controlled in a manner providing effective, continual drainage of excavations, fills and surrounding area.

Surface Water Control: Diversion ditches, dikes and grading shall be provided and maintained as necessary during construction to prevent external surface water from entering or exiting excavated areas. Excavation slopes and backfill surfaces shall be protected so as to prevent erosion and sloughing. Water accumulated with HWM 5 and HWM 7 shall be controlled in accordance with Paragraph 6, SECTION: WASHDOWN STATION AND EQUIPMENT CONTAMINATION. (Appendix C)

Ground Water Control: groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation, and to eliminate interference with the orderly progress of construction.

Sediment Control: Sediment and suspended solids in run-off water shall be contained within the construction areas.

During the closure period, groundwater monitoring shall occur at least quarterly.

# POST CLOSURE CARE AND GROUNDWATER MONITORING

## HAZARDOUS WASTE SURFACE IMPOUNDMENTS

In accordance with the Virginia Hazardous Waste Regulations, this section presents the post-closure plan for HWM 5 and 7 based on the closure of both sites as hazardous units. Unless otherwise determined by the State Executive Director post-closure care is to extend over a 30-year period (10.6.H). The major components of post-closure care as proposed in this plan are groundwater monitoring, inspection and maintenance. Possible contingency activities are also described in this section. This plan will extend until such time as a post closure care permit is issued.

### Post Closure Contact

Regginald Tyler
RADFORD ARMY AMMUNITION PLANT
(703) 639-8641

### Groundwater Monitoring

Results of the Groundwater Quality Assessment Program conducted at the sites indicate that groundwater contamination has occurred. In response to these monitoring results a Compliance Monitoring program will be instituted under 10.5.B and will continue during the post-closure period.

This Compliance Monitoring Program will be implemented using a minimum of four wells (one upgradient and three downgradient), constructed in accordance with 10.5.H. The wells to be used will be selected after final review of the Groundwater Quality Assessment Program.

Samples will be collected in accordance with 10.5.H.4 and (5) on a quarterly basis. Background groundwater quality will be determined for each constituent as specified in 10.5.H.7. The water quality parameters that will be analyzed as part of this program include:

- Specific conductance
- Total organic carbon (TOC)
- Total organic halogen (TOX)
- pH
- Any additional parameters as agreed

For quality control purposes, samples will be split into four portions for analysis. Groundwater elevations will be measured for each sampling event and the direction and rate of groundwater flow will be determined on an annual basis. Additionally, all monitoring wells will be analyzed for Virginia Regulations Appendix 3.6 hazardous constituents on an annual basis.

It is anticipated that because of the nature of the wastes in the surface impoundments and the closure activities to be conducted as described in Section 6.0, the Radford AAP may elect after several years of groundwater monitoring to discuss with the State the requirement for monitoring over a 30-year period. It is probable that the groundwater quality at these sites will improve to ambient levels after several years. If monitoring confirms this then groundwater monitoring could be terminated or reduced in scope.

Inspection

In accordance with 10.6.I.2.(a) regular post-closure inspections of the sites will be made to ensure the integrity of the cover system and all associated structures. Inspections will be conducted by qualified personnel on a monthly basis, with additional inspections following inclement weather or catastrophic events (e.g., fire or explosion elsewhere at the Radford AAP). To ensure that all items of

interest are addressed during the inspection, an inspection log will be used during each inspection. This inspection log will list the potential problems/conditions that the inspector should note while conducting the inspection. The inspector will be asked to identify the existence or absence of each problem and, if present, to address its degree of severity (e.g., low, moderate or high). Table 7.1, discussed in the following paragraphs, provides a listing of all items to be inspected.

Because failure of the soil cover or the underlying PVC liner could result in increased infiltration and leachate generation, it is necessary to inspect the cover for surface erosion, subsidence, or ponding; plant root penetration, or exposure of the liner. The grass cover should be inspected for general health and the presence of undesirable competitive species, particularly deep-rooted plants or shrubs. Vegetation should be kept trimmed to prevent encroachment on access controls, roads and signs. Stormwater drainage controls (i.e., slopes and swales) should be inspected for erosion, subsidence, and in the case of swales, accumulated sediment that might block the flow of stormwater. Locks and caps on groundwater monitoring wells should be inspected for damage.

The need for additional security is expected to be minimal due to the overall secure nature of the Radford plant. Therefore, the installation of warning signs will be the only additional security measure taken during the post-closure care period, as only authorized personnel are allowed to enter the restricted portion of the Radford AAP.

Maintenance

The nature and degree of post-closure maintenance of the site will be primarily determined by observations made during the routine inspections. However, since the Radford AAP will remain in operation, plant personnel will have the opportunity to observe the need for maintenance on a more frequent basis. A description of the expected maintenance activities that will be performed in accordance with

10.6.I is discussed below.

The cover, drainage slopes, and vegetation will be maintained as needed. Damage due to erosion and subsidence will be corrected by adding soil and regrading the site. It is expected that no significant subsidence will occur following closure, and thus only erosion would be the major long term concern. Maintenance of vegetation necessary to control erosion will include removing deep-rooted plants and adding fertilizer to enhance growth as necessary. Overgrowth into drainage swales and access roads will be controlled. Swales will be cleared of any accumulated material. These precipitation run-off pathways will be tested annually for the constituents of which were disposed in the units to determine if precipitation run-off is becoming contaminated.

Security will be maintained by immediately repairing or replacing any damaged signs or access roads. Damaged monitoring wells will be repaired if possible. If it is determined that the integrity of the well has been destroyed, then the well will be replaced. Surveyed benchmarks used to indicate the location of the site will be protected and maintained as necessary. The general perimter of the surface impoundment will be easily recognizable due to the presence of riprap for slope protection.

Contingency Activities

In the event of major damage, contingency measures will be promptly taken erosion will be repaired by the most appropriate of the following measures: replacement of cover or fill soil; restoration of original grade design or replacement with new grade design; and/or installation of riprap. Any other cover deterioration due to deep-rooted plants, cracking, cold weather, or slope instability will be promptly corrected by filling, regrading and reseeding, as appropriate. Damage to vegetation will be controlled by the addition of nutrients, manual watering (in the event of drought), and/or pest control as appropriate.

# INSPECTION CHECKLIST FOR CLOSED ON-SITE FACILITIES

Inspector Name:

Date:

Unit #:

Correction Action:

| Item | Problem | Problem Exists? (Yes or No) | Degree of Problem? (e.g., Low) |
|---|---|---|---|
| Soil Cover | erosion | | |
| | subsidence | | |
| | ponding | | |
| PVC Liner | exposed | | |
| Grass Cover | inadequate growth/health | | |
| | deep-rooted vegetation | | |
| | presence of undesirable species | | |
| | inadequate trimming | | |
| Stormwater Drainage | | | |
| slopes | erosion | | |
| | subsidence | | |
| drainage swale | erosion | | |
| | subsidence | | |
| | vegetation growth | | |
| | accumulated sediment | | |
| Monitoring Wells | | | |
| locks | damage | | |
| caps | damage | | |
| Security | | | |
| warning signs | missing | | |
| | defaced | | |
| | obscured | | |
| access road | disrepair | | |
| LEACHATE COLLECTION SYSTEM (H&M #16) | BASIN FULL | | |
| | OPERATING EFFECTIVLY | | |

HAZARDOUS WASTE LANDFILL TRENCH

Since post-closure care is also required for HWM 16, groundwater monitoring and inspection programs similar to those outlined will be implemented. An additional inspection item for HWM 16 would be the leachate collection sump. If any leachate is found to have accumulated in the sump, it will be removed and managed as a listed hazardous waste and more frequent inspections will be conducted. If it is deemed necessary, a routine leachate removal program will be implemented. As in the case of the surface impoundments, surface water monitoring will be performed annually along drainage ditches to determine if surface water run-off has become contaminated to ensure that there will be no release to surface water from the site. Post-closure care will continue for 30 years, unless otherwise determined by the Executive Director. This plan will remain in effect until such time as a Post Closure Permit is issued.

FUTURE USE RESTRICTIONS

In accordance with 10.6.H.3., there will be no use of the disposal areas (HWM #5, HWM #7, and HWM #16) which would allow any disturbance of the integrity of the final cover, liner(s) or any other components of any containment system, or of the function of the associated monitoring systems. Land use activities that will be prohibited at each facility include:

- On-site construction
- Excavation (except as necessary for major maintenance activities)
- Well construction on or near the site
- Agricultural use
- Silvicultural use
- Water infiltration (run-on, ponding, irrigation)
- Recreational use
- Disposal operations
- Vehicular traffic (except as necessary for major maintenance activities)
- Housing on or near the site.

NOTICE TO LOCAL LAND AUTHORITY

As required by 10.6.J, the Radford AAP will submit to the local land authority survey plans prepared and certified by a professional land surveyor which show the disposal areas (HWM #5,

#7, and #16) with respect to permanently surveyed benchmarks. These plans shall contain a note stating that there will be no disturbance of the disposal areas by Radford AAP.

NOTICE IN DEED TO PROPERTY

As required by 10.6.J, a notation (HWM #5, #7, and #16) will be made on the deed to the facility property that will notify, in perpetuity, any potential purchaser of the property that: (1) the land has been used to manage hazardous waste; (2) its use is restricted to that of open space; and (3) the survey plan and record of the type, location, and quantity of hazardous wastes disposed on site has been filed with the Executive Director and local land authority.

## SOIL TREATMENT

The bottom sediments and subsoil of HWM 5 and HWM 7 will be treated with lime kiln dust and a mixture of cement kiln dust and flyash, repectively. The objectives of this treatment are to stabilize the soft sediments, especially at HWM 7, and to retard release of potential contaminants.

### Source of Soil Treatment Reagent

U.S. Gypsum at Kimballton, Virginia, the supplier of lime to Radford AAP, can supply about 25 tons of lime kiln dust per day, delivered in a pneumatic truck. Cement kiln dust is also available locally in large quantities from Lonestar Cement, Culverdale, Virginia about 45 miles from the RAAP. Flyash is available from the RAAP. For application at the HWM 7 site, three parts flyash and one part cement kiln dust will be used. Once unloaded, storing and handling of this type of material would involve many problems (e.g., storage space, dust, and protection from rain and wind). Therefore, it is desirable to plan the soil treatment work in accordance with the material production and delivery schedule.

### Method of Construction

The impoundment bottom of HWM 5 is not likely to be soft and therefore, any light equipment (e.g., loader, grader, small bulldozer, tiller, etc.) should be able to work on it to mix lime kiln dust into the soil. At HWM 7, however, the bottom sediments and soil are anticipated to be too soft to support any equipment. Therefore, the mixing equipment for the HWM 7 sediment treatment will be a clamshell or the equivalent, with a bucket or hoe extensible to the center of the lagoon from the bank.

## SOIL SAMPLING AND ANALYSIS

The objective of the soil sampling and analysis program is to document the characteristics of subsoils (HWM Nos. 5 and 7) for future reference. This documentation could be very useful should a need arise to trace the source of any future groundwater contamination and to develop a corrective action program.

SECTION 2F

EARTHWORK

1. APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1 Military Standards (Mil. Std.):

| | |
|---|---|
| MIL-STD-619B | Unified Soil Classification System for Roads, Airfields, Embankments and Foundations |
| MIL-STD-621A | Test Method for Pavement Subgrade, Subbase and Base-Course Materials |

1.2 American Society for Testing and Materials (ASTM):

| | |
|---|---|
| C 136-84a | Sieve Analysis of Fine and Coarse Aggregates |
| D 698-78 | Moisture-Density Relations of Soils and Soil-Aggregate Moistures using five pound (2.27 kg) Rammer and 12-inch (305 mm) Drop. |
| D 1140-54 (R 1972) | Amount of Material in Soils Finer Than the No. 200 (75-um) Sieve |
| D 1556-82 | Density of Soil in Place by the Sand-Cone Method |
| D 2922-81 | Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| D 3017-78 | Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |

D 4318-84 Liquid Limit, Plastic Limit, and plasticity Index of Soils

2. SUBMITTALS:

2.1 Gradation Curves for Drainage Material: The Contractor shall furnish the Contracting Officer gradation curves provided by the approved laboratory for drainage sand and gravel in accordance with ASTM C 136.

2.2 Construction Plans: Prior to commencement of earthwork, the Contractor shall submit in writing, for the Contracting Officer's approval, a Grading, Excavation and Backfilling plan with the sequence of operation. The plans shall show: the type, rated capacity, and quantity of equipment to be used; location of proposed temporary stockpiles; the drainage, sediment control, and dewatering plan which shows the diversion and removal of surface water from excavated areas; and a storage plan for materials: drainage sand, gravel and riprap.

2.3 Test Results: Two copies of all geotechnical test results, including calibration curves and results of calibration tests, shall be submitted to the Contracting Officer within 24 hours of conclusion of physical tests.

3. MATERIALS:

3.1 Satisfactory Materials: Satisfactory materials for use as fill or backfill shall be materials classified in MIL-STD-619, as GW, GP, GM, GC, SW, SP, SM, SC, ML, MH and CL, and free from roots and other organic matter, trash, debris, frozen materials, and stones larger than 3 inches in any dimension.

3.2 Compacted Fill: Compacted fill shall be satisfactory materials obtained from borrow pits as shown. Additionally, all material excavated from the bank for construction of the HWM 5 and HWM 7 access ramps shall be used as compacted fill. Hypalon liner removed from HWM 5 shall be buried as part of the backfill in HWM 5.

3.3 Clay Liner: Material to be used in constructing the compacted clay liner shall be CL as classified in MIL-STD-619, having a liquid limit between 30 and 60.

3.4 Drainage Material: Drainage materials shall be sand or gravel as indicated. Drainage materials shall be graded between the limits specified hereinafter.

3.4.1 Cover System Drainage Sand: The drainage sand material shall be free of sharp stones or any material that would puncture the PVC liner. The sand shall conform to the following gradation:

| Sieve Size | Percent by Weight Passing |
|---|---|
| 3/8 inch | 100 |
| No. 4 | 86 - 100 |
| No. 10 | 44 - 87 |
| No. 20 | 12 - 52 |
| No. 40 | 0 - 26 |
| No. 100 | 0 - 5 |
| No. 200 | 0 - 1 |

3.4.2 Gravel: Gravel drainage material shall conform to the following gradation:

| Sieve Size | Percent by Weight Passing |
|---|---|
| 2 inch | 100 |
| 1-1/2 inch | 95 - 100 |
| 1-inch | 76 - 100 |
| 1/2-inch | 30 - 80 |
| 3/8 inch | 20 - 73 |
| No. 4 | 0 - 34 |
| No. 10 | 0 - 1 |

3.5 Cover Soil: Cover soil material shall be free of roots and other organic matter, trash, debris, frozen materials, and stones larger than

3 inches. Cover soil materials shall be SM as classified in MIL-STD-619 and obtained from Borrow Pits.

3.6 Topsoil: Topsoil shall be in accordance with SECTION: TURF

3.7 Riprap: Riprap for the cover system perimeter of HWM 5 and HWM 7 shall be salvage riprap from HWM 5. Additional riprap required shall be imported and consist of sound and durable stone. All riprap material shall have a maximum size of 6 inches and be reasonably well-graded between the maximum size stone permitted and 3-inch stone, with not more than five percent by weight smaller than the 3-inch size. The least dimension of a stone shall be considered its size.

3.8 Unsatisfactory Materials: Unsatisfactory materials shall be materials that do not comply with the requirements for satisfactory materials. Materials excavated during stripping, regardless of classification, shall be treated as unsatisfactory materials for use as fill or backfill, unless directed otherwise by the Contracting Officer. Unsatisfactory materials include, but are not limited to, those materials containing roots and other organic matter, trash, debris frozen materials, stones larger than 3 inches, and materials classified in MIL-STD-619 as Pt, OH and OL. Unsatisfactory materials also include manmade fills, refuse or backfills for previous construction. Clay shale, although classified as a CL or CH, is not a satisfactory material for fills or backfills.

4. CLEARING AND GRUBBING:

4.1 General: The areas requiring excavation shall be cleared of brush and other vegetation, debris, existing foundation, pavements, utility lines, structures, fences, and other items that would interfere with construction operations. Roots and other organic matter shall be completely removed. The resulting depressions shall be filled with satisfactory material and compacted as specified.

4.2 Disposal of Cleared Materials: Materials removed shall be disposed of in the dumps as indicated. The cleared materials from the HWM 7 impoundment slopes shall be disposed of in HWM 7 and compacted as part of backfilling.

5. STRIPPING OF BORROW AREAS: The borrow areas shall be stripped to clear all roots, vegetation and organic materials. Stripped materials, regardless of classification, shall not be used for fill or backfill. The location of borings and boring logs for borrow areas are indicated in SECTION: SPECIAL CLAUSES. Stripped topsoil and unsatisfactory material shall be spread back into the borrow areas. Finished slopes of borrow area excavation shall not exceed one (vertical) to three (horizontal) and shall have positive drainage away from the site without ponded areas.

6. DRAINAGE AND DEWATERING:

6.1 General: Drainage and dewatering shall consist of the control of surface water, regardless of origin, nature or quantity, flowing toward and tending to collect in fills, backfills, or excavations. This water shall be controlled in a manner providing effective, continual drainage of excavations, fills and surrounding area.

6.2 Surface Water Control: Diversion ditches, dikes and grading shall be provided and maintained as necessary during construction to prevent external surface water from entering or exiting excavated areas. Excavation slopes and backfill surfaces shall be protected so as to prevent erosion and sloughing. Water accumulated within HWM 5 and HWM 7 shall be controlled in accordance with Paragraph 6, SECTION: WASHDOWN STATION AND EQUIPMENT CONTAMINATION.

6.3 Ground Water Control: groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation, and to eliminate interference with the orderly progress of construction.

6.4 Sediment Control: Sediment and suspended solids in run-off water shall be contained within the construction areas.

7. EXCAVATION:

7.1 Excavation shall conform to the lines, grades, dimensions and elevations indicated on the drawings. Excavation below indicated depths will not be permitted. The minimum distance from stockpile to excavation shall not be less than one-half of the depth of excavation, but in no instance less than three feet.

7.2 Excavation for the leachate collection sump shall be at least 24 inches larger in diameter than the sump to allow backfill compaction. Any overdepth excavation below the sump bottom will be considered unauthorized and shall be backfilled with satisfactory material at no additional cost to the Government.

7.3 Borrow Pit No. 2 shall not be used until no more borrow material is available from Borrow Pit No. 1. Clay materials obtained during excavation of the borrow materials shall be stockpiled and be used for clay liner construction only. Where satisfactory materials are not available in sufficient quantity from the borrow areas, satisfactory materials shall be obtained from approved sources outside the limits of Government-controlled land.

8. STOCKPILES:

8.1 Satisfactory excavated material from the borrow areas shall be stockpiled if it cannot be readily placed. Stockpiles shall be kept in a neat and well-drained condition and the surface shall be sealed by

rubber-tired equipment. Unsatisfactory material shall be spread within the excavated borrow area.

8.2 Material from HWM 5 and HWM 7 access ramp excavation shall be stockpiled and later used for backfilling. A run-on diversion dike shall be provided for the stockpiles of materials excavated from the HWM 5 and 7 access ramps. The stockpiles of sand and liner from the bottom of HWM 5 shall be kept covered and underlain with plastic sheets if contaminated.

8.3 Areas on Government-controlled land not previously used as stockpile areas shall be cleared prior to stockpiling material thereon.

10. PLACING:

10.1 Riprap: Riprap shall be placed as a reasonably well-graded mass of rock with the minimum practicable percentage of voids, to the lines

and grades indicated. Riprap shall be placed to its full course thickness at one operation. Freefall height of stones shall be less than two feet to avoid damaging the underlying clay liner and filter fabric. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to obtain a reasonably well graded distribution of stone sizes.

10.2 Sand Drainage Material: The sand drainage material shall be placed as indicated. The sand drainage material shall be placed on the liner as a single lift of 12 inches using a light track dozer. Equipment shall not be driven on the liner with less than 12 inches of cover sand

10.3 Compacted Fills, Clay Liner and Cover Soil: Satisfactory material shall be placed in horizontal layers as specified hereinafter. The moisture content of the fill material shall be adjusted in the stockpile, borrow areas, or other approved areas to obtain the uniform moisture content as required to obtain the density specified. The surface of each lift shall be scarified before the next lift is placed. When compaction is to be accomplished by use of hand or hand-operated machine compactors, the layer thickness of each lift shall not exceed six inches in uncompacted thickness.

The clay liner shall not be installed in freezing temperatures.

10.4 Use of Clay: Clay material meeting the requirements of Paragraph 3.3 shall be used only for the construction of the compacted clay liner.

11. COMPACTION:

11.1 Laboratory Compaction Curves: The Contractor shall determine the ASTM D 698 maximum density and optimum moisture content for each different type of fill material prior to placing the fill material.

These compaction curves shall be used for field compaction quality control. The mositure control for the laboratory compaction test of the HWM 5 subsoil shall be made after mixing a required amount of lime kiln dust to the uncompacted sample.

11.2 Field Density: Field density shall be determined in accordance with ASTM D 1556, MIL-STD-621, Method 106 or ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556 or MIL-STD-621, Method 106. When using ASTM D 2922 for wet density, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gages shall also be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gages shall be made at the beginning of a job, on each different type of material encountered, and at one week intervals, whichever comes first.

11.3 Compaction Equipment: Clay liner materials shall be compacted by sheepsfoot roller. Pneumatic-tired roller, steel-wheeled rollers, or other approved equipment may be used for common fills and other materials. No sheepsfoot rollers shall be used for the compaction of any material above the PVC liner. Only a light weight, track-mounted dozer shall be used to spread and compact drainage sand on the PVC liner.

11.4 Compaction Density and Moisture Requirements: Each layer shall be compacted to no less than the percentage of maximum density (ASTM D 698) and at a moisture content specified as follows:

| | ASTM D 698 Percent Maximum Density | Moisture Content (%) |
|---|---|---|
| Cover Soil | 90% | ±2% of optimum |
| Compacted Fill | 95% | ±2% of optimum |
| Clay liner | 95% | 2 to 5% above optimum |
| Sand drainage layer | 90% | Not applicable |
| Backfill sand (HWM16) | 90% | No free liquid by Paint Filter Test |
| HWM 5 treated subsoil | 90% | ±2% of optimum |

11.5 Compaction of Drainage Sand: The drainage sand shall be placed in a single lift of at least 12 inches to protect the underlying PVC liner. The drainage sand shall be compacted with a light track dozer only.

12. PROTECTIONS:

Protection of Clay Liner: Clay liner shall be protected from drying by placing the PVC liner within three calendar days of clay liner placement. During the three day period of exposure, clay liner shall be watered as needed to prevent drying and desiccation. If the PVC liner cannot be placed within three days of clay liner construction, the clay liner shall be protected by covering with PVC liner sheets. The clay liner shall not be exposed to freezing temperatures.

13. FINISHING: The surface of excavation, embankments, fills and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The surface shall be within 1/10 of a foot of the grades and elevations indicated, and shall be free of depressed areas where water would pond. Drainage channels shall be finished in such a manner that will result in effective drainage. Surface of areas to be turfed shall be finished to a smoothness suitable for application of turfing materials.

14. TOPSOILING: The topsoil subgrade shall be pulverized to a minimum depth of two inches by disking or plowing for the bonding of topsoil

with the subsoil. Topsoil shall then be uniformly spread, graded, and compacted to the thickness, elevations, and slopes shown, and free of surface irregularities. Topsoil shall be compacted in two lifts by one pass of a culti-packer, roller, or other approved equipment weighing 100 to 160 pounds per linear foot of roller. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to seeding, planting, or proper grading. The surface shall be free of materials that would hinder seeding or maintenance.

15. TESTING:

15.1 Earthwork Testing: Field tests for density and moisture content shall be performed to assure that the specified densities are being obtained in fills and backfills.

15.3 Test Results: When test results indicate, , that compaction is not as specified, the material shall be removed, replaced and recompacted to meet specification requirements, and retested as specified.

Inspections and test results shall be certified by a registered professional civil engineer of the laboratory. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being tested.

15.4 Number of Tests: The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type of operation.

15.4.1 Clay Liner: One density and moisture content test for every 300 square yards, or fraction thereof, of each lift of fill areas.

15.4.2 Compacted Fill and Treated Subsoil One density test for every 500 square yards, or fraction thereof, of each lift of fill areas.

15.4.3 Cover Soil and Drainage Sand: One density test for every 500 square yards, or fraction thereof, of each lift of fill areas.

15.4.4 Clay Liner Material Testing: One liquid limit, plastic limit and plasticity index per 500 cubic yards of material shall be tested using ASTM D 4318.

15.4.5 Moisture Content: In the stockpile, excavation or borrow areas, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer.

SECTION 2G

PVC LINER

PART 1 - GENERAL

1. APPLICABLE PUBLICATIONS: The publication listed below form a part of this specification to the extent referenced.

1.1 National Sanitation Foundation (NSF) Standard:

NSF Standard 54 Flexible Membrane Liners

2. SUBMITTALS:

2.1 Manufacturer's Specifications: The Contractor shall obtain the manufacturer's specifications showing that the PVC liner material meets all requirements included in these specifications. The manufacturer's specifications shall be submitted to the Contracting Officer for approval prior to the delivery of the material.

2.2 Shop Drawings: Furnish four copies of shop drawings for the approval of the Contracting Officer and obtain such approval before proceeding with the work. These drawings shall show details of extent, sizes and termination of the PVC lining.

3. DELIVERY AND STORAGE: Materials delivered to the site shall be inspected for damage, unloaded, and stored with the minimum of handling. Materials shall not be stored directly on the ground or in the direct sunlight. During shipment and storage, the PVC liner shall be wrapped in burlap or similar heavy duty protective covering.

## PART 2 - MATERIALS

4. PVC LINER: The 30-mil PVC liner shall be material manufactured from virgin polyvinyl chloride resin specifically compounded for impermeable lining, and which have been satisfactorily demonstrated by prior use to be suitable and durable for use as impermeable lining. Complete material specifications, descriptive shop drawings, and warranties shall be provided by the manufacturer before commencing installation of PVC liner. Other 30-mil or thicker membrane liners which essentially meet all requirements for the 30-mil PVC liner in NSF Standard 54 may be substituted upon approval of the Contracting Officer.

5. FACTORY FABRICATION: Individual widths of PVC materials shall be factory fabricated into large panels. Lap joints with a minimum width of 1/2" shall be used. Panels shall be as large as can be conveniently handled on the job site and shall be fabricated as shown on the shop drawings. Factory seams shall comply with requirements set forth by NSF as indicated in Paragraph 6.

6. PHYSICAL CHARACTERISTICS: The 30-mil PVC lining materials to be used at the HWM sites shall meet the minimum requirements set forth in NSF Standard 54.

## PART 3 - EXECUTION

7. INSTALLATION LIMITATIONS: Installation of 30-mil PVC liner shall be performed by a Contractor that has previously installed a minimum of 500,000 square feet of this material or by a Contractor that has a fabricator's field representative directing the installation. The lining material shall be placed over the clay liner as indicated in such a manner as to assure minimal handling. Any portion of lining damaged

during installation shall be removed or repaired by using an additional piece of lining as specified hereinafter. No membrane material shall be placed when air termperature is less than 50°F, when it is raining, in high winds, or when there is frost on the ground.

8. FIELD JOINTS: Lap joints shall be used to seal factory fabricated panels together in the field. Lap joints shall be formed by lapping the edges of panels a minimum of 2 inches. The contact surfaces of the panels shall be wiped clean to remove all dirt, dust, or other foreign materials. Bonding adhesive shall be applied as recommended by the fabricator. Field made splices shall have a strength of 80% of the specified sheet strength.

9. REPAIRS TO PVC LINER: Any necessary repairs to the PVC liner shall be patched with the lining material itself and bonding adhesive. The bonding adhesive shall be applied as recommended by the fabricator.

10. QUALITY OF WORKMANSHIP: Any lining surface showing injury due to scuffing, penetration by foreign objects, or distress from rough subgrade shall be replaced or covered and sealed with an additional layer of PVC liner of a proper size.

11. QUALITY CONTROL: The Contractor shall provide a technical representative of the sheeting fabricator at the jobsite to ensure compliance with the fabricator's directions. The technical representative must be present when the liner installation is started and make periodic check-backs, if required. He shall instruct and observe the work, reporting unsatisfctory conditions or recommendations for improvement in procedures to the Contractor.

SECTION 2H

FILTER FABRIC

PART 1 - GENERAL

1. APPLICABLE PUBLICATIONS: The American Society for Testing and Materials (ASTM) publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

| | |
|---|---|
| D 751-79 | Testing Coated Fabrics |
| D 1682-64 (R 1975) | Breaking Load and Elongation of Textile Fabrics |

2. SUBMITTALS: The Contractor shall furnish the Contracting Officer, in duplicate, a mill certificate or affidavit from the manufacturer of the filter fabric, certifying that the fabric meets the chemical, physical, and manufacturing requirements stated in this specification.

3. DELIVERY AND STORAGE: Materials delivered to site shall be inspected for damage, unloaded, and stored with the minimum of handling. Materials shall not be stored directly on the ground or in the direct sunlight. During shipment and storage, filter fabric shall be wrapped in burlap or similar heavy duty protective covering.

## PART 2 - MATERIAL

4. FILTER FABRIC: Filter fabric shall be a pervious sheet of non-woven polypropylene filaments with a unit weight no less than six ounces per square yard and a thickness no less than 80 mils. The filter fabric shall provide an Equivalent Opening Size (EOS) no finer than the US Standard Sieve No. 100 and no coarser than the US Standard Sieve No. 40. EOS is defined as the number of the US Standard Sieve having openings closest in size to the filter fabric openings. The fabric shall have a minimum physical strength of 100 pounds per inch in any direction when tested in accordance with ASTM D 1682 using the Grab Test Method with one square inch jaws and a constant rate of travel of 12 inches per minute. Elongation at failure shall be no less than 30 percent. The fabric shall be constructed so that the filaments will retain their relative position with respect to each other. The filter fabric shall have a minimum bursting strength of 200 pounds per square inch and a minimum puncture strength of 60 pounds in accordance with ASTM D 751.

## PART 3 - EXECUTION

5. SOIL SURFACES: Surfaces to be covered with filter fabric shall be graded to obtain smooth side and bottom surfaces so that the fabric will not bridge cavities in the soil or be damaged by projecting rock.

6. PLACING FILTER FABRIC: The fabric shall be laid smooth, but not stretched on the soil, and shall be secured with temporary anchors without damaging the underlying PVC and clay liner. Overlaps shall be at least two feet and anchor pins shall be used along the overlaps.

7. OVERLAPS ON PERFORATED PIPES: One layer of filter fabric shall be wrapped around perforated collector pipes (HWM 16 cover system) to form a minimum of two-inch continuous, longitudinal overlaps. The fabric shall be secured to the pipe in such a manner that drainage sand will not migrate through fabric overlaps.

8. OVERLAPS ON GRAVEL DRAIN: One layer of filter fabric shall be wrapped around the gravel drain of the HWM 16 leachate collection system. Overlap shall be at least 18 inches and secured in such a manner that the surrounding sand will not migrate through fabric overlaps.

SECTION 2J

WASHDOWN STATION AND EQUIPMENT DECONTAMINATION

1. GENERAL: Vehicles and equipment used within the exclusion zone of HWM 5 and HWM 7 shall be decontaminated at the washdown station before leaving the site.

2. SUBMITTALS: The Contractor shall submit to the Contracting Officer shop drawings for the washdown stations. Shop drawings shall be approved prior to commencement of work.

3. WASHDOWN STATION LOCATION AND SERVICE PERIOD: The Contractor shall provide vehicle and equipment washdown stations for HWM 5 and HWM 7 as indicated. The washdown stations shall be available for service during the demolition, soil treatment and soil sampling tasks at HWM 5 and HWM 7.

4. CONSTRUCTION OF WASHDOWN STATION: The washdown station shall consist of, at a minimum, a washwater containment pit, a wash station pad, and a 30-mil PVC membrane to line the containment pit and wash pad as indicated. The PVC lining shall be as specified in SECTION: PVC LINER. The PVC liner shall be installed on the compacted smooth surfaces. The station shall be equipped with a portable pressure water sprayer, pump, hoses and nozzles necessary to wash equipment and to transfer the washdown water to disposal areas. Washdown water is to be provided by the Contractor.

5. OPERATION:

5.1 Operation During Demolition: All vehicles and equipment which made direct contact with the contaminated material, except for the cargo

area of the transportation vehicles, within the Exclusion Area of HWM 5 and HWM 7 shall be cleaned prior to leaving the site. The cleaning shall consist of scraping off soils from all contaminated parts of equipment. The cargo area of the transportation vehicles shall be cleaned only once when transportation of all contaminated material is completed.

5.2 Operation During Soil Treatment: All equipment which was used to excavate subsoil or to mix the reagent and subsoil, shall be decontaminated at the wash station prior to leaving the site. All reagent and soil shall be removed from equipment.

5.3 Operation During Soil Sampling: Drilling and sampling tools which made direct contact with the subsurface soil shall be decontaminated at the wash station by scraping and washing with pressure water. Equipment and tools which made contact with treated surface do not need decontamination.

6. CONTROL OF WASHDOWN WATER AND SEDIMENT: The washdown water and sediment shall be contained within the containment pit. The washdown water accumulating in the containment pit shall be removed by pumping. The pumped washdown water from HWM 5 shall be disposed of in the manhole to the immediate north of the impoundment. At HWM 7, the washdown water shall be pumped to SWM 9 after adjusting pH between 6 and 9. Ph shall not be less than 2 in the pit at any time.

7. REMOVAL OF WASHDOWN STATION: The washdown stations shall be removed upon completion of the first lift of backfill compaction at HWM 5 and 7. The washdown station cover soils, sediment and liner shall be disposed within the impoundment in a manner to facilitate remaining backfilling and compaction. The containment pit area shall be graded by backfilling.

SECTION 2K

CHAIN GATE AND WARNING SIGN

PART 1 - GENERAL

1. APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1 Federal Specification (Fed. Spec.):

| | |
|---|---|
| RR-F-191G/GEN | Fencing, Wire and Post Metal (and Gates, Chain-Link Fence Fabric, and Accessories). |

1.2 American Society for Testing and Materials (ASTM) Standard:

| | |
|---|---|
| C387-83 | Packaged, Dry, Combined Materials for Mortar and Concrete |

2. PRODUCTS:

2.1 Concrete: Dry mix conforming to ASTM C387 and the minimum amount of water to produce a workable mix.

2.2 Posts, Chain Gate and Accessories: Fed. Spec. RR-F-191, zinc coated, except as modified herein. All posts shall be round pipe. The chain for the gate shall be a single galvanized chain. Accessories shall include galvanized steel clamps to be provided around the post to connect the chain.

2.3 Signs:

2.3.1 Sign Board: Sign board shall be 0.125 inch solid acrylic plastic with satin matte finish and integral permanent color. Signs shall have red background with white subsurface, helvetica medium lettering.

2.3.2 Signs shall be a minimum of 24 inches high by 48 inches wide with square edges and corners.

2.3.3 Lettering shall be all capitals and shall be a minimum of two-inch in height. Lettering shall be proportionately sized to the size of the sign. Signs shall read:

WARNING!

THIS IS A CLOSED HAZARDOUS WASTE FACILITY.
ENTRY OF UNAUTHORIZED PERSONNEL AND
VEHICLES IS PROHIBITED. CONTACT RAAP SECURITY
POLICE (639-7163) TO REPORT DAMAGE OR ACCIDENTS.

2.3.4 Signs shall be provided with connectors for attaching to the chain.

3. EXECUTION:

3.1 General: A chain gate shall be installed across the access ramp of HWM Sites 5, 7, and 16. Installation shall be in accordance with the fence manufacturer's written installation instructions except as modified herein.

3.2 Excavation: Excavation for concrete-embedded posts shall be 2 feet in diameter and 3 feet in depth. Post holes shall be cleared of loose materials. Waste excavated material shall be spread to the grade.

3.3 Post Setting: Posts shall be set plumb and in alignment. Posts shall be set in concrete bases to a depth of three feet below grade. Concrete shall be filled in the excavation and compacted so as to be free of voids and finished in a dome. Concrete shall be cured a minimum of 72 hours before any further work is done on the posts.

3.4 Chain Gate and Sign: Chain gate shall be installed in accordance with the manufacturer's recommendation. A lock shall be installed to secure the chain to the gate post. The sign shall be attached to the center of the chain.

Boswell/kp/5140

May 14, 1987

Project Management Branch

Mr. Kevin L. Greene, Geologist
Bureau of Hazardous Waste Management
Department of Waste Management
11th Floor, Monroe Building
101 North 14th Street
Richmond, Virginia 23219

Dear Mr. Greene:

Reference your letters of February 6, 1987, and May 6, 1987, concerning Closure Plan for Hazardous Waste Management Units 5, 7, and 16, Radford Army Ammunition Plant (RAAP), Virginia.

At the request of Ms. Shelley Barker, RAAP, we have addressed your concerns raised in the referenced letters. Enclosed are our responses. We hope they are satisfactory.

If you have further concerns, please contact Ms. Shelley Barker, RAAP (SMCRA-EN), telephone 703-639-8482 or Mr. Jack Boswell, Huntsville Division (HNDED-PM), telephone 205-895-5140.

Sincerely,

5/14/87
SHEARER, E

5/14
PHILLIPS,

5/19
EVERITT, E

JAMES A. HENDERSON
for H. O. Everitt
Chief, Engineering Division

Enclosure

CF:
ED File/Read
ED-PM Read/Shearer/Boswell/5-13C
AD-E

13 May 87

U.S. ARMY ENGINEER DIVISION HUNTSVILLE

# DESIGN REVIEW COMMENTS

PBR

CORPS OF ENGINEERS

PROJECT Radford AAP Closure Plans 2-253

XX SITE DEV & GEO TECH ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INSTR & CONTROLS ☐ SPECIFICATIONS

REVIEW State of VA comments
DATE 5 MAR 1987 TYPE
NAME W. King/bjw

WK

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|---|---|---|---|
| 1 | General | The State of Virginia's requirement for site-specific closure and post closure plans is addressed under the closure and post-closure plan prepared in July 1984 by $CH_2M$ Hill and PEER consultants. A copy of this document should have been provided by Radford AAP to State of Virginia regulators soon after this date. The combination of the closure design package and this plan should address all of the State's concerns.<br><br>RESPONSES TO SPECIFIC GEOTECHNICAL COMMENTS | |
| 2 | Para I-1e(1)(b) | a. Testing by Engineering Science of Fairfax, VA has shown that the recommended sludge/cement/flyash mixture can achieve adequate strength for long term closure. A copy of their report is attached for your information.<br><br>b. Consolidation was also considered in the test program. The results indicate that settlement due to consolidation of the stabilized sludges is estimated to be less than one half inch by the following formula:<br><br>$S = \frac{H \Delta e}{1+e_o} = 0.36$ inches<br><br>Where S = settlement<br>H = thickness of layer (7' maximum)<br>$e_o$ = void ratio at no load (1.787)<br>$\Delta e$ = change in void ratio with load (1.787-1.775 = 0.012)<br><br>Settlement of 0.36 inches will have no impact on the integrity of the cap or its function. | |

ACTION CODES:
A — ACCEPTED/CONCUR
D — ACTION DEFERRED
W — WITHDRAWN
N — NON-CONCUR
VE — VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER DIVISION HUNTSVILLE

# DESIGN REVIEW COMMENTS

PROJECT Radford AAP Closure Plans 2-253

CORPS OF ENGINEERS

☒ SITE DEV & GEO TECH ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INSTR & CONTROLS ☐ SPECIFICATIONS

REVIEW State of VA comments
DATE 5 MAR 1987 TYPE
NAME W. King/bjw

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|---|---|---|---|
| 2 | (Cont'd) | c. Settlement within the compacted backfill will be negligible if the material is placed and compacted as required by design specifications.<br><br>d. Foundation compression will also be negligible as the lagoons were excavated in a sandy silt soil. Any compression which does occur will do so during the construction phase. No long term settlement is anticipated and the function of the cap will not be affected. | |
| 3 | Para I-1(e)6 | See response to Para I-1e(1)(b). | |
| 4 | Para I-1f | Groundwater monitoring and run-on control are addressed in the 1984 closure and post closure plan. | |
| 5 | Para I-2 | Specific post closure plans are addressed in the 1984 closure and post closure plan. | |

ACTION CODES
A -- ACCEPTED/CONCUR
D — ACTION DEFERRED
W — WITHDRAWN
N — NON-CONCUR
VE — VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER DIVISION HUNTSVILLE

DF # 2-253 S: 6 March 1987

# DESIGN REVIEW COMMENTS

CORPS OF ENGINEERS

PROJECT Closure Plan for HWM 5, 7 & 16 (Radford AAP)

- ☐ SITE DEV & GEO TECH
- ☒ ENVIR PROT & UTIL
- ☐ ARCHITECTURAL
- ☐ STRUCTURAL
- ☐ MECHANICAL
- ☐ MFG TECHNOLOGY
- ☐ ELECTRICAL
- ☐ INSTR & CONTROLS
- ☐ SAFETY
- ☐ ADV TECH
- ☐ ESTIMATING
- ☐ SPECIFICATIONS
- ☐ SYSTEMS ENG
- ☐ VALUE ENG
- ☐ OTHER

REVIEW N/A

DATE 5 March 1987 TYPE A

NAME Gary Holden

| ITEM | DRAWING NO OR REFERENCE | COMMENT | ACTION |
|---|---|---|---|
| 1. | I-1d | The only contaminant of concern is corrosive liquid. The Closure Technical Plan outlines the procedure for decontamination of equipment and personnel. Thorough washing and rinsing is all that is needed. | |
| 2. | I-1i | A groundwater monitoring plan for each unit is outlined in the Closure and Post-Closure Plan completed by CH2M Hill in 1984. | |
| 3. | I-1g | A closure schedule for each unit appears in the CH2M Hill Closure Plan. It needs updating. | |
| 4. | I-2 | The elements listed here are addressed in the CH2M Hill Post-Closure Plan. The Plan needs updating. | |

ACTION CODES:
A — ACCEPTED/CONCUR
D — ACTION DEFERRED
W — WITHDRAWN
N — NON-CONCUR
VE — VE POTENTIAL/VEP ATTACHED

ND FORM 7

SECTION 2D

SEDIMENT AND SUBSOIL TREATMENT

1. APPLICABLE PUBLICATIONS: The American Society for Testing and Materials (ASTM) publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

| | |
|---|---|
| D 1632-63 | Standard Method for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory. |
| D 2166-66 | Unconfined Compressive Strength of Cohesive Soil. |
| D 2216-80 | Laboratory Determination of Water (Moisture) Content of Soil, Rock and Soil-Aggregate Mixtures. |
| G 51-77 | pH of Soil for Use in Corrosion Testing. |

2. SUBMITTALS: The procedures, equipment and schedule for this work shall be submitted for approval. The submittal shall include the reagent (lime kiln dust and cement kiln dust) stock pile plan, qualifications of selected laboratory for geotechnical testing, health and safety procedures and equipment decontamination procedure. The flyash to be used as reagent will be provided by the Radford AAP.

3. REAGENT STORAGE: The Contractor shall coordinate the work schedule with the reagent supplier to minimize on-site storage of the reagent. Any storage of the reagent shall be protected from rain and wind using synthetic membrane as bottom liner and cover. On-site storage of the reagent shall not exceed 15 calendar days.

4. SUBSOIL TREATMENT:

4.1 The Contractor shall provide all necessary materials and equipment to neutralize and stabilize the subsoil and sediments in HWM 5 and HWM 7 as indicated. Equipment to be used for mixing at HWM 7 shall be capable of reaching and thoroughly mixing all areas of the lagoon from the bank. The amounts of reagent specified in paragraphs 4.2 and 4.3 are based on bench tests and engineering calculations.

4.2 Subsoil Treatment For HWM 5: The Contractor shall till the lime kiln dust into the top two feet of subsoil in 6-inch lifts and compact in accordance with SECTION: EARTHWORK. The mix ratio shall be approximately 15 pounds lime kiln dust per cubic foot of bank soil.

4.3 Sediment and Subsoil Treatment For HWM 7: Prior to initiation of sediment and subsoil treatment at HWM 7, areas with high lime concentration as indicated shall be excavated and spread over the entire lagoon area. Also, one foot of surface material from the bank slopes shall be scraped off and spread within the lagoon area. The Contractor shall mix the reagent (one part cement kiln dust and three parts flyash by weight) into the top seven feet of sediment and subsoil. The reagent mix ratio shall be approximately 82 pounds reagent per cubic foot of sediment/subsoil.

4.4 Treatment Criteria: Upon completion of the treatment, the pH of the treated soil for both HWM 5 and HWM 7 shall be between 6.0 and 12.0 and the two-week unconfined compressive strength of treated soil shall be no less than 1,500 pounds per square foot.

5. QUALITY CONTROL FOR pH: The Contractor shall perform field pH tests for treated soil in HWM 7 and HWM 5.

5.1 Quality Control Sampling: At HWM 7, the Contractor shall take bulk samples at 10 evenly distributed locations upon completion of mixing. Three ten-pound samples shall be taken at each location: one at

elevation 1,696 feet, one at elevation 1,698.5 feet, and another at elevation 1,701 feet. At HWM 5, bulk samples shall be taken at 10 evenly distributed locations. From each sampling location at HWM 5, two samples no less than three pounds each shall be taken at a depth of 6 and 18 inches below the treated soil surface. At the time of sampling, samples shall not include any unmixed reagent (lime kiln dust or cement kiln dust). Any samples containing unmixed reagent shall be rejected.

5.2 pH Testing: Each sample shall be tested for pH in accordance with ASTM G 51.

5.3 Reporting: The results of the pH testing shall be reported by individual values, average and deviations for each lagoon.

6. QUALITY CONTROL FOR COMPRESSIVE STRENGTH: The Contractor shall perform moisture content (ASTM D 2216) and unconfined compressive strength (ASTM D 2166) tests for treated soil

The Contractor shall obtain services of an approved laboratory to perform these test in accordance with SECTION: EARTHWORK

6.1 Quality Control Sampling: Samples obtained for pH testing shall be used for preparation of test specimens and no separate sampling is required.

6.2 Quality Control Testing: The initial moisture content and 14-day unconfined compressive strength of each sample shall be determined and the results shall be submitted to the Contracting Officer.

6.2.1 Two moisture content tests in accordance with ASTM D 2216 shall be conducted for each sample and the average of the two results shall be reported as the moisture content of each sample.

6.2.2 The unconfined compressive strength test specimen shall be prepared in accordance with ASTM D 1632 and cured for 14 days. The

cured specimens shall be tested in accordance with ASTM D 2166 using a controlled strain rate of one percent per minute.

6.3 Corrective Action:

6.3.1 If the average of 30 unconfined compressive strength test results is greater than 1,500 pounds per square foot and none of the individual values are less than 1,250 per square foot, the compressive strength is considered satisfactory and no corrective action is required.

6.3.2 If the average of 30 unconfined compressive strength test results is less than 1,500 pounds per square foot, corrective action small be performed.

6.3.3 If the average of 30 unconfined compressive strength test results is greater than 1,500 pounds but some individual values are less than 1,250 pounds per square foot, corrective action shall be performed for the portions with the unconfined compressive-strength less than 1,250 pounds per square foot.

SECTION 2E

SUBSOIL SAMPLING AND ANALYSIS

1. APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1 U.S. Environmental Protection Agency (EPA) Publications:

EPA SW-846 Test Methods for Evaluating Solid Waste (Second Edition, July 1982; Revised April 1984)

1.2 American Society for Testing and Materials (ASTM) Publications:

| | |
|---|---|
| G 51-77 | pH of Soil for Use in Corrosion Testing |
| D 1586-84 | Penetration Test and Split Barrel Sampling of Soils |
| D 2488-84 | Description and Identification of Soils (Visual-Manual Procedure) |

2. SUBMITTALS: The contractor shall obtain a certificate from the analytical labatory indicating that the laboratory is approved by the USEPA to perform solid waste analysis and conforms to their quality control requirements. This certificate shall be submitted to the Contracting Officer for approval prior to sampling of soils.

3. SAMPLING: The Contractor shall sample subsoil after soil treatment at HWM 5 and HWM 7 in accordance with specifications provided herein.

3.1 Sampling Location: Three soil borings shall be drilled as shown in each of HWM 5 and HWM 7 and subsoil samples shall be collected at Elevations 1769, 1765 and 1759 for HWM 5, and Elevations 1700, 1694 and 1691 for HWM 7.

3.2 Boring and Sampling: Boring and sampling shall be performed in accordance with ASTM D 1586. At least 300 grams of soil shall be taken for each sample and placed in 500-ml size glass or plastic bottles. The split spoon sampler shall be cleaned with detergent water and a brush, then rinsed with distilled water prior to each use. Prior to sampling, sample bottles shall be prepared by the analytical laboratory in accordance with EPA SW-846 and shipped to the field. Label shall also be provided by the laboratory.

3.3 Soil pH Test: The soil pH shall be determined in the field immediately after sampling in accordance with ASTM G 51 using a pH meter with a combination-type electrode.

3.4 Boring Log: The boring logs shall be provided to document the sampling task. The information in the boring log should include: site name, boring number, drilling date, driller's name, ground surface elevation, sample depth, sample identification number, sample recovery, soil description and SPT (Standard Penetration Test) blow count. Soil description shall be in accordance with ASTM 2488.

3.5 Boring Backfilling: The borings shall be backfilled with drill cutting and compacted with drilling tools assisted by hydraulic pressure or drop hammer. No more than two feet of loose material shall be placed before each compaction.

3.6 Personnel Protection and Equipment Decontamination: Personnel protection and equipment decontamination shall be in accordance with

SECTIONS: SAFETY, HEALTH AND EMERGENCY RESPONSE REQUIREMENTS and WASH-DOWN STATION AND EQUIPMENT DECONTAMINATION.

4. SAMPLE CUSTODY:

4.1 Sample Label and Packaging:

4.1.1 Sample Label: The sample bottles shall be labeled at the time of sampling with the following information:

a. Sample site, boring number and sample elevation. This information shall constitute a unique sample identification number. For example, HWM5-B2-1765 is a sample taken from Elevation 1765 of Boring No. 2 at the HWM 5 site.

b. Date and time of collection, collector's name, sample media (water, soil, etc.) and the name of sampling organization.

4.1.2 Sample Packaging: The sample bottles shall be individually placed in plastic bags and packed with ice in a sturdy cooler type container lined with a large impermeable plastic bag. Spaces between and above the bottles shall be tightly filled with appropriate absorbent material to secure the bottles in the container during shipping and handling.

4.2 Field Sample Custody:

4.2.1 Chain-of-Custody Record: A copy of the Chain-of-Custody form shall be completed and accompany the sample from the initial sampling in the field to the laboratory until sample testing and final disposal in accordance with EPA SW-846. The field sample collector shall indicate the sample designation/location number in the space provided on the appropriate chain-of-custody form for each sample. The chain-of-custody form should be completed, secured in a water-tight plastic bag, and placed on the top of the filler material prior to sealing the container.

4.2.2 Identification Control: Each sample container shall be assigned a unique identification number by the laboratory. This number shall be recorded on the chain-of-custody record and marked with indelible ink on the outside of the container.

4.2.3 Security of Samples During Transportation: The shipping container shall be closed and a seal affixed to the latch. This seal must be broken to open the container, and subsequently indicates tampering if the seal is broken before receipt at the laboratory. The laboratory shall notify the shipper if tampering is apparent.

4.3 Laboratory Sample Custody: The sample collector shall notify the laboratory of upcoming transfer of samples to the laboratory. This notification shall include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival. The laboratory sample custody program shall meet the following criteria:

4.3.1 The laboratory should have a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.

4.3.2 Upon receipt of the samples, the custodian shall check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.

4.3.3 In the event of discrepant documentation, the laboratory shall immediately contact the sample collector as part of the corrective action process. A qualitative assessment of each sample container should be performed to note any anomalies, such as broken or leaking bottles. This assessment shall be recorded as part of the incoming chain-of-custody procedure.

4.3.4 The samples shall be stored in a secured area at a temperature of approximately 4°C until analyses are to commence.

4.3.5 A completed chain-of-custody form shall accompany the laboratory report and will become a permanent part of the project records.

4.3.6 Samples should be disposed in accordance with the standard laboratory sample disposal procedure.

5. ANALYTICAL METHODS: The soil samples shall be analyzed for the metals listed below and in accordance with EPA Methods as provided in EPA SW-846.

| Metal | EPA Methods |
|---|---|
| Arsenic | 7060, 7061 |
| Barium | 7080 |
| Cadmium | 7130 |
| Chromium (Total) | 7190 |
| Lead | 7420 |
| Mercury | 7470 |
| Selenium | 7740, 7741 |
| Silver | 7760,7761 |

6. QUALITY CONTROL FOR METAL ANALYSIS: One set of quality control analysis shall be made for each of two sites. The quality control analysis shall include one duplicate analysis, a reagent blank, and a spiked sample. Each of these quality control samples shall be prepared in the same manner as the sample. The blank concentration shall be less than two times the detection limit for the metal. The percentage recovery of each metal in the spiked sample should be between 90% and 110% for all metals except mercury. The recovery range for mercury analyses is 80% to 120%. The relative percentage difference for the analysis of replicate samples is calculated. A Relative Percentage Deviation for duplicate samples is expected to be equal to or less than 10% of the larger observed concentration.

Contract V84482, Borrow Site Investigation for Closure of Hazardous Waste Management Facilities, Radford Army Ammunition Plant, Radford, Virginia

# CHAIN OF CUSTODY RECORD 11200 889623 4241642.2

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA. 17605-2425/ Kay Hower, Manager (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU7<br>**Event:** Geoprobe borings<br>**DAA JN:** 802271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO<br>**Sample Collection for Project Complete?** ☑YES ☐NO<br>**Carrier:** UPS<br>**Tracking Number:** | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☐Client ☑Consultant
Preserved and shipped on Ice: ☑YES ☐NO

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | | | Moisture | TCL Organics - Pest/PCBS/SV | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | G | G | G | G | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | U | U | U | U | | | |
| Required pH of Sample | | | | | | | | | <2 | | | |
| Box 2 - Preservative | | | | | | | H | H | A | | | |
| Box 5 - Sample Container Type | | | | | | | CG (2 oz.) | CG | 40mL voa | | | |
| 7GP-17 (11') | 3/24 | 13:20 | S | 2 | | | X | X | | | | |
| 7GP-18 (14') | 3/24 | 13:45 | S | 2 | | | X | X | | | | |
| 7GP-19 (14') | 3/24 | 14:05 | S | 2 | | | X | X | | | | |
| 7GP-20 (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | |
| 7GP-20 MS (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | |
| 7GP-20 MSD (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | |
| 7GP-21 (13.5') | 3/24 | 16:15 | S | 2 | | | X | X | | | | |
| 7GP-22 (13') | 3/24 | 15:55 | S | 2 | | | X | X | | | | |
| 7GP-22-22 (13') | 3/24 | 15:55 | S | 2 | | | X | X | | | | |
| 7GP-23 (12.5') | 3/24 | 15:30 | S | 2 | | | X | X | | | | |
| 7GP-24 (14') | 3/24 | 15:05 | S | 2 | | | X | X | | | | |

**GENERAL NOTES:** SV 8270C/Pest?PCBS 8081A

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 3/24/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 3/24/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 09:00 | Company Name: DAA | Time: 17:15 | Company Name: | Time: | 30 DYS ORG/6 MTHS INORG |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): HEATHER CARLOUGH | Date: 3/25/04 | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: LQ Heather Carlough | Time: 1040 | |

# CHAIN OF C..ODY RECORD 11200 889622 424628..

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | **Location:** | HWMU5 |
| **Address:** | 0 | **Address:** | 2206 South Main Street, Blacksburg, Virginia 24060 | **Event:** | Geoprobe borings |
| | 0 | **Phone:** | (540) 552-0444 | **DAA JN:** | B02271-01 |
| **Phone:** | 0 | **Fax:** | (540) 552-0291 | **Lab JN:** | |
| **Fax:** | 0 | | | | |
| **Fax:** | 0 | | | | |

**Project Specific (PS) or Batch (B) QC:** ☑ YES ☐ NO
**Sample Collection for Project Complete?** ☑ YES ☐ NO
**Carrier:** UPS
**Tracking Number:**

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
**Copy to Consultant:** ☑ YES ☐ NO
**Bill:** ☐ Client ☑ Consultant
**Preserved and shipped on Ice:** ☑ YES ☐ NO

| Box 4 - Sample Type | G | G | G | G | G | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | |
| Required pH of Sample | | | | | <2 | | | | |
| Box 2 - Preservative | methanol | NaHSO4 | H | H | A | | | | |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics-VOA 8260B (TCE) | TCL Organics-VOA 8260B (TCE) | Moisture | TCL Organics - Pest/PCBS/SV | 8260 - TCE only |
|---|---|---|---|---|---|---|---|---|---|
| 5GP-17 (15') | 3/24 | 09:20 | S | 2 | | | X | X | |
| 5GP-18 (13') | 3/24 | 10:20 | S | 2 | | | X | X | |
| 5GP-19 (15') | 3/24 | 09:45 | S | 2 | | | X | X | |
| 5GP-20 (14') | 3/24 | 12:35 | S | 2 | | | X | X | |
| 5GP-20 MS (14') | 3/24 | 12:35 | S | 2 | | | X | X | |
| 5GP-20 MSD (14') | 3/24 | 12:35 | S | 2 | | | X | X | |
| 5GP-21 (14') | 3/24 | 10:45 | S | 5 | X | X | X | X | |
| 5GP-21-21 (14') | 3/24 | 10:45 | S | 3 | X | X | | | |
| 5GP-22 (14') | 3/24 | 12:05 | S | 2 | | | X | X | |
| 5GP-22-22 (14') | 3/24 | 12:05 | S | 2 | | | X | X | |
| 5GP-23 (14') | 3/24 | 11:40 | S | 2 | | | X | X | |
| 5GP-24 (14') | 3/24 | 11:10 | S | 2 | | | X | X | |
| | | | | | | | | | |
| Trip blanks | 3/23 | 16:00 | TB | 2 | | | | | X |
| | | | | | | | | | |

**GENERAL NOTES:** SV 8270C/Pest?PCBS 8081A Volatile samples: Trichloroethene only (not the full volatile list).

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 3/24/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 3/24/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 09:00 | Company Name: DAA | Time: 17:15 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Heather Zeller | Date: 3/25/04 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: HEATHER CARLSON | Time: 0930 | |

# CHAIN OF CUSTODY RECORD 11200/885259/4219010-25

**Laboratory:** Lancaster Laboratories; 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU7<br>**Event:** Geoprobe borings<br>**DAA JN:** B02271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO<br>**Sample Collection for Project Complete?** ☑YES ☐NO<br>**Carrier:**<br>**Tracking Number:** | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☐Client ☑Consultant
Preserved and shipped on Ice: ☑YES ☐NO

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | G | G | C | G | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | U | U | U | U | | | | |
| **Required pH of Sample** | | | | | <2 | <2 | | | <2 | | | | |
| **Box 2 - Preservative** | | | | | methanol | NaHSO4 | H | H | A | | | | |
| **Box 5 - Sample Container Type** | | | | | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |
| **Sample ID** | **Date: 2004** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **TCL Organics** | **TCL Organics** | **Moisture** (P) | **TCLP (Full Waste Characterization)** | **8260** | | | | |
| 7GP-17 (11') | 2/18 | 9:40 | S | 4 | X | X | X | | | | | | |
| 7GP-18 (14') | 2/18 | 10:05 | S | 4 | X | X | X | | | | | | |
| 7GP-19 (14') | 2/18 | 10:20 | S | 4 | X | X | X | | | | | | |
| 7GP-20 (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | | | | | |
| 7GP-20 MS (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | | | | | |
| 7GP-20 MSD (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | | | | | |
| 7GP-21 (13.5') | 2/18 | 11:00 | S | 4 | X | X | X | | | | | | |
| 13' 7GP-22 (~~14'~~) | 2/18 | 11:20 | S | 4 | X | X | X | | | | | | |
| 13' 7GP-22-22 (~~14'~~) | 2/18 | 11:20 | S | 4 | X | X | X | | | | | | |
| 12.5 7GP-23 (14') | 2/18 | 11:40 | S | 4 | X | X | X | | | | | | |
| 7GP-24 (14') | 2/18 | 12:00 | S | 4 | X | X | X | | | | | | |
| Unit 7 Composite | 2/18 | 12:30 | S | 1 | | | | X | | | | | |
| Trip blanks | | | | | X | X | | | X | | | | |
| | | | | | | | | | | | | | |

**GENERAL NOTES:** Report results at or greater than QL. TCLP composites to include reactivity, corrosivity, ignitability.

**Clients Special Instructions:** level 4 with add.

Received by lab in Good Condition X Yes ____ No Custody Seal Intact X Yes ____ No Temperature upon arrival 3-3.5 Received on Ice X Yes ____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN CALDWELL | Date: 2/18/04 | #1 Relinquished by (Signature): Darren Caldwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: | |
| Sampler Signature: Darren Caldwell | Time: 0900 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Dennis Mc | Date: 2/19/04 | 30 DYS ORG/6 MTHS INORG | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: Lancaster Labs | Time: 7:00 | | |

DD 2/19/04

# CHAIN OF CUSTODY RECORD

11200/885258/4218994 009

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU5<br>**Event:** Geoprobe borings<br>**DAA JN:** B02271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO<br>**Sample Collection for Project Complete?** ☑YES ☐NO<br>**Carrier:** _____<br>**Tracking Number:** _____ | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☐Client ☑Consultant
Preserved and shipped on ice: ☑YES Bi ☐NO

| Box 4 - Sample Type | G | G | G | C | G | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | |
| Required pH of Sample | <2 | <2 | | | <2 | | | | |
| Box 2 - Preservative | methanol | NaHSO4 | H | H | A | | | | |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |

**GENERAL NOTES:** Report results at or greater than QL. TCLP composites to include reactivity, corrosivity, ignitability.

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics | TCL Organics | Moisture | TCLP (Full Waste Characterization) | 8260 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5GP-17 (15') | 2/17 | 11:15 | S | 4 | X | X | X | | | | | | |
| 5GP-18 (13') | 2/17 | 11:45 | S | 4 | X | X | X | | | | | | |
| 5GP-19 (15') | 2/17 | 12:15 | S | 4 | X | X | X | | | | | | |
| 5GP-20 (14') | 2/17 | 12:45 | S | 4 | X | X | X | | | | | | |
| 5GP-20 MS (14') | 2/17 | 12:45 | S | 4 | X | X | X | | | | | | |
| 5GP-20 MSD (14') | 2/17 | 12:45 | S | 4 | X | X | X | | | | | | |
| 5GP-21 (14') | 2/17 | 13:45 | S | 4 | X | X | X | | | | | | |
| 5GP-22 (14') | 2/17 | 14:15 | S | 4 | X | X | X | | | | | | |
| 5GP-22-22 (14') | 2/17 | 14:15 | S | 4 | X | X | X | | | | | | |
| 5GP-23 (14') | 2/17 | 14:45 | S | 4 | X | X | X | | | | | | |
| 5GP-24 (14') | 2/17 | 15:05 | S | 4 | X | X | X | | | | | | |
| Unit 5 Composite | 2/17 | 15:30 | S | 1 | | | | X | | | | | |
| Trip blanks | | | | | X | X | | | X | | | | |
| | | | | | | | | | | | | | |

**Clients Special Instructions: level 4 with edd.**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 2/17/04 | #1 Relinquished by (Signature): Darren Caldwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Caldwell | Time: 11:00 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **6010B** | | | | | | | |
| 5GP-17 (15') | Vanadium | 54.1 | | 54.1 | | 6.2 | No action taken. |
| 5GP-17 (15') | Aluminum | 18300 | | 18300 | | 24.7 | No action taken. |
| 5GP-17 (15') | Copper | 9.7 | | 9.7 | | 3.1 | No action taken. |
| 5GP-17 (15') | Cobalt | 5.6 | B | U | | 6.2 | Result < LOQ. |
| 5GP-17 (15') | Calcium | 604 | B | U | | 616 | Result < LOQ. |
| 5GP-17 (15') | Zinc | 22.4 | | 22.4 | | 2.5 | No action taken. |
| 5GP-17 (15') | Potassium | 826 | | 826 | | 616 | No action taken. |
| 5GP-17 (15') | Nickel | 7 | | 7 | | 4.9 | No action taken. |
| 5GP-17 (15') | Thallium | 0.79 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-17 (15') | Chromium | 20.8 | | 20.8 | | 1.2 | No action taken. |
| 5GP-17 (15') | Lead | 10.1 | | 10.1 | | 0.37 | No action taken. |
| 5GP-17 (15') | Barium | 53.3 | | 53.3 | | 24.7 | No action taken. |
| 5GP-17 (15') | Antimony | 0.32 | B | U | J | 7.4 | Result < LOQ. MS/MSD recovered low (38/28%). |
| 5GP-17 (15') | Iron | 21400 | | 21400 | | 12.3 | No action taken. |
| 5GP-17 (15') | Magnesium | 698 | | 698 | | 616 | No action taken. |
| 5GP-17 (15') | Manganese | 380 | | 380 | | 1.8 | No action taken. |
| 5GP-17 (15') | Arsenic | 3.2 | | 3.2 | | 1.2 | No action taken. |
| 5GP-18 (13') | Nickel | 4.7 | B | U | | 4.8 | Result < LOQ. |
| 5GP-18 (13') | Zinc | 18.5 | | 18.5 | | 2.4 | No action taken. |
| 5GP-18 (13') | Aluminum | 15000 | | 15000 | | 24.1 | No action taken. |
| 5GP-18 (13') | Copper | 7.5 | | 7.5 | | 3 | No action taken. |
| 5GP-18 (13') | Cobalt | 4.4 | B | U | | 6 | Result < LOQ. |
| 5GP-18 (13') | Chromium | 23.5 | | 23.5 | | 1.2 | No action taken. |
| 5GP-18 (13') | Vanadium | 45.5 | | 45.5 | | 6 | No action taken. |
| 5GP-18 (13') | Potassium | 439 | B | U | | 602 | Result < LOQ. |
| 5GP-18 (13') | Lead | 10.6 | | 10.6 | | 0.36 | No action taken. |
| 5GP-18 (13') | Barium | 22.2 | B | U | | 24.1 | Result < LOQ. |
| 5GP-18 (13') | Calcium | 639 | | 639 | | 602 | No action taken. |
| 5GP-18 (13') | Arsenic | 3.8 | | 3.8 | | 1.2 | No action taken. |
| 5GP-18 (13') | Thallium | 0.61 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-18 (13') | Antimony | 7.2 | U | U | J | 7.2 | Analyte not detected. MS/MSD recovered low (38/28%). |
| 5GP-18 (13') | Iron | 23500 | | 23500 | | 12 | No action taken. |
| 5GP-18 (13') | Magnesium | 598 | B | U | | 602 | Result < LOQ. |
| 5GP-18 (13') | Manganese | 225 | | 225 | | 1.8 | No action taken. |
| 5GP-19 (15') | Copper | 8.8 | | 8.8 | | 3 | No action taken. |
| 5GP-19 (15') | Aluminum | 17400 | | 17400 | | 24.1 | No action taken. |
| 5GP-19 (15') | Manganese | 247 | | 247 | | 1.8 | No action taken. |
| 5GP-19 (15') | Calcium | 1970 | | 1970 | | 603 | No action taken. |
| 5GP-19 (15') | Chromium | 18.8 | | 18.8 | | 1.2 | No action taken. |
| 5GP-19 (15') | Zinc | 20.6 | | 20.6 | | 2.4 | No action taken. |
| 5GP-19 (15') | Vanadium | 44.7 | | 44.7 | | 6 | No action taken. |
| 5GP-19 (15') | Potassium | 719 | | 719 | | 603 | No action taken. |
| 5GP-19 (15') | Cobalt | 3.7 | B | U | | 6 | Result < LOQ. |
| 5GP-19 (15') | Magnesium | 527 | B | U | | 603 | Result < LOQ. |

**SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.**

# Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-19 (15') | Iron | 15300 | | 15300 | | 12.1 | No action taken. |
| 5GP-19 (15') | Antimony | 0.37 | B | U | J | 7.2 | Result < LOQ. MS/MSD recovered low (38/28%). |
| 5GP-19 (15') | Thallium | 0.65 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-19 (15') | Lead | 9.9 | | 9.9 | | 0.36 | No action taken. |
| 5GP-19 (15') | Arsenic | 3.4 | | 3.4 | | 1.2 | No action taken. |
| 5GP-19 (15') | Barium | 62.1 | | 62.1 | | 24.1 | No action taken. |
| 5GP-19 (15') | Nickel | 6.7 | | 6.7 | | 4.8 | No action taken. |
| 5GP-20 (14') | Potassium | 781 | | 781 | | 604 | No action taken. |
| 5GP-20 (14') | Vanadium | 42.2 | | 42.2 | | 6 | No action taken. |
| 5GP-20 (14') | Zinc | 21.5 | | 21.5 | | 2.4 | No action taken. |
| 5GP-20 (14') | Chromium | 19.8 | | 19.8 | | 1.2 | No action taken. |
| 5GP-20 (14') | Calcium | 1000 | | 1000 | | 604 | No action taken. |
| 5GP-20 (14') | Cobalt | 3.7 | B | U | | 6 | Result < LOQ. |
| 5GP-20 (14') | Copper | 8.8 | | 8.8 | | 3 | No action taken. |
| 5GP-20 (14') | Iron | 14700 | | 14700 | | 12.1 | No action taken. |
| 5GP-20 (14') | Aluminum | 18900 | | 18900 | | 24.1 | No action taken. |
| 5GP-20 (14') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 5GP-20 (14') | Nickel | 7 | | 7 | | 4.8 | No action taken. |
| 5GP-20 (14') | Lead | 8.4 | | 8.4 | | 0.36 | No action taken. |
| 5GP-20 (14') | Thallium | 1.1 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-20 (14') | Antimony | 7.2 | U | U | J | 7.2 | Analyte not detected. MS/MSD recovered low (38/28%). |
| 5GP-20 (14') | Magnesium | 576 | B | U | | 604 | Result < LOQ. |
| 5GP-20 (14') | Manganese | 207 | | 207 | | 1.8 | No action taken. |
| 5GP-20 (14') | Barium | 59.8 | | 59.8 | | 24.1 | No action taken. |
| 5GP-21 (14') | Aluminum | 12800 | | 12800 | | 23.6 | No action taken. |
| 5GP-21 (14') | Copper | 8.5 | | 8.5 | | 3 | No action taken. |
| 5GP-21 (14') | Potassium | 1180 | | 1180 | | 590 | No action taken. |
| 5GP-21 (14') | Calcium | 12000 | | 12000 | | 590 | No action taken. |
| 5GP-21 (14') | Chromium | 17.9 | | 17.9 | | 1.2 | No action taken. |
| 5GP-21 (14') | Zinc | 21.6 | | 21.6 | | 2.4 | No action taken. |
| 5GP-21 (14') | Vanadium | 32.6 | | 32.6 | | 5.9 | No action taken. |
| 5GP-21 (14') | Sodium | 1190 | | 1190 | | 590 | No action taken. |
| 5GP-21 (14') | Beryllium | 0.086 | B | U | | 0.59 | Result < LOQ. Blank contamination in the calibration blanks (0.2 ug/l, 0.2 ug/l, 0.2 ug/l) and prep blank (0.2 ug/l). |
| 5GP-21 (14') | Cobalt | 9.5 | | 9.5 | | 5.9 | No action taken. |
| 5GP-21 (14') | Arsenic | 3.1 | | 3.1 | | 1.2 | No action taken. |
| 5GP-21 (14') | Barium | 44 | | 44 | | 23.6 | No action taken. |
| 5GP-21 (14') | Manganese | 520 | | 520 | | 1.8 | No action taken. |
| 5GP-21 (14') | Magnesium | 1330 | | 1330 | | 590 | No action taken. |
| 5GP-21 (14') | Iron | 16500 | | 16500 | | 11.8 | No action taken. |
| 5GP-21 (14') | Antimony | 0.41 | B | U | J | 7.1 | Result < LOQ. MS/MSD recovered low (38/28%). |
| 5GP-21 (14') | Thallium | 1.2 | | 1.2 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 5GP-21 (14') | Lead | 27.4 | | 27.4 | | 0.35 | No action taken. |
| 5GP-21 (14') | Nickel | 9.3 | | 9.3 | | 4.7 | No action taken. |

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-22 (14') | Beryllium | 0.21 | B | U | | 0.6 | Result < LOQ. |
| 5GP-22 (14') | Vanadium | 36.1 | | 36.1 | | 6 | No action taken. |
| 5GP-22 (14') | Zinc | 17.5 | | 17.5 | | 2.4 | No action taken. |
| 5GP-22 (14') | Chromium | 15.6 | | 15.6 | | 1.2 | No action taken. |
| 5GP-22 (14') | Calcium | 345 | B | U | | 596 | Result < LOQ. |
| 5GP-22 (14') | Cobalt | 4.2 | B | U | | 6 | Result < LOQ. |
| 5GP-22 (14') | Arsenic | 2.8 | | 2.8 | | 1.2 | No action taken. |
| 5GP-22 (14') | Aluminum | 12700 | | 12700 | | 23.8 | No action taken. |
| 5GP-22 (14') | Barium | 78.8 | | 78.8 | | 23.8 | No action taken. |
| 5GP-22 (14') | Copper | 6.5 | | 6.5 | | 3 | No action taken. |
| 5GP-22 (14') | Manganese | 331 | | 331 | | 1.8 | No action taken. |
| 5GP-22 (14') | Magnesium | 497 | B | U | | 596 | Result < LOQ. |
| 5GP-22 (14') | Iron | 12900 | | 12900 | | 11.9 | No action taken. |
| 5GP-22 (14') | Antimony | 7.1 | U | U | J | 7.1 | Analyte not detected. MS/MSD recovered low (38/28%). |
| 5GP-22 (14') | Thallium | 0.66 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-22 (14') | Lead | 9.9 | | 9.9 | | 0.36 | No action taken. |
| 5GP-22 (14') | Nickel | 5.3 | | 5.3 | | 4.8 | No action taken. |
| 5GP-22 (14') | Potassium | 508 | B | U | | 596 | Result < LOQ. |
| 5GP-22-22 (14') | Thallium | 1.1 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-22-22 (14') | Beryllium | 0.28 | B | U | | 0.6 | Result < LOQ. |
| 5GP-22-22 (14') | Vanadium | 38.8 | | 38.8 | | 6 | No action taken. |
| 5GP-22-22 (14') | Zinc | 19.9 | | 19.9 | | 2.4 | No action taken. |
| 5GP-22-22 (14') | Chromium | 18.7 | | 18.7 | | 1.2 | No action taken. |
| 5GP-22-22 (14') | Calcium | 339 | B | U | | 596 | Result < LOQ. |
| 5GP-22-22 (14') | Cobalt | 4.4 | B | U | | 6 | Result < LOQ. |
| 5GP-22-22 (14') | Aluminum | 13900 | | 13900 | | 23.9 | No action taken. |
| 5GP-22-22 (14') | Potassium | 531 | B | U | | 596 | Result < LOQ. |
| 5GP-22-22 (14') | Copper | 6.6 | | 6.6 | | 3 | No action taken. |
| 5GP-22-22 (14') | Lead | 10.2 | | 10.2 | | 0.36 | No action taken. |
| 5GP-22-22 (14') | Arsenic | 3.7 | | 3.7 | | 1.2 | No action taken. |
| 5GP-22-22 (14') | Nickel | 6.1 | | 6.1 | | 4.8 | No action taken. |
| 5GP-22-22 (14') | Antimony | 7.2 | U | U | J | 7.2 | Analyte not detected. MS/MSD recovered low (38/28%). |
| 5GP-22-22 (14') | Iron | 14800 | | 14800 | | 11.9 | No action taken. |
| 5GP-22-22 (14') | Magnesium | 527 | B | U | | 596 | Result < LOQ. |
| 5GP-22-22 (14') | Manganese | 372 | | 372 | | 1.8 | No action taken. |
| 5GP-22-22 (14') | Barium | 91.2 | | 91.2 | | 23.9 | No action taken. |
| 5GP-23 (14') | Barium | 57.6 | | 57.6 | | 24.2 | No action taken. |
| 5GP-23 (14') | Nickel | 7 | | 7 | | 4.8 | No action taken. |
| 5GP-23 (14') | Cobalt | 5 | B | U | | 6 | Result < LOQ. |
| 5GP-23 (14') | Calcium | 12000 | | 12000 | | 604 | No action taken. |
| 5GP-23 (14') | Chromium | 22.2 | | 22.2 | | 1.2 | No action taken. |
| 5GP-23 (14') | Zinc | 20.6 | | 20.6 | | 2.4 | No action taken. |
| 5GP-23 (14') | Vanadium | 45 | | 45 | | 6 | No action taken. |
| 5GP-23 (14') | Sodium | 204 | B | U | | 604 | Result < LOQ. |
| 5GP-23 (14') | Copper | 9.2 | | 9.2 | | 3 | No action taken. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-23 (14') | Arsenic | 3.7 | | 3.7 | | 1.2 | No action taken. |
| 5GP-23 (14') | Manganese | 268 | | 268 | | 1.8 | No action taken. |
| 5GP-23 (14') | Magnesium | 906 | | 906 | | 604 | No action taken. |
| 5GP-23 (14') | Iron | 18100 | | 18100 | | 12.1 | No action taken. |
| 5GP-23 (14') | Antimony | 7.2 | U | U | J | 7.2 | Analyte not detected. MS/MSD recovered low (38/28%). |
| 5GP-23 (14') | Thallium | 0.91 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-23 (14') | Selenium | 0.36 | B | U | | 0.6 | Result < LOQ. |
| 5GP-23 (14') | Lead | 21.9 | | 21.9 | | 0.36 | No action taken. |
| 5GP-23 (14') | Aluminum | 16600 | | 16600 | | 24.2 | No action taken. |
| 5GP-23 (14') | Potassium | 833 | | 833 | | 604 | No action taken. |
| 5GP-24 (14') | Beryllium | 0.12 | B | U | | 0.61 | Result < LOQ. Blank contamination in the calibration blanks (0.2 ug/l, 0.2 ug/l, 0.2 ug/l) and prep blank (0.2 ug/l). |
| 5GP-24 (14') | Sodium | 208 | B | U | | 609 | Result < LOQ. |
| 5GP-24 (14') | Vanadium | 36.6 | | 36.6 | | 6.1 | No action taken. |
| 5GP-24 (14') | Zinc | 18.7 | | 18.7 | | 2.4 | No action taken. |
| 5GP-24 (14') | Chromium | 25.7 | | 25.7 | | 1.2 | No action taken. |
| 5GP-24 (14') | Calcium | 18700 | | 18700 | | 609 | No action taken. |
| 5GP-24 (14') | Cobalt | 3.7 | B | U | | 6.1 | Result < LOQ. |
| 5GP-24 (14') | Aluminum | 13000 | | 13000 | | 24.4 | No action taken. |
| 5GP-24 (14') | Potassium | 856 | | 856 | | 609 | No action taken. |
| 5GP-24 (14') | Copper | 7.5 | | 7.5 | | 3 | No action taken. |
| 5GP-24 (14') | Barium | 49.5 | | 49.5 | | 24.4 | No action taken. |
| 5GP-24 (14') | Manganese | 245 | | 245 | | 1.8 | No action taken. |
| 5GP-24 (14') | Magnesium | 864 | | 864 | | 609 | No action taken. |
| 5GP-24 (14') | Iron | 17100 | | 17100 | | 12.2 | No action taken. |
| 5GP-24 (14') | Antimony | 0.38 | B | U | J | 7.3 | Result < LOQ. MS/MSD recovered low (38/28%). |
| 5GP-24 (14') | Thallium | 0.74 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 5GP-24 (14') | Arsenic | 3.6 | | 3.6 | | 1.2 | No action taken. |
| 5GP-24 (14') | Nickel | 5.3 | | 5.3 | | 4.9 | No action taken. |
| 5GP-24 (14') | Lead | 24 | | 24 | | 0.37 | No action taken. |
| 7GP-17 (11') | Antimony | 1.2 | B | U | | 7.5 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-17 (11') | Sodium | 611 | B | U | | 624 | Result < LOQ. |
| 7GP-17 (11') | Vanadium | 46 | | 46 | | 6.2 | No action taken. |
| 7GP-17 (11') | Aluminum | 13500 | | 13500 | | 25 | No action taken. |
| 7GP-17 (11') | Zinc | 165 | | 165 | | 2.5 | No action taken. |
| 7GP-17 (11') | Copper | 36.3 | | 36.3 | | 3.1 | No action taken. |
| 7GP-17 (11') | Chromium | 45.6 | | 45.6 | | 1.2 | No action taken. |
| 7GP-17 (11') | Cadmium | 0.29 | B | U | | 0.62 | Result < LOQ. |
| 7GP-17 (11') | Cobalt | 10.4 | | 10.4 | | 6.2 | No action taken. |
| 7GP-17 (11') | Beryllium | 0.43 | B | U | | 0.62 | Result < LOQ. |
| 7GP-17 (11') | Calcium | 39100 | | 39100 | | 624 | No action taken. |
| 7GP-17 (11') | Arsenic | 26.4 | | 26.4 | | 1.2 | No action taken. |
| 7GP-17 (11') | Nickel | 28.1 | | 28.1 | | 5 | No action taken. |
| 7GP-17 (11') | Barium | 244 | | 244 | | 25 | No action taken. |
| 7GP-17 (11') | Manganese | 272 | | 272 | | 1.9 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-17 (11') | Iron | 24200 | | 24200 | | 12.5 | No action taken. |
| 7GP-17 (11') | Thallium | 2.1 | | 2.1 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-17 (11') | Selenium | 3.1 | | 3.1 | | 0.62 | No action taken. |
| 7GP-17 (11') | Lead | 120 | | 120 | | 0.37 | No action taken. |
| 7GP-17 (11') | Potassium | 3640 | | 3640 | | 624 | No action taken. |
| 7GP-17 (11') | Magnesium | 4050 | | 4050 | | 624 | No action taken. |
| 7GP-18 (14') | Potassium | 1460 | | 1460 | | 604 | No action taken. |
| 7GP-18 (14') | Vanadium | 50 | | 50 | | 6 | No action taken. |
| 7GP-18 (14') | Chromium | 23.2 | | 23.2 | | 1.2 | No action taken. |
| 7GP-18 (14') | Cobalt | 8.2 | | 8.2 | | 6 | No action taken. |
| 7GP-18 (14') | Nickel | 8.3 | | 8.3 | | 4.8 | No action taken. |
| 7GP-18 (14') | Aluminum | 17500 | | 17500 | | 24.2 | No action taken. |
| 7GP-18 (14') | Zinc | 26.6 | | 26.6 | | 2.4 | No action taken. |
| 7GP-18 (14') | Copper | 10.6 | | 10.6 | | 3 | No action taken. |
| 7GP-18 (14') | Manganese | 257 | | 257 | | 1.8 | No action taken. |
| 7GP-18 (14') | Magnesium | 932 | | 932 | | 604 | No action taken. |
| 7GP-18 (14') | Iron | 25800 | | 25800 | | 12.1 | No action taken. |
| 7GP-18 (14') | Antimony | 0.35 | B | U | | 7.2 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-18 (14') | Thallium | 0.74 | B | U | | 1.2 | Result < LOQ. Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). |
| 7GP-18 (14') | Lead | 8.9 | | 8.9 | | 0.36 | No action taken. |
| 7GP-18 (14') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 7GP-18 (14') | Calcium | 770 | | 770 | | 604 | No action taken. |
| 7GP-18 (14') | Barium | 59.3 | | 59.3 | | 24.2 | No action taken. |
| 7GP-19 (14') | Copper | 28 | | 28 | | 3 | No action taken. |
| 7GP-19 (14') | Potassium | 3770 | | 3770 | | 610 | No action taken. |
| 7GP-19 (14') | Beryllium | 0.5 | B | U | | 0.61 | Result < LOQ. |
| 7GP-19 (14') | Sodium | 446 | B | U | | 610 | Result < LOQ. |
| 7GP-19 (14') | Vanadium | 50.6 | | 50.6 | | 6.1 | No action taken. |
| 7GP-19 (14') | Zinc | 39.4 | | 39.4 | | 2.4 | No action taken. |
| 7GP-19 (14') | Nickel | 18.9 | | 18.9 | | 4.9 | No action taken. |
| 7GP-19 (14') | Cobalt | 8.7 | | 8.7 | | 6.1 | No action taken. |
| 7GP-19 (14') | Thallium | 2.1 | | 2.1 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-19 (14') | Cadmium | 0.1 | B | U | | 0.61 | Result < LOQ. |
| 7GP-19 (14') | Barium | 273 | | 273 | | 24.4 | No action taken. |
| 7GP-19 (14') | Manganese | 133 | | 133 | | 1.8 | No action taken. |
| 7GP-19 (14') | Magnesium | 3010 | | 3010 | | 610 | No action taken. |
| 7GP-19 (14') | Antimony | 1.2 | B | U | | 7.3 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-19 (14') | Selenium | 3.7 | | 3.7 | | 0.61 | No action taken. |
| 7GP-19 (14') | Lead | 95.3 | | 95.3 | | 0.37 | No action taken. |
| 7GP-19 (14') | Arsenic | 30.5 | | 30.5 | | 1.2 | No action taken. |
| 7GP-19 (14') | Calcium | 39700 | | 39700 | | 610 | No action taken. |
| 7GP-19 (14') | Aluminum | 14300 | | 14300 | | 24.4 | No action taken. |
| 7GP-19 (14') | Iron | 16100 | | 16100 | | 12.2 | No action taken. |

**SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.**

# Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-19 (14') | Chromium | 38.4 | | 38.4 | | 1.2 | No action taken. |
| 7GP-20 (14.5') | Calcium | 10400 | | 10400 | | 598 | No action taken. |
| 7GP-20 (14.5') | Aluminum | 11300 | | 11300 | | 23.9 | No action taken. |
| 7GP-20 (14.5') | Cobalt | 6.6 | | 6.6 | | 6 | No action taken. |
| 7GP-20 (14.5') | Chromium | 75.3 | | 75.3 | | 1.2 | No action taken. |
| 7GP-20 (14.5') | Zinc | 46.1 | | 46.1 | | 2.4 | No action taken. |
| 7GP-20 (14.5') | Vanadium | 43.2 | | 43.2 | | 6 | No action taken. |
| 7GP-20 (14.5') | Sodium | 316 | B | U | | 598 | Result < LOQ. |
| 7GP-20 (14.5') | Potassium | 2280 | | 2280 | | 598 | No action taken. |
| 7GP-20 (14.5') | Nickel | 15.5 | | 15.5 | | 4.8 | No action taken. |
| 7GP-20 (14.5') | Lead | 66.5 | | 66.5 | | 0.36 | No action taken. |
| 7GP-20 (14.5') | Copper | 15.7 | | 15.7 | | 3 | No action taken. |
| 7GP-20 (14.5') | Barium | 114 | | 114 | | 23.9 | No action taken. |
| 7GP-20 (14.5') | Arsenic | 8.3 | | 8.3 | | 1.2 | No action taken. |
| 7GP-20 (14.5') | Thallium | 1.3 | | 1.3 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-20 (14.5') | Antimony | 0.94 | B | U | | 7.2 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-20 (14.5') | Iron | 19800 | | 19800 | | 12 | No action taken. |
| 7GP-20 (14.5') | Magnesium | 2990 | | 2990 | | 598 | No action taken. |
| 7GP-20 (14.5') | Manganese | 173 | | 173 | | 1.8 | No action taken. |
| 7GP-21 (13.5') | Copper | 12.8 | | 12.8 | | 3 | No action taken. |
| 7GP-21 (13.5') | Lead | 12.4 | | 12.4 | | 0.36 | No action taken. |
| 7GP-21 (13.5') | Barium | 79.6 | | 79.6 | | 24 | No action taken. |
| 7GP-21 (13.5') | Zinc | 32.5 | | 32.5 | | 2.4 | No action taken. |
| 7GP-21 (13.5') | Vanadium | 55.9 | | 55.9 | | 6 | No action taken. |
| 7GP-21 (13.5') | Potassium | 1920 | | 1920 | | 601 | No action taken. |
| 7GP-21 (13.5') | Nickel | 9.4 | | 9.4 | | 4.8 | No action taken. |
| 7GP-21 (13.5') | Calcium | 699 | | 699 | | 601 | No action taken. |
| 7GP-21 (13.5') | Manganese | 705 | | 705 | | 1.8 | No action taken. |
| 7GP-21 (13.5') | Magnesium | 1380 | | 1380 | | 601 | No action taken. |
| 7GP-21 (13.5') | Iron | 28900 | | 28900 | | 12 | No action taken. |
| 7GP-21 (13.5') | Thallium | 1.4 | | 1.4 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-21 (13.5') | Arsenic | 2.8 | | 2.8 | | 1.2 | No action taken. |
| 7GP-21 (13.5') | Aluminum | 17700 | | 17700 | | 24 | No action taken. |
| 7GP-21 (13.5') | Cobalt | 23.6 | | 23.6 | | 6 | No action taken. |
| 7GP-21 (13.5') | Antimony | 0.42 | B | U | | 7.2 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-21 (13.5') | Chromium | 23.3 | | 23.3 | | 1.2 | No action taken. |
| 7GP-22 (13') | Arsenic | 21 | | 21 | | 1.2 | No action taken. |
| 7GP-22 (13') | Cadmium | 0.043 | B | U | | 0.6 | Result < LOQ. |
| 7GP-22 (13') | Aluminum | 12700 | | 12700 | | 24.2 | No action taken. |
| 7GP-22 (13') | Copper | 23.7 | | 23.7 | | 3 | No action taken. |
| 7GP-22 (13') | Cobalt | 8.1 | | 8.1 | | 6 | No action taken. |
| 7GP-22 (13') | Calcium | 30400 | | 30400 | | 604 | No action taken. |
| 7GP-22 (13') | Lead | 109 | | 109 | | 0.36 | No action taken. |
| 7GP-22 (13') | Selenium | 2.5 | | 2.5 | J | 0.6 | RPD 48% b/w sample and field duplicate. |

**SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.**

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-22 (13') | Thallium | 1.8 | | 1.8 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-22 (13') | Antimony | 0.99 | B | U | | 7.3 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-22 (13') | Sodium | 395 | B | U | | 604 | Result < LOQ. |
| 7GP-22 (13') | Chromium | 38.4 | | 38.4 | | 1.2 | No action taken. |
| 7GP-22 (13') | Zinc | 39.9 | | 39.9 | | 2.4 | No action taken. |
| 7GP-22 (13') | Vanadium | 42.7 | | 42.7 | | 6 | No action taken. |
| 7GP-22 (13') | Iron | 16300 | | 16300 | | 12.1 | No action taken. |
| 7GP-22 (13') | Beryllium | 0.12 | B | U | | 0.6 | Result < LOQ. Blank contamination in the calibration blanks (0.2 ug/l, 0.2 ug/l, 0.2 ug/l) and prep blank (0.2 ug/l). |
| 7GP-22 (13') | Magnesium | 2870 | | 2870 | | 604 | No action taken. |
| 7GP-22 (13') | Nickel | 19 | | 19 | | 4.8 | No action taken. |
| 7GP-22 (13') | Barium | 211 | | 211 | | 24.2 | No action taken. |
| 7GP-22 (13') | Potassium | 3050 | | 3050 | | 604 | No action taken. |
| 7GP-22 (13') | Manganese | 167 | | 167 | | 1.8 | No action taken. |
| 7GP-22-22 (13') | Calcium | 40300 | | 40300 | | 614 | No action taken. |
| 7GP-22-22 (13') | Nickel | 19.8 | | 19.8 | | 4.9 | No action taken. |
| 7GP-22-22 (13') | Potassium | 3680 | | 3680 | | 614 | No action taken. |
| 7GP-22-22 (13') | Sodium | 487 | B | U | | 614 | Result < LOQ. |
| 7GP-22-22 (13') | Zinc | 39 | | 39 | | 2.5 | No action taken. |
| 7GP-22-22 (13') | Cobalt | 9.1 | | 9.1 | | 6.1 | No action taken. |
| 7GP-22-22 (13') | Cadmium | 0.083 | B | U | | 0.61 | Result < LOQ. |
| 7GP-22-22 (13') | Aluminum | 14700 | | 14700 | | 24.6 | No action taken. |
| 7GP-22-22 (13') | Copper | 29.9 | | 29.9 | | 3.1 | No action taken. |
| 7GP-22-22 (13') | Beryllium | 0.55 | B | U | | 0.61 | Result < LOQ. |
| 7GP-22-22 (13') | Barium | 279 | | 279 | | 24.6 | No action taken. |
| 7GP-22-22 (13') | Chromium | 41.6 | | 41.6 | | 1.2 | No action taken. |
| 7GP-22-22 (13') | Manganese | 146 | | 146 | | 1.8 | No action taken. |
| 7GP-22-22 (13') | Magnesium | 3180 | | 3180 | | 614 | No action taken. |
| 7GP-22-22 (13') | Iron | 15300 | | 15300 | | 12.3 | No action taken. |
| 7GP-22-22 (13') | Antimony | 0.9 | B | U | | 7.4 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-22-22 (13') | Thallium | 2.1 | | 2.1 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-22-22 (13') | Selenium | 4.1 | | 4.1 | J | 0.61 | RPD 48% b/w sample and field duplicate. |
| 7GP-22-22 (13') | Lead | 104 | | 104 | | 0.37 | No action taken. |
| 7GP-22-22 (13') | Arsenic | 29.8 | | 29.8 | | 1.2 | No action taken. |
| 7GP-22-22 (13') | Vanadium | 49.2 | | 49.2 | | 6.1 | No action taken. |
| 7GP-23 (12.5') | Cobalt | 8.3 | | 8.3 | | 6.2 | No action taken. |
| 7GP-23 (12.5') | Barium | 221 | | 221 | | 24.8 | No action taken. |
| 7GP-23 (12.5') | Nickel | 25.6 | | 25.6 | | 5 | No action taken. |
| 7GP-23 (12.5') | Potassium | 3530 | | 3530 | | 621 | No action taken. |
| 7GP-23 (12.5') | Beryllium | 0.082 | B | U | | 0.62 | Result < LOQ. Blank contamination in the calibration blanks (0.2 ug/l, 0.2 ug/l, 0.2 ug/l) and prep blank (0.2 ug/l). |
| 7GP-23 (12.5') | Sodium | 556 | B | U | | 621 | Result < LOQ. |
| 7GP-23 (12.5') | Vanadium | 42.7 | | 42.7 | | 6.2 | No action taken. |
| 7GP-23 (12.5') | Zinc | 43.3 | | 43.3 | | 2.5 | No action taken. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-23 (12.5') | Chromium | 61.4 | | 61.4 | | 1.2 | No action taken. |
| 7GP-23 (12.5') | Calcium | 44100 | | 44100 | | 621 | No action taken. |
| 7GP-23 (12.5') | Magnesium | 2880 | | 2880 | | 621 | No action taken. |
| 7GP-23 (12.5') | Copper | 26 | | 26 | | 3.1 | No action taken. |
| 7GP-23 (12.5') | Aluminum | 13100 | | 13100 | | 24.8 | No action taken. |
| 7GP-23 (12.5') | Cadmium | 0.047 | B | U | | 0.62 | Result < LOQ. |
| 7GP-23 (12.5') | Iron | 19000 | | 19000 | | 12.4 | No action taken. |
| 7GP-23 (12.5') | Antimony | 1.2 | B | U | | 7.5 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-23 (12.5') | Thallium | 2.3 | | 2.3 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-23 (12.5') | Selenium | 2.7 | | 2.7 | | 0.62 | No action taken. |
| 7GP-23 (12.5') | Lead | 236 | | 236 | | 0.37 | No action taken. |
| 7GP-23 (12.5') | Arsenic | 21.4 | | 21.4 | | 1.2 | No action taken. |
| 7GP-23 (12.5') | Manganese | 169 | | 169 | | 1.9 | No action taken. |
| 7GP-24 (14') | Antimony | 0.84 | B | U | | 7.1 | Result < LOQ. MS/MSD recovered low (41/40%). |
| 7GP-24 (14') | Iron | 23500 | | 23500 | | 11.8 | No action taken. |
| 7GP-24 (14') | Magnesium | 3760 | | 3760 | | 589 | No action taken. |
| 7GP-24 (14') | Manganese | 375 | | 375 | | 1.8 | No action taken. |
| 7GP-24 (14') | Zinc | 62.7 | | 62.7 | | 2.4 | No action taken. |
| 7GP-24 (14') | Aluminum | 14000 | | 14000 | | 23.6 | No action taken. |
| 7GP-24 (14') | Cobalt | 11.7 | | 11.7 | | 5.9 | No action taken. |
| 7GP-24 (14') | Thallium | 1.7 | | 1.7 | A | 1.2 | Blank contamination in the calibration blanks (3.7 ug/l, 4.2 ug/l) and prep blank (5.6 ug/l). Result less than 5x the blank contamination. LOQ adjusted to sample concentration. |
| 7GP-24 (14') | Potassium | 1910 | | 1910 | | 589 | No action taken. |
| 7GP-24 (14') | Chromium | 20.1 | | 20.1 | | 1.2 | No action taken. |
| 7GP-24 (14') | Barium | 101 | | 101 | | 23.6 | No action taken. |
| 7GP-24 (14') | Nickel | 12.6 | | 12.6 | | 4.7 | No action taken. |
| 7GP-24 (14') | Vanadium | 39.2 | | 39.2 | | 5.9 | No action taken. |
| 7GP-24 (14') | Calcium | 1150 | | 1150 | | 589 | No action taken. |
| 7GP-24 (14') | Lead | 9.2 | | 9.2 | | 0.35 | No action taken. |
| 7GP-24 (14') | Arsenic | 2.1 | | 2.1 | | 1.2 | No action taken. |
| 7GP-24 (14') | Copper | 11.5 | | 11.5 | | 2.9 | No action taken. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 7471A | | | | | | |
| 5GP-17 (15') | Mercury | 0.076 | B | U | 0.12 | Result < LOQ. |
| 5GP-18 (13') | Mercury | 0.065 | B | U | 0.12 | Result < LOQ. |
| 5GP-19 (15') | Mercury | 0.13 | | 0.13 | 0.12 | No action taken. |
| 5GP-20 (14') | Mercury | 0.12 | | 0.12 | 0.12 | No action taken. |
| 5GP-21 (14') | Mercury | 0.083 | B | U | 0.12 | Result < LOQ. |
| 5GP-22 (14') | Mercury | 0.056 | B | U | 0.12 | Result < LOQ. |
| 5GP-22-22 (14') | Mercury | 0.062 | B | U | 0.12 | Result < LOQ. |
| 5GP-23 (14') | Mercury | 0.096 | B | U | 0.12 | Result < LOQ. |
| 5GP-24 (14') | Mercury | 0.081 | B | U | 0.12 | Result < LOQ. |
| 7GP-17 (11') | Mercury | 0.067 | B | U | 0.12 | Result < LOQ. |
| 7GP-18 (14') | Mercury | 0.051 | B | U | 0.12 | Result < LOQ. |
| 7GP-19 (14') | Mercury | 0.052 | B | U | 0.12 | Result < LOQ. |
| 7GP-20 (14.5') | Mercury | 0.084 | B | U | 0.12 | Result < LOQ. |
| 7GP-21 (13.5') | Mercury | 0.054 | B | U | 0.12 | Result < LOQ. |
| 7GP-22 (13') | Mercury | 0.043 | B | U | 0.12 | Result < LOQ. |
| 7GP-22-22 (13') | Mercury | 0.048 | B | U | 0.12 | Result < LOQ. |
| 7GP-23 (12.5') | Mercury | 0.098 | B | U | 0.12 | Result < LOQ. |
| 7GP-24 (14') | Mercury | 0.024 | B | U | 0.12 | Result < LOQ. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **8081A/8082** | | | | | | | |
| 5GP-17(15) | PCB-1248 | 0.0072 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 5GP-17(15) | p,p-DDD | 0.0074 | | 0.0074 | | 0.002 | No action taken |
| 5GP-17(15) | PCB-1260 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-17(15) | PCB-1254 | 0.039 | | 0.039 | J | 0.02 | Estimated due limited QC information. |
| 5GP-17(15) | PCB-1242 | 0.0048 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-17(15) | PCB-1016 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-17(15) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-17(15) | p,p-DDE | 0.0012 | J | U | | 0.002 | Result < LOQ. |
| 5GP-17(15) | PCB-1232 | 0.0052 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1016 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1232 | 0.0052 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1242 | 0.0048 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1254 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1248 | 0.0072 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 5GP-18(13) | PCB-1260 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1242 | 0.0048 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1232 | 0.0052 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1248 | 0.0072 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1254 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1260 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | PCB-1016 | 0.004 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-19(15) | p,p-DDE | 0.00057 | J | U | | 0.002 | Result < LOQ. |
| 5GP-19(15) | p,p-DDD | 0.0045 | | 0.0045 | | 0.002 | No action taken |
| 5GP-20(14) | PCB-1016 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | Delta BHC | 0.00045 | J | U | | 0.001 | Result < LOQ. |
| 5GP-20(14) | p,p-DDD | 0.0017 | J | U | | 0.0021 | Result < LOQ. |
| 5GP-20(14) | PCB-1221 | 0.012 | U | U | J | 0.037 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | PCB-1232 | 0.0053 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | PCB-1242 | 0.0049 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | PCB-1248 | 0.0074 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | PCB-1254 | 0.013 | J | U | J | 0.021 | Result < LOQ. Estimated due limited QC information. |
| 5GP-20(14) | PCB-1260 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-20(14) | Gamma Chlordane | 0.00077 | J | U | | 0.0011 | Result < LOQ. |
| 5GP-21(14) | p,p-DDE | 0.00085 | J | U | | 0.002 | Result < LOQ. |
| 5GP-21(14) | Heptachlor | 0.00028 | J | U | | 0.00098 | Result < LOQ. |
| 5GP-21(14) | Gamma Chlordane | 0.00038 | J | U | | 0.0011 | Result < LOQ. |
| 5GP-21(14) | PCB-1260 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | PCB-1254 | 0.039 | | 0.039 | J | 0.02 | Estimated due limited QC information. |
| 5GP-21(14) | PCB-1248 | 0.0071 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | PCB-1242 | 0.0047 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | PCB-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | p,p-DDD | 0.01 | | 0.01 | | 0.002 | No action taken |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-21(14) | PCB-1016 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-21(14) | Endosulfan II | 0.00046 | J | U | | 0.002 | Result < LOQ. |
| 5GP-22(14) | PCB-1254 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | PCB-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | Gamma Chlordane | 0.0015 | | 0.0015 | J | 0.0011 | RPD exceeded 35 b/w sample and field duplicate. |
| 5GP-22(14) | PCB-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | PCB-1260 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | PCB-1248 | 0.0071 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | PCB-1242 | 0.0047 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22(14) | PCB-1016 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | Gamma Chlordane | 0.00035 | U | U | J | 0.0011 | RPD exceeded 35 b/w sample and field duplicate. |
| 5GP-22-22(14) | PCB-1260 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1254 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1016 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1248 | 0.0071 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1242 | 0.0047 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-22-22(14) | PCB-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1016 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1242 | 0.0048 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1248 | 0.0071 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1254 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-23(14) | PCB-1260 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | PCB-1221 | 0.012 | U | U | J | 0.037 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | PCB-1016 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | p,p-DDD | 0.0044 | | 0.0044 | | 0.0021 | No action taken |
| 5GP-24(14) | p,p-DDE | 0.0012 | J | U | | 0.0021 | Result < LOQ. |
| 5GP-24(14) | PCB-1242 | 0.0049 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | PCB-1248 | 0.0073 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | PCB-1260 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-24(14) | PCB-1254 | 0.052 | | 0.052 | J | 0.021 | Estimated due limited QC information. |
| 5GP-24(14) | PCB-1232 | 0.0053 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1242 | 0.0049 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1221 | 0.012 | U | U | J | 0.037 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1260 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1254 | 0.34 | | 0.34 | J | 0.021 | Estimated due limited QC information. |
| 7GP-17(11) | PCB-1232 | 0.0053 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1248 | 0.0073 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 7GP-17(11) | PCB-1016 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-18(14) | PCB-1254 | 0.18 | | 0.18 | J | 0.02 | Estimated due limited QC information. |
| 7GP-18(14) | PCB-1248 | 0.007 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-18(14) | PCB-1242 | 0.0047 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-18(14) | PCB-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-18(14) | PCB-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-18(14) | PCB-1260 | 0.0038 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-18(14) | PCB-1016 | 0.0038 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1232 | 0.027 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1260 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1254 | 0.53 | | 0.53 | J | 0.11 | Estimated due limited QC information. |
| 7GP-19(14) | PCB-1242 | 0.025 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1221 | 0.062 | U | U | J | 0.19 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1016 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-19(14) | PCB-1248 | 0.037 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1242 | 0.025 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1260 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1248 | 0.038 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1232 | 0.027 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1221 | 0.063 | U | U | J | 0.19 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1016 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-20(14.5) | PCB-1254 | 0.35 | | 0.35 | J | 0.11 | Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1260 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1254 | 0.5 | | 0.5 | J | 0.11 | Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1248 | 0.038 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1242 | 0.025 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1232 | 0.027 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1221 | 0.063 | U | U | J | 0.19 | Analyte not detected. Estimated due limited QC information. |
| 7GP-21(13.5) | PCB-1016 | 0.021 | U | U | J | 0.11 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1016 | 0.0082 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1221 | 0.025 | U | U | J | 0.075 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1260 | 0.0082 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1254 | 0.38 | | 0.38 | J | 0.042 | Estimated due limited QC information. |
| 7GP-22(13) | PCB-1232 | 0.011 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1248 | 0.015 | U | U | J | 0.045 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22(13) | PCB-1242 | 0.01 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1016 | 0.0082 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1260 | 0.0082 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1254 | 0.33 | | 0.33 | J | 0.042 | Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1248 | 0.015 | U | U | J | 0.045 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1242 | 0.0099 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1232 | 0.011 | U | U | J | 0.042 | Analyte not detected. Estimated due limited QC information. |
| 7GP-22-22(13) | PCB-1221 | 0.025 | U | U | J | 0.074 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1260 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1016 | 0.004 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1254 | 0.4 | | 0.4 | J | 0.021 | Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1248 | 0.0073 | U | U | J | 0.022 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1242 | 0.0048 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-23(12.5) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1248 | 0.0071 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1242 | 0.0047 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-24(14) | PCB-1260 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1016 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1254 | 0.0039 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-24(14) | PCB-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **8260B** | | | | | | | |
| 5GP-17(15) | Trichloroethene | 0.002 | J | U | | 0.005 | Result < LOQ. |
| 5GP-17(15) | Acetone | 0.014 | J | U | | 0.021 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-17(15) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-17(15) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-17(15) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-18(13) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-18(13) | Acetone | 0.012 | J | U | | 0.02 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-18(13) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-18(13) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-18(13) | Trichloroethene | 0.004 | J | U | | 0.005 | Result < LOQ. |
| 5GP-19(15) | Acetone | 0.018 | J | U | | 0.02 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-19(15) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-19(15) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-19(15) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-20(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-20(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-20(14) | Acetone | 0.01 | J | U | | 0.021 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-20(14) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-21(14) | Trichloroethene | 0.046 | | 0.046 | J | 0.005 | Estimated due to RPD>35. Verification sample result. |
| 5GP-21(14) | 2-Hexanone | 0.003 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-21(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-21(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-21(14) | Acetone | 0.018 | J | U | | 0.019 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-21(14) | Trichloroethene | 0.011 | | 0.011 | | 0.005 | No action taken. |
| 5GP-21-21(14) | Trichloroethene | 0.12 | | 0.12 | J | 0.005 | Estimated due to RPD>35. Verification sample result. |
| 5GP-22(14) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-22(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-22(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-22(14) | Acetone | 0.009 | J | U | | 0.019 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-22-22(14) | Acetone | 0.013 | J | U | | 0.019 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-22-22(14) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-22-22(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-22-22(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-23(14) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-23(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-23(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-23(14) | Acetone | 0.008 | J | U | | 0.019 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 5GP-23(14) | Benzene | 0.0006 | J | U | | 0.005 | Result < LOQ. |
| 5GP-24(14) | 2-Hexanone | 0.003 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (45%). |
| 5GP-24(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (50%). |
| 5GP-24(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Analyte not detected. Calibration verification >25%D (39%). |
| 5GP-24(14) | Acetone | 0.009 | J | U | | 0.018 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-17(11) | Acetone | 0.029 | | 0.029 | | 0.025 | Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-17(11) | Benzene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-17(11) | Toluene | 0.003 | J | U | | 0.006 | Result < LOQ. |
| 7GP-17(11) | Carbon Disulfide | 0.003 | J | U | | 0.006 | Result < LOQ. |
| 7GP-17(11) | 4-Methyl-2-pentanone | 0.004 | U | U | J | 0.013 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-17(11) | 2-Hexanone | 0.004 | U | U | J | 0.013 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-17(11) | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.013 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-18(14) | Benzene | 0.0008 | J | U | | 0.005 | Result < LOQ. |
| 7GP-18(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-18(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-18(14) | 2-Hexanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-19(14) | 4-Methyl-2-pentanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-19(14) | Benzene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-19(14) | Toluene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-19(14) | Acetone | 0.01 | J | U | | 0.024 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-19(14) | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-19(14) | 2-Hexanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-19(14) | Carbon Disulfide | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-20(14.5) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-20(14.5) | 2-Hexanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-20(14.5) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-20(14.5) | Carbon Disulfide | 0.003 | J | U | | 0.006 | Result < LOQ. |
| 7GP-20(14.5) | Acetone | 0.016 | J | U | | 0.022 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-20(14.5) | Toluene | 0.006 | | 0.006 | | 0.006 | No action taken. |
| 7GP-20(14.5) | Benzene | 0.003 | J | U | | 0.006 | Result < LOQ. |
| 7GP-20(14.5) | Total Xylenes | 0.001 | J | U | | 0.006 | Result < LOQ. |
| 7GP-21(13.5) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-21(13.5) | Benzene | 0.001 | J | U | | 0.005 | Result < LOQ. |
| 7GP-21(13.5) | Acetone | 0.034 | | 0.034 | | 0.02 | Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-21(13.5) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-21(13.5) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-22(13) | Benzene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-22(13) | Toluene | 0.003 | J | U | | 0.006 | Result < LOQ. |
| 7GP-22(13) | Carbon Disulfide | 0.003 | J | U | | 0.006 | Result < LOQ. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-22(13) | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-22(13) | 4-Methyl-2-pentanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-22(13) | 2-Hexanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-22(13) | Acetone | 0.012 | J | U | | 0.024 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-22-22(13) | 4-Methyl-2-pentanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-22-22(13) | 2-Hexanone | 0.004 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-22-22(13) | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.012 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-22-22(13) | Acetone | 0.017 | J | U | | 0.023 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-22-22(13) | Benzene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-22-22(13) | Toluene | 0.004 | J | U | | 0.006 | Result < LOQ. |
| 7GP-22-22(13) | Total Xylenes | 0.001 | J | U | | 0.006 | Result < LOQ. |
| 7GP-22-22(13) | Carbon Disulfide | 0.004 | J | U | | 0.006 | Result < LOQ. |
| 7GP-23(12.5) | Acetone | 0.021 | J | U | | 0.022 | Result < LOQ. Potential contamination resulting from sodium bisulfate preservation. |
| 7GP-23(12.5) | 2-Hexanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-23(12.5) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-23(12.5) | Carbon Disulfide | 0.004 | J | U | | 0.006 | Result < LOQ. |
| 7GP-23(12.5) | Toluene | 0.004 | J | U | | 0.006 | Result < LOQ. |
| 7GP-23(12.5) | Benzene | 0.002 | J | U | | 0.006 | Result < LOQ. |
| 7GP-23(12.5) | Total Xylenes | 0.001 | J | U | | 0.006 | Result < LOQ. |
| 7GP-23(12.5) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.011 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-24(14) | 2-Hexanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (45%). |
| 7GP-24(14) | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (39%). |
| 7GP-24(14) | 4-Methyl-2-pentanone | 0.003 | U | U | J | 0.01 | Analyte not detected. Calibration verification >25%D (50%). |
| 7GP-24(14) | Acetone | 0.025 | | 0.025 | | 0.02 | Potential contamination resulting from sodium bisulfate preservation. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result | Q | Validated Result | Q | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **8270C** | | | | | | | |
| 5GP-17(15) | N-Nitrosodiphenylamine | 0.14 | J | U | | 0.4 | Result < LOQ. |
| 5GP-19(15) | N-Nitrosodiphenylamine | 0.075 | J | U | | 0.4 | Result < LOQ. |
| 5GP-20(14) | bis(2-Ethylhexyl)phthalate | 0.32 | J | U | | 0.41 | Result < LOQ. Contamination suspected, but not confirmed with this event. |
| 5GP-24(14) | N-Nitrosodiphenylamine | 0.13 | J | U | | 0.41 | Result < LOQ. |
| 7GP-17(11) | Di-n-butylphthalate | 0.12 | J | U | | 0.41 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| 7GP-17(11) | bis(2-Ethylhexyl)phthalate | 0.56 | | 0.56 | | 0.41 | No action taken. Contamination suspected, but not confirmed for this event. |
| 7GP-17(11) | N-Nitrosodiphenylamine | 3.5 | | 3.5 | | 0.41 | No action taken. |
| 7GP-18(14) | bis(2-Ethylhexyl)phthalate | 0.34 | J | U | | 0.39 | Result < LOQ. Contamination suspected, but not confirmed for this event. |
| 7GP-18(14) | N-Nitrosodiphenylamine | 2.1 | | 2.1 | | 0.39 | No action taken. |
| 7GP-19(14) | Di-n-butylphthalate | 0.11 | J | U | | 0.42 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| 7GP-19(14) | bis(2-Ethylhexyl)phthalate | 0.47 | | 0.48 | | 0.42 | No action taken. Contamination suspected, but not confirmed for this event. |
| 7GP-19(14) | N-Nitrosodiphenylamine | 0.9 | | 0.9 | | 0.42 | No action taken. |
| 7GP-20(14.5) | 4-Nitrophenol | 0.28 | J | U | | 1 | Result < LOQ. |
| 7GP-20(14.5) | N-Nitrosodiphenylamine | 3 | | 3 | | 0.42 | No action taken. |
| 7GP-20(14.5) | bis(2-Ethylhexyl)phthalate | 0.29 | J | U | | 0.42 | Result < LOQ. Contamination suspected, but not confirmed for this event. |
| 7GP-21(13.5) | N-Nitrosodiphenylamine | 2.8 | | 2.8 | | 0.42 | No action taken. |
| 7GP-21(13.5) | Phenol | 0.066 | J | U | | 0.42 | Result < LOQ. |
| 7GP-21(13.5) | Di-n-butylphthalate | 0.12 | J | U | | 0.42 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| 7GP-21(13.5) | bis(2-Ethylhexyl)phthalate | 1 | | 1 | | 0.42 | No action taken. Contamination suspected, but not confirmed for this event. |
| 7GP-22(13) | N-Nitrosodiphenylamine | 3.3 | | 3.3 | | 0.41 | No action taken. |
| 7GP-22(13) | Di-n-butylphthalate | 0.13 | J | U | | 0.41 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| 7GP-22(13) | bis(2-Ethylhexyl)phthalate | 0.88 | | 0.88 | J | 0.41 | RPD 46% b/w sample and field duplicate. Contamination suspected, but not confirmed for this event. |
| 7GP-22-22(13) | N-Nitrosodiphenylamine | 4.3 | | 4.3 | | 0.41 | No action taken. |
| 7GP-22-22(13) | Di-n-butylphthalate | 0.2 | J | U | | 0.41 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| 7GP-22-22(13) | bis(2-Ethylhexyl)phthalate | 0.52 | | 0.52 | J | 0.41 | RPD 46% b/w sample and field duplicate. Contamination suspected, but not confirmed for this event. |
| 7GP-23(12.5) | N-Nitrosodiphenylamine | 3.4 | | 3.4 | | 0.4 | No action taken. |
| 7GP-23(12.5) | bis(2-Ethylhexyl)phthalate | 0.6 | | 0.6 | | 0.4 | No action taken. Contamination suspected, but not confirmed for this event. |
| 7GP-23(12.5) | Di-n-butylphthalate | 0.1 | J | U | | 0.4 | Result < LOQ. Blank contamination in a method blank (0.094 mg/kg). |
| **9012A** | | | | | | | |
| 5GP-21 (14') | Cyanide | 0.62 | | 0.62 | | 0.59 | No action taken. |
| 7GP-17 (11') | Cyanide | 0.3 | B | U | | 0.62 | Result < LOQ. |
| 7GP-19 (14') | Cyanide | 0.29 | B | U | | 0.61 | Result < LOQ. |
| 7GP-22 (13') | Cyanide | 0.53 | B | U | | 0.6 | Result < LOQ. |
| 7GP-22-22 (13') | Cyanide | 0.38 | B | U | | 0.61 | Result < LOQ. |
| 7GP-23 (12.5') | Cyanide | 0.74 | | 0.74 | | 0.62 | No action taken. |

## Data Validation Report. All soil results in mg/kg/dry weight basis.

**Alliant-Hazardous Waste Management Unit 5 and 7** **Event Date: February 17-18, 2004**

| Sample ID | Analyte | Laboratory Result Q | Validated Result Q | LOQ | Validation Notes |
|---|---|---|---|---|---|

**Definitions:**

**U-** Denotes the analyte was analyzed for, but was not detected at or above the laboratory limit of quantitation (LOQ).
**J-** Denotes an estimated value. See sample specific note presented on data validation report table for further explanation.
**UJ-** The LOQ should be considered estimated. See sample specific note presented on data validation report table for further explanation.
**R-** Denotes sample result was rejected. See sample specific note presented on data validation report table for further explanation.
**Q-** Denotes Data Qualifier.
**B-** Denotes result detected <LOQ and result estimated. This is a laboratory data qualifier.

NOTE (1): The table summaries all detected results and results which required qualification based on data validation.
All results reported on a dryweight basis.
See laboratory report for definition of laboratory result qualifiers, if needed.
NOTE (2): Soil sampling event performed on February 17-18 and March 24, 2004. March 24, 2004 includes trichloroethene verification event for 5GP-21 (14')

## SW-846 METHODS 8081A VOLATILE DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the March 24, 2004 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Ammunition and Powder Company, Montgomery County, Virginia. Soil samples were collected from locations 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), and 7 GP-24 (14'). All soil samples were analyzed for twenty-eight (28) pesticides and polychlorinated biphenyls (PCBs) per USEPA Methods 8081A.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the analyses. On behalf of RAAP, Lancaster submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Method 8081A and validation of the results was based on a limited review of the following items: quality control (QC) deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, extraction procedures, instrument calibrations, blank analysis, surrogate spike recoveries, retention time, matrix spike (MS/MSD) analyses, laboratory control samples (LCS), and internal standards requirements, where applicable. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

The laboratory received the samples on ice and in good condition with custody seals intact. All technical holding time criteria were met. All sample extraction and analysis holding time criteria were met. All preservation criteria were met.

### *Method 8081A*

The original certificate of analysis for Method 8081A was complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All QC history documentation and QC check sample criteria were met. All initial calibration, calibration verification, breakdown check, blank, surrogate, retention time, MS/MSD and LCS criteria were met.

Sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance and quality control criteria that were identified during the review process are summarized below.

Sample analysis by Method 8081A included PCBs. A five-point initial calibration was not performed for all detected aroclors; also, the LCS and MS/MSD samples were not spiked with PCBs. All PCB results were qualified as estimated due to limited availability of quality control data.

All sample results were reported on a dry-weight basis. All samples were florisil cleaned. To obtain a final result within the instrument calibration range, sample dilutions were required, where appropriate.

All sample and field sample duplicate (5GP-22 (14') and 7GP-22(13')) results met relative percent difference criteria for all target analytes except gamma chlordane in 5GP-22(14') which was qualified as estimated.

Target parameters reported above the LOQ remain as reported by the laboratory, except where noted above. All sample results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U" (i.e., not detected above the LOQ). Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

**SW-846 METHOD 8081A (ORGANOCHLORINE PESTICIDES/PCBs)**
**GC DATA VALIDATION FOR SOILS**

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), and 7 GP-24 (14').

**QC Samples:** 5GP-20 (14'), 7GP-20 (14.5') Matrix spike/Matrix spike duplicate, Extraction Blank, LCS, Field Dups: 5GP-22-22 (14'), 7GP-22-22 (13')

**Laboratory:** Lancaster Laboratories, Lancaster, PA, SDG: RAV03/RAV04

***Comments: Method 8081A involves the extraction of samples usingSW-846 Method 3550B-ultrasonic extraction. Target parameters are separated and quantified by GC using electron capture detection (ECD). All samples were florisil cleaned.***

## A. QC DELIVERABLES PACKAGE:

| | | |
|---|---|---|
| 1. | Was case narrative present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 2. | Was the Chain of Custody present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 3. | Were sample results included for all sample locations? | ☑ YES ☐ NO |
| 4. | Did the laboratory parameter list correspond to project specific parameter list? | ☑ YES ☐ NO |
| 5. | Were the LOQs reported on sample summary sheets supported by the MDL study? | ☑ YES ☐ NO |
| 6. | Did the electronic deliverable list the correct LOQs? | ☑ YES ☐ NO |

**Comments:** All QC deliverables requirements were met.

## B. INSTRUMENT QC HISTORY DOCUMENTATION CRITERIA:

| | | |
|---|---|---|
| 1. | Was the specific extraction method specified? | ☑ YES ☐ NO |
| 2. | Was documentation of DDT/Endrin breakdown study provided? | ☑ YES ☐ NO |
| 3. | Were instrument specific LODs for the target parameters provided? | ☑ YES ☐ NO |
| 4. | Were instrument specific LOQs for the target parameters provided? | ☑ YES ☐ NO |
| 5. | Were instrument specific working ranges for target parameters specified? | ☑ YES ☐ NO |
| 6. | Were sample analysis log sheets provided? | ☑ YES ☐ NO |
| 7. | Were chromatograms and integration reports provided? | ☑ YES ☐ NO |

**Comments:** All instrument QC history criteria were met.

## C. CHECK SAMPLE CRITERIA:
*(Initial Demonstration of Capability)*

1. Was the check sample data obtained from the instrument that was used for analysis? ☑YES ☐ NO
2. Did the check sample contain all required target parameters? ☑ YES ☐ NO
3. Were the check samples analyzed in quadruplicate? ☑ YES ☐ NO
4. Were the average recoveries of the target parameters in the check samples reported? ☑ YES ☐ NO
5. Were the standard deviations for the recoveries of target parameters quadruplicated and reported? ☑ YES ☐ NO

**Comments:** All check sample criteria were met.

## D. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** All preservation criteria were met. All sample extraction and analysis holding time criteria were met.

## E. INITIAL GC CALIBRATION CRITERIA:

1. Were all target parameters included in the ICAL? ☑ YES ☐ NO
2. Was a minimum five-point calibration analyzed prior to analysis? ☑YES ☐ NO
3. Calibration type used by laboratory: *External.*
4. Was the % Relative Standard Deviation (%RSD) for all target parameter CFs <20% over the established working range? ☑ YES ☐ NO
5. State the Quantitation Method used by the laboratory: *Calibration Factor.*
6. List target parameters with a % RSD >20% over the established working range: *None.*
   Note: Up to 2 target parameters may exceed the 20% criteria, but must be <30%.
7. Was the lowest concentration calibration standard at or below the LOQ, MCL, regulatory compliance or action limit? ☑ YES ☐ NO
8. Were calibration standards dropped to meet calibration criteria? ☑NA☐YES☐ NO

**Comments:** For most aroclors, there was only a one point calibration. All other initial calibration criteria were met.

**F. DDT / ENDRIN BREAKDOWN CHECK CRITERIA:**

1. Was a 4,4'-DDT and Endrin standard analyzed every 12-hours? ☑ YES ☐ NO
2. For every 12-hours, was 4,4'-DDE, 4,4'-DDD, Endrin Ketone or Endrin Aldehyde present which indicated breakdown? ☑ YES ☐ NO
3. Was the calculated % breakdown less than 15%? ☐ NA ☑ YES ☐ NO
   If no, corrective action must be taken before proceeding with analysis.

**Comments:** All DDT/Endrin breakdown criteria were met.

**G. CALIBRATION VERIFICATION CRITERIA:**

1. Was a calibration verification (CV) standard performed once every 12-hours? ☑ YES ☐ NO
2. Did target parameter responses have a % Difference (%D) within ± 15%? ☑ YES ☐ NO
   If no, was a new calibration curve prepared? *No.*
3. Was a mid-concentration standard analyzed after each group of 20 samples (10 recommended) and at the end of the analytical sequence? ☑YES ☐ NO
4. Were all target parameters and surrogates included in the CV? ☑ YES ☐ NO

**Comments:** All calibration verification criteria were met.

**H. BLANK CRITERIA:**

1. Was a blank analyzed prior to the batch samples? ☑ YES ☐ NO
2. Was a blank analyzed after 20 batch samples? ☐ NA ☑ YES ☐ NO
3. Was an extraction blank analyzed with the batch samples? ☑ YES ☐ NO
4 Was a trip blank analyzed per analytical batch? ☑ YES ☐ NO
5. List target parameters identified in the blanks: *None.*

**Comments:** All blank criteria were met.

**I. SURROGATE CRITERIA:**

1. Were all samples, standards, blanks, and checks spiked with at least 2 surrogate parameters for dual column analysis? ☑ YES ☐ NO
2. List surrogate used and laboratory's surrogate % recovery range criteria:
   tetrachloro-xylene (TCMX): 40%-130%
   decachlorobiphenyl (DCBP): 40%-130%
3. List samples whose surrogate % recoveries were not within the laboratory range: *None*

**Comments:** All surrogate recovery criteria were met.

**J. RETENTION TIME CRITERIA:**

1. Were the daily Retention Time (RT) windows reported? ☑ YES ☐ NO

**Comments:** All retention time criteria were met.

**K. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:**

1. Was a MS/MSD analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD contain required target parameters? See comment section
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List laboratory's matrix spike % recovery range criteria: *40%-130%, select analytes*
5. List matrix spike target parameters not within the recovery range criteria: None
6. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
7. Did the LCS for the failed matrix spike parameter(s) fall within the recovery range criteria and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO
8. Were any parameters flagged as estimated concentrations? ☐ YES ☑ NO
9. List parameters flagged as estimated concentrations:

**Comments:** QC samples were not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other matrix spike criteria were met.

**L. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:**

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters?*select analytes* ☑ YES ☐ NO
3. List the LCS parameters and the laboratory's recovery range criteria. *See certificate of analysis.*
4. List the LCS parameters not within the recovery range criteria. *None.*

**Comments:** The LCS was not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other LCS data were met.

**M. TARGET PARAMETER IDENTIFICATION:**

1. Were the reported parameters within the retention time windows? ☑ YES ☐ NO

| | | |
|---|---|---|
| 2. | Were retention time shifts observed when compared with the last calibration verification? | ☐ YES ☑ NO |
| 3. | Were all reported parameters confirmed? | ☑ YES ☐ NO |
| 4. | Did the initial analysis of any sample have a concentration of a target parameter which exceeded the instrument calibration range? | ☑ NA ☐ YES ☐ NO |
| 5. | Were sample dilutions required? | ☑ YES ☐ NO |
| 6. | Were all parameter concentrations that were recorded on the sample quantitation reports accurately transferred to the sample summary sheets? | ☑ YES ☐ NO |

**Comments:** All target parameter identification criteria were met. All QC criteria for both columns were met. If RPDs > 40% between the primary and confirmation columns occurred, the lower result was reported due to possible interference.

## N. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was taken.

## LIMITATIONS AND REFERENCES:

Draper Aden Associates conducted a limited data validation for the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data evaluation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: Kathy Olsen

Date: 05/07/04

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

**Kathy Olsen, Environmental Scientist**
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## METHODS 8260B AND 8270C ORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the February 17-18 and March 24, 2004 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Ammunition and Powder Company, Montgomery County, Virginia. Soil samples were collected from locations 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), and 7 GP-24 (14'). For the February 17-18, 2004 event, all soil samples were analyzed for 34 (thirty-four) volatile analytes by Method 8260B. For the March 24, 2004 event all samples were analyzed for 64 (sixty-four) semivolatile analytes according to Method 8270C. As well, sample 5GP-21 (14') and the field duplicate 5GP21-21 (14') were analyzed for trichloroethene only.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the GC/MS analyses. Lancaster Laboratories submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Methods 8260B and 8270C and validation of the results was based on a limited review of the following items: QC deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, instrument performance (tune) check, instrument calibrations, blank analysis, surrogate spike recoveries, matrix spike and matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) data, and internal standard requirements. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were performed on select samples. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

### *Method 8260B*

The original certificate of analysis for Method 8260B appeared complete in its presentation and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data and the method detection limit study data. The first calibration level was less than the reported LOQ in all cases.

All sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met, except where noted below. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors

were noted. Deviations from specific quality assurance/quality control (QA/QC) criteria that were identified during the data review process are discussed below.

All calibration verification criteria were met except for 2-butanone, 2-hexanone, and 4-methyl-2-pentanone exceeded validation guidelines for percent drift/difference. Results for these analytes, where appropriate, were qualified as estimated.

All target analyte identification and quantitation requirements were met. Target analytes reported at or above the LOQ remain as reported by the laboratory except for acetone. All detected acetone results were qualified as estimated due to potential contamination from the sodium bisulfate sample preservation.

Trichloroethene was reported above the LOQ (February 17-18, 2004 sampling event) in sample 5GP-21. A verification sampling event at 5GP-21 was performed on the March 24, 2004. The sample and its field duplicate, 5GP21-21, were analyzed for trichloroethene only. For the verification sampling event, all sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, blank, and internal standard requirements were met As well, reported results were similar to historical data. However, relative percent difference criteria were not met and the trichloroethene results were qualified as estimated.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Method 8270C***

The original certificate of analysis for Method 8270C was complete and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data as well as the method detection limit study data.

QC history documentation were provided. Sample preservation, instrument performance check (tuning), initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met, except where noted below. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific QA/QC criteria were identified during the data review process and noted below.

Di-n-butylphalate was detected in the laboratory blank for Unit 7. Detected results less than the LOQ for di-n-butylphalate were attributed to laboratory contamination and validated accordingly.

All target analyte identification and quantitation requirements were met.

All sample and field sample duplicate (5GP-22 (14') and 7GP-22(13')) results met relative percent difference criteria for all target analytes except bis(2-ethylhexyl)phthalate (7GP-22(13')) which was qualified as estimated.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and greater than their corresponding LOQs remain as reported by Lancaster Laboratories. All sample results less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

## SW-846 METHOD 8260B (GC/MS) VOLATILE ORGANIC DATA VALIDATION

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), 7 GP-24 (14').

**QC Samples:** 5GP-20 (14')MS, MSD, LCS, Method Blank, Field Dup: 5GP-22-22
7GP-20 (14.5')MS, MSD, LCS, Method Blank, Field Dup: 7GP-22-22
Field Dup: 5-GP-21-21 (March 24, 2004 Event)

**Laboratory:** Lancaster Laboratories, Lancaster PA;
SDG RAV01/RAV02-February 17-18, 2004 Sampling Event
SDG RAV03-March 24, 2004 Sampling Event-Trichloroethane only

***Comment:*** *Method 8260B uses a purge and trap system to remove volatile organic target analytes from a 5 gram soil sample (SW-846 5035). Analytes are separated and quantified using a capillary column GC/MS.*

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present/signed by a lab representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory analyte list correspond to the project specific analyte list? ☑ YES ☐ NO
5. Were all analyte LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑ NA ☐ YES ☐ NO

**Comments:** All QC deliverables package requirements were met. All LOQs are supported by an acceptable MDL study. Note target analyte list from SOW OLM03.2.

### B. QC HISTORY DOCUMENTATION CRITERIA:

1. Was an instrument specific MDL study provided, which included LOD and LOQ values for all target analytes? ☑ YES ☐ NO
2. Was the instrument specific working range for each target analyte specified? ☑ YES ☐ NO
3. Was initial demonstration of capability (IDOC) data provided for each target analyte? ☑ YES ☐ NO

**Comments:** QC history documentation criteria were met. MDL study is laboratory specific. Laboratory submitted IDOC data as an addendum.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to analysis holding time met? ☑ YES ☐ NO
2. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO
3. Was the pH of each sample adjusted to < 2 with HCl? ☑ NA ☐ YES ☐ NO

**Comments:** All sample holding time criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE (TUNING) CHECK CRITERIA:

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period during which standards or samples were analyzed? ☑ YES ☐ NO
2. Was there documentation of the injection of 5-50 ng bromofluorobenzene (BFB)? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Were calibration, blank, and sample analyses performed within 12 hours of tuning? ☑ YES ☐ NO

**Comments:** All instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:

***SW-846 Criteria:***

1. Was the internal standard (IS) which was selected for target analyte RF calculation the IS which had the closest retention time? ☑ YES ☐ NO
2. Were all target analytes included in the ICAL? ☑ YES ☐ NO
3. Did all ICALs consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
4. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ NA ☐ YES ☐ NO
4. Was the calibration curve developed using the same purge volume used for sample analysis? ☑ YES ☐ NO
6. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)
7. Were 8260B CCC criteria met? (%RSD ≤ 30%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane

- toluene
- ethylbenzene
- vinyl chloride

8. Was each target analyte %RSD ≤ 15%? ☐ YES ☑ NO
9. Was the correlation coefficient >0.99 for target analytes with ≥15 % RSD? ☐ NA ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target analytes and surrogates have % RSDs ≤ 15% and >0.99 correlation coefficient? ☐NA ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or analyzed independently during another 12-hour analysis period. ☑ YES ☐ NO
2. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)
3. Were 8260B CCC criteria met?
(%Drift or % Difference (%D) within ± 20%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane
   - toluene
   - ethylbenzene
   - vinyl chloride

***Method Validation Performance Criteria:***

1. Did all target analytes and system monitoring analytes (surrogates) have the % D within ± 25.0%? ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)

If "NO", list analytes that exceed these criteria:

***DAA Contractual Requirements:***

1. Did all target analytes and system monitoring analytes (surrogates) have % Ds within ± 25.0%? ☑ YES ☐ NO
2. Three analytes may fail to meet maximum % D as long as the % D is within ± 40.0% ☑ YES ☐ NO
   Did the calibration verification meet this criteria?

**Comments:** All calibration verification criteria were met.

## G. BLANK CRITERIA:

1. Was a method blank analyzed after the calibration standards, prior to sample analysis, and once for every 12-hour period beginning with the injection of BFB? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☑ YES ☐ NO
3. Were the trip blanks and method blanks interference free? ☑ YES ☐ NO
4. List target analytes detected in the blanks:
5. Was the level of blank contamination less than 5% of the MCL associated with the analyte? ☑ NA YES ☐ NO
6. Did any samples contain high concentrations of VOCs in excess of the linear range of the calibration curve? ☐ YES ☑ NO
7. Were one or more blanks analyzed following the high concentration sample to prevent cross contamination? ☑ NA ☐ YES ☐ NO

**Comments:** All blank criteria were met.

## H. SURROGATE CRITERIA:

***SW-846 Criteria:***

1. Were the following surrogates used? ☑ YES ☐ NO
   - dibromofluoromethane ( 80%-120%)
   - 4-bromofluorobenzene (74%-121%)
   - toluene-$d_8$ (81%-117%)
   - 1,2-dichloroethane-$d_4$ (80%-120%)
2. Were recoveries within the specified ranges? ☑ YES ☐ NO
   If "NO", corrective action is required. Flagging of the data as estimated is not acceptable until corrective action has been attempted.
3. Were samples with surrogates outside the QC window reanalyzed as required? ☑ NA ☐ YES ☐ NO

**Comments:** All surrogate criteria were met.

## I. MATRIX SPIKE, MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| *Analyte* | *% R Water* | *RPD Water* |
|---|---|---|
| 1,1-dichloroethene | 61-145 | 14 |
| trichloroethene | 71-120 | 14 |
| benzene | 76-127 | 11 |
| toluene | 76-125 | 13 |
| chlorobenzene | 75-130 | 13 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD contain additional target analytes? ☑ YES ☐ NO
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List MS analytes not within laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed MS criteria? ☑ NA ☐ YES ☐ NO
6. Did the LCS for the failed MS analyte(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference ☑ NA ☐ YES ☐ NO
7. Were any analytes flagged as estimated concentrations? ☐ NA ☐ YES ☑ NO
8. List analytes flagged as estimated concentrations: *none*

**Comments:** All MS/MSD criteria were met.

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target analytes? ☑ YES ☐ NO
3. List the LCS analytes and the laboratory's acceptable recovery range. *See volatile certificate of analysis.*
4. List the LCS analytes that exceeded the acceptable recovery range. *None.*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - fluorobenzene
   - chlorobenzene-$d_5$
   - 1,4-dichlorobenzene-$d_4$
2. Were internal standard areas within - 50% to + 100% of the last calibration verification? ☑ YES ☐ NO

3. Were internal standard retention times within ± 30 seconds of the last calibration verification? ☑ YES ☐ NO
4. Were samples failing items 2. and/or 3. above reanalyzed as required by the method? ☑ NA ☐ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET ANALYTE IDENTIFICATION:

1. Were the RRTs of the reported analytes within ± 0.06 RRT units of the standard RRT? ☐ NA ☑ YES ☐ NO
2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:
   - Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑ YES ☐ NO
   - Were all characteristic ions present in the standard spectra present in the sample spectra for analytes detected above the LOQ? ☑ NA ☐ YES ☐ NO
   - Were the relative intensities of the ions between the standard and sample spectra within ± 30 %? ☐ NA ☑ YES ☐ NO
3. Were all reported analytes confirmed? ☐ NA ☑ YES ☐ NO

**Comments:** All target analyte identification criteria were met.

## M. TARGET ANALYTE QUANTITATION:

- If the %RSD of a analyte was 15% or less, then the average relative response factor should have been used for quantitation.
- If the %RSD of a analyte was greater than 15%, then the quantitation should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the detected analytes whose %RSD was >15%: *none*
   a. Was the quantitation based on a linear regression fit? ☑ NA ☐ YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐ YES ☐ NO
2. Did the initial analysis of any sample have a target analyte concentration that exceeded the initial calibration range? ☐ NA ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO
3. Were the analyte concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** All target analyte quantitation criteria were met.

**N. LIBRARY SEARCHES:**

**Comments:** Library searches were not requested with this data set.

**O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:**

**Comments:** No corrective action was required.

## SW-846 METHOD 8270C (GC/MS) SEMIVOLATILE ORGANIC DATA VALIDATION

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), 7 GP-24 (14').

**QC Samples:** 5GP-20 (14')MS, MSD, LCS, Method Blank, Field Dup: 5GP-22-22
7GP-20(14.5')MS/MSD, LCS, Method Blank, Field Dup 7GP-22-22

**Laboratory:** Lancaster Laboratories, Lancaster PA; SDG RAV03/RAV04

***Comment:*** *Semivolatile (a.k.a, base/neutral and acid extractables) analysis involves sample preparation using SW-846 Method 3550B-ultrasonic extraction. The semivolatile extracts are concentrated through evaporation. Target analytes are separated and quantified using capillary column GC/MS.*

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present and signed by a laboratory representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory analyte list correspond to the project specific analyte list? ☑ YES ☐ NO
5. Were all analyte LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑NA☐ YES ☐NO

**Comments:** All QC deliverables package criteria were met.

### B. QC HISTORY DOCUMENTATION CRITERIA:

1. Were the instrument specific LODs for target analytes provided? ☑ YES ☐ NO
2. Were the instrument specific LOQs for target analytes provided? ☑ YES ☐ NO
3. Was the instrument specific calibration range for each target analyte specified? ☑ YES ☐ NO
4. Was initial demonstration of capability data provided for all target analytes? ☑ YES ☐ NO

**Comments:** All QC history documentation criteria were met.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** The sample collection to extraction and extraction to analysis holding times were met. All preservation criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE CHECK CRITERIA:
***(Tuning, Injection Port And Column Performance)***

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period of standard and/or sample analysis? ☑ YES ☐ NO
2. Was there documentation of the injection of 50 ng of DFTPP? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Was the injection port inertness verified by analysis of 4,4'-DDT? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was the injection port inertness check acceptable? ☐ NA ☑ YES ☐ NO
5. Was column performance checked through the analysis of peak tailing of pentachlorophenol and benzidine? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was column performance check acceptable? ☐ NA ☑ YES ☐ NO

**Comments:** All GC/MS instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:
***SW-846 Criteria:***

1. Were the initial calibrations (ICAL) and any directly associated blanks and samples analyzed within 12-hours of the associated instrument performance (tune) check? ☑ YES ☐ NO
2. Were quantitation ions, used and listed on data, randomly checked against primary quantitation ions as required by Method 8270C and the RFP? ☑ YES ☐ NO
3. Were all target analytes included in the ICAL? ☑ YES ☐ NO
4. Did the ICAL consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
5. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ YES ☐ NO
6. Were calibration levels removed from the curve that would

negatively impact the data integrity? ☐ YES ☑ NO

7. Were 8270C SPCC criteria met?
(Relative Response Factor-average(RRF) ≥ 0.050) ☐ NA ☑ YES ☐ NO
   - N-nitroso-di-n-propylamine
   - Hexachlorocyclopentadiene
   - 2,4-Dinitrophenol
   - 4-nitrophenol

8. Were 8270C B/N Fraction analyte criteria met?
( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - acenaphthene
   - 1,4-dichlorobenzene
   - hexachlorobutadiene
   - N-nitrosodiphenylamine
   - Di-n-octyl phthalate
   - fluoranthene
   - benzo(a)pyrene

9. Were 8270C Acid Fraction analyte criteria met?
( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - 4-chloro-3-methylphenol
   - 2,4-dichlorophenol
   - 2-nitrophenol
   - phenol
   - pentachlorophenol
   - 2,4,6-trichlorophenol

10. Was each target analyte %RSD ≤ 15%?
(with the exception of SPCC/CCC compounds) ☐ NA ☑ YES ☐ NO

11. Was the correlation coefficient or coefficient of determination >0.99 for target analytes with ≥ 15 % RSD
(with the exception of SPCC/CCC compounds)? ☑ NA ☐ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target analytes and surrogates (with the exception of SPCC/ CCC compounds)that have % RSDs ≥ 15% have >0.99 correlation coefficient or coefficient of determination? ☐ NA ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument

performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or run independently on another 12-hour analysis period. ☑ YES ☐ NO

2. Were 8270C SPCC criteria met? (Relative Response Factor (RRF) ≥ 0.050) ☑ YES ☐ NO
3. Were all 13 8270C CCC criteria met? (%D within ± 20%) ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did all target analytes and system monitoring analytes (surrogates) have % Ds within ± 25.0%? ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)
If "NO", list analytes that exceed this criterion:

***DAA Contractual Requirements:***

1. Did all target analytes and system monitoring analytes (surrogates) have % Ds within ± 25.0%? ☑ YES ☐ NO
2. Five analytes, in each standard mix, may fail to meet maximum % D as long the % D is within ± 40.0%
Did calibration verification meet this criteria? ☑ YES ☐ NO

**Comments**: All calibration verification criteria were met.

## G. BLANK CRITERIA:

1. Was a method/extraction blank analyzed on each GC/MS system used for sample analysis? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☐ YES ☑ NO
2. Were the blank samples interference free? ☐ YES ☑ NO
3. Was the level of blank contamination less than 5% of the MCL? ☑ YES ☐ NO
5. List target analytes detected in the blanks:
*di-n-butylphthalate*

**Comments:** All blank criteria were met with the exception of di-n-butylphthalate in the Unit 7 samples. Bis-2-ethylhexylphthalate was detected in several samples. Laboratory contamination was suspected, but not confirm for this common laboratory contaminant.

## H. SURROGATE CRITERIA:

1. Were the following surrogates used? ☑ YES ☐ NO
   - phenol - $d_6$ (24%-113%)
   - 2-fluorophenol (25%-121%)
   - 2,4,6-tribromophenol (19%-122%)
   - nitrobenzene – $d_8$ (23%-120%)
   - 2-fluorobiphenyl (25%-121%)
   - p-terphenyl - $d_{14}$ (18%-137%)
2. Were recoveries within the specified ranges? ☑ YES ☐ NO
3. Were any two base/neutral or acid surrogates out of specification or did any one base/neutral or acid extractable surrogate have a recovery of less than 10%? ☐YES ☑ NO
   If yes, was a reextraction and reanalysis performed to confirm that the non-compliance was due to sample matrix effects rather than laboratory deficiencies? ☑ NA ☐ YES ☐ NO

**Comments:** All surrogate requirements were met.

## I. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| Analyte | % R Water | % RPD Water |
|---|---|---|
| Phenol | 12-110 | 42 |
| 2-Chlorophenol | 27-123 | 40 |
| N-Nitroso-di-n-propylamine | 41-116 | 38 |
| 4-Chloro-3-methylphenol | 23-97 | 42 |
| Acenaphthene | 46-118 | 31 |
| 4-Nitrophenol | 10-80 | 50 |
| 2,4-Dinitrotoluene | 24-96 | 38 |
| Pyrene | 26-127 | 31 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD spike contain additional target analytes? ☑ YES ☐ NO
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List MS/MSD target analytes not within acceptable laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
6. Did the LCS for the failed matrix spike analyte(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO

7. Were any analytes flagged as estimated concentrations? ☐ YES ☑ NO
8. List analytes flagged as estimated concentrations: *none*

**Comments:** All MS/MSD requirements were met.

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target analytes? ☑ YES ☐ NO
3. List the LCS target analytes and laboratory recovery range.
   *See semivolatile certificate of analysis.*
4. List the LCS analytes which exceeded the acceptable recovery range: *none*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - 1,4-Dichlorobenzene-$d_4$
   - Naphthalene-$d_8$
   - Acenapththene-$d_{10}$
   - Phenanthrene-$d_{10}$
   - Chrysene-$d_{12}$
   - Perylene-$d_{12}$
2. Were internal standard areas within ± 50% of last calibration verification? ☑ YES ☐ NO
3. Were internal standard retention times within ± 30 seconds of last calibration verification? ☑ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET ANALYTE IDENTIFICATION:

1. Were the RRTs of the reported analytes within ± 0.06 RRT units of the standard RRT? ☐ NA ☑YES ☐ NO
2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:
   - Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑YES ☐ NO
   - Were all characteristic ions present in the standard spectra present in the sample spectra for analytes detected above the LOQ? ☐ NA ☑YES ☐ NO
   - Were the relative intensities of the ions between the

standard and sample spectra within ± 30 %? ☐ NA ☑YES ☐ NO

3. Were all reported analytes confirmed? ☐NA ☑YES ☐ NO

**Comments:** All target analyte identification requirements were met.

## M. TARGET ANALYTE QUANTITATION:

- If the %RSD of a analyte was 15% or less, then the average relative response factor should have been used for quantitation.
- If the %RSD of a analyte was greater than 15%, then the quantitation should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the analytes detected above the LOQ whose %RSD was >15%: *none*
   a. Was the subsequent quantitation based on a linear regression fit? ☑ NA ☐YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐YES ☐ NO
2. Did the initial analysis of any sample have a concentration of a target analyte that exceeded the initial calibration range? ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO
3. Were the analyte concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** Target analyte quantitation criteria were met.

## N. LIBRARY SEARCHES:

**Comments:** Library searches were not requested with this data set.

## O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was required.

**LIMITATIONS AND REFERENCES:**

Draper Aden Associates conducted data validation of the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: Date:

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

5.6.04

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## SW-846 INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the February 17-18, 2004 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Ammunition and Powder Company, Montgomery County, Virginia. Soil samples were collected from locations 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), and 7GP-24 (14').

All samples were analyzed for twenty-two metal target analytes per SW-846 Method 6010B, mercury per SW-846 7471A and cyanide per SW-846 9012A. Inductively coupled plasma (ICP), cold vapor atomic absorption (CVAA) and colorimetric were the techniques on which the individual analytical methods for each of the inorganics were based.

Soil samples were collected and submitted to the laboratory for analysis of the following metals: ICP Method 6010B (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc), Method 7471A (mercury) and Method 9012A (total cyanide).

Severn Trent Laboratories (STL) of North Canton, Ohio performed the inorganic analyses. STL submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results.

The evaluation of STL's compliance with inorganic analytical methods and validation of results presented here are based upon a limited review of QA/QC information including chain of custody, case narrative, holding time, preservation procedures, standards, spike analysis on sample matrix (S), blank samples analyses (method, calibration and other blanks), and duplicate analyses (SD) results. Review was limited to summary sheets provided by the laboratory, unless a notable discrepancy in the data package required review of the raw data. A summary of data review results and any observed deviations is provided below.

STL received the samples on ice and in good condition. All technical holding time criteria were met.

***Method 6010B***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported

limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, calibration standards, pre-digestion spikes and duplicates were analyzed as required. All laboratory control samples, pre-digestion spikes and duplicates were recovered within control limits, except where noted below. Duplicate sample results exhibited acceptable precision, where applicable. All LOQ standards exhibited acceptable recovery. Deviations from specific quality control criteria that were identified and noted during the data review process are summarized below.

The associated blanks were not interference free; however, data qualification was necessary for only beryllium, and thallium. Detected results less than the LOQ and less than five times the blank concentration for beryllium and thallium were attributed to laboratory contamination and validated accordingly, where applicable. All sample results greater than the LOQ, but less than five times the blank concentration were considered influenced by contamination and the results qualified and reported as "UA."

Antimony recovered low in the matrix spike and matrix spike duplicate sample and all results for these target parameters were qualified as estimated and should be considered biased low.

The sample and field sample duplicate (5GP-22 (14') and 7GP-22(13')) met relative percent difference criteria for all target analytes except selenium (7GP-22(13')) which was qualified as estimated.

The laboratory presented all results in mg/kg on a dry weight basis. Except where noted above, all sample results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Methods 7471A (CVAA/ 9012A(Colorimetric)***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported LOQ for mercury and cyanide, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, LCS samples, pre-digestion spikes and spike duplicates were analyzed as required. All blank criteria were met. Laboratory spike and spike duplicate sample results exhibited acceptable precision, where applicable. All laboratory control samples, pre-digestion spikes and duplicates

were recovered within control limits. No deviations from specific quality control criteria were identified during the data review process.

The laboratory presented all results in mg/kg on a dry weight basis. All results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U."

## INORGANIC DATA EVALUATION
## FOR ICP SW-846 METHOD 6010B-SOIL

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), 7GP-24 (14')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.

- Matrix spike/duplicate-5GP-20(14')
- Matrix spike/duplicate-7GP-20(14')
- Field Duplicates-5GP-22 (14'); 5GP-22-22 (14')
- Field Duplicates-7GP-22 (13'); 7GP-22-22 (13')

**Laboratory:** STL, North Canton, OH; SDG A4B190299

Does Laboratory analyte list correspond to analyte list requested by DAA? _X_ yes ___ no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 6 month holding time

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and at least 1 standard

### D. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:

☑ 10 sample frequency
☑ Use of calibration blank and check standard
☑ %R within 90-110% range

### E. BLANK SAMPLES ANALYSES CRITERIA:

☑ Method/Other Lab Blanks (check only if analyzed)

☑ Interference free
☑ CCB 10 sample frequency

**F. INTERFERENCE CHECK SAMPLES (ICS) CRITERIA:**

☑ ICS (80-120%)

**G. DUPLICATE ANALYSES CRITERIA:**

☑ One spike/sample duplicate per batch of samples
☑ %RPD ± 20% for spike/ sample values greater than 5 X LOQ
☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES /LCS CRITERIA:**

☑ %R within 75-125% range/ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

☑ Samples fall within ICP linear concentration ranges

**J. Revisions:** No revisions were required. Prep method 3050B

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

Kathy Olsen 05-07-04

**Kathy Olsen**
**Environmental Scientist**
**2206 South Main Street**
**Blacksburg, Virginia 24060**
**540-552-0444**
**kolsen@daa.com**

## INORGANIC DATA EVALUATION FOR MERCURY- BY COLD VAPOR AA METHOD 7471A-SOIL

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), 7GP-24 (14')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.

- Matrix spike/duplicate-5GP-20(14')
- Matrix spike/duplicate-7GP-20(14')
- Field Duplicates-5GP-22 (14'); 5GP-22-22 (14')
- Field Duplicates-7GP-22 (13'); 7GP-22-22 (13')

**Laboratory:** STL, North Canton, OH; SDG A4B190299

Does Laboratory analyte list correspond to analyte list requested by DAA? √yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LOD/LOQ for mercury?

### B. METHOD INFORMATION DOCUMENTATION

☑ All target parameters analyzed by requested methods?

### C. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 28 Day holding time
☑ Cool 4°C

### D. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and 5 standards
☑ Instrument calibrated for every analytical sequence for every method

### E. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:

☑ 10 sample frequency for CCV
☑ %R within 90-110% range

**F. BLANK SAMPLES ANALYSES CRITERIA:**

- ☑ Method/other laboratory blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

**G. DUPLICATE ANALYSES CRITERIA:**

- ☑ One spike/sample duplicate per batch of samples
- ☑ %RPD ± 20% for spike/sample values greater than 5 X LOQ
- ☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES/LCS CRITERIA:**

- ☑ Pre-digestion matrix spikes for all analytes
- ☑ %R within 75-125% range/80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within calibration concentration range

**J. Revisions:** No revisions were required.

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

Kathy Olsen 05-0204

**Kathy Olsen**
**Environmental Scientist**
**2206 South Main Street**
**Blacksburg, Virginia 24060**
**540-552-0444**
**kolsen@daa.com**

## INORGANIC DATA EVALUATION FOR CYANIDE BY METHOD 9012A-SOIL

**Sample ID:** 5GP-17 (15'), 5GP-18 (13'), 5GP-19 (15'), 5GP-20 (14'), 5GP-21 (14'), 5GP-22 (14'), 5GP-23 (14'), 5GP-24 (14'), 7GP-17 (11'), 7GP-18 (14'), 7GP-19 (14'), 7GP-20 (14.5'), 7GP-21 (13.5'), 7GP-22 (13'), 7GP-23 (12.5'), 7GP-24 (14')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.

- Matrix spike/duplicate-5GP-20(14')
- Matrix spike/duplicate-7GP-20(14')
- Field Duplicates-5GP-22 (14'); 5GP-22-22 (14')
- Field Duplicates-7GP-22 (13'); 7GP-22-22 (13')

**Laboratory:** STL, North Canton, OH; SDG A4B190299

Does Laboratory analyte list correspond to analyte list requested by DAA? X yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LOD/ LOQ

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS CRITERIA:

☑ 14 days holding time
☑ Cool 4° C

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 6 calibration levels plus blank

### D. INITIAL AND CONTINUING CALIBRATION VALIDATION CRITERIA:

☑ 20 sample frequency
☑ Use of check standard with every batch of samples
☑ %R within 85-115% range (± 15%)

### E. BLANK SAMPLES ANALYSES CRITERIA:

☑ Interference free
☑ Verification Blank analysis every 20 samples

**F. DUPLICATE SAMPLE ANALYSES CRITERIA:**

- ☑ One duplicate for every 20 samples
- ☑ %RPD ± 20% for sample values greater than 5 times LOQ
- ☑ (Sample ± LOQ) when values are less than 5 times LOQ

**G. SPIKED SAMPLE ANALYSES CRITERIA:**

- ☑ One spike for every 20 samples
- ☑ Spikes fall within 85-115% range

**H. LCS CRITERIA:**

- ☑ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within calibration concentration range

**J. Revisions:** No revisions were required.

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA, and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Kathy Olsen

Date: 05/07/04

**Kathy Olsen**
**Environmental Scientist**
**2206 South Main Street**
**Blacksburg, Virginia 24060**
**540-552-0444**
**kolsen@daa.com**

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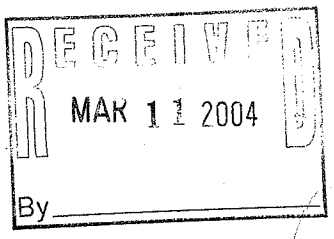
Where quality is a science.

Unit 5
029




Dear Client:

Enclosed please find the requested data package.

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt, at (717) 656-2300.

Sincerely yours,

LANCASTER LABORATORIES
Data Packages Department

# Data Package

***Type I Data Package***

***Analytical Data Report Package***
***for***
***Draper Aden Associates, Inc.***

*RAAP-Radford, VA  Geoprobe boring #B02271-01*
*Soil and Methanol Samples*
*Collected on 02/17/04*
*Sample No. 4218994-4219007, 4219009*

*SDG# RAV01*

*PA Cert. # 36-037*
*NY Cert. # 10670*
*NJ Cert. # PA011*
*NC Cert. # 521*

***Prepared by*** Carolyn A Schwarz

***Quality Assurance Review*** Lisa C. Jones

***Date*** March 9, 2004

***Delivery Date*** 3-11-04

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Where quality is a science.

Lancaster Laboratories, Inc. * 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 * 717-656-2300 Fax: 717-656-2681

# CHAIN OF CUSTODY RECORD 11200/885259/4219010-25

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | **Location:** | HWMU7 |
| **Address:** | 0 | **Address:** | 2206 South Main Street | **Event:** | Geoprobe borings |
| | 0 | | Blacksburg, Virginia 24060 | **DAA JN:** | B02271-01 |
| **Phone:** | 0 | **Phone:** | (540) 552-0444 | **Lab JN:** | |
| **Fax:** | 0 | **Fax:** | (540) 552-0291 | | |
| **Fax:** | 0 | | | | |

**Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO
**Sample Collection for Project Complete?** ☑YES ☐NO
**Carrier:** _____
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
**Copy to Consultant:** ☑YES ☐NO
**Bill:** ☐Client ☑Consultant
**Preserved and shipped on ice:** ☑YES ☐NO

| Box 4 - Sample Type | G | G | G | C | G | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | |
| Required pH of Sample | <2 | <2 | | | <2 | | | | |
| Box 2 - Preservative | methanol | NaHSO4 | H | H | A | | | | |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |

**GENERAL NOTES:** Report results at or greater than QL. TCLP composites to include reactivity, corrosivity, ignitability.

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics | TCL Organics | Moisture | TCLP (Full Waste Characterization) | 8260 |
|---|---|---|---|---|---|---|---|---|---|
| 7GP-17 (11') | 2/18 | 9:40 | S | 4 | X | X | X | | |
| 7GP-18 (14') | 2/18 | 10:05 | S | 4 | X | X | X | | |
| 7GP-19 (14') | 2/18 | 10:20 | S | 4 | X | X | X | | |
| 7GP-20 (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-20 MS (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-20 MSD (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-21 (13.5') | 2/18 | 11:00 | S | 4 | X | X | X | | |
| 13' 7GP-22 (~~14½~~) | 2/18 | 11:20 | S | 4 | X | X | X | | |
| 13' 7GP-22-22 (~~14½~~) | 2/18 | 11:20 | S | 4 | X | X | X | | |
| 12.5' 7GP-23 (~~14½~~) | 2/18 | 11:40 | S | 4 | X | X | X | | |
| 7GP-24 (~~14'~~) | 2/18 | 12:00 | S | 4 | X | X | X | | |
| Unit 7 Composite | 2/18 | 12:30 | S | 1 | | | | X | |
| Trip blanks | | | | | X | X | | | X |
| | | | | | | | | | |

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition X Yes ____ No Custody Seal Intact X Yes ____ No Temperature upon arrival 3-3.5 Received on Ice X Yes ____ No
Describe problems, if any:

| | | | | | |
|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 2/18/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: |
| Sampler Signature: Darren Kidwell | Time: 0900 | Company Name: DAA | Time: 17:00 | Company Name: | Time: |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Denise Mc | Date: 2/19/04 |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: Lancaster Labs | Time: 8:00 |

Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG

DD 2/19/04

# CHAIN OF CUSTODY RECORD 11200/885259/4219010-25

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU7<br>**Event:** Geoprobe borings<br>**DAA JN:** B02271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO<br>**Sample Collection for Project Complete?** ☑YES ☐NO<br>**Carrier:**<br>**Tracking Number:** | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; AG Amber Glass; V VOA; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☐Client ☑Consultant
Preserved and shipped on Ice: ☑YES ☐NO

| Box 4 - Sample Type | G | G | G | C | G | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | | |
| Required pH of Sample | <2 | <2 | | | <2 | | | | | |
| Box 2 - Preservative | methanol | NaHSO4 | H | H | A | | | | | |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | | |

**GENERAL NOTES:** Report results at or greater than QL. TCLP composites to include reactivity, corrosivity, ignitability.

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics | TCL Organics | Moisture (P) | TCLP (Full Waste Characterization) | 8260 |
|---|---|---|---|---|---|---|---|---|---|
| 7GP-17 (11') | 2/18 | 9:40 | S | 4 | X | X | X | | |
| 7GP-18 (14') | 2/18 | 10:05 | S | 4 | X | X | X | | |
| 7GP-19 (14') | 2/18 | 10:20 | S | 4 | X | X | X | | |
| 7GP-20 (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-20 MS (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-20 MSD (14.5') | 2/18 | 10:45 | S | 4 | X | X | X | | |
| 7GP-21 (13.5') | 2/18 | 11:00 | S | 4 | X | X | X | | |
| 13' 7GP-22 (~~14'~~) | 2/18 | 11:20 | S | 4 | X | X | X | | |
| 13' 7GP-22-22 (~~14'~~) | 2/18 | 11:20 | S | 4 | X | X | X | | |
| 12.5 7GP-23 (~~14'~~) | 2/18 | 11:40 | S | 4 | X | X | X | | |
| 7GP-24 (~~14'~~) | 2/18 | 12:00 | S | 4 | X | X | X | | |
| Unit 7 Composite | 2/18 | 12:30 | S | 1 | | | | X | |
| Trip blanks | | | | | X | X | | | X |
| | | | | | | | | | |

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition X Yes ____ No. Custody Seal Intact X Yes ____ No. Temperature upon arrival 3.3.5 Received on Ice X Yes ____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARLEEN KIDWELL | Date: 2/18/04 | #1 Relinquished by (Signature): Darlen Kidwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darlen Kidwell | Time: 0900 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Demi Y Mc | Date: 2/19/04 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: Lancaster Labs | Time: 7:00 | |

2/19/04

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## Sample Reference List for SDG Number RAV01 with a Data Package Type of I

**11200 - Draper Aden Associates, Inc.**
RAAP-Radford, VA Geoprobe boring #B02271-01

| Lab Sample Number | Lab Sample Code | Client Sample Description |
|---|---|---|
| 4218994 | 5GP17 | 5GP-17(15') Grab Soil Sample |
| 4218995 | 5GP18 | 5GP-18(13') Grab Soil Sample |
| 4218996 | 5GP19 | 5GP-19(15') Grab Soil Sample |
| 4218997 | 5GP20 | 5GP-20(14') Unspiked Grab Soil Sample |
| 4218998 | 5GP20 | 5GP-20(14')MS Matrix Spike Grab Soil Sample |
| 4218999 | 5GP20 | 5GP-20(14')MSD Matrix Spike Dup/Dup Grab Soil |
| 4219000 | 5GP21 | 5GP-21(14') Grab Soil Sample |
| 4219001 | 5GP22 | 5GP-22(14') Grab Soil Sample |
| 4219002 | 52222 | 5GP-22-22(14') Grab Soil Sample |
| 4219003 | 5GP23 | 5GP-23(14') Grab Soil Sample |
| 4219004 | 5GP24 | 5GP-24(14') Grab Soil Sample |
| 4219005 | UNIT5 | Unit 5 Composite Soil Sample |
| 4219006 | UN5NV | Unit 5 Composite Soil SampleTCLP NON-VOLATILE EXTRACTION |
| 4219007 | UN5ZH | Unit 5 Composite Soil SampleTCLP ZERO HEADSPACE EXTRACTION |
| 4219009 | 5GPTM | Trip Blank NaHSO4/Methanol Sample |

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Sample Administration
# Receipt Documentation Log

**Client/Project:** Draper Aden Associates (AA)

**Date of Receipt:** 2/19/04

**Time of Receipt:** 0915

**Source Code:** So 60 ~~DS~~ 2/19/04

**Shipping Container Sealed:** (Y) / N

**COC Seal Present:** Y / (N)

**COC Seal Intact:** Y / (N)

**Package:** (Chilled) / Not Chilled

**Unpacker Emp. No.:** 1025

| Temperature of Shipping Containers | |
|---|---|
| (#1) | (#2) |
| Thermometer ID: 2041 | Thermometer ID: 2041 |
| Temp: 3.5C | Temp: 3.5C |
| (Temp. Bottle) / Surface Temp. | (Temp. Bottle) / Surface Temp. |
| (Wet Ice) / Dry Ice / Ice Packs | (Wet Ice) / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |
| (#3) | #4 |
| Thermometer ID: 2041 | Thermometer ID: |
| Temp.: 3.3C | Temp.: |
| (Temp. Bottle) / Surface Temp. | Temp. Bottle / Surface Temp. |
| (Wet Ice) / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? Y / N Loose / Bagged |

**Paperwork Discrepancy/Unpacking Problems:** received 7 mod trip blanks & 6 regular trip blanks

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| Dawn Walker | 2/19/04 | 1055 | Unpacking |
| DA Nesland | 2/19/04 | 1100 | Place in Storage or (Entry) |
| | | | Remove from Storage |
| | | | Place in Storage or Entry |
| | | | Entry |

# METHODOLOGY SUMMARY/REFERENCE

## *1163 GC/MS Volatiles Water Preparation*

An undiluted aliquot of the water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Waste, SW-846, Method 5030B, Revision 2, December 1996.

**********

## *6292 TCL by 8260 (soil)*

The sample or extract of the sample is analyzed by purge and trap GC/MS.

Reference: Test Methods for Evaluating Solid Waste, SW-846, Method 8260B, Revision 2, December 1996

**********

## *3636 TCLP Volatiles (leachate)*

The zero headspace extracted sample is purged and the volatile compounds are collected on a sorbent trap which is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8260B, Revision 2, December 1996

**********

## *0371 ICP Metals (water/soil)*

The solution resulting from the metals digestion is analyzed by ICP.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 6010B, December 1996

## 0259 Mercury (water)

The solution resulting from the mercury digestion is analyzed by Cold Vapor AA.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 7470A, September 1994

**********

## 5713 Mercury Digestion (water, SW-846)

The sample is heated at 95 C with nitric acid, sulfuric acid, potassium persulfate, and potassium permanganate. Excess potassium permanganate is reduced with sodium chloride/hydroxylamine hydrochloride. Mercuric ions are reduced to mercury metal using stannous chloride.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 7470A, September 1994

**********

## 5705 Metals Digestion (water, total, SW-846)

The sample is digested with nitric and hydrochloric acids.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 3010A, July 1992

**********

## 0816 Water Sample Herbicide Extraction

The water sample is hydrolyzed, acidified and solvent extracted. The acids are converted to methyl esters using derivatization. Florisil cleanup is used to minimize interference.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 8151A, December 1996

**********

## 0817 Water Sample Pesticide Extraction

Pesticides are extracted from the water with methylene chloride. The extract is then dried and concentrated. If necessary, florisil cleanup is used to minimize interferences.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 3510C, December 1996

## 0949/4731 TCLP Semivolatiles

The sample is leached by the TCLP method. The leachate is then solvent extracted and analyzed by GC/MS.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 8270C, December 1996

**********

## 1123 Cyanide (reactivity) SW-846 Interim Method (water/solid)

The sample is acidified with sulfuric acid in a closed system. The hydrogen cyanide gas is trapped in a sodium hydroxide solution and quantitatively analyzed using an automated colorimetric procedure. Prep # is 1121.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 9012A modified, December 1996

**********

## 0946 TCLP Zero Headspace Extraction

For liquid wastes (containing <0.5% solids), the TCLP volatile extract is defined as the filtrate resulting from filtration of the waste in a zero headspace extractor through a 0.6 to 0.8 um glass fiber filter.

For wastes containing >0.5% solids (and free standing liquid), the waste is filtered through a glass fiber filter in a zero headspace extractor into a Tedlar bag. The solid portion is then extracted for 18 hours with extraction fluid 1 (pH of 4.93 +0.05) at a volume 20 times the weight of the solid. Following the extraction, the leachate is filtered through a glass fiber filter into the Tedlar bag containing the initial filtrate and these filtrates are combined for the final leachate.

For waste not containing any free standing liquid, the sample is extracted with a volume of extraction fluid 1 at a volume 20 times the sample weight for 18 hours in a zero headspace extractor. The extract is then filtered into zero headspace vials and the leachate is defined as the filtrate.

Reference: Test Methods for Evaluating Solid Waste1
SW-846, Method 1311, July 1992

## 0947 TCLP Non-volatile Extraction

For the liquid wastes (containing <0.5% solids), the TCLP non-volatile extract is defined as the filtrate resulting from filtration of the waste through a 0.6 to 0.8 um glass fiber filter.

For wastes containing >0.5% solids (and free standing liquid), the waste is filtered through a glass fiber filter and the filtrate is stored for later use. The solid portion is then evaluated for buffering capacity and extracted for 18 hours with the appropriate extraction fluid (pH of 4.93 +0.05 or pH of 2.88 +0.05) at a volume 20 times the weight of the solid. Following the extraction, the leachate is filtered through a glass fiber filter and the final and initial filtrates are combined.

For waste not containing any free standing liquid, the sample is extracted with a volume of the appropriate extraction fluid at a volume 20 times the sample weight for 18 hours. The extract is then filtered and the leachate is defined as the filtrate.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 1311, July 1992

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## 0496 Corrosivity (water/solids)

Determination of corrosivity is based on the pH value.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7, September 1994

**********

## 0542 Ignitability (solid)

Ignitability is determined empirically by exposing the sample to air, water, and friction. The vapors of the sample are then exposed to a flame using a closed cup apparatus.

Reference: 40 CFR, Part 261.21

**********

## 0111 Moisture (solid)

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and
Wastes USEPA 600/4-79-020, Method 160.3 (modified)

## 0118 Moisture (solid)

This value reflects the background moisture value. It is used to calculate dry weight reports for matrix spike and matrix spike duplicate samples.

Reference: See background sample moisture method reference

**********

## 0121 Moisture Duplicate (solid)

This analysis is required to check the precision of the moisture analysis. The value is not used in report calculations.

Reference: See background sample moisture method reference

**********

## 1121 Reactivity Prep (water/solid)

The sample is acidified to pH 2, and gases are collected in a scrubber containing sodium hydroxide. This is followed by analysis for sulfide and/or cyanide content.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7.3, December 1996

**********

## 1122 Sulfide (Reactivity)

Excess iodine is added to a portion of the scrubber solution which contains sodium hydroxide. The iodine oxidizes the sulfide to sulfur under acidic conditions. The excess iodine is back titrated with sodium thiosulfate.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7 and Method 9034

**********

## 0394 pH (solids)

The activity of hydrogen ions in the sample is measured on a 1:1 slurry of sample and deionized water using a glass electrode and a reference electrode.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 9045C, (modified) September 1994

## *0950 TCLP Pesticides (leachate)*

The leachate sample is solvent extracted and quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 8081A, December 1996

**********

## *0952 TCLP Herbicides (leachate)*

The leachate sample is hydrolyzed, acidified, solvent extracted and converted to the methyl esters. The resulting extract is quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 8151A, December 1996

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 885258. Samples arrived at the laboratory on Thursday, February 19, 2004.

| Client Description | Lancaster Labs Number |
|---|---|
| 5GP-17(15') Grab Soil Sample | 4218994 |
| 5GP-18(13') Grab Soil Sample | 4218995 |
| 5GP-19(15') Grab Soil Sample | 4218996 |
| 5GP-20(14') Unspiked Grab Soil Sample | 4218997 |
| 5GP-20(14')MS Matrix Spike Grab Soil Sample | 4218998 |
| 5GP-20(14')MSD Matrix Spike Dup/Dup Grab Soil | 4218999 |
| 5GP-21(14') Grab Soil Sample | 4219000 |
| 5GP-22(14') Grab Soil Sample | 4219001 |
| 5GP-22-22(14') Grab Soil Sample | 4219002 |
| 5GP-23(14') Grab Soil Sample | 4219003 |
| 5GP-24(14') Grab Soil Sample | 4219004 |
| Unit 5 Composite Soil Sample | 4219005 |
| Unit 5 Composite Soil Sample | 4219006 |
| Unit 5 Composite Soil Sample | 4219007 |
| Trip Blank NaHSO4/Methanol Sample | 4219009 |

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Draper Aden Associates, Inc. Attn: Ms. Janet Frazier
1 COPY TO Data Package Group

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300.

Respectfully Submitted,

Valerie L. Tomayko
Sr. Chemist

Trout Spring 1865

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218994**

**5GP-17(15') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 11:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.7 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.85 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.85 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.85 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.85 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.85 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05462 | Trichloroethene | 79-01-6 | 2. | J | 1. | 5. | ug/kg | 0.85 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 06293 | Acetone | 67-64-1 | 14. | J | 7. | 21. | ug/kg | 0.85 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.85 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.85 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.85 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218994**

**5GP-17(15') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 11:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.85 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.85 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.85 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.85 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 13:25 | Lauren C Marzario | 0.85 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218995**

**5GP-18(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 11:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.4 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.82 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05462 | Trichloroethene | 79-01-6 | 4. | J | 1. | 5. | ug/kg | 0.82 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06293 | Acetone | 67-64-1 | 12. | J | 7. | 20. | ug/kg | 0.82 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.82 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218995**

**5GP-18(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 11:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.82 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.82 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 13:52 | Lauren C Marzario | 0.82 |

8815

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218996**

**5GP-19(15') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.9 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.83 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.83 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.83 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.83 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.83 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 06293 | Acetone | 67-64-1 | 18. | J | 7. | 20. | ug/kg | 0.83 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.83 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.83 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.83 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218996**

**5GP-19(15') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.83 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.83 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.83 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 21:31 | Lauren C Marzario | 0.83 |

8817

*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218997**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.9 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.87 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.87 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.87 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.87 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.87 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 06293 | Acetone | 67-64-1 | 10. | J | 7. | 21. | ug/kg | 0.87 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.87 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.87 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.87 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218997**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.87 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.87 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.87 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.87 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 14:19 | Lauren C Marzario | 0.87 |

0819

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218998**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.9 | 0.50 | 0.50 | % | 1 |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | 22. | 2. | 5. | ug/kg | 0.84 |
| 05445 | Vinyl Chloride | 75-01-4 | 22. | 1. | 5. | ug/kg | 0.84 |
| 05446 | Bromomethane | 74-83-9 | 20. | 2. | 5. | ug/kg | 0.84 |
| 05447 | Chloroethane | 75-00-3 | 20. | 2. | 5. | ug/kg | 0.84 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 20. | 1. | 5. | ug/kg | 0.84 |
| 05450 | Methylene Chloride | 75-09-2 | 19. | 2. | 5. | ug/kg | 0.84 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 20. | 1. | 5. | ug/kg | 0.84 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 20. | 1. | 5. | ug/kg | 0.84 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 19. | 1. | 5. | ug/kg | 0.84 |
| 05455 | Chloroform | 67-66-3 | 21. | 1. | 5. | ug/kg | 0.84 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | 5. | ug/kg | 0.84 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 21. | 1. | 5. | ug/kg | 0.84 |
| 05460 | Benzene | 71-43-2 | 20. | 0.5 | 5. | ug/kg | 0.84 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 20. | 1. | 5. | ug/kg | 0.84 |
| 05462 | Trichloroethene | 79-01-6 | 19. | 1. | 5. | ug/kg | 0.84 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 19. | 1. | 5. | ug/kg | 0.84 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | 5. | ug/kg | 0.84 |
| 05466 | Toluene | 108-88-3 | 18. | 1. | 5. | ug/kg | 0.84 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 18. | 1. | 5. | ug/kg | 0.84 |
| 05468 | Tetrachloroethene | 127-18-4 | 19. | 1. | 5. | ug/kg | 0.84 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | 5. | ug/kg | 0.84 |
| 05472 | Chlorobenzene | 108-90-7 | 17. | 1. | 5. | ug/kg | 0.84 |
| 05474 | Ethylbenzene | 100-41-4 | 16. | 1. | 5. | ug/kg | 0.84 |
| 05477 | Styrene | 100-42-5 | 15. | 1. | 5. | ug/kg | 0.84 |
| 05478 | Bromoform | 75-25-2 | 17. | 1. | 5. | ug/kg | 0.84 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 17. | 1. | 5. | ug/kg | 0.84 |
| 06293 | Acetone | 67-64-1 | 130. | 7. | 20. | ug/kg | 0.84 |
| 06294 | Carbon Disulfide | 75-15-0 | 20. | 1. | 5. | ug/kg | 0.84 |
| 06296 | 2-Butanone | 78-93-3 | 130. | 4. | 10. | ug/kg | 0.84 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 18. | 1. | 5. | ug/kg | 0.84 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 18. | 1. | 5. | ug/kg | 0.84 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 85. | 3. | 10. | ug/kg | 0.84 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218998**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06300 | 2-Hexanone | 591-78-6 | 78. | 3. | 10. | ug/kg | 0.84 |
| 06301 | Xylene (Total) | 1330-20-7 | 47. | 1. | 5. | ug/kg | 0.84 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 14:46 | Lauren C Marzario | 0.84 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218999**

**5GP-20(14')MSD Matrix Spike Dup/Dup Grab Soil**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.9 | 0.50 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 16.0 | 0.50 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | 23. | 2. | 5. | ug/kg | 0.82 |
| 05445 | Vinyl Chloride | 75-01-4 | 23. | 1. | 5. | ug/kg | 0.82 |
| 05446 | Bromomethane | 74-83-9 | 21. | 2. | 5. | ug/kg | 0.82 |
| 05447 | Chloroethane | 75-00-3 | 21. | 2. | 5. | ug/kg | 0.82 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05450 | Methylene Chloride | 75-09-2 | 20. | 2. | 5. | ug/kg | 0.82 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 20. | 1. | 5. | ug/kg | 0.82 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 19. | 1. | 5. | ug/kg | 0.82 |
| 05455 | Chloroform | 67-66-3 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05460 | Benzene | 71-43-2 | 20. | 0.5 | 5. | ug/kg | 0.82 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 21. | 1. | 5. | ug/kg | 0.82 |
| 05462 | Trichloroethene | 79-01-6 | 19. | 1. | 5. | ug/kg | 0.82 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 19. | 1. | 5. | ug/kg | 0.82 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | 5. | ug/kg | 0.82 |
| 05466 | Toluene | 108-88-3 | 17. | 1. | 5. | ug/kg | 0.82 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 19. | 1. | 5. | ug/kg | 0.82 |
| 05468 | Tetrachloroethene | 127-18-4 | 18. | 1. | 5. | ug/kg | 0.82 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | 5. | ug/kg | 0.82 |
| 05472 | Chlorobenzene | 108-90-7 | 15. | 1. | 5. | ug/kg | 0.82 |
| 05474 | Ethylbenzene | 100-41-4 | 15. | 1. | 5. | ug/kg | 0.82 |
| 05477 | Styrene | 100-42-5 | 13. | 1. | 5. | ug/kg | 0.82 |
| 05478 | Bromoform | 75-25-2 | 17. | 1. | 5. | ug/kg | 0.82 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 20. | 1. | 5. | ug/kg | 0.82 |
| 06293 | Acetone | 67-64-1 | 150. | 7. | 20. | ug/kg | 0.82 |
| 06294 | Carbon Disulfide | 75-15-0 | 20. | 1. | 5. | ug/kg | 0.82 |
| 06296 | 2-Butanone | 78-93-3 | 150. | 4. | 10. | ug/kg | 0.82 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4218999**

**5GP-20(14')MSD Matrix Spike Dup/Dup Grab Soil**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 12:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV01-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 18. | 1. | 5. | ug/kg | 0.82 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 17. | 1. | 5. | ug/kg | 0.82 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 96. | 3. | 10. | ug/kg | 0.82 |
| 06300 | 2-Hexanone | 591-78-6 | 90. | 3. | 10. | ug/kg | 0.82 |
| 06301 | Xylene (Total) | 1330-20-7 | 43. | 1. | 5. | ug/kg | 0.82 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 15:13 | Lauren C Marzario | 0.82 |

9823

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219000**

**5GP-21(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 13:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.1 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.78 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.78 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.78 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.78 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.78 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05462 | Trichloroethene | 79-01-6 | 11. | | 0.9 | 5. | ug/kg | 0.78 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05466 | Toluene | 108-88-3 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05477 | Styrene | 100-42-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 06293 | Acetone | 67-64-1 | 18. | J | 7. | 19. | ug/kg | 0.78 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 9. | ug/kg | 0.78 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 0.9 | 5. | ug/kg | 0.78 |

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219000**

**5GP-21(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 13:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.9 | 5. | ug/kg | 0.78 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 9. | ug/kg | 0.78 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 9. | ug/kg | 0.78 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 0.9 | 5. | ug/kg | 0.78 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 15:40 | Lauren C Marzario | 0.78 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219001**

**5GP-22(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV01-06

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.3 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.81 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.81 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.81 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.81 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.81 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 06293 | Acetone | 67-64-1 | 9. | J | 7. | 19. | ug/kg | 0.81 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.81 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.81 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.81 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219001**

**5GP-22(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV01-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.81 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.81 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.81 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.81 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 16:07 | Lauren C Marzario | 0.81 |

8027

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219002**

**5GP-22-22(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

52222 SDG#: RAV01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.2 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.82 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06293 | Acetone | 67-64-1 | 13. | J | 7. | 19. | ug/kg | 0.82 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.82 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219002**

**5GP-22-22(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:15 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

52222 SDG#: RAV01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.82 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.82 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 16:34 | Lauren C Marzario | 0.82 |

8829

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219003**

**5GP-23(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.7 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05460 | Benzene | 71-43-2 | 0.6 | J | 0.5 | 5. | ug/kg | 0.82 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06293 | Acetone | 67-64-1 | 8. | J | 7. | 19. | ug/kg | 0.82 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.82 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219003**

**5GP-23(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 14:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.82 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.82 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 17:01 | Lauren C Marzario | 0.82 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219004**

**5GP-24(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:05 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV01-09

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 18.4 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.75 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.75 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.75 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.75 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05460 | Benzene | 71-43-2 | N.D. | | 0.5 | 5. | ug/kg | 0.75 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05466 | Toluene | 108-88-3 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05477 | Styrene | 100-42-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 06293 | Acetone | 67-64-1 | 9. | J | 6. | 18. | ug/kg | 0.75 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 9. | ug/kg | 0.75 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 0.9 | 5. | ug/kg | 0.75 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219004**

**5GP-24(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:05 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV01-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.9 | 5. | ug/kg | 0.75 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 9. | ug/kg | 0.75 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 9. | ug/kg | 0.75 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 0.9 | 5. | ug/kg | 0.75 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 15:17 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 17:28 | Lauren C Marzario | 0.75 |

6033

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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**Lancaster Laboratories Sample No. SW 4219005**

**Unit 5 Composite Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT5 SDG#: RAV01-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00394 | pH | n.a. | 7.7 | 0.010 | 0.010 | Std. Units | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | | | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 7.65 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | | |
| 00542 | Ignitability | n.a. | See Below | | | | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | | |
| 01121 | Reactivity | n.a. | See Below | | | see below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27.0 | 100. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 97.4 | 97.4 | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00394 | pH | SW-846 9045C (modified) | 1 | 02/23/2004 20:00 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 02/23/2004 20:00 | Luz M Groff | 1 |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4219005**

**Unit 5 Composite Soil Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT5 SDG#: RAV01-10

| | | | | | | |
|---|---|---|---|---|---|---|
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 02/24/2004 05:27 | Susan A Engle | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 02/26/2004 08:00 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 02/26/2004 08:00 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 02/26/2004 15:10 | Kyle W Eckenroad | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219006**

**Unit 5 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN5NV SDG#: RAV01-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.00016 | 0.00020 | mg/l | 1 |

The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Arsenic | 5.0 | Cadmium | 1.0 | Lead | 5.0 | Selenium | 1.0 |
| Barium | 100.0 | Chromium | 5.0 | Mercury | 0.2 | Silver | 5.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0049 | 0.0100 | mg/l | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0047 | 0.0100 | mg/l | 1 |
| 07046 | Barium | 7440-39-3 | 0.553 | 0.00048 | 0.0050 | mg/l | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00087 | 0.0050 | mg/l | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0022 | 0.0050 | mg/l | 1 |
| 07055 | Lead | 7439-92-1 | 0.0190 J | 0.0093 | 0.0200 | mg/l | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0018 | 0.0050 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | 0.00050 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000020 | 0.00010 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00035 | 0.0025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | 0.0050 | mg/l | 1 |

The pesticide/herbicide analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima:

| | | | |
|---|---|---|---|
| Chlordane | 0.03 | Methoxychlor | 10.0 |
| Endrin | 0.02 | Toxaphene | 0.5 |
| Heptachlor (and epoxide) | 0.008 | 2,4-D | 10.0 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219006**

**Unit 5 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN5NV SDG#: RAV01-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Lindane | 0.4 | 2,4,5-TP(Silvex) | 1.0 | | | |
| | The limits are published in March 29, 1990 Federal Register, pp. 11845-6. | | | | | | |
| 00952 | TCLP Herbicides | | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | 0.010 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | 0.0010 | mg/l | 1 |
| 00949 | TCLP Acid Base/Neutrals | | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.004 | 0.020 | mg/l | 1 |
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.004 | 0.020 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.002 | 0.020 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.006 | 0.050 | mg/l | 1 |

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, 12/94). If the TCLP extract contains any one of the Toxicity Characteristic (TC) constituents in an amount equal to or exceeding the concentrations specified in 40 CFR part 261.24, the waste possesses the characteristic of toxicity and is a hazardous waste. These limits are listed below in mg/L. Other limits may apply for analyses performed under other regulations.

| | | | |
|---|---|---|---|
| Total Methylphenols | 200.0 | Nitrobenzene | 2.0 |
| 1,4-Dichlorobenzene | 7.5 | Pentachlorophenol | 100.0 |
| 2,4-Dinitrotoluene | 0.13 | Pyridine | 5.0 |
| Hexachlorobenzene | 0.13 | 2,4,5-Trichlorophenol | 400.0 |
| Hexachlorobutadiene | 0.5 | 2,4,6-Trichlorophenol | 2.0 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219006**

**Unit 5 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN5NV SDG#: RAV01-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Hexachloroethane | | 3.0 | | | | |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 02/25/2004 10:49 | Damary Valentin | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 02/25/2004 06:31 | Joanne M Gates | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 02/25/2004 17:16 | Richard A Shober | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 02/25/2004 13:28 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 02/25/2004 03:05 | Ian D Spotts | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 02/24/2004 21:50 | Karen L Beyer | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 02/25/2004 02:00 | Darin P Wagner | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 02/23/2004 12:30 | Carlene A Landis | n.a. |
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 02/24/2004 15:30 | Andrew G Newton | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 02/24/2004 21:20 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 02/24/2004 17:30 | Nelli S Markaryan | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219007**

**Unit 5 Composite Soil Sample**
**TCLP ZERO HEADSPACE EXTRACTION**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN5ZH SDG#: RAV01-12

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | 0.10 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | 0.20 | mg/l | 20 |

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, 12/94).
If the TCLP extract contains any one of the Toxicity Characteristic (TC) constituents in an amount equal to or exceeding the concentrations specified in 40 CFR Part 261.24, the waste possesses the characteristic of toxicity and is a hazardous waste. These limits are listed below in mg/L. Other limits may apply for analyses performed under other regulations.

| | | | |
|---|---|---|---|
| Benzene | 0.5 | 1,1-Dichloroethene | 0.7 |
| Carbon Tetrachloride | 0.5 | Methyl Ethyl Ketone (2-Butanone) | 200.0 |
| Chlorobenzene | 100.0 | Tetrachloroethene | 0.7 |
| Chloroform | 6.0 | Trichloroethene | 0.5 |
| 1,2-Dichloroethane | 0.5 | Vinyl Chloride | 0.2 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 02/25/2004 01:42 | Scott M Evans | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 02/23/2004 13:30 | Melvin O Strother | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 02/25/2004 01:42 | Scott M Evans | n.a. |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219007**

**Unit 5 Composite Soil Sample**
**TCLP ZERO HEADSPACE EXTRACTION**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected:02/17/2004 15:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN5ZH SDG#: RAV01-12

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. G5 4219009**

**Trip Blank NaHSO4/Methanol Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected: n.a.

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GPTM SDG#: RAV01-14TB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | 5. | ug/kg | 1 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | 5. | ug/kg | 1 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | 5. | ug/kg | 1 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | 5. | ug/kg | 1 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05460 | Benzene | 71-43-2 | N.D. | 0.5 | 5. | ug/kg | 1 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | 5. | ug/kg | 1 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | 5. | ug/kg | 1 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | 20. | ug/kg | 1 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | 5. | ug/kg | 1 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | 10. | ug/kg | 1 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 1 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. G5 4219009**

**Trip Blank NaHSO4/Methanol Sample**
**RAAP-Radford, VA Geoprobe boring #B02271-01**

Collected: n.a.

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:19
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GPTM SDG#: RAV01-14TB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 12:31 | Lauren C Marzario | 1 |

8842

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

# Volatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance
# Summary

**CASE NARRATIVE**
**Client: Draper Aden Associates, Inc.**
**SDG#: RAV01**

LANCASTER LABORATORIES
VOLATILES BY GC/MS

**SAMPLE NUMBERS:**

| | | Matrix | | |
|---|---|---|---|---|
| LL #'s | Sample Code | Soil | Water | Comments |
| 4218994 | 5GP17 | X | | |
| 4218995 | 5GP18 | X | | |
| 4218996 | 5GP19 | X | | |
| 4218997 | 5GP20 | X | | Unspiked |
| 4218998 | 5GP20MS | X | | Matrix Spike |
| 4218999 | 5GP20MSD | X | | Matrix Spike Dup |
| 4219000 | 5GP21 | X | | |
| 4219001 | 5GP22 | X | | |
| 4219002 | 52222 | X | | |
| 4219003 | 5GP23 | X | | |
| 4219004 | 5GP24 | X | | |
| 4219007 | UN5ZH | | X | 20 X Dilution |
| 4219009 | 5GPTM | X | | Client Blank |

**LABORATORY SUBMITTED QC:**

| | | | | |
|---|---|---|---|---|
| 4219274 | EXBLKB | | X | Method Blank<br>20 X Dilution |
| 4221333 | EXBLKD | | X | Method Blank<br>20 X Dilution |
| VBLKX06 | VBLKX06 | X | | Method Blank |
| VBLKN36 | VBLKN367 | | X | Method Blank |
| 4218086 | MM500 | | X | Unspiked<br>20 X Dilution |
| 4218087 | MM500MS | | X | Matrix Spike<br>20X Dilution |
| 4218088 | MM500MSD | | X | Matrix Spike<br>20X Dilution |
| LCSN36 | LCSN36 | | X | Lab Control Sample |
| LCSX06 | LCSX06 | X | | Lab Control Sample |

## SAMPLE PREPARATION:

The soil samples were collected in the field using EnCore™ samplers. Once submitted to Lancaster Laboratories, the samples were transferred into the appropriate pre-weighed containers and were re-weighed to determine the weight of the sample. Since an approximate amount of sample is collected in the field, the dilution factors may vary from sample to sample.

The weights for several samples were found to be outside the SW-846 Method 5035 requirement of 4.5g to 5.5g (EnCore™ sampler) when these samples were re-weighed at the laboratory. Please see the Vial Preparation sheets following the QC Raw Data section for more information.

No other problems were encountered during the sample preparation for the VOA fraction.

## ANALYSIS:

The method used for analysis was EPA SW846 Method 8260B.

All field samples for TCLP were analyzed at a twenty times dilution due to the leachate matrix and the action reporting limits of the TCLP.

No other problems were encountered during the analysis of these samples.

## QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Only client requested compounds are addressed in this narrative.

All QC was within specifications.

## DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Richard S. Rodgers Date 3/2/04

Richard S. Rodgers, B.S., GC/MS Volatiles

# QC Summary

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf16t01.d BFB Injection Date: 02/16/04

Instrument ID: HP09193 BFB Injection Time: 09:21

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.6 |
| 75 | 30.0 - 60.0% of mass 95 | 44.4 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 90.8 |
| 175 | 5.0 - 9.0% of mass 174 | 6.7 ( 7.3)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.9 ( 99.1)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.8 ( 6.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | xf16i01.d | 02/16/04 | 09:47 |
| 02 | VSTD020 | VSTD020 | xf16i04.d | 02/16/04 | 11:45 |
| 03 | VSTD010 | VSTD010 | xf16i05.d | 02/16/04 | 12:12 |
| 04 | VSTD004 | VSTD004 | xf16i06.d | 02/16/04 | 12:39 |
| 05 | VSTD100 | VSTD100 | xf16i07.d | 02/16/04 | 13:06 |
| 06 | VSTD050 | VSTD050 | xf16i09.d | 02/16/04 | 14:27 |
| 07 | VSTD001 | 1PPBMDL | xf16m02.d | 02/16/04 | 14:54 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: xf20t03.d  BFB Injection Date: 02/20/04

Instrument ID: HP09193  BFB Injection Time: 10:03

Matrix: (soil/water) SOIL  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.3 |
| 75 | 30.0 - 60.0% of mass 95 | 43.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 92.7 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.9 ( 6.6)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD100 | VSTD100 | xf20c01.d | 02/20/04 | 10:28 |
| 02 | VBLKX06 | VBLKX06 | xf20b01.d | 02/20/04 | 11:22 |
| 03 | LCSX06 | LCSX06 | xf20s01.d | 02/20/04 | 11:49 |
| 04 | 5GPTM | 4219009 | xf18s02.d | 02/20/04 | 12:31 |
| 05 | 7GPTM | 4219025 | xf18s03.d | 02/20/04 | 12:58 |
| 06 | 5GP17 | 4218994 | xf18s04.d | 02/20/04 | 13:25 |
| 07 | 5GP18 | 4218995 | xf18s05.d | 02/20/04 | 13:52 |
| 08 | 5GP20 | 4218997 | xf18s06.d | 02/20/04 | 14:19 |
| 09 | 5GP20MS | 4218998 | xf18s07.d | 02/20/04 | 14:46 |
| 10 | 5GP20MSD | 4218999 | xf18s08.d | 02/20/04 | 15:13 |
| 11 | 5GP21 | 4219000 | xf18s09.d | 02/20/04 | 15:40 |
| 12 | 5GP22 | 4219001 | xf18s10.d | 02/20/04 | 16:07 |
| 13 | 52222 | 4219002 | xf20s11.d | 02/20/04 | 16:34 |
| 14 | 5GP23 | 4219003 | xf20s12.d | 02/20/04 | 17:01 |
| 15 | 5GP24 | 4219004 | xf20s13.d | 02/20/04 | 17:28 |
| 16 | 7GP17 | 4219010 | xf20s14.d | 02/20/04 | 17:55 |
| 17 | 7GP18 | 4219011 | xf20s15.d | 02/20/04 | 18:22 |
| 18 | 7GP19 | 4219012 | xf20s16.d | 02/20/04 | 18:49 |
| 19 | 7GP20 | 4219013 | xf20s17.d | 02/20/04 | 19:16 |
| 20 | 7GP20MS | 4219014 | xf20s18.d | 02/20/04 | 19:43 |
| 21 | 7GP20MSD | 4219015 | xf20s19.d | 02/20/04 | 20:10 |
| 22 | 7GP21 | 4219016 | xf20s20.d | 02/20/04 | 20:38 |



FORM V VOA

365884

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf20t03.d BFB Injection Date: 02/20/04

Instrument ID: HP09193 BFB Injection Time: 10:03

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.3 |
| 75 | 30.0 - 60.0% of mass 95 | 43.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 92.7 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.9 ( 6.6)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 23 | 7GP22 | 4219017 | xf20s21.d | 02/20/04 | 21:05 |
| 24 | 5GP19 | 4218996 | xf20s22.d | 02/20/04 | 21:31 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: nf02t07.d  BFB Injection Date: 02/02/04

Instrument ID: HP07159  BFB Injection Time: 11:30

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.4 |
| 75 | 30.0 - 60.0% of mass 95 | 47.6 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.0 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 95.8 |
| 175 | 5.0 - 9.0% of mass 174 | 7.8 ( 8.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 92.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.7 ( 7.2)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | nf02i10.d | 02/02/04 | 11:54 |
| 02 | VSTD100 | VSTD100 | nf02i11.d | 02/02/04 | 12:19 |
| 03 | VSTD050 | VSTD050 | nf02i12.d | 02/02/04 | 12:44 |
| 04 | VSTD020 | VSTD020 | nf02i13.d | 02/02/04 | 13:09 |
| 05 | VSTD010 | VSTD010 | nf02i14.d | 02/02/04 | 13:35 |
| 06 | VSTD004 | VSTD004 | nf02i15.d | 02/02/04 | 14:00 |
| 07 | VSTD001 | VSTD001 | nf02m16.d | 02/02/04 | 14:25 |
| 08 | VSTD0.5 | VSTD0.5 | nf02m20.d | | 17:29 |



FORM V VOA

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: nf24t04.d  BFB Injection Date: 02/24/04

Instrument ID: HP07159  BFB Injection Time: 18:58

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.5 |
| 75 | 30.0 - 60.0% of mass 95 | 47.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 5.8 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 94.0 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.0)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 91.2 ( 97.0)1 |
| 177 | 5.0 - 9.0% of mass 176 | 7.2 ( 7.8)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD150 | VSTD150 | nf24c03.d | 02/24/04 | 19:25 |
| 02 | VBLKN36 | VBLKN36 | nf24b02.d | 02/24/04 | 20:31 |
| 03 | LCSN36 | LCSN36 | nf24s30.d | 02/24/04 | 20:55 |
| 04 | EXBLKB | 4219274 | nf24s31.d | 02/24/04 | 21:34 |
| 05 | MM500 | 4218086 | nf24s32.d | 02/24/04 | 21:58 |
| 06 | MM500MS | 4218087 | nf24s33.d | 02/24/04 | 22:23 |
| 07 | MM500MSD | 4218088 | nf24s34.d | 02/24/04 | 22:48 |
| 08 | MM800 | 4218089 | nf24s35.d | 02/24/04 | 23:12 |
| 09 | S105Z | 4218609 | nf24s36.d | 02/24/04 | 23:38 |
| 10 | S105ZMS | 4218609 | nf24s37.d | 02/25/04 | 00:02 |
| 11 | EXBLKC | 4217864 | nf24s38.d | 02/25/04 | 00:28 |
| 12 | I1VOA | 4217216 | nf24s39.d | 02/25/04 | 00:52 |
| 13 | EXBLKD | 4221333 | nf24s40.d | 02/25/04 | 01:17 |
| 14 | UN5ZH | 4219007 | nf24s41.d | 02/25/04 | 01:42 |
| 15 | UN7ZH | 4219023 | nf24s42.d | 02/25/04 | 02:06 |
| 16 | ZH5SL | 4219914 | nf24s43.d | 02/25/04 | 02:31 |
| 17 | ZH5SLMS | 4219914 | nf24s44.d | 02/25/04 | 02:55 |
| 18 | ZHSP1 | 4220721 | nf24s45.d | 02/25/04 | 03:21 |
| 19 | ZHSP2 | 4220724 | nf24s46.d | 02/25/04 | 03:46 |
| 20 | ZH439 | 4220302 | nf24s47.d | 02/25/04 | 04:10 |
| 21 | ZH407 | 4219670 | nf24s48.d | 02/25/04 | 04:35 |

8852

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01

Level: (low/med) LOW

| | LL #'s | EPA SAMPLE NO. | S1 (DBF) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | TOT OUT |
|---|---|---|---|---|---|---|---|
| 01 | 4218994 | 5GP17 | 103 | 97 | 102 | 95 | 0 |
| 02 | 4218995 | 5GP18 | 104 | 98 | 100 | 96 | 0 |
| 03 | 4218996 | 5GP19 | 106 | 99 | 103 | 91 | 0 |
| 04 | 4218997 | 5GP20 | 105 | 99 | 102 | 93 | 0 |
| 05 | 4218998 | 5GP20MS | 102 | 94 | 104 | 99 | 0 |
| 06 | 4218999 | 5GP20MSD | 105 | 97 | 105 | 96 | 0 |
| 07 | 4219000 | 5GP21 | 105 | 99 | 101 | 95 | 0 |
| 08 | 4219001 | 5GP22 | 105 | 100 | 101 | 93 | 0 |
| 09 | 4219002 | 52222 | 105 | 98 | 108 | 87 | 0 |
| 10 | 4219003 | 5GP23 | 107 | 100 | 104 | 89 | 0 |
| 11 | 4219004 | 5GP24 | 107 | 99 | 104 | 90 | 0 |
| 12 | 4219009 | 5GPTM | 103 | 100 | 100 | 97 | 0 |
| 13 | VBLKX06 | VBLKX06 | 102 | 98 | 101 | 98 | 0 |
| 14 | LCSX06 | LCSX06 | 103 | 101 | 103 | 100 | 0 |

| | QC LIMITS |
|---|---|
| S1 (DBF) = Dibromofluoromethane | (70-129) |
| S2 (DCA) = 1,2-Dichloroethane-d4 | (70-121) |
| S3 (TOL) = Toluene-d8 | (70-130) |
| S4 (BFB) = 4-Bromofluorobenzene | (70-128) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2A

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01

| | LL #'s | EPA SAMPLE NO. | S1 (DBF)# | S2 (DCA)# | S3 (TOL)# | S4 (BFB)# | TOT OUT |
|---|---|---|---|---|---|---|---|
| 01 | 4219007 | UN5ZH | 94 | 95 | 99 | 99 | 0 |
| 02 | VBLKN36 | VBLKN36 | 93 | 93 | 100 | 99 | 0 |
| 03 | 4219274 | EXBLKB | 94 | 94 | 100 | 100 | 0 |
| 04 | 4221333 | EXBLKD | 94 | 93 | 100 | 99 | 0 |
| 05 | 4218086 | MM500 | 95 | 93 | 99 | 100 | 0 |
| 06 | 4218087 | MM500MS | 96 | 95 | 99 | 102 | 0 |
| 07 | 4218088 | MM500MSD | 95 | 90 | 99 | 102 | 0 |
| 08 | LCSN36 | LCSN36 | 94 | 92 | 100 | 103 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (DBF) | = Dibromofluoromethane | (81-120) |
| S2 (DCA) | = 1,2-Dichloroethane-d4 | (82-112) |
| S3 (TOL) | = Toluene-d8 | (85-112) |
| S4 (BFB) | = 4-Bromofluorobenzene | (83-113) |

# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 107-02-8 | Acrolein | | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 7 | U |
| 74-88-4 | Methyl Iodide | | 3 | U |
| 67-63-0 | 2-Propanol | | 60 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 79-20-9 | Methyl Acetate | | 2 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 20 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 0.5 | U |
| 110-54-3 | n-Hexane | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 78-93-3 | 2-Butanone | | 4 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 107-12-0 | Propionitrile | | 30 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 126-98-7 | Methacrylonitrile | | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 4 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 1 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 3 | U |
| 71-36-3 | n-Butanol | | 110 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-87-2 | Methylcyclohexane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 3 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |
| 591-78-6 | 2-Hexanone | | 3 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 108-94-1 | Cyclohexanone | | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 10 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |
| 91-57-6 | 2-Methylnaphthalene | | 2 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKN36

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKN36

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24b02.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/24/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 0.8 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 78-93-3 | 2-Butanone | | 3 | U |
| 67-66-3 | Chloroform | | 0.8 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-88-3 | Toluene | | 0.7 | U |
| 127-18-4 | Tetrachloroethene | | 0.8 | U |
| 108-90-7 | Chlorobenzene | | 0.8 | U |
| 100-41-4 | Ethylbenzene | | 0.8 | U |
| 1330-20-7 | m+p-Xylene | | 0.8 | U |
| 95-47-6 | o-Xylene | | 0.8 | U |
| 108-94-1 | Cyclohexanone | | 55 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |

8859



FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EXBLKB

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: 4219274

Sample wt/vol: 0.25 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24s31.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/24/04

Column: (pack/cap) CAP Dilution Factor: 20.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or /Kg) | MDL | mg/L | Q |
|---|---|---|---|---|---|
| 75-01-4 | Vinyl Chloride | | 0.020 | | U |
| 75-35-4 | 1,1-Dichloroethene | | 0.016 | | U |
| 76-13-1 | Freon 113 | | 0.040 | | U |
| 75-15-0 | Carbon Disulfide | | 0.020 | | U |
| 75-09-2 | Methylene Chloride | | 0.040 | | U |
| 78-93-3 | 2-Butanone | | 0.060 | | U |
| 67-66-3 | Chloroform | | 0.016 | | U |
| 56-23-5 | Carbon Tetrachloride | | 0.020 | | U |
| 78-83-1 | Isobutyl Alcohol | | 2.000 | | U |
| 71-43-2 | Benzene | | 0.010 | | U |
| 107-06-2 | 1,2-Dichloroethane | | 0.020 | | U |
| 79-01-6 | Trichloroethene | | 0.020 | | U |
| 108-88-3 | Toluene | | 0.014 | | U |
| 127-18-4 | Tetrachloroethene | | 0.016 | | U |
| 108-90-7 | Chlorobenzene | | 0.016 | | U |
| 100-41-4 | Ethylbenzene | | 0.016 | | U |
| 1330-20-7 | m+p-Xylene | | 0.016 | | U |
| 95-47-6 | o-Xylene | | 0.016 | | U |
| 108-94-1 | Cyclohexanone | | 1.100 | | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.020 | | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 0.020 | | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EXBLKD

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: 4221333

Sample wt/vol: 0.25 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24s40.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/25/04

Column: (pack/cap) CAP Dilution Factor: 20.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or /Kg) MDL | mg/L | Q |
|---|---|---|---|---|
| 75-01-4 | Vinyl Chloride | | 0.020 | U |
| 75-35-4 | 1,1-Dichloroethene | | 0.016 | U |
| 76-13-1 | Freon 113 | | 0.040 | U |
| 75-15-0 | Carbon Disulfide | | 0.020 | U |
| 75-09-2 | Methylene Chloride | | 0.040 | U |
| 78-93-3 | 2-Butanone | | 0.060 | U |
| 67-66-3 | Chloroform | | 0.016 | U |
| 56-23-5 | Carbon Tetrachloride | | 0.020 | U |
| 78-83-1 | Isobutyl Alcohol | | 2.000 | U |
| 71-43-2 | Benzene | | 0.010 | U |
| 107-06-2 | 1,2-Dichloroethane | | 0.020 | U |
| 79-01-6 | Trichloroethene | | 0.020 | U |
| 108-88-3 | Toluene | | 0.014 | U |
| 127-18-4 | Tetrachloroethene | | 0.016 | U |
| 108-90-7 | Chlorobenzene | | 0.016 | U |
| 100-41-4 | Ethylbenzene | | 0.016 | U |
| 1330-20-7 | m+p-Xylene | | 0.016 | U |
| 95-47-6 | o-Xylene | | 0.016 | U |
| 108-94-1 | Cyclohexanone | | 1.100 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.020 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 0.020 | U |



FORM I VOA

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf20b01.d Lab Sample ID: VBLKX06

Date Analyzed: 02/20/04 Time Analyzed: 11:22

Matrix (soil/water) SOIL Level: (low/med) LOW

Instrument ID: HP09193

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSX06 | LCSX06 | xf20s01.d | 11:49 |
| 02 | 5GPTM | 4219009 | xf18s02.d | 12:31 |
| 03 | 7GPTM | 4219025 | xf18s03.d | 12:58 |
| 04 | 5GP17 | 4218994 | xf18s04.d | 13:25 |
| 05 | 5GP18 | 4218995 | xf18s05.d | 13:52 |
| 06 | 5GP20 | 4218997 | xf18s06.d | 14:19 |
| 07 | 5GP20MS | 4218998 | xf18s07.d | 14:46 |
| 08 | 5GP20MSD | 4218999 | xf18s08.d | 15:13 |
| 09 | 5GP21 | 4219000 | xf18s09.d | 15:40 |
| 10 | 5GP22 | 4219001 | xf18s10.d | 16:07 |
| 11 | 52222 | 4219002 | xf20s11.d | 16:34 |
| 12 | 5GP23 | 4219003 | xf20s12.d | 17:01 |
| 13 | 5GP24 | 4219004 | xf20s13.d | 17:28 |
| 14 | 7GP17 | 4219010 | xf20s14.d | 17:55 |
| 15 | 7GP18 | 4219011 | xf20s15.d | 18:22 |
| 16 | 7GP19 | 4219012 | xf20s16.d | 18:49 |
| 17 | 7GP20 | 4219013 | xf20s17.d | 19:16 |
| 18 | 7GP20MS | 4219014 | xf20s18.d | 19:43 |
| 19 | 7GP20MSD | 4219015 | xf20s19.d | 20:10 |
| 20 | 7GP21 | 4219016 | xf20s20.d | 20:38 |
| 21 | 7GP22 | 4219017 | xf20s21.d | 21:05 |
| 22 | 5GP19 | 4218996 | xf20s22.d | 21:31 |

COMMENTS:



FORM IV VOA

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: nf24b02.d Lab Sample ID: VBLKN36

Date Analyzed: 02/24/04 Time Analyzed: 20:31

Matrix (soil/water) WATER Level: (low/med) LOW

Instrument ID: HP07159

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSN36 | LCSN36 | nf24s30.d | 20:55 |
| 02 | EXBLKB | 4219274 | nf24s31.d | 21:34 |
| 03 | MM500 | 4218086 | nf24s32.d | 21:58 |
| 04 | MM500MS | 4218087 | nf24s33.d | 22:23 |
| 05 | MM500MSD | 4218088 | nf24s34.d | 22:48 |
| 06 | MM800 | 4218089 | nf24s35.d | 23:12 |
| 07 | S105Z | 4218609 | nf24s36.d | 23:38 |
| 08 | S105ZMS | 4218609 | nf24s37.d | 00:02 |
| 09 | EXBLKC | 4217864 | nf24s38.d | 00:28 |
| 10 | I1VOA | 4217216 | nf24s39.d | 00:52 |
| 11 | EXBLKD | 4221333 | nf24s40.d | 01:17 |
| 12 | UN5ZH | 4219007 | nf24s41.d | 01:42 |
| 13 | UN7ZH | 4219023 | nf24s42.d | 02:06 |
| 14 | ZH5SL | 4219914 | nf24s43.d | 02:31 |
| 15 | ZH5SLMS | 4219914 | nf24s44.d | 02:55 |
| 16 | ZHSP1 | 4220721 | nf24s45.d | 03:21 |
| 17 | ZHSP2 | 4220724 | nf24s46.d | 03:46 |
| 18 | ZH439 | 4220302 | nf24s47.d | 04:10 |
| 19 | ZH407 | 4219670 | nf24s48.d | 04:35 |

COMMENTS:

_____

8863

_____

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: xf18s06.d
5GP20 4218997
Method: SW-846 8260B
Dilution Factor: 0.87
Instrument: HP09193

Matrix Spike: xf18s07.d
5GP20MS 4218998
Matrix/Level: SL
MS Dilution Factor: 0.84

Spike Duplicate: xf18s08.d
5GP20MSD 4218999
Batch: X040511AA
MSD Dilution Factor: 0.82
Moisture: 17

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 20.2 | 19.8 | ND | 21.9 | 22.6 | 109 | 114 | 21-155 | YES | 4 | 30 |
| Vinyl Chloride | 20.2 | 19.8 | ND | 22.5 | 23.5 | 111 | 119 | 23-154 | YES | 7 | 30 |
| Bromomethane | 20.2 | 19.8 | ND | 20.3 | 20.5 | 101 | 104 | 19-147 | YES | 3 | 30 |
| Chloroethane | 20.2 | 19.8 | ND | 20.3 | 20.9 | 100 | 105 | 33-147 | YES | 5 | 30 |
| 1,1-Dichloroethene | 20.2 | 19.8 | ND | 20.2 | 20.6 | 100 | 104 | 48-147 | YES | 4 | 30 |
| Acetone | 152.0 | 148.0 | 10.3 | 133 | 147 | 81 | 93 | 9 -178 | YES | 14 | 30 |
| Carbon Disulfide | 20.2 | 19.8 | ND | 20.1 | 20.0 | 100 | 101 | 37-147 | YES | 1 | 30 |
| Methylene Chloride | 20.2 | 19.8 | ND | 19.3 | 20.0 | 96 | 101 | 59-135 | YES | 5 | 30 |
| trans-1,2-Dichloroethene | 20.2 | 19.8 | ND | 19.9 | 19.7 | 98 | 100 | 54-135 | YES | 2 | 30 |
| 1,1-Dichloroethane | 20.2 | 19.8 | ND | 20.2 | 20.6 | 100 | 104 | 60-133 | YES | 4 | 30 |
| cis-1,2-Dichloroethene | 20.2 | 19.8 | ND | 19.0 | 19.0 | 94 | 96 | 57-131 | YES | 2 | 30 |
| 2-Butanone | 152.0 | 148.0 | ND | 129 | 150 | 85 | 101 | 24-149 | YES | 17 | 30 |
| Chloroform | 20.2 | 19.8 | ND | 20.9 | 20.6 | 103 | 104 | 57-135 | YES | 1 | 30 |
| 1,1,1-Trichloroethane | 20.2 | 19.8 | ND | 21.4 | 21.3 | 106 | 108 | 53-137 | YES | 2 | 30 |
| Carbon Tetrachloride | 20.2 | 19.8 | ND | 21.5 | 21.1 | 106 | 106 | 46-138 | YES | 0 | 30 |
| Benzene | 20.2 | 19.8 | ND | 19.6 | 19.5 | 97 | 99 | 52-141 | YES | 2 | 30 |
| 1,2-Dichloroethane | 20.2 | 19.8 | ND | 20.4 | 20.9 | 101 | 105 | 57-137 | YES | 4 | 30 |
| Trichloroethene | 20.2 | 19.8 | ND | 19.4 | 18.7 | 96 | 94 | 47-140 | YES | 2 | 30 |
| 1,2-Dichloropropane | 20.2 | 19.8 | ND | 19.1 | 19.2 | 95 | 97 | 60-129 | YES | 2 | 30 |
| Bromodichloromethane | 20.2 | 19.8 | ND | 19.1 | 19.0 | 94 | 96 | 57-126 | YES | 2 | 30 |
| cis-1,3-Dichloropropene | 20.2 | 19.8 | ND | 17.8 | 17.4 | 88 | 88 | 50-129 | YES | 0 | 30 |
| 4-Methyl-2-Pentanone | 101.0 | 98.9 | ND | 85.6 | 96.5 | 85 | 98 | 34-143 | YES | 14 | 30 |
| Toluene | 20.2 | 19.8 | ND | 17.8 | 17.3 | 88 | 87 | 45-142 | YES | 1 | 30 |
| trans-1,3-Dichloropropene | 20.2 | 19.8 | ND | 17.8 | 18.0 | 88 | 91 | 51-127 | YES | 3 | 30 |
| 1,1,2-Trichloroethane | 20.2 | 19.8 | ND | 18.0 | 18.7 | 89 | 94 | 50-147 | YES | 5 | 30 |
| Tetrachloroethene | 20.2 | 19.8 | ND | 18.8 | 17.6 | 93 | 89 | 39-160 | YES | 4 | 30 |
| 2-Hexanone | 101.0 | 98.9 | ND | 78.1 | 90.0 | 77 | 91 | 27-149 | YES | 17 | 30 |
| Dibromochloromethane | 20.2 | 19.8 | ND | 18.2 | 18.5 | 90 | 93 | 53-130 | YES | 3 | 30 |
| Chlorobenzene | 20.2 | 19.8 | ND | 16.6 | 15.3 | 82 | 77 | 59-125 | YES | 6 | 30 |
| Ethylbenzene | 20.2 | 19.8 | ND | 16.5 | 14.9 | 81 | 75 | 40-143 | YES | 8 | 30 |
| m+p-Xylene | 40.5 | 39.6 | ND | 31.6 | 28.7 | 78 | 73 | 40-143 | YES | 7 | 30 |
| Xylene (Total) | 60.7 | 59.4 | ND | 47.4 | 43.1 | 78 | 72 | 40-143 | YES | 8 | 30 |
| o-Xylene | 20.2 | 19.8 | ND | 15.8 | 14.3 | 78 | 72 | 40-143 | YES | 8 | 30 |
| Styrene | 20.2 | 19.8 | ND | 14.6 | 13.1 | 72 | 66 | 46-137 | YES | 9 | 30 |
| Bromoform | 20.2 | 19.8 | ND | 16.9 | 17.3 | 83 | 87 | 46-128 | YES | 5 | 30 |
| 1,1,2,2-Tetrachloroethane | 20.2 | 19.8 | ND | 17.2 | 19.6 | 85 | 99 | 37-151 | YES | 15 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

8884

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: nf24s32.d
MM500 4218086
Method: SW-846 8260B
Instrument: HP07159

Matrix Spike: nf24s33.d
MM500MS 4218087
Matrix/Level: WL
Dilution Factor: 20.00

Spike Duplicate: nf24s34.d
MM500MSD 4218088
Batch: N040552AB

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 400.0 | 400.0 | ND | 430 | 432 | 108 | 108 | 70-151 | YES | 0 | 30 |
| 1,1-Dichloroethene | 400.0 | 400.0 | ND | 424 | 418 | 106 | 104 | 78-146 | YES | 1 | 30 |
| Freon 113 | 400.0 | 400.0 | ND | 452 | 451 | 113 | 113 | 73-166 | YES | 0 | 30 |
| Carbon Disulfide | 400.0 | 400.0 | ND | 458 | 458 | 115 | 115 | 77-155 | YES | 0 | 30 |
| Methylene Chloride | 400.0 | 400.0 | ND | 391 | 387 | 98 | 97 | 79-133 | YES | 1 | 30 |
| 2-Butanone | 3000.0 | 3000.0 | 4470 | 6950 | 7210 | 83 | 91 | 42-140 | YES | 4 | 30 |
| Chloroform | 400.0 | 400.0 | ND | 395 | 393 | 99 | 98 | 82-131 | YES | 0 | 30 |
| Carbon Tetrachloride | 400.0 | 400.0 | ND | 412 | 407 | 103 | 102 | 73-144 | YES | 1 | 30 |
| Isobutyl Alcohol | 10000.0 | 10000.0 | ND | 6560 | 6770 | 66 | 68 | 51-140 | YES | 3 | 30 |
| Benzene | 400.0 | 400.0 | ND | 407 | 407 | 102 | 102 | 83-128 | YES | 0 | 30 |
| 1,2-Dichloroethane | 400.0 | 400.0 | ND | 376 | 374 | 94 | 93 | 73-136 | YES | 0 | 30 |
| Trichloroethene | 400.0 | 400.0 | ND | 398 | 393 | 100 | 98 | 75-135 | YES | 1 | 30 |
| Toluene | 400.0 | 400.0 | 68.8 | 475 | 474 | 102 | 101 | 83-127 | YES | 0 | 30 |
| Tetrachloroethene | 400.0 | 400.0 | ND | 388 | 385 | 97 | 96 | 75-143 | YES | 1 | 30 |
| Chlorobenzene | 400.0 | 400.0 | ND | 390 | 392 | 97 | 98 | 83-120 | YES | 0 | 30 |
| Ethylbenzene | 400.0 | 400.0 | ND | 413 | 416 | 103 | 104 | 82-129 | YES | 1 | 30 |
| m+p-Xylene | 800.0 | 800.0 | ND | 806 | 819 | 101 | 102 | 82-130 | YES | 2 | 30 |
| o-Xylene | 400.0 | 400.0 | ND | 393 | 403 | 98 | 101 | 82-130 | YES | 2 | 30 |
| Cyclohexanone | 10000.0 | 10000.0 | ND | 6670 | 6680 | 67 | 67 | 21-139 | YES | 0 | 30 |
| 1,4-Dichlorobenzene | 400.0 | 400.0 | ND | 387 | 393 | 97 | 98 | 81-122 | YES | 1 | 30 |
| 1,2-Dichlorobenzene | 400.0 | 400.0 | ND | 380 | 385 | 95 | 96 | 82-117 | YES | 1 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Entry by _____

_____ Ver. by _____

_____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: xf20s01.d
Inst: HP09193
Dilution Factor: 1.0

Injected: 02/20/04 at 11:49
Sample: LCSX06

Method: SW-846 8260B
Matrix/Level: SL
Batch: X040511AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Chloromethane | 20.00 | 21.44 | 107 | 44-139 | YES |
| Vinyl Chloride | 20.00 | 21.67 | 108 | 48-135 | YES |
| Bromomethane | 20.00 | 19.92 | 100 | 35-146 | YES |
| Chloroethane | 20.00 | 20.04 | 100 | 50-137 | YES |
| 1,1-Dichloroethene | 20.00 | 19.80 | 99 | 69-133 | YES |
| Acetone | 150.00 | 136.74 | 91 | 29-165 | YES |
| Carbon Disulfide | 20.00 | 19.79 | 99 | 70-129 | YES |
| Methylene Chloride | 20.00 | 19.24 | 96 | 81-121 | YES |
| trans-1,2-Dichloroethene | 20.00 | 19.88 | 99 | 77-124 | YES |
| 1,1-Dichloroethane | 20.00 | 20.34 | 102 | 79-124 | YES |
| cis-1,2-Dichloroethene | 20.00 | 19.19 | 96 | 83-118 | YES |
| 2-Butanone | 150.00 | 139.57 | 93 | 31-147 | YES |
| Chloroform | 20.00 | 20.40 | 102 | 81-117 | YES |
| 1,1,1-Trichloroethane | 20.00 | 20.42 | 102 | 74-121 | YES |
| Carbon Tetrachloride | 20.00 | 20.53 | 103 | 63-124 | YES |
| Benzene | 20.00 | 20.22 | 101 | 83-118 | YES |
| 1,2-Dichloroethane | 20.00 | 20.62 | 103 | 76-126 | YES |
| Trichloroethene | 20.00 | 20.05 | 100 | 81-114 | YES |
| 1,2-Dichloropropane | 20.00 | 19.84 | 99 | 78-119 | YES |
| Bromodichloromethane | 20.00 | 19.44 | 97 | 77-116 | YES |
| cis-1,3-Dichloropropene | 20.00 | 19.45 | 97 | 80-113 | YES |
| 4-Methyl-2-Pentanone | 100.00 | 92.48 | 92 | 55-135 | YES |
| Toluene | 20.00 | 19.33 | 97 | 81-116 | YES |
| trans-1,3-Dichloropropene | 20.00 | 19.84 | 99 | 72-119 | YES |
| 1,1,2-Trichloroethane | 20.00 | 19.18 | 96 | 83-114 | YES |
| Tetrachloroethene | 20.00 | 20.69 | 103 | 79-122 | YES |
| 2-Hexanone | 100.00 | 86.17 | 86 | 41-144 | YES |
| Dibromochloromethane | 20.00 | 19.42 | 97 | 73-116 | YES |
| Chlorobenzene | 20.00 | 19.20 | 96 | 81-112 | YES |
| Ethylbenzene | 20.00 | 19.44 | 97 | 82-115 | YES |
| m+p-Xylene | 40.00 | 38.96 | 97 | 82-117 | YES |
| Xylene (Total) | 60.00 | 58.39 | 97 | 82-117 | YES |
| o-Xylene | 20.00 | 19.43 | 97 | 82-117 | YES |
| Styrene | 20.00 | 18.87 | 94 | 79-116 | YES |
| Bromoform | 20.00 | 19.04 | 95 | 63-116 | YES |
| 1,1,2,2-Tetrachloroethane | 20.00 | 18.36 | 92 | 64-121 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: nf24s30.d
Inst: HP07159
Dilution Factor: 1.0

Injected: 02/24/04 at 20:55
Sample: LCSN36

Method: SW-846 8260B
Matrix/Level: WL
Batch: N040552AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Vinyl Chloride | 20.00 | 18.59 | 93 | 71-129 | YES |
| 1,1-Dichloroethene | 20.00 | 18.82 | 94 | 79-130 | YES |
| Freon 113 | 20.00 | 18.88 | 94 | 73-140 | YES |
| Carbon Disulfide | 20.00 | 19.91 | 100 | 73-143 | YES |
| Methylene Chloride | 20.00 | 18.27 | 91 | 80-128 | YES |
| 2-Butanone | 150.00 | 147.71 | 98 | 45-154 | YES |
| Chloroform | 20.00 | 18.04 | 90 | 86-124 | YES |
| Carbon Tetrachloride | 20.00 | 17.70 | 89 | 77-130 | YES |
| Isobutyl Alcohol | 500.00 | 407.85 | 82 | 59-134 | YES |
| Benzene | 20.00 | 18.58 | 93 | 85-117 | YES |
| 1,2-Dichloroethane | 20.00 | 17.75 | 89 | 77-132 | YES |
| Trichloroethene | 20.00 | 17.76 | 89 | 87-117 | YES |
| Toluene | 20.00 | 18.40 | 92 | 85-115 | YES |
| Tetrachloroethene | 20.00 | 18.57 | 93 | 82-126 | YES |
| Chlorobenzene | 20.00 | 18.35 | 92 | 85-115 | YES |
| Ethylbenzene | 20.00 | 18.56 | 93 | 82-119 | YES |
| m+p-Xylene | 40.00 | 36.93 | 92 | 84-120 | YES |
| o-Xylene | 20.00 | 18.42 | 92 | 84-120 | YES |
| Cyclohexanone | 500.00 | 422.28 | 84 | 19-158 | YES |
| 1,4-Dichlorobenzene | 20.00 | 18.33 | 92 | 84-116 | YES |
| 1,2-Dichlorobenzene | 20.00 | 18.36 | 92 | 81-112 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xf20c01.d Date Analyzed: 02/20/04

Instrument ID: HP09193 Time Analyzed: 10:28

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 135522 | 4.505 | 1266290 | 7.958 | 1000818 | 11.346 | 570512 | 13.201 |
| | UPPER LIMIT | 271044 | 5.005 | 2532580 | 8.458 | 2001636 | 11.846 | 1141024 | 13.701 |
| | LOWER LIMIT | 67761 | 4.005 | 633145 | 7.458 | 500409 | 10.846 | 285256 | 12.701 |
| | EPA SAMPLE NO. | | | | | | | | |
| 01 | VBLKX06 | 135106 | 4.502 | 1244404 | 7.952 | 985904 | 11.344 | 550687 | 13.201 |
| 02 | LCSX06 | | | 1186869 | 7.952 | 932602 | 11.343 | 526036 | 13.201 |
| 03 | 5GPTM | | | 1241140 | 7.952 | 986851 | 11.343 | 541841 | 13.201 |
| 04 | 7GPTM | | | 1095005 | 7.952 | 861307 | 11.343 | 461853 | 13.201 |
| 05 | 5GP17 | | | 1091311 | 7.951 | 846235 | 11.346 | 449061 | 13.201 |
| 06 | 5GP18 | | | 1122121 | 7.952 | 893422 | 11.343 | 486995 | 13.201 |
| 07 | 5GP20 | | | 1035190 | 7.955 | 805411 | 11.343 | 404563 | 13.201 |
| 08 | 5GP20MS | | | 1081350 | 7.955 | 842038 | 11.347 | 461865 | 13.201 |
| 09 | 5GP20MSD | | | 1077707 | 7.951 | 820331 | 11.343 | 410618 | 13.201 |
| 10 | 5GP21 | | | 1082785 | 7.955 | 853764 | 11.343 | 453402 | 13.204 |
| 11 | 5GP22 | | | 1084943 | 7.951 | 845975 | 11.343 | 431017 | 13.201 |
| 12 | 52222 | | | 1014479 | 7.955 | 737865 | 11.343 | 323933 | 13.201 |
| 13 | 5GP23 | | | 1022786 | 7.952 | 770274 | 11.343 | 346240 | 13.201 |
| 14 | 5GP24 | | | 1041670 | 7.952 | 803069 | 11.343 | 380446 | 13.204 |
| 15 | 7GP17 | | | 1064329 | 7.955 | 832786 | 11.343 | 416079 | 13.201 |
| 16 | 7GP18 | | | 1045559 | 7.955 | 823281 | 11.343 | 417066 | 13.201 |
| 17 | 7GP19 | | | 970494 | 7.952 | 714880 | 11.347 | 297543 | 13.201 |
| 18 | 7GP20 | | | 992011 | 7.954 | 746930 | 11.343 | 327862 | 13.204 |
| 19 | 7GP20MS | | | 1053590 | 7.955 | 770638 | 11.343 | 306089 | 13.204 |
| 20 | 7GP20MSD | | | 1095668 | 7.951 | 802161 | 11.343 | 333037 | 13.201 |
| 21 | 7GP21 | | | 1007842 | 7.951 | 783236 | 11.346 | 384661 | 13.204 |
| 22 | 7GP22 | | | 1042990 | 7.952 | 775846 | 11.347 | 336749 | 13.201 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xf20c01.d Date Analyzed: 02/20/04

Instrument ID: HP09193 Time Analyzed: 10:28

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) AREA # | RT # | IS2(FBZ) AREA # | RT # | IS3(CBZ) AREA # | RT # | IS4(DCB) AREA # | RT # |
|---|---|---|---|---|---|---|---|---|
| 12 HOUR STD | 135522 | 4.505 | 1266290 | 7.958 | 1000818 | 11.346 | 570512 | 13.201 |
| UPPER LIMIT | 271044 | 5.005 | 2532580 | 8.458 | 2001636 | 11.846 | 1141024 | 13.701 |
| LOWER LIMIT | 67761 | 4.005 | 633145 | 7.458 | 500409 | 10.846 | 285256 | 12.701 |
| EPA SAMPLE NO. | | | | | | | | |
| 23 5GP19 | | | 1049523 | 7.955 | 810481 | 11.343 | 389551 | 13.205 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID (Standard): nf24c03.d  Date Analyzed: 02/24/04

Instrument ID: HP07159  Time Analyzed: 19:25

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| | | IS1(FBZ) | | IS2(CBZ) | | IS3(DCB) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 1037153 | 7.970 | 814583 | 11.349 | 443611 | 13.200 |
| | UPPER LIMIT | 2074306 | 8.470 | 1629166 | 11.849 | 887222 | 13.700 |
| | LOWER LIMIT | 518576 | 7.470 | 407292 | 10.849 | 221806 | 12.700 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | VBLKN36 | 1002998 | 7.966 | 773708 | 11.351 | 388007 | 13.203 |
| 02 | LCSN36 | 1016012 | 7.970 | 788005 | 11.352 | 425281 | 13.200 |
| 03 | EXBLKB | 1051668 | 7.967 | 815941 | 11.349 | 397895 | 13.201 |
| 04 | MM500 | 1045894 | 7.970 | 820309 | 11.352 | 425007 | 13.200 |
| 05 | MM500MS | 1023135 | 7.970 | 806738 | 11.352 | 436008 | 13.200 |
| 06 | MM500MSD | 1030024 | 7.969 | 802774 | 11.351 | 433415 | 13.202 |
| 07 | MM800 | 1034594 | 7.971 | 806888 | 11.353 | 425591 | 13.201 |
| 08 | S105Z | 1011646 | 7.969 | 789829 | 11.351 | 422075 | 13.203 |
| 09 | S105ZMS | 1004365 | 7.970 | 788951 | 11.352 | 427600 | 13.200 |
| 10 | EXBLKC | 1057625 | 7.972 | 819519 | 11.354 | 409178 | 13.202 |
| 11 | I1VOA | 1037661 | 7.969 | 798040 | 11.351 | 404285 | 13.203 |
| 12 | EXBLKD | 1034638 | 7.967 | 799941 | 11.352 | 404590 | 13.204 |
| 13 | UN5ZH | 1035102 | 7.969 | 807350 | 11.355 | 401306 | 13.203 |
| 14 | UN7ZH | 1017391 | 7.969 | 790516 | 11.354 | 396645 | 13.202 |
| 15 | ZH5SL | 1014736 | 7.969 | 802674 | 11.351 | 404352 | 13.202 |
| 16 | ZH5SLMS | 962309 | 7.967 | 765601 | 11.352 | 407495 | 13.201 |
| 17 | ZHSP1 | 968621 | 7.967 | 756401 | 11.353 | 380430 | 13.201 |
| 18 | ZHSP2 | 997235 | 7.969 | 780479 | 11.351 | 395769 | 13.202 |
| 19 | ZH439 | 958466 | 7.972 | 755712 | 11.351 | 387835 | 13.202 |
| 20 | ZH407 | 931085 | 7.969 | 727825 | 11.351 | 380085 | 13.200 |

IS1 (FBZ)=Fluorobenzene
IS2 (CBZ)=Chlorobenzene-d5
IS3 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

# Sample Data

Data File: /chem/HP09193.i/04feb20a.b/xf18s04.d
Date : 20-FEB-2004 13:25
Client ID: 5GP17
Sample Info: 5GP17;4218994;2;0;;;

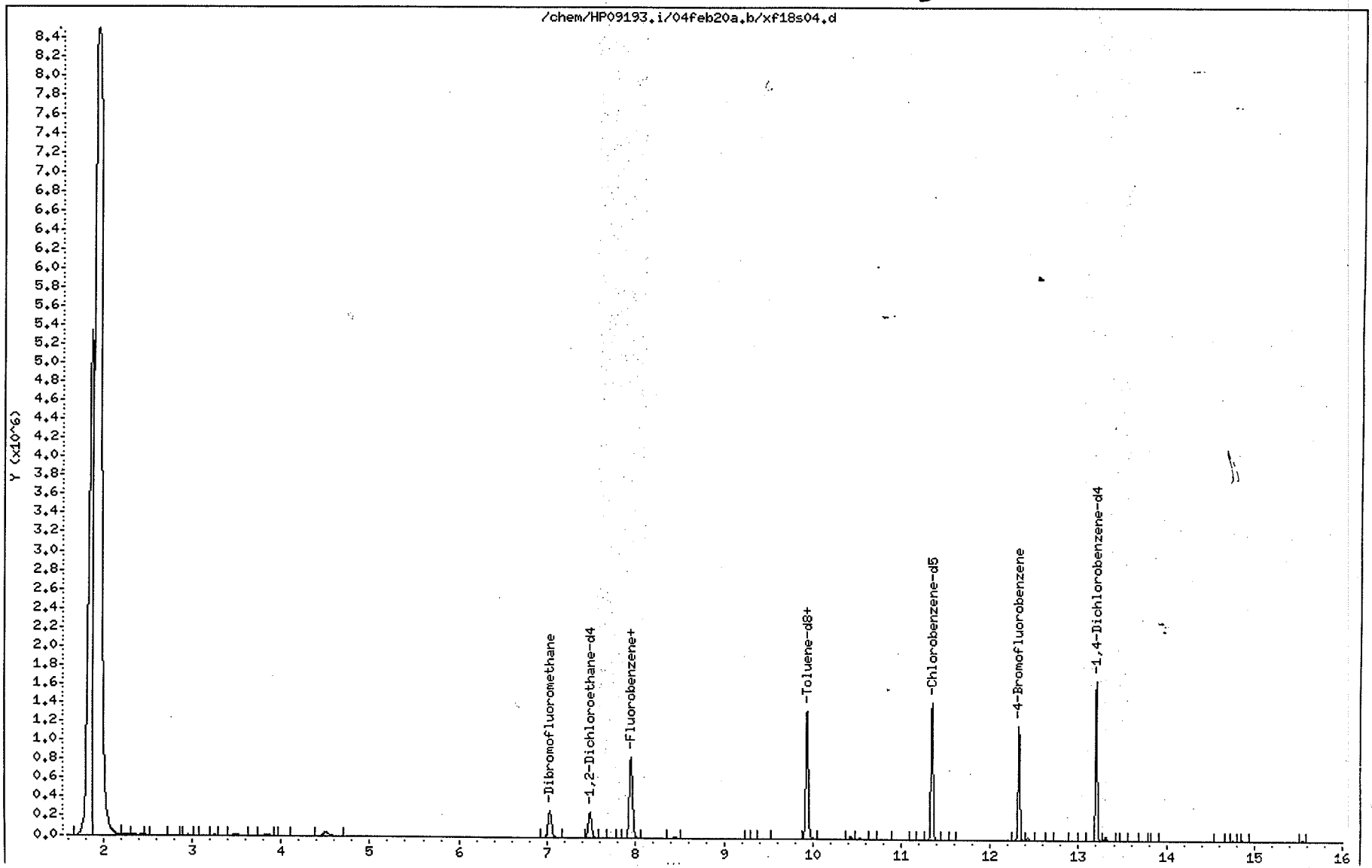
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

8572





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s04.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 13:25  Analyst ID: LCM01518

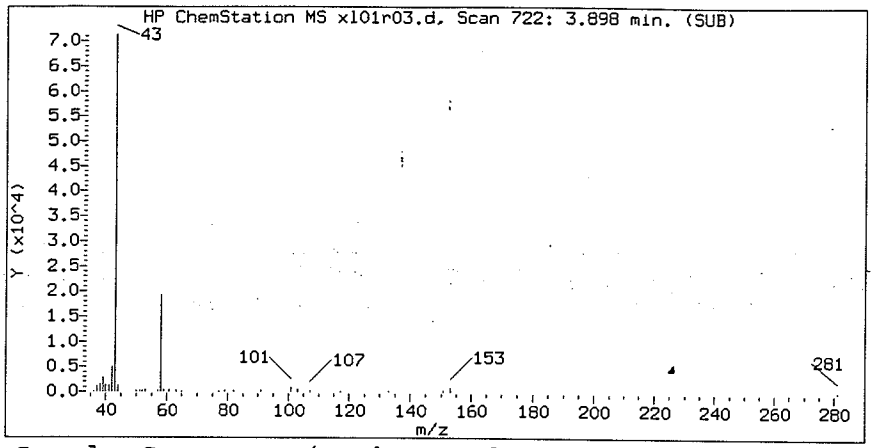
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:20 msl01251

Sample Name: 5GP17  Lab Sample ID: 4218994

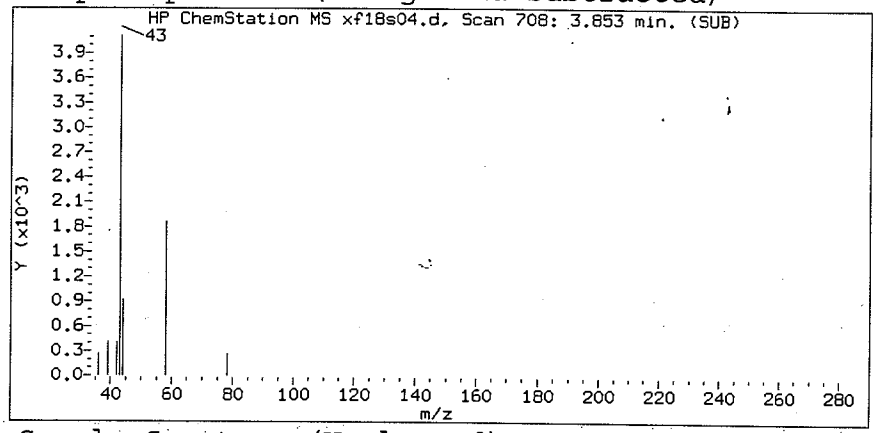
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.853 | 58 | 5419 | ~~13.548~~ |
| 69)*Fluorobenzene | (1) | 7.951 | 96 | 1091311 | 50.000 |
| 73) Trichloroethene | (1) | 8.445 | 95 | 8553 | 1.460 |
| 100)*Chlorobenzene-d5 | (2) | 11.346 | 117 | 846235 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 449061 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 241384 | 51.389 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.492 | 102 | 57171 | 48.563 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1041265 | 51.181 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 369524 | 47.517 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

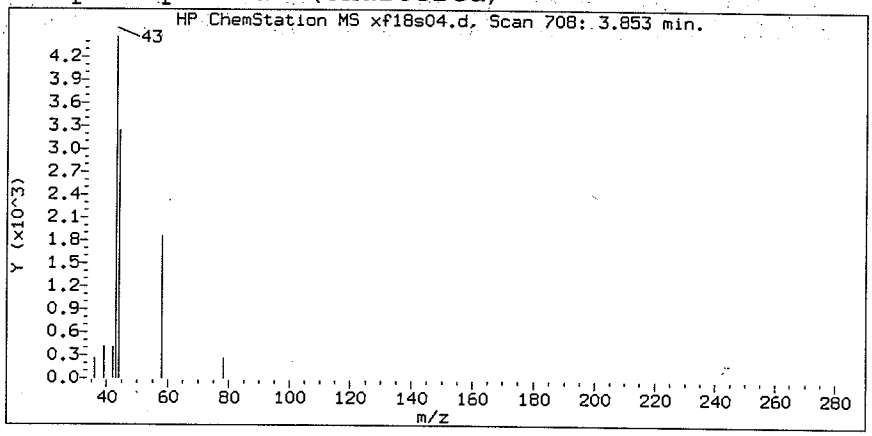
Reference Standard Spectrum for Acetone

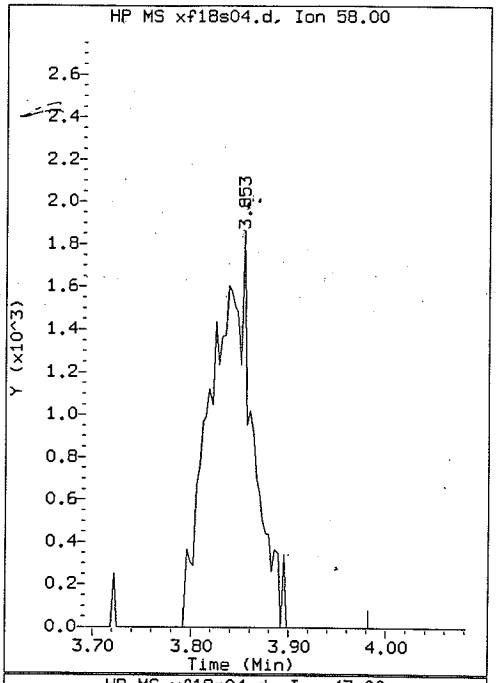


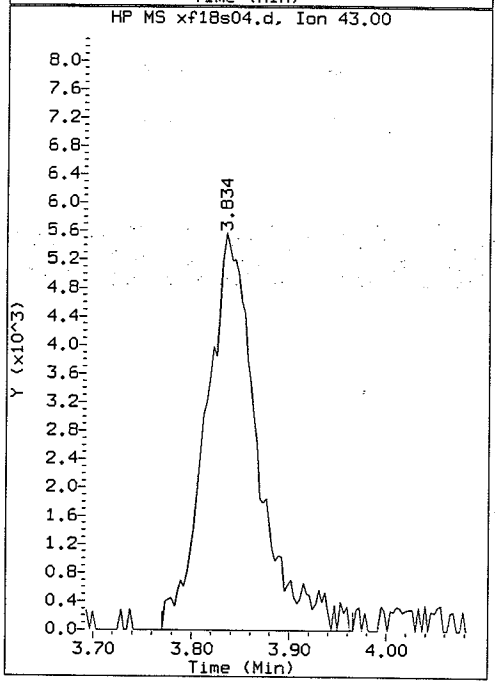

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s04.d
Injection date and time: 20-FEB-2004 13:25

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:20 msl01251

Sample Name: 5GP17

Lab Sample ID: 4218994

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 708 |
| Retention Time (minutes) | : 3.853 |
| Quant Ion | : 58.0 |
| Area (flag) | : 5419 |
| Concentration (ug/Kg) | : 13.5484 |

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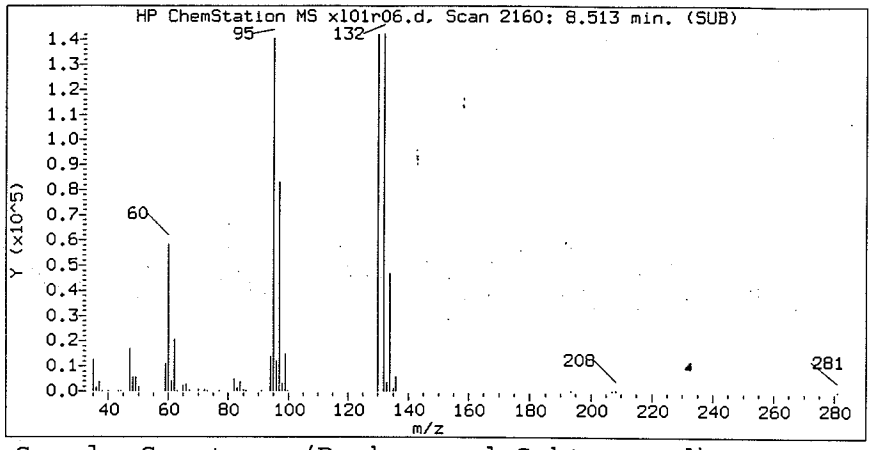
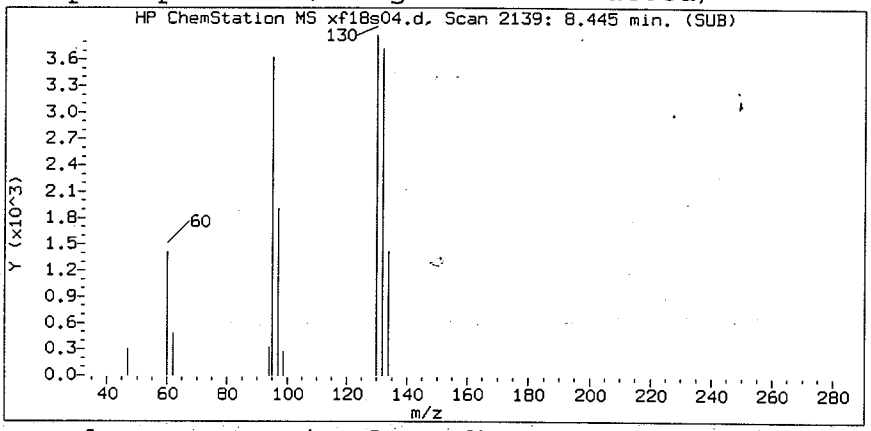
Hit Data Report for data file /chem/HP09193.i/04feb20a.b/xf18s04.d, generated on 02/20/2004 at 16:20

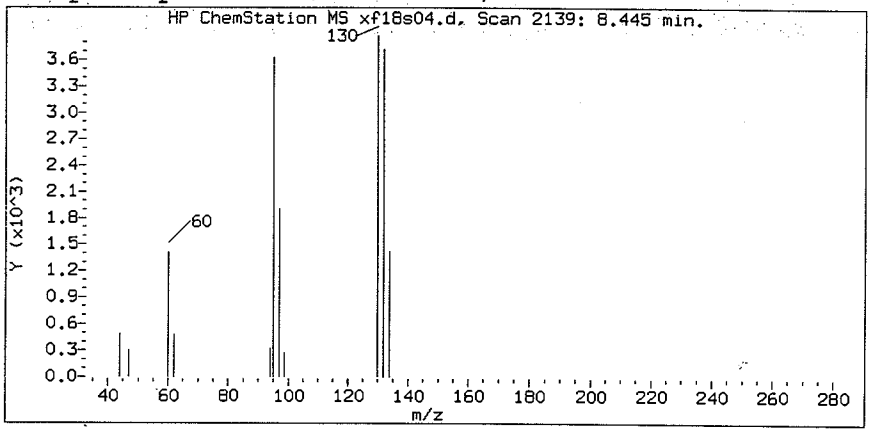
Reference Standard Spectrum for Trichloroethene

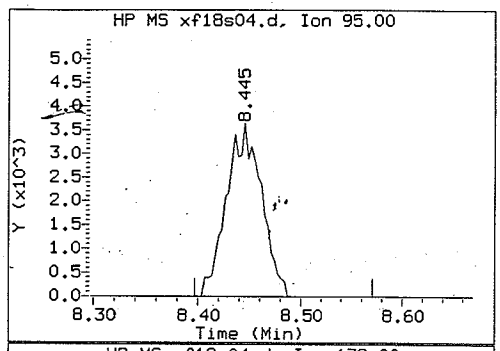


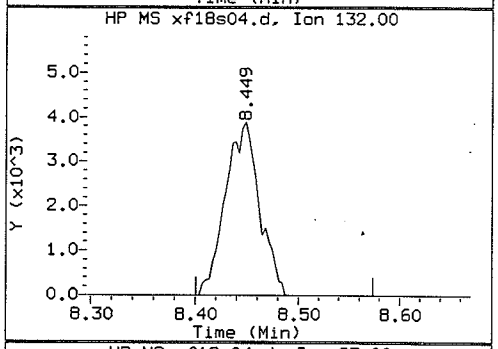

Sample Spectrum (Background Subtracted)

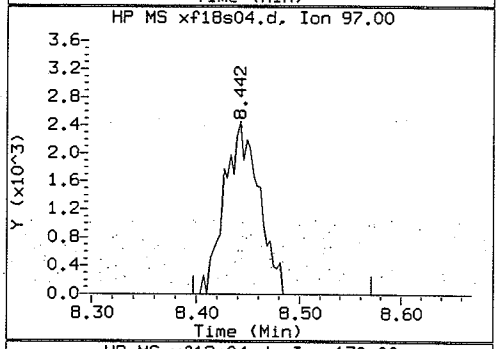


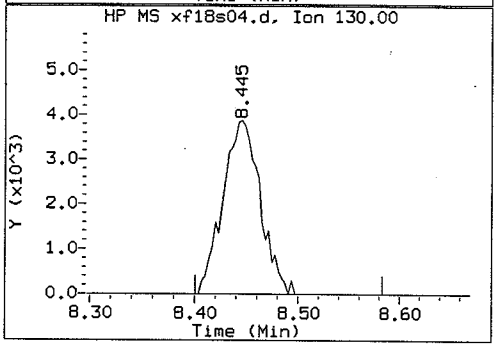

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s04.d
Injection date and time: 20-FEB-2004 13:25

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:20 msl01251

Sample Name: 5GP17

Lab Sample ID: 4218994

| | |
|---|---|
| Compound Number | : 73 |
| Compound Name | : Trichloroethene |
| Scan Number | : 2139 |
| Retention Time (minutes) | : 8.445 |
| Quant Ion | : 95.0 |
| Area (flag) | : 8553 |
| Concentration (ug/Kg) | : 1.4599 |

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# 5GP17

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218994

File: /chem/HP09193.i/04feb20a.b/xf18s04.d
Sample: 5GP17;4218994;2;0;;;
Injected At:20-FEB-2004 13:25
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.85
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.951( 0.007) | 1985 | 96 | 1091311( -14) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.346( 0.000) | 3043 | 117 | 846235( -15) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 449061( -21) | 50.00 | |

250ng / 5 ml = 50 ng/ml

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 241384 | 51.389 | 103% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.492(-0.001) | 102 | 57171 | 48.563 | 97% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1041265 | 51.181 | 102% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 369524 | 47.517 | 95% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) ug/kg | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.69 | 4.24 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.69 | 4.24 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.69 | 4.24 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 20) Acetone | (1) | 3.853(-0.002) | 58 | 5419 | 13.548 | 11.48 | | J | 5.93 | 16.95 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.69 | 4.24 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.39 | 8.47 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.42 | 4.24 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 73) Trichloroethene | (1) | 8.445(-0.001) | 95 | 8553 | 1.460 | 1.24 | | J | 0.85 | 4.24 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.85 | 4.24 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.54 | 8.47 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.85 | 4.24 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.85 | 4.24 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



5

8876

2681 ICEAP Dat
.0183

5GP17

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4218994

File: /chem/HP09193.i/04feb20a.b/xf18s04.d
Sample: 5GP17;4218994;2;0;;;
Injected At:20-FEB-2004 13:25
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.85
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.54 | 8.47 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.85 | 4.24 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.85 | 4.24 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4702

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



8877

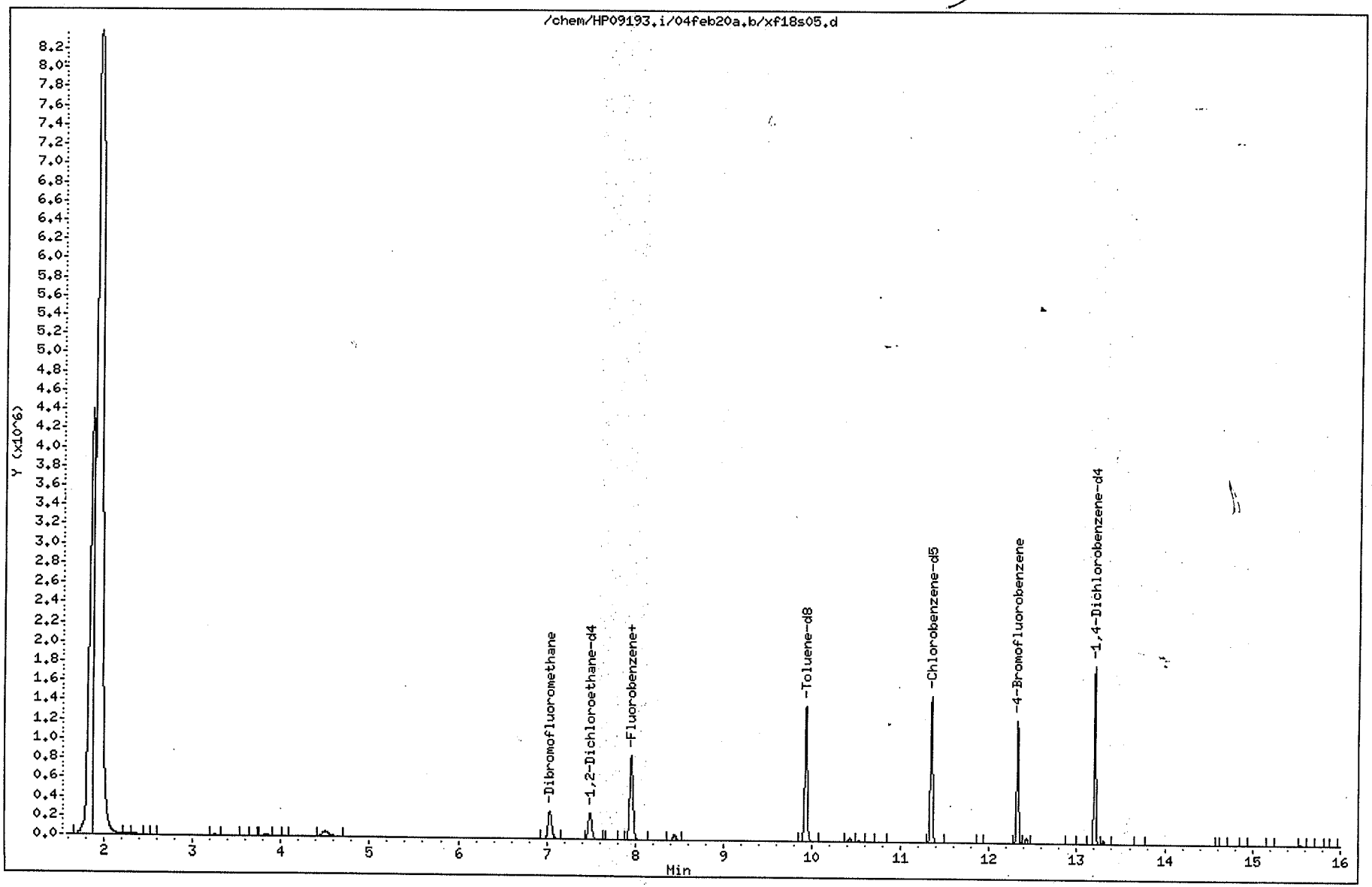
Data File: /chem/HP09193.i/04feb20a.b/xf18s05.d
Date : 20-FEB-2004 13:52
Client ID: 5GP18
Sample Info: 5GP18;4218995;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s05.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 13:52  Analyst ID: LCM01518

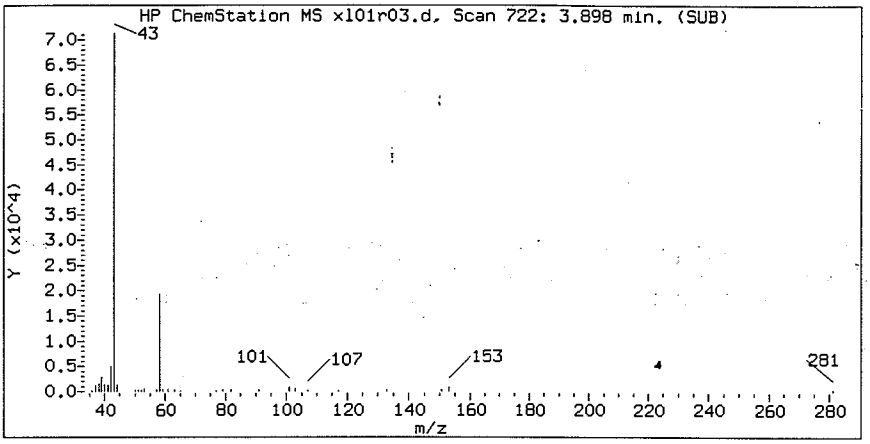
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:21 msl01251

Sample Name: 5GP18  Lab Sample ID: 4218995

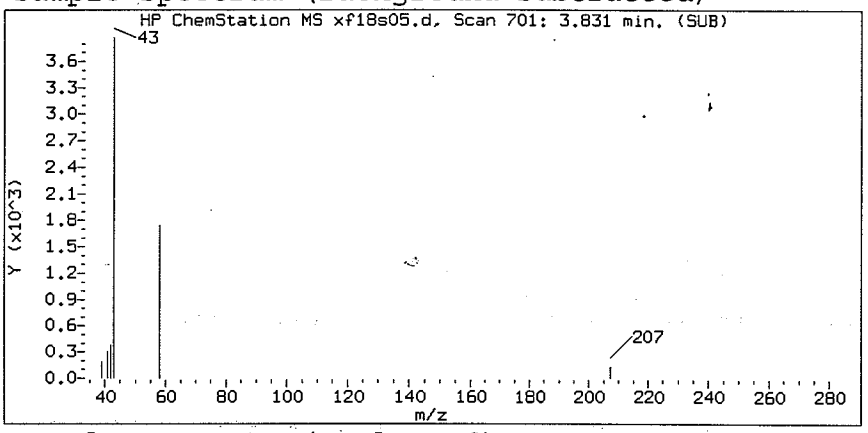
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.831 | 58 | 4865 | 11.829 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1122121 | 50.000 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 26247 | 4.357 ug/kg |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 893422 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 486995 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 251730 | 52.120 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 59547 | 49.192 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1073930 | 49.998 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 392456 | 47.801 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

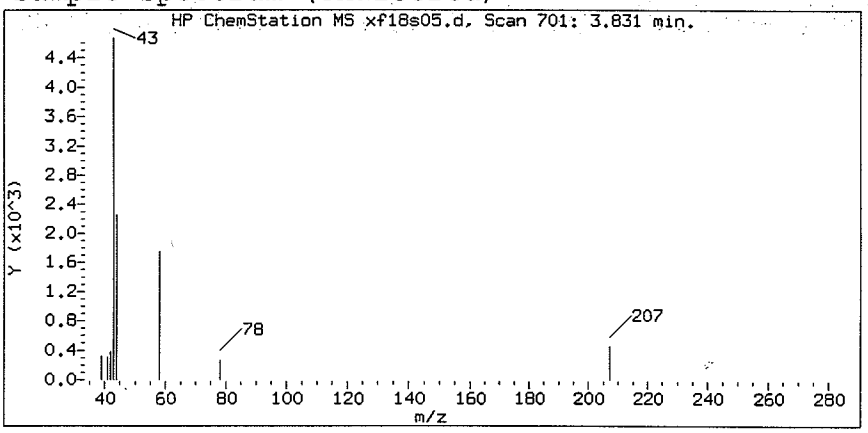
Reference Standard Spectrum for Acetone

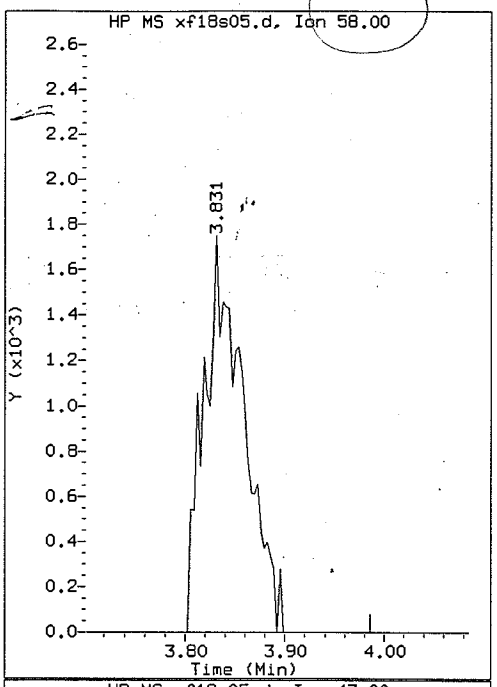


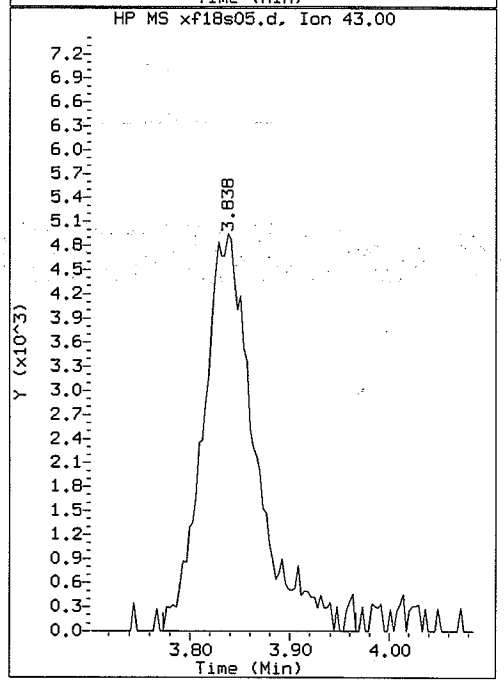

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



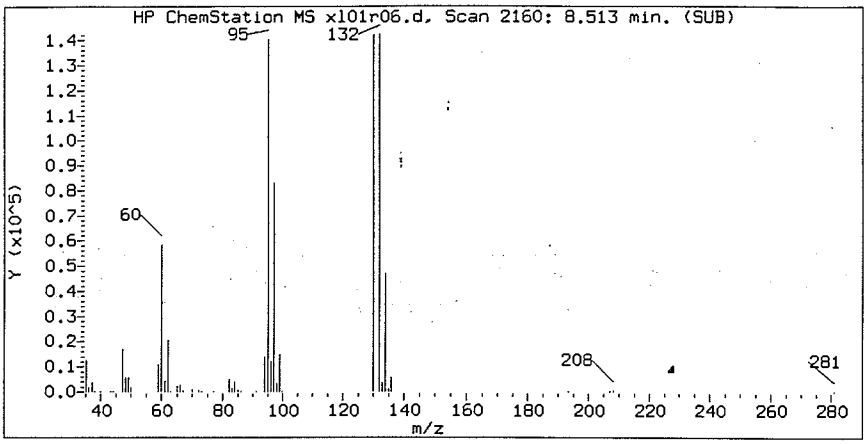

Data File: /chem/HP09193.i/04feb20a.b/xf18s05.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 13:52  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:21 msl01251

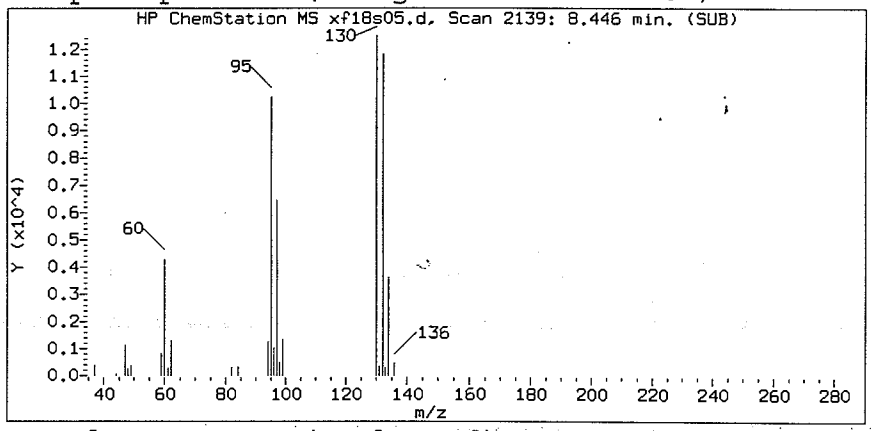
Sample Name: 5GP18  Lab Sample ID: 4218995

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 701 |
| Retention Time (minutes) | : 3.831 |
| Quant Ion | : 58.0 |
| Area (flag) | : 4865 |
| Concentration (ug/Kg) | : 11.8294 |

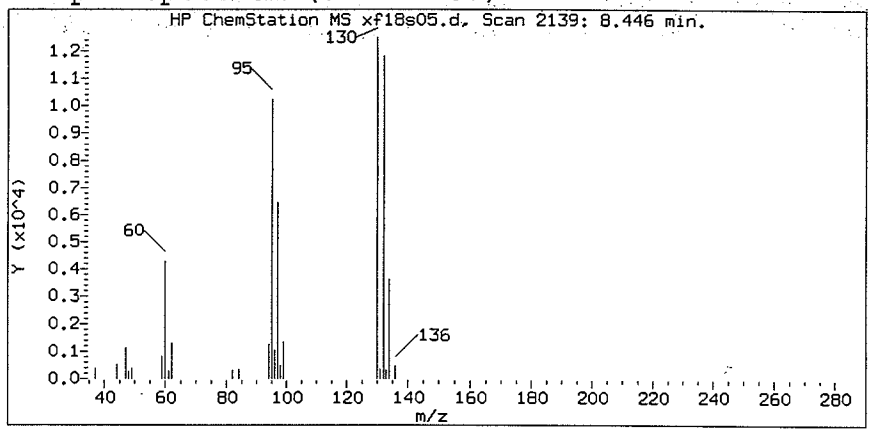
Reference Standard Spectrum for Trichloroethene

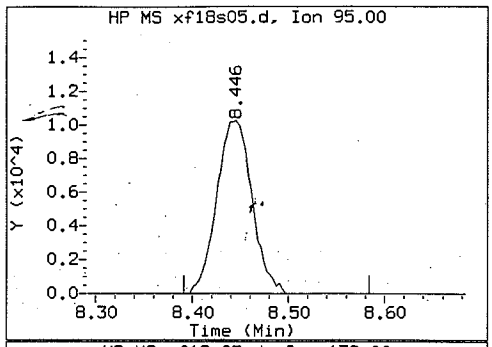


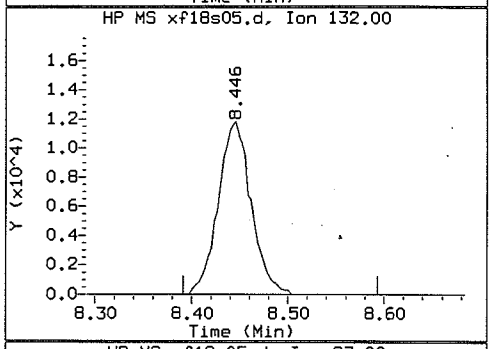

Sample Spectrum (Background Subtracted)

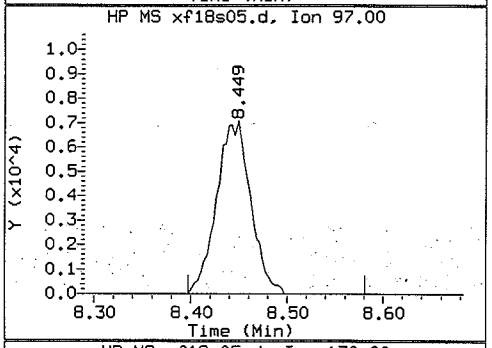


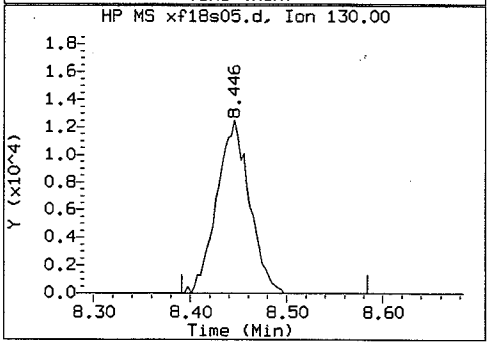

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s05.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 13:52  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:21 msl01251

Sample Name: 5GP18  Lab Sample ID: 4218995

| | |
|---|---|
| Compound Number | : 73 |
| Compound Name | : Trichloroethene |
| Scan Number | : 2139 |
| Retention Time (minutes) | : 8.446 |
| Quant Ion | : 95.0 |
| Area (flag) | : 26247 |
| Concentration (ug/Kg) | : 4.3572 |

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5GP18

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4218995

File: /chem/HP09193.i/04feb20a.b/xf18s05.d
Sample: 5GP18;4218995;2;0;;;
Injected At:20-FEB-2004 13:52
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1100 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1122121( -11) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 893422( -11) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 486995( -15) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 251730 | 52.120 | 104% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 59547 | 49.192 | 98% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1073930 | 49.998 | 100% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 392456 | 47.801 | 96% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 20) Acetone | (1) | 3.831( 0.001) | 58 | 4865 | 11.829 | 9.68 | | J | 5.73 | 16.37 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.27 | 8.18 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.41 | 4.09 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 73) Trichloroethene | (1) | 8.446(-0.001) | 95 | 26247 | 4.357 | 3.57 | | J | 0.82 | 4.09 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.45 | 8.18 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.82 | 4.09 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.82 | 4.09 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8882

5GP18

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4218995

File: /chem/HP09193.i/04feb20a.b/xf18s05.d
Sample: 5GP18;4218995;2;0;;;
Injected At:20-FEB-2004 13:52
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1100 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.45 | 8.18 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.82 | 4.09 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4708

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/20/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s22.d
Date : 20-FEB-2004 21:31
Client ID: 5GP19
Sample Info: 5GP19;4218996;2;0;;;

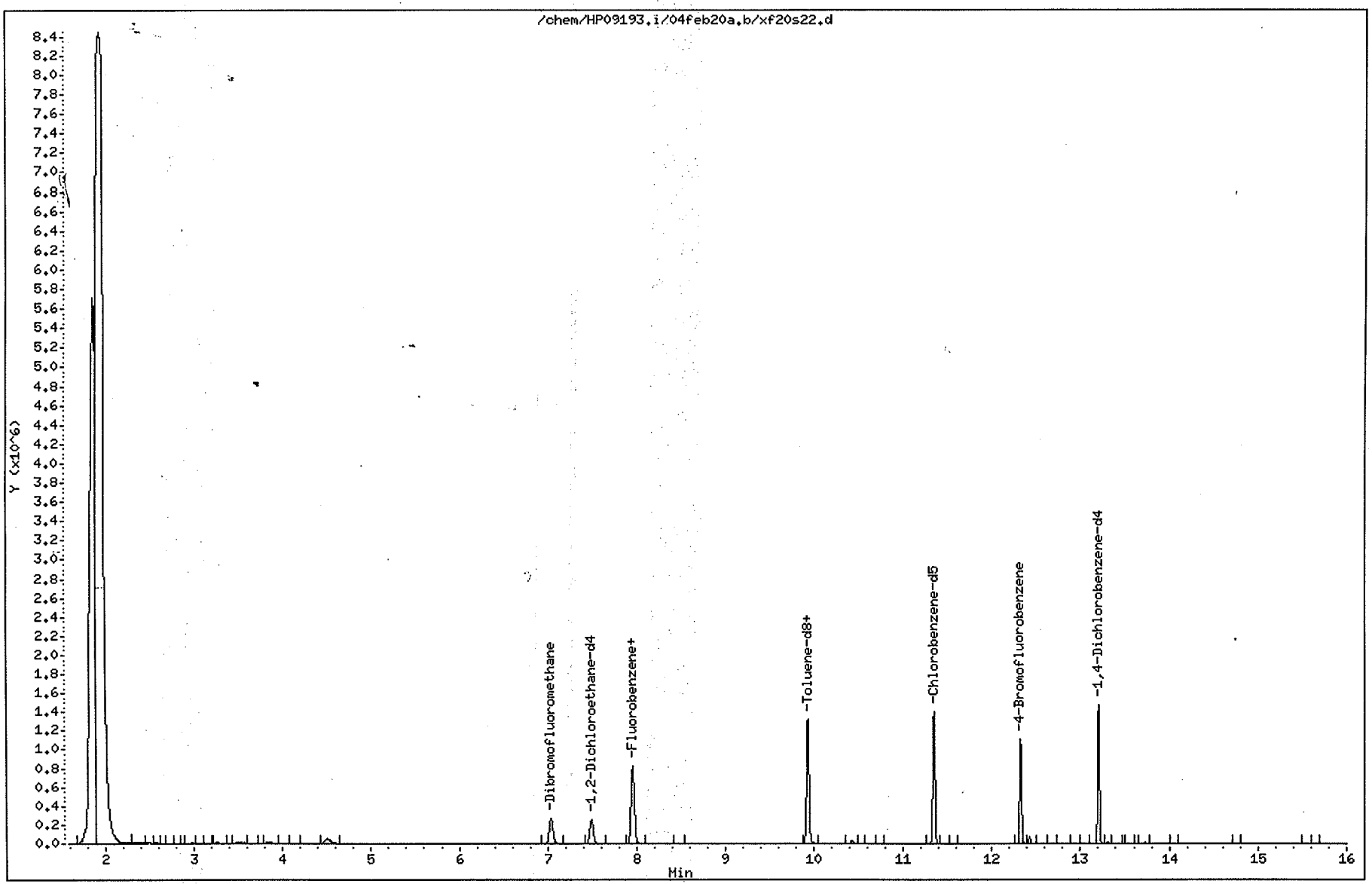
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

Temp
12.54
2.22.04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s22.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:31  Analyst ID: LCM01518

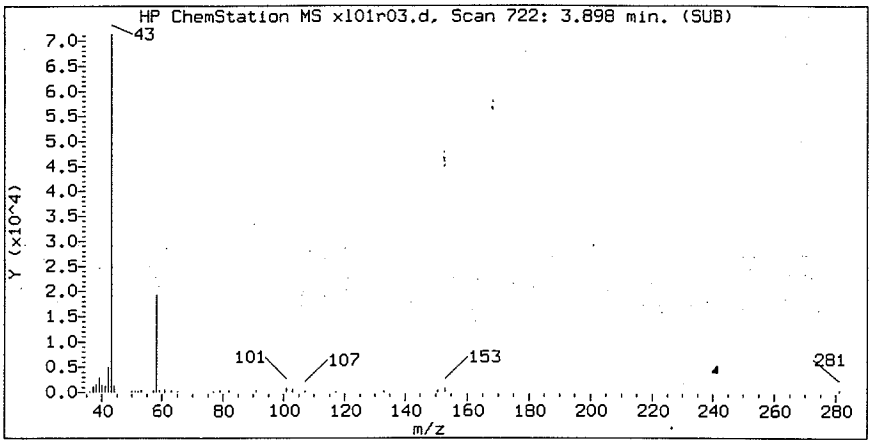
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 23:52 acp01254

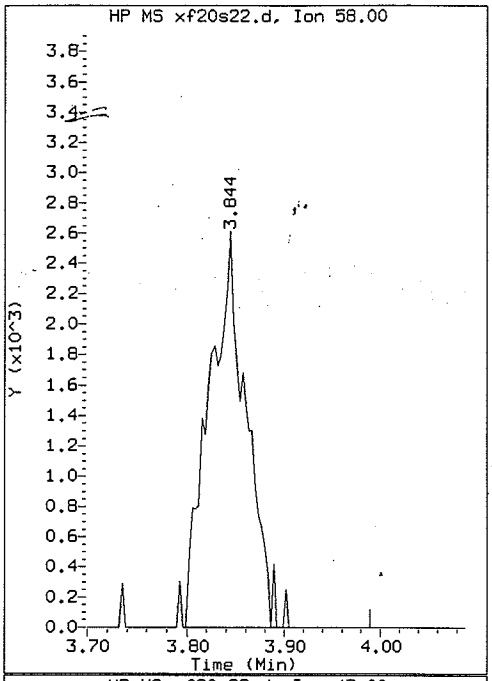
Sample Name: 5GP19  Lab Sample ID: 4218996

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.844 | 58 | 6946 | 18.058 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1049523 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 810481 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 389551 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 240218 | 53.176 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 56181 | 49.622 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1006911 | 51.676 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 338045 | 45.387 |

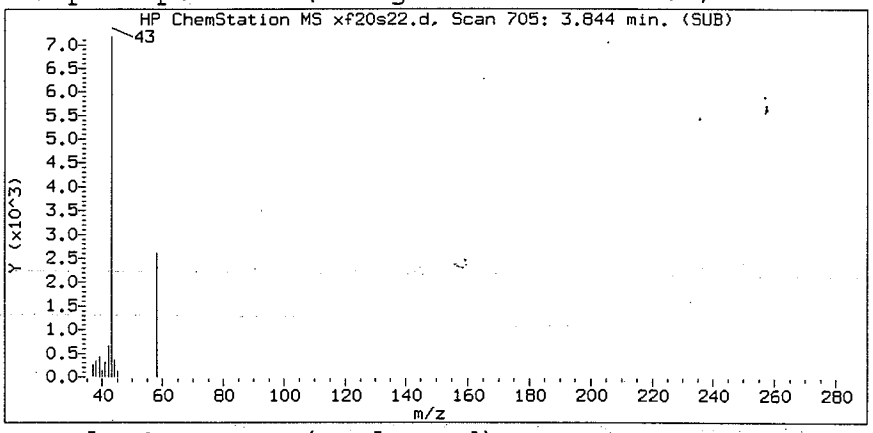
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

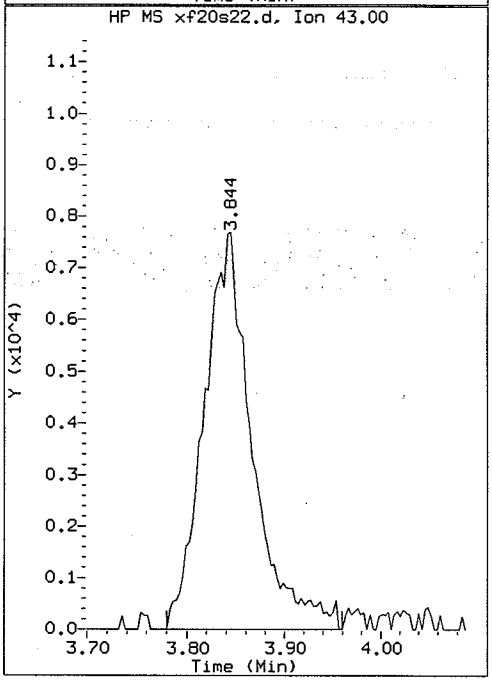
Reference Standard Spectrum for Acetone



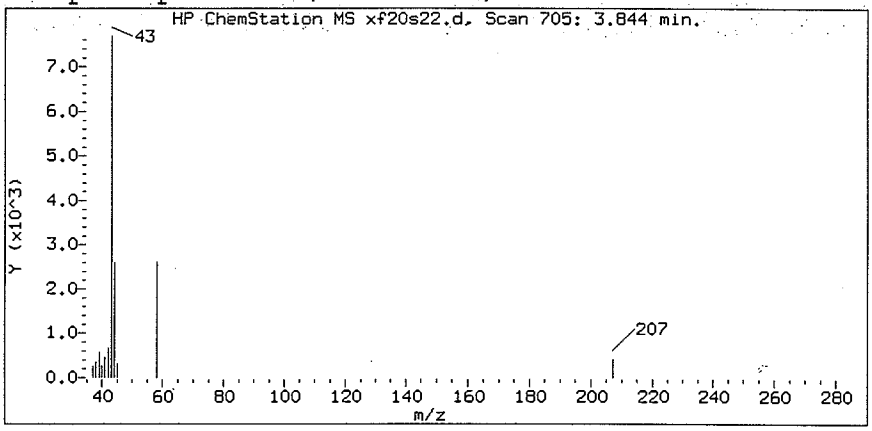




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s22.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:31 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:52 acp01254

Sample Name: 5GP19 Lab Sample ID: 4218996

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 705 |
| Retention Time (minutes) | : 3.844 |
| Quant Ion | : 58.0 |
| Area (flag) | : 6946 |
| Concentration (ug/Kg) | : 18.0576 |

# 5GP19

## Lancaster Laboratories
## Quantitation Report GC/MS Volatiles

# 4218996

File: /chem/HP09193.i/04feb20a.b/xf20s22.d
Sample: 5GP19;4218996;2;0;;;
Injected At:20-FEB-2004 21:31
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.83
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1049523( -17) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 810481( -19) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205(-0.003) | 3622 | 152 | 389551( -32) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 240218 | 53.176 | 106% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 56181 | 49.622 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1006911 | 51.676 | 103% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 338045 | 45.387 | 91% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 20) Acetone | (1) | 3.844(-0.001) | 58 | 6946 | 18.058 | 14.95 | | J | 5.79 | 16.56 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.31 | 8.28 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.41 | 4.14 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.48 | 8.28 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.83 | 4.14 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.83 | 4.14 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

5GP19

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4218996

File: /chem/HP09193.i/04feb20a.b/xf20s22.d
Sample: 5GP19;4218996;2;0;;;
Injected At:20-FEB-2004 21:31
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.83
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.48 | 8.28 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.83 | 4.14 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4712

Analyst: Acmp 1254 Date: 2.22.04

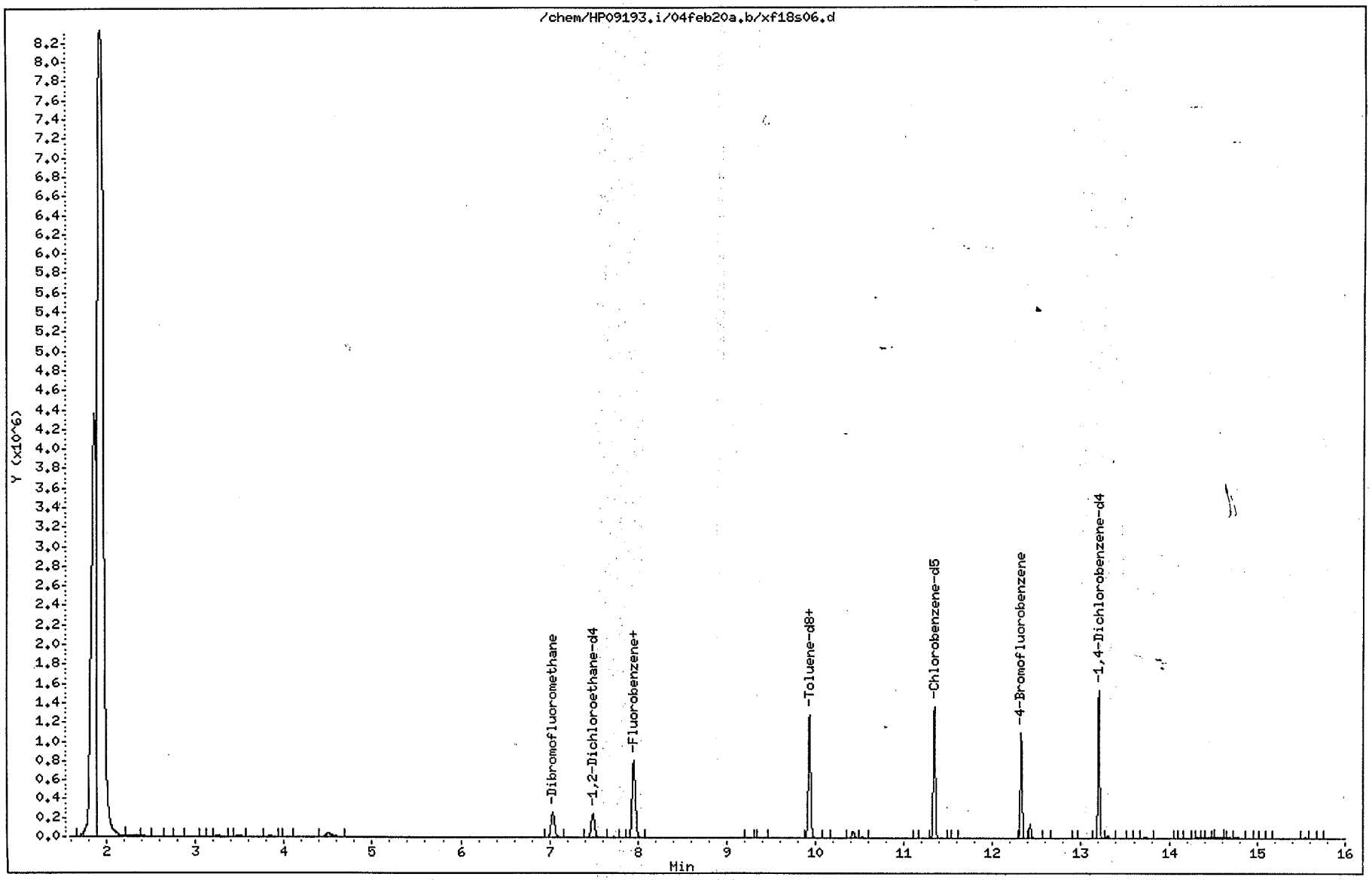
Auditor: [signature] Date: 2/25/04

Data File: /chem/HP09193.i/04feb20a.b/xf18s06.d
Date : 20-FEB-2004 14:19
Client ID: 5GP20
Sample Info: 5GP20;4218997;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s06.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 14:19  Analyst ID: LCM01518

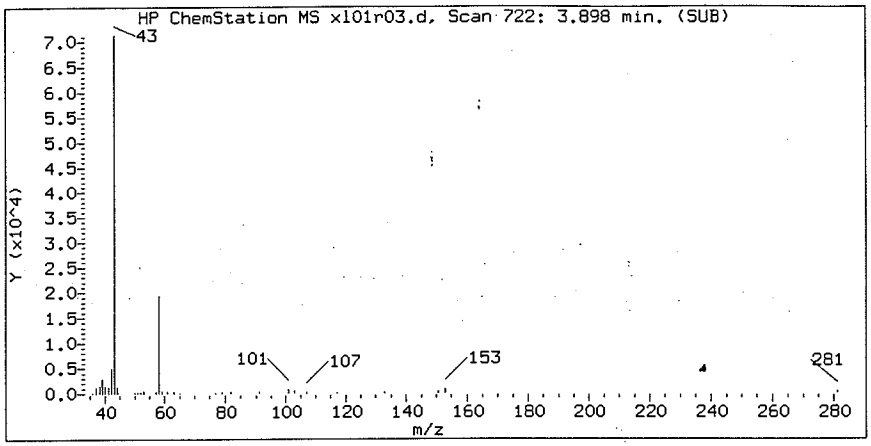
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:22 msl01251

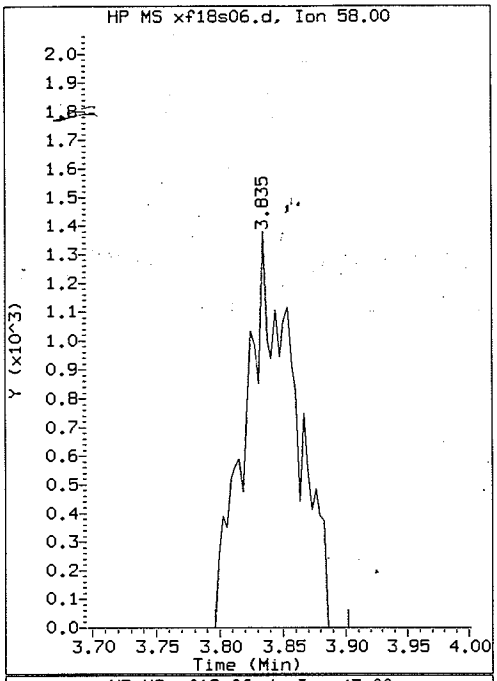
Sample Name: 5GP20  Lab Sample ID: 4218997

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.835 | 58 | 3741 | 9.860 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1035190 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 805411 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 404563 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 234025 | 52.523 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 55433 | 49.639 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 988881 | 51.070 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 345483 | 46.678 |

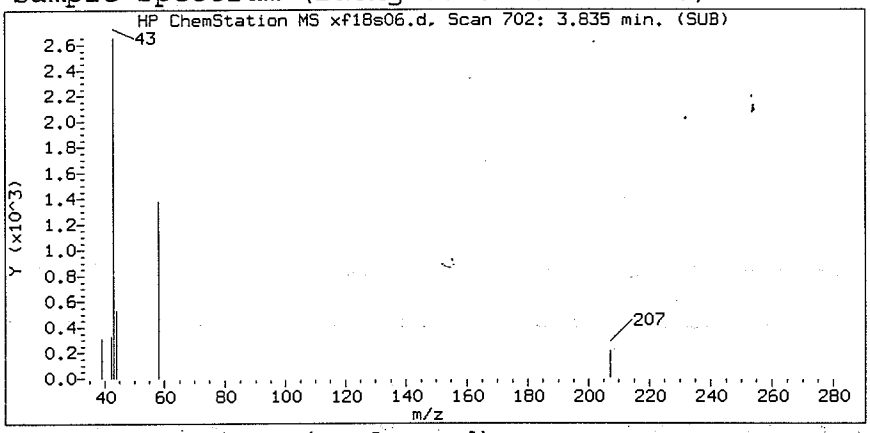
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

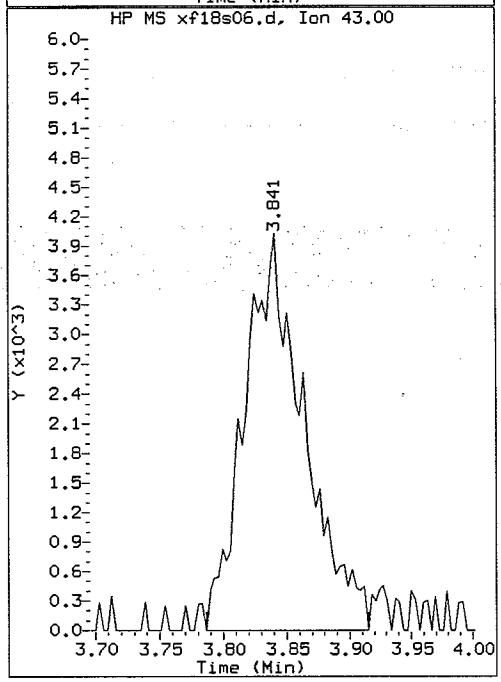
Reference Standard Spectrum for Acetone



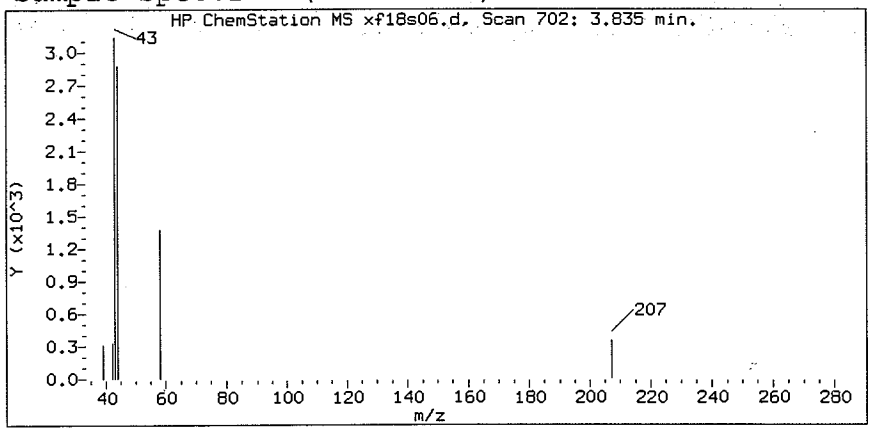




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s06.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 14:19  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:22 msl01251

Sample Name: 5GP20  Lab Sample ID: 4218997

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 702 |
| Retention Time (minutes) | : 3.835 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3741 |
| Concentration (ug/Kg) | : 9.8602 |

8891

5GP20

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4218997

File: /chem/HP09193.i/04feb20a.b/xf18s06.d
Sample: 5GP20;4218997;2;0;;;
Injected At:20-FEB-2004 14:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.87
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.7700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1035190( -18) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 805411( -20) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 404563( -29) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.000) | 113 | 234025 | 52.523 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 55433 | 49.639 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 988881 | 51.070 | 102% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 345483 | 46.678 | 93% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.73 | 4.33 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.73 | 4.33 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.73 | 4.33 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 20) Acetone | (1) | 3.835( 0.001) | 58 | 3741 | 9.860 | 8.54 | | J | 6.07 | 17.33 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.73 | 4.33 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.47 | 8.67 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.43 | 4.33 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.87 | 4.33 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.60 | 8.67 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.87 | 4.33 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.87 | 4.33 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



8892

5GP20

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4218997

File: /chem/HP09193.i/04feb20a.b/xf18s06.d
Sample: 5GP20;4218997;2;0;;;
Injected At:20-FEB-2004 14:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.87
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.7700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.60 | 8.67 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.87 | 4.33 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.87 | 4.33 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: M705

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



8893

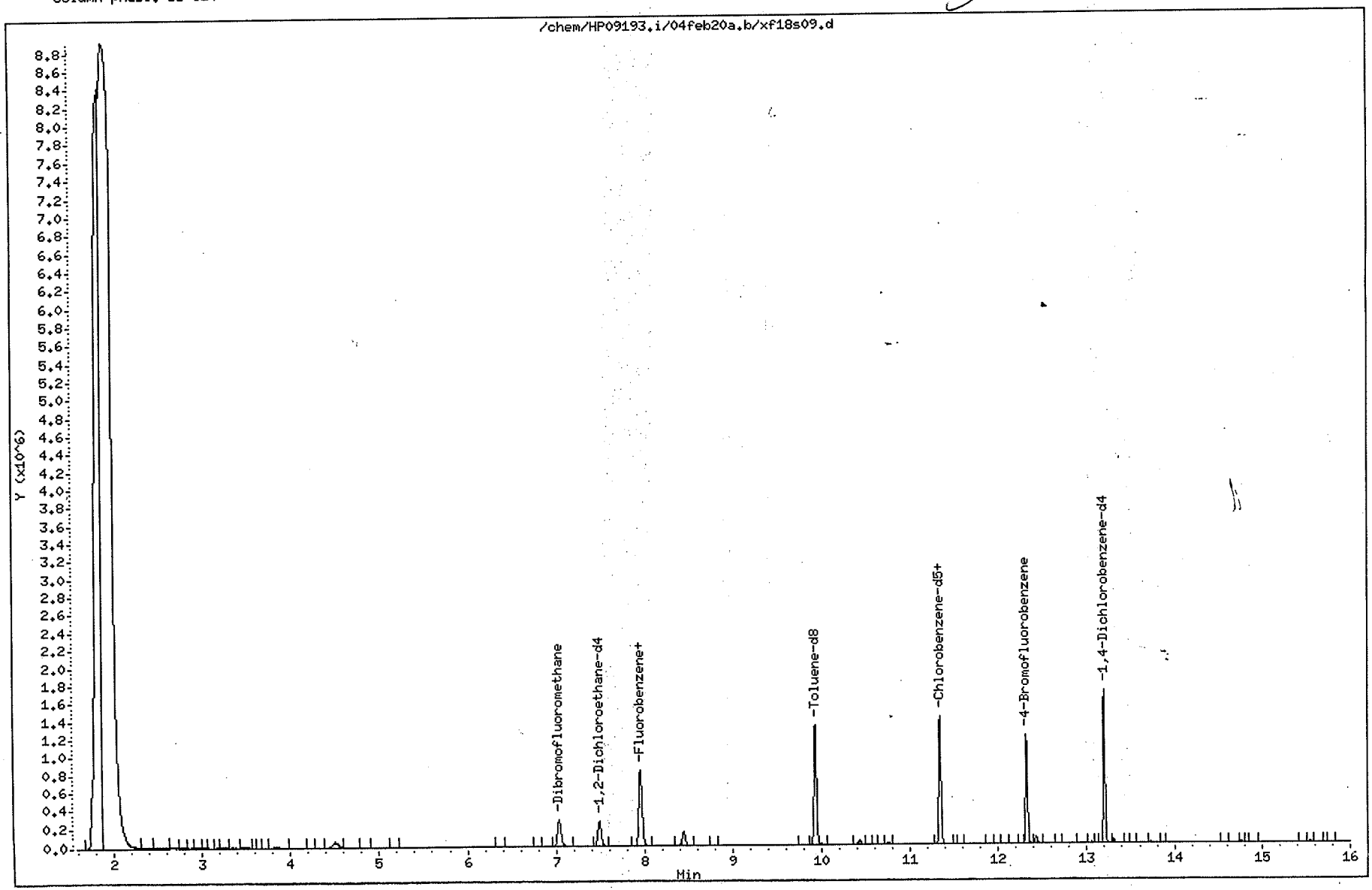
Data File: /chem/HP09193.i/04feb20a.b/xf18s09.d
Date : 20-FEB-2004 15:40
Client ID: 5GP21
Sample Info: 5GP21;4219000;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s09.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 15:40 Analyst ID: LCM01518

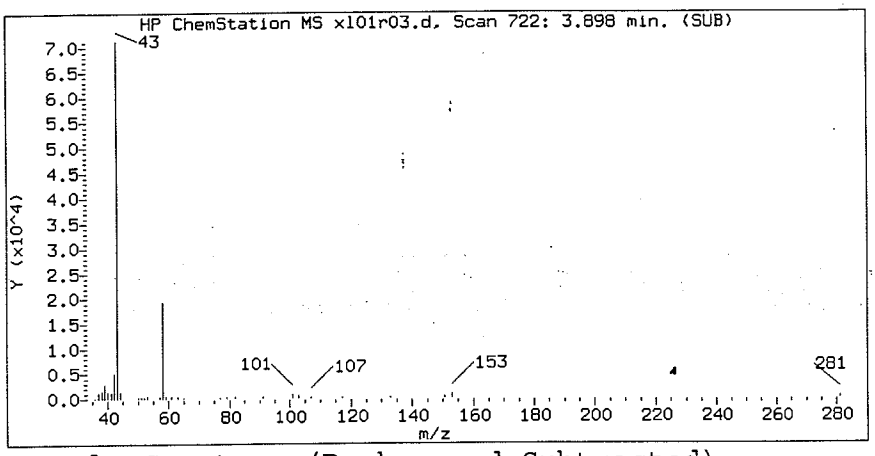
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:24 msl01251

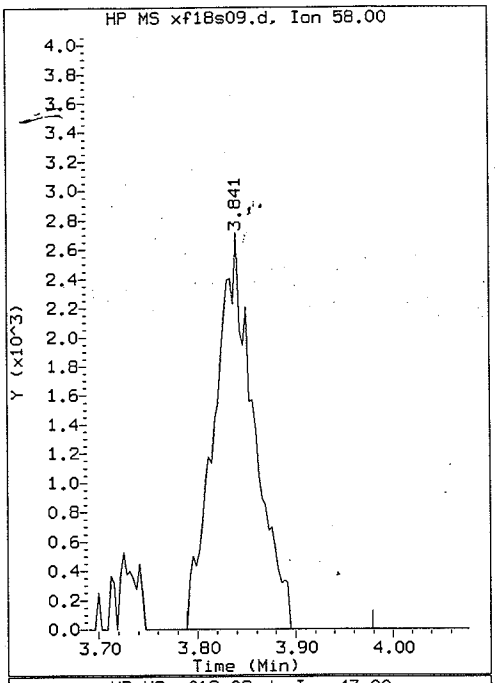
Sample Name: 5GP21 Lab Sample ID: 4219000

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.841 | 58 | 7576 | 19.090 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1082785 | 50.000 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 66781 | 11.489 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 853764 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 453402 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.030 | 113 | 244422 | 52.445 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 58072 | 49.716 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1033628 | 50.357 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 373522 | 47.608 |

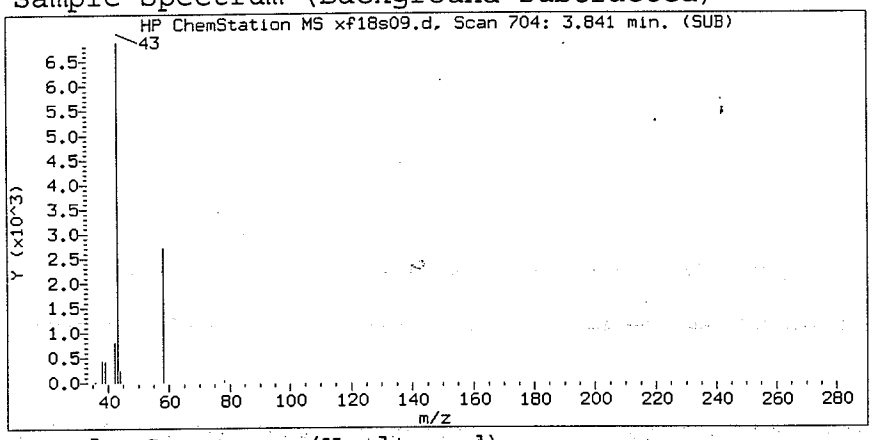
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

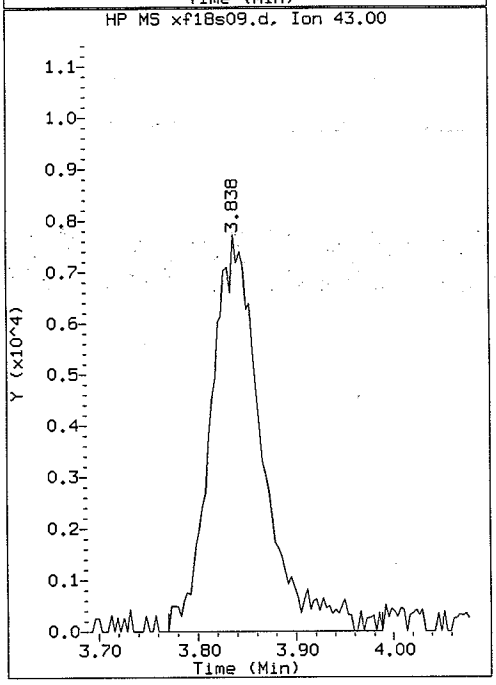
Reference Standard Spectrum for Acetone



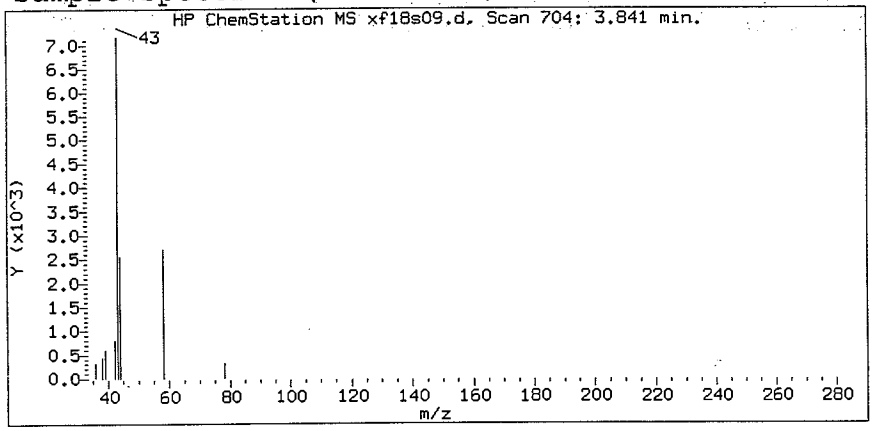




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



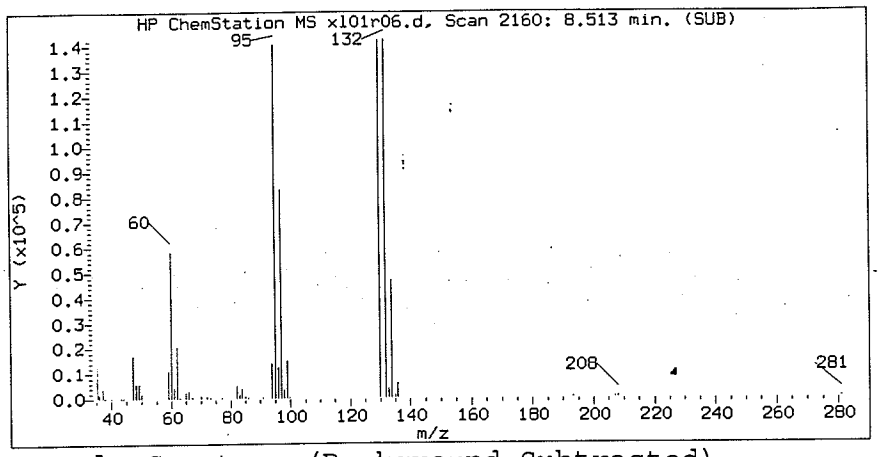

Data File: /chem/HP09193.i/04feb20a.b/xf18s09.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 15:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:24 msl01251

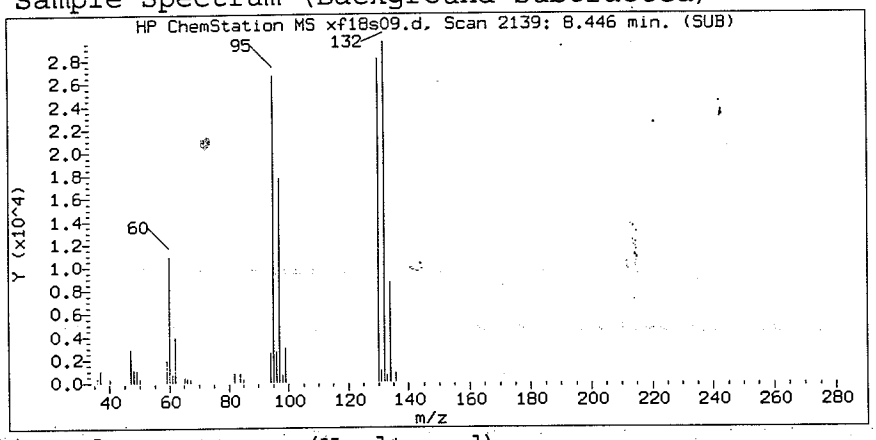
Sample Name: 5GP21  Lab Sample ID: 4219000

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 704 |
| Retention Time (minutes) | : 3.841 |
| Quant Ion | : 58.0 |
| Area (flag) | : 7576 |
| Concentration (ug/Kg) | : 19.0904 |

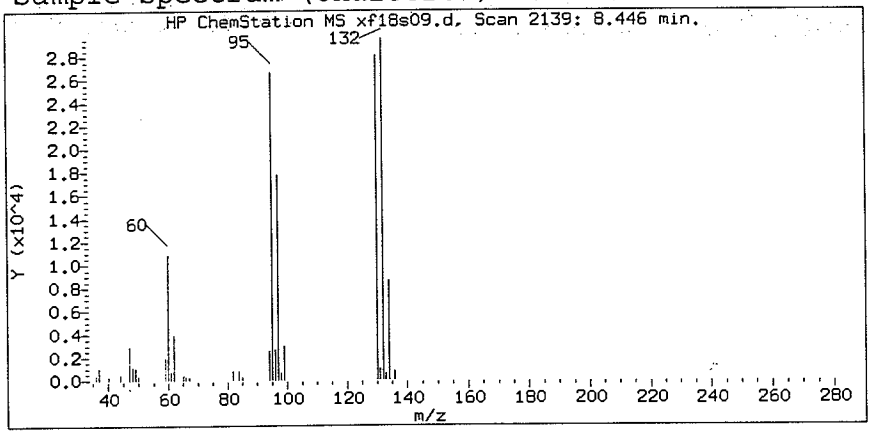
Reference Standard Spectrum for Trichloroethene

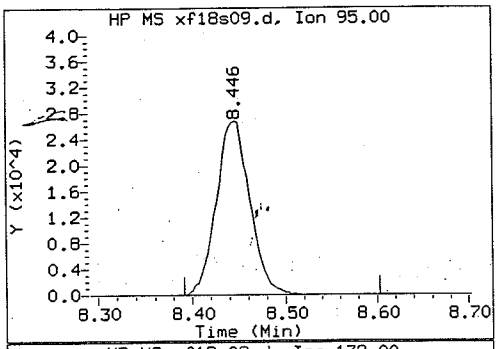


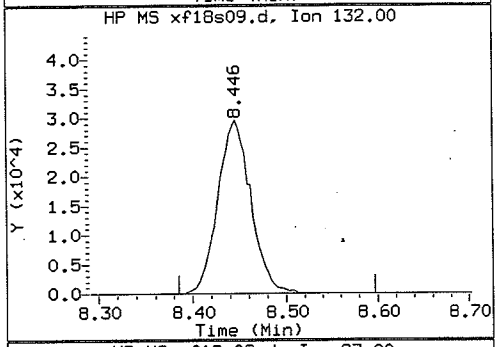

Sample Spectrum (Background Subtracted)

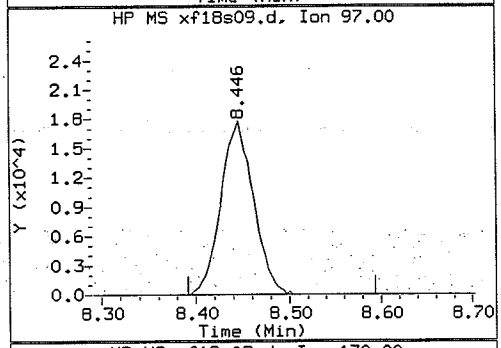


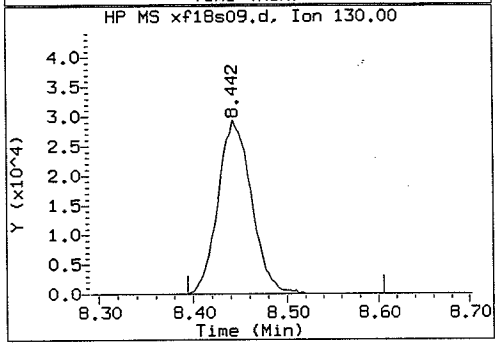

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s09.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 15:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:24 msl01251

Sample Name: 5GP21  Lab Sample ID: 4219000

| | |
|---|---|
| Compound Number | : 73 |
| Compound Name | : Trichloroethene |
| Scan Number | : 2139 |
| Retention Time (minutes) | : 8.446 |
| Quant Ion | : 95.0 |
| Area (flag) | : 66781 |
| Concentration (ug/Kg) | : 11.4889 |

8857

# 5GP21

## Lancaster Laboratories
## Quantitation Report GC/MS Volatiles

# 4219000

File: /chem/HP09193.i/04feb20a.b/xf18s09.d
Sample: 5GP21;4219000;2;0;;;
Injected At:20-FEB-2004 15:40
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.78
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.4300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1082785( -14) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 853764( -15) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.204(-0.003) | 3622 | 152 | 453402( -21) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.030( 0.000) | 113 | 244422 | 52.445 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.496(-0.001) | 102 | 58072 | 49.716 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1033628 | 50.357 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 373522 | 47.608 | 95% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.56 | 3.89 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.56 | 3.89 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.56 | 3.89 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 20) Acetone | (1) | 3.841( 0.000) | 58 | 7576 | 19.090 | 14.84 | | J | 5.44 | 15.55 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.56 | 3.89 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.11 | 7.78 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.39 | 3.89 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 73) Trichloroethene | (1) | 8.446( 0.000) | 95 | 66781 | 11.489 | 8.93 | | | 0.78 | 3.89 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.78 | 3.89 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.33 | 7.78 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.78 | 3.89 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.78 | 3.89 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



SW
Amp purj x df

5GP21

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4219000

File: /chem/HP09193.i/04feb20a.b/xf18s09.d
Sample: 5GP21;4219000;2;0;;;
Injected At:20-FEB-2004 15:40
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.78
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.4300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.33 | 7.78 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.78 | 3.89 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.78 | 3.89 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4718

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



8899

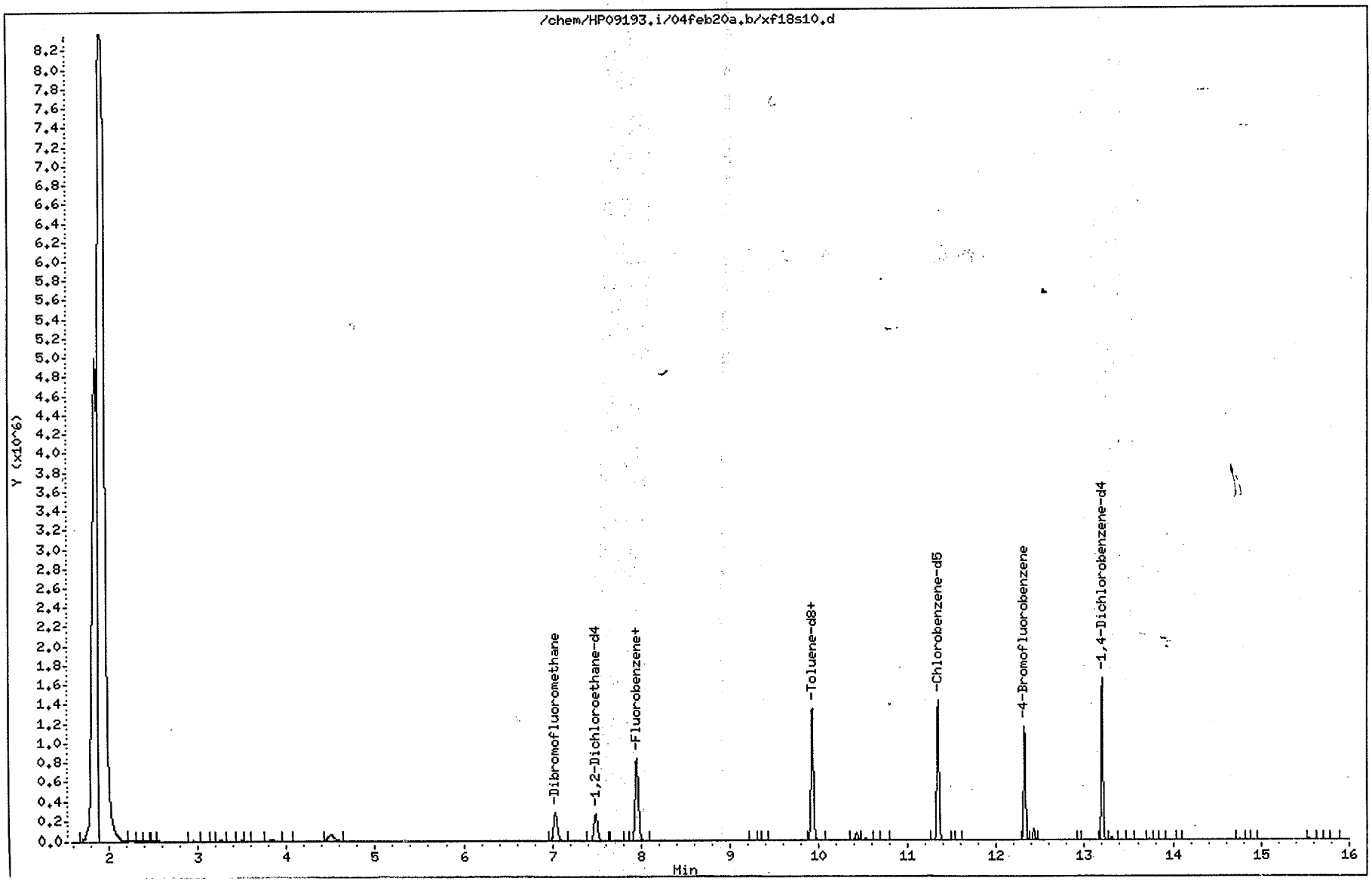
Data File: /chem/HP09193.i/04feb20a.b/xf18s10.d
Date : 20-FEB-2004 16:07
Client ID: 5GP22
Sample Info: 5GP22;4219001;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s10.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 16:07 Analyst ID: LCM01518

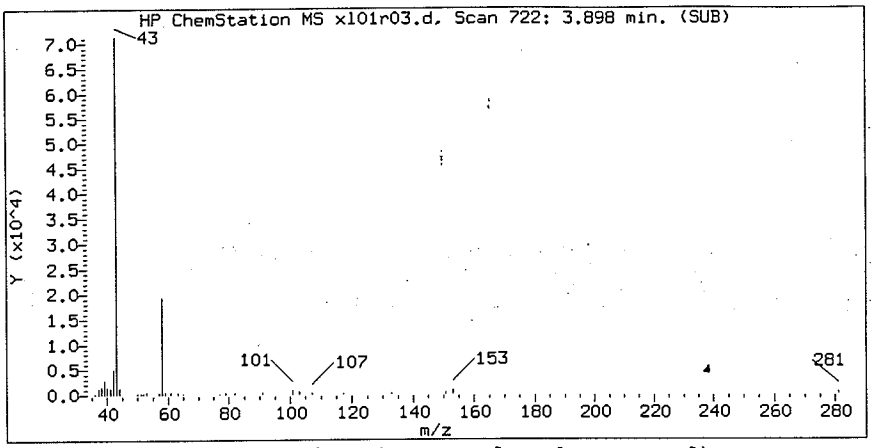
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:43 msl01251

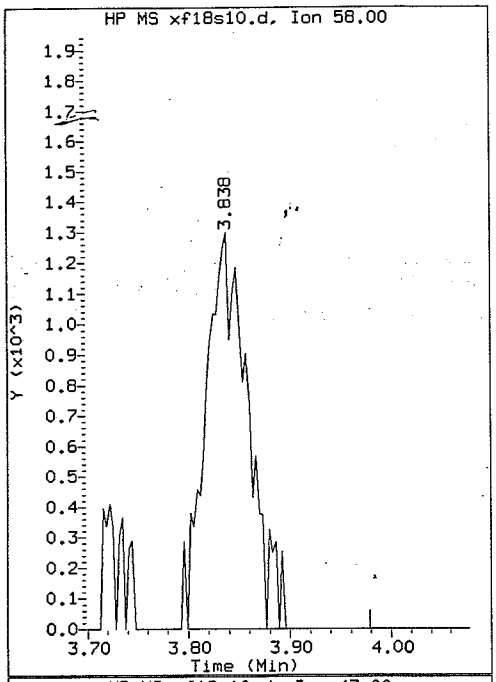
Sample Name: 5GP22 Lab Sample ID: 4219001

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.838 | 58 | 3700 | 9.305 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1084943 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 845975 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 431017 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 245740 | 52.623 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 58431 | 49.924 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1031884 | 50.735 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 360680 | 46.394 |

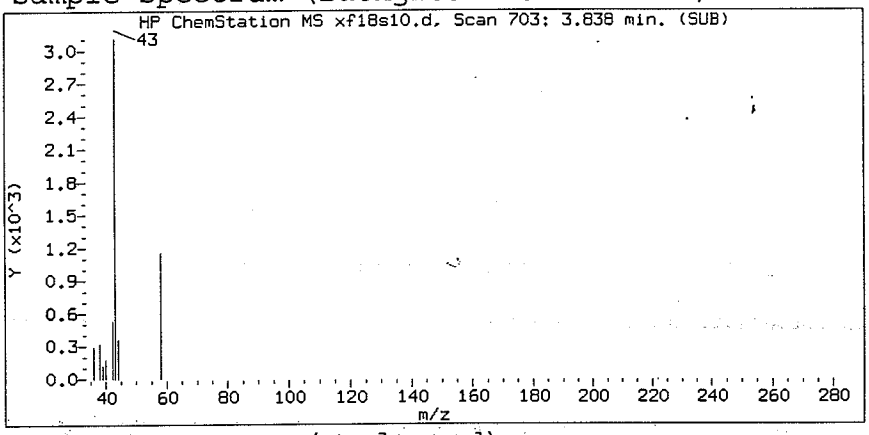
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

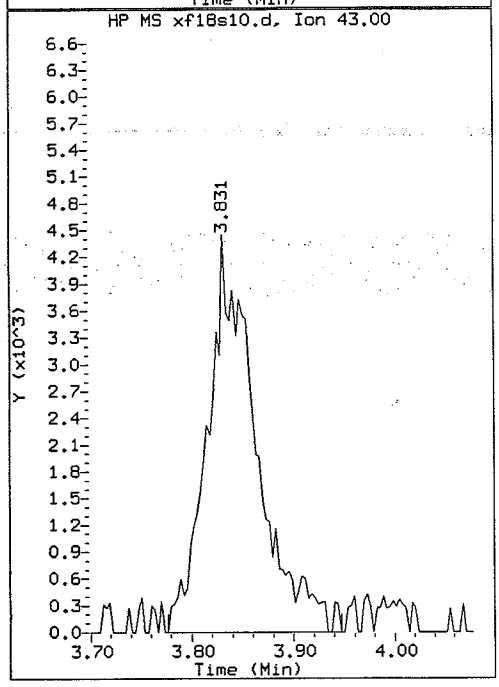
Reference Standard Spectrum for Acetone



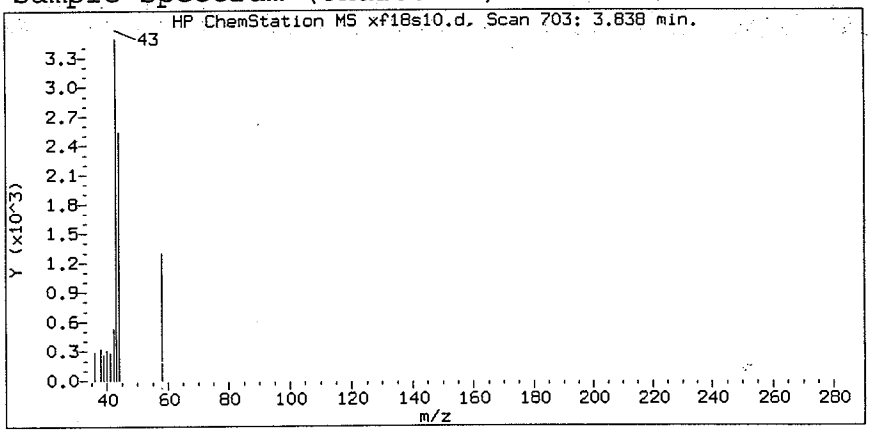




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf18s10.d
Injection date and time: 20-FEB-2004 16:07

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:43 msl01251

Sample Name: 5GP22

Lab Sample ID: 4219001

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 703 |
| Retention Time (minutes) | : 3.838 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3700 |
| Concentration (ug/Kg) | : 9.3049 |

# 5GP22

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219001

File: /chem/HP09193.i/04feb20a.b/xf18s10.d
Sample: 5GP22;4219001;2;0;;;
Injected At:20-FEB-2004 16:07
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.81
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.2000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1084943( -14) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 845975( -15) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 431017( -24) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 245740 | 52.623 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 58431 | 49.924 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1031884 | 50.735 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 360680 | 46.394 | 93% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.61 | 4.03 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.61 | 4.03 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.61 | 4.03 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 20) Acetone | (1) | 3.838( 0.000) | 58 | 3700 | 9.305 | 7.50 | | J | 5.65 | 16.13 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.61 | 4.03 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.23 | 8.06 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.40 | 4.03 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.81 | 4.03 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.42 | 8.06 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.81 | 4.03 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.81 | 4.03 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

5GP22

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219001

File: /chem/HP09193.i/04feb20a.b/xf18s10.d
Sample: 5GP22;4219001;2;0;;;
Injected At:20-FEB-2004 16:07
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.81
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.2000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.42 | 8.06 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.81 | 4.03 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.81 | 4.03 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4714

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



5184

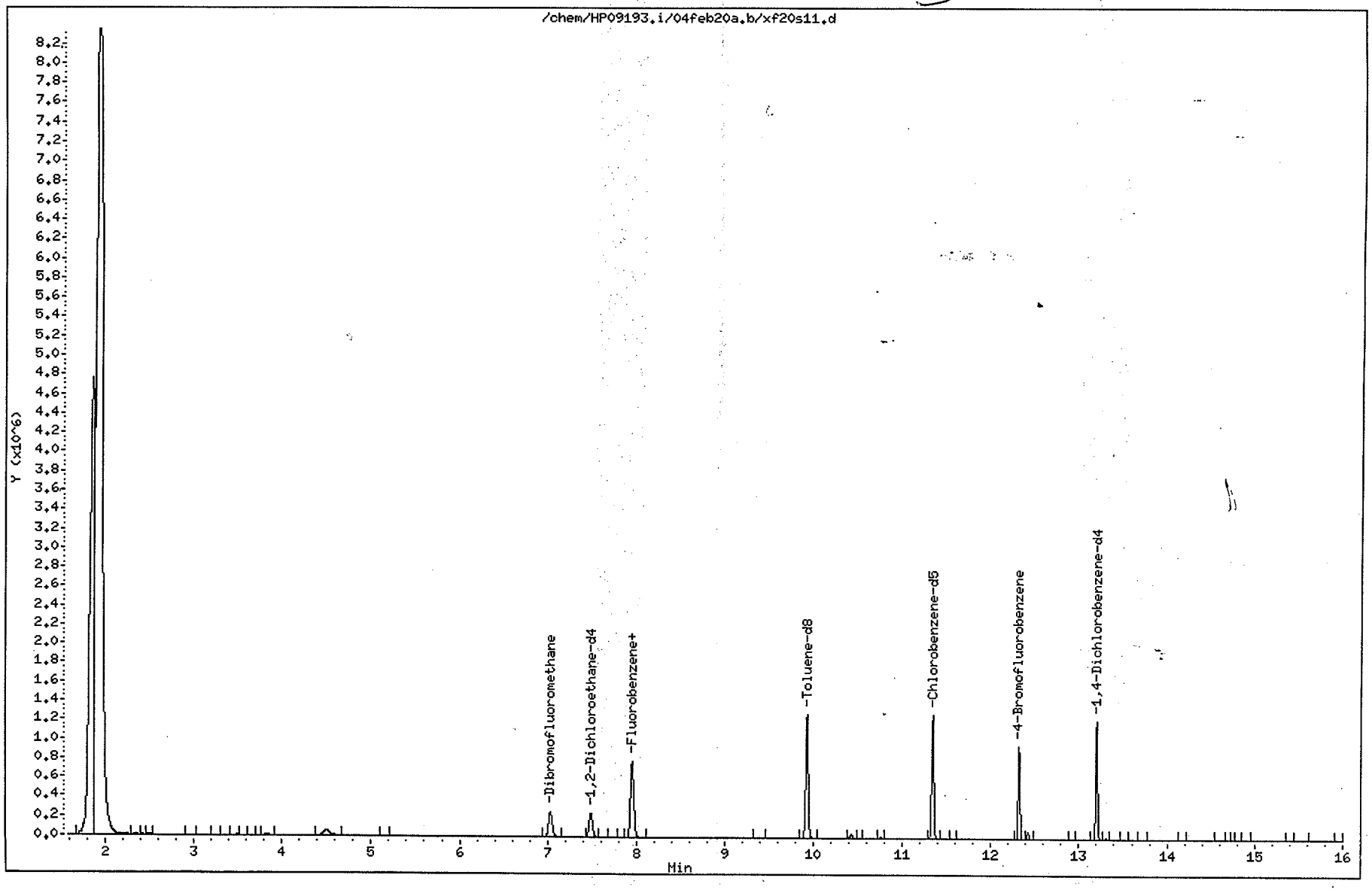
Data File: /chem/HP09193.i/04feb20a.b/xf20s11.d
Date : 20-FEB-2004 16:34
Client ID: 52222
Sample Info: 52222;4219002;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s11.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 16:34  Analyst ID: LCM01518

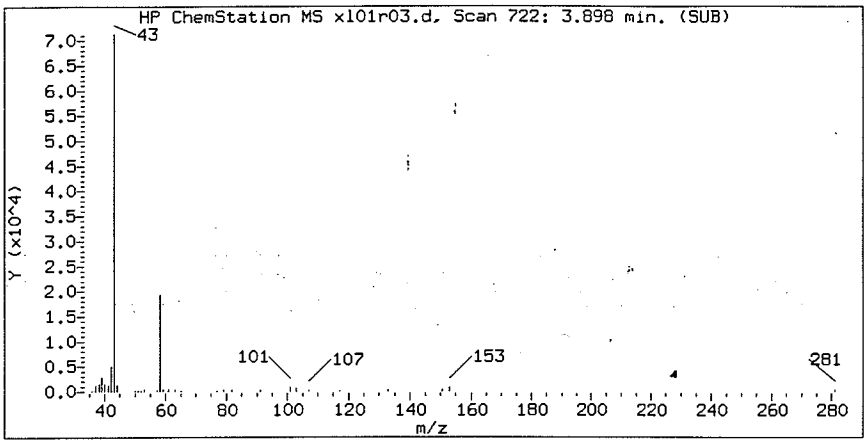
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:59 msl01251

Sample Name: 52222  Lab Sample ID: 4219002

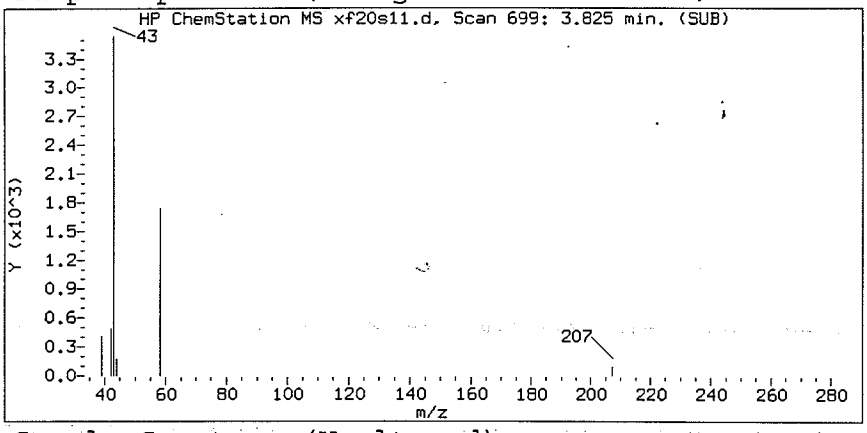
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.825 | 58 | 5166 | 13.894 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1014479 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 737865 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 323933 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 230292 | 52.740 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 53699 | 49.068 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 954318 | 53.796 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 296563 | 43.736 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

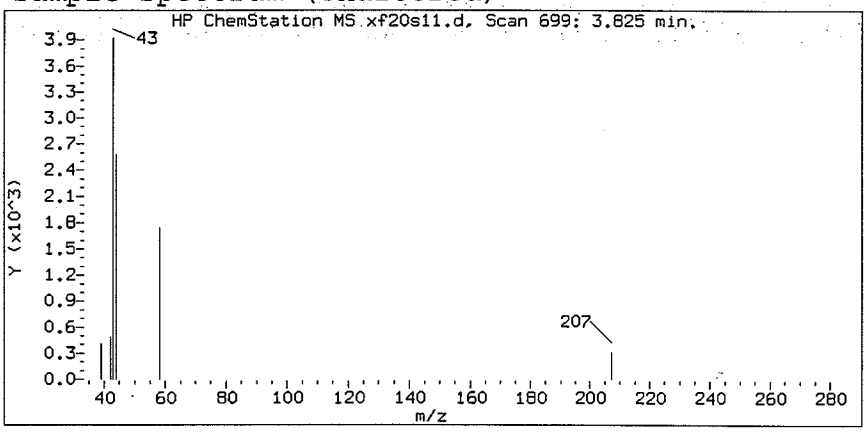
Reference Standard Spectrum for Acetone

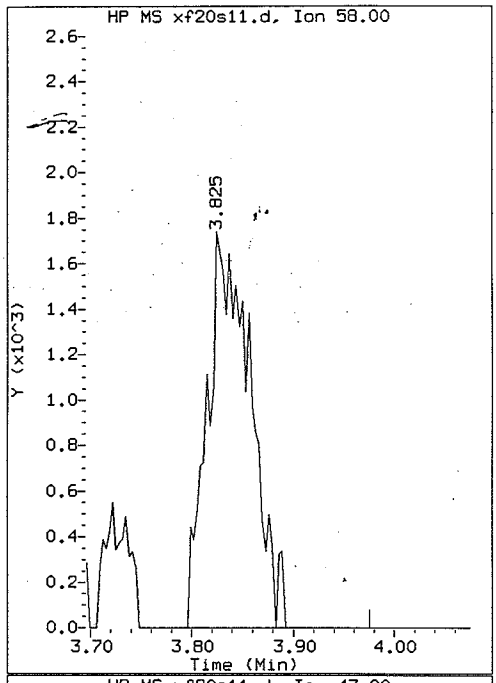


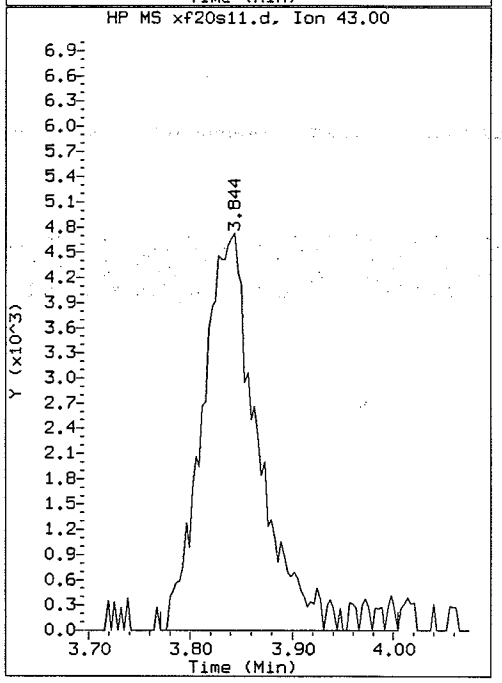

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s11.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 16:34  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 16:59 msl01251

Sample Name: 52222  Lab Sample ID: 4219002

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 699 |
| Retention Time (minutes) | : 3.825 |
| Quant Ion | : 58.0 |
| Area (flag) | : 5166 |
| Concentration (ug/Kg) | : 13.8941 |

52222

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219002

File: /chem/HP09193.i/04feb20a.b/xf20s11.d
Sample: 52222;4219002;2;0;;;
Injected At:20-FEB-2004 16:34
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1200 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1014479( -20) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 737865( -26) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 323933( -43) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 230292 | 52.740 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 53699 | 49.068 | 98% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 954318 | 53.796 | 108% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325(-0.001) | 95 | 296563 | 43.736 | 87% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.63 | 4.08 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.63 | 4.08 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.63 | 4.08 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 20) Acetone | (1) | 3.825( 0.002) | 58 | 5166 | 13.894 | 11.35 | | J | 5.72 | 16.34 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.63 | 4.08 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.27 | 8.17 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.41 | 4.08 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.82 | 4.08 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.45 | 8.17 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.82 | 4.08 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.82 | 4.08 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

52222 Lancaster Laboratories 4219002
Quantitation Report GC/MS Volatiles

File: /chem/HP09193.i/04feb20a.b/xf20s11.d
Sample: 52222;4219002;2;0;;;
Injected At:20-FEB-2004 16:34
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1200 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.45 | 8.17 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.82 | 4.08 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.82 | 4.08 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4721

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04

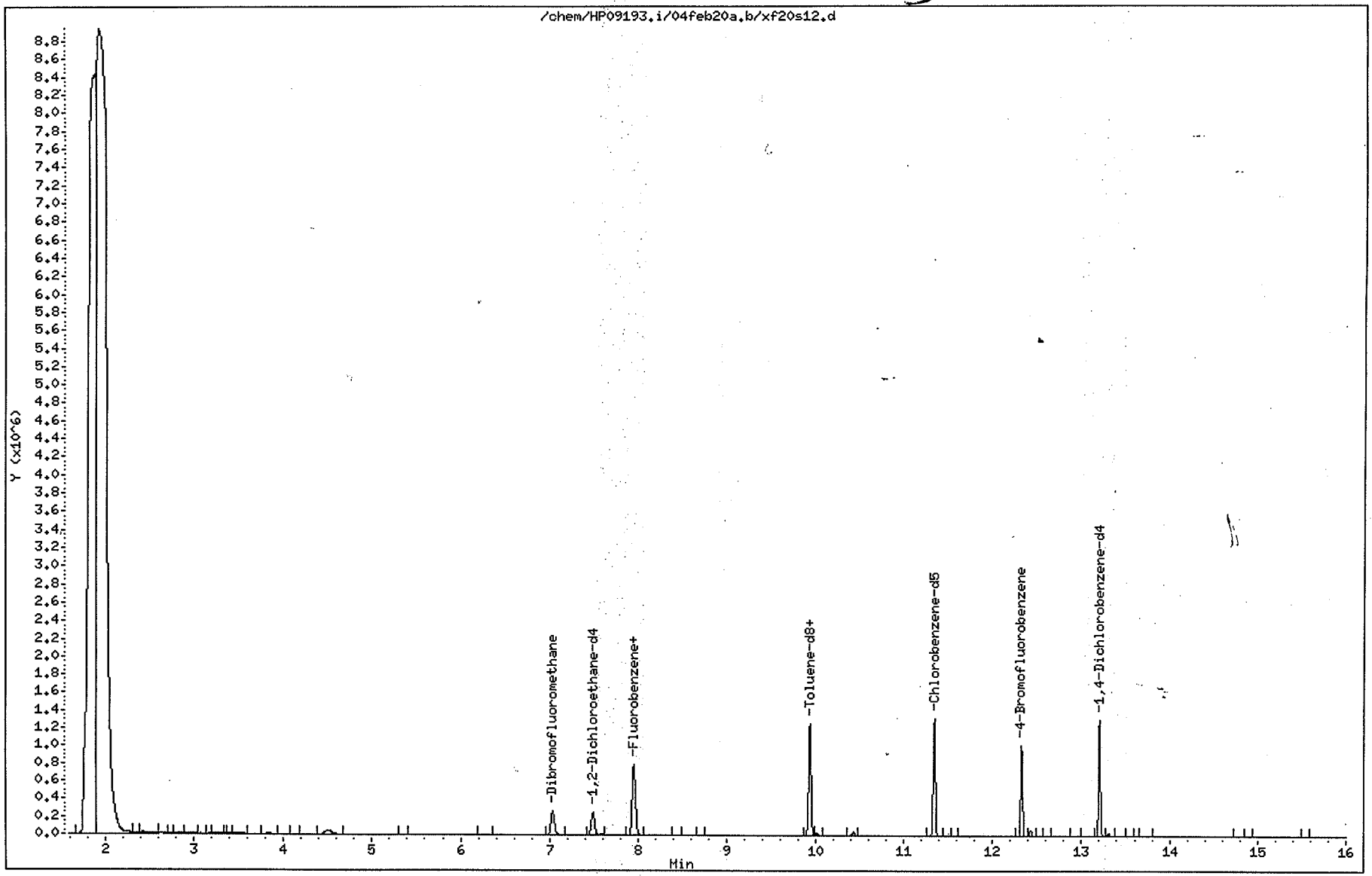
Data File: /chem/HP09193.i/04feb20a.b/xf20s12.d
Date : 20-FEB-2004 17:01
Client ID: 5GP23
Sample Info: 5GP23;4219003;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s12.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:01 Analyst ID: LCM01518

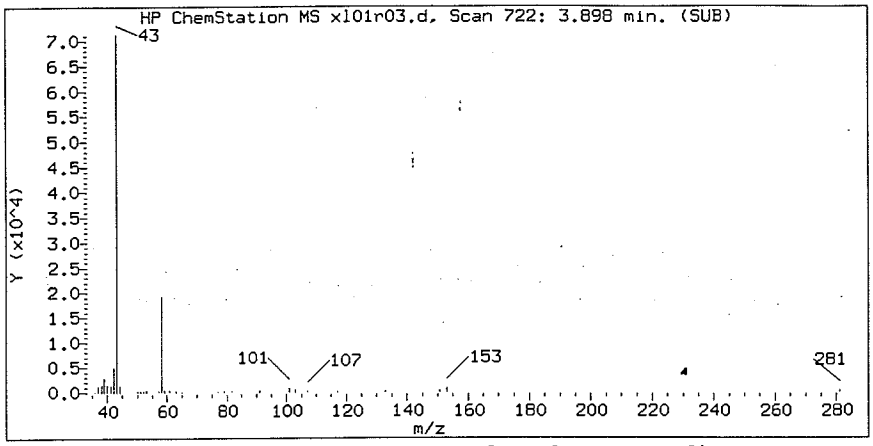
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 17:58 msl01251

Sample Name: 5GP23 Lab Sample ID: 4219003

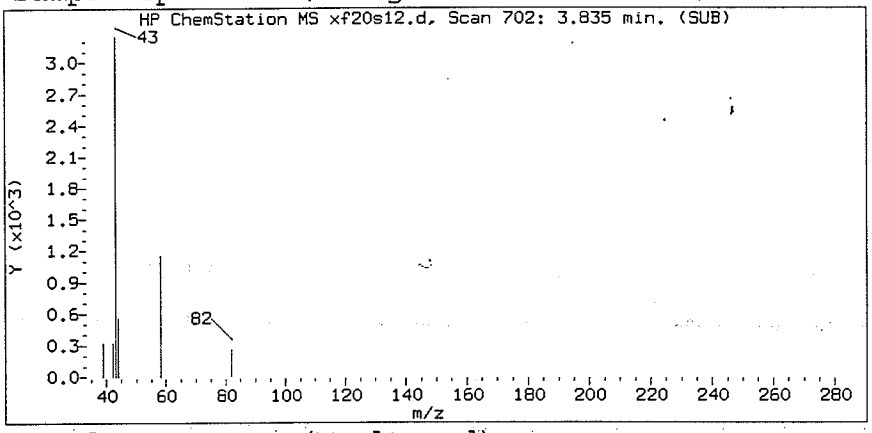
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.835 | 58 | 3264 | 8.707 |
| 65) Benzene | (1) | 7.592 | 78 | 13050 | 0.601 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1022786 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 770274 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 346240 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 235056 | 53.394 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 55365 | 50.179 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 962066 | 51.951 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 315299 | 44.543 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

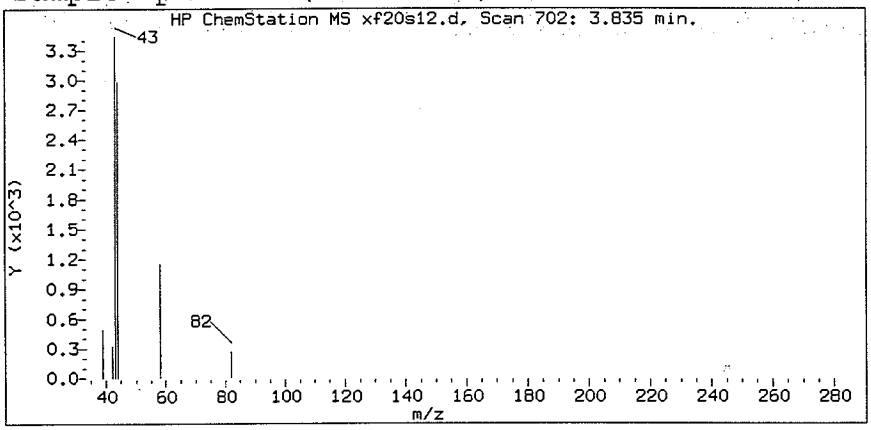
Reference Standard Spectrum for Acetone

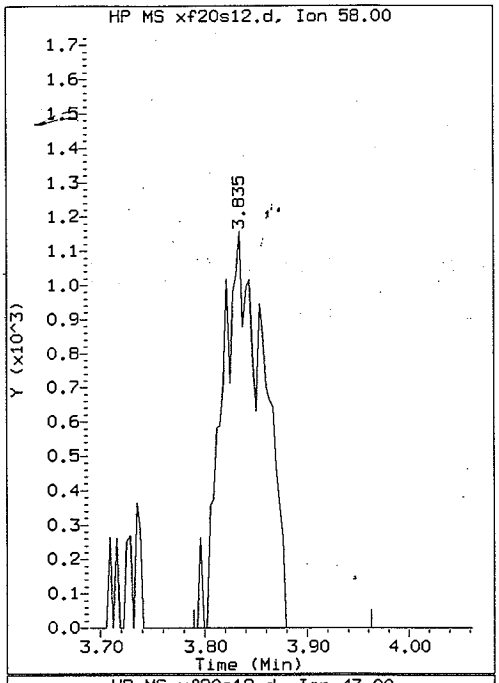


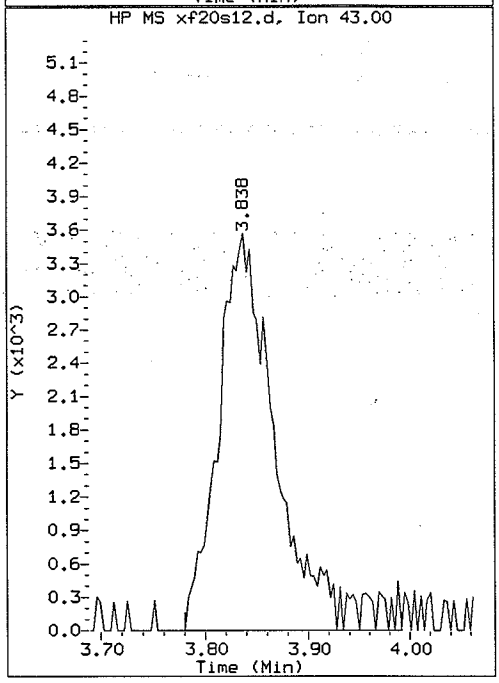

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s12.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:01  Analyst ID: LCM01518

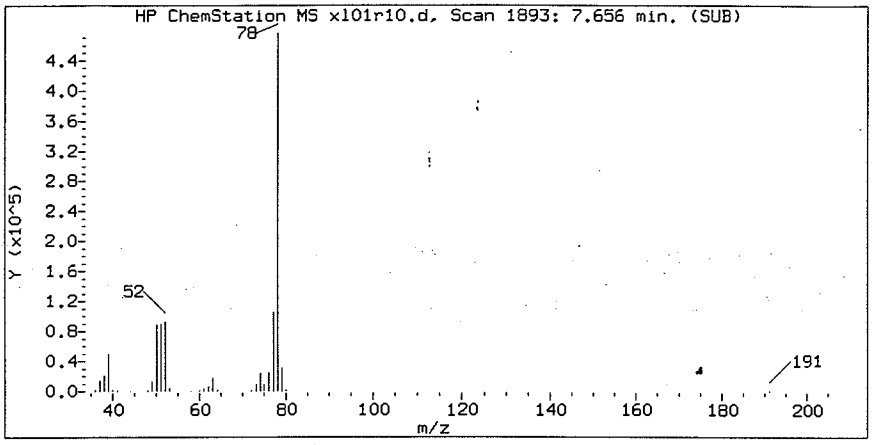
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 17:58 msl01251

Sample Name: 5GP23  Lab Sample ID: 4219003

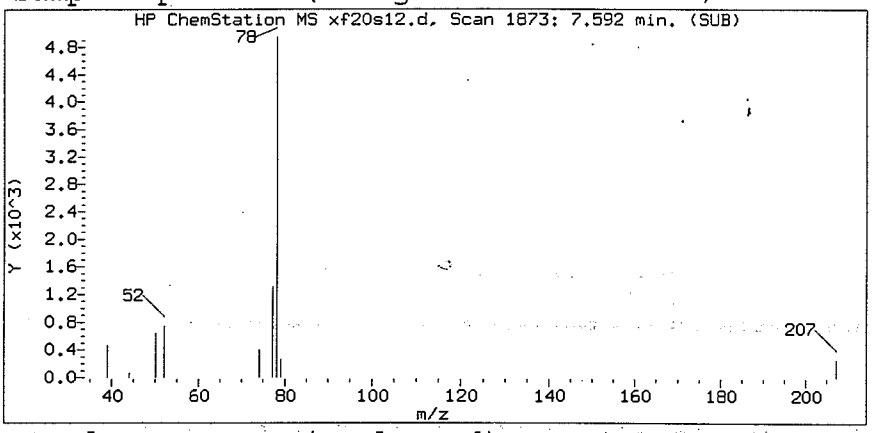
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 702 |
| Retention Time (minutes) | : 3.835 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3264 |
| Concentration (ug/Kg) | : 8.7073 |

0112

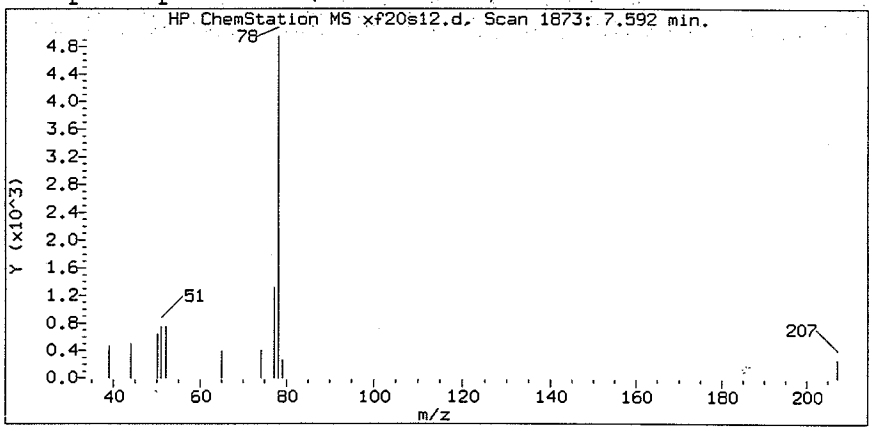
Reference Standard Spectrum for Benzene

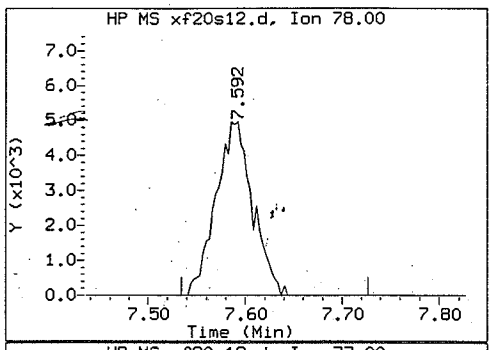


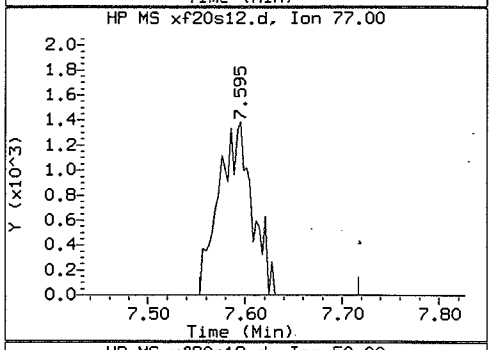

Sample Spectrum (Background Subtracted)

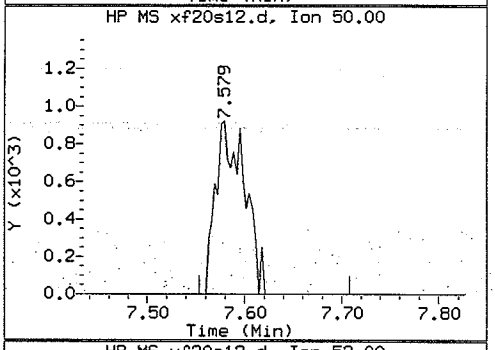


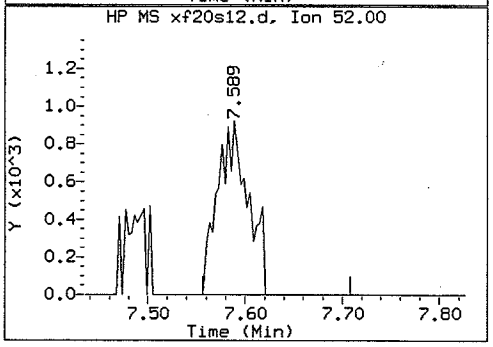

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s12.d
Injection date and time: 20-FEB-2004 17:01

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 17:58 msl01251

Sample Name: 5GP23

Lab Sample ID: 4219003

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1873 |
| Retention Time (minutes) | : 7.592 |
| Quant Ion | : 78.0 |
| Area (flag) | : 13050 |
| Concentration (ug/Kg) | : 0.6012 |

5GP23

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219003

File: /chem/HP09193.i/04feb20a.b/xf20s12.d
Sample: 5GP23;4219003;2;0;;;
Injected At:20-FEB-2004 17:01
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1100 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1022786( -19) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 770274( -23) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 346240( -39) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 235056 | 53.394 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 55365 | 50.179 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 962066 | 51.951 | 104% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 315299 | 44.543 | 89% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 20) Acetone | (1) | 3.835( 0.000) | 58 | 3264 | 8.707 | 7.13 | | J | 5.73 | 16.37 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.64 | 4.09 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.27 | 8.18 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 65) Benzene | (1) | 7.592(-0.001) | 78 | 13050 | 0.601 | 0.49 | | J | 0.41 | 4.09 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.82 | 4.09 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.45 | 8.18 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.82 | 4.09 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.82 | 4.09 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

5GP23

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219003

File: /chem/HP09193.i/04feb20a.b/xf20s12.d
Sample: 5GP23;4219003;2;0;;;
Injected At:20-FEB-2004 17:01
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.1100 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.45 | 8.18 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.82 | 4.09 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.82 | 4.09 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4714

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04

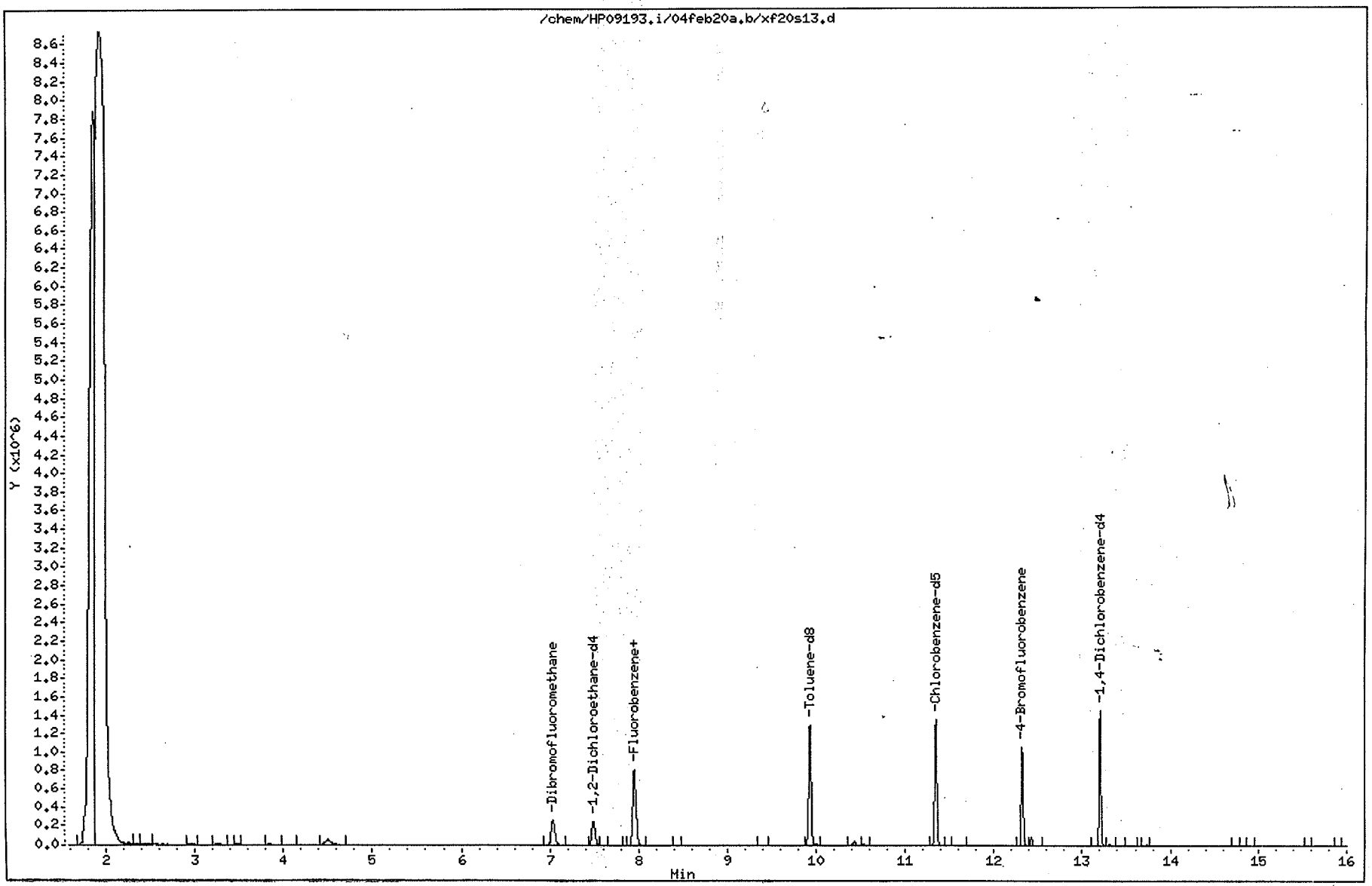
Data File: /chem/HP09193.i/04feb20a.b/xf20s13.d
Date : 20-FEB-2004 17:28
Client ID: 5GP24
Sample Info: 5GP24;4219004;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s13.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:28  Analyst ID: LCM01518

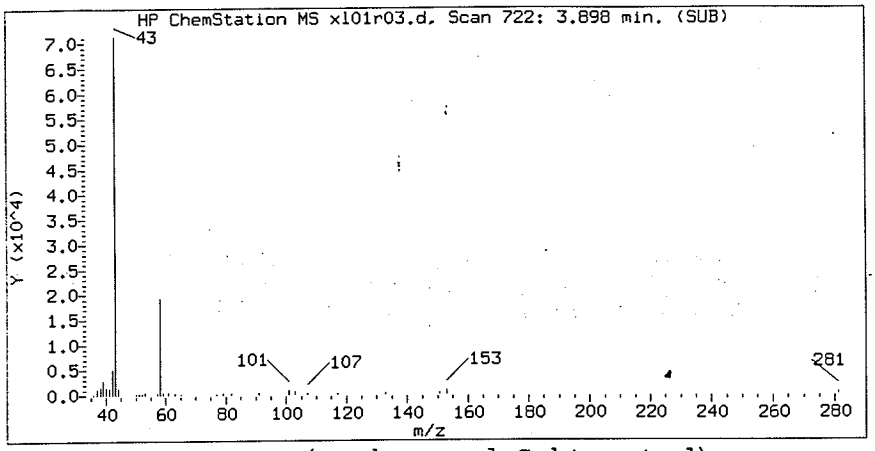
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 17:58 msl01251

Sample Name: 5GP24  Lab Sample ID: 4219004

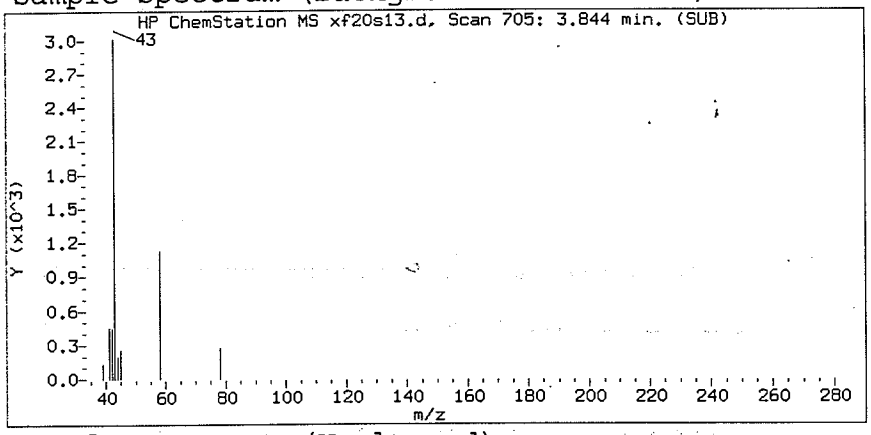
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.844 | 58 | 3566 | 9.340 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1041670 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 803069 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 380446 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 239298 | 53.372 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.486 | 102 | 55431 | 49.328 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 999952 | 51.792 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 333207 | 45.150 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

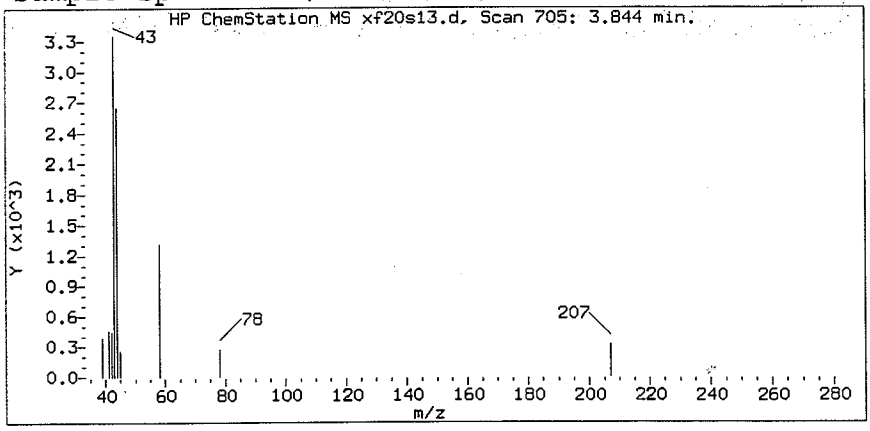
Reference Standard Spectrum for Acetone

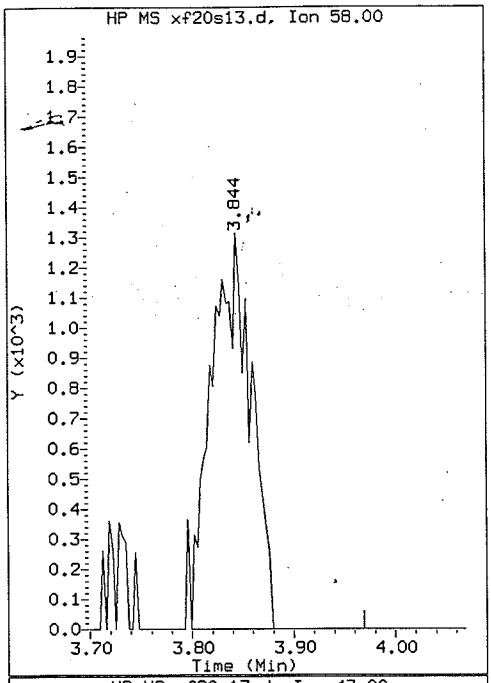


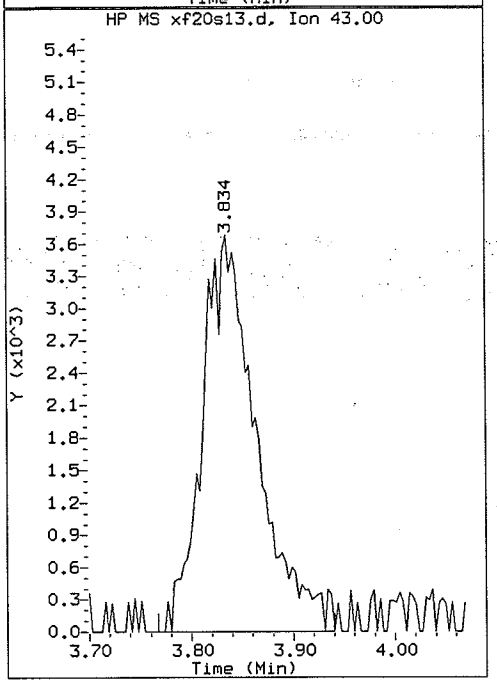

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s13.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:28  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 17:58 msl01251

Sample Name: 5GP24  Lab Sample ID: 4219004

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 705 |
| Retention Time (minutes) | : 3.844 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3566 |
| Concentration (ug/Kg) | : 9.3405 |

5GP24

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219004

File: /chem/HP09193.i/04feb20a.b/xf20s13.d
Sample: 5GP24;4219004;2;0;;;
Injected At:20-FEB-2004 17:28
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.75
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.6900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1041670( -18) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 803069( -20) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205(-0.003) | 3622 | 152 | 380446( -33) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 239298 | 53.372 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.486( 0.000) | 102 | 55431 | 49.328 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 999952 | 51.792 | 104% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 333207 | 45.150 | 90% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.49 | 3.74 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.49 | 3.74 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.49 | 3.74 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 20) Acetone | (1) | 3.844(-0.001) | 58 | 3566 | 9.340 | 6.98 | | J | 5.23 | 14.95 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.49 | 3.74 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 2.99 | 7.47 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.37 | 3.74 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.75 | 3.74 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.24 | 7.47 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.75 | 3.74 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.75 | 3.74 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



8119

5GP24

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219004

File: /chem/HP09193.i/04feb20a.b/xf20s13.d
Sample: 5GP24;4219004;2;0;;;
Injected At:20-FEB-2004 17:28
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.75
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.6900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.24 | 7.47 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.75 | 3.74 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.75 | 3.74 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4723

Analyst: [signature] Date: 2/20/04

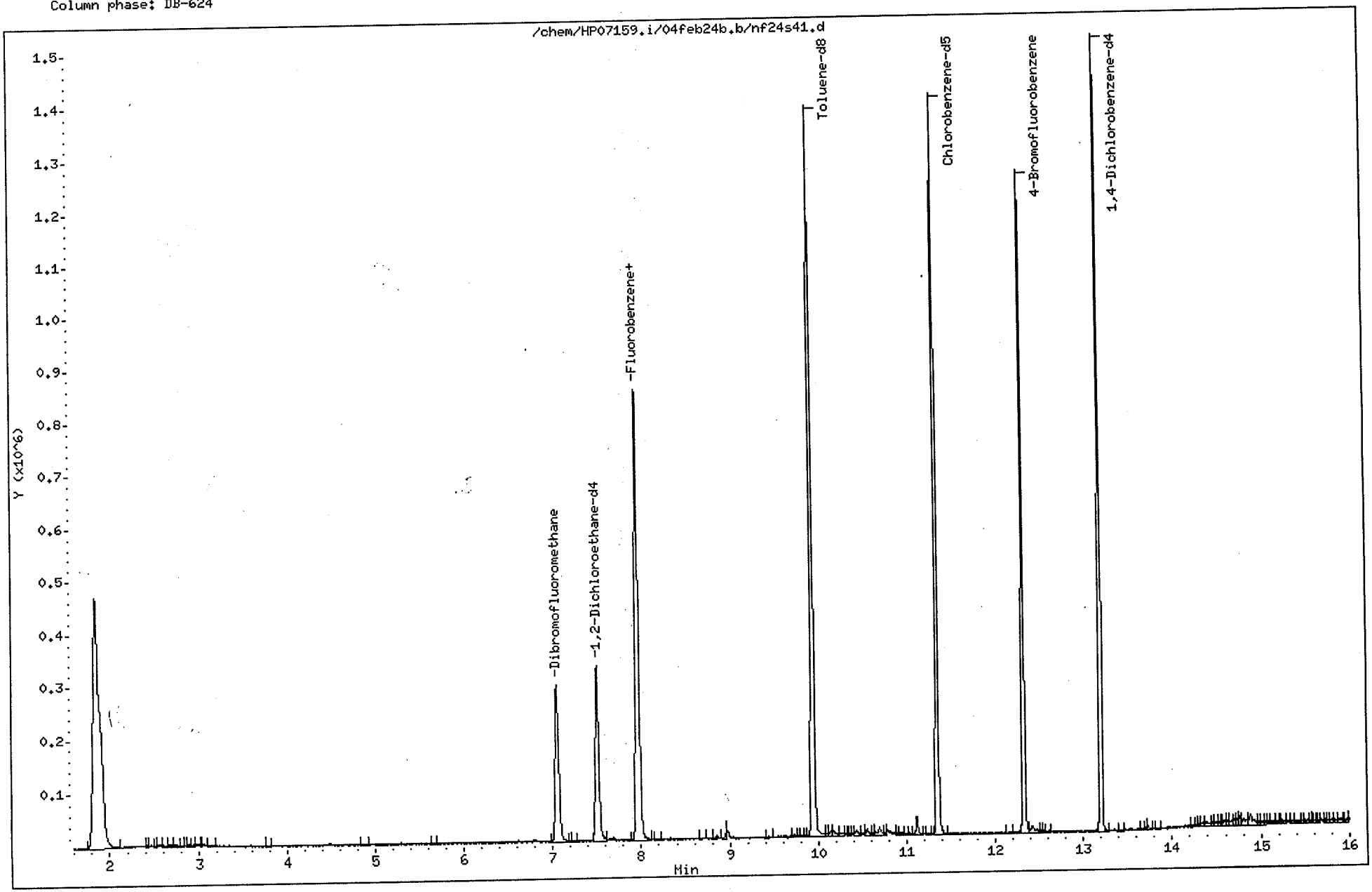
Auditor: [signature] Date: 2/22/04

Data File: /chem/HP07159.i/04feb24b.b/nf24s41.d
Date : 25-FEB-2004 01:42
Client ID: UN5ZH
Sample Info: UN5ZH;4219007;1;0;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

Temp
125
2.25.04
B121



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s41.d  Instrument ID: HP07159.i
Injection date and time: 25-FEB-2004 01:42  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 25-Feb-2004 02:06 acp01254

Sample Name: UN5ZH  Lab Sample ID: 4219007

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) *Fluorobenzene | (1) | 7.969 | 96 | 1035102 | 50.000 |
| 94) *Chlorobenzene-d5 | (2) | 11.355 | 117 | 807350 | 50.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 401306 | 50.000 |
| 50) $Dibromofluoromethane | (1) | 7.055 | 113 | 249933 | 46.891 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.514 | 102 | 67102 | 47.680 |
| 80) $Toluene-d8 | (2) | 9.943 | 98 | 1044337 | 49.685 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 377547 | 49.342 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

UN5ZH

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219007

File: /chem/HP07159.i/04feb24b.b/nf24s41.d
Sample: UN5ZH;4219007;1;0;;;;
Injected At:25-FEB-2004 01:42
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s40.d
Sublist: 3636

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AD
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.969( 0.001) | 1988 | 96 | 1035102( 0) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.355(-0.006) | 3043 | 117 | 807350( -1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.203(-0.003) | 3619 | 152 | 401306( -10) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.055( 0.000) | 113 | 249933 | 46.891 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.514( 0.000) | 102 | 67102 | 47.680 | 95% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1044337 | 49.685 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 377547 | 49.342 | 99% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: Comp 124 Date: 2.25.04

Auditor: Date: 2/25/04



0123

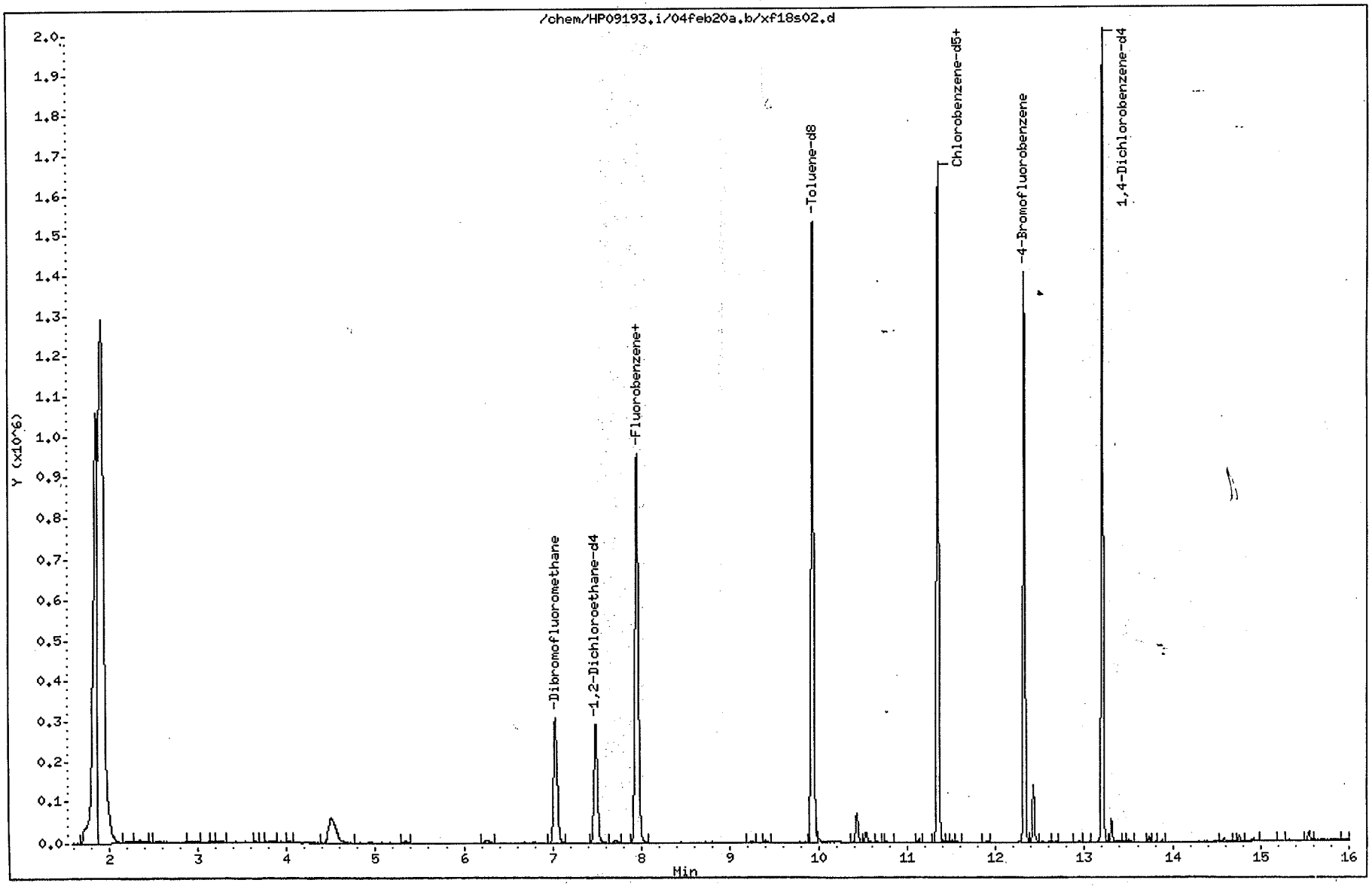
Data File: /chem/HP09193.i/04feb20a.b/xf18s02.d
Date : 20-FEB-2004 12:31
Client ID: 5GPTM
Sample Info: 5GPTM;4219009;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s02.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 12:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:18 msl01251

Sample Name: 5GPTM  Lab Sample ID: 4219009

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1241140 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 986851 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 541841 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 276024 | 51.669 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 67080 | 50.101 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1185989 | 49.988 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 439392 | 48.451 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

5GPTM

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4219009

File: /chem/HP09193.i/04feb20a.b/xf18s02.d
Sample: 5GPTM;4219009;2;0;;;
Injected At:20-FEB-2004 12:31
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1241140( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 986851( -1) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 541841( -5) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 276024 | 51.669 | 103% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 67080 | 50.101 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1185989 | 49.988 | 100% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325(-0.001) | 95 | 439392 | 48.451 | 97% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 4.00 | 10.00 |
| 54) Chloroform | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8126

5GPTM

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4219009

File: /chem/HP09193.i/04feb20a.b/xf18s02.d
Sample: 5GPTM;4219009;2;0;;;
Injected At:20-FEB-2004 12:31
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NS484

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



8127

# Standards Data

6A
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.3092 | 0.2669 | 0.3338 | 0.3487 | 0.3321 | 0.3238 | | 0.3191 | 9 | AVG | |
| Chloromethane | #0.3510 | 0.3029 | 0.3513 | 0.3406 | 0.3411 | 0.3137 | | 0.3334 | 6 | AVG | # |
| Vinyl Chloride | *0.3115 | 0.2731 | 0.3322 | 0.3346 | 0.3320 | 0.3033 | | 0.3144 | 8 | AVG | * |
| Bromomethane | 0.2164 | 0.2016 | 0.2286 | 0.2248 | 0.2228 | 0.1982 | | 0.2154 | 6 | AVG | |
| Chloroethane | 0.1892 | 0.1675 | 0.1921 | 0.1907 | 0.1912 | 0.1714 | | 0.1837 | 6 | AVG | |
| Trichlorofluoromethane | 0.3478 | 0.3044 | 0.3738 | 0.3861 | 0.3725 | 0.3649 | | 0.3582 | 8 | AVG | |
| Acrolein | 0.0317 | 0.0297 | 0.0284 | 0.0361 | 0.0330 | 0.0312 | | 0.0317 | 8 | AVG | |
| 1,1-Dichloroethene | *0.2378 | 0.1972 | 0.2369 | 0.2404 | 0.2349 | 0.2153 | | 0.2271 | 8 | AVG | * |
| Freon 113 | 0.2292 | 0.1878 | 0.2398 | 0.2507 | 0.2368 | 0.2187 | | 0.2272 | 10 | AVG | |
| Acetone | 0.0229 | 0.0204 | 0.0173 | 0.0176 | 0.0169 | 0.0150 | | 0.0183 | 15 | AVG | |
| Methyl Iodide | 0.4251 | 0.3920 | 0.4384 | 0.4452 | 0.4442 | 0.4058 | | 0.4251 | 5 | AVG | |
| 2-Propanol | 0.0145 | 0.0167 | 0.0140 | 0.0116 | 0.0126 | 0.0121 | | 0.0136 | 14 | AVG | |
| Carbon Disulfide | 0.8461 | 0.7124 | 0.8666 | 0.8908 | 0.8715 | 0.7988 | | 0.8310 | 8 | AVG | |
| Allyl Chloride | 0.3991 | 0.3535 | 0.4157 | 0.4047 | 0.4195 | 0.3995 | | 0.3986 | 6 | AVG | |
| Methyl Acetate | 0.1516 | 0.1428 | 0.1322 | 0.1240 | 0.1267 | 0.1285 | | 0.1343 | 8 | AVG | |
| Methylene Chloride | 0.3125 | 0.2739 | 0.2731 | 0.2721 | 0.2670 | 0.2454 | | 0.2740 | 8 | AVG | |
| t-Butyl Alcohol | 1.2793 | 1.4467 | 1.3521 | 1.3838 | 1.5117 | 1.3486 | | 1.3870 | 6 | AVG | |
| Acrylonitrile | 0.0745 | 0.0745 | 0.0713 | 0.0775 | 0.0764 | 0.0715 | | 0.0743 | 3 | AVG | |
| trans-1,2-Dichloroethene | 0.2696 | 0.2383 | 0.2761 | 0.2801 | 0.2786 | 0.2587 | | 0.2669 | 6 | AVG | |
| Methyl Tertiary Butyl Ether | 0.6689 | 0.6930 | 0.6855 | 0.6542 | 0.6628 | 0.6253 | | 0.6649 | 4 | AVG | |
| n-Hexane | 0.4047 | 0.3194 | 0.4024 | 0.4346 | 0.4029 | 0.3689 | | 0.3888 | 10 | AVG | |
| 1,1-Dichloroethane | #0.4422 | 0.4100 | 0.4655 | 0.4648 | 0.4567 | 0.4323 | | 0.4452 | 5 | AVG | # |
| 2-Chloro-1,3-Butadiene | 0.3194 | 0.2865 | 0.3610 | 0.3818 | 0.3776 | 0.3629 | | 0.3482 | 11 | AVG | |
| di-Isopropyl Ether | 0.8064 | 0.8066 | 0.8535 | 0.8423 | 0.8497 | 0.7807 | | 0.8232 | 4 | AVG | |
| Ethyl t-Butyl Ether | 0.7188 | 0.7350 | 0.7618 | 0.7522 | 0.7606 | 0.7106 | | 0.7398 | 3 | AVG | |
| cis-1,2-Dichloroethene | 0.3201 | 0.2833 | 0.3008 | 0.2939 | 0.2921 | 0.2704 | | 0.2934 | 6 | AVG | |
| 1,2-Dichloroethene (total) | 0.2949 | 0.2608 | 0.2885 | 0.2870 | 0.2854 | 0.2645 | | 0.2802 | 5 | AVG | |
| 2,2-Dichloropropane | 0.3435 | 0.3080 | 0.3613 | 0.3779 | 0.3750 | 0.3630 | | 0.3548 | 7 | AVG | |
| 2-Butanone | 0.0237 | 0.0258 | 0.0235 | 0.0298 | 0.0266 | 0.0251 | | 0.0257 | 9 | AVG | |
| Propionitrile | 0.0262 | 0.0286 | 0.0267 | 0.0246 | 0.0258 | 0.0252 | | 0.0262 | 5 | AVG | |
| Methacrylonitrile | 0.0835 | 0.0910 | 0.0885 | 0.0813 | 0.0847 | 0.0837 | | 0.0854 | 4 | AVG | |
| Bromochloromethane | 0.1315 | 0.1270 | 0.1285 | 0.1283 | 0.1265 | 0.1232 | | 0.1275 | 2 | AVG | |
| Tetrahydrofuran | 0.0254 | 0.0241 | 0.0224 | 0.0252 | 0.0239 | 0.0234 | | 0.0241 | 5 | AVG | |
| Chloroform | *0.4053 | 0.3871 | 0.4268 | 0.4321 | 0.4314 | 0.4113 | | 0.4157 | 4 | AVG | * |
| 1,1,1-Trichloroethane | 0.3591 | 0.3168 | 0.3773 | 0.3935 | 0.3889 | 0.3784 | | 0.3690 | 8 | AVG | |
| Cyclohexane | 0.4485 | 0.3837 | 0.4787 | 0.5051 | 0.4862 | 0.4475 | | 0.4583 | 9 | AVG | |
| 1,1-Dichloropropene | 0.3310 | 0.2837 | 0.3478 | 0.3566 | 0.3471 | 0.3319 | | 0.3330 | 8 | AVG | |
| Carbon Tetrachloride | 0.2993 | 0.2653 | 0.3202 | 0.3426 | 0.3348 | 0.3292 | | 0.3152 | 9 | AVG | |
| Benzene | 1.0703 | 0.9738 | 1.1017 | 1.1090 | 1.0995 | 1.0121 | | 1.0611 | 5 | AVG | |
| Isobutyl Alcohol | 0.0071 | 0.0085 | 0.0080 | 0.0067 | 0.0078 | 0.0076 | | 0.0076 | 8 | AVG | |
| 1,2-Dichloroethane | 0.2902 | 0.2885 | 0.2937 | 0.2905 | 0.2933 | 0.2848 | | 0.2902 | 1 | AVG | |
| t-Amyl Methyl Ether | 0.6393 | 0.6611 | 0.6850 | 0.6739 | 0.6952 | 0.6621 | | 0.6694 | 3 | AVG | |
| n-Heptane | 0.0718 | 0.0606 | 0.0770 | 0.0862 | 0.0808 | 0.0754 | | 0.0753 | 12 | AVG | |
| n-Butanol | 0.0058 | 0.0068 | 0.0068 | 0.0055 | 0.0067 | 0.0065 | | 0.0063 | 9 | AVG | |
| Trichloroethene | 0.2787 | 0.2393 | 0.2729 | 0.2786 | 0.2761 | 0.2648 | | 0.2684 | 6 | AVG | |
| Methylcyclohexane | 0.4363 | 0.3561 | 0.4597 | 0.4631 | 0.4580 | 0.4354 | | 0.4348 | 9 | AVG | |
| 1,2-Dichloropropane | *0.2551 | 0.2523 | 0.2688 | 0.2681 | 0.2719 | 0.2508 | | 0.2612 | 4 | AVG | * |
| Dibromomethane | 0.1334 | 0.1339 | 0.1370 | 0.1327 | 0.1366 | 0.1327 | | 0.1344 | 1 | AVG | |
| 1,4-Dioxane | 0.0021 | 0.0024 | 0.0024 | 0.0022 | 0.0023 | 0.0022 | | 0.0023 | 6 | AVG | |
| Methyl Methacrylate | 0.1453 | 0.1560 | 0.1579 | 0.1497 | 0.1630 | 0.1638 | | 0.1559 | 5 | AVG | |
| Bromodichloromethane | 0.2692 | 0.2736 | 0.2954 | 0.3041 | 0.3147 | 0.3075 | | 0.2941 | 6 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

8129



FORM VI VOA

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Nitropropane | 0.0444 | 0.0446 | 0.0429 | 0.0593 | 0.0512 | 0.0524 | | 0.0491 | 13 | AVG | |
| cis-1,3-Dichloropropene | 0.3633 | 0.3672 | 0.4029 | 0.4129 | 0.4218 | 0.4025 | | 0.3951 | 6 | AVG | |
| 4-Methyl-2-Pentanone | 0.2089 | 0.2232 | 0.2207 | 0.3071 | 0.2436 | 0.2333 | | 0.2395 | 15 | AVG | |
| Toluene | *0.9153 | 0.8521 | 0.9426 | 0.9578 | 0.9527 | 0.8645 | | 0.9141 | 5 | AVG | * |
| trans-1,3-Dichloropropene | 0.3889 | 0.4156 | 0.4381 | 0.4341 | 0.4545 | 0.4361 | | 0.4279 | 5 | AVG | |
| Ethyl Methacrylate | 0.3596 | 0.3920 | 0.4178 | 0.4074 | 0.4415 | 0.4269 | | 0.4076 | 7 | AVG | |
| 1,1,2-Trichloroethane | 0.3059 | 0.3007 | 0.2887 | 0.2726 | 0.2812 | 0.2627 | | 0.2853 | 6 | AVG | |
| Tetrachloroethene | 0.4298 | 0.3726 | 0.4313 | 0.4493 | 0.4358 | 0.4059 | | 0.4208 | 7 | AVG | |
| 1,3-Dichloropropane | 0.4777 | 0.4945 | 0.4892 | 0.4665 | 0.4789 | 0.4420 | | 0.4748 | 4 | AVG | |
| 2-Hexanone | 0.2008 | 0.2198 | 0.2187 | 0.3019 | 0.2298 | 0.2208 | | 0.2320 | 15 | AVG | |
| Dibromochloromethane | 0.2638 | 0.2836 | 0.3047 | 0.3085 | 0.3295 | 0.3176 | | 0.3013 | 8 | AVG | |
| 1,2-Dibromoethane | 0.2805 | 0.2895 | 0.2872 | 0.2742 | 0.2867 | 0.2737 | | 0.2820 | 2 | AVG | |
| Chlorobenzene | #1.0455 | 0.9758 | 1.0503 | 1.0351 | 1.0406 | 0.9515 | | 1.0165 | 4 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.3159 | 0.3174 | 0.3467 | 0.3511 | 0.3610 | 0.3385 | | 0.3384 | 5 | AVG | |
| Ethylbenzene | *1.6823 | 1.5603 | 1.7632 | 1.8110 | 1.7819 | 1.5727 | | 1.6952 | 6 | AVG | * |
| m+p-Xylene | 0.6863 | 0.6279 | 0.7166 | 0.7376 | 0.7293 | 0.6708 | | 0.6948 | 6 | AVG | |
| Xylene (Total) | 0.6582 | 0.6205 | 0.6971 | 0.7166 | 0.7093 | 0.6418 | | 0.6739 | 6 | AVG | |
| o-Xylene | 0.6301 | 0.6131 | 0.6776 | 0.6956 | 0.6894 | 0.6129 | | 0.6531 | 6 | AVG | |
| Styrene | 0.9552 | 0.9838 | 1.1056 | 1.1646 | 1.1740 | 1.0410 | | 1.0707 | 9 | AVG | |
| Bromoform | #0.1814 | 0.1954 | 0.2055 | 0.2063 | 0.2291 | 0.2250 | | 0.2071 | 9 | AVG | # |
| Isopropylbenzene | 1.6609 | 1.5531 | 1.7718 | 1.8462 | 1.8175 | 1.5926 | | 1.7070 | 7 | AVG | |
| Cyclohexanone | 0.0090 | 0.0098 | 0.0091 | 0.0087 | 0.0091 | 0.0098 | | 0.0092 | 5 | AVG | |
| Bromobenzene | 0.8701 | 0.8145 | 0.8594 | 0.8226 | 0.8246 | 0.7347 | | 0.8210 | 6 | AVG | |
| 1,1,2,2-Tetrachloroethane | #0.7225 | 0.7151 | 0.7113 | 0.6272 | 0.6769 | 0.6220 | | 0.6792 | 7 | AVG | # |
| 1,2,3-Trichloropropane | 0.2567 | 0.2266 | 0.2076 | 0.1798 | 0.1908 | 0.1743 | | 0.2060 | 15 | AVG | |
| trans-1,4-Dichloro-2-Butene | 0.1833 | 0.2064 | 0.2009 | 0.1740 | 0.1878 | 0.1739 | | 0.1877 | 7 | AVG | |
| n-Propylbenzene | 3.6739 | 3.3921 | 3.8586 | 3.8683 | 3.7594 | 3.1561 | | 3.6181 | 8 | AVG | |
| 2-Chlorotoluene | 0.8054 | 0.7413 | 0.8179 | 0.8104 | 0.8087 | 0.7409 | | 0.7874 | 5 | AVG | |
| 1,3,5-Trimethylbenzene | 2.5699 | 2.4625 | 2.7583 | 2.8001 | 2.7530 | 2.4042 | | 2.6246 | 6 | AVG | |
| 4-Chlorotoluene | 0.8275 | 0.7853 | 0.8422 | 0.8308 | 0.8289 | 0.7525 | | 0.8112 | 4 | AVG | |
| tert-Butylbenzene | 0.6308 | 0.5928 | 0.6738 | 0.6809 | 0.6784 | 0.6152 | | 0.6453 | 6 | AVG | |
| Pentachloroethane | 0.4335 | 0.4665 | 0.5059 | 0.5093 | 0.5369 | 0.4997 | | 0.4920 | 7 | AVG | |
| 1,2,4-Trimethylbenzene | 2.5800 | 2.5363 | 2.7565 | 2.8027 | 2.7538 | 2.3797 | | 2.6348 | 6 | AVG | |
| sec-Butylbenzene | 3.3744 | 3.1242 | 3.5897 | 3.6967 | 3.6002 | 3.0132 | | 3.3997 | 8 | AVG | |
| 1,3-Dichlorobenzene | 1.6735 | 1.5674 | 1.6328 | 1.6071 | 1.5855 | 1.3860 | | 1.5754 | 6 | AVG | |
| p-Isopropyltoluene | 2.8732 | 2.7248 | 3.0700 | 3.1902 | 3.0981 | 2.6301 | | 2.9311 | 8 | AVG | |
| 1,4-Dichlorobenzene | 1.8022 | 1.6500 | 1.6613 | 1.6372 | 1.6291 | 1.4741 | | 1.6423 | 6 | AVG | |
| 1,2-Dichlorobenzene | 1.5709 | 1.5173 | 1.5050 | 1.4906 | 1.4866 | 1.3501 | | 1.4868 | 5 | AVG | |
| n-Butylbenzene | 2.5377 | 2.3846 | 2.6866 | 2.8467 | 2.7606 | 2.3684 | | 2.5974 | 8 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.1325 | 0.1267 | 0.1219 | 0.1087 | 0.1205 | 0.1213 | | 0.1219 | 6 | AVG | |
| 1,2,4-Trichlorobenzene | 1.2319 | 1.2461 | 1.1356 | 1.1752 | 1.1865 | 0.9974 | | 1.1621 | 8 | AVG | |
| Hexachlorobutadiene | 0.5872 | 0.5553 | 0.5918 | 0.6495 | 0.6475 | 0.5357 | | 0.5945 | 8 | AVG | |
| Naphthalene | 2.9365 | 2.9999 | 2.7067 | 2.4718 | 2.6413 | 2.2556 | | 2.6686 | 11 | AVG | |
| 1,2,3-Trichlorobenzene | 1.1613 | 1.2197 | 1.0746 | 1.0815 | 1.1034 | 0.9233 | | 1.0940 | 9 | AVG | |
| 2-Methylnaphthalene | 1.7693 | 1.9567 | 1.6787 | 1.4976 | 1.6582 | 1.5099 | | 1.6784 | 10 | AVG | |
| Dibromofluoromethane | 0.2249 | 0.2005 | 0.2136 | 0.2143 | 0.2195 | 0.2183 | | 0.2152 | 4 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0562 | 0.0559 | 0.0542 | 0.0517 | 0.0532 | 0.0524 | | 0.0539 | 3 | AVG | |
| Toluene-d8(mz100) | 0.8185 | 0.7345 | 0.8311 | 0.8230 | 0.8372 | 0.8052 | | 0.8083 | 5 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4401 | 0.4045 | 0.4166 | 0.4149 | 0.4253 | 0.4178 | | 0.4199 | 3 | AVG | |
| Dibromofluoromethane(mz111) | 0.2259 | 0.2032 | 0.2164 | 0.2189 | 0.2238 | 0.2230 | | 0.2185 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0343 | 0.0320 | 0.0336 | 0.0326 | 0.0335 | 0.0331 | | 0.0332 | 2 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Toluene-d8 | 1.2284 | 1.1035 | 1.2347 | 1.2217 | 1.2405 | 1.1836 | | 1.2021 | 4 | AVG |
| 4-Bromofluorobenzene | 0.4802 | 0.4440 | 0.4571 | 0.4570 | 0.4628 | 0.4557 | | 0.4595 | 3 | AVG |

Average %RSD 7

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

8131



FORM VI VOA

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d
Date : 16-FEB-2004 09:47
Client ID: VSTD300
Sample Info: VSTD300;VSTD300;;2;1;;;

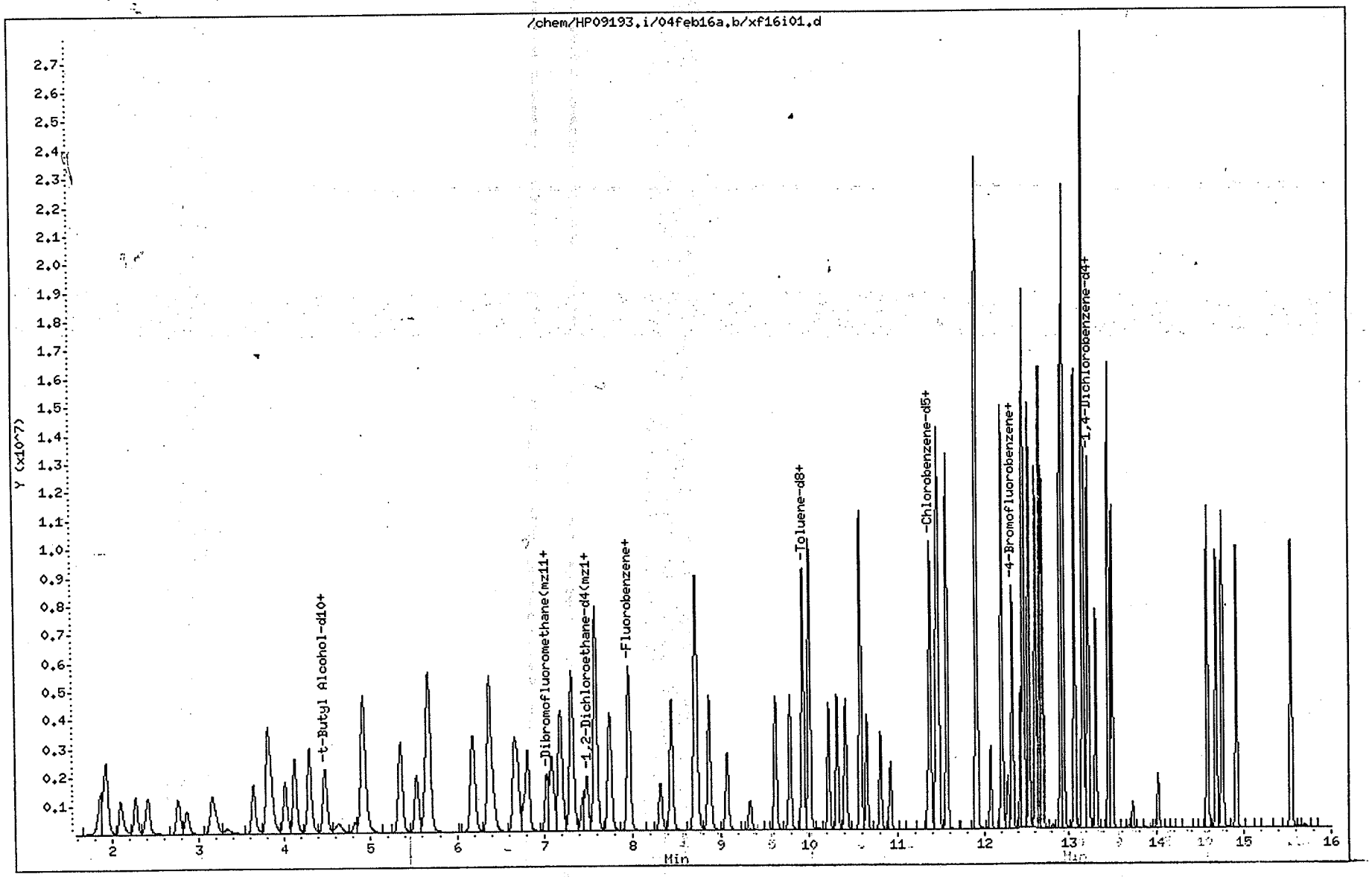
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1128 2/16/04

6132



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 2557283 | 300.000 |
| 4) Chloromethane | (1) | 2.272 | 50 | 2478104 | 300.000 |
| 5) Vinyl Chloride | (1) | 2.413 | 62 | 2395390 | 300.000 |
| 7) Bromomethane | (1) | 2.759 | 94 | 1565790 | 300.000 |
| 8) Chloroethane | (1) | 2.859 | 64 | 1354023M | 300.000 |
| 12) Trichlorofluoromethane | (1) | 3.157 | 101 | 2881920 | 300.000 |
| 13) Ethanol | (4) | 3.327 | 45 | 420949 | 7500.000 |
| 16) Acrolein | (1) | 3.635 | 56 | 2462545 | 3000.000 |
| 17) 1,1-Dichloroethene | (1) | 3.802 | 96 | 1700257 | 300.000 |
| 19) Freon 113 | (1) | 3.834 | 101 | 1727550 | 300.000 |
| 20) Acetone | (1) | 3.828 | 58 | 236495 | 600.000 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 3204890 | 300.000 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 478470 | 1500.000 |
| 24) Carbon Disulfide | (1) | 4.126 | 76 | 6309399 | 300.000 |
| 26) Allyl Chloride | (1) | 4.296 | 41 | 3155357 | 300.000 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 1015060 | 300.000 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 1938561 | 300.000 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 119476 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.630 | 59 | 966734 | 1500.000 |
| 32) Acrylonitrile | (1) | 4.819 | 53 | 564596 | 300.000 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 2043460 | 300.000 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 4938813 | 300.000 |
| 36) n-Hexane | (1) | 5.343 | 57 | 2913651 | 300.000 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 3414320 | 300.000 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 2866519 | 300.000 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 6166638 | 300.000 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 5612504 | 300.000 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 2135530 | 300.000 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 4178990 | 600.000 |
| 48) 2,2-Dichloropropane | (1) | 6.385 | 77 | 2867017 | 300.000 |
| 46) 2-Butanone | (1) | 6.366 | 72 | 395949M | 600.000 |
| 49) Propionitrile | (1) | 6.437 | 54 | 994592 | 1500.000 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 1652207 | 750.000 |
| 52) Bromochloromethane | (1) | 6.700 | 128 | 973375 | 300.000 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 369679 | 600.000 |
| 54) Chloroform | (1) | 6.815 | 83 | 3248794 | 300.000 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 2988788 | 300.000 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 3534556 | 300.000 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 2621539 | 300.000 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 2599911 | 300.000 |
| 65) Benzene | (1) | 7.586 | 78 | 7994630 | 300.000 |
| 61) Isobutyl Alcohol | (1) | 7.438 | 41 | 749722 | 3750.000 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 2249393 | 300.000 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 5230106 | 300.000 |
| 69) *Fluorobenzene | (1) | 7.948 | 96 | 1316447 | 50.000 |
| 71) n-Heptane | (1) | 7.961 | 100 | 595367 | 300.000 |
| 72) n-Butanol | (1) | 8.320 | 56 | 1286389 | 7500.000 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 2091883 | 300.000 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 3439231 | 300.000 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 1981150 | 300.000 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 1047995 | 300.000 |
| 78) 1,4-Dioxane | (1) | 8.888 | 88 | 220613 | 3750.000 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 1293688 | 300.000 |
| 81) Bromodichloromethane | (1) | 9.071 | 83 | 2428465 | 300.000 |
| 82) 2-Nitropropane | (1) | 9.334 | 41 | 827988 | 600.000 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 3179488 | 300.000 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 3685916 | 600.000 |
| 88) Toluene | (2) | 10.005 | 92 | 5224163 | 300.000 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 2635332 | 300.000 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 2579685 | 300.000 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 1587869 | 300.000 |
| 93) Tetrachloroethene | (2) | 10.579 | 166 | 2452819 | 300.000 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 2671335 | 300.000 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 2668756 | 600.000 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 1919605 | 300.000 |
| 99) 1,2-Dibromoethane | (2) | 10.916 | 107 | 1653812 | 300.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1007220 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 5750506 | 300.000 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 2045728 | 300.000 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 9504309 | 300.000 |
| 105) m+p-Xylene | (2) | 11.561 | 106 | 4053629 | 300.000 |
| 92) Xylene (Total) | (2) | | 106 | 7757422 | 600.000 |
| 107) o-Xylene | (2) | 11.902 | 106 | 3703793 | 300.000 |
| 108) Styrene | (2) | 11.908 | 104 | 6291040 | 300.000 |
| 109) Bromoform | (2) | 12.068 | 173 | 1359449 | 300.000 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 9624694 | 300.000 |
| 112) Cyclohexanone | (2) | 12.267 | 55 | 741356 | 3750.000 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 2543267 | 300.000 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 2153282 | 300.000 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 603326 | 300.000 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 1505076 | 750.000 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 10925798 | 300.000 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 2564854 | 300.000 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 8322682 | 300.000 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 2604833 | 300.000 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 2129583 | 300.000 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 1729693 | 300.000 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 8237827 | 300.000 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 10430879 | 300.000 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 4798105 | 300.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 576962 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.159 | 119 | 9104861 | 300.000 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 5102934 | 300.000 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 4673631 | 300.000 |
| 134) n-Butylbenzene | (3) | 13.451 | 91 | 8199014 | 300.000 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 419850 | 300.000 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 3452753 | 300.000 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 1854316 | 300.000 |
| 140) Naphthalene | (3) | 14.758 | 128 | 7808394 | 300.000 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 3196339 | 300.000 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 5227035 | 300.000 |
| 155)$Dibromofluoromethane | (1) | 7.034 | 113 | 1724322 | 300.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

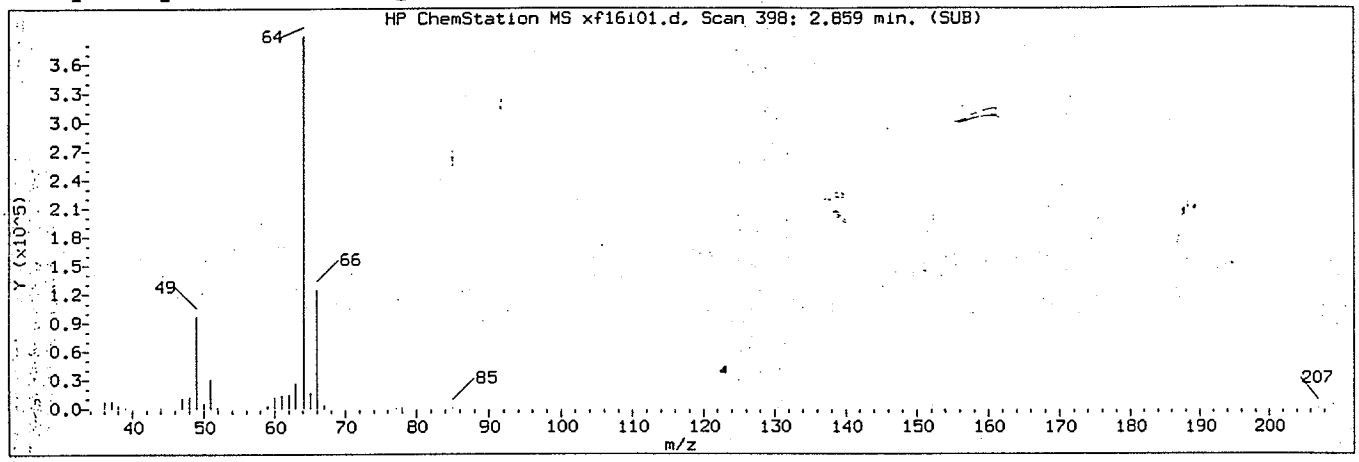
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

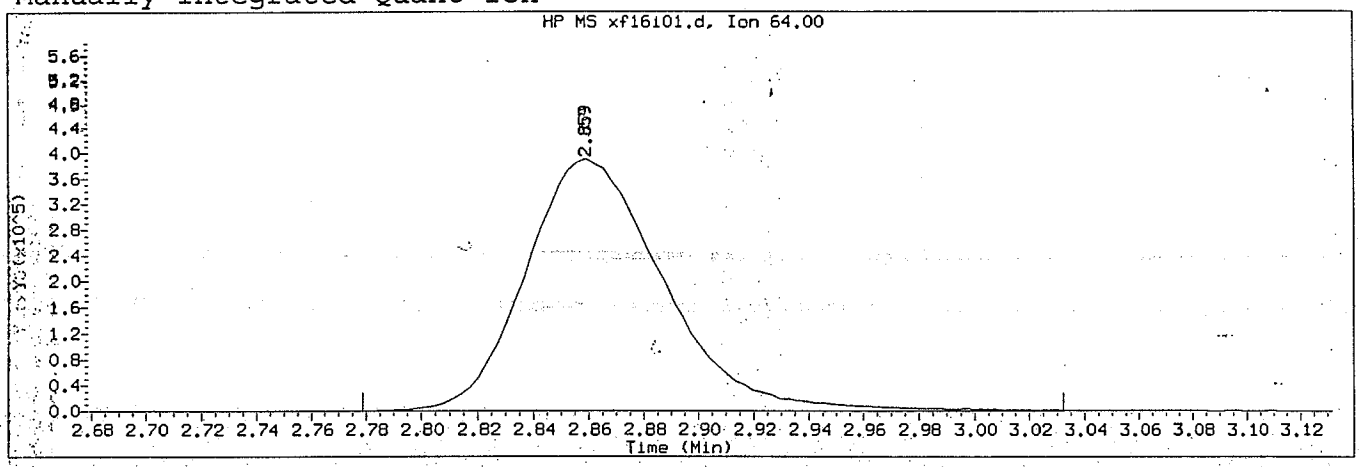
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.486 | 102 | 414215 | 300.000 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 4866260 | 300.000 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 2524919 | 300.000 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.030 | 111 | 1761228 | 300.000 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.486 | 104 | 261464 | 300.000 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 7152914 | 300.000 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 2754150 | 300.000 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

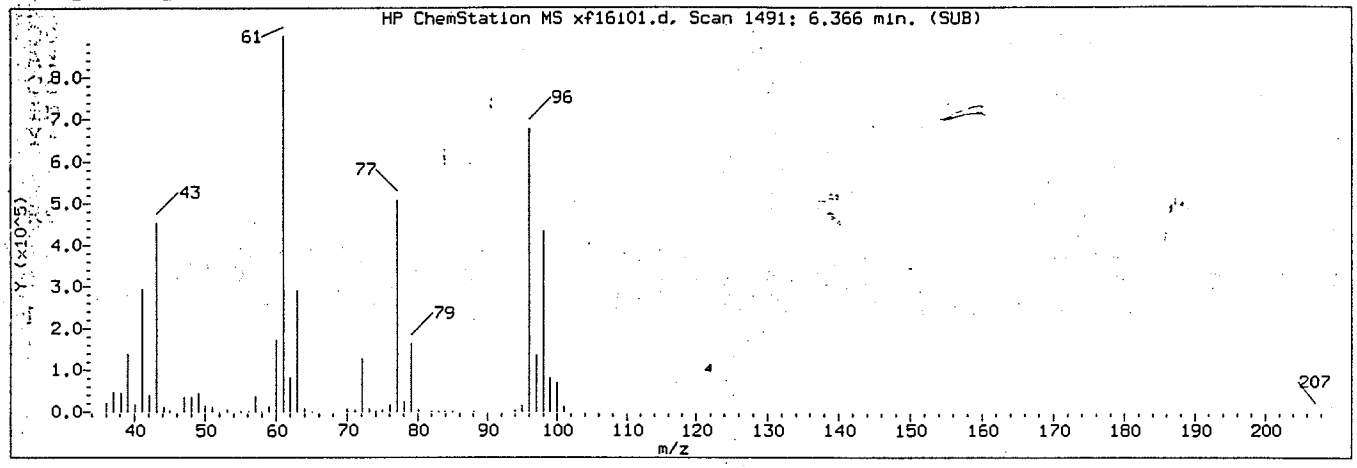
| | | |
|---|---|---|
| Compound Number | : | 8 |
| Compound Name | : | Chloroethane |
| Scan Number | : | 398 |
| Retention Time (minutes) | : | 2.859 |
| Quant Ion | : | 64 |
| Area (flag) | : | 1354023 M |
| Concentration (ug/Kg) | : | 300.0000 |
| Integration start scan | : | 372 Integration stop scan: 451 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

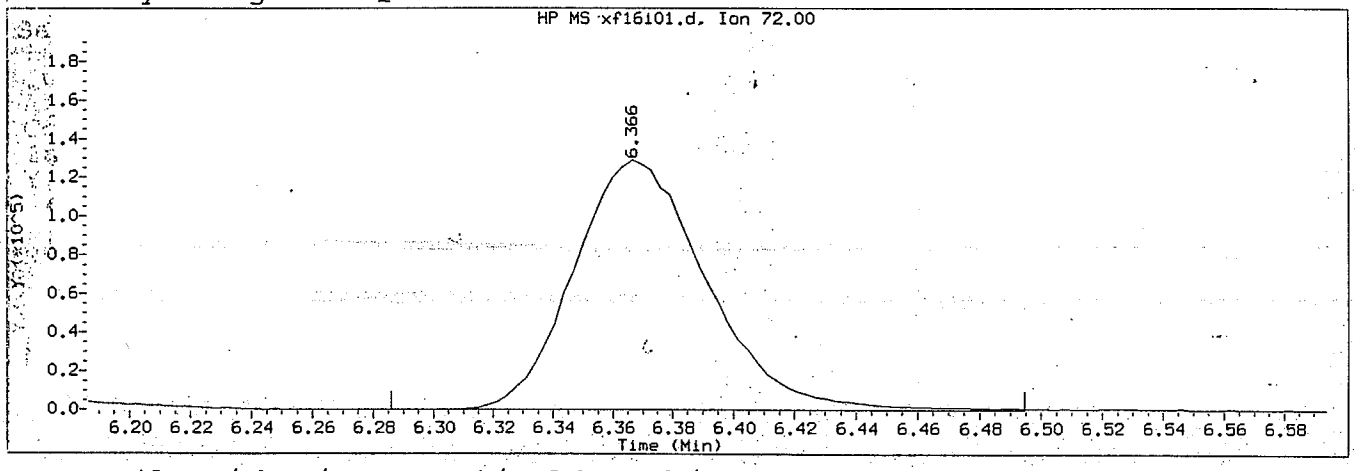
Analyst responsible for change: LCM1528 2/16/04

GC/MS audit/management approval: [signature], 2/17/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

| | |
|---|---|
| Compound Number | : 46 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1491 |
| Retention Time (minutes) | : 6.366 |
| Quant Ion | : 72 |
| Area (flag) | : 395949 M |
| Concentration (ug/Kg) | : 600.0000 |
| Integration start scan | : 1465 Integration stop scan: 1530 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: [signature] 2/17/04

8138

Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16i01.d, generated on 02/16/2004 at 15:05

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d
Date : 16-FEB-2004 11:45
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;2;1;;;

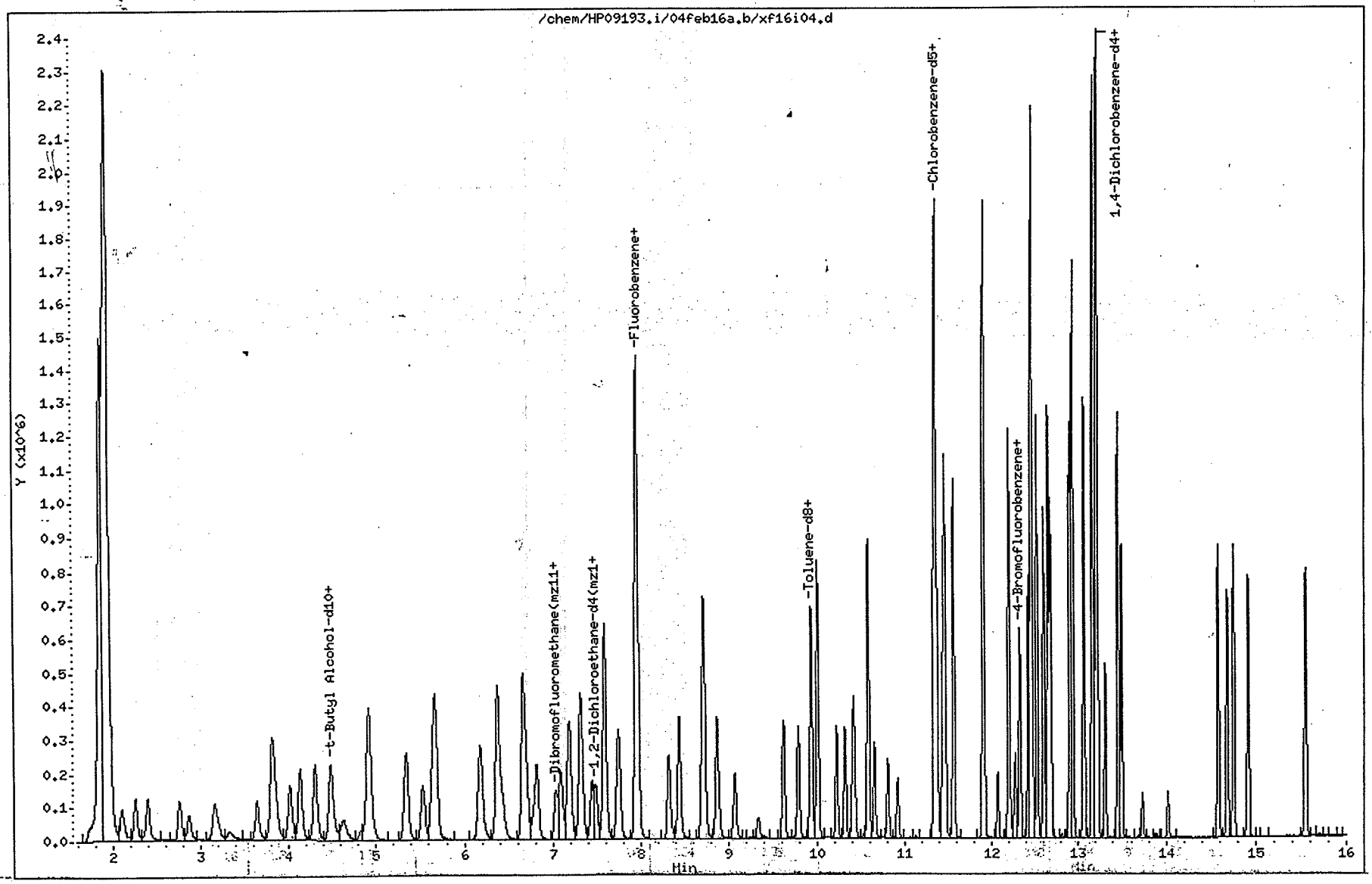
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
2/16/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 196368 | 20.925 |
| 4) Chloromethane | (1) | 2.249 | 50 | 206648 | 21.071 |
| 5) Vinyl Chloride | (1) | 2.394 | 62 | 195421 | 21.131 |
| 7) Bromomethane | (1) | 2.760 | 94 | 134459 | 21.223 |
| 8) Chloroethane | (1) | 2.865 | 64 | 112990 | 20.915 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 219887 | 20.869 |
| 13) Ethanol | (4) | 3.328 | 45 | 64018 | 893.431 |
| 16) Acrolein | (1) | 3.645 | 56 | 167073 | 179.289 |
| 17) 1,1-Dichloroethene | (1) | 3.802 | 96 | 139372 | 20.867 |
| 19) Freon 113 | (1) | 3.841 | 101 | 141074 | 21.114 |
| 20) Acetone | (1) | 3.828 | 58 | 20315 | 37.691 |
| 22) Methyl Iodide | (1) | 4.017 | 142 | 257909 | 20.627 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 82188 | 205.775 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 509748 | 20.856 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 244510 | 20.854 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 77781 | 19.690 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 160676 | 19.937 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 142545 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.627 | 59 | 154188 | 194.964 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 41915 | 19.186 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 162438 | 20.692 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.919 | 73 | 403221 | 20.618 |
| 36) n-Hexane | (1) | 5.343 | 57 | 236728 | 20.701 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 273815 | 20.910 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 212332 | 20.734 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 502061 | 20.736 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 448096 | 20.593 |
| 45) cis-1,2-Dichloroethene | (1) | 6.370 | 96 | 176933 | 20.502 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 339371 | 41.193 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 212507 | 20.366 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 27679MA | 35.507 |
| 49) Propionitrile | (1) | 6.437 | 54 | 157202 | 204.042 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 260279 | 103.570 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 75611 | 20.160 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 26366 | 37.251 |
| 54) Chloroform | (1) | 6.822 | 83 | 251033 | 20.534 |
| 57) 1,1,1-Trichloroethane | (1) | 7.088 | 97 | 221969 | 20.452 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 281584 | 20.891 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 204599 | 20.889 |
| 60) Carbon Tetrachloride | (1) | 7.323 | 117 | 188373 | 20.317 |
| 65) Benzene | (1) | 7.586 | 78 | 648070 | 20.766 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 118166 | 527.916 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 172775 | 20.244 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 402916 | 20.464 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1470593 | 50.000 |
| 71) n-Heptane | (1) | 7.961 | 100 | 45321 | 20.466 |
| 72) n-Butanol | (1) | 8.321 | 56 | 199079 | 1065.230 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 160540 | 20.336 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 270402 | 21.146 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 158110 | 20.584 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 80584 | 20.389 |
| 78) 1,4-Dioxane | (1) | 8.895 | 88 | 34808 | 520.245 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 92876 | 20.250 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 173776 | 20.091 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 50469 | 34.922 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 237023 | 20.396 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 259607 | 36.859 |
| 88) Toluene | (2) | 10.002 | 92 | 411128 | 20.621 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 191082 | 20.477 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 182250 | 20.504 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 125932 | 20.238 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 188140 | 20.502 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 213397 | 20.607 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 190813 | 37.717 |
| 97) Dibromochloromethane | (2) | 10.801 | 129 | 132921 | 20.229 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 125264 | 20.370 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1090453 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 458104 | 20.665 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 102) | 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 151210 | 20.487 |
| 103) | Ethylbenzene | (2) | 11.462 | 91 | 769066 | 20.802 |
| 105) | m+p-Xylene | (2) | 11.562 | 106 | 312573 | 20.629 |
| 92) | Xylene (Total) | (2) | | 106 | 608135 | 41.379 |
| 107) | o-Xylene | (2) | 11.899 | 106 | 295562 | 20.750 |
| 108) | Styrene | (2) | 11.908 | 104 | 482227 | 20.651 |
| 109) | Bromoform | (2) | 12.065 | 173 | 89642 | 19.844 |
| 110) | Isopropylbenzene | (2) | 12.197 | 105 | 772822 | 20.759 |
| 112) | Cyclohexanone | (2) | 12.268 | 55 | 99147 | 491.825 |
| 116) | Bromobenzene | (3) | 12.450 | 156 | 203059 | 20.935 |
| 115) | 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 168075 | 20.946 |
| 117) | 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 49045 | 20.155 |
| 118) | trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 237346 | 107.014 |
| 119) | n-Propylbenzene | (3) | 12.518 | 91 | 911762 | 21.330 |
| 120) | 2-Chlorotoluene | (3) | 12.598 | 126 | 193261 | 20.773 |
| 121) | 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 651760 | 21.018 |
| 122) | 4-Chlorotoluene | (3) | 12.675 | 126 | 198999 | 20.764 |
| 123) | tert-Butylbenzene | (3) | 12.900 | 134 | 159225 | 20.884 |
| 124) | Pentachloroethane | (3) | 12.925 | 167 | 119548 | 20.568 |
| 125) | 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 651348 | 20.924 |
| 126) | sec-Butylbenzene | (3) | 13.060 | 105 | 848214 | 21.117 |
| 128) | 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 385821 | 20.729 |
| 129) | *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 590732 | 50.000 |
| 127) | p-Isopropyltoluene | (3) | 13.160 | 119 | 725423 | 20.948 |
| 130) | 1,4-Dichlorobenzene | (3) | 13.217 | 146 | 392561 | 20.232 |
| 135) | 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 355630 | 20.246 |
| 134) | n-Butylbenzene | (3) | 13.452 | 91 | 634813 | 20.686 |
| 137) | 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 28814 | 19.999 |
| 138) | 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 268331 | 19.543 |
| 139) | Hexachlorobutadiene | (3) | 14.687 | 225 | 139827 | 19.907 |
| 140) | Naphthalene | (3) | 14.758 | 128 | 639583 | 20.286 |
| 141) | 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 253915 | 19.645 |
| 143) | 2-Methylnaphthalene | (3) | 15.550 | 142 | 396668 | 20.004 |
| 55) | $Dibromofluoromethane | (1) | 7.031 | 113 | 125672 | 19.854 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45 Analyst ID: LCM01518

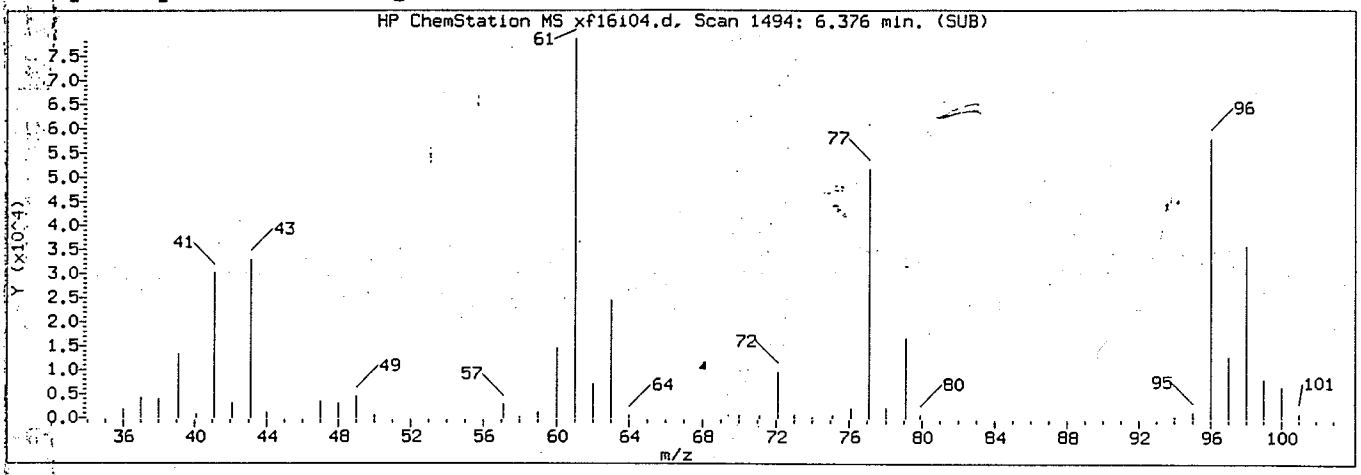
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

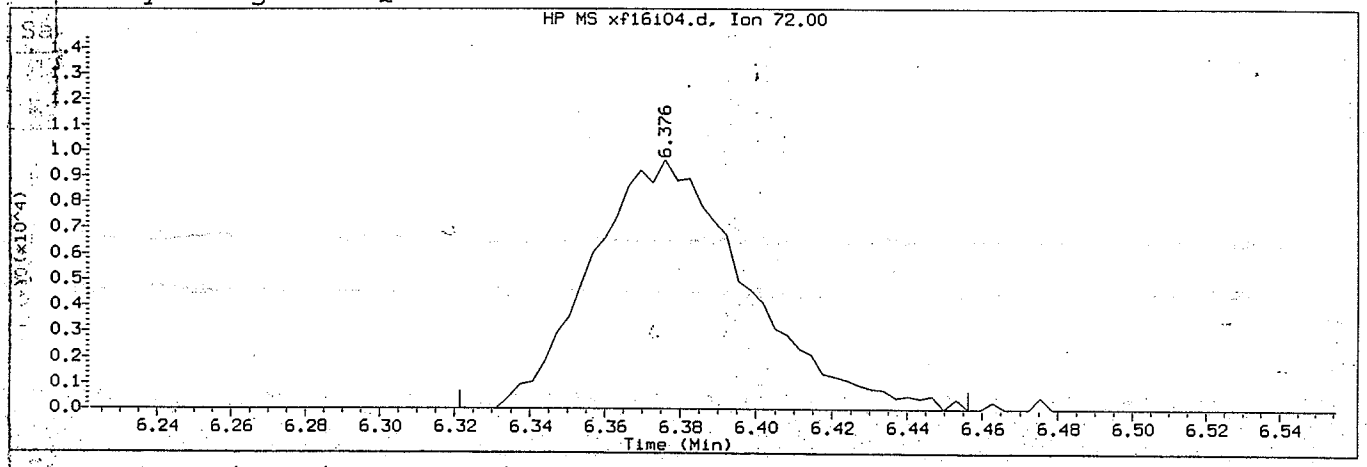
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 31891 | 20.103 |
| 87)$Toluene-d8(mz100) | (2) | 9.928 | 100 | 362521 | 20.566 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 181695 | 19.843 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 127322 | 19.808 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.489 | 104 | 19772 | 20.259 |
| 86)$Toluene-d8 | (2) | 9.928 | 98 | 538560 | 20.543 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 199371 | 19.896 |

$= Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| | |
|---|---|
| Compound Number | : 46 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1494 |
| Retention Time (minutes) | : 6.376 |
| Quant Ion | : 72 |
| Area (flag) | : 27679AM |
| Concentration (ug/Kg) | : 35.5070 |
| Integration start scan | : 1476 Integration stop scan: 1518 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: LCM/1518 2/17/04

GC/MS audit/management approval: *AM/320, 2/17/04

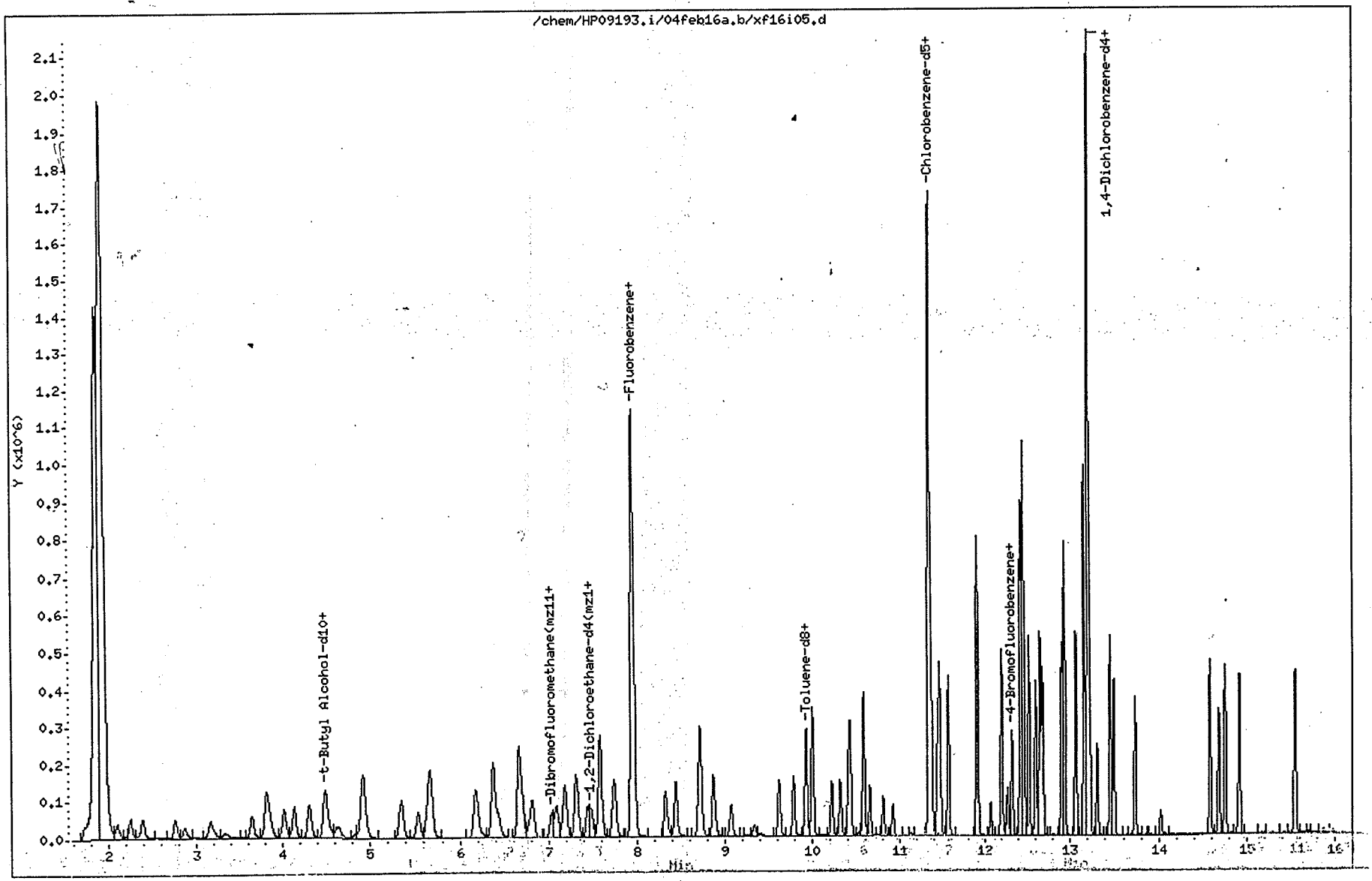
Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d
Date : 16-FEB-2004 12:12
Client ID: VSTD010
Sample Info: VSTD010;VSTD010;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 2/16/04



Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d
Date : 16-FEB-2004 14:54
Client ID: VSTD001
Sample Info: VSTD001;1 PPB MDL;2;3;MDL/LOQ;;

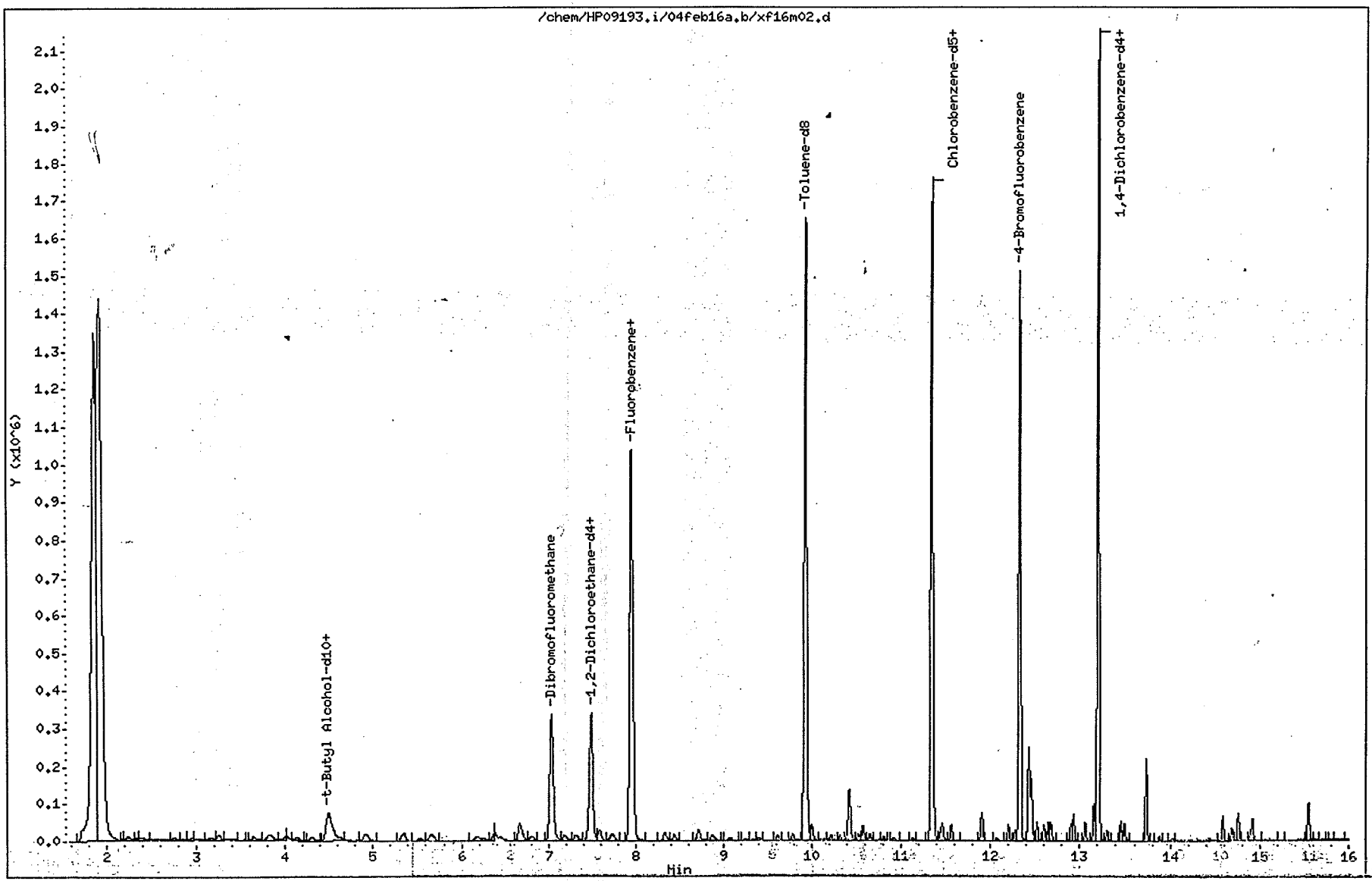
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518 2/16/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 73289 | | 8.364 |
| 4) Chloromethane | (1) | 2.253 | 50 | 83190 | | 9.084 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 75005 | | 8.685 |
| 7) Bromomethane | (1) | 2.763 | 94 | 55360 | | 9.358 |
| 8) Chloroethane | (1) | 2.865 | 64 | 46015 | | 9.122 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 83597 | | 8.497 |
| 13) Ethanol | (4) | 3.331 | 45 | 34124 | | 474.500 |
| 16) Acrolein | (1) | 3.636 | 56 | 81704 | | 93.895 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 54166 | | 8.685 |
| 19) Freon 113 | (1) | 3.844 | 101 | 51577 | | 8.267 |
| 20) Acetone | (1) | 3.838 | 58 | 11183 | | 22.220 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 107656 | | 9.221 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 45969 | | 123.254 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 195649 | | 8.572 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 97090 | | 8.868 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 39226 | | 10.634 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 75236 | | 9.997 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 137431 | | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.637 | 59 | 79531 | | 104.306 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 20472 | | 10.035 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 65442 | | 8.927 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 190321 | | 10.422 |
| 36) n-Hexane | (1) | 5.346 | 57 | 87730 | | 8.216 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 112593 | | 9.208 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 78682 | | 8.228 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 221522 | | 9.798 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 201861 | | 9.935 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 77802 | | 9.654 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 143244 | | 18.582 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 84591 | | 8.682 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 14144 | A | 19.692 |
| 49) Propionitrile | (1) | 6.437 | 54 | 78475 | | 109.080 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 125012 | | 53.272 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 34880 | | 9.960 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 13213 | 19.991 |
| 54) Chloroform | (1) | 6.819 | 83 | 106302 | 9.312 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 86999 | 8.584 |
| 58) Cyclohexane | (1) | 7.185 | 56 | 105391 | 8.374 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 77927 | 8.520 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 72875 | 8.417 |
| 65) Benzene | (1) | 7.583 | 78 | 267441 | 9.177 |
| 61) Isobutyl Alcohol | (1) | 7.448 | 41 | 58115 | 278.043 |
| 66) 1,2-Dichloroethane | (1) | 7.586 | 62 | 79243 | 9.943 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 181578 | 9.876 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1373221 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 16636 | 8.045 |
| 72) n-Butanol | (1) | 8.324 | 56 | 93777 | 537.361 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 65723 | 8.915 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 97794 | 8.190 |
| 75) 1,2-Dichloropropane | (1) | 8.719 | 63 | 69306 | 9.662 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 36778 | 9.965 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 16670 | 266.819 |
| 76) Methyl Methacrylate | (1) | 8.863 | 69 | 42849 | 10.005 |
| 81) Bromodichloromethane | (1) | 9.072 | 83 | 75146 | 9.304 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 24505 | 18.158 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 100862 | 9.295 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 122625 | 18.645 |
| 88) Toluene | (2) | 10.002 | 92 | 173420 | 9.321 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 84587 | 9.713 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 79790 | 9.619 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 61205 | 10.540 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 75828 | 8.854 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 100635 | 10.414 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 89470 | 18.951 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 57723 | 9.413 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 58919 | 10.267 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1017617 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 198602 | 9.600 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 64606 | 9.380 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 317567 | 9.204 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 127800 | 9.038 |
| 92) Xylene (Total) | (2) | | 106 | 252587 | 18.426 |
| 107) o-Xylene | (2) | 11.899 | 106 | 124787 | 9.388 |
| 108) Styrene | (2) | 11.908 | 104 | 200236 | 9.189 |
| 109) Bromoform | (2) | 12.065 | 173 | 39772 | 9.434 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 316082 | 9.098 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 49766 | 264.537 |
| 116) Bromobenzene | (3) | 12.450 | 156 | 91298 | 9.921 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 80157 | 10.529 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 25403 | 11.004 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 115650 | 54.963 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 380211 | 9.375 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 83085 | 9.414 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 276010 | 9.382 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 88022 | 9.681 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 66440 | 9.186 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 52291 | 9.483 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 284287 | 9.626 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 350180 | 9.190 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 175687 | 9.949 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 560433 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.156 | 119 | 305416 | 9.296 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 184946 | 10.047 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 170071 | 10.206 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 267280 | 9.181 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 14204 | 10.392 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 139675 | 10.723 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 62247 | 9.341 |
| 140) Naphthalene | (3) | 14.758 | 128 | 336243 | 11.241 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 136713 | 11.149 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 219319 | 11.658 |
| 155) $Dibromofluoromethane | (1) | 7.034 | 113 | 55067 | 9.317 |

* Compound is an internal standard.
$ Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 15351 | 10.363 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 149482 | 9.087 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 82333 | 9.635 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 55812 | 9.299 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.486 | 104 | 8785 | 9.640 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 224596 | 9.180 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 90368 | 9.663 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d
Date : 16-FEB-2004 12:39
Client ID: VSTD004
Sample Info: VSTD004;VSTD004;2;1;;;

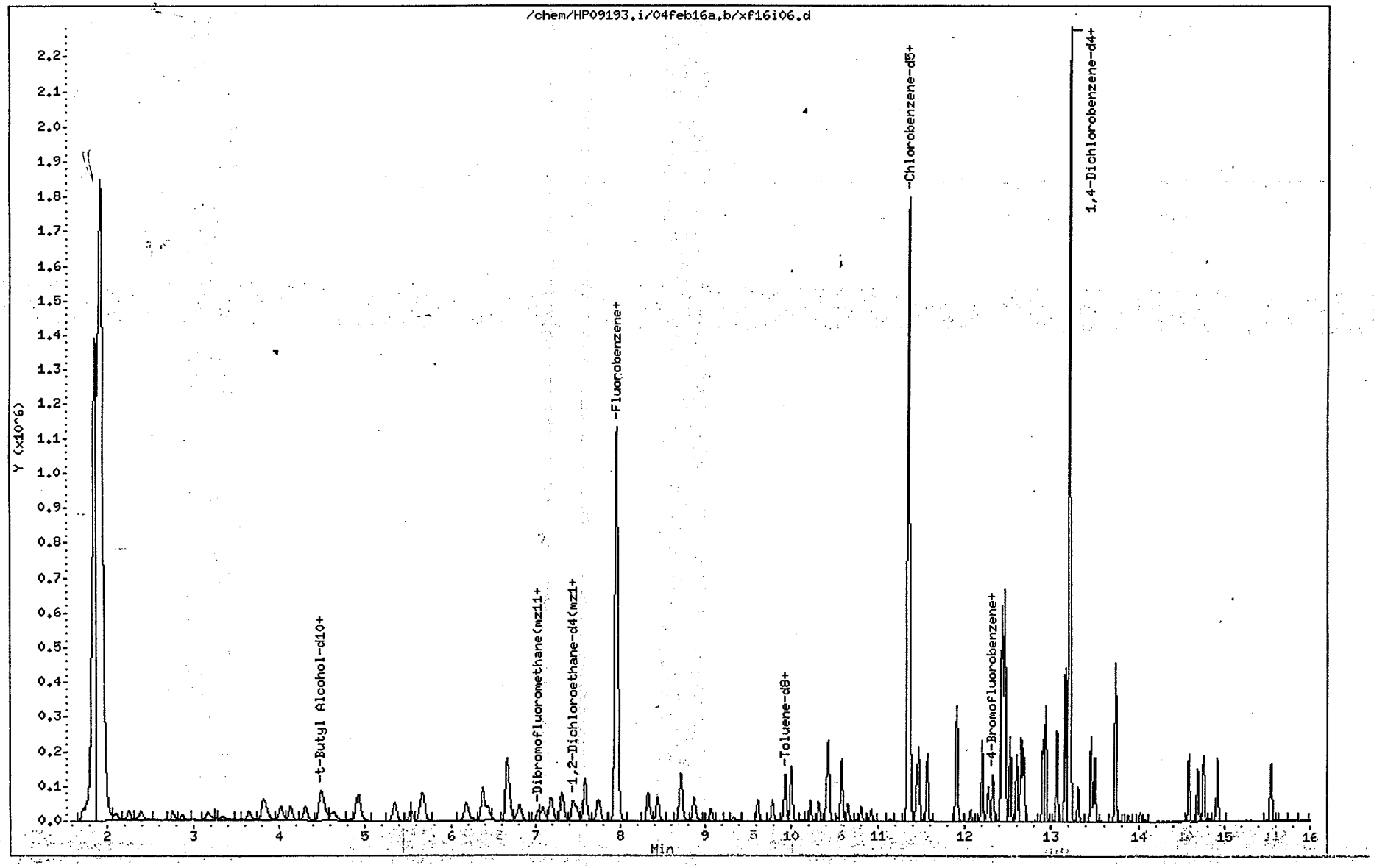
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCH 2/17/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 35323 | 3.876 |
| 4) Chloromethane | (1) | 2.246 | 50 | 40095 | 4.210 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 35583 | 3.962 |
| 7) Bromomethane | (1) | 2.756 | 94 | 24723 | 4.019 |
| 8) Chloroethane | (1) | 2.862 | 64 | 21609 | 4.119 |
| 12) Trichlorofluoromethane | (1) | 3.158 | 101 | 39727 | 3.883 |
| 13) Ethanol | (4) | 3.331 | 45 | 26745 | 342.118 |
| 16) Acrolein | (1) | 3.642 | 56 | 36207 | 40.014 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 27165 | 4.189 |
| 19) Freon 113 | (1) | 3.841 | 101 | 26181 | 4.035 |
| 20) Acetone | (1) | 3.835 | 58 | 5231 | 9.995 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 48566 | 4.000 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 33085 | 85.308 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 96653 | 4.072 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 45589 | 4.004 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 17324 | 4.516 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 35700 | 4.562 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 144809 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.630 | 59 | 59280 | 73.785 |
| 32) Acrylonitrile | (1) | 4.836 | 53 | 8505 | 4.009 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 30804 | 4.041 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 76410 | 4.024 |
| 36) n-Hexane | (1) | 5.340 | 57 | 46231 | 4.163 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 50514 | 3.973 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 36483 | 3.669 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 92124 | 3.918 |
| 42) Ethyl t-Butyl Ether | (1) | 6.177 | 59 | 82116 | 3.886 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 36566 | 4.363 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 67370 | 8.404 |
| 48) 2,2-Dichloropropane | (1) | 6.382 | 77 | 39238 | 3.873 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 5423 A | 7.473 |
| 49) Propionitrile | (1) | 6.437 | 54 | 59969 | 80.160 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 95415 | 39.101 |
| 52) Bromochloromethane | (1) | 6.700 | 128 | 15026 | 4.126 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.784 | 71 | 5814 | 8.459 |
| 54) Chloroform | (1) | 6.816 | 83 | 46296 | 3.900 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 41023 | 3.893 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 51232 | 3.914 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 37811 | 3.976 |
| 60) Carbon Tetrachloride | (1) | 7.323 | 117 | 34190 | 3.798 |
| 65) Benzene | (1) | 7.586 | 78 | 122268 | 4.035 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 40760 | 187.533 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 33147 | 4.000 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 73028 | 3.820 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1427973 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 8199 | 3.813 |
| 72) n-Butanol | (1) | 8.330 | 56 | 66511 | 366.508 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 31838 | 4.153 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 49847 | 4.014 |
| 75) 1,2-Dichloropropane | (1) | 8.715 | 63 | 29142 | 3.907 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 15236 | 3.970 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 11983 | 184.445 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 16601 | 3.728 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 30751 | 3.661 |
| 82) 2-Nitropropane | (1) | 9.341 | 41 | 10142 | 7.227 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 41504 | 3.678 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 47731 | 6.979 |
| 88) Toluene | (2) | 10.002 | 92 | 78499 | 4.005 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 33350 | 3.635 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 30845 | 3.530 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 26236 | 4.289 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 36862 | 4.086 |
| 94) 1,3-Dichloropropane | (2) | 10.577 | 76 | 40972 | 4.025 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 34449 | 6.926 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 22625 | 3.502 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 24058 | 3.979 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1072048 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 89669 | 4.114 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 102) | 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 27089 | 3.733 |
| 103) | Ethylbenzene | (2) | 11.462 | 91 | 144282 | 3.970 |
| 105) | m+p-Xylene | (2) | 11.562 | 106 | 58864 | 3.952 |
| 92) | Xylene (Total) | (2) | | 106 | 112906 | 7.811 |
| 107) | o-Xylene | (2) | 11.899 | 106 | 54042 | 3.859 |
| 108) | Styrene | (2) | 11.908 | 104 | 81918 | 3.568 |
| 109) | Bromoform | (2) | 12.065 | 173 | 15561 | 3.504 |
| 110) | Isopropylbenzene | (2) | 12.197 | 105 | 142445 | 3.892 |
| 112) | Cyclohexanone | (2) | 12.271 | 55 | 38510 | 194.311 |
| 116) | Bromobenzene | (3) | 12.451 | 156 | 41471 | 4.239 |
| 115) | 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 34436 | 4.255 |
| 117) | 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 12235 | 4.985 |
| 118) | trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 87377 | 39.064 |
| 119) | n-Propylbenzene | (3) | 12.518 | 91 | 175103 | 4.062 |
| 120) | 2-Chlorotoluene | (3) | 12.595 | 126 | 38385 | 4.091 |
| 121) | 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 122483 | 3.917 |
| 122) | 4-Chlorotoluene | (3) | 12.675 | 126 | 39442 | 4.081 |
| 123) | tert-Butylbenzene | (3) | 12.903 | 134 | 30064 | 3.910 |
| 124) | Pentachloroethane | (3) | 12.922 | 167 | 20660 | 3.524 |
| 125) | 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 122966 | 3.917 |
| 126) | sec-Butylbenzene | (3) | 13.060 | 105 | 160828 | 3.970 |
| 128) | 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 79763 | 4.249 |
| 129) | *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 595765 | 50.000 |
| 127) | p-Isopropyltoluene | (3) | 13.160 | 119 | 136942 | 3.921 |
| 130) | 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 85896 | 4.389 |
| 135) | 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 74871 | 4.226 |
| 134) | n-Butylbenzene | (3) | 13.452 | 91 | 120951 | 3.908 |
| 137) | 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 6316 | 4.347 |
| 138) | 1,2,4-Trichlorobenzene | (3) | 14.584 | 180 | 58713 | 4.240 |
| 139) | Hexachlorobutadiene | (3) | 14.684 | 225 | 27989 | 3.951 |
| 140) | Naphthalene | (3) | 14.758 | 128 | 139957 | 4.402 |
| 141) | 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 55350 | 4.246 |
| 143) | 2-Methylnaphthalene | (3) | 15.547 | 142 | 84327 | 4.217 |
| 55) | $Dibromofluoromethane | (1) | 7.037 | 113 | 25697 | 4.181 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 6417 | 4.166 |
| 87)$Toluene-d8(mz100) | (2) | 9.928 | 100 | 70197 | 4.051 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 37744 | 4.193 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 25806 | 4.135 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.490 | 104 | 3913 | 4.129 |
| 86)$Toluene-d8 | (2) | 9.928 | 98 | 105348 | 4.087 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 41187 | 4.181 |

$ Compound is a surrogate standard.

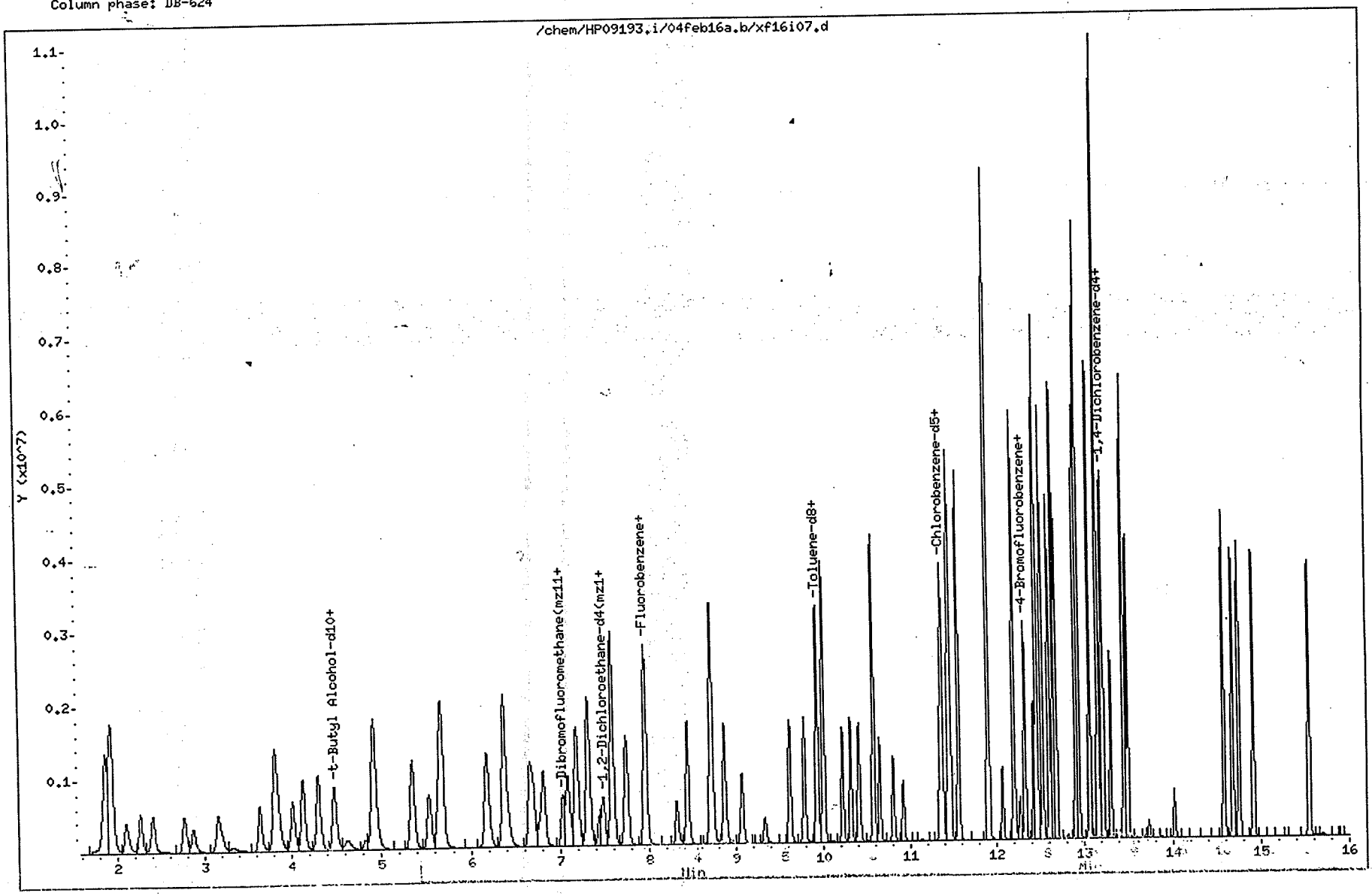
Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d
Date : 16-FEB-2004 13:06
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1 DS
2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.099 | 85 | 903445 | 104.079 |
| 4) Chloromethane | (1) | 2.262 | 50 | 928009 | 102.297 |
| 5) Vinyl Chloride | (1) | 2.403 | 62 | 903162 | 105.578 |
| 7) Bromomethane | (1) | 2.766 | 94 | 606255 | 103.452 |
| 8) Chloroethane | (1) | 2.866 | 64 | 520204 | 104.100 |
| 12) Trichlorofluoromethane | (1) | 3.158 | 101 | 1013435 | 103.983 |
| 13) Ethanol | (4) | 3.331 | 45 | 142345 | 2533.483 |
| 16) Acrolein | (1) | 3.639 | 56 | 897715 | 1041.461 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 638985 | 103.427 |
| 19) Freon 113 | (1) | 3.838 | 101 | 644300 | 104.247 |
| 20) Acetone | (1) | 3.825 | 58 | 91819 | 184.169 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 1208401 | 104.483 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 171166 | 463.296 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 2370965 | 104.871 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 1141318 | 105.232 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 344568 | 94.300 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 726336 | 97.431 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 115886 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.627 | 59 | 350365 | 544.936 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 207990 | 102.921 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 757952 | 104.378 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 1803263 | 99.683 |
| 36) n-Hexane | (1) | 5.343 | 57 | 1095994 | 103.610 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 1242482 | 102.576 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.677 | 53 | 1027239 | 108.444 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 2311795 | 103.223 |
| 42) Ethyl t-Butyl Ether | (1) | 6.184 | 59 | 2069405 | 102.813 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 794713 | 99.551 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1552665 | 203.929 |
| 43) 2,2-Dichloropropane | (1) | 6.386 | 77 | 1020231 | 105.705 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 144534 A | 209.126 |
| 49) Propionitrile | (1) | 6.434 | 54 | 351250 | 492.872 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 575955 | 247.766 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 344097 | 99.187 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 129969 | 198.513 |
| 54) Chloroform | (1) | 6.819 | 83 | 1173774 | 103.798 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 1058141 | 105.399 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 1322739 | 106.092 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 944304 | 104.227 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 910887 | 106.207 |
| 65) Benzene | (1) | 7.586 | 78 | 2991277 | 103.621 |
| 71) Isobutyl Alcohol | (1) | 7.441 | 41 | 263954 | 1274.846 |
| 76) 1,2-Dichloroethane | (1) | 7.589 | 62 | 798016 | 101.085 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 1891358 | 103.849 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1360301 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 219858 | 107.336 |
| 72) n-Butanol | (1) | 8.321 | 56 | 456001 | 2637.795 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 751090 | 102.855 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 1246048 | 105.343 |
| 75) 1,2-Dichloropropane | (1) | 8.719 | 63 | 739598 | 104.091 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 371606 | 101.648 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 79873 | 1290.583 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 443398 | 104.512 |
| 81) Bromodichloromethane | (1) | 9.072 | 83 | 856101 | 107.004 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 278763 | 208.528 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 1147474 | 106.748 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 1325415 | 203.438 |
| 88) Toluene | (2) | 10.002 | 92 | 1942688 | 104.221 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 926802 | 106.230 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 900245 | 108.330 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 573398 | 98.561 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 888667 | 103.575 |
| 94) 1,3-Dichloropropane | (2) | 10.577 | 76 | 976563 | 100.866 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 936979 | 198.095 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 671765 | 109.346 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 584667 | 101.691 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1019520 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 2121871 | 102.376 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 102) | 1,1,1,2-Tetrachloroethane | (2) | 11.437 | 131 | 736034 | 106.661 |
| 103) | Ethylbenzene | (2) | 11.462 | 91 | 3633300 | 105.110 |
| 105) | m+p-Xylene | (2) | 11.562 | 106 | 1487008 | 104.967 |
| 92) | Xylene (Total) | (2) | | 106 | 2892765 | 210.523 |
| 107) | o-Xylene | (2) | 11.899 | 106 | 1405757 | 105.556 |
| 108) | Styrene | (2) | 11.905 | 104 | 2393852 | 109.649 |
| 109) | Bromoform | (2) | 12.065 | 173 | 467243 | 110.629 |
| 110) | Isopropylbenzene | (2) | 12.197 | 105 | 3705897 | 106.471 |
| 112) | Cyclohexanone | (2) | 12.268 | 55 | 231263 | 1227.011 |
| 116) | Bromobenzene | (3) | 12.451 | 156 | 947032 | 100.444 |
| 115) | 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 777367 | 99.664 |
| 117) | 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 219162 | 92.654 |
| 118) | trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 539238 | 250.124 |
| 119) | n-Propylbenzene | (3) | 12.518 | 91 | 4317420 | 103.906 |
| 120) | 2-Chlorotoluene | (3) | 12.598 | 126 | 928790 | 102.707 |
| 121) | 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 3161605 | 104.890 |
| 122) | 4-Chlorotoluene | (3) | 12.675 | 126 | 951877 | 102.177 |
| 123) | tert-Butylbenzene | (3) | 12.900 | 134 | 779133 | 105.133 |
| 124) | Pentachloroethane | (3) | 12.925 | 167 | 616610 | 109.138 |
| 125) | 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 3162602 | 104.517 |
| 126) | sec-Butylbenzene | (3) | 13.060 | 105 | 4134559 | 105.896 |
| 128) | 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 1820792 | 100.639 |
| 129) | *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 574215 | 50.000 |
| 127) | p-Isopropyltoluene | (3) | 13.156 | 119 | 3558002 | 105.700 |
| 130) | 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1870855 | 99.193 |
| 135) | 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1707273 | 99.991 |
| 134) | n-Butylbenzene | (3) | 13.452 | 91 | 3170372 | 106.282 |
| 137) | 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 138390 | 98.817 |
| 138) | 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 1362666 | 102.102 |
| 139) | Hexachlorobutadiene | (3) | 14.687 | 225 | 743640 | 108.919 |
| 140) | Naphthalene | (3) | 14.758 | 128 | 3033293 | 98.974 |
| 141) | 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 1267193 | 100.863 |
| 143) | 2-Methylnaphthalene | (3) | 15.550 | 142 | 1904302 | 98.795 |
| 55) | $Dibromofluoromethane | (1) | 7.034 | 113 | 597240 | 102.005 |

* Compound is an internal standard.
$ Compound is a surrogate standard.

8159

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 144662 | 98.581 |
| 87)$Toluene-d8(mz100) | (2) | 9.932 | 100 | 1707173 | 103.587 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 867129 | 101.286 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 608826 | 102.397 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.490 | 104 | 91199 | 101.024 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 2529477 | 103.198 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 943726 | 100.728 |

$ Compound is a surrogate standard.

8168

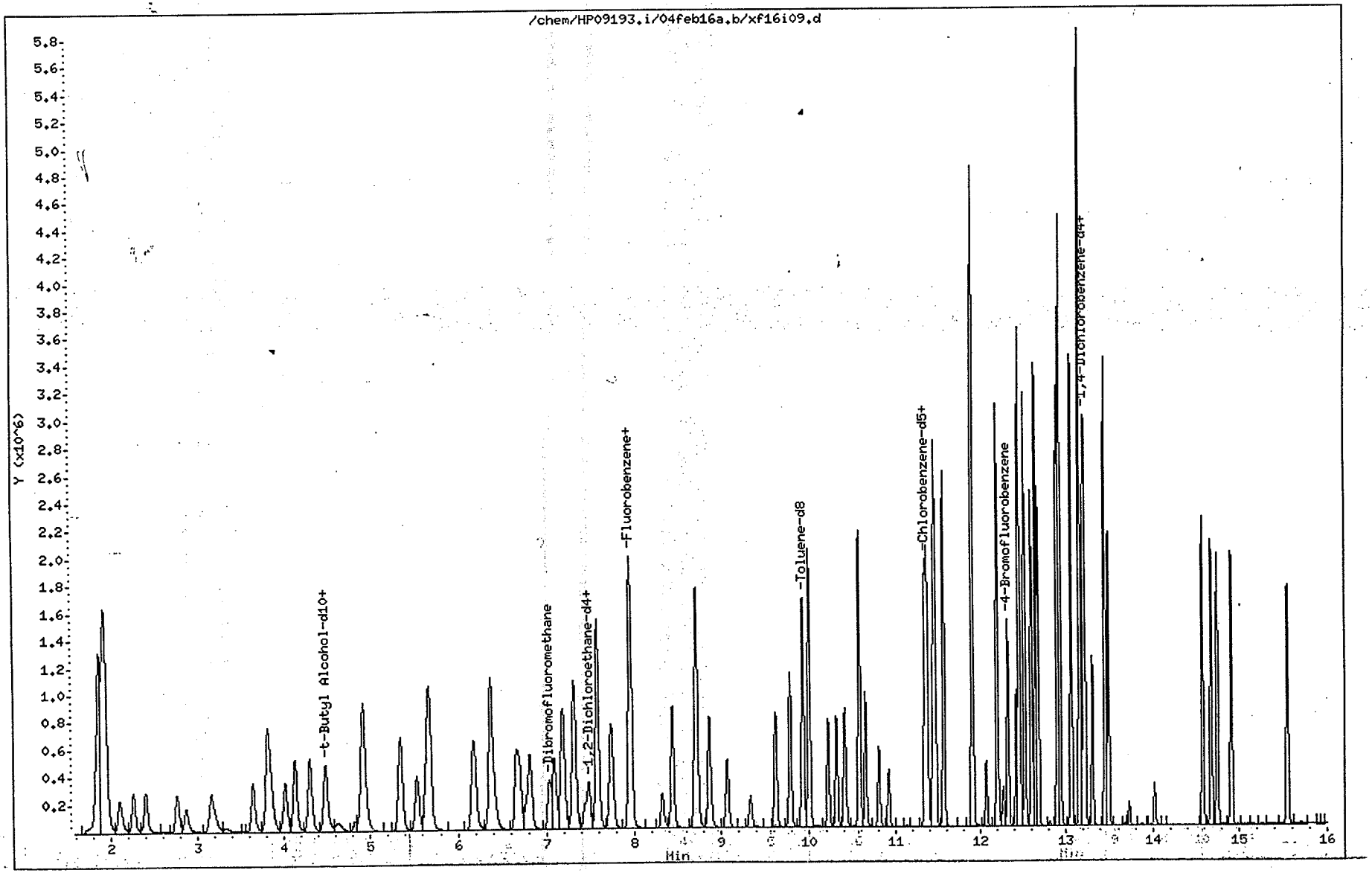
Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d
Date : 16-FEB-2004 14:27
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 493079 | 54.637 |
| 4) Chloromethane | (1) | 2.259 | 50 | 481760 | 51.080 |
| 5) Vinyl Chloride | (1) | 2.403 | 62 | 473139 | 53.200 |
| 7) Bromomethane | (1) | 2.763 | 94 | 317893 | 52.177 |
| 8) Chloroethane | (1) | 2.865 | 64 | 269633 | 51.899 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 546045 | 53.890 |
| 13) Ethanol | (4) | 3.334 | 45 | 73324 | 1259.221 |
| 16) Acrolein | (1) | 3.642 | 56 | 510264 | 569.393 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 340053 | 52.942 |
| 19) Freon 113 | (1) | 3.838 | 101 | 354567 | 55.181 |
| 20) Acetone | (1) | 3.825 | 58 | 49738 | 95.959 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 629603 | 52.362 |
| 23) 2-Propanol | (1) | 4.008 | 45 | 81958 | 213.376 |
| 24) Carbon Disulfide | (1) | 4.127 | 76 | 1259765 | 53.596 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 572314 | 50.756 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 175339 | 46.156 |
| 28) Methylene Chloride | (1) | 4.479 | 84 | 384800 | 49.649 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 117535 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.624 | 59 | 162642 | 249.414 |
| 32) Acrylonitrile | (1) | 4.823 | 53 | 109611 | 52.171 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 396118 | 52.469 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 925145 | 49.191 |
| 36) n-Hexane | (1) | 5.343 | 57 | 614616 | 55.887 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 657297 | 52.195 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 539908 | 54.824 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 1191194 | 51.159 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 1063826 | 50.838 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 415686 | 50.086 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 811804 | 102.555 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 534377 | 53.255 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 84202 A | 115.678 |
| 49) Propionitrile | (1) | 6.434 | 54 | 174087 | 234.962 |
| 51) Methacrylonitrile | (1) | 6.662 | 67 | 287302 | 118.879 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 181459 | 50.311 |

A = User selected an alternate hit.
* = Compound is an internal standard.

8162

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 71249 | 104.675 |
| 54) Chloroform | (1) | 6.819 | 83 | 611106 | 51.980 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 556549 | 53.322 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 714285 | 55.105 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 504283 | 53.537 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 484557 | 54.343 |
| 65) Benzene | (1) | 7.586 | 78 | 1568355 | 52.258 |
| 61) Isobutyl Alcohol | (1) | 7.444 | 41 | 117945 | 547.926 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 410904 | 50.064 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 953023 | 50.332 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1414236 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 121849 | 57.218 |
| 72) n-Butanol | (1) | 8.324 | 56 | 193978 | 1079.297 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 394070 | 51.906 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 654957 | 53.260 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 379147 | 51.326 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 187683 | 49.380 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 38417 | 597.066 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 211665 | 47.988 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 430101 | 51.708 |
| 82) 2-Nitropropane | (1) | 9.335 | 41 | 167655 | 120.631 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 583869 | 52.245 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 868619 | 128.240 |
| 88) Toluene | (2) | 10.002 | 92 | 1018425 | 52.387 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 461563 | 50.726 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 433222 | 49.985 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 289837 | 47.769 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 477712 | 53.385 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 496062 | 49.127 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 641993 | 130.140 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 328034 | 51.197 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 291575 | 48.626 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1063302 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 1100579 | 50.914 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 373348 | 51.875 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 1925651 | 53.415 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 784316 | 53.085 |
| 92) Xylene (Total) | (2) | | 106 | 1524000 | 106.339 |
| 107) o-Xylene | (2) | 11.898 | 106 | 739684 | 53.254 |
| 108) Styrene | (2) | 11.908 | 104 | 1238313 | 54.385 |
| 109) Bromoform | (2) | 12.065 | 173 | 219381 | 49.804 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 1963118 | 54.078 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 115893 | 589.574 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 492363 | 50.099 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 375397 | 46.173 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 107599 | 43.641 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 260421 | 115.888 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 2315317 | 53.458 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 485073 | 51.461 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 1675946 | 53.343 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 497255 | 51.208 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 407512 | 52.754 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 304810 | 51.759 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 1677484 | 53.185 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 2212594 | 54.368 |
| 128) 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 961889 | 51.006 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 598530 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.156 | 119 | 1909406 | 54.419 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 979892 | 49.843 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 892151 | 50.128 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 1703846 | 54.799 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 65063 | 44.571 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 703371 | 50.561 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 388736 | 54.624 |
| 140) Naphthalene | (3) | 14.758 | 128 | 1479475 | 46.313 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 647289 | 49.429 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 896381 | 44.615 |
| 55)$Dibromofluoromethane | (1) | 7.031 | 113 | 303137 | 49.799 |

Compound is an internal standard.
Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 73163 | 47.956 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 875060 | 50.910 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 441192 | 49.412 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.031 | 111 | 309646 | 50.093 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.489 | 104 | 46125 | 49.146 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1299084 | 50.818 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 485921 | 49.729 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d
Date : 16-FEB-2004 14:54
Client ID: VSTD001
Sample Info: VSTD001;1 PPB MDL;2;3;MDL/LOQ;;

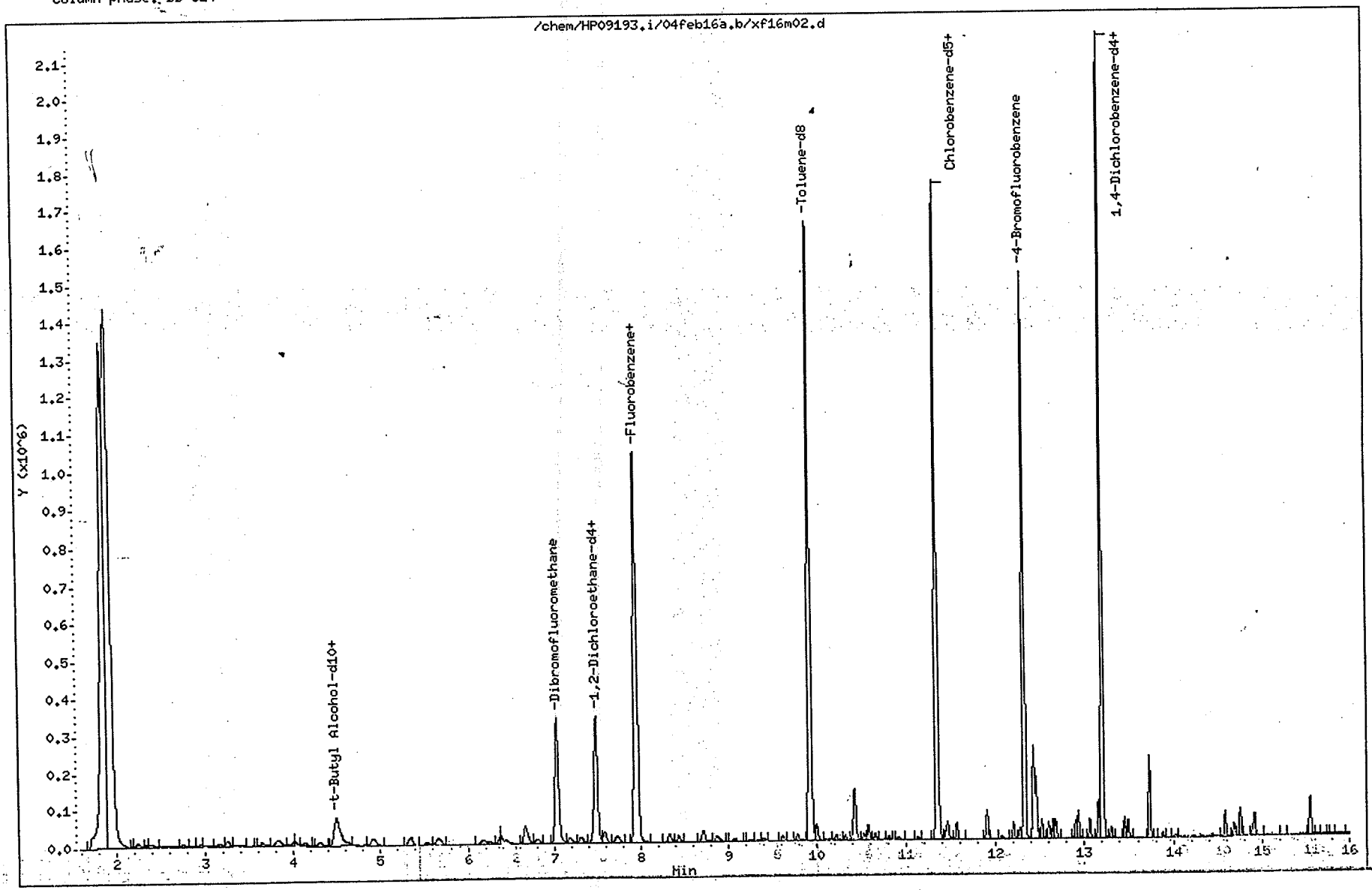
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
2/16/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.095 | 85 | 7107 | 0.823 |
| 4) Chloromethane | (1) | 2.243 | 50 | 11073 | 1.227 |
| 5) Vinyl Chloride | (1) | 2.371 | 62 | 7764 | 0.912 |
| 7) Bromomethane | (1) | 2.747 | 94 | 5706 | 0.978 |
| 8) Chloroethane | (1) | 2.862 | 64 | 4924 | 0.990 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 9787 | 1.009 |
| 13) Ethanol | (4) | 3.331 | 45 | 8192 | 71.579 |
| 16) Acrolein | (1) | 3.645 | 56 | 12178 | 14.198 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 5394 | 0.877 |
| 19) Freon 113 | (1) | 3.847 | 101 | 5195M | 0.845 |
| 20) Acetone | (1) | 3.831 | 58 | 3003 | 6.053 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 10340 | 0.898 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 12112 | 32.945 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 20555 | 0.914 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 10445 | 0.968 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 5658 | 1.556 |
| 28) Methylene Chloride | (1) | 4.479 | 84 | 18490 | 2.492 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 150389 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.640 | 59 | 19449 | 23.310 |
| 32) Acrylonitrile | (1) | 4.842 | 53 | 2235 | 1.111 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 6591 | 0.912 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.913 | 73 | 18512M | 1.028 |
| 36) n-Hexane | (1) | 5.346 | 57 | 18219 | 1.731 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 10643 | 0.883 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 7088 | 0.752 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 19909 | 0.893 |
| 42) Ethyl t-Butyl Ether | (1) | 6.180 | 59 | 18680 | 0.933 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 11261 | 1.418 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 17852 | 2.330 |
| 48) 2,2-Dichloropropane | (1) | 6.379 | 77 | 7807 | 0.813 |
| 46) 2-Butanone | (1) | 6.392 | 72 | 1319 A | 1.893 |
| 49) Propionitrile | (1) | 6.450 | 54 | 16644 | 23.470 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 24639 | 10.652 |
| 52) Bromochloromethane | (1) | 6.706 | 128 | 3355 | 0.972 |

M Compound was manually integrated.
A User selected an alternate hit.
* Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.790 | 71 | 2239 | 3.437 |
| 54) Chloroform | (1) | 6.822 | 83 | 10820 | 0.962 |
| 57) 1,1,1-Trichloroethane | (1) | 7.088 | 97 | 7881 | 0.789 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 11424 | 0.921 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 7875 | 0.873 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 6743 | 0.790 |
| 65) Benzene | (1) | 7.586 | 78 | 28128 | 0.979 |
| 61) Isobutyl Alcohol | (1) | 7.444 | 41 | 11597 | 56.287 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 8580 | 1.092 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 16762 | 0.925 |
| 69) *Fluorobenzene | (1) | 7.951 | 96 | 1353625 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 1737 | 0.852 |
| 72) n-Butanol | (1) | 8.333 | 56 | 17446 | 101.416 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 7190 | 0.989 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 9269 | 0.787 |
| 75) 1,2-Dichloropropane | (1) | 8.715 | 63 | 6703 | 0.948 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 3934 | 1.081 |
| 78) 1,4-Dioxane | (1) | 8.901 | 88 | 3144 | 51.051 |
| 76) Methyl Methacrylate | (1) | 8.876 | 69 | 4075 | 0.965 |
| 81) Bromodichloromethane | (1) | 9.071 | 83 | 7124 | 0.895 |
| 82) 2-Nitropropane | (1) | 9.341 | 41 | 2480M | 1.864 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 9774 | 0.914 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 13770 | 2.124 |
| 88) Toluene | (2) | 10.005 | 92 | 19423 | 1.042 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 9090 | 1.042 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 7438 | 0.895 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 8019 | 1.379 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 8333 | 0.971 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 10804 | 1.116 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 12903M | 2.728 |
| 97) Dibromochloromethane | (2) | 10.807 | 129 | 5460 | 0.889 |
| 99) 1,2-Dibromoethane | (2) | 10.916 | 107 | 6659 | 1.158 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1019411 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 23016 | 1.111 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.433 | 131 | 5828 | 0.845 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 31834 | 0.921 |
| 105) m+p-Xylene | (2) | 11.558 | 106 | 13348 | 0.942 |
| 92) Xylene (Total) | (2) | | 106 | 25012 | 1.818 |
| 107) o-Xylene | (2) | 11.902 | 106 | 11664 | 0.876 |
| 108) Styrene | (2) | 11.905 | 104 | 18781 | 0.860 |
| 109) Bromoform | (2) | 12.068 | 173 | 3472 | 0.822 |
| 115) Isopropylbenzene | (2) | 12.197 | 105 | 27515 | 0.791 |
| 2) Cyclohexanone | (2) | 12.271 | 55 | 11738M | 62.285 |
| 116) Bromobenzene | (3) | 12.450 | 156 | 11593 | 1.249 |
| 85) 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 8561 | 1.115 |
| 117) 1,2,3-Trichloropropane | (3) | 12.454 | 110 | 3293 | 1.415 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 22421 | 10.567 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 37311 | 0.912 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 8883 | 0.998 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 25024 | 0.844 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 10091 | 1.101 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 5922 | 0.812 |
| 124) Pentachloroethane | (3) | 12.922 | 167 | 4186 | 0.753 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 26984 | 0.906 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 31900M | 0.830 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 21802 | 1.224 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 565116 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.159 | 119 | 26969 | 0.814 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 26349 | 1.420 |
| 131) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 19998 | 1.190 |
| 132) n-Butylbenzene | (3) | 13.452 | 91 | 26255 | 0.894 |
| 133) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 1683 | 1.221 |
| 134) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 18903 | 1.439 |
| 135) Hexachlorobutadiene | (3) | 14.687 | 225 | 6457 | 0.961 |
| 136) Naphthalene | (3) | 14.758 | 128 | 53703 | 1.781 |
| 137) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 18441 | 1.491 |
| 113) 2-Methylnaphthalene | (3) | 15.550 | 142 | 53243 | 2.807 |
| 65) $Dibromofluoromethane | (1) | 7.034 | 113 | 301752 | 51.791 |

M = Compound was manually integrated.

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

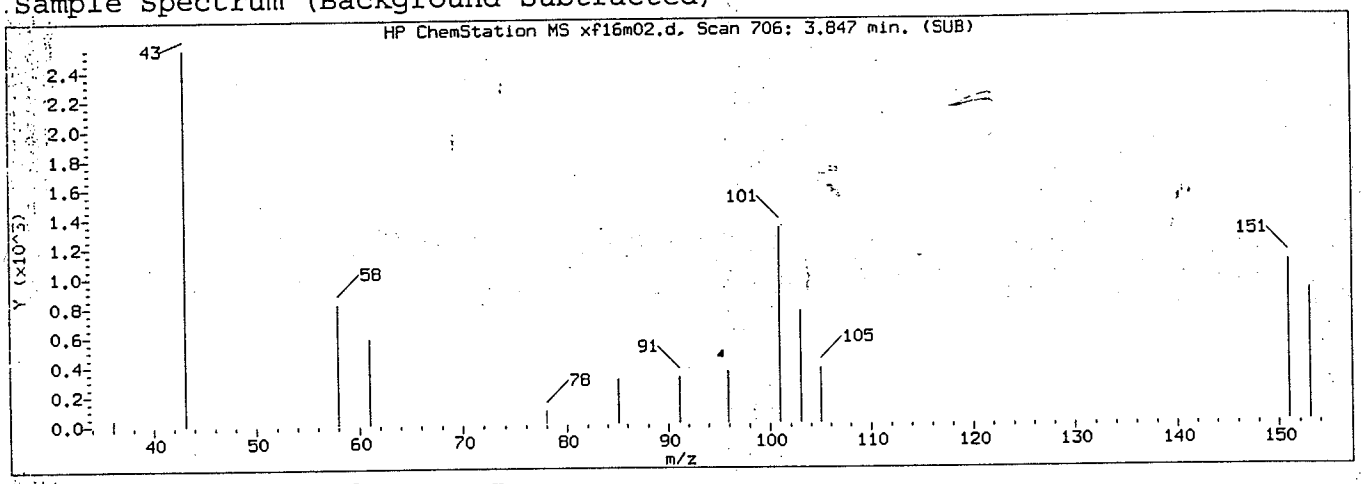
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

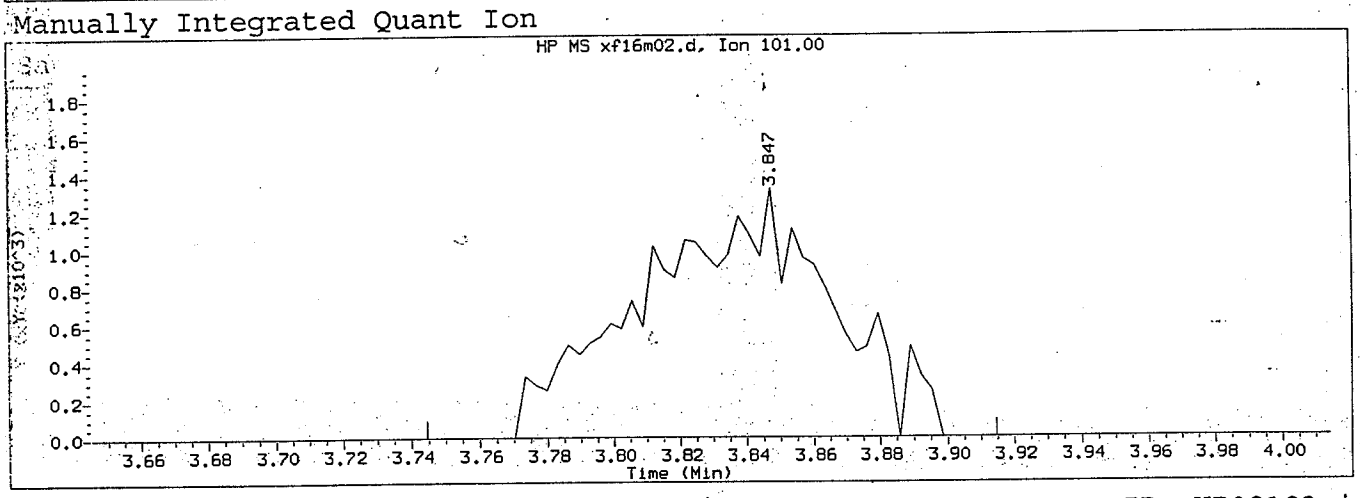
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 2)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 74931 | 51.314 |
| 5)$Toluene-d8 | (2) | 9.928 | 98 | 1270675 | 51.847 |
| 8)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 477007 | 50.919 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

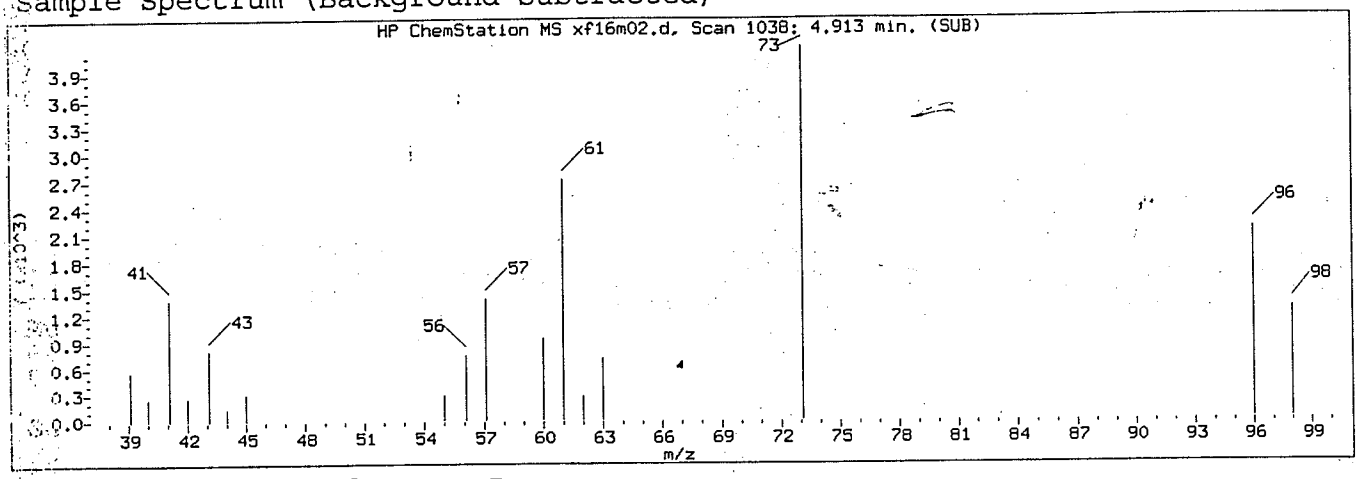
| | | |
|---|---|---|
| Compound Number | : | 19 |
| Compound Name | : | Freon 113 |
| Scan Number | : | 706 |
| Retention Time (minutes) | : | 3.847 |
| Quant Ion | : | 101 |
| Area (flag) | : | 5195 M |
| Concentration (ug/Kg) | : | 0.8447 |
| Integration start scan | : | 673 Integration stop scan: 726 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

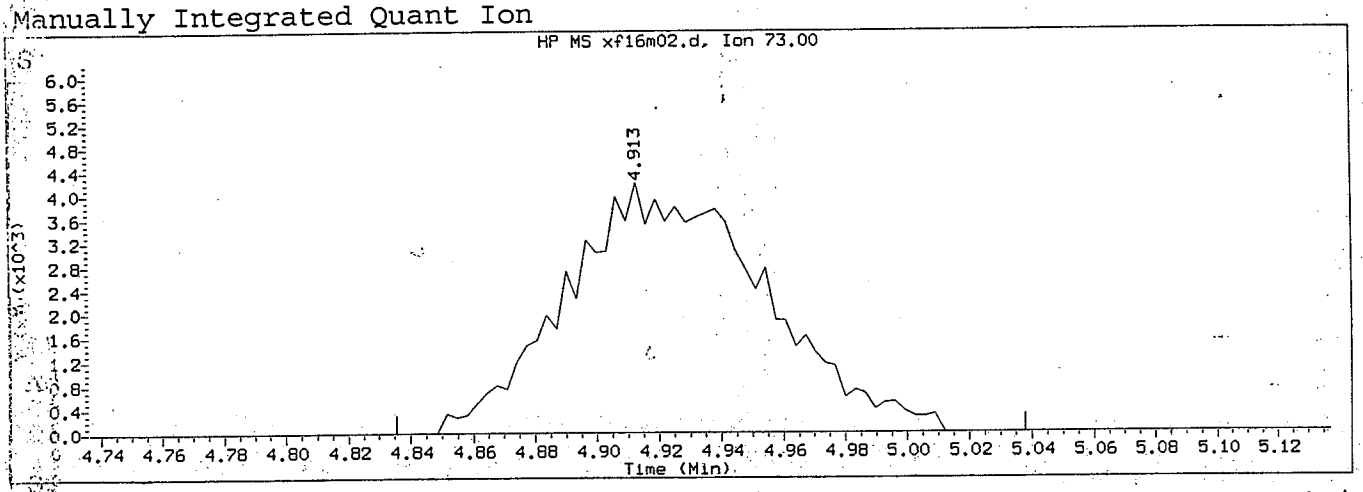
Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: [illegible] 2/17/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

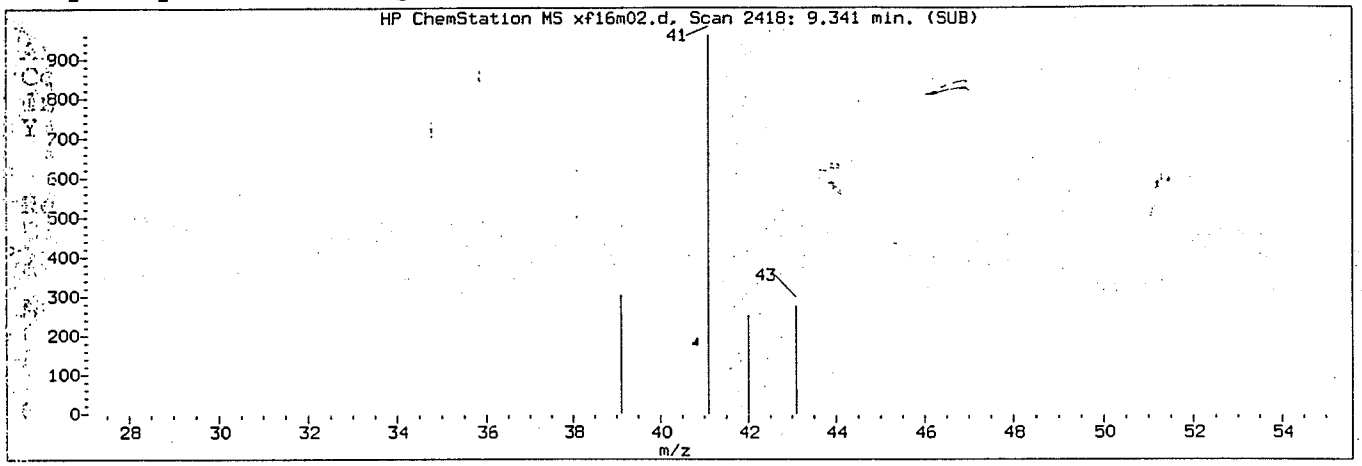
Compound Number : 35
Compound Name : Methyl Tertiary Butyl Ether
Scan Number : 1038
Retention Time (minutes): 4.913
Quant Ion : 73
Area (flag) : 18512 M
Concentration (ug/Kg) : 1.0284
Integration start scan : 1013 Integration stop scan: 1076
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

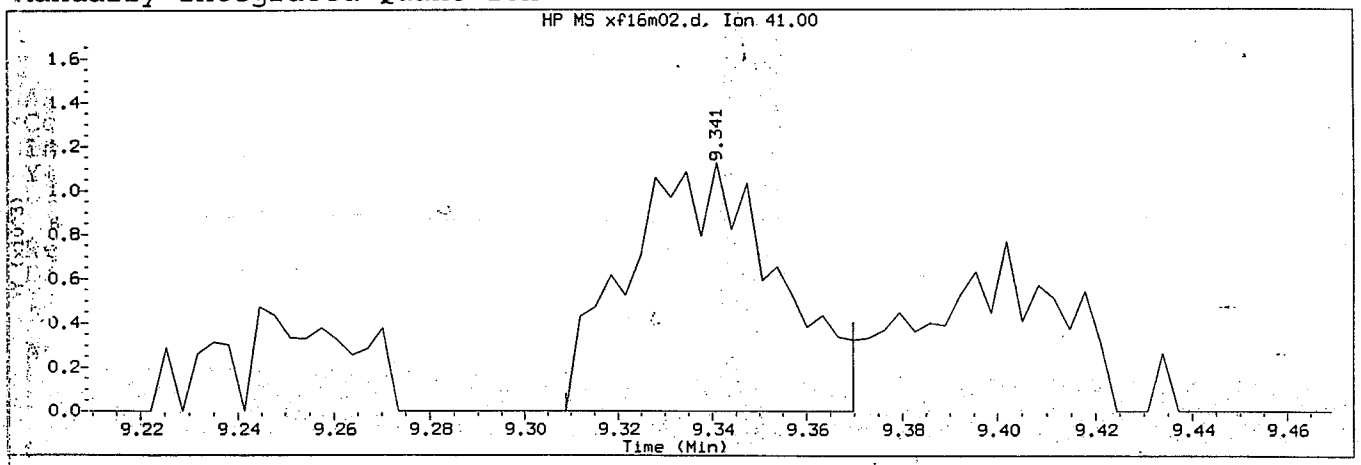
Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: [signature] 2/17/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| | |
|---|---|
| Compound Number | : 82 |
| Compound Name | : 2-Nitropropane |
| Scan Number | : 2418 |
| Retention Time (minutes) | : 9.341 |
| Quant Ion | : 41 |
| Area (flag) | : 2480 M |
| Concentration (ug/Kg) | : 1.8643 |
| Integration start scan | : 2407 Integration stop scan: 2426 |
| Y at integration start | : 0 Y at integration end: 0 |

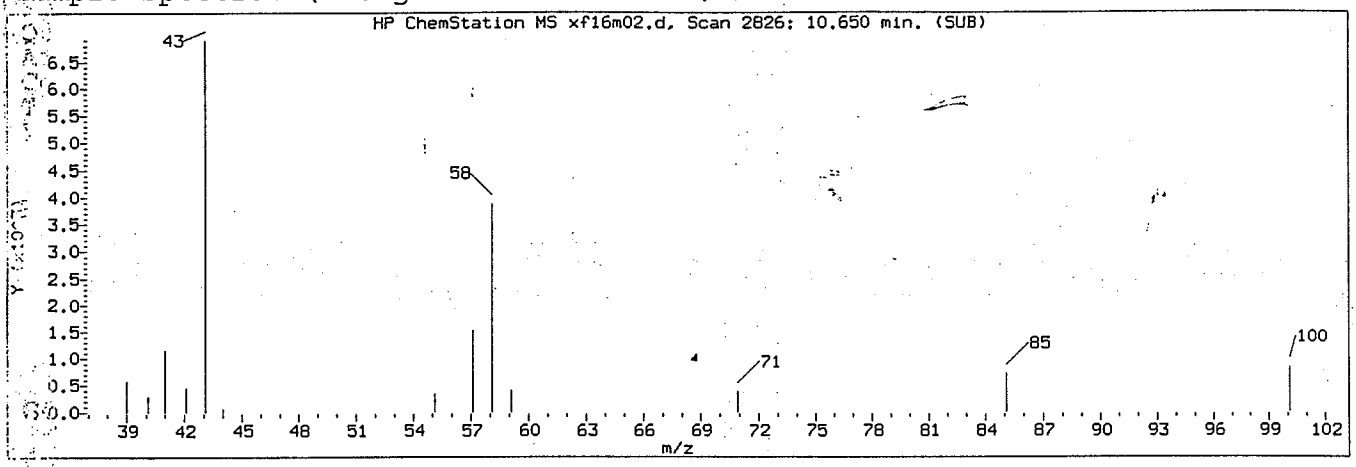
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

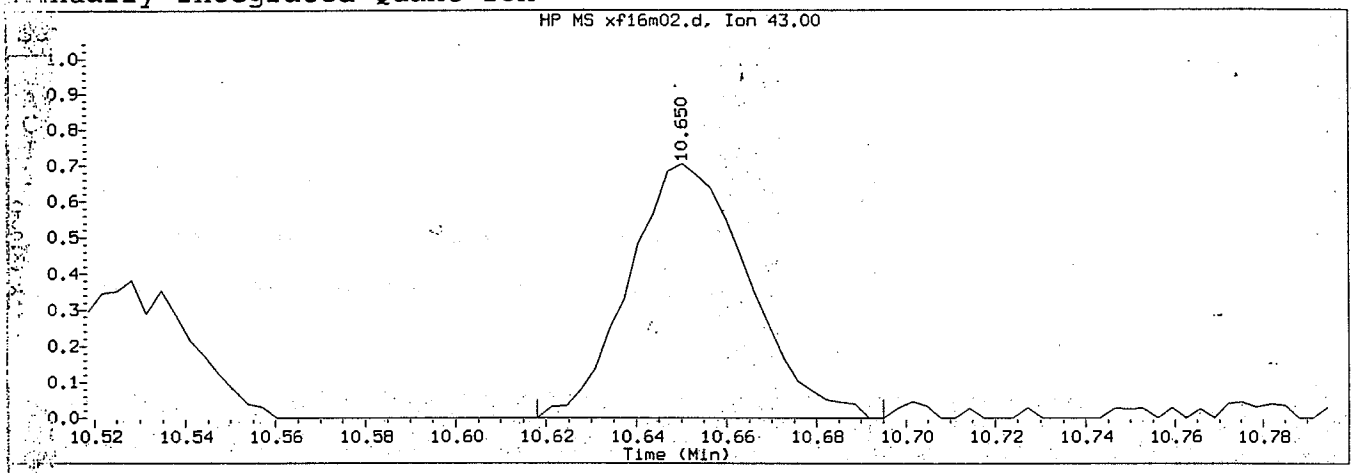
GC/MS audit/management approval: [illegible], 2/17/04

8173

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 95 |
| Compound Name | : | 2-Hexanone |
| Scan Number | : | 2826 |
| Retention Time (minutes) | : | 10.650 |
| Quant Ion | : | 43 |
| Area (flag) | : | 12903 M |
| Concentration (ug/Kg) | : | 2.7282 |
| Integration start scan | : | 2815 Integration stop scan: 2839 |
| Y at integration start | : | 0 Y at integration end: 0 |

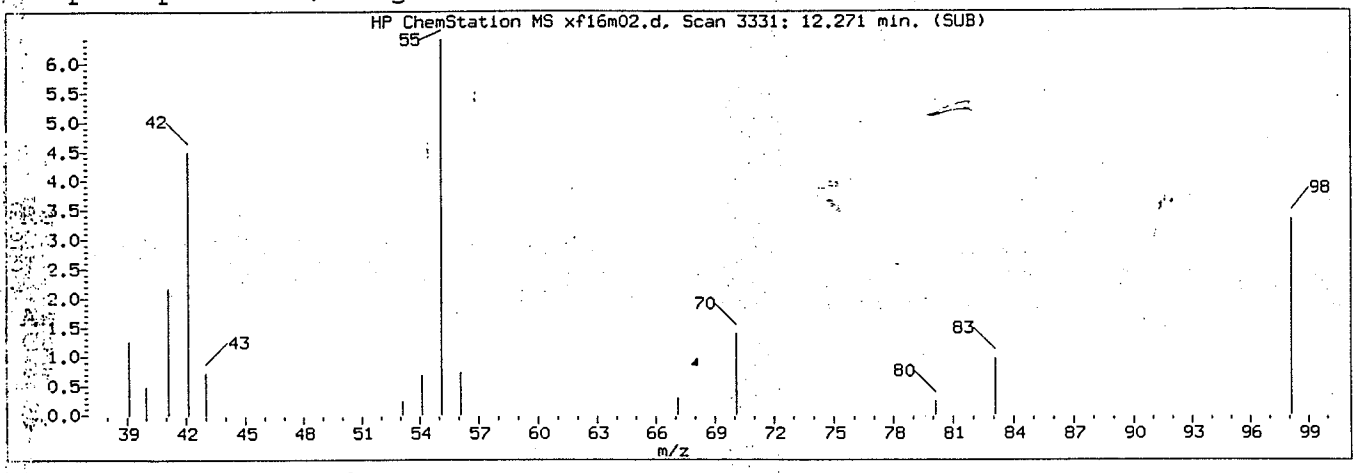
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

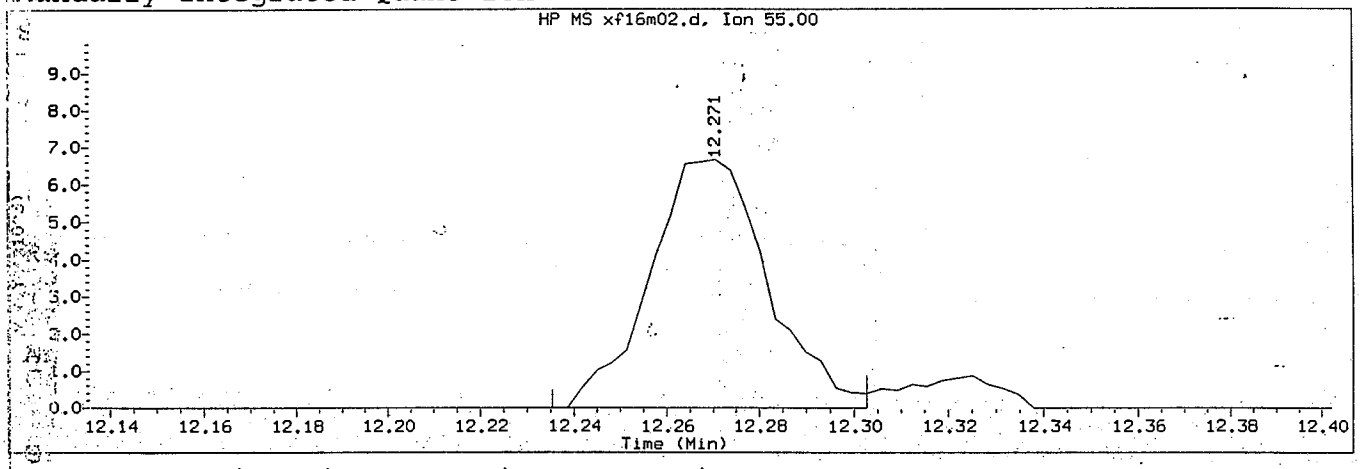
GC/MS audit/management approval: [signature] 2/17/04

0174

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

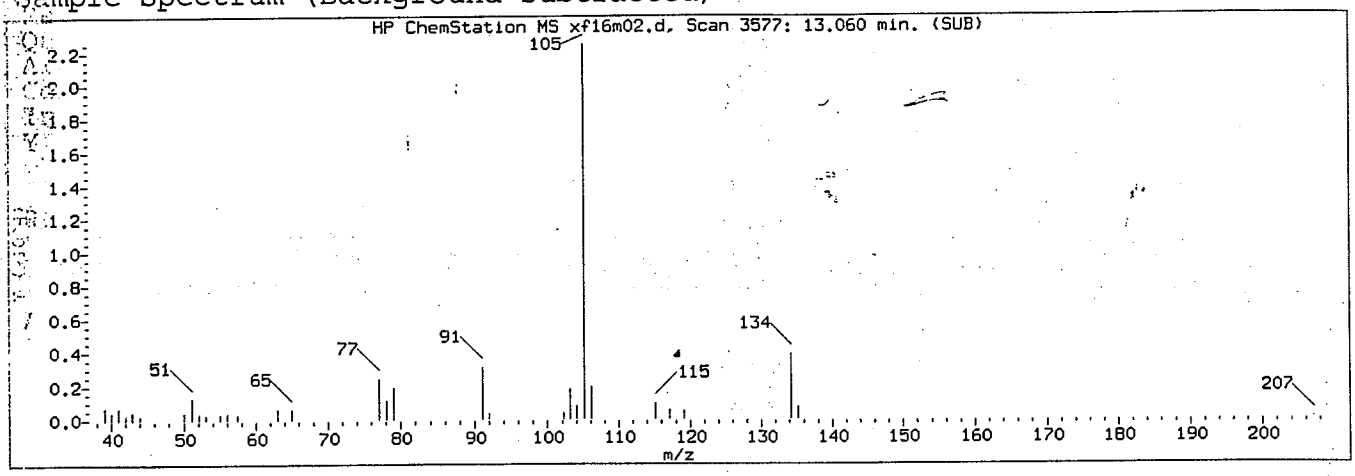
| | |
|---|---|
| Compound Number | : 112 |
| Compound Name | : Cyclohexanone |
| Scan Number | : 3331 |
| Retention Time (minutes) | : 12.271 |
| Quant Ion | : 55 |
| Area (flag) | : 11738 M |
| Concentration (ug/Kg) | : 62.2849 |
| Integration start scan | : 3319 Integration stop scan: 3340 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

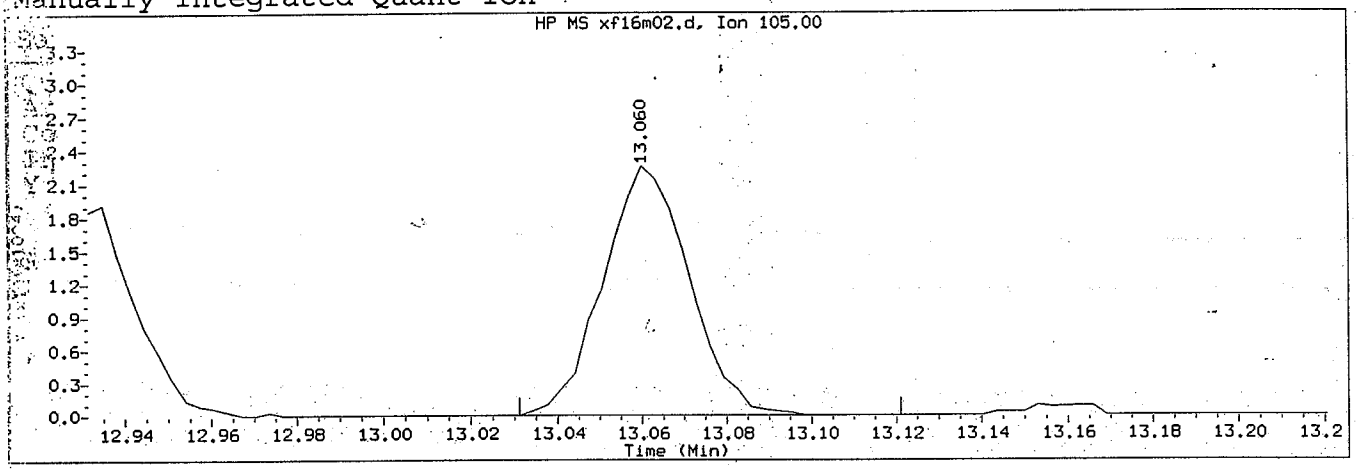
Analyst responsible for change: LCM 1518 2/16/04

GC/MS audit/management approval: JM 321, 2/19/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

Compound Number : 126
Compound Name : sec-Butylbenzene
Scan Number : 3577
Retention Time (minutes): 13.060
Quant Ion : 105
Area (flag) : 31900 M
Concentration (ug/Kg) : 0.8302
Integration start scan : 3567 Integration stop scan: 3595
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

SG/MS audit/management approval: [signature] 2/17/04

B125

# Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP09193.i/04feb16a.b/xf16i01.d VSTD300
/chem/HP09193.i/04feb16a.b/xf16i04.d VSTD020
/chem/HP09193.i/04feb16a.b/xf16i05.d VSTD010
/chem/HP09193.i/04feb16a.b/xf16i06.d VSTD004
/chem/HP09193.i/04feb16a.b/xf16i07.d VSTD100
/chem/HP09193.i/04feb16a.b/xf16i09.d VSTD050

Area Summary

File ID:

| Internal Standard Name | xf16i01.d | xf16i04.d | xf16i05.d | xf16i06.d | xf16i07.d | xf16i09.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 119476 | 142545 | 137431 | 144809 | 115886 | 117535 | 129614 | 10 | Yes |
| Fluorobenzene | 1316447 | 1470593 | 1373221 | 1427973 | 1360301 | 1414236 | 1393795 | 4 | Yes |
| Chlorobenzene-d5 | 1007220 | 1090453 | 1017617 | 1072048 | 1019520 | 1063302 | 1045027 | 3 | Yes |
| 1,4-Dichlorobenzene-d4 | 576962 | 590732 | 560433 | 595765 | 574215 | 598530 | 582773 | 3 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | xf16i01.d | xf16i04.d | xf16i05.d | xf16i06.d | xf16i07.d | xf16i09.d | Avg. RT |
|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.496 | 4.496 | 4.496 | 4.502 | 4.496 | 4.498 |
| Fluorobenzene | 7.948 | 7.952 | 7.952 | 7.952 | 7.952 | 7.952 | 7.951 |
| Chlorobenzene-d5 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 |

* indicates the retention time is greater than 30 seconds from the average RT.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.3977 | 0.3410 | 0.4194 | 0.4236 | 0.4143 | 0.4276 | | 0.4039 | 8 | AVG | |
| Chloromethane | #0.4629 | 0.4313 | 0.4690 | 0.4523 | 0.4186 | 0.4524 | | 0.4478 | 4 | AVG | # |
| Vinyl Chloride | *0.4078 | 0.3702 | 0.4335 | 0.4192 | 0.4059 | 0.4112 | | 0.4080 | 5 | AVG | * |
| Bromomethane | 0.2479 | 0.2313 | 0.2601 | 0.2557 | 0.2407 | 0.2225 | | 0.2430 | 6 | AVG | |
| Chloroethane | 0.2216 | 0.2065 | 0.2344 | 0.2293 | 0.2192 | 0.2110 | | 0.2203 | 5 | AVG | |
| Trichlorofluoromethane | 0.4582 | 0.3875 | 0.4751 | 0.4721 | 0.4619 | 0.4718 | | 0.4544 | 7 | AVG | |
| Ethanol | 0.0022 | 0.0021 | 0.0021 | 0.0022 | 0.0025 | 0.0026 | | 0.0023 | 9 | AVG | |
| Acrolein | 0.0920 | 0.0936 | 0.0865 | 0.1202 | 0.1009 | 0.0962 | | 0.0982 | 12 | AVG | |
| 1,1-Dichloroethene | *0.2815 | 0.2735 | 0.2597 | 0.2552 | 0.2527 | 0.2613 | | 0.2640 | 4 | AVG | * |
| Freon 113 | 0.2629 | 0.2546 | 0.2604 | 0.2561 | 0.2117 | 0.2334 | | 0.2465 | 8 | AVG | |
| Acetone | 0.0596 | 0.0638 | 0.0659 | 0.0829 | 0.0734 | 0.0607 | | 0.0677 | 13 | AVG | |
| Methyl Iodide | 0.5039 | 0.5247 | 0.4998 | 0.4983 | 0.4964 | 0.5113 | | 0.5057 | 2 | AVG | |
| 2-Propanol | 0.0349 | 0.0362 | 0.0354 | 0.0366 | 0.0387 | 0.0405 | | 0.0371 | 6 | AVG | |
| Carbon Disulfide | 0.9148 | 0.9153 | 0.8871 | 0.8755 | 0.8719 | 0.8867 | | 0.8919 | 2 | AVG | |
| Allyl Chloride | 0.4385 | 0.5452 | 0.4980 | 0.4925 | 0.5027 | 0.5137 | | 0.4984 | 7 | AVG | |
| Methylene Chloride | 0.3205 | 0.3210 | 0.3031 | 0.2927 | 0.2977 | 0.3023 | | 0.3062 | 4 | AVG | |
| t-Butyl Alcohol | 0.0601 | 0.0654 | 0.0604 | 0.0625 | 0.0647 | 0.0648 | | 0.0630 | 4 | AVG | |
| Acrylonitrile | 0.1611 | 0.1786 | 0.1611 | 0.2204 | 0.1826 | 0.1788 | | 0.1804 | 12 | AVG | |
| trans-1,2-Dichloroethene | 0.3091 | 0.3095 | 0.2913 | 0.2905 | 0.2845 | 0.2892 | | 0.2957 | 4 | AVG | |
| Methyl Tertiary Butyl Ether | 0.9900 | 1.0286 | 0.9545 | 0.9440 | 0.9420 | 0.9368 | | 0.9660 | 4 | AVG | |
| n-Hexane | 0.3136 | 0.2989 | 0.3054 | 0.3004 | 0.2489 | 0.2186 | | 0.2810 | 14 | AVG | |
| 1,2-Dichloroethene (total) | 0.3196 | 0.3248 | 0.3068 | 0.3016 | 0.2971 | 0.2989 | | 0.3081 | 4 | AVG | |
| 1,1-Dichloroethane | #0.5384 | 0.5523 | 0.5291 | 0.5219 | 0.5221 | 0.5269 | | 0.5318 | 2 | AVG | # |
| di-Isopropyl Ether | 1.0642 | 1.0969 | 1.0564 | 1.0400 | 1.0390 | 1.0451 | | 1.0569 | 2 | AVG | |
| 2-Chloro-1,3-Butadiene | 0.4089 | 0.4118 | 0.4017 | 0.3997 | 0.3911 | 0.4040 | | 0.4029 | 2 | AVG | |
| Ethyl t-Butyl Ether | 0.9989 | 1.0197 | 0.9727 | 0.9818 | 0.9523 | 0.9377 | | 0.9772 | 3 | AVG | |
| cis-1,2-Dichloroethene | 0.3302 | 0.3401 | 0.3222 | 0.3127 | 0.3096 | 0.3087 | | 0.3206 | 4 | AVG | |
| 2-Butanone | 0.0626 | 0.0684 | 0.0672 | 0.0891 | 0.0794 | 0.0691 | | 0.0726 | 13 | AVG | |
| 2,2-Dichloropropane | 0.4635 | 0.4624 | 0.4460 | 0.4437 | 0.4296 | 0.4288 | | 0.4456 | 3 | AVG | |
| Propionitrile | 0.0667 | 0.0727 | 0.0673 | 0.0674 | 0.0684 | 0.0686 | | 0.0685 | 3 | AVG | |
| Methacrylonitrile | 0.1721 | 0.1905 | 0.1753 | 0.1757 | 0.1762 | 0.1753 | | 0.1775 | 4 | AVG | |
| Bromochloromethane | 0.1605 | 0.1782 | 0.1636 | 0.1595 | 0.1709 | 0.1701 | | 0.1671 | 4 | AVG | |
| Tetrahydrofuran | 0.0541 | 0.0567 | 0.0511 | 0.0709 | 0.0590 | 0.0563 | | 0.0580 | 12 | AVG | |
| Chloroform | *0.5005 | 0.5220 | 0.4964 | 0.4894 | 0.4875 | 0.4914 | | 0.4979 | 3 | AVG | * |
| 1,1,1-Trichloroethane | 0.4586 | 0.4670 | 0.4492 | 0.4421 | 0.4225 | 0.4368 | | 0.4460 | 4 | AVG | |
| Cyclohexane | 0.4757 | 0.4631 | 0.4682 | 0.4543 | 0.3576 | 0.3758 | | 0.4324 | 12 | AVG | |
| 1,1-Dichloropropene | 0.3948 | 0.4021 | 0.3906 | 0.3837 | 0.3600 | 0.3706 | | 0.3837 | 4 | AVG | |
| Carbon Tetrachloride | 0.4140 | 0.4133 | 0.3999 | 0.4021 | 0.3637 | 0.3845 | | 0.3963 | 5 | AVG | |
| Isobutyl Alcohol | 0.0194 | 0.0212 | 0.0200 | 0.0204 | 0.0211 | 0.0214 | | 0.0206 | 4 | AVG | |
| Benzene | 1.2478 | 1.2539 | 1.1907 | 1.1690 | 1.1576 | 1.1581 | | 1.1962 | 4 | AVG | |
| 1,2-Dichloroethane | 0.4139 | 0.4310 | 0.4205 | 0.4114 | 0.4116 | 0.4116 | | 0.4167 | 2 | AVG | |
| 1,2-Dichloroethane (mz 98) | 0.0369 | 0.0391 | 0.0401 | 0.0392 | 0.0383 | 0.0390 | | 0.0388 | 3 | AVG | |
| t-Amyl Methyl Ether | 0.9990 | 1.0219 | 0.9588 | 0.9595 | 0.9465 | 0.9204 | | 0.9677 | 4 | AVG | |
| n-Heptane | 0.0480 | 0.0475 | 0.0493 | 0.0480 | 0.0483 | 0.0334 | | 0.0457 | 13 | AVG | |
| n-Butanol | 0.0159 | 0.0171 | 0.0161 | 0.0171 | 0.0182 | 0.0185 | | 0.0171 | 6 | AVG | |
| Trichloroethene | 0.3059 | 0.3143 | 0.2983 | 0.2980 | 0.2876 | 0.2917 | | 0.2993 | 3 | AVG | |
| 1,2-Dichloropropane | *0.3274 | 0.3411 | 0.3323 | 0.3253 | 0.3197 | 0.3192 | | 0.3275 | 3 | AVG | * |
| Methyl Methacrylate | 0.2917 | 0.3097 | 0.3024 | 0.3037 | 0.3075 | 0.3072 | | 0.3037 | 2 | AVG | |
| Dibromomethane | 0.2027 | 0.2121 | 0.2018 | 0.2043 | 0.2065 | 0.2027 | | 0.2050 | 2 | AVG | |
| 1,4-Dioxane | 0.0046 | 0.0048 | 0.0045 | 0.0048 | 0.0051 | 0.0052 | | 0.0048 | 6 | AVG | |
| Bromodichloromethane | 0.3641 | 0.3947 | 0.3712 | 0.3735 | 0.3765 | 0.3787 | | 0.3765 | 3 | AVG | |
| 2-Nitropropane | 0.1211 | 0.1287 | 0.1196 | 0.1653 | 0.1425 | 0.1299 | | 0.1345 | 13 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

0179



FORM VI VOA

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chloroethyl Vinyl Ether | 0.2247 | 0.2393 | 0.2324 | 0.2413 | 0.2514 | 0.2525 | | 0.2403 | 4 | AVG | |
| cis-1,3-Dichloropropene | 0.5320 | 0.5625 | 0.5334 | 0.5350 | 0.5415 | 0.5364 | | 0.5401 | 2 | AVG | |
| 4-Methyl-2-Pentanone | 0.4753 | 0.5157 | 0.4761 | 0.6641 | 0.5867 | 0.5186 | | 0.5394 | 14 | AVG | |
| Toluene | *1.0055 | 1.0331 | 0.9822 | 0.9767 | 0.9168 | 0.9338 | | 0.9747 | 4 | AVG | * |
| trans-1,3-Dichloropropene | 0.6376 | 0.6567 | 0.6436 | 0.6422 | 0.6393 | 0.6442 | | 0.6439 | 1 | AVG | |
| Ethyl Methacrylate | 0.5961 | 0.6598 | 0.6345 | 0.6516 | 0.6570 | 0.6625 | | 0.6436 | 4 | AVG | |
| 1,1,2-Trichloroethane | 0.3837 | 0.3920 | 0.3688 | 0.3717 | 0.3659 | 0.3655 | | 0.3746 | 3 | AVG | |
| Tetrachloroethene | 0.4644 | 0.4732 | 0.4474 | 0.4445 | 0.3764 | 0.3885 | | 0.4324 | 9 | AVG | |
| 1,3-Dichloropropane | 0.6618 | 0.6903 | 0.6615 | 0.6601 | 0.6524 | 0.6543 | | 0.6634 | 2 | AVG | |
| 2-Hexanone | 0.4810 | 0.5089 | 0.4889 | 0.6740 | 0.6258 | 0.5168 | | 0.5492 | 15 | AVG | |
| Dibromochloromethane | 0.4275 | 0.4526 | 0.4429 | 0.4568 | 0.4504 | 0.4549 | | 0.4475 | 2 | AVG | |
| 1,2-Dibromoethane | 0.4169 | 0.4223 | 0.4123 | 0.4166 | 0.4137 | 0.4119 | | 0.4156 | 1 | AVG | |
| Chlorobenzene | #1.1329 | 1.1650 | 1.0930 | 1.1032 | 1.0374 | 1.0499 | | 1.0969 | 4 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.4072 | 0.4174 | 0.4065 | 0.4159 | 0.3879 | 0.3963 | | 0.4052 | 3 | AVG | |
| Ethylbenzene | *1.8020 | 1.8654 | 1.7762 | 1.7628 | 1.5493 | 1.5798 | | 1.7226 | 7 | AVG | * |
| m+p-Xylene | 0.7252 | 0.7471 | 0.7058 | 0.7001 | 0.6098 | 0.6209 | | 0.6848 | 8 | AVG | |
| Xylene (Total) | 0.7235 | 0.7391 | 0.7027 | 0.6957 | 0.6079 | 0.6190 | | 0.6813 | 8 | AVG | |
| o-Xylene | 0.7201 | 0.7233 | 0.6966 | 0.6870 | 0.6043 | 0.6153 | | 0.6744 | 8 | AVG | |
| Styrene | 1.1432 | 1.2150 | 1.1783 | 1.2018 | 1.1051 | 1.1316 | | 1.1625 | 4 | AVG | |
| Bromoform | #0.3796 | 0.3946 | 0.3933 | 0.4009 | 0.3999 | 0.4024 | | 0.3951 | 2 | AVG | # |
| Isopropylbenzene | 1.7324 | 1.7267 | 1.6391 | 1.6353 | 1.3601 | 1.3056 | | 1.5666 | 12 | AVG | |
| Cyclohexanone | 0.0211 | 0.0201 | 0.0204 | 0.0224 | 0.0241 | 0.0249 | | 0.0222 | 9 | AVG | |
| 1,1,2,2-Tetrachloroethane | #1.0954 | 1.1399 | 1.0797 | 1.0630 | 1.0451 | 1.0788 | | 1.0836 | 3 | AVG | # |
| trans-1,4-Dichloro-2-Butene | 0.3292 | 0.3629 | 0.3454 | 0.3512 | 0.3492 | 0.3703 | | 0.3514 | 4 | AVG | |
| Bromobenzene | 0.9434 | 0.9622 | 0.9214 | 0.9108 | 0.8334 | 0.8599 | | 0.9052 | 5 | AVG | |
| 1,2,3-Trichloropropane | 0.3394 | 0.3525 | 0.3290 | 0.3230 | 0.3139 | 0.3185 | | 0.3293 | 4 | AVG | |
| n-Propylbenzene | 3.4703 | 3.3980 | 3.2416 | 3.1746 | 2.6939 | 2.5925 | | 3.0952 | 12 | AVG | |
| 2-Chlorotoluene | 0.7968 | 0.8070 | 0.7525 | 0.7455 | 0.6456 | 0.6656 | | 0.7355 | 9 | AVG | |
| 1,3,5-Trimethylbenzene | 2.4696 | 2.4421 | 2.3551 | 2.3059 | 1.9677 | 1.9183 | | 2.2431 | 11 | AVG | |
| 4-Chlorotoluene | 0.8179 | 0.8359 | 0.7860 | 0.7777 | 0.6786 | 0.7035 | | 0.7666 | 8 | AVG | |
| tert-Butylbenzene | 0.5602 | 0.5616 | 0.5354 | 0.5222 | 0.4564 | 0.4181 | | 0.5090 | 12 | AVG | |
| Pentachloroethane | 0.5172 | 0.6019 | 0.5577 | 0.5614 | 0.5786 | 0.5803 | | 0.5662 | 5 | AVG | |
| 1,2,4-Trimethylbenzene | 2.5649 | 2.5669 | 2.4391 | 2.4111 | 2.0755 | 2.0258 | | 2.3472 | 10 | AVG | |
| sec-Butylbenzene | 2.7512 | 2.6958 | 2.5734 | 2.5428 | 2.2616 | 1.9086 | | 2.4556 | 13 | AVG | |
| p-Isopropyltoluene | 2.4699 | 2.4224 | 2.3431 | 2.2947 | 2.0546 | 1.7503 | | 2.2225 | 12 | AVG | |
| 1,3-Dichlorobenzene | 1.5868 | 1.5940 | 1.5264 | 1.5139 | 1.3266 | 1.3295 | | 1.4795 | 8 | AVG | |
| 1,4-Dichlorobenzene | 1.7266 | 1.6695 | 1.5923 | 1.5976 | 1.4046 | 1.4250 | | 1.5693 | 8 | AVG | |
| n-Butylbenzene | 1.9188 | 1.9159 | 1.8941 | 1.8435 | 1.7401 | 1.3909 | | 1.7839 | 11 | AVG | |
| 1,2-Dichlorobenzene | 1.6151 | 1.5765 | 1.5409 | 1.5145 | 1.3450 | 1.3626 | | 1.4924 | 8 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.2343 | 0.2296 | 0.2326 | 0.2406 | 0.2340 | 0.2499 | | 0.2368 | 3 | AVG | |
| 1,2,4-Trichlorobenzene | 0.9385 | 0.9673 | 0.9634 | 0.9934 | 0.9281 | 0.8051 | | 0.9326 | 7 | AVG | |
| Hexachlorobutadiene | 0.5301 | 0.4876 | 0.4638 | 0.4292 | 0.4611 | 0.3218 | | 0.4489 | 16 | 2NDDEG | |
| Naphthalene | 2.7701 | 2.9420 | 3.0340 | 3.1768 | 2.9686 | 2.8863 | | 2.9630 | 5 | AVG | |
| 1,2,3-Trichlorobenzene | 0.8583 | 0.9347 | 0.9299 | 0.9595 | 0.8947 | 0.7773 | | 0.8924 | 7 | AVG | |
| Dibromofluoromethane | 0.2426 | 0.2513 | 0.2523 | 0.2575 | 0.2661 | 0.2751 | | 0.2575 | 5 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0689 | 0.0658 | 0.0656 | 0.0680 | 0.0690 | 0.0706 | | 0.0680 | 3 | AVG | |
| Dibromofluoromethane(mz111) | 0.2497 | 0.2587 | 0.2563 | 0.2627 | 0.2700 | 0.2808 | | 0.2630 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0407 | 0.0438 | 0.0433 | 0.0431 | 0.0447 | 0.0448 | | 0.0434 | 3 | AVG | |
| Toluene-d8(mz100) | 0.8533 | 0.8506 | 0.8365 | 0.8629 | 0.8811 | 0.9002 | | 0.8641 | 3 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4525 | 0.4693 | 0.4539 | 0.4693 | 0.4762 | 0.4812 | | 0.4671 | 2 | AVG | |
| Toluene-d8 | 1.2811 | 1.2839 | 1.2579 | 1.3028 | 1.3261 | 1.3586 | | 1.3017 | 3 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

8179

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 0.4593 | 0.4668 | 0.4578 | 0.4753 | 0.4874 | 0.4966 | | 0.4739 | 3 | AVG |

Average %RSD 6

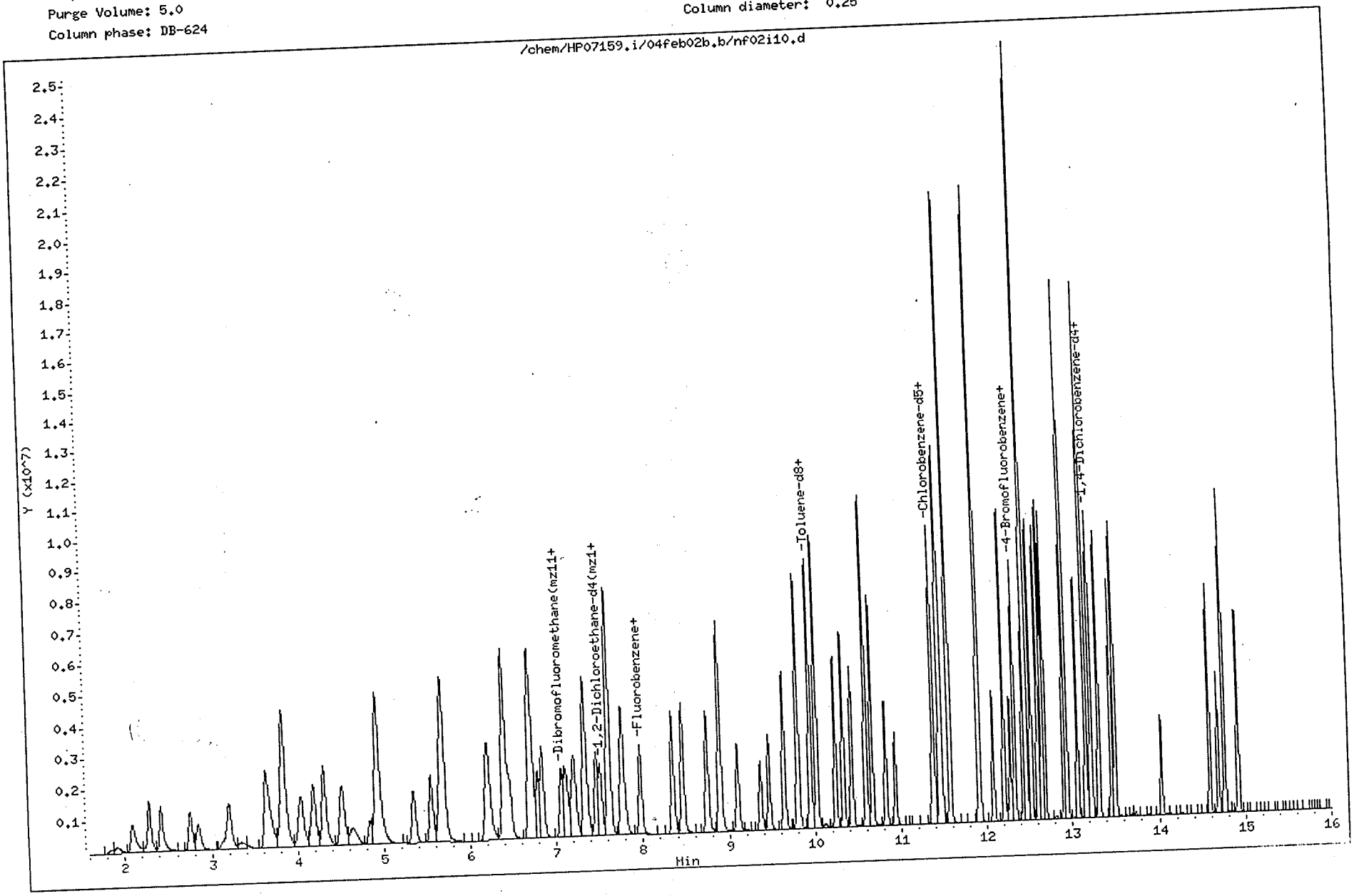
Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d
Date : 02-FEB-2004 11:54
Client ID: VSTD300
Sample Info: VSTD300;VSTD300;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.092 | 85 | 2646880 | 300.000 |
| 3) Chloromethane | (1) | 2.288 | 50 | 2800694 | 300.000 |
| 4) Vinyl Chloride | (1) | 2.423 | 62 | 2545394 | 300.000 |
| 5) Bromomethane | (1) | 2.760 | 94 | 1377647 | 300.000 |
| 6) Chloroethane | (1) | 2.853 | 64 | 1306373 | 300.000 |
| 7) Trichlorofluoromethane | (1) | 3.206 | 101 | 2920744 | 300.000 |
| 11) Ethanol | (1) | 3.353 | 46 | 401002 | 7500.000 |
| 13) Acrolein | (1) | 3.639 | 56 | 5952466 | 3000.000 |
| 16) 1,1-Dichloroethene | (1) | 3.838 | 96 | 1617259 | 300.000 |
| 17) Freon 113 | (1) | 3.835 | 101 | 1444986 | 300.000 |
| 18) Acetone | (1) | 3.841 | 58 | 752027 | 600.000 |
| 19) Methyl Iodide | (1) | 4.050 | 142 | 3165178 | 300.000 |
| 20) 2-Propanol | (1) | 4.017 | 45 | 1252883 | 1500.000 |
| 22) Carbon Disulfide | (1) | 4.187 | 76 | 5488756 | 300.000 |
| 23) Allyl Chloride | (1) | 4.309 | 41 | 3180172 | 300.000 |
| 24) Methylene Chloride | (1) | 4.518 | 84 | 1871635 | 300.000 |
| 25) t-Butyl Alcohol | (1) | 4.650 | 59 | 2005893 | 1500.000 |
| 27) Acrylonitrile | (1) | 4.839 | 53 | 1107137 | 300.000 |
| 28) trans-1,2-Dichloroethene | (1) | 4.929 | 96 | 1790461 | 300.000 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.935 | 73 | 5798918 | 300.000 |
| 32) n-Hexane | (1) | 5.346 | 57 | 1353422 | 300.000 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 3701139 | 600.000 |
| 35) 1,1-Dichloroethane | (1) | 5.551 | 63 | 3261637 | 300.000 |
| 36) di-Isopropyl Ether | (1) | 5.670 | 45 | 6469626 | 300.000 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.689 | 53 | 2500984 | 300.000 |
| 38) Ethyl t-Butyl Ether | (1) | 6.209 | 59 | 5804970 | 300.000 |
| 39) cis-1,2-Dichloroethene | (1) | 6.398 | 96 | 1910677 | 300.000 |
| 40) 2-Butanone | (1) | 6.395 | 72 | 855816 | 600.000 |
| 41) 2,2-Dichloropropane | (1) | 6.414 | 77 | 2654205 | 300.000 |
| 42) Propionitrile | (1) | 6.466 | 54 | 2122999 | 1500.000 |
| 45) Methacrylonitrile | (1) | 6.697 | 67 | 2713130 | 750.000 |
| 46) Bromochloromethane | (1) | 6.732 | 128 | 1052840 | 300.000 |
| 47) Tetrahydrofuran | (1) | 6.790 | 71 | 697610 | 600.000 |
| 48) Chloroform | (1) | 6.844 | 83 | 3041988 | 300.000 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.114 | 97 | 2704010 | 300.000 |
| 52) Cyclohexane | (1) | 7.207 | 56 | 2326086 | 300.000 |
| 54) 1,1-Dichloropropene | (1) | 7.332 | 75 | 2294357 | 300.000 |
| 56) Carbon Tetrachloride | (1) | 7.348 | 117 | 2380289 | 300.000 |
| 57) Isobutyl Alcohol | (1) | 7.470 | 41 | 1654574 | 3750.000 |
| 60) Benzene | (1) | 7.611 | 78 | 7168715 | 300.000 |
| 61) 1,2-Dichloroethane | (1) | 7.621 | 62 | 2548181 | 300.000 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.624 | 98 | 241531 | 300.000 |
| 64) t-Amyl Methyl Ether | (1) | 7.769 | 73 | 5697658 | 300.000 |
| 66) n-Heptane | (1) | 7.977 | 100 | 207028 | 300.000 |
| 65)*Fluorobenzene | (1) | 7.977 | 96 | 1031721 | 50.000 |
| 68) n-Butanol | (1) | 8.349 | 56 | 2865406 | 7500.000 |
| 69) Trichloroethene | (1) | 8.465 | 95 | 1805950 | 300.000 |
| 70) 1,2-Dichloropropane | (1) | 8.750 | 63 | 1976042 | 300.000 |
| 71) Methyl Methacrylate | (1) | 8.892 | 69 | 1901799 | 300.000 |
| 72) Dibromomethane | (1) | 8.898 | 93 | 1254574 | 300.000 |
| 73) 1,4-Dioxane | (1) | 8.914 | 88 | 402149 | 3750.000 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 2344404 | 300.000 |
| 76) 2-Nitropropane | (1) | 9.370 | 41 | 1608173 | 600.000 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.469 | 63 | 1563137 | 300.000 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 3320737 | 300.000 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.809 | 43 | 6420443 | 600.000 |
| 82) Toluene | (2) | 10.024 | 92 | 4489463 | 300.000 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 3097140 | 300.000 |
| 84) Ethyl Methacrylate | (2) | 10.332 | 69 | 3185249 | 300.000 |
| 85) 1,1,2-Trichloroethane | (2) | 10.432 | 97 | 1757096 | 300.000 |
| 87) Tetrachloroethene | (2) | 10.595 | 166 | 1867867 | 300.000 |
| 88) 1,3-Dichloropropane | (2) | 10.599 | 76 | 3145759 | 300.000 |
| 90) 2-Hexanone | (2) | 10.669 | 43 | 4968897 | 600.000 |
| 91) Dibromochloromethane | (2) | 10.823 | 129 | 2187280 | 300.000 |
| 92) 1,2-Dibromoethane | (2) | 10.936 | 107 | 1980348 | 300.000 |
| 94)*Chlorobenzene-d5 | (2) | 11.356 | 117 | 801301 | 50.000 |
| 95) Chlorobenzene | (2) | 11.385 | 112 | 5047691 | 300.000 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.452 | 131 | 1905106 | 300.000 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.475 | 91 | 7595443 | 300.000 |
| 98) m+p-Xylene | (2) | 11.574 | 106 | 5970283 | 600.000 |
| 93) Xylene (Total) | (2) | | 106 | 8928723 | 900.000 |
| 100) o-Xylene | (2) | 11.911 | 106 | 2958439 | 300.000 |
| 101) Styrene | (2) | 11.917 | 104 | 5440284 | 300.000 |
| 102) Bromoform | (2) | 12.081 | 173 | 1934876 | 300.000 |
| 105) Isopropylbenzene | (2) | 12.206 | 105 | 6277257 | 300.000 |
| 106) Cyclohexanone | (2) | 12.280 | 55 | 1495465 | 3750.000 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.431 | 83 | 2826197 | 300.000 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.469 | 53 | 2425185 | 750.000 |
| 112) Bromobenzene | (3) | 12.460 | 156 | 2252822 | 300.000 |
| 113) 1,2,3-Trichloropropane | (3) | 12.469 | 110 | 834342 | 300.000 |
| 114) n-Propylbenzene | (3) | 12.527 | 91 | 6791941 | 300.000 |
| 115) 2-Chlorotoluene | (3) | 12.607 | 126 | 1743809 | 300.000 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.652 | 105 | 5025707 | 300.000 |
| 117) 4-Chlorotoluene | (3) | 12.684 | 126 | 1843098 | 300.000 |
| 118) tert-Butylbenzene | (3) | 12.906 | 134 | 1095394 | 300.000 |
| 119) Pentachloroethane | (3) | 12.935 | 167 | 1520350 | 300.000 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.938 | 105 | 5307205 | 300.000 |
| 121) sec-Butylbenzene | (3) | 13.066 | 105 | 5000189 | 300.000 |
| 122) p-Isopropyltoluene | (3) | 13.162 | 119 | 4585408 | 300.000 |
| 123) 1,3-Dichlorobenzene | (3) | 13.162 | 146 | 3482988 | 300.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.207 | 152 | 436638 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.227 | 146 | 3733370 | 300.000 |
| 126) n-Butylbenzene | (3) | 13.454 | 91 | 3643849 | 300.000 |
| 127) 1,2-Dichlorobenzene | (3) | 13.496 | 146 | 3569740 | 300.000 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.029 | 75 | 654617 | 300.000 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 2109120 | 300.000 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 842942 | 300.000 |
| 134) Naphthalene | (3) | 14.760 | 128 | 7561564 | 300.000 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 2036389 | 300.000 |
| 50) $Dibromofluoromethane | (1) | 7.059 | 113 | 1702837 | 300.000 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.518 | 102 | 436801 | 300.000 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.059 | 111 | 1738373 | 300.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.518 | 104 | 277450 | 300.000 |
| 81)$Toluene-d8(mz100) | (2) | 9.950 | 100 | 4327955 | 300.000 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.335 | 174 | 2313465 | 300.000 |
| 80)$Toluene-d8 | (2) | 9.950 | 98 | 6531824 | 300.000 |
| 107)$4-Bromofluorobenzene | (2) | 12.331 | 95 | 2387734 | 300.000 |

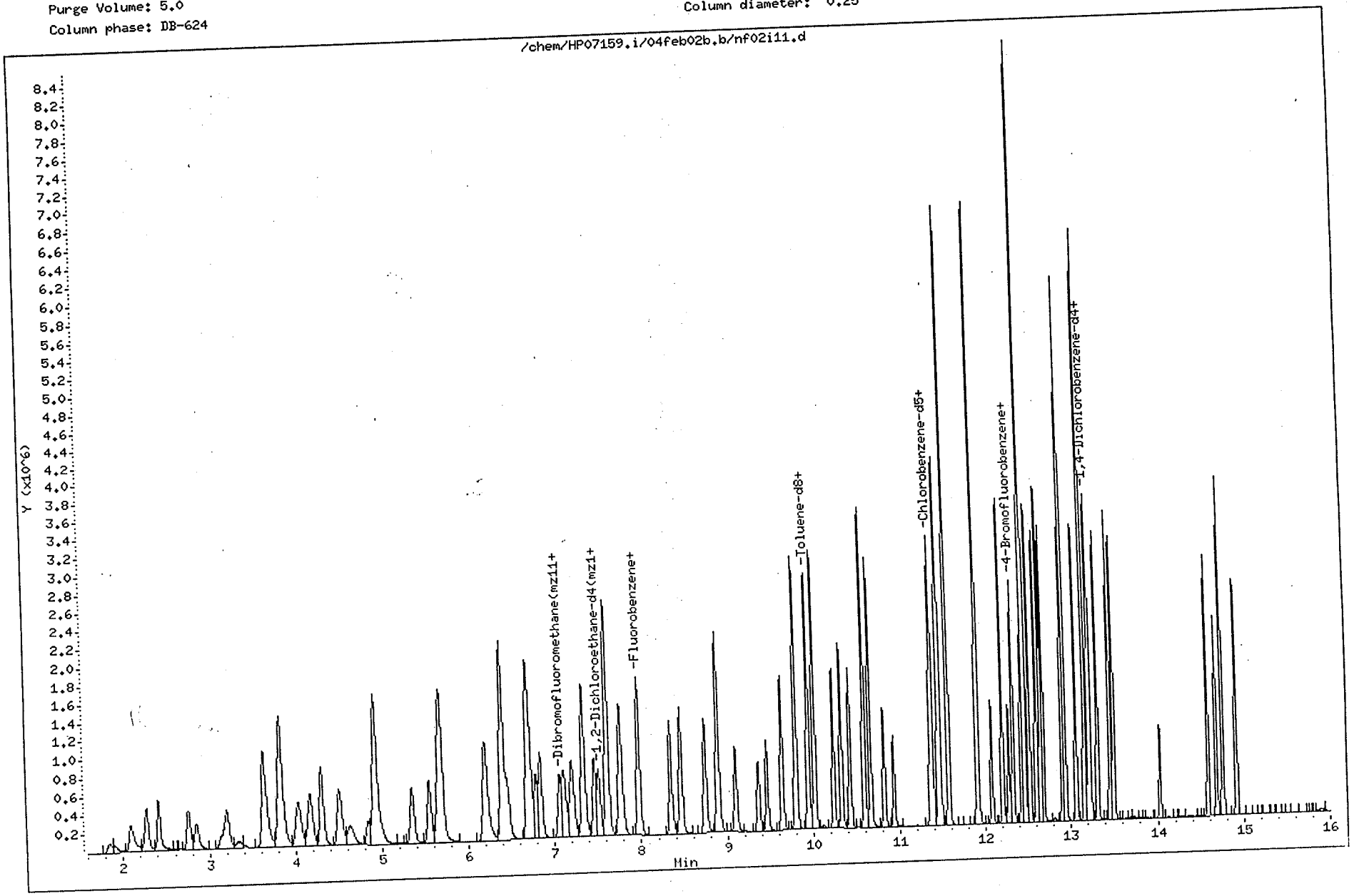
$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d
Date : 02-FEB-2004 12:19
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.089 | 85 | 833030 | 102.555 |
| 3) Chloromethane | (1) | 2.278 | 50 | 841822 | 93.496 |
| 4) Vinyl Chloride | (1) | 2.416 | 62 | 816279 | 99.498 |
| 5) Bromomethane | (1) | 2.763 | 94 | 484039 | 99.043 |
| 6) Chloroethane | (1) | 2.852 | 64 | 440789 | 99.480 |
| 7) Trichlorofluoromethane | (1) | 3.209 | 101 | 928903 | 101.649 |
| 11) Ethanol | (1) | 3.337 | 46 | 123196 | 2686.143 |
| 13) Acrolein | (1) | 3.639 | 56 | 2028340 | 1027.085 |
| 16) 1,1-Dichloroethene | (1) | 3.831 | 96 | 508162 | 95.728 |
| 17) Freon 113 | (1) | 3.838 | 101 | 425714 | 85.875 |
| 18) Acetone | (1) | 3.834 | 58 | 295143 | 216.722 |
| 19) Methyl Iodide | (1) | 4.046 | 142 | 998124 | 98.150 |
| 20) 2-Propanol | (1) | 4.008 | 45 | 389150 | 522.330 |
| 22) Carbon Disulfide | (1) | 4.174 | 76 | 1753260 | 97.758 |
| 23) Allyl Chloride | (1) | 4.312 | 41 | 1010812 | 100.852 |
| 24) Methylene Chloride | (1) | 4.511 | 84 | 598672 | 97.212 |
| 25) t-Butyl Alcohol | (1) | 4.637 | 59 | 650876 | 513.868 |
| 27) Acrylonitrile | (1) | 4.842 | 53 | 367103 | 101.170 |
| 28) trans-1,2-Dichloroethene | (1) | 4.925 | 96 | 572137 | 96.217 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 1894195 | 97.514 |
| 32) n-Hexane | (1) | 5.352 | 57 | 500551M | 88.594 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1194733 | 192.798 |
| 35) 1,1-Dichloroethane | (1) | 5.548 | 63 | 1049902 | 98.180 |
| 36) di-Isopropyl Ether | (1) | 5.663 | 45 | 2089374 | 98.303 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.692 | 53 | 786506 | 97.082 |
| 38) Ethyl t-Butyl Ether | (1) | 6.199 | 59 | 1914908 | 97.450 |
| 39) cis-1,2-Dichloroethene | (1) | 6.398 | 96 | 622596 | 96.580 |
| 40) 2-Butanone | (1) | 6.395 | 72 | 319356 | 218.644 |
| 41) 2,2-Dichloropropane | (1) | 6.405 | 77 | 863985 | 96.409 |
| 42) Propionitrile | (1) | 6.462 | 54 | 687231 | 498.971 |
| 45) Methacrylonitrile | (1) | 6.693 | 67 | 885675 | 248.090 |
| 46) Bromochloromethane | (1) | 6.729 | 128 | 343592 | 102.232 |
| 47) Tetrahydrofuran | (1) | 6.790 | 71 | 237251 | 203.343 |
| 48) Chloroform | (1) | 6.844 | 83 | 980363 | 97.920 |

M = Compound was manually integrated.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.114 | 97 | 849656 | 94.727 |
| 52) Cyclohexane | (1) | 7.207 | 56 | 719111 | 82.695 |
| 54) 1,1-Dichloropropene | (1) | 7.332 | 75 | 724029 | 93.847 |
| 56) Carbon Tetrachloride | (1) | 7.348 | 117 | 731409 | 91.785 |
| 57) Isobutyl Alcohol | (1) | 7.463 | 41 | 530850 | 1282.518 |
| 60) Benzene | (1) | 7.611 | 78 | 2327804 | 96.774 |
| 61) 1,2-Dichloroethane | (1) | 7.618 | 62 | 827674 | 98.779 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.624 | 98 | 77022 | 98.825 |
| 64) t-Amyl Methyl Ether | (1) | 7.768 | 73 | 1903419 | 97.815 |
| 66) n-Heptane | (1) | 7.977 | 100 | 97107 | 105.534 |
| 65) *Fluorobenzene | (1) | 7.977 | 96 | 1005461 | 50.000 |
| 68) n-Butanol | (1) | 8.346 | 56 | 912490 | 2644.994 |
| 69) Trichloroethene | (1) | 8.465 | 95 | 578340 | 96.086 |
| 70) 1,2-Dichloropropane | (1) | 8.747 | 63 | 642859 | 97.611 |
| 71) Methyl Methacrylate | (1) | 8.895 | 69 | 618365 | 101.247 |
| 72) Dibromomethane | (1) | 8.901 | 93 | 415325 | 100.746 |
| 73) 1,4-Dioxane | (1) | 8.914 | 88 | 128185 | 1318.262 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 757141 | 100.016 |
| 76) 2-Nitropropane | (1) | 9.370 | 41 | 572933 | 211.835 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.469 | 63 | 505500 | 104.629 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 1088918 | 100.253 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.806 | 43 | 2359451 | 217.523 |
| 82) Toluene | (2) | 10.024 | 92 | 1449967 | 94.062 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 1011006 | 99.274 |
| 84) Ethyl Methacrylate | (2) | 10.332 | 69 | 1039034 | 102.082 |
| 85) 1,1,2-Trichloroethane | (2) | 10.432 | 97 | 578653 | 97.675 |
| 87) Tetrachloroethene | (2) | 10.592 | 166 | 595245 | 87.046 |
| 88) 1,3-Dichloropropane | (2) | 10.598 | 76 | 1031771 | 98.342 |
| 90) 2-Hexanone | (2) | 10.666 | 43 | 1979419 | 227.879 |
| 91) Dibromochloromethane | (2) | 10.823 | 129 | 712339 | 100.644 |
| 92) 1,2-Dibromoethane | (2) | 10.935 | 107 | 654352 | 99.547 |
| 94) *Chlorobenzene-d5 | (2) | 11.356 | 117 | 790761 | 50.000 |
| 95) Chlorobenzene | (2) | 11.385 | 112 | 1640625 | 94.573 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.452 | 131 | 613469 | 95.733 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.474 | 91 | 2450203 | 89.939 |
| 98) m+p-Xylene | (2) | 11.574 | 106 | 1928701 | 178.085 |
| 93) Xylene (Total) | (2) | | 106 | 2884378 | 267.685 |
| 100) o-Xylene | (2) | 11.911 | 106 | 955677 | 89.600 |
| 101) Styrene | (2) | 11.917 | 104 | 1747724 | 95.062 |
| 102) Bromoform | (2) | 12.081 | 173 | 632511 | 101.217 |
| 105) Isopropylbenzene | (2) | 12.206 | 105 | 2150964 | 86.818 |
| 106) Cyclohexanone | (2) | 12.280 | 55 | 476705 | 1358.671 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.428 | 83 | 933833 | 96.444 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.469 | 53 | 780116 | 248.485 |
| 112) Bromobenzene | (3) | 12.460 | 156 | 744679 | 92.071 |
| 113) 1,2,3-Trichloropropane | (3) | 12.469 | 110 | 280439 | 95.293 |
| 114) n-Propylbenzene | (3) | 12.524 | 91 | 2407080 | 87.036 |
| 115) 2-Chlorotoluene | (3) | 12.604 | 126 | 576814 | 87.771 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 1758155 | 87.720 |
| 117) 4-Chlorotoluene | (3) | 12.684 | 126 | 606333 | 88.518 |
| 118) tert-Butylbenzene | (3) | 12.902 | 134 | 407821 | 89.672 |
| 119) Pentachloroethane | (3) | 12.931 | 167 | 517034 | 102.199 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.934 | 105 | 1854548 | 88.425 |
| 121) sec-Butylbenzene | (3) | 13.063 | 105 | 2020817 | 92.102 |
| 122) p-Isopropyltoluene | (3) | 13.159 | 119 | 1835850 | 92.446 |
| 123) 1,3-Dichlorobenzene | (3) | 13.162 | 146 | 1185388 | 89.666 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.207 | 152 | 446762 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.223 | 146 | 1255022 | 89.505 |
| 126) n-Butylbenzene | (3) | 13.451 | 91 | 1554859 | 97.548 |
| 127) 1,2-Dichlorobenzene | (3) | 13.496 | 146 | 1201788 | 90.122 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 209090 | 98.809 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 829283 | 99.515 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 411981 | 105.323 |
| 134) Naphthalene | (3) | 14.757 | 128 | 2652557 | 100.192 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 799425 | 100.258 |
| 50) $Dibromofluoromethane | (1) | 7.062 | 113 | 535176 | 103.367 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.518 | 102 | 138764 | 101.506 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.059 | 111 | 543003 | 102.655 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

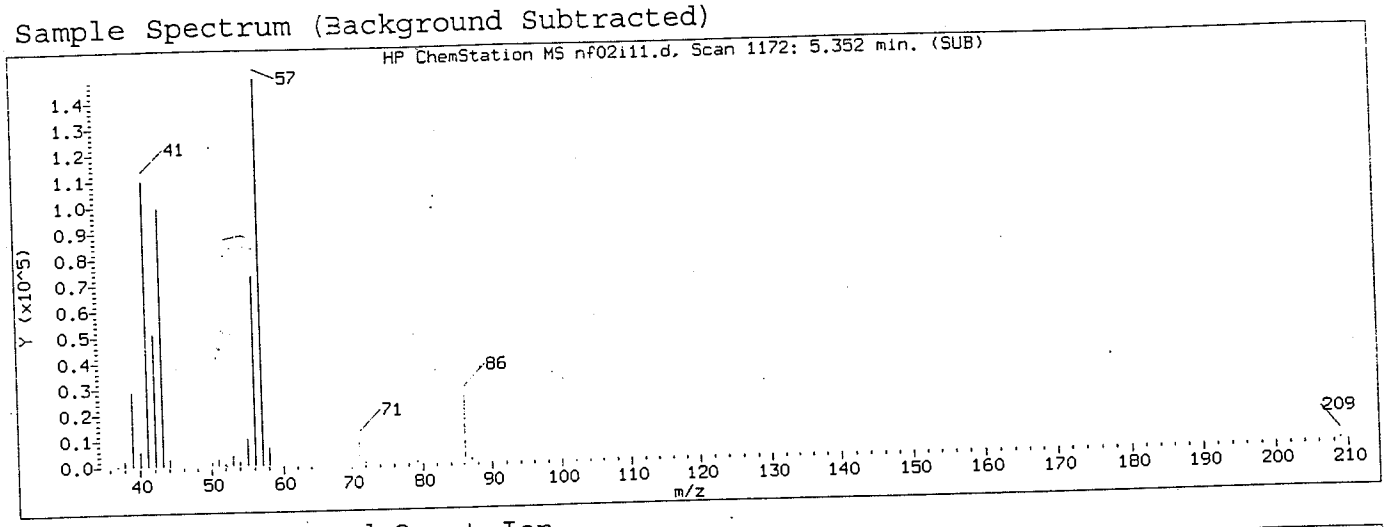
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

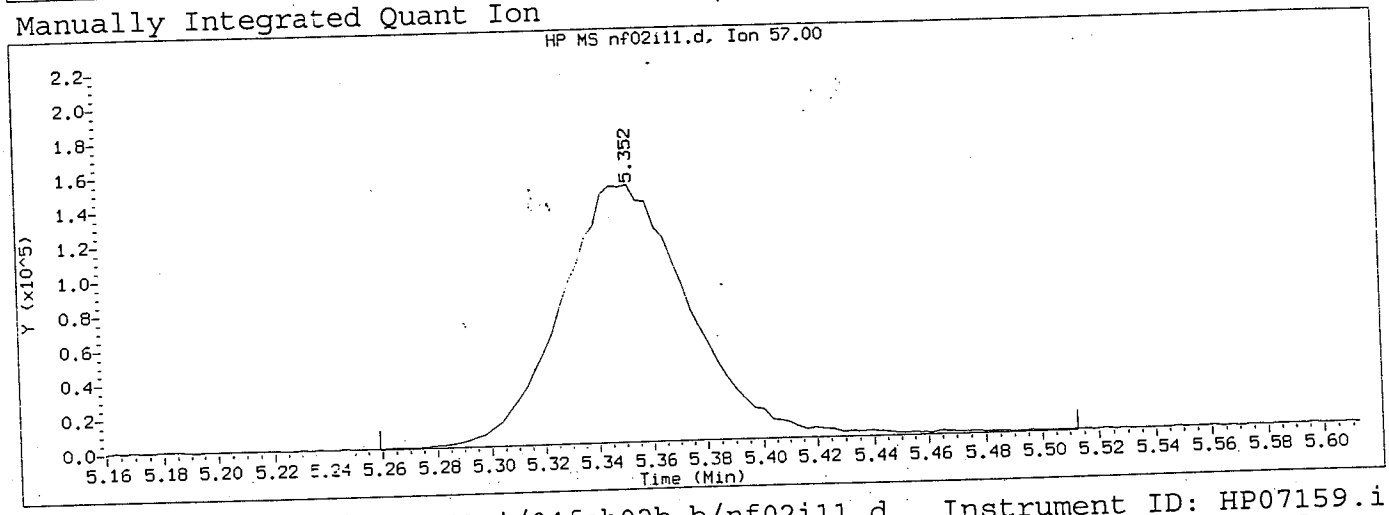
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4(mz104) | (1) | 7.521 | 104 | 89846 | 102.932 |
| 81) $Toluene-d8(mz100) | (2) | 9.950 | 100 | 1393458 | 101.966 |
| 108) $4-Bromofluorobenzene(mz174) | (2) | 12.334 | 174 | 753168 | 101.963 |
| 80) $Toluene-d8 | (2) | 9.950 | 98 | 2097284 | 101.874 |
| 107) $4-Bromofluorobenzene | (2) | 12.331 | 95 | 770879 | 102.860 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 14:33
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| | |
|---|---|
| Compound Number | : 32 |
| Compound Name | : n-Hexane |
| Scan Number | : 1172 |
| Retention Time (minutes) | : 5.352 |
| Quant Ion | : 57 |
| Area (flag) | : 500551 M |
| Concentration (ug/L) | : 88.5937 |
| Integration start scan | : 1142 Integration stop scan: 1221 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak ~~improper integration~~

Analyst responsible for change: SJR KM 2/2/04

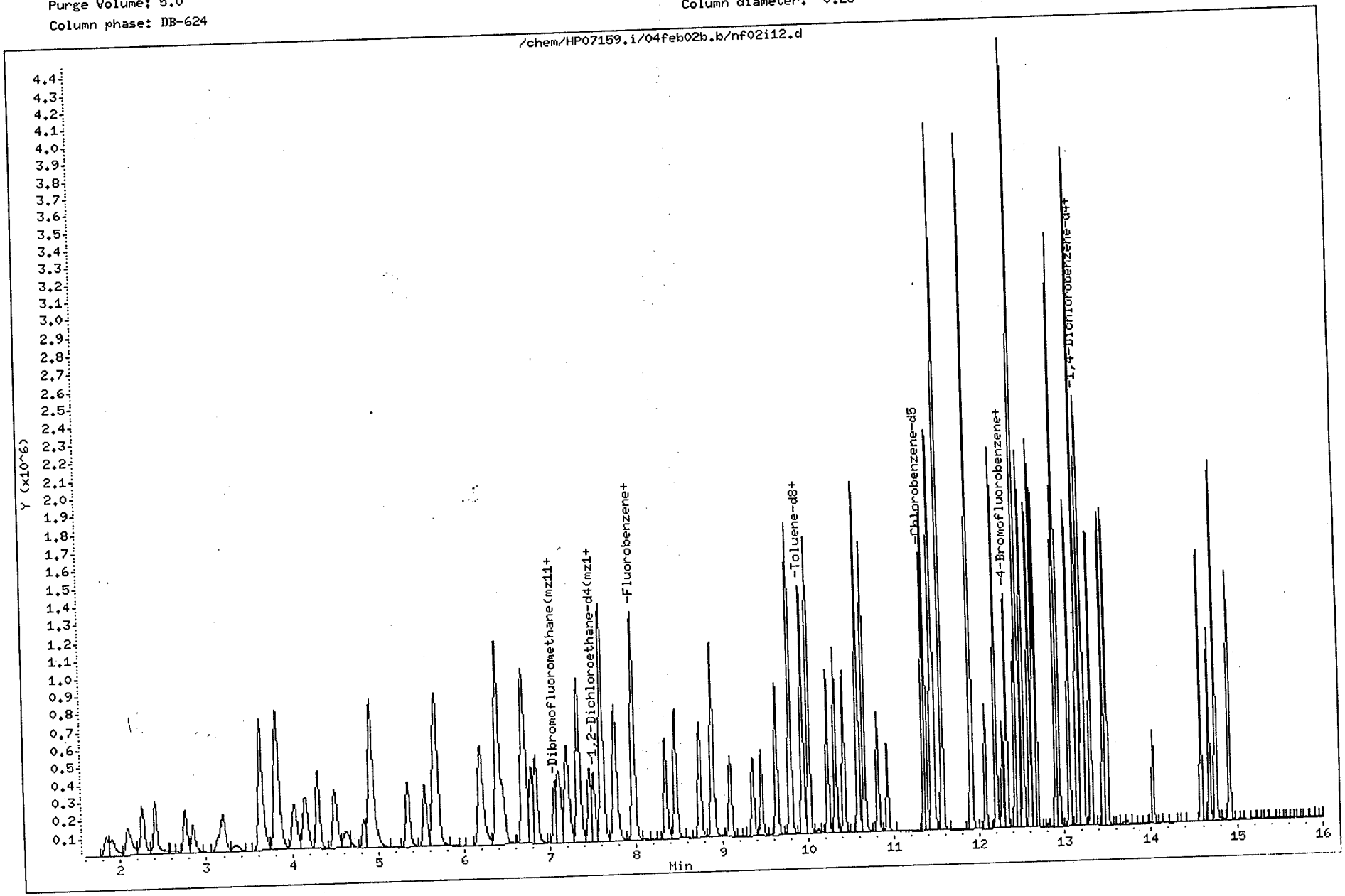
GC/MS audit/management approval: [signature] 2/3/04

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d
Date : 02-FEB-2004 12:44
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577
2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.094 | 85 | 440998 | 50.210 |
| 3) Chloromethane | (1) | 2.264 | 50 | 470889 | 51.266 |
| 4) Vinyl Chloride | (1) | 2.411 | 62 | 436408 | 50.858 |
| 5) Bromomethane | (1) | 2.758 | 94 | 266168 | 53.342 |
| 6) Chloroethane | (1) | 2.851 | 64 | 238704 | 52.147 |
| 7) Trichlorofluoromethane | (1) | 3.201 | 101 | 491521 | 50.372 |
| 11) Ethanol | (1) | 3.342 | 46 | 57350 | 1140.457 |
| 13) Acrolein | (1) | 3.640 | 56 | 1251169 | 568.292 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 265670 | 49.765 |
| 17) Freon 113 | (1) | 3.836 | 101 | 266662 | 54.786 |
| 18) Acetone | (1) | 3.830 | 58 | 172540 | 114.561 |
| 19) Methyl Iodide | (1) | 4.032 | 142 | 518753 | 49.630 |
| 20) 2-Propanol | (1) | 4.009 | 45 | 190769 | 237.288 |
| 22) Carbon Disulfide | (1) | 4.160 | 76 | 911469 | 49.855 |
| 23) Allyl Chloride | (1) | 4.308 | 41 | 512745 | 48.959 |
| 24) Methylene Chloride | (1) | 4.500 | 84 | 304778 | 49.183 |
| 25) t-Butyl Alcohol | (1) | 4.641 | 59 | 325365 | 244.094 |
| 27) Acrylonitrile | (1) | 4.834 | 53 | 229487 | 56.827 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 302487 | 50.424 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.927 | 73 | 982809 | 50.164 |
| 32) n-Hexane | (1) | 5.347 | 57 | 312712 | 69.659 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 628024 | 100.804 |
| 35) 1,1-Dichloroethane | (1) | 5.546 | 63 | 543363 | 49.834 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 1082786 | 49.934 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.687 | 53 | 416172 | 50.181 |
| 38) Ethyl t-Butyl Ether | (1) | 6.198 | 59 | 1022147 | 51.280 |
| 39) cis-1,2-Dichloroethene | (1) | 6.393 | 96 | 325536 | 50.381 |
| 40) 2-Butanone | (1) | 6.387 | 72 | 185551 | 112.494 |
| 41) 2,2-Dichloropropane | (1) | 6.406 | 77 | 461902 | 51.110 |
| 42) Propionitrile | (1) | 6.461 | 54 | 350707 | 247.308 |
| 45) Methacrylonitrile | (1) | 6.692 | 67 | 457419 | 124.998 |
| 46) Bromochloromethane | (1) | 6.727 | 128 | 166037 | 47.803 |
| 47) Tetrahydrofuran | (1) | 6.788 | 71 | 147711 | 114.247 |
| 48) Chloroform | (1) | 6.839 | 83 | 509491 | 49.993 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.112 | 97 | 460316 | 50.958 |
| 52) Cyclohexane | (1) | 7.205 | 56 | 472957 | 57.375 |
| 54) 1,1-Dichloropropene | (1) | 7.330 | 75 | 399495 | 51.648 |
| 56) Carbon Tetrachloride | (1) | 7.343 | 117 | 418663 | 52.434 |
| 57) Isobutyl Alcohol | (1) | 7.465 | 41 | 265222 | 607.682 |
| 60) Benzene | (1) | 7.610 | 78 | 1217062 | 50.320 |
| 61) 1,2-Dichloroethane | (1) | 7.619 | 62 | 428348 | 49.985 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.619 | 98 | 40815 | 50.466 |
| 64) t-Amyl Methyl Ether | (1) | 7.764 | 73 | 998929 | 50.919 |
| 66) n-Heptane | (1) | 7.972 | 100 | 50019 | 55.530 |
| 65)*Fluorobenzene | (1) | 7.975 | 96 | 1041133 | 50.000 |
| 68) n-Butanol | (1) | 8.344 | 56 | 445000 | 1192.513 |
| 69) Trichloroethene | (1) | 8.463 | 95 | 310260 | 50.950 |
| 70) 1,2-Dichloropropane | (1) | 8.745 | 63 | 338719 | 50.611 |
| 71) Methyl Methacrylate | (1) | 8.890 | 69 | 316241 | 49.606 |
| 72) Dibromomethane | (1) | 8.896 | 93 | 212660 | 49.944 |
| 73) 1,4-Dioxane | (1) | 8.906 | 88 | 62799 | 598.314 |
| 74) Bromodichloromethane | (1) | 9.098 | 83 | 388915 | 49.640 |
| 76) 2-Nitropropane | (1) | 9.368 | 41 | 344124 | 113.295 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.464 | 63 | 251203 | 48.569 |
| 78) cis-1,3-Dichloropropene | (1) | 9.641 | 75 | 557005 | 49.754 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.804 | 43 | 1382897 | 112.604 |
| 82) Toluene | (2) | 10.019 | 92 | 790914 | 51.817 |
| 83) trans-1,3-Dichloropropene | (2) | 10.241 | 75 | 520051 | 50.024 |
| 84) Ethyl Methacrylate | (2) | 10.331 | 69 | 527700 | 49.588 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 301006 | 50.546 |
| 87) Tetrachloroethene | (2) | 10.594 | 166 | 359955 | 55.131 |
| 88) 1,3-Dichloropropane | (2) | 10.597 | 76 | 534531 | 50.342 |
| 90) 2-Hexanone | (2) | 10.664 | 43 | 1091658 | 111.312 |
| 91) Dibromochloromethane | (2) | 10.822 | 129 | 369917 | 50.302 |
| 92) 1,2-Dibromoethane | (2) | 10.931 | 107 | 337393 | 50.307 |
| 94)*Chlorobenzene-d5 | (2) | 11.354 | 117 | 809807 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 893401 | 51.868 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.450 | 131 | 336804 | 51.986 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.473 | 91 | 1427530 | 54.053 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 1133888 | 108.781 |
| 93) Xylene (Total) | (2) | | 106 | 1690221 | 162.829 |
| 100) o-Xylene | (2) | 11.906 | 106 | 556333 | 54.048 |
| 101) Styrene | (2) | 11.916 | 104 | 973241 | 52.428 |
| 102) Bromoform | (2) | 12.076 | 173 | 324625 | 49.973 |
| 105) Isopropylbenzene | (2) | 12.201 | 105 | 1324297 | 57.033 |
| 106) Cyclohexanone | (2) | 12.278 | 55 | 226816 | 588.379 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 488074 | 50.033 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.464 | 53 | 403082 | 122.992 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 418172 | 52.461 |
| 113) 1,2,3-Trichloropropane | (3) | 12.468 | 110 | 148299 | 50.714 |
| 114) n-Propylbenzene | (3) | 12.522 | 91 | 1457599 | 56.280 |
| 115) 2-Chlorotoluene | (3) | 12.602 | 126 | 342310 | 54.374 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.651 | 105 | 1058747 | 55.861 |
| 117) 4-Chlorotoluene | (3) | 12.679 | 126 | 357060 | 54.010 |
| 118) tert-Butylbenzene | (3) | 12.901 | 134 | 239758 | 56.080 |
| 119) Pentachloroethane | (3) | 12.930 | 167 | 257766 | 48.949 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.936 | 105 | 1107045 | 55.535 |
| 121) sec-Butylbenzene | (3) | 13.061 | 105 | 1167504 | 56.818 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 1053623 | 56.432 |
| 123) 1,3-Dichlorobenzene | (3) | 13.161 | 146 | 695108 | 54.457 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.206 | 152 | 459146 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 733518 | 54.128 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 846438 | 55.588 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 695361 | 53.806 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.027 | 75 | 110454 | 49.811 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.585 | 180 | 456116 | 54.651 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 197044 | 53.114 |
| 134) Naphthalene | (3) | 14.756 | 128 | 1458635 | 52.761 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 440553 | 54.694 |
| 50) $Dibromofluoromethane | (1) | 7.054 | 113 | 268082 | 48.358 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.513 | 102 | 70781 | 49.133 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.058 | 111 | 273464 | 48.431 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.513 | 104 | 44880 | 48.761 |
| 81)$Toluene-d8(mz100) | (2) | 9.949 | 100 | 698805 | 48.952 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.330 | 174 | 380041 | 49.340 |
| 80)$Toluene-d8 | (2) | 9.949 | 98 | 1055029 | 49.008 |
| 107)$4-Bromofluorobenzene | (2) | 12.330 | 95 | 384906 | 48.854 |

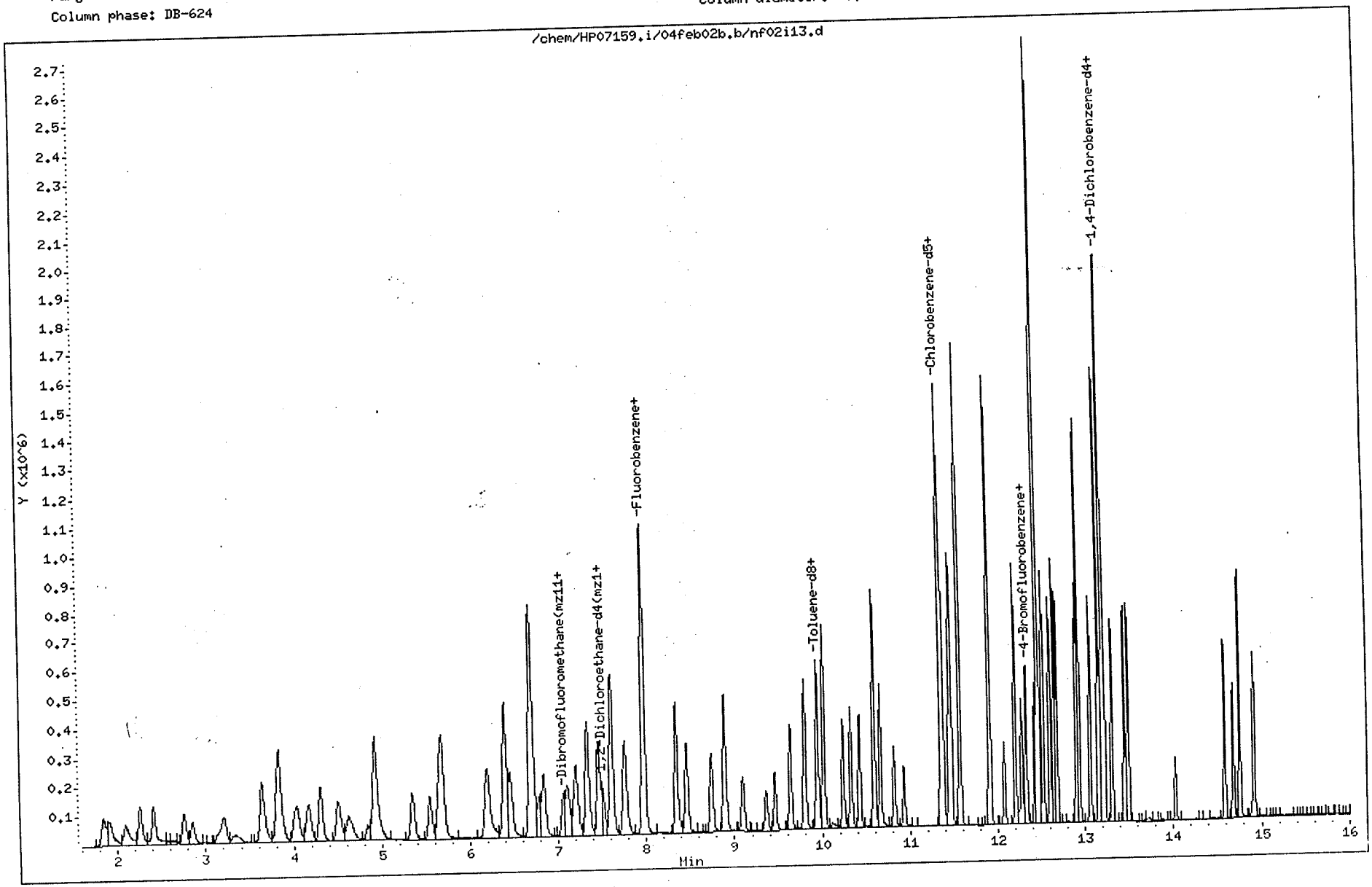
$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d
Date : 02-FEB-2004 13:09
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577
2/3/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 179761 | 19.916 |
| 3) Chloromethane | (1) | 2.258 | 50 | 200995 | 20.933 |
| 4) Vinyl Chloride | (1) | 2.409 | 62 | 185782 | 20.769 |
| 5) Bromomethane | (1) | 2.756 | 94 | 111456 | 21.252 |
| 6) Chloroethane | (1) | 2.852 | 64 | 100468 | 20.979 |
| 7) Trichlorofluoromethane | (1) | 3.211 | 101 | 203614 | 20.207 |
| 11) Ethanol | (1) | 3.349 | 46 | 45108 | 900.535 |
| 13) Acrolein | (1) | 3.638 | 56 | 370676 | 171.399 |
| 16) 1,1-Dichloroethene | (1) | 3.821 | 96 | 111298 | 20.193 |
| 17) Freon 113 | (1) | 3.834 | 101 | 111597 | 21.662 |
| 18) Acetone | (1) | 3.830 | 58 | 56510 | 37.284 |
| 19) Methyl Iodide | (1) | 4.036 | 142 | 214201 | 19.935 |
| 20) 2-Propanol | (1) | 4.007 | 45 | 151718 | 187.267 |
| 22) Carbon Disulfide | (1) | 4.167 | 76 | 380192 | 20.155 |
| 23) Allyl Chloride | (1) | 4.305 | 41 | 213420 | 19.851 |
| 24) Methylene Chloride | (1) | 4.508 | 84 | 129921 | 20.278 |
| 25) t-Butyl Alcohol | (1) | 4.626 | 59 | 258649 | 191.289 |
| 27) Acrylonitrile | (1) | 4.841 | 53 | 69058 | 17.351 |
| 28) trans-1,2-Dichloroethene | (1) | 4.921 | 96 | 124853 | 20.167 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.925 | 73 | 409085 | 20.216 |
| 32) n-Hexane | (1) | 5.348 | 57 | 130904 | 25.661 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 262938 | 40.736 |
| 35) 1,1-Dichloroethane | (1) | 5.547 | 63 | 226741 | 20.155 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 452764 | 20.216 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.695 | 53 | 172163 | 20.129 |
| 38) Ethyl t-Butyl Ether | (1) | 6.195 | 59 | 416862 | 20.240 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 138084 | 20.569 |
| 40) 2-Butanone | (1) | 6.385 | 72 | 57635 | 35.287 |
| 41) 2,2-Dichloropropane | (1) | 6.407 | 77 | 191133 | 20.410 |
| 42) Propionitrile | (1) | 6.458 | 54 | 288394 | 198.204 |
| 45) Methacrylonitrile | (1) | 6.690 | 67 | 375630 | 99.807 |
| 46) Bromochloromethane | (1) | 6.725 | 128 | 70136 | 19.715 |
| 47) Tetrahydrofuran | (1) | 6.789 | 71 | 43802 | 34.444 |
| 48) Chloroform | (1) | 6.840 | 83 | 212754 | 20.213 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.113 | 97 | 192518 | 20.527 |
| 52) Cyclohexane | (1) | 7.206 | 56 | 200642 | 22.619 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 167396 | 20.762 |
| 56) Carbon Tetrachloride | (1) | 7.341 | 117 | 171390 | 20.637 |
| 57) Isobutyl Alcohol | (1) | 7.460 | 41 | 214741 | 483.392 |
| 60) Benzene | (1) | 7.604 | 78 | 510322 | 20.375 |
| 61) 1,2-Dichloroethane | (1) | 7.614 | 62 | 180202 | 20.323 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.620 | 98 | 17172 | 20.470 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 410914 | 20.264 |
| 66) n-Heptane | (1) | 7.976 | 100 | 21120 | 22.018 |
| 65) *Fluorobenzene | (1) | 7.973 | 96 | 1071448 | 50.000 |
| 68) n-Butanol | (1) | 8.342 | 56 | 344958 | 921.708 |
| 69) Trichloroethene | (1) | 8.464 | 95 | 127843 | 20.299 |
| 70) 1,2-Dichloropropane | (1) | 8.743 | 63 | 142405 | 20.503 |
| 71) Methyl Methacrylate | (1) | 8.891 | 69 | 129582 | 19.813 |
| 72) Dibromomethane | (1) | 8.894 | 93 | 86482 | 19.801 |
| 73) 1,4-Dioxane | (1) | 8.907 | 88 | 48099 | 457.817 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 159080 | 19.797 |
| 76) 2-Nitropropane | (1) | 9.366 | 41 | 102489 | 34.335 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.468 | 63 | 99615 | 19.021 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 228600 | 19.881 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 408075 | 33.923 |
| 82) Toluene | (2) | 10.020 | 92 | 329930 | 20.627 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 216198 | 20.041 |
| 84) Ethyl Methacrylate | (2) | 10.328 | 69 | 213115 | 19.480 |
| 85) 1,1,2-Trichloroethane | (2) | 10.428 | 97 | 123872 | 20.045 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 150267 | 21.602 |
| 88) 1,3-Dichloropropane | (2) | 10.595 | 76 | 222183 | 20.134 |
| 90) 2-Hexanone | (2) | 10.662 | 43 | 328457 | 33.931 |
| 91) Dibromochloromethane | (2) | 10.822 | 129 | 148760 | 19.629 |
| 92) 1,2-Dibromoethane | (2) | 10.935 | 107 | 138501 | 19.936 |
| 94) *Chlorobenzene-d5 | (2) | 11.355 | 117 | 839736 | 50.000 |
| 95) Chlorobenzene | (2) | 11.381 | 112 | 367134 | 20.413 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.451 | 131 | 136535 | 20.241 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.471 | 91 | 596629 | 21.310 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 474128 | 42.830 |
| 93) Xylene (Total) | (2) | | 106 | 708097 | 64.237 |
| 100) o-Xylene | (2) | 11.907 | 106 | 233968 | 21.406 |
| 101) Styrene | (2) | 11.917 | 104 | 395777 | 20.417 |
| 102) Bromoform | (2) | 12.077 | 173 | 132113 | 19.708 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 550578 | 22.075 |
| 106) Cyclohexanone | (2) | 12.276 | 55 | 171393 | 444.598 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.427 | 83 | 205195 | 20.245 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.462 | 53 | 328245 | 97.573 |
| 112) Bromobenzene | (3) | 12.459 | 156 | 175113 | 20.909 |
| 113) 1,2,3-Trichloropropane | (3) | 12.465 | 110 | 62517 | 20.491 |
| 114) n-Propylbenzene | (3) | 12.520 | 91 | 616061 | 22.160 |
| 115) 2-Chlorotoluene | (3) | 12.603 | 126 | 143004 | 21.429 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 447582 | 22.044 |
| 117) 4-Chlorotoluene | (3) | 12.680 | 126 | 149385 | 21.347 |
| 118) tert-Butylbenzene | (3) | 12.902 | 134 | 101743 | 22.167 |
| 119) Pentachloroethane | (3) | 12.931 | 167 | 105983 | 19.584 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.934 | 105 | 463552 | 21.799 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 489071 | 22.169 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 445297 | 22.202 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 290090 | 21.437 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 475119 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 302613 | 21.162 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 359966 | 22.061 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 292835 | 21.390 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 44199 | 19.441 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 183095 | 20.887 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 88137 | 22.140 |
| 134) Naphthalene | (3) | 14.756 | 128 | 576599 | 20.116 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.917 | 180 | 176722 | 20.888 |
| 50) $Dibromofluoromethane | (1) | 7.062 | 113 | 108111 | 19.202 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.514 | 102 | 28133 | 19.222 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.052 | 111 | 109842 | 19.166 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4(mz104) | (1) | 7.511 | 104 | 18567 | 19.700 |
| 81) $Toluene-d8(mz100) | (2) | 9.946 | 100 | 280983 | 19.226 |
| 108) $4-Bromofluorobenzene(mz174) | (2) | 12.331 | 174 | 152464 | 19.309 |
| 80) $Toluene-d8 | (2) | 9.946 | 98 | 422506 | 19.184 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 153773 | 19.103 |

$ = Compound is a surrogate standard.

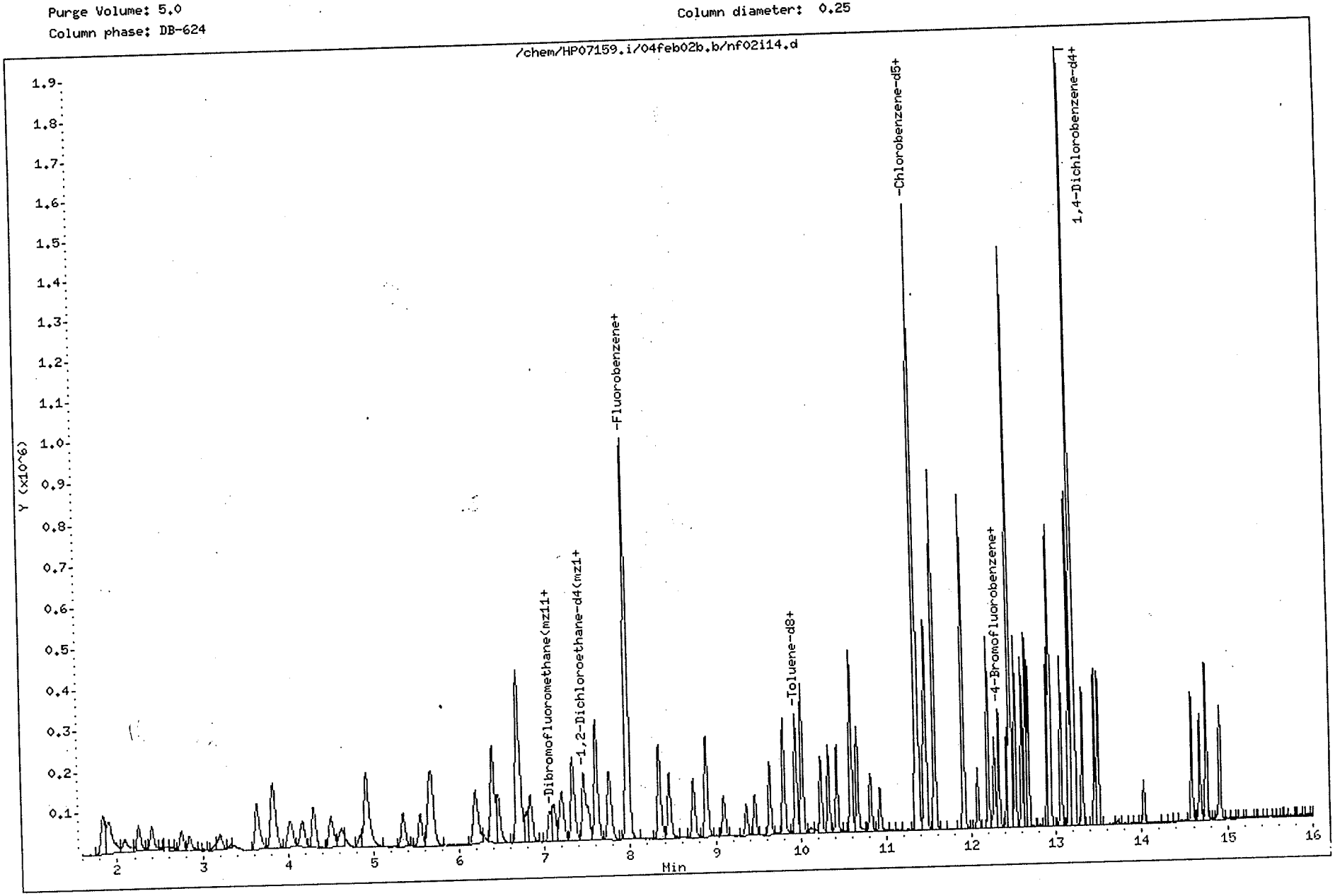
Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d
Date : 02-FEB-2004 13:35
Client ID: VSTD010
Sample Info: VSTD010;VSTD010;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 2/4/04

8282



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.091 | 85 | 72952 | 8.417 |
| 3) Chloromethane | (1) | 2.258 | 50 | 92253 | 9.698 |
| 4) Vinyl Chloride | (1) | 2.408 | 62 | 79192 | 9.074 |
| 5) Bromomethane | (1) | 2.758 | 94 | 49484 | 9.557 |
| 6) Chloroethane | (1) | 2.851 | 64 | 44173 | 9.383 |
| 7) Trichlorofluoromethane | (1) | 3.201 | 101 | 82882 | 8.541 |
| 11) Ethanol | (1) | 3.326 | 46 | 22873 | 465.369 |
| 13) Acrolein | (1) | 3.644 | 56 | 200155 | 94.087 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 58506 | 10.501 |
| 17) Freon 113 | (1) | 3.840 | 101 | 54457 | 10.466 |
| 18) Acetone | (1) | 3.830 | 58 | 27300 | 18.404 |
| 19) Methyl Iodide | (1) | 4.039 | 142 | 112230 | 10.367 |
| 20) 2-Propanol | (1) | 4.010 | 45 | 77419 | 96.555 |
| 22) Carbon Disulfide | (1) | 4.170 | 76 | 195788 | 10.316 |
| 23) Allyl Chloride | (1) | 4.302 | 41 | 116613 | 10.681 |
| 24) Methylene Chloride | (1) | 4.510 | 84 | 68666 | 10.581 |
| 25) t-Butyl Alcohol | (1) | 4.629 | 59 | 139882 | 102.889 |
| 27) Acrylonitrile | (1) | 4.841 | 53 | 38194 | 9.688 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 66205 | 10.562 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.931 | 73 | 220022 | 10.701 |
| 32) n-Hexane | (1) | 5.351 | 57 | 63934 | 11.945 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 138956 | 21.236 |
| 35) 1,1-Dichloroethane | (1) | 5.543 | 63 | 118143 | 10.412 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 234642 | 10.393 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.694 | 53 | 88080 | 10.251 |
| 38) Ethyl t-Butyl Ether | (1) | 6.192 | 59 | 218124 | 10.482 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 72751 | 10.673 |
| 40) 2-Butanone | (1) | 6.397 | 72 | 29248 | 18.317 |
| 41) 2,2-Dichloropropane | (1) | 6.403 | 77 | 98912 | 10.460 |
| 42) Propionitrile | (1) | 6.458 | 54 | 155476 | 105.558 |
| 45) Methacrylonitrile | (1) | 6.686 | 67 | 203773 | 53.336 |
| 46) Bromochloromethane | (1) | 6.728 | 128 | 38115 | 10.578 |
| 47) Tetrahydrofuran | (1) | 6.792 | 71 | 24256 | 19.280 |
| 48) Chloroform | (1) | 6.840 | 83 | 111670 | 10.497 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.103 | 97 | 99895 | 10.529 |
| 52) Cyclohexane | (1) | 7.206 | 56 | 99061 | 10.928 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 86020 | 10.543 |
| 56) Carbon Tetrachloride | (1) | 7.340 | 117 | 88412 | 10.525 |
| 57) Isobutyl Alcohol | (1) | 7.462 | 41 | 113145 | 254.102 |
| 60) Benzene | (1) | 7.604 | 78 | 268228 | 10.574 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 92193 | 10.330 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.626 | 98 | 8362 | 9.989 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 218593 | 10.629 |
| 66) n-Heptane | (1) | 7.976 | 100 | 10166 | 10.488 |
| 65)*Fluorobenzene | (1) | 7.973 | 96 | 1069541 | 50.000 |
| 68) n-Butanol | (1) | 8.342 | 56 | 183396 | 492.692 |
| 69) Trichloroethene | (1) | 8.463 | 95 | 67236 | 10.548 |
| 70) 1,2-Dichloropropane | (1) | 8.739 | 63 | 72967 | 10.415 |
| 71) Methyl Methacrylate | (1) | 8.887 | 69 | 66255 | 10.118 |
| 72) Dibromomethane | (1) | 8.893 | 93 | 45365 | 10.322 |
| 73) 1,4-Dioxane | (1) | 8.909 | 88 | 25490 | 244.410 |
| 74) Bromodichloromethane | (1) | 9.099 | 83 | 84427 | 10.416 |
| 76) 2-Nitropropane | (1) | 9.362 | 41 | 55048 | 18.761 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.461 | 63 | 51181 | 9.831 |
| 78) cis-1,3-Dichloropropene | (1) | 9.638 | 75 | 120327 | 10.383 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.802 | 43 | 220607 | 18.676 |
| 82) Toluene | (2) | 10.020 | 92 | 173037 | 10.667 |
| 83) trans-1,3-Dichloropropene | (2) | 10.238 | 75 | 109997 | 10.179 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 110515 | 10.103 |
| 85) 1,1,2-Trichloroethane | (2) | 10.424 | 97 | 65664 | 10.517 |
| 87) Tetrachloroethene | (2) | 10.591 | 166 | 79251 | 11.108 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 115627 | 10.401 |
| 90) 2-Hexanone | (2) | 10.665 | 43 | 170463 | 18.081 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 75813 | 10.024 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 70733 | 10.167 |
| 94)*Chlorobenzene-d5 | (2) | 11.355 | 117 | 837455 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 195131 | 10.691 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.448 | 131 | 69911 | 10.312 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.470 | 91 | 312432 | 10.930 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 250260 | 22.080 |
| 93) Xylene (Total) | (2) | | 106 | 371400 | 32.951 |
| 100) o-Xylene | (2) | 11.907 | 106 | 121139 | 10.871 |
| 101) Styrene | (2) | 11.913 | 104 | 203504 | 10.417 |
| 102) Bromoform | (2) | 12.077 | 173 | 66097 | 9.909 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 289215 | 11.261 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 84358 | 224.926 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 107886 | 10.542 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.465 | 53 | 171729 | 50.997 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 91070 | 10.721 |
| 113) 1,2,3-Trichloropropane | (3) | 12.462 | 110 | 33358 | 10.767 |
| 114) n-Propylbenzene | (3) | 12.523 | 91 | 321602 | 11.251 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 76376 | 11.158 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 231127 | 11.111 |
| 117) 4-Chlorotoluene | (3) | 12.677 | 126 | 79114 | 11.052 |
| 118) tert-Butylbenzene | (3) | 12.898 | 134 | 53154 | 11.261 |
| 119) Pentachloroethane | (3) | 12.927 | 167 | 56968 | 10.450 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.933 | 105 | 242945 | 11.143 |
| 121) sec-Butylbenzene | (3) | 13.058 | 105 | 255141 | 11.249 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 229265 | 11.148 |
| 123) 1,3-Dichlorobenzene | (3) | 13.161 | 146 | 150861 | 10.932 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 473221 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 158011 | 10.857 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 181333 | 10.905 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 149210 | 10.740 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.028 | 75 | 21731 | 9.675 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 91549 | 10.385 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 46153 | 11.271 |
| 134) Naphthalene | (3) | 14.753 | 128 | 278441 | 9.802 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 88461 | 10.394 |
| 50) $Dibromofluoromethane | (1) | 7.055 | 113 | 53752 | 9.648 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.504 | 102 | 14074 | 9.705 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.058 | 111 | 55341 | 9.737 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.517 | 104 | 9378 | 9.975 |
| 81)$Toluene-d8(mz100) | (2) | 9.946 | 100 | 142469 | 9.819 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.327 | 174 | 78596 | 9.985 |
| 80)$Toluene-d8 | (2) | 9.946 | 98 | 215041 | 9.832 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 78178 | 9.790 |

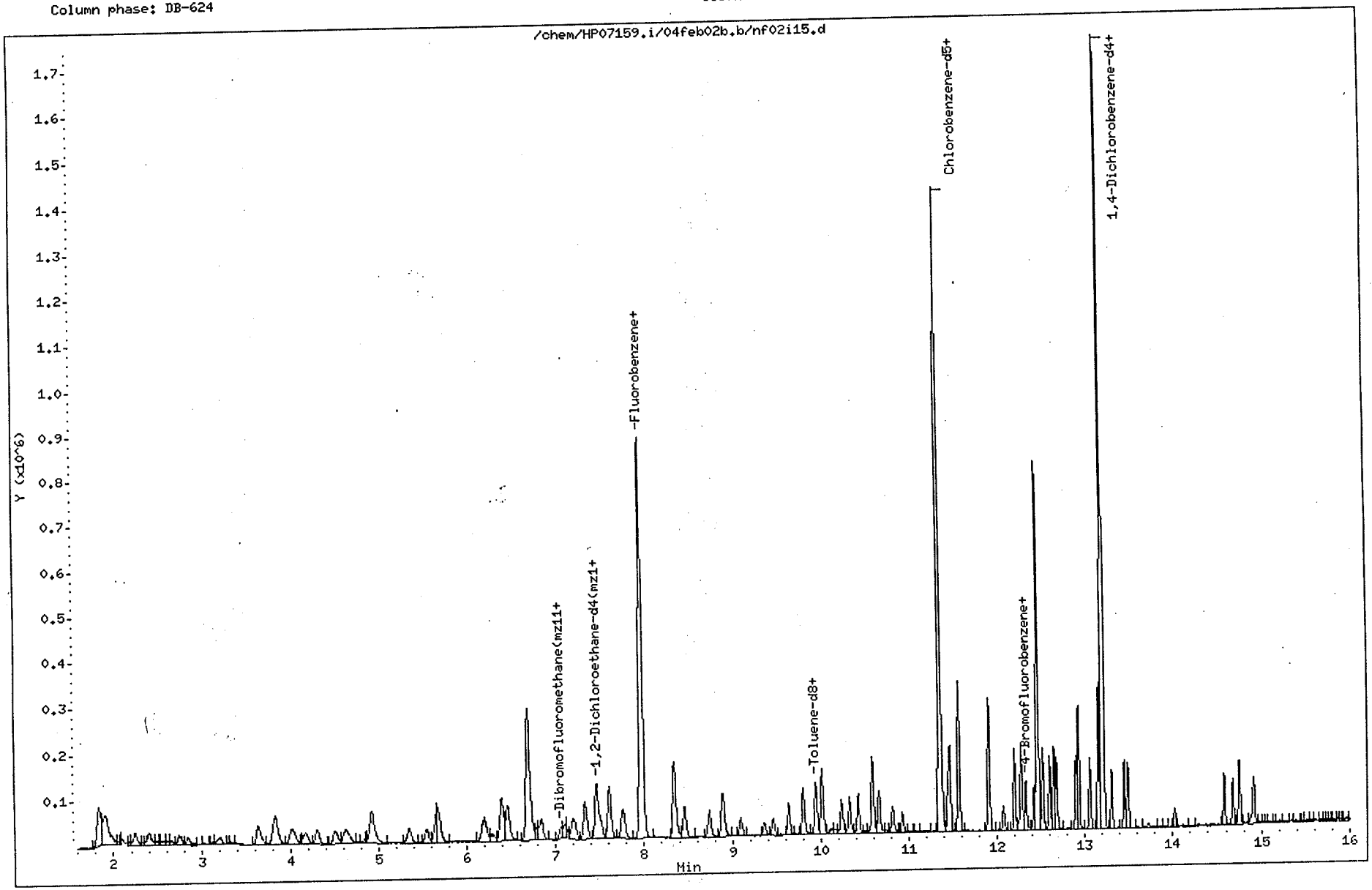
$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d
Date : 02-FEB-2004 14:00
Client ID: VSTD004
Sample Info: VSTD004;VSTD004;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.097 | 85 | 32810 | 3.938 |
| 3) Chloromethane | (1) | 2.251 | 50 | 38187 | 4.135 |
| 4) Vinyl Chloride | (1) | 2.412 | 62 | 33645 | 3.999 |
| 5) Bromomethane | (1) | 2.752 | 94 | 20450 | 4.080 |
| 6) Chloroethane | (1) | 2.839 | 64 | 18284 | 4.023 |
| 7) Trichlorofluoromethane | (1) | 3.208 | 101 | 37800 | 4.033 |
| 11) Ethanol | (1) | 3.329 | 46 | 11321 | 240.679 |
| 13) Acrolein | (1) | 3.638 | 56 | 75880 | 37.464 |
| 16) 1,1-Dichloroethene | (1) | 3.820 | 96 | 23226 | 4.266 |
| 17) Freon 113 | (1) | 3.833 | 101 | 21689M | 4.266 |
| 18) Acetone | (1) | 3.830 | 58 | 9835 | 7.041 |
| 19) Methyl Iodide | (1) | 4.039 | 142 | 41567 | 3.985 |
| 20) 2-Propanol | (1) | 4.007 | 45 | 57537 | 75.300 |
| 22) Carbon Disulfide | (1) | 4.167 | 76 | 75468 | 4.103 |
| 23) Allyl Chloride | (1) | 4.305 | 41 | 36172 | 3.519 |
| 24) Methylene Chloride | (1) | 4.513 | 84 | 26444 | 4.187 |
| 25) t-Butyl Alcohol | (1) | 4.623 | 59 | 99218 | 76.377 |
| 27) Acrylonitrile | (1) | 4.844 | 53 | 13294 | 3.572 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 25499 | 4.181 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.918 | 73 | 81671 | 4.100 |
| 32) n-Hexane | (1) | 5.351 | 57 | 25867 | 4.461 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 52738 | 8.301 |
| 35) 1,1-Dichloroethane | (1) | 5.547 | 63 | 44417 | 4.050 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 87794 | 4.027 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.691 | 53 | 33734 | 4.060 |
| 38) Ethyl t-Butyl Ether | (1) | 6.195 | 59 | 82404 | 4.089 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 27239 | 4.120 |
| 40) 2-Butanone | (1) | 6.397 | 72 | 10322 | 6.890 |
| 41) 2,2-Dichloropropane | (1) | 6.410 | 77 | 38233 | 4.160 |
| 42) Propionitrile | (1) | 6.468 | 54 | 109983 | 77.861 |
| 45) Methacrylonitrile | (1) | 6.686 | 67 | 142006 | 38.785 |
| 46) Bromochloromethane | (1) | 6.721 | 128 | 13244 | 3.842 |
| 47) Tetrahydrofuran | (1) | 6.798 | 71 | 8918 | 7.453 |
| 48) Chloroform | (1) | 6.837 | 83 | 41288 | 4.021 |

M = Compound was manually integrated.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.106 | 97 | 37832 | 4.113 |
| 52) Cyclohexane | (1) | 7.199 | 56 | 39244 | 4.400 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 32570 | 4.116 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 34157 | 4.179 |
| 57) Isobutyl Alcohol | (1) | 7.459 | 41 | 80098 | 188.684 |
| 60) Benzene | (1) | 7.607 | 78 | 102936 | 4.173 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 34149 | 3.974 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.620 | 98 | 3041 | 3.804 |
| 64) t-Amyl Methyl Ether | (1) | 7.758 | 73 | 82412 | 4.129 |
| 66) n-Heptane | (1) | 7.973 | 100 | 3957 | 4.193 |
| 65)*Fluorobenzene | (1) | 7.973 | 96 | 1031204 | 50.000 |
| 68) n-Butanol | (1) | 8.345 | 56 | 131387 | 371.338 |
| 69) Trichloroethene | (1) | 8.464 | 95 | 25238 | 4.088 |
| 70) 1,2-Dichloropropane | (1) | 8.743 | 63 | 27011 | 3.999 |
| 71) Methyl Methacrylate | (1) | 8.894 | 69 | 24067 | 3.842 |
| 72) Dibromomethane | (1) | 8.894 | 93 | 16723 | 3.955 |
| 73) 1,4-Dioxane | (1) | 8.916 | 88 | 19119 | 191.712 |
| 74) Bromodichloromethane | (1) | 9.096 | 83 | 30035 | 3.868 |
| 76) 2-Nitropropane | (1) | 9.365 | 41 | 19985 | 7.205 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.465 | 63 | 18534 | 3.740 |
| 78) cis-1,3-Dichloropropene | (1) | 9.641 | 75 | 43885 | 3.939 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 78419 | 7.049 |
| 82) Toluene | (2) | 10.017 | 92 | 64244 | 4.127 |
| 83) trans-1,3-Dichloropropene | (2) | 10.238 | 75 | 40736 | 3.961 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 38084 | 3.705 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 24514 | 4.097 |
| 87) Tetrachloroethene | (2) | 10.594 | 166 | 29671 | 4.296 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 42281 | 3.990 |
| 90) 2-Hexanone | (2) | 10.662 | 43 | 61469 | 7.007 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 27314 | 3.821 |
| 92) 1,2-Dibromoethane | (2) | 10.931 | 107 | 26634 | 4.012 |
| 94)*Chlorobenzene-d5 | (2) | 11.355 | 117 | 798644 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 72380 | 4.131 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.444 | 131 | 26016 | 4.020 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.470 | 91 | 115130 | 4.184 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 92666 | 8.472 |
| 93) Xylene (Total) | (2) | | 106 | 138672 | 12.743 |
| 100) o-Xylene | (2) | 11.907 | 106 | 46006 | 4.271 |
| 101) Styrene | (2) | 11.916 | 104 | 73040 | 3.934 |
| 102) Bromoform | (2) | 12.073 | 173 | 24252 | 3.843 |
| 105) Isopropylbenzene | (2) | 12.199 | 105 | 110688 | 4.424 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 67562 | 190.660 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.423 | 83 | 39029 | 4.043 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.465 | 53 | 117283 | 37.473 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 33614 | 4.169 |
| 113) 1,2,3-Trichloropropane | (3) | 12.465 | 110 | 12094 | 4.122 |
| 114) n-Propylbenzene | (3) | 12.523 | 91 | 123650 | 4.485 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 28390 | 4.333 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.645 | 105 | 87994 | 4.404 |
| 117) 4-Chlorotoluene | (3) | 12.683 | 126 | 29143 | 4.268 |
| 118) tert-Butylbenzene | (3) | 12.905 | 134 | 19961 | 4.403 |
| 119) Pentachloroethane | (3) | 12.927 | 167 | 18429 | 3.654 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.933 | 105 | 91390 | 4.371 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 98028 | 4.482 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 88005 | 4.445 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 56538 | 4.290 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 445381 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 61519 | 4.401 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 68366 | 4.302 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 57546 | 4.329 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.028 | 75 | 8350 | 3.958 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 33439 | 4.025 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 18887 | 4.723 |
| 134) Naphthalene | (3) | 14.756 | 128 | 98700 | 3.740 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 30580 | 3.847 |
| 50) $Dibromofluoromethane | (1) | 7.058 | 113 | 20010 | 3.768 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 5684 | 4.054 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.055 | 111 | 20603 | 3.798 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

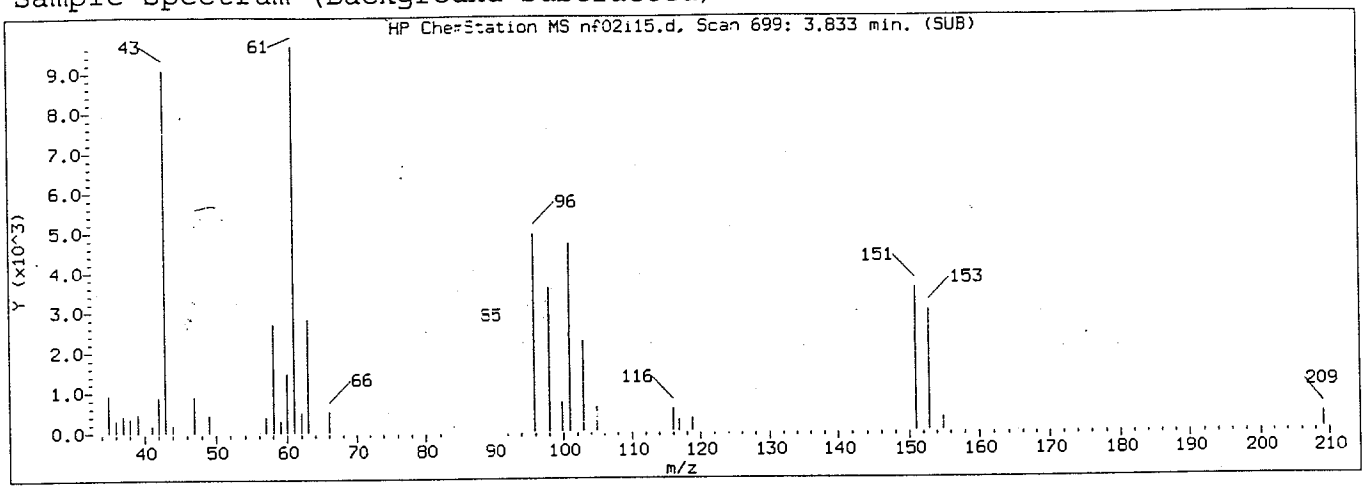
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

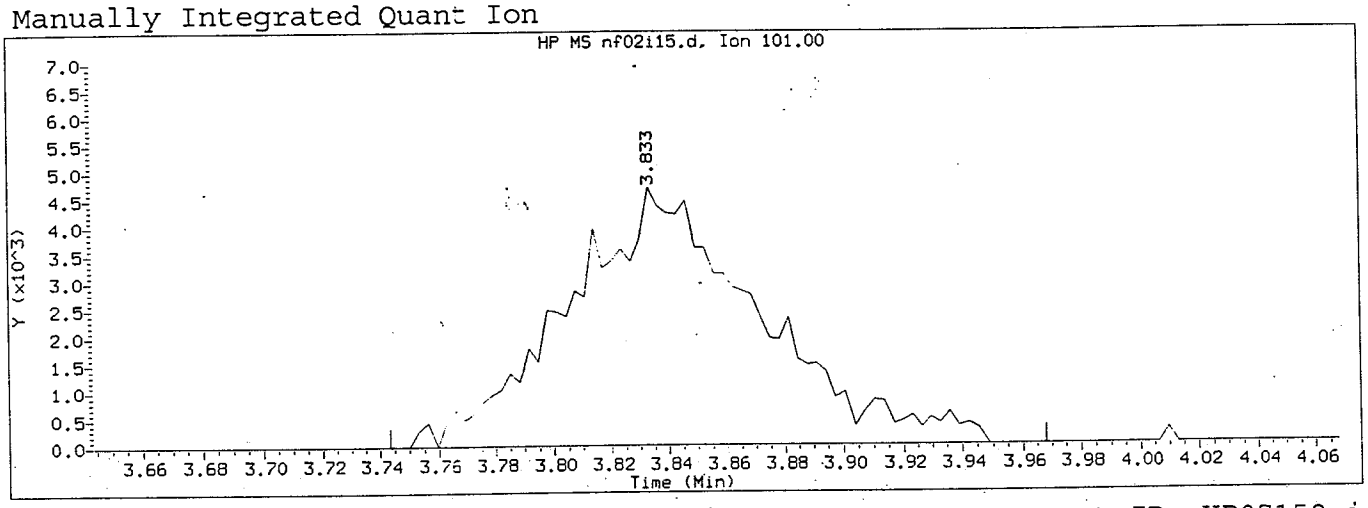
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.517 | 104 | 3355 | 3.748 |
| 81)$Toluene-d8(mz100) | (2) | 9.946 | 100 | 54516 | 3.950 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.327 | 174 | 28911 | 3.875 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 81851 | 3.937 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 29347 | 3.877 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 14:33
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

Compound Number : 17
Compound Name : Freon 113
Scan Number : 699
Retention Time (minutes): 3.833
Quant Ion : 101
Area (flag) : 21689 M
Concentration (ug/L) : 4.2660
Integration start scan : 670  Integration stop scan: 740
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: SJR 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

8212

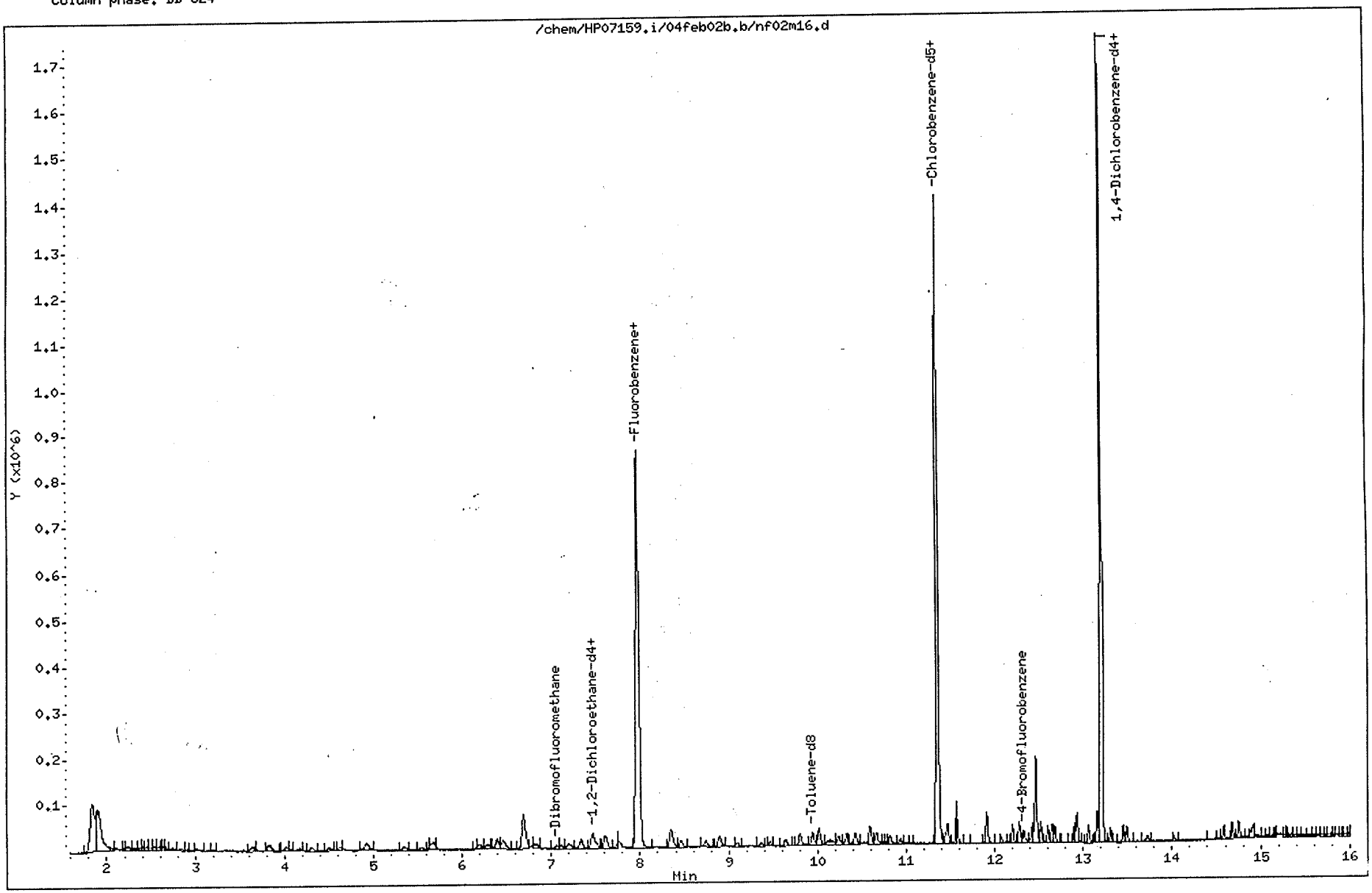
Manual Integration Report for data file /chem/HP07159.i/04feb02b.b/nf02i15.d, generated on 02/02/2004 at 14:41

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d
Date : 02-FEB-2004 14:25
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;MDL/LOQ;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.107 | 85 | 5528 | 0.655 |
| 3) Chloromethane | (1) | 2.251 | 50 | 7865 | 0.841 |
| 4) Vinyl Chloride | (1) | 2.399 | 62 | 6178 | 0.725 |
| 5) Bromomethane | (1) | 2.745 | 94 | 4630 | 0.912 |
| 6) Chloroethane | (1) | 2.842 | 64 | 3777 | 0.821 |
| 7) Trichlorofluoromethane | (1) | 3.207 | 101 | 7680 | 0.809 |
| 11) Ethanol | (1) | 3.358 | 46 | 3082 | 64.720 |
| 13) Acrolein | (1) | 3.637 | 56 | 17061 | 8.320 |
| 16) 1,1-Dichloroethene | (1) | 3.804 | 96 | 5085 | 0.923 |
| 17) Freon 113 | (1) | 3.827 | 101 | 3705 | 0.720 |
| 18) Acetone | (1) | 3.843 | 58 | 2738 | 1.936 |
| 19) Methyl Iodide | (1) | 4.038 | 142 | 8663M | 0.821 |
| 20) 2-Propanol | (1) | 4.000 | 45 | 14325 | 18.518 |
| 22) Carbon Disulfide | (1) | 4.176 | 76 | 16520 | 0.887 |
| 23) Allyl Chloride | (1) | 4.295 | 41 | 8324 | 0.800 |
| 24) Methylene Chloride | (1) | 4.484 | 84 | 6779 | 1.060 |
| 25) t-Butyl Alcohol | (1) | 4.642 | 59 | 25505 | 19.393 |
| 27) Acrylonitrile | (1) | 4.844 | 53 | 2999 | 0.796 |
| 28) trans-1,2-Dichloroethene | (1) | 4.921 | 96 | 5438 | 0.881 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.924 | 73 | 22525 | 1.117 |
| 32) n-Hexane | (1) | 5.357 | 57 | 4930 | 0.840 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 11599 | 1.801 |
| 35) 1,1-Dichloroethane | (1) | 5.540 | 63 | 9224 | 0.831 |
| 36) di-Isopropyl Ether | (1) | 5.652 | 45 | 19363 | 0.877 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.681 | 53 | 6650 | 0.791 |
| 38) Ethyl t-Butyl Ether | (1) | 6.201 | 59 | 18855 | 0.924 |
| 39) cis-1,2-Dichloroethene | (1) | 6.390 | 96 | 6161 | 0.920 |
| 40) 2-Butanone | (1) | 6.400 | 72 | 2236 | 1.474 |
| 41) 2,2-Dichloropropane | (1) | 6.390 | 77 | 8509 | 0.914 |
| 42) Propionitrile | (1) | 6.464 | 54 | 26398 | 18.459 |
| 45) Methacrylonitrile | (1) | 6.692 | 67 | 34116 | 9.204 |
| 46) Bromochloromethane | (1) | 6.727 | 128 | 2848 | 0.816 |
| 47) Tetrahydrofuran | (1) | 6.785 | 71 | 2527 | 2.086 |
| 48) Chloroform | (1) | 6.846 | 83 | 8750 | 0.842 |

M = Compound was manually integrated.

.655 µg/l

5m

8214

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.109 | 97 | 5685 | 0.610 |
| 52) Cyclohexane | (1) | 7.202 | 56 | 7875 | 0.872 |
| 54) 1,1-Dichloropropene | (1) | 7.324 | 75 | 7076 | 0.883 |
| 56) Carbon Tetrachloride | (1) | 7.347 | 117 | 6790 | 0.821 |
| 57) Isobutyl Alcohol | (1) | 7.462 | 41 | 19908 | 46.323 |
| 60) Benzene | (1) | 7.610 | 78 | 23237 | 0.930 |
| 61) 1,2-Dichloroethane | (1) | 7.616 | 62 | 8378 | 0.963 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 20595 | 1.019 |
| 66) n-Heptane | (1) | 7.976 | 100 | 840 | 0.879 |
| 65) *Fluorobenzene | (1) | 7.972 | 96 | 1043973 | 50.000 |
| 68) n-Butanol | (1) | 8.351 | 56 | 31149 | 86.959 |
| 69) Trichloroethene | (1) | 8.460 | 95 | 5378 | 0.861 |
| 70) 1,2-Dichloropropane | (1) | 8.752 | 63 | 5946 | 0.870 |
| 71) Methyl Methacrylate | (1) | 8.887 | 69 | 5653 | 0.891 |
| 72) Dibromomethane | (1) | 8.893 | 93 | 3704 | 0.865 |
| 73) 1,4-Dioxane | (1) | 8.906 | 88 | 4600 | 45.562 |
| 74) Bromodichloromethane | (1) | 9.095 | 83 | 6908 | 0.879 |
| 76) 2-Nitropropane | (1) | 9.362 | 41 | 5121 | 1.824 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.468 | 63 | 3819 | 0.761 |
| 78) cis-1,3-Dichloropropene | (1) | 9.638 | 75 | 9934 | 0.881 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 18650 | 1.656 |
| 82) Toluene | (2) | 10.020 | 92 | 13847 | 0.870 |
| 83) trans-1,3-Dichloropropene | (2) | 10.244 | 75 | 9769 | 0.929 |
| 84) Ethyl Methacrylate | (2) | 10.328 | 69 | 9565 | 0.910 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 5580 | 0.912 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 6224 | 0.881 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 10476 | 0.967 |
| 90) 2-Hexanone | (2) | 10.661 | 43 | 15105 | 1.684 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 6227 | 0.852 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 6296 | 0.928 |
| 94) *Chlorobenzene-d5 | (2) | 11.351 | 117 | 816580 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 15881 | 0.887 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.448 | 131 | 5719 | 0.864 |
| 97) Ethylbenzene | (2) | 11.470 | 91 | 25962 | 0.923 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

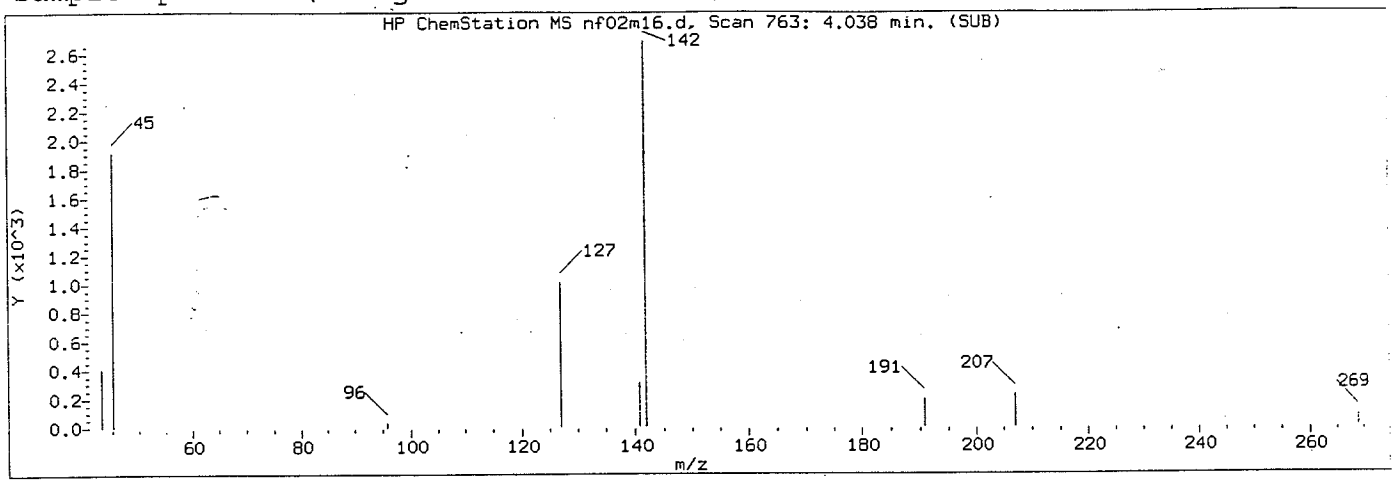
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

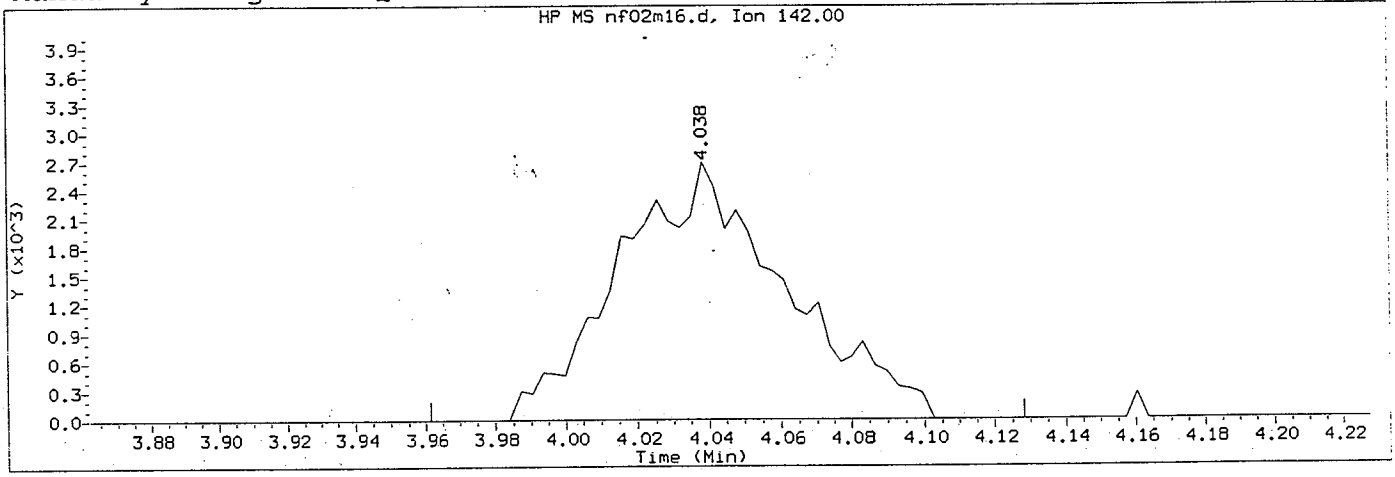
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 98) m+p-Xylene | (2) | 11.569 | 106 | 19199 | 1.717 |
| 93) Xylene (Total) | (2) | | 106 | 28480 | 2.559 |
| 100) o-Xylene | (2) | 11.906 | 106 | 9281 | 0.843 |
| 101) Styrene | (2) | 11.916 | 104 | 15670 | 0.825 |
| 102) Bromoform | (2) | 12.080 | 173 | 5275 | 0.817 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 23142 | 0.905 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 17687 | 48.816 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 9733 | 1.005 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.468 | 53 | 27037 | 8.614 |
| 112) Bromobenzene | (3) | 12.455 | 156 | 7764 | 0.960 |
| 113) 1,2,3-Trichloropropane | (3) | 12.471 | 110 | 3006 | 1.022 |
| 114) n-Propylbenzene | (3) | 12.522 | 91 | 27065 | 0.979 |
| 115) 2-Chlorotoluene | (3) | 12.603 | 126 | 6156 | 0.937 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 19212 | 0.959 |
| 117) 4-Chlorotoluene | (3) | 12.680 | 126 | 6531 | 0.954 |
| 118) tert-Butylbenzene | (3) | 12.898 | 134 | 4424 | 0.973 |
| 119) Pentachloroethane | (3) | 12.930 | 167 | 3827 | 0.757 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.930 | 105 | 20257 | 0.966 |
| 121) sec-Butylbenzene | (3) | 13.058 | 105 | 22029 | 1.004 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 19283 | 0.971 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 13144 | 0.994 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 446676 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 14010 | 0.999 |
| 126) n-Butylbenzene | (3) | 13.453 | 91 | 16035 | 1.006 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 12867 | 0.965 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.027 | 75 | 2240 | 1.059 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.589 | 180 | 8280 | 0.994 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 6462 | 5.185 |
| 134) Naphthalene | (3) | 14.753 | 128 | 24052 | 0.909 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.913 | 180 | 7843 | 0.984 |
| 50) $Dibromofluoromethane | (1) | 7.061 | 113 | 4545 | 0.845 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.514 | 102 | 1264 | 0.891 |
| 80) $Toluene-d8 | (2) | 9.946 | 98 | 17943 | 0.844 |
| 107) $4-Bromofluorobenzene | (2) | 12.324 | 95 | 8003 | 1.034 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 14:58
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

Compound Number : 19
Compound Name : Methyl Iodide
Scan Number : 763
Retention Time (minutes) : 4.038
Quant Ion : 142
Area (flag) : 8663 M
Concentration (ug/L) : 0.8205
Integration start scan : 738  Integration stop scan: 790
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: SJR 15m 2/2/04

GC/MS audit/management approval: [illegible] 2/3/04

8217

Manual Integration Report for data file /chem/HP07159.i/04feb02b.b/nf02m16.d, generated on 02/02/2004 at 15:06

Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d
Date : 02-FEB-2004 17:29
Client ID: VSTD0.5
Sample Info: VSTD0.5;VSTD0.5;1;3;MDL/LOQ;
Purge Volume: 5.0
Column phase: DB-624

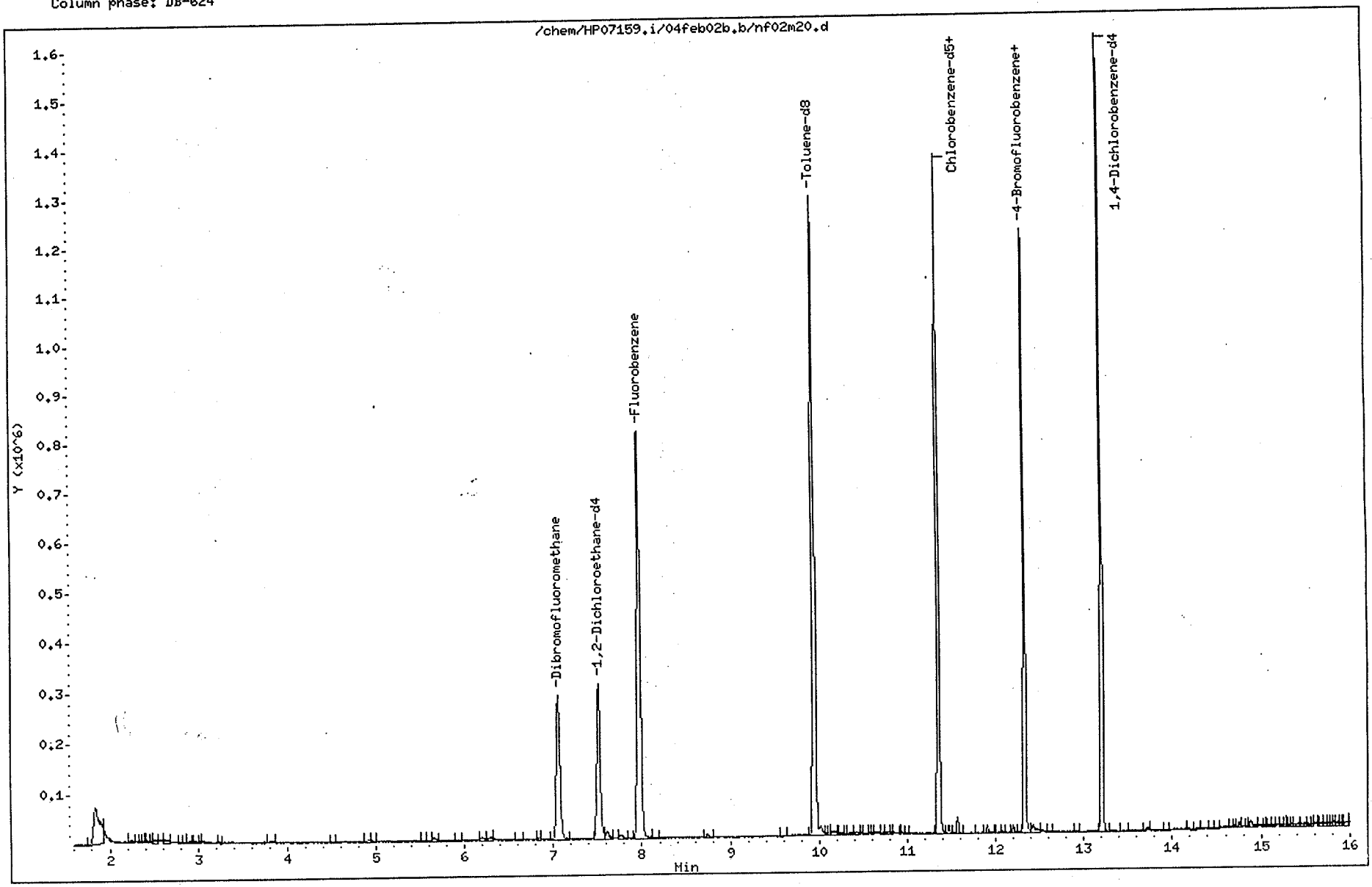
Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533 2/2/04



8218



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Chloromethane | (1) | 2.241 | 50 | 3464 | 0.384 |
| 4) Vinyl Chloride | (1) | 2.395 | 62 | 2782 | 0.339 |
| 11) Ethanol | (1) | 3.342 | 46 | 1332 | 29.005 |
| 16) 1,1-Dichloroethene | (1) | 3.836 | 96 | 2314M | 0.435 |
| 25) t-Butyl Alcohol | (1) | 4.635 | 59 | 2727 | 2.150 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.914 | 73 | 10283 | 0.529 |
| 35) 1,1-Dichloroethane | (1) | 5.550 | 63 | 4153 | 0.388 |
| 36) di-Isopropyl Ether | (1) | 5.662 | 45 | 9223 | 0.433 |
| 38) Ethyl t-Butyl Ether | (1) | 6.188 | 59 | 9176 | 0.466 |
| 48) Chloroform | (1) | 6.836 | 83 | 4154 | 0.414 |
| 60) Benzene | (1) | 7.610 | 78 | 11408 | 0.474 |
| 61) 1,2-Dichloroethane | (1) | 7.616 | 62 | 3424 | 0.408 |
| 64) t-Amyl Methyl Ether | (1) | 7.757 | 73 | 9197M | 0.472 |
| 65) *Fluorobenzene | (1) | 7.969 | 96 | 1006774 | 50.000 |
| 70) 1,2-Dichloropropane | (1) | 8.733 | 63 | 2684 | 0.407 |
| 82) Toluene | (2) | 10.019 | 92 | 6097 | 0.407 |
| 92) 1,2-Dibromoethane | (2) | 10.934 | 107 | 2797 | 0.438 |
| 94) *Chlorobenzene-d5 | (2) | 11.354 | 117 | 768695 | 50.000 |
| 95) Chlorobenzene | (2) | 11.383 | 112 | 6636 | 0.394 |
| 97) Ethylbenzene | (2) | 11.470 | 91 | 11872 | 0.448 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 8043 | 0.764 |
| 93) Xylene (Total) | (2) | | 106 | 12546 | 1.198 |
| 100) o-Xylene | (2) | 11.903 | 106 | 4503 | 0.434 |
| 102) Bromoform | (2) | 12.073 | 173 | 2340 | 0.385 |
| 105) Isopropylbenzene | (2) | 12.201 | 105 | 9007 | 0.374 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 3776M | 0.419 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 415882 | 50.000 |
| 134) Naphthalene | (3) | 14.756 | 128 | 7467 | 0.303 |
| 50) $Dibromofluoromethane | (1) | 7.058 | 113 | 238951 | 46.092 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.510 | 102 | 62757 | 45.847 |
| 80) $Toluene-d8 | (2) | 9.946 | 98 | 993829 | 49.660 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 357337 | 49.049 |

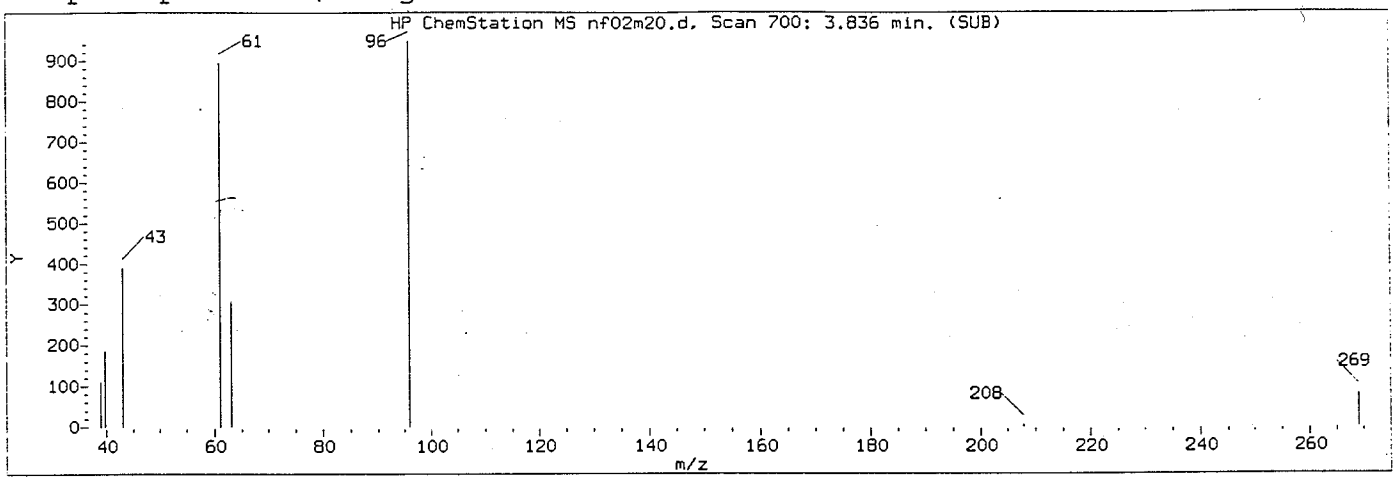
OK JCR 3/18/04

M = Compound was manually integrated.

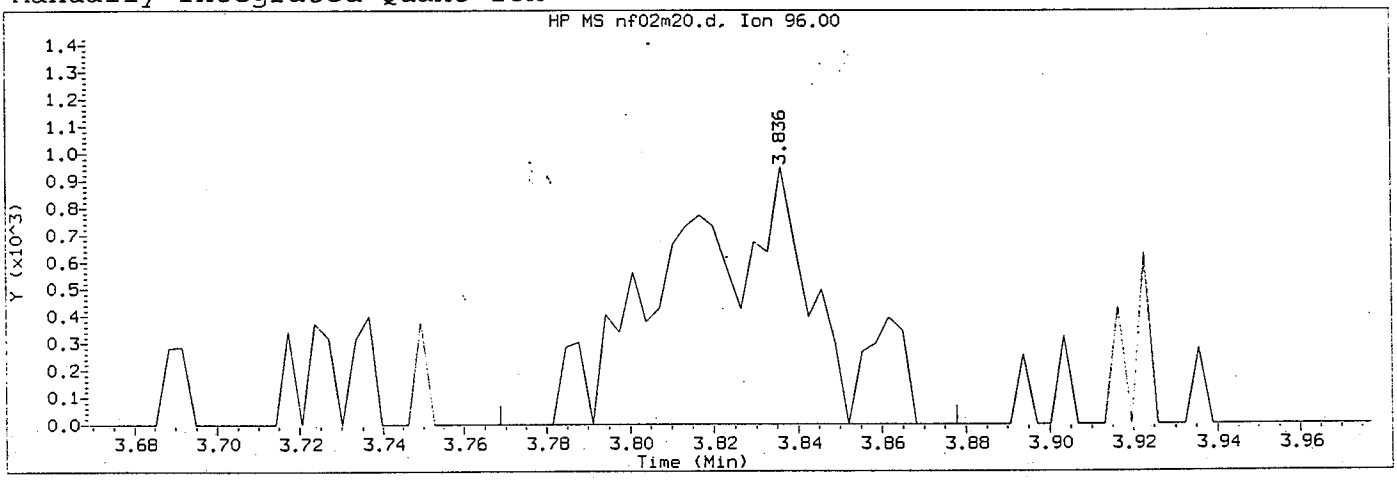
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

$\frac{3464}{1006774} \times \frac{250\ ng}{.478} \quad 5\ ml \quad \frac{866000}{2254167}$

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

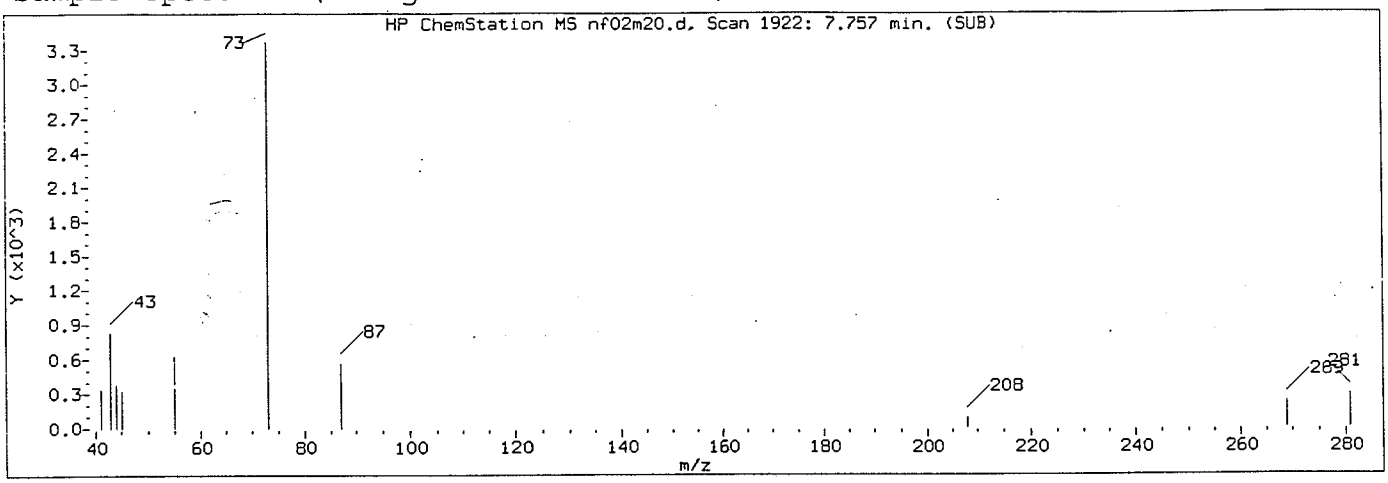
Compound Number : 16
Compound Name : 1,1-Dichloroethene
Scan Number : 700
Retention Time (minutes): 3.836
Quant Ion : 96
Area (flag) : 2314 M
Concentration (ug/L) : 0.4354
Integration start scan : 678  Integration stop scan: 712
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

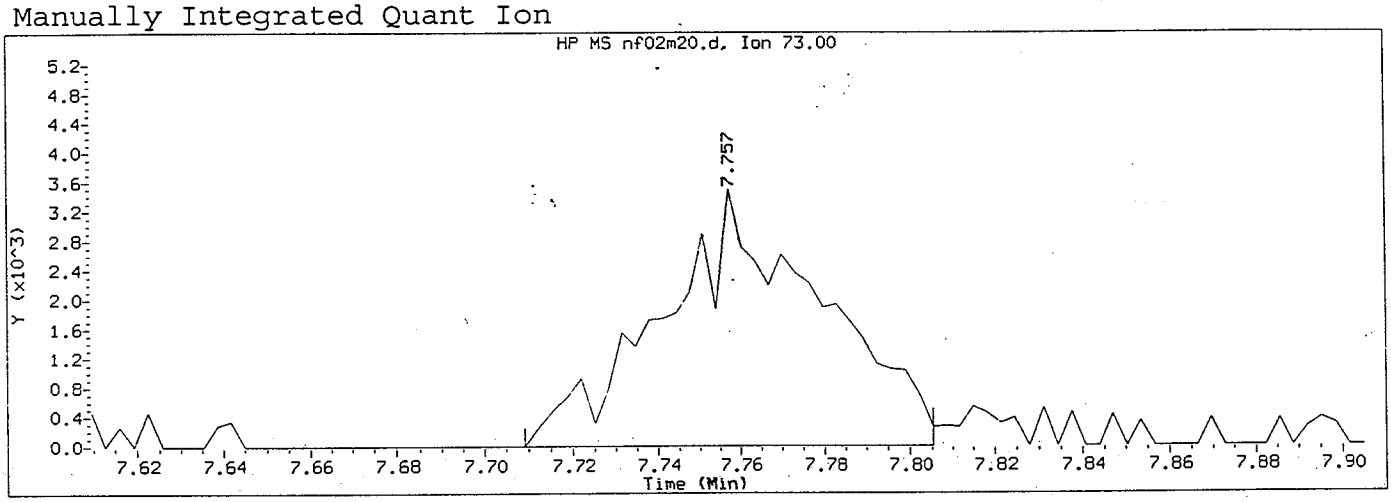
Analyst responsible for change: SME1533 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

Compound Number : 64
Compound Name : t-Amyl Methyl Ether
Scan Number : 1922
Retention Time (minutes): 7.757
Quant Ion : 73
Area (flag) : 9197 M
Concentration (ug/L) : 0.4720
Integration start scan : 1906  Integration stop scan: 1936
Y at integration start : 0  Y at integration end: 0

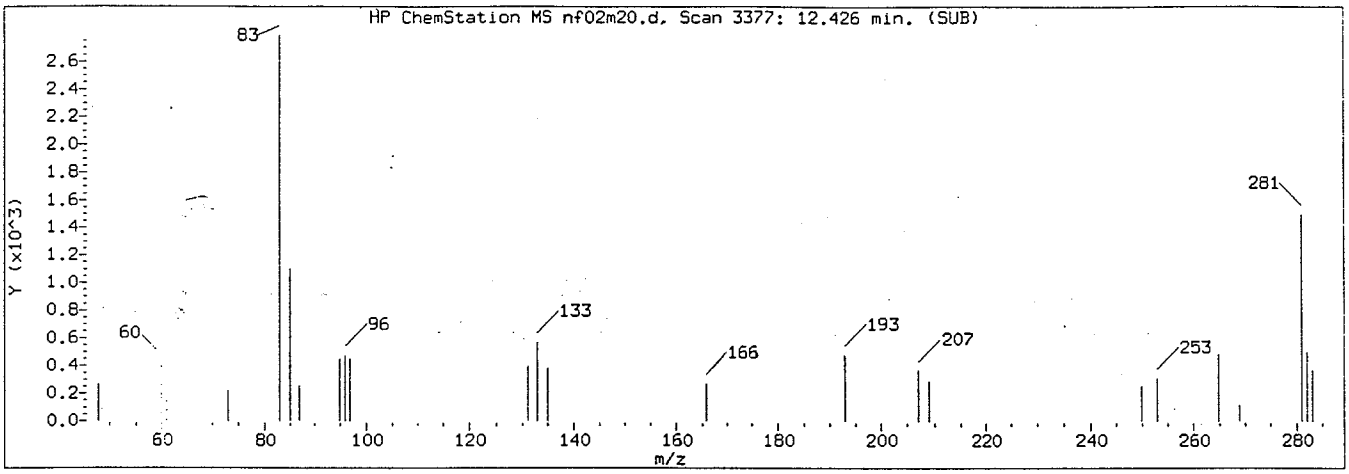
Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: SME1533 2/2/04

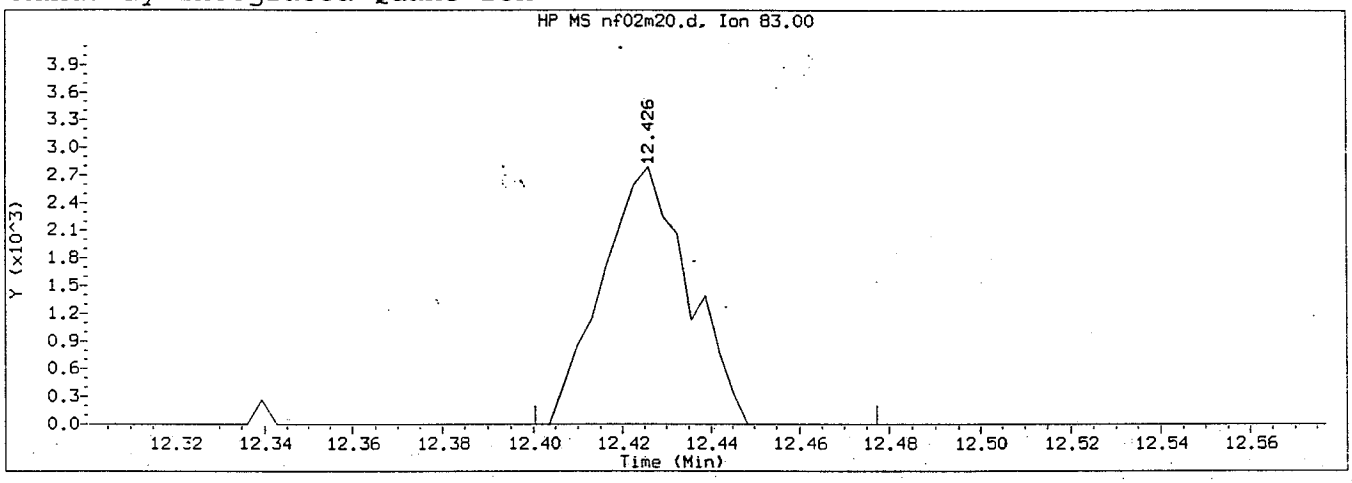
GC/MS audit/management approval: JM 3221, 2/3/04

8221

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

Compound Number : 110
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3377
Retention Time (minutes): 12.426
Quant Ion : 83
Area (flag) : 3776 M
Concentration (ug/L) : 0.4190
Integration start scan : 3368  Integration stop scan: 3392
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

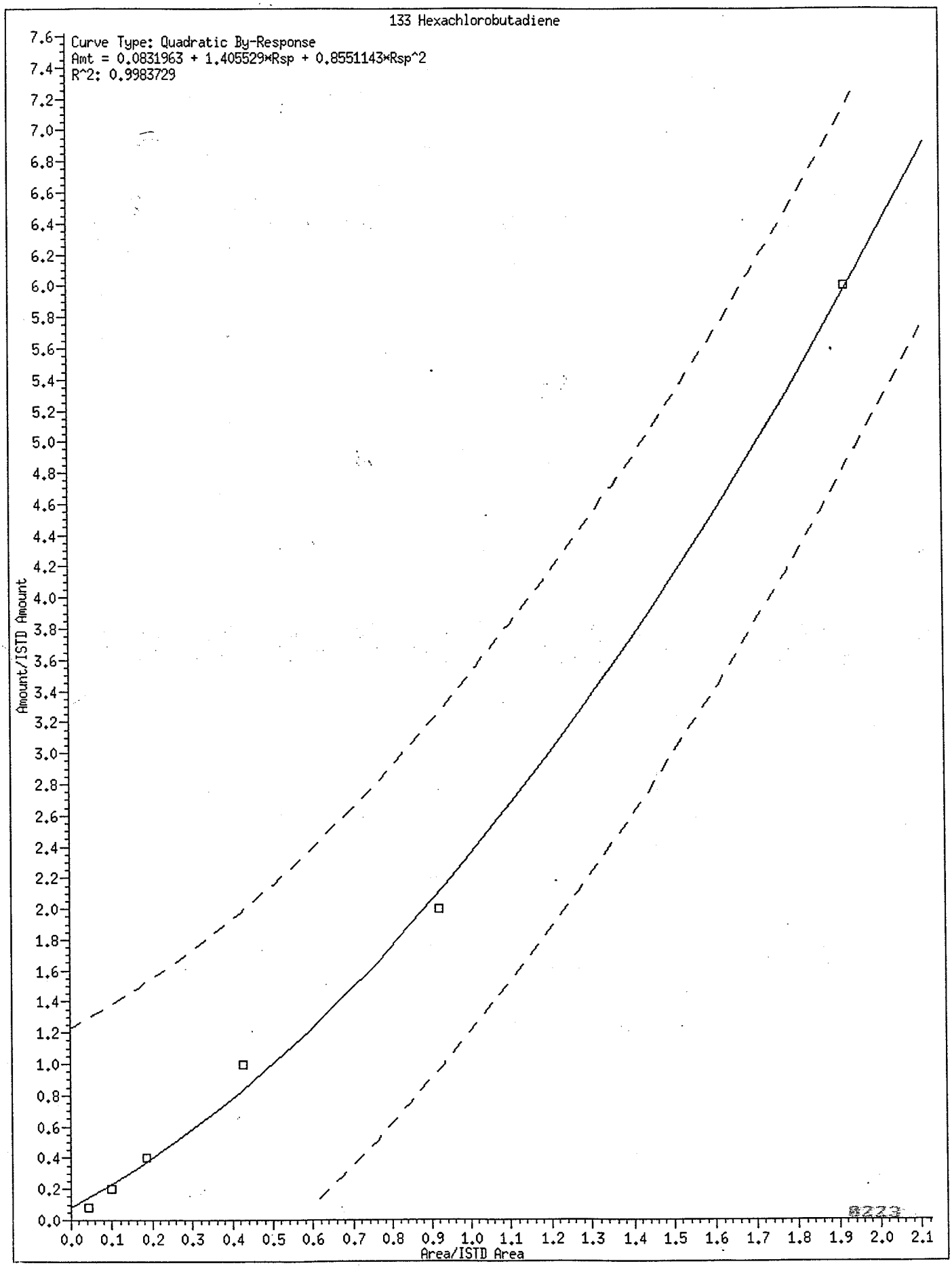
Analyst responsible for change: SME1533 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

8222

Manual Integration Report for data file /chem/HP07159.i/04feb02b.b/nf02m20.d, generated on 02/02/2004 at 17:58

SJR 15-1
2/2/04


133 Hexachlorobutadiene
Curve Type: Quadratic By-Response
Amt = 0.0831963 + 1.405529*Rsp + 0.8551143*Rsp^2
R^2: 0.9983729
Amount/ISTD Amount
Area/ISTD Area
8223

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF100 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.3191 | 0.3452 | 108.19 | 100 | 8 | |
| # | Chloromethane | 0.3334 | 0.3541 | 106.20 | 100 | 6 | # |
| * | Vinyl Chloride | 0.3144 | 0.3413 | 108.54 | 100 | 9 | * |
| | Bromomethane | 0.2154 | 0.2335 | 108.38 | 100 | 8 | |
| | Chloroethane | 0.1837 | 0.1977 | 107.65 | 100 | 8 | |
| | Trichlorofluoromethane | 0.3582 | 0.3882 | 108.35 | 100 | 8 | |
| | Acrolein | 0.0317 | 0.0368 | 1162.54 | 1000 | 16 | |
| * | 1,1-Dichloroethene | 0.2271 | 0.2269 | 99.92 | 100 | 0 | * |
| | Freon 113 | 0.2272 | 0.2288 | 100.72 | 100 | 1 | |
| | Acetone | 0.0183 | 0.0190 | 207.05 | 200 | 4 | |
| | Methyl Iodide | 0.4251 | 0.4354 | 102.41 | 100 | 2 | |
| | 2-Propanol | 0.0136 | 0.0152 | 560.06 | 500 | 12 | |
| | Carbon Disulfide | 0.8310 | 0.8552 | 102.91 | 100 | 3 | |
| | Allyl Chloride | 0.3986 | 0.4290 | 107.61 | 100 | 8 | |
| | Methyl Acetate | 0.1343 | 0.1421 | 105.77 | 100 | 6 | |
| | Methylene Chloride | 0.2740 | 0.2579 | 94.13 | 100 | -6 | |
| | t-Butyl Alcohol | 1.3870 | 1.3715 | 494.42 | 500 | -1 | |
| | Acrylonitrile | 0.0743 | 0.0860 | 115.73 | 100 | 16 | |
| | trans-1,2-Dichloroethene | 0.2669 | 0.2704 | 101.30 | 100 | 1 | |
| | Methyl Tertiary Butyl Ether | 0.6649 | 0.6704 | 100.82 | 100 | 1 | |
| | n-Hexane | 0.3888 | 0.3701 | 95.19 | 100 | -5 | |
| # | 1,1-Dichloroethane | 0.4452 | 0.4464 | 100.27 | 100 | 0 | # |
| | 2-Chloro-1,3-Butadiene | 0.3482 | 0.3604 | 103.50 | 100 | 3 | |
| | di-Isopropyl Ether | 0.8232 | 0.8155 | 99.06 | 100 | -1 | |
| | Ethyl t-Butyl Ether | 0.7398 | 0.7470 | 100.97 | 100 | 1 | |
| | cis-1,2-Dichloroethene | 0.2934 | 0.2799 | 95.40 | 100 | -5 | |
| | 1,2-Dichloroethene (total) | 0.2802 | 0.2752 | 196.70 | 200 | -2 | |
| | 2,2-Dichloropropane | 0.3548 | 0.3690 | 104.01 | 100 | 4 | |
| | 2-Butanone | 0.0257 | 0.0357 | 277.41 | 200 | 39 | |
| | Propionitrile | 0.0262 | 0.0271 | 518.24 | 500 | 4 | |
| | Methacrylonitrile | 0.0854 | 0.0887 | 259.45 | 250 | 4 | |
| | Bromochloromethane | 0.1275 | 0.1418 | 111.19 | 100 | 11 | |
| | Tetrahydrofuran | 0.0241 | 0.0294 | 244.75 | 200 | 22 | |
| * | Chloroform | 0.4157 | 0.4226 | 101.68 | 100 | 2 | * |
| | 1,1,1-Trichloroethane | 0.3690 | 0.3817 | 103.45 | 100 | 3 | |
| | Cyclohexane | 0.4583 | 0.4491 | 97.99 | 100 | -2 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

0224

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF100 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3330 | 0.3319 | 99.68 | 100 | 0 | |
| | Carbon Tetrachloride | 0.3152 | 0.3274 | 103.84 | 100 | 4 | |
| | Benzene | 1.0611 | 1.0511 | 99.06 | 100 | -1 | |
| | Isobutyl Alcohol | 0.0076 | 0.0087 | 1421.37 | 1250 | 14 | |
| | 1,2-Dichloroethane | 0.2902 | 0.2910 | 100.29 | 100 | 0 | |
| | t-Amyl Methyl Ether | 0.6694 | 0.7005 | 104.65 | 100 | 5 | |
| | n-Heptane | 0.0753 | 0.0762 | 101.20 | 100 | 1 | |
| | n-Butanol | 0.0063 | 0.0076 | 2973.08 | 2500 | 19 | |
| | Trichloroethene | 0.2684 | 0.2670 | 99.47 | 100 | -1 | |
| | Methylcyclohexane | 0.4348 | 0.4497 | 103.43 | 100 | 3 | |
| * | 1,2-Dichloropropane | 0.2612 | 0.2586 | 99.03 | 100 | -1 | * |
| | Dibromomethane | 0.1344 | 0.1369 | 101.89 | 100 | 2 | |
| | 1,4-Dioxane | 0.0023 | 0.0025 | 1356.18 | 1250 | 8 | |
| | Methyl Methacrylate | 0.1559 | 0.1708 | 109.51 | 100 | 10 | |
| | Bromodichloromethane | 0.2941 | 0.3100 | 105.40 | 100 | 5 | |
| | 2-Nitropropane | 0.0491 | 0.0768 | 312.61 | 200 | 56 | |
| | cis-1,3-Dichloropropene | 0.3951 | 0.4114 | 104.13 | 100 | 4 | |
| | 4-Methyl-2-Pentanone | 0.2395 | 0.3587 | 299.62 | 200 | 50 | |
| * | Toluene | 0.9141 | 0.8612 | 94.20 | 100 | -6 | * |
| | trans-1,3-Dichloropropene | 0.4279 | 0.4348 | 101.63 | 100 | 2 | |
| | Ethyl Methacrylate | 0.4076 | 0.4355 | 106.85 | 100 | 7 | |
| | 1,1,2-Trichloroethane | 0.2853 | 0.2718 | 95.27 | 100 | -5 | |
| | Tetrachloroethene | 0.4208 | 0.3992 | 94.87 | 100 | -5 | |
| | 1,3-Dichloropropane | 0.4748 | 0.4553 | 95.88 | 100 | -4 | |
| | 2-Hexanone | 0.2320 | 0.3363 | 289.93 | 200 | 45 | |
| | Dibromochloromethane | 0.3013 | 0.3198 | 106.14 | 100 | 6 | |
| | 1,2-Dibromoethane | 0.2820 | 0.2770 | 98.25 | 100 | -2 | |
| # | Chlorobenzene | 1.0165 | 0.9572 | 94.17 | 100 | -6 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3384 | 0.3389 | 100.13 | 100 | 0 | |
| * | Ethylbenzene | 1.6952 | 1.6224 | 95.70 | 100 | -4 | * |
| | m+p-Xylene | 0.6948 | 0.6594 | 94.92 | 100 | -5 | |
| | Xylene (Total) | 0.6739 | 0.6434 | 190.96 | 200 | -5 | |
| | o-Xylene | 0.6531 | 0.6273 | 96.04 | 100 | -4 | |
| | Styrene | 1.0707 | 1.0690 | 99.84 | 100 | 0 | |
| # | Bromoform | 0.2071 | 0.2301 | 111.07 | 100 | 11 | # |
| | Isopropylbenzene | 1.7070 | 1.6542 | 96.91 | 100 | -3 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8225

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF100 | CONC. | CONC. | DRIFT | |
| Cyclohexanone | 0.0092 | 0.0095 | 1278.69 | 1250 | 2 | |
| Bromobenzene | 0.8210 | 0.7502 | 91.38 | 100 | -9 | |
| # 1,1,2,2-Tetrachloroethane | 0.6792 | 0.6583 | 96.93 | 100 | -3 | # |
| 1,2,3-Trichloropropane | 0.2060 | 0.1905 | 92.48 | 100 | -8 | |
| trans-1,4-Dichloro-2-Butene | 0.1877 | 0.1836 | 244.52 | 250 | -2 | |
| n-Propylbenzene | 3.6181 | 3.3454 | 92.46 | 100 | -8 | |
| 2-Chlorotoluene | 0.7874 | 0.7282 | 92.48 | 100 | -8 | |
| 1,3,5-Trimethylbenzene | 2.6246 | 2.4519 | 93.42 | 100 | -7 | |
| 4-Chlorotoluene | 0.8112 | 0.7419 | 91.45 | 100 | -9 | |
| tert-Butylbenzene | 0.6453 | 0.6061 | 93.93 | 100 | -6 | |
| Pentachloroethane | 0.4920 | 0.5117 | 104.02 | 100 | 4 | |
| 1,2,4-Trimethylbenzene | 2.6348 | 2.4620 | 93.44 | 100 | -7 | |
| sec-Butylbenzene | 3.3997 | 3.1677 | 93.17 | 100 | -7 | |
| 1,3-Dichlorobenzene | 1.5754 | 1.4278 | 90.63 | 100 | -9 | |
| p-Isopropyltoluene | 2.9311 | 2.7323 | 93.22 | 100 | -7 | |
| 1,4-Dichlorobenzene | 1.6423 | 1.4651 | 89.21 | 100 | -11 | |
| 1,2-Dichlorobenzene | 1.4868 | 1.3474 | 90.63 | 100 | -9 | |
| n-Butylbenzene | 2.5974 | 2.3923 | 92.10 | 100 | -8 | |
| 1,2-Dibromo-3-Chloropropane | 0.1219 | 0.1224 | 100.40 | 100 | 0 | |
| 1,2,4-Trichlorobenzene | 1.1621 | 1.0420 | 89.67 | 100 | -10 | |
| Hexachlorobutadiene | 0.5945 | 0.5474 | 92.08 | 100 | -8 | |
| Naphthalene | 2.6686 | 2.4863 | 93.17 | 100 | -7 | |
| 1,2,3-Trichlorobenzene | 1.0940 | 0.9808 | 89.66 | 100 | -10 | |
| 2-Methylnaphthalene | 1.6784 | 1.5642 | 93.20 | 100 | -7 | |
| Dibromofluoromethane | 0.2152 | 0.2234 | 51.89 | 50 | 4 | |
| 1,2-Dichloroethane-d4 | 0.0539 | 0.0528 | 48.96 | 50 | -2 | |
| Toluene-d8(mz100) | 0.8083 | 0.8247 | 51.02 | 50 | 2 | |
| 4-Bromofluorobenzene(mz174) | 0.4199 | 0.4278 | 50.95 | 50 | 2 | |
| Dibromofluoromethane(mz111) | 0.2185 | 0.2273 | 52.00 | 50 | 4 | |
| 1,2-Dichloroethane-d4(mz104) | 0.0332 | 0.0336 | 50.65 | 50 | 1 | |
| Toluene-d8 | 1.2021 | 1.2310 | 51.20 | 50 | 2 | |
| 4-Bromofluorobenzene | 0.4595 | 0.4639 | 50.49 | 50 | 1 | |

Average %Drift 7

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

0226

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d
Date : 20-FEB-2004 10:28
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;2;2;;;

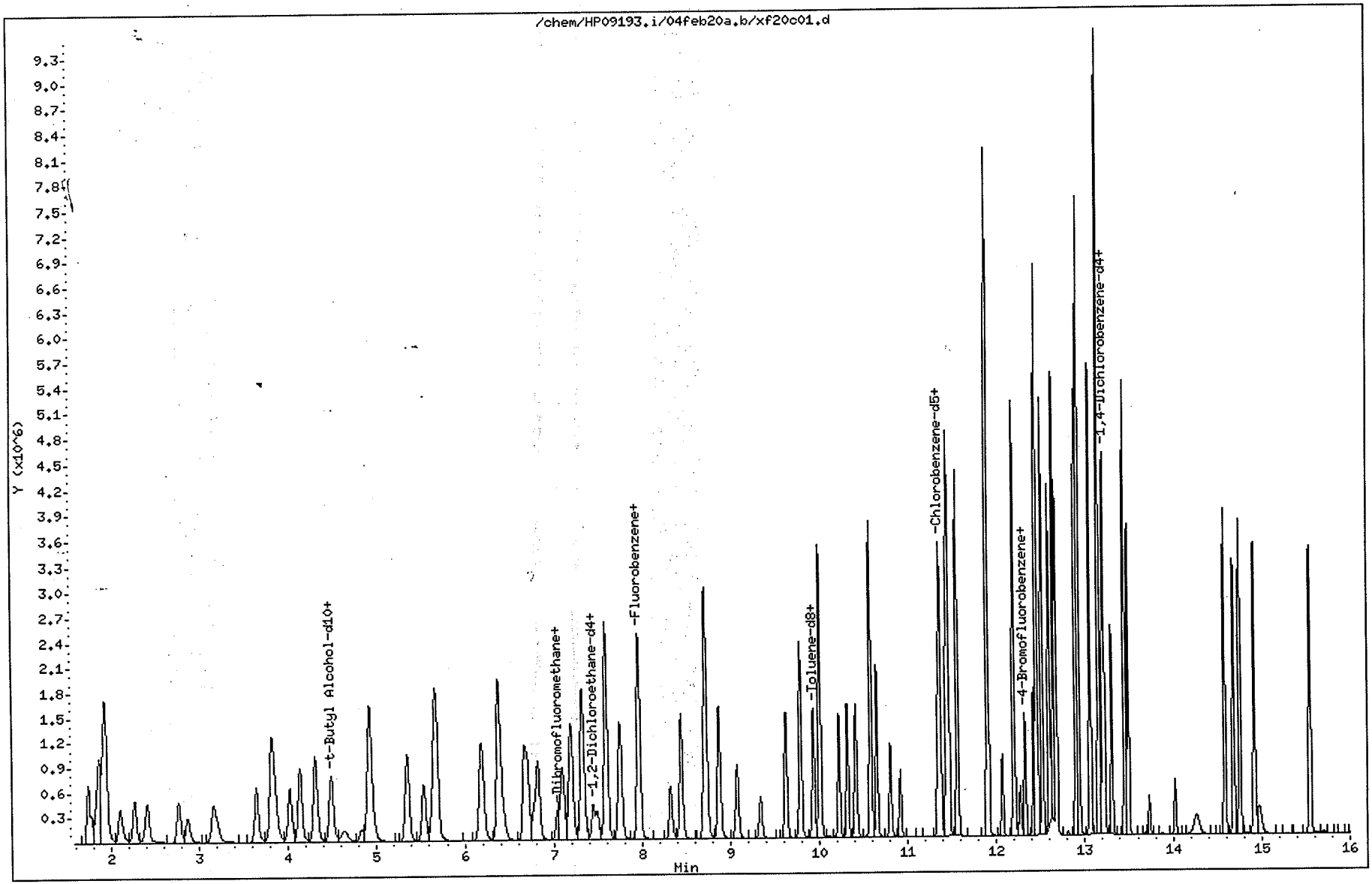
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
2/20/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 874249 | 108.192 |
| 4) Chloromethane | (1) | 2.265 | 50 | 896831 | 106.200 |
| 5) Vinyl Chloride | (1) | 2.406 | 62 | 864295 | 108.536 |
| 7) Bromomethane | (1) | 2.766 | 94 | 591235 | 108.379 |
| 8) Chloroethane | (1) | 2.869 | 64 | 500777 | 107.652 |
| 12) Trichlorofluoromethane | (1) | 3.167 | 101 | 983022 | 108.350 |
| 16) Acrolein | (1) | 3.642 | 56 | 932826 | 1162.537 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 574663 | 99.921 |
| 19) Freon 113 | (1) | 3.844 | 101 | 579466 | 100.717 |
| 20) Acetone | (1) | 3.841 | 58 | 96091 | 207.046 |
| 22) Methyl Iodide | (1) | 4.021 | 142 | 1102603 | 102.413 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 192614 | 560.055 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 2165829 | 102.909 |
| 26) Allyl Chloride | (1) | 4.306 | 41 | 1086454 | 107.610 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 359775 | 105.771 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 653249 | 94.133 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 135522 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.643 | 59 | 371749 | 494.420 |
| 32) Acrylonitrile | (1) | 4.829 | 53 | 217708 | 115.728 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 684768 | 101.301 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 1697764 | 100.818 |
| 36) n-Hexane | (1) | 5.349 | 57 | 937305 | 95.187 |
| 37) 1,1-Dichloroethane | (1) | 5.538 | 63 | 1130561 | 100.265 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.686 | 53 | 912633 | 103.498 |
| 39) di-Isopropyl Ether | (1) | 5.660 | 45 | 2065330 | 99.064 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 1891913 | 100.973 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 708972 | 95.404 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1393740 | 196.705 |
| 48) 2,2-Dichloropropane | (1) | 6.389 | 77 | 934495 | 104.010 |
| 46) 2-Butanone | (1) | 6.379 | 72 | 180804 | 277.411 |
| 49) Propionitrile | (1) | 6.440 | 54 | 343804 | 518.240 |
| 51) Methacrylonitrile | (1) | 6.671 | 67 | 561432 | 259.449 |
| 52) Bromochloromethane | (1) | 6.710 | 128 | 359081 | 111.190 |
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 149168 | 244.752 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.825 | 83 | 1070334 | 101.677 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 966782 | 103.448 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 1137306 | 97.992 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 840676 | 99.678 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 829051 | 103.842 |
| 65) Benzene | (1) | 7.589 | 78 | 2662024 | 99.062 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 273952 | 1421.366 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 737010 | 100.288 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 1774197 | 104.649 |
| 69) *Fluorobenzene | (1) | 7.958 | 96 | 1266290 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 192960 | 101.198 |
| 72) n-Butanol | (1) | 8.324 | 56 | 478443 | 2973.085 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 676168 | 99.469 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 1138833 | 103.427 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 655009 | 99.030 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 346750 | 101.890 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 78132 | 1356.178 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 432501 | 109.511 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 784984 | 105.399 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 389021 | 312.611 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 1042003 | 104.133 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 1817116 | 299.616 |
| 88) Toluene | (2) | 10.005 | 92 | 1723739 | 94.203 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 870364 | 101.625 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 871651 | 106.849 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 544105 | 95.274 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 799050 | 94.871 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 911307 | 95.885 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 1346207 | 289.931 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 640083 | 106.136 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 554521 | 98.250 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1000818 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 1916041 | 94.172 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 678283 | 100.129 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 3247489 | 95.704 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 1319949 | 94.916 |
| 92) Xylene (Total) | (2) | | 106 | 2575530 | 190.957 |
| 107) o-Xylene | (2) | 11.902 | 106 | 1255581 | 96.041 |
| 108) Styrene | (2) | 11.908 | 104 | 2139656 | 99.837 |
| 109) Bromoform | (2) | 12.069 | 173 | 460508 | 111.072 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 3311167 | 96.908 |
| 112) Cyclohexanone | (2) | 12.267 | 55 | 236582 | 1278.688 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 855987 | 91.377 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 751188 | 96.933 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 217339 | 92.480 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 523762 | 244.523 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 3817160 | 92.463 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 830899 | 92.478 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 2797643 | 93.417 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 846487 | 91.454 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 691631 | 93.932 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 583891 | 104.017 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 2809167 | 93.439 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 3614395 | 93.175 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 1629179 | 90.633 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 570512 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 3117582 | 93.217 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1671700 | 89.209 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1537425 | 90.628 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 2729710 | 92.104 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 139701 | 100.401 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 1188984 | 89.667 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 624598 | 92.077 |
| 140) Naphthalene | (3) | 14.758 | 128 | 2836898 | 93.167 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 1119131 | 89.656 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 1784810 | 93.196 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 282829 | 51.892 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 66886 | 48.964 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 87) $Toluene-d8 (mz100) | (2) | 9.935 | 100 | 825386 | 51.018 |
| 114) $4-Bromofluorobenzene (mz174) | (2) | 12.325 | 174 | 428197 | 50.951 |
| 56) $Dibromofluoromethane (mz111) | (1) | 7.040 | 111 | 287790 | 51.996 |
| 63) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.493 | 104 | 42567 | 50.654 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1231985 | 51.202 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 464324 | 50.486 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09193.i/04feb16a.b/xf16i06.d
/chem/HP09193.i/04feb16a.b/xf16i05.d
/chem/HP09193.i/04feb16a.b/xf16i04.d
/chem/HP09193.i/04feb16a.b/xf16i09.d
/chem/HP09193.i/04feb16a.b/xf16i07.d
/chem/HP09193.i/04feb16a.b/xf16i01.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP09193.i/04feb20a.b/xf20c01.d

RT Summary

| Internal Standard Name | File ID: xf20c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.498 | Yes |
| Fluorobenzene | 7.958 | 7.951 | Yes |
| Chlorobenzene-d5 | 11.347 | 11.343 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: xf20c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 135522 | 129614 | 64807 | 259228 | Yes |
| Fluorobenzene | 1266290 | 1393795 | 696898 | 2787590 | Yes |
| Chlorobenzene-d5 | 1000818 | 1045027 | 522514 | 2090054 | Yes |
| 1,4-Dichlorobenzene-d4 | 570512 | 582773 | 291386 | 1165546 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF150 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.4039 | 0.3598 | 133.62 | 150 | -11 | |
| # | Chloromethane | 0.4478 | 0.4197 | 140.61 | 150 | -6 | # |
| * | Vinyl Chloride | 0.4080 | 0.3716 | 136.63 | 150 | -9 | * |
| | Bromomethane | 0.2430 | 0.2146 | 132.46 | 150 | -12 | |
| | Chloroethane | 0.2203 | 0.2062 | 140.38 | 150 | -6 | |
| | Trichlorofluoromethane | 0.4544 | 0.3945 | 130.21 | 150 | -13 | |
| | Ethanol | 0.0023 | 0.0022 | 3651.72 | 3750 | -3 | |
| | Acrolein | 0.0982 | 0.0766 | 1169.69 | 1500 | -22 | |
| * | 1,1-Dichloroethene | 0.2640 | 0.2289 | 130.08 | 150 | -13 | * |
| | Freon 113 | 0.2465 | 0.2203 | 134.06 | 150 | -11 | |
| | Acetone | 0.0677 | 0.0395 | 175.15 | 300 | -42 | |
| | Methyl Iodide | 0.5057 | 0.4489 | 133.14 | 150 | -11 | |
| | 2-Propanol | 0.0371 | 0.0329 | 665.54 | 750 | -11 | |
| | Carbon Disulfide | 0.8919 | 0.8192 | 137.78 | 150 | -8 | |
| | Allyl Chloride | 0.4984 | 0.4838 | 145.60 | 150 | -3 | |
| | Methylene Chloride | 0.3062 | 0.2739 | 134.14 | 150 | -11 | |
| | t-Butyl Alcohol | 0.0630 | 0.0541 | 644.20 | 750 | -14 | |
| | Acrylonitrile | 0.1804 | 0.1442 | 119.88 | 150 | -20 | |
| | trans-1,2-Dichloroethene | 0.2957 | 0.2647 | 134.29 | 150 | -10 | |
| | Methyl Tertiary Butyl Ether | 0.9660 | 0.9122 | 141.65 | 150 | -6 | |
| | n-Hexane | 0.2810 | 0.2831 | 151.15 | 150 | 1 | |
| | 1,2-Dichloroethene (total) | 0.3081 | 0.2762 | 268.89 | 300 | -10 | |
| # | 1,1-Dichloroethane | 0.5318 | 0.4961 | 139.95 | 150 | -7 | # |
| | di-Isopropyl Ether | 1.0569 | 1.0106 | 143.43 | 150 | -4 | |
| | 2-Chloro-1,3-Butadiene | 0.4029 | 0.3921 | 146.00 | 150 | -3 | |
| | Ethyl t-Butyl Ether | 0.9772 | 0.9244 | 141.90 | 150 | -5 | |
| | cis-1,2-Dichloroethene | 0.3206 | 0.2876 | 134.59 | 150 | -10 | |
| | 2-Butanone | 0.0726 | 0.0509 | 210.28 | 300 | -30 | |
| | 2,2-Dichloropropane | 0.4456 | 0.4133 | 139.11 | 150 | -7 | |
| | Propionitrile | 0.0685 | 0.0569 | 622.79 | 750 | -17 | |
| | Methacrylonitrile | 0.1775 | 0.1527 | 322.59 | 375 | -14 | |
| | Bromochloromethane | 0.1671 | 0.1545 | 138.65 | 150 | -8 | |
| | Tetrahydrofuran | 0.0580 | 0.0452 | 233.70 | 300 | -22 | |
| * | Chloroform | 0.4979 | 0.4575 | 137.82 | 150 | -8 | * |
| | 1,1,1-Trichloroethane | 0.4460 | 0.4017 | 135.10 | 150 | -10 | |
| | Cyclohexane | 0.4324 | 0.4173 | 144.74 | 150 | -4 | |

0233

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF150 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3837 | 0.3607 | 141.04 | 150 | -6 | |
| | Carbon Tetrachloride | 0.3963 | 0.3603 | 136.38 | 150 | -9 | |
| | Isobutyl Alcohol | 0.0206 | 0.0178 | 1621.09 | 1875 | -14 | |
| | Benzene | 1.1962 | 1.1205 | 140.50 | 150 | -6 | |
| | 1,2-Dichloroethane | 0.4167 | 0.3771 | 135.76 | 150 | -9 | |
| | 1,2-Dichloroethane (mz 98) | 0.0388 | 0.0360 | 139.18 | 150 | -7 | |
| | t-Amyl Methyl Ether | 0.9677 | 0.9065 | 140.51 | 150 | -6 | |
| | n-Heptane | 0.0457 | 0.0471 | 154.26 | 150 | 3 | |
| | n-Butanol | 0.0171 | 0.0157 | 3432.50 | 3750 | -8 | |
| | Trichloroethene | 0.2993 | 0.2754 | 138.02 | 150 | -8 | |
| * | 1,2-Dichloropropane | 0.3275 | 0.3121 | 142.95 | 150 | -5 | * |
| | Methyl Methacrylate | 0.3037 | 0.2695 | 133.10 | 150 | -11 | |
| | Dibromomethane | 0.2050 | 0.1878 | 137.38 | 150 | -8 | |
| | 1,4-Dioxane | 0.0048 | 0.0046 | 1786.91 | 1875 | -5 | |
| | Bromodichloromethane | 0.3765 | 0.3516 | 140.08 | 150 | -7 | |
| | 2-Nitropropane | 0.1345 | 0.1015 | 226.30 | 300 | -25 | |
| | 2-Chloroethyl Vinyl Ether | 0.2403 | 0.2026 | 126.48 | 150 | -16 | |
| | cis-1,3-Dichloropropene | 0.5401 | 0.5121 | 142.21 | 150 | -5 | |
| | 4-Methyl-2-Pentanone | 0.5394 | 0.4400 | 244.71 | 300 | -18 | |
| * | Toluene | 0.9747 | 0.9127 | 140.46 | 150 | -6 | * |
| | trans-1,3-Dichloropropene | 0.6439 | 0.6031 | 140.49 | 150 | -6 | |
| | Ethyl Methacrylate | 0.6436 | 0.6185 | 144.15 | 150 | -4 | |
| | 1,1,2-Trichloroethane | 0.3746 | 0.3425 | 137.16 | 150 | -9 | |
| | Tetrachloroethene | 0.4324 | 0.3841 | 133.25 | 150 | -11 | |
| | 1,3-Dichloropropane | 0.6634 | 0.6171 | 139.53 | 150 | -7 | |
| | 2-Hexanone | 0.5492 | 0.4196 | 229.18 | 300 | -24 | |
| | Dibromochloromethane | 0.4475 | 0.4163 | 139.54 | 150 | -7 | |
| | 1,2-Dibromoethane | 0.4156 | 0.3735 | 134.79 | 150 | -10 | |
| # | Chlorobenzene | 1.0969 | 1.0139 | 138.64 | 150 | -8 | # |
| | 1,1,1,2-Tetrachloroethane | 0.4052 | 0.3742 | 138.54 | 150 | -8 | |
| * | Ethylbenzene | 1.7226 | 1.6609 | 144.63 | 150 | -4 | * |
| | m+p-Xylene | 0.6848 | 0.6477 | 283.74 | 300 | -5 | |
| | Xylene (Total) | 0.6813 | 0.6411 | 423.39 | 450 | -6 | |
| | o-Xylene | 0.6744 | 0.6279 | 139.65 | 150 | -7 | |
| | Styrene | 1.1625 | 1.1264 | 145.35 | 150 | -3 | |
| # | Bromoform | 0.3951 | 0.3487 | 132.38 | 150 | -12 | # |

0234

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF150 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Isopropylbenzene | 1.5666 | 1.4960 | 143.25 | 150 | -5 | |
| | Cyclohexanone | 0.0222 | 0.0213 | 1802.82 | 1875 | -4 | |
| # | 1,1,2,2-Tetrachloroethane | 1.0836 | 0.9811 | 135.81 | 150 | -9 | # |
| | trans-1,4-Dichloro-2-Butene | 0.3514 | 0.3306 | 352.87 | 375 | -6 | |
| | Bromobenzene | 0.9052 | 0.8338 | 138.17 | 150 | -8 | |
| | 1,2,3-Trichloropropane | 0.3293 | 0.2828 | 128.78 | 150 | -14 | |
| | n-Propylbenzene | 3.0952 | 3.1036 | 150.41 | 150 | 0 | |
| | 2-Chlorotoluene | 0.7355 | 0.6947 | 141.67 | 150 | -6 | |
| | 1,3,5-Trimethylbenzene | 2.2431 | 2.2172 | 148.27 | 150 | -1 | |
| | 4-Chlorotoluene | 0.7666 | 0.7261 | 142.08 | 150 | -5 | |
| | tert-Butylbenzene | 0.5090 | 0.4966 | 146.34 | 150 | -2 | |
| | Pentachloroethane | 0.5662 | 0.5262 | 139.41 | 150 | -7 | |
| | 1,2,4-Trimethylbenzene | 2.3472 | 2.3223 | 148.41 | 150 | -1 | |
| | sec-Butylbenzene | 2.4556 | 2.4927 | 152.27 | 150 | 2 | |
| | p-Isopropyltoluene | 2.2225 | 2.2448 | 151.50 | 150 | 1 | |
| | 1,3-Dichlorobenzene | 1.4795 | 1.3815 | 140.06 | 150 | -7 | |
| | 1,4-Dichlorobenzene | 1.5693 | 1.4548 | 139.06 | 150 | -7 | |
| | n-Butylbenzene | 1.7839 | 1.8544 | 155.93 | 150 | 4 | |
| | 1,2-Dichlorobenzene | 1.4924 | 1.3776 | 138.46 | 150 | -8 | |
| | 1,2-Dibromo-3-Chloropropane | 0.2368 | 0.2024 | 128.23 | 150 | -15 | |
| | 1,2,4-Trichlorobenzene | 0.9326 | 0.8828 | 141.99 | 150 | -5 | |
| | Hexachlorobutadiene | 0.4489 | 0.4156 | 158.22 | 150 | 5 | |
| | Naphthalene | 2.9630 | 2.6839 | 135.87 | 150 | -9 | |
| | 1,2,3-Trichlorobenzene | 0.8924 | 0.8231 | 138.36 | 150 | -8 | |
| | Dibromofluoromethane | 0.2575 | 0.2451 | 47.59 | 50 | -5 | |
| | 1,2-Dichloroethane-d4 | 0.0680 | 0.0623 | 45.81 | 50 | -8 | |
| | Dibromofluoromethane(mz111) | 0.2630 | 0.2490 | 47.32 | 50 | -5 | |
| | 1,2-Dichloroethane-d4(mz104) | 0.0434 | 0.0397 | 45.72 | 50 | -9 | |
| | Toluene-d8(mz100) | 0.8641 | 0.8580 | 49.65 | 50 | -1 | |
| | 4-Bromofluorobenzene(mz174) | 0.4671 | 0.4578 | 49.01 | 50 | -2 | |
| | Toluene-d8 | 1.3017 | 1.2906 | 49.57 | 50 | -1 | |
| | 4-Bromofluorobenzene | 0.4739 | 0.4911 | 51.82 | 50 | 4 | |

Average %Drift 9

0235

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

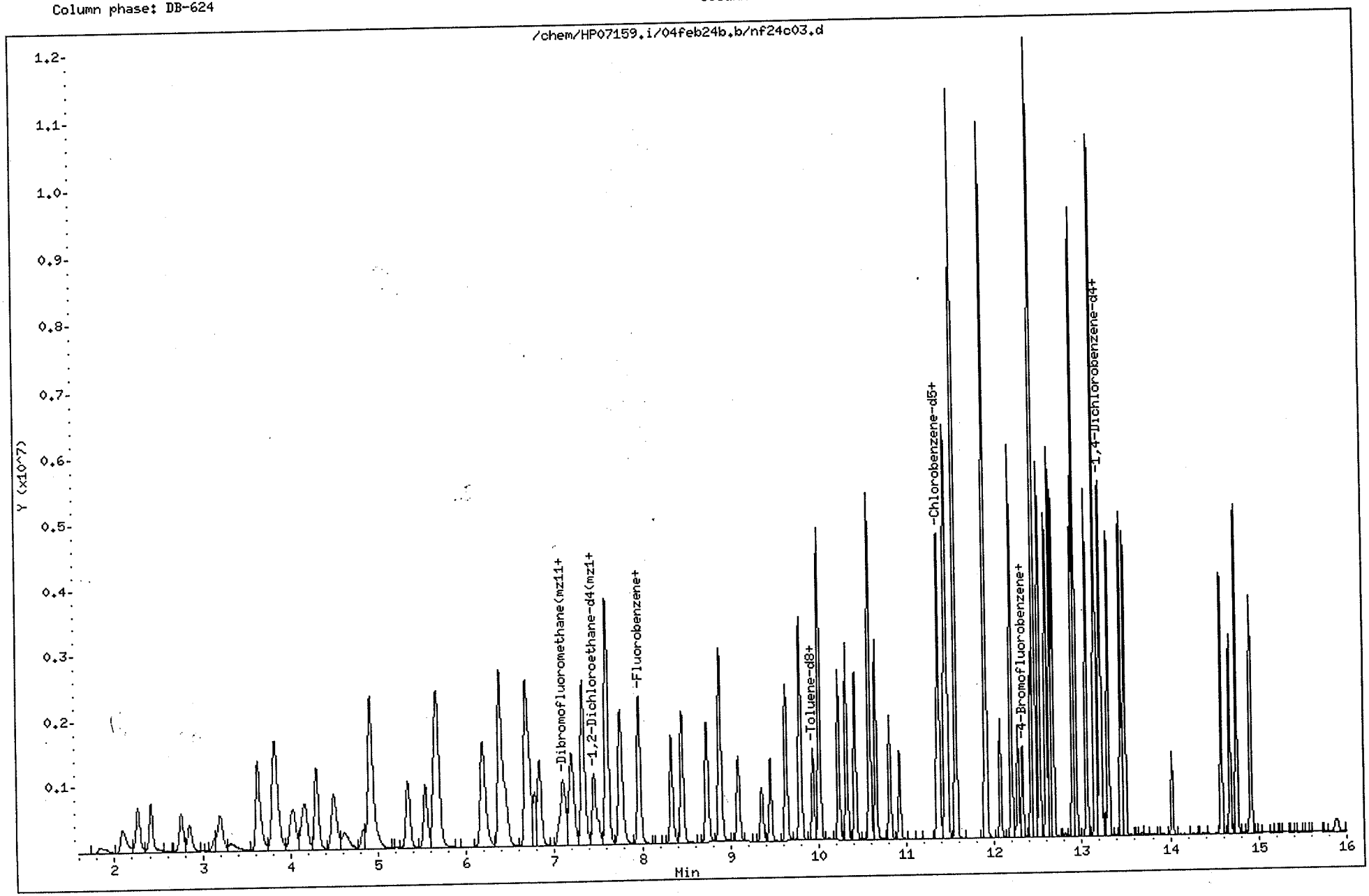
Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d
Date : 24-FEB-2004 19:25
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;2;;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533
2/24/04





Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 1119611 | 133.624 |
| 3) Chloromethane | (1) | 2.271 | 50 | 1305923 | 140.608 |
| 4) Vinyl Chloride | (1) | 2.419 | 62 | 1156224 | 136.629 |
| 5) Bromomethane | (1) | 2.762 | 94 | 667770 | 132.462 |
| 6) Chloroethane | (1) | 2.852 | 64 | 641626 | 140.381 |
| 7) Trichlorofluoromethane | (1) | 3.205 | 101 | 1227414 | 130.210 |
| 11) Ethanol | (1) | 3.333 | 46 | 172759 | 3651.718 |
| 13) Acrolein | (1) | 3.635 | 56 | 2382780 | 1169.693 |
| 16) 1,1-Dichloroethene | (1) | 3.818 | 96 | 712288 | 130.081 |
| 17) Freon 113 | (1) | 3.840 | 101 | 685521 | 134.058 |
| 18) Acetone | (1) | 3.827 | 58 | 246046 | 175.150 |
| 19) Methyl Iodide | (1) | 4.036 | 142 | 1396595 | 133.137 |
| 20) 2-Propanol | (1) | 3.997 | 45 | 511477 | 665.543 |
| 22) Carbon Disulfide | (1) | 4.168 | 76 | 2548978 | 137.782 |
| 23) Allyl Chloride | (1) | 4.299 | 41 | 1505257 | 145.596 |
| 24) Methylene Chloride | (1) | 4.495 | 84 | 852140 | 134.142 |
| 25) t-Butyl Alcohol | (1) | 4.623 | 59 | 841671 | 644.196 |
| 27) Acrylonitrile | (1) | 4.825 | 53 | 448700 | 119.879 |
| 28) trans-1,2-Dichloroethene | (1) | 4.915 | 96 | 823709 | 134.292 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 2838191 | 141.647 |
| 32) n-Hexane | (1) | 5.339 | 57 | 880909 | 151.150 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1718701 | 268.885 |
| 35) 1,1-Dichloroethane | (1) | 5.541 | 63 | 1543699 | 139.946 |
| 36) di-Isopropyl Ether | (1) | 5.653 | 45 | 3144586 | 143.428 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.682 | 53 | 1220096 | 145.999 |
| 38) Ethyl t-Butyl Ether | (1) | 6.192 | 59 | 2876164 | 141.896 |
| 39) cis-1,2-Dichloroethene | (1) | 6.385 | 96 | 894992 | 134.594 |
| 40) 2-Butanone | (1) | 6.382 | 72 | 316814 | 210.276 |
| 41) 2,2-Dichloropropane | (1) | 6.407 | 77 | 1285933 | 139.108 |
| 42) Propionitrile | (1) | 6.452 | 54 | 884796 | 622.785 |
| 45) Methacrylonitrile | (1) | 6.680 | 67 | 1187941 | 322.590 |
| 46) Bromochloromethane | (1) | 6.722 | 128 | 480663 | 138.646 |
| 47) Tetrahydrofuran | (1) | 6.776 | 71 | 281267 | 233.702 |
| 48) Chloroform | (1) | 6.834 | 83 | 1423368 | 137.824 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.104 | 97 | 1249999 | 135.102 |
| 52) Cyclohexane | (1) | 7.200 | 56 | 1298325 | 144.741 |
| 54) 1,1-Dichloropropene | (1) | 7.325 | 75 | 1122432 | 141.042 |
| 56) Carbon Tetrachloride | (1) | 7.341 | 117 | 1121008 | 136.378 |
| 57) Isobutyl Alcohol | (1) | 7.457 | 41 | 692139 | 1621.092 |
| 60) Benzene | (1) | 7.598 | 78 | 3486249 | 140.505 |
| 61) 1,2-Dichloroethane | (1) | 7.611 | 62 | 1173370 | 135.757 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.614 | 98 | 111891 | 139.178 |
| 64) t-Amyl Methyl Ether | (1) | 7.758 | 73 | 2820500 | 140.515 |
| 66) n-Heptane | (1) | 7.967 | 100 | 146419 | 154.263 |
| 65) *Fluorobenzene | (1) | 7.970 | 96 | 1037153 | 50.000 |
| 68) n-Butanol | (1) | 8.336 | 56 | 1221494 | 3432.496 |
| 69) Trichloroethene | (1) | 8.458 | 95 | 856911 | 138.018 |
| 70) 1,2-Dichloropropane | (1) | 8.737 | 63 | 971124 | 142.949 |
| 71) Methyl Methacrylate | (1) | 8.884 | 69 | 838525 | 133.099 |
| 72) Dibromomethane | (1) | 8.891 | 93 | 584181 | 137.375 |
| 73) 1,4-Dioxane | (1) | 8.904 | 88 | 179232 | 1786.914 |
| 74) Bromodichloromethane | (1) | 9.093 | 83 | 1093837 | 140.077 |
| 76) 2-Nitropropane | (1) | 9.356 | 41 | 631339 | 226.297 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.459 | 63 | 630341 | 126.482 |
| 78) cis-1,3-Dichloropropene | (1) | 9.635 | 75 | 1593337 | 142.211 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.799 | 43 | 2737988 | 244.707 |
| 82) Toluene | (2) | 10.014 | 92 | 2230352 | 140.456 |
| 83) trans-1,3-Dichloropropene | (2) | 10.232 | 75 | 1473830 | 140.488 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 1511368 | 144.145 |
| 85) 1,1,2-Trichloroethane | (2) | 10.425 | 97 | 837070 | 137.163 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 938626 | 133.247 |
| 88) 1,3-Dichloropropane | (2) | 10.592 | 76 | 1508022 | 139.532 |
| 90) 2-Hexanone | (2) | 10.659 | 43 | 2050725 | 229.183 |
| 91) Dibromochloromethane | (2) | 10.816 | 129 | 1017362 | 139.537 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 912738 | 134.794 |
| 94) *Chlorobenzene-d5 | (2) | 11.349 | 117 | 814583 | 50.000 |
| 95) Chlorobenzene | (2) | 11.378 | 112 | 2477618 | 138.645 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.445 | 131 | 914503 | 138.536 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.468 | 91 | 4058863 | 144.631 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 3165556 | 283.741 |
| 93) Xylene (Total) | (2) | | 106 | 4699946 | 423.392 |
| 100) o-Xylene | (2) | 11.904 | 106 | 1534390 | 139.651 |
| 101) Styrene | (2) | 11.914 | 104 | 2752705 | 145.347 |
| 102) Bromoform | (2) | 12.074 | 173 | 852178 | 132.381 |
| 105) Isopropylbenzene | (2) | 12.199 | 105 | 3655887 | 143.245 |
| 106) Cyclohexanone | (2) | 12.273 | 55 | 651596 | 1802.823 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.424 | 83 | 1305709 | 135.808 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.462 | 53 | 1100018 | 352.869 |
| 112) Bromobenzene | (3) | 12.456 | 156 | 1109661 | 138.171 |
| 113) 1,2,3-Trichloropropane | (3) | 12.462 | 110 | 376325 | 128.784 |
| 114) n-Propylbenzene | (3) | 12.520 | 91 | 4130369 | 150.408 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 924486 | 141.674 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.645 | 105 | 2950778 | 148.269 |
| 117) 4-Chlorotoluene | (3) | 12.677 | 126 | 966385 | 142.084 |
| 118) tert-Butylbenzene | (3) | 12.899 | 134 | 660860 | 146.343 |
| 119) Pentachloroethane | (3) | 12.924 | 167 | 700310 | 139.409 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.931 | 105 | 3090605 | 148.407 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 3317314 | 152.265 |
| 122) p-Isopropyltoluene | (3) | 13.155 | 119 | 2987396 | 151.501 |
| 123) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 1838572 | 140.063 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 443611 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 1936154 | 139.063 |
| 126) n-Butylbenzene | (3) | 13.447 | 91 | 2467916 | 155.930 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 1833402 | 138.463 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 269427 | 128.226 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.580 | 180 | 1174884 | 141.989 |
| 133) Hexachlorobutadiene | (3) | 14.680 | 225 | 553038 | 158.222 |
| 134) Naphthalene | (3) | 14.753 | 128 | 3571774 | 135.870 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.914 | 180 | 1095427 | 138.356 |
| 50) $Dibromofluoromethane | (1) | 7.052 | 113 | 254170 | 47.592 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 64605 | 45.815 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.052 | 111 | 258217 | 47.324 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.505 | 104 | 41164 | 45.719 |
| 81)$Toluene-d8(mz100) | (2) | 9.943 | 100 | 698906 | 49.647 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.328 | 174 | 372918 | 49.009 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1051308 | 49.573 |
| 107)$4-Bromofluorobenzene | (2) | 12.324 | 95 | 400074 | 51.822 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP07159.i/04feb02b.b/nf02i15.d
/chem/HP07159.i/04feb02b.b/nf02i14.d
/chem/HP07159.i/04feb02b.b/nf02i13.d
/chem/HP07159.i/04feb02b.b/nf02i12.d
/chem/HP07159.i/04feb02b.b/nf02i11.d
/chem/HP07159.i/04feb02b.b/nf02i10.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP07159.i/04feb24b.b/nf24c03.d

RT Summary

| Internal Standard Name | File ID: nf24c03.d | ICAL RT | In Spec |
|---|---|---|---|
| Fluorobenzene | 7.970 | 7.975 | Yes |
| Chlorobenzene-d5 | 11.349 | 11.355 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.200 | 13.205 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: nf24c03.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| Fluorobenzene | 1037153 | 1041751 | 520876 | 2083502 | Yes |
| Chlorobenzene-d5 | 814583 | 812951 | 406476 | 1625902 | Yes |
| 1,4-Dichlorobenzene-d4 | 443611 | 456044 | 228022 | 912088 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

# Raw QC Data

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

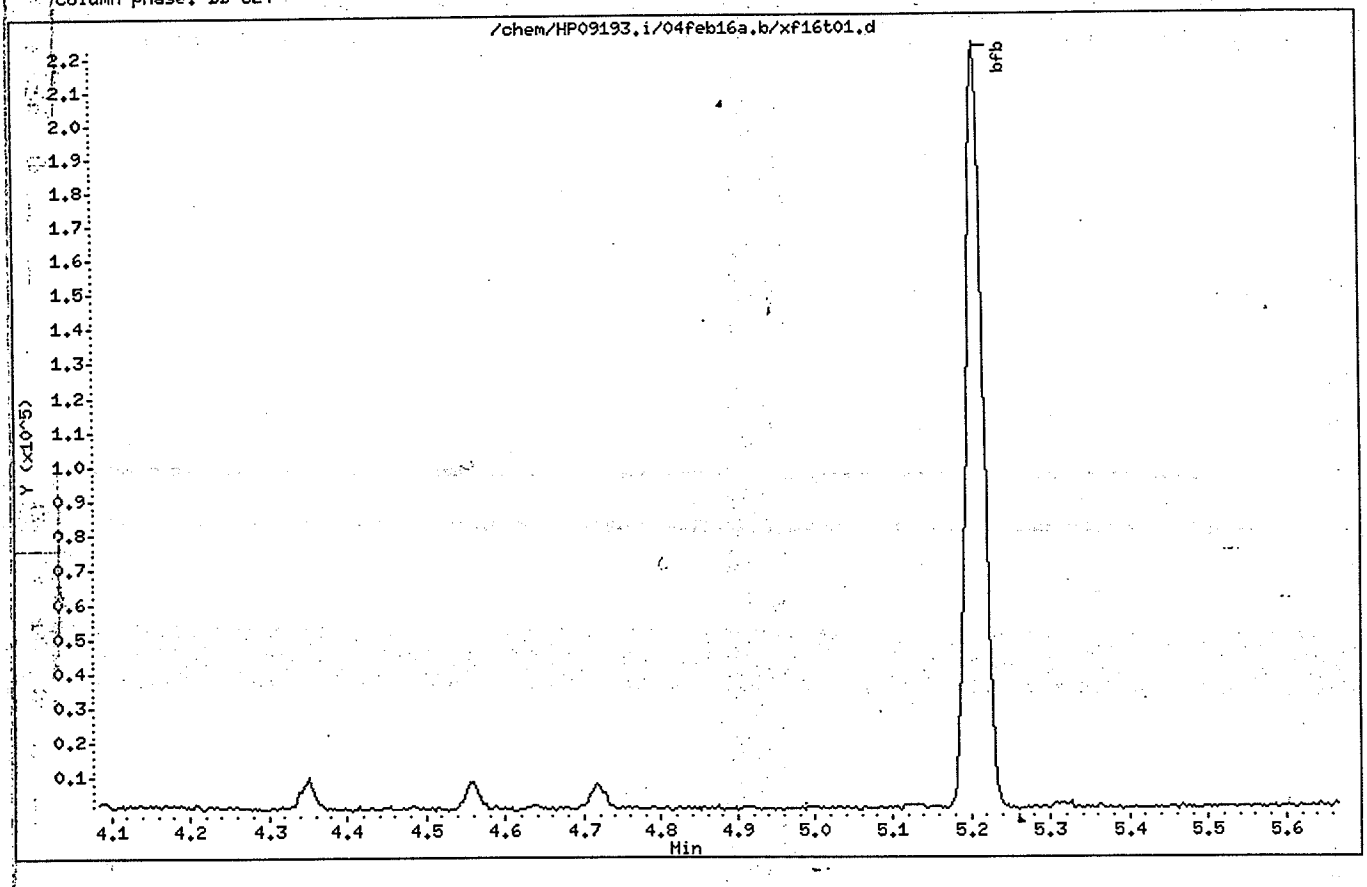
Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25




LCM1518
2/16/04

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

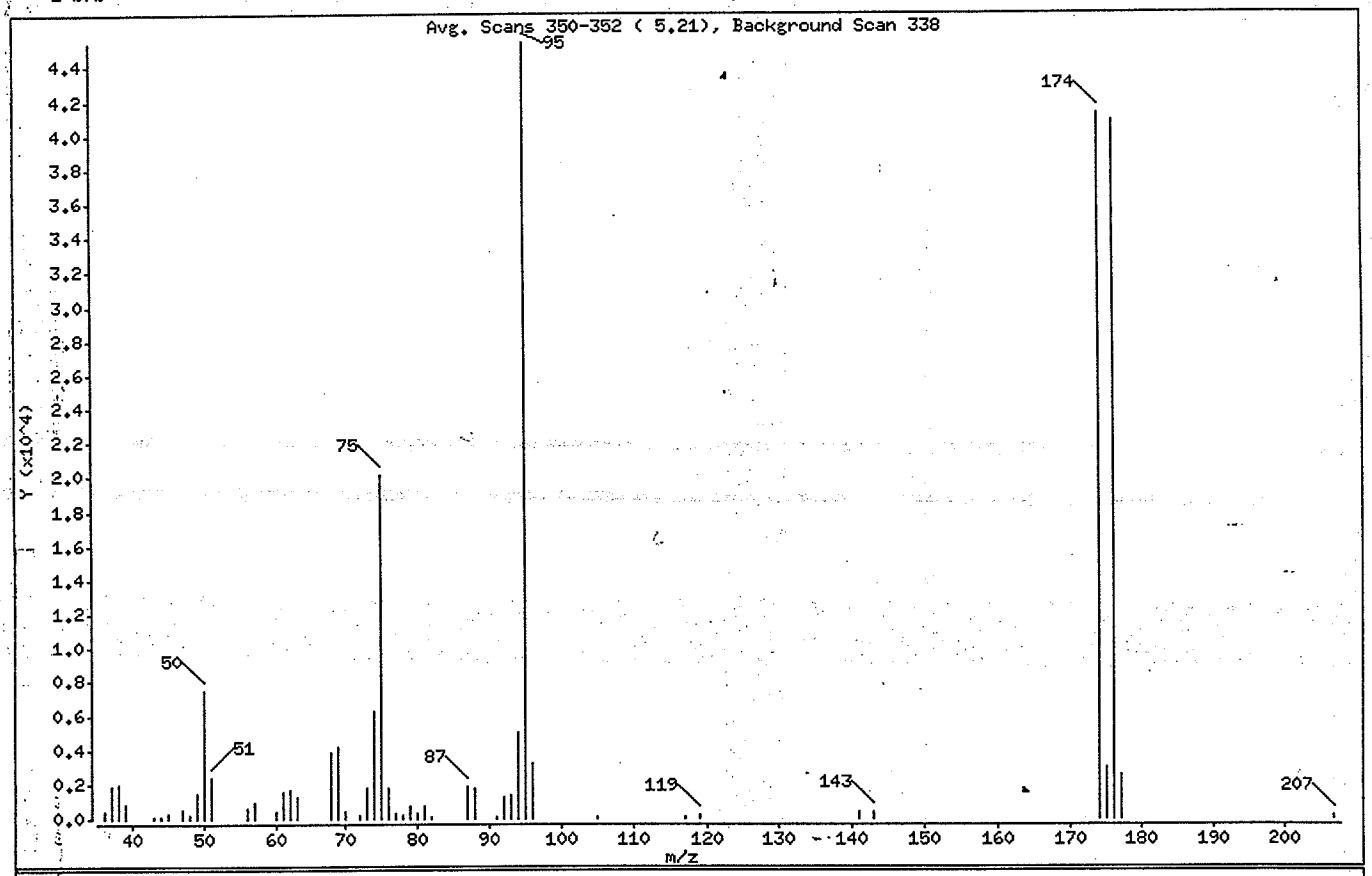
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 16.59 |
| 75 | 30.00 - 60.00% of mass 95 | 44.43 |
| 96 | 5.00 - 9.00% of mass 95 | 7.22 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 90.79 |
| 175 | 5.00 - 9.00% of mass 174 | 6.67 ( 7.35) |
| 176 | 95.00 - 101.00% of mass 174 | 89.94 ( 99.07) |
| 177 | 5.00 - 9.00% of mass 176 | 5.75 ( 6.40) |

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

Data File: xf16t01.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 338

Location of Maximum: 95.00

Number of points: 50

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 420 | 57.00 | 896 | 77.00 | 348 | 96.00 | 3277 |
| 37.00 | 1882 | 60.00 | 435 | 78.00 | 209 | 105.00 | 108 |
| 38.00 | 1950 | 61.00 | 1605 | 79.00 | 679 | 117.00 | 89 |
| 39.00 | 817 | 62.00 | 1641 | 80.00 | 358 | 119.00 | 193 |
| 43.00 | 107 | 63.00 | 1245 | 81.00 | 770 | 141.00 | 367 |
| 44.00 | 151 | 68.00 | 3842 | 82.00 | 88 | 143.00 | 384 |
| 45.00 | 325 | 69.00 | 4125 | 87.00 | 1888 | 174.00 | 41224 |
| 47.00 | 538 | 70.00 | 395 | 88.00 | 1746 | 175.00 | 3030 |
| 48.00 | 189 | 72.00 | 205 | 91.00 | 104 | 176.00 | 40840 |
| 49.00 | 1464 | 73.00 | 1755 | 92.00 | 1226 | 177.00 | 2612 |
| 50.00 | 7531 | 74.00 | 6230 | 93.00 | 1407 | 207.00 | 160 |
| 51.00 | 2391 | 75.00 | 20168 | 94.00 | 5006 | | |
| 56.00 | 583 | 76.00 | 1771 | 95.00 | 45408 | | |

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

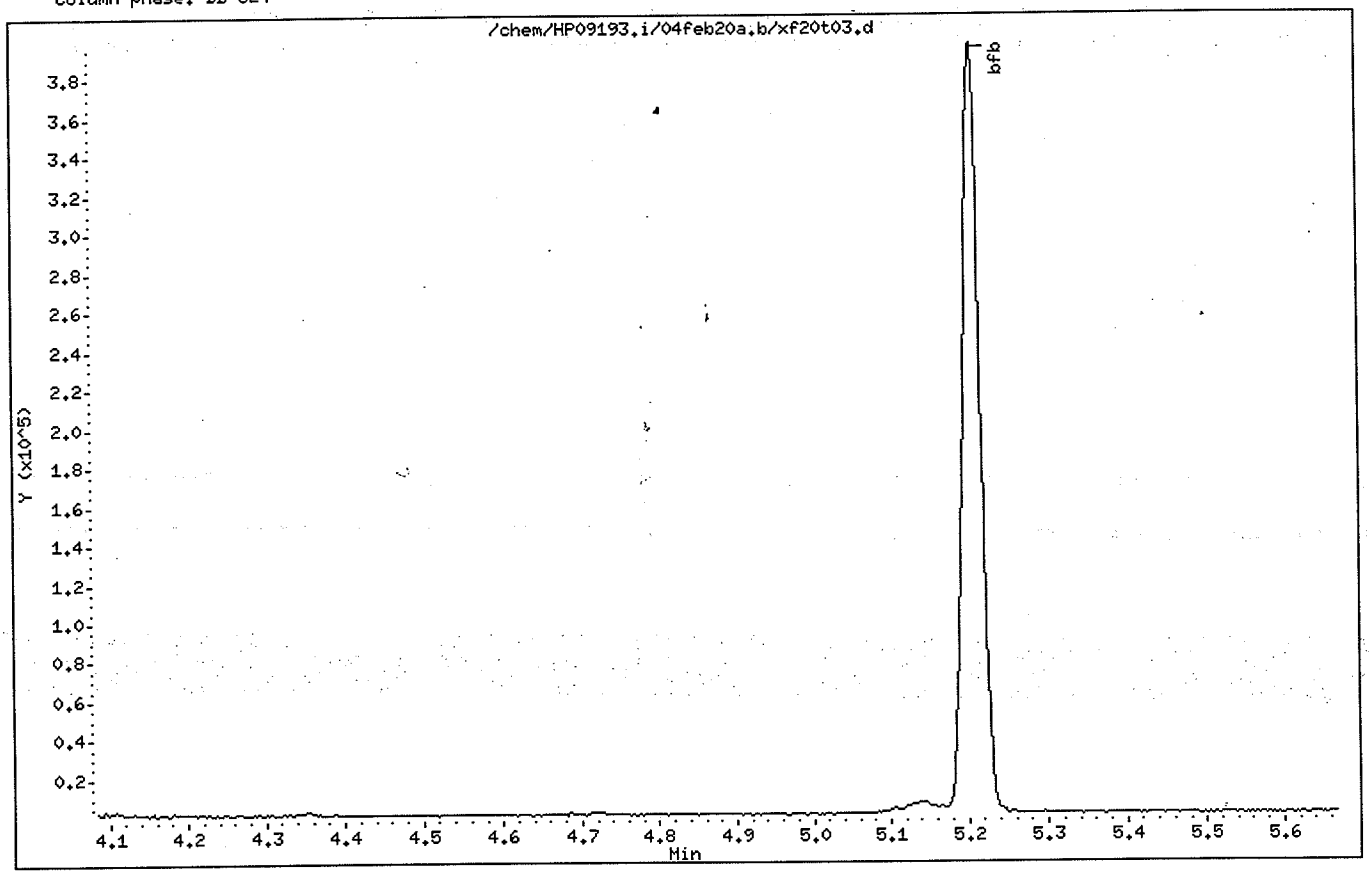
Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25




LCM1518
2/20/04

8246

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

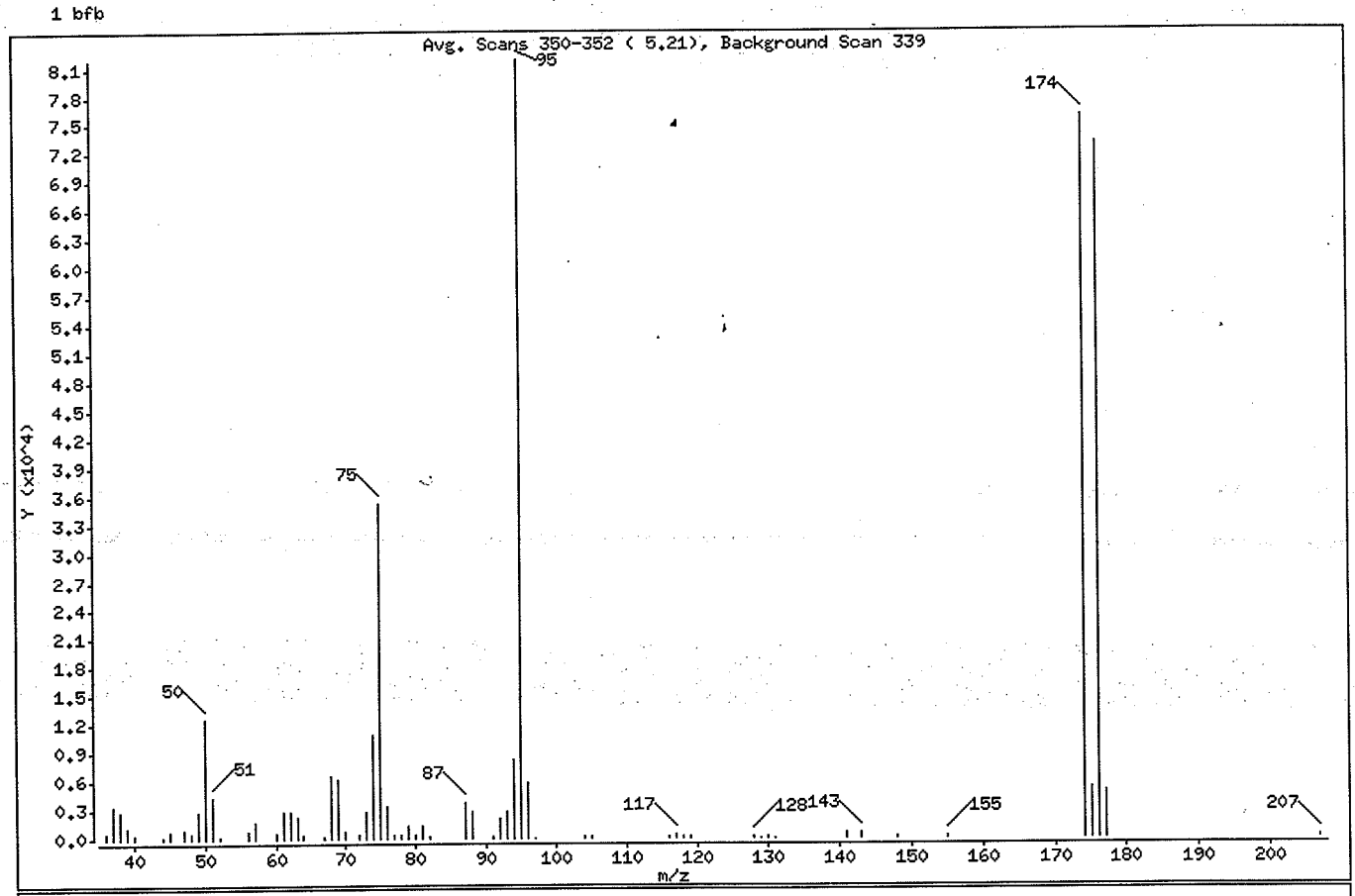
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.30 |
| 75 | 30.00 - 60.00% of mass 95 | 43.03 |
| 96 | 5.00 - 9.00% of mass 95 | 7.22 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 92.68 |
| 175 | 5.00 - 9.00% of mass 174 | 6.55 ( 7.06) |
| 176 | 95.00 - 101.00% of mass 174 | 89.23 ( 96.28) |
| 177 | 5.00 - 9.00% of mass 176 | 5.91 ( 6.62) |

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

Data File: xf20t03.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 339

Location of Maximum: 95.00

Number of points: 63

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 597 | 61.00 | 2823 | 80.00 | 378 | 118.00 | 172 |
| 37.00 | 3306 | 62.00 | 2911 | 81.00 | 1301 | 119.00 | 199 |
| 38.00 | 2732 | 63.00 | 2274 | 82.00 | 243 | 128.00 | 101 |
| 39.00 | 1201 | 64.00 | 401 | 87.00 | 3711 | 129.00 | 83 |
| 40.00 | 296 | 67.00 | 123 | 88.00 | 2873 | 130.00 | 98 |
| 44.00 | 266 | 68.00 | 6663 | 91.00 | 228 | 131.00 | 71 |
| 45.00 | 722 | 69.00 | 6254 | 92.00 | 2157 | 141.00 | 577 |
| 47.00 | 956 | 70.00 | 717 | 93.00 | 2860 | 143.00 | 617 |
| 48.00 | 478 | 72.00 | 311 | 94.00 | 8328 | 148.00 | 101 |
| 49.00 | 2733 | 73.00 | 2914 | 95.00 | 81864 | 155.00 | 105 |
| 50.00 | 12525 | 74.00 | 10988 | 96.00 | 5910 | 174.00 | 75872 |
| 51.00 | 4251 | 75.00 | 35224 | 97.00 | 88 | 175.00 | 5359 |
| 52.00 | 96 | 76.00 | 3366 | 104.00 | 221 | 176.00 | 73048 |
| 56.00 | 764 | 77.00 | 432 | 105.00 | 183 | 177.00 | 4838 |
| 57.00 | 1743 | 78.00 | 371 | 116.00 | 109 | 207.00 | 109 |
| 60.00 | 605 | 79.00 | 1331 | 117.00 | 446 | | |

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

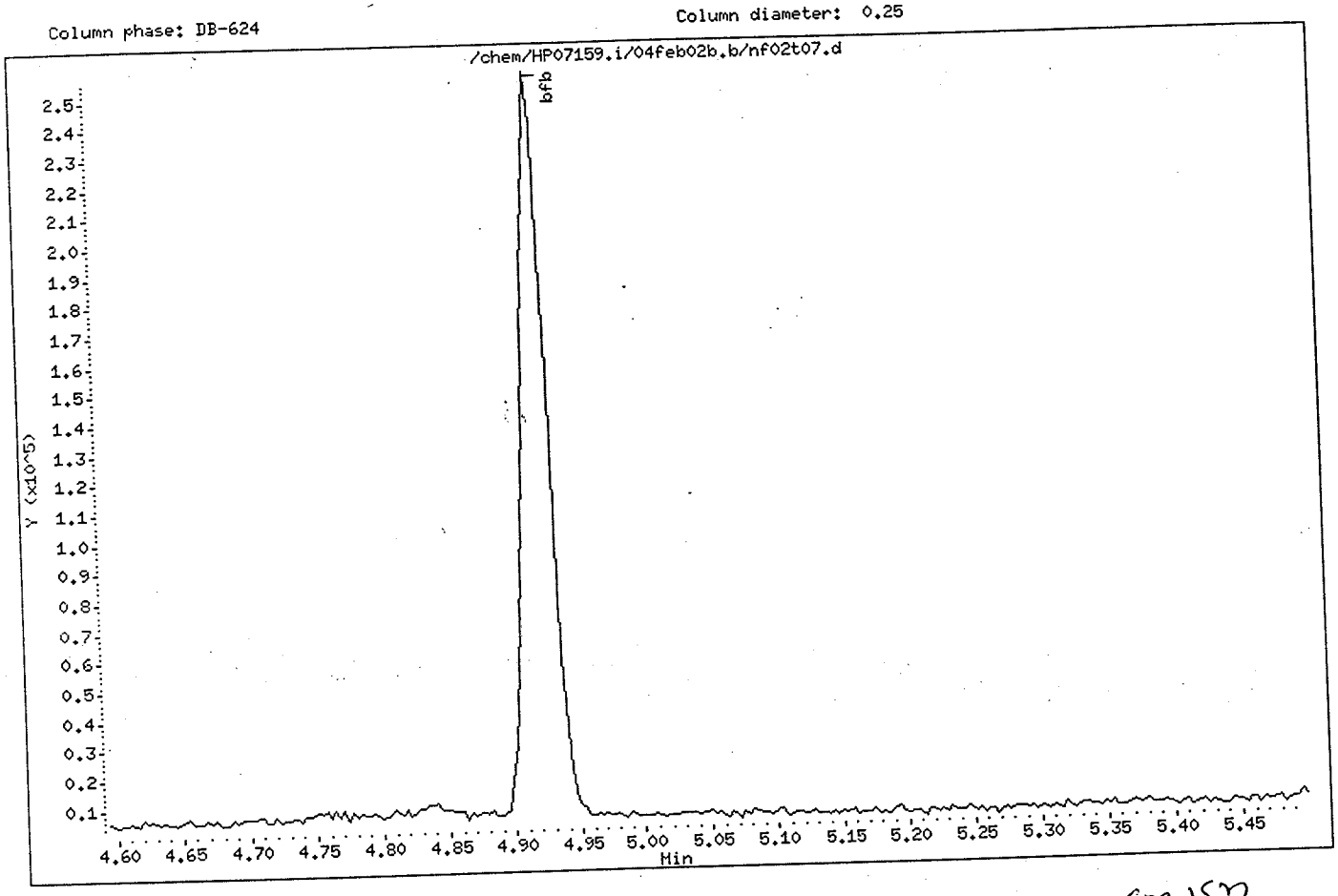
Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column phase: DB-624

Column diameter: 0.25




SJR 1SM
2/2/04

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

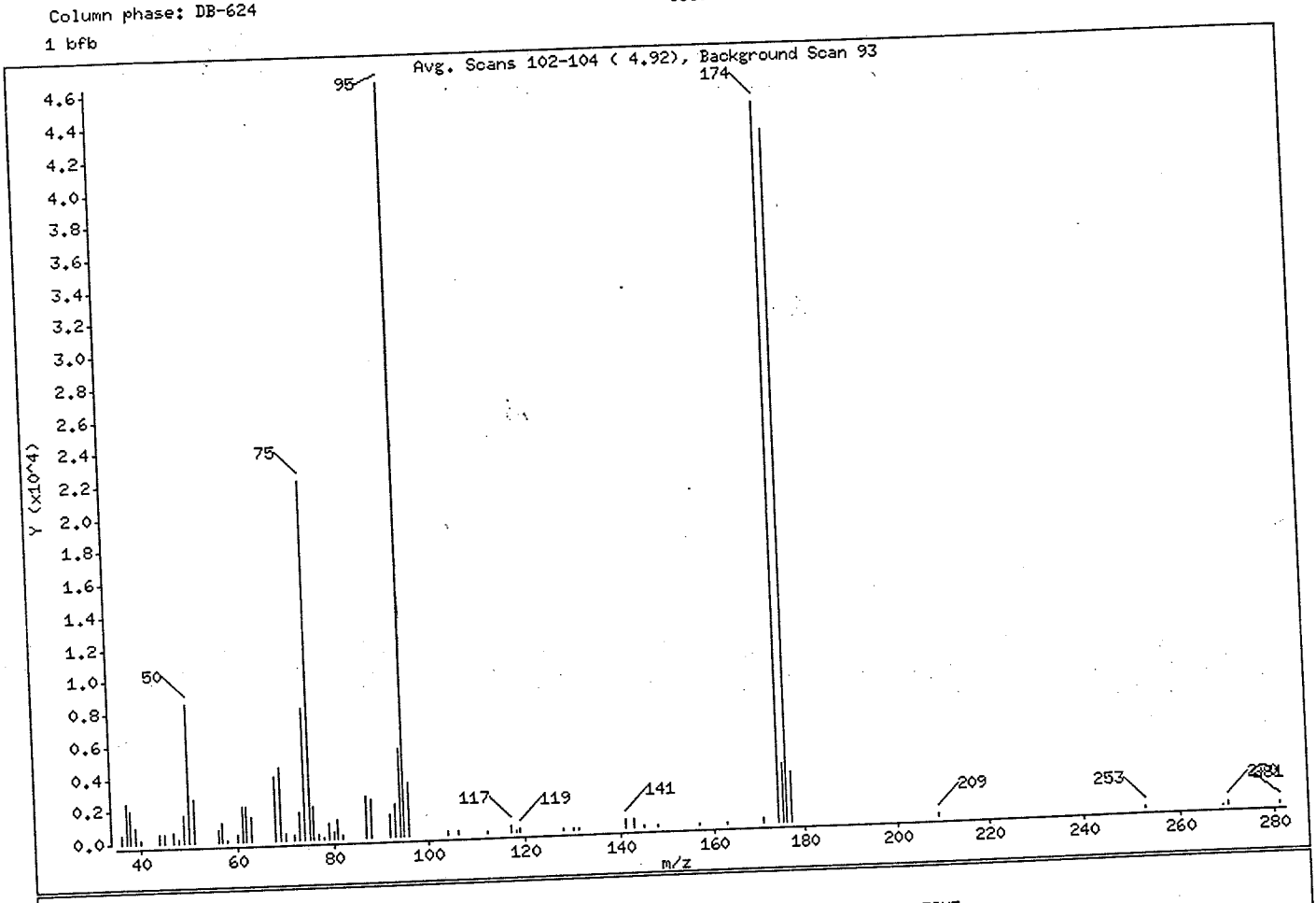
Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column diameter: 0.25

Column phase: DB-624

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.39 |
| 75 | 30.00 - 60.00% of mass 95 | 47.64 |
| 96 | 5.00 - 9.00% of mass 95 | 7.01 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 95.78 |
| 175 | 5.00 - 9.00% of mass 174 | 7.80 ( 8.15) |
| 176 | 95.00 - 101.00% of mass 174 | 92.21 ( 96.27) |
| 177 | 5.00 - 9.00% of mass 176 | 6.67 ( 7.24) |

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column phase: DB-624

Column diameter: 0.25

Data File: nf02t07.d

Spectrum: Avg. Scans 102-104 ( 4.92), Background Scan 93

Location of Maximum: 95.00

Number of points: 65

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 482 | 62.00 | 2104 | 88.00 | 2358 | 145.00 | 84 |
| 37.00 | 2459 | 63.00 | 1500 | 92.00 | 1383 | 148.00 | 97 |
| 38.00 | 2006 | 68.00 | 4003 | 93.00 | 1982 | 157.00 | 84 |
| 39.00 | 945 | 69.00 | 4434 | 94.00 | 5449 | 163.00 | 85 |
| 40.00 | 187 | 70.00 | 424 | 95.00 | 46464 | 171.00 | 282 |
| 44.00 | 532 | 72.00 | 349 | 96.00 | 3259 | 174.00 | 44504 |
| 45.00 | 508 | 73.00 | 1721 | 104.00 | 200 | 175.00 | 3626 |
| 47.00 | 675 | 74.00 | 8142 | 106.00 | 174 | 176.00 | 42848 |
| 48.00 | 210 | 75.00 | 22136 | 112.00 | 83 | 177.00 | 3101 |
| 49.00 | 1703 | 76.00 | 1986 | 117.00 | 391 | 209.00 | 189 |
| 50.00 | 8547 | 77.00 | 343 | 118.00 | 127 | 253.00 | 89 |
| 51.00 | 2699 | 78.00 | 117 | 119.00 | 180 | 269.00 | 19 |
| 56.00 | 730 | 79.00 | 967 | 128.00 | 88 | 270.00 | 182 |
| 57.00 | 1208 | 80.00 | 402 | 130.00 | 112 | 281.00 | 128 |
| 58.00 | 84 | 81.00 | 1189 | 131.00 | 116 | | |
| 60.00 | 438 | 82.00 | 236 | 141.00 | 541 | | |
| 61.00 | 2152 | 87.00 | 2610 | 143.00 | 490 | | |

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

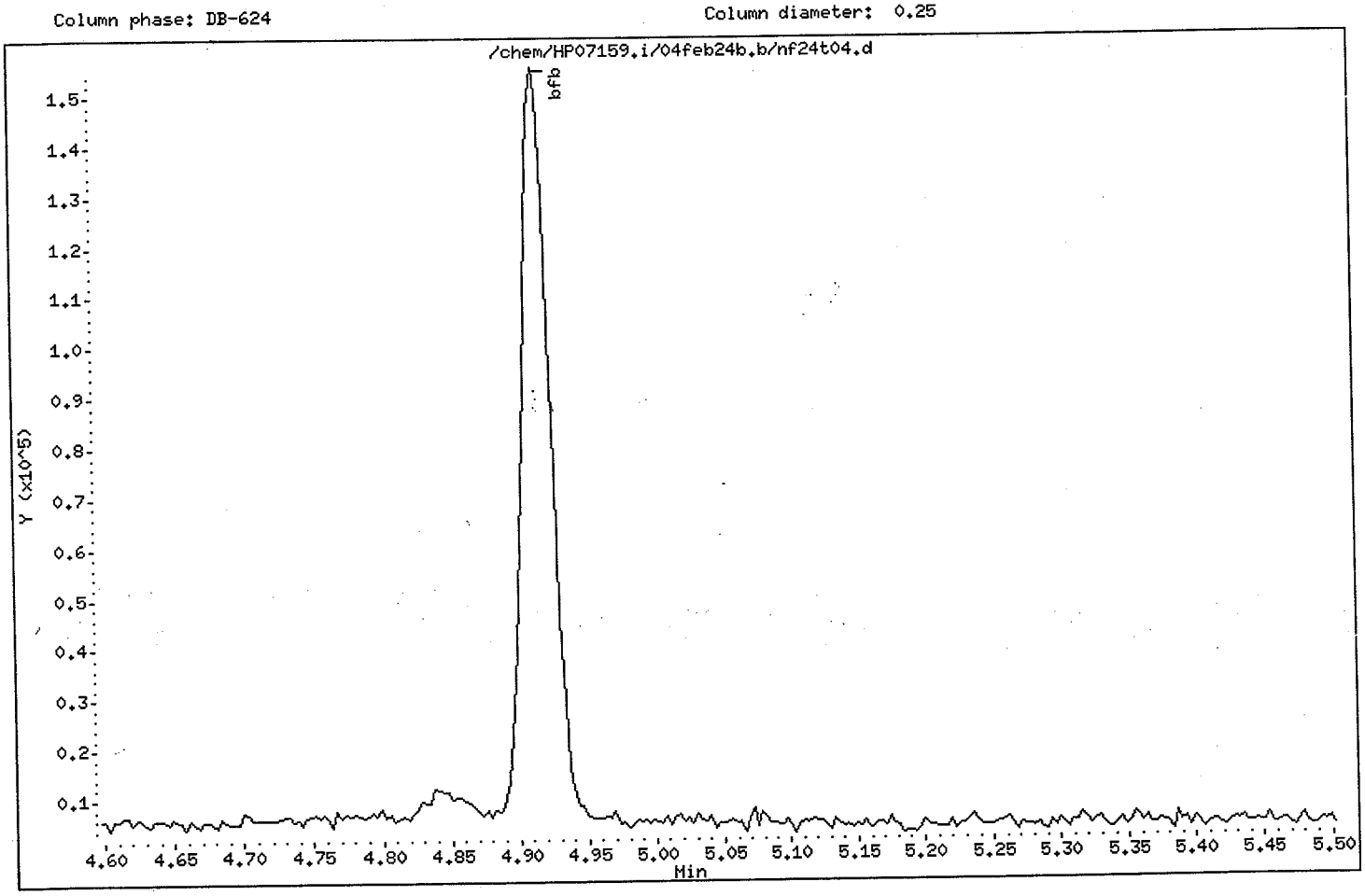
Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25




SME1533
2/24/04

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

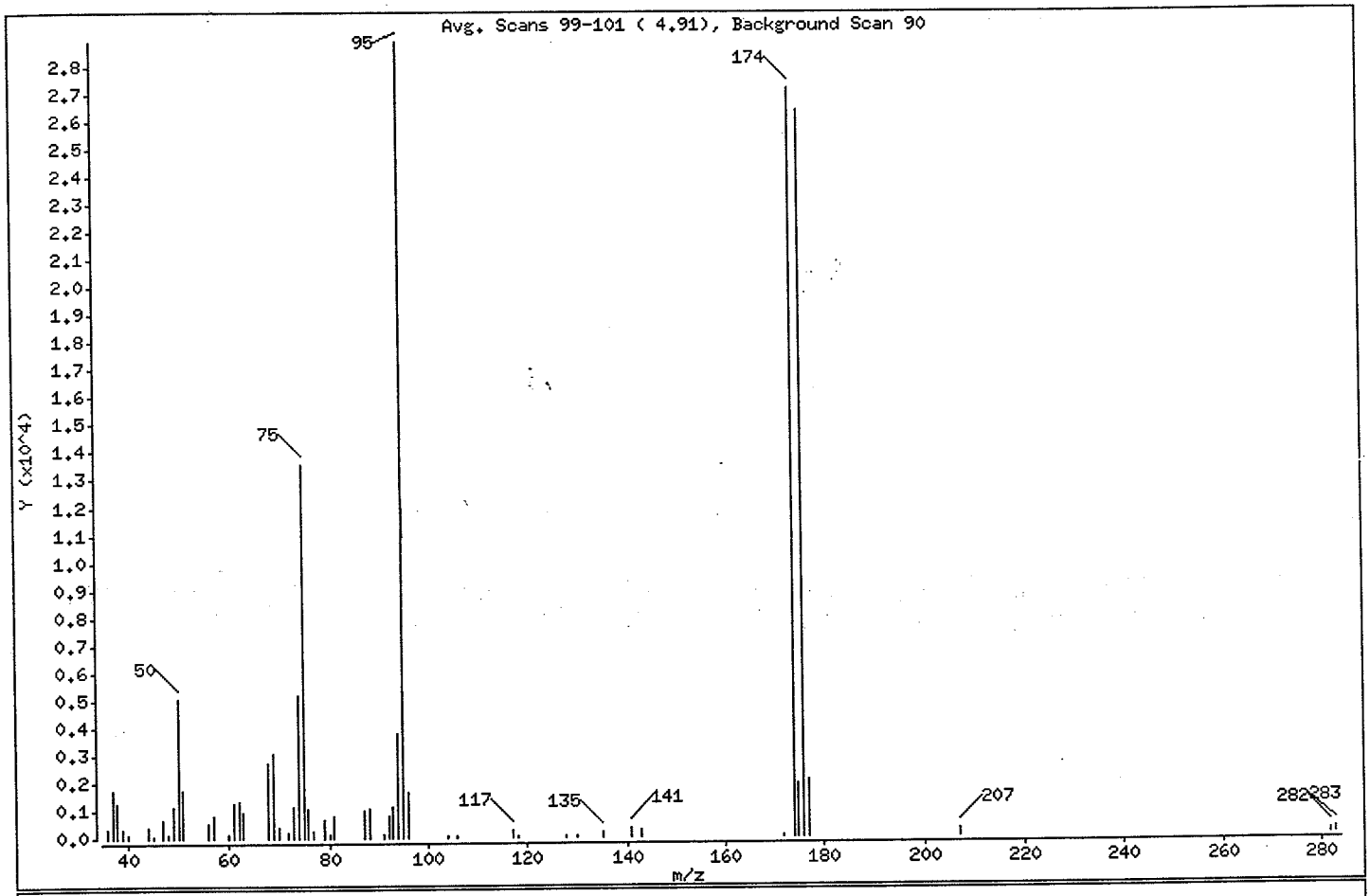
Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.53 |
| 75 | 30.00 - 60.00% of mass 95 | 47.00 |
| 96 | 5.00 - 9.00% of mass 95 | 5.80 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 93.96 |
| 175 | 5.00 - 9.00% of mass 174 | 6.61 ( 7.04) |
| 176 | 95.00 - 101.00% of mass 174 | 91.18 ( 97.04) |
| 177 | 5.00 - 9.00% of mass 176 | 7.16 ( 7.85) |

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25

Data File: nf24t04.d

Spectrum: Avg. Scans 99-101 ( 4.91), Background Scan 90

Location of Maximum: 95.00

Number of points: 55

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 343 | 60.00 | 116 | 80.00 | 112 | 128.00 | 93 |
| 37.00 | 1738 | 61.00 | 1259 | 81.00 | 802 | 130.00 | 89 |
| 38.00 | 1242 | 62.00 | 1359 | 87.00 | 1012 | 135.00 | 225 |
| 39.00 | 325 | 63.00 | 942 | 88.00 | 1065 | 141.00 | 309 |
| 40.00 | 117 | 68.00 | 2739 | 91.00 | 152 | 143.00 | 299 |
| 44.00 | 398 | 69.00 | 3067 | 92.00 | 791 | 172.00 | 92 |
| 45.00 | 89 | 70.00 | 366 | 93.00 | 1134 | 174.00 | 27168 |
| 47.00 | 635 | 72.00 | 214 | 94.00 | 3765 | 175.00 | 1912 |
| 48.00 | 122 | 73.00 | 1149 | 95.00 | 28920 | 176.00 | 26368 |
| 49.00 | 1158 | 74.00 | 5155 | 96.00 | 1677 | 177.00 | 2070 |
| 50.00 | 5070 | 75.00 | 13593 | 104.00 | 95 | 207.00 | 273 |
| 51.00 | 1748 | 76.00 | 1096 | 106.00 | 86 | 282.00 | 112 |
| 56.00 | 560 | 77.00 | 243 | 117.00 | 239 | 283.00 | 173 |
| 57.00 | 826 | 79.00 | 671 | 118.00 | 90 | | |

Data File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Date : 20-FEB-2004 11:22
Client ID: VBLKX06
Sample Info: VBLKX06;VBLKX06;2;3;;;

Column phase: DB-624

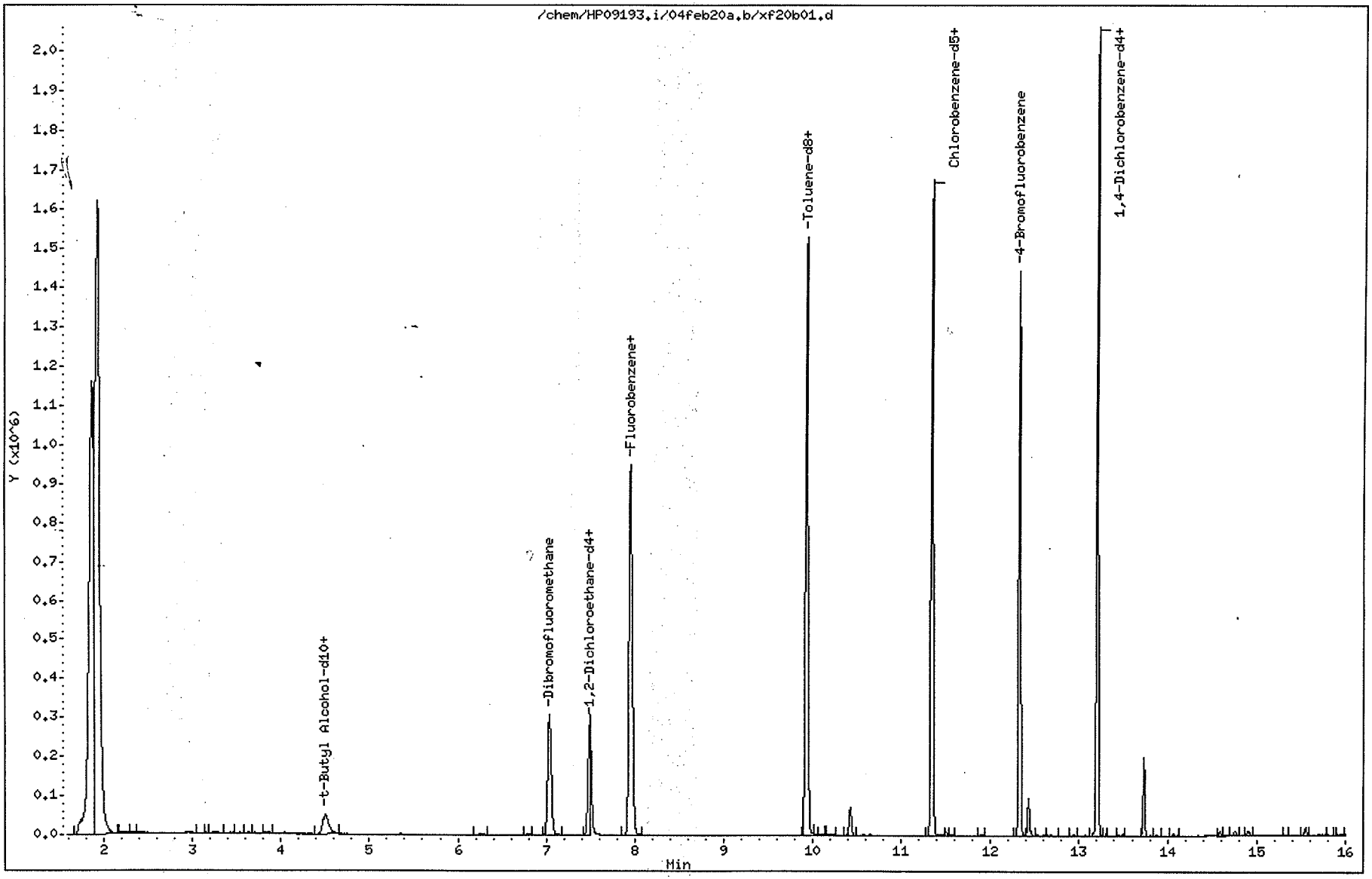
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM1518 2/20/04



32555



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20b01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:22 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 11:47 lcm01518

Sample Name: VBLKX06 Lab Sample ID: VBLKX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 135106 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1244404 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.344 | 117 | 985904 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 550687 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 274417 | 51.234 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 65744 | 48.974 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1191893 | 50.285 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 442528 | 48.844 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

8256

# VBLKX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.502( 0.003) | 910 | 65 | 135106( 0) | 250.00 | |
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1244404( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.344( 0.003) | 3042 | 117 | 985904( -1) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 550687( -3) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 274417 | 51.234 | 102% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 65744 | 48.974 | 98% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1191893 | 50.285 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 442528 | 48.844 | 98% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 16) Acrolein | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 19) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | | | | ND | ND | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 26) Allyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 27) Methyl Acetate | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | | | | ND | ND | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | | | | ND | ND | | | 4.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 36) n-Hexane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 39) di-Isopropyl Ether | (1) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 4.00 | 10.00 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 74) Methylcyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



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Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



8259

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 135) 1,2-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 134) n-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 143) 2-Methylnaphthalene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: LCM1518 Date: 2/20/04

Auditor: [signature] Date: 2/23/04



8261

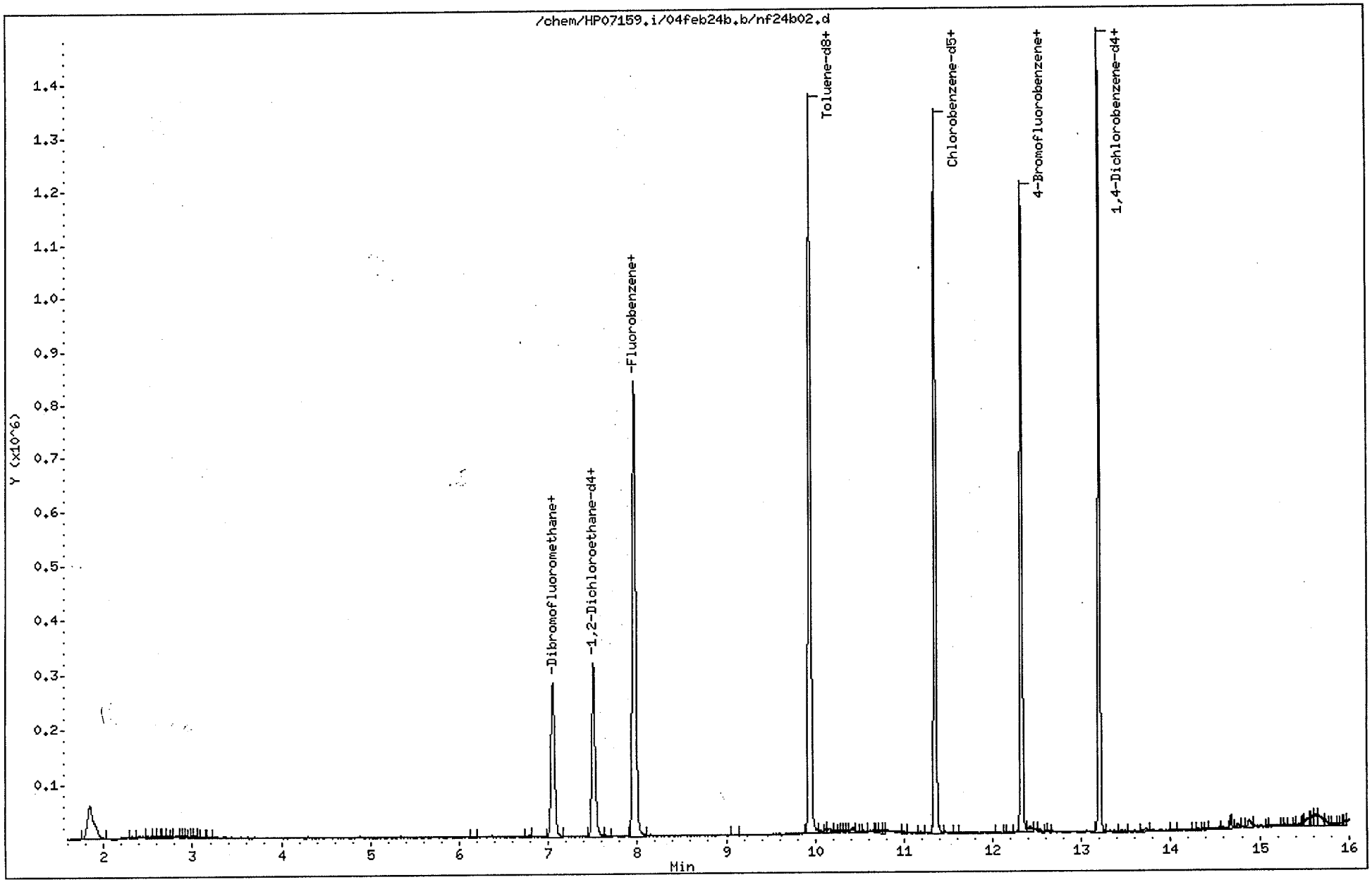
Data File: /chem/HP07159.i/04feb24b.b/nf24b02.d
Date : 24-FEB-2004 20:31
Client ID: VBLKN36
Sample Info: VBLKN36;VBLKN36;1;3;;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533 2/24/04

8262



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24b02.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 20:31  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 20:54 sme01533

Sample Name: VBLKN36  Lab Sample ID: VBLKN36

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65)*Fluorobenzene | (1) | 7.966 | 96 | 1002998 | 50.000 |
| 94)*Chlorobenzene-d5 | (2) | 11.351 | 117 | 773708 | 50.000 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 388007 | 50.000 |
| 50)$Dibromofluoromethane | (1) | 7.052 | 113 | 240702 | 46.605 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.507 | 102 | 63318 | 46.431 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1006224 | 49.954 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 363573 | 49.581 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# VBLKN36

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKN36

File: /chem/HP07159.i/04feb24b.b/nf24b02.d
Sample: VBLKN36;VBLKN36;1;3;;;;
Injected At:24-FEB-2004 20:31
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference:
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AA
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:1.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 5.0000 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.966( 0.004) | 1986 | 96 | 1002998( -3) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.351(-0.003) | 3041 | 117 | 773708( -5) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.203(-0.003) | 3618 | 152 | 388007( -13) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.052( 0.000) | 113 | 240702 | 46.605 | 93% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.507( 0.000) | 102 | 63318 | 46.431 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1006224 | 49.954 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 363573 | 49.581 | 99% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.80 | 5.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 3.00 | 10.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 0.80 | 5.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 100.00 | 250.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 0.70 | 5.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 55.00 | 250.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: SME1533 Date: 2/24/04

Auditor: Date: 2/25/04

8264

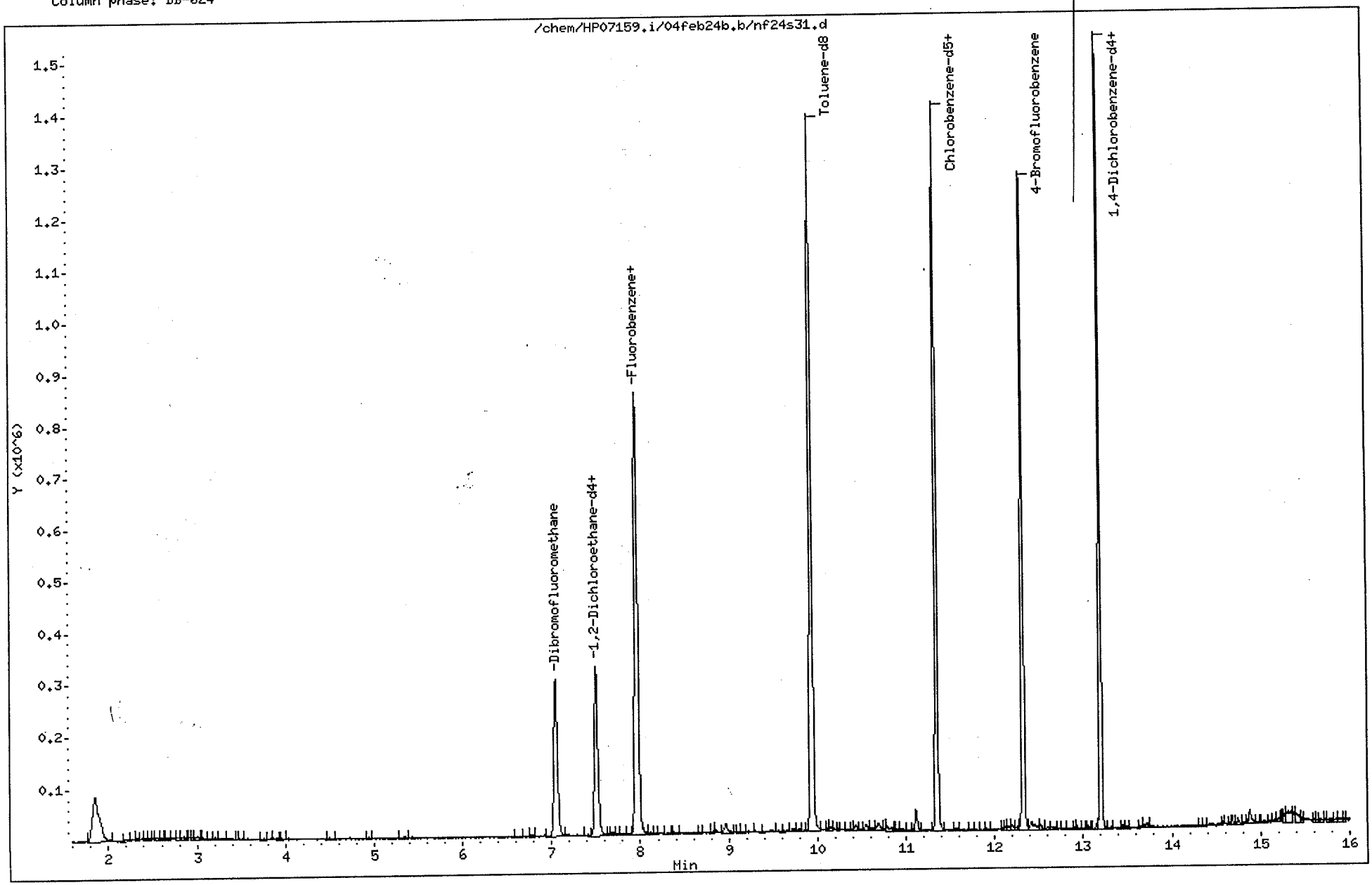
Data File: /chem/HP07159.i/04feb24b.b/nf24s31.d
Date : 24-FEB-2004 21:34
Client ID: EXBLKB
Sample Info: EXBLKB;4219274;1;3;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533 2/24/04

8255



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s31.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 21:34  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 21:59 sme01533

Sample Name: EXBLKB  Lab Sample ID: 4219274

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) *Fluorobenzene | (1) | 7.967 | 96 | 1051668 | 50.000 |
| 94) *Chlorobenzene-d5 | (2) | 11.349 | 117 | 815941 | 50.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 397895 | 50.000 |
| 50) $Dibromofluoromethane | (1) | 7.050 | 113 | 254216 | 46.943 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.508 | 102 | 67312 | 47.075 |
| 80) $Toluene-d8 | (2) | 9.941 | 98 | 1057664 | 49.790 |
| 107) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 386589 | 49.991 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# EXBLKB

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219274

File: /chem/HP07159.i/04feb24b.b/nf24s31.d
Sample: EXBLKB;4219274;1;3;;;;
Injected At:24-FEB-2004 21:34
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.967( 0.003) | 1987 | 96 | 1051668( 1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.349(-0.001) | 3041 | 117 | 815941( 0) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.201(-0.001) | 3618 | 152 | 397895( -10) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.050( 0.000) | 113 | 254216 | 46.943 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.508( 0.000) | 102 | 67312 | 47.075 | 94% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.941( 0.000) | 98 | 1057664 | 49.790 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 386589 | 49.991 | 100% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: SME1533 Date: 2/24/04

Auditor: Date: 2/25/04

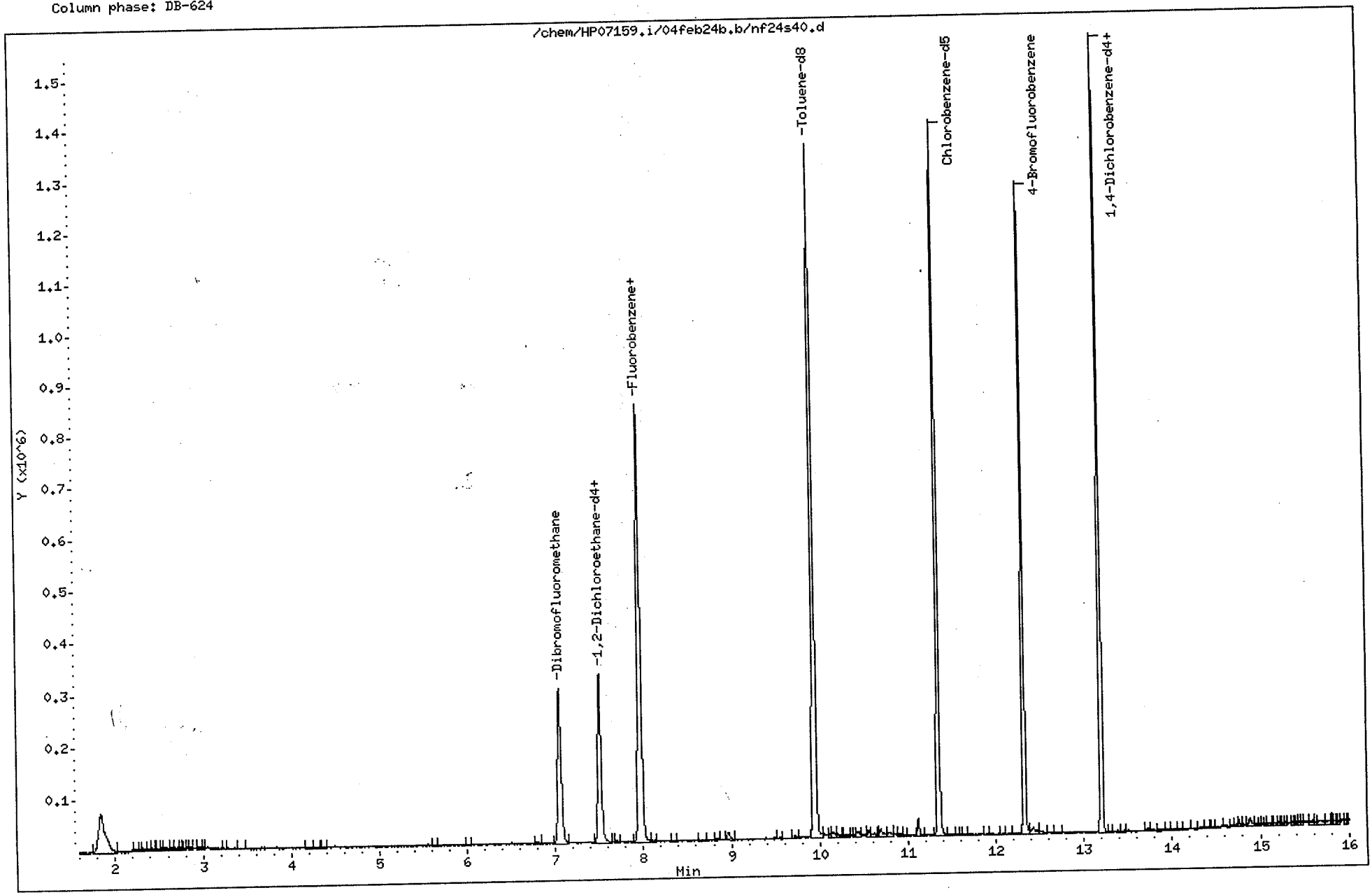
0267

Data File: /chem/HP07159.i/04feb24b.b/nf24s40.d
Date : 25-FEB-2004 01:17
Client ID: EXBLKD
Sample Info: EXBLKD;4221333;1;3;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

GCMS 1254 2.25.04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s40.d  Instrument ID: HP07159.i
Injection date and time: 25-FEB-2004 01:17  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 25-Feb-2004 01:46 acp01254

Sample Name: EXBLKD  Lab Sample ID: 4221333

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) *Fluorobenzene | (1) | 7.967 | 96 | 1034638 | 50.000 |
| 94) *Chlorobenzene-d5 | (2) | 11.352 | 117 | 799941 | 50.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 404590 | 50.000 |
| 50) $Dibromofluoromethane | (1) | 7.053 | 113 | 251352 | 47.178 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 65474 | 46.544 |
| 80) $Toluene-d8 | (2) | 9.940 | 98 | 1037501 | 49.817 |
| 107) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 376319 | 49.637 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# EXBLKD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4221333

File: /chem/HP07159.i/04feb24b.b/nf24s40.d
Sample: EXBLKD;4221333;1;3;;;;
Injected At:25-FEB-2004 01:17
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AD
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.967( 0.003) | 1987 | 96 | 1034638( 0) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.004) | 3042 | 117 | 799941( -2) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.204(-0.004) | 3619 | 152 | 404590( -9) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.053( 0.000) | 113 | 251352 | 47.178 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 65474 | 46.544 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.940( 0.001) | 98 | 1037501 | 49.817 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 376319 | 49.637 | 99% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: _____

Analyst: ACMP 1254 Date: 2.25.04

Auditor: _____ Date: 2/25/04

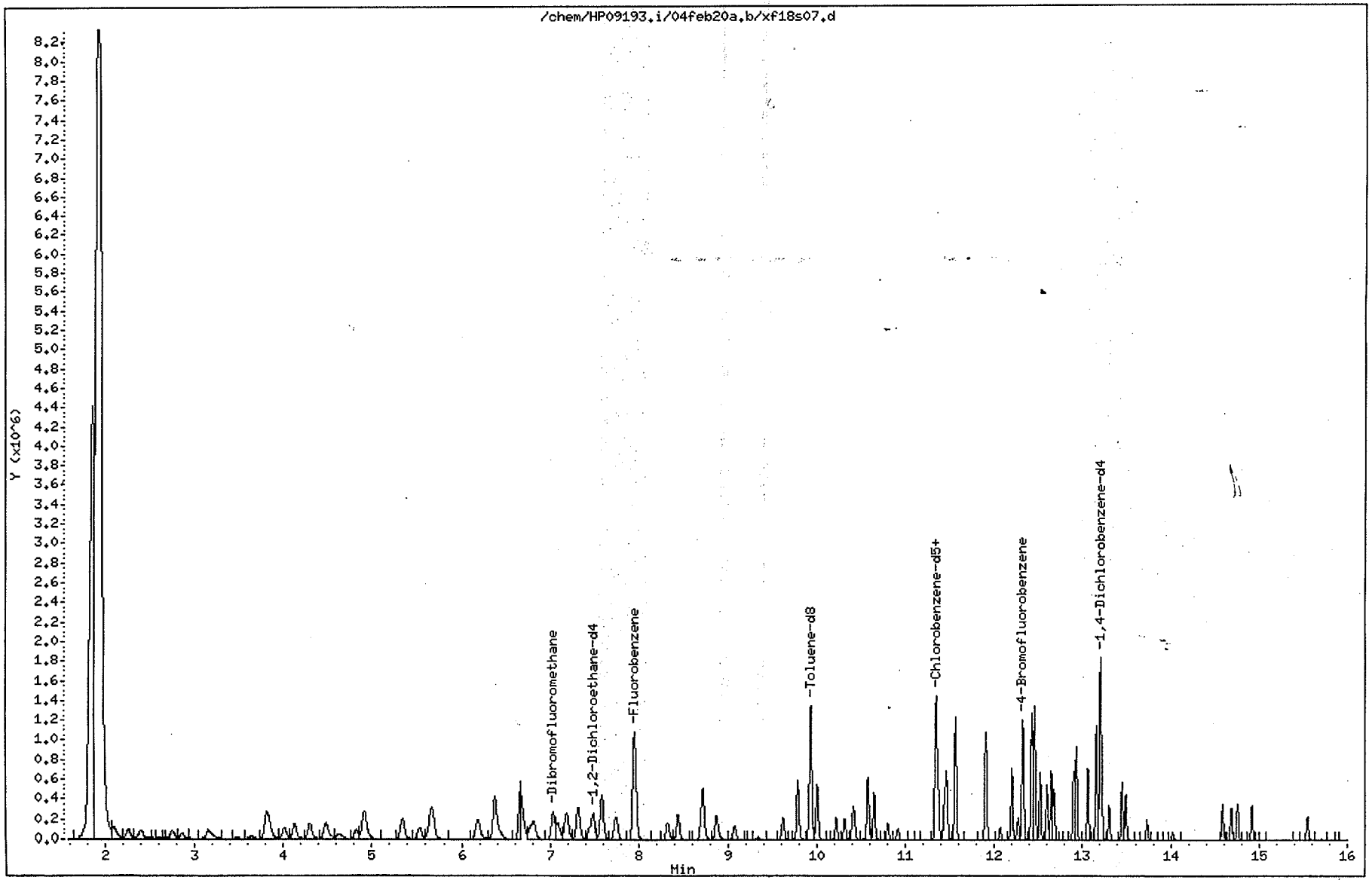
Data File: /chem/HP09193.i/04feb20a.b/xf18s07.d
Date : 20-FEB-2004 14:46
Client ID: 5GP20MS
Sample Info: 5GP20MS;4218998;2;3;MS;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s07.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 14:46 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 15:10 Automation

Sample Name: 5GP20MS Lab Sample ID: 4218998

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.265 | 50 | 156217 | 21.663 |
| 5) Vinyl Chloride | (1) | 2.407 | 62 | 150839 | 22.182 |
| 7) Bromomethane | (1) | 2.753 | 94 | 93473 | 20.065 |
| 8) Chloroethane | (1) | 2.869 | 64 | 79532 | 20.021 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 97813 | 19.916 |
| 20) Acetone | (1) | 3.831 | 58 | 52069 | 131.381 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 357136 | 19.872 |
| 28) Methylene Chloride | (1) | 4.480 | 84 | 112938 | 19.058 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 113390 | 19.643 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 192116 | 19.952 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 118830 | 18.725 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 70779 | 127.172 |
| 54) Chloroform | (1) | 6.819 | 83 | 185144 | 20.596 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 168848 | 21.157 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 144504 | 21.195 |
| 65) Benzene | (1) | 7.586 | 78 | 443537 | 19.328 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 126731 | 20.194 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1081350 | 50.000 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 111082 | 19.136 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 106808 | 18.910 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 119848 | 18.844 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 150480 | 17.610 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 437888 | 84.550 |
| 88) Toluene | (2) | 10.005 | 92 | 271095 | 17.609 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 126813 | 17.599 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 85342 | 17.761 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 131795 | 18.599 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 301428 | 77.160 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 91022 | 17.939 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 842038 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 280986 | 16.414 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 464127 | 16.257 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 364864 | 31.184 |
| 92) Xylene (Total) | (2) | | 106 | 537054 | 46.839 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s07.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 14:46 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 15:10 Automation

Sample Name: 5GP20MS Lab Sample ID: 4218998

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.902 | 106 | 172189 | 15.655 |
| 108) Styrene | (2) | 11.908 | 104 | 260759 | 14.461 |
| 109) Bromoform | (2) | 12.069 | 173 | 58110 | 16.659 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 106279 | 16.940 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 461865 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 238518 | 51.246 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 55071 | 47.210 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1049563 | 51.846 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 382971 | 49.492 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# 5GP20MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218998

File: /chem/HP09193.i/04feb20a.b/xf18s07.d
Sample: 5GP20MS;4218998;2;3;MS;;
Injected At:20-FEB-2004 14:46
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9500 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1081350( -15) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 842038( -16) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 461865( -19) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 238518 | 51.246 | 102% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 55071 | 47.210 | 94% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1049563 | 51.846 | 104% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 382971 | 49.492 | 99% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.265( 0.000) | 50 | 156217 | 21.663 | 18.20 | | | 1.68 | 4.20 |
| 5) Vinyl Chloride | (1) | 2.407( 0.000) | 62 | 150839 | 22.182 | 18.64 | | | 0.84 | 4.20 |
| 7) Bromomethane | (1) | 2.753( 0.001) | 94 | 93473 | 20.065 | 16.86 | | | 1.68 | 4.20 |
| 8) Chloroethane | (1) | 2.869( 0.000) | 64 | 79532 | 20.021 | 16.82 | | | 1.68 | 4.20 |
| 17) 1,1-Dichloroethene | (1) | 3.806( 0.001) | 96 | 97813 | 19.916 | 16.74 | | | 0.84 | 4.20 |
| 20) Acetone | (1) | 3.831( 0.001) | 58 | 52069 | 131.381 | 110.40 | | | 5.88 | 16.81 |
| 24) Carbon Disulfide | (1) | 4.130( 0.001) | 76 | 357136 | 19.872 | 16.70 | | | 0.84 | 4.20 |
| 28) Methylene Chloride | (1) | 4.480( 0.001) | 84 | 112938 | 19.058 | 16.01 | | | 1.68 | 4.20 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916( 0.000) | 96 | 113390 | 19.643 | 16.51 | | | 0.84 | 4.20 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 192116 | 19.952 | 16.77 | | | 0.84 | 4.20 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 118830 | 18.725 | 15.74 | | | 0.84 | 4.20 |
| 46) 2-Butanone | (1) | 6.370( 0.001) | 72 | 70779 | 127.172 | 106.87 | | | 3.36 | 8.40 |
| 54) Chloroform | (1) | 6.819( 0.000) | 83 | 185144 | 20.596 | 17.31 | | | 0.84 | 4.20 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095( 0.000) | 97 | 168848 | 21.157 | 17.78 | | | 0.84 | 4.20 |
| 60) Carbon Tetrachloride | (1) | 7.326( 0.000) | 117 | 144504 | 21.195 | 17.81 | | | 0.84 | 4.20 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 443537 | 19.328 | 16.24 | | | 0.42 | 4.20 |
| 66) 1,2-Dichloroethane | (1) | 7.595( 0.000) | 62 | 126731 | 20.194 | 16.97 | | | 0.84 | 4.20 |
| 73) Trichloroethene | (1) | 8.443( 0.000) | 95 | 111082 | 19.136 | 16.08 | | | 0.84 | 4.20 |
| 75) 1,2-Dichloropropane | (1) | 8.722( 0.000) | 63 | 106808 | 18.910 | 15.89 | | | 0.84 | 4.20 |
| 81) Bromodichloromethane | (1) | 9.075( 0.000) | 83 | 119848 | 18.844 | 15.84 | | | 0.84 | 4.20 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620( 0.000) | 75 | 150480 | 17.610 | 14.80 | | | 0.84 | 4.20 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784( 0.000) | 43 | 437888 | 84.550 | 71.05 | | | 2.52 | 8.40 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 271095 | 17.609 | 14.80 | | | 0.84 | 4.20 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 126813 | 17.599 | 14.79 | | | 0.84 | 4.20 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



83.1% Moisture
DF = .84

0274

# 5GP20MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218998

File: /chem/HP09193.i/04feb20a.b/xf18s07.d
Sample: 5GP20MS;4218998;2;3;MS;;
Injected At:20-FEB-2004 14:46
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9500 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | ( 0.000) | 97 | 85342 | 17.761 | 14.93 | | | 0.84 | 4.20 |
| 93) Tetrachloroethene | (2) | 10.576 | ( 0.000) | 166 | 131795 | 18.599 | 15.63 | | | 0.84 | 4.20 |
| 95) 2-Hexanone | (2) | 10.647 | ( 0.000) | 43 | 301428 | 77.160 | 64.84 | | | 2.52 | 8.40 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 91022 | 17.939 | 15.07 | | | 0.84 | 4.20 |
| 101) Chlorobenzene | (2) | 11.369 | ( 0.000) | 112 | 280986 | 16.414 | 13.79 | | | 0.84 | 4.20 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 464127 | 16.257 | 13.66 | | | 0.84 | 4.20 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 364864 | 31.184 | 26.21 | | | 0.84 | 4.20 |
| 92) Xylene (Total) | (2) | | | 106 | 537054 | 46.839 | 39.36 | | | 0.84 | 4.20 |
| 107) o-Xylene | (2) | 11.902 | ( 0.000) | 106 | 172189 | 15.655 | 13.16 | | | 0.84 | 4.20 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 260759 | 14.461 | 12.15 | | | 0.84 | 4.20 |
| 109) Bromoform | (2) | 12.069 | ( 0.000) | 173 | 58110 | 16.659 | 14.00 | | | 0.84 | 4.20 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 106279 | 16.940 | 14.24 | | | 0.84 | 4.20 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: IW4701

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/25/04

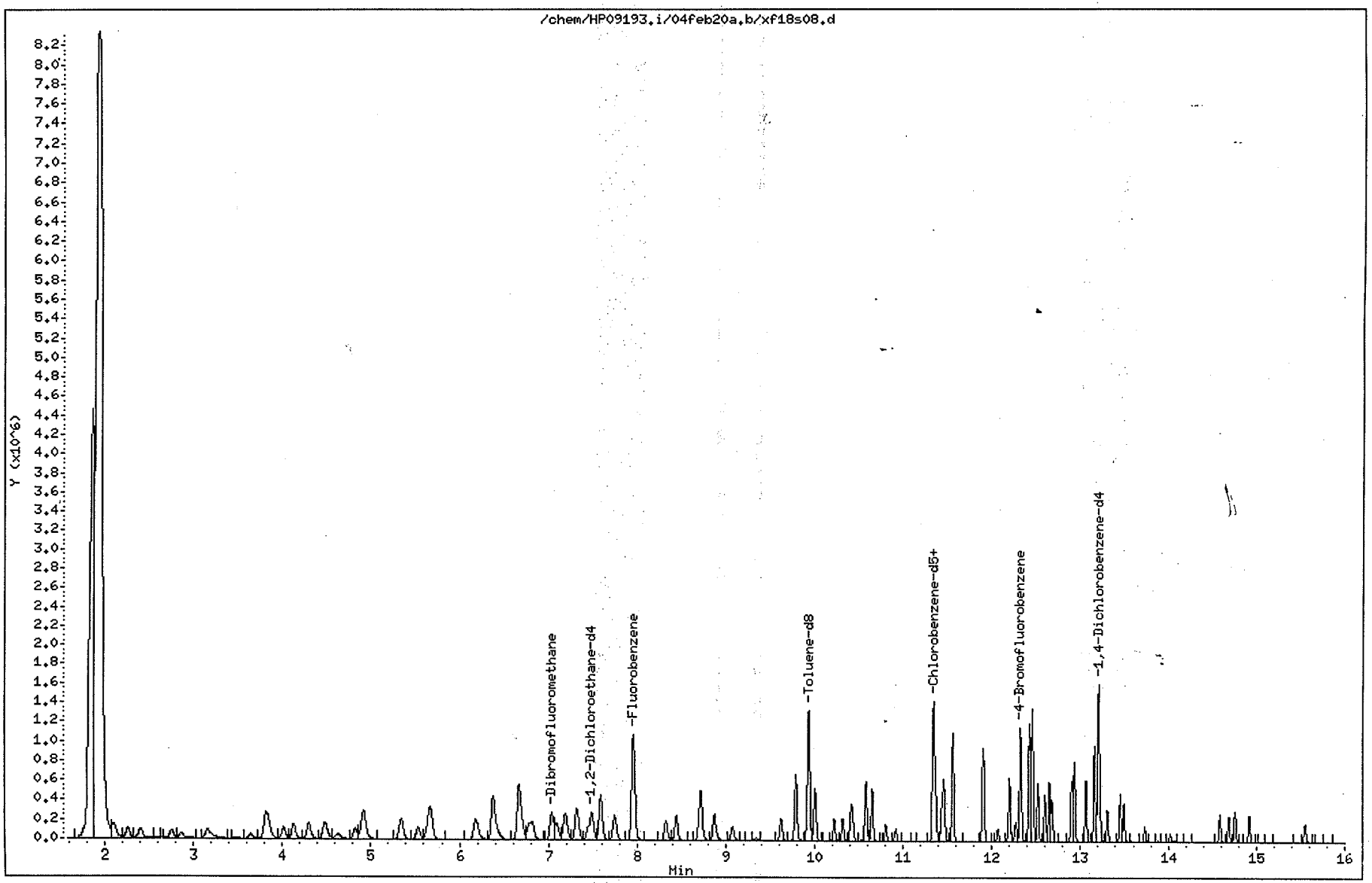
Data File: /chem/HP09193.i/04feb20a.b/xf18s08.d
Date : 20-FEB-2004 15:13
Client ID: 5GP20MSD
Sample Info: 5GP20MSD;4218999;2;3;MSD;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s08.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 15:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 15:35 Automation

Sample Name: 5GP20MSD Lab Sample ID: 4218999

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.262 | 50 | 164173 | 22.843 |
| 5) Vinyl Chloride | (1) | 2.410 | 62 | 160773 | 23.722 |
| 7) Bromomethane | (1) | 2.753 | 94 | 96421 | 20.768 |
| 8) Chloroethane | (1) | 2.868 | 64 | 83455 | 21.080 |
| 17) 1,1-Dichloroethene | (1) | 3.802 | 96 | 101976 | 20.834 |
| 20) Acetone | (1) | 3.828 | 58 | 58789 | 148.839 |
| 24) Carbon Disulfide | (1) | 4.126 | 76 | 362737 | 20.251 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 119695 | 20.266 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 114745 | 19.945 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 199788 | 20.819 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 121314 | 19.181 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 83925 | 151.300 |
| 54) Chloroform | (1) | 6.819 | 83 | 186599 | 20.828 |
| 57) 1,1,1-Trichloroethane | (1) | 7.091 | 97 | 171167 | 21.520 |
| 60) Carbon Tetrachloride | (1) | 7.322 | 117 | 144772 | 21.306 |
| 65) Benzene | (1) | 7.589 | 78 | 451739 | 19.752 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 132023 | 21.109 |
| 69) *Fluorobenzene | (1) | 7.951 | 96 | 1077707 | 50.000 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 109079 | 18.854 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 109351 | 19.426 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 121605 | 19.185 |
| 84) cis-1,3-Dichloropropene | (1) | 9.623 | 75 | 150102 | 17.625 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 503388 | 97.526 |
| 88) Toluene | (2) | 10.005 | 92 | 262065 | 17.473 |
| 89) trans-1,3-Dichloropropene | (2) | 10.223 | 75 | 127568 | 18.172 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 88536 | 18.914 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 123098 | 17.831 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 346373 | 91.011 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 92235 | 18.659 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 820331 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 257905 | 15.465 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 419562 | 15.085 |
| 105) m+p-Xylene | (2) | 11.561 | 106 | 330924 | 29.032 |
| 92) Xylene (Total) | (2) | | 106 | 486288 | 43.530 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s08.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 15:13  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 15:35 Automation

Sample Name: 5GP20MSD  Lab Sample ID: 4218999

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.902 | 106 | 155364 | 14.499 |
| 108) Styrene | (2) | 11.908 | 104 | 231810 | 13.196 |
| 109) Bromoform | (2) | 12.068 | 173 | 59488 | 17.505 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 110341 | 19.783 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 410618 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 242812 | 52.345 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.486 | 102 | 56229 | 48.365 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1040069 | 52.736 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 362706 | 48.113 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# 5GP20MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218999

File: /chem/HP09193.i/04feb20a.b/xf18s08.d
Sample: 5GP20MSD;4218999;2;3;MSD;;
Injected At:20-FEB-2004 15:13
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.951( 0.006) | 1985 | 96 | 1077707( -15) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 820331( -18) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 410618( -28) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 242812 | 52.345 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.486( 0.000) | 102 | 56229 | 48.365 | 97% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1040069 | 52.736 | 105% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 362706 | 48.113 | 96% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.262( 0.000) | 50 | 164173 | 22.843 | 18.75 | | | 1.64 | 4.11 |
| 5) Vinyl Chloride | (1) | 2.410(-0.001) | 62 | 160773 | 23.722 | 19.48 | | | 0.82 | 4.11 |
| 7) Bromomethane | (1) | 2.753( 0.001) | 94 | 96421 | 20.768 | 17.05 | | | 1.64 | 4.11 |
| 8) Chloroethane | (1) | 2.868( 0.000) | 64 | 83455 | 21.080 | 17.31 | | | 1.64 | 4.11 |
| 17) 1,1-Dichloroethene | (1) | 3.802( 0.001) | 96 | 101976 | 20.834 | 17.11 | | | 0.82 | 4.11 |
| 20) Acetone | (1) | 3.828( 0.001) | 58 | 58789 | 148.839 | 122.20 | | | 5.75 | 16.42 |
| 24) Carbon Disulfide | (1) | 4.126( 0.001) | 76 | 362737 | 20.251 | 16.63 | | | 0.82 | 4.11 |
| 28) Methylene Chloride | (1) | 4.483( 0.000) | 84 | 119695 | 20.266 | 16.64 | | | 1.64 | 4.11 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919( 0.000) | 96 | 114745 | 19.945 | 16.38 | | | 0.82 | 4.11 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 199788 | 20.819 | 17.09 | | | 0.82 | 4.11 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 121314 | 19.181 | 15.75 | | | 0.82 | 4.11 |
| 46) 2-Butanone | (1) | 6.376( 0.000) | 72 | 83925 | 151.300 | 124.22 | | | 3.28 | 8.21 |
| 54) Chloroform | (1) | 6.819( 0.000) | 83 | 186599 | 20.828 | 17.10 | | | 0.82 | 4.11 |
| 57) 1,1,1-Trichloroethane | (1) | 7.091( 0.000) | 97 | 171167 | 21.520 | 17.67 | | | 0.82 | 4.11 |
| 60) Carbon Tetrachloride | (1) | 7.322( 0.000) | 117 | 144772 | 21.306 | 17.49 | | | 0.82 | 4.11 |
| 65) Benzene | (1) | 7.589(-0.001) | 78 | 451739 | 19.752 | 16.22 | | | 0.41 | 4.11 |
| 66) 1,2-Dichloroethane | (1) | 7.592( 0.000) | 62 | 132023 | 21.109 | 17.33 | | | 0.82 | 4.11 |
| 73) Trichloroethene | (1) | 8.442( 0.000) | 95 | 109079 | 18.854 | 15.48 | | | 0.82 | 4.11 |
| 75) 1,2-Dichloropropane | (1) | 8.718( 0.000) | 63 | 109351 | 19.426 | 15.95 | | | 0.82 | 4.11 |
| 81) Bromodichloromethane | (1) | 9.075(-0.001) | 83 | 121605 | 19.185 | 15.75 | | | 0.82 | 4.11 |
| 84) cis-1,3-Dichloropropene | (1) | 9.623(-0.001) | 75 | 150102 | 17.625 | 14.47 | | | 0.82 | 4.11 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787(-0.001) | 43 | 503388 | 97.526 | 80.07 | | | 2.46 | 8.21 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 262065 | 17.473 | 14.35 | | | 0.82 | 4.11 |
| 89) trans-1,3-Dichloropropene | (2) | 10.223(-0.001) | 75 | 127568 | 18.172 | 14.92 | | | 0.82 | 4.11 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



6279

# 5GP20MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218999

File: /chem/HP09193.i/04feb20a.b/xf18s08.d
Sample: 5GP20MSD;4218999;2;3;MSD;;
Injected At:20-FEB-2004 15:13
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | ( 0.000) | 97 | 88536 | 18.914 | 15.53 | | | 0.82 | 4.11 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 123098 | 17.831 | 14.64 | | | 0.82 | 4.11 |
| 95) 2-Hexanone | (2) | 10.650 | ( 0.000) | 43 | 346373 | 91.011 | 74.72 | | | 2.46 | 8.21 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 92235 | 18.659 | 15.32 | | | 0.82 | 4.11 |
| 101) Chlorobenzene | (2) | 11.369 | ( 0.000) | 112 | 257905 | 15.465 | 12.70 | | | 0.82 | 4.11 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 419562 | 15.085 | 12.39 | | | 0.82 | 4.11 |
| 105) m+p-Xylene | (2) | 11.561 | ( 0.000) | 106 | 330924 | 29.032 | 23.84 | | | 0.82 | 4.11 |
| 92) Xylene (Total) | (2) | | | 106 | 486288 | 43.530 | 35.74 | | | 0.82 | 4.11 |
| 107) o-Xylene | (2) | 11.902 | ( 0.000) | 106 | 155364 | 14.499 | 11.90 | | | 0.82 | 4.11 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 231810 | 13.196 | 10.83 | | | 0.82 | 4.11 |
| 109) Bromoform | (2) | 12.068 | ( 0.000) | 173 | 59488 | 17.505 | 14.37 | | | 0.82 | 4.11 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 110341 | 19.783 | 16.24 | | | 0.82 | 4.11 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4711

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04



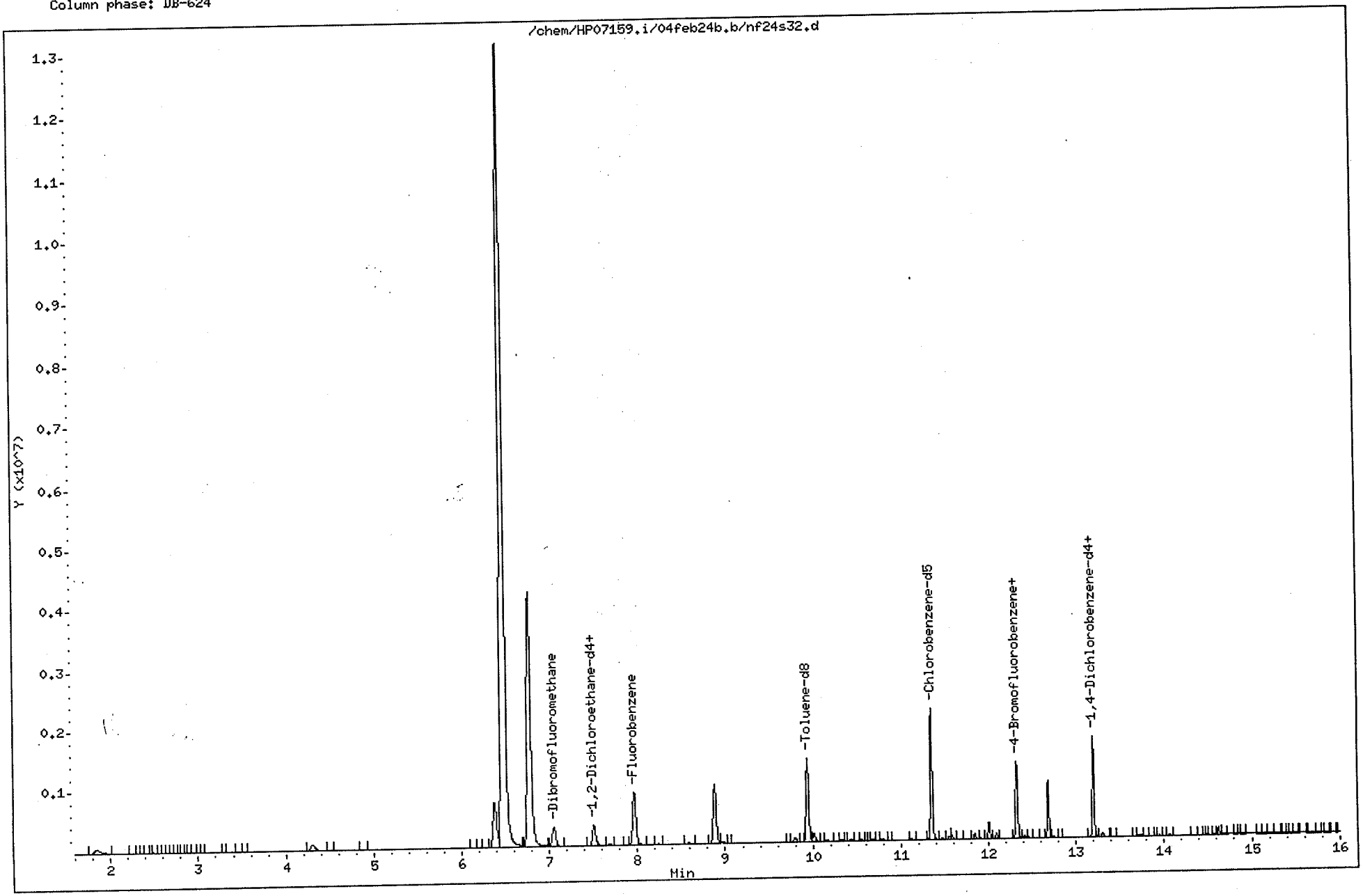
8288

Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Date : 24-FEB-2004 21:58
Client ID: MM500
Sample Info: MM500;4218086;1;0;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

Sue 1533 2/24/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 21:58  Analyst ID: SME01533

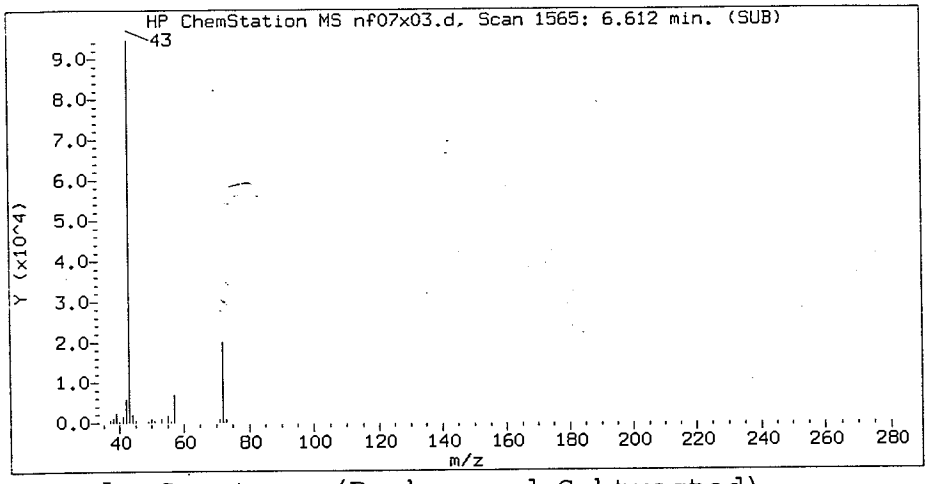
Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

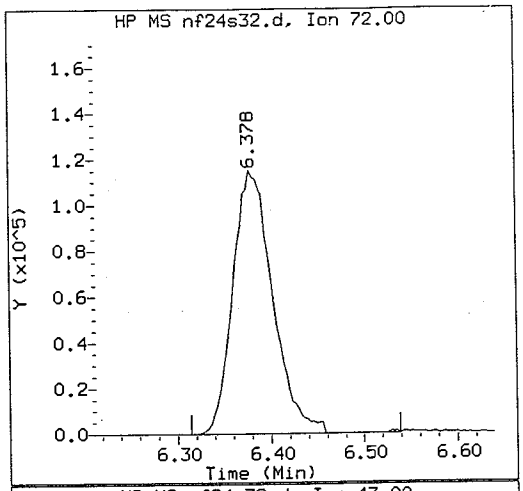
Sample Name: MM500  Lab Sample ID: 4218086

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 40) 2-Butanone | (1) | 6.378 | 72 | 339263 | 223.294 |
| 65)*Fluorobenzene | (1) | 7.970 | 96 | 1045894 | 50.000 |
| 82) Toluene | (2) | 10.017 | 92 | 54997 | 3.439 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 820309 | 50.000 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 425007 | 50.000 |
| 50)$Dibromofluoromethane | (1) | 7.052 | 113 | 254805 | 47.312 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 66023 | 46.429 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1056599 | 49.475 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 387218 | 49.806 |

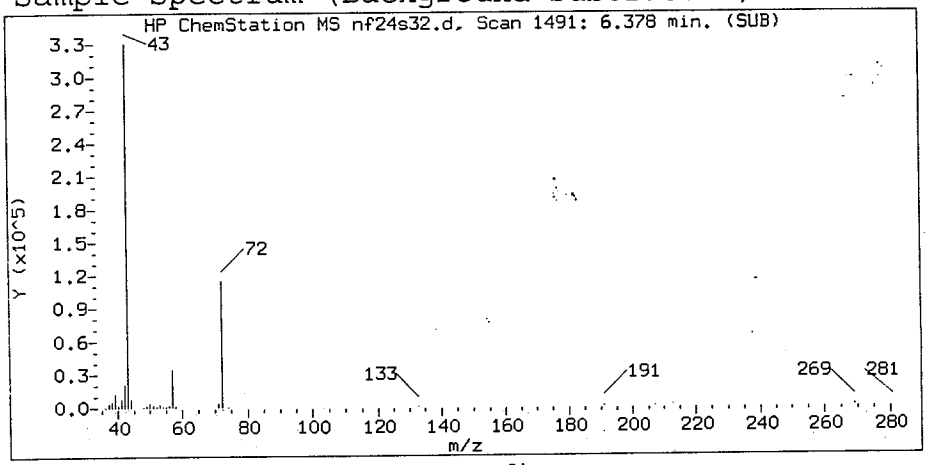
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

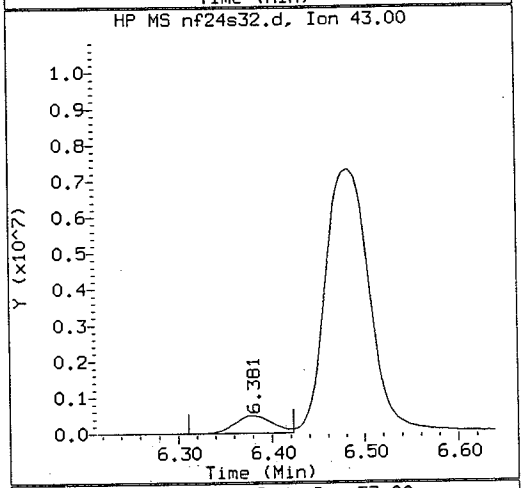
Reference Standard Spectrum for 2-Butanone



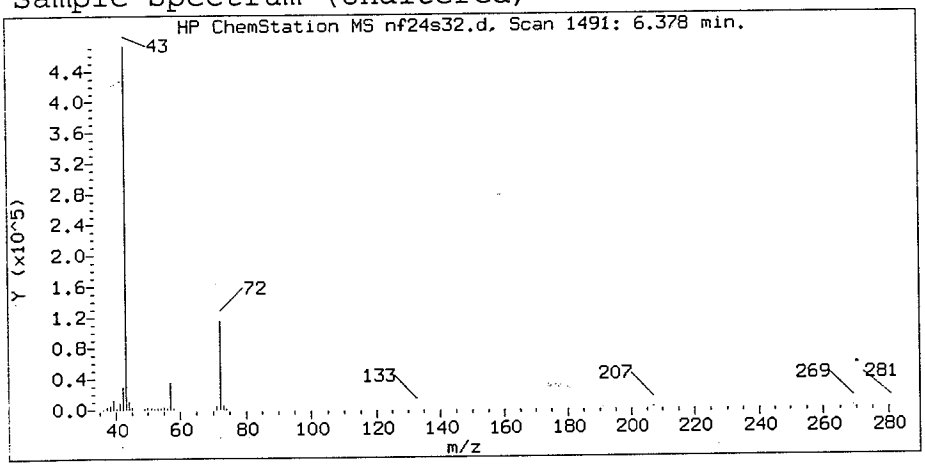



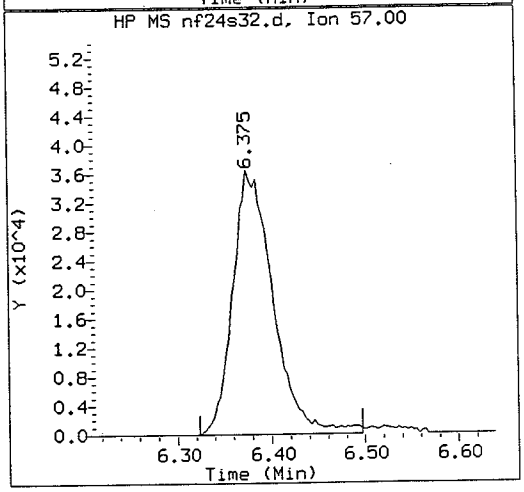

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Injection date and time: 24-FEB-2004 21:58

Instrument ID: HP07159.i
Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m
Calibration date and time: 24-FEB-2004 19:47

Sublist used: 3636QC

Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

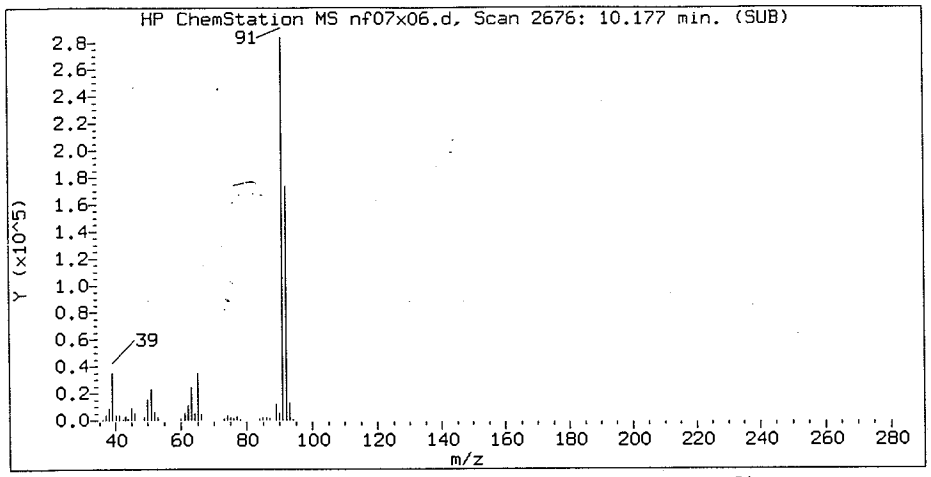
Sample Name: MM500

Lab Sample ID: 4218086

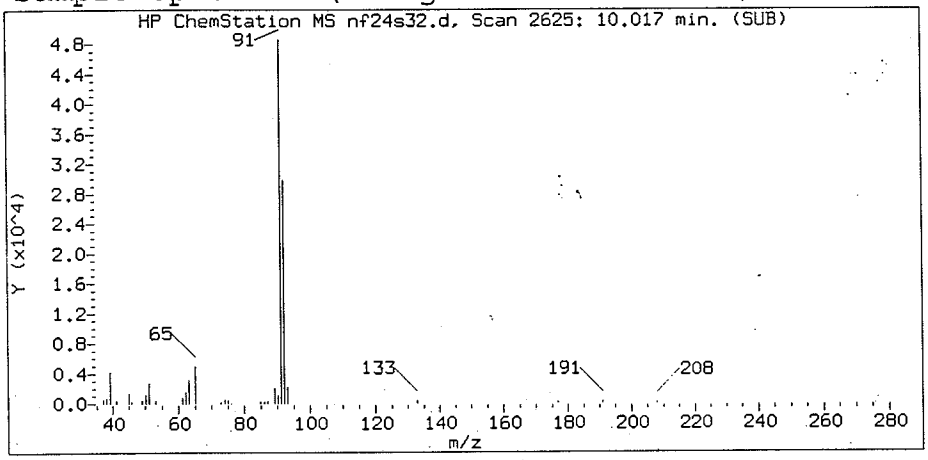
| | |
|---|---|
| Compound Number | : 40 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1491 |
| Retention Time (minutes) | : 6.378 |
| Quant Ion | : 72.0 |
| Area (flag) | : 339263 |
| Concentration (ug/L) | : 223.2938 |

8283

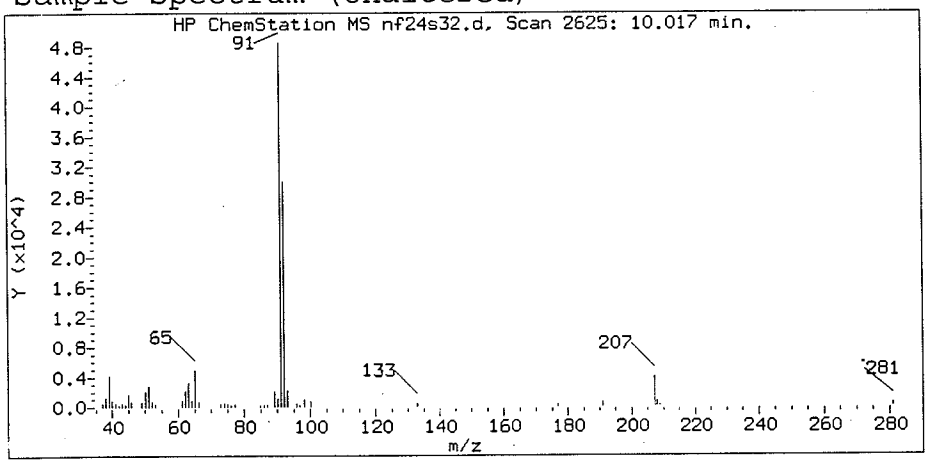
Reference Standard Spectrum for Toluene

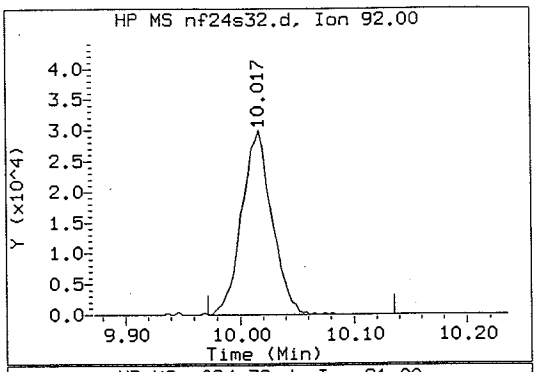


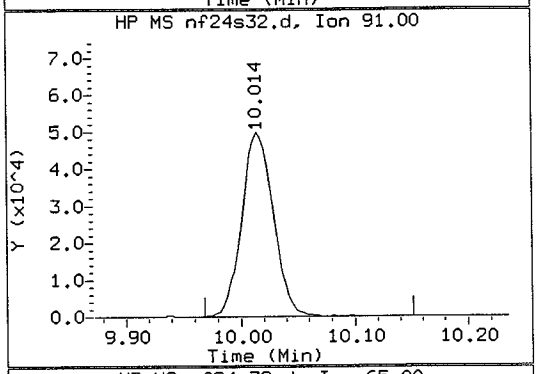

Sample Spectrum (Background Subtracted)

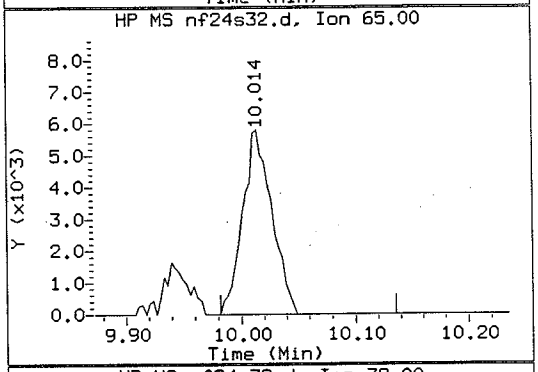


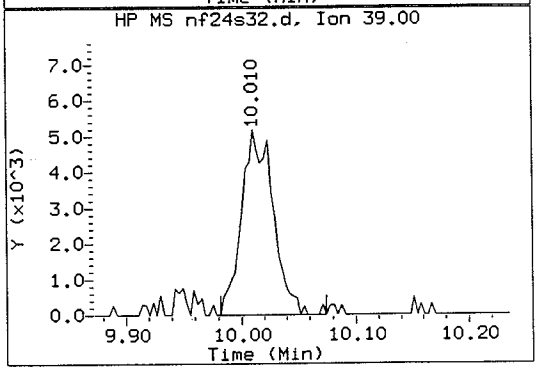

Sample Spectrum (Unaltered)




Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Injection date and time: 24-FEB-2004 21:58

Instrument ID: HP07159.i
Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m
Calibration date and time: 24-FEB-2004 19:47

Sublist used: 3636QC

Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

Sample Name: MM500

Lab Sample ID: 4218086

| | |
|---|---|
| Compound Number | : 82 |
| Compound Name | : Toluene |
| Scan Number | : 2625 |
| Retention Time (minutes) | : 10.017 |
| Quant Ion | : 92.0 |
| Area (flag) | : 54997 |
| Concentration (ug/L) | : 3.4393 |

6284

MM500

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4218086

File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Sample: MM500;4218086;1;0;;;;
Injected At:24-FEB-2004 21:58
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1987 | 96 | 1045894( 1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3041 | 117 | 820309( 1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3617 | 152 | 425007( -4) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.052( 0.000) | 113 | 254805 | 47.312 | 95% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 66023 | 46.429 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1056599 | 49.475 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 387218 | 49.806 | 100% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.378( 0.000) | 72 | 339263 | 223.294 | 4465.88 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.017( 0.000) | 92 | 54997 | 3.439 | 68.79 | | J | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: Butan

Analyst: SME1533 Date: 2/24/04

Auditor: Date: 2/25/04

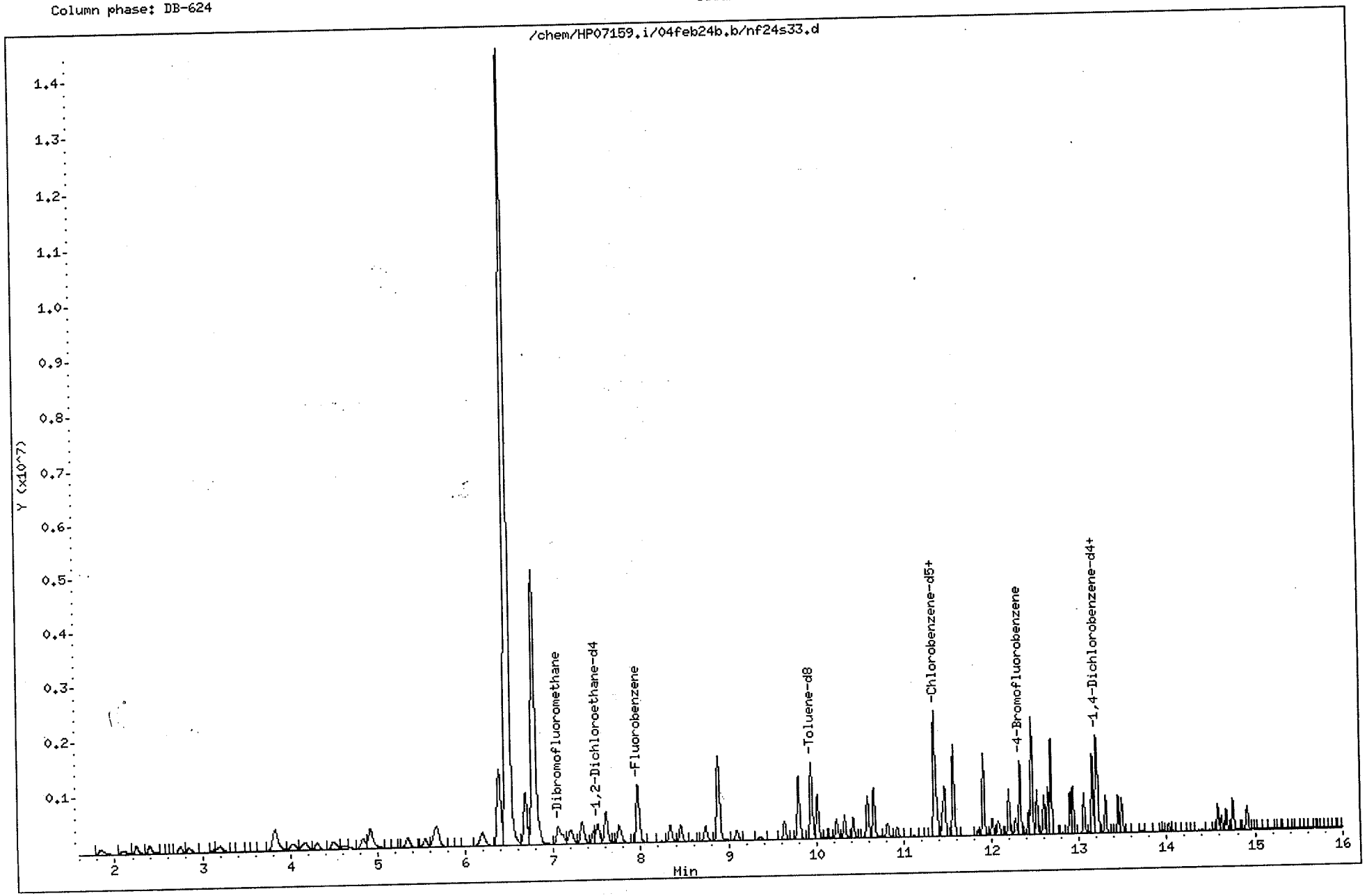
8285

Sue1533
2/24/04

Data File: /chem/HP07159.i/04feb24b.b/nf24s33.d
Date : 24-FEB-2004 22:23
Client ID: MM500MS
Sample Info: MM500MS;4218087;1;3;MS;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s33.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 22:23  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 22:45 Automation

Sample Name: MM500MS  Lab Sample ID: 4218087

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.402 | 62 | 179490 | 21.501 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 114499 | 21.197 |
| 17) Freon 113 | (1) | 3.846 | 101 | 113932 | 22.586 |
| 22) Carbon Disulfide | (1) | 4.170 | 76 | 417933 | 22.900 |
| 24) Methylene Chloride | (1) | 4.501 | 84 | 122561 | 19.558 |
| 40) 2-Butanone | (1) | 6.384 | 72 | 516688 | 347.635 |
| 48) Chloroform | (1) | 6.840 | 83 | 200965 | 19.726 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 167182 | 20.617 |
| 57) Isobutyl Alcohol | (1) | 7.456 | 41 | 138249 | 328.237 |
| 60) Benzene | (1) | 7.601 | 78 | 498654 | 20.372 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 160102 | 18.777 |
| 65)*Fluorobenzene | (1) | 7.970 | 96 | 1023135 | 50.000 |
| 69) Trichloroethene | (1) | 8.457 | 95 | 122006 | 19.920 |
| 82) Toluene | (2) | 10.017 | 92 | 373834 | 23.771 |
| 87) Tetrachloroethene | (2) | 10.585 | 166 | 135373 | 19.404 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 806738 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 345078 | 19.498 |
| 97) Ethylbenzene | (2) | 11.467 | 91 | 573518 | 20.635 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 445289 | 40.301 |
| 100) o-Xylene | (2) | 11.904 | 106 | 213893 | 19.657 |
| 106) Cyclohexanone | (2) | 12.273 | 55 | 119311 | 333.318 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 436008 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 265059 | 19.370 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 247110 | 18.988 |
| 50)$Dibromofluoromethane | (1) | 7.058 | 113 | 251614 | 47.759 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 65728 | 47.250 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1037081 | 49.378 |
| 107)$4-Bromofluorobenzene | (2) | 12.324 | 95 | 389699 | 50.968 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# MM500MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218087

File: /chem/HP07159.i/04feb24b.b/nf24s33.d
Sample: MM500MS;4218087;1;3;MS;;;
Injected At:24-FEB-2004 22:23
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W_m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1988 | 96 | 1023135( -1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3042 | 117 | 806738( -1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3618 | 152 | 436008( -2) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.058(-0.001) | 113 | 251614 | 47.759 | 96% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 65728 | 47.250 | 95% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1037081 | 49.378 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.324( 0.000) | 95 | 389699 | 50.968 | 102% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.402( 0.002) | 62 | 179490 | 21.501 | 430.01 | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | 3.817( 0.000) | 96 | 114499 | 21.197 | 423.94 | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | 3.846(-0.001) | 101 | 113932 | 22.586 | 451.71 | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | 4.170( 0.000) | 76 | 417933 | 22.900 | 458.01 | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | 4.501(-0.001) | 84 | 122561 | 19.558 | 391.15 | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.384( 0.000) | 72 | 516688 | 347.635 | 6952.69 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | 6.840(-0.001) | 83 | 200965 | 19.726 | 394.52 | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | 7.337( 0.000) | 117 | 167182 | 20.617 | 412.35 | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | 7.456( 0.000) | 41 | 138249 | 328.237 | 6564.74 | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | 7.601( 0.000) | 78 | 498654 | 20.372 | 407.45 | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | 7.613( 0.000) | 62 | 160102 | 18.777 | 375.55 | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | 8.457( 0.000) | 95 | 122006 | 19.920 | 398.40 | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.017( 0.000) | 92 | 373834 | 23.771 | 475.42 | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | 10.585( 0.001) | 166 | 135373 | 19.404 | 388.09 | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | 11.377( 0.000) | 112 | 345078 | 19.498 | 389.96 | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | 11.467( 0.000) | 91 | 573518 | 20.635 | 412.70 | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | 11.567( 0.000) | 106 | 445289 | 40.301 | 806.02 | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | 11.904( 0.000) | 106 | 213893 | 19.657 | 393.13 | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | 12.273( 0.000) | 55 | 119311 | 333.318 | 6666.36 | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219( 0.000) | 146 | 265059 | 19.370 | 387.39 | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492( 0.000) | 146 | 247110 | 18.988 | 379.76 | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: Batch

Analyst: SME1533 Date: 2/24/04

Auditor: Date: 2/25/04

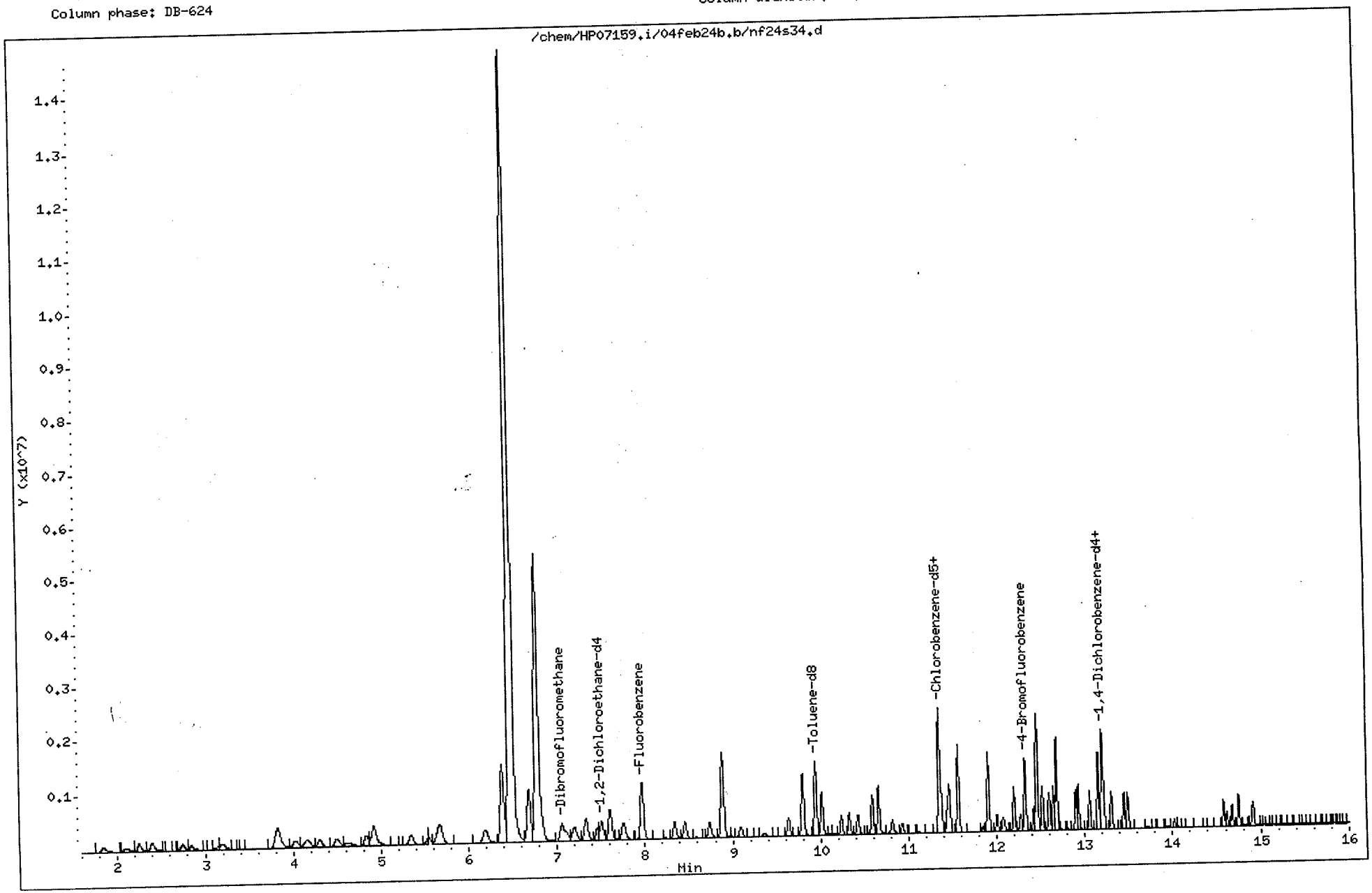
8288

Acmp
1254
2.25 04



Data File: /chem/HP07159.i/04feb24b.b/nf24s34.d
Date : 24-FEB-2004 22:48
Client ID: MM500MSD
Sample Info: MM500MSD;4218088;1;3;MSD;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i
Operator: SME01533
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s34.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 22:48  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 23:10 Automation

Sample Name: MM500MSD  Lab Sample ID: 4218088

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.401 | 62 | 181502 | 21.596 |
| 16) 1,1-Dichloroethene | (1) | 3.813 | 96 | 113582 | 20.887 |
| 17) Freon 113 | (1) | 3.839 | 101 | 114437 | 22.534 |
| 22) Carbon Disulfide | (1) | 4.166 | 76 | 420758 | 22.901 |
| 24) Methylene Chloride | (1) | 4.500 | 84 | 122138 | 19.360 |
| 40) 2-Butanone | (1) | 6.380 | 72 | 539449 | 360.521 |
| 48) Chloroform | (1) | 6.836 | 83 | 201534 | 19.650 |
| 56) Carbon Tetrachloride | (1) | 7.343 | 117 | 165924 | 20.326 |
| 57) Isobutyl Alcohol | (1) | 7.458 | 41 | 143463 | 338.338 |
| 60) Benzene | (1) | 7.603 | 78 | 500963 | 20.330 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 160440 | 18.691 |
| 65)*Fluorobenzene | (1) | 7.969 | 96 | 1030024 | 50.000 |
| 69) Trichloroethene | (1) | 8.456 | 95 | 121214 | 19.659 |
| 82) Toluene | (2) | 10.016 | 92 | 371052 | 23.711 |
| 87) Tetrachloroethene | (2) | 10.584 | 166 | 133777 | 19.270 |
| 94)*Chlorobenzene-d5 | (2) | 11.351 | 117 | 802774 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 344962 | 19.588 |
| 97) Ethylbenzene | (2) | 11.466 | 91 | 575350 | 20.803 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 450152 | 40.942 |
| 100) o-Xylene | (2) | 11.903 | 106 | 218030 | 20.136 |
| 106) Cyclohexanone | (2) | 12.275 | 55 | 118941 | 333.926 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.202 | 152 | 433415 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.218 | 146 | 267401 | 19.658 |
| 127) 1,2-Dichlorobenzene | (3) | 13.491 | 146 | 248957 | 19.244 |
| 50)$Dibromofluoromethane | (1) | 7.054 | 113 | 252034 | 47.518 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.507 | 102 | 63189 | 45.121 |
| 80)$Toluene-d8 | (2) | 9.942 | 98 | 1036338 | 49.586 |
| 107)$4-Bromofluorobenzene | (2) | 12.326 | 95 | 389061 | 51.136 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# MM500MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218088

File: /chem/HP07159.i/04feb24b.b/nf24s34.d
Sample: MM500MSD;4218088;1;3;MSD;;;
Injected At:24-FEB-2004 22:48
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.969( 0.001) | 1987 | 96 | 1030024( -1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.351(-0.002) | 3041 | 117 | 802774( -1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.202(-0.002) | 3618 | 152 | 433415( -2) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.054( 0.000) | 113 | 252034 | 47.518 | 95% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.507( 0.000) | 102 | 63189 | 45.121 | 90% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.942( 0.000) | 98 | 1036338 | 49.586 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.326( 0.000) | 95 | 389061 | 51.136 | 102% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.401( 0.002) | 62 | 181502 | 21.596 | 431.93 | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | 3.813( 0.000) | 96 | 113582 | 20.887 | 417.73 | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | 3.839( 0.000) | 101 | 114437 | 22.534 | 450.68 | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | 4.166( 0.000) | 76 | 420758 | 22.901 | 458.02 | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | 4.500(-0.001) | 84 | 122138 | 19.360 | 387.20 | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.380( 0.000) | 72 | 539449 | 360.521 | 7210.42 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | 6.836( 0.000) | 83 | 201534 | 19.650 | 392.99 | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | 7.343( 0.000) | 117 | 165924 | 20.326 | 406.51 | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | 7.458( 0.000) | 41 | 143463 | 338.338 | 6766.75 | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | 7.603(-0.001) | 78 | 500963 | 20.330 | 406.60 | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | 7.613( 0.000) | 62 | 160440 | 18.691 | 373.83 | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | 8.456( 0.000) | 95 | 121214 | 19.659 | 393.17 | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.016( 0.000) | 92 | 371052 | 23.711 | 474.21 | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | 10.584( 0.001) | 166 | 133777 | 19.270 | 385.41 | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | 11.380( 0.000) | 112 | 344962 | 19.588 | 391.75 | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | 11.466( 0.000) | 91 | 575350 | 20.803 | 416.06 | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | 11.569( 0.000) | 106 | 450152 | 40.942 | 818.85 | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | 11.903( 0.000) | 106 | 218030 | 20.136 | 402.71 | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | 12.275( 0.000) | 55 | 118941 | 333.926 | 6678.52 | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.218( 0.000) | 146 | 267401 | 19.658 | 393.15 | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.491( 0.000) | 146 | 248957 | 19.244 | 384.88 | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: ~~Client~~ batch
(3) Acmp 125U
2.25.04

Analyst: Acmp 125Y  Date: 2.25.04

8291

Auditor: [signature]  Date: 2/25/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Date : 20-FEB-2004 11:49
Client ID: LCSX06
Sample Info: LCSX06;LCSX06;2;3;LCS;;

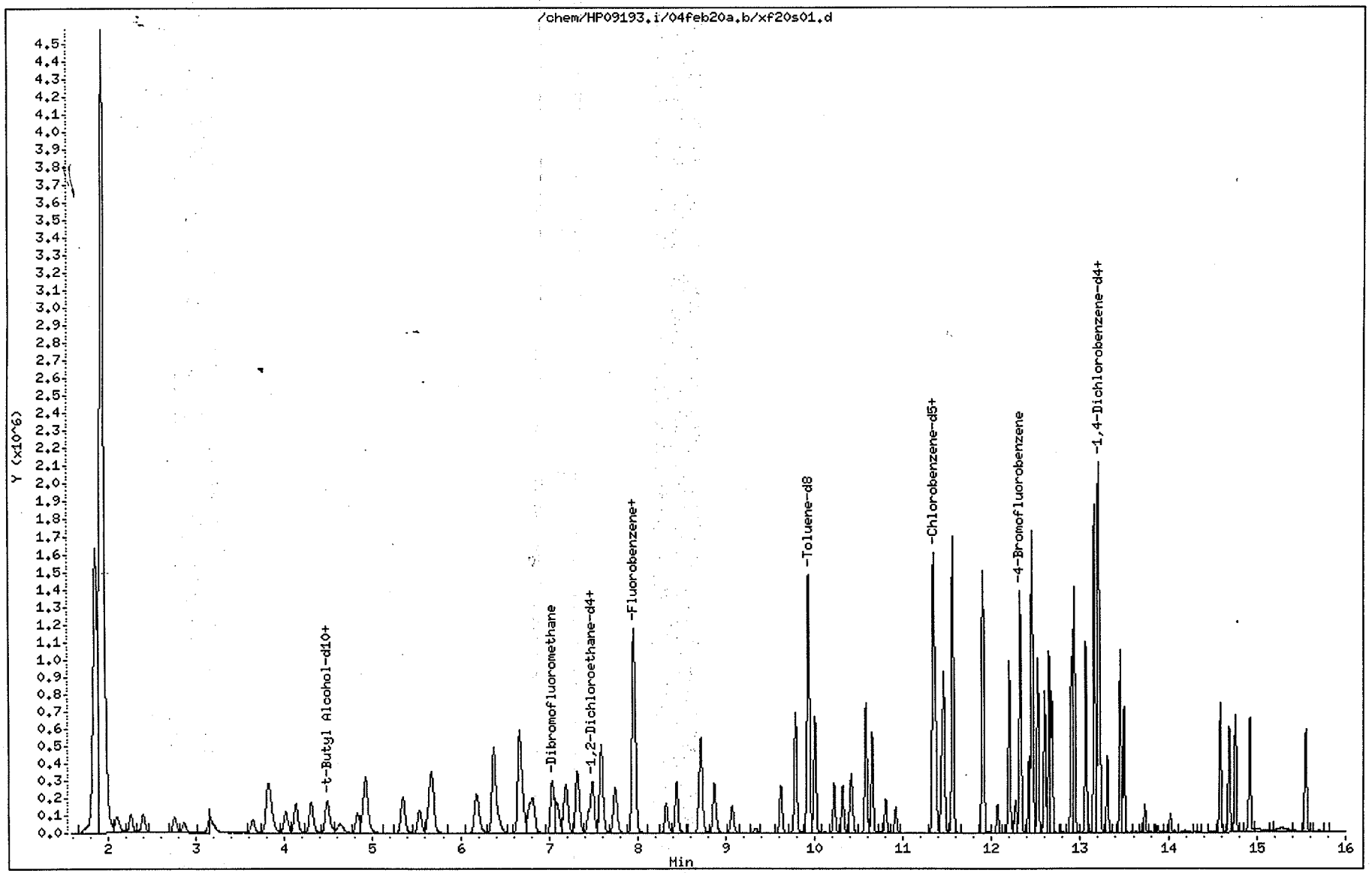
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518 2/20/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 12:20 lcm01518

Sample Name: LCSX06 Lab Sample ID: LCSX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.256 | 50 | 169726 | 21.443 |
| 5) Vinyl Chloride | (1) | 2.394 | 62 | 161773 | 21.674 |
| 7) Bromomethane | (1) | 2.753 | 94 | 101871 | 19.923 |
| 8) Chloroethane | (1) | 2.859 | 64 | 87381 | 20.041 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 106751 | 19.804 |
| 20) Acetone | (1) | 3.834 | 58 | 59480 | 136.737 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 390429 | 19.793 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 125141 | 19.239 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 125981 | 19.884 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 214967 | 20.340 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 133630 | 19.185 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 85262 | 139.573 |
| 54) Chloroform | (1) | 6.819 | 83 | 201291 | 20.401 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 178837 | 20.417 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 153632 | 20.531 |
| 65) Benzene | (1) | 7.586 | 78 | 509388 | 20.224 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 142058 | 20.624 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1186869 | 50.000 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 127729 | 20.047 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 122982 | 19.838 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 135685 | 19.437 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 182405 | 19.449 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 525671 | 92.476 |
| 88) Toluene | (2) | 10.005 | 92 | 329596 | 19.330 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 158329 | 19.839 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 102072 | 19.180 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 162410 | 20.693 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 372853 | 86.175 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 109123 | 19.418 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 932602 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 364062 | 19.202 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 614749 | 19.442 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 504878 | 38.961 |
| 92) Xylene (Total) | (2) | | 106 | 741557 | 58.389 |

* = Compound is an internal standard.

127729 / 1186869 = .25 / .12684

8293

31929.75 / 1592.77 = 20.04

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 12:20 lcm01518

Sample Name: LCSX06 Lab Sample ID: LCSX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.898 | 106 | 236679 | 19.428 |
| 108) Styrene | (2) | 11.908 | 104 | 376755 | 18.865 |
| 109) Bromoform | (2) | 12.069 | 173 | 73562 | 19.041 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 131201 | 18.362 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 526036 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 262086 | 51.304 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 64369 | 50.275 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1150658 | 51.320 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 429277 | 50.089 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

LCSX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX06

File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Sample: LCSX06;LCSX06;2;3;LCS;;
Injected At:20-FEB-2004 11:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1186869( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 932602( -7) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 526036( -8) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 262086 | 51.304 | 103% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 64369 | 50.275 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1150658 | 51.320 | 103% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 429277 | 50.089 | 100% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.256( 0.001) | 50 | 169726 | 21.443 | 21.44 | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | 2.394( 0.001) | 62 | 161773 | 21.674 | 21.67 | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | 2.753( 0.001) | 94 | 101871 | 19.923 | 19.92 | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | 2.859( 0.001) | 64 | 87381 | 20.041 | 20.04 | | | 2.00 | 5.00 |
| 17) 1,1-Dichloroethene | (1) | 3.809( 0.000) | 96 | 106751 | 19.804 | 19.80 | | | 1.00 | 5.00 |
| 20) Acetone | (1) | 3.834( 0.000) | 58 | 59480 | 136.737 | 136.74 | | | 7.00 | 20.00 |
| 24) Carbon Disulfide | (1) | 4.130( 0.000) | 76 | 390429 | 19.793 | 19.79 | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | 4.483( 0.000) | 84 | 125141 | 19.239 | 19.24 | | | 2.00 | 5.00 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919(-0.001) | 96 | 125981 | 19.884 | 19.88 | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 214967 | 20.340 | 20.34 | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 133630 | 19.185 | 19.19 | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | 6.370( 0.001) | 72 | 85262 | 139.573 | 139.57 | | | 4.00 | 10.00 |
| 54) Chloroform | (1) | 6.819( 0.000) | 83 | 201291 | 20.401 | 20.40 | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092( 0.000) | 97 | 178837 | 20.417 | 20.42 | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | 7.326( 0.000) | 117 | 153632 | 20.531 | 20.53 | | | 1.00 | 5.00 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 509388 | 20.224 | 20.22 | | | 0.50 | 5.00 |
| 66) 1,2-Dichloroethane | (1) | 7.592( 0.000) | 62 | 142058 | 20.624 | 20.62 | | | 1.00 | 5.00 |
| 73) Trichloroethene | (1) | 8.446(-0.001) | 95 | 127729 | 20.047 | 20.05 | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | 8.718( 0.000) | 63 | 122982 | 19.838 | 19.84 | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | 9.075(-0.001) | 83 | 135685 | 19.437 | 19.44 | | | 1.00 | 5.00 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620(-0.001) | 75 | 182405 | 19.449 | 19.45 | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787(-0.001) | 43 | 525671 | 92.476 | 92.48 | | | 3.00 | 10.00 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 329596 | 19.330 | 19.33 | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 158329 | 19.839 | 19.84 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX06

File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Sample: LCSX06;LCSX06;2;3;LCS;;
Injected At:20-FEB-2004 11:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | ( 0.000) | 97 | 102072 | 19.180 | 19.18 | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 162410 | 20.693 | 20.69 | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | 10.650 | ( 0.000) | 43 | 372853 | 86.175 | 86.17 | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 109123 | 19.418 | 19.42 | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | 11.369 | ( 0.000) | 112 | 364062 | 19.202 | 19.20 | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 614749 | 19.442 | 19.44 | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 504878 | 38.961 | 38.96 | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | 106 | 741557 | 58.389 | 58.39 | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | 11.898 | ( 0.000) | 106 | 236679 | 19.428 | 19.43 | | | 1.00 | 5.00 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 376755 | 18.865 | 18.87 | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | 12.069 | ( 0.000) | 173 | 73562 | 19.041 | 19.04 | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 131201 | 18.362 | 18.36 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: LCM1518 Date: 2/20/04

Auditor: [signature] Date: 2/23/04

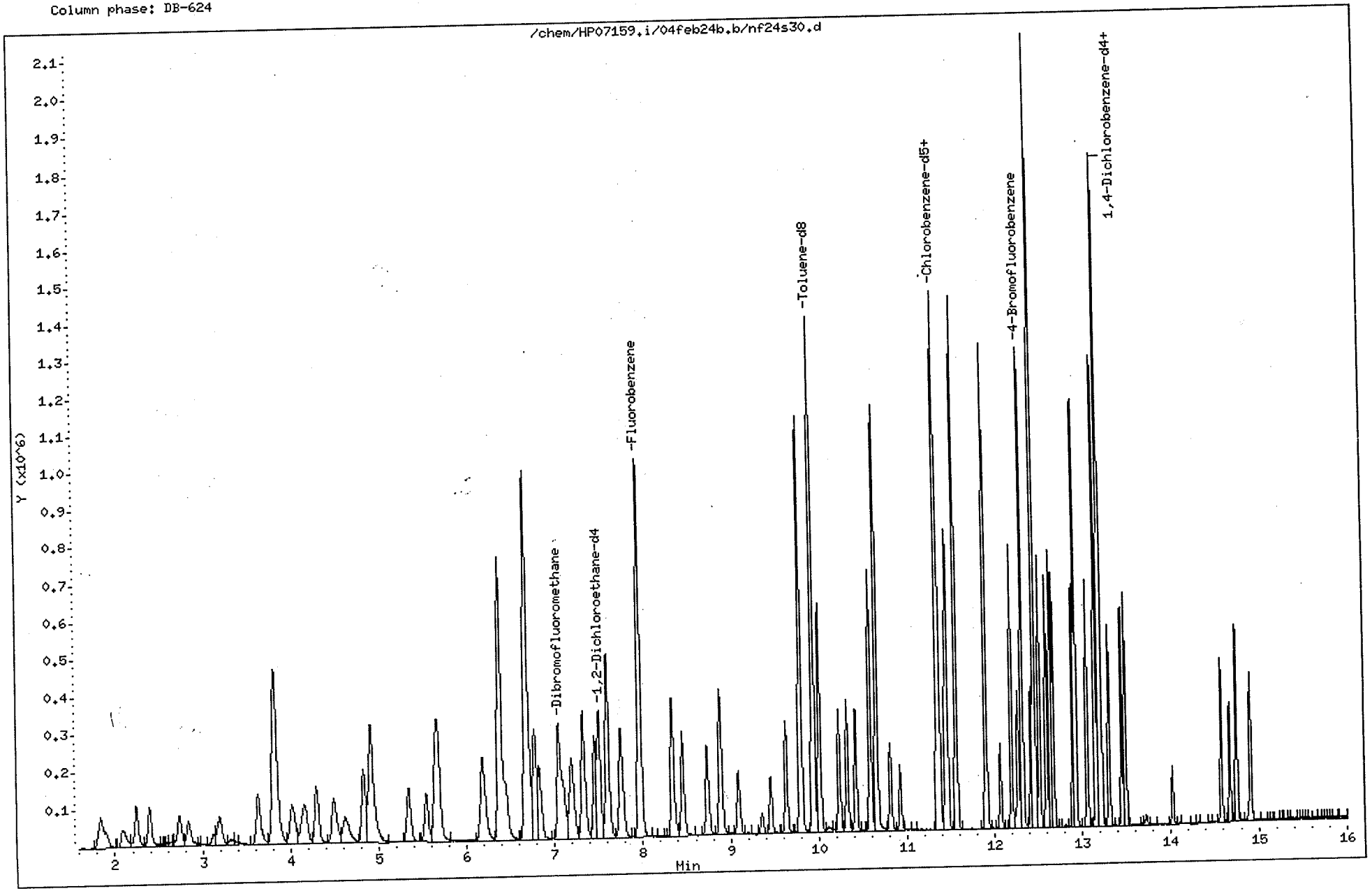
Data File: /chem/HP07159.i/04feb24b.b/nf24s30.d
Date : 24-FEB-2004 20:55
Client ID: LCSN36
Sample Info: LCSN36;LCSN36;1;3;LCS;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME01533 2/24/04

8257



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s30.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 20:55  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 21:18 Automation

Sample Name: LCSN36  Lab Sample ID: LCSN36

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.399 | 62 | 154134 | 18.593 |
| 16) 1,1-Dichloroethene | (1) | 3.811 | 96 | 100972 | 18.824 |
| 17) Freon 113 | (1) | 3.837 | 101 | 94570 | 18.879 |
| 22) Carbon Disulfide | (1) | 4.164 | 76 | 360749 | 19.906 |
| 24) Methylene Chloride | (1) | 4.498 | 84 | 113694 | 18.270 |
| 40) 2-Butanone | (1) | 6.384 | 72 | 218011 | 147.709 |
| 48) Chloroform | (1) | 6.837 | 83 | 182483 | 18.038 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 142566 | 17.705 |
| 57) Isobutyl Alcohol | (1) | 7.456 | 41 | 170584 | 407.846 |
| 60) Benzene | (1) | 7.597 | 78 | 451623 | 18.580 |
| 61) 1,2-Dichloroethane | (1) | 7.610 | 62 | 150259 | 17.747 |
| 65)*Fluorobenzene | (1) | 7.970 | 96 | 1016012 | 50.000 |
| 69) Trichloroethene | (1) | 8.457 | 95 | 108017 | 17.760 |
| 82) Toluene | (2) | 10.014 | 92 | 282632 | 18.399 |
| 87) Tetrachloroethene | (2) | 10.585 | 166 | 126510 | 18.565 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 788005 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 317221 | 18.350 |
| 97) Ethylbenzene | (2) | 11.467 | 91 | 503934 | 18.563 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 398609 | 36.934 |
| 100) o-Xylene | (2) | 11.907 | 106 | 195791 | 18.421 |
| 106) Cyclohexanone | (2) | 12.276 | 55 | 147646 | 422.283 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 425281 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 244719 | 18.334 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 233100 | 18.363 |
| 50)$Dibromofluoromethane | (1) | 7.055 | 113 | 246843 | 47.181 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 63362 | 45.868 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1024397 | 49.933 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 385063 | 51.559 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

LCSN36

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSN36

File: /chem/HP07159.i/04feb24b.b/nf24s30.d
Sample: LCSN36;LCSN36;1;3;LCS;;;
Injected At:24-FEB-2004 20:55
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AA
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:1.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 5.0000 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1988 | 96 | 1016012( -2) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3042 | 117 | 788005( -3) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3618 | 152 | 425281( -4) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.055( 0.000) | 113 | 246843 | 47.181 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 63362 | 45.868 | 92% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1024397 | 49.933 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 385063 | 51.559 | 103% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.399( 0.002) | 62 | 154134 | 18.593 | 18.59 | | | 1.00 | 5.00 |
| 16) 1,1-Dichloroethene | (1) | 3.811( 0.001) | 96 | 100972 | 18.824 | 18.82 | | | 0.80 | 5.00 |
| 17) Freon 113 | (1) | 3.837( 0.000) | 101 | 94570 | 18.879 | 18.88 | | | 2.00 | 10.00 |
| 22) Carbon Disulfide | (1) | 4.164( 0.000) | 76 | 360749 | 19.906 | 19.91 | | | 1.00 | 5.00 |
| 24) Methylene Chloride | (1) | 4.498( 0.000) | 84 | 113694 | 18.270 | 18.27 | | | 2.00 | 5.00 |
| 40) 2-Butanone | (1) | 6.384( 0.000) | 72 | 218011 | 147.709 | 147.71 | | | 3.00 | 10.00 |
| 48) Chloroform | (1) | 6.837( 0.000) | 83 | 182483 | 18.038 | 18.04 | | | 0.80 | 5.00 |
| 56) Carbon Tetrachloride | (1) | 7.337( 0.000) | 117 | 142566 | 17.705 | 17.70 | | | 1.00 | 5.00 |
| 57) Isobutyl Alcohol | (1) | 7.456( 0.000) | 41 | 170584 | 407.846 | 407.85 | | | 100.00 | 250.00 |
| 60) Benzene | (1) | 7.597( 0.000) | 78 | 451623 | 18.580 | 18.58 | | | 0.50 | 5.00 |
| 61) 1,2-Dichloroethane | (1) | 7.610( 0.000) | 62 | 150259 | 17.747 | 17.75 | | | 1.00 | 5.00 |
| 69) Trichloroethene | (1) | 8.457( 0.000) | 95 | 108017 | 17.760 | 17.76 | | | 1.00 | 5.00 |
| 82) Toluene | (2) | 10.014( 0.000) | 92 | 282632 | 18.399 | 18.40 | | | 0.70 | 5.00 |
| 87) Tetrachloroethene | (2) | 10.585( 0.001) | 166 | 126510 | 18.565 | 18.57 | | | 0.80 | 5.00 |
| 95) Chlorobenzene | (2) | 11.377( 0.000) | 112 | 317221 | 18.350 | 18.35 | | | 0.80 | 5.00 |
| 97) Ethylbenzene | (2) | 11.467( 0.000) | 91 | 503934 | 18.563 | 18.56 | | | 0.80 | 5.00 |
| 98) m+p-Xylene | (2) | 11.567( 0.000) | 106 | 398609 | 36.934 | 36.93 | | | 0.80 | 5.00 |
| 100) o-Xylene | (2) | 11.907( 0.000) | 106 | 195791 | 18.421 | 18.42 | | | 0.80 | 5.00 |
| 106) Cyclohexanone | (2) | 12.276( 0.000) | 55 | 147646 | 422.283 | 422.28 | | | 55.00 | 250.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219( 0.000) | 146 | 244719 | 18.334 | 18.33 | | | 1.00 | 5.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492( 0.000) | 146 | 233100 | 18.363 | 18.36 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

CDS

Comments:

360749 x .25 µg
1016012 x .005 L

Analyst: SME1533  Date: 2/24/04

Auditor:  Date: 2/25/04

8299

844306

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004701 e | | | | | | | | | | | |
| Lab Number 4218998 | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.606 | 38.601 | 5.95 | 2/20/04 | SY035 | N | — |
| Bottle Code 93H | Comments | | | | | | | | | | |
| Vial ID -004702 re | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4218994 | SY035 | 12/31/03 | 2/17/04 | 1115 | 32.58 | 38.48 | 5.90 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID -004703 re | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4218994 | SY035 | 12/31/03 | 2/17/04 | 1115 | 32.48 | 39.09 | 6.61 | 2/20/04 | SY035 | N | — |
| Bottle Code 93H | Comments | | | | | | | | | | |
| Vial ID -004704 e | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number | SY035 | 12/31/03 | | | 32.77 | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 360 01

Balance ID: 5311

| Vial ID | Lab Number | Bottle Code | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -004705 | 4218997 | 93B | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.67 | 38.44 | 5.77 | 2/20/04 | SY035 | N | — | |
| -004706 | 4218998 | 93B | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.76 | 38.78 | 6.02 | 2/20/04 | SY035 | N | — | |
| -004707 | 4218995 | 93B | SY035 | 12/31/03 | 2/17/04 | 1145 | 32.79 | 39.08 | 6.29 | 2/20/04 | SY035 | N | — | |
| -004708 | 4218995 | 93A | SY035 | 12/31/03 | 2/17/04 | 1145 | 32.79 | 38.90 | 6.11 | 2/20/04 | SY035 | N | — | |

Reviewed by: _____ Date: _____



043626 20

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004697 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.71 | 38.68 | 5.97 | 2/19/04 | SY035 | N | — |
| Lab Number: 4219013 | | | | | | | | | | | |
| Bottle Code: 93A | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004698 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.64 | 38.00 | 5.36 | 2/19/04 | SY035 | Y | — |
| Lab Number: 4219014 | | | | | | | | | | | |
| Bottle Code: 93A | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004699 | SY035 | 12/31/03 | | | 32.88 | | | | | | |
| Lab Number | | | | | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

| Vial | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004700 | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.78 | 38.94 | 6.16 | 2/20/04 | SY035 | N | — |
| Lab Number: 4218997 | | | | | | | | | | | |
| Bottle Code: 93A | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 033600 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004709 re | | | | | | | | | | | |
| Lab Number 4219003 | SY035 | 12/31/03 | 2/17/04 | 1445 | 32.80 | 38.99 | 6.19 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID -004710 | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4218999 | SY035 | 12/31/03 | 2/17/04 | 1245 | 33.11 | 39.38 | 6.27 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID -004711 re | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4218999 | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.62 | 38.71 | 6.09 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID -004712 re | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4218996 | SY035 | 12/31/03 | 2/17/04 | 1215 | 32.57 | 38.61 | 6.04 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004713 | SY035 | 12/31/03 | 2/17/04 | 1215 | 32.60 | 38.74 | 6.14 | 2/20/04 | SY035 | N | — |
| Lab Number 4218996 | | | | | | | | | | | |
| Bottle Code 93B | Comments | | | | | | | | | | |

| Vial -004714 here | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Number 4219003 | SY035 | 12/31/03 | 2/17/04 | 1445 | 32.96 | 39.07 | 6.11 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

| Vial -004715 here | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Number 4219002 | SY035 | 12/31/03 | 2/17/04 | 1415 | 32.90 | 39.22 | 6.32 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

| Vial ID -004716 | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Number 4219001 | SY035 | 12/31/03 | 2/17/04 | 1415 | 32.78 | 38.98 | 6.20 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004717 re | | | | | | | | | | | |
| Lab Number 4219000 | SY035 | 12/31/03 | 2/17/04 | 1345 | 32.68 | 39.18 | 6.50 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004718 e | | | | | | | | | | | |
| Lab Number 4219000 | SY035 | 12/31/03 | 2/17/04 | 1345 | 32.62 | 39.05 | 6.43 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004719 | | | | | | | | | | | |
| Lab Number | SY035 | 12/31/03 | | | 32.76 | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004720 | | | | | | | | | | | |
| Lab Number 4219001 | SY035 | 12/31/03 | 2/17/04 | 1415 | 32.50 | 38.86 | 6.36 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 3L0 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004721 e | | | | | | | | | | | |
| Lab Number 4219002 | SY035 | 12/31/03 | 2/17/04 | 1415 | 32.66 | 38.78 | 6.12 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004722 ere | | | | | | | | | | | |
| Lab Number 4219004 | SY035 | 12/31/03 | 2/17/04 | 1505 | 32.93 | 39.95 | 7.02 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004723 ere | | | | | | | | | | | |
| Lab Number 4219004 | SY035 | 12/31/03 | 2/17/04 | 1505 | 32.78 | 39.47 | 6.69 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004724 re | | | | | | | | | | | |
| Lab Number | SY035 | 12/31/03 | | | 32.75 | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____



043626 24

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

Extraction Started (date/time) 2-19-04 (13:00) by: M.O.S 1457

Extraction Ended (date/time) 2.20.04 (0700) by: Q 1230

Leachate Batch #: 04050 - 1457 - 0946 -

Analytical Batch #:

Extraction Fluid Lot #: 123002904B

| | Sample # | Matrix | Acquired | | | | Bottles | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | SPK | BK | MS | MSD | Dept. 21 | Dept. 25 | Dept. 32 | Other |
| EXBLK | 4219274 | EXT FLUID #1 | | SUB | | | 3 | | | |
| 1 | 4218086 | SOLID | | SUB | | | 3 | | | |
| 2 | 4218087 | SOLID | SUB | ~~SUB~~ | ACMP | | 3 | | | |
| 3 | 4218088 | SOLID | SUB | | | ACMP | 3 | | | |
| 4 | 4218089 | SOLID | | ACMP | | | 3 | | | |
| 5 | 4218609 | SOIL | SUB | ACMP | ACMP | | 3 | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
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| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

(3) MOS 1457 2-23-04

Extraction Started (date/time) 2-23-04 (13:30) by: MOS 1457

Extraction Ended (date/time) 2-24-04 (7:30) by: MOS 1457

Leachate Batch #: 04054 - 1457 - 02573 - 0946 -

Analytical Batch #:

Extraction Fluid Lot #: 1457022304A

| | Sample # | Matrix | Acquired | | | | Bottles | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | SPK | BK | MS | MSD | Dept. 21 | Dept. 25 | Dept. 32 | Other |
| EXBLK | TCLP 02573 4221333 | EXT FLUID #1 | | Acmp | | | 1 | | | |
| 1 | 4219007 | SOIL | | Acmp | | | 3 | | | |
| 2 | 4219023 | SOIL | | Acmp | | | 3 | | | |
| 3 | 4219914 | SLUDGE | SMC | Acmp | Acmp | | 3 | | | |
| 4 | 4220721 | SOIL | | Acmp | | | 3 | | | |
| 5 | 4220724 | SOIL | | Acmp | | | 3 | | | |
| 6 | 4220302 | SOLID | | Acmp | | | 1 | | | |
| 7 | 4219670 | SOIL | | Acmp | | | 3 | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst: LCM ** Shift #2 Analyst: _____ ** Shift #3 Analyst: _____ *

Comment Code:
R = Reinjection necessary
S = Surrogate problem
NU = Not used
MR = Meets requirements
Cz = Confirms z, (z = S, I or X)
X = Sample sent to be reextracted
I = Internal Standard problem
F = Further dilution required
IUO = Internal use only
T = Injected outside valid tune period

Other problems or comments are as follows:

8260B LOW LEVEL ENCORE SOILS

Data Directory Path is - D:\DATA\04FEB16A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XF16T01.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 16 Feb 04 | 09:21 | | | MR |
| XF16I01.D | VSTD300 | VSTD300 | 16 Feb 04 | 09:47 | | | MR |
| XF16I02.D | VSTD100 | VSTD100 | 16 Feb 04 | 10:13 | | | NU |
| XF16I03.D | VSTD050 | VSTD050 | 16 Feb 04 | 11:19 | | | NU |
| XF16I04.D | VSTD020 | VSTD020 | 16 Feb 04 | 11:45 | | | MR |
| XF16I05.D | VSTD010 | VSTD010 | 16 Feb 04 | 12:12 | | | MR |
| XF16I06.D | VSTD004 | VSTD004 | 16 Feb 04 | 12:39 | | | MR |
| XF16I07.D | VSTD100 | VSTD100 | 16 Feb 04 | 13:06 | | | MR |
| XF16I08.D | BLANK | BLANK | 16 Feb 04 | 13:33 | | | NU |
| XF16M01.D | VSTD001 | 1 PPB MDL | 16 Feb 04 | 14:00 | | | NU |
| XF16I09.D | VSTD050 | VSTD050 | 16 Feb 04 | 14:27 | | | MR |
| XF16M02.D | VSTD001 | 1 PPB MDL | 16 Feb 04 | 14:54 | | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst:___LCM_____** Shift #2 Analyst:____MSL____** Shift #3 Analyst:____ACMP___*

Comment Code:

| | | | |
|---|---|---|---|
| R = | Reinjection necessary | X = | Sample sent to be reextracted |
| S = | Surrogate problem | I = | Internal Standard problem |
| NU = | Not used | F = | Further dilution required |
| MR = | Meets requirements | IUO = | Internal use only |
| Cz = | Confirms z, (z = S, I or X) | T = | Injected outside valid tune period |

Other problems or comments are as follows:

*_____*

*_____8260B LOW SOIL ENCORE_____*

*_____*

*_____*

Data Directory Path is - D:\DATA\04FEB20A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XF20T01.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 09:38 | | | NU |
| XF20T02.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 09:51 | | | NU |
| XF20T03.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 10:03 | | | MR |
| XF20C01.D | VSTD100 | VSTD100 | 20 Feb 04 | 10:28 | | | MR |
| XF20X01.D | BLANK | BLANK | 20 Feb 04 | 10:55 | X040511AA | | NU |
| XF20B01.D | VBLKX06 | VBLKX06 | 20 Feb 04 | 11:22 | X040511AA | | MR |
| XF20S01.D | LCSX06 | LCSX06 | 20 Feb 04 | 11:49 | X040511AA | | MR |
| XF18S02.D | 5GPTM | 4219009 | 20 Feb 04 | 12:31 | X040511AA | | MR |
| XF18S03.D | 7GPTM | 4219025 | 20 Feb 04 | 12:58 | X040511BA | | MR |
| XF18S04.D | 5GP17 | 4218994 | 20 Feb 04 | 13:25 | X040511AA | | MR |
| XF18S05.D | 5GP18 | 4218995 | 20 Feb 04 | 13:52 | X040511AA | | MR |
| XF18S06.D | 5GP20 | 4218997 | 20 Feb 04 | 14:19 | X040511AA | | MR |
| XF18S07.D | 5GP20MS | 4218998 | 20 Feb 04 | 14:46 | X040511AA | | MR |
| XF18S08.D | 5GP20MSD | 4218999 | 20 Feb 04 | 15:13 | X040511AA | | MR |
| XF18S09.D | 5GP21 | 4219000 | 20 Feb 04 | 15:40 | X040511AA | | MR |
| XF18S10.D | 5GP22 | 4219001 | 20 Feb 04 | 16:07 | X040511AA | | MR |
| XF20S11.D | 52222 | 4219002 | 20 Feb 04 | 16:34 | X040511AA | | MR |
| XF20S12.D | 5GP23 | 4219003 | 20 Feb 04 | 17:01 | X040511AA | | MR |
| XF20S13.D | 5GP24 | 4219004 | 20 Feb 04 | 17:28 | X040511AA | | MR |
| XF20S14.D | 7GP17 | 4219010 | 20 Feb 04 | 17:55 | X040511BA | | MR |
| XF20S15.D | 7GP18 | 4219011 | 20 Feb 04 | 18:22 | X040511BA | | MR |
| XF20S16.D | 7GP19 | 4219012 | 20 Feb 04 | 18:49 | X040511BA | | MR |
| XF20S17.D | 7GP20 | 4219013 | 20 Feb 04 | 19:16 | X040511BA | | MR |
| XF20S18.D | 7GP20MS | 4219014 | 20 Feb 04 | 19:43 | X040511BA | | MR |
| XF20S19.D | 7GP20MSD | 4219015 | 20 Feb 04 | 20:10 | X040511BA | | MR |
| XF20S20.D | 7GP21 | 4219016 | 20 Feb 04 | 20:38 | X040511BA | | MR |
| XF20S21.D | 7GP22 | 4219017 | 20 Feb 04 | 21:05 | X040511BA | | MR |
| XF20S22.D | 5GP19 | 4218996 | 20 Feb 04 | 21:31 | X040511AA | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP07159 **HP #11**

** Shift #1 Analyst:___SJR_____** Shift #2 Analyst:____SME____** Shift #3 Analyst:_____*

Comment Code: R = Reinjection necessary X = Sample sent to be reextracted
S = Surrogate problem I = Internal Standard problem
NU = Not used F = Further dilution required
MR = Meets requirements IUO = Internal use only
Cz = Confirms z, (z = S, I or X) T = Injected outside valid tune period

Other problems or comments are as follows:

*_____*
*_____8260B WATERS_____*
*_____*
*_____*
*_____*

Data Directory Path is - C:\HPCHEM\1\DATA\04FEB02B\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| NF02T04.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 10:47 | | | NU |
| NF02T05.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:06 | | | NU |
| NF02T06.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:19 | | | NU |
| NF02T07.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:30 | | | MR |
| NF02I10.D | VSTD300 | VSTD300 | 2 Feb 2004 | 11:54 | | | MR |
| NF02I11.D | VSTD100 | VSTD100 | 2 Feb 2004 | 12:19 | | | MR |
| NF02I12.D | VSTD050 | VSTD050 | 2 Feb 2004 | 12:44 | | | MR |
| NF02I13.D | VSTD020 | VSTD020 | 2 Feb 2004 | 13:09 | | | MR |
| NF02I14.D | VSTD010 | VSTD010 | 2 Feb 2004 | 13:35 | | | MR |
| NF02I15.D | VSTD004 | VSTD004 | 2 Feb 2004 | 14:00 | | | MR |
| NF02M16.D | VSTD001 | VSTD001 | 2 Feb 2004 | 14:25 | | | NU |
| NF02M17.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 14:50 | | | NU |
| NF02M18.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 15:44 | | | NU |
| NF02B01.D | VBLKN03 | VBLKN03 | 2 Feb 2004 | 16:09 | N040331AA | | NU |
| NF02M19.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 16:39 | | | NU |
| NF02B02.D | VBLKN03 | VBLKN03 | 2 Feb 2004 | 17:04 | N040331AA | | NU |
| NF02M20.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 17:29 | | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP07159 **HP #11**

** Shift #1 Analyst:_____** Shift #2 Analyst:__SME_____** Shift #3 Analyst:__ACMP_____*

Comment Code: R = Reinjection necessary X = Sample sent to be reextracted
S = Surrogate problem I = Internal Standard problem
NU = Not used F = Further dilution required
MR = Meets requirements IUO = Internal use only
Cz = Confirms z, (z = S, I or X) T = Injected outside valid tune period

Other problems or comments are as follows:

*_____8260B WATERS_____*
*_____*
*_____*
*_____*

Data Directory Path is - C:\HPCHEM\1\DATA\04FEB24B\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| NF24T02.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 17:20 | | | NU |
| NF24T03.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 17:33 | | | NU |
| NF24C02.D | VSTD150 | VSTD150 | 24 Feb 2004 | 17:56 | | | NU/MISS PREP |
| NF24T04.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 18:58 | | | MR |
| NF24C03.D | VSTD150 | VSTD150 | 24 Feb 2004 | 19:25 | | | MR |
| NF24X11.D | CLNBLK | CLNBLK | 24 Feb 2004 | 20:06 | | | NU |
| NF24B02.D | VBLKN36 | VBLKN36 | 24 Feb 2004 | 20:31 | N040552AA | | MR |
| NF24S30.D | LCSN36 | LCSN36 | 24 Feb 2004 | 20:55 | N040552AA | | MR |
| NF24S31.D | EXBLKB | 4219274 | 24 Feb 2004 | 21:34 | N040552AB | 20 | MR |
| NF24S32.D | MM500 | 4218086 | 24 Feb 2004 | 21:58 | N040552AB | 20 | MR |
| NF24S33.D | MM500MS | 4218087 | 24 Feb 2004 | 22:23 | N040552AB | 20 | MR |
| NF24S34.D | MM500MSD | 4218088 | 24 Feb 2004 | 22:48 | N040552AB | 20 | MR |
| NF24S35.D | MM800D | 4218089 | 24 Feb 2004 | 23:12 | N040552AB | 20 | F |
| NF24S36.D | S105Z | 4218609 | 24 Feb 2004 | 23:38 | N040552AB | 20 | MR |
| NF24S37.D | S105ZMS | 4218609 | 25 Feb 2004 | 00:02 | N040552AB | 20 | MR |
| NF24S38.D | EXBLKC | 4217864 | 25 Feb 2004 | 00:28 | N040552AC | 20 | MR |
| NF24S39.D | IIV0A | 4217216 | 25 Feb 2004 | 00:52 | N040552AC | 20 | MR |
| NF24S40.D | EXBLKD | 4221333 | 25 Feb 2004 | 1:17 | N040552AD | 20 | MR |
| NF24S41.D | UN5ZH | 4219007 | 25 Feb 2004 | 1:42 | N040552AD | 20 | MR |
| NF24S42.D | UN7ZH | 4219023 | 25 Feb 2004 | 2:06 | N040552AD | 20 | MR |
| NF24S43.D | ZH5SL | 4219914 | 25 Feb 2004 | 2:31 | N040552AD | 20 | MR |
| NF24S44.D | ZH5SLMS | 4219914 | 25 Feb 2004 | 2:55 | N040552AD | 20 | MR |
| NF24S45.D | ZHSP1 | 4220721 | 25 Feb 2004 | 3:21 | N040552AD | 20 | MR |
| NF24S46.D | ZHSP2 | 4220724 | 25 Feb 2004 | 3:46 | N040552AD | 20 | MR |
| NF24S47.D | ZH439 | 4220302 | 25 Feb 2004 | 4:10 | N040552AD | 20 | MR |
| NF24S48.D | ZH407 | 4219670 | 25 Feb 2004 | 4:35 | N040552AD | 20 | MR |

# Semivolatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance
# Summary

CASE NARRATIVE

**Client: Draper Aden Associates, Inc.**
**SDG #: RAV01**

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

**SAMPLE NUMBER(S) :**

| LL #'s | Sample Code | Matrix Water | Comments |
|---|---|---|---|
| 4219006 | UN5NV | X | |

**LABORATORY SUBMITTED QC:**

| | | | |
|---|---|---|---|
| SBLKWC055 | SBLKWC055M | X | Method Blank |
| 4219022 | UN7NV | X | Unspiked |
| 4219022 | UN7NVMS | X | Matrix Spike |
| 4219022 | UN7NVMSD | X | Matrix Spike Dup |
| 055WCLCS | 055WCLCSM | X | Lab Control Sample |

**SAMPLE PREPARATION:**

All samples were leached by SW-846 Method 1311 and extracted according to SW-846 Method 3510C.

Due to insufficient sample, only 330 mls were used in the extractions of UN7NV, UN7NVMS and UN7NVMSD.

No other problems were encountered during the extraction of these samples.

**ANALYSIS:**

The method used for analysis was SW-846 8270C.

**Case Narrative (continued)**
**SDG#: RAV01**

All samples were analyzed for the semivolatile TCLP (toxicity characteristic leaching procedure) compounds.

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**

All QC was within specifications.

**DATA INTERPRETATION:**

Only non-conformances for client requested compounds are addressed in this case narrative.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christina M. Ratchford for CJN Date: 3-3-04
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

# QC Summary

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb33z.d DFTPP Injection Date: 02/13/04

Instrument ID: HP06755 DFTPP Injection Time: 05:30

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 41.1 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 55.5 |
| 70 | Less than 2.0% of mass 69 | 0.12 ( 0.22)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.5 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.09 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 2.37 |
| 441 | Present, and less than mass 443 | 7.76 |
| 442 | Greater than 40.0 % of mass 198 | 53.2 |
| 443 | 17.0 - 23.0% of mass 442 | 10.5 ( 19.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0404 | mb33a.d | 02/13/04 | 06:59 |
| 02 | SSTD120 | STD0404 | mb332.d | 02/13/04 | 08:00 |
| 03 | SSTD080 | STD0404 | mb333.d | 02/13/04 | 09:01 |
| 04 | SSTD005 | STD0404 | mb334.d | 02/13/04 | 10:02 |
| 05 | SSTD015 | STD0404 | mb335.d | 02/13/04 | 11:03 |
| 06 | SSTD030 | STD0404 | mb336.d | 02/13/04 | 12:04 |
| 07 | SSTD001 | 8270MDL0404 | mb337.d | 02/13/04 | 13:05 |
| 08 | SSTD050 | ICV0224 | mb338.d | 02/13/04 | 14:06 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb610.d DFTPP Injection Date: 02/24/04

Instrument ID: HP06755 DFTPP Injection Time: 20:24

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 43.5 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 56.8 |
| 70 | Less than 2.0% of mass 69 | 0.14 ( 0.24)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.97 |
| 275 | 10.0 - 30.0% of mass 198 | 19.6 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, and less than mass 443 | 8.06 |
| 442 | Greater than 40.0 % of mass 198 | 55.4 |
| 443 | 17.0 - 23.0% of mass 442 | 10.5 ( 19.0)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0404 | mb611.d | 02/24/04 | 20:48 |
| 02 | SBLKWC055M | SBLKWC055 | mb612.d | 02/24/04 | 22:13 |
| 03 | 055WCLCSM | 055WCLCS | mb613.d | 02/24/04 | 23:12 |
| 04 | UN7NV | 4219022 | mb614.d | 02/25/04 | 00:10 |
| 05 | UN7NVMS | 4219022 | mb615.d | 02/25/04 | 01:08 |
| 06 | UN7NVMSD | 4219022 | mb616.d | 02/25/04 | 02:07 |
| 07 | UN5NV | 4219006 | mb617.d | 02/25/04 | 03:05 |
| 08 | TC407 | 4219669 | mb618.d | 02/25/04 | 04:03 |
| 09 | NV5SL | 4219913 | mb619.d | 02/25/04 | 05:01 |



FORM V SV

2C

# WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01

| | LL #'s | EPA SAMPLE NO. | S1 (PHL) # | S2 (2FP) # | S3 (TBP) # | S4 (TPH) # | S5 (NBZ) # | S6 (FBP) # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 4219006 | UN5NV | 34 | 52 | 90 | 70 | 84 | 78 | 0 |
| 02 | SBLKWC055 | SBLKWC055M | 51 | 69 | 89 | 80 | 84 | 77 | 0 |
| 03 | 4219022 | UN7NV | 33 | 50 | 87 | 70 | 79 | 73 | 0 |
| 04 | 4219022 | UN7NVMS | 38 | 59 | 97 | 78 | 87 | 89 | 0 |
| 05 | 4219022 | UN7NVMSD | 36 | 56 | 92 | 68 | 83 | 85 | 0 |
| 06 | 055WCLCS | 055WCLCSM | 54 | 74 | 97 | 85 | 87 | 91 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (PHL) | = Phenol-d6 | (10-80) |
| S2 (2FP) | = 2-Fluorophenol | (23-94) |
| S3 (TBP) | = 2,4,6-Tribromophenol | (45-142) |
| S4 (TPH) | = Terphenyl-d14 | (53-124) |
| S5 (NBZ) | = Nitrobenzene-d5 | (54-124) |
| S6 (FBP) | = 2-Fluorobiphenyl | (64-112) |

# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out



FORM II SV-1

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLKWC055M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb612.d Lab Sample ID: SBLKWC055

Date Extracted: 02/24/04 Extraction: Sepf

Date Analyzed: 02/24/04 Time Analyzed: 22:13

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP06755

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 055WCLCSM | 055WCLCS | mb613.d | 02/24/04 |
| 02 | UN7NV | 4219022 | mb614.d | 02/25/04 |
| 03 | UN7NVMS | 4219022 | mb615.d | 02/25/04 |
| 04 | UN7NVMSD | 4219022 | mb616.d | 02/25/04 |
| 05 | UN5NV | 4219006 | mb617.d | 02/25/04 |
| 06 | TC407 | 4219669 | mb618.d | 02/25/04 |
| 07 | NV5SL | 4219913 | mb619.d | 02/25/04 |
| 08 | NV5SLDL | 4219913DL | mb634.d | 02/25/04 |
| 09 | NV5SLRE | 4219913RE | mb635.d | 02/25/04 |
| 10 | NV439 | 4220301 | mb636.d | 02/25/04 |
| 11 | BLA20 | 4221331 | mb637.d | 02/25/04 |
| 12 | BLA44 | 4221332 | mb638.d | 02/25/04 |

COMMENTS:

_____

_____

9321

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWC055M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWC055

Sample wt/vol: 500 (g/mL)ML Lab File ID: mb612.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 02/24/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/24/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or mg/Kg) MDL | MG/L | Q |
|---|---|---|---|---|
| 110-86-1 | Pyridine | | 0.004 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.002 | U |
| 95-48-7 | 2-Methylphenol | | 0.002 | U |
| 106-44-5 | 4-Methylphenol | | 0.004 | U |
| 67-72-1 | Hexachloroethane | | 0.002 | U |
| 98-95-3 | Nitrobenzene | | 0.002 | U |
| 87-68-3 | Hexachlorobutadiene | | 0.002 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | 0.002 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | | 0.002 | U |
| 121-14-2 | 2,4-Dinitrotoluene | | 0.002 | U |
| 118-74-1 | Hexachlorobenzene | | 0.002 | U |
| 87-86-5 | Pentachlorophenol | | 0.006 | U |

9322

WATER GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:mb614.d
UN7NV 4219022
AMT USED:330.0 ml
FINAL VOL:1 ml

MATRIX SPIKE:mb615.d
UN7NVMS 4219022
AMT USED: 330.0 ml
FINAL VOL: 1 ml

SPIKE DUPLICATE:mb616.d
UN7NVMSD 4219022
AMT USED: 330.0 ml
FINAL VOL: 1 ml

INSTRUMENT: HP06755  DILUTION FACTOR: 1  BATCH: 04055WAC026

%MOISTURE:  EXTRACT SPIKE LEVEL: 303.03

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pyridine | 303.03 | 303.03 | ND | 166.37 | 150.69 | 55 | 50 | 31- 88 | YES | 10 | 30 | YES |
| 1,4-Dichlorobenzene | 303.03 | 303.03 | ND | 200.30 | 190.26 | 66 | 63 | 42-105 | YES | 5 | 30 | YES |
| 2-Methylphenol | 303.03 | 303.03 | ND | 227.39 | 220.75 | 75 | 73 | 34-119 | YES | 3 | 30 | YES |
| 4-Methylphenol | 303.03 | 303.03 | ND | 215.81 | 207.30 | 71 | 68 | 30-114 | YES | 4 | 30 | YES |
| Hexachloroethane | 303.03 | 303.03 | ND | 158.80 | 144.22 | 52 | 48 | 20-116 | YES | 10 | 30 | YES |
| Nitrobenzene | 303.03 | 303.03 | ND | 255.98 | 245.85 | 84 | 81 | 43-133 | YES | 4 | 30 | YES |
| Hexachlorobutadiene | 303.03 | 303.03 | ND | 187.41 | 171.06 | 62 | 56 | 31-122 | YES | 9 | 30 | YES |
| 2,4,6-Trichlorophenol | 303.03 | 303.03 | ND | 274.29 | 265.21 | 91 | 88 | 31-140 | YES | 3 | 30 | YES |
| 2,4,5-Trichlorophenol | 303.03 | 303.03 | ND | 272.41 | 262.53 | 90 | 87 | 38-138 | YES | 4 | 30 | YES |
| 2,4-Dinitrotoluene | 303.03 | 303.03 | ND | 299.42 | 292.61 | 99 | 97 | 43-145 | YES | 2 | 30 | YES |
| Hexachlorobenzene | 303.03 | 303.03 | ND | 265.02 | 261.05 | 87 | 86 | 65-114 | YES | 2 | 30 | YES |
| Pentachlorophenol | 303.03 | 303.03 | ND | 216.38 | 197.23 | 71 | 65 | 20-130 | YES | 9 | 30 | YES |

COMMENTS: _____

Lancaster Laboratories, Inc.
WATER Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06755

Method: SW-846 8270C  File ID: mb613.d

LCS SAMPLE NO: 055WCLCS  BATCH: 04055WAC026  Sample Code: 055WCLCSM

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Pyridine | 200.00 | 89.07 | 45 | 31 - 88 | YES |
| 1,4-Dichlorobenzene | 200.00 | 138.15 | 69 | 41 - 102 | YES |
| 2-Methylphenol | 200.00 | 159.64 | 80 | 56 - 105 | YES |
| 4-Methylphenol | 200.00 | 160.01 | 80 | 52 - 97 | YES |
| Hexachloroethane | 200.00 | 112.07 | 56 | 22 - 102 | YES |
| Nitrobenzene | 200.00 | 162.84 | 81 | 63 - 112 | YES |
| Hexachlorobutadiene | 200.00 | 127.82 | 64 | 20 - 111 | YES |
| 2,4,6-Trichlorophenol | 200.00 | 182.23 | 91 | 71 - 109 | YES |
| 2,4,5-Trichlorophenol | 200.00 | 180.76 | 90 | 70 - 115 | YES |
| 2,4-Dinitrotoluene | 200.00 | 198.70 | 99 | 75 - 122 | YES |
| Hexachlorobenzene | 200.00 | 175.33 | 88 | 71 - 110 | YES |
| Pentachlorophenol | 200.00 | 143.80 | 72 | 50 - 112 | YES |

NC = Could not calculate

Comments: _____

0324

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): mb611.d Date Analyzed: 02/24/04

Instrument ID: HP06755 Time Analyzed: 20:48

| | IS1(DCB) AREA # | RT # | IS2(NPT) AREA # | RT # | IS3(ANT) AREA # | RT # |
|---|---|---|---|---|---|---|
| 12 HOUR STD | 259852 | 13.034 | 914033 | 16.807 | 408312 | 22.227 |
| UPPER LIMIT | 519704 | 13.534 | 1828066 | 17.307 | 816624 | 22.727 |
| LOWER LIMIT | 129926 | 12.534 | 457017 | 16.307 | 204156 | 21.727 |
| EPA SAMPLE NO. | | | | | | |
| 01 SBLKWC055M | 194795 | 13.020 | 705596 | 16.793 | 335924 | 22.212 |
| 02 055WCLCSM | 170951 | 13.023 | 600519 | 16.796 | 272869 | 22.216 |
| 03 UN7NV | 196059 | 13.020 | 698411 | 16.794 | 332773 | 22.213 |
| 04 UN7NVMS | 176916 | 13.023 | 616576 | 16.796 | 287941 | 22.215 |
| 05 UN7NVMSD | 178322 | 13.019 | 633954 | 16.793 | 291698 | 22.223 |
| 06 UN5NV | 190383 | 13.020 | 683034 | 16.793 | 324263 | 22.213 |
| 07 TC407 | 176626 | 13.020 | 631681 | 16.793 | 286608 | 22.223 |
| 08 NV5SL | 148064 | 13.034 | 295855* | 16.797 | 281085 | 22.227 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): mb611.d Date Analyzed: 02/24/04

Instrument ID: HP06755 Time Analyzed: 20:48

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 592211 | 26.737 | 469554 | 33.247 | 458698 | 39.682 |
| | UPPER LIMIT | 1184422 | 27.237 | 939108 | 33.747 | 917396 | 40.182 |
| | LOWER LIMIT | 296106 | 26.237 | 234777 | 32.747 | 229349 | 39.182 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWC055M | 517276 | 26.723 | 417272 | 33.233 | 381897 | 39.657 |
| 02 | 055WCLCSM | 440856 | 26.726 | 341712 | 33.247 | 342528 | 39.671 |
| 03 | UN7NV | 511805 | 26.724 | 422772 | 33.233 | 407255 | 39.657 |
| 04 | UN7NVMS | 464316 | 26.726 | 355558 | 33.246 | 360009 | 39.670 |
| 05 | UN7NVMSD | 464140 | 26.733 | 356871 | 33.243 | 357292 | 39.667 |
| 06 | UN5NV | 507054 | 26.723 | 417167 | 33.233 | 401556 | 39.657 |
| 07 | TC407 | 446602 | 26.734 | 403321 | 33.233 | 405036 | 39.646 |
| 08 | NV5SL | 460753 | 26.727 | 389326 | 33.236 | 399834 | 39.650 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk 8326
* Values outside of QC limits.

# Sample Data

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 0.429 | 0.443 | 0.486 | 0.465 | 0.403 | 0.491 | 0.523 | 0.463 | 0.041 | 3.143 | 0.129 | 1.00 | 46 | 0.129 |
| N-Nitrosodimethylamine | 0.394 | 0.409 | 0.494 | 0.454 | 0.471 | 0.481 | 0.416 | 0.446 | 0.039 | 3.143 | 0.123 | 1.00 | 45 | 0.123 |
| Pyridine | 0.474 | 0.464 | 0.515 | 0.527 | 0.541 | 0.455 | 0.545 | 0.503 | 0.038 | 3.143 | 0.119 | 1.00 | 50 | 0.119 |
| 2-Picoline | 0.822 | 0.843 | 0.833 | 0.827 | 0.813 | 0.819 | 0.819 | 0.825 | 0.010 | 3.143 | 0.032 | 1.00 | 83 | 0.032 |
| N-Nitrosomethylethylamine | 0.425 | 0.413 | 0.496 | 0.488 | 0.304 | 0.542 | 0.377 | 0.435 | 0.081 | 3.143 | 0.254 | 1.00 | 44 | 0.254 |
| Methyl methanesulfonate | 0.745 | 0.749 | 0.625 | 0.533 | 0.635 | 0.518 | 0.602 | 0.630 | 0.091 | 3.143 | 0.287 | 1.00 | 63 | 0.287 |
| N-Nitrosodiethylamine | 0.792 | 0.685 | 0.799 | 0.837 | 0.906 | 0.793 | 0.738 | 0.793 | 0.070 | 3.143 | 0.220 | 1.00 | 79 | 0.220 |
| Ethyl methanesulfonate | 0.905 | 0.818 | 0.759 | 0.815 | 0.930 | 0.824 | 0.835 | 0.841 | 0.058 | 3.143 | 0.183 | 1.00 | 84 | 0.183 |
| Aniline | 0.636 | 0.638 | 0.532 | 0.693 | 0.619 | 0.494 | 0.459 | 0.582 | 0.087 | 3.143 | 0.273 | 1.00 | 58 | 0.273 |
| Phenol | 0.454 | 0.479 | 0.559 | 0.571 | 0.464 | 0.513 | 0.488 | 0.504 | 0.046 | 3.143 | 0.144 | 1.00 | 50 | 0.144 |
| bis(2-Chloroethyl)ether | 0.960 | 0.947 | 1.088 | 1.029 | 1.056 | 1.009 | 1.031 | 1.017 | 0.050 | 3.143 | 0.158 | 1.00 | 102 | 0.158 |
| 2-Chlorophenol | 0.949 | 0.933 | 0.939 | 0.974 | 0.965 | 1.021 | 0.957 | 0.963 | 0.029 | 3.143 | 0.092 | 1.00 | 96 | 0.092 |
| 1,3-Dichlorobenzene | 0.866 | 0.833 | 0.817 | 0.832 | 0.906 | 0.844 | 0.888 | 0.855 | 0.033 | 3.143 | 0.103 | 1.00 | 86 | 0.103 |
| 1,4-Dichlorobenzene | 0.868 | 0.860 | 0.813 | 0.833 | 0.893 | 0.826 | 0.878 | 0.853 | 0.030 | 3.143 | 0.093 | 1.00 | 85 | 0.093 |
| Benzyl alcohol | 0.913 | 0.985 | 0.997 | 0.941 | 0.906 | 1.000 | 0.939 | 0.954 | 0.039 | 3.143 | 0.124 | 1.00 | 95 | 0.124 |
| 1,2-Dichlorobenzene | 0.955 | 0.838 | 0.875 | 0.810 | 0.982 | 0.808 | 0.828 | 0.871 | 0.071 | 3.143 | 0.222 | 1.00 | 87 | 0.222 |
| 2-Methylphenol | 0.837 | 0.848 | 0.836 | 0.930 | 0.915 | 0.759 | 0.741 | 0.838 | 0.071 | 3.143 | 0.223 | 1.00 | 84 | 0.223 |
| 2,2'-oxybis(1-Chloropropane) | 1.170 | 1.212 | 1.199 | 1.243 | 1.260 | 1.183 | 1.169 | 1.205 | 0.035 | 3.143 | 0.112 | 1.00 | 121 | 0.112 |
| bis(2-Chloroisopropyl)ether | 1.170 | 1.212 | 1.199 | 1.243 | 1.260 | 1.183 | 1.169 | 1.205 | 0.035 | 3.143 | 0.112 | 1.00 | 121 | 0.112 |
| N-Nitrosopyrrolidine | 0.854 | 0.720 | 0.827 | 0.890 | 0.847 | 0.627 | 0.750 | 0.788 | 0.093 | 3.143 | 0.292 | 1.00 | 79 | 0.292 |
| Acetophenone | 1.114 | 1.063 | 1.071 | 1.112 | 1.063 | 1.069 | 1.123 | 1.088 | 0.027 | 3.143 | 0.085 | 1.00 | 109 | 0.085 |
| N-Nitroso-di-n-propylamine | 0.822 | 0.908 | 1.010 | 1.072 | 0.982 | 0.941 | 0.992 | 0.961 | 0.080 | 3.143 | 0.252 | 1.00 | 96 | 0.252 |
| N-Nitrosomorpholine | 0.848 | 0.778 | 0.768 | 0.938 | 0.836 | 0.848 | 0.886 | 0.843 | 0.059 | 3.143 | 0.185 | 1.00 | 84 | 0.185 |
| 4-Methylphenol | 0.761 | 0.832 | 0.852 | 0.908 | 0.924 | 0.831 | 0.736 | 0.835 | 0.069 | 3.143 | 0.218 | 1.00 | 83 | 0.218 |
| o-Toluidine | 0.741 | 0.689 | 0.603 | 0.792 | 0.819 | 0.544 | 0.471 | 0.666 | 0.131 | 3.143 | 0.410 | 1.00 | 67 | 0.410 |
| Hexachloroethane | 0.693 | 0.621 | 0.612 | 0.703 | 0.741 | 0.776 | 0.634 | 0.683 | 0.063 | 3.143 | 0.198 | 1.00 | 68 | 0.198 |
| Nitrobenzene | 0.919 | 0.964 | 1.019 | 0.973 | 1.013 | 1.167 | 1.239 | 1.042 | 0.117 | 3.143 | 0.367 | 1.00 | 104 | 0.367 |

Analyst name and ID (printed): Joseph M. Gamble 346 Approved by: Chris Ratcliff/412

Signature: 12/23/03 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosopiperidine | 0.772 | 0.858 | 0.779 | 0.989 | 0.869 | 0.675 | 0.729 | 0.810 | 0.104 | 3.143 | 0.327 | 1.00 | 81 | 0.327 |
| Isophorone | 0.926 | 0.919 | 0.876 | 0.962 | 0.920 | 0.944 | 0.920 | 0.924 | 0.026 | 3.143 | 0.083 | 1.00 | 92 | 0.083 |
| 2-Nitrophenol | 0.747 | 0.728 | 0.770 | 0.743 | 0.759 | 0.678 | 0.687 | 0.730 | 0.035 | 3.143 | 0.111 | 1.00 | 73 | 0.111 |
| 2,4-Dimethylphenol | 0.438 | 0.842 | 0.906 | 0.814 | 0.855 | 0.702 | 0.474 | 0.719 | 0.190 | 3.143 | 0.598 | 1.00 | 72 | 0.598 |
| O,O,O-triethylphosphorothioat | 0.933 | 0.745 | 0.857 | 0.847 | 0.859 | 0.919 | 0.851 | 0.859 | 0.061 | 3.143 | 0.192 | 1.00 | 86 | 0.192 |
| bis(2-Chloroethoxy)methane | 1.095 | 1.038 | 1.059 | 1.118 | 1.056 | 1.018 | 1.004 | 1.055 | 0.041 | 3.143 | 0.127 | 1.00 | 106 | 0.127 |
| Benzoic acid # | 6.870 | 6.667 | 6.250 | 6.390 | 11.182 | 6.364 | 6.109 | 7.119 | 1.810 | 3.143 | 5.688 | 25.00 | 28 | 5.688 |
| 2,4-Dichlorophenol | 0.813 | 0.795 | 0.956 | 0.876 | 0.739 | 0.871 | 0.762 | 0.830 | 0.075 | 3.143 | 0.237 | 1.00 | 83 | 0.237 |
| 1,2,4-Trichlorobenzene | 0.840 | 0.861 | 0.828 | 0.837 | 0.780 | 0.853 | 0.837 | 0.834 | 0.026 | 3.143 | 0.082 | 1.00 | 83 | 0.082 |
| Naphthalene | 1.014 | 0.989 | 1.015 | 1.087 | 1.019 | 1.085 | 1.032 | 1.034 | 0.037 | 3.143 | 0.118 | 1.00 | 103 | 0.118 |
| 4-Chloroaniline | 0.784 | 0.800 | 0.686 | 0.855 | 0.839 | 0.641 | 0.567 | 0.739 | 0.109 | 3.143 | 0.342 | 1.00 | 74 | 0.342 |
| 2,6-Dichlorophenol | 0.945 | 0.992 | 0.911 | 0.783 | 0.957 | 0.878 | 0.778 | 0.892 | 0.084 | 3.143 | 0.264 | 1.00 | 89 | 0.264 |
| Hexachloropropene | 0.549 | 0.396 | 0.199 | 0.383 | 0.252 | 0.346 | 0.326 | 0.350 | 0.112 | 3.143 | 0.353 | 1.00 | 35 | 0.353 |
| Hexachlorobutadiene | 0.698 | 0.773 | 0.718 | 0.690 | 0.658 | 0.699 | 0.649 | 0.698 | 0.041 | 3.143 | 0.129 | 1.00 | 70 | 0.129 |
| Caprolactam * | 1.279 | 1.179 | 1.187 | 1.044 | 1.319 | 1.138 | 1.307 | 1.208 | 0.100 | 3.143 | 0.315 | 5.00 | 24 | 0.315 |
| N-Nitrosodi-n-butylamine | 0.592 | 0.534 | 0.611 | 0.596 | 0.620 | 0.589 | 0.638 | 0.597 | 0.033 | 3.143 | 0.103 | 1.00 | 60 | 0.103 |
| 4-Chloro-3-methylphenol | 0.850 | 0.758 | 0.809 | 0.725 | 0.843 | 0.821 | 0.811 | 0.802 | 0.045 | 3.143 | 0.143 | 1.00 | 80 | 0.143 |
| Safrole | 0.894 | 0.817 | 0.932 | 0.970 | 0.914 | 0.851 | 0.852 | 0.890 | 0.053 | 3.143 | 0.168 | 1.00 | 89 | 0.168 |
| 2-Methylnaphthalene | 0.912 | 0.924 | 0.999 | 0.971 | 1.002 | 0.985 | 0.960 | 0.965 | 0.035 | 3.143 | 0.111 | 1.00 | 96 | 0.111 |
| 1-Methylnaphthalene | 0.995 | 0.914 | 1.002 | 0.961 | 0.918 | 0.924 | 0.968 | 0.955 | 0.037 | 3.143 | 0.115 | 1.00 | 95 | 0.115 |
| Hexachlorocyclopentadiene | 2.541 | 2.153 | 2.148 | 2.118 | 2.367 | 2.196 | 2.441 | 2.281 | 0.168 | 3.143 | 0.527 | 2.00 | 114 | 0.527 |
| 1,2,4,5-Tetrachlorobenzene | 0.831 | 0.898 | 0.939 | 0.938 | 0.965 | 0.845 | 0.815 | 0.890 | 0.060 | 3.143 | 0.188 | 1.00 | 89 | 0.188 |
| 2,4,6-Trichlorophenol | 0.763 | 0.609 | 0.694 | 0.594 | 0.729 | 0.646 | 0.603 | 0.663 | 0.067 | 3.143 | 0.210 | 1.00 | 66 | 0.210 |
| 2,4,5-Trichlorophenol | 0.589 | 0.680 | 0.733 | 0.527 | 0.631 | 0.804 | 0.555 | 0.646 | 0.100 | 3.143 | 0.313 | 1.00 | 65 | 0.313 |
| Isosafrole | 0.806 | 0.691 | 0.824 | 0.743 | 0.851 | 0.736 | 0.704 | 0.765 | 0.062 | 3.143 | 0.195 | 1.00 | 77 | 0.195 |
| Biphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |
| Diphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |

Analyst name and ID (printed): Joseph M. Gambler 346 Approved by: Chris Ratcliff/412

Signature: 12/23/05 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |
| 2-Chloronaphthalene | 0.882 | 0.940 | 0.939 | 0.962 | 0.994 | 0.953 | 0.903 | 0.939 | 0.037 | 3.143 | 0.117 | 1.00 | 94 | 0.117 |
| Diphenyl ether | 1.045 | 1.019 | 1.105 | 1.029 | 1.037 | 0.977 | 1.045 | 1.037 | 0.038 | 3.143 | 0.120 | 1.00 | 104 | 0.120 |
| 2-Nitroaniline | 0.630 | 0.621 | 0.546 | 0.689 | 0.603 | 0.610 | 0.630 | 0.618 | 0.042 | 3.143 | 0.133 | 1.00 | 62 | 0.133 |
| 1,4-Naphthoquinone | 3.667 | 3.491 | 3.402 | 3.977 | 3.790 | 4.077 | 3.675 | 3.726 | 0.244 | 3.143 | 0.766 | 10.00 | 37 | 0.766 |
| 1,4-Dinitrobenzene | 0.420 | 0.336 | 0.318 | 0.135 | 0.323 | 0.167 | 0.439 | 0.305 | 0.116 | 3.143 | 0.364 | 1.00 | 31 | 0.364 |
| Dimethylphthalate | 0.984 | 0.894 | 0.910 | 0.957 | 0.897 | 0.916 | 0.881 | 0.920 | 0.037 | 3.143 | 0.117 | 1.00 | 92 | 0.117 |
| 1,3-Dinitrobenzene | 0.508 | 0.570 | 0.501 | 0.441 | 0.425 | 0.545 | 0.590 | 0.511 | 0.062 | 3.143 | 0.196 | 1.00 | 51 | 0.196 |
| 2,6-Dinitrotoluene | 0.789 | 0.747 | 0.677 | 0.702 | 0.779 | 0.633 | 0.705 | 0.719 | 0.056 | 3.143 | 0.177 | 1.00 | 72 | 0.177 |
| Acenaphthylene | 0.835 | 0.809 | 0.933 | 0.794 | 0.858 | 0.878 | 0.831 | 0.848 | 0.047 | 3.143 | 0.147 | 1.00 | 85 | 0.147 |
| 3-Nitroaniline | 0.627 | 0.562 | 0.636 | 0.661 | 0.660 | 0.638 | 0.514 | 0.614 | 0.055 | 3.143 | 0.173 | 1.00 | 61 | 0.173 |
| Acenaphthene | 1.068 | 1.068 | 1.050 | 1.126 | 1.058 | 1.074 | 0.976 | 1.060 | 0.044 | 3.143 | 0.140 | 1.00 | 106 | 0.140 |
| 2,4-Dinitrophenol * | 11.148 | 11.393 | 11.155 | 10.973 | 11.408 | 11.071 | 11.058 | 11.172 | 0.167 | 3.143 | 0.526 | 20.00 | 56 | 0.526 |
| Pentachlorobenzene | 0.891 | 0.777 | 0.708 | 0.650 | 0.797 | 0.859 | 0.822 | 0.786 | 0.084 | 3.143 | 0.264 | 1.00 | 79 | 0.264 |
| 4-Nitrophenol * | 5.565 | 5.428 | 5.642 | 5.115 | 5.218 | 5.568 | 5.223 | 5.394 | 0.208 | 3.143 | 0.655 | 20.00 | 27 | 0.655 |
| Dibenzofuran | 1.068 | 0.966 | 1.024 | 1.075 | 1.080 | 1.048 | 0.989 | 1.036 | 0.044 | 3.143 | 0.140 | 1.00 | 104 | 0.140 |
| 2,4-Dinitrotoluene | 0.611 | 0.662 | 0.623 | 0.591 | 0.590 | 0.649 | 0.655 | 0.626 | 0.030 | 3.143 | 0.094 | 1.00 | 63 | 0.094 |
| 1-Naphthylamine | 0.566 | 0.571 | 0.462 | 0.679 | 0.568 | 0.420 | 0.153 | 0.488 | 0.170 | 3.143 | 0.534 | 1.00 | 49 | 0.534 |
| 2,3,4,6-Tetrachlorophenol | 0.397 | 0.281 | 0.320 | 0.247 | 0.281 | 0.302 | 0.119 | 0.278 | 0.084 | 3.143 | 0.265 | 1.00 | 28 | 0.265 |
| 2-Naphthylamine | 0.717 | 0.579 | 0.547 | 0.766 | 0.670 | 0.486 | 0.391 | 0.594 | 0.133 | 3.143 | 0.417 | 1.00 | 59 | 0.417 |
| Diethylphthalate | 1.003 | 0.917 | 0.971 | 0.954 | 1.014 | 0.951 | 0.994 | 0.972 | 0.034 | 3.143 | 0.107 | 1.00 | 97 | 0.107 |
| Thionazin | 0.728 | 0.933 | 1.022 | 0.735 | 0.747 | 0.774 | 0.763 | 0.815 | 0.115 | 3.143 | 0.362 | 1.00 | 81 | 0.362 |
| Fluorene | 1.052 | 0.997 | 1.078 | 1.148 | 1.148 | 1.077 | 1.085 | 1.084 | 0.053 | 3.143 | 0.167 | 1.00 | 108 | 0.167 |
| 4-Chlorophenyl-phenylether | 1.092 | 0.948 | 0.981 | 1.148 | 1.082 | 1.029 | 0.983 | 1.038 | 0.072 | 3.143 | 0.227 | 1.00 | 104 | 0.227 |
| 5-Nitro-o-toluidine | 0.836 | 0.787 | 0.682 | 0.802 | 0.912 | 0.771 | 0.608 | 0.771 | 0.100 | 3.143 | 0.314 | 1.00 | 77 | 0.314 |
| 4-Nitroaniline | 0.832 | 0.765 | 0.969 | 0.852 | 0.898 | 0.879 | 0.731 | 0.847 | 0.081 | 3.143 | 0.253 | 1.00 | 85 | 0.253 |
| 4,6-Dinitro-2-methylphenol * | 7.044 | 7.076 | 6.835 | 6.609 | 6.511 | 7.261 | 7.074 | 6.916 | 0.274 | 3.143 | 0.862 | 20.00 | 35 | 0.862 |

Analyst name and ID (printed): JOSEPH M. Gamblin 346 Approved by: Chris Ratcliff/412

Signature: 12-23-03 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Nitronaphthalene | 0.842 | 0.747 | 0.730 | 0.540 | 0.824 | 0.552 | 0.846 | 0.726 | 0.131 | 3.143 | 0.411 | 1.00 | 73 | 0.411 |
| N-Nitrosodiphenylamine | 0.956 | 0.954 | 0.979 | 0.943 | 0.884 | 0.855 | 0.864 | 0.919 | 0.050 | 3.143 | 0.158 | 1.00 | 92 | 0.158 |
| 1,2-Diphenylhydrazine | 0.985 | 0.922 | 0.882 | 0.914 | 0.986 | 0.943 | 0.876 | 0.930 | 0.044 | 3.143 | 0.140 | 1.00 | 93 | 0.140 |
| Tetraethyldithiopyrophosphate | 0.892 | 0.864 | 0.860 | 0.806 | 0.862 | 0.943 | 0.793 | 0.860 | 0.051 | 3.143 | 0.159 | 1.00 | 86 | 0.159 |
| 1,3,5-Trinitrobenzene * | 4.604 | 4.572 | 4.655 | 4.418 | 4.312 | 4.326 | 4.269 | 4.451 | 0.157 | 3.143 | 0.495 | 5.00 | 89 | 0.495 |
| Phenacetin | 0.744 | 0.730 | 0.895 | 0.800 | 0.874 | 0.793 | 0.794 | 0.804 | 0.061 | 3.143 | 0.192 | 1.00 | 80 | 0.192 |
| 4-Bromophenyl-phenylether | 0.852 | 0.941 | 0.797 | 0.976 | 0.765 | 0.801 | 0.803 | 0.848 | 0.080 | 3.143 | 0.253 | 1.00 | 85 | 0.253 |
| Hexachlorobenzene | 0.758 | 0.801 | 0.744 | 0.883 | 0.753 | 0.772 | 0.732 | 0.778 | 0.051 | 3.143 | 0.162 | 1.00 | 78 | 0.162 |
| Dimethoate | 0.860 | 0.740 | 0.808 | 0.808 | 0.859 | 0.759 | 0.792 | 0.804 | 0.046 | 3.143 | 0.143 | 1.00 | 80 | 0.143 |
| Diallate TRANS/CIS | 0.767 | 0.876 | 0.886 | 0.942 | 0.949 | 0.932 | 0.849 | 0.886 | 0.064 | 3.143 | 0.202 | 1.00 | 89 | 0.202 |
| Pentachlorophenol * | 11.373 | 11.729 | 11.722 | 9.672 | 11.494 | 10.118 | 11.721 | 11.118 | 0.856 | 3.143 | 2.691 | 50.00 | 22 | 2.691 |
| Pentachloronitrobenzene | 0.487 | 0.244 | 0.236 | 0.244 | 0.488 | 0.000 | 0.000 | 0.243 | 0.199 | 3.143 | 0.626 | 1.00 | 24 | 0.626 |
| 4-Aminobiphenyl * | 4.121 | 4.249 | 4.284 | 4.033 | 4.576 | 5.140 | 4.250 | 4.379 | 0.376 | 3.143 | 1.181 | 5.00 | 88 | 1.181 |
| Pronamide | 0.863 | 0.873 | 0.829 | 0.750 | 0.828 | 0.732 | 0.831 | 0.815 | 0.054 | 3.143 | 0.169 | 1.00 | 82 | 0.169 |
| Phenanthrene | 1.097 | 1.068 | 1.134 | 1.099 | 1.075 | 1.057 | 1.039 | 1.081 | 0.031 | 3.143 | 0.099 | 1.00 | 108 | 0.099 |
| Anthracene | 1.045 | 1.028 | 1.020 | 1.054 | 1.025 | 1.004 | 0.974 | 1.021 | 0.027 | 3.143 | 0.083 | 1.00 | 102 | 0.083 |
| Carbazole | 1.064 | 0.986 | 1.003 | 1.046 | 1.063 | 1.052 | 1.068 | 1.040 | 0.033 | 3.143 | 0.102 | 1.00 | 104 | 0.102 |
| Di-n-butylphthalate | 1.023 | 1.022 | 1.035 | 0.970 | 1.004 | 1.024 | 1.021 | 1.014 | 0.021 | 3.143 | 0.068 | 1.00 | 101 | 0.068 |
| 4-Nitroquinoline-1-oxide | 6.851 | 7.052 | 7.103 | 6.823 | 7.066 | 7.153 | 6.943 | 6.999 | 0.128 | 3.143 | 0.401 | 10.00 | 70 | 0.401 |
| Methapyrilene # | 0.733 | 0.871 | 0.852 | 0.720 | 0.709 | 0.687 | 0.668 | 0.749 | 0.080 | 3.143 | 0.252 | 5.00 | 15 | 0.252 |
| Isodrin | 0.983 | 0.580 | 0.555 | 0.582 | 0.637 | 0.345 | 0.759 | 0.634 | 0.197 | 3.143 | 0.619 | 1.00 | 63 | 0.619 |
| Fluoranthene | 0.999 | 0.990 | 1.032 | 0.998 | 1.000 | 0.998 | 1.017 | 1.005 | 0.014 | 3.143 | 0.045 | 1.00 | 100 | 0.045 |
| Benzidine | 3.468 | 5.700 | 4.465 | 6.211 | 5.213 | 2.544 | 0.837 | 4.063 | 1.908 | 3.143 | 5.997 | 10.00 | 41 | 5.997 |
| Pyrene | 1.108 | 1.015 | 1.057 | 1.090 | 1.045 | 1.124 | 1.055 | 1.071 | 0.038 | 3.143 | 0.120 | 1.00 | 107 | 0.120 |
| p-Dimethylaminoazobenzene | 0.635 | 0.667 | 0.607 | 0.579 | 0.677 | 0.642 | 0.590 | 0.628 | 0.038 | 3.143 | 0.118 | 1.00 | 63 | 0.118 |
| Chlorobenzilate | 0.865 | 0.857 | 1.095 | 0.883 | 0.914 | 0.996 | 0.881 | 0.927 | 0.088 | 3.143 | 0.275 | 1.00 | 93 | 0.275 |
| 3,3'-Dimethylbenzidine @ | 2.660 | 2.269 | 3.178 | 8.631 | 2.097 | 6.820 | 5.666 | 4.474 | 2.572 | 3.143 | 8.083 | 25.00 | 18 | 8.083 |
| Butylbenzylphthalate | 1.049 | 0.962 | 1.055 | 0.998 | 1.029 | 1.010 | 0.969 | 1.010 | 0.037 | 3.143 | 0.115 | 1.00 | 101 | 0.115 |

Analyst name and ID (printed): JOSEPH M. GZMBIAK 346 Approved by: Chris Ratcliff/412

Signature: [signature] 12.23.03 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Acetylaminofluorene | 0.565 | 0.621 | 0.570 | 0.528 | 0.583 | 0.593 | 0.519 | 0.568 | 0.036 | 3.143 | 0.112 | 1.00 | 57 | 0.112 |
| 3,3'-Dichlorobenzidine | 0.608 | 0.510 | 0.399 | 0.548 | 0.602 | 0.478 | 0.531 | 0.525 | 0.073 | 3.143 | 0.228 | 1.00 | 53 | 0.228 |
| 4,4'-Methylenebis(2-Chloroani | 0.498 | 0.333 | 0.247 | 0.420 | 0.508 | 0.170 | 0.384 | 0.366 | 0.125 | 3.143 | 0.394 | 1.00 | 37 | 0.394 |
| Benzo(a)anthracene | 1.147 | 1.119 | 0.993 | 1.088 | 1.079 | 1.141 | 1.068 | 1.091 | 0.053 | 3.143 | 0.166 | 1.00 | 109 | 0.166 |
| Chrysene | 1.002 | 1.025 | 0.965 | 0.999 | 1.005 | 1.104 | 1.028 | 1.018 | 0.043 | 3.143 | 0.135 | 1.00 | 102 | 0.135 |
| bis(2-Ethylhexyl)phthalate * | 5.748 | 5.948 | 5.790 | 5.664 | 5.784 | 5.786 | 5.777 | 5.785 | 0.084 | 3.143 | 0.265 | 5.00 | 116 | 0.265 |
| Di-n-octylphthalate | 0.663 | 0.674 | 0.681 | 0.617 | 0.678 | 0.656 | 0.612 | 0.654 | 0.029 | 3.143 | 0.090 | 1.00 | 65 | 0.090 |
| 7,12-Dimethylbenz[a]anthracer | 0.517 | 0.422 | 0.422 | 0.491 | 0.444 | 0.525 | 0.563 | 0.483 | 0.055 | 3.143 | 0.174 | 1.00 | 48 | 0.174 |
| Benzo(b)fluoranthene | 1.010 | 0.908 | 0.992 | 0.894 | 0.959 | 0.993 | 0.902 | 0.951 | 0.049 | 3.143 | 0.154 | 1.00 | 95 | 0.154 |
| Benzo(k)fluoranthene | 0.993 | 0.927 | 0.931 | 1.015 | 0.998 | 0.952 | 0.916 | 0.962 | 0.040 | 3.143 | 0.125 | 1.00 | 96 | 0.125 |
| Benzo(a)pyrene | 0.858 | 0.866 | 0.815 | 0.772 | 0.877 | 0.824 | 0.836 | 0.835 | 0.036 | 3.143 | 0.113 | 1.00 | 84 | 0.113 |
| 3-Methylcholanthrene | 0.584 | 0.715 | 0.539 | 0.623 | 0.526 | 0.551 | 0.587 | 0.589 | 0.065 | 3.143 | 0.203 | 1.00 | 59 | 0.203 |
| Indeno(1,2,3-cd)pyrene | 0.677 | 0.690 | 0.680 | 0.659 | 0.705 | 0.636 | 0.608 | 0.665 | 0.033 | 3.143 | 0.105 | 1.00 | 67 | 0.105 |
| Dibenz(a,h)anthracene | 0.737 | 0.724 | 0.771 | 0.698 | 0.770 | 0.697 | 0.664 | 0.723 | 0.040 | 3.143 | 0.125 | 1.00 | 72 | 0.125 |
| Benzo(g,h,i)perylene | 0.714 | 0.783 | 0.635 | 0.721 | 0.680 | 0.746 | 0.765 | 0.721 | 0.051 | 3.143 | 0.160 | 1.00 | 72 | 0.160 |
| 1,4-Phenylenediamine & | 17.774 | 22.584 | 45.148 | 46.714 | 21.542 | 24.776 | 24.708 | 29.035 | 11.787 | 3.143 | 37.047 | 1000.00 | 3 | 37.047 |
| Benzaldehyde $ | 0.311 | 0.364 | 0.316 | 0.382 | 0.340 | 0.257 | 0.276 | 0.321 | 0.0450 | 3.143 | 0.1416 | 1.00 | 32 | 0.1416 |
| Atrazine $ | 0.962 | 0.861 | 0.905 | 0.908 | 0.858 | 0.872 | 0.986 | 0.907 | 0.0500 | 3.143 | 0.1572 | 1.00 | 91 | 0.1572 |

# = Taken from files cg629.d, cg630.d, cg631.d, cg632.d, cg642.d, cg643.d, cg644.d
* = Taken from files ng251.d, ng252.d, ng253.d, ng254.d, ng255.d, ng256.d, ng257.d
& = Taken from files ng304.d, ng305.d, ng306.d, ng307.d, ng308.d, ng309.d, ng310.d
@ = Taken from files nl452.d, nl453.d, nl454.d, nl455.d, nl456.d, nl457.d, nl458.d
$ = Taken from files lh326.d, lh327.d, lh328.d, lh329.d, lh332.d, lh333.d, lh334.d

Analyst name and ID (printed): JOSEPH M. GAMBLE 346 Approved by: Chris Ratchtl/412

Signature: Joe 12/26/03 Title: Sr. Chemist

UN5NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219006

Data file: /chem/HP06755.i/04feb24a.b/mb617.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 03:05 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.020( 0.014) | 830 | 152.0 | 190383( -27) | 40.00 | |
| 52) Naphthalene-d8 | 16.793( 0.014) | 1183 | 136.0 | 683034( -25) | 40.00 | |
| 96) Acenaphthene-d10 | 22.213( 0.014) | 1690 | 164.0 | 324263( -21) | 40.00 | |
| 133) Phenanthrene-d10 | 26.723( 0.014) | 2112 | 188.0 | 507054( -14) | 40.00 | |
| 165) Chrysene-d12 | 33.233( 0.014) | 2721 | 240.0 | 417167( -11) | 40.00 | |
| 173) Perylene-d12 | 39.657( 0.025) | 3322 | 264.0 | 401556( -12) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.386( 0.003) | 112 | 830815 | 104.352 | 52% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.834( 0.001) | 99 | 657512 | 67.269 | 34% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.613( 0.000) | 82 | 561930 | 84.134 | 84% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.075( 0.000) | 172 | 846004 | 78.029 | 78% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.660( 0.000) | 330 | 265138 | 180.104 | 90% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.497(-0.001) | 244 | 635947 | 70.219 | 70% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | | | | ND | ND | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

V



8332

UN5NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219006

Data file: /chem/HP06755.i/04feb24a.b/mb617.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 03:05 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

# THIS SPACE WAS LEFT BLANK INTENTIONALLY

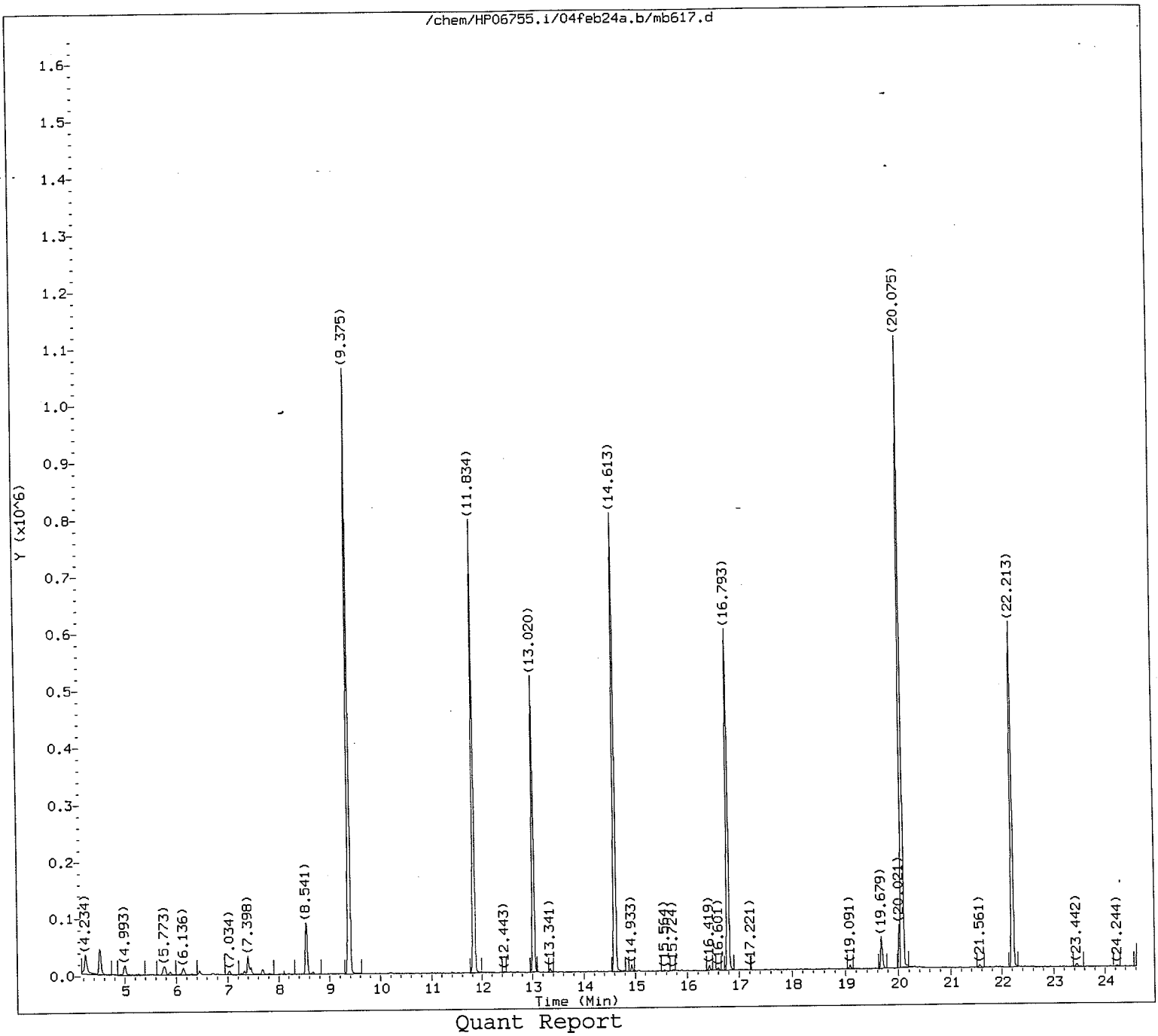
Total number of targets = 12

Comments: _____

Analyst: Jac Michelle Jarosick Date: 2/25/04
Auditor: _____ Date: 2/25/04



6334




Quant Report

Target Revision 3.5

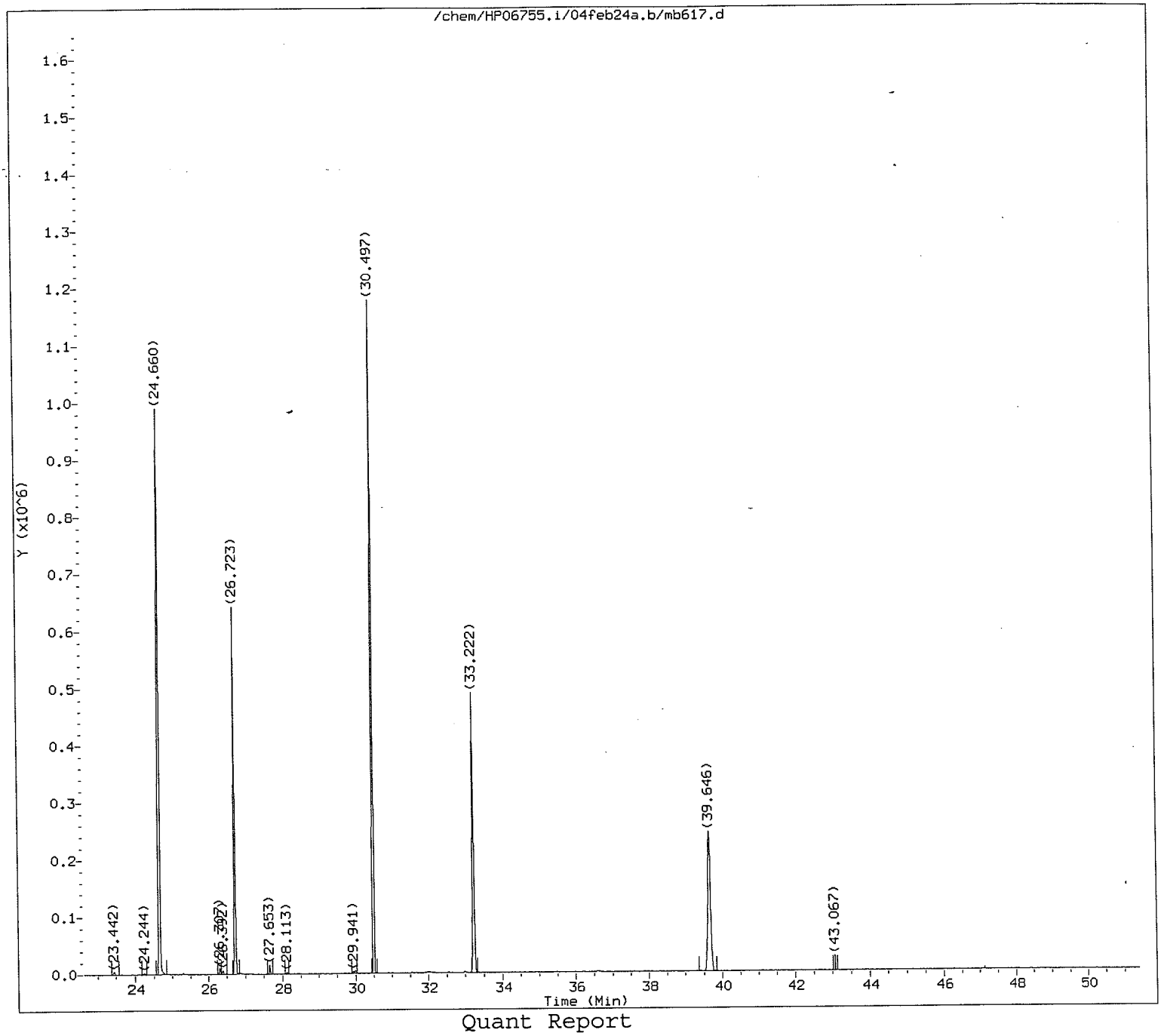
Data File: /chem/HP06755.i/04feb24a.b/mb617.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 03:05  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN5NV  Lab Sample ID: 4219006

JMG 2/25/04

0335




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb617.d
Injection date and time: 25-FEB-2004 03:05

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN5NV

Lab Sample ID: 4219006

JMG/346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb617.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 03:05  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN5NV  Lab Sample ID: 4219006

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.020 | 152 | 190383 | 40.000 |
| 52) Naphthalene-d8 | (2) | 16.793 | 136 | 683034 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 22.213 | 164 | 324263 | 40.000 |
| 133) Phenanthrene-d10 | (4) | 26.723 | 188 | 507054 | 40.000 |
| 165) Chrysene-d12 | (5) | 33.233 | 240 | 417167 | 40.000 |
| 173) Perylene-d12 | (6) | 39.657 | 264 | 401556 | 40.000 |
| 9) 2-Fluorophenol | (1) | 9.386 | 112 | 830815 | 104.352 |
| 15) Phenol-d6 | (1) | 11.834 | 99 | 657512 | 67.269 |
| 38) Nitrobenzene-d5 | (2) | 14.613 | 82 | 561930 | 84.134 |
| 77) 2-Fluorobiphenyl | (3) | 20.075 | 172 | 846004 | 78.029 |
| 117) 2,4,6-Tribromophenol | (3) | 24.660 | 330 | 265138 | 180.104 |
| 154) Terphenyl-d14 | (5) | 30.497 | 244 | 635947 | 70.219 |

M = Compound was manually integrated.  A = User selected an alternate hit

# Standards Data

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

| COMPOUND | | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | | 0.692 | 0.667 | 0.751 | 0.757 | 0.712 | 0.734 | | 0.719 | 5 | AVG | |
| N-Nitrosodimethylamine | | 1.075 | 1.086 | 1.151 | 1.231 | 1.139 | 1.170 | | 1.142 | 5 | AVG | |
| Pyridine | | 1.884 | 1.802 | 1.886 | 1.947 | 1.805 | 1.794 | | 1.853 | 3 | AVG | |
| N,N-dimethyl formamide | | 1.061 | 1.006 | 1.072 | 1.173 | 1.121 | 1.157 | | 1.098 | 6 | AVG | |
| 2-Picoline | | 1.862 | 1.821 | 1.794 | 1.892 | 1.760 | 1.754 | | 1.814 | 3 | AVG | |
| N-Nitrosomethylethylamine | | 0.794 | 0.852 | 0.839 | 0.900 | 0.849 | 0.856 | | 0.849 | 4 | AVG | |
| Methyl methanesulfonate | | 0.739 | 0.742 | 0.739 | 0.789 | 0.745 | 0.754 | | 0.751 | 3 | AVG | |
| N,N-dimethyl acetamide | | 0.960 | 0.912 | 0.949 | 1.029 | 0.974 | 1.003 | | 0.971 | 4 | AVG | |
| N-Nitrosodiethylamine | | 0.853 | 0.821 | 0.812 | 0.852 | 0.807 | 0.809 | | 0.826 | 3 | AVG | |
| Ethyl methanesulfonate | | 0.946 | 0.891 | 0.895 | 0.930 | 0.891 | 0.891 | | 0.907 | 3 | AVG | |
| Aniline | | 2.500 | 2.441 | 2.412 | 2.489 | 2.272 | 2.223 | | 2.389 | 5 | AVG | |
| Phenol | * | 2.127 | 2.028 | 1.990 | 2.098 | 1.928 | 1.851 | | 2.004 | 5 | AVG | * |
| Pentachloroethane | | 0.527 | 0.537 | 0.521 | 0.526 | 0.494 | 0.505 | | 0.518 | 3 | AVG | |
| bis(2-Chloroethyl)ether | | 1.743 | 1.691 | 1.628 | 1.683 | 1.551 | 1.510 | | 1.634 | 5 | AVG | |
| 2-Chlorophenol | | 1.624 | 1.562 | 1.536 | 1.606 | 1.505 | 1.505 | | 1.556 | 3 | AVG | |
| 1,3-Dichlorobenzene | | 1.688 | 1.629 | 1.602 | 1.651 | 1.541 | 1.543 | | 1.609 | 4 | AVG | |
| 1,4-Dichlorobenzene | * | 1.680 | 1.634 | 1.609 | 1.658 | 1.563 | 1.540 | | 1.614 | 3 | AVG | * |
| Benzyl alcohol | | 1.020 | 0.968 | 1.001 | 1.074 | 1.049 | 1.012 | | 1.021 | 4 | AVG | |
| 1,2-Dichlorobenzene | | 1.581 | 1.562 | 1.547 | 1.565 | 1.482 | 1.455 | | 1.532 | 3 | AVG | |
| 2-Methylphenol | | 1.506 | 1.490 | 1.435 | 1.474 | 1.387 | 1.374 | | 1.444 | 4 | AVG | |
| 2,2'-oxybis(1-Chloropropane) | | 2.433 | 2.397 | 2.218 | 2.318 | 2.124 | 2.127 | | 2.270 | 6 | AVG | |
| bis(2-Chloroisopropyl)ether | | 2.433 | 2.397 | 2.218 | 2.318 | 2.124 | 2.127 | | 2.270 | 6 | AVG | |
| N-Nitrosopyrrolidine | | 0.847 | 0.837 | 0.812 | 0.842 | 0.781 | 0.751 | | 0.812 | 5 | AVG | |
| Acetophenone | | 2.158 | 2.059 | 1.947 | 1.993 | 1.834 | 1.720 | | 1.952 | 8 | AVG | |
| N-Nitroso-di-n-propylamine | # | 1.078 | 1.050 | 0.957 | 0.996 | 0.858 | 0.779 | | 0.953 | 12 | AVG | # |
| N-Nitrosomorpholine | | 0.893 | 0.837 | 0.773 | 0.810 | 0.749 | 0.727 | | 0.798 | 8 | AVG | |
| 4-Methylphenol | | 1.558 | 1.521 | 1.474 | 1.516 | 1.415 | 1.376 | | 1.477 | 5 | AVG | |
| o-Toluidine | | 2.466 | 2.363 | 2.251 | 2.316 | 2.098 | 2.046 | | 2.257 | 7 | AVG | |
| Hexachloroethane | | 0.703 | 0.668 | 0.677 | 0.688 | 0.657 | 0.646 | | 0.673 | 3 | AVG | |
| Nitrobenzene | | 0.416 | 0.393 | 0.385 | 0.402 | 0.364 | 0.361 | | 0.387 | 6 | AVG | |
| N-Nitrosopiperidine | | 0.221 | 0.209 | 0.211 | 0.217 | 0.203 | 0.203 | | 0.211 | 3 | AVG | |
| Isophorone | | 0.797 | 0.792 | 0.758 | 0.790 | 0.725 | 0.704 | | 0.761 | 5 | AVG | |
| 2-Nitrophenol | * | 0.199 | 0.207 | 0.211 | 0.222 | 0.209 | 0.210 | | 0.210 | 4 | AVG | * |
| 2,4-Dimethylphenol | | 0.420 | 0.413 | 0.394 | 0.401 | 0.369 | 0.356 | | 0.392 | 6 | AVG | |
| O,O,O-triethylphosphorothioate | | 0.142 | 0.142 | 0.140 | 0.143 | 0.138 | 0.136 | | 0.140 | 2 | AVG | |
| bis(2-Chloroethoxy)methane | | 0.501 | 0.491 | 0.463 | 0.489 | 0.435 | 0.429 | | 0.468 | 7 | AVG | |
| Benzoic acid | | 0.248 | 0.278 | 0.296 | 0.315 | 0.323 | 0.314 | | 0.296 | 10 | AVG | |
| 2,4-Dichlorophenol | * | 0.299 | 0.300 | 0.298 | 0.310 | 0.293 | 0.295 | | 0.299 | 2 | AVG | * |
| 1,2,4-Trichlorobenzene | | 0.321 | 0.303 | 0.307 | 0.316 | 0.296 | 0.291 | | 0.306 | 4 | AVG | |
| Naphthalene | | 1.128 | 1.075 | 1.061 | 1.077 | 0.999 | 0.979 | | 1.053 | 5 | AVG | |
| (2-Bromoethyl)benzene | | 0.061 | 0.061 | 0.061 | 0.062 | 0.059 | 0.059 | | 0.060 | 2 | AVG | |
| 4-Chloroaniline | | 0.507 | 0.484 | 0.475 | 0.488 | 0.458 | 0.447 | | 0.477 | 5 | AVG | |
| 2,6-Dichlorophenol | | 0.291 | 0.279 | 0.281 | 0.285 | 0.265 | 0.267 | | 0.278 | 4 | AVG | |
| Hexachloropropene | | 0.143 | 0.148 | 0.154 | 0.157 | 0.156 | 0.156 | | 0.152 | 4 | AVG | |
| Hexachlorobutadiene | * | 0.143 | 0.140 | 0.142 | 0.143 | 0.137 | 0.137 | | 0.140 | 2 | AVG | * |
| Caprolactam | | 0.135 | 0.135 | 0.135 | 0.139 | 0.131 | 0.131 | | 0.134 | 2 | AVG | |
| N-Nitrosodi-n-butylamine | | 0.326 | 0.320 | 0.313 | 0.323 | 0.235 | 0.224 | | 0.290 | 16 | 2NDDEG | |
| 4-Chloro-3-methylphenol | * | 0.325 | 0.333 | 0.329 | 0.342 | 0.316 | 0.306 | | 0.325 | 4 | AVG | * |
| Safrole | | 0.248 | 0.248 | 0.249 | 0.260 | 0.243 | 0.238 | | 0.248 | 3 | AVG | |
| 2-Methylnaphthalene | | 0.673 | 0.669 | 0.651 | 0.673 | 0.619 | 0.600 | | 0.647 | 5 | AVG | |
| 1-Methylnaphthalene | | 0.632 | 0.620 | 0.615 | 0.620 | 0.581 | 0.562 | | 0.605 | 5 | AVG | |
| Hexachlorocyclopentadiene | # | 0.214 | 0.261 | 0.279 | 0.304 | 0.295 | 0.302 | | 0.276 | 12 | AVG | # |

8339

LLG 2/15/04

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1,2,4,5-Tetrachlorobenzene | 0.598 | 0.572 | 0.569 | 0.581 | 0.549 | 0.541 | | 0.568 | 4 | AVG | |
| | cis-Isosafrole | 0.514 | 0.510 | 0.512 | 0.510 | 0.503 | 0.530 | | 0.513 | 2 | AVG | |
| * | 2,4,6-Trichlorophenol | 0.388 | 0.394 | 0.411 | 0.426 | 0.413 | 0.413 | | 0.407 | 3 | AVG | * |
| | 2,4,5-Trichlorophenol | 0.423 | 0.436 | 0.453 | 0.465 | 0.457 | 0.454 | | 0.448 | 3 | AVG | |
| | trans-Isosafrole | 0.668 | 0.667 | 0.664 | 0.670 | 0.646 | 0.639 | | 0.659 | 2 | AVG | |
| | Isosafrole | 0.595 | 0.594 | 0.591 | 0.597 | 0.575 | 0.568 | | 0.587 | 2 | AVG | |
| | Biphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | Diphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | 1,1'-Biphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | 2-Chloronaphthalene | 1.331 | 1.296 | 1.276 | 1.291 | 1.211 | 1.186 | | 1.265 | 4 | AVG | |
| | Diphenyl ether | 0.865 | 0.827 | 0.816 | 0.831 | 0.787 | 0.781 | | 0.818 | 4 | AVG | |
| | 2-Nitroaniline | 0.532 | 0.530 | 0.549 | 0.577 | 0.548 | 0.541 | | 0.546 | 3 | AVG | |
| | 1,4-Naphthoquinone | 0.434 | 0.448 | 0.435 | 0.416 | 0.372 | 0.354 | | 0.410 | 9 | AVG | |
| | 1,4-Dinitrobenzene | 0.215 | 0.238 | 0.261 | 0.280 | 0.270 | 0.279 | | 0.257 | 10 | AVG | |
| | Dimethylphthalate | 1.541 | 1.514 | 1.486 | 1.522 | 1.435 | 1.422 | | 1.487 | 3 | AVG | |
| | 1,3-Dinitrobenzene | 0.269 | 0.285 | 0.294 | 0.306 | 0.298 | 0.303 | | 0.292 | 5 | AVG | |
| | 2,6-Dinitrotoluene | 0.382 | 0.377 | 0.392 | 0.403 | 0.384 | 0.380 | | 0.386 | 3 | AVG | |
| | Acenaphthylene | 2.050 | 1.963 | 2.001 | 1.999 | 1.909 | 1.856 | | 1.963 | 4 | AVG | |
| | 3-Nitroaniline | 0.457 | 0.456 | 0.476 | 0.499 | 0.478 | 0.480 | | 0.475 | 3 | AVG | |
| * | Acenaphthene | 1.234 | 1.199 | 1.197 | 1.204 | 1.127 | 1.078 | | 1.173 | 5 | AVG | * |
| # | 2,4-Dinitrophenol | 0.154 | 0.179 | 0.208 | 0.228 | 0.232 | 0.235 | | 0.206 | 16 | 1STDEG | # |
| | Pentachlorobenzene | 0.462 | 0.460 | 0.457 | 0.466 | 0.452 | 0.445 | | 0.457 | 2 | AVG | |
| # | 4-Nitrophenol | 0.185 | 0.195 | 0.203 | 0.215 | 0.211 | 0.213 | | 0.204 | 6 | AVG | # |
| | Dibenzofuran | 1.799 | 1.748 | 1.718 | 1.742 | 1.628 | 1.597 | | 1.706 | 5 | AVG | |
| | 2,4-Dinitrotoluene | 0.442 | 0.467 | 0.478 | 0.493 | 0.478 | 0.475 | | 0.472 | 4 | AVG | |
| | 1-Naphthylamine | 1.083 | 1.092 | 1.203 | 1.267 | 1.190 | 1.170 | | 1.168 | 6 | AVG | |
| | 2,3,4,6-Tetrachlorophenol | 0.295 | 0.303 | 0.309 | 0.320 | 0.302 | 0.309 | | 0.306 | 3 | AVG | |
| | 2-Naphthylamine | 1.129 | 0.953 | 1.265 | 1.343 | 1.288 | 1.289 | | 1.211 | 12 | AVG | |
| | Diethylphthalate | 1.660 | 1.557 | 1.516 | 1.561 | 1.460 | 1.428 | | 1.530 | 5 | AVG | |
| | Thionazin | 0.282 | 0.276 | 0.284 | 0.289 | 0.273 | 0.267 | | 0.278 | 3 | AVG | |
| | Fluorene | 1.453 | 1.371 | 1.318 | 1.326 | 1.200 | 1.092 | | 1.293 | 10 | AVG | |
| | 4-Chlorophenyl-phenylether | 0.591 | 0.595 | 0.586 | 0.590 | 0.568 | 0.558 | | 0.581 | 3 | AVG | |
| | 5-Nitro-o-toluidine | 0.475 | 0.494 | 0.491 | 0.498 | 0.449 | 0.406 | | 0.469 | 8 | AVG | |
| | 4-Nitroaniline | 0.471 | 0.477 | 0.480 | 0.479 | 0.442 | 0.432 | | 0.463 | 5 | AVG | |
| | 4,6-Dinitro-2-methylphenol | 0.129 | 0.150 | 0.174 | 0.177 | 0.183 | 0.190 | | 0.167 | 14 | AVG | |
| | 1-Nitronaphthalene | 0.190 | 0.186 | 0.189 | 0.193 | 0.191 | 0.192 | | 0.190 | 1 | AVG | |
| * | N-Nitrosodiphenylamine (1) | 0.680 | 0.638 | 0.645 | 0.653 | 0.624 | 0.604 | | 0.641 | 4 | AVG | * |
| | 1,2-Diphenylhydrazine | 1.183 | 1.147 | 1.082 | 1.092 | 1.018 | 0.981 | | 1.084 | 7 | AVG | |
| | Tetraethyldithiopyrophosphate | 0.207 | 0.212 | 0.199 | 0.204 | 0.182 | 0.165 | | 0.195 | 9 | AVG | |
| | 1,3,5-Trinitrobenzene | 0.077 | 0.093 | 0.114 | 0.120 | 0.122 | 0.128 | | 0.109 | 18 | 1STDEG | |
| | Diallate (peak 1) | 0.528 | 0.527 | 0.512 | 0.510 | 0.475 | 0.458 | | 0.502 | 6 | AVG | |
| | Phorate | 0.671 | 0.655 | 0.606 | 0.587 | 0.495 | 0.441 | | 0.576 | 16 | 2NDDEG | |
| | Phenacetin | 0.584 | 0.585 | 0.575 | 0.574 | 0.519 | 0.487 | | 0.554 | 7 | AVG | |
| | 4-Bromophenyl-phenylether | 0.218 | 0.210 | 0.222 | 0.224 | 0.213 | 0.213 | | 0.217 | 2 | AVG | |
| | Diallate (peak 2) | 0.508 | 0.499 | 0.482 | 0.478 | 0.451 | 0.442 | | 0.477 | 5 | AVG | |
| | Hexachlorobenzene | 0.238 | 0.239 | 0.242 | 0.242 | 0.237 | 0.237 | | 0.239 | 1 | AVG | |
| | Dimethoate | 0.472 | 0.456 | 0.391 | 0.367 | 0.329 | 0.331 | | 0.391 | 16 | 2NDDEG | |
| | Diallate TRANS/CIS | 0.523 | 0.520 | 0.505 | 0.502 | 0.469 | 0.454 | | 0.495 | 6 | AVG | |
| * | Pentachlorophenol | 0.146 | 0.156 | 0.172 | 0.178 | 0.177 | 0.175 | | 0.167 | 8 | AVG | * |
| | Pentachloronitrobenzene | 0.090 | 0.087 | 0.089 | 0.089 | 0.087 | 0.090 | | 0.088 | 1 | AVG | |
| | 4-Aminobiphenyl | 0.676 | 0.680 | 0.677 | 0.684 | 0.559 | 0.514 | | 0.632 | 12 | AVG | |
| | Pronamide | 0.397 | 0.405 | 0.408 | 0.408 | 0.398 | 0.381 | | 0.400 | 3 | AVG | |

(1) Cannot be separated from Diphenylamine

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

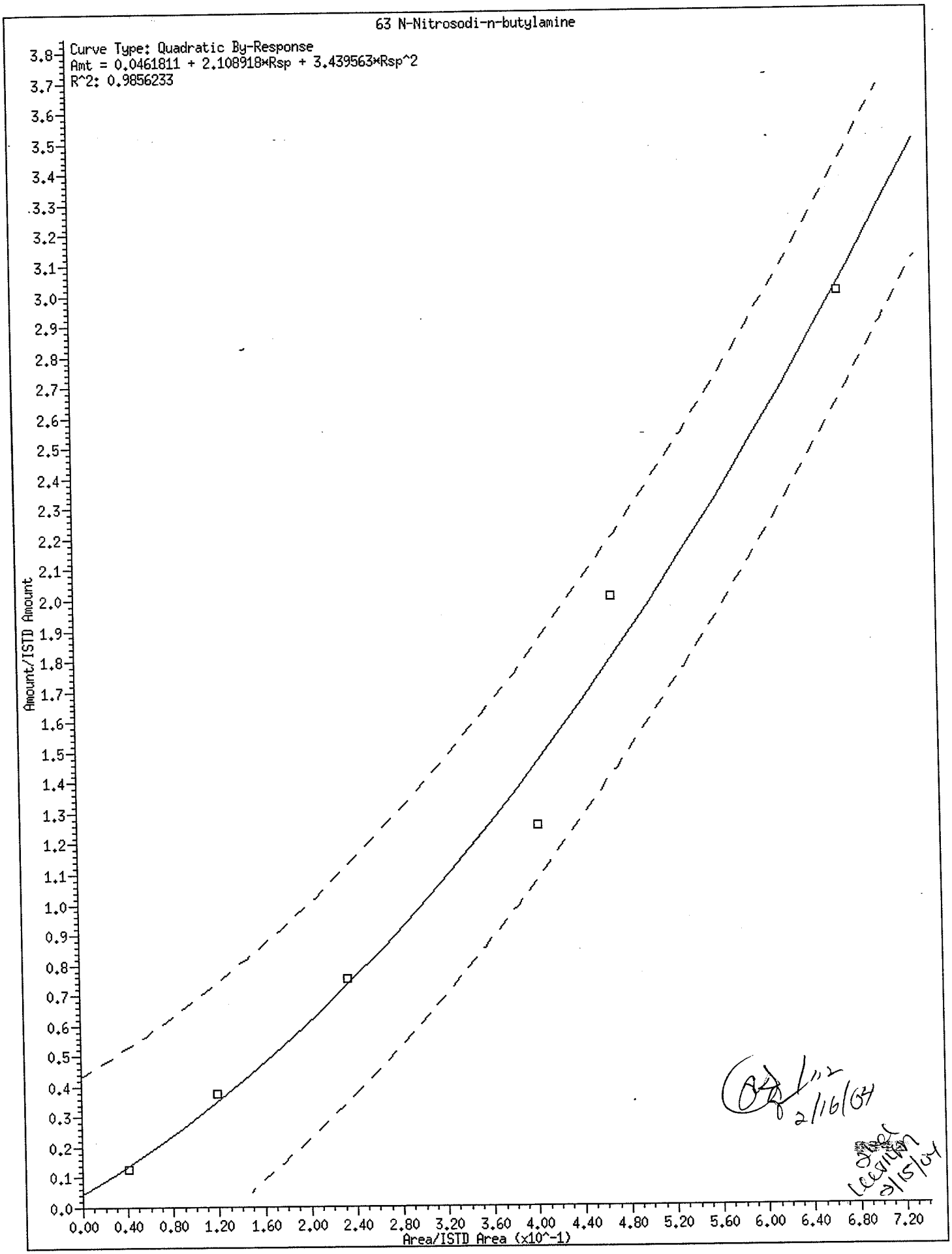
Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dinoseb | 0.140 | 0.194 | 0.234 | 0.249 | 0.256 | 0.263 | | 0.223 | 21 | 1STDEG | |
| | Phenanthrene | 1.236 | 1.186 | 1.190 | 1.193 | 1.116 | 1.067 | | 1.165 | 5 | AVG | |
| | Anthracene | 1.261 | 1.219 | 1.204 | 1.239 | 1.164 | 1.086 | | 1.195 | 5 | AVG | |
| | Carbazole | 1.205 | 1.170 | 1.184 | 1.211 | 1.140 | 1.110 | | 1.170 | 3 | AVG | |
| | Methyl parathion | 0.382 | 0.420 | 0.415 | 0.406 | 0.377 | 0.364 | | 0.394 | 6 | AVG | |
| | Di-n-butylphthalate | 1.791 | 1.787 | 1.786 | 1.800 | 1.718 | 1.617 | | 1.750 | 4 | AVG | |
| | Parathion | 0.205 | 0.228 | 0.234 | 0.246 | 0.236 | 0.230 | | 0.230 | 6 | AVG | |
| | 4-Nitroquinoline-1-oxide | 0.060 | 0.097 | 0.134 | 0.155 | 0.150 | 0.153 | | 0.125 | 31 | 1STDEG | |
| | Methapyrilene | 0.556 | 0.530 | 0.427 | 0.373 | 0.379 | 0.441 | | 0.451 | 17 | 1STDEG | |
| | Isodrin | 0.138 | 0.133 | 0.137 | 0.139 | 0.137 | 0.136 | | 0.137 | 2 | AVG | |
| * | Fluoranthene | 1.226 | 1.187 | 1.207 | 1.206 | 1.139 | 1.082 | | 1.175 | 5 | AVG | * |
| | Benzidine | 0.594 | 0.718 | 0.890 | 0.824 | 0.707 | 0.656 | | 0.732 | 15 | AVG | + |
| | Pyrene | 1.541 | 1.543 | 1.508 | 1.508 | 1.425 | 1.372 | | 1.483 | 5 | AVG | |
| | p-Dimethylaminoazobenzene | 0.284 | 0.305 | 0.307 | 0.316 | 0.306 | 0.305 | | 0.304 | 4 | AVG | |
| | Chlorobenzilate | 0.578 | 0.595 | 0.593 | 0.608 | 0.572 | 0.565 | | 0.585 | 3 | AVG | |
| | 3,3'-Dimethylbenzidine | 0.504 | 0.631 | 0.817 | 0.741 | 0.708 | 0.736 | | 0.690 | 16 | 1STDEG | |
| | Butylbenzylphthalate | 1.036 | 1.013 | 1.001 | 1.035 | 0.980 | 0.968 | | 1.006 | 3 | AVG | |
| | 2-Acetylaminofluorene | 0.584 | 0.658 | 0.712 | 0.737 | 0.718 | 0.734 | | 0.691 | 9 | AVG | |
| | 3,3'-Dichlorobenzidine | 0.464 | 0.493 | 0.545 | 0.549 | 0.518 | 0.503 | | 0.512 | 6 | AVG | |
| | 4,4'-Methylenebis(2-Chloroanil | 0.211 | 0.228 | 0.262 | 0.261 | 0.252 | 0.244 | | 0.243 | 8 | AVG | |
| | Benzo(a)anthracene | 1.319 | 1.263 | 1.287 | 1.300 | 1.252 | 1.244 | | 1.278 | 2 | AVG | |
| | Chrysene | 1.195 | 1.176 | 1.179 | 1.195 | 1.140 | 1.134 | | 1.170 | 2 | AVG | |
| | bis(2-Ethylhexyl)phthalate | 1.275 | 1.393 | 1.396 | 1.438 | 1.400 | 1.383 | | 1.381 | 4 | AVG | |
| * | Di-n-octylphthalate | 2.406 | 2.565 | 2.530 | 2.683 | 2.598 | 2.558 | | 2.557 | 4 | AVG | * |
| | 7,12-Dimethylbenz[a]anthracene | 0.593 | 0.626 | 0.647 | 0.665 | 0.656 | 0.649 | | 0.639 | 4 | AVG | |
| | Benzo(b)fluoranthene | 1.426 | 1.410 | 1.397 | 1.440 | 1.399 | 1.390 | | 1.410 | 1 | AVG | |
| | Benzo(k)fluoranthene | 1.326 | 1.321 | 1.328 | 1.335 | 1.305 | 1.271 | | 1.314 | 2 | AVG | |
| * | Benzo(a)pyrene | 1.224 | 1.210 | 1.260 | 1.297 | 1.268 | 1.282 | | 1.257 | 3 | AVG | * |
| | 3-Methylcholanthrene | 0.676 | 0.670 | 0.690 | 0.706 | 0.707 | 0.722 | | 0.695 | 3 | AVG | |
| | Indeno(1,2,3-cd)pyrene | 1.132 | 1.132 | 1.182 | 1.222 | 1.234 | 1.260 | | 1.194 | 5 | AVG | |
| | Dibenz(a,h)anthracene | 1.005 | 1.045 | 1.087 | 1.119 | 1.105 | 1.125 | | 1.081 | 4 | AVG | |
| | Benzo(g,h,i)perylene | 1.136 | 1.163 | 1.208 | 1.255 | 1.257 | 1.258 | | 1.213 | 4 | AVG | |
| | 2-Fluorophenol | 1.698 | 1.655 | 1.671 | 1.757 | 1.616 | 1.639 | | 1.673 | 3 | AVG | |
| | Phenol-d5 | 2.121 | 2.046 | 2.054 | 2.132 | 1.988 | 1.981 | | 2.054 | 3 | AVG | |
| | Phenol-d6 | 2.121 | 2.046 | 2.054 | 2.132 | 1.988 | 1.981 | | 2.054 | 3 | AVG | |
| | Nitrobenzene-d5 | 0.402 | 0.396 | 0.397 | 0.404 | 0.376 | 0.373 | | 0.391 | 3 | AVG | |
| | 2-Fluorobiphenyl | 1.411 | 1.351 | 1.352 | 1.359 | 1.294 | 1.257 | | 1.337 | 4 | AVG | |
| | 2,4,6-Tribromophenol | 0.171 | 0.177 | 0.188 | 0.192 | 0.185 | 0.177 | | 0.182 | 4 | AVG | |
| | Terphenyl-d14 | 0.896 | 0.900 | 0.887 | 0.895 | 0.845 | 0.788 | | 0.868 | 5 | AVG | |
| | | | | | | | | | Average %RSD | 6 | | |

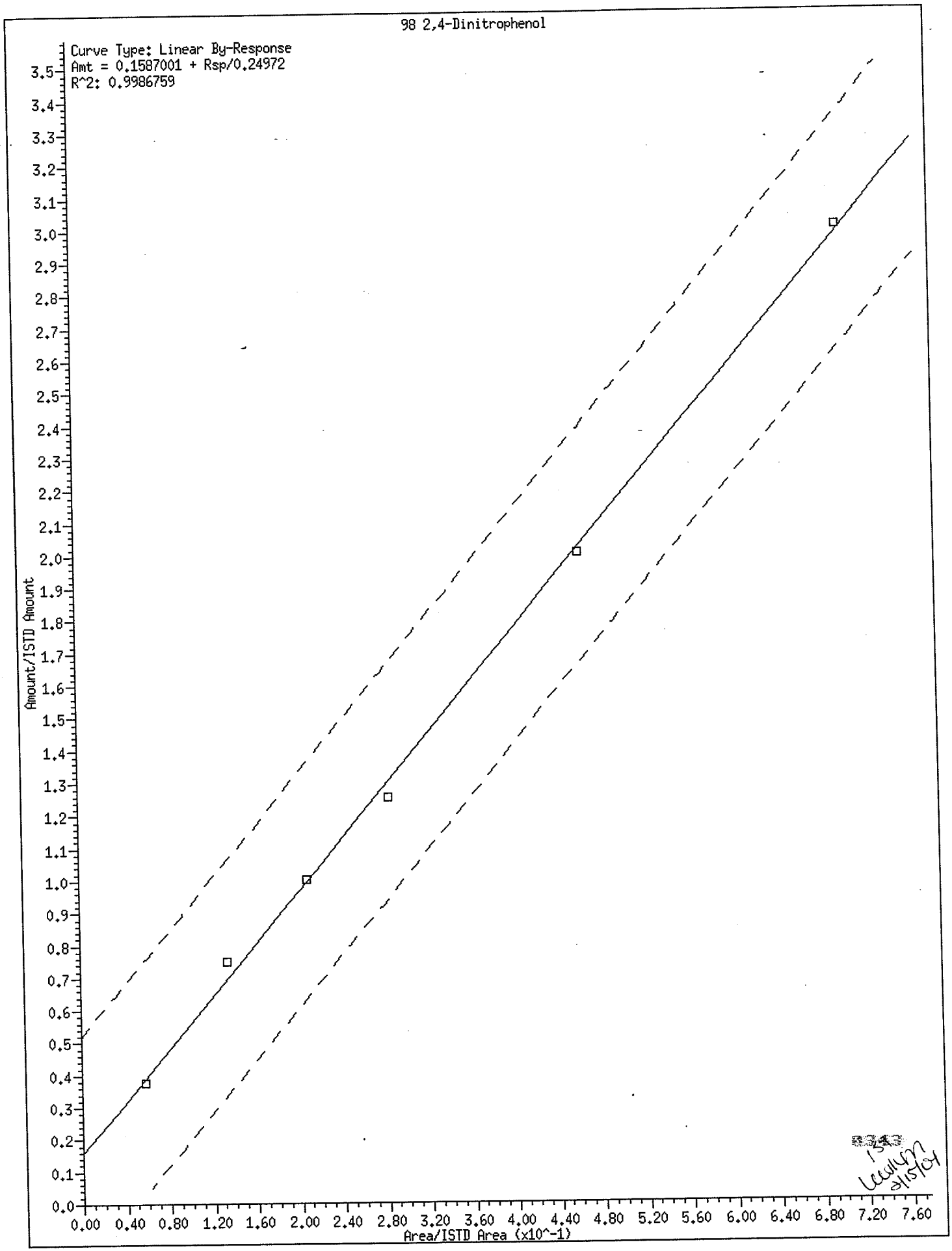
+ %RSD is less than or equal to 15%; however, value rounds to 15.

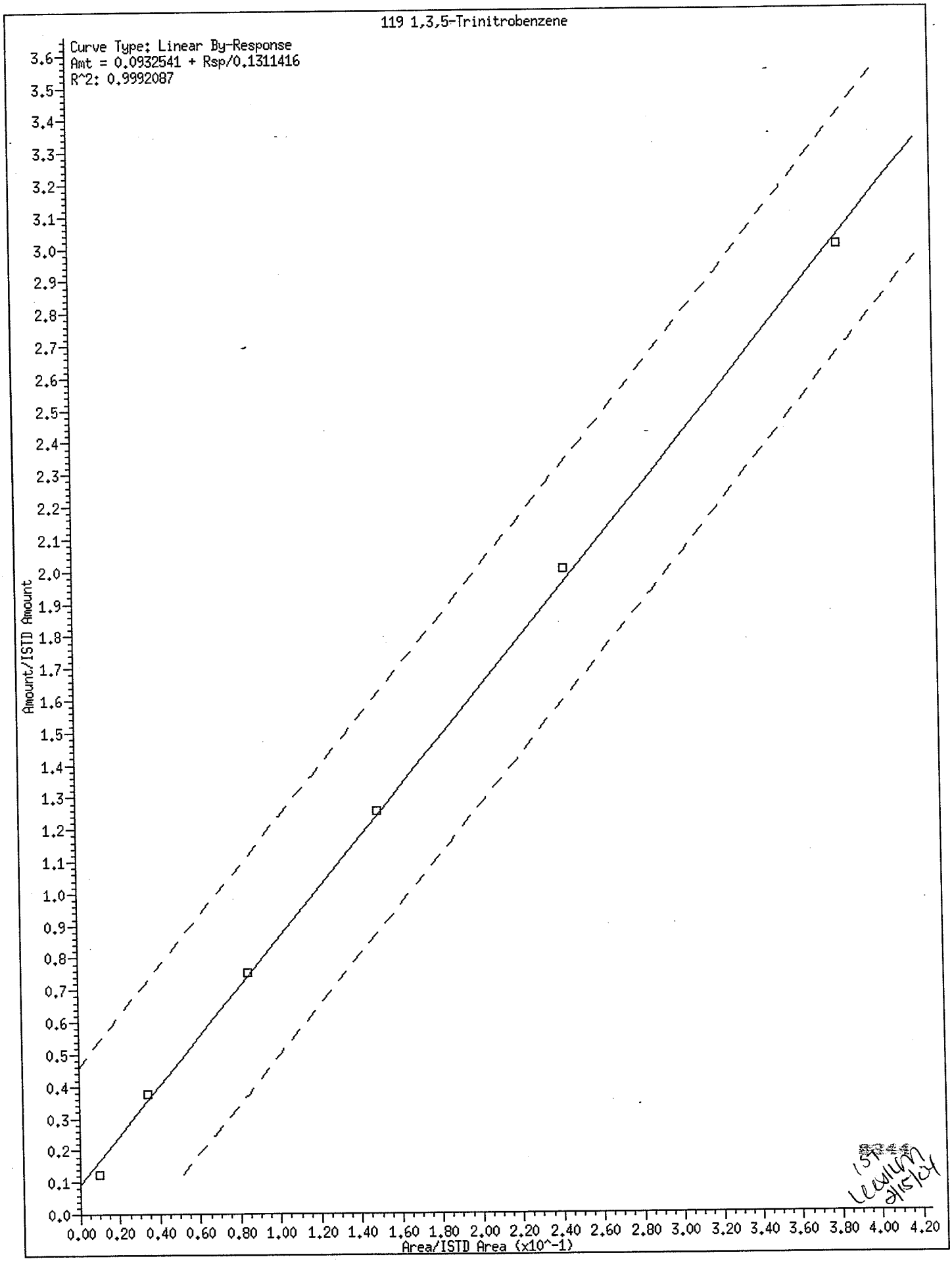
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5 ,15, 30 standards.

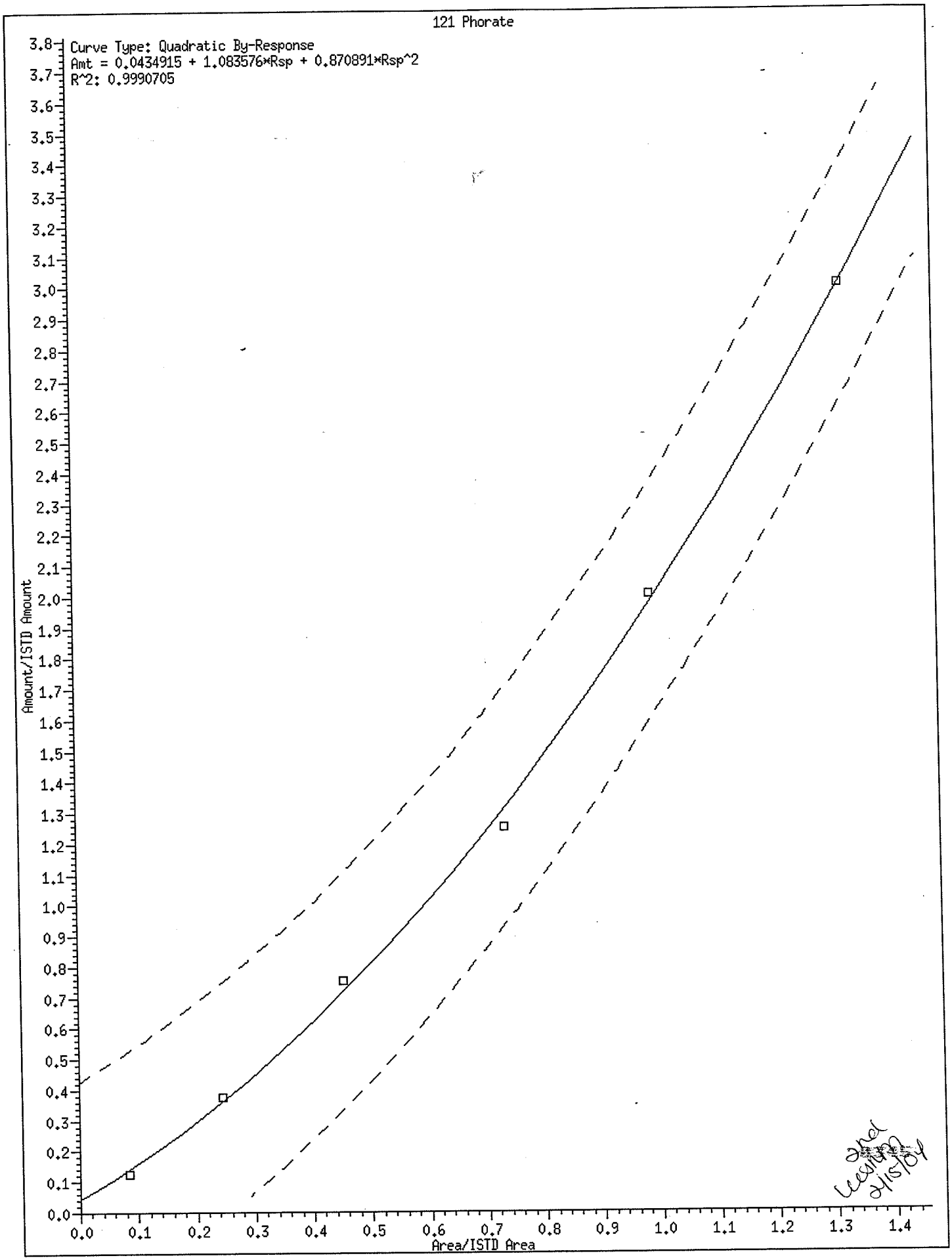

63 N-Nitrosodi-n-butylamine
Curve Type: Quadratic By-Response
Amt = 0.0461811 + 2.108918*Rsp + 3.439563*Rsp^2
R^2: 0.9856233
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8
0.00 0.40 0.80 1.20 1.60 2.00 2.40 2.80 3.20 3.60 4.00 4.40 4.80 5.20 5.60 6.00 6.40 6.80 7.20

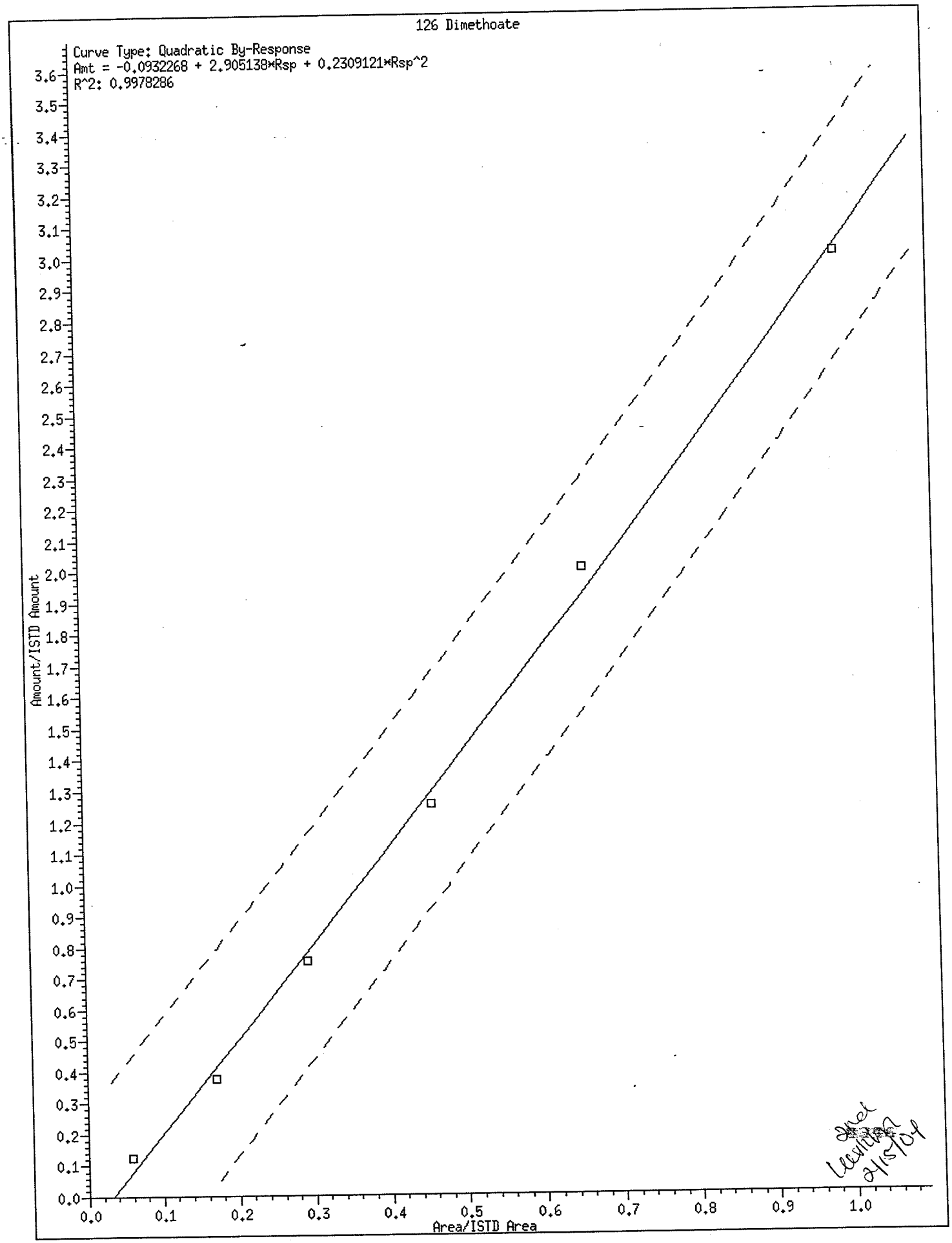
2/16/04

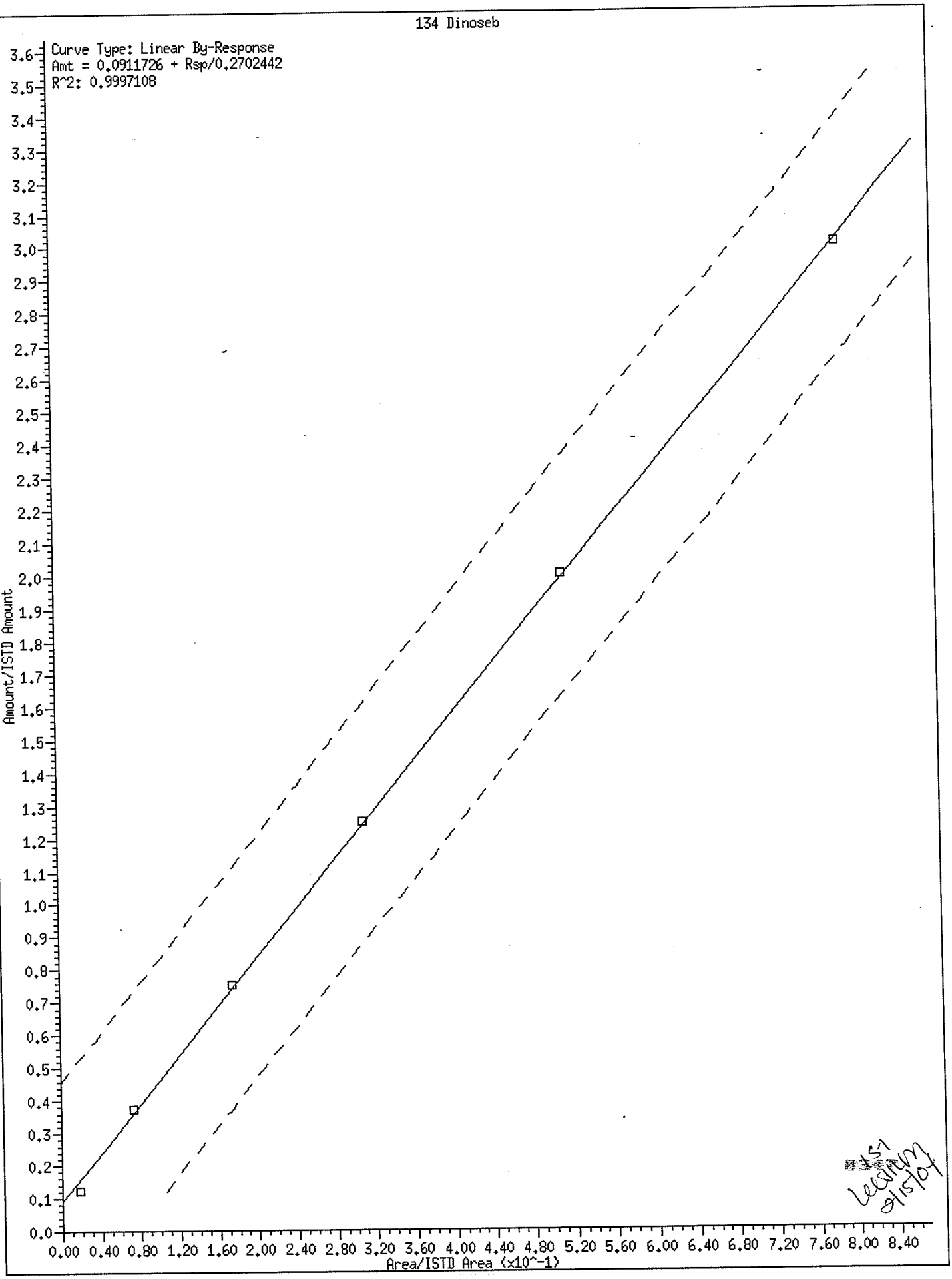
3/15/04

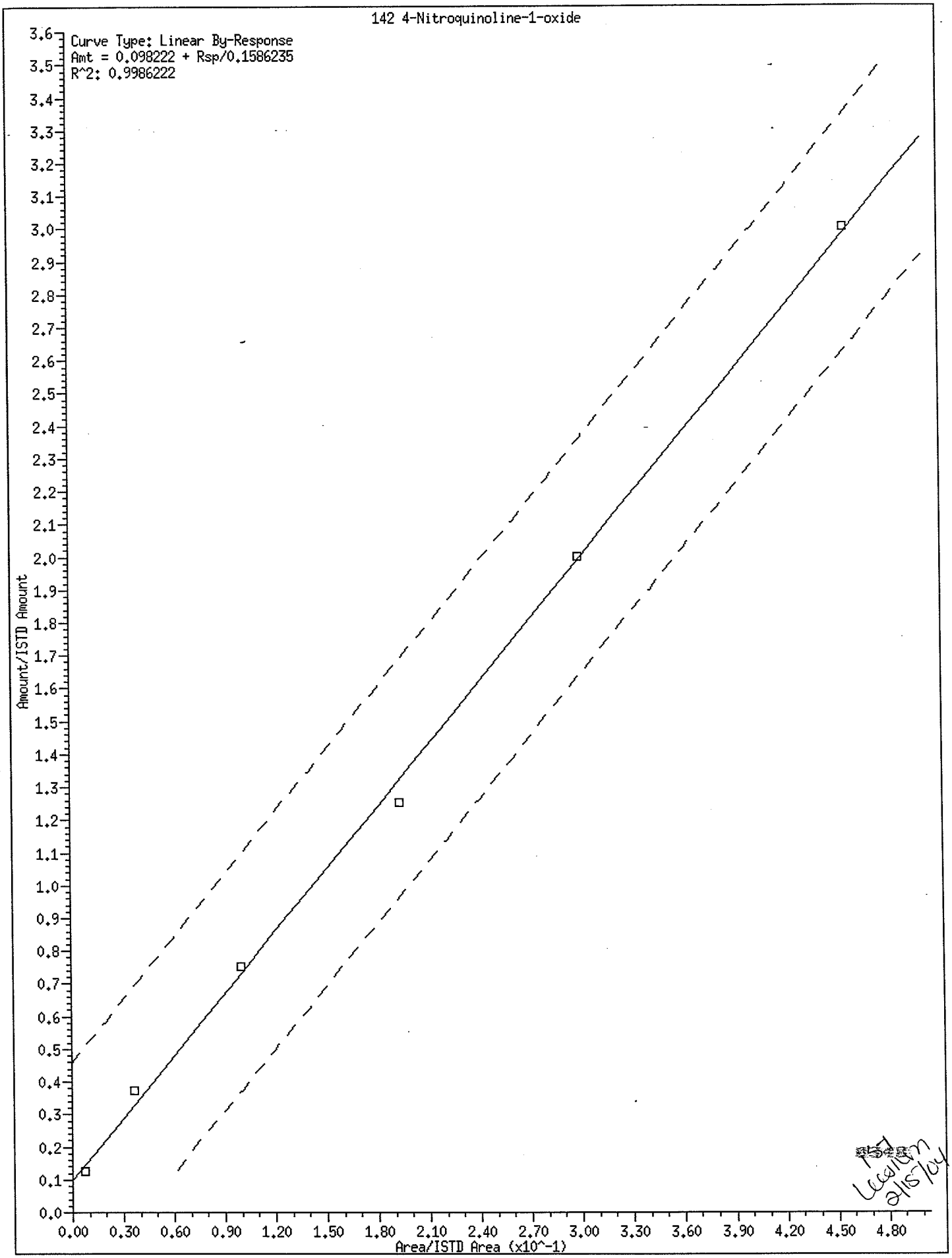

98 2,4-Dinitrophenol
Curve Type: Linear By-Response
Amt = 0.1587001 + Rsp/0.24972
R^2: 0.9986759
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
0.00
0.40
0.80
1.20
1.60
2.00
2.40
2.80
3.20
3.60
4.00
4.40
4.80
5.20
5.60
6.00
6.40
6.80
7.20
7.60

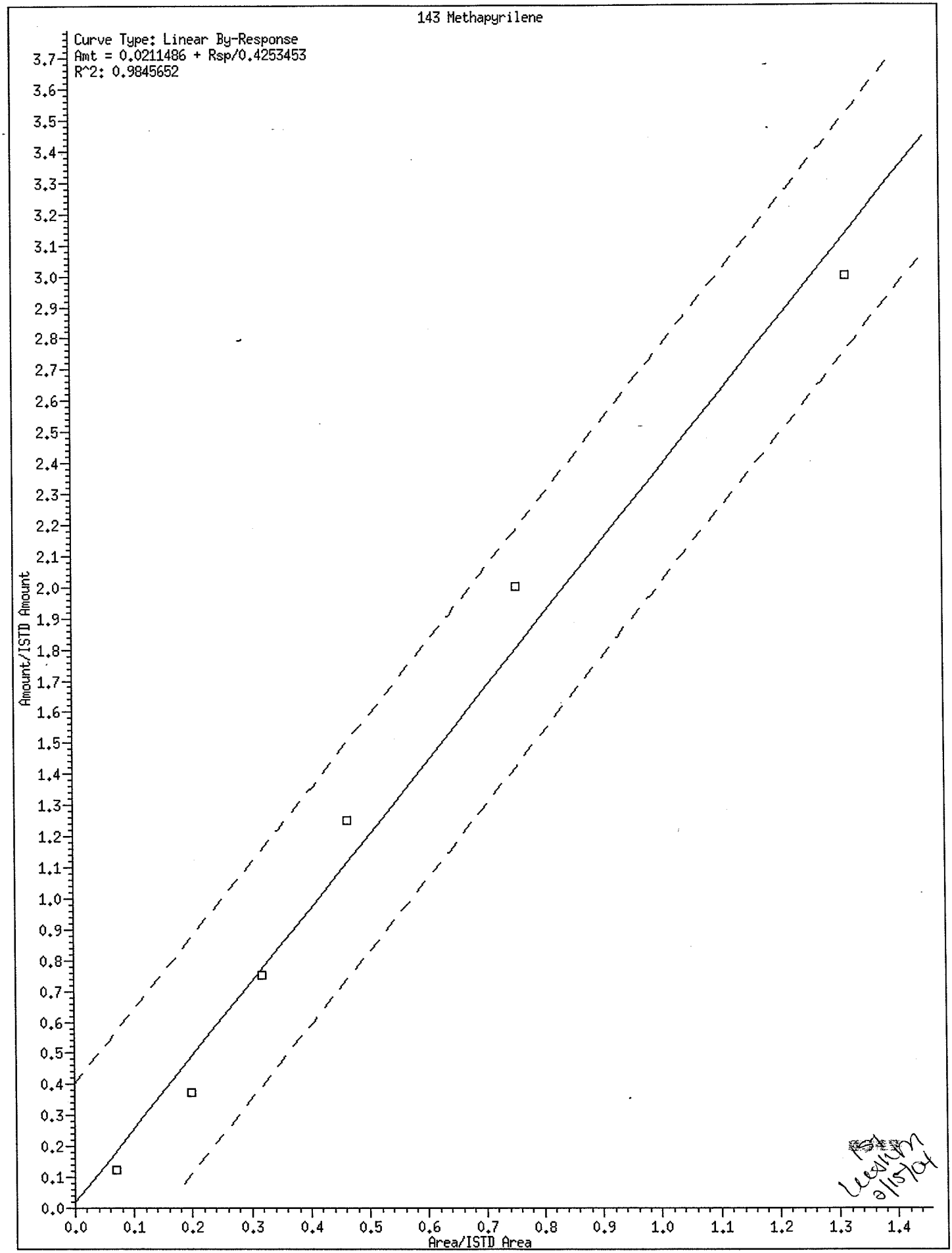

119 1,3,5-Trinitrobenzene
Curve Type: Linear By-Response
Amt = 0.0932541 + Rsp/0.1311416
R^2: 0.9992087
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6
0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.20 2.40 2.60 2.80 3.00 3.20 3.40 3.60 3.80 4.00 4.20

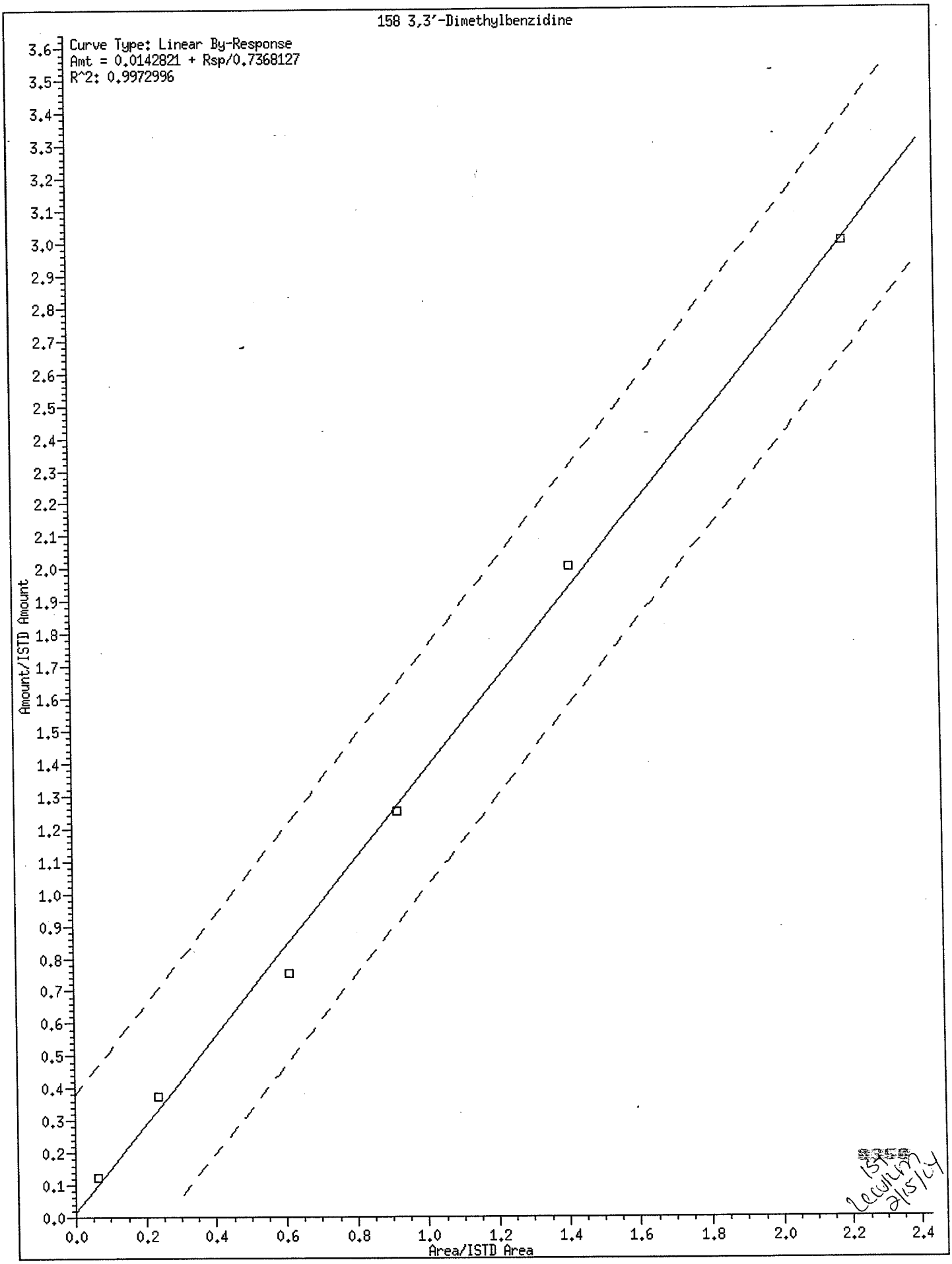

121 Phorate
Curve Type: Quadratic By-Response
Amt = 0.0434915 + 1.083576*Rsp + 0.870891*Rsp^2
R^2: 0.9990705
Amount/ISTD Amount
Area/ISTD Area
2nd Weight 2/15/04


126 Dimethoate
Curve Type: Quadratic By-Response
Amt = -0.0932268 + 2.905138*Rsp + 0.2309121*Rsp^2
R^2: 0.9978286
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6


134 Dinoseb
Curve Type: Linear By-Response
Amt = 0.0911726 + Rsp/0.2702442
R^2: 0.9997108
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6
0.00 0.40 0.80 1.20 1.60 2.00 2.40 2.80 3.20 3.60 4.00 4.40 4.80 5.20 5.60 6.00 6.40 6.80 7.20 7.60 8.00 8.40


142 4-Nitroquinoline-1-oxide
Curve Type: Linear By-Response
Amt = 0.098222 + Rsp/0.1586235
R^2: 0.9986222
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
0.00
0.30
0.60
0.90
1.20
1.50
1.80
2.10
2.40
2.70
3.00
3.30
3.60
3.90
4.20
4.50
4.80


143 Methapyrilene
Curve Type: Linear By-Response
Amt = 0.0211486 + Rsp/0.4253453
R^2: 0.9845652
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7


158 3,3'-Dimethylbenzidine
Curve Type: Linear By-Response
Amt = 0.0142821 + Rsp/0.7368127
R^2: 0.9972996
Amount/ISTD Amount
Area/ISTD Area
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
0.1
0.3
0.5
0.7
0.9
1.1
1.3
1.5
1.7
1.9
2.1
2.3
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
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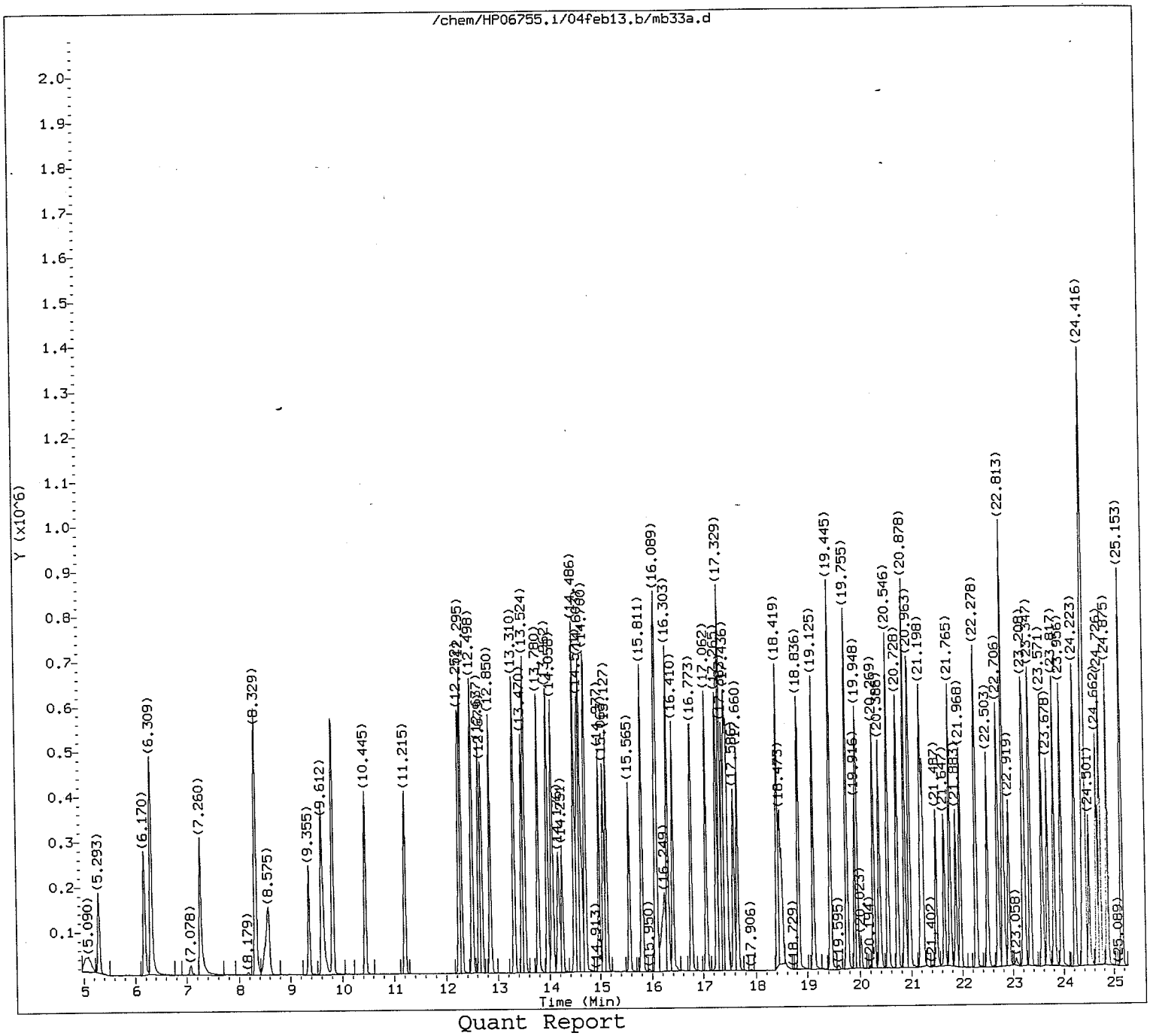
3.5
3.6




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

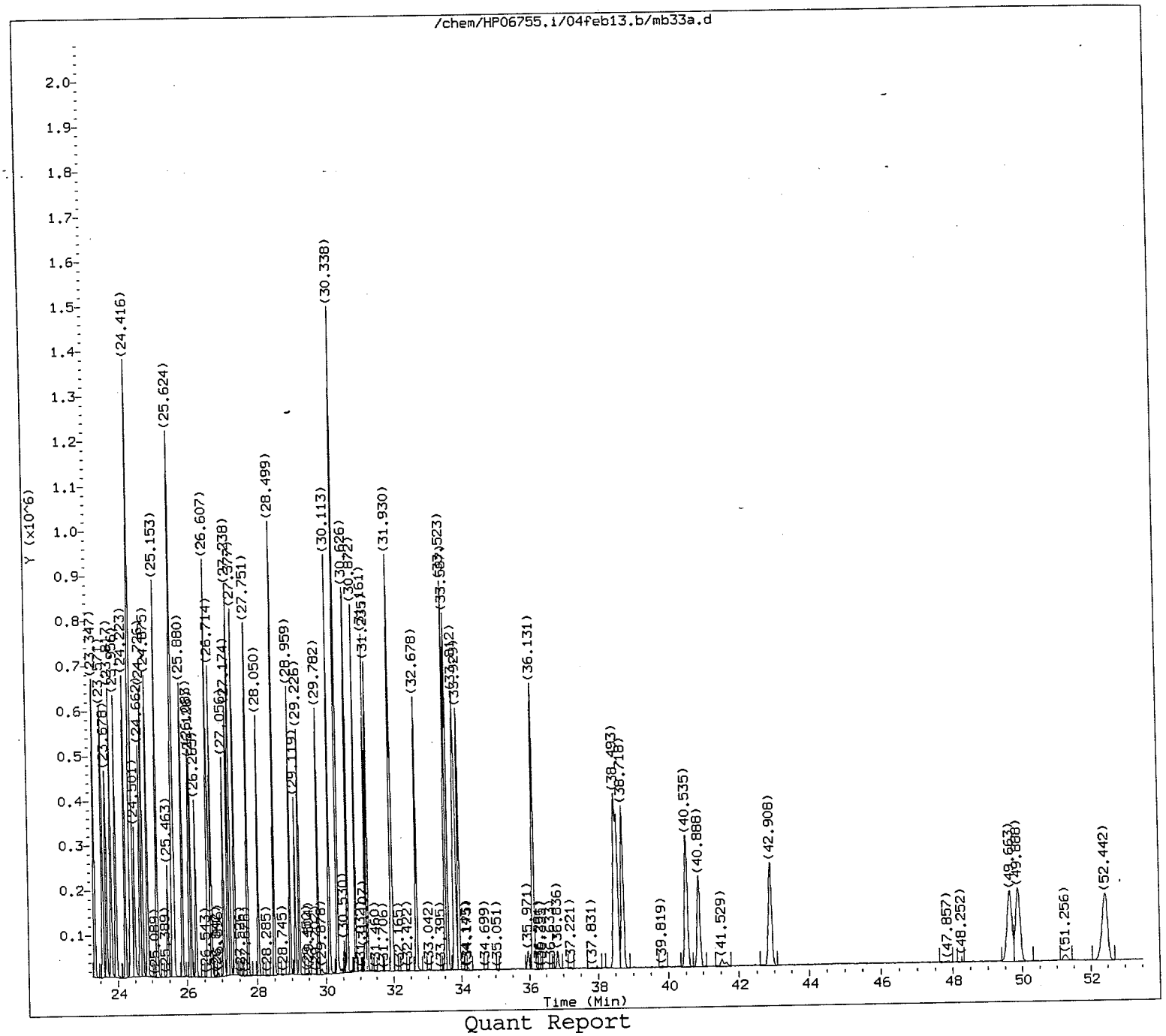
Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050

Lab Sample ID: STD0404

JMG 5546
2/13/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050

Lab Sample ID: STD0404

JMG 346
2/13/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 06:59  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 08:32
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.293 | 88 | 179796 | 50.000 |
| 2) | N-Nitrosodimethylamine | (1) | 6.170 | 74 | 292442 | 50.000 |
| 3) | Pyridine | (1) | 6.309 | 79 | 462446 | 50.000 |
| 4) | N,N-dimethyl formamide | (1) | 7.260 | 73 | 278677 | 50.000 |
| 5) | 2-Picoline | (1) | 8.318 | 93 | 449483 | 50.000 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.575 | 88 | 213910 | 50.000 |
| 7) | Methyl methanesulfonate | (1) | 9.355 | 80 | 187362 | 50.000 |
| 8) | N,N-dimethyl acetamide | (1) | 9.601 | 87 | 244448 | 50.000 |
| 10) | N-Nitrosodiethylamine | (1) | 10.445 | 102 | 202468 | 50.000 |
| 11) | Ethyl methanesulfonate | (1) | 11.215 | 109 | 220915 | 50.000 |
| 13) | Aniline | (1) | 12.498 | 93 | 591187 | 50.000 |
| 16) | Phenol | (1) | 12.295 | 94 | 498453 | 50.000 |
| 17) | Pentachloroethane | (1) | 12.690 | 167 | 124989 | 50.000 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.637 | 93 | 399859 | 50.000 |
| 19) | 2-Chlorophenol | (1) | 12.850 | 128 | 381588 | 50.000 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.310 | 146 | 392208 | 50.000 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.470 | 152 | 190040 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.524 | 146 | 393946 | 50.000 |
| 24) | Benzyl alcohol | (1) | 13.791 | 108 | 255089 | 50.000 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.962 | 146 | 371711 | 50.000 |
| 26) | 2-Methylphenol | (1) | 14.058 | 108 | 350249 | 50.000 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.176 | 45 | 550749 | 50.000 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.176 | 45 | 550749 | 50.000 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.529 | 100 | 200119 | 50.000 |
| 30) | Acetophenone | (1) | 14.603 | 105 | 473522 | 50.000 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.571 | 70 | 236481 | 50.000 |
| 32) | N-Nitrosomorpholine | (1) | 14.635 | 56 | 192357 | 50.000 |
| 33) | 4-Methylphenol | (1) | 14.486 | 108 | 360227 | 50.000 |
| 34) | o-Toluidine | (1) | 14.710 | 106 | 550158 | 50.000 |
| 37) | Hexachloroethane | (1) | 14.977 | 117 | 163384 | 50.000 |
| 39) | Nitrobenzene | (2) | 15.127 | 77 | 345520 | 50.000 |
| 40) | N-Nitrosopiperidine | (2) | 15.565 | 114 | 186475 | 50.000 |
| 41) | Isophorone | (2) | 15.811 | 82 | 678691 | 50.000 |
| 42) | 2-Nitrophenol | (2) | 16.068 | 139 | 191019 | 50.000 |
| 44) | 2,4-Dimethylphenol | (2) | 16.089 | 107 | 344126 | 50.000 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.303 | 198 | 122437 | 50.000 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.410 | 93 | 420045 | 50.000 |
| 47) | Benzoic acid | (2) | 16.249 | 105 | 271025 | 50.000 |
| 49) | 2,4-Dichlorophenol | (2) | 16.773 | 162 | 266054 | 50.000 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.062 | 180 | 271672 | 50.000 |
| 52) | Naphthalene-d8 | (2) | 17.265 | 136 | 687352 | 40.000 |
| 53) | Naphthalene | (2) | 17.329 | 128 | 925585 | 50.000 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.383 | 184 | 53146 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.425 | 127 | 419511 | 50.000 |
| 56) | 2,6-Dichlorophenol | (2) | 17.468 | 162 | 244940 | 50.000 |
| 57) | Hexachloropropene | (2) | 17.586 | 213 | 135216 | 50.000 |
| 59) | Hexachlorobutadiene | (2) | 17.660 | 225 | 122897 | 50.000 |
| 62) | Caprolactam | (2) | 18.473 | 113 | 119655 | 50.000 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.419 | 84 | 277385 | 50.000 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.836 | 107 | 293927 | 50.000 |
| 68) | Safrole | (2) | 19.125 | 162 | 223591 | 50.000 |
| 69) | 2-Methylnaphthalene | (2) | 19.445 | 142 | 577891 | 50.000 |
| 70) | 1-Methylnaphthalene | (2) | 19.755 | 142 | 533119 | 50.000 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.916 | 237 | 117970 | 50.000 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.948 | 216 | 225528 | 50.000 |
| 73) | cis-Isosafrole | (3) | 20.023 | 162 | 21808 | 5.500 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.269 | 196 | 165337 | 50.000 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.386 | 196 | 180562 | 50.000 |
| 78) | trans-Isosafrole | (3) | 20.728 | 162 | 231709 | 44.500 |
| 79) | Isosafrole | (3) | 20.728 | 162 | 231709 | 50.000 |
| 80) | Biphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 81) | Diphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 82) | 1,1'-Biphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 83) | 2-Chloronaphthalene | (3) | 20.963 | 162 | 501444 | 50.000 |
| 86) | Diphenyl ether | (3) | 21.198 | 170 | 322765 | 50.000 |
| 87) | 2-Nitroaniline | (3) | 21.241 | 138 | 224268 | 50.000 |
| 88) | 1,4-Naphthoquinone | (3) | 21.487 | 158 | 161748 | 50.000 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.647 | 168 | 108919 | 50.000 |
| 90) | Dimethylphthalate | (3) | 21.765 | 163 | 591126 | 50.000 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.883 | 168 | 118714 | 50.000 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.968 | 165 | 156567 | 50.000 |
| 93) | Acenaphthylene | (3) | 22.278 | 152 | 776389 | 50.000 |
| 95) | 3-Nitroaniline | (3) | 22.503 | 138 | 193866 | 50.000 |
| 96) | Acenaphthene-d10 | (3) | 22.706 | 164 | 310702 | 40.000 |
| 97) | Acenaphthene | (3) | 22.813 | 153 | 467753 | 50.000 |
| 98) | 2,4-Dinitrophenol | (3) | 22.823 | 184 | 88436 | 50.000 |
| 99) | Pentachlorobenzene | (3) | 23.208 | 250 | 180931 | 50.000 |
| 101) | 4-Nitrophenol | (3) | 22.919 | 109 | 83457 | 50.000 |
| 102) | Dibenzofuran | (3) | 23.347 | 168 | 676730 | 50.000 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.229 | 165 | 191565 | 50.000 |
| 104) | 1-Naphthylamine | (3) | 23.571 | 143 | 491928 | 50.000 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.678 | 232 | 124141 | 50.000 |
| 106) | 2-Naphthylamine | (3) | 23.817 | 143 | 521733 | 50.000 |
| 107) | Diethylphthalate | (3) | 23.956 | 149 | 606422 | 50.000 |
| 108) | Thionazin | (3) | 24.223 | 107 | 112175 | 50.000 |
| 109) | Fluorene | (3) | 24.416 | 166 | 514801 | 50.000 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32
Sublist used: all1
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.384 | 204 | 229194 | 50.000 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.405 | 152 | 193343 | 50.000 |
| 112) | 4-Nitroaniline | (3) | 24.427 | 138 | 185894 | 50.000 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.501 | 198 | 101636 | 50.000 |
| 114) | 1-Nitronaphthalene | (4) | 24.662 | 173 | 110718 | 50.000 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.726 | 169 | 375182 | 50.000 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.875 | 77 | 627369 | 50.000 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.153 | 97 | 117077 | 50.000 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.463 | 213 | 69224 | 50.000 |
| 120) | Diallate (peak 1) | (4) | 25.592 | 86 | 220009 | 37.500 |
| 121) | Phorate | (4) | 25.634 | 75 | 337087 | 50.000 |
| 122) | Phenacetin | (4) | 25.624 | 108 | 330105 | 50.000 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.880 | 248 | 128599 | 50.000 |
| 124) | Diallate (peak 2) | (4) | 25.870 | 86 | 68739 | 12.500 |
| 125) | Hexachlorobenzene | (4) | 26.083 | 284 | 138914 | 50.000 |
| 126) | Dimethoate | (4) | 26.126 | 87 | 210965 | 50.000 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 288748 | 50.000 |
| 129) | Pentachlorophenol | (4) | 26.607 | 266 | 102395 | 50.000 |
| 130) | Pentachloronitrobenzene | (4) | 26.650 | 237 | 50896 | 50.000 |
| 131) | 4-Aminobiphenyl | (4) | 26.607 | 169 | 393029 | 50.000 |
| 132) | Pronamide | (4) | 26.714 | 173 | 234599 | 50.000 |
| 133) | Phenanthrene-d10 | (4) | 27.174 | 188 | 459737 | 40.000 |
| 134) | Dinoseb | (4) | 27.056 | 211 | 143028 | 50.000 |
| 135) | Phenanthrene | (4) | 27.238 | 178 | 685560 | 50.000 |
| 136) | Anthracene | (4) | 27.377 | 178 | 712176 | 50.000 |
| 138) | Carbazole | (4) | 27.751 | 167 | 695654 | 50.000 |
| 139) | Methyl parathion | (4) | 28.050 | 109 | 233201 | 50.000 |
| 140) | Di-n-butylphthalate | (4) | 28.499 | 149 | 1034445 | 50.000 |
| 141) | Parathion | (4) | 28.959 | 109 | 141285 | 50.000 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.119 | 190 | 89100 | 50.000 |
| 143) | Methapyrilene | (4) | 29.226 | 97 | 214184 | 50.000 |
| 144) | Isodrin | (4) | 29.782 | 193 | 80012 | 50.000 |
| 145) | Fluoranthene | (4) | 30.113 | 202 | 693290 | 50.000 |
| 150) | Benzidine | (5) | 30.338 | 184 | 1115969 | 150.000 |
| 152) | Pyrene | (5) | 30.626 | 202 | 680425 | 50.000 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.171 | 225 | 142679 | 50.000 |
| 157) | Chlorobenzilate | (5) | 31.235 | 139 | 274318 | 50.000 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.973 | 212 | 334307 | 50.000 |
| 159) | Butylbenzylphthalate | (5) | 31.930 | 149 | 467165 | 50.000 |
| 160) | 2-Acetylaminofluorene | (5) | 32.678 | 181 | 332689 | 50.000 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.598 | 252 | 247845 | 50.000 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.587 | 231 | 117892 | 50.000 |
| 164) | Benzo(a)anthracene | (5) | 33.801 | 228 | 586748 | 50.000 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

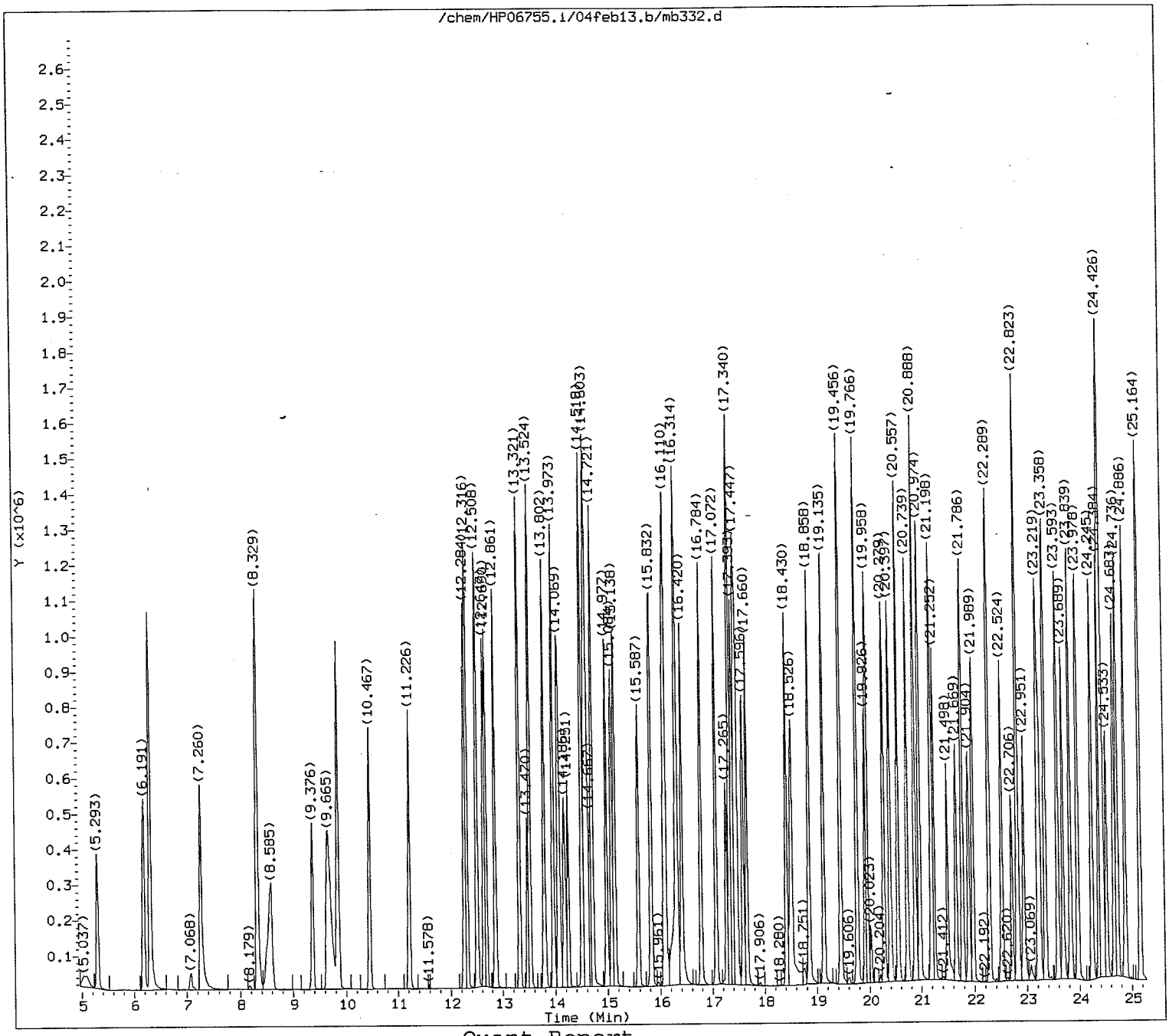
Sample Name: SSTD050

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.844 | 240 | 360948 | 40.000 |
| 166) | Chrysene | (5) | 33.929 | 228 | 539099 | 50.000 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.534 | 149 | 648729 | 50.000 |
| 168) | Di-n-octylphthalate | (6) | 36.131 | 149 | 1111107 | 50.000 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.483 | 256 | 275321 | 50.000 |
| 170) | Benzo(b)fluoranthene | (6) | 38.557 | 252 | 596407 | 50.000 |
| 171) | Benzo(k)fluoranthene | (6) | 38.718 | 252 | 552961 | 50.000 |
| 172) | Benzo(a)pyrene | (6) | 40.535 | 252 | 537088 | 50.000 |
| 173) | Perylene-d12 | (6) | 40.877 | 264 | 331311 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.919 | 268 | 292570 | 50.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.663 | 276 | 506012 | 50.000 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.888 | 278 | 463595 | 50.000 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.442 | 276 | 519825 | 50.000 |
| 9) | 2-Fluorophenol | (1) | 9.825 | 112 | 417431 | 50.000 |
| 14) | Phenol-d5 | (1) | 12.252 | 99 | 506530 | 50.000 |
| 15) | Phenol-d6 | (1) | 12.252 | 99 | 506530 | 50.000 |
| 38) | Nitrobenzene-d5 | (2) | 15.063 | 82 | 347137 | 50.000 |
| 77) | 2-Fluorobiphenyl | (3) | 20.546 | 172 | 527928 | 50.000 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.153 | 330 | 74417 | 50.000 |
| 154) | Terphenyl-d14 | (5) | 30.872 | 244 | 403745 | 50.000 |

M = Compound was manually integrated.

A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42

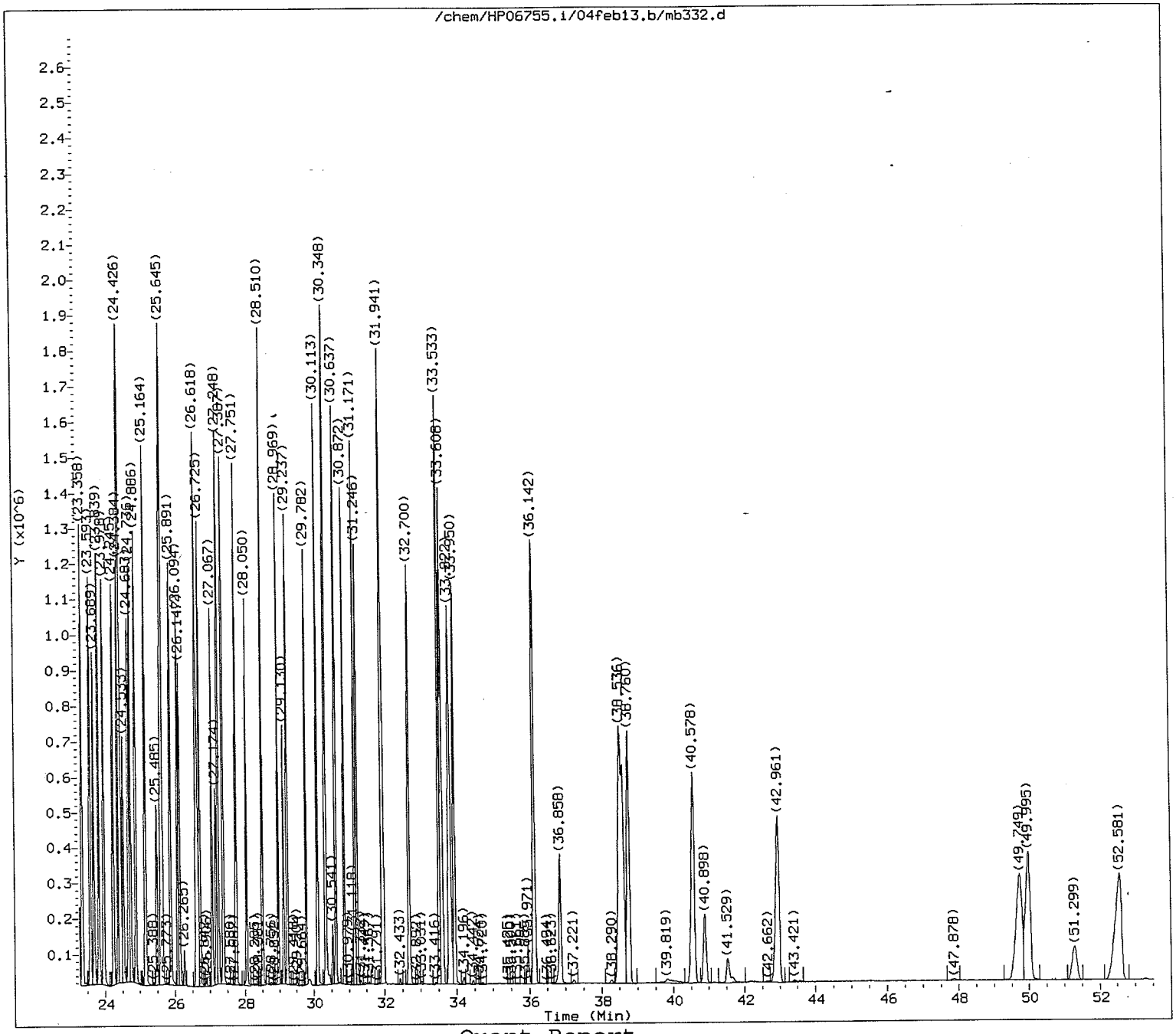
Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120

Lab Sample ID: STD0404

01/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120

Lab Sample ID: STD0404

8358

WG11422
01/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 08:00  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:42
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.293 | 88 | 391457 | 118.158 |
| 2) | N-Nitrosodimethylamine | (1) | 6.191 | 74 | 623971 | 116.946 |
| 3) | Pyridine | (1) | 6.309 | 79 | 956716 | 115.096 |
| 4) | N,N-dimethyl formamide | (1) | 7.271 | 73 | 617043 | 119.168 |
| 5) | 2-Picoline | (1) | 8.329 | 93 | 935241 | 115.439 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.585 | 88 | 456275 | 116.928 |
| 7) | Methyl methanesulfonate | (1) | 9.376 | 80 | 402116 | 117.297 |
| 8) | N,N-dimethyl acetamide | (1) | 9.665 | 87 | 534659 | 118.433 |
| 10) | N-Nitrosodiethylamine | (1) | 10.467 | 102 | 431723 | 116.908 |
| 11) | Ethyl methanesulfonate | (1) | 11.226 | 109 | 475030 | 117.411 |
| 13) | Aniline | (1) | 12.508 | 93 | 1185804 | 113.245 |
| 16) | Phenol | (1) | 12.316 | 94 | 987277 | 112.491 |
| 17) | Pentachloroethane | (1) | 12.690 | 167 | 269532 | 117.583 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.647 | 93 | 805526 | 113.504 |
| 19) | 2-Chlorophenol | (1) | 12.861 | 128 | 802479 | 116.078 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.321 | 146 | 823171 | 115.959 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.470 | 152 | 177775 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.524 | 146 | 821476 | 115.570 |
| 24) | Benzyl alcohol | (1) | 13.802 | 108 | 539548 | 116.423 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.973 | 146 | 775946 | 115.635 |
| 26) | 2-Methylphenol | (1) | 14.069 | 108 | 732930 | 115.781 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.186 | 45 | 1134570 | 114.842 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.186 | 45 | 1134570 | 114.842 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.571 | 100 | 400475 | 113.107 |
| 30) | Acetophenone | (1) | 14.614 | 105 | 917334 | 111.167 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.593 | 70 | 415263 | 105.331 |
| 32) | N-Nitrosomorpholine | (1) | 14.667 | 56 | 387774 | 113.545 |
| 33) | 4-Methylphenol | (1) | 14.518 | 108 | 733917 | 114.179 |
| 34) | o-Toluidine | (1) | 14.721 | 106 | 1091225 | 112.575 |
| 37) | Hexachloroethane | (1) | 14.977 | 117 | 344508 | 116.237 |
| 39) | Nitrobenzene | (2) | 15.138 | 77 | 704226 | 113.549 |
| 40) | N-Nitrosopiperidine | (2) | 15.587 | 114 | 395106 | 115.873 |
| 41) | Isophorone | (2) | 15.832 | 82 | 1373376 | 113.119 |
| 42) | 2-Nitrophenol | (2) | 16.078 | 139 | 408750 | 116.464 |
| 44) | 2,4-Dimethylphenol | (2) | 16.110 | 107 | 695097 | 113.010 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.324 | 198 | 266177 | 117.414 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.420 | 93 | 836493 | 112.162 |
| 47) | Benzoic acid | (2) | 16.346 | 105 | 612781 | 119.767 |
| 49) | 2,4-Dichlorophenol | (2) | 16.784 | 162 | 575473 | 117.110 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.072 | 180 | 567891 | 115.062 |
| 52) | Naphthalene-d8 | (2) | 17.265 | 136 | 650051 | 40.000 |
| 53) | Naphthalene | (2) | 17.340 | 128 | 1908996 | 114.258 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.393 | 184 | 115022 | 117.145 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.447 | 127 | 872194 | 114.738 |
| 56) | 2,6-Dichlorophenol | (2) | 17.479 | 162 | 520459 | 116.043 |
| 57) | Hexachloropropene | (2) | 17.596 | 213 | 303425 | 119.315 |
| 59) | Hexachlorobutadiene | (2) | 17.671 | 225 | 266825 | 117.335 |
| 62) | Caprolactam | (2) | 18.526 | 113 | 254578 | 116.121 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.430 | 84 | 437772 | 98.434 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.858 | 107 | 597170 | 113.359 |
| 68) | Safrole | (2) | 19.135 | 162 | 464914 | 114.745 |
| 69) | 2-Methylnaphthalene | (2) | 19.456 | 142 | 1170084 | 113.154 |
| 70) | 1-Methylnaphthalene | (2) | 19.766 | 142 | 1095808 | 114.055 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.916 | 237 | 263669 | 119.736 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.958 | 216 | 471891 | 115.780 |
| 73) | cis-Isosafrole | (3) | 20.023 | 162 | 50822 | 13.447 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.279 | 196 | 359789 | 118.133 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.397 | 196 | 396235 | 118.637 |
| 78) | trans-Isosafrole | (3) | 20.739 | 162 | 495613 | 104.219 |
| 79) | Isosafrole | (3) | 20.739 | 162 | 495613 | 117.100 |
| 80) | Biphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 81) | Diphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 82) | 1,1'-Biphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 83) | 2-Chloronaphthalene | (3) | 20.985 | 162 | 1034243 | 114.920 |
| 86) | Diphenyl ether | (3) | 21.198 | 170 | 680748 | 116.258 |
| 87) | 2-Nitroaniline | (3) | 21.252 | 138 | 472091 | 116.142 |
| 88) | 1,4-Naphthoquinone | (3) | 21.498 | 158 | 308741 | 110.290 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.669 | 168 | 243372 | 119.720 |
| 90) | Dimethylphthalate | (3) | 21.786 | 163 | 1239731 | 115.919 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.904 | 168 | 264526 | 119.554 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.989 | 165 | 331404 | 116.473 |
| 93) | Acenaphthylene | (3) | 22.289 | 152 | 1618506 | 115.559 |
| 95) | 3-Nitroaniline | (3) | 22.524 | 138 | 418623 | 117.669 |
| 96) | Acenaphthene-d10 | (3) | 22.706 | 164 | 290622 | 40.000 |
| 97) | Acenaphthene | (3) | 22.823 | 153 | 939598 | 113.338 |
| 98) | 2,4-Dinitrophenol | (3) | 22.844 | 184 | 204767 | 121.856 |
| 99) | Pentachlorobenzene | (3) | 23.219 | 250 | 387559 | 117.186 |
| 101) | 4-Nitrophenol | (3) | 22.951 | 109 | 185769 | 119.491 |
| 102) | Dibenzofuran | (3) | 23.358 | 168 | 1392748 | 114.790 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.251 | 165 | 414356 | 117.771 |
| 104) | 1-Naphthylamine | (3) | 23.593 | 143 | 1019768 | 115.223 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.689 | 232 | 269712 | 118.037 |
| 106) | 2-Naphthylamine | (3) | 23.839 | 143 | 1124175 | 117.540 |
| 107) | Diethylphthalate | (3) | 23.978 | 149 | 1244980 | 114.642 |
| 108) | Thionazin | (3) | 24.245 | 107 | 233204 | 115.394 |
| 109) | Fluorene | (3) | 24.426 | 166 | 951655 | 108.382 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.384 | 204 | 486167 | 116.600 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.426 | 152 | 354050 | 107.821 |
| 112) | 4-Nitroaniline | (3) | 24.459 | 138 | 376522 | 113.834 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.533 | 198 | 241571 | 124.389 |
| 114) | 1-Nitronaphthalene | (4) | 24.683 | 173 | 244027 | 119.863 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.747 | 169 | 766160 | 115.286 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.886 | 77 | 1244788 | 113.562 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.164 | 97 | 209993 | 107.545 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.495 | 213 | 163021 | 123.836 |
| 120) | Diallate (peak 1) | (4) | 25.602 | 86 | 436176 | 85.135 |
| 121) | Phorate | (4) | 25.645 | 75 | 560021 | 103.018 |
| 122) | Phenacetin | (4) | 25.656 | 108 | 617899 | 110.083 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.891 | 248 | 270064 | 116.963 |
| 124) | Diallate (peak 2) | (4) | 25.869 | 86 | 140283 | 28.812 |
| 125) | Hexachlorobenzene | (4) | 26.094 | 284 | 301209 | 118.882 |
| 126) | Dimethoate | (4) | 26.147 | 87 | 420783 | 113.876 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 576459 | 113.948 |
| 129) | Pentachlorophenol | (4) | 26.618 | 266 | 222614 | 119.041 |
| 130) | Pentachloronitrobenzene | (4) | 26.660 | 237 | 113910 | 120.782 |
| 131) | 4-Aminobiphenyl | (4) | 26.618 | 169 | 652143 | 102.944 |
| 132) | Pronamide | (4) | 26.725 | 173 | 483728 | 115.865 |
| 133) | Phenanthrene-d10 | (4) | 27.174 | 188 | 423168 | 40.000 |
| 134) | Dinoseb | (4) | 27.067 | 211 | 334318 | 123.387 |
| 135) | Phenanthrene | (4) | 27.248 | 178 | 1354485 | 113.308 |
| 136) | Anthracene | (4) | 27.387 | 178 | 1378889 | 112.099 |
| 138) | Carbazole | (4) | 27.761 | 167 | 1409414 | 114.813 |
| 139) | Methyl parathion | (4) | 28.050 | 109 | 462337 | 113.515 |
| 140) | Di-n-butylphthalate | (4) | 28.510 | 149 | 2053218 | 113.584 |
| 141) | Parathion | (4) | 28.969 | 109 | 292023 | 116.010 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.130 | 190 | 193729 | 119.047 |
| 143) | Methapyrilene | (4) | 29.237 | 97 | 560231 | 130.112 |
| 144) | Isodrin | (4) | 29.782 | 193 | 172331 | 118.480 |
| 145) | Fluoranthene | (4) | 30.113 | 202 | 1374001 | 113.493 |
| 150) | Benzidine | (5) | 30.359 | 184 | 1942208 | 318.927 |
| 152) | Pyrene | (5) | 30.637 | 202 | 1355233 | 114.348 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.171 | 225 | 301137 | 117.821 |
| 157) | Chlorobenzilate | (5) | 31.235 | 139 | 558359 | 115.648 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.984 | 212 | 726426 | 119.568 |
| 159) | Butylbenzylphthalate | (5) | 31.941 | 149 | 955946 | 115.966 |
| 160) | 2-Acetylaminofluorene | (5) | 32.700 | 181 | 724552 | 119.704 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.619 | 252 | 496925 | 114.745 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.598 | 231 | 240715 | 115.835 |
| 164) | Benzo(a)anthracene | (5) | 33.811 | 228 | 1228885 | 117.360 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

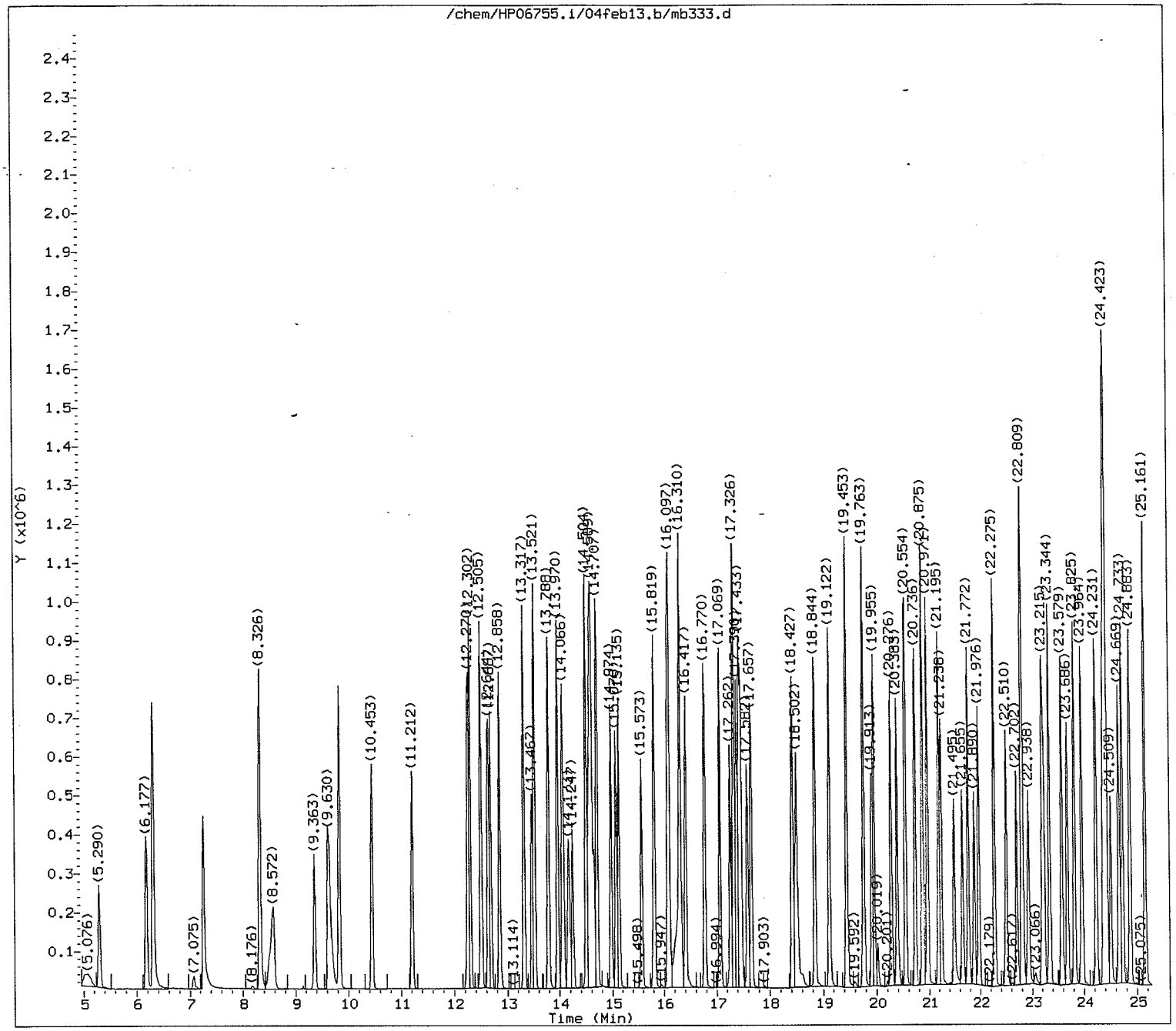
Data File: /chem/HP06755.i/04feb13.b/mb332.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 08:00  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:42
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.854 | 240 | 329161 | 40.000 |
| 166) | Chrysene | (5) | 33.950 | 228 | 1119807 | 116.865 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.533 | 149 | 1365395 | 117.654 |
| 168) | Di-n-octylphthalate | (6) | 36.142 | 149 | 2406318 | 117.146 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.515 | 256 | 610681 | 118.579 |
| 170) | Benzo(b)fluoranthene | (6) | 38.611 | 252 | 1307045 | 117.857 |
| 171) | Benzo(k)fluoranthene | (6) | 38.760 | 252 | 1195480 | 117.042 |
| 172) | Benzo(a)pyrene | (6) | 40.578 | 252 | 1206145 | 119.322 |
| 173) | Perylene-d12 | (6) | 40.898 | 264 | 313534 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.972 | 268 | 678897 | 121.287 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.749 | 276 | 1184938 | 121.834 |
| 176) | Dibenz(a,h)anthracene | (6) | 50.005 | 278 | 1057942 | 120.285 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.581 | 276 | 1183695 | 120.155 |
| 9) | 2-Fluorophenol | (1) | 9.857 | 112 | 873998 | 115.814 |
| 14) | Phenol-d5 | (1) | 12.273 | 99 | 1056661 | 115.594 |
| 15) | Phenol-d6 | (1) | 12.273 | 99 | 1056661 | 115.594 |
| 38) | Nitrobenzene-d5 | (2) | 15.084 | 82 | 727117 | 115.184 |
| 77) | 2-Fluorobiphenyl | (3) | 20.557 | 172 | 1096264 | 115.325 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.164 | 330 | 154380 | 115.267 |
| 154) | Terphenyl-d14 | (5) | 30.872 | 244 | 778096 | 112.377 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080 Lab Sample ID: STD0404



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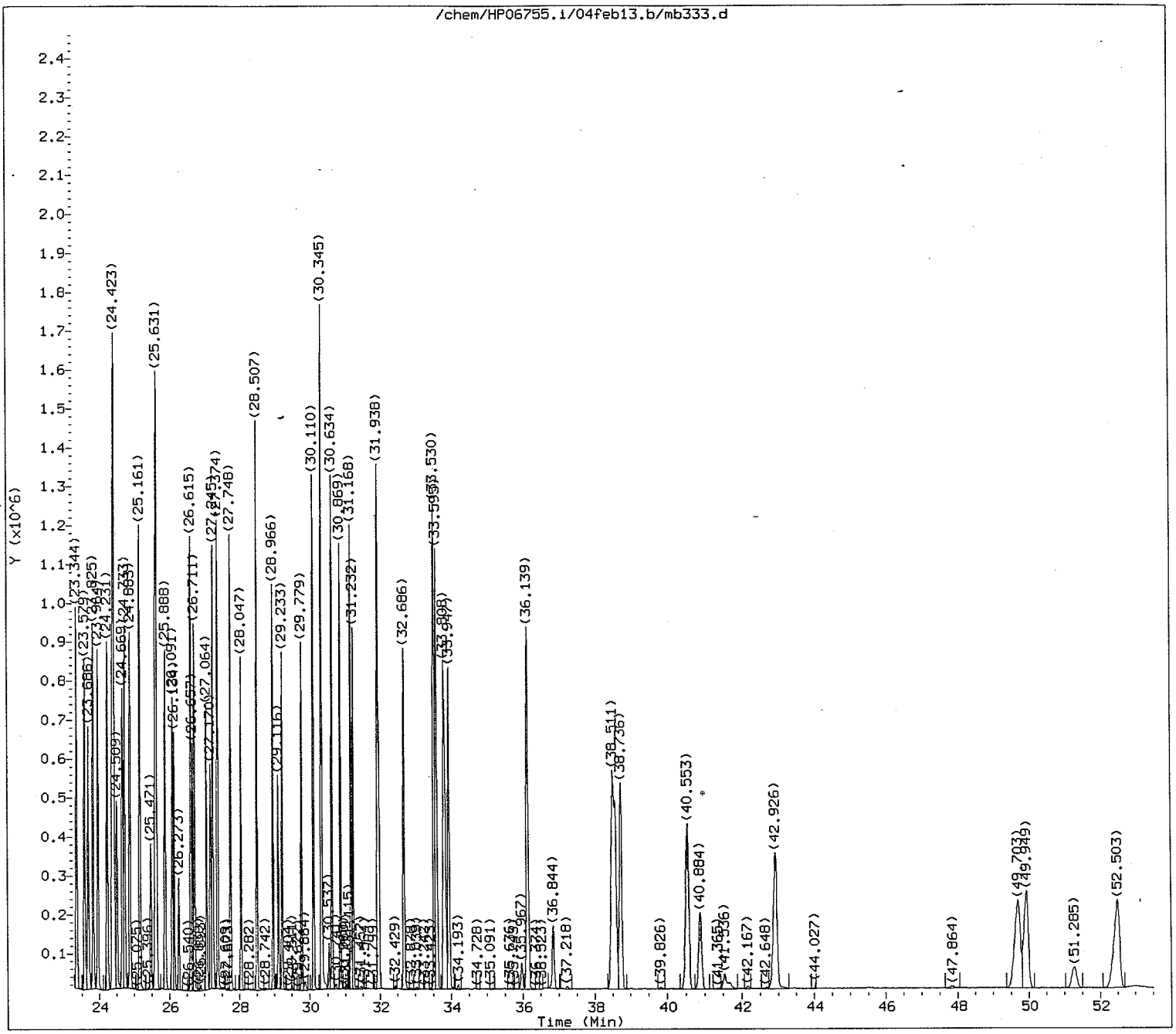



Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080 Lab Sample ID: STD0404

8354

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.290 | 88 | 265146 | 77.579 |
| 2) | N-Nitrosodimethylamine | (1) | 6.177 | 74 | 424187 | 77.231 |
| 3) | Pyridine | (1) | 6.306 | 79 | 672117 | 78.119 |
| 4) | N,N-dimethyl formamide | (1) | 7.257 | 73 | 417239 | 77.938 |
| 5) | 2-Picoline | (1) | 8.326 | 93 | 655184 | 78.128 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 316181 | 78.229 |
| 7) | Methyl methanesulfonate | (1) | 9.363 | 80 | 277228 | 78.125 |
| 8) | N,N-dimethyl acetamide | (1) | 9.619 | 87 | 362512 | 77.755 |
| 10) | N-Nitrosodiethylamine | (1) | 10.453 | 102 | 300329 | 78.424 |
| 11) | Ethyl methanesulfonate | (1) | 11.212 | 109 | 331690 | 78.849 |
| 13) | Aniline | (1) | 12.505 | 93 | 845968 | 78.075 |
| 16) | Phenol | (1) | 12.302 | 94 | 718003 | 78.737 |
| 17) | Pentachloroethane | (1) | 12.687 | 167 | 183900 | 77.706 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.644 | 93 | 577382 | 78.444 |
| 19) | 2-Chlorophenol | (1) | 12.858 | 128 | 560495 | 78.261 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.317 | 146 | 573745 | 78.096 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 186171 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 581984 | 78.780 |
| 24) | Benzyl alcohol | (1) | 13.788 | 108 | 390694 | 80.334 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.970 | 146 | 551677 | 78.997 |
| 26) | 2-Methylphenol | (1) | 14.066 | 108 | 516467 | 78.592 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 790937 | 77.597 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 790937 | 77.597 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.547 | 100 | 290634 | 78.914 |
| 30) | Acetophenone | (1) | 14.611 | 105 | 682898 | 79.347 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.579 | 70 | 319338 | 78.212 |
| 32) | N-Nitrosomorpholine | (1) | 14.654 | 56 | 278929 | 78.649 |
| 33) | 4-Methylphenol | (1) | 14.504 | 108 | 526740 | 78.826 |
| 34) | o-Toluidine | (1) | 14.707 | 106 | 781120 | 77.940 |
| 37) | Hexachloroethane | (1) | 14.974 | 117 | 244596 | 79.199 |
| 39) | Nitrobenzene | (2) | 15.135 | 77 | 495735 | 77.519 |
| 40) | N-Nitrosopiperidine | (2) | 15.573 | 114 | 277013 | 78.373 |
| 41) | Isophorone | (2) | 15.819 | 82 | 986970 | 78.407 |
| 42) | 2-Nitrophenol | (2) | 16.075 | 139 | 284609 | 78.277 |
| 44) | 2,4-Dimethylphenol | (2) | 16.097 | 107 | 501833 | 78.599 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.310 | 198 | 188142 | 79.503 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.417 | 93 | 591712 | 77.129 |
| 47) | Benzoic acid | (2) | 16.289 | 105 | 439695 | 81.368 |
| 49) | 2,4-Dichlorophenol | (2) | 16.770 | 162 | 398957 | 78.339 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.069 | 180 | 403294 | 78.680 |
| 52) | Naphthalene-d8 | (2) | 17.262 | 136 | 680684 | 40.000 |
| 53) | Naphthalene | (2) | 17.337 | 128 | 1360047 | 78.478 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 80459 | 78.829 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 55) 4-Chloroaniline | (2) | 17.433 | 127 | 623445 | 78.875 |
| 56) 2,6-Dichlorophenol | (2) | 17.465 | 162 | 361168 | 77.908 |
| 57) Hexachloropropene | (2) | 17.593 | 213 | 211752 | 79.679 |
| 59) Hexachlorobutadiene | (2) | 17.657 | 225 | 186635 | 78.911 |
| 62) Caprolactam | (2) | 18.502 | 113 | 178778 | 78.571 |
| 63) N-Nitrosodi-n-butylamine | (2) | 18.427 | 84 | 320302 | 72.153 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.844 | 107 | 429645 | 78.579 |
| 68) Safrole | (2) | 19.122 | 162 | 330997 | 78.667 |
| 69) 2-Methylnaphthalene | (2) | 19.453 | 142 | 842162 | 78.504 |
| 70) 1-Methylnaphthalene | (2) | 19.763 | 142 | 790368 | 79.035 |
| 71) Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 179313 | 78.553 |
| 72) 1,2,4,5-Tetrachlorobenzene | (3) | 19.955 | 216 | 333920 | 78.877 |
| 73) cis-Isosafrole | (3) | 20.019 | 162 | 33612 | 8.599 |
| 74) 2,4,6-Trichlorophenol | (3) | 20.276 | 196 | 250803 | 79.148 |
| 76) 2,4,5-Trichlorophenol | (3) | 20.394 | 196 | 277727 | 79.665 |
| 78) trans-Isosafrole | (3) | 20.736 | 162 | 349473 | 70.569 |
| 79) Isosafrole | (3) | 20.736 | 162 | 349473 | 79.291 |
| 80) Biphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 81) Diphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 82) 1,1'-Biphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 83) 2-Chloronaphthalene | (3) | 20.971 | 162 | 736289 | 78.802 |
| 86) Diphenyl ether | (3) | 21.195 | 170 | 478597 | 78.751 |
| 87) 2-Nitroaniline | (3) | 21.238 | 138 | 333193 | 78.904 |
| 88) 1,4-Naphthoquinone | (3) | 21.495 | 158 | 226078 | 78.118 |
| 89) 1,4-Dinitrobenzene | (3) | 21.655 | 168 | 163866 | 78.019 |
| 90) Dimethylphthalate | (3) | 21.772 | 163 | 872344 | 78.643 |
| 91) 1,3-Dinitrobenzene | (3) | 21.890 | 168 | 181342 | 78.896 |
| 92) 2,6-Dinitrotoluene | (3) | 21.976 | 165 | 233617 | 78.991 |
| 93) Acenaphthylene | (3) | 22.275 | 152 | 1160407 | 79.471 |
| 95) 3-Nitroaniline | (3) | 22.510 | 138 | 290881 | 78.769 |
| 96) Acenaphthene-d10 | (3) | 22.702 | 164 | 303985 | 40.000 |
| 97) Acenaphthene | (3) | 22.809 | 153 | 685198 | 79.343 |
| 98) 2,4-Dinitrophenol | (3) | 22.831 | 184 | 141090 | 80.181 |
| 99) Pentachlorobenzene | (3) | 23.205 | 250 | 274878 | 79.640 |
| 101) 4-Nitrophenol | (3) | 22.938 | 109 | 128163 | 79.205 |
| 102) Dibenzofuran | (3) | 23.344 | 168 | 989932 | 78.657 |
| 103) 2,4-Dinitrotoluene | (3) | 23.237 | 165 | 290604 | 79.308 |
| 104) 1-Naphthylamine | (3) | 23.579 | 143 | 723746 | 78.778 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 23.686 | 232 | 183840 | 77.919 |
| 106) 2-Naphthylamine | (3) | 23.825 | 143 | 782928 | 78.833 |
| 107) Diethylphthalate | (3) | 23.964 | 149 | 887723 | 78.758 |
| 108) Thionazin | (3) | 24.231 | 107 | 165877 | 78.974 |
| 109) Fluorene | (3) | 24.423 | 166 | 729286 | 79.603 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.381 | 204 | 345426 | 79.467 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.423 | 152 | 272750 | 79.606 |
| 112) | 4-Nitroaniline | (3) | 24.445 | 138 | 268486 | 78.386 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.520 | 198 | 163132 | 79.756 |
| 114) | 1-Nitronaphthalene | (4) | 24.669 | 173 | 170334 | 79.544 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.733 | 169 | 557383 | 79.674 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.883 | 77 | 908765 | 79.060 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 162410 | 79.232 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.471 | 213 | 109263 | 79.119 |
| 120) | Diallate (peak 1) | (4) | 25.599 | 86 | 317792 | 59.198 |
| 121) | Phorate | (4) | 25.631 | 75 | 442265 | 78.062 |
| 122) | Phenacetin | (4) | 25.631 | 108 | 463509 | 78.849 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.888 | 248 | 190349 | 78.760 |
| 124) | Diallate (peak 2) | (4) | 25.866 | 86 | 100700 | 19.737 |
| 125) | Hexachlorobenzene | (4) | 26.091 | 284 | 211499 | 79.423 |
| 126) | Dimethoate | (4) | 26.134 | 87 | 293800 | 76.859 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 418492 | 78.935 |
| 129) | Pentachlorophenol | (4) | 26.615 | 266 | 157936 | 80.044 |
| 130) | Pentachloronitrobenzene | (4) | 26.657 | 237 | 77375 | 78.506 |
| 131) | 4-Aminobiphenyl | (4) | 26.615 | 169 | 498819 | 76.351 |
| 132) | Pronamide | (4) | 26.711 | 173 | 355448 | 80.475 |
| 133) | Phenanthrene-d10 | (4) | 27.170 | 188 | 446364 | 40.000 |
| 134) | Dinoseb | (4) | 27.064 | 211 | 228644 | 80.000 |
| 135) | Phenanthrene | (4) | 27.245 | 178 | 996068 | 79.327 |
| 136) | Anthracene | (4) | 27.374 | 178 | 1038830 | 80.043 |
| 138) | Carbazole | (4) | 27.748 | 167 | 1017266 | 79.035 |
| 139) | Methyl parathion | (4) | 28.047 | 109 | 336216 | 78.831 |
| 140) | Di-n-butylphthalate | (4) | 28.507 | 149 | 1533790 | 80.293 |
| 141) | Parathion | (4) | 28.966 | 109 | 210274 | 79.460 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.127 | 190 | 133929 | 78.671 |
| 143) | Methapyrilene | (4) | 29.233 | 97 | 338415 | 76.255 |
| 144) | Isodrin | (4) | 29.779 | 193 | 122326 | 79.820 |
| 145) | Fluoranthene | (4) | 30.110 | 202 | 1017078 | 79.763 |
| 150) | Benzidine | (5) | 30.345 | 184 | 1493504 | 232.857 |
| 152) | Pyrene | (5) | 30.634 | 202 | 1002505 | 79.422 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.168 | 225 | 215124 | 79.159 |
| 157) | Chlorobenzilate | (5) | 31.232 | 139 | 402284 | 78.623 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.970 | 212 | 498507 | 77.814 |
| 159) | Butylbenzylphthalate | (5) | 31.938 | 149 | 689569 | 78.832 |
| 160) | 2-Acetylaminofluorene | (5) | 32.686 | 181 | 505543 | 78.750 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.605 | 252 | 364387 | 79.141 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.595 | 231 | 177611 | 79.974 |
| 164) | Benzo(a)anthracene | (5) | 33.808 | 228 | 880692 | 79.120 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

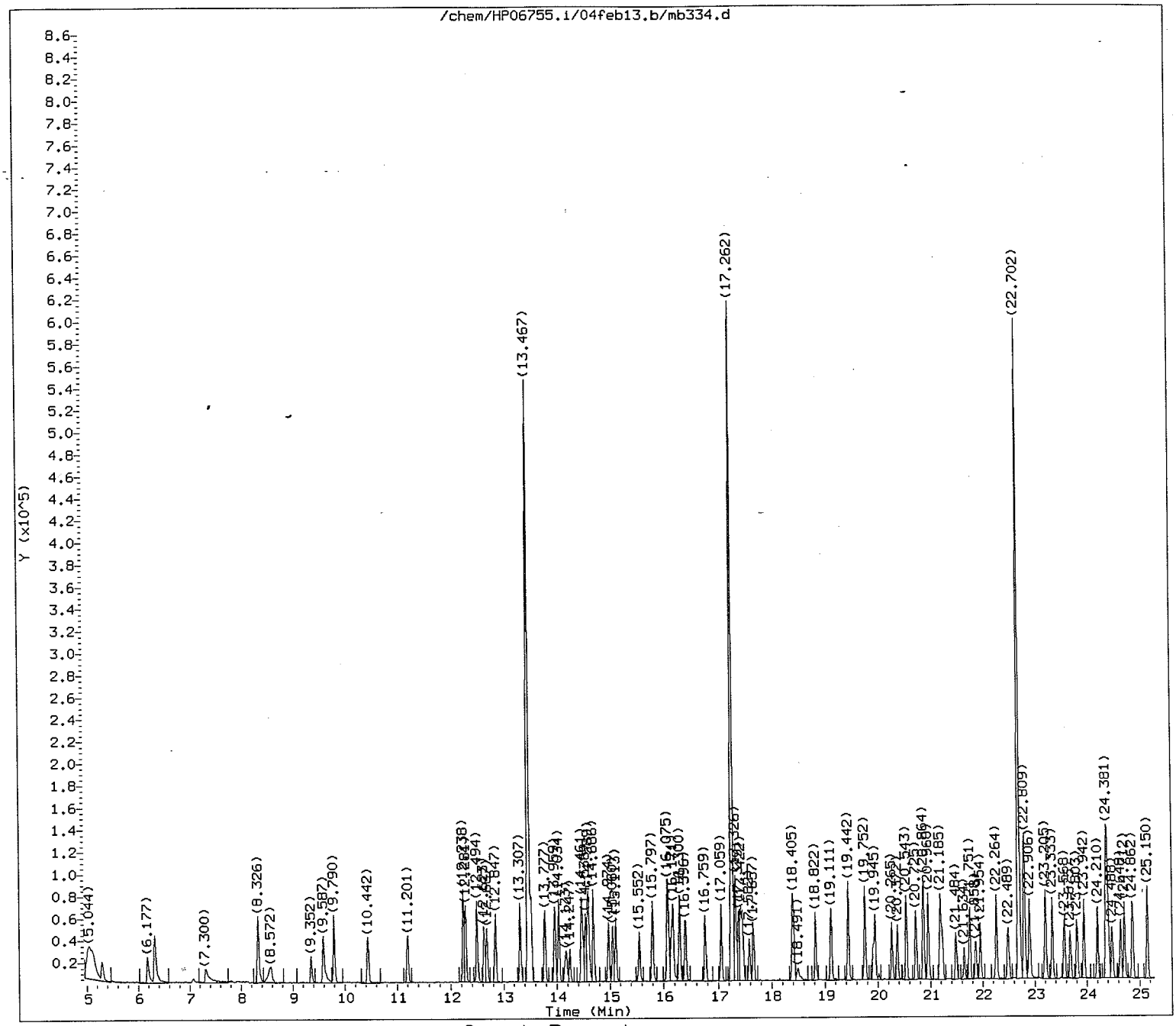
Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.851 | 240 | 351832 | 40.000 |
| 166) | Chrysene | (5) | 33.947 | 228 | 801826 | 78.850 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.530 | 149 | 985067 | 79.607 |
| 168) | Di-n-octylphthalate | (6) | 36.139 | 149 | 1694436 | 79.539 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.511 | 256 | 428129 | 79.953 |
| 170) | Benzo(b)fluoranthene | (6) | 38.586 | 252 | 912303 | 79.393 |
| 171) | Benzo(k)fluoranthene | (6) | 38.736 | 252 | 851101 | 80.077 |
| 172) | Benzo(a)pyrene | (6) | 40.553 | 252 | 826892 | 79.096 |
| 173) | Perylene-d12 | (6) | 40.884 | 264 | 326099 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.937 | 268 | 461167 | 79.474 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.703 | 276 | 805130 | 79.728 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.949 | 278 | 720751 | 79.189 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.514 | 276 | 819488 | 79.987 |
| 9) | 2-Fluorophenol | (1) | 9.833 | 112 | 601878 | 77.397 |
| 14) | Phenol-d5 | (1) | 12.270 | 99 | 740240 | 78.198 |
| 15) | Phenol-d6 | (1) | 12.270 | 99 | 740240 | 78.198 |
| 38) | Nitrobenzene-d5 | (2) | 15.070 | 82 | 511621 | 78.247 |
| 77) | 2-Fluorobiphenyl | (3) | 20.554 | 172 | 786476 | 79.397 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.161 | 330 | 112711 | 80.303 |
| 154) | Terphenyl-d14 | (5) | 30.869 | 244 | 594631 | 80.231 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

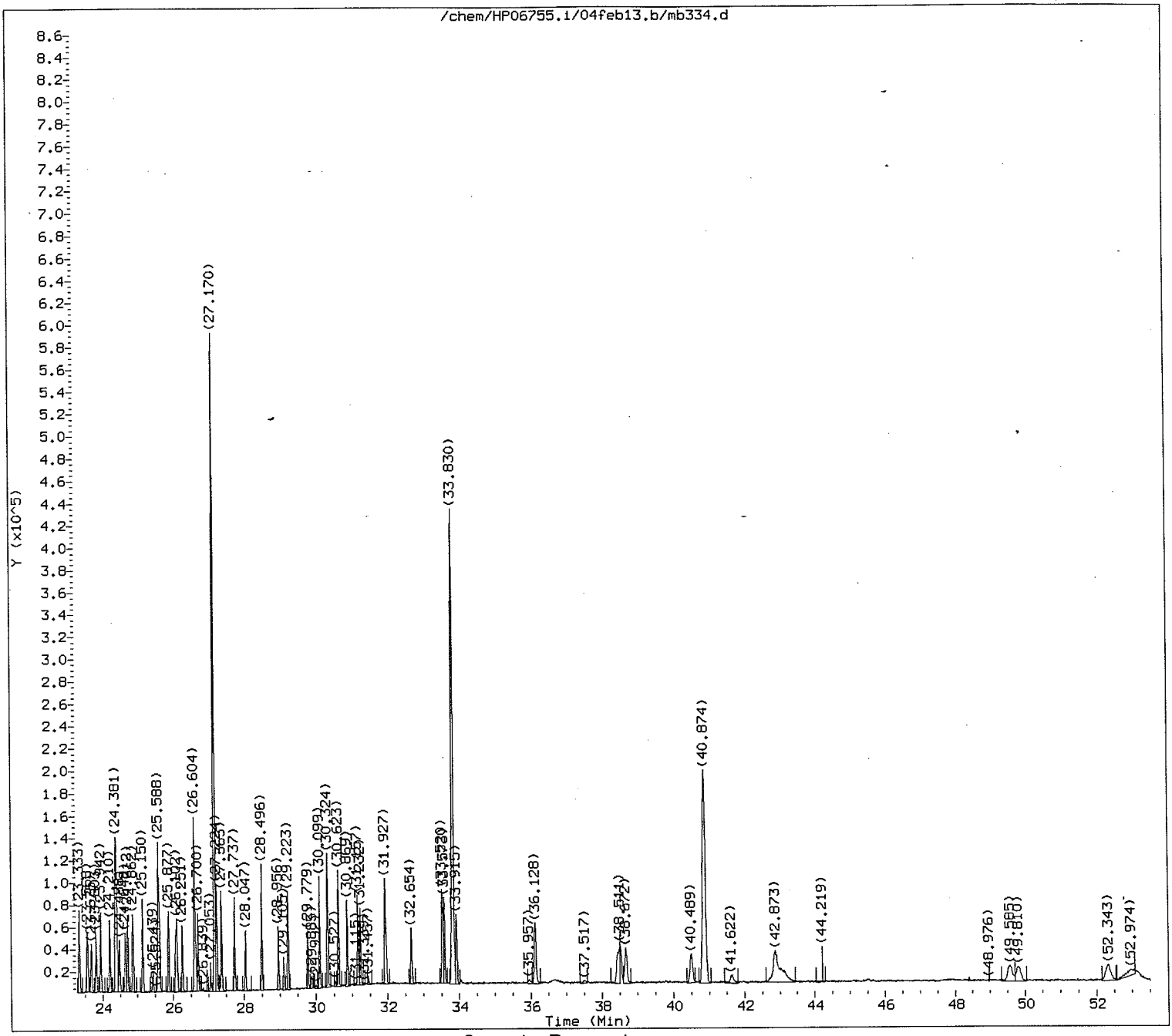
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005

Lab Sample ID: STD0404

03369

2/17/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

8378

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sublist used: all1

Sample Name: SSTD005

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.301 | 88 | 16578M | 4.782 |
| 2) | N-Nitrosodimethylamine | (1) | 6.177 | 74 | 25737 | 4.658 |
| 3) | Pyridine | (1) | 6.316 | 79 | 45113 | 5.071 |
| 4) | N,N-dimethyl formamide | (1) | 7.310 | 73 | 25398M | 4.702 |
| 5) | 2-Picoline | (1) | 8.326 | 93 | 44578 | 5.123 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 19018 | 4.673 |
| 7) | Methyl methanesulfonate | (1) | 9.352 | 80 | 17702 | 4.885 |
| 8) | N,N-dimethyl acetamide | (1) | 9.587 | 87 | 22983M | 4.841 |
| 10) | N-Nitrosodiethylamine | (1) | 10.442 | 102 | 20425 | 5.136 |
| 11) | Ethyl methanesulfonate | (1) | 11.201 | 109 | 22663 | 5.175 |
| 13) | Aniline | (1) | 12.494 | 93 | 59855 | 5.271 |
| 16) | Phenol | (1) | 12.281 | 94 | 50930 | 5.314 |
| 17) | Pentachloroethane | (1) | 12.687 | 167 | 12611 | 5.133 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.623 | 93 | 41750 | 5.375 |
| 19) | 2-Chlorophenol | (1) | 12.847 | 128 | 38897 | 5.206 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.307 | 146 | 40431 | 5.257 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 191572 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 40237 | 5.217 |
| 24) | Benzyl alcohol | (1) | 13.777 | 108 | 24426 | 4.910 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.959 | 146 | 37848 | 5.198 |
| 26) | 2-Methylphenol | (1) | 14.034 | 108 | 36074 | 5.247 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 58273 | 5.406 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 58273 | 5.406 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.493 | 100 | 20282 | 5.259 |
| 30) | Acetophenone | (1) | 14.589 | 105 | 51671 | 5.601 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.536 | 70 | 25807 | 5.810 |
| 32) | N-Nitrosomorpholine | (1) | 14.611 | 56 | 21392 | 5.620 |
| 33) | 4-Methylphenol | (1) | 14.461 | 108 | 37313 | 5.313 |
| 34) | o-Toluidine | (1) | 14.686 | 106 | 59047 | 5.525 |
| 37) | Hexachloroethane | (1) | 14.974 | 117 | 16843 | 5.222 |
| 39) | Nitrobenzene | (2) | 15.113 | 77 | 36567 | 5.390 |
| 40) | N-Nitrosopiperidine | (2) | 15.552 | 114 | 19417 | 5.233 |
| 41) | Isophorone | (2) | 15.797 | 82 | 70093 | 5.286 |
| 42) | 2-Nitrophenol | (2) | 16.065 | 139 | 17489 | 4.736 |
| 44) | 2,4-Dimethylphenol | (2) | 16.086 | 107 | 36898 | 5.432 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.300 | 198 | 12479 | 5.077 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.407 | 93 | 44062 | 5.407 |
| 47) | Benzoic acid | (2) | 16.171 | 105 | 65410 | 12.392 |
| 49) | 2,4-Dichlorophenol | (2) | 16.759 | 162 | 26252 | 4.991 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.059 | 180 | 28237 | 5.244 |
| 52) | Naphthalene-d8 | (2) | 17.262 | 136 | 703403 | 40.000 |
| 53) | Naphthalene | (2) | 17.326 | 128 | 99217 | 5.394 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 5366 | 5.065 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.422 | 127 | 44580 | 5.336 |
| 56) | 2,6-Dichlorophenol | (2) | 17.454 | 162 | 25560 | 5.247 |
| 57) | Hexachloropropene | (2) | 17.582 | 213 | 12615 | 4.689 |
| 59) | Hexachlorobutadiene | (2) | 17.657 | 225 | 12611 | 5.119 |
| 62) | Caprolactam | (2) | 18.384 | 113 | 11876 | 5.038 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.405 | 84 | 28625 | 5.876 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.822 | 107 | 28613 | 5.048 |
| 68) | Safrole | (2) | 19.122 | 162 | 21765 | 5.004 |
| 69) | 2-Methylnaphthalene | (2) | 19.442 | 142 | 59158 | 5.248 |
| 70) | 1-Methylnaphthalene | (2) | 19.752 | 142 | 55611 | 5.281 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 8372 | 3.838 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.945 | 216 | 23410 | 5.272 |
| 73) | cis-Isosafrole | (3) | 20.020 | 162 | 2211 | 0.549 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.265 | 196 | 15181 | 4.735 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.372 | 196 | 16569 | 4.706 |
| 78) | trans-Isosafrole | (3) | 20.725 | 162 | 23265 | 4.534 |
| 79) | Isosafrole | (3) | 20.725 | 162 | 23265 | 5.094 |
| 80) | Biphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 81) | Diphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 82) | 1,1'-Biphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 83) | 2-Chloronaphthalene | (3) | 20.960 | 162 | 52093 | 5.304 |
| 86) | Diphenyl ether | (3) | 21.185 | 170 | 33855 | 5.301 |
| 87) | 2-Nitroaniline | (3) | 21.217 | 138 | 20807 | 4.837 |
| 88) | 1,4-Naphthoquinone | (3) | 21.484 | 158 | 16966 | 5.502 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.644 | 168 | 8408 | 4.116 |
| 90) | Dimethylphthalate | (3) | 21.751 | 163 | 60307 | 5.207 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.869 | 168 | 10513 | 4.569 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.954 | 165 | 14960 | 4.934 |
| 93) | Acenaphthylene | (3) | 22.264 | 152 | 80230 | 5.248 |
| 95) | 3-Nitroaniline | (3) | 22.489 | 138 | 17881 | 4.773 |
| 96) | Acenaphthene-d10 | (3) | 22.702 | 164 | 313036 | 40.000 |
| 97) | Acenaphthene | (3) | 22.799 | 153 | 48304 | 5.317 |
| 98) | 2,4-Dinitrophenol | (3) | 22.809 | 184 | 18031 | 10.865 |
| 99) | Pentachlorobenzene | (3) | 23.205 | 250 | 18064 | 5.061 |
| 101) | 4-Nitrophenol | (3) | 22.906 | 109 | 14448 | 8.969 |
| 102) | Dibenzofuran | (3) | 23.333 | 168 | 70405 | 5.317 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.216 | 165 | 17289 | 4.680 |
| 104) | 1-Naphthylamine | (3) | 23.568 | 143 | 42389 | 4.600 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.675 | 232 | 11554 | 4.814 |
| 106) | 2-Naphthylamine | (3) | 23.803 | 143 | 44169 | 4.471 |
| 107) | Diethylphthalate | (3) | 23.942 | 149 | 64953 | 5.434 |
| 108) | Thionazin | (3) | 24.199 | 107 | 11039 | 5.077 |
| 109) | Fluorene | (3) | 24.413 | 166 | 56872 | 5.733 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.370 | 204 | 23131 | 5.125 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.391 | 152 | 18602 | 5.201 |
| 112) | 4-Nitroaniline | (3) | 24.391 | 138 | 18434 | 5.168 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.488 | 198 | 14918 | 7.582 |
| 114) | 1-Nitronaphthalene | (4) | 24.648 | 173 | 11013 | 4.961 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.712 | 169 | 39412 | 5.308 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.862 | 77 | 68607 | 5.537 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 12004 | 5.461 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.439 | 213 | 4447 | 3.424 |
| 120) | Diallate (peak 1) | (4) | 25.588 | 86 | 22977 | 4.019 |
| 121) | Phorate | (4) | 25.621 | 75 | 38921 | 6.117 |
| 122) | Phenacetin | (4) | 25.588 | 108 | 33888 | 5.399 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.877 | 248 | 12652 | 5.027 |
| 124) | Diallate (peak 2) | (4) | 25.866 | 86 | 7367 | 1.352 |
| 125) | Hexachlorobenzene | (4) | 26.080 | 284 | 13806 | 4.991 |
| 126) | Dimethoate | (4) | 26.112 | 87 | 27389 | 6.297 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 30344 | 5.371 |
| 129) | Pentachlorophenol | (4) | 26.604 | 266 | 25330 | 12.921 |
| 130) | Pentachloronitrobenzene | (4) | 26.647 | 237 | 5191 | 5.050 |
| 131) | 4-Aminobiphenyl | (4) | 26.604 | 169 | 39199 | 5.558 |
| 132) | Pronamide | (4) | 26.700 | 173 | 23034 | 5.013 |
| 133) | Phenanthrene-d10 | (4) | 27.170 | 188 | 463970 | 40.000 |
| 134) | Dinoseb | (4) | 27.053 | 211 | 8111 | 3.080 |
| 135) | Phenanthrene | (4) | 27.224 | 178 | 71663 | 5.359 |
| 136) | Anthracene | (4) | 27.363 | 178 | 73133 | 5.309 |
| 138) | Carbazole | (4) | 27.737 | 167 | 69875 | 5.165 |
| 139) | Methyl parathion | (4) | 28.047 | 109 | 22173 | 5.001 |
| 140) | Di-n-butylphthalate | (4) | 28.496 | 149 | 103852 | 5.171 |
| 141) | Parathion | (4) | 28.956 | 109 | 11876 | 4.470 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.105 | 190 | 3452 | 2.302 |
| 143) | Methapyrilene | (4) | 29.223 | 97 | 32265 | 6.360 |
| 144) | Isodrin | (4) | 29.779 | 193 | 8026 | 5.029 |
| 145) | Fluoranthene | (4) | 30.099 | 202 | 71122 | 5.270 |
| 150) | Benzidine | (5) | 30.324 | 184 | 81849 | 12.811 |
| 152) | Pyrene | (5) | 30.623 | 202 | 70795 | 5.272 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.157 | 225 | 13029 | 4.686 |
| 157) | Chlorobenzilate | (5) | 31.232 | 139 | 26571 | 4.978 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.959 | 212 | 23174 | 3.751 |
| 159) | Butylbenzylphthalate | (5) | 31.927 | 149 | 47613 | 5.156 |
| 160) | 2-Acetylaminofluorene | (5) | 32.665 | 181 | 26852 | 4.214 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.584 | 252 | 21328 | 4.563 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.573 | 231 | 9703 | 4.361 |
| 164) | Benzo(a)anthracene | (5) | 33.787 | 228 | 60615 | 5.158 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02
Instrument ID: HP06755.i
Analyst ID: jmg00346

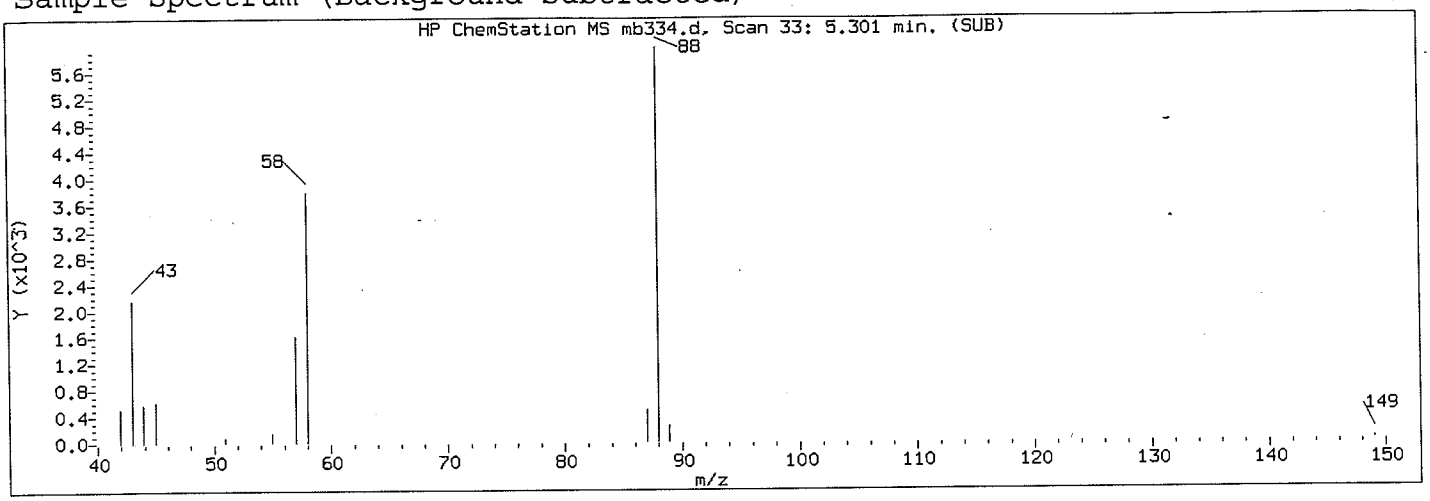
Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005
Lab Sample ID: STD0404

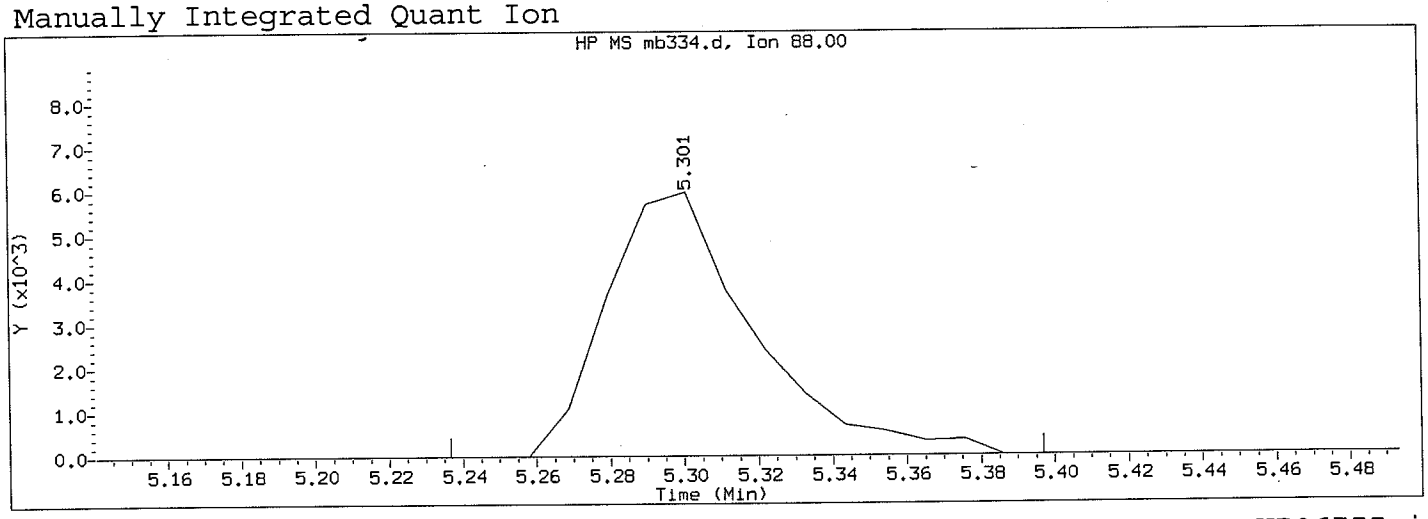
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.830 | 240 | 367524 | 40.000 |
| 166) | Chrysene | (5) | 33.915 | 228 | 54920 | 5.127 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.520 | 149 | 58581 | 4.641 |
| 168) | Di-n-octylphthalate | (6) | 36.128 | 149 | 95423 | 4.697 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.447 | 256 | 23505 | 4.625 |
| 170) | Benzo(b)fluoranthene | (6) | 38.522 | 252 | 56527 | 5.042 |
| 171) | Benzo(k)fluoranthene | (6) | 38.661 | 252 | 52589 | 5.064 |
| 172) | Benzo(a)pyrene | (6) | 40.510 | 252 | 48555 | 4.829 |
| 173) | Perylene-d12 | (6) | 40.874 | 264 | 317229 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.873 | 268 | 26810 | 4.810 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.564 | 276 | 44894M | 4.670 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.810 | 278 | 39855 | 4.616 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.311 | 276 | 45058 | 4.632 |
| 9) | 2-Fluorophenol | (1) | 9.790 | 112 | 40662 | 5.061 |
| 14) | Phenol-d5 | (1) | 12.238 | 99 | 50785 | 5.159 |
| 15) | Phenol-d6 | (1) | 12.238 | 99 | 50785 | 5.159 |
| 38) | Nitrobenzene-d5 | (2) | 15.060 | 82 | 35355 | 5.172 |
| 77) | 2-Fluorobiphenyl | (3) | 20.543 | 172 | 55225 | 5.304 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.150 | 330 | 6683 | 4.712 |
| 154) | Terphenyl-d14 | (5) | 30.869 | 244 | 41149 | 5.233 |

M = Compound was manually integrated.
A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005 Lab Sample ID: STD0404

Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 33
Retention Time (minutes): 5.301
Quant Ion : 88
Area (flag) : 16578 M
Concentration (ng/ul) : 4.7822
Integration start scan : 26 Integration stop scan: 41
Y at integration start : 0 Y at integration end: 0

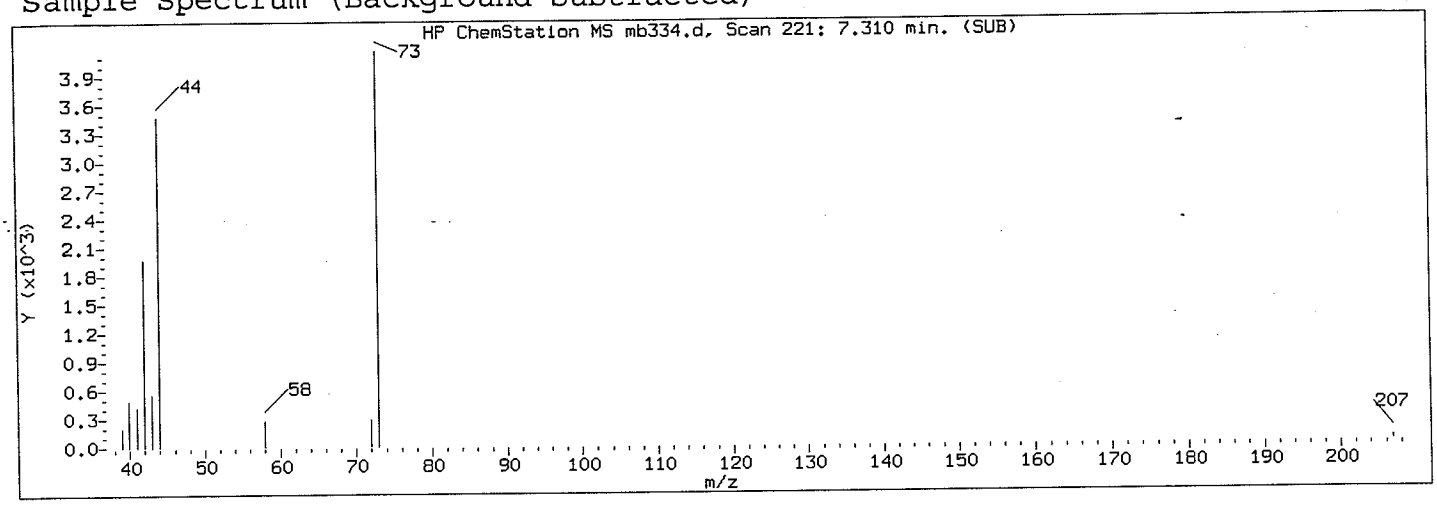
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jean Spotts 2/15/04

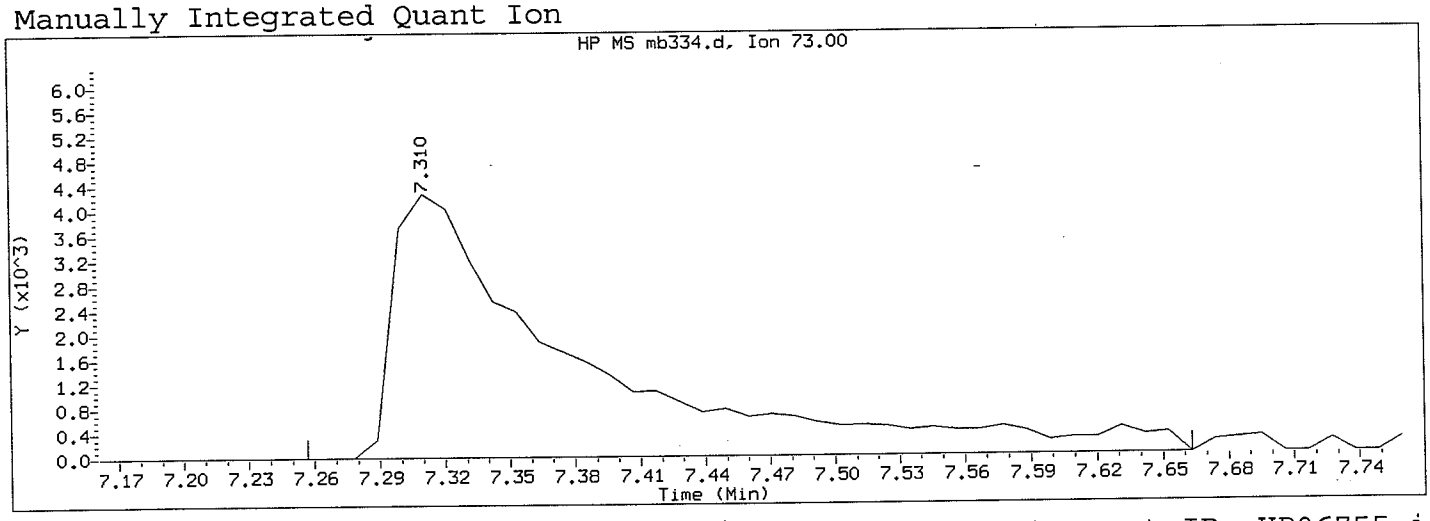
GC/MS audit/management approval: [illegible] 2/21/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb334.d, generated on 02/15/2004 at 16:43

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

Compound Number : 4
Compound Name : N,N-dimethyl formamide
Scan Number : 221
Retention Time (minutes): 7.310
Quant Ion : 73
Area (flag) : 25398 M
Concentration (ng/ul) : 4.7020
Integration start scan : 215  Integration stop scan: 253
Y at integration start : 0  Y at integration end: 0

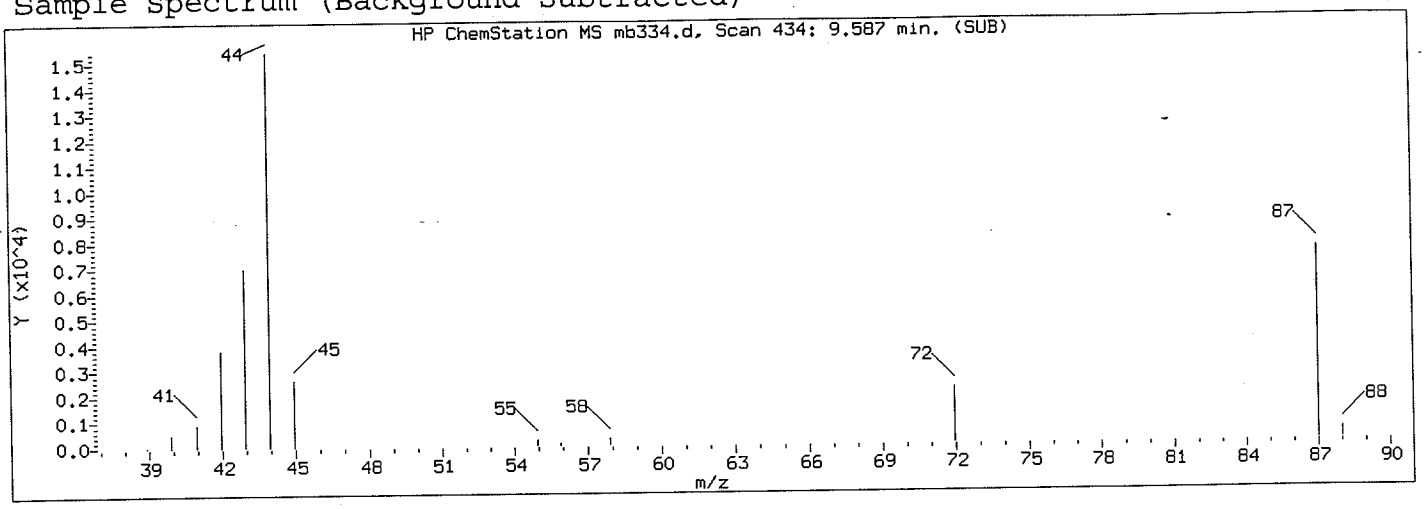
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jean Foster 2/15/04

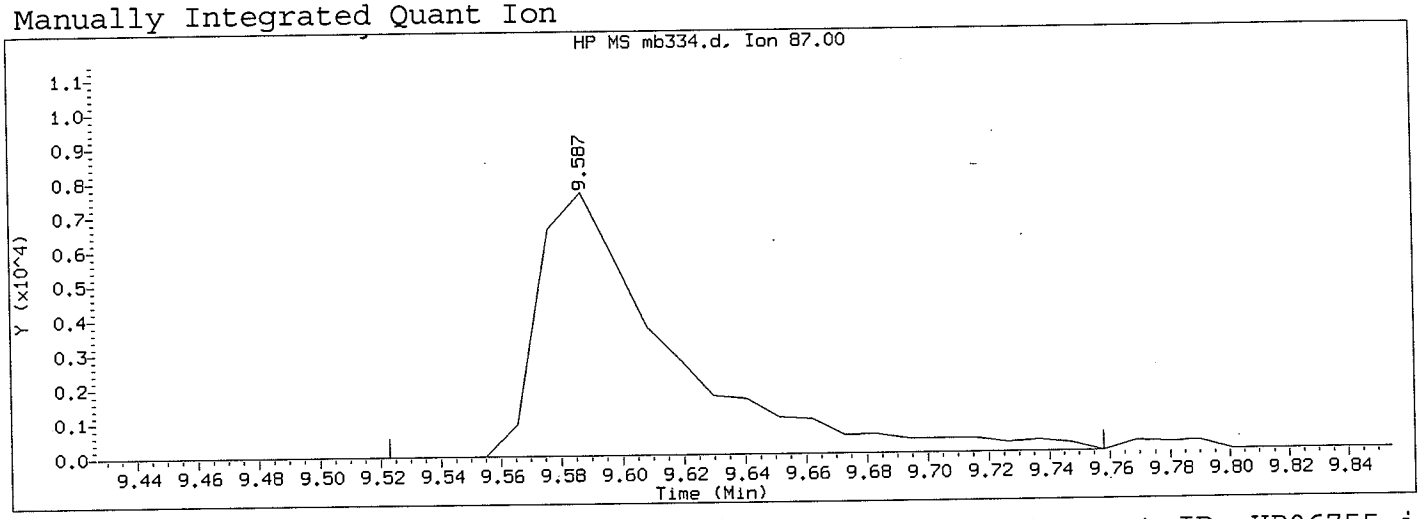
GC/MS audit/management approval: MJ05 2/21/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb334.d, generated on 02/15/2004 at 16:43

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

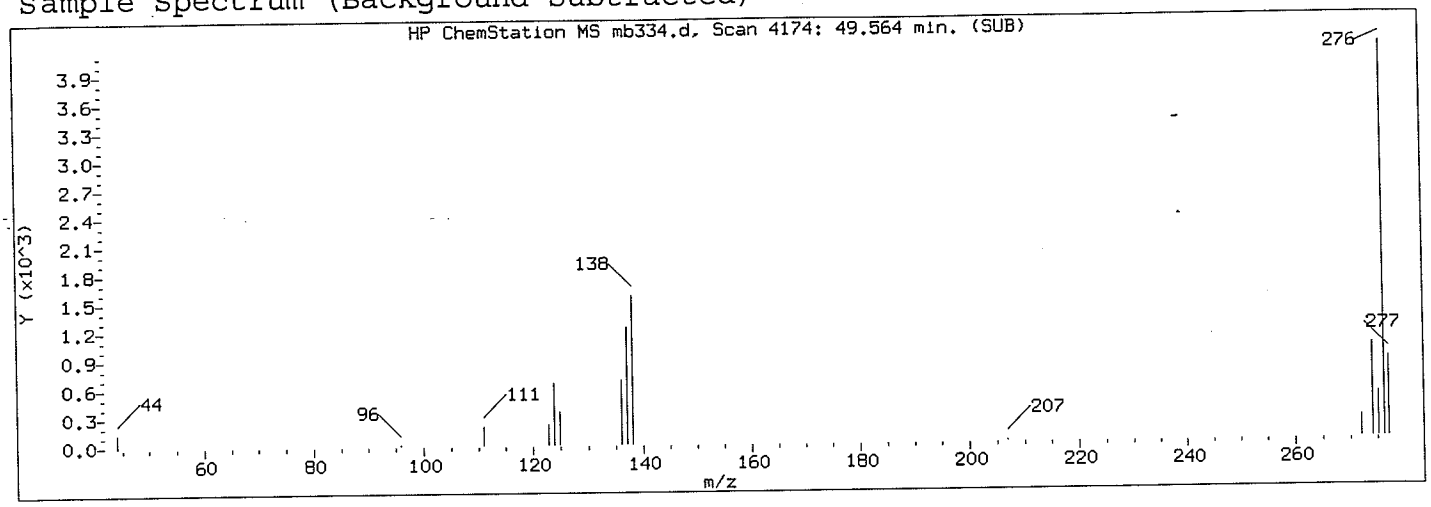
Compound Number : 8
Compound Name : N,N-dimethyl acetamide
Scan Number : 434
Retention Time (minutes): 9.587
Quant Ion : 87
Area (flag) : 22983 M
Concentration (ng/ul) : 4.8413
Integration start scan : 427  Integration stop scan: 449
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

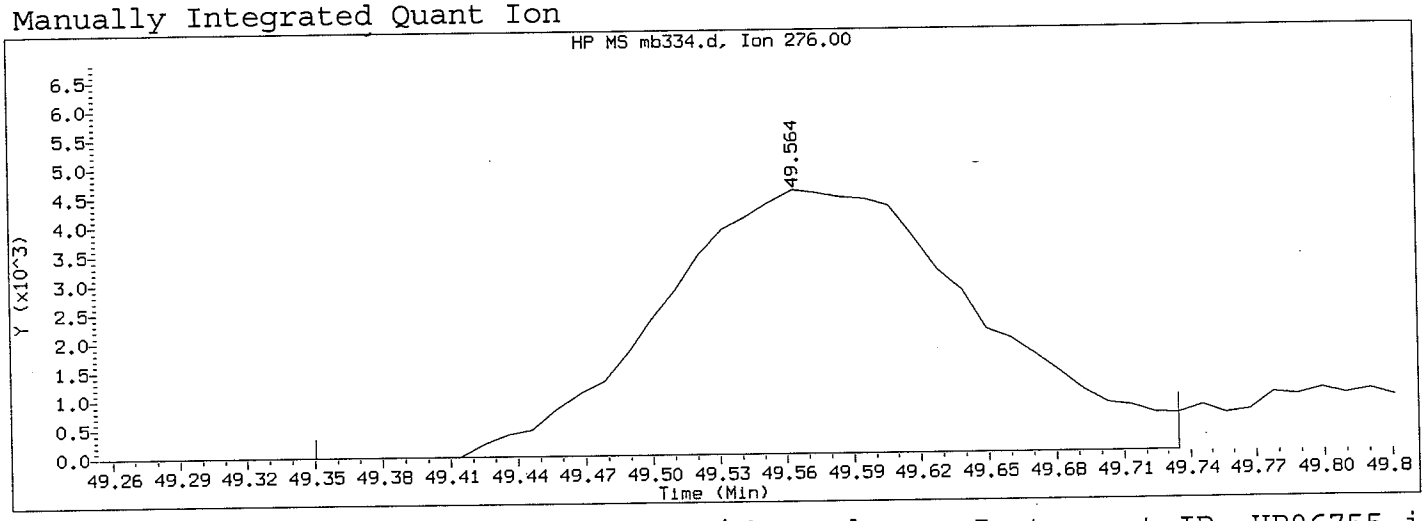
Analyst responsible for change: Jan Sparks 2/18/04

GC/MS audit/management approval: m/705 2/21/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

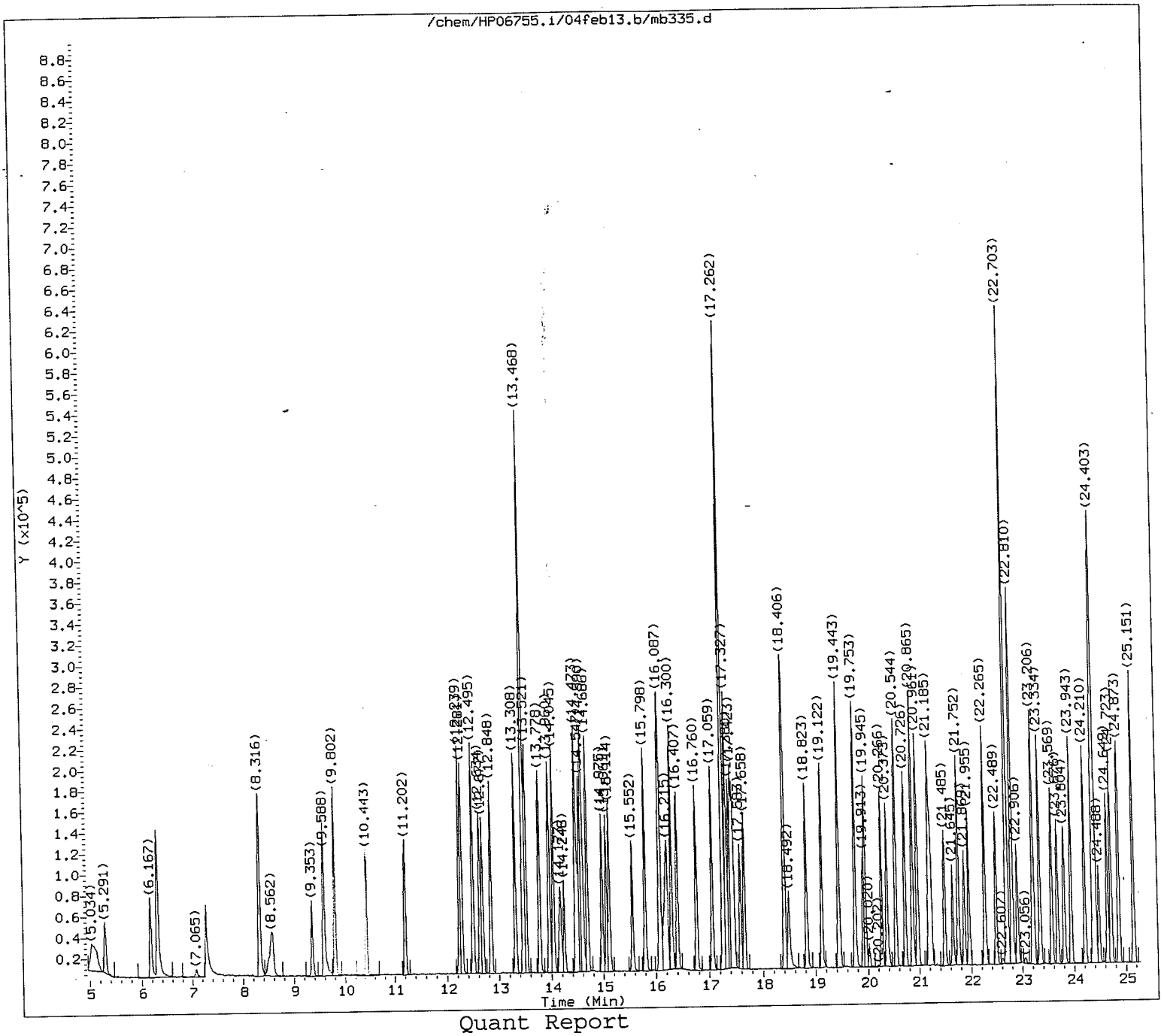
| | |
|---|---|
| Compound Number | : 175 |
| Compound Name | : Indeno(1,2,3-cd)pyrene |
| Scan Number | : 4174 |
| Retention Time (minutes) | : 49.564 |
| Quant Ion | : 276 |
| Area (flag) | : 44894 M |
| Concentration (ng/ul) | : 4.6704 |
| Integration start scan | : 4153 Integration stop scan: 4189 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jen Spicer 2/15/04

GC/MS audit/management approval: mw/705 2/17/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb334.d, generated on 02/15/2004 at 16:43




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

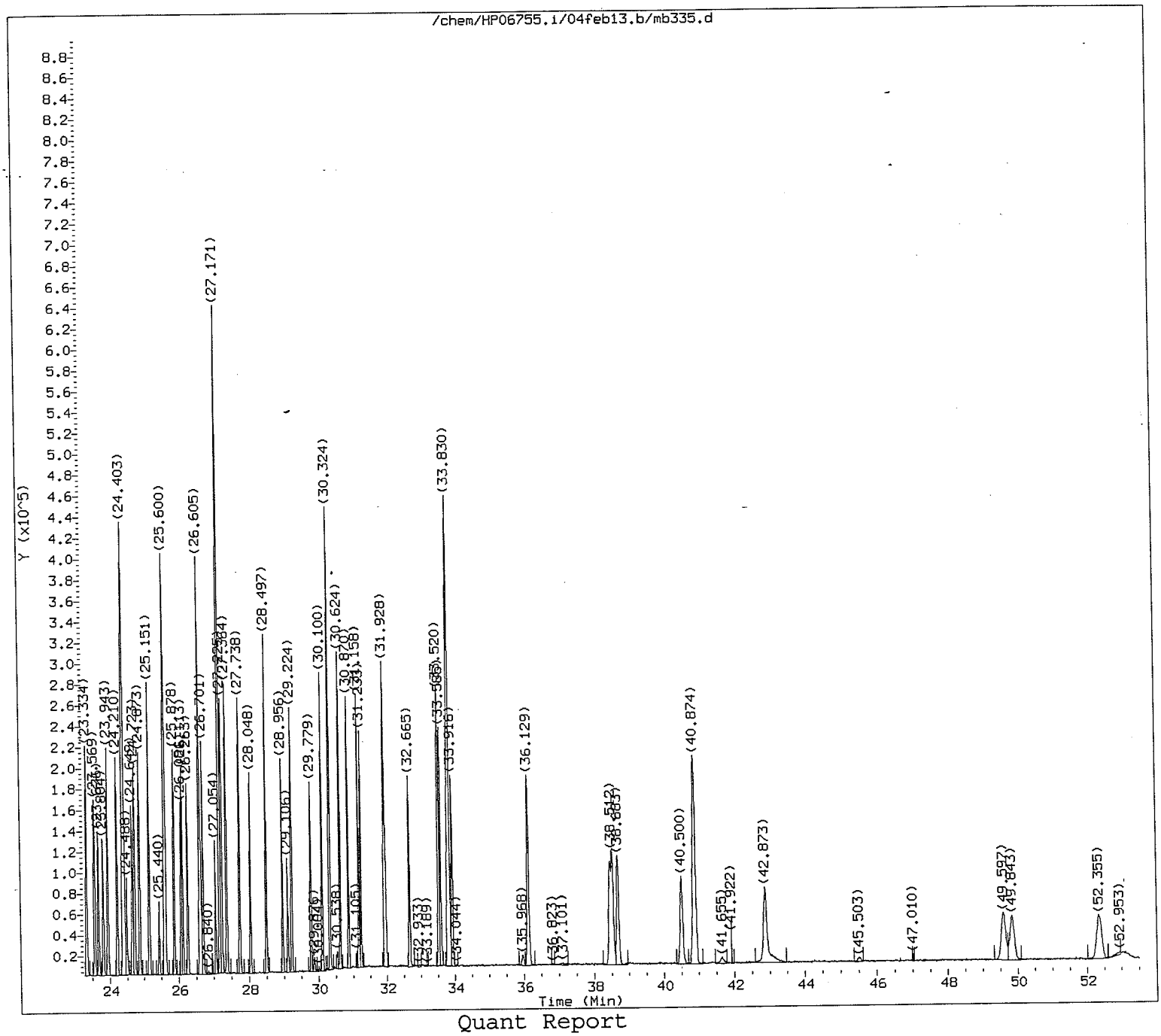
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404



2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 11:03  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.291 | 88 | 48708 | 14.051 |
| 2) | N-Nitrosodimethylamine | (1) | 6.167 | 74 | 79261 | 14.289 |
| 3) | Pyridine | (1) | 6.306 | 79 | 131525 | 14.643 |
| 4) | N,N-dimethyl formamide | (1) | 7.268 | 73 | 73404 | 13.674 |
| 5) | 2-Picoline | (1) | 8.326 | 93 | 132905 | 15.030 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 62204 | 15.037 |
| 7) | Methyl methanesulfonate | (1) | 9.353 | 80 | 54167 | 14.772 |
| 8) | N,N-dimethyl acetamide | (1) | 9.577 | 87 | 66528 | 14.021 |
| 10) | N-Nitrosodiethylamine | (1) | 10.443 | 102 | 59905 | 14.864 |
| 11) | Ethyl methanesulfonate | (1) | 11.202 | 109 | 64985 | 14.684 |
| 13) | Aniline | (1) | 12.495 | 93 | 178121 | 15.352 |
| 16) | Phenol | (1) | 12.281 | 94 | 147955 | 15.158 |
| 17) | Pentachloroethane | (1) | 12.688 | 167 | 39210 | 15.563 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.634 | 93 | 123362 | 15.503 |
| 19) | 2-Chlorophenol | (1) | 12.848 | 128 | 113958 | 15.012 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.308 | 146 | 118861 | 15.171 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.468 | 152 | 194592 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 119230 | 15.174 |
| 24) | Benzyl alcohol | (1) | 13.778 | 108 | 70663 | 14.176 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.960 | 146 | 114008 | 15.329 |
| 26) | 2-Methylphenol | (1) | 14.045 | 108 | 108741 | 15.453 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 174941 | 15.771 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 174941 | 15.771 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.505 | 100 | 61101 | 15.475 |
| 30) | Acetophenone | (1) | 14.590 | 105 | 150226 | 15.813 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.547 | 70 | 76657 | 16.552 |
| 32) | N-Nitrosomorpholine | (1) | 14.622 | 56 | 61058 | 15.626 |
| 33) | 4-Methylphenol | (1) | 14.473 | 108 | 111017 | 15.447 |
| 34) | o-Toluidine | (1) | 14.697 | 106 | 172427 | 15.699 |
| 37) | Hexachloroethane | (1) | 14.975 | 117 | 48762 | 14.906 |
| 39) | Nitrobenzene | (2) | 15.114 | 77 | 104188 | 15.218 |
| 40) | N-Nitrosopiperidine | (2) | 15.563 | 114 | 55474 | 14.896 |
| 41) | Isophorone | (2) | 15.798 | 82 | 210106 | 15.601 |
| 42) | 2-Nitrophenol | (2) | 16.065 | 139 | 55007 | 14.853 |
| 44) | 2,4-Dimethylphenol | (2) | 16.087 | 107 | 109564 | 15.821 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.300 | 198 | 37694 | 15.201 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.407 | 93 | 130323 | 15.716 |
| 47) | Benzoic acid | (2) | 16.215 | 105 | 147562 | 28.218 |
| 49) | 2,4-Dichlorophenol | (2) | 16.760 | 162 | 79524 | 15.030 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.059 | 180 | 80475 | 14.892 |
| 52) | Naphthalene-d8 | (2) | 17.262 | 136 | 707233 | 40.000 |
| 53) | Naphthalene | (2) | 17.327 | 128 | 285010 | 15.328 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.380 | 184 | 16209 | 15.174 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.423 | 127 | 128482 | 15.235 |
| 56) | 2,6-Dichlorophenol | (2) | 17.455 | 162 | 74029 | 15.093 |
| 57) | Hexachloropropene | (2) | 17.583 | 213 | 39316 | 14.625 |
| 59) | Hexachlorobutadiene | (2) | 17.658 | 225 | 37199 | 15.014 |
| 62) | Caprolactam | (2) | 18.406 | 113 | 35729 | 15.060 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.406 | 84 | 84857 | 16.803 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.823 | 107 | 88225 | 15.382 |
| 68) | Safrole | (2) | 19.122 | 162 | 65782 | 15.034 |
| 69) | 2-Methylnaphthalene | (2) | 19.443 | 142 | 177447 | 15.521 |
| 70) | 1-Methylnaphthalene | (2) | 19.753 | 142 | 164446 | 15.422 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 31636 | 14.242 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.945 | 216 | 69273 | 15.105 |
| 73) | cis-Isosafrole | (3) | 20.020 | 162 | 6790 | 1.639 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.266 | 196 | 47739 | 14.549 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.373 | 196 | 52807 | 14.635 |
| 78) | trans-Isosafrole | (3) | 20.726 | 162 | 71877 | 13.537 |
| 79) | Isosafrole | (3) | 20.726 | 162 | 71877 | 15.210 |
| 80) | Biphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 81) | Diphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 82) | 1,1'-Biphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 83) | 2-Chloronaphthalene | (3) | 20.961 | 162 | 156895 | 15.393 |
| 86) | Diphenyl ether | (3) | 21.185 | 170 | 100091 | 15.160 |
| 87) | 2-Nitroaniline | (3) | 21.228 | 138 | 64121 | 14.562 |
| 88) | 1,4-Naphthoquinone | (3) | 21.485 | 158 | 54165 | 16.586 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.645 | 168 | 28748 | 13.901 |
| 90) | Dimethylphthalate | (3) | 21.752 | 163 | 183239 | 15.274 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.869 | 168 | 34436 | 14.610 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.955 | 165 | 45592 | 14.664 |
| 93) | Acenaphthylene | (3) | 22.265 | 152 | 237568 | 15.056 |
| 95) | 3-Nitroaniline | (3) | 22.489 | 138 | 55194 | 14.426 |
| 96) | Acenaphthene-d10 | (3) | 22.703 | 164 | 322764 | 40.000 |
| 97) | Acenaphthene | (3) | 22.799 | 153 | 145174 | 15.396 |
| 98) | 2,4-Dinitrophenol | (3) | 22.821 | 184 | 43438 | 26.191 |
| 99) | Pentachlorobenzene | (3) | 23.206 | 250 | 55697 | 15.108 |
| 101) | 4-Nitrophenol | (3) | 22.906 | 109 | 23564 | 14.342 |
| 102) | Dibenzofuran | (3) | 23.334 | 168 | 211527 | 15.393 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.216 | 165 | 56505 | 14.867 |
| 104) | 1-Naphthylamine | (3) | 23.569 | 143 | 132223 | 14.120 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.676 | 232 | 36686 | 14.860 |
| 106) | 2-Naphthylamine | (3) | 23.815 | 143 | 115337 | 11.907 |
| 107) | Diethylphthalate | (3) | 23.943 | 149 | 188417 | 15.230 |
| 108) | Thionazin | (3) | 24.210 | 107 | 33362 | 14.906 |
| 109) | Fluorene | (3) | 24.413 | 166 | 165881 | 15.960 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.371 | 204 | 71977 | 15.370 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.392 | 152 | 59799 | 15.958 |
| 112) | 4-Nitroaniline | (3) | 24.403 | 138 | 57692 | 15.544 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.488 | 198 | 27089 | 13.588 |
| 114) | 1-Nitronaphthalene | (4) | 24.649 | 173 | 33576 | 14.665 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.723 | 169 | 115128 | 14.962 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.873 | 77 | 207012 | 15.874 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.151 | 97 | 38205 | 16.375 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.440 | 213 | 16720 | 12.855 |
| 120) | Diallate (peak 1) | (4) | 25.589 | 86 | 71285 | 11.860 |
| 121) | Phorate | (4) | 25.621 | 75 | 118208 | 17.244 |
| 122) | Phenacetin | (4) | 25.600 | 108 | 105571 | 15.958 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.878 | 248 | 37922 | 14.621 |
| 124) | Diallate (peak 2) | (4) | 25.867 | 86 | 22498 | 3.932 |
| 125) | Hexachlorobenzene | (4) | 26.081 | 284 | 43211 | 15.050 |
| 126) | Dimethoate | (4) | 26.113 | 87 | 82265 | 17.483 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 93783 | 15.792 |
| 129) | Pentachlorophenol | (4) | 26.605 | 266 | 56391 | 28.162 |
| 130) | Pentachloronitrobenzene | (4) | 26.647 | 237 | 15685 | 14.770 |
| 131) | 4-Aminobiphenyl | (4) | 26.605 | 169 | 122677 | 16.384 |
| 132) | Pronamide | (4) | 26.701 | 173 | 73035 | 15.260 |
| 133) | Phenanthrene-d10 | (4) | 27.171 | 188 | 481177 | 40.000 |
| 134) | Dinoseb | (4) | 27.054 | 211 | 35078 | 13.223 |
| 135) | Phenanthrene | (4) | 27.235 | 178 | 214024 | 15.345 |
| 136) | Anthracene | (4) | 27.364 | 178 | 220009 | 15.319 |
| 138) | Carbazole | (4) | 27.738 | 167 | 211051 | 15.035 |
| 139) | Methyl parathion | (4) | 28.048 | 109 | 75737 | 16.155 |
| 140) | Di-n-butylphthalate | (4) | 28.497 | 149 | 322466 | 15.383 |
| 141) | Parathion | (4) | 28.956 | 109 | 41058 | 14.921 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.106 | 190 | 17574 | 11.885 |
| 143) | Methapyrilene | (4) | 29.224 | 97 | 95553 | 17.427 |
| 144) | Isodrin | (4) | 29.779 | 193 | 24050 | 14.621 |
| 145) | Fluoranthene | (4) | 30.111 | 202 | 214183 | 15.240 |
| 150) | Benzidine | (5) | 30.324 | 184 | 301541 | 46.151 |
| 152) | Pyrene | (5) | 30.624 | 202 | 216014 | 15.657 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.158 | 225 | 42727 | 15.098 |
| 157) | Chlorobenzilate | (5) | 31.233 | 139 | 83352 | 15.294 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.971 | 212 | 88433 | 14.261 |
| 159) | Butylbenzylphthalate | (5) | 31.928 | 149 | 141913 | 15.100 |
| 160) | 2-Acetylaminofluorene | (5) | 32.665 | 181 | 92123 | 14.376 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.585 | 252 | 69034 | 14.627 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.574 | 231 | 31972 | 14.305 |
| 164) | Benzo(a)anthracene | (5) | 33.788 | 228 | 176920 | 14.853 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sublist used: all1

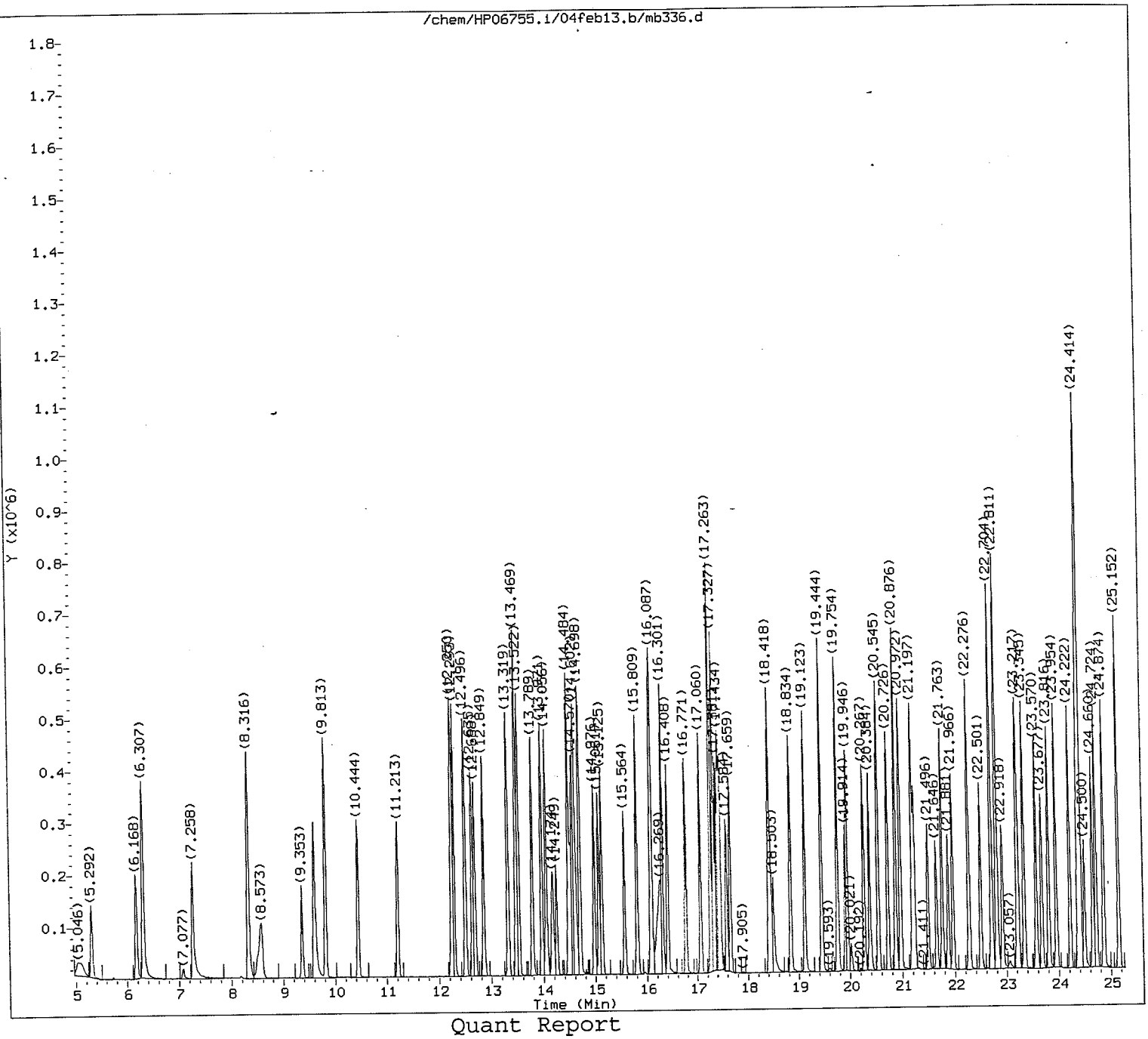
Sample Name: SSTD015

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.830 | 240 | 373444 | 40.000 |
| 166) | Chrysene | (5) | 33.916 | 228 | 164636 | 15.099 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.520 | 149 | 195063 | 15.165 |
| 168) | Di-n-octylphthalate | (6) | 36.129 | 149 | 316157 | 15.014 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.448 | 256 | 77180 | 14.722 |
| 170) | Benzo(b)fluoranthene | (6) | 38.534 | 252 | 173808 | 14.969 |
| 171) | Benzo(k)fluoranthene | (6) | 38.683 | 252 | 162842 | 15.106 |
| 172) | Benzo(a)pyrene | (6) | 40.500 | 252 | 149188 | 14.448 |
| 173) | Perylene-d12 | (6) | 40.874 | 264 | 328751 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.884 | 268 | 82561 | 14.428 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.607 | 276 | 139565 | 14.198 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.843 | 278 | 128795 | 14.512 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.355 | 276 | 143397 | 14.373 |
| 9) | 2-Fluorophenol | (1) | 9.802 | 112 | 120741 | 14.835 |
| 14) | Phenol-d5 | (1) | 12.239 | 99 | 149269 | 14.941 |
| 15) | Phenol-d6 | (1) | 12.239 | 99 | 149269 | 14.941 |
| 38) | Nitrobenzene-d5 | (2) | 15.061 | 82 | 104897 | 15.210 |
| 77) | 2-Fluorobiphenyl | (3) | 20.544 | 172 | 163563 | 15.188 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.151 | 330 | 21414 | 14.714 |
| 154) | Terphenyl-d14 | (5) | 30.870 | 244 | 126005 | 15.609 |

M = Compound was manually integrated.

A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

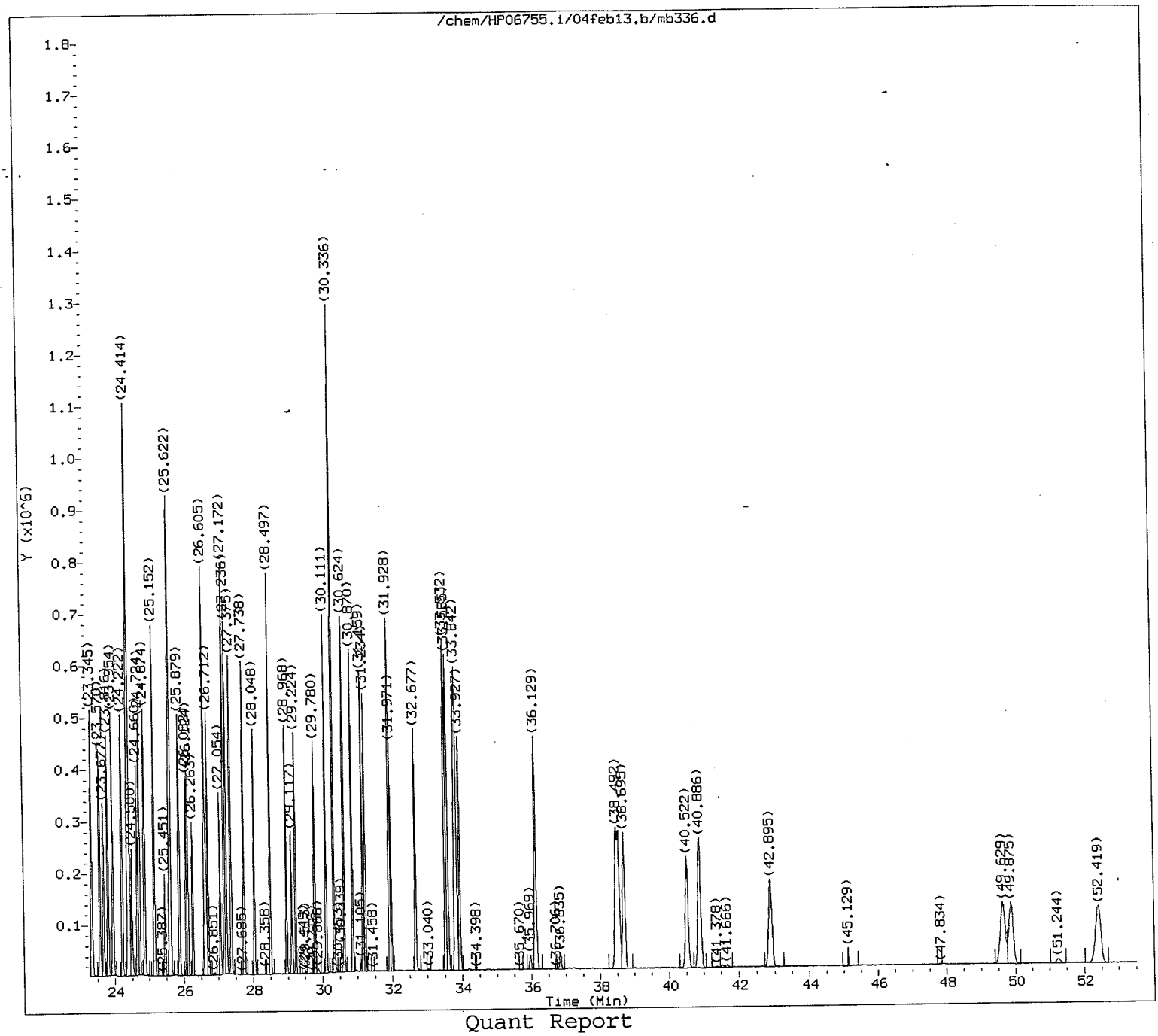
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030

Lab Sample ID: STD0404

8385

2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030

Lab Sample ID: STD0404

9356

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.292 | 88 | 138419 | 31.332 |
| 2) | N-Nitrosodimethylamine | (1) | 6.168 | 74 | 212178 | 30.234 |
| 3) | Pyridine | (1) | 6.307 | 79 | 347738 | 30.538 |
| 4) | N,N-dimethyl formamide | (1) | 7.258 | 73 | 197682 | 29.291 |
| 5) | 2-Picoline | (1) | 8.327 | 93 | 330792 | 29.679 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.573 | 88 | 154752 | 29.678 |
| 7) | Methyl methanesulfonate | (1) | 9.353 | 80 | 136161 | 29.495 |
| 8) | N,N-dimethyl acetamide | (1) | 9.599 | 87 | 174897 | 29.315 |
| 10) | N-Nitrosodiethylamine | (1) | 10.444 | 102 | 149734 | 29.509 |
| 11) | Ethyl methanesulfonate | (1) | 11.213 | 109 | 164972 | 29.592 |
| 13) | Aniline | (1) | 12.496 | 93 | 444686 | 30.285 |
| 16) | Phenol | (1) | 12.293 | 94 | 366885 | 29.797 |
| 17) | Pentachloroethane | (1) | 12.688 | 167 | 96070 | 30.157 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.635 | 93 | 300144 | 29.884 |
| 19) | 2-Chlorophenol | (1) | 12.849 | 128 | 283166 | 29.607 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.319 | 146 | 295393 | 29.873 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.469 | 152 | 245801 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.522 | 146 | 296621 | 29.904 |
| 24) | Benzyl alcohol | (1) | 13.789 | 108 | 184545 | 29.422 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.971 | 146 | 285177 | 30.295 |
| 26) | 2-Methylphenol | (1) | 14.056 | 108 | 264464 | 29.794 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.174 | 45 | 408865 | 29.314 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.174 | 45 | 408865 | 29.314 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.527 | 100 | 149736 | 30.018 |
| 30) | Acetophenone | (1) | 14.602 | 105 | 358938 | 29.926 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.559 | 70 | 176359 | 30.122 |
| 32) | N-Nitrosomorpholine | (1) | 14.634 | 56 | 142494 | 29.052 |
| 33) | 4-Methylphenol | (1) | 14.484 | 108 | 271766 | 29.946 |
| 34) | o-Toluidine | (1) | 14.698 | 106 | 414911 | 29.922 |
| 37) | Hexachloroethane | (1) | 14.976 | 117 | 124730 | 30.154 |
| 39) | Nitrobenzene | (2) | 15.125 | 77 | 254492 | 29.828 |
| 40) | N-Nitrosopiperidine | (2) | 15.564 | 114 | 139570 | 30.033 |
| 41) | Isophorone | (2) | 15.809 | 82 | 501892 | 29.892 |
| 42) | 2-Nitrophenol | (2) | 16.066 | 139 | 139456 | 30.152 |
| 44) | 2,4-Dimethylphenol | (2) | 16.098 | 107 | 260732 | 30.148 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.301 | 198 | 92743 | 29.981 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.408 | 93 | 306504 | 29.688 |
| 47) | Benzoic acid | (2) | 16.258 | 105 | 261365 | 40.050 |
| 49) | 2,4-Dichlorophenol | (2) | 16.771 | 162 | 197273 | 29.904 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.060 | 180 | 203074 | 30.100 |
| 52) | Naphthalene-d8 | (2) | 17.263 | 136 | 882361 | 40.000 |
| 53) | Naphthalene | (2) | 17.327 | 128 | 701981 | 30.216 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.391 | 184 | 40128 | 30.091 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.424 | 127 | 314277 | 29.891 |
| 56) | 2,6-Dichlorophenol | (2) | 17.466 | 162 | 186022 | 30.331 |
| 57) | Hexachloropropene | (2) | 17.584 | 213 | 102103 | 30.368 |
| 59) | Hexachlorobutadiene | (2) | 17.659 | 225 | 94129 | 30.375 |
| 62) | Caprolactam | (2) | 18.450 | 113 | 89242 | 30.125 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.418 | 84 | 206864 | 32.324 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.834 | 107 | 217631 | 30.343 |
| 68) | Safrole | (2) | 19.123 | 162 | 164696 | 30.142 |
| 69) | 2-Methylnaphthalene | (2) | 19.444 | 142 | 430614 | 30.158 |
| 70) | 1-Methylnaphthalene | (2) | 19.754 | 142 | 406980 | 30.491 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.914 | 237 | 83304 | 30.342 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.957 | 216 | 169843 | 30.027 |
| 73) | cis-Isosafrole | (3) | 20.021 | 162 | 16805 | 3.292 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.267 | 196 | 122720 | 30.273 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.384 | 196 | 135227 | 30.325 |
| 78) | trans-Isosafrole | (3) | 20.726 | 162 | 176425 | 26.903 |
| 79) | Isosafrole | (3) | 20.726 | 162 | 176425 | 30.228 |
| 80) | Biphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 81) | Diphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 82) | 1,1'-Biphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 83) | 2-Chloronaphthalene | (3) | 20.972 | 162 | 381046 | 30.263 |
| 86) | Diphenyl ether | (3) | 21.197 | 170 | 243599 | 29.933 |
| 87) | 2-Nitroaniline | (3) | 21.239 | 138 | 163917 | 30.157 |
| 88) | 1,4-Naphthoquinone | (3) | 21.496 | 158 | 129977 | 31.873 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.646 | 168 | 77802 | 30.421 |
| 90) | Dimethylphthalate | (3) | 21.763 | 163 | 443583 | 29.986 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.881 | 168 | 87764 | 30.163 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.966 | 165 | 117049 | 30.441 |
| 93) | Acenaphthylene | (3) | 22.276 | 152 | 597306 | 30.579 |
| 95) | 3-Nitroaniline | (3) | 22.501 | 138 | 142162 | 30.110 |
| 96) | Acenaphthene-d10 | (3) | 22.704 | 164 | 398015 | 40.000 |
| 97) | Acenaphthene | (3) | 22.811 | 153 | 357408 | 30.612 |
| 98) | 2,4-Dinitrophenol | (3) | 22.821 | 184 | 82823 | 40.413 |
| 99) | Pentachlorobenzene | (3) | 23.206 | 250 | 136376 | 29.999 |
| 101) | 4-Nitrophenol | (3) | 22.918 | 109 | 60746 | 29.986 |
| 102) | Dibenzofuran | (3) | 23.345 | 168 | 512869 | 30.221 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.228 | 165 | 142732 | 30.377 |
| 104) | 1-Naphthylamine | (3) | 23.570 | 143 | 359002 | 30.903 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.687 | 232 | 92097 | 30.210 |
| 106) | 2-Naphthylamine | (3) | 23.816 | 143 | 377570 | 31.329 |
| 107) | Diethylphthalate | (3) | 23.954 | 149 | 452671 | 29.726 |
| 108) | Thionazin | (3) | 24.222 | 107 | 84729 | 30.580 |
| 109) | Fluorene | (3) | 24.414 | 166 | 393456 | 30.579 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 12:04  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.382 | 204 | 175066 | 30.263 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.403 | 152 | 146593 | 31.423 |
| 112) | 4-Nitroaniline | (3) | 24.414 | 138 | 143199 | 31.065 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.500 | 198 | 76009 | 31.179 |
| 114) | 1-Nitronaphthalene | (4) | 24.660 | 173 | 82816 | 29.844 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.724 | 169 | 282367 | 30.205 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.874 | 77 | 473647 | 29.947 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.152 | 97 | 87023 | 30.616 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.451 | 213 | 49771 | 31.273 |
| 120) | Diallate (peak 1) | (4) | 25.590 | 86 | 168214 | 22.971 |
| 121) | Phorate | (4) | 25.633 | 75 | 265431 | 31.579 |
| 122) | Phenacetin | (4) | 25.611 | 108 | 251873 | 31.142 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.879 | 248 | 96983 | 30.680 |
| 124) | Diallate (peak 2) | (4) | 25.868 | 86 | 52764 | 7.583 |
| 125) | Hexachlorobenzene | (4) | 26.082 | 284 | 106046 | 30.367 |
| 126) | Dimethoate | (4) | 26.124 | 87 | 171349 | 30.012 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 220978 | 30.555 |
| 129) | Pentachlorophenol | (4) | 26.616 | 266 | 100228 | 41.041 |
| 130) | Pentachloronitrobenzene | (4) | 26.648 | 237 | 38801 | 30.096 |
| 131) | 4-Aminobiphenyl | (4) | 26.605 | 169 | 296292 | 32.149 |
| 132) | Pronamide | (4) | 26.712 | 173 | 178798 | 30.656 |
| 133) | Phenanthrene-d10 | (4) | 27.172 | 188 | 583787 | 40.000 |
| 134) | Dinoseb | (4) | 27.054 | 211 | 102300 | 31.473 |
| 135) | Phenanthrene | (4) | 27.236 | 178 | 521188 | 30.663 |
| 136) | Anthracene | (4) | 27.375 | 178 | 526947 | 30.202 |
| 138) | Carbazole | (4) | 27.738 | 167 | 518365 | 30.363 |
| 139) | Methyl parathion | (4) | 28.048 | 109 | 181556 | 31.582 |
| 140) | Di-n-butylphthalate | (4) | 28.497 | 149 | 782092 | 30.623 |
| 141) | Parathion | (4) | 28.968 | 109 | 102400 | 30.558 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.117 | 190 | 58714 | 32.240 |
| 143) | Methapyrilene | (4) | 29.235 | 97 | 186843 | 28.389 |
| 144) | Isodrin | (4) | 29.780 | 193 | 60138 | 30.113 |
| 145) | Fluoranthene | (4) | 30.111 | 202 | 528406 | 30.821 |
| 150) | Benzidine | (5) | 30.336 | 184 | 920391 | 109.493 |
| 152) | Pyrene | (5) | 30.635 | 202 | 519830 | 30.509 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.170 | 225 | 105789 | 30.309 |
| 157) | Chlorobenzilate | (5) | 31.234 | 139 | 204269 | 30.376 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.971 | 212 | 281812 | 35.556 |
| 159) | Butylbenzylphthalate | (5) | 31.928 | 149 | 345072 | 29.860 |
| 160) | 2-Acetylaminofluorene | (5) | 32.677 | 181 | 245605 | 30.944 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.596 | 252 | 187861 | 31.925 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.585 | 231 | 90234 | 32.299 |
| 164) | Benzo(a)anthracene | (5) | 33.799 | 228 | 443537 | 30.211 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

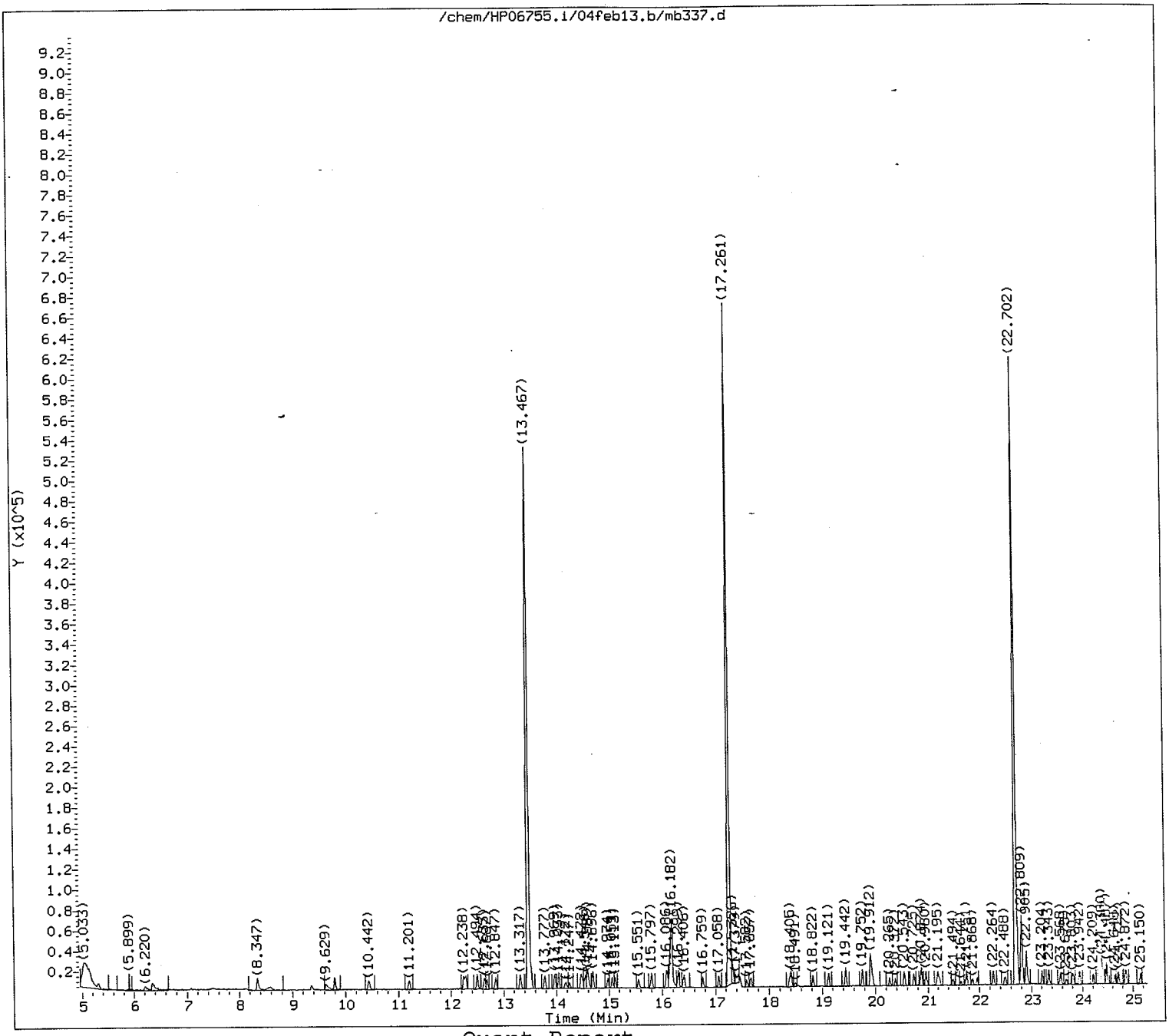
Data File: /chem/HP06755.i/04feb13.b/mb336.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 12:04  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.842 | 240 | 459640 | 40.000 |
| 166) | Chrysene | (5) | 33.927 | 228 | 406278 | 30.228 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.532 | 149 | 481338 | 30.336 |
| 168) | Di-n-octylphthalate | (6) | 36.129 | 149 | 805253 | 29.691 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.481 | 256 | 205974 | 30.367 |
| 170) | Benzo(b)fluoranthene | (6) | 38.545 | 252 | 444658 | 29.726 |
| 171) | Benzo(k)fluoranthene | (6) | 38.705 | 252 | 422615 | 30.312 |
| 172) | Benzo(a)pyrene | (6) | 40.522 | 252 | 400820 | 30.064 |
| 173) | Perylene-d12 | (6) | 40.897 | 264 | 424302 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.906 | 268 | 219536 | 29.772 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.640 | 276 | 376000 | 29.696 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.875 | 278 | 346069 | 30.178 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.419 | 276 | 384423 | 29.878 |
| 9) | 2-Fluorophenol | (1) | 9.813 | 112 | 308142 | 29.977 |
| 14) | Phenol-d5 | (1) | 12.250 | 99 | 378621 | 30.003 |
| 15) | Phenol-d6 | (1) | 12.250 | 99 | 378621 | 30.003 |
| 38) | Nitrobenzene-d5 | (2) | 15.061 | 82 | 262395 | 30.412 |
| 77) | 2-Fluorobiphenyl | (3) | 20.545 | 172 | 403498 | 30.320 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.152 | 330 | 56063 | 31.026 |
| 154) | Terphenyl-d14 | (5) | 30.870 | 244 | 305790 | 30.644 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d
Injection date and time: 13-FEB-2004 13:05

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 13:06

Sublist used: all1

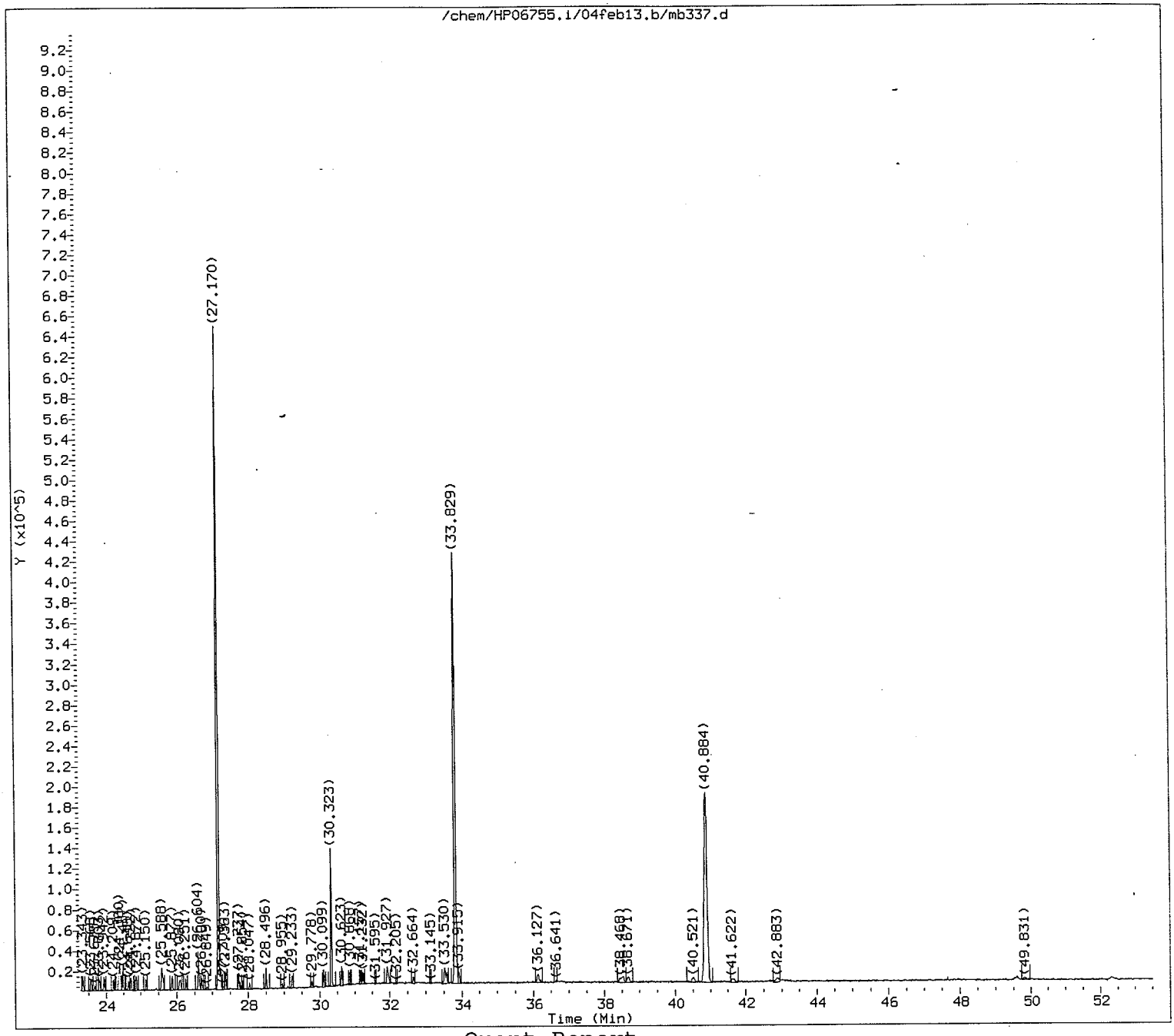
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001

Lab Sample ID: 8270MDL0404

[redacted]

Wesley 2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404



2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.300 | 88 | 3210M | 0.910 |
| 2) | N-Nitrosodimethylamine | (1) | 6.209 | 74 | 4472 | 0.798 |
| 3) | Pyridine | (1) | 6.348 | 79 | 7828 | 0.861 |
| 4) | N,N-dimethyl formamide | (1) | 7.470 | 73 | 2753M | 0.511 |
| 5) | 2-Picoline | (1) | 8.336 | 93 | 8912 | 1.002 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.593 | 88 | 3806 | 0.914 |
| 7) | Methyl methanesulfonate | (1) | 9.362 | 80 | 3869 | 1.050 |
| 8) | N,N-dimethyl acetamide | (1) | 9.640 | 87 | 3803M | 0.799 |
| 10) | N-Nitrosodiethylamine | (1) | 10.442 | 102 | 3938 | 0.972 |
| 11) | Ethyl methanesulfonate | (1) | 11.201 | 109 | 4463 | 1.003 |
| 13) | Aniline | (1) | 12.494 | 93 | 12047 | 1.028 |
| 16) | Phenol | (1) | 12.280 | 94 | 10504 | 1.069 |
| 17) | Pentachloroethane | (1) | 12.676 | 167 | 2251M | 0.885 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.633 | 93 | 8719 | 1.088 |
| 19) | 2-Chlorophenol | (1) | 12.847 | 128 | 7769 | 1.018 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.317 | 146 | 8529 | 1.081 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 196209 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.520 | 146 | 8148 | 1.029 |
| 24) | Benzyl alcohol | (1) | 13.777 | 108 | 4731 | 0.945 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.969 | 146 | 7789 | 1.037 |
| 26) | 2-Methylphenol | (1) | 14.044 | 108 | 7465 | 1.054 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.172 | 45 | 12234 | 1.099 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.172 | 45 | 12234 | 1.099 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.504 | 100 | 3887 | 0.976 |
| 30) | Acetophenone | (1) | 14.589 | 105 | 10902 | 1.139 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.546 | 70 | 5260 | 1.125 |
| 32) | N-Nitrosomorpholine | (1) | 14.621 | 56 | 4686 | 1.197 |
| 33) | 4-Methylphenol | (1) | 14.472 | 108 | 7081 | 0.977 |
| 34) | o-Toluidine | (1) | 14.685 | 106 | 12543 | 1.133 |
| 37) | Hexachloroethane | (1) | 14.974 | 117 | 3297 | 0.999 |
| 39) | Nitrobenzene | (2) | 15.113 | 77 | 7448 | 1.068 |
| 40) | N-Nitrosopiperidine | (2) | 15.562 | 114 | 3653 | 0.961 |
| 41) | Isophorone | (2) | 15.797 | 82 | 14834 | 1.081 |
| 42) | 2-Nitrophenol | (2) | 16.064 | 139 | 3271 | 0.865 |
| 44) | 2,4-Dimethylphenol | (2) | 16.086 | 107 | 7097 | 1.004 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.299 | 198 | 2547M | 1.007 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.406 | 93 | 9566 | 1.133 |
| 47) | Benzoic acid | (2) | 16.182 | 105 | 60083 | 11.261 |
| 49) | 2,4-Dichlorophenol | (2) | 16.759 | 162 | 5008 | 0.929 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.058 | 180 | 5761 | 1.044 |
| 52) | Naphthalene-d8 | (2) | 17.261 | 136 | 721419 | 40.000 |
| 53) | Naphthalene | (2) | 17.326 | 128 | 20501 | 1.079 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 1088M | 0.998 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.422 | 127 | 8554 | 0.995 |
| 56) | 2,6-Dichlorophenol | (2) | 17.464 | 162 | 5278 | 1.053 |
| 57) | Hexachloropropene | (2) | 17.582 | 213 | 2370M | 0.862 |
| 59) | Hexachlorobutadiene | (2) | 17.657 | 225 | 2482 | 0.980 |
| 62) | Caprolactam | (2) | 18.384 | 113 | 2018M | 0.834 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.405 | 84 | 5874 | 2.543 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.822 | 107 | 5521 | 0.941 |
| 68) | Safrole | (2) | 19.121 | 162 | 4318 | 0.967 |
| 69) | 2-Methylnaphthalene | (2) | 19.442 | 142 | 12007 | 1.028 |
| 70) | 1-Methylnaphthalene | (2) | 19.752 | 142 | 11284 | 1.034 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.912 | 237 | 9498 | 4.277 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.944 | 216 | 4845 | 1.059 |
| 73) | cis-Isosafrole | (3) | 20.019 | 162 | 130M | 0.032 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.265 | 196 | 2837 | 0.865 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.372 | 196 | 2993 | 0.830 |
| 78) | trans-Isosafrole | (3) | 20.725 | 162 | 4748 | 0.895 |
| 79) | Isosafrole | (3) | 20.725 | 162 | 4748 | 1.006 |
| 80) | Biphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 81) | Diphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 82) | 1,1'-Biphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 83) | 2-Chloronaphthalene | (3) | 20.960 | 162 | 10823 | 1.063 |
| 86) | Diphenyl ether | (3) | 21.195 | 170 | 7164 | 1.088 |
| 87) | 2-Nitroaniline | (3) | 21.227 | 138 | 3476 | 0.791 |
| 88) | 1,4-Naphthoquinone | (3) | 21.484 | 158 | 2537M | 0.769 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.644 | 168 | 1124M | 0.544 |
| 90) | Dimethylphthalate | (3) | 21.751 | 163 | 12980 | 1.085 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.868 | 168 | 1549M | 0.658 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.954 | 165 | 2414 | 0.776 |
| 93) | Acenaphthylene | (3) | 22.275 | 152 | 16408 | 1.039 |
| 95) | 3-Nitroaniline | (3) | 22.488 | 138 | 3013 | 0.789 |
| 96) | Acenaphthene-d10 | (3) | 22.702 | 164 | 321916 | 40.000 |
| 97) | Acenaphthene | (3) | 22.809 | 153 | 10034 | 1.063 |
| 98) | 2,4-Dinitrophenol | (3) | 22.820 | 184 | 15757 | 14.188 |
| 99) | Pentachlorobenzene | (3) | 23.204 | 250 | 3725 | 1.013 |
| 101) | 4-Nitrophenol | (3) | 22.905 | 109 | 6607 | 4.032 |
| 102) | Dibenzofuran | (3) | 23.333 | 168 | 14695 | 1.071 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.215 | 165 | 3301 | 0.869 |
| 104) | 1-Naphthylamine | (3) | 23.568 | 143 | 10172 | 1.083 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.675 | 232 | 1806M | 0.733 |
| 106) | 2-Naphthylamine | (3) | 23.814 | 143 | 10514 | 1.079 |
| 107) | Diethylphthalate | (3) | 23.942 | 149 | 13161 | 1.069 |
| 108) | Thionazin | (3) | 24.209 | 107 | 2127M | 0.949 |
| 109) | Fluorene | (3) | 24.412 | 166 | 11916 | 1.145 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.370 | 204 | 4686 | 1.002 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.380 | 152 | 3333 | 0.883 |
| 112) | 4-Nitroaniline | (3) | 24.391 | 138 | 3630 | 0.974 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.487 | 198 | 6067 | 3.053 |
| 114) | 1-Nitronaphthalene | (4) | 24.648 | 173 | 1798 | 0.795 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.722 | 169 | 7575 | 0.994 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.872 | 77 | 14000 | 1.086 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 2313M | 0.998 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.438 | 213 | 348M | 3.953 |
| 120) | Diallate (peak 1) | (4) | 25.588 | 86 | 4713 | 0.790 |
| 121) | Phorate | (4) | 25.620 | 75 | 7778 | 2.457 |
| 122) | Phenacetin | (4) | 25.599 | 108 | 6203 | 0.941 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.877 | 248 | 2753 | 1.068 |
| 124) | Diallate (peak 2) | (4) | 25.866 | 86 | 1196M | 0.211 |
| 125) | Hexachlorobenzene | (4) | 26.080 | 284 | 2808 | 0.986 |
| 126) | Dimethoate | (4) | 26.112 | 87 | 4901 | 0.000 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 5909 | 1.001 |
| 129) | Pentachlorophenol | (4) | 26.604 | 266 | 7242 | 3.638 |
| 130) | Pentachloronitrobenzene | (4) | 26.636 | 237 | 721M | 0.687 |
| 131) | 4-Aminobiphenyl | (4) | 26.604 | 169 | 9134 | 1.216 |
| 132) | Pronamide | (4) | 26.700 | 173 | 4002 | 0.842 |
| 133) | Phenanthrene-d10 | (4) | 27.170 | 188 | 475858 | 40.000 |
| 134) | Dinoseb | (4) | 27.053 | 211 | 832M | 3.906 |
| 135) | Phenanthrene | (4) | 27.234 | 178 | 14684 | 1.060 |
| 136) | Anthracene | (4) | 27.363 | 178 | 14886 | 1.047 |
| 138) | Carbazole | (4) | 27.737 | 167 | 13595 | 0.977 |
| 139) | Methyl parathion | (4) | 28.047 | 109 | 2967 | 0.633 |
| 140) | Di-n-butylphthalate | (4) | 28.496 | 149 | 20856 | 1.002 |
| 141) | Parathion | (4) | 28.955 | 109 | 1493M | 0.547 |
| 143) | Methapyrilene | (4) | 29.233 | 97 | 5410 | 1.915 |
| 144) | Isodrin | (4) | 29.778 | 193 | 1603M | 0.985 |
| 145) | Fluoranthene | (4) | 30.110 | 202 | 13975 | 1.000 |
| 150) | Benzidine | (5) | 30.323 | 184 | 84315 | 12.481 |
| 152) | Pyrene | (5) | 30.623 | 202 | 14278 | 1.043 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.168 | 225 | 2209 | 0.788 |
| 157) | Chlorobenzilate | (5) | 31.232 | 139 | 4733 | 0.876 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.969 | 212 | 6248 | 1.490 |
| 159) | Butylbenzylphthalate | (5) | 31.927 | 149 | 9953 | 1.072 |
| 160) | 2-Acetylaminofluorene | (5) | 32.664 | 181 | 3941 | 0.618 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.584 | 252 | 3867 | 0.818 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.584 | 231 | 1661M | 0.740 |
| 164) | Benzo(a)anthracene | (5) | 33.797 | 228 | 12751 | 1.081 |
| 165) | Chrysene-d12 | (5) | 33.829 | 240 | 369387 | 40.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d
Injection date and time: 13-FEB-2004 13:05

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sublist used: all1

Sample Name: SSTD001

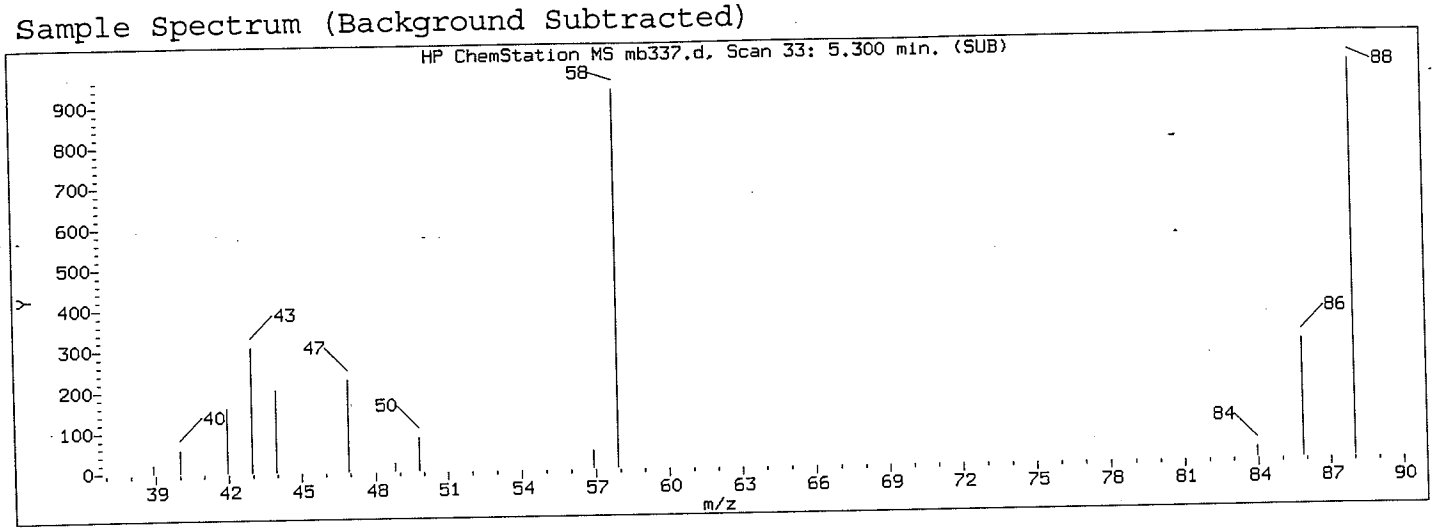
Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 166) | Chrysene | (5) | 33.926 | 228 | 10335 | 0.957 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.530 | 149 | 13045 | 1.023 |
| 168) | Di-n-octylphthalate | (6) | 36.138 | 149 | 19065 | 0.967 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.447 | 256 | 4169 | 0.845 |
| 170) | Benzo(b)fluoranthene | (6) | 38.522 | 252 | 11040 | 1.015 |
| 171) | Benzo(k)fluoranthene | (6) | 38.682 | 252 | 10105 | 0.997 |
| 172) | Benzo(a)pyrene | (6) | 40.521 | 252 | 9078 | 0.937 |
| 173) | Perylene-d12 | (6) | 40.873 | 264 | 308471 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.862 | 268 | 4244 | 0.792 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.585 | 276 | 7623M | 0.828 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.831 | 278 | 7364 | 0.883 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.332 | 276 | 8016 | 0.857 |
| 9) | 2-Fluorophenol | (1) | 9.790 | 112 | 8703 | 1.061 |
| 14) | Phenol-d5 | (1) | 12.238 | 99 | 10013 | 0.994 |
| 15) | Phenol-d6 | (1) | 12.238 | 99 | 10013 | 0.994 |
| 38) | Nitrobenzene-d5 | (2) | 15.059 | 82 | 7323 | 1.038 |
| 77) | 2-Fluorobiphenyl | (3) | 20.543 | 172 | 11182 | 1.039 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.150 | 330 | 941 | 0.644 |
| 154) | Terphenyl-d14 | (5) | 30.868 | 244 | 8076 | 1.007 |

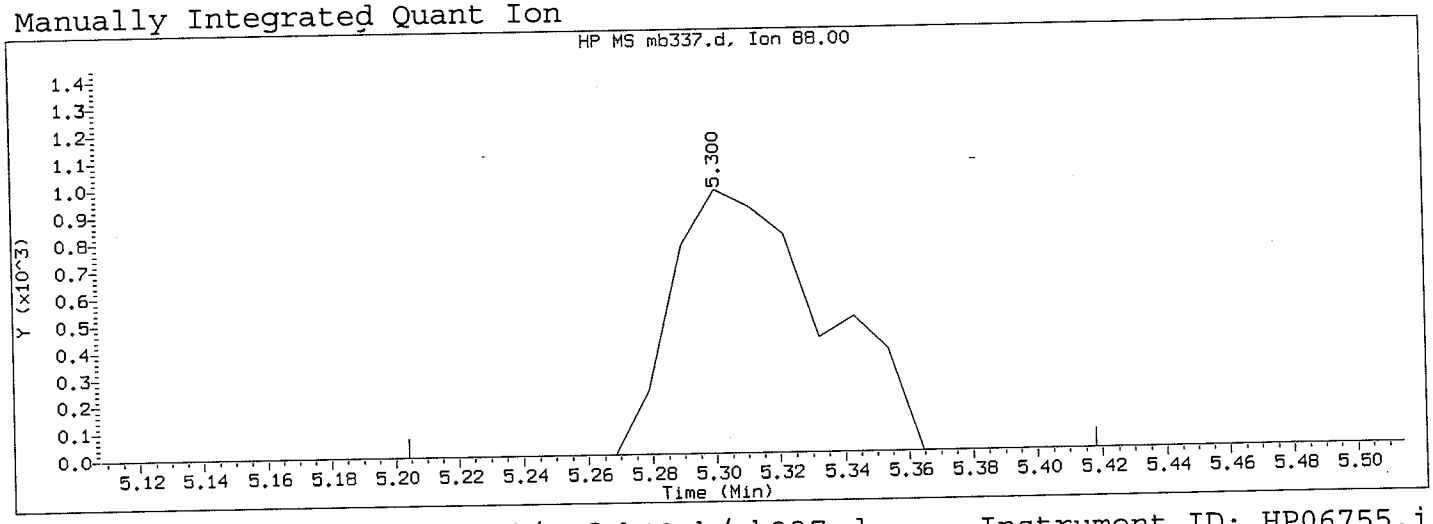
M = Compound was manually integrated.

A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 33
Retention Time (minutes): 5.300
Quant Ion : 88
Area (flag) : 3210 M
Concentration (ng/ul) : 0.9104
Integration start scan : 23 Integration stop scan: 43
Y at integration start : 0 Y at integration end: 0

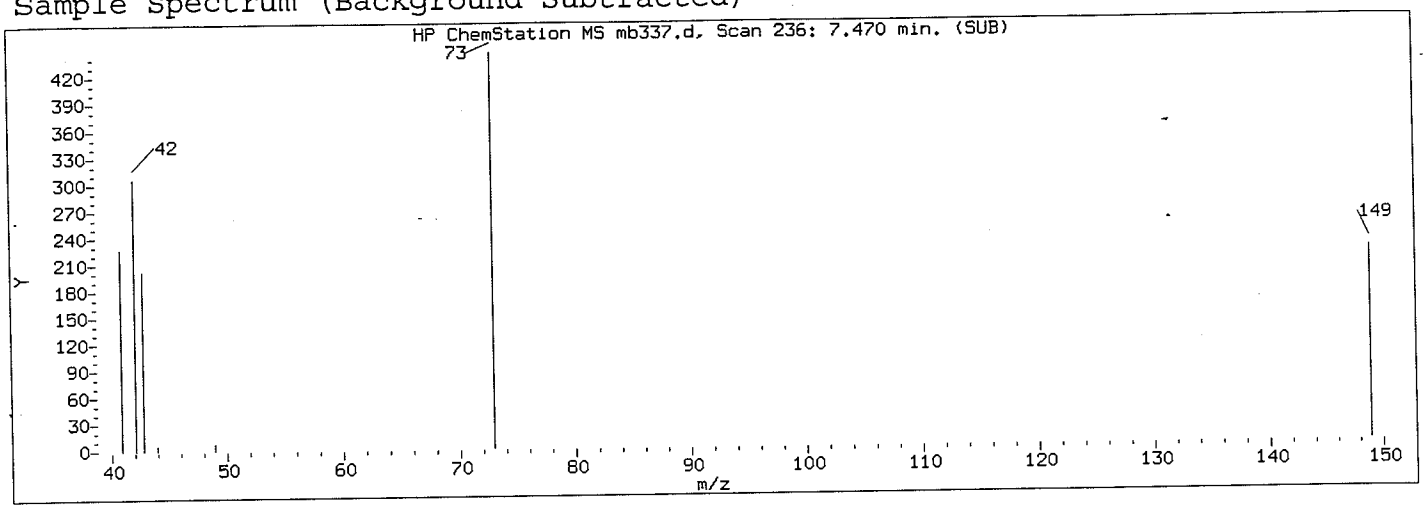
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jen Jp.Otis 2/15/04

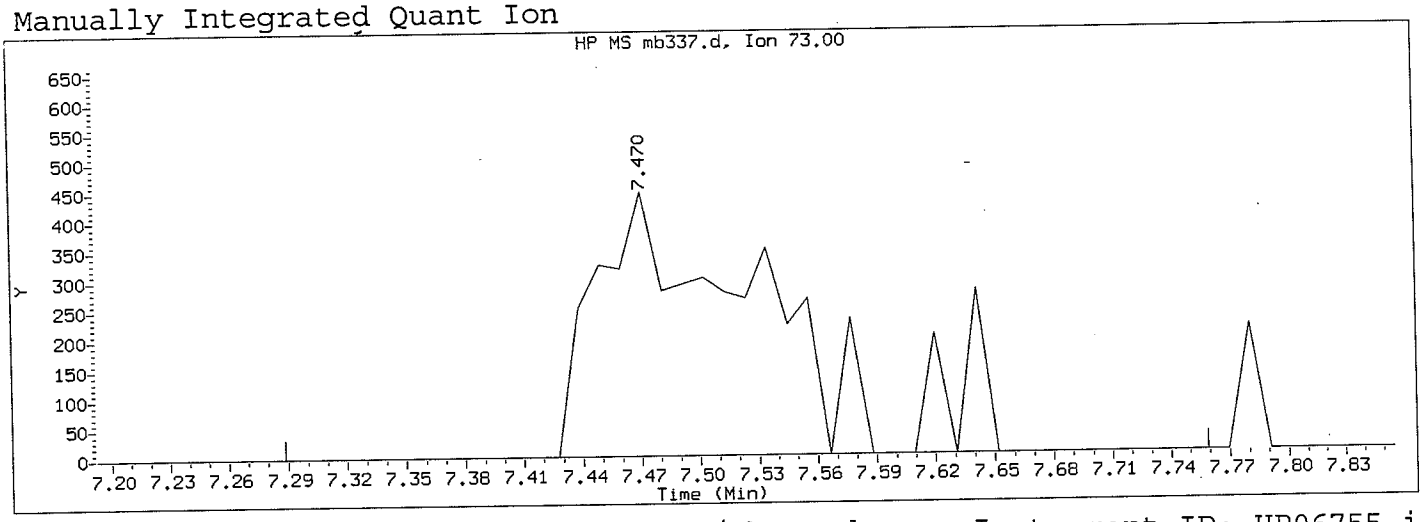
GC/MS audit/management approval: mw/ms 2/20/04 8397

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

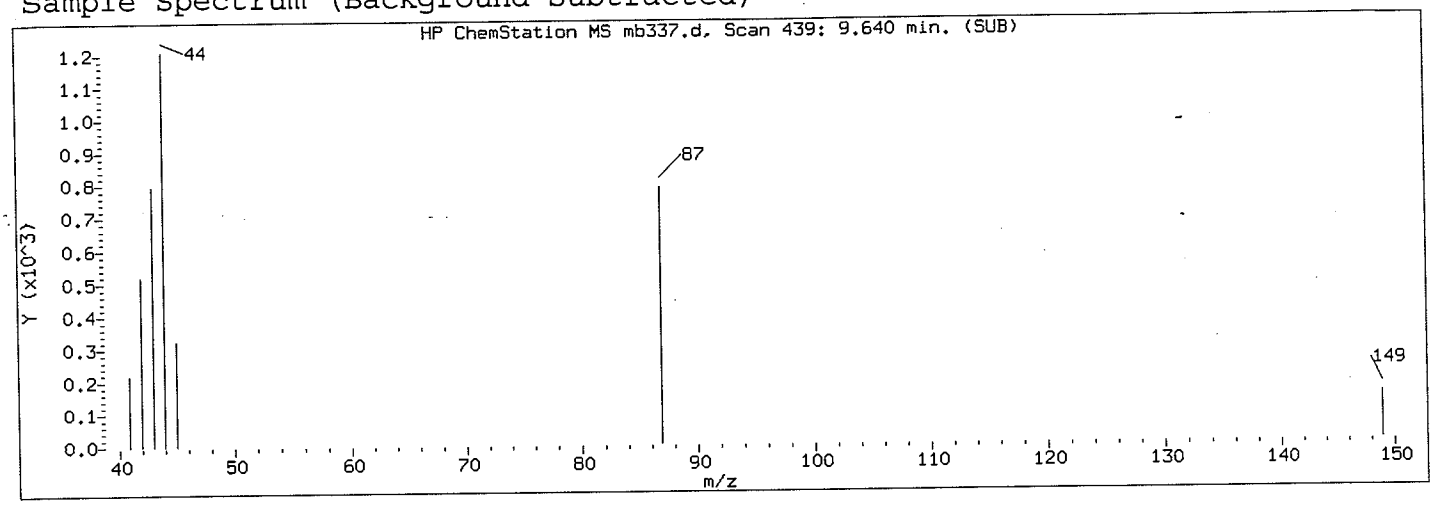
Compound Number : 4
Compound Name : N,N-dimethyl formamide
Scan Number : 236
Retention Time (minutes): 7.470
Quant Ion : 73
Area (flag) : 2753 M
Concentration (ng/ul) : 0.5112
Integration start scan : 218  Integration stop scan: 262
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak  improper integration

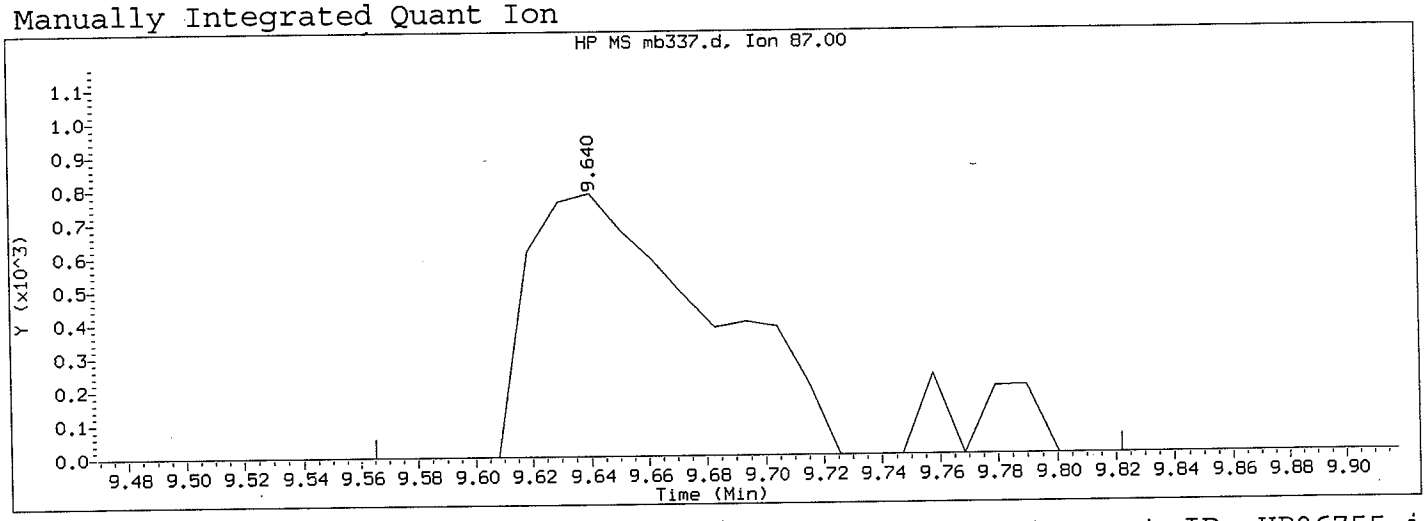
Analyst responsible for change: Jean Spotts 2/15/04

GC/MS audit/management approval: mw/pas 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 8
Compound Name : N,N-dimethyl acetamide
Scan Number : 439
Retention Time (minutes): 9.640
Quant Ion : 87
Area (flag) : 3803 M
Concentration (ng/ul) : 0.7986
Integration start scan : 431 Integration stop scan: 455
Y at integration start : 0 Y at integration end: 0

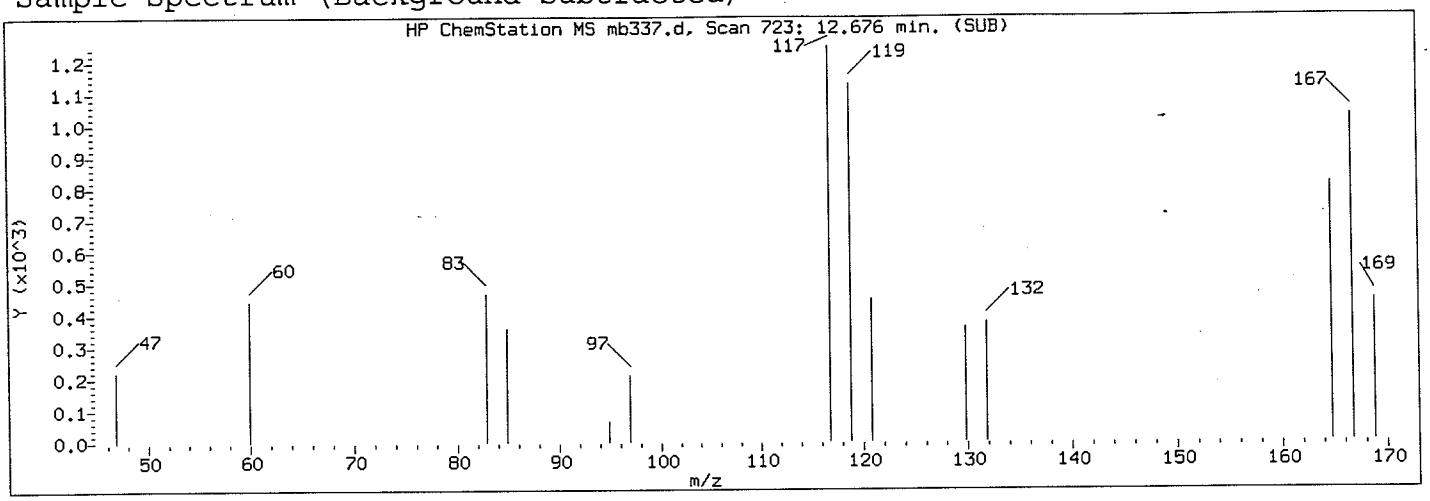
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jean Spotts 2/15/04

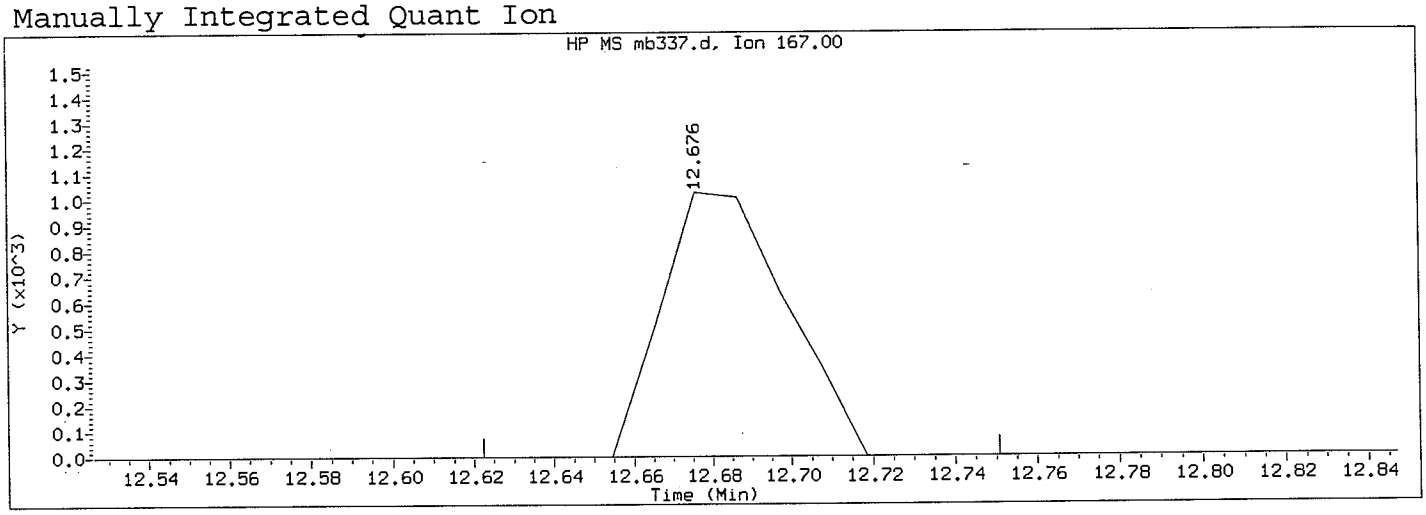
GC/MS audit/management approval: mm/ms 2/20/2004

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

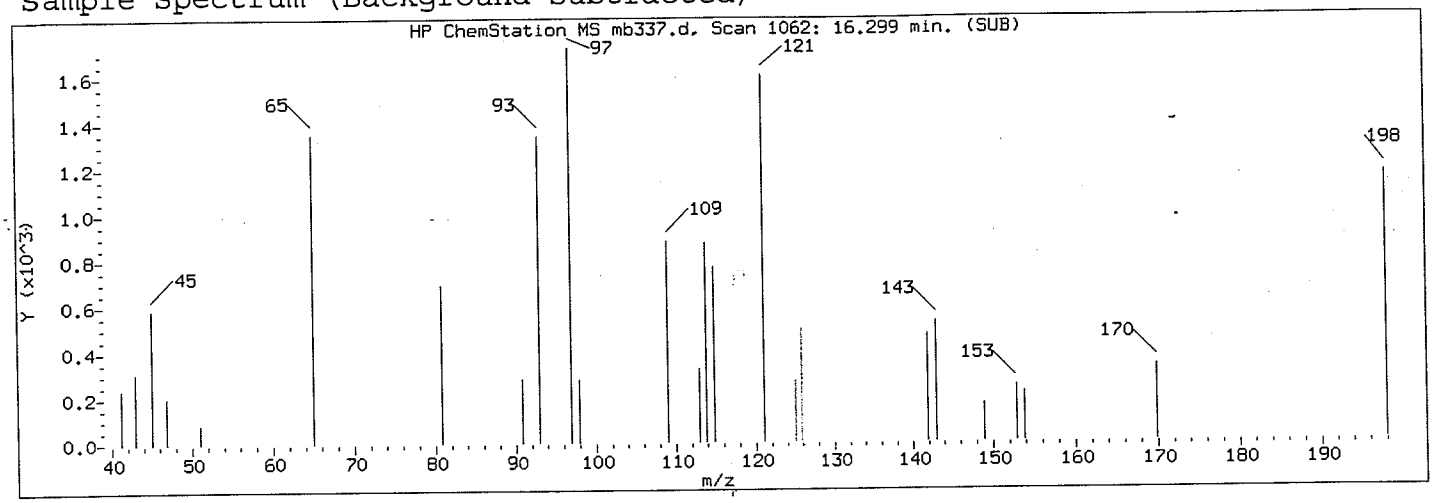
Compound Number : 17
Compound Name : Pentachloroethane
Scan Number : 723
Retention Time (minutes): 12.676
Quant Ion : 167
Area (flag) : 2251 M
Concentration (ng/ul) : 0.8855
Integration start scan : 717 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

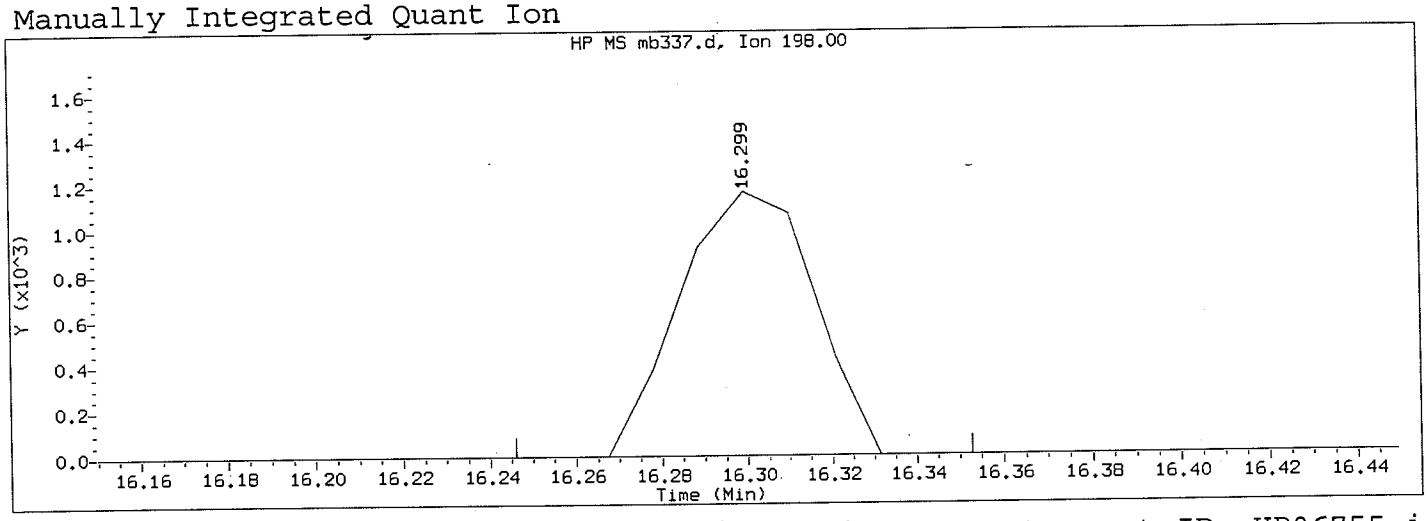
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 45
Compound Name : O,O,O-triethylphosphorothioate
Scan Number : 1062
Retention Time (minutes): 16.299
Quant Ion : 198
Area (flag) : 2547 M
Concentration (ng/ul) : 1.0072
Integration start scan : 1056 Integration stop scan: 1066
Y at integration start : 0 Y at integration end: 0

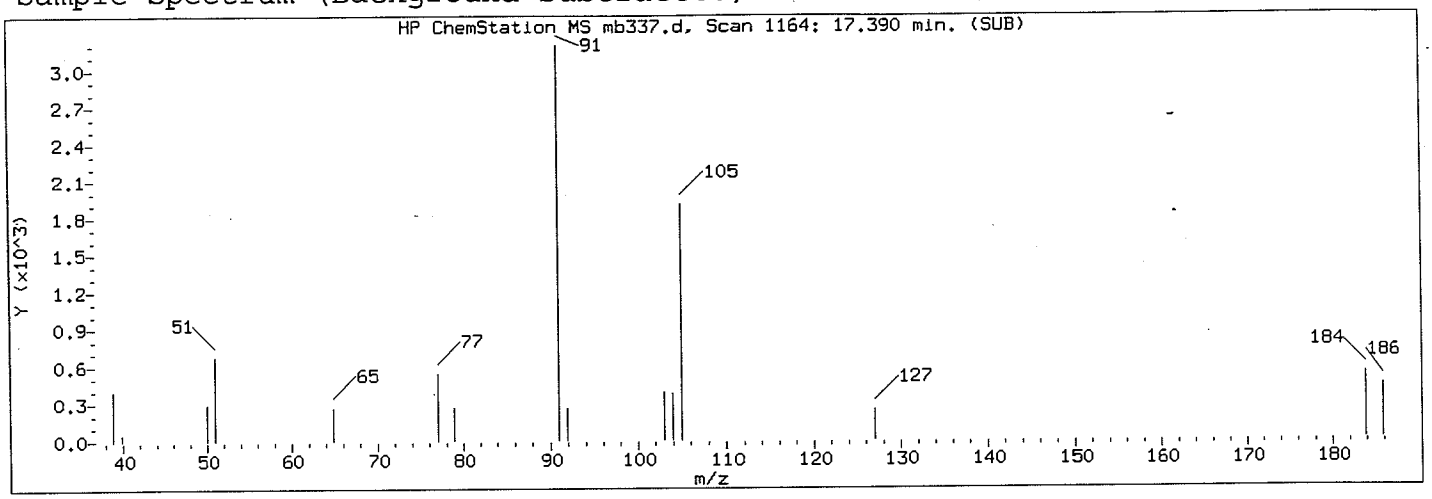
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: [signature] 2/15/04

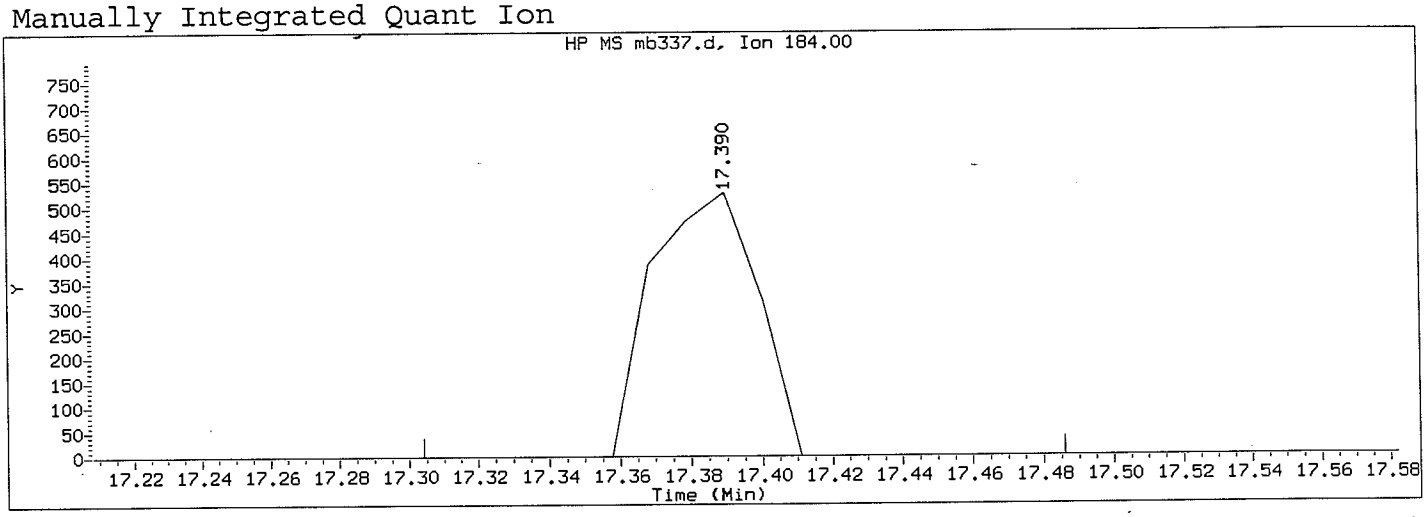
GC/MS audit/management approval: [signature] 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | |
|---|---|
| Compound Number | : 54 |
| Compound Name | : (2-Bromoethyl)benzene |
| Scan Number | : 1164 |
| Retention Time (minutes) | : 17.390 |
| Quant Ion | : 184 |
| Area (flag) | : 1088 M |
| Concentration (ng/ul) | : 0.9982 |
| Integration start scan | : 1155 Integration stop scan: 1172 |
| Y at integration start | : 0 Y at integration end: 0 |

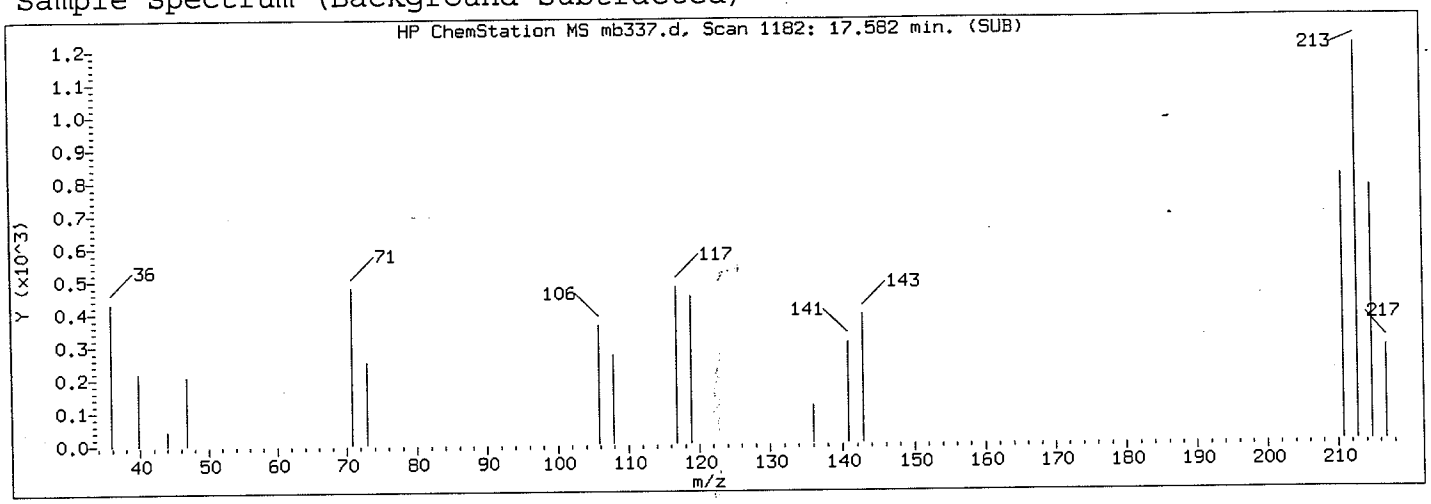
Reason for manual integration (circle one): missed peak  improper integration

Analyst responsible for change: _____ 2/15/04

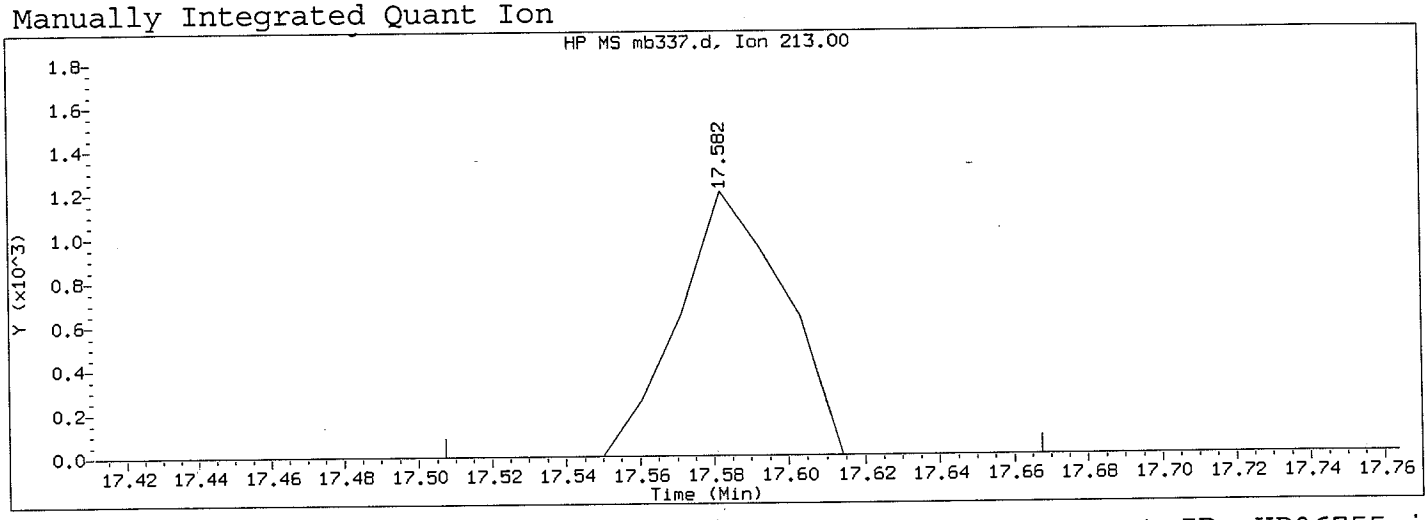
GC/MS audit/management approval: _____ 2/22/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 57
Compound Name : Hexachloropropene
Scan Number : 1182
Retention Time (minutes): 17.582
Quant Ion : 213
Area (flag) : 2370 M
Concentration (ng/ul) : 0.8623
Integration start scan : 1174 Integration stop scan: 1189
Y at integration start : 0 Y at integration end: 0

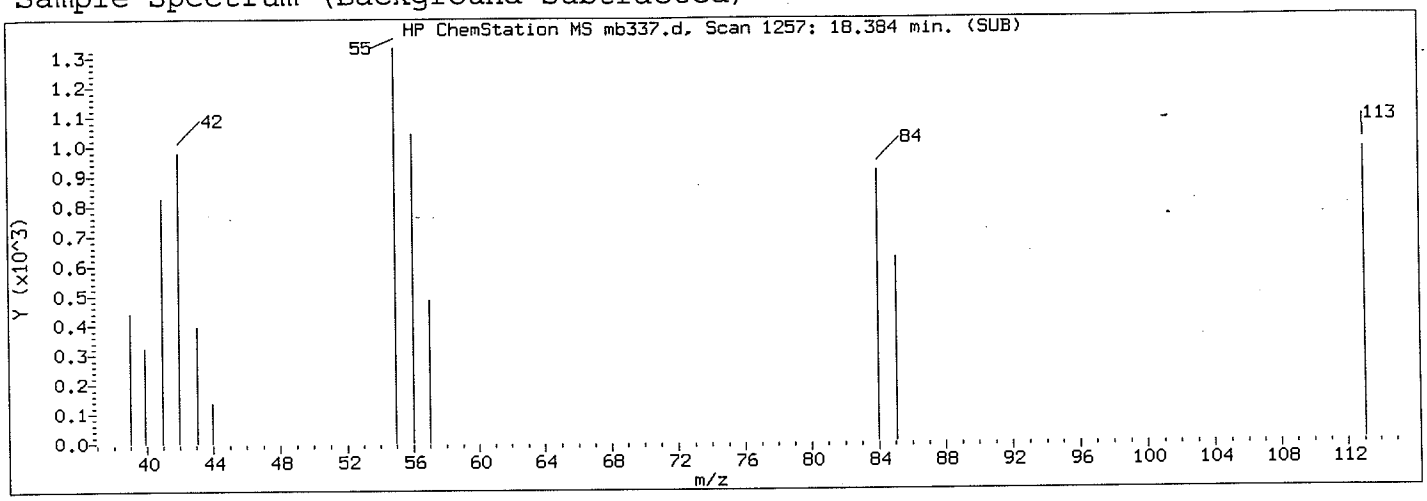
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

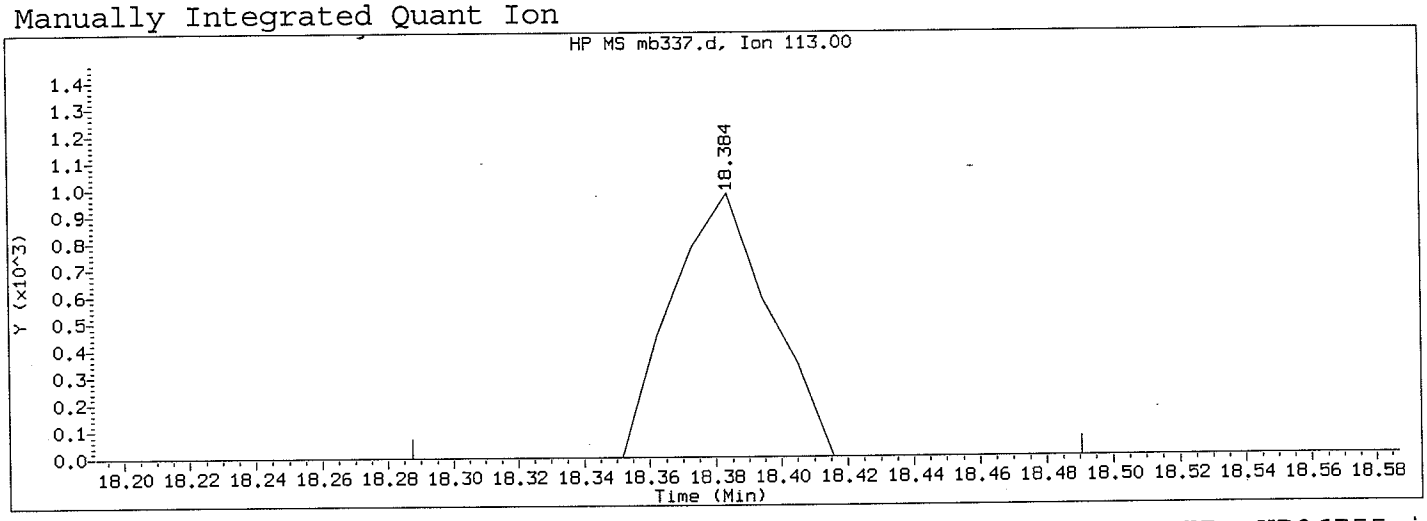
GC/MS audit/management approval: _____ 2/19/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 62
Compound Name : Caprolactam
Scan Number : 1257
Retention Time (minutes): 18.384
Quant Ion : 113
Area (flag) : 2018 M
Concentration (ng/ul) : 0.8336
Integration start scan : 1247 Integration stop scan: 1266
Y at integration start : 0 Y at integration end: 0

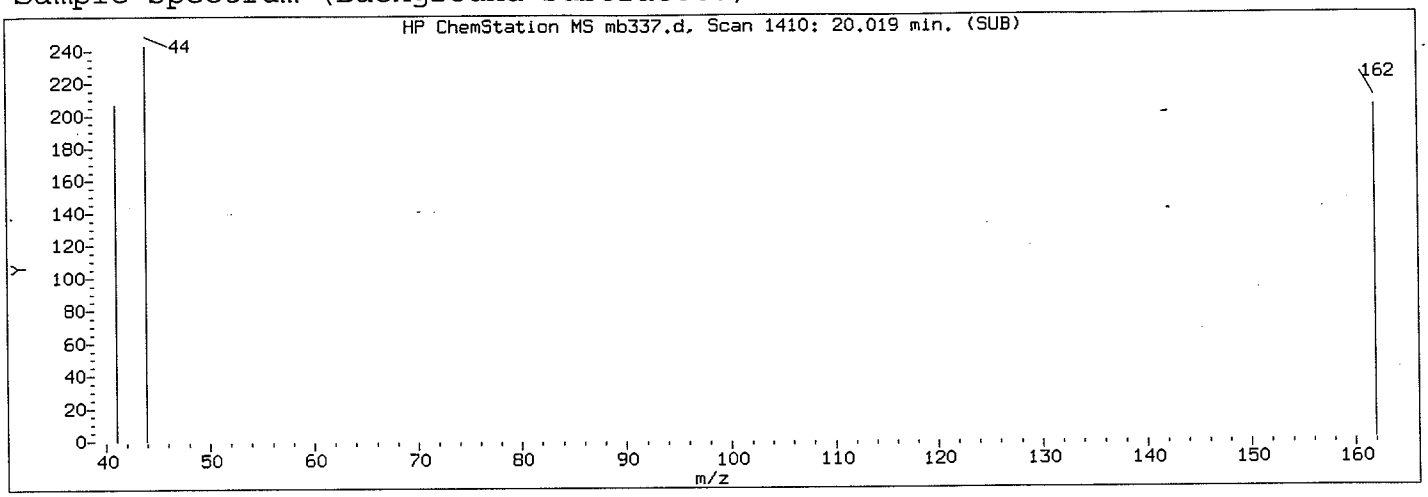
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

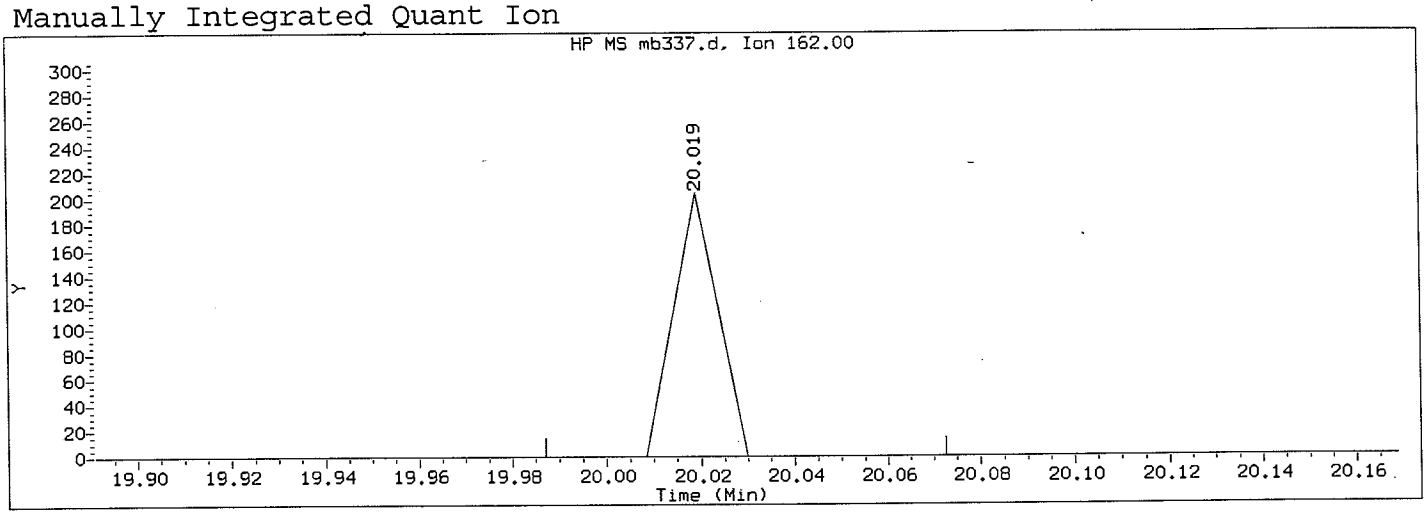
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 73
Compound Name : cis-Isosafrole
Scan Number : 1410
Retention Time (minutes): 20.019
Quant Ion : 162
Area (flag) : 130 M
Concentration (ng/ul) : 0.0317
Integration start scan : 1406 Integration stop scan: 1414
Y at integration start : 0 Y at integration end: 0

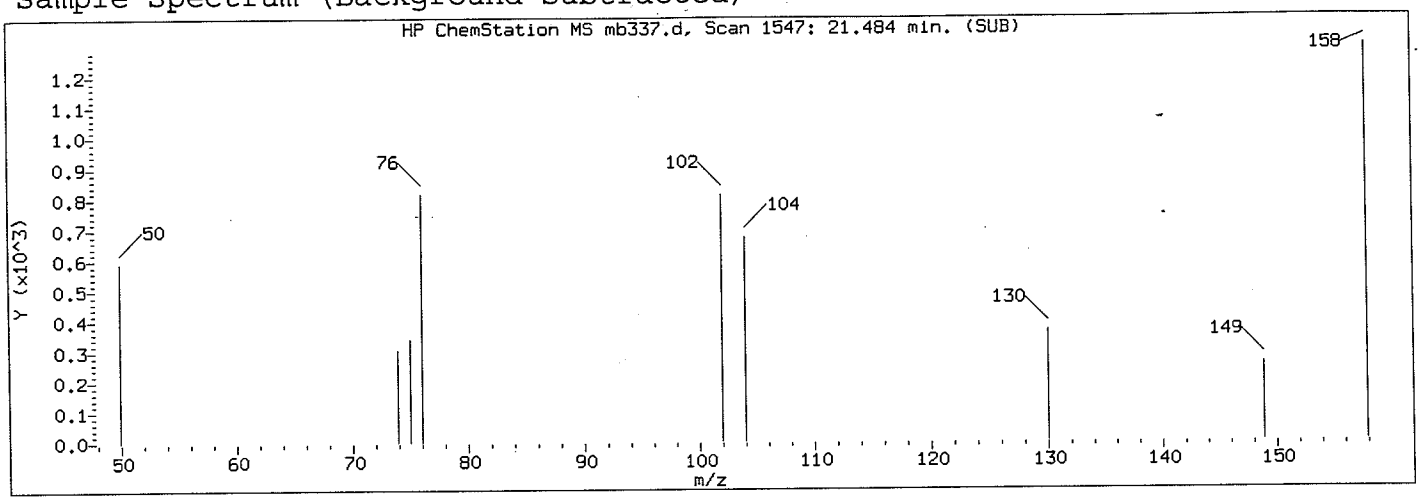
Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: _____ 2/15/04

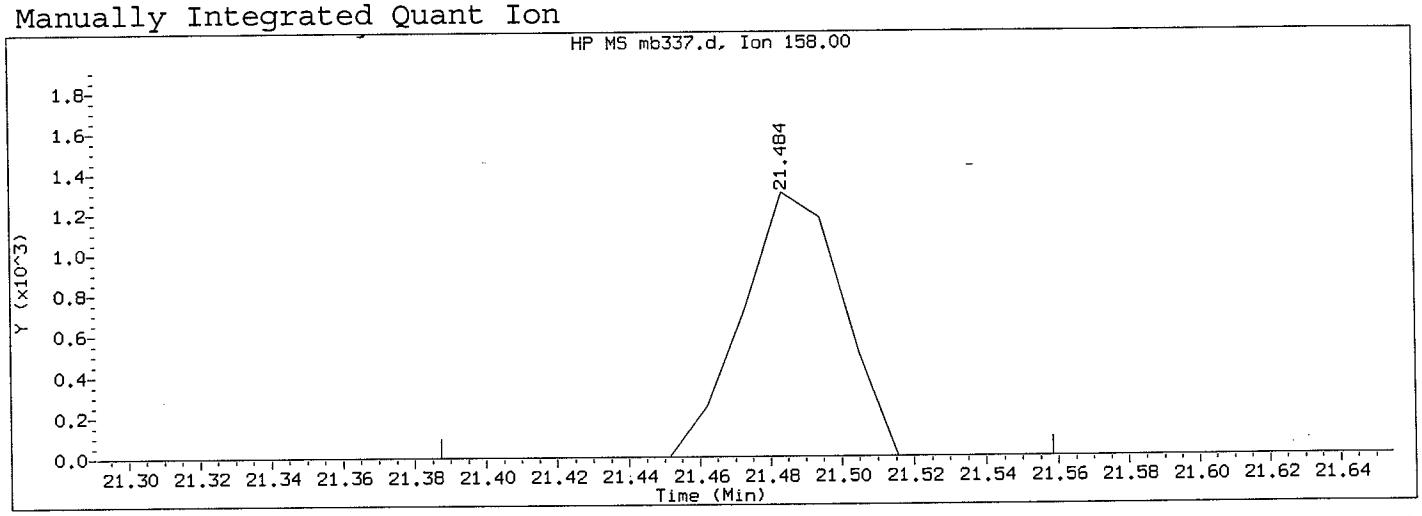
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

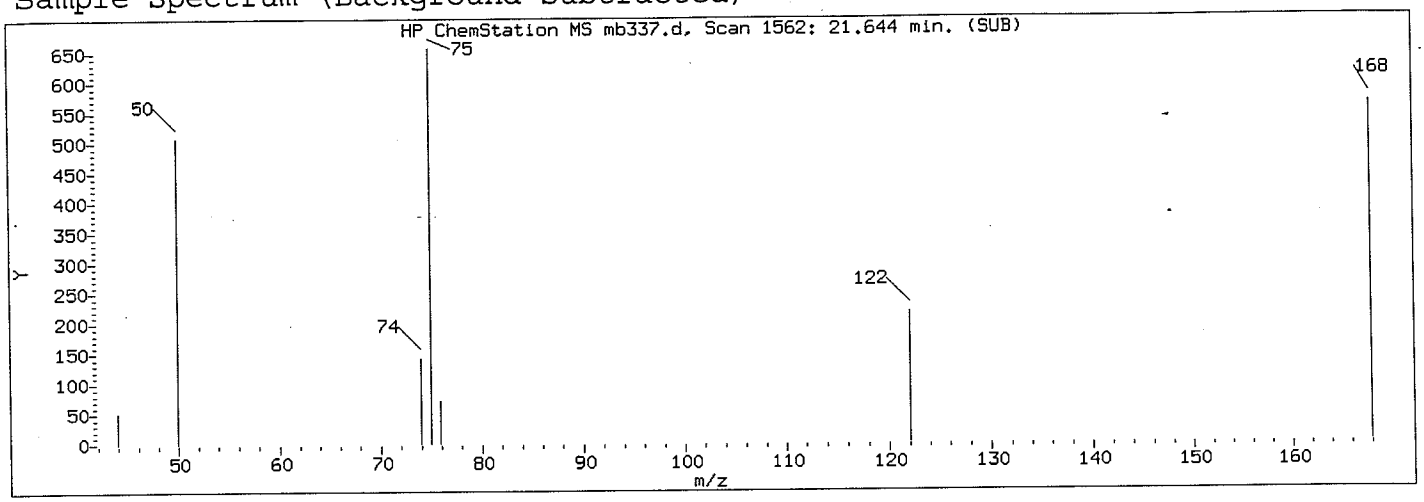
Compound Number : 88
Compound Name : 1,4-Naphthoquinone
Scan Number : 1547
Retention Time (minutes): 21.484
Quant Ion : 158
Area (flag) : 2537 M
Concentration (ng/ul) : 0.7694
Integration start scan : 1537 Integration stop scan: 1553
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

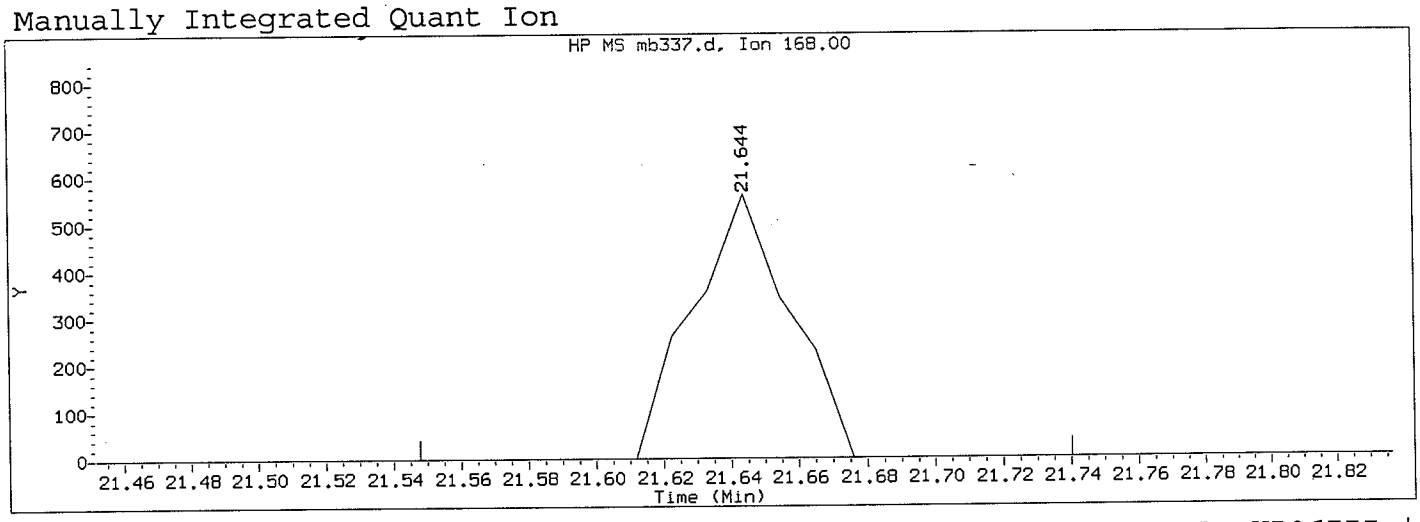
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/22/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 89
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1562
Retention Time (minutes): 21.644
Quant Ion : 168
Area (flag) : 1124 M
Concentration (ng/ul) : 0.5435
Integration start scan : 1552 Integration stop scan: 1570
Y at integration start : 0 Y at integration end: 0

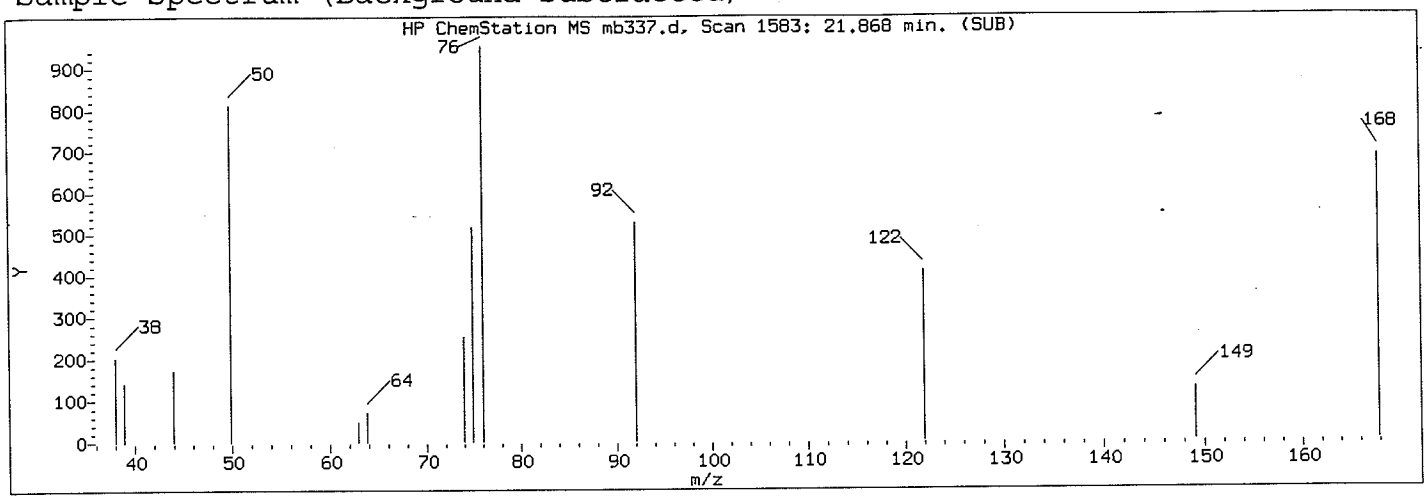
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

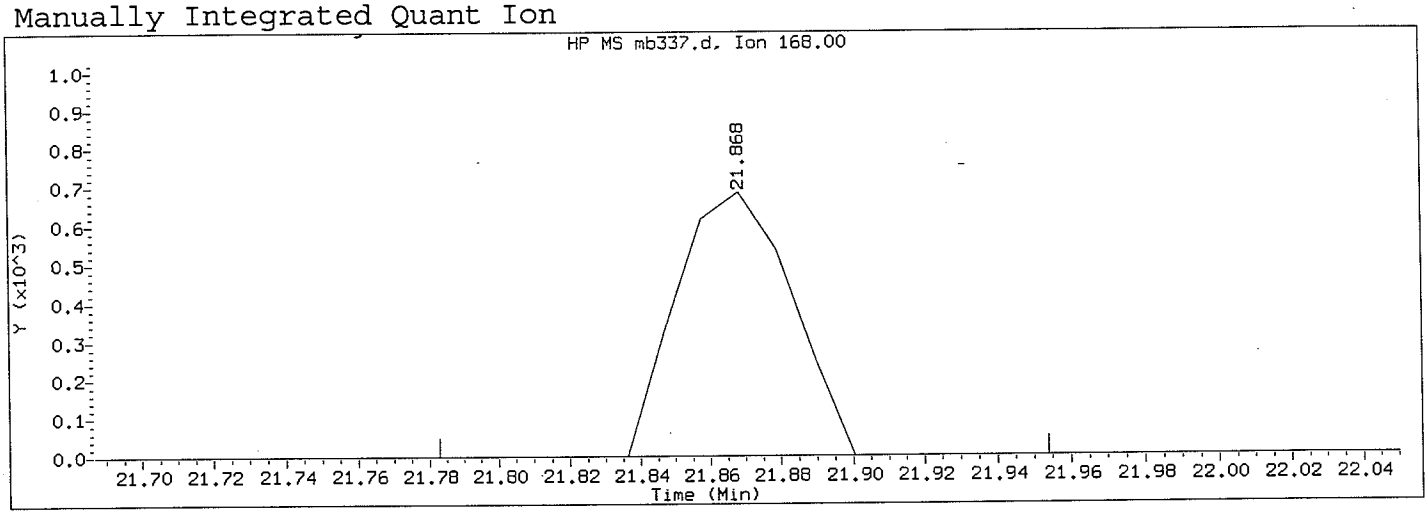
GC/MS audit/management approval: _____

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

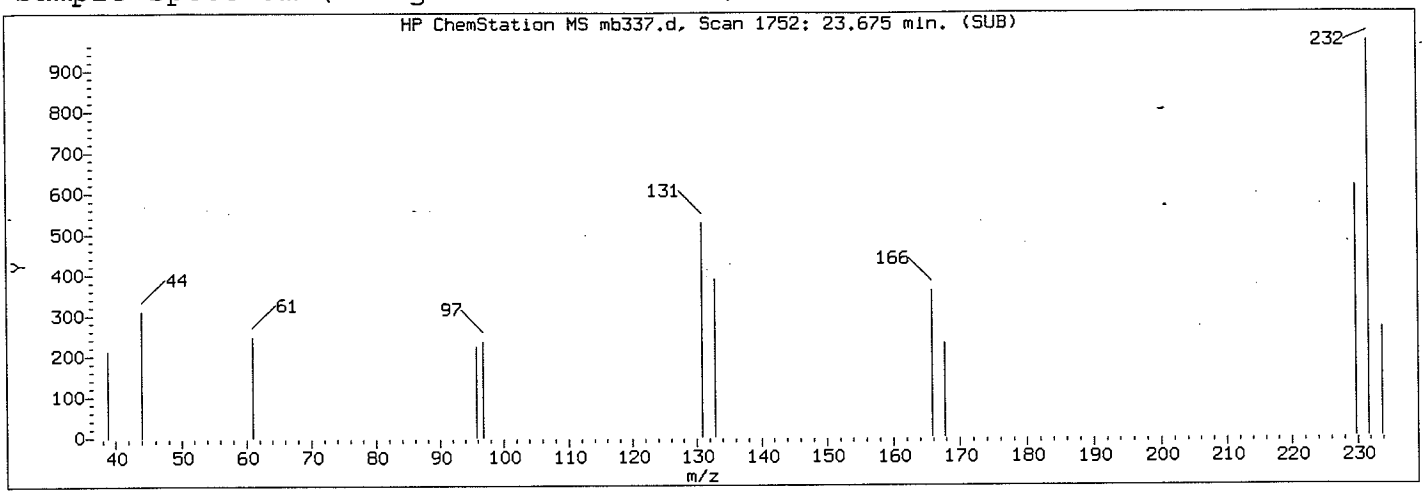
Compound Number : 91
Compound Name : 1,3-Dinitrobenzene
Scan Number : 1583
Retention Time (minutes): 21.868
Quant Ion : 168
Area (flag) : 1549 M
Concentration (ng/ul) : 0.6584
Integration start scan : 1574 Integration stop scan: 1590
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

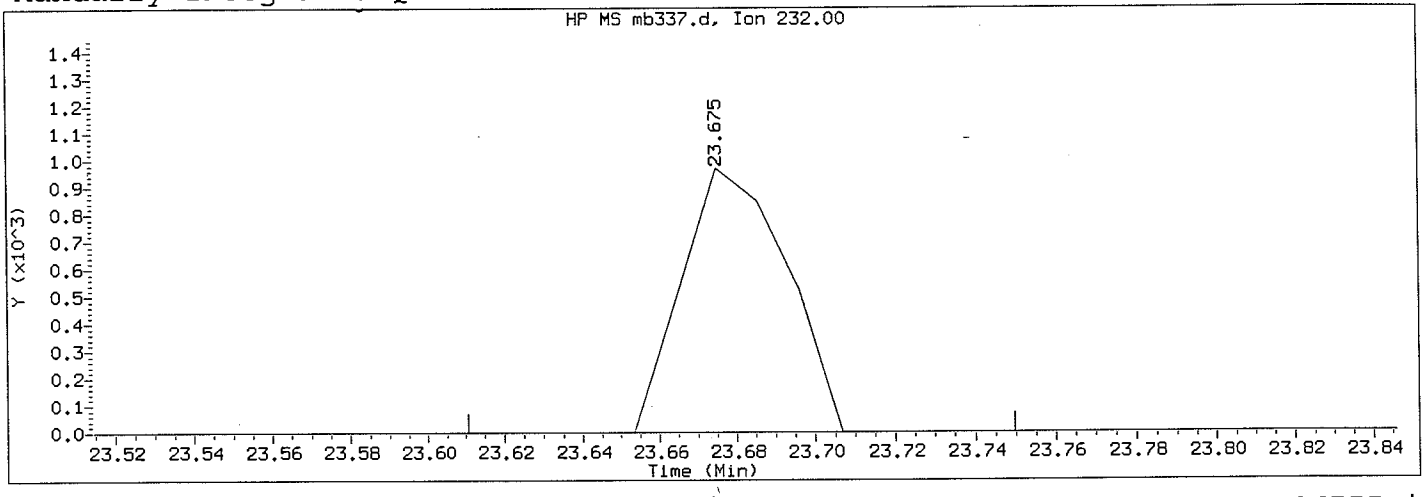
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 105
Compound Name : 2,3,4,6-Tetrachlorophenol
Scan Number : 1752
Retention Time (minutes): 23.675
Quant Ion : 232
Area (flag) : 1806 M
Concentration (ng/ul) : 0.7327
Integration start scan : 1745 Integration stop scan: 1758
Y at integration start : 0 Y at integration end: 0

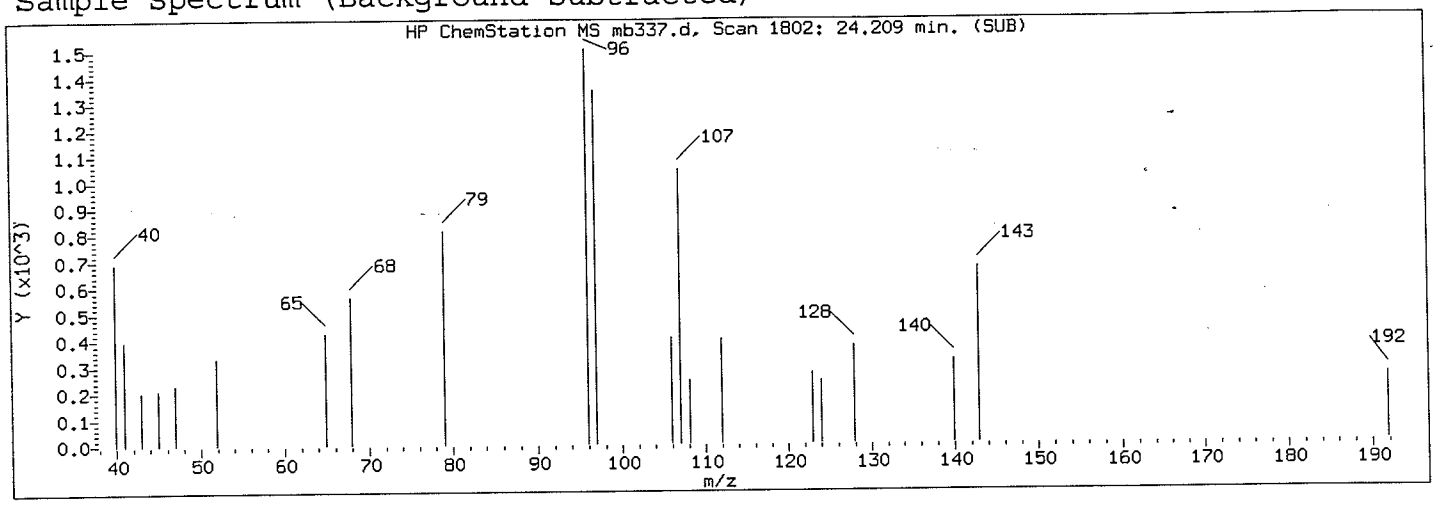
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

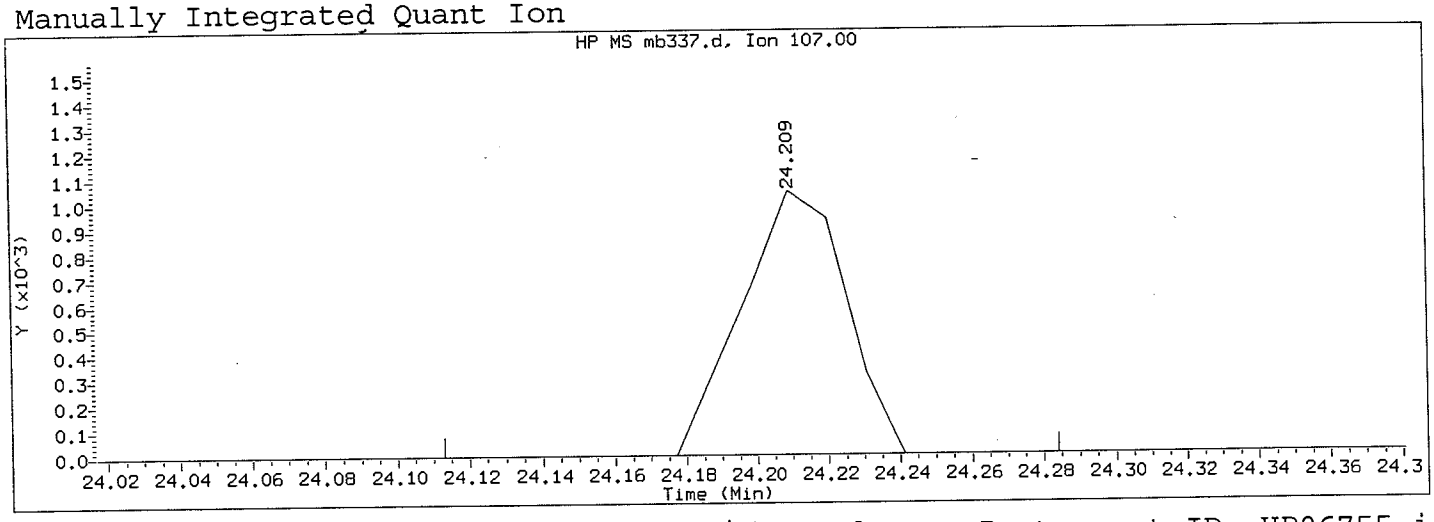
GC/MS audit/management approval: _____

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

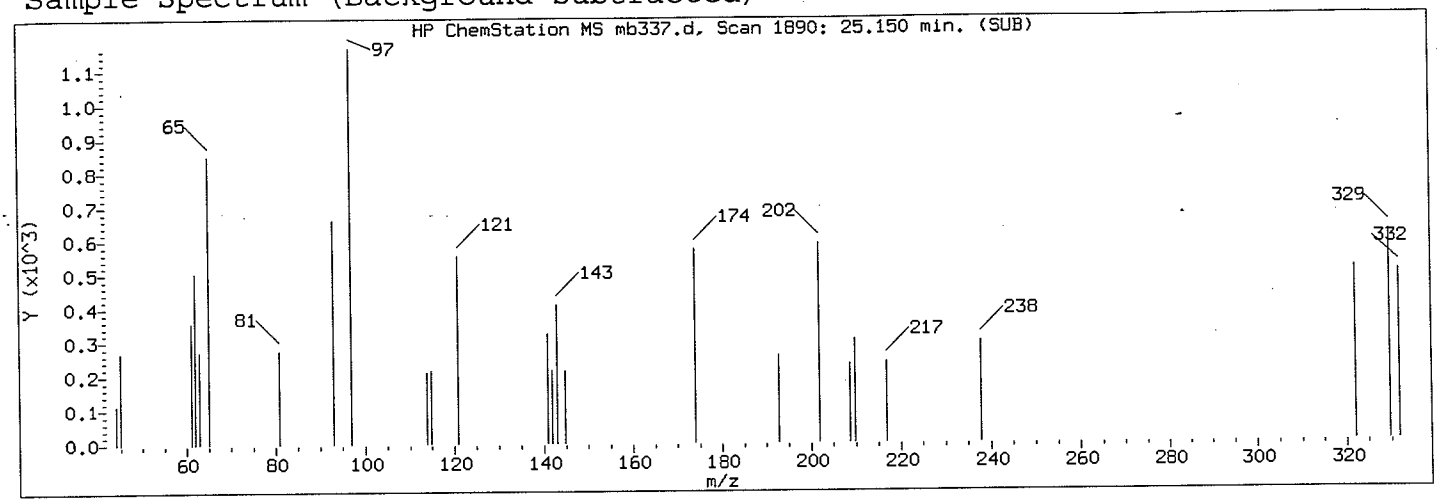
Compound Number : 108
Compound Name : Thionazin
Scan Number : 1802
Retention Time (minutes): 24.209
Quant Ion : 107
Area (flag) : 2127 M
Concentration (ng/ul) : 0.9493
Integration start scan : 1792 Integration stop scan: 1808
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

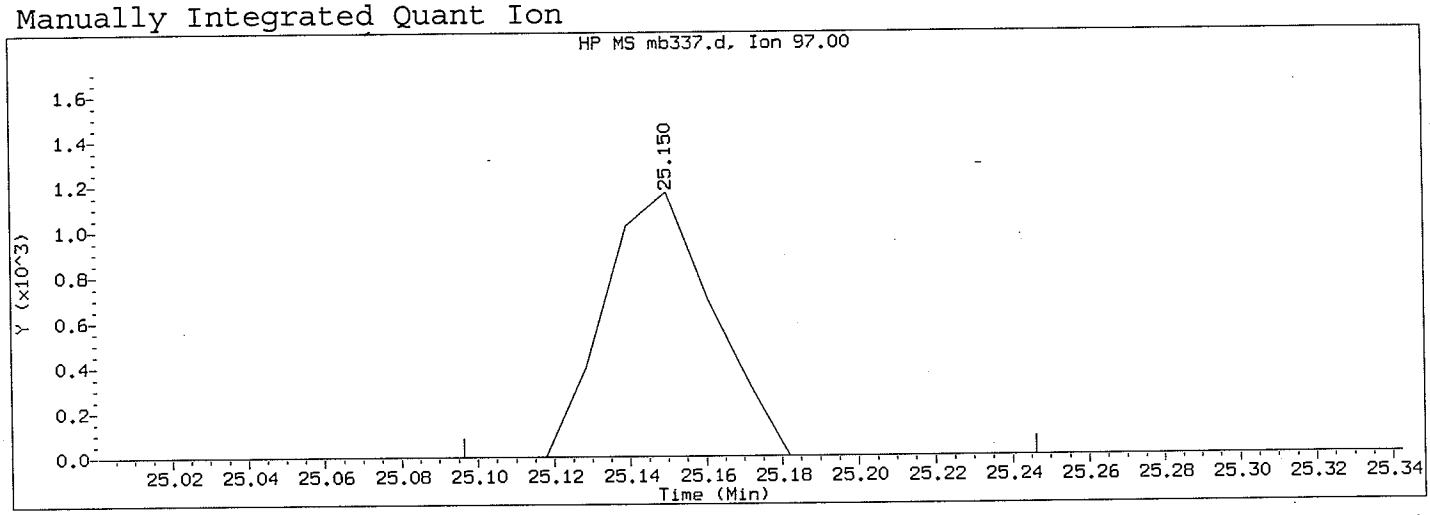
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 118
Compound Name : Tetraethyldithiopyrophosphate
Scan Number : 1890
Retention Time (minutes): 25.150
Quant Ion : 97
Area (flag) : 2313 M
Concentration (ng/ul) : 0.9984
Integration start scan : 1884  Integration stop scan: 1898
Y at integration start : 0  Y at integration end: 0

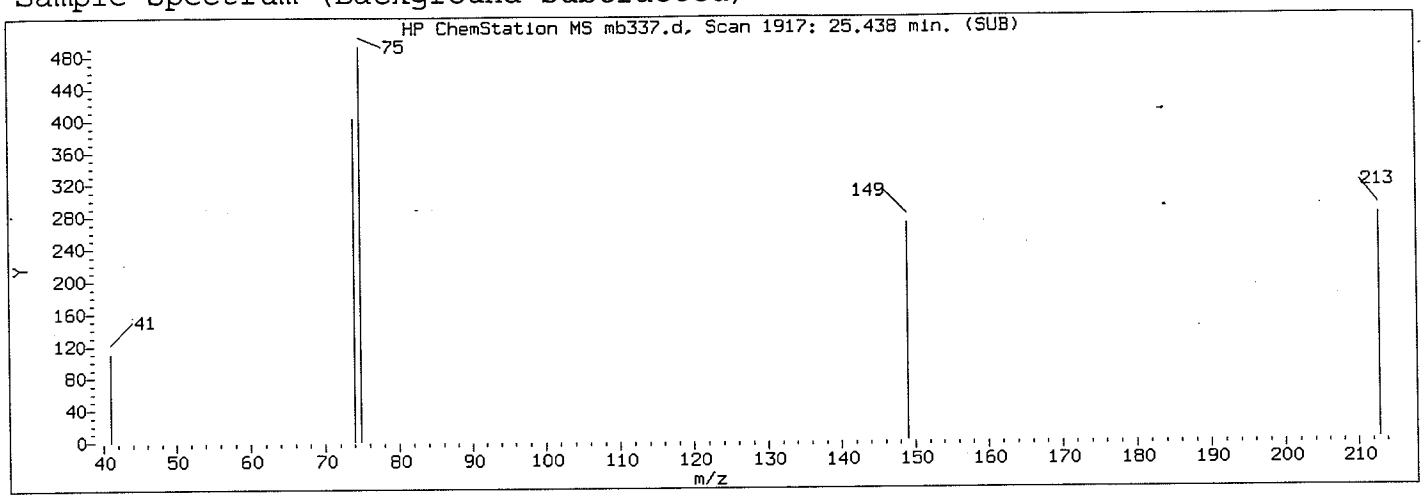
Reason for manual integration (circle one): ~~missed peak~~ improper integration

Analyst responsible for change: _____ 2/15/04

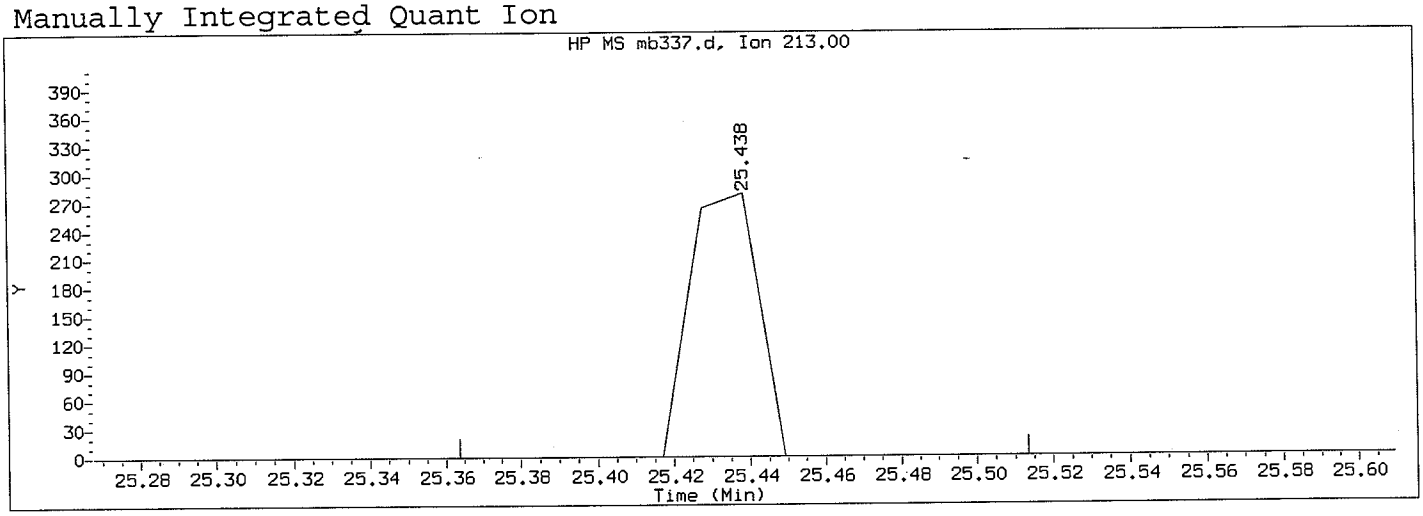
GC/MS audit/management approval: _____

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 119
Compound Name : 1,3,5-Trinitrobenzene
Scan Number : 1917
Retention Time (minutes): 25.438
Quant Ion : 213
Area (flag) : 348 M
Concentration (ng/ul) : 3.9534
Integration start scan : 1909  Integration stop scan: 1923
Y at integration start : 0  Y at integration end: 0

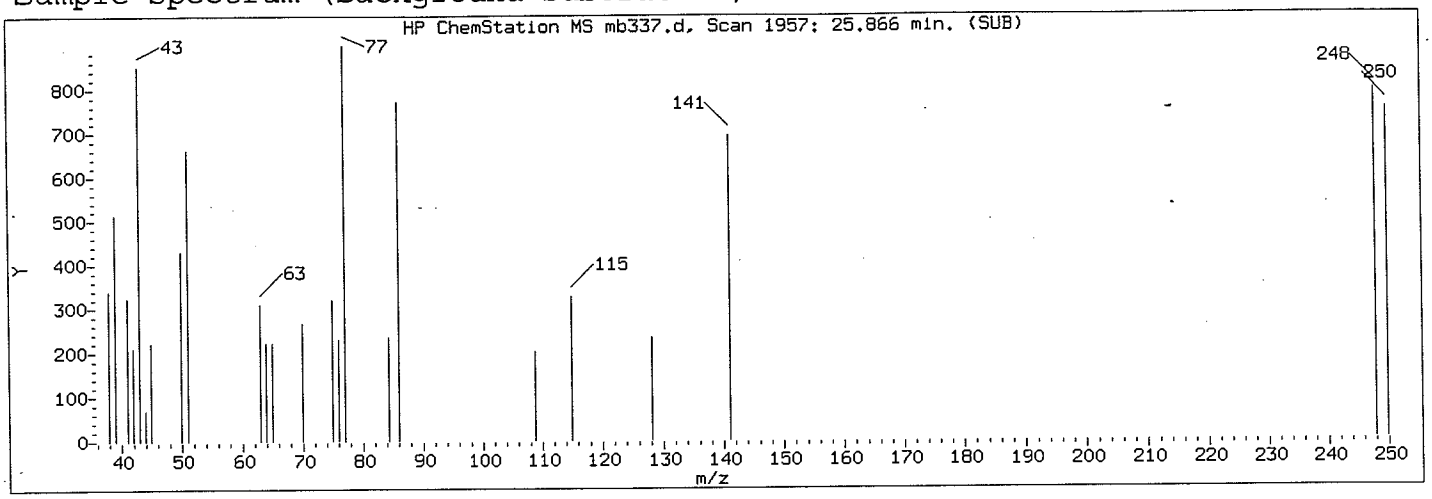
Reason for manual integration (circle one): missed peak  improper integration

Analyst responsible for change: _____ 2/15/04

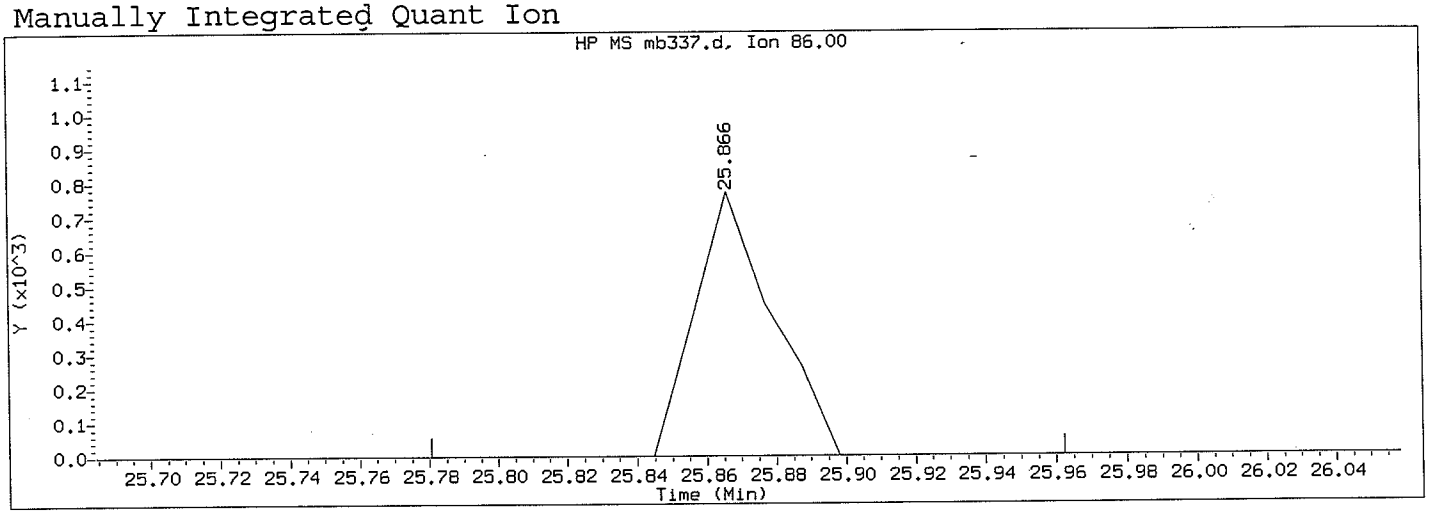
GC/MS audit/management approval: _____

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 124
Compound Name : Diallate (peak 2)
Scan Number : 1957
Retention Time (minutes): 25.866
Quant Ion : 86
Area (flag) : 1196 M
Concentration (ng/ul) : 0.2110
Integration start scan : 1948 Integration stop scan: 1965
Y at integration start : 0 Y at integration end: 0

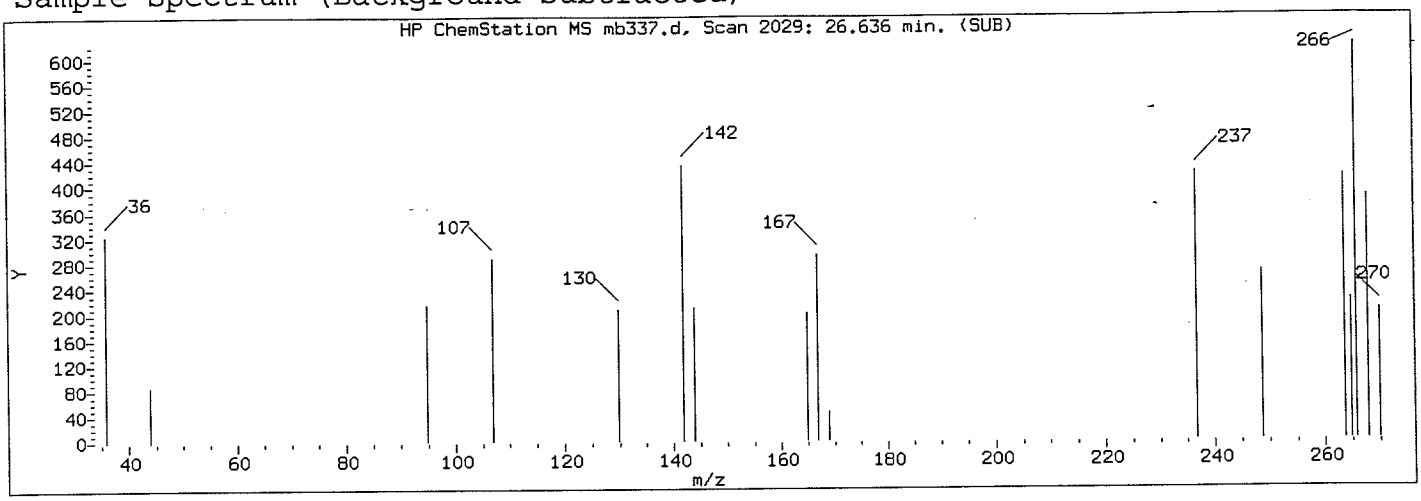
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

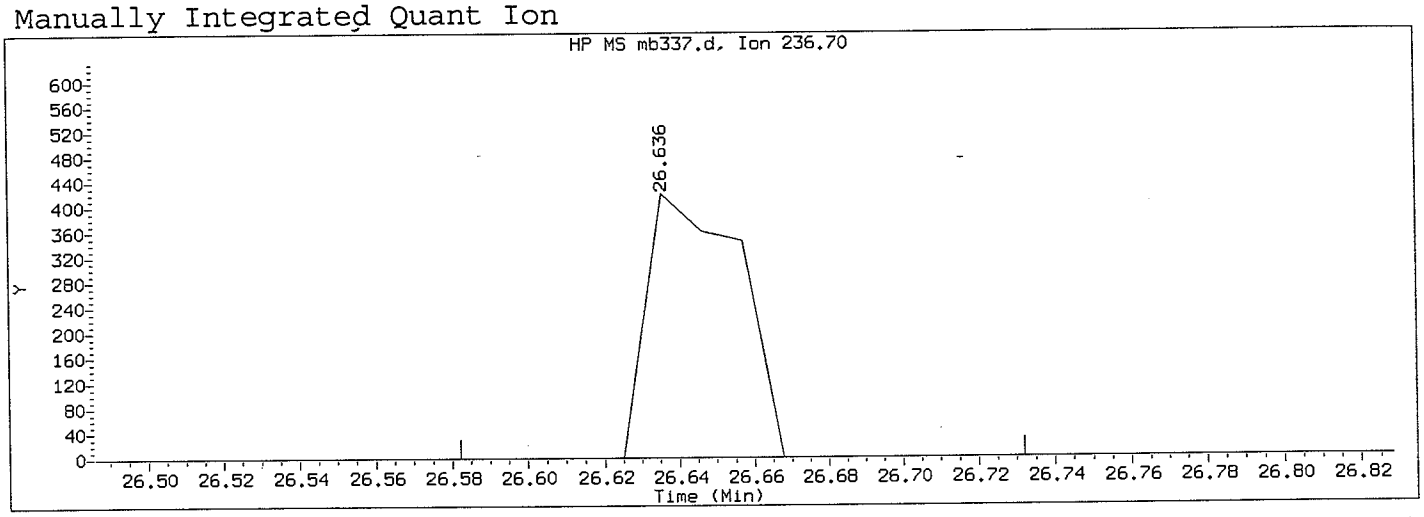
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

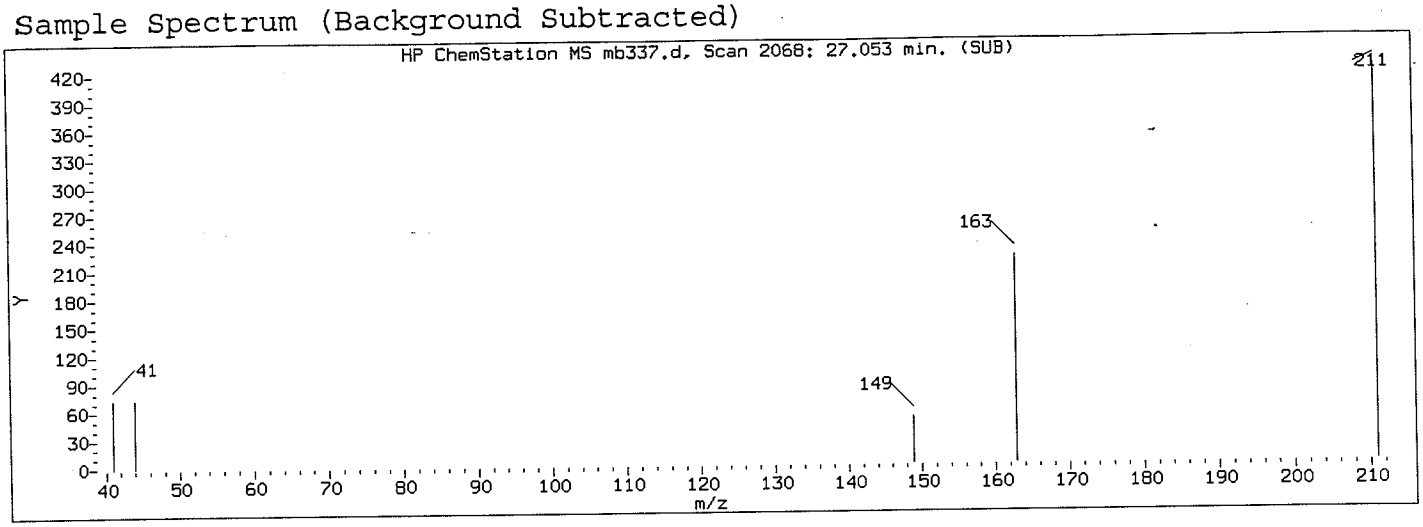
Compound Number : 130
Compound Name : Pentachloronitrobenzene
Scan Number : 2029
Retention Time (minutes): 26.636
Quant Ion : 237
Area (flag) : 721 M
Concentration (ng/ul) : 0.6866
Integration start scan : 2023  Integration stop scan: 2037
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak  improper integration

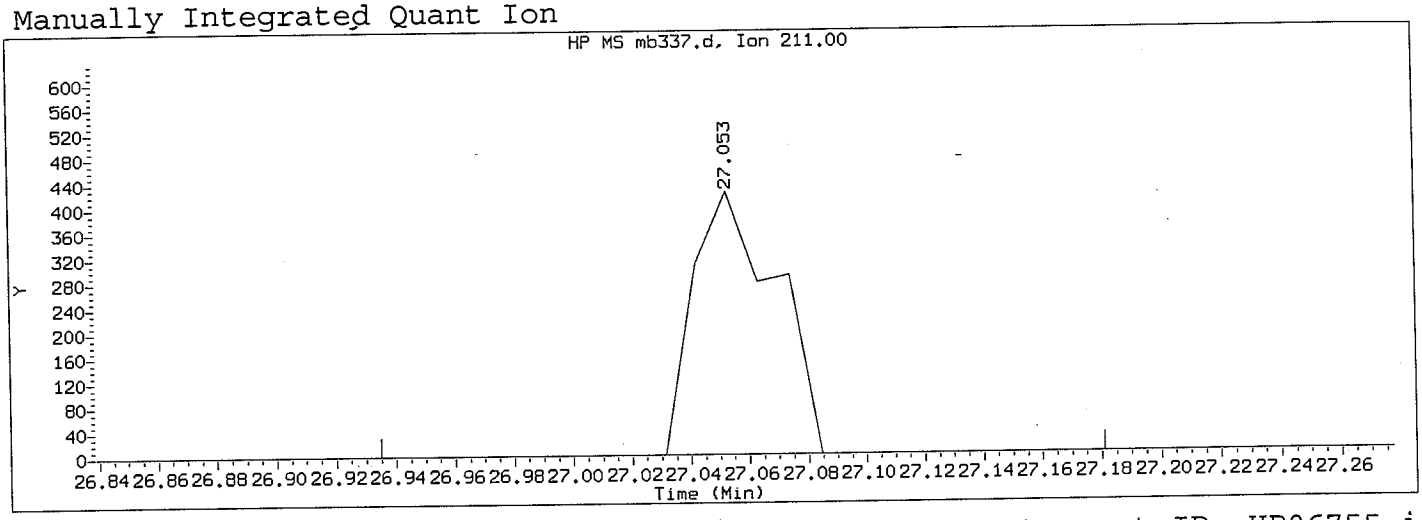
Analyst responsible for change: Jan Spotts 2/15/04

GC/MS audit/management approval: MJ/05 2/16/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

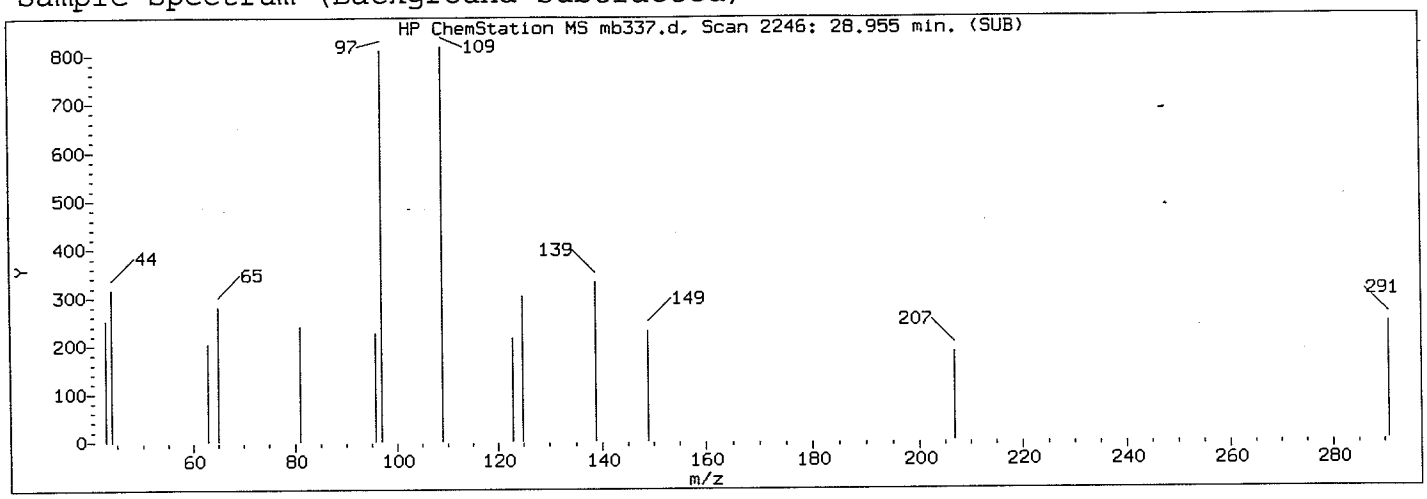
Compound Number : 134
Compound Name : Dinoseb
Scan Number : 2068
Retention Time (minutes): 27.053
Quant Ion : 211
Area (flag) : 832 M
Concentration (ng/ul) : 3.9058
Integration start scan : 2056 Integration stop scan: 2079
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

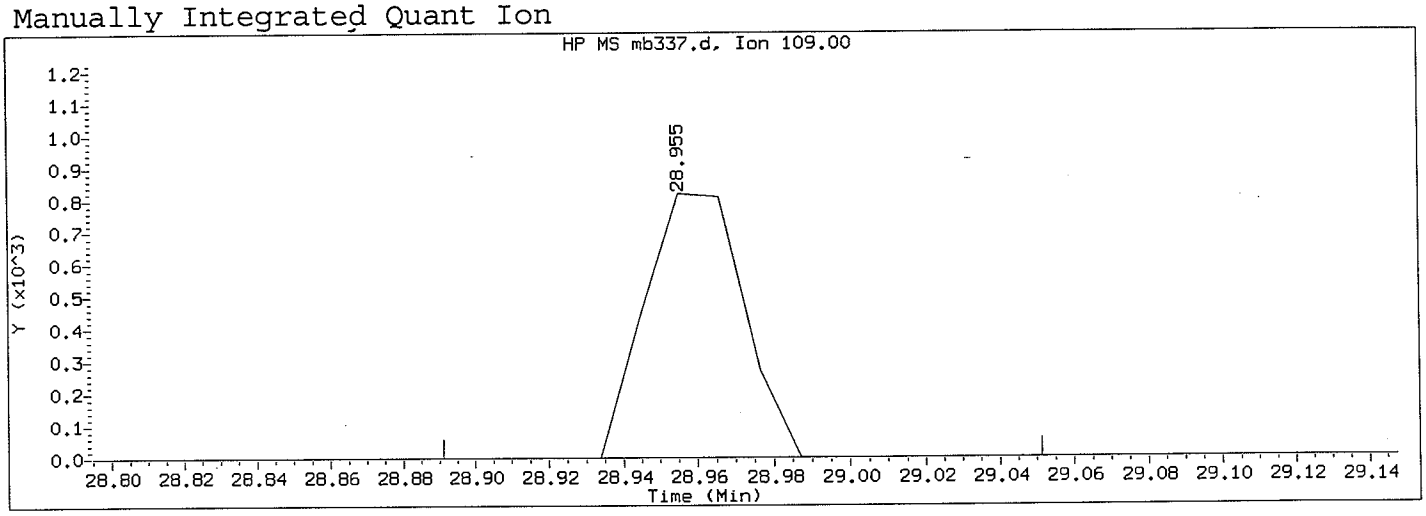
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/17/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 141
Compound Name : Parathion
Scan Number : 2246
Retention Time (minutes): 28.955
Quant Ion : 109
Area (flag) : 1493 M
Concentration (ng/ul) : 0.5466
Integration start scan : 2239 Integration stop scan: 2254
Y at integration start : 0 Y at integration end: 0

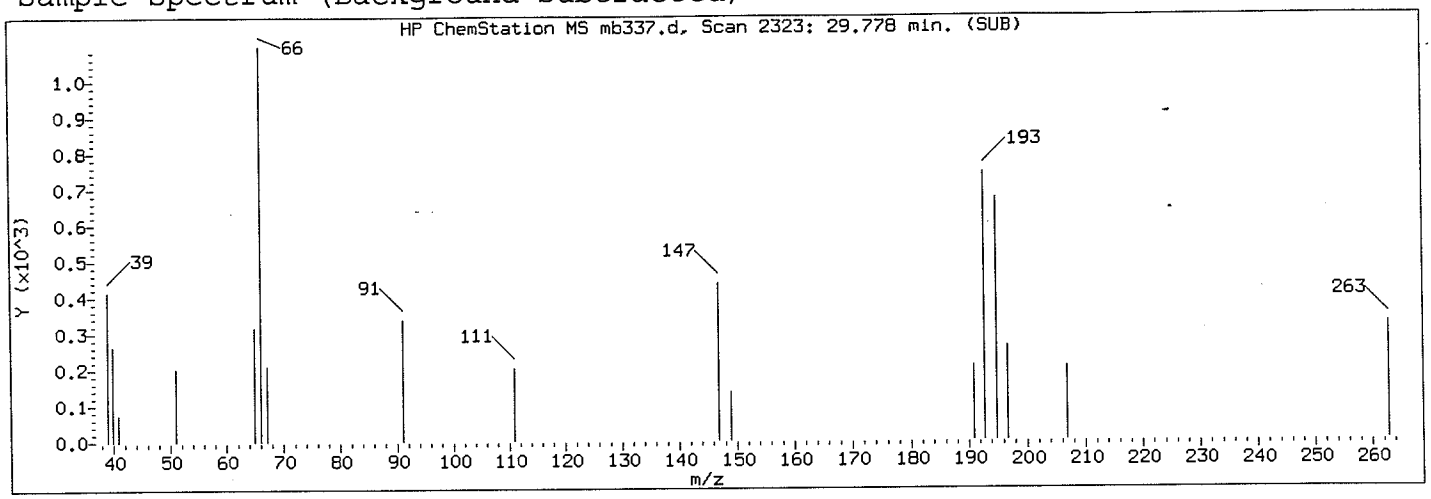
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

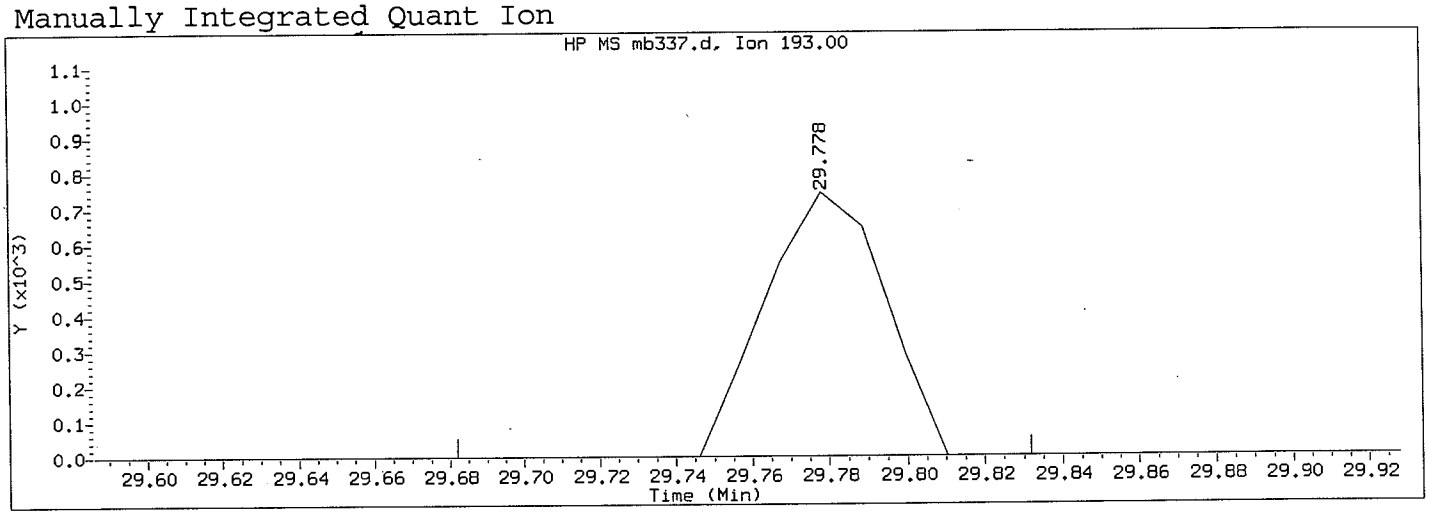
GC/MS audit/management approval: _____ 2/15/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:03

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

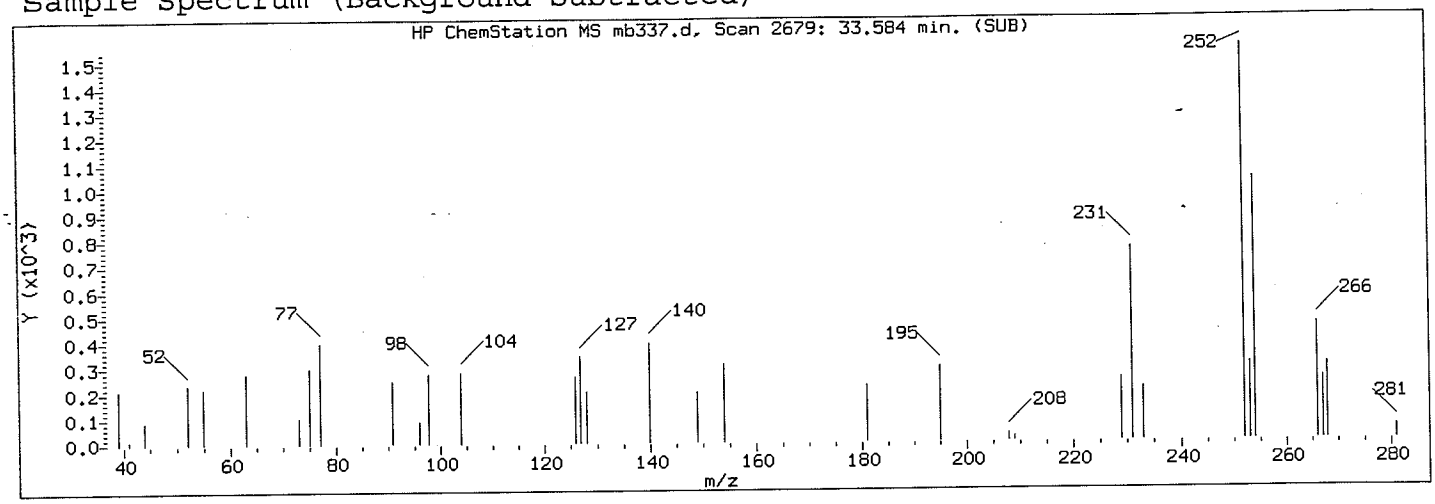
Compound Number : 144
Compound Name : Isodrin
Scan Number : 2323
Retention Time (minutes): 29.778
Quant Ion : 193
Area (flag) : 1603 M
Concentration (ng/ul) : 0.9849
Integration start scan : 2313 Integration stop scan: 2327
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

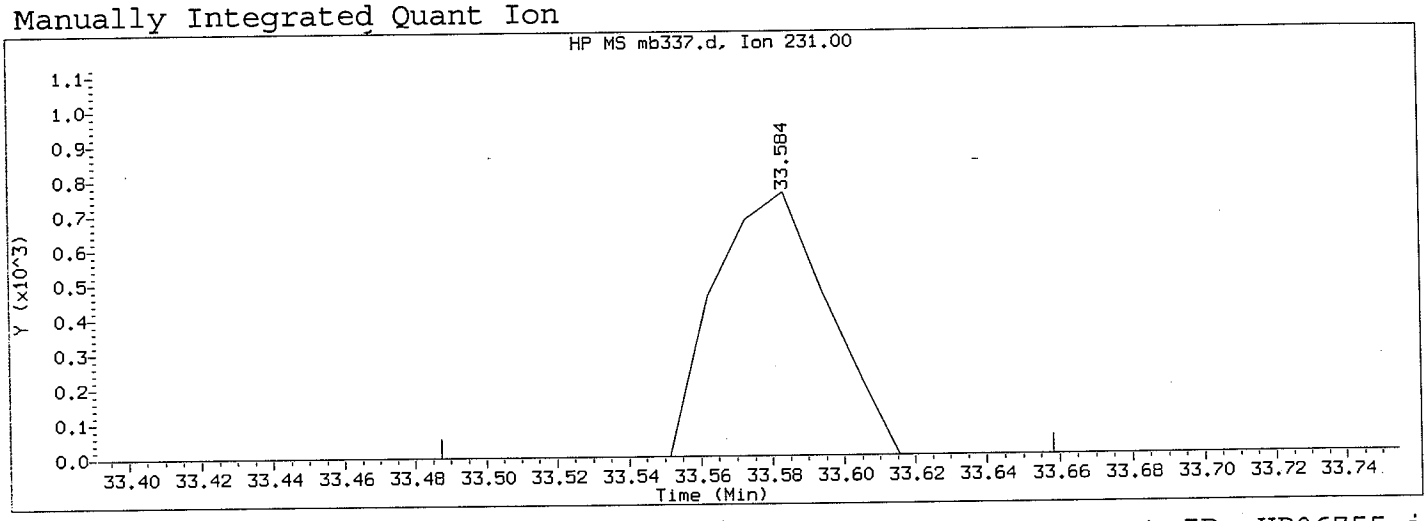
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 163
Compound Name : 4,4'-Methylenebis(2-Chloroanil
Scan Number : 2679
Retention Time (minutes): 33.584
Quant Ion : 231
Area (flag) : 1661 M
Concentration (ng/ul) : 0.7398
Integration start scan : 2669 Integration stop scan: 2685
Y at integration start : 0 Y at integration end: 0

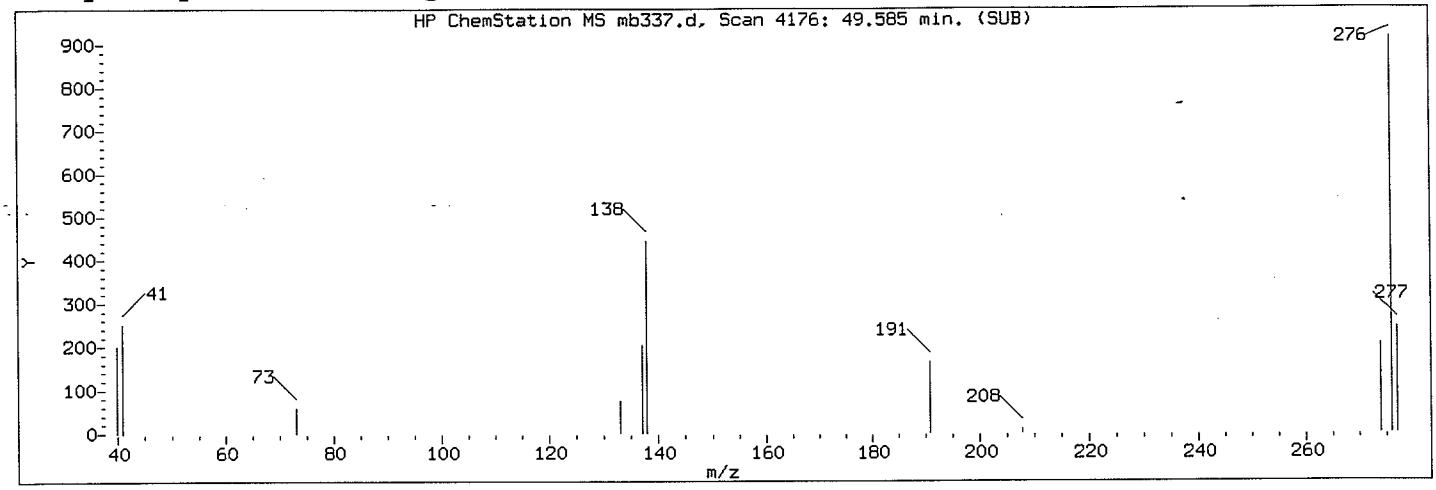
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: 2/15/04

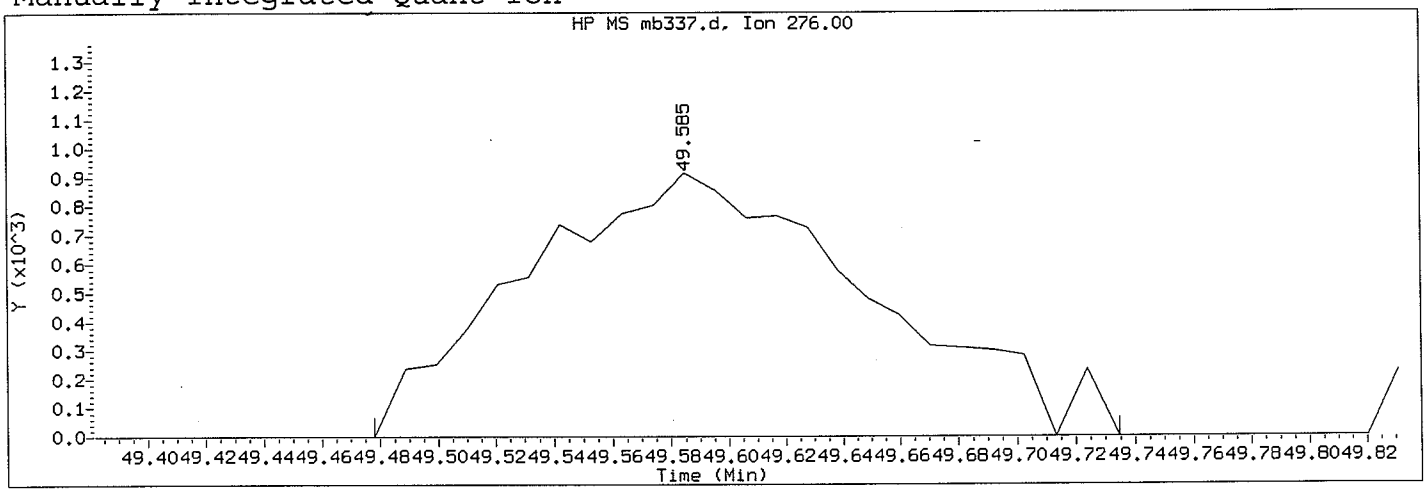
GC/MS audit/management approval: 2/16/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:03

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 4176
Retention Time (minutes): 49.585
Quant Ion : 276
Area (flag) : 7623 M
Concentration (ng/ul) : 0.8282
Integration start scan : 4165 Integration stop scan: 4189
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.719 | 0.735 | 51.120 | 50.0 | 2 |
| | N-Nitrosodimethylamine | 1.142 | 1.152 | 50.450 | 50.0 | 1 |
| | Pyridine | 1.853 | 1.760 | 47.490 | 50.0 | -5 |
| | N,N-dimethyl formamide | 1.098 | 1.157 | 52.670 | 50.0 | 5 |
| | 2-Picoline | 1.814 | 1.788 | 49.280 | 50.0 | -1 |
| | N-Nitrosomethylethylamine | 0.849 | 0.850 | 50.070 | 50.0 | 0 |
| | Methyl methanesulfonate | 0.751 | 0.768 | 51.120 | 50.0 | 2 |
| | N,N-dimethyl acetamide | 0.971 | 0.987 | 50.830 | 50.0 | 2 |
| | N-Nitrosodiethylamine | 0.826 | 0.797 | 48.240 | 50.0 | -4 |
| | Ethyl methanesulfonate | 0.907 | 0.921 | 50.740 | 50.0 | 1 |
| | Aniline | 2.389 | 2.337 | 48.900 | 50.0 | -2 |
| * | Phenol | 2.004 | 1.921 | 47.940 | 50.0 | -4* |
| | Pentachloroethane | 0.518 | 0.516 | 49.790 | 50.0 | 0 |
| | bis(2-Chloroethyl)ether | 1.634 | 1.494 | 45.700 | 50.0 | -9 |
| | 2-Chlorophenol | 1.556 | 1.561 | 50.150 | 50.0 | 0 |
| | 1,3-Dichlorobenzene | 1.609 | 1.625 | 50.500 | 50.0 | 1 |
| * | 1,4-Dichlorobenzene | 1.614 | 1.599 | 49.530 | 50.0 | -1* |
| | Benzyl alcohol | 1.021 | 0.999 | 48.950 | 50.0 | -2 |
| | 1,2-Dichlorobenzene | 1.532 | 1.528 | 49.870 | 50.0 | 0 |
| | 2-Methylphenol | 1.444 | 1.409 | 48.770 | 50.0 | -2 |
| | 2,2'-oxybis(1-Chloropropane) | 2.270 | 2.029 | 44.690 | 50.0 | -11 |
| | bis(2-Chloroisopropyl)ether | 2.270 | 2.029 | 44.690 | 50.0 | -11 |
| | N-Nitrosopyrrolidine | 0.812 | 0.765 | 47.120 | 50.0 | -6 |
| | Acetophenone | 1.952 | 1.826 | 46.770 | 50.0 | -6 |
| # | N-Nitroso-di-n-propylamine | 0.953 | 0.836 | 43.850 | 50.0 | -12# |
| | N-Nitrosomorpholine | 0.798 | 0.739 | 46.270 | 50.0 | -7 |
| | 4-Methylphenol | 1.477 | 1.416 | 47.940 | 50.0 | -4 |
| | o-Toluidine | 2.257 | 2.115 | 46.870 | 50.0 | -6 |
| | Hexachloroethane | 0.673 | 0.672 | 49.910 | 50.0 | 0 |
| | Nitrobenzene | 0.387 | 0.379 | 49.030 | 50.0 | -2 |
| | N-Nitrosopiperidine | 0.211 | 0.214 | 50.680 | 50.0 | 1 |
| | Isophorone | 0.761 | 0.750 | 49.270 | 50.0 | -1 |
| * | 2-Nitrophenol | 0.210 | 0.217 | 51.770 | 50.0 | 4* |
| | 2,4-Dimethylphenol | 0.392 | 0.393 | 50.160 | 50.0 | 0 |
| | O,O,O-triethylphosphorothioate | 0.140 | 0.140 | 49.780 | 50.0 | 0 |
| | bis(2-Chloroethoxy)methane | 0.468 | 0.452 | 48.330 | 50.0 | -3 |

#428
Leslie
2/24/04

FORM VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | Benzoic acid | 0.296 | 0.242 | 40.890 | 50.0 | -18 |
| * | 2,4-Dichlorophenol | 0.299 | 0.307 | 51.370 | 50.0 | 3* |
| | 1,2,4-Trichlorobenzene | 0.306 | 0.320 | 52.230 | 50.0 | 4 |
| | Naphthalene | 1.053 | 1.062 | 50.400 | 50.0 | 1 |
| | (2-Bromoethyl)benzene | 0.060 | 0.062 | 51.660 | 50.0 | 3 |
| | 4-Chloroaniline | 0.477 | 0.470 | 49.340 | 50.0 | -1 |
| | 2,6-Dichlorophenol | 0.278 | 0.280 | 50.310 | 50.0 | 1 |
| | Hexachloropropene | 0.152 | 0.163 | 53.430 | 50.0 | 7 |
| * | Hexachlorobutadiene | 0.140 | 0.146 | 51.940 | 50.0 | 4* |
| | Caprolactam | 0.134 | 0.139 | 51.790 | 50.0 | 4 |
| | N-Nitrosodi-n-butylamine | 0.290 | 0.306 | 54.260 | 50.0 | 9 |
| * | 4-Chloro-3-methylphenol | 0.325 | 0.337 | 51.790 | 50.0 | 4* |
| | Safrole | 0.248 | 0.252 | 50.920 | 50.0 | 2 |
| | 2-Methylnaphthalene | 0.647 | 0.646 | 49.880 | 50.0 | 0 |
| | 1-Methylnaphthalene | 0.605 | 0.610 | 50.420 | 50.0 | 1 |
| # | Hexachlorocyclopentadiene | 0.276 | 0.284 | 51.440 | 50.0 | 3# |
| | 1,2,4,5-Tetrachlorobenzene | 0.568 | 0.590 | 51.920 | 50.0 | 4 |
| | cis-Isosafrole | 0.513 | 0.465 | 4.990 | 5.5 | -9 |
| * | 2,4,6-Trichlorophenol | 0.407 | 0.427 | 52.420 | 50.0 | 5* |
| | 2,4,5-Trichlorophenol | 0.448 | 0.461 | 51.400 | 50.0 | 3 |
| | trans-Isosafrole | 0.659 | 0.676 | 45.620 | 44.5 | 3 |
| | Isosafrole | 0.587 | 0.601 | 51.260 | 50.0 | 3 |
| | Biphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| | Diphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| | 1,1'-Biphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| | 2-Chloronaphthalene | 1.265 | 1.264 | 49.930 | 50.0 | 0 |
| | Diphenyl ether | 0.818 | 0.816 | 49.890 | 50.0 | 0 |
| | 2-Nitroaniline | 0.546 | 0.568 | 51.980 | 50.0 | 4 |
| | 1,4-Naphthoquinone | 0.410 | 0.462 | 56.400 | 50.0 | 13 |
| | 1,4-Dinitrobenzene | 0.257 | 0.288 | 56.060 | 50.0 | 12 |
| | Dimethylphthalate | 1.487 | 1.536 | 51.650 | 50.0 | 3 |
| | 1,3-Dinitrobenzene | 0.292 | 0.314 | 53.660 | 50.0 | 7 |
| | 2,6-Dinitrotoluene | 0.386 | 0.406 | 52.500 | 50.0 | 5 |
| | Acenaphthylene | 1.963 | 1.988 | 50.630 | 50.0 | 1 |
| | 3-Nitroaniline | 0.475 | 0.500 | 52.710 | 50.0 | 5 |
| * | Acenaphthene | 1.173 | 1.186 | 50.530 | 50.0 | 1* |

8421

7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| # | 2,4-Dinitrophenol | 0.206 | 0.203 | 47.090 | 50.0 | -6# |
| | Pentachlorobenzene | 0.457 | 0.474 | 51.870 | 50.0 | 4 |
| # | 4-Nitrophenol | 0.204 | 0.214 | 52.660 | 50.0 | 5# |
| | Dibenzofuran | 1.706 | 1.702 | 49.900 | 50.0 | 0 |
| | 2,4-Dinitrotoluene | 0.472 | 0.499 | 52.790 | 50.0 | 6 |
| | 1-Naphthylamine | 1.168 | 1.093 | 46.800 | 50.0 | -6 |
| | 2,3,4,6-Tetrachlorophenol | 0.306 | 0.307 | 50.120 | 50.0 | 0 |
| | 2-Naphthylamine | 1.211 | 1.309 | 54.020 | 50.0 | 8 |
| | Diethylphthalate | 1.530 | 1.538 | 50.250 | 50.0 | 1 |
| | Thionazin | 0.278 | 0.272 | 48.770 | 50.0 | -2 |
| | Fluorene | 1.293 | 1.234 | 47.710 | 50.0 | -5 |
| | 4-Chlorophenyl-phenylether | 0.581 | 0.575 | 49.420 | 50.0 | -1 |
| | 5-Nitro-o-toluidine | 0.469 | 0.450 | 48.000 | 50.0 | -4 |
| | 4-Nitroaniline | 0.463 | 0.468 | 50.480 | 50.0 | 1 |
| | 4,6-Dinitro-2-methylphenol | 0.167 | 0.188 | 56.420 | 50.0 | 13 |
| | 1-Nitronaphthalene | 0.190 | 0.198 | 52.140 | 50.0 | 4 |
| * | N-Nitrosodiphenylamine (1) | 0.641 | 0.640 | 49.980 | 50.0 | 0* |
| | 1,2-Diphenylhydrazine | 1.084 | 1.038 | 47.890 | 50.0 | -4 |
| | Tetraethyldithiopyrophosphate | 0.195 | 0.201 | 51.610 | 50.0 | 3 |
| | 1,3,5-Trinitrobenzene | 0.109 | 0.128 | 52.700 | 50.0 | 5 |
| | Diallate (peak 1) | 0.502 | 0.493 | 36.830 | 37.5 | -2 |
| | Phorate | 0.576 | 0.495 | 41.890 | 50.0 | -16 |
| | Phenacetin | 0.554 | 0.556 | 50.170 | 50.0 | 0 |
| | 4-Bromophenyl-phenylether | 0.217 | 0.229 | 52.900 | 50.0 | 6 |
| | Diallate (peak 2) | 0.477 | 0.456 | 11.970 | 12.5 | -4 |
| | Hexachlorobenzene | 0.239 | 0.257 | 53.700 | 50.0 | 7 |
| | Dimethoate | 0.391 | 0.368 | 51.640 | 50.0 | 3 |
| | Diallate TRANS/CIS | 0.495 | 0.484 | 48.800 | 50.0 | -2 |
| * | Pentachlorophenol | 0.167 | 0.162 | 48.490 | 50.0 | -3* |
| | Pentachloronitrobenzene | 0.088 | 0.095 | 54.050 | 50.0 | 8 |
| | 4-Aminobiphenyl | 0.632 | 0.655 | 51.830 | 50.0 | 4 |
| | Pronamide | 0.400 | 0.415 | 51.910 | 50.0 | 4 |
| | Dinoseb | 0.223 | 0.248 | 49.540 | 50.0 | -1 |
| | Phenanthrene | 1.165 | 1.171 | 50.260 | 50.0 | 1 |
| | Anthracene | 1.195 | 1.210 | 50.600 | 50.0 | 1 |
| | Carbazole | 1.170 | 1.192 | 50.930 | 50.0 | 2 |

8422

(1) Cannot be Separated from Diphenylamine

7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

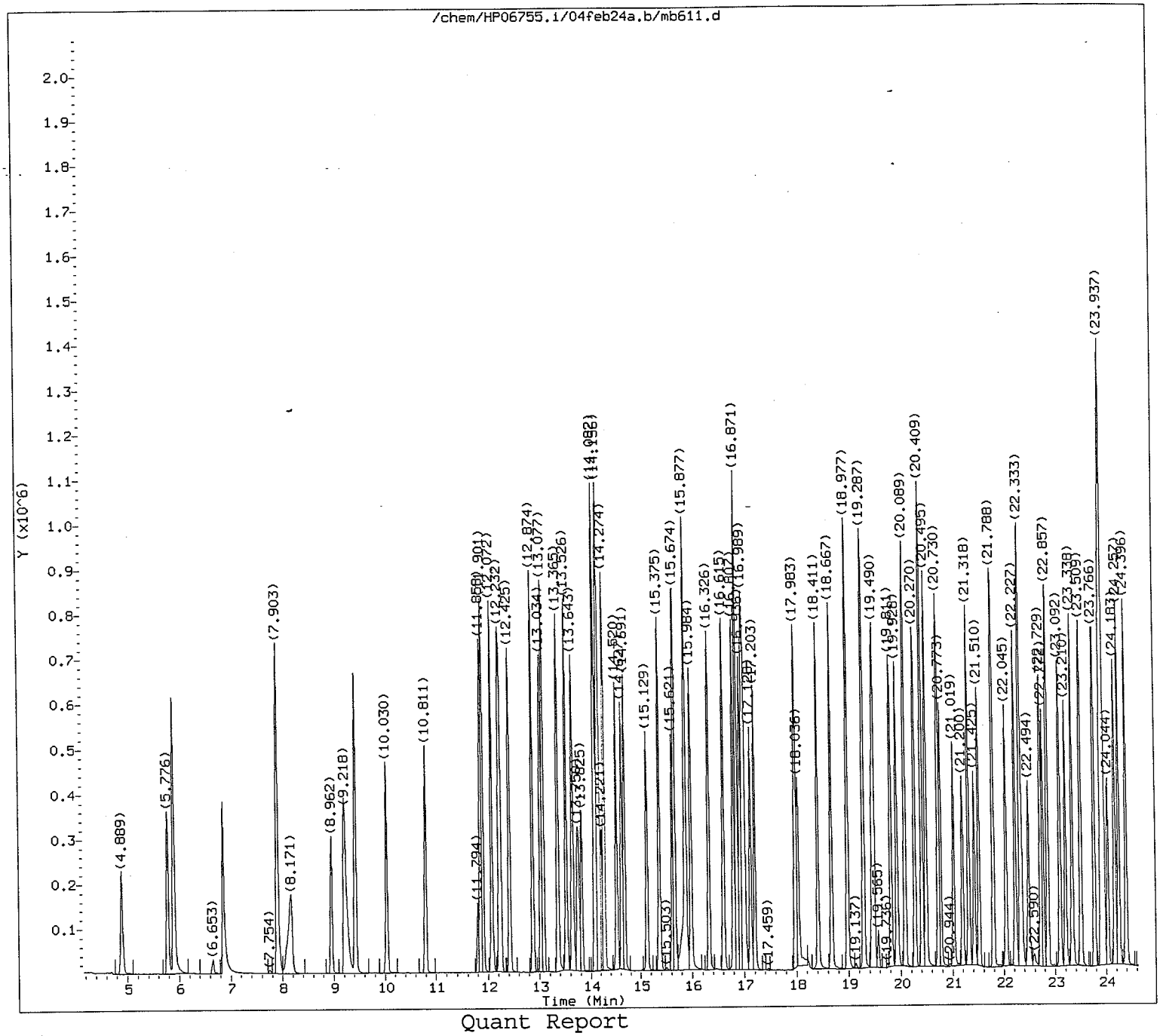
Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | | | ACTUAL | TRUE | % |
|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT |
| Methyl parathion | 0.394 | 0.424 | 53.790 | 50.0 | 8 |
| Di-n-butylphthalate | 1.750 | 1.772 | 50.620 | 50.0 | 1 |
| Parathion | 0.230 | 0.246 | 53.540 | 50.0 | 7 |
| 4-Nitroquinoline-1-oxide | 0.125 | 0.077 | 28.290 | 50.0 | -43 |
| Methapyrilene | 0.451 | 0.433 | 51.710 | 50.0 | 3 |
| Isodrin | 0.137 | 0.134 | 48.780 | 50.0 | -2 |
| * Fluoranthene | 1.175 | 1.216 | 51.740 | 50.0 | 3* |
| Benzidine | 0.732 | 0.732 | 150.180 | 150.0 | 0 |
| Pyrene | 1.483 | 1.482 | 49.980 | 50.0 | 0 |
| p-Dimethylaminoazobenzene | 0.304 | 0.305 | 50.250 | 50.0 | 0 |
| Chlorobenzilate | 0.585 | 0.592 | 50.540 | 50.0 | 1 |
| 3,3'-Dimethylbenzidine | 0.690 | 0.776 | 53.200 | 50.0 | 6 |
| Butylbenzylphthalate | 1.006 | 1.010 | 50.230 | 50.0 | 0 |
| 2-Acetylaminofluorene | 0.691 | 0.749 | 54.190 | 50.0 | 8 |
| 3,3'-Dichlorobenzidine | 0.512 | 0.544 | 53.120 | 50.0 | 6 |
| 4,4'-Methylenebis(2-Chloroanil | 0.243 | 0.255 | 52.450 | 50.0 | 5 |
| Benzo(a)anthracene | 1.278 | 1.294 | 50.650 | 50.0 | 1 |
| Chrysene | 1.170 | 1.168 | 49.940 | 50.0 | 0 |
| bis(2-Ethylhexyl)phthalate | 1.381 | 1.408 | 50.980 | 50.0 | 2 |
| * Di-n-octylphthalate | 2.557 | 2.523 | 49.340 | 50.0 | -1* |
| 7,12-Dimethylbenz[a]anthracene | 0.639 | 0.653 | 51.030 | 50.0 | 2 |
| Benzo(b)fluoranthene | 1.410 | 1.397 | 49.520 | 50.0 | -1 |
| Benzo(k)fluoranthene | 1.314 | 1.298 | 49.380 | 50.0 | -1 |
| * Benzo(a)pyrene | 1.257 | 1.289 | 51.280 | 50.0 | 3* |
| 3-Methylcholanthrene | 0.695 | 0.690 | 49.600 | 50.0 | -1 |
| Indeno(1,2,3-cd)pyrene | 1.194 | 1.276 | 53.460 | 50.0 | 7 |
| Dibenz(a,h)anthracene | 1.081 | 1.130 | 52.270 | 50.0 | 5 |
| Benzo(g,h,i)perylene | 1.213 | 1.283 | 52.900 | 50.0 | 6 |
| 2-Fluorophenol | 1.673 | 1.676 | 50.100 | 50.0 | 0 |
| Phenol-d5 | 2.054 | 2.032 | 49.480 | 50.0 | -1 |
| Phenol-d6 | 2.054 | 2.032 | 49.480 | 50.0 | -1 |
| Nitrobenzene-d5 | 0.391 | 0.386 | 49.390 | 50.0 | -1 |
| 2-Fluorobiphenyl | 1.337 | 1.366 | 51.060 | 50.0 | 2 |
| 2,4,6-Tribromophenol | 0.182 | 0.194 | 53.440 | 50.0 | 7 |
| Terphenyl-d14 | 0.868 | 0.860 | 49.520 | 50.0 | -1 |




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d
Injection date and time: 24-FEB-2004 20:48

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: all1

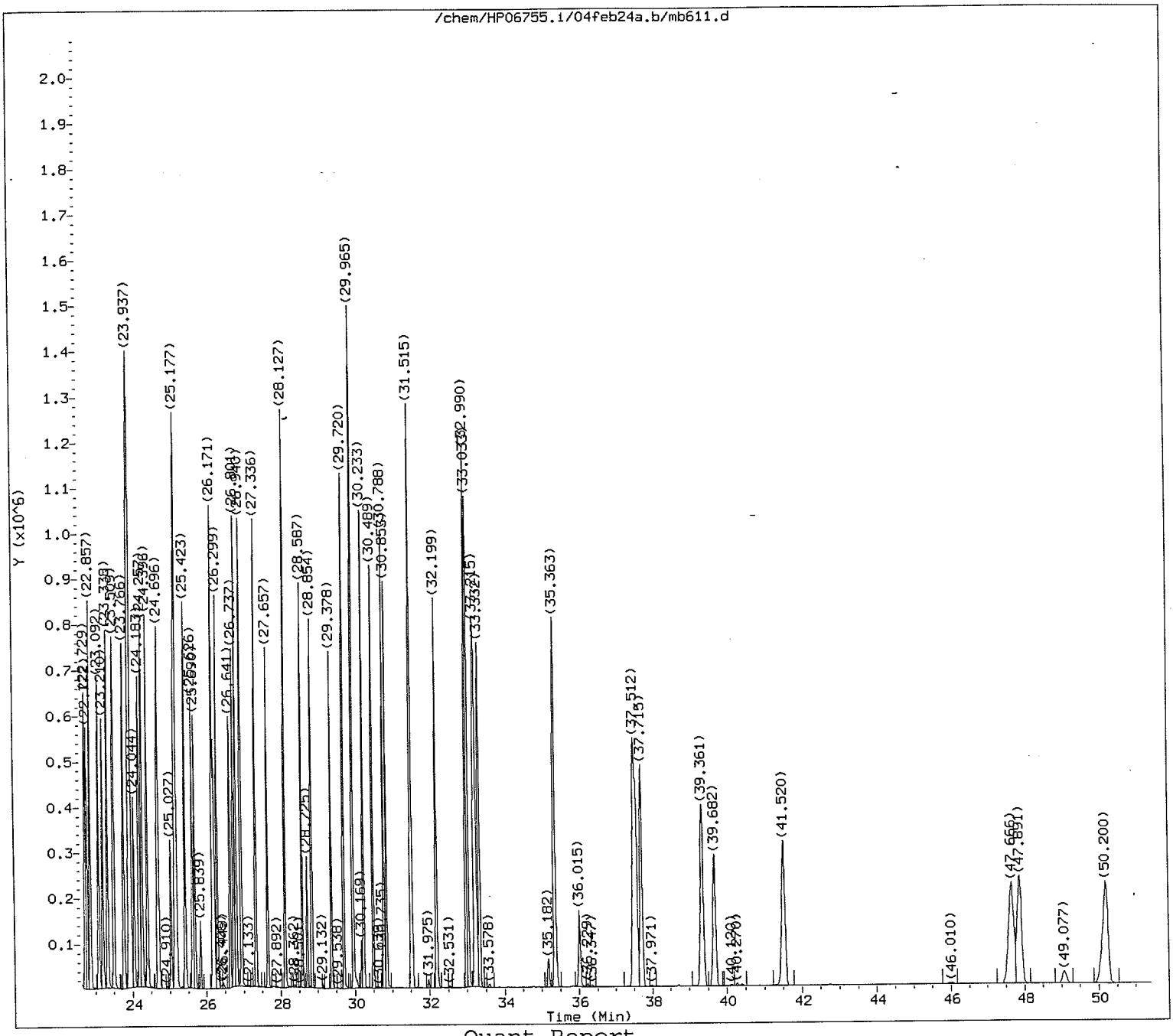
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050

Lab Sample ID: STD0404

9434

Wesling 2/24/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d
Injection date and time: 24-FEB-2004 20:48

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: all1

Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050

Lab Sample ID: STD0404

Leeann 2/24/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | | Conc. (on column) |
|---|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.889 | 88 | 238774 | | 51.125 |
| 2) | N-Nitrosodimethylamine | (1) | 5.776 | 74 | 374307 | | 50.453 |
| 3) | Pyridine | (1) | 5.883 | 79 | 571706 | | 47.492 |
| 4) | N,N-dimethyl formamide | (1) | 6.856 | 73 | 375811 | | 52.674 |
| 5) | 2-Picoline | (1) | 7.903 | 93 | 580656 | | 49.280 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.171 | 88 | 276014 | | 50.072 |
| 7) | Methyl methanesulfonate | (1) | 8.962 | 80 | 249493 | | 51.123 |
| 8) | N,N-dimethyl acetamide | (1) | 9.207 | 87 | 320596 | | 50.830 |
| 10) | N-Nitrosodiethylamine | (1) | 10.030 | 102 | 258785 | | 48.242 |
| 11) | Ethyl methanesulfonate | (1) | 10.811 | 109 | 299022 | | 50.737 |
| 13) | Aniline | (1) | 12.072 | 93 | 759002 | | 48.896 |
| 16) | Phenol | (1) | 11.901 | 94 | 624003 | | 47.938 |
| 17) | Pentachloroethane | (1) | 12.243 | 167 | 167669 | | 49.786 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.222 | 93 | 485208 | | 45.698 |
| 19) | 2-Chlorophenol | (1) | 12.425 | 128 | 507042 | | 50.149 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.874 | 146 | 527881 | | 50.497 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.034 | 152 | 259852 | | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.087 | 146 | 519405 | | 49.533 |
| 24) | Benzyl alcohol | (1) | 13.365 | 108 | 324550 | | 48.946 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.526 | 146 | 496299 | | 49.872 |
| 26) | 2-Methylphenol | (1) | 13.643 | 108 | 457635 | | 48.768 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.750 | 45 | 658904 | | 44.686 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.750 | 45 | 658904 | | 44.686 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.103 | 100 | 248453 | | 47.115 |
| 30) | Acetophenone | (1) | 14.167 | 105 | 592994 | | 46.767 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.146 | 70 | 271438 | | 43.855 |
| 32) | N-Nitrosomorpholine | (1) | 14.221 | 56 | 239939 | A | 46.275 |
| 33) | 4-Methylphenol | (1) | 14.082 | 108 | 459962 | | 47.943 |
| 34) | o-Toluidine | (1) | 14.274 | 106 | 687027 | | 46.867 |
| 37) | Hexachloroethane | (1) | 14.520 | 117 | 218257 | | 49.911 |
| 39) | Nitrobenzene | (2) | 14.691 | 77 | 433365 | | 49.033 |
| 40) | N-Nitrosopiperidine | (2) | 15.129 | 114 | 243972 | | 50.680 |
| 41) | Isophorone | (2) | 15.375 | 82 | 856877 | | 49.265 |
| 42) | 2-Nitrophenol | (2) | 15.621 | 139 | 248030 | | 51.768 |
| 44) | 2,4-Dimethylphenol | (2) | 15.674 | 107 | 449404 | | 50.163 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 15.877 | 198 | 159511 | | 49.778 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.984 | 93 | 516915 | | 48.334 |
| 47) | Benzoic acid | (2) | 15.877 | 105 | 276409 | | 40.888 |
| 49) | 2,4-Dichlorophenol | (2) | 16.326 | 162 | 351060 | | 51.372 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.615 | 180 | 365063 | | 52.235 |
| 52) | Naphthalene-d8 | (2) | 16.807 | 136 | 914033 | | 40.000 |
| 53) | Naphthalene | (2) | 16.871 | 128 | 1212918 | | 50.400 |
| 54) | (2-Bromoethyl)benzene | (2) | 16.936 | 184 | 71368 | | 51.663 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 16.989 | 127 | 537409 | 49.342 |
| 56) | 2,6-Dichlorophenol | (2) | 17.021 | 162 | 319611 | 50.307 |
| 57) | Hexachloropropene | (2) | 17.128 | 213 | 186082 | 53.427 |
| 59) | Hexachlorobutadiene | (2) | 17.213 | 225 | 166738 | 51.942 |
| 62) | Caprolactam | (2) | 18.036 | 113 | 158927 | 51.789 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 17.983 | 84 | 349711 | 54.262 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.411 | 107 | 384817 | 51.794 |
| 68) | Safrole | (2) | 18.667 | 162 | 288214 | 50.919 |
| 69) | 2-Methylnaphthalene | (2) | 18.977 | 142 | 737846 | 49.884 |
| 70) | 1-Methylnaphthalene | (2) | 19.287 | 142 | 697190 | 50.424 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.447 | 237 | 144887 | 51.442 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.490 | 216 | 301274 | 51.920 |
| 73) | cis-Isosafrole | (3) | 19.565 | 162 | 26116 | 4.987 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.811 | 196 | 217989 | 52.418 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.928 | 196 | 235146 | 51.402 |
| 78) | trans-Isosafrole | (3) | 20.270 | 162 | 306917 | 45.622 |
| 79) | Isosafrole | (3) | 20.270 | 162 | 306917 | 51.261 |
| 80) | Biphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 81) | Diphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 82) | 1,1'-Biphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 83) | 2-Chloronaphthalene | (3) | 20.495 | 162 | 645002 | 49.934 |
| 86) | Diphenyl ether | (3) | 20.730 | 170 | 416554 | 49.894 |
| 87) | 2-Nitroaniline | (3) | 20.784 | 138 | 289865 | 51.983 |
| 88) | 1,4-Naphthoquinone | (3) | 21.029 | 158 | 235956 | 56.403 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.200 | 168 | 147093 | 56.064 |
| 90) | Dimethylphthalate | (3) | 21.318 | 163 | 783798 | 51.649 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.425 | 168 | 160180 | 53.662 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.521 | 165 | 207090 | 52.499 |
| 93) | Acenaphthylene | (3) | 21.788 | 152 | 1014461 | 50.626 |
| 95) | 3-Nitroaniline | (3) | 22.045 | 138 | 255321 | 52.713 |
| 96) | Acenaphthene-d10 | (3) | 22.227 | 164 | 408312 | 40.000 |
| 97) | Acenaphthene | (3) | 22.333 | 153 | 605209 | 50.528 |
| 98) | 2,4-Dinitrophenol | (3) | 22.366 | 184 | 103848 | 47.087 |
| 99) | Pentachlorobenzene | (3) | 22.729 | 250 | 241917 | 51.874 |
| 101) | 4-Nitrophenol | (3) | 22.494 | 109 | 109441 | 52.660 |
| 102) | Dibenzofuran | (3) | 22.857 | 168 | 868766 | 49.901 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.772 | 165 | 254479 | 52.793 |
| 104) | 1-Naphthylamine | (3) | 23.092 | 143 | 557799 | 46.804 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.210 | 232 | 156752 | 50.121 |
| 106) | 2-Naphthylamine | (3) | 23.338 | 143 | 667884 | 54.021 |
| 107) | Diethylphthalate | (3) | 23.509 | 149 | 785070 | 50.253 |
| 108) | Thionazin | (3) | 23.766 | 107 | 138626 | 48.770 |
| 109) | Fluorene | (3) | 23.937 | 166 | 629696 | 47.705 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d
Injection date and time: 24-FEB-2004 20:48
Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10
Sublist used: all1
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.905 | 204 | 293290 | 49.422 |
| 111) | 5-Nitro-o-toluidine | (3) | 23.948 | 152 | 229740 | 48.004 |
| 112) | 4-Nitroaniline | (3) | 23.969 | 138 | 238728 | 50.483 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.044 | 198 | 139517 | 56.416 |
| 114) | 1-Nitronaphthalene | (4) | 24.183 | 173 | 146775 | 52.141 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.257 | 169 | 473980 | 49.980 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.396 | 77 | 768354 | 47.889 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 24.696 | 97 | 148809 | 51.609 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.027 | 213 | 95070 | 52.695 |
| 120) | Diallate (peak 1) | (4) | 25.134 | 86 | 273608 | 36.833 |
| 121) | Phorate | (4) | 25.177 | 75 | 366364 | 41.885 |
| 122) | Phenacetin | (4) | 25.187 | 108 | 411602 | 50.167 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.423 | 248 | 169619 | 52.895 |
| 124) | Diallate (peak 2) | (4) | 25.423 | 86 | 84476 | 11.968 |
| 125) | Hexachlorobenzene | (4) | 25.626 | 284 | 190249 | 53.705 |
| 126) | Dimethoate | (4) | 25.690 | 87 | 272236 | 51.642 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 358084 | 48.801 |
| 129) | Pentachlorophenol | (4) | 26.171 | 266 | 120119 | 48.487 |
| 130) | Pentachloronitrobenzene | (4) | 26.214 | 237 | 70689 | 54.050 |
| 131) | 4-Aminobiphenyl | (4) | 26.171 | 169 | 484559 | 51.829 |
| 132) | Pronamide | (4) | 26.299 | 173 | 307139 | 51.913 |
| 133) | Phenanthrene-d10 | (4) | 26.737 | 188 | 592211 | 40.000 |
| 134) | Dinoseb | (4) | 26.652 | 211 | 183605 | 49.536 |
| 135) | Phenanthrene | (4) | 26.801 | 178 | 866538 | 50.255 |
| 136) | Anthracene | (4) | 26.940 | 178 | 895658 | 50.604 |
| 138) | Carbazole | (4) | 27.336 | 167 | 882095 | 50.933 |
| 139) | Methyl parathion | (4) | 27.657 | 109 | 313679 | 53.790 |
| 140) | Di-n-butylphthalate | (4) | 28.127 | 149 | 1311420 | 50.618 |
| 141) | Parathion | (4) | 28.587 | 109 | 181989 | 53.537 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 28.725 | 190 | 57203 | 28.286 |
| 143) | Methapyrilene | (4) | 28.854 | 97 | 320338 | 51.715 |
| 144) | Isodrin | (4) | 29.378 | 193 | 98829 | 48.782 |
| 145) | Fluoranthene | (4) | 29.720 | 202 | 899932 | 51.745 |
| 150) | Benzidine | (5) | 29.965 | 184 | 1289661 | 150.183 |
| 152) | Pyrene | (5) | 30.243 | 202 | 869875 | 49.975 |
| 156) | p-Dimethylaminoazobenzene | (5) | 30.788 | 225 | 179174 | 50.250 |
| 157) | Chlorobenzilate | (5) | 30.853 | 139 | 347188 | 50.539 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.537 | 212 | 455200 | 53.200 |
| 159) | Butylbenzylphthalate | (5) | 31.515 | 149 | 593009 | 50.230 |
| 160) | 2-Acetylaminofluorene | (5) | 32.199 | 181 | 439408 | 54.193 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.044 | 252 | 319295 | 53.115 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.033 | 231 | 149691 | 52.450 |
| 164) | Benzo(a)anthracene | (5) | 33.215 | 228 | 759644 | 50.649 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

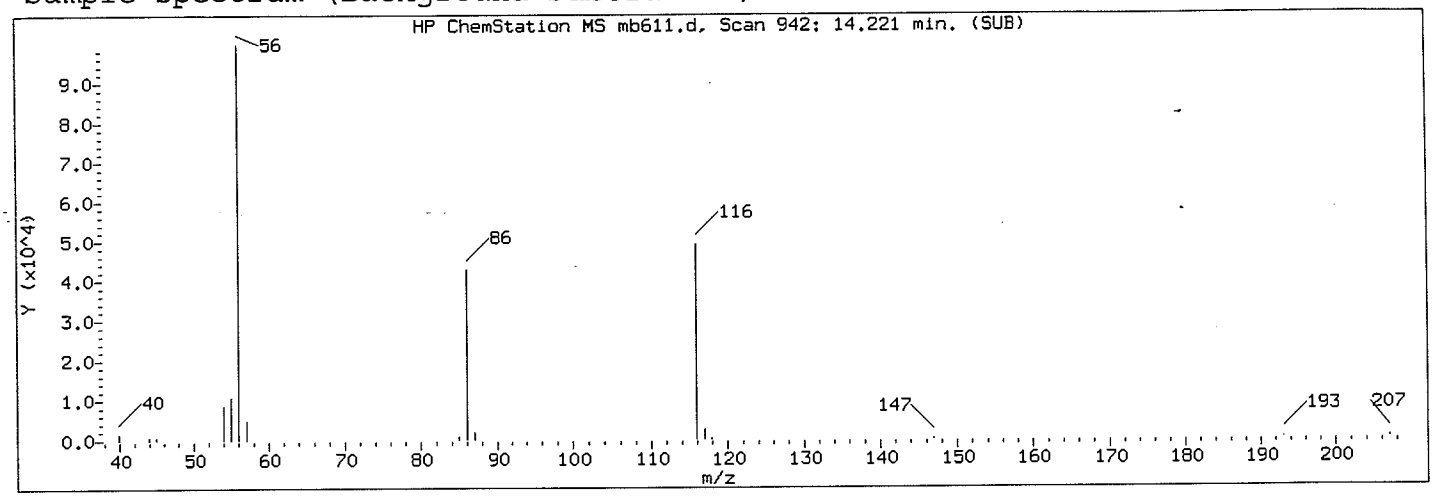
Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

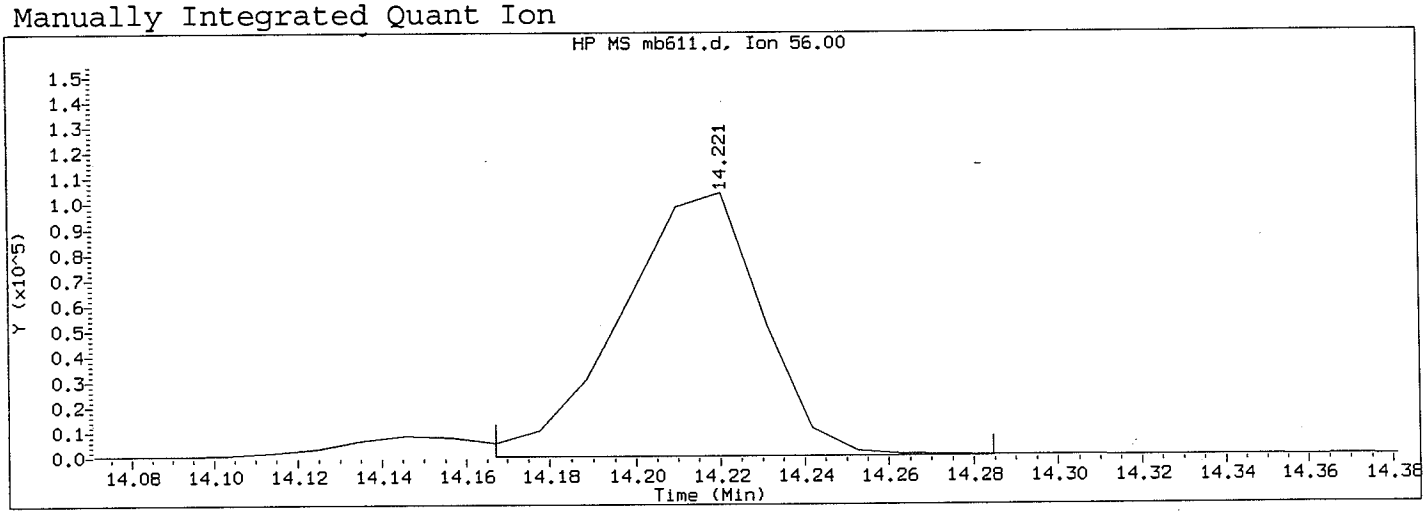
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.247 | 240 | 469554 | 40.000 |
| 166) | Chrysene | (5) | 33.332 | 228 | 685682 | 49.939 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 32.990 | 149 | 826372 | 50.982 |
| 168) | Di-n-octylphthalate | (6) | 35.363 | 149 | 1446773 | 49.345 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.501 | 256 | 374193 | 51.032 |
| 170) | Benzo(b)fluoranthene | (6) | 37.576 | 252 | 800822 | 49.521 |
| 171) | Benzo(k)fluoranthene | (6) | 37.715 | 252 | 744305 | 49.381 |
| 172) | Benzo(a)pyrene | (6) | 39.372 | 252 | 739081 | 51.279 |
| 173) | Perylene-d12 | (6) | 39.682 | 264 | 458698 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 41.531 | 268 | 395423 | 49.603 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 47.666 | 276 | 731827M | 53.465 |
| 176) | Dibenz(a,h)anthracene | (6) | 47.891 | 278 | 647980 | 52.267 |
| 177) | Benzo(g,h,i)perylene | (6) | 50.200 | 276 | 735756 | 52.897 |
| 9) | 2-Fluorophenol | (1) | 9.432 | 112 | 544481 | 50.105 |
| 14) | Phenol-d5 | (1) | 11.858 | 99 | 660164 | 49.484 |
| 15) | Phenol-d6 | (1) | 11.858 | 99 | 660164 | 49.484 |
| 38) | Nitrobenzene-d5 | (2) | 14.627 | 82 | 441428 | 49.389 |
| 77) | 2-Fluorobiphenyl | (3) | 20.089 | 172 | 697095 | 51.060 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 99072 | 53.445 |
| 154) | Terphenyl-d14 | (5) | 30.489 | 244 | 504827 | 49.522 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

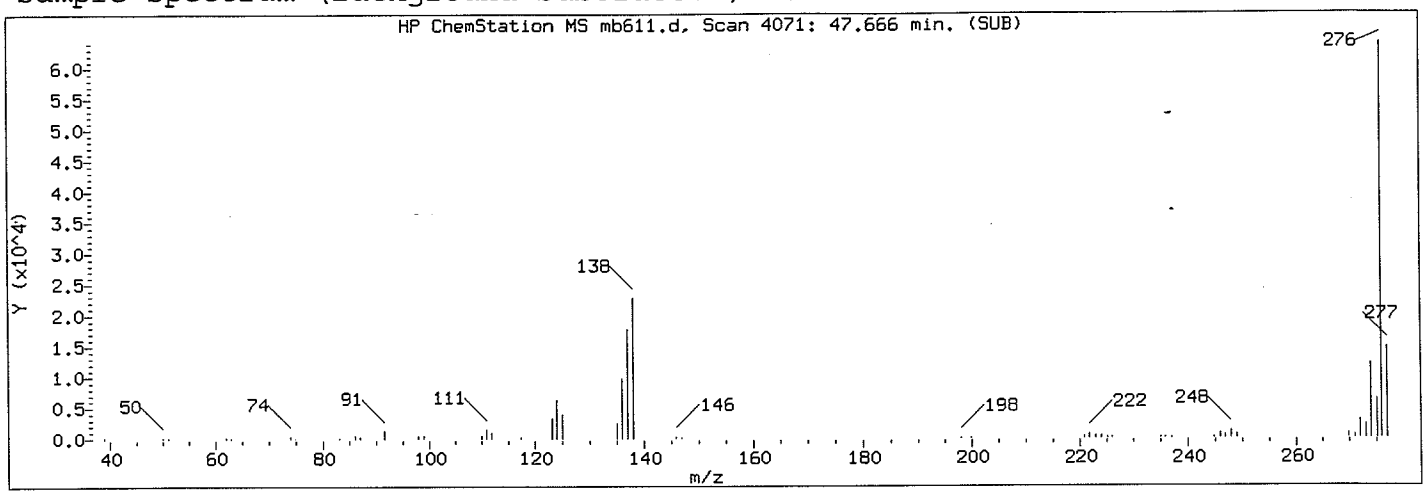
Compound Number : 32
Compound Name : N-Nitrosomorpholine
Scan Number : 942
Retention Time (minutes): 14.221
Quant Ion : 56
Area (flag) : 239939A
Concentration (ng/ul) : 46.2747
Integration start scan : 936  Integration stop scan: 947
Y at integration start : 298  Y at integration end: 298

Reason for manual integration (circle one): missed peak improper integration

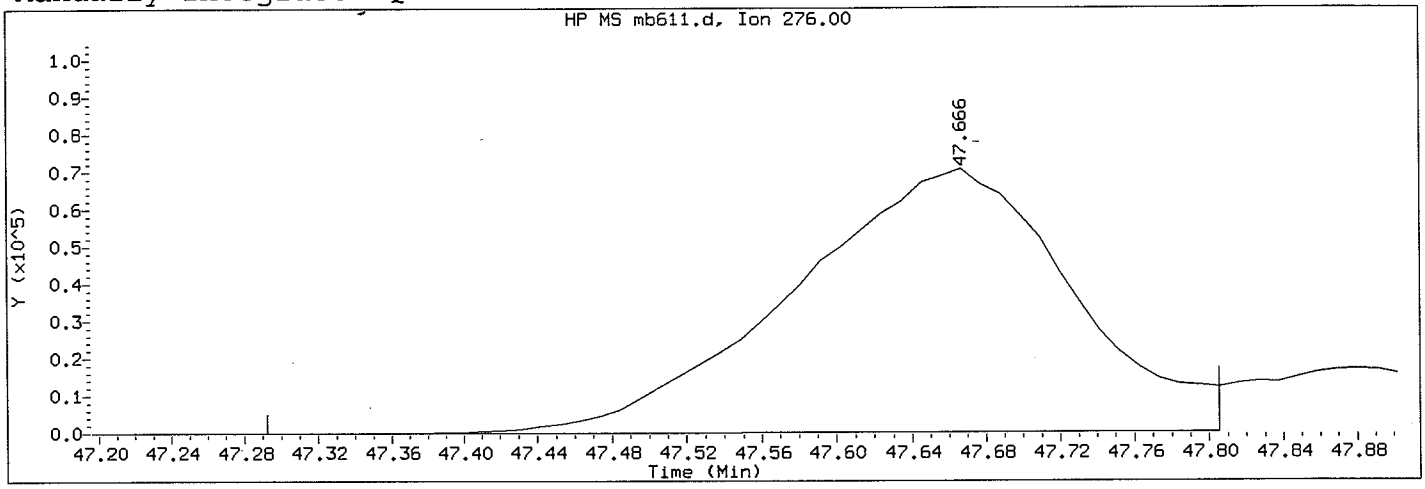
Analyst responsible for change: Jen Spotts 2/24/04

GC/MS audit/management approval: mg 1758 2/25/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 4071
Retention Time (minutes): 47.666
Quant Ion : 276
Area (flag) : 731827 M
Concentration (ng/ul) : 53.4645
Integration start scan : 4035 Integration stop scan: 4083
Y at integration start : 0 Y at integration end: 145

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jen Spitz 2/24/04

GC/MS audit/management approval: mg758 2/25/04

Manual Integration Report for data file /chem/HP06755.i/04feb24a.b/mb611.d, generated on 02/24/2004 at 22:10

# Raw QC Data

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

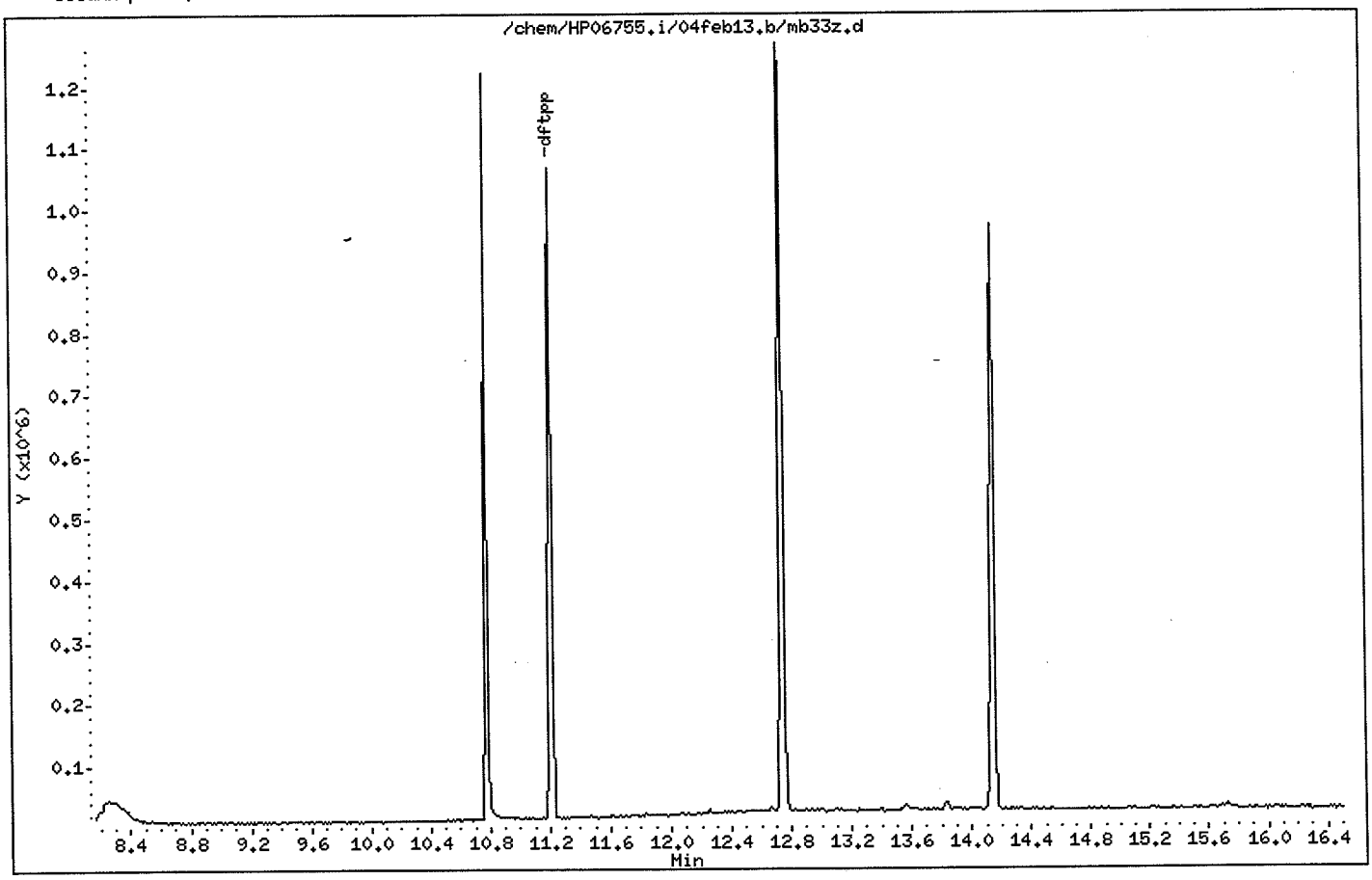
Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

Instrument: HP06755.i

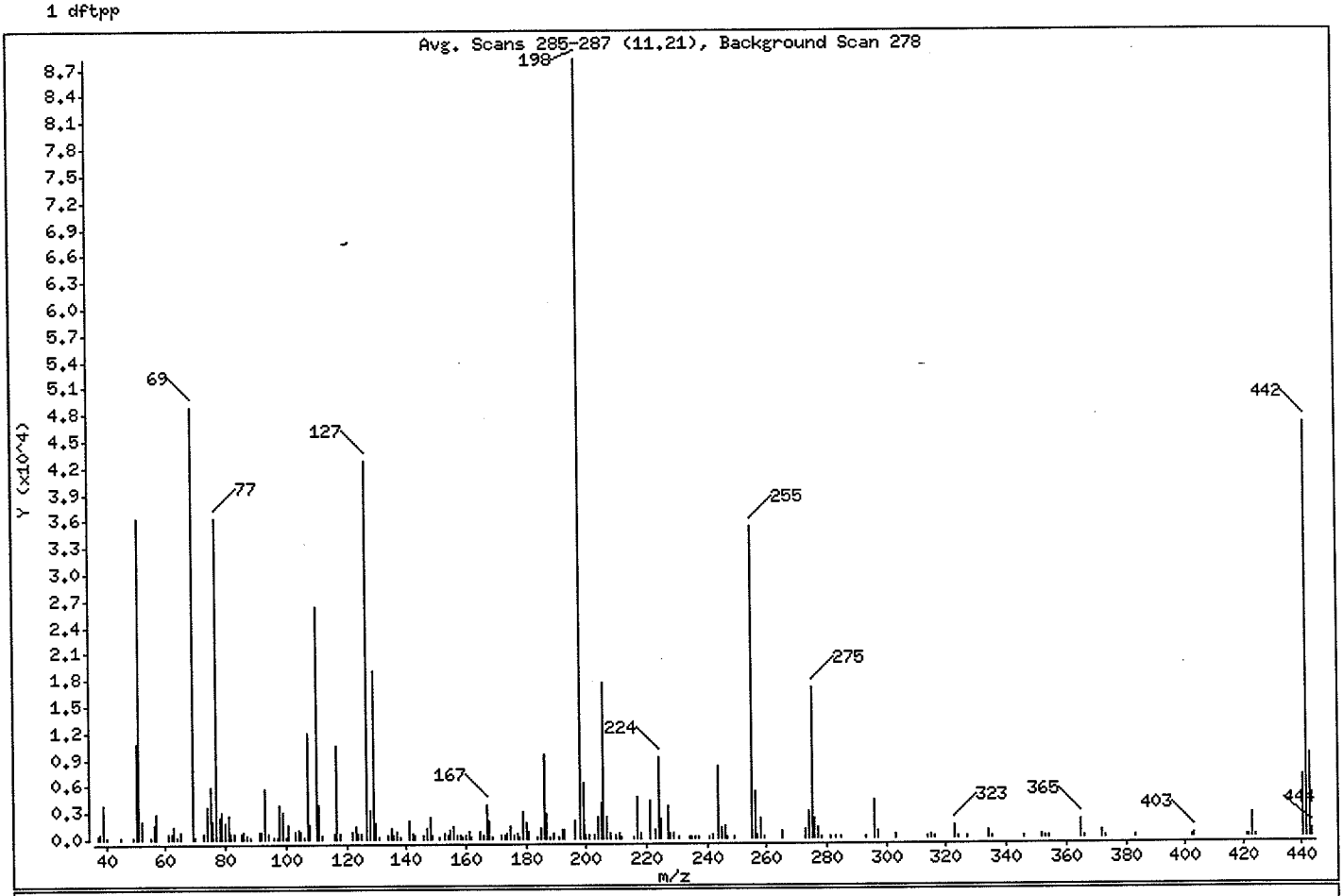
Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 41.10 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 55.52 |
| 70 | Less than 2.00% of mass 69 | 0.12 ( 0.22) |
| 127 | 40.00 - 60.00% of mass 198 | 48.49 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 7.09 |
| 275 | 10.00 - 30.00% of mass 198 | 19.22 |
| 365 | Greater than 1.00% of mass 198 | 2.37 |
| 441 | Present, but less than mass 443 | 7.76 |
| 442 | 40.00 - 99.99% of mass 198 | 53.19 |
| 443 | 17.00 - 23.00% of mass 442 | 10.51 ( 19.75) |

8434

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274 Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5 Column diameter: 0.25

Data File: mb33z.d

Spectrum: Avg. Scans 285-287 (11.21), Background Scan 278

Location of Maximum: 198.00

Number of points: 194

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 312 | 108.00 | 1717 | 177.00 | 701 | 249.00 | 161 |
| 38.00 | 610 | 110.00 | 26336 | 178.00 | 136 | 255.00 | 35248 |
| 39.00 | 3923 | 111.00 | 3751 | 179.00 | 3006 | 256.00 | 5316 |
| 40.00 | 298 | 112.00 | 403 | 180.00 | 1916 | 257.00 | 381 |
| 45.00 | 105 | 116.00 | 691 | 181.00 | 735 | 258.00 | 2231 |
| 49.00 | 204 | 117.00 | 10498 | 184.00 | 137 | 259.00 | 242 |
| 50.00 | 10685 | 118.00 | 613 | 185.00 | 1220 | 265.00 | 862 |
| 51.00 | 36224 | 122.00 | 835 | 186.00 | 9600 | 273.00 | 1111 |
| 52.00 | 2062 | 123.00 | 1406 | 187.00 | 2739 | 274.00 | 3092 |
| 55.00 | 162 | 124.00 | 564 | 188.00 | 119 | 275.00 | 16944 |
| 56.00 | 1520 | 125.00 | 516 | 189.00 | 687 | 276.00 | 2216 |
| 57.00 | 2810 | 127.00 | 42744 | 191.00 | 302 | 277.00 | 1218 |
| 61.00 | 534 | 128.00 | 3291 | 192.00 | 997 | 278.00 | 159 |
| 62.00 | 522 | 129.00 | 19000 | 193.00 | 1088 | 281.00 | 228 |
| 63.00 | 1372 | 130.00 | 1817 | 196.00 | 2036 | 283.00 | 102 |
| 64.00 | 145 | 131.00 | 294 | 198.00 | 88152 | 285.00 | 145 |
| 65.00 | 722 | 134.00 | 482 | 199.00 | 6253 | 293.00 | 239 |
| 69.00 | 48936 | 135.00 | 1233 | 200.00 | 350 | 296.00 | 4216 |
| 70.00 | 110 | 136.00 | 495 | 201.00 | 381 | 297.00 | 733 |
| 73.00 | 697 | 137.00 | 829 | 203.00 | 432 | 303.00 | 426 |
| 74.00 | 3647 | 138.00 | 249 | 204.00 | 2341 | 314.00 | 102 |
| 75.00 | 5962 | 141.00 | 2117 | 205.00 | 4131 | 315.00 | 439 |
| 76.00 | 2109 | 142.00 | 654 | 206.00 | 17592 | 316.00 | 144 |
| 77.00 | 36336 | 143.00 | 494 | 207.00 | 2399 | 323.00 | 1493 |
| 78.00 | 2458 | 146.00 | 426 | 208.00 | 530 | 324.00 | 169 |
| 79.00 | 2970 | 147.00 | 1130 | 210.00 | 353 | 327.00 | 204 |
| 80.00 | 1764 | 148.00 | 2450 | 211.00 | 603 | 334.00 | 762 |
| 81.00 | 2707 | 149.00 | 327 | 212.00 | 117 | 335.00 | 126 |
| 82.00 | 555 | 151.00 | 157 | 216.00 | 243 | 346.00 | 198 |
| 83.00 | 638 | 153.00 | 675 | 217.00 | 4656 | 352.00 | 388 |
| 85.00 | 550 | 154.00 | 361 | 218.00 | 646 | 353.00 | 164 |
| 86.00 | 812 | 155.00 | 991 | 221.00 | 4341 | 354.00 | 246 |
| 87.00 | 346 | 156.00 | 1404 | 223.00 | 969 | 365.00 | 2091 |
| 88.00 | 119 | 157.00 | 328 | 224.00 | 9196 | 366.00 | 113 |
| 91.00 | 798 | 158.00 | 396 | 225.00 | 2185 | 372.00 | 839 |

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25

Data File: mb33z.d

Spectrum: Avg. Scans 285-287 (11.21), Background Scan 278

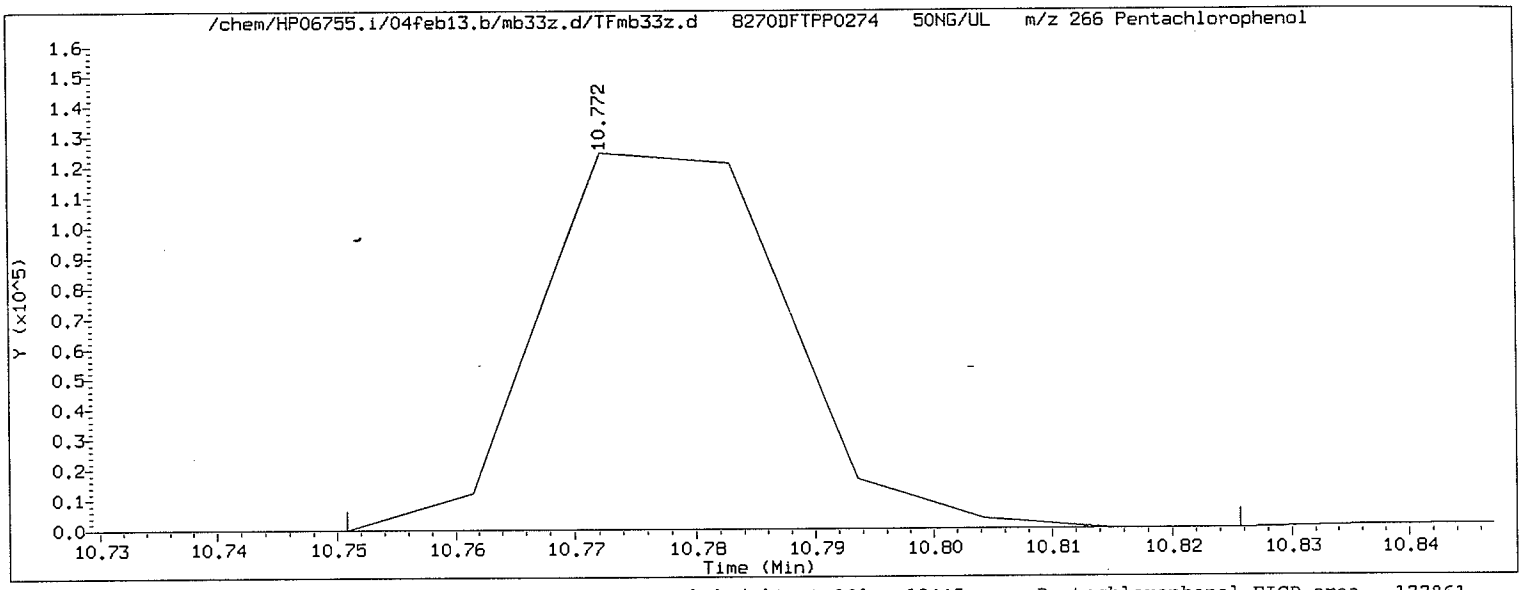
Location of Maximum: 198.00

Number of points: 194

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 92.00 | 725 | 159.00 | 255 | 227.00 | 3704 | 373.00 | 126 |
| 93.00 | 5620 | 160.00 | 489 | 228.00 | 528 | 383.00 | 133 |
| 94.00 | 534 | 161.00 | 788 | 229.00 | 701 | 402.00 | 237 |
| 96.00 | 104 | 162.00 | 157 | 231.00 | 300 | 403.00 | 389 |
| 97.00 | 121 | 165.00 | 745 | 234.00 | 143 | 421.00 | 271 |
| 98.00 | 3869 | 166.00 | 478 | 235.00 | 260 | 422.00 | 273 |
| 99.00 | 2960 | 167.00 | 3912 | 236.00 | 203 | 423.00 | 2621 |
| 100.00 | 267 | 168.00 | 1967 | 237.00 | 264 | 424.00 | 267 |
| 101.00 | 1549 | 169.00 | 275 | 241.00 | 113 | 441.00 | 6841 |
| 103.00 | 711 | 172.00 | 355 | 242.00 | 491 | 442.00 | 46888 |
| 104.00 | 971 | 173.00 | 432 | 244.00 | 8035 | 443.00 | 9262 |
| 105.00 | 882 | 174.00 | 622 | 245.00 | 1172 | 444.00 | 852 |
| 106.00 | 219 | 175.00 | 1449 | 246.00 | 1392 | | |
| 107.00 | 11921 | 176.00 | 418 | 247.00 | 134 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

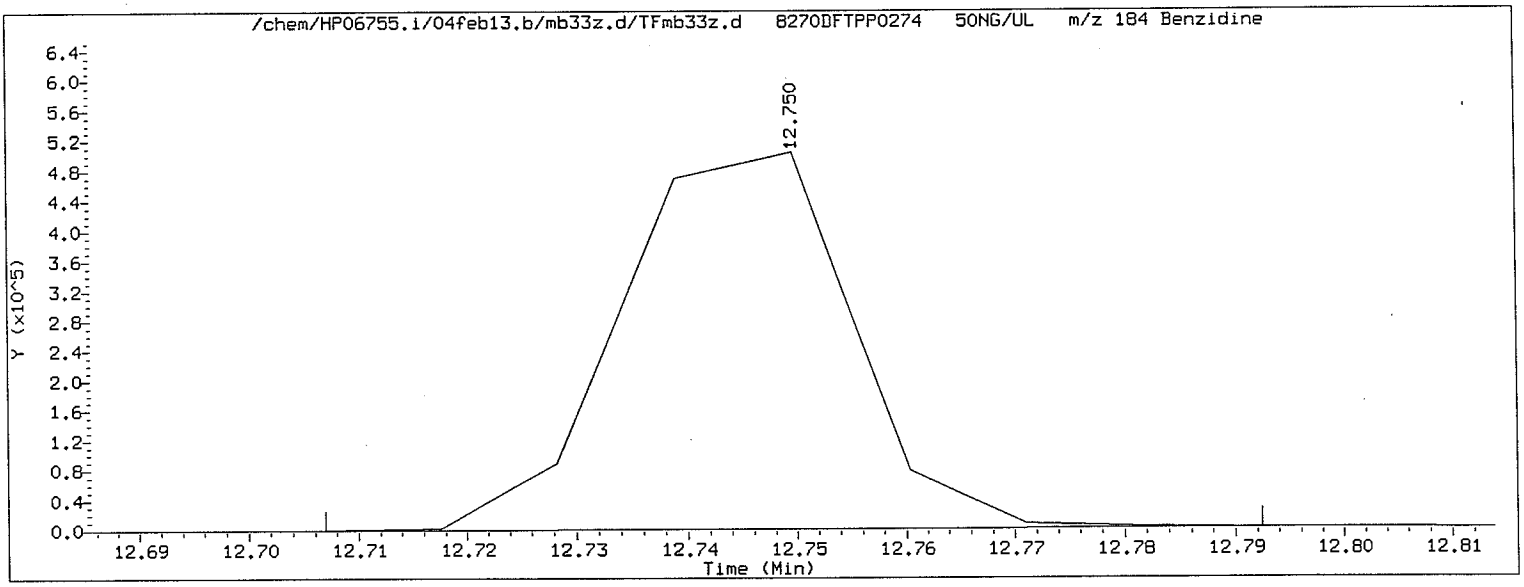
Instrument ID: HP06755.i  Injection Date: 13-FEB-2004 05:30  Operator: jmg00346




Pentachlorophenol EICP peak height = 124448  EICP peak height at 10% = 12445  Pentachlorophenol EICP area = 177861

Pentachlorophenol EICP peak apex (min.) = 10.772
RT at 10% of front half of EICP (min.) = 10.762  'Front' peak width (min.) = 0.0106666667
RT at 10% of back half of EICP (min.) = 10.797  'Tailing' peak width (min.) = 0.0246166667

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0246166667}{0.0106666667} = 2.308$




Benzidine EICP peak height = 502700  EICP peak height at 10% = 50270  Benzidine EICP area = 736206

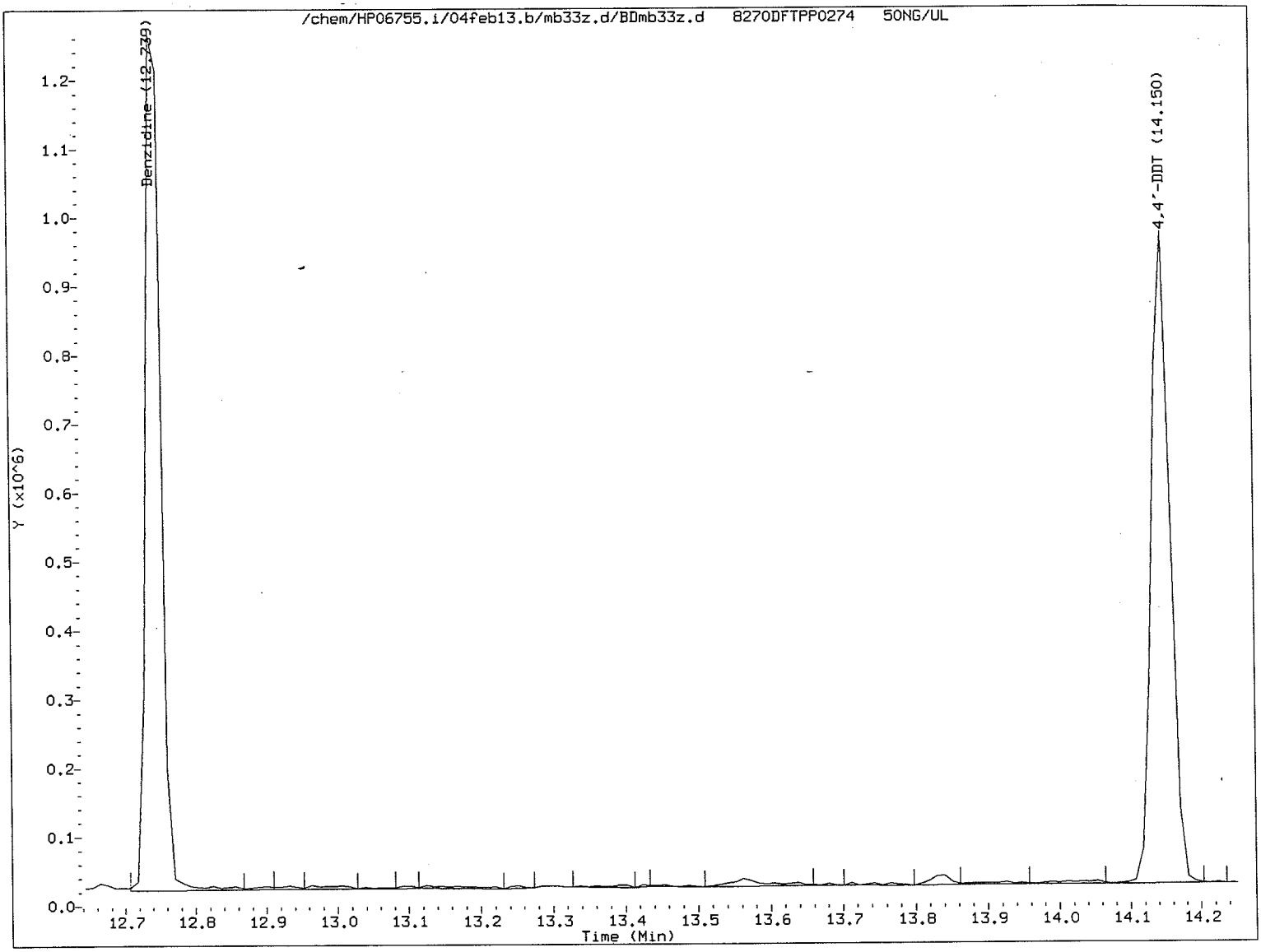
Benzidine EICP peak apex (min.) = 12.750
RT at 10% of front half of EICP (min.) = 12.724  'Front' peak width (min.) = 0.0260333333
RT at 10% of back half of EICP (min.) = 12.765  'Tailing' peak width (min.) = 0.0148500000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0148500000}{0.0260333333} = 0.570$


printed on 02/13/2004 at 05:55

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06755.i  Injection Date: 13-FEB-2004 05:30  Operator: jmg00346




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 1726211} \times 100 = 0.0$$


printed on 02/13/2004 at 06:02

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274

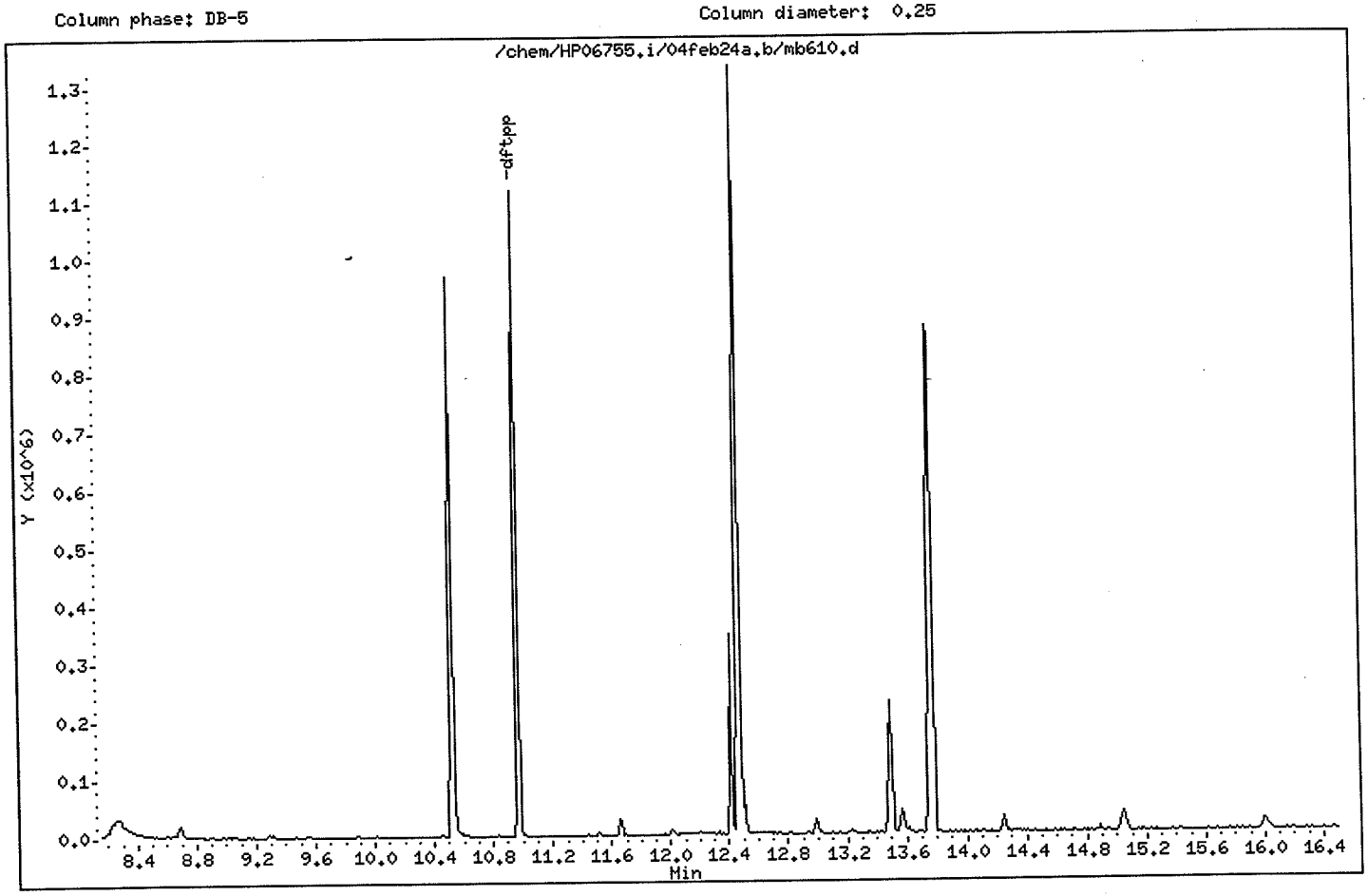
Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274

Instrument: HP06755.i

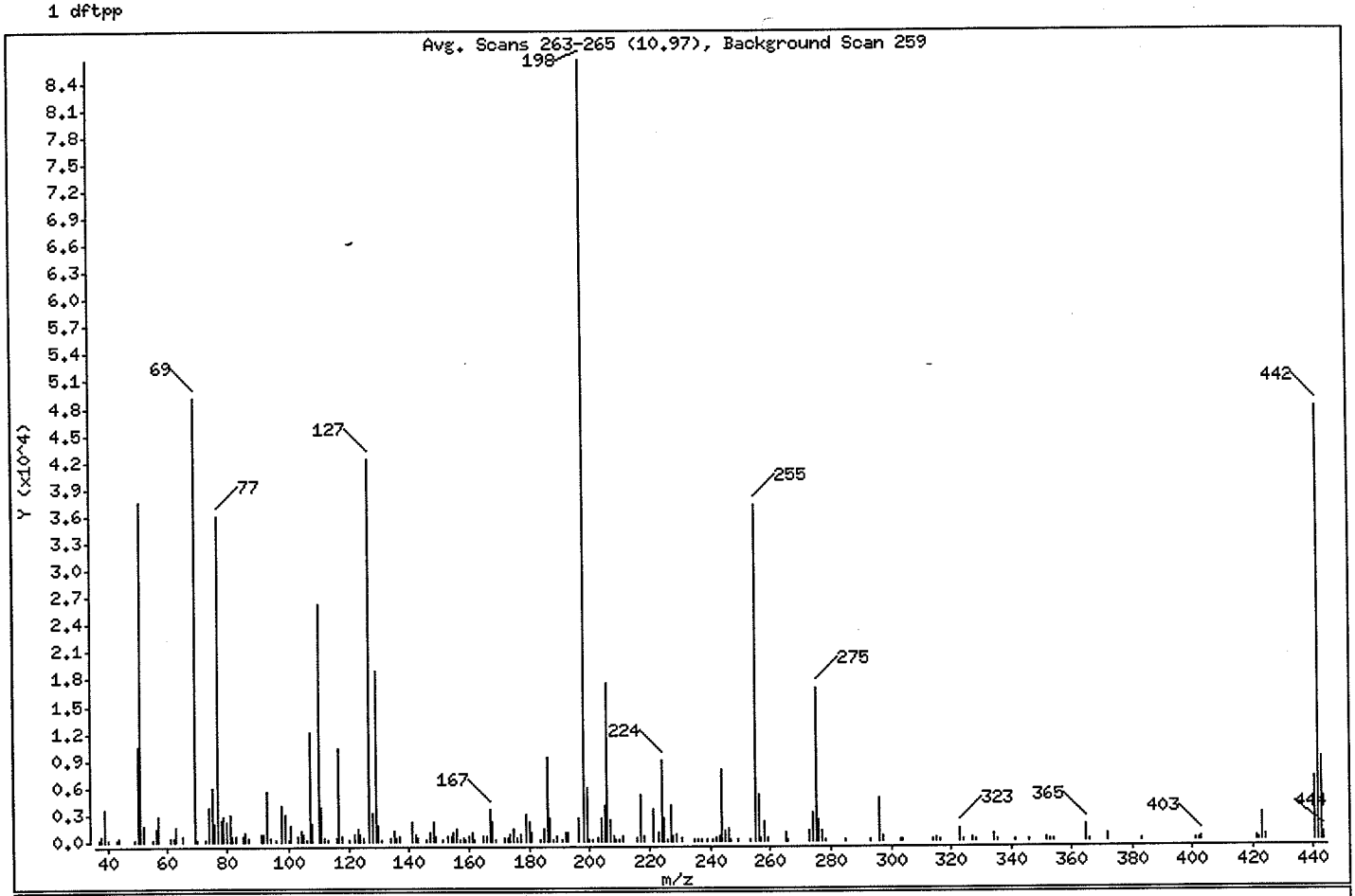
Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 43.46 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 56.85 |
| 70 | Less than 2.00% of mass 69 | 0.14 ( 0.24) |
| 127 | 40.00 - 60.00% of mass 198 | 49.08 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.97 |
| 275 | 10.00 - 30.00% of mass 198 | 19.63 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, but less than mass 443 | 8.06 |
| 442 | 40.00 - 99.99% of mass 198 | 55.39 |
| 443 | 17.00 - 23.00% of mass 442 | 10.54 ( 19.04) |

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274 Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;;

Operator: ids01472

Column phase: DB-5 Column diameter: 0.25

Data File: mb610.d

Spectrum: Avg. Scans 263-265 (10.97), Background Scan 259

Location of Maximum: 198.00

Number of points: 197

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 261 | 112.00 | 468 | 181.00 | 982 | 256.00 | 5111 |
| 38.00 | 634 | 113.00 | 122 | 184.00 | 219 | 257.00 | 352 |
| 39.00 | 3650 | 116.00 | 357 | 185.00 | 1385 | 258.00 | 2198 |
| 40.00 | 103 | 117.00 | 10280 | 186.00 | 9323 | 259.00 | 314 |
| 43.00 | 112 | 118.00 | 636 | 187.00 | 2604 | 265.00 | 1004 |
| 44.00 | 321 | 120.00 | 139 | 188.00 | 185 | 266.00 | 119 |
| 49.00 | 218 | 122.00 | 843 | 189.00 | 616 | 273.00 | 1166 |
| 50.00 | 10606 | 123.00 | 1394 | 191.00 | 137 | 274.00 | 3217 |
| 51.00 | 37584 | 124.00 | 697 | 192.00 | 925 | 275.00 | 16968 |
| 52.00 | 1808 | 125.00 | 408 | 193.00 | 981 | 276.00 | 2479 |
| 55.00 | 237 | 127.00 | 42448 | 196.00 | 2499 | 277.00 | 1186 |
| 56.00 | 1359 | 128.00 | 3217 | 198.00 | 86488 | 278.00 | 102 |
| 57.00 | 2716 | 129.00 | 18880 | 199.00 | 6030 | 285.00 | 119 |
| 61.00 | 451 | 130.00 | 1739 | 200.00 | 275 | 293.00 | 256 |
| 62.00 | 401 | 131.00 | 266 | 201.00 | 205 | 296.00 | 4728 |
| 63.00 | 1551 | 134.00 | 402 | 203.00 | 360 | 297.00 | 673 |
| 65.00 | 625 | 135.00 | 1220 | 204.00 | 2550 | 303.00 | 291 |
| 69.00 | 49168 | 136.00 | 470 | 205.00 | 3947 | 304.00 | 110 |
| 70.00 | 118 | 137.00 | 596 | 206.00 | 17440 | 314.00 | 126 |
| 73.00 | 166 | 141.00 | 2249 | 207.00 | 2319 | 315.00 | 485 |
| 74.00 | 3718 | 142.00 | 729 | 208.00 | 610 | 316.00 | 171 |
| 75.00 | 5936 | 143.00 | 414 | 209.00 | 100 | 323.00 | 1491 |
| 76.00 | 1903 | 146.00 | 244 | 210.00 | 290 | 324.00 | 179 |
| 77.00 | 36000 | 147.00 | 918 | 211.00 | 599 | 327.00 | 301 |
| 78.00 | 2412 | 148.00 | 2217 | 216.00 | 348 | 328.00 | 100 |
| 79.00 | 2845 | 149.00 | 511 | 217.00 | 5087 | 334.00 | 831 |
| 80.00 | 2109 | 151.00 | 298 | 218.00 | 618 | 335.00 | 153 |
| 81.00 | 2907 | 153.00 | 631 | 221.00 | 3664 | 341.00 | 142 |
| 82.00 | 615 | 154.00 | 532 | 223.00 | 1093 | 346.00 | 168 |
| 83.00 | 674 | 155.00 | 1046 | 224.00 | 9036 | 352.00 | 423 |
| 85.00 | 580 | 156.00 | 1422 | 225.00 | 2558 | 353.00 | 131 |
| 86.00 | 1075 | 157.00 | 169 | 226.00 | 130 | 354.00 | 265 |
| 87.00 | 379 | 158.00 | 317 | 227.00 | 4011 | 365.00 | 1879 |
| 91.00 | 720 | 159.00 | 167 | 228.00 | 546 | 366.00 | 112 |
| 92.00 | 772 | 160.00 | 583 | 229.00 | 789 | 372.00 | 723 |

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274

Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5

Column diameter: 0.25

Data File: mb610.d

Spectrum: Avg. Scans 263-265 (10.97), Background Scan 259

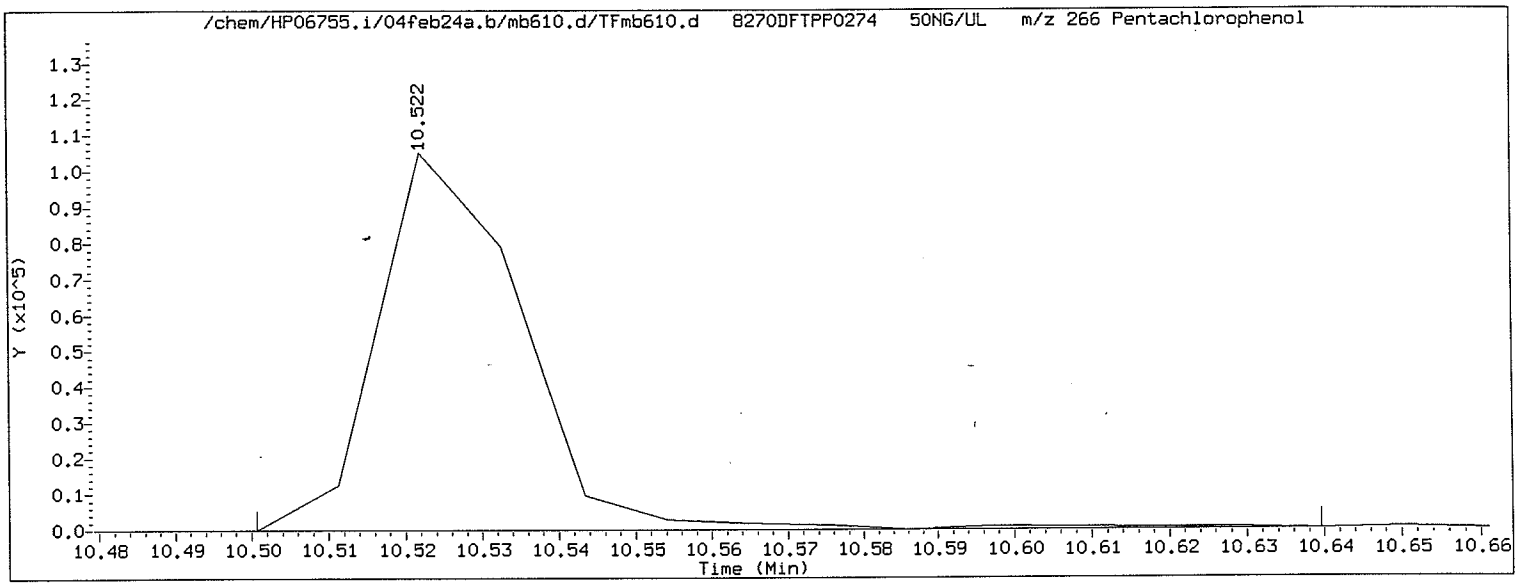
Location of Maximum: 198.00

Number of points: 197

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 93.00 | 5483 | 161.00 | 934 | 231.00 | 311 | 383.00 | 146 |
| 94.00 | 351 | 162.00 | 107 | 235.00 | 160 | 401.00 | 161 |
| 96.00 | 161 | 165.00 | 683 | 236.00 | 112 | 402.00 | 119 |
| 98.00 | 4007 | 166.00 | 507 | 237.00 | 164 | 403.00 | 406 |
| 99.00 | 3070 | 167.00 | 3598 | 239.00 | 106 | 421.00 | 412 |
| 100.00 | 163 | 168.00 | 2090 | 241.00 | 144 | 422.00 | 186 |
| 101.00 | 1739 | 169.00 | 281 | 242.00 | 422 | 423.00 | 2918 |
| 103.00 | 533 | 172.00 | 386 | 243.00 | 595 | 424.00 | 511 |
| 104.00 | 1182 | 173.00 | 386 | 244.00 | 7933 | 441.00 | 6970 |
| 105.00 | 884 | 174.00 | 852 | 245.00 | 1131 | 442.00 | 47904 |
| 106.00 | 139 | 175.00 | 1294 | 246.00 | 1330 | 443.00 | 9120 |
| 107.00 | 12188 | 176.00 | 349 | 247.00 | 145 | 444.00 | 893 |
| 108.00 | 1944 | 177.00 | 813 | 249.00 | 266 | | |
| 110.00 | 26160 | 179.00 | 2991 | 253.00 | 112 | | |
| 111.00 | 3859 | 180.00 | 2167 | 255.00 | 37104 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

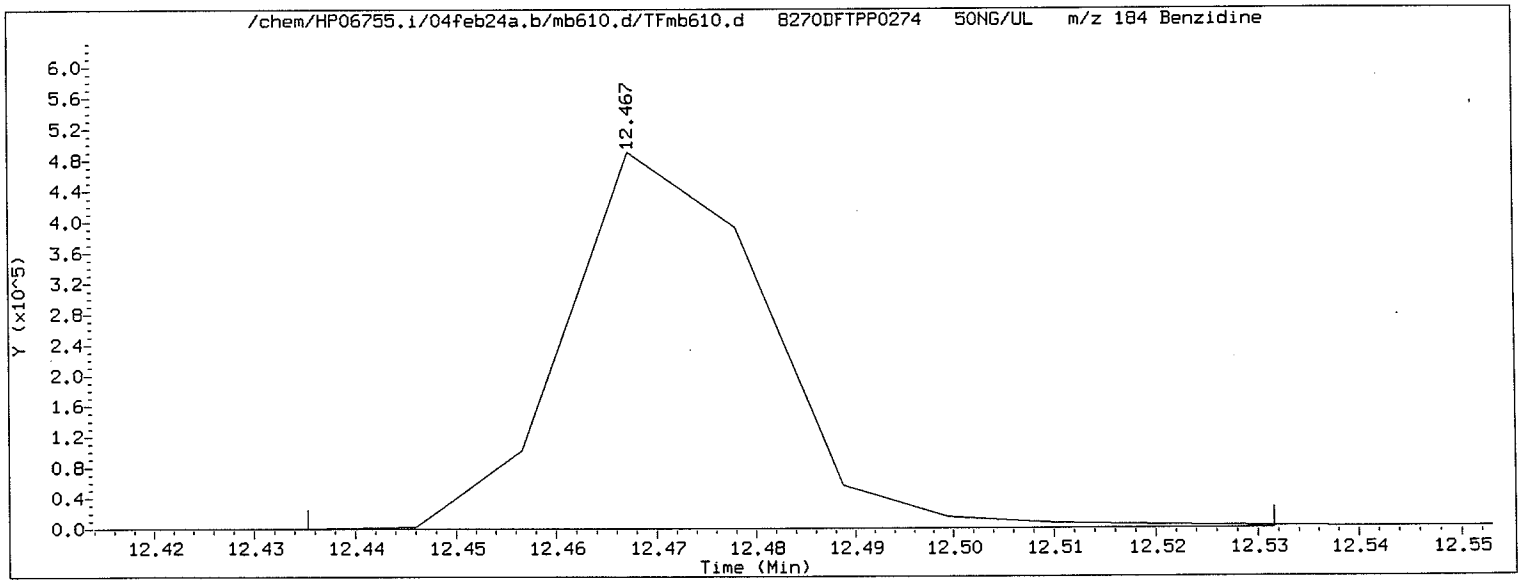
Instrument ID: HP06755.i  Injection Date: 24-FEB-2004 20:24  Operator: ids01472




Pentachlorophenol EICP peak height = 105120  EICP peak height at 10% = 10512  Pentachlorophenol EICP area = 137699

Pentachlorophenol EICP peak apex (min.) = 10.522
RT at 10% of front half of EICP (min.) = 10.510  'Front' peak width (min.) = 0.0124166667
RT at 10% of back half of EICP (min.) = 10.543  'Tailing' peak width (min.) = 0.0212166667

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0212166667}{0.0124166667} = 1.709$




Benzidine EICP peak height = 489728  EICP peak height at 10% = 48973  Benzidine EICP area = 684658

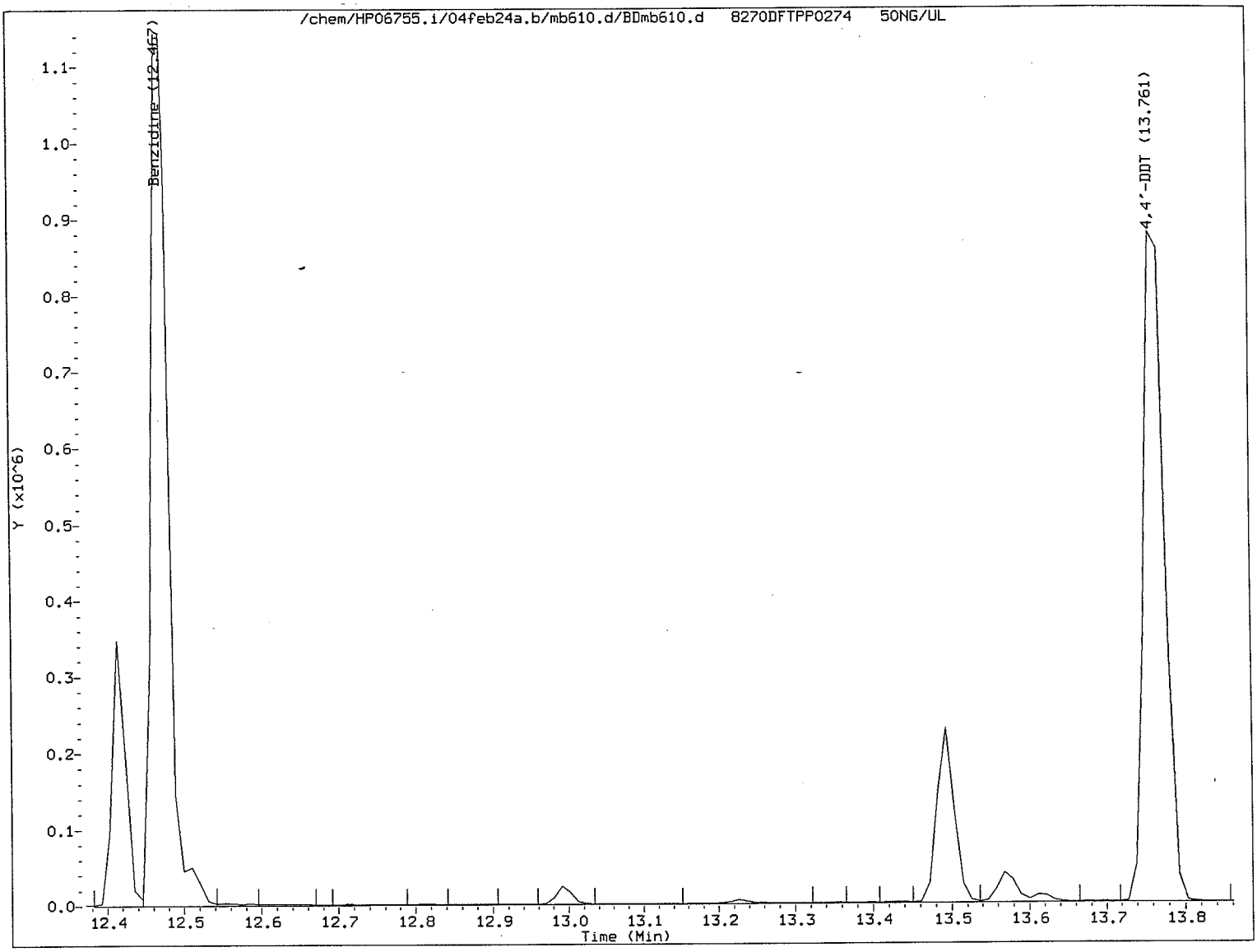
Benzidine EICP peak apex (min.) = 12.467
RT at 10% of front half of EICP (min.) = 12.451  'Front' peak width (min.) = 0.0162500000
RT at 10% of back half of EICP (min.) = 12.490  'Tailing' peak width (min.) = 0.0230500000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0230500000}{0.0162500000} = 1.418$


printed on 02/24/2004 at 20:50

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06755.i  Injection Date: 24-FEB-2004 20:24  Operator: ids01472




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 1612528} \times 100 = 0.0$$


printed on 02/24/2004 at 21:09

# SBLKWC055M

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# SBLKWC055

Data file: /chem/HP06755.i/04feb24a.b/mb612.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 22:13 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.020( 0.014) | 830 | 152.0 | 194795( -25) | 40.00 | |
| 52) Naphthalene-d8 | 16.793( 0.014) | 1183 | 136.0 | 705596( -23) | 40.00 | |
| 96) Acenaphthene-d10 | 22.212( 0.014) | 1690 | 164.0 | 335924( -18) | 40.00 | |
| 133) Phenanthrene-d10 | 26.723( 0.014) | 2112 | 188.0 | 517276( -13) | 40.00 | |
| 165) Chrysene-d12 | 33.233( 0.014) | 2721 | 240.0 | 417272( -11) | 40.00 | |
| 173) Perylene-d12 | 39.657( 0.025) | 3322 | 264.0 | 381897( -17) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.385( 0.003) | 112 | 1117279 | 137.154 | 69% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.844( 0.000) | 99 | 1016486 | 101.639 | 51% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.612( 0.000) | 82 | 582798 | 84.468 | 84% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.085( 0.000) | 172 | 859824 | 76.551 | 77% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.660( 0.000) | 330 | 272301 | 178.549 | 89% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.496(-0.001) | 244 | 725903 | 80.131 | 80% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | | | | ND | ND | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

# SBLKWC055M

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# SBLKWC055

Data file: /chem/HP06755.i/04feb24a.b/mb612.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 22:13 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

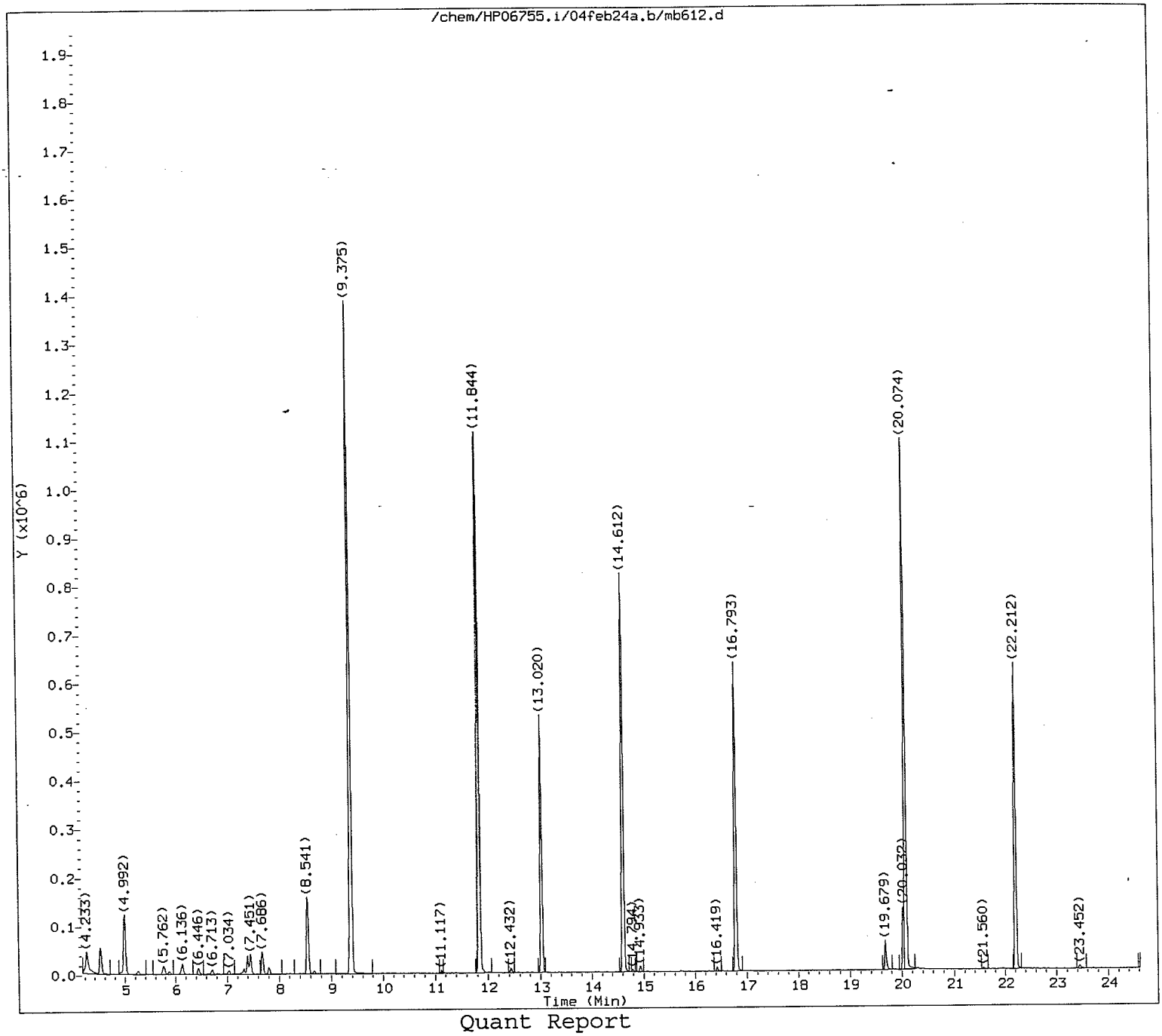
Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 12

Comments:

Analyst: for Michael Garbosick Date: 2/25/04
Auditor: Date: 2/25/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d
Injection date and time: 24-FEB-2004 22:13

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

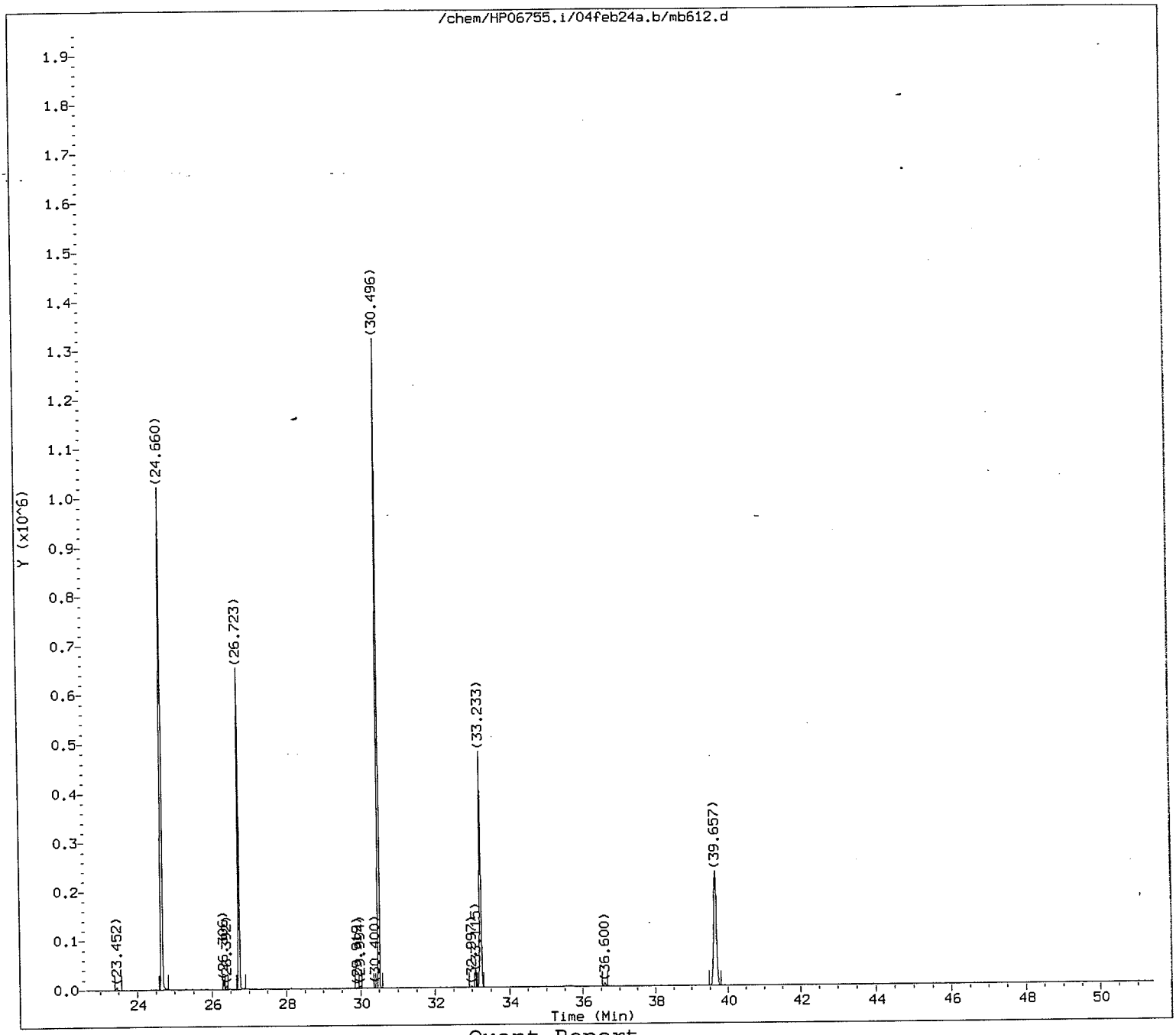
Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M

Lab Sample ID: SBLKWC055

JMG 546
2/25/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d
Injection date and time: 24-FEB-2004 22:13

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M

Lab Sample ID: SBLKWC055

JMG/SYC
2/25/04

8448

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 22:13  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M  Lab Sample ID: SBLKWC055

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.020 | 152 | 194795 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 16.793 | 136 | 705596 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 22.212 | 164 | 335924 | 40.000 |
| 133) | Phenanthrene-d10 | (4) | 26.723 | 188 | 517276 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.233 | 240 | 417272 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.657 | 264 | 381897 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.385 | 112 | 1117279 | 137.154 |
| 15) | Phenol-d6 | (1) | 11.844 | 99 | 1016486 | 101.639 |
| 38) | Nitrobenzene-d5 | (2) | 14.612 | 82 | 582798 | 84.468 |
| 77) | 2-Fluorobiphenyl | (3) | 20.085 | 172 | 859824 | 76.551 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.660 | 330 | 272301 | 178.549 |
| 154) | Terphenyl-d14 | (5) | 30.496 | 244 | 725903 | 80.131 |

M = Compound was manually integrated.  A = User selected an alternate hit

UN7NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb614.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 00:10 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.020( 0.014) | 830 | 152.0 | 196059( -25) | 40.00 | |
| 52) Naphthalene-d8 | 16.794( 0.014) | 1183 | 136.0 | 698411( -24) | 40.00 | |
| 96) Acenaphthene-d10 | 22.213( 0.014) | 1690 | 164.0 | 332773( -19) | 40.00 | |
| 133) Phenanthrene-d10 | 26.724( 0.014) | 2112 | 188.0 | 511805( -14) | 40.00 | |
| 165) Chrysene-d12 | 33.233( 0.014) | 2721 | 240.0 | 422772( -10) | 40.00 | |
| 173) Perylene-d12 | 39.657( 0.024) | 3322 | 264.0 | 407255( -11) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.375( 0.004) | 112 | 827986 | 100.986 | 50% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.834( 0.001) | 99 | 662951 | 65.862 | 33% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.613( 0.000) | 82 | 542404 | 79.422 | 79% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.075( 0.000) | 172 | 816630 | 73.394 | 73% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.661( 0.000) | 330 | 261948 | 173.386 | 87% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.497(-0.001) | 244 | 645061 | 70.281 | 70% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | | | | ND | ND | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8458

UN7NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb614.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 00:10 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

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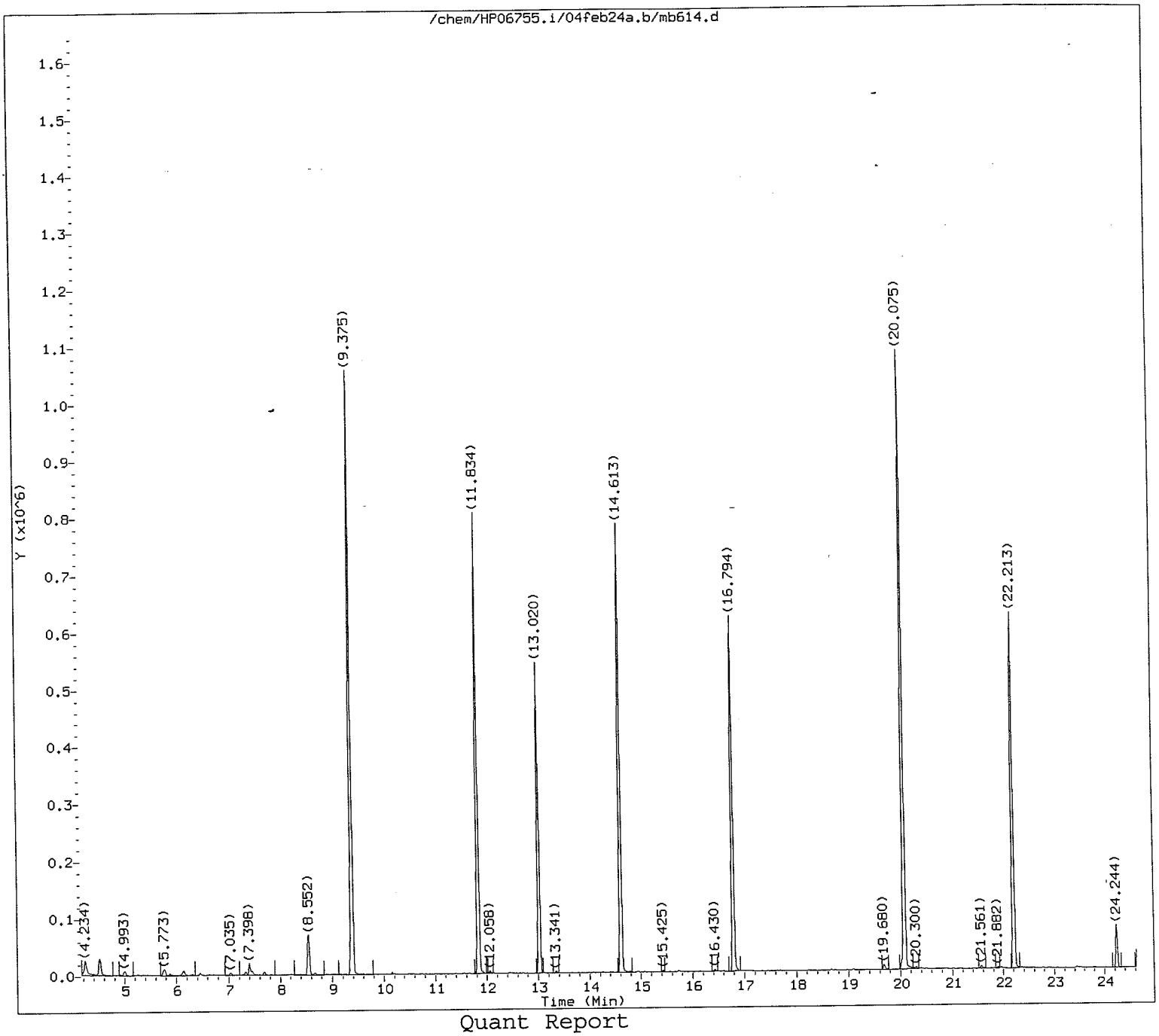
Total number of targets = 12

Comments: 241

Analyst: for Michelle Garosick Date: 2/25/04
Auditor: Date: 2/25/04



8451




Quant Report

Target Revision 3.5

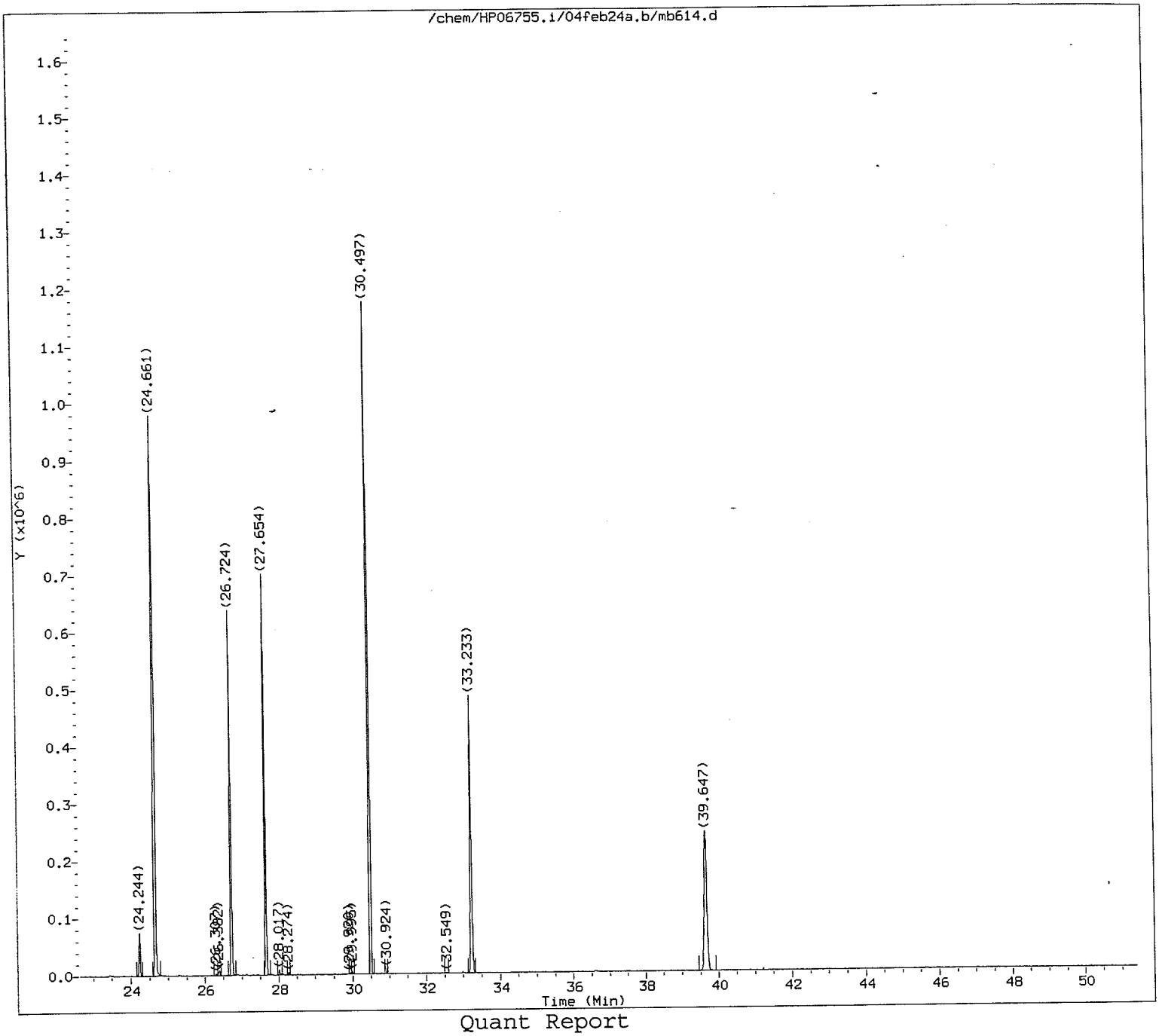
Data File: /chem/HP06755.i/04feb24a.b/mb614.d Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 00:10 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV Lab Sample ID: 4219022

JMG 3/4/6
2/25/04

9452




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb614.d
Injection date and time: 25-FEB-2004 00:10

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV

Lab Sample ID: 4219022

JMG 2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb614.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 00:10  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV  Lab Sample ID: 4219022

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.020 | 152 | 196059 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 16.794 | 136 | 698411 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 22.213 | 164 | 332773 | 40.000 |
| 133) | Phenanthrene-d10 | (4) | 26.724 | 188 | 511805 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.233 | 240 | 422772 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.657 | 264 | 407255 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.375 | 112 | 827986 | 100.986 |
| 15) | Phenol-d6 | (1) | 11.834 | 99 | 662951 | 65.862 |
| 38) | Nitrobenzene-d5 | (2) | 14.613 | 82 | 542404 | 79.422 |
| 77) | 2-Fluorobiphenyl | (3) | 20.075 | 172 | 816630 | 73.394 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.661 | 330 | 261948 | 173.386 |
| 154) | Terphenyl-d14 | (5) | 30.497 | 244 | 645061 | 70.281 |

M = Compound was manually integrated.  A = User selected an alternate hit

UN7NVMS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219022

Data file: /chem/HP06755.i/04feb24a.b/mb615.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 01:08 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.023( 0.011) | 830 | 152.0 | 176916( -32) | 40.00 | |
| 52) Naphthalene-d8 | 16.796( 0.011) | 1183 | 136.0 | 616576( -33) | 40.00 | |
| 96) Acenaphthene-d10 | 22.215( 0.011) | 1690 | 164.0 | 287941( -29) | 40.00 | |
| 133) Phenanthrene-d10 | 26.726( 0.011) | 2112 | 188.0 | 464316( -22) | 40.00 | |
| 165) Chrysene-d12 | 33.246( 0.001) | 2722 | 240.0 | 355558( -24) | 40.00 | |
| 173) Perylene-d12 | 39.670( 0.011) | 3323 | 264.0 | 360009( -22) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.389( 0.003) | 112 | 877181 | 118.562 | 59% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.847( 0.000) | 99 | 690717 | 76.045 | 38% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.626(-0.001) | 82 | 524978 | 87.073 | 87% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.088( 0.000) | 172 | 854448 | 88.749 | 89% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674(-0.001) | 330 | 253779 | 194.133 | 97% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.499( 0.000) | 244 | 603186 | 78.142 | 78% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.893(-0.001) | 79 | 449981 | 54.903 | 166.37 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076( 0.000) | 146 | 471896 | 66.099 | 200.30 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.632( 0.000) | 108 | 479419 | 75.040 | 227.39 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.081(-0.001) | 108 | 465173 | 71.216 | 215.81 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.519(-0.001) | 117 | 156016 | 52.403 | 158.80 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.680( 0.000) | 77 | 503626 | 84.472 | 255.98 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.202( 0.000) | 225 | 133918 | 61.844 | 187.41 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.810( 0.000) | 196 | 265451 | 90.515 | 274.29 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917( 0.000) | 196 | 290005 | 89.895 | 272.41 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771( 0.000) | 165 | 335873 | 98.807 | 299.42 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.625( 0.000) | 284 | 242907 | 87.457 | 265.02 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.170( 0.000) | 266 | 138694 | 71.405 | 216.38 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8455

UN7NVMS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb615.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 01:08 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

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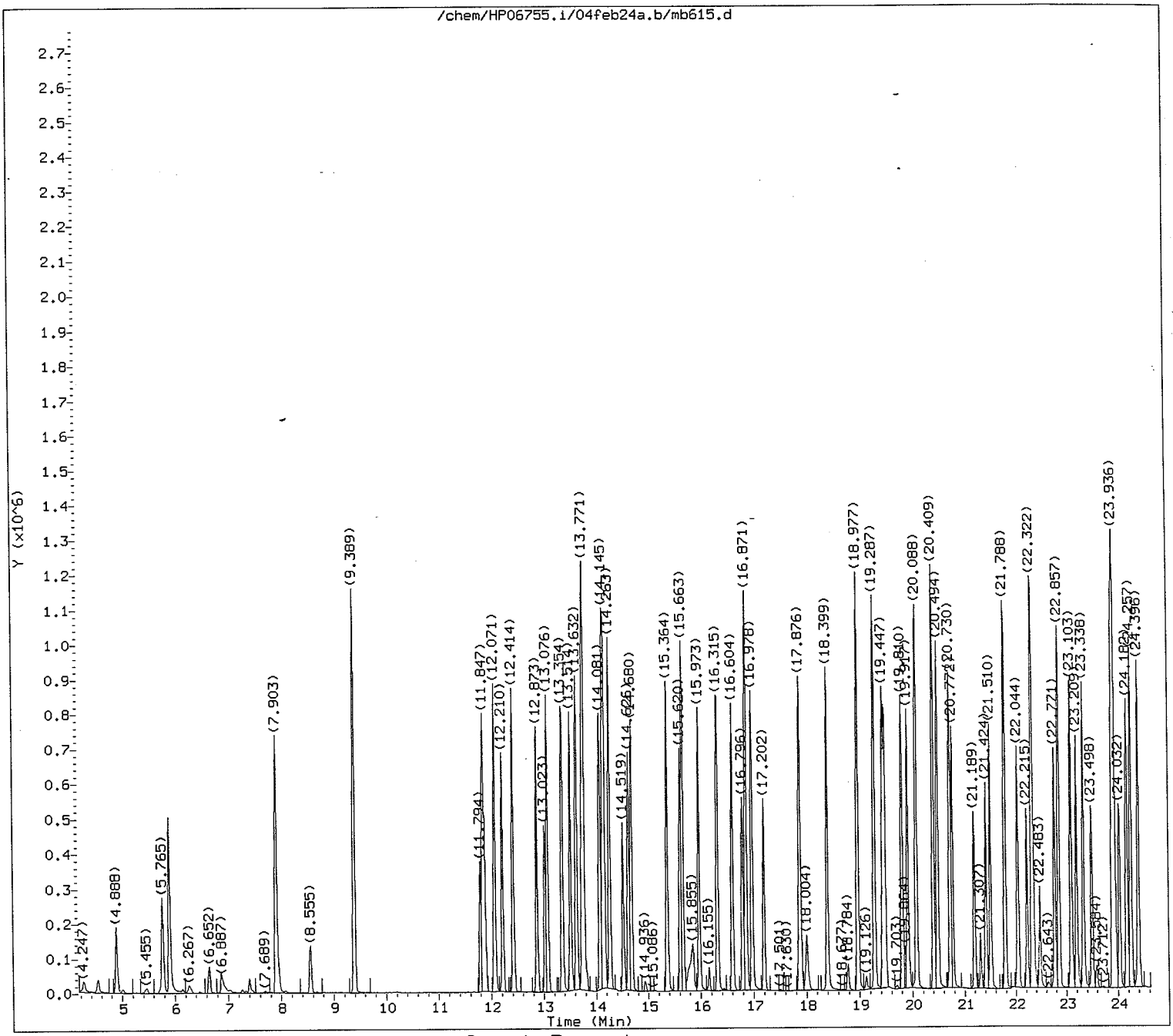
Total number of targets = 12

Comments: 241

Analyst: Joe Mjanek Jarosick Date: 2/25/04
Auditor: Date: 2/25/04



8455




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d
Injection date and time: 25-FEB-2004 01:08

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

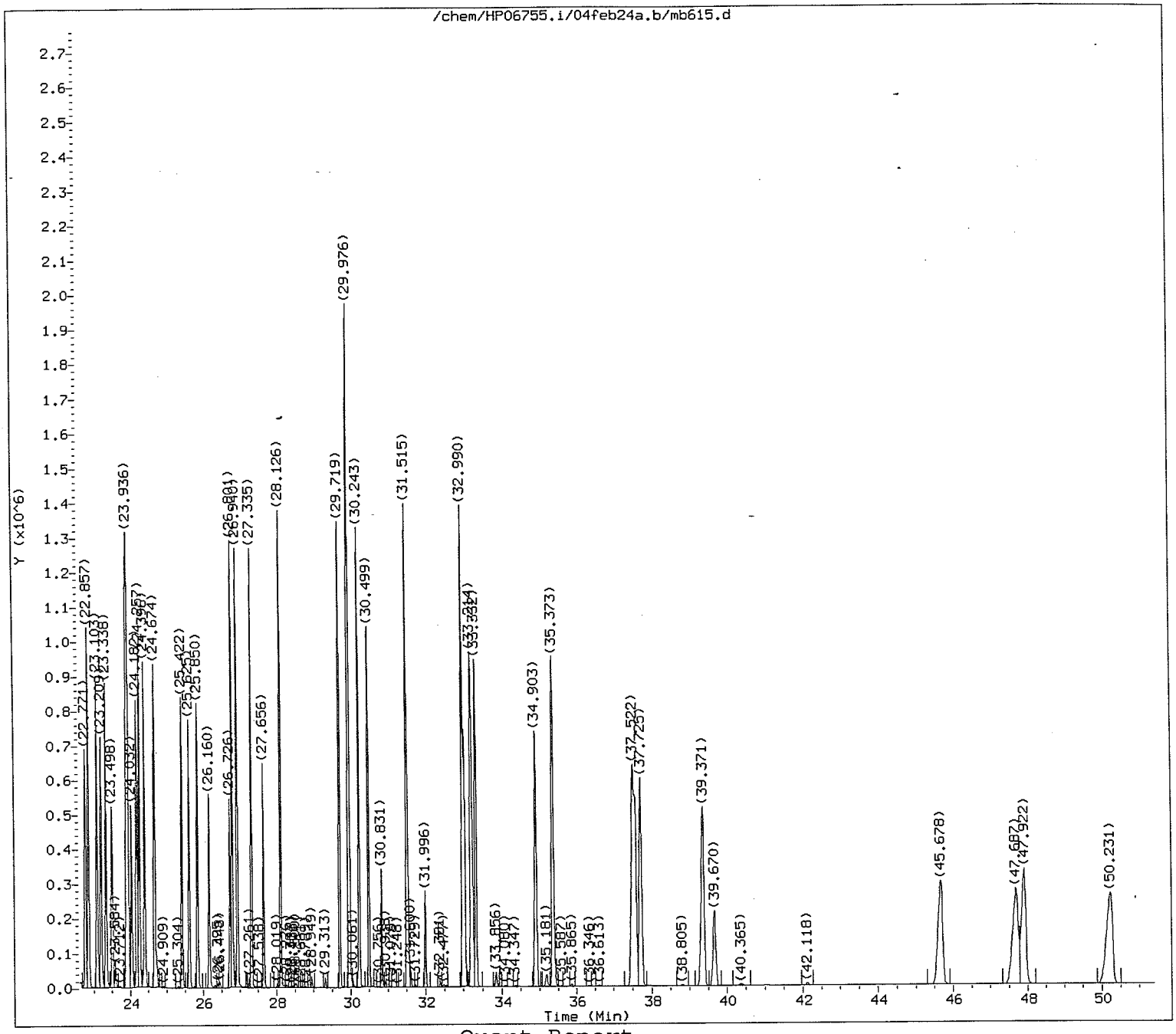
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS

Lab Sample ID: 4219022

JMG 346
2/25/04

8457




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 01:08 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS Lab Sample ID: 4219022

JMG 346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 01:08  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS  Lab Sample ID: 4219022

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.893 | 79 | 449981 | 54.903 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.023 | 152 | 176916 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076 | 146 | 471896 | 66.099 |
| 26) 2-Methylphenol | (1) | 13.632 | 108 | 479419 | 75.040 |
| 33) 4-Methylphenol | (1) | 14.081 | 108 | 465173 | 71.216 |
| 37) Hexachloroethane | (1) | 14.519 | 117 | 156016 | 52.403 |
| 39) Nitrobenzene | (2) | 14.680 | 77 | 503626 | 84.472 |
| 52) Naphthalene-d8 | (2) | 16.796 | 136 | 616576 | 40.000 |
| 59) Hexachlorobutadiene | (2) | 17.202 | 225 | 133918 | 61.844 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.810 | 196 | 265451 | 90.515 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917 | 196 | 290005 | 89.895 |
| 96) Acenaphthene-d10 | (3) | 22.215 | 164 | 287941 | 40.000 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771 | 165 | 335873 | 98.807 |
| 125) Hexachlorobenzene | (4) | 25.625 | 284 | 242907 | 87.457 |
| 129) Pentachlorophenol | (4) | 26.170 | 266 | 138694 | 71.405 |
| 133) Phenanthrene-d10 | (4) | 26.726 | 188 | 464316 | 40.000 |
| 165) Chrysene-d12 | (5) | 33.246 | 240 | 355558 | 40.000 |
| 173) Perylene-d12 | (6) | 39.670 | 264 | 360009 | 40.000 |
| 9) 2-Fluorophenol | (1) | 9.389 | 112 | 877181 | 118.562 |
| 15) Phenol-d6 | (1) | 11.847 | 99 | 690717 | 76.045 |
| 38) Nitrobenzene-d5 | (2) | 14.626 | 82 | 524978 | 87.073 |
| 77) 2-Fluorobiphenyl | (3) | 20.088 | 172 | 854448 | 88.749 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 253779 | 194.133 |
| 154) Terphenyl-d14 | (5) | 30.499 | 244 | 603186 | 78.142 |

M = Compound was manually integrated.  A = User selected an alternate hit

UN7NVMSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb616.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 02:07 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.019( 0.015) | 830 | 152.0 | 178322( -31) | 40.00 | |
| 52) Naphthalene-d8 | 16.793( 0.015) | 1183 | 136.0 | 633954( -31) | 40.00 | |
| 96) Acenaphthene-d10 | 22.223( 0.004) | 1691 | 164.0 | 291698( -29) | 40.00 | |
| 133) Phenanthrene-d10 | 26.733( 0.004) | 2113 | 188.0 | 464140( -22) | 40.00 | |
| 165) Chrysene-d12 | 33.243( 0.004) | 2722 | 240.0 | 356871( -24) | 40.00 | |
| 173) Perylene-d12 | 39.667( 0.015) | 3323 | 264.0 | 357292( -22) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.396( 0.002) | 112 | 835082 | 111.982 | 56% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.844( 0.000) | 99 | 656962 | 71.758 | 36% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.623(-0.001) | 82 | 514634 | 83.018 | 83% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.085( 0.000) | 172 | 824846 | 84.571 | 85% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.670( 0.000) | 330 | 242959 | 183.463 | 92% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.496( 0.000) | 244 | 523987 | 67.632 | 68% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.890(-0.001) | 79 | 410802 | 49.728 | 150.69 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.073( 0.000) | 146 | 451813 | 62.787 | 190.26 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.629( 0.000) | 108 | 469115 | 72.848 | 220.75 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.078(-0.001) | 108 | 450392 | 68.410 | 207.30 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.516(-0.001) | 117 | 142823 | 47.593 | 144.22 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.676( 0.000) | 77 | 497335 | 81.130 | 245.85 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.199( 0.000) | 225 | 125681 | 56.449 | 171.06 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.807( 0.000) | 196 | 260013 | 87.519 | 265.21 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.924( 0.000) | 196 | 283131 | 86.634 | 262.53 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.778( 0.000) | 165 | 332526 | 96.562 | 292.61 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.622( 0.000) | 284 | 239174 | 86.146 | 261.05 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.167( 0.000) | 266 | 126369 | 65.085 | 197.23 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

UN7NVMSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb616.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
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Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

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Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

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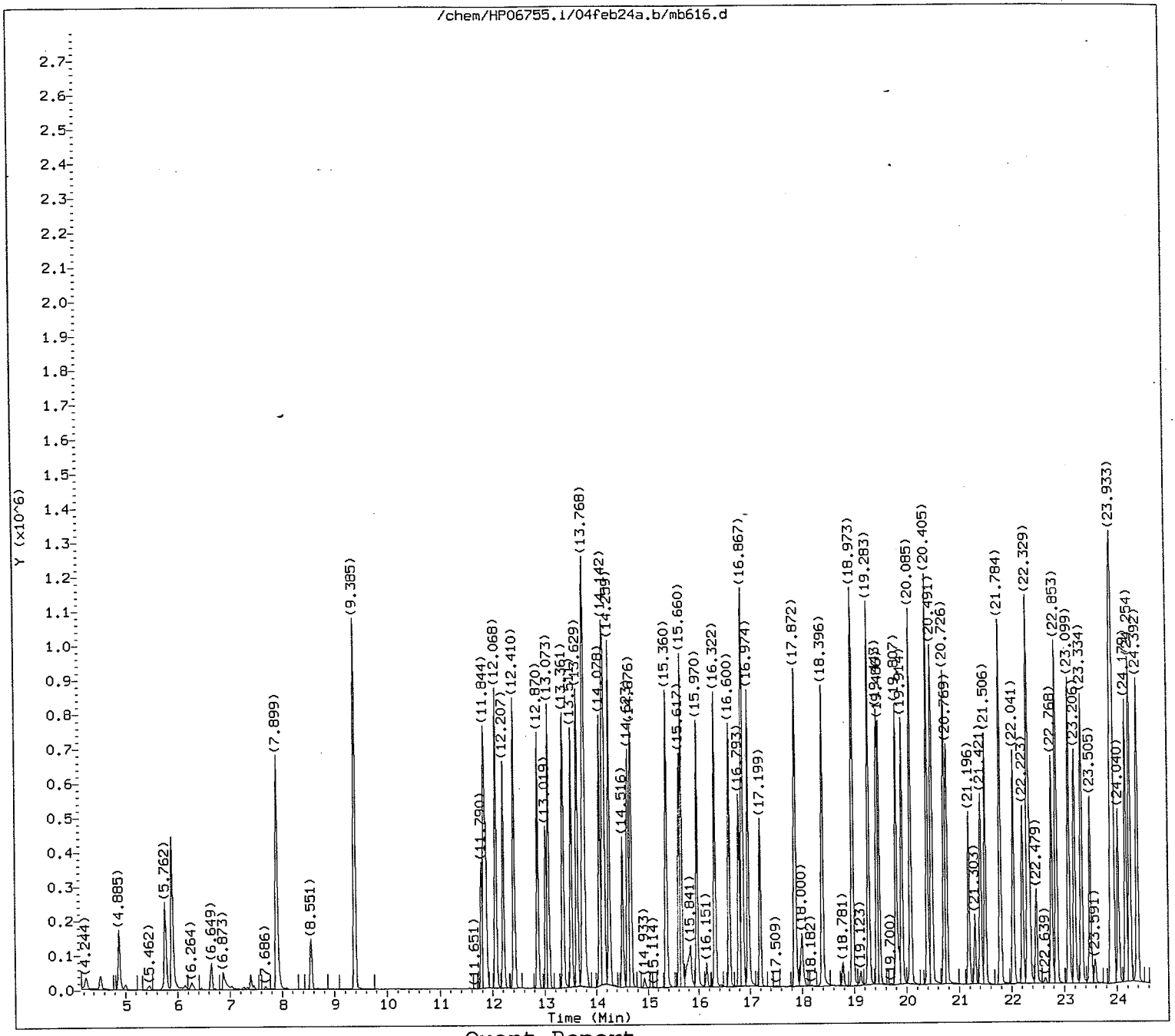
Total number of targets = 12

Comments: 241

Analyst: for Michele Jarosick Date: 2/25/04
Auditor: Date: 2/25/04



B&E 1




Quant Report

Target Revision 3.5

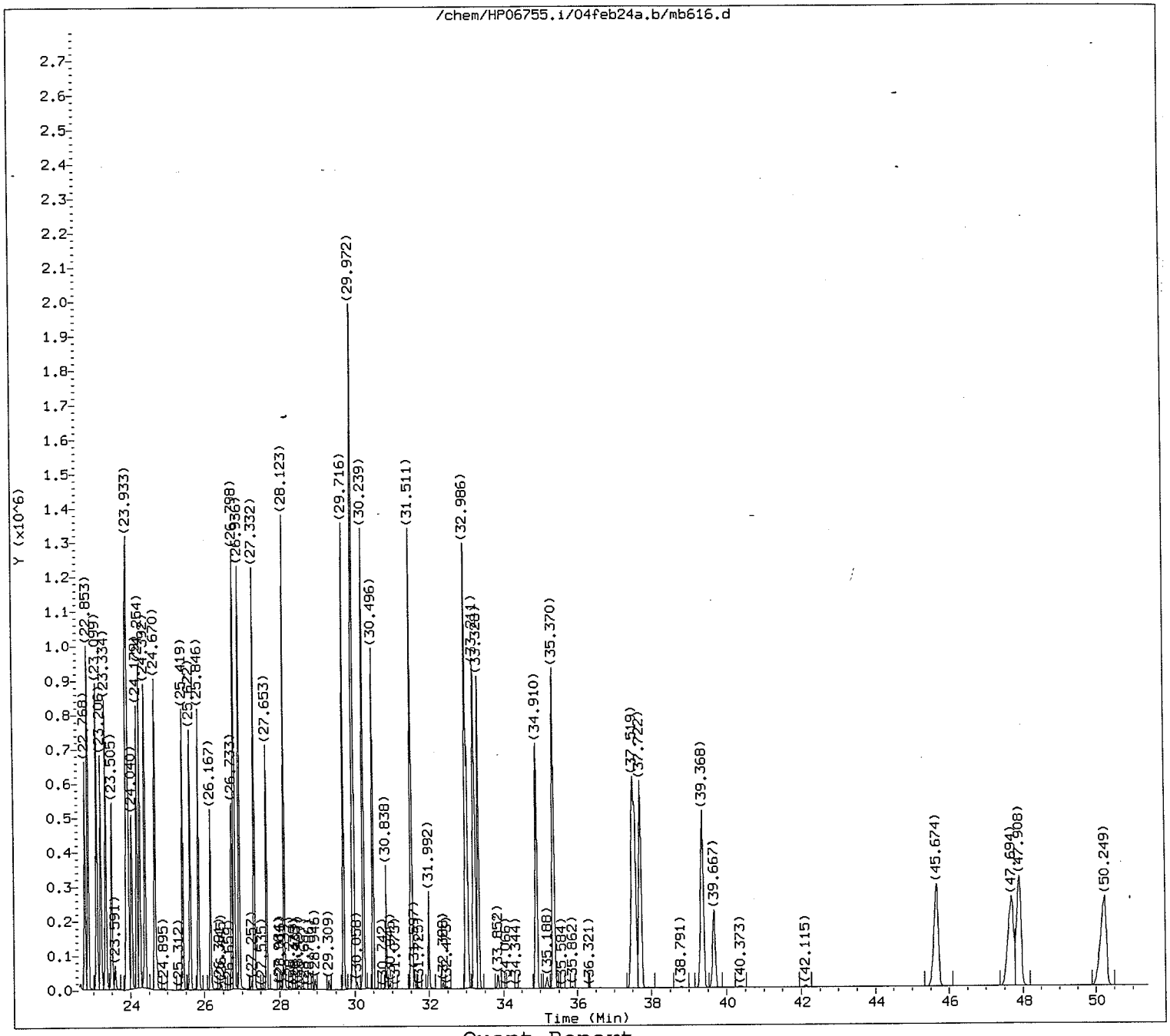
Data File: /chem/HP06755.i/04feb24a.b/mb616.d
Injection date and time: 25-FEB-2004 02:07
Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10
Sublist used: WTCLP04
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMSD
Lab Sample ID: 4219022

JM16/346
2/25/04

8462

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Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb616.d Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 02:07 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
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Sample Name: UN7NVMSD Lab Sample ID: 4219022

JMG 346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb616.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 02:07  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMSD  Lab Sample ID: 4219022

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.890 | 79 | 410802 | 49.728 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.019 | 152 | 178322 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.073 | 146 | 451813 | 62.787 |
| 26) 2-Methylphenol | (1) | 13.629 | 108 | 469115 | 72.848 |
| 33) 4-Methylphenol | (1) | 14.078 | 108 | 450392 | 68.410 |
| 37) Hexachloroethane | (1) | 14.516 | 117 | 142823 | 47.593 |
| 39) Nitrobenzene | (2) | 14.676 | 77 | 497335 | 81.130 |
| 52) Naphthalene-d8 | (2) | 16.793 | 136 | 633954 | 40.000 |
| 59) Hexachlorobutadiene | (2) | 17.199 | 225 | 125681 | 56.449 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.807 | 196 | 260013 | 87.519 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.924 | 196 | 283131 | 86.634 |
| 96) Acenaphthene-d10 | (3) | 22.223 | 164 | 291698 | 40.000 |
| 103) 2,4-Dinitrotoluene | (3) | 22.778 | 165 | 332526 | 96.562 |
| 125) Hexachlorobenzene | (4) | 25.622 | 284 | 239174 | 86.146 |
| 129) Pentachlorophenol | (4) | 26.167 | 266 | 126369 | 65.085 |
| 133) Phenanthrene-d10 | (4) | 26.733 | 188 | 464140 | 40.000 |
| 165) Chrysene-d12 | (5) | 33.243 | 240 | 356871 | 40.000 |
| 173) Perylene-d12 | (6) | 39.667 | 264 | 357292 | 40.000 |
| 9) 2-Fluorophenol | (1) | 9.396 | 112 | 835082 | 111.982 |
| 15) Phenol-d6 | (1) | 11.844 | 99 | 656962 | 71.758 |
| 38) Nitrobenzene-d5 | (2) | 14.623 | 82 | 514634 | 83.018 |
| 77) 2-Fluorobiphenyl | (3) | 20.085 | 172 | 824846 | 84.571 |
| 117) 2,4,6-Tribromophenol | (3) | 24.670 | 330 | 242959 | 183.463 |
| 154) Terphenyl-d14 | (5) | 30.496 | 244 | 523987 | 67.632 |

M = Compound was manually integrated.  A = User selected an alternate hit

# 055WCLCSM

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 055WCLCS

Data file: /chem/HP06755.i/04feb24a.b/mb613.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 23:12 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.023 | ( 0.011) | 830 | 152.0 | 170951 | ( -34) | 40.00 | |
| 52) Naphthalene-d8 | 16.796 | ( 0.011) | 1183 | 136.0 | 600519 | ( -34) | 40.00 | |
| 96) Acenaphthene-d10 | 22.216 | ( 0.011) | 1690 | 164.0 | 272869 | ( -33) | 40.00 | |
| 133) Phenanthrene-d10 | 26.726 | ( 0.011) | 2112 | 188.0 | 440856 | ( -26) | 40.00 | |
| 165) Chrysene-d12 | 33.247 | ( 0.000) | 2722 | 240.0 | 341712 | ( -27) | 40.00 | |
| 173) Perylene-d12 | 39.671 | ( 0.011) | 3323 | 264.0 | 342528 | (--25) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.399 | ( 0.002) | 112 | 1052158 | 147.175 | 74% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.858 | (-0.001) | 99 | 949636 | 108.199 | 54% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.626 | (-0.001) | 82 | 509192 | 86.713 | 87% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.088 | ( 0.000) | 172 | 826820 | 90.623 | 91% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | (-0.001) | 330 | 240343 | 194.011 | 97% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.500 | ( 0.000) | 244 | 628887 | 84.772 | 85% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.904 | (-0.002) | 79 | 352703 | 44.536 | 89.07 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076 | ( 0.000) | 146 | 476515 | 69.075 | 138.15 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.632 | ( 0.000) | 108 | 492770 | 79.821 | 159.64 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.081 | (-0.001) | 108 | 504969 | 80.006 | 160.01 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.520 | (-0.001) | 117 | 161209 | 56.037 | 112.07 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.680 | ( 0.000) | 77 | 472775 | 81.418 | 162.84 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.202 | ( 0.000) | 225 | 134787 | 63.910 | 127.82 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.811 | ( 0.000) | 196 | 253225 | 91.115 | 182.23 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917 | ( 0.000) | 196 | 276304 | 90.379 | 180.76 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771 | ( 0.000) | 165 | 320040 | 99.350 | 198.70 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.625 | ( 0.000) | 284 | 231187 | 87.667 | 175.33 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.171 | ( 0.000) | 266 | 132594 | 71.898 | 143.80 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Data file: /chem/HP06755.i/04feb24a.b/mb613.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 23:12 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

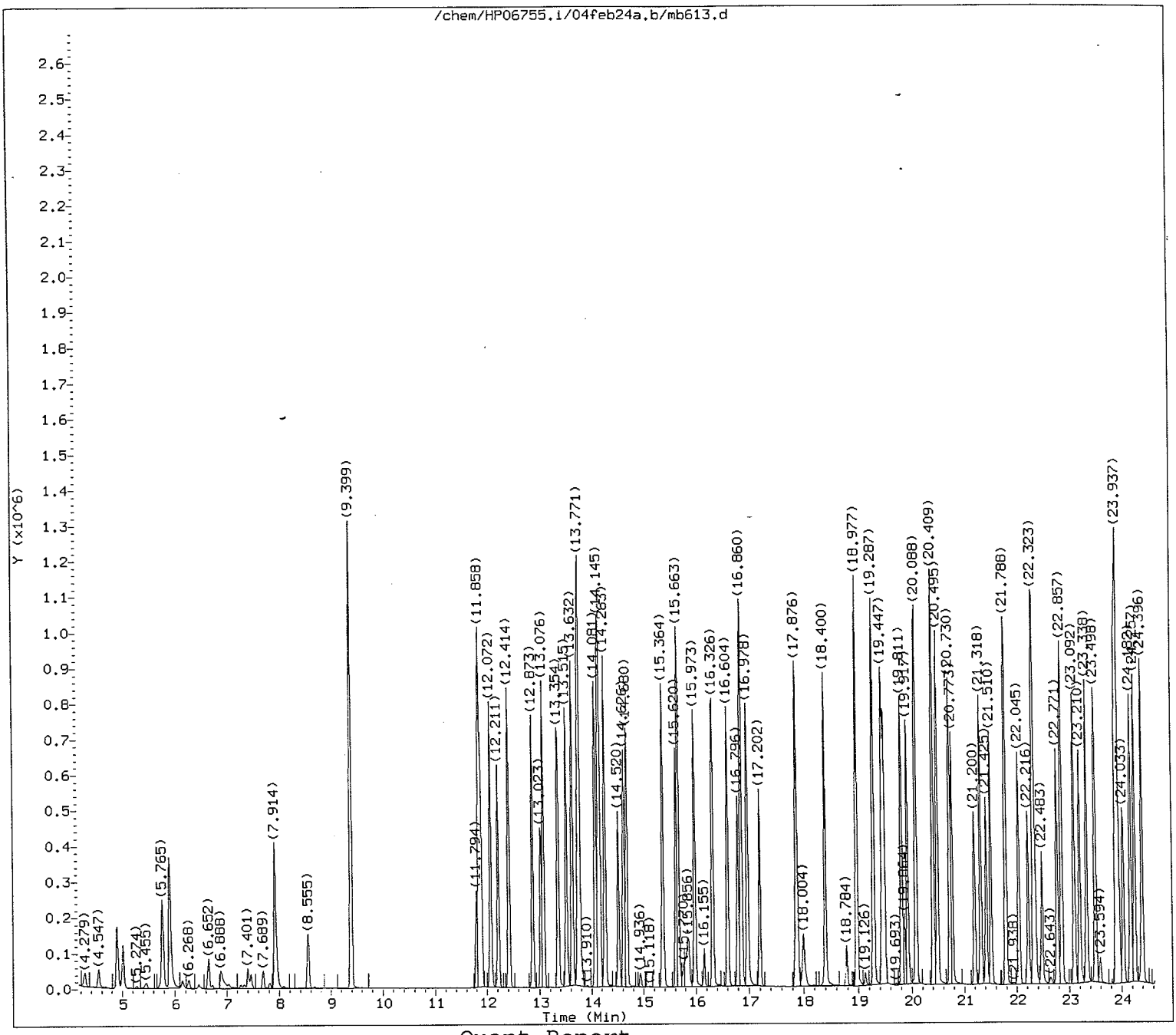
Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

# THIS SPACE WAS LEFT BLANK INTENTIONALLY

Total number of targets = 12

Comments: _____

Analyst: for Michele Jarosick Date: 2/25/04
Auditor: _____ Date: 2/25/04




Quant Report

Target Revision 3.5

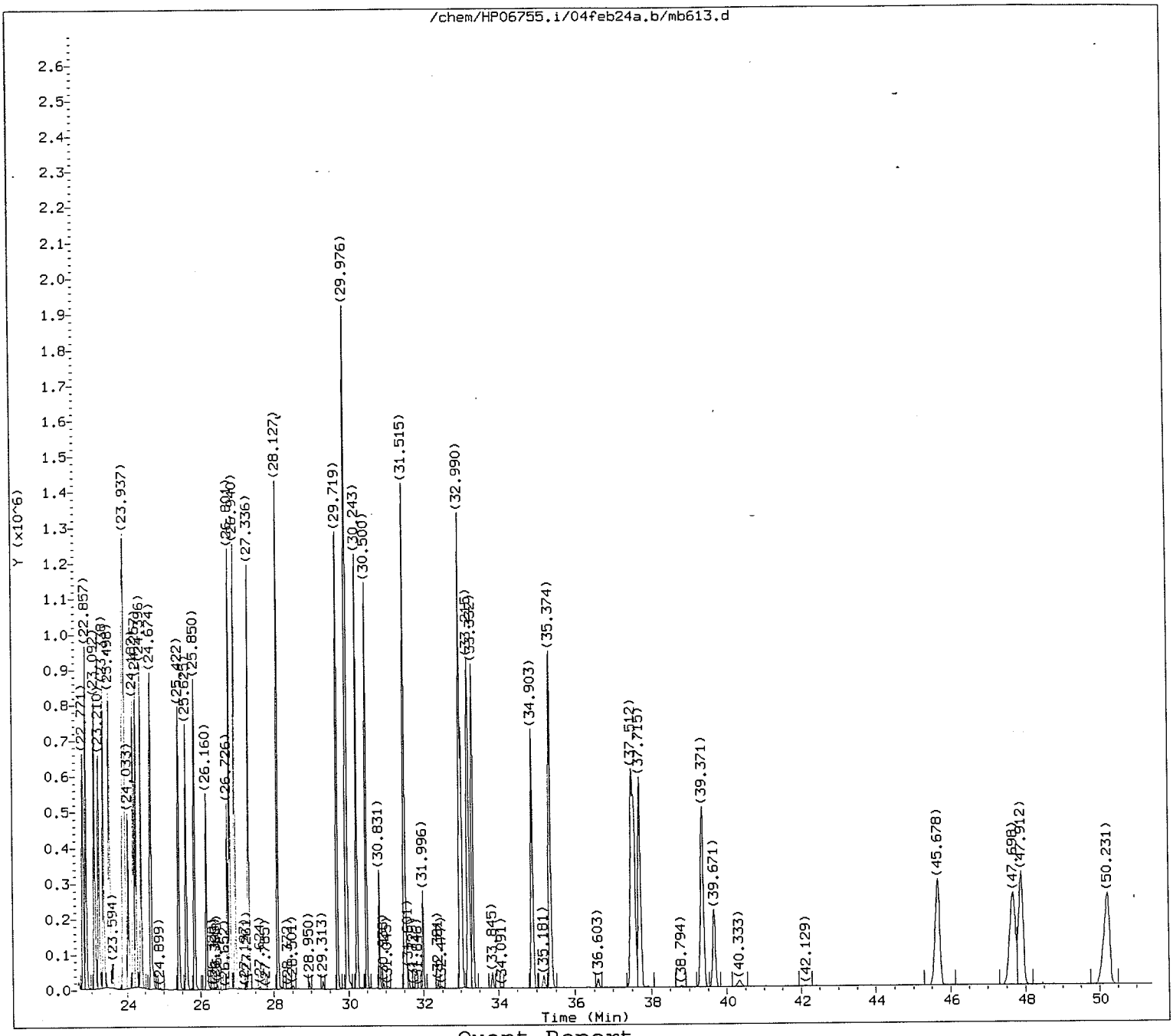
Data File: /chem/HP06755.i/04feb24a.b/mb613.d
Injection date and time: 24-FEB-2004 23:12
Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10
Sublist used: WTCLP04
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM
Lab Sample ID: 055WCLCS

JMG 346
2/25/04

3467




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb613.d Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 23:12 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM Lab Sample ID: 055WCLCS

JMG 346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb613.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 23:12  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM  Lab Sample ID: 055WCLCS

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.904 | 79 | 352703 | 44.536 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.023 | 152 | 170951 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076 | 146 | 476515 | 69.075 |
| 26) 2-Methylphenol | (1) | 13.632 | 108 | 492770 | 79.821 |
| 33) 4-Methylphenol | (1) | 14.081 | 108 | 504969 | 80.006 |
| 37) Hexachloroethane | (1) | 14.520 | 117 | 161209 | 56.037 |
| 39) Nitrobenzene | (2) | 14.680 | 77 | 472775 | 81.418 |
| 52) Naphthalene-d8 | (2) | 16.796 | 136 | 600519 | 40.000 |
| 59) Hexachlorobutadiene | (2) | 17.202 | 225 | 134787 | 63.910 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.811 | 196 | 253225 | 91.115 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917 | 196 | 276304 | 90.379 |
| 96) Acenaphthene-d10 | (3) | 22.216 | 164 | 272869 | 40.000 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771 | 165 | 320040 | 99.350 |
| 125) Hexachlorobenzene | (4) | 25.625 | 284 | 231187 | 87.667 |
| 129) Pentachlorophenol | (4) | 26.171 | 266 | 132594 | 71.898 |
| 133) Phenanthrene-d10 | (4) | 26.726 | 188 | 440856 | 40.000 |
| 165) Chrysene-d12 | (5) | 33.247 | 240 | 341712 | 40.000 |
| 173) Perylene-d12 | (6) | 39.671 | 264 | 342528 | 40.000 |
| 9) 2-Fluorophenol | (1) | 9.399 | 112 | 1052158 | 147.175 |
| 15) Phenol-d6 | (1) | 11.858 | 99 | 949636 | 108.199 |
| 38) Nitrobenzene-d5 | (2) | 14.626 | 82 | 509192 | 86.713 |
| 77) 2-Fluorobiphenyl | (3) | 20.088 | 172 | 826820 | 90.623 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 240343 | 194.011 |
| 154) Terphenyl-d14 | (5) | 30.500 | 244 | 628887 | 84.772 |

M = Compound was manually integrated.  A = User selected an alternate hit

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06755 **HP #13**

*** Shift #1 Analyst: JMC *** Shift #2 Analyst: IDS *

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

Other problems or comments are as follows:

*

*

*

*

Data Directory Path is - D:\DATA\04FEB13\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | MB340.D | 8270DFTPP0274 | 50NG/UL | 13 Feb 2004 | 04:53 | | | NU |
| 1 | MB33Z.D | 8270DFTPP0274 | 50NG/UL | 13 Feb 2004 | 05:30 | | | MR |
| 2 | MB331.D | SSTD050 | STD0404 | 13 Feb 2004 | 05:53 | | | NU |
| 2 | MB33A.D | SSTD050 | STD0404 | 13 Feb 2004 | 06:59 | | | MR |
| 3 | MB332.D | SSTD120 | STD0404 | 13 Feb 2004 | 08:00 | | | MR |
| 4 | MB333.D | SSTD080 | STD0404 | 13 Feb 2004 | 09:01 | | | MR |
| 5 | MB334.D | SSTD005 | STD0404 | 13 Feb 2004 | 10:02 | | | MR |
| 6 | MB335.D | SSTD015 | STD0404 | 13 Feb 2004 | 11:03 | | | MR |
| 7 | MB336.D | SSTD030 | STD0404 | 13 Feb 2004 | 12:04 | | | MR |
| 8 | MB337.D | SSTD001 | 8270MDL0404 | 13 Feb 2004 | 13:05 | | | MR |
| 9 | MB338.D | SSTD050 | ICV0224 | 13 Feb 2004 | 14:06 | | | MR |

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06755 **HP #13**

*** Shift #1 Analyst: JMG *** Shift #2 Analyst: IDS *

Comment Code:

| | | | |
|---|---|---|---|
| R = Reinjection necessary | X = Sample sent to be reextracted |
| S = Surrogate problem | I = Internal Standard problem |
| NU = Not used | F = Further dilution required |
| MR = Meets requirements | IUO = Internal use only |
| Cz = Confirms z, (z = I or X) | T = Injected outside valid tune period |

Other problems or comments are as follows:

*

*

*

*

Data Directory Path is - D:\DATA\04FEB24A\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | MB610.D | 8270DFTPP0274 | 50NG/UL | 24 Feb 2004 | 20:24 | | | MR2 |
| 2 | MB611.D | SSTD050 | STD0404 | 24 Feb 2004 | 20:48 | | | |
| 11 | MB612.D | SBLKWC055M | SBLKWC055 | 24 Feb 2004 | 22:13 | 04055WAC | | |
| 12 | MB613.D | 055WCLCSM | 055WCLCS | 24 Feb 2004 | 23:12 | 04055WAC | | |
| 13 | MB614.D | UN7NV | 4219022 | 25 Feb 2004 | 00:10 | 04055WAC | | |
| 14 | MB615.D | UN7NVMS | 4219022 | 25 Feb 2004 | 01:08 | 04055WAC | | |
| 15 | MB616.D | UN7NVMSD | 4219022 | 25 Feb 2004 | 02:07 | 04055WAC | | |
| 16 | MB617.D | UN5NV | 4219006 | 25 Feb 2004 | 03:05 | 04055WAC | | |
| 17 | MB618.D | TC407 | 4219669 | 25 Feb 2004 | 04:03 | 04055WAC | | |
| 18 | MB619.D | NV5SL | 4219913 | 25 Feb 2004 | 05:01 | 04055WAC | | IRF-20 |

# Extraction/Distillation/Digestion Logs

2/24/04 19:30

# Organic Extraction Batchlog

Reviewed: JMG 2/25/04
Start Date: 2/24/04
Start Time: 15:30
Tech 1: AGN489
Tech 2:

Prep Analysis # 04731 TCLP Leachate Water Extraction
Prep Group # 625 TCLP GC/MS Dept: 26

BATCH NO. 04055WAC026

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANK6 | PBLKXE | 500 | SS0404726A | 1.0 | | | 1 | 11 | 2 | Z | |
| LCS6 | LCSVO | 500 | SS0404726A | | MS0404826A | 1.0 | | | | | |
| 4219022MS | UN7NVMS | 330 | SS0404726A | | MS0404826A | | | | | 45B | clear |
| 4219022MSD | UN7NVMSD | 330 | SS0404726A | | MS0404826A | | | | | | |

AGN489

| | Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4219006 | UN5NV | 500 | SS0404726A | 1.0 | 1 | 11 | 2 | 45A | clear | 949 | 3/2/04 | P |
| 2 | 4219022 bkg | UN7NV AGN 330 | 330 | SS0404726A | | | | | 45A/B | | 949 | 3/2/04 | P |
| 3 | 4219669 | TC407 | 500 | SS0404726A | | | | | 45A | | 949 | 3/4/04 | P |
| 4 | 4219913 | NV5SL | 500 | SS0404726A | | | | | | cloudy | 949 base cent 1x | 3/4/04 | N |
| 5 | 4220301 | NV439 | 500 | SS0404726A | | | | | | clear | 949 | 2/27/04 | S |
| 6 | 4221331 | BLA20 | 500 | SS0404726A | | | | | | | 949 | 3/3/04 | P |
| 7 | 4221332 | BLA44 | 500 | SS0404726A | | | | | | | 949 | 3/3/04 | P |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

AGN489

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS0404726A BNA SURROGATE STANDARD
MS0404826A LCS SPIKE MIX

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| $MeCl_2$ | A02E58 | $Na_2SO_4$ | 026638 |
| NaOH | 3092-26 | | |
| $H_2SO_4$ | 935037 | Work Station: | $H_2O$ Bench 1 |
| Internal Standar | 4300730 | Balance # | |
| S-bath ID 9 | 85 °C | S-bath ID | °C |
| N-Evap | °C | | |

Documented temps are NIST corrected. 04055WAC026

8473

$MeCl_2$ Lot → A02E58

# Pesticides Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV01**

## LANCASTER LABORATORIES

## TCLP Pesticides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **LEACHATE** | **COMMENTS** |
| BLANKA | PBLKXG | | X | Method Blank |
| LCSA | LCSVQ | | X | Laboratory Control Spike |
| 4219006 | UN5NV | | X | |
| 4219022 | UN7NV | | X | Background |
| 4219022MS | UN7NVMS | | X | Matrix Spike |
| 4219022MSD | UN7NVMSD | | X | Matrix Spike Dup |
| | | | | |

### A. Sample Preparation:

Florisil cleanup was used to minimize interferences. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1C13051, 1C13051B, 2C13051, 2C13051B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

An SW-846 method update was performed using the initial calibration files from 1C13051 and the calibration name was changed to 2C13051.

### C. Quality Control:

All reported surrogates are within the QC limits.

The matrix spike data are within the QC limits.

The LCS data are within the QC limits.

### D. Data Interpretation:

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.

No further interpretation is needed.

Lancaster Laboratories

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

for: 2-29-04

**Jenifer E. Hess, Group Leader** **Date**

8477

# QC Summary

# 2
# SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: RAV01

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

| SAMPLE | SAMPLE CODE NO. | TCX 1 % REC # | TCX 2 % REC # | DCB 1 % REC # | DCB 2 % REC # | TOT OUT |
|---|---|---|---|---|---|---|
| 4219006 | UN5NV | 80 | 79 | 91 | 83 | 0 |
| 4219022 | UN7NV | 78 | 80 | 90 | 84 | 0 |
| 4219022 MS | UN7NVMS | 74 | 74 | 96 | 88 | 0 |
| 4219022 MSD | UN7NVMSD | 71 | 73 | 94 | 86 | 0 |
| BLANKA | PBLKXG | 71 | 69 | 94 | 85 | 0 |
| LCSA | LCSVQ | 71 | 70 | 94 | 87 | 0 |

| | | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|---|
| TCX | = Tetrachloro-m-xylene | (45 - 125) | 1.44 | ug/Kg |
| DCB | = Decachlorobiphenyl | (47 - 155) | 1.46 | ug/Kg |

# Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

# Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: UN7NV

| Compound | Spike Added (ug/l) | Sample Concen (ug/l) | MS Concen (ug/l) | MSD Concen (ug/l) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.52 | 0 | 0.52 | 0.49 | 100 | 94 | (67 - 151) | 6 | 30 |
| Heptachlor | 0.51 | 0 | 0.50 | 0.49 | 98 | 96 | (37 - 145) | 2 | 30 |
| Heptachlor epoxide | 0.76 | 0 | 0.79 | 0.77 | 104 | 101 | (62 - 150) | 3 | 30 |
| Endrin | 0.25 | 0 | 0.25 | 0.24 | 100 | 96 | (61 - 145) | 4 | 30 |
| Methoxychlor | 2.0 | 0 | 2.0 | 1.9 | 100 | 95 | (47 - 170) | 5 | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comments: Results calculated on as-received basis.

Sample No.: 4219022 Batch: 040550003A

# Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSVQ

| Compound | Spike Added (mg/l) | LCS Concen (mg/l) | LCSD Concen (mg/l) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.52 | 0.47 | | 90 | | (65 - 144) | | 30 |
| Heptachlor | 0.51 | 0.44 | | 86 | | (45 - 130) | | 30 |
| Heptachlor epoxide | 0.76 | 0.74 | | 97 | | (73 - 141) | | 30 |
| Endrin | 0.25 | 0.23 | | 92 | | (62 - 135) | | 30 |
| Methoxychlor | 2.0 | 1.9 | | 95 | | (49 - 155) | | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 5 outside limits

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 040550003A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKXG

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV01

Lab Sample ID BLANKA

Lab File ID: 2C13051.18R 2C13051B.18R

Matrix: (soil/water) LEACHATE

Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N

Date Extracted: 2/25/04

Date Analyzed (1): 2/25/04

Date Analyzed (2): 2/25/04

Time Analyzed (1): 16:35:19

Time Analyzed (2): 16:35:19

Instrument ID (1): H6722A

Instrument ID (2): H6722B

GC Column: RTX-CLP ID: 0.32 (mm)

GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | UN5NV | 4219006 | 2/25/04 | 2/25/04 |
| 02 | UN7NV | 4219022 | 2/25/04 | 2/25/04 |
| 03 | UN7NVMS | 4219022 | 2/25/04 | 2/25/04 |
| 04 | UN7NVMSD | 4219022 | 2/25/04 | 2/25/04 |
| 05 | PBLKXG | BLANKA | 2/25/04 | 2/25/04 |
| 06 | LCSVQ | LCSA | 2/25/04 | 2/25/04 |

8482

COMMENTS: _____

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKXG

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** LEACHATE **Lab Sample ID:** BLANKA

**Sample wt/vol:** 200 **(g/ml)** ml **Lab File ID:** 2C13051.18R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SEPF **Date Extracted:** 2/25/04

**Concentrated Extract Volume:** 10000 **(uL)** **Date Analyzed:** 2/25/04

**Injection Volume:** 2 **(uL)** **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/l | Q |
|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.010 | U |
| 76-44-8 | Heptachlor | 0.010 | U |
| 1024-57-3 | Heptachlor epoxide | 0.010 | U |
| 72-20-8 | Endrin | 0.020 | U |
| 72-43-5 | Methoxychlor | 0.10 | U |
| 57-74-9 | Chlordane (Technical) | 0.35 | U |
| 8001-35-2 | Toxaphene | 1.5 | U |

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 00950 Name: TCLP Pesticides

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| gamma-BHC (Lindane) | ug/l | 0.05 | 0.01 |
| Heptachlor | ug/l | 0.05 | 0.01 |
| Heptachlor epoxide | ug/l | 0.05 | 0.01 |
| Methoxychlor | ug/l | 0.5 | 0.1 |
| Endrin | ug/l | 0.1 | 0.02 |
| Chlordane (Technical) | ug/l | 2.5 | 0.35 |
| Toxaphene | ug/l | 5 | 1.5 |

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219006 F UN5NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV01 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722A
Result file : 2C13051.20R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 79.8% Conc.: 1.151704
%SSR(DCB) : 91.3% Conc.: 1.333664

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 87468 | 1.151704 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 2033 | 0.021967 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 654 | 0.007686 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 3219 | 0.031153 |
| **Hept. epoxide** | 7.35 | 7.40 | 7.41 | 1120 | 0.012668 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1057 | 0.012400 |
| **4,4'-DDE** | 7.78 | 7.84 | 7.84 | 551 | 0.008075 |
| **Dieldrin** | 8.20 | 8.22 | 8.26 | 539 | 0.007400 |
| **o,p-DDT** | 8.35 | 8.38 | 8.41 | 218 | 0.004012 |
| **4,4'-DDD** | 8.57 | 8.62 | 8.63 | 3487 | 0.065583 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 1264 | 0.018276 |
| **Methoxychlor** | 9.54 | 9.54 | 9.60 | 407 | 0.011677 |
| **Mirex** | 9.78 | 9.80 | 9.84 | 181 | 0.002881 |
| **Endo. sulfate** | 9.91 | 9.92 | 9.97 | 257 | 0.004175 |
| **DCB** | 11.59 | 11.60 | 11.65 | 99647 | 1.333664 |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722B
Result file : 2C13051B.20R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 79.2% Conc.: 1.142451
%SSR(DCB) : 83.2% Conc.: 1.215529

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 58114 | 1.142451 |
| **HCB** | 4.87 | 4.91 | 4.93 | 14178 | 0.183112 |
| **gamma-BHC** | 5.58 | 5.64 | 5.64 | 178 | 0.003511 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 11653 | 0.222851 |
| **o,p-DDT** | 8.74 | 8.78 | 8.80 | 176 | 0.005781 |
| **4,4'-DDD** | 8.83 | 8.85 | 8.89 | 1437 | 0.057655 |
| **Endrin aldehyde** | 9.40 | 9.43 | 9.46 | 780 | 0.023677 |
| **Endrin ketone** | 10.43 | 10.48 | 10.49 | 762 | 0.015684 |
| **DCB** | 12.20 | 12.21 | 12.26 | 61040 | 1.215529 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 1.151704 | | | | 0.81 | |
| HCB | | | | | | | |
| alpha-BHC | | | | | | | |
| gamma-BHC | | | <0.05 | <0.01 | | | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | | | <0.05 | <0.01 | | | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.05 | <0.01 | | | |
| g. Chlordane | | | | | | | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | | | | | | | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | B | 0.005781 | | | | 36.13 | |
| Endrin | | | <0.1 | <0.02 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 0.065583 | | | | 12.87 | |
| Endosulfan II | | | | | | | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | | | <0.5 | <0.1 | | | 8485 |
| Mirex | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:10:36

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219006 F UN5NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV01 State: VA
Analyses: 00950

Analysis Report (A)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722A
Result file : 2C13051.20R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722B
Result file : 2C13051B.20R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endo. sulfate | | | | | | | |
| Endrin ketone | | | | | | | |
| DCB | A | 1.333664 | | | | 9.27 | |

Units: ug/l

Reviewed by: Andrea J Carey Date: 2-26-04
Verified by: [signature] Date: 2/26/04



%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:10:36

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4219006** F UN5NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 0120 SDG: RAV01 State: VA
**Analyses:** 00950

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:16:16 |
| **Instrument** | H6722A |
| **Result file** | 2C13051.20R |
| **Calibration file** | 2C13051 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 79.8% | Conc: | 1.151704 |
| %SSR(DCB) | 91.3% | Conc: | 1.333664 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:16:16 |
| **Instrument** | H6722B |
| **Result file** | 2C13051B.20R |
| **Calibration file** | 2C13051B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 79.2% | Conc: | 1.142451 |
| %SSR(DCB) | 83.2% | Conc: | 1.215529 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Chlordane (Technical) | | | <2.5 | <0.35 | | | 2 | 20 | |
| Toxaphene | | | <5 | <1.5 | | | 4 | 30 | |

Units: ug/l

%Difference = High - Low divided by the Average times 100

Reviewed By: Andrea J Carey Date: 2-26-04

Verified By: [illegible] Date: 2/26/04

8455

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4219006 F UN5NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV01 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722A
Result file : 2C13051.20R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 79.8% Conc.: 1.151704
%SSR(DCB) : 91.3% Conc.: 1.333664

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 67.53 | |
| 5.47 | 5.51 | 5.53 | 567.387024 | 0.704129 | | | 3 |
| 6.10 | 6.12 | 6.16 | 3218.765381 | 2.242867 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1807.3396 | 0.838811 | | | 6 |
| Height Summation | | | **5593.492005** | | | | |
| Amount Avg CF: | | | **1.261936** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 131.39 | |
| 4.39 | 4.43 | 4.45 | 153.430161 | 0.149005 | | | 1 |
| 4.61 | 4.61 | 4.67 | 2220.209473 | 4.050738 | | | 2 |
| Height Summation | | | **2373.639634** | | | | |
| Amount Avg CF: | | | **2.099872** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 66.54 | |
| 5.47 | 5.51 | 5.53 | 567.387024 | 1.494697 | | | 3 |
| 6.09 | 6.12 | 6.15 | 3218.765381 | 4.835159 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1807.3396 | 1.894685 | | | 6 |
| Height Summation | | | **5593.492005** | | | | |
| Amount Avg CF: | | | **2.741514** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 68.87 | |
| 5.47 | 5.51 | 5.53 | 567.387024 | 0.82111 | | | 3 |
| 6.10 | 6.12 | 6.16 | 3218.765381 | 2.622426 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1807.3396 | 0.942157 | | | 6 |
| Height Summation | | | **5593.492005** | | | | |
| Amount Avg CF: | | | **1.461898** | Linear: | | | |
| **Aroclor-1248** | | | | | 4 | 195.74 | |
| E 6.29 | 6.32 | 6.35 | 140616.3593 | 58.397923 | | | 3 |
| 6.56 | 6.59 | 6.62 | 1807.3396 | 0.628465 | | | 4 |
| 7.16 | 7.19 | 7.22 | 486.743988 | 0.17059 | | | 5 |
| 7.94 | 7.95 | 8.00 | 225.133209 | 0.149999 | | | 6 |
| Height Summation | | | **143135.576172** | | | | |
| Amount Avg CF: | | | **14.836744** | Linear: | | | |
| **Aroclor-1254** | | | | | 2 | 97.91 | |
| 7.94 | 7.95 | 8.00 | 225.133209 | 0.053189 | | | 3 |
| 8.90 | 8.91 | 8.96 | 967.171448 | 0.292557 | | | 6 |
| Height Summation | | | **1192.304657** | | | | |
| Amount Avg CF: | | | **0.172873** | Linear: | | | |
| **Aroclor-1260** | | | | | 3 | 71.67 | |
| 8.17 | 8.22 | 8.23 | 539.2229 | 0.150842 | | | 2 |
| 8.89 | 8.91 | 8.95 | 967.171448 | 0.217624 | | | 3 |
| 9.75 | 9.80 | 9.81 | 180.935471 | 0.029886 | | | 5 |
| Height Summation | | | **1687.329819** | | | | |
| Amount Avg CF: | | | **0.132784** | Linear: | | | |
| **Chlordane** | | | | | 4 | 72.13 | |
| 6.10 | 6.12 | 6.16 | 3218.765381 | 0.750933 | | | 2 |
| 6.71 | 6.74 | 6.77 | 1493.161011 | 0.342542 | | | 3 |
| 7.69 | 7.72 | 7.75 | 1057.030273 | 0.100283 | | | 5 |
| 8.70 | 8.72 | 8.76 | 938.936707 | 0.313531 | | | 6 |
| Height Summation | | | **6707.893372** | | | | |
| Amount Avg CF: | | | **0.376822** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722B
Result file : 2C13051B.20R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 79.2% Conc.: 1.142451
%SSR(DCB) : 83.2% Conc.: 1.215529

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 167.32 | |
| 4.88 | 4.91 | 4.94 | 14178.07031 | 13.483457 | | | 1 |
| 5.44 | 5.48 | 5.50 | 408.71933 | 0.230461 | | | 2 |
| + 6.06 | 6.07 | 6.12 | 1098.78894 | 0.388689 | | | 3 |
| 6.06 | 6.11 | 6.12 | 2918.488037 | 1.032394 | | | 3 |
| 6.50 | 6.50 | 6.56 | 575.338745 | 0.634449 | | | 5 |
| Height Summation | | | **18080.616425** | | | | |
| Amount Avg CF: | | | **3.84519** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.87 | 4.91 | 4.93 | 14178.07031 | 9.831544 | | | 3 |
| Height Summation | | | **14178.070313** | | | | |
| Amount Avg CF: | | | **9.831544** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 130.51 | |
| E 4.87 | 4.91 | 4.93 | 14178.07031 | 12.559191 | | | 1 |
| 5.44 | 5.48 | 5.50 | 408.71933 | 0.521525 | | | 2 |
| + 6.06 | 6.07 | 6.12 | 1098.78894 | 0.9048 | | | 3 |
| 6.06 | 6.11 | 6.12 | 2918.488037 | 2.403235 | | | 3 |
| 6.50 | 6.50 | 6.56 | 575.338745 | 1.609789 | | | 5 |
| Height Summation | | | **18080.616425** | | | | |
| Amount Avg CF: | | | **4.273435** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 165.02 | |
| E 4.87 | 4.91 | 4.93 | 14178.07031 | 14.802746 | | | 1 |
| 5.44 | 5.48 | 5.50 | 408.71933 | 0.261631 | | | 2 |
| + 6.06 | 6.07 | 6.12 | 1098.78894 | 0.462531 | | | 3 |
| 6.06 | 6.11 | 6.12 | 2918.488037 | 1.228527 | | | 3 |
| 6.50 | 6.50 | 6.56 | 575.338745 | 0.763656 | | | 5 |
| Height Summation | | | **18080.616425** | | | | |
| Amount Avg CF: | | | **4.26414** | Linear: | | | |
| **Aroclor-1248** | | | | | 2 | 12.04 | |
| 5.44 | 5.48 | 5.50 | 408.71933 | 0.534134 | | | 1 |
| 6.50 | 6.50 | 6.56 | 575.338745 | 0.450328 | | | 2 |
| Height Summation | | | **984.058075** | | | | |
| Amount Avg CF: | | | **0.492231** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 6.50 | 6.50 | 6.56 | 575.338745 | 0.545821 | | | 1 |
| Height Summation | | | **575.338745** | | | | |
| Amount Avg CF: | | | **0.545821** | Linear: | | | |
| **Aroclor-1260** | | | | | 1 | | |
| 8.77 | 8.78 | 8.83 | 175.777557 | 0.066304 | | | 2 |
| Height Summation | | | **175.777557** | | | | |
| Amount Avg CF: | | | **0.066304** | Linear: | | | |
| **Chlordane** | | | | | 1 | | |
| 7.67 | 7.68 | 7.73 | 11652.57812 | 1.952664 | | | 4 |
| Height Summation | | | **11652.578125** | | | | |
| Amount Avg CF: | | | **1.952664** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.40 | 9.43 | 9.46 | 780.136963 | 1.095698 | | | 3 |
| Height Summation | | | **780.136963** | | | | |
| Amount Avg CF: | | | **1.095698** | Linear: | | | |

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:10:47

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4219006** F UN5NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV01 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722A
Result file : 2C13051.20R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 17:16:16
Instrument : CP13--H6722B
Result file : 2C13051B.20R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **4** | **108.66** | |
| 8.56 | 8.62 | 8.62 | 3486.827881 | 2.884632 | | | 1 |
| 8.94 | 9.00 | 9.00 | 407.051697 | 0.367345 | | | 2 |
| 9.22 | 9.26 | 9.28 | 1313.392212 | 1.12912 | | | 3 |
| 9.78 | 9.80 | 9.84 | 180.935471 | 0.169143 | | | 5 |
| Height Summation | | | **5388.207261** | | | | |
| Amount Avg CF: | | | **1.13756** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 0 | 0 | | ** 101.16 | 4 | 40 | |
| Aroclor-1221 | | | 0 | 0 | | ** 129.60 | 3 | 5 | |
| Aroclor-1232 | | | 0 | 0 | | ** 43.68 | 4 | 10 | |
| Aroclor-1242 | | | 0 | 0 | | ** 97.88 | 4 | 30 | |
| Aroclor-1248 | | | 0 | 0 | E | ** 187.16 | 4 | 30 | |
| Aroclor-1254 | | | 0 | 0 | | ** 103.78 | 4 | 40 | |
| Aroclor-1260 | | | 0 | 0 | | ** 66.78 | 4 | 40 | |
| Chlordane | | | 2.5 | 0.35 | | ** 135.30 | 2 | 20 | |
| Toxaphene | | | 5 | 1.5 | | 3.75 | 4 | 30 | |

Units: ug/l



Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:10:47

Sample Name: **4219006F ABUN5NV T 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 05:30:16pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.20R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.849 | | 0.0000 | 0.000 | 15635.5 | 1.259 | BB | 0.046 | 5656.93 | 1.252 |
| 2 | 3.920 | | 0.0000 | 0.000 | 13719.4 | 1.105 | BB | 0.034 | 6756.74 | 1.495 |
| 3 | 3.998 | | 0.0000 | 0.000 | 377.8 | 0.030 | BB | 0.021 | 298.61 | 0.066 |
| 4 | 4.041 | | 0.0000 | 0.000 | 1723.4 | 0.139 | BB | 0.032 | 885.89 | 0.196 |
| 5 | 4.163 | TCX | 230.3409 | 42.761 | 222081.0 | 17.887 | BB | 0.042 | 87467.88 | 19.351 |
| 6 | 4.433 | | 0.0000 | 0.000 | 802.9 | 0.065 | BB | 0.087 | 153.43 | 0.034 |
| 7 | 4.491 | | 0.0000 | 0.000 | 965.0 | 0.078 | BB | 0.027 | 586.08 | 0.130 |
| 8 | 4.547 | | 0.0000 | 0.000 | 1241.9 | 0.100 | BB | 0.029 | 701.71 | 0.155 |
| 9 | 4.610 | | 0.0000 | 0.000 | 6403.0 | 0.516 | BB | 0.048 | 2220.21 | 0.491 |
| 10 | 4.787 | | 0.0000 | 0.000 | 88449.4 | 7.124 | BB | 0.056 | 26097.96 | 5.774 |
| 11 | 4.960 | | 0.0000 | 0.000 | 291.2 | 0.023 | BB | 0.026 | 189.89 | 0.042 |
| 12 | 5.015 | alpha-BHC | 4.3935 | 0.816 | 5192.6 | 0.418 | BB | 0.043 | 2032.91 | 0.450 |
| 13 | 5.101 | | 0.0000 | 0.000 | 403.5 | 0.033 | BB | 0.035 | 193.70 | 0.043 |
| 14 | 5.255 | | 0.0000 | 0.000 | 3529.6 | 0.284 | BB | 0.043 | 1377.20 | 0.305 |
| 15 | 5.322 | | 0.0000 | 0.000 | 809.0 | 0.065 | BB | 0.028 | 481.11 | 0.106 |
| 16 | 5.506 | | 0.0000 | 0.000 | 2235.5 | 0.180 | BB | 0.066 | 567.39 | 0.126 |
| 17 | 5.622 | | 0.0000 | 0.000 | 49666.3 | 4.000 | BB | 0.040 | 20822.80 | 4.607 |
| 18 | 5.783 | | 0.0000 | 0.000 | 1233.9 | 0.099 | BB | 0.033 | 631.44 | 0.140 |
| 19 | 5.809 | delta-BHC | 1.5372 | 0.285 | 938.6 | 0.076 | BB | 0.024 | 654.28 | 0.145 |
| 20 | 5.950 | | 0.0000 | 0.000 | 1996.7 | 0.161 | BB | 0.054 | 614.86 | 0.136 |
| 21 | 6.125 | Heptachlor | 6.2306 | 1.157 | 13031.4 | 1.050 | BV | 0.067 | 3218.77 | 0.712 |
| 22 | 6.198 | | 0.0000 | 0.000 | 6143.4 | 0.495 | VB | 0.047 | 2192.57 | 0.485 |
| 23 | 6.325 | | 0.0000 | 0.000 | 294665.0 | 23.733 | BV | 0.035 | 140616.40 | 31.110 |
| 24 | 6.475 | | 0.0000 | 0.000 | 5626.2 | 0.453 | VV | 0.060 | 1551.35 | 0.343 |
| 25 | 6.591 | | 0.0000 | 0.000 | 9330.2 | 0.751 | VV | 0.086 | 1807.34 | 0.400 |
| 26 | 6.738 | | 0.0000 | 0.000 | 5130.0 | 0.413 | VB | 0.057 | 1493.16 | 0.330 |
| 27 | 6.921 | | 0.0000 | 0.000 | 9422.9 | 0.759 | BB | 0.051 | 3065.80 | 0.678 |
| 28 | 7.028 | | 0.0000 | 0.000 | 171.7 | 0.014 | BB | 0.024 | 118.38 | 0.026 |
| 29 | 7.080 | | 0.0000 | 0.000 | 3277.2 | 0.264 | BB | 0.046 | 1193.45 | 0.264 |
| 30 | 7.191 | | 0.0000 | 0.000 | 1720.4 | 0.139 | BB | 0.059 | 486.74 | 0.108 |
| 31 | 7.258 | | 0.0000 | 0.000 | 182.7 | 0.015 | BB | 0.022 | 138.59 | 0.031 |
| 32 | 7.310 | | 0.0000 | 0.000 | 616.0 | 0.050 | BV | 0.036 | 282.61 | 0.063 |
| 33 | 7.396 | Hept. epoxide | 2.5335 | 0.470 | 4152.0 | 0.334 | VV | 0.062 | 1119.91 | 0.248 |
| 34 | 7.501 | | 0.0000 | 0.000 | 22046.7 | 1.776 | VB | 0.056 | 6531.55 | 1.445 |
| 35 | 7.718 | a. Chlordane | 2.4801 | 0.460 | 3534.6 | 0.285 | BV | 0.056 | 1057.03 | 0.234 |
| 36 | 7.843 | 4,4'-DDE | 1.6151 | 0.300 | 1985.8 | 0.160 | VB | 0.060 | 551.27 | 0.122 |
| 37 | 7.951 | | 0.0000 | 0.000 | 447.7 | 0.036 | BV | 0.033 | 225.13 | 0.050 |
| 38 | 8.002 | | 0.0000 | 0.000 | 689.1 | 0.055 | VB | 0.043 | 270.06 | 0.060 |
| 39 | 8.081 | | 0.0000 | 0.000 | 3354.9 | 0.270 | BV | 0.063 | 885.77 | 0.196 |
| 40 | 8.164 | | 0.0000 | 0.000 | 1487.3 | 0.120 | VV | 0.045 | 547.82 | 0.121 |
| 41 | 8.223 | Dieldrin | 1.4799 | 0.275 | 1644.2 | 0.132 | VB | 0.051 | 539.22 | 0.119 |
| 42 | 8.382 | o,p-DDT | 0.8024 | 0.149 | 866.4 | 0.070 | BB | 0.066 | 218.47 | 0.048 |
| 43 | 8.617 | 4,4'-DDD | 13.1165 | 2.435 | 11914.2 | 0.960 | BV | 0.057 | 3486.83 | 0.771 |
| 44 | 8.725 | | 0.0000 | 0.000 | 3555.7 | 0.286 | VB | 0.063 | 938.94 | 0.208 |
| 45 | 8.851 | Endosulfan II | 3.6552 | 0.679 | 3706.5 | 0.299 | BV | 0.049 | 1263.98 | 0.280 |
| 46 | 8.910 | | 0.0000 | 0.000 | 3283.6 | 0.264 | VV | 0.057 | 967.17 | 0.214 |
| 47 | 8.995 | | 0.0000 | 0.000 | 1368.3 | 0.110 | VB | 0.056 | 407.05 | 0.090 |
| 48 | 9.109 | | 0.0000 | 0.000 | 393.3 | 0.032 | BV | 0.037 | 176.74 | 0.039 |
| 49 | 9.179 | | 0.0000 | 0.000 | 322.8 | 0.026 | VB | 0.049 | 110.55 | 0.024 |
| 50 | 9.260 | | 0.0000 | 0.000 | 3411.2 | 0.275 | BB | 0.043 | 1313.39 | 0.291 |
| 51 | 9.455 | | 0.0000 | 0.000 | 1708.0 | 0.138 | BV | 0.040 | 708.24 | 0.157 |
| 52 | 9.542 | Methoxychlor | 2.3355 | 0.434 | 1059.7 | 0.085 | VB | 0.043 | 406.51 | 0.090 |
| 53 | 9.638 | | 0.0000 | 0.000 | 1441.0 | 0.116 | BV | 0.056 | 427.39 | 0.095 |
| 54 | 9.803 | Mirex | 0.5762 | 0.107 | 674.3 | 0.054 | VB | 0.062 | 180.94 | 0.040 |
| 55 | 9.919 | Endo. sulfate | 0.8350 | 0.155 | 700.1 | 0.056 | BV | 0.045 | 256.92 | 0.057 |
| 56 | 10.074 | | 0.0000 | 0.000 | 3648.7 | 0.294 | VV | 0.057 | 1062.76 | 0.235 |
| 57 | 10.141 | | 0.0000 | 0.000 | 62509.2 | 5.035 | VB | 0.119 | 8746.54 | 1.935 |
| 58 | 10.466 | | 0.0000 | 0.000 | 627.4 | 0.051 | BB | 0.053 | 198.38 | 0.044 |
| 59 | 10.632 | | 0.0000 | 0.000 | 951.5 | 0.077 | BV | 0.081 | 196.01 | 0.043 |
| 60 | 10.725 | | 0.0000 | 0.000 | 2512.1 | 0.202 | VB | 0.054 | 780.45 | 0.173 |
| 61 | 11.126 | | 0.0000 | 0.000 | 21072.9 | 1.697 | BB | 0.167 | 2108.38 | 0.466 |
| 62 | 11.321 | | 0.0000 | 0.000 | 1704.9 | 0.137 | BB | 0.079 | 360.79 | 0.080 |
| 63 | 11.477 | | 0.0000 | 0.000 | 1049.8 | 0.085 | BB | 0.040 | 434.33 | 0.096 |
| 64 | 11.598 | DCB | 266.7328 | 49.517 | 285423.7 | 22.989 | BB | 0.048 | 99647.05 | 22.046 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 12.087 | | 0.0000 | 0.000 | 11743.8 | 0.946 | BB | 0.326 | 600.99 | 0.133 |
| 66 | 13.102 | | 0.0000 | 0.000 | 3032.8 | 0.244 | BB | 0.153 | 329.64 | 0.073 |
| 67 | 13.412 | | 0.0000 | 0.000 | 5972.5 | 0.481 | BB | 0.488 | 203.98 | 0.045 |
| 68 | 13.930 | | 0.0000 | 0.000 | 569.8 | 0.046 | BB | 0.052 | 182.40 | 0.040 |

Total Area = 1241580.0, Total Amount = 538.664, Total Height = 451998.7, Sample Units = PPB

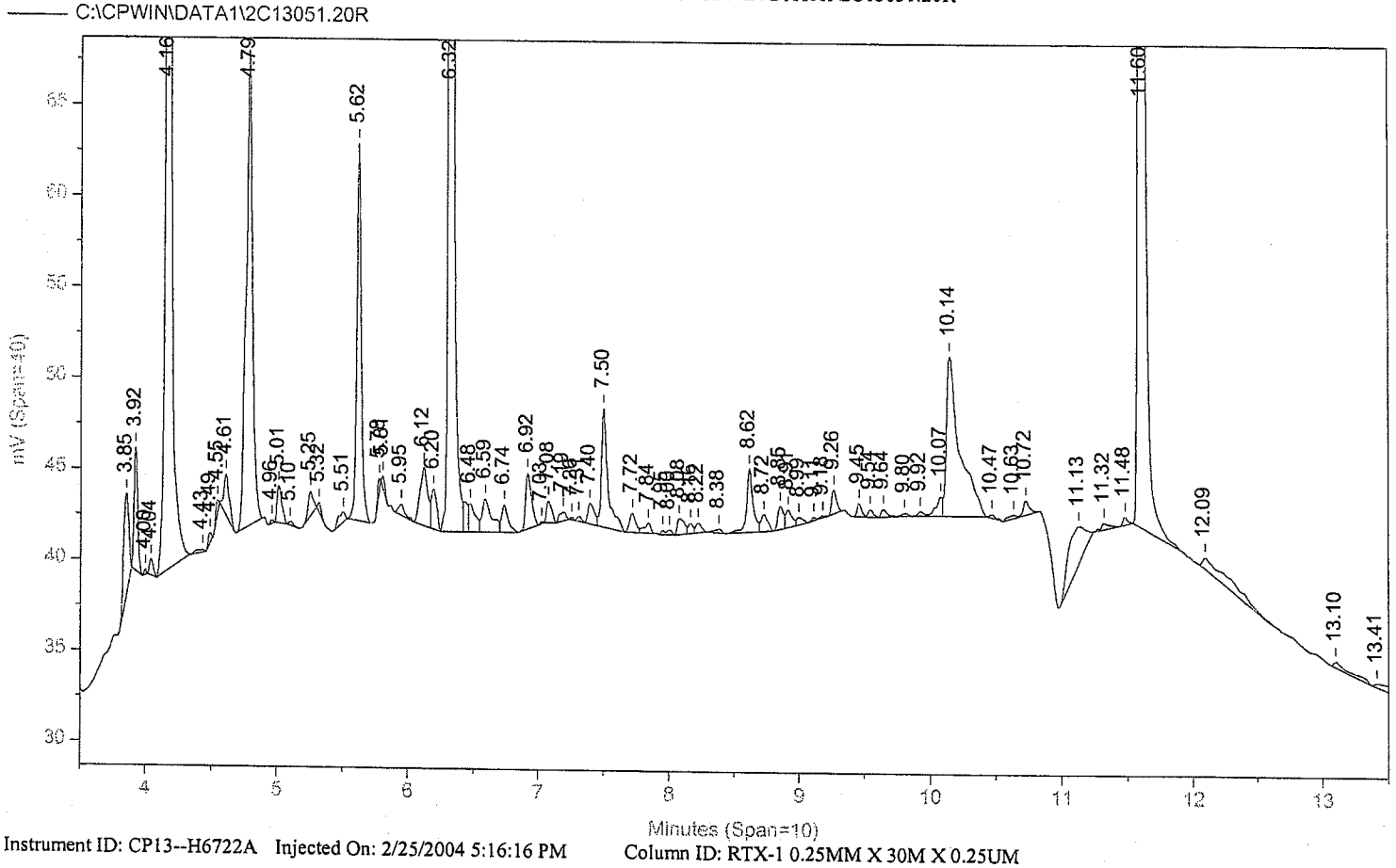
Sample Name: **4219006F ABUN5NV T 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 05:30:16pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.20R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.133 | | 0.0000 | 0.000 | 28516.9 | 5.200 | BB | 0.052 | 9084.81 | 4.553 |
| 2 | 3.366 | | 0.0000 | 0.000 | 7340.7 | 1.339 | BB | 0.069 | 1784.81 | 0.894 |
| 3 | 3.555 | | 0.0000 | 0.000 | 969.4 | 0.177 | BB | 0.024 | 680.99 | 0.341 |
| 4 | 3.622 | | 0.0000 | 0.000 | 12666.8 | 2.310 | BB | 0.039 | 5477.20 | 2.745 |
| 5 | 3.774 | | 0.0000 | 0.000 | 1799.5 | 0.328 | BB | 0.035 | 864.49 | 0.433 |
| 6 | 3.867 | | 0.0000 | 0.000 | 271.4 | 0.049 | BB | 0.020 | 221.33 | 0.111 |
| 7 | 3.913 | | 0.0000 | 0.000 | 6249.9 | 1.140 | BB | 0.037 | 2800.64 | 1.404 |
| 8 | 4.065 | | 0.0000 | 0.000 | 724.9 | 0.132 | BB | 0.048 | 253.50 | 0.127 |
| 9 | 4.134 | | 0.0000 | 0.000 | 311.0 | 0.057 | BB | 0.029 | 176.77 | 0.089 |
| 10 | 4.197 TCX | | 228.4901 | 39.803 | 126674.3 | 23.099 | BB | 0.036 | 58114.40 | 29.124 |
| 11 | 4.353 | | 0.0000 | 0.000 | 41707.8 | 7.605 | BB | 0.064 | 10863.78 | 5.444 |
| 12 | 4.742 | | 0.0000 | 0.000 | 2082.7 | 0.380 | BB | 0.043 | 798.42 | 0.400 |
| 13 | 4.911 HCB | | 36.6224 | 6.380 | 34518.5 | 6.294 | BB | 0.041 | 14178.07 | 7.105 |
| 14 | 5.477 | | 0.0000 | 0.000 | 1787.7 | 0.326 | BB | 0.073 | 408.72 | 0.205 |
| 15 | 5.640 gamma-BHC | | 0.7022 | 0.122 | 197.7 | 0.036 | BB | 0.019 | 177.79 | 0.089 |
| 16 | 5.686 | | 0.0000 | 0.000 | 1071.1 | 0.195 | BB | 0.054 | 332.79 | 0.167 |
| 17 | 5.790 | | 0.0000 | 0.000 | 689.7 | 0.126 | BB | 0.032 | 359.88 | 0.180 |
| 18 | 5.898 | | 0.0000 | 0.000 | 6155.2 | 1.122 | BV | 0.045 | 2262.16 | 1.134 |
| 19 | 6.070 | | 0.0000 | 0.000 | 2090.9 | 0.381 | VV | 0.032 | 1098.79 | 0.551 |
| 20 | 6.113 | | 0.0000 | 0.000 | 15544.0 | 2.834 | VB | 0.089 | 2918.49 | 1.463 |
| 21 | 6.339 | | 0.0000 | 0.000 | 803.0 | 0.146 | BB | 0.050 | 266.26 | 0.133 |
| 22 | 6.443 | | 0.0000 | 0.000 | 717.2 | 0.131 | BB | 0.037 | 326.02 | 0.163 |
| 23 | 6.502 | | 0.0000 | 0.000 | 2362.2 | 0.431 | BB | 0.068 | 575.34 | 0.288 |
| 24 | 6.747 | | 0.0000 | 0.000 | 14543.4 | 2.652 | BB | 0.050 | 4877.23 | 2.444 |
| 25 | 7.042 | | 0.0000 | 0.000 | 1473.0 | 0.269 | BB | 0.053 | 463.04 | 0.232 |
| 26 | 7.684 g. Chlordane | | 44.5702 | 7.764 | 27679.5 | 5.047 | BB | 0.040 | 11652.58 | 5.840 |
| 27 | 8.780 o,p-DDT | | 1.1563 | 0.201 | 567.0 | 0.103 | BB | 0.054 | 175.78 | 0.088 |
| 28 | 8.850 4,4'-DDD | | 11.5310 | 2.009 | 4506.5 | 0.822 | BB | 0.052 | 1436.61 | 0.720 |
| 29 | 9.160 | | 0.0000 | 0.000 | 9163.0 | 1.671 | BB | 0.172 | 887.54 | 0.445 |
| 30 | 9.430 Endrin aldehyde | | 4.7355 | 0.825 | 4323.6 | 0.788 | BB | 0.092 | 780.14 | 0.391 |
| 31 | 10.035 | | 0.0000 | 0.000 | 10897.8 | 1.987 | BB | 0.064 | 2860.05 | 1.433 |
| 32 | 10.485 Endrin ketone | | 3.1367 | 0.546 | 7682.2 | 1.401 | BB | 0.168 | 761.71 | 0.382 |
| 33 | 11.163 | | 0.0000 | 0.000 | 1378.8 | 0.251 | BB | 0.088 | 260.66 | 0.131 |
| 34 | 11.772 | | 0.0000 | 0.000 | 6752.0 | 1.231 | BB | 0.353 | 318.91 | 0.160 |
| 35 | 12.207 DCB | | 243.1058 | 42.349 | 164189.6 | 29.939 | BB | 0.045 | 61040.41 | 30.591 |

Total Area = 548408.9, Total Amount = 574.05, Total Height = 199540.1, Sample Units = PPB

LANCASTER LABORATORIES

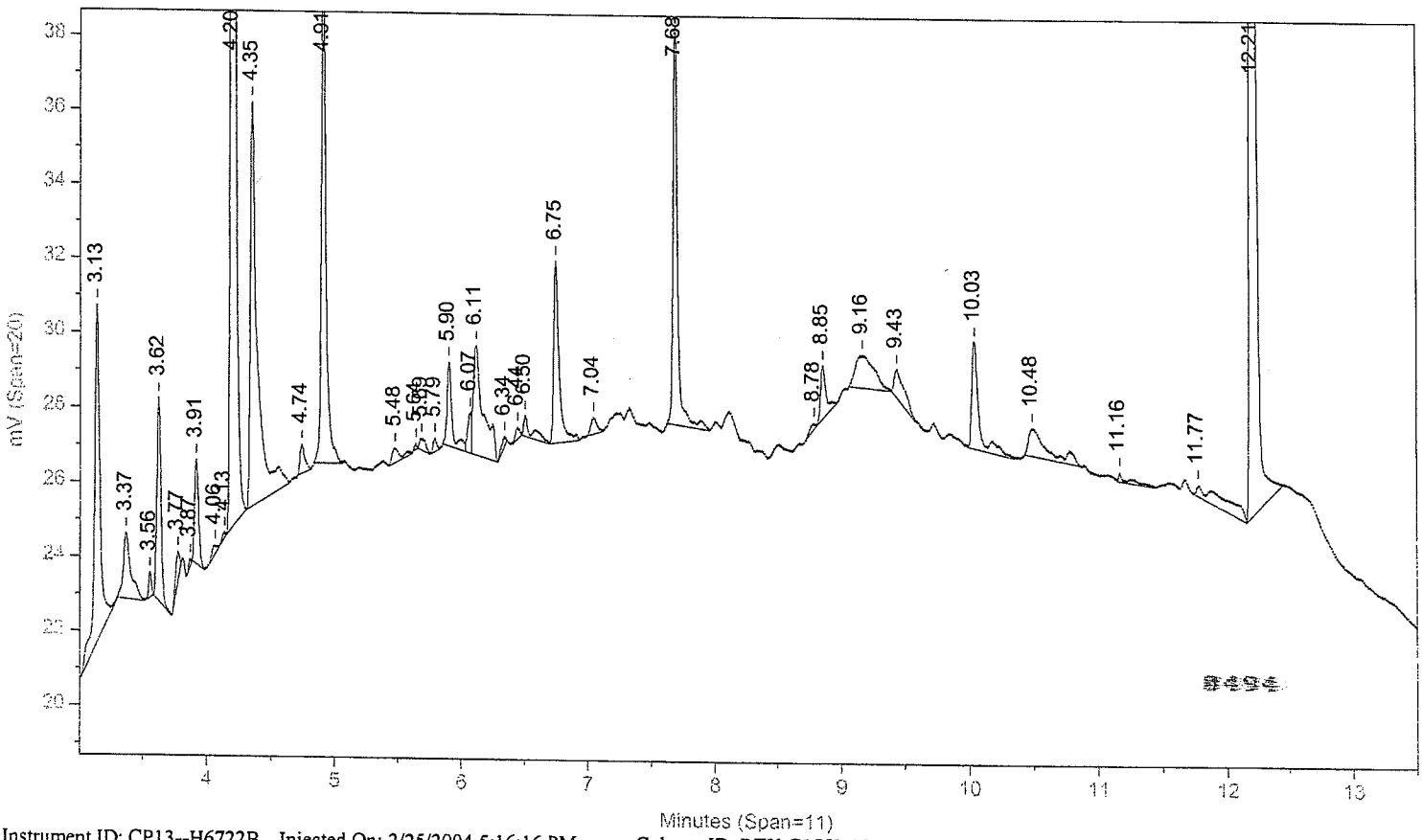
File: C:\CPWIN\DATA1\2C13051.20R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:16:16 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.20R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:16:16 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

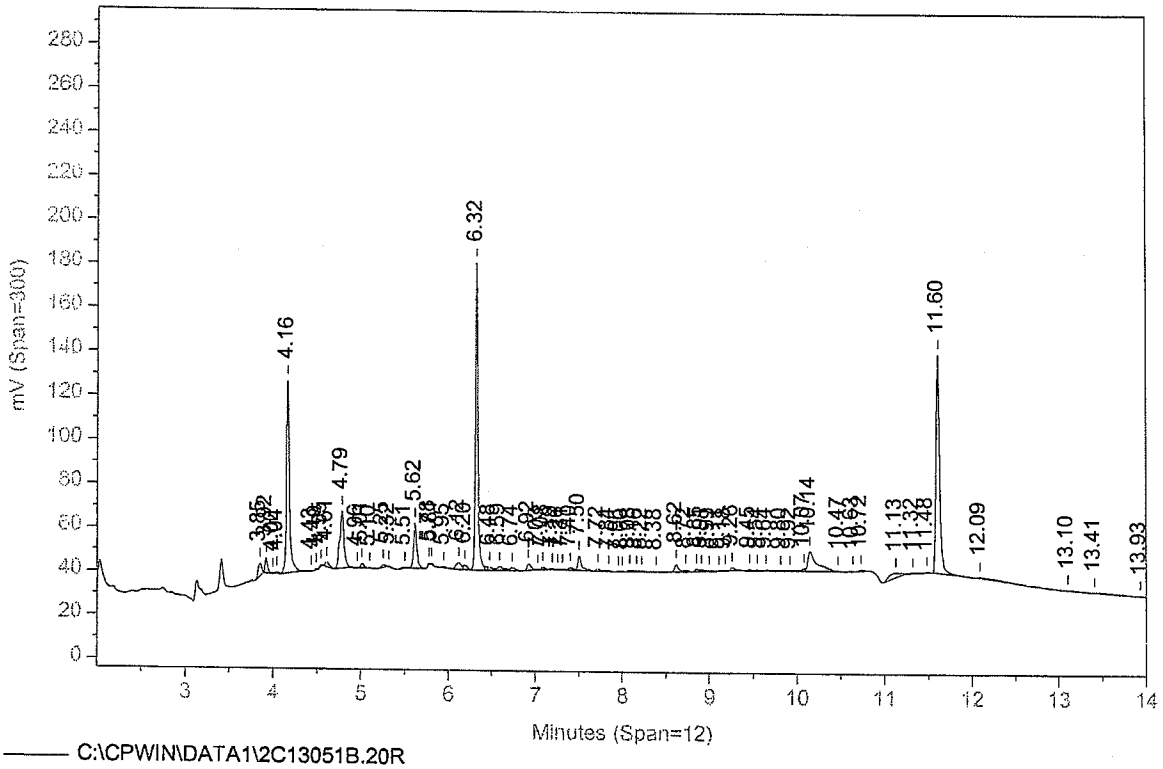
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.163 | 87468 | 1.1517 | TCX | 4.197 | 58114 | 1.14245 | TCX |
| . | 0 | . | HCB | 4.911 | 14178 | .18311 | HCB |
| 5.015 | 2033 | .02197 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | gamma-BHC | 5.64 | 178 | .00351 | gamma-BHC |
| 5.809 | 654 | .00769 | delta-BHC | . | 0 | . | delta-BHC |
| 6.125 | 3219 | .03115 | Heptachlor | . | 0 | . | Heptachlor |
| 7.396 | 1120 | .01267 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.684 | 11653 | .22285 | g. Chlordane |
| 7.718 | 1057 | .0124 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.843 | 551 | .00808 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.223 | 539 | .0074 | Dieldrin | . | 0 | . | Dieldrin |
| 8.382 | 218 | .00401 | o,p-DDT | 8.78 | 176 | .00578 | o,p-DDT |
| 8.617 | 3487 | .06558 | 4,4'-DDD | 8.85 | 1437 | .05765 | 4,4'-DDD |
| 8.851 | 1264 | .01828 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.43 | 780 | .02368 | Endrin aldehyde |
| 9.542 | 407 | .01168 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.803 | 181 | .00288 | Mirex | . | 0 | . | Mirex |
| 9.919 | 257 | .00417 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.485 | 762 | .01568 | Endrin ketone |
| 11.598 | 99647 | 1.33366 | DCB | 12.207 | 61040 | 1.21553 | DCB |

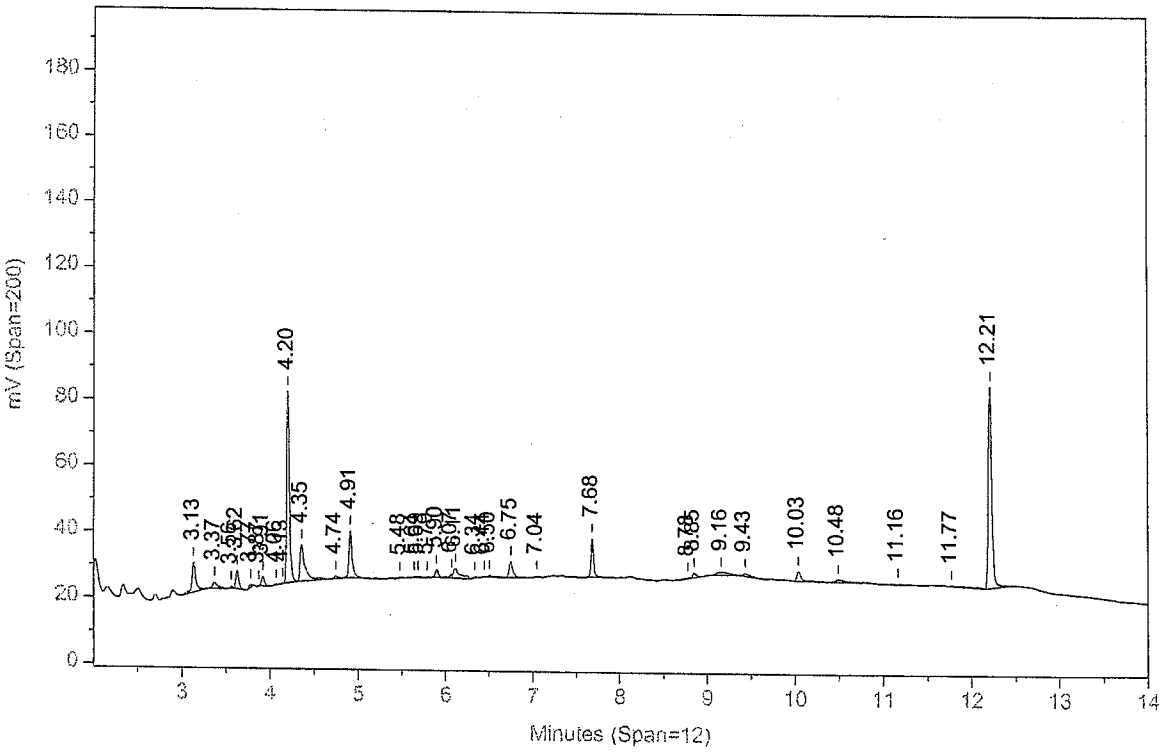
Files:
Area File: C:\CPWIN\DATA1\2C13051.20A
Area File: C:\CPWIN\DATA1\2C13051B.20A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 5:30:20 PM
File Reported On: 2/25/2004 at 5:30:28 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.20R




C:\CPWIN\DATA1\2C13051B.20R



# Standards Data

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.18 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.14 | 4.20 |
| Hcb | 4.75 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 | 4.71 | 4.77 |
| alpha-BHC | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 4.97 | 5.03 |
| gamma-BHC (Lindane) | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 | 5.43 | 5.49 |
| beta-BHC | 5.59 | 5.59 | 5.58 | 5.59 | 5.58 | 5.58 | 5.55 | 5.61 |
| delta-BHC | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 | 5.81 | 5.87 |
| Heptachlor | 6.13 | 6.14 | 6.13 | 6.14 | 6.13 | 6.13 | 6.10 | 6.16 |
| Aldrin | 6.55 | 6.56 | 6.55 | 6.56 | 6.55 | 6.55 | 6.52 | 6.58 |
| Telodrin | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.82 | 6.88 |
| o,p-DDE | 7.36 | 7.36 | 7.36 | 7.36 | 7.36 | 7.36 | 7.33 | 7.39 |
| Heptachlor epoxide | 7.38 | 7.39 | 7.38 | 7.39 | 7.38 | 7.38 | 7.35 | 7.41 |
| gamma-Chlordane | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.52 | 7.58 |
| alpha-Chlordane | 7.73 | 7.73 | 7.73 | 7.73 | 7.72 | 7.73 | 7.70 | 7.76 |
| 4,4'-DDE | 7.81 | 7.82 | 7.81 | 7.82 | 7.81 | 7.81 | 7.78 | 7.84 |
| Endosulfan I | 7.91 | 7.91 | 7.91 | 7.91 | 7.91 | 7.91 | 7.88 | 7.94 |
| o,p-DDD | 8.05 | 8.04 | 8.04 | 8.04 | 8.04 | 8.04 | 8.01 | 8.07 |
| Dieldrin | 8.23 | 8.23 | 8.23 | 8.23 | 8.23 | 8.23 | 8.20 | 8.26 |
| o,p-DDT | 8.38 | 8.38 | 8.38 | 8.37 | 8.38 | 8.38 | 8.35 | 8.41 |
| Endrin | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.51 | 8.57 |
| Kepone | 8.60 | 8.59 | 8.59 | 8.59 | 8.59 | 8.59 | 8.56 | 8.62 |
| 4,4'-DDD | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.57 | 8.63 |
| Endosulfan II | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.80 | 8.86 |
| 4,4'-DDT | 8.96 | 8.96 | 8.96 | 8.96 | 8.96 | 8.96 | 8.93 | 8.99 |
| Endrin aldehyde | 9.38 | 9.38 | 9.38 | 9.38 | 9.37 | 9.38 | 9.35 | 9.41 |
| Methoxychlor | 9.57 | 9.57 | 9.57 | 9.57 | 9.57 | 9.57 | 9.54 | 9.60 |
| Mirex | 9.81 | 9.81 | 9.81 | 9.80 | 9.81 | 9.81 | 9.78 | 9.84 |
| Endosulfan sulfate | 9.94 | 9.94 | 9.94 | 9.94 | 9.94 | 9.94 | 9.91 | 9.97 |
| Endrin ketone | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.28 | 10.34 |
| Decachlorobiphenyl | 11.62 | 11.62 | 11.62 | 11.62 | 11.62 | 11.62 | 11.59 | 11.65 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/20/04 , 2/20/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.18 | 4.24 |
| Hcb | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.87 | 4.93 |
| alpha-BHC | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.07 | 5.13 |
| gamma-BHC (Lindane) | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| beta-BHC | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.71 | 5.77 |
| delta-BHC | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.12 | 6.18 |
| Heptachlor | 6.23 | 6.23 | 6.23 | 6.23 | 6.23 | 6.23 | 6.20 | 6.26 |
| Aldrin | 6.68 | 6.68 | 6.68 | 6.68 | 6.68 | 6.68 | 6.65 | 6.71 |
| Telodrin | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |
| Heptachlor epoxide | 7.45 | 7.45 | 7.45 | 7.45 | 7.45 | 7.45 | 7.42 | 7.48 |
| gamma-Chlordane | 7.76 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.67 | 7.73 |
| o,p-DDE | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.67 | 7.73 |
| alpha-Chlordane | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.86 | 7.92 |
| Endosulfan I | 7.97 | 7.97 | 7.97 | 7.97 | 7.97 | 7.97 | 7.94 | 8.00 |
| 4,4'-DDE | 8.11 | 8.11 | 8.11 | 8.11 | 8.10 | 8.11 | 8.08 | 8.14 |
| Dieldrin | 8.33 | 8.33 | 8.33 | 8.33 | 8.33 | 8.33 | 8.30 | 8.36 |
| o,p-DDD | 8.37 | 8.37 | 8.37 | 8.37 | 8.37 | 8.37 | 8.34 | 8.40 |
| Endrin | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.70 | 8.76 |
| o,p-DDT | 8.77 | 8.77 | 8.77 | 8.76 | 8.76 | 8.77 | 8.74 | 8.80 |
| 4,4'-DDD | 8.86 | 8.86 | 8.86 | 8.86 | 8.86 | 8.86 | 8.83 | 8.89 |
| Kepone | 8.88 | 8.88 | 8.88 | 8.87 | 8.87 | 8.88 | 8.85 | 8.91 |
| Endosulfan II | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 8.97 | 9.03 |
| 4,4'-DDT | 9.26 | 9.26 | 9.26 | 9.26 | 9.26 | 9.26 | 9.23 | 9.29 |
| Endrin aldehyde | 9.44 | 9.43 | 9.43 | 9.43 | 9.43 | 9.43 | 9.40 | 9.46 |
| Endosulfan sulfate | 9.79 | 9.79 | 9.79 | 9.79 | 9.78 | 9.79 | 9.76 | 9.82 |
| Methoxychlor | 10.13 | 10.13 | 10.13 | 10.13 | 10.13 | 10.13 | 10.10 | 10.16 |
| Mirex | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.41 | 10.47 |
| Endrin ketone | 10.49 | 10.49 | 10.49 | 10.49 | 10.48 | 10.46 | 10.43 | 10.49 |
| Decachlorobiphenyl | 12.23 | 12.23 | 12.23 | 12.23 | 12.23 | 12.23 | 12.20 | 12.26 |

ayc 2-24-04

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# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 4.12E+03 | 3.86E+03 | 3.75E+03 | 3.67E+03 | 3.59E+03 | 3.80E+03 | 5.5 |
| Hcb | 7.25E+03 | 6.88E+03 | 6.62E+03 | 6.27E+03 | 5.89E+03 | 6.58E+03 | 8.0 |
| alpha-BHC | 4.25E+03 | 4.34E+03 | 4.64E+03 | 4.88E+03 | 5.01E+03 | 4.63E+03 | 7.1 |
| gamma-BHC (Lindane) | 4.38E+03 | 4.38E+03 | 4.57E+03 | 4.72E+03 | 4.79E+03 | 4.57E+03 | 4.1 |
| beta-BHC | 3.13E+03 | 2.73E+03 | 2.64E+03 | 2.59E+03 | 2.55E+03 | 2.73E+03 | 8.6 |
| delta-BHC | 4.13E+03 | 4.03E+03 | 4.22E+03 | 4.38E+03 | 4.52E+03 | 4.26E+03 | 4.6 |
| Heptachlor | 5.61E+03 | 5.15E+03 | 5.06E+03 | 5.02E+03 | 4.99E+03 | 5.17E+03 | 5.0 |
| Aldrin | 4.12E+03 | 3.87E+03 | 3.92E+03 | 3.98E+03 | 4.05E+03 | 3.99E+03 | 2.6 |
| Telodrin | 4.71E+03 | 4.58E+03 | 4.46E+03 | 4.28E+03 | 4.11E+03 | 4.43E+03 | 5.4 |
| o,p-DDE | 2.96E+03 | 2.75E+03 | 2.69E+03 | 2.65E+03 | 2.64E+03 | 2.74E+03 | 4.9 |
| Heptachlor epoxide | 5.10E+03 | 4.41E+03 | 4.25E+03 | 4.18E+03 | 4.15E+03 | 4.42E+03 | 8.9 |
| gamma-Chlordane | 4.77E+03 | 4.25E+03 | 4.10E+03 | 4.05E+03 | 4.02E+03 | 4.24E+03 | 7.3 |
| alpha-Chlordane | 4.90E+03 | 4.27E+03 | 4.11E+03 | 4.05E+03 | 3.99E+03 | 4.26E+03 | 8.7 |
| 4,4'-DDE | 3.38E+03 | 3.31E+03 | 3.39E+03 | 3.47E+03 | 3.50E+03 | 3.41E+03 | 2.2 |
| Endosulfan I | 4.07E+03 | 3.86E+03 | 3.77E+03 | 3.74E+03 | 3.71E+03 | 3.83E+03 | 3.8 |
| o,p-DDD | 2.23E+03 | 2.21E+03 | 2.19E+03 | 2.18E+03 | 2.19E+03 | 2.20E+03 | 1.0 |
| Dieldrin | 3.65E+03 | 3.57E+03 | 3.63E+03 | 3.67E+03 | 3.70E+03 | 3.64E+03 | 1.3 |
| o,p-DDT | 2.80E+03 | 2.75E+03 | 2.71E+03 | 2.68E+03 | 2.68E+03 | 2.72E+03 | 1.8 |
| Endrin | 3.57E+03 | 3.33E+03 | 3.34E+03 | 3.38E+03 | 3.38E+03 | 3.40E+03 | 2.9 |
| Kepone | 1.83E+02 | 4.10E+02 | 3.54E+02 | 3.09E+02 | 8.72E+02 | 4.26E+02 | 61.9 |
| 4,4'-DDD | 2.81E+03 | 2.54E+03 | 2.60E+03 | 2.67E+03 | 2.68E+03 | 2.66E+03 | 3.8 |
| Endosulfan II | 3.75E+03 | 3.48E+03 | 3.40E+03 | 3.35E+03 | 3.31E+03 | 3.46E+03 | 5.0 |
| 4,4'-DDT | 3.17E+03 | 2.88E+03 | 2.89E+03 | 2.94E+03 | 2.92E+03 | 2.96E+03 | 4.1 |
| Endrin aldehyde | 2.78E+03 | 2.49E+03 | 2.42E+03 | 2.40E+03 | 2.34E+03 | 2.49E+03 | 6.9 |
| Methoxychlor | 2.11E+03 | 1.75E+03 | 1.66E+03 | 1.62E+03 | 1.57E+03 | 1.74E+03 | 12.4 |
| Mirex | 3.80E+03 | 3.42E+03 | 3.12E+03 | 2.81E+03 | 2.56E+03 | 3.14E+03 | 15.6 |
| Endosulfan sulfate | 3.56E+03 | 3.07E+03 | 2.96E+03 | 2.92E+03 | 2.89E+03 | 3.08E+03 | 9.0 |
| Endrin ketone | 3.81E+03 | 3.59E+03 | 3.53E+03 | 3.49E+03 | 3.46E+03 | 3.58E+03 | 3.9 |
| Decachlorobiphenyl | 4.84E+03 | 3.91E+03 | 3.50E+03 | 3.28E+03 | 3.16E+03 | 3.74E+03 | 18.1 |

Average % RSD: 8.1

Calibration File Name: **C:\CPWIN\DATA1\2C13051.CAL** Version = 2
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

## 1 TCX

Retention time = 4.173 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 15862.4 | 4120.112 | Manual | 2/23/2004 10:21: |
| 2 | 19.240 | 74307.4 | 3862.131 | Manual | 2/23/2004 10:21: |
| 3 | 38.480 | 144260.9 | 3748.984 | Manual | 2/23/2004 10:21: |
| 4 | 57.720 | 211609.3 | 3666.135 | Manual | 2/23/2004 10:21: |
| 5 | 76.960 | 276229.3 | 3589.258 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3797.324 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9926, Average error = 4.08%
Average CF = 3797.3240 with RSD = 5.45%

## 2 HCB

Retention time = 4.743 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7251.9 | 7251.88 | Manual | 2/23/2004 10:21: |
| 2 | 2.500 | 17209.4 | 6883.772 | Manual | 2/23/2004 10:21: |
| 3 | 5.000 | 33107.6 | 6621.524 | Manual | 2/23/2004 10:21: |
| 4 | 10.000 | 62671.9 | 6267.188 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 117815.5 | 5890.775 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 6583.028 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9744, Average error = 6.13%
Average CF = 6583.0280 with RSD = 8.03%

## 3 alpha-BHC

Retention time = 4.996 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4252.1 | 4252.111 | Manual | 2/23/2004 10:21: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 21714.9 | 4342.978 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 46439.0 | 4643.898 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 74216.7 | 4882.677 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 100278.1 | 5013.905 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4627.114 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9872, Average error = 5.70%
Average CF = 4627.1140 with RSD = 7.14%

**4 gamma-BHC**
Retention time = 5.456 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4379.8 | 4379.767 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21906.8 | 4381.352 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 45660.8 | 4566.075 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 71807.8 | 4724.2 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 95761.7 | 4788.084 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4567.896 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9952, Average error = 3.30%
Average CF = 4567.8960 with RSD = 4.14%

**5 beta-BHC**
Retention time = 5.584 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3126.1 | 3126.14 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13639.3 | 2727.868 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 26400.2 | 2640.015 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 39306.6 | 2585.961 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 50960.0 | 2548 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2725.597 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9878, Average error = 5.91%
Average CF = 2725.5970 with RSD = 8.58%

**6 delta-BHC**
Retention time = 5.838 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4127.1 | 4127.145 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 20162.1 | 4032.418 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 42249.9 | 4224.988 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 66562.9 | 4379.138 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 90346.6 | 4517.331 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4256.204 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9933, Average error = 3.61%
Average CF = 4256.2040 with RSD = 4.57%

**7 Heptachlor**
Retention time = 6.134 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5611.5 | 5611.521 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 25760.9 | 5152.174 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 50585.3 | 5058.526 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 76298.0 | 5019.608 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 99769.2 | 4988.46 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 5166.058 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9967, Average error = 3.45%
Average CF = 5166.0580 with RSD = 4.97%

**8 Aldrin**
Retention time = 6.554 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4123.9 | 4123.933 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 19336.1 | 3867.228 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 39168.4 | 3916.845 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 60499.6 | 3980.237 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 80938.7 | 4046.934 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3987.035 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.97%
Average CF = 3987.0350 with RSD = 2.56%

**9 Telodrin**
Retention time = 6.851 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4706.3 | 4706.29 | Manual | 2/23/2004 10:21: |
| 2 | 2.500 | 11456.3 | 4582.524 | Manual | 2/23/2004 10:21: |
| 3 | 5.000 | 22319.4 | 4463.872 | Manual | 2/23/2004 10:21: |
| 4 | 10.000 | 42774.6 | 4277.461 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 82202.9 | 4110.143 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4428.058 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9890, Average error = 4.23%
Average CF = 4428.0580 with RSD = 5.37%

**10 o,p-DDE**
Retention time = 7.358 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5926.5 | 2963.255 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13760.2 | 2752.046 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 26896.7 | 2689.668 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 52982.1 | 2649.107 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 105401.7 | 2635.042 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2737.824 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 3.50%
Average CF = 2737.8240 with RSD = 4.89%

**11 Hept. epoxide**
Retention time = 7.384 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5100.9 | 5100.883 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 22063.7 | 4412.742 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 42501.0 | 4250.096 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 63598.7 | 4184.126 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 83080.5 | 4154.022 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4420.374 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9886, Average error = 6.16%
Average CF = 4420.3740 with RSD = 8.90%

**12 g. Chlordane**
Retention time = 7.548 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4766.0 | 4765.989 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21229.7 | 4245.938 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 40954.5 | 4095.452 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 61551.4 | 4049.433 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 80374.9 | 4018.746 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4235.111 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9921, Average error = 5.12%
Average CF = 4235.1110 with RSD = 7.30%

**13 a. Chlordane**
Retention time = 7.725 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4897.1 | 4897.133 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21335.0 | 4266.994 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 41081.6 | 4108.158 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 61505.5 | 4046.413 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 79838.3 | 3991.916 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4262.123 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9882, Average error = 6.01%
Average CF = 4262.1230 with RSD = 8.67%

**14 4,4'-DDE**
Retention time = 7.814 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6765.6 | 3382.789 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 33125.1 | 3312.514 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 67870.3 | 3393.514 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 105595.0 | 3473.52 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 140146.3 | 3503.657 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3413.199 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 1.77%
Average CF = 3413.1990 with RSD = 2.23%

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**15 Endosulfan I**
Retention time = 7.913 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4071.4 | 4071.436 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 19306.7 | 3861.338 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 37748.4 | 3774.838 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 56834.2 | 3739.09 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 74188.0 | 3709.398 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3831.22 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9974, Average error = 2.82%
Average CF = 3831.2200 with RSD = 3.81%

**16 o,p-DDD**
Retention time = 8.044 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4461.2 | 2230.62 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 11063.1 | 2212.616 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 21912.0 | 2191.199 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 43548.4 | 2177.418 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 87658.7 | 2191.468 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2200.664 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.76%
Average CF = 2200.6640 with RSD = 0.95%

**17 Dieldrin**
Retention time = 8.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7304.3 | 3652.168 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 35698.0 | 3569.796 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 72586.3 | 3629.315 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 111557.1 | 3669.642 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 147881.0 | 3697.025 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3643.589 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 0.97%
Average CF = 3643.5890 with RSD = 1.32%

**18 o,p-DDT**
Retention time = 8.376 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5594.1 | 2797.03 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13731.7 | 2746.33 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 27123.4 | 2712.337 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 53619.6 | 2680.98 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 107083.9 | 2677.097 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2722.755 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.44%
Average CF = 2722.7550 with RSD = 1.84%

**19 Endrin**
Retention time = 8.536 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7138.1 | 3569.033 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 33293.7 | 3329.372 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 66870.8 | 3343.54 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 102604.9 | 3375.161 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 135181.2 | 3379.53 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3399.327 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 2.00%
Average CF = 3399.3270 with RSD = 2.86%

**20 Kepone**
Retention time = 8.593 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 1829.8 | 182.978 | Manual | 2/23/2004 10:21: |
| 2 | 25.000 | 10255.8 | 410.23 | Manual | 2/23/2004 10:21: |
| 3 | 50.000 | 17697.9 | 353.9584 | Manual | 2/23/2004 10:21: |
| 4 | 100.000 | 30918.1 | 309.1811 | Manual | 2/23/2004 10:21: |
| 5 | 200.000 | 174489.8 | 872.449 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 425.759 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.6081, Average error = 41.97%
Average CF = 425.7593 with RSD = 61.86%

**21 4,4'-DDD**
Retention time = 8.598 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5614.0 | 2807.002 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 25384.3 | 2538.431 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 51992.3 | 2599.615 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 81157.5 | 2669.654 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 107081.3 | 2677.032 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2658.347 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 2.69%
Average CF = 2658.3470 with RSD = 3.78%

**22 Endosulfan II**
Retention time = 8.831 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7495.3 | 3747.644 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 34768.5 | 3476.854 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 68050.8 | 3402.542 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 101844.9 | 3350.161 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 132518.0 | 3312.95 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3458.03 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9954, Average error = 3.57%
Average CF = 3458.0300 with RSD = 5.01%

**23 4,4'-DDT**
Retention time = 8.960 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6348.6 | 3174.315 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 28817.8 | 2881.783 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 57842.0 | 2892.101 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 89368.0 | 2939.737 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 116963.8 | 2924.095 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2962.406 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 2.86%
Average CF = 2962.4060 with RSD = 4.08%

**24 Endrin aldehyde**

Retention time = 9.376 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5554.0 | 2776.99 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 24864.5 | 2486.452 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 48429.8 | 2421.489 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 73088.4 | 2404.223 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 93538.2 | 2338.455 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2485.522 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9915, Average error = 4.71%
Average CF = 2485.5220 with RSD = 6.89%

**25 Methoxychlor**
Retention time = 9.570 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 21052.2 | 2105.221 | Manual | 2/23/2004 10:21: |
| 2 | 50.000 | 87671.6 | 1753.432 | Manual | 2/23/2004 10:21: |
| 3 | 100.000 | 166094.3 | 1660.943 | Manual | 2/23/2004 10:21: |
| 4 | 152.000 | 245691.8 | 1616.393 | Manual | 2/23/2004 10:21: |
| 5 | 200.000 | 313414.0 | 1567.07 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 1740.612 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9703, Average error = 8.67%
Average CF = 1740.6120 with RSD = 12.36%

**26 Mirex**
Retention time = 9.806 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 18990.3 | 3798.064 | Manual | 2/23/2004 10:21: |
| 2 | 12.500 | 42721.3 | 3417.703 | Manual | 2/23/2004 10:21: |
| 3 | 25.000 | 78050.6 | 3122.023 | Manual | 2/23/2004 10:21: |
| 4 | 50.000 | 140413.7 | 2808.274 | Manual | 2/23/2004 10:21: |
| 5 | 100.000 | 255559.8 | 2555.598 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3140.333 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8964, Average error = 11.91%
Average CF = 3140.3330 with RSD = 15.62%

**27 Endo. sulfate**
Retention time = 9.942 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7113.0 | 3556.483 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 30663.6 | 3066.362 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 59121.5 | 2956.077 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 88798.9 | 2921.017 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 115400.8 | 2885.02 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3076.992 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9883, Average error = 6.23%
Average CF = 3076.9920 with RSD = 8.99%

**28 Endrin ketone**
Retention time = 10.309 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7613.3 | 3806.627 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 35879.5 | 3587.953 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 70623.6 | 3531.178 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 106202.0 | 3493.487 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 138269.4 | 3456.735 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3575.196 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9973, Average error = 2.73%
Average CF = 3575.1960 with RSD = 3.86%

**29 DCB**
Retention time = 11.618 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 18859.6 | 4835.79 | Manual | 2/23/2004 10:21: |
| 2 | 19.480 | 76124.6 | 3907.836 | Manual | 2/23/2004 10:21: |
| 3 | 38.960 | 136235.6 | 3496.807 | Manual | 2/23/2004 10:21: |
| 4 | 58.440 | 191737.3 | 3280.926 | Manual | 2/23/2004 10:21: |
| 5 | 77.920 | 246058.1 | 3157.83 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3735.838 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9123, Average error = 13.62%
Average CF = 3735.8380 with RSD = 18.14%

# 6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13051B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 2.55E+03 | 2.53E+03 | 2.57E+03 | 2.56E+03 | 2.51E+03 | 2.54E+03 | .9 |
| Hcb | 4.02E+03 | 3.89E+03 | 3.90E+03 | 3.82E+03 | 3.74E+03 | 3.87E+03 | 2.7 |
| alpha-BHC | 2.05E+03 | 2.17E+03 | 2.46E+03 | 2.74E+03 | 2.93E+03 | 2.47E+03 | 15.1 |
| gamma-BHC (Lindane) | 2.20E+03 | 2.28E+03 | 2.53E+03 | 2.76E+03 | 2.89E+03 | 2.53E+03 | 11.7 |
| beta-BHC | 1.80E+03 | 1.55E+03 | 1.55E+03 | 1.57E+03 | 1.57E+03 | 1.61E+03 | 6.7 |
| delta-BHC | 2.13E+03 | 1.95E+03 | 2.12E+03 | 2.30E+03 | 2.45E+03 | 2.19E+03 | 8.6 |
| Heptachlor | 3.00E+03 | 2.75E+03 | 2.78E+03 | 2.85E+03 | 2.89E+03 | 2.85E+03 | 3.5 |
| Aldrin | 2.21E+03 | 2.14E+03 | 2.27E+03 | 2.43E+03 | 2.52E+03 | 2.31E+03 | 6.8 |
| Telodrin | 2.54E+03 | 2.55E+03 | 2.56E+03 | 2.58E+03 | 2.63E+03 | 2.57E+03 | 1.4 |
| Heptachlor epoxide | 2.71E+03 | 2.47E+03 | 2.53E+03 | 2.57E+03 | 2.61E+03 | 2.58E+03 | 3.5 |
| gamma-Chlordane | 2.89E+03 | 2.50E+03 | 2.52E+03 | 2.56E+03 | 2.60E+03 | 2.61E+03 | 6.1 |
| o,p-DDE | 1.41E+03 | 1.43E+03 | 1.50E+03 | 1.55E+03 | 1.66E+03 | 1.51E+03 | 6.9 |
| alpha-Chlordane | 3.18E+03 | 2.58E+03 | 2.56E+03 | 2.59E+03 | 2.61E+03 | 2.71E+03 | 9.9 |
| Endosulfan I | 2.94E+03 | 2.31E+03 | 2.31E+03 | 2.35E+03 | 2.37E+03 | 2.46E+03 | 11.0 |
| 4,4'-DDE | 1.95E+03 | 1.74E+03 | 1.89E+03 | 2.02E+03 | 2.10E+03 | 1.94E+03 | 7.0 |
| Dieldrin | 2.25E+03 | 2.17E+03 | 2.32E+03 | 2.45E+03 | 2.51E+03 | 2.34E+03 | 6.1 |
| o,p-DDD | 1.13E+03 | 1.13E+03 | 1.14E+03 | 1.19E+03 | 1.30E+03 | 1.18E+03 | 6.1 |
| Endrin | 1.91E+03 | 1.90E+03 | 2.02E+03 | 2.13E+03 | 2.18E+03 | 2.03E+03 | 6.2 |
| o,p-DDT | 1.44E+03 | 1.46E+03 | 1.49E+03 | 1.55E+03 | 1.65E+03 | 1.52E+03 | 5.5 |
| 4,4'-DDD | 1.11E+03 | 1.14E+03 | 1.23E+03 | 1.35E+03 | 1.40E+03 | 1.25E+03 | 10.4 |
| Kepone | 8.32E+01 | 2.72E+02 | 2.35E+02 | 2.13E+02 | 6.57E+02 | 2.92E+02 | 74.1 |
| Endosulfan II | 2.10E+03 | 2.03E+03 | 2.09E+03 | 2.16E+03 | 2.17E+03 | 2.11E+03 | 2.7 |
| 4,4'-DDT | 1.53E+03 | 1.52E+03 | 1.62E+03 | 1.70E+03 | 1.75E+03 | 1.62E+03 | 6.4 |
| Endrin aldehyde | 1.79E+03 | 1.60E+03 | 1.61E+03 | 1.62E+03 | 1.61E+03 | 1.65E+03 | 5.0 |
| Endosulfan sulfate | 1.94E+03 | 1.80E+03 | 1.83E+03 | 1.88E+03 | 1.89E+03 | 1.87E+03 | 2.9 |
| Methoxychlor | 1.10E+03 | 9.95E+02 | 9.72E+02 | 9.64E+02 | 9.40E+02 | 9.95E+02 | 6.4 |
| Mirex | 2.39E+03 | 2.18E+03 | 2.05E+03 | 1.94E+03 | 1.80E+03 | 2.07E+03 | 10.9 |
| Endrin ketone | 2.63E+03 | 2.34E+03 | 2.38E+03 | 2.40E+03 | 2.40E+03 | 2.43E+03 | 4.6 |
| Decachlorobiphenyl | 3.10E+03 | 2.63E+03 | 2.39E+03 | 2.26E+03 | 2.17E+03 | 2.51E+03 | 14.8 |

Average % RSD: 9.1

Calibration File Name: **C:\CPWIN\DATA1\2C13051B.CAL** Version = 1
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

## 1 TCX

Retention time = 4.208 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 9805.7 | 2546.927 | Manual | 2/23/2004 10:29: |
| 2 | 19.240 | 48686.1 | 2530.462 | Manual | 2/23/2004 10:29: |
| 3 | 38.480 | 98756.4 | 2566.434 | Manual | 2/23/2004 10:29: |
| 4 | 57.720 | 147777.4 | 2560.246 | Manual | 2/23/2004 10:32: |
| 5 | 76.960 | 193398.9 | 2512.979 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2543.41 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.68%
Average CF = 2543.4100 with RSD = 0.86%

## 2 HCB

Retention time = 4.897 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4019.3 | 4019.26 | Manual | 2/23/2004 10:29: |
| 2 | 2.500 | 9713.0 | 3885.192 | Manual | 2/23/2004 10:29: |
| 3 | 5.000 | 19489.3 | 3897.858 | Manual | 2/23/2004 10:29: |
| 4 | 10.000 | 38167.1 | 3816.715 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 74761.9 | 3738.094 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 3871.424 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9977, Average error = 1.94%
Average CF = 3871.4240 with RSD = 2.69%

## 3 alpha-BHC

Retention time = 5.100 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2049.4 | 2049.444 | Manual | 2/23/2004 10:29: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 10851.1 | 2170.228 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 24566.1 | 2456.614 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 41648.7 | 2740.048 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 58699.2 | 2934.961 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2470.259 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9499, Average error = 11.89%
Average CF = 2470.2590 with RSD = 15.09%

**4 gamma-BHC**
Retention time = 5.613 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2198.7 | 2198.67 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 11402.3 | 2280.452 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25345.8 | 2534.578 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 41940.4 | 2759.236 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 57719.3 | 2885.964 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2531.78 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9685, Average error = 9.23%
Average CF = 2531.7800 with RSD = 11.71%

**5 beta-BHC**
Retention time = 5.737 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1799.1 | 1799.056 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7742.6 | 1548.518 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 15527.0 | 1552.705 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 23807.2 | 1566.261 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 31453.0 | 1572.65 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1607.838 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9977, Average error = 4.76%
Average CF = 1607.8380 with RSD = 6.68%

**6 delta-BHC**
Retention time = 6.149 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2129.2 | 2129.226 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 9759.4 | 1951.888 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 21181.0 | 2118.096 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 34991.4 | 2302.064 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 48903.4 | 2445.171 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2189.289 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9783, Average error = 6.74%
Average CF = 2189.2890 with RSD = 8.64%

**7 Heptachlor**
Retention time = 6.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2995.9 | 2995.935 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 13735.4 | 2747.078 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 27801.0 | 2780.101 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 43253.6 | 2845.628 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 57890.0 | 2894.501 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2852.649 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 2.60%
Average CF = 2852.6490 with RSD = 3.45%

**8 Aldrin**
Retention time = 6.676 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2210.0 | 2209.965 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 10709.5 | 2141.904 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 22712.2 | 2271.221 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 36882.2 | 2426.463 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 50452.1 | 2522.604 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2314.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9860, Average error = 5.53%
Average CF = 2314.4310 with RSD = 6.78%

**9 Telodrin**
Retention time = 6.897 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2544.1 | 2544.09 | Manual | 2/23/2004 10:29: |
| 2 | 2.500 | 6370.6 | 2548.256 | Manual | 2/23/2004 10:29: |
| 3 | 5.000 | 12809.3 | 2561.854 | Manual | 2/23/2004 10:29: |
| 4 | 10.000 | 25827.0 | 2582.702 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52652.9 | 2632.647 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2573.91 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9991, Average error = 1.05%
Average CF = 2573.9100 with RSD = 1.40%

**10 Hept. epoxide**
Retention time = 7.447 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2713.2 | 2713.151 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12351.0 | 2470.19 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25284.5 | 2528.449 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 39117.4 | 2573.513 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52203.0 | 2610.149 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2579.09 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 2.56%
Average CF = 2579.0900 with RSD = 3.54%

**11 g. Chlordane**
Retention time = 7.698 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2891.1 | 2891.102 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12493.6 | 2498.716 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25207.7 | 2520.768 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 38952.3 | 2562.651 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 51978.7 | 2598.937 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2614.435 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9987, Average error = 4.23%
Average CF = 2614.4350 with RSD = 6.10%

**12 o,p-DDE**
Retention time = 7.699 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2812.0 | 1405.99 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7146.1 | 1429.218 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 15036.3 | 1503.633 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 31042.7 | 1552.137 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 66586.4 | 1664.661 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1511.128 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9856, Average error = 5.15%
Average CF = 1511.1280 with RSD = 6.87%

**13 a. Chlordane**
Retention time = 7.889 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3183.7 | 3183.683 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12922.7 | 2584.53 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25579.5 | 2557.953 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 39327.4 | 2587.327 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52232.1 | 2611.604 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2705.02 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9939, Average error = 7.08%
Average CF = 2705.0200 with RSD = 9.92%

**14 Endosulfan I**
Retention time = 7.968 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2936.6 | 2936.585 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 11575.0 | 2314.996 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 23106.7 | 2310.673 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 35695.4 | 2348.379 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 47485.8 | 2374.288 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2456.984 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9935, Average error = 7.81%
Average CF = 2456.9840 with RSD = 10.96%

0516

**15 4,4'-DDE**
Retention time = 8.105 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3893.6 | 1946.78 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 17413.9 | 1741.393 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 37702.1 | 1885.103 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 61371.1 | 2018.786 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 83809.0 | 2095.224 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1937.457 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9879, Average error = 5.13%
Average CF = 1937.4570 with RSD = 6.96%

**16 Dieldrin**
Retention time = 8.327 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4499.3 | 2249.663 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 21652.7 | 2165.272 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 46343.0 | 2317.149 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 74376.4 | 2446.592 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 100522.7 | 2513.068 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2338.349 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9896, Average error = 4.84%
Average CF = 2338.3490 with RSD = 6.07%

**17 o,p-DDD**
Retention time = 8.370 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2263.2 | 1131.58 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 5626.2 | 1125.24 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 11411.7 | 1141.172 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 23766.3 | 1188.317 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 51898.4 | 1297.461 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1176.754 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9855, Average error = 4.50%
Average CF = 1176.7540 with RSD = 6.11%

8517

**18 Endrin**
Retention time = 8.726 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3827.0 | 1913.483 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 18964.5 | 1896.452 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 40396.1 | 2019.807 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 64686.0 | 2127.83 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 87061.0 | 2176.524 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2026.819 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9896, Average error = 4.95%
Average CF = 2026.8190 with RSD = 6.17%

**19 o,p-DDT**
Retention time = 8.765 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2886.4 | 1443.19 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7314.3 | 1462.852 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 14939.9 | 1493.994 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 30979.0 | 1548.95 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 66083.0 | 1652.076 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1520.212 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9892, Average error = 4.23%
Average CF = 1520.2120 with RSD = 5.52%

**20 4,4'-DDD**
Retention time = 8.856 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2219.2 | 1109.599 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 11353.7 | 1135.369 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 24596.1 | 1229.804 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 41118.8 | 1352.592 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 56080.4 | 1402.009 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1245.875 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9733, Average error = 8.44%
Average CF = 1245.8750 with RSD = 10.37%

**21 Kepone**
Retention time = 8.876 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 832.4 | 83.239 | Manual | 2/23/2004 10:29: |
| 2 | 25.000 | 6791.1 | 271.6432 | Manual | 2/23/2004 10:29: |
| 3 | 50.000 | 11725.3 | 234.506 | Manual | 2/23/2004 10:29: |
| 4 | 100.000 | 21254.3 | 212.5426 | Manual | 2/23/2004 10:32: |
| 5 | 200.000 | 131417.3 | 657.0865 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 291.803 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.5485, Average error = 50.07%
Average CF = 291.8035 with RSD = 74.08%

**22 Endosulfan II**
Retention time = 9.001 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4203.3 | 2101.674 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 20291.0 | 2029.098 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 41875.8 | 2093.79 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 65615.1 | 2158.393 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 86979.3 | 2174.481 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2111.487 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9979, Average error = 2.08%
Average CF = 2111.4870 with RSD = 2.74%

**23 4,4'-DDT**
Retention time = 9.256 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3057.3 | 1528.64 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 15167.7 | 1516.774 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 32343.7 | 1617.183 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 51754.2 | 1702.442 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 70001.2 | 1750.029 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1623.014 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9888, Average error = 5.09%
Average CF = 1623.0140 with RSD = 6.36%

**24 Endrin aldehyde**

Retention time = 9.433 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3588.8 | 1794.41 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 16046.8 | 1604.682 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 32120.9 | 1606.047 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 49368.5 | 1623.963 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 64322.1 | 1608.052 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1647.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 3.57%
Average CF = 1647.4310 with RSD = 5.01%

**25 Endo. sulfate**
Retention time = 9.785 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3883.3 | 1941.649 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 17987.8 | 1798.775 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 36613.0 | 1830.649 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 57040.2 | 1876.322 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 75535.4 | 1888.384 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1867.156 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 2.25%
Average CF = 1867.1560 with RSD = 2.94%

**26 Methoxychlor**
Retention time = 10.128 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 11031.3 | 1103.132 | Manual | 2/23/2004 10:29: |
| 2 | 50.000 | 49738.4 | 994.7674 | Manual | 2/23/2004 10:29: |
| 3 | 100.000 | 97174.3 | 971.743 | Manual | 2/23/2004 10:29: |
| 4 | 152.000 | 146587.7 | 964.3928 | Manual | 2/23/2004 10:32: |
| 5 | 200.000 | 188035.9 | 940.1795 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 994.843 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9928, Average error = 4.35%
Average CF = 994.8430 with RSD = 6.39%

**27 Mirex**
Retention time = 10.441 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 11943.6 | 2388.716 | Manual | 2/23/2004 10:29: |
| 2 | 12.500 | 27279.5 | 2182.363 | Manual | 2/23/2004 10:29: |
| 3 | 25.000 | 51290.3 | 2051.614 | Manual | 2/23/2004 10:29: |
| 4 | 50.000 | 96859.9 | 1937.198 | Manual | 2/23/2004 10:32: |
| 5 | 100.000 | 180391.6 | 1803.916 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2072.761 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9579, Average error = 8.21%
Average CF = 2072.7610 with RSD = 10.87%

**28 Endrin ketone**
Retention time = 10.458 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5251.2 | 2625.604 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 23427.9 | 2342.795 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 47529.2 | 2376.458 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 72856.8 | 2396.605 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 96014.8 | 2400.371 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2428.366 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 3.25%
Average CF = 2428.3670 with RSD = 4.64%

**29 DCB**
Retention time = 12.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 12085.0 | 3098.708 | Manual | 2/23/2004 10:29: |
| 2 | 19.480 | 51308.1 | 2633.884 | Manual | 2/23/2004 10:29: |
| 3 | 38.960 | 93083.5 | 2389.207 | Manual | 2/23/2004 10:29: |
| 4 | 58.440 | 132191.1 | 2261.997 | Manual | 2/23/2004 10:32: |
| 5 | 77.920 | 169124.7 | 2170.492 | Manual | 2/23/2004 10:29: |

9521

Calibration formula: Y = 2510.857 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9392, Average error = 11.32%
Average CF = 2510.8570 with RSD = 14.81%

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.70 | 4.67 | 4.73 | 80 | 1 | 50 | 4388 | 10.6 |
| | | | | | | 2 | 100 | 8671 | |
| | | | | | | 3 | 200 | 16439 | |
| | | | | | | 4 | 500 | 37142 | |
| | | | | | | 5 | 1000 | 67958 | |
| | 2 | 5.21 | 5.18 | 5.24 | 140 | 1 | 50 | 8125 | 14.2 |
| | | | | | | 2 | 100 | 15306 | |
| | | | | | | 3 | 200 | 28550 | |
| | | | | | | 4 | 500 | 63099 | |
| | | | | | | 5 | 1000 | 113509 | |
| | 3 | 5.50 | 5.47 | 5.53 | 40 | 1 | 50 | 2339 | 14.5 |
| | | | | | | 2 | 100 | 4438 | |
| | | | | | | 3 | 200 | 8327 | |
| | | | | | | 4 | 500 | 17996 | |
| | | | | | | 5 | 1000 | 32663 | |
| | 4 | 6.04 | 6.01 | 6.07 | 114 | 1 | 50 | 6589 | 11.7 |
| | | | | | | 2 | 100 | 12173 | |
| | | | | | | 3 | 200 | 23111 | |
| | | | | | | 4 | 500 | 52545 | |
| | | | | | | 5 | 1000 | 97944 | |
| | 5 | 6.13 | 6.10 | 6.16 | 72 | 1 | 50 | 3995 | 7.7 |
| | | | | | | 2 | 100 | 7324 | |
| | | | | | | 3 | 200 | 14403 | |
| | | | | | | 4 | 500 | 34167 | |
| | | | | | | 5 | 1000 | 65289 | |
| | 6 | 6.59 | 6.56 | 6.62 | 108 | 1 | 50 | 6320 | 12.6 |
| | | | | | | 2 | 100 | 11381 | |
| | | | | | | 3 | 200 | 21670 | |
| | | | | | | 4 | 500 | 49534 | |
| | | | | | | 5 | 1000 | 91033 | |
| Aroclor-1221 | 1 | 4.42 | 4.39 | 4.45 | 51 | 1 | 200 | 10297 | |
| | 2 | 4.64 | 4.61 | 4.67 | 27 | 1 | 200 | 5481 | |
| | 3 | 4.70 | 4.67 | 4.73 | 117 | 1 | 200 | 23341 | |
| Aroclor-1232 | 1 | 4.70 | 4.67 | 4.73 | 91 | 1 | 200 | 18167 | |
| | 2 | 5.21 | 5.18 | 5.24 | 64 | 1 | 200 | 12876 | |
| | 3 | 5.50 | 5.47 | 5.53 | 19 | 1 | 200 | 3796 | |
| | 4 | 6.04 | 6.01 | 6.07 | 54 | 1 | 200 | 10845 | |
| | 5 | 6.12 | 6.09 | 6.15 | 33 | 1 | 200 | 6657 | |
| | 6 | 6.59 | 6.56 | 6.62 | 48 | 1 | 200 | 9539 | |

8523

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13051

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.70 | 4.67 | 4.73 | 75 | 1 | 200 | 15089 | |
| | 2 | 5.21 | 5.18 | 5.24 | 125 | 1 | 200 | 25020 | |
| | 3 | 5.50 | 5.47 | 5.53 | 35 | 1 | 200 | 6910 | |
| | 4 | 6.04 | 6.01 | 6.07 | 100 | 1 | 200 | 20052 | |
| | 5 | 6.13 | 6.10 | 6.16 | 61 | 1 | 200 | 12274 | |
| | 6 | 6.59 | 6.56 | 6.62 | 96 | 1 | 200 | 19183 | |
| Aroclor-1248 | 1 | 5.20 | 5.17 | 5.23 | 61 | 1 | 200 | 12107 | |
| | 2 | 5.85 | 5.82 | 5.88 | 39 | 1 | 200 | 7893 | |
| | 3 | 6.32 | 6.29 | 6.35 | 120 | 1 | 200 | 24079 | |
| | 4 | 6.59 | 6.56 | 6.62 | 144 | 1 | 200 | 28758 | |
| | 5 | 7.19 | 7.16 | 7.22 | 143 | 1 | 200 | 28533 | |
| | 6 | 7.97 | 7.94 | 8.00 | 75 | 1 | 200 | 15009 | |
| Aroclor-1254 | 1 | 6.29 | 6.26 | 6.32 | 90 | 1 | 250 | 22592 | |
| | 2 | 7.44 | 7.41 | 7.47 | 191 | 1 | 250 | 47747 | |
| | 3 | 7.97 | 7.94 | 8.00 | 212 | 1 | 250 | 52909 | |
| | 4 | 8.33 | 8.30 | 8.36 | 143 | 1 | 250 | 35695 | |
| | 5 | 8.57 | 8.54 | 8.60 | 109 | 1 | 250 | 27358 | |
| | 6 | 8.93 | 8.90 | 8.96 | 165 | 1 | 250 | 41324 | |

8523

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 7.44 | 7.41 | 7.47 | 81 | 1 | 50 | 4516 | 11.1 |
| | | | | | | 2 | 100 | 8861 | |
| | | | | | | 3 | 200 | 16714 | |
| | | | | | | 4 | 500 | 37649 | |
| | | | | | | 5 | 1000 | 68941 | |
| | 2 | 8.20 | 8.17 | 8.23 | 179 | 1 | 50 | 10936 | 15.9 |
| | | | | | | 2 | 100 | 19207 | |
| | | | | | | 3 | 200 | 35490 | |
| | | | | | | 4 | 500 | 79600 | |
| | | | | | | 5 | 1000 | 146251 | |
| | 3 | 8.92 | 8.89 | 8.95 | 222 | 1 | 50 | 13588 | 14.5 |
| | | | | | | 2 | 100 | 23312 | |
| | | | | | | 3 | 200 | 43309 | |
| | | | | | | 4 | 500 | 100285 | |
| | | | | | | 5 | 1000 | 189064 | |
| | 4 | 9.39 | 9.36 | 9.42 | 132 | 1 | 50 | 7858 | 12.8 |
| | | | | | | 2 | 100 | 13900 | |
| | | | | | | 3 | 200 | 26272 | |
| | | | | | | 4 | 500 | 60604 | |
| | | | | | | 5 | 1000 | 113419 | |
| | 5 | 9.78 | 9.75 | 9.81 | 303 | 1 | 50 | 17925 | 12.3 |
| | | | | | | 2 | 100 | 31658 | |
| | | | | | | 3 | 200 | 59518 | |
| | | | | | | 4 | 500 | 138614 | |
| | | | | | | 5 | 1000 | 263660 | |
| | 6 | 10.94 | 10.91 | 10.97 | 92 | 1 | 50 | 5336 | 10.2 |
| | | | | | | 2 | 100 | 9440 | |
| | | | | | | 3 | 200 | 18134 | |
| | | | | | | 4 | 500 | 43185 | |
| | | | | | | 5 | 1000 | 82001 | |
| Chlordane (Technical) | 1 | 6.02 | 5.99 | 6.05 | 161 | 1 | 200.8 | 32342 | |
| | 2 | 6.13 | 6.10 | 6.16 | 214 | 1 | 200.8 | 43035 | |
| | 3 | 6.74 | 6.71 | 6.77 | 218 | 1 | 200.8 | 43765 | |
| | 4 | 7.55 | 7.52 | 7.58 | 427 | 1 | 200.8 | 85730 | |
| | 5 | 7.72 | 7.69 | 7.75 | 527 | 1 | 200.8 | 105826 | |
| | 6 | 8.73 | 8.70 | 8.76 | 150 | 1 | 200.8 | 30067 | |

8524

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13051

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.59 | 8.56 | 8.62 | 60 | 1 | 500 | 30219 | |
| | 2 | 8.97 | 8.94 | 9.00 | 55 | 1 | 500 | 27702 | |
| | 3 | 9.25 | 9.22 | 9.28 | 58 | 1 | 500 | 29080 | |
| | 4 | 9.34 | 9.31 | 9.37 | 65 | 1 | 500 | 32540 | |
| | 5 | 9.81 | 9.78 | 9.84 | 53 | 1 | 500 | 26743 | |
| | 6 | 10.27 | 10.24 | 10.30 | 61 | 1 | 500 | 30276 | |

8525

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.91 | 4.88 | 4.94 | 53 | 1 | 50 | 2990 | 9.5 |
| | | | | | | 2 | 100 | 5430 | |
| | | | | | | 3 | 200 | 10526 | |
| | | | | | | 4 | 500 | 24708 | |
| | | | | | | 5 | 1000 | 46733 | |
| | 2 | 5.47 | 5.44 | 5.50 | 89 | 1 | 50 | 5098 | 11.8 |
| | | | | | | 2 | 100 | 9444 | |
| | | | | | | 3 | 200 | 17958 | |
| | | | | | | 4 | 500 | 40935 | |
| | | | | | | 5 | 1000 | 75311 | |
| | 3 | 6.09 | 6.06 | 6.12 | 141 | 1 | 50 | 7762 | 6.2 |
| | | | | | | 2 | 100 | 14286 | |
| | | | | | | 3 | 200 | 27966 | |
| | | | | | | 4 | 500 | 68349 | |
| | | | | | | 5 | 1000 | 132100 | |
| | 4 | 6.27 | 6.24 | 6.30 | 78 | 1 | 50 | 4331 | 7.5 |
| | | | | | | 2 | 100 | 7972 | |
| | | | | | | 3 | 200 | 15381 | |
| | | | | | | 4 | 500 | 37219 | |
| | | | | | | 5 | 1000 | 71407 | |
| | 5 | 6.53 | 6.50 | 6.56 | 45 | 1 | 50 | 2606 | 9.6 |
| | | | | | | 2 | 100 | 4636 | |
| | | | | | | 3 | 200 | 8991 | |
| | | | | | | 4 | 500 | 21285 | |
| | | | | | | 5 | 1000 | 40703 | |
| | 6 | 6.89 | 6.86 | 6.92 | 59 | 1 | 50 | 3361 | 7.9 |
| | | | | | | 2 | 100 | 5928 | |
| | | | | | | 3 | 200 | 11653 | |
| | | | | | | 4 | 500 | 28311 | |
| | | | | | | 5 | 1000 | 55238 | |
| Aroclor-1221 | 1 | 4.62 | 4.59 | 4.65 | 31 | 1 | 200 | 6269 | |
| | 2 | 4.82 | 4.79 | 4.85 | 22 | 1 | 200 | 4386 | |
| | 3 | 4.90 | 4.87 | 4.93 | 72 | 1 | 200 | 14421 | |
| Aroclor-1232 | 1 | 4.90 | 4.87 | 4.93 | 56 | 1 | 200 | 11289 | |
| | 2 | 5.47 | 5.44 | 5.50 | 39 | 1 | 200 | 7837 | |
| | 3 | 6.09 | 6.06 | 6.12 | 61 | 1 | 200 | 12144 | |
| | 4 | 6.27 | 6.24 | 6.30 | 34 | 1 | 200 | 6874 | |
| | 5 | 6.53 | 6.50 | 6.56 | 18 | 1 | 200 | 3574 | |
| | 6 | 6.89 | 6.86 | 6.92 | 25 | 1 | 200 | 4906 | |

8526

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.90 | 4.87 | 4.93 | 48 | 1 | 200 | 9578 | |
| | 2 | 5.47 | 5.44 | 5.50 | 78 | 1 | 200 | 15622 | |
| | 3 | 6.09 | 6.06 | 6.12 | 119 | 1 | 200 | 23756 | |
| | 4 | 6.27 | 6.24 | 6.30 | 66 | 1 | 200 | 13166 | |
| | 5 | 6.53 | 6.50 | 6.56 | 38 | 1 | 200 | 7534 | |
| | 6 | 6.89 | 6.86 | 6.92 | 51 | 1 | 200 | 10153 | |
| Aroclor-1248 | 1 | 5.47 | 5.44 | 5.50 | 38 | 1 | 200 | 7652 | |
| | 2 | 6.53 | 6.50 | 6.56 | 64 | 1 | 200 | 12776 | |
| | 3 | 6.89 | 6.86 | 6.92 | 79 | 1 | 200 | 15784 | |
| | 4 | 7.45 | 7.42 | 7.48 | 70 | 1 | 200 | 14082 | |
| | 5 | 7.76 | 7.73 | 7.79 | 70 | 1 | 200 | 13985 | |
| | 6 | 8.29 | 8.26 | 8.32 | 42 | 1 | 200 | 8349 | |
| Aroclor-1254 | 1 | 6.53 | 6.50 | 6.56 | 53 | 1 | 250 | 13176 | |
| | 2 | 7.44 | 7.41 | 7.47 | 84 | 1 | 250 | 20947 | |
| | 3 | 8.29 | 8.26 | 8.32 | 127 | 1 | 250 | 31627 | |
| | 4 | 8.58 | 8.55 | 8.61 | 75 | 1 | 250 | 18685 | |
| | 5 | 9.02 | 8.99 | 9.05 | 54 | 1 | 250 | 13464 | |
| | 6 | 9.27 | 9.24 | 9.30 | 96 | 1 | 250 | 24088 | |

0527

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.54 | 8.51 | 8.57 | 116 | 1 | 50 | 6187 | 6.7 |
| | | | | | | 2 | 100 | 12355 | |
| | | | | | | 3 | 200 | 23553 | |
| | | | | | | 4 | 500 | 55688 | |
| | | | | | | 5 | 1000 | 105828 | |
| | 2 | 8.80 | 8.77 | 8.83 | 133 | 1 | 50 | 8273 | 14.5 |
| | | | | | | 2 | 100 | 13268 | |
| | | | | | | 3 | 200 | 25218 | |
| | | | | | | 4 | 500 | 60535 | |
| | | | | | | 5 | 1000 | 117467 | |
| | 3 | 9.01 | 8.98 | 9.04 | 92 | 1 | 50 | 5467 | 10.4 |
| | | | | | | 2 | 100 | 8984 | |
| | | | | | | 3 | 200 | 17601 | |
| | | | | | | 4 | 500 | 43661 | |
| | | | | | | 5 | 1000 | 87024 | |
| | 4 | 9.26 | 9.23 | 9.29 | 127 | 1 | 50 | 7714 | 12.3 |
| | | | | | | 2 | 100 | 12655 | |
| | | | | | | 3 | 200 | 24194 | |
| | | | | | | 4 | 500 | 59172 | |
| | | | | | | 5 | 1000 | 116014 | |
| | 5 | 9.76 | 9.73 | 9.79 | 99 | 1 | 50 | 5772 | 10.2 |
| | | | | | | 2 | 100 | 9924 | |
| | | | | | | 3 | 200 | 19183 | |
| | | | | | | 4 | 500 | 46269 | |
| | | | | | | 5 | 1000 | 89749 | |
| | 6 | 10.07 | 10.04 | 10.10 | 197 | 1 | 50 | 12054 | 12.9 |
| | | | | | | 2 | 100 | 19625 | |
| | | | | | | 3 | 200 | 37244 | |
| | | | | | | 4 | 500 | 90927 | |
| | | | | | | 5 | 1000 | 180030 | |
| Chlordane (Technical) | 1 | 6.02 | 5.99 | 6.05 | 91 | 1 | 200.8 | 18357 | |
| | 2 | 6.23 | 6.20 | 6.26 | 120 | 1 | 200.8 | 24067 | |
| | 3 | 6.88 | 6.85 | 6.91 | 133 | 1 | 200.8 | 26681 | |
| | 4 | 7.70 | 7.67 | 7.73 | 298 | 1 | 200.8 | 59914 | |
| | 5 | 7.82 | 7.79 | 7.85 | 232 | 1 | 200.8 | 46626 | |
| | 6 | 7.89 | 7.86 | 7.92 | 259 | 1 | 200.8 | 51910 | |

8529

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.30 | 8.27 | 8.33 | 22 | 1 | 500 | 11125 | |
| | 2 | 9.10 | 9.07 | 9.13 | 54 | 1 | 500 | 27079 | |
| | 3 | 9.43 | 9.40 | 9.46 | 36 | 1 | 500 | 17800 | |
| | 4 | 10.10 | 10.07 | 10.13 | 47 | 1 | 500 | 23400 | |
| | 5 | 10.61 | 10.58 | 10.64 | 25 | 1 | 500 | 12700 | |
| | 6 | 10.84 | 10.81 | 10.87 | 15 | 1 | 500 | 7541 | |

8529

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/20/04

Lab File ID: 1C13051.16R  Time Analyzed: 12:51

Lab Standard ID: ICMAXAA  Initial Calibration: 1C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.17 | 4.14 | 4.20 | 38.08 | 38.48 | -1.0 |
| alpha-BHC | 5.00 | 4.97 | 5.03 | 9.57 | 10.00 | -4.3 |
| gamma-BHC (Lindane) | 5.46 | 5.43 | 5.49 | 10.10 | 10.00 | 1.0 |
| beta-BHC | 5.58 | 5.55 | 5.61 | 9.85 | 10.00 | -1.5 |
| delta-BHC | 5.84 | 5.81 | 5.87 | 10.01 | 10.00 | 0.1 |
| Heptachlor | 6.13 | 6.10 | 6.16 | 9.79 | 10.00 | -2.1 |
| Aldrin | 6.55 | 6.52 | 6.58 | 10.10 | 10.00 | 1.0 |
| Heptachlor epoxide | 7.38 | 7.35 | 7.41 | 9.67 | 10.00 | -3.3 |
| gamma-Chlordane | 7.55 | 7.52 | 7.58 | 9.99 | 10.00 | -0.1 |
| alpha-Chlordane | 7.72 | 7.70 | 7.76 | 9.97 | 10.00 | -0.3 |
| 4,4'-DDE | 7.81 | 7.78 | 7.84 | 20.48 | 20.00 | 2.4 |
| Endosulfan I | 7.91 | 7.88 | 7.94 | 10.10 | 10.00 | 1.0 |
| Dieldrin | 8.23 | 8.20 | 8.26 | 19.85 | 20.00 | -0.7 |
| Endrin | 8.54 | 8.51 | 8.57 | 19.69 | 20.00 | -1.5 |
| 4,4'-DDD | 8.60 | 8.57 | 8.63 | 19.57 | 20.00 | -2.1 |
| Endosulfan II | 8.83 | 8.80 | 8.86 | 19.69 | 20.00 | -1.5 |
| 4,4'-DDT | 8.96 | 8.93 | 8.99 | 19.70 | 20.00 | -1.5 |
| Endrin aldehyde | 9.37 | 9.35 | 9.41 | 22.08 | 20.00 | 10.4 |
| Methoxychlor | 9.57 | 9.54 | 9.60 | 95.02 | 100.00 | -5.0 |
| Endosulfan sulfate | 9.94 | 9.91 | 9.97 | 19.74 | 20.00 | -1.3 |
| Endrin ketone | 10.31 | 10.28 | 10.34 | 20.16 | 20.00 | 0.8 |
| Decachlorobiphenyl | 11.62 | 11.59 | 11.65 | 36.40 | 38.96 | -6.6 |
| | | | | | Average of %D: | 2.3 |

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/20/04

Lab File ID: 1C13051B.16R  Time Analyzed: 12:51

Lab Standard ID: ICMAXAA  Initial Calibration: 1C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.21 | 4.18 | 4.24 | 38.74 | 38.48 | 0.7 |
| alpha-BHC | 5.10 | 5.07 | 5.13 | 9.36 | 10.00 | -6.4 |
| gamma-BHC (Lindane) | 5.61 | 5.58 | 5.64 | 10.06 | 10.00 | 0.6 |
| beta-BHC | 5.74 | 5.71 | 5.77 | 9.83 | 10.00 | -1.7 |
| delta-BHC | 6.15 | 6.12 | 6.18 | 9.63 | 10.00 | -3.7 |
| Heptachlor | 6.23 | 6.20 | 6.26 | 9.81 | 10.00 | -1.9 |
| Aldrin | 6.68 | 6.65 | 6.71 | 10.20 | 10.00 | 2.0 |
| Heptachlor epoxide | 7.45 | 7.42 | 7.48 | 9.79 | 10.00 | -2.1 |
| gamma-Chlordane | 7.70 | 7.67 | 7.73 | 9.95 | 10.00 | -0.5 |
| alpha-Chlordane | 7.89 | 7.86 | 7.92 | 9.72 | 10.00 | -2.8 |
| Endosulfan I | 7.97 | 7.94 | 8.00 | 9.59 | 10.00 | -4.1 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 19.65 | 20.00 | -1.8 |
| Dieldrin | 8.33 | 8.30 | 8.36 | 19.66 | 20.00 | -1.7 |
| Endrin | 8.73 | 8.70 | 8.76 | 19.88 | 20.00 | -0.6 |
| 4,4'-DDD | 8.86 | 8.83 | 8.89 | 19.41 | 20.00 | -3.0 |
| Endosulfan II | 9.00 | 8.97 | 9.03 | 19.85 | 20.00 | -0.8 |
| 4,4'-DDT | 9.26 | 9.23 | 9.29 | 19.77 | 20.00 | -1.1 |
| Endrin aldehyde | 9.43 | 9.40 | 9.46 | 21.85 | 20.00 | 9.2 |
| Endosulfan sulfate | 9.78 | 9.76 | 9.82 | 19.77 | 20.00 | -1.1 |
| Methoxychlor | 10.13 | 10.10 | 10.16 | 96.36 | 100.00 | -3.6 |
| Endrin ketone | 10.48 | 10.43 | 10.49 | 19.53 | 20.00 | -2.4 |
| Decachlorobiphenyl | 12.23 | 12.20 | 12.26 | 36.79 | 38.96 | -5.6 |
| | | | | | Average of %D: | 2.6 |

9531

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051.04R  Time Analyzed: 11:48

Lab Standard ID: PEMIR  Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.17 | 4.14 | 4.20 | 19.93 | 20.10 | -0.9 |
| alpha-BHC | 4.99 | 4.97 | 5.03 | 10.23 | 10.00 | 2.3 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 9.99 | 10.00 | -0.1 |
| beta-BHC | 5.58 | 5.55 | 5.61 | 9.88 | 10.00 | -1.2 |
| 4,4'-DDE | 7.81 | 7.78 | 7.84 | 0.60 | | |
| Endrin | 8.53 | 8.51 | 8.57 | 48.44 | 50.10 | -3.3 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 94.77 | 100.20 | -5.4 |
| Endrin aldehyde | 9.37 | 9.35 | 9.41 | 0.89 | | |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 207.21 | 250.50 | -17.3 |
| Endrin ketone | 10.30 | 10.28 | 10.34 | 0.80 | | |
| Decachlorobiphenyl | 11.61 | 11.59 | 11.65 | 20.10 | 20.00 | 0.5 |

4'4-DDT % breakdown:0.7  Endrin % breakdown: 3  Combined % breakdown:3.7

8532

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051B.04R  Time Analyzed: 11:48

Lab Standard ID: PEMIR  Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 19.59 | 20.10 | -2.5 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 9.40 | 10.00 | -6.0 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 10.03 | 10.00 | 0.3 |
| beta-BHC | 5.73 | 5.71 | 5.77 | 9.78 | 10.00 | -2.2 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 0.86 | | |
| Endrin | 8.71 | 8.70 | 8.76 | 53.62 | 50.10 | 7.0 |
| 4,4'-DDD | 8.86 | 8.83 | 8.89 | 0.58 | | |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 110.24 | 100.20 | 10.0 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 1.09 | | |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 219.57 | 250.50 | -12.3 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 0.97 | | |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 20.61 | 20.00 | 3.0 |

4'4-DDT % breakdown:1.3  Endrin % breakdown: 3.7  Combined % breakdown: 5

8533

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H6722A
Init. Calib Date(s): 02/20/04 02/20/04
GC Column (1) : RTX-CLP ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2C13051.05R
Time Analyzed: 12:09
Lab Standard ID: MIXA3LS
Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 38.19 | 38.48 | -0.8 |
| alpha-BHC | 4.99 | 4.97 | 5.03 | 10.09 | 10.00 | 0.9 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 10.08 | 10.00 | 0.8 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.82 | 10.00 | -1.8 |
| delta-BHC | 5.83 | 5.81 | 5.87 | 9.88 | 10.00 | -1.2 |
| Heptachlor | 6.12 | 6.10 | 6.16 | 9.95 | 10.00 | -0.5 |
| Aldrin | 6.54 | 6.52 | 6.58 | 10.00 | 10.00 | 0 |
| Heptachlor epoxide | 7.37 | 7.35 | 7.41 | 9.81 | 10.00 | -1.9 |
| gamma-Chlordane | 7.54 | 7.52 | 7.58 | 9.91 | 10.00 | -0.9 |
| alpha-Chlordane | 7.71 | 7.70 | 7.76 | 9.77 | 10.00 | -2.3 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 19.01 | 20.00 | -4.9 |
| Endosulfan I | 7.90 | 7.88 | 7.94 | 10.08 | 10.00 | 0.8 |
| Dieldrin | 8.22 | 8.20 | 8.26 | 19.99 | 20.00 | -0.1 |
| Endrin | 8.52 | 8.51 | 8.57 | 19.33 | 20.00 | -3.4 |
| Endosulfan II | 8.82 | 8.80 | 8.86 | 19.45 | 20.00 | -2.7 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 18.35 | 20.00 | -8.3 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 19.22 | 20.00 | -3.9 |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 87.22 | 100.00 | -12.8 |
| Endosulfan sulfate | 9.93 | 9.91 | 9.97 | 18.71 | 20.00 | -6.5 |
| Endrin ketone | 10.30 | 10.28 | 10.34 | 19.75 | 20.00 | -1.3 |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 36.35 | 38.96 | -6.7 |

4-4-DDD 8.59 17.66 Average of %D: ~~3.0~~ (3) -11.7 3.4

Bgc us, 2.26.04

8534



FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B

Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)

Date Analyzed: 02/25/04

Lab File ID: 2C13051B.05R

Time Analyzed: 12:09

Lab Standard ID: MIXA3LS

Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 38.92 | 38.48 | 1.1 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 9.07 | 10.00 | -9.3 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 10.11 | 10.00 | 1.1 |
| beta-BHC | 5.73 | 5.71 | 5.77 | 9.69 | 10.00 | -3.1 |
| delta-BHC | 6.14 | 6.12 | 6.18 | 9.39 | 10.00 | -6.1 |
| Heptachlor | 6.22 | 6.20 | 6.26 | 10.48 | 10.00 | 4.8 |
| Aldrin | 6.66 | 6.65 | 6.71 | 10.27 | 10.00 | 2.7 |
| Heptachlor epoxide | 7.44 | 7.42 | 7.48 | 10.26 | 10.00 | 2.6 |
| gamma-Chlordane | 7.69 | 7.67 | 7.73 | 10.06 | 10.00 | 0.6 |
| alpha-Chlordane | 7.88 | 7.86 | 7.92 | 9.86 | 10.00 | -1.4 |
| Endosulfan I | 7.96 | 7.94 | 8.00 | 9.72 | 10.00 | -2.8 |
| 4,4'-DDE | 8.09 | 8.08 | 8.14 | 16.06 | 20.00 | -19.7 |
| Dieldrin | 8.31 | 8.30 | 8.36 | 20.11 | 20.00 | 0.6 |
| Endrin | 8.71 | 8.70 | 8.76 | 19.59 | 20.00 | -2.1 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 14.98 | 20.00 | -25.1 |
| Endosulfan II | 8.99 | 8.97 | 9.03 | 19.54 | 20.00 | -2.3 |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 17.82 | 20.00 | -10.9 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 18.78 | 20.00 | -6.1 |
| Endosulfan sulfate | 9.77 | 9.76 | 9.82 | 18.80 | 20.00 | -6.0 |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 85.33 | 100.00 | -14.7 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 19.25 | 20.00 | -3.7 |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 37.27 | 38.96 | -4.3 |
| | | | | | Average of %D: | 6.0 |

9535

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051.27R  Time Analyzed: 19:38

Lab Standard ID: PEMIS  Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 19.62 | 20.10 | -2.4 |
| alpha-BHC | 4.98 | 4.97 | 5.03 | 10.07 | 10.00 | 0.7 |
| gamma-BHC (Lindane) | 5.44 | 5.43 | 5.49 | 9.80 | 10.00 | -2.0 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.61 | 10.00 | -3.9 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 0.59 | | |
| Endrin | 8.52 | 8.51 | 8.57 | 46.70 | 50.10 | -6.8 |
| 4,4'-DDT | 8.94 | 8.93 | 8.99 | 89.33 | 100.20 | -10.8 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 1.49 | | |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 188.15 | 250.50 | -24.9 |
| Endrin ketone | 10.29 | 10.28 | 10.34 | 1.34 | | |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 19.90 | 20.00 | -0.5 |

4'4-DDT % breakdown: 0.8  Endrin % breakdown: 5.1  Combined % breakdown: 5.9

8536

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051B.27R  Time Analyzed: 19:38

Lab Standard ID: PEMIS  Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 18.95 | 20.10 | -5.7 |
| alpha-BHC | 5.08 | 5.07 | 5.13 | 7.86 | 10.00 | -21.4 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 9.75 | 10.00 | -2.5 |
| beta-BHC | 5.72 | 5.71 | 5.77 | 9.25 | 10.00 | -7.5 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 0.70 | | |
| Endrin | 8.71 | 8.70 | 8.76 | 50.01 | 50.10 | -0.2 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 0.63 | | |
| 4,4'-DDT | 9.24 | 9.23 | 9.29 | 94.86 | 100.20 | -5.3 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 1.59 | | |
| Methoxychlor | 10.11 | 10.10 | 10.16 | 192.62 | 250.50 | -23.1 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 1.46 | | |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 17.48 | 20.00 | -12.6 |

4'4-DDT % breakdown: 1.4  Endrin % breakdown: 5.7  Combined % breakdown: 7.1

8537

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A

Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)

Date Analyzed: 02/25/04

Lab File ID: 2C13051.28R

Time Analyzed: 19:58

Lab Standard ID: MIXA3LN

Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 38.28 | 38.48 | -0.5 |
| alpha-BHC | 4.98 | 4.97 | 5.03 | 10.12 | 10.00 | 1.2 |
| gamma-BHC (Lindane) | 5.44 | 5.43 | 5.49 | 10.06 | 10.00 | 0.6 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.70 | 10.00 | -3.0 |
| delta-BHC | 5.82 | 5.81 | 5.87 | 9.67 | 10.00 | -3.3 |
| Heptachlor | 6.12 | 6.10 | 6.16 | 9.92 | 10.00 | -0.8 |
| Aldrin | 6.54 | 6.52 | 6.58 | 10.02 | 10.00 | 0.2 |
| gamma-Chlordane | 7.53 | 7.52 | 7.58 | 9.85 | 10.00 | -1.5 |
| alpha-Chlordane | 7.71 | 7.70 | 7.76 | 9.73 | 10.00 | -2.7 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 18.03 | 20.00 | -9.8 |
| Endosulfan I | 7.90 | 7.88 | 7.94 | 10.15 | 10.00 | 1.5 |
| Dieldrin | 8.21 | 8.20 | 8.26 | 19.87 | 20.00 | -0.6 |
| Endrin | 8.52 | 8.51 | 8.57 | 18.88 | 20.00 | -5.6 |
| Endosulfan II | 8.82 | 8.80 | 8.86 | 19.14 | 20.00 | -4.3 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 17.05 | 20.00 | -14.8 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 18.94 | 20.00 | -5.3 |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 76.28 | 100.00 | -23.7 |
| Endosulfan sulfate | 9.92 | 9.91 | 9.97 | 18.15 | 20.00 | -9.2 |
| Endrin ketone | 10.29 | 10.28 | 10.34 | 19.29 | 20.00 | -3.5 |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 35.31 | 38.96 | -9.4 |

Average of %D: ~~5.1~~ ③

Heptepox 7.37 9.80 10.0 -2.0

4,4-DDD 8.58 16.10 20.0 -19.5

→ 5.6

③ Ayelisi 2-26-04

8538

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051B.28R  Time Analyzed: 19:58

Lab Standard ID: MIXA3LN  Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.19 | 4.18 | 4.24 | 38.71 | 38.48 | 0.6 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 8.08 | 10.00 | -19.2 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 9.97 | 10.00 | -0.3 |
| beta-BHC | 5.72 | 5.71 | 5.77 | 9.37 | 10.00 | -6.3 |
| delta-BHC | 6.13 | 6.12 | 6.18 | 8.85 | 10.00 | -11.5 |
| Heptachlor | 6.21 | 6.20 | 6.26 | 10.67 | 10.00 | 6.7 |
| Aldrin | 6.66 | 6.65 | 6.71 | 10.37 | 10.00 | 3.7 |
| Heptachlor epoxide | 7.43 | 7.42 | 7.48 | 10.16 | 10.00 | 1.6 |
| gamma-Chlordane | 7.68 | 7.67 | 7.73 | 9.90 | 10.00 | -1.0 |
| alpha-Chlordane | 7.87 | 7.86 | 7.92 | 9.76 | 10.00 | -2.4 |
| Endosulfan I | 7.95 | 7.94 | 8.00 | 9.55 | 10.00 | -4.5 |
| 4,4'-DDE | 8.09 | 8.08 | 8.14 | 12.95 | 20.00 | -35.2 |
| Dieldrin | 8.31 | 8.30 | 8.36 | 19.83 | 20.00 | -0.8 |
| Endrin | 8.71 | 8.70 | 8.76 | 18.60 | 20.00 | -7.0 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 10.54 | 20.00 | -47.3 |
| Endosulfan II | 8.99 | 8.97 | 9.03 | 18.02 | 20.00 | -9.9 |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 14.68 | 20.00 | -26.6 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 17.56 | 20.00 | -12.2 |
| Endosulfan sulfate | 9.77 | 9.76 | 9.82 | 17.43 | 20.00 | -12.9 |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 68.76 | 100.00 | -31.2 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 18.13 | 20.00 | -9.3 |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 35.22 | 38.96 | -9.6 |
| | | | | | Average of %D: | 11.8 |

8539

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 02/20/2004 | 10:28:31 | 1C13051 | 4.17 | 11.62 |
| 002 | PEMAA | EVALX03C | 02/20/2004 | 10:48:56 | 1C13051 | 4.17 | 11.62 |
| 003 | MIXA1AA | MIXA103D | 02/20/2004 | 11:09:20 | 1C13051 | 4.18 | 11.62 |
| 004 | MIXA2AA | MIXA203E | 02/20/2004 | 11:29:46 | 1C13051 | 4.17 | 11.62 |
| 005 | MIXA3AA | MIXA303D | 02/20/2004 | 11:50:07 | 1C13051 | 4.17 | 11.62 |
| 006 | MIXA4AA | MIXA403E | 02/20/2004 | 12:10:44 | 1C13051 | 4.17 | 11.62 |
| 007 | MIXA5AA | MIXA503D | 02/20/2004 | 12:31:07 | 1C13051 | 4.17 | 11.62 |
| 008 | ICMAXAA | ICMAX03F | 02/20/2004 | 12:51:32 | 1C13051 | 4.17 | 11.62 |
| 009 | MIXE1AA | MIXE103C | 02/20/2004 | 13:11:54 | 1C13051 | 4.18 | 11.62 |
| 010 | MIXE2AA | MIXE203C | 02/20/2004 | 13:32:18 | 1C13051 | 4.17 | 11.62 |
| 011 | MIXE3AA | MIXE303D | 02/20/2004 | 13:52:38 | 1C13051 | 4.17 | 11.62 |
| 012 | MIXE4AA | MIXE403C | 02/20/2004 | 14:13:02 | 1C13051 | 4.17 | 11.61 |
| 013 | MIXE5AA | MIXE503C | 02/20/2004 | 14:33:25 | 1C13051 | 4.17 | 11.62 |
| 014 | TOXWXAA | TOXWX03B | 02/20/2004 | 14:54:03 | 1C13051 | 4.17 | 11.62 |
| 015 | CHLDXAA | CHLDX03B | 02/20/2004 | 15:14:24 | 1C13051 | 4.17 | 11.62 |
| 016 | AR161AA | AR1610424A | 02/20/2004 | 15:35:00 | 2C13051 | 4.17 | 11.62 |
| 017 | AR162AA | AR1620424A | 02/20/2004 | 15:55:21 | 1C13051 | 4.17 | 11.62 |
| 018 | AR163AA | AR1630424A | 02/20/2004 | 16:15:46 | 1C13051 | 4.17 | 11.62 |
| 019 | AR164AA | AR1640424A | 02/20/2004 | 16:36:24 | 1C13051 | 4.17 | 11.62 |
| 020 | AR165AA | AR1650424A | 02/20/2004 | 16:56:57 | 1C13051 | 4.17 | 11.62 |
| 021 | AR210AA | AR210424A | 02/20/2004 | 17:17:18 | 1C13051 | 4.17 | 11.62 |
| 022 | AR32XAA | AR32X03C | 02/20/2004 | 17:37:40 | 1C13051 | 4.17 | 11.62 |
| 023 | AR420AA | AR420424A | 02/20/2004 | 17:58:02 | 1C13051 | 4.17 | 11.62 |
| 024 | AR483AA | AR4830424A | 02/20/2004 | 18:18:26 | 1C13051 | 4.17 | 11.62 |
| 025 | AR543AA | AR5430424A | 02/20/2004 | 18:38:46 | 1C13051 | 4.17 | 11.62 |
| 026 | MDLAXAA | MDLAX03D | 02/20/2004 | 18:59:07 | 1C13051 | 4.17 | |
| 027 | MDLEXAA | MDLEX03C | 02/20/2004 | 19:19:29 | 1C13051 | 4.17 | |
| 028 | MD16XAA | MD16X0424A | 02/20/2004 | 19:39:53 | 1C13051 | 4.17 | |
| 029 | MDTXXAA | MDTXX03B | 02/20/2004 | 20:00:15 | 1C13051 | 4.17 | |
| 030 | MDCHXAA | MDCHX03B | 02/20/2004 | 20:20:36 | 1C13051 | 4.17 | |
| 031 | IC16XAA | IC16X03B | 02/20/2004 | 20:40:56 | 1C13051 | 4.17 | 11.62 |

| ICAL Dates | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13051 | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |
| 2C13051 | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 032 | PBLKSD | BLANKA | 02/20/2004 | 21:01:19 | 1C13051 | 4.17 | 11.61 |
| 033 | LCSQE | LCSA | 02/20/2004 | 21:21:42 | 1C13051 | 4.17 | 11.61 |
| 034 | LCSDIO | LCSDA | 02/20/2004 | 21:42:05 | 1C13051 | 4.17 | 11.61 |
| 035 | 69--1 | 4217521 | 02/20/2004 | 22:02:26 | 1C13051 | 4.17 | 11.61 |
| 036 | PEMIH | EVALX03C | 02/20/2004 | 22:22:49 | 1C13051 | 4.17 | 11.61 |
| 037 | MIXA3LD | MIXA303D | 02/20/2004 | 22:43:09 | 1C13051 | 4.17 | 11.61 |
| 038 | MIXE3NR | MIXE303D | 02/20/2004 | 23:03:34 | 1C13051 | 4.17 | 11.62 |
| 039 | AR163UL | AR1630424A | 02/20/2004 | 23:23:56 | 1C13051 | 4.17 | 11.62 |
| 040 | PBLKSP | BLANKA | 02/20/2004 | 23:44:19 | 2C13051 | 4.17 | 11.61 |
| 041 | LCSQS | LCSA | 02/21/2004 | 00:04:38 | 2C13051 | 4.17 | 11.61 |
| 042 | I1-NV | 4217215 | 02/21/2004 | 00:25:02 | 2C13051 | 4.17 | 11.61 |
| 043 | I1-NVMS | 4217215 | 02/21/2004 | 00:45:26 | 2C13051 | 4.17 | 11.61 |
| 044 | I1-NVMSD | 4217215 | 02/21/2004 | 01:05:51 | 2C13051 | 4.17 | 11.61 |
| 045 | BLA-2 | 4217866 | 02/21/2004 | 01:26:12 | 2C13051 | 4.17 | 11.61 |
| 046 | PBLKO9 | BLANKA | 02/21/2004 | 01:46:34 | 2C13051 | 4.17 | 11.61 |
| 047 | CF314 | 4213699 | 02/21/2004 | 02:07:09 | 2C13051 | 4.17 | 11.61 |
| 048 | C14L4 | 4213700 | 02/21/2004 | 02:27:35 | 2C13051 | 4.17 | 11.61 |
| 049 | AA | CONTROL | 02/21/2004 | 02:47:58 | 2C13051 | | |
| 050 | AA | SYRINGE | 02/21/2004 | 03:08:22 | 2C13051 | 4.16 | 11.60 |
| 051 | AA | SYRINGE FILTE | 02/21/2004 | 03:28:42 | 2C13051 | | 11.59 |
| 052 | PEMII | EVALX03C | 02/21/2004 | 03:49:07 | 2C13051 | 4.17 | 11.61 |
| 053 | MIXA3LE | MIXA303D | 02/21/2004 | 04:09:31 | 2C13051 | 4.17 | 11.61 |
| 054 | AR163UM | AR1630424A | 02/21/2004 | 04:29:57 | 2C13051 | 4.17 | 11.61 |
| 055 | PBLKSO | BLANKA | 02/21/2004 | 04:50:20 | 2C13051 | 4.17 | 11.61 |
| 056 | LCSQR | LCSA | 02/21/2004 | 05:10:43 | 2C13051 | 4.17 | 11.61 |
| 057 | LCSDIT | LCSDA | 02/21/2004 | 05:31:06 | 2C13051 | 4.17 | 11.61 |
| 058 | FITTE | 4218136 | 02/21/2004 | 05:51:47 | 2C13051 | 4.17 | 11.61 |
| 059 | WENC- | 4218137 | 02/21/2004 | 06:12:12 | 2C13051 | 4.17 | 11.61 |
| 060 | PEMIJ | EVALX03C | 02/21/2004 | 06:32:37 | 2C13051 | 4.17 | 11.61 |
| 061 | MIXA3LF | MIXA303D | 02/21/2004 | 06:52:59 | 2C13051 | 4.17 | 11.61 |
| 062 | AR163UN | AR1630424A | 02/21/2004 | 07:13:37 | 2C13051 | 4.17 | 11.61 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13051 | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |
| 2C13051 | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |

8541

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 02/20/2004 | 10:28:31 | 1C13051B | 4.21 | 12.23 |
| 002 | PEMAA | EVALX03C | 02/20/2004 | 10:48:56 | 1C13051B | 4.21 | 12.23 |
| 003 | MIXA1AA | MIXA103D | 02/20/2004 | 11:09:20 | 1C13051B | 4.21 | 12.23 |
| 004 | MIXA2AA | MIXA203E | 02/20/2004 | 11:29:46 | 1C13051B | 4.21 | 12.23 |
| 005 | MIXA3AA | MIXA303D | 02/20/2004 | 11:50:07 | 1C13051B | 4.21 | 12.23 |
| 006 | MIXA4AA | MIXA403E | 02/20/2004 | 12:10:44 | 1C13051B | 4.21 | 12.23 |
| 007 | MIXA5AA | MIXA503D | 02/20/2004 | 12:31:07 | 1C13051B | 4.21 | 12.23 |
| 008 | ICMAXAA | ICMAX03F | 02/20/2004 | 12:51:32 | 1C13051B | 4.21 | 12.23 |
| 009 | MIXE1AA | MIXE103C | 02/20/2004 | 13:11:54 | 1C13051B | 4.21 | 12.23 |
| 010 | MIXE2AA | MIXE203C | 02/20/2004 | 13:32:18 | 1C13051B | 4.21 | 12.23 |
| 011 | MIXE3AA | MIXE303D | 02/20/2004 | 13:52:38 | 1C13051B | 4.21 | 12.23 |
| 012 | MIXE4AA | MIXE403C | 02/20/2004 | 14:13:02 | 1C13051B | 4.21 | 12.23 |
| 013 | MIXE5AA | MIXE503C | 02/20/2004 | 14:33:25 | 1C13051B | 4.21 | 12.23 |
| 014 | TOXWXAA | TOXWX03B | 02/20/2004 | 14:54:03 | 1C13051B | 4.21 | 12.23 |
| 015 | CHLDXAA | CHLDX03B | 02/20/2004 | 15:14:24 | 1C13051B | 4.21 | 12.23 |
| 016 | AR161AA | AR1610424A | 02/20/2004 | 15:35:00 | 2C13051B | 4.21 | 12.23 |
| 017 | AR162AA | AR1620424A | 02/20/2004 | 15:55:21 | 1C13051B | 4.21 | 12.23 |
| 018 | AR163AA | AR1630424A | 02/20/2004 | 16:15:46 | 1C13051B | 4.21 | 12.23 |
| 019 | AR164AA | AR1640424A | 02/20/2004 | 16:36:24 | 1C13051B | 4.21 | 12.23 |
| 020 | AR165AA | AR1650424A | 02/20/2004 | 16:56:57 | 1C13051B | 4.21 | 12.23 |
| 021 | AR210AA | AR210424A | 02/20/2004 | 17:17:18 | 1C13051B | 4.21 | 12.23 |
| 022 | AR32XAA | AR32X03C | 02/20/2004 | 17:37:40 | 1C13051B | 4.21 | 12.23 |
| 023 | AR420AA | AR420424A | 02/20/2004 | 17:58:02 | 1C13051B | 4.21 | 12.23 |
| 024 | AR483AA | AR4830424A | 02/20/2004 | 18:18:26 | 1C13051B | 4.21 | 12.23 |
| 025 | AR543AA | AR5430424A | 02/20/2004 | 18:38:46 | 1C13051B | 4.21 | 12.23 |
| 026 | MDLAXAA | MDLAX03D | 02/20/2004 | 18:59:07 | 1C13051B | 4.21 | |
| 027 | MDLEXAA | MDLEX03C | 02/20/2004 | 19:19:29 | 1C13051B | 4.21 | |
| 028 | MD16XAA | MD16X0424A | 02/20/2004 | 19:39:53 | 1C13051B | | |
| 029 | MDTXXAA | MDTXX03B | 02/20/2004 | 20:00:15 | 1C13051B | 4.20 | |
| 030 | MDCHXAA | MDCHX03B | 02/20/2004 | 20:20:36 | 1C13051B | 4.21 | |
| 031 | IC16XAA | IC16X03B | 02/20/2004 | 20:40:56 | 1C13051B | 4.21 | 12.23 |

| ICAL Dates | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13051B | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.21 | (4.18 - 4.24 Minutes) |
| | | DCB = Decachlorobiphenyl | 12.23 | (12.20 - 12.26 Minutes) |
| 2C13051B | 02/20/2004 - 02/20/2004 | TCX = Tetrachloro-m-xylene | 4.21 | (4.18 - 4.24 Minutes) |
| | | DCB = Decachlorobiphenyl | 12.23 | (12.20 - 12.26 Minutes) |

8542

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 032 | PBLKSD | BLANKA | 02/20/2004 | 21:01:19 | 1C13051B | 4.21 | 12.22 |
| 033 | LCSQE | LCSA | 02/20/2004 | 21:21:42 | 1C13051B | 4.21 | 12.22 |
| 034 | LCSDIO | LCSDA | 02/20/2004 | 21:42:05 | 1C13051B | 4.21 | 12.22 |
| 035 | 69--1 | 4217521 | 02/20/2004 | 22:02:26 | 1C13051B | 4.21 | 12.22 |
| 036 | PEMIH | EVALX03C | 02/20/2004 | 22:22:49 | 1C13051B | 4.21 | 12.22 |
| 037 | MIXA3LD | MIXA303D | 02/20/2004 | 22:43:09 | 1C13051B | 4.21 | 12.22 |
| 038 | MIXE3NR | MIXE303D | 02/20/2004 | 23:03:34 | 1C13051B | 4.21 | 12.23 |
| 039 | AR163UL | AR1630424A | 02/20/2004 | 23:23:56 | 1C13051B | 4.21 | 12.23 |
| 040 | PBLKSP | BLANKA | 02/20/2004 | 23:44:19 | 2C13051B | 4.20 | 12.22 |
| 041 | LCSQS | LCSA | 02/21/2004 | 00:04:38 | 2C13051B | 4.20 | 12.22 |
| 042 | I1-NV | 4217215 | 02/21/2004 | 00:25:02 | 2C13051B | 4.20 | 12.22 |
| 043 | I1-NVMS | 4217215 | 02/21/2004 | 00:45:26 | 2C13051B | 4.21 | 12.22 |
| 044 | I1-NVMSD | 4217215 | 02/21/2004 | 01:05:51 | 2C13051B | 4.20 | 12.22 |
| 045 | BLA-2 | 4217866 | 02/21/2004 | 01:26:12 | 2C13051B | 4.21 | 12.22 |
| 046 | PBLKO9 | BLANKA | 02/21/2004 | 01:46:34 | 2C13051B | 4.20 | 12.22 |
| 047 | CF314 | 4213699 | 02/21/2004 | 02:07:09 | 2C13051B | 4.20 | 12.22 |
| 048 | C14L4 | 4213700 | 02/21/2004 | 02:27:35 | 2C13051B | 4.20 | 12.22 |
| 049 | AA | CONTROL | 02/21/2004 | 02:47:58 | 2C13051B | | |
| 050 | AA | SYRINGE | 02/21/2004 | 03:08:22 | 2C13051B | | |
| 051 | AA | SYRINGE FILTE | 02/21/2004 | 03:28:42 | 2C13051B | | |
| 052 | PEMII | EVALX03C | 02/21/2004 | 03:49:07 | 2C13051B | 4.20 | 12.22 |
| 053 | MIXA3LE | MIXA303D | 02/21/2004 | 04:09:31 | 2C13051B | 4.20 | 12.22 |
| 054 | AR163UM | AR1630424A | 02/21/2004 | 04:29:57 | 2C13051B | 4.20 | 12.22 |
| 055 | PBLKSO | BLANKA | 02/21/2004 | 04:50:20 | 2C13051B | 4.20 | 12.22 |
| 056 | LCSQR | LCSA | 02/21/2004 | 05:10:43 | 2C13051B | 4.20 | 12.22 |
| 057 | LCSDIT | LCSDA | 02/21/2004 | 05:31:06 | 2C13051B | 4.20 | 12.22 |
| 058 | FITTE | 4218136 | 02/21/2004 | 05:51:47 | 2C13051B | 4.20 | 12.22 |
| 059 | WENC- | 4218137 | 02/21/2004 | 06:12:12 | 2C13051B | 4.20 | 12.22 |
| 060 | PEMIJ | EVALX03C | 02/21/2004 | 06:32:37 | 2C13051B | 4.20 | 12.22 |
| 061 | MIXA3LF | MIXA303D | 02/21/2004 | 06:52:59 | 2C13051B | 4.20 | 12.22 |
| 062 | AR163UN | AR1630424A | 02/21/2004 | 07:13:37 | 2C13051B | 4.20 | 12.22 |

ICAL Dates

1C13051B 02/20/2004 - 02/20/2004

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

| | |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMIR | EVALX03C | 02/25/2004 | 11:48:45 | 2C13051 | 4.17 | 11.61 |
| 002 | MIXA3LS | MIXA303D | 02/25/2004 | 12:09:08 | 2C13051 | 4.16 | 11.60 |
| 003 | AR163VI | AR1630424A | 02/25/2004 | 12:29:34 | 2C13051 | 4.17 | 11.61 |
| 004 | PBLKXO | BLANKA | 02/25/2004 | 12:49:56 | 2C13051 | 4.17 | 11.60 |
| 005 | LCSW0 | LCSA | 02/25/2004 | 13:10:18 | 2C13051 | 4.17 | 11.60 |
| 006 | LCSDKO | LCSDA | 02/25/2004 | 13:30:55 | 2C13051 | 4.17 | 11.60 |
| 007 | SUMP1 | 4217721 | 02/25/2004 | 13:51:35 | 2C13051 | 4.16 | 11.60 |
| 008 | SP274 | 4217722 | 02/25/2004 | 14:12:13 | 2C13051 | 4.18 | 11.60 |
| 009 | SP276 | 4217723 | 02/25/2004 | 14:32:36 | 2C13051 | 4.16 | 11.60 |
| 010 | SMP5A | 4217724 | 02/25/2004 | 14:52:57 | 2C13051 | 4.16 | 11.60 |
| 011 | PBLKXF | BLANKA | 02/25/2004 | 15:13:18 | 2C13051 | 4.16 | 11.60 |
| 012 | LCSVP | LCSA | 02/25/2004 | 15:33:41 | 2C13051 | 4.16 | 11.60 |
| 013 | LCSDKJ | LCSDA | 02/25/2004 | 15:54:06 | 2C13051 | 4.16 | 11.60 |
| 014 | MFTFB | 4221475 | 02/25/2004 | 16:14:27 | 2C13051 | 4.16 | 11.60 |
| 015 | PBLKXG | BLANKA | 02/25/2004 | 16:35:19 | 2C13051 | 4.16 | 11.60 |
| 016 | LCSVQ | LCSA | 02/25/2004 | 16:55:54 | 2C13051 | 4.16 | 11.60 |
| 017 | UN5NV | 4219006 | 02/25/2004 | 17:16:16 | 2C13051 | 4.16 | 11.60 |
| 018 | UN7NV | 4219022 | 02/25/2004 | 17:36:37 | 2C13051 | 4.16 | 11.60 |
| 019 | UN7NVMS | 4219022 | 02/25/2004 | 17:56:58 | 2C13051 | 4.16 | 11.60 |
| 020 | UN7NVMSD | 4219022 | 02/25/2004 | 18:17:17 | 2C13051 | 4.16 | 11.60 |
| 021 | TC407 | 4219669 | 02/25/2004 | 18:37:37 | 2C13051 | 4.16 | 11.60 |
| 022 | BLA20 | 4221331 | 02/25/2004 | 18:57:57 | 2C13051 | 4.16 | 11.60 |
| 023 | BLA44 | 4221332 | 02/25/2004 | 19:18:19 | 2C13051 | 4.16 | 11.60 |
| 024 | PEMIS | EVALX03C | 02/25/2004 | 19:38:39 | 2C13051 | 4.16 | 11.60 |
| 025 | MIXA3LN | MIXA303D | 02/25/2004 | 19:58:59 | 2C13051 | 4.16 | 11.60 |
| 026 | AR163VJ | AR1630424A | 02/25/2004 | 20:19:17 | 2C13051 | 4.16 | 11.60 |
| 027 | PBLKRC | BLANKA | 02/25/2004 | 20:39:38 | 2C13051 | 4.16 | 11.60 |
| 028 | LCSOX | LCSA | 02/25/2004 | 20:59:59 | 2C13051 | 4.16 | 11.60 |
| 029 | B1116 | 4217561 | 02/25/2004 | 21:20:19 | 2C13051 | 4.17 | 11.60 |
| 030 | B1116 | 4217561 | 02/25/2004 | 21:40:37 | 2C13051 | 4.17 | 11.60 |
| 031 | B1116MS | 4217561 | 02/25/2004 | 22:00:57 | 2C13051 | 4.17 | 11.60 |
| 032 | B1116MS | 4217561 | 02/25/2004 | 22:21:15 | 2C13051 | 4.17 | 11.60 |
| 033 | B1116MSD | 4217561 | 02/25/2004 | 22:41:37 | 2C13051 | 4.17 | 11.60 |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)
11.62 (11.59 - 11.65 Minutes)

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | B1116MSD | 4217561 | 02/25/2004 | 23:02:12 | 2C13051 | 4.17 | 11.60 |
| 035 | B1216 | 4217562 | 02/25/2004 | 23:22:48 | 2C13051 | 4.16 | 11.60 |
| 036 | B1216 | 4217562 | 02/25/2004 | 23:43:22 | 2C13051 | 4.17 | 11.60 |
| 037 | B1316 | 4217563 | 02/26/2004 | 00:03:56 | 2C13051 | 4.17 | 11.60 |
| 038 | B1316 | 4217563 | 02/26/2004 | 00:24:16 | 2C13051 | 4.16 | 11.60 |
| 039 | B1416 | 4217564 | 02/26/2004 | 00:44:37 | 2C13051 | 4.16 | 11.60 |
| 040 | B1416 | 4217564 | 02/26/2004 | 01:05:10 | 2C13051 | 4.16 | 11.60 |
| 041 | B1516 | 4217565 | 02/26/2004 | 01:25:29 | 2C13051 | 4.16 | 11.59 |
| 042 | B1516 | 4217565 | 02/26/2004 | 01:45:46 | 2C13051 | 4.16 | 11.60 |
| 043 | AA | CONTROL | 02/26/2004 | 02:06:26 | 2C13051 | | 11.59 |
| 044 | AA | EXP1 | 02/26/2004 | 02:27:00 | 2C13051 | 4.19 | |
| 045 | AA | EXP2 | 02/26/2004 | 02:47:20 | 2C13051 | 4.19 | 11.60 |
| 046 | AA | EXP3 | 02/26/2004 | 03:07:51 | 2C13051 | | |
| 047 | PEMIT | EVALX03C | 02/26/2004 | 03:28:27 | 2C13051 | 4.16 | 11.60 |
| 048 | MIXA4NZ | MIXA403E | 02/26/2004 | 03:48:48 | 2C13051 | 4.16 | 11.59 |
| 049 | AR164XG | AR1640424A | 02/26/2004 | 04:09:09 | 2C13051 | 4.16 | 11.60 |
| 050 | PBLKVJ | BLANKA | 02/26/2004 | 04:29:44 | 2C13051 | 4.16 | 11.59 |
| 051 | LCSTI | LCSA | 02/26/2004 | 04:50:22 | 2C13051 | 4.16 | 11.59 |
| 052 | OM-3- | 4220751 | 02/26/2004 | 05:10:55 | 2C13051 | 4.16 | 11.59 |
| 053 | OM-3- | 4220751 | 02/26/2004 | 05:31:18 | 2C13051 | 4.16 | 11.59 |
| 054 | OM-3-MS | 4220751 | 02/26/2004 | 05:51:55 | 2C13051 | 4.16 | 11.59 |
| 055 | OM-3-MS | 4220751 | 02/26/2004 | 06:12:31 | 2C13051 | 4.16 | 11.59 |
| 056 | OM-3-MSD | 4220751 | 02/26/2004 | 06:33:06 | 2C13051 | 4.16 | 11.59 |
| 057 | OM-3-MSD | 4220751 | 02/26/2004 | 06:53:27 | 2C13051 | 4.16 | 11.59 |
| 058 | OM-1- | 4220750 | 02/26/2004 | 07:14:06 | 2C13051 | 4.16 | 11.59 |
| 059 | OM-1- | 4220750 | 02/26/2004 | 07:34:47 | 2C13051 | 4.16 | 11.59 |
| 060 | OM-4- | 4220752 | 02/26/2004 | 07:55:26 | 2C13051 | 4.16 | 11.59 |
| 061 | OM-6- | 4220753 | 02/26/2004 | 08:16:06 | 2C13051 | 4.16 | |
| 062 | OM-6- | 4220753 | 02/26/2004 | 08:36:44 | 2C13051 | 4.16 | 11.59 |
| 063 | CON-- | 4220754 | 02/26/2004 | 08:57:24 | 2C13051 | 4.16 | |
| 064 | OM1C- | 4220755 | 02/26/2004 | 09:17:46 | 2C13051 | 4.16 | |
| 065 | OM3C- | 4220756 | 02/26/2004 | 09:38:08 | 2C13051 | 4.16 | 11.59 |
| 066 | OM4C- | 4220757 | 02/26/2004 | 09:58:27 | 2C13051 | 4.16 | |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)
11.62 (11.59 - 11.65 Minutes)

8545

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 067 | OM4C- | 4220757 | 02/26/2004 | 10:18:50 | 2C13051 | 4.16 | |
| 068 | OM6C- | 4220758 | 02/26/2004 | 10:39:14 | 2C13051 | 4.16 | 11.59 |
| 069 | CONCT | 4220759 | 02/26/2004 | 10:59:55 | 2C13051 | 4.16 | |
| 070 | PEMIW | EVALX03C | 02/26/2004 | 11:20:28 | 2C13051 | 4.16 | 11.59 |
| 071 | MIXA3LQ | MIXA303D | 02/26/2004 | 11:40:50 | 2C13051 | 4.15 | 11.59 |
| 072 | MIXE3NY | MIXE303D | 02/26/2004 | 12:01:26 | 2C13051 | 4.16 | 11.59 |
| 073 | AR163VP | AR1630424A | 02/26/2004 | 12:21:54 | 2C13051 | 4.15 | 11.59 |
| 074 | PBLKOR | BLANKA | 02/26/2004 | 12:42:18 | 2C13051 | 4.16 | 11.59 * |
| 075 | B4132 | 4216244 | 02/26/2004 | 13:02:44 | 2C13051 | 4.15 | 11.59 * |
| 076 | MIXE3NZ | MIXE303D | 02/26/2004 | 13:23:09 | 2C13051 | 4.16 | 11.59 |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)
11.62 (11.59 - 11.65 Minutes)

8546

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMIR | EVALX03C | 02/25/2004 | 11:48:45 | 2C13051B | 4.20 | 12.21 |
| 002 | MIXA3LS | MIXA303D | 02/25/2004 | 12:09:08 | 2C13051B | 4.20 | 12.21 |
| 003 | AR163VI | AR1630424A | 02/25/2004 | 12:29:34 | 2C13051B | 4.20 | 12.22 |
| 004 | PBLKXO | BLANKA | 02/25/2004 | 12:49:56 | 2C13051B | 4.20 | 12.21 |
| 005 | LCSW0 | LCSA | 02/25/2004 | 13:10:18 | 2C13051B | 4.20 | 12.21 |
| 006 | LCSDKO | LCSDA | 02/25/2004 | 13:30:55 | 2C13051B | 4.20 | 12.21 |
| 007 | SUMP1 | 4217721 | 02/25/2004 | 13:51:35 | 2C13051B | 4.20 | 12.22 |
| 008 | SP274 | 4217722 | 02/25/2004 | 14:12:13 | 2C13051B | 4.20 | 12.22 |
| 009 | SP276 | 4217723 | 02/25/2004 | 14:32:36 | 2C13051B | 4.20 | 12.21 |
| 010 | SMP5A | 4217724 | 02/25/2004 | 14:52:57 | 2C13051B | 4.20 | 12.22 |
| 011 | PBLKXF | BLANKA | 02/25/2004 | 15:13:18 | 2C13051B | 4.20 | 12.21 |
| 012 | LCSVP | LCSA | 02/25/2004 | 15:33:41 | 2C13051B | 4.20 | 12.21 |
| 013 | LCSDKJ | LCSDA | 02/25/2004 | 15:54:06 | 2C13051B | 4.20 | 12.21 |
| 014 | MFTFB | 4221475 | 02/25/2004 | 16:14:27 | 2C13051B | 4.20 | 12.21 |
| 015 | PBLKXG | BLANKA | 02/25/2004 | 16:35:19 | 2C13051B | 4.20 | 12.21 |
| 016 | LCSVQ | LCSA | 02/25/2004 | 16:55:54 | 2C13051B | 4.20 | 12.21 |
| 017 | UN5NV | 4219006 | 02/25/2004 | 17:16:16 | 2C13051B | 4.20 | 12.21 |
| 018 | UN7NV | 4219022 | 02/25/2004 | 17:36:37 | 2C13051B | 4.20 | 12.20 |
| 019 | UN7NVMS | 4219022 | 02/25/2004 | 17:56:58 | 2C13051B | 4.20 | 12.21 |
| 020 | UN7NVMSD | 4219022 | 02/25/2004 | 18:17:17 | 2C13051B | 4.20 | 12.21 |
| 021 | TC407 | 4219669 | 02/25/2004 | 18:37:37 | 2C13051B | 4.19 | 12.20 |
| 022 | BLA20 | 4221331 | 02/25/2004 | 18:57:57 | 2C13051B | 4.20 | 12.21 |
| 023 | BLA44 | 4221332 | 02/25/2004 | 19:18:19 | 2C13051B | 4.19 | 12.21 |
| 024 | PEMIS | EVALX03C | 02/25/2004 | 19:38:39 | 2C13051B | 4.20 | 12.21 |
| 025 | MIXA3LN | MIXA303D | 02/25/2004 | 19:58:59 | 2C13051B | 4.19 | 12.21 |
| 026 | AR163VJ | AR1630424A | 02/25/2004 | 20:19:17 | 2C13051B | 4.20 | 12.21 |
| 027 | PBLKRC | BLANKA | 02/25/2004 | 20:39:38 | 2C13051B | 4.19 | 12.20 |
| 028 | LCSOX | LCSA | 02/25/2004 | 20:59:59 | 2C13051B | 4.19 | 12.20 |
| 029 | B1116 | 4217561 | 02/25/2004 | 21:20:19 | 2C13051B | 4.20 | 12.21 |
| 030 | B1116 | 4217561 | 02/25/2004 | 21:40:37 | 2C13051B | 4.20 | 12.21 |
| 031 | B1116MS | 4217561 | 02/25/2004 | 22:00:57 | 2C13051B | 4.20 | 12.21 |
| 032 | B1116MS | 4217561 | 02/25/2004 | 22:21:15 | 2C13051B | | 12.22 |
| 033 | B1116MSD | 4217561 | 02/25/2004 | 22:41:37 | 2C13051B | 4.20 | 12.21 |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

| | |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

8547

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | B1116MSD | 4217561 | 02/25/2004 | 23:02:12 | 2C13051B | 4.20 | 12.21 |
| 035 | B1216 | 4217562 | 02/25/2004 | 23:22:48 | 2C13051B | 4.19 | 12.20 |
| 036 | B1216 | 4217562 | 02/25/2004 | 23:43:22 | 2C13051B | 4.20 | 12.21 |
| 037 | B1316 | 4217563 | 02/26/2004 | 00:03:56 | 2C13051B | 4.20 | 12.21 |
| 038 | B1316 | 4217563 | 02/26/2004 | 00:24:16 | 2C13051B | 4.20 | 12.20 |
| 039 | B1416 | 4217564 | 02/26/2004 | 00:44:37 | 2C13051B | 4.20 | 12.20 |
| 040 | B1416 | 4217564 | 02/26/2004 | 01:05:10 | 2C13051B | 4.20 | 12.21 |
| 041 | B1516 | 4217565 | 02/26/2004 | 01:25:29 | 2C13051B | 4.19 | 12.20 |
| 042 | B1516 | 4217565 | 02/26/2004 | 01:45:46 | 2C13051B | 4.20 | 12.20 |
| 043 | AA | CONTROL | 02/26/2004 | 02:06:26 | 2C13051B | | |
| 044 | AA | EXP1 | 02/26/2004 | 02:27:00 | 2C13051B | | |
| 045 | AA | EXP2 | 02/26/2004 | 02:47:20 | 2C13051B | 4.18 | |
| 046 | AA | EXP3 | 02/26/2004 | 03:07:51 | 2C13051B | | |
| 047 | PEMIT | EVALX03C | 02/26/2004 | 03:28:27 | 2C13051B | 4.19 | 12.20 |
| 048 | MIXA4NZ | MIXA403E | 02/26/2004 | 03:48:48 | 2C13051B | 4.19 | 12.20 |
| 049 | AR164XG | AR1640424A | 02/26/2004 | 04:09:09 | 2C13051B | 4.19 | 12.20 |
| 050 | PBLKVJ | BLANKA | 02/26/2004 | 04:29:44 | 2C13051B | 4.19 | |
| 051 | LCSTI | LCSA | 02/26/2004 | 04:50:22 | 2C13051B | 4.19 | |
| 052 | OM-3- | 4220751 | 02/26/2004 | 05:10:55 | 2C13051B | 4.19 | |
| 053 | OM-3- | 4220751 | 02/26/2004 | 05:31:18 | 2C13051B | 4.19 | |
| 054 | OM-3-MS | 4220751 | 02/26/2004 | 05:51:55 | 2C13051B | 4.19 | |
| 055 | OM-3-MS | 4220751 | 02/26/2004 | 06:12:31 | 2C13051B | 4.19 | 12.20 |
| 056 | OM-3-MSD | 4220751 | 02/26/2004 | 06:33:06 | 2C13051B | 4.19 | |
| 057 | OM-3-MSD | 4220751 | 02/26/2004 | 06:53:27 | 2C13051B | 4.19 | |
| 058 | OM-1- | 4220750 | 02/26/2004 | 07:14:06 | 2C13051B | 4.19 | |
| 059 | OM-1- | 4220750 | 02/26/2004 | 07:34:47 | 2C13051B | 4.19 | 12.21 |
| 060 | OM-4- | 4220752 | 02/26/2004 | 07:55:26 | 2C13051B | 4.19 | |
| 061 | OM-6- | 4220753 | 02/26/2004 | 08:16:06 | 2C13051B | 4.19 | |
| 062 | OM-6- | 4220753 | 02/26/2004 | 08:36:44 | 2C13051B | 4.19 | |
| 063 | CON-- | 4220754 | 02/26/2004 | 08:57:24 | 2C13051B | 4.19 | |
| 064 | OM1C- | 4220755 | 02/26/2004 | 09:17:46 | 2C13051B | 4.19 | |
| 065 | OM3C- | 4220756 | 02/26/2004 | 09:38:08 | 2C13051B | 4.19 | |
| 066 | OM4C- | 4220757 | 02/26/2004 | 09:58:27 | 2C13051B | 4.19 | |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

| | |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

8548

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 067 | OM4C- | 4220757 | 02/26/2004 | 10:18:50 | 2C13051B | 4.19 | |
| 068 | OM6C- | 4220758 | 02/26/2004 | 10:39:14 | 2C13051B | 4.19 | |
| 069 | CONCT | 4220759 | 02/26/2004 | 10:59:55 | 2C13051B | 4.19 | |
| 070 | PEMIW | EVALX03C | 02/26/2004 | 11:20:28 | 2C13051B | 4.19 | |
| 071 | MIXA3LQ | MIXA303D | 02/26/2004 | 11:40:50 | 2C13051B | 4.19 | |
| 072 | MIXE3NY | MIXE303D | 02/26/2004 | 12:01:26 | 2C13051B | 4.19 | 12.20 |
| 073 | AR163VP | AR1630424A | 02/26/2004 | 12:21:54 | 2C13051B | 4.19 | |
| 074 | PBLKOR | BLANKA | 02/26/2004 | 12:42:18 | 2C13051B | 4.19 | 12.19 * |
| 075 | B4132 | 4216244 | 02/26/2004 | 13:02:44 | 2C13051B | 4.19 | 12.19 * |
| 076 | MIXE3NZ | MIXE303D | 02/26/2004 | 13:23:09 | 2C13051B | 4.19 | 12.20 |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

| | |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\1C13051.seq

Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1

Method Directory: \\Cp13\c-drive\CPWIN\DATA1

Number of Entries: 70

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 1C13051.01R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 2 | CONDITIONER | MISC | AA | 1C13051.02R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 3 | CONDITIONER | MISC | AA | 1C13051.03R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 4 | CONDITIONER | MISC | AA | 1C13051.04R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 5 | CONDITIONER | MISC | AA | 1C13051.05R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 6 | CONDITIONER | MISC | AA | 1C13051.06R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 7 | CONDITIONER | MISC | AA | 1C13051.07R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 8 | CONDITIONER | MISC | AA | 1C13051.08R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 9 | IBLKX03B | PIBLK | AA | 1C13051.09R | 608D.MET | 1000 | 10 | 1 | 045099999 | |
| 10 | EVALX03C | IPEM | AA | 1C13051.10R | E608D.MET | 1 | 1 | 1 | 045099999 | |
| 11 | MIXA103D | ICAL | AA | 1C13051.11R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 12 | MIXA203E | ICAL | AA | 1C13051.12R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 13 | MIXA303D | ICAL | AA | 1C13051.13R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 14 | MIXA403E | ICAL | AA | 1C13051.14R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 15 | MIXA503D | ICAL | AA | 1C13051.15R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 16 | ICMAX03F | CCAL | AA | 1C13051.16R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 17 | MIXE103C | ICAL | AA | 1C13051.17R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 18 | MIXE203C | ICAL | AA | 1C13051.18R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 19 | MIXE303D | ICAL | AA | 1C13051.19R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 20 | MIXE403C | ICAL | AA | 1C13051.20R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 21 | MIXE503C | ICAL | AA | 1C13051.21R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 22 | TOXWX03B | ICAL | AA | 1C13051.22R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 23 | CHLDX03B | ICAL | AA | 1C13051.23R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 24 | AR1610424A | ICAL | AA | 1C13051.24R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 25 | AR1620424A | ICAL | AA | 1C13051.25R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 26 | AR1630424A | ICAL | AA | 1C13051.26R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 27 | AR1640424A | ICAL | AA | 1C13051.27R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 28 | AR1650424A | ICAL | AA | 1C13051.28R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 29 | AR210424A | ICAL | AA | 1C13051.29R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 30 | AR32X03C | ICAL | AA | 1C13051.30R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 31 | AR420424A | ICAL | AA | 1C13051.31R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 32 | AR4830424A | ICAL | AA | 1C13051.32R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 33 | AR5430424A | ICAL | AA | 1C13051.33R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 34 | MDLAX03D | ICAL | AA | 1C13051.34R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 35 | MDLEX03C | ICAL | AA | 1C13051.35R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 36 | MD16X0424A | ICAL | AA | 1C13051.36R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 37 | MDTXX03B | ICAL | AA | 1C13051.37R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 38 | MDCHX03B | ICAL | AA | 1C13051.38R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 39 | IC16X03B | CCAL | AA | 1C13051.39R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 40 | BLANKA 2/19/04F | BLK | AB | 1C13051.40R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 41 | LCSA 2/19/04F | LCS | AB | 1C13051.41R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 42 | LCSDA 2/19/04F | LCSD | AB | 1C13051.42R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 43 | 4217521F | T | AB | 1C13051.43R | 608D.MET | 1006 | 10 | 1 | 040500010A | 00177 |
| 44 | EVALX03C | PEM | IH | 1C13051.44R | E608D.MET | 1 | 1 | 1 | 045099999 | |
| 45 | MIXA303D | CCAL | LD | 1C13051.45R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 46 | MIXE303D | CCAL | NR | 1C13051.46R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 47 | AR1630424A | CCAL | UL | 1C13051.47R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 48 | BLANKA 2/20/04F | BLK | AB | 1C13051.48R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 49 | LCSA 2/20/04F | LCS | AB | 1C13051.49R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 50 | 4217215F | T | AB | 1C13051.50R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |

23/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

equence File: \\Cp13\c-drive\CPWIN\DATA1\1C13051.seq
hromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
lethod Directory: \\Cp13\c-drive\CPWIN\DATA1
umber of Entries: 70

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 4217215MSF | MS | AB | 1C13051.51R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 2 4217215MSDF | MSD | AB | 1C13051.52R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 3 4217866F | T | AB | 1C13051.53R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 4 BLANKA 2/16/04 RI C | BLK | AD | 1C13051.54R | PESTD.MET | 30 | 10 | 1 | 040470009A | 08899 |
| 5 4213699CFG | T | AD | 1C13051.55R | PESTD.MET | 30 | 10 | 1 | 040470009A | 01224 |
| 6 4213700CFG | T | AD | 1C13051.56R | PESTD.MET | 30 | 10 | 1 | 040470009A | 01224 |
| 7 CONTROL | MISC | AA | 1C13051.57R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 8 SYRINGE | MISC | AA | 1C13051.58R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 9 SYRINGE FILTER | MISC | AA | 1C13051.59R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 0 EVALX03C | PEM | II | 1C13051.60R | EVALD.MET | 1 | 1 | 1 | 045099999 | |
| 1 MIXA303D | CCAL | LE | 1C13051.61R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 2 AR1630424A | CCAL | UM | 1C13051.62R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 3 BLANKA 2/20/04F | BLK | AB | 1C13051.63R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 4 LCSA 2/20/04F | LCS | AB | 1C13051.64R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 5 LCSDA 2/20/04F | LCSD | AB | 1C13051.65R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 6 4218136F | T | AB | 1C13051.66R | PESTD.MET | 1040 | 10 | 1 | 040500017A | 00937 |
| 7 4218137F | T | AB | 1C13051.67R | PESTD.MET | 1030 | 10 | 1 | 040500017A | 00937 |
| 8 EVALX03C | PEM | IJ | 1C13051.68R | EVALD.MET | 1 | 1 | 1 | 045099999 | |
| 9 MIXA303D | CCAL | LF | 1C13051.69R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 0 AR1630424A | CCAL | UN | 1C13051.70R | PESTD.MET | 1 | 1 | 1 | 045099999 | |

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t-up by: Andrea Carey Date: 2-25-04

23/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\2C13051.seq
Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
Method Directory: \\Cp13\c-drive\CPWIN\DATA1
Number of Entries: 79

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 2C13051.01R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 2 | CONDITIONER | MISC | AA | 2C13051.02R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 3 | CONDITIONER | MISC | AA | 2C13051.03R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 4 | EVALX03C | PEM | IR | 2C13051.04R | EVALD.MET | 1 | 1 | 1 | 045599999 | |
| 5 | MIXA303D | CCAL | LS | 2C13051.05R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 6 | AR1630424A | CCAL | VI | 2C13051.06R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 7 | BLANKA 2/25/04F | BLK | AB | 2C13051.07R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 8 | LCSA 2/25/04F | LCS | AB | 2C13051.08R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 9 | LCSDA 2/25/04F | LCSD | AB | 2C13051.09R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 10 | 4217721RF DF50 | T | AC | 2C13051.10R | PESTD.MET | 100 | 500 | 1 | 040550010A | 01322 |
| 11 | 4217722RF DF50 | T | AC | 2C13051.11R | PESTD.MET | 100 | 500 | 1 | 040550010A | 01322 |
| 12 | 4217723RF DF100 | T | AC | 2C13051.12R | PESTD.MET | 100 | 1000 | 1 | 040550010A | 01322 |
| 13 | 4217724RF DF50 | T | AC | 2C13051.13R | PESTD.MET | 200 | 500 | 1 | 040550010A | 01322 |
| 14 | BLANKA 2/25/04F | BLK | AB | 2C13051.14R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 15 | LCSA 2/25/04F | LCS | AB | 2C13051.15R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 16 | LCSDA 2/25/04F | LCSD | AB | 2C13051.16R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 17 | 4221475F | T | AB | 2C13051.17R | PESTD.MET | 1052 | 10 | 1 | 040550002A | 00937 |
| 18 | BLANKA 2/25/04F | BLK | AB | 2C13051.18R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 19 | LCSA 2/25/04F | LCS | AB | 2C13051.19R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 20 | 4219006F | T | AB | 2C13051.20R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 21 | 4219022F | T | AB | 2C13051.21R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 22 | 4219022MSF | MS | AB | 2C13051.22R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 23 | 4219022MSDF | MSD | AB | 2C13051.23R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 24 | 4219669F | T | AB | 2C13051.24R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 25 | 4221331F | T | AB | 2C13051.25R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 26 | 4221332F | T | AB | 2C13051.26R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 27 | EVALX03C | PEM | IS | 2C13051.27R | EVALD.MET | 1 | 1 | 1 | 045599999 | |
| 28 | MIXA303D | CCAL | LN | 2C13051.28R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 29 | AR1630424A | CCAL | VJ | 2C13051.29R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 30 | BLANKA 2/18/04FG | BLK | AC | 2C13051.30R | PESTD.MET | 30 | 10 | 1 | 040490011A | 08899 |
| 31 | LCSA 2/18/04FG | LCS | AC | 2C13051.31R | PESTD.MET | 30 | 10 | 1 | 040490011A | 08899 |
| 32 | 4217561FG DF10 | T | AD | 2C13051.32R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 33 | 4217561FG DF50 | T | AE | 2C13051.33R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 34 | 4217561MSFG DF10 | MS | AD | 2C13051.34R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 35 | 4217561MSFG DF50 | MS | AE | 2C13051.35R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 36 | 4217561MSDFG DF10 | MSD | AD | 2C13051.36R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 37 | 4217561MSDFG DF50 | MSD | AE | 2C13051.37R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 38 | 4217562FG | T | AC | 2C13051.38R | PESTD.MET | 30 | 10 | 1 | 040490011A | 01224 |
| 39 | 4217562FG DF5 | T | AD | 2C13051.39R | PESTD.MET | 30 | 50 | 1 | 040490011A | 01224 |
| 40 | 4217563FG DF20 | T | AD | 2C13051.40R | PESTD.MET | 30 | 200 | 1 | 040490011A | 01224 |
| 41 | 4217563FG DF100 | T | AE | 2C13051.41R | PESTD.MET | 30 | 1000 | 1 | 040490011A | 01224 |
| 42 | 4217564FG DF5 | T | AD | 2C13051.42R | PESTD.MET | 30 | 50 | 1 | 040490011A | 01224 |
| 43 | 4217564FG DF20 | T | AE | 2C13051.43R | PESTD.MET | 30 | 200 | 1 | 040490011A | 01224 |
| 44 | 4217565FG | T | AC | 2C13051.44R | PESTD.MET | 30 | 10 | 1 | 040490011A | 01224 |
| 45 | 4217565FG DF10 | T | AD | 2C13051.45R | PESTD.MET | 30 | 100 | 1 | 040490011A | 01224 |
| 46 | CONTROL | MISC | AA | 2C13051.46R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 47 | EXP1 | MISC | AA | 2C13051.47R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 48 | EXP2 | MISC | AA | 2C13051.48R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 49 | EXP3 | MISC | AA | 2C13051.49R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 50 | EVALX03C | PEM | IT | 2C13051.50R | EVALD.MET | 1 | 1 | 1 | 045599999 | |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\2C13051.seq
Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
Method Directory: \\Cp13\c-drive\CPWIN\DATA1
Number of Entries: 79

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 51 MIXA403E | CCAL | NZ | 2C13051.51R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 52 AR1640424A | CCAL | XG | 2C13051.52R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 53 BLANKA 2/23/04FG | BLK | AB | 2C13051.53R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 54 LCSA 2/23/04FG | LCS | AB | 2C13051.54R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 55 4220751FG | T | AB | 2C13051.55R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 56 4220751FG DF5 | T | AC | 2C13051.56R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 57 4220751MSFG | MS | AB | 2C13051.57R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 58 4220751MSFG DF5 | MS | AC | 2C13051.58R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 59 4220751MSDFG | MSD | AB | 2C13051.59R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 60 4220751MSDFG DF5 | MSD | AC | 2C13051.60R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 61 4220750FG DF10 | T | AC | 2C13051.61R | PESTD.MET | 30 | 100 | 1 | 040520007A | 01224 |
| 62 4220750FG DF50 | T | AD | 2C13051.62R | PESTD.MET | 30 | 500 | 1 | 040520007A | 01224 |
| 63 4220752FG DF10 | T | AC | 2C13051.63R | PESTD.MET | 30 | 100 | 1 | 040520007A | 01224 |
| 64 4220753FG | T | AB | 2C13051.64R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 65 4220753FG DF5 | T | AC | 2C13051.65R | PESTD.MET | 30 | 50 | 1 | 040520007A | 01224 |
| 66 4220754FG | T | AB | 2C13051.66R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 67 4220755FG | T | AB | 2C13051.67R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 68 4220756FG | T | AB | 2C13051.68R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 69 4220757FG | T | AB | 2C13051.69R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 70 4220757FG DF5 | T | AC | 2C13051.70R | PESTD.MET | 30 | 50 | 1 | 040520007A | 01224 |
| 71 4220758FG | T | AB | 2C13051.71R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 72 4220759FG | T | AB | 2C13051.72R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 73 EVALX03C | PEM | IW | 2C13051.73R | EVALD.MET | 1 | 1 | 1 | 045699999 | |
| 74 MIXA303D | CCAL | LQ | 2C13051.74R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 75 MIXE303D | CCAL | NY | 2C13051.75R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 76 AR1630424A | CCAL | VP | 2C13051.76R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 77 BLANKA 2/17/04 RI C | BLK | AC | 2C13051.77R | PESTD.MET | 30 | 10 | 1 | 040470022A | 08899 |
| 78 4216244 RI CF | T | AC | 2C13051.78R | PESTD.MET | 30 | 10 | 1 | 040470022A | 01224 |
| 79 MIXE303D | CCAL | NZ | 2C13051.79R | PESTD.MET | 1 | 1 | 1 | 045699999 | |

Set-up by: Andrea Covey Date: 2-26-04
2/26/04

Sample Name: **EVALX03C AAPEMAA IPEM 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:02:56am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.10R**
Method File: C:\CPWIN\DATA1\E608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.848 | | 0.0000 | 0.000 | 770.3 | 0.029 | BB | 0.040 | 322.03 | 0.028 |
| 2 | 4.174 | TCX | 19.1886 | 1.692 | 177536.1 | 6.722 | BB | 0.041 | 72865.26 | 6.444 |
| 3 | 4.626 | | 0.0000 | 0.000 | 526.6 | 0.020 | BB | 0.111 | 79.22 | 0.007 |
| 4 | 4.747 | HCB | 3.0560 | 0.270 | 1823.5 | 0.069 | BB | 0.036 | 848.43 | 0.075 |
| 5 | 4.809 | | 0.0000 | 0.000 | 74.2 | 0.003 | BB | 0.022 | 55.02 | 0.005 |
| 6 | 4.997 | alpha-BHC | 9.9991 | 0.882 | 95858.0 | 3.630 | BB | 0.035 | 46266.95 | 4.091 |
| 7 | 5.457 | gamma-BHC | 9.6915 | 0.855 | 91138.8 | 3.451 | BB | 0.034 | 44269.85 | 3.915 |
| 8 | 5.585 | beta-BHC | 9.5526 | 0.842 | 57738.2 | 2.186 | BB | 0.037 | 26036.43 | 2.302 |
| 9 | 5.689 | | 0.0000 | 0.000 | 272.9 | 0.010 | BB | 0.024 | 192.32 | 0.017 |
| 10 | 5.838 | delta-BHC | 0.0633 | 0.006 | 639.1 | 0.024 | BB | 0.040 | 269.47 | 0.024 |
| 11 | 5.936 | | 0.0000 | 0.000 | 1146.2 | 0.043 | BB | 0.043 | 447.65 | 0.040 |
| 12 | 6.119 | Heptachlor | 0.0170 | 0.001 | 260.5 | 0.010 | BV | 0.050 | 87.67 | 0.008 |
| 13 | 6.224 | | 0.0000 | 0.000 | 925.9 | 0.035 | VV | 0.122 | 126.34 | 0.011 |
| 14 | 6.340 | | 0.0000 | 0.000 | 4067.3 | 0.154 | VB | 0.153 | 444.05 | 0.039 |
| 15 | 6.759 | | 0.0000 | 0.000 | 392.0 | 0.015 | BB | 0.057 | 115.55 | 0.010 |
| 16 | 6.931 | | 0.0000 | 0.000 | 446.9 | 0.017 | BB | 0.046 | 162.43 | 0.014 |
| 17 | 7.068 | | 0.0000 | 0.000 | 1703.6 | 0.065 | BV | 0.067 | 423.67 | 0.037 |
| 18 | 7.358 | o,p-DDE | 0.0000 | 0.000 | 8824.2 | 0.334 | VV | 0.262 | 561.21 | 0.050 |
| 19 | 7.515 | | 0.0000 | 0.000 | 2088.2 | 0.079 | VV | 0.061 | 569.17 | 0.050 |
| 20 | 7.565 | g. Chlordane | 0.1206 | 0.011 | 2312.7 | 0.088 | VV | 0.075 | 510.76 | 0.045 |
| 21 | 7.727 | a. Chlordane | 0.1366 | 0.012 | 3467.3 | 0.131 | VV | 0.099 | 582.10 | 0.051 |
| 22 | 7.814 | 4,4'-DDE | 0.7581 | 0.067 | 6504.9 | 0.246 | VV | 0.042 | 2587.71 | 0.229 |
| 23 | 7.911 | Endosulfan I | 0.0423 | 0.004 | 448.0 | 0.017 | VB | 0.046 | 162.01 | 0.014 |
| 24 | 8.189 | | 0.0000 | 0.000 | 1173.4 | 0.044 | BB | 0.097 | 202.20 | 0.018 |
| 25 | 8.376 | o,p-DDT | 691.7918 | 61.009 | 5402.2 | 0.205 | BB | 0.044 | 2068.77 | 0.183 |
| 26 | 8.537 | Endrin | 48.9487 | 4.317 | 369829.7 | 14.004 | BV | 0.037 | 166392.80 | 14.714 |
| 27 | 8.673 | | 0.0000 | 0.000 | 2931.1 | 0.111 | VV | 0.038 | 1285.22 | 0.114 |
| 28 | 8.709 | | 0.0000 | 0.000 | 4256.9 | 0.161 | VB | 0.060 | 1185.19 | 0.105 |
| 29 | 8.838 | Endosulfan II | 0.1265 | 0.011 | 1265.3 | 0.048 | BV | 0.048 | 437.31 | 0.039 |
| 30 | 8.960 | 4,4'-DDT | 98.5241 | 8.689 | 638732.4 | 24.186 | VV | 0.036 | 291868.30 | 25.811 |
| 31 | 9.171 | | 0.0000 | 0.000 | 1165.7 | 0.044 | VV | 0.079 | 245.68 | 0.022 |
| 32 | 9.273 | | 0.0000 | 0.000 | 169.2 | 0.006 | VB | 0.033 | 85.30 | 0.008 |
| 33 | 9.378 | Endrin aldehyde | 0.5375 | 0.047 | 3226.1 | 0.122 | BV | 0.040 | 1335.96 | 0.118 |
| 34 | 9.570 | Methoxychlor | 220.6844 | 19.462 | 906426.8 | 34.322 | VB | 0.039 | 384125.90 | 33.969 |
| 35 | 9.879 | | 0.0000 | 0.000 | 1146.2 | 0.043 | BB | 0.052 | 367.53 | 0.033 |
| 36 | 9.946 | Endo. sulfate | 0.2231 | 0.020 | 2033.1 | 0.077 | BV | 0.049 | 686.33 | 0.061 |
| 37 | 10.111 | | 0.0000 | 0.000 | 4749.6 | 0.180 | VV | 0.074 | 1072.95 | 0.095 |
| 38 | 10.181 | | 0.0000 | 0.000 | 7416.8 | 0.281 | VB | 0.051 | 2440.63 | 0.216 |
| 39 | 10.310 | Endrin ketone | 0.5514 | 0.049 | 4519.6 | 0.171 | BB | 0.038 | 1971.39 | 0.174 |
| 40 | 10.708 | | 0.0000 | 0.000 | 8249.4 | 0.312 | BV | 0.080 | 1717.04 | 0.152 |
| 41 | 10.910 | | 0.0000 | 0.000 | 1334.1 | 0.051 | VB | 0.098 | 226.81 | 0.020 |
| 42 | 11.159 | | 0.0000 | 0.000 | 231.1 | 0.009 | BB | 0.057 | 67.44 | 0.006 |
| 43 | 11.339 | | 0.0000 | 0.000 | 650.3 | 0.025 | BB | 0.038 | 286.29 | 0.025 |
| 44 | 11.485 | | 0.0000 | 0.000 | 508.6 | 0.019 | BB | 0.101 | 83.75 | 0.007 |
| 45 | 11.619 | DCB | 19.9004 | 1.755 | 213118.6 | 8.070 | BB | 0.048 | 74344.84 | 6.574 |
| 46 | 13.489 | | 0.0000 | 0.000 | 3452.4 | 0.131 | BB | 0.176 | 326.92 | 0.029 |

Total Area = 2640954.0, Total Amount = 1133.913, Total Height = 1130810.0, Sample Units = PPB

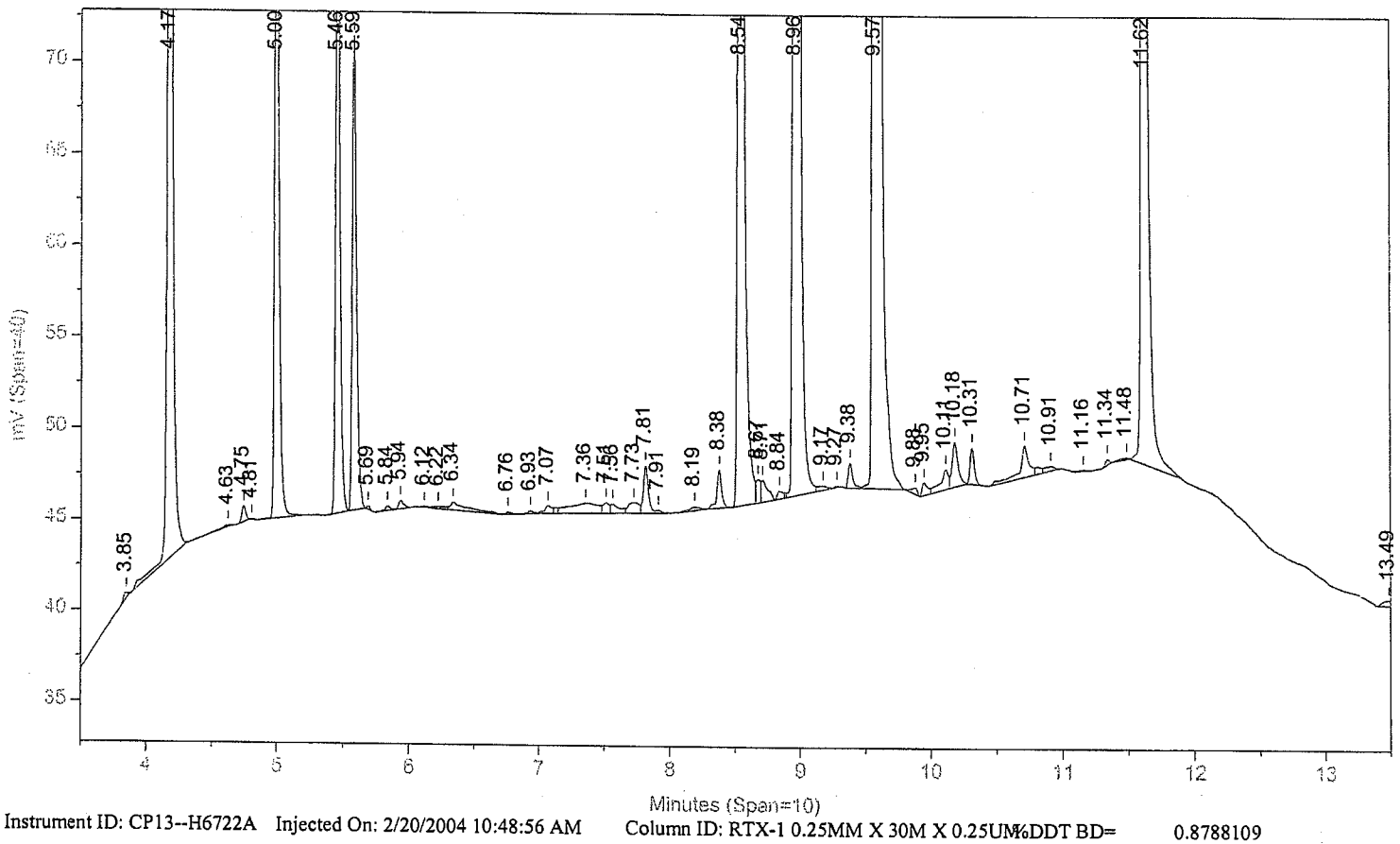
Sample Name: **EVALX03C AAPEMAA IPEM 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:02:56am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.10R**
Method File: C:\CPWIN\DATA1\E608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1914.7 | 0.127 | BB | 0.045 | 714.73 | 0.102 |
| 2 | 3.211 | | 0.0000 | 0.000 | 896.2 | 0.060 | BB | 0.295 | 50.70 | 0.007 |
| 3 | 3.360 | | 0.0000 | 0.000 | 3415.3 | 0.227 | BB | 0.205 | 277.41 | 0.040 |
| 4 | 3.776 | | 0.0000 | 0.000 | 1379.9 | 0.092 | BB | 0.045 | 507.55 | 0.073 |
| 5 | 4.210 | TCX | 18.7340 | 3.960 | 104202.7 | 6.929 | BB | 0.036 | 47648.13 | 6.808 |
| 6 | 4.748 | | 0.0000 | 0.000 | 3012.0 | 0.200 | BB | 0.085 | 593.55 | 0.085 |
| 7 | 5.100 | alpha-BHC | 9.8753 | 2.087 | 44857.6 | 2.983 | BB | 0.031 | 24394.46 | 3.485 |
| 8 | 5.556 | | 0.0000 | 0.000 | 238.0 | 0.016 | BB | 0.022 | 178.65 | 0.026 |
| 9 | 5.614 | gamma-BHC | 9.6480 | 2.039 | 46020.9 | 3.060 | BV | 0.031 | 24426.51 | 3.490 |
| 10 | 5.738 | beta-BHC | 9.5794 | 2.025 | 37370.8 | 2.485 | VB | 0.040 | 15402.06 | 2.201 |
| 11 | 8.020 | | 0.0000 | 0.000 | 30689.0 | 2.041 | BV | 0.573 | 892.88 | 0.128 |
| 12 | 8.109 | 4,4'-DDE | 0.9239 | 0.195 | 11927.0 | 0.793 | VB | 0.111 | 1789.97 | 0.256 |
| 13 | 8.727 | Endrin | 53.9566 | 11.404 | 210079.9 | 13.970 | BB | 0.032 | 109360.20 | 15.625 |
| 14 | 8.862 | 4,4'-DDD | 0.5674 | 0.120 | 1706.2 | 0.113 | BB | 0.040 | 706.95 | 0.101 |
| 15 | 9.153 | | 0.0000 | 0.000 | 1640.3 | 0.109 | BB | 0.343 | 79.63 | 0.011 |
| 16 | 9.200 | | 0.0000 | 0.000 | 207.9 | 0.014 | BB | 0.025 | 138.05 | 0.020 |
| 17 | 9.255 | 4,4'-DDT | 113.6605 | 24.023 | 368286.1 | 24.490 | BB | 0.033 | 184472.50 | 26.357 |
| 18 | 9.433 | Endrin aldehyde | 0.7196 | 0.152 | 2793.3 | 0.186 | BB | 0.039 | 1185.55 | 0.169 |
| 19 | 10.126 | Methoxychlor | 234.8342 | 49.635 | 493214.5 | 32.797 | BB | 0.035 | 233623.10 | 33.379 |
| 20 | 10.287 | | 0.0000 | 0.000 | 1958.1 | 0.130 | BB | 0.031 | 1043.49 | 0.149 |
| 21 | 10.485 | Endrin ketone | 0.6634 | 0.140 | 3464.1 | 0.230 | BB | 0.036 | 1611.08 | 0.230 |
| 22 | 10.553 | | 0.0000 | 0.000 | 1292.4 | 0.086 | BB | 0.031 | 690.62 | 0.099 |
| 23 | 12.231 | DCB | 19.9609 | 4.219 | 133270.0 | 8.862 | BB | 0.044 | 50119.06 | 7.161 |

Total Area = 1503837.0, Total Amount = 473.123, Total Height = 699906.9, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.10R

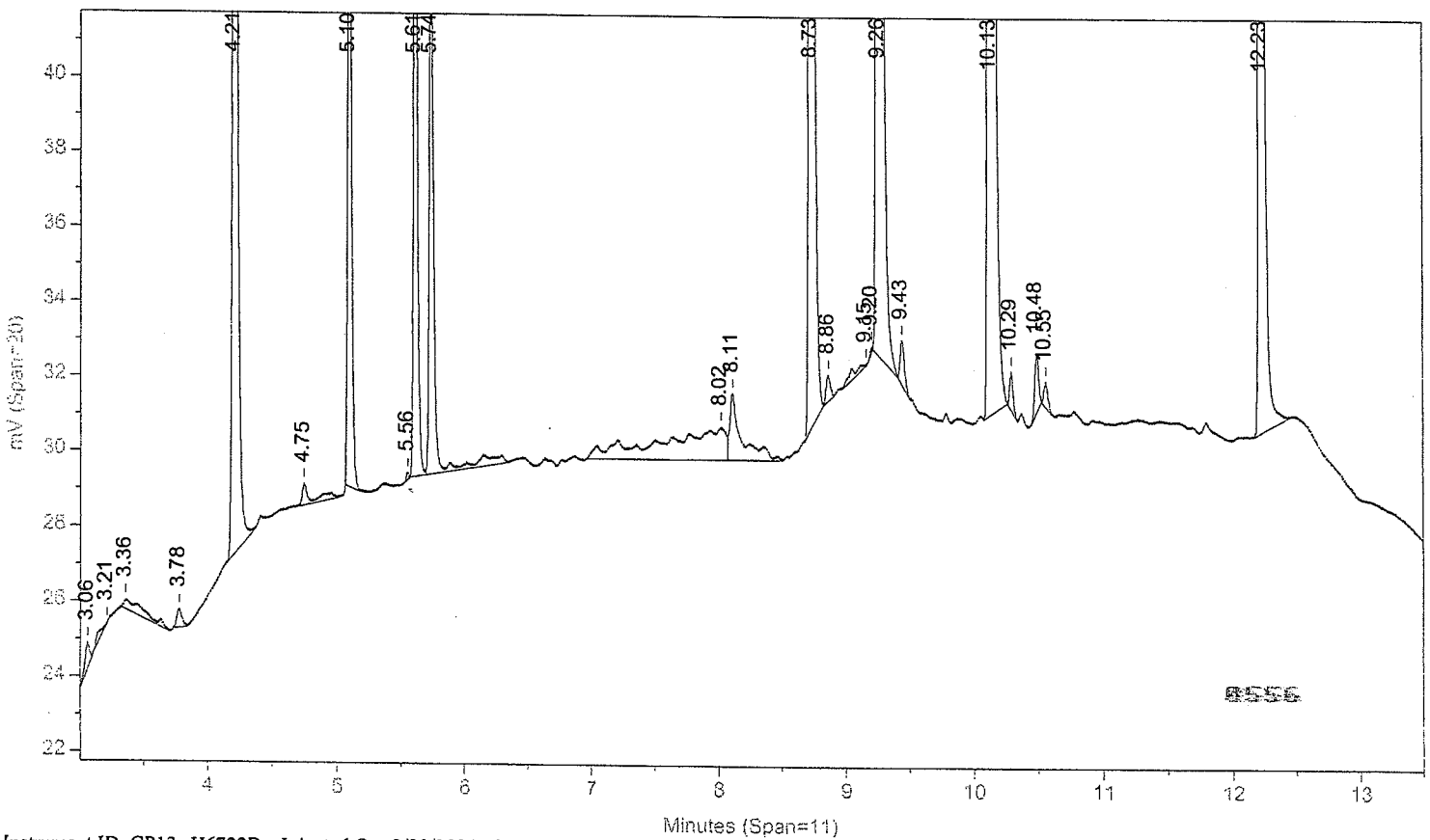



Instrument ID: CP13--H6722A Injected On: 2/20/2004 10:48:56 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.8788109

%ENDRIN BD= 1.948937

File: C:\CPWIN\DATA1\1C13051B.10R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 10:48:56 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.335473

%ENDRIN BD= 2.4935

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 72865 | 19.189 | TCX | 4.21 | 47648 | 18.734 | TCX |
| 4.747 | 848 | 3.056 | HCB | . | 0 | . | HCB |
| 4.997 | 46267 | 9.999 | alpha-BHC | 5.1 | 24394 | 9.875 | alpha-BHC |
| 5.457 | 44270 | 9.692 | gamma-BHC | 5.614 | 24427 | 9.648 | gamma-BHC |
| 5.585 | 26036 | 9.553 | beta-BHC | 5.738 | 15402 | 9.579 | beta-BHC |
| 5.838 | 269 | .063 | delta-BHC | . | 0 | . | delta-BHC |
| 6.119 | 88 | .017 | Heptachlor | . | 0 | . | Heptachlor |
| 7.358 | 561 | . | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.565 | 511 | .121 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.727 | 582 | .137 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.814 | 2588 | .758 | 4,4'-DDE | 8.109 | 1790 | .924 | 4,4'-DDE |
| 7.911 | 162 | .042 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.376 | 2069 | 691.792 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.537 | 166393 | 48.949 | Endrin | 8.727 | 109360 | 53.957 | Endrin |
| 8.838 | 437 | .126 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.862 | 707 | .567 | 4,4'-DDD |
| 8.96 | 291868 | 98.524 | 4,4'-DDT | 9.255 | 184473 | 113.66 | 4,4'-DDT |
| 9.378 | 1336 | .537 | Endrin aldehyde | 9.433 | 1186 | .72 | Endrin aldehyde |
| 9.57 | 384126 | 220.684 | Methoxychlor | 10.126 | 233623 | 234.834 | Methoxychlor |
| 9.946 | 686 | .223 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.31 | 1971 | .551 | Endrin ketone | 10.485 | 1611 | .663 | Endrin ketone |
| 11.619 | 74345 | 19.9 | DCB | 12.231 | 50119 | 19.961 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.10A
Area File: C:\CPWIN\DATA1\1C13051B.10A
Method A: C:\CPWIN\DATA1\E608D.MET
Method B: C:\CPWIN\DATA1\E608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/23/2004 9:47:00 AM
File Reported On: 2/23/2004 at 9:47:10 AM

Sample Name: **MIXA103D AAMIXA1AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:23:20am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.11R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 1038.6 | 0.222 | BB | 0.036 | 479.16 | 0.283 |
| 2 | 4.176 | TCX | 4.1773 | 8.043 | 41715.5 | 8.904 | BB | 0.044 | 15862.43 | 9.357 |
| 3 | 4.747 | HCB | 0.8287 | 1.596 | 3280.5 | 0.700 | BB | 0.238 | 230.08 | 0.136 |
| 4 | 4.996 | alpha-BHC | 0.9190 | 1.769 | 9148.1 | 1.953 | BB | 0.036 | 4252.11 | 2.508 |
| 5 | 5.107 | | 0.0000 | 0.000 | 407.1 | 0.087 | BB | 0.045 | 152.28 | 0.090 |
| 6 | 5.456 | gamma-BHC | 0.9588 | 1.846 | 9275.1 | 1.980 | BB | 0.035 | 4379.77 | 2.584 |
| 7 | 5.585 | beta-BHC | 1.1470 | 2.208 | 6905.5 | 1.474 | BB | 0.037 | 3126.14 | 1.844 |
| 8 | 5.687 | | 0.0000 | 0.000 | 79.9 | 0.017 | BB | 0.026 | 50.83 | 0.030 |
| 9 | 5.838 | delta-BHC | 0.9697 | 1.867 | 8585.0 | 1.832 | BB | 0.035 | 4127.14 | 2.435 |
| 10 | 5.973 | | 0.0000 | 0.000 | 381.8 | 0.082 | BV | 0.056 | 112.89 | 0.067 |
| 11 | 6.134 | Heptachlor | 1.0862 | 2.091 | 15382.7 | 3.283 | VV | 0.046 | 5611.52 | 3.310 |
| 12 | 6.368 | | 0.0000 | 0.000 | 4179.5 | 0.892 | VV | 0.150 | 463.56 | 0.273 |
| 13 | 6.554 | Aldrin | 1.0343 | 1.991 | 10204.5 | 2.178 | VB | 0.041 | 4123.93 | 2.433 |
| 14 | 6.766 | | 0.0000 | 0.000 | 419.4 | 0.090 | BB | 0.049 | 141.88 | 0.084 |
| 15 | 6.931 | | 0.0000 | 0.000 | 758.3 | 0.162 | BV | 0.058 | 217.69 | 0.128 |
| 16 | 7.384 | Hept. epoxide | 1.1539 | 2.222 | 20314.8 | 4.336 | VV | 0.066 | 5100.88 | 3.009 |
| 17 | 7.549 | g. Chlordane | 1.1254 | 2.167 | 13751.8 | 2.935 | VB | 0.048 | 4765.99 | 2.811 |
| 18 | 7.725 | a. Chlordane | 1.1490 | 2.212 | 12410.6 | 2.649 | BV | 0.042 | 4897.13 | 2.889 |
| 19 | 7.814 | 4,4'-DDE | 1.9822 | 3.816 | 15634.9 | 3.337 | VV | 0.039 | 6765.58 | 3.991 |
| 20 | 7.913 | Endosulfan I | 1.0627 | 2.046 | 9283.3 | 1.982 | VB | 0.038 | 4071.44 | 2.402 |
| 21 | 8.229 | Dieldrin | 2.0047 | 3.860 | 16279.7 | 3.475 | BB | 0.037 | 7304.34 | 4.309 |
| 22 | 8.327 | | 0.0000 | 0.000 | 310.7 | 0.066 | BB | 0.050 | 102.70 | 0.061 |
| 23 | 8.536 | Endrin | 2.0998 | 4.043 | 15846.9 | 3.383 | BV | 0.037 | 7138.07 | 4.211 |
| 24 | 8.597 | 4,4'-DDD | 2.1118 | 4.066 | 19181.3 | 4.094 | VB | 0.057 | 5614.00 | 3.312 |
| 25 | 8.832 | Endosulfan II | 2.1675 | 4.173 | 18240.3 | 3.893 | BV | 0.041 | 7495.29 | 4.421 |
| 26 | 8.959 | 4,4'-DDT | 2.1431 | 4.126 | 16543.3 | 3.531 | VV | 0.043 | 6348.63 | 3.745 |
| 27 | 9.181 | | 0.0000 | 0.000 | 820.1 | 0.175 | VV | 0.097 | 141.18 | 0.083 |
| 28 | 9.232 | | 0.0000 | 0.000 | 691.4 | 0.148 | VB | 0.043 | 266.65 | 0.157 |
| 29 | 9.377 | Endrin aldehyde | 2.2345 | 4.302 | 13750.2 | 2.935 | BB | 0.041 | 5553.98 | 3.276 |
| 30 | 9.573 | Methoxychlor | 12.0947 | 23.286 | 54637.4 | 11.662 | BB | 0.043 | 21052.21 | 12.419 |
| 31 | 9.874 | | 0.0000 | 0.000 | 900.4 | 0.192 | BB | 0.061 | 244.72 | 0.144 |
| 32 | 9.942 | Endo. sulfate | 2.3117 | 4.451 | 17114.8 | 3.653 | BV | 0.040 | 7112.97 | 4.196 |
| 33 | 10.182 | | 0.0000 | 0.000 | 14020.8 | 2.993 | VB | 0.057 | 4132.23 | 2.438 |
| 34 | 10.310 | Endrin ketone | 2.1295 | 4.100 | 17548.4 | 3.746 | BB | 0.038 | 7613.26 | 4.491 |
| 35 | 10.710 | | 0.0000 | 0.000 | 3009.5 | 0.642 | BV | 0.071 | 710.67 | 0.419 |
| 36 | 10.814 | | 0.0000 | 0.000 | 563.5 | 0.120 | VB | 0.070 | 133.81 | 0.079 |
| 37 | 10.918 | | 0.0000 | 0.000 | 1019.7 | 0.218 | BB | 0.114 | 149.10 | 0.088 |
| 38 | 11.482 | | 0.0000 | 0.000 | 1085.9 | 0.232 | BB | 0.237 | 76.39 | 0.045 |
| 39 | 11.621 | DCB | 5.0483 | 9.720 | 58842.6 | 12.560 | BB | 0.052 | 18859.58 | 11.125 |
| 40 | 13.476 | | 0.0000 | 0.000 | 14928.6 | 3.187 | BB | 0.461 | 539.39 | 0.318 |

Total Area = 468492.6, Total Amount = 51.94, Total Height = 169521.6, Sample Units = PPB

Sample Name: **MIXA103D AAMIXA1AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:23:20am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.11R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1775.5 | 0.575 | BB | 0.044 | 669.40 | 0.707 |
| 2 | 3.380 | | 0.0000 | 0.000 | 24746.2 | 8.014 | BB | 0.373 | 1105.83 | 1.167 |
| 3 | 3.772 | | 0.0000 | 0.000 | 1380.8 | 0.447 | BB | 0.046 | 503.48 | 0.531 |
| 4 | 4.211 | TCX | 3.8553 | 7.352 | 49785.0 | 16.122 | BB | 0.085 | 9805.67 | 10.351 |
| 5 | 5.099 | alpha-BHC | 0.8296 | 1.582 | 4146.4 | 1.343 | BB | 0.034 | 2049.44 | 2.163 |
| 6 | 5.611 | gamma-BHC | 0.8684 | 1.656 | 4537.9 | 1.470 | BV | 0.034 | 2198.67 | 2.321 |
| 7 | 5.737 | beta-BHC | 1.1189 | 2.134 | 5745.7 | 1.861 | VV | 0.053 | 1799.06 | 1.899 |
| 8 | 6.149 | delta-BHC | 0.9726 | 1.855 | 4946.2 | 1.602 | VV | 0.039 | 2129.23 | 2.248 |
| 9 | 6.230 | Heptachlor | 1.0502 | 2.003 | 6942.5 | 2.248 | VB | 0.039 | 2995.94 | 3.163 |
| 10 | 6.676 | Aldrin | 0.9549 | 1.821 | 4566.9 | 1.479 | BB | 0.034 | 2209.96 | 2.333 |
| 11 | 7.448 | Hept. epoxide | 1.0520 | 2.006 | 8678.5 | 2.810 | BV | 0.053 | 2713.15 | 2.864 |
| 12 | 7.699 | g. Chlordane | 5.5621 | 10.607 | 11244.8 | 3.641 | VV | 0.065 | 2891.10 | 3.052 |
| 13 | 7.889 | a. Chlordane | 1.1770 | 2.245 | 8465.4 | 2.741 | VV | 0.044 | 3183.68 | 3.361 |
| 14 | 7.968 | Endosulfan I | 1.1952 | 2.279 | 11051.7 | 3.579 | VV | 0.063 | 2936.58 | 3.100 |
| 15 | 8.105 | 4,4'-DDE | 2.0096 | 3.833 | 15373.6 | 4.978 | VV | 0.066 | 3893.56 | 4.110 |
| 16 | 8.327 | Dieldrin | 1.9241 | 3.670 | 13472.5 | 4.363 | VB | 0.050 | 4499.32 | 4.750 |
| 17 | 8.726 | Endrin | 1.8882 | 3.601 | 8195.5 | 2.654 | BB | 0.036 | 3826.97 | 4.040 |
| 18 | 8.855 | 4,4'-DDD | 1.7812 | 3.397 | 6118.7 | 1.981 | BB | 0.046 | 2219.20 | 2.343 |
| 19 | 9.002 | Endosulfan II | 1.9907 | 3.796 | 11147.7 | 3.610 | BB | 0.044 | 4203.35 | 4.437 |
| 20 | 9.257 | 4,4'-DDT | 1.8837 | 3.592 | 7245.6 | 2.346 | BB | 0.039 | 3057.28 | 3.227 |
| 21 | 9.436 | Endrin aldehyde | 2.1784 | 4.154 | 8518.0 | 2.758 | BB | 0.040 | 3588.82 | 3.788 |
| 22 | 9.785 | Endo. sulfate | 2.0798 | 3.966 | 9614.0 | 3.113 | BB | 0.041 | 3883.30 | 4.099 |
| 23 | 10.131 | Methoxychlor | 11.0885 | 21.147 | 27380.2 | 8.867 | BB | 0.041 | 11031.32 | 11.645 |
| 24 | 10.486 | Endrin ketone | 2.1624 | 4.124 | 20318.2 | 6.580 | BB | 0.064 | 5251.21 | 5.543 |
| 25 | 12.233 | DCB | 4.8131 | 9.179 | 33408.1 | 10.818 | BB | 0.046 | 12084.96 | 12.757 |

Total Area = 308805.3, Total Amount = 52.436, Total Height = 94730.46, Sample Units = PPB

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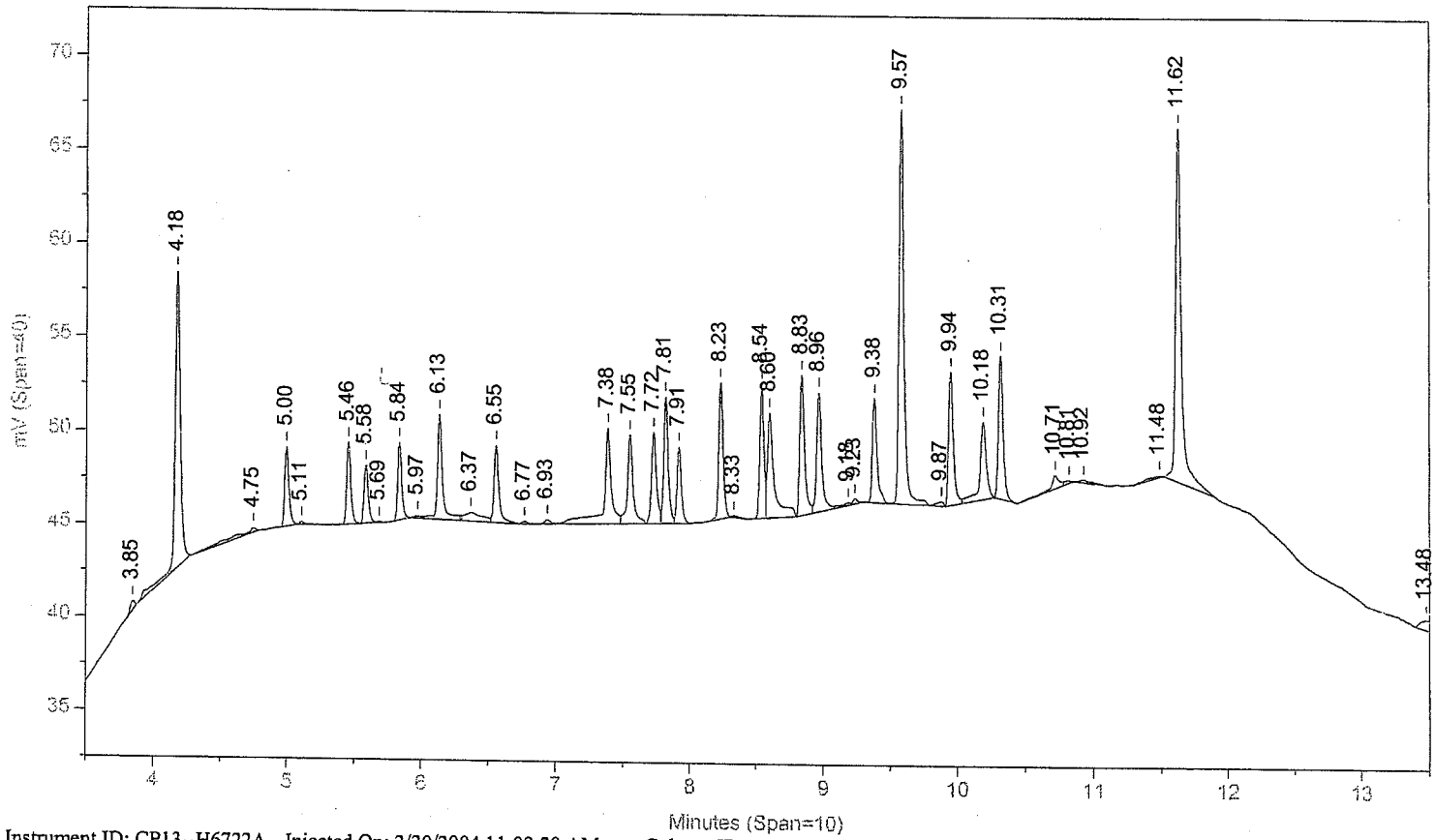
File: C:\CPWIN\DATA1\1C13051.11R

C:\CPWIN\DATA1\1C13051.11R

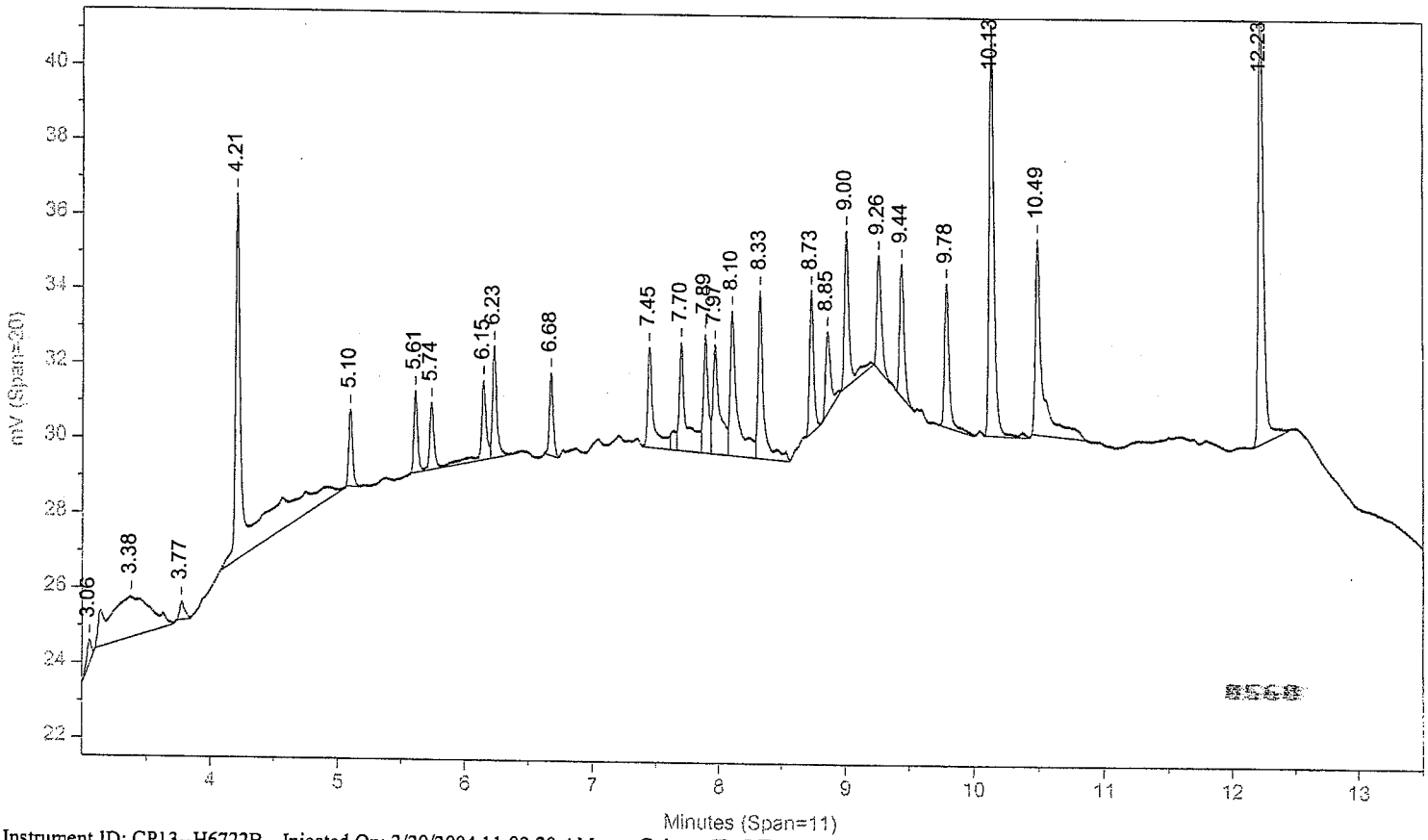



Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:09:20 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.11R

C:\CPWIN\DATA1\1C13051B.11R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:09:20 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

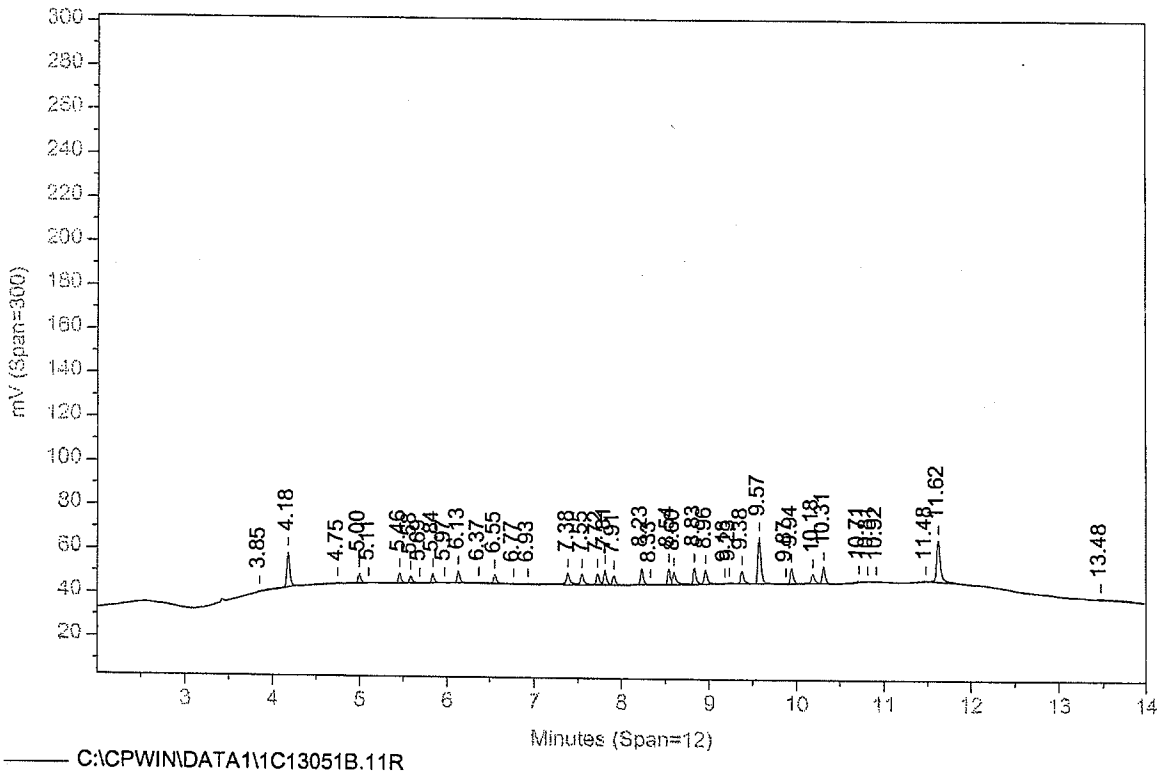
Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

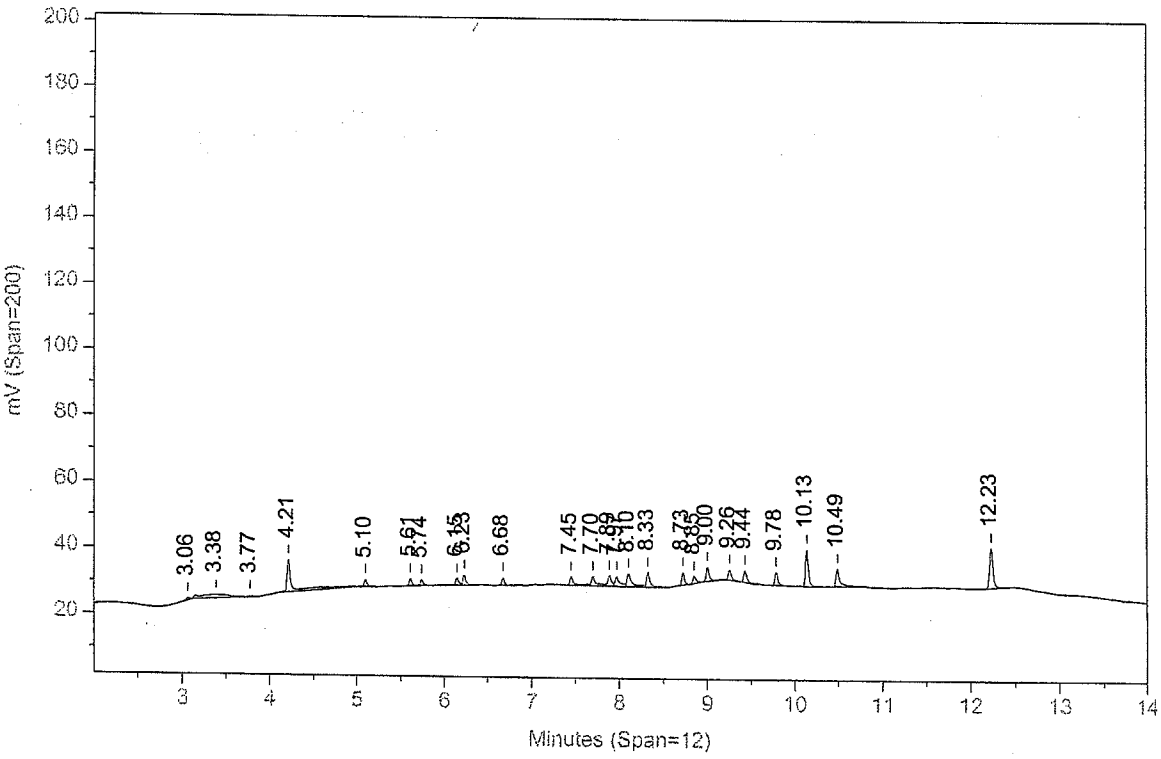
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.176 | 15862 | 4.17726 | TCX | 4.211 | 9806 | 3.85532 | TCX |
| 4.747 | 230 | .82874 | HCB | . | 0 | . | HCB |
| 4.996 | 4252 | .91896 | alpha-BHC | 5.099 | 2049 | .82965 | alpha-BHC |
| 5.456 | 4380 | .95881 | gamma-BHC | 5.611 | 2199 | .86843 | gamma-BHC |
| 5.585 | 3126 | 1.14696 | beta-BHC | 5.737 | 1799 | 1.11893 | beta-BHC |
| 5.838 | 4127 | .96968 | delta-BHC | 6.149 | 2129 | .97257 | delta-BHC |
| 6.134 | 5612 | 1.08623 | Heptachlor | 6.23 | 2996 | 1.05023 | Heptachlor |
| 6.554 | 4124 | 1.03434 | Aldrin | 6.676 | 2210 | .95486 | Aldrin |
| 7.384 | 5101 | 1.15395 | Hept. epoxide | 7.448 | 2713 | 1.05198 | Hept. epoxide |
| 7.549 | 4766 | 1.12535 | g. Chlordane | 7.699 | 2891 | 5.56208 | g. Chlordane |
| 7.725 | 4897 | 1.14899 | a. Chlordane | 7.889 | 3184 | 1.17695 | a. Chlordane |
| 7.814 | 6766 | 1.98218 | 4,4'-DDE | 8.105 | 3894 | 2.00962 | 4,4'-DDE |
| 7.913 | 4071 | 1.0627 | Endosulfan I | 7.968 | 2937 | 1.1952 | Endosulfan I |
| 8.229 | 7304 | 2.00471 | Dieldrin | 8.327 | 4499 | 1.92415 | Dieldrin |
| 8.536 | 7138 | 2.09985 | Endrin | 8.726 | 3827 | 1.88816 | Endrin |
| 8.597 | 5614 | 2.11184 | 4,4'-DDD | 8.855 | 2219 | 1.78124 | 4,4'-DDD |
| 8.832 | 7495 | 2.1675 | Endosulfan II | 9.002 | 4203 | 1.9907 | Endosulfan II |
| 8.959 | 6349 | 2.14307 | 4,4'-DDT | 9.257 | 3057 | 1.88371 | 4,4'-DDT |
| 9.377 | 5554 | 2.23453 | Endrin aldehyde | 9.436 | 3589 | 2.17843 | Endrin aldehyde |
| 9.573 | 21052 | 12.09472 | Methoxychlor | 10.131 | 11031 | 11.08851 | Methoxychlor |
| 9.942 | 7113 | 2.31166 | Endo. sulfate | 9.785 | 3883 | 2.07979 | Endo. sulfate |
| 10.31 | 7613 | 2.12947 | Endrin ketone | 10.486 | 5251 | 2.16244 | Endrin ketone |
| 11.621 | 18860 | 5.04829 | DCB | 12.233 | 12085 | 4.81308 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.11A
Area File: C:\CPWIN\DATA1\1C13051B.11A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:12 AM
File Reported On: 2/23/2004 at 10:02:24 AM

C:\CPWIN\DATA1\1C13051.11R




C:\CPWIN\DATA1\1C13051B.11R



Sample Name: **MIXA203E AAMIXA2AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:43:46am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.12R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 2400.7 | 0.133 | BB | 0.036 | 1105.07 | 0.149 |
| 2 | 4.174 | TCX | 19.5684 | 8.177 | 180427.7 | 9.983 | BB | 0.040 | 74307.41 | 10.034 |
| 3 | 4.625 | | 0.0000 | 0.000 | 1503.8 | 0.083 | BB | 0.113 | 220.88 | 0.030 |
| 4 | 4.746 | HCB | 3.2353 | 1.352 | 1917.6 | 0.106 | BB | 0.036 | 898.19 | 0.121 |
| 5 | 4.810 | | 0.0000 | 0.000 | 78.2 | 0.004 | BB | 0.022 | 58.47 | 0.008 |
| 6 | 4.997 | alpha-BHC | 4.6930 | 1.961 | 46236.2 | 2.558 | BB | 0.035 | 21714.89 | 2.932 |
| 7 | 5.456 | gamma-BHC | 4.7958 | 2.004 | 45835.8 | 2.536 | BB | 0.035 | 21906.76 | 2.958 |
| 8 | 5.585 | beta-BHC | 5.0042 | 2.091 | 30152.7 | 1.668 | BB | 0.037 | 13639.34 | 1.842 |
| 9 | 5.688 | | 0.0000 | 0.000 | 301.8 | 0.017 | BB | 0.028 | 182.66 | 0.025 |
| 10 | 5.838 | delta-BHC | 4.7371 | 1.979 | 43115.7 | 2.386 | BB | 0.036 | 20162.09 | 2.722 |
| 11 | 6.046 | | 0.0000 | 0.000 | 339.4 | 0.019 | BV | 0.045 | 126.40 | 0.017 |
| 12 | 6.135 | Heptachlor | 4.9866 | 2.084 | 58253.5 | 3.223 | VV | 0.038 | 25760.87 | 3.478 |
| 13 | 6.370 | | 0.0000 | 0.000 | 3613.1 | 0.200 | VV | 0.129 | 467.68 | 0.063 |
| 14 | 6.555 | Aldrin | 4.8498 | 2.027 | 42941.3 | 2.376 | VB | 0.037 | 19336.14 | 2.611 |
| 15 | 6.764 | | 0.0000 | 0.000 | 409.9 | 0.023 | BB | 0.046 | 147.58 | 0.020 |
| 16 | 6.932 | | 0.0000 | 0.000 | 859.7 | 0.048 | BV | 0.053 | 268.87 | 0.036 |
| 17 | 7.017 | | 0.0000 | 0.000 | 343.6 | 0.019 | VV | 0.043 | 132.54 | 0.018 |
| 18 | 7.385 | Hept. epoxide | 4.9914 | 2.086 | 57956.7 | 3.207 | VV | 0.044 | 22063.71 | 2.979 |
| 19 | 7.549 | g. Chlordane | 5.0128 | 2.095 | 50997.7 | 2.822 | VV | 0.040 | 21229.69 | 2.867 |
| 20 | 7.725 | a. Chlordane | 5.0057 | 2.092 | 49431.3 | 2.735 | VV | 0.039 | 21334.97 | 2.881 |
| 21 | 7.815 | 4,4'-DDE | 9.7050 | 4.055 | 73315.0 | 4.056 | VV | 0.037 | 33125.14 | 4.473 |
| 22 | 7.914 | Endosulfan I | 5.0393 | 2.106 | 44326.8 | 2.453 | VV | 0.038 | 19306.69 | 2.607 |
| 23 | 8.050 | o,p-DDD | 8.0140 | 3.349 | 152.7 | 0.008 | VB | 0.032 | 80.03 | 0.011 |
| 24 | 8.229 | Dieldrin | 9.7975 | 4.094 | 79005.1 | 4.371 | BB | 0.037 | 35697.96 | 4.820 |
| 25 | 8.537 | Endrin | 9.7942 | 4.093 | 71215.8 | 3.940 | BV | 0.036 | 33293.72 | 4.496 |
| 26 | 8.598 | 4,4'-DDD | 9.5489 | 3.990 | 67343.0 | 3.726 | VV | 0.044 | 25384.31 | 3.428 |
| 27 | 8.832 | Endosulfan II | 10.0544 | 4.201 | 82480.9 | 4.564 | VV | 0.040 | 34768.54 | 4.695 |
| 28 | 8.960 | 4,4'-DDT | 9.7278 | 4.065 | 67797.7 | 3.751 | VV | 0.039 | 28817.83 | 3.891 |
| 29 | 9.176 | | 0.0000 | 0.000 | 568.4 | 0.031 | VV | 0.054 | 175.86 | 0.024 |
| 30 | 9.234 | | 0.0000 | 0.000 | 3771.2 | 0.209 | VB | 0.047 | 1342.46 | 0.181 |
| 31 | 9.376 | Endrin aldehyde | 10.0037 | 4.180 | 62313.0 | 3.448 | BV | 0.042 | 24864.52 | 3.357 |
| 32 | 9.572 | Methoxychlor | 50.3683 | 21.047 | 219160.3 | 12.126 | VB | 0.042 | 87671.58 | 11.838 |
| 33 | 9.876 | | 0.0000 | 0.000 | 590.9 | 0.033 | BB | 0.060 | 165.00 | 0.022 |
| 34 | 9.942 | Endo. sulfate | 9.9655 | 4.164 | 72840.2 | 4.030 | BV | 0.040 | 30663.62 | 4.140 |
| 35 | 10.117 | | 0.0000 | 0.000 | 1784.7 | 0.099 | VV | 0.041 | 730.40 | 0.099 |
| 36 | 10.181 | | 0.0000 | 0.000 | 15028.5 | 0.832 | VB | 0.048 | 5248.24 | 0.709 |
| 37 | 10.310 | Endrin ketone | 10.0357 | 4.194 | 83492.4 | 4.620 | BB | 0.039 | 35879.53 | 4.845 |
| 38 | 10.708 | | 0.0000 | 0.000 | 3393.6 | 0.188 | BB | 0.044 | 1286.94 | 0.174 |
| 39 | 11.156 | | 0.0000 | 0.000 | 159.8 | 0.009 | BB | 0.049 | 53.82 | 0.007 |
| 40 | 11.341 | | 0.0000 | 0.000 | 433.6 | 0.024 | BB | 0.037 | 194.57 | 0.026 |
| 41 | 11.619 | DCB | 20.3769 | 8.515 | 224722.6 | 12.434 | BB | 0.049 | 76124.64 | 10.279 |
| 42 | 13.499 | | 0.0000 | 0.000 | 16342.6 | 0.904 | BB | 0.417 | 653.54 | 0.088 |

Total Area = 1807355.0, Total Amount = 239.311, Total Height = 740593.1, Sample Units = PPB

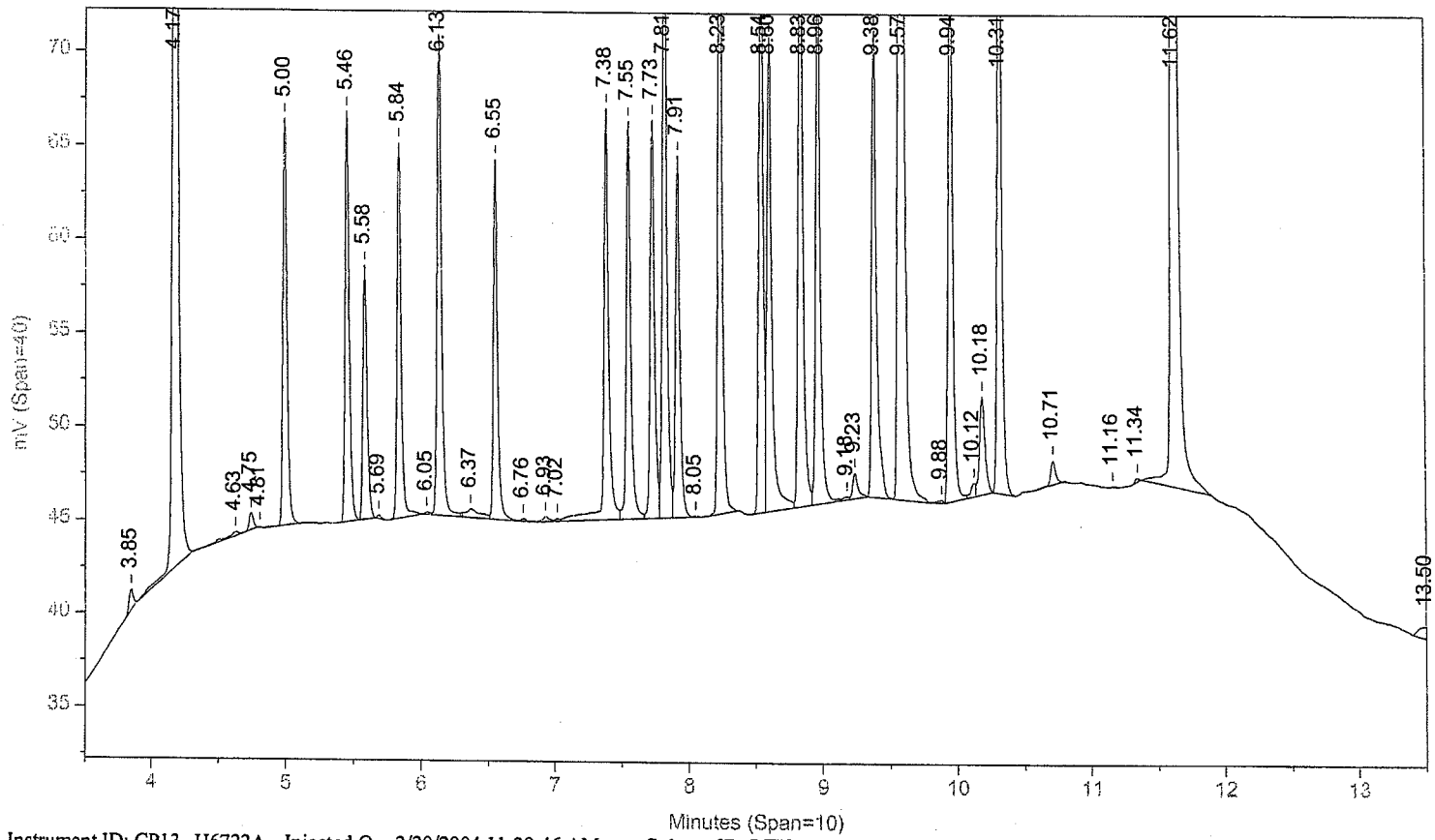
Sample Name: **MIXA203E AAMIXA2AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:43:46am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.12R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.061 | | 0.0000 | 0.000 | 1653.0 | 0.162 | BB | 0.041 | 667.34 | 0.155 |
| 2 | 3.373 | | 0.0000 | 0.000 | 25102.6 | 2.454 | BB | 0.350 | 1194.19 | 0.278 |
| 3 | 3.777 | | 0.0000 | 0.000 | 1124.8 | 0.110 | BB | 0.041 | 458.61 | 0.107 |
| 4 | 3.940 | | 0.0000 | 0.000 | 838.9 | 0.082 | BB | 0.036 | 392.39 | 0.091 |
| 5 | 4.210 | TCX | 19.1421 | 8.413 | 109183.6 | 10.674 | BB | 0.037 | 48686.09 | 11.317 |
| 6 | 4.747 | | 0.0000 | 0.000 | 2900.7 | 0.284 | BB | 0.085 | 571.94 | 0.133 |
| 7 | 5.100 | alpha-BHC | 4.3927 | 1.931 | 20766.7 | 2.030 | BB | 0.032 | 10851.14 | 2.522 |
| 8 | 5.613 | gamma-BHC | 4.5037 | 1.979 | 22232.1 | 2.173 | BB | 0.032 | 11402.26 | 2.650 |
| 9 | 5.737 | beta-BHC | 4.8155 | 2.116 | 16612.7 | 1.624 | BB | 0.036 | 7742.59 | 1.800 |
| 10 | 6.149 | delta-BHC | 4.4578 | 1.959 | 19747.5 | 1.930 | BV | 0.034 | 9759.44 | 2.269 |
| 11 | 6.230 | Heptachlor | 4.8150 | 2.116 | 29185.5 | 2.853 | VB | 0.035 | 13735.39 | 3.193 |
| 12 | 6.676 | Aldrin | 4.6273 | 2.034 | 21479.1 | 2.100 | BB | 0.033 | 10709.52 | 2.489 |
| 13 | 7.448 | Hept. epoxide | 4.7889 | 2.105 | 28606.6 | 2.797 | BV | 0.039 | 12350.95 | 2.871 |
| 14 | 7.699 | g. Chlordane | 11.3784 | 5.001 | 30059.9 | 2.939 | VV | 0.040 | 12493.58 | 2.904 |
| 15 | 7.890 | a. Chlordane | 4.7773 | 2.100 | 27698.9 | 2.708 | VV | 0.036 | 12922.65 | 3.004 |
| 16 | 7.969 | Endosulfan I | 4.7111 | 2.070 | 28258.2 | 2.762 | VV | 0.041 | 11574.98 | 2.691 |
| 17 | 8.105 | 4,4'-DDE | 8.9880 | 3.950 | 45703.5 | 4.468 | VV | 0.044 | 17413.93 | 4.048 |
| 18 | 8.328 | Dieldrin | 9.2598 | 4.070 | 45904.8 | 4.488 | VB | 0.035 | 21652.72 | 5.033 |
| 19 | 8.727 | Endrin | 9.3568 | 4.112 | 38977.9 | 3.810 | BB | 0.034 | 18964.52 | 4.408 |
| 20 | 8.857 | 4,4'-DDD | 9.1130 | 4.005 | 29361.8 | 2.870 | BB | 0.043 | 11353.69 | 2.639 |
| 21 | 9.002 | Endosulfan II | 9.6098 | 4.223 | 45271.1 | 4.426 | BB | 0.037 | 20290.98 | 4.717 |
| 22 | 9.258 | 4,4'-DDT | 9.3454 | 4.107 | 35302.8 | 3.451 | BB | 0.039 | 15167.74 | 3.526 |
| 23 | 9.434 | Endrin aldehyde | 9.7405 | 4.281 | 36739.2 | 3.592 | BB | 0.038 | 16046.82 | 3.730 |
| 24 | 9.561 | | 0.0000 | 0.000 | 2936.8 | 0.287 | BB | 0.065 | 755.81 | 0.176 |
| 25 | 9.786 | Endo. sulfate | 9.6338 | 4.234 | 40896.4 | 3.998 | BB | 0.038 | 17987.75 | 4.181 |
| 26 | 10.044 | | 0.0000 | 0.000 | 570.0 | 0.056 | BB | 0.034 | 277.56 | 0.065 |
| 27 | 10.129 | Methoxychlor | 49.9962 | 21.973 | 116302.4 | 11.370 | BB | 0.039 | 49738.37 | 11.562 |
| 28 | 10.366 | | 0.0000 | 0.000 | 579.9 | 0.057 | BB | 0.032 | 306.09 | 0.071 |
| 29 | 10.486 | Endrin ketone | 9.6476 | 4.240 | 61768.0 | 6.038 | BB | 0.044 | 23427.95 | 5.446 |
| 30 | 12.231 | DCB | 20.4345 | 8.981 | 137165.1 | 13.409 | BB | 0.045 | 51308.05 | 11.926 |

Total Area = 1022930.0, Total Amount = 227.535, Total Height = 430205.0, Sample Units = PPB

LANCASTER LABORATORIES

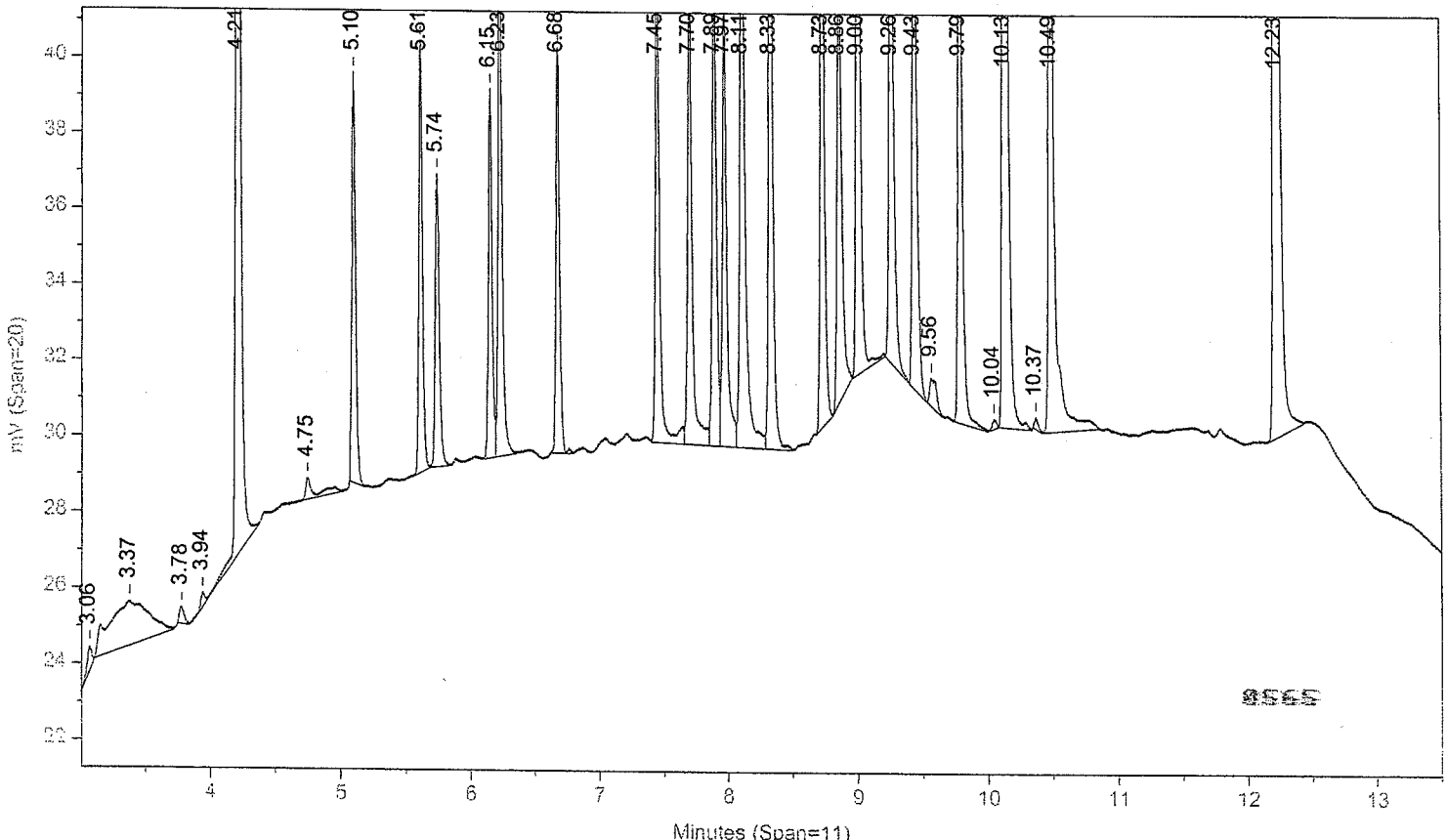
File: C:\CPWIN\DATA1\1C13051.12R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:29:46 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.12R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:29:46 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

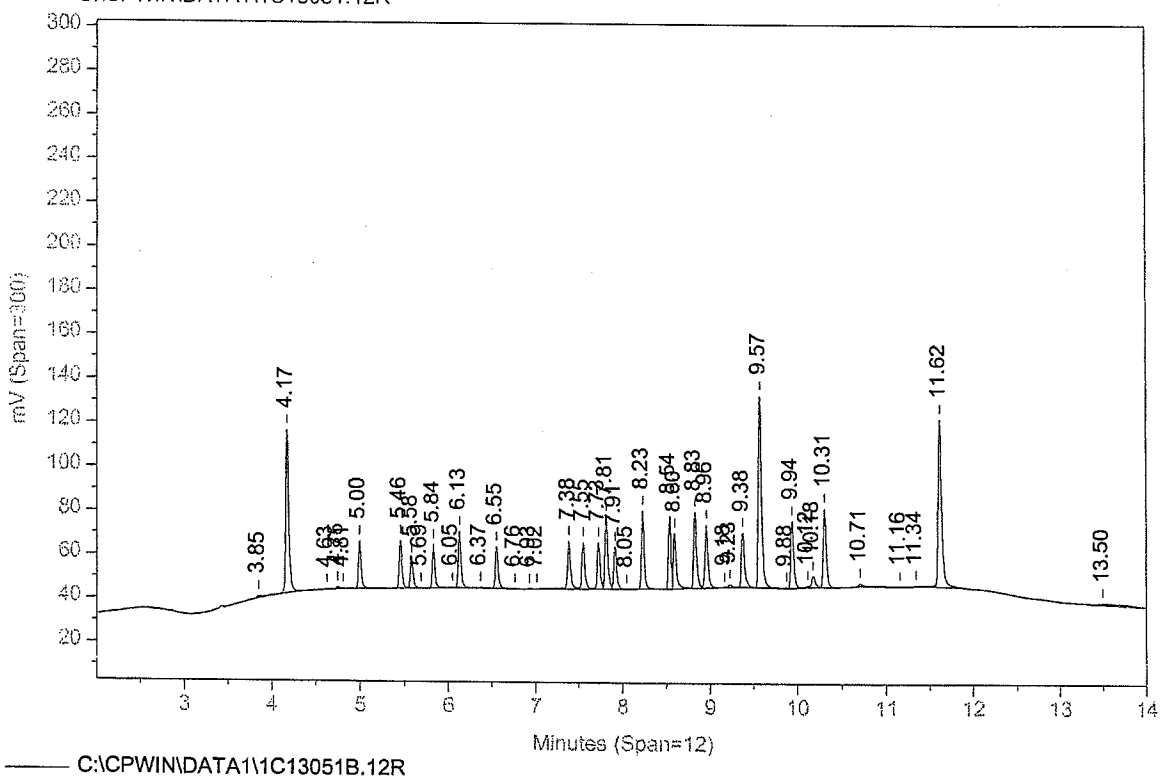
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 74307 | 19.56836 | TCX | 4.21 | 48686 | 19.14205 | TCX |
| 4.746 | 898 | 3.23528 | HCB | . | 0 | . | HCB |
| 4.997 | 21715 | 4.69297 | alpha-BHC | 5.1 | 10851 | 4.39271 | alpha-BHC |
| 5.456 | 21907 | 4.79581 | gamma-BHC | 5.613 | 11402 | 4.50365 | gamma-BHC |
| 5.585 | 13639 | 5.00417 | beta-BHC | 5.737 | 7743 | 4.81553 | beta-BHC |
| 5.838 | 20162 | 4.73711 | delta-BHC | 6.149 | 9759 | 4.45781 | delta-BHC |
| 6.135 | 25761 | 4.98656 | Heptachlor | 6.23 | 13735 | 4.81496 | Heptachlor |
| 6.555 | 19336 | 4.84975 | Aldrin | 6.676 | 10710 | 4.62728 | Aldrin |
| 7.385 | 22064 | 4.99137 | Hept. epoxide | 7.448 | 12351 | 4.78888 | Hept. epoxide |
| 7.549 | 21230 | 5.01278 | g. Chlordane | 7.699 | 12494 | 11.37841 | g. Chlordane |
| 7.725 | 21335 | 5.00571 | a. Chlordane | 7.89 | 12923 | 4.77729 | a. Chlordane |
| 7.815 | 33125 | 9.70501 | 4,4'-DDE | 8.105 | 17414 | 8.98803 | 4,4'-DDE |
| 7.914 | 19307 | 5.03931 | Endosulfan I | 7.969 | 11575 | 4.71105 | Endosulfan I |
| 8.05 | 80 | 8.01404 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.229 | 35698 | 9.79747 | Dieldrin | 8.328 | 21653 | 9.25984 | Dieldrin |
| 8.537 | 33294 | 9.79421 | Endrin | 8.727 | 18965 | 9.35679 | Endrin |
| 8.598 | 25384 | 9.54891 | 4,4'-DDD | 8.857 | 11354 | 9.11303 | 4,4'-DDD |
| 8.832 | 34769 | 10.05444 | Endosulfan II | 9.002 | 20291 | 9.60981 | Endosulfan II |
| 8.96 | 28818 | 9.72785 | 4,4'-DDT | 9.258 | 15168 | 9.34541 | 4,4'-DDT |
| 9.376 | 24865 | 10.00374 | Endrin aldehyde | 9.434 | 16047 | 9.74051 | Endrin aldehyde |
| 9.572 | 87672 | 50.36826 | Methoxychlor | 10.129 | 49738 | 49.9962 | Methoxychlor |
| 9.942 | 30664 | 9.96545 | Endo. sulfate | 9.786 | 17988 | 9.63377 | Endo. sulfate |
| 10.31 | 35880 | 10.03568 | Endrin ketone | 10.486 | 23428 | 9.64762 | Endrin ketone |
| 11.619 | 76125 | 20.37686 | DCB | 12.231 | 51308 | 20.43447 | DCB |

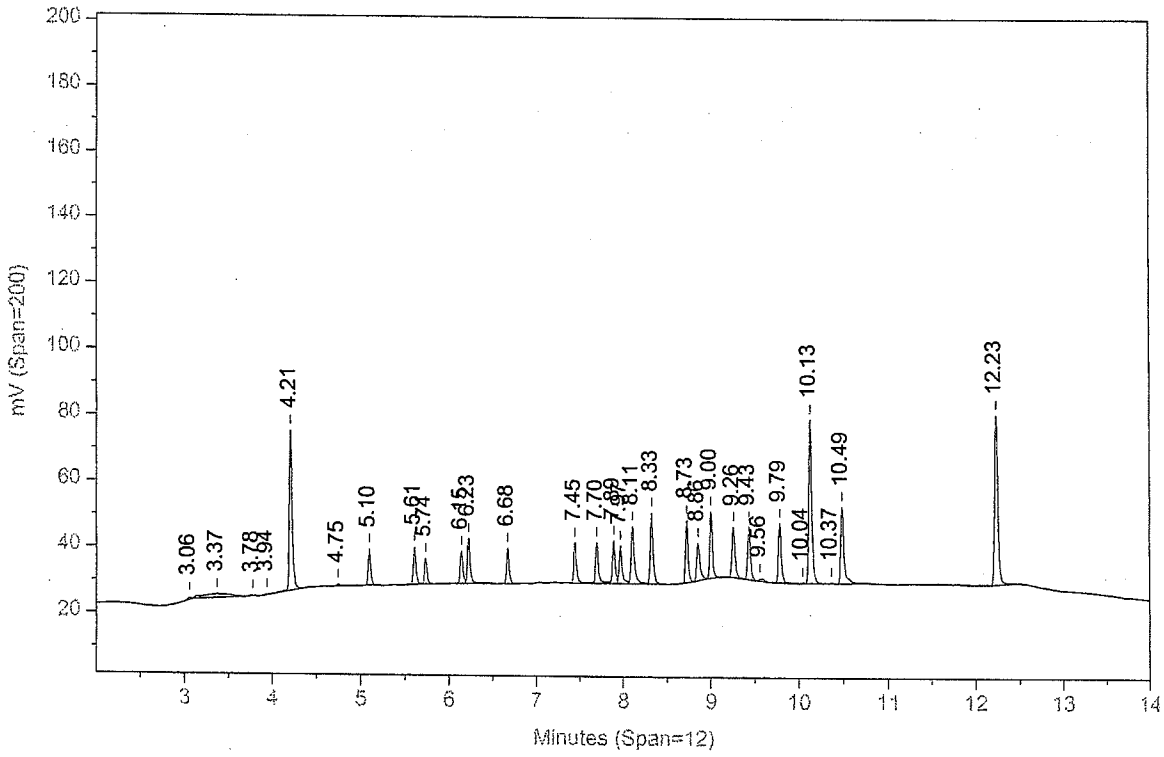
Files:
Area File: C:\CPWIN\DATA1\1C13051.12A
Area File: C:\CPWIN\DATA1\1C13051B.12A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:36 AM
File Reported On: 2/23/2004 at 10:02:47 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.12R




C:\CPWIN\DATA1\1C13051B.12R



Sample Name: **MIXA303D AAMIXA3AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:04:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.13R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 4162.8 | 0.122 | BB | 0.037 | 1888.78 | 0.131 |
| 2 | 4.173 | TCX | 37.9902 | 7.291 | 344462.0 | 10.101 | BB | 0.040 | 144260.90 | 9.998 |
| 3 | 4.506 | | 0.0000 | 0.000 | 198.7 | 0.006 | BB | 0.037 | 90.71 | 0.006 |
| 4 | 4.621 | | 0.0000 | 0.000 | 714.3 | 0.021 | BB | 0.057 | 210.03 | 0.015 |
| 5 | 4.746 | HCB | 6.4126 | 1.231 | 3763.8 | 0.110 | BB | 0.035 | 1780.28 | 0.123 |
| 6 | 4.806 | | 0.0000 | 0.000 | 132.2 | 0.004 | BB | 0.021 | 103.61 | 0.007 |
| 7 | 4.872 | | 0.0000 | 0.000 | 186.1 | 0.005 | BB | 0.032 | 96.52 | 0.007 |
| 8 | 4.996 | alpha-BHC | 10.0363 | 1.926 | 95779.7 | 2.809 | BB | 0.034 | 46438.98 | 3.219 |
| 9 | 5.160 | | 0.0000 | 0.000 | 165.7 | 0.005 | BB | 0.040 | 69.03 | 0.005 |
| 10 | 5.456 | gamma-BHC | 9.9960 | 1.918 | 94227.0 | 2.763 | BB | 0.034 | 45660.75 | 3.165 |
| 11 | 5.584 | beta-BHC | 9.6860 | 1.859 | 58238.8 | 1.708 | BB | 0.037 | 26400.15 | 1.830 |
| 12 | 5.689 | | 0.0000 | 0.000 | 607.3 | 0.018 | BB | 0.028 | 364.86 | 0.025 |
| 13 | 5.838 | delta-BHC | 9.9267 | 1.905 | 88060.4 | 2.582 | BB | 0.035 | 42249.88 | 2.928 |
| 14 | 6.046 | | 0.0000 | 0.000 | 503.7 | 0.015 | BV | 0.041 | 205.84 | 0.014 |
| 15 | 6.134 | Heptachlor | 9.7918 | 1.879 | 111794.8 | 3.278 | VV | 0.037 | 50585.26 | 3.506 |
| 16 | 6.370 | | 0.0000 | 0.000 | 3831.0 | 0.112 | VV | 0.113 | 562.68 | 0.039 |
| 17 | 6.554 | Aldrin | 9.8240 | 1.885 | 84834.3 | 2.488 | VB | 0.036 | 39168.45 | 2.715 |
| 18 | 6.761 | | 0.0000 | 0.000 | 554.0 | 0.016 | BB | 0.055 | 167.97 | 0.012 |
| 19 | 6.933 | | 0.0000 | 0.000 | 8247.0 | 0.242 | BB | 0.044 | 3123.28 | 0.216 |
| 20 | 7.140 | | 0.0000 | 0.000 | 650.8 | 0.019 | BV | 0.058 | 185.96 | 0.013 |
| 21 | 7.384 | Hept. epoxide | 9.6148 | 1.845 | 99266.7 | 2.911 | VV | 0.039 | 42500.96 | 2.946 |
| 22 | 7.548 | g. Chlordane | 9.6702 | 1.856 | 94348.1 | 2.767 | VV | 0.038 | 40954.52 | 2.838 |
| 23 | 7.725 | a. Chlordane | 9.6388 | 1.850 | 91765.7 | 2.691 | VV | 0.037 | 41081.58 | 2.847 |
| 24 | 7.814 | 4,4'-DDE | 19.8847 | 3.816 | 146627.3 | 4.300 | VV | 0.036 | 67870.28 | 4.704 |
| 25 | 7.913 | Endosulfan I | 9.8528 | 1.891 | 85877.5 | 2.518 | VV | 0.038 | 37748.38 | 2.616 |
| 26 | 8.052 | o,p-DDD | 14.7292 | 2.827 | 297.9 | 0.009 | VB | 0.034 | 147.09 | 0.010 |
| 27 | 8.229 | Dieldrin | 19.9216 | 3.823 | 156978.1 | 4.603 | BB | 0.036 | 72586.30 | 5.031 |
| 28 | 8.536 | Endrin | 19.6718 | 3.775 | 141179.9 | 4.140 | BV | 0.035 | 66870.80 | 4.635 |
| 29 | 8.598 | 4,4'-DDD | 19.5581 | 3.754 | 132170.6 | 3.876 | VV | 0.042 | 51992.29 | 3.603 |
| 30 | 8.831 | Endosulfan II | 19.6791 | 3.777 | 158589.6 | 4.650 | VV | 0.039 | 68050.84 | 4.716 |
| 31 | 8.960 | 4,4'-DDT | 19.5253 | 3.747 | 133046.5 | 3.901 | VV | 0.038 | 57842.01 | 4.009 |
| 32 | 9.173 | | 0.0000 | 0.000 | 528.8 | 0.016 | VV | 0.053 | 166.04 | 0.012 |
| 33 | 9.233 | | 0.0000 | 0.000 | 6755.3 | 0.198 | VB | 0.042 | 2691.11 | 0.187 |
| 34 | 9.376 | Endrin aldehyde | 19.4847 | 3.739 | 121611.8 | 3.566 | BV | 0.042 | 48429.77 | 3.357 |
| 35 | 9.570 | Methoxychlor | 95.4230 | 18.313 | 409321.7 | 12.003 | VB | 0.041 | 166094.30 | 11.511 |
| 36 | 9.807 | Mirex | 55.3018 | 10.613 | 489.3 | 0.014 | BB | 0.082 | 99.09 | 0.007 |
| 37 | 9.942 | Endo. sulfate | 19.2141 | 3.688 | 139515.4 | 4.091 | BV | 0.039 | 59121.53 | 4.098 |
| 38 | 10.114 | | 0.0000 | 0.000 | 3503.9 | 0.103 | VV | 0.043 | 1372.39 | 0.095 |
| 39 | 10.181 | | 0.0000 | 0.000 | 13211.0 | 0.387 | VB | 0.045 | 4876.38 | 0.338 |
| 40 | 10.309 | Endrin ketone | 19.7538 | 3.791 | 164518.2 | 4.824 | BB | 0.039 | 70623.56 | 4.895 |
| 41 | 10.488 | | 0.0000 | 0.000 | 389.5 | 0.011 | BB | 0.037 | 174.00 | 0.012 |
| 42 | 10.710 | | 0.0000 | 0.000 | 1287.3 | 0.038 | BB | 0.065 | 331.72 | 0.023 |
| 43 | 11.338 | | 0.0000 | 0.000 | 1129.3 | 0.033 | BB | 0.038 | 494.32 | 0.034 |
| 44 | 11.492 | | 0.0000 | 0.000 | 264.6 | 0.008 | BB | 0.085 | 51.78 | 0.004 |
| 45 | 11.618 | DCB | 36.4672 | 6.999 | 386487.2 | 11.333 | BB | 0.047 | 136235.60 | 9.442 |
| 46 | 13.536 | | 0.0000 | 0.000 | 19887.0 | 0.583 | BB | 0.396 | 836.67 | 0.058 |

Total Area = 3410163.0, Total Amount = 521.055, Total Height = 1442857.0, Sample Units = PPB

Sample Name: **MIXA303D AAMIXA3AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:04:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.13R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

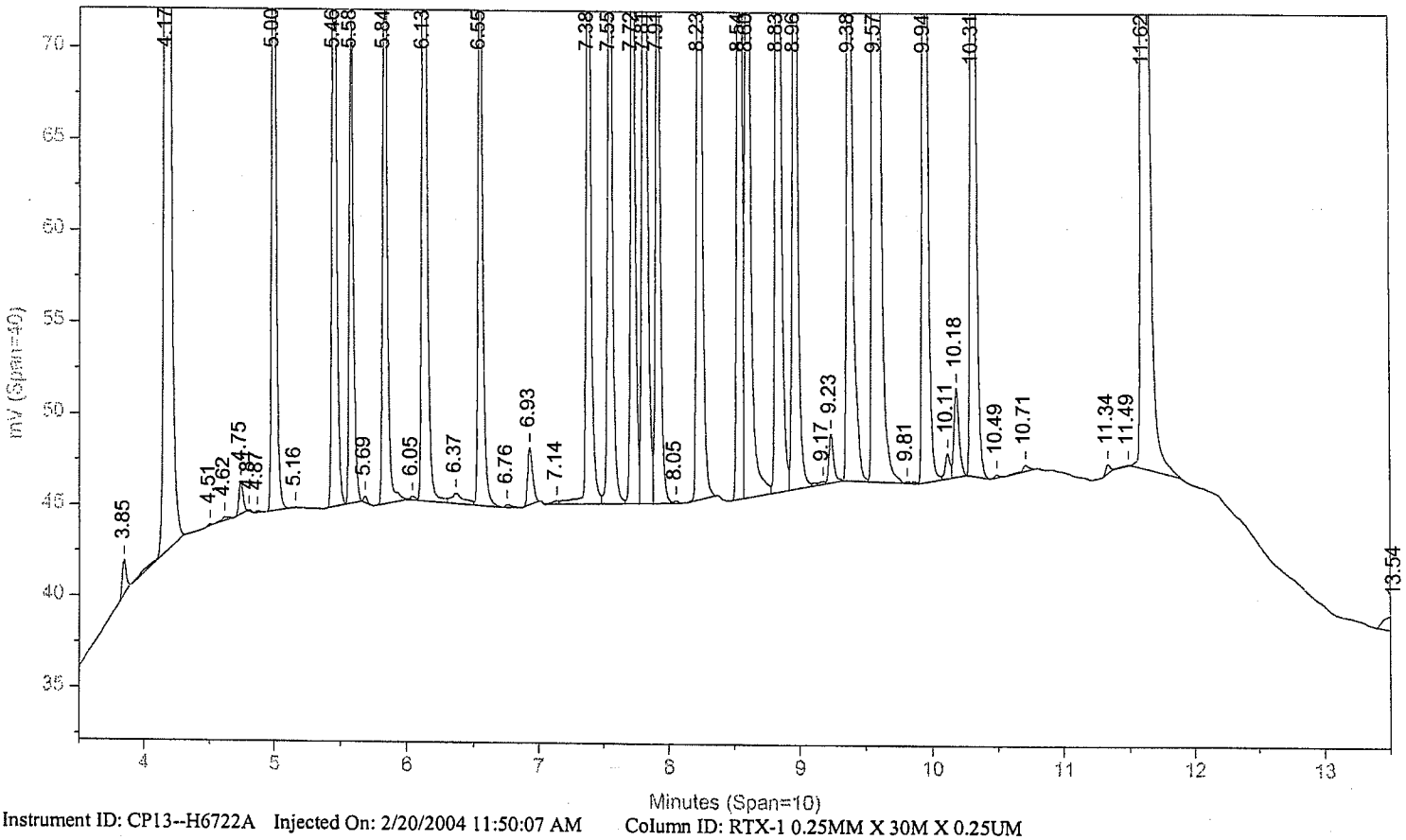
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 2028.6 | 0.105 | BB | 0.045 | 754.28 | 0.086 |
| 2 | 3.232 | | 0.0000 | 0.000 | 1634.0 | 0.085 | BB | 0.518 | 52.57 | 0.006 |
| 3 | 3.772 | | 0.0000 | 0.000 | 1549.1 | 0.080 | BB | 0.046 | 560.34 | 0.064 |
| 4 | 3.942 | | 0.0000 | 0.000 | 1611.7 | 0.083 | BB | 0.039 | 689.23 | 0.079 |
| 5 | 4.208 | TCX | 38.8283 | 8.548 | 211031.3 | 10.929 | BB | 0.036 | 98756.38 | 11.311 |
| 6 | 4.749 | | 0.0000 | 0.000 | 4319.4 | 0.224 | BB | 0.064 | 1123.90 | 0.129 |
| 7 | 5.100 | alpha-BHC | 9.9448 | 2.189 | 45018.2 | 2.331 | BB | 0.031 | 24566.14 | 2.814 |
| 8 | 5.613 | gamma-BHC | 10.0111 | 2.204 | 47529.2 | 2.462 | BB | 0.031 | 25345.78 | 2.903 |
| 9 | 5.737 | beta-BHC | 9.6571 | 2.126 | 32858.0 | 1.702 | BV | 0.035 | 15527.05 | 1.778 |
| 10 | 5.887 | | 0.0000 | 0.000 | 669.4 | 0.035 | VB | 0.040 | 281.33 | 0.032 |
| 11 | 6.149 | delta-BHC | 9.6748 | 2.130 | 41079.2 | 2.127 | BV | 0.032 | 21180.96 | 2.426 |
| 12 | 6.229 | Heptachlor | 9.7457 | 2.145 | 56709.4 | 2.937 | VB | 0.034 | 27801.01 | 3.184 |
| 13 | 6.676 | Aldrin | 9.8133 | 2.160 | 43095.5 | 2.232 | BB | 0.032 | 22712.21 | 2.601 |
| 14 | 6.766 | | 0.0000 | 0.000 | 5453.3 | 0.282 | BB | 0.052 | 1737.39 | 0.199 |
| 15 | 7.447 | Hept. epoxide | 9.8036 | 2.158 | 53746.7 | 2.783 | BV | 0.035 | 25284.49 | 2.896 |
| 16 | 7.698 | g. Chlordane | 15.7770 | 3.473 | 55274.4 | 2.863 | VV | 0.037 | 25207.68 | 2.887 |
| 17 | 7.889 | a. Chlordane | 9.4563 | 2.082 | 52791.9 | 2.734 | VV | 0.034 | 25579.53 | 2.930 |
| 18 | 7.968 | Endosulfan I | 9.4045 | 2.070 | 51657.7 | 2.675 | VV | 0.037 | 23106.73 | 2.647 |
| 19 | 8.105 | 4,4'-DDE | 19.4596 | 4.284 | 88691.7 | 4.593 | VV | 0.039 | 37702.05 | 4.318 |
| 20 | 8.327 | Dieldrin | 19.8187 | 4.363 | 92552.5 | 4.793 | VB | 0.033 | 46342.98 | 5.308 |
| 21 | 8.624 | | 0.0000 | 0.000 | 932.8 | 0.048 | BB | 0.044 | 355.24 | 0.041 |
| 22 | 8.726 | Endrin | 19.9308 | 4.388 | 79652.8 | 4.125 | BB | 0.033 | 40396.14 | 4.627 |
| 23 | 8.856 | 4,4'-DDD | 19.7420 | 4.346 | 60364.6 | 3.126 | BB | 0.041 | 24596.09 | 2.817 |
| 24 | 9.001 | Endosulfan II | 19.8324 | 4.366 | 88669.6 | 4.592 | BB | 0.035 | 41875.80 | 4.796 |
| 25 | 9.256 | 4,4'-DDT | 19.9282 | 4.387 | 71195.4 | 3.687 | BB | 0.037 | 32343.67 | 3.705 |
| 26 | 9.433 | Endrin aldehyde | 19.4976 | 4.292 | 71256.2 | 3.690 | BB | 0.037 | 32120.94 | 3.679 |
| 27 | 9.561 | | 0.0000 | 0.000 | 6022.3 | 0.312 | BB | 0.064 | 1575.04 | 0.180 |
| 28 | 9.785 | Endo. sulfate | 19.6090 | 4.317 | 80264.1 | 4.157 | BB | 0.037 | 36612.98 | 4.193 |
| 29 | 10.128 | Methoxychlor | 97.6780 | 21.503 | 222645.9 | 11.531 | BB | 0.038 | 97174.30 | 11.130 |
| 30 | 10.365 | | 0.0000 | 0.000 | 1436.4 | 0.074 | BB | 0.036 | 671.06 | 0.077 |
| 31 | 10.485 | Endrin ketone | 19.5725 | 4.309 | 108924.4 | 5.641 | BB | 0.038 | 47529.16 | 5.444 |
| 32 | 11.795 | | 0.0000 | 0.000 | 1905.0 | 0.099 | BB | 0.072 | 443.52 | 0.051 |
| 33 | 12.229 | DCB | 37.0724 | 8.161 | 248332.9 | 12.861 | BB | 0.044 | 93083.51 | 10.661 |

Total Area = 1930903.0, Total Amount = 454.258, Total Height = 873089.5, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.13R

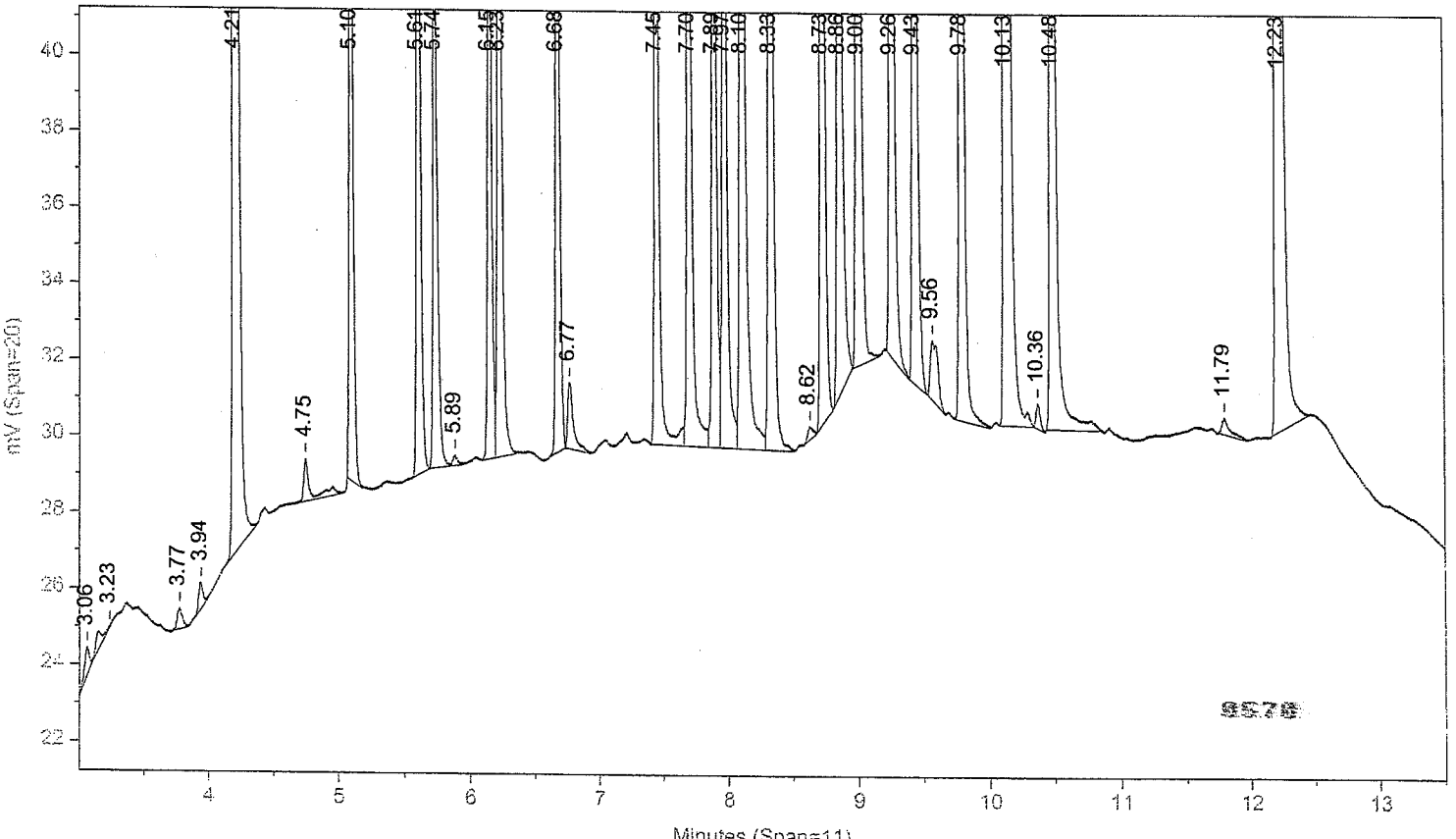
C:\CPWIN\DATA1\1C13051.13R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:50:07 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.13R

C:\CPWIN\DATA1\1C13051B.13R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:50:07 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

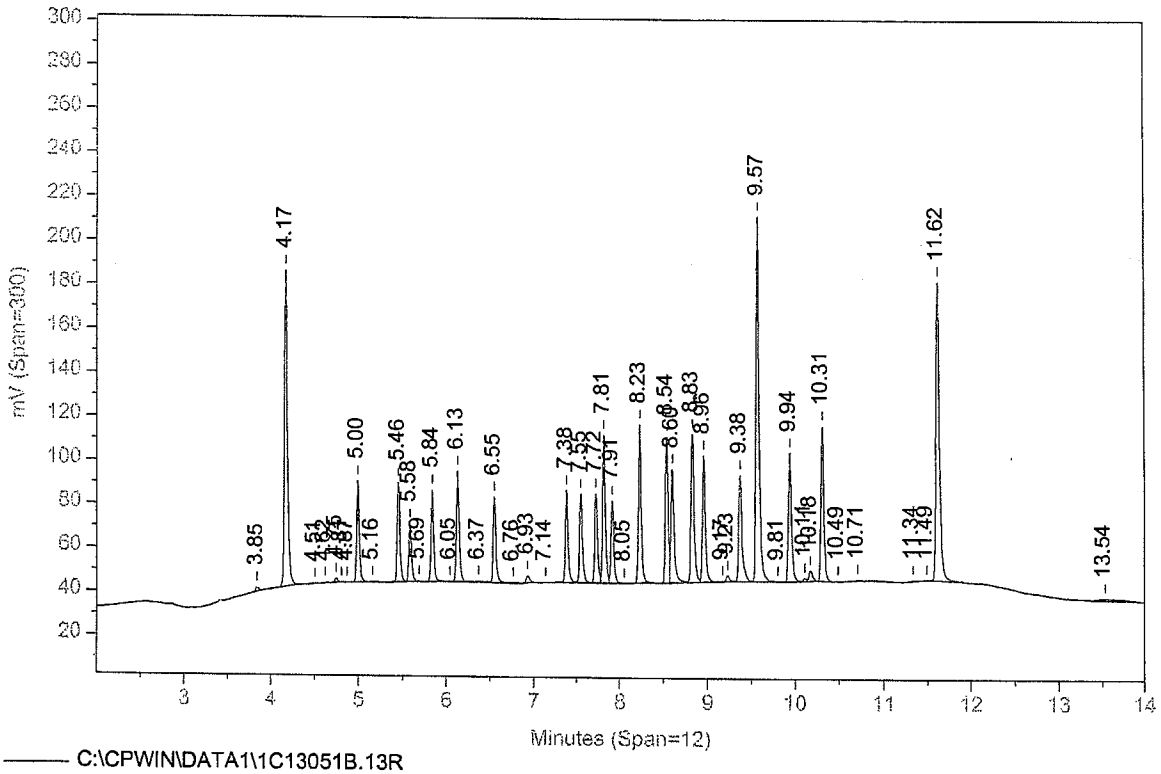
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 144261 | 37.99015 | TCX | 4.208 | 98756 | 38.82834 | TCX |
| 4.746 | 1780 | 6.41256 | HCB | . | 0 | . | HCB |
| 4.996 | 46439 | 10.03627 | alpha-BHC | 5.1 | 24566 | 9.94476 | alpha-BHC |
| 5.456 | 45661 | 9.99601 | gamma-BHC | 5.613 | 25346 | 10.01105 | gamma-BHC |
| 5.584 | 26400 | 9.68601 | beta-BHC | 5.737 | 15527 | 9.6571 | beta-BHC |
| 5.838 | 42250 | 9.92666 | delta-BHC | 6.149 | 21181 | 9.67481 | delta-BHC |
| 6.134 | 50585 | 9.79185 | Heptachlor | 6.229 | 27801 | 9.74568 | Heptachlor |
| 6.554 | 39168 | 9.82395 | Aldrin | 6.676 | 22712 | 9.8133 | Aldrin |
| 7.384 | 42501 | 9.61479 | Hept. epoxide | 7.447 | 25284 | 9.80365 | Hept. epoxide |
| 7.548 | 40955 | 9.67023 | g. Chlordane | 7.698 | 25208 | 15.77697 | g. Chlordane |
| 7.725 | 41082 | 9.63876 | a. Chlordane | 7.889 | 25580 | 9.45632 | a. Chlordane |
| 7.814 | 67870 | 19.88465 | 4,4'-DDE | 8.105 | 37702 | 19.45955 | 4,4'-DDE |
| 7.913 | 37748 | 9.85284 | Endosulfan I | 7.968 | 23107 | 9.40451 | Endosulfan I |
| 8.052 | 147 | 14.72921 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.229 | 72586 | 19.92165 | Dieldrin | 8.327 | 46343 | 19.81868 | Dieldrin |
| 8.536 | 66871 | 19.67178 | Endrin | 8.726 | 40396 | 19.93081 | Endrin |
| 8.598 | 51992 | 19.55813 | 4,4'-DDD | 8.856 | 24596 | 19.74202 | 4,4'-DDD |
| 8.831 | 68051 | 19.67908 | Endosulfan II | 9.001 | 41876 | 19.83237 | Endosulfan II |
| 8.96 | 57842 | 19.52535 | 4,4'-DDT | 9.256 | 32344 | 19.92816 | 4,4'-DDT |
| 9.376 | 48430 | 19.48475 | Endrin aldehyde | 9.433 | 32121 | 19.4976 | Endrin aldehyde |
| 9.57 | 166094 | 95.42296 | Methoxychlor | 10.128 | 97174 | 97.67803 | Methoxychlor |
| 9.942 | 59122 | 19.21407 | Endo. sulfate | 9.785 | 36613 | 19.60896 | Endo. sulfate |
| 9.807 | 99 | 55.30183 | Mirex | . | 0 | . | Mirex |
| 10.309 | 70624 | 19.75376 | Endrin ketone | 10.485 | 47529 | 19.57248 | Endrin ketone |
| 11.618 | 136236 | 36.46721 | DCB | 12.229 | 93084 | 37.0724 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.13A
Area File: C:\CPWIN\DATA1\1C13051B.13A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:58 AM
File Reported On: 2/23/2004 at 10:03:09 AM

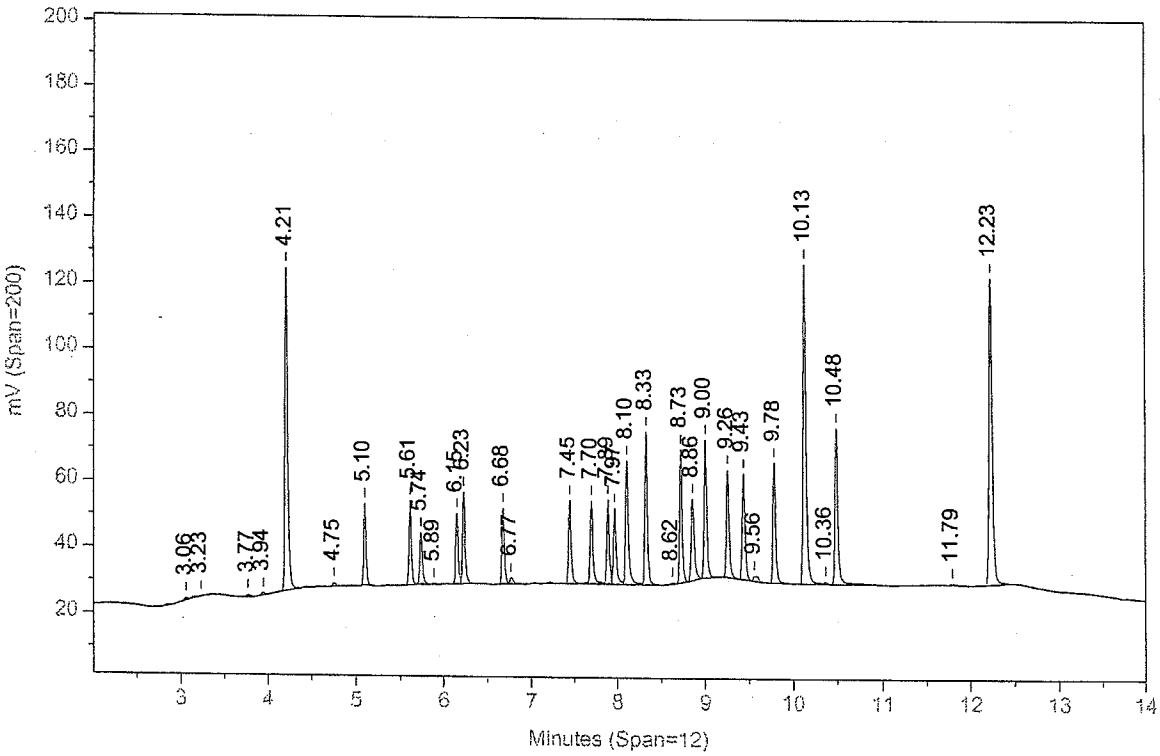
8571

10X REPLOTS

C:\CPWIN\DATA1\1C13051.13R




C:\CPWIN\DATA1\1C13051B.13R



Sample Name: **MIXA403E AAMIXA4AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:24:44pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.14R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 5846.8 | 0.117 | BB | 0.036 | 2683.39 | 0.124 |
| 2 | 4.174 | TCX | 55.7259 | 6.687 | 501249.6 | 9.997 | BB | 0.039 | 211609.30 | 9.785 |
| 3 | 4.747 | HCB | 9.5993 | 1.152 | 5508.3 | 0.110 | BB | 0.034 | 2665.00 | 0.123 |
| 4 | 4.809 | | 0.0000 | 0.000 | 218.6 | 0.004 | BB | 0.021 | 173.13 | 0.008 |
| 5 | 4.998 | alpha-BHC | 16.0395 | 1.925 | 152480.1 | 3.041 | BB | 0.034 | 74216.69 | 3.432 |
| 6 | 5.457 | gamma-BHC | 15.7201 | 1.886 | 146166.3 | 2.915 | BB | 0.034 | 71807.84 | 3.320 |
| 7 | 5.585 | beta-BHC | 14.4213 | 1.731 | 86441.9 | 1.724 | BB | 0.037 | 39306.61 | 1.817 |
| 8 | 5.690 | | 0.0000 | 0.000 | 872.3 | 0.017 | BB | 0.028 | 521.01 | 0.024 |
| 9 | 5.839 | delta-BHC | 15.6390 | 1.877 | 132549.8 | 2.644 | BB | 0.033 | 66562.89 | 3.078 |
| 10 | 6.048 | | 0.0000 | 0.000 | 505.2 | 0.010 | BV | 0.034 | 245.19 | 0.011 |
| 11 | 6.135 | Heptachlor | 14.7691 | 1.772 | 165102.9 | 3.293 | VV | 0.036 | 76298.05 | 3.528 |
| 12 | 6.373 | | 0.0000 | 0.000 | 3074.9 | 0.061 | VV | 0.133 | 385.46 | 0.018 |
| 13 | 6.556 | Aldrin | 15.1741 | 1.821 | 128594.6 | 2.565 | VB | 0.035 | 60499.60 | 2.797 |
| 14 | 6.767 | | 0.0000 | 0.000 | 485.0 | 0.010 | BB | 0.054 | 149.31 | 0.007 |
| 15 | 6.931 | | 0.0000 | 0.000 | 629.6 | 0.013 | BB | 0.046 | 230.62 | 0.011 |
| 16 | 7.018 | | 0.0000 | 0.000 | 392.2 | 0.008 | BB | 0.029 | 228.89 | 0.011 |
| 17 | 7.138 | | 0.0000 | 0.000 | 754.8 | 0.015 | BV | 0.069 | 181.04 | 0.008 |
| 18 | 7.385 | Hept. epoxide | 14.3876 | 1.727 | 144711.7 | 2.886 | VV | 0.038 | 63598.71 | 2.941 |
| 19 | 7.550 | g. Chlordane | 14.5336 | 1.744 | 139300.5 | 2.778 | VV | 0.038 | 61551.38 | 2.846 |
| 20 | 7.726 | a. Chlordane | 14.4307 | 1.732 | 136402.8 | 2.721 | VV | 0.037 | 61505.48 | 2.844 |
| 21 | 7.815 | 4,4'-DDE | 30.9373 | 3.712 | 225035.4 | 4.488 | VV | 0.036 | 105595.00 | 4.883 |
| 22 | 7.914 | Endosulfan I | 14.8345 | 1.780 | 129135.3 | 2.576 | VV | 0.038 | 56834.17 | 2.628 |
| 23 | 8.054 | o,p-DDD | 25.3476 | 3.042 | 531.8 | 0.011 | VB | 0.035 | 253.12 | 0.012 |
| 24 | 8.230 | Dieldrin | 30.6174 | 3.674 | 239067.3 | 4.768 | BB | 0.036 | 111557.10 | 5.158 |
| 25 | 8.373 | o,p-DDT | 59.4031 | 7.128 | 297.4 | 0.006 | BB | 0.028 | 177.64 | 0.008 |
| 26 | 8.537 | Endrin | 30.1839 | 3.622 | 212332.7 | 4.235 | BV | 0.034 | 102604.90 | 4.744 |
| 27 | 8.599 | 4,4'-DDD | 30.5293 | 3.664 | 200701.0 | 4.003 | VV | 0.041 | 81157.48 | 3.753 |
| 28 | 8.833 | Endosulfan II | 29.4517 | 3.534 | 233382.2 | 4.655 | VV | 0.038 | 101844.90 | 4.709 |
| 29 | 8.961 | 4,4'-DDT | 30.1674 | 3.620 | 201283.2 | 4.015 | VV | 0.038 | 89367.99 | 4.132 |
| 30 | 9.161 | | 0.0000 | 0.000 | 1005.8 | 0.020 | VV | 0.099 | 169.38 | 0.008 |
| 31 | 9.235 | | 0.0000 | 0.000 | 10099.8 | 0.201 | VB | 0.041 | 4096.87 | 0.189 |
| 32 | 9.377 | Endrin aldehyde | 29.4057 | 3.529 | 181346.9 | 3.617 | BV | 0.041 | 73088.39 | 3.380 |
| 33 | 9.571 | Methoxychlor | 141.1526 | 16.938 | 593960.9 | 11.846 | VB | 0.040 | 245691.80 | 11.360 |
| 34 | 9.808 | Mirex | 70.9763 | 8.517 | 254.4 | 0.005 | BB | 0.033 | 127.18 | 0.006 |
| 35 | 9.943 | Endo. sulfate | 28.8590 | 3.463 | 207043.8 | 4.129 | BV | 0.039 | 88798.92 | 4.106 |
| 36 | 10.116 | | 0.0000 | 0.000 | 5466.1 | 0.109 | VV | 0.043 | 2105.24 | 0.097 |
| 37 | 10.182 | | 0.0000 | 0.000 | 12196.3 | 0.243 | VB | 0.046 | 4440.59 | 0.205 |
| 38 | 10.311 | Endrin ketone | 29.7052 | 3.565 | 247078.7 | 4.928 | BB | 0.039 | 106202.00 | 4.911 |
| 39 | 10.488 | | 0.0000 | 0.000 | 388.4 | 0.008 | BB | 0.033 | 194.69 | 0.009 |
| 40 | 10.710 | | 0.0000 | 0.000 | 2384.0 | 0.048 | BB | 0.058 | 689.95 | 0.032 |
| 41 | 10.932 | | 0.0000 | 0.000 | 804.6 | 0.016 | BB | 0.105 | 127.23 | 0.006 |
| 42 | 11.163 | | 0.0000 | 0.000 | 216.1 | 0.004 | BB | 0.051 | 70.43 | 0.003 |
| 43 | 11.339 | | 0.0000 | 0.000 | 1912.6 | 0.038 | BB | 0.043 | 735.05 | 0.034 |
| 44 | 11.620 | DCB | 51.3238 | 6.159 | 540690.8 | 10.784 | BB | 0.047 | 191737.30 | 8.866 |
| 45 | 13.489 | | 0.0000 | 0.000 | 15960.1 | 0.318 | BB | 0.444 | 599.51 | 0.028 |

Total Area = 5013863.0, Total Amount = 833.335, Total Height = 2162687.0, Sample Units = PPB

Sample Name: **MIXA403E AAMIXA4AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:24:44pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.14R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

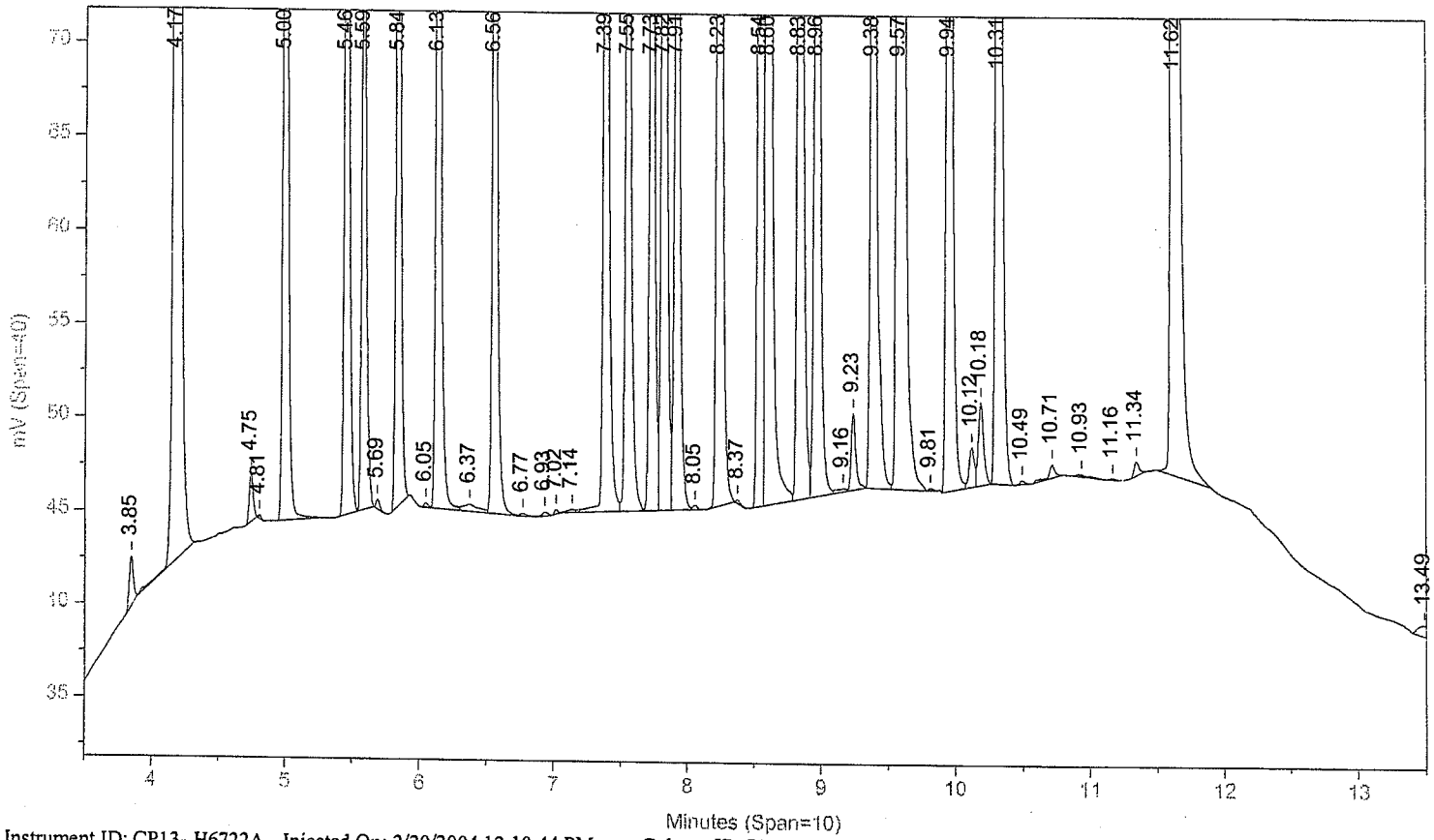
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.063 | | 0.0000 | 0.000 | 1858.6 | 0.064 | BB | 0.046 | 679.08 | 0.050 |
| 2 | 3.365 | | 0.0000 | 0.000 | 23722.7 | 0.814 | BB | 0.346 | 1143.56 | 0.085 |
| 3 | 3.771 | | 0.0000 | 0.000 | 1339.9 | 0.046 | BB | 0.043 | 520.38 | 0.039 |
| 4 | 3.937 | | 0.0000 | 0.000 | 2398.6 | 0.082 | BB | 0.037 | 1073.63 | 0.079 |
| 5 | 4.208 | TCX | 58.1021 | 8.323 | 312013.6 | 10.707 | BB | 0.035 | 147777.40 | 10.942 |
| 6 | 4.687 | | 0.0000 | 0.000 | 2014.0 | 0.069 | BB | 0.508 | 66.13 | 0.005 |
| 7 | 4.748 | | 0.0000 | 0.000 | 5487.1 | 0.188 | BB | 0.057 | 1604.86 | 0.119 |
| 8 | 5.100 | alpha-BHC | 16.8601 | 2.415 | 74000.4 | 2.539 | BB | 0.030 | 41648.73 | 3.084 |
| 9 | 5.613 | gamma-BHC | 16.5656 | 2.373 | 76224.2 | 2.616 | BB | 0.030 | 41940.39 | 3.106 |
| 10 | 5.737 | beta-BHC | 14.8069 | 2.121 | 49795.5 | 1.709 | BV | 0.035 | 23807.17 | 1.763 |
| 11 | 5.881 | | 0.0000 | 0.000 | 807.2 | 0.028 | VB | 0.037 | 368.39 | 0.027 |
| 12 | 6.149 | delta-BHC | 15.9830 | 2.290 | 65210.8 | 2.238 | BV | 0.031 | 34991.38 | 2.591 |
| 13 | 6.229 | Heptachlor | 15.1626 | 2.172 | 85243.1 | 2.925 | VB | 0.033 | 43253.55 | 3.203 |
| 14 | 6.676 | Aldrin | 15.9358 | 2.283 | 70367.6 | 2.415 | BB | 0.032 | 36882.23 | 2.731 |
| 15 | 7.212 | | 0.0000 | 0.000 | 662.2 | 0.023 | BB | 0.035 | 312.77 | 0.023 |
| 16 | 7.448 | Hept. epoxide | 15.1671 | 2.173 | 80865.8 | 2.775 | BV | 0.034 | 39117.39 | 2.897 |
| 17 | 7.698 | g. Chlordane | 18.5319 | 2.655 | 82341.9 | 2.826 | VV | 0.035 | 38952.29 | 2.884 |
| 18 | 7.890 | a. Chlordane | 14.5387 | 2.083 | 80434.6 | 2.760 | VV | 0.034 | 39327.37 | 2.912 |
| 19 | 7.969 | Endosulfan I | 14.5281 | 2.081 | 76362.1 | 2.620 | VV | 0.036 | 35695.36 | 2.643 |
| 20 | 8.105 | 4,4'-DDE | 31.6761 | 4.538 | 137506.7 | 4.719 | VV | 0.037 | 61371.09 | 4.544 |
| 21 | 8.327 | Dieldrin | 31.8072 | 4.557 | 144625.4 | 4.963 | VB | 0.032 | 74376.41 | 5.507 |
| 22 | 8.726 | Endrin | 31.9150 | 4.572 | 124000.0 | 4.255 | BB | 0.032 | 64686.03 | 4.790 |
| 23 | 8.856 | 4,4'-DDD | 33.0040 | 4.728 | 95891.2 | 3.291 | BB | 0.039 | 41118.79 | 3.045 |
| 24 | 9.001 | Endosulfan II | 31.0753 | 4.452 | 134788.3 | 4.625 | BB | 0.034 | 65615.13 | 4.859 |
| 25 | 9.257 | 4,4'-DDT | 31.8877 | 4.568 | 110418.8 | 3.789 | BB | 0.036 | 51754.23 | 3.832 |
| 26 | 9.433 | Endrin aldehyde | 29.9669 | 4.293 | 106940.0 | 3.670 | BB | 0.036 | 49368.46 | 3.656 |
| 27 | 9.562 | | 0.0000 | 0.000 | 9038.3 | 0.310 | BB | 0.062 | 2432.51 | 0.180 |
| 28 | 9.785 | Endo. sulfate | 30.5492 | 4.376 | 121169.4 | 4.158 | BB | 0.035 | 57040.20 | 4.224 |
| 29 | 10.128 | Methoxychlor | 147.3476 | 21.108 | 324161.2 | 11.124 | BB | 0.037 | 146587.70 | 10.854 |
| 30 | 10.289 | | 0.0000 | 0.000 | 492.7 | 0.017 | BB | 0.024 | 347.51 | 0.026 |
| 31 | 10.369 | | 0.0000 | 0.000 | 1940.7 | 0.067 | BB | 0.034 | 955.38 | 0.071 |
| 32 | 10.485 | Endrin ketone | 30.0024 | 4.298 | 161043.3 | 5.526 | BB | 0.037 | 72856.79 | 5.395 |
| 33 | 11.795 | | 0.0000 | 0.000 | 2516.9 | 0.086 | BB | 0.066 | 639.70 | 0.047 |
| 34 | 12.230 | DCB | 52.6478 | 7.542 | 348500.2 | 11.959 | BB | 0.044 | 132191.10 | 9.788 |

Total Area = 2914183.0, Total Amount = 698.061, Total Height = 1350503.0, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.14R

C:\CPWIN\DATA1\1C13051.14R

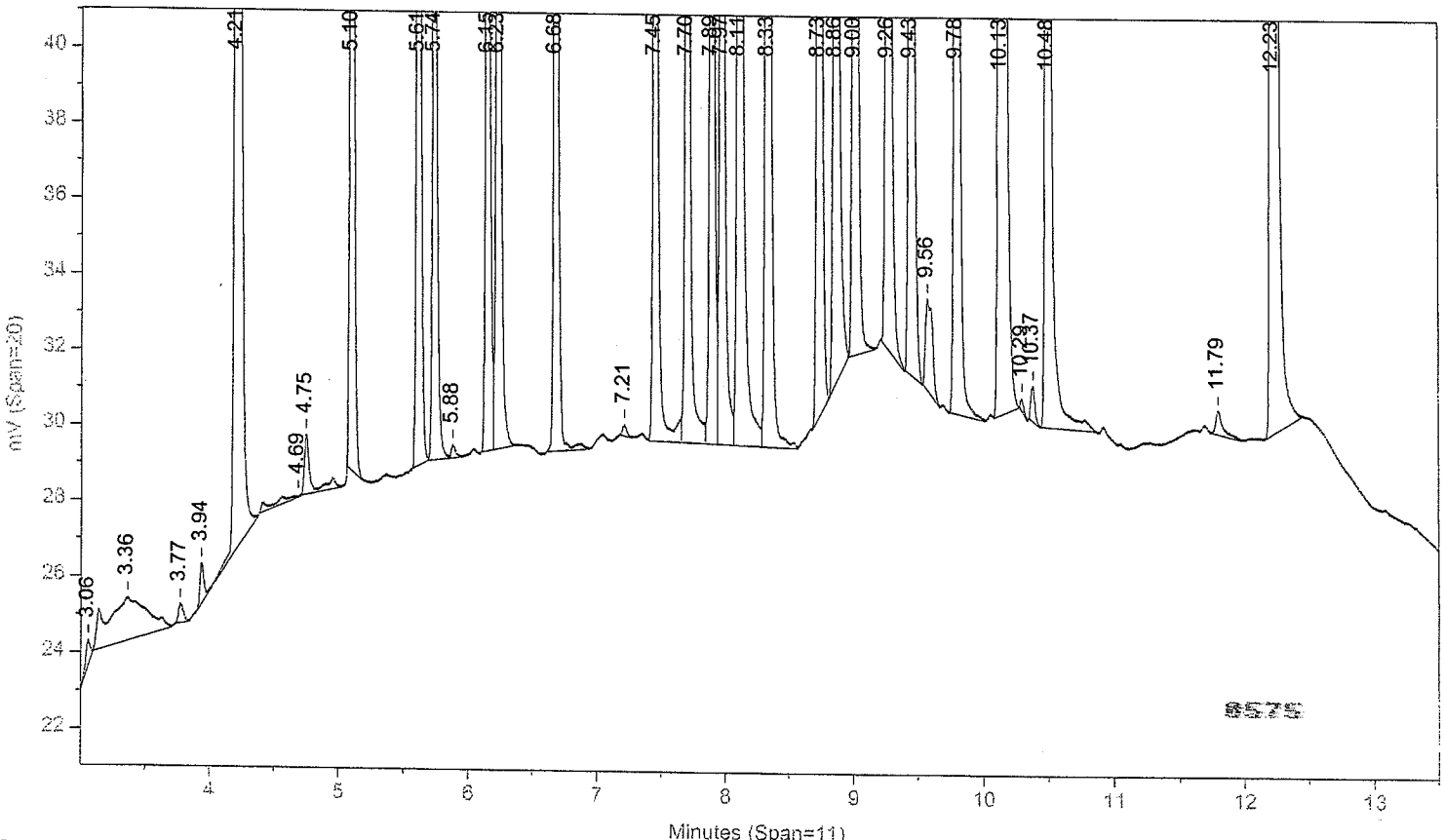



Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:10:44 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.14R

C:\CPWIN\DATA1\1C13051B.14R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:10:44 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

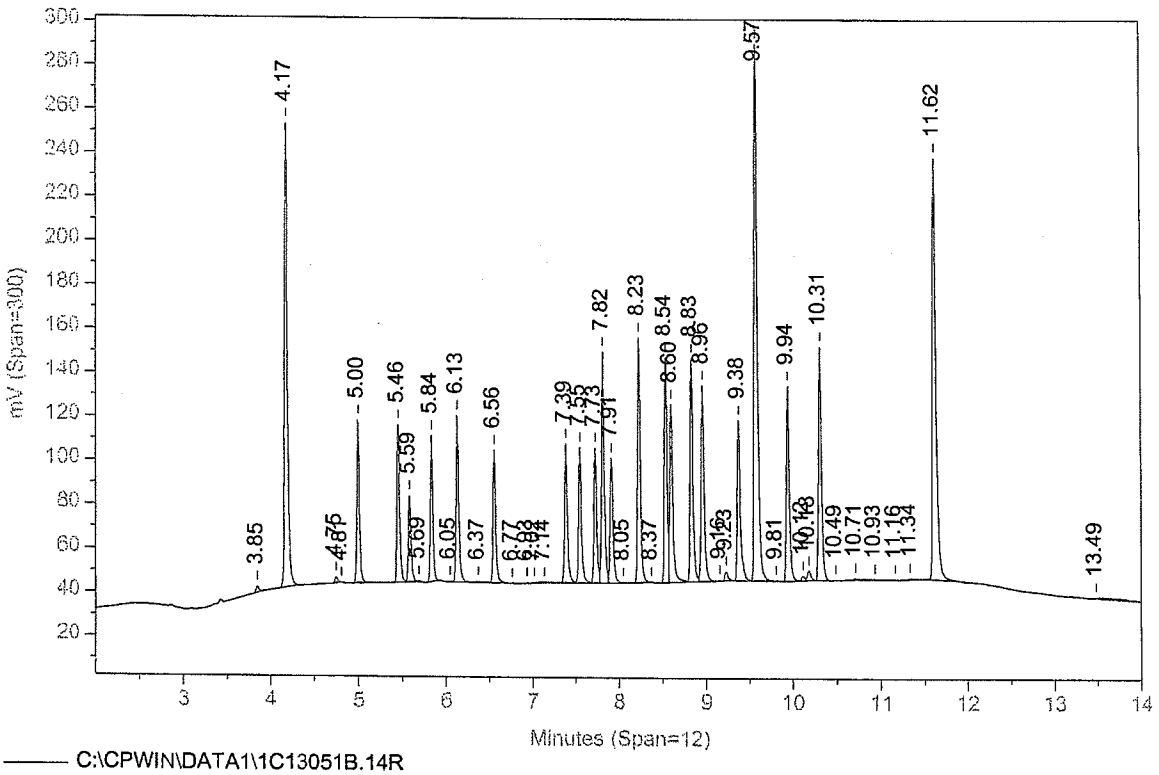
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 211609 | 55.72591 | TCX | 4.208 | 147777 | 58.10209 | TCX |
| 4.747 | 2665 | 9.59931 | HCB | . | 0 | . | HCB |
| 4.998 | 74217 | 16.03952 | alpha-BHC | 5.1 | 41649 | 16.86007 | alpha-BHC |
| 5.457 | 71808 | 15.72011 | gamma-BHC | 5.613 | 41940 | 16.56557 | gamma-BHC |
| 5.585 | 39307 | 14.42128 | beta-BHC | 5.737 | 23807 | 14.80695 | beta-BHC |
| 5.839 | 66563 | 15.63903 | delta-BHC | 6.149 | 34991 | 15.98299 | delta-BHC |
| 6.135 | 76298 | 14.7691 | Heptachlor | 6.229 | 43254 | 15.16259 | Heptachlor |
| 6.556 | 60500 | 15.17408 | Aldrin | 6.676 | 36882 | 15.93576 | Aldrin |
| 7.385 | 63599 | 14.38763 | Hept. epoxide | 7.448 | 39117 | 15.16713 | Hept. epoxide |
| 7.55 | 61551 | 14.53359 | g. Chlordane | 7.698 | 38952 | 18.5319 | g. Chlordane |
| 7.726 | 61505 | 14.43071 | a. Chlordane | 7.89 | 39327 | 14.53866 | a. Chlordane |
| 7.815 | 105595 | 30.93725 | 4,4'-DDE | 8.105 | 61371 | 31.67611 | 4,4'-DDE |
| 7.914 | 56834 | 14.83448 | Endosulfan I | 7.969 | 35695 | 14.52812 | Endosulfan I |
| 8.054 | 253 | 25.34764 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.23 | 111557 | 30.61736 | Dieldrin | 8.327 | 74376 | 31.80724 | Dieldrin |
| 8.373 | 178 | 59.40315 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.537 | 102605 | 30.18389 | Endrin | 8.726 | 64686 | 31.91504 | Endrin |
| 8.599 | 81157 | 30.5293 | 4,4'-DDD | 8.856 | 41119 | 33.00395 | 4,4'-DDD |
| 8.833 | 101845 | 29.45172 | Endosulfan II | 9.001 | 65615 | 31.07532 | Endosulfan II |
| 8.961 | 89368 | 30.16737 | 4,4'-DDT | 9.257 | 51754 | 31.88774 | 4,4'-DDT |
| 9.377 | 73088 | 29.40565 | Endrin aldehyde | 9.433 | 49368 | 29.96695 | Endrin aldehyde |
| 9.571 | 245692 | 141.1526 | Methoxychlor | 10.128 | 146588 | 147.3476 | Methoxychlor |
| 9.943 | 88799 | 28.85901 | Endo. sulfate | 9.785 | 57040 | 30.54925 | Endo. sulfate |
| 9.808 | 127 | 70.97627 | Mirex | . | 0 | . | Mirex |
| 10.311 | 106202 | 29.70523 | Endrin ketone | 10.485 | 72857 | 30.00239 | Endrin ketone |
| 11.62 | 191737 | 51.32378 | DCB | 12.23 | 132191 | 52.64779 | DCB |

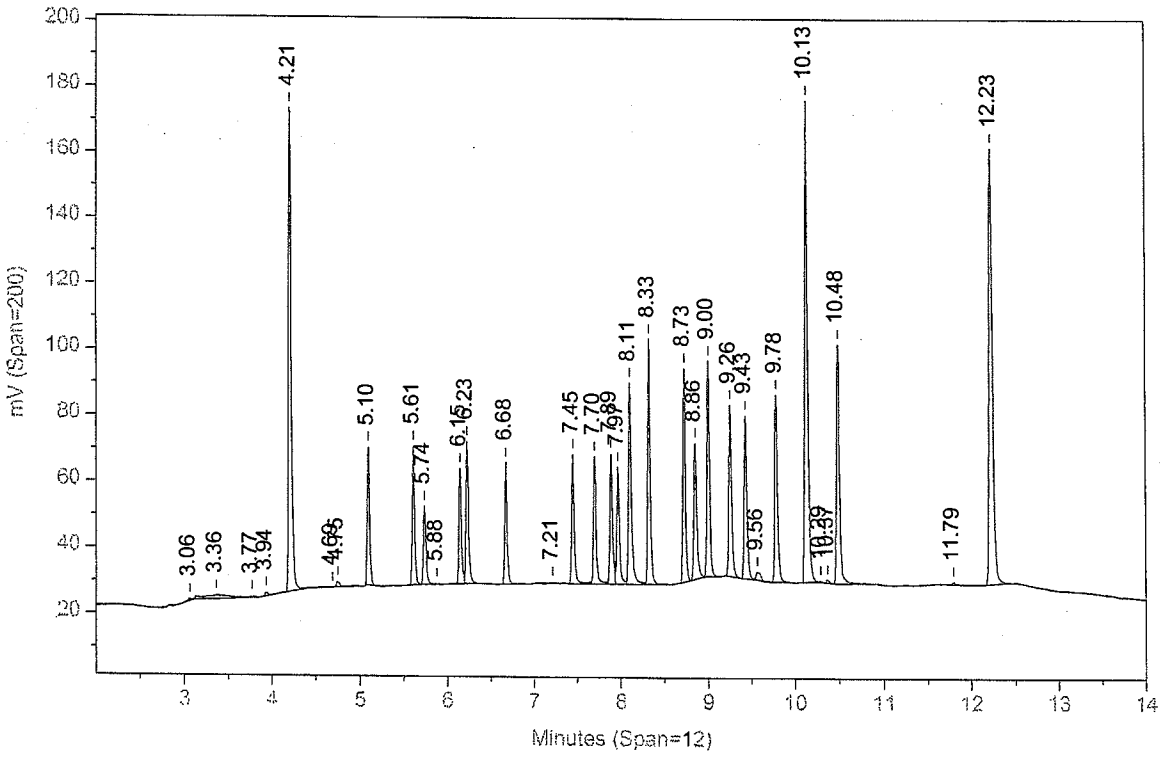
Files:
Area File: C:\CPWIN\DATA1\1C13051.14A
Area File: C:\CPWIN\DATA1\1C13051B.14A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:03:22 AM
File Reported On: 2/23/2004 at 10:03:32 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.14R




C:\CPWIN\DATA1\1C13051B.14R



Sample Name: **MIXA503D AAMIXA5AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:45:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.15R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 7336.2 | 0.112 | BB | 0.037 | 3328.09 | 0.118 |
| 2 | 3.932 | | 0.0000 | 0.000 | 823.3 | 0.013 | BB | 0.033 | 417.35 | 0.015 |
| 3 | 4.173 | TCX | 72.7431 | 6.454 | 655334.8 | 10.041 | BB | 0.040 | 276229.30 | 9.783 |
| 4 | 4.626 | | 0.0000 | 0.000 | 1171.5 | 0.018 | BB | 0.141 | 138.77 | 0.005 |
| 5 | 4.746 | HCB | 12.6942 | 1.126 | 7311.9 | 0.112 | BB | 0.035 | 3524.20 | 0.125 |
| 6 | 4.806 | | 0.0000 | 0.000 | 290.6 | 0.004 | BB | 0.023 | 209.86 | 0.007 |
| 7 | 4.996 | alpha-BHC | 21.6718 | 1.923 | 205663.7 | 3.151 | BB | 0.034 | 100278.10 | 3.551 |
| 8 | 5.456 | gamma-BHC | 20.9641 | 1.860 | 195085.2 | 2.989 | BB | 0.034 | 95761.69 | 3.391 |
| 9 | 5.584 | beta-BHC | 18.6968 | 1.659 | 111928.0 | 1.715 | BB | 0.037 | 50960.01 | 1.805 |
| 10 | 5.689 | | 0.0000 | 0.000 | 1154.6 | 0.018 | BB | 0.027 | 705.28 | 0.025 |
| 11 | 5.838 | delta-BHC | 21.2270 | 1.883 | 184838.0 | 2.832 | BB | 0.034 | 90346.62 | 3.200 |
| 12 | 6.046 | | 0.0000 | 0.000 | 721.2 | 0.011 | BV | 0.037 | 329.26 | 0.012 |
| 13 | 6.133 | Heptachlor | 19.3124 | 1.714 | 215409.7 | 3.301 | VV | 0.036 | 99769.20 | 3.533 |
| 14 | 6.337 | | 0.0000 | 0.000 | 3354.3 | 0.051 | VV | 0.121 | 463.12 | 0.016 |
| 15 | 6.554 | Aldrin | 20.3005 | 1.801 | 170259.4 | 2.609 | VB | 0.035 | 80938.68 | 2.866 |
| 16 | 6.766 | | 0.0000 | 0.000 | 380.2 | 0.006 | BB | 0.050 | 125.52 | 0.004 |
| 17 | 6.931 | | 0.0000 | 0.000 | 359.3 | 0.006 | BB | 0.052 | 115.22 | 0.004 |
| 18 | 7.015 | | 0.0000 | 0.000 | 630.6 | 0.010 | BB | 0.031 | 341.60 | 0.012 |
| 19 | 7.134 | | 0.0000 | 0.000 | 1024.7 | 0.016 | BV | 0.088 | 193.01 | 0.007 |
| 20 | 7.383 | Hept. epoxide | 18.7949 | 1.668 | 186464.3 | 2.857 | VV | 0.037 | 83080.45 | 2.942 |
| 21 | 7.548 | g. Chlordane | 18.9782 | 1.684 | 180405.9 | 2.764 | VV | 0.037 | 80374.92 | 2.847 |
| 22 | 7.724 | a. Chlordane | 18.7321 | 1.662 | 175724.4 | 2.693 | VV | 0.037 | 79838.31 | 2.828 |
| 23 | 7.814 | 4,4'-DDE | 41.0601 | 3.643 | 299679.5 | 4.592 | VV | 0.036 | 140146.30 | 4.963 |
| 24 | 7.912 | Endosulfan I | 19.3641 | 1.718 | 168052.0 | 2.575 | VV | 0.038 | 74187.95 | 2.627 |
| 25 | 8.050 | o,p-DDD | 26.2756 | 2.331 | 561.6 | 0.009 | VB | 0.036 | 262.39 | 0.009 |
| 26 | 8.228 | Dieldrin | 40.5866 | 3.601 | 314561.2 | 4.820 | BB | 0.035 | 147881.00 | 5.237 |
| 27 | 8.370 | o,p-DDT | 81.1937 | 7.204 | 423.5 | 0.006 | BB | 0.029 | 242.81 | 0.009 |
| 28 | 8.535 | Endrin | 39.7670 | 3.528 | 282151.4 | 4.323 | BV | 0.035 | 135181.20 | 4.788 |
| 29 | 8.597 | 4,4'-DDD | 40.2812 | 3.574 | 261674.4 | 4.009 | VV | 0.041 | 107081.30 | 3.792 |
| 30 | 8.830 | Endosulfan II | 38.3218 | 3.400 | 302738.0 | 4.639 | VV | 0.038 | 132518.00 | 4.693 |
| 31 | 8.959 | 4,4'-DDT | 39.4827 | 3.503 | 264300.1 | 4.050 | VV | 0.038 | 116963.80 | 4.142 |
| 32 | 9.111 | | 0.0000 | 0.000 | 580.2 | 0.009 | VV | 0.043 | 224.77 | 0.008 |
| 33 | 9.158 | | 0.0000 | 0.000 | 522.5 | 0.008 | VV | 0.045 | 191.43 | 0.007 |
| 34 | 9.232 | | 0.0000 | 0.000 | 12923.3 | 0.198 | VB | 0.040 | 5318.64 | 0.188 |
| 35 | 9.374 | Endrin aldehyde | 37.6332 | 3.339 | 233757.5 | 3.582 | BV | 0.042 | 93538.18 | 3.313 |
| 36 | 9.569 | Methoxychlor | 180.0597 | 15.977 | 760690.1 | 11.656 | VV | 0.040 | 313414.00 | 11.100 |
| 37 | 9.803 | Mirex | 136.8401 | 12.142 | 713.0 | 0.011 | VB | 0.048 | 245.19 | 0.009 |
| 38 | 9.940 | Endo. sulfate | 37.5044 | 3.328 | 268615.1 | 4.116 | BV | 0.039 | 115400.80 | 4.087 |
| 39 | 10.113 | | 0.0000 | 0.000 | 6837.0 | 0.105 | VV | 0.042 | 2720.07 | 0.096 |
| 40 | 10.180 | | 0.0000 | 0.000 | 10913.6 | 0.167 | VB | 0.046 | 3997.39 | 0.142 |
| 41 | 10.308 | Endrin ketone | 38.6746 | 3.432 | 321755.7 | 4.930 | BB | 0.039 | 138269.40 | 4.897 |
| 42 | 10.483 | | 0.0000 | 0.000 | 501.6 | 0.008 | BB | 0.032 | 262.20 | 0.009 |
| 43 | 10.712 | | 0.0000 | 0.000 | 892.0 | 0.014 | BB | 0.070 | 213.55 | 0.008 |
| 44 | 11.336 | | 0.0000 | 0.000 | 2829.3 | 0.043 | BB | 0.046 | 1033.68 | 0.037 |
| 45 | 11.479 | | 0.0000 | 0.000 | 173.1 | 0.003 | BB | 0.066 | 43.99 | 0.002 |
| 46 | 11.616 | DCB | 65.8642 | 5.844 | 686504.0 | 10.519 | BB | 0.047 | 246058.10 | 8.714 |
| 47 | 13.521 | | 0.0000 | 0.000 | 18405.3 | 0.282 | BB | 0.405 | 756.90 | 0.027 |

Total Area = 6526427.0, Total Amount = 1127.024, Total Height = 2823622.0, Sample Units = PPB

Sample Name: **MIXA503D AAMIXA5AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:45:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.15R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 2174.3 | 0.057 | BB | 0.043 | 847.52 | 0.047 |
| 2 | 3.141 | | 0.0000 | 0.000 | 1883.1 | 0.050 | BB | 0.046 | 678.03 | 0.038 |
| 3 | 3.361 | | 0.0000 | 0.000 | 3384.7 | 0.089 | BB | 0.135 | 419.01 | 0.023 |
| 4 | 3.629 | | 0.0000 | 0.000 | 702.8 | 0.019 | BB | 0.034 | 342.21 | 0.019 |
| 5 | 3.769 | | 0.0000 | 0.000 | 1480.9 | 0.039 | BB | 0.045 | 547.89 | 0.031 |
| 6 | 3.940 | | 0.0000 | 0.000 | 2997.5 | 0.079 | BB | 0.037 | 1339.50 | 0.075 |
| 7 | 4.207 | TCX | 76.0392 | 8.271 | 409890.3 | 10.801 | BB | 0.035 | 193398.90 | 10.785 |
| 8 | 4.560 | | 0.0000 | 0.000 | 2276.6 | 0.060 | BB | 0.147 | 258.98 | 0.014 |
| 9 | 4.748 | | 0.0000 | 0.000 | 4845.3 | 0.128 | BB | 0.038 | 2104.92 | 0.117 |
| 10 | 5.099 | alpha-BHC | 23.7624 | 2.585 | 102625.2 | 2.704 | BB | 0.029 | 58699.23 | 3.273 |
| 11 | 5.613 | gamma-BHC | 22.7979 | 2.480 | 104398.5 | 2.751 | BB | 0.030 | 57719.29 | 3.219 |
| 12 | 5.737 | beta-BHC | 19.5623 | 2.128 | 64689.6 | 1.705 | BB | 0.034 | 31452.99 | 1.754 |
| 13 | 5.886 | | 0.0000 | 0.000 | 807.3 | 0.021 | BB | 0.034 | 397.37 | 0.022 |
| 14 | 6.149 | delta-BHC | 22.3376 | 2.430 | 89848.1 | 2.368 | BV | 0.031 | 48903.42 | 2.727 |
| 15 | 6.228 | Heptachlor | 20.2934 | 2.208 | 112188.8 | 2.956 | VB | 0.032 | 57890.02 | 3.228 |
| 16 | 6.675 | Aldrin | 21.7989 | 2.371 | 94367.5 | 2.487 | BB | 0.031 | 50452.07 | 2.814 |
| 17 | 7.215 | | 0.0000 | 0.000 | 1702.5 | 0.045 | BB | 0.074 | 382.35 | 0.021 |
| 18 | 7.447 | Hept. epoxide | 20.2409 | 2.202 | 105345.7 | 2.776 | BV | 0.034 | 52202.98 | 2.911 |
| 19 | 7.697 | g. Chlordane | 19.8814 | 2.163 | 106899.2 | 2.817 | VV | 0.034 | 51978.74 | 2.899 |
| 20 | 7.888 | a. Chlordane | 19.3093 | 2.100 | 103211.9 | 2.720 | VV | 0.033 | 52232.08 | 2.913 |
| 21 | 7.967 | Endosulfan I | 19.3268 | 2.102 | 99227.8 | 2.615 | VV | 0.035 | 47485.75 | 2.648 |
| 22 | 8.104 | 4,4'-DDE | 43.2572 | 4.705 | 183174.4 | 4.827 | VV | 0.036 | 83808.98 | 4.674 |
| 23 | 8.325 | Dieldrin | 42.9888 | 4.676 | 191778.2 | 5.054 | VB | 0.032 | 100522.70 | 5.606 |
| 24 | 8.725 | Endrin | 42.9545 | 4.673 | 165545.6 | 4.362 | BB | 0.032 | 87060.96 | 4.855 |
| 25 | 8.855 | 4,4'-DDD | 45.0128 | 4.896 | 129167.6 | 3.404 | BB | 0.038 | 56080.36 | 3.127 |
| 26 | 8.999 | Endosulfan II | 41.1934 | 4.481 | 177030.0 | 4.665 | BB | 0.034 | 86979.25 | 4.850 |
| 27 | 9.255 | 4,4'-DDT | 43.1304 | 4.692 | 148663.7 | 3.917 | BB | 0.035 | 70001.16 | 3.904 |
| 28 | 9.431 | Endrin aldehyde | 39.0439 | 4.247 | 138159.9 | 3.641 | BB | 0.036 | 64322.07 | 3.587 |
| 29 | 9.560 | | 0.0000 | 0.000 | 12081.7 | 0.318 | BB | 0.063 | 3179.25 | 0.177 |
| 30 | 9.783 | Endo. sulfate | 40.4548 | 4.401 | 159612.7 | 4.206 | BB | 0.035 | 75535.36 | 4.212 |
| 31 | 10.125 | Methoxychlor | 189.0107 | 20.560 | 416870.6 | 10.985 | BB | 0.037 | 188035.90 | 10.486 |
| 32 | 10.288 | | 0.0000 | 0.000 | 850.4 | 0.022 | BB | 0.028 | 503.59 | 0.028 |
| 33 | 10.363 | | 0.0000 | 0.000 | 2767.9 | 0.073 | BB | 0.036 | 1266.48 | 0.071 |
| 34 | 10.483 | Endrin ketone | 39.5389 | 4.301 | 206585.7 | 5.444 | BB | 0.036 | 96014.82 | 5.354 |
| 35 | 10.916 | | 0.0000 | 0.000 | 703.1 | 0.019 | BB | 0.041 | 282.84 | 0.016 |
| 36 | 11.796 | | 0.0000 | 0.000 | 2552.6 | 0.067 | BB | 0.057 | 751.94 | 0.042 |
| 37 | 12.227 | DCB | 67.3574 | 7.327 | 444388.3 | 11.710 | BB | 0.044 | 169124.70 | 9.431 |

Total Area = 3794880.0, Total Amount = 919.293, Total Height = 1793204.0, Sample Units = PPB

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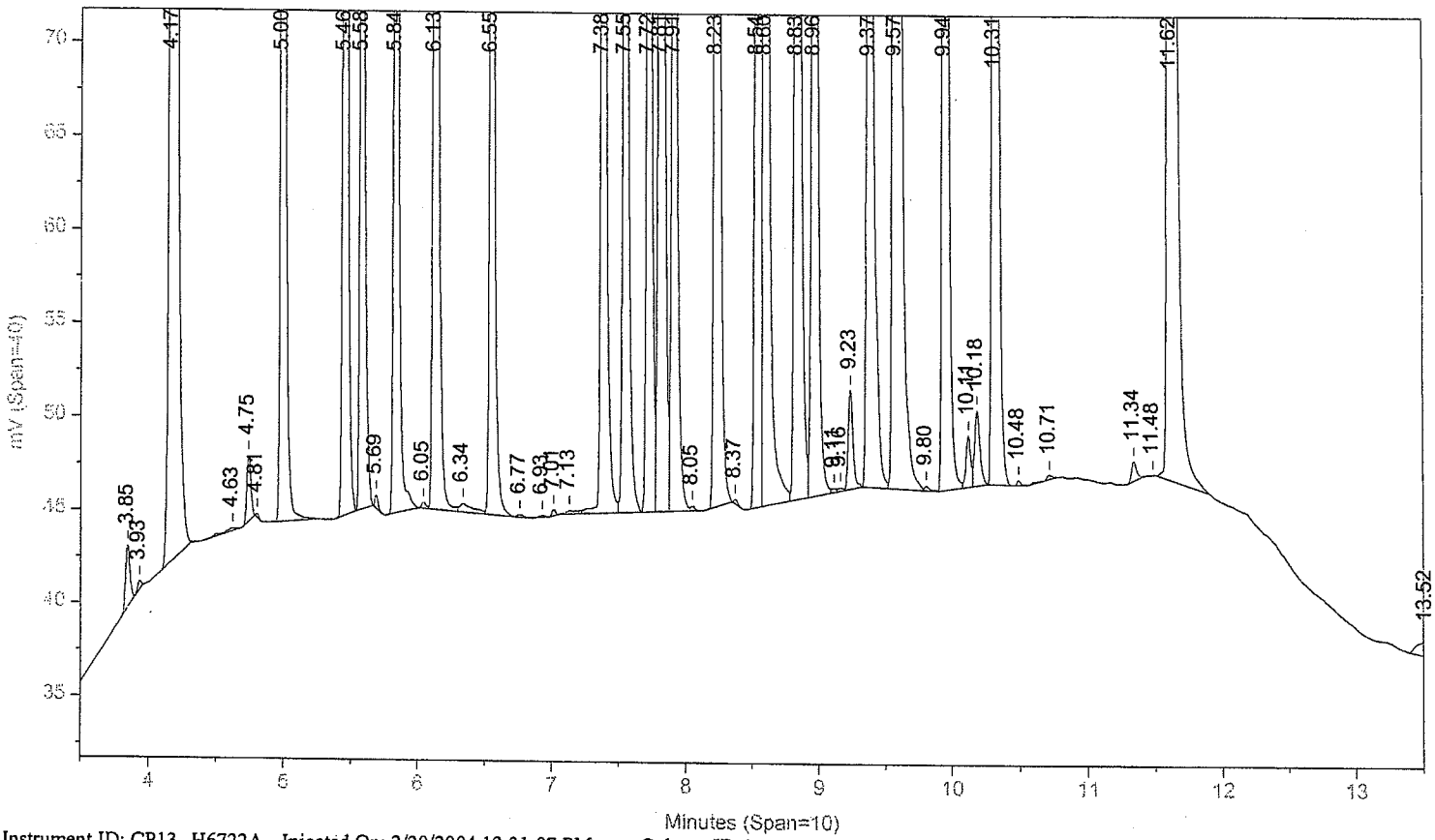
File: C:\CPWIN\DATA1\1C13051.15R

C:\CPWIN\DATA1\1C13051.15R

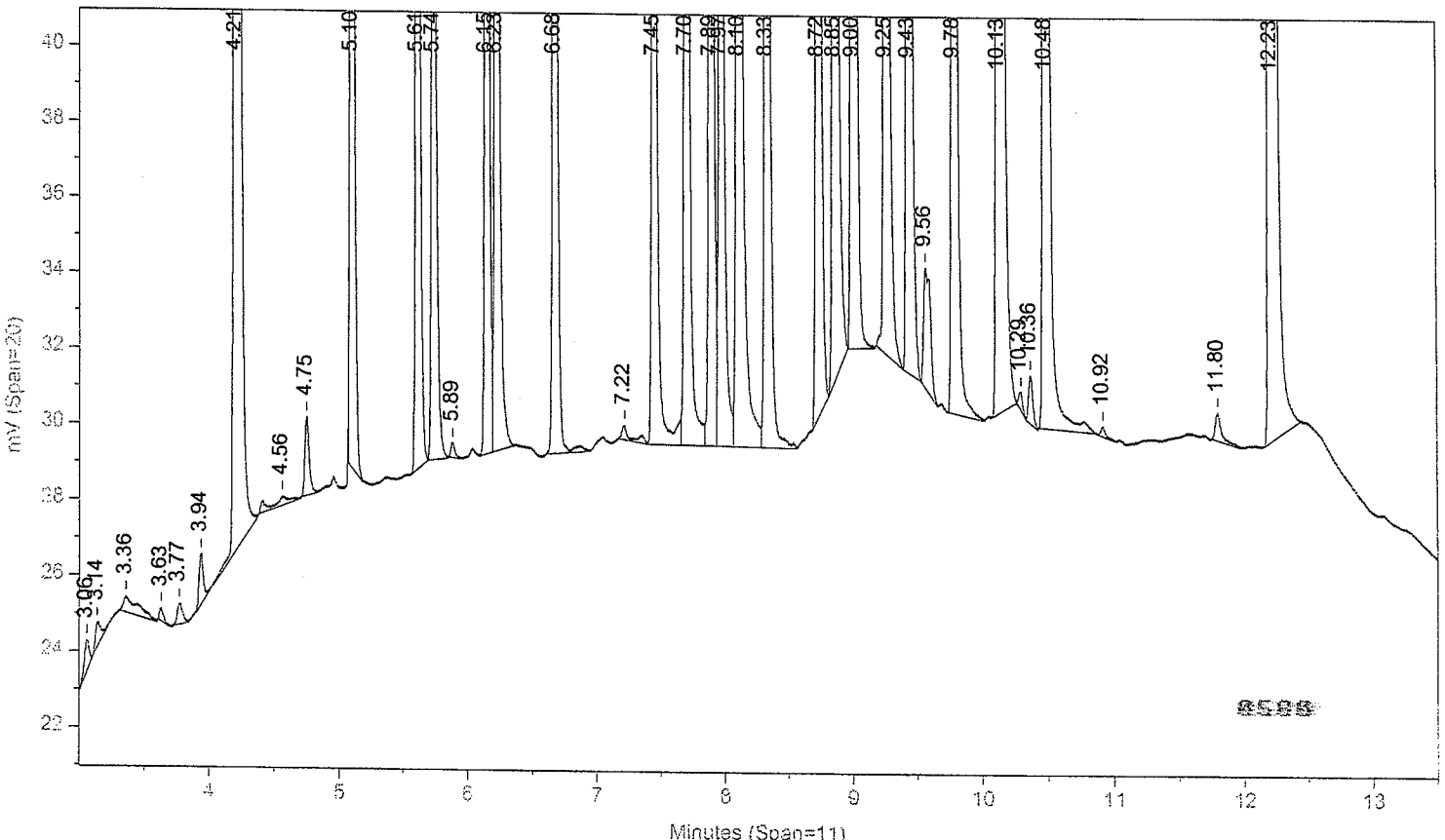



Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:31:07 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.15R

C:\CPWIN\DATA1\1C13051B.15R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:31:07 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

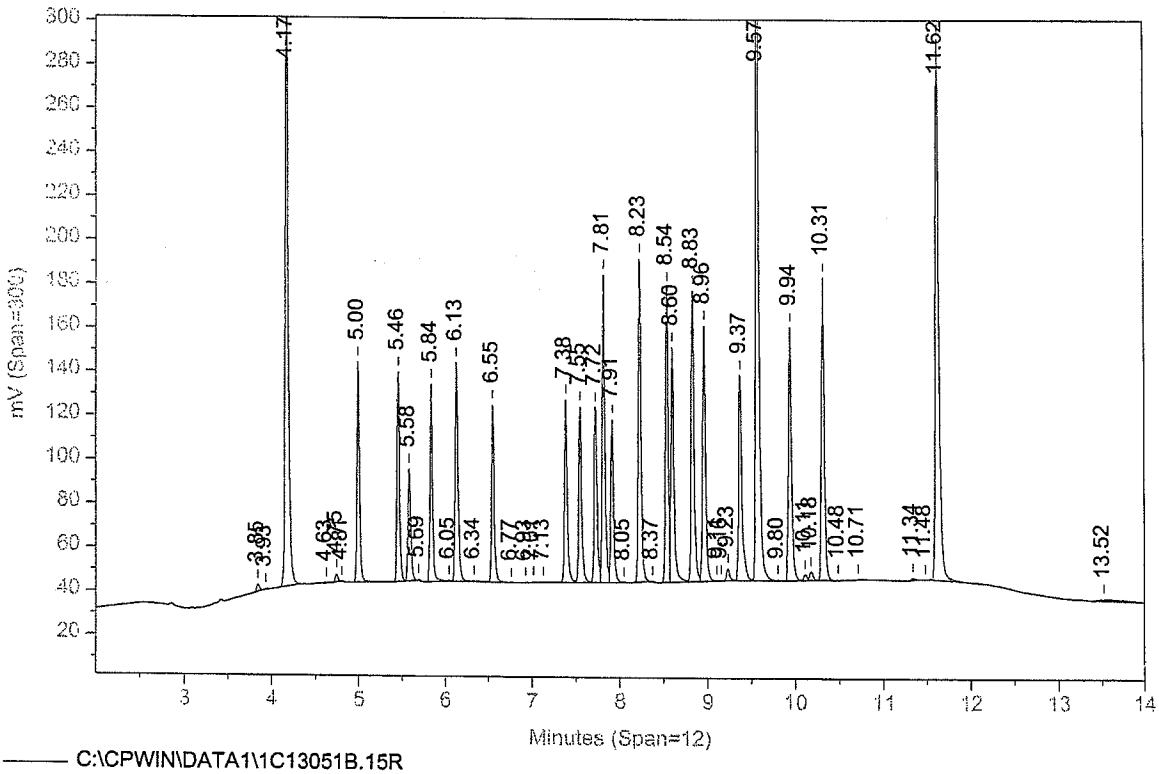
Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 276229 | 72.74315 | TCX | 4.207 | 193399 | 76.03922 | TCX |
| 4.746 | 3524 | 12.69417 | HCB | . | 0 | . | HCB |
| 4.996 | 100278 | 21.67184 | alpha-BHC | 5.099 | 58699 | 23.76237 | alpha-BHC |
| 5.456 | 95762 | 20.96407 | gamma-BHC | 5.613 | 57719 | 22.79791 | gamma-BHC |
| 5.584 | 50960 | 18.69683 | beta-BHC | 5.737 | 31453 | 19.56229 | beta-BHC |
| 5.838 | 90347 | 21.22704 | delta-BHC | 6.149 | 48903 | 22.33758 | delta-BHC |
| 6.133 | 99769 | 19.31244 | Heptachlor | 6.228 | 57890 | 20.29343 | Heptachlor |
| 6.554 | 80939 | 20.30047 | Aldrin | 6.675 | 50452 | 21.79891 | Aldrin |
| 7.383 | 83080 | 18.79489 | Hept. epoxide | 7.447 | 52203 | 20.24085 | Hept. epoxide |
| 7.548 | 80375 | 18.97823 | g. Chlordane | 7.697 | 51979 | 19.88144 | g. Chlordane |
| 7.724 | 79838 | 18.73205 | a. Chlordane | 7.888 | 52232 | 19.30932 | a. Chlordane |
| 7.814 | 140146 | 41.06011 | 4,4'-DDE | 8.104 | 83809 | 43.25721 | 4,4'-DDE |
| 7.912 | 74188 | 19.36405 | Endosulfan I | 7.967 | 47486 | 19.32684 | Endosulfan I |
| 8.05 | 262 | 26.27556 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.228 | 147881 | 40.58663 | Dieldrin | 8.325 | 100523 | 42.98877 | Dieldrin |
| 8.37 | 243 | 81.1937 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.535 | 135181 | 39.76704 | Endrin | 8.725 | 87061 | 42.95448 | Endrin |
| 8.597 | 107081 | 40.28115 | 4,4'-DDD | 8.855 | 56080 | 45.01284 | 4,4'-DDD |
| 8.83 | 132518 | 38.32182 | Endosulfan II | 8.999 | 86979 | 41.19336 | Endosulfan II |
| 8.959 | 116964 | 39.4827 | 4,4'-DDT | 9.255 | 70001 | 43.13036 | 4,4'-DDT |
| 9.374 | 93538 | 37.63322 | Endrin aldehyde | 9.431 | 64322 | 39.04388 | Endrin aldehyde |
| 9.569 | 313414 | 180.0597 | Methoxychlor | 10.125 | 188036 | 189.0107 | Methoxychlor |
| 9.94 | 115401 | 37.50443 | Endo. sulfate | 9.783 | 75535 | 40.45477 | Endo. sulfate |
| 9.803 | 245 | 136.8402 | Mirex | . | 0 | . | Mirex |
| 10.308 | 138269 | 38.67463 | Endrin ketone | 10.483 | 96015 | 39.53886 | Endrin ketone |
| 11.616 | 246058 | 65.86424 | DCB | 12.227 | 169125 | 67.35736 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.15A
Area File: C:\CPWIN\DATA1\1C13051B.15A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:03:44 AM
File Reported On: 2/23/2004 at 10:03:55 AM

C:\CPWIN\DATA1\1C13051.15R

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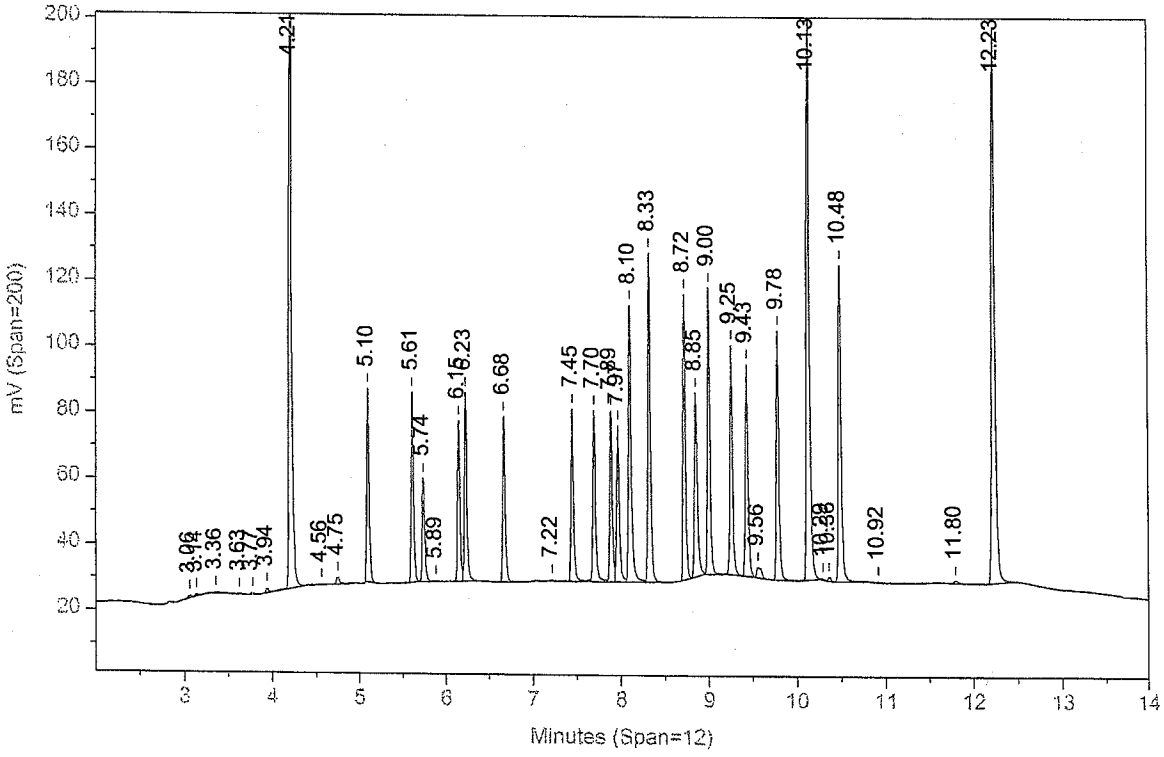


Sample Name: **ICMAX03F AAICMAXAA CCAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 01:05:32pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.16R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 4379.4 | 0.127 | BB | 0.037 | 1988.78 | 0.137 |
| 2 | 4.174 | TCX | 38.0778 | 7.694 | 344277.7 | 10.009 | BB | 0.040 | 144593.70 | 9.935 |
| 3 | 4.746 | HCB | 6.4459 | 1.302 | 3745.8 | 0.109 | BB | 0.035 | 1789.52 | 0.123 |
| 4 | 4.808 | | 0.0000 | 0.000 | 160.3 | 0.005 | BB | 0.024 | 113.43 | 0.008 |
| 5 | 4.997 | alpha-BHC | 9.5722 | 1.934 | 90279.6 | 2.625 | BB | 0.034 | 44291.77 | 3.043 |
| 6 | 5.103 | | 0.0000 | 0.000 | 448.8 | 0.013 | BB | 0.032 | 236.72 | 0.016 |
| 7 | 5.456 | gamma-BHC | 10.0964 | 2.040 | 94842.7 | 2.757 | BB | 0.034 | 46119.09 | 3.169 |
| 8 | 5.584 | beta-BHC | 9.8492 | 1.990 | 59054.8 | 1.717 | BB | 0.037 | 26844.86 | 1.845 |
| 9 | 5.689 | | 0.0000 | 0.000 | 598.0 | 0.017 | BB | 0.028 | 358.59 | 0.025 |
| 10 | 5.838 | delta-BHC | 10.0084 | 2.022 | 88987.2 | 2.587 | BB | 0.035 | 42597.90 | 2.927 |
| 11 | 6.047 | | 0.0000 | 0.000 | 419.5 | 0.012 | BV | 0.036 | 192.09 | 0.013 |
| 12 | 6.134 | Heptachlor | 9.7922 | 1.979 | 111175.7 | 3.232 | VV | 0.037 | 50587.14 | 3.476 |
| 13 | 6.339 | | 0.0000 | 0.000 | 3054.2 | 0.089 | VV | 0.144 | 354.25 | 0.024 |
| 14 | 6.555 | Aldrin | 10.0958 | 2.040 | 86870.1 | 2.525 | VB | 0.036 | 40252.13 | 2.766 |
| 15 | 6.763 | | 0.0000 | 0.000 | 284.3 | 0.008 | BB | 0.042 | 111.87 | 0.008 |
| 16 | 6.928 | | 0.0000 | 0.000 | 274.8 | 0.008 | BV | 0.053 | 86.57 | 0.006 |
| 17 | 7.016 | | 0.0000 | 0.000 | 628.4 | 0.018 | VV | 0.038 | 275.30 | 0.019 |
| 18 | 7.384 | Hept. epoxide | 9.6655 | 1.953 | 103453.3 | 3.008 | VV | 0.040 | 42725.25 | 2.936 |
| 19 | 7.549 | g. Chlordane | 9.9923 | 2.019 | 97891.9 | 2.846 | VV | 0.039 | 42318.38 | 2.908 |
| 20 | 7.725 | a. Chlordane | 9.9698 | 2.015 | 94858.8 | 2.758 | VV | 0.037 | 42492.72 | 2.920 |
| 21 | 7.814 | 4,4'-DDE | 20.4828 | 4.139 | 151520.4 | 4.405 | VV | 0.036 | 69912.02 | 4.804 |
| 22 | 7.913 | Endosulfan I | 10.1023 | 2.041 | 87998.4 | 2.558 | VB | 0.038 | 38704.23 | 2.659 |
| 23 | 8.228 | Dieldrin | 19.8527 | 4.012 | 156954.1 | 4.563 | BB | 0.036 | 72335.04 | 4.970 |
| 24 | 8.536 | Endrin | 19.6905 | 3.979 | 141162.6 | 4.104 | BV | 0.035 | 66934.36 | 4.599 |
| 25 | 8.598 | 4,4'-DDD | 19.5745 | 3.955 | 131577.5 | 3.825 | VV | 0.042 | 52035.77 | 3.575 |
| 26 | 8.831 | Endosulfan II | 19.6935 | 3.979 | 158514.4 | 4.608 | VV | 0.039 | 68100.87 | 4.679 |
| 27 | 8.959 | 4,4'-DDT | 19.6961 | 3.980 | 134616.2 | 3.914 | VV | 0.038 | 58347.99 | 4.009 |
| 28 | 9.231 | | 0.0000 | 0.000 | 9581.3 | 0.279 | VB | 0.046 | 3448.49 | 0.237 |
| 29 | 9.375 | Endrin aldehyde | 22.0763 | 4.461 | 134062.7 | 3.897 | BV | 0.041 | 54871.24 | 3.770 |
| 30 | 9.570 | Methoxychlor | 95.0230 | 19.201 | 412020.7 | 11.978 | VB | 0.042 | 165398.20 | 11.365 |
| 31 | 9.809 | Mirex | 38.8218 | 7.845 | 140.9 | 0.004 | BB | 0.034 | 69.56 | 0.005 |
| 32 | 9.941 | Endo. sulfate | 19.7370 | 3.988 | 142696.5 | 4.148 | BV | 0.039 | 60730.63 | 4.173 |
| 33 | 10.113 | | 0.0000 | 0.000 | 4142.9 | 0.120 | VV | 0.044 | 1578.68 | 0.108 |
| 34 | 10.180 | | 0.0000 | 0.000 | 10089.4 | 0.293 | VB | 0.047 | 3592.86 | 0.247 |
| 35 | 10.308 | Endrin ketone | 20.1641 | 4.075 | 168870.4 | 4.909 | BB | 0.039 | 72090.59 | 4.953 |
| 36 | 10.485 | | 0.0000 | 0.000 | 426.7 | 0.012 | BB | 0.040 | 177.18 | 0.012 |
| 37 | 10.707 | | 0.0000 | 0.000 | 4471.7 | 0.130 | BB | 0.043 | 1743.42 | 0.120 |
| 38 | 11.145 | | 0.0000 | 0.000 | 169.3 | 0.005 | BB | 0.053 | 53.26 | 0.004 |
| 39 | 11.336 | | 0.0000 | 0.000 | 1215.1 | 0.035 | BB | 0.041 | 488.57 | 0.034 |
| 40 | 11.616 | DCB | 36.4039 | 7.356 | 391392.3 | 11.379 | BB | 0.048 | 135998.90 | 9.345 |
| 41 | 13.459 | | 0.0000 | 0.000 | 12432.7 | 0.361 | BB | 0.482 | 430.34 | 0.030 |

Total Area = 3439741.0, Total Amount = 494.884, Total Height = 1455372.0, Sample Units = PPB

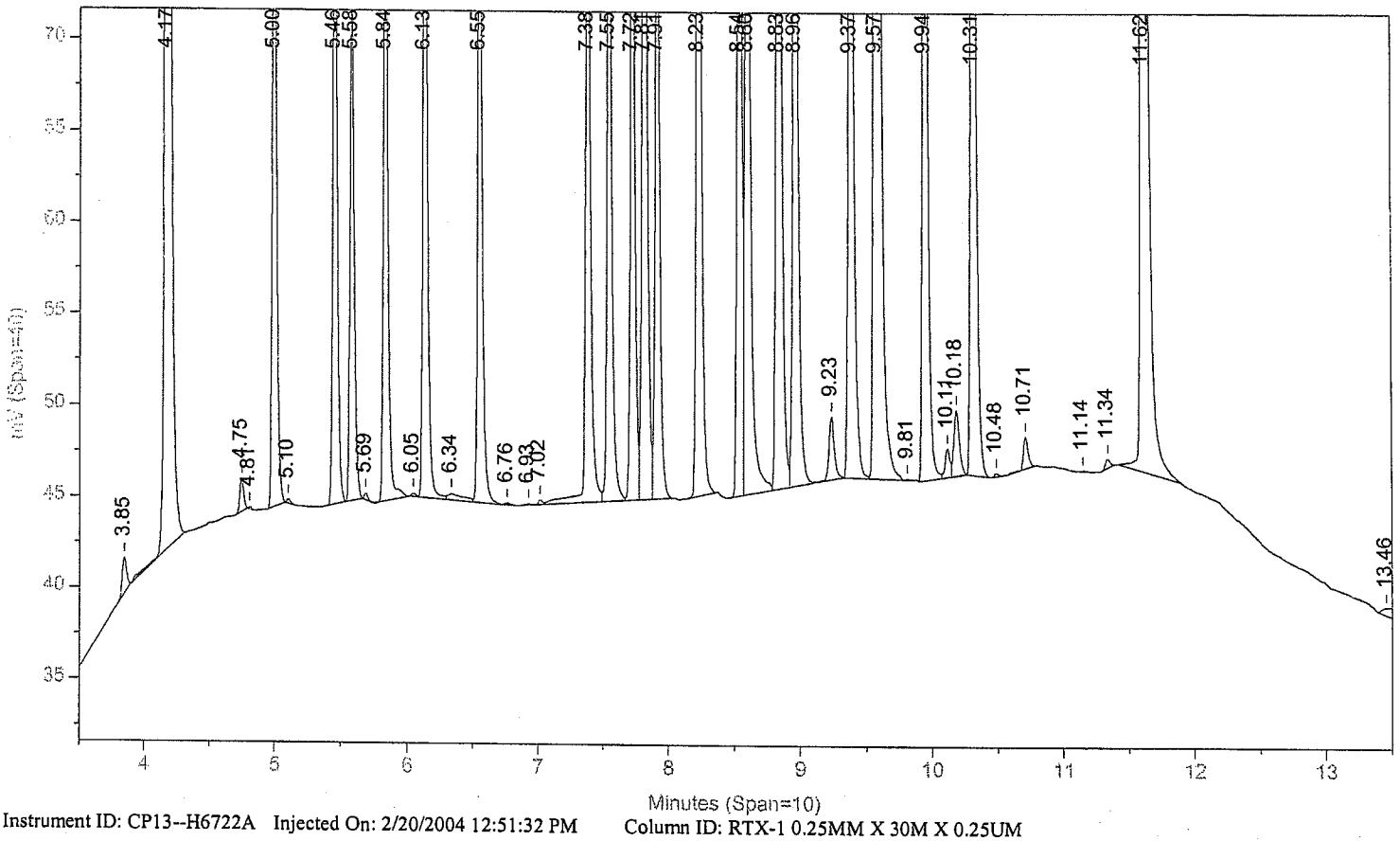
Sample Name: **ICMAX03F AAICMAXAA CCAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 01:05:32pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.16R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.058 | | 0.0000 | 0.000 | 1737.8 | 0.089 | BB | 0.041 | 704.14 | 0.081 |
| 2 | 3.324 | | 0.0000 | 0.000 | 3473.3 | 0.178 | BB | 0.732 | 79.09 | 0.009 |
| 3 | 3.777 | | 0.0000 | 0.000 | 1510.0 | 0.077 | BB | 0.047 | 538.64 | 0.062 |
| 4 | 3.940 | | 0.0000 | 0.000 | 1607.2 | 0.082 | BB | 0.035 | 761.65 | 0.087 |
| 5 | 4.209 | TCX | 38.7419 | 8.625 | 210371.8 | 10.769 | BB | 0.036 | 98536.50 | 11.270 |
| 6 | 4.567 | | 0.0000 | 0.000 | 1135.2 | 0.058 | BB | 0.052 | 362.14 | 0.041 |
| 7 | 4.752 | | 0.0000 | 0.000 | 4091.5 | 0.209 | BB | 0.063 | 1085.17 | 0.124 |
| 8 | 5.100 | alpha-BHC | 9.3555 | 2.083 | 42574.3 | 2.179 | BB | 0.031 | 23110.58 | 2.643 |
| 9 | 5.613 | gamma-BHC | 10.0563 | 2.239 | 48408.9 | 2.478 | BV | 0.032 | 25460.27 | 2.912 |
| 10 | 5.737 | beta-BHC | 9.8310 | 2.189 | 36432.7 | 1.865 | VV | 0.038 | 15806.60 | 1.808 |
| 11 | 6.149 | delta-BHC | 9.6285 | 2.144 | 40881.5 | 2.093 | VV | 0.032 | 21079.66 | 2.411 |
| 12 | 6.229 | Heptachlor | 9.8068 | 2.183 | 57133.5 | 2.925 | VB | 0.034 | 27975.29 | 3.200 |
| 13 | 6.676 | Aldrin | 10.2043 | 2.272 | 46901.1 | 2.401 | BB | 0.033 | 23617.12 | 2.701 |
| 14 | 7.210 | | 0.0000 | 0.000 | 608.0 | 0.031 | BB | 0.034 | 294.47 | 0.034 |
| 15 | 7.447 | Hept. epoxide | 9.7923 | 2.180 | 53345.5 | 2.731 | BV | 0.035 | 25255.26 | 2.889 |
| 16 | 7.698 | g. Chlordane | 9.9486 | 2.215 | 57589.8 | 2.948 | VV | 0.037 | 26009.95 | 2.975 |
| 17 | 7.889 | a. Chlordane | 9.7240 | 2.165 | 54528.8 | 2.791 | VV | 0.035 | 26303.62 | 3.008 |
| 18 | 7.968 | Endosulfan I | 9.5871 | 2.134 | 53019.2 | 2.714 | VV | 0.038 | 23555.33 | 2.694 |
| 19 | 8.104 | 4,4'-DDE | 19.6500 | 4.374 | 91340.0 | 4.676 | VV | 0.040 | 38070.98 | 4.354 |
| 20 | 8.326 | Dieldrin | 19.6649 | 4.378 | 92746.5 | 4.748 | VB | 0.034 | 45983.47 | 5.259 |
| 21 | 8.725 | Endrin | 19.8790 | 4.425 | 79907.5 | 4.091 | BB | 0.033 | 40291.19 | 4.608 |
| 22 | 8.856 | 4,4'-DDD | 19.4085 | 4.321 | 60574.2 | 3.101 | BB | 0.042 | 24180.60 | 2.766 |
| 23 | 9.000 | Endosulfan II | 19.8480 | 4.419 | 89390.6 | 4.576 | BB | 0.036 | 41908.89 | 4.793 |
| 24 | 9.256 | 4,4'-DDT | 19.7744 | 4.402 | 72480.2 | 3.710 | BB | 0.038 | 32094.13 | 3.671 |
| 25 | 9.432 | Endrin aldehyde | 21.8471 | 4.864 | 80769.1 | 4.135 | BB | 0.037 | 35991.52 | 4.116 |
| 26 | 9.562 | | 0.0000 | 0.000 | 4334.5 | 0.222 | BB | 0.046 | 1578.47 | 0.181 |
| 27 | 9.784 | Endo. sulfate | 19.7702 | 4.401 | 81788.8 | 4.187 | BB | 0.037 | 36914.07 | 4.222 |
| 28 | 10.127 | Methoxychlor | 96.3617 | 21.452 | 223683.9 | 11.451 | BB | 0.039 | 95864.81 | 10.964 |
| 29 | 10.367 | | 0.0000 | 0.000 | 1494.6 | 0.077 | BB | 0.035 | 719.78 | 0.082 |
| 30 | 10.484 | Endrin ketone | 19.5281 | 4.347 | 111128.0 | 5.689 | BB | 0.039 | 47421.37 | 5.424 |
| 31 | 11.797 | | 0.0000 | 0.000 | 1610.4 | 0.082 | BB | 0.066 | 407.62 | 0.047 |
| 32 | 12.227 | DCB | 36.7872 | 8.190 | 246876.3 | 12.638 | BB | 0.045 | 92367.32 | 10.564 |

Total Area = 1953475.0, Total Amount = 449.195, Total Height = 874329.7, Sample Units = PPB

LANCASTER LABORATORIES

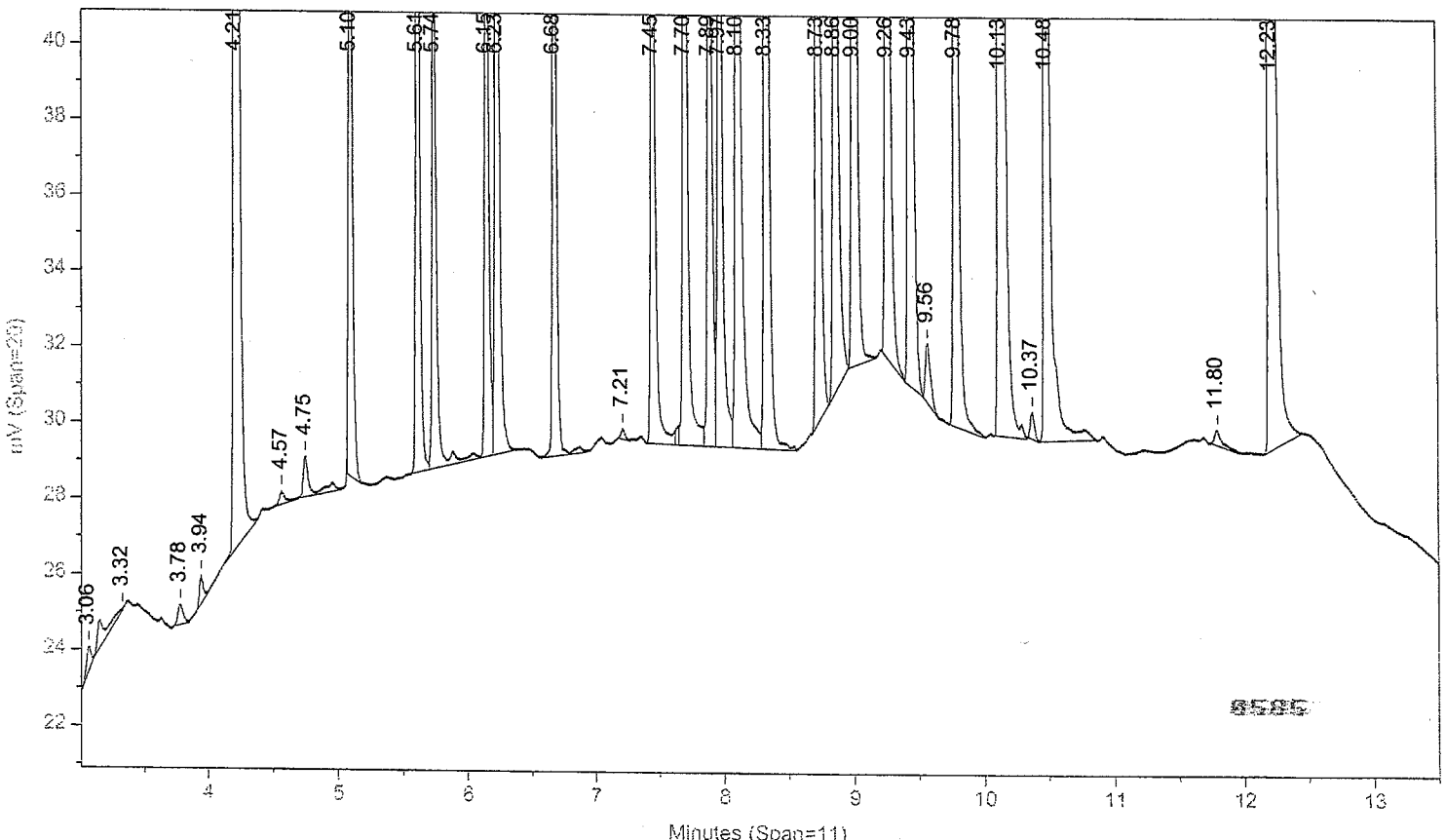
File: C:\CPWIN\DATA1\1C13051.16R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:51:32 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.16R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:51:32 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

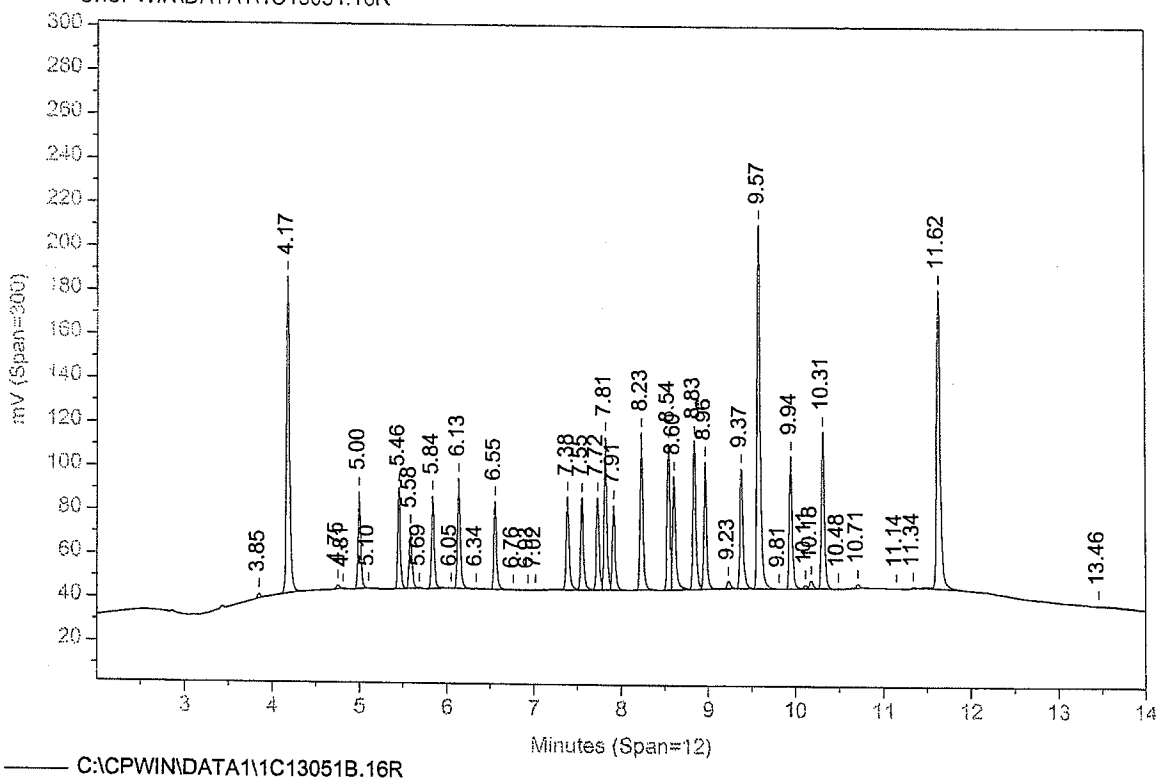
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 144594 | 38.07778 | TCX | 4.209 | 98537 | 38.74189 | TCX |
| 4.746 | 1790 | 6.44585 | HCB | . | 0 | . | HCB |
| 4.997 | 44292 | 9.57222 | alpha-BHC | 5.1 | 23111 | 9.35553 | alpha-BHC |
| 5.456 | 46119 | 10.09635 | gamma-BHC | 5.613 | 25460 | 10.05627 | gamma-BHC |
| 5.584 | 26845 | 9.84917 | beta-BHC | 5.737 | 15807 | 9.83097 | beta-BHC |
| 5.838 | 42598 | 10.00843 | delta-BHC | 6.149 | 21080 | 9.62854 | delta-BHC |
| 6.134 | 50587 | 9.79221 | Heptachlor | 6.229 | 27975 | 9.80678 | Heptachlor |
| 6.555 | 40252 | 10.09575 | Aldrin | 6.676 | 23617 | 10.20429 | Aldrin |
| 7.384 | 42725 | 9.66553 | Hept. epoxide | 7.447 | 25255 | 9.79232 | Hept. epoxide |
| 7.549 | 42318 | 9.99227 | g. Chlordane | 7.698 | 26010 | 9.94859 | g. Chlordane |
| 7.725 | 42493 | 9.96985 | a. Chlordane | 7.889 | 26304 | 9.72401 | a. Chlordane |
| 7.814 | 69912 | 20.48284 | 4,4'-DDE | 8.104 | 38071 | 19.64997 | 4,4'-DDE |
| 7.913 | 38704 | 10.10233 | Endosulfan I | 7.968 | 23555 | 9.58709 | Endosulfan I |
| 8.228 | 72335 | 19.85269 | Dieldrin | 8.326 | 45983 | 19.66493 | Dieldrin |
| 8.536 | 66934 | 19.69047 | Endrin | 8.725 | 40291 | 19.87902 | Endrin |
| 8.598 | 52036 | 19.57449 | 4,4'-DDD | 8.856 | 24181 | 19.40854 | 4,4'-DDD |
| 8.831 | 68101 | 19.69354 | Endosulfan II | 9. | 41909 | 19.84805 | Endosulfan II |
| 8.959 | 58348 | 19.69615 | 4,4'-DDT | 9.256 | 32094 | 19.77441 | 4,4'-DDT |
| 9.375 | 54871 | 22.07635 | Endrin aldehyde | 9.432 | 35992 | 21.84706 | Endrin aldehyde |
| 9.57 | 165398 | 95.023 | Methoxychlor | 10.127 | 95865 | 96.36175 | Methoxychlor |
| 9.941 | 60731 | 19.73701 | Endo. sulfate | 9.784 | 36914 | 19.77022 | Endo. sulfate |
| 9.809 | 70 | 38.82181 | Mirex | . | 0 | . | Mirex |
| 10.308 | 72091 | 20.16409 | Endrin ketone | 10.484 | 47421 | 19.5281 | Endrin ketone |
| 11.616 | 135999 | 36.40386 | DCB | 12.227 | 92367 | 36.78716 | DCB |

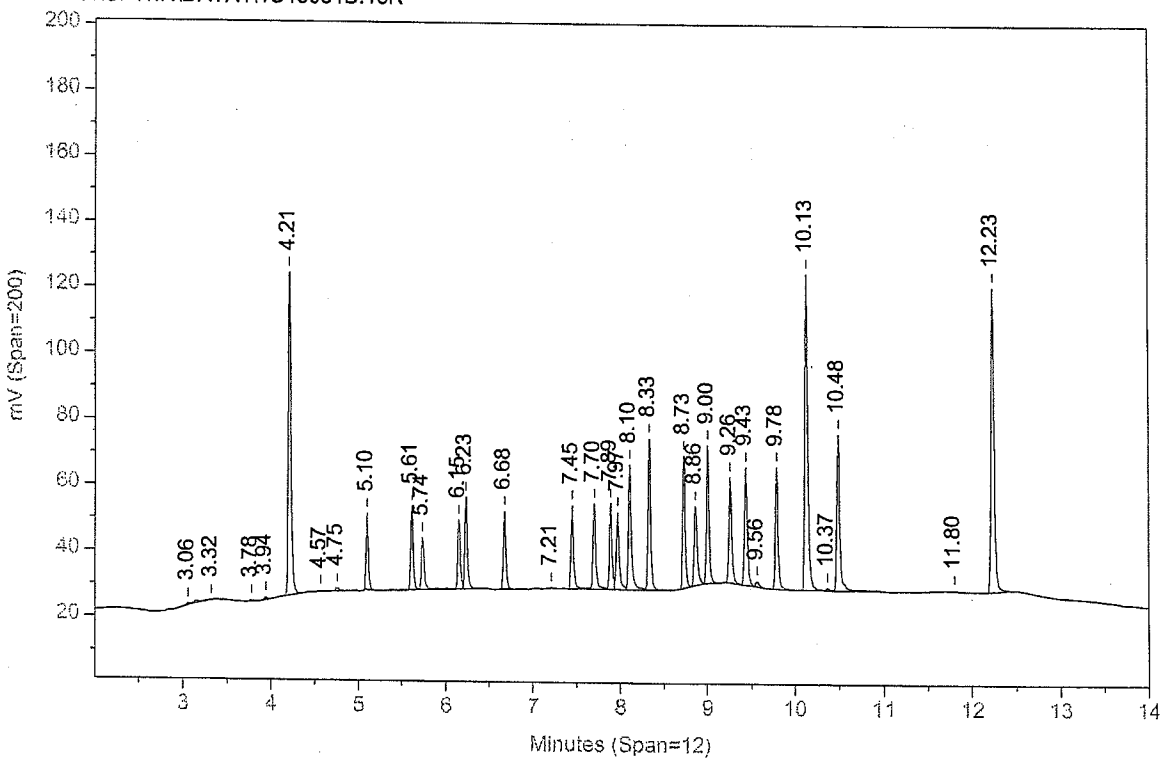
Files:
Area File: C:\CPWIN\DATA1\1C13051.16A
Area File: C:\CPWIN\DATA1\1C13051B.16A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:04:08 AM
File Reported On: 2/23/2004 at 10:04:17 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.16R




C:\CPWIN\DATA1\1C13051B.16R



Sample Name: **TOXWX03B AATOXWXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 03:08:03pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.22R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.851 | | 0.0000 | 0.000 | 728.2 | 0.035 | BB | 0.043 | 284.50 | 0.038 |
| 2 | 4.174 | TCX | 19.5888 | 13.318 | 179711.0 | 8.570 | BB | 0.040 | 74385.17 | 9.833 |
| 3 | 4.394 | | 0.0000 | 0.000 | 214.9 | 0.010 | BB | 0.040 | 88.81 | 0.012 |
| 4 | 4.746 | HCB | 0.1506 | 0.102 | 2103.9 | 0.100 | BB | 0.035 | 991.32 | 0.131 |
| 5 | 4.819 | | 0.0000 | 0.000 | 133.2 | 0.006 | BB | 0.031 | 71.89 | 0.010 |
| 6 | 4.877 | | 0.0000 | 0.000 | 62.3 | 0.003 | BB | 0.029 | 35.96 | 0.005 |
| 7 | 4.994 | alpha-BHC | 0.3177 | 0.216 | 3630.7 | 0.173 | BB | 0.041 | 1470.08 | 0.194 |
| 8 | 5.111 | | 0.0000 | 0.000 | 155.7 | 0.007 | BB | 0.036 | 71.64 | 0.009 |
| 9 | 5.429 | gamma-BHC | 0.2002 | 0.136 | 2416.4 | 0.115 | BB | 0.044 | 914.50 | 0.121 |
| 10 | 5.584 | beta-BHC | 0.0447 | 0.030 | 212.7 | 0.010 | BB | 0.029 | 121.76 | 0.016 |
| 11 | 5.689 | | 0.0000 | 0.000 | 439.3 | 0.021 | BB | 0.033 | 222.43 | 0.029 |
| 12 | 5.836 | delta-BHC | 0.0654 | 0.044 | 680.3 | 0.032 | BB | 0.041 | 278.21 | 0.037 |
| 13 | 5.953 | | 0.0000 | 0.000 | 498.1 | 0.024 | BB | 0.028 | 292.62 | 0.039 |
| 14 | 6.002 | | 0.0000 | 0.000 | 424.9 | 0.020 | BB | 0.026 | 268.32 | 0.035 |
| 15 | 6.124 | Heptachlor | 0.0458 | 0.031 | 655.6 | 0.031 | BV | 0.046 | 236.57 | 0.031 |
| 16 | 6.194 | | 0.0000 | 0.000 | 1254.5 | 0.060 | VV | 0.066 | 318.86 | 0.042 |
| 17 | 6.334 | | 0.0000 | 0.000 | 2089.7 | 0.100 | VV | 0.081 | 432.64 | 0.057 |
| 18 | 6.466 | | 0.0000 | 0.000 | 592.3 | 0.028 | VV | 0.040 | 244.09 | 0.032 |
| 19 | 6.530 | Aldrin | 0.0994 | 0.068 | 1508.7 | 0.072 | VV | 0.063 | 396.13 | 0.052 |
| 20 | 6.623 | | 0.0000 | 0.000 | 1271.2 | 0.061 | VB | 0.047 | 449.31 | 0.059 |
| 21 | 6.715 | | 0.0000 | 0.000 | 635.2 | 0.030 | BV | 0.032 | 333.25 | 0.044 |
| 22 | 6.746 | | 0.0000 | 0.000 | 690.5 | 0.033 | VV | 0.032 | 356.99 | 0.047 |
| 23 | 6.802 | | 0.0000 | 0.000 | 6888.3 | 0.329 | VB | 0.053 | 2151.71 | 0.284 |
| 24 | 6.967 | | 0.0000 | 0.000 | 478.8 | 0.023 | BV | 0.029 | 275.28 | 0.036 |
| 25 | 7.003 | | 0.0000 | 0.000 | 447.5 | 0.021 | VB | 0.034 | 217.40 | 0.029 |
| 26 | 7.044 | | 0.0000 | 0.000 | 328.5 | 0.016 | BB | 0.024 | 229.56 | 0.030 |
| 27 | 7.143 | | 0.0000 | 0.000 | 1730.2 | 0.083 | BB | 0.032 | 900.58 | 0.119 |
| 28 | 7.199 | | 0.0000 | 0.000 | 875.5 | 0.042 | BB | 0.026 | 571.40 | 0.076 |
| 29 | 7.253 | | 0.0000 | 0.000 | 6568.0 | 0.313 | BV | 0.039 | 2833.88 | 0.375 |
| 30 | 7.308 | | 0.0000 | 0.000 | 4371.8 | 0.208 | VB | 0.040 | 1811.04 | 0.239 |
| 31 | 7.392 | Hept. epoxide | 0.2331 | 0.158 | 1985.2 | 0.095 | BV | 0.032 | 1030.21 | 0.136 |
| 32 | 7.436 | | 0.0000 | 0.000 | 1686.7 | 0.080 | VV | 0.032 | 878.65 | 0.116 |
| 33 | 7.522 | g. Chlordane | 0.4528 | 0.308 | 7184.7 | 0.343 | VV | 0.062 | 1917.72 | 0.254 |
| 34 | 7.581 | | 0.0000 | 0.000 | 4541.4 | 0.217 | VB | 0.047 | 1593.97 | 0.211 |
| 35 | 7.714 | a. Chlordane | 1.4761 | 1.004 | 26292.9 | 1.254 | BB | 0.070 | 6291.41 | 0.832 |
| 36 | 7.833 | 4,4'-DDE | 0.2570 | 0.175 | 1311.1 | 0.063 | BV | 0.025 | 877.32 | 0.116 |
| 37 | 7.915 | Endosulfan I | 1.2687 | 0.863 | 17273.5 | 0.824 | VV | 0.059 | 4860.65 | 0.643 |
| 38 | 7.996 | | 0.0000 | 0.000 | 7209.1 | 0.344 | VV | 0.056 | 2142.97 | 0.283 |
| 39 | 8.085 | | 0.0000 | 0.000 | 7756.2 | 0.370 | VV | 0.042 | 3072.49 | 0.406 |
| 40 | 8.180 | | 0.0000 | 0.000 | 36987.2 | 1.764 | VV | 0.054 | 11445.81 | 1.513 |
| 41 | 8.226 | Dieldrin | 2.7054 | 1.839 | 23569.3 | 1.124 | VB | 0.040 | 9857.53 | 1.303 |
| 42 | 8.346 | o,p-DDT | 5.6524 | 3.843 | 47399.7 | 2.260 | BV | 0.051 | 15390.18 | 2.034 |
| 43 | 8.433 | | 0.0000 | 0.000 | 81165.3 | 3.871 | VV | 0.071 | 19016.79 | 2.514 |
| 44 | 8.588 | Kepone | 58.1501 | 39.535 | 110040.6 | 5.248 | VV | 0.061 | 30219.16 | 3.995 |
| 45 | 8.642 | | 0.0000 | 0.000 | 44871.4 | 2.140 | VV | 0.039 | 19420.42 | 2.567 |
| 46 | 8.693 | | 0.0000 | 0.000 | 36777.0 | 1.754 | VV | 0.050 | 12250.39 | 1.619 |
| 47 | 8.809 | | 0.0000 | 0.000 | 69867.0 | 3.332 | VV | 0.066 | 17517.59 | 2.316 |
| 48 | 8.850 | Endosulfan II | 4.8485 | 3.296 | 38832.9 | 1.852 | VV | 0.039 | 16766.34 | 2.216 |
| 49 | 8.926 | | 0.0000 | 0.000 | 77849.0 | 3.713 | VV | 0.061 | 21342.67 | 2.821 |
| 50 | 8.970 | 4,4'-DDT | 9.3513 | 6.358 | 70746.4 | 3.374 | VV | 0.043 | 27702.25 | 3.662 |
| 51 | 9.043 | | 0.0000 | 0.000 | 2932.4 | 0.140 | VB | 0.028 | 1772.79 | 0.234 |
| 52 | 9.113 | | 0.0000 | 0.000 | 4070.9 | 0.194 | BV | 0.031 | 2206.73 | 0.292 |
| 53 | 9.172 | | 0.0000 | 0.000 | 40755.9 | 1.944 | VV | 0.047 | 14399.78 | 1.904 |
| 54 | 9.249 | | 0.0000 | 0.000 | 82570.3 | 3.938 | VV | 0.047 | 29080.18 | 3.844 |
| 55 | 9.337 | | 0.0000 | 0.000 | 109528.8 | 5.223 | VB | 0.056 | 32539.64 | 4.302 |
| 56 | 9.408 | | 0.0000 | 0.000 | 15706.1 | 0.749 | BB | 0.034 | 7786.15 | 1.029 |
| 57 | 9.495 | | 0.0000 | 0.000 | 35098.3 | 1.674 | BV | 0.032 | 18130.69 | 2.397 |
| 58 | 9.545 | Methoxychlor | 8.7882 | 5.975 | 56437.6 | 2.692 | VV | 0.042 | 22647.32 | 2.994 |
| 59 | 9.624 | | 0.0000 | 0.000 | 5868.9 | 0.280 | VB | 0.024 | 4093.02 | 0.541 |
| 60 | 9.683 | | 0.0000 | 0.000 | 65538.8 | 3.126 | BB | 0.049 | 22295.79 | 2.947 |
| 61 | 9.805 | Mirex | 5.8814 | 3.999 | 71191.2 | 3.395 | BB | 0.044 | 26742.96 | 3.535 |
| 62 | 9.865 | | 0.0000 | 0.000 | 39801.2 | 1.898 | BV | 0.053 | 12611.74 | 1.667 |
| 63 | 9.924 | Endo. sulfate | 7.4452 | 5.062 | 52324.0 | 2.495 | VB | 0.038 | 22908.70 | 3.028 |
| 64 | 10.020 | | 0.0000 | 0.000 | 28431.1 | 1.356 | BB | 0.032 | 14693.34 | 1.942 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.100 | | 0.0000 | 0.000 | 36687.4 | 1.750 | BV | 0.045 | 13642.50 | 1.803 |
| 66 | 10.170 | | 0.0000 | 0.000 | 20992.6 | 1.001 | VB | 0.040 | 8830.14 | 1.167 |
| 67 | 10.271 | | 0.0000 | 0.000 | 82523.0 | 3.936 | BV | 0.045 | 30275.69 | 4.002 |
| 68 | 10.356 | | 0.0000 | 0.000 | 7783.2 | 0.371 | VV | 0.027 | 4737.10 | 0.626 |
| 69 | 10.394 | | 0.0000 | 0.000 | 31831.0 | 1.518 | VV | 0.036 | 14648.17 | 1.936 |
| 70 | 10.460 | | 0.0000 | 0.000 | 53051.6 | 2.530 | VV | 0.043 | 20392.15 | 2.696 |
| 71 | 10.538 | | 0.0000 | 0.000 | 14457.4 | 0.689 | VV | 0.032 | 7554.85 | 0.999 |
| 72 | 10.574 | | 0.0000 | 0.000 | 22865.8 | 1.090 | VV | 0.038 | 10071.51 | 1.331 |
| 73 | 10.619 | | 0.0000 | 0.000 | 7373.9 | 0.352 | VB | 0.029 | 4274.64 | 0.565 |
| 74 | 10.697 | | 0.0000 | 0.000 | 4283.5 | 0.204 | BV | 0.037 | 1952.73 | 0.258 |
| 75 | 10.778 | | 0.0000 | 0.000 | 11936.8 | 0.569 | VB | 0.056 | 3523.79 | 0.466 |
| 76 | 10.938 | | 0.0000 | 0.000 | 7835.0 | 0.374 | BB | 0.040 | 3300.01 | 0.436 |
| 77 | 11.017 | | 0.0000 | 0.000 | 11818.5 | 0.564 | BB | 0.041 | 4805.54 | 0.635 |
| 78 | 11.142 | | 0.0000 | 0.000 | 5766.2 | 0.275 | BB | 0.051 | 1894.77 | 0.250 |
| 79 | 11.294 | | 0.0000 | 0.000 | 2454.6 | 0.117 | BB | 0.037 | 1115.99 | 0.148 |
| 80 | 11.386 | | 0.0000 | 0.000 | 8916.9 | 0.425 | BB | 0.049 | 3006.34 | 0.397 |
| 81 | 11.548 | | 0.0000 | 0.000 | 663.1 | 0.032 | BB | 0.089 | 123.56 | 0.016 |
| 82 | 11.618 | DCB | 20.0627 | 13.640 | 205525.8 | 9.802 | BB | 0.046 | 73947.92 | 9.775 |
| 83 | 11.752 | | 0.0000 | 0.000 | 661.1 | 0.032 | BB | 0.025 | 438.84 | 0.058 |
| 84 | 12.078 | | 0.0000 | 0.000 | 322.8 | 0.015 | BB | 0.039 | 138.07 | 0.018 |
| 85 | 12.165 | | 0.0000 | 0.000 | 2037.0 | 0.097 | BB | 0.158 | 214.25 | 0.028 |
| 86 | 12.379 | | 0.0000 | 0.000 | 1913.6 | 0.091 | BB | 0.067 | 479.35 | 0.063 |
| 87 | 13.449 | | 0.0000 | 0.000 | 9770.1 | 0.466 | BB | 0.487 | 334.54 | 0.044 |

Total Area = 2096871.0, Total Amount = 147.086, Total Height = 756461.8, Sample Units = PPB

Sample Name: **TOXWX03B AATOXWXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 03:08:03pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.22R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.067 | | 0.0000 | 0.000 | 1539.1 | 0.155 | BB | 0.049 | 518.25 | 0.129 |
| 2 | 3.414 | | 0.0000 | 0.000 | 22095.1 | 2.228 | BB | 0.382 | 965.18 | 0.240 |
| 3 | 3.774 | | 0.0000 | 0.000 | 1512.9 | 0.153 | BB | 0.043 | 586.75 | 0.146 |
| 4 | 4.208 | TCX | 19.0687 | 14.196 | 114317.8 | 11.530 | BB | 0.039 | 48499.44 | 12.039 |
| 5 | 4.746 | | 0.0000 | 0.000 | 2944.1 | 0.297 | BB | 0.084 | 585.38 | 0.145 |
| 6 | 5.094 | alpha-BHC | 1.2756 | 0.950 | 1385.3 | 0.140 | BB | 0.034 | 687.61 | 0.171 |
| 7 | 5.599 | gamma-BHC | 0.9689 | 0.721 | 926.3 | 0.093 | BB | 0.036 | 427.29 | 0.106 |
| 8 | 6.523 | | 0.0000 | 0.000 | 666.9 | 0.067 | BB | 0.030 | 374.08 | 0.093 |
| 9 | 6.804 | | 0.0000 | 0.000 | 2145.4 | 0.216 | BB | 0.046 | 779.19 | 0.193 |
| 10 | 6.987 | | 0.0000 | 0.000 | 1023.1 | 0.103 | BB | 0.041 | 418.55 | 0.104 |
| 11 | 7.170 | | 0.0000 | 0.000 | 463.0 | 0.047 | BB | 0.025 | 314.30 | 0.078 |
| 12 | 7.237 | | 0.0000 | 0.000 | 4131.9 | 0.417 | BB | 0.037 | 1867.62 | 0.464 |
| 13 | 7.344 | | 0.0000 | 0.000 | 1369.2 | 0.138 | BB | 0.035 | 655.17 | 0.163 |
| 14 | 7.436 | Hept. epoxide | 0.5566 | 0.414 | 5587.5 | 0.564 | BB | 0.065 | 1435.43 | 0.356 |
| 15 | 7.565 | | 0.0000 | 0.000 | 4056.3 | 0.409 | BV | 0.051 | 1313.49 | 0.326 |
| 16 | 7.679 | g. Chlordane | 0.3866 | 0.288 | 3235.6 | 0.326 | VV | 0.053 | 1010.75 | 0.251 |
| 17 | 7.784 | | 0.0000 | 0.000 | 16622.6 | 1.677 | VV | 0.053 | 5203.03 | 1.292 |
| 18 | 7.954 | Endosulfan I | 0.3767 | 0.280 | 3455.7 | 0.349 | VV | 0.059 | 972.25 | 0.241 |
| 19 | 8.001 | | 0.0000 | 0.000 | 5017.6 | 0.506 | VV | 0.037 | 2275.56 | 0.565 |
| 20 | 8.037 | | 0.0000 | 0.000 | 5310.7 | 0.536 | VV | 0.041 | 2135.71 | 0.530 |
| 21 | 8.140 | | 0.0000 | 0.000 | 8998.4 | 0.908 | VB | 0.072 | 2092.39 | 0.519 |
| 22 | 8.233 | | 0.0000 | 0.000 | 2185.1 | 0.220 | BV | 0.032 | 1144.53 | 0.284 |
| 23 | 8.299 | Dieldrin | 4.7578 | 3.542 | 33288.3 | 3.357 | VB | 0.050 | 11125.48 | 2.762 |
| 24 | 8.443 | | 0.0000 | 0.000 | 12581.7 | 1.269 | BV | 0.036 | 5832.40 | 1.448 |
| 25 | 8.525 | | 0.0000 | 0.000 | 14366.5 | 1.449 | VV | 0.049 | 4927.53 | 1.223 |
| 26 | 8.598 | | 0.0000 | 0.000 | 19696.0 | 1.986 | VV | 0.042 | 7795.45 | 1.935 |
| 27 | 8.637 | | 0.0000 | 0.000 | 34391.3 | 3.469 | VV | 0.061 | 9437.52 | 2.343 |
| 28 | 8.719 | Endrin | 1.9723 | 1.468 | 9003.4 | 0.908 | VV | 0.038 | 3997.47 | 0.992 |
| 29 | 8.772 | o,p-DDT | 1.0815 | 0.805 | 2788.5 | 0.281 | VB | 0.028 | 1644.11 | 0.408 |
| 30 | 8.843 | 4,4'-DDD | 2.6388 | 1.965 | 3655.7 | 0.369 | BB | 0.039 | 1571.46 | 0.390 |
| 31 | 8.875 | Kepone | 37.9735 | 28.270 | 13001.8 | 1.311 | BB | 0.027 | 8042.66 | 1.996 |
| 32 | 8.926 | | 0.0000 | 0.000 | 3619.1 | 0.365 | BB | 0.020 | 2977.74 | 0.739 |
| 33 | 8.978 | Endosulfan II | 3.8335 | 2.854 | 14231.5 | 1.435 | BB | 0.029 | 8094.46 | 2.009 |
| 34 | 9.101 | | 0.0000 | 0.000 | 71550.7 | 7.216 | BB | 0.044 | 27078.90 | 6.722 |
| 35 | 9.203 | | 0.0000 | 0.000 | 14480.0 | 1.460 | BB | 0.033 | 7207.55 | 1.789 |
| 36 | 9.343 | | 0.0000 | 0.000 | 24548.6 | 2.476 | BB | 0.037 | 10978.82 | 2.725 |
| 37 | 9.434 | Endrin aldehyde | 10.8047 | 8.044 | 43811.6 | 4.419 | BB | 0.041 | 17800.03 | 4.419 |
| 38 | 9.545 | | 0.0000 | 0.000 | 43142.0 | 4.351 | BB | 0.053 | 13687.84 | 3.398 |
| 39 | 9.614 | | 0.0000 | 0.000 | 7234.5 | 0.730 | BB | 0.035 | 3399.34 | 0.844 |
| 40 | 9.712 | | 0.0000 | 0.000 | 17911.6 | 1.807 | BB | 0.041 | 7264.87 | 1.803 |
| 41 | 9.773 | Endo. sulfate | 4.3214 | 3.217 | 12649.4 | 1.276 | BB | 0.026 | 8068.75 | 2.003 |
| 42 | 9.853 | | 0.0000 | 0.000 | 6030.6 | 0.608 | BB | 0.030 | 3327.88 | 0.826 |
| 43 | 9.897 | | 0.0000 | 0.000 | 1513.7 | 0.153 | BB | 0.020 | 1269.92 | 0.315 |
| 44 | 9.931 | | 0.0000 | 0.000 | 8141.1 | 0.821 | BB | 0.034 | 3955.84 | 0.982 |
| 45 | 10.034 | | 0.0000 | 0.000 | 3470.1 | 0.350 | BB | 0.024 | 2372.67 | 0.589 |
| 46 | 10.099 | Methoxychlor | 23.5211 | 17.511 | 52671.7 | 5.312 | BB | 0.038 | 23399.80 | 5.809 |
| 47 | 10.168 | | 0.0000 | 0.000 | 30763.0 | 3.103 | BB | 0.039 | 13175.66 | 3.271 |
| 48 | 10.232 | | 0.0000 | 0.000 | 14295.7 | 1.442 | BB | 0.027 | 8956.02 | 2.223 |
| 49 | 10.347 | | 0.0000 | 0.000 | 10153.8 | 1.024 | BB | 0.029 | 5851.75 | 1.453 |
| 50 | 10.413 | Mirex | 0.8012 | 0.596 | 15295.0 | 1.543 | BB | 0.036 | 7005.07 | 1.739 |
| 51 | 10.544 | | 0.0000 | 0.000 | 15105.2 | 1.523 | BB | 0.041 | 6115.09 | 1.518 |
| 52 | 10.605 | | 0.0000 | 0.000 | 27914.1 | 2.815 | BB | 0.037 | 12699.51 | 3.152 |
| 53 | 10.695 | | 0.0000 | 0.000 | 6527.0 | 0.658 | BB | 0.042 | 2605.32 | 0.647 |
| 54 | 10.766 | | 0.0000 | 0.000 | 7990.9 | 0.806 | BB | 0.028 | 4779.32 | 1.186 |
| 55 | 10.835 | | 0.0000 | 0.000 | 14029.7 | 1.415 | BB | 0.031 | 7541.01 | 1.872 |
| 56 | 10.911 | | 0.0000 | 0.000 | 5405.8 | 0.545 | BB | 0.029 | 3091.91 | 0.768 |
| 57 | 10.984 | | 0.0000 | 0.000 | 12683.0 | 1.279 | BB | 0.067 | 3145.80 | 0.781 |
| 58 | 11.121 | | 0.0000 | 0.000 | 4220.0 | 0.426 | BB | 0.066 | 1059.75 | 0.263 |
| 59 | 11.225 | | 0.0000 | 0.000 | 4720.7 | 0.476 | BB | 0.036 | 2212.38 | 0.549 |
| 60 | 11.308 | | 0.0000 | 0.000 | 1094.3 | 0.110 | BB | 0.042 | 436.81 | 0.108 |
| 61 | 11.459 | | 0.0000 | 0.000 | 2002.2 | 0.202 | BB | 0.031 | 1068.71 | 0.265 |
| 62 | 11.505 | | 0.0000 | 0.000 | 2635.4 | 0.266 | BB | 0.029 | 1537.35 | 0.382 |
| 63 | 11.607 | | 0.0000 | 0.000 | 1497.7 | 0.151 | BB | 0.037 | 666.56 | 0.165 |
| 64 | 11.688 | | 0.0000 | 0.000 | 1751.8 | 0.177 | BB | 0.039 | 757.03 | 0.188 |

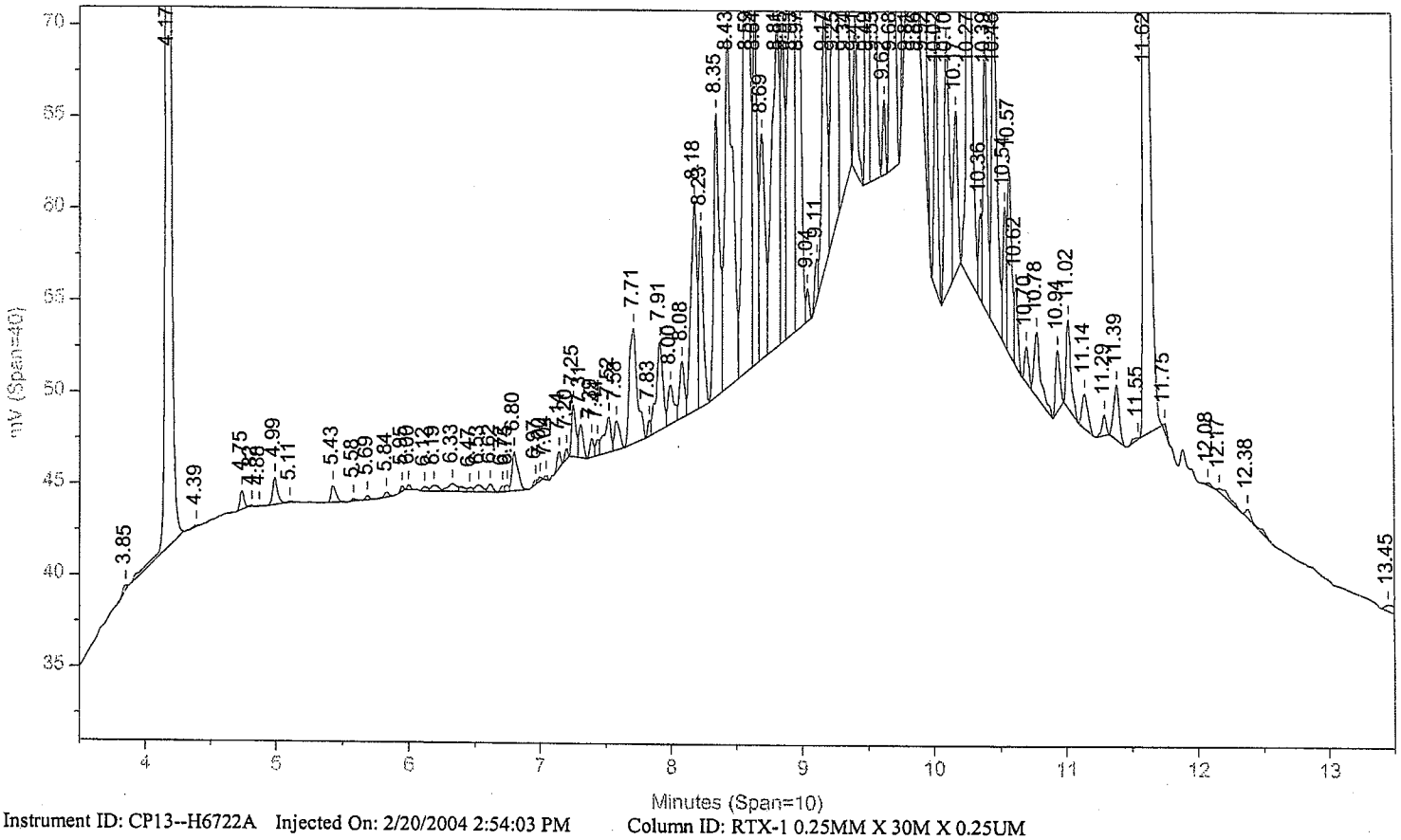
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.976 | | 0.0000 | 0.000 | 2250.5 | 0.227 | BB | 0.053 | 706.55 | 0.175 |
| 66 | 12.229 | DCB | 19.9848 | 14.878 | 134393.0 | 13.555 | BB | 0.045 | 49916.63 | 12.391 |

Total Area = 991498.0, Total Amount = 134.324, Total Height = 402848.7, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.22R

C:\CPWIN\DATA1\1C13051.22R

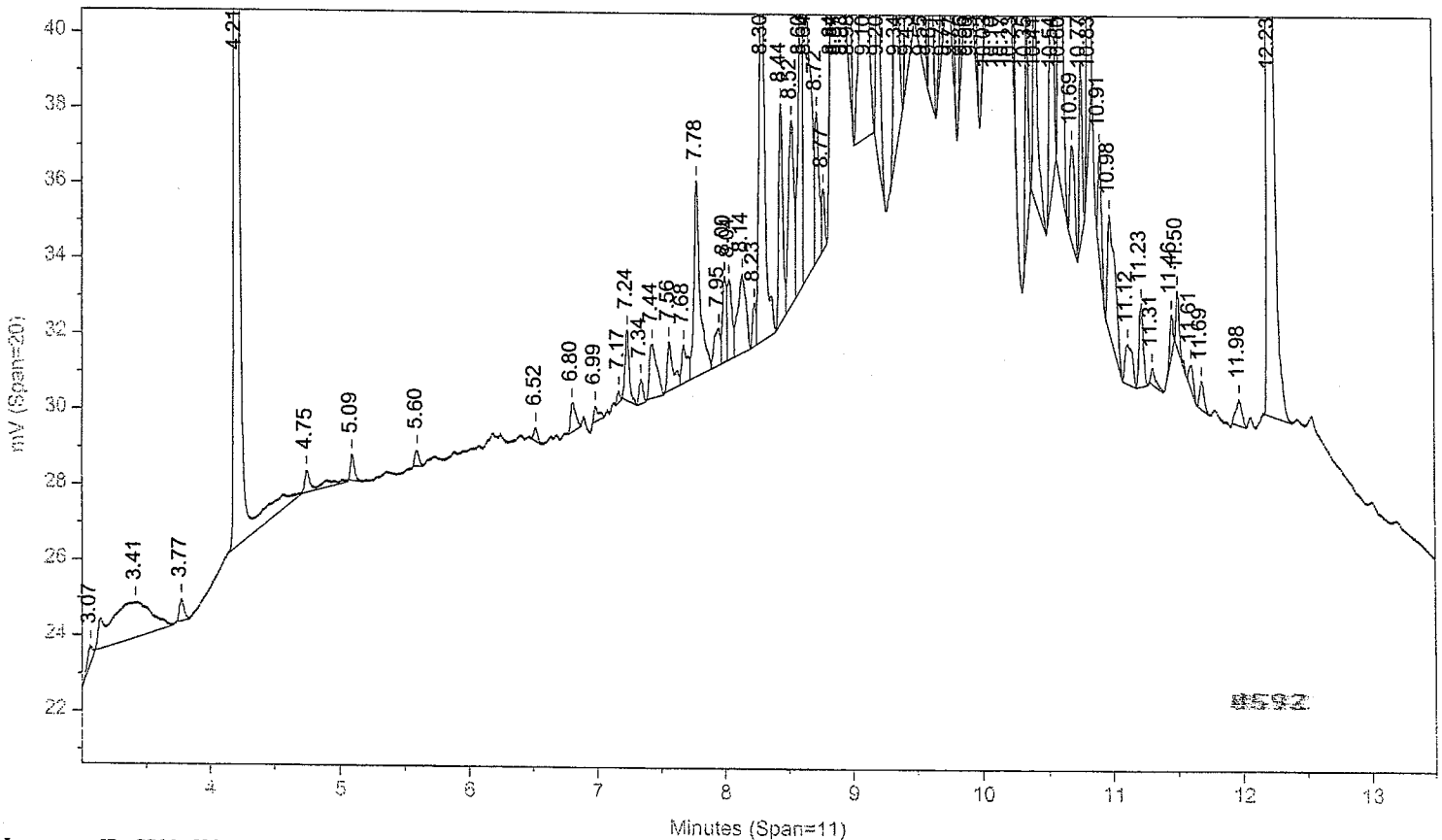



Instrument ID: CP13--H6722A Injected On: 2/20/2004 2:54:03 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.22R

C:\CPWIN\DATA1\1C13051B.22R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 2:54:03 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

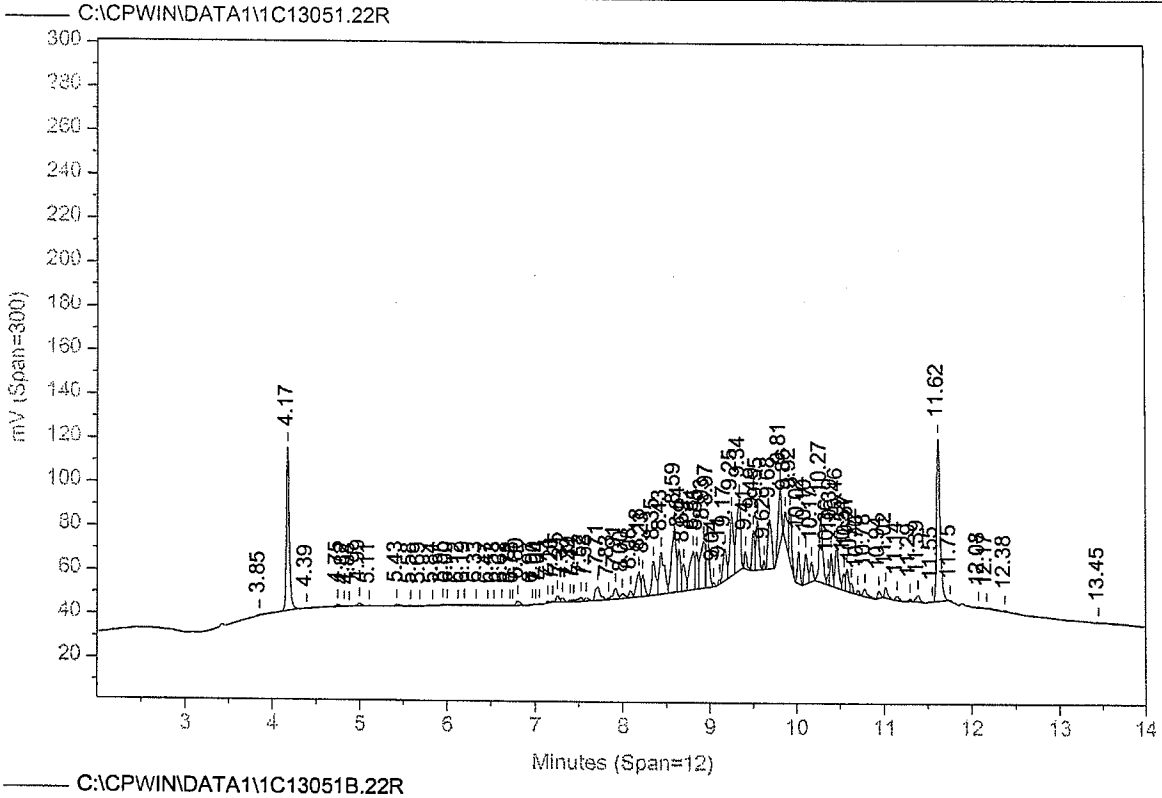
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 74385 | 19.58884 | TCX | 4.208 | 48499 | 19.06867 | TCX |
| 4.746 | 991 | .15059 | HCB | . | 0 | . | HCB |
| 4.994 | 1470 | .31771 | alpha-BHC | 5.094 | 688 | 1.27557 | alpha-BHC |
| 5.429 | 915 | .2002 | gamma-BHC | 5.599 | 427 | .96889 | gamma-BHC |
| 5.584 | 122 | .04467 | beta-BHC | . | 0 | . | beta-BHC |
| 5.836 | 278 | .06537 | delta-BHC | . | 0 | . | delta-BHC |
| 6.124 | 237 | .04579 | Heptachlor | . | 0 | . | Heptachlor |
| 6.53 | 396 | .09935 | Aldrin | . | 0 | . | Aldrin |
| 7.392 | 1030 | .23306 | Hept. epoxide | 7.436 | 1435 | .55657 | Hept. epoxide |
| 7.522 | 1918 | .45281 | g. Chlordane | 7.679 | 1011 | .3866 | g. Chlordane |
| 7.714 | 6291 | 1.47612 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.833 | 877 | .25704 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.915 | 4861 | 1.26869 | Endosulfan I | 7.954 | 972 | .37671 | Endosulfan I |
| 8.226 | 9858 | 2.70545 | Dieldrin | 8.299 | 11125 | 4.75784 | Dieldrin |
| 8.346 | 15390 | 5.65243 | o,p-DDT | 8.772 | 1644 | 1.0815 | o,p-DDT |
| 8.588 | 30219 | 58.15011 | Kepone | 8.875 | 8043 | 37.97349 | Kepone |
| . | 0 | . | Endrin | 8.719 | 3997 | 1.97229 | Endrin |
| . | 0 | . | 4,4'-DDD | 8.843 | 1571 | 2.63884 | 4,4'-DDD |
| 8.85 | 16766 | 4.84852 | Endosulfan II | 8.978 | 8094 | 3.83353 | Endosulfan II |
| 8.97 | 27702 | 9.35127 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.434 | 17800 | 10.80472 | Endrin aldehyde |
| 9.545 | 22647 | 8.78822 | Methoxychlor | 10.099 | 23400 | 23.5211 | Methoxychlor |
| 9.924 | 22909 | 7.44516 | Endo. sulfate | 9.773 | 8069 | 4.32141 | Endo. sulfate |
| 9.805 | 26743 | 5.88144 | Mirex | 10.413 | 7005 | .80123 | Mirex |
| 11.618 | 73948 | 20.06271 | DCB | 12.229 | 49917 | 19.98483 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.22A
Area File: C:\CPWIN\DATA1\1C13051B.22A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 11:18:12 AM
File Reported On: 2/23/2004 at 11:18:20 AM



10X REPLOTS

C:\CPWIN\DATA1\1C13051.22R

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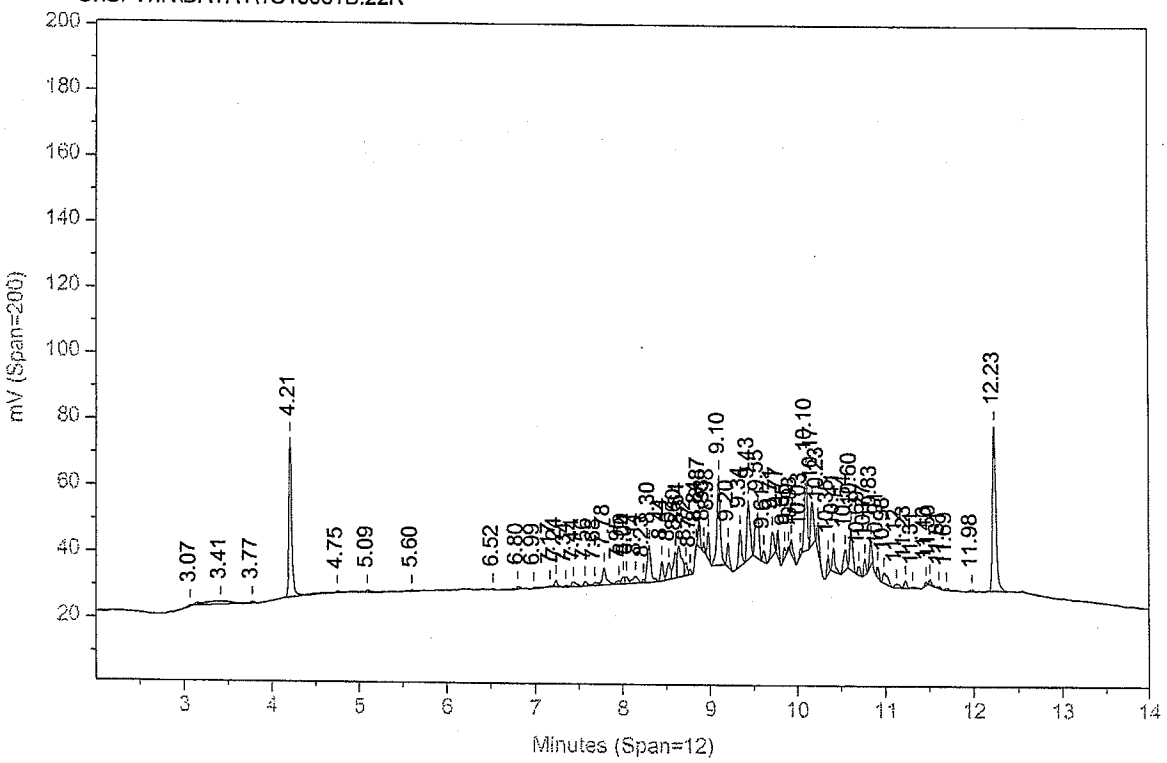



8594

Sample Name: **CHLDX03B AACHLDXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 03:28:24pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.23R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.850 | | 0.0000 | 0.000 | 1377.0 | 0.074 | BB | 0.043 | 536.90 | 0.079 |
| 2 | 4.088 | | 0.0000 | 0.000 | 24509.3 | 1.312 | BB | 0.035 | 11838.96 | 1.750 |
| 3 | 4.173 | TCX | 19.2131 | 12.759 | 166159.6 | 8.896 | BB | 0.038 | 72958.21 | 10.786 |
| 4 | 4.636 | | 0.0000 | 0.000 | 1510.8 | 0.081 | BB | 0.187 | 134.47 | 0.020 |
| 5 | 4.744 | HCB | 0.1391 | 0.092 | 1933.5 | 0.104 | BB | 0.035 | 915.90 | 0.135 |
| 6 | 4.808 | | 0.0000 | 0.000 | 92.0 | 0.005 | BB | 0.024 | 63.82 | 0.009 |
| 7 | 4.865 | | 0.0000 | 0.000 | 215.8 | 0.012 | BB | 0.035 | 104.17 | 0.015 |
| 8 | 4.969 | alpha-BHC | 0.0447 | 0.030 | 529.4 | 0.028 | BB | 0.043 | 206.68 | 0.031 |
| 9 | 5.072 | | 0.0000 | 0.000 | 7651.4 | 0.410 | BB | 0.040 | 3196.30 | 0.473 |
| 10 | 5.219 | | 0.0000 | 0.000 | 5127.1 | 0.274 | BB | 0.038 | 2263.17 | 0.335 |
| 11 | 5.347 | | 0.0000 | 0.000 | 795.7 | 0.043 | BB | 0.027 | 489.87 | 0.072 |
| 12 | 5.399 | | 0.0000 | 0.000 | 1835.8 | 0.098 | BB | 0.033 | 938.18 | 0.139 |
| 13 | 5.534 | | 0.0000 | 0.000 | 1117.7 | 0.060 | BB | 0.033 | 561.60 | 0.083 |
| 14 | 5.596 | beta-BHC | 0.1408 | 0.093 | 713.6 | 0.038 | BB | 0.031 | 383.70 | 0.057 |
| 15 | 5.659 | | 0.0000 | 0.000 | 2034.8 | 0.109 | BB | 0.045 | 756.48 | 0.112 |
| 16 | 5.764 | | 0.0000 | 0.000 | 3255.7 | 0.174 | BB | 0.033 | 1652.47 | 0.244 |
| 17 | 5.841 | delta-BHC | 0.1424 | 0.095 | 1127.1 | 0.060 | BB | 0.031 | 606.09 | 0.090 |
| 18 | 5.904 | | 0.0000 | 0.000 | 5249.1 | 0.281 | BB | 0.033 | 2629.95 | 0.389 |
| 19 | 6.018 | | 0.0000 | 0.000 | 67496.7 | 3.614 | BB | 0.035 | 32341.53 | 4.781 |
| 20 | 6.132 | Heptachlor | 8.3304 | 5.532 | 93522.6 | 5.007 | BB | 0.036 | 43035.41 | 6.362 |
| 21 | 6.292 | | 0.0000 | 0.000 | 31304.1 | 1.676 | BV | 0.065 | 8051.70 | 1.190 |
| 22 | 6.434 | | 0.0000 | 0.000 | 3827.8 | 0.205 | VV | 0.038 | 1669.00 | 0.247 |
| 23 | 6.504 | | 0.0000 | 0.000 | 333.9 | 0.018 | VB | 0.036 | 153.48 | 0.023 |
| 24 | 6.574 | Aldrin | 0.1601 | 0.106 | 1422.0 | 0.076 | BV | 0.037 | 638.36 | 0.094 |
| 25 | 6.667 | | 0.0000 | 0.000 | 5915.1 | 0.317 | VV | 0.036 | 2719.58 | 0.402 |
| 26 | 6.737 | | 0.0000 | 0.000 | 103069.4 | 5.518 | VV | 0.039 | 43765.48 | 6.470 |
| 27 | 6.894 | | 0.0000 | 0.000 | 6082.1 | 0.326 | VV | 0.041 | 2473.20 | 0.366 |
| 28 | 6.979 | | 0.0000 | 0.000 | 19373.3 | 1.037 | VB | 0.085 | 3789.14 | 0.560 |
| 29 | 7.084 | | 0.0000 | 0.000 | 8700.1 | 0.466 | BB | 0.035 | 4095.34 | 0.605 |
| 30 | 7.154 | | 0.0000 | 0.000 | 19896.2 | 1.065 | BB | 0.061 | 5404.62 | 0.799 |
| 31 | 7.293 | | 0.0000 | 0.000 | 38953.8 | 2.085 | BV | 0.037 | 17654.64 | 2.610 |
| 32 | 7.385 | Hept. epoxide | 1.9930 | 1.324 | 27108.3 | 1.451 | VV | 0.051 | 8809.80 | 1.302 |
| 33 | 7.438 | | 0.0000 | 0.000 | 44344.0 | 2.374 | VV | 0.044 | 16662.84 | 2.463 |
| 34 | 7.547 | g. Chlordane | 20.2427 | 13.443 | 229485.3 | 12.286 | VV | 0.045 | 85730.29 | 12.674 |
| 35 | 7.716 | a. Chlordane | 24.8294 | 16.489 | 375642.9 | 20.111 | VV | 0.059 | 105826.10 | 15.645 |
| 36 | 7.832 | 4,4'-DDE | 0.6324 | 0.420 | 7021.8 | 0.376 | VB | 0.054 | 2158.51 | 0.319 |
| 37 | 7.934 | Endosulfan I | 0.3524 | 0.234 | 2427.1 | 0.130 | BV | 0.030 | 1350.14 | 0.200 |
| 38 | 8.001 | | 0.0000 | 0.000 | 21731.0 | 1.163 | VV | 0.058 | 6248.59 | 0.924 |
| 39 | 8.128 | | 0.0000 | 0.000 | 27967.1 | 1.497 | VB | 0.044 | 10623.68 | 1.571 |
| 40 | 8.246 | Dieldrin | 0.5350 | 0.355 | 3721.0 | 0.199 | BB | 0.032 | 1949.46 | 0.288 |
| 41 | 8.328 | | 0.0000 | 0.000 | 14603.2 | 0.782 | BB | 0.039 | 6263.10 | 0.926 |
| 42 | 8.453 | | 0.0000 | 0.000 | 4587.0 | 0.246 | BV | 0.056 | 1375.00 | 0.203 |
| 43 | 8.587 | Kepone | 62.5963 | 41.569 | 118131.5 | 6.324 | VV | 0.058 | 34186.36 | 5.054 |
| 44 | 8.669 | | 0.0000 | 0.000 | 6872.3 | 0.368 | VV | 0.033 | 3420.14 | 0.506 |
| 45 | 8.733 | | 0.0000 | 0.000 | 70571.3 | 3.778 | VV | 0.039 | 30066.63 | 4.445 |
| 46 | 8.815 | Endosulfan II | 0.2136 | 0.142 | 1108.3 | 0.059 | VB | 0.025 | 738.56 | 0.109 |
| 47 | 9.050 | | 0.0000 | 0.000 | 17525.2 | 0.938 | BV | 0.057 | 5130.82 | 0.759 |
| 48 | 9.180 | | 0.0000 | 0.000 | 696.8 | 0.037 | VV | 0.033 | 353.23 | 0.052 |
| 49 | 9.242 | | 0.0000 | 0.000 | 1290.3 | 0.069 | VV | 0.033 | 643.89 | 0.095 |
| 50 | 9.285 | | 0.0000 | 0.000 | 3506.6 | 0.188 | VB | 0.047 | 1246.53 | 0.184 |
| 51 | 9.394 | Endrin aldehyde | 0.1787 | 0.119 | 1022.2 | 0.055 | BV | 0.038 | 444.12 | 0.066 |
| 52 | 9.474 | | 0.0000 | 0.000 | 929.7 | 0.050 | VV | 0.037 | 420.80 | 0.062 |
| 53 | 9.518 | | 0.0000 | 0.000 | 535.1 | 0.029 | VV | 0.032 | 278.13 | 0.041 |
| 54 | 9.578 | Methoxychlor | -5.6752 | -3.769 | 867.0 | 0.046 | VV | 0.038 | 377.40 | 0.056 |
| 55 | 9.632 | | 0.0000 | 0.000 | 940.0 | 0.050 | VB | 0.039 | 402.57 | 0.060 |
| 56 | 9.743 | | 0.0000 | 0.000 | 545.3 | 0.029 | BB | 0.041 | 219.52 | 0.032 |
| 57 | 9.804 | Mirex | -4.8921 | -3.249 | 271.4 | 0.015 | BB | 0.024 | 186.26 | 0.028 |
| 58 | 9.883 | | 0.0000 | 0.000 | 1311.7 | 0.070 | BV | 0.033 | 656.95 | 0.097 |
| 59 | 9.928 | Endo. sulfate | 1.0570 | 0.702 | 8143.9 | 0.436 | VV | 0.042 | 3252.53 | 0.481 |
| 60 | 9.996 | | 0.0000 | 0.000 | 4147.2 | 0.222 | VV | 0.047 | 1466.52 | 0.217 |
| 61 | 10.089 | | 0.0000 | 0.000 | 2706.6 | 0.145 | VV | 0.048 | 941.55 | 0.139 |
| 62 | 10.180 | | 0.0000 | 0.000 | 11362.3 | 0.608 | VB | 0.068 | 2795.39 | 0.413 |
| 63 | 10.623 | | 0.0000 | 0.000 | 1413.1 | 0.076 | BV | 0.133 | 177.33 | 0.026 |
| 64 | 10.707 | | 0.0000 | 0.000 | 963.6 | 0.052 | VB | 0.060 | 269.34 | 0.040 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.176 | | 0.0000 | 0.000 | 199.4 | 0.011 | BB | 0.046 | 72.94 | 0.011 |
| 66 | 11.338 | | 0.0000 | 0.000 | 477.2 | 0.026 | BB | 0.035 | 224.64 | 0.033 |
| 67 | 11.476 | | 0.0000 | 0.000 | 364.4 | 0.020 | BB | 0.095 | 64.12 | 0.009 |
| 68 | 11.616 DCB | | 20.3515 | 13.515 | 218427.9 | 11.694 | BB | 0.049 | 74826.23 | 11.062 |
| 69 | 11.922 | | 0.0000 | 0.000 | 423.5 | 0.023 | BB | 0.035 | 202.82 | 0.030 |
| 70 | 13.448 | | 0.0000 | 0.000 | 9341.0 | 0.500 | BB | 0.494 | 315.42 | 0.047 |

Total Area = 1867866.0, Total Amount = 150.585, Total Height = 676406.5, Sample Units = PPB

Sample Name: **CHLDX03B AACHLDXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 03:28:24pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.23R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

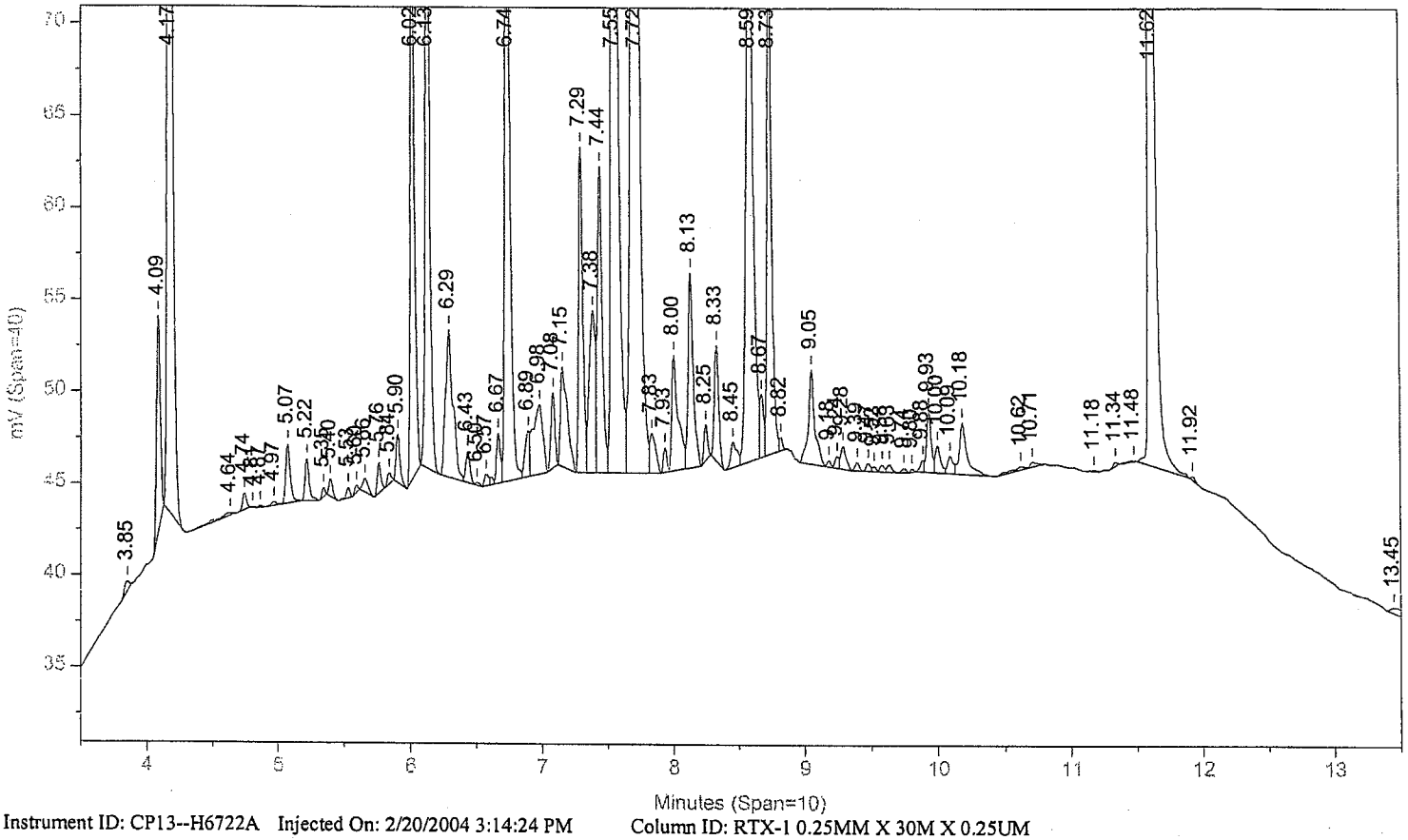
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1601.9 | 0.157 | BB | 0.044 | 610.62 | 0.139 |
| 2 | 3.440 | | 0.0000 | 0.000 | 22053.6 | 2.167 | BB | 0.384 | 956.28 | 0.218 |
| 3 | 3.775 | | 0.0000 | 0.000 | 1506.8 | 0.148 | BB | 0.043 | 577.48 | 0.131 |
| 4 | 4.208 | TCX | 17.5385 | 11.492 | 83458.1 | 8.200 | BB | 0.031 | 44607.46 | 10.151 |
| 5 | 4.261 | | 0.0000 | 0.000 | 2694.2 | 0.265 | BB | 0.021 | 2148.72 | 0.489 |
| 6 | 4.745 | | 0.0000 | 0.000 | 3067.1 | 0.301 | BB | 0.081 | 631.70 | 0.144 |
| 7 | 5.021 | | 0.0000 | 0.000 | 3360.1 | 0.330 | BB | 0.033 | 1721.85 | 0.392 |
| 8 | 5.146 | | 0.0000 | 0.000 | 3351.0 | 0.329 | BB | 0.039 | 1439.02 | 0.327 |
| 9 | 5.495 | | 0.0000 | 0.000 | 330.9 | 0.033 | BB | 0.125 | 44.10 | 0.010 |
| 10 | 5.665 | | 0.0000 | 0.000 | 397.4 | 0.039 | BB | 0.027 | 247.22 | 0.056 |
| 11 | 5.722 | beta-BHC | 0.2453 | 0.161 | 671.2 | 0.066 | BB | 0.028 | 394.43 | 0.090 |
| 12 | 5.776 | | 0.0000 | 0.000 | 1668.0 | 0.164 | BB | 0.032 | 872.15 | 0.198 |
| 13 | 5.874 | | 0.0000 | 0.000 | 2172.4 | 0.213 | BB | 0.044 | 830.54 | 0.189 |
| 14 | 5.978 | | 0.0000 | 0.000 | 2218.6 | 0.218 | BV | 0.026 | 1436.42 | 0.327 |
| 15 | 6.023 | | 0.0000 | 0.000 | 36888.4 | 3.625 | VB | 0.033 | 18356.81 | 4.177 |
| 16 | 6.227 | Heptachlor | 8.4369 | 5.528 | 51564.6 | 5.067 | BB | 0.036 | 24067.39 | 5.477 |
| 17 | 6.377 | | 0.0000 | 0.000 | 3930.4 | 0.386 | BB | 0.025 | 2671.04 | 0.608 |
| 18 | 6.446 | | 0.0000 | 0.000 | 4564.8 | 0.449 | BB | 0.035 | 2149.54 | 0.489 |
| 19 | 6.611 | | 0.0000 | 0.000 | 2935.3 | 0.288 | BB | 0.052 | 937.91 | 0.213 |
| 20 | 6.755 | | 0.0000 | 0.000 | 6449.3 | 0.634 | BB | 0.035 | 3074.40 | 0.700 |
| 21 | 6.879 | Telodrin | 10.3658 | 6.792 | 56041.4 | 5.507 | BB | 0.035 | 26680.71 | 6.072 |
| 22 | 6.955 | | 0.0000 | 0.000 | 314.7 | 0.031 | BB | 0.015 | 349.38 | 0.080 |
| 23 | 7.050 | | 0.0000 | 0.000 | 2301.8 | 0.226 | BB | 0.031 | 1251.63 | 0.285 |
| 24 | 7.093 | | 0.0000 | 0.000 | 459.8 | 0.045 | BB | 0.017 | 438.25 | 0.100 |
| 25 | 7.142 | | 0.0000 | 0.000 | 8456.1 | 0.831 | BB | 0.032 | 4376.84 | 0.996 |
| 26 | 7.235 | | 0.0000 | 0.000 | 5853.6 | 0.575 | BB | 0.037 | 2649.66 | 0.603 |
| 27 | 7.398 | | 0.0000 | 0.000 | 20863.5 | 2.050 | BB | 0.035 | 9900.09 | 2.253 |
| 28 | 7.486 | | 0.0000 | 0.000 | 1033.3 | 0.102 | BV | 0.030 | 580.89 | 0.132 |
| 29 | 7.551 | | 0.0000 | 0.000 | 35496.8 | 3.488 | VV | 0.055 | 10692.42 | 2.433 |
| 30 | 7.695 | g. Chlordane | 22.9166 | 15.016 | 129020.7 | 12.677 | VV | 0.036 | 59914.08 | 13.634 |
| 31 | 7.816 | | 0.0000 | 0.000 | 108869.8 | 10.697 | VV | 0.039 | 46626.27 | 10.611 |
| 32 | 7.887 | a. Chlordane | 19.1902 | 12.574 | 111722.6 | 10.978 | VV | 0.036 | 51909.96 | 11.813 |
| 33 | 8.083 | 4,4'-DDE | 1.0560 | 0.692 | 9896.2 | 0.972 | VV | 0.081 | 2045.93 | 0.466 |
| 34 | 8.204 | | 0.0000 | 0.000 | 10996.8 | 1.081 | VV | 0.052 | 3534.68 | 0.804 |
| 35 | 8.330 | Dieldrin | 2.6819 | 1.757 | 18031.1 | 1.772 | VB | 0.048 | 6271.30 | 1.427 |
| 36 | 8.453 | | 0.0000 | 0.000 | 1836.6 | 0.180 | BV | 0.029 | 1049.03 | 0.239 |
| 37 | 8.520 | | 0.0000 | 0.000 | 4903.0 | 0.482 | VV | 0.059 | 1395.08 | 0.317 |
| 38 | 8.568 | | 0.0000 | 0.000 | 3543.3 | 0.348 | VV | 0.044 | 1347.22 | 0.307 |
| 39 | 8.682 | | 0.0000 | 0.000 | 7124.1 | 0.700 | VB | 0.062 | 1917.56 | 0.436 |
| 40 | 8.823 | | 0.0000 | 0.000 | 10374.4 | 1.019 | BB | 0.027 | 6417.34 | 1.460 |
| 41 | 8.874 | Kepone | 49.7343 | 32.589 | 33264.6 | 3.269 | BB | 0.035 | 15986.79 | 3.638 |
| 42 | 8.968 | | 0.0000 | 0.000 | 732.7 | 0.072 | BB | 0.024 | 509.78 | 0.116 |
| 43 | 9.058 | | 0.0000 | 0.000 | 39987.2 | 3.929 | BB | 0.037 | 18034.88 | 4.104 |
| 44 | 9.176 | | 0.0000 | 0.000 | 5065.8 | 0.498 | BB | 0.134 | 631.34 | 0.144 |
| 45 | 9.466 | | 0.0000 | 0.000 | 7987.6 | 0.785 | BB | 0.044 | 3014.43 | 0.686 |
| 46 | 9.626 | | 0.0000 | 0.000 | 854.1 | 0.084 | BB | 0.029 | 491.46 | 0.112 |
| 47 | 9.890 | | 0.0000 | 0.000 | 1545.0 | 0.152 | BB | 0.062 | 414.75 | 0.094 |
| 48 | 10.051 | | 0.0000 | 0.000 | 676.8 | 0.067 | BB | 0.034 | 333.71 | 0.076 |
| 49 | 10.406 | | 0.0000 | 0.000 | 1398.8 | 0.137 | BB | 0.034 | 685.61 | 0.156 |
| 50 | 10.488 | Endrin ketone | 0.3344 | 0.219 | 2062.7 | 0.203 | BB | 0.042 | 812.10 | 0.185 |
| 51 | 10.583 | | 0.0000 | 0.000 | 3421.7 | 0.336 | BB | 0.047 | 1206.56 | 0.275 |
| 52 | 12.226 | DCB | 20.1127 | 13.179 | 138710.3 | 13.629 | BB | 0.046 | 50186.23 | 11.421 |

Total Area = 1017731.0, Total Amount = 152.613, Total Height = 439431.1, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.23R

C:\CPWIN\DATA1\1C13051.23R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 3:14:24 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.23R

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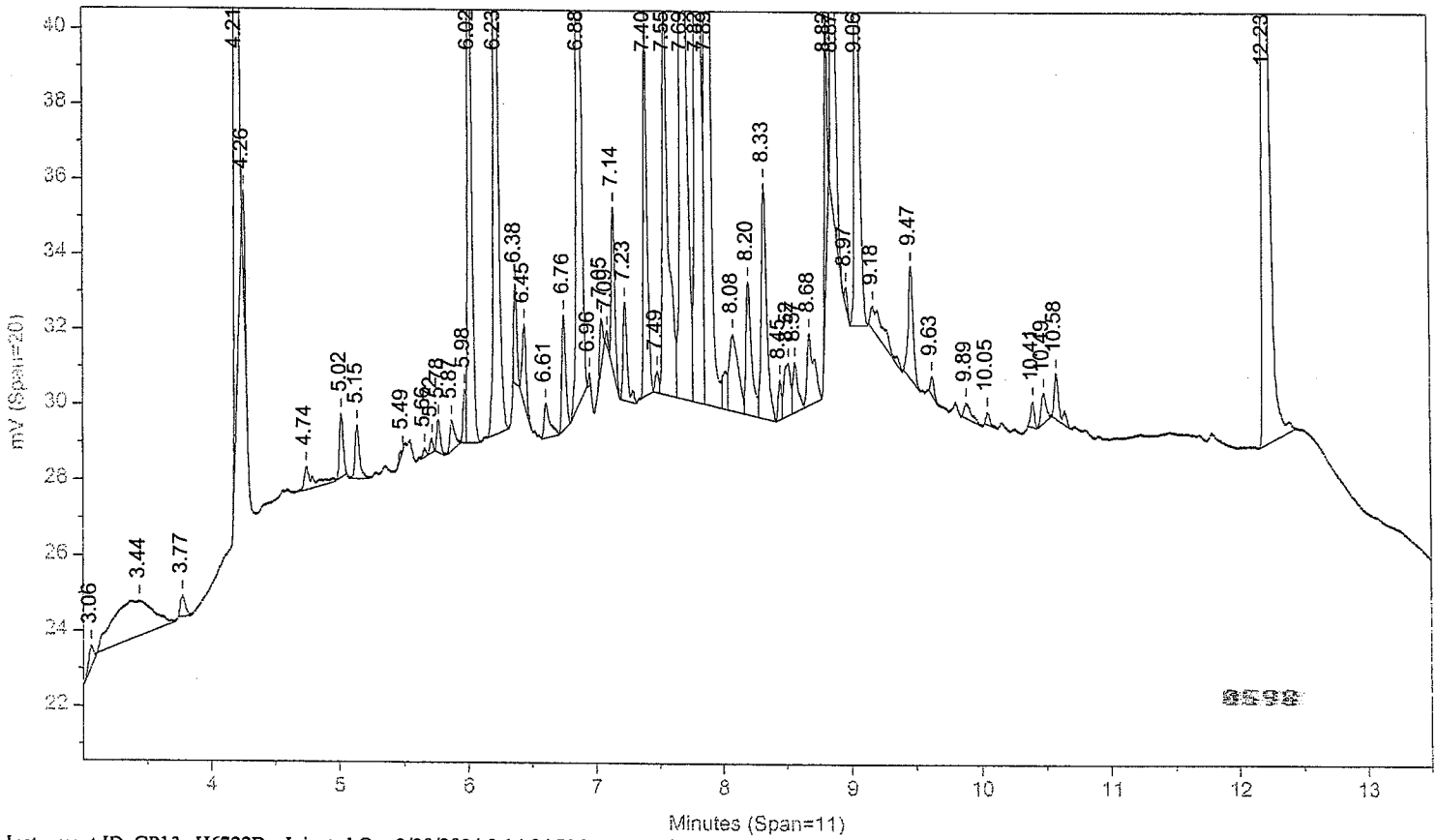



Instrument ID: CP13--H6722B Injected On: 2/20/2004 3:14:24 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

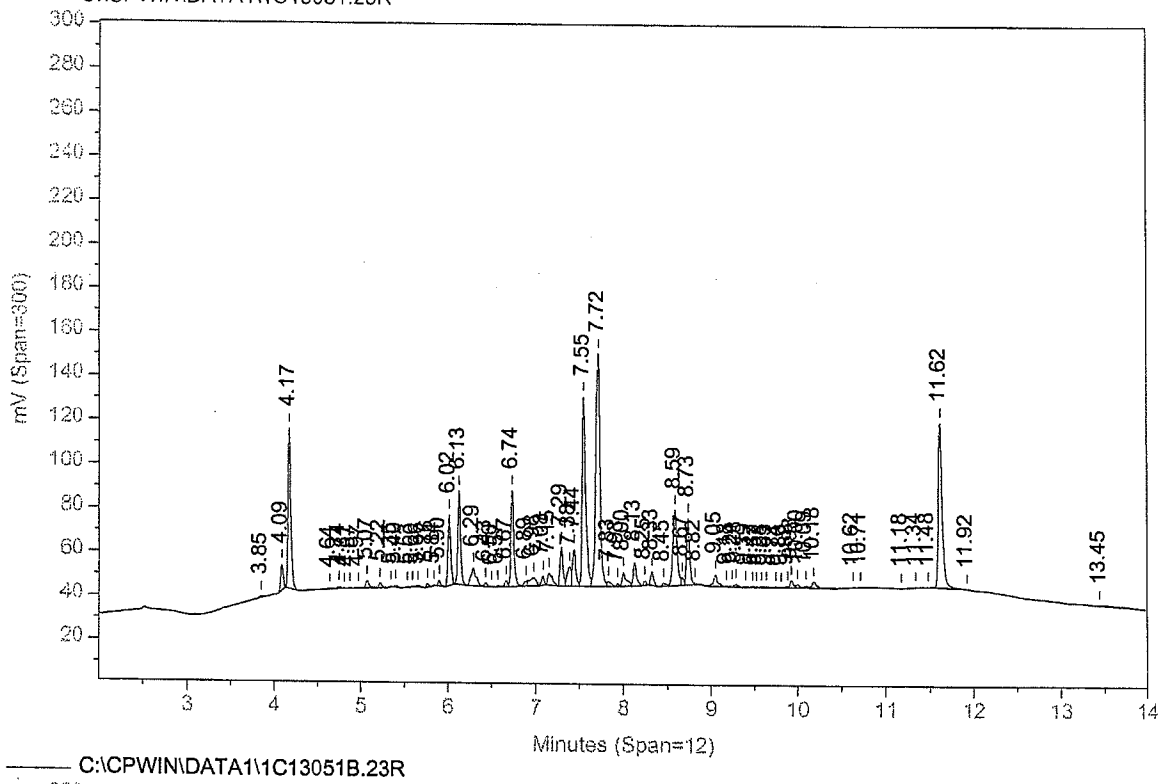
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 72958 | 19.21306 | TCX | 4.208 | 44607 | 17.53845 | TCX |
| 4.744 | 916 | .13913 | HCB | . | 0 | . | HCB |
| 4.969 | 207 | .04467 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.596 | 384 | .14078 | beta-BHC | 5.722 | 394 | .24531 | beta-BHC |
| 5.841 | 606 | .1424 | delta-BHC | . | 0 | . | delta-BHC |
| 6.132 | 43035 | 8.33042 | Heptachlor | 6.227 | 24067 | 8.43686 | Heptachlor |
| 6.574 | 638 | .16011 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Telodrin | 6.879 | 26681 | 10.36583 | Telodrin |
| 7.385 | 8810 | 1.993 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.547 | 85730 | 20.24275 | g. Chlordane | 7.695 | 59914 | 22.91665 | g. Chlordane |
| 7.716 | 105826 | 24.82943 | a. Chlordane | 7.887 | 51910 | 19.19024 | a. Chlordane |
| 7.832 | 2159 | .6324 | 4,4'-DDE | 8.083 | 2046 | 1.05599 | 4,4'-DDE |
| 7.934 | 1350 | .3524 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.246 | 1949 | .53504 | Dieldrin | 8.33 | 6271 | 2.68193 | Dieldrin |
| 8.587 | 34186 | 62.59631 | Kepone | 8.874 | 15987 | 49.7343 | Kepone |
| 8.815 | 739 | .21358 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.394 | 444 | .17868 | Endrin aldehyde | . | 0 | . | Endrin aldehyde |
| 9.578 | 377 | -5.67524 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.804 | 186 | -4.89214 | Mirex | . | 0 | . | Mirex |
| 9.928 | 3253 | 1.05705 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.488 | 812 | .33442 | Endrin ketone |
| 11.616 | 74826 | 20.35145 | DCB | 12.226 | 50186 | 20.11273 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.23A
Area File: C:\CPWIN\DATA1\1C13051B.23A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 11:18:34 AM
File Reported On: 2/23/2004 at 11:18:42 AM

8599

10X REPLOTS

C:\CPWIN\DATA1\1C13051.23R

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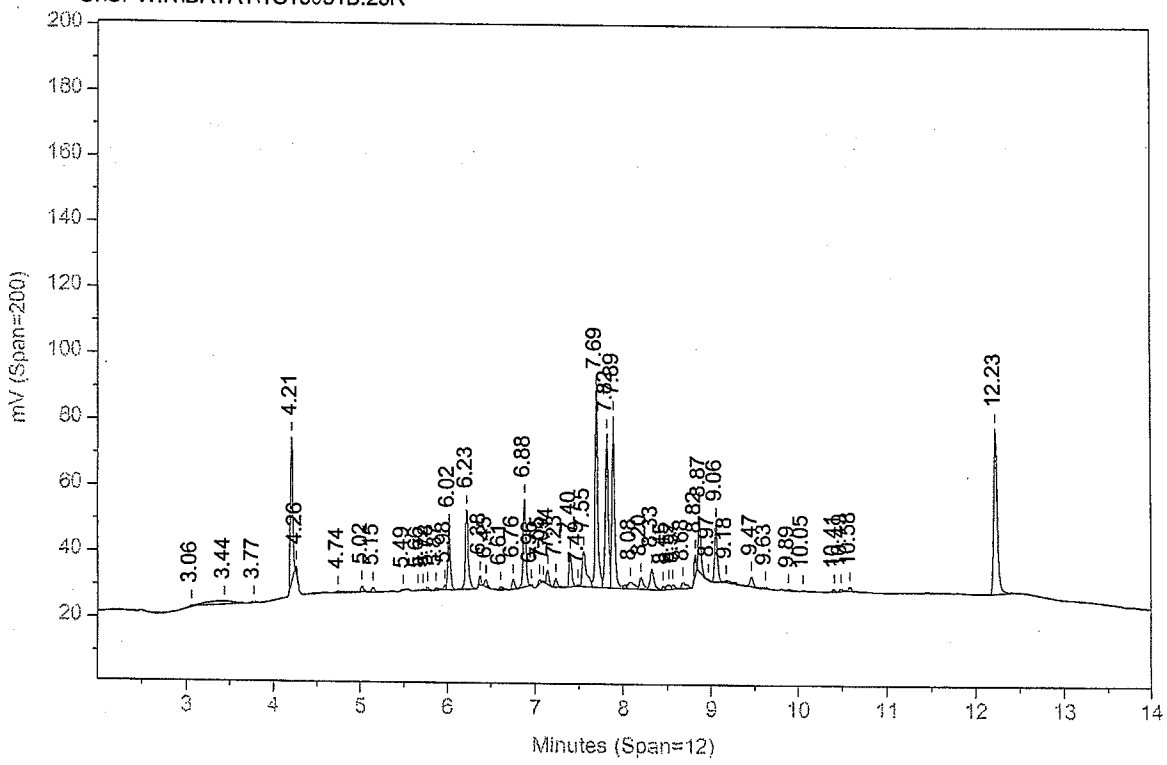


Sample Name: **MDLAX03D AAMDLAXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 07:13:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.34R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.849 | | 0.0000 | 0.000 | 725.7 | 0.426 | BB | 0.051 | 235.70 | 0.616 |
| 2 | 4.171 | TCX | 0.9383 | 85.468 | 11164.5 | 6.546 | BB | 0.052 | 3562.95 | 9.312 |
| 3 | 4.992 | alpha-BHC | 0.2080 | 18.950 | 14080.1 | 8.255 | BB | 0.244 | 962.63 | 2.516 |
| 4 | 5.103 | | 0.0000 | 0.000 | 200.2 | 0.117 | BB | 0.037 | 90.81 | 0.237 |
| 5 | 5.451 | gamma-BHC | 0.1953 | 17.787 | 1927.3 | 1.130 | BB | 0.036 | 891.97 | 2.331 |
| 6 | 5.581 | beta-BHC | 0.2158 | 19.660 | 1365.2 | 0.800 | BB | 0.039 | 588.27 | 1.537 |
| 7 | 5.689 | | 0.0000 | 0.000 | 56.8 | 0.033 | BB | 0.029 | 33.10 | 0.087 |
| 8 | 5.834 | delta-BHC | 0.1812 | 16.507 | 1622.2 | 0.951 | BB | 0.035 | 771.31 | 2.016 |
| 9 | 5.967 | | 0.0000 | 0.000 | 648.6 | 0.380 | BV | 0.071 | 151.30 | 0.395 |
| 10 | 6.130 | Heptachlor | 0.2761 | 25.152 | 7502.3 | 4.399 | VV | 0.088 | 1426.45 | 3.728 |
| 11 | 6.368 | | 0.0000 | 0.000 | 5552.0 | 3.255 | VV | 0.124 | 746.81 | 1.952 |
| 12 | 6.551 | Aldrin | 0.2568 | 23.393 | 3533.0 | 2.071 | VB | 0.058 | 1023.93 | 2.676 |
| 13 | 6.930 | | 0.0000 | 0.000 | 1203.6 | 0.706 | BV | 0.056 | 358.40 | 0.937 |
| 14 | 7.381 | Hept. epoxide | 0.3482 | 31.720 | 13664.2 | 8.011 | VV | 0.148 | 1539.32 | 4.023 |
| 15 | 7.545 | g. Chlordane | 0.3235 | 29.465 | 6046.1 | 3.545 | VV | 0.074 | 1369.95 | 3.580 |
| 16 | 7.722 | a. Chlordane | 0.3013 | 27.442 | 4146.9 | 2.431 | VV | 0.054 | 1284.01 | 3.356 |
| 17 | 7.810 | 4,4'-DDE | 0.4332 | 39.462 | 3683.7 | 2.160 | VV | 0.042 | 1478.66 | 3.864 |
| 18 | 7.909 | Endosulfan I | 0.2252 | 20.513 | 1952.7 | 1.145 | VB | 0.038 | 862.77 | 2.255 |
| 19 | 8.224 | Dieldrin | 0.4372 | 39.824 | 3983.0 | 2.335 | BB | 0.042 | 1592.98 | 4.163 |
| 20 | 8.321 | | 0.0000 | 0.000 | 415.6 | 0.244 | BB | 0.066 | 104.93 | 0.274 |
| 21 | 8.533 | Endrin | 0.4077 | 37.133 | 3094.4 | 1.814 | BV | 0.037 | 1385.76 | 3.622 |
| 22 | 8.595 | 4,4'-DDD | 0.4115 | 37.483 | 3238.6 | 1.899 | VB | 0.049 | 1093.90 | 2.859 |
| 23 | 8.830 | Endosulfan II | 0.4054 | 36.932 | 3755.5 | 2.202 | BV | 0.045 | 1402.05 | 3.664 |
| 24 | 8.956 | 4,4'-DDT | 0.4510 | 41.082 | 5369.8 | 3.148 | VV | 0.067 | 1336.06 | 3.492 |
| 25 | 9.374 | Endrin aldehyde | 0.4242 | 38.637 | 5271.0 | 3.090 | VB | 0.083 | 1054.27 | 2.755 |
| 26 | 9.571 | Methoxychlor | -3.5101 | -319.736 | 10972.6 | 6.433 | BV | 0.049 | 3711.10 | 9.699 |
| 27 | 9.875 | | 0.0000 | 0.000 | 693.7 | 0.407 | VB | 0.064 | 180.75 | 0.472 |
| 28 | 9.940 | Endo. sulfate | 0.3522 | 32.081 | 2722.2 | 1.596 | BV | 0.042 | 1083.68 | 2.832 |
| 29 | 10.177 | | 0.0000 | 0.000 | 4021.8 | 2.358 | VB | 0.106 | 633.66 | 1.656 |
| 30 | 10.307 | Endrin ketone | 0.3787 | 34.495 | 3207.1 | 1.880 | BB | 0.039 | 1353.89 | 3.538 |
| 31 | 10.709 | | 0.0000 | 0.000 | 1698.9 | 0.996 | BB | 0.055 | 517.44 | 1.352 |
| 32 | 11.618 | DCB | -2.5629 | -233.450 | 35006.1 | 20.524 | BB | 0.114 | 5124.60 | 13.393 |
| 33 | 13.462 | | 0.0000 | 0.000 | 8033.9 | 4.710 | BB | 0.431 | 310.56 | 0.812 |

Total Area = 170559.4, Total Amount = 1.098, Total Height = 38263.98, Sample Units = PPB

Sample Name: **MDLAX03D AAMDLAXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 07:13:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.34R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

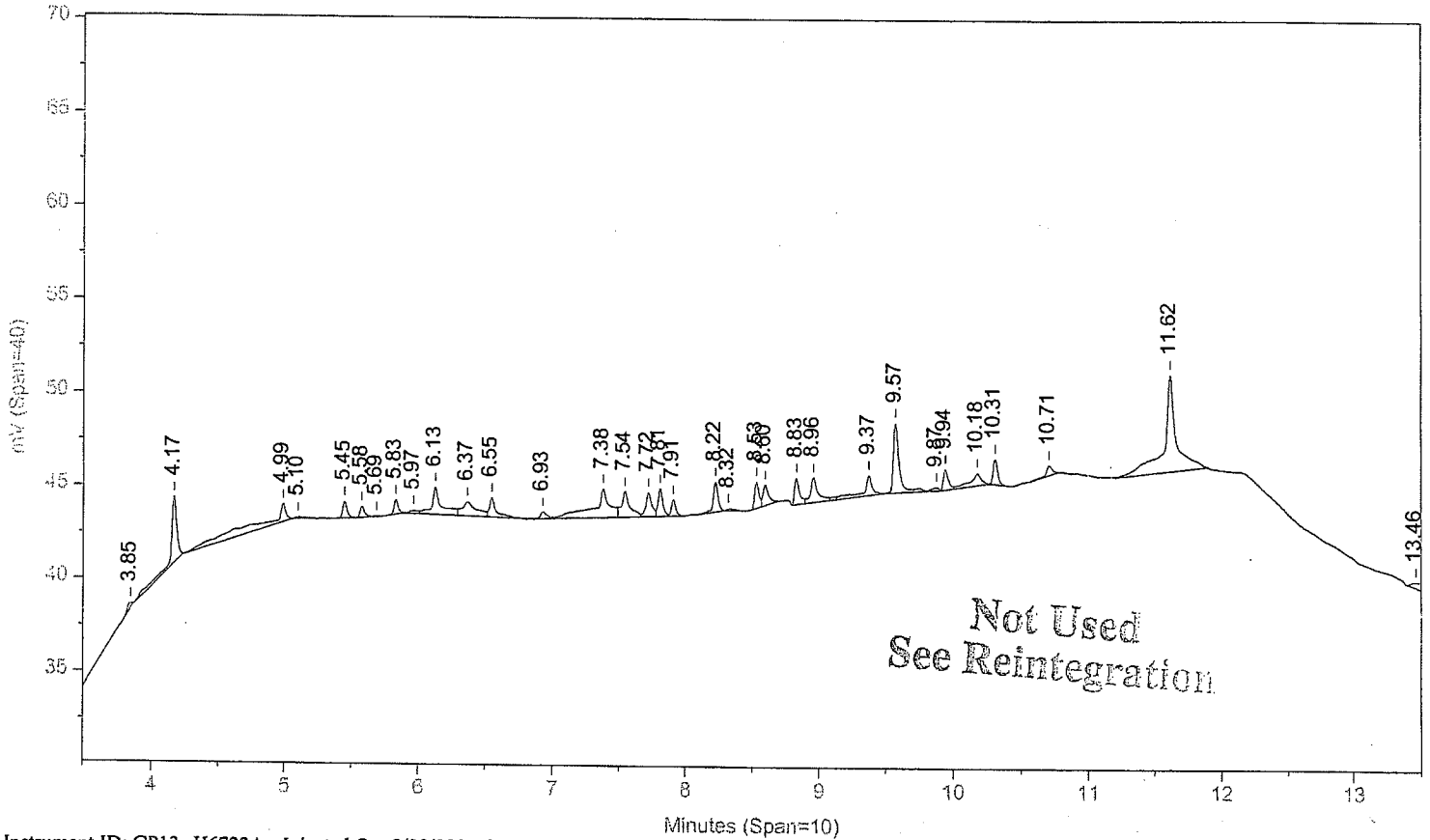
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.065 | | 0.0000 | 0.000 | 1226.2 | 1.713 | BB | 0.052 | 395.71 | 1.975 |
| 2 | 3.240 | | 0.0000 | 0.000 | 2128.6 | 2.973 | BB | 0.640 | 55.40 | 0.276 |
| 3 | 3.773 | | 0.0000 | 0.000 | 1330.8 | 1.859 | BB | 0.046 | 480.44 | 2.397 |
| 4 | 4.207 | TCX | 0.8284 | 8.983 | 7435.2 | 10.385 | BB | 0.059 | 2107.08 | 10.515 |
| 5 | 5.094 | alpha-BHC | 1.1864 | 12.864 | 778.4 | 1.087 | BB | 0.031 | 420.42 | 2.098 |
| 6 | 5.604 | gamma-BHC | 0.9630 | 10.441 | 783.2 | 1.094 | BB | 0.032 | 409.88 | 2.045 |
| 7 | 5.730 | beta-BHC | 0.1980 | 2.147 | 625.0 | 0.873 | BB | 0.033 | 318.41 | 1.589 |
| 8 | 6.144 | delta-BHC | 0.2755 | 2.987 | 1966.4 | 2.747 | BV | 0.054 | 603.20 | 3.010 |
| 9 | 6.226 | Heptachlor | 0.2751 | 2.983 | 2227.2 | 3.111 | VB | 0.047 | 784.70 | 3.916 |
| 10 | 6.675 | Aldrin | 0.2248 | 2.438 | 1124.4 | 1.571 | BB | 0.036 | 520.32 | 2.596 |
| 11 | 7.443 | Hept. epoxide | 0.2345 | 2.543 | 3771.1 | 5.267 | BV | 0.104 | 604.87 | 3.018 |
| 12 | 7.696 | g. Chlordane | 0.2892 | 3.136 | 4651.3 | 6.497 | VV | 0.103 | 756.12 | 3.773 |
| 13 | 7.884 | a. Chlordane | 0.3812 | 4.133 | 3403.6 | 4.754 | VV | 0.055 | 1031.07 | 5.145 |
| 14 | 7.964 | Endosulfan I | 0.3466 | 3.759 | 4907.0 | 6.854 | VV | 0.091 | 901.55 | 4.499 |
| 15 | 8.104 | 4,4'-DDE | 0.5015 | 5.438 | 4780.9 | 6.678 | VB | 0.082 | 971.73 | 4.849 |
| 16 | 8.324 | Dieldrin | 0.3806 | 4.127 | 2261.2 | 3.158 | BB | 0.042 | 890.00 | 4.441 |
| 17 | 8.721 | Endrin | 0.3721 | 4.035 | 1889.1 | 2.639 | BB | 0.042 | 754.25 | 3.764 |
| 18 | 8.858 | 4,4'-DDD | 1.7527 | 19.004 | 700.1 | 0.978 | BB | 0.038 | 304.81 | 1.521 |
| 19 | 8.998 | Endosulfan II | 0.3714 | 4.027 | 2120.3 | 2.961 | BB | 0.045 | 784.16 | 3.913 |
| 20 | 9.254 | 4,4'-DDT | 0.3491 | 3.786 | 1892.9 | 2.644 | BB | 0.056 | 566.67 | 2.828 |
| 21 | 9.436 | Endrin aldehyde | 0.3727 | 4.041 | 1465.7 | 2.047 | BB | 0.040 | 614.00 | 3.064 |
| 22 | 9.786 | Endo. sulfate | 0.2971 | 3.221 | 1307.2 | 1.826 | BB | 0.039 | 554.67 | 2.768 |
| 23 | 10.133 | Methoxychlor | 1.7025 | 18.460 | 4779.9 | 6.676 | BB | 0.047 | 1693.69 | 8.452 |
| 24 | 10.483 | Endrin ketone | 0.3433 | 3.722 | 5059.5 | 7.067 | BB | 0.101 | 833.61 | 4.160 |
| 25 | 12.232 | DCB | -2.4233 | -26.275 | 8980.8 | 12.544 | BB | 0.056 | 2682.69 | 13.387 |

Total Area = 71596.2, Total Amount = 9.223, Total Height = 20039.47, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.34R

C:\CPWIN\DATA1\1C13051.34R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 6:59:07 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

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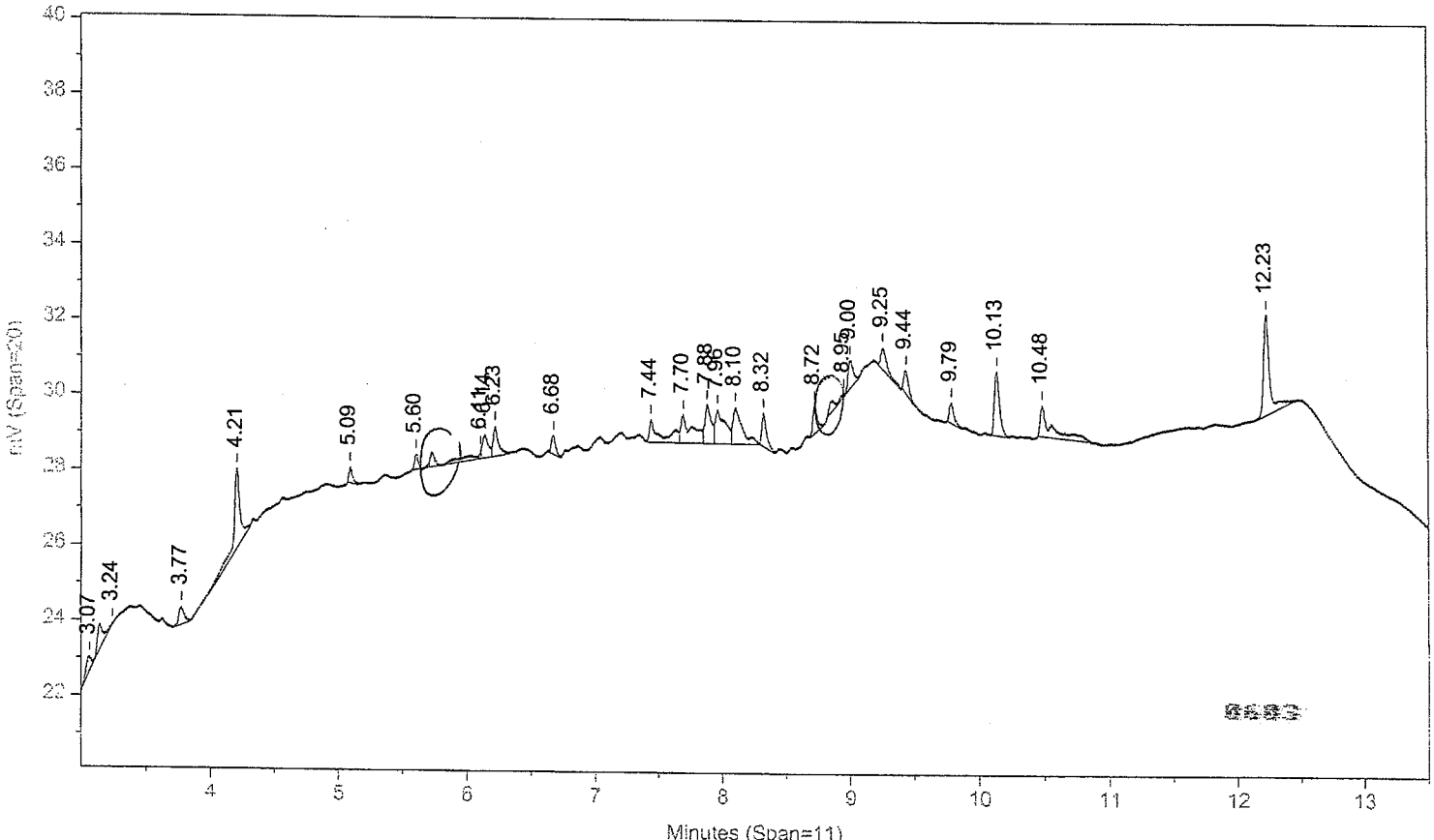
C:\CPWIN\DATA1\1C13051B.34R

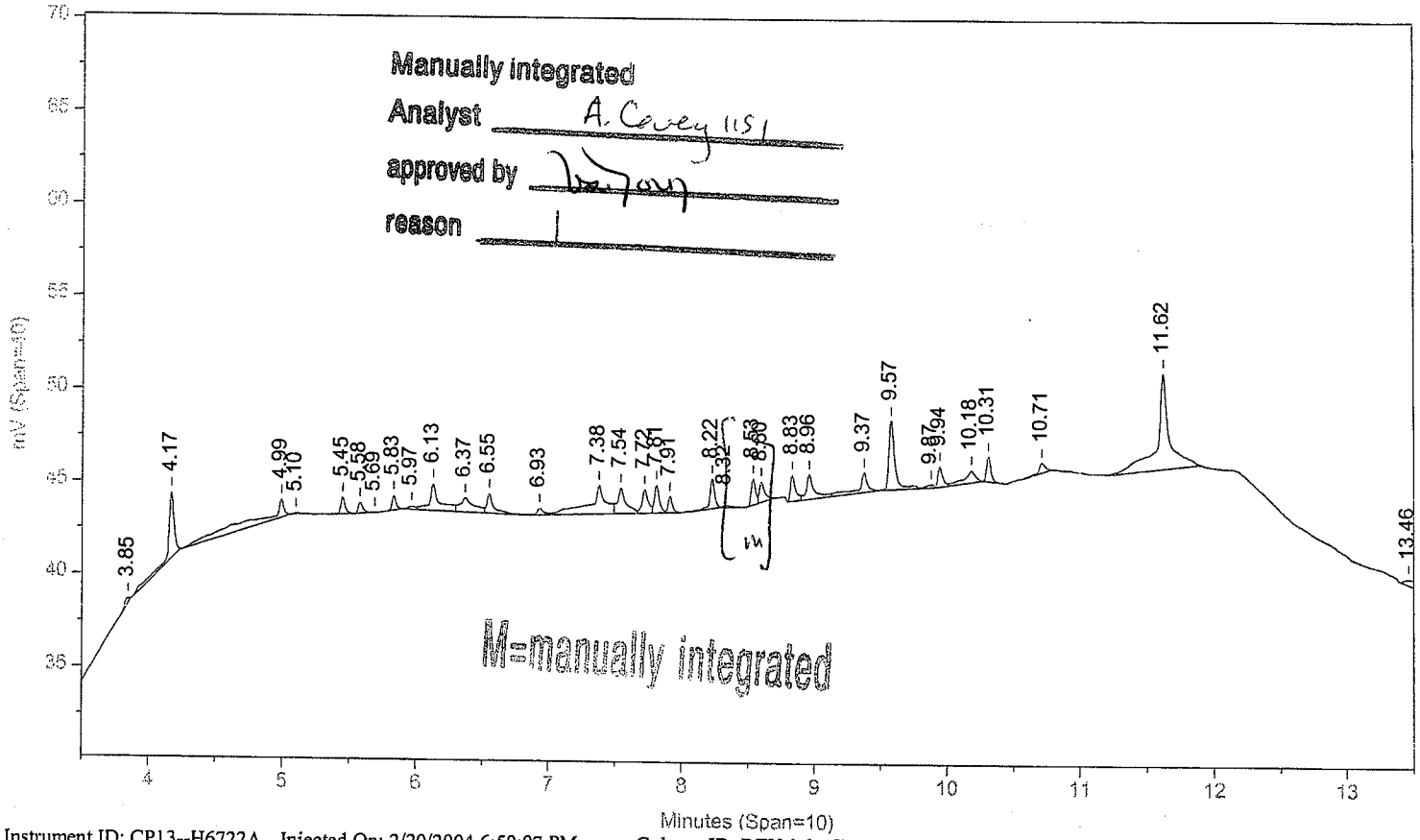



Instrument ID: CP13--H6722B Injected On: 2/20/2004 6:59:07 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.34R

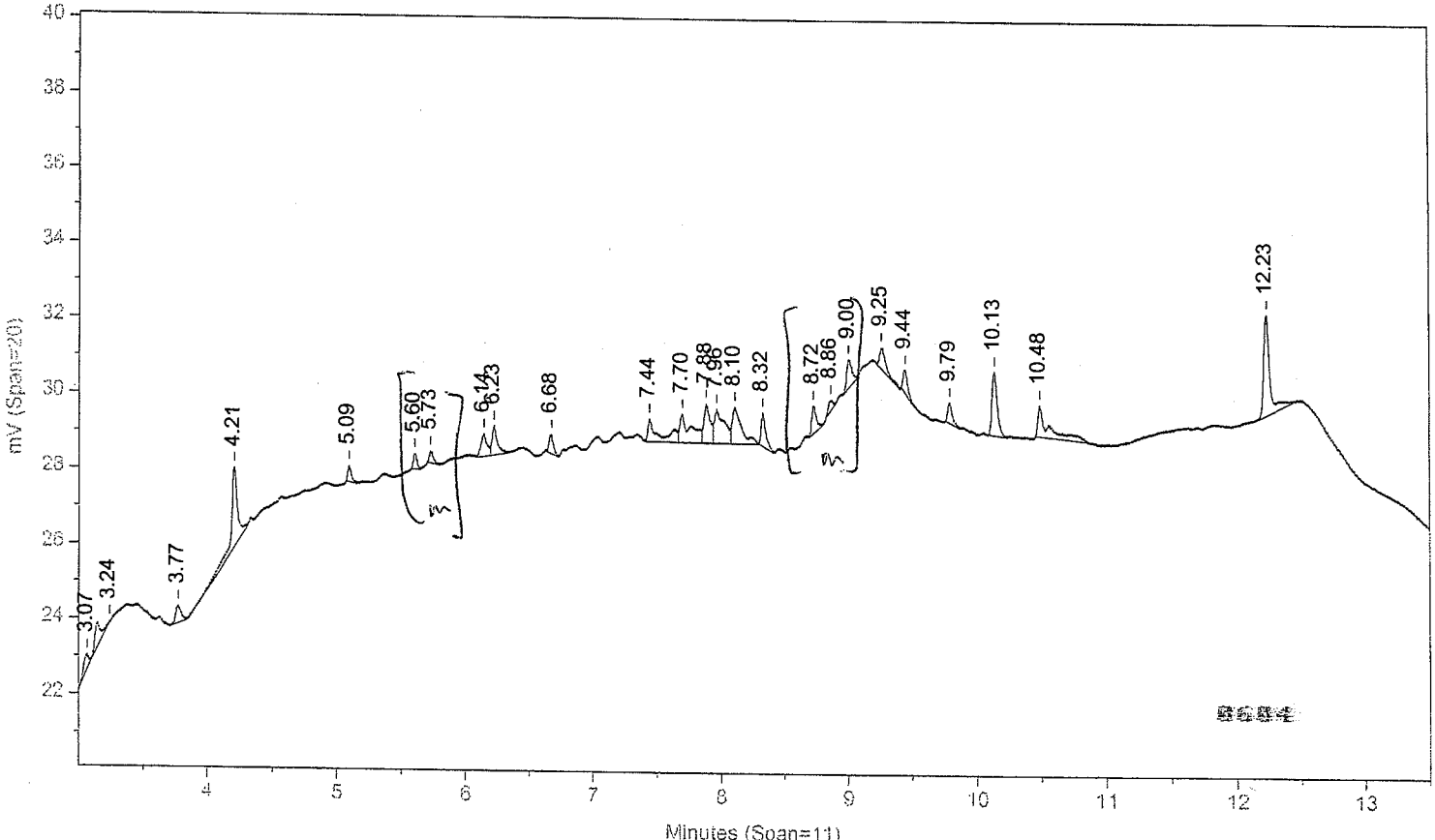
C:\CPWIN\DATA1\1C13051.34R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.34R

C:\CPWIN\DATA1\1C13051B.34R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.171 | 3563 | .93828 | TCX | 4.207 | 2107 | .82845 | TCX |
| 4.992 | 963 | .20804 | alpha-BHC | 5.094 | 420 | 1.18645 | alpha-BHC |
| 5.451 | 892 | .19527 | gamma-BHC | 5.604 | 410 | .96298 | gamma-BHC |
| 5.581 | 588 | .21583 | beta-BHC | 5.73 | 318 | .19804 | beta-BHC |
| 5.834 | 771 | .18122 | delta-BHC | 6.144 | 603 | .27552 | delta-BHC |
| 6.13 | 1426 | .27612 | Heptachlor | 6.226 | 785 | .27508 | Heptachlor |
| 6.551 | 1024 | .25682 | Aldrin | 6.675 | 520 | .22482 | Aldrin |
| 7.381 | 1539 | .34823 | Hept. epoxide | 7.443 | 605 | .23453 | Hept. epoxide |
| 7.545 | 1370 | .32347 | g. Chlordane | 7.696 | 756 | .28921 | g. Chlordane |
| 7.722 | 1284 | .30126 | a. Chlordane | 7.884 | 1031 | .38117 | a. Chlordane |
| 7.81 | 1479 | .43322 | 4,4'-DDE | 8.104 | 972 | .50155 | 4,4'-DDE |
| 7.909 | 863 | .22519 | Endosulfan I | 7.964 | 902 | .34664 | Endosulfan I |
| 8.224 | 1593 | .4372 | Dieldrin | 8.324 | 890 | .38061 | Dieldrin |
| 8.533 | 1386 | .40766 | Endrin | 8.721 | 754 | .37213 | Endrin |
| 8.595 | 1094 | .4115 | 4,4'-DDD | 8.858 | 305 | 1.7527 | 4,4'-DDD |
| 8.83 | 1402 | .40545 | Endosulfan II | 8.998 | 784 | .37138 | Endosulfan II |
| 8.956 | 1336 | .45101 | 4,4'-DDT | 9.254 | 567 | .34915 | 4,4'-DDT |
| 9.374 | 1054 | .42417 | Endrin aldehyde | 9.436 | 614 | .3727 | Endrin aldehyde |
| 9.571 | 3711 | -3.51012 | Methoxychlor | 10.133 | 1694 | 1.70247 | Methoxychlor |
| 9.94 | 1084 | .35219 | Endo. sulfate | 9.786 | 555 | .29707 | Endo. sulfate |
| 10.307 | 1354 | .37869 | Endrin ketone | 10.483 | 834 | .34328 | Endrin ketone |
| 11.618 | 5125 | -2.56286 | DCB | 12.232 | 2683 | -2.42327 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 4:15:06 PM
File Reported On: 2/23/2004 at 4:15:08 PM



10X REPLOTS

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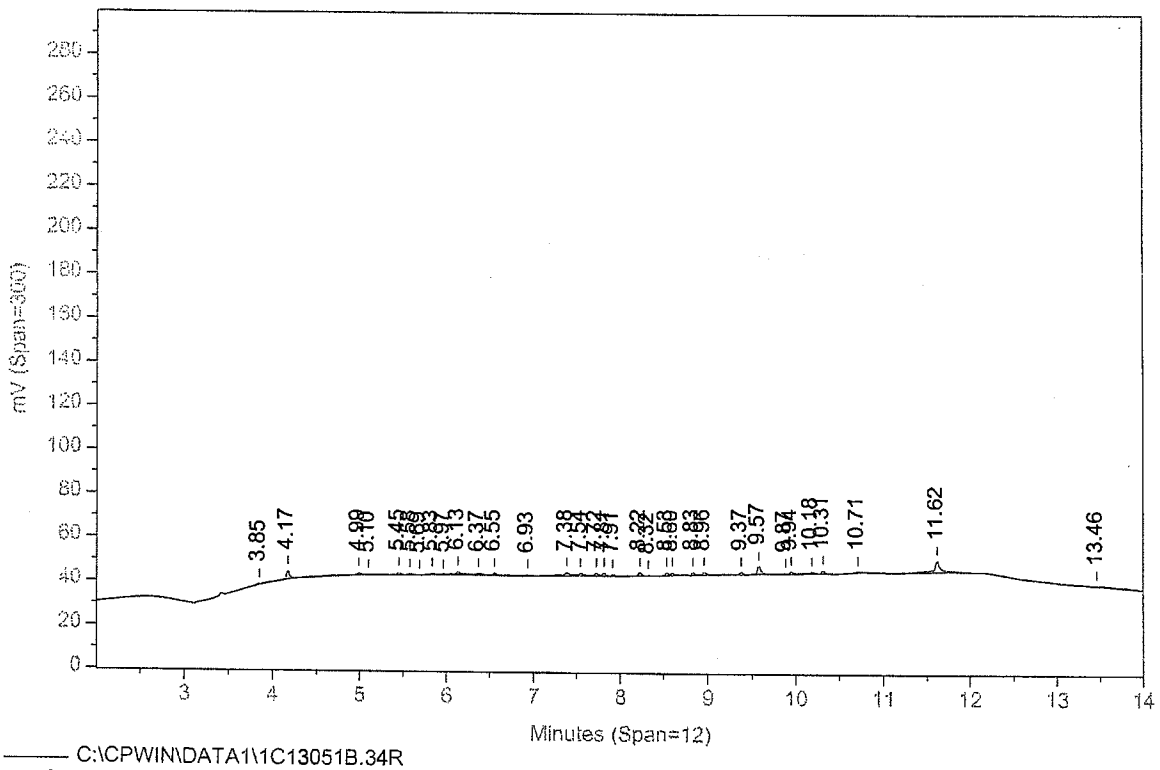
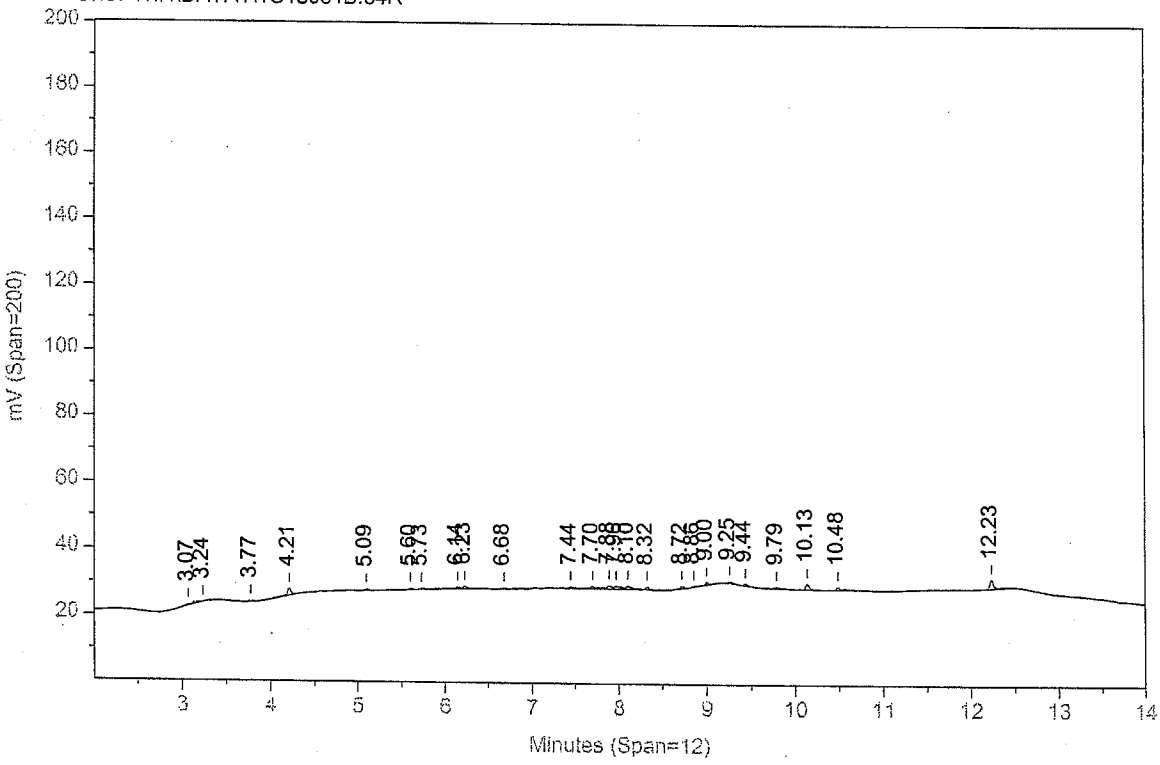



C:\CPWIN\DATA1\1C13051B.34R



Sample Name: **MDTXX03B AAMDTXXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 08:14:15pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.37R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.170 | TCX | 0.9208 | -9.320 | 33093.7 | 16.237 | BB | 0.158 | 3496.40 | 9.442 |
| 2 | 5.101 | | 0.0000 | 0.000 | 31318.5 | 15.366 | BB | 0.802 | 650.51 | 1.757 |
| 3 | 5.429 | gamma-BHC | 0.0076 | -0.077 | 72.2 | 0.035 | BB | 0.035 | 34.62 | 0.093 |
| 4 | 5.620 | | 0.0000 | 0.000 | 56.6 | 0.028 | BB | 0.032 | 29.38 | 0.079 |
| 5 | 6.109 | Heptachlor | 0.0908 | -0.919 | 6929.1 | 3.400 | BV | 0.246 | 469.22 | 1.267 |
| 6 | 6.214 | | 0.0000 | 0.000 | 3751.0 | 1.840 | VV | 0.125 | 501.25 | 1.354 |
| 7 | 6.334 | | 0.0000 | 0.000 | 9262.0 | 4.544 | VV | 0.177 | 873.63 | 2.359 |
| 8 | 6.799 | | 0.0000 | 0.000 | 319.3 | 0.157 | VB | 0.052 | 103.01 | 0.278 |
| 9 | 6.928 | | 0.0000 | 0.000 | 334.1 | 0.164 | BB | 0.045 | 124.80 | 0.337 |
| 10 | 7.255 | | 0.0000 | 0.000 | 2713.3 | 1.331 | BV | 0.140 | 321.94 | 0.869 |
| 11 | 7.306 | | 0.0000 | 0.000 | 1251.6 | 0.614 | VV | 0.067 | 311.26 | 0.841 |
| 12 | 7.387 | Hept. epoxide | 0.0659 | -0.667 | 888.1 | 0.436 | VV | 0.051 | 291.16 | 0.786 |
| 13 | 7.512 | | 0.0000 | 0.000 | 777.8 | 0.382 | VB | 0.065 | 199.75 | 0.539 |
| 14 | 7.714 | a. Chlordane | 0.1304 | -1.320 | 3422.2 | 1.679 | BV | 0.103 | 555.82 | 1.501 |
| 15 | 7.912 | Endosulfan I | 0.0520 | -0.526 | 528.7 | 0.259 | VB | 0.044 | 199.19 | 0.538 |
| 16 | 8.089 | | 0.0000 | 0.000 | 630.6 | 0.309 | BV | 0.082 | 127.57 | 0.345 |
| 17 | 8.176 | | 0.0000 | 0.000 | 2013.9 | 0.988 | VV | 0.053 | 632.21 | 1.707 |
| 18 | 8.221 | Dieldrin | 0.1445 | -1.462 | 1345.5 | 0.660 | VB | 0.043 | 526.33 | 1.421 |
| 19 | 8.341 | | 0.0000 | 0.000 | 2433.2 | 1.194 | BV | 0.052 | 775.45 | 2.094 |
| 20 | 8.429 | | 0.0000 | 0.000 | 3261.4 | 1.600 | VV | 0.067 | 809.16 | 2.185 |
| 21 | 8.562 | Endrin | 0.2685 | -2.718 | 3635.1 | 1.783 | VV | 0.066 | 912.73 | 2.465 |
| 22 | 8.640 | | 0.0000 | 0.000 | 2410.8 | 1.183 | VV | 0.042 | 945.47 | 2.553 |
| 23 | 8.689 | | 0.0000 | 0.000 | 2120.3 | 1.040 | VV | 0.051 | 688.12 | 1.858 |
| 24 | 8.770 | | 0.0000 | 0.000 | 1821.0 | 0.893 | VB | 0.046 | 658.59 | 1.779 |
| 25 | 8.854 | Endosulfan II | 0.1572 | -1.591 | 1128.2 | 0.554 | BV | 0.035 | 543.46 | 1.468 |
| 26 | 8.923 | | 0.0000 | 0.000 | 3302.0 | 1.620 | VV | 0.057 | 958.18 | 2.588 |
| 27 | 8.967 | 4,4'-DDT | 0.4027 | -4.077 | 3168.4 | 1.554 | VB | 0.044 | 1193.09 | 3.222 |
| 28 | 9.169 | | 0.0000 | 0.000 | 2264.5 | 1.111 | BV | 0.054 | 703.42 | 1.900 |
| 29 | 9.247 | | 0.0000 | 0.000 | 4043.6 | 1.984 | VV | 0.051 | 1327.48 | 3.585 |
| 30 | 9.332 | | 0.0000 | 0.000 | 5207.6 | 2.555 | VB | 0.058 | 1485.43 | 4.012 |
| 31 | 9.404 | Endrin aldehyde | 0.1315 | -1.331 | 711.6 | 0.349 | BB | 0.036 | 326.90 | 0.883 |
| 32 | 9.491 | | 0.0000 | 0.000 | 1520.6 | 0.746 | BV | 0.033 | 758.13 | 2.047 |
| 33 | 9.542 | Methoxychlor | -5.2819 | 53.463 | 2461.6 | 1.208 | VV | 0.042 | 982.99 | 2.655 |
| 34 | 9.621 | | 0.0000 | 0.000 | 206.7 | 0.101 | VB | 0.024 | 143.12 | 0.387 |
| 35 | 9.681 | | 0.0000 | 0.000 | 2668.8 | 1.309 | BB | 0.049 | 906.58 | 2.448 |
| 36 | 9.803 | Mirex | -4.5416 | 45.969 | 2725.2 | 1.337 | BB | 0.043 | 1050.42 | 2.837 |
| 37 | 9.861 | | 0.0000 | 0.000 | 1740.7 | 0.854 | BV | 0.060 | 480.19 | 1.297 |
| 38 | 9.920 | Endo. sulfate | 0.2175 | -2.201 | 1292.0 | 0.634 | VB | 0.032 | 669.13 | 1.807 |
| 39 | 10.018 | | 0.0000 | 0.000 | 1195.3 | 0.586 | BV | 0.033 | 600.06 | 1.621 |
| 40 | 10.098 | | 0.0000 | 0.000 | 1463.8 | 0.718 | VV | 0.044 | 552.95 | 1.493 |
| 41 | 10.175 | | 0.0000 | 0.000 | 3149.4 | 1.545 | VB | 0.047 | 1118.58 | 3.021 |
| 42 | 10.267 | | 0.0000 | 0.000 | 2461.7 | 1.208 | BB | 0.038 | 1078.20 | 2.912 |
| 43 | 10.350 | | 0.0000 | 0.000 | 120.3 | 0.059 | BV | 0.022 | 90.84 | 0.245 |
| 44 | 10.390 | | 0.0000 | 0.000 | 818.0 | 0.401 | VB | 0.030 | 453.64 | 1.225 |
| 45 | 10.458 | | 0.0000 | 0.000 | 1363.5 | 0.669 | BB | 0.036 | 622.82 | 1.682 |
| 46 | 10.537 | | 0.0000 | 0.000 | 308.5 | 0.151 | BV | 0.027 | 191.24 | 0.516 |
| 47 | 10.572 | | 0.0000 | 0.000 | 402.5 | 0.197 | VB | 0.030 | 223.59 | 0.604 |
| 48 | 10.705 | | 0.0000 | 0.000 | 2063.2 | 1.012 | BB | 0.039 | 883.04 | 2.385 |
| 49 | 10.932 | | 0.0000 | 0.000 | 283.7 | 0.139 | BB | 0.035 | 136.04 | 0.367 |
| 50 | 11.013 | | 0.0000 | 0.000 | 367.6 | 0.180 | BB | 0.037 | 165.54 | 0.447 |
| 51 | 11.616 | DCB | -2.6454 | 26.776 | 35349.9 | 17.344 | BB | 0.121 | 4873.67 | 13.162 |
| 52 | 13.450 | | 0.0000 | 0.000 | 7642.9 | 3.750 | BB | 0.467 | 272.83 | 0.737 |

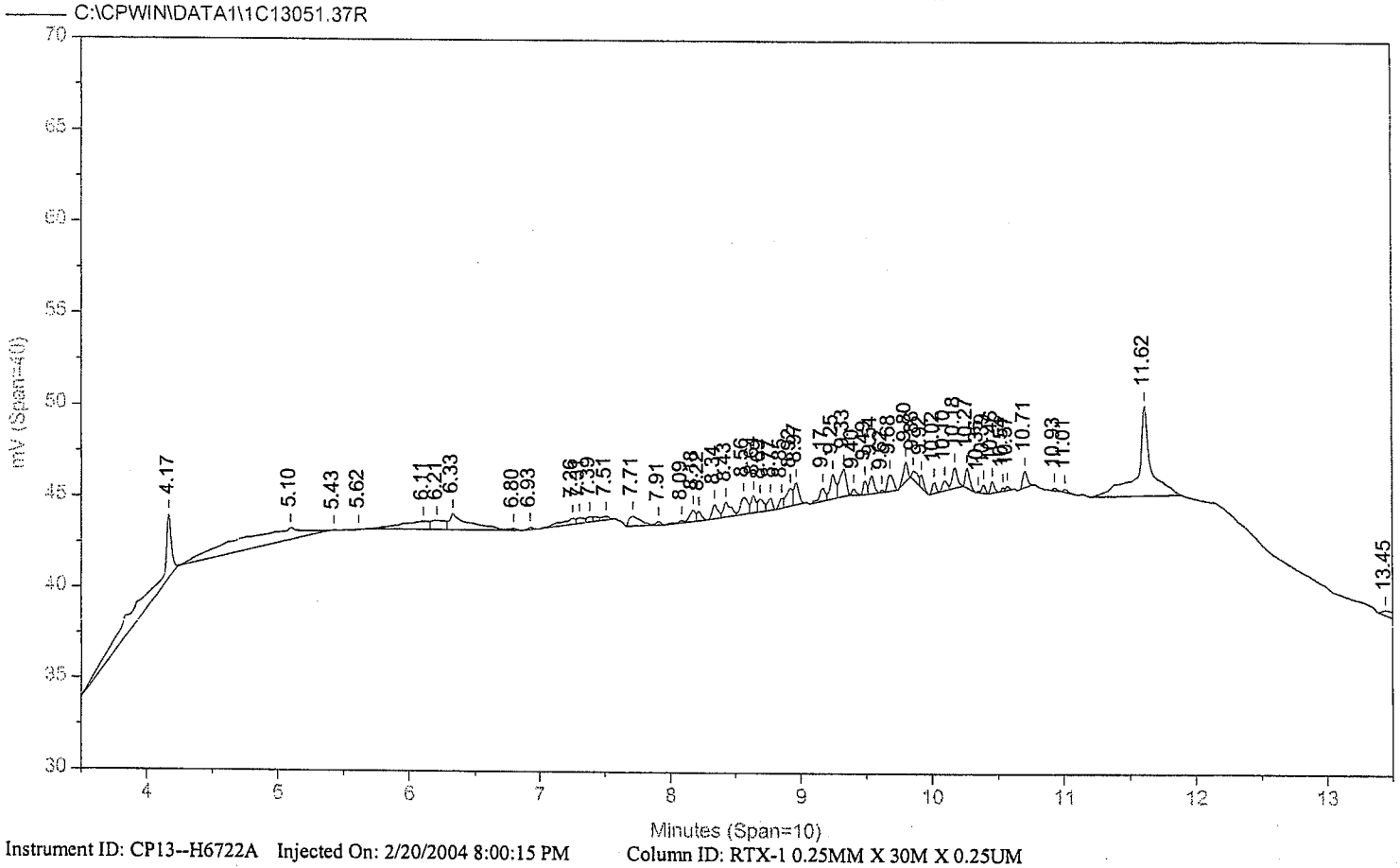
Total Area = 203821.8, Total Amount = -9.88, Total Height = 37029.12, Sample Units = PPB

Sample Name: **MDTXX03B AAMDTXXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 08:14:15pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.37R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.057 | | 0.0000 | 0.000 | 1226.0 | 1.520 | BB | 0.042 | 487.37 | 3.400 |
| 2 | 3.373 | | 0.0000 | 0.000 | 24288.2 | 30.120 | BB | 0.367 | 1102.93 | 7.693 |
| 3 | 3.770 | | 0.0000 | 0.000 | 1204.4 | 1.494 | BB | 0.044 | 460.64 | 3.213 |
| 4 | 4.205 | TCX | 0.8533 | -38.762 | 11295.8 | 14.008 | BB | 0.087 | 2170.39 | 15.139 |
| 5 | 8.013 | | 0.0000 | 0.000 | 13325.7 | 16.525 | BB | 0.367 | 605.77 | 4.225 |
| 6 | 8.446 | | 0.0000 | 0.000 | 1428.4 | 1.771 | BB | 0.073 | 326.55 | 2.278 |
| 7 | 8.774 | o,p-DDT | 0.0948 | -4.307 | 3014.3 | 3.738 | BB | 0.349 | 144.15 | 1.005 |
| 8 | 8.843 | 4,4'-DDD | 1.8114 | -82.278 | 1032.1 | 1.280 | BB | 0.044 | 388.65 | 2.711 |
| 9 | 8.951 | | 0.0000 | 0.000 | 453.9 | 0.563 | BB | 0.148 | 51.07 | 0.356 |
| 10 | 8.973 | Endosulfan II | 0.1249 | -5.675 | 403.2 | 0.500 | BB | 0.025 | 263.79 | 1.840 |
| 11 | 9.101 | | 0.0000 | 0.000 | 2883.2 | 3.575 | BB | 0.046 | 1048.89 | 7.316 |
| 12 | 9.196 | | 0.0000 | 0.000 | 581.4 | 0.721 | BB | 0.031 | 309.02 | 2.156 |
| 13 | 9.337 | | 0.0000 | 0.000 | 773.4 | 0.959 | BB | 0.036 | 362.74 | 2.530 |
| 14 | 9.430 | Endrin aldehyde | 0.4575 | -20.781 | 1976.7 | 2.451 | BB | 0.044 | 753.69 | 5.257 |
| 15 | 9.535 | | 0.0000 | 0.000 | 1343.1 | 1.666 | BB | 0.050 | 449.79 | 3.137 |
| 16 | 9.710 | | 0.0000 | 0.000 | 1173.7 | 1.456 | BB | 0.073 | 268.77 | 1.875 |
| 17 | 10.096 | | 0.0000 | 0.000 | 1999.1 | 2.479 | BB | 0.038 | 872.77 | 6.088 |
| 18 | 10.166 | | 0.0000 | 0.000 | 1043.4 | 1.294 | BB | 0.039 | 451.22 | 3.147 |
| 19 | 10.412 | Mirex | -3.0218 | 137.261 | 1025.8 | 1.272 | BB | 0.067 | 256.45 | 1.789 |
| 20 | 10.552 | | 0.0000 | 0.000 | 757.3 | 0.939 | BB | 0.030 | 425.36 | 2.967 |
| 21 | 10.600 | | 0.0000 | 0.000 | 745.7 | 0.925 | BB | 0.033 | 377.79 | 2.635 |
| 22 | 10.833 | | 0.0000 | 0.000 | 453.5 | 0.562 | BB | 0.027 | 283.30 | 1.976 |
| 23 | 12.229 | DCB | -2.5216 | 114.542 | 8210.4 | 10.182 | BB | 0.055 | 2475.33 | 17.266 |

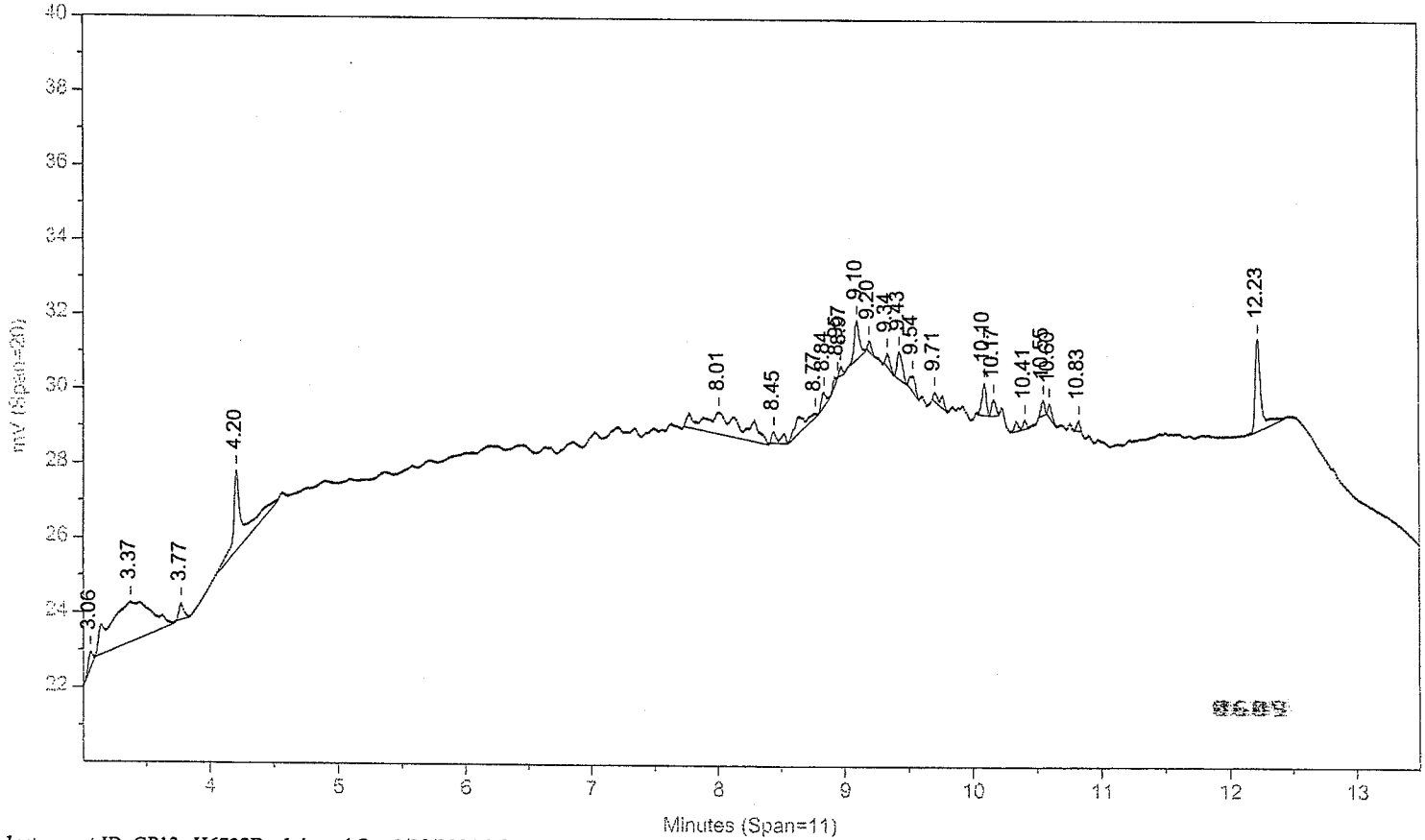
Total Area = 80638.8, Total Amount = -2.202, Total Height = 14336.44, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.37R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 8:00:15 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.37R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 8:00:15 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

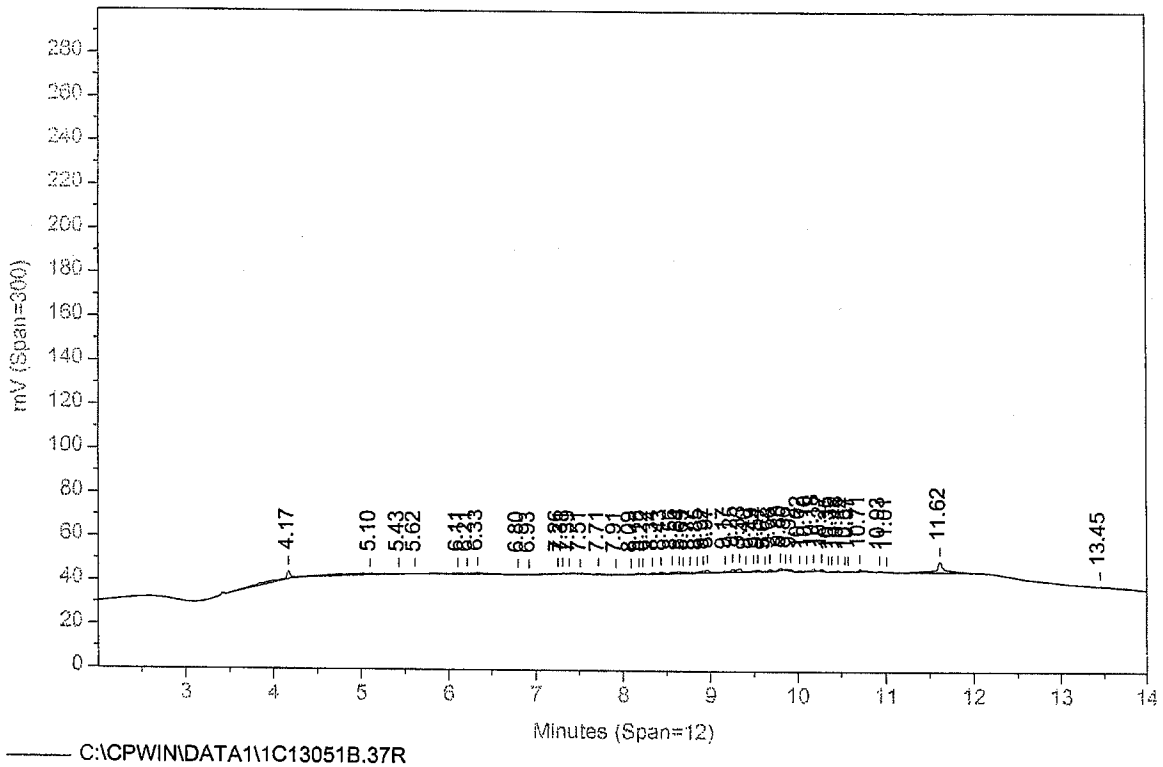
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.17 | 3496 | .92075 | TCX | 4.205 | 2170 | .85334 | TCX |
| 5.429 | 35 | .00758 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.109 | 469 | .09083 | Heptachlor | . | 0 | . | Heptachlor |
| 7.387 | 291 | .06587 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.714 | 556 | .13041 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.912 | 199 | .05199 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.221 | 526 | .14445 | Dieldrin | . | 0 | . | Dieldrin |
| 8.562 | 913 | .2685 | Endrin | . | 0 | . | Endrin |
| . | 0 | . | o,p-DDT | 8.774 | 144 | .09482 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.843 | 389 | 1.81136 | 4,4'-DDD |
| 8.854 | 543 | .15716 | Endosulfan II | 8.973 | 264 | .12493 | Endosulfan II |
| 8.967 | 1193 | .40275 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| 9.404 | 327 | .13152 | Endrin aldehyde | 9.43 | 754 | .45749 | Endrin aldehyde |
| 9.542 | 983 | -5.28193 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.803 | 1050 | -4.54157 | Mirex | 10.412 | 256 | -3.0218 | Mirex |
| 9.92 | 669 | .21746 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 11.616 | 4874 | -2.64536 | DCB | 12.229 | 2475 | -2.52165 | DCB |

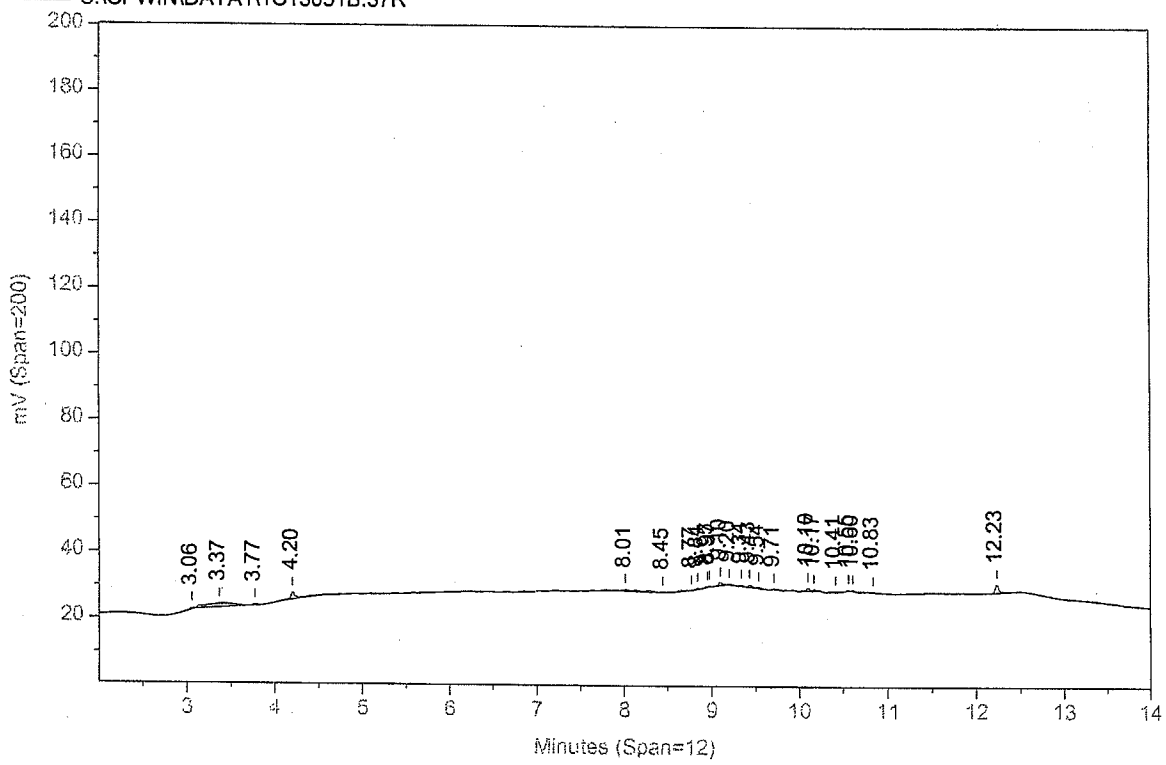
Files:
Area File: C:\CPWIN\DATA1\1C13051.37A
Area File: C:\CPWIN\DATA1\1C13051B.37A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 1:13:34 PM
File Reported On: 2/23/2004 at 1:13:42 PM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.37R




C:\CPWIN\DATA1\1C13051B.37R



Sample Name: **MDCHX03B AAMDCHXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 08:34:36pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.38R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.090 | | 0.0000 | 0.000 | 12683.6 | 7.174 | BB | 0.774 | 272.99 | 0.972 |
| 2 | 4.171 | TCX | 0.5246 | 2.167 | 4587.7 | 2.595 | BB | 0.038 | 1992.18 | 7.090 |
| 3 | 5.098 | | 0.0000 | 0.000 | 20266.3 | 11.464 | BB | 0.999 | 338.17 | 1.203 |
| 4 | 5.397 | | 0.0000 | 0.000 | 156.8 | 0.089 | BB | 0.069 | 37.76 | 0.134 |
| 5 | 5.680 | | 0.0000 | 0.000 | 247.3 | 0.140 | BB | 0.107 | 38.37 | 0.137 |
| 6 | 5.901 | | 0.0000 | 0.000 | 325.5 | 0.184 | BB | 0.080 | 68.16 | 0.243 |
| 7 | 6.016 | | 0.0000 | 0.000 | 1887.4 | 1.068 | BB | 0.036 | 880.38 | 3.133 |
| 8 | 6.130 | Heptachlor | 0.2358 | 0.974 | 2789.7 | 1.578 | BB | 0.038 | 1218.33 | 4.336 |
| 9 | 6.292 | | 0.0000 | 0.000 | 295.9 | 0.167 | BB | 0.044 | 112.77 | 0.401 |
| 10 | 6.662 | | 0.0000 | 0.000 | 127.9 | 0.072 | BB | 0.027 | 79.25 | 0.282 |
| 11 | 6.736 | | 0.0000 | 0.000 | 2979.9 | 1.686 | BB | 0.037 | 1327.62 | 4.725 |
| 12 | 6.930 | | 0.0000 | 0.000 | 763.1 | 0.432 | BB | 0.084 | 152.21 | 0.542 |
| 13 | 7.090 | | 0.0000 | 0.000 | 218.5 | 0.124 | BB | 0.041 | 89.33 | 0.318 |
| 14 | 7.159 | | 0.0000 | 0.000 | 409.6 | 0.232 | BB | 0.056 | 121.93 | 0.434 |
| 15 | 7.291 | | 0.0000 | 0.000 | 1491.8 | 0.844 | BV | 0.043 | 581.97 | 2.071 |
| 16 | 7.385 | Hept. epoxide | 0.1093 | 0.451 | 1774.0 | 1.003 | VV | 0.061 | 483.16 | 1.719 |
| 17 | 7.436 | | 0.0000 | 0.000 | 2518.6 | 1.425 | VV | 0.059 | 716.00 | 2.548 |
| 18 | 7.544 | g. Chlordane | 0.6379 | 2.635 | 8756.7 | 4.953 | VV | 0.054 | 2701.57 | 9.614 |
| 19 | 7.714 | a. Chlordane | 0.7656 | 3.162 | 12156.5 | 6.876 | VB | 0.062 | 3262.94 | 11.612 |
| 20 | 8.001 | | 0.0000 | 0.000 | 501.4 | 0.284 | BB | 0.051 | 164.35 | 0.585 |
| 21 | 8.127 | | 0.0000 | 0.000 | 400.4 | 0.227 | BB | 0.033 | 202.83 | 0.722 |
| 22 | 8.326 | | 0.0000 | 0.000 | 846.2 | 0.479 | BB | 0.050 | 283.26 | 1.008 |
| 23 | 8.567 | Kepone | 25.0508 | 103.462 | 3531.8 | 1.998 | BV | 0.086 | 685.76 | 2.440 |
| 24 | 8.732 | | 0.0000 | 0.000 | 7013.4 | 3.967 | VB | 0.082 | 1433.02 | 5.100 |
| 25 | 9.050 | | 0.0000 | 0.000 | 10749.7 | 6.081 | BV | 0.262 | 683.08 | 2.431 |
| 26 | 9.181 | | 0.0000 | 0.000 | 3587.1 | 2.029 | VV | 0.108 | 555.12 | 1.976 |
| 27 | 9.320 | | 0.0000 | 0.000 | 3593.4 | 2.033 | VV | 0.126 | 476.92 | 1.697 |
| 28 | 9.743 | | 0.0000 | 0.000 | 5165.1 | 2.922 | VB | 0.454 | 189.54 | 0.675 |
| 29 | 9.873 | | 0.0000 | 0.000 | 923.2 | 0.522 | BB | 0.065 | 237.94 | 0.847 |
| 30 | 10.080 | | 0.0000 | 0.000 | 3375.7 | 1.909 | BV | 0.115 | 490.26 | 1.745 |
| 31 | 10.179 | | 0.0000 | 0.000 | 6187.7 | 3.500 | VB | 0.097 | 1066.13 | 3.794 |
| 32 | 10.707 | | 0.0000 | 0.000 | 19533.7 | 11.049 | BB | 0.095 | 3413.18 | 12.147 |
| 33 | 11.617 | DCB | -3.1115 | -12.851 | 29653.8 | 16.774 | BB | 0.143 | 3455.58 | 12.298 |
| 34 | 13.453 | | 0.0000 | 0.000 | 7289.3 | 4.123 | BB | 0.422 | 287.56 | 1.023 |

Total Area = 176788.8, Total Amount = 24.212, Total Height = 28099.64, Sample Units = PPB

Sample Name: **MDCHX03B AAMDCHXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 08:34:36pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.38R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

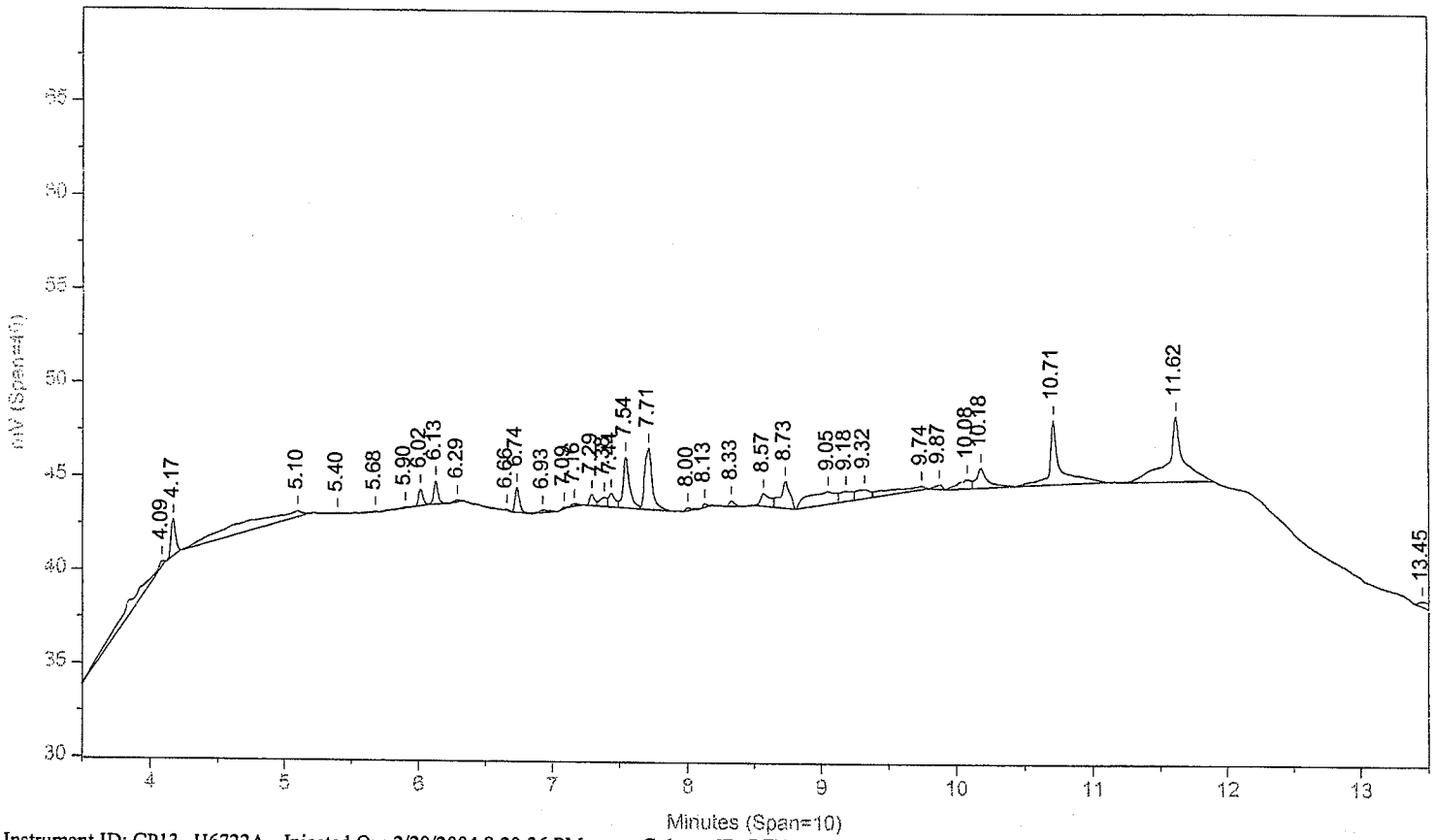
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.061 | | 0.0000 | 0.000 | 1239.4 | 1.151 | BB | 0.043 | 477.96 | 2.920 |
| 2 | 3.444 | | 0.0000 | 0.000 | 24144.6 | 22.426 | BB | 0.409 | 982.89 | 6.004 |
| 3 | 3.770 | | 0.0000 | 0.000 | 1173.3 | 1.090 | BB | 0.043 | 454.89 | 2.779 |
| 4 | 4.155 | | 0.0000 | 0.000 | 737.6 | 0.685 | BB | 0.162 | 75.76 | 0.463 |
| 5 | 4.209 | TCX | 0.4732 | 36.715 | 5927.6 | 5.506 | BB | 0.082 | 1203.49 | 7.352 |
| 6 | 4.855 | | 0.0000 | 0.000 | 1440.8 | 1.338 | BB | 0.049 | 493.37 | 3.014 |
| 7 | 5.042 | | 0.0000 | 0.000 | 335.5 | 0.312 | BB | 0.021 | 270.81 | 1.654 |
| 8 | 5.986 | | 0.0000 | 0.000 | 4675.1 | 4.342 | BV | 0.355 | 219.19 | 1.339 |
| 9 | 6.020 | | 0.0000 | 0.000 | 3020.7 | 2.806 | VV | 0.074 | 677.15 | 4.137 |
| 10 | 6.227 | Heptachlor | 0.2819 | 21.873 | 2421.9 | 2.250 | VB | 0.050 | 804.16 | 4.912 |
| 11 | 6.877 | Telodrin | 0.3253 | 25.243 | 1792.3 | 1.665 | BB | 0.036 | 837.38 | 5.115 |
| 12 | 7.396 | | 0.0000 | 0.000 | 778.7 | 0.723 | BV | 0.066 | 197.38 | 1.206 |
| 13 | 7.694 | g. Chlordane | 0.6509 | 50.508 | 5843.7 | 5.428 | VV | 0.057 | 1701.86 | 10.396 |
| 14 | 7.813 | | 0.0000 | 0.000 | 4658.4 | 4.327 | VV | 0.049 | 1590.05 | 9.713 |
| 15 | 7.884 | a. Chlordane | 0.6846 | 53.118 | 18136.3 | 16.845 | VB | 0.163 | 1851.82 | 11.312 |
| 16 | 8.827 | 4,4'-DDD | 1.7843 | 138.445 | 965.9 | 0.897 | BB | 0.046 | 349.93 | 2.138 |
| 17 | 8.989 | Endosulfan II | 0.0203 | 1.577 | 621.4 | 0.577 | BB | 0.241 | 42.92 | 0.262 |
| 18 | 9.184 | | 0.0000 | 0.000 | 17841.7 | 16.572 | BB | 0.320 | 929.26 | 5.677 |
| 19 | 10.556 | | 0.0000 | 0.000 | 6261.0 | 5.815 | BB | 0.065 | 1598.79 | 9.767 |
| 20 | 12.227 | DCB | -2.9317 | -227.479 | 5647.3 | 5.245 | BB | 0.058 | 1610.89 | 9.841 |

Total Area = 107663.1, Total Amount = 1.289, Total Height = 16369.96, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.38R

C:\CPWIN\DATA1\1C13051.38R

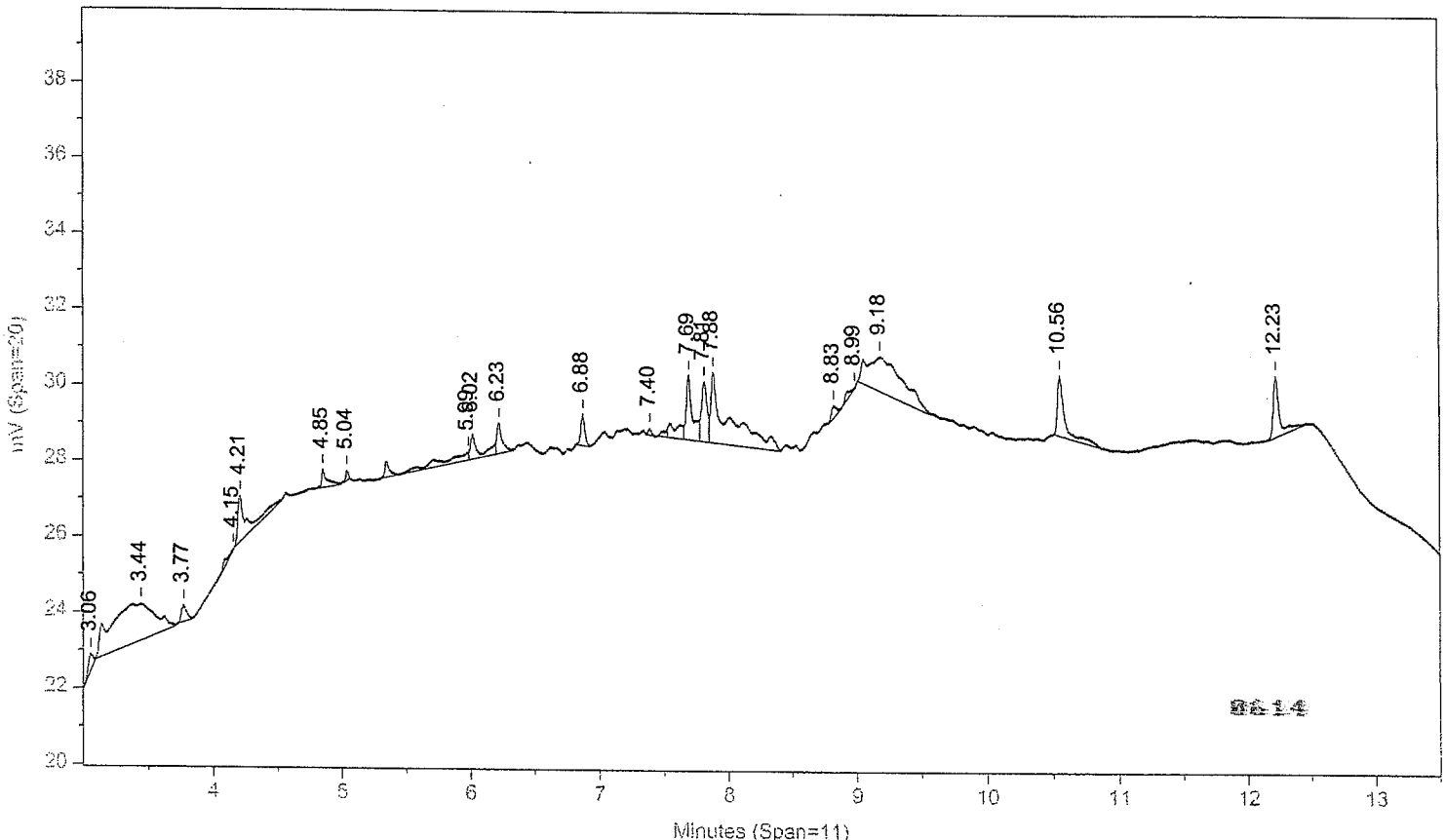



Instrument ID: CP13--H6722A Injected On: 2/20/2004 8:20:36 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.38R

C:\CPWIN\DATA1\1C13051B.38R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 8:20:36 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

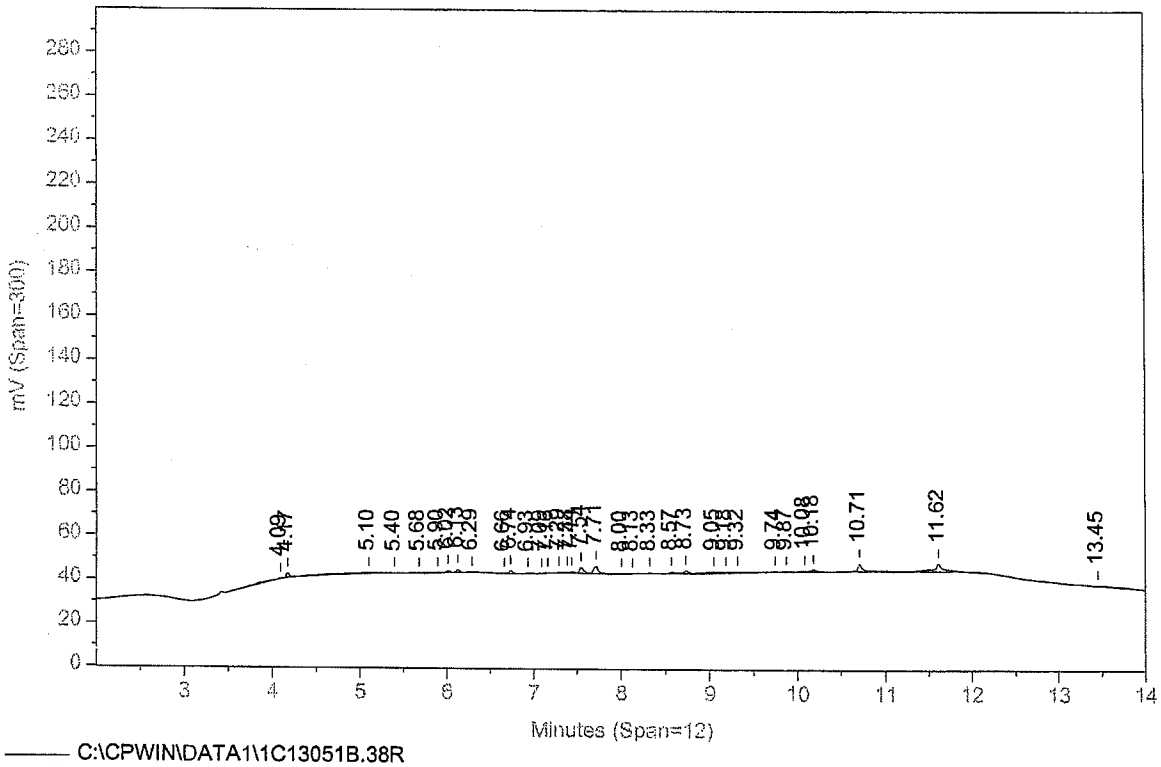
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.171 | 1992 | .52463 | TCX | 4.209 | 1203 | .47318 | TCX |
| 6.13 | 1218 | .23583 | Heptachlor | 6.227 | 804 | .2819 | Heptachlor |
| . | 0 | . | Telodrin | 6.877 | 837 | .32534 | Telodrin |
| 7.385 | 483 | .1093 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.544 | 2702 | .6379 | g. Chlordane | 7.694 | 1702 | .65095 | g. Chlordane |
| 7.714 | 3263 | .76557 | a. Chlordane | 7.884 | 1852 | .68459 | a. Chlordane |
| 8.567 | 686 | 25.05076 | Kepone | . | 0 | . | Kepone |
| . | 0 | . | 4,4'-DDD | 8.827 | 350 | 1.78427 | 4,4'-DDD |
| . | 0 | . | Endosulfan II | 8.989 | 43 | .02033 | Endosulfan II |
| 11.617 | 3456 | -3.11155 | DCB | 12.227 | 1611 | -2.93175 | DCB |

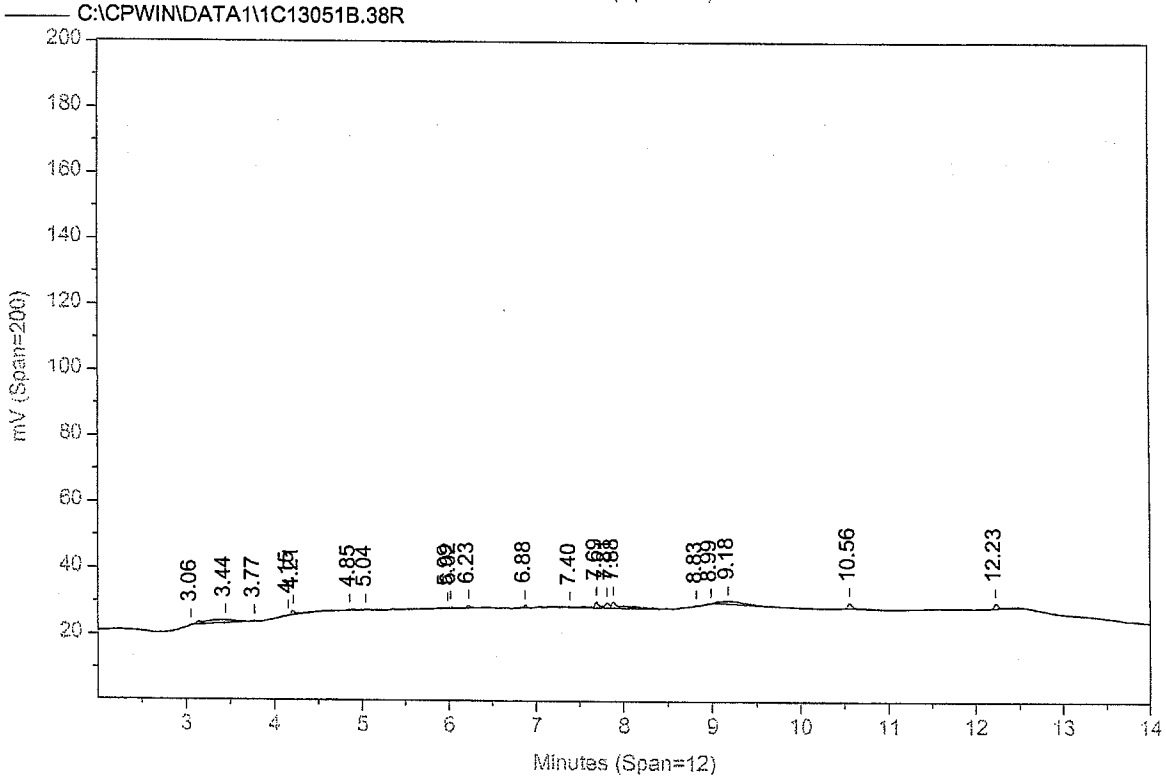
Files:
Area File: C:\CPWIN\DATA1\1C13051.38A
Area File: C:\CPWIN\DATA1\1C13051B.38A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 1:13:54 PM
File Reported On: 2/23/2004 at 1:14:02 PM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.38R




C:\CPWIN\DATA1\1C13051B.38R



Sample Name: **EVALX03C IRPEMIR PEM 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 12:02:45pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.04R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.167 | TCX | 19.9274 | 4.697 | 212086.8 | 7.913 | BB | 0.047 | 75670.73 | 6.903 |
| 2 | 4.739 | HCB | 0.1404 | 0.033 | 1939.1 | 0.072 | BB | 0.035 | 924.48 | 0.084 |
| 3 | 4.989 | alpha-BHC | 10.2299 | 2.411 | 98369.0 | 3.670 | BB | 0.035 | 47335.12 | 4.318 |
| 4 | 5.448 | gamma-BHC | 9.9920 | 2.355 | 94100.4 | 3.511 | BB | 0.034 | 45642.34 | 4.164 |
| 5 | 5.576 | beta-BHC | 9.8756 | 2.328 | 60417.4 | 2.254 | BB | 0.037 | 26916.96 | 2.456 |
| 6 | 5.680 | | 0.0000 | 0.000 | 330.5 | 0.012 | BB | 0.026 | 210.88 | 0.019 |
| 7 | 5.826 | delta-BHC | 0.0106 | 0.003 | 202.4 | 0.008 | BB | 0.075 | 45.20 | 0.004 |
| 8 | 5.926 | | 0.0000 | 0.000 | 1072.6 | 0.040 | BB | 0.040 | 443.39 | 0.040 |
| 9 | 6.108 | Heptachlor | 0.0198 | 0.005 | 302.8 | 0.011 | BV | 0.049 | 102.30 | 0.009 |
| 10 | 6.209 | | 0.0000 | 0.000 | 331.0 | 0.012 | VV | 0.074 | 74.92 | 0.007 |
| 11 | 6.252 | | 0.0000 | 0.000 | 723.2 | 0.027 | VB | 0.029 | 422.03 | 0.038 |
| 12 | 6.743 | | 0.0000 | 0.000 | 212.8 | 0.008 | BB | 0.044 | 80.51 | 0.007 |
| 13 | 6.924 | | 0.0000 | 0.000 | 634.6 | 0.024 | BB | 0.041 | 260.79 | 0.024 |
| 14 | 7.006 | | 0.0000 | 0.000 | 88.8 | 0.003 | BB | 0.024 | 62.73 | 0.006 |
| 15 | 7.059 | | 0.0000 | 0.000 | 1175.1 | 0.044 | BV | 0.066 | 297.19 | 0.027 |
| 16 | 7.366 | o,p-DDE | 0.1939 | 0.046 | 7937.4 | 0.296 | VV | 0.249 | 530.83 | 0.048 |
| 17 | 7.504 | | 0.0000 | 0.000 | 2090.2 | 0.078 | VV | 0.055 | 631.70 | 0.058 |
| 18 | 7.556 | g. Chlordane | 0.1511 | 0.036 | 3140.4 | 0.117 | VV | 0.082 | 639.85 | 0.058 |
| 19 | 7.805 | 4,4'-DDE | 0.6045 | 0.142 | 4846.9 | 0.181 | VB | 0.039 | 2063.12 | 0.188 |
| 20 | 8.239 | Dieldrin | 0.0236 | 0.006 | 1205.9 | 0.045 | BB | 0.233 | 86.16 | 0.008 |
| 21 | 8.367 | o,p-DDT | 0.7630 | 0.180 | 4967.0 | 0.185 | BB | 0.040 | 2077.34 | 0.190 |
| 22 | 8.526 | Endrin | 48.4360 | 11.417 | 365079.0 | 13.621 | BV | 0.037 | 164649.80 | 15.020 |
| 23 | 8.670 | | 0.0000 | 0.000 | 247.9 | 0.009 | VB | 0.027 | 151.79 | 0.014 |
| 24 | 8.829 | Endosulfan II | 0.0864 | 0.020 | 1087.7 | 0.041 | BV | 0.061 | 298.73 | 0.027 |
| 25 | 8.950 | 4,4'-DDT | 94.7719 | 22.340 | 645913.5 | 24.098 | VV | 0.038 | 280752.90 | 25.612 |
| 26 | 9.217 | | 0.0000 | 0.000 | 585.6 | 0.022 | VV | 0.040 | 242.63 | 0.022 |
| 27 | 9.262 | | 0.0000 | 0.000 | 758.5 | 0.028 | VB | 0.051 | 248.82 | 0.023 |
| 28 | 9.368 | Endrin aldehyde | 0.8907 | 0.210 | 5869.4 | 0.219 | BV | 0.044 | 2213.84 | 0.202 |
| 29 | 9.561 | Methoxychlor | 207.2063 | 48.843 | 914316.3 | 34.112 | VB | 0.042 | 360665.70 | 32.902 |
| 30 | 10.101 | | 0.0000 | 0.000 | 2346.8 | 0.088 | BV | 0.042 | 940.39 | 0.086 |
| 31 | 10.169 | | 0.0000 | 0.000 | 4917.1 | 0.183 | VB | 0.051 | 1601.58 | 0.146 |
| 32 | 10.298 | Endrin ketone | 0.8047 | 0.190 | 6963.1 | 0.260 | BB | 0.040 | 2876.93 | 0.262 |
| 33 | 10.476 | | 0.0000 | 0.000 | 295.4 | 0.011 | BB | 0.043 | 115.16 | 0.011 |
| 34 | 10.701 | | 0.0000 | 0.000 | 16769.0 | 0.626 | BB | 0.188 | 1487.98 | 0.136 |
| 35 | 11.326 | | 0.0000 | 0.000 | 777.1 | 0.029 | BB | 0.041 | 317.13 | 0.029 |
| 36 | 11.606 | DCB | 20.1020 | 4.738 | 218256.2 | 8.143 | BB | 0.048 | 75097.63 | 6.851 |

Total Area = 2680357.0, Total Amount = 424.23, Total Height = 1096180.0, Sample Units = PPB

Sample Name: **EVALX03C IRPEMIR PEM 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 12:02:45pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.04R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

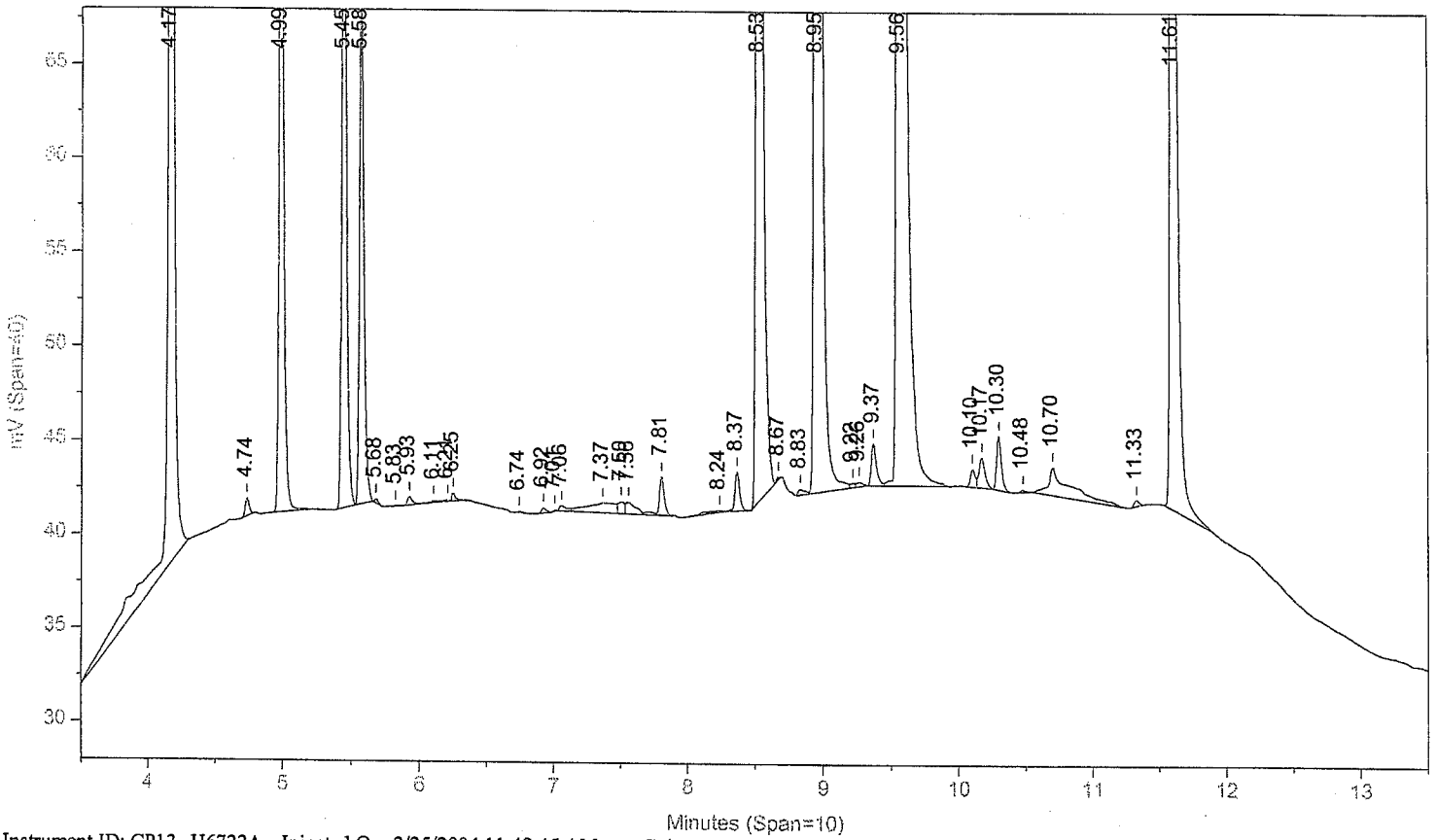
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1324.5 | 0.083 | BB | 0.049 | 446.10 | 0.065 |
| 2 | 3.356 | | 0.0000 | 0.000 | 20450.7 | 1.280 | BB | 0.345 | 987.92 | 0.145 |
| 3 | 4.200 | TCX | 19.5935 | 4.293 | 130741.5 | 8.181 | BB | 0.044 | 49834.38 | 7.293 |
| 4 | 4.741 | | 0.0000 | 0.000 | 2508.0 | 0.157 | BB | 0.074 | 566.08 | 0.083 |
| 5 | 5.091 | alpha-BHC | 9.4029 | 2.060 | 38721.7 | 2.423 | BB | 0.028 | 23227.67 | 3.399 |
| 6 | 5.604 | gamma-BHC | 10.0253 | 2.197 | 48672.5 | 3.046 | BV | 0.032 | 25381.82 | 3.714 |
| 7 | 5.728 | beta-BHC | 9.7846 | 2.144 | 40793.2 | 2.553 | VB | 0.043 | 15732.04 | 2.302 |
| 8 | 7.200 | | 0.0000 | 0.000 | 12538.8 | 0.785 | BV | 0.349 | 597.96 | 0.088 |
| 9 | 7.926 | | 0.0000 | 0.000 | 20100.1 | 1.258 | VV | 0.386 | 867.81 | 0.127 |
| 10 | 8.097 | 4,4'-DDE | 0.8632 | 0.189 | 13767.0 | 0.862 | VB | 0.137 | 1672.43 | 0.245 |
| 11 | 8.715 | Endrin | 53.6175 | 11.749 | 213896.5 | 13.385 | BB | 0.033 | 108673.10 | 15.904 |
| 12 | 8.856 | 4,4'-DDD | 0.5849 | 0.128 | 2314.8 | 0.145 | BB | 0.053 | 728.66 | 0.107 |
| 13 | 9.037 | | 0.0000 | 0.000 | 492.4 | 0.031 | BB | 0.032 | 253.21 | 0.037 |
| 14 | 9.246 | 4,4'-DDT | 110.2441 | 24.157 | 393467.2 | 24.622 | BB | 0.037 | 178927.80 | 26.185 |
| 15 | 9.425 | Endrin aldehyde | 1.0902 | 0.239 | 4361.3 | 0.273 | BB | 0.040 | 1795.95 | 0.263 |
| 16 | 10.117 | Methoxychlor | 219.5696 | 48.114 | 503551.4 | 31.511 | BB | 0.038 | 218437.30 | 31.967 |
| 17 | 10.277 | | 0.0000 | 0.000 | 1340.4 | 0.084 | BB | 0.028 | 791.92 | 0.116 |
| 18 | 10.473 | Endrin ketone | 0.9722 | 0.213 | 5487.8 | 0.343 | BB | 0.039 | 2360.86 | 0.345 |
| 19 | 11.789 | | 0.0000 | 0.000 | 1700.4 | 0.106 | BB | 0.097 | 292.82 | 0.043 |
| 20 | 12.214 | DCB | 20.6089 | 4.516 | 141795.8 | 8.873 | BB | 0.046 | 51746.00 | 7.573 |

Total Area = 1598026.0, Total Amount = 456.357, Total Height = 683321.7, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.04R

C:\CPWIN\DATA1\2C13051.04R



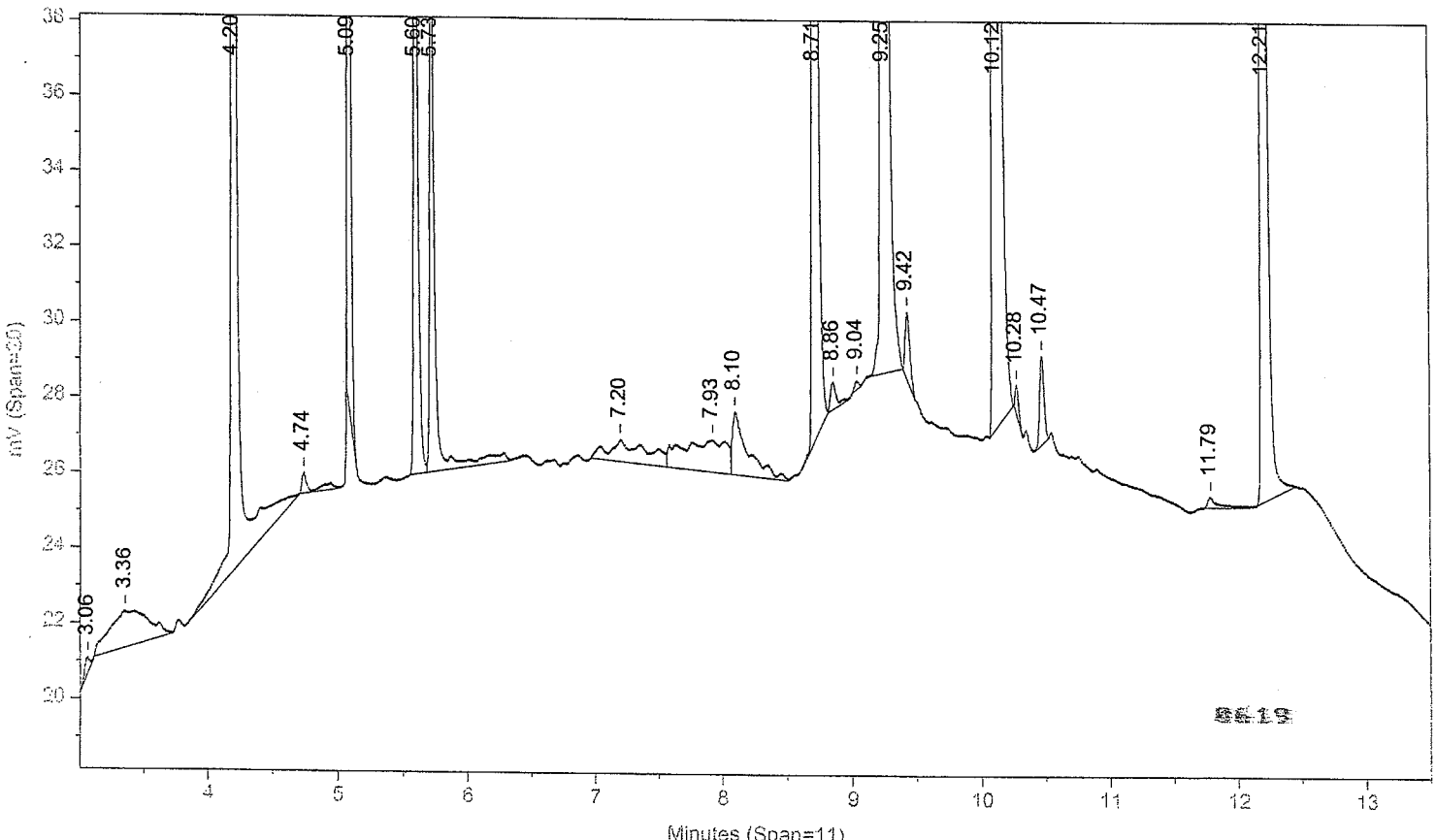

Instrument ID: CP13--H6722A Injected On: 2/25/2004 11:48:45 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.7294912

%ENDRIN BD= 2.999145

File: C:\CPWIN\DATA1\2C13051B.04R

C:\CPWIN\DATA1\2C13051B.04R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 11:48:45 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.324163

%ENDRIN BD= 3.684137

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: I20

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.167 | 75671 | 19.927 | TCX | 4.2 | 49834 | 19.594 | TCX |
| 4.739 | 924 | .14 | HCB | . | 0 | . | HCB |
| 4.989 | 47335 | 10.23 | alpha-BHC | 5.091 | 23228 | 9.403 | alpha-BHC |
| 5.448 | 45642 | 9.992 | gamma-BHC | 5.604 | 25382 | 10.025 | gamma-BHC |
| 5.576 | 26917 | 9.876 | beta-BHC | 5.728 | 15732 | 9.785 | beta-BHC |
| 5.826 | 45 | .011 | delta-BHC | . | 0 | . | delta-BHC |
| 6.108 | 102 | .02 | Heptachlor | . | 0 | . | Heptachlor |
| 7.366 | 531 | .194 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.556 | 640 | .151 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.805 | 2063 | .604 | 4,4'-DDE | 8.097 | 1672 | .863 | 4,4'-DDE |
| 8.239 | 86 | .024 | Dieldrin | . | 0 | . | Dieldrin |
| 8.367 | 2077 | .763 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.526 | 164650 | 48.436 | Endrin | 8.715 | 108673 | 53.618 | Endrin |
| 8.829 | 299 | .086 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.856 | 729 | .585 | 4,4'-DDD |
| 8.95 | 280753 | 94.772 | 4,4'-DDT | 9.246 | 178928 | 110.244 | 4,4'-DDT |
| 9.368 | 2214 | .891 | Endrin aldehyde | 9.425 | 1796 | 1.09 | Endrin aldehyde |
| 9.561 | 360666 | 207.206 | Methoxychlor | 10.117 | 218437 | 219.57 | Methoxychlor |
| 10.298 | 2877 | .805 | Endrin ketone | 10.473 | 2361 | .972 | Endrin ketone |
| 11.606 | 75098 | 20.102 | DCB | 12.214 | 51746 | 20.609 | DCB |

Files:
Area File: C:\CPWIN\DATA1\2C13051.04A
Area File: C:\CPWIN\DATA1\2C13051B.04A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/25/2004 12:02:50 PM
File Reported On: 2/25/2004 at 12:02:57 PM

Sample Name: **MIXA303D LSMIXA3LS CCAL 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 12:23:08pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.05R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.839 | | 0.0000 | 0.000 | 3275.2 | 0.095 | BB | 0.039 | 1408.02 | 0.099 |
| 2 | 4.165 | TCX | 38.1898 | 7.265 | 352477.8 | 10.215 | BB | 0.041 | 145019.10 | 10.238 |
| 3 | 4.650 | | 0.0000 | 0.000 | 1065.9 | 0.031 | BB | 0.160 | 111.26 | 0.008 |
| 4 | 4.737 | HCB | 0.2831 | 0.054 | 3928.7 | 0.114 | BB | 0.035 | 1863.87 | 0.132 |
| 5 | 4.798 | | 0.0000 | 0.000 | 154.8 | 0.004 | BB | 0.023 | 110.75 | 0.008 |
| 6 | 4.867 | | 0.0000 | 0.000 | 79.6 | 0.002 | BB | 0.030 | 44.00 | 0.003 |
| 7 | 4.987 | alpha-BHC | 10.0907 | 1.920 | 97144.0 | 2.815 | BB | 0.035 | 46691.00 | 3.296 |
| 8 | 5.151 | | 0.0000 | 0.000 | 225.5 | 0.007 | BB | 0.049 | 76.54 | 0.005 |
| 9 | 5.447 | gamma-BHC | 10.0806 | 1.918 | 95725.8 | 2.774 | BB | 0.035 | 46047.11 | 3.251 |
| 10 | 5.575 | beta-BHC | 9.8152 | 1.867 | 59926.3 | 1.737 | BB | 0.037 | 26752.28 | 1.889 |
| 11 | 5.680 | | 0.0000 | 0.000 | 656.9 | 0.019 | BB | 0.028 | 390.40 | 0.028 |
| 12 | 5.828 | delta-BHC | 9.8848 | 1.881 | 88572.0 | 2.567 | BB | 0.035 | 42071.91 | 2.970 |
| 13 | 6.035 | | 0.0000 | 0.000 | 435.6 | 0.013 | BV | 0.044 | 165.13 | 0.012 |
| 14 | 6.124 | Heptachlor | 9.9489 | 1.893 | 116146.2 | 3.366 | VV | 0.038 | 51396.70 | 3.629 |
| 15 | 6.360 | | 0.0000 | 0.000 | 5465.2 | 0.158 | VV | 0.110 | 826.33 | 0.058 |
| 16 | 6.544 | Aldrin | 10.0010 | 1.903 | 87869.6 | 2.546 | VB | 0.037 | 39874.31 | 2.815 |
| 17 | 6.924 | | 0.0000 | 0.000 | 13066.1 | 0.379 | BB | 0.051 | 4237.75 | 0.299 |
| 18 | 7.129 | | 0.0000 | 0.000 | 301.3 | 0.009 | BV | 0.063 | 80.14 | 0.006 |
| 19 | 7.374 | Hept. epoxide | 9.8100 | 1.866 | 101777.1 | 2.949 | VV | 0.039 | 43364.05 | 3.062 |
| 20 | 7.538 | g. Chlordane | 9.9121 | 1.886 | 98533.2 | 2.855 | VV | 0.039 | 41978.88 | 2.964 |
| 21 | 7.714 | a. Chlordane | 9.7678 | 1.858 | 93159.1 | 2.700 | VV | 0.037 | 41631.64 | 2.939 |
| 22 | 7.805 | 4,4'-DDE | 19.0145 | 3.617 | 145321.6 | 4.211 | VV | 0.037 | 64900.18 | 4.582 |
| 23 | 7.903 | Endosulfan I | 10.0812 | 1.918 | 90298.0 | 2.617 | VV | 0.039 | 38623.22 | 2.727 |
| 24 | 8.043 | o,p-DDD | 0.0620 | 0.012 | 284.4 | 0.008 | VB | 0.035 | 136.41 | 0.010 |
| 25 | 8.218 | Dieldrin | 19.9898 | 3.803 | 160529.6 | 4.652 | BB | 0.037 | 72834.49 | 5.142 |
| 26 | 8.362 | o,p-DDT | 0.0455 | 0.009 | 191.6 | 0.006 | BB | 0.026 | 123.95 | 0.009 |
| 27 | 8.525 | Endrin | 19.3297 | 3.677 | 140085.7 | 4.060 | BV | 0.036 | 65707.98 | 4.639 |
| 28 | 8.588 | Kepone | 110.2383 | 20.972 | 130077.5 | 3.770 | VV | 0.046 | 46935.00 | 3.314 |
| 29 | 8.820 | Endosulfan II | 19.4541 | 3.701 | 162236.5 | 4.702 | VV | 0.040 | 67272.96 | 4.750 |
| 30 | 8.949 | 4,4'-DDT | 18.3500 | 3.491 | 132672.7 | 3.845 | VV | 0.041 | 54360.05 | 3.838 |
| 31 | 9.154 | | 0.0000 | 0.000 | 369.0 | 0.011 | VV | 0.053 | 115.50 | 0.008 |
| 32 | 9.222 | | 0.0000 | 0.000 | 4402.9 | 0.128 | VB | 0.042 | 1740.25 | 0.123 |
| 33 | 9.364 | Endrin aldehyde | 19.2175 | 3.656 | 123816.8 | 3.588 | BV | 0.043 | 47765.47 | 3.372 |
| 34 | 9.561 | Methoxychlor | 87.2164 | 16.592 | 406054.9 | 11.767 | VV | 0.045 | 151809.90 | 10.718 |
| 35 | 9.799 | Mirex | 0.0579 | 0.011 | 662.0 | 0.019 | VB | 0.061 | 181.90 | 0.013 |
| 36 | 9.929 | Endo. sulfate | 18.7099 | 3.559 | 140721.5 | 4.078 | BV | 0.041 | 57570.17 | 4.064 |
| 37 | 10.102 | | 0.0000 | 0.000 | 4304.6 | 0.125 | VV | 0.050 | 1449.08 | 0.102 |
| 38 | 10.163 | | 0.0000 | 0.000 | 2511.2 | 0.073 | VB | 0.048 | 865.76 | 0.061 |
| 39 | 10.297 | Endrin ketone | 19.7473 | 3.757 | 168994.7 | 4.897 | BB | 0.040 | 70600.55 | 4.984 |
| 40 | 10.699 | | 0.0000 | 0.000 | 19187.9 | 0.556 | BB | 0.107 | 2993.86 | 0.211 |
| 41 | 11.324 | | 0.0000 | 0.000 | 1264.7 | 0.037 | BB | 0.042 | 503.56 | 0.036 |
| 42 | 11.603 | DCB | 36.3463 | 6.915 | 396757.3 | 11.498 | BB | 0.049 | 135783.80 | 9.586 |

Total Area = 3450731.0, Total Amount = 525.645, Total Height = 1416415.0, Sample Units = PPB

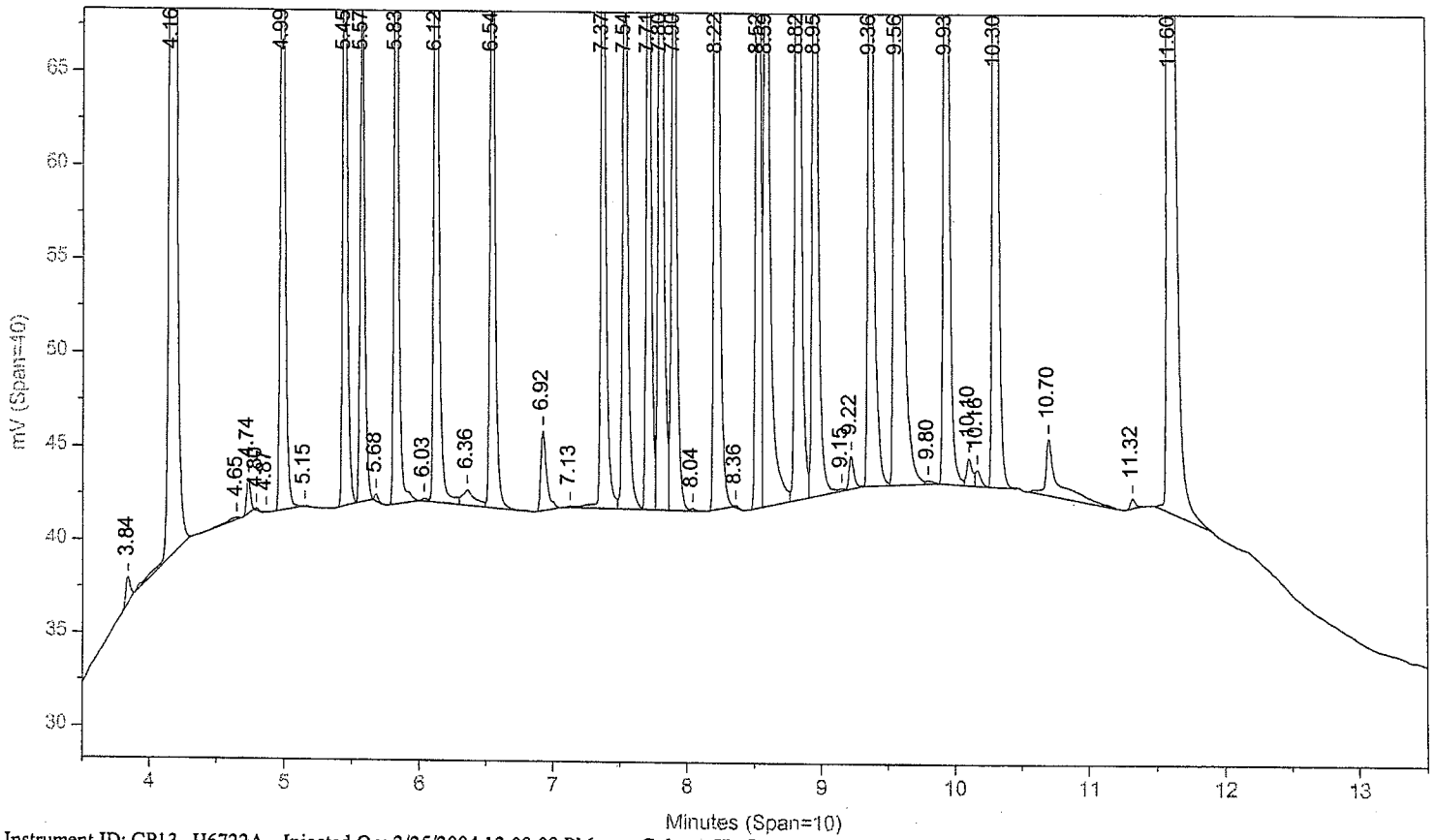
Sample Name: **MIXA303D LSMIXA3LS CCAL 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 12:23:08pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.05R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.052 | | 0.0000 | 0.000 | 1623.0 | 0.081 | BB | 0.044 | 610.21 | 0.072 |
| 2 | 3.370 | | 0.0000 | 0.000 | 21865.4 | 1.097 | BB | 0.364 | 1000.00 | 0.118 |
| 3 | 3.768 | | 0.0000 | 0.000 | 837.6 | 0.042 | BB | 0.045 | 312.91 | 0.037 |
| 4 | 3.928 | | 0.0000 | 0.000 | 1167.7 | 0.059 | BB | 0.036 | 534.69 | 0.063 |
| 5 | 4.199 | TCX | 38.9192 | 9.150 | 224740.9 | 11.280 | BB | 0.038 | 98987.56 | 11.716 |
| 6 | 4.742 | | 0.0000 | 0.000 | 4473.7 | 0.225 | BB | 0.067 | 1110.41 | 0.131 |
| 7 | 5.090 | alpha-BHC | 9.0716 | 2.133 | 37029.8 | 1.859 | BB | 0.028 | 22409.12 | 2.652 |
| 8 | 5.603 | gamma-BHC | 10.1096 | 2.377 | 49583.1 | 2.489 | BV | 0.032 | 25595.22 | 3.029 |
| 9 | 5.727 | beta-BHC | 9.6880 | 2.278 | 37684.6 | 1.891 | VV | 0.040 | 15576.70 | 1.844 |
| 10 | 6.139 | delta-BHC | 9.3933 | 2.208 | 41015.5 | 2.059 | VV | 0.033 | 20564.58 | 2.434 |
| 11 | 6.219 | Heptachlor | 10.4784 | 2.463 | 62353.3 | 3.129 | VB | 0.035 | 29891.33 | 3.538 |
| 12 | 6.665 | Aldrin | 10.2669 | 2.414 | 45870.5 | 2.302 | BB | 0.032 | 23762.13 | 2.812 |
| 13 | 6.760 | | 0.0000 | 0.000 | 4093.9 | 0.205 | BB | 0.058 | 1181.73 | 0.140 |
| 14 | 7.203 | | 0.0000 | 0.000 | 661.1 | 0.033 | BB | 0.038 | 291.11 | 0.034 |
| 15 | 7.437 | Hept. epoxide | 10.2571 | 2.411 | 55411.9 | 2.781 | BV | 0.035 | 26453.87 | 3.131 |
| 16 | 7.687 | g. Chlordane | 10.0618 | 2.365 | 58429.9 | 2.933 | VV | 0.037 | 26306.02 | 3.114 |
| 17 | 7.878 | a. Chlordane | 9.8588 | 2.318 | 56323.3 | 2.827 | VV | 0.035 | 26668.22 | 3.156 |
| 18 | 7.957 | Endosulfan I | 9.7228 | 2.286 | 54653.8 | 2.743 | VV | 0.038 | 23888.82 | 2.827 |
| 19 | 8.095 | 4,4'-DDE | 16.0594 | 3.775 | 87995.9 | 4.416 | VV | 0.047 | 31114.35 | 3.683 |
| 20 | 8.315 | Dieldrin | 20.1128 | 4.728 | 96225.2 | 4.830 | VB | 0.034 | 47030.84 | 5.566 |
| 21 | 8.714 | Endrin | 19.5900 | 4.605 | 80005.4 | 4.015 | BB | 0.034 | 39705.36 | 4.699 |
| 22 | 8.847 | 4,4'-DDD | 14.9786 | 3.521 | 54791.6 | 2.750 | BB | 0.049 | 18661.51 | 2.209 |
| 23 | 8.989 | Endosulfan II | 19.5410 | 4.594 | 90555.8 | 4.545 | BB | 0.037 | 41260.67 | 4.884 |
| 24 | 9.247 | 4,4'-DDT | 17.8172 | 4.189 | 71655.9 | 3.596 | BB | 0.041 | 28917.52 | 3.423 |
| 25 | 9.421 | Endrin aldehyde | 18.7768 | 4.414 | 73105.4 | 3.669 | BB | 0.039 | 30933.56 | 3.661 |
| 26 | 9.554 | | 0.0000 | 0.000 | 412.2 | 0.021 | BB | 0.034 | 202.74 | 0.024 |
| 27 | 9.577 | | 0.0000 | 0.000 | 952.4 | 0.048 | BB | 0.028 | 576.24 | 0.068 |
| 28 | 9.773 | Endo. sulfate | 18.8036 | 4.421 | 82219.7 | 4.127 | BB | 0.039 | 35109.23 | 4.155 |
| 29 | 10.119 | Methoxychlor | 85.3332 | 20.061 | 220514.3 | 11.068 | BB | 0.043 | 84893.11 | 10.048 |
| 30 | 10.350 | | 0.0000 | 0.000 | 1205.7 | 0.061 | BB | 0.035 | 578.29 | 0.068 |
| 31 | 10.472 | Endrin ketone | 19.2541 | 4.526 | 115842.0 | 5.814 | BB | 0.041 | 46756.07 | 5.534 |
| 32 | 11.777 | | 0.0000 | 0.000 | 1736.6 | 0.087 | BB | 0.068 | 423.07 | 0.050 |
| 33 | 12.212 | DCB | 37.2732 | 8.763 | 257401.4 | 12.919 | BB | 0.046 | 93587.80 | 11.077 |

Total Area = 1992439.0, Total Amount = 425.368, Total Height = 844895.1, Sample Units = PPB

LANCASTER LABORATORIES

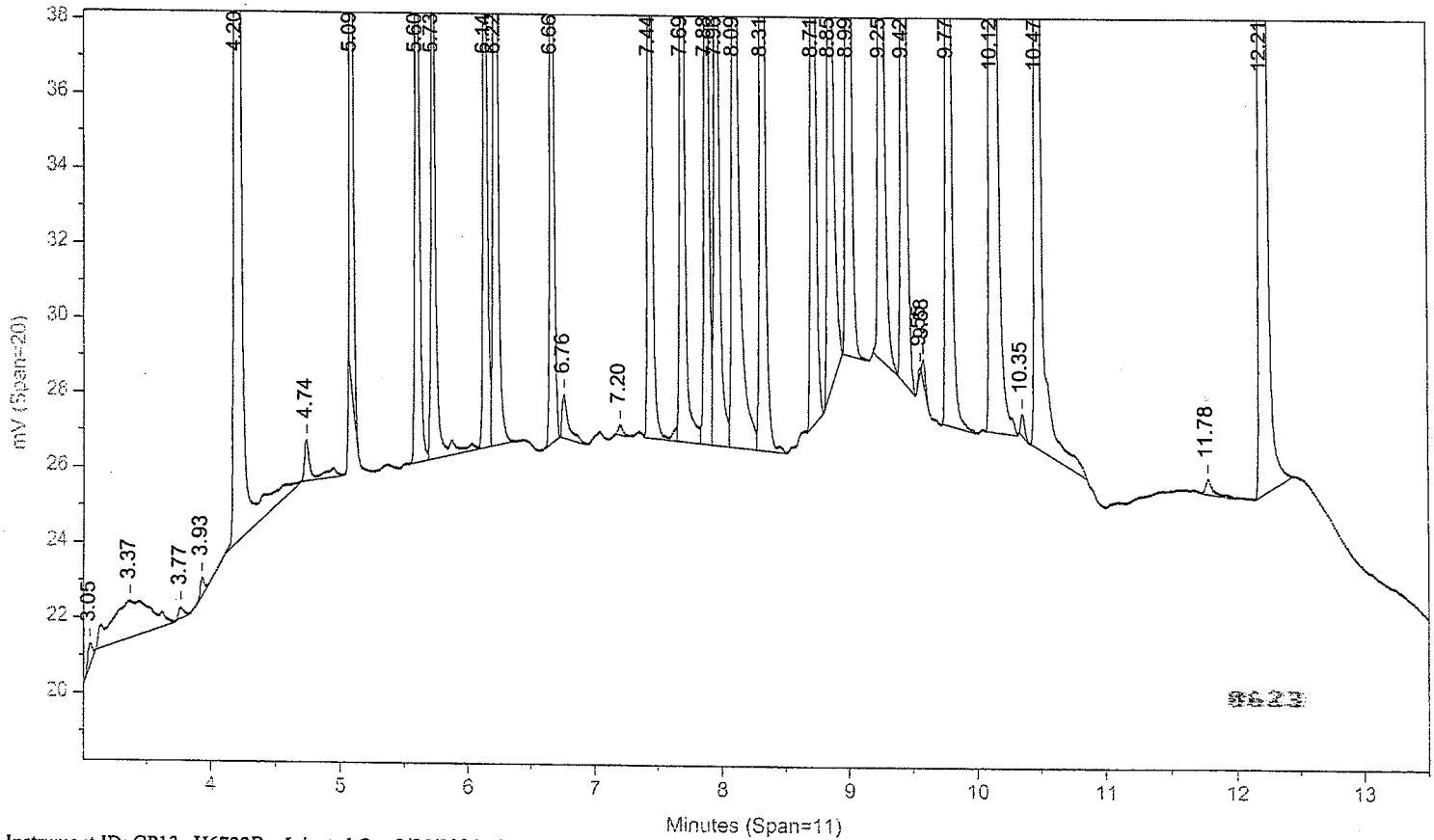
File: C:\CPWIN\DATA1\2C13051.05R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 12:09:08 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.05R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 12:09:08 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.165 | 145019 | 38.18981 | TCX | 4.199 | 98988 | 38.91924 | TCX |
| 4.737 | 1864 | .28313 | HCB | . | 0 | . | HCB |
| 4.987 | 46691 | 10.09074 | alpha-BHC | 5.09 | 22409 | 9.07157 | alpha-BHC |
| 5.447 | 46047 | 10.0806 | gamma-BHC | 5.603 | 25595 | 10.10958 | gamma-BHC |
| 5.575 | 26752 | 9.8152 | beta-BHC | 5.727 | 15577 | 9.68798 | beta-BHC |
| 5.828 | 42072 | 9.88484 | delta-BHC | 6.139 | 20565 | 9.39327 | delta-BHC |
| 6.124 | 51397 | 9.94892 | Heptachlor | 6.219 | 29891 | 10.47845 | Heptachlor |
| 6.544 | 39874 | 10.00099 | Aldrin | 6.665 | 23762 | 10.26694 | Aldrin |
| 7.374 | 43364 | 9.81004 | Hept. epoxide | 7.437 | 26454 | 10.25705 | Hept. epoxide |
| 7.538 | 41979 | 9.91211 | g. Chlordane | 7.687 | 26306 | 10.06184 | g. Chlordane |
| 7.714 | 41632 | 9.76782 | a. Chlordane | 7.878 | 26668 | 9.85879 | a. Chlordane |
| 7.805 | 64900 | 19.01447 | 4,4'-DDE | 8.095 | 31114 | 16.05937 | 4,4'-DDE |
| 7.903 | 38623 | 10.08118 | Endosulfan I | 7.957 | 23889 | 9.72282 | Endosulfan I |
| 8.043 | 136 | .06198 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.218 | 72834 | 19.98977 | Dieldrin | 8.315 | 47031 | 20.11284 | Dieldrin |
| 8.362 | 124 | .04552 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.525 | 65708 | 19.3297 | Endrin | 8.714 | 39705 | 19.58999 | Endrin |
| 8.588 | 46935 | 110.2383 | Kepone /DDD | . | 0 | . | Kepone |
| 8.82 | 67273 | 19.45413 | Endosulfan II | 8.989 | 41261 | 19.54105 | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.847 | 18662 | 14.97864 | 4,4'-DDD |
| 8.949 | 54360 | 18.34997 | 4,4'-DDT | 9.247 | 28918 | 17.81717 | 4,4'-DDT |
| 9.364 | 47765 | 19.21748 | Endrin aldehyde | 9.421 | 30934 | 18.77685 | Endrin aldehyde |
| 9.561 | 151810 | 87.2164 | Methoxychlor | 10.119 | 84893 | 85.33318 | Methoxychlor |
| 9.929 | 57570 | 18.70989 | Endo. sulfate | 9.773 | 35109 | 18.80359 | Endo. sulfate |
| 9.799 | 182 | .05793 | Mirex | . | 0 | . | Mirex |
| 10.297 | 70601 | 19.74732 | Endrin ketone | 10.472 | 46756 | 19.25413 | Endrin ketone |
| 11.603 | 135784 | 36.34628 | DCB | 12.212 | 93588 | 37.27325 | DCB |

agc 11/31 2-26-04

Files:
Area File: C:\CPWIN\DATA1\2C13051.05A
Area File: C:\CPWIN\DATA1\2C13051B.05A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 12:44:08 PM
File Reported On: 2/26/2004 at 12:44:18 PM

Files:
10X REPLOTS

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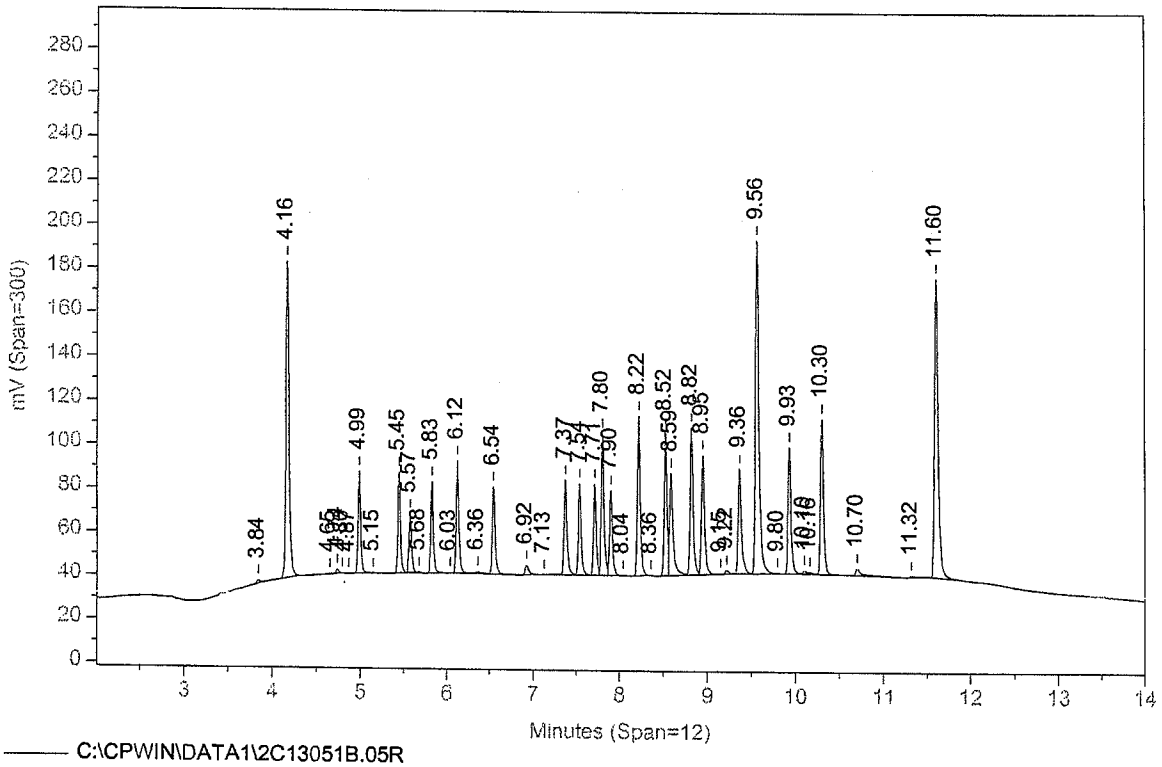


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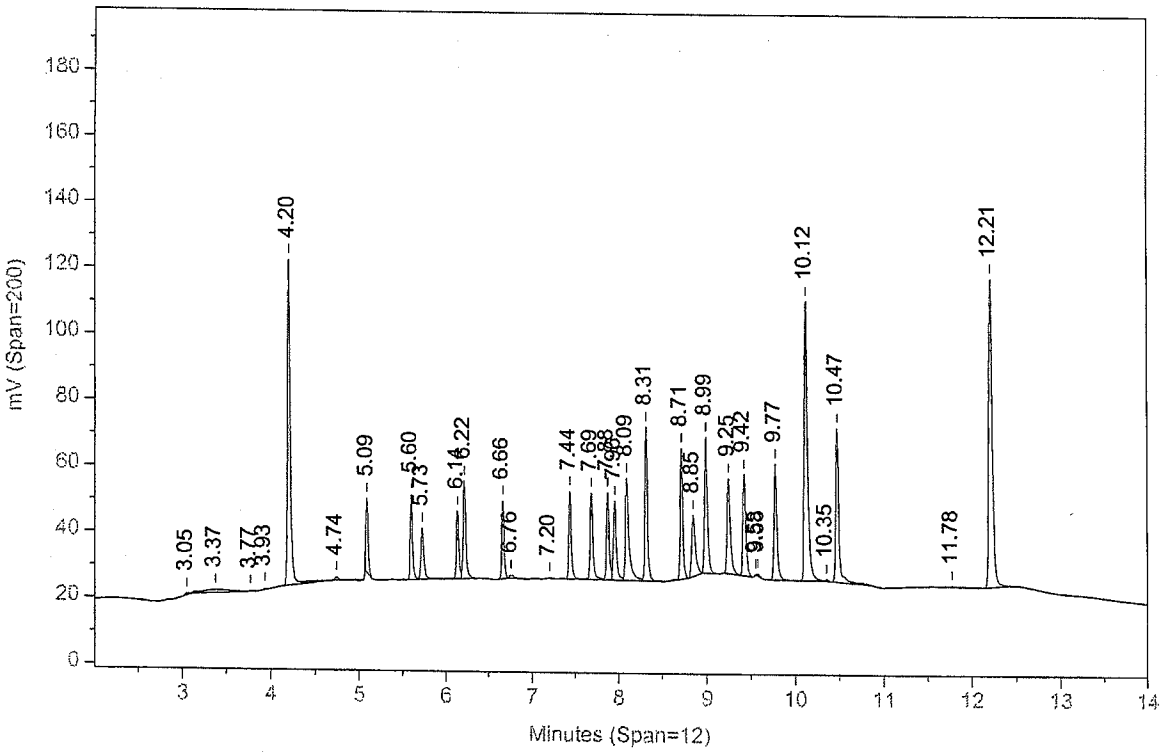


Sample Name: **EVALX03C ISPEMIS PEM 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 07:52:39pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.27R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.161 | TCX | 19.6221 | 4.929 | 209683.2 | 7.486 | BB | 0.047 | 74511.41 | 7.133 |
| 2 | 4.732 | HCB | 0.1386 | 0.035 | 1989.2 | 0.071 | BB | 0.036 | 912.44 | 0.087 |
| 3 | 4.982 | alpha-BHC | 10.0701 | 2.530 | 99164.4 | 3.541 | BB | 0.035 | 46595.46 | 4.461 |
| 4 | 5.441 | gamma-BHC | 9.7968 | 2.461 | 93090.4 | 3.324 | BB | 0.035 | 44750.62 | 4.284 |
| 5 | 5.570 | beta-BHC | 9.6125 | 2.415 | 59305.5 | 2.117 | BB | 0.038 | 26199.91 | 2.508 |
| 6 | 5.673 | | 0.0000 | 0.000 | 269.5 | 0.010 | BB | 0.024 | 189.23 | 0.018 |
| 7 | 5.920 | | 0.0000 | 0.000 | 1055.8 | 0.038 | BB | 0.042 | 418.69 | 0.040 |
| 8 | 6.104 | Heptachlor | 0.0331 | 0.008 | 536.6 | 0.019 | BV | 0.052 | 170.97 | 0.016 |
| 9 | 6.323 | | 0.0000 | 0.000 | 8429.4 | 0.301 | VB | 0.285 | 493.55 | 0.047 |
| 10 | 7.001 | | 0.0000 | 0.000 | 119.8 | 0.004 | BB | 0.028 | 70.87 | 0.007 |
| 11 | 7.050 | | 0.0000 | 0.000 | 1025.7 | 0.037 | BV | 0.066 | 260.62 | 0.025 |
| 12 | 7.363 | o,p-DDE | 0.2042 | 0.051 | 5557.6 | 0.198 | VV | 0.166 | 559.07 | 0.054 |
| 13 | 7.500 | | 0.0000 | 0.000 | 2268.7 | 0.081 | VV | 0.056 | 669.73 | 0.064 |
| 14 | 7.549 | g. Chlordane | 0.1638 | 0.041 | 3856.4 | 0.138 | VV | 0.093 | 693.91 | 0.066 |
| 15 | 7.799 | 4,4'-DDE | 0.5872 | 0.148 | 5442.5 | 0.194 | VB | 0.045 | 2004.13 | 0.192 |
| 16 | 8.108 | | 0.0000 | 0.000 | 612.1 | 0.022 | BV | 0.065 | 156.32 | 0.015 |
| 17 | 8.227 | Dieldrin | 0.0273 | 0.007 | 360.1 | 0.013 | VB | 0.060 | 99.55 | 0.010 |
| 18 | 8.360 | o,p-DDT | 0.7260 | 0.182 | 4797.8 | 0.171 | BB | 0.040 | 1976.65 | 0.189 |
| 19 | 8.519 | Endrin | 46.6975 | 11.731 | 363456.2 | 12.977 | BV | 0.038 | 158740.20 | 15.197 |
| 20 | 8.690 | | 0.0000 | 0.000 | 10705.1 | 0.382 | VV | 0.105 | 1703.04 | 0.163 |
| 21 | 8.830 | Endosulfan II | 0.1803 | 0.045 | 3028.3 | 0.108 | VV | 0.081 | 623.59 | 0.060 |
| 22 | 8.944 | 4,4'-DDT | 89.3311 | 22.441 | 645425.1 | 23.044 | VV | 0.041 | 264634.80 | 25.335 |
| 23 | 9.216 | | 0.0000 | 0.000 | 1873.7 | 0.067 | VB | 0.072 | 433.20 | 0.041 |
| 24 | 9.362 | Endrin aldehyde | 1.4856 | 0.373 | 10576.2 | 0.378 | BV | 0.048 | 3692.44 | 0.354 |
| 25 | 9.555 | Methoxychlor | 188.1512 | 47.266 | 920228.2 | 32.856 | VB | 0.047 | 327498.30 | 31.354 |
| 26 | 10.096 | | 0.0000 | 0.000 | 1802.4 | 0.064 | BB | 0.036 | 835.58 | 0.080 |
| 27 | 10.293 | Endrin ketone | 1.3367 | 0.336 | 16405.0 | 0.586 | BV | 0.057 | 4779.11 | 0.458 |
| 28 | 10.469 | | 0.0000 | 0.000 | 10833.3 | 0.387 | VV | 0.133 | 1358.06 | 0.130 |
| 29 | 10.724 | | 0.0000 | 0.000 | 68004.3 | 2.428 | VB | 0.349 | 3246.93 | 0.311 |
| 30 | 11.132 | | 0.0000 | 0.000 | 19136.0 | 0.683 | BB | 0.202 | 1580.51 | 0.151 |
| 31 | 11.320 | | 0.0000 | 0.000 | 781.4 | 0.028 | BB | 0.041 | 315.26 | 0.030 |
| 32 | 11.599 | DCB | 19.9045 | 5.000 | 231012.2 | 8.248 | BB | 0.052 | 74359.99 | 7.119 |

Total Area = 2800832.0, Total Amount = 398.069, Total Height = 1044534.0, Sample Units = PPB

Sample Name: **EVALX03C ISPEMIS PEM 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 07:52:39pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.27R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

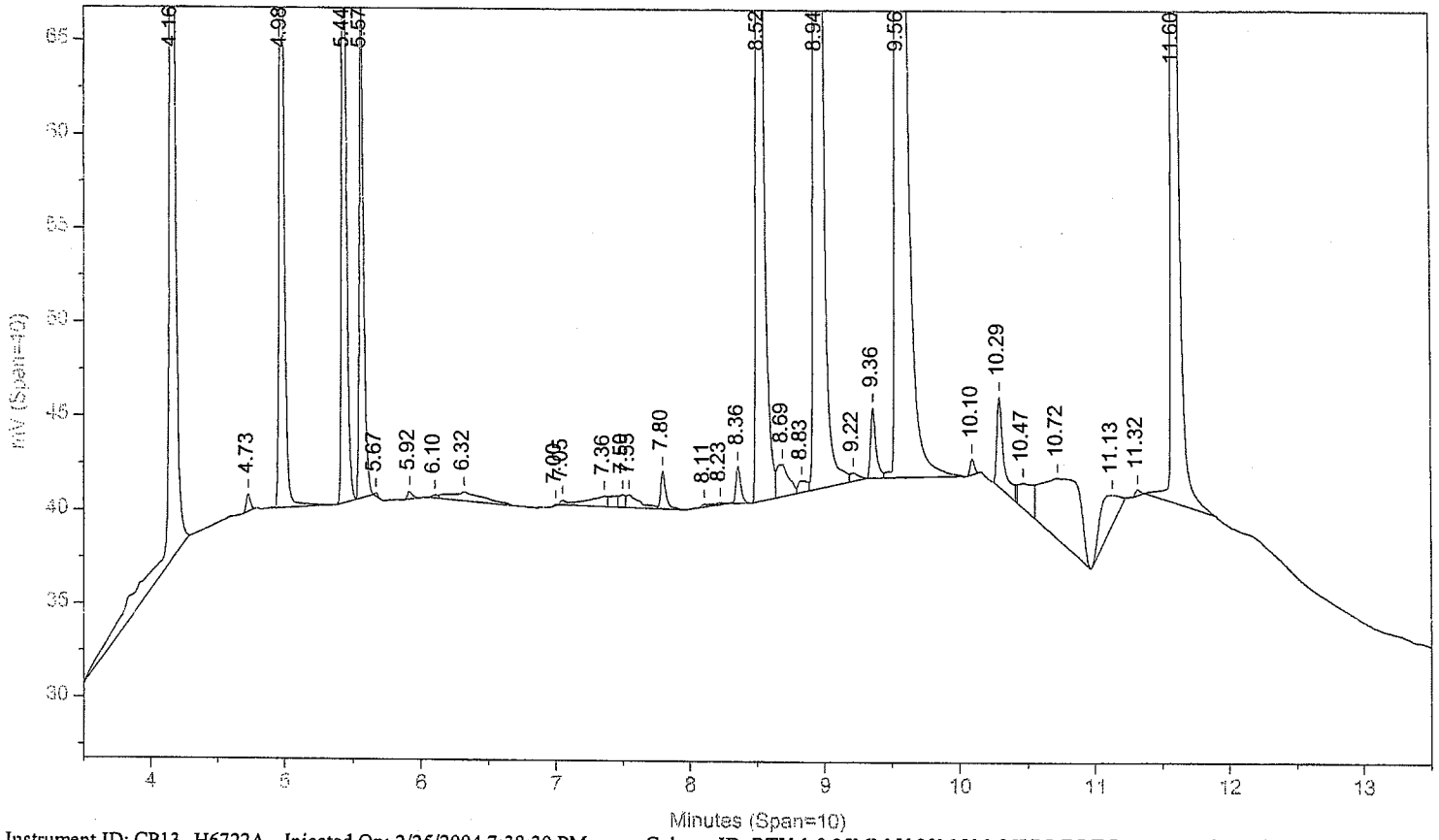
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.056 | | 0.0000 | 0.000 | 1405.7 | 0.090 | BB | 0.049 | 480.97 | 0.079 |
| 2 | 3.315 | | 0.0000 | 0.000 | 1892.3 | 0.121 | BB | 0.428 | 73.63 | 0.012 |
| 3 | 3.760 | | 0.0000 | 0.000 | 866.9 | 0.056 | BB | 0.048 | 300.97 | 0.049 |
| 4 | 4.195 | TCX | 18.9475 | 4.674 | 125536.7 | 8.053 | BB | 0.043 | 48191.21 | 7.911 |
| 5 | 4.732 | | 0.0000 | 0.000 | 2939.3 | 0.189 | BB | 0.087 | 561.52 | 0.092 |
| 6 | 5.085 | alpha-BHC | 7.8600 | 1.939 | 28449.7 | 1.825 | BB | 0.024 | 19416.25 | 3.187 |
| 7 | 5.598 | gamma-BHC | 9.7485 | 2.405 | 48588.3 | 3.117 | BV | 0.033 | 24681.04 | 4.051 |
| 8 | 5.723 | beta-BHC | 9.2506 | 2.282 | 41619.6 | 2.670 | VB | 0.047 | 14873.54 | 2.441 |
| 9 | 7.635 | | 0.0000 | 0.000 | 1807.6 | 0.116 | BV | 0.103 | 291.68 | 0.048 |
| 10 | 7.914 | a. Chlordane | 0.2375 | 0.059 | 7075.6 | 0.454 | VV | 0.184 | 642.45 | 0.105 |
| 11 | 8.101 | 4,4'-DDE | 0.6997 | 0.173 | 11059.4 | 0.709 | VB | 0.136 | 1355.56 | 0.223 |
| 12 | 8.709 | Endrin | 50.0113 | 12.336 | 206868.0 | 13.270 | BB | 0.034 | 101363.80 | 16.639 |
| 13 | 8.848 | 4,4'-DDD | 0.6286 | 0.155 | 2365.6 | 0.152 | BB | 0.050 | 783.20 | 0.129 |
| 14 | 8.951 | | 0.0000 | 0.000 | 302.4 | 0.019 | BB | 0.020 | 253.45 | 0.042 |
| 15 | 9.243 | 4,4'-DDT | 94.8643 | 23.401 | 390521.1 | 25.050 | BB | 0.042 | 153966.00 | 25.273 |
| 16 | 9.421 | Endrin aldehyde | 1.5875 | 0.392 | 6738.2 | 0.432 | BB | 0.043 | 2615.25 | 0.429 |
| 17 | 10.115 | Methoxychlor | 192.6156 | 47.513 | 535742.3 | 34.365 | BB | 0.047 | 191622.30 | 31.455 |
| 18 | 10.470 | Endrin ketone | 1.4624 | 0.361 | 9491.7 | 0.609 | BB | 0.045 | 3551.12 | 0.583 |
| 19 | 11.780 | | 0.0000 | 0.000 | 6303.1 | 0.404 | BB | 0.367 | 286.24 | 0.047 |
| 20 | 12.210 | DCB | 17.4805 | 4.312 | 129383.5 | 8.299 | BB | 0.049 | 43891.04 | 7.205 |

Total Area = 1558957.0, Total Amount = 405.394, Total Height = 609201.2, Sample Units = PPB

8627

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.27R

C:\CPWIN\DATA1\2C13051.27R



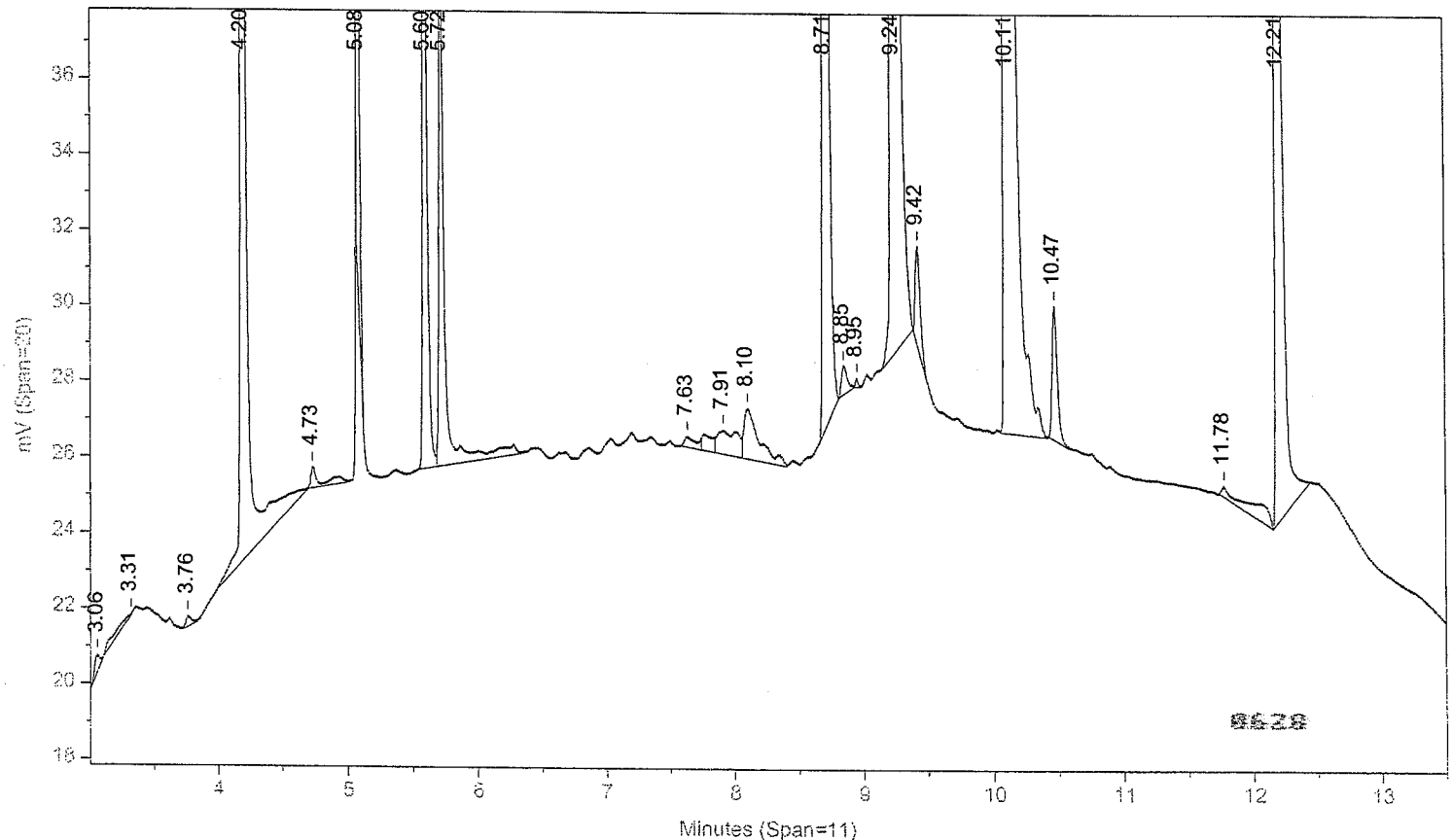

Instrument ID: CP13--H6722A Injected On: 2/25/2004 7:38:39 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.7516283

%ENDRIN BD= 5.06636

File: C:\CPWIN\DATA1\2C13051B.27R

C:\CPWIN\DATA1\2C13051B.27R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 7:38:39 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.370081

%ENDRIN BD= 5.734553

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 74511 | 19.622 | TCX | 4.195 | 48191 | 18.947 | TCX |
| 4.732 | 912 | .139 | HCB | . | 0 | . | HCB |
| 4.982 | 46595 | 10.07 | alpha-BHC | 5.085 | 19416 | 7.86 | alpha-BHC |
| 5.441 | 44751 | 9.797 | gamma-BHC | 5.598 | 24681 | 9.748 | gamma-BHC |
| 5.57 | 26200 | 9.613 | beta-BHC | 5.723 | 14874 | 9.251 | beta-BHC |
| 6.104 | 171 | .033 | Heptachlor | . | 0 | . | Heptachlor |
| 7.363 | 559 | .204 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.549 | 694 | .164 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.799 | 2004 | .587 | 4,4'-DDE | 8.101 | 1356 | .7 | 4,4'-DDE |
| . | 0 | . | a. Chlordane | 7.914 | 642 | .238 | a. Chlordane |
| 8.227 | 100 | .027 | Dieldrin | . | 0 | . | Dieldrin |
| 8.36 | 1977 | .726 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 158740 | 46.698 | Endrin | 8.709 | 101364 | 50.011 | Endrin |
| 8.83 | 624 | .18 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.848 | 783 | .629 | 4,4'-DDD |
| 8.944 | 264635 | 89.331 | 4,4'-DDT | 9.243 | 153966 | 94.864 | 4,4'-DDT |
| 9.362 | 3692 | 1.486 | Endrin aldehyde | 9.421 | 2615 | 1.587 | Endrin aldehyde |
| 9.555 | 327498 | 188.151 | Methoxychlor | 10.115 | 191622 | 192.616 | Methoxychlor |
| 10.293 | 4779 | 1.337 | Endrin ketone | 10.47 | 3551 | 1.462 | Endrin ketone |
| 11.599 | 74360 | 19.905 | DCB | 12.21 | 43891 | 17.48 | DCB |

Files:
Area File: C:\CPWIN\DATA1\2C13051.27A
Area File: C:\CPWIN\DATA1\2C13051B.27A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/25/2004 7:52:44 PM
File Reported On: 2/25/2004 at 7:52:51 PM

Sample Name: **MIXA303D LNMIXA3LN CCAL 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 08:12:59pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.28R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.835 | | 0.0000 | 0.000 | 3324.3 | 0.096 | BB | 0.039 | 1438.41 | 0.105 |
| 2 | 4.160 | TCX | 38.2809 | 7.579 | 352201.8 | 10.193 | BB | 0.040 | 145365.10 | 10.620 |
| 3 | 4.614 | | 0.0000 | 0.000 | 1204.8 | 0.035 | BB | 0.083 | 241.59 | 0.018 |
| 4 | 4.733 | HCB | 0.2829 | 0.056 | 3928.0 | 0.114 | BB | 0.035 | 1862.27 | 0.136 |
| 5 | 4.983 | alpha-BHC | 10.1179 | 2.003 | 98387.5 | 2.847 | BB | 0.035 | 46816.62 | 3.420 |
| 6 | 5.442 | gamma-BHC | 10.0560 | 1.991 | 95423.4 | 2.762 | BB | 0.035 | 45934.56 | 3.356 |
| 7 | 5.570 | beta-BHC | 9.6992 | 1.920 | 59615.4 | 1.725 | BB | 0.038 | 26436.13 | 1.931 |
| 8 | 5.674 | | 0.0000 | 0.000 | 606.3 | 0.018 | BB | 0.028 | 364.18 | 0.027 |
| 9 | 5.823 | delta-BHC | 9.6671 | 1.914 | 87331.7 | 2.527 | BB | 0.035 | 41145.19 | 3.006 |
| 10 | 6.034 | | 0.0000 | 0.000 | 423.5 | 0.012 | BV | 0.044 | 160.97 | 0.012 |
| 11 | 6.119 | Heptachlor | 9.9203 | 1.964 | 114923.8 | 3.326 | VV | 0.037 | 51249.01 | 3.744 |
| 12 | 6.358 | | 0.0000 | 0.000 | 4668.7 | 0.135 | VV | 0.109 | 716.33 | 0.052 |
| 13 | 6.539 | Aldrin | 10.0203 | 1.984 | 88685.7 | 2.567 | VB | 0.037 | 39951.26 | 2.919 |
| 14 | 6.920 | | 0.0000 | 0.000 | 10447.5 | 0.302 | BB | 0.053 | 3260.86 | 0.238 |
| 15 | 7.124 | | 0.0000 | 0.000 | 287.8 | 0.008 | BV | 0.062 | 77.27 | 0.006 |
| 16 | 7.368 | o,p-DDE | 15.8288 | 3.134 | 101768.2 | 2.945 | VV | 0.039 | 43336.34 | 3.166 |
| 17 | 7.533 | g. Chlordane | 9.8533 | 1.951 | 98539.0 | 2.852 | VB | 0.039 | 41729.80 | 3.049 |
| 18 | 7.709 | a. Chlordane | 9.7293 | 1.926 | 93295.1 | 2.700 | BV | 0.037 | 41467.58 | 3.029 |
| 19 | 7.799 | 4,4'-DDE | 18.0347 | 3.571 | 140674.7 | 4.071 | VV | 0.038 | 61555.94 | 4.497 |
| 20 | 7.897 | Endosulfan I | 10.1539 | 2.010 | 93110.3 | 2.695 | VB | 0.040 | 38902.02 | 2.842 |
| 21 | 8.212 | Dieldrin | 19.8704 | 3.934 | 161418.1 | 4.672 | BB | 0.037 | 72399.57 | 5.289 |
| 22 | 8.520 | Endrin | 18.8767 | 3.737 | 138927.8 | 4.021 | BV | 0.036 | 64167.93 | 4.688 |
| 23 | 8.583 | Kepone | 100.5111 | 19.901 | 129639.2 | 3.752 | VV | 0.050 | 42793.55 | 3.126 |
| 24 | 8.815 | Endosulfan II | 19.1359 | 3.789 | 164362.9 | 4.757 | VV | 0.041 | 66172.61 | 4.834 |
| 25 | 8.945 | 4,4'-DDT | 17.0494 | 3.376 | 135373.2 | 3.918 | VV | 0.045 | 50507.16 | 3.690 |
| 26 | 9.218 | | 0.0000 | 0.000 | 5143.9 | 0.149 | VB | 0.047 | 1814.62 | 0.133 |
| 27 | 9.360 | Endrin aldehyde | 18.9427 | 3.751 | 127224.4 | 3.682 | BV | 0.045 | 47082.57 | 3.440 |
| 28 | 9.558 | Methoxychlor | 76.2809 | 15.103 | 408162.5 | 11.812 | VB | 0.051 | 132775.40 | 9.700 |
| 29 | 9.925 | Endo. sulfate | 18.1549 | 3.595 | 141359.5 | 4.091 | BV | 0.042 | 55862.60 | 4.081 |
| 30 | 10.097 | | 0.0000 | 0.000 | 5880.6 | 0.170 | VB | 0.070 | 1394.55 | 0.102 |
| 31 | 10.292 | Endrin ketone | 19.2923 | 3.820 | 171946.8 | 4.976 | BB | 0.042 | 68973.90 | 5.039 |
| 32 | 10.584 | | 0.0000 | 0.000 | 146.1 | 0.004 | BB | 0.045 | 53.82 | 0.004 |
| 33 | 10.699 | | 0.0000 | 0.000 | 8533.8 | 0.247 | BB | 0.315 | 452.01 | 0.033 |
| 34 | 11.321 | | 0.0000 | 0.000 | 1253.3 | 0.036 | BB | 0.046 | 450.34 | 0.033 |
| 35 | 11.600 | DCB | 35.3061 | 6.990 | 407156.0 | 11.783 | BB | 0.051 | 131897.90 | 9.636 |

Total Area = 3455376.0, Total Amount = 505.065, Total Height = 1368810.0, Sample Units = PPB

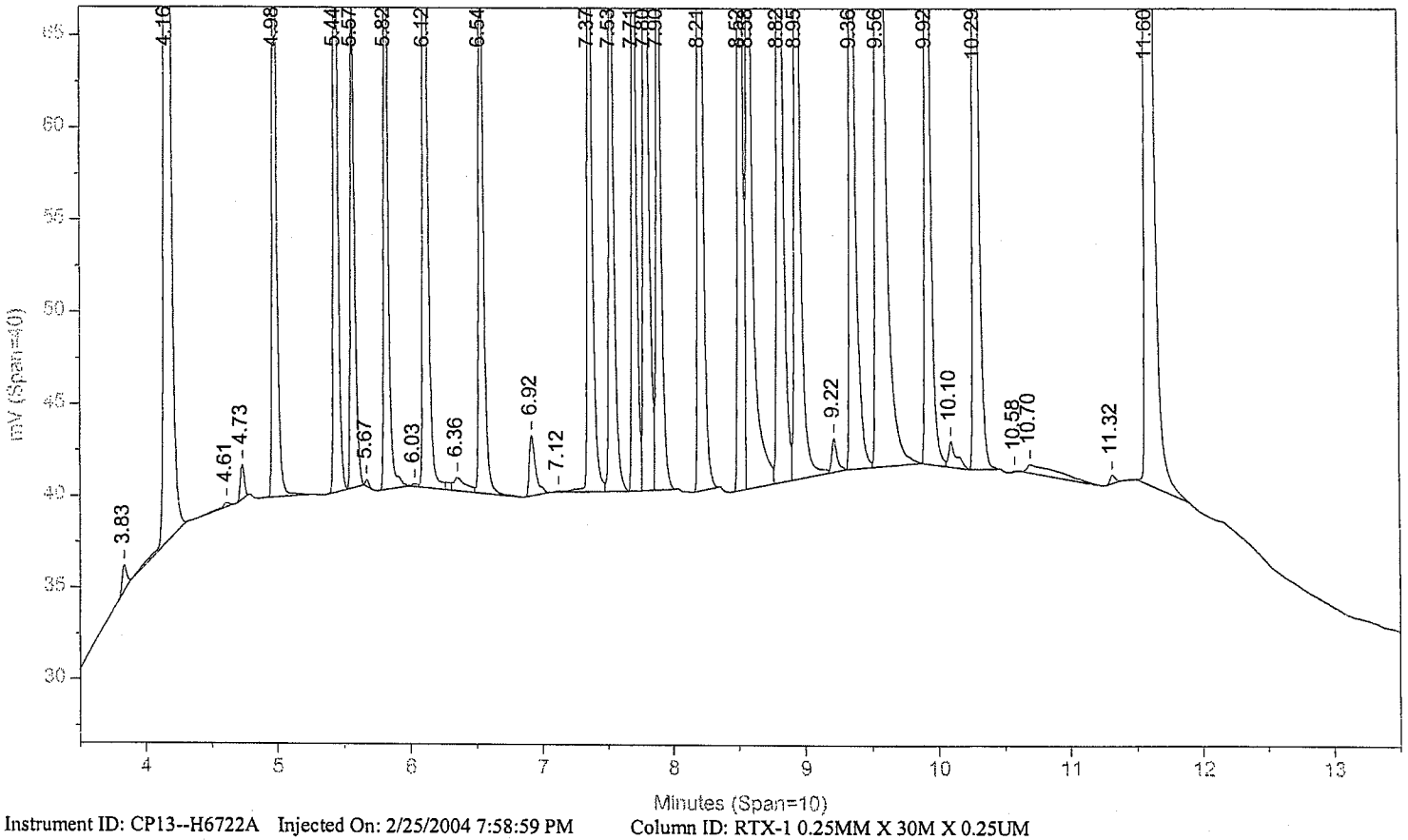
Sample Name: **MIXA303D LNMIXA3LN CCAL 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 08:12:59pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.28R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.050 | | 0.0000 | 0.000 | 1506.1 | 0.077 | BB | 0.042 | 591.28 | 0.075 |
| 2 | 3.225 | | 0.0000 | 0.000 | 1704.4 | 0.087 | BB | 0.360 | 78.91 | 0.010 |
| 3 | 3.389 | | 0.0000 | 0.000 | 3661.1 | 0.187 | BB | 0.203 | 300.60 | 0.038 |
| 4 | 3.764 | | 0.0000 | 0.000 | 880.9 | 0.045 | BB | 0.046 | 316.12 | 0.040 |
| 5 | 3.927 | | 0.0000 | 0.000 | 1138.1 | 0.058 | BB | 0.035 | 536.19 | 0.068 |
| 6 | 4.195 | TCX | 38.7116 | 10.001 | 216488.1 | 11.040 | BB | 0.037 | 98459.57 | 12.514 |
| 7 | 4.736 | | 0.0000 | 0.000 | 4680.7 | 0.239 | BB | 0.069 | 1126.90 | 0.143 |
| 8 | 5.085 | alpha-BHC | 8.0761 | 2.086 | 29340.3 | 1.496 | BB | 0.025 | 19950.15 | 2.536 |
| 9 | 5.598 | gamma-BHC | 9.9683 | 2.575 | 49681.4 | 2.533 | BV | 0.033 | 25237.52 | 3.208 |
| 10 | 5.723 | beta-BHC | 9.3705 | 2.421 | 37722.0 | 1.924 | VB | 0.042 | 15066.24 | 1.915 |
| 11 | 6.134 | delta-BHC | 8.8485 | 2.286 | 39172.0 | 1.998 | BV | 0.034 | 19371.85 | 2.462 |
| 12 | 6.214 | Heptachlor | 10.6658 | 2.755 | 63843.1 | 3.256 | VB | 0.035 | 30425.82 | 3.867 |
| 13 | 6.660 | Aldrin | 10.3680 | 2.678 | 46870.6 | 2.390 | BB | 0.033 | 23996.02 | 3.050 |
| 14 | 6.754 | | 0.0000 | 0.000 | 3418.2 | 0.174 | BB | 0.061 | 935.50 | 0.119 |
| 15 | 7.200 | | 0.0000 | 0.000 | 936.5 | 0.048 | BV | 0.058 | 269.38 | 0.034 |
| 16 | 7.432 | Hept. epoxide | 10.1642 | 2.626 | 56268.5 | 2.869 | VV | 0.036 | 26214.43 | 3.332 |
| 17 | 7.682 | g. Chlordane | 9.8957 | 2.556 | 59634.6 | 3.041 | VV | 0.038 | 25871.76 | 3.288 |
| 18 | 7.873 | a. Chlordane | 9.7583 | 2.521 | 57272.8 | 2.921 | VV | 0.036 | 26396.39 | 3.355 |
| 19 | 7.952 | Endosulfan I | 9.5534 | 2.468 | 55539.7 | 2.832 | VV | 0.039 | 23472.49 | 2.983 |
| 20 | 8.090 | 4,4'-DDE | 12.9520 | 3.346 | 86778.0 | 4.425 | VV | 0.058 | 25094.04 | 3.189 |
| 21 | 8.310 | Dieldrin | 19.8325 | 5.123 | 99230.8 | 5.060 | VB | 0.036 | 46375.30 | 5.894 |
| 22 | 8.650 | | 0.0000 | 0.000 | 287.7 | 0.015 | BB | 0.052 | 91.47 | 0.012 |
| 23 | 8.709 | Endrin | 18.6016 | 4.805 | 78530.7 | 4.005 | BB | 0.035 | 37701.99 | 4.792 |
| 24 | 8.846 | 4,4'-DDD | 10.5376 | 2.722 | 45906.9 | 2.341 | BB | 0.058 | 13128.50 | 1.669 |
| 25 | 8.986 | Endosulfan II | 18.0191 | 4.655 | 89317.7 | 4.555 | BB | 0.039 | 38047.16 | 4.836 |
| 26 | 9.246 | 4,4'-DDT | 14.6764 | 3.791 | 69855.1 | 3.562 | BB | 0.049 | 23820.04 | 3.028 |
| 27 | 9.419 | Endrin aldehyde | 17.5553 | 4.535 | 73919.8 | 3.769 | BB | 0.043 | 28921.20 | 3.676 |
| 28 | 9.550 | | 0.0000 | 0.000 | 310.5 | 0.016 | BB | 0.031 | 165.66 | 0.021 |
| 29 | 9.573 | | 0.0000 | 0.000 | 922.5 | 0.047 | BB | 0.028 | 558.69 | 0.071 |
| 30 | 9.770 | Endo. sulfate | 17.4293 | 4.503 | 83873.2 | 4.277 | BB | 0.043 | 32543.23 | 4.136 |
| 31 | 10.119 | Methoxychlor | 68.7618 | 17.763 | 221107.6 | 11.275 | BB | 0.054 | 68407.23 | 8.695 |
| 32 | 10.344 | | 0.0000 | 0.000 | 1135.6 | 0.058 | BB | 0.037 | 514.81 | 0.065 |
| 33 | 10.469 | Endrin ketone | 18.1346 | 4.685 | 109827.7 | 5.601 | BB | 0.042 | 44037.41 | 5.597 |
| 34 | 11.780 | | 0.0000 | 0.000 | 998.3 | 0.051 | BB | 0.051 | 328.42 | 0.042 |
| 35 | 12.210 | DCB | 35.2160 | 9.097 | 269242.4 | 13.730 | BB | 0.051 | 88422.36 | 11.239 |

Total Area = 1961004.0, Total Amount = 387.097, Total Height = 786774.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.28R

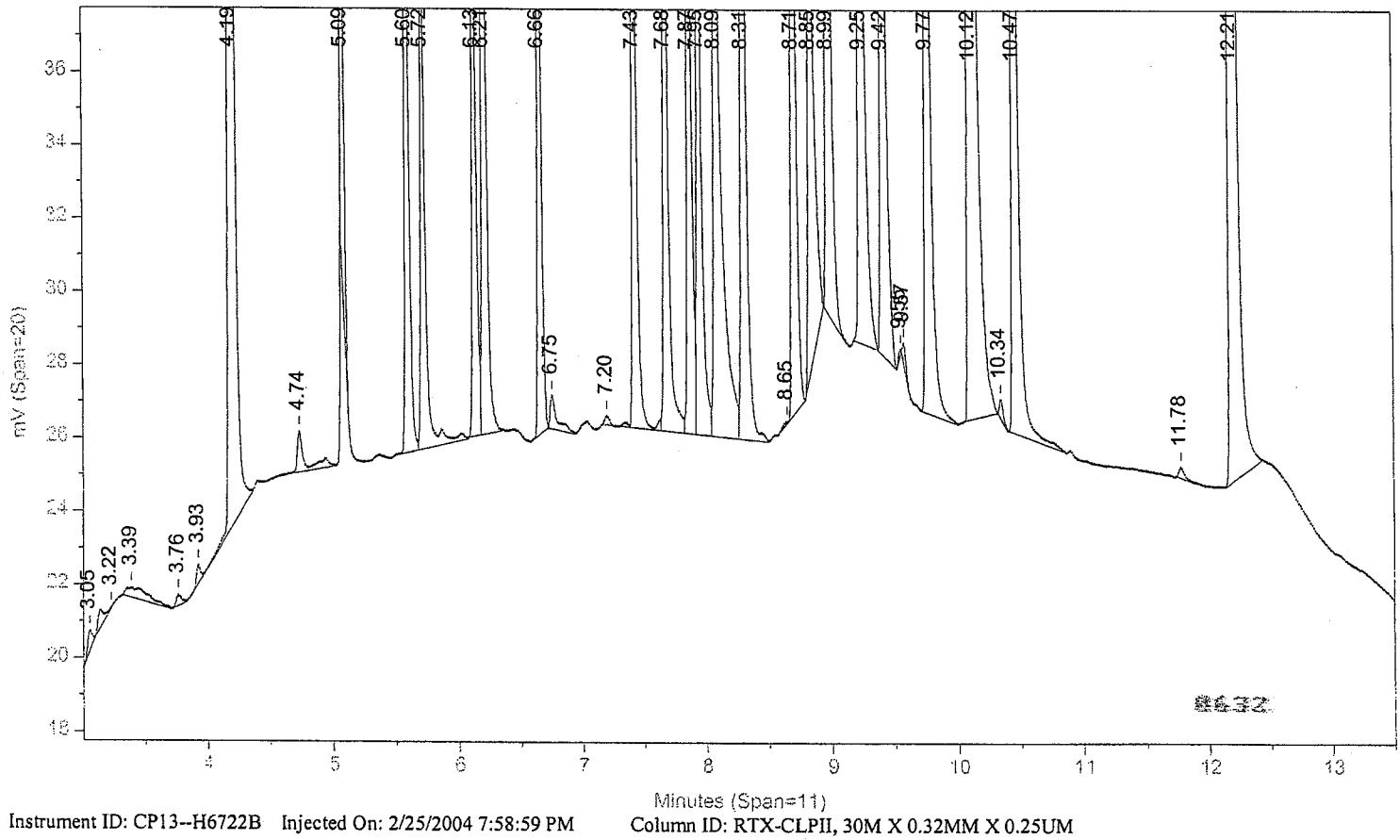
—— C:\CPWIN\DATA1\2C13051.28R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 7:58:59 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.28R

—— C:\CPWIN\DATA1\2C13051B.28R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 7:58:59 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.16 | 145365 | 38.28093 | TCX | 4.195 | 98460 | 38.71164 | TCX |
| 4.733 | 1862 | .28289 | HCB | . | 0 | . | HCB |
| 4.983 | 46817 | 10.11789 | alpha-BHC | 5.085 | 19950 | 8.07614 | alpha-BHC |
| 5.442 | 45935 | 10.05596 | gamma-BHC | 5.598 | 25238 | 9.96829 | gamma-BHC |
| 5.57 | 26436 | 9.69921 | beta-BHC | 5.723 | 15066 | 9.37049 | beta-BHC |
| 5.823 | 41145 | 9.66711 | delta-BHC | 6.134 | 19372 | 8.84847 | delta-BHC |
| 6.119 | 51249 | 9.92033 | Heptachlor | 6.214 | 30426 | 10.66581 | Heptachlor |
| 6.539 | 39951 | 10.02029 | Aldrin | 6.66 | 23996 | 10.368 | Aldrin |
| 7.368 | 43336 | 15.82875 | o,p-DDE / hept epox | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.432 | 26214 | 10.16422 | Hept. epoxide |
| 7.533 | 41730 | 9.85329 | g. Chlordane | 7.682 | 25872 | 9.89574 | g. Chlordane |
| 7.709 | 41468 | 9.72933 | a. Chlordane | 7.873 | 26396 | 9.7583 | a. Chlordane |
| 7.799 | 61556 | 18.03468 | 4,4'-DDE | 8.09 | 25094 | 12.95205 | 4,4'-DDE |
| 7.897 | 38902 | 10.15395 | Endosulfan I | 7.952 | 23472 | 9.55338 | Endosulfan I |
| 8.212 | 72400 | 19.8704 | Dieldrin | 8.31 | 46375 | 19.8325 | Dieldrin |
| 8.52 | 64168 | 18.87666 | Endrin | 8.709 | 37702 | 18.60155 | Endrin |
| 8.583 | 42794 | 100.5112 | Kepone / DDD | . | 0 | . | Kepone |
| 8.815 | 66173 | 19.13593 | Endosulfan II | 8.986 | 38047 | 18.01913 | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.846 | 13129 | 10.53758 | 4,4'-DDD |
| 8.945 | 50507 | 17.04937 | 4,4'-DDT | 9.246 | 23820 | 14.67642 | 4,4'-DDT |
| 9.36 | 47083 | 18.94273 | Endrin aldehyde | 9.419 | 28921 | 17.55534 | Endrin aldehyde |
| 9.558 | 132775 | 76.28088 | Methoxychlor | 10.119 | 68407 | 68.76183 | Methoxychlor |
| 9.925 | 55863 | 18.15494 | Endo. sulfate | 9.77 | 32543 | 17.42931 | Endo. sulfate |
| 10.292 | 68974 | 19.29234 | Endrin ketone | 10.469 | 44037 | 18.13458 | Endrin ketone |
| 11.6 | 131898 | 35.30612 | DCB | 12.21 | 88422 | 35.216 | DCB |

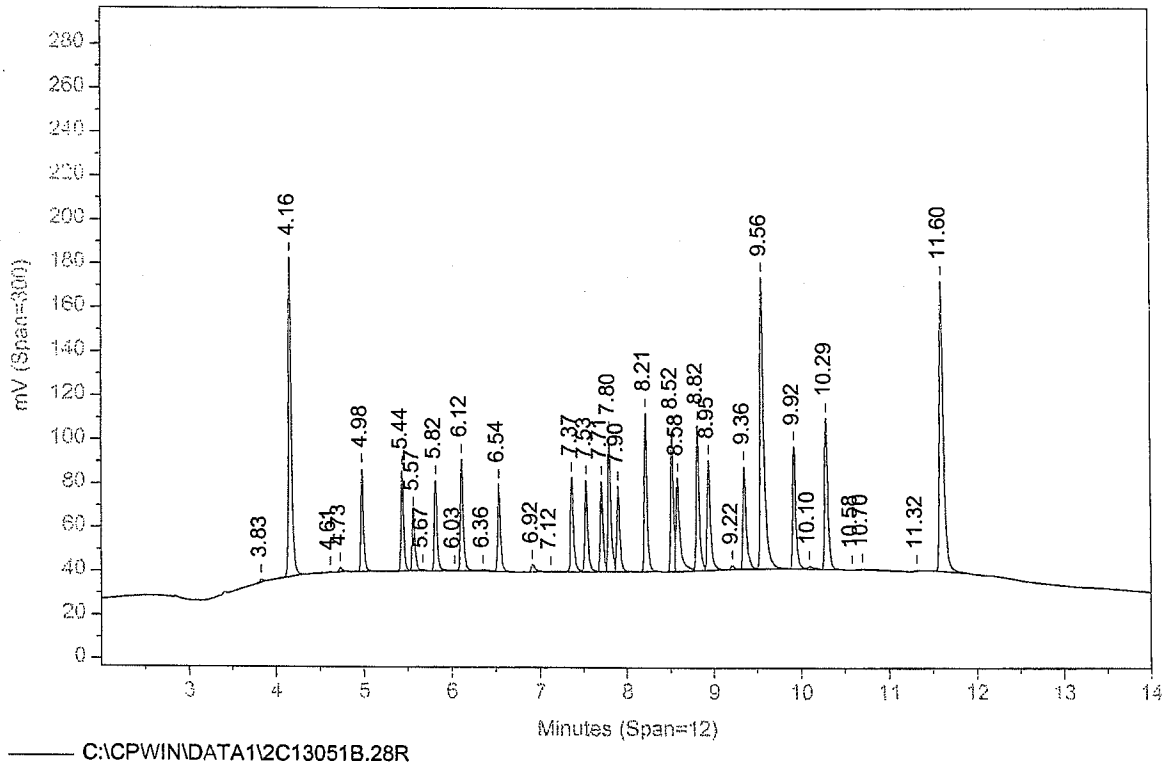
agc 11 S1 2.26.04

Files:
Area File: C:\CPWIN\DATA1\2C13051.28A
Area File: C:\CPWIN\DATA1\2C13051B.28A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 8:13:04 PM
File Reported On: 2/25/2004 at 8:13:12 PM

8633

10X REPLOTS

C:\CPWIN\DATA1\2C13051.28R

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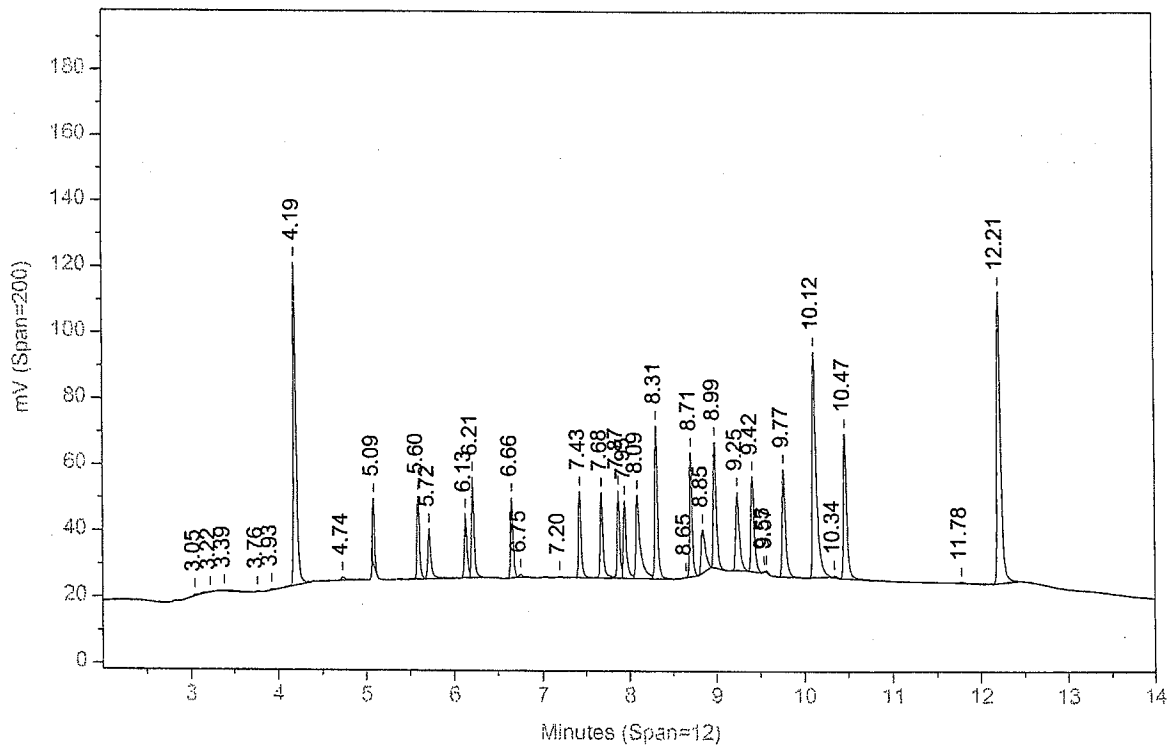

# Raw QC Data

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 70.7% Conc.: 1.019935
%SSR(DCB) : 94% Conc.: 1.373149

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 77460 | 1.019935 |
| **HCB** | 4.71 | 4.75 | 4.77 | 1864 | 0.014155 |
| **alpha-BHC** | 4.97 | 5.02 | 5.03 | 1942 | 0.020986 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 11296 | 0.132698 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 1362 | 0.013184 |
| **Hept. epoxide** | 7.35 | 7.40 | 7.41 | 1472 | 0.016655 |
| **g. Chlordane** | 7.52 | 7.57 | 7.58 | 2253 | 0.026600 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 942 | 0.011047 |
| **4,4'-DDE** | 7.78 | 7.81 | 7.84 | 384 | 0.005625 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 130 | 0.001692 |
| **o,p-DDT** | 8.35 | 8.39 | 8.41 | 122 | 0.002232 |
| **4,4'-DDD** | 8.57 | 8.60 | 8.63 | 492 | 0.009248 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 1189 | 0.017195 |
| **Methoxychlor** | 9.54 | 9.55 | 9.60 | 1301 | 0.037381 |
| **Mirex** | 9.78 | 9.81 | 9.84 | 106 | 0.001680 |
| **Endo. sulfate** | 9.91 | 9.92 | 9.97 | 102 | 0.001653 |
| **DCB** | 11.59 | 11.60 | 11.65 | 102597 | 1.373149 |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 68.8% Conc.: 0.993488
%SSR(DCB) : 85.4% Conc.: 1.248342

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 50537 | 0.993488 |
| **HCB** | 4.87 | 4.91 | 4.93 | 12619 | 0.162974 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 1669 | 0.031922 |
| **Endrin aldehyde** | 9.40 | 9.42 | 9.46 | 761 | 0.023089 |
| **DCB** | 12.20 | 12.21 | 12.26 | 62688 | 1.248342 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 1.019935 | | | | 2.63 | |
| HCB | B | 0.162974 | | | | ** 168.03 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | | | <0.05 | <0.01 | | | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | | | <0.05 | <0.01 | | | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.031922 | | | | 18.19 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | | | | | | | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <0.1 | <0.02 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | | | | | |
| Endosulfan II | | | | | | | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:08:59

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <0.5 | <0.1 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | | | | | | | |
| DCB | A | 1.373149 | | | | 9.52 | |

Units: ug/l

Reviewed by: Andrea Covey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

8637

%Difference = High - Low Amount divided by the Average times 100
*%Difference > 40
*Recovery outside QC Limits
Printed on: 2/26/04 09:08:59

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** **BLANKA** 2/25/04F PBLKXG BLK Sample ID: AB **Batchnumber:** **040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 0120 SDG: State:
**Analyses:** 00950

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 16:35:19 |
| **Instrument** | H6722A |
| **Result file** | 2C13051.18R |
| **Calibration file** | 2C13051 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 70.7% | Conc: | 1.019935 |
| %SSR(DCB) | 94.0% | Conc: | 1.373149 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 16:35:19 |
| **Instrument** | H6722B |
| **Result file** | 2C13051B.18R |
| **Calibration file** | 2C13051B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 68.8% | Conc: | 0.993488 |
| %SSR(DCB) | 85.4% | Conc: | 1.248342 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Chlordane (Technical) | | | <2.5 | <0.35 | | | 2 | 20 | |
| Toxaphene | | | <5 | <1.5 | | | 4 | 30 | |

Units: ug/l

%Difference = High - Low divided by the Average times 100

Reviewed By: Andrea Carey Date: 2-26-04

Verified By: [illegible] Date: 2/26/04

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# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 70.7% Conc.: 1.019935
%SSR(DCB) : 94% Conc.: 1.373149

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 28.81 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 0.880212 | | | 3 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 0.949164 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.527267 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **0.785548** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.61 | 4.61 | 4.67 | 1256.110352 | 2.291754 | | | 2 |
| Height Summation | | | **1256.110352** | | | | |
| Amount Avg CF: | | | **2.291754** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 26.52 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 1.86848 | | | 3 |
| 6.09 | 6.12 | 6.15 | 1362.157349 | 2.046203 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 1.190977 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **1.701887** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 30.56 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 1.026447 | | | 3 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 1.109791 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.592229 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **0.909489** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 155.86 | |
| 6.29 | 6.33 | 6.35 | 16355.58593 | 6.792469 | | | 3 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.395046 | | | 4 |
| 7.16 | 7.17 | 7.22 | 270.217102 | 0.094703 | | | 5 |
| Height Summation | | | **17761.875916** | | | | |
| Amount Avg CF: | | | **2.427406** | Linear: | | | |
| **Aroclor-1254** | | | | | 2 | 29.52 | |
| 6.26 | 6.27 | 6.32 | 620.272644 | 0.343193 | | | 1 |
| 8.54 | 8.60 | 8.60 | 491.692535 | 0.224657 | | | 5 |
| Height Summation | | | **1111.965179** | | | | |
| Amount Avg CF: | | | **0.283925** | Linear: | | | |
| **Aroclor-1260** | | | | | 1 | | |
| 8.17 | 8.18 | 8.23 | 311.961487 | 0.087268 | | | 2 |
| Height Summation | | | **311.961487** | | | | |
| Amount Avg CF: | | | **0.087268** | Linear: | | | |
| **Chlordane** | | | | | 6 | 45.58 | |
| 5.99 | 5.99 | 6.05 | 388.17038 | 0.120501 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 0.317789 | | | 2 |
| 6.71 | 6.74 | 6.77 | 660.929138 | 0.151622 | | | 3 |
| 7.52 | 7.57 | 7.58 | 2253.067139 | 0.263861 | | | 4 |
| 7.69 | 7.72 | 7.75 | 941.689392 | 0.089341 | | | 5 |
| 8.70 | 8.73 | 8.76 | 658.78241 | 0.219981 | | | 6 |
| Height Summation | | | **6264.795808** | | | | |
| Amount Avg CF: | | | **0.193849** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 68.8% Conc.: 0.993488
%SSR(DCB) : 85.4% Conc.: 1.248342

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 2 | 126.31 | |
| 4.88 | 4.91 | 4.94 | 12618.79882 | 12.000577 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.186474 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 0.67743 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.339004** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.87 | 4.91 | 4.93 | 12618.79882 | 8.750294 | | | 3 |
| Height Summation | | | **12618.798828** | | | | |
| Amount Avg CF: | | | **8.750294** | Linear: | | | |
| **Aroclor-1232** | | | | | 2 | 106.45 | |
| E 4.87 | 4.91 | 4.93 | 12618.79882 | 11.17796 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.434079 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 1.576938 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.377449** | Linear: | | | |
| **Aroclor-1242** | | | | | 2 | 125.11 | |
| E 4.87 | 4.91 | 4.93 | 12618.79882 | 13.174774 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.2219 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 0.806126 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.99045** | Linear: | | | |
| **Chlordane** | | | | | 1 | | |
| 7.67 | 7.68 | 7.73 | 1669.145996 | 0.279705 | | | 4 |
| Height Summation | | | **1669.145996** | | | | |
| Amount Avg CF: | | | **0.279705** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.40 | 9.42 | 9.46 | 760.750305 | 1.06847 | | | 3 |
| Height Summation | | | **760.750305** | | | | |
| Amount Avg CF: | | | **1.06847** | Linear: | | | |

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Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 2/26/04 09:09:08

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **4** | **64.37** | |
| 8.56 | 8.60 | 8.62 | 491.692535 | 0.406774 | | | 1 |
| 8.94 | 8.99 | 9.00 | 629.357544 | 0.567966 | | | 2 |
| 9.22 | 9.26 | 9.28 | 966.760986 | 0.831122 | | | 3 |
| 9.78 | 9.81 | 9.84 | 105.51207 | 0.098635 | | | 5 |

Height Summation **2193.323135**
Amount Avg CF: **0.476124** Linear:

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 0 | 0 | | ** 155.90 | 4 | 40 | |
| Aroclor-1221 | | | 0 | 0 | | ** 116.98 | 3 | 5 | |
| Aroclor-1232 | | | 0 | 0 | | ** 115.74 | 4 | 10 | |
| Aroclor-1242 | | | 0 | 0 | | ** 153.95 | 4 | 30 | |
| Aroclor-1248 | | | 0 | 0 | | | 4 | 30 | |
| Aroclor-1254 | | | 0 | 0 | | | 4 | 40 | |
| Aroclor-1260 | | | 0 | 0 | | | 4 | 40 | |
| Chlordane | | | 2.5 | 0.35 | | 36.26 | 2 | 20 | |
| Toxaphene | | | 5 | 1.5 | | ** 76.70 | 4 | 30 | |

Units: ug/l

8648

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:09:08

Sample Name: **BLANKA 2/25/04F ABPBLKXG BLK 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 04:49:19pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.18R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.851 | | 0.0000 | 0.000 | 14920.1 | 1.644 | BB | 0.048 | 5135.85 | 1.739 |
| 2 | 3.919 | | 0.0000 | 0.000 | 2054.0 | 0.226 | BB | 0.027 | 1264.22 | 0.428 |
| 3 | 4.001 | | 0.0000 | 0.000 | 1858.6 | 0.205 | BB | 0.035 | 877.46 | 0.297 |
| 4 | 4.163 | TCX | 203.9870 | 37.704 | 198453.0 | 21.867 | BB | 0.043 | 77460.46 | 26.222 |
| 5 | 4.386 | | 0.0000 | 0.000 | 804.9 | 0.089 | BB | 0.065 | 207.40 | 0.070 |
| 6 | 4.492 | | 0.0000 | 0.000 | 356.0 | 0.039 | BB | 0.035 | 171.88 | 0.058 |
| 7 | 4.547 | | 0.0000 | 0.000 | 3069.5 | 0.338 | BB | 0.037 | 1394.96 | 0.472 |
| 8 | 4.611 | | 0.0000 | 0.000 | 3478.0 | 0.383 | BB | 0.046 | 1256.11 | 0.425 |
| 9 | 4.750 | HCB | 2.8311 | 0.523 | 4989.4 | 0.550 | BB | 0.045 | 1863.71 | 0.631 |
| 10 | 4.842 | | 0.0000 | 0.000 | 844.2 | 0.093 | BB | 0.036 | 388.96 | 0.132 |
| 11 | 4.902 | | 0.0000 | 0.000 | 287.3 | 0.032 | BB | 0.025 | 192.62 | 0.065 |
| 12 | 5.015 | alpha-BHC | 4.1971 | 0.776 | 5006.0 | 0.552 | BB | 0.043 | 1942.06 | 0.657 |
| 13 | 5.101 | | 0.0000 | 0.000 | 295.6 | 0.033 | BB | 0.033 | 151.36 | 0.051 |
| 14 | 5.256 | | 0.0000 | 0.000 | 9180.6 | 1.012 | BB | 0.078 | 1966.10 | 0.666 |
| 15 | 5.503 | | 0.0000 | 0.000 | 2109.8 | 0.232 | BB | 0.050 | 709.28 | 0.240 |
| 16 | 5.622 | | 0.0000 | 0.000 | 44687.0 | 4.924 | BB | 0.040 | 18730.19 | 6.341 |
| 17 | 5.742 | | 0.0000 | 0.000 | 285.8 | 0.031 | BB | 0.028 | 168.81 | 0.057 |
| 18 | 5.814 | delta-BHC | 26.5395 | 4.905 | 27649.5 | 3.047 | BB | 0.041 | 11295.76 | 3.824 |
| 19 | 5.924 | | 0.0000 | 0.000 | 115.6 | 0.013 | BB | 0.027 | 72.66 | 0.025 |
| 20 | 5.993 | | 0.0000 | 0.000 | 1425.6 | 0.157 | BB | 0.061 | 388.17 | 0.131 |
| 21 | 6.121 | Heptachlor | 2.6367 | 0.487 | 5293.9 | 0.583 | BB | 0.065 | 1362.16 | 0.461 |
| 22 | 6.195 | | 0.0000 | 0.000 | 373.1 | 0.041 | BB | 0.027 | 230.04 | 0.078 |
| 23 | 6.266 | | 0.0000 | 0.000 | 1052.8 | 0.116 | BV | 0.028 | 620.27 | 0.210 |
| 24 | 6.325 | | 0.0000 | 0.000 | 41101.0 | 4.529 | VB | 0.042 | 16355.59 | 5.537 |
| 25 | 6.446 | | 0.0000 | 0.000 | 86.9 | 0.010 | BB | 0.025 | 58.65 | 0.020 |
| 26 | 6.592 | | 0.0000 | 0.000 | 3652.2 | 0.402 | BV | 0.054 | 1136.07 | 0.385 |
| 27 | 6.686 | | 0.0000 | 0.000 | 934.2 | 0.103 | VV | 0.042 | 371.87 | 0.126 |
| 28 | 6.740 | | 0.0000 | 0.000 | 2663.4 | 0.293 | VB | 0.067 | 660.93 | 0.224 |
| 29 | 6.921 | | 0.0000 | 0.000 | 7439.9 | 0.820 | BV | 0.052 | 2399.32 | 0.812 |
| 30 | 7.025 | | 0.0000 | 0.000 | 296.6 | 0.033 | VB | 0.027 | 182.55 | 0.062 |
| 31 | 7.079 | | 0.0000 | 0.000 | 1113.6 | 0.123 | BB | 0.043 | 433.14 | 0.147 |
| 32 | 7.166 | | 0.0000 | 0.000 | 658.3 | 0.073 | BB | 0.041 | 270.22 | 0.091 |
| 33 | 7.257 | | 0.0000 | 0.000 | 334.8 | 0.037 | BB | 0.024 | 235.43 | 0.080 |
| 34 | 7.318 | | 0.0000 | 0.000 | 1301.3 | 0.143 | BV | 0.047 | 456.83 | 0.155 |
| 35 | 7.395 | Hept. epoxide | 3.3310 | 0.616 | 6035.5 | 0.665 | VV | 0.068 | 1472.43 | 0.498 |
| 36 | 7.501 | | 0.0000 | 0.000 | 15525.0 | 1.711 | VV | 0.047 | 5523.52 | 1.870 |
| 37 | 7.565 | g. Chlordane | 5.3200 | 0.983 | 7034.3 | 0.775 | VV | 0.052 | 2253.07 | 0.763 |
| 38 | 7.718 | a. Chlordane | 2.2094 | 0.408 | 2907.2 | 0.320 | VV | 0.051 | 941.69 | 0.319 |
| 39 | 7.813 | 4,4'-DDE | 1.1250 | 0.208 | 1472.8 | 0.162 | VB | 0.064 | 384.00 | 0.130 |
| 40 | 7.903 | Endosulfan I | 0.3384 | 0.063 | 226.7 | 0.025 | BV | 0.029 | 129.66 | 0.044 |
| 41 | 8.008 | | 0.0000 | 0.000 | 1090.1 | 0.120 | VB | 0.037 | 492.55 | 0.167 |
| 42 | 8.104 | | 0.0000 | 0.000 | 3849.9 | 0.424 | BV | 0.055 | 1160.69 | 0.393 |
| 43 | 8.182 | | 0.0000 | 0.000 | 653.7 | 0.072 | VB | 0.035 | 311.96 | 0.106 |
| 44 | 8.387 | o,p-DDT | 0.4463 | 0.082 | 230.0 | 0.025 | BB | 0.032 | 121.52 | 0.041 |
| 45 | 8.485 | | 0.0000 | 0.000 | 1328.7 | 0.146 | BV | 0.059 | 374.49 | 0.127 |
| 46 | 8.596 | 4,4'-DDD | 1.8496 | 0.342 | 1595.9 | 0.176 | VV | 0.054 | 491.69 | 0.166 |
| 47 | 8.656 | | 0.0000 | 0.000 | 1074.2 | 0.118 | VV | 0.054 | 333.78 | 0.113 |
| 48 | 8.726 | | 0.0000 | 0.000 | 2391.5 | 0.264 | VV | 0.061 | 658.78 | 0.223 |
| 49 | 8.851 | Endosulfan II | 3.4391 | 0.636 | 5504.9 | 0.607 | VV | 0.077 | 1189.24 | 0.403 |
| 50 | 8.994 | | 0.0000 | 0.000 | 2449.7 | 0.270 | VV | 0.065 | 629.36 | 0.213 |
| 51 | 9.184 | | 0.0000 | 0.000 | 1320.3 | 0.145 | VV | 0.070 | 313.48 | 0.106 |
| 52 | 9.259 | | 0.0000 | 0.000 | 3821.6 | 0.421 | VB | 0.066 | 966.76 | 0.327 |
| 53 | 9.455 | | 0.0000 | 0.000 | 1454.0 | 0.160 | BV | 0.041 | 593.15 | 0.201 |
| 54 | 9.547 | Methoxychlor | 7.4762 | 1.382 | 3544.7 | 0.391 | VV | 0.045 | 1301.31 | 0.441 |
| 55 | 9.637 | | 0.0000 | 0.000 | 1240.4 | 0.137 | VB | 0.055 | 378.85 | 0.128 |
| 56 | 9.807 | Mirex | 0.3360 | 0.062 | 452.4 | 0.050 | BB | 0.071 | 105.51 | 0.036 |
| 57 | 9.922 | Endo. sulfate | 0.3305 | 0.061 | 327.8 | 0.036 | BV | 0.054 | 101.71 | 0.034 |
| 58 | 10.031 | | 0.0000 | 0.000 | 729.6 | 0.080 | VV | 0.046 | 261.62 | 0.089 |
| 59 | 10.075 | | 0.0000 | 0.000 | 655.6 | 0.072 | VV | 0.036 | 301.45 | 0.102 |
| 60 | 10.137 | | 0.0000 | 0.000 | 17353.8 | 1.912 | VB | 0.068 | 4248.57 | 1.438 |
| 61 | 10.370 | | 0.0000 | 0.000 | 2947.0 | 0.325 | BV | 0.092 | 531.14 | 0.180 |
| 62 | 10.467 | | 0.0000 | 0.000 | 9085.1 | 1.001 | VV | 0.126 | 1199.67 | 0.406 |
| 63 | 10.691 | | 0.0000 | 0.000 | 22876.4 | 2.521 | VV | 0.105 | 3639.41 | 1.232 |
| 64 | 10.722 | | 0.0000 | 0.000 | 25069.0 | 2.762 | VV | 0.106 | 3943.35 | 1.335 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.839 | | 0.0000 | 0.000 | 28534.6 | 3.144 | VB | 0.105 | 4510.19 | 1.527 |
| 66 | 11.133 | | 0.0000 | 0.000 | 22202.9 | 2.447 | BB | 0.185 | 1995.31 | 0.675 |
| 67 | 11.321 | | 0.0000 | 0.000 | 496.7 | 0.055 | BB | 0.033 | 248.70 | 0.084 |
| 68 | 11.478 | | 0.0000 | 0.000 | 641.5 | 0.071 | BB | 0.038 | 283.23 | 0.096 |
| 69 | 11.598 | DCB | 274.6299 | 50.761 | 294824.8 | 32.487 | BB | 0.048 | 102597.30 | 34.732 |
| 70 | 12.098 | | 0.0000 | 0.000 | 18608.9 | 2.051 | BB | 0.616 | 503.08 | 0.170 |
| 71 | 13.104 | | 0.0000 | 0.000 | 3134.4 | 0.345 | BB | 0.335 | 156.01 | 0.053 |
| 72 | 13.434 | | 0.0000 | 0.000 | 6661.6 | 0.734 | BB | 0.326 | 340.55 | 0.115 |

Total Area = 907526.1, Total Amount = 541.023, Total Height = 295399.8, Sample Units = PPB

Sample Name: **BLANKA 2/25/04F ABPBLKXG BLK 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 04:49:19pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.18R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

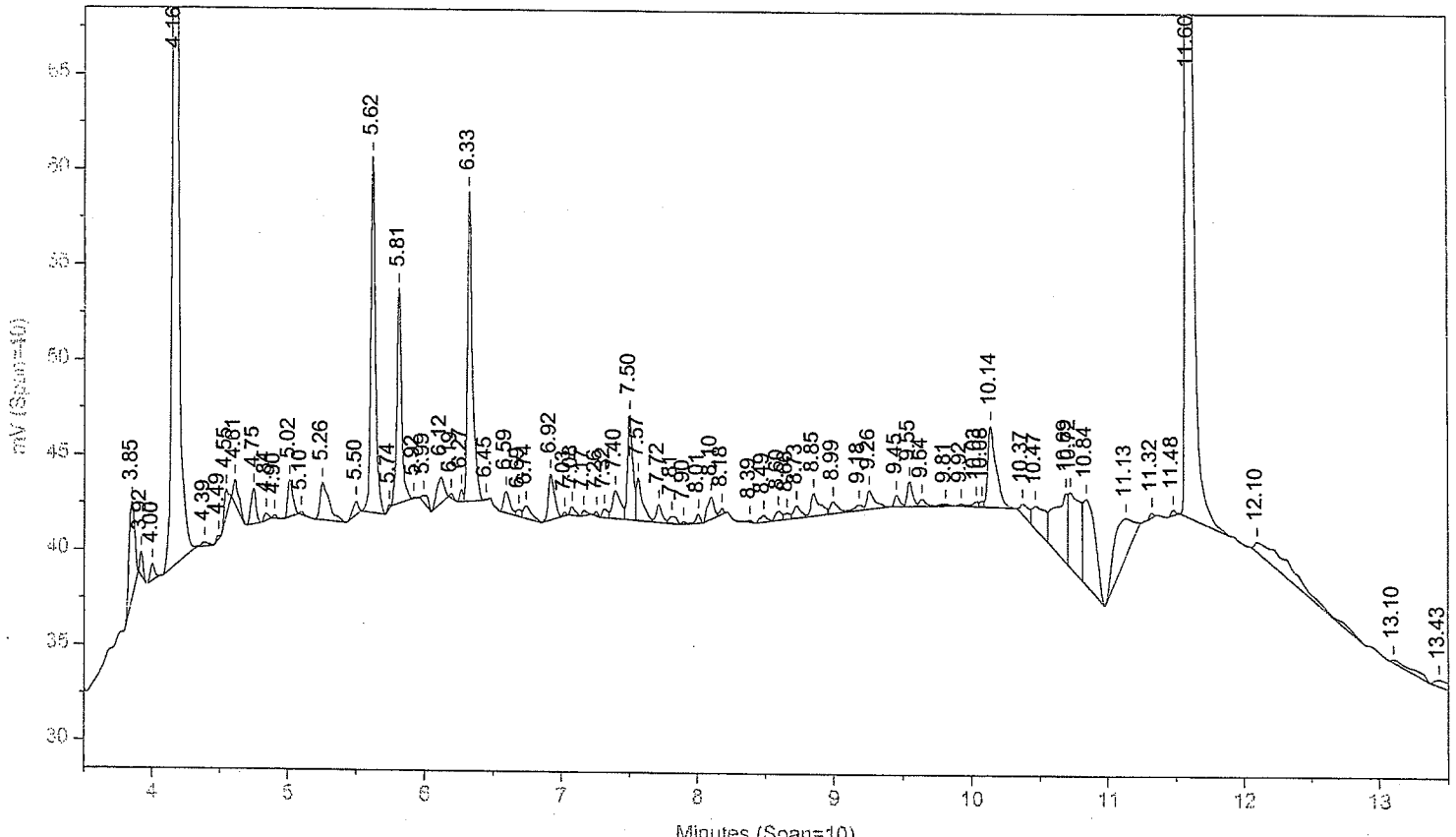
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 19545.9 | 4.662 | BB | 0.052 | 6260.74 | 3.995 |
| 2 | 3.263 | | 0.0000 | 0.000 | 374.1 | 0.089 | BB | 0.028 | 219.98 | 0.140 |
| 3 | 3.367 | | 0.0000 | 0.000 | 5200.6 | 1.240 | BB | 0.061 | 1425.40 | 0.910 |
| 4 | 3.622 | | 0.0000 | 0.000 | 3516.0 | 0.839 | BB | 0.041 | 1420.76 | 0.907 |
| 5 | 3.778 | | 0.0000 | 0.000 | 3272.4 | 0.781 | BB | 0.052 | 1053.05 | 0.672 |
| 6 | 3.873 | | 0.0000 | 0.000 | 336.9 | 0.080 | BB | 0.035 | 159.25 | 0.102 |
| 7 | 3.908 | | 0.0000 | 0.000 | 1334.1 | 0.318 | BB | 0.032 | 703.26 | 0.449 |
| 8 | 4.049 | | 0.0000 | 0.000 | 1049.5 | 0.250 | BB | 0.041 | 423.73 | 0.270 |
| 9 | 4.131 | | 0.0000 | 0.000 | 246.1 | 0.059 | BB | 0.028 | 148.52 | 0.095 |
| 10 | 4.196 TCX | | 198.6977 | 40.389 | 111598.9 | 26.618 | BB | 0.037 | 50536.96 | 32.251 |
| 11 | 4.401 | | 0.0000 | 0.000 | 3883.0 | 0.926 | BB | 0.055 | 1181.19 | 0.754 |
| 12 | 4.741 | | 0.0000 | 0.000 | 2056.6 | 0.491 | BB | 0.043 | 794.37 | 0.507 |
| 13 | 4.909 HCB | | 32.5947 | 6.625 | 29809.5 | 7.110 | BB | 0.039 | 12618.80 | 8.053 |
| 14 | 5.703 | | 0.0000 | 0.000 | 1544.7 | 0.368 | BB | 0.060 | 429.56 | 0.274 |
| 15 | 5.786 | | 0.0000 | 0.000 | 5604.9 | 1.337 | BB | 0.037 | 2515.20 | 1.605 |
| 16 | 5.891 | | 0.0000 | 0.000 | 1317.0 | 0.314 | BB | 0.036 | 617.70 | 0.394 |
| 17 | 6.068 | | 0.0000 | 0.000 | 759.7 | 0.181 | BV | 0.024 | 527.15 | 0.336 |
| 18 | 6.113 | | 0.0000 | 0.000 | 8765.5 | 2.091 | VB | 0.076 | 1915.03 | 1.222 |
| 19 | 6.746 | | 0.0000 | 0.000 | 12009.7 | 2.864 | BB | 0.052 | 3829.69 | 2.444 |
| 20 | 7.042 | | 0.0000 | 0.000 | 1034.5 | 0.247 | BB | 0.055 | 314.92 | 0.201 |
| 21 | 7.206 | | 0.0000 | 0.000 | 2685.6 | 0.641 | BV | 0.109 | 410.92 | 0.262 |
| 22 | 7.333 | | 0.0000 | 0.000 | 4739.8 | 1.131 | VB | 0.078 | 1010.67 | 0.645 |
| 23 | 7.683 g. Chlordane | | 6.3843 | 1.298 | 10162.5 | 2.424 | BB | 0.101 | 1669.15 | 1.065 |
| 24 | 8.471 | | 0.0000 | 0.000 | 1820.3 | 0.434 | BB | 0.081 | 376.83 | 0.240 |
| 25 | 9.047 | | 0.0000 | 0.000 | 338.6 | 0.081 | BB | 0.078 | 72.30 | 0.046 |
| 26 | 9.164 | | 0.0000 | 0.000 | 5807.8 | 1.385 | BB | 0.152 | 636.15 | 0.406 |
| 27 | 9.421 Endrin aldehyde | | 4.6178 | 0.939 | 4340.9 | 1.035 | BB | 0.095 | 760.75 | 0.485 |
| 28 | 10.034 | | 0.0000 | 0.000 | 6369.3 | 1.519 | BB | 0.067 | 1595.47 | 1.018 |
| 29 | 11.668 | | 0.0000 | 0.000 | 1020.3 | 0.243 | BB | 0.045 | 381.35 | 0.243 |
| 30 | 12.206 DCB | | 249.6683 | 50.749 | 168715.4 | 40.241 | BB | 0.045 | 62688.16 | 40.006 |

Total Area = 419259.9, Total Amount = 491.963, Total Height = 156697.0, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.18R

C:\CPWIN\DATA1\2C13051.18R

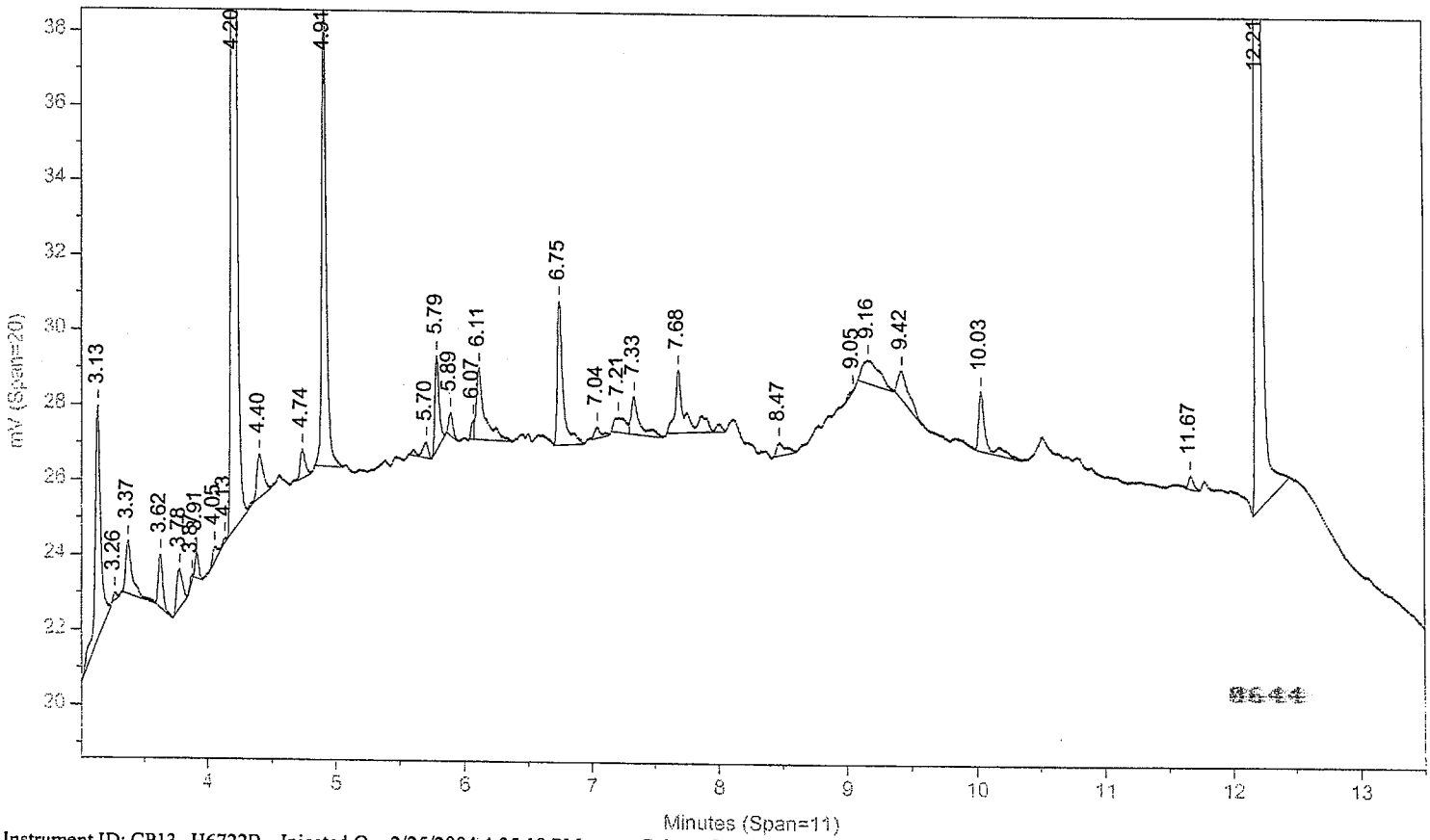



Instrument ID: CP13--H6722A Injected On: 2/25/2004 4:35:19 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.18R

C:\CPWIN\DATA1\2C13051B.18R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 4:35:19 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

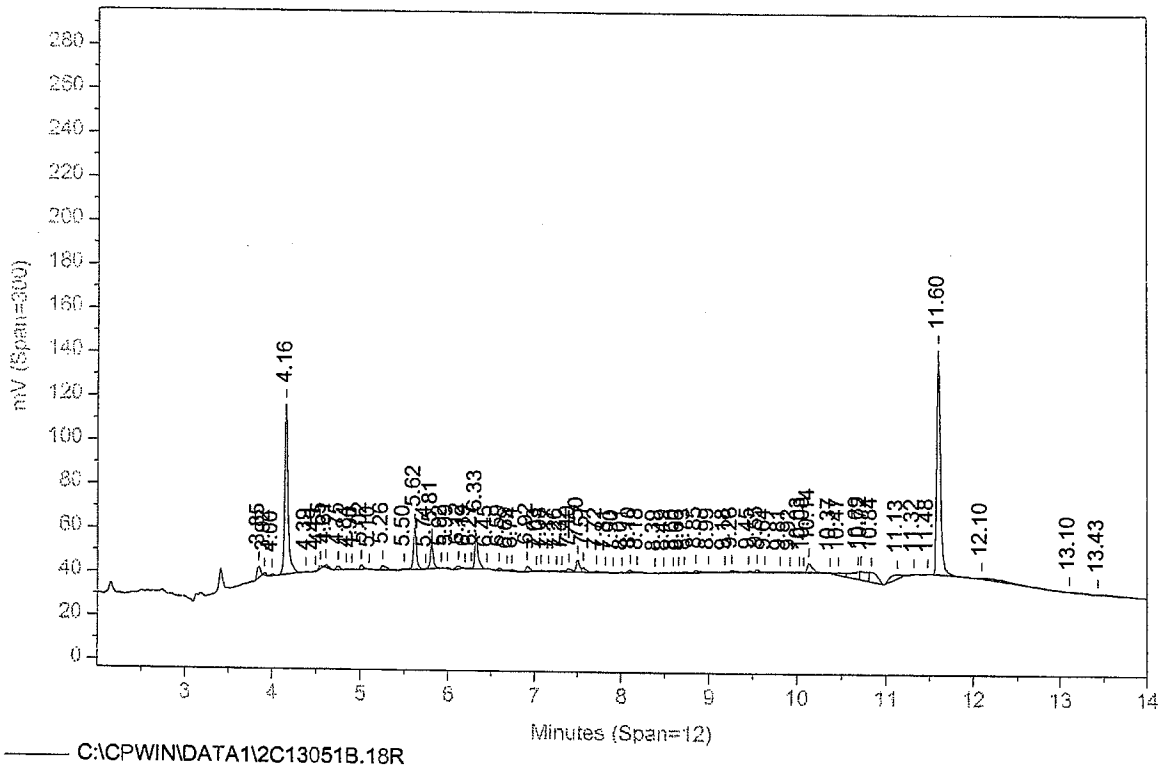
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.163 | 77460 | 1.01993 | TCX | 4.196 | 50537 | .99349 | TCX |
| 4.75 | 1864 | .01416 | HCB | 4.909 | 12619 | .16297 | HCB |
| 5.015 | 1942 | .02099 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.814 | 11296 | .1327 | delta-BHC | . | 0 | . | delta-BHC |
| 6.121 | 1362 | .01318 | Heptachlor | . | 0 | . | Heptachlor |
| 7.395 | 1472 | .01666 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.565 | 2253 | .0266 | g. Chlordane | 7.683 | 1669 | .03192 | g. Chlordane |
| 7.718 | 942 | .01105 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.813 | 384 | .00563 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.903 | 130 | .00169 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.387 | 122 | .00223 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.596 | 492 | .00925 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 8.851 | 1189 | .0172 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.421 | 761 | .02309 | Endrin aldehyde |
| 9.547 | 1301 | .03738 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.807 | 106 | .00168 | Mirex | . | 0 | . | Mirex |
| 9.922 | 102 | .00165 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 11.598 | 102597 | 1.37315 | DCB | 12.206 | 62688 | 1.24834 | DCB |

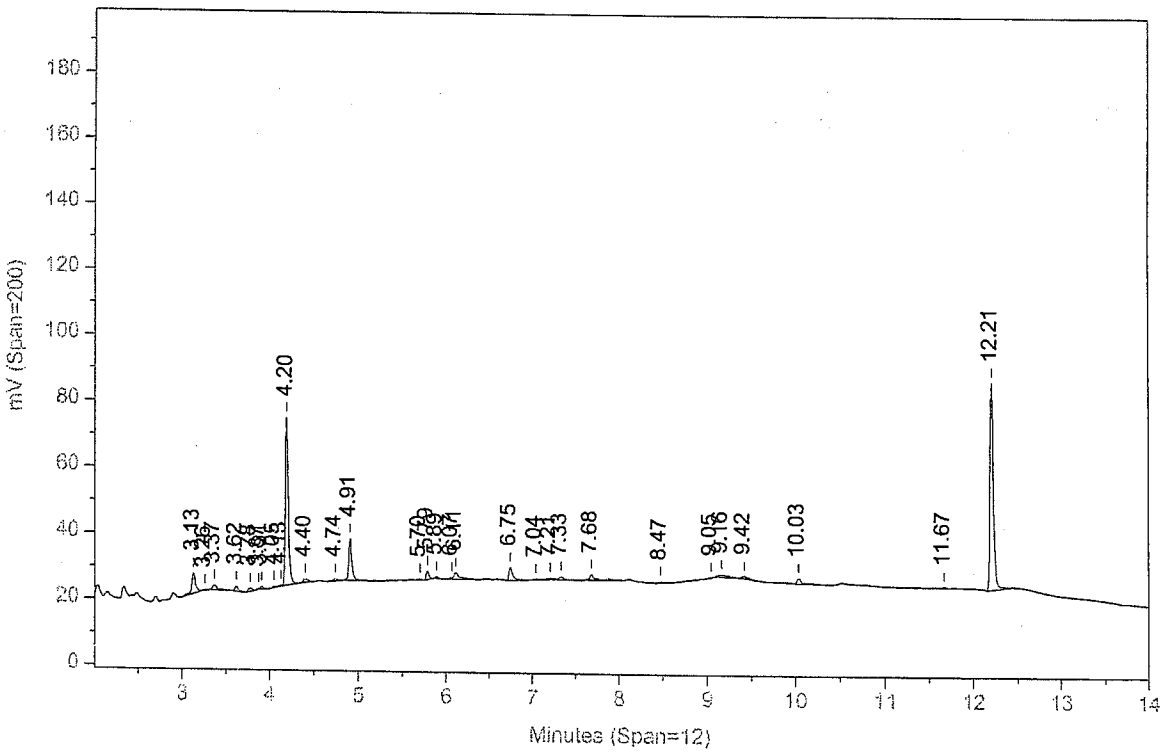
Files:
Area File: C:\CPWIN\DATA1\2C13051.18A
Area File: C:\CPWIN\DATA1\2C13051B.18A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 4:49:24 PM
File Reported On: 2/25/2004 at 4:49:32 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.18R




C:\CPWIN\DATA1\2C13051B.18R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 2/25/04F LCSVQ Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722A
Result file : 2C13051.19R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 71.5% Conc.: 1.031506
%SSR(DCB) : 93.9% Conc.: 1.372405

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 78339 | 1.031506 |
| **HCB** | 4.71 | 4.75 | 4.77 | 2079 | 0.015787 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 3753 | 0.040559 |
| **gamma-BHC** | 5.43 | 5.44 | 5.49 | 42558 | 0.465837 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 20323 | 0.238744 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 44593 | 0.431599 |
| **o,p-DDE** | 7.33 | 7.37 | 7.39 | 59901 | 1.093951 |
| **g. Chlordane** | 7.52 | 7.57 | 7.58 | 2647 | 0.031250 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1338 | 0.015702 |
| **4,4'-DDE** | 7.78 | 7.83 | 7.84 | 560 | 0.008207 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 210 | 0.002736 |
| **Dieldrin** | 8.20 | 8.21 | 8.26 | 1405 | 0.019283 |
| **o,p-DDT** | 8.35 | 8.39 | 8.41 | 292 | 0.005369 |
| **Endrin** | 8.51 | 8.52 | 8.57 | 15748 | 0.231627 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 2460 | 0.035571 |
| **4,4'-DDT** | 8.93 | 8.99 | 8.99 | 1127 | 0.019025 |
| **Methoxychlor** | 9.54 | 9.56 | 9.60 | 67079 | 1.926867 |
| **Endo. sulfate** | 9.91 | 9.92 | 9.97 | 143 | 0.002328 |
| **Endrin ketone** | 10.28 | 10.29 | 10.34 | 271 | 0.003792 |
| **DCB** | 11.59 | 11.60 | 11.65 | 102542 | 1.372405 |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722B
Result file : 2C13051B.19R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 69.6% Conc.: 1.004252
%SSR(DCB) : 87.1% Conc.: 1.272433

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 51085 | 1.004252 |
| **HCB** | 4.87 | 4.91 | 4.93 | 14280 | 0.184432 |
| **alpha-BHC** | 5.07 | 5.08 | 5.13 | 207 | 0.004186 |
| **gamma-BHC** | 5.58 | 5.60 | 5.64 | 24037 | 0.474699 |
| **Heptachlor** | 6.20 | 6.22 | 6.26 | 25266 | 0.442854 |
| **Hept. epoxide** | 7.42 | 7.43 | 7.48 | 38064 | 0.737935 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 2682 | 0.051290 |
| **a. Chlordane** | 7.86 | 7.86 | 7.92 | 888 | 0.016420 |
| **4,4'-DDE** | 8.08 | 8.10 | 8.14 | 1211 | 0.031263 |
| **Endrin** | 8.70 | 8.71 | 8.76 | 9265 | 0.228564 |
| **Endrin aldehyde** | 9.40 | 9.41 | 9.46 | 987 | 0.029955 |
| **Methoxychlor** | 10.10 | 10.11 | 10.16 | 37814 | 1.900501 |
| **Endrin ketone** | 10.43 | 10.47 | 10.49 | 340 | 0.007011 |
| **DCB** | 12.20 | 12.21 | 12.26 | 63898 | 1.272433 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 1.031506 | | | | 2.68 | |
| HCB | B | 0.184432 | | | | ** 168.46 | |
| alpha-BHC | A | 0.040559 | | | | ** 162.58 | |
| gamma-BHC | B | 0.474699 | 0.05 | 0.01 | | 1.88 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.442854 | 0.05 | 0.01 | | 2.57 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | B | 0.737935 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.051290 | | | | ** 48.56 | |
| a. Chlordane | B | 0.016420 | | | | 4.47 | |
| 4,4'-DDE | B | 0.031263 | | | | ** 116.83 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.231627 | 0.1 | 0.02 | | 1.33 | |
| Kepone | | | | | | | 85.47 |
| 4,4'-DDD | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:09:47

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 2/25/04F LCSVQ Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

Analysis Report (A)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722A
Result file : 2C13051.19R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722B
Result file : 2C13051B.19R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endosulfan II | | | | | | | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | A | 1.926867 | 0.5 | 0.1 | | 1.38 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.007011 | | | | ** 59.59 | |
| DCB | A | 1.372405 | | | | 7.56 | |

Units: ug/l

Reviewed by: Andrea J Carey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

8649

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:09:47

Sample Name: **LCSA 2/25/04F ABLCSVQ LCS 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 05:09:54pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.19R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.850 | | 0.0000 | 0.000 | 21752.0 | 1.416 | BB | 0.050 | 7204.67 | 1.302 |
| 2 | 3.916 | | 0.0000 | 0.000 | 415.6 | 0.027 | BB | 0.020 | 354.83 | 0.064 |
| 3 | 4.001 | | 0.0000 | 0.000 | 2743.9 | 0.179 | BB | 0.037 | 1236.48 | 0.223 |
| 4 | 4.163 | TCX | 206.3011 | 14.752 | 208055.4 | 13.544 | BB | 0.044 | 78339.22 | 14.158 |
| 5 | 4.388 | | 0.0000 | 0.000 | 1090.1 | 0.071 | BB | 0.057 | 316.59 | 0.057 |
| 6 | 4.490 | | 0.0000 | 0.000 | 620.2 | 0.040 | BB | 0.029 | 352.43 | 0.064 |
| 7 | 4.547 | | 0.0000 | 0.000 | 2037.6 | 0.133 | BB | 0.030 | 1142.78 | 0.207 |
| 8 | 4.609 | | 0.0000 | 0.000 | 2386.4 | 0.155 | BB | 0.043 | 927.02 | 0.168 |
| 9 | 4.751 | HCB | 3.1574 | 0.226 | 5829.9 | 0.380 | BB | 0.047 | 2078.55 | 0.376 |
| 10 | 4.841 | | 0.0000 | 0.000 | 948.5 | 0.062 | BB | 0.036 | 442.78 | 0.080 |
| 11 | 4.903 | | 0.0000 | 0.000 | 748.4 | 0.049 | BB | 0.033 | 382.07 | 0.069 |
| 12 | 5.015 | alpha-BHC | 8.1117 | 0.580 | 12548.2 | 0.817 | BB | 0.056 | 3753.39 | 0.678 |
| 13 | 5.256 | | 0.0000 | 0.000 | 10477.3 | 0.682 | BB | 0.063 | 2753.30 | 0.498 |
| 14 | 5.444 | gamma-BHC | 93.1674 | 6.662 | 90202.1 | 5.872 | BB | 0.035 | 42557.92 | 7.691 |
| 15 | 5.622 | | 0.0000 | 0.000 | 49455.6 | 3.220 | BB | 0.039 | 20918.13 | 3.780 |
| 16 | 5.741 | | 0.0000 | 0.000 | 227.5 | 0.015 | BB | 0.022 | 168.76 | 0.031 |
| 17 | 5.814 | delta-BHC | 47.7488 | 3.414 | 50626.0 | 3.296 | BB | 0.042 | 20322.85 | 3.673 |
| 18 | 5.985 | | 0.0000 | 0.000 | 5456.9 | 0.355 | BB | 0.068 | 1328.50 | 0.240 |
| 19 | 6.121 | Heptachlor | 86.3199 | 6.173 | 103361.5 | 6.729 | BV | 0.039 | 44593.36 | 8.059 |
| 20 | 6.266 | | 0.0000 | 0.000 | 1760.8 | 0.115 | VV | 0.032 | 909.46 | 0.164 |
| 21 | 6.326 | | 0.0000 | 0.000 | 48041.9 | 3.127 | VB | 0.040 | 19807.98 | 3.580 |
| 22 | 6.444 | | 0.0000 | 0.000 | 297.0 | 0.019 | BB | 0.025 | 194.94 | 0.035 |
| 23 | 6.588 | | 0.0000 | 0.000 | 7033.8 | 0.458 | BV | 0.050 | 2344.17 | 0.424 |
| 24 | 6.677 | | 0.0000 | 0.000 | 3043.6 | 0.198 | VV | 0.053 | 963.46 | 0.174 |
| 25 | 6.738 | | 0.0000 | 0.000 | 3150.3 | 0.205 | VB | 0.067 | 780.72 | 0.141 |
| 26 | 6.921 | | 0.0000 | 0.000 | 7967.6 | 0.519 | BB | 0.052 | 2535.31 | 0.458 |
| 27 | 7.023 | | 0.0000 | 0.000 | 919.0 | 0.060 | BB | 0.029 | 524.90 | 0.095 |
| 28 | 7.077 | | 0.0000 | 0.000 | 1352.9 | 0.088 | BB | 0.043 | 521.20 | 0.094 |
| 29 | 7.165 | | 0.0000 | 0.000 | 1026.0 | 0.067 | BB | 0.036 | 473.50 | 0.086 |
| 30 | 7.255 | | 0.0000 | 0.000 | 889.7 | 0.058 | BB | 0.028 | 531.14 | 0.096 |
| 31 | 7.310 | | 0.0000 | 0.000 | 1187.9 | 0.077 | BV | 0.031 | 632.58 | 0.114 |
| 32 | 7.370 | o,p-DDE | 218.7902 | 15.645 | 139270.2 | 9.066 | VV | 0.039 | 59900.90 | 10.826 |
| 33 | 7.501 | | 0.0000 | 0.000 | 19213.8 | 1.251 | VV | 0.047 | 6797.99 | 1.229 |
| 34 | 7.566 | g. Chlordane | 6.2500 | 0.447 | 8920.4 | 0.581 | VV | 0.056 | 2646.96 | 0.478 |
| 35 | 7.716 | a. Chlordane | 3.1403 | 0.225 | 3815.1 | 0.248 | VV | 0.048 | 1338.45 | 0.242 |
| 36 | 7.834 | 4,4'-DDE | 1.6415 | 0.117 | 2000.4 | 0.130 | VB | 0.060 | 560.26 | 0.101 |
| 37 | 7.904 | Endosulfan I | 0.5471 | 0.039 | 395.2 | 0.026 | BV | 0.031 | 209.61 | 0.038 |
| 38 | 8.007 | | 0.0000 | 0.000 | 2403.4 | 0.156 | VV | 0.055 | 730.63 | 0.132 |
| 39 | 8.102 | | 0.0000 | 0.000 | 10195.8 | 0.664 | VV | 0.064 | 2657.74 | 0.480 |
| 40 | 8.214 | Dieldrin | 3.8565 | 0.276 | 7426.2 | 0.483 | VB | 0.088 | 1405.17 | 0.254 |
| 41 | 8.385 | o,p-DDT | 1.0738 | 0.077 | 570.8 | 0.037 | BB | 0.033 | 292.36 | 0.053 |
| 42 | 8.520 | Endrin | 46.3254 | 3.313 | 40311.0 | 2.624 | BV | 0.043 | 15747.50 | 2.846 |
| 43 | 8.722 | | 0.0000 | 0.000 | 4446.1 | 0.289 | VB | 0.055 | 1339.45 | 0.242 |
| 44 | 8.847 | Endosulfan II | 7.1142 | 0.509 | 9199.1 | 0.599 | BV | 0.062 | 2460.10 | 0.445 |
| 45 | 8.990 | 4,4'-DDT | 3.8049 | 0.272 | 3326.3 | 0.217 | VB | 0.049 | 1127.17 | 0.204 |
| 46 | 9.181 | | 0.0000 | 0.000 | 981.7 | 0.064 | BB | 0.055 | 298.30 | 0.054 |
| 47 | 9.258 | | 0.0000 | 0.000 | 1438.2 | 0.094 | BB | 0.038 | 638.71 | 0.115 |
| 48 | 9.337 | | 0.0000 | 0.000 | 637.0 | 0.041 | BB | 0.053 | 199.71 | 0.036 |
| 49 | 9.452 | | 0.0000 | 0.000 | 3771.9 | 0.246 | BV | 0.043 | 1452.65 | 0.263 |
| 50 | 9.557 | Methoxychlor | 385.3734 | 27.558 | 177879.8 | 11.580 | VV | 0.044 | 67078.54 | 12.123 |
| 51 | 9.766 | | 0.0000 | 0.000 | 989.7 | 0.064 | VB | 0.059 | 281.72 | 0.051 |
| 52 | 9.920 | Endo. sulfate | 0.4656 | 0.033 | 311.8 | 0.020 | BB | 0.036 | 143.27 | 0.026 |
| 53 | 10.026 | | 0.0000 | 0.000 | 1089.7 | 0.071 | BV | 0.042 | 433.61 | 0.078 |
| 54 | 10.070 | | 0.0000 | 0.000 | 918.8 | 0.060 | VV | 0.038 | 404.01 | 0.073 |
| 55 | 10.137 | | 0.0000 | 0.000 | 26395.0 | 1.718 | VB | 0.072 | 6086.94 | 1.100 |
| 56 | 10.288 | Endrin ketone | 0.7584 | 0.054 | 770.0 | 0.050 | BV | 0.047 | 271.15 | 0.049 |
| 57 | 10.363 | | 0.0000 | 0.000 | 3505.8 | 0.228 | VV | 0.067 | 873.09 | 0.158 |
| 58 | 10.469 | | 0.0000 | 0.000 | 9200.3 | 0.599 | VV | 0.126 | 1215.26 | 0.220 |
| 59 | 10.625 | | 0.0000 | 0.000 | 11270.8 | 0.734 | VV | 0.085 | 2204.09 | 0.398 |
| 60 | 10.719 | | 0.0000 | 0.000 | 31125.2 | 2.026 | VV | 0.130 | 3976.42 | 0.719 |
| 61 | 10.833 | | 0.0000 | 0.000 | 26121.1 | 1.700 | VB | 0.107 | 4079.20 | 0.737 |
| 62 | 11.124 | | 0.0000 | 0.000 | 18129.6 | 1.180 | BB | 0.168 | 1798.61 | 0.325 |
| 63 | 11.269 | | 0.0000 | 0.000 | 168.5 | 0.011 | BB | 0.029 | 95.78 | 0.017 |
| 64 | 11.322 | | 0.0000 | 0.000 | 1443.5 | 0.094 | BB | 0.076 | 317.10 | 0.057 |

8649

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.475 | | 0.0000 | 0.000 | 1823.3 | 0.119 | BB | 0.043 | 705.93 | 0.128 |
| 66 | 11.598 DCB | | 274.4810 | 19.628 | 291714.2 | 18.990 | BB | 0.047 | 102541.60 | 18.532 |
| 67 | 12.087 | | 0.0000 | 0.000 | 15636.5 | 1.018 | BB | 0.379 | 688.27 | 0.124 |
| 68 | 13.103 | | 0.0000 | 0.000 | 4373.9 | 0.285 | BB | 0.193 | 377.20 | 0.068 |
| 69 | 13.433 | | 0.0000 | 0.000 | 8715.1 | 0.567 | BB | 0.355 | 408.96 | 0.074 |
| 70 | 13.924 | | 0.0000 | 0.000 | 564.6 | 0.037 | BB | 0.063 | 149.16 | 0.027 |

Total Area = 1536124.0, Total Amount = 1398.429, Total Height = 553326.6, Sample Units = PPB

Sample Name: **LCSA 2/25/04F ABLCSVQ LCS 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 05:09:54pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.19R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

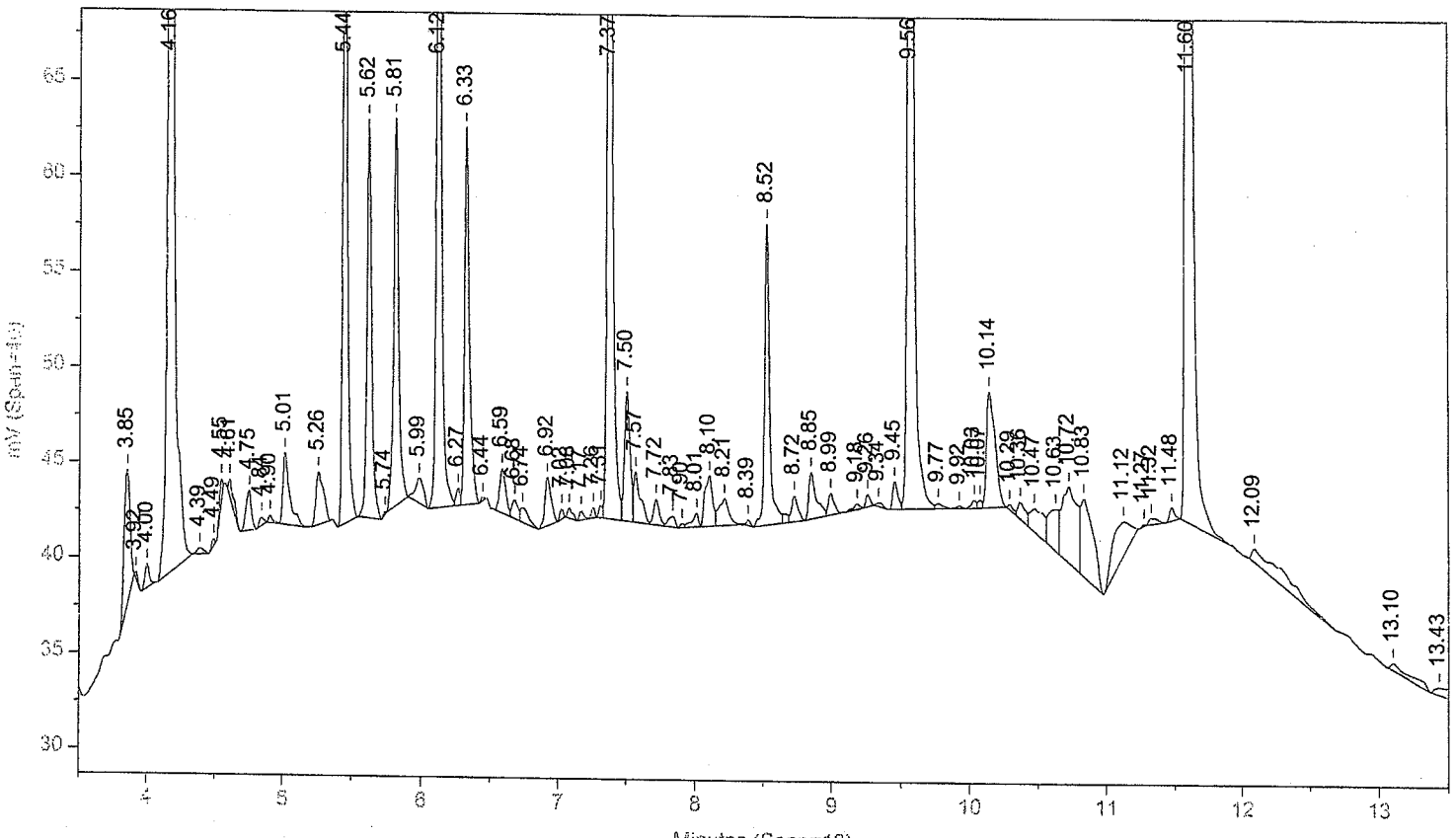
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.133 | | 0.0000 | 0.000 | 16803.9 | 2.147 | BB | 0.056 | 4986.81 | 1.624 |
| 2 | 3.364 | | 0.0000 | 0.000 | 10561.2 | 1.350 | BB | 0.060 | 2940.90 | 0.958 |
| 3 | 3.620 | | 0.0000 | 0.000 | 1957.3 | 0.250 | BB | 0.039 | 845.85 | 0.275 |
| 4 | 3.773 | | 0.0000 | 0.000 | 4025.8 | 0.514 | BB | 0.050 | 1332.49 | 0.434 |
| 5 | 3.868 | | 0.0000 | 0.000 | 1282.3 | 0.164 | BB | 0.030 | 715.31 | 0.233 |
| 6 | 3.911 | | 0.0000 | 0.000 | 728.2 | 0.093 | BB | 0.024 | 496.89 | 0.162 |
| 7 | 4.053 | | 0.0000 | 0.000 | 1224.4 | 0.156 | BB | 0.042 | 483.94 | 0.158 |
| 8 | 4.197 | TCX | 200.8505 | 15.726 | 111493.0 | 14.248 | BB | 0.036 | 51084.50 | 16.632 |
| 9 | 4.346 | | 0.0000 | 0.000 | 237.2 | 0.030 | BB | 0.033 | 118.98 | 0.039 |
| 10 | 4.403 | | 0.0000 | 0.000 | 6448.4 | 0.824 | BB | 0.055 | 1953.77 | 0.636 |
| 11 | 4.557 | | 0.0000 | 0.000 | 641.2 | 0.082 | BB | 0.034 | 315.66 | 0.103 |
| 12 | 4.743 | | 0.0000 | 0.000 | 2015.6 | 0.258 | BB | 0.042 | 791.47 | 0.258 |
| 13 | 4.910 | HCB | 36.8864 | 2.888 | 35442.8 | 4.529 | BB | 0.041 | 14280.29 | 4.649 |
| 14 | 5.083 | alpha-BHC | 0.8372 | 0.066 | 265.6 | 0.034 | BB | 0.021 | 206.81 | 0.067 |
| 15 | 5.480 | | 0.0000 | 0.000 | 1596.4 | 0.204 | BB | 0.053 | 498.87 | 0.162 |
| 16 | 5.599 | gamma-BHC | 94.9399 | 7.434 | 48722.0 | 6.226 | BB | 0.034 | 24036.70 | 7.826 |
| 17 | 5.787 | | 0.0000 | 0.000 | 9829.3 | 1.256 | BB | 0.037 | 4373.71 | 1.424 |
| 18 | 5.889 | | 0.0000 | 0.000 | 1382.4 | 0.177 | BB | 0.034 | 686.71 | 0.224 |
| 19 | 6.065 | | 0.0000 | 0.000 | 2833.6 | 0.362 | BV | 0.037 | 1268.78 | 0.413 |
| 20 | 6.111 | | 0.0000 | 0.000 | 7984.9 | 1.020 | VV | 0.055 | 2410.03 | 0.785 |
| 21 | 6.215 | Heptachlor | 88.5708 | 6.935 | 52665.7 | 6.730 | VB | 0.035 | 25266.15 | 8.226 |
| 22 | 6.450 | | 0.0000 | 0.000 | 351.4 | 0.045 | BB | 0.032 | 182.29 | 0.059 |
| 23 | 6.578 | | 0.0000 | 0.000 | 3514.7 | 0.449 | BB | 0.083 | 705.40 | 0.230 |
| 24 | 6.745 | | 0.0000 | 0.000 | 14783.2 | 1.889 | BB | 0.054 | 4561.62 | 1.485 |
| 25 | 7.034 | | 0.0000 | 0.000 | 1679.3 | 0.215 | BB | 0.057 | 492.39 | 0.160 |
| 26 | 7.220 | | 0.0000 | 0.000 | 3252.9 | 0.416 | BB | 0.090 | 601.87 | 0.196 |
| 27 | 7.327 | | 0.0000 | 0.000 | 2253.7 | 0.288 | BB | 0.039 | 951.32 | 0.310 |
| 28 | 7.432 | Hept. epoxide | 147.5871 | 11.556 | 76291.2 | 9.750 | BV | 0.033 | 38064.05 | 12.393 |
| 29 | 7.680 | g. Chlordane | 10.2581 | 0.803 | 14525.4 | 1.856 | VV | 0.090 | 2681.90 | 0.873 |
| 30 | 7.863 | a. Chlordane | 3.2839 | 0.257 | 7392.7 | 0.945 | VV | 0.139 | 888.31 | 0.289 |
| 31 | 8.097 | 4,4'-DDE | 6.2527 | 0.490 | 9000.2 | 1.150 | VB | 0.124 | 1211.43 | 0.394 |
| 32 | 8.473 | | 0.0000 | 0.000 | 2704.0 | 0.346 | BV | 0.063 | 716.67 | 0.233 |
| 33 | 8.554 | | 0.0000 | 0.000 | 833.7 | 0.107 | VB | 0.034 | 407.46 | 0.133 |
| 34 | 8.710 | Endrin | 45.7128 | 3.579 | 24500.9 | 3.131 | BB | 0.044 | 9265.16 | 3.017 |
| 35 | 9.129 | | 0.0000 | 0.000 | 14916.4 | 1.906 | BB | 0.167 | 1485.14 | 0.484 |
| 36 | 9.410 | Endrin aldehyde | 5.9911 | 0.469 | 6663.6 | 0.852 | BB | 0.113 | 986.99 | 0.321 |
| 37 | 10.032 | | 0.0000 | 0.000 | 4496.6 | 0.575 | BB | 0.037 | 2007.21 | 0.654 |
| 38 | 10.114 | Methoxychlor | 380.1003 | 29.761 | 93786.5 | 11.985 | BB | 0.041 | 37814.01 | 12.312 |
| 39 | 10.474 | Endrin ketone | 1.4021 | 0.110 | 661.9 | 0.085 | BB | 0.032 | 340.49 | 0.111 |
| 40 | 10.777 | | 0.0000 | 0.000 | 1429.0 | 0.183 | BB | 0.059 | 405.27 | 0.132 |
| 41 | 11.667 | | 0.0000 | 0.000 | 9009.0 | 1.151 | BB | 0.393 | 381.91 | 0.124 |
| 42 | 12.206 | DCB | 254.4865 | 19.926 | 172317.5 | 22.021 | BB | 0.045 | 63897.93 | 20.804 |

Total Area = 782505.1, Total Amount = 1277.159, Total Height = 307143.4, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.19R

C:\CPWIN\DATA1\2C13051.19R

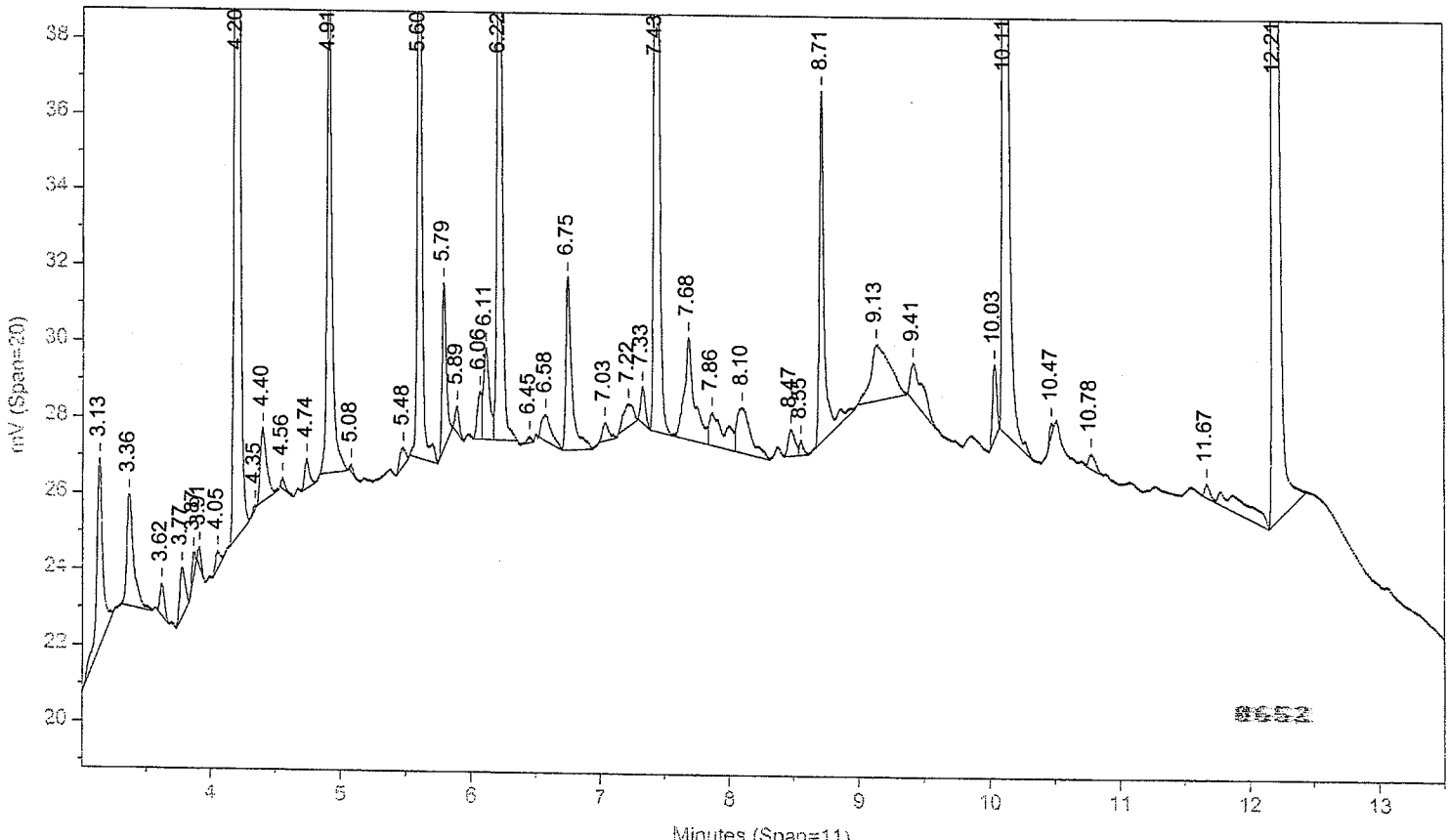



Instrument ID: CP13--H6722A Injected On: 2/25/2004 4:55:54 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.19R

C:\CPWIN\DATA1\2C13051B.19R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 4:55:54 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.163 | 78339 | 1.03151 | TCX | 4.197 | 51085 | 1.00425 | TCX |
| 4.751 | 2079 | .01579 | HCB | 4.91 | 14280 | .18443 | HCB |
| 5.015 | 3753 | .04056 | alpha-BHC | 5.083 | 207 | .00419 | alpha-BHC |
| 5.444 | 42558 | .46584 | gamma-BHC | 5.599 | 24037 | .4747 | gamma-BHC |
| 5.814 | 20323 | .23874 | delta-BHC | . | 0 | . | delta-BHC |
| 6.121 | 44593 | .4316 | Heptachlor | 6.215 | 25266 | .44285 | Heptachlor |
| 7.37 | 59901 | 1.09395 | o,p-DDE /hept epoy . | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.432 | 38064 | .73794 | Hept. epoxide |
| 7.566 | 2647 | .03125 | g. Chlordane | 7.68 | 2682 | .05129 | g. Chlordane |
| 7.716 | 1338 | .0157 | a. Chlordane | 7.863 | 888 | .01642 | a. Chlordane |
| 7.834 | 560 | .00821 | 4,4'-DDE | 8.097 | 1211 | .03126 | 4,4'-DDE |
| 7.904 | 210 | .00274 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.214 | 1405 | .01928 | Dieldrin | . | 0 | . | Dieldrin |
| 8.385 | 292 | .00537 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.52 | 15748 | .23163 | Endrin | 8.71 | 9265 | .22856 | Endrin |
| 8.847 | 2460 | .03557 | Endosulfan II | . | 0 | . | Endosulfan II |
| 8.99 | 1127 | .01902 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.41 | 987 | .02996 | Endrin aldehyde |
| 9.557 | 67079 | 1.92687 | Methoxychlor | 10.114 | 37814 | 1.9005 | Methoxychlor |
| 9.92 | 143 | .00233 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.288 | 271 | .00379 | Endrin ketone | 10.474 | 340 | .00701 | Endrin ketone |
| 11.598 | 102542 | 1.3724 | DCB | 12.206 | 63898 | 1.27243 | DCB |

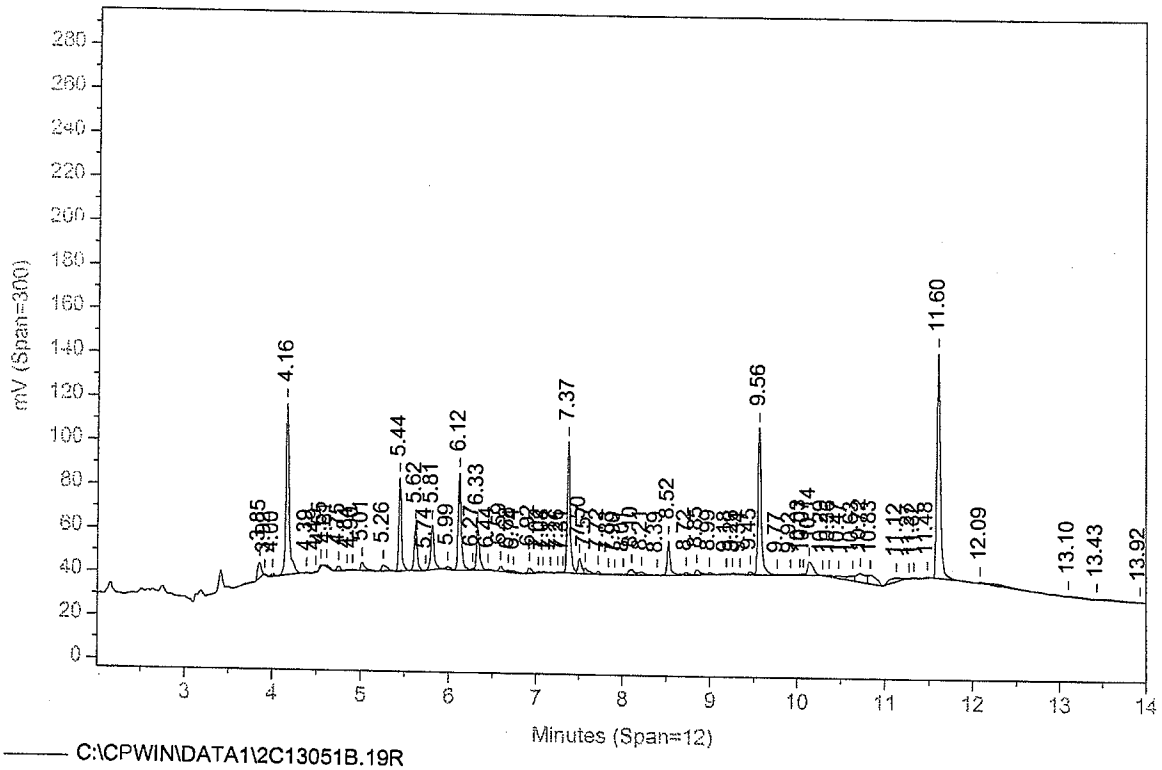
age 1151
2.26.04

Files:
Area File: C:\CPWIN\DATA1\2C13051.19A
Area File: C:\CPWIN\DATA1\2C13051B.19A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 5:09:58 PM
File Reported On: 2/25/2004 at 5:10:07 PM

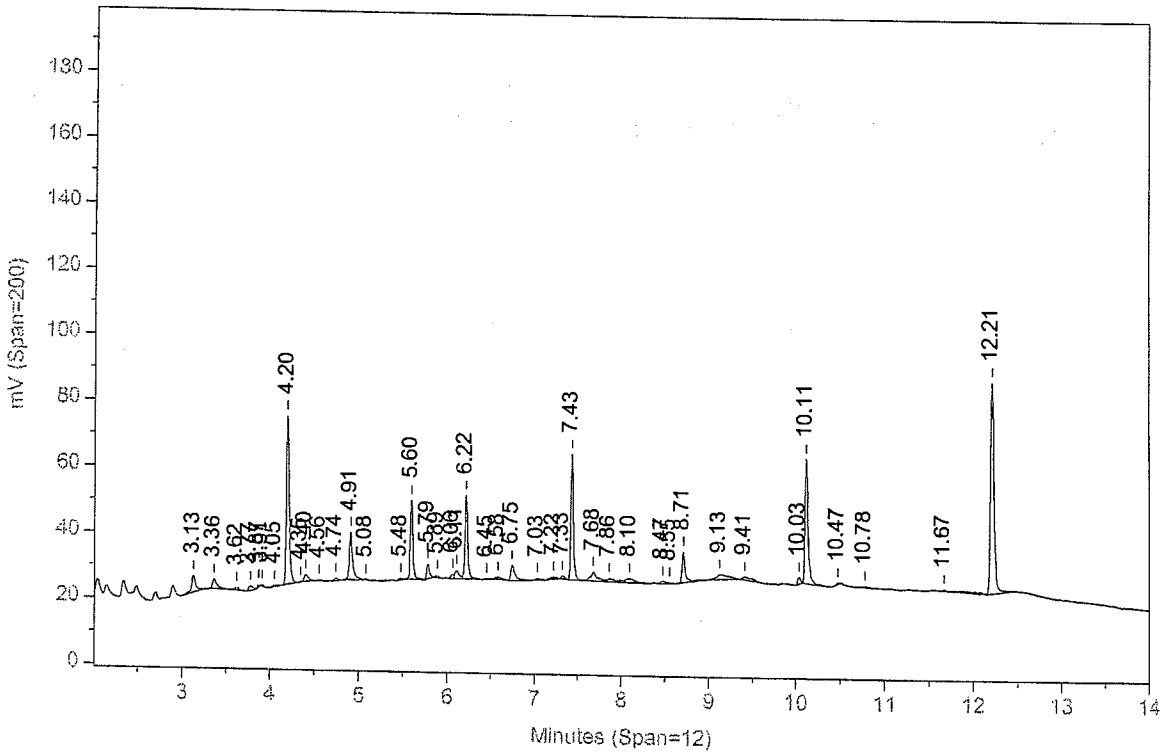
8653

10X REPLOTS

C:\CPWIN\DATA1\2C13051.19R




C:\CPWIN\DATA1\2C13051B.19R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 78.2% Conc.: 1.1279
%SSR(DCB) : 90.4% Conc.: 1.320316

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 85660 | 1.127900 |
| **HCB** | 4.71 | 4.76 | 4.77 | 3718 | 0.028240 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 3233 | 0.034938 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 5765 | 0.055799 |
| **Hept. epoxide** | 7.35 | 7.40 | 7.41 | 1354 | 0.015314 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1150 | 0.013486 |
| **4,4'-DDE** | 7.78 | 7.80 | 7.84 | 300 | 0.004389 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 62 | 0.000804 |
| **Dieldrin** | 8.20 | 8.22 | 8.26 | 633 | 0.008687 |
| **o,p-DDT** | 8.35 | 8.38 | 8.41 | 251 | 0.004605 |
| **4,4'-DDD** | 8.57 | 8.61 | 8.63 | 1651 | 0.031045 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 974 | 0.014087 |
| **DCB** | 11.59 | 11.60 | 11.65 | 98650 | 1.320316 |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 80.3% Conc.: 1.158805
%SSR(DCB) : 83.9% Conc.: 1.225335

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 58946 | 1.158805 |
| **HCB** | 4.87 | 4.91 | 4.93 | 14119 | 0.182352 |
| **Telodrin** | 6.87 | 6.89 | 6.93 | 1051 | 0.020418 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 11601 | 0.221868 |
| **o,p-DDT** | 8.74 | 8.78 | 8.80 | 133 | 0.004360 |
| **4,4'-DDD** | 8.83 | 8.84 | 8.89 | 645 | 0.025885 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 1939 | 0.045913 |
| **Endrin aldehyde** | 9.40 | 9.43 | 9.46 | 788 | 0.023922 |
| **DCB** | 12.20 | 12.20 | 12.26 | 61533 | 1.225335 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 1.158805 | | | | 2.70 | |
| HCB | B | 0.182352 | | | | ** 146.36 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | | | <0.05 | <0.01 | | | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | | | <0.05 | <0.01 | | | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.05 | <0.01 | | | |
| g. Chlordane | | | | | | | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | | | | | | | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | A | 0.004605 | | | | 5.47 | |
| Endrin | | | <0.1 | <0.02 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 0.031045 | | | | 18.13 | |
| Endosulfan II | B | 0.045913 | | | | ** 106.09 | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | | | <0.5 | <0.1 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
**%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:11:26

# Lancaster Laboratories Single Component Data Summary

**Sample Name:** **4219022 F** UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

Analysis Report (A)

| | |
|---|---|
| Injected on | : FEB 25, 2004 17:36:37 |
| Instrument | : CP13--H6722A |
| Result file | : 2C13051.21R |
| Calibration file | : 2C13051.CAL |
| Method file | : PESTD.MET |

Analysis Report (B)

| | |
|---|---|
| Injected on | : FEB 25, 2004 17:36:37 |
| Instrument | : CP13--H6722B |
| Result file | : 2C13051B.21R |
| Calibration file | : 2C13051B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| DCB | A | 1.320316 | | | | 7.46 | |

Units: ug/l

Reviewed by: Andrea Carey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

8656

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:11:26

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4219022** F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 0120 SDG: RAV02 State: VA
**Analyses:** 00950

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:36:37 |
| **Instrument** | H6722A |
| **Result file** | 2C13051.21R |
| **Calibration file** | 2C13051 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 78.2% | Conc: | 1.1279 |
| %SSR(DCB) | 90.4% | Conc: | 1.320316 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:36:37 |
| **Instrument** | H6722B |
| **Result file** | 2C13051B.21R |
| **Calibration file** | 2C13051B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 80.3% | Conc: | 1.158805 |
| %SSR(DCB) | 83.9% | Conc: | 1.225335 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Chlordane (Technical) | | | <2.5 | <0.35 | | | 2 | 20 | |
| Toxaphene | | | <5 | <1.5 | | | 4 | 30 | |

Units: ug/l

%Difference = High - Low divided by the Average times 100

Reviewed By: Andrea J Covey Date: 2-26-04

Verified By: [illegible] Date: 2/26/04

8557

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 78.2% Conc.: 1.1279
%SSR(DCB) : 90.4% Conc.: 1.320316

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 55.35 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 1.203337 | | | 3 |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 4.017262 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 2.427066 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **2.549222** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 112.14 | |
| 4.39 | 4.39 | 4.45 | 240.892334 | 0.233944 | | | 1 |
| 4.61 | 4.61 | 4.67 | 1110.178467 | 2.025503 | | | 2 |
| Height Summation | | | **1351.070801** | | | | |
| Amount Avg CF: | | | **1.129724** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 54.87 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 2.554396 | | | 3 |
| 6.09 | 6.12 | 6.15 | 5765.221191 | 8.660389 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 5.482192 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **5.565659** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 56.34 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 1.403254 | | | 3 |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 4.697101 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 2.726093 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **2.942149** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 165.05 | |
| E 6.29 | 6.32 | 6.35 | 139048.9375 | 57.746974 | | | 3 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 1.818438 | | | 4 |
| 7.16 | 7.16 | 7.22 | 188.814346 | 0.066174 | | | 5 |
| Height Summation | | | **144467.215225** | | | | |
| Amount Avg CF: | | | **19.877195** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 8.90 | 8.91 | 8.96 | 731.756042 | 0.221347 | | | 6 |
| Height Summation | | | **731.756042** | | | | |
| Amount Avg CF: | | | **0.221347** | Linear: | | | |
| **Aroclor-1260** | | | | | 3 | 71.42 | |
| 8.17 | 8.22 | 8.23 | 633.057617 | 0.177091 | | | 2 |
| 8.89 | 8.91 | 8.95 | 731.756042 | 0.164653 | | | 3 |
| 9.75 | 9.76 | 9.81 | 130.066589 | 0.021484 | | | 5 |
| Height Summation | | | **1494.880248** | | | | |
| Amount Avg CF: | | | **0.121076** | Linear: | | | |
| **Chlordane** | | | | | 4 | 98.94 | |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 1.345017 | | | 2 |
| 6.71 | 6.74 | 6.77 | 2636.333496 | 0.604794 | | | 3 |
| 7.69 | 7.72 | 7.75 | 1149.593872 | 0.109065 | | | 5 |
| 8.70 | 8.73 | 8.76 | 626.837952 | 0.209314 | | | 6 |
| Height Summation | | | **10177.986511** | | | | |
| Amount Avg CF: | | | **0.567048** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 58.90 | |
| 8.56 | 8.61 | 8.62 | 1650.552124 | 1.365492 | | | 1 |
| 9.22 | 9.25 | 9.28 | 3855.930664 | 3.314934 | | | 3 |
| Height Summation | | | **5506.482788** | | | | |
| Amount Avg CF: | | | **2.340213** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 80.3% Conc.: 1.158805
%SSR(DCB) : 83.9% Conc.: 1.225335

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 130.90 | |
| 4.88 | 4.91 | 4.94 | 14119.24804 | 13.427516 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 1.023124 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 1.744138 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 0.885881 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **5.352512** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.87 | 4.91 | 4.93 | 14119.24804 | 9.790755 | | | 3 |
| Height Summation | | | **14119.248047** | | | | |
| Amount Avg CF: | | | **9.790755** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 88.42 | |
| E 4.87 | 4.91 | 4.93 | 14119.24804 | 12.507085 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 2.381655 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 4.060049 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 2.142475 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **6.236536** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 128.23 | |
| E 4.87 | 4.91 | 4.93 | 14119.24804 | 14.741332 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 1.217495 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 2.075486 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 1.035259 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **5.950692** | Linear: | | | |
| **Aroclor-1248** | | | | | 1 | | |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 0.665926 | | | 3 |
| Height Summation | | | **1051.098022** | | | | |
| Amount Avg CF: | | | **0.665926** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 8.99 | 9.00 | 9.05 | 1938.893677 | 1.800072 | | | 5 |
| Height Summation | | | **1938.893677** | | | | |
| Amount Avg CF: | | | **1.800072** | Linear: | | | |
| **Aroclor-1260** | | | | | 2 | 128.57 | |
| 8.77 | 8.78 | 8.83 | 132.55397 | 0.05 | | | 2 |
| 8.98 | 9.00 | 9.04 | 1938.893677 | 1.050251 | | | 3 |
| Height Summation | | | **2071.447647** | | | | |
| Amount Avg CF: | | | **0.550126** | Linear: | | | |
| **Chlordane** | | | | | 2 | 93.60 | |
| 6.85 | 6.89 | 6.91 | 1051.098022 | 0.395526 | | | 3 |
| 7.67 | 7.68 | 7.73 | 11601.18164 | 1.944051 | | | 4 |
| Height Summation | | | **12652.279663** | | | | |
| Amount Avg CF: | | | **1.169789** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.40 | 9.43 | 9.46 | 788.206604 | 1.107032 | | | 3 |
| Height Summation | | | **788.206604** | | | | |
| Amount Avg CF: | | | **1.107032** | Linear: | | | |

8558

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:11:36

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4219022 F** UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| roclor-1016 | | | 0 | 0 | | ** 70.95 | 4 | 40 | |
| roclor-1221 | | | 0 | 0 | | ** 158.62 | 3 | 5 | |
| roclor-1232 | | | 0 | 0 | | 11.37 | 4 | 10 | |
| roclor-1242 | | | 0 | 0 | | ** 67.66 | 4 | 30 | |
| roclor-1248 | | | 0 | 0 | E | ** 187.03 | 4 | 30 | |
| roclor-1254 | | | 0 | 0 | | ** 156.20 | 4 | 40 | |
| roclor-1260 | | | 0 | 0 | | ** 127.85 | 4 | 40 | |
| hlordane | | | 2.5 | 0.35 | | ** 69.41 | 2 | 20 | |
| oxaphene | | | 5 | 1.5 | | ** 71.55 | 4 | 30 | |

Units: ug/l

8659

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:11:36

Sample Name: **4219022F ABUN7NV T 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 05:50:37pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.21R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.849 | | 0.0000 | 0.000 | 20162.1 | 1.519 | BB | 0.049 | 6894.01 | 1.472 |
| 2 | 3.917 | | 0.0000 | 0.000 | 2536.4 | 0.191 | BB | 0.027 | 1559.51 | 0.333 |
| 3 | 3.999 | | 0.0000 | 0.000 | 626.3 | 0.047 | BB | 0.027 | 384.07 | 0.082 |
| 4 | 4.040 | | 0.0000 | 0.000 | 3849.4 | 0.290 | BB | 0.033 | 1930.47 | 0.412 |
| 5 | 4.161 | TCX | 225.5800 | 42.408 | 184820.1 | 13.929 | BB | 0.036 | 85660.02 | 18.286 |
| 6 | 4.393 | | 0.0000 | 0.000 | 855.8 | 0.064 | BB | 0.059 | 240.89 | 0.051 |
| 7 | 4.489 | | 0.0000 | 0.000 | 1296.6 | 0.098 | BB | 0.029 | 757.78 | 0.162 |
| 8 | 4.546 | | 0.0000 | 0.000 | 1564.7 | 0.118 | BB | 0.032 | 809.52 | 0.173 |
| 9 | 4.573 | | 0.0000 | 0.000 | 131.4 | 0.010 | BB | 0.015 | 149.71 | 0.032 |
| 10 | 4.608 | | 0.0000 | 0.000 | 3194.2 | 0.241 | BB | 0.048 | 1110.18 | 0.237 |
| 11 | 4.756 | HCB | 5.6480 | 1.062 | 6297.2 | 0.475 | BB | 0.028 | 3718.08 | 0.794 |
| 12 | 4.783 | | 0.0000 | 0.000 | 3304.1 | 0.249 | BB | 0.023 | 2430.31 | 0.519 |
| 13 | 4.901 | | 0.0000 | 0.000 | 702.7 | 0.053 | BB | 0.026 | 451.66 | 0.096 |
| 14 | 4.960 | | 0.0000 | 0.000 | 98.2 | 0.007 | BB | 0.024 | 68.50 | 0.015 |
| 15 | 5.013 | alpha-BHC | 6.9877 | 1.314 | 8311.5 | 0.626 | BB | 0.043 | 3233.28 | 0.690 |
| 16 | 5.102 | | 0.0000 | 0.000 | 429.5 | 0.032 | BB | 0.029 | 245.75 | 0.052 |
| 17 | 5.254 | | 0.0000 | 0.000 | 15099.4 | 1.138 | BB | 0.087 | 2906.40 | 0.620 |
| 18 | 5.504 | | 0.0000 | 0.000 | 3247.6 | 0.245 | BB | 0.056 | 969.65 | 0.207 |
| 19 | 5.621 | | 0.0000 | 0.000 | 48811.2 | 3.679 | BB | 0.039 | 20620.00 | 4.402 |
| 20 | 5.781 | | 0.0000 | 0.000 | 6218.8 | 0.469 | BB | 0.046 | 2240.05 | 0.478 |
| 21 | 5.946 | | 0.0000 | 0.000 | 3697.7 | 0.279 | BB | 0.087 | 707.73 | 0.151 |
| 22 | 6.121 | Heptachlor | 11.1598 | 2.098 | 31243.6 | 2.355 | BV | 0.090 | 5765.22 | 1.231 |
| 23 | 6.196 | | 0.0000 | 0.000 | 19375.8 | 1.460 | VB | 0.048 | 6770.27 | 1.445 |
| 24 | 6.324 | | 0.0000 | 0.000 | 327776.8 | 24.702 | BV | 0.039 | 139048.90 | 29.683 |
| 25 | 6.478 | | 0.0000 | 0.000 | 29108.8 | 2.194 | VV | 0.083 | 5820.54 | 1.243 |
| 26 | 6.590 | | 0.0000 | 0.000 | 30179.2 | 2.274 | VV | 0.096 | 5229.46 | 1.116 |
| 27 | 6.686 | | 0.0000 | 0.000 | 6260.7 | 0.472 | VV | 0.036 | 2859.12 | 0.610 |
| 28 | 6.735 | | 0.0000 | 0.000 | 14964.8 | 1.128 | VV | 0.095 | 2636.33 | 0.563 |
| 29 | 6.915 | | 0.0000 | 0.000 | 21086.4 | 1.589 | VB | 0.051 | 6836.23 | 1.459 |
| 30 | 7.043 | | 0.0000 | 0.000 | 26962.2 | 2.032 | BB | 0.046 | 9803.52 | 2.093 |
| 31 | 7.164 | | 0.0000 | 0.000 | 461.4 | 0.035 | BB | 0.041 | 188.81 | 0.040 |
| 32 | 7.253 | | 0.0000 | 0.000 | 1286.5 | 0.097 | BB | 0.029 | 745.33 | 0.159 |
| 33 | 7.316 | | 0.0000 | 0.000 | 1818.0 | 0.137 | BV | 0.051 | 592.82 | 0.127 |
| 34 | 7.397 | Hept. epoxide | 3.0628 | 0.576 | 5843.5 | 0.440 | VV | 0.072 | 1353.86 | 0.289 |
| 35 | 7.500 | | 0.0000 | 0.000 | 19201.2 | 1.447 | VV | 0.051 | 6224.96 | 1.329 |
| 36 | 7.715 | a. Chlordane | 2.6972 | 0.507 | 3482.7 | 0.262 | VV | 0.050 | 1149.59 | 0.245 |
| 37 | 7.799 | 4,4'-DDE | 0.8778 | 0.165 | 717.0 | 0.054 | VV | 0.040 | 299.62 | 0.064 |
| 38 | 7.837 | | 0.0000 | 0.000 | 783.5 | 0.059 | VB | 0.038 | 345.86 | 0.074 |
| 39 | 7.904 | Endosulfan I | 0.1608 | 0.030 | 85.9 | 0.006 | BB | 0.023 | 61.60 | 0.013 |
| 40 | 8.000 | | 0.0000 | 0.000 | 585.2 | 0.044 | BB | 0.055 | 177.67 | 0.038 |
| 41 | 8.081 | | 0.0000 | 0.000 | 1817.7 | 0.137 | BV | 0.036 | 837.54 | 0.179 |
| 42 | 8.161 | | 0.0000 | 0.000 | 2201.9 | 0.166 | VV | 0.045 | 807.67 | 0.172 |
| 43 | 8.225 | Dieldrin | 1.7375 | 0.327 | 2106.5 | 0.159 | VB | 0.055 | 633.06 | 0.135 |
| 44 | 8.383 | o,p-DDT | 0.9211 | 0.173 | 575.1 | 0.043 | BB | 0.038 | 250.79 | 0.054 |
| 45 | 8.614 | 4,4'-DDD | 6.2089 | 1.167 | 6760.2 | 0.509 | BV | 0.068 | 1650.55 | 0.352 |
| 46 | 8.726 | | 0.0000 | 0.000 | 2454.6 | 0.185 | VV | 0.065 | 626.84 | 0.134 |
| 47 | 8.854 | Endosulfan II | 2.8175 | 0.530 | 2884.9 | 0.217 | VV | 0.049 | 974.28 | 0.208 |
| 48 | 8.908 | | 0.0000 | 0.000 | 2323.3 | 0.175 | VV | 0.053 | 731.76 | 0.156 |
| 49 | 9.001 | | 0.0000 | 0.000 | 1056.3 | 0.080 | VB | 0.055 | 318.73 | 0.068 |
| 50 | 9.149 | | 0.0000 | 0.000 | 40090.6 | 3.021 | BV | 0.092 | 7273.99 | 1.553 |
| 51 | 9.254 | | 0.0000 | 0.000 | 20984.4 | 1.581 | VB | 0.091 | 3855.93 | 0.823 |
| 52 | 9.453 | | 0.0000 | 0.000 | 681.6 | 0.051 | BB | 0.034 | 333.13 | 0.071 |
| 53 | 9.539 | | 0.0000 | 0.000 | 720.9 | 0.054 | BB | 0.039 | 304.75 | 0.065 |
| 54 | 9.639 | | 0.0000 | 0.000 | 842.2 | 0.063 | BB | 0.051 | 277.16 | 0.059 |
| 55 | 9.762 | | 0.0000 | 0.000 | 432.0 | 0.033 | BB | 0.055 | 130.07 | 0.028 |
| 56 | 10.070 | | 0.0000 | 0.000 | 9206.3 | 0.694 | BV | 0.038 | 4072.92 | 0.869 |
| 57 | 10.140 | | 0.0000 | 0.000 | 11493.2 | 0.866 | VB | 0.061 | 3163.10 | 0.675 |
| 58 | 10.516 | | 0.0000 | 0.000 | 14845.4 | 1.119 | BV | 0.160 | 1549.09 | 0.331 |
| 59 | 10.728 | | 0.0000 | 0.000 | 24756.9 | 1.866 | VV | 0.151 | 2736.22 | 0.584 |
| 60 | 10.843 | | 0.0000 | 0.000 | 19340.1 | 1.458 | VB | 0.100 | 3229.51 | 0.689 |
| 61 | 11.128 | | 0.0000 | 0.000 | 9007.9 | 0.679 | BB | 0.198 | 759.14 | 0.162 |
| 62 | 11.218 | | 0.0000 | 0.000 | 3710.8 | 0.280 | BB | 0.059 | 1047.16 | 0.224 |
| 63 | 11.315 | | 0.0000 | 0.000 | 476.0 | 0.036 | BB | 0.032 | 247.05 | 0.053 |
| 64 | 11.483 | | 0.0000 | 0.000 | 178.5 | 0.013 | BB | 0.032 | 92.39 | 0.020 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.597 | DCB | 264.0633 | 49.643 | 281458.8 | 21.212 | BB | 0.048 | 98649.77 | 21.059 |
| 66 | 12.117 | | 0.0000 | 0.000 | 3546.9 | 0.267 | BB | 0.149 | 397.92 | 0.085 |
| 67 | 12.316 | | 0.0000 | 0.000 | 1818.4 | 0.137 | BB | 0.097 | 313.33 | 0.067 |
| 68 | 13.412 | | 0.0000 | 0.000 | 4662.6 | 0.351 | BB | 0.431 | 180.40 | 0.039 |

Total Area = 1326913.0, Total Amount = 531.922, Total Height = 468441.5, Sample Units = PPB

Sample Name: **4219022F ABUN7NV T 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 05:50:37pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.21R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

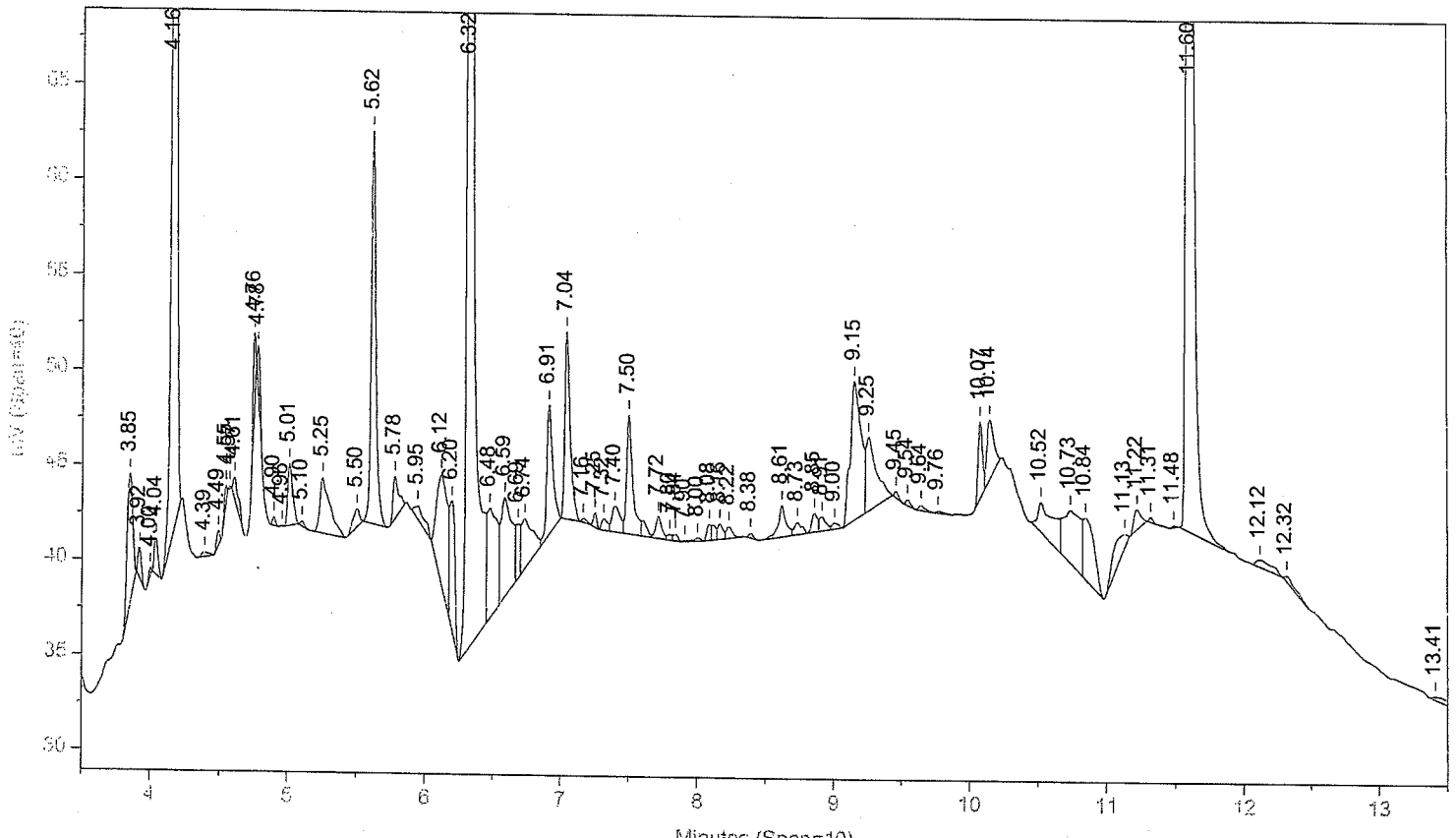
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 24754.2 | 4.254 | BB | 0.059 | 7006.50 | 3.544 |
| 2 | 3.365 | | 0.0000 | 0.000 | 10045.5 | 1.726 | BB | 0.067 | 2489.31 | 1.259 |
| 3 | 3.622 | | 0.0000 | 0.000 | 4125.6 | 0.709 | BB | 0.037 | 1844.10 | 0.933 |
| 4 | 3.776 | | 0.0000 | 0.000 | 1183.9 | 0.203 | BB | 0.040 | 497.06 | 0.251 |
| 5 | 3.813 | | 0.0000 | 0.000 | 1219.7 | 0.210 | BB | 0.026 | 793.34 | 0.401 |
| 6 | 3.870 | | 0.0000 | 0.000 | 227.2 | 0.039 | BB | 0.020 | 184.68 | 0.093 |
| 7 | 3.914 | | 0.0000 | 0.000 | 4599.8 | 0.790 | BB | 0.036 | 2113.79 | 1.069 |
| 8 | 4.140 | | 0.0000 | 0.000 | 1570.7 | 0.270 | BB | 0.267 | 97.88 | 0.050 |
| 9 | 4.196 TCX | | 231.7609 | 39.837 | 128182.7 | 22.026 | BB | 0.036 | 58946.30 | 29.813 |
| 10 | 4.352 | | 0.0000 | 0.000 | 4606.4 | 0.792 | BB | 0.031 | 2447.95 | 1.238 |
| 11 | 4.399 | | 0.0000 | 0.000 | 1930.0 | 0.332 | BB | 0.029 | 1110.27 | 0.562 |
| 12 | 4.554 | | 0.0000 | 0.000 | 5729.5 | 0.985 | BB | 0.118 | 809.00 | 0.409 |
| 13 | 4.741 | | 0.0000 | 0.000 | 2030.1 | 0.349 | BB | 0.043 | 782.06 | 0.396 |
| 14 | 4.909 HCB | | 36.4704 | 6.269 | 35048.4 | 6.023 | BB | 0.041 | 14119.25 | 7.141 |
| 15 | 5.580 | | 0.0000 | 0.000 | 1371.5 | 0.236 | BB | 0.165 | 138.37 | 0.070 |
| 16 | 5.793 | | 0.0000 | 0.000 | 455.5 | 0.078 | BB | 0.033 | 227.33 | 0.115 |
| 17 | 5.898 | | 0.0000 | 0.000 | 14062.4 | 2.416 | BV | 0.091 | 2567.89 | 1.299 |
| 18 | 6.065 | | 0.0000 | 0.000 | 7203.5 | 1.238 | VV | 0.042 | 2892.28 | 1.463 |
| 19 | 6.111 | | 0.0000 | 0.000 | 43016.5 | 7.392 | VB | 0.145 | 4930.52 | 2.494 |
| 20 | 6.338 | | 0.0000 | 0.000 | 4832.3 | 0.830 | BB | 0.029 | 2771.70 | 1.402 |
| 21 | 6.501 | | 0.0000 | 0.000 | 581.7 | 0.100 | BB | 0.030 | 318.11 | 0.161 |
| 22 | 6.746 | | 0.0000 | 0.000 | 11843.0 | 2.035 | BB | 0.044 | 4462.19 | 2.257 |
| 23 | 6.893 Telodrin | | 4.0837 | 0.702 | 2520.7 | 0.433 | BB | 0.040 | 1051.10 | 0.532 |
| 24 | 7.081 | | 0.0000 | 0.000 | 18887.7 | 3.246 | BV | 0.083 | 3788.50 | 1.916 |
| 25 | 7.307 | | 0.0000 | 0.000 | 8455.6 | 1.453 | VV | 0.152 | 926.90 | 0.469 |
| 26 | 7.682 g. Chlordane | | 44.3736 | 7.627 | 41659.8 | 7.159 | VB | 0.060 | 11601.18 | 5.867 |
| 27 | 8.784 o,p-DDT | | 0.8719 | 0.150 | 594.5 | 0.102 | BB | 0.075 | 132.55 | 0.067 |
| 28 | 8.844 4,4'-DDD | | 5.1771 | 0.890 | 1510.3 | 0.260 | BB | 0.039 | 645.00 | 0.326 |
| 29 | 8.997 Endosulfan II | | 9.1826 | 1.578 | 17432.3 | 2.995 | BB | 0.150 | 1938.89 | 0.981 |
| 30 | 9.432 Endrin aldehyde | | 4.7845 | 0.822 | 3568.7 | 0.613 | BB | 0.075 | 788.21 | 0.399 |
| 31 | 9.717 | | 0.0000 | 0.000 | 7816.4 | 1.343 | BB | 0.054 | 2412.34 | 1.220 |
| 32 | 10.034 | | 0.0000 | 0.000 | 4735.8 | 0.814 | BB | 0.058 | 1352.95 | 0.684 |
| 33 | 12.205 DCB | | 245.0670 | 42.124 | 166150.3 | 28.551 | BB | 0.045 | 61532.83 | 31.121 |

Total Area = 581952.0, Total Amount = 581.772, Total Height = 197720.4, Sample Units = PPB

LANCASTER LABORATORIES

C:\CPWIN\DATA1\2C13051.21R

File: C:\CPWIN\DATA1\2C13051.21R

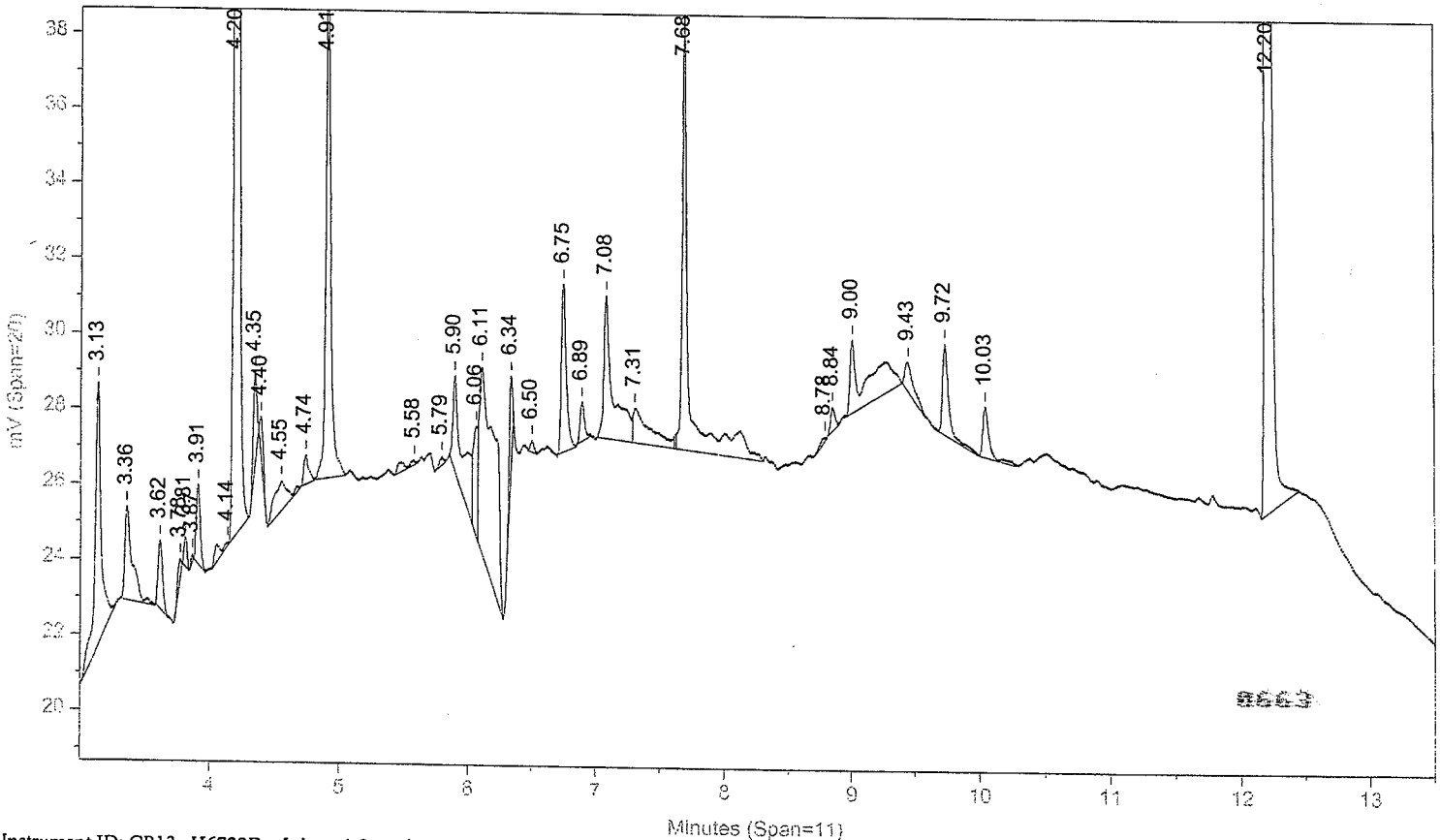



Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:36:37 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

C:\CPWIN\DATA1\2C13051B.21R

File: C:\CPWIN\DATA1\2C13051B.21R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:36:37 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

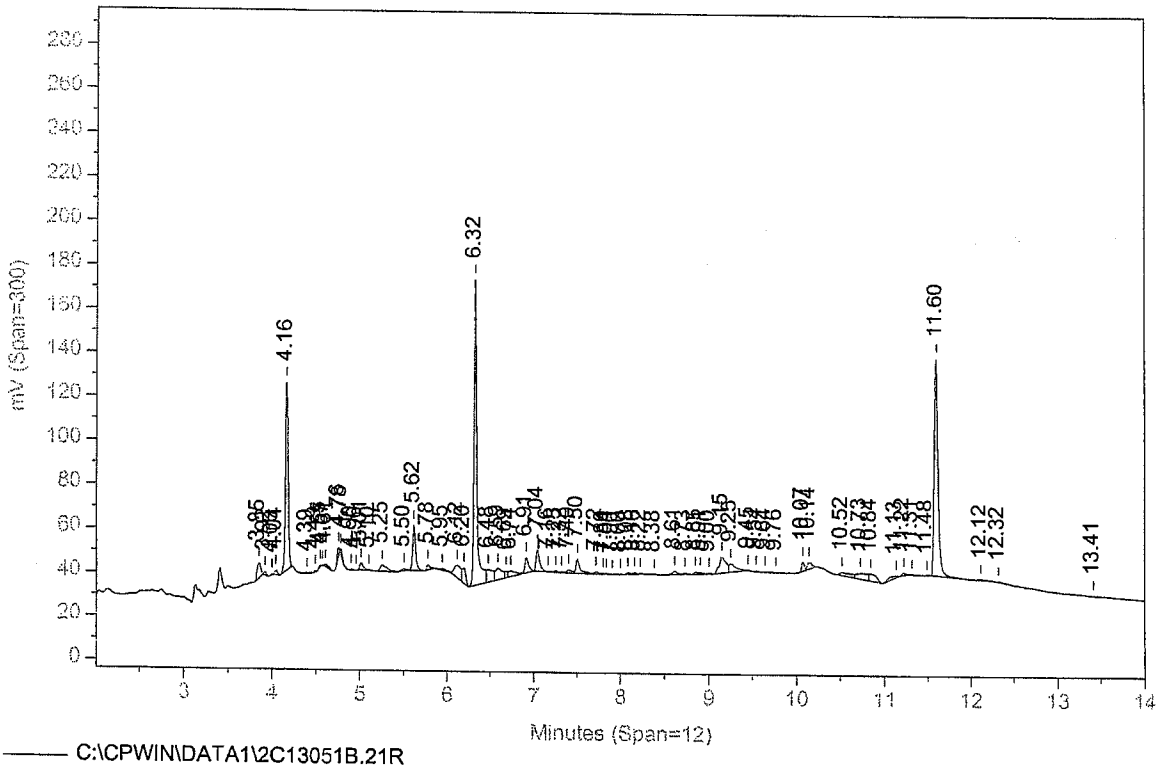
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 85660 | 1.1279 | TCX | 4.196 | 58946 | 1.1588 | TCX |
| 4.756 | 3718 | .02824 | HCB | 4.909 | 14119 | .18235 | HCB |
| 5.013 | 3233 | .03494 | alpha-BHC | . | 0 | . | alpha-BHC |
| 6.121 | 5765 | .0558 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.893 | 1051 | .02042 | Telodrin |
| 7.397 | 1354 | .01531 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.682 | 11601 | .22187 | g. Chlordane |
| 7.715 | 1150 | .01349 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.799 | 300 | .00439 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.904 | 62 | .0008 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.225 | 633 | .00869 | Dieldrin | . | 0 | . | Dieldrin |
| 8.383 | 251 | .00461 | o,p-DDT | 8.784 | 133 | .00436 | o,p-DDT |
| 8.614 | 1651 | .03104 | 4,4'-DDD | 8.844 | 645 | .02589 | 4,4'-DDD |
| 8.854 | 974 | .01409 | Endosulfan II | 8.997 | 1939 | .04591 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.432 | 788 | .02392 | Endrin aldehyde |
| 11.597 | 98650 | 1.32032 | DCB | 12.205 | 61533 | 1.22534 | DCB |

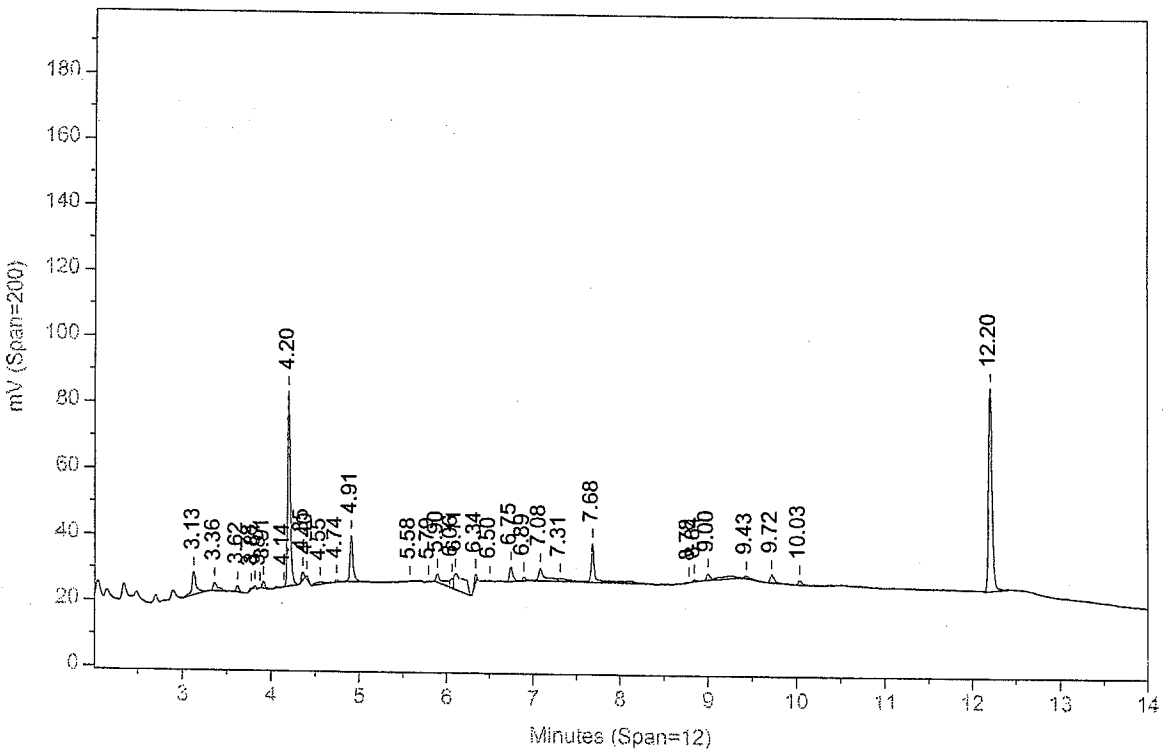
Files:
Area File: C:\CPWIN\DATA1\2C13051.21A
Area File: C:\CPWIN\DATA1\2C13051B.21A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 5:50:42 PM
File Reported On: 2/25/2004 at 5:50:50 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.21R




C:\CPWIN\DATA1\2C13051B.21R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSF UN7NVMS **Sample ID:** AB **Batchnumber:** 040550003A
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722A
Result file : 2C13051.22R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 74.2% Conc.: 1.070783
%SSR(DCB) : 96% Conc.: 1.402888

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 81322 | 1.070783 |
| **HCB** | 4.71 | 4.76 | 4.77 | 3599 | 0.027339 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 2526 | 0.027300 |
| **gamma-BHC** | 5.43 | 5.44 | 5.49 | 45263 | 0.495449 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 40122 | 0.471333 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 50429 | 0.488077 |
| **o,p-DDE** / hept epox | 7.33 | 7.37 | 7.39 | 62532 | 1.141998 / 0.707 |
| **g. Chlordane** | 7.52 | 7.56 | 7.58 | 1067 | 0.012598 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1827 | 0.021427 |
| **4,4'-DDE** | 7.78 | 7.83 | 7.84 | 736 | 0.010786 |
| **Endosulfan I** | 7.88 | 7.91 | 7.94 | 352 | 0.004593 |
| **o,p-DDT** | 8.35 | 8.40 | 8.41 | 176 | 0.003234 |
| **Endrin** | 8.51 | 8.52 | 8.57 | 16852 | 0.247879 |
| **4,4'-DDD** | 8.57 | 8.61 | 8.63 | 1699 | 0.031963 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 1318 | 0.019053 |
| **4,4'-DDT** | 8.93 | 8.99 | 8.99 | 1035 | 0.017465 |
| **Methoxychlor** | 9.54 | 9.56 | 9.60 | 71161 | 2.044143 |
| **Endrin ketone** | 10.28 | 10.29 | 10.34 | 227 | 0.003181 |
| **DCB** | 11.59 | 11.60 | 11.65 | 104819 | 1.402888 |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722B
Result file : 2C13051B.22R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 74.3% Conc.: 1.071934
%SSR(DCB) : 88% Conc.: 1.286274

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 54527 | 1.071934 |
| **HCB** | 4.87 | 4.91 | 4.93 | 15981 | 0.206392 |
| **gamma-BHC** | 5.58 | 5.60 | 5.64 | 26244 | 0.518298 |
| **Heptachlor** | 6.20 | 6.21 | 6.26 | 28746 | 0.503855 |
| **Telodrin** | 6.87 | 6.89 | 6.93 | 1184 | 0.022997 |
| **Hept. epoxide** | 7.42 | 7.43 | 7.48 | 40736 | 0.789740 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 13687 | 0.261758 |
| **4,4'-DDE** | 8.08 | 8.08 | 8.14 | 835 | 0.021562 |
| **Endrin** | 8.70 | 8.71 | 8.76 | 9874 | 0.243588 |
| **4,4'-DDD** | 8.83 | 8.85 | 8.89 | 1006 | 0.040362 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 2077 | 0.049189 |
| **4,4'-DDT** | 9.23 | 9.25 | 9.29 | 371 | 0.011433 |
| **Endrin aldehyde** | 9.40 | 9.41 | 9.46 | 1916 | 0.058158 |
| **Methoxychlor** | 10.10 | 10.11 | 10.16 | 40564 | 2.038736 |
| **Endrin ketone** | 10.43 | 10.47 | 10.49 | 155 | 0.003182 |
| **DCB** | 12.20 | 12.21 | 12.26 | 64593 | 1.286274 |

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## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 1.071934 | | | | 0.11 | |
| HCB | B | 0.206392 | | | | ** 153.21 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | B | 0.518298 | 0.05 | 0.01 | | 4.51 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.503855 | 0.05 | 0.01 | | 3.18 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | B | 0.789740 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.261758 | | | | ** 181.63 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | B | 0.021562 | | | | ** 66.63 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.247879 | 0.1 | 0.02 | | 1.75 | |
| Kepone | | | | | | | |
| 4,4'-DDD | B | 0.040362 | | | | 23.23 | |
| Endosulfan II | B | 0.049189 | | | | ** 88.32 | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:29:38

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSF UN7NVMS Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

Analysis Report (A)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722A
Result file : 2C13051.22R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722B
Result file : 2C13051B.22R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | A | 0.017465 | | | | ** 41.75 | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | A | 2.044143 | 0.5 | 0.1 | | 0.26 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.003182 | | | | 0.03 | |
| DCB | A | 1.402888 | | | | 8.67 | |

Units: ug/l

Reviewed by: Andrea Casey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:29:38

Sample Name: **4219022MSF ABUN7NVMS MS 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 06:10:58pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.22R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.504 | | 0.0000 | 0.000 | 132.3 | 0.007 | BB | 0.017 | 130.61 | 0.017 |
| 2 | 3.849 | | 0.0000 | 0.000 | 9741.7 | 0.512 | BB | 0.046 | 3507.11 | 0.463 |
| 3 | 3.922 | | 0.0000 | 0.000 | 12323.7 | 0.648 | BB | 0.037 | 5590.32 | 0.738 |
| 4 | 3.996 | | 0.0000 | 0.000 | 109.3 | 0.006 | BB | 0.017 | 109.78 | 0.014 |
| 5 | 4.041 | | 0.0000 | 0.000 | 5635.2 | 0.296 | BB | 0.035 | 2649.66 | 0.350 |
| 6 | 4.162 TCX | | 214.1566 | 14.199 | 193985.2 | 10.202 | BB | 0.040 | 81322.22 | 10.730 |
| 7 | 4.417 | | 0.0000 | 0.000 | 1047.5 | 0.055 | BB | 0.058 | 302.39 | 0.040 |
| 8 | 4.491 | | 0.0000 | 0.000 | 1734.1 | 0.091 | BB | 0.029 | 980.32 | 0.129 |
| 9 | 4.546 | | 0.0000 | 0.000 | 652.4 | 0.034 | BB | 0.029 | 372.73 | 0.049 |
| 10 | 4.610 | | 0.0000 | 0.000 | 7328.7 | 0.385 | BB | 0.049 | 2477.47 | 0.327 |
| 11 | 4.757 HCB | | 5.4678 | 0.363 | 5910.3 | 0.311 | BB | 0.027 | 3599.49 | 0.475 |
| 12 | 4.783 | | 0.0000 | 0.000 | 3545.1 | 0.186 | BB | 0.023 | 2526.53 | 0.333 |
| 13 | 4.900 | | 0.0000 | 0.000 | 332.1 | 0.017 | BB | 0.022 | 250.89 | 0.033 |
| 14 | 5.014 alpha-BHC | | 5.4600 | 0.362 | 7236.7 | 0.381 | BB | 0.048 | 2526.38 | 0.333 |
| 15 | 5.105 | | 0.0000 | 0.000 | 718.3 | 0.038 | BB | 0.035 | 345.70 | 0.046 |
| 16 | 5.255 | | 0.0000 | 0.000 | 2837.0 | 0.149 | BB | 0.050 | 951.03 | 0.125 |
| 17 | 5.321 | | 0.0000 | 0.000 | 422.2 | 0.022 | BB | 0.030 | 231.60 | 0.031 |
| 18 | 5.443 gamma-BHC | | 99.0897 | 6.570 | 95769.3 | 5.037 | BB | 0.035 | 45263.16 | 5.972 |
| 19 | 5.621 | | 0.0000 | 0.000 | 53228.5 | 2.800 | BB | 0.039 | 22720.41 | 2.998 |
| 20 | 5.738 | | 0.0000 | 0.000 | 326.5 | 0.017 | BB | 0.022 | 252.30 | 0.033 |
| 21 | 5.813 delta-BHC | | 94.2667 | 6.250 | 92599.1 | 4.870 | BB | 0.038 | 40121.82 | 5.294 |
| 22 | 5.972 | | 0.0000 | 0.000 | 18168.3 | 0.956 | BB | 0.064 | 4709.97 | 0.621 |
| 23 | 6.120 Heptachlor | | 97.6153 | 6.472 | 143426.6 | 7.543 | BB | 0.047 | 50428.64 | 6.654 |
| 24 | 6.325 | | 0.0000 | 0.000 | 328690.7 | 17.287 | BB | 0.035 | 158714.00 | 20.941 |
| 25 | 6.478 | | 0.0000 | 0.000 | 470.3 | 0.025 | BB | 0.029 | 266.41 | 0.035 |
| 26 | 6.590 | | 0.0000 | 0.000 | 3289.8 | 0.173 | BV | 0.051 | 1073.51 | 0.142 |
| 27 | 6.685 | | 0.0000 | 0.000 | 521.8 | 0.027 | VV | 0.031 | 281.44 | 0.037 |
| 28 | 6.739 | | 0.0000 | 0.000 | 4412.2 | 0.232 | VB | 0.071 | 1031.46 | 0.136 |
| 29 | 6.916 | | 0.0000 | 0.000 | 24174.8 | 1.271 | BB | 0.050 | 7996.11 | 1.055 |
| 30 | 7.044 | | 0.0000 | 0.000 | 27586.2 | 1.451 | BB | 0.046 | 9909.59 | 1.307 |
| 31 | 7.161 | | 0.0000 | 0.000 | 648.3 | 0.034 | BB | 0.037 | 292.07 | 0.039 |
| 32 | 7.254 | | 0.0000 | 0.000 | 1536.2 | 0.081 | BV | 0.032 | 796.13 | 0.105 |
| 33 | 7.369 o,p-DDE | | 228.3997 | 15.143 | 140544.3 | 7.392 | VV | 0.037 | 62531.80 | 8.250 |
| 34 | 7.500 | | 0.0000 | 0.000 | 14665.9 | 0.771 | VV | 0.039 | 6224.45 | 0.821 |
| 35 | 7.564 g. Chlordane | | 2.5197 | 0.167 | 1806.3 | 0.095 | VB | 0.028 | 1067.11 | 0.141 |
| 36 | 7.718 a. Chlordane | | 4.2855 | 0.284 | 4700.3 | 0.247 | BV | 0.043 | 1826.52 | 0.241 |
| 37 | 7.827 4,4'-DDE | | 2.1572 | 0.143 | 2574.8 | 0.135 | VB | 0.058 | 736.31 | 0.097 |
| 38 | 7.906 Endosulfan I | | 0.9186 | 0.061 | 725.6 | 0.038 | BV | 0.034 | 351.94 | 0.046 |
| 39 | 8.006 | | 0.0000 | 0.000 | 3256.9 | 0.171 | VV | 0.040 | 1362.51 | 0.180 |
| 40 | 8.103 | | 0.0000 | 0.000 | 6680.1 | 0.351 | VV | 0.049 | 2273.65 | 0.300 |
| 41 | 8.182 | | 0.0000 | 0.000 | 7283.9 | 0.383 | VB | 0.069 | 1766.40 | 0.233 |
| 42 | 8.396 o,p-DDT | | 0.6468 | 0.043 | 340.1 | 0.018 | BB | 0.032 | 176.12 | 0.023 |
| 43 | 8.519 Endrin | | 49.5758 | 3.287 | 43296.5 | 2.277 | BV | 0.043 | 16852.44 | 2.224 |
| 44 | 8.613 4,4'-DDD | | 6.3926 | 0.424 | 5654.8 | 0.297 | VV | 0.055 | 1699.37 | 0.224 |
| 45 | 8.725 | | 0.0000 | 0.000 | 1941.5 | 0.102 | VV | 0.050 | 646.63 | 0.085 |
| 46 | 8.778 | | 0.0000 | 0.000 | 1074.2 | 0.056 | VV | 0.045 | 394.29 | 0.052 |
| 47 | 8.848 Endosulfan II | | 3.8106 | 0.253 | 3709.8 | 0.195 | VV | 0.047 | 1317.71 | 0.174 |
| 48 | 8.911 | | 0.0000 | 0.000 | 3227.7 | 0.170 | VV | 0.056 | 956.82 | 0.126 |
| 49 | 8.987 4,4'-DDT | | 3.4931 | 0.232 | 3058.5 | 0.161 | VB | 0.049 | 1034.80 | 0.137 |
| 50 | 9.149 | | 0.0000 | 0.000 | 41927.5 | 2.205 | BV | 0.088 | 7928.26 | 1.046 |
| 51 | 9.253 | | 0.0000 | 0.000 | 13217.6 | 0.695 | VB | 0.062 | 3540.50 | 0.467 |
| 52 | 9.451 | | 0.0000 | 0.000 | 1059.6 | 0.056 | BB | 0.035 | 500.28 | 0.066 |
| 53 | 9.556 Methoxychlor | | 408.8286 | 27.105 | 183397.0 | 9.646 | BB | 0.043 | 71161.19 | 9.389 |
| 54 | 9.765 | | 0.0000 | 0.000 | 123.9 | 0.007 | BB | 0.023 | 90.96 | 0.012 |
| 55 | 10.070 | | 0.0000 | 0.000 | 13319.0 | 0.700 | BV | 0.041 | 5400.06 | 0.712 |
| 56 | 10.136 | | 0.0000 | 0.000 | 20530.4 | 1.080 | VB | 0.068 | 5039.27 | 0.665 |
| 57 | 10.289 Endrin ketone | | 0.6362 | 0.042 | 396.4 | 0.021 | BV | 0.029 | 227.45 | 0.030 |
| 58 | 10.362 | | 0.0000 | 0.000 | 606.5 | 0.032 | VB | 0.038 | 268.90 | 0.035 |
| 59 | 10.515 | | 0.0000 | 0.000 | 4477.7 | 0.236 | BV | 0.063 | 1193.55 | 0.157 |
| 60 | 10.688 | | 0.0000 | 0.000 | 6114.1 | 0.322 | VB | 0.057 | 1784.19 | 0.235 |
| 61 | 11.132 | | 0.0000 | 0.000 | 531.7 | 0.028 | BB | 0.045 | 195.17 | 0.026 |
| 62 | 11.216 | | 0.0000 | 0.000 | 5096.7 | 0.268 | BB | 0.061 | 1403.39 | 0.185 |
| 63 | 11.314 | | 0.0000 | 0.000 | 623.6 | 0.033 | BB | 0.042 | 245.05 | 0.032 |
| 64 | 11.477 | | 0.0000 | 0.000 | 1062.7 | 0.056 | BB | 0.039 | 457.32 | 0.060 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.597 DCB | | 280.5777 | 18.602 | 298842.6 | 15.717 | BB | 0.048 | 104819.30 | 13.830 |
| 66 | 12.091 | | 0.0000 | 0.000 | 14596.2 | 0.768 | BB | 0.475 | 512.03 | 0.068 |
| 67 | 13.105 | | 0.0000 | 0.000 | 2350.8 | 0.124 | BB | 0.196 | 200.04 | 0.026 |

Total Area = 1901355.0, Total Amount = 1508.298, Total Height = 757916.8, Sample Units = PPB

Sample Name: **4219022MSF ABUN7NVMS MS 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 06:10:58pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.22R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

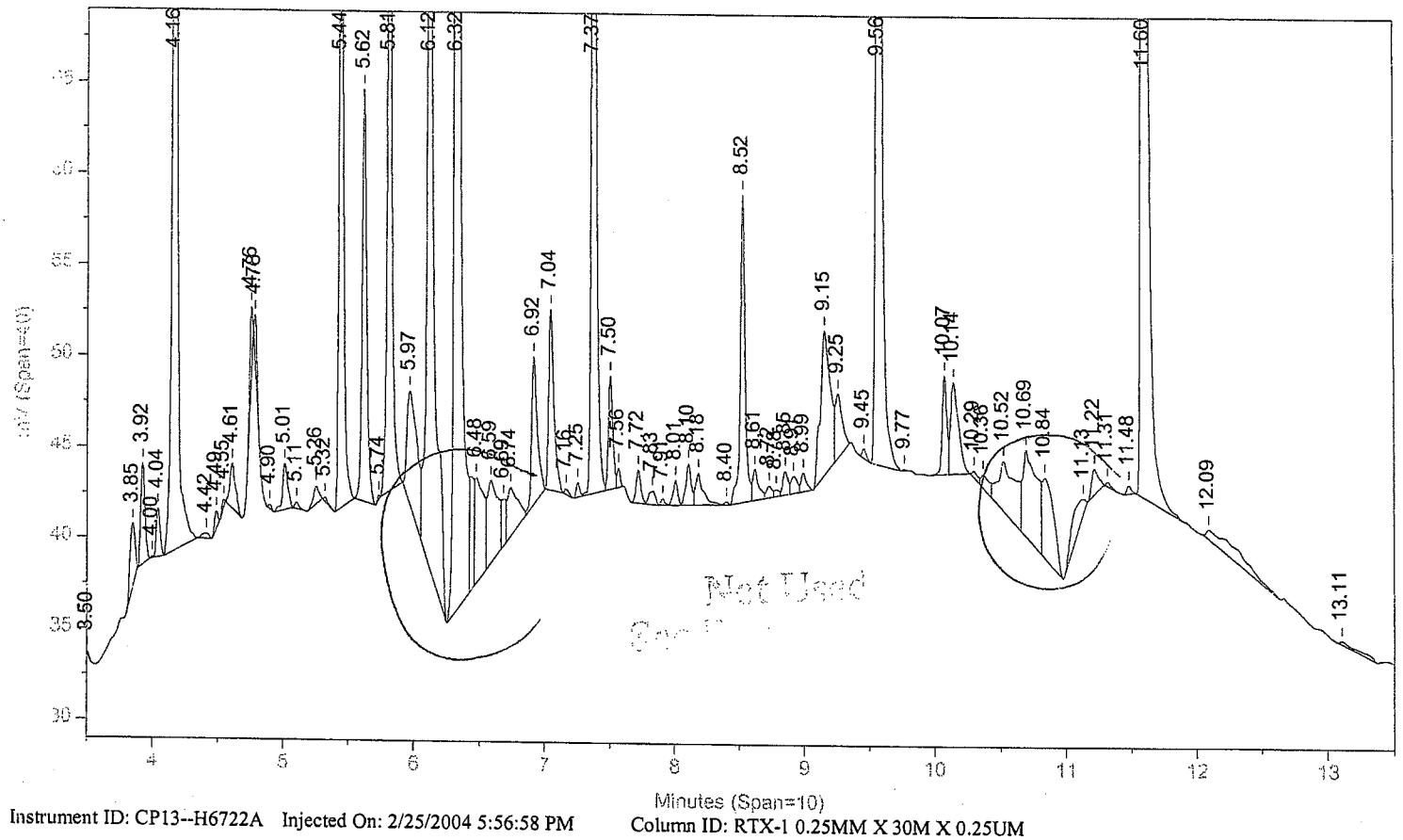
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.134 | | 0.0000 | 0.000 | 26940.8 | 3.042 | BB | 0.052 | 8645.52 | 2.375 |
| 2 | 3.365 | | 0.0000 | 0.000 | 12131.2 | 1.370 | BB | 0.094 | 2156.64 | 0.592 |
| 3 | 3.622 | | 0.0000 | 0.000 | 10676.2 | 1.205 | BB | 0.041 | 4308.18 | 1.184 |
| 4 | 3.819 | | 0.0000 | 0.000 | 5215.3 | 0.589 | BB | 0.059 | 1461.18 | 0.401 |
| 5 | 3.914 | | 0.0000 | 0.000 | 4641.7 | 0.524 | BB | 0.035 | 2209.79 | 0.607 |
| 6 | 4.057 | | 0.0000 | 0.000 | 1024.5 | 0.116 | BB | 0.042 | 408.74 | 0.112 |
| 7 | 4.128 | | 0.0000 | 0.000 | 269.7 | 0.030 | BB | 0.021 | 211.18 | 0.058 |
| 8 | 4.197 TCX | | 214.3869 | 15.040 | 118759.6 | 13.408 | BB | 0.036 | 54527.37 | 14.980 |
| 9 | 4.352 | | 0.0000 | 0.000 | 6086.1 | 0.687 | BB | 0.033 | 3112.57 | 0.855 |
| 10 | 4.398 | | 0.0000 | 0.000 | 1574.4 | 0.178 | BB | 0.032 | 810.89 | 0.223 |
| 11 | 4.564 | | 0.0000 | 0.000 | 4809.2 | 0.543 | BB | 0.112 | 715.68 | 0.197 |
| 12 | 4.741 | | 0.0000 | 0.000 | 2478.5 | 0.280 | BB | 0.048 | 852.38 | 0.234 |
| 13 | 4.910 HCB | | 41.2785 | 2.896 | 38818.6 | 4.383 | BB | 0.040 | 15980.65 | 4.390 |
| 14 | 5.600 gamma-BHC | | 103.6595 | 7.272 | 55155.9 | 6.227 | BB | 0.035 | 26244.31 | 7.210 |
| 15 | 5.788 | | 0.0000 | 0.000 | 20499.8 | 2.314 | BB | 0.037 | 9143.40 | 2.512 |
| 16 | 5.898 | | 0.0000 | 0.000 | 3927.9 | 0.443 | BB | 0.034 | 1926.42 | 0.529 |
| 17 | 6.070 | | 0.0000 | 0.000 | 1109.5 | 0.125 | BV | 0.029 | 648.45 | 0.178 |
| 18 | 6.111 | | 0.0000 | 0.000 | 6266.9 | 0.708 | VB | 0.042 | 2489.59 | 0.684 |
| 19 | 6.215 Heptachlor | | 100.7710 | 7.069 | 60812.0 | 6.866 | BB | 0.035 | 28746.42 | 7.897 |
| 20 | 6.342 | | 0.0000 | 0.000 | 4147.6 | 0.468 | BB | 0.032 | 2152.34 | 0.591 |
| 21 | 6.439 | | 0.0000 | 0.000 | 523.3 | 0.059 | BB | 0.033 | 267.03 | 0.073 |
| 22 | 6.500 | | 0.0000 | 0.000 | 696.6 | 0.079 | BB | 0.031 | 379.34 | 0.104 |
| 23 | 6.747 | | 0.0000 | 0.000 | 14952.6 | 1.688 | BB | 0.044 | 5602.51 | 1.539 |
| 24 | 6.892 Telodrin | | 4.5995 | 0.323 | 2849.7 | 0.322 | BB | 0.040 | 1183.86 | 0.325 |
| 25 | 7.081 | | 0.0000 | 0.000 | 14744.2 | 1.665 | BB | 0.063 | 3893.68 | 1.070 |
| 26 | 7.330 | | 0.0000 | 0.000 | 1919.4 | 0.217 | BV | 0.044 | 723.11 | 0.199 |
| 27 | 7.432 Hept. epoxide | | 157.9481 | 11.080 | 80849.3 | 9.128 | VB | 0.033 | 40736.24 | 11.191 |
| 28 | 7.627 | | 0.0000 | 0.000 | 1553.4 | 0.175 | BV | 0.039 | 661.95 | 0.182 |
| 29 | 7.683 g. Chlordane | | 52.3516 | 3.673 | 33852.9 | 3.822 | VV | 0.041 | 13686.98 | 3.760 |
| 30 | 7.856 | | 0.0000 | 0.000 | 7436.8 | 0.840 | VV | 0.088 | 1409.24 | 0.387 |
| 31 | 8.080 4,4'-DDE | | 4.3123 | 0.303 | 8223.0 | 0.928 | VB | 0.164 | 835.49 | 0.230 |
| 32 | 8.473 | | 0.0000 | 0.000 | 4522.5 | 0.511 | BB | 0.064 | 1176.17 | 0.323 |
| 33 | 8.709 Endrin | | 48.7176 | 3.418 | 21963.7 | 2.480 | BB | 0.037 | 9874.18 | 2.713 |
| 34 | 8.853 4,4'-DDD | | 8.0725 | 0.566 | 2968.3 | 0.335 | BB | 0.049 | 1005.73 | 0.276 |
| 35 | 8.997 Endosulfan II | | 9.8377 | 0.690 | 4873.2 | 0.550 | BB | 0.039 | 2077.22 | 0.571 |
| 36 | 9.128 | | 0.0000 | 0.000 | 1524.0 | 0.172 | BB | 0.063 | 402.59 | 0.111 |
| 37 | 9.247 4,4'-DDT | | 2.2866 | 0.160 | 1835.0 | 0.207 | BB | 0.082 | 371.11 | 0.102 |
| 38 | 9.413 Endrin aldehyde | | 11.6316 | 0.816 | 10146.4 | 1.146 | BB | 0.088 | 1916.22 | 0.526 |
| 39 | 9.719 | | 0.0000 | 0.000 | 7582.2 | 0.856 | BB | 0.045 | 2779.51 | 0.764 |
| 40 | 10.033 | | 0.0000 | 0.000 | 3662.9 | 0.414 | BB | 0.038 | 1619.30 | 0.445 |
| 41 | 10.114 Methoxychlor | | 407.7472 | 28.604 | 97991.9 | 11.063 | BB | 0.040 | 40564.45 | 11.144 |
| 42 | 10.473 Endrin ketone | | 0.6363 | 0.045 | 295.5 | 0.033 | BB | 0.032 | 154.52 | 0.042 |
| 43 | 10.510 | | 0.0000 | 0.000 | 1769.5 | 0.200 | BB | 0.035 | 832.57 | 0.229 |
| 44 | 11.669 | | 0.0000 | 0.000 | 1302.4 | 0.147 | BB | 0.043 | 500.96 | 0.138 |
| 45 | 12.206 DCB | | 257.2548 | 18.047 | 172368.7 | 19.460 | BB | 0.044 | 64593.00 | 17.745 |

Total Area = 885752.4, Total Amount = 1425.492, Total Height = 363998.7, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.22R

C:\CPWIN\DATA1\2C13051.22R

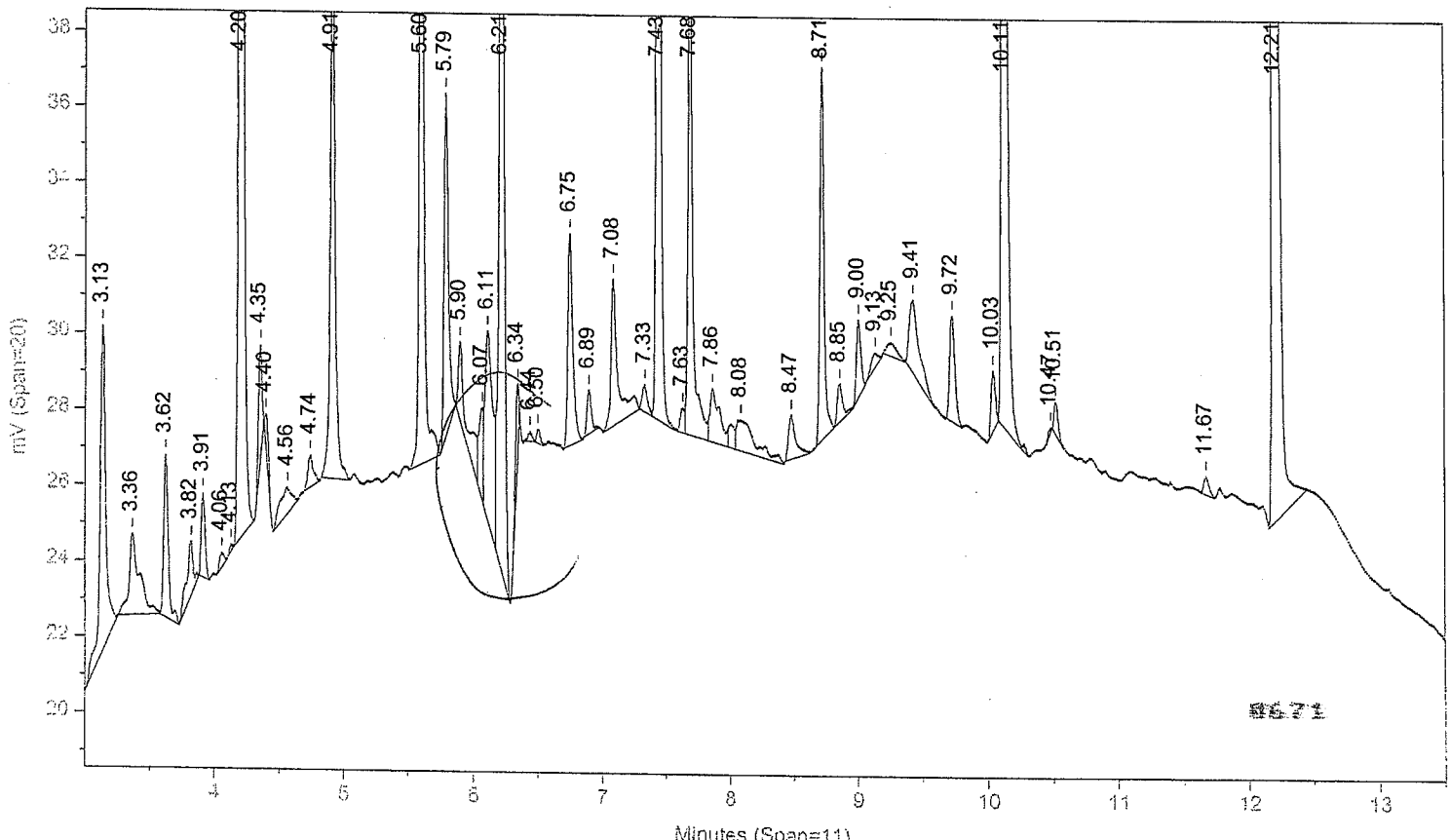



Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.22R

C:\CPWIN\DATA1\2C13051B.22R



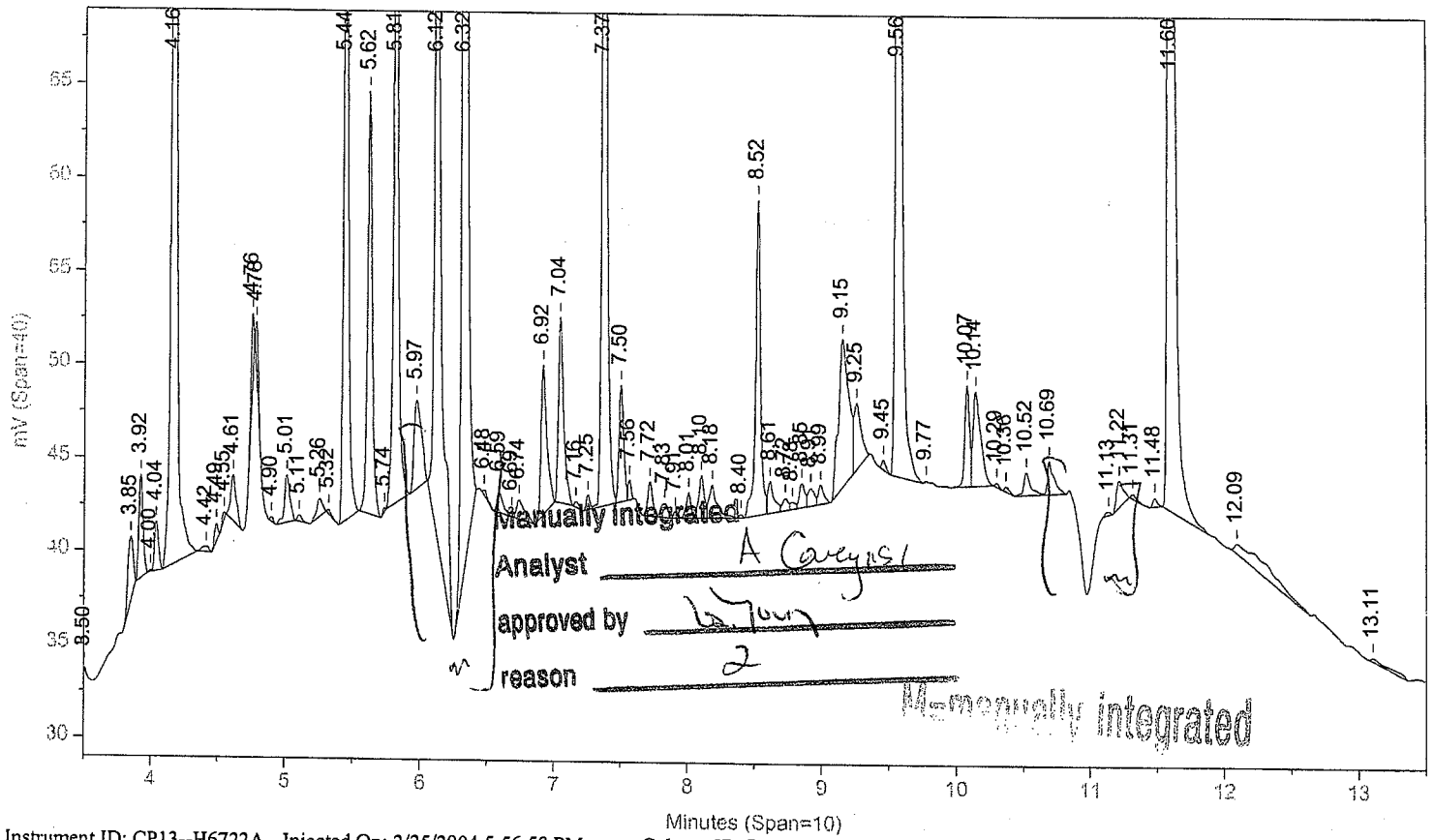

Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.22R

C:\CPWIN\DATA1\2C13051.22R

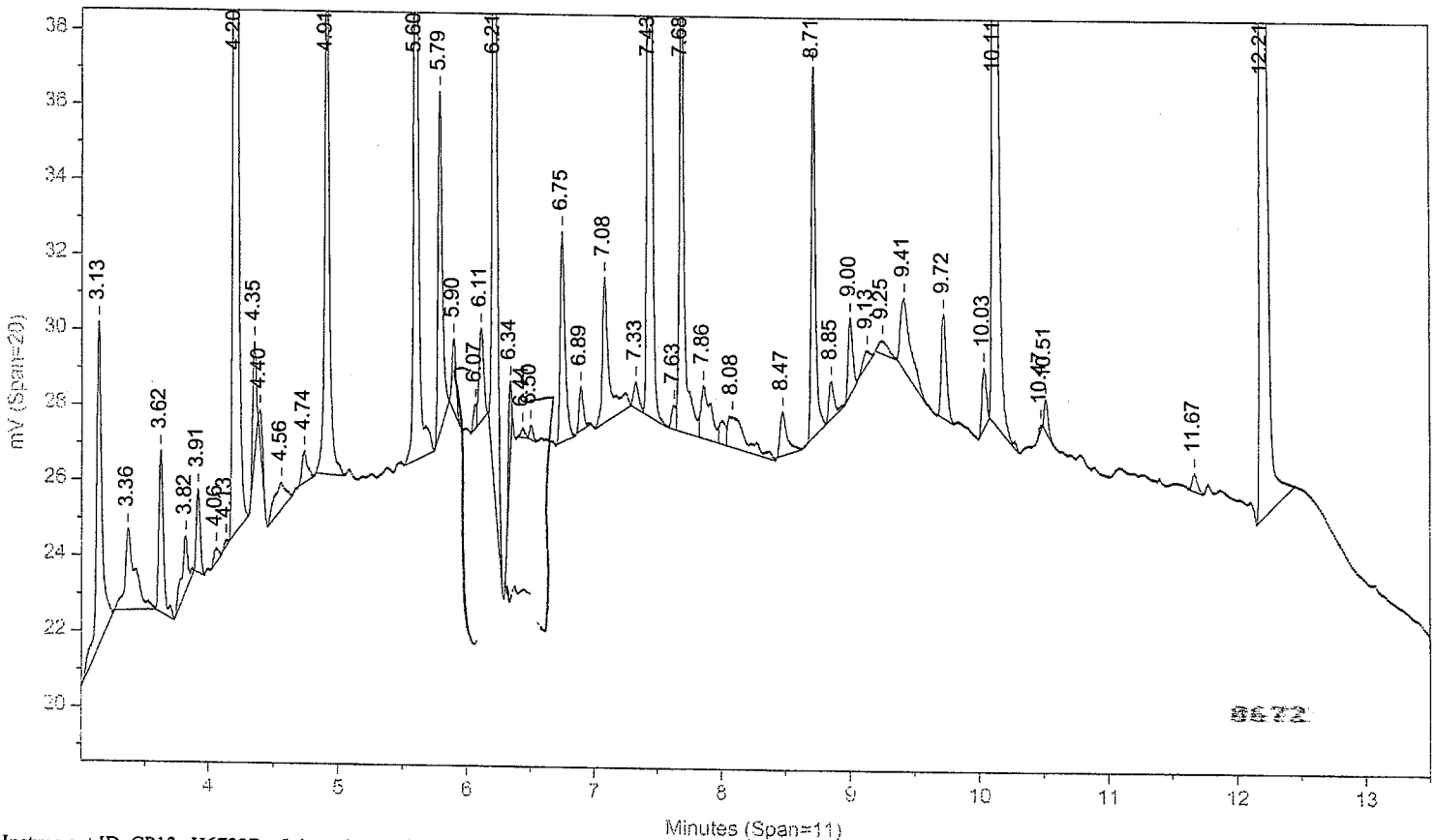



Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.22R

C:\CPWIN\DATA1\2C13051B.22R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

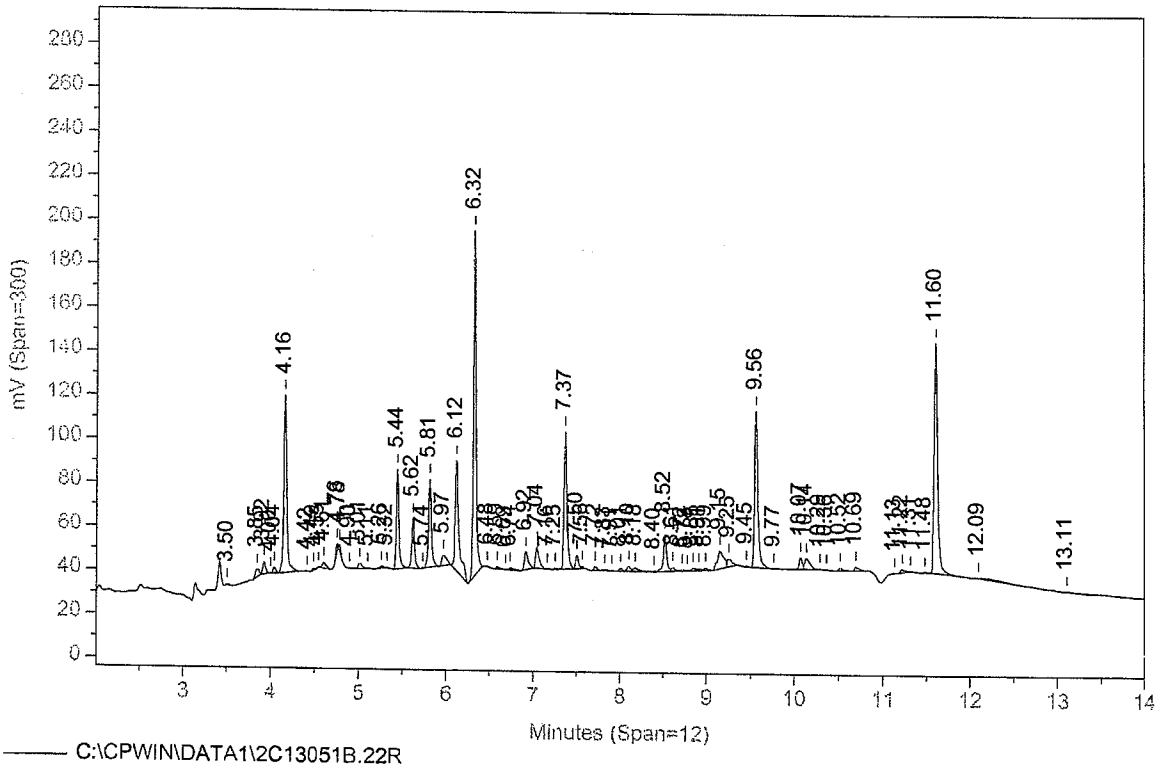
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.162 | 81322 | 1.07078 | TCX | 4.197 | 54527 | 1.07193 | TCX |
| 4.757 | 3599 | .02734 | HCB | 4.91 | 15981 | .20639 | HCB |
| 5.014 | 2526 | .0273 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.443 | 45263 | .49545 | gamma-BHC | 5.6 | 26244 | .5183 | gamma-BHC |
| 5.813 | 40122 | .47133 | delta-BHC | . | 0 | . | delta-BHC |
| 6.12 | 50429 | .48808 | Heptachlor | 6.215 | 28746 | .50385 | Heptachlor |
| . | 0 | . | Telodrin | 6.892 | 1184 | .023 | Telodrin |
| 7.369 | 62532 | 1.142 | o,p-DDE /hept epox | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.432 | 40736 | .78974 | Hept. epoxide |
| 7.564 | 1067 | .0126 | g. Chlordane agc 1151 2.2609 | 7.683 | 13687 | .26176 | g. Chlordane |
| 7.718 | 1827 | .02143 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.827 | 736 | .01079 | 4,4'-DDE | 8.08 | 835 | .02156 | 4,4'-DDE |
| 7.906 | 352 | .00459 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.396 | 176 | .00323 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 16852 | .24788 | Endrin | 8.709 | 9874 | .24359 | Endrin |
| 8.613 | 1699 | .03196 | 4,4'-DDD | 8.853 | 1006 | .04036 | 4,4'-DDD |
| 8.848 | 1318 | .01905 | Endosulfan II | 8.997 | 2077 | .04919 | Endosulfan II |
| 8.987 | 1035 | .01747 | 4,4'-DDT | 9.247 | 371 | .01143 | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.413 | 1916 | .05816 | Endrin aldehyde |
| 9.556 | 71161 | 2.04414 | Methoxychlor | 10.114 | 40564 | 2.03874 | Methoxychlor |
| 10.289 | 227 | .00318 | Endrin ketone | 10.473 | 155 | .00318 | Endrin ketone |
| 11.597 | 104819 | 1.40289 | DCB | 12.206 | 64593 | 1.28627 | DCB |

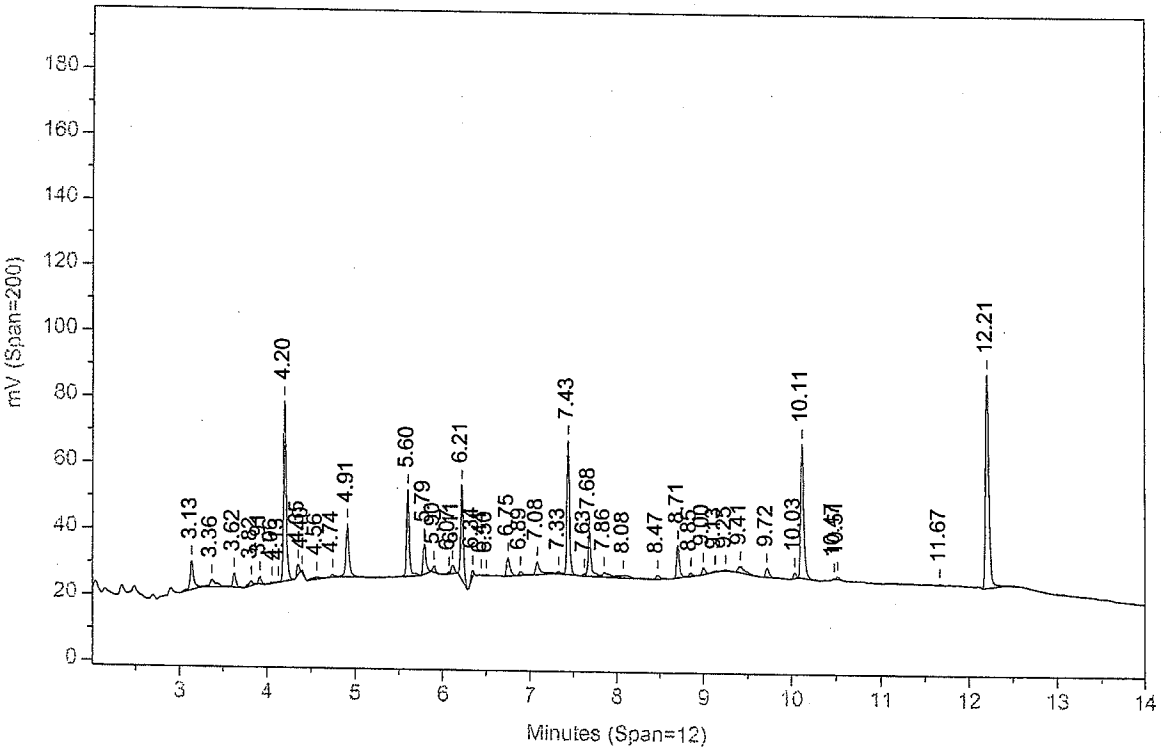
Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 1:26:28 PM
File Reported On: 2/26/2004 at 1:26:30 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.22R




C:\CPWIN\DATA1\2C13051B.22R




8624

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022MSDF UN7NVMS Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

3/18/04

## Analysis Report (A)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722A
Result file : 2C13051.23R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 71.3% Conc.: 1.029314
%SSR(DCB) : 93.9% Conc.: 1.37192

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 78173 | 1.029314 |
| **HCB** | 4.71 | 4.76 | 4.77 | 3518 | 0.026718 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 2775 | 0.029991 |
| **gamma-BHC** | 5.43 | 5.44 | 5.49 | 43394 | 0.474990 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 12386 | 0.145501 |
| **Heptachlor** (3) | 6.10 | 6.12 | 6.16 | 49668 | 0.480712 (3) |
| **o,p-DDE**/hept epox | 7.33 | 7.37 | 7.39 | 60921 | 1.112581/0.689 |
| **g. Chlordane** | 7.52 | 7.56 | 7.58 | 1987 | 0.023464 |
| **a. Chlordane** | 7.70 | 7.71 | 7.76 | 1139 | 0.013365 |
| **4,4'-DDE** | 7.78 | 7.84 | 7.84 | 355 | 0.005205 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 119 | 0.001550 |
| **Dieldrin** | 8.20 | 8.22 | 8.26 | 640 | 0.008788 |
| **o,p-DDT** | 8.35 | 8.39 | 8.41 | 212 | 0.003892 |
| **Endrin** | 8.51 | 8.52 | 8.57 | 16281 | 0.239469 |
| **4,4'-DDD** | 8.57 | 8.61 | 8.63 | 1825 | 0.034322 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 1256 | 0.018163 |
| **Methoxychlor** | 9.54 | 9.56 | 9.60 | 66969 | 1.923721 |
| **Mirex** | 9.78 | 9.80 | 9.84 | 134 | 0.002139 |
| **Endo. sulfate** | 9.91 | 9.92 | 9.97 | 141 | 0.002285 |
| **Endrin ketone** | 10.28 | 10.29 | 10.34 | 205 | 0.002866 |
| **DCB** | 11.59 | 11.60 | 11.65 | 102505 | 1.371920 |

(3 agree) 2.2604

## Analysis Report (B)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722B
Result file : 2C13051B.23R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 72.8% Conc.: 1.050653
%SSR(DCB) : 86% Conc.: 1.25589

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 53445 | 1.050653 |
| **HCB** | 4.87 | 4.91 | 4.93 | 15356 | 0.198322 |
| **gamma-BHC** | 5.58 | 5.60 | 5.64 | 24957 | 0.492883 |
| **Heptachlor** | 6.20 | 6.21 | 6.26 | 27948 | 0.489859 |
| **Telodrin** | 6.87 | 6.90 | 6.93 | 1120 | 0.021755 |
| **Hept. epoxide** | 7.42 | 7.43 | 7.48 | 39484 | 0.765471 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 13454 | 0.257306 |
| **4,4'-DDE** | 8.08 | 8.11 | 8.14 | 971 | 0.025049 |
| **Endrin** | 8.70 | 8.71 | 8.76 | 9444 | 0.232988 |
| **4,4'-DDD** | 8.83 | 8.84 | 8.89 | 772 | 0.031002 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 1964 | 0.046498 |
| **Endrin aldehyde** | 9.40 | 9.42 | 9.46 | 1068 | 0.032404 |
| **Methoxychlor** | 10.10 | 10.11 | 10.16 | 38372 | 1.928540 |
| **Endrin ketone** | 10.43 | 10.48 | 10.49 | 651 | 0.013412 |
| **DCB** | 12.20 | 12.21 | 12.26 | 63067 | 1.255890 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 1.050653 | | | | 2.05 | |
| HCB | B | 0.198322 | | | | ** 152.51 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | B | 0.492883 | 0.05 | 0.01 | | 3.70 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.489859 | 0.05 | 0.01 | | 1.88 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | A | 0.765471 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.257306 | | | | ** 166.57 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | B | 0.025049 | | | | ** 131.18 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.239469 | 0.1 | 0.02 | | 2.74 | 9675 |
| Kepone | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:30:33

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSDF UN7NVMS Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

WS 318104

Analysis Report (A)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722A
Result file : 2C13051.23R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722B
Result file : 2C13051B.23R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | A | 0.034322 | | | | 10.16 | |
| Endosulfan II | B | 0.046498 | | | | ** 87.64 | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | B | 1.928540 | 0.5 | 0.1 | | 0.25 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.013412 | | | | ** 129.57 | |
| DCB | A | 1.371920 | | | | 8.83 | |

Units: ug/l

Reviewed by: Andrea J Carey Date: 2-26-04
Verified by: [signature] Date: 2/26/04

3636

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:30:33

Sample Name: **4219022MSDF ABUN7NVMSD MSD 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 06:31:17pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.23R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 13514.1 | 0.758 | BB | 0.045 | 5000.79 | 0.711 |
| 2 | 3.919 | | 0.0000 | 0.000 | 15758.2 | 0.884 | BB | 0.035 | 7562.88 | 1.075 |
| 3 | 3.993 | | 0.0000 | 0.000 | 149.7 | 0.008 | BB | 0.017 | 150.07 | 0.021 |
| 4 | 4.040 | | 0.0000 | 0.000 | 5088.2 | 0.286 | BB | 0.035 | 2418.01 | 0.344 |
| 5 | 4.161 | TCX | 205.8628 | 14.808 | 169571.8 | 9.516 | BB | 0.036 | 78172.77 | 11.114 |
| 6 | 4.421 | | 0.0000 | 0.000 | 853.7 | 0.048 | BB | 0.071 | 201.55 | 0.029 |
| 7 | 4.489 | | 0.0000 | 0.000 | 3052.3 | 0.171 | BB | 0.030 | 1674.88 | 0.238 |
| 8 | 4.544 | | 0.0000 | 0.000 | 616.2 | 0.035 | BB | 0.024 | 424.61 | 0.060 |
| 9 | 4.608 | | 0.0000 | 0.000 | 6617.2 | 0.371 | BB | 0.049 | 2245.28 | 0.319 |
| 10 | 4.755 | HCB | 5.3437 | 0.384 | 6251.8 | 0.351 | BB | 0.030 | 3517.75 | 0.500 |
| 11 | 4.782 | | 0.0000 | 0.000 | 3407.1 | 0.191 | BB | 0.022 | 2629.30 | 0.374 |
| 12 | 4.899 | | 0.0000 | 0.000 | 432.2 | 0.024 | BB | 0.023 | 308.85 | 0.044 |
| 13 | 5.013 | alpha-BHC | 5.9982 | 0.431 | 7535.3 | 0.423 | BB | 0.045 | 2775.44 | 0.395 |
| 14 | 5.100 | | 0.0000 | 0.000 | 583.7 | 0.033 | BB | 0.033 | 296.20 | 0.042 |
| 15 | 5.253 | | 0.0000 | 0.000 | 7747.6 | 0.435 | BB | 0.090 | 1430.54 | 0.203 |
| 16 | 5.442 | gamma-BHC | 94.9980 | 6.833 | 91705.0 | 5.146 | BB | 0.035 | 43394.09 | 6.170 |
| 17 | 5.620 | | 0.0000 | 0.000 | 52210.2 | 2.930 | BB | 0.039 | 22096.39 | 3.142 |
| 18 | 5.811 | delta-BHC | 29.1003 | 2.093 | 34003.9 | 1.908 | BB | 0.046 | 12385.66 | 1.761 |
| 19 | 5.947 | | 0.0000 | 0.000 | 2147.7 | 0.121 | BB | 0.077 | 465.06 | 0.066 |
| 20 | 6.119 | Heptachlor | 96.1424 | 6.916 | 146143.6 | 8.201 | BB | 0.049 | 49667.73 | 7.062 |
| 21 | 6.324 | | 0.0000 | 0.000 | 314561.1 | 17.653 | BB | 0.034 | 152002.60 | 21.611 |
| 22 | 6.477 | | 0.0000 | 0.000 | 517.6 | 0.029 | BB | 0.031 | 279.38 | 0.040 |
| 23 | 6.589 | | 0.0000 | 0.000 | 3886.9 | 0.218 | BV | 0.059 | 1104.69 | 0.157 |
| 24 | 6.740 | | 0.0000 | 0.000 | 4011.8 | 0.225 | VB | 0.085 | 784.13 | 0.111 |
| 25 | 6.914 | | 0.0000 | 0.000 | 20372.9 | 1.143 | BB | 0.049 | 6863.44 | 0.976 |
| 26 | 7.043 | | 0.0000 | 0.000 | 27794.8 | 1.560 | BB | 0.046 | 10004.37 | 1.422 |
| 27 | 7.163 | | 0.0000 | 0.000 | 782.6 | 0.044 | BB | 0.038 | 339.82 | 0.048 |
| 28 | 7.252 | | 0.0000 | 0.000 | 1455.4 | 0.082 | BB | 0.030 | 809.87 | 0.115 |
| 29 | 7.368 | o,p-DDE | 222.5162 | 16.006 | 139899.0 | 7.851 | BV | 0.038 | 60921.01 | 8.662 |
| 30 | 7.500 | | 0.0000 | 0.000 | 16915.4 | 0.949 | VV | 0.043 | 6577.66 | 0.935 |
| 31 | 7.564 | g. Chlordane | 4.6928 | 0.338 | 6385.0 | 0.358 | VV | 0.054 | 1987.45 | 0.283 |
| 32 | 7.715 | a. Chlordane | 2.6731 | 0.192 | 2948.0 | 0.165 | VV | 0.043 | 1139.29 | 0.162 |
| 33 | 7.842 | 4,4'-DDE | 1.0410 | 0.075 | 1308.6 | 0.073 | VB | 0.061 | 355.33 | 0.051 |
| 34 | 7.901 | Endosulfan I | 0.3099 | 0.022 | 158.2 | 0.009 | BB | 0.022 | 118.74 | 0.017 |
| 35 | 8.006 | | 0.0000 | 0.000 | 1338.1 | 0.075 | BV | 0.045 | 495.05 | 0.070 |
| 36 | 8.102 | | 0.0000 | 0.000 | 4806.5 | 0.270 | VV | 0.064 | 1252.83 | 0.178 |
| 37 | 8.178 | | 0.0000 | 0.000 | 2100.9 | 0.118 | VV | 0.048 | 731.89 | 0.104 |
| 38 | 8.220 | Dieldrin | 1.7577 | 0.126 | 2002.1 | 0.112 | VB | 0.052 | 640.42 | 0.091 |
| 39 | 8.387 | o,p-DDT | 0.7783 | 0.056 | 432.9 | 0.024 | BB | 0.034 | 211.92 | 0.030 |
| 40 | 8.519 | Endrin | 47.8939 | 3.445 | 38681.1 | 2.171 | BV | 0.040 | 16280.69 | 2.315 |
| 41 | 8.612 | 4,4'-DDD | 6.8643 | 0.494 | 6245.0 | 0.350 | VV | 0.057 | 1824.78 | 0.259 |
| 42 | 8.722 | | 0.0000 | 0.000 | 2176.9 | 0.122 | VV | 0.050 | 725.06 | 0.103 |
| 43 | 8.849 | Endosulfan II | 3.6326 | 0.261 | 3617.8 | 0.203 | VV | 0.048 | 1256.17 | 0.179 |
| 44 | 8.910 | | 0.0000 | 0.000 | 2438.1 | 0.137 | VV | 0.053 | 761.10 | 0.108 |
| 45 | 8.991 | | 0.0000 | 0.000 | 1663.2 | 0.093 | VB | 0.054 | 510.83 | 0.073 |
| 46 | 9.148 | | 0.0000 | 0.000 | 43821.1 | 2.459 | BV | 0.092 | 7972.43 | 1.133 |
| 47 | 9.253 | | 0.0000 | 0.000 | 22672.9 | 1.272 | VB | 0.091 | 4136.93 | 0.588 |
| 48 | 9.452 | | 0.0000 | 0.000 | 1504.1 | 0.084 | BB | 0.036 | 693.06 | 0.099 |
| 49 | 9.555 | Methoxychlor | 384.7443 | 27.676 | 174771.5 | 9.808 | BB | 0.043 | 66969.04 | 9.521 |
| 50 | 9.797 | Mirex | 0.4278 | 0.031 | 477.8 | 0.027 | BB | 0.059 | 134.35 | 0.019 |
| 51 | 9.916 | Endo. sulfate | 0.4571 | 0.033 | 272.4 | 0.015 | BB | 0.032 | 140.65 | 0.020 |
| 52 | 10.069 | | 0.0000 | 0.000 | 13632.9 | 0.765 | BV | 0.042 | 5386.27 | 0.766 |
| 53 | 10.134 | | 0.0000 | 0.000 | 17276.8 | 0.970 | VB | 0.069 | 4189.49 | 0.596 |
| 54 | 10.288 | Endrin ketone | 0.5732 | 0.041 | 347.8 | 0.020 | BB | 0.028 | 204.91 | 0.029 |
| 55 | 10.364 | | 0.0000 | 0.000 | 517.3 | 0.029 | BB | 0.038 | 226.70 | 0.032 |
| 56 | 10.515 | | 0.0000 | 0.000 | 3717.9 | 0.209 | BV | 0.055 | 1124.45 | 0.160 |
| 57 | 10.721 | | 0.0000 | 0.000 | 4167.2 | 0.234 | VB | 0.065 | 1063.32 | 0.151 |
| 58 | 11.125 | | 0.0000 | 0.000 | 117.2 | 0.007 | BB | 0.033 | 58.68 | 0.008 |
| 59 | 11.216 | | 0.0000 | 0.000 | 4696.2 | 0.264 | BB | 0.063 | 1248.50 | 0.178 |
| 60 | 11.313 | | 0.0000 | 0.000 | 476.9 | 0.027 | BB | 0.039 | 206.14 | 0.029 |
| 61 | 11.474 | | 0.0000 | 0.000 | 1506.9 | 0.085 | BB | 0.041 | 611.27 | 0.087 |
| 62 | 11.596 | DCB | 274.3840 | 19.737 | 294059.0 | 16.502 | BB | 0.048 | 102505.40 | 14.574 |
| 63 | 12.085 | | 0.0000 | 0.000 | 13286.3 | 0.746 | BB | 0.292 | 757.69 | 0.108 |
| 64 | 13.098 | | 0.0000 | 0.000 | 3573.7 | 0.201 | BB | 0.151 | 393.22 | 0.056 |

8677

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 13.438 | | 0.0000 | 0.000 | 6366.1 | 0.357 | BB | 0.357 | 297.56 | 0.042 |
| 66 | 13.929 | | 0.0000 | 0.000 | 796.8 | 0.045 | BB | 0.057 | 233.15 | 0.033 |

Total Area = 1781948.0, Total Amount = 1390.191, Total Height = 703349.6, Sample Units = PPB

Sample Name: **4219022MSDF ABUN7NVMSD MSD 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 06:31:17pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.23R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

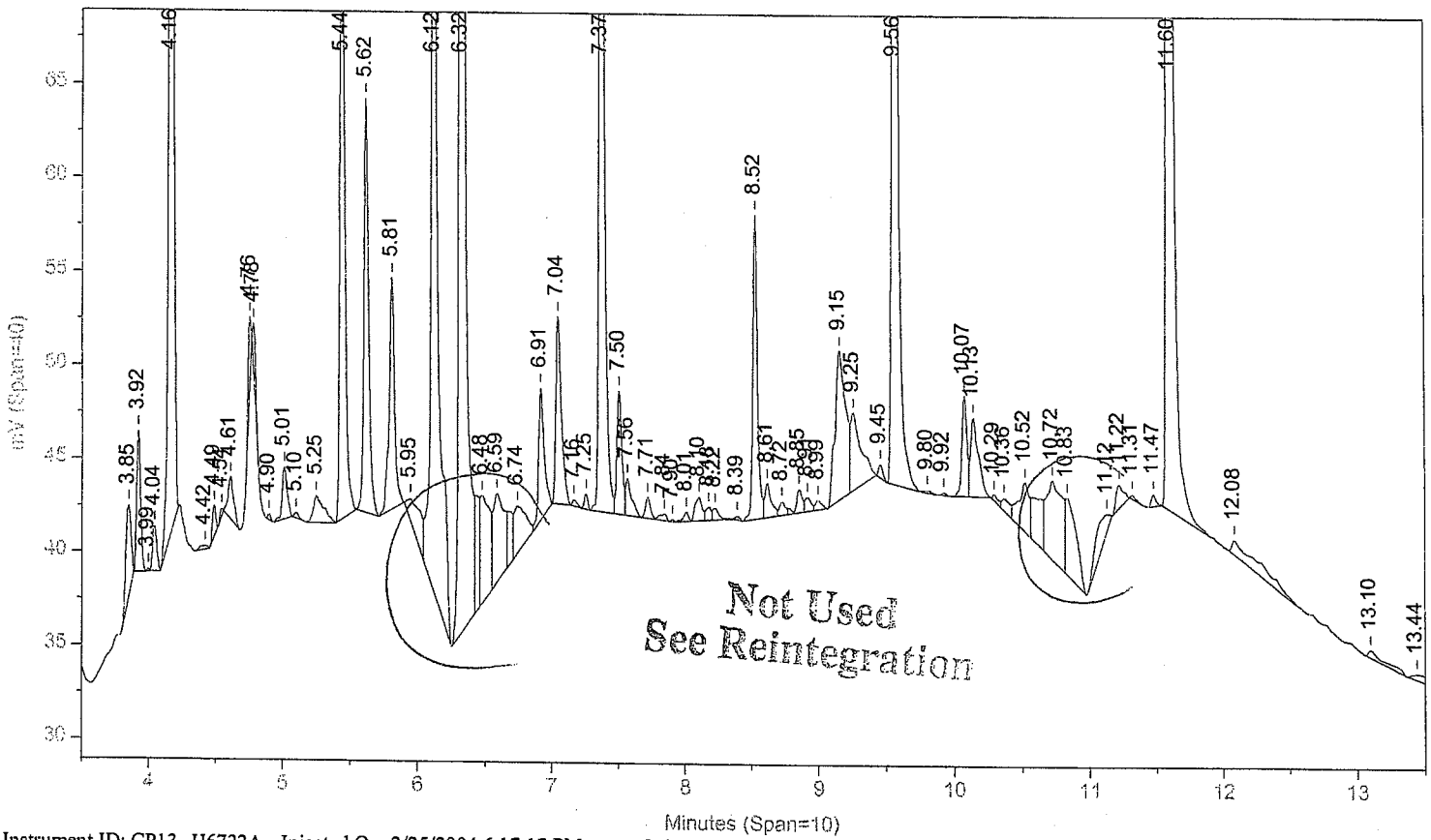
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 30854.6 | 3.609 | BB | 0.050 | 10193.61 | 2.948 |
| 2 | 3.367 | | 0.0000 | 0.000 | 8386.2 | 0.981 | BB | 0.069 | 2039.48 | 0.590 |
| 3 | 3.621 | | 0.0000 | 0.000 | 14408.1 | 1.685 | BB | 0.040 | 5978.91 | 1.729 |
| 4 | 3.783 | | 0.0000 | 0.000 | 1205.1 | 0.141 | BB | 0.069 | 291.07 | 0.084 |
| 5 | 3.815 | | 0.0000 | 0.000 | 1379.5 | 0.161 | BB | 0.026 | 871.01 | 0.252 |
| 6 | 3.867 | | 0.0000 | 0.000 | 219.6 | 0.026 | BB | 0.018 | 201.57 | 0.058 |
| 7 | 3.914 | | 0.0000 | 0.000 | 4558.7 | 0.533 | BB | 0.035 | 2195.20 | 0.635 |
| 8 | 4.057 | | 0.0000 | 0.000 | 1298.7 | 0.152 | BB | 0.045 | 477.95 | 0.138 |
| 9 | 4.129 | | 0.0000 | 0.000 | 543.3 | 0.064 | BB | 0.021 | 438.42 | 0.127 |
| 10 | 4.196 | TCX | 210.1306 | 15.356 | 116234.0 | 13.597 | BB | 0.036 | 53444.81 | 15.457 |
| 11 | 4.353 | | 0.0000 | 0.000 | 5072.9 | 0.593 | BB | 0.032 | 2612.85 | 0.756 |
| 12 | 4.393 | | 0.0000 | 0.000 | 1515.5 | 0.177 | BB | 0.037 | 679.52 | 0.197 |
| 13 | 4.557 | | 0.0000 | 0.000 | 5671.3 | 0.663 | BB | 0.108 | 875.04 | 0.253 |
| 14 | 4.737 | | 0.0000 | 0.000 | 2334.0 | 0.273 | BB | 0.053 | 736.64 | 0.213 |
| 15 | 4.909 | HCB | 39.6644 | 2.899 | 37016.5 | 4.330 | BB | 0.040 | 15355.77 | 4.441 |
| 16 | 5.377 | | 0.0000 | 0.000 | 456.5 | 0.053 | BB | 0.039 | 197.47 | 0.057 |
| 17 | 5.471 | | 0.0000 | 0.000 | 853.5 | 0.100 | BB | 0.048 | 299.28 | 0.087 |
| 18 | 5.599 | gamma-BHC | 98.5766 | 7.204 | 50200.6 | 5.872 | BB | 0.034 | 24957.42 | 7.218 |
| 19 | 5.786 | | 0.0000 | 0.000 | 6156.7 | 0.720 | BB | 0.038 | 2699.50 | 0.781 |
| 20 | 5.899 | | 0.0000 | 0.000 | 4355.2 | 0.509 | BB | 0.035 | 2073.11 | 0.600 |
| 21 | 6.066 | | 0.0000 | 0.000 | 1573.4 | 0.184 | BV | 0.031 | 842.60 | 0.244 |
| 22 | 6.112 | | 0.0000 | 0.000 | 5053.6 | 0.591 | VB | 0.042 | 2018.30 | 0.584 |
| 23 | 6.214 | Heptachlor | 97.9719 | 7.160 | 59475.9 | 6.957 | BB | 0.035 | 27947.93 | 8.083 |
| 24 | 6.340 | | 0.0000 | 0.000 | 4072.8 | 0.476 | BB | 0.034 | 2004.48 | 0.580 |
| 25 | 6.446 | | 0.0000 | 0.000 | 554.0 | 0.065 | BB | 0.040 | 231.48 | 0.067 |
| 26 | 6.505 | | 0.0000 | 0.000 | 2037.1 | 0.238 | BB | 0.087 | 390.64 | 0.113 |
| 27 | 6.745 | | 0.0000 | 0.000 | 12843.7 | 1.502 | BB | 0.044 | 4918.18 | 1.422 |
| 28 | 6.896 | Telodrin | 4.3509 | 0.318 | 2836.8 | 0.332 | BB | 0.042 | 1119.89 | 0.324 |
| 29 | 7.080 | | 0.0000 | 0.000 | 15165.3 | 1.774 | BB | 0.066 | 3825.13 | 1.106 |
| 30 | 7.327 | | 0.0000 | 0.000 | 2012.2 | 0.235 | BV | 0.045 | 743.79 | 0.215 |
| 31 | 7.431 | Hept. epoxide | 153.0943 | 11.188 | 78625.1 | 9.197 | VB | 0.033 | 39484.39 | 11.419 |
| 32 | 7.682 | g. Chlordane | 51.4611 | 3.761 | 40165.6 | 4.698 | BV | 0.050 | 13454.18 | 3.891 |
| 33 | 8.107 | 4,4'-DDE | 5.0098 | 0.366 | 8698.9 | 1.018 | VB | 0.149 | 970.63 | 0.281 |
| 34 | 8.476 | | 0.0000 | 0.000 | 2466.0 | 0.288 | BB | 0.059 | 699.58 | 0.202 |
| 35 | 8.709 | Endrin | 46.5975 | 3.405 | 20677.1 | 2.419 | BB | 0.036 | 9444.47 | 2.731 |
| 36 | 8.844 | 4,4'-DDD | 6.2005 | 0.453 | 2195.2 | 0.257 | BB | 0.047 | 772.50 | 0.223 |
| 37 | 8.997 | Endosulfan II | 9.2995 | 0.680 | 4735.6 | 0.554 | BB | 0.040 | 1963.59 | 0.568 |
| 38 | 9.175 | | 0.0000 | 0.000 | 1300.8 | 0.152 | BB | 0.301 | 72.02 | 0.021 |
| 39 | 9.423 | Endrin aldehyde | 6.4808 | 0.474 | 6489.0 | 0.759 | BB | 0.101 | 1067.67 | 0.309 |
| 40 | 9.719 | | 0.0000 | 0.000 | 8910.8 | 1.042 | BB | 0.054 | 2745.60 | 0.794 |
| 41 | 10.036 | | 0.0000 | 0.000 | 2867.8 | 0.335 | BB | 0.039 | 1213.83 | 0.351 |
| 42 | 10.114 | Methoxychlor | 385.7080 | 28.187 | 95481.9 | 11.169 | BB | 0.041 | 38371.89 | 11.097 |
| 43 | 10.476 | Endrin ketone | 2.6825 | 0.196 | 3264.3 | 0.382 | BB | 0.084 | 651.40 | 0.188 |
| 44 | 11.103 | | 0.0000 | 0.000 | 2964.3 | 0.347 | BB | 0.193 | 255.48 | 0.074 |
| 45 | 11.670 | | 0.0000 | 0.000 | 1318.4 | 0.154 | BB | 0.041 | 541.83 | 0.157 |
| 46 | 11.883 | | 0.0000 | 0.000 | 5635.7 | 0.659 | BB | 0.280 | 335.78 | 0.097 |
| 47 | 12.205 | DCB | 251.1780 | 18.356 | 170719.3 | 19.970 | BB | 0.045 | 63067.21 | 18.239 |

Total Area = 854861.1, Total Amount = 1368.406, Total Height = 345773.1, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.23R

C:\CPWIN\DATA1\2C13051.23R

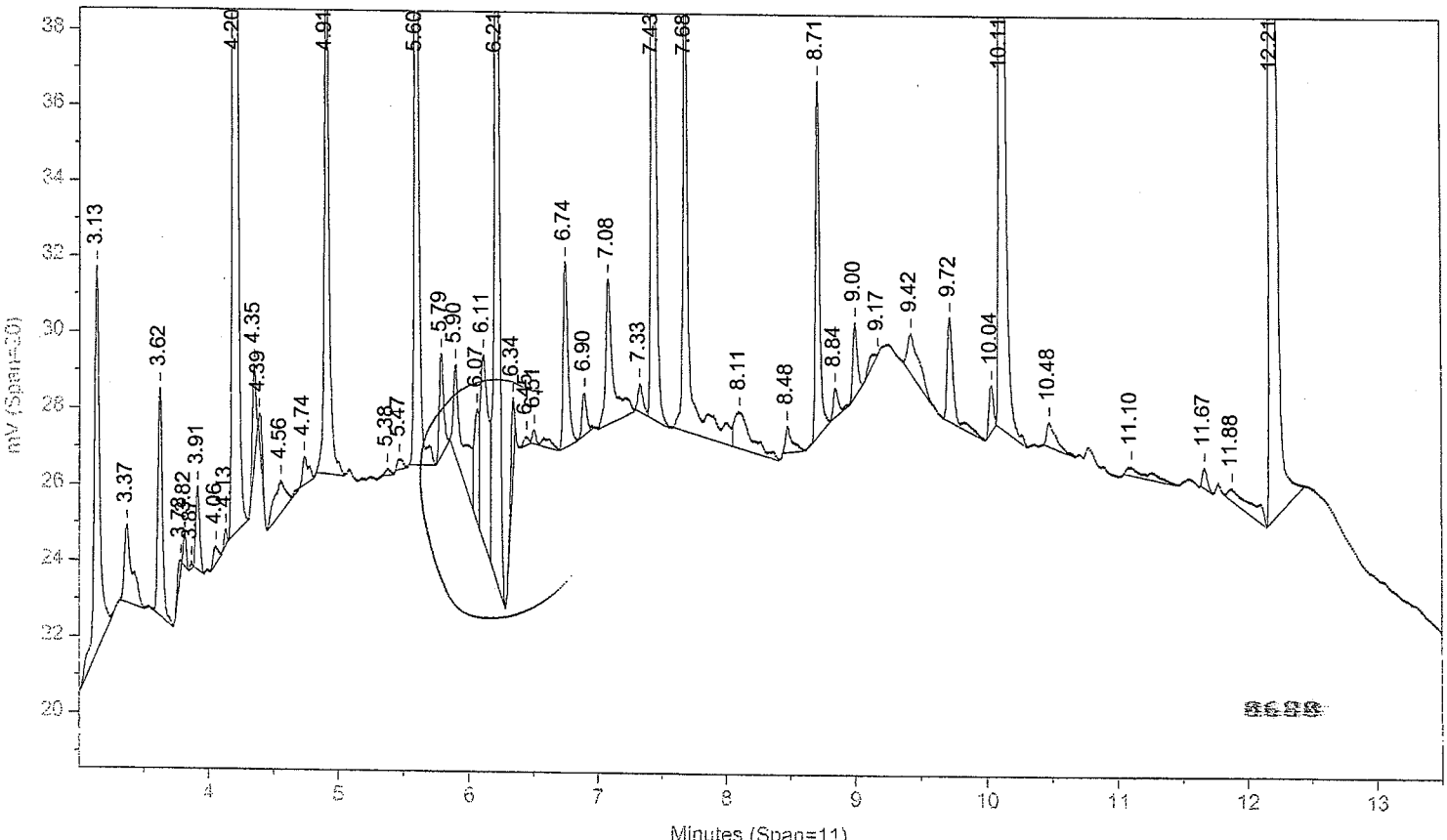



Instrument ID: CP13--H6722A Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.23R

C:\CPWIN\DATA1\2C13051B.23R

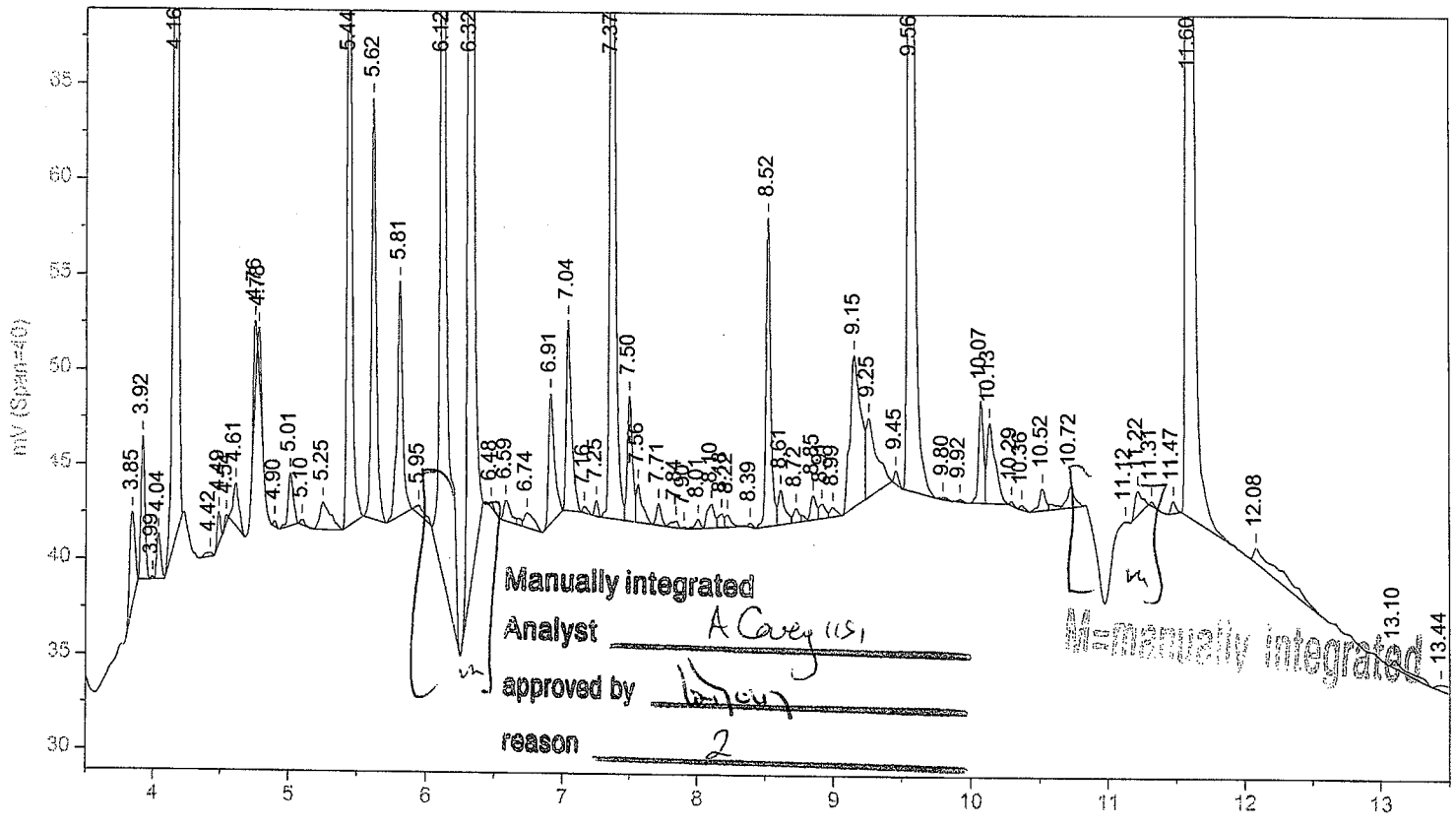



Instrument ID: CP13--H6722B Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.23R

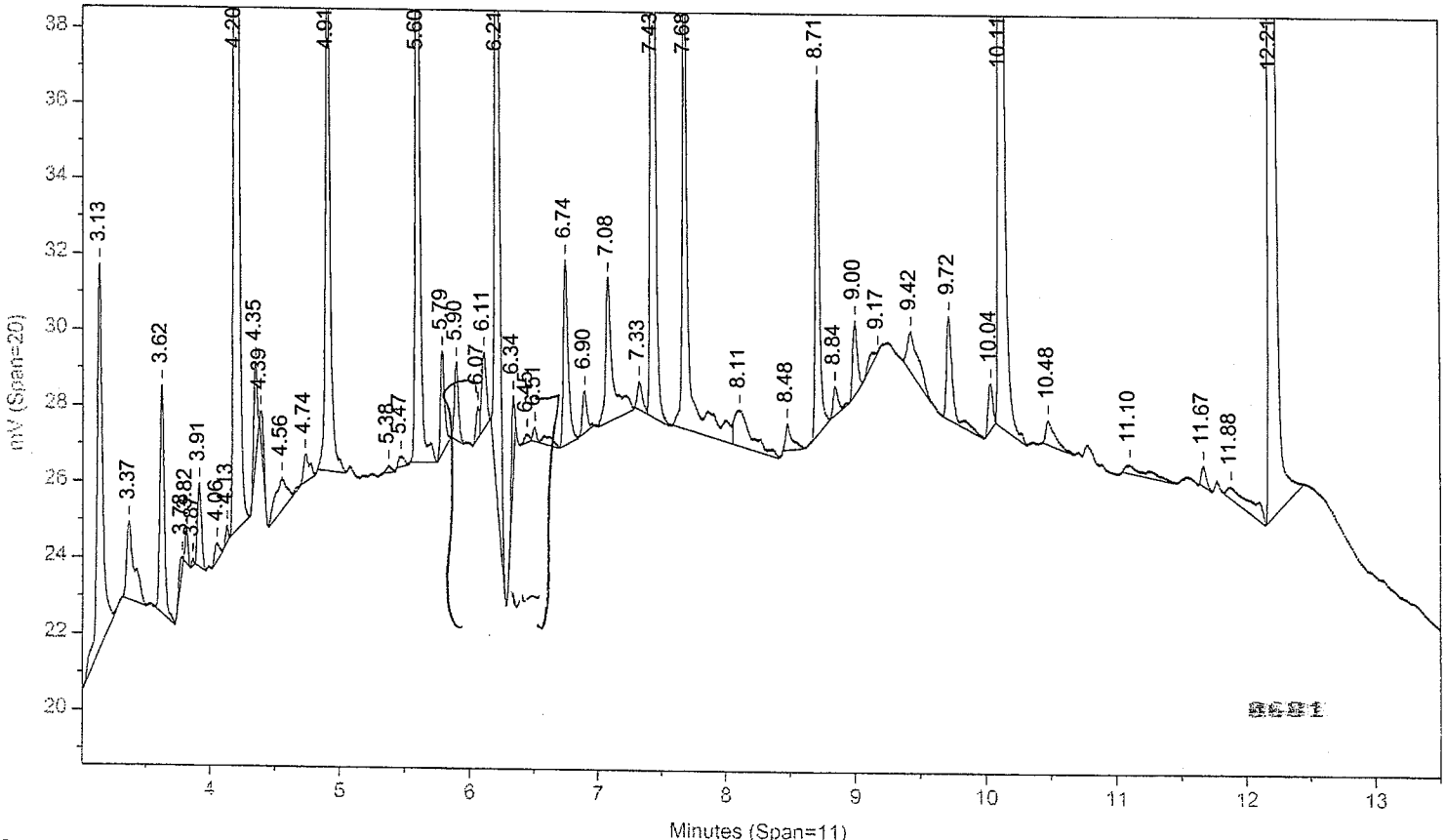
C:\CPWIN\DATA1\2C13051.23R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 6:17:17 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.23R

C:\CPWIN\DATA1\2C13051B.23R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 6:17:17 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 78173 | 1.02931 | TCX | 4.196 | 53445 | 1.05065 | TCX |
| 4.755 | 3518 | .02672 | HCB | 4.909 | 15356 | .19832 | HCB |
| 5.013 | 2775 | .02999 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.442 | 43394 | .47499 | gamma-BHC | 5.599 | 24957 | .49288 | gamma-BHC |
| 5.811 | 12386 | .1455 | delta-BHC | . | 0 | . | delta-BHC |
| 6.119 | 49668 | .48071 | Heptachlor | 6.214 | 27948 | .48986 | Heptachlor |
| . | 0 | . | Telodrin | 6.896 | 1120 | .02175 | Telodrin |
| 7.368 | 60921 | 1.11258 | o,p-DDE / hept epox. | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.431 | 39484 | .76547 | Hept. epoxide |
| 7.564 | 1987 | .02346 | g. Chlordane | 7.682 | 13454 | .25731 | g. Chlordane |
| 7.715 | 1139 | .01337 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.842 | 355 | .00521 | 4,4'-DDE | 8.107 | 971 | .02505 | 4,4'-DDE |
| 7.901 | 119 | .00155 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.22 | 640 | .00879 | Dieldrin | . | 0 | . | Dieldrin |
| 8.387 | 212 | .00389 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 16281 | .23947 | Endrin | 8.709 | 9444 | .23299 | Endrin |
| 8.612 | 1825 | .03432 | 4,4'-DDD | 8.844 | 772 | .031 | 4,4'-DDD |
| 8.849 | 1256 | .01816 | Endosulfan II | 8.997 | 1964 | .0465 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.423 | 1068 | .0324 | Endrin aldehyde |
| 9.555 | 66969 | 1.92372 | Methoxychlor | 10.114 | 38372 | 1.92854 | Methoxychlor |
| 9.797 | 134 | .00214 | Mirex | . | 0 | . | Mirex |
| 9.916 | 141 | .00229 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.288 | 205 | .00287 | Endrin ketone | 10.476 | 651 | .01341 | Endrin ketone |
| 11.596 | 102505 | 1.37192 | DCB | 12.205 | 63067 | 1.25589 | DCB |

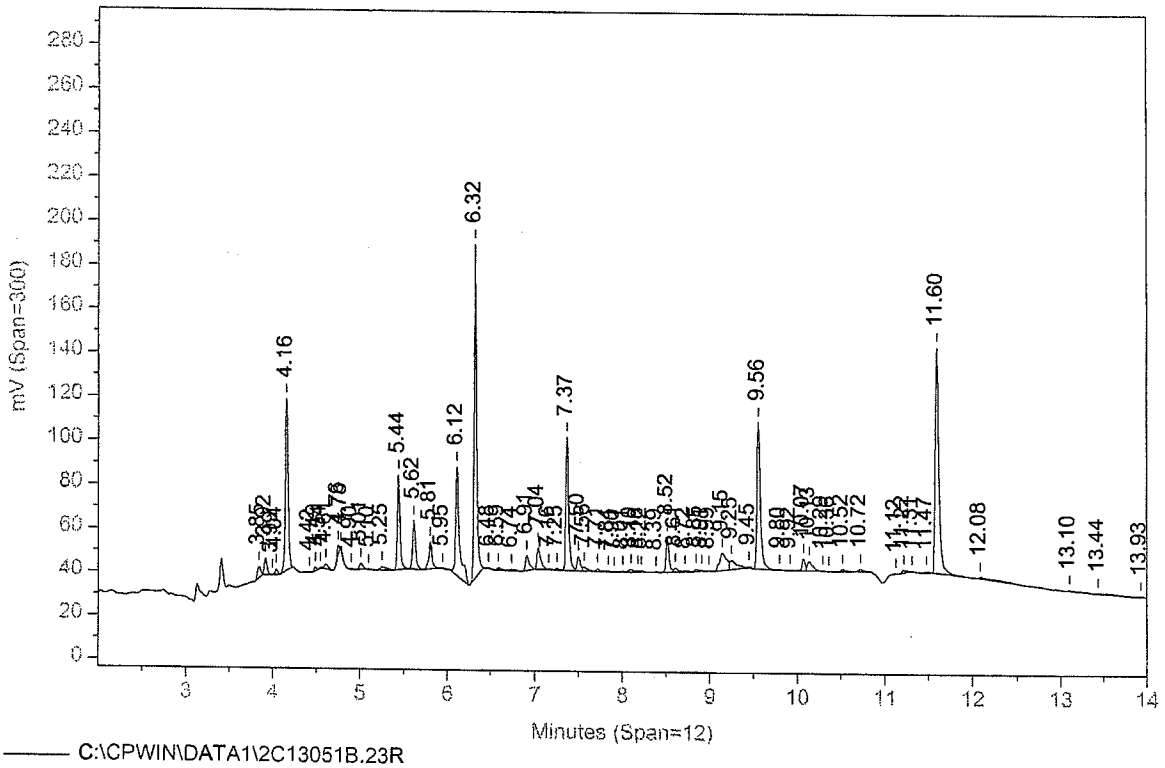
aye 1151 2.26-04

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 1:28:18 PM
File Reported On: 2/26/2004 at 1:28:20 PM

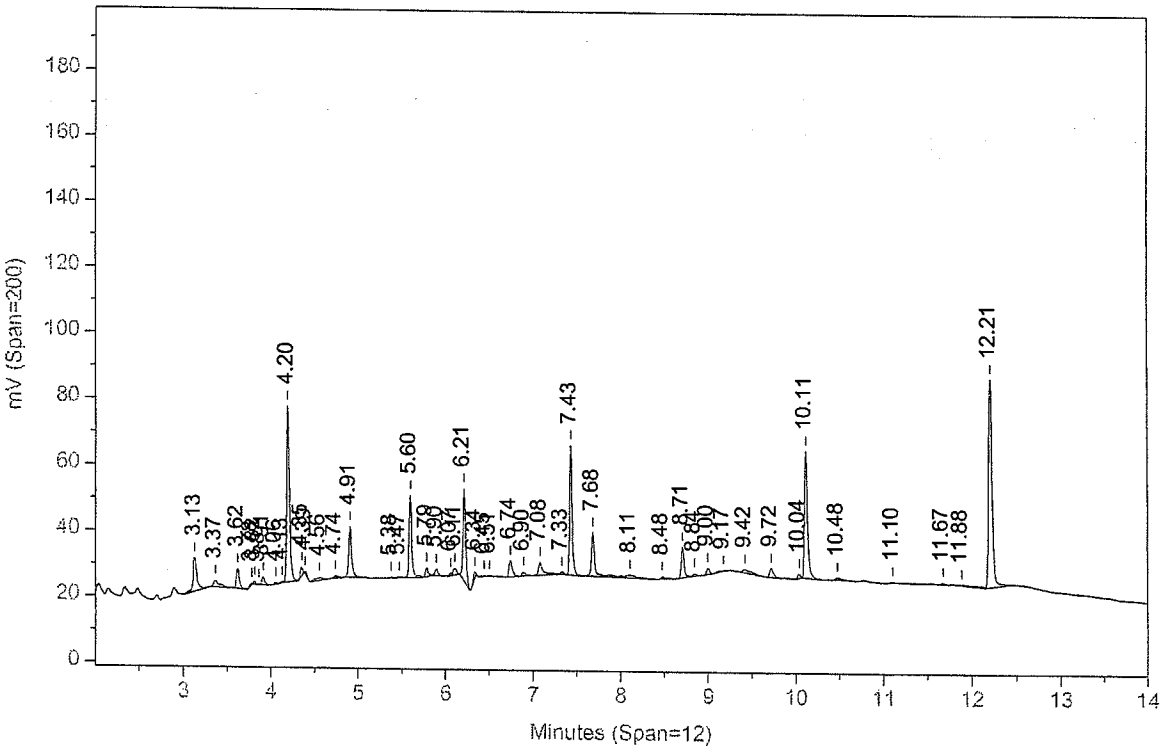
8682

10X REPLOTS

C:\CPWIN\DATA1\2C13051.23R




C:\CPWIN\DATA1\2C13051B.23R



# Organic Extraction Batchlog

Prep Analysis # 00817 Water Sample Pest. Extraction

Prep Group # 6 Pesticide Leachates Dept: 24

Reviewed: GJ

Start Date: 2-25-04

Start Time: 2:00

Tech 1: DH 1825

Tech 2: DW482

BATCH NO. 040550003A

| QC | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKXG | 200/1000 | SS0402924A | 1.0 | — | — | 10.0 | 6 | Z | | DF 1:10 text fluid |
| LCSA | LCSVQ | 〃 | SS0402924A | 〃 | MS03245F | 1.0 | 〃 | 6 | Z | | 〃 1230022304A |
| 4219022MS | UN7NVMS | 200 | SS0402924A | 〃 | MS03245F | 〃 | 〃 | 7 | 2 | 30A | clear |
| 4219022MSD | UN7NVMSD | 〃 | SS0402924A | 〃 | MS03245F | 〃 | 〃 | 7 | 2 | 〃 | 〃 |

| | Sample # | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4219006 | UN5NV | 200 | SS0402924A | 1.0 | 100 | 6 | → | 30A | clear | 950 | 3/2/04 | P |
| 2 | 4219022 bkg | UN7NV | 〃 | SS0402924A | 〃 | 〃 | 7 | | 〃 | 〃 | 950 | 3/2/04 | P |
| 3 | 4219669 | TC407 | 〃 | SS0402924A | 〃 | 〃 | 5 | | 〃 | 〃 | 950 | 3/4/04 | P |
| 4 | 4221331 | BLA20 | 〃 | SS0402924A | 〃 | 〃 | 5 | | 〃 | 〃 | 950 | 3/3/04 | P |
| 5 | 4221332 | BLA44 | 〃 | SS0402924A | 〃 | 〃 | 5 | | 〃 | 〃 | 950 | 3/3/04 | P |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

DH 1825
2-25-04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS0402924A SW846 SURROGATE STANDARD

MS03245F TCLP PEST SPIKE

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| $MeCl_2$ | A020558 | Z | |
| $NaHSO_4$ | 026838 | | |
| Hexane | 451e11 | Work Station: | Hz Bench 2 |
| Internal Standar | | Balance # | — |

| S-bath ID | Y | 47°C | S-bath ID | — | — °C | N-Evap | — °C |
|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected. 040550003A

8685

DW482

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 00817 Water Sample Pest. Extraction

**Prep Group #** 6 Pesticide Leachates

**Verified:** RB

**Start Date:** 2-25-04

**Start Time:** 500

**Tech 1:** D.H 1429

**Tech 2:** DW482

**BATCH NO.** 040550003A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2.0 | 2.0 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4219022MS | | | | | | 950 |
| 4 | 4219022MSD | | | | | | 950 |
| 5 | 4219006 | | | | | | 950 |
| 6 | 4219022 | | | | | | 950 |
| 7 | 4219669 | | | | | | 950 |
| 8 | 4221331 | | | | | | 950 |
| 9 | 4221332 | | | | | | 950 |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

D.H 1429
2-25-04

**Additional Comment:** _____

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 1:1 Acetone/Hexane | I425021504A | | |
| | Z | | Z |
| Florisil | 205510-AR | | |

| S-Evap/bath | °C | S-Evap/bath | °C | N-Evap 5 | 38 °C |
|---|---|---|---|---|---|

The documented temperatures are NIST corrected.

# Herbicides Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV01**

## LANCASTER LABORATORIES

## TCLP Herbicides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **LEACHATE** | **COMMENTS** |
| BLANKA | PBLKXH | | X | Method Blank |
| LCSA | LCSVR | | X | Laboratory Control Spike |
| 4219006 | UN5NV | | X | |
| 4219022 | UN7NV | | X | Background |
| 4219022MS | UN7NVMS | | X | Matrix Spike |
| 4219022MSD | UN7NVMSD | | X | Matrix Spike Dup |
| | | | | |

### A. Sample Preparation:

Florisil cleanup was used to minimize interferences. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1H14048, 1H14048B, 2H14048, 2H14048B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

### C. Quality Control:

The DCAA surrogate is outside the QC limits for sample UN7NV. Since the recovery is outside specification high and no analytes of interest have been detected, the data has been reported. All other reported surrogates are within the QC limits.

The matrix spike data are within the QC limits.

The LCS data are within the QC limits.

### D. Data Interpretation:

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.

No further interpretation is needed.

Lancaster Laboratories

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

Michelle S. Tull for: 2-29-04

**Jenifer E. Hess, Group Leader** **Date**

# QC Summary

# 2
# SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: RAV01

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

| SAMPLE | SAMPLE CODE NO. | DCAA 1 % REC # | DCAA 2 % REC # | TOT OUT |
|---|---|---|---|---|
| 4219006 | UN5NV | 133 | 132 | 0 |
| 4219022 | UN7NV | 171 * | 165 * | 2 |
| 4219022 MS | UN7NVMS | 125 | 116 | 0 |
| 4219022 MSD | UN7NVMSD | 128 | 125 | 0 |
| BLANKA | PBLKXH | 110 | 105 | 0 |
| LCSA | LCSVR | 87 | 90 | 0 |

| | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|
| DCAA = Dichlorophenylacetic acid | (40 - 154) | 40 | ug/Kg |

# Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

# Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: UN7NV

| Compound | Spike Added (ug/l) | Sample Concen (ug/l) | MS Concen (ug/l) | MSD Concen (ug/l) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| 2,4-D | 10 | 0 | 12 | 13 | 120 | 130 | (38 - 176) | 8 | 30 |
| 2,4,5-TP | 10 | 0 | 12 | 13 | 120 | 130 | (50 - 134) | 8 | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

Comments: Results calculated on as-received basis.

8693

Sample No.: 4219022 Batch: 040550004A

# Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSVR

| Compound | Spike Added (ug/l) | LCS Concen (ug/l) | LCSD Concen (ug/l) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| 2,4-D | 10 | 8.4 | | 84 | | (53 - 145) | | 30 |
| 2,4,5-TP | 10 | 8.7 | | 87 | | (55 - 128) | | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 2 outside limits

Comments: Results calculated on as-received basis.

8654

Sample No.: LCSA Batch: 040550004A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKXH

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV01

Lab Sample ID BLANKA

Lab File ID: 2H14048.05R 2H14048B.05R

Matrix: (soil/water) LEACHATE

Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N

Date Extracted: 2/24/04

Date Analyzed (1): 2/25/04

Date Analyzed (2): 2/25/04

Time Analyzed (1): 11:15:44

Time Analyzed (2): 11:15:44

Instrument ID (1): H8456A

Instrument ID (2): H8456B

GC Column: RTX-CLP ID: 0.32 (mm)

GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | UN5NV | 4219006 | 2/25/04 | 2/25/04 |
| 02 | UN7NV | 4219022 | 2/25/04 | 2/25/04 |
| 03 | UN7NVMS | 4219022 | 2/25/04 | 2/25/04 |
| 04 | UN7NVMSD | 4219022 | 2/25/04 | 2/25/04 |
| 05 | PBLKXH | BLANKA | 2/25/04 | 2/25/04 |
| 06 | LCSVR | LCSA | 2/25/04 | 2/25/04 |

8695

COMMENTS: _____

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKXG

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** LEACHATE **Lab Sample ID:** BLANKA

**Sample wt/vol:** 200 (g/ml) ml **Lab File ID:** 2C13051.18R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SEPF **Date Extracted:** 2/25/04

**Concentrated Extract Volume:** 10000 (uL) **Date Analyzed:** 2/25/04

**Injection Volume:** 2 (uL) **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/l | Q |
|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.010 | U |
| 76-44-8 | Heptachlor | 0.010 | U |
| 1024-57-3 | Heptachlor epoxide | 0.010 | U |
| 72-20-8 | Endrin | 0.020 | U |
| 72-43-5 | Methoxychlor | 0.10 | U |
| 57-74-9 | Chlordane (Technical) | 0.35 | U |
| 8001-35-2 | Toxaphene | 1.5 | U |

8695

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 00952 Name: TCLP Herbicides

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| 2,4-D | ug/l | 10 | 2 |
| 2,4,5-TP | ug/l | 1 | 0.2 |

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4219006** F UN5NV Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV01 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 13:28:28
Instrument : CP14--H8456A
Result file : 2H14048.10R
Calibration file : 1H14048.CAL
Method file : HERW.MET

%SSR(DCAA) : 133.4% Conc.: 53.374687

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.21 | 4.28 | 212 | 1.082143 |
| **3,5-DCBA** | 9.44 | 9.61 | 9.67 | 4187 E | 0.819606 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 11164 | 53.374687 |
| **MCPP** | 10.10 | 10.19 | 10.29 | 83 | 105.813728 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1566 | 1198.499268 |
| **2,4-DP** | 10.78 | 10.79 | 10.97 | 383 | 1.719565 |
| **2,4-D** | 11.07 | 11.23 | 11.26 | 450 | 2.247846 |
| **PCP** | 11.53 | 11.66 | 11.73 | 390 | 0.157470 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 31010 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.30 | 12.35 | 87 | 0.104252 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 697 | 1.104900 |
| **2,4-DB** | 13.19 | 13.32 | 13.40 | 133 | 1.727971 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 833 | 1.669460 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 150 E | 0.017551 |

## Analysis Report (B)

Injected on : FEB 25, 2004 13:28:28
Instrument : CP14--H8456B
Result file : 2H14048B.10R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET

%SSR(DCAA) : 132.4% Conc.: 52.952187

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.82 | 3.89 | 754 | 3.556566 |
| **3,5-DCBA** | 8.79 | 8.91 | 9.00 | 852 E | 0.144269 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 12625 | 52.952187 |
| **DICAMBA** | 9.56 | 9.59 | 9.75 | 520 | 0.540362 |
| **MCPP** | 9.65 | 9.75 | 9.83 | 462 | 428.562927 |
| **MCPA** | 9.93 | 9.92 | 10.11 | 567 | 348.410248 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 984 | 3.615120 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 39170 | 2.004000 |
| **2,4,5-TP** | 11.72 | 11.76 | 11.92 | 564 | 0.574679 |
| **2,4,5-T** | 12.20 | 12.21 | 12.40 | 688 | 0.916949 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 778 | 8.030109 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 3.556566 | | | | ** 106.69 | |
| 3,5-DCBA | A | 0.819606 | | | E | ** 140.13 | |
| DCAA | A | 53.374687 | | | | 0.79 | |
| DICAMBA | | | | | | | |
| MCPP | B | 428.562927 | | | | ** 120.79 | |
| MCPA | A | 1198.499268 | | | | ** 109.91 | |
| 2,4-DP | B | 3.615120 | | | | ** 71.07 | |
| 2,4-D | | | <10 | <2 | | | |
| PCP | | | | | | | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | | | <1 | <0.2 | | | |
| 2,4,5-T | A | 1.104900 | | | | 18.59 | |
| 2,4-DB | B | 8.030109 | | | | ** 129.17 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | | | | | E | | |

Units: ug/l

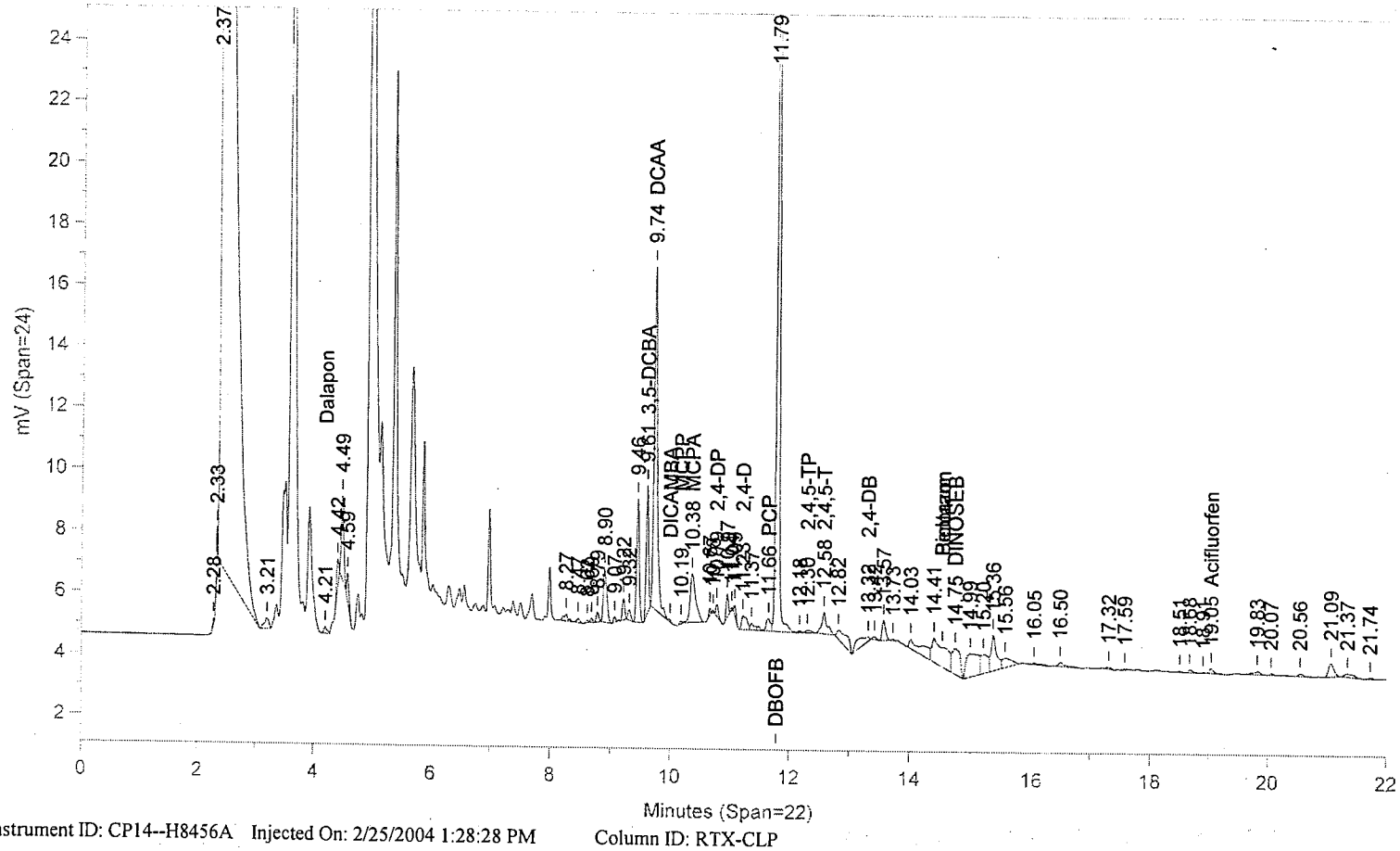
Reviewed by: _____ Date: 2/27/04
Verified by: _____ Date: 2/27/04

8599

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:52:19

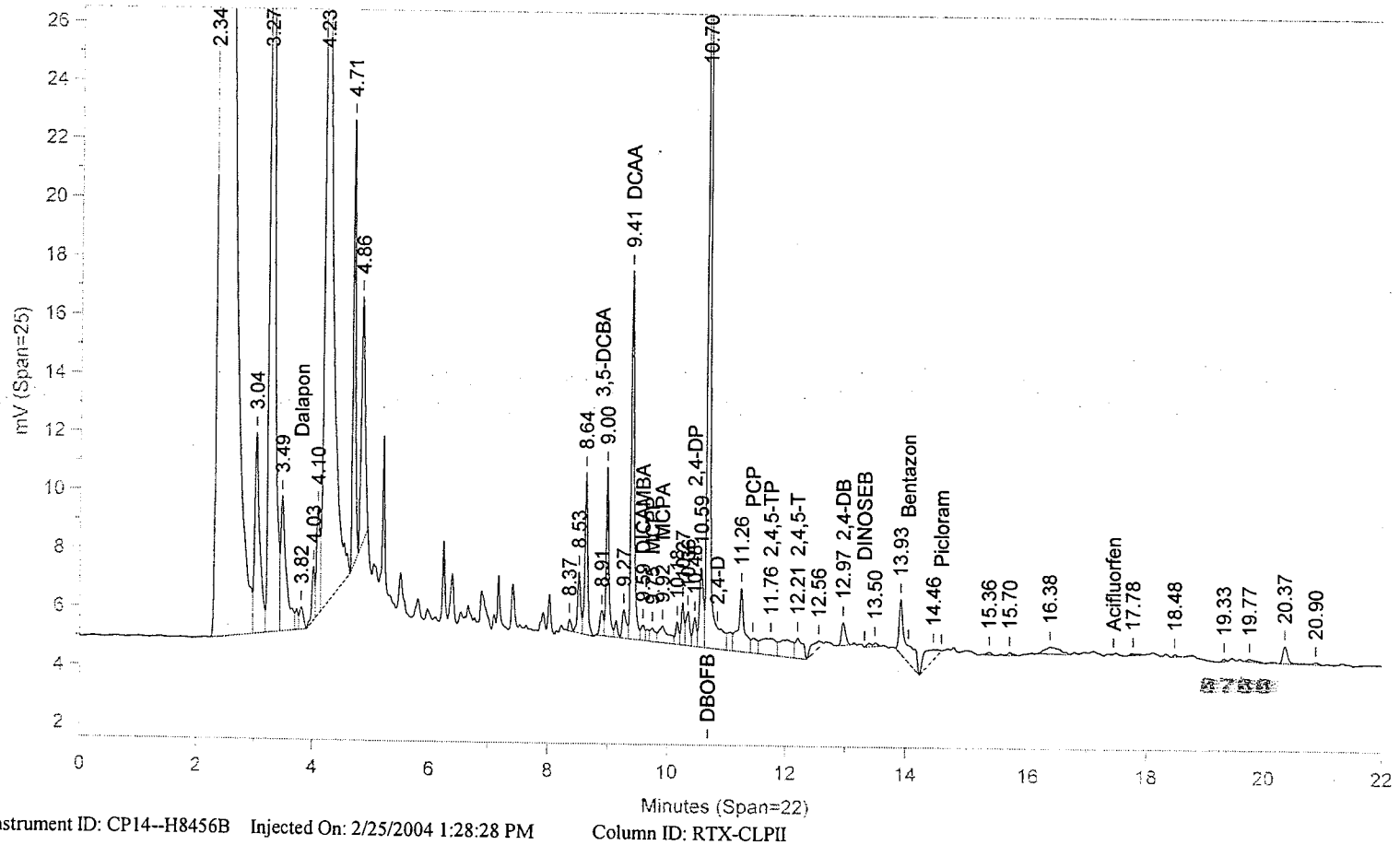
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.10R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 1:28:28 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.10R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 1:28:28 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.206 | 212 | 1.082 | Dalapon | 3.818 | 754 | 3.557 | Dalapon |
| 9.614 | 4187 | .82 | 3,5-DCBA | 8.908 | 852 | .144 | 3,5-DCBA |
| 9.736 | 11164 | 53.375 | DCAA | 9.408 | 12625 | 52.952 | DCAA |
| . | 0 | . | DICAMBA | 9.595 | 520 | .54 | DICAMBA |
| 10.193 | 83 | 105.814 | MCPP | 9.753 | 462 | 428.563 | MCPP |
| 10.379 | 1566 | 1198.499 | MCPA | 9.924 | 567 | 348.41 | MCPA |
| 10.791 | 383 | 1.72 | 2,4-DP | 10.479 | 984 | 3.615 | 2,4-DP |
| 11.789 | 31010 | 2.004 | DBOFB | 10.699 | 39170 | 2.004 | DBOFB |
| 11.227 | 450 | 2.248 | 2,4-D | . | 0 | . | 2,4-D |
| 11.659 | 390 | .157 | PCP | . | 0 | . | PCP |
| 12.304 | 87 | .104 | 2,4,5-TP | 11.756 | 564 | .575 | 2,4,5-TP |
| 12.583 | 697 | 1.105 | 2,4,5-T | 12.212 | 688 | .917 | 2,4,5-T |
| 13.319 | 133 | 1.728 | 2,4-DB | 12.968 | 778 | 8.03 | 2,4-DB |
| 14.748 | 833 | 1.669 | DINOSEB | . | 0 | . | DINOSEB |
| 19.052 | 150 | .018 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.10A
Area File: C:\CPWIN\DATA1\2H14048B.10A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 1:50:32 PM
File Reported On: 2/25/2004 at 1:50:33 PM

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456A  Calibration File: 1H14048

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Dalapon | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.14 | 4.28 |
| 3,5-DCBA | 9.56 | | | | | 9.56 | 9.44 | 9.67 |
| Dichlorophenylacetic acid | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.64 | 9.84 |
| Dicamba | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 9.92 | 10.10 |
| Mcpp | 10.19 | 10.20 | 10.19 | 10.20 | 10.20 | 10.19 | 10.10 | 10.29 |
| Mcpa | 10.39 | 10.39 | 10.38 | 10.38 | 10.39 | 10.38 | 10.29 | 10.48 |
| 2,4-DP | 10.88 | 10.88 | 10.88 | 10.88 | 10.87 | 10.88 | 10.78 | 10.97 |
| 2,4-D | 11.17 | 11.17 | 11.17 | 11.16 | 11.16 | 11.17 | 11.07 | 11.26 |
| PCP | 11.62 | 11.63 | 11.63 | 11.63 | 11.62 | 11.63 | 11.53 | 11.73 |
| 2,4,5-TP | 12.25 | 12.25 | 12.25 | 12.25 | 12.25 | 12.25 | 12.15 | 12.35 |
| 2,4,5-T | 12.62 | 12.62 | 12.61 | 12.61 | 12.60 | 12.61 | 12.51 | 12.72 |
| 2,4-DB | 13.30 | 13.30 | 13.30 | 13.29 | 13.29 | 13.30 | 13.19 | 13.40 |
| Bentazon | 14.51 | | | | | 14.55 | 14.44 | 14.67 |
| Picloram | 14.51 | | | | | 14.55 | 14.44 | 14.67 |
| Dinoseb | 14.77 | 14.77 | 14.76 | 14.76 | 14.76 | 14.76 | 14.65 | 14.88 |
| Acifluorfen | 19.06 | | | | | 19.06 | 18.95 | 19.18 |

2/18/04 MP 12

8283



FORM VI-1

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456B  Calibration File: 1H14048B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Dalapon | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 | 3.69 | 3.89 |
| 3,5-DCBA | 8.89 | | | | | 8.89 | 8.79 | 9.00 |
| Dichlorophenylacetic acid | 9.41 | 9.42 | 9.41 | 9.41 | 9.41 | 9.41 | 9.32 | 9.51 |
| Dicamba | 9.65 | 9.66 | 9.65 | 9.65 | 9.65 | 9.65 | 9.56 | 9.75 |
| Mcpp | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.65 | 9.83 |
| Mcpa | 10.02 | 10.02 | 10.02 | 10.02 | 10.02 | 10.02 | 9.93 | 10.11 |
| 2,4-DP | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.35 | 10.54 |
| 2,4-D | 10.86 | 10.86 | 10.86 | 10.82 | 10.82 | 10.86 | 10.77 | 10.96 |
| PCP | 11.46 | 11.46 | 11.46 | 11.46 | 11.46 | 11.46 | 11.36 | 11.56 |
| 2,4,5-TP | 11.82 | 11.82 | 11.82 | 11.82 | 11.82 | 11.82 | 11.72 | 11.92 |
| 2,4,5-T | 12.30 | 12.31 | 12.30 | 12.30 | 12.29 | 12.30 | 12.20 | 12.40 |
| 2,4-DB | 12.93 | 12.93 | 12.92 | 12.92 | 12.91 | 12.92 | 12.82 | 13.03 |
| Dinoseb | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.22 | 13.44 |
| Bentazon | 14.06 | | | | | 14.06 | 13.95 | 14.16 |
| Picloram | 14.60 | | | | | 14.60 | 14.49 | 14.71 |
| Acifluorfen | 17.47 | | | | | 17.47 | 17.36 | 17.58 |

2/16/04
INDL

8784



FORM VI-1

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456A  Calibration File: 1H14048

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Dalapon | 1.51E-01 | 1.36E-01 | 1.26E-01 | 1.19E-01 | 1.01E-01 | 1.27E-01 | 14.6 |
| 3,5-DCBA | 3.30E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.60E-01 | ##### |
| Dichlorophenylacetic acid | 1.59E-01 | 1.49E-01 | 1.34E-01 | 1.27E-01 | 1.08E-01 | 1.35E-01 | 14.6 |
| Dicamba | 6.01E-01 | 5.78E-01 | 5.38E-01 | 5.01E-01 | 4.94E-01 | 5.42E-01 | 8.6 |
| Mcpp | 5.57E-04 | 5.59E-04 | 5.18E-04 | 4.90E-04 | 4.05E-04 | 5.06E-04 | 12.5 |
| Mcpa | 1.15E-03 | 9.70E-04 | 8.15E-04 | 7.12E-04 | 5.71E-04 | 8.44E-04 | 26.8 |
| 2,4-DP | 1.70E-01 | 1.60E-01 | 1.47E-01 | 1.24E-01 | 1.20E-01 | 1.44E-01 | 15.1 |
| 2,4-D | 1.35E-01 | 1.35E-01 | 1.31E-01 | 1.28E-01 | 1.17E-01 | 1.29E-01 | 5.8 |
| PCP | 1.58E+00 | 1.61E+00 | 1.60E+00 | 1.64E+00 | 1.58E+00 | 1.60E+00 | 1.5 |
| 2,4,5-TP | 5.35E-01 | 5.14E-01 | 5.09E-01 | 5.35E-01 | 5.89E-01 | 5.36E-01 | 5.9 |
| 2,4,5-T | 3.83E-01 | 3.84E-01 | 3.90E-01 | 4.15E-01 | 4.66E-01 | 4.08E-01 | 8.6 |
| 2,4-DB | 4.91E-02 | 4.81E-02 | 4.78E-02 | 5.20E-02 | 5.08E-02 | 4.96E-02 | 3.6 |
| Bentazon | 3.11E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.22E-01 | ##### |
| Picloram | 3.11E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.22E-01 | ##### |
| Dinoseb | 3.60E-01 | 3.19E-01 | 3.08E-01 | 3.26E-01 | 2.99E-01 | 3.22E-01 | 7.3 |
| Acifluorfen | 5.52E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.10E+00 | ##### |

Average % RSD: ~~7.8~~ 10.4

2/18/04 MDH

8795



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1H14048.CAL** Version = 8
Internal standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 0
Amount units = PPB
17 components with 5 levels each

## 1 Dalapon

Retention time = 4.207 min., Search window = 0.069 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 113.950 | 7194.5 | 63.13719 | 1.1372 | 0.1718 | Manual | 2/18/2004 10:22: |
| 2 | 227.900 | 13231.1 | 58.05674 | 2.2745 | 0.3085 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 455.800 | 25015.5 | 54.88254 | 4.5489 | 0.5746 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 912.440 | 47640.1 | 52.21171 | 9.1062 | 1.0877 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 2279.000 | 107148.1 | 47.0154 | 22.7445 | 2.3051 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.127 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8865, Average error = 10.47%
Average CF = 0.1268 with RSD = 14.60%

## 2 3,5-DCBA

Retention time = 9.557 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 93.200 | 128577.0 | 1379.582 | 0.9301 | 3.0705 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | 114.9404 | | | | 1H14048.07A | 2/18/2004 10:11: |
| 3 | -1.000 | 106.2329 | | | | 1H14048.08A | 2/18/2004 10:17: |
| 4 | -1.000 | 101.5561 | | | | 1H14048.09A | 2/18/2004 10:11: |
| 5 | -1.000 | 108.4865 | | | | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 3.301 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.3011 with RSD = 0.00%

8786

## 3 DCAA

Retention time = 9.741 min., Search window = 0.100 min.

Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 46.940 | 3110.2 | 66.2601 | 0.4685 | 0.0743 | Manual | 2/18/2004 10:22: |
| 2 | 93.880 | 5985.8 | 63.75969 | 0.9369 | 0.1395 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 187.760 | 10937.8 | 58.2541 | 1.8739 | 0.2513 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 375.520 | 20771.2 | 55.3132 | 3.7477 | 0.4743 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 938.800 | 46932.1 | 49.99161 | 9.3693 | 1.0096 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.135 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8825, Average error = 10.99%
Average CF = 0.1352 with RSD = 14.62%

**4 DICAMBA**
Retention time = 10.009 min., Search window = 0.093 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.700 | 1180.3 | 251.1232 | 0.0469 | 0.0282 | Manual | 2/18/2004 10:22: |
| 2 | 9.400 | 2324.9 | 247.3319 | 0.0938 | 0.0542 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18.800 | 4394.6 | 233.7559 | 0.1876 | 0.1009 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37.600 | 8232.6 | 218.9513 | 0.3752 | 0.1880 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94.000 | 21537.9 | 229.1266 | 0.9381 | 0.4633 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.542 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9814, Average error = 6.94%
Average CF = 0.5423 with RSD = 8.63%

**5 MCPP**
Retention time = 10.194 min., Search window = 0.091 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4706.500 | 1094.7 | 0.2325858 | 46.9711 | 0.0261 | Manual | 2/18/2004 10:22: |
| 2 | 9413.000 | 2253.0 | 0.2393526 | 93.9421 | 0.0525 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18826.000 | 4238.7 | 0.2251504 | 187.8842 | 0.0974 | 1H14048.08A | 2/18/2004 10:17: |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 37666.800 | 8062.8 | 0.2140549 | 375.9162 | 0.1841 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94130.000 | 17683.2 | 0.1878595 | 939.4212 | 0.3804 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8896, Average error = 9.23%
Average CF = 0.0005 with RSD = 12.51%

**6 MCPA**
Retention time = 10.384 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4686.000 | 2258.2 | 0.4818967 | 46.7665 | 0.0539 | Manual | 2/18/2004 10:22: |
| 2 | 9372.000 | 3890.1 | 0.4150764 | 93.5329 | 0.0907 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18744.000 | 6639.9 | 0.3542432 | 187.0659 | 0.1525 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37535.200 | 11682.4 | 0.3112375 | 374.6028 | 0.2667 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 93720.000 | 24836.5 | 0.265007 | 935.3293 | 0.5343 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.5459, Average error = 20.57%
Average CF = 0.0008 with RSD = 26.74%

**7 2,4-DP**
Retention time = 10.876 min., Search window = 0.094 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.300 | 3359.6 | 71.02835 | 0.4721 | 0.0802 | Manual | 2/18/2004 10:22: |
| 2 | 94.590 | 6466.5 | 68.3631 | 0.9440 | 0.1508 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 189.180 | 12047.4 | 63.682 | 1.8880 | 0.2767 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 379.110 | 20611.0 | 54.36676 | 3.7835 | 0.4706 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 945.900 | 52641.0 | 55.65176 | 9.4401 | 1.1325 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.144 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9194, Average error = 12.18%
Average CF = 0.1441 with RSD = 15.08%

**8 2,4-D**

Retention time = 11.166 min., Search window = 0.095 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.100 | 2665.1 | 56.5837 | 0.4701 | 0.0636 | Manual | 2/18/2004 10:22: |
| 2 | 94.190 | 5443.7 | 57.79478 | 0.9400 | 0.1269 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 188.380 | 10705.9 | 56.8313 | 1.8800 | 0.2459 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 376.750 | 21152.6 | 56.14495 | 3.7600 | 0.4830 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 941.900 | 51074.6 | 54.22505 | 9.4002 | 1.0988 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.129 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9806, Average error = 4.11%
Average CF = 0.1293 with RSD = 5.82%

**9 PCP**
Retention time = 11.626 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 5.010 | 3317.1 | 662.092 | 0.0500 | 0.0792 | Manual | 2/18/2004 10:22: |
| 2 | 10.030 | 6914.7 | 689.4033 | 0.1001 | 0.1612 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 20.060 | 13967.9 | 696.3046 | 0.2002 | 0.3209 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 40.110 | 28675.4 | 714.9199 | 0.4003 | 0.6547 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 100.280 | 73309.6 | 731.0491 | 1.0008 | 1.5771 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 1.602 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.08%
Average CF = 1.6018 with RSD = 1.46%

**10 DBOFB * Internal Standard * * Retention Time Reference ***
Retention time = 11.794 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 100.200 | 41875.6 | 417.9199 | Manual | 2/18/2004 10:22: |
| 2 | 100.200 | 42894.4 | 428.088 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 100.200 | 43532.8 | 434.4595 | 1H14048.08A | 2/18/2004 10:17: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 4 | 100.200 | 43797.3 | 437.0988 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 100.200 | 46483.8 | 463.91 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 1.0 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.0000, Average error = 0.00%
Average CF = 436.2952 with RSD = 3.92%

**11 2,4,5-TP**
Retention time = 12.250 min., Search window = 0.099 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.760 | 1065.1 | 223.755 | 0.0475 | 0.0254 | Manual | 2/18/2004 10:22: |
| 2 | 9.510 | 2093.6 | 220.1463 | 0.0949 | 0.0488 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 19.020 | 4203.4 | 221.0015 | 0.1898 | 0.0966 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 38.040 | 8889.2 | 233.6807 | 0.3796 | 0.2030 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 95.100 | 25983.1 | 273.2186 | 0.9491 | 0.5590 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.536 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9869, Average error = 3.92%
Average CF = 0.5364 with RSD = 5.91%

**12 2,4,5-T**
Retention time = 12.613 min., Search window = 0.103 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.740 | 758.9 | 160.1149 | 0.0473 | 0.0181 | Manual | 2/18/2004 10:22: |
| 2 | 9.480 | 1560.3 | 164.592 | 0.0946 | 0.0364 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18.960 | 3209.3 | 169.269 | 0.1892 | 0.0737 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37.920 | 6878.5 | 181.3945 | 0.3784 | 0.1571 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94.800 | 20492.1 | 216.1617 | 0.9461 | 0.4408 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.408 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9746, Average error = 6.45%
Average CF = 0.4076 with RSD = 8.60%

**13 2,4-DB**

Retention time = 13.295 min., Search window = 0.105 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.450 | 974.3 | 20.53303 | 0.4736 | 0.0233 | Manual | 2/18/2004 10:22: |
| 2 | 94.890 | 1954.4 | 20.59662 | 0.9470 | 0.0456 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 189.780 | 3944.3 | 20.78334 | 1.8940 | 0.0906 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 379.560 | 8622.9 | 22.71802 | 3.7880 | 0.1969 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 948.900 | 22354.4 | 23.55823 | 9.4701 | 0.4809 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.05 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 2.92%
Average CF = 0.0496 with RSD = 3.58%

**14 Bentazon**
Retention time = 14.553 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 330.750 | 429853.0 | 1299.631 | 3.3009 | 10.2650 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 3.11 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.1098 with RSD = 0.00%

**15 Picloram**
Retention time = 14.553 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 330.750 | 429853.0 | 1299.631 | 3.3009 | 10.2650 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 3.11 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.1098 with RSD = 0.00%

**16 DINOSEB**
Retention time = 14.763 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 23.720 | 3571.2 | 150.556 | 0.2367 | 0.0853 | Manual | 2/18/2004 10:22: |
| 2 | 47.440 | 6479.3 | 136.5785 | 0.4735 | 0.1511 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 94.880 | 12682.2 | 133.6657 | 0.9469 | 0.2913 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 189.760 | 27064.3 | 142.6239 | 1.8938 | 0.6179 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 474.400 | 65848.8 | 138.8044 | 4.7345 | 1.4166 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.322 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9895, Average error = 5.16%
Average CF = 0.3225 with RSD = 7.30%

**17 Acifluorfen**
Retention time = 19.061 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 96.300 | 222158.0 | 2306.937 | 0.9611 | 5.3052 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 5.52 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 5.5200 with RSD = 0.00%

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456B  Calibration File: 1H14048B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Dalapon | 1.30E-01 | 1.17E-01 | 1.09E-01 | 1.02E-01 | 8.47E-02 | 1.08E-01 | 15.6 |
| 3,5-DCBA | 3.02E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.04E-01 | ##### |
| Dichlorophenylacetic acid | 1.41E-01 | 1.33E-01 | 1.21E-01 | 1.15E-01 | 1.00E-01 | 1.22E-01 | 12.8 |
| Dicamba | 4.97E-01 | 5.23E-01 | 4.98E-01 | 4.69E-01 | 4.75E-01 | 4.93E-01 | 4.4 |
| Mcpp | 6.78E-04 | 6.30E-04 | 5.40E-04 | 5.03E-04 | 4.04E-04 | 5.51E-04 | 19.6 |
| Mcpa | 1.17E-03 | 9.69E-04 | 7.90E-04 | 6.85E-04 | 5.53E-04 | 8.33E-04 | 28.9 |
| 2,4-DP | 1.63E-01 | 1.55E-01 | 1.41E-01 | 1.20E-01 | 1.17E-01 | 1.39E-01 | 14.6 |
| 2,4-D | 1.72E-01 | 1.53E-01 | 1.35E-01 | 1.23E-01 | 1.13E-01 | 1.39E-01 | 16.9 |
| PCP | 1.31E+00 | 1.40E+00 | 1.43E+00 | 1.51E+00 | 1.45E+00 | 1.42E+00 | 5.2 |
| 2,4,5-TP | 4.43E-01 | 4.92E-01 | 4.93E-01 | 5.11E-01 | 5.71E-01 | 5.02E-01 | 9.2 |
| 2,4,5-T | 3.41E-01 | 3.65E-01 | 3.74E-01 | 3.96E-01 | 4.42E-01 | 3.84E-01 | 10.0 |
| 2,4-DB | 5.10E-02 | 4.99E-02 | 4.79E-02 | 5.01E-02 | 4.90E-02 | 4.96E-02 | 2.4 |
| Dinoseb | 3.36E-01 | 3.24E-01 | 3.12E-01 | 3.14E-01 | 2.92E-01 | 3.16E-01 | 5.1 |
| Bentazon | 1.16E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 2.31E-01 | ##### |
| Picloram | 7.72E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.54E+00 | ##### |
| Acifluorfen | 6.61E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.32E+00 | ##### |

Average % RSD: ~~.0~~ 12.1

2/18/04 MDH

(3)

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FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1H14048B.CAL** Version = 10
Internal standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 0
Amount units = PPB
17 components with 5 levels each

## 1 Dalapon

Retention time = 3.790 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 113.950 | 7691.2 | 67.49638 | 1.1372 | 0.1480 | Manual | 2/18/2004 10:29: |
| 2 | 227.900 | 14110.3 | 61.91439 | 2.2745 | 0.2652 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 455.800 | 26861.4 | 58.93236 | 4.5489 | 0.4949 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 912.440 | 50622.2 | 55.48006 | 9.1062 | 0.9272 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 2279.000 | 110521.0 | 48.49539 | 22.7445 | 1.9261 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.108 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8577, Average error = 11.18%
Average CF = 0.1084 with RSD = 15.60%

## 2 3,5-DCBA

Retention time = 8.893 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 93.200 | 146046.0 | 1567.017 | 0.9301 | 2.8094 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | 0 | | | | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | -1.000 | 0 | | | | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | -1.000 | 0 | | | | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | -1.000 | 0 | | | | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 3.02 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.0204 with RSD = 0.00%

8714

## 3 DCAA

Retention time = 9.414 min., Search window = 0.092 min.

Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 46.940 | 3424.5 | 72.95473 | 0.4685 | 0.0659 | Manual | 2/18/2004 10:29: |
| 2 | 93.880 | 6627.7 | 70.59722 | 0.9369 | 0.1246 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 187.760 | 12297.3 | 65.49473 | 1.8739 | 0.2266 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 375.520 | 23526.8 | 62.65115 | 3.7477 | 0.4309 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 938.800 | 53997.3 | 57.51738 | 9.3693 | 0.9410 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.122 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9172, Average error = 9.71%
Average CF = 0.1220 with RSD = 12.84%

**4 DICAMBA**
Retention time = 9.653 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.700 | 1212.9 | 258.0662 | 0.0469 | 0.0233 | Manual | 2/18/2004 10:29: |
| 2 | 9.400 | 2612.7 | 277.9514 | 0.0938 | 0.0491 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18.800 | 5074.5 | 269.9214 | 0.1876 | 0.0935 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37.600 | 9604.3 | 255.4341 | 0.3752 | 0.1759 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94.000 | 25547.7 | 271.7835 | 0.9381 | 0.4452 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.493 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 3.38%
Average CF = 0.4925 with RSD = 4.42%

**5 MCPP**
Retention time = 9.738 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4706.500 | 1655.5 | 0.3517506 | 46.9711 | 0.0318 | Manual | 2/18/2004 10:29: |
| 2 | 9413.000 | 3151.3 | 0.3347788 | 93.9421 | 0.0592 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18826.000 | 5506.7 | 0.2925072 | 187.8842 | 0.1015 | 1H14048B.08A | 2/18/2004 10:26: |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 37666.800 | 10326.5 | 0.274155 | 375.9162 | 0.1891 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94130.000 | 21787.1 | 0.231458 | 939.4212 | 0.3797 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.7528, Average error = 14.96%
Average CF = 0.0006 with RSD = 19.54%

**6 MCPA**
Retention time = 10.020 min., Search window = 0.093 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4686.000 | 2834.3 | 0.6048342 | 46.7665 | 0.0545 | Manual | 2/18/2004 10:29: |
| 2 | 9372.000 | 4820.2 | 0.5143166 | 93.5329 | 0.0906 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18744.000 | 8017.1 | 0.4277164 | 187.0659 | 0.1477 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37535.200 | 14000.2 | 0.3729886 | 374.6028 | 0.2564 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 93720.000 | 29654.5 | 0.3164155 | 935.3293 | 0.5168 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.4806, Average error = 22.59%
Average CF = 0.0008 with RSD = 28.92%

**7 2,4-DP**
Retention time = 10.441 min., Search window = 0.094 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.300 | 4001.7 | 84.60213 | 0.4721 | 0.0770 | Manual | 2/18/2004 10:29: |
| 2 | 94.590 | 7771.1 | 82.15552 | 0.9440 | 0.1460 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 189.180 | 14457.7 | 76.42309 | 1.8880 | 0.2664 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 379.110 | 24884.7 | 65.63969 | 3.7835 | 0.4558 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 945.900 | 63485.1 | 67.11604 | 9.4401 | 1.1064 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.139 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9288, Average error = 11.76%
Average CF = 0.1393 with RSD = 14.57%

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**8 DBOFB** *** Internal Standard * * Retention Time Reference ***

Retention time = 10.704 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 100.200 | 51984.1 | 518.8038 | Manual | 2/18/2004 10:29: |
| 2 | 100.200 | 53210.3 | 531.0405 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 100.200 | 54272.1 | 541.638 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 100.200 | 54595.8 | 544.8682 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 100.200 | 57380.0 | 572.6549 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 1.0 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.0000, Average error = 0.00%
Average CF = 541.8011 with RSD = 3.70%

**9 2,4-D**
Retention time = 10.863 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.100 | 4201.7 | 89.20865 | 0.4701 | 0.0808 | Manual | 2/18/2004 10:29: |
| 2 | 94.190 | 7647.4 | 81.19143 | 0.9400 | 0.1437 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 188.380 | 13799.4 | 73.25294 | 1.8800 | 0.2543 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 376.750 | 25249.6 | 67.01959 | 3.7600 | 0.4625 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 941.900 | 61023.6 | 64.78774 | 9.4002 | 1.0635 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.139 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8982, Average error = 13.32%
Average CF = 0.1392 with RSD = 16.91%

**10 PCP**
Retention time = 11.460 min., Search window = 0.102 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 5.010 | 3409.3 | 680.4968 | 0.0500 | 0.0656 | Manual | 2/18/2004 10:29: |
| 2 | 10.030 | 7441.3 | 741.9078 | 0.1001 | 0.1398 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 20.060 | 15562.6 | 775.8026 | 0.2002 | 0.2868 | 1H14048B.08A | 2/18/2004 10:26: |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 40.110 | 33037.8 | 823.6805 | 0.4003 | 0.6051 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 100.280 | 83480.9 | 832.4781 | 1.0008 | 1.4549 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 1.421 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.77%
Average CF = 1.4213 with RSD = 5.21%

**11 2,4,5-TP**
Retention time = 11.821 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.760 | 1095.0 | 230.0357 | 0.0475 | 0.0211 | Manual | 2/18/2004 10:29: |
| 2 | 9.510 | 2486.8 | 261.4915 | 0.0949 | 0.0467 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 19.020 | 5082.4 | 267.215 | 0.1898 | 0.0936 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 38.040 | 10583.3 | 278.214 | 0.3796 | 0.1938 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 95.100 | 31109.6 | 327.125 | 0.9491 | 0.5422 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.502 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9763, Average error = 6.17%
Average CF = 0.5022 with RSD = 9.16%

**12 2,4,5-T**
Retention time = 12.301 min., Search window = 0.103 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.740 | 838.5 | 176.8956 | 0.0473 | 0.0161 | Manual | 2/18/2004 10:29: |
| 2 | 9.480 | 1835.6 | 193.6303 | 0.0946 | 0.0345 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18.960 | 3845.7 | 202.8344 | 0.1892 | 0.0709 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37.920 | 8188.2 | 215.9327 | 0.3784 | 0.1500 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94.800 | 24020.4 | 253.3803 | 0.9461 | 0.4186 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.384 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9714, Average error = 7.42%
Average CF = 0.3838 with RSD = 10.00%

**13 2,4-DB**

Retention time = 12.922 min., Search window = 0.105 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.450 | 1256.1 | 26.47165 | 0.4736 | 0.0242 | Manual | 2/18/2004 10:29: |
| 2 | 94.890 | 2512.0 | 26.47307 | 0.9470 | 0.0472 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 189.780 | 4919.7 | 25.92324 | 1.8940 | 0.0906 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 379.560 | 10367.7 | 27.31505 | 3.7880 | 0.1899 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 948.890 | 26616.2 | 28.0498 | 9.4700 | 0.4639 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.05 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.85%
Average CF = 0.0496 with RSD = 2.42%

**14 DINOSEB**
Retention time = 13.330 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 23.720 | 4131.8 | 174.1917 | 0.2367 | 0.0795 | Manual | 2/18/2004 10:29: |
| 2 | 47.440 | 8165.2 | 172.1155 | 0.4735 | 0.1535 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 94.880 | 16029.3 | 168.9433 | 0.9469 | 0.2954 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 189.760 | 32426.7 | 170.8829 | 1.8938 | 0.5939 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 474.400 | 79451.4 | 167.4777 | 4.7345 | 1.3847 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.316 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9893, Average error = 3.64%
Average CF = 0.3156 with RSD = 5.09%

**15 Bentazon**
Retention time = 14.057 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

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| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 236.250 | 141696.0 | 599.7714 | 2.3578 | 2.7258 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 1.156 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 1.1561 with RSD = 0.00%

**16 Picloram**
Retention time = 14.601 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 94.500 | 378722.0 | 4007.64 | 0.9431 | 7.2853 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 7.725 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 7.7248 with RSD = 0.00%

**17 Acifluorfen**
Retention time = 17.469 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 96.300 | 330010.0 | 3426.895 | 0.9611 | 6.3483 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 6.605 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 6.6054 with RSD = 0.00%

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456A
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (1) : RTX-CLP ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048.04R
Time Analyzed: 10:49
Lab Standard ID: HERB2GZ
Initial Calibration: 1H14048

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 4.22 | 4.14 | 4.28 | 251.03 | 227.90 | 10.1 |
| Dichlorophenylacetic acid | 9.76 | 9.64 | 9.84 | 106.90 | 93.88 | 13.9 |
| Dicamba | 10.03 | 9.92 | 10.10 | 10.20 | 9.40 | 8.5 |
| Mcpp | 10.21 | 10.10 | 10.29 | 10517.53 | 9413.00 | 11.7 |
| Mcpa | 10.40 | 10.29 | 10.48 | 10860.76 | 9372.00 | 15.9 |
| 2,4-DP | 10.89 | 10.78 | 10.97 | 109.03 | 94.59 | 15.3 |
| 2,4-D | 11.18 | 11.07 | 11.26 | 103.06 | 94.19 | 9.4 |
| PCP | 11.64 | 11.53 | 11.73 | 10.07 | 10.03 | 0.4 |
| 2,4,5-TP | 12.27 | 12.15 | 12.35 | 9.88 | 9.51 | 3.9 |
| 2,4,5-T | 12.63 | 12.51 | 12.72 | 9.72 | 9.48 | 2.5 |
| 2,4-DB | 13.31 | 13.19 | 13.40 | 103.99 | 94.89 | 9.6 |
| Dinoseb | 14.78 | 14.65 | 14.88 | 48.86 | 47.44 | 3.0 |
| | | | | | Average of %D: | 8.7 |

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# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456B
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (2) : RTXCLPII ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048B.04R
Time Analyzed: 10:49
Lab Standard ID: HERB2GZ
Initial Calibration: 1H14048B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 3.80 | 3.69 | 3.89 | 246.77 | 227.90 | 8.3 |
| Dichlorophenylacetic acid | 9.43 | 9.32 | 9.51 | 106.36 | 93.88 | 13.3 |
| Dicamba | 9.67 | 9.56 | 9.75 | 10.02 | 9.40 | 6.6 |
| Mcpp | 9.76 | 9.65 | 9.83 | 10728.39 | 9413.00 | 14.0 |
| Mcpa | 10.04 | 9.93 | 10.11 | 10644.78 | 9372.00 | 13.6 |
| 2,4-DP | 10.46 | 10.35 | 10.54 | 105.39 | 94.59 | 11.4 |
| 2,4-D | 10.88 | 10.77 | 10.96 | 102.30 | 94.19 | 8.6 |
| PCP | 11.48 | 11.36 | 11.56 | 9.76 | 10.03 | -2.6 |
| 2,4,5-TP | 11.84 | 11.72 | 11.92 | 9.29 | 9.51 | -2.3 |
| 2,4,5-T | 12.32 | 12.20 | 12.40 | 10.30 | 9.48 | 8.6 |
| 2,4-DB | 12.94 | 12.82 | 13.03 | 98.90 | 94.89 | 4.2 |
| Dinoseb | 13.35 | 13.22 | 13.44 | 52.31 | 47.44 | 10.3 |
| | | | | | Average of %D: | 8.7 |

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FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456A
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (1) : RTX-CLP ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048.15R
Time Analyzed: 15:41
Lab Standard ID: HERB3WP
Initial Calibration: 1H14048

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 4.21 | 4.14 | 4.28 | 464.69 | 455.80 | 2.0 |
| Dichlorophenylacetic acid | 9.74 | 9.64 | 9.84 | 189.12 | 187.76 | 0.7 |
| Dicamba | 10.01 | 9.92 | 10.10 | 18.84 | 18.80 | 0.2 |
| Mcpp | 10.19 | 10.10 | 10.29 | 18972.81 | 18826.00 | 0.8 |
| Mcpa | 10.38 | 10.29 | 10.48 | 18771.41 | 18744.00 | 0.1 |
| 2,4-DP | 10.87 | 10.78 | 10.97 | 196.33 | 189.18 | 3.8 |
| 2,4-D | 11.16 | 11.07 | 11.26 | 195.96 | 188.38 | 4.0 |
| PCP | 11.62 | 11.53 | 11.73 | 20.15 | 20.06 | 0.5 |
| 2,4,5-TP | 12.25 | 12.15 | 12.35 | 20.01 | 19.02 | 5.2 |
| 2,4,5-T | 12.61 | 12.51 | 12.72 | 21.24 | 18.96 | 12.0 |
| 2,4-DB | 13.29 | 13.19 | 13.40 | 209.33 | 189.78 | 10.3 |
| Dinoseb | 14.76 | 14.65 | 14.88 | 108.00 | 94.88 | 13.8 |
| | | | | | Average of %D: | 4.5 |

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FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456B
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (2) : RTXCLPII ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048B.15R
Time Analyzed: 15:41
Lab Standard ID: HERB3WP
Initial Calibration: 1H14048B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 3.79 | 3.69 | 3.89 | 454.56 | 455.80 | -0.3 |
| Dichlorophenylacetic acid | 9.41 | 9.32 | 9.51 | 187.63 | 187.76 | -0.1 |
| Dicamba | 9.65 | 9.56 | 9.75 | 19.18 | 18.80 | 2.0 |
| Mcpp | 9.74 | 9.65 | 9.83 | 18183.52 | 18826.00 | -3.4 |
| Mcpa | 10.02 | 9.93 | 10.11 | 17239.99 | 18744.00 | -8.0 |
| 2,4-DP | 10.44 | 10.35 | 10.54 | 192.32 | 189.18 | 1.7 |
| 2,4-D | 10.86 | 10.77 | 10.96 | 183.41 | 188.38 | -2.6 |
| PCP | 11.46 | 11.36 | 11.56 | 20.08 | 20.06 | 0.1 |
| 2,4,5-TP | 11.82 | 11.72 | 11.92 | 19.39 | 19.02 | 1.9 |
| 2,4,5-T | 12.30 | 12.20 | 12.40 | 19.95 | 18.96 | 5.2 |
| 2,4-DB | 12.92 | 12.82 | 13.03 | 197.47 | 189.78 | 4.1 |
| Dinoseb | 13.33 | 13.22 | 13.44 | 104.37 | 94.88 | 10.0 |
| | | | | | Average of %D: | 3.3 |

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# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 001 | HERB1AA | HERB103C | 02/17/2004 | 16:27:41 | 1H14048 | 9.74 | 10.01 |
| 002 | HERB2AA | HERB203C | 02/17/2004 | 16:54:10 | 1H14048 | 9.74 | 10.01 |
| 003 | HERB3AA | HERB303C | 02/17/2004 | 17:20:41 | 1H14048 | 9.74 | 10.01 |
| 004 | HERB4AA | HERB403D | 02/17/2004 | 17:47:07 | 1H14048 | 9.74 | 10.01 |
| 005 | HERB5AA | HERB503C | 02/17/2004 | 18:13:37 | 1H14048 | 9.74 | 10.01 |
| 006 | AA | MDHEX03 | 02/17/2004 | 18:40:08 | 1H14048 | | |
| 007 | ICHBXAT | ICHBX03H | 02/17/2004 | 19:06:37 | 1H14048 | 9.74 | 10.01 |
| 008 | HX15HAA | HX15H03B | 02/17/2004 | 19:33:03 | 1H14048 | 9.74 | 10.00 |
| 009 | PBLKKF | BLANKA | 02/17/2004 | 19:59:33 | 1H14048 | 9.74 | 10.01 |
| 010 | MDL5W | MDLA | 02/17/2004 | 20:26:00 | 1H14048 | | |
| 011 | MDL5X | MDLB | 02/17/2004 | 20:52:31 | 1H14048 | | |
| 012 | MDL5Y | MDLC | 02/17/2004 | 21:19:01 | 1H14048 | | |
| 013 | MDL5Z | MDLD | 02/17/2004 | 21:45:28 | 1H14048 | | |
| 014 | MDL60 | MDLE | 02/17/2004 | 22:11:55 | 1H14048 | | |
| 015 | MDL61 | MDLF | 02/17/2004 | 22:38:24 | 1H14048 | | |
| 016 | MDL62 | MDLG | 02/17/2004 | 23:04:53 | 1H14048 | | |
| 017 | HERB4HU | HERB403D | 02/17/2004 | 23:31:23 | 1H14048 | 9.75 | 10.02 |
| 018 | HERB3AA | HERB303C | 02/17/2004 | 23:57:49 | CLH048 | | 10.02 |
| 019 | HERB4AA | HERB403D | 02/18/2004 | 00:24:17 | CLH048 | | 10.02 |
| 020 | HERB5AA | HERB503C | 02/18/2004 | 00:50:44 | CLH048 | | 10.02 |
| 021 | HERB6AA | HERB603B | 02/18/2004 | 01:17:14 | CLH048 | | 10.02 |
| 022 | HERB7AA | HERB703B | 02/18/2004 | 01:43:42 | CLH048 | | 10.01 |
| 023 | AA | MDHEX03 | 02/18/2004 | 02:10:07 | CLH048 | | |
| 024 | PBLKOG | BLANKA | 02/18/2004 | 02:36:33 | CLH048 | | 10.02 |
| 025 | LCSLZ | LCSA | 02/18/2004 | 03:03:02 | CLH048 | | 10.01 |
| 026 | 212-- | 4215679 | 02/18/2004 | 03:29:29 | CLH048 | | 10.01 |
| 027 | 212--MS | 4215680 | 02/18/2004 | 03:55:58 | CLH048 | | 10.02 |
| 028 | 212--MSD | 4215681 | 02/18/2004 | 04:22:23 | CLH048 | | 10.01 |
| 029 | HERB5BL | HERB503C | 02/18/2004 | 04:48:50 | CLH048 | | 10.01 |
| 030 | | CONDITIONER | 02/18/2004 | 08:25:24 | CLH048 | | 10.11 |
| 031 | | CONDITIONER | 02/18/2004 | 08:51:54 | CLH048 | | 9.92 |

ICAL Dates

1H14048 02/17/2004 - 02/17/2004

CLH048 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.74 | (9.64 - 9.84 Minutes) |
| 10.01 | (9.92 - 10.10 Minutes) |
| 10.02 | (9.92 - 10.12 Minutes) |

8725

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 032 | | CONDITIONER | 02/18/2004 | 09:18:23 | CLH048 | | 10.07 |
| 033 | HERB5BM | HERB503C | 02/18/2004 | 09:44:55 | CLH048 | | 9.98 |
| 034 | PBLKQ1 | BLANKA | 02/18/2004 | 10:11:26 | CLH048 | | 10.00 |
| 035 | LCSNO | LCSA | 02/18/2004 | 10:38:01 | CLH048 | | 10.01 |
| 036 | LCSDHH | LCSDA | 02/18/2004 | 11:04:32 | CLH048 | | 10.02 |
| 037 | LOC1- | 4215682 | 02/18/2004 | 11:31:05 | CLH048 | | 10.02 |
| 038 | HERB5BN | HERB503C | 02/18/2004 | 11:57:35 | CLH048 | | 10.02 |
| 039 | HERB3WF | HERB303C | 02/18/2004 | 12:24:10 | 1H14048 | 9.75 | 10.02 |
| 040 | PBLKQ0 | BLANKA | 02/18/2004 | 12:50:42 | 1H14048 | 9.76 | 10.02 |
| 041 | LCSNN | LCSA | 02/18/2004 | 13:17:16 | 1H14048 | 9.76 | 10.03 |
| 042 | LCSDHG | LCSDA | 02/18/2004 | 13:43:45 | 1H14048 | 9.76 | 10.02 |
| 043 | 283GR | 4217437 | 02/18/2004 | 14:10:17 | 1H14048 | 9.76 | 10.02 |
| 044 | 4052- | 4217438 | 02/18/2004 | 14:36:48 | 1H14048 | 9.75 | 10.02 |
| 045 | 503-3 | 4217439 | 02/18/2004 | 15:03:22 | 1H14048 | 9.76 | 10.03 |
| 046 | HERB3WG | HERB303C | 02/18/2004 | 15:29:52 | 1H14048 | 9.76 | 10.03 |
| 047 | HERB3WH | HERB303C FLO | 02/18/2004 | 15:56:21 | 1H14048 | 9.76 | 10.03 |
| 048 | | CONDITIONER | 02/23/2004 | 08:27:39 | 1H14048 | 9.66 | 9.93 |
| 049 | | CONDITIONER | 02/23/2004 | 08:54:11 | 1H14048 | 9.68 | 9.95 |
| 050 | | CONDITIONER | 02/23/2004 | 09:20:41 | 1H14048 | 9.71 | 9.98 |
| 051 | HERB4HV | HERB403D | 02/23/2004 | 09:47:12 | 1H14048 | 9.72 | 9.98 |
| 052 | HX15XAC | HX15X03C | 02/23/2004 | 10:13:45 | 1H14048 | 9.72 | 9.99 |
| 053 | PBLKV9 | BLANKA | 02/23/2004 | 10:40:18 | 1H14048 | 9.73 | 10.00 |
| 054 | LCST7 | LCSA | 02/23/2004 | 11:06:49 | 1H14048 | 9.73 | 10.00 |
| 055 | LCSDJL | LCSDA | 02/23/2004 | 11:33:20 | 1H14048 | 9.73 | 10.00 |
| 056 | 16001 | 4220679 | 02/23/2004 | 11:59:50 | 1H14048 | 9.73 | 10.00 |
| 057 | 16002 | 4220680 | 02/23/2004 | 12:26:24 | 1H14048 | 9.73 | 10.00 |
| 058 | 16003 | 4220681 | 02/23/2004 | 12:52:56 | 1H14048 | 9.73 | 9.99 |
| 059 | PBLKSM | BLANKA | 02/23/2004 | 13:19:29 | 1H14048 | 9.73 | 10.00 |
| 060 | LCSQN | LCS1 | 02/23/2004 | 13:46:00 | 1H14048 | 9.73 | 10.00 |
| 061 | LCSQO | LCS2 | 02/23/2004 | 14:12:31 | 1H14048 | 9.73 | 10.00 |
| 062 | LCSQP | LCS3 | 02/23/2004 | 14:39:02 | 1H14048 | 9.73 | 10.00 |

ICAL Dates

1H14048 02/17/2004 - 02/17/2004

CLH048 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

ICAL RT QC Limits

9.74 (9.64 - 9.84 Minutes)

10.01 (9.92 - 10.10 Minutes)

10.02 (9.92 - 10.12 Minutes)

8726

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 063 | HERB3WI | HERB303C | 02/23/2004 | 15:05:34 | 1H14048 | 9.73 | 10.00 |
| 064 | LCSQQ | LCS4 | 02/23/2004 | 15:32:04 | 1H14048 | 9.72 | 9.99 |
| 065 | FITTE | 4218136 | 02/23/2004 | 15:58:33 | 1H14048 | 9.73 | 10.00 |
| 066 | WENC- | 4218137 | 02/23/2004 | 16:25:01 | 1H14048 | 9.72 | 9.99 |
| 067 | HERB3WJ | HERB303C | 02/23/2004 | 16:51:34 | 1H14048 | 9.73 | 9.99 |
| 068 | HERB3WK | HERB303C 2090 | 02/23/2004 | 17:18:06 | 1H14048 | 9.72 | 9.99 |
| 069 | HERB3WL | HERB303C 3032 | 02/23/2004 | 17:44:38 | 1H14048 | 9.72 | 9.99 |

| | ICAL Dates |
|---|---|
| 1H14048 | 02/17/2004 - 02/17/2004 |
| CLH048 | 02/17/2004 - 02/18/2004 |

DCAA = Dichlorophenylacetic acid
DCMB = Dicamba
DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.74 | (9.64 - 9.84 Minutes) |
| 10.01 | (9.92 - 10.10 Minutes) |
| 10.02 | (9.92 - 10.12 Minutes) |

8727

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 001 | HERB1AA | HERB103C | 02/17/2004 | 16:27:41 | 1H14048B | 9.41 | 9.65 |
| 002 | HERB2AA | HERB203C | 02/17/2004 | 16:54:10 | 1H14048B | 9.42 | 9.65 |
| 003 | HERB3AA | HERB303C | 02/17/2004 | 17:20:41 | 1H14048B | 9.41 | 9.65 |
| 004 | HERB4AA | HERB403D | 02/17/2004 | 17:47:07 | 1H14048B | 9.41 | 9.65 |
| 005 | HERB5AA | HERB503C | 02/17/2004 | 18:13:37 | 1H14048B | 9.41 | 9.65 |
| 006 | AA | MDHEX03 | 02/17/2004 | 18:40:08 | 1H14048B | | |
| 007 | ICHBXAT | ICHBX03H | 02/17/2004 | 19:06:37 | 1H14048B | 9.41 | 9.65 |
| 008 | HX15HAA | HX15H03B | 02/17/2004 | 19:33:03 | 1H14048B | | |
| 009 | PBLKKF | BLANKA | 02/17/2004 | 19:59:33 | 1H14048B | 9.41 | 9.66 |
| 010 | MDL5W | MDLA | 02/17/2004 | 20:26:00 | 1H14048B | | |
| 011 | MDL5X | MDLB | 02/17/2004 | 20:52:31 | 1H14048B | | |
| 012 | MDL5Y | MDLC | 02/17/2004 | 21:19:01 | 1H14048B | | |
| 013 | MDL5Z | MDLD | 02/17/2004 | 21:45:28 | 1H14048B | | |
| 014 | MDL60 | MDLE | 02/17/2004 | 22:11:55 | 1H14048B | | |
| 015 | MDL61 | MDLF | 02/17/2004 | 22:38:24 | 1H14048B | | |
| 016 | MDL62 | MDLG | 02/17/2004 | 23:04:53 | 1H14048B | | |
| 017 | HERB4HU | HERB403D | 02/17/2004 | 23:31:23 | 1H14048B | 9.42 | 9.66 |
| 018 | HERB3AA | HERB303C | 02/17/2004 | 23:57:49 | CLH048B | | 9.66 |
| 019 | HERB4AA | HERB403D | 02/18/2004 | 00:24:17 | CLH048B | | 9.67 |
| 020 | HERB5AA | HERB503C | 02/18/2004 | 00:50:44 | CLH048B | | 9.66 |
| 021 | HERB6AA | HERB603B | 02/18/2004 | 01:17:14 | CLH048B | | 9.66 |
| 022 | HERB7AA | HERB703B | 02/18/2004 | 01:43:42 | CLH048B | | 9.66 |
| 023 | AA | MDHEX03 | 02/18/2004 | 02:10:07 | CLH048B | | |
| 024 | PBLKOG | BLANKA | 02/18/2004 | 02:36:33 | CLH048B | | 9.66 |
| 025 | LCSLZ | LCSA | 02/18/2004 | 03:03:02 | CLH048B | | 9.66 |
| 026 | 212-- | 4215679 | 02/18/2004 | 03:29:29 | CLH048B | | 9.66 |
| 027 | 212--MS | 4215680 | 02/18/2004 | 03:55:58 | CLH048B | | 9.66 |
| 028 | 212--MSD | 4215681 | 02/18/2004 | 04:22:23 | CLH048B | | 9.66 |
| 029 | HERB5BL | HERB503C | 02/18/2004 | 04:48:50 | CLH048B | | 9.66 |
| 030 | | CONDITIONER | 02/18/2004 | 08:25:24 | CLH048B | | 9.65 |
| 031 | | CONDITIONER | 02/18/2004 | 08:51:54 | CLH048B | | 9.66 |

ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

CLH048B 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.41 | (9.32 - 9.51 Minutes) |
| 9.65 | (9.56 - 9.75 Minutes) |
| 9.66 | (9.56 - 9.76 Minutes) |

8728

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 032 | | CONDITIONER | 02/18/2004 | 09:18:23 | CLH048B | | 9.69 |
| 033 | HERB5BM | HERB503C | 02/18/2004 | 09:44:55 | CLH048B | | 9.63 |
| 034 | PBLKQ1 | BLANKA | 02/18/2004 | 10:11:26 | CLH048B | | 9.65 |
| 035 | LCSNO | LCSA | 02/18/2004 | 10:38:01 | CLH048B | | 9.66 |
| 036 | LCSDHH | LCSDA | 02/18/2004 | 11:04:32 | CLH048B | | 9.66 |
| 037 | LOC1- | 4215682 | 02/18/2004 | 11:31:05 | CLH048B | | 9.66 |
| 038 | HERB5BN | HERB503C | 02/18/2004 | 11:57:35 | CLH048B | | 9.66 |
| 039 | HERB3WF | HERB303C | 02/18/2004 | 12:24:10 | 1H14048B | 9.42 | 9.66 |
| 040 | PBLKQ0 | BLANKA | 02/18/2004 | 12:50:42 | 1H14048B | 9.43 | 9.67 |
| 041 | LCSNN | LCSA | 02/18/2004 | 13:17:16 | 1H14048B | 9.43 | 9.67 |
| 042 | LCSDHG | LCSDA | 02/18/2004 | 13:43:45 | 1H14048B | 9.43 | 9.67 |
| 043 | 283GR | 4217437 | 02/18/2004 | 14:10:17 | 1H14048B | 9.43 | 9.68 |
| 044 | 4052- | 4217438 | 02/18/2004 | 14:36:48 | 1H14048B | 9.42 | 9.67 |
| 045 | 503-3 | 4217439 | 02/18/2004 | 15:03:22 | 1H14048B | 9.43 | 9.67 |
| 046 | HERB3WG | HERB303C | 02/18/2004 | 15:29:52 | 1H14048B | 9.43 | 9.67 |
| 047 | HERB3WH | HERB303C FLOI | 02/18/2004 | 15:56:21 | 1H14048B | 9.43 | 9.67 |
| 048 | | CONDITIONER | 02/23/2004 | 08:27:39 | 1H14048B | 9.33 | 9.57 |
| 049 | | CONDITIONER | 02/23/2004 | 08:54:11 | 1H14048B | 9.36 | 9.60 |
| 050 | | CONDITIONER | 02/23/2004 | 09:20:41 | 1H14048B | 9.38 | 9.62 |
| 051 | HERB4HV | HERB403D | 02/23/2004 | 09:47:12 | 1H14048B | 9.39 | 9.63 |
| 052 | HX15XAC | HX15X03C | 02/23/2004 | 10:13:45 | 1H14048B | | |
| 053 | PBLKV9 | BLANKA | 02/23/2004 | 10:40:18 | 1H14048B | 9.40 | 9.62 |
| 054 | LCST7 | LCSA | 02/23/2004 | 11:06:49 | 1H14048B | 9.40 | 9.64 |
| 055 | LCSDJL | LCSDA | 02/23/2004 | 11:33:20 | 1H14048B | 9.40 | 9.64 |
| 056 | 16001 | 4220679 | 02/23/2004 | 11:59:50 | 1H14048B | 9.40 | 9.66 |
| 057 | 16002 | 4220680 | 02/23/2004 | 12:26:24 | 1H14048B | 9.40 | 9.65 |
| 058 | 16003 | 4220681 | 02/23/2004 | 12:52:56 | 1H14048B | 9.40 | 9.65 |
| 059 | PBLKSM | BLANKA | 02/23/2004 | 13:19:29 | 1H14048B | 9.40 | 9.64 |
| 060 | LCSQN | LCS1 | 02/23/2004 | 13:46:00 | 1H14048B | 9.40 | 9.64 |
| 061 | LCSQO | LCS2 | 02/23/2004 | 14:12:31 | 1H14048B | 9.40 | 9.64 |
| 062 | LCSQP | LCS3 | 02/23/2004 | 14:39:02 | 1H14048B | 9.40 | 9.64 |

ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

CLH048B 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

ICAL RT QC Limits

9.41 (9.32 - 9.51 Minutes)

9.65 (9.56 - 9.75 Minutes)

9.66 (9.56 - 9.76 Minutes)

8229

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTXCLPII ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 063 | HERB3WI | HERB303C | 02/23/2004 | 15:05:34 | 1H14048B | 9.40 | 9.64 |
| 064 | LCSQQ | LCS4 | 02/23/2004 | 15:32:04 | 1H14048B | 9.40 | 9.64 |
| 065 | FITTE | 4218136 | 02/23/2004 | 15:58:33 | 1H14048B | 9.40 | 9.64 |
| 066 | WENC- | 4218137 | 02/23/2004 | 16:25:01 | 1H14048B | 9.40 | 9.63 |
| 067 | HERB3WJ | HERB303C | 02/23/2004 | 16:51:34 | 1H14048B | 9.40 | 9.64 |
| 068 | HERB3WK | HERB303C 2090 | 02/23/2004 | 17:18:06 | 1H14048B | 9.40 | 9.64 |
| 069 | HERB3WL | HERB303C 3032 | 02/23/2004 | 17:44:38 | 1H14048B | 9.40 | 9.64 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1H14048B | 02/17/2004 - 02/17/2004 | DCAA = Dichlorophenylacetic acid | 9.41 | (9.32 - 9.51 Minutes) |
| | | DCMB = Dicamba | 9.65 | (9.56 - 9.75 Minutes) |
| CLH048B | 02/17/2004 - 02/18/2004 | DCMB = Dicamba | 9.66 | (9.56 - 9.76 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA |
|---|---|---|---|---|---|---|
| 001 | HERB2GZ | HERB203C | 02/25/2004 | 10:49:10 | 1H14048 | 9.76 |
| 002 | PBLKXH | BLANKA | 02/25/2004 | 11:15:44 | 1H14048 | 9.74 |
| 003 | LCSVR | LCSA | 02/25/2004 | 11:42:18 | 1H14048 | 9.73 |
| 004 | I1-NV | 4217215 | 02/25/2004 | 12:08:52 | 1H14048 | 9.73 |
| 005 | I1-NVMS | 4217215 | 02/25/2004 | 12:35:22 | 1H14048 | 9.73 |
| 006 | BLA-2 | 4217866 | 02/25/2004 | 13:01:55 | 1H14048 | 9.74 |
| 007 | UN5NV | 4219006 | 02/25/2004 | 13:28:28 | 1H14048 | 9.74 |
| 008 | UN7NV | 4219022 | 02/25/2004 | 13:55:02 | 1H14048 | 9.74 |
| 009 | UN7NVMS | 4219022 | 02/25/2004 | 14:21:33 | 1H14048 | 9.74 |
| 010 | UN7NVMSD | 4219022 | 02/25/2004 | 14:48:04 | 1H14048 | 9.74 |
| 011 | TC407 | 4219669 | 02/25/2004 | 15:14:33 | 1H14048 | 9.74 |
| 012 | HERB3WP | HERB303C | 02/25/2004 | 15:41:06 | 1H14048 | 9.74 |
| 013 | BLA20 | 4221331 | 02/25/2004 | 16:07:38 | 1H14048 | 9.74 |
| 014 | BLA44 | 4221332 | 02/25/2004 | 16:34:09 | 1H14048 | 9.73 |
| 015 | PBLKWR | BLANKA | 02/25/2004 | 17:00:37 | 1H14048 | 9.73 |
| 016 | LCSUX | LCSA | 02/25/2004 | 17:27:07 | 1H14048 | 9.73 |
| 017 | LCSDK5 | LCSDA | 02/25/2004 | 17:53:34 | 1H14048 | 9.73 |
| 018 | HERB4HW | HERB404D | 02/25/2004 | 18:20:06 | 1H14048 | 9.73 |
| 019 | C7028 | 4219619 | 02/25/2004 | 18:46:34 | 1H14048 | 9.73 |
| 020 | HERB3WQ | HERB303C | 02/25/2004 | 19:13:02 | 1H14048 | 9.73 |
| 021 | | CONDITIONER | 02/26/2004 | 07:49:56 | 1H14048 | 9.65 |
| 022 | | CONDITIONER | 02/26/2004 | 08:16:26 | 1H14048 | 9.67 |
| 023 | | CONDITIONER | 02/26/2004 | 08:42:55 | 1H14048 | 9.70 |
| 024 | HERB2HA | HERB203C | 02/26/2004 | 09:09:27 | 1H14048 | 9.73 |
| 025 | PBLKYJ | BLANKA | 02/26/2004 | 09:35:58 | 1H14048 | 9.74 |
| 026 | LCSWS | LCSA | 02/26/2004 | 10:02:33 | 1H14048 | 9.74 |
| 027 | 38001 | 4221898 | 02/26/2004 | 10:29:03 | 1H14048 | 9.74 |
| 028 | 38001MS | 4221898 | 02/26/2004 | 10:55:35 | 1H14048 | 9.74 |
| 029 | 38001MSD | 4221898 | 02/26/2004 | 11:22:04 | 1H14048 | 9.74 |
| 030 | 38002 | 4221899 | 02/26/2004 | 11:48:39 | 1H14048 | 9.74 |
| 031 | HERB3WT | HERB303C | 02/26/2004 | 12:15:11 | 1H14048 | 9.74 |
| 032 | C7028 | 4219619 | 02/26/2004 | 12:41:44 | 1H14048 | 9.75 |
| 033 | HERB3WS | HERB303C | 02/26/2004 | 13:08:12 | 1H14048 | 9.74 |

ICAL Dates

1H14048 02/17/2004 - 02/17/2004

DCAA = Dichlorophenylacetic acid

ICAL RT QC Limits

9.74 (9.64 - 9.84 Minutes)

8731

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA |
|---|---|---|---|---|---|---|
| 001 | HERB2GZ | HERB203C | 02/25/2004 | 10:49:10 | 1H14048B | 9.43 |
| 002 | PBLKXH | BLANKA | 02/25/2004 | 11:15:44 | 1H14048B | 9.41 |
| 003 | LCSVR | LCSA | 02/25/2004 | 11:42:18 | 1H14048B | 9.41 |
| 004 | I1-NV | 4217215 | 02/25/2004 | 12:08:52 | 1H14048B | 9.40 |
| 005 | I1-NVMS | 4217215 | 02/25/2004 | 12:35:22 | 1H14048B | 9.40 |
| 006 | BLA-2 | 4217866 | 02/25/2004 | 13:01:55 | 1H14048B | 9.41 |
| 007 | UN5NV | 4219006 | 02/25/2004 | 13:28:28 | 1H14048B | 9.41 |
| 008 | UN7NV | 4219022 | 02/25/2004 | 13:55:02 | 1H14048B | 9.41 |
| 009 | UN7NVMS | 4219022 | 02/25/2004 | 14:21:33 | 1H14048B | 9.41 |
| 010 | UN7NVMSD | 4219022 | 02/25/2004 | 14:48:04 | 1H14048B | 9.41 |
| 011 | TC407 | 4219669 | 02/25/2004 | 15:14:33 | 1H14048B | 9.41 |
| 012 | HERB3WP | HERB303C | 02/25/2004 | 15:41:06 | 1H14048B | 9.41 |
| 013 | BLA20 | 4221331 | 02/25/2004 | 16:07:38 | 1H14048B | 9.41 |
| 014 | BLA44 | 4221332 | 02/25/2004 | 16:34:09 | 1H14048B | 9.40 |
| 015 | PBLKWR | BLANKA | 02/25/2004 | 17:00:37 | 1H14048B | 9.41 |
| 016 | LCSUX | LCSA | 02/25/2004 | 17:27:07 | 1H14048B | 9.40 |
| 017 | LCSDK5 | LCSDA | 02/25/2004 | 17:53:34 | 1H14048B | 9.40 |
| 018 | HERB4HW | HERB404D | 02/25/2004 | 18:20:06 | 1H14048B | 9.40 |
| 019 | C7028 | 4219619 | 02/25/2004 | 18:46:34 | 1H14048B | 9.40 |
| 020 | HERB3WQ | HERB303C | 02/25/2004 | 19:13:02 | 1H14048B | 9.40 |
| 021 | | CONDITIONER | 02/26/2004 | 07:49:56 | 1H14048B | 9.56 * |
| 022 | | CONDITIONER | 02/26/2004 | 08:16:26 | 1H14048B | 9.34 |
| 023 | | CONDITIONER | 02/26/2004 | 08:42:55 | 1H14048B | 9.37 |
| 024 | HERB2HA | HERB203C | 02/26/2004 | 09:09:27 | 1H14048B | 9.40 |
| 025 | PBLKYJ | BLANKA | 02/26/2004 | 09:35:58 | 1H14048B | 9.41 |
| 026 | LCSWS | LCSA | 02/26/2004 | 10:02:33 | 1H14048B | 9.41 |
| 027 | 38001 | 4221898 | 02/26/2004 | 10:29:03 | 1H14048B | 9.41 |
| 028 | 38001MS | 4221898 | 02/26/2004 | 10:55:35 | 1H14048B | 9.41 |
| 029 | 38001MSD | 4221898 | 02/26/2004 | 11:22:04 | 1H14048B | 9.41 |
| 030 | 38002 | 4221899 | 02/26/2004 | 11:48:39 | 1H14048B | 9.41 |
| 031 | HERB3WT | HERB303C | 02/26/2004 | 12:15:11 | 1H14048B | 9.41 |
| 032 | C7028 | 4219619 | 02/26/2004 | 12:41:44 | 1H14048B | 9.41 |
| 033 | HERB3WS | HERB303C | 02/26/2004 | 13:08:12 | 1H14048B | 9.41 |

ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

DCAA = Dichlorophenylacetic acid

ICAL RT QC Limits 9.41 (9.32 - 9.51 Minutes)

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\1h14048.seq

Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1

Method Directory: \\cp14\C-Drive\cpwin\DATA1

Number of Entries: 84

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 1h14048.01R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 2 | CONDITIONER | MISC | AA | 1h14048.02R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 3 | CONDITIONER | MISC | AA | 1h14048.03R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 4 | CONDITIONER | MISC | AA | 1h14048.04R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 5 | CONDITIONER | MISC | AA | 1h14048.05R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 6 | HERB103C | ICAL | AA | 1h14048.06R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 7 | HERB203C | ICAL | AA | 1h14048.07R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 8 | HERB303C | ICAL | AA | 1h14048.08R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 9 | HERB403D | ICAL | AA | 1h14048.09R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 10 | HERB503C | ICAL | AA | 1h14048.10R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 11 | MDHEX03C | MDL | AA | 1h14048.11R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 12 | ICHBX03H | CCAL | AT | 1h14048.12R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 13 | HX15H03B | ICAL | AA | 1h14048.13R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 14 | BLANKA 2/13/04 RIF | BLK | AB | 1h14048.14R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 15 | MDLA 2/13/04 RIF | MDL | AB | 1h14048.15R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 16 | MDLB 2/13/04 RIF | MDL | AB | 1h14048.16R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 17 | MDLC 2/13/04 RIF | MDL | AB | 1h14048.17R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 18 | MDLD 2/13/04 RIF | MDL | AB | 1h14048.18R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 19 | MDLE 2/13/04 RIF | MDL | AB | 1h14048.19R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 20 | MDLF 2/13/04 RIF | MDL | AB | 1h14048.20R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 21 | MDLG 2/13/04 RIF | MDL | AB | 1h14048.21R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 22 | HERB403D | CCAL | HU | 1h14048.22R | HERW.MET | 1 | 1 | 100.2 | 040380004A | |
| 23 | HERB303C | ICAL | AA | 1h14048.23R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 24 | HERB403D | ICAL | AA | 1h14048.24R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 25 | HERB503C | ICAL | AA | 1h14048.25R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 26 | HERB603B | ICAL | AA | 1h14048.26R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 27 | HERB703B | ICAL | AA | 1h14048.27R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 28 | MDHEX03C | MDL | AA | 1h14048.28R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 29 | BLANKA 2/16/04F | BLK | AB | 1h14048.29R | CLH.MET | 1000 | 10 | 100.2 | 040470013A | 05300 |
| 30 | LCSA 2/16/04F | LCS | AB | 1h14048.30R | CLH.MET | 1000 | 10 | 100.2 | 040470013A | 05300 |
| 31 | 4215679F | T | AB | 1h14048.31R | CLH.MET | 1043 | 10 | 100.2 | 040470013A | 05300 |
| 32 | 4215680MSF | MS | AB | 1h14048.32R | CLH.MET | 1058 | 10 | 100.2 | 040470013A | 05300 |
| 33 | 4215681MSDF | MSD | AB | 1h14048.33R | CLH.MET | 1023 | 10 | 100.2 | 040470013A | 05300 |
| 34 | HERB503C | CCAL | BL | 1h14048.34R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 35 | CONDITIONER | CCAL | AA | 1h14048.35R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 36 | CONDITIONER | CCAL | AA | 1h14048.36R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 37 | CONDITIONER | CCAL | AA | 1h14048.37R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 38 | HERB503C | CCAL | BM | 1h14048.38R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 39 | BLANKA 2/17/04F | BLK | AB | 1h14048.39R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 40 | LCSA 2/17/04F | LCS | AB | 1h14048.40R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 41 | LCSDA 2/17/04F | LCSD | AB | 1h14048.41R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 42 | 4215682F | T | AB | 1h14048.42R | CLH.MET | 1046 | 10 | 100.2 | 040480010A | 05300 |
| 43 | HERB503C | CCAL | BN | 1h14048.43R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 44 | HERB303C | CCAL | WF | 1h14048.44R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 45 | BLANKA 2/17/04F | BLK | AB | 1h14048.45R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 46 | LCSA 2/17/04F | LCS | AB | 1h14048.46R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 47 | LCSDA 2/17/04F | LCSD | AB | 1h14048.47R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 48 | 4217437F | T | AB | 1h14048.48R | HERW.MET | 1017 | 10 | 100.2 | 040480009A | 01856 |

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\1h14048.seq

Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1

Method Directory: \\cp14\C-Drive\cpwin\DATA1

Number of Entries: 84

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 49 4217438F | T | AB | 1h14048.49R | HERW.MET | 925 | 10 | 100.2 | 040480009A | 01856 |
| 50 4217439F | T | AB | 1h14048.50R | HERW.MET | 988 | 10 | 100.2 | 040480009A | 01856 |
| 51 HERB303C | CCAL | WG | 1h14048.51R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 52 HERB303C FLOR | CCAL | WH | 1h14048.52R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 53 CONDITIONER | CCAL | AA | 1h14048.53R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 54 CONDITIONER | CCAL | AA | 1h14048.54R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 55 CONDITIONER | CCAL | AA | 1h14048.55R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 56 HERB403D | CCAL | HV | 1h14048.56R | HERW.MET | 1 | 1 | 100.2 | 040470013A | |
| 57 HX15X03C | CCAL | AC | 1h14048.57R | HERW.MET | 1 | 1 | 100.2 | 040470013A | |
| 58 BLANKA 2/21/04F | BLK | AB | 1h14048.58R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 59 LCSA 2/21/04F | LCS | AB | 1h14048.59R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 60 LCSDA 2/21/04F | LCSD | AB | 1h14048.60R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 61 4220679F | T | AB | 1h14048.61R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 62 4220680F | T | AB | 1h14048.62R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 63 4220681F | T | AB | 1h14048.63R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 64 BLANKA 2/20/04F | BLK | AB | 1h14048.64R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 65 LCS1 2/20/04F | LCS | AB | 1h14048.65R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 66 LCS2 2/20/04F | LCS | AB | 1h14048.66R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 67 LCS3 2/20/04F | LCS | AB | 1h14048.67R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 68 HERB303C | CCAL | WI | 1h14048.68R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 69 LCS4 2/20/04F | LCS | AB | 1h14048.69R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 70 4218136F | T | AB | 1h14048.70R | HERW.MET | 1027 | 10 | 100.2 | 040500016A | 01856 |
| 71 4218137F | T | AB | 1h14048.71R | HERW.MET | 1024 | 10 | 100.2 | 040500016A | 01856 |
| 72 HERB303C | CCAL | WJ | 1h14048.72R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 73 HERB303C 209050AR | CCAL | WK | 1h14048.73R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 74 HERB303C 303221AZ | CCAL | WL | 1h14048.74R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 75 CONDITIONER | CCAL | AA | 1h14048.75R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 76 CONDITIONER | CCAL | AA | 1h14048.76R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 77 CONDITIONER | CCAL | AA | 1h14048.77R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 78 HERB203C | CCAL | GY | 1h14048.78R | HERW.MET | 1 | 1 | 100.2 | 040500016A | |
| 79 BLANKA 2/24/04F | BLK | AB | 1h14048.79R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 80 LCSA 2/24/04F | LCS | AB | 1h14048.80R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 81 LCSDA 2/24/04F | LCSD | AB | 1h14048.81R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 82 4219619F DF10 | T | AC | 1h14048.82R | HERW.MET | 30 | 100 | 100.2 | 040540005A | 01865 |
| 83 4219619F | T | AB | 1h14048.83R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 01865 |
| 84 HERB303C | CCAL | WN | 1h14048.84R | HERISCCB.ME | 1 | 1 | 100.2 | 040500016A | |

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Set-up by: _____ Date: 2/25/04

2/24/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\2H14048.seq
Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1
Method Directory: \\cp14\C-Drive\cpwin\DATA1
Number of Entries: 36

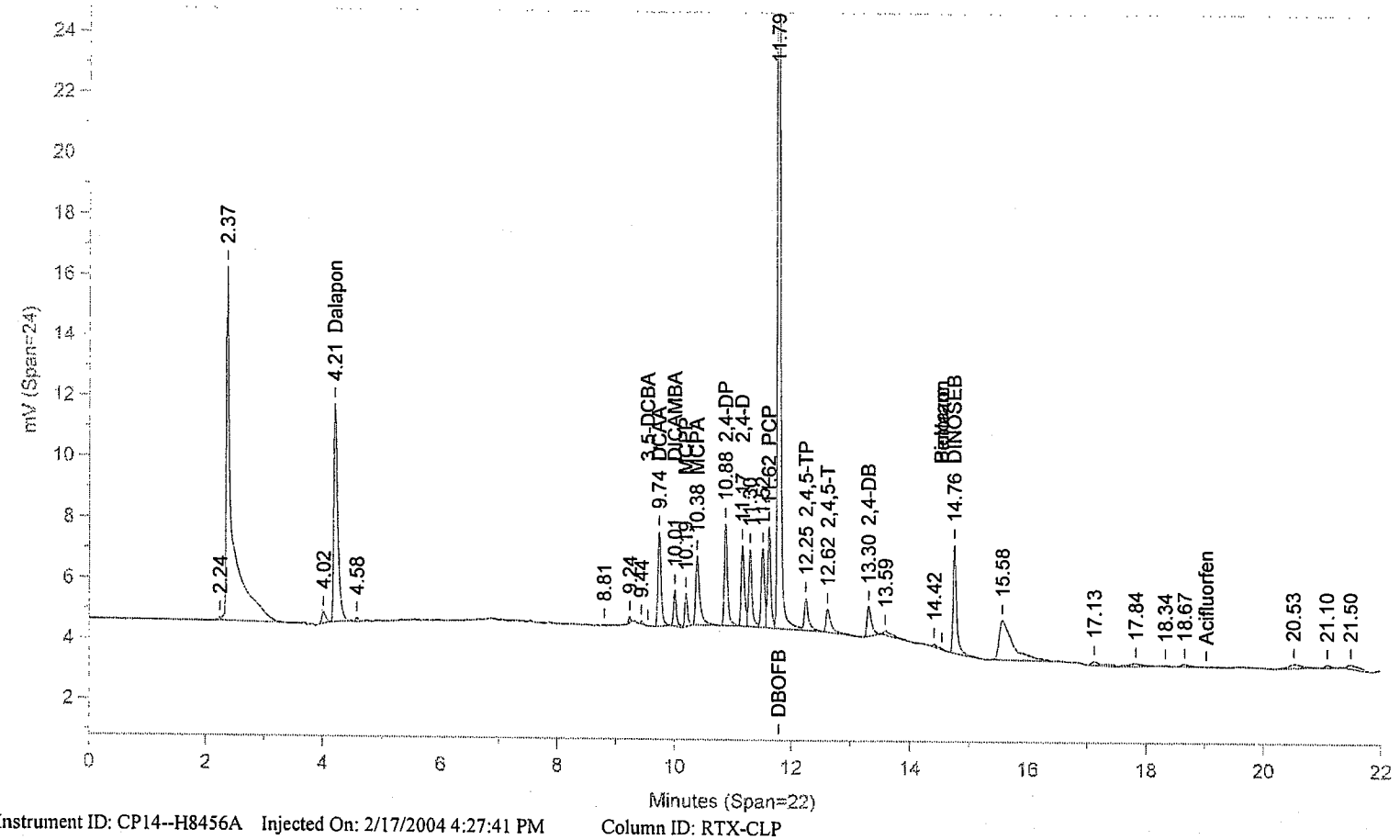
| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | MISC | AA | 2H14048.01R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 2 CONDITIONER | MISC | AA | 2H14048.02R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 3 CONDITIONER | MISC | AA | 2H14048.03R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 4 HERB203C | CCAL | GZ | 2H14048.04R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 5 BLANKA 2/24/04F | BLK | AB | 2H14048.05R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 6 LCSA 2/24/04F | LCS | AB | 2H14048.06R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 7 4217215F | T | AB | 2H14048.07R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 8 4217215MSF | MS | AB | 2H14048.08R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 9 4217866F | T | AB | 2H14048.09R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 10 4219006F | T | AB | 2H14048.10R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 11 4219022F | T | AB | 2H14048.11R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 12 4219022MSF | MS | AB | 2H14048.12R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 13 4219022MSDF | MSD | AB | 2H14048.13R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 14 4219669F | T | AB | 2H14048.14R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 15 HERB303C | CCAL | WP | 2H14048.15R | HERISCC.MET | 1 | 1 | 100.2 | 040550004A | |
| 16 4221331F | T | AB | 2H14048.16R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 17 4221332F | T | AB | 2H14048.17R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 18 BLANKA 2/24/04F | BLK | AB | 2H14048.18R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 19 LCSA 2/24/04F | LCS | AB | 2H14048.19R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 20 LCSDA 2/24/04F | LCSD | AB | 2H14048.20R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 21 HERB404D | CCAL | HW | 2H14048.21R | HERW.MET | 1 | 1 | 100.2 | 040540005A | |
| 22 4219619F | T | AB | 2H14048.22R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 01865 |
| 23 HERB303C | CCAL | WQ | 2H14048.23R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 24 CONDITIONER | CCAL | AA | 2H14048.24R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 25 CONDITIONER | CCAL | AA | 2H14048.25R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 26 CONDITIONER | CCAL | AA | 2H14048.26R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 27 HERB203C | CCAL | HA | 2H14048.27R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 28 BLANKA 2/25/04F | BLK | AB | 2H14048.28R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 29 LCSA 2/25/04F | LCS | AB | 2H14048.29R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 30 4221898F | T | AB | 2H14048.30R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 31 4221898MSF | MS | AB | 2H14048.31R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 32 4221898MSDF | MSD | AB | 2H14048.32R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 33 4221899F | T | AB | 2H14048.33R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 01865 |
| 34 HERB303C | CCAL | WT | 2H14048.34R | HERISCC.MET | 1 | 1 | 100.2 | 040560001A | |
| 35 4219619F DF10 | T | AC | 2H14048.35R | HERW.MET | 30 | 100 | 100.2 | 040540005A | 01865 |
| 36 HERB303C | CCAL | WS | 2H14048.36R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |

Set-up by: _____ Date: 2/26/04

2/26/04

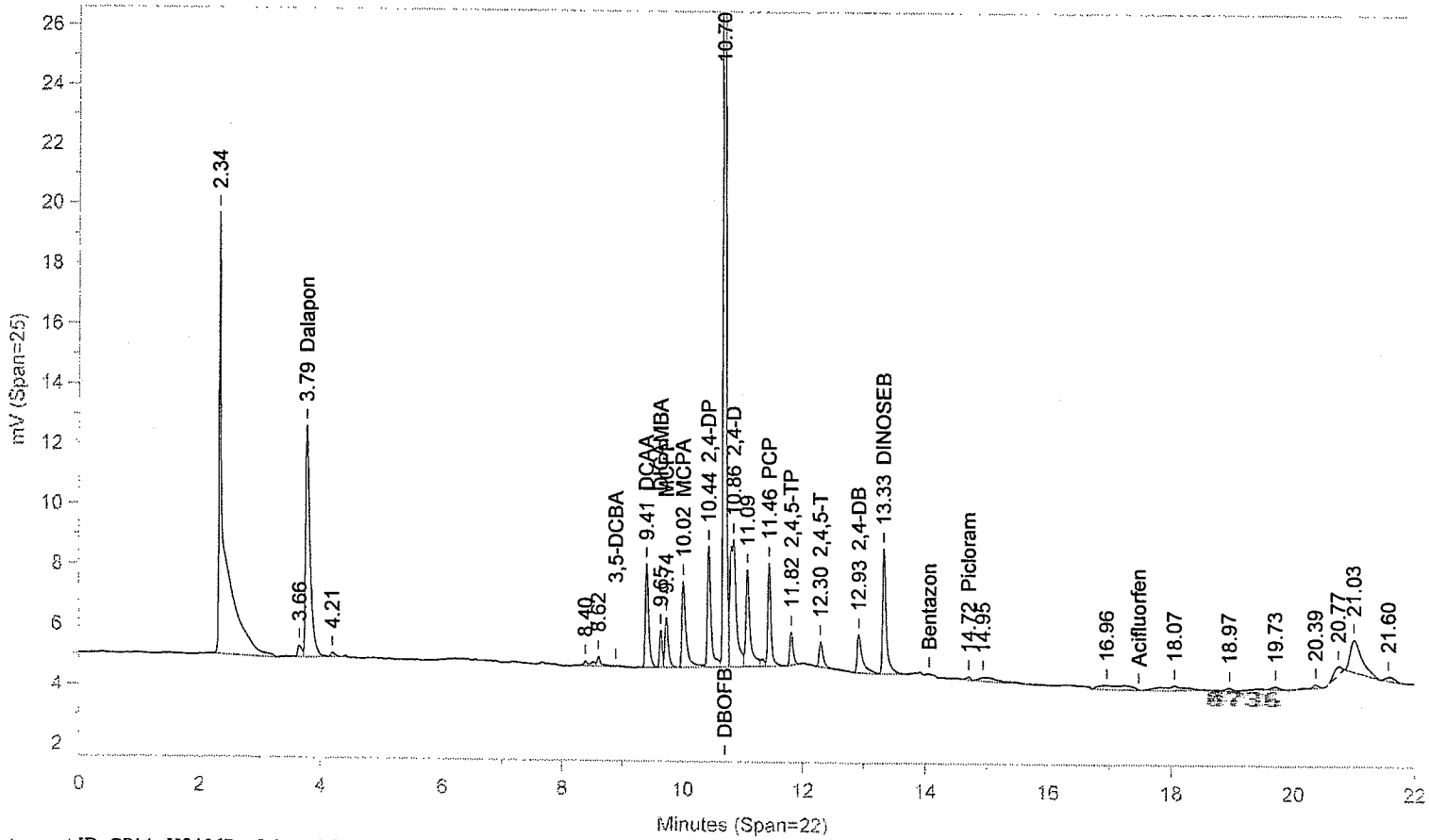
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.06R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 4:27:41 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.06R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 4:27:41 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.208 | 7194 | 123.623 | Dalapon | 3.791 | 7691 | 128.149 | Dalapon |
| 9.741 | 3110 | 55.786 | DCAA | 9.414 | 3424 | 54.999 | DCAA |
| 10.007 | 1180 | 4.539 | DICAMBA | 9.652 | 1213 | 4.645 | DICAMBA |
| 10.194 | 1095 | 5849.113 | MCPP | 9.738 | 1656 | 6605.702 | MCPP |
| 10.385 | 2258 | 7243.784 | MCPA | 10.02 | 2834 | 7432.232 | MCPA |
| 10.876 | 3360 | 57.464 | 2,4-DP | 10.442 | 4002 | 57.314 | 2,4-DP |
| 11.793 | 41876 | 100.2 | DBOFB | 10.702 | 51984 | 100.2 | DBOFB |
| 11.166 | 2665 | 56.18 | 2,4-D | 10.861 | 4202 | 60.521 | 2,4-D |
| 11.624 | 3317 | 4.958 | PCP | 11.458 | 3409 | 4.624 | PCP |
| 12.251 | 1065 | 5.171 | 2,4,5-TP | 11.822 | 1095 | 4.294 | 2,4,5-TP |
| 12.615 | 759 | 5.504 | 2,4,5-T | 12.302 | 838 | 5.107 | 2,4,5-T |
| 13.299 | 974 | 70.389 | 2,4-DB | 12.926 | 1256 | 53.144 | 2,4-DB |
| 14.765 | 3571 | 27.857 | DINOSEB | 13.331 | 4132 | 27.146 | DINOSEB |
| . | 0 | . | Picloram | 14.72 | 110 | .031 | Picloram |

Files:
Area File: C:\CPWIN\DATA1\1H14048.06A
Area File: C:\CPWIN\DATA1\1H14048B.06A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:08 AM
File Reported On: 2/18/2004 at 10:11:11 AM

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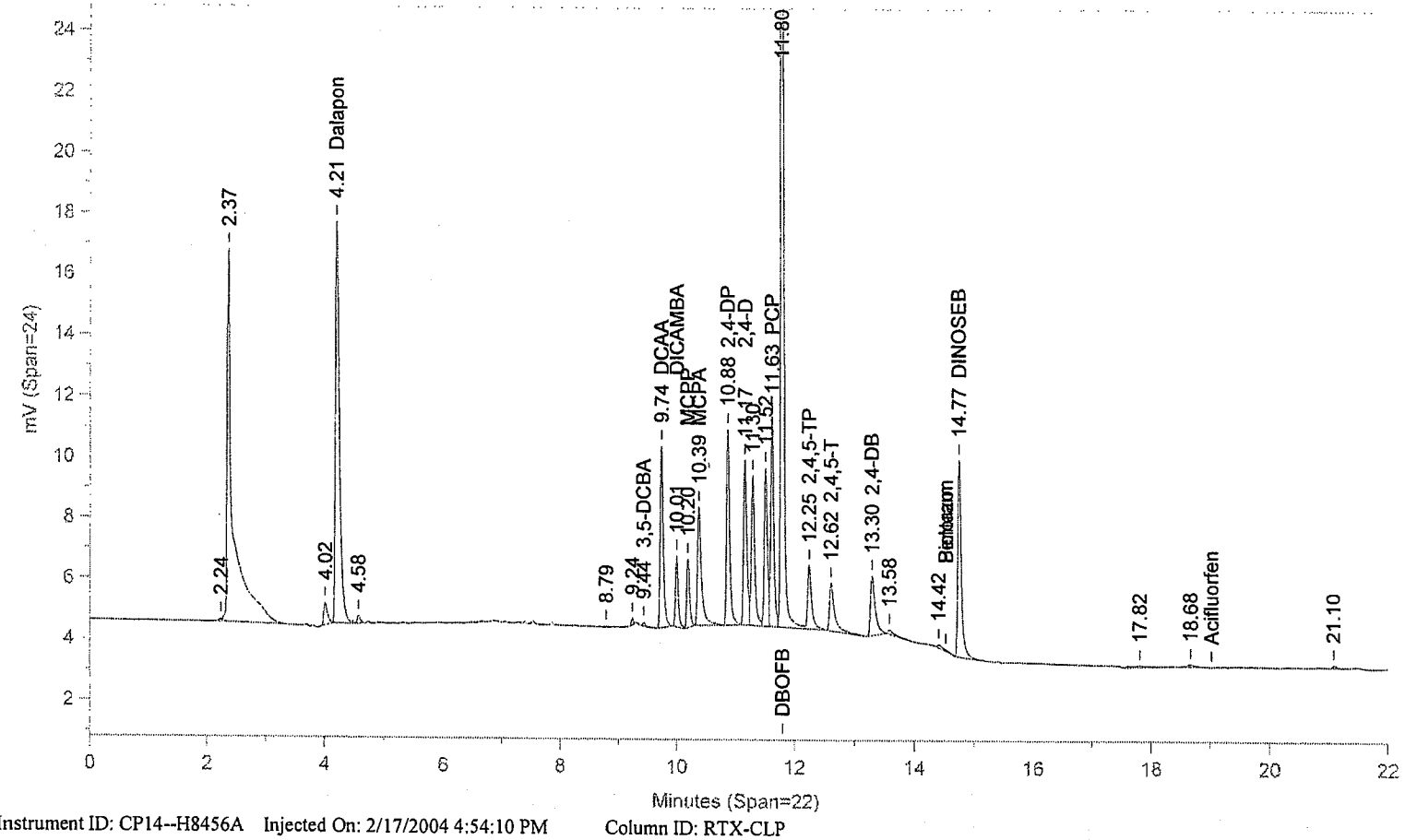
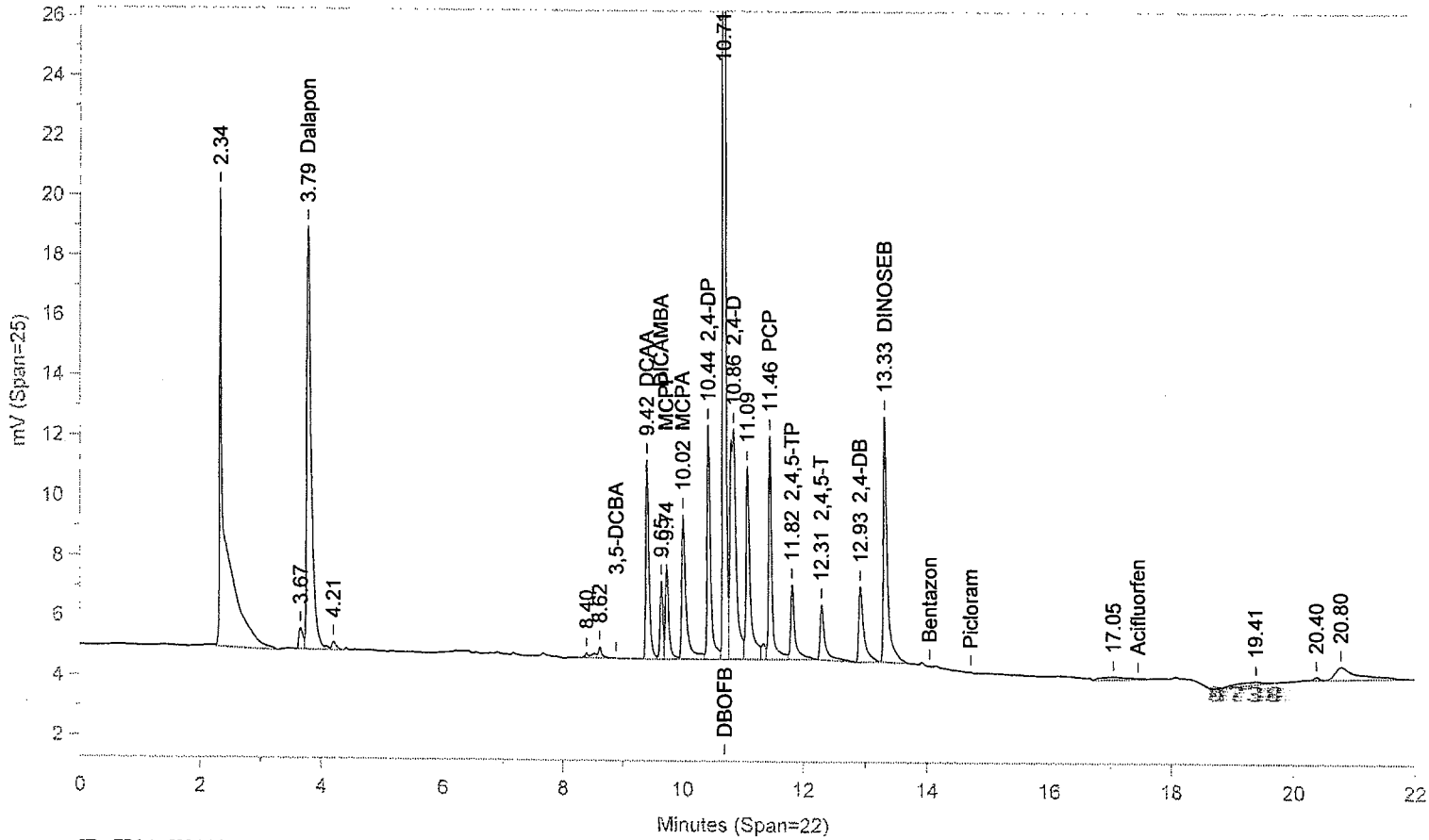
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.07R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 4:54:10 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.07R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 4:54:10 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.208 | 13231 | 226.196 | Dalapon | 3.792 | 14110 | 232.625 | Dalapon |
| 9.743 | 5986 | 103.558 | DCAA | 9.416 | 6628 | 102.806 | DCAA |
| 9.44 | 115 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.01 | 2325 | 9.138 | DICAMBA | 9.655 | 2613 | 9.847 | DICAMBA |
| 10.196 | 2253 | 10873.4 | MCPP | 9.74 | 3151 | 11340.07 | MCPP |
| 10.386 | 3890 | 11307.08 | MCPA | 10.022 | 4820 | 11578.93 | MCPA |
| 10.878 | 6466 | 105.679 | 2,4-DP | 10.444 | 7771 | 106.944 | 2,4-DP |
| 11.796 | 42894 | 100.2 | DBOFB | 10.705 | 53210 | 100.2 | DBOFB |
| 11.168 | 5444 | 106.534 | 2,4-D | 10.864 | 7647 | 106.424 | 2,4-D |
| 11.627 | 6915 | 10.05 | PCP | 11.462 | 7441 | 9.899 | PCP |
| 12.254 | 2094 | 9.447 | 2,4,5-TP | 11.824 | 2487 | 9.859 | 2,4,5-TP |
| 12.618 | 1560 | 10.421 | 2,4,5-T | 12.306 | 1836 | 10.692 | 2,4,5-T |
| 13.301 | 1954 | 121.287 | 2,4-DB | 12.928 | 2512 | 104.912 | 2,4-DB |
| 14.768 | 6479 | 47.625 | DINOSEB | 13.334 | 8165 | 51.391 | DINOSEB |

Files:
Area File: C:\CPWIN\DATA1\1H14048.07A
Area File: C:\CPWIN\DATA1\1H14048B.07A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:20 AM
File Reported On: 2/18/2004 at 10:11:23 AM

8739

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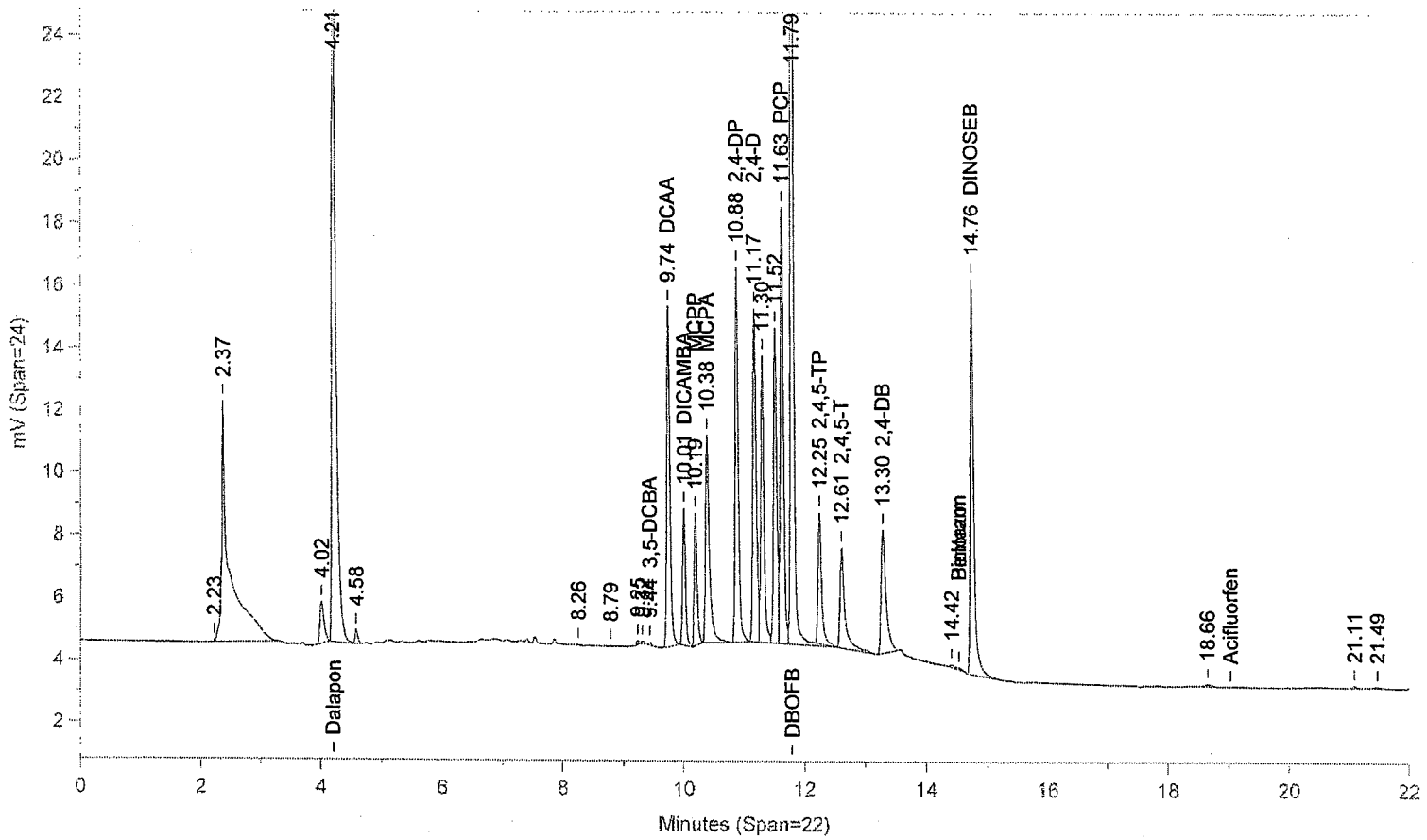
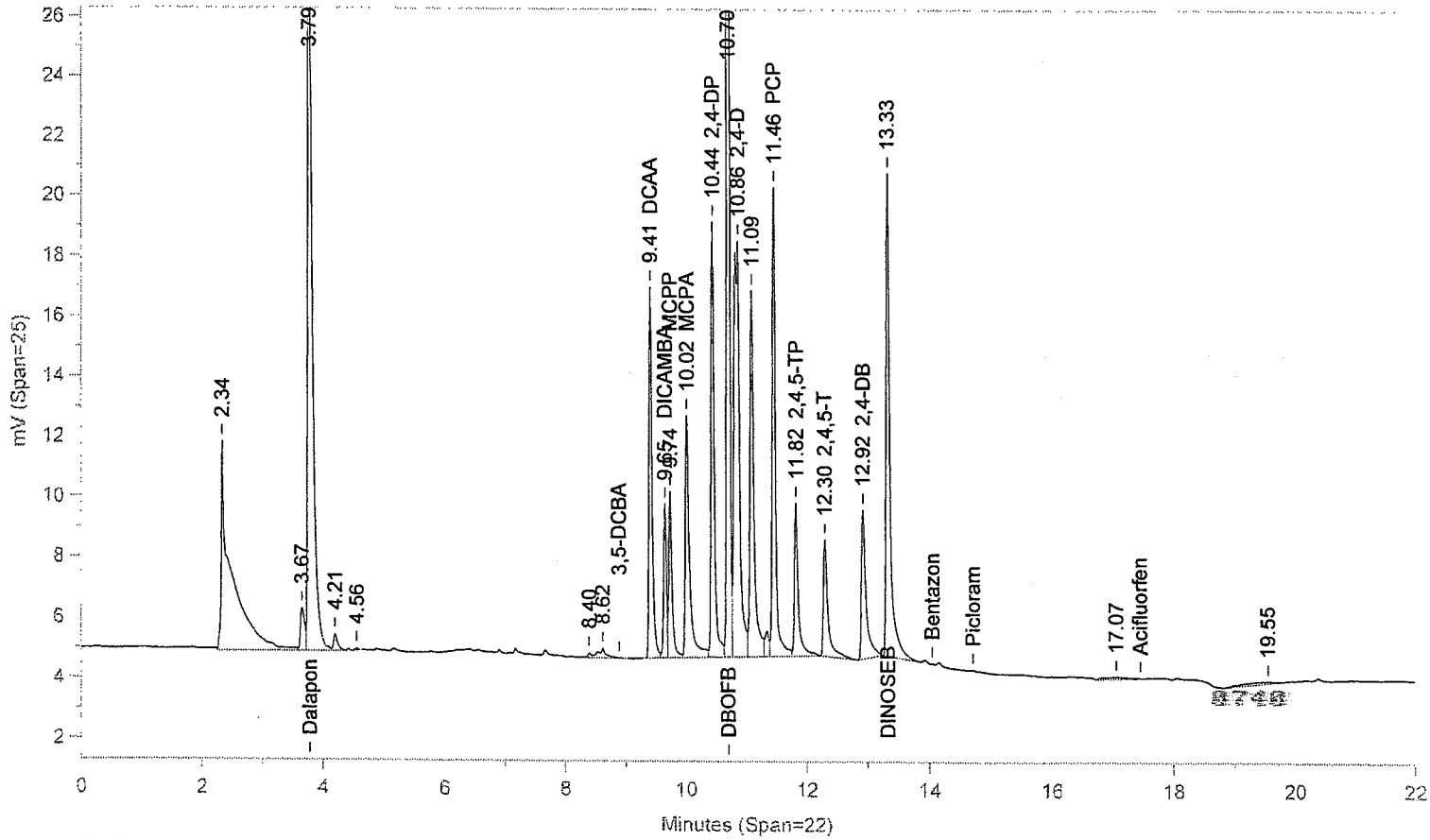
File: C:\CPWIN\DATA1\1H14048.08R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 5:20:41 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.08R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 5:20:41 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

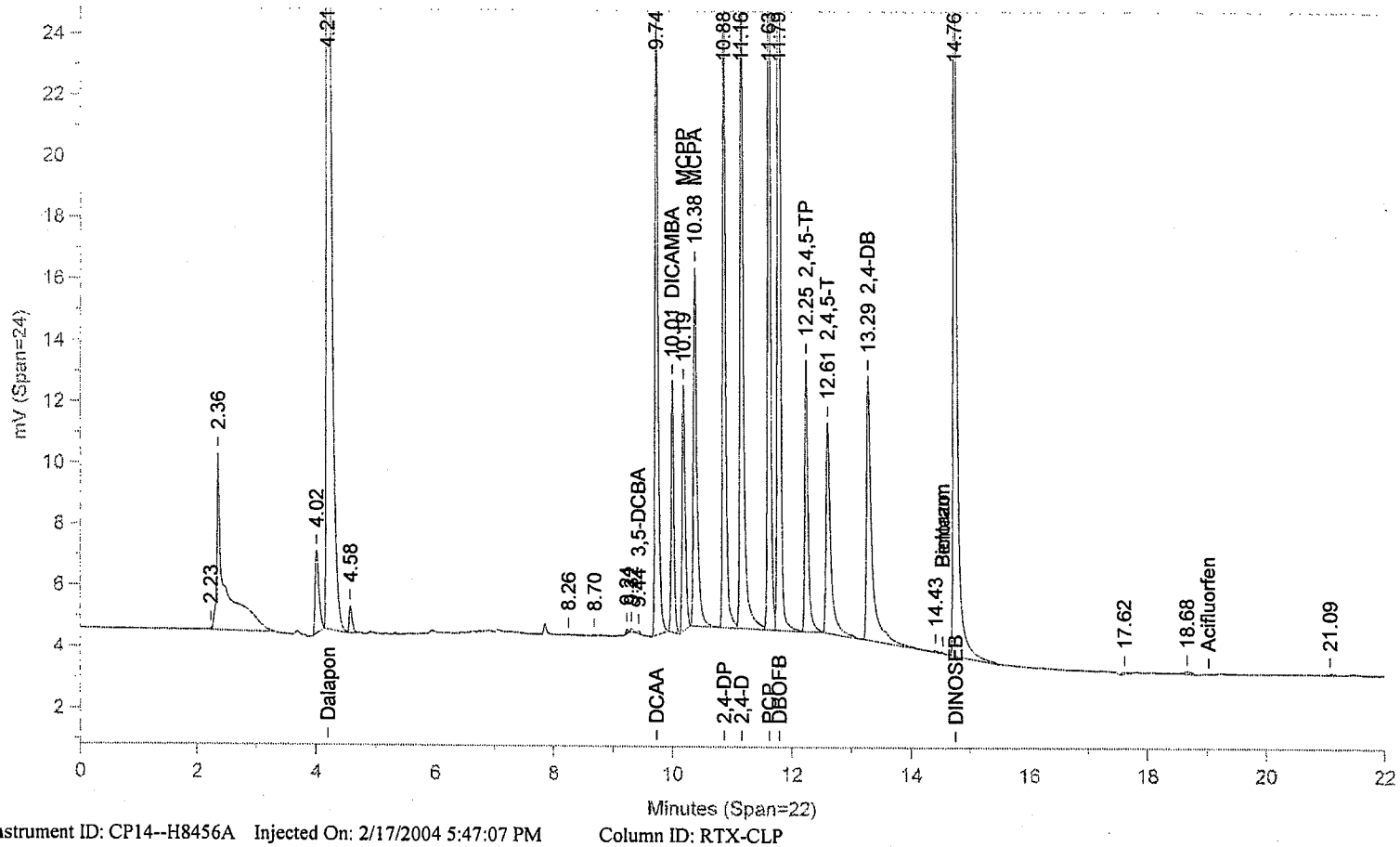
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.207 | 25015 | 429.566 | Dalapon | 3.79 | 26861 | 439.937 | Dalapon |
| 9.741 | 10938 | 185.799 | DCAA | 9.414 | 12297 | 186.553 | DCAA |
| 9.438 | 106 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.009 | 4395 | 18.185 | DICAMBA | 9.653 | 5075 | 18.83 | DICAMBA |
| 10.194 | 4239 | 19573.4 | MCPP | 9.738 | 5507 | 18811.52 | MCPP |
| 10.384 | 6640 | 18472.04 | MCPA | 10.02 | 8017 | 18290.41 | MCPA |
| 10.876 | 12047 | 192.698 | 2,4-DP | 10.441 | 14458 | 193.289 | 2,4-DP |
| 11.794 | 43533 | 100.2 | DBOFB | 10.704 | 54272 | 100.2 | DBOFB |
| 11.166 | 10706 | 199.978 | 2,4-D | 10.863 | 13799 | 187.696 | 2,4-D |
| 11.626 | 13968 | 20.029 | PCP | 11.46 | 15563 | 20.271 | PCP |
| 12.25 | 4203 | 18.514 | 2,4,5-TP | 11.821 | 5082 | 19.472 | 2,4,5-TP |
| 12.613 | 3209 | 20.235 | 2,4,5-T | 12.301 | 3846 | 20.922 | 2,4,5-T |
| 13.295 | 3944 | 221.171 | 2,4-DB | 12.922 | 4920 | 223.634 | 2,4-DB |
| 14.763 | 12682 | 91.784 | DINOSEB | 13.33 | 16029 | 97.655 | DINOSEB |

Files:
Area File: C:\CPWIN\DATA1\1H14048.08A
Area File: C:\CPWIN\DATA1\1H14048B.08A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:32 AM
File Reported On: 2/18/2004 at 10:11:35 AM

8741

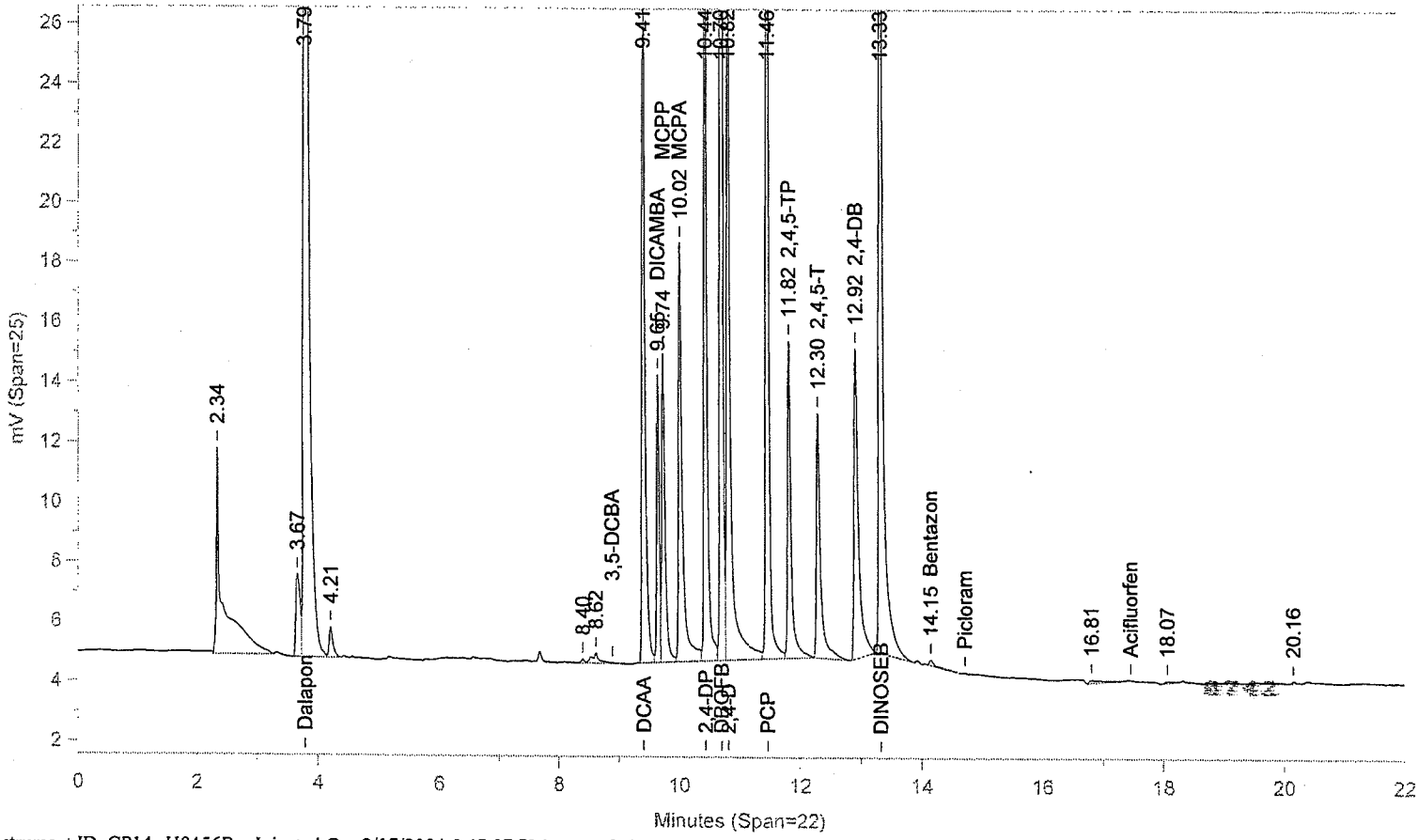
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.09R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 5:47:07 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.09R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 5:47:07 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

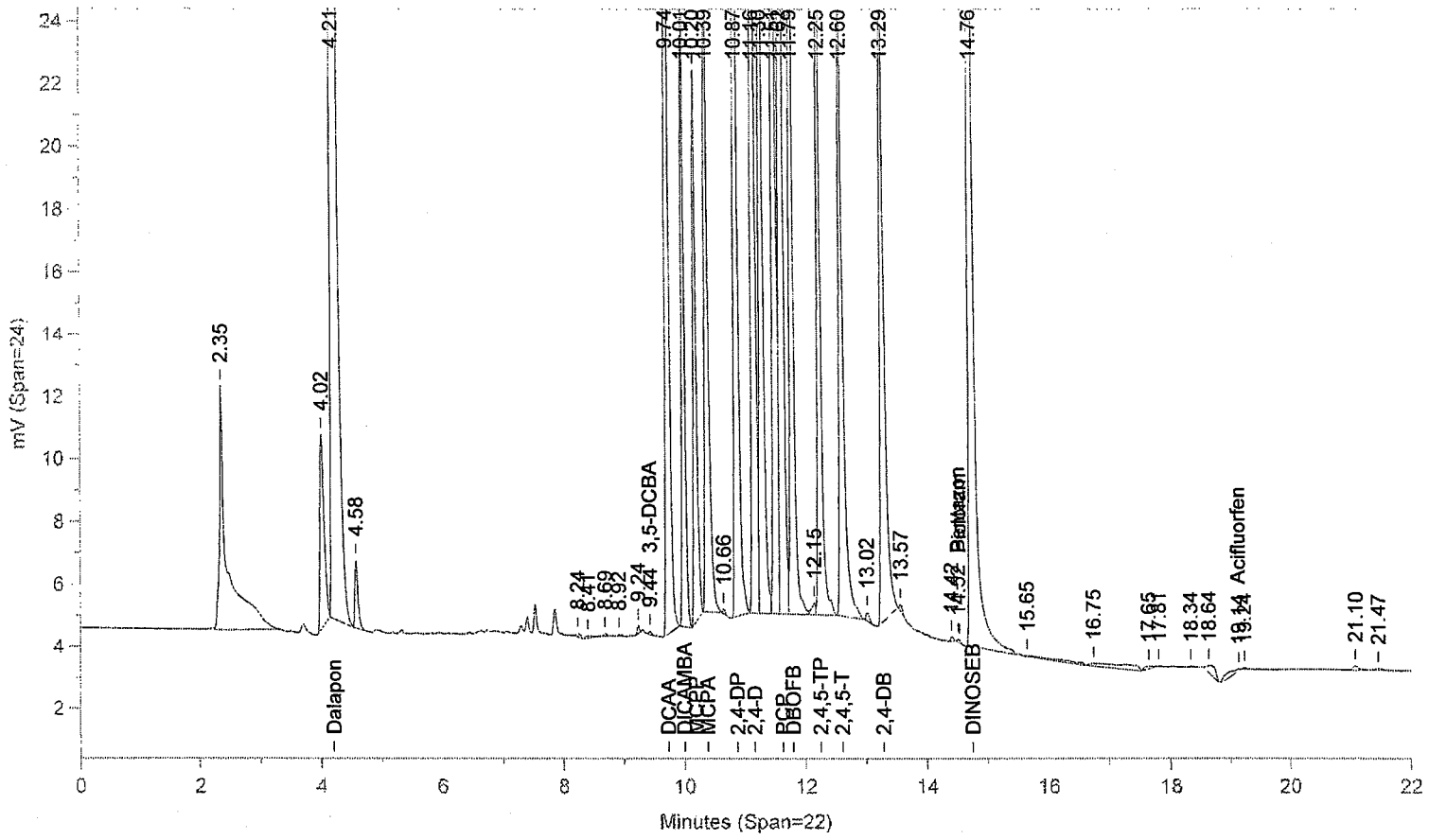
Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.209 | 47640 | 825.108 | Dalapon | 3.792 | 50622 | 830.118 | Dalapon |
| 9.74 | 20771 | 349.905 | DCAA | 9.413 | 23527 | 353.396 | DCAA |
| 9.439 | 102 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.008 | 8233 | 34.031 | DICAMBA | 9.653 | 9604 | 35.56 | DICAMBA |
| 10.195 | 8063 | 36533.03 | MCPP | 9.739 | 10327 | 34594.74 | MCPP |
| 10.384 | 11682 | 31770.67 | MCPA | 10.02 | 14000 | 31199.81 | MCPA |
| 10.875 | 20611 | 325.902 | 2,4-DP | 10.441 | 24885 | 328.398 | 2,4-DP |
| 11.794 | 43797 | 100.2 | DBOFB | 10.704 | 54596 | 100.2 | DBOFB |
| 11.164 | 21153 | 382.157 | 2,4-D | 10.817 | 25250 | 339.636 | 2,4-D |
| 11.626 | 28675 | 40.934 | PCP | 11.46 | 33038 | 42.703 | PCP |
| 12.249 | 8889 | 38.383 | 2,4,5-TP | 11.82 | 10583 | 39.44 | 2,4,5-TP |
| 12.61 | 6878 | 41.023 | 2,4,5-T | 12.299 | 8188 | 42.016 | 2,4,5-T |
| 13.291 | 8623 | 439.866 | 2,4-DB | 12.919 | 10368 | 427.666 | 2,4-DB |
| 14.762 | 27064 | 193.007 | DINOSEB | 13.329 | 32427 | 192.047 | DINOSEB |
| . | 0 | . | Bentazon | 14.152 | 186 | . | Bentazon |

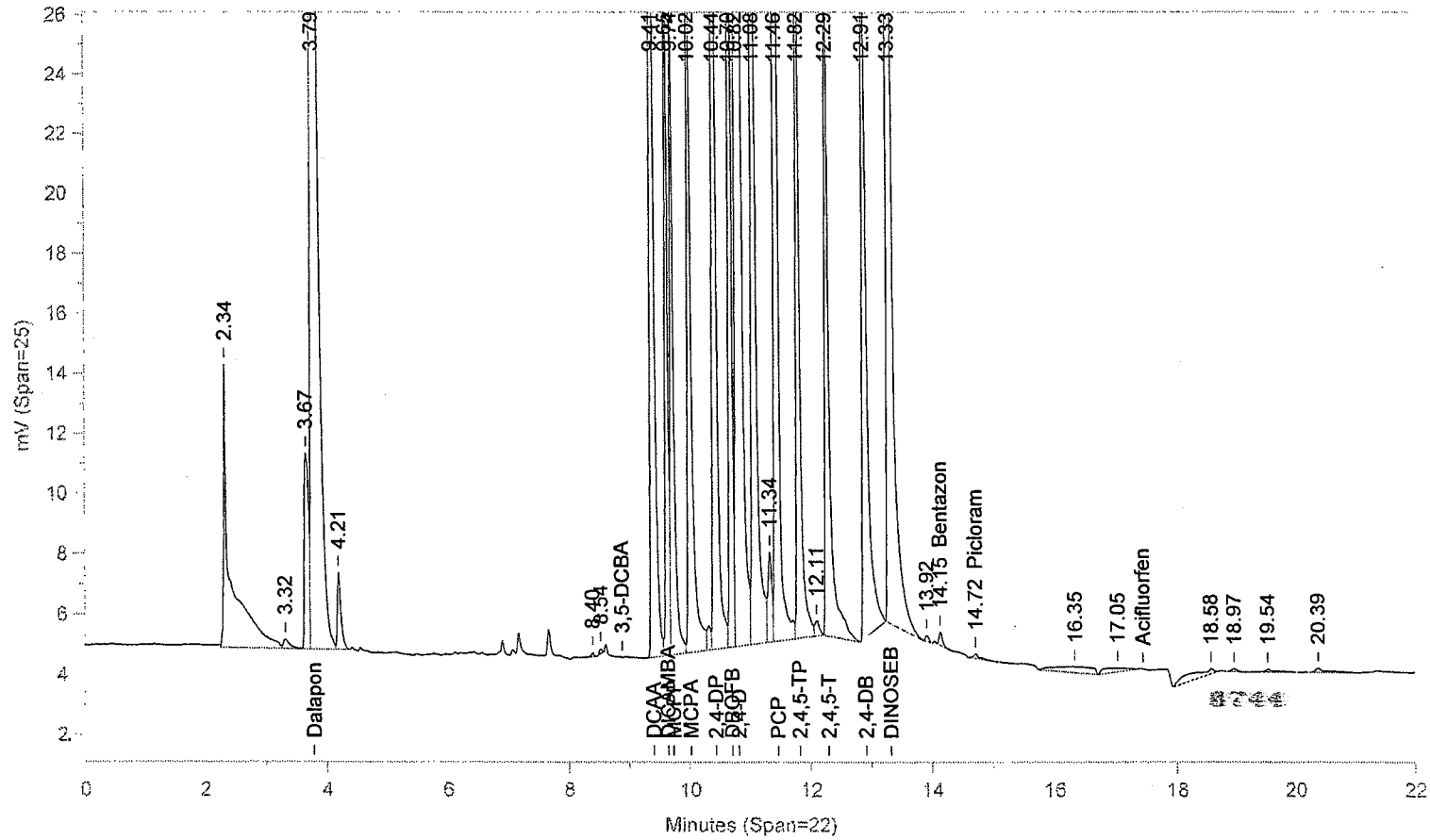
Files:
Area File: C:\CPWIN\DATA1\1H14048.09A
Area File: C:\CPWIN\DATA1\1H14048B.09A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:44 AM
File Reported On: 2/18/2004 at 10:11:47 AM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1H14048.10R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:13:37 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.10R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:13:37 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

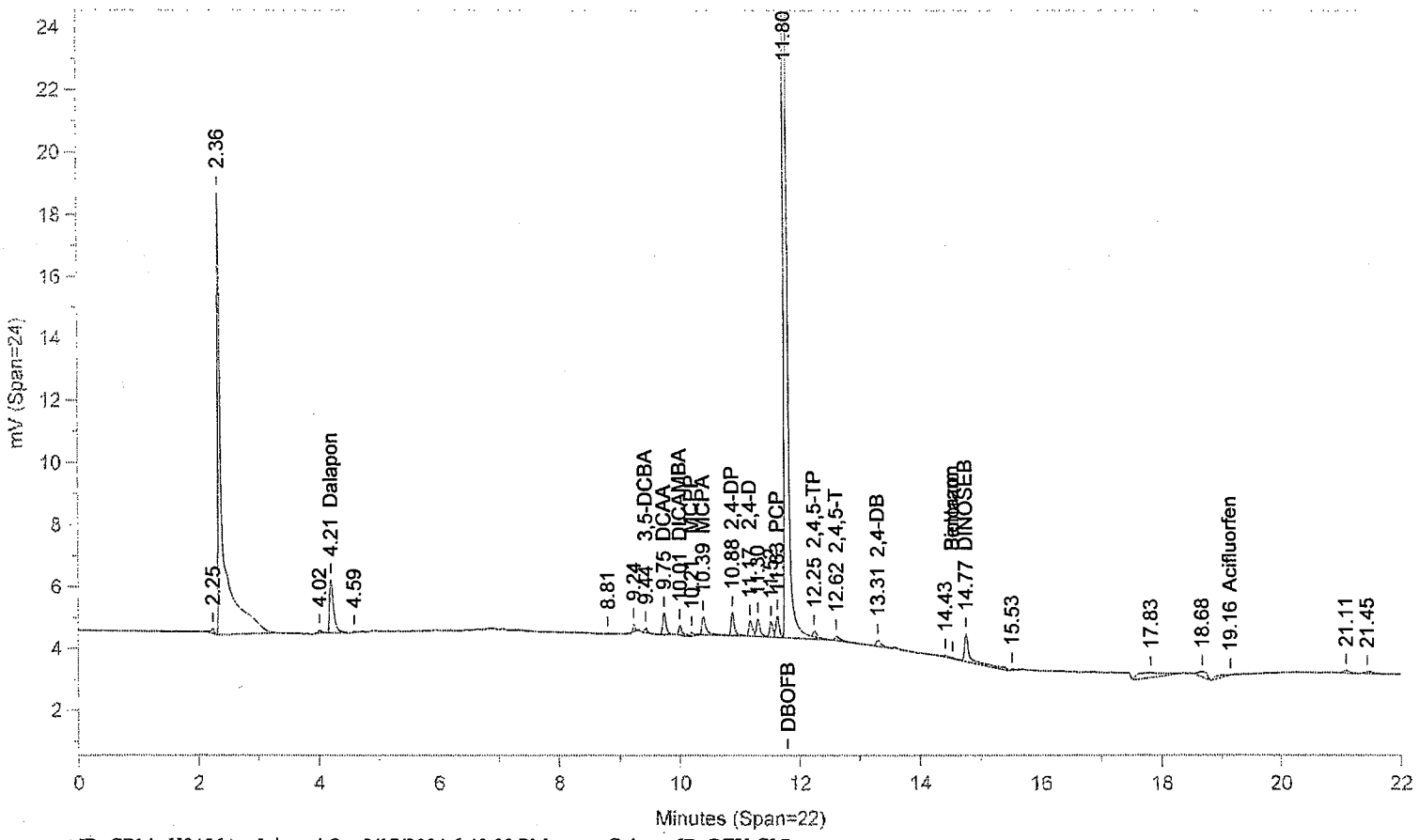
Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.21 | 107148 | 1790.218 | Dalapon | 3.791 | 110521 | 1753.456 | Dalapon |
| 9.737 | 46932 | 746.565 | DCAA | 9.41 | 53997 | 772.559 | DCAA |
| 9.439 | 108 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.007 | 21538 | 85.306 | DICAMBA | 9.651 | 25548 | 90.583 | DICAMBA |
| 10.196 | 17683 | 75382.16 | MCPP | 9.741 | 21787 | 69144.15 | MCPP |
| 10.387 | 24836 | 63446.46 | MCPA | 10.023 | 29654 | 62442.2 | MCPA |
| 10.873 | 52641 | 785.818 | 2,4-DP | 10.438 | 63485 | 796.036 | 2,4-DP |
| 11.793 | 46484 | 100.2 | DBOFB | 10.702 | 57380 | 100.2 | DBOFB |
| 11.161 | 51075 | 857.756 | 2,4-D | 10.815 | 61024 | 769.638 | 2,4-D |
| 11.624 | 73310 | 98.681 | PCP | 11.458 | 83481 | 102.618 | PCP |
| 12.246 | 25983 | 105.026 | 2,4,5-TP | 11.818 | 31110 | 109.197 | 2,4,5-TP |
| 12.604 | 20492 | 111.704 | 2,4,5-T | 12.294 | 24020 | 113.129 | 2,4,5-T |
| 13.285 | 22354 | 1016.855 | 2,4-DB | 12.913 | 26616 | 985.947 | 2,4-DB |
| 14.76 | 65849 | 441.028 | DINOSEB | 13.325 | 79451 | 443.365 | DINOSEB |
| 14.524 | 93 | . | Bentazon | 14.149 | 434 | . | Bentazon |
| . | 0 | . | Picloram | 14.724 | 149 | 115.525 | Picloram |
| 19.136 | 79 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\1H14048.10A
Area File: C:\CPWIN\DATA1\1H14048B.10A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:54 AM
File Reported On: 2/18/2004 at 10:11:59 AM

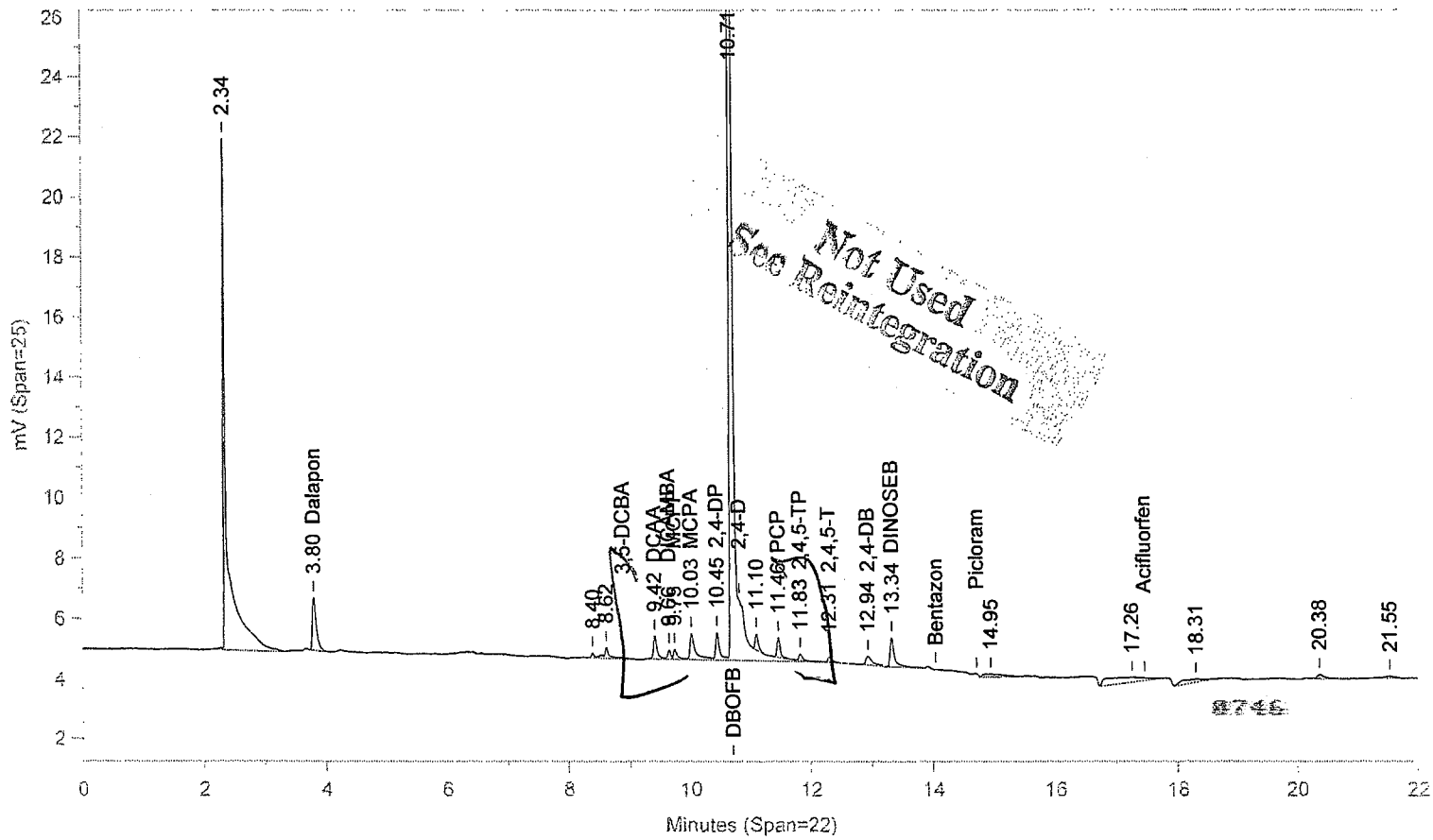
8745

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.11R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

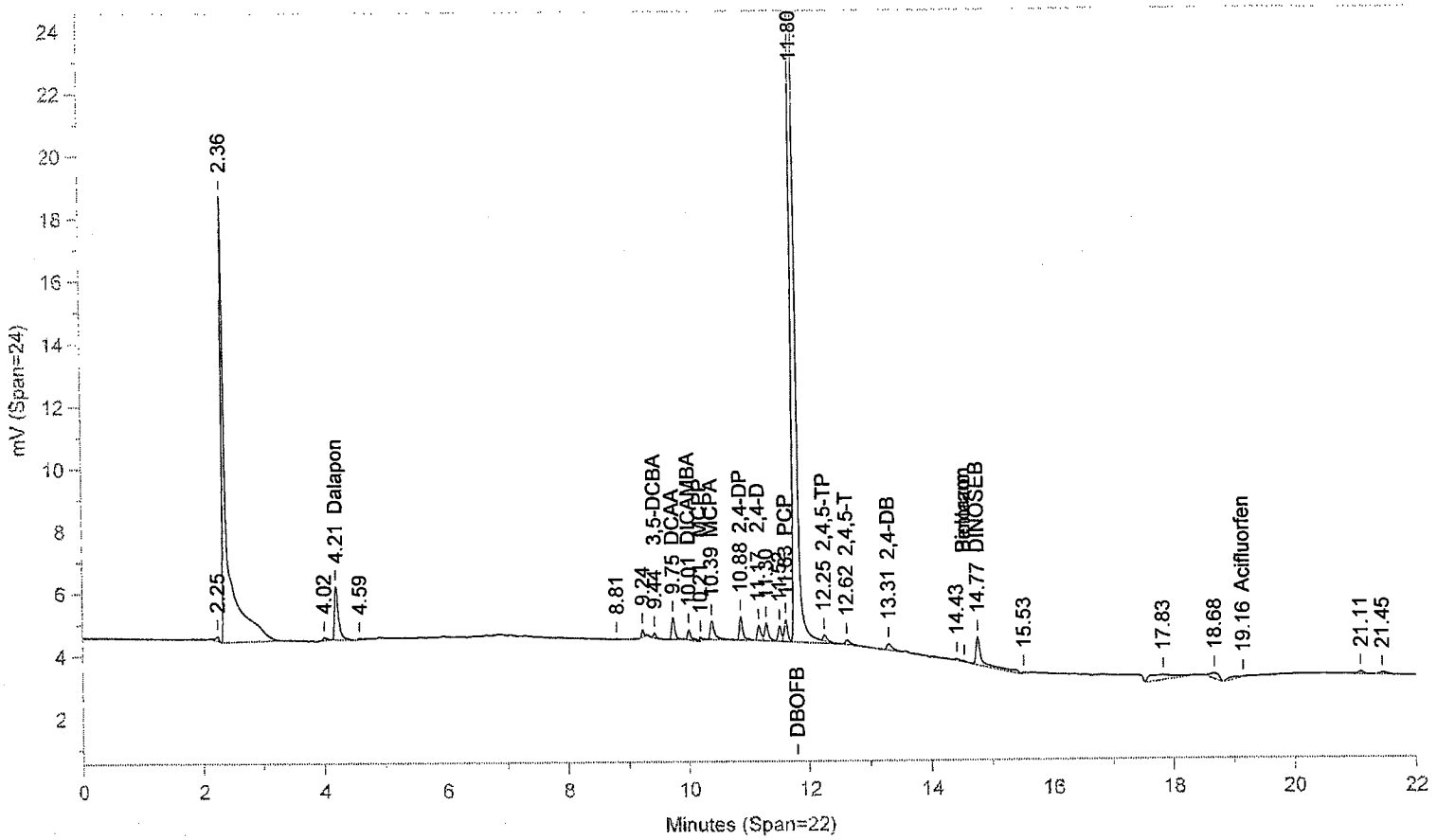
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.212 | 1710 | 26.011 | Dalapon | 3.795 | 1749 | 25.395 | Dalapon |
| 9.746 | 695 | 9.915 | DCAA | 9.42 | 757 | 9.764 | DCAA |
| 9.443 | 153 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.011 | 305 | 1.085 | DICAMBA | 9.656 | 300 | .96 | DICAMBA |
| 10.205 | 115 | 439.701 | MCPP | 9.746 | 327 | 933.943 | MCPP |
| 10.393 | 586 | 1338.856 | MCPA | 10.028 | 862 | 1630.154 | MCPA |
| 10.881 | 741 | 9.919 | 2,4-DP | 10.447 | 921 | 10.4 | 2,4-DP |
| 11.797 | 51964 | 100.2 | DBOFB | 10.706 | 63678 | 100.2 | DBOFB |
| 11.172 | 479 | 7.143 | 2,4-D | . | 0 | . | 2,4-D |
| 11.628 | 700 | .843 | PCP | 11.462 | 658 | .729 | PCP |
| 12.255 | 184 | .663 | 2,4,5-TP | 11.827 | 203 | .637 | 2,4,5-TP |
| 12.623 | 143 | .678 | 2,4,5-T | 12.312 | 173 | .709 | 2,4,5-T |
| 13.307 | 204 | 7.947 | 2,4-DB | 12.941 | 285 | 9.04 | 2,4-DB |
| 14.77 | 889 | 5.314 | DINOSEB | 13.337 | 961 | 4.793 | DINOSEB |
| 19.158 | 8 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\1H14048.11A
Area File: C:\CPWIN\DATA1\1H14048B.11A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:12:06 AM
File Reported On: 2/18/2004 at 10:12:09 AM

Not Used
See Reintegration

8747

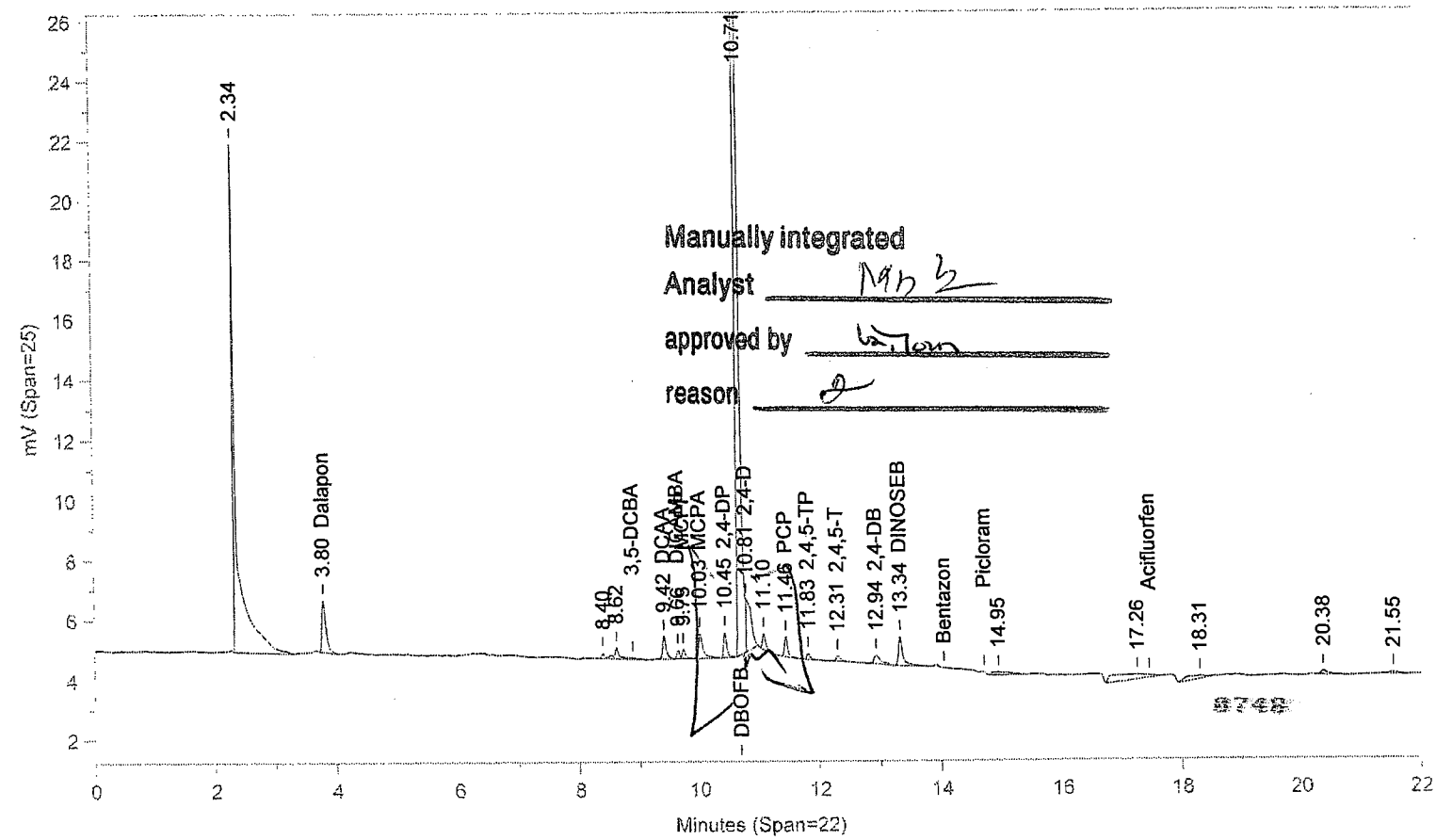
LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLP

M=manually integrated

File: C:\CPWIN\DATA1\1H14048B.11R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.212 | 1710 | 26.011 | Dalapon | 3.795 | 1749 | 25.463 | Dalapon |
| 9.746 | 695 | 9.915 | DCAA | 9.42 | 752 | 9.73 | DCAA |
| 9.443 | 153 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.011 | 305 | 1.085 | DICAMBA | 9.656 | 287 | .92 | DICAMBA |
| 10.205 | 115 | 439.701 | MCPP | 9.746 | 310 | 888.757 | MCPP |
| 10.393 | 586 | 1338.856 | MCPA | 10.028 | 828 | 1569.243 | MCPA |
| 10.881 | 741 | 9.919 | 2,4-DP | 10.447 | 856 | 9.693 | 2,4-DP |
| 11.797 | 51964 | 100.2 | DBOFB | 10.706 | 63507 | 100.2 | DBOFB |
| 11.172 | 479 | 7.143 | 2,4-D | 10.807 | 1746 | 19.788 | 2,4-D |
| 11.628 | 700 | .843 | PCP | 11.462 | 658 | .731 | PCP |
| 12.255 | 184 | .663 | 2,4,5-TP | 11.827 | 203 | .639 | 2,4,5-TP |
| 12.623 | 143 | .678 | 2,4,5-T | 12.312 | 173 | .711 | 2,4,5-T |
| 13.307 | 204 | 7.947 | 2,4-DB | 12.941 | 285 | 9.064 | 2,4-DB |
| 14.77 | 889 | 5.314 | DINOSEB | 13.337 | 961 | 4.806 | DINOSEB |
| 19.158 | 8 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:16:30 AM
File Reported On: 2/18/2004 at 10:16:29 AM

9749

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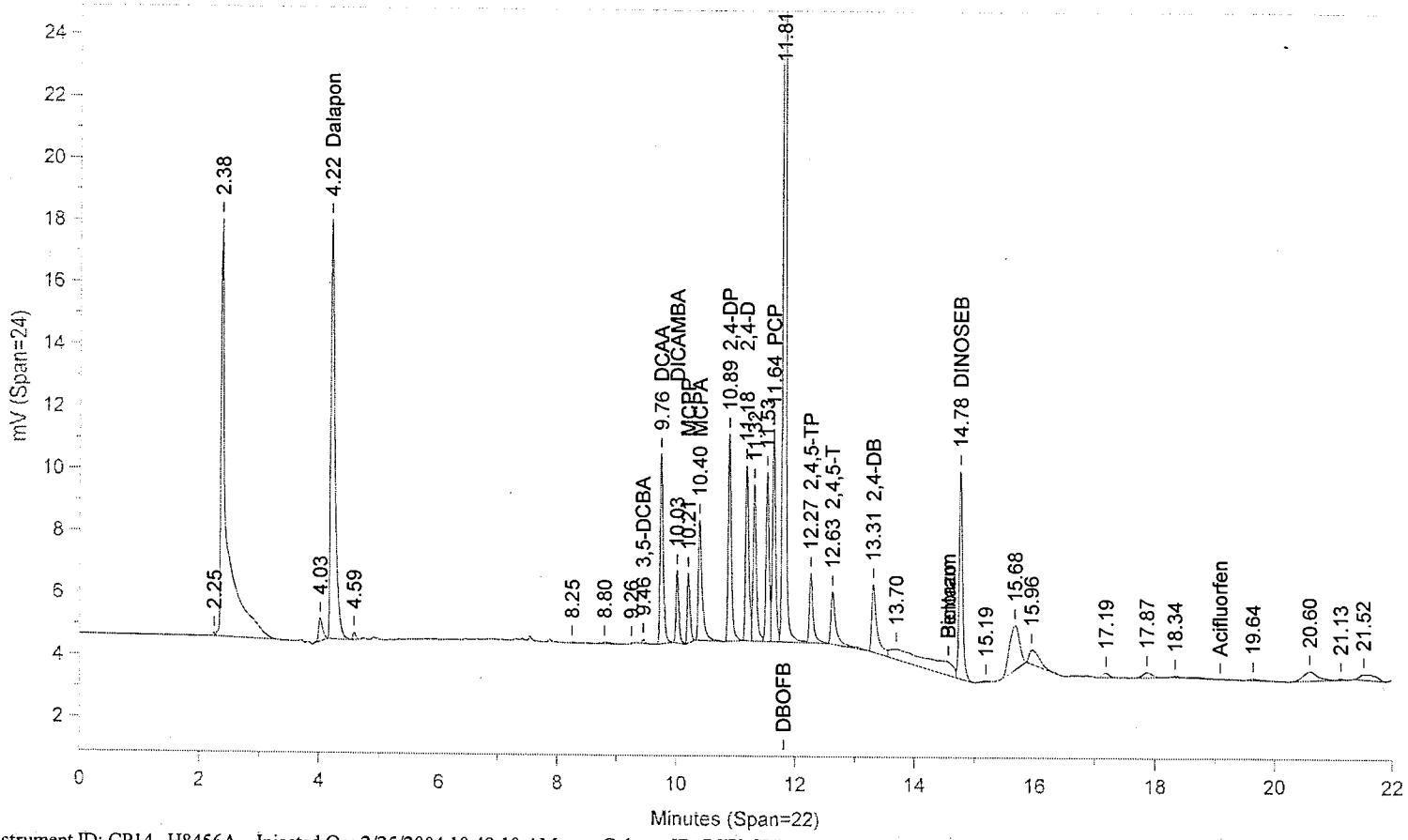
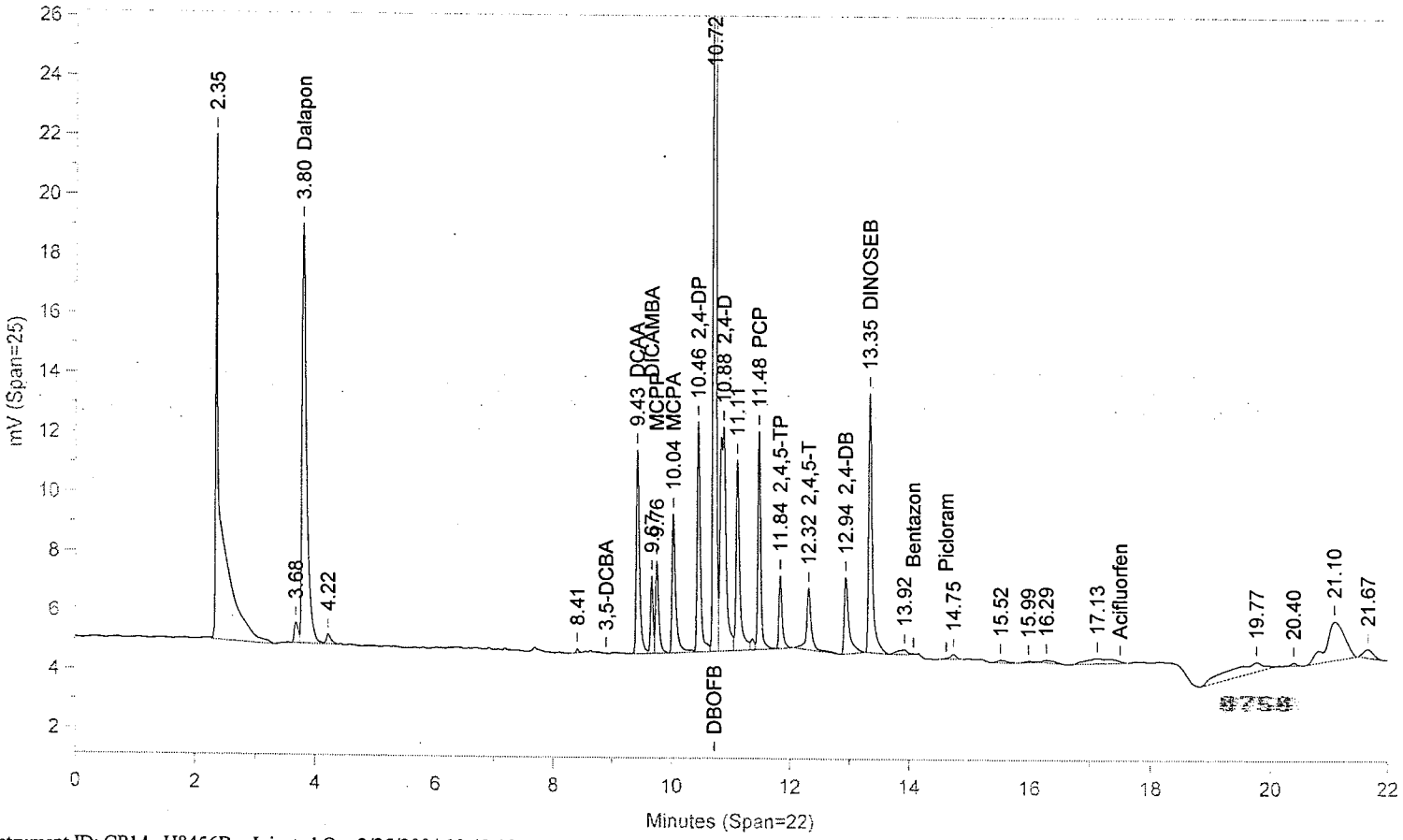
File: C:\CPWIN\DATA1\2H14048.04R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 10:49:10 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.04R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 10:49:10 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

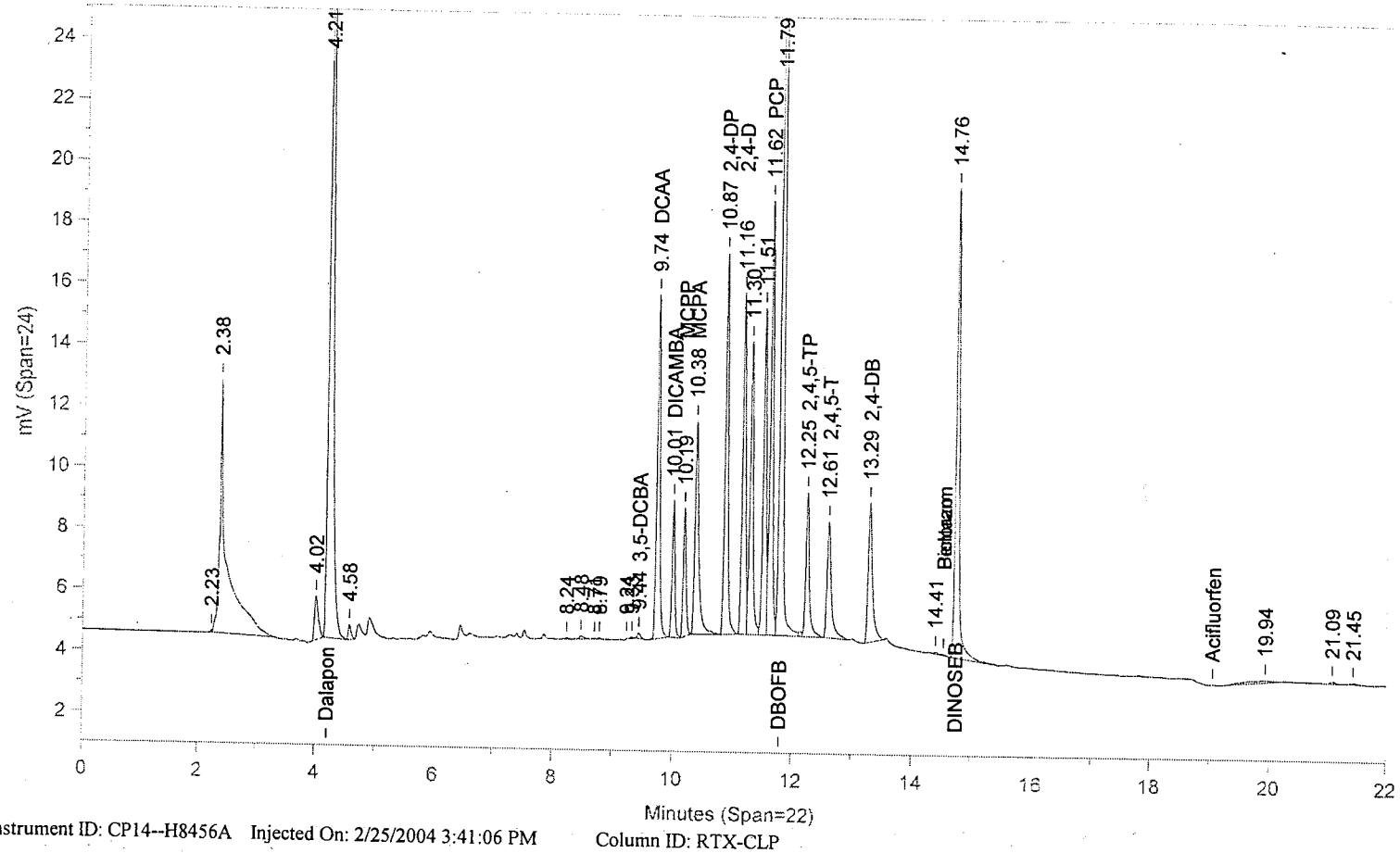
Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.221 | 13532 | 251.031 | Dalapon | 3.805 | 14178 | 246.77 | Dalapon |
| 9.758 | 6145 | 106.896 | DCAA | 9.431 | 6876 | 106.359 | DCAA |
| 9.456 | 128 | .091 | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.025 | 2352 | 10.197 | DICAMBA | 9.67 | 2616 | 10.021 | DICAMBA |
| 10.211 | 2262 | 10517.53 | MCPP | 9.755 | 3134 | 10728.39 | MCPP |
| 10.401 | 3899 | 10860.76 | MCPA | 10.036 | 4695 | 10644.78 | MCPA |
| 10.893 | 6682 | 109.032 | 2,4-DP | 10.458 | 7782 | 105.389 | 2,4-DP |
| 11.81 | 42609 | 100.2 | DBOFB | 10.72 | 53108 | 100.2 | DBOFB |
| 11.183 | 5667 | 103.062 | 2,4-D | 10.879 | 7550 | 102.304 | 2,4-D |
| 11.643 | 6859 | 10.071 | PCP | 11.477 | 7354 | 9.763 | PCP |
| 12.267 | 2255 | 9.885 | 2,4,5-TP | 11.837 | 2473 | 9.29 | 2,4,5-TP |
| 12.631 | 1685 | 9.72 | 2,4,5-T | 12.318 | 2095 | 10.297 | 2,4,5-T |
| 13.312 | 2192 | 103.994 | 2,4-DB | 12.939 | 2598 | 98.903 | 2,4-DB |
| 14.779 | 6701 | 48.86 | DINOSEB | 13.346 | 8749 | 52.305 | DINOSEB |

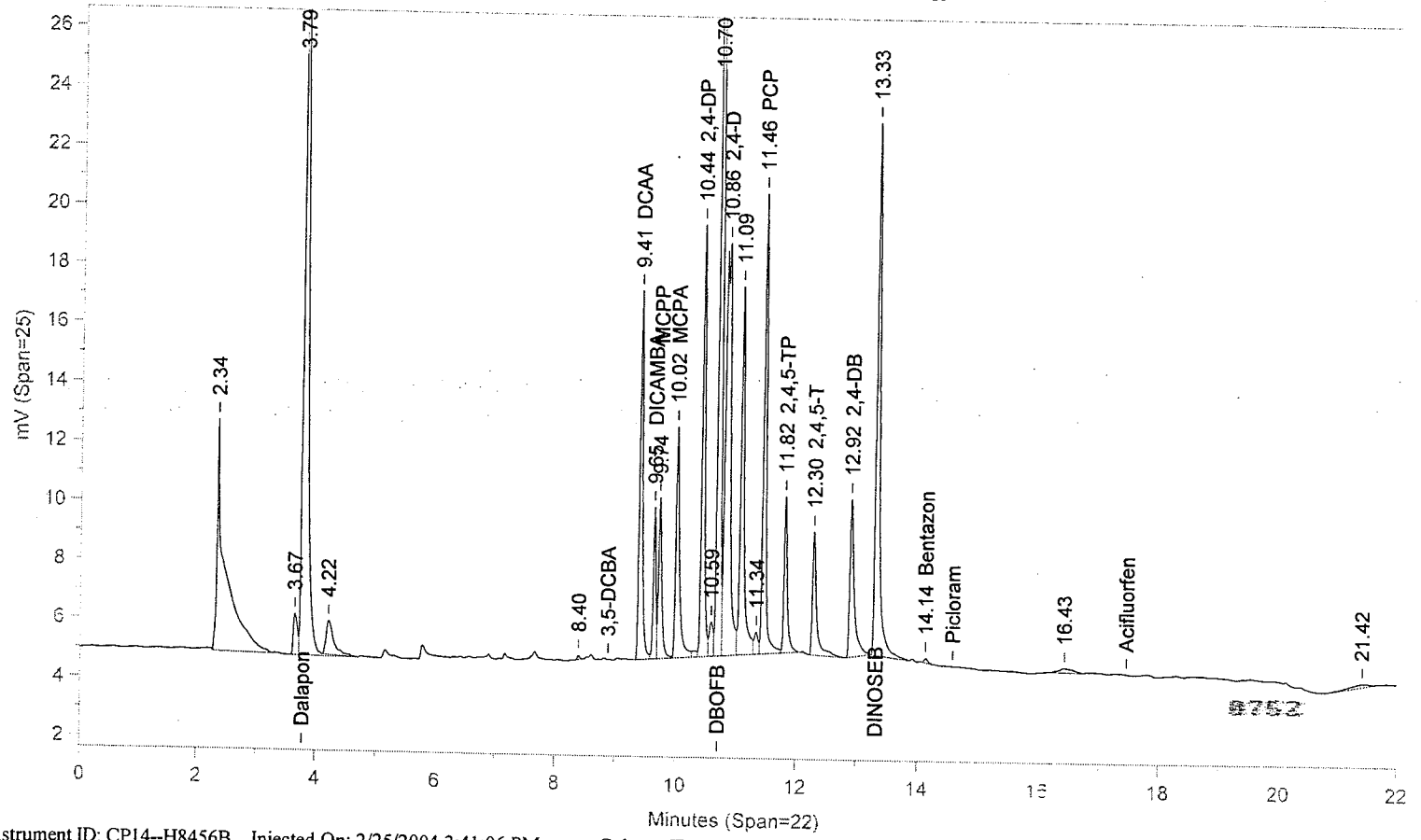
Files:
Area File: C:\CPWIN\DATA1\2H14048.04A
Area File: C:\CPWIN\DATA1\2H14048B.04A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 11:11:14 AM
File Reported On: 2/25/2004 at 11:11:16 AM

File: C:\CPWIN\DATA1\2H14048.15R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 3:41:06 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.15R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 3:41:06 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 min

Volume Inj: Al#A

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RPD A | RT B | Height B | Amount B | Compound B | RPD B |
|---|---|---|---|---|---|---|---|---|---|
| 4.208 | 25932 | 464.691 | Dalapon | 2. | 3.79 | 26884 | 454.558 | Dalapon | -.3 |
| 9.739 | 11254 | 189.119 | DCAA | .7 | 9.411 | 12488 | 187.632 | DCAA | -.1 |
| 9.441 | 184 | .127 | 3,5-DCBA | -112.7 | . | 0 | . | 3,5-DCBA | ERR |
| 10.007 | 4499 | 18.844 | DICAMBA | .2 | 9.651 | 5155 | 19.183 | DICAMBA | 2. |
| 10.192 | 4224 | 18972.81 | MCPP | .8 | 9.736 | 5468 | 18183.52 | MCPP | -3.4 |
| 10.382 | 6977 | 18771.41 | MCPA | .1 | 10.018 | 7828 | 17239.99 | MCPA | -8. |
| 10.874 | 12456 | 196.33 | 2,4-DP | 3.8 | 10.439 | 14618 | 192.321 | 2,4-DP | 1.7 |
| 11.792 | 44111 | 100.2 | DBOFB | . | 10.702 | 54669 | 100.2 | DBOFB | . |
| 11.164 | 11155 | 195.958 | 2,4-D | 4. | 10.86 | 13934 | 183.412 | 2,4-D | -2.6 |
| 11.624 | 14209 | 20.151 | PCP | .5 | 11.458 | 15570 | 20.078 | PCP | .1 |
| 12.248 | 4724 | 20.005 | 2,4,5-TP | 5.2 | 11.818 | 5312 | 19.385 | 2,4,5-TP | 1.9 |
| 12.61 | 3812 | 21.244 | 2,4,5-T | 12. | 12.298 | 4177 | 19.948 | 2,4,5-T | 5.2 |
| 13.29 | 4568 | 209.332 | 2,4-DB | 10.3 | 12.917 | 5341 | 197.471 | 2,4-DB | 4.1 |
| 14.759 | 15332 | 107.995 | DINOSEB | 13.8 | 13.327 | 17971 | 104.373 | DINOSEB | 10. |
| . | 0 | . | Bentazon | ERR | 14.144 | 155 | .247 | Bentazon | -124.7 |

Files:
Area File: C:\CPWIN\DATA1\2H14048.15A
Area File: C:\CPWIN\DATA1\2H14048B.15A
Method A: C:\CPWIN\DATA1\HERISCC.MET
Method B: C:\CPWIN\DATA1\HERISCCB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERISCC.FMTA
Format B: C:\CPWIN\DATA1\HERISCC.FMTB
Area File Created On: 2/25/2004 4:03:10 PM
File Reported On: 2/25/2004 at 4:03:12 PM

8253

# Raw QC Data

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/24/04F PBLKXH Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: State:
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 11:15:44
Instrument : CP14--H8456A
Result file : 2H14048.05R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 109.8% Conc.: 43.923359

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.22 | 4.28 | 112 | 0.391827 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 4871 E | 0.653288 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 13410 | 43.923359 |
| **MCPP** | 10.10 | 10.25 | 10.29 | 450 | 393.731995 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 3178 | 1666.527466 |
| **2,4-DP** | 10.78 | 10.80 | 10.97 | 822 | 2.526106 |
| **2,4-D** | 11.07 | 11.23 | 11.26 | 1103 | 3.776308 |
| **PCP** | 11.53 | 11.67 | 11.73 | 543 | 0.150068 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 45263 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.19 | 12.35 | 86 | 0.071053 |
| **2,4,5-T** | 12.51 | 12.59 | 12.72 | 334 | 0.362339 |
| **2,4-DB** | 13.19 | 13.33 | 13.40 | 99 | 0.881009 |
| **Bentazon** | 14.44 | 14.47 | 14.67 | 845 E | 0.120256 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 549 | 0.753914 |
| **Acifluorfen** | 18.95 | 19.06 | 19.18 | 220 E | 0.017609 |

## Analysis Report (B)

Injected on : FEB 25, 2004 11:15:44
Instrument : CP14--H8456B
Result file : 2H14048B.05R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 105.5% Conc.: 42.19986

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.83 | 3.89 | 1825 | 6.095829 |
| **3,5-DCBA** | 8.79 | 8.92 | 9.00 | 1590 E | 0.190522 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 14220 | 42.199860 |
| **DICAMBA** | 9.56 | 9.60 | 9.75 | 799 | 0.587427 |
| **MCPP** | 9.65 | 9.81 | 9.83 | 208 | 136.548141 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 1364 | 3.544169 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 55361 | 2.004000 |
| **2,4,5-TP** | 11.72 | 11.77 | 11.92 | 1321 | 0.951946 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 667 | 4.872818 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 6.095829 | | | | ** 175.84 | |
| 3,5-DCBA | A | 0.653288 | | | E | ** 109.68 | |
| DCAA | A | 43.923359 | | | | 4.00 | |
| DICAMBA | | | | | | | |
| MCPP | A | 393.731995 | | | | ** 97.00 | |
| MCPA | | | | | | | |
| 2,4-DP | B | 3.544169 | | | | 33.54 | |
| 2,4-D | | | <10 | <2 | | | |
| PCP | | | | | | | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | | | <1 | <0.2 | | | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 4.872818 | | | | ** 138.75 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | | | | | E | | |

Units: ug/l

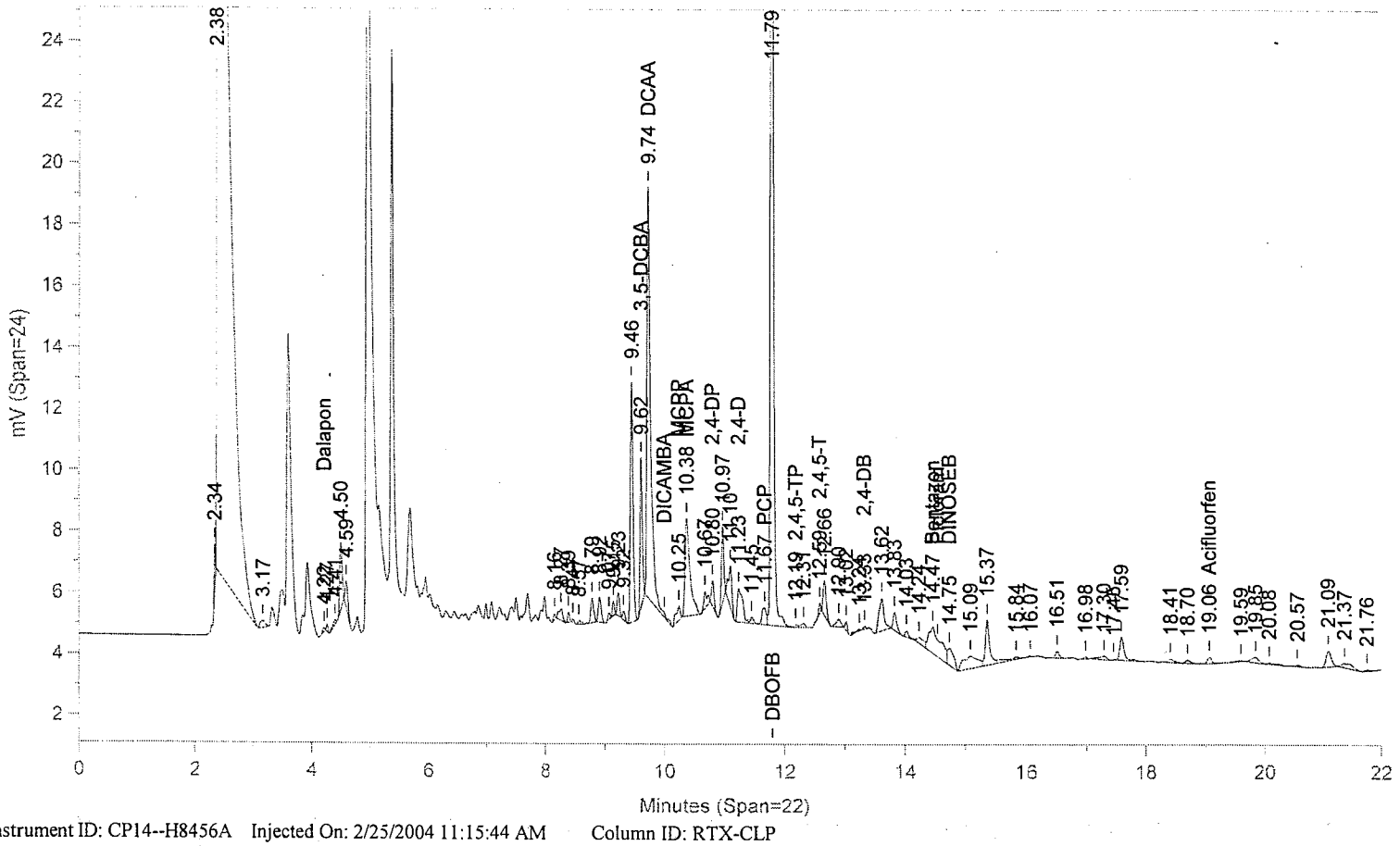
Reviewed by: [signature] Date: 2/26/04
Verified by: [signature] Date: 2/27/04

8755

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/25/04 12:37:52

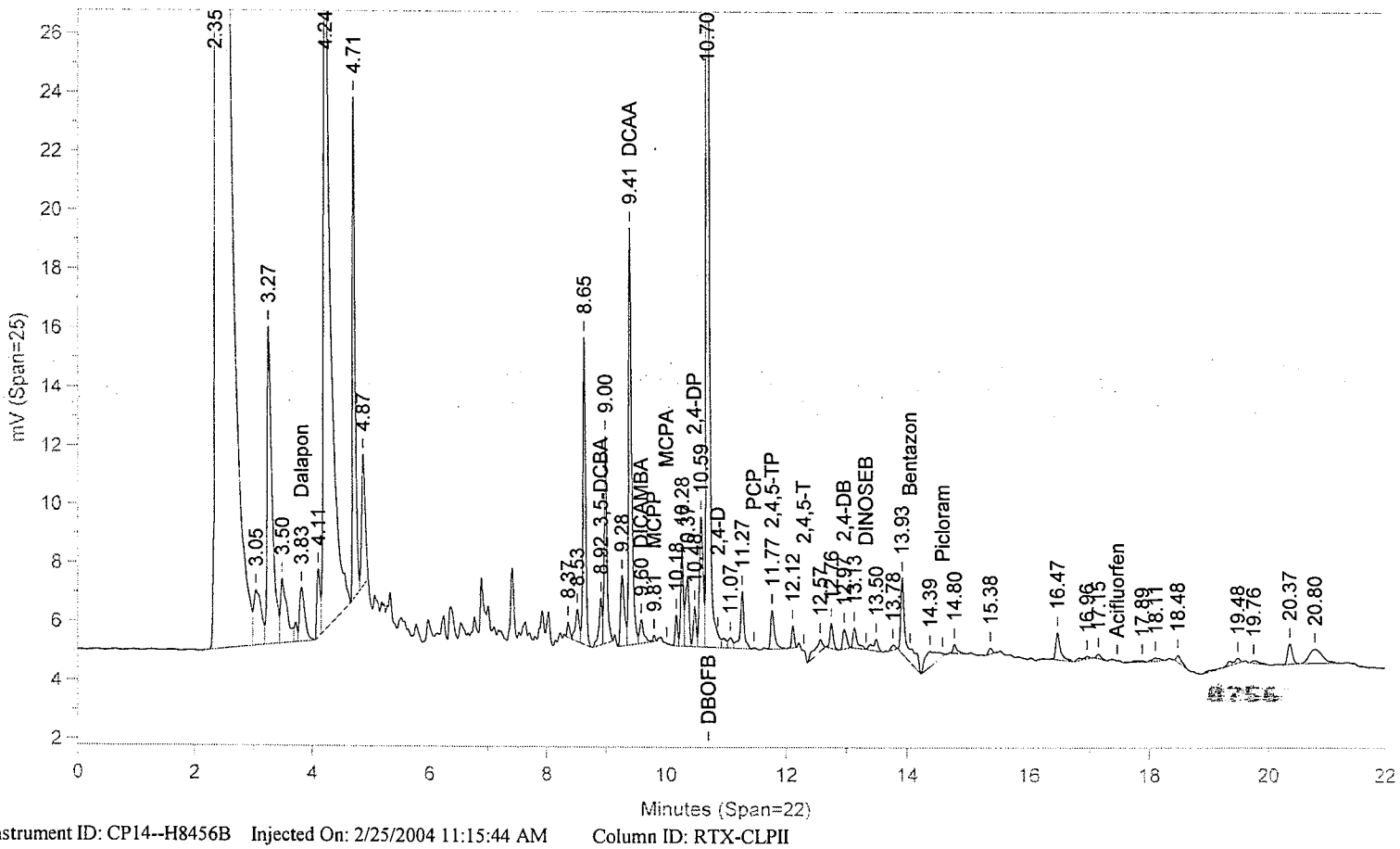
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.05R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 11:15:44 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.05R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 11:15:44 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.215 | 112 | .392 | Dalapon | 3.825 | 1825 | 6.096 | Dalapon |
| 9.618 | 4871 | .653 | 3,5-DCBA | 8.921 | 1590 | .191 | 3,5-DCBA |
| 9.741 | 13410 | 43.923 | DCAA | 9.411 | 14220 | 42.2 | DCAA |
| . | 0 | . | DICAMBA | 9.597 | 799 | .587 | DICAMBA |
| 10.248 | 450 | 393.732 | MCPP | 9.81 | 208 | 136.548 | MCPP |
| 10.376 | 3178 | 1666.527 | MCPA | . | 0 | . | MCPA |
| 10.801 | 822 | 2.526 | 2,4-DP | 10.483 | 1364 | 3.544 | 2,4-DP |
| 11.793 | 45263 | 2.004 | DBOFB | 10.703 | 55361 | 2.004 | DBOFB |
| 11.231 | 1103 | 3.776 | 2,4-D | . | 0 | . | 2,4-D |
| 11.666 | 543 | .15 | PCP | . | 0 | . | PCP |
| 12.187 | 86 | .071 | 2,4,5-TP | 11.768 | 1321 | .952 | 2,4,5-TP |
| 12.586 | 334 | .362 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.331 | 99 | .881 | 2,4-DB | 12.969 | 667 | 4.873 | 2,4-DB |
| 14.468 | 845 | .12 | Bentazon | . | 0 | . | Bentazon |
| 14.747 | 549 | .754 | DINOSEB | . | 0 | . | DINOSEB |
| 19.06 | 220 | .018 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.05A
Area File: C:\CPWIN\DATA1\2H14048B.05A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 11:37:48 AM
File Reported On: 2/25/2004 at 11:37:51 AM

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 2/24/04F LCSVR Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: State:
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 11:42:18
Instrument : CP14--H8456A
Result file : 2H14048.06R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 86.9% Conc.: 34.757191

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.20 | 4.28 | 214 | 0.809194 |
| **3,5-DCBA** | 9.44 | 9.61 | 9.67 | 2297 E | 0.333972 |
| **DCAA** | 9.64 | 9.73 | 9.84 | 9789 | 34.757191 |
| **MCPP** | 10.10 | 10.25 | 10.29 | 74 | 70.551018 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1573 | 894.254822 |
| **2,4-DP** | 10.78 | 10.78 | 10.97 | 255 | 0.849918 |
| **2,4-D** | 11.07 | 11.16 | 11.26 | 1792 | 6.650123 |
| **PCP** | 11.53 | 11.63 | 11.73 | 547 | 0.163912 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 41752 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.24 | 12.35 | 9737 | 8.713263 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 589 | 0.693430 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 151 E | 0.013156 |

## Analysis Report (B)

Injected on : FEB 25, 2004 11:42:18
Instrument : CP14--H8456B
Result file : 2H14048B.06R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 89.9% Conc.: 35.946522

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **3,5-DCBA** | 8.79 | 8.91 | 9.00 | 1087 E | 0.141493 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 11157 | 35.946522 |
| **DICAMBA** | 9.56 | 9.59 | 9.75 | 397 | 0.317086 |
| **MCPP** | 9.65 | 9.76 | 9.83 | 282 | 200.764221 |
| **MCPA** | 9.93 | 9.92 | 10.11 | 282 | 133.237183 |
| **2,4-DP** | 10.35 | 10.47 | 10.54 | 617 | 1.740209 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 50991 | 2.004000 |
| **2,4-D** | 10.77 | 10.81 | 10.96 | 2973 | 8.391212 |
| **2,4,5-TP** | 11.72 | 11.81 | 11.92 | 10897 | 8.527424 |
| **2,4,5-T** | 12.20 | 12.27 | 12.40 | 604 | 0.618578 |
| **2,4-DB** | 12.82 | 12.96 | 13.03 | 572 | 4.535941 |
| **Acifluorfen** | 17.36 | 17.40 | 17.58 | 117 E | 0.006972 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | | | | | | | |
| 3,5-DCBA | A | 0.333972 | | | E | ** 80.96 | |
| DCAA | B | 35.946522 | | | | 3.36 | |
| DICAMBA | | | | | | | |
| MCPP | B | 200.764221 | | | | ** 95.99 | |
| MCPA | A | 894.254822 | | | | ** 148.13 | |
| 2,4-DP | B | 1.740209 | | | | ** 68.74 | |
| 2,4-D | B | 8.391212 | <10 | 2 | J | 23.15 | |
| PCP | | | | | | | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 8.713263 | 1 | 0.2 | | 2.16 | |
| 2,4,5-T | A | 0.693430 | | | | 11.41 | |
| 2,4-DB | | | | | | | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | A | 0.013156 | | | E | ** 61.45 | |

Units: ug/l

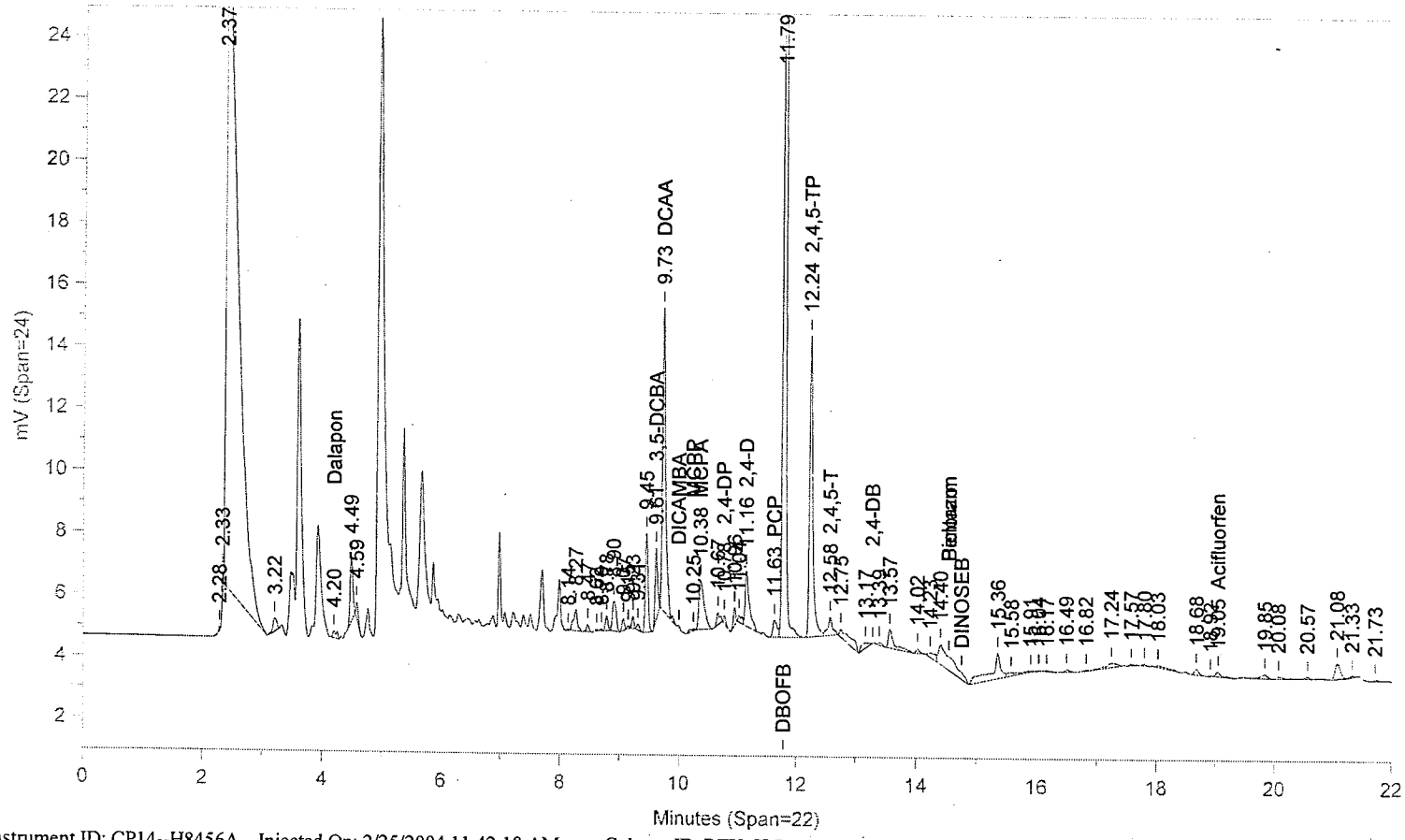
Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/26/04

8758

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/25/04 12:38:08

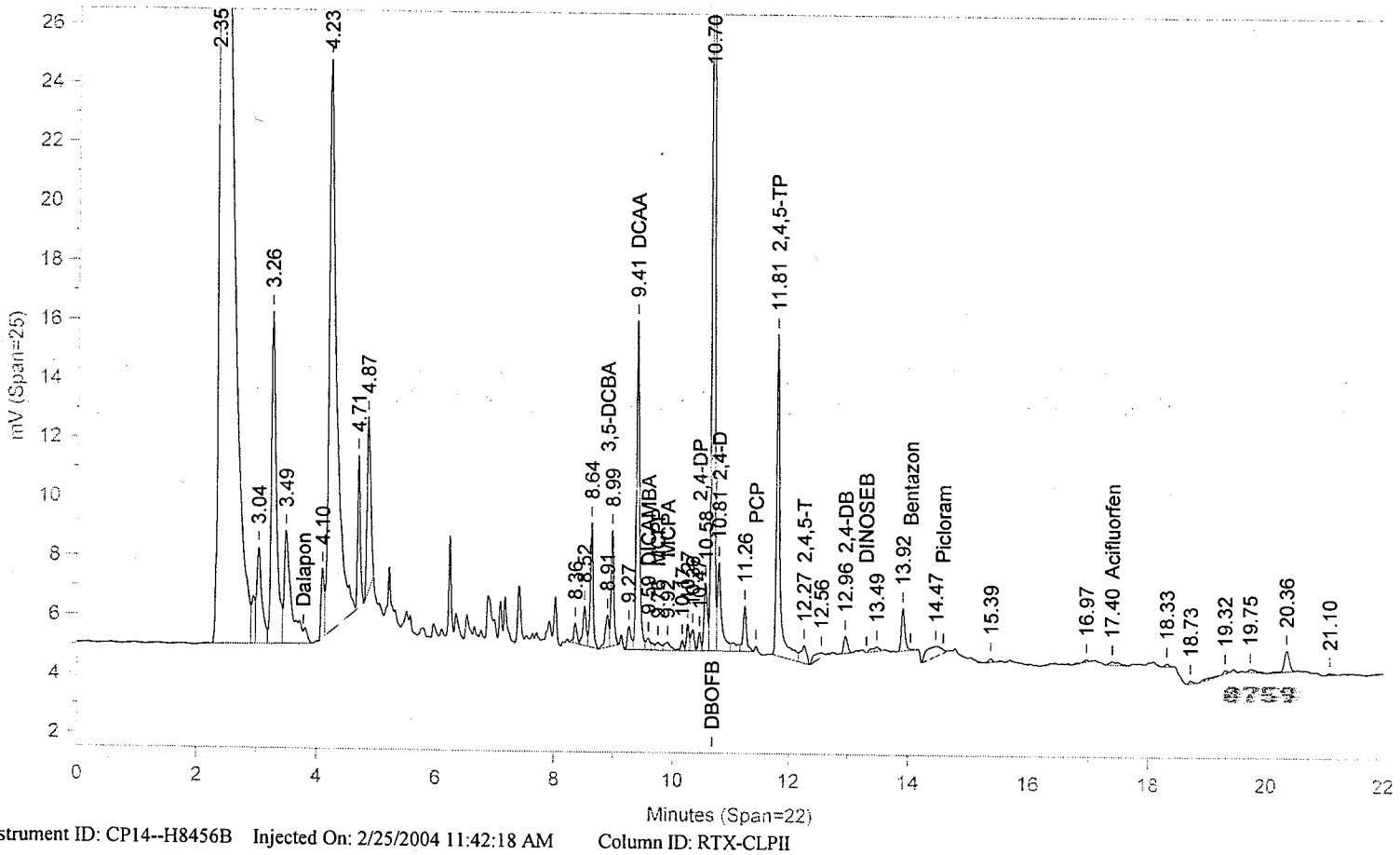
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.06R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 11:42:18 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2HI4048B.06R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 11:42:18 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.204 | 214 | .809 | Dalapon | . | 0 | . | Dalapon |
| 9.612 | 2297 | .334 | 3,5-DCBA | 8.913 | 1087 | .141 | 3,5-DCBA |
| 9.734 | 9789 | 34.757 | DCAA | 9.406 | 11157 | 35.947 | DCAA |
| . | 0 | . | DICAMBA | 9.594 | 397 | .317 | DICAMBA |
| 10.251 | 74 | 70.551 | MCPP | 9.755 | 282 | 200.764 | MCPP |
| 10.376 | 1573 | 894.255 | MCPA | 9.92 | 282 | 133.237 | MCPA |
| 10.783 | 255 | .85 | 2,4-DP | 10.474 | 617 | 1.74 | 2,4-DP |
| 11.786 | 41752 | 2.004 | DBOFB | 10.697 | 50991 | 2.004 | DBOFB |
| 11.161 | 1792 | 6.65 | 2,4-D | 10.812 | 2973 | 8.391 | 2,4-D |
| 11.631 | 547 | .164 | PCP | . | 0 | . | PCP |
| 12.241 | 9737 | 8.713 | 2,4,5-TP | 11.811 | 10897 | 8.527 | 2,4,5-TP |
| 12.578 | 589 | .693 | 2,4,5-T | 12.266 | 604 | .619 | 2,4,5-T |
| . | 0 | . | 2,4-DB | 12.964 | 572 | 4.536 | 2,4-DB |
| 19.052 | 151 | .013 | Acifluorfen | 17.4 | 117 | .007 | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.06A
Area File: C:\CPWIN\DATA1\2H14048B.06A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 12:04:20 PM
File Reported On: 2/25/2004 at 12:04:23 PM

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 13:55:02
Instrument : CP14--H8456A
Result file : 2H14048.11R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : *171% Conc.: 68.386162

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.20 | 4.28 | 72 | 0.490623 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 2559 E | 0.673714 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 10636 | 68.386162 |
| **DICAMBA** | 9.92 | 10.08 | 10.10 | 220 | 0.352793 |
| **MCPP** | 10.10 | 10.18 | 10.29 | 85 | 145.452881 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1282 | 1319.405518 |
| **2,4-DP** | 10.78 | 10.79 | 10.97 | 249 | 1.504254 |
| **PCP** | 11.53 | 11.63 | 11.73 | 770 | 0.417679 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 23058 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.19 | 12.35 | 66 | 0.107558 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 633 | 1.349022 |
| **2,4-DB** | 13.19 | 13.31 | 13.40 | 116 | 2.026573 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 610 | 1.643170 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 131 E | 0.020702 |

## Analysis Report (B)

Injected on : FEB 25, 2004 13:55:02
Instrument : CP14--H8456B
Result file : 2H14048B.11R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : *165.3% Conc.: 66.101746

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.81 | 3.89 | 1094 | 6.972112 |
| **3,5-DCBA** | 8.79 | 8.89 | 9.00 | 777 E | 0.177848 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 11667 | 66.101746 |
| **DICAMBA** | 9.56 | 9.59 | 9.75 | 397 | 0.557206 |
| **MCPP** | 9.65 | 9.76 | 9.83 | 171 | 214.189728 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 247 | 1.227029 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 28996 | 2.004000 |
| **PCP** | 11.36 | 11.46 | 11.56 | 503 | 0.244555 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 636 | 8.873380 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 6.972112 | | | | ** 173.70 | |
| 3,5-DCBA | A | 0.673714 | | | E | ** 116.46 | |
| DCAA | A | 68.386162 | | | | 3.40 | |
| DICAMBA | B | 0.557206 | | | | ** 44.93 | |
| MCPP | B | 214.189728 | | | | 38.23 | |
| MCPA | | | | | | | |
| 2,4-DP | A | 1.504254 | | | | 20.30 | |
| 2,4-D | | | <10 | <2 | | | |
| PCP | A | 0.417679 | | | | ** 52.28 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | | | <1 | <0.2 | | | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 8.873380 | | | | ** 125.63 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | | | | | E | | |

Units: ug/l

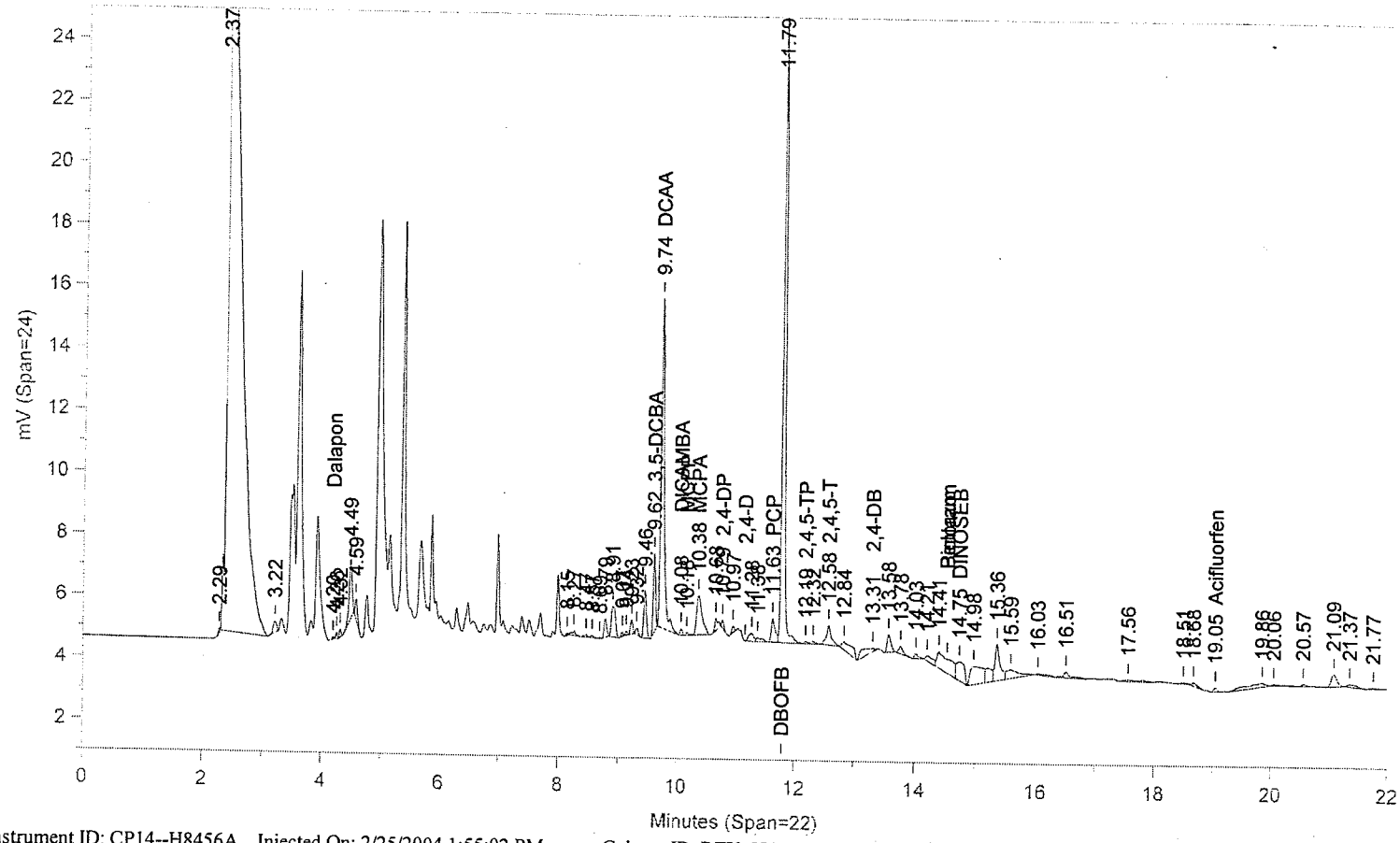
Reviewed by: [signature] Date: 2/26/04
Verified by: [signature] Date: 2/27/04

8761

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:52:36

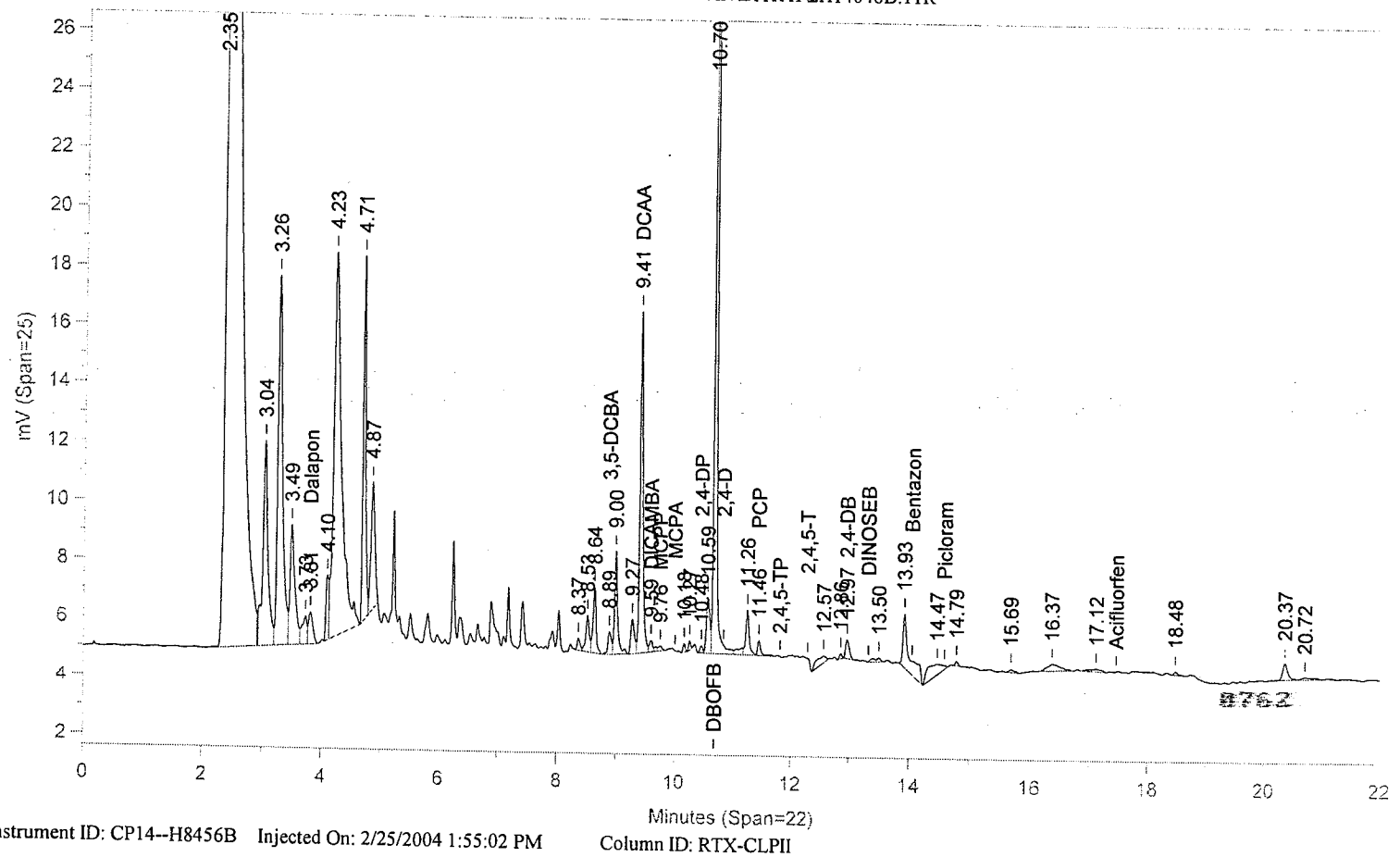
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 1:55:02 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.11R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 1:55:02 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.205 | 72 | .491 | Dalapon | 3.814 | 1094 | 6.972 | Dalapon |
| 9.615 | 2559 | .674 | 3,5-DCBA | 8.893 | 777 | .178 | 3,5-DCBA |
| 9.737 | 10636 | 68.386 | DCAA | 9.409 | 11667 | 66.102 | DCAA |
| 10.083 | 220 | .353 | DICAMBA | 9.594 | 397 | .557 | DICAMBA |
| 10.18 | 85 | 145.453 | MCPP | 9.757 | 171 | 214.19 | MCPP |
| 10.382 | 1282 | 1319.406 | MCPA | . | 0 | . | MCPA |
| 10.787 | 249 | 1.504 | 2,4-DP | 10.476 | 247 | 1.227 | 2,4-DP |
| 11.79 | 23058 | 2.004 | DBOFB | 10.7 | 28996 | 2.004 | DBOFB |
| 11.63 | 770 | .418 | PCP | 11.457 | 503 | .245 | PCP |
| 12.19 | 66 | .108 | 2,4,5-TP | . | 0 | . | 2,4,5-TP |
| 12.582 | 633 | 1.349 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.314 | 116 | 2.027 | 2,4-DB | 12.967 | 636 | 8.873 | 2,4-DB |
| 14.747 | 610 | 1.643 | DINOSEB | . | 0 | . | DINOSEB |
| 19.052 | 131 | .021 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.11A
Area File: C:\CPWIN\DATA1\2H14048B.11A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 2:17:06 PM
File Reported On: 2/25/2004 at 2:17:07 PM

8753

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4219022** MSF UN7NVMS Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 14:21:33
Instrument : CP14--H8456A
Result file : 2H14048.12R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 124.6% Conc.: 49.859745

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.26 | 4.28 | 316 | 1.679332 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 3431 E | 0.699320 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 10018 | 49.859745 |
| **DICAMBA** | 9.92 | 10.08 | 10.10 | 285 | 0.354105 |
| **MCPP** | 10.10 | 10.18 | 10.29 | 248 | 329.803955 |
| **MCPA** | 10.29 | 10.37 | 10.48 | 615 | 490.197449 |
| **2,4-DP** | 10.78 | 10.80 | 10.97 | 989 | 4.617748 |
| **2,4-D** | 11.07 | 11.17 | 11.26 | 1603 | 8.339655 |
| **PCP** | 11.53 | 11.63 | 11.73 | 839 | 0.352421 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 29787 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.25 | 12.35 | 9285 | 11.646132 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 538 | 0.887508 |
| **2,4-DB** | 13.19 | 13.32 | 13.40 | 42 | 0.571099 |
| **DINOSEB** | 14.65 | 14.78 | 14.88 | 790 | 1.647400 |
| **Acifluorfen** | 18.95 | 19.06 | 19.18 | 132 E | 0.016033 |

## Analysis Report (B)

Injected on : FEB 25, 2004 14:21:33
Instrument : CP14--H8456B
Result file : 2H14048B.12R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 116.4% Conc.: 46.552471

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.82 | 3.89 | 1153 | 5.690412 |
| **3,5-DCBA** | 8.79 | 8.92 | 9.00 | 1082 E | 0.191530 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 10619 | 46.552471 |
| **DICAMBA** | 9.56 | 9.60 | 9.75 | 323 | 0.350385 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 1089 | 4.181561 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 37474 | 2.004000 |
| **2,4-D** | 10.77 | 10.82 | 10.96 | 3047 | 11.700768 |
| **PCP** | 11.36 | 11.46 | 11.56 | 507 | 0.190744 |
| **2,4,5-TP** | 11.72 | 11.82 | 11.92 | 10457 | 11.135098 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 527 | 5.682556 |
| **DINOSEB** | 13.22 | 13.38 | 13.44 | 163 | 0.275733 |
| **Picloram** | 14.49 | 14.52 | 14.71 | 273 E | 0.018878 |
| **Acifluorfen** | 17.36 | 17.36 | 17.58 | 71 E | 0.005728 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 5.690412 | | | | ** 108.85 | |
| 3,5-DCBA | A | 0.699320 | | | E | ** 114.00 | |
| DCAA | A | 49.859745 | | | | 6.86 | |
| DICAMBA | A | 0.354105 | | | | 1.06 | |
| MCPP | | | | | | | |
| MCPA | | | | | | | |
| 2,4-DP | A | 4.617748 | | | | 9.91 | |
| 2,4-D | B | 11.700768 | 10 | 2 | | 33.54 | |
| PCP | A | 0.352421 | | | | ** 59.53 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 11.646132 | 1 | 0.2 | | 4.49 | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 5.682556 | | | | ** 163.47 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | A | 1.647400 | | | | ** 142.65 | |
| Acifluorfen | A | 0.016033 | | | E | ** 94.71 | |

Units: ug/l

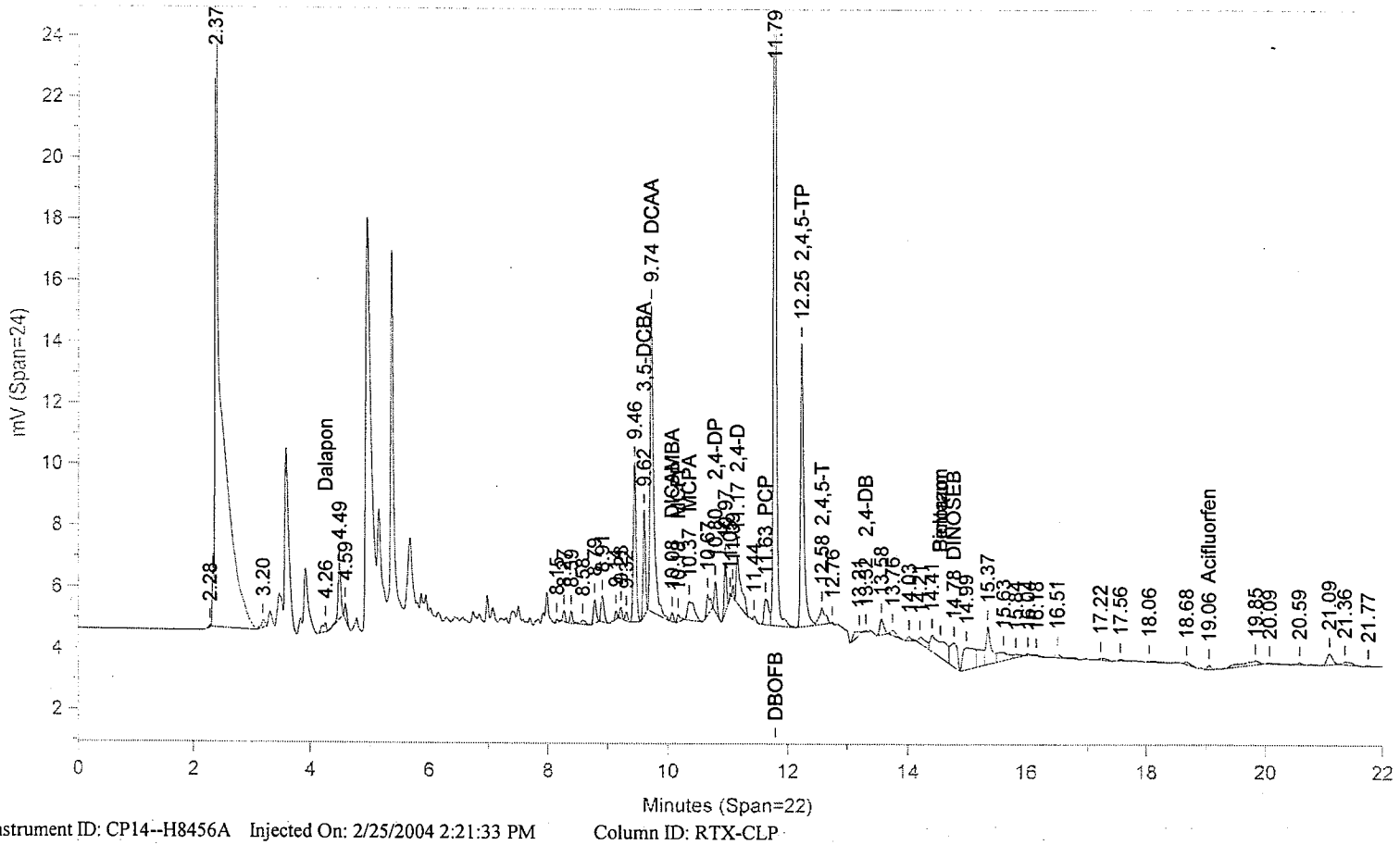
Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/27/04

8264

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:52:52

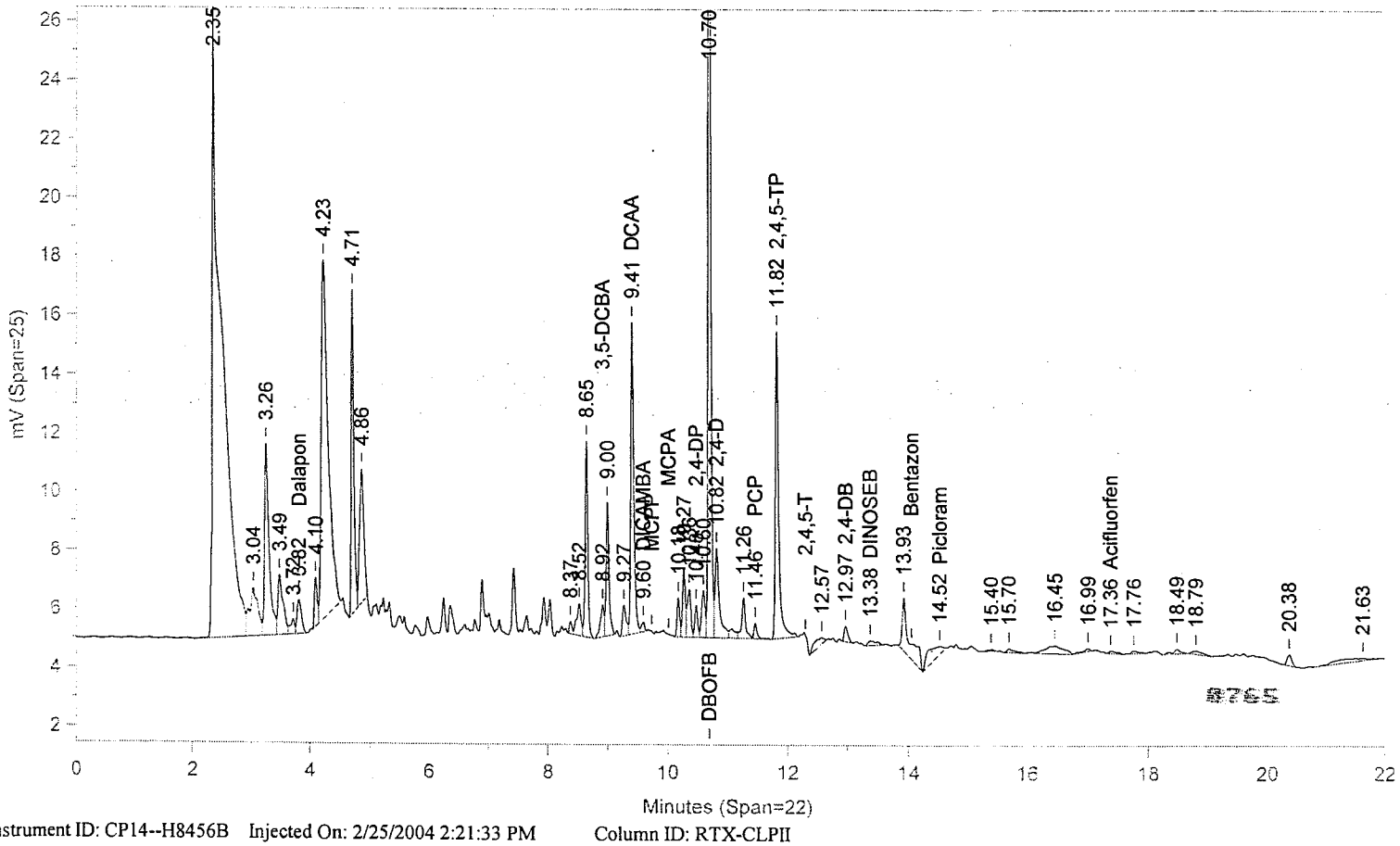
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.12R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 2:21:33 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.12R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 2:21:33 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.26 | 316 | 1.679 | Dalapon | 3.818 | 1153 | 5.69 | Dalapon |
| 9.616 | 3431 | .699 | 3,5-DCBA | 8.918 | 1082 | .192 | 3,5-DCBA |
| 9.738 | 10018 | 49.86 | DCAA | 9.41 | 10619 | 46.552 | DCAA |
| 10.083 | 285 | .354 | DICAMBA | 9.596 | 323 | .35 | DICAMBA |
| 10.181 | 248 | 329.804 | MCPP | . | 0 | . | MCPP |
| 10.368 | 615 | 490.197 | MCPA | . | 0 | . | MCPA |
| 10.802 | 989 | 4.618 | 2,4-DP | 10.479 | 1089 | 4.182 | 2,4-DP |
| 11.791 | 29787 | 2.004 | DBOFB | 10.7 | 37474 | 2.004 | DBOFB |
| 11.166 | 1603 | 8.34 | 2,4-D | 10.816 | 3047 | 11.701 | 2,4-D |
| 11.635 | 839 | .352 | PCP | 11.457 | 507 | .191 | PCP |
| 12.245 | 9285 | 11.646 | 2,4,5-TP | 11.816 | 10457 | 11.135 | 2,4,5-TP |
| 12.584 | 538 | .888 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.321 | 42 | .571 | 2,4-DB | 12.968 | 527 | 5.683 | 2,4-DB |
| 14.783 | 790 | 1.647 | DINOSEB | 13.38 | 163 | .276 | DINOSEB |
| . | 0 | . | Picloram | 14.52 | 273 | .019 | Picloram |
| 19.058 | 132 | .016 | Acifluorfen | 17.361 | 71 | .006 | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.12A
Area File: C:\CPWIN\DATA1\2H14048B.12A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 2:43:36 PM
File Reported On: 2/25/2004 at 2:43:39 PM

8766

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSDF UN7NVMSI **Sample ID:** AB **Batchnumber:** 040550004A
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 14:48:04
Instrument : CP14--H8456A
Result file : 2H14048.13R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 128.2% Conc.: 51.284664

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| Dalapon | 4.14 | 4.21 | 4.28 | 457 | 1.986665 |
| 3,5-DCBA | 9.44 | 9.61 | 9.67 | 4985 E | 0.832754 |
| DCAA | 9.64 | 9.74 | 9.84 | 12571 | 51.284664 |
| DICAMBA | 9.92 | 10.08 | 10.10 | 411 | 0.417889 |
| MCPP | 10.10 | 10.25 | 10.29 | 496 | 541.286865 |
| MCPA | 10.29 | 10.38 | 10.48 | 1136 | 742.171692 |
| 2,4-DP | 10.78 | 10.79 | 10.97 | 407 | 1.556253 |
| 2,4-D | 11.07 | 11.16 | 11.26 | 2699 | 11.510244 |
| PCP | 11.53 | 11.63 | 11.73 | 961 | 0.330858 |
| DBOFB | 11.70 | 11.79 | 11.89 | 36339 | 2.004000 |
| 2,4,5-TP | 12.15 | 12.24 | 12.35 | 12477 | 12.828421 |
| 2,4,5-T | 12.51 | 12.58 | 12.72 | 369 | 0.499308 |
| 2,4-DB | 13.19 | 13.32 | 13.40 | 91 | 1.015644 |
| Bentazon | 14.44 | 14.47 | 14.67 | 1249 E | 0.221578 |
| DINOSEB | 14.65 | 14.75 | 14.88 | 850 | 1.454369 |
| Acifluorfen | 18.95 | 19.05 | 19.18 | 155 E | 0.015514 |

## Analysis Report (B)

Injected on : FEB 25, 2004 14:48:04
Instrument : CP14--H8456B
Result file : 2H14048B.13R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 125% Conc.: 50.013382

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| Dalapon | 3.69 | 3.82 | 3.89 | 1967 | 7.995684 |
| 3,5-DCBA | 8.79 | 8.92 | 9.00 | 901 E | 0.131478 |
| DCAA | 9.32 | 9.41 | 9.51 | 13848 | 50.013382 |
| DICAMBA | 9.56 | 9.60 | 9.75 | 906 | 0.810561 |
| MCPP | 9.65 | 9.82 | 9.83 | 300 | 239.922775 |
| 2,4-DP | 10.35 | 10.48 | 10.54 | 617 | 1.952212 |
| DBOFB | 10.61 | 10.70 | 10.80 | 45488 | 2.004000 |
| 2,4-D | 10.77 | 10.81 | 10.96 | 4038 | 12.776676 |
| PCP | 11.36 | 11.46 | 11.56 | 911 | 0.282285 |
| 2,4,5-TP | 11.72 | 11.81 | 11.92 | 14465 | 12.689519 |
| 2,4-DB | 12.82 | 12.97 | 13.03 | 565 | 5.019195 |
| DINOSEB | 13.22 | 13.34 | 13.44 | 163 | 0.228126 |
| Picloram | 14.49 | 14.54 | 14.71 | 343 E | 0.019566 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 7.995684 | | | | ** 120.39 | |
| 3,5-DCBA | A | 0.832754 | | | E | ** 145.46 | |
| DCAA | A | 51.284664 | | | | 2.51 | |
| DICAMBA | B | 0.810561 | | | | ** 63.93 | |
| MCPP | A | 541.286865 | | | | ** 77.15 | |
| MCPA | | | | | | | |
| 2,4-DP | B | 1.952212 | | | | 22.57 | |
| 2,4-D | B | 12.776676 | 10 | 2 | | 10.43 | |
| PCP | A | 0.330858 | | | | 15.84 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 12.828421 | 1 | 0.2 | | 1.09 | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 5.019195 | | | | ** 132.68 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | A | 1.454369 | | | | ** 145.76 | |
| Acifluorfen | | | | | E | | |

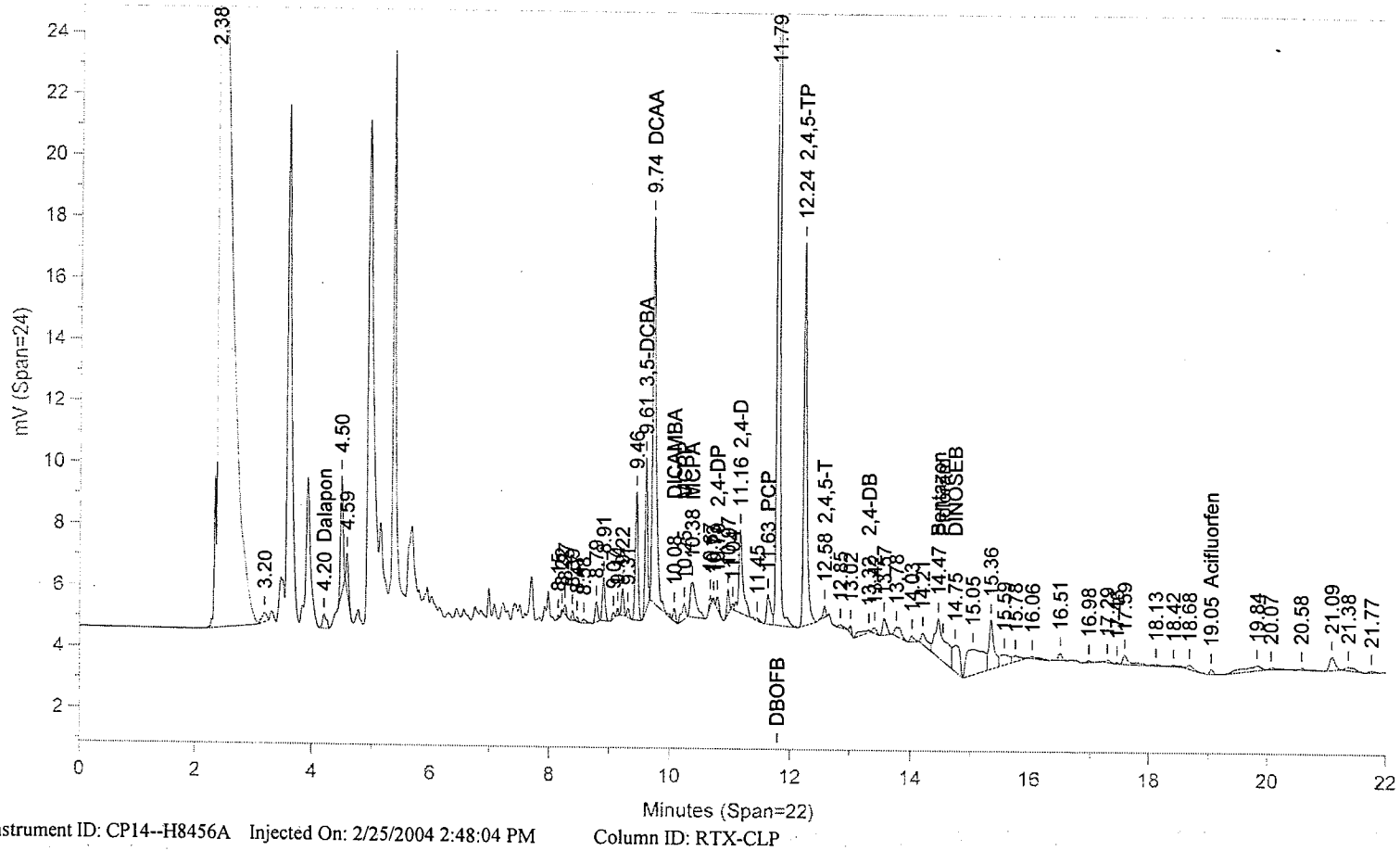
Units: ug/l

Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/27/04

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:53:09

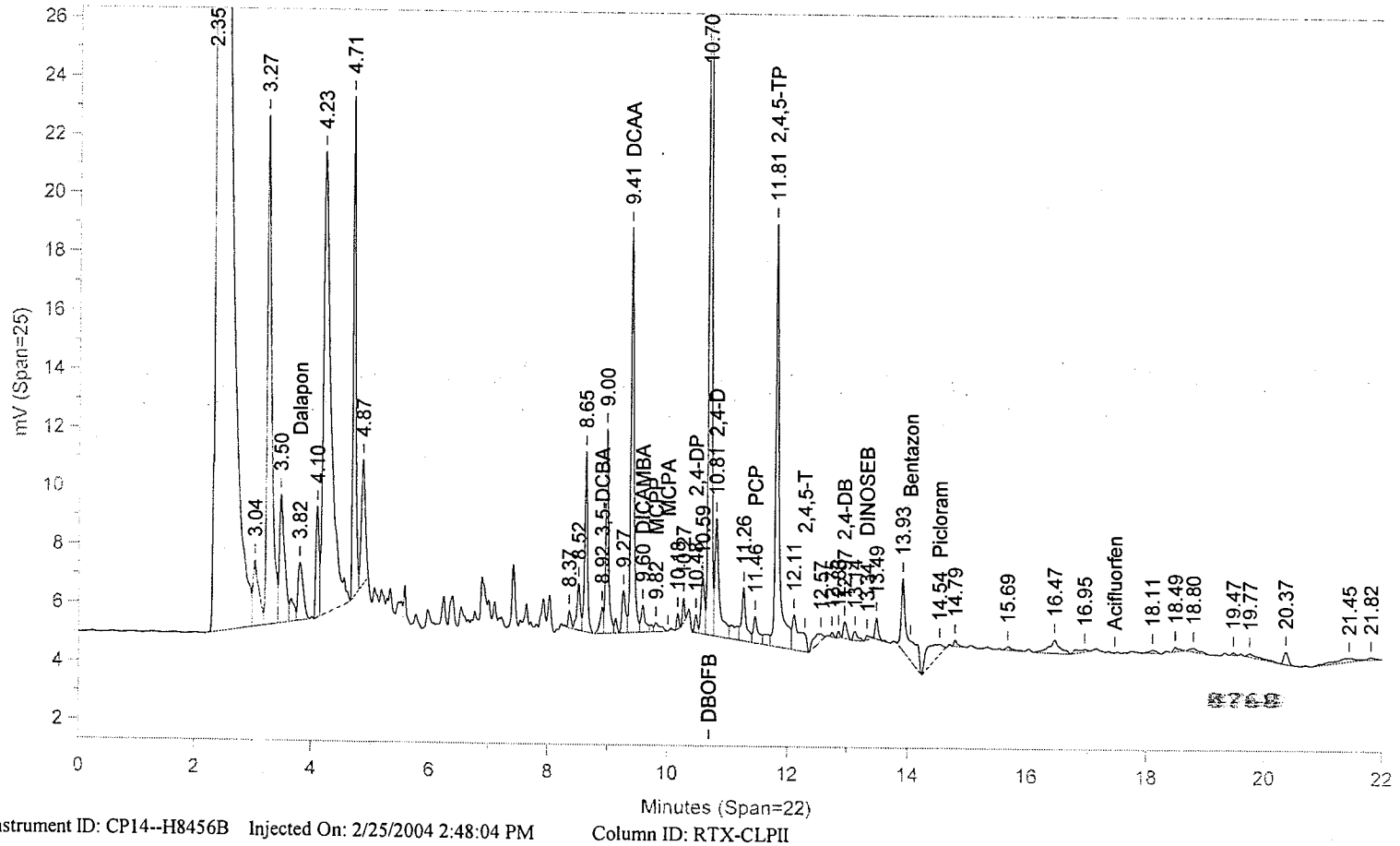
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.13R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 2:48:04 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.13R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 2:48:04 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.205 | 457 | 1.987 | Dalapon | 3.817 | 1967 | 7.996 | Dalapon |
| 9.615 | 4985 | .833 | 3,5-DCBA | 8.918 | 901 | .131 | 3,5-DCBA |
| 9.737 | 12571 | 51.285 | DCAA | 9.408 | 13848 | 50.013 | DCAA |
| 10.082 | 411 | .418 | DICAMBA | 9.596 | 906 | .811 | DICAMBA |
| 10.246 | 496 | 541.287 | MCPP | 9.816 | 300 | 239.923 | MCPP |
| 10.375 | 1136 | 742.172 | MCPA | . | 0 | . | MCPA |
| 10.791 | 407 | 1.556 | 2,4-DP | 10.48 | 617 | 1.952 | 2,4-DP |
| 11.79 | 36339 | 2.004 | DBOFB | 10.699 | 45488 | 2.004 | DBOFB |
| 11.164 | 2699 | 11.51 | 2,4-D | 10.815 | 4038 | 12.777 | 2,4-D |
| 11.629 | 961 | .331 | PCP | 11.456 | 911 | .282 | PCP |
| 12.243 | 12477 | 12.828 | 2,4,5-TP | 11.815 | 14465 | 12.69 | 2,4,5-TP |
| 12.581 | 369 | .499 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.323 | 91 | 1.016 | 2,4-DB | 12.965 | 565 | 5.019 | 2,4-DB |
| 14.748 | 850 | 1.454 | DINOSEB | 13.342 | 163 | .228 | DINOSEB |
| 14.471 | 1249 | .222 | Bentazon | . | 0 | . | Bentazon |
| . | 0 | . | Picloram | 14.536 | 343 | .02 | Picloram |
| 19.053 | 155 | .016 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.13A
Area File: C:\CPWIN\DATA1\2H14048B.13A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 3:10:08 PM
File Reported On: 2/25/2004 at 3:10:09 PM

8769

# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: MDH 2/25/04
Start Date: 2/24/04
Start Time: 21:50
Tech 1: MDH
Tech 2: —

Prep Analysis # 00816 Water Sample Herbicide Extract
Prep Group # 3 Herbicide Leachates Dept: 24

BATCH NO. 040550004A

| QC | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKXH | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | | | 10.0 | ✓ | ✓ | NA | |
| LCSA | LCSVR | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear |
| 4217215MS | I1-NVMS | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear |
| 4219022MS | UN7NVMS | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear |
| 4219022MSD | UN7NVMSD | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | Sample # | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4217215 bkg | I1-NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/1/04 | P |
| 2 | 4217866 | BLA-2 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 2/27/04 | P |
| 3 | 4219006 | UN5NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/2/04 | P |
| 4 | 4219022 bkg | UN7NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/2/04 | P |
| 5 | 4219669 | TC407 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/4/04 | P |
| 6 | 4221331 | BLA20 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/3/04 | P |
| 7 | 4221332 | BLA44 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 3.0A | Clear | 952 | 3/3/04 | P |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

**Additional Comment:** * Empty Filter Lot # Analyst

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS03328B HERB SURROGATE STANDARD 1.3 2/24/04
MS04008C TCLP HERB SPIKE
IS0404024A HERB INTERNAL STANDARD

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| Extraction Fluid | 122002230 4A | MeCl2 | A02658 |
| NaCl | 33270 | 1N H2SO4 | 881012904A |
| 6N NaOH | 3238-05 | Work Station: | Herb Area |
| Internal Standar | | Balance # | — |

| S-bath ID | 55.0 °C | S-bath ID | — °C | N-Evap | 40.0 °C |
|---|---|---|---|---|---|

Documented temps are NIST corrected. 040550004A

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 00816 Water Sample Herbicide Extract

**Prep Group #** 3 Herbicide Leachates

**Verified:** MDA 2/25/07

**Start Date:** 2/25/07

**Start Time:** 04:45

**Tech 1:** MJ

**Tech 2:** —

**BATCH NO.** 040550004A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2.0 | 2.0 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4217215MS | | | | | | 952 |
| 4 | 4219022MS | | | | | | 952 |
| 5 | 4219022MSD | | | | | | 952 |
| 6 | 4217215 | | | | | | 952 |
| 7 | 4217866 | | | | | | 952 |
| 8 | 4219006 | | | | | | 952 |
| 9 | 4219022 | | | | | | 952 |
| 10 | 4219669 | | | | | | 952 |
| 11 | 4221331 | | | | | | 952 |
| 12 | 4221332 | ✓ | ✓ | | | | 952 |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |

**Additional Comment:** _____

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 50% Ether/Hexane | 7J1042404A | Diazald Soln | 7J1042504A |
| Ethyl Ether | A42405 | Hexane | YS1E11 |
| Diazald | 13825LA | Aniline (Acid) | 076818 |
| Florisil | 20240AR | | |

| S-Evap/bath | — °C | S-Evap/bath | — °C | N-Evap | 40 °C |
|---|---|---|---|---|---|

The documented temperatures are NIST corrected.

8772

# Metals Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

*Where quality is a science.*

# CASE NARRATIVE FOR INORGANICS

Laboratory Name: Lancaster Laboratories

SDG Number: RAV01

Date Received: 02/19/04

Dilutions:

Refer to the analysis run logs for samples requiring dilutions.

Explanatory Notes:

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

Calibration Standards:

Instrument calibration standards are prepared monthly from stock solutions purchased from Aldrich Chemical, EM Science, Fisher Scientific, High Purity, Inorganic Ventures, JT Baker, Spex Industries Inc., Ultra Scientific, or VHG Laboratories.

Case Narrative reviewed and approved by:

Ramona V. Goss Date 3/3/04

Ramona V. Goss, Principal Chemist
Inorganic Analysis

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QUALITY ASSURANCE SUMMARY

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV01

| Client Sample ID. | Lab Sample ID. |
|---|---|
| UN5NV | 4219006 |

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO_

LEGEND

| FLAGS: (indicate matrix interference) | U = Below MDL B = Below LOQ |
|---|---|
| N = Matrix Spike OOS | METHODS: |
| * = Duplicate OOS | A = Flame Atomic Absorption |
| W = Method F Analytical Spike Recovery <85% or >115% when the sample conc. is <50% of the spike conc. | P = Inductively Coupled Plasma |
| | F = Graphite Furnace |
| | CV = Cold Vapor |
| S = Analysis Determined by MSA | NR = Not Required |
| + = MSA Correlation Coefficient <0.995 | TERMS: |
| E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution | MDL = Method Detection Limit |
| | LOQ = Limit of Quantitation |
| M = Duplicate Injection Precision not met | OOS = Out of Specification |
| Presence of FLAGS does not invalidate data | MSA = Method of Standard Addition |

I certify that this data package is technically accurate and complete. Release of the data contained in this data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Ramona Goss Name: Ramona V. Goss 8736

Date: 3/3/04 Title: Principal Chemist Inorganic Analysis

# Sample Data

QUALITY ASSURANCE SUMMARY

INORGANIC ANALYSIS DATA SHEET
FORM 1

CLIENT SAMPLE NO.

UN5NV

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01

Matrix (soil/water): WATER

Lab Sample ID: 4219006

Level (low/med): LOW

Date Received: 02/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L___

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 4.9 | U | | P |
| 7440-39-3 | Barium | 553 | | | P |
| 7440-43-9 | Cadmium | 0.87 | U | | P |
| 7440-47-3 | Chromium | 2.2 | U | | P |
| 7439-92-1 | Lead | 19.0 | B | | P |
| 7439-97-6 | Mercury | 0.16 | U | | CV |
| 7782-49-2 | Selenium | 4.7 | U | | P |
| 7440-22-4 | Silver | 1.8 | U | | P |

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

# Quality Control Data

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | M |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | True | Found | %R(2) | Found | %R(2) | |
| Arsenic | 600.0 | 582.14 | 97.0 | 500.0 | 465.85 | 93.2 | 479.65 | 95.9 | P |
| Barium | 600.0 | 607.47 | 101.2 | 500.0 | 488.07 | 97.6 | 496.71 | 99.3 | P |
| Cadmium | 600.0 | 596.88 | 99.5 | 500.0 | 483.88 | 96.8 | 496.00 | 99.2 | P |
| Chromium | 600.0 | 609.72 | 101.6 | 500.0 | 489.74 | 97.9 | 502.00 | 100.4 | P |
| Lead | 600.0 | 608.88 | 101.5 | 500.0 | 494.92 | 99.0 | 502.26 | 100.5 | P |
| Mercury | 2.5 | 2.45 | 98.0 | 1.0 | 1.02 | 102.0 | 1.07 | 107.0 | CV |
| Selenium | 600.0 | 611.22 | 101.9 | 500.0 | 493.86 | 98.8 | 499.41 | 99.9 | P |
| Silver | 600.0 | 614.04 | 102.3 | 500.0 | 502.61 | 100.5 | 510.77 | 102.2 | P |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | 500.0 | 481.51 | 96.3 | 486.03 | 97.2 | P |
| Barium | | | | 500.0 | 492.89 | 98.6 | 490.58 | 98.1 | P |
| Cadmium | | | | 500.0 | 499.14 | 99.8 | 505.24 | 101.0 | P |
| Chromium | | | | 500.0 | 504.07 | 100.8 | 506.89 | 101.4 | P |
| Lead | | | | 500.0 | 507.93 | 101.6 | 510.91 | 102.2 | P |
| Mercury | | | | 1.0 | 1.01 | 101.0 | 1.05 | 105.0 | CV |
| Selenium | | | | 500.0 | 499.16 | 99.8 | 503.13 | 100.6 | P |
| Silver | | | | 500.0 | 508.95 | 101.8 | 506.73 | 101.3 | P |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Mercury | | | | 1.0 | 1.00 | 100.0 | 1.09 | 109.0 | CV |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

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QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Mercury | | | | 1.0 | 1.04 | 104.0 | | | CV |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

LOW LEVEL CHECK STANDARD FOR AA AND ICP

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

AA CRDL Standard Source: LLI_____

ICP CRDL Standard Source: LLI_____

Concentration Units: ug/L

| Analyte | AA | | | ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Initial | | | Final | |
| | True | Found | %R | True | Found | %R | Found | %R |
| Arsenic | | | | 10.0 | 7.64 | 76.4 | 9.32 | 93.2 |
| Barium | | | | 5.0 | 5.16 | 103.2 | 5.17 | 103.4 |
| Cadmium | | | | 5.0 | 5.44 | 108.8 | 5.57 | 111.4 |
| Chromium | | | | 5.0 | 4.61 | 92.2 | 4.83 | 96.6 |
| Lead | | | | 20.0 | 20.60 | 103.0 | 21.16 | 105.8 |
| Mercury | 0.2 | 0.19 | 95.0 | | | | | |
| Selenium | | | | 10.0 | 7.81 | 78.1 | 7.39 | 73.9 |
| Silver | | | | 5.0 | 4.78 | 95.6 | 5.39 | 107.8 |

Control Limits: All Metals 50-150% for samples < 10 times the value of the low level check standard

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Preparation Blank Matrix (soil/water): _WATER____

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L_____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.1 | U | 6.1 | U | 6.1 | U | 6.1 | U | 4.900 | U | P |
| Barium | 0.19 | U | 0.19 | U | 0.19 | U | 0.19 | U | 0.710 | B | P |
| Cadmium | 0.58 | U | 0.58 | U | 0.58 | U | 0.58 | U | 0.870 | U | P |
| Chromium | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 2.200 | U | P |
| Lead | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 9.300 | U | P |
| Mercury | 0.016 | U | 0.016 | U | -0.039 | B | -0.045 | B | 0.160 | U | CV |
| Selenium | 4.3 | U | 4.3 | U | 4.3 | U | 4.3 | U | 4.700 | U | P |
| Silver | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.800 | U | P |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | 6.1 | U | | | | | | | P |
| Barium | | | 0.19 | U | | | | | | | P |
| Cadmium | | | 0.58 | U | | | | | | | P |
| Chromium | | | 1.1 | U | | | | | | | P |
| Lead | | | 2.0 | U | | | | | | | P |
| Mercury | | | -0.021 | B | -0.040 | B | -0.026 | B | | | CV |
| Selenium | | | 4.3 | U | | | | | | | P |
| Silver | | | 1.7 | U | | | | | | | P |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | | | NR |
| Barium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Lead | | | | | | | | | | | NR |
| Mercury | | | -0.099 | B | | | | | | | CV |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |

QUALITY ASSURANCE SUMMARY

ICP INTERFERENCE CHECK SAMPLE

Lab Name: LANCASTER_LABORATORIES_____

SDG No.: RAV01__

ICP Instrument ID: 06383_____ ICS Source: LLI_____

Concentration Units: ug/L

| Analyte | True | | Initial Found | | | Final Found | | |
|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | Sol. AB | %R | Sol. A | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 509864 | 518713.7 | 103.7 | 513505 | 514775.3 | 103.0 |
| Arsenic | 0 | 100 | 1 | 102.5 | 102.5 | -2 | 98.1 | 98.1 |
| Barium | 0 | 500 | -1 | 524.9 | 105.0 | -1 | 516.0 | 103.2 |
| Cadmium | 0 | 1000 | 5 | 965.6 | 96.6 | 5 | 988.6 | 98.9 |
| Calcium | 500000 | 500000 | 531043 | 534038.6 | 106.8 | 541128 | 543974.7 | 108.8 |
| Chromium | 0 | 500 | -3 | 503.0 | 100.6 | -3 | 509.1 | 101.8 |
| Iron | 200000 | 200000 | 200350 | 203172.8 | 101.6 | 203709 | 205823.1 | 102.9 |
| Lead | 0 | 50 | 4 | 56.8 | 113.6 | 4 | 55.3 | 110.6 |
| Magnesium | 500000 | 500000 | 506237 | 514111.9 | 102.8 | 515982 | 521598.0 | 104.3 |
| Mercury | | | | | | | | |
| Selenium | 0 | 50 | -7 | 49.0 | 98.0 | -5 | 47.8 | 95.6 |
| Silver | 0 | 200 | -1 | 215.4 | 107.7 | 0 | 212.3 | 106.2 |

Control Limits: All Metals 80%-120% ✓ ✓

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Lab Name: LANCASTER_LABORATORIES

CLIENT SAMPLE NO.

*19022S

SDG No.: RAV01

Matrix (soil/water): WATER_____

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limit %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | P | 5.3700 | B | 2104.8100 | | 2103.0800 | | 2000.00 | 2000.00 | 105 | | 105 | | 86 - 119 | 0 | | 20 |
| Barium | P | 320.2100 | | 2380.8700 | | 2373.2000 | | 2000.00 | 2000.00 | 103 | | 103 | | 82 - 113 | 0 | | 20 |
| Cadmium | P | 0.8700 | U | 51.0900 | | 50.9100 | | 50.00 | 50.00 | 102 | | 102 | | 87 - 117 | 0 | | 20 |
| Chromium | P | 10.9700 | | 210.4300 | | 210.4700 | | 200.00 | 200.00 | 100 | | 100 | | 86 - 118 | 0 | | 20 |
| Lead | P | 9.3000 | U | 517.6300 | | 515.9000 | | 500.00 | 500.00 | 104 | | 103 | | 87 - 118 | 0 | | 20 |
| Mercury | NR | | | | | | | | | | | | | | | | |
| Selenium | P | 12.1100 | | 2136.8000 | | 2118.4300 | | 2000.00 | 2000.00 | 106 | | 105 | | 75 - 125 | 1 | | 20 |
| Silver | P | 1.8000 | U | 53.4300 | | 53.6900 | | 50.00 | 50.00 | 107 | | 107 | | 75 - 125 | 0 | | 20 |

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV01

UN5NVS

Matrix (soil/water): WATER_____

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limit %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | NR | | | | | | | | | | | | | | | | |
| Barium | NR | | | | | | | | | | | | | | | | |
| Cadmium | NR | | | | | | | | | | | | | | | | |
| Chromium | NR | | | | | | | | | | | | | | | | |
| Lead | NR | | | | | | | | | | | | | | | | |
| Mercury | CV | 0.1600 | U | 1.0600 | | 1.0700 | | 1.00 | 1.00 | 106 | | 107 | | 80 - 120 | 1 | | 20 |
| Selenium | NR | | | | | | | | | | | | | | | | |
| Silver | NR | | | | | | | | | | | | | | | | |

✓ ✓

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QUALITY ASSURANCE SUMMARY

DUPLICATES

CLIENT SAMPLE No.

*19022D

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Matrix (soil/water): WATER_____ Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

| Analyte | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | | 5.3700 | B | 4.9000 | U | 200 | | P |
| Barium | | 320.2100 | | 324.9900 | | ✓ 1 | | P |
| Cadmium | | 0.8700 | U | 0.8700 | U | | | P |
| Chromium | 5.0 | 10.9700 | | 10.6600 | | ✓ 3 | | P |
| Lead | | 9.3000 | U | 9.3000 | U | | | P |
| Mercury | | | | | | | | NR |
| Selenium | 10.0 | 12.1100 | | 13.5900 | | ✓ 12 | | P |
| Silver | | 1.8000 | U | 1.8000 | U | | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

CLIENT SAMPLE No.

DUPLICATES

| UN5NVD |
|---|

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Matrix (soil/water): WATER_____ Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

| Analyte | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Mercury | | 0.1600 | U | 0.1600 | U | | | CV |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

LABORATORY CONTROL SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Solid LCS Source: _____

Aqueous LCS Source: LLI_____

| Analyte | Aqueous (ug/L) True | Found | %R(1) | Solid (mg/kg) True | Found | C | Limit | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2000.0 | 2104.04 | 105 | | | | | | |
| Barium | 2000.0 | 2047.26 | 102 | | | | | | |
| Cadmium | 50.0 | 53.02 | 106 | | | | | | |
| Chromium | 200.0 | 206.51 | 103 | | | | | | |
| Lead | 500.0 | 532.04 | 106 | | | | | | |
| Mercury | 1.0 | 1.07 | 107 | | | | | | |
| Selenium | 2000.0 | 2135.21 | 107 | | | | | | |
| Silver | 50.0 | 53.36 | 107 | | | | | | |

Control Limits: Statistically determined

Statistical Windows: Waters LCS/LCSD

9/12/03

SW846 ICP

| Element | True value mg/L | Statistical Window |
|---|---|---|
| AL | 2 | 93-112 |
| SB | 0.5 | 94-112 |
| AS | 2 | 92-109 |
| BA | 2 | 93-109 |
| BE | 0.05 | 96-111 |
| B | 2 | 93-110 |
| CD | 0.05 | 97-111 |
| CA | 4 | 93-113 |
| CR | 0.2 | 95-112 |
| CO | 0.5 | 95-109 |
| CU | 0.25 | 92-110 |
| FE | 1 | 91-114 |
| PB | 0.5 | 93-110 |
| MG | 2 | 93-110 |
| MN | 0.5 | 93-110 |
| MO | 2 | 97-109 |
| NI | 0.5 | 93-110 |
| K | 4 | 80-120 |
| SE | 2 | 91-111 |
| AG | 0.05 | 96-114 |
| NA | 4 | 89-112 |
| SR | 1 | 97-107 |
| TL | 2 | 92-107 |
| SN | 4 | 95-112 |
| TI | 1 | 96-109 |
| V | 0.5 | 96-109 |
| ZN | 0.5 | 94-112 |

10/1/03

SW846 GFAA

| Element | True value mg/L | Statistical Window |
|---|---|---|
| SB | 50 | 80-120 |
| AS | 40 | 80-120 |
| BE | 2.5 | 80-120 |
| CD | 2.5 | 80-112 |
| CR | 10 | 79-109 |
| CU | 20 | 85-116 |
| PB | 20 | 80-120 |
| NI | 20 | 80-120 |
| SE | 10 | 80-114 |
| AG | 2.5 | 85-116 |
| TL | 50 | 80-120 |

10/1/03

SW846 Mercury

| Element | True value mg/L | Statistical Window |
|---|---|---|
| HG | 1 | 80-120 |

QUALITY ASSURANCE SUMMARY

CLIENT SAMPLE NO.

ICP SERIAL DILUTIONS

*19022 L

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Matrix (soil/water): WATER_____ Level (low/med): LOW

Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Arsenic | 5.37 | B | 24.50 | U | 100 | | P |
| Barium | 320.21 | | 312.35 | | ✓ 2.5 | | P |
| Cadmium | 0.87 | U | 4.35 | U | | | P |
| Chromium | 10.97 | | 11.00 | U | 100 | | P |
| Lead | 9.30 | U | 46.50 | U | | | P |
| Mercury | | | | | | | NR |
| Selenium | 12.11 | | 23.50 | U | 100 | | P |
| Silver | 1.80 | U | 9.00 | U | | | P |

NOTE: An (E) in column "Q" indicates the presence of a chemical or physical interference in the matrix during analysis (% Difference > 10% when (I)> or = 50x MDL for ICP or (I) > or = 25x MDL for GFAA).

# Verification of Instrument Parameters

QUALITY ASSURANCE SUMMARY IDL

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

ICP ID Number: ___06383 _____ Date: 01/15/04

Flame AA ID Number: _____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Arsenic | 189.04 | | 6.1 | P |
| Barium | 493.40 | | 0.19 | P |
| Cadmium | 226.50 | | 0.58 | P |
| Chromium | 267.71 | | 1.1 | P |
| Lead | 220.35 | | 2.0 | P |
| Mercury | | | | NR |
| Selenium | 196.02 | | 4.3 | P |
| Silver | 328.06 | | 1.7 | P |

Comments:

QUALITY ASSURANCE SUMMARY

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

ICP ID Number: _____ Date: 01/15/04

Flame AA ID Number: ___62016 ____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Arsenic | | | | NR |
| Barium | | | | NR |
| Cadmium | | | | NR |
| Chromium | | | | NR |
| Lead | | | | NR |
| Mercury | 254.00 | | 0.016 | CV |
| Selenium | | | | NR |
| Silver | | | | NR |

Comments:

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QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY) MDL

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV01

Method: _P_ Matrix: (soil/water): WATER Date: 05/01/03

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Arsenic | 189.04 | | 10.0 | 4.9 |
| Barium | 493.40 | | 5.0 | 0.48 |
| Cadmium | 226.50 | | 5.0 | 0.87 |
| Chromium | 267.71 | | 5.0 | 2.2 |
| Lead | 220.35 | | 20.0 | 9.3 |
| Mercury | | | | |
| Selenium | 196.02 | | 10.0 | 4.7 |
| Silver | 328.06 | | 5.0 | 1.8 |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV01

Method: _CV_ Matrix: (soil/water): WATER Date: 05/01/03

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Arsenic | | | | |
| Barium | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| Lead | | | | |
| Mercury | 254.00 | | 0.20 | 0.16 |
| Selenium | | | | |
| Silver | | | | |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | Interelement Correction Factor for: AL | CA | FE | MG | CO |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Barium | 493.40 | 0.0000000 | 0.0000020 | 0.0000050 | 0.0000000 | 0.0000000 |
| Cadmium | 226.50 | -0.0000020 | 0.0000000 | 0.0000820 | 0.0000000 | -0.0001050 |
| Chromium | 267.71 | 0.0000000 | 0.0000000 | -0.0000040 | 0.0000040 | 0.0000000 |
| Lead1 | 220.35 | 0.0004960 | 0.0000000 | 0.0000890 | 0.0000060 | 0.0000510 |
| Lead2 | 220.35 | -0.0002510 | 0.0000000 | 0.0000490 | 0.0000040 | 0.0000440 |
| Mercury | | | | | | |
| Selenium1 | 196.02 | 0.0000030 | 0.0000000 | -0.0000230 | 0.0000000 | 0.0002580 |
| Selenium2 | 196.02 | 0.0000010 | 0.0000000 | -0.0002200 | 0.0000000 | -0.0004670 |
| Silver | 328.06 | 0.0000000 | 0.0000010 | 0.0000020 | 0.0000000 | 0.0000000 |

Comments:

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QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | Interelement Correction Factor for: CR | MN | MO | NI | TI |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | -0.0054790 | 0.0000000 | -0.0031670 | 0.0000000 | 0.0000000 |
| Barium | 493.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.50 | 0.0000000 | 0.0000000 | -0.0000980 | 0.0000000 | 0.0000000 |
| Chromium | 267.71 | 0.0000000 | 0.0000000 | -0.0002250 | 0.0000000 | 0.0000000 |
| Lead1 | 220.35 | 0.0000000 | 0.0000000 | -0.0003530 | 0.0002760 | 0.0000000 |
| Lead2 | 220.35 | 0.0000000 | 0.0000000 | -0.0005790 | 0.0000520 | -0.0006380 |
| Mercury | | | | | | |
| Selenium1 | 196.02 | -0.0000500 | 0.0005410 | 0.0000000 | 0.0000000 | 0.0000000 |
| Selenium2 | 196.02 | -0.0004360 | 0.0003200 | 0.0000000 | 0.0000000 | 0.0000000 |
| Silver | 328.06 | 0.0000060 | 0.0000000 | -0.0003660 | 0.0000000 | 0.0000000 |

Comments:

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_____

_____

_____

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV01___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | V | Interelement Correction Factor for: -- | -- | -- | -- |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | 0.0000000 | | | | |
| Barium | 493.40 | 0.0000000 | | | | |
| Cadmium | 226.50 | 0.0000000 | | | | |
| Chromium | 267.71 | -0.0000350 | | | | |
| Lead1 | 220.35 | -0.0000100 | | | | |
| Lead2 | 220.35 | -0.0002890 | | | | |
| Mercury | | | | | | |
| Selenium1 | 196.02 | 0.0000000 | | | | |
| Selenium2 | 196.02 | 0.0000000 | | | | |
| Silver | 328.06 | 0.0000670 | | | | |

Comments:

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_____

_____

_____

QUALITY ASSURANCE SUMMARY

ICP LINEAR RANGES (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

ICP ID Number: ___06383 _____ Date: 01/15/04

| Analyte | Integ. Time (Sec.) | Concentration (ug/L) | M |
|---|---|---|---|
| Arsenic | 10.00 | 40000.0 | P |
| Barium | 10.00 | 10000.0 | P |
| Cadmium | 10.00 | 50000.0 | P |
| Chromium | 10.00 | 120000.0 | P |
| Lead | 10.00 | 70000.0 | P |
| Mercury | | | NR |
| Selenium | 10.00 | 10000.0 | P |
| Silver | 10.00 | 10000.0 | P |

Comments:

# Preparation and Run Logs

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___ 2/17

Method: P__

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| *19022 | 02/24/04 | | 50 |
| *19022D | 02/24/04 | | 50 |
| *19022M | 02/24/04 | | 50 |
| *19022S | 02/24/04 | | 50 |
| LCSW | 02/24/04 | | 50 |
| PBW | 02/24/04 | | 50 |
| UN5NV | 02/24/04 | | 50 |

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Method: CV_

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| LCSW | 02/24/04 | | 50 |
| PBW | 02/24/04 | | 50 |
| UN5NV | 02/24/04 | | 50 |
| UN5NVD | 02/24/04 | | 50 |
| UN5NVM | 02/24/04 | | 50 |
| UN5NVS | 02/24/04 | | 50 |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Instrument ID Number: 06383_____ Method: P_

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Instrument ID Number: 06383_____ Method: P_

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AS | BA | CD | CR | PB | HG | SE | AG | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 20.00 | 0720 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0726 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0731 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0736 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 0742 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 0747 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0753 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0758 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0815 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 0820 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 0825 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 0831 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 0836 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 0842 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV01___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AS | BA | CD | CR | PB | HG | SE | AG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1034 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1035 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1036 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1040 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1042 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1043 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1044 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PBW | 1.00 | 1046 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSW | 1.00 | 1047 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN5NV | 1.00 | 1049 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN5NVD | 1.00 | 1050 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN5NVS | 1.00 | 1051 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN5NVM | 1.00 | 1052 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1054 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1055 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1056 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1058 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Raw Data

# ICP Data

Lancaster Laboratories

Data Reviewed By: JM01170 2-25-04

Method Reference
6010B

Data Verified By: NCH0243 2-25-04

Data File Name: 05602T63.DAT

Analyst: 1170

Run Name: 0405602T63

Instrument Parameters:

| | |
|---|---|
| Rinse Time: | 90 sec |
| Individual Integration Time: | 10 sec |
| Total Integration Time: | 30 sec |

| Element Symbol | Element Name | Wavelength(nm) |
|---|---|---|
| Ag | Silver | 328.06 |
| Al | Aluminum | 308.21 |
| As | Arsenic | 189.04 |
| B | Boron | 249.67 |
| Ba | Barium | 493.40 |
| Be | Beryllium | 313.04 |
| Ca | Calcium | 317.93 |
| Cd | Cadmium | 226.50 |
| Co | Cobalt | 228.61 |
| Cr | Chromium | 267.71 |
| Cu | Copper | 324.75 |
| Fe | Iron | 259.94 |
| K | Potassium | 766.49 |
| Mg | Magnesium | 279.07 |
| Mn | Manganese | 257.61 |
| Mo | Molybdenum | 202.03 |
| Na | Sodium | 330.23 |
| Ni | Nickel | 231.60 |
| Pb | Lead | 220.35/1 |
| Pb | Lead | 220.35/2 |
| Sb | Antimony | 206.83/1 |
| Se | Selenium | 196.02/2 |
| Se | Selenium | 196.02/1 |
| Sn | Tin | 189.98 |
| Sr | Strontium | 421.55 |
| Ti | Titanium | 334.94 |
| Tl | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| Y | Yttrium | 371.03 |
| Zn | Zinc | 206.20 |

The 61E TRACE ICP uses a Crawford-Kunselman Noise Reduction Technique for lead and selenium. This requires the utilization of the first and second order wavelengths in the calculation of each of these metals determinations. The 61E TRACE ICP also utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

standard to compensate for fluctuations in nebulization and plas[redacted]
All Yttrium readings are expressed in counts.



LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 1 S0 02/25/04 04:30

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| Ag | 0.000 | -0.00423 | 3.333 | -0.00413 | -0.00439 | -0.00416 |
| Al | 0.000 | 0.00690 | 1.161 | 0.00699 | 0.00684 | 0.00687 |
| As | 0.000 | 0.00032 | 17.78 | 0.00029 | 0.00028 | 0.00038 |
| B | 0.000 | 0.00116 | 11.61 | 0.00121 | 0.00101 | 0.00127 |
| Ba | 0.000 | 0.00023 | 6.516 | 0.00024 | 0.00021 | 0.00023 |
| Be | 0.000 | -0.00076 | 0.330 | -0.00076 | -0.00076 | -0.00076 |
| Ca | 0.000 | -0.00260 | 1.476 | -0.00263 | -0.00261 | -0.00256 |
| Cd | 0.000 | 0.00000 | 2512. | -0.00016 | 0.00019 | -0.00005 |
| Co | 0.000 | -0.00006 | 17.07 | -0.00007 | -0.00006 | -0.00005 |
| Cr | 0.000 | 0.00012 | 3.539 | 0.00012 | 0.00012 | 0.00012 |
| Cu | 0.000 | -0.00102 | 4.305 | -0.00102 | -0.00106 | -0.00098 |
| Fe | 0.000 | 0.00060 | 31.10 | 0.00069 | 0.00038 | 0.00072 |
| K | 0.000 | 0.01840 | 15.40 | 0.02164 | 0.01637 | 0.01718 |
| Mg | 0.000 | 0.00010 | 29.80 | 0.00009 | 0.00008 | 0.00014 |
| Mn | 0.000 | 0.00001 | 22.00 | 0.00002 | 0.00002 | 0.00001 |
| Mo | 0.000 | -0.00004 | 131.3 | -0.00008 | -0.00006 | 0.00002 |
| Na | 0.000 | 0.00022 | 82.83 | 0.00041 | 0.00022 | 0.00004 |
| Ni | 0.000 | 0.00000 | 2819. | 0.00010 | -0.00012 | 0.00001 |
| Pb | 0.000 | 0.00039 | 167.7 | 0.00018 | 0.00114 | -0.00014 |
| Sb | 0.000 | 0.00129 | 43.54 | 0.00129 | 0.00072 | 0.00185 |
| Se | 0.000 | -0.00157 | 14.79 | -0.00160 | -0.00178 | -0.00132 |
| Sn | 0.000 | -0.00013 | 61.02 | -0.00018 | -0.00004 | -0.00017 |
| Sr | 0.000 | 0.00035 | 4.580 | 0.00037 | 0.00035 | 0.00034 |
| Ti | 0.000 | -0.00100 | 12.63 | -0.00095 | -0.00115 | -0.00092 |
| Tl | 0.000 | -0.00055 | 6.551 | -0.00057 | -0.00051 | -0.00058 |
| V | 0.000 | 0.00001 | 24.43 | 0.00001 | 0.00002 | 0.00001 |
| Y | N/A | 149270.67187 | 0.692 | 148084.00000 | 149756.00000 | 149972.00000 |
| Zn | 0.000 | 0.00002 | 147.8 | 0.00004 | -0.00002 | 0.00006 |

[redacted]

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 2 S1 02/25/04 04:35

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| __Al | 50.000 | 0.76335 | 0.563 | 0.75893 | 0.76752 | 0.76361 |
| __Ca | 50.000 | 1.24218 | 0.517 | 1.23534 | 1.24811 | 1.24308 |
| __Fe | 50.000 | 8.16456 | 0.516 | 8.12024 | 8.20419 | 8.16924 |
| __K | 50.000 | 5.75285 | 0.323 | 5.74385 | 5.77424 | 5.74045 |
| __Mg | 50.000 | 0.74361 | 0.536 | 0.73936 | 0.74728 | 0.74419 |
| __Na | 50.000 | 0.11112 | 0.700 | 0.11022 | 0.11166 | 0.11147 |
| __Y | N/A | 147627.32812 | 0.465 | 147212.00000 | 147250.00000 | 148420.00000 |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 3 S2 02/25/04 04:39

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| Ag | 1.000 | 0.28369 | 0.237 | 0.28296 | 0.28429 | 0.28382 |
| As | 1.000 | 0.10347 | 0.246 | 0.10333 | 0.10377 | 0.10332 |
| B | 1.000 | 0.15936 | 0.554 | 0.15834 | 0.15991 | 0.15983 |
| Ba | 1.000 | 0.24081 | 0.311 | 0.24001 | 0.24150 | 0.24090 |
| Be | 1.000 | 0.37932 | 0.398 | 0.37760 | 0.38044 | 0.37993 |
| Cd | 1.000 | 0.75833 | 0.366 | 0.75531 | 0.76079 | 0.75888 |
| Co | 1.000 | 0.11137 | 0.398 | 0.11087 | 0.11170 | 0.11154 |
| Cu | 1.000 | 0.12281 | 0.324 | 0.12236 | 0.12314 | 0.12291 |
| Mn | 1.000 | 0.22469 | 0.365 | 0.22377 | 0.22533 | 0.22498 |
| Ni | 1.000 | 0.27488 | 0.453 | 0.27345 | 0.27576 | 0.27542 |
| Pb | 1.000 | 0.21715 | 0.913 | 0.21738 | 0.21506 | 0.21901 |
| Se | 1.000 | 0.11836 | 0.391 | 0.11834 | 0.11791 | 0.11883 |
| Sr | 1.000 | 0.50968 | 0.308 | 0.50797 | 0.51107 | 0.51000 |
| Tl | 1.000 | 0.04568 | 0.403 | 0.04553 | 0.04588 | 0.04562 |
| Y | N/A | 152154.00000 | 0.318 | 151663.00000 | 152632.00000 | 152167.00000 |
| Zn | 1.000 | 0.06223 | 0.497 | 0.06188 | 0.06234 | 0.06247 |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 4 S3 02/25/04 04:44

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| __Cr | 1.000 | 0.12399 | 1.347 | 0.12207 | 0.12486 | 0.12505 |
| __Mo | 1.000 | 0.10236 | 2.435 | 0.09952 | 0.10337 | 0.10419 |
| __Sb | 1.000 | 0.18753 | 1.453 | 0.18439 | 0.18905 | 0.18917 |
| __Sn | 1.000 | 0.09630 | 1.437 | 0.09471 | 0.09696 | 0.09723 |
| __Ti | 1.000 | 0.52581 | 1.272 | 0.51810 | 0.52915 | 0.53017 |
| __V | 1.000 | 0.03144 | 1.098 | 0.03104 | 0.03162 | 0.03165 |
| __Y | N/A | 151777.67187 | 0.102 | 151943.00000 | 151756.00000 | 151634.00000 |

0819

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 5 HS1 02/25/04 04:48

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00003 | 684.0 | -0.00007 | -0.00025 | 0.00022 | | |
| Al | 50.73395 | 2.071 | 49.52109 | 51.37911 | 51.30165 | | |
| As | 0.00150 | 133.0 | 0.00324 | 0.00195 | -0.00068 | | |
| B | -0.00239 | 36.33 | -0.00218 | -0.00334 | -0.00164 | | |
| Ba | 0.00010 | 25.26 | 0.00011 | 0.00007 | 0.00012 | | |
| Be | 0.00009 | 211.1 | 0.00032 | 0.00000 | -0.00003 | | |
| Ca | 50.71604 | 2.164 | 49.44910 | 51.37568 | 51.32335 | | |
| Cd | 0.00127 | 12.98 | 0.00115 | 0.00146 | 0.00121 | | |
| Co | -0.00059 | 22.90 | -0.00071 | -0.00044 | -0.00062 | | |
| Cr | -0.00062 | 48.93 | -0.00027 | -0.00084 | -0.00074 | | |
| Cu | 0.00086 | 16.80 | 0.00084 | 0.00073 | 0.00102 | | |
| Fe | 50.63522 | 2.234 | 49.32919 | 51.31333 | 51.26313 | | |
| K | 50.45930 | 1.618 | 49.51779 | 50.97428 | 50.88581 | | |
| Mg | 50.61149 | 2.120 | 49.37250 | 51.24356 | 51.21843 | | |
| Mn | -0.00079 | 8.668 | -0.00083 | -0.00071 | -0.00083 | | |
| Mo | 0.00175 | 59.36 | 0.00282 | 0.00073 | 0.00170 | | |
| Na | 50.37203 | 1.746 | 49.37947 | 51.05519 | 50.68142 | | |
| Ni | -0.00012 | 264.6 | 0.00001 | 0.00011 | -0.00050 | | |
| Pb | 0.00188 | 41.03 | 0.00213 | 0.00251 | 0.00102 | | |
| Sb | -0.00251 | 40.23 | -0.00329 | -0.00287 | -0.00136 | | |
| Se | -0.00555 | 32.90 | -0.00394 | -0.00754 | -0.00517 | | |
| Sn | 0.00069 | 472.5 | 0.00387 | 0.00084 | -0.00264 | | |
| Sr | -0.00624 | 1.975 | -0.00610 | -0.00629 | -0.00633 | | |
| Ti | -0.00028 | 39.83 | -0.00017 | -0.00040 | -0.00027 | | |
| Tl | 0.00558 | 26.75 | 0.00599 | 0.00392 | 0.00683 | | |
| V | 0.00168 | 3.821 | 0.00161 | 0.00171 | 0.00173 | | |
| Y | 152242.67187 | 1.129 | 154213.00000 | 151041.00000 | 151474.00000 | | |
| Zn | -0.00041 | 81.22 | -0.00065 | -0.00055 | -0.00002 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 6 HS2 02/25/04 04:53

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 1.00738 | 0.412 | 1.00361 | 1.00669 | 1.01183 | | |
| Al | -0.04045 | 14.00 | -0.03395 | -0.04427 | -0.04315 | | |
| As | 1.00268 | 0.352 | 0.99918 | 1.00625 | 1.00260 | | |
| B | 1.00773 | 0.515 | 1.00282 | 1.00720 | 1.01317 | | |
| Ba | 1.00853 | 0.501 | 1.00375 | 1.00802 | 1.01383 | | |
| Be | 1.00129 | 0.538 | 0.99586 | 1.00134 | 1.00665 | | |
| Ca | -0.04898 | 2.806 | -0.04746 | -0.04934 | -0.05014 | | |
| Cd | 0.99979 | 0.418 | 0.99596 | 0.99915 | 1.00425 | | |
| Co | 1.00069 | 0.529 | 0.99538 | 1.00073 | 1.00597 | | |
| Cr | -0.00088 | 24.03 | -0.00100 | -0.00064 | -0.00100 | | |
| Cu | 1.00913 | 0.458 | 1.00530 | 1.00783 | 1.01426 | | |
| Fe | -0.00498 | 20.00 | -0.00384 | -0.00540 | -0.00570 | | |
| K | 0.02964 | 12.78 | 0.02828 | 0.03393 | 0.02672 | | |
| Mg | -0.01358 | 14.71 | -0.01151 | -0.01374 | -0.01549 | | |
| Mn | 1.00261 | 0.496 | 0.99762 | 1.00262 | 1.00757 | | |
| Mo | -0.00005 | 1765. | -0.00054 | 0.00105 | -0.00067 | | |
| Na | 0.01412 | 151.0 | 0.00342 | 0.03870 | 0.00026 | | |
| Ni | 0.99888 | 0.470 | 0.99408 | 0.99909 | 1.00348 | | |
| Pb | 1.00058 | 1.274 | 0.98623 | 1.00490 | 1.01061 | | |
| Sb | -0.00218 | 16.32 | -0.00204 | -0.00192 | -0.00259 | | |
| Se | 1.00120 | 1.057 | 0.98934 | 1.00458 | 1.00968 | | |
| Sn | 0.00273 | 165.0 | -0.00152 | 0.00227 | 0.00745 | | |
| Sr | 1.00800 | 0.518 | 1.00304 | 1.00750 | 1.01345 | | |
| Ti | -0.00006 | 98.65 | -0.00002 | -0.00002 | -0.00012 | | |
| Tl | 0.99928 | 0.882 | 0.98915 | 1.00345 | 1.00523 | | |
| V | -0.00043 | 111.3 | -0.00070 | 0.00012 | -0.00070 | | |
| Y | 152746.67187 | 0.327 | 152696.00000 | 153270.00000 | 152274.00000 | | |
| Zn | 0.99904 | 0.366 | 0.99554 | 0.99873 | 1.00284 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 7 HS3 02/25/04 04:59

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00027 | 148.5 | 0.00004 | 0.00075 | 0.00003 | | |
| Al | -0.00407 | 168.5 | 0.00222 | -0.00304 | -0.01139 | | |
| As | -0.00154 | 15.52 | -0.00150 | -0.00132 | -0.00180 | | |
| B | 0.01143 | 3.940 | 0.01103 | 0.01192 | 0.01136 | | |
| Ba | 0.00006 | 85.81 | 0.00001 | 0.00012 | 0.00006 | | |
| Be | -0.00003 | 9.460 | -0.00003 | -0.00003 | -0.00003 | | |
| Ca | -0.04813 | 0.839 | -0.04837 | -0.04767 | -0.04837 | | |
| Cd | 0.00015 | 149.8 | 0.00040 | 0.00006 | -0.00002 | | |
| Co | -0.00001 | 3106. | -0.00014 | 0.00063 | -0.00055 | | |
| Cr | 1.01079 | 0.454 | 1.00664 | 1.01572 | 1.01001 | | |
| Cu | 0.00020 | 157.7 | 0.00012 | 0.00054 | -0.00007 | | |
| Fe | -0.00569 | 13.80 | -0.00479 | -0.00604 | -0.00624 | | |
| K | 0.03648 | 14.81 | 0.03872 | 0.04039 | 0.03031 | | |
| Mg | -0.01094 | 18.93 | -0.01049 | -0.00913 | -0.01320 | | |
| Mn | 0.00005 | 203.4 | 0.00017 | 0.00005 | -0.00006 | | |
| Mo | 1.01771 | 0.989 | 1.00631 | 1.02537 | 1.02146 | | |
| Na | 0.06997 | 134.9 | 0.14891 | 0.09570 | -0.03468 | | |
| Ni | -0.00045 | 70.22 | -0.00021 | -0.00033 | -0.00081 | | |
| Pb | 0.00077 | 138.8 | -0.00046 | 0.00144 | 0.00135 | | |
| Sb | 1.01487 | 0.571 | 1.00844 | 1.01969 | 1.01649 | | |
| Se | -0.00119 | 67.61 | -0.00026 | -0.00160 | -0.00172 | | |
| Sn | 1.00930 | 0.965 | 0.99888 | 1.01817 | 1.01086 | | |
| Sr | -0.00011 | 23.63 | -0.00008 | -0.00012 | -0.00013 | | |
| Ti | 1.01422 | 0.414 | 1.00991 | 1.01832 | 1.01442 | | |
| Tl | -0.00305 | 88.54 | -0.00011 | -0.00362 | -0.00543 | | |
| V | 1.01325 | 0.465 | 1.00859 | 1.01803 | 1.01314 | | |
| Y | 150638.67187 | 0.152 | 150567.00000 | 150453.00000 | 150896.00000 | | |
| Zn | -0.00029 | 254.0 | 0.00045 | -0.00029 | -0.00104 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 8 ICV 02/25/04 05:04

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.61404 | 0.308 | 0.61211 | 0.61591 | 0.61409 | | |
| Al | 30.94063 | 0.568 | 30.77437 | 31.12479 | 30.92273 | | |
| ✓As | 0.58214 | 0.312 | 0.58072 | 0.58150 | 0.58419 | | |
| B | 0.63632 | 0.308 | 0.63412 | 0.63791 | 0.63692 | | |
| ✓Ba | 0.60747 | 0.451 | 0.60542 | 0.61059 | 0.60640 | | |
| Be | 0.61746 | 0.843 | 0.61193 | 0.61819 | 0.62227 | | |
| Ca | 30.81862 | 0.983 | 30.51027 | 30.82963 | 31.11596 | | |
| ✓Cd | 0.59688 | 0.801 | 0.59167 | 0.59792 | 0.60106 | | |
| Co | 0.60191 | 0.755 | 0.59693 | 0.60296 | 0.60584 | | |
| ✓Cr | 0.60972 | 0.846 | 0.60400 | 0.61113 | 0.61404 | | |
| Cu | 0.61955 | 0.537 | 0.61717 | 0.62336 | 0.61813 | | |
| Fe | 30.68174 | 0.730 | 30.43099 | 30.75178 | 30.86244 | | |
| K | 30.68631 | 0.533 | 30.53346 | 30.85889 | 30.66658 | | |
| Mg | 30.36984 | 0.776 | 30.10931 | 30.43106 | 30.56916 | | |
| Mn | 0.61274 | 0.624 | 0.60851 | 0.61379 | 0.61594 | | |
| Mo | 0.61897 | 1.219 | 0.61060 | 0.62105 | 0.62526 | | |
| Na | 30.73337 | 0.579 | 30.60584 | 30.93676 | 30.65752 | | |
| Ni | 0.60646 | 0.878 | 0.60065 | 0.60761 | 0.61112 | | |
| ✓Pb | 0.60888 | 1.176 | 0.60164 | 0.60905 | 0.61596 | | |
| Sb | 0.61427 | 0.690 | 0.60974 | 0.61814 | 0.61494 | | |
| ✓Se | 0.61122 | 0.877 | 0.60569 | 0.61640 | 0.61155 | | |
| Sn | 0.61767 | 0.705 | 0.61306 | 0.61822 | 0.62173 | | |
| Sr | 0.61667 | 0.439 | 0.61411 | 0.61950 | 0.61639 | | |
| Ti | 0.61424 | 0.596 | 0.61008 | 0.61699 | 0.61564 | | |
| Tl | 0.58985 | 1.976 | 0.57868 | 0.58892 | 0.60194 | | |
| V | 0.61141 | 0.590 | 0.60724 | 0.61327 | 0.61371 | | |
| Y | 151693.00000 | 0.798 | 152672.00000 | 152068.00000 | 150339.00000 | | |
| Zn | 0.60379 | 1.186 | 0.59690 | 0.60328 | 0.61119 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 9 ICB 02/25/04 05:09

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00023 | 130.1 | -0.00018 | 0.00004 | -0.00056 | | |
| Al | -0.03838 | 22.37 | -0.02967 | -0.03863 | -0.04685 | | |
| As | -0.00515 | 93.30 | -0.00552 | -0.00017 | -0.00977 | | |
| B | -0.00298 | 13.59 | -0.00300 | -0.00256 | -0.00337 | | |
| Ba | 0.00000 | 3042. | 0.00007 | -0.00001 | -0.00006 | | |
| Be | 0.00001 | 320.2 | 0.00001 | 0.00004 | -0.00002 | | |
| Ca | -0.05303 | 3.032 | -0.05435 | -0.05124 | -0.05350 | | |
| Cd | 0.00016 | 116.5 | 0.00033 | 0.00019 | -0.00004 | | |
| Co | -0.00066 | 45.98 | -0.00043 | -0.00053 | -0.00100 | | |
| Cr | -0.00055 | 83.08 | -0.00016 | -0.00043 | -0.00106 | | |
| Cu | 0.00029 | 64.87 | 0.00014 | 0.00050 | 0.00022 | | |
| Fe | -0.00518 | 15.93 | -0.00432 | -0.00523 | -0.00597 | | |
| K | 0.02799 | 23.24 | 0.03052 | 0.03286 | 0.02060 | | |
| Mg | -0.01478 | 21.77 | -0.01107 | -0.01641 | -0.01685 | | |
| Mn | 0.00002 | 167.3 | 0.00006 | 0.00003 | -0.00002 | | |
| Mo | 0.00045 | 133.7 | 0.00060 | 0.00098 | -0.00021 | | |
| Na | 0.02368 | 612.7 | 0.12807 | 0.08503 | -0.14205 | | |
| Ni | -0.00029 | 245.6 | 0.00008 | 0.00015 | -0.00113 | | |
| Pb | 0.00155 | 118.1 | 0.00303 | 0.00214 | -0.00050 | | |
| Sb | -0.00076 | 461.0 | 0.00315 | -0.00365 | -0.00179 | | |
| Se | -0.00101 | 166.3 | -0.00295 | -0.00026 | 0.00016 | | |
| Sn | 0.00064 | 475.2 | 0.00078 | 0.00366 | -0.00250 | | |
| Sr | -0.00018 | 29.43 | -0.00013 | -0.00017 | -0.00024 | | |
| Ti | 0.00004 | 405.0 | 0.00005 | 0.00021 | -0.00013 | | |
| Tl | 0.00320 | 150.7 | 0.00440 | 0.00731 | -0.00211 | | |
| V | -0.00022 | 285.3 | 0.00033 | -0.00008 | -0.00091 | | |
| Y | 154045.67187 | 0.675 | 152853.00000 | 154774.00000 | 154510.00000 | | |
| Zn | -0.00001 | 3532. | 0.00047 | -0.00005 | -0.00046 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 10 LLC 02/25/04 05:15

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00478 | 4.574 | 0.00471 | 0.00460 | 0.00502 | | |
| Al | 0.17456 | 3.460 | 0.18143 | 0.17008 | 0.17218 | | |
| As | 0.00764 | 21.75 | 0.00735 | 0.00614 | 0.00943 | | |
| B | 0.04878 | 1.224 | 0.04891 | 0.04812 | 0.04929 | | |
| Ba | 0.00516 | 0.815 | 0.00512 | 0.00517 | 0.00520 | | |
| Be | 0.00514 | 0.140 | 0.00513 | 0.00514 | 0.00514 | | |
| Ca | 0.16014 | 0.531 | 0.16096 | 0.15926 | 0.16019 | | |
| Cd | 0.00544 | 0.755 | 0.00543 | 0.00548 | 0.00540 | | |
| Co | 0.00476 | 7.155 | 0.00504 | 0.00487 | 0.00438 | | |
| Cr | 0.00461 | 7.596 | 0.00489 | 0.00471 | 0.00422 | | |
| Cu | 0.01076 | 2.498 | 0.01051 | 0.01074 | 0.01104 | | |
| Fe | 0.20067 | 0.111 | 0.20077 | 0.20083 | 0.20042 | | |
| K | 0.49839 | 1.075 | 0.50458 | 0.49536 | 0.49524 | | |
| Mg | 0.08637 | 1.499 | 0.08508 | 0.08767 | 0.08636 | | |
| Mn | 0.00530 | 0.644 | 0.00528 | 0.00527 | 0.00533 | | |
| Mo | 0.00956 | 3.559 | 0.00981 | 0.00917 | 0.00971 | | |
| Na | 1.01026 | 17.91 | 1.00973 | 1.19148 | 0.82956 | | |
| Ni | 0.01034 | 5.938 | 0.00963 | 0.01071 | 0.01068 | | |
| Pb | 0.02060 | 3.761 | 0.02102 | 0.02108 | 0.01971 | | |
| Sb | 0.01150 | 9.650 | 0.01058 | 0.01118 | 0.01273 | | |
| Se | 0.00781 | 5.122 | 0.00816 | 0.00737 | 0.00790 | | |
| Sn | 0.02162 | 12.82 | 0.02004 | 0.02000 | 0.02482 | | |
| Sr | 0.00498 | 0.961 | 0.00504 | 0.00495 | 0.00496 | | |
| Ti | 0.00982 | 1.249 | 0.00996 | 0.00971 | 0.00980 | | |
| Tl | 0.02318 | 19.96 | 0.02680 | 0.02477 | 0.01797 | | |
| V | 0.00495 | 1.005 | 0.00500 | 0.00493 | 0.00491 | | |
| Y | 153314.67187 | 0.912 | 151739.00000 | 153791.00000 | 154414.00000 | | |
| Zn | 0.02008 | 2.690 | 0.02018 | 0.01949 | 0.02055 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 11 ICSA 02/25/04 05:20

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00079 | 26.58 | -0.00084 | -0.00056 | -0.00097 | | |
| Al | 509.86434 | 0.876 | 504.76208 | 513.08020 | 511.75079 | | |
| As | 0.00095 | 772.5 | -0.00747 | 0.00388 | 0.00646 | | |
| B | -0.00430 | 28.58 | -0.00571 | -0.00371 | -0.00347 | | |
| Ba | -0.00071 | 7.525 | -0.00076 | -0.00071 | -0.00066 | | |
| Be | 0.00013 | 4.174 | 0.00013 | 0.00014 | 0.00013 | | |
| Ca | 531.04290 | 0.841 | 526.17211 | 534.95867 | 531.99792 | | |
| Cd | 0.00507 | 12.46 | 0.00438 | 0.00522 | 0.00562 | | |
| Co | 0.00328 | 16.69 | 0.00272 | 0.00381 | 0.00330 | | |
| Cr | -0.00347 | 11.52 | -0.00358 | -0.00302 | -0.00380 | | |
| Cu | 0.00321 | 17.42 | 0.00256 | 0.00355 | 0.00352 | | |
| Fe | 200.34965 | 0.690 | 198.75741 | 201.24874 | 201.04280 | | |
| K | 0.02970 | 45.91 | 0.04537 | 0.02331 | 0.02043 | | |
| Mg | 506.23666 | 0.978 | 500.53912 | 509.54067 | 508.63015 | | |
| Mn | 0.00360 | 6.265 | 0.00340 | 0.00384 | 0.00356 | | |
| Mo | -0.00178 | 145.0 | -0.00476 | -0.00053 | -0.00005 | | |
| Na | 0.02005 | 779.2 | 0.20015 | -0.07956 | -0.06042 | | |
| Ni | 0.00205 | 62.85 | 0.00070 | 0.00328 | 0.00218 | | |
| Pb | 0.00412 | 36.92 | 0.00404 | 0.00568 | 0.00264 | | |
| Sb | -0.00105 | 1491. | -0.01891 | 0.01087 | 0.00487 | | |
| Se | -0.00708 | 96.88 | -0.01202 | 0.00075 | -0.00997 | | |
| Sn | 0.00381 | 234.8 | -0.00652 | 0.00868 | 0.00929 | | |
| Sr | -0.07110 | 0.909 | -0.07038 | -0.07165 | -0.07126 | | |
| Ti | -0.00527 | 2.147 | -0.00514 | -0.00535 | -0.00532 | | |
| Tl | 0.00048 | 648.3 | -0.00101 | 0.00412 | -0.00165 | | |
| V | 0.00343 | 28.81 | 0.00229 | 0.00403 | 0.00398 | | |
| Y | 143128.32812 | 1.044 | 141441.00000 | 143656.00000 | 144288.00000 | | |
| Zn | 0.01176 | 19.35 | 0.00927 | 0.01225 | 0.01375 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 12 ICSAB 02/25/04 05:26

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.21540 | 0.768 | 0.21509 | 0.21719 | 0.21392 | | |
| Al | 518.71368 | 0.894 | 520.16320 | 522.45629 | 513.52154 | | |
| As | 0.10253 | 6.963 | 0.10869 | 0.10418 | 0.09470 | | |
| B | -0.00185 | 28.52 | -0.00127 | -0.00197 | -0.00230 | | |
| Ba | 0.52487 | 0.907 | 0.52657 | 0.52854 | 0.51949 | | |
| Be | 0.51171 | 0.867 | 0.51276 | 0.51553 | 0.50684 | | |
| Ca | 534.03863 | 1.136 | 535.19567 | 539.44873 | 527.47155 | | |
| Cd | 0.96560 | 0.934 | 0.96853 | 0.97279 | 0.95548 | | |
| Co | 0.49456 | 0.895 | 0.49627 | 0.49788 | 0.48953 | | |
| Cr | 0.50299 | 0.932 | 0.50468 | 0.50661 | 0.49769 | | |
| Cu | 0.54769 | 0.869 | 0.54983 | 0.55101 | 0.54223 | | |
| Fe | 203.17285 | 0.964 | 203.52990 | 204.92939 | 201.05923 | | |
| K | 0.02194 | 62.88 | 0.00832 | 0.03591 | 0.02158 | | |
| Mg | 514.11187 | 0.809 | 514.95324 | 517.78771 | 509.59472 | | |
| Mn | 0.50926 | 0.890 | 0.51045 | 0.51307 | 0.50425 | | |
| Mo | -0.00114 | 103.1 | -0.00023 | -0.00071 | -0.00247 | | |
| Na | -0.05846 | 49.08 | -0.03195 | -0.05449 | -0.08893 | | |
| Ni | 0.97320 | 0.801 | 0.97515 | 0.97985 | 0.96461 | | |
| Pb | 0.05683 | 3.647 | 0.05769 | 0.05446 | 0.05832 | | |
| Sb | 0.63363 | 1.233 | 0.64229 | 0.63150 | 0.62710 | | |
| Se | 0.04896 | 5.407 | 0.04946 | 0.05131 | 0.04609 | | |
| Sn | 0.00419 | 73.39 | 0.00146 | 0.00358 | 0.00753 | | |
| Sr | -0.07140 | 1.146 | -0.07156 | -0.07213 | -0.07052 | | |
| Ti | -0.00541 | 3.945 | -0.00561 | -0.00544 | -0.00518 | | |
| Tl | 0.10270 | 1.652 | 0.10288 | 0.10092 | 0.10430 | | |
| V | 0.51873 | 0.933 | 0.51964 | 0.52306 | 0.51350 | | |
| Y | 142352.00000 | 0.735 | 141983.00000 | 141539.00000 | 143534.00000 | | |
| Zn | 0.96946 | 0.771 | 0.97236 | 0.97506 | 0.96097 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 13 CCV 02/25/04 05:31

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50261 | 0.772 | 0.50344 | 0.49838 | 0.50602 | | |
| Al | 25.51491 | 0.899 | 25.55221 | 25.26894 | 25.72360 | | |
| As | 0.46585 | 0.927 | 0.46920 | 0.46098 | 0.46738 | | |
| B | 0.50520 | 0.904 | 0.50429 | 0.50116 | 0.51016 | | |
| Ba | 0.48807 | 0.893 | 0.48884 | 0.48338 | 0.49200 | | |
| Be | 0.49586 | 0.959 | 0.49603 | 0.49102 | 0.50054 | | |
| Ca | 25.23265 | 0.974 | 25.18734 | 25.01252 | 25.49808 | | |
| Cd | 0.48388 | 0.817 | 0.48420 | 0.47978 | 0.48767 | | |
| Co | 0.48922 | 0.872 | 0.48827 | 0.48550 | 0.49388 | | |
| Cr | 0.48974 | 0.930 | 0.48933 | 0.48541 | 0.49449 | | |
| Cu | 0.49884 | 0.928 | 0.49920 | 0.49404 | 0.50328 | | |
| Fe | 25.41178 | 0.929 | 25.39751 | 25.18296 | 25.65488 | | |
| K | 25.26233 | 0.751 | 25.35788 | 25.04363 | 25.38548 | | |
| Mg | 25.20248 | 0.889 | 25.18736 | 24.98617 | 25.43391 | | |
| Mn | 0.49243 | 0.919 | 0.49257 | 0.48784 | 0.49689 | | |
| Mo | 0.49308 | 0.977 | 0.48990 | 0.49071 | 0.49863 | | |
| Na | 25.44402 | 0.831 | 25.42978 | 25.23984 | 25.66244 | | |
| Ni | 0.48537 | 0.605 | 0.48365 | 0.48369 | 0.48876 | | |
| Pb | 0.49492 | 0.815 | 0.49799 | 0.49035 | 0.49642 | | |
| Sb | 0.48960 | 1.527 | 0.48630 | 0.48434 | 0.49816 | | |
| Se | 0.49386 | 0.893 | 0.49713 | 0.48884 | 0.49562 | | |
| Sn | 0.49643 | 1.382 | 0.49633 | 0.48962 | 0.50334 | | |
| Sr | 0.49679 | 0.888 | 0.49763 | 0.49202 | 0.50072 | | |
| Ti | 0.49189 | 0.951 | 0.49226 | 0.48704 | 0.49637 | | |
| Tl | 0.47418 | 1.659 | 0.46621 | 0.47438 | 0.48194 | | |
| V | 0.49099 | 0.931 | 0.49121 | 0.48630 | 0.49545 | | |
| Y | 150665.67187 | 1.494 | 148203.00000 | 152620.00000 | 151174.00000 | | |
| Zn | 0.48373 | 0.857 | 0.48209 | 0.48066 | 0.48845 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 14 CCB 02/25/04 05:37

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00006 | 243.0 | 0.00009 | -0.00010 | 0.00019 | | |
| Al | -0.02202 | 60.62 | -0.00684 | -0.02729 | -0.03193 | | |
| As | -0.00372 | 13.85 | -0.00421 | -0.00376 | -0.00318 | | |
| B | -0.00285 | 70.83 | -0.00104 | -0.00246 | -0.00503 | | |
| Ba | -0.00002 | 88.74 | 0.00000 | -0.00001 | -0.00004 | | |
| Be | 0.00009 | 106.5 | 0.00020 | 0.00005 | 0.00001 | | |
| Ca | -0.04193 | 9.953 | -0.03711 | -0.04426 | -0.04443 | | |
| Cd | 0.00019 | 40.77 | 0.00027 | 0.00011 | 0.00020 | | |
| Co | -0.00025 | 25.93 | -0.00022 | -0.00033 | -0.00021 | | |
| Cr | -0.00014 | 519.4 | 0.00067 | -0.00031 | -0.00079 | | |
| Cu | 0.00027 | 15.00 | 0.00023 | 0.00027 | 0.00032 | | |
| Fe | -0.00028 | 850.7 | 0.00254 | -0.00152 | -0.00188 | | |
| K | 0.04272 | 5.938 | 0.04437 | 0.04399 | 0.03980 | | |
| Mg | -0.00049 | 937.4 | 0.00372 | 0.00030 | -0.00553 | | |
| Mn | 0.00013 | 66.35 | 0.00021 | 0.00003 | 0.00015 | | |
| Mo | 0.00040 | 331.9 | 0.00192 | -0.00049 | -0.00023 | | |
| Na | 0.17319 | 65.22 | 0.29174 | 0.06680 | 0.16102 | | |
| Ni | 0.00000 | 15576 | 0.00045 | -0.00075 | 0.00030 | | |
| Pb | 0.00043 | 206.5 | 0.00052 | 0.00126 | -0.00050 | | |
| Sb | 0.00055 | 347.1 | 0.00010 | 0.00268 | -0.00111 | | |
| Se | -0.00315 | 6.251 | -0.00298 | -0.00337 | -0.00310 | | |
| Sn | 0.00149 | 204.6 | 0.00487 | -0.00109 | 0.00070 | | |
| Sr | -0.00015 | 36.50 | -0.00009 | -0.00020 | -0.00016 | | |
| Ti | -0.00014 | 71.57 | -0.00005 | -0.00012 | -0.00025 | | |
| Tl | -0.00019 | 441.2 | 0.00024 | -0.00120 | 0.00036 | | |
| V | 0.00021 | 491.3 | 0.00143 | -0.00028 | -0.00049 | | |
| Y | 149764.00000 | 0.648 | 148649.00000 | 150430.00000 | 150213.00000 | | |
| Zn | 0.00046 | 97.10 | 0.00082 | 0.00060 | -0.00003 | | |

8829

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 15 PBW 02/25/04 05:42
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00056 | 138.5 | -0.00080 | -0.00120 | 0.00031 | | |
| Al | -0.01922 | 40.06 | -0.01035 | -0.02423 | -0.02307 | | |
| As | -0.00271 | 43.95 | -0.00165 | -0.00248 | -0.00400 | | |
| B | 0.01437 | 10.99 | 0.01613 | 0.01307 | 0.01392 | | |
| Ba | 0.00071 | 6.206 | 0.00066 | 0.00073 | 0.00074 | | |
| Be | 0.00000 | 992.7 | 0.00000 | 0.00008 | -0.00005 | | |
| Ca | -0.01308 | 27.19 | -0.01689 | -0.01251 | -0.00985 | | |
| Cd | 0.00012 | 160.0 | -0.00010 | 0.00027 | 0.00020 | | |
| Co | -0.00032 | 103.0 | -0.00062 | -0.00038 | 0.00003 | | |
| Cr | -0.00044 | 89.18 | -0.00090 | -0.00026 | -0.00016 | | |
| Cu | 0.00128 | 39.48 | 0.00080 | 0.00123 | 0.00180 | | |
| Fe | -0.00012 | 227.0 | 0.00008 | -0.00046 | 0.00000 | | |
| K | 0.08940 | 23.65 | 0.06739 | 0.10957 | 0.09124 | | |
| Mg | 0.00658 | 79.48 | 0.00649 | 0.00139 | 0.01185 | | |
| Mn | 0.00040 | 3.364 | 0.00039 | 0.00041 | 0.00041 | | |
| Mo | -0.00059 | 131.0 | -0.00145 | 0.00003 | -0.00034 | | |
| Na | 1178.24658 | 0.497 | 1184.70922 | 1176.73840 | 1173.29211 | | |
| Ni | -0.00020 | 90.02 | -0.00036 | -0.00022 | 0.00000 | | |
| Pb | 0.00104 | 72.74 | 0.00148 | 0.00149 | 0.00016 | | |
| Sb | -0.00591 | 19.09 | -0.00630 | -0.00679 | -0.00464 | | |
| Se | 0.00357 | 66.70 | 0.00382 | 0.00107 | 0.00582 | | |
| Sn | 0.08282 | 0.537 | 0.08334 | 0.08252 | 0.08262 | | |
| Sr | 0.00030 | 3.722 | 0.00032 | 0.00030 | 0.00030 | | |
| Ti | 0.00042 | 18.63 | 0.00045 | 0.00033 | 0.00048 | | |
| Tl | 0.00125 | 116.2 | 0.00245 | 0.00168 | -0.00036 | | |
| V | 0.00000 | 2449. | 0.00013 | 0.00012 | -0.00029 | | |
| Y | 152414.00000 | 0.770 | 151208.00000 | 152479.00000 | 153555.00000 | | |
| Zn | 0.00248 | 0.919 | 0.00250 | 0.00248 | 0.00246 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 16 LCSW 02/25/04 05:48
****,1-1,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05336 | 1.295 | 0.05414 | 0.05284 | 0.05309 | | |
| Al | 2.17943 | 1.608 | 2.21947 | 2.15430 | 2.16452 | | |
| ✓As | 2.10404 | 0.899 | 2.12590 | 2.09305 | 2.09317 | | |
| B | 2.17895 | 0.994 | 2.20306 | 2.16107 | 2.17271 | | |
| ✓Ba | 2.04726 | 1.083 | 2.07271 | 2.03206 | 2.03700 | | |
| Be | 0.05254 | 0.881 | 0.05306 | 0.05220 | 0.05235 | | |
| Ca | 4.15770 | 0.740 | 4.19250 | 4.13407 | 4.14652 | | |
| ✓Cd | 0.05302 | 1.073 | 0.05367 | 0.05261 | 0.05279 | | |
| Co | 0.52154 | 0.830 | 0.52652 | 0.51861 | 0.51950 | | |
| ✓Cr | 0.20651 | 1.168 | 0.20926 | 0.20476 | 0.20550 | | |
| ✓Cu | 0.27104 | 0.996 | 0.27414 | 0.26917 | 0.26982 | | |
| Fe | 1.04008 | 1.024 | 1.05238 | 1.03383 | 1.03403 | | |
| K | 5.78087 | 0.789 | 5.83284 | 5.74745 | 5.76232 | | |
| Mg | 2.05450 | 0.853 | 2.07372 | 2.03936 | 2.05042 | | |
| Mn | 0.51873 | 0.893 | 0.52404 | 0.51551 | 0.51663 | | |
| Mo | 2.12529 | 0.241 | 2.12824 | 2.11936 | 2.12826 | | |
| Na | 1298.11767 | 0.612 | 1307.09899 | 1291.97851 | 1295.27551 | | |
| ✓Ni | 0.52279 | 0.634 | 0.52653 | 0.52022 | 0.52161 | | |
| ✓Pb | 0.53204 | 0.197 | 0.53129 | 0.53158 | 0.53324 | | |
| Sb | 0.52341 | 1.151 | 0.53010 | 0.51841 | 0.52171 | | |
| ✓Se | 2.13521 | 0.355 | 2.13066 | 2.13098 | 2.14397 | | |
| Sn | 4.43063 | 0.897 | 4.47625 | 4.40337 | 4.41226 | | |
| Sr | 1.02950 | 1.047 | 1.04186 | 1.02201 | 1.02463 | | |
| Ti | 1.02188 | 0.941 | 1.03278 | 1.01453 | 1.01833 | | |
| Tl | 2.07659 | 0.119 | 2.07897 | 2.07403 | 2.07677 | | |
| V | 0.51693 | 1.029 | 0.52303 | 0.51324 | 0.51451 | | |
| Y | 151229.67187 | 1.168 | 149193.00000 | 152344.00000 | 152152.00000 | | |
| ✓Zn | 0.52902 | 0.870 | 0.53428 | 0.52574 | 0.52704 | | |

0031

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 17 4219022 02/25/04 05:53
U***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00125 | 11.41 | -0.00111 | -0.00140 | -0.00125 | | |
| Al | 0.00351 | 291.4 | 0.01342 | 0.00415 | -0.00703 | | |
| X As | 0.00537 | 18.06 | 0.00648 | 0.00490 | 0.00472 | | |
| B | 0.37932 | 0.402 | 0.37848 | 0.38108 | 0.37839 | | |
| X Ba | 0.32021 | 0.436 | 0.31874 | 0.32152 | 0.32037 | | |
| Be | 0.00011 | 71.50 | 0.00021 | 0.00010 | 0.00004 | | |
| Ca | 1263.00317 | 0.565 | 1258.97497 | 1271.24792 | 1258.78662 | | |
| X Cd | 0.00059 | 10.56 | 0.00061 | 0.00064 | 0.00052 | | |
| Co | 0.00418 | 16.72 | 0.00473 | 0.00441 | 0.00339 | | |
| X Cr | 0.01097 | 1.424 | 0.01112 | 0.01097 | 0.01081 | | |
| ✓ Cu | 0.00647 | 3.407 | 0.00647 | 0.00670 | 0.00626 | | |
| Fe | 0.00274 | 23.29 | 0.00347 | 0.00246 | 0.00229 | | |
| K | 29.48326 | 0.342 | 29.47480 | 29.58835 | 29.38664 | | |
| Mg | 12.61985 | 0.442 | 12.55991 | 12.67024 | 12.62941 | | |
| Mn | 1.23569 | 0.502 | 1.22898 | 1.24122 | 1.23687 | | |
| Mo | 0.03765 | 5.833 | 0.03929 | 0.03850 | 0.03515 | | |
| Na | 1314.45202 | 0.431 | 1308.34790 | 1319.56091 | 1315.44726 | | |
| ✓ Ni | 0.01481 | 1.150 | 0.01479 | 0.01499 | 0.01465 | | |
| X Pb | 0.00335 | 3.915 | 0.00345 | 0.00339 | 0.00320 | | |
| Sb | 0.00333 | 57.70 | 0.00430 | 0.00457 | 0.00111 | | |
| X Se | 0.01211 | 17.79 | 0.01347 | 0.00962 | 0.01324 | | |
| Sn | 0.00906 | 17.05 | 0.00747 | 0.01056 | 0.00915 | | |
| Sr | 2.34692 | 0.492 | 2.33481 | 2.35786 | 2.34808 | | |
| Ti | -0.00185 | 5.510 | -0.00196 | -0.00182 | -0.00177 | | |
| Tl | 0.00191 | 185.0 | 0.00415 | -0.00217 | 0.00376 | | |
| V | 0.00999 | 3.625 | 0.01040 | 0.00970 | 0.00988 | | |
| Y | 143652.67187 | 0.362 | 143165.00000 | 143592.00000 | 144201.00000 | | |
| ✓ Zn | 0.00251 | 19.55 | 0.00304 | 0.00207 | 0.00242 | | |

8832

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 18 4219022 02/25/04 05:58
UP**,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.01982 | 1.435 | 0.01961 | 0.01970 | 0.02014 | | |
| Al | 1.10625 | 0.388 | 1.11121 | 1.10358 | 1.10394 | | |
| As | 0.49472 | 0.919 | 0.49968 | 0.49074 | 0.49373 | | |
| B | 0.62707 | 0.157 | 0.62756 | 0.62594 | 0.62771 | | |
| Ba | 0.36808 | 0.080 | 0.36805 | 0.36780 | 0.36839 | | |
| Be | 0.01930 | 0.185 | 0.01926 | 0.01931 | 0.01932 | | |
| Ca | 1220.47241 | 0.268 | 1216.77563 | 1221.61621 | 1223.02526 | | |
| Cd | 0.04835 | 0.148 | 0.04840 | 0.04827 | 0.04839 | | |
| Co | 0.10219 | 0.257 | 0.10206 | 0.10202 | 0.10249 | | |
| Cr | 0.20488 | 0.309 | 0.20422 | 0.20548 | 0.20493 | | |
| Cu | 0.54506 | 0.061 | 0.54543 | 0.54478 | 0.54497 | | |
| Fe | 0.49319 | 0.105 | 0.49283 | 0.49379 | 0.49295 | | |
| K | 32.19405 | 0.381 | 32.05305 | 32.25046 | 32.27865 | | |
| Mg | 13.45433 | 0.166 | 13.43131 | 13.45571 | 13.47599 | | |
| Mn | 1.28092 | 0.153 | 1.27876 | 1.28138 | 1.28262 | | |
| Mo | 0.23476 | 1.399 | 0.23108 | 0.23579 | 0.23740 | | |
| Na | 1309.20849 | 0.219 | 1306.04858 | 1309.89807 | 1311.67883 | | |
| Ni | 0.16191 | 0.562 | 0.16240 | 0.16247 | 0.16086 | | |
| Pb | 0.49613 | 0.385 | 0.49601 | 0.49428 | 0.49810 | | |
| Sb | 0.39967 | 0.424 | 0.39991 | 0.39786 | 0.40122 | | |
| Se | 0.84034 | 0.338 | 0.83728 | 0.84289 | 0.84086 | | |
| Sn | 0.61099 | 0.164 | 0.61215 | 0.61036 | 0.61046 | | |
| Sr | 2.35335 | 0.081 | 2.35226 | 2.35222 | 2.35557 | | |
| Ti | 0.09875 | 0.448 | 0.09824 | 0.09902 | 0.09900 | | |
| Tl | 0.98447 | 0.245 | 0.98308 | 0.98307 | 0.98726 | | |
| V | 0.10815 | 0.433 | 0.10860 | 0.10817 | 0.10766 | | |
| Y | 143967.00000 | 0.150 | 143852.00000 | 143832.00000 | 144217.00000 | | |
| Zn | 0.11847 | 0.656 | 0.11769 | 0.11847 | 0.11925 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 19 4219022 02/25/04 06:04
D***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | -0.00176 | 37.90 | -0.00254 | -0.00137 | -0.00139 | | |
| Al | 0.00836 | 69.13 | 0.01406 | 0.00852 | 0.00250 | | |
| ✓As | 0.00281 | 35.76 | 0.00344 | 0.00334 | 0.00165 | | |
| B | 0.38219 | 0.184 | 0.38154 | 0.38295 | 0.38209 | | |
| ✓Ba | 0.32499 | 0.387 | 0.32459 | 0.32640 | 0.32398 | | |
| Be | 0.00021 | 93.96 | 0.00044 | 0.00014 | 0.00006 | | |
| Ca | 1271.50598 | 1.257 | 1255.76879 | 1287.74548 | 1271.00366 | | |
| ✓Cd | 0.00055 | 65.63 | 0.00016 | 0.00060 | 0.00089 | | |
| Co | 0.00405 | 5.744 | 0.00420 | 0.00378 | 0.00417 | | |
| ✓Cr | 0.01066 | 4.654 | 0.01015 | 0.01071 | 0.01114 | | |
| ✓Cu | 0.00586 | 11.16 | 0.00519 | 0.00591 | 0.00650 | | |
| Fe | -0.00033 | 165.8 | -0.00069 | -0.00061 | 0.00030 | | |
| K | 30.20254 | 0.364 | 30.15035 | 30.32894 | 30.12833 | | |
| Mg | 12.83937 | 0.623 | 12.76154 | 12.92137 | 12.83521 | | |
| Mn | 1.25535 | 0.583 | 1.24807 | 1.26271 | 1.25526 | | |
| Mo | 0.03399 | 0.751 | 0.03369 | 0.03412 | 0.03415 | | |
| Na | 1333.49462 | 0.274 | 1330.86035 | 1337.67065 | 1331.95300 | | |
| ✓Ni | 0.01484 | 6.927 | 0.01419 | 0.01603 | 0.01431 | | |
| ✓Pb | 0.00179 | 58.81 | 0.00107 | 0.00301 | 0.00130 | | |
| Sb | 0.00270 | 54.74 | 0.00215 | 0.00157 | 0.00437 | | |
| ✓Se | 0.01359 | 5.859 | 0.01267 | 0.01403 | 0.01407 | | |
| Sn | 0.00904 | 13.72 | 0.00866 | 0.00804 | 0.01043 | | |
| Sr | 2.38295 | 0.328 | 2.38106 | 2.39156 | 2.37623 | | |
| Ti | -0.00204 | 2.416 | -0.00205 | -0.00199 | -0.00208 | | |
| Tl | -0.00068 | 565.1 | 0.00300 | -0.00037 | -0.00466 | | |
| V | 0.01031 | 3.626 | 0.00989 | 0.01060 | 0.01043 | | |
| Y | 144358.32812 | 0.786 | 144073.00000 | 143393.00000 | 145609.00000 | | |
| ✓Zn | -0.00064 | 121.4 | -0.00135 | -0.00078 | 0.00019 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 20 4219022 02/25/04 06:09
R***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05343 | 0.131 | 0.05348 | 0.05335 | 0.05346 | | |
| Al | 2.21117 | 0.707 | 2.22917 | 2.20356 | 2.20079 | | |
| ✓As | 2.10481 | 0.094 | 2.10644 | 2.10261 | 2.10537 | | |
| B | 2.56715 | 0.222 | 2.57324 | 2.56188 | 2.56634 | | |
| ✓Ba | 2.38087 | 0.322 | 2.38915 | 2.37400 | 2.37947 | | |
| Be | 0.05094 | 0.260 | 0.05108 | 0.05082 | 0.05093 | | |
| Ca | 1270.10424 | 0.229 | 1267.00451 | 1270.52209 | 1272.78613 | | |
| ✓Cd | 0.05109 | 0.332 | 0.05090 | 0.05119 | 0.05119 | | |
| Co | 0.51026 | 0.038 | 0.51022 | 0.51048 | 0.51009 | | |
| ✓Cr | 0.21043 | 0.345 | 0.21029 | 0.21121 | 0.20978 | | |
| ✓Cu | 0.28261 | 0.404 | 0.28393 | 0.28192 | 0.28198 | | |
| Fe | 1.01799 | 0.020 | 1.01823 | 1.01790 | 1.01783 | | |
| K | 35.58146 | 0.131 | 35.57344 | 35.53911 | 35.63183 | | |
| Mg | 14.83527 | 0.097 | 14.82408 | 14.83022 | 14.85152 | | |
| Mn | 1.76177 | 0.122 | 1.76081 | 1.76025 | 1.76425 | | |
| Mo | 2.11349 | 0.751 | 2.09610 | 2.11714 | 2.12723 | | |
| Na | 1335.00622 | 0.141 | 1335.50231 | 1332.91967 | 1336.59680 | | |
| ✓Ni | 0.52118 | 0.144 | 0.52126 | 0.52039 | 0.52188 | | |
| ✓Pb | 0.51763 | 0.405 | 0.51632 | 0.52005 | 0.51651 | | |
| Sb | 0.53426 | 0.810 | 0.53710 | 0.53640 | 0.52927 | | |
| ✓Se | 2.13680 | 0.618 | 2.12377 | 2.15021 | 2.13643 | | |
| Sn | 4.23287 | 0.193 | 4.22616 | 4.23045 | 4.24199 | | |
| Sr | 3.38156 | 0.291 | 3.39173 | 3.37204 | 3.38089 | | |
| Ti | 1.01118 | 0.095 | 1.01178 | 1.01007 | 1.01169 | | |
| Tl | 2.01008 | 0.962 | 1.99116 | 2.00926 | 2.02982 | | |
| V | 0.51979 | 0.167 | 0.52041 | 0.51880 | 0.52017 | | |
| Y | 144480.32812 | 0.478 | 143718.00000 | 144656.00000 | 145067.00000 | | |
| ✓Zn | 0.49991 | 0.593 | 0.49654 | 0.50215 | 0.50103 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 21 4219022 02/25/04 06:15
M***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05369 | 1.153 | 0.05316 | 0.05437 | 0.05353 | | |
| Al | 2.19208 | 0.262 | 2.19445 | 2.19627 | 2.18553 | | |
| ✓As | 2.10308 | 0.014 | 2.10275 | 2.10336 | 2.10313 | | |
| B | 2.55674 | 0.223 | 2.56116 | 2.55878 | 2.55027 | | |
| ✓Ba | 2.37320 | 0.205 | 2.37140 | 2.37872 | 2.36950 | | |
| Be | 0.05074 | 0.522 | 0.05044 | 0.05093 | 0.05084 | | |
| Ca | 1295.20434 | 1.518 | 1273.05200 | 1310.63842 | 1301.92248 | | |
| ✓Cd | 0.05091 | 0.905 | 0.05048 | 0.05087 | 0.05139 | | |
| Co | 0.50894 | 0.778 | 0.50514 | 0.51305 | 0.50862 | | |
| ✓Cr | 0.21047 | 1.085 | 0.20793 | 0.21236 | 0.21111 | | |
| ✓Cu | 0.28139 | 0.366 | 0.28124 | 0.28249 | 0.28045 | | |
| Fe | 1.01866 | 0.608 | 1.01161 | 1.02324 | 1.02114 | | |
| K | 36.02463 | 0.600 | 35.93457 | 36.27152 | 35.86780 | | |
| Mg | 14.97822 | 0.589 | 14.87741 | 15.04158 | 15.01568 | | |
| Mn | 1.77221 | 0.588 | 1.76049 | 1.78042 | 1.77573 | | |
| Mo | 2.11387 | 0.966 | 2.09038 | 2.12746 | 2.12378 | | |
| Na | 1343.42126 | 0.315 | 1339.53710 | 1347.93444 | 1342.79235 | | |
| ✓Ni | 0.52028 | 0.588 | 0.51738 | 0.52348 | 0.51998 | | |
| ✓Pb | 0.51590 | 2.359 | 0.50200 | 0.52466 | 0.52104 | | |
| Sb | 0.53339 | 0.658 | 0.53474 | 0.53603 | 0.52940 | | |
| ✓Se | 2.11843 | 2.151 | 2.06641 | 2.15131 | 2.13758 | | |
| Sn | 4.22752 | 0.656 | 4.19569 | 4.24668 | 4.24018 | | |
| Sr | 3.38520 | 0.283 | 3.37800 | 3.39609 | 3.38149 | | |
| Ti | 1.00576 | 0.490 | 1.00036 | 1.01001 | 1.00692 | | |
| Tl | 2.01082 | 1.577 | 1.97570 | 2.03737 | 2.01941 | | |
| V | 0.51913 | 0.585 | 0.51565 | 0.52129 | 0.52043 | | |
| Y | 143980.32812 | 1.230 | 145845.00000 | 142320.00000 | 143776.00000 | | |
| ✓Zn | 0.50056 | 0.681 | 0.49668 | 0.50310 | 0.50189 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 22 4219022 02/25/04 06:20
UL**,50-50,DF5,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00053 | 118.6 | 0.00117 | -0.00009 | 0.00053 | | |
| Al | -0.01640 | 48.34 | -0.00745 | -0.02257 | -0.01917 | | |
| As | 0.00093 | 230.3 | 0.00321 | 0.00063 | -0.00105 | | |
| B | 0.07821 | 1.245 | 0.07933 | 0.07775 | 0.07754 | | |
| Ba | 0.06247 | 0.397 | 0.06257 | 0.06219 | 0.06265 | | |
| Be | 0.00005 | 85.34 | 0.00000 | 0.00006 | 0.00010 | | |
| Ca | 196.44129 | 0.254 | 196.47715 | 195.92382 | 196.92291 | | |
| Cd | 0.00028 | 129.2 | -0.00002 | 0.00018 | 0.00069 | | |
| Co | 0.00099 | 51.84 | 0.00051 | 0.00093 | 0.00153 | | |
| Cr | 0.00148 | 26.46 | 0.00107 | 0.00153 | 0.00186 | | |
| Cu | 0.00151 | 32.97 | 0.00127 | 0.00116 | 0.00208 | | |
| Fe | -0.00475 | 6.327 | -0.00449 | -0.00508 | -0.00467 | | |
| K | 4.28367 | 0.581 | 4.26112 | 4.27947 | 4.31042 | | |
| Mg | 2.45810 | 0.103 | 2.45730 | 2.45605 | 2.46096 | | |
| Mn | 0.24272 | 0.198 | 0.24299 | 0.24216 | 0.24300 | | |
| Mo | 0.01072 | 19.57 | 0.01314 | 0.00960 | 0.00942 | | |
| Na | 283.16662 | 0.216 | 283.26068 | 282.51208 | 283.72711 | | |
| Ni | 0.00258 | 63.67 | 0.00098 | 0.00248 | 0.00427 | | |
| Pb | 0.00066 | 72.59 | 0.00066 | 0.00018 | 0.00114 | | |
| Sb | 0.00061 | 328.8 | 0.00239 | -0.00158 | 0.00104 | | |
| Se | 0.00124 | 193.3 | 0.00403 | -0.00015 | -0.00013 | | |
| Sn | 0.00263 | 97.61 | -0.00023 | 0.00473 | 0.00341 | | |
| Sr | 0.46884 | 0.269 | 0.47001 | 0.46750 | 0.46902 | | |
| Ti | -0.00007 | 52.23 | -0.00007 | -0.00004 | -0.00012 | | |
| Tl | 0.00890 | 45.63 | 0.01030 | 0.01208 | 0.00432 | | |
| V | 0.00186 | 1.048 | 0.00189 | 0.00185 | 0.00185 | | |
| Y | 147989.00000 | 0.840 | 146559.00000 | 148824.00000 | 148584.00000 | | |
| Zn | 0.00227 | 7.640 | 0.00234 | 0.00207 | 0.00240 | | |

8837

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 23 Q219022 02/25/04 06:26
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.18365 | 0.290 | 0.18303 | 0.18394 | 0.18398 | | |
| Al | 0.41636 | 0.609 | 0.41905 | 0.41601 | 0.41402 | | |
| As | 0.21795 | 0.100 | 0.21787 | 0.21779 | 0.21820 | | |
| B | 0.25122 | 0.290 | 0.25040 | 0.25143 | 0.25182 | | |
| Ba | 1.77430 | 0.673 | 1.76069 | 1.78306 | 1.77915 | | |
| Be | 0.22267 | 0.711 | 0.22086 | 0.22378 | 0.22339 | | |
| Ca | 47.76588 | 0.780 | 47.33623 | 48.00254 | 47.95885 | | |
| Cd | 0.04411 | 0.411 | 0.04393 | 0.04429 | 0.04412 | | |
| Co | 0.21240 | 0.601 | 0.21102 | 0.21264 | 0.21354 | | |
| Cr | 0.21372 | 0.817 | 0.21172 | 0.21451 | 0.21493 | | |
| Cu | 0.21700 | 0.677 | 0.21530 | 0.21774 | 0.21795 | | |
| Fe | 0.20895 | 0.858 | 0.20690 | 0.21025 | 0.20969 | | |
| K | 3.10619 | 0.363 | 3.09559 | 3.10493 | 3.11806 | | |
| Mg | 2.74068 | 0.595 | 2.72200 | 2.75217 | 2.74788 | | |
| Mn | 0.27742 | 0.670 | 0.27533 | 0.27889 | 0.27804 | | |
| Mo | 0.43287 | 1.406 | 0.42587 | 0.43579 | 0.43694 | | |
| Na | 68.39972 | 0.666 | 67.88088 | 68.73496 | 68.58333 | | |
| Ni | 0.21453 | 1.161 | 0.21168 | 0.21630 | 0.21560 | | |
| Pb | 0.11869 | 1.175 | 0.11744 | 0.12019 | 0.11842 | | |
| Sb | 0.21135 | 0.629 | 0.21046 | 0.21070 | 0.21288 | | |
| Se | 0.04365 | 3.000 | 0.04273 | 0.04308 | 0.04515 | | |
| Sn | 2.15607 | 0.879 | 2.13417 | 2.16698 | 2.16706 | | |
| Sr | 0.31332 | 0.656 | 0.31096 | 0.31472 | 0.31429 | | |
| Ti | 0.43084 | 0.792 | 0.42698 | 0.43346 | 0.43208 | | |
| Tl | 0.20991 | 1.604 | 0.20608 | 0.21126 | 0.21239 | | |
| V | 0.21892 | 0.647 | 0.21729 | 0.21961 | 0.21986 | | |
| Y | 152533.00000 | 0.130 | 152313.00000 | 152586.00000 | 152700.00000 | | |
| Zn | 0.24098 | 0.678 | 0.23912 | 0.24163 | 0.24219 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 24 4219006 02/25/04 06:31
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00076 | 119.6 | -0.00182 | -0.00013 | -0.00034 | | |
| Al | 0.01700 | 98.16 | 0.03624 | 0.00846 | 0.00630 | | |
| X As | -0.00154 | 154.4 | -0.00392 | -0.00152 | 0.00083 | | |
| B | 0.03178 | 3.888 | 0.03310 | 0.03161 | 0.03064 | | |
| X Ba | 0.55272 | 2.345 | 0.56768 | 0.54490 | 0.54557 | | |
| Be | 0.00018 | 78.61 | 0.00034 | 0.00013 | 0.00006 | | |
| Ca | 657.27166 | 2.668 | 677.46643 | 645.83361 | 648.51501 | | |
| X Cd | 0.00069 | 34.29 | 0.00041 | 0.00080 | 0.00085 | | |
| Co | 0.00858 | 4.472 | 0.00841 | 0.00831 | 0.00902 | | |
| X Cr | 0.00045 | 67.50 | 0.00060 | 0.00065 | 0.00010 | | |
| Cu | 0.00927 | 3.000 | 0.00907 | 0.00915 | 0.00959 | | |
| Fe | 0.00347 | 12.17 | 0.00396 | 0.00325 | 0.00321 | | |
| K | 6.60860 | 2.208 | 6.77698 | 6.53004 | 6.51879 | | |
| Mg | 10.08314 | 2.025 | 10.31773 | 9.94458 | 9.98711 | | |
| Mn | 3.65918 | 2.178 | 3.75090 | 3.60667 | 3.61998 | | |
| Mo | 0.00083 | 141.9 | 0.00220 | 0.00015 | 0.00015 | | |
| Na | 1315.68713 | 1.539 | 1339.06701 | 1303.47497 | 1304.51940 | | |
| Ni | 0.01142 | 2.503 | 0.01173 | 0.01116 | 0.01138 | | |
| X Pb | 0.01900 | 14.63 | 0.01859 | 0.01644 | 0.02196 | | |
| Sb | -0.00550 | 26.48 | -0.00532 | -0.00705 | -0.00415 | | |
| X Se | 0.00304 | 86.72 | 0.00008 | 0.00515 | 0.00389 | | |
| Sn | 0.00987 | 16.63 | 0.01141 | 0.01006 | 0.00814 | | |
| Sr | 0.38009 | 2.242 | 0.38993 | 0.37492 | 0.37543 | | |
| Ti | -0.00116 | 27.53 | -0.00118 | -0.00147 | -0.00083 | | |
| Tl | -0.00274 | 107.0 | -0.00144 | -0.00067 | -0.00610 | | |
| V | 0.00030 | 146.3 | -0.00004 | 0.00080 | 0.00015 | | |
| Y | 145347.00000 | 2.166 | 141718.00000 | 146967.00000 | 147356.00000 | | |
| Zn | 0.00867 | 10.22 | 0.00900 | 0.00934 | 0.00766 | | |

0039

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 25 CCV 02/25/04 06:37

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.51077 | 0.595 | 0.51412 | 0.50818 | 0.51001 | | |
| Al | 26.02376 | 0.612 | 26.19797 | 25.88545 | 25.98785 | | |
| As | 0.47965 | 0.282 | 0.48082 | 0.47817 | 0.47998 | | |
| B | 0.51752 | 0.470 | 0.51985 | 0.51499 | 0.51773 | | |
| Ba | 0.49671 | 0.786 | 0.50110 | 0.49363 | 0.49539 | | |
| Be | 0.50718 | 0.698 | 0.51125 | 0.50476 | 0.50553 | | |
| Ca | 25.75607 | 0.585 | 25.92574 | 25.63768 | 25.70479 | | |
| Cd | 0.49600 | 0.522 | 0.49899 | 0.49435 | 0.49467 | | |
| Co | 0.50009 | 0.739 | 0.50422 | 0.49708 | 0.49897 | | |
| Cr | 0.50200 | 0.537 | 0.50491 | 0.49958 | 0.50151 | | |
| Cu | 0.50699 | 0.638 | 0.51057 | 0.50427 | 0.50613 | | |
| Fe | 25.95505 | 0.668 | 26.15183 | 25.82405 | 25.88929 | | |
| K | 25.83378 | 0.544 | 25.96628 | 25.68620 | 25.84885 | | |
| Mg | 25.72422 | 0.630 | 25.91075 | 25.61633 | 25.64558 | | |
| Mn | 0.50259 | 0.697 | 0.50653 | 0.49983 | 0.50139 | | |
| Mo | 0.50572 | 0.090 | 0.50543 | 0.50547 | 0.50625 | | |
| Na | 26.15943 | 0.428 | 26.28894 | 26.09788 | 26.09148 | | |
| Ni | 0.49675 | 0.523 | 0.49973 | 0.49493 | 0.49560 | | |
| Pb | 0.50226 | 0.386 | 0.50017 | 0.50400 | 0.50260 | | |
| Sb | 0.50090 | 1.118 | 0.50455 | 0.49445 | 0.50369 | | |
| Se | 0.49941 | 0.561 | 0.49990 | 0.49640 | 0.50194 | | |
| Sn | 0.50719 | 0.289 | 0.50839 | 0.50764 | 0.50555 | | |
| Sr | 0.50522 | 0.725 | 0.50929 | 0.50218 | 0.50419 | | |
| Ti | 0.50101 | 0.618 | 0.50451 | 0.49859 | 0.49994 | | |
| Tl | 0.48258 | 0.691 | 0.47902 | 0.48563 | 0.48308 | | |
| V | 0.49952 | 0.530 | 0.50251 | 0.49747 | 0.49858 | | |
| Y | 150837.00000 | 0.633 | 149833.00000 | 151735.00000 | 150943.00000 | | |
| Zn | 0.49850 | 0.352 | 0.50044 | 0.49702 | 0.49803 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 26 CCB 02/25/04 06:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00023 | 263.8 | -0.00005 | 0.00096 | -0.00019 | | |
| Al | -0.03094 | 21.08 | -0.02621 | -0.02823 | -0.03838 | | |
| As | -0.00116 | 275.9 | -0.00279 | 0.00254 | -0.00324 | | |
| B | -0.00123 | 89.84 | -0.00141 | -0.00004 | -0.00224 | | |
| Ba | 0.00004 | 121.4 | 0.00009 | 0.00003 | 0.00000 | | |
| Be | 0.00011 | 44.35 | 0.00016 | 0.00006 | 0.00012 | | |
| Ca | -0.03949 | 13.95 | -0.03999 | -0.03375 | -0.04474 | | |
| Cd | 0.00034 | 30.61 | 0.00044 | 0.00023 | 0.00034 | | |
| Co | -0.00033 | 226.7 | -0.00098 | 0.00050 | -0.00052 | | |
| Cr | -0.00041 | 67.56 | -0.00025 | -0.00074 | -0.00024 | | |
| Cu | 0.00020 | 305.0 | -0.00030 | 0.00088 | 0.00002 | | |
| Fe | -0.00544 | 14.29 | -0.00471 | -0.00536 | -0.00626 | | |
| K | 0.03929 | 6.580 | 0.03762 | 0.03798 | 0.04227 | | |
| Mg | -0.01066 | 64.50 | -0.00465 | -0.00917 | -0.01817 | | |
| Mn | 0.00017 | 50.74 | 0.00027 | 0.00009 | 0.00015 | | |
| Mo | 0.00069 | 54.52 | 0.00113 | 0.00054 | 0.00041 | | |
| Na | 0.25903 | 54.26 | 0.40609 | 0.24500 | 0.12601 | | |
| Ni | 0.00029 | 390.0 | -0.00020 | 0.00161 | -0.00052 | | |
| Pb | 0.00069 | 177.1 | 0.00202 | 0.00044 | -0.00038 | | |
| Sb | 0.00176 | 99.59 | 0.00079 | 0.00379 | 0.00070 | | |
| Se | -0.00391 | 14.54 | -0.00342 | -0.00454 | -0.00378 | | |
| Sn | 0.00252 | 27.17 | 0.00173 | 0.00283 | 0.00299 | | |
| Sr | -0.00013 | 30.08 | -0.00008 | -0.00015 | -0.00015 | | |
| Ti | -0.00018 | 16.86 | -0.00019 | -0.00021 | -0.00015 | | |
| Tl | 0.00230 | 236.6 | 0.00414 | 0.00660 | -0.00383 | | |
| V | 0.00013 | 461.3 | 0.00076 | -0.00049 | 0.00014 | | |
| Y | 150012.00000 | 0.707 | 150496.00000 | 150745.00000 | 148795.00000 | | |
| Zn | 0.00006 | 1674. | -0.00100 | 0.00123 | -0.00003 | | |

8841

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 27 4219669 02/25/04 06:47
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | -0.00018 | 246.7 | -0.00066 | 0.00025 | -0.00015 | | |
| Al | 0.43298 | 2.485 | 0.44361 | 0.43325 | 0.42209 | | |
| XAs | 0.00009 | 1791. | -0.00105 | 0.00212 | -0.00077 | | |
| B | 0.02329 | 3.417 | 0.02315 | 0.02415 | 0.02257 | | |
| XBa | 0.23662 | 0.095 | 0.23656 | 0.23688 | 0.23644 | | |
| Be | 0.00018 | 33.47 | 0.00023 | 0.00019 | 0.00011 | | |
| Ca | 365.00598 | 0.256 | 365.00262 | 365.94265 | 364.07269 | | |
| XCd | 0.00077 | 31.14 | 0.00049 | 0.00091 | 0.00090 | | |
| Co | 0.07226 | 0.871 | 0.07165 | 0.07291 | 0.07222 | | |
| XCr | 0.00108 | 23.06 | 0.00109 | 0.00133 | 0.00083 | | |
| XCu | 0.00764 | 1.076 | 0.00761 | 0.00773 | 0.00757 | | |
| Fe | 0.50937 | 0.107 | 0.50952 | 0.50982 | 0.50876 | | |
| K | 1.69016 | 1.335 | 1.66815 | 1.71326 | 1.68906 | | |
| Mg | 25.12740 | 0.174 | 25.10833 | 25.17765 | 25.09622 | | |
| Mn | 0.76091 | 0.242 | 0.75949 | 0.76300 | 0.76024 | | |
| Mo | 0.00203 | 43.55 | 0.00121 | 0.00297 | 0.00191 | | |
| Na | 1315.04394 | 0.170 | 1312.62988 | 1317.06494 | 1315.43688 | | |
| XNi | 0.07192 | 0.813 | 0.07147 | 0.07258 | 0.07171 | | |
| XPb | 0.00937 | 15.62 | 0.01074 | 0.00955 | 0.00782 | | |
| Sb | -0.00467 | 14.46 | -0.00389 | -0.00512 | -0.00499 | | |
| XSe | 0.00356 | 31.26 | 0.00229 | 0.00403 | 0.00436 | | |
| Sn | 0.00716 | 13.92 | 0.00663 | 0.00655 | 0.00832 | | |
| Sr | 0.61182 | 0.147 | 0.61120 | 0.61286 | 0.61139 | | |
| Ti | -0.00040 | 33.65 | -0.00026 | -0.00040 | -0.00054 | | |
| Tl | -0.00203 | 152.6 | -0.00545 | 0.00064 | -0.00130 | | |
| V | 0.00186 | 40.49 | 0.00181 | 0.00264 | 0.00113 | | |
| Y | 148223.00000 | 1.106 | 146428.00000 | 148599.00000 | 149642.00000 | | |
| XZn | 0.28035 | 0.608 | 0.28005 | 0.28219 | 0.27882 | | |

8842

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 28 4219697 02/25/04 06:53
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00021 | 3.639 | -0.00020 | -0.00021 | -0.00021 | | |
| Al | 0.49822 | 2.097 | 0.51013 | 0.49055 | 0.49399 | | |
| X As | -0.00153 | 290.8 | 0.00121 | 0.00086 | -0.00669 | | |
| B | 0.05384 | 1.381 | 0.05349 | 0.05334 | 0.05469 | | |
| X Ba | 0.38924 | 0.893 | 0.39183 | 0.38529 | 0.39060 | | |
| Be | 0.00080 | 5.903 | 0.00085 | 0.00080 | 0.00076 | | |
| Ca | 38.88766 | 0.807 | 39.03121 | 38.52768 | 39.10409 | | |
| X Cd | 0.00081 | 31.25 | 0.00062 | 0.00110 | 0.00072 | | |
| Co | 0.02300 | 0.688 | 0.02290 | 0.02292 | 0.02318 | | |
| X Cr | 0.01055 | 4.270 | 0.01107 | 0.01027 | 0.01032 | | |
| Cu | 0.01809 | 2.083 | 0.01800 | 0.01777 | 0.01851 | | |
| Fe | 2.46465 | 0.799 | 2.47719 | 2.44195 | 2.47481 | | |
| K | 22.69489 | 0.942 | 22.86198 | 22.45375 | 22.76893 | | |
| Mg | 10.90901 | 0.846 | 10.95550 | 10.80264 | 10.96890 | | |
| Mn | 3.33664 | 0.807 | 3.35375 | 3.30558 | 3.35057 | | |
| Mo | -0.00073 | 154.6 | 0.00041 | -0.00185 | -0.00076 | | |
| Na | 1294.95800 | 0.600 | 1298.97680 | 1285.99841 | 1299.89880 | | |
| Ni | 0.02479 | 2.370 | 0.02547 | 0.02441 | 0.02449 | | |
| X Pb | 0.00898 | 10.57 | 0.00940 | 0.00964 | 0.00789 | | |
| Sb | -0.00470 | 25.91 | -0.00351 | -0.00595 | -0.00465 | | |
| X Se | 0.00214 | 99.62 | 0.00461 | 0.00098 | 0.00084 | | |
| Sn | 0.00729 | 11.21 | 0.00651 | 0.00814 | 0.00723 | | |
| Sr | 0.18357 | 0.915 | 0.18487 | 0.18167 | 0.18417 | | |
| Ti | 0.00116 | 21.75 | 0.00093 | 0.00113 | 0.00144 | | |
| Tl | 0.00381 | 71.88 | 0.00422 | 0.00089 | 0.00633 | | |
| V | 0.00013 | 387.1 | 0.00064 | 0.00020 | -0.00042 | | |
| Y | 149150.67187 | 0.890 | 147831.00000 | 150486.00000 | 149135.00000 | | |
| Zn | 0.03683 | 3.513 | 0.03683 | 0.03554 | 0.03812 | | |

8843

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 29 4219913 02/25/04 06:58
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | 0.00025 | 172.9 | 0.00010 | 0.00075 | -0.00008 | | |
| Al | 0.01204 | 15.19 | 0.01414 | 0.01117 | 0.01080 | | |
| X As | 0.07795 | 6.248 | 0.07306 | 0.07800 | 0.08280 | | |
| B | 0.35216 | 1.690 | 0.34533 | 0.35624 | 0.35492 | | |
| X Ba | 0.05918 | 0.940 | 0.05854 | 0.05951 | 0.05950 | | |
| Be | 0.00017 | 46.22 | 0.00027 | 0.00013 | 0.00012 | | |
| Ca | 199.01356 | 1.787 | 194.90638 | 201.06591 | 201.06837 | | |
| X Cd | 0.00321 | 4.098 | 0.00308 | 0.00321 | 0.00334 | | |
| Co | 0.03360 | 0.203 | 0.03367 | 0.03359 | 0.03353 | | |
| X Cr | 0.00415 | 8.355 | 0.00392 | 0.00455 | 0.00399 | | |
| Cu | 0.01594 | 2.694 | 0.01546 | 0.01606 | 0.01629 | | |
| Fe | 14.75684 | 1.632 | 14.47864 | 14.89248 | 14.89939 | | |
| K | 321.97555 | 1.788 | 315.43740 | 324.19531 | 326.29397 | | |
| Mg | 14.18296 | 1.723 | 13.90071 | 14.31904 | 14.32913 | | |
| Mn | 1.64181 | 1.621 | 1.61108 | 1.65662 | 1.65774 | | |
| Mo | 0.07968 | 2.836 | 0.07707 | 0.08101 | 0.08097 | | |
| Na | 1119.77978 | 1.232 | 1104.03942 | 1125.51501 | 1129.78479 | | |
| Ni | 0.45858 | 1.723 | 0.44959 | 0.46174 | 0.46442 | | |
| X Pb | 0.01134 | 17.84 | 0.01148 | 0.01329 | 0.00925 | | |
| Sb | 0.08934 | 2.692 | 0.08829 | 0.09209 | 0.08764 | | |
| X Se | 0.00224 | 98.66 | 0.00089 | 0.00103 | 0.00480 | | |
| Sn | 0.00616 | 14.01 | 0.00593 | 0.00543 | 0.00711 | | |
| Sr | 0.55992 | 1.395 | 0.55091 | 0.56409 | 0.56477 | | |
| Ti | 0.00021 | 31.17 | 0.00014 | 0.00027 | 0.00022 | | |
| Tl | 0.00631 | 45.55 | 0.00451 | 0.00963 | 0.00479 | | |
| V | 0.00825 | 1.069 | 0.00815 | 0.00831 | 0.00829 | | |
| Y | 152109.67187 | 0.500 | 152859.00000 | 151338.00000 | 152132.00000 | | |
| Zn | 2.14569 | 1.836 | 2.10023 | 2.16997 | 2.16688 | | |

0244

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 30 Q219913 02/25/04 07:04
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.19072 | 0.947 | 0.18989 | 0.19280 | 0.18948 | | |
| Al | 0.43454 | 3.652 | 0.44102 | 0.44615 | 0.41645 | | |
| As | 0.21997 | 1.401 | 0.21927 | 0.22334 | 0.21730 | | |
| B | 0.25793 | 0.813 | 0.25747 | 0.26022 | 0.25610 | | |
| Ba | 4.47590 | 0.813 | 4.43511 | 4.50512 | 4.48748 | | |
| Be | 0.22702 | 1.061 | 0.22425 | 0.22817 | 0.22863 | | |
| Ca | 11.26876 | 1.109 | 11.12557 | 11.32414 | 11.35657 | | |
| Cd | 0.04477 | 0.875 | 0.04440 | 0.04474 | 0.04518 | | |
| Co | 0.22265 | 0.946 | 0.22056 | 0.22478 | 0.22260 | | |
| Cr | 0.22302 | 1.172 | 0.22007 | 0.22391 | 0.22507 | | |
| Cu | 0.22557 | 0.838 | 0.22410 | 0.22770 | 0.22490 | | |
| Fe | 0.89629 | 1.050 | 0.88544 | 0.90222 | 0.90121 | | |
| K | 13.13291 | 0.623 | 13.04344 | 13.20408 | 13.15121 | | |
| Mg | 2.86299 | 0.952 | 2.83297 | 2.88624 | 2.86976 | | |
| Mn | 0.30064 | 0.998 | 0.29720 | 0.30198 | 0.30274 | | |
| Mo | 0.45015 | 1.181 | 0.44404 | 0.45371 | 0.45271 | | |
| Na | 56.88325 | 0.757 | 56.39055 | 57.18998 | 57.06923 | | |
| Ni | 0.24269 | 1.219 | 0.23929 | 0.24409 | 0.24469 | | |
| Pb | 0.22323 | 2.766 | 0.21626 | 0.22803 | 0.22539 | | |
| Sb | 0.21740 | 2.550 | 0.21578 | 0.22357 | 0.21284 | | |
| Se | 0.04074 | 9.127 | 0.03681 | 0.04421 | 0.04121 | | |
| Sn | 2.23936 | 1.082 | 2.21156 | 2.25036 | 2.25614 | | |
| Sr | 0.25248 | 0.829 | 0.25010 | 0.25402 | 0.25332 | | |
| Ti | 0.44545 | 0.924 | 0.44072 | 0.44830 | 0.44732 | | |
| Tl | 0.21681 | 1.798 | 0.21486 | 0.22130 | 0.21427 | | |
| V | 0.22401 | 1.067 | 0.22125 | 0.22533 | 0.22546 | | |
| Y | 153875.00000 | 0.736 | 152877.00000 | 153642.00000 | 155106.00000 | | |
| Zn | 0.32171 | 1.360 | 0.31672 | 0.32350 | 0.32490 | | |

0845

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 31 4220283 02/25/04 07:09
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | 0.00044 | 107.0 | 0.00099 | 0.00016 | 0.00017 | | |
| Al | 1.57612 | 0.512 | 1.58238 | 1.56700 | 1.57899 | | |
| XAs | 0.00029 | 400.6 | 0.00153 | -0.00079 | 0.00013 | | |
| B | 0.02575 | 2.428 | 0.02646 | 0.02547 | 0.02531 | | |
| XBa | 0.10848 | 0.272 | 0.10826 | 0.10837 | 0.10881 | | |
| Be | 0.00026 | 8.116 | 0.00026 | 0.00029 | 0.00024 | | |
| Ca | 3.75189 | 0.492 | 3.73090 | 3.75913 | 3.76563 | | |
| XCd | 0.00099 | 21.67 | 0.00083 | 0.00124 | 0.00091 | | |
| Co | 0.00600 | 11.99 | 0.00683 | 0.00564 | 0.00554 | | |
| XCr | 0.00523 | 8.837 | 0.00569 | 0.00523 | 0.00476 | | |
| Cu | 0.17123 | 0.452 | 0.17038 | 0.17141 | 0.17189 | | |
| Fe | 2.65525 | 0.476 | 2.64070 | 2.66134 | 2.66371 | | |
| K | 0.98616 | 2.027 | 1.00803 | 0.98164 | 0.96881 | | |
| Mg | 9.26839 | 0.562 | 9.20824 | 9.29900 | 9.29793 | | |
| Mn | 0.35275 | 0.388 | 0.35123 | 0.35314 | 0.35389 | | |
| Mo | 0.00006 | 1237. | 0.00075 | 0.00028 | -0.00084 | | |
| Na | 1308.47167 | 0.635 | 1299.08056 | 1311.41662 | 1314.91796 | | |
| Ni | 0.04982 | 0.736 | 0.04946 | 0.04979 | 0.05020 | | |
| XPb | 0.02154 | 3.925 | 0.02223 | 0.02060 | 0.02179 | | |
| Sb | 0.00530 | 27.75 | 0.00373 | 0.00551 | 0.00665 | | |
| XSe | -0.00055 | 339.9 | -0.00272 | 0.00032 | 0.00073 | | |
| Sn | 0.00538 | 115.8 | -0.00078 | 0.01168 | 0.00525 | | |
| Sr | 0.02039 | 0.102 | 0.02038 | 0.02038 | 0.02041 | | |
| Ti | 0.00202 | 4.541 | 0.00196 | 0.00197 | 0.00213 | | |
| Tl | -0.00207 | 98.34 | -0.00281 | 0.00023 | -0.00365 | | |
| V | 0.00083 | 40.47 | 0.00114 | 0.00090 | 0.00047 | | |
| Y | 146080.00000 | 1.974 | 142769.00000 | 148054.00000 | 147417.00000 | | |
| Zn | 5.61402 | 0.533 | 5.57948 | 5.63036 | 5.63223 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 32 4220301 02/25/04 07:15
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00020 | 88.80 | -0.00018 | -0.00003 | -0.00039 | | |
| Al | -0.01482 | 31.13 | -0.01018 | -0.01941 | -0.01487 | | |
| X As | 0.00054 | 473.5 | -0.00029 | -0.00150 | 0.00341 | | |
| B | 0.08100 | 1.058 | 0.08058 | 0.08044 | 0.08199 | | |
| X Ba | 0.03323 | 0.523 | 0.03303 | 0.03334 | 0.03333 | | |
| Be | 0.00008 | 147.4 | 0.00023 | 0.00001 | 0.00001 | | |
| Ca | 4.22978 | 0.917 | 4.18734 | 4.26348 | 4.23853 | | |
| X Cd | 0.00036 | 16.23 | 0.00036 | 0.00030 | 0.00042 | | |
| Co | 0.06156 | 2.034 | 0.06040 | 0.06289 | 0.06141 | | |
| X Cr | 0.00145 | 15.77 | 0.00129 | 0.00172 | 0.00136 | | |
| Cu | 0.00466 | 8.776 | 0.00421 | 0.00501 | 0.00477 | | |
| Fe | 3.05012 | 0.777 | 3.02414 | 3.07062 | 3.05558 | | |
| K | 0.47225 | 3.732 | 0.45773 | 0.49186 | 0.46717 | | |
| Mg | 1.52093 | 1.063 | 1.50477 | 1.53712 | 1.52090 | | |
| Mn | 15.23638 | 0.760 | 15.10882 | 15.33490 | 15.26543 | | |
| Mo | -0.00098 | 58.93 | -0.00158 | -0.00042 | -0.00095 | | |
| Na | 1287.99401 | 0.596 | 1279.14514 | 1291.94470 | 1292.89208 | | |
| Ni | 0.44496 | 0.906 | 0.44037 | 0.44794 | 0.44657 | | |
| X Pb | 0.00136 | 92.70 | 0.00239 | -0.00004 | 0.00175 | | |
| Sb | -0.00372 | 121.6 | -0.00699 | -0.00561 | 0.00144 | | |
| X Se | 0.00139 | 31.91 | 0.00091 | 0.00145 | 0.00180 | | |
| Sn | 0.00807 | 43.14 | 0.00859 | 0.01127 | 0.00436 | | |
| Sr | 0.03909 | 0.661 | 0.03879 | 0.03923 | 0.03925 | | |
| Ti | 0.00125 | 14.96 | 0.00107 | 0.00145 | 0.00124 | | |
| Tl | 0.00421 | 76.16 | 0.00741 | 0.00423 | 0.00099 | | |
| V | 0.00036 | 155.7 | -0.00027 | 0.00078 | 0.00057 | | |
| Y | 150714.32812 | 0.431 | 151156.00000 | 151019.00000 | 149968.00000 | | |
| Zn | 0.01198 | 1.872 | 0.01173 | 0.01217 | 0.01204 | | |

0847

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 33 Q220301 02/25/04 07:20
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.16579 | 0.402 | 0.16509 | 0.16642 | 0.16586 | | |
| Al | 0.41941 | 0.876 | 0.42361 | 0.41785 | 0.41678 | | |
| As | 0.21529 | 0.991 | 0.21775 | 0.21395 | 0.21416 | | |
| B | 0.23748 | 0.727 | 0.23555 | 0.23889 | 0.23800 | | |
| Ba | 4.21165 | 0.346 | 4.19569 | 4.21497 | 4.22429 | | |
| Be | 0.21959 | 0.295 | 0.21884 | 0.22002 | 0.21991 | | |
| Ca | 2.37539 | 0.249 | 2.36865 | 2.37980 | 2.37773 | | |
| Cd | 0.04376 | 0.246 | 0.04368 | 0.04388 | 0.04370 | | |
| Co | 0.21805 | 0.787 | 0.21762 | 0.21994 | 0.21659 | | |
| Cr | 0.21516 | 0.352 | 0.21523 | 0.21588 | 0.21437 | | |
| Cu | 0.21473 | 0.345 | 0.21388 | 0.21520 | 0.21513 | | |
| Fe | 0.35056 | 0.154 | 0.34995 | 0.35075 | 0.35099 | | |
| K | 2.15789 | 0.474 | 2.16868 | 2.15670 | 2.14828 | | |
| Mg | 2.21818 | 0.340 | 2.21016 | 2.22513 | 2.21925 | | |
| Mn | 0.92118 | 0.248 | 0.91859 | 0.92206 | 0.92290 | | |
| Mo | 0.43143 | 0.820 | 0.42735 | 0.43326 | 0.43369 | | |
| Na | 67.82109 | 0.215 | 67.70511 | 67.77336 | 67.98479 | | |
| Ni | 0.23467 | 0.323 | 0.23382 | 0.23529 | 0.23490 | | |
| Pb | 0.21839 | 0.390 | 0.21761 | 0.21930 | 0.21827 | | |
| Sb | 0.21038 | 1.082 | 0.21257 | 0.21054 | 0.20802 | | |
| Se | 0.04121 | 7.779 | 0.03760 | 0.04231 | 0.04372 | | |
| Sn | 2.17748 | 0.388 | 2.16780 | 2.18345 | 2.18119 | | |
| Sr | 0.21881 | 0.344 | 0.21802 | 0.21889 | 0.21952 | | |
| Ti | 0.43153 | 0.353 | 0.42978 | 0.43261 | 0.43220 | | |
| Tl | 0.20666 | 3.686 | 0.19867 | 0.21384 | 0.20747 | | |
| V | 0.21557 | 0.448 | 0.21474 | 0.21663 | 0.21532 | | |
| Y | 152133.00000 | 0.508 | 151485.00000 | 151924.00000 | 152990.00000 | | |
| Zn | 0.22151 | 0.607 | 0.22034 | 0.22298 | 0.22121 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 34 4220720 02/25/04 07:26
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00020 | 144.9 | -0.00027 | -0.00045 | 0.00011 | | |
| Al | 0.32769 | 2.445 | 0.33618 | 0.32665 | 0.32025 | | |
| As | 0.00284 | 102.2 | 0.00011 | 0.00251 | 0.00591 | | |
| B | 0.03569 | 2.057 | 0.03542 | 0.03513 | 0.03653 | | |
| Ba | 0.83037 | 0.133 | 0.83027 | 0.83153 | 0.82931 | | |
| Be | 0.00160 | 9.129 | 0.00176 | 0.00154 | 0.00149 | | |
| Ca | 27.79736 | 0.276 | 27.70946 | 27.85284 | 27.82978 | | |
| Cd | 0.00087 | 23.71 | 0.00098 | 0.00063 | 0.00100 | | |
| Co | 0.03958 | 1.741 | 0.04022 | 0.03885 | 0.03967 | | |
| Cr | 0.00068 | 25.01 | 0.00084 | 0.00050 | 0.00071 | | |
| Cu | 0.02004 | 1.078 | 0.01985 | 0.01999 | 0.02027 | | |
| Fe | 0.11833 | 0.885 | 0.11780 | 0.11766 | 0.11954 | | |
| K | 2.17281 | 0.337 | 2.16981 | 2.18116 | 2.16746 | | |
| Mg | 8.18680 | 0.277 | 8.16128 | 8.19425 | 8.20486 | | |
| Mn | 4.93393 | 0.170 | 4.92569 | 4.94253 | 4.93358 | | |
| Mo | -0.00033 | 80.27 | -0.00056 | -0.00042 | -0.00003 | | |
| Na | 1281.48010 | 0.097 | 1280.09106 | 1282.51745 | 1281.83190 | | |
| Ni | 0.02993 | 1.754 | 0.02935 | 0.03007 | 0.03037 | | |
| Pb | 0.01648 | 3.751 | 0.01580 | 0.01662 | 0.01701 | | |
| Sb | -0.00572 | 34.28 | -0.00760 | -0.00369 | -0.00587 | | |
| Se | 0.00203 | 59.15 | 0.00250 | 0.00294 | 0.00066 | | |
| Sn | 0.00756 | 15.02 | 0.00719 | 0.00884 | 0.00666 | | |
| Sr | 0.26346 | 0.131 | 0.26330 | 0.26386 | 0.26322 | | |
| Ti | 0.00362 | 8.952 | 0.00337 | 0.00349 | 0.00399 | | |
| Tl | 0.00315 | 49.55 | 0.00160 | 0.00473 | 0.00313 | | |
| V | 0.00058 | 35.88 | 0.00059 | 0.00037 | 0.00079 | | |
| Y | 151007.32812 | 0.583 | 149996.00000 | 151611.00000 | 151415.00000 | | |
| Zn | 0.02260 | 0.766 | 0.02240 | 0.02268 | 0.02271 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 35 4220723 02/25/04 07:31
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00025 | 270.8 | 0.00038 | 0.00085 | -0.00048 | | |
| Al | 0.26554 | 4.187 | 0.27396 | 0.26973 | 0.25294 | | |
| As | 0.00012 | 535.2 | -0.00019 | -0.00032 | 0.00089 | | |
| B | 0.03249 | 1.782 | 0.03182 | 0.03280 | 0.03286 | | |
| Ba | 0.78656 | 0.208 | 0.78482 | 0.78808 | 0.78679 | | |
| Be | 0.00122 | 7.144 | 0.00132 | 0.00118 | 0.00116 | | |
| Ca | 28.44309 | 0.380 | 28.31856 | 28.51373 | 28.49698 | | |
| Cd | 0.00069 | 4.453 | 0.00072 | 0.00066 | 0.00069 | | |
| Co | 0.02091 | 2.290 | 0.02129 | 0.02108 | 0.02037 | | |
| Cr | 0.00036 | 132.4 | 0.00091 | 0.00017 | 0.00000 | | |
| Cu | 0.02993 | 0.717 | 0.02984 | 0.03018 | 0.02978 | | |
| Fe | 0.09182 | 1.166 | 0.09179 | 0.09290 | 0.09076 | | |
| K | 1.87641 | 0.337 | 1.86994 | 1.87672 | 1.88258 | | |
| Mg | 7.51827 | 0.228 | 7.49843 | 7.52846 | 7.52792 | | |
| Mn | 3.83540 | 0.313 | 3.82171 | 3.84430 | 3.84019 | | |
| Mo | -0.00116 | 148.0 | -0.00054 | 0.00016 | -0.00312 | | |
| Na | 1265.96020 | 0.304 | 1261.51184 | 1268.12304 | 1268.24560 | | |
| Ni | 0.02053 | 0.519 | 0.02041 | 0.02062 | 0.02055 | | |
| X Pb | 0.15512 | 1.962 | 0.15420 | 0.15264 | 0.15852 | | |
| Sb | -0.00302 | 55.63 | -0.00458 | -0.00123 | -0.00326 | | |
| Se | -0.00043 | 506.1 | 0.00209 | -0.00186 | -0.00152 | | |
| Sn | 0.00675 | 2.090 | 0.00661 | 0.00674 | 0.00690 | | |
| Sr | 0.24191 | 0.205 | 0.24136 | 0.24232 | 0.24205 | | |
| Ti | 0.00402 | 2.067 | 0.00397 | 0.00412 | 0.00397 | | |
| Tl | 0.00155 | 287.7 | 0.00003 | 0.00658 | -0.00195 | | |
| V | -0.00005 | 345.1 | -0.00005 | -0.00026 | 0.00014 | | |
| Y | 153348.00000 | 0.559 | 152736.00000 | 152980.00000 | 154328.00000 | | |
| Zn | 0.02117 | 4.414 | 0.02125 | 0.02206 | 0.02019 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 36 4220725 02/25/04 07:36
****,25-25,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | -0.00028 | 182.5 | 0.00011 | -0.00009 | -0.00087 | | |
| Al | 0.00063 | 96.59 | 0.00113 | -0.00005 | 0.00082 | | |
| XAs | -0.00220 | 112.4 | 0.00065 | -0.00373 | -0.00354 | | |
| B | 0.05238 | 0.683 | 0.05205 | 0.05233 | 0.05276 | | |
| XBa | 0.00251 | 0.525 | 0.00250 | 0.00251 | 0.00252 | | |
| Be | -0.00009 | 26.27 | -0.00010 | -0.00006 | -0.00010 | | |
| Ca | 0.44320 | 0.993 | 0.43813 | 0.44542 | 0.44606 | | |
| XCd | 0.00028 | 84.42 | 0.00052 | 0.00004 | 0.00028 | | |
| Co | -0.00067 | 36.16 | -0.00040 | -0.00071 | -0.00088 | | |
| XCr | 0.00137 | 32.15 | 0.00170 | 0.00087 | 0.00154 | | |
| Cu | 0.01415 | 1.688 | 0.01443 | 0.01403 | 0.01400 | | |
| Fe | 0.00325 | 6.985 | 0.00345 | 0.00329 | 0.00300 | | |
| K | 2.07712 | 1.124 | 2.06407 | 2.10409 | 2.06320 | | |
| Mg | 0.04064 | 6.612 | 0.04343 | 0.03806 | 0.04044 | | |
| Mn | 0.00107 | 11.12 | 0.00119 | 0.00107 | 0.00095 | | |
| Mo | 0.00051 | 176.3 | 0.00153 | 0.00022 | -0.00021 | | |
| Na | 1360.46875 | 0.601 | 1351.02465 | 1365.51672 | 1364.86486 | | |
| Ni | 0.00887 | 17.35 | 0.01063 | 0.00815 | 0.00782 | | |
| XPb | 0.00042 | 309.6 | 0.00045 | -0.00091 | 0.00173 | | |
| Sb | -0.00460 | 21.07 | -0.00513 | -0.00520 | -0.00348 | | |
| XSe | -0.00290 | 95.31 | -0.00184 | -0.00082 | -0.00604 | | |
| Sn | 0.00598 | 70.95 | 0.01021 | 0.00172 | 0.00600 | | |
| Sr | 0.01192 | 0.555 | 0.01185 | 0.01197 | 0.01195 | | |
| Ti | 0.00041 | 44.80 | 0.00058 | 0.00021 | 0.00044 | | |
| Tl | 0.00271 | 303.4 | 0.01153 | -0.00481 | 0.00143 | | |
| V | 0.00038 | 129.9 | 0.00092 | 0.00032 | -0.00008 | | |
| Y | 155576.32812 | 1.036 | 157395.00000 | 154322.00000 | 155012.00000 | | |
| Zn | 0.02639 | 1.939 | 0.02639 | 0.02588 | 0.02690 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 37 CCV 02/25/04 07:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50895 | 0.113 | 0.50962 | 0.50857 | 0.50867 | | |
| Al | 25.93685 | 0.158 | 25.97880 | 25.93511 | 25.89664 | | |
| As | 0.48151 | 0.462 | 0.48383 | 0.47940 | 0.48130 | | |
| B | 0.51511 | 0.162 | 0.51432 | 0.51598 | 0.51503 | | |
| Ba | 0.49289 | 0.136 | 0.49356 | 0.49291 | 0.49221 | | |
| Be | 0.50902 | 0.174 | 0.50989 | 0.50904 | 0.50812 | | |
| Ca | 26.14757 | 0.119 | 26.15673 | 26.17329 | 26.11269 | | |
| Cd | 0.49914 | 0.418 | 0.50100 | 0.49953 | 0.49688 | | |
| Co | 0.50354 | 0.207 | 0.50463 | 0.50346 | 0.50254 | | |
| Cr | 0.50407 | 0.280 | 0.50488 | 0.50488 | 0.50244 | | |
| Cu | 0.50449 | 0.123 | 0.50516 | 0.50393 | 0.50437 | | |
| Fe | 26.02387 | 0.132 | 26.05788 | 26.02469 | 25.98903 | | |
| K | 25.67649 | 0.383 | 25.77812 | 25.66996 | 25.58138 | | |
| Mg | 25.81304 | 0.186 | 25.85446 | 25.82456 | 25.76011 | | |
| Mn | 0.50312 | 0.208 | 0.50426 | 0.50289 | 0.50220 | | |
| Mo | 0.50297 | 0.723 | 0.49891 | 0.50594 | 0.50405 | | |
| Na | 26.10794 | 0.479 | 26.20983 | 26.14567 | 25.96830 | | |
| Ni | 0.49966 | 0.157 | 0.49876 | 0.50000 | 0.50022 | | |
| Pb | 0.50793 | 0.762 | 0.50785 | 0.51184 | 0.50409 | | |
| Sb | 0.50013 | 0.257 | 0.50162 | 0.49946 | 0.49931 | | |
| Se | 0.49916 | 0.462 | 0.49956 | 0.50125 | 0.49668 | | |
| Sn | 0.50694 | 0.620 | 0.50423 | 0.51040 | 0.50620 | | |
| Sr | 0.50259 | 0.151 | 0.50342 | 0.50241 | 0.50193 | | |
| Ti | 0.50059 | 0.068 | 0.50047 | 0.50097 | 0.50032 | | |
| Tl | 0.48891 | 1.071 | 0.48286 | 0.49204 | 0.49182 | | |
| V | 0.50051 | 0.294 | 0.50178 | 0.50087 | 0.49889 | | |
| Y | 150172.67187 | 0.321 | 149855.00000 | 149935.00000 | 150728.00000 | | |
| Zn | 0.50452 | 0.491 | 0.50723 | 0.50396 | 0.50237 | | |

8852

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 38 CCB 02/25/04 07:47

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00006 | 587.5 | -0.00004 | 0.00029 | -0.00044 | | |
| Al | -0.03927 | 6.856 | -0.03656 | -0.03931 | -0.04194 | | |
| As | -0.00161 | 260.5 | 0.00311 | -0.00489 | -0.00305 | | |
| B | -0.00214 | 27.48 | -0.00233 | -0.00261 | -0.00148 | | |
| Ba | 0.00002 | 120.7 | 0.00001 | 0.00000 | 0.00004 | | |
| Be | 0.00000 | 1518. | 0.00010 | -0.00005 | -0.00006 | | |
| Ca | -0.05468 | 2.369 | -0.05324 | -0.05573 | -0.05508 | | |
| Cd | 0.00027 | 40.02 | 0.00030 | 0.00014 | 0.00035 | | |
| Co | -0.00045 | 73.99 | -0.00007 | -0.00055 | -0.00072 | | |
| Cr | -0.00042 | 49.73 | -0.00064 | -0.00021 | -0.00043 | | |
| Cu | 0.00024 | 113.0 | -0.00001 | 0.00054 | 0.00021 | | |
| Fe | -0.00523 | 11.37 | -0.00455 | -0.00563 | -0.00552 | | |
| K | 0.04826 | 12.92 | 0.05543 | 0.04522 | 0.04412 | | |
| Mg | -0.01240 | 28.12 | -0.01420 | -0.00838 | -0.01463 | | |
| Mn | 0.00020 | 7.805 | 0.00020 | 0.00018 | 0.00021 | | |
| Mo | 0.00011 | 841.0 | 0.00111 | 0.00009 | -0.00085 | | |
| Na | 0.29224 | 30.68 | 0.32255 | 0.19134 | 0.36283 | | |
| Ni | -0.00026 | 142.5 | 0.00009 | -0.00065 | -0.00022 | | |
| Pb | 0.00035 | 152.3 | -0.00001 | 0.00010 | 0.00096 | | |
| Sb | -0.00029 | 481.6 | 0.00079 | 0.00020 | -0.00188 | | |
| Se | -0.00305 | 94.50 | -0.00010 | -0.00588 | -0.00319 | | |
| Sn | 0.00191 | 56.16 | 0.00098 | 0.00309 | 0.00166 | | |
| Sr | -0.00016 | 5.986 | -0.00017 | -0.00015 | -0.00015 | | |
| Ti | -0.00002 | 282.2 | -0.00011 | -0.00001 | 0.00004 | | |
| Tl | 0.00423 | 88.52 | 0.00827 | 0.00353 | 0.00088 | | |
| V | 0.00005 | 219.5 | 0.00012 | 0.00012 | -0.00008 | | |
| Y | 153183.00000 | 0.474 | 153892.00000 | 152440.00000 | 153217.00000 | | |
| Zn | -0.00039 | 189.5 | 0.00047 | -0.00088 | -0.00078 | | |

8853

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 39 4220726 02/25/04 07:53
****,25-25,DF1,040555705004,S,,

| ELEM | | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|---|
| XAg | | -0.00029 | 76.75 | -0.00054 | -0.00008 | -0.00027 | | |
| Al | | 0.03411 | 7.729 | 0.03659 | 0.03134 | 0.03439 | | |
| XAs | | 0.00250 | 114.3 | -0.00058 | 0.00507 | 0.00303 | | |
| B | | 4.38196 | 1.629 | 4.46430 | 4.34491 | 4.33668 | | |
| XBa | | 0.04131 | 1.817 | 0.04218 | 0.04086 | 0.04090 | | |
| Be | | -0.00001 | 605.4 | 0.00008 | -0.00010 | -0.00002 | | |
| Ca | | 530.32806 | 1.891 | 541.88049 | 525.28228 | 523.82141 | | |
| XCd | | 0.00072 | 30.57 | 0.00054 | 0.00096 | 0.00065 | | |
| Co | | 0.00555 | 7.533 | 0.00527 | 0.00535 | 0.00603 | | |
| XCr | | 0.01406 | 1.981 | 0.01435 | 0.01404 | 0.01379 | | |
| Cu | | 0.02257 | 0.878 | 0.02257 | 0.02238 | 0.02278 | | |
| Fe | | 1.70376 | 1.640 | 1.73601 | 1.68864 | 1.68663 | | |
| K | C | 517.95520 | 86.63 | 0.00000 | 789.46105 | 764.40454 | | |
| Mg | | 4.27956 | 1.437 | 4.35052 | 4.24641 | 4.24174 | | |
| Mn | | 0.34565 | 1.641 | 0.35219 | 0.34263 | 0.34212 | | |
| Mo | | 0.00856 | 3.881 | 0.00856 | 0.00822 | 0.00889 | | |
| Na | | 1894.42895 | 1.302 | 1922.76770 | 1882.85986 | 1877.65917 | | |
| Ni | | 0.04855 | 2.724 | 0.04996 | 0.04835 | 0.04734 | | |
| XPb | | 0.00443 | 57.26 | 0.00578 | 0.00600 | 0.00150 | | |
| Sb | | -0.00225 | 157.4 | -0.00303 | -0.00534 | 0.00161 | | |
| XSe | | -0.00256 | 67.03 | -0.00358 | -0.00353 | -0.00057 | | |
| Sn | | 0.00525 | 42.58 | 0.00620 | 0.00685 | 0.00269 | | |
| Sr | | 0.55963 | 1.840 | 0.57149 | 0.55445 | 0.55296 | | |
| Ti | | -0.00050 | 74.40 | -0.00087 | -0.00049 | -0.00013 | | |
| Tl | | 0.00238 | 230.7 | 0.00722 | -0.00360 | 0.00354 | | |
| V | | 0.00035 | 122.5 | 0.00001 | 0.00020 | 0.00083 | | |
| Y | | 149811.67187 | 0.779 | 148571.00000 | 149976.00000 | 150888.00000 | | |
| Zn | | 0.13905 | 1.189 | 0.14093 | 0.13837 | 0.13784 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 40 4220727 02/25/04 07:58
****,25-25,DF1,040555705004,S,,

| ELEM | | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|---|
| Ag | k | 0.00004 | 412.3 | -0.00006 | 0.00028 | -0.00006 | N | |
| Al | | 0.16048 | 8.365 | 0.17591 | 0.15146 | 0.15407 | | |
| As | | 0.00143 | 71.38 | 0.00239 | 0.00156 | 0.00035 | | |
| B | | 3.68697 | 0.553 | 3.69930 | 3.66340 | 3.69820 | | |
| Ba | k | 0.04532 | 0.488 | 0.04539 | 0.04507 | 0.04549 | N | |
| Be | | 0.00021 | 86.32 | 0.00041 | 0.00018 | 0.00004 | | |
| Ca | C | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | | |
| Cd | | 0.00311 | 1.432 | 0.00307 | 0.00316 | 0.00311 | | |
| Co | | 0.01381 | 1.590 | 0.01402 | 0.01359 | 0.01383 | | |
| Cr | | 0.00162 | 28.16 | 0.00185 | 0.00109 | 0.00192 | | |
| Cu | | 0.01000 | 3.205 | 0.00965 | 0.01006 | 0.01028 | | |
| Fe | | 3.12051 | 0.432 | 3.12658 | 3.10505 | 3.12990 | | |
| K | | 11.13635 | 0.587 | 11.18963 | 11.06327 | 11.15615 | | |
| Mg | | 16.65078 | 0.443 | 16.67768 | 16.56722 | 16.70746 | | |
| Mn | | 1.62624 | 0.482 | 1.62993 | 1.61722 | 1.63156 | | |
| Mo | | -0.00057 | 51.96 | -0.00031 | -0.00049 | -0.00089 | | |
| Na | | 1669.66540 | 0.353 | 1670.33178 | 1663.46179 | 1675.20275 | | |
| Ni | | 0.18462 | 1.098 | 0.18605 | 0.18230 | 0.18551 | | |
| Pb | | 0.00504 | 9.767 | 0.00448 | 0.00521 | 0.00542 | | |
| Sb | | -0.00650 | 33.00 | -0.00482 | -0.00576 | -0.00891 | | |
| Se | | 0.00415 | 18.55 | 0.00395 | 0.00350 | 0.00500 | | |
| Sn | | 0.00929 | 19.88 | 0.00755 | 0.00910 | 0.01123 | | |
| Sr | k | 1.29943 | 0.561 | 1.30431 | 1.29105 | 1.30293 | | |
| Ti | | -0.00439 | 5.435 | -0.00440 | -0.00415 | -0.00463 | | |
| Tl | | 0.00868 | 24.41 | 0.00780 | 0.01110 | 0.00713 | | |
| V | | 0.00017 | 375.6 | 0.00017 | -0.00047 | 0.00081 | | |
| Y | | 148040.32812 | 1.001 | 146380.00000 | 149233.00000 | 148508.00000 | | |
| Zn | k | 3.20865 | 0.338 | 3.21301 | 3.19628 | 3.21665 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 41 4220902 02/25/04 08:04
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | -0.00066 | 110.3 | -0.00150 | -0.00028 | -0.00020 | | |
| Al | 0.18341 | 2.639 | 0.18881 | 0.17947 | 0.18194 | | |
| XAs | -0.00447 | 43.25 | -0.00666 | -0.00299 | -0.00376 | | |
| B | 0.05008 | 1.409 | 0.05081 | 0.04940 | 0.05003 | | |
| XBa | 0.32425 | 0.465 | 0.32598 | 0.32325 | 0.32351 | | |
| Be | 0.00049 | 1.459 | 0.00049 | 0.00050 | 0.00048 | | |
| Ca | 138.37536 | 0.158 | 138.23977 | 138.25836 | 138.62797 | | |
| XCd | 0.00190 | 9.081 | 0.00199 | 0.00170 | 0.00202 | | |
| Co | 0.02778 | 2.649 | 0.02693 | 0.02814 | 0.02826 | | |
| XCr | 0.00070 | 169.3 | 0.00197 | -0.00038 | 0.00052 | | |
| Cu | 0.03510 | 0.903 | 0.03475 | 0.03520 | 0.03536 | | |
| Fe | 0.06864 | 0.221 | 0.06872 | 0.06873 | 0.06846 | | |
| K | 3.35936 | 2.512 | 3.45623 | 3.30153 | 3.32032 | | |
| Mg | 47.11197 | 0.170 | 47.16188 | 47.01939 | 47.15463 | | |
| Mn | 4.41422 | 0.197 | 4.42371 | 4.40653 | 4.41241 | | |
| Mo | -0.00126 | 26.87 | -0.00137 | -0.00154 | -0.00088 | | |
| Na | 1292.11267 | 0.293 | 1296.45336 | 1289.43798 | 1290.44653 | | |
| Ni | 0.01539 | 5.999 | 0.01645 | 0.01494 | 0.01478 | | |
| XPb | 0.01629 | 6.658 | 0.01730 | 0.01514 | 0.01642 | | |
| Sb | -0.00527 | 16.22 | -0.00479 | -0.00476 | -0.00625 | | |
| XSe | 0.00081 | 564.7 | -0.00361 | 0.00555 | 0.00050 | | |
| Sn | 0.01038 | 57.10 | 0.01708 | 0.00825 | 0.00581 | | |
| Sr | 0.18573 | 0.539 | 0.18689 | 0.18514 | 0.18517 | | |
| Ti | 0.00128 | 20.74 | 0.00097 | 0.00146 | 0.00142 | | |
| Tl | -0.00228 | 119.3 | -0.00073 | -0.00068 | -0.00544 | | |
| V | 0.00051 | 95.63 | 0.00081 | -0.00005 | 0.00079 | | |
| Y | 148963.32812 | 0.965 | 147314.00000 | 149619.00000 | 149957.00000 | | |
| Zn | 0.17843 | 0.401 | 0.17772 | 0.17916 | 0.17842 | | |

0856

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 42 4221331 02/25/04 08:09
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | 0.00159 | 55.42 | 0.00063 | 0.00177 | 0.00238 | | |
| Al | -0.01713 | 54.32 | -0.00677 | -0.01982 | -0.02479 | | |
| XAs | -0.00235 | 204.5 | -0.00749 | 0.00208 | -0.00166 | | |
| B | 0.01561 | 10.93 | 0.01375 | 0.01711 | 0.01595 | | |
| XBa | 0.00444 | 1.331 | 0.00437 | 0.00448 | 0.00446 | | |
| Be | -0.00015 | 85.52 | -0.00030 | -0.00006 | -0.00008 | | |
| Ca | 0.06595 | 7.056 | 0.06929 | 0.06063 | 0.06793 | | |
| XCd | 0.00023 | 156.6 | -0.00011 | 0.00020 | 0.00060 | | |
| Co | -0.00097 | 100.2 | -0.00205 | -0.00073 | -0.00014 | | |
| XCr | 0.00016 | 270.6 | -0.00033 | 0.00036 | 0.00045 | | |
| Cu | 0.00256 | 34.57 | 0.00156 | 0.00288 | 0.00324 | | |
| Fe | -0.00071 | 123.8 | -0.00171 | -0.00040 | -0.00002 | | |
| K | 0.16719 | 10.39 | 0.18447 | 0.16738 | 0.14972 | | |
| Mg | 0.00139 | 369.8 | -0.00454 | 0.00489 | 0.00384 | | |
| Mn | 0.00046 | 23.33 | 0.00041 | 0.00038 | 0.00058 | | |
| Mo | -0.00124 | 74.94 | -0.00229 | -0.00047 | -0.00097 | | |
| Na | 1261.18701 | 0.772 | 1249.97778 | 1267.67358 | 1265.90966 | | |
| Ni | -0.00032 | 249.8 | -0.00112 | -0.00032 | 0.00048 | | |
| XPb | 0.00311 | 42.21 | 0.00462 | 0.00245 | 0.00225 | | |
| Sb | -0.00610 | 49.80 | -0.00901 | -0.00637 | -0.00294 | | |
| XSe | 0.00142 | 273.0 | -0.00292 | 0.00265 | 0.00453 | | |
| Sn | 0.00349 | 289.8 | -0.00816 | 0.00851 | 0.01014 | | |
| Sr | 0.00055 | 1.417 | 0.00054 | 0.00054 | 0.00055 | | |
| Ti | 0.00147 | 34.50 | 0.00088 | 0.00177 | 0.00176 | | |
| Tl | -0.00795 | 54.74 | -0.01291 | -0.00625 | -0.00471 | | |
| V | 0.00019 | 215.3 | -0.00027 | 0.00054 | 0.00032 | | |
| Y | 150387.00000 | 3.533 | 144284.00000 | 152889.00000 | 153988.00000 | | |
| Zn | 0.00399 | 24.79 | 0.00287 | 0.00436 | 0.00475 | | |

0857

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 43 4221332 02/25/04 08:15
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00004 | 1548. | 0.00054 | 0.00014 | -0.00082 | | |
| Al | -0.03313 | 15.90 | -0.02775 | -0.03336 | -0.03828 | | |
| X As | 0.00015 | 906.8 | 0.00141 | 0.00046 | -0.00140 | | |
| B | 0.01793 | 4.164 | 0.01776 | 0.01874 | 0.01728 | | |
| X Ba | 0.00404 | 0.525 | 0.00402 | 0.00406 | 0.00406 | | |
| Be | -0.00007 | 170.9 | 0.00007 | -0.00017 | -0.00014 | | |
| Ca | 0.01142 | 78.52 | 0.02171 | 0.00531 | 0.00722 | | |
| X Cd | 0.00020 | 95.76 | 0.00008 | 0.00042 | 0.00009 | | |
| Co | -0.00072 | 108.9 | -0.00047 | -0.00009 | -0.00162 | | |
| X Cr | -0.00032 | 130.0 | -0.00080 | -0.00010 | -0.00005 | | |
| Cu | 0.00211 | 8.329 | 0.00217 | 0.00225 | 0.00191 | | |
| Fe | -0.00256 | 12.38 | -0.00261 | -0.00221 | -0.00284 | | |
| K | 0.12725 | 4.702 | 0.12042 | 0.13161 | 0.12970 | | |
| Mg | -0.00771 | 28.00 | -0.00687 | -0.00609 | -0.01016 | | |
| Mn | 0.00030 | 10.43 | 0.00031 | 0.00033 | 0.00027 | | |
| Mo | -0.00058 | 124.0 | -0.00039 | 0.00002 | -0.00137 | | |
| Na | 1285.68078 | 1.191 | 1268.01916 | 1293.58862 | 1295.43444 | | |
| Ni | 0.00011 | 1289. | -0.00133 | 0.00159 | 0.00008 | | |
| X Pb | 0.00248 | 29.45 | 0.00224 | 0.00330 | 0.00190 | | |
| Sb | -0.00444 | 54.69 | -0.00252 | -0.00718 | -0.00364 | | |
| X Se | -0.00082 | 76.26 | -0.00152 | -0.00029 | -0.00065 | | |
| Sn | 0.00572 | 19.89 | 0.00444 | 0.00611 | 0.00663 | | |
| Sr | 0.00056 | 9.704 | 0.00049 | 0.00060 | 0.00058 | | |
| Ti | 0.00118 | 7.436 | 0.00124 | 0.00121 | 0.00108 | | |
| Tl | -0.00188 | 225.8 | 0.00247 | -0.00210 | -0.00601 | | |
| V | -0.00057 | 55.60 | -0.00029 | -0.00091 | -0.00049 | | |
| Y | 153345.32812 | 1.545 | 156042.00000 | 151598.00000 | 152396.00000 | | |
| Zn | 0.00337 | 10.20 | 0.00313 | 0.00377 | 0.00322 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 44 LLC 02/25/04 08:20

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00539 | 25.76 | 0.00409 | 0.00685 | 0.00523 | | |
| Al | 0.16508 | 4.935 | 0.16302 | 0.17406 | 0.15816 | | |
| As | 0.00932 | 22.90 | 0.00815 | 0.01178 | 0.00802 | | |
| B | 0.04993 | 2.246 | 0.04914 | 0.05122 | 0.04944 | | |
| Ba | 0.00517 | 3.490 | 0.00503 | 0.00537 | 0.00511 | | |
| Be | 0.00515 | 2.605 | 0.00530 | 0.00507 | 0.00507 | | |
| Ca | 0.17707 | 1.470 | 0.17842 | 0.17872 | 0.17407 | | |
| Cd | 0.00557 | 1.398 | 0.00551 | 0.00566 | 0.00554 | | |
| Co | 0.00570 | 24.45 | 0.00509 | 0.00730 | 0.00472 | | |
| Cr | 0.00483 | 12.77 | 0.00460 | 0.00553 | 0.00436 | | |
| Cu | 0.01147 | 10.15 | 0.01037 | 0.01269 | 0.01135 | | |
| Fe | 0.20277 | 0.589 | 0.20251 | 0.20408 | 0.20173 | | |
| K | 0.51058 | 5.912 | 0.49226 | 0.54543 | 0.49407 | | |
| Mg | 0.09319 | 9.307 | 0.08559 | 0.10264 | 0.09135 | | |
| Mn | 0.00532 | 0.068 | 0.00532 | 0.00532 | 0.00532 | | |
| Mo | 0.00910 | 6.710 | 0.00961 | 0.00927 | 0.00842 | | |
| Na | 1.37033 | 1.357 | 1.38811 | 1.35101 | 1.37186 | | |
| Ni | 0.00990 | 2.469 | 0.00975 | 0.01018 | 0.00977 | | |
| Pb | 0.02116 | 4.584 | 0.02215 | 0.02021 | 0.02113 | | |
| Sb | 0.01439 | 39.23 | 0.00899 | 0.02026 | 0.01392 | | |
| Se | 0.00739 | 21.15 | 0.00705 | 0.00603 | 0.00910 | | |
| Sn | 0.02343 | 13.49 | 0.02236 | 0.02699 | 0.02095 | | |
| Sr | 0.00489 | 0.176 | 0.00490 | 0.00488 | 0.00489 | | |
| Ti | 0.01010 | 3.313 | 0.00974 | 0.01040 | 0.01016 | | |
| Tl | 0.02748 | 33.27 | 0.02799 | 0.03636 | 0.01809 | | |
| V | 0.00471 | 6.751 | 0.00458 | 0.00508 | 0.00448 | | |
| Y | 156158.32812 | 1.141 | 158178.00000 | 155492.00000 | 154805.00000 | | |
| Zn | 0.02179 | 5.247 | 0.02219 | 0.02268 | 0.02050 | | |

LANCASTER LABORATORIES

Run Name: 040502T63 INSTRUMENT ID: 06383

Tube: 45 ICSA 02/25/04 08:25

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00042 | 77.07 | -0.00009 | -0.00042 | -0.00074 | | |
| Al | 513.50531 | 0.156 | 514.39453 | 513.29888 | 512.82244 | | |
| As | -0.00240 | 33.61 | -0.00186 | -0.00201 | -0.00333 | | |
| B | -0.00271 | 19.13 | -0.00217 | -0.00320 | -0.00278 | | |
| Ba | -0.00066 | 13.03 | -0.00057 | -0.00074 | -0.00067 | | |
| Be | 0.00016 | 129.2 | 0.00040 | 0.00005 | 0.00003 | | |
| Ca | 541.12756 | 0.565 | 544.56738 | 540.10540 | 538.70989 | | |
| Cd | 0.00485 | 4.711 | 0.00459 | 0.00499 | 0.00498 | | |
| Co | 0.00388 | 25.35 | 0.00501 | 0.00321 | 0.00343 | | |
| Cr | -0.00303 | 22.78 | -0.00237 | -0.00374 | -0.00297 | | |
| Cu | 0.00406 | 7.912 | 0.00427 | 0.00369 | 0.00421 | | |
| Fe | 203.70904 | 0.338 | 204.48893 | 203.45707 | 203.18113 | | |
| K | 0.01942 | 103.2 | -0.00160 | 0.03834 | 0.02155 | | |
| Mg | 515.98205 | 0.185 | 517.08636 | 515.39569 | 515.46411 | | |
| Mn | 0.00361 | 2.392 | 0.00351 | 0.00365 | 0.00368 | | |
| Mo | -0.00094 | 49.11 | -0.00146 | -0.00058 | -0.00077 | | |
| Na | 0.13913 | 153.6 | 0.36055 | -0.06613 | 0.12298 | | |
| Ni | 0.00185 | 22.29 | 0.00141 | 0.00190 | 0.00223 | | |
| Pb | 0.00402 | 39.66 | 0.00315 | 0.00304 | 0.00586 | | |
| Sb | -0.00133 | 292.9 | -0.00352 | -0.00364 | 0.00317 | | |
| Se | -0.00533 | 64.37 | -0.00852 | -0.00169 | -0.00577 | | |
| Sn | 0.00895 | 50.82 | 0.01031 | 0.00387 | 0.01265 | | |
| Sr | -0.07256 | 0.555 | -0.07301 | -0.07244 | -0.07223 | | |
| Ti | -0.00551 | 4.514 | -0.00525 | -0.00575 | -0.00552 | | |
| Tl | -0.00164 | 181.6 | -0.00445 | 0.00150 | -0.00199 | | |
| V | 0.00454 | 14.49 | 0.00528 | 0.00402 | 0.00433 | | |
| Y | 146208.32812 | 0.689 | 145223.00000 | 146163.00000 | 147239.00000 | | |
| Zn | 0.01284 | 11.40 | 0.01274 | 0.01143 | 0.01435 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 46 ICSAB 02/25/04 08:31

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.21228 | 0.696 | 0.21087 | 0.21214 | 0.21382 | | |
| Al | 514.77526 | 0.353 | 512.85198 | 515.00286 | 516.47094 | | |
| As | 0.09806 | 1.627 | 0.09631 | 0.09943 | 0.09844 | | |
| B | -0.00146 | 46.83 | -0.00176 | -0.00194 | -0.00067 | | |
| Ba | 0.51605 | 0.232 | 0.51503 | 0.51577 | 0.51737 | | |
| Be | 0.52002 | 0.449 | 0.51779 | 0.51981 | 0.52245 | | |
| Ca | 543.97467 | 0.632 | 541.04699 | 543.11322 | 547.76385 | | |
| Cd | 0.98863 | 0.342 | 0.98544 | 0.98826 | 0.99219 | | |
| Co | 0.50296 | 0.585 | 0.50006 | 0.50289 | 0.50594 | | |
| Cr | 0.50914 | 0.509 | 0.50684 | 0.50862 | 0.51195 | | |
| Cu | 0.54018 | 0.245 | 0.53900 | 0.53991 | 0.54161 | | |
| Fe | 205.82312 | 0.450 | 204.94715 | 205.72938 | 206.79281 | | |
| K | 0.02738 | 88.34 | 0.00942 | 0.01783 | 0.05490 | | |
| Mg | 521.59796 | 0.453 | 519.28607 | 521.49615 | 524.01165 | | |
| Mn | 0.51300 | 0.324 | 0.51161 | 0.51254 | 0.51484 | | |
| Mo | -0.00055 | 266.5 | -0.00224 | 0.00058 | -0.00001 | | |
| Na | 0.01073 | 1081. | -0.06211 | -0.05033 | 0.14466 | | |
| Ni | 0.98538 | 0.288 | 0.98353 | 0.98397 | 0.98865 | | |
| Pb | 0.05527 | 4.105 | 0.05265 | 0.05654 | 0.05662 | | |
| Sb | 0.63569 | 0.923 | 0.63421 | 0.63070 | 0.64216 | | |
| Se | 0.04778 | 5.644 | 0.04470 | 0.04888 | 0.04975 | | |
| Sn | 0.00706 | 85.80 | 0.01293 | 0.00742 | 0.00082 | | |
| Sr | -0.07297 | 0.663 | -0.07251 | -0.07291 | -0.07348 | | |
| Ti | -0.00550 | 1.871 | -0.00557 | -0.00554 | -0.00538 | | |
| Tl | 0.10025 | 0.477 | 0.10075 | 0.10021 | 0.09979 | | |
| V | 0.52261 | 0.356 | 0.52102 | 0.52214 | 0.52466 | | |
| Y | 148416.67187 | 0.681 | 148272.00000 | 149492.00000 | 147486.00000 | | |
| Zn | 1.00240 | 0.508 | 0.99652 | 1.00518 | 1.00551 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 47 CCV 02/25/04 08:36

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50673 | 0.210 | 0.50561 | 0.50685 | 0.50774 | | |
| Al | 25.84488 | 0.385 | 25.73340 | 25.87565 | 25.92559 | | |
| As | 0.48603 | 0.735 | 0.48387 | 0.48407 | 0.49016 | | |
| B | 0.51701 | 0.430 | 0.51472 | 0.51713 | 0.51917 | | |
| Ba | 0.49058 | 0.316 | 0.48895 | 0.49075 | 0.49204 | | |
| Be | 0.51365 | 0.409 | 0.51134 | 0.51417 | 0.51545 | | |
| Ca | 26.33996 | 0.548 | 26.18050 | 26.37758 | 26.46180 | | |
| Cd | 0.50524 | 0.388 | 0.50326 | 0.50528 | 0.50719 | | |
| Co | 0.50779 | 0.326 | 0.50588 | 0.50876 | 0.50873 | | |
| Cr | 0.50689 | 0.575 | 0.50381 | 0.50724 | 0.50961 | | |
| Cu | 0.50496 | 0.246 | 0.50352 | 0.50562 | 0.50574 | | |
| Fe | 26.20690 | 0.448 | 26.07772 | 26.23529 | 26.30768 | | |
| K | 25.34927 | 0.370 | 25.24132 | 25.41148 | 25.39502 | | |
| Mg | 26.14099 | 0.415 | 26.01992 | 26.17327 | 26.22978 | | |
| Mn | 0.50590 | 0.401 | 0.50363 | 0.50653 | 0.50754 | | |
| Mo | 0.50824 | 1.368 | 0.50074 | 0.50949 | 0.51448 | | |
| Na | 25.78866 | 0.370 | 25.68866 | 25.87899 | 25.79834 | | |
| Ni | 0.50303 | 0.322 | 0.50252 | 0.50173 | 0.50485 | | |
| Pb | 0.51091 | 0.995 | 0.50515 | 0.51279 | 0.51478 | | |
| Sb | 0.50057 | 0.450 | 0.49802 | 0.50232 | 0.50136 | | |
| Se | 0.50313 | 1.034 | 0.49766 | 0.50803 | 0.50370 | | |
| Sn | 0.51687 | 0.910 | 0.51147 | 0.51902 | 0.52012 | | |
| Sr | 0.50074 | 0.330 | 0.49894 | 0.50108 | 0.50219 | | |
| Ti | 0.50187 | 0.362 | 0.49988 | 0.50229 | 0.50345 | | |
| Tl | 0.49439 | 1.337 | 0.48685 | 0.49923 | 0.49708 | | |
| V | 0.50284 | 0.476 | 0.50013 | 0.50372 | 0.50467 | | |
| Y | 157437.00000 | 0.274 | 156938.00000 | 157673.00000 | 157700.00000 | | |
| Zn | 0.51677 | 0.468 | 0.51412 | 0.51732 | 0.51886 | | |

LANCASTER LABORATORIES

Run Name: 040560ZT63 INSTRUMENT ID: 06383

Tube: 48 CCB 02/25/04 08:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00022 | 145.2 | -0.00053 | 0.00012 | -0.00027 | | |
| Al | -0.03462 | 21.85 | -0.02593 | -0.03811 | -0.03981 | | |
| As | -0.00149 | 28.14 | -0.00101 | -0.00181 | -0.00163 | | |
| B | -0.00176 | 77.90 | -0.00031 | -0.00194 | -0.00305 | | |
| Ba | -0.00001 | 457.7 | -0.00002 | -0.00005 | 0.00004 | | |
| Be | -0.00006 | 94.24 | 0.00000 | -0.00006 | -0.00012 | | |
| Ca | -0.03555 | 8.863 | -0.03192 | -0.03721 | -0.03753 | | |
| Cd | 0.00030 | 48.27 | 0.00015 | 0.00031 | 0.00044 | | |
| Co | -0.00008 | 267.6 | -0.00029 | 0.00016 | -0.00012 | | |
| Cr | -0.00049 | 197.2 | -0.00147 | 0.00048 | -0.00049 | | |
| Cu | 0.00093 | 24.98 | 0.00084 | 0.00076 | 0.00120 | | |
| Fe | 0.00048 | 385.8 | 0.00263 | -0.00071 | -0.00047 | | |
| K | 0.03520 | 21.57 | 0.03058 | 0.04396 | 0.03104 | | |
| Mg | 0.00516 | 99.04 | 0.00956 | -0.00044 | 0.00637 | | |
| Mn | 0.00012 | 104.6 | -0.00002 | 0.00023 | 0.00017 | | |
| Mo | 0.00027 | 253.4 | 0.00022 | -0.00039 | 0.00097 | | |
| Na | 0.16002 | 78.68 | 0.06058 | 0.30160 | 0.11789 | | |
| Ni | -0.00018 | 380.4 | -0.00097 | 0.00038 | 0.00003 | | |
| Pb | -0.00026 | 498.7 | -0.00158 | 0.00101 | -0.00021 | | |
| Sb | 0.00009 | 1892. | 0.00152 | 0.00079 | -0.00202 | | |
| Se | 0.00101 | 169.4 | 0.00292 | 0.00055 | -0.00042 | | |
| Sn | 0.00249 | 120.3 | 0.00251 | 0.00549 | -0.00051 | | |
| Sr | -0.00018 | 17.73 | -0.00021 | -0.00014 | -0.00020 | | |
| Ti | 0.00003 | 174.8 | 0.00005 | -0.00003 | 0.00007 | | |
| Tl | 0.00101 | 525.6 | 0.00708 | -0.00288 | -0.00116 | | |
| V | 0.00017 | 286.1 | 0.00011 | 0.00072 | -0.00029 | | |
| Zn | 0.00000 | 9294. | -0.00046 | -0.00046 | 0.00096 | | |

Data Reviewed by: JMG/1170 2-25-04

Data Verified by: NCH0243 2-25-04

8863

# Mercury Data

LANCASTER LABRATORIES

MERCURY ANALYZER

DATA REVIEWED BY: JW354 2-25-04 METHOD REFERENCE: SW-846 7470A

DATA VERIFIED BY: JLM1163 2/25/04

DATA FILE NAME: 0405601.PRN
RUN NAME: 0405601M05 INSTRUMENT NO: 62016

ANALYST: 354 ELEMENT: HG

RUN NAME: 0405601M05
PAGE: 1
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 1 02/25/04 09:08

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.0000 | -638.0 |

---

TUBE: 2 02/25/04 09:10

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0.2 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.2000 | 25835.0 |

---

TUBE: 3 02/25/04 09:11

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0.5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.5000 | 57450.0 |

---

TUBE: 4 02/25/04 09:12

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S1.0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0000 | 122057.0 |

---

TUBE: 5 02/25/04 09:14

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S2.5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 2.5000 | 300820.0 |

---

TUBE: 6 02/25/04 09:15

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S5.0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 5.0000 | 564108.0 | Correlation Coefficient = 0.99941 |

---

TUBE: 7 02/25/04 09:16

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| ICV | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 2.4500 | 282749.0 | %RECOVERY = 98.0 |

---

RUN NAME: 0405601M05
PAGE: 2
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 8 02/25/04 09:18

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| ICB | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0140 | 2789.0 |

---

TUBE: 9 02/25/04 09:19

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CRA | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.1920 | 26106.0 |

---

TUBE: 10 02/25/04 09:21

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 1 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0200 | 120424.0 |

%RECOVERY = 102.0

---

TUBE: 11 02/25/04 09:22

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 1 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0100 | 3206.0 |

---

TUBE: 12 02/25/04 09:23

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0030 | 3956.0 | — | — |

---

TUBE: 13 02/25/04 09:24

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0300 | 121703.0 | — | — |

---

TUBE: 14 02/25/04 09:25

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218105 | U****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4660.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 3
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 15 02/25/04 09:27

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218107 | D****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0500 | -1271.0 | — | — |

---

TUBE: 16 02/25/04 09:28

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218106 | R****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 1.0400 | 122519.0 | — | — |

---

TUBE: 17 02/25/04 09:29

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218106 | M****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0400 | 122669.0 | — | — |

---

TUBE: 18 02/25/04 09:31

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218108 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0210 | 1957.0 | — | — |

---

TUBE: 19 02/25/04 09:32

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218109 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0430 | -564.0 | — | — |

---

TUBE: 20 02/25/04 09:33

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218110 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0150 | 2659.0 | — | — |

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RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 4
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 21 02/25/04 09:34
SAMPLE 4218111

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 50 | 50 | 1 | 040555713001 |

V

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| -0.0130 | 2906.0 | — | — |

---

TUBE: 22 02/25/04 09:36
SAMPLE CCV 2

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0700 | 125839.0 |

%RECOVERY = 107.0

---

TUBE: 23 02/25/04 09:37
SAMPLE CCB 2

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0390 | -34.0 |

---

TUBE: 24 02/25/04 09:39
SAMPLE 4218112

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 50 | 50 | 1 | 040555713001 |

V

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0160 | 6112.0 | — | — |

---

TUBE: 25 02/25/04 09:40
SAMPLE 4218848

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 50 | 50 | 1 | 040555713001 |

V

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0180 | 6433.0 | — | — |

---

TUBE: 26 02/25/04 09:41
SAMPLE 4218849

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 50 | 50 | 1 | 040555713001 |

V

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0330 | 8060.0 | — | — |

---

TUBE: 27 02/25/04 09:42
SAMPLE 4218850

| CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|
| ******* | 50 | 50 | 1 | 040555713001 |

V

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| -0.0150 | 2662.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 5
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 28 02/25/04 09:43

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218851 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0010 | 4203.0 | — | — |

---

TUBE: 29 02/25/04 09:44

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218852 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4677.0 | — | — |

---

TUBE: 30 02/25/04 09:47

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218853 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0710 | 12374.0 | — | — |

---

TUBE: 31 02/25/04 09:48

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218854 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0230 | 6987.0 | — | — |

---

TUBE: 32 02/25/04 09:50

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218855 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0320 | 711.0 | — | — |

---

TUBE: 33 02/25/04 09:51

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218856 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0010 | 4404.0 | — | — |

---

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 6
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 34 02/25/04 09:53

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCV 3 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0100 | 119159.0 |

%RECOVERY = 101.0

---

TUBE: 35 02/25/04 09:54

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCB 3 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0450 | -767.0 |

---

TUBE: 36 02/25/04 09:55

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0130 | 2841.0 | — | — |

---

TUBE: 37 02/25/04 09:57

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0900 | 128230.0 | — | — |

---

TUBE: 38 02/25/04 09:58

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218114 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0640 | -2931.0 | — | — |

---

TUBE: 39 02/25/04 09:59

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218115 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0110 | 5607.0 | — | — |

---

TUBE: 40 02/25/04 10:00

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218116 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0510 | -1454.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 7
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 41 02/25/04 10:01

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218117 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0350 | 357.0 | — | — |

---

TUBE: 42 02/25/04 10:02

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218118 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0400 | 8897.0 | — | — |

---

TUBE: 43 02/25/04 10:04

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218858 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0190 | 6451.0 | — | — |

---

TUBE: 44 02/25/04 10:06

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218859 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0010 | 4418.0 | — | — |

---

TUBE: 45 02/25/04 10:07

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218860 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0420 | -371.0 | — | — |

---

TUBE: 46 02/25/04 10:09

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 4 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 1.0500 | 123823.0 | %RECOVERY = 105.0 |

---

TUBE: 47 02/25/04 10:10

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 4 | ******* | 0 | 0 | 1 | 8872 |

| AVG(ppb) | Intensity |
|---|---|
| -0.0210 | 1959.0 |

---

RUN NAME: 0405601M05

LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 8
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 48 02/25/04 10:12

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218861 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0170 | 2425.0 | — | — |

---

TUBE: 49 02/25/04 10:13

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218863 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0160 | 2489.0 | — | — |

---

TUBE: 50 02/25/04 10:15

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220918 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0070 | 5129.0 | — | — |

---

TUBE: 51 02/25/04 10:16

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220919 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0110 | 5609.0 | — | — |

---

TUBE: 52 02/25/04 10:17

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220920 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0050 | 4966.0 | — | — |

---

TUBE: 53 02/25/04 10:19

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220921 | U****** | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4700.0 | — | — |

---

8873

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 9
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 54 02/25/04 10:20

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220923 | D****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0550 | -1924.0 | — | — |

---

TUBE: 55 02/25/04 10:21

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220922 | R****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 1.0200 | 120291.0 | — | — |

---

TUBE: 56 02/25/04 10:22

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220922 | M****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 125399.0 | — | — |

---

TUBE: 57 02/25/04 10:24

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218862 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0060 | 3674.0 | — | — |

---

TUBE: 58 02/25/04 10:25

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 1.0000 | 117829.0 | %RECOVERY = 100.0 |

---

TUBE: 59 02/25/04 10:26

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0400 | -183.0 |

---

TUBE: 60 02/25/04 10:27

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0070 | 3599.0 | — | — |

RUN NAME: 0405601M05
PAGE: 10
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 61 02/25/04 10:28
SAMPLE LCSW | CLASS ******* | IVOL/WT 1 | FVOL 1 | DF 1 | BATCH NUMBER 040555713003

V ✓ | AVG(ppb) 1.0800 | Intensity 126302.0 | RR — | RD —

---

TUBE: 62 02/25/04 10:30
SAMPLE 4218136 | CLASS ******* | IVOL/WT 50 | FVOL 50 | DF 1 | BATCH NUMBER 040555713003

V X | AVG(ppb) -0.0110 | Intensity 3043.0 | RR — | RD —

---

TUBE: 63 02/25/04 10:31
SAMPLE 4218137 | CLASS ******* | IVOL/WT 50 | FVOL 50 | DF 1 | BATCH NUMBER 040555713003

V X | AVG(ppb) 0.0120 | Intensity 5740.0 | RR — | RD —

---

TUBE: 64 02/25/04 10:33
SAMPLE 4220308 | CLASS U****** | IVOL/WT 50 | FVOL 50 | DF 1 | BATCH NUMBER 040555713003

V X | AVG(ppb) -0.0040 | Intensity 3944.0 | RR — | RD —

---

TUBE: 65 02/25/04 10:34
SAMPLE 4220308 | CLASS D****** | IVOL/WT 50 | FVOL 50 | DF 1 | BATCH NUMBER 040555713003

V ✓ | AVG(ppb) -0.0400 | Intensity -167.0 | RR — | RD —

---

TUBE: 66 02/25/04 10:35
SAMPLE 4220308 | CLASS R****** | IVOL/WT 50 | FVOL 50 | DF 1 | BATCH NUMBER 040555713003

V ✓ | AVG(ppb) 1.0900 | Intensity 127651.0 | RR — | RD —

---

— 0875

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 11
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 67 02/25/04 10:36

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220308 | M******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0800 | 126345.0 | — | — |

---

TUBE: 68 02/25/04 10:38

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220310 | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0540 | -1794.0 | — | — |

---

TUBE: 69 02/25/04 10:39

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220312 | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0170 | 2466.0 | — | — |

---

TUBE: 70 02/25/04 10:40

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 6 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0900 | 127456.0 |

%RECOVERY = 109.0

---

TUBE: 71 02/25/04 10:42

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 6 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0260 | 1390.0 |

---

TUBE: 72 02/25/04 10:43

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4221482 | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0180 | 6412.0 | — | — |

---

TUBE: 73 02/25/04 10:44

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4221507 | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0390 | 8796.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 12
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 74 02/25/04 10:46

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0260 | 1350.0 | — | — |

---

TUBE: 75 02/25/04 10:47

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 126269.0 | — | — |

---

TUBE: 76 02/25/04 10:49

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | U****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✗ | 0.0220 | 6829.0 | — | — |

---

TUBE: 77 02/25/04 10:50

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | D****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 0.0510 | 10132.0 | — | — |

---

TUBE: 78 02/25/04 10:51

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | R****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0600 | 124563.0 | — | — |

---

TUBE: 79 02/25/04 10:52

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | M****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 126223.0 | — | — |

---

8877

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 13
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 80 02/25/04 10:54

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219022 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0130 | 2838.0 | — | — |

---

TUBE: 81 02/25/04 10:55

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219022 | QA***** | 10 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 2.9300 | 336284.0 | — | — |

---

TUBE: 82 02/25/04 10:56

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCV 7 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 1.0400 | 121797.0 | %RECOVERY = 104.0 |

---

TUBE: 83 02/25/04 10:58

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCB 7 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0990 | -6876.0 |

---

TUBE: 84 02/25/04 10:59

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219669 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0220 | 1860.0 | — | — |

---

TUBE: 85 02/25/04 11:01

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219667 | ******* | 50 | 50 | | 1 | 040555713004 |

9 2-25-04 DV3S1

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0760 | 13018.0 | — | — |

---

TUBE: 86 02/25/04 11:02

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219913 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0290 | 7583.0 | — | — |

---

# Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Water Digestion Logbook
## AA/ICP – 820/1848/5705/5706/6360

Batch # 04055 5705 004

Digest Type: AA/ICP/GF(Sb)-SW846
COC (Y/N): No

Start Time [24:00] ON Hotplate/IN HotBlock: 21:20
End Time [24:00] OFF Hotplate/OUT of HotBlock: 23:25
[May include time for cooling, reagent additions, etc.]

| | Sample # | T | Initial Vol (mL) | Final Vol (mL) | SDG # (3 AA 11/01 2/26/04) | AA (A) | ICP (I) | GF (G) |
|---|---|---|---|---|---|---|---|---|
| 1 | 4219006 | 1 | 50 | 50 | RAV021 | | I | |
| 2 | 9022 LL | | | | RAV02 | | | |
| 3 | 9022 QA | | | | ↓ | | | |
| 4 | 9669 | | | | ARF29 | | | |
| 5 | 9697 | | | | | | | |
| 6 | 9913 | | | | | | | |
| 7 | 9913QA | | | | | | | |
| 8 | 4220283 | | | | | | | |
| 9 | 0301 | | | | | | | |
| 10 | 0301 QA | | | | CLV85 | | | |
| 11 | 0720 | | | | ↓ | | | |
| 12 | 0723 | | ↓ | ↓ | | | | |
| 13 | 0725 | | 25 | 25 | | | | |
| 14 | 0726 | | ↓ | ↓ | | | | |
| 15 | 0727 | | | | | | | |
| 16 | 0902 | | 50 | 50 | | | | |
| 17 | 1331 | | ↓ | ↓ | | | | |
| 18 | 1332 | ↓ | | | | | | |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| Dup (D) | 4219022 | 1 | 50 | 50 | RAV02 | | I | |
| Spike (R) | 9022 | | ↓ | ↓ | ↓ | | ↓ | |
| MSD (M) | 9022 | | | | | | | |
| Blank | BLANK* | | | | | | | |

* A Blank and LCS(s) [same initial volume(s)] were digested in this batch in a similar manner as field samples and adjusted to the same final volume.

| Spike Information | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample # | Sol'n ID | 1 | 2 | 3 | 4 | 5 | 8 |
| 4219022 (R) | Lot # | 365 | 036 | 357 | 346A | 008 | |
| 4219022 (M) | Vol Added (mL) | 1mL | ↓ | ↓ | ↓ | ↓ | |
| QC LCS | Vol Added (mL) | ↓ | ↓ | ↓ | ↓ | ↓ | |
| QC LCSD | | ↓ | ↓ | ↓ | ↓ | ↓ | |

| | Notes | Reagents 1:1 $HNO_3$ Lot # Z Vol Added (mL) | 1:1 HCl Lot # 023 Vol Added (mL) | $HNO_3$ Lot # Y07028 Vol Added (mL) |
|---|---|---|---|---|
| 1 | 08a | | 5mL | 3mL |
| 2 | ↓ | | ↓ | ↓ |
| 3 | 08B | | | |
| 4 | 08a | | | |
| 5 | | | | |
| 6 | ↓ | | | |
| 7 | 08B | | | |
| 8 | 08a Rush due 3/3 | | | |
| 9 | ↓ Rush due 2/27 | | | |
| 10 | 08B | | | |
| 11 | 08a | | | |
| 12 | ↓ | | ↓ | ↓ |
| 13 | 99a Limited sample! Preserved in aliquots Rush! due 2/25 | | 2.5mL | 1.5mL |
| 14 | ↓ ↓ ↓ ↓ | | ↓ | ↓ |
| 15 | | | | |
| 16 | 08a | | 5mL | 3mL |
| 17 | ↓ | | ↓ | ↓ |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| Dup | 08a | | 5mL | 3mL |
| Spike | ↓ | | ↓ | ↓ |
| MSD | | | | |
| Blank | +LCSW Ext. fluid used Lot: 1230022304 A | | | |

Digest Date: 2-25-04 (4) @ AM1SO862 2-24-04

Digested by (Init./Emp. #): AM1SO862

1480.02

53 044341

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1480a.02

044341 53

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# Water Digestion Logbook
## Hg – 5713

Batch # 04055 5713 004

Digest Type Hg-SW846 COC (Y/N) N Start Time 1730

| | Sample # | T | Initial Vol (mL) | Final Vol (mL) | DF | SDG # |
|---|---|---|---|---|---|---|
| 1 | 4219006U | 1 | 50 | 50 | 1 | RAVQ1 |
| 2 | 9022 | ↓ | ↓ | ↓ | ↓ | RAVQ2 |
| 3 | 9022BA | | 10 | | | ↓ |
| 4 | 9669 | | 50 | | | ARF29 |
| 5 | 9697 | | ↓ | | | |
| 6 | 9913 | | ↓ | | | |
| 7 | 9913BA | | 10 | | | |
| 8 | 4220283 | | 50 | | | |
| 9 | 0301 | | 50 | | | |
| 10 | 0301BA | | 10 | | | |
| 11 | 0725 | | 25 | | | |
| 12 | 0726 | | ↓ | | | |
| 13 | 0727 | | ↓ | | | |
| 14 | 0902 | | 50 | | | |
| 15 | 1331 | | ↓ | | | |
| 16 | 1332 | ↓ | ↓ | ↓ | ↓ | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| Dup (D) | 4219006D | 1 | 50 | 50 | 1 | RAVQ1 |
| Spike (R) | 9006R | ↓ | ↓ | ↓ | ↓ | ↓ |
| MSD (M) | 9006M | ↓ | ↓ | ↓ | ↓ | ↓ |
| Blank | BLANK * | ↓ | ↓ | ↓ | ↓ | |

*A Blank and LCS(s) [same initial volume(s)] were digested in this batch in a similar manner as field samples and adjusted to the same final volume.

| QC | Spike Information | | |
|---|---|---|---|
| | LCS | Soln ID | 1 ppm Hg |
| | | Lot # | 055 |
| | | Vol Added (mL) | 0.05mL →50 |
| | LCSD | | 1.0 @ NSM823 2.24.04 |
| | Sample # | Soln ID | ~~0.1~~ ppm Hg |
| | 4219006 (R) | Lot # | 055 |
| | 4219006 (M) | Vol Added (mL) | 0.05mL →50 |

1502.01

67 044362

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| | Notes |
|---|---|
| 1 | Manual Digestion 08A |
| 2 | ↓ |
| 3 | 08B |
| 4 | 08A |
| 5 | ↓ |
| 6 | ↓ |
| 7 | 08B |
| 8 | 08A |
| 9 | ↓ |
| 10 | 08B |
| 11 | 99A · Very limited sample. |
| 12 | ↓ ↓ Hold 15 min $KMnO_4$ |
| 13 | ↓ |
| 14 | 08A |
| 15 | ↓ |
| 16 | ↓ |
| 17 | ↓ |
| 18 | ↓ |
| 19 | ↓ |
| 20 | ↓ |
| Dup | Manual Digestion 08A |
| Spike | ↓ ↓ |
| MSD | |
| Blank | ↓ |

| Reagent | Lot # | Vol. Added (mL)* | Vol. Added (mL)** |
|---|---|---|---|
| $H_2SO_4$ | 287Y42005 | ~~0.3~~ | 2.5 |
| $HNO_3$ | 407028 | 0.15 | 1.25 |
| 5% $KMnO_4$ | 047 | ~~0.9~~ | 7.5 |
| 5% $K_2S_2O_8$ | 042 | ~~0.48~~ | 4.0 |
| $NaCl/NH_2OH.HCl$ | | ~~0.36~~ | ⑧ SEE REVISED LOG NSM823 2.24.04 |

*Automated digester volumes added to each field and QC sample.
**Manual digestion volumes added to each field and QC sample.

Digest Date: 2/24/04

Digested by (Init/Emp#): NSM823

1502a.01

044362 67

# Instrumental Analysis Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

*Where quality is a science.*

## Case Narrative

**CLIENT:** Draper Aden Associates, Inc.
**SDG:** RAV01

**Lancaster Laboratories**
**Instrumental Analysis**

**Sample Numbers:**

| LLI #'s | Sample Code | Comments |
|---|---|---|
| 4219005 | UNIT5 | |

**Analysis:**
Dilutions are listed in the table below:

| Sample | Reactive Cyanide |
|---|---|
| P219021M | 5 |
| P219021S | 5 |
| LCS/F | 250 |
| LCS/S | 10 |

**Quality Control and Non Conformance Summary:**
QC was within specifications.

**Data Interpretation:**
No further interpretation of data is needed.

Case Narrative Reviewed and Approved by:

Catherine L. Cammarata for Date: 3/2/04
Sandra J. Miller, Specialist/Coordinator

# QC Summary

# Lancaster Laboratories

**CLIENT:** Draper Aden Associates, Inc.
**SDG:** RAV01

| Analyte | Batch Numbers | Sample Numbers |
|---|---|---|
| Reactive Cyanide | 04057104201A | 4219005<br>P219021 M, S, B<br>LCS/F<br>LCS/S<br>PBS |

# Lancaster Laboratories

Quality Control Summary
Method Blank
Instrumental Water Quality
Matrix: SOIL
SDG: RAV01

| Analyte | Analysis Date | Method | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|
| Reactive Cyanide | 02/26/04 | AK | 04057104201 | ND | mg/kg | 100 | 100 |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

AK = Alpkem
DOC = Dissolved Organic Carbon
IC = Ion Chromatography
TKN = Total Kjeldahl Nitrogen
TOC = Total Organic Carbon
TOX = Total Organic Halogen
J = Estimated Value
LOQ = Limit of Quantitation
MDL = Method Detection Limit
NA = Not Applicable
ND = Not Detected

# Lancaster Laboratories

Quality Control Summary
Matrix Spike (MS)
Matrix Spike Duplicate (MSD)
Instrumental Water Quality
Matrix: SOIL
SDG: RAV01

| Sample Number | Sample Code | Analyte | Spike Analysis Date | ME | Batch # | Sample Result | MS Spike Added | MSD Spike Added | MS Result | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | %RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P219021 | 9021R | Reactive Cyanide | 02/26/04 | AK | 04057104201A | ND | 997.5 | 997.5 | ND | ND | mg/kg | NA | NA | NA - NA | NA | 17 |
| P219021 | 9021M | | | | | | | | | | | | | | | |

Comments:

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

If the background result was more than four times the spike added amount the percent recovery is program deleted.

ABBREVIATION KEY

| | |
|---|---|
| AK = Alpkem | J = Estimated Value < LOQ |
| DOC = Dissolved Organic Carbon | LOQ = Limit of Quantitation |
| IC = Ion Chromatography | ME = Method |
| RA = Rapid Analyzer | NA = Not Applicable |
| TKN = Total Kjeldahl Nitrogen | ND = Non Detected |
| TOC = Total Organic Carbon | R = Spike |
| TOX = Total Organic Halogen | M = Spike Duplicate |
| | * = Out of Specification |

# Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Instrumental Water Quality
Matrix: SOIL
SDG: RAV01

| Batch Numbers | Analyte | Analysis Date | ME | True LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
|---|---|---|---|---|---|---|---|---|---|---|
| 04057104201 | Reactive Cyanide | 02/26/04 | AK | 997.5 | 990.635 | NA | mg/kg | 926 - 1134 | NA | NA |

ABBREVIATION KEY

| | |
|---|---|
| AK = Alpkem | ME = Method |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| IC = Ion Chromatography | ND = Not Detected |
| TKN = Total Kjeldahl Nitrogen | * = Out of Specification |
| TOC = Total Organic Carbon | RA = Rapid Analyzer |
| TOX = Total Organic Halogen | |

# Lancaster Laboratories

Quality Control Summary
Initial And Continuing Calibration
Instrumental Analysis
Reactive Cyanide
SDG: RAV01
Instrument Identification: 4758

| Initial Calibration Verification/Blank | True Value | Result (mg/L) | % Recovery |
|---|---|---|---|
| ICV | 0.15 | 0.14940 | 100 |
| ICB | 0 | ND | NA |

| Continuing Calibration Verification/Blank | True Value | Result (mg/L) | % Recovery |
|---|---|---|---|
| CCV1 | 0.05 | 0.05220 | 104 |
| CCB 1 | 0 | ND | NA |
| CCV2 | 0.15 | 0.15390 | 103 |
| CCB 2 | 0 | ND | NA |

*=Out of Specifications

Initial Calibration Date: 02/26/04
Continuing Calibration Dates: 02/26/04

| | True Value (mg/L) | Acceptance Range |
|---|---|---|
| ICV/CCV | Varies | +/- 10% |
| ICB/CCB | 0 | < LOQ |

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 01/09/04

| Analysis Number | Analysis Name | Method | True MDL | True LOQ | Units |
|---|---|---|---|---|---|
| 0217 | Total Kjeldahl Nitrogen | AK | 0.5 | 1 | mg/l |
| 0219 | Nitrite Nitrogen | AK | 0.015 | 0.05 | mg/l |
| 0220/7882 | Nitrate Nitrogen | AK | 0.04 | 0.1 | mg/l |
| 0224 | Chloride | IC | 0.3 | 0.4 | mg/l |
| 0227/0345 | Total Phosphorus | AK | 0.04 | 0.05 | mg/l |
| 0228 | Sulfate | IC | 0.3 | 1 | mg/l |
| 0237 | Total Cyanide, EPA | AK | .005 | .010 | mg/l |
| 0241 | Free Cyanide | AK | 0.004 | 0.005 | mg/l |
| 0273/0354 | TOC (Water) | TOC | 0.5 | 2 | mg/l |
| 0332/1506 | Nitrite-Nitrogen | IC | 0.08 | 0.1 | mg/l |
| 0368 | Nitrate-Nitrogen | IC | 0.08 | 0.1 | mg/l |
| 0434 | Phenol (Water), EPA | AK | 0.012 | 0.04 | mg/l |
| 0574/0555 | TOX (Water) | TOX | 7 | 20 | ug/l |
| 1123 | Reactive Cyanide | AK | 100 | 100 | mg/kg |
| 1503 | TOX (Solid) | TOX | 70 | 200 | mg/kg |
| 1504 | Fluoride | IC | 0.08 | 0.1 | mg/l |
| 1505 | Bromide | IC | 0.4 | 0.5 | mg/l |
| 1511 | Total Kjeldahl Nitrogen | AK | 150 | 400 | mg/kg |
| 1546 | Soluble Phosphorus | AK | 0.05 | 0.15 | mg/l |
| 1549 | Amenable Cyanide, Waters | AK | .005 | .010 | mg/l |
| 1550 | Total Carbon | TC | 0.6 | 2 | mg/l |
| 2079/0383 | TOC Combustion | TOC | 60 | 170 | mg/kg |
| 2109 | Titrimetric Cyanide | NA | 0.6 | 2 | mg/l |
| 2111/2118/2121/7 | Moisture | RA | 1 | 1 | % |
| 2353 | CLP Moisture | RA | 1 | 1 | % |
| 2393 | Phenol (Water), SW-846 | AK | 0.009 | 0.03 | mg/l |

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 01/09/04

| Analysis Number | Analysis Name | Method | True MDL | True LOQ | Units |
|---|---|---|---|---|---|
| 3343 | CLP Cyanide (Water) | AK | 4 | 10 | ug/l |
| 5892 | Hexavalent Chromium (Sol | IC | 0.2 | 1 | mg/kg |
| 5893/5894 | Total Phosphorus (Solid) | AK | 10 | 20 | mg/kg |
| 5895 | Total CN (Solid) | AK | 0.18 | 0.5 | mg/kg |
| 5898 | Amenable Cyanide, Solids | AK | 0.18 | 0.5 | mg/kg |
| 5910 | CLP Cyanide (Solid) | AK | 0.2 | 0.5 | mg/kg |
| 5912 | Phenol (Solid) | AK | 1.2 | 3.5 | mg/kg |
| 5991 | Nitrite-Nitrogen (solid) | AK | 0.2 | 0.6 | mg/kg |
| 5992 | Nitrate-Nitrogen (solid) | AK | 0.6 | 1.7 | mg/kg |
| 6467 | Hexavalent Chromium (Wat | IC | 5 | 10 | ug/l |
| 7332 | Fluoride, Solid | IC | 0.8 | 1 | mg/kg |
| 7333 | Chloride, Solid | IC | 3 | 4 | mg/kg |
| 7334 | Nitrite, Solid | IC | 0.8 | 1 | mg/kg |
| 7335 | Bromide, Solid | IC | 4 | 5 | mg/kg |
| 7336 | Nitrate, Solid | IC | 0.8 | 1.5 | mg/kg |
| 7338 | Sulfate, Solid | IC | 3 | 10 | mg/kg |
| 7547 | Dissolved Organic Carbon | TOC | 0.6 | 2 | mg/l |
| 8255 | Total Cyanide, SW-846 | AK | .005 | .010 | mg/l |

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

# Raw Data

LANCASTER LABORATORIES

CYANIDE REACTIVITY

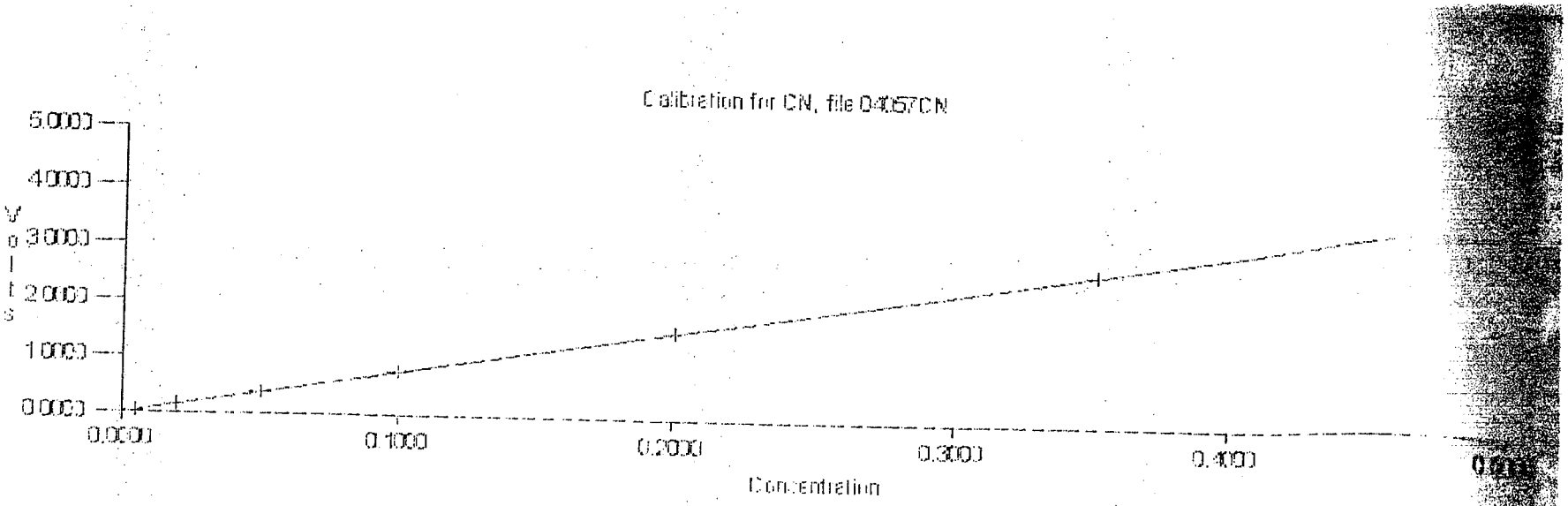
Report for 04057CN.ACF [S1]
Date: 2/26/04
Base Configuration: CN

| Sam# | Cup# | Identifier | Dil | Date | Time | Volts | CN mg/L | Status |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | SYNC | 1.000 | 2/26/04 | 2:50:56 PM | 2.9683 | 0.3435 | |
| 2 | 2 | RINSE | 1.000 | 2/26/04 | 2:52:05 PM | 0.3468 | 0.0002 | NP |
| 3 | 3 | W | 1.000 | 2/26/04 | 2:53:15 PM | 0.3460 | 0.0001 | NP |
| 4 | 4 | C1 | 1.000 | 2/26/04 | 2:54:25 PM | 0.3790 | 0.0045 | NP |
| 5 | 5 | C2 | 1.000 | 2/26/04 | 2:55:35 PM | 0.4965 | 0.0199 | |
| 6 | 6 | C3 | 1.000 | 2/26/04 | 2:56:45 PM | 0.7258 | 0.0501 | |
| 7 | 7 | C4 | 1.000 | 2/26/04 | 2:57:54 PM | 1.1088 | 0.1003 | |
| 8 | 8 | C5 | 1.000 | 2/26/04 | 2:59:04 PM | 1.8754 | 0.2008 | |
| 9 | 9 | C6 | 1.000 | 2/26/04 | 3:00:14 PM | 3.0104 | 0.3495 | |
| | | Curve Type | | | | | 1st Order | |
| | | Correlation | | | | | 0.99999 | |
| | | Intercept | | | | | -0.0007 | |
| | | Slope | | | | | 7.6352 | |
| 10 | 10 | RINSE | 1.000 | 2/26/04 | 3:01:24 PM | 0.3446 | 0.0004 | NP |
| 11 | 11 | W | 1.000 | 2/26/04 | 3:02:34 PM | 0.3416 | 0.0001 | NP |
| 12 | 12 | ICV | 1.000 | 2/26/04 | 3:03:44 PM | 1.4816 | 0.1494 | |
| 13 | 13 | W | 1.000 | 2/26/04 | 3:04:54 PM | 0.3417 | 0.0001 | NP |
| 14 | 14 | REACBLK | 1.000 | 2/26/04 | 3:06:04 PM | 0.3365 | -0.0006 | NP |
| 15 | 15 | REACFLSK | 250.000 | 2/26/04 | 3:07:14 PM | 1.4703 | 36.9750 | |
| 16 | 16 | REACSTD | 10.000 | 2/26/04 | 3:08:23 PM | 0.7884 | 0.5857 | |
| 17 | 17 | 4217214 | 1.000 | 2/26/04 | 3:09:33 PM | 0.3373 | -0.0005 | NP |
| 18 | 18 | 4219005 | 1.000 | 2/26/04 | 3:10:43 PM | 0.3352 | -0.0008 | NP |
| 19 | 19 | 4219021 | 1.000 | 2/26/04 | 3:11:53 PM | 0.3373 | -0.0005 | NP |
| 20 | 20 | 4219668 | 1.000 | 2/26/04 | 3:13:03 PM | 0.3355 | -0.0008 | NP |
| 21 | 21 | 4219912 | 1.000 | 2/26/04 | 3:14:13 PM | 0.3346 | -0.0009 | NP |
| 22 | 22 | 4220300 | 1.000 | 2/26/04 | 3:15:23 PM | 0.3349 | -0.0008 | NP |
| 23 | 23 | 4219021-R | 5.000 | 2/26/04 | 3:16:33 PM | 1.0981 | 0.4956 | |
| 24 | 24 | CCV1 | 1.000 | 2/26/04 | 3:17:43 PM | 0.7397 | 0.0522 | |
| 25 | 25 | W | 1.000 | 2/26/04 | 3:18:53 PM | 0.3422 | 0.0001 | NP |
| 26 | 26 | 4219021-M | 5.000 | 2/26/04 | 3:20:02 PM | 1.1959 | 0.5597 | |
| 27 | 27 | 4223331 | 1.000 | 2/26/04 | 3:21:12 PM | 0.3361 | -0.0006 | NP |
| 28 | 28 | LCSW | 1.000 | 2/26/04 | 3:22:22 PM | 1.8312 | 0.1952 | |

LANCASTER LABORATORIES

CYANIDE REACTIVITY

| Report for 04057CN.ACF [S1] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date:2/26/04 | | | | | | | | |
| Base Configuration: CN | | | | | | | | |
| Sam# | Cup# | Identifier | Dil | Date | Time | Volts | CN mg/L | Status |
| 29 | 29 | PBW | 1.000 | 2/26/04 | 3:23:32 PM | 0.3365 | -0.0004 | NP |
| 30 | 30 | 4222322 | 1.000 | 2/26/04 | 3:24:42 PM | 0.3370 | -0.0004 | NP |
| 31 | 31 | 4222930 | 1.000 | 2/26/04 | 3:25:52 PM | 0.3375 | -0.0002 | NP |
| 32 | 32 | 4222932-U | 1.000 | 2/26/04 | 3:27:02 PM | 0.5247 | 0.0243 | |
| 33 | 33 | 4222932-R | 1.000 | 2/26/04 | 3:28:12 PM | 1.9465 | 0.2106 | |
| 34 | 34 | 4222932-D | 1.000 | 2/26/04 | 3:29:22 PM | 0.5113 | 0.0227 | |
| 35 | 35 | LCSW | 1.000 | 2/26/04 | 3:30:32 PM | 1.8473 | 0.1977 | |
| 36 | 36 | CCV2 | 1.000 | 2/26/04 | 3:31:42 PM | 1.5121 | 0.1539 | |
| 37 | 37 | W | 1.000 | 2/26/04 | 3:32:51 PM | 0.3376 | 0.0001 | NP |
| 38 | 38 | PBW | 1.000 | 2/26/04 | 3:34:01 PM | 0.3349 | -0.0003 | NP |
| 39 | 39 | 4221475 | 1.000 | 2/26/04 | 3:35:11 PM | 0.7136 | 0.0493 | NP |
| 40 | 40 | 4223084-U | 1.000 | 2/26/04 | 3:36:21 PM | 0.4836 | 0.0192 | NP |
| 41 | 41 | 4223085-R | 1.000 | 2/26/04 | 3:37:31 PM | 1.9313 | 0.2088 | |
| 42 | 42 | 4223087-D | 1.000 | 2/26/04 | 3:38:41 PM | 0.6201 | 0.0371 | NP |
| 43 | 43 | 4223088 | 1.000 | 2/26/04 | 3:39:51 PM | 0.5647 | 0.0298 | NP |
| 44 | 44 | 4223089 | 1.000 | 2/26/04 | 3:41:01 PM | 0.3411 | 0.0006 | NP |
| 45 | 45 | LCSW | 1.000 | 2/26/04 | 3:42:11 PM | 1.7057 | 0.1793 | |
| 46 | 46 | PBW | 1.000 | 2/26/04 | 3:43:21 PM | 0.3361 | -0.0001 | NP |
| 47 | 47 | 4221167-U | 1.000 | 2/26/04 | 3:44:30 PM | 0.3329 | -0.0005 | NP |
| 48 | 48 | CCV3 | 1.000 | 2/26/04 | 3:45:41 PM | 1.8885 | 0.2033 | |
| 49 | 49 | W | 1.000 | 2/26/04 | 3:46:50 PM | 0.3373 | 0.0001 | NP |
| 50 | 50 | 4221167-D | 1.000 | 2/26/04 | 3:48:00 PM | 0.3333 | -0.0004 | NP |
| 51 | 51 | 4221167-R | 1.000 | 2/26/04 | 3:49:10 PM | 1.7640 | 0.1870 | |
| 52 | 52 | 4221168 | 1.000 | 2/26/04 | 3:50:20 PM | 0.3352 | -0.0002 | NP |
| 53 | 53 | 4221169 | 1.000 | 2/26/04 | 3:51:30 PM | 0.3333 | -0.0004 | NP |
| 54 | 54 | 4221170 | 1.000 | 2/26/04 | 3:52:40 PM | 0.3318 | -0.0006 | NP |
| 55 | 55 | 4221239 | 1.000 | 2/26/04 | 3:53:50 PM | 0.3491 | 0.0016 | NP |
| 56 | 56 | 4221240 | 1.000 | 2/26/04 | 3:55:00 PM | 0.3622 | 0.0033 | NP |
| 57 | 57 | 4221241 | 1.000 | 2/26/04 | 3:56:10 PM | 0.3471 | 0.0013 | NP |
| 58 | 58 | 4221464 | 1.000 | 2/26/04 | 3:57:19 PM | 0.3321 | -0.0006 | NP |
| 59 | 59 | LCSW | 1.000 | 2/26/04 | 3:58:29 PM | 1.8736 | 0.2013 | |
| 60 | 60 | CCV2 | 1.000 | 2/26/04 | 3:59:39 PM | 1.5110 | 0.1538 | |




1st Order Y=BX+A
B=7.8652 A=-0.0007
Correlation=0.99963

LANCASTER LABORATORIES

CYANIDE
REACTIVITY

FEB 26 2004

P5995

Analysis: Total Cyan
Date of Analysis: 2/26/04
Analyst: 1505 KWE1505

# Lancaster Laboratories Instrumental Water Quality Report

| | |
|---|---|
| Analyte: | Total Cyanide |
| Run Time: | 14:50:56 |
| Sample Table Name: | |
| IAG Run Name: | 0405703C02 |
| Instrument Number: | 04758 |
| Detector ID: | 9037 |

Calibration Information

| | |
|---|---|
| Calibration Type: | LINEAR |
| Number of Calibrants: | 6 |

| | Volts | Calc Conc | True Conc |
|---|---|---|---|
| S1 | 0.3790 | 0.0045 | 0.005 |
| S2 | 0.4965 | 0.0199 | 0.020 |
| S3 | 0.7258 | 0.0501 | 0.050 |
| S4 | 1.1088 | 0.1003 | 0.100 |
| S5 | 1.8754 | 0.2008 | 0.200 |
| S6 | 3.0104 | 0.3495 | 0.350 |

| QC Values | True Value | Range |
|---|---|---|
| ICV Waters (mg/l) | 0.15 | 0.13425 - 0.1656 |
| ICB/CCB (mg/l) | | 0 - 0.01 |
| CCV1 (mg/l) | 0.05 | 0.04475 - 0.0552 |
| CCV2 (mg/l) | 0.15 | 0.13425 - 0.1656 |
| CCV3 (mg/l) | 0.2 | 0.179 - 0.2208 |
| CRDL (mg/l) | | Not Applicable |
| LCS Waters (mg/l) | 0.2 | 0.179 - 0.2208 |
| PB Waters (mg/l) | 0 | 0 - 0.01 |
| LCS Solids (mg/kg) | 10 | 8.95 - 11.04 |
| PB Solids (mg/kg) | 0 | 0 - 0.5 |

Curve Information recorded in:

Book#:042203
Page#:038

Status flags
AR - above range
BR - below range
NP - no peak found
UM - user modified

Analyst : KWE1505 Date: 2/27/04

Verified By: [illegible] Date: 2/27/04

8897

RUN NAME: 04057CN.
PAGE: 1
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 1 Date: 2/26/04 Time: 14:50:56 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| SYNC | 1 | 2.9683 | 0.34350 | |

Comments:

Cup# 2 Date: 2/26/04 Time: 14:52:05 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| RINSE | 1 | 0.3468 | 0.00020 | NP |

Comments:

Cup# 3 Date: 2/26/04 Time: 14:53:15 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S0 | 1 | 0.3460 | 0.00010 | NP |

Comments:

Cup# 4 Date: 2/26/04 Time: 14:54:25 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S1 | 1 | 0.3790 | 0.00450 | NP |

Comments:

Cup# 5 Date: 2/26/04 Time: 14:55:35 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S2 | 1 | 0.4965 | 0.01990 | |

Comments:

Cup# 6 Date: 2/26/04 Time: 14:56:45 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S3 | 1 | 0.7258 | 0.05010 | |

Comments:

Cup# 7 Date: 2/26/04 Time: 14:57:54 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S4 | 1 | 1.1088 | 0.10030 | |

Comments:

Cup# 8 Date: 2/26/04 Time: 14:59:04 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S5 | 1 | 1.8754 | 0.20080 | |

Comments:

Cup# 9 Date: 2/26/04 Time: 15:00:14 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S6 | 1 | 3.0104 | 0.34950 | |

Comments:

RUN NAME: 04057CN.
PAGE: 2
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 10 Date: 2/26/04 Time: 15:01:24 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| RINSE | 1 | 0.3446 | 0.00040 | NP |

Comments:

Cup# 11 Date: 2/26/04 Time: 15:02:34 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| W | ******* | 1 | 0.0000 | 0 | 0.3416 |

| Raw Result (mg/l ) | Calc Result (mg/l ) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.00010 | 0.00010 | NP | | |

Comments:

Cup# 12 Date: 2/26/04 Time: 15:03:44 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| ICV | 1 | 1.4816 | 0.14940 | |

% Recovery = 100

Comments: IS

Cup# 13 Date: 2/26/04 Time: 15:04:54 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| ICB | 1 | 0.3417 | 0.00010 | NP |

Comments: IS

Cup# 14 Date: 2/26/04 Time: 15:06:04 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| PB | ******* | 1 | 10.0000 | 500 | 0.3365 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00060 | -0.03000 | NP | 04057104201A | |

Comments:

Cup# 15 Date: 2/26/04 Time: 15:07:14 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| LCS | **F**** | 250 | 10.0000 | 260 | 1.4703 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.14790 | 961.35000 | | 04057104201A | |

Comments:

Cup# 16 Date: 2/26/04 Time: 15:08:23 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| LCS | **S**** | 10 | 10.0000 | 500 | 0.7884 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.05857 | 29.28500 | | 04057104201A | |

Comments: TV = 997.5 mg/kg Calc Value = 990.635 mg/kg

RUN NAME: 04057CN.
PAGE: 3
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 17 Date: 2/26/04 Time: 15:09:33 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4217214 | ******* | 1 | 10.1850 | 500 | 0.3373 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00050 | -0.02455 | NP | 04057104201A | |

Comments:

Cup# 18 Date: 2/26/04 Time: 15:10:43 SDG: RAV01

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219005 | ******* | 1 | 10.2660 | 500 | 0.3352 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03896 | NP | 04057104201A | |

Comments:

Cup# 19 Date: 2/26/04 Time: 15:11:53 SDG: RAV02

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219021 | U******* | 1 | 10.1620 | 500 | 0.3373 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00050 | -0.02460 | NP | 04057104201A | |

Comments:

Cup# 20 Date: 2/26/04 Time: 15:13:03 SDG: ARF29

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219668 | ******* | 1 | 10.0790 | 500 | 0.3355 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03969 | NP | 04057104201A | |

Comments:

Cup# 21 Date: 2/26/04 Time: 15:14:13 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219912 | ******* | 1 | 10.0580 | 500 | 0.3346 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00090 | -0.04474 | NP | 04057104201A | |

Comments:

Cup# 22 Date: 2/26/04 Time: 15:15:23 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4220300 | ******* | 1 | 10.3860 | 500 | 0.3349 |

| Raw Result (mg/l ) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03851 | NP | 04057104201A | |

Comments:

RUN NAME: 04057CN.
PAGE: 4
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 23 Date: 2/26/04 Time: 15:16:33 SDG: RAV02

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219021 | R****** | 5 | 10.0430 | 500 | 1.0981 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.09912 | 24.67390 | | 04057104201A | |

Comments: SA = ~~1000 mg/kg~~ 997.5 mg/kg  % Rec = 2
#③ CWE1505 2/27/04

Cup# 24 Date: 2/26/04 Time: 15:17:43 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
|---|---|---|---|---|
| CCV1 | 1 | 0.7397 | 0.05220 | |

% Recovery = 104

Comments: IS

Cup# 25 Date: 2/26/04 Time: 15:18:53 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
|---|---|---|---|---|
| CCB 1 | 1 | 0.3422 | 0.00010 | NP |

Comments: IS

Cup# 26 Date: 2/26/04 Time: 15:20:02 SDG: RAV02

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219021 | M****** | 5 | 10.0530 | 500 | 1.1959 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.11194 | 27.83746 | | 04057104201A | |

Comments: SA = ~~1000 mg/kg~~ 997.5 mg/kg  % Rec = 3
#③ CWE1505 2/27/04

Cup# 27 Date: 2/26/04 Time: 15:21:12 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4223331 | ******* | 1 | 10.0220 | 500 | 0.3361 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00060 | -0.02993 | NP | 04057104201A | |

Comments:

Cup# 28 Date: 2/26/04 Time: 15:22:22 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| LCSW | ******* | 1 | 50.0000 | 50 | 1.8312 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.19520 | 0.19520 | | 04057102101A | |

Comments: TV = 0.2 mg/L  % Rec = 98  IS

RUN NAME: 04057CN.
PAGE: 6
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

| Cup# 35 | Date: 2/26/04 | Time: 15:30:32 | SDG: | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| LCSW | ******* | 1 | 50.0000 | 50 | 1.8473 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.19770 | 0.19770 | | 04057117101A | |

Comments: TV = 0.2mg/L % Rec = 99 IS

| Cup# 36 | Date: 2/26/04 | Time: 15:31:42 | SDG: | |
|---|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCV2 | 1 | 1.5121 | 0.15390 | |

% Recovery = 103

Comments: IS

| Cup# 37 | Date: 2/26/04 | Time: 15:32:51 | SDG: | |
|---|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCB 2 | 1 | 0.3376 | 0.00010 | NP |

Comments: IS

| Cup# 38 | Date: 2/26/04 | Time: 15:34:01 | SDG: | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| PBW | ******* | 1 | 50.0000 | 50 | 0.3349 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00030 | -0.00030 | NP | 04057117101A | |

Comments: <LOQ IS

| Cup# 39 | Date: 2/26/04 | Time: 15:35:11 | SDG: TBE43 | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4221475 | ***A*** | 1 | 50.0000 | 50 | 0.7136 |

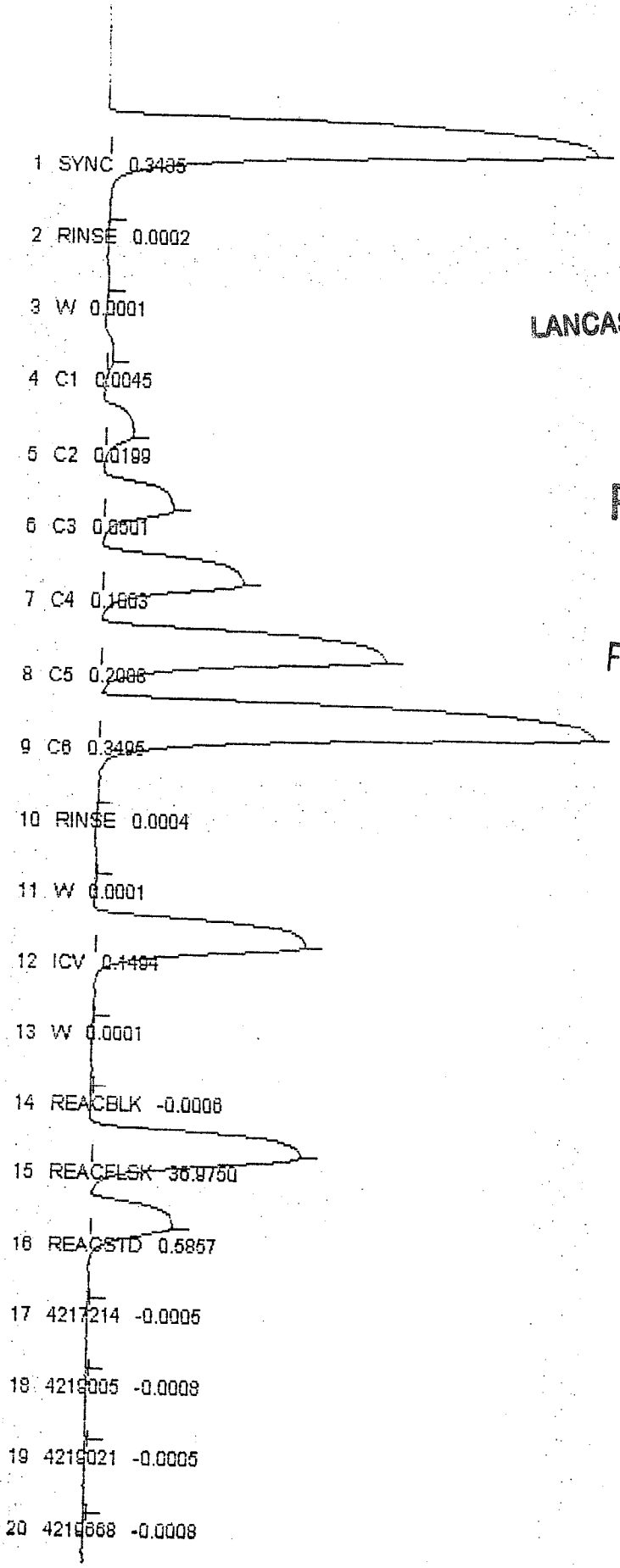
| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.04930 | 0.04930 | NP | 04057117101A | |

Comments: See Cup 74

| Cup# 40 | Date: 2/26/04 | Time: 15:36:21 | SDG: TBE44 | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4223084 | U**A*** | 1 | 50.0000 | 50 | 0.4836 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.01920 | 0.01920 | NP | 04057117101A | |

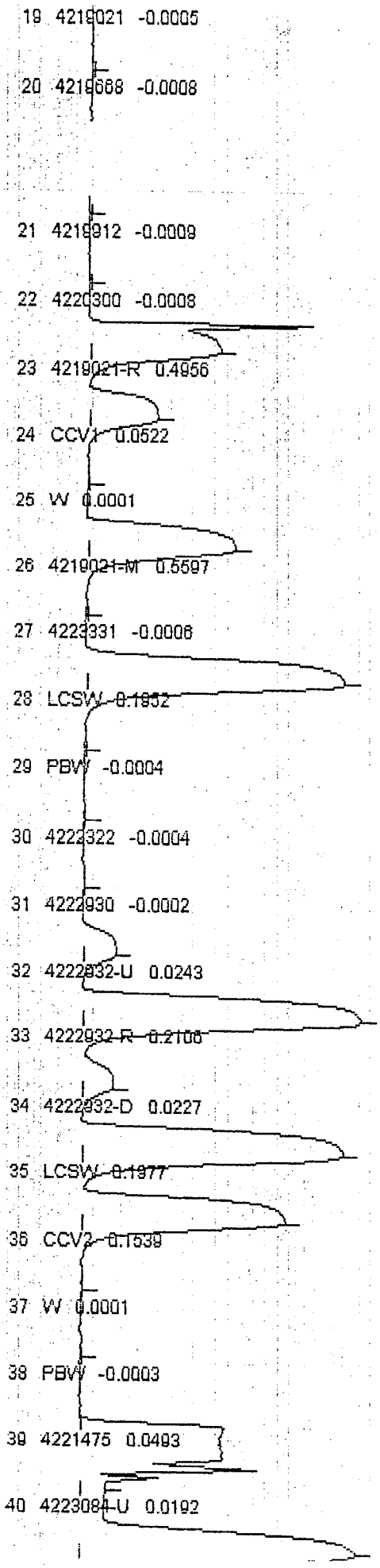
Comments: See Cup 75




LANCASTER LABORATORIES

CYANIDE
REACTIVITY

FEB 26 2004




LANCASTER LABORATORIES

CYANIDE
REACTIVITY

FEB 26 2004

C:\FASPACV\4057CN.ACF System 1 Channel 1 [CN]

6984

# Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601-5994

# RAW DATA LOGBOOK

## REACTIVITY (Prep) Analysis #1121

## REACTIVE SULFIDE (Titrimetric) Analysis #1122

Batch #: 040577 | 112 | 101 | A

Init./Emp. #: SEH416 Date: 2/26/04 Time: 0800 Balance I.D. #: 6640

$Na_2S_2O_3$ Normality: 0.0249N $Na_2S_2O_3$ Ref. (Book/Pg.): 044338 p. 7

Iodine Normality: 0.025N Iodine Ref. (Book/Pg.): 042899 p. 59

Sulfide Std. Ref. (Book/Pg.): 044338 p. 14 Cyanide Std. Ref. (Book/Pg.): 037470/50/17-18

| Sample Number | Sample Wt. (g) | D.F. | $Na_2S_2O_3$ (mL) | Iodine (mL) | Calc. Value (mg/kg) | LOQ (mg/kg) | Comments |
|---|---|---|---|---|---|---|---|
| BLANK | 10.002 | 1 | 10.15 | 10 | 0 | 100 | (13) |
| SULFIDE | 10.237 | 1 | 4.95 | 10 | 500.1 | ↓ | (15) 88% |
| CYANIDE | 10.004 | 1 | — | — | — | — | TV = 997.5 mg/l |
| 4217214 | 10.185 | 1 | 10.1 | 10 | 0 | 100 | — 21A |
| 4219005 | 10.266 | 1 | 10.05 | 10 | 2.9 | ↓ | — ↓ |
| 4219021 | 10.162 | 1 | 10.2 | 10 | 0 | ↓ | — ↓ |
| 4219668 | 10.079 | 1 | 10.0 | 10 | 5.0 | ↓ | — 74A |
| 4219912 | 10.058 | 1 | 10.0 | 10 | 8.0 | ↓ | — ↓ |
| 4220300 | 10.386 | 1 | 10.05 | 10 | 2.9 | ↓ | — 21A |
| CYANIDE 4219021 MS | 10.043 | 1 | — | — | — | — | + 10 ml of 997.5 mg/l |
| CYANIDE 4219021 MSD | 10.053 | 1 | — | — | — | — | ↓ ↓ |
| SULFIDE 4219668 MS | 10.305 | 1 | 8.05 | 10 | 196.6 | 100 | SA = 553 (15) 56% 74A + 10 ml of 570 mg/l |
| SULFIDE 4219668 MSD | 10.343 | 1 | 8.5 | 10 | 152.5 | ↓ | SA = 551 (15) 28% R = 25 + 10 ml of 570 mg/l ↓ |
| 4223331 | 10.022 | 1 | 2.75 | 10 | 729.9 | ↓ | — 21A |

D.F. = Dilution Factor

Verified by: RH/355 Date: 2/26/04

# Leachate Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Extraction Logbook

Date 2-23-04 A
Tech 1 CH 1230
Tech 2 —

| Sample # | Ana. # 947 or 1339 | Particle size appropriate? | Matrix: Soil/solid sludge Ash | Pre-filtration? | Initial pH | pH Meter ID | 2nd pH | pH Meter ID | Thermometer ID | Balance ID | Sample Weight (g) | Extraction Fluid Volume (mL) | Extraction Fluid Type | Vessel ID | Tumbler ID | pH Meter ID | Final pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4219006 | 947 | Y | Soil Solid | Y | 8.90 | 28- 3 | 1.63 | 28- 3 | 28-1 | 28- 1 | 100.0 | 2000.0 | 1 | W13 A | 28- | 28- 3 | 6.18 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | 100.0 | 2000.0 | 2 | W16 B | 123 | 28- 6 | |
| 4219022 | 947 | Y | Soil Solid | Y | 10.07 | 28- 3 | 2.34 | 28- 3 | 28-1 | 28- 1 | 100.0 | 2000.0 | 1 | W11 A | 28- | 28- 3 | 6.69 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | 100.0 | 2000.0 | 2 | W19 B | 123 | 28- 6 | |
| 4219669 | 947 | Y | Soil Solid | Y | 9.46 | 28- 3 | 1.52 | 28- 3 | 28-1 | 28- 1 | 150.0 | 3000.0 | 1 | W14 C | 28- | 28- 3 | 5.45 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | 37 1230 | 123 | 28- 6 | |
| 4219697 | 947 | Y | Soil Solid | Y | 8.76 | 28- 3 | 1.34 | 28- 3 | 28-1 | 28- 1 | 100.0 | 2000.0 | 1 | | 28- | 28- 3 | 5.02 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | P7 | 123 | 28- 6 | |
| 4219913 | 947 | Y | Soil Solid | Y | 7.99 @ 1236 ~~8.80~~ | 28- 3 | 3.20 | 28- 3 | 28-1 | 28- 1 | 84.80 | 1696 | 1 | | 28- | 28- 3 | 5.38 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | W26 | 123 | 28- 6 | |
| 4220283 | 947 | Y | Soil Solid | Y | 9.17 | 28- 3 | 1.28 | 28- 3 | 28-1 | 28- 1 | 160.0 | 2000.0 | 1 | | 28- | 28- 3 | 5.01 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | P41 | 123 | 28- 6 | |
| 4220301 | 947 | Y | Soil Solid | Y | 4.63 | 28- 3 | — | 28- 3 | 28-1 | 28- 1 | 150.0 | 3000.0 | 1 | | 28- | 28- 3 | 4.89 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | 34 | 123 | 28- 6 | |
| 4220720 | 947 | Y | Soil Solid | Y | 6.60 | 28- 3 | 1.31 | 28- 3 | 28-1 | 28- 1 | 100.0 | 2000.0 | 1 | | 28- | 28- 3 | 4.97 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | P45 | 123 | 28- 6 | |
| 4220723 | 947 | Y | Soil Solid | Y | 6.30 | 28- 3 | 1.29 | 28- 3 | 28-1 | 28- 1 | ↓ | ↓ | 1 | | 28- | 28- 3 | 5.00 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | P47 | 123 | 28- 6 | |
| 4220902 | 947 | Y | Soil Solid | Y | 8.82 | 28- 3 | 1.32 | 28- 3 | 28-1 | 28- 1 | | | 1 | | 28- | 28- 3 | 5.20 |
| | 1339 | N | Sludge Ash | N | | 28- 6 | | 28- 6 | | 28- 2 | | | 2 | P48 | 123 | 28- 6 | |

Comments:

Verified by: 75092 Date: 2/27/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

**Extraction Started (date/time)** 2.23-04 (1230) by QJ 1230

# TCLP Leachate Preservation/Batch Sheet

**Extraction Ended (date/time)** 2-24-04 (0630) by QJ 1230

Batch #: 04054 - 970 - 0947A

Waste Type: (Soil) Solid Sludge Ash _____ Filtration

| | Sample # | Ext. Fluid | Lot Number | Metals * $HNO_3$ pH<2 | | BNA * $Na_2S_2O_3$ | | Pest/Herb* $Na_2S_2O_3$ | | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| BLANK | 4221331 | 1 | 1230022304A | ✓ | 1P | ✓ | 1G | ✓ | 1G | |
| 1 | 4219006 | 1 | | ✓ | 1P | ✓ | 1G | ✓ | 1G | |
| 2 | 4219022 | 1 | | SPK | 2P | SPK | 2G | SPK | 2G | |
| 3 | 4219669 | 1 | | ✓ | 1P | ✓ | 1G | ✓ | 1G | |
| 4 | 4219697 | 1 | | ✓ | 1P | | | | | |
| 5 | 4220720 | 1 | | ✓ | 1P | | | | | |
| 6 | 4220723 | 1 | | ✓ | 1P | | | | | |
| 7 | 4220902 | 1 | ↓ | ✓ | 1P | | | | | |
| 8 | | | | | | | | | | |
| 9 44 | 4221332 Mixed | | 1230022304A | ✓ | 1P | ✓ | 1G | ✓ | 1G | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

*Check if Sample gets these parameters.
SPK is a batch matrix spike.

Volume of metals spike bottle: 200 mL

Metals Spike Lot #1: 237152A Volume Added: 4mL

Lot #2: 237152A Volume Added: 4mL

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# SPLP / TCLP VOLATILE EXTRACTION LOGBOOK

Date: 2-23-04
Tech 1: M.O.S. 1457
Tech 2: _____

| Sample # | Analysis # 946, 1339 2573 or 8792 | Matrix: Soil/Solid Sludge Ash | Pre-Filtration? | Balance ID | Weigh of residue extracted (g) | Volume of extraction fluid (mL) | Extraction Fluid | Vessel ID | Tumbler ID |
|---|---|---|---|---|---|---|---|---|---|
| TCLP 2573 BLK | 946, 1339 | soil solid sludge | Y | 28- 1 | | | TCLP #1 | | 28- 4 28-5 |
| 4221333 | (2573), 8792 | ash filtration | (N) | 28- 2 | ——— | 500.00 | DI $H_2O$ | 04 | 28- 7 28-8 |
| 4219007 | (946), 1339 | (soil) solid sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | (N) | (28- 2) | 25.0 | 500.00 | DI $H_2O$ | 01 | 28- 7 28-8 |
| 4219023 | (946), 1339 | (soil) solid sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | (N) | (28- 2) | 25.0 | 500.00 | DI $H_2O$ | 02 | 28- 7 28-8 |
| 4219670 | (946), 1339 | (soil) solid sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | (N) | (28- 2) | 25.0 | 500.00 | DI $H_2O$ | 06 | 28- 7 28-8 |
| 4219914 | (946), 1339 | soil solid (sludge) | (Y) | 28- 1 | (3) MOS 2-23-04 | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | N | (28- 2) | 423.49 | 470 | DI $H_2O$ | 07 | 28- 7 28-8 |
| 4220721 | (946), 1339 | (soil) solid sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | (N) | (28- 2) | 25.00 | 500.00 | DI $H_2O$ | 11 | 28- 7 28-8 |
| 4220724 | (946), 1339 | (soil) solid sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | 2573, 8792 | ash filtration | (N) | (28- 2) | 25.00 | 500.00 | DI $H_2O$ | 08 | 28- 7 28-8 |
| 4220302 | 946, 1339 | soil (solid) sludge | Y | 28- 1 | | | (TCLP #1) | | 28- 4 (28-5) |
| | (2573), 8792 | ash filtration | (N) | (28- 2) | 25.00 | 500.00 | DI $H_2O$ | 10 | 28- 7 28-8 |
| | 946, 1339 | soil solid sludge | Y | 28- 1 | | | TCLP #1 | | 28- 4 28-5 |
| | 2573, 8792 | ash filtration | N | 28- 2 | | | DI $H_2O$ | | 28- 7 28-8 |
| | 946, 1339 | soil solid sludge | Y | 28- 1 | | | TCLP #1 | | 28- 4 28-5 |
| | 2573, 8792 | ash filtration | N | 28- 2 | | | DI $H_2O$ | | 28- 7 28-8 |

Comments:

Verified by: TS 092 Date: 2/27/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

Extraction Started (date/time) (3) MOS. 1457 2-23-04 7 2-23-04 (13:30) by: M.O.S. ~~1457~~ 1457

Extraction Ended (date/time) 2-24-04 (7:30) by: M.O.S. 1457

Leachate Batch #: 04054 - 1457 - 02573 0946 -

Analytical Batch #:

Extraction Fluid Lot #: 1457022304A

| | Sample # | Matrix | Acquired | | | | Bottles | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | SPK | BK | MS | MSD | Dept. 21 | Dept. 25 | Dept. 32 | Other |
| EXBLK | TCLP 2573 4251333 | EXT FLUID #1 | | | | | 1 | | | |
| 1 | 4219007 | SOIL | | | | | 3 | | | |
| 2 | 4219023 | SOIL | | | | | 3 | | | |
| 3 | 4219914 | SLUDGE | | | | | 3 | | | |
| 4 | 4220721 | SOIL | | | | | 3 | | | |
| 5 | 4220724 | SOIL | | | | | 3 | | | |
| 6 | 4220302 | SOLID | | | | | 1 | | | |
| 7 | 4219670 | SOIL | | | | | 3 | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
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| 15 | | | | | | | | | | |
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| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

# Miscellaneous Analysis Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

*Where quality is a science.*

**CLIENT: Draper Aden Associates, Inc.**
**SDG:** RAV01

**LANCASTER LABORATORIES**

**MISCELLANEOUS WET CHEMISTRY**

**SAMPLE NUMBERS:**

| Sample # | Sample Code | Comments |
|---|---|---|
| 4218994 | 5GP17 | |
| 4218995 | 5GP18 | |
| 4218996 | 5GP19 | |
| 4218997 | 5GP20 | |
| 4218998 | 5GP20 | |
| 4218999 | 5GP20 | |
| 4219000 | 5GP21 | |
| 4219001 | 5GP22 | |
| 4219002 | 52222 | |
| 4219003 | 5GP23 | |
| 4219004 | 5GP24 | |
| 4219005 | UNIT5 | |

**ANALYSIS:**
No problems were encountered during analysis.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**
QC was within specification.

**DATA INTERPRETATION:**
Determination of corrosivity is based on the pH values.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Catherine L. Cammarata for Date: 3/2/04
Sandra J. Miller
Specialist/Coordinator

5914

# QC Summary

# Lancaster Laboratories

Quality Control Summary
Matrix Spike Analysis/ Matrix Spike Duplicate
Miscellaneous Wet Chemistry
SDG: RAV01

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | Matrix: SOIL | | |
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| 4219005 | UNIT5 | 04057112101 | Reactive Sulfide | TI | 2/26/04 | P219668 | 8.0 | P219668 | 553 | 196.6 | P219668 | 551 | 152.5 | mg/kg | 36 | 28 | 15 - 107 | 25 | 29 |

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

If the background result was more than four times the spike added amount, the percent recovery is program deleted.

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | ND = Not Detected |
| DI = Distillaton | ME = Method |
| G = Gravimetric | MS = Matrix Spike |
| IR = Infrared Spectrophotometry | NA = Not Applicable |
| M = Meter | LOQ = Limit of Quantitation |
| OD = Oven Dried | * = Out of Specification |
| TI = Titration | J = Estimated Value < LOQ |
| MSD = Matrix Spike Duplicate | |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: RAV01

| Sample Information | Duplicate Analysis | | | | | | | | | Matrix: SOIL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| 4218994 | 5GP17 | 04051820005 | Moisture | OD | 2/20/04 | 4218997 | 16.94 | 4218999 | 15.95 | % | 6 | 15 |
| 4218995 | 5GP18 | | | | | | | | | | | |
| 4218996 | 5GP19 | | | | | | | | | | | |
| 4218997 | 5GP20 | | | | | | | | | | | |
| 4218998 | 5GP20 | | | | | | | | | | | |
| 4218999 | 5GP20 | | | | | | | | | | | |
| 4219000 | 5GP21 | | | | | | | | | | | |
| 4219001 | 5GP22 | | | | | | | | | | | |
| 4219002 | 52222 | | | | | | | | | | | |
| 4219003 | 5GP23 | | | | | | | | | | | |
| 4219004 | 5GP24 | | | | | | | | | | | |
| 4219005 | UNIT5 | 04054039401 | pH | M | 2/23/04 | P219243 | 4.73 | P219243 | 4.73 | NA | 0 | 1 |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

If the background and/or duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG: RAV01

| Sample Info. | Laboratory Control Standards | | | | | | | | Matrix: SOIL | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | | | % RPD Results | % RPD Acceptance </= |
| 4218994 | 5GP17 | 04051820005 | Moisture | OD | 2/20/04 | 89.5 | 89.42 | NA | % | 88.6 | - | 90.4 | NA | NA |
| 4218995 | 5GP18 | | | | | | | | | | | | | |
| 4218996 | 5GP19 | | | | | | | | | | | | | |
| 4218997 | 5GP20 | | | | | | | | | | | | | |
| 4218998 | 5GP20 | | | | | | | | | | | | | |
| 4218999 | 5GP20 | | | | | | | | | | | | | |
| 4219000 | 5GP21 | | | | | | | | | | | | | |
| 4219001 | 5GP22 | | | | | | | | | | | | | |
| 4219002 | 52222 | | | | | | | | | | | | | |
| 4219003 | 5GP23 | | | | | | | | | | | | | |
| 4219004 | 5GP24 | | | | | | | | | | | | | |
| 4219005 | UNIT5 | 04057112101 | Reactive Sulfide | TI | 2/26/04 | 570 | 500.1 | NA | mg/kg | 431 | - | 571 | NA | NA |
| 4219005 | UNIT5 | 04054039401 | pH | M | 2/23/04 | 6.87 | 6.89 | NA | NA | 6.82 | - | 6.93 | NA | NA |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

| ANALYSIS | LL # | MDL | ANALYSIS | LL # | MDL |
|---|---|---|---|---|---|
| Acidity | 476 | 2 mg/l | Oil and Grease | 231 | 2.5 mg/l |
| Acidity | 4530 | 3 mg/l | Oil and Grease | 236 | 430 mg/kg |
| Alkalinity to pH 4.5 | 202 | 0.41 mg/l as CaCO3 | Oil and Grease | 429 | 0.40 mg/l |
| Ammonia Nitrogen | 573 | 4.2 mg/kg | Oil and Grease | 2446 | 233 mg/kg |
| Ammonia Nitrogen | 221 | 0.11 mg/l | Orthophosphate | 226 | 0.01 mg/l |
| Ammonia Nitrogen | 6914 | 0.03 mg/l | | | |
| BOD | 235 | 0.80 mg/l | Petroleum Hydrocarbons | 1126, 8140 | 0.40 mg/l |
| Carbonaceous BOD | 1364 | 0.80 mg/l | Petroleum Hydrocarbons | 1554 | 0.50 mg/l |
| Chemical Oxygen Demand | 1553 | 2.1 mg/l | Petroleum Hydrocarbons | 1562 | 23 mg/kg |
| Chemical Oxygen Demand | 234 | 300 mg/kg | Petroleum Hydrocarbons | 1663 | 21 mg/kg |
| Chemical Oxygen Demand | 4001 | 8.2 mg/l | | | |
| Chloride | 1124 | 0.20 mg/l | Petroleum Hydrocarbons | 8129 | 9 mg/kg |
| Chlorine Residual | 240 | 0.04 mg/l | Petroleum Hydrocarbons | 8141 | 12.6 mg/kg |
| Dissolved Oxygen | 428 | 0.09 mg/l | Silica | 559 | 0.024 mg/l |
| | | | Soluble BOD | 541 | 0.80 mg/l |
| Ferrous Iron | 8344 | 0.008 mg/l | Specific Conductance | 280 | 1.7 umhos/cm |
| Fluoride | 263 | 0.03 mg/l | Specific Gravity | 1443 | 0.005 |
| Fluoride Distillation | 2200 | 0.03 mg/l | Sulfate | 1125 | 1.5 mg/l |
| Hexane Extractable Materials(Silica-Gel Treated) | 8078 | 1.3 mg/l | Sulfide | 230 | 0.022 mg/l |
| Hexane Extractable Materials | 8079 | 1.7 mg/l | Sulfide, Acid Volatile | 1630 | 0.39 micromol/g |
| Hexavalent Chromium | 276 | 0.003 mg/l | Sulfide Titration | 1333 | 0.53 mg/l |
| Hexavalent Chromium | 425 | 0.50 mg/kg | Sulfide Titration | 1122 | 27 mg/kg |
| Hexavalent Chromium | 1446 | 0.0007 mg/l | Sulfide Titration | 487 | 8.4 mg/kg |
| Hexavalent Chromium | 4858 | 0.38 mg/kg | Sulfite | 229 | 1.2 mg/l |
| Hexavalent Chromium | 4859 | 0.004 mg/l | Total Dissolved Solids | 212 | 9.7 mg/l |
| | | | Total Hardness | 216 | 0.49 mg/l as CaCO3 |
| | | | Total Solids | 203 | 6.3 mg/l |
| M.B.A.S. | 225 | 0.035 mg/l | Total Suspended Solids | 206 | 3.0 mg/l |
| Moisture | 111 | 0.5 % | Turbidity | 279 | 0.09 NTU |
| Moisture | 1353 | 0.5 % | UV Absorbance | 7120 | 0.006cm-1 |
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Revised 1/31/04

# Raw Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601-5994

# RAW DATA LOGBOOK

## REACTIVITY (Prep) Analysis #1121

## REACTIVE SULFIDE (Titrimetric) Analysis #1122

Batch #: 04057 | 112 | 101 | A

Init./Emp. #: SEH416 Date: 2/26/04 Time: 0800 Balance I.D. #: 6640

$Na_2S_2O_3$ Normality: 0.0249N $Na_2S_2O_3$ Ref. (Book/Pg.): 044338 p. 7

Iodine Normality: 0.0251N Iodine Ref. (Book/Pg.): 042899 p. 59

Sulfide Std. Ref. (Book/Pg.): 044338 p. 14 Cyanide Std. Ref. (Book/Pg.): 037470/50/17-18

| Sample Number | Sample Wt. (g) | D.F. | $Na_2S_2O_3$ (mL) | Iodine (mL) | Calc. Value (mg/kg) | LOQ (mg/kg) | Comments |
|---|---|---|---|---|---|---|---|
| BLANK | 10.002 | 1 | 10.15 | 10 | 0 | 100 | (15) |
| SULFIDE | 10.237 | 1 | 4.95 | 10 | 500.1 | ↓ | (15) 88% |
| CYANIDE | 10.004 | 1 | — | — | — | — | TV = 997.5 mg/l |
| 4217214 | 10.185 | 1 | 10.1 | 10 | 0 | 100 | — 21A |
| 4219005 | 10.266 | 1 | 10.05 | 10 | 2.9 | ↓ | — ↓ |
| 4219021 | 10.162 | 1 | 10.2 | 10 | 0 | ↓ | — ↓ |
| 4219668 | 10.079 | 1 | 10.0 | 10 | 5.0 | ↓ | — 74A |
| 4219912 | 10.058 | 1 | 10.0 | 10 | 5.0 | ↓ | — ↓ |
| 4220300 | 10.386 | 1 | 10.05 | 10 | 2.9 | ↓ | — 21A |
| CYANIDE 4219021 MS | 10.043 | 1 | — | — | — | — | + 10 ml of 997.5 mg/l ↓ ↓ |
| CYANIDE 4219021 MSD | 10.053 | 1 | — | — | — | — | ↓ ↓ |
| SULFIDE 4219668 MS | 10.305 | 1 | 8.05 | 10 | 196.6 | 100 | SA = 553 (15) 56% 74A + 10 ml of 570 mg/l |
| SULFIDE 4219668 MSD | 10.343 | 1 | 8.5 | 10 | 152.5 | ↓ | SA = 551 (15) 28% R = 25 + 10 ml of 570 mg/l ↓ |
| 4223331 | 10.022 | 1 | 2.75 | 10 | 729.9 | ↓ | — 21A |
| | | | | | | | |
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| | | | | | | | 8921 |
| | | | | | | | |

D.F. = Dilution Factor

Verified by: RH/355 Date: 2/26/04

B5
Oven 2
2nd shelf
Left Side



# Batch#: 04051820005

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1602 Time Out: 0542

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P1

| # | Sample ID | Date Added | Comments | Analysis# |
|---|---|---|---|---|
| 1) | LCS 89.5% | 02/20/04 12:32 | | |
| 2) | 4216774 | 02/20/04 12:31 | sandy soil | 00111 |
| 3) | 4216775 | 02/20/04 12:31 | | 00111 |
| 4) | 4216775DUP | 02/20/04 12:32 | | 00111 |
| 5) | 4216776 | 02/20/04 12:31 | moist sandy soil | 00111 |
| 6) | 4216777 | 02/20/04 12:31 | sandy soil | 00111 |
| 7) | 4216778 | 02/20/04 12:31 | | 00111 |
| 8) | 4216779 | 02/20/04 12:31 | | 00111 |
| 9) | 4218610 | 02/20/04 12:31 | soft clay | 00111 |
| 10) | 4218611 | 02/20/04 12:31 | clay pieces | 00111 |
| 11) | 4218612 | 02/20/04 12:31 | soft clay ~~ec~~ SSF120 2/20/04 | 00111 |
| 12) | 4218613 | 02/20/04 12:31 | | 00111 |
| 13) | 4218994 | 02/20/04 12:31 | | 00111 |
| 14) | 4218995 | 02/20/04 12:31 | | 00111 |
| 15) | 4218996 | 02/20/04 12:31 | | 00111 |
| 16) | 4218997 | 02/20/04 12:31 | | 00111 |
| 17) | 4218998MS | 02/20/04 12:31 | | 00118 |
| 18) | 4218999MSD | 02/20/04 12:31 | | 00121 |
| 19) | 4219000 | 02/20/04 12:31 | | 00111 |
| 20) | 4219001 | 02/20/04 12:31 | | 00111 |
| 21) | 4219002 | 02/20/04 12:31 | | 00111 |
| 22) | 4219003 | 02/20/04 12:31 | | 00111 |

21A

20A

77A

Signature: Scott Trexler 1201 Date: 2/20/04

Printed by 00236 on 02/20/2004 at 12:37

✓cw 23c 2/23/04

# Batch#: 04051820005

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1602 Time Out: 0542

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P1

| # | Sample ID | Date Added | Comments | Analysis# |
|---|---|---|---|---|
| 23) | 4219004 | 02/20/04 12:31 | Soft clay 77A | 00111 |
| 24) | 4219459 | 02/20/04 12:31 | Sandy soil w/rocks ↓ | 00111 |

**Signature:** Scott Fiesler 1201 **Date:** 2/20/04

Printed by 00236 on 02/20/2004 at 12:37

√ CW 236 2/23/04

# Batch#: 04051820005

## LLENS Batch Chronology Report - Moisture

| # | Operation | Instrument | Date | Time | Analyst |
|---|---|---|---|---|---|
| 1) | Batch Creation | | 02/20/2004 | 12:31 | 00236 |
| 2) | Pre-Drying Wt. | 009001 | 02/20/2004 | 15:17 | 01201 |
| 3) | Dry Sample Wt. | 009001 | 02/21/2004 | 06:58 | 00382 |
| 4) | Calculate/Transmit | LLENS2 | 02/21/2004 | 07:04 | 00382 |

Comments: √ cw 236 2/23/04

8934

Printed by 00382 on 02/21/2004 at 07:04

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture |
|---|---|---|---|---|---|---|---|---|---|
| LCS 89.5% | A | | | 1.1370 | 5.0373 | 1.6701 | | | 89.42 100% (15) |
| 4216774 | A | 00111 | | 1.1504 | 8.0131 | 7.9379 | | | 15.29 |
| 4216775 | A | 00111 | | 1.1485 | 8.6890 | 8.6313 | | | 13.88 |
| 4216775DUP | A | 00111 | | 1.1381 | 7.3206 | 7.4654 | 0.31 | 2.28 | 13.57 R=2% (15) |
| 4216776 | A | 00111 | | 1.1477 | 9.1466 | 8.8832 | | | 15.43 |
| 4216777 | A | 00111 | | 1.1392 | 7.1622 | 7.2646 | | | 14.48 |
| 4216778 | A | 00111 | | 1.1522 | 7.7693 | 7.6747 | | | 16.05 |
| 4216779 | A | 00111 | | 1.1517 | 7.5639 | 7.4861 | | | 16.25 |
| 4218610 | A | 00111 | | 1.1595 | 8.4563 | 7.4860 | | | 25.19 |
| 4218611 | A | 00111 | | 1.1614 | 6.6174 | 6.4543 | | | 20.02 |
| 4218612 | A | 00111 | | 1.1334 | 9.9612 | 9.1007 | | | 20.02 |
| 4218613 | A | 00111 | | 1.1325 | 9.4356 | 8.7425 | | | 19.35 |
| 4218994 | B | 00111 | | 1.1560 | 7.6192 | 7.4283 | | | 17.68 |
| 4218995 | B | 00111 | | 1.1315 | 7.2079 | 7.1588 | | | 16.38 |
| 4218996 | B | 00111 | | 1.1427 | 5.0594 | 5.2971 | | | 17.89 |
| 4218997 | B | 00111 | | 1.1397 | 8.5220 | 8.2180 | | | 16.94 |
| 4218998MS | B | 00118 | | | | | | | 16.94 |
| 4218999MSD | B | 00118 | | | | | | | 16.94 |
| 4218999MSD | B | 00121 | | 1.1435 | 7.4990 | 7.4463 | 0.99 | 6.02 | 15.95 R=6% (15) |
| 4219000 | B | 00111 | | 1.1502 | 6.9316 | 6.9641 | | | 16.12 |
| 4219001 | B | 00111 | | 1.1406 | 7.3590 | 7.3760 | | | 15.27 |
| 4219002 | B | 00111 | | 1.1637 | 7.7246 | 7.7915 | | | 14.20 |
| 4219003 | B | 00111 | | 1.1421 | 8.4141 | 8.2351 | | | 15.70 |
| 4219004 | B | 00111 | | 1.1531 | 7.8190 | 7.5325 | | | 18.41 |

Printed by 00382 on 02/21/2004 at 07:04

✓ QW 236 2/23/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Raw Data Logbook
## Ignitability (Solids)
## Analysis #542

Batch No. 04055 | 054 | 201 | A

Init./Emp. #: SAE/227

Pensky-Martens Closed Flash Tester Inst. #: 1089

| Date | Sample Number | Air (Y/N) | Water (Y/N) | Friction (Y/N) | Closed Cup Flame Source (Y/N) | @ 0527 Comments |
|---|---|---|---|---|---|---|
| 2-24-04 | 4219005 | N | N | N | N | Dirt Coverd Stones 21A |
| ↓ | 4219021 | N | N | N | N | Dirt & Stones |
| ↓ | 4219668 | N | N | N | N | Oily Sandy Soil |
| ↓ | 4220300 | N | N | N | N | Oily Stone Chips ↓ |

Verified By: RH/355 Date: 2/25/04

1320 Rev. 02/03/94

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Raw Data Logbook
## Solid pH (Analysis #0394)
## Corrosivity (Analysis #0496)

soln C Ref (Book/pg): 44338 p6 Balance ID#: 2910

Batch # 04054 039 401A

Date: 2.23.04
Time: 20.00
Analyst: jmg/239

Inst #: 6166
Upld Date: 2.23.04
Upld by: jmg/239

| | Sample Number | Sample Wt. (g) | DI $H_2O$ Wt. (g) | Reading | LOQ | Std. True Value | QC# | Temp (°C) | Batch Letter | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lcs | – | – | 6.89 | 0.01 | 6.87 | 1 | 11.7 | A | Soln C 100% |
| 2 | PH2 | – | – | 2.08 | 0.01 | | | 20.9 | | |
| 3 | PH12 | – | – | 12.07 | 0.01 | | | 21.4 | | |
| 4 | 4219005 | 25 | 25 | 7.64 | 0.01 | | | 21.4 | | 21A |
| 5 | 4219005 | | | 7.65 | 0.01 | | | 21.4 | | 496 |
| 6 | 4219005 | | | 7.65 | 0.01 | | | 21.4 | | |
| 7 | 4219021 | | | 9.06 | 0.01 | | | 21.2 | | |
| 8 | 4219021 | | | 9.07 | 0.01 | | | 21.2 | | 496 |
| 9 | 4219021 | | | 9.07 | 0.01 | | | 21.2 | | |
| 10 | 4219912 | | | 7.68 | 0.01 | | | 21.6 | | |
| 11 | 4219912 | | | 7.67 | 0.01 | | | 21.6 | | 496 |
| 12 | 4219912 | | | 7.67 | 0.01 | | | 21.6 | | |
| 13 | CCV | – | – | 6.90 | 0.01 | | | 14.2 | | Soln C 100% |
| 14 | 4219243 V | 25 | 25 | 4.73 | 0.01 | | | 16.2 | | 20A |
| 15 | 4219243 D | | | 4.73 | 0.01 | | | 16.4 | | RPD=0 |
| 16 | 4219668 | | | 7.75 | 0.01 | | | 21.3 | | 21A |
| 17 | 4220300 | | | 4.32 | 0.01 | | | 21.6 | | |
| 18 | CCV | – | – | 6.90 | 0.01 | | | 14.5 | | Soln C 100% |
| 19 | | | | | 0.01 | | | | | |
| 20 | | | | | 0.01 | | | | | |
| 21 | | | | | 0.01 | | | | | |
| 22 | | | | | 0.01 | | | | | |
| 23 | | | | | 0.01 | | | | | |
| 24 | | | | | 0.01 | | | | | |
| 25 | | | | | 0.01 | | | | | |
| 26 | | | | | 0.01 | | | | | |
| 27 | | | | | 0.01 | | | | | |
| 28 | | | | | 0.01 | | | | | |
| 29 | | | | | 0.01 | | | | | |
| 30 | | | | | 0.01 | | | | | |
| 31 | | | | | 0.01 | | | | | |

Verified by: MLG/1124 Date: 2/24/04

2670.01 02/23/01

# CHAIN OF CUSTODY RECORD

11200/885258/4218994-009

Laboratory: Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425, Kay Hoover, Manager, (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| Client: | Draper Aden Associates | Consultant: | Draper Aden Associates | Sample Site: | RAAP, Radford, Virginia |
| Attn: | 0 | Attn: | Janet C. Frazier | Location: | HWMU5 |
| Address: | 0 | Address: | 2206 South Main Street, Blacksburg, Virginia 24060 | Event: | Geoprobe borings |
| | 0 | | | DAA JN: | B02271-01 |
| Phone: | 0 | Phone: | (540) 552-0444 | Lab JN: | |
| Fax: | 0 | Fax: | (540) 552-0291 | | |
| Fax: | 0 | | | | |

Project Specific (PS) or Batch (B) QC: ☑ Yes ☐ No
Sample Collection for Project Complete? ☑ Yes ☐ No

Carrier: _____
Tracking Number: _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; AG Amber Glass; V VOA; CG Clear Glass

**Invoice**
Copy to Consultant: ☑ Yes ☐ No
Bill: ☐ Client ☑ Consultant
Preserved and shipped on ice: ☑ Yes ☐ No

| Box 4 - Sample Type | G | G | G | C | G |
|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U |
| Required pH of Sample | <2 | <2 | | | <2 |
| Box 2 - Preservative | methanol | $NaHSO_4$ | H | H | A |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa |

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics 8260 | TCL Organics | Moisture | TCLP (Full Waste Characterization) | 8260 |
|---|---|---|---|---|---|---|---|---|---|
| 5GP-17 (15') ✓ | 2/17 | 11:15 | S | 4 | X | X | X | | |
| 5GP-18 (13') ✓ | 2/17 | 11:45 | S | 4 | X | X | X | | |
| 5GP-19 (15') ✓ | 2/17 | 12:15 | S | 4 | X | X | X | | |
| 5GP-20 (14') ✓ | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-20 MS (14') | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-20 MSD (14') | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-21 (14') ✓ | 2/17 | 13:45 | S | 4 | X | X | X | | |
| 5GP-22 (14') ✓ | 2/17 | 14:15 | S | 4 | X | X | X | | |
| 5GP-22-22 (14') ✓ | 2/17 | 14:15 | S | 4 | X | X | X | | |
| 5GP-23 (14') ✓ | 2/17 | 14:45 | S | 4 | X | X | X | | |
| 5GP-24 (14') ✓ | 2/17 | 15:05 | S | 4 | X | X | X | | |
| Unit 5 Composite | 2/17 | 15:30 | S | 1 | | | | X | |
| Trip blanks | | | | | X | X | | | X |
| | | | | | | | | | |
| | | | | | | | | | |

GENERAL NOTES: Report results at or greater than QL, reactivity, corrosivity, ignitability. TCLP composites to include

Clients Special Instructions: level 4 with edd.

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 2/17/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: | |
| Sampler Signature: Darren Kidwell | Time: 17:00 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Jaime Yoder | Date: 2/19/04 | 30 DYS ORG/6 MTHS INORG | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: Lancaster Laboratories | Time: 0915 | | |

# Data Package

***Type I Data Package***

***Analytical Data Report Package***
***for***
***Draper Aden Associates, Inc.***

*RAAP - Radford, VA Geoprobe Borings #BO2271-01*
*Soil and Methanol*
*Collected on 03/24/04*
*Sample No. 4241628-4241641*

*SDG# RAV03*

*PA Cert. # 36-037*
*NY Cert. # 10670*
*NJ Cert. # PA011*
*NC Cert. # 521*

***Prepared by*** Carolyn A Schwarz

***Quality Assurance Review*** [signature]

***Date*** 4/7/04

***Delivery Date*** 4/12/04

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories, Inc. * 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 * 717-656-2300 Fax: 717-656-2681

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## Sample Reference List for SDG Number RAV03 with a Data Package Type of I

**11200 - Draper Aden Associates, Inc.**
RAAP - Radford, VA Geoprobe Borings #BO2271-01

| Lab Sample Number | Lab Sample Code | Client Sample Description |
|---|---|---|
| 4241628 | 5GP17 | 5GP-17(15') Grab Soil Sample |
| 4241629 | 5GP18 | 5GP-18(13') Grab Soil Sample |
| 4241630 | 5GP19 | 5GP-19(15') Grab Soil Sample |
| 4241631 | 5GP20 | 5GP-20(14') Unspiked Grab Soil Sample |
| 4241632 | 5GP20 | 5GP-20(14')MS Matrix Spike Grab Soil Sample |
| 4241633 | 5GP20 | 5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample |
| 4241634 | 5GP21 | 5GP-21(14') Grab Soil Sample |
| 4241635 | TGP2D | 5GP-21-21(14') Grab Soil Sample |
| 4241636 | 5GP22 | 5GP-22(14') Grab Soil Sample |
| 4241637 | 2222D | 5GP-22-22(14') Grab Soil Sample |
| 4241638 | 5GP23 | 5GP-23(14') Grab Soil Sample |
| 4241639 | 5GP24 | 5GP-24(14') Grab Soil Sample |
| 4241640 | 5GPTB | Trip Blank NaHS04/Methanol Sample |

# CHAIN OF CUSTODY RECORD 11200 889622 4241628-41

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | **Location:** | HWMU5 |
| **Address:** | 0<br>0 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Event:** | Geoprobe borings |
| **Phone:** | 0 | **Phone:** | (540) 552-0444 | **DAA JN:** | B02271-01 |
| **Fax:** | 0 | **Fax:** | (540) 552-0291 | **Lab JN:** | |
| **Fax:** | 0 | | | | |

**Project Specific (PS) or Batch (B) QC:** ☑ YES ☐ NO
**Sample Collection for Project Complete?** ☑ YES ☐ NO
**Carrier:** UPS
**Tracking Number:**

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; AG Amber Glass; V VOA; CG Clear Glass

**Invoice**
**Copy to Consultant:** ☑ YES ☐ NO
**Bill:** ☐ Client ☑ Consultant
**Preserved and shipped on Ice:** ☑ YES ☐ NO

**GENERAL NOTES:** SV 8270C/Pest?PCBS 8081A Volatile samples: Trichloroethene only (not the full volatile list).

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics-VOA 8260B (TCE) | TCL Organics-VOA 8260B (TCE) | Moisture | TCL Organics - Pest/PCBS/SV | 8260 - TCE only | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | G | G | G | G | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | U | U | U | U | | | | |
| Required pH of Sample | | | | | | | | | <2 | | | | |
| Box 2 - Preservative | | | | | methanol | NaHSO4 | H | H | A | | | | |
| Box 5 - Sample Container Type | | | | | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |
| 5GP-17 (15') | 3/24 | 09:20 | S | 2 | | | X | X | | | | | |
| 5GP-18 (13') | 3/24 | 10:20 | S | 2 | | | X | X | | | | | |
| 5GP-19 (15') | 3/24 | 09:45 | S | 2 | | | X | X | | | | | |
| 5GP-20 (14') | 3/24 | 12:35 | S | 2 | | | X | X | | | | | |
| 5GP-20 MS (14') | 3/24 | 12:35 | S | 2 | | | X | X | | | | | |
| 5GP-20 MSD (14') | 3/24 | 12:35 | S | 2 | | | X | X | | | | | |
| 5GP-21 (14') | 3/24 | 10:45 | S | 5 | X | X | X | X | | | | | |
| 5GP-21-21 (14') | 3/24 | 10:45 | S | 3 | X | X | | | | | | | |
| 5GP-22 (14') | 3/24 | 12:05 | S | 2 | | | X | X | | | | | |
| 5GP-22-22 (14') | 3/24 | 12:05 | S | 2 | | | X | X | | | | | |
| 5GP-23 (14') | 3/24 | 11:40 | S | 2 | | | X | X | | | | | |
| 5GP-24 (14') | 3/24 | 11:10 | S | 2 | | | X | X | | | | | |
| | | | | | | | | | | | | | |
| Trip blanks | 3/23 | 16:00 | TB | 2 | | | | | X | | | | |
| | | | | | | | | | | | | | |

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 3/24/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 3/24/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 09:00 | Company Name: DAA | Time: 17:15 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Heather Zeiler | Date: 3/25/04 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: HEATHER CARNAHAN | Time: 0930 | |

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Environmental Sample Administration
## Receipt Documentation Log

**Client/Project:** Draper V. Assoc

**Date of Receipt:** 3/25/04

**Time of Receipt:** 0920

**Source Code:** 60-1

**Shipping Container Sealed:** (Y) / N

**Custody Seal Present:** (Y) / N

**Custody Seal Intact** (Y) / N / NA

**Package:** (Chilled) / Not Chilled

**Unpacker Emp. No.:** 173

| Temperature of Shipping Containers | |
|---|---|
| #1 | #2 |
| Thermometer ID: HB12059 | Thermometer ID: HB12059 |
| Temp.: 3.0 C | Temp.: 3.0C |
| (Temp. Bottle) / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet Ice / Dry Ice / (Ice Packs) TBS w/ H2O | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |
| #3 | #4 |
| Thermometer ID: HB12059 | Thermometer ID: HB12059 |
| Temp.: 4.0C | Temp.: 4.0 C |
| (Temp. Bottle) / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet (Ice) / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |

**Paperwork Discrepancy/Unpacking Problems:**

3 $H_2O$ TBs.

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| Heather Carlough | 3/25/04 | 1006 | Unpacking |
| [signature] | 3/25/04 | 1010 | (Place in Storage) or Entry |
| [signature] | 3/25/04 | 1018 | Remove from Storage + Entry |
| | | | Place in Storage or Entry |
| | | | Entry |

Lancaster Laboratories

*Where quality is a science.*

# METHODOLOGY SUMMARY/REFERENCE

## *6292 TCL by 8260 (soil)*

The sample or extract of the sample is analyzed by purge and trap GC/MS.

Reference: Test Methods for Evaluating Solid Waste, SW-846, Method 8260B, Revision 2, December 1996

**********

## *6006 Solid Sample Pesticide Extraction*

A sonic probe extraction with hexane and acetone is used. Alternatively, the sample may be soxhlet extracted with hexane and acetone. Florisil cleanup is used to minimize interference.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 3550B, December 1996 (Sonic Probe)

**********

## *1225 TCL Pesticides in Solids*

The sample is solvent extracted and cleaned using a Florisil column. The resulting extract is quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8081A/8082, December 1996

**********

## *4688/4689 TCL Semivolatiles by 8270C (soils)*

The sample is solvent extracted and then analyzed by GC/MS for the target compound list.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8270C, Update III, December 1996

## 0111 Moisture (solid)

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and Wastes USEPA 600/4-79-020, Method 160.3 (modified)

**********

## 0118 Moisture (solid)

This value reflects the background moisture value. It is used to calculate dry weight reports for matrix spike and matrix spike duplicate samples.

Reference: See background sample moisture method reference

**********

## 0121 Moisture Duplicate (solid)

This analysis is required to check the precision of the moisture analysis. The value is not used in report calculations.

Reference: See background sample moisture method reference

**********

## 7801 Moisture (Re-Entry)

A well-mixed sample is placed in a tared beaker and dried to constant weight in an oven at 103-105 C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and Wastes USEPA 600/4-79-020, Method 160.3 (modified)

0685

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 889622. Samples arrived at the laboratory on Thursday, March 25, 2004.

| Client Description | Lancaster Labs Number |
|---|---|
| 5GP-17(15') Grab Soil Sample | 4241628 |
| 5GP-18(13') Grab Soil Sample | 4241629 |
| 5GP-19(15') Grab Soil Sample | 4241630 |
| 5GP-20(14') Unspiked Grab Soil Sample | 4241631 |
| 5GP-20(14')MS Matrix Spike Grab Soil Sample | 4241632 |
| 5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample | 4241633 |
| 5GP-21(14') Grab Soil Sample | 4241634 |
| 5GP-21-21(14') Grab Soil Sample | 4241635 |
| 5GP-22(14') Grab Soil Sample | 4241636 |
| 5GP-22-22(14') Grab Soil Sample | 4241637 |
| 5GP-23(14') Grab Soil Sample | 4241638 |
| 5GP-24(14') Grab Soil Sample | 4241639 |
| Trip Blank NaHS04/Methanol Sample | 4241640 |

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Draper Aden Associates, Inc. Attn: Ms. Janet Frazier
1 COPY TO Data Package Group



MEMBER ACIL
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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300.

Respectfully Submitted,

Michele A. Jarosick

**Michele A Jarosick**
**Senior Chemist**

53807

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241628**

**5GP-17(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:53
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV03-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.8 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.61 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.60 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.2 | J | 0.40 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 7.4 | | 0.70 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.53 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 4.0 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 4.8 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 7.2 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 39. | | 4.0 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 4.0 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.36 | 1.1 | ug/kg | 1 |
| | | | | | | | ##### | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | | |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241628**

**5GP-17(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:53
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV03-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 800. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241628**

**5GP-17(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:53
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV03-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 800. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 140. | J | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 80. | 800. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 80. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | | |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241628**

**5GP-17(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:53
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP17 SDG#: RAV03-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 10:30 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 09:47 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 09:47 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241629**

**5GP-18(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV03-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.6 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.61 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.60 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.8 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.70 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.53 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 4.0 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.2 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.8 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.2 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 4.0 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 4.0 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.40 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.36 | 1.1 | ug/kg | 1 |
| | | | | | | | A812 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241629**

**5GP-18(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV03-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 800. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241629**

**5GP-18(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV03-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | 800. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | 400. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | 400. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241629**

**5GP-18(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP18 SDG#: RAV03-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 10:50 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 10:30 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 10:30 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

0015

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241630**

**5GP-19(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV03-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.0 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.61 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.60 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 0.57 | J | 0.40 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 4.5 | | 0.70 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.53 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 4.0 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 4.8 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 7.2 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 4.0 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 4.0 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.36 | 1.1 | ug/kg | 1 |



04688 TCL SW846 Semivolatiles Soil

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241630**

**5GP-19(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV03-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 800. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| | | | | | | | 8817 |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241630**

**5GP-19(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV03-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 800. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 75. | J | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 80. | 800. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 80. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 80. | 400. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 80. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 40. | 400. | ug/kg | 1 |

The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken.

0015

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241630**

**5GP-19(15') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 09:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAV03-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 11:11 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 11:12 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 11:12 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

6819

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241631**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 18.4 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.61 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 0.45 | J | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 1.7 | J | 0.71 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.54 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | 3.7 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | 37. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.3 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 4.9 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 7.4 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 13. | J | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.77 | J | 0.37 | 1.1 | ug/kg | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | | |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241631**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 82. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 820. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 82. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | 8621 | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241631**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 820. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 82. | 820. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 320. | J | 200. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 82. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 41. | 410. | ug/kg | 1 |

The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken.

8822

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241631**

**5GP-20(14') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 11:31 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 07:39 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 07:39 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

6823

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241632**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 18.4 | 0.50 | 0.50 | % | 1 |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 4.0 | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 4.1 | 0.21 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 4.2 | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 8.3 | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 8.1 | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 8.4 | 0.61 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 37. | 4.9 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 4.2 | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 3.9 | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 4.2 | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.3 | 0.21 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 8.3 | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 7.7 | 0.71 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 4.1 | 0.54 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 9.0 | 0.40 | 2.1 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 9.2 | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 6.7 | 1.2 | 3.7 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 37. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.3 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.9 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.4 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 8.7 | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 3.9 | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 4.2 | 0.37 | 1.1 | ug/kg | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | 3,600. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,700. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241632**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,500. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,000. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,800. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,400. | 82. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,400. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,900. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,300. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,500. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,700. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,200. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 2,900. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,000. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,700. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,600. | 82. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 9,000. | 200. | 820. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,700. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 4,400. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,800. | 82. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,800. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 3,400. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,700. | 82. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,200. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 4,000. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 4,100. | 41. | 410. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 3,900. | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | 4,000. | 41. | 410. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 2,600. | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 3,800. | 82. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,900. | 200. | 1,000. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241632**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01195 | Pyrene | 129-00-0 | 4,400. | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 3,000. | 820. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 4,000. | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,500. | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,800. | 82. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,900. | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 4,300. | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 4,300. | 82. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 4,400. | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,700. | 82. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,600. | 82. | 820. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,900. | 200. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 4,300. | 82. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,900. | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,500. | 82. | 410. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,700. | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,200. | 82. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | 4,000. | 41. | 410. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. | | | | | | |

0826

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241632**

**5GP-20(14')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MS

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 11:52 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 08:21 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 08:21 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

8027

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241633**

**5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 18.4 | 0.50 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 17.6 | 0.50 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 3.7 | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 3.8 | 0.21 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 3.7 | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 7.8 | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 7.4 | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 7.7 | 0.61 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 35. | 4.9 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 3.9 | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 3.6 | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 3.8 | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.0 | 0.21 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 7.7 | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 6.9 | 0.71 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 3.8 | 0.54 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 8.1 | 0.40 | 2.1 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 8.2 | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 6.3 | 1.2 | 3.7 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 37. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.3 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.9 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.4 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 8.0 | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 3.6 | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 3.9 | 0.37 | 1.1 | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241633**

**5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | 3,500. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,700. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,500. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,000. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,900. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,500. | 82. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,900. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,500. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,900. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,900. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,200. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,400. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,700. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,200. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,000. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,100. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,700. | 82. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 8,700. | 200. | 820. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 4,500. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,900. | 82. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,800. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 3,400. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,600. | 82. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,500. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 4,100. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 4,300. | 41. | 410. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 4,000. | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |

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*=This limit was used in the evaluation of the final result

MEMBER ACIL
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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241633**

**5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | 4,100. | 41. | 410. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 2,700. | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 3,800. | 82. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,900. | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 4,300. | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 3,500. | 820. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 4,200. | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,700. | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,800. | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,900. | 82. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,700. | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 4,500. | 82. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 4,400. | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,800. | 82. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 4,000. | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,900. | 82. | 820. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,700. | 200. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 4,400. | 82. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,200. | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 4,100. | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,300. | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 4,000. | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,700. | 82. | 410. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,800. | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,400. | 82. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | 3,900. | 41. | 410. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. | | | | | | |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241633**

**5GP-20(14')MSD Matrix Spike Dup. Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:35 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP20 SDG#: RAV03-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 12:12 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 09:04 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 09:04 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

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*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241634**

**5GP-21(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV03-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.5 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 0.28 | J | 0.20 | 0.98 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.60 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.39 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.59 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 0.85 | J | 0.39 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 10. | | 0.69 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | 39. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.52 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 0.46 | J | 0.39 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 3.9 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 4.7 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 7.1 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 39. | | 3.9 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 3.9 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | 0.98 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.38 | J | 0.36 | 1.1 | ug/kg | 1 |
| | | | | | | | | 6932 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | | |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241634**

**5GP-21(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV03-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 790. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | 390. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | 390. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | 8633 | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | 390. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



MEMBER ACIL
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241634**

**5GP-21(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV03-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 990. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 990. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 990. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | 390. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | 790. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 390. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | 390. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | 390. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | 390. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | |

8834

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241634**

**5GP-21(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP21 SDG#: RAV03-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05462 | Trichloroethene | 79-01-6 | 46. | 0.9 | 5. | ug/kg | 0.8 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 12:33 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 11:55 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 11:55 | Susan L Scheuering | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 03/29/2004 12:07 | Lauren C Marzario | 0.8 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 1 | 03/26/2004 00:43 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 2 | 03/26/2004 00:44 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 3 | 03/26/2004 00:45 | Sherri A Yohn | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

0035

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241635**

**5GP-21-21(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 10:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

TGP2D SDG#: RAV03-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 15.5 | 0.060 | 0.50 | % | 1 |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05462 | Trichloroethene | 79-01-6 | 120. | 1. | 5. | ug/kg | 0.81 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 03/26/2004 14:51 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 03/29/2004 12:34 | Lauren C Marzario | 0.81 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 1 | 03/26/2004 00:46 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 2 | 03/26/2004 00:47 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 3 | 03/26/2004 00:48 | Sherri A Yohn | 1 |

8836

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241636**

**5GP-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV03-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.4 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.60 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.59 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.69 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 39. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.52 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.5 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 35. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.7 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.1 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 1.5 | 0.35 | 1.1 | ug/kg | 1 |
| | | | | | | | 0037 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241636**

**5GP-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV03-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 790. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | 390. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | 390. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | 390. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241636**

**5GP-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV03-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 990. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 990. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 990. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | 390. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | 790. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 390. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | 390. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | 390. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | 390. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | |

8839

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241636**

**5GP-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP22 SDG#: RAV03-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 12:53 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 12:38 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 12:38 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241637**

**5GP-22-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV03-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.2 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.60 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.59 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.68 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 39. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.52 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.5 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 35. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.7 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.1 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.35 | 1.1 | ug/kg | 1 |
| | | | | | | | 6641 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |

*=This limit was used in the evaluation of the final result



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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241637**

**5GP-22-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV03-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 790. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | 390. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | 390. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | 390. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | 390. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4241637**

**5GP-22-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV03-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 980. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 980. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 980. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | 390. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | 390. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | 390. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | 790. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 390. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | 390. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | 390. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | 390. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | 390. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | |

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*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241637**

**5GP-22-22(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 12:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:54
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV03-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 13:14 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 13:21 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 13:21 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

8844

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241638**

**5GP-23(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV03-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.0 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.61 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.60 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.8 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.69 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 39. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.52 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.8 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.1 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | 0.99 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.36 | 1.1 | ug/kg | 1 |

8845

04688 TCL SW846 Semivolatiles Soil

*=This limit was used in the evaluation of the final result



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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241638**

**5GP-23(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV03-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 790. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241638**

**5GP-23(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV03-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 990. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 990. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 990. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | 790. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | 400. | ug/kg | 1 |

The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken.

8947

*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241638**

**5GP-23(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP23 SDG#: RAV03-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 13:35 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 14:04 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 14:04 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

9848

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241639**

**5GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:10 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV03-10

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 18.3 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.61 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.2 | J | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 4.4 | | 0.71 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.54 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | 3.7 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | 37. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.3 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 4.9 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 7.3 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 52. | | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.37 | 1.1 | ug/kg | 1 |

8849

04688 TCL SW846 Semivolatiles Soil

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241639**

**5GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:10 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV03-10

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 82. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 820. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 82. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241639**

**5GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:10 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV03-10

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 820. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 130. | J | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 82. | 820. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 200. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 82. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| | The recovery of fluoranthene was above QC limits in the LCS. Since fluoranthene was not detected in the sample, no further action was taken. | | | | | | | |

8851

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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2425 New Holland Pike
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241639**

**5GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 11:10 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP24 SDG#: RAV03-10

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/26/2004 13:55 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 14:46 | Susan L Scheuering | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 14:46 | Susan L Scheuering | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Luis E Villamil | 1 |

8852

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241640**

**Trip Blank NaHS04/Methanol Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/23/2004 16:00

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 04/08/2004 at 11:55
Discard: 05/09/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GPTB SDG#: RAV03-11TB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | 5. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 03/29/2004 11:40 | Lauren C Marzario | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 1 | 03/26/2004 00:49 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 2 | 03/26/2004 00:50 | Sherri A Yohn | 1 |
| 02392 | LL/HL Field Preserved NaHSO4 | SW-846 5035 | 3 | 03/26/2004 00:51 | Sherri A Yohn | 1 |

6853

*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

# Volatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance
# Summary

## CASE NARRATIVE

**Client: Draper Aden Associates, Inc.**
**SDG#: RAV03**

LANCASTER LABORATORIES
VOLATILES BY GC/MS

### SAMPLE NUMBERS :

| LL #'s | Sample Code | Matrix Soil | Comments |
|---|---|---|---|
| 4241634 | 5GP21 | X | |
| 4241635 | TGP2D | X | |
| 4241640 | 5GPTB | X | Client Blank |

### LABORATORY SUBMITTED QC:

| | | | |
|---|---|---|---|
| VBLKX61 | VBLKX61 | X | Method Blank |
| VBLKX66 | VBLKX66 | X | Method Blank |
| 4232854 | SEDT2 | X | Unspiked |
| 4232855 | SEDT2MS | X | Matrix Spike |
| 4232856 | SED72MSD | X | Matrix Spike Dup |
| LCSX61 | LCSX61 | X | Lab Control Sample |

### SAMPLE PREPARATION:

The soil samples were collected in the field in pre-preserved and pre-weighed vials. Once submitted to Lancaster Laboratories, the samples were re-weighed to determine the weight of the sample. Since an approximate amount of sample is collected in the field, the dilution factors may vary from sample to sample.

No problems were encountered during the sample preparation for the VOA fraction.

### ANALYSIS:

The method used for analysis was EPA SW846 Method 8260B.

No problems were encountered during the analysis of these samples.

0056

## QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Only client requested compounds are addressed in this narrative.

All QC was within specifications.

## DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

John F. Morton Date 4/6/04

John F. Morton, M.S., GC/MS Volatiles

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# QC Summary

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xm12t01.d BFB Injection Date: 03/12/04

Instrument ID: HP09193 BFB Injection Time: 07:40

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.8 |
| 75 | 30.0 - 60.0% of mass 95 | 46.5 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.8 |
| 173 | Less than 2.0% of mass 174 | 0.3 ( 0.3)1 |
| 174 | Greater than 50.0% of mass 95 | 91.5 |
| 175 | 5.0 - 9.0% of mass 174 | 7.4 ( 8.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 90.8 ( 99.2)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.1 ( 6.8)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | xm12i01.d | 03/12/04 | 08:04 |
| 02 | VSTD100 | VSTD100 | xm12i02.d | 03/12/04 | 08:31 |
| 03 | VSTD050 | VSTD050 | xm12i03.d | 03/12/04 | 08:58 |
| 04 | VSTD020 | VSTD020 | xm12i04.d | 03/12/04 | 09:26 |
| 05 | VSTD010 | VSTD010 | xm12i05.d | 03/12/04 | 09:53 |
| 06 | VSTD004 | VSTD004 | xm12i07.d | 03/12/04 | 11:13 |
| 07 | VSTD001 | 1PPBMDL | xm12m02.d | 03/12/04 | 11:40 |

0059

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: xm22t02.d  BFB Injection Date: 03/22/04

Instrument ID: HP09193  BFB Injection Time: 14:06

Matrix: (soil/water) SOIL  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.5 |
| 75 | 30.0 - 60.0% of mass 95 | 44.4 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.7 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 93.8 |
| 175 | 5.0 - 9.0% of mass 174 | 7.2 ( 7.7)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 90.0 ( 95.9)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.2 ( 6.8)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD050 | VSTD050 | xm22c03.d | 03/22/04 | 14:31 |
| 02 | VSTD050 | VSTD050 | xm22c05.d | 03/22/04 | 16:02 |
| 03 | VBLKX61 | VBLKX61 | xm22b04.d | 03/22/04 | 16:29 |
| 04 | LCSX61 | LCSX61 | xm22l01.d | 03/22/04 | 16:55 |
| 05 | LCS1X61 | LCS1X61 | xm22l03.d | 03/22/04 | 18:17 |
| 06 | SEDT1 | 4232853 | xm22s10.d | 03/22/04 | 19:12 |
| 07 | SEDT2 | 4232854 | xm22s11.d | 03/22/04 | 19:39 |
| 08 | SEDT2MS | 4232855 | xm22s12.d | 03/22/04 | 20:11 |
| 09 | SEDT2MSD | 4232856 | xm22s13.d | 03/22/04 | 20:38 |
| 10 | SEDT2MS1 | 4232855 | xm22s14.d | 03/22/04 | 21:05 |
| 11 | SEDT2MSD1 | 4232856 | xm22s15.d | 03/22/04 | 21:32 |
| 12 | T2-FD | 4232858 | xm22s16.d | 03/22/04 | 21:59 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xm29t01.d BFB Injection Date: 03/29/04

Instrument ID: HP09193 BFB Injection Time: 08:11

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.1 |
| 75 | 30.0 - 60.0% of mass 95 | 44.5 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.9 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 92.7 |
| 175 | 5.0 - 9.0% of mass 174 | 6.8 ( 7.3)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 92.1 ( 99.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.3 ( 6.8)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD020 | VSTD020 | xm29c01.d | 03/29/04 | 08:34 |
| 02 | VSTD020 | VSTD020 | xm29c02.d | 03/29/04 | 09:29 |
| 03 | VBLKX66 | VBLKX66 | xm29b03.d | 03/29/04 | 10:36 |
| 04 | STCKPRE | 4235623 | xm29s01.d | 03/29/04 | 11:13 |
| 05 | 5GPTB | 4241640 | xm29s02.d | 03/29/04 | 11:40 |
| 06 | 5GP21 | 4241634 | xm29s03.d | 03/29/04 | 12:07 |
| 07 | TGP2D | 4241635 | xm29s04.d | 03/29/04 | 12:34 |
| 08 | GLAUP | 4243034 | xm29s05.d | 03/29/04 | 13:14 |
| 09 | GLADN | 4243035 | xm29s06.d | 03/29/04 | 13:41 |
| 10 | GLADNMS | 4243036 | xm29s07.d | 03/29/04 | 14:08 |
| 11 | GLADNMSD | 4243037 | xm29s08.d | 03/29/04 | 14:35 |
| 12 | GLADNMS1 | 4243036 | xm29s09.d | 03/29/04 | 15:02 |
| 13 | GLADNMSD1 | 4243037 | xm29s10.d | 03/29/04 | 15:28 |
| 14 | GLAUPRE | 4243034 | xm29s11.d | 03/29/04 | 15:56 |
| 15 | GLADNRE | 4243035 | xm29s12.d | 03/29/04 | 16:23 |

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2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV03

Level: (low/med) LOW

| | LL #'s | EPA SAMPLE NO. | S1 (DBF) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | TOT OUT |
|---|---|---|---|---|---|---|---|
| 01 | 4241634 | 5GP21 | 104 | 94 | 100 | 86 | 0 |
| 02 | 4241635 | TGP2D | 106 | 96 | 100 | 84 | 0 |
| 03 | 4241640 | 5GPTB | 105 | 96 | 98 | 88 | 0 |
| 04 | VBLKX61 | VBLKX61 | 99 | 96 | 98 | 90 | 0 |
| 05 | 4232854 | SEDT2 | 99 | 93 | 100 | 90 | 0 |
| 06 | 4232855 | SEDT2MS | 97 | 95 | 103 | 90 | 0 |
| 07 | 4232856 | SEDT2MSD | 95 | 95 | 102 | 91 | 0 |
| 08 | LCSX61 | LCSX61 | 99 | 96 | 101 | 96 | 0 |
| 09 | VBLKX66 | VBLKX66 | 104 | 96 | 97 | 88 | 0 |

| | QC LIMITS |
|---|---|
| S1 (DBF) = Dibromofluoromethane | (70-129) |
| S2 (DCA) = 1,2-Dichloroethane-d4 | (70-121) |
| S3 (TOL) = Toluene-d8 | (70-130) |
| S4 (BFB) = 4-Bromofluorobenzene | (70-128) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out



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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX61

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX61

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar22b.b/xm22b04.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/22/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 109-66-0 | n-Pentane | | 4 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 107-02-8 | Acrolein | | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 60-29-7 | Ethyl Ether | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 7 | U |
| 74-88-4 | Methyl Iodide | | 3 | U |
| 67-63-0 | 2-Propanol | | 60 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-05-8 | Acetonitrile | | 25 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 79-20-9 | Methyl Acetate | | 2 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 20 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 0.5 | U |
| 110-54-3 | n-Hexane | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-05-4 | Vinyl Acetate | | 2 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |

6863

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX61

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX61

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar22b.b/xm22b04.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/22/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 78-93-3 | 2-Butanone | | 4 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 107-12-0 | Propionitrile | | 30 | U |
| 141-78-6 | Ethyl Acetate | | 1 | U |
| 126-98-7 | Methacrylonitrile | | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 4 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 1 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 108-21-4 | Isopropyl Acetate | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 3 | U |
| 71-36-3 | n-Butanol | | 110 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-87-2 | Methylcyclohexane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 109-60-4 | n-Propyl Acetate | | 2 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 3 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX61

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX61

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar22b.b/xm22b04.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/22/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |
| 591-78-6 | 2-Hexanone | | 3 | U |
| 123-86-4 | Butyl Acetate | | 2 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 108-94-1 | Cyclohexanone | | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 10 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |

0065



FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX61

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX61

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar22b.b/xm22b04.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/22/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 141-93-5 | 1,3-Diethylbenzene | | 1 | U |
| 105-05-5 | 1,4-Diethylbenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 135-01-3 | 1,2-Diethylbenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | J |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |
| 91-57-6 | 2-Methylnaphthalene | | 3 | J |
| 25340-17-4 | Diethylbenzene (total) | | 1 | U |

0066

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX66

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX66

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar29a.b/xm29b03.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/29/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 107-02-8 | Acrolein | | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 7 | U |
| 74-88-4 | Methyl Iodide | | 3 | U |
| 67-63-0 | 2-Propanol | | 60 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-05-8 | Acetonitrile | | 25 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 20 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 0.5 | U |
| 110-54-3 | n-Hexane | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-05-4 | Vinyl Acetate | | 2 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 78-93-3 | 2-Butanone | | 4 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |

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1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKX66

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX66

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar29a.b/xm29b03.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/29/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 107-12-0 | Propionitrile | | 30 | U |
| 141-78-6 | Ethyl Acetate | | 1 | U |
| 126-98-7 | Methacrylonitrile | | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 4 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 1 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 108-21-4 | Isopropyl Acetate | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 3 | U |
| 71-36-3 | n-Butanol | | 110 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 109-60-4 | n-Propyl Acetate | | 2 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 3 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |

0868

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX66

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX66

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar29a.b/xm29b03.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/29/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |
| 591-78-6 | 2-Hexanone | | 3 | U |
| 123-86-4 | Butyl Acetate | | 2 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 108-94-1 | Cyclohexanone | | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 10 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |

8869

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKX66

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX66

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04mar29a.b/xm29b03.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 03/29/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 141-93-5 | 1,3-Diethylbenzene | | 1 | U |
| 105-05-5 | 1,4-Diethylbenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 135-01-3 | 1,2-Diethylbenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |
| 25340-17-4 | Diethylbenzene (total) | | 1 | U |

6878



FORM I VOA

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: xm22b04.d  Lab Sample ID: VBLKX61

Date Analyzed: 03/22/04  Time Analyzed: 16:29

Matrix (soil/water) SOIL  Level: (low/med) LOW

Instrument ID: HP09193

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSX61 | LCSX61 | xm22101.d | 16:55 |
| 02 | LCS1X61 | LCS1X61 | xm22103.d | 18:17 |
| 03 | SEDT1 | 4232853 | xm22s10.d | 19:12 |
| 04 | SEDT2 | 4232854 | xm22s11.d | 19:39 |
| 05 | SEDT2MS | 4232855 | xm22s12.d | 20:11 |
| 06 | SEDT2MSD | 4232856 | xm22s13.d | 20:38 |
| 07 | SEDT2MS1 | 4232855 | xm22s14.d | 21:05 |
| 08 | SEDT2MSD1 | 4232856 | xm22s15.d | 21:32 |
| 09 | T2-FD | 4232858 | xm22s16.d | 21:59 |

COMMENTS:

6871

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: xm29b03.d  Lab Sample ID: VBLKX66

Date Analyzed: 03/29/04  Time Analyzed: 10:36

Matrix (soil/water) SOIL  Level: (low/med) LOW

Instrument ID: HP09193

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | STCKPRE | 4235623 | xm29s01.d | 11:13 |
| 02 | 5GPTB | 4241640 | xm29s02.d | 11:40 |
| 03 | 5GP21 | 4241634 | xm29s03.d | 12:07 |
| 04 | TGP2D | 4241635 | xm29s04.d | 12:34 |
| 05 | GLAUP | 4243034 | xm29s05.d | 13:14 |
| 06 | GLADN | 4243035 | xm29s06.d | 13:41 |
| 07 | GLADNMS | 4243036 | xm29s07.d | 14:08 |
| 08 | GLADNMSD | 4243037 | xm29s08.d | 14:35 |
| 09 | GLADNMS1 | 4243036 | xm29s09.d | 15:02 |
| 10 | GLADNMSD1 | 4243037 | xm29s10.d | 15:28 |
| 11 | GLAUPRE | 4243034 | xm29s11.d | 15:56 |
| 12 | GLADNRE | 4243035 | xm29s12.d | 16:23 |

COMMENTS:

0072

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: xm22s11.d
SEDT2 4232854
Method: SW-846 8260B
Dilution Factor: 0.84
Instrument: HP09193

Matrix Spike: xm22s12.d
SEDT2MS 4232855
Matrix/Level: SL
MS Dilution Factor: 0.84

Spike Duplicate: xm22s13.d
SEDT2MSD 4232856
Batch: X040821AA
MSD Dilution Factor: 0.84
Moisture: 17

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.3 | 20.3 | ND | 24.0 | 23.4 | 118 | 115 | 1 -179 | YES | 3 | 30 |
| Chloromethane | 20.3 | 20.3 | ND | 22.1 | 20.9 | 109 | 103 | 21-155 | YES | 6 | 30 |
| Vinyl Chloride | 20.3 | 20.3 | ND | 21.6 | 20.7 | 107 | 102 | 23-154 | YES | 5 | 30 |
| Bromomethane | 20.3 | 20.3 | ND | 19.2 | 19.3 | 95 | 95 | 19-147 | YES | 0 | 30 |
| Chloroethane | 20.3 | 20.3 | ND | 20.4 | 20.3 | 101 | 100 | 33-147 | YES | 1 | 30 |
| Trichlorofluoromethane | 20.3 | 20.3 | ND | 20.3 | 19.8 | 100 | 98 | 26-149 | YES | 2 | 30 |
| Acrolein | 152.0 | 152.0 | ND | 161 | 163 | 106 | 107 | 14-143 | YES | 1 | 30 |
| 1,1-Dichloroethene | 20.3 | 20.3 | ND | 22.0 | 20.2 | 108 | 100 | 48-147 | YES | 8 | 30 |
| Freon 113 | 20.3 | 20.3 | ND | 21.3 | 20.0 | 105 | 98 | 37-146 | YES | 7 | 30 |
| Acetone | 152.0 | 152.0 | 13.2 | 162 | 172 | 98 | 105 | 9 -178 | YES | 7 | 30 |
| Methyl Iodide | 20.3 | 20.3 | ND | 20.9 | 19.6 | 103 | 97 | 52-141 | YES | 6 | 30 |
| 2-Propanol | 152.0 | 152.0 | ND | 167 | 180 | 110 | 118 | 15-191 | YES | 7 | 30 |
| Carbon Disulfide | 20.3 | 20.3 | ND | 27.7 | 20.8 | 137 | 102 | 37-147 | YES | 29 | 30 |
| Allyl Chloride | 20.3 | 20.3 | ND | 20.1 | 20.7 | 99 | 102 | 29-140 | YES | 3 | 30 |
| Methyl Acetate | 20.3 | 20.3 | ND | 21.8 | 22.9 | 108 | 113 | 47-145 | YES | 5 | 30 |
| Methylene Chloride | 20.3 | 20.3 | ND | 21.0 | 20.1 | 103 | 99 | 59-135 | YES | 4 | 30 |
| t-Butyl Alcohol | 203.0 | 203.0 | ND | 203 | 209 | 100 | 103 | 38-160 | YES | 3 | 30 |
| Acrylonitrile | 102.0 | 102.0 | ND | 108 | 112 | 106 | 110 | 47-125 | YES | 4 | 30 |
| trans-1,2-Dichloroethene | 20.3 | 20.3 | ND | 21.5 | 19.9 | 106 | 98 | 54-135 | YES | 8 | 30 |
| Methyl Tertiary Butyl Ether | 20.3 | 20.3 | ND | 20.7 | 20.6 | 102 | 102 | 57-136 | YES | 0 | 30 |
| n-Hexane | 20.3 | 20.3 | ND | 21.6 | 21.6 | 106 | 107 | 15-152 | YES | 1 | 30 |
| 1,1-Dichloroethane | 20.3 | 20.3 | ND | 21.8 | 19.9 | 107 | 98 | 60-133 | YES | 9 | 30 |
| 2-Chloro-1,3-Butadiene | 20.3 | 20.3 | ND | 23.5 | 21.7 | 116 | 107 | 51-135 | YES | 8 | 30 |
| di-Isopropyl Ether | 20.3 | 20.3 | ND | 21.1 | 20.7 | 104 | 102 | 55-132 | YES | 2 | 30 |
| Ethyl t-Butyl Ether | 20.3 | 20.3 | ND | 20.5 | 20.3 | 101 | 100 | 58-127 | YES | 1 | 30 |
| cis-1,2-Dichloroethene | 20.3 | 20.3 | ND | 21.2 | 20.1 | 104 | 99 | 57-131 | YES | 5 | 30 |
| 1,2-Dichloroethene (total) | 40.6 | 40.6 | ND | 42.7 | 40.1 | 105 | 99 | 57-131 | YES | 6 | 30 |
| 2,2-Dichloropropane | 20.3 | 20.3 | ND | 20.0 | 18.7 | 99 | 92 | 53-135 | YES | 7 | 30 |
| 2-Butanone | 152.0 | 152.0 | ND | 167 | 175 | 110 | 115 | 24-149 | YES | 4 | 30 |
| Propionitrile | 152.0 | 152.0 | ND | 168 | 176 | 111 | 116 | 49-140 | YES | 4 | 30 |
| Methacrylonitrile | 152.0 | 152.0 | ND | 165 | 171 | 109 | 112 | 56-133 | YES | 3 | 30 |
| Bromochloromethane | 20.3 | 20.3 | ND | 18.7 | 19.4 | 92 | 96 | 38-136 | YES | 4 | 30 |
| Tetrahydrofuran | 102.0 | 102.0 | ND | 123 | 130 | 121 | 128 | 50-150 | YES | 6 | 30 |
| Chloroform | 20.3 | 20.3 | ND | 21.0 | 19.5 | 103 | 96 | 57-135 | YES | 7 | 30 |
| 1,1,1-Trichloroethane | 20.3 | 20.3 | ND | 20.6 | 19.1 | 101 | 94 | 53-137 | YES | 7 | 30 |
| Cyclohexane | 20.3 | 20.3 | ND | 22.5 | 21.9 | 111 | 108 | 31-157 | YES | 3 | 30 |
| 1,1-Dichloropropene | 20.3 | 20.3 | ND | 21.5 | 20.2 | 106 | 99 | 57-130 | YES | 7 | 30 |
| Carbon Tetrachloride | 20.3 | 20.3 | ND | 20.8 | 19.0 | 103 | 94 | 46-138 | YES | 9 | 30 |
| Benzene | 20.3 | 20.3 | ND | 22.3 | 20.6 | 110 | 101 | 52-141 | YES | 9 | 30 |
| Isobutyl Alcohol | 508.0 | 508.0 | ND | 548 | 600 | 108 | 118 | 29-155 | YES | 9 | 30 |
| 1,2-Dichloroethane | 20.3 | 20.3 | ND | 20.4 | 19.6 | 101 | 97 | 57-137 | YES | 4 | 30 |
| t-Amyl Methyl Ether | 20.3 | 20.3 | ND | 19.9 | 20.3 | 98 | 100 | 58-126 | YES | 2 | 30 |
| n-Heptane | 20.3 | 20.3 | ND | 18.0 | 18.5 | 89 | 91 | 10-148 | YES | 2 | 30 |
| n-Butanol | 1020.0 | 1020.0 | ND | 1130 | 1270 | 111 | 124 | 29-147 | YES | 11 | 30 |
| Trichloroethene | 20.3 | 20.3 | ND | 21.0 | 19.7 | 103 | 97 | 47-140 | YES | 6 | 30 |
| Methylcyclohexane | 20.3 | 20.3 | ND | 19.4 | 20.3 | 95 | 100 | 6 -151 | YES | 5 | 30 |
| 1,2-Dichloropropane | 20.3 | 20.3 | ND | 21.6 | 20.9 | 106 | 103 | 60-129 | YES | 3 | 30 |
| Dibromomethane | 20.3 | 20.3 | ND | 20.4 | 20.0 | 101 | 99 | 61-123 | YES | 2 | 30 |
| 1,4-Dioxane | 508.0 | 508.0 | ND | 589 | 689 | 116 | 136 | 26-160 | YES | 16 | 30 |
| Methyl Methacrylate | 20.3 | 20.3 | ND | 21.5 | 22.6 | 106 | 111 | 39-139 | YES | 5 | 30 |
| Bromodichloromethane | 20.3 | 20.3 | ND | 19.1 | 18.5 | 94 | 91 | 57-126 | YES | 3 | 30 |
| 2-Nitropropane | 20.3 | 20.3 | ND | 19.1 | 19.7 | 94 | 97 | 26-155 | YES | 3 | 30 |
| cis-1,3-Dichloropropene | 20.3 | 20.3 | ND | 20.0 | 19.6 | 98 | 97 | 50-129 | YES | 1 | 30 |
| 4-Methyl-2-Pentanone | 102.0 | 102.0 | ND | 110 | 116 | 108 | 113 | 34-143 | YES | 5 | 30 |
| Toluene | 20.3 | 20.3 | ND | 23.4 | 21.0 | 115 | 103 | 45-142 | YES | 11 | 30 |
| trans-1,3-Dichloropropene | 20.3 | 20.3 | ND | 20.4 | 20.2 | 100 | 100 | 51-127 | YES | 0 | 30 |
| Ethyl Methacrylate | 20.3 | 20.3 | ND | 20.8 | 21.4 | 103 | 105 | 36-140 | YES | 2 | 30 |
| 1,1,2-Trichloroethane | 20.3 | 20.3 | ND | 20.3 | 20.0 | 100 | 99 | 50-147 | YES | 1 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Entered by _____

_____ Ver. by _____

_____

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: xm22s11.d
SEDT2 4232854
Method: SW-846 8260B
Dilution Factor: 0.84
Instrument: HP09193

Matrix Spike: xm22s12.d
SEDT2MS 4232855
Matrix/Level: SL
MS Dilution Factor: 0.84

Spike Duplicate: xm22s13.d
SEDT2MSD 4232856
Batch: X040821AA
MSD Dilution Factor: 0.84
Moisture: 17

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 20.3 | 20.3 | ND | 20.7 | 19.6 | 102 | 97 | 39-160 | YES | 5 | 30 |
| 1,3-Dichloropropane | 20.3 | 20.3 | ND | 20.4 | 20.5 | 101 | 101 | 61-129 | YES | 0 | 30 |
| 2-Hexanone | 102.0 | 102.0 | ND | 105 | 110 | 103 | 108 | 27-149 | YES | 5 | 30 |
| Dibromochloromethane | 20.3 | 20.3 | ND | 19.4 | 19.2 | 95 | 95 | 53-130 | YES | 0 | 30 |
| 1,2-Dibromoethane | 20.3 | 20.3 | ND | 20.8 | 20.7 | 103 | 102 | 61-125 | YES | 1 | 30 |
| Chlorobenzene | 20.3 | 20.3 | ND | 20.9 | 19.9 | 103 | 98 | 59-125 | YES | 5 | 30 |
| 1,1,1,2-Tetrachloroethane | 20.3 | 20.3 | ND | 19.6 | 19.0 | 97 | 94 | 58-128 | YES | 3 | 30 |
| Ethylbenzene | 20.3 | 20.3 | ND | 39.2 | 22.0 | 193 | 108 | 40-143 | NO | 56 | 30 |
| m+p-Xylene | 40.6 | 40.6 | 1.57 | 74.4 | 44.2 | 179 | 105 | 40-143 | NO | 52 | 30 |
| Xylene (Total) | 61.0 | 61.0 | 3.14 | 122 | 68.9 | 194 | 108 | 40-143 | NO | 57 | 30 |
| o-Xylene | 20.3 | 20.3 | 1.56 | 47.3 | 24.7 | 225 | 114 | 40-143 | NO | 65 | 30 |
| Styrene | 20.3 | 20.3 | ND | 21.0 | 19.9 | 104 | 98 | 46-137 | YES | 6 | 30 |
| Bromoform | 20.3 | 20.3 | ND | 19.1 | 19.5 | 94 | 96 | 46-128 | YES | 2 | 30 |
| Isopropylbenzene | 20.3 | 20.3 | 1.21 | 40.4 | 23.3 | 193 | 109 | 48-138 | NO | 56 | 30 |
| Cyclohexanone | 508.0 | 508.0 | ND | 563 | 625 | 111 | 123 | 5 -174 | YES | 10 | 30 |
| Bromobenzene | 20.3 | 20.3 | ND | 22.8 | 21.8 | 113 | 108 | 52-131 | YES | 5 | 30 |
| 1,1,2,2-Tetrachloroethane | 20.3 | 20.3 | ND | 24.6 | 24.4 | 121 | 120 | 37-151 | YES | 1 | 30 |
| 1,2,3-Trichloropropane | 20.3 | 20.3 | ND | 24.0 | 24.0 | 118 | 118 | 36-161 | YES | 0 | 30 |
| trans-1,4-Dichloro-2-Butene | 102.0 | 102.0 | ND | 104 | 105 | 102 | 103 | 36-143 | YES | 1 | 30 |
| n-Propylbenzene | 20.3 | 20.3 | 1.74 | 46.6 | 26.0 | 221 | 120 | 31-151 | NO | 59 | 30 |
| 2-Chlorotoluene | 20.3 | 20.3 | ND | 23.8 | 22.3 | 117 | 110 | 48-141 | YES | 6 | 30 |
| 1,3,5-Trimethylbenzene | 20.3 | 20.3 | 12.9 | 94.4 | 46.4 | 402 | 165 | 29-153 | NO | 84 | 30 |
| 4-Chlorotoluene | 20.3 | 20.3 | ND | 22.7 | 21.8 | 112 | 107 | 48-134 | YES | 5 | 30 |
| tert-Butylbenzene | 20.3 | 20.3 | ND | 22.8 | 21.7 | 112 | 107 | 44-148 | YES | 5 | 30 |
| Pentachloroethane | 20.3 | 20.3 | ND | 19.9 | 21.0 | 98 | 103 | 26-138 | YES | 5 | 30 |
| 1,2,4-Trimethylbenzene | 20.3 | 20.3 | 33.1 | 240 | 83.5 | 1017 | 248 | 35-153 | NO | 122 | 30 |
| sec-Butylbenzene | 20.3 | 20.3 | ND | 23.3 | 21.6 | 115 | 106 | 31-149 | YES | 8 | 30 |
| 1,3-Dichlorobenzene | 20.3 | 20.3 | ND | 21.4 | 20.9 | 105 | 103 | 45-130 | YES | 2 | 30 |
| p-Isopropyltoluene | 20.3 | 20.3 | 2.77 | 33.2 | 26.2 | 150 | 116 | 33-144 | NO | 26 | 30 |
| 1,4-Dichlorobenzene | 20.3 | 20.3 | ND | 20.9 | 20.7 | 103 | 102 | 45-129 | YES | 1 | 30 |
| 1,2-Dichlorobenzene | 20.3 | 20.3 | ND | 20.7 | 20.3 | 102 | 100 | 49-126 | YES | 2 | 30 |
| n-Butylbenzene | 20.3 | 20.3 | 26.1 | 26.2 | 22.5 | 0 | -18 | 22-149 | NO | 200 | 30 |
| 1,2-Dibromo-3-Chloropropane | 20.3 | 20.3 | ND | 86.2 | 41.2 | 425 | 203 | 29-147 | NO | 71 | 30 |
| 1,2,4-Trichlorobenzene | 20.3 | 20.3 | ND | 15.0 | 15.0 | 74 | 74 | 13-140 | YES | 0 | 30 |
| Hexachlorobutadiene | 20.3 | 20.3 | ND | 14.5 | 13.5 | 71 | 66 | 5 -151 | YES | 7 | 30 |
| Naphthalene | 20.3 | 20.3 | 568 | 762 | 561 | 956 | -37 | 2 -142 | NO | 216 | 30 |
| 1,2,3-Trichlorobenzene | 20.3 | 20.3 | ND | 13.5 | 13.7 | 67 | 67 | 15-140 | YES | 0 | 30 |
| 2-Methylnaphthalene | 20.3 | 20.3 | 534 | 1130 | 720 | 2937 | 919 | 1 -127 | NO | 105 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: xm22l01.d
Inst: HP09193
Dilution Factor: 1.0

Injected: 03/22/04 at 16:55
Sample: LCSX61

Method: SW-846 8260B
Matrix/Level: SL
Batch: X040821AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.00 | 20.20 | 101 | 1 -166 | YES |
| Chloromethane | 20.00 | 19.68 | 98 | 44-139 | YES |
| Vinyl Chloride | 20.00 | 18.31 | 92 | 48-135 | YES |
| Bromomethane | 20.00 | 18.44 | 92 | 35-146 | YES |
| Chloroethane | 20.00 | 18.57 | 93 | 50-137 | YES |
| Trichlorofluoromethane | 20.00 | 17.28 | 86 | 45-133 | YES |
| Acrolein | 150.00 | 138.84 | 93 | 55-128 | YES |
| 1,1-Dichloroethene | 20.00 | 18.06 | 90 | 69-133 | YES |
| Freon 113 | 20.00 | 17.39 | 87 | 58-129 | YES |
| Acetone | 150.00 | 153.57 | 102 | 29-165 | YES |
| Methyl Iodide | 20.00 | 18.61 | 93 | 72-127 | YES |
| 2-Propanol | 150.00 | 141.47 | 94 | 41-175 | YES |
| Carbon Disulfide | 20.00 | 18.48 | 92 | 70-129 | YES |
| Allyl Chloride | 20.00 | 18.37 | 92 | 39-144 | YES |
| Methyl Acetate | 20.00 | 22.08 | 110 | 64-135 | YES |
| Methylene Chloride | 20.00 | 18.99 | 95 | 81-121 | YES |
| t-Butyl Alcohol | 200.00 | 180.56 | 90 | 51-160 | YES |
| Acrylonitrile | 100.00 | 104.68 | 105 | 63-123 | YES |
| trans-1,2-Dichloroethene | 20.00 | 18.31 | 92 | 77-124 | YES |
| Methyl Tertiary Butyl Ether | 20.00 | 20.10 | 100 | 75-125 | YES |
| n-Hexane | 20.00 | 18.06 | 90 | 51-135 | YES |
| 1,1-Dichloroethane | 20.00 | 18.79 | 94 | 79-124 | YES |
| 2-Chloro-1,3-Butadiene | 20.00 | 19.53 | 98 | 72-128 | YES |
| di-Isopropyl Ether | 20.00 | 19.98 | 100 | 70-129 | YES |
| Ethyl t-Butyl Ether | 20.00 | 19.55 | 98 | 71-124 | YES |
| cis-1,2-Dichloroethene | 20.00 | 19.17 | 96 | 83-118 | YES |
| 1,2-Dichloroethene (total) | 40.00 | 37.48 | 94 | 83-118 | YES |
| 2,2-Dichloropropane | 20.00 | 17.29 | 86 | 72-123 | YES |
| 2-Butanone | 150.00 | 163.78 | 109 | 31-147 | YES |
| Propionitrile | 150.00 | 158.03 | 105 | 64-134 | YES |
| Methacrylonitrile | 150.00 | 161.92 | 108 | 70-131 | YES |
| Bromochloromethane | 20.00 | 18.89 | 94 | 53-134 | YES |
| Tetrahydrofuran | 100.00 | 124.24 | 124 | 60-144 | YES |
| Chloroform | 20.00 | 19.08 | 95 | 81-117 | YES |
| 1,1,1-Trichloroethane | 20.00 | 17.59 | 88 | 74-121 | YES |
| Cyclohexane | 20.00 | 18.47 | 92 | 62-132 | YES |
| 1,1-Dichloropropene | 20.00 | 18.02 | 90 | 75-121 | YES |
| Carbon Tetrachloride | 20.00 | 17.57 | 88 | 63-124 | YES |
| Benzene | 20.00 | 19.13 | 96 | 83-118 | YES |
| Isobutyl Alcohol | 500.00 | 478.60 | 96 | 40-144 | YES |
| 1,2-Dichloroethane | 20.00 | 19.56 | 98 | 76-126 | YES |
| t-Amyl Methyl Ether | 20.00 | 19.27 | 96 | 74-117 | YES |
| n-Heptane | 20.00 | 17.79 | 89 | 50-127 | YES |
| n-Butanol | 1000.00 | 886.66 | 89 | 46-136 | YES |
| Trichloroethene | 20.00 | 18.20 | 91 | 81-114 | YES |
| Methylcyclohexane | 20.00 | 17.82 | 89 | 23-142 | YES |
| 1,2-Dichloropropane | 20.00 | 19.77 | 99 | 78-119 | YES |
| Dibromomethane | 20.00 | 19.57 | 98 | 80-116 | YES |
| 1,4-Dioxane | 500.00 | 457.56 | 92 | 56-131 | YES |
| Methyl Methacrylate | 20.00 | 20.64 | 103 | 63-122 | YES |
| Bromodichloromethane | 20.00 | 18.35 | 92 | 77-116 | YES |
| 2-Nitropropane | 20.00 | 18.46 | 92 | 43-147 | YES |
| cis-1,3-Dichloropropene | 20.00 | 18.79 | 94 | 80-113 | YES |
| 4-Methyl-2-Pentanone | 100.00 | 108.23 | 108 | 55-135 | YES |
| Toluene | 20.00 | 18.96 | 95 | 81-116 | YES |
| trans-1,3-Dichloropropene | 20.00 | 19.42 | 97 | 72-119 | YES |
| Ethyl Methacrylate | 20.00 | 19.86 | 99 | 70-121 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by 8675

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: xm22l01.d
Inst: HP09193
Dilution Factor: 1.0

Injected: 03/22/04 at 16:55
Sample: LCSX61

Method: SW-846 8260B
Matrix/Level: SL
Batch: X040821AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 20.00 | 19.64 | 98 | 83-114 | YES |
| Tetrachloroethene | 20.00 | 17.25 | 86 | 79-122 | YES |
| 1,3-Dichloropropane | 20.00 | 19.69 | 98 | 80-117 | YES |
| 2-Hexanone | 100.00 | 101.98 | 102 | 41-144 | YES |
| Dibromochloromethane | 20.00 | 18.83 | 94 | 73-116 | YES |
| 1,2-Dibromoethane | 20.00 | 19.44 | 97 | 77-114 | YES |
| Chlorobenzene | 20.00 | 18.48 | 92 | 81-112 | YES |
| 1,1,1,2-Tetrachloroethane | 20.00 | 18.54 | 93 | 78-115 | YES |
| Ethylbenzene | 20.00 | 18.43 | 92 | 82-115 | YES |
| m+p-Xylene | 40.00 | 36.58 | 91 | 82-117 | YES |
| Xylene (Total) | 60.00 | 55.53 | 93 | 82-117 | YES |
| o-Xylene | 20.00 | 18.95 | 95 | 82-117 | YES |
| Styrene | 20.00 | 18.19 | 91 | 79-116 | YES |
| Bromoform | 20.00 | 18.46 | 92 | 63-116 | YES |
| Isopropylbenzene | 20.00 | 18.56 | 93 | 79-117 | YES |
| Cyclohexanone | 500.00 | 445.51 | 89 | 30-151 | YES |
| Bromobenzene | 20.00 | 18.91 | 95 | 77-113 | YES |
| 1,1,2,2-Tetrachloroethane | 20.00 | 20.06 | 100 | 64-121 | YES |
| 1,2,3-Trichloropropane | 20.00 | 20.77 | 104 | 67-126 | YES |
| trans-1,4-Dichloro-2-Butene | 100.00 | 92.65 | 93 | 55-134 | YES |
| n-Propylbenzene | 20.00 | 18.46 | 92 | 72-124 | YES |
| 2-Chlorotoluene | 20.00 | 18.49 | 92 | 73-114 | YES |
| 1,3,5-Trimethylbenzene | 20.00 | 18.30 | 92 | 72-118 | YES |
| 4-Chlorotoluene | 20.00 | 18.26 | 91 | 79-116 | YES |
| tert-Butylbenzene | 20.00 | 18.35 | 92 | 74-120 | YES |
| Pentachloroethane | 20.00 | 18.30 | 92 | 66-111 | YES |
| 1,2,4-Trimethylbenzene | 20.00 | 18.57 | 93 | 74-117 | YES |
| sec-Butylbenzene | 20.00 | 18.32 | 92 | 72-120 | YES |
| 1,3-Dichlorobenzene | 20.00 | 18.31 | 92 | 76-112 | YES |
| p-Isopropyltoluene | 20.00 | 18.12 | 91 | 74-120 | YES |
| 1,4-Dichlorobenzene | 20.00 | 17.86 | 89 | 81-113 | YES |
| 1,2-Dichlorobenzene | 20.00 | 18.18 | 91 | 81-114 | YES |
| n-Butylbenzene | 20.00 | 17.74 | 89 | 69-124 | YES |
| 1,2-Dibromo-3-Chloropropane | 20.00 | 17.88 | 89 | 49-127 | YES |
| 1,2,4-Trichlorobenzene | 20.00 | 16.53 | 83 | 68-119 | YES |
| Hexachlorobutadiene | 20.00 | 16.13 | 81 | 57-122 | YES |
| Naphthalene | 20.00 | 17.30 | 86 | 59-123 | YES |
| 1,2,3-Trichlorobenzene | 20.00 | 16.57 | 83 | 70-117 | YES |
| 2-Methylnaphthalene | 20.00 | 9.95 | 50 | 48-107 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by 0076

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xm22c03.d Date Analyzed: 03/22/04

Instrument ID: HP09193 Time Analyzed: 14:31

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) AREA # | RT # | IS2(FBZ) AREA # | RT # | IS3(CBZ) AREA # | RT # | IS4(DCB) AREA # | RT # |
|---|---|---|---|---|---|---|---|---|
| 12 HOUR STD | 250367 | 4.505 | 1764970 | 7.952 | 1401027 | 11.344 | 828766 | 13.205 |
| UPPER LIMIT | 500734 | 5.005 | 3529940 | 8.452 | 2802054 | 11.844 | 1657532 | 13.705 |
| LOWER LIMIT | 125184 | 4.005 | 882485 | 7.452 | 700514 | 10.844 | 414383 | 12.705 |
| EPA SAMPLE NO. | | | | | | | | |
| 01 VBLKX61 | 290585 | 4.508 | 1773114 | 7.958 | 1405600 | 11.347 | 762263 | 13.205 |
| 02 LCSX61 | 262626 | 4.512 | 1824081 | 7.955 | 1424311 | 11.346 | 815819 | 13.201 |
| 03 LCS1X61 | | | 1798105 | 7.951 | 1417268 | 11.343 | 780335 | 13.204 |
| 04 SEDT1 | | | 1704971 | 7.951 | 1329304 | 11.343 | 688511 | 13.201 |
| 05 SEDT2 | 238508 | 4.505 | 1676020 | 7.955 | 1291527 | 11.343 | 679238 | 13.201 |
| 06 SEDT2MS | 273155 | 4.502 | 1840215 | 7.951 | 1390534 | 11.346 | 681912 | 13.204 |
| 07 SEDT2MSD | 311455 | 4.505 | 1979142 | 7.952 | 1505804 | 11.343 | 756792 | 13.201 |
| 08 SEDT2MS1 | | | 1902558 | 7.955 | 1328653 | 11.347 | 516727 | 13.205 |
| 09 SEDT2MSD1 | | | 1957551 | 7.951 | 1373059 | 11.346 | 556233 | 13.204 |
| 10 T2-FD | | | 2042804 | 7.955 | 1477830 | 11.343 | 617360 | 13.201 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

0677

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xm29c01.d Date Analyzed: 03/29/04

Instrument ID: HP09193 Time Analyzed: 08:34

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | | IS1(TBA) AREA | # | RT | # | IS2(FBZ) AREA | # | RT | # | IS3(CBZ) AREA | # | RT | # | IS4(DCB) AREA | # | RT | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 187979 | | 4.505 | | 1433401 | | 7.955 | | 1136753 | | 11.346 | | 696250 | | 13.204 | |
| | UPPER LIMIT | 375958 | | 5.005 | | 2866802 | | 8.455 | | 2273506 | | 11.846 | | 1392500 | | 13.704 | |
| | LOWER LIMIT | 93990 | | 4.005 | | 716700 | | 7.455 | | 568376 | | 10.846 | | 348125 | | 12.704 | |
| | EPA SAMPLE NO. | | | | | | | | | | | | | | | | |
| 01 | VBLKX66 | 219335 | | 4.499 | | 1346790 | | 7.958 | | 1081184 | | 11.343 | | 604337 | | 13.204 | |
| 02 | STCKPRE | | | | | 1233676 | | 7.958 | | 843169 | | 11.347 | | 300323 | * | 13.204 | |
| 03 | 5GPTB | | | | | 1355364 | | 7.958 | | 1072239 | | 11.347 | | 575529 | | 13.205 | |
| 04 | 5GP21 | | | | | 1297630 | | 7.958 | | 1005455 | | 11.346 | | 511101 | | 13.204 | |
| 05 | TGP2D | | | | | 1209366 | | 7.955 | | 945532 | | 11.346 | | 448187 | | 13.204 | |
| 06 | GLAUP | | | | | 1241228 | | 7.958 | | 806296 | | 11.346 | | 259280 | * | 13.204 | |
| 07 | GLADN | | | | | 1249799 | | 7.955 | | 859108 | | 11.346 | | 294632 | * | 13.204 | |
| 08 | GLADNMS | | | | | 1370279 | | 7.958 | | 938222 | | 11.346 | | 367719 | | 13.204 | |
| 09 | GLADNMSD | | | | | 1476734 | | 7.958 | | 1052823 | | 11.346 | | 436398 | | 13.204 | |
| 10 | GLADNMS1 | | | | | 1425111 | | 7.955 | | 1002830 | | 11.346 | | 362612 | | 13.204 | |
| 11 | GLADNMSD1 | | | | | 1399904 | | 7.958 | | 974608 | | 11.346 | | 333092 | * | 13.204 | |
| 12 | GLAUPRE | | | | | 1353964 | | 7.958 | | 954952 | | 11.346 | | 334721 | * | 13.204 | |
| 13 | GLADNRE | | | | | 1303202 | | 7.961 | | 925045 | | 11.346 | | 334056 | * | 13.204 | |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

0078

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

# Sample Data

Data File: /chem/HP09193.i/04mar29a.b/xm29s03.d
Date : 29-MAR-2004 12:07
Client ID: 5GP21
Sample Info: 5GP21;4241634;2;0;;;

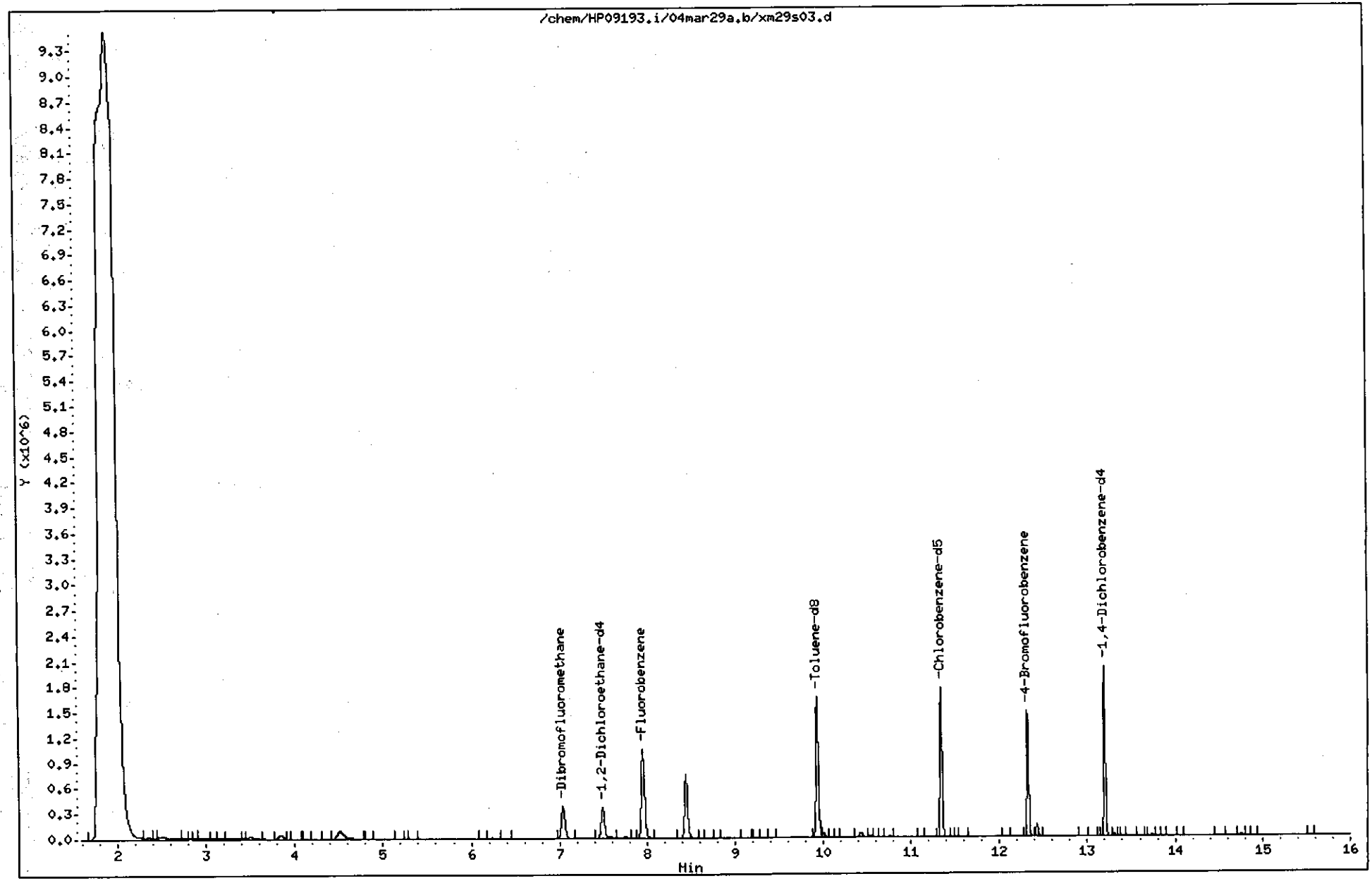
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
3/29/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29s03.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 12:07  Analyst ID: LCM01518

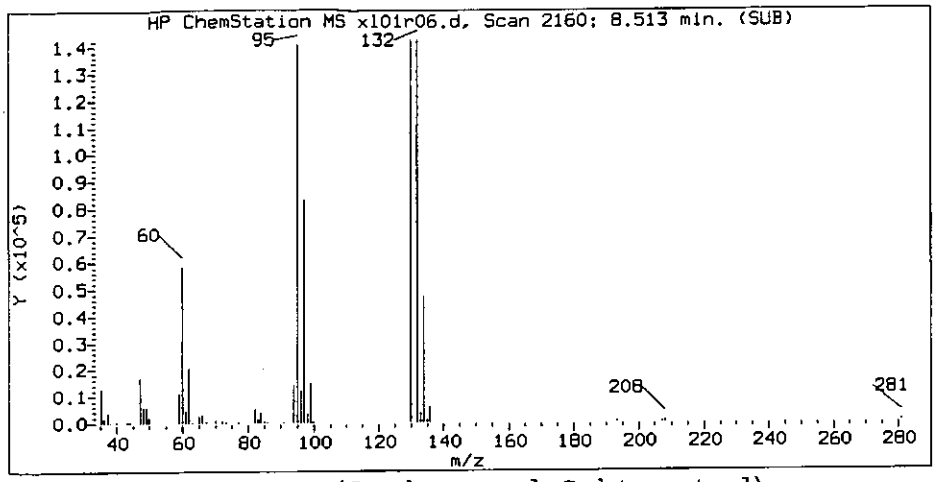
Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: TCE
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 12:31 Automation

Sample Name: 5GP21  Lab Sample ID: 4241634

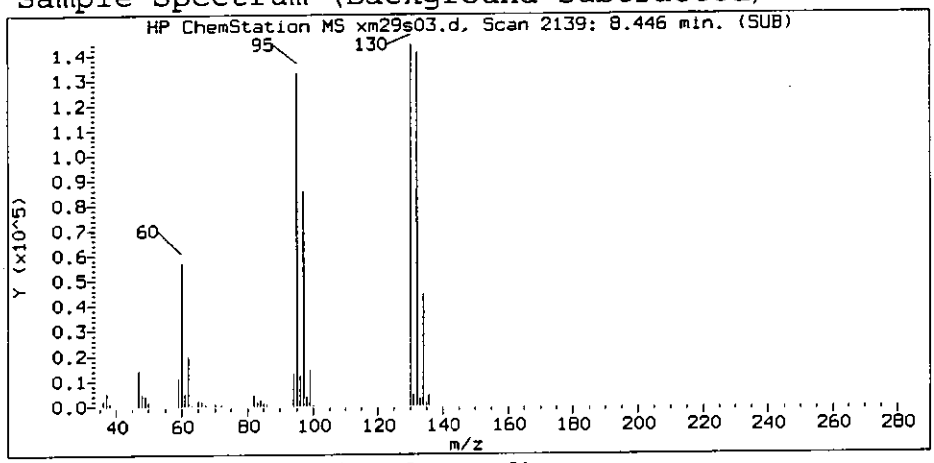
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 69)*Fluorobenzene | (1) | 7.958 | 96 | 1297630 | 50.000 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 327638 | 48.589 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 1005455 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 511101 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.040 | 113 | 321511 | 52.226 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 77364 | 46.876 |
| 86)$Toluene-d8 | (2) | 9.935 | 98 | 1242697 | 50.165 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 426340 | 42.793 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

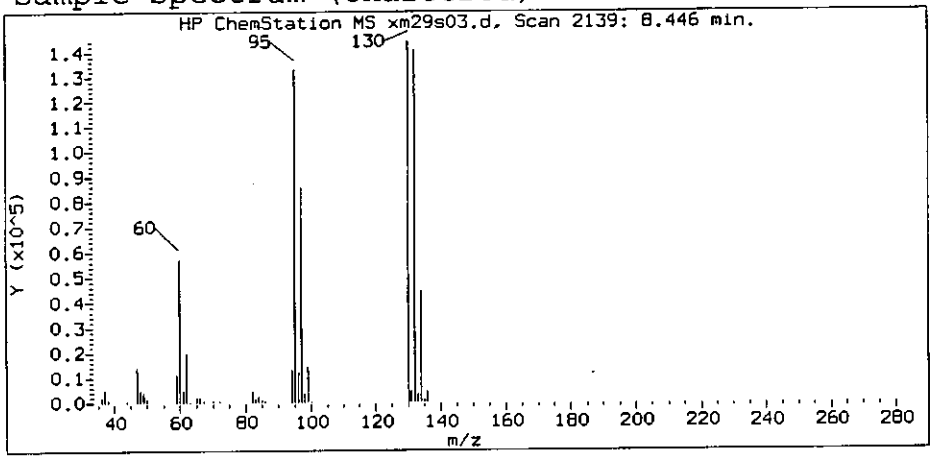
Reference Standard Spectrum for Trichloroethene

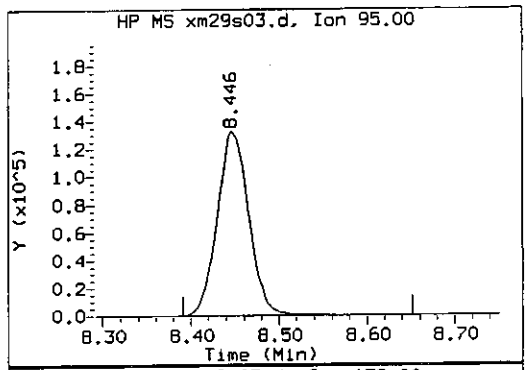


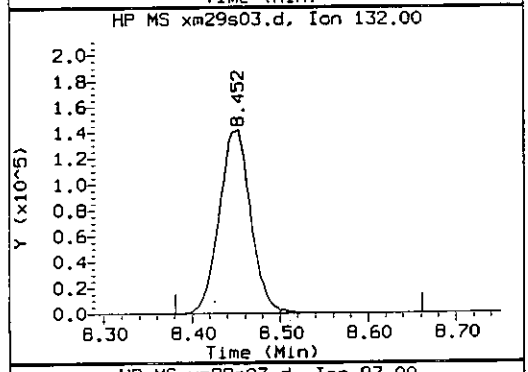

Sample Spectrum (Background Subtracted)

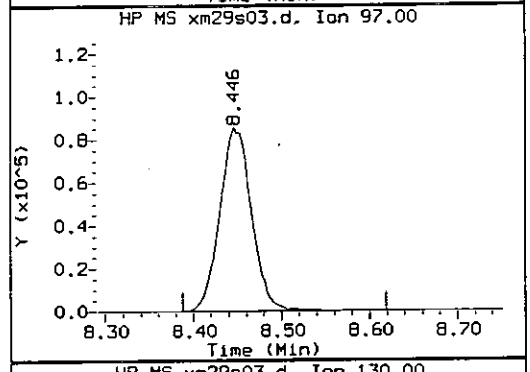


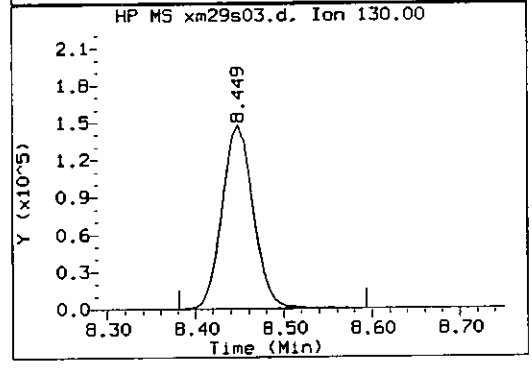

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04mar29a.b/xm29s03.d
Injection date and time: 29-MAR-2004 12:07

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: TCE
Calibration date and time: 29-MAR-2004 11:02
Date, time and analyst ID of latest file update: 29-Mar-2004 12:31 Automation

Sample Name: 5GP21

Lab Sample ID: 4241634

| | |
|---|---|
| Compound Number | : 73 |
| Compound Name | : Trichloroethene |
| Scan Number | : 2139 |
| Retention Time (minutes) | : 8.446 |
| Quant Ion | : 95.0 |
| Area (flag) | : 327638 |
| Concentration (ug/Kg) | : 48.5886 |

8882

5GP21

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4241634

File: /chem/HP09193.i/04mar29a.b/xm29s03.d
Sample: 5GP21;4241634;2;0;;;
Injected At:29-MAR-2004 12:07
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm29b03.d
Sublist: TCE

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:0.80
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.2200 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.958(-0.003) | 1987 | 96 | 1297630( -9) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 1005455( -12) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205( 0.000) | 3622 | 152 | 511101( -27) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.040( 0.000) | 113 | 321511 | 52.226 | 104% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 77364 | 46.876 | 94% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.935( 0.000) | 98 | 1242697 | 50.165 | 100% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 426340 | 42.793 | 86% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Reporting Qual. | Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 73) Trichloroethene | (1) | 8.446( 0.000) | 95 | 327638 | 48.589 | 39.06 | | | 0.80 | 4.02 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N6512

Analyst: LCM1518 Date: 3/29/04

Auditor: [signature] Date: 3/30/04

Data File: /chem/HP09193.i/04mar29a.b/xm29s04.d
Date : 29-MAR-2004 12:34
Client ID: TGP2D
Sample Info: TGP2D;4241635;2;0;;;

Column phase: DB-624

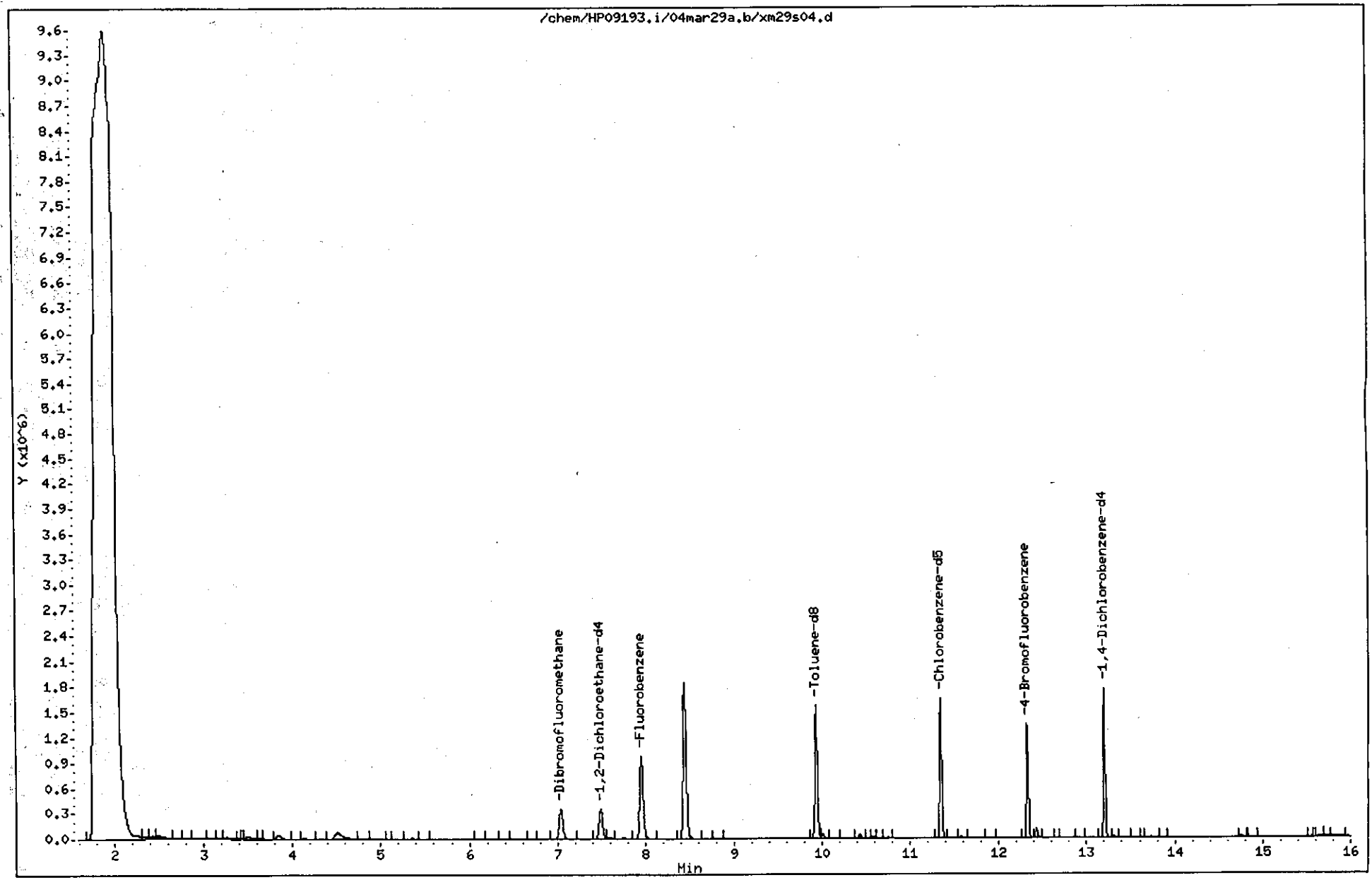
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM1518
3/29/04



68674



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29s04.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 12:34  Analyst ID: LCM01518

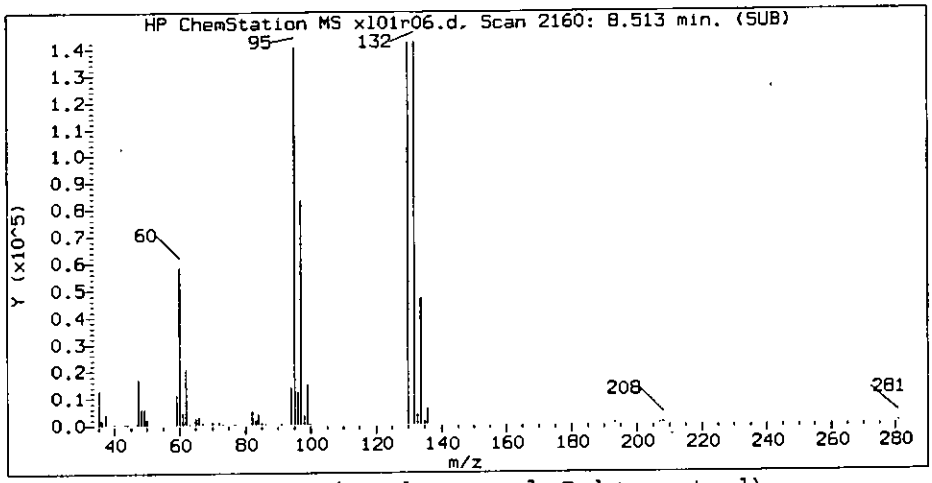
Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: TCE
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 12:59 Automation

Sample Name: TGP2D  Lab Sample ID: 4241635

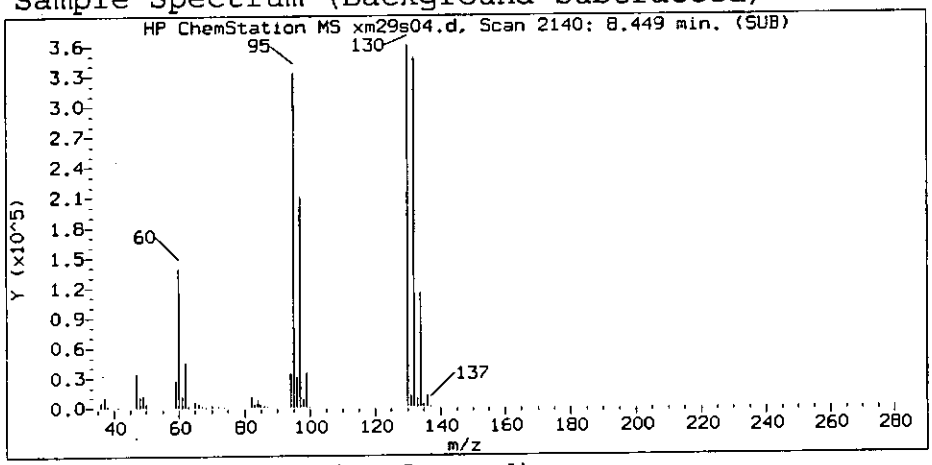
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1209366 | 50.000 |
| 73) Trichloroethene | (1) | 8.449 | 95 | 808769 | 128.694 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 945532 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 448187 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.040 | 113 | 305055 | 53.170 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 74034 | 48.132 |
| 86)$Toluene-d8 | (2) | 9.935 | 98 | 1165178 | 50.017 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 393234 | 41.972 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

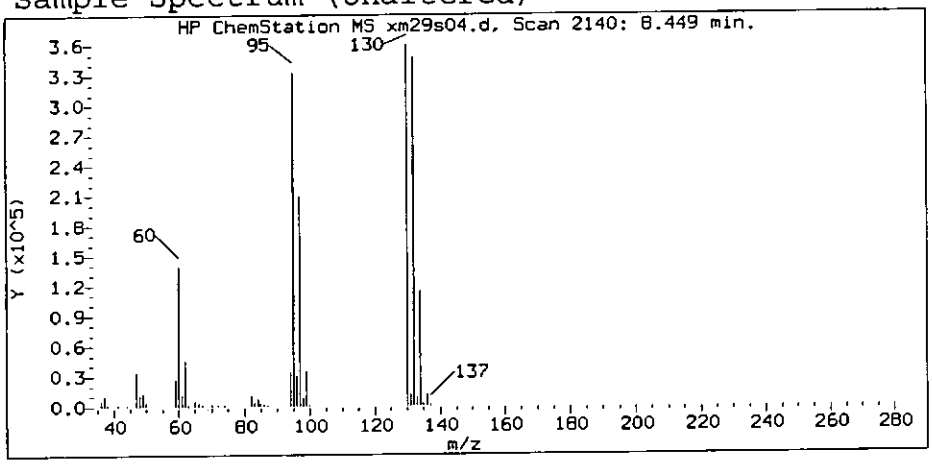
Reference Standard Spectrum for Trichloroethene

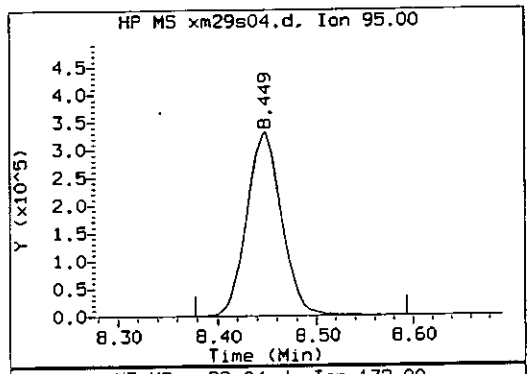


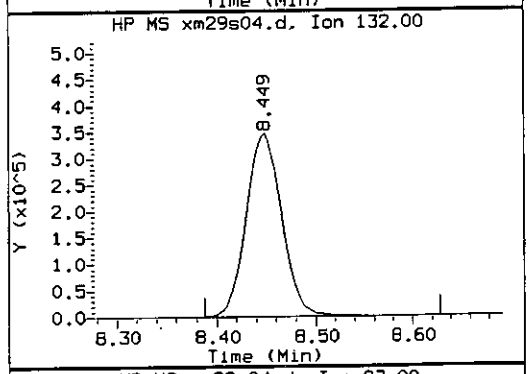

Sample Spectrum (Background Subtracted)

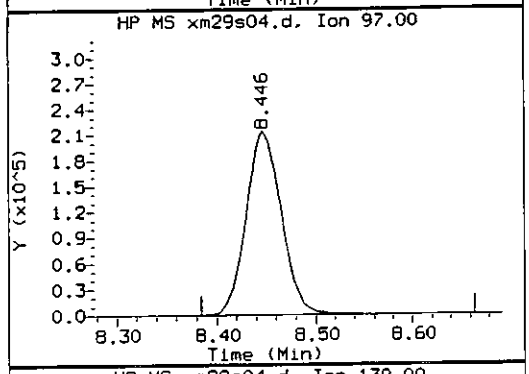


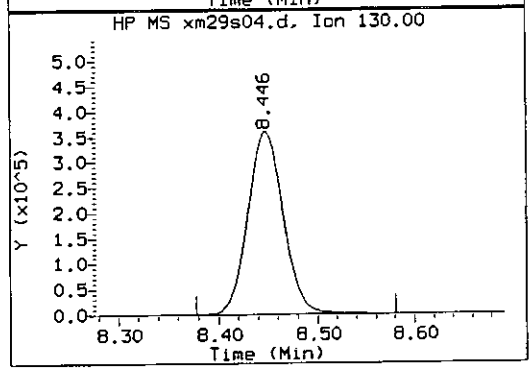

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04mar29a.b/xm29s04.d
Injection date and time: 29-MAR-2004 12:34

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: TCE
Calibration date and time: 29-MAR-2004 11:02
Date, time and analyst ID of latest file update: 29-Mar-2004 12:59 Automation

Sample Name: TGP2D

Lab Sample ID: 4241635

| | | |
|---|---|---|
| Compound Number | : | 73 |
| Compound Name | : | Trichloroethene |
| Scan Number | : | 2140 |
| Retention Time (minutes) | : | 8.449 |
| Quant Ion | : | 95.0 |
| Area (flag) | : | 808769 |
| Concentration (ug/Kg) | : | 128.6939 |

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# TGP2D

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4241635

File: /chem/HP09193.i/04mar29a.b/xm29s04.d
Sample: TGP2D;4241635;2;0;;;
Injected At:29-MAR-2004 12:34
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm29b03.d
Sublist: TCE

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:0.81
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.2000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.000) | 1986 | 96 | 1209366( -16) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 945532( -17) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.204( 0.000) | 3622 | 152 | 448187( -36) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.040( 0.000) | 113 | 305055 | 53.170 | 106% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 74034 | 48.132 | 96% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.935( 0.000) | 98 | 1165178 | 50.017 | 100% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 393234 | 41.972 | 84% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 73) Trichloroethene | (1) | 8.449( 0.000) | 95 | 808769 | 128.694 | 103.79 | | | 0.81 | 4.03 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N6510

Analyst: LCM1518 Date: 3/29/04

Auditor: [signature] Date: 3/30/04

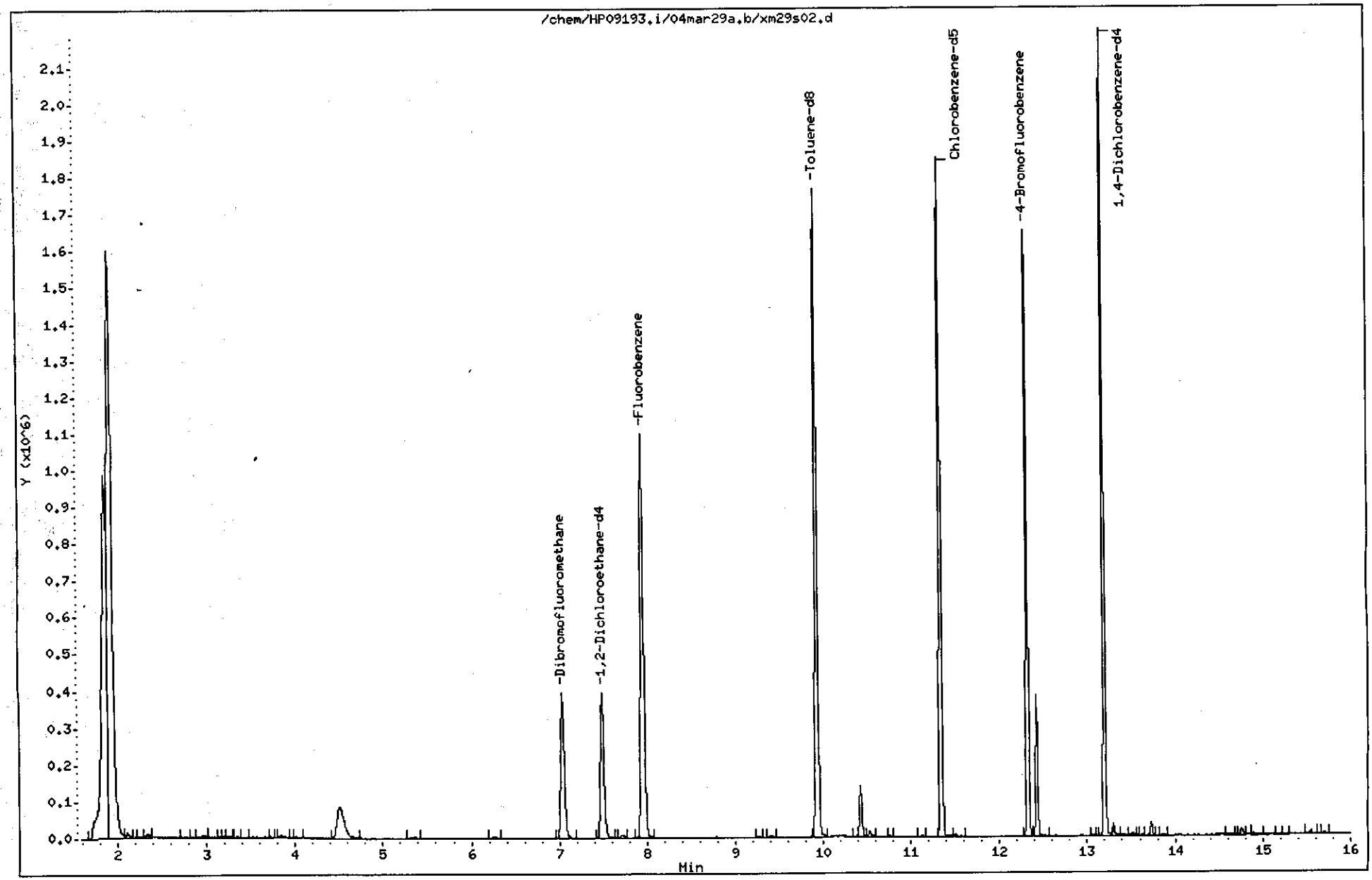
Data File: /chem/HP09193.i/04mar29a.b/xm29s02.d
Date : 29-MAR-2004 11:40
Client ID: 5GPTB
Sample Info: 5GPTB;4241640;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 01518 3/29/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29s02.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 11:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: TCE
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 12:13 lcm01518

Sample Name: 5GPTB  Lab Sample ID: 4241640

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 69) *Fluorobenzene | (1) | 7.958 | 96 | 1355364 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1072239 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 575529 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.040 | 113 | 336437 | 52.323 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 82962 | 48.126 |
| 86) $Toluene-d8 | (2) | 9.935 | 98 | 1293277 | 48.955 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 465044 | 43.771 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# 5GPTB

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4241640

File: /chem/HP09193.i/04mar29a.b/xm29s02.d
Sample: 5GPTB;4241640;2;0;;;
Injected At:29-MAR-2004 11:40
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm29b03.d
Sublist: TCE

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml.(Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.958(-0.003) | 1987 | 96 | 1355364( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 1072239( -6) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205( 0.000) | 3622 | 152 | 575529( -17) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.040( 0.000) | 113 | 336437 | 52.323 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 82962 | 48.126 | 96% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.935( 0.000) | 98 | 1293277 | 48.955 | 98% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 465044 | 43.771 | 88% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 73) Trichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N6514

Analyst: LCM1518 Date: 3/29/04

Auditor: [signature] Date: 3/30/04



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# Standards Data

6A

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 03/12/04 03/12/04

Heated Purge: (Y/N) Y Calibration Times: 08:04 11:13

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xm12i07.d RRF 10= xm12i05.d RRF 20= xm12i04.d
RRF 50= xm12i03.d RRF100= xm12i02.d RRF300= xm12i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.3558 | 0.2637 | 0.3586 | 0.3490 | 0.3376 | 0.3320 | | 0.3328 | 11 | AVG | |
| Chloromethane | #0.3525 | 0.2952 | 0.3392 | 0.3259 | 0.2952 | 0.2837 | | 0.3153 | 9 | AVG | # |
| Vinyl Chloride | *0.3341 | 0.2617 | 0.3217 | 0.3147 | 0.2972 | 0.2761 | | 0.3009 | 9 | AVG | * |
| Bromomethane | 0.2329 | 0.1876 | 0.2208 | 0.2113 | 0.1999 | 0.1747 | | 0.2045 | 11 | AVG | |
| Chloroethane | 0.1903 | 0.1521 | 0.1865 | 0.1788 | 0.1676 | 0.1488 | | 0.1707 | 10 | AVG | |
| Trichlorofluoromethane | 0.3615 | 0.2733 | 0.3647 | 0.3617 | 0.3537 | 0.3516 | | 0.3444 | 10 | AVG | |
| Acrolein | 0.0455 | 0.0345 | 0.0405 | 0.0438 | 0.0439 | 0.0373 | | 0.0409 | 11 | AVG | |
| 1,1-Dichloroethene | *0.2360 | 0.2029 | 0.2225 | 0.2195 | 0.2062 | 0.2047 | | 0.2153 | 6 | AVG | * |
| Freon 113 | 0.2488 | 0.2054 | 0.2275 | 0.2254 | 0.2126 | 0.2122 | | 0.2220 | 7 | AVG | |
| Acetone | 0.0321 | 0.0234 | 0.0229 | 0.0231 | 0.0227 | 0.0191 | | 0.0239 | 18 | 2NDDEG | |
| Methyl Iodide | 0.4535 | 0.3892 | 0.4293 | 0.4244 | 0.4063 | 0.4047 | | 0.4179 | 5 | AVG | |
| 2-Propanol | 0.0238 | 0.0199 | 0.0211 | 0.0184 | 0.0183 | 0.0169 | | 0.0197 | 13 | AVG | |
| Carbon Disulfide | 0.8978 | 0.7483 | 0.8296 | 0.8107 | 0.7651 | 0.7598 | | 0.8019 | 7 | AVG | |
| Allyl Chloride | 0.4328 | 0.4222 | 0.4091 | 0.4117 | 0.4003 | 0.3849 | | 0.4101 | 4 | AVG | |
| Methyl Acetate | 0.2361 | 0.2036 | 0.2002 | 0.1862 | 0.1865 | 0.1759 | | 0.1981 | 11 | AVG | |
| Methylene Chloride | 0.3006 | 0.2575 | 0.2745 | 0.2642 | 0.2517 | 0.2500 | | 0.2664 | 7 | AVG | |
| t-Butyl Alcohol | 1.1971 | 1.2890 | 1.4209 | 1.2345 | 1.2276 | 1.2865 | | 1.2759 | 6 | AVG | |
| Acrylonitrile | 0.0981 | 0.0789 | 0.0895 | 0.0979 | 0.0994 | 0.0886 | | 0.0921 | 9 | AVG | |
| trans-1,2-Dichloroethene | 0.2691 | 0.2378 | 0.2635 | 0.2609 | 0.2506 | 0.2489 | | 0.2551 | 4 | AVG | |
| Methyl Tertiary Butyl Ether | 0.7084 | 0.6507 | 0.7435 | 0.7245 | 0.7114 | 0.6944 | | 0.7055 | 4 | AVG | |
| n-Hexane | 0.3527 | 0.3126 | 0.3629 | 0.3715 | 0.3499 | 0.3454 | | 0.3492 | 6 | AVG | |
| 1,1-Dichloroethane | #0.4557 | 0.3961 | 0.4346 | 0.4289 | 0.4196 | 0.4187 | | 0.4256 | 5 | AVG | # |
| 2-Chloro-1,3-Butadiene | 0.3054 | 0.2898 | 0.3345 | 0.3450 | 0.3356 | 0.3478 | | 0.3264 | 7 | AVG | |
| di-Isopropyl Ether | 0.7275 | 0.7033 | 0.8066 | 0.8074 | 0.7814 | 0.7590 | | 0.7642 | 6 | AVG | |
| Ethyl t-Butyl Ether | 0.6331 | 0.6350 | 0.7410 | 0.7508 | 0.7337 | 0.7095 | | 0.7005 | 8 | AVG | |
| cis-1,2-Dichloroethene | 0.2838 | 0.2525 | 0.2807 | 0.2774 | 0.2670 | 0.2654 | | 0.2711 | 4 | AVG | |
| 1,2-Dichloroethene (total) | 0.2764 | 0.2452 | 0.2721 | 0.2692 | 0.2588 | 0.2572 | | 0.2631 | 4 | AVG | |
| 2,2-Dichloropropane | 0.3475 | 0.3065 | 0.3468 | 0.3503 | 0.3378 | 0.3506 | | 0.3399 | 5 | AVG | |
| 2-Butanone | 0.0338 | 0.0284 | 0.0329 | 0.0363 | 0.0378 | 0.0331 | | 0.0337 | 10 | AVG | |
| Propionitrile | 0.0412 | 0.0363 | 0.0373 | 0.0355 | 0.0357 | 0.0335 | | 0.0366 | 7 | AVG | |
| Methacrylonitrile | 0.1196 | 0.1111 | 0.1158 | 0.1100 | 0.1117 | 0.1073 | | 0.1126 | 4 | AVG | |
| Bromochloromethane | 0.1485 | 0.1519 | 0.1531 | 0.1494 | 0.1485 | 0.1455 | | 0.1495 | 2 | AVG | |
| Tetrahydrofuran | 0.0337 | 0.0255 | 0.0288 | 0.0326 | 0.0335 | 0.0304 | | 0.0307 | 10 | AVG | |
| Chloroform | *0.4383 | 0.3871 | 0.4271 | 0.4214 | 0.4085 | 0.4182 | | 0.4168 | 4 | AVG | * |
| 1,1,1-Trichloroethane | 0.4047 | 0.3432 | 0.3743 | 0.3694 | 0.3571 | 0.3785 | | 0.3712 | 6 | AVG | |
| Cyclohexane | 0.4100 | 0.3655 | 0.4280 | 0.4419 | 0.4182 | 0.4202 | | 0.4140 | 6 | AVG | |
| 1,1-Dichloropropene | 0.3294 | 0.2899 | 0.3223 | 0.3230 | 0.3133 | 0.3187 | | 0.3161 | 4 | AVG | |
| Carbon Tetrachloride | 0.3246 | 0.2778 | 0.3134 | 0.3200 | 0.3114 | 0.3314 | | 0.3131 | 6 | AVG | |
| Benzene | 0.9621 | 0.9617 | 1.0547 | 1.0387 | 0.9930 | 0.9732 | | 0.9972 | 4 | AVG | @ |
| Isobutyl Alcohol | 0.0124 | 0.0104 | 0.0125 | 0.0100 | 0.0109 | 0.0106 | | 0.0111 | 10 | AVG | |
| 1,2-Dichloroethane | 0.3431 | 0.2991 | 0.3307 | 0.3235 | 0.3158 | 0.3236 | | 0.3226 | 5 | AVG | |
| t-Amyl Methyl Ether | 0.6286 | 0.6083 | 0.7185 | 0.7224 | 0.7097 | 0.6940 | | 0.6803 | 7 | AVG | |
| n-Heptane | 0.0808 | 0.0687 | 0.0756 | 0.0758 | 0.0721 | 0.0735 | | 0.0744 | 5 | AVG | |
| n-Butanol | 0.0096 | 0.0078 | 0.0108 | 0.0085 | 0.0097 | 0.0092 | | 0.0092 | 11 | AVG | |
| Trichloroethene | 0.2703 | 0.2436 | 0.2684 | 0.2626 | 0.2536 | 0.2605 | | 0.2598 | 4 | AVG | |
| Methylcyclohexane | 0.4391 | 0.4533 | 0.4721 | 0.4705 | 0.4656 | 0.4642 | | 0.4608 | 3 | AVG | |
| 1,2-Dichloropropane | *0.2567 | 0.2404 | 0.2681 | 0.2626 | 0.2510 | 0.2467 | | 0.2542 | 4 | AVG | * |
| Dibromomethane | 0.1645 | 0.1434 | 0.1593 | 0.1558 | 0.1530 | 0.1542 | | 0.1550 | 5 | AVG | |
| 1,4-Dioxane | 0.0031 | 0.0029 | 0.0033 | 0.0029 | 0.0031 | 0.0029 | | 0.0030 | 5 | AVG | |
| Methyl Methacrylate | 0.1797 | 0.1651 | 0.1988 | 0.1978 | 0.2066 | 0.2061 | | 0.1923 | 9 | AVG | |
| Bromodichloromethane | 0.2989 | 0.2767 | 0.3139 | 0.3129 | 0.3128 | 0.3277 | | 0.3071 | 6 | AVG | |

@-Level 4 is 1ppb std--xm12m02
Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

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FORM VI VOA

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 03/12/04 03/12/04

Heated Purge: (Y/N) Y Calibration Times: 08:04 11:13

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xm12i07.d RRF 10= xm12i05.d RRF 20= xm12i04.d
RRF 50= xm12i03.d RRF100= xm12i02.d RRF300= xm12i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Nitropropane | 0.0666 | 0.0624 | 0.0670 | 0.0700 | 0.0719 | 0.0631 | | 0.0668 | 6 | AVG | |
| cis-1,3-Dichloropropene | 0.3520 | 0.3452 | 0.4059 | 0.4187 | 0.4169 | 0.4199 | | 0.3931 | 9 | AVG | |
| 4-Methyl-2-Pentanone | 0.2517 | 0.2280 | 0.2818 | 0.3241 | 0.3356 | 0.2943 | | 0.2859 | 14 | AVG | |
| Toluene | *0.8667 | 0.8104 | 0.8967 | 0.8932 | 0.8513 | 0.8304 | | 0.8581 | 4 | AVG | * |
| trans-1,3-Dichloropropene | 0.4076 | 0.4023 | 0.4694 | 0.4754 | 0.4750 | 0.4761 | | 0.4510 | 8 | AVG | |
| Ethyl Methacrylate | 0.3552 | 0.3791 | 0.4830 | 0.4923 | 0.5051 | 0.4991 | | 0.4523 | 15 | AVG | |
| 1,1,2-Trichloroethane | 0.3648 | 0.2924 | 0.3232 | 0.3097 | 0.3037 | 0.2969 | | 0.3151 | 8 | AVG | |
| Tetrachloroethene | 0.4453 | 0.3940 | 0.4299 | 0.4296 | 0.4069 | 0.4056 | | 0.4185 | 5 | AVG | |
| 1,3-Dichloropropane | 0.5351 | 0.4884 | 0.5426 | 0.5189 | 0.5075 | 0.4833 | | 0.5126 | 5 | AVG | |
| 2-Hexanone | 0.2672 | 0.2344 | 0.2799 | 0.3322 | 0.3391 | 0.2813 | | 0.2890 | 14 | AVG | |
| Dibromochloromethane | 0.3234 | 0.2984 | 0.3466 | 0.3480 | 0.3497 | 0.3590 | | 0.3375 | 7 | AVG | |
| 1,2-Dibromoethane | 0.3169 | 0.3009 | 0.3334 | 0.3288 | 0.3238 | 0.3224 | | 0.3210 | 4 | AVG | |
| Chlorobenzene | #1.0793 | 0.9566 | 1.0322 | 1.0107 | 0.9626 | 0.9413 | | 0.9971 | 5 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.3370 | 0.3160 | 0.3564 | 0.3545 | 0.3427 | 0.3491 | | 0.3426 | 4 | AVG | |
| Ethylbenzene | *1.6089 | 1.5013 | 1.6788 | 1.6880 | 1.5918 | 1.5102 | | 1.5965 | 5 | AVG | * |
| m+p-Xylene | 0.6510 | 0.6199 | 0.6871 | 0.6904 | 0.6552 | 0.6507 | | 0.6590 | 4 | AVG | |
| Xylene (Total) | 0.6161 | 0.5989 | 0.6726 | 0.6736 | 0.6379 | 0.6244 | | 0.6372 | 5 | AVG | |
| o-Xylene | 0.5811 | 0.5779 | 0.6582 | 0.6568 | 0.6206 | 0.5981 | | 0.6154 | 6 | AVG | |
| Styrene | 0.9118 | 0.9476 | 1.1014 | 1.1308 | 1.0844 | 1.0357 | | 1.0353 | 9 | AVG | |
| Bromoform | #0.2285 | 0.2122 | 0.2591 | 0.2606 | 0.2666 | 0.2809 | | 0.2513 | 10 | AVG | # |
| Isopropylbenzene | 1.4595 | 1.4663 | 1.6643 | 1.7146 | 1.6143 | 1.5517 | | 1.5784 | 7 | AVG | |
| Cyclohexanone | 0.0135 | 0.0116 | 0.0129 | 0.0132 | 0.0146 | 0.0138 | | 0.0133 | 8 | AVG | |
| Bromobenzene | 0.8526 | 0.7878 | 0.8484 | 0.8157 | 0.7639 | 0.7035 | | 0.7953 | 7 | AVG | |
| 1,1,2,2-Tetrachloroethane | #0.8460 | 0.7260 | 0.8471 | 0.7700 | 0.7745 | 0.7224 | | 0.7810 | 7 | AVG | # |
| 1,2,3-Trichloropropane | 0.2693 | 0.2313 | 0.2612 | 0.2311 | 0.2295 | 0.2088 | | 0.2385 | 9 | AVG | |
| trans-1,4-Dichloro-2-Butene | 0.2476 | 0.2394 | 0.2687 | 0.2324 | 0.2365 | 0.2138 | | 0.2397 | 8 | AVG | |
| n-Propylbenzene | 3.4468 | 3.2341 | 3.5234 | 3.5015 | 3.2239 | 2.8645 | | 3.2990 | 8 | AVG | |
| 2-Chlorotoluene | 0.7431 | 0.7035 | 0.7619 | 0.7601 | 0.7138 | 0.6914 | | 0.7290 | 4 | AVG | |
| 1,3,5-Trimethylbenzene | 2.3772 | 2.3244 | 2.5565 | 2.5828 | 2.4017 | 2.2448 | | 2.4146 | 5 | AVG | |
| 4-Chlorotoluene | 0.7846 | 0.7414 | 0.8082 | 0.7900 | 0.7361 | 0.7155 | | 0.7626 | 5 | AVG | |
| tert-Butylbenzene | 0.5474 | 0.5454 | 0.6090 | 0.6308 | 0.5913 | 0.5750 | | 0.5832 | 6 | AVG | |
| Pentachloroethane | 0.4631 | 0.5116 | 0.5147 | 0.5213 | 0.5099 | 0.4814 | | 0.5003 | 5 | AVG | |
| 1,2,4-Trimethylbenzene | 2.4171 | 2.4217 | 2.6183 | 2.6003 | 2.4241 | 2.2301 | | 2.4519 | 6 | AVG | |
| sec-Butylbenzene | 3.0050 | 2.8994 | 3.2335 | 3.2982 | 3.0640 | 2.7791 | | 3.0465 | 6 | AVG | |
| 1,3-Dichlorobenzene | 1.6583 | 1.5221 | 1.6091 | 1.5609 | 1.4504 | 1.3369 | | 1.5230 | 8 | AVG | |
| p-Isopropyltoluene | 2.6227 | 2.5636 | 2.8622 | 2.8835 | 2.6611 | 2.4492 | | 2.6737 | 6 | AVG | |
| 1,4-Dichlorobenzene | 1.7655 | 1.5997 | 1.6629 | 1.6067 | 1.5016 | 1.4578 | | 1.5990 | 7 | AVG | |
| 1,2-Dichlorobenzene | 1.5533 | 1.4443 | 1.5499 | 1.4885 | 1.4153 | 1.3716 | | 1.4705 | 5 | AVG | |
| n-Butylbenzene | 2.2881 | 2.2389 | 2.5101 | 2.5570 | 2.3553 | 2.2322 | | 2.3636 | 6 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.1718 | 0.1368 | 0.1673 | 0.1492 | 0.1629 | 0.1631 | | 0.1585 | 8 | AVG | |
| 1,2,4-Trichlorobenzene | 1.1542 | 1.0981 | 1.2048 | 1.1784 | 1.1333 | 1.0925 | | 1.1435 | 4 | AVG | |
| Hexachlorobutadiene | 0.6103 | 0.5445 | 0.5921 | 0.5979 | 0.5626 | 0.5701 | | 0.5796 | 4 | AVG | |
| Naphthalene | 2.9426 | 3.3491 | 3.5980 | 3.2341 | 3.1687 | 2.6397 | | 3.1554 | 11 | AVG | |
| 1,2,3-Trichlorobenzene | 1.1975 | 1.1515 | 1.2025 | 1.1628 | 1.1188 | 1.0636 | | 1.1494 | 5 | AVG | |
| 2-Methylnaphthalene | 1.3133 | 2.8739 | 2.8626 | 2.4195 | 2.3877 | 1.7390 | | 2.2660 | 28 | 2NDDEG | |
| Dibromofluoromethane | 0.2425 | 0.2390 | 0.2356 | 0.2341 | 0.2362 | 0.2358 | | 0.2372 | 1 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0680 | 0.0644 | 0.0644 | 0.0620 | 0.0623 | 0.0605 | | 0.0636 | 4 | AVG | |
| Toluene-d8(mz100) | 0.8138 | 0.8321 | 0.8391 | 0.8380 | 0.8357 | 0.8031 | | 0.8270 | 2 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4927 | 0.4654 | 0.4627 | 0.4546 | 0.4530 | 0.4471 | | 0.4626 | 4 | AVG | |
| Dibromofluoromethane(mz111) | 0.2496 | 0.2400 | 0.2396 | 0.2378 | 0.2403 | 0.2401 | | 0.2412 | 2 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0430 | 0.0412 | 0.0407 | 0.0391 | 0.0398 | 0.0388 | | 0.0404 | 4 | AVG | |

8093

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 03/12/04 03/12/04

Heated Purge: (Y/N) Y Calibration Times: 08:04 11:13

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

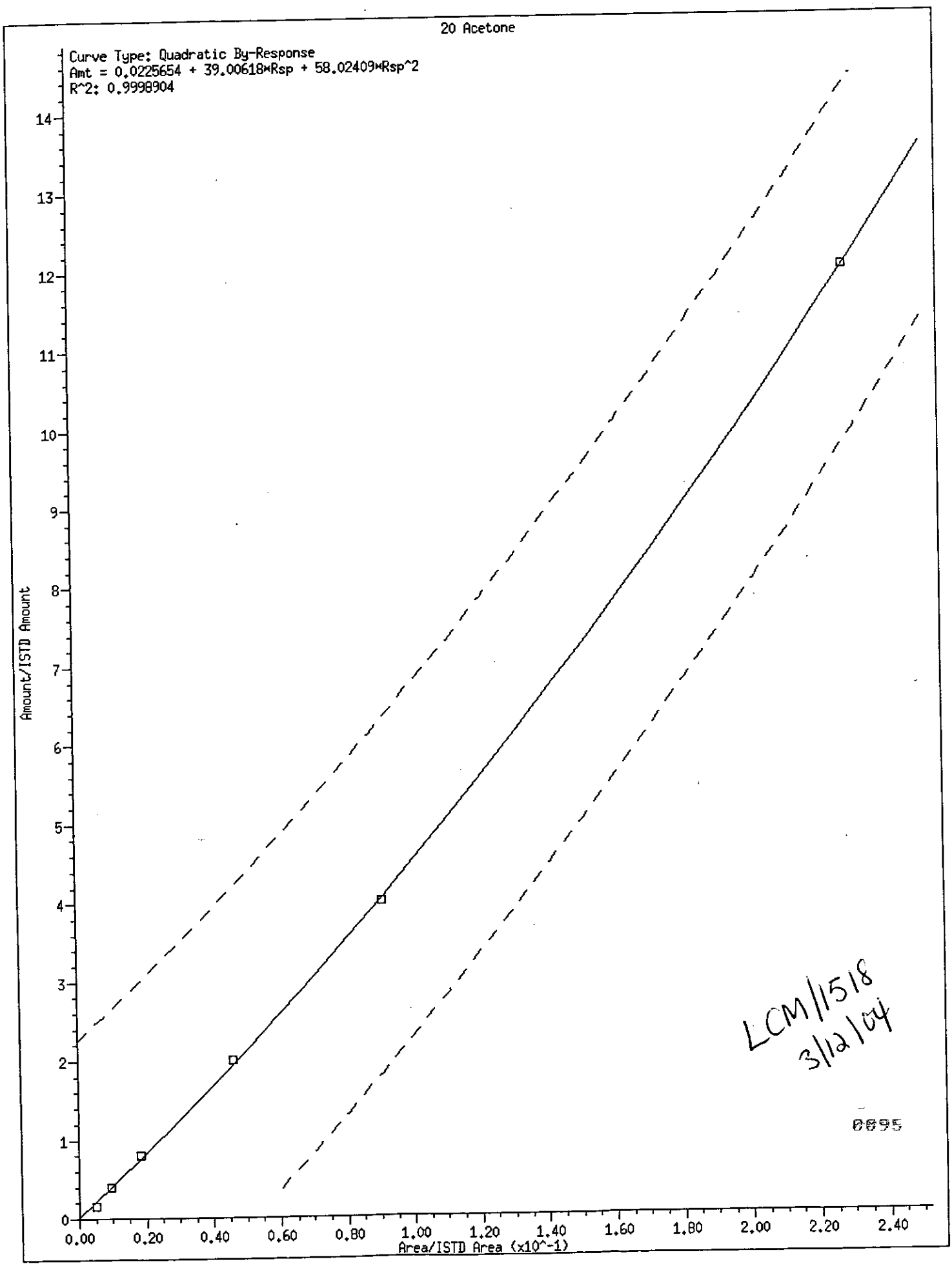
LAB FILE ID: RRF 4 = xm12i07.d RRF 10= xm12i05.d RRF 20= xm12i04.d
RRF 50= xm12i03.d RRF100= xm12i02.d RRF300= xm12i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Toluene-d8 | 1.2230 | 1.2490 | 1.2532 | 1.2500 | 1.2370 | 1.1791 | | 1.2319 | 2 | AVG |
| 4-Bromofluorobenzene | 0.5186 | 0.5024 | 0.4972 | 0.4878 | 0.4883 | 0.4783 | | 0.4954 | 3 | AVG |

Average %RSD 7

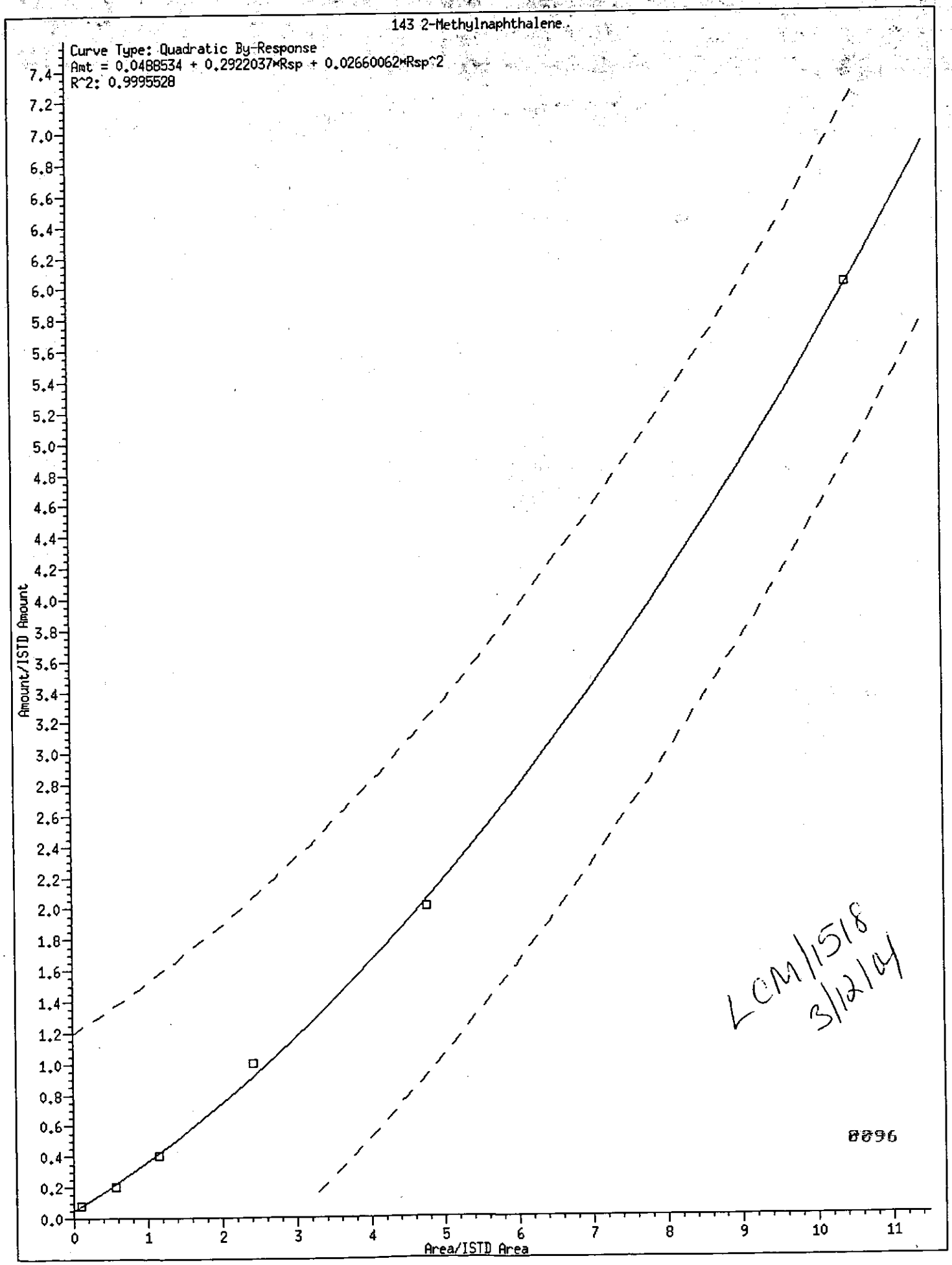
6894

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%




LCM/1518
3/12/04

0095


143 2-Methylnaphthalene
Curve Type: Quadratic By Response
Amt = 0.0488534 + 0.2922037*Rsp + 0.02660062*Rsp^2
R^2: 0.9995528
Amount/ISTD Amount
Area/ISTD Area
LCM 1518
3/12/14
8896

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

/chem/HP09193.i/04mar12a.b/xm12i01.d VSTD300
/chem/HP09193.i/04mar12a.b/xm12i02.d VSTD100
/chem/HP09193.i/04mar12a.b/xm12i03.d VSTD050
/chem/HP09193.i/04mar12a.b/xm12i04.d VSTD020
/chem/HP09193.i/04mar12a.b/xm12i05.d VSTD010
/chem/HP09193.i/04mar12a.b/xm12i07.d VSTD004

Area Summary

File ID:

| Internal Standard Name | xm12i01.d | xm12i02.d | xm12i03.d | xm12i04.d | xm12i05.d | xm12i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 187158 | 218862 | 211778 | 217187 | 212700 | 265397 | 218847 | 12 | Yes |
| Fluorobenzene | 1419654 | 1538708 | 1579076 | 1589900 | 1588434 | 1511868 | 1537940 | 4 | Yes |
| Chlorobenzene-d5 | 1113771 | 1175590 | 1197478 | 1203142 | 1196384 | 1153116 | 1173247 | 3 | Yes |
| 1,4-Dichlorobenzene-d4 | 680009 | 689895 | 696037 | 698715 | 689842 | 679894 | 689065 | 1 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | xm12i01.d | xm12i02.d | xm12i03.d | xm12i04.d | xm12i05.d | xm12i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.508 | 4.505 | 4.508 | 4.499 | 4.502 | 4.508 | 4.505 |
| Fluorobenzene | 7.955 | 7.955 | 7.955 | 7.955 | 7.954 | 7.955 | 7.955 |
| Chlorobenzene-d5 | 11.347 | 11.347 | 11.343 | 11.347 | 11.346 | 11.347 | 11.346 |
| 1,4-Dichlorobenzene-d4 | 13.204 | 13.201 | 13.205 | 13.205 | 13.204 | 13.204 | 13.204 |

* indicates the retention time is greater than 30 seconds from the average RT.

Data File: /chem/HP09193.i/04mar12a.b/xm12i01.d
Date : 12-MAR-2004 08:04
Client ID: VSTD300
Sample Info: VSTD300;VSTD300;2;1;;;

Column phase: DB-624

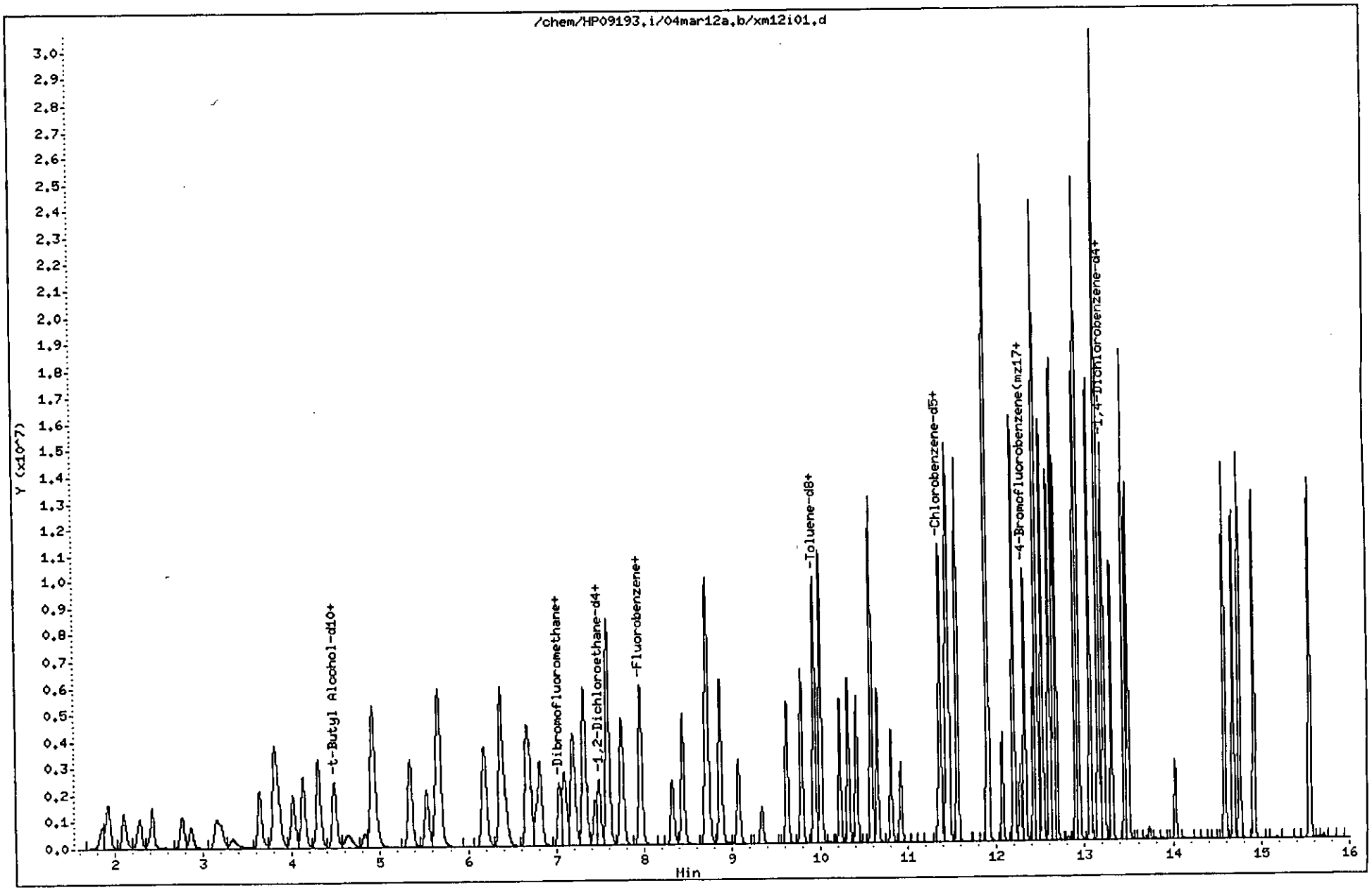
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM11518
3/12/04



8698



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i01.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:04  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 2828282 | 299.326 |
| 4) Chloromethane | (1) | 2.285 | 50 | 2416363 | 269.931 |
| 5) Vinyl Chloride | (1) | 2.426 | 62 | 2352104 | 275.284 |
| 7) Bromomethane | (1) | 2.766 | 94 | 1488023 | 256.229 |
| 8) Chloroethane | (1) | 2.865 | 64 | 1267308 | 261.518 |
| 12) Trichlorofluoromethane | (1) | 3.157 | 101 | 2995167 | 306.277 |
| 13) Ethanol | (4) | 3.337 | 45 | 1079183 | 7085.420 |
| 16) Acrolein | (1) | 3.639 | 56 | 3173371 | 2733.238 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 1743350 | 285.202 |
| 19) Freon 113 | (1) | 3.841 | 101 | 1807108 | 286.720 |
| 20) Acetone | (1) | 3.831 | 58 | 325046 | 479.498 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 3447275 | 290.523 |
| 23) 2-Propanol | (1) | 4.017 | 45 | 719716 | 1284.802 |
| 24) Carbon Disulfide | (1) | 4.126 | 76 | 6471900 | 284.256 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 3278558 | 281.527 |
| 27) Methyl Acetate | (1) | 4.309 | 43 | 1498572 | 266.414 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 2129348 | 281.484 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.508 | 65 | 187158 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.640 | 59 | 1444721 | 1512.480 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 754756 | 288.734 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 2120500 | 292.717 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926 | 73 | 5914451 | 295.268 |
| 36) n-Hexane | (1) | 5.346 | 57 | 2941974 | 296.749 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 3566450 | 295.149 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 2962868 | 319.743 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 6464773 | 297.939 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 6043772 | 303.865 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 2260518 | 293.641 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 4381018 | 586.358 |
| 48) 2,2-Dichloropropane | (1) | 6.395 | 77 | 2986286 | 309.422 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 563486 | 588.619 |
| 49) Propionitrile | (1) | 6.437 | 54 | 1426408 | 1373.776 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 2285636 | 714.891 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 1239571 | 292.053 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i01.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:04  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 517924 | 593.325 |
| 54) Chloroform | (1) | 6.822 | 83 | 3562050 | 301.023 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 3224453 | 305.947 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 3579013 | 304.496 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 2714793 | 302.471 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 2823181 | 317.568 |
| 65) Benzene | (1) | 7.592 | 78 | 8289377 | 286.257 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 1131973 | 3577.575 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 2755992 | 300.835 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 5911355 | 306.055 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1419654 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 626024 | 296.318 |
| 72) n-Butanol | (1) | 8.324 | 56 | 1950677 | 7428.116 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 2218575 | 300.734 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 3954418 | 302.235 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 2101042 | 291.044 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 1313607 | 298.413 |
| 78) 1,4-Dioxane | (1) | 8.889 | 88 | 310048 | 3598.152 |
| 76) Methyl Methacrylate | (1) | 8.872 | 69 | 1755352 | 321.439 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 2791203 | 320.077 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 1075199 | 566.564 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 3576596 | 320.445 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 5014185 | 617.669 |
| 88) Toluene | (2) | 10.005 | 92 | 5549313 | 290.313 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 3181817 | 316.734 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 3335229 | 331.034 |
| 91) 1,1,2-Trichloroethane | (2) | 10.413 | 97 | 1984272 | 282.691 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 2710271 | 290.707 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 3229464 | 282.810 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 3759209 | 583.894 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 2399164 | 319.111 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 2154587 | 301.290 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1113771 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 6290324 | 283.199 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i01.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:04  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 2333027 | 305.693 |
| 103) Ethylbenzene | (2) | 11.465 | 91 | 10092125 | 283.785 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 4348335 | 296.197 |
| 92) Xylene (Total) | (2) | | 106 | 8345018 | 587.729 |
| 107) o-Xylene | (2) | 11.902 | 106 | 3996683 | 291.532 |
| 108) Styrene | (2) | 11.908 | 104 | 6921346 | 300.124 |
| 109) Bromoform | (2) | 12.069 | 173 | 1877044 | 335.271 |
| 110) Isopropylbenzene | (2) | 12.200 | 105 | 10369479 | 294.918 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 1152609 | 3896.354 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 2870223 | 265.356 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.422 | 83 | 2947343 | 277.481 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 851732 | 262.545 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 2181105 | 668.932 |
| 119) n-Propylbenzene | (3) | 12.524 | 91 | 11687285 | 260.485 |
| 120) 2-Chlorotoluene | (3) | 12.601 | 126 | 2820998 | 284.548 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 9158900 | 278.905 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 2919392 | 281.469 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 2346112 | 295.817 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 1964331 | 288.665 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 9099066 | 272.861 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 11339016 | 273.668 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 5454519 | 263.342 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 680009 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 9992691 | 274.805 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 5947728 | 273.494 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 5596316 | 279.832 |
| 134) n-Butylbenzene | (3) | 13.455 | 91 | 9107622 | 283.326 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 665324 | 308.617 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.591 | 180 | 4457448 | 286.608 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 2326136 | 295.105 |
| 140) Naphthalene | (3) | 14.761 | 128 | 10770233 | 250.975 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 4339368 | 277.582 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | 142 | 7095312 | 230.232 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 2008729 | 298.251 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i01.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:04  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 515068 | 285.259 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 5366958 | 291.346 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 2987839 | 289.962 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 2045054 | 298.600 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 330723 | 288.053 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 7879200 | 287.135 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 3196127 | 289.606 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04mar12a.b/xm12i02.d
Date : 12-MAR-2004 08:31
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;2;1;;;

Column phase: DB-624

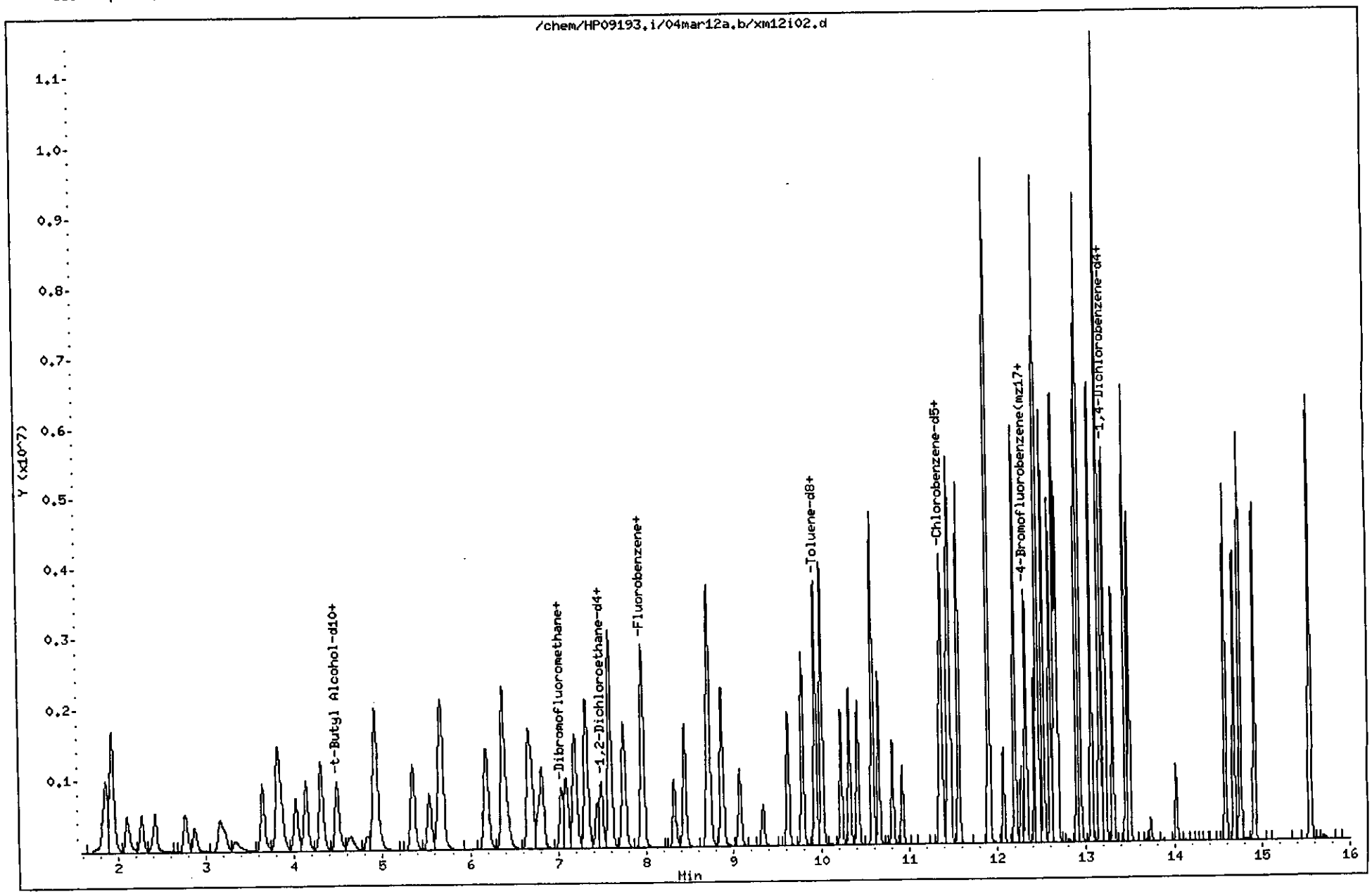
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
3/12/04



8183



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 1039025 | 101.455 |
| 4) Chloromethane | (1) | 2.272 | 50 | 908367 | 93.622 |
| 5) Vinyl Chloride | (1) | 2.423 | 62 | 914579 | 98.758 |
| 7) Bromomethane | (1) | 2.766 | 94 | 615202 | 97.738 |
| 8) Chloroethane | (1) | 2.869 | 64 | 515693 | 98.183 |
| 12) Trichlorofluoromethane | (1) | 3.167 | 101 | 1088632 | 102.707 |
| 13) Ethanol | (4) | 3.337 | 45 | 452990 | 2543.298 |
| 16) Acrolein | (1) | 3.645 | 56 | 1349524 | 1072.417 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 634413 | 95.756 |
| 19) Freon 113 | (1) | 3.841 | 101 | 654405 | 95.796 |
| 20) Acetone | (1) | 3.831 | 58 | 139812 | 190.289 |
| 22) Methyl Iodide | (1) | 4.017 | 142 | 1250424 | 97.227 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 281535 | 463.696 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 2354386 | 95.407 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 1231800 | 97.590 |
| 27) Methyl Acetate | (1) | 4.316 | 43 | 574070 | 94.161 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 774634 | 94.478 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 218862 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.637 | 59 | 537338 | 481.051 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 305983 | 107.998 |
| 34) trans-1,2-Dichloroethene | (1) | 4.922 | 96 | 771228 | 98.224 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926 | 73 | 2189268 | 100.839 |
| 36) n-Hexane | (1) | 5.346 | 57 | 1076804 | 100.211 |
| 37) 1,1-Dichloroethane | (1) | 5.539 | 63 | 1291203 | 98.588 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683 | 53 | 1032793 | 102.832 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 2404774 | 102.253 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 2258008 | 104.743 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 821769 | 98.488 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1592997 | 196.713 |
| 48) 2,2-Dichloropropane | (1) | 6.389 | 77 | 1039528 | 99.376 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 232833 | 224.399 |
| 49) Propionitrile | (1) | 6.437 | 54 | 548643 | 487.515 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 859735 | 248.098 |
| 52) Bromochloromethane | (1) | 6.710 | 128 | 457136 | 99.372 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 205999 | 217.730 |
| 54) Chloroform | (1) | 6.822 | 83 | 1257158 | 98.020 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 1098884 | 96.199 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 1287112 | 101.032 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 964119 | 99.107 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 958188 | 99.443 |
| 65) Benzene | (1) | 7.589 | 78 | 3055906 | 97.364 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 419316 | 1222.702 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 971985 | 97.889 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 2184131 | 104.332 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1538708 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 221881 | 96.898 |
| 72) n-Butanol | (1) | 8.324 | 56 | 745937 | 2620.727 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 780464 | 97.608 |
| 74) Methylcyclohexane | (1) | 8.722 | 83 | 1432856 | 101.040 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 772550 | 98.736 |
| 77) Dibromomethane | (1) | 8.873 | 93 | 470938 | 98.706 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 118844 | 1272.489 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 635696 | 107.402 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 962466 | 101.830 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 442227 | 214.997 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 1282996 | 106.056 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 2065332 | 234.732 |
| 88) Toluene | (2) | 10.005 | 92 | 2001455 | 99.200 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 1116862 | 105.332 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 1187581 | 111.674 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 714000 | 96.372 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 956659 | 97.216 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 1193319 | 99.006 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 1594703 | 234.670 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 822164 | 103.605 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 761322 | 100.862 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1175590 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 2263286 | 96.538 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 805695 | 100.018 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 3742572 | 99.705 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 1540410 | 99.411 |
| 92) Xylene (Total) | (2) | | 106 | 2999490 | 200.245 |
| 107) o-Xylene | (2) | 11.902 | 106 | 1459080 | 100.834 |
| 108) Styrene | (2) | 11.908 | 104 | 2549668 | 104.745 |
| 109) Bromoform | (2) | 12.069 | 173 | 626914 | 106.089 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 3795590 | 102.273 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 430277 | 1378.049 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 1054069 | 96.054 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 1068654 | 99.168 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 316616 | 96.198 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 815788 | 246.612 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 4448349 | 97.724 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 984852 | 97.916 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 3313896 | 99.468 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 1015616 | 96.516 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 815882 | 101.399 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 703557 | 101.908 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 3344774 | 98.865 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 4227622 | 100.572 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 2001289 | 95.237 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 689895 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 3671698 | 99.527 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 2071946 | 93.909 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1952798 | 96.246 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 3249810 | 99.648 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 224803 | 102.783 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 1563726 | 99.105 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 776250 | 97.068 |
| 140) Naphthalene | (3) | 14.758 | 128 | 4372143 | 100.423 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 1543660 | 97.330 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 3294583 | 105.372 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 727025 | 99.595 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 191727 | 97.968 |
| 87)$Toluene-d8(mz100) | (2) | 9.932 | 100 | 1964909 | 101.056 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 1065016 | 97.922 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 739492 | 99.620 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 122488 | 98.430 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 2908504 | 100.419 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 1148150 | 98.565 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04mar12a.b/xm12i03.d
Date : 12-MAR-2004 08:58
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCH/ISIS
3/12/04



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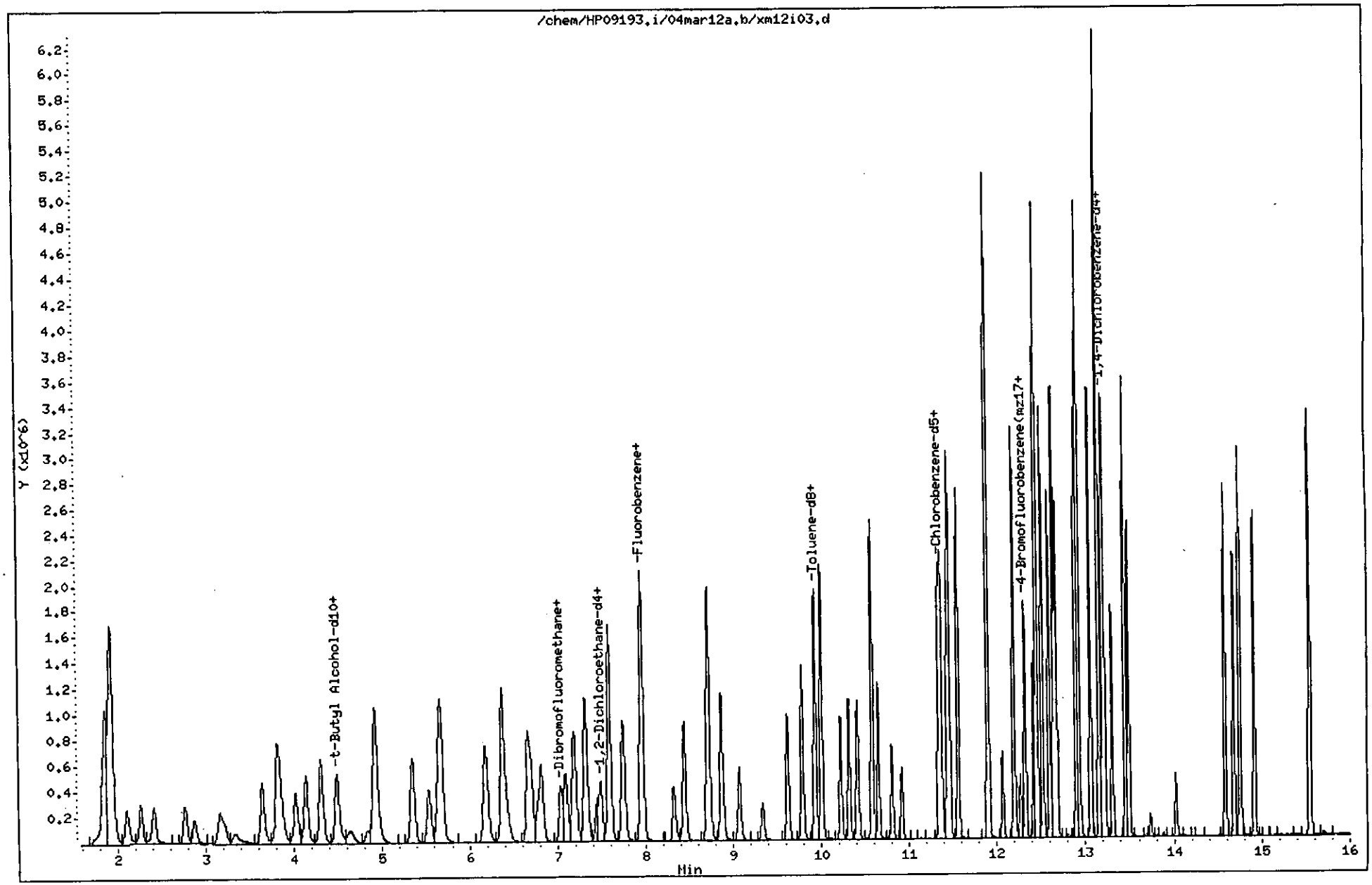


Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i03.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:58  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 551085 | 52.435 |
| 4) Chloromethane | (1) | 2.262 | 50 | 514631 | 51.685 |
| 5) Vinyl Chloride | (1) | 2.410 | 62 | 496995 | 52.294 |
| 7) Bromomethane | (1) | 2.763 | 94 | 333688 | 51.658 |
| 8) Chloroethane | (1) | 2.869 | 64 | 282302 | 52.374 |
| 12) Trichlorofluoromethane | (1) | 3.167 | 101 | 571137 | 52.507 |
| 13) Ethanol | (4) | 3.344 | 45 | 220303 | 1278.258 |
| 16) Acrolein | (1) | 3.639 | 56 | 691234 | 535.256 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 346563 | 50.972 |
| 19) Freon 113 | (1) | 3.847 | 101 | 355889 | 50.765 |
| 20) Acetone | (1) | 3.835 | 58 | 72802 | 96.553 |
| 22) Methyl Iodide | (1) | 4.021 | 142 | 670110 | 50.773 |
| 23) 2-Propanol | (1) | 4.017 | 45 | 144956 | 232.643 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 1280229 | 50.553 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 650069 | 50.185 |
| 27) Methyl Acetate | (1) | 4.309 | 43 | 293993 | 46.989 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 417257 | 49.590 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.508 | 65 | 211778 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.624 | 59 | 261430 | 241.874 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 154600 | 53.172 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 411955 | 51.126 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926 | 73 | 1144069 | 51.349 |
| 36) n-Hexane | (1) | 5.346 | 57 | 586573 | 53.193 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 677192 | 50.384 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.686 | 53 | 544745 | 52.852 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 1274950 | 52.826 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 1185530 | 53.588 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 438071 | 51.160 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 850026 | 102.286 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 553165 | 51.529 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 114564 | 107.592 |
| 49) Propionitrile | (1) | 6.437 | 54 | 279953 | 242.402 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 434177 | 122.090 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 235840 | 49.956 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i03.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:58  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 102964 | 106.045 |
| 54) Chloroform | (1) | 6.822 | 83 | 665461 | 50.559 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 583236 | 49.752 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 697870 | 53.379 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 510035 | 51.089 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 505316 | 51.102 |
| 65) Benzene | (1) | 7.589 | 78 | 1640109 | 50.920 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 196666 | 558.807 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 510907 | 50.139 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 1140756 | 53.099 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1579076 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 119718 | 50.946 |
| 72) n-Butanol | (1) | 8.324 | 56 | 333897 | 1143.103 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 414589 | 50.525 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 742935 | 51.050 |
| 75) 1,2-Dichloropropane | (1) | 8.725 | 63 | 414681 | 51.644 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 246051 | 50.252 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 58009 | 605.237 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 312345 | 51.422 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 494025 | 50.932 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 221174 | 104.779 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 661203 | 53.260 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 1023472 | 113.347 |
| 88) Toluene | (2) | 10.005 | 92 | 1069635 | 52.046 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 569299 | 52.709 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 589540 | 54.424 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 370839 | 49.139 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 514415 | 51.320 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 621319 | 50.607 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 795694 | 114.951 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 416734 | 51.555 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 393737 | 51.210 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1197478 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 1210329 | 50.682 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i03.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:58  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 424478 | 51.731 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 2021368 | 52.866 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 826772 | 52.381 |
| 92) Xylene (Total) | (2) | | 106 | 1613309 | 105.743 |
| 107) o-Xylene | (2) | 11.902 | 106 | 786537 | 53.362 |
| 108) Styrene | (2) | 11.908 | 104 | 1354080 | 54.611 |
| 109) Bromoform | (2) | 12.069 | 173 | 312108 | 51.851 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 2053156 | 54.312 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 197742 | 621.733 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 567777 | 51.283 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 535926 | 49.294 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 160887 | 48.451 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 404468 | 121.191 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 2437166 | 53.068 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 529059 | 52.136 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 1797702 | 53.483 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 549900 | 51.797 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 439060 | 54.085 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 362850 | 52.094 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 1809875 | 53.024 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 2295699 | 54.131 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 1086468 | 51.246 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 696037 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 2007009 | 53.923 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1118339 | 50.240 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1036064 | 50.613 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 1779751 | 54.091 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 103860 | 47.067 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 820193 | 51.523 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 416162 | 51.581 |
| 140) Naphthalene | (3) | 14.761 | 128 | 2251041 | 51.247 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 809379 | 50.582 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 1684048 | 53.387 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 369679 | 49.347 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i03.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 08:58  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 97964 | 48.778 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 1003523 | 50.668 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 544368 | 49.137 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 375453 | 49.286 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.489 | 104 | 61687 | 48.304 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1496832 | 50.735 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 584111 | 49.227 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04mar12a.b/xm12i04.d
Date : 12-MAR-2004 09:26
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;2;1;;;

Column phase: DB-624

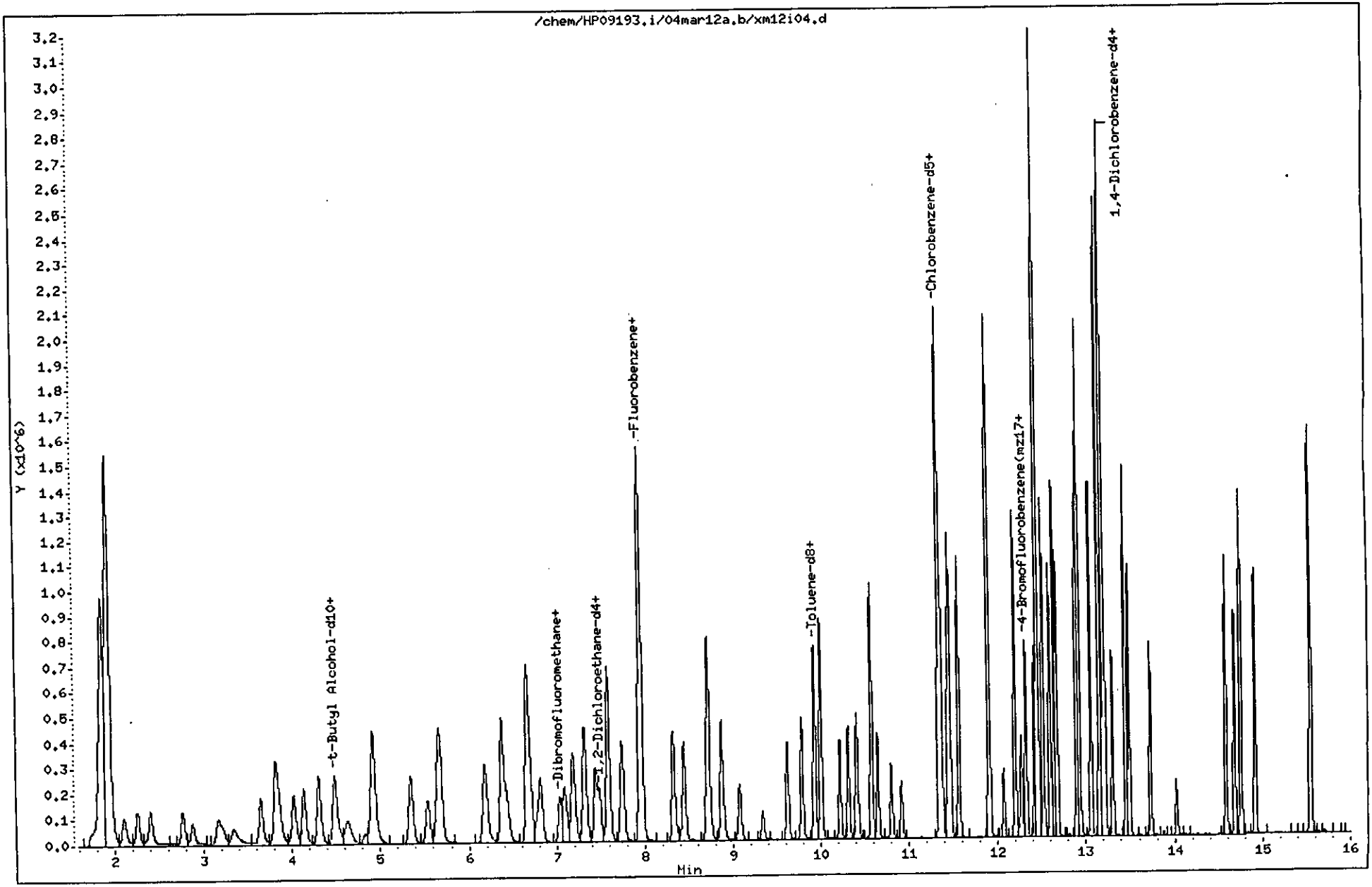
Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM | 1518
3|12|04



8113



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i04.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:26  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.108 | 85 | 228044 | 21.550 |
| 4) Chloromethane | (1) | 2.253 | 50 | 215717 | 21.517 |
| 5) Vinyl Chloride | (1) | 2.397 | 62 | 204582 | 21.380 |
| 7) Bromomethane | (1) | 2.763 | 94 | 140394 | 21.586 |
| 8) Chloroethane | (1) | 2.869 | 64 | 118583 | 21.850 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 231926 | 21.177 |
| 13) Ethanol | (4) | 3.340 | 45 | 183254 | 1036.809 |
| 16) Acrolein | (1) | 3.642 | 56 | 257835 | 198.295 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 141532 | 20.675 |
| 19) Freon 113 | (1) | 3.847 | 101 | 144676 | 20.497 |
| 20) Acetone | (1) | 3.835 | 58 | 29154 | 38.402 |
| 22) Methyl Iodide | (1) | 4.021 | 142 | 273043 | 20.547 |
| 23) 2-Propanol | (1) | 4.017 | 45 | 134290 | 214.058 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 527584 | 20.691 |
| 26) Allyl Chloride | (1) | 4.306 | 41 | 260170 | 19.948 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 127351 | 20.216 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 174586 | 20.608 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.499 | 65 | 217187 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.637 | 59 | 246889 | 222.732 |
| 32) Acrylonitrile | (1) | 4.829 | 53 | 56900 | 19.436 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 167559 | 20.653 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 472866 | 21.079 |
| 36) n-Hexane | (1) | 5.352 | 57 | 230814 | 20.789 |
| 37) 1,1-Dichloroethane | (1) | 5.542 | 63 | 276367 | 20.422 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.686 | 53 | 212724 | 20.498 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 512989 | 21.110 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 471222 | 21.155 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 178486 | 20.703 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 346045 | 41.356 |
| 48) 2,2-Dichloropropane | (1) | 6.395 | 77 | 220555 | 20.406 |
| 46) 2-Butanone | (1) | 6.379 | 72 | 41873 | 39.057 |
| 49) Propionitrile | (1) | 6.443 | 54 | 237169 | 203.959 |
| 51) Methacrylonitrile | (1) | 6.671 | 67 | 368356 | 102.876 |
| 52) Bromochloromethane | (1) | 6.710 | 128 | 97389 | 20.489 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i04.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:26  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 36625 | 37.464 |
| 54) Chloroform | (1) | 6.822 | 83 | 271611 | 20.496 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 238058 | 20.169 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 272175 | 20.677 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 204993 | 20.394 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 199307 | 20.019 |
| 65) Benzene | (1) | 7.589 | 78 | 670751 | 20.683 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 198869 | 561.219 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 210329 | 20.500 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 456914 | 21.123 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1589900 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 48064 | 20.314 |
| 72) n-Butanol | (1) | 8.324 | 56 | 342940 | 1166.069 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 170684 | 20.659 |
| 74) Methylcyclohexane | (1) | 8.719 | 83 | 300220 | 20.489 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 170501 | 21.089 |
| 77) Dibromomethane | (1) | 8.873 | 93 | 101280 | 20.544 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 52261 | 541.553 |
| 76) Methyl Methacrylate | (1) | 8.873 | 69 | 126421 | 20.671 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 199627 | 20.441 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 85237 | 40.105 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 258140 | 20.652 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 358462 | 39.429 |
| 88) Toluene | (2) | 10.005 | 92 | 431546 | 20.899 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 225913 | 20.818 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 232465 | 21.359 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 155530 | 20.512 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 206897 | 20.544 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 261132 | 21.169 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 269393 | 38.735 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 166811 | 20.539 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 160438 | 20.769 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1203142 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 496770 | 20.704 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i04.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:26  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 171516 | 20.804 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 807910 | 21.030 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 330669 | 20.851 |
| 92) Xylene (Total) | (2) | | 106 | 647427 | 42.240 |
| 107) o-Xylene | (2) | 11.902 | 106 | 316758 | 21.389 |
| 108) Styrene | (2) | 11.911 | 104 | 530074 | 21.278 |
| 109) Bromoform | (2) | 12.069 | 173 | 124706 | 20.620 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 800957 | 21.088 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 155375 | 486.224 |
| 116) Bromobenzene | (3) | 12.450 | 156 | 237104 | 21.334 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 236751 | 21.692 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 73007 | 21.902 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 375468 | 112.071 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 984734 | 21.360 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 212932 | 20.903 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 714518 | 21.176 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 225886 | 21.195 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 170201 | 20.886 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 143857 | 20.574 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 731784 | 21.357 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 903731 | 21.228 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 449733 | 21.132 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 698715 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 799940 | 21.410 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 464769 | 20.799 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 433169 | 21.080 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 701541 | 21.240 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 46758 | 21.109 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.591 | 180 | 336724 | 21.071 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 165492 | 20.433 |
| 140) Naphthalene | (3) | 14.761 | 128 | 1005599 | 22.806 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 336090 | 20.924 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 800045 | 25.265 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 149804 | 19.861 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i04.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:26  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 40939 | 20.245 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 403809 | 20.293 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 222681 | 20.005 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.040 | 111 | 152345 | 19.862 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 25886 | 20.132 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 603107 | 20.346 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 239297 | 20.072 |

$ = Compound is a surrogate standard.

Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d
Date : 12-MAR-2004 09:53
Client ID: VSTD010
Sample Info: VSTD010;VSTD010;2;1;;;

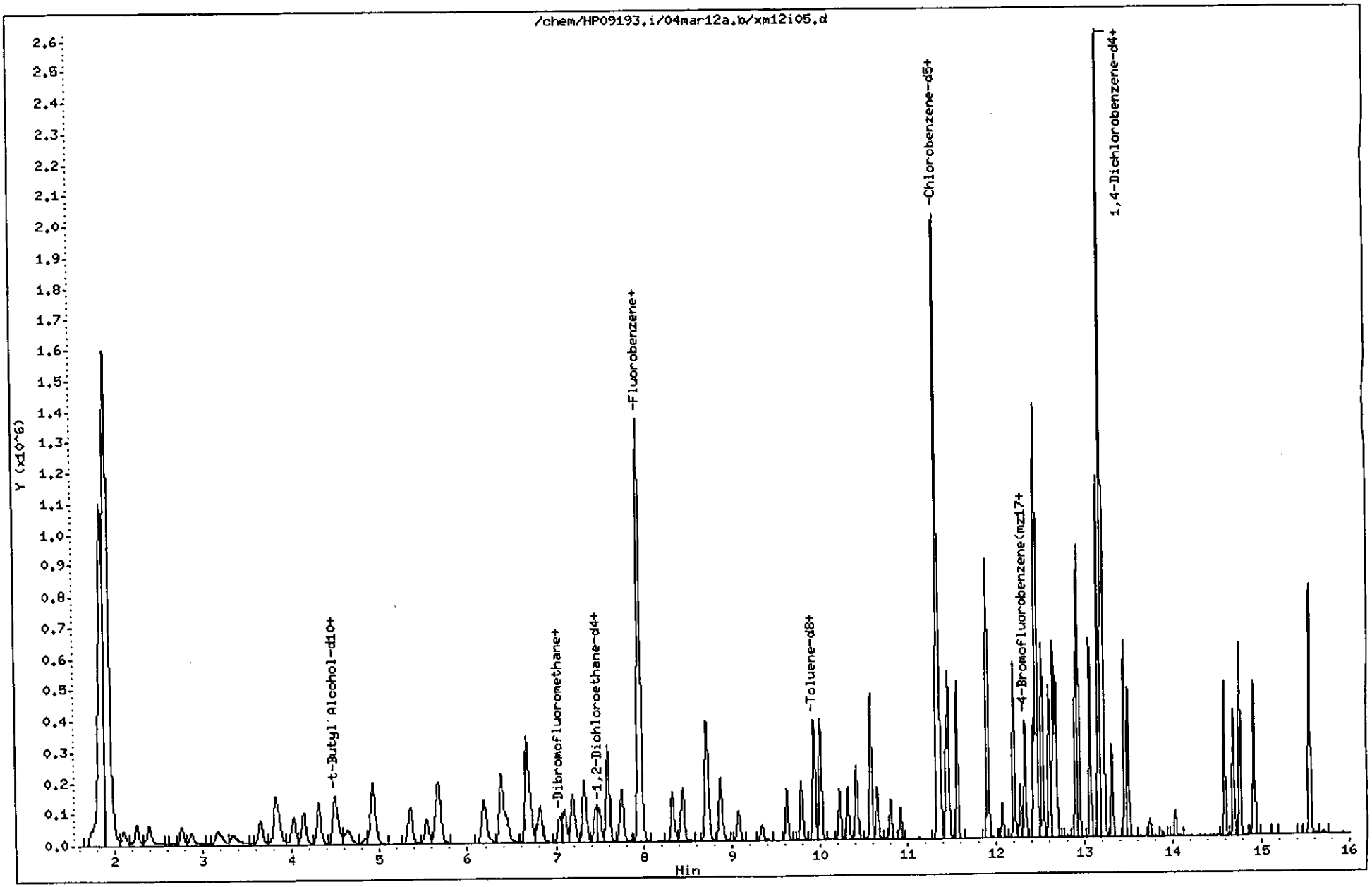
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM1 1518
3/12/04

0118



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 83780 | 7.925 |
| 4) Chloromethane | (1) | 2.255 | 50 | 93794 | 9.364 |
| 5) Vinyl Chloride | (1) | 2.390 | 62 | 83134 | 8.696 |
| 7) Bromomethane | (1) | 2.759 | 94 | 59607 | 9.173 |
| 8) Chloroethane | (1) | 2.875 | 64 | 48322 | 8.912 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 86824 | 7.935 |
| 13) Ethanol | (4) | 3.337 | 45 | 89148 | 515.019 |
| 16) Acrolein | (1) | 3.642 | 56 | 109475 | 84.272 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 64465 | 9.426 |
| 19) Freon 113 | (1) | 3.834 | 101 | 65267 | 9.255 |
| 20) Acetone | (1) | 3.837 | 58 | 14882 | 19.621 |
| 22) Methyl Iodide | (1) | 4.024 | 142 | 123656 | 9.314 |
| 23) 2-Propanol | (1) | 4.020 | 45 | 63120 | 100.706 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 237733 | 9.332 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 134139 | 10.295 |
| 27) Methyl Acetate | (1) | 4.316 | 43 | 64684 | 10.278 |
| 28) Methylene Chloride | (1) | 4.489 | 84 | 81820 | 9.667 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 212700 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.636 | 59 | 109668 | 101.024 |
| 32) Acrylonitrile | (1) | 4.835 | 53 | 25062 | 8.569 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 75547 | 9.321 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 206713 | 9.223 |
| 36) n-Hexane | (1) | 5.355 | 57 | 99306 | 8.952 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 125836 | 9.307 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.686 | 53 | 92068 | 8.880 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 223434 | 9.203 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 201721 | 9.064 |
| 45) cis-1,2-Dichloroethene | (1) | 6.382 | 96 | 80225 | 9.314 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 155772 | 18.634 |
| 48) 2,2-Dichloropropane | (1) | 6.395 | 77 | 97365 | 9.016 |
| 46) 2-Butanone | (1) | 6.369 | 72 | 18070 | 16.870 |
| 49) Propionitrile | (1) | 6.443 | 54 | 115454 | 99.379 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 176528 | 49.347 |
| 52) Bromochloromethane | (1) | 6.709 | 128 | 48256 | 10.161 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.786 | 71 | 16212 | 16.599 |
| 54) Chloroform | (1) | 6.819 | 83 | 122979 | 9.288 |
| 57) 1,1,1-Trichloroethane | (1) | 7.094 | 97 | 109020 | 9.245 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 116102 | 8.828 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 92095 | 9.171 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 88249 | 8.872 |
| 65) Benzene | (1) | 7.589 | 78 | 305504 | 9.429 |
| 61) Isobutyl Alcohol | (1) | 7.444 | 41 | 82802 | 233.887 |
| 66) 1,2-Dichloroethane | (1) | 7.598 | 62 | 95026 | 9.271 |
| 68) t-Amyl Methyl Ether | (1) | 7.752 | 73 | 193264 | 8.943 |
| 69) *Fluorobenzene | (1) | 7.954 | 96 | 1588434 | 50.000 |
| 71) n-Heptane | (1) | 7.971 | 100 | 21828 | 9.234 |
| 72) n-Butanol | (1) | 8.327 | 56 | 124311 | 423.074 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 77388 | 9.376 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 144021 | 9.838 |
| 75) 1,2-Dichloropropane | (1) | 8.721 | 63 | 76368 | 9.455 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 45570 | 9.252 |
| 78) 1,4-Dioxane | (1) | 8.901 | 88 | 22697 | 235.414 |
| 76) Methyl Methacrylate | (1) | 8.872 | 69 | 52444 | 8.583 |
| 81) Bromodichloromethane | (1) | 9.074 | 83 | 87916 | 9.010 |
| 82) 2-Nitropropane | (1) | 9.337 | 41 | 39643 | 18.670 |
| 84) cis-1,3-Dichloropropene | (1) | 9.623 | 75 | 109659 | 8.781 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.790 | 43 | 144868M | 15.949 |
| 88) Toluene | (2) | 10.005 | 92 | 193906 | 9.444 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 96259 | 8.920 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 90704 | 8.381 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 69958 | 9.278 |
| 93) Tetrachloroethene | (2) | 10.579 | 166 | 94273 | 9.414 |
| 94) 1,3-Dichloropropane | (2) | 10.579 | 76 | 116871 | 9.528 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 112188 | 16.222 |
| 97) Dibromochloromethane | (2) | 10.807 | 129 | 71395 | 8.840 |
| 99) 1,2-Dibromoethane | (2) | 10.913 | 107 | 72007 | 9.374 |
| 100) *Chlorobenzene-d5 | (2) | 11.346 | 117 | 1196384 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 228893 | 9.593 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 75623 | 9.225 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 359229 | 9.404 |
| 105) m+p-Xylene | (2) | 11.564 | 106 | 148325 | 9.406 |
| 92) Xylene (Total) | (2) | | 106 | 286603 | 18.796 |
| 107) o-Xylene | (2) | 11.898 | 106 | 138278 | 9.390 |
| 108) Styrene | (2) | 11.908 | 104 | 226739 | 9.153 |
| 109) Bromoform | (2) | 12.068 | 173 | 50770 | 8.442 |
| 110) Isopropylbenzene | (2) | 12.200 | 105 | 350854 | 9.290 |
| 112) Cyclohexanone | (2) | 12.267 | 55 | 69228 | 217.863 |
| 116) Bromobenzene | (3) | 12.453 | 156 | 108696 | 9.906 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 100170 | 9.296 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 31913 | 9.697 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 165144 | 49.927 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 446202 | 9.803 |
| 120) 2-Chlorotoluene | (3) | 12.601 | 126 | 97063 | 9.651 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 320696 | 9.627 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 102283 | 9.721 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 75243 | 9.352 |
| 124) Pentachloroethane | (3) | 12.928 | 167 | 70587 | 10.225 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 334123 | 9.877 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 400019 | 9.517 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 210002 | 9.994 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 689842 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.159 | 119 | 353701 | 9.588 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 220705 | 10.004 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 199272 | 9.822 |
| 134) n-Butylbenzene | (3) | 13.455 | 91 | 308894 | 9.472 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 18877 | 8.631 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 151509 | 9.603 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 75121 | 9.394 |
| 140) Naphthalene | (3) | 14.761 | 128 | 462068 | 10.614 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 158868 | 10.018 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | 142 | 396510 | 12.683 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 75916 | 10.074 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

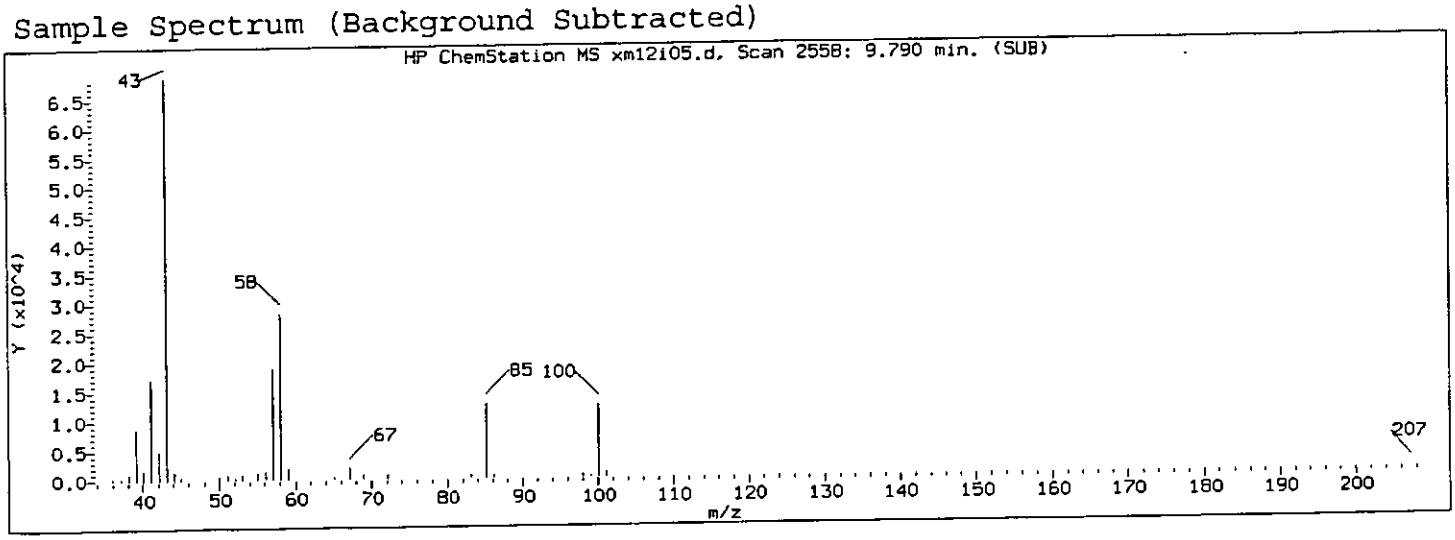
Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 20467M | 10.131 |
| 87)$Toluene-d8(mz100) | (2) | 9.934 | 100 | 199109 | 10.062 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 111357 | 10.061 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 76231 | 9.948 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.496 | 104 | 13096 | 10.194 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 298856 | 10.139 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 120217 | 10.141 |

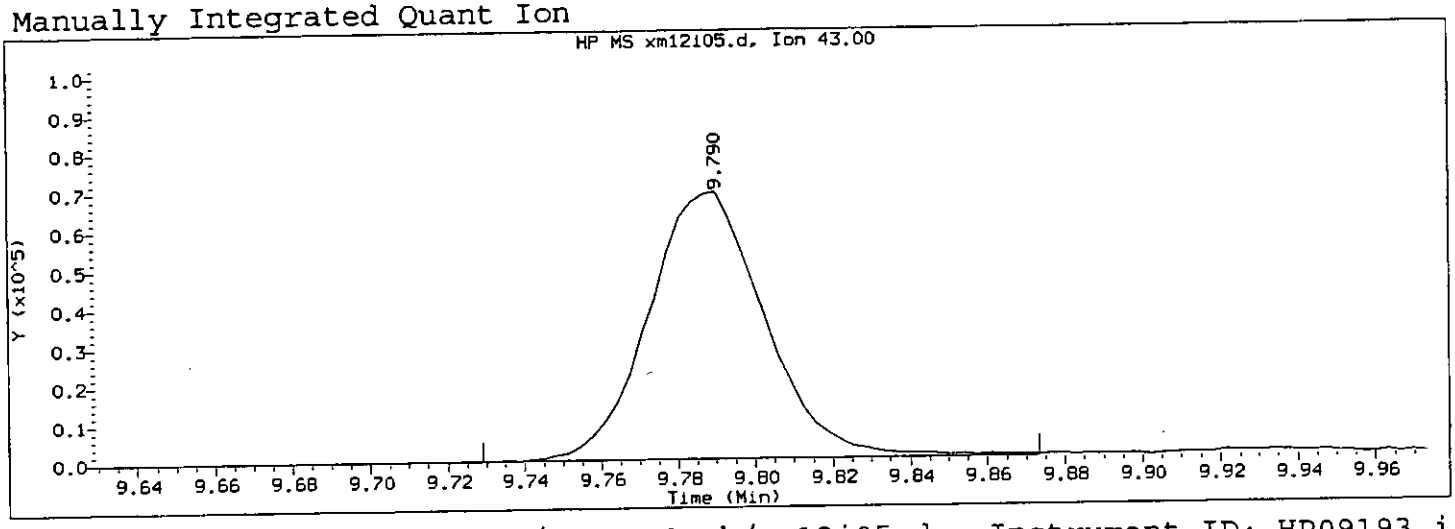
M = Compound was manually integrated.

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| | | |
|---|---|---|
| Compound Number | : | 85 |
| Compound Name | : | 4-Methyl-2-Pentanone |
| Scan Number | : | 2558 |
| Retention Time (minutes) | : | 9.790 |
| Quant Ion | : | 43 |
| Area (flag) | : | 144868 M |
| Concentration (ug/Kg) | : | 15.9493 |
| Integration start scan | : | 2538 Integration stop scan: 2583 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

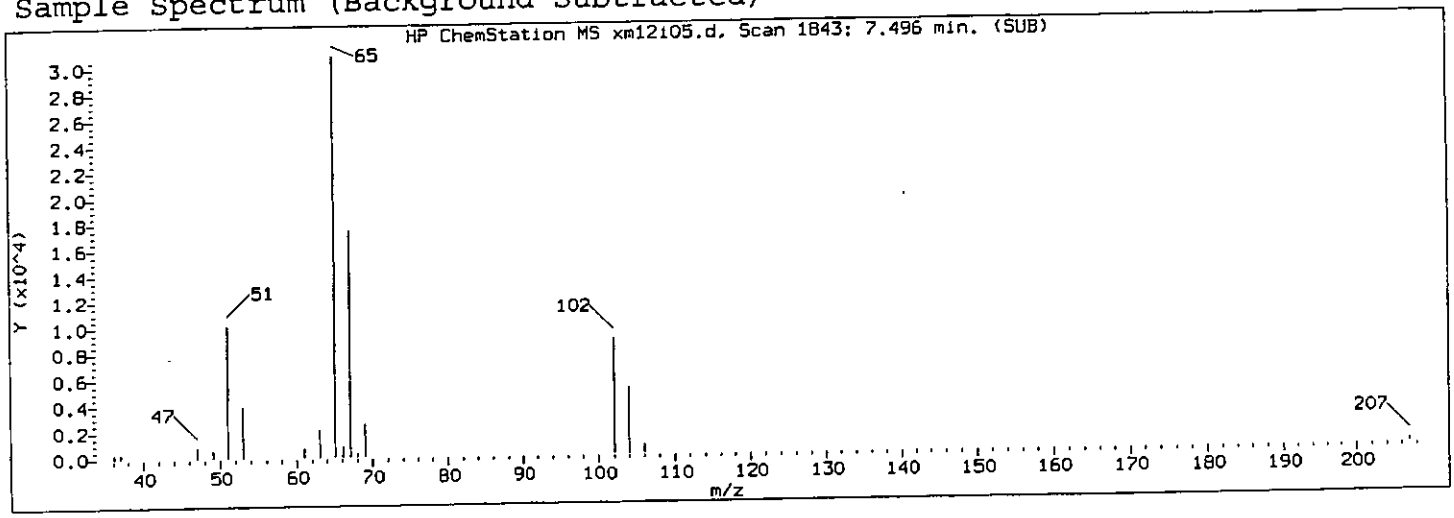
Analyst responsible for change: LCM1518 3/12/04

0123

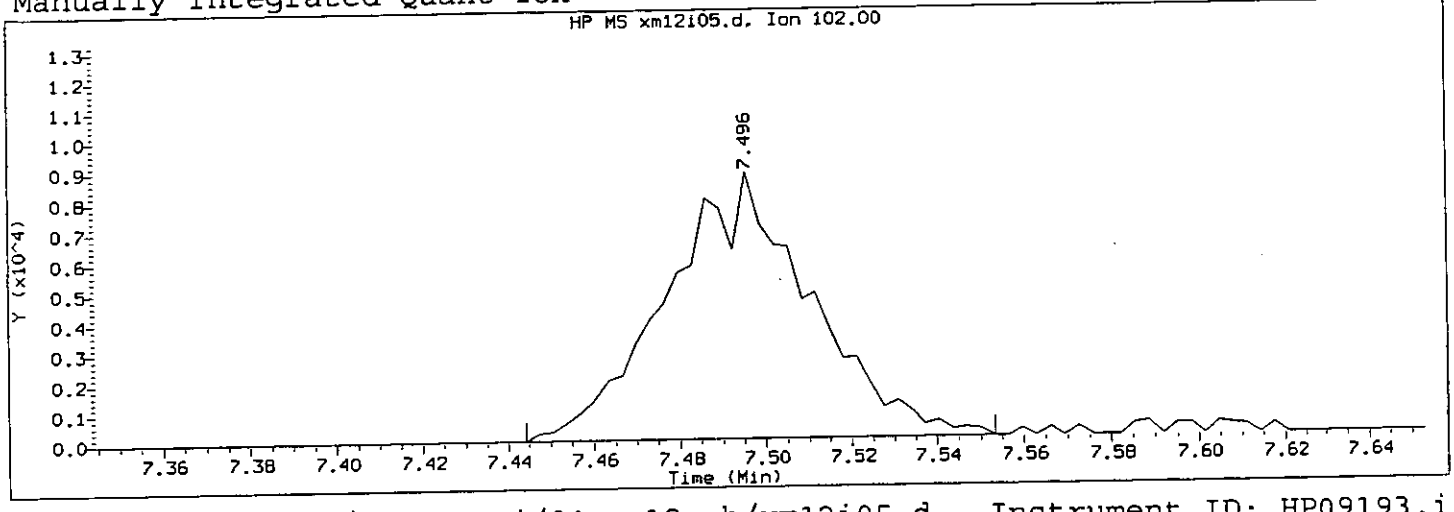
GC/MS audit/management approval: [signature] 3/12/04

Manual Integration Report for data file /chem/HP09193.i/04mar12a.b/xm12i05.d, generated on 03/12/2004 at 11:47

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i05.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 09:53 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| | |
|---|---|
| Compound Number | : 62 |
| Compound Name | : 1,2-Dichloroethane-d4 |
| Scan Number | : 1843 |
| Retention Time (minutes) | : 7.496 |
| Quant Ion | : 102 |
| Area (flag) | : 20467 M |
| Concentration (ug/Kg) | : 10.1308 |
| Integration start scan | : 1826 Integration stop scan: 1860 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

GC/MS audit/management approval: [illegible] 3/12/04 0124

Manual Integration Report for data file /chem/HP09193.i/04mar12a.b/xm12i05.d, generated on 03/12/2004 at 11:47

Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d
Date : 12-MAR-2004 11:13
Client ID: VSTD004
Sample Info: VSTD004;VSTD004;2;1;;;

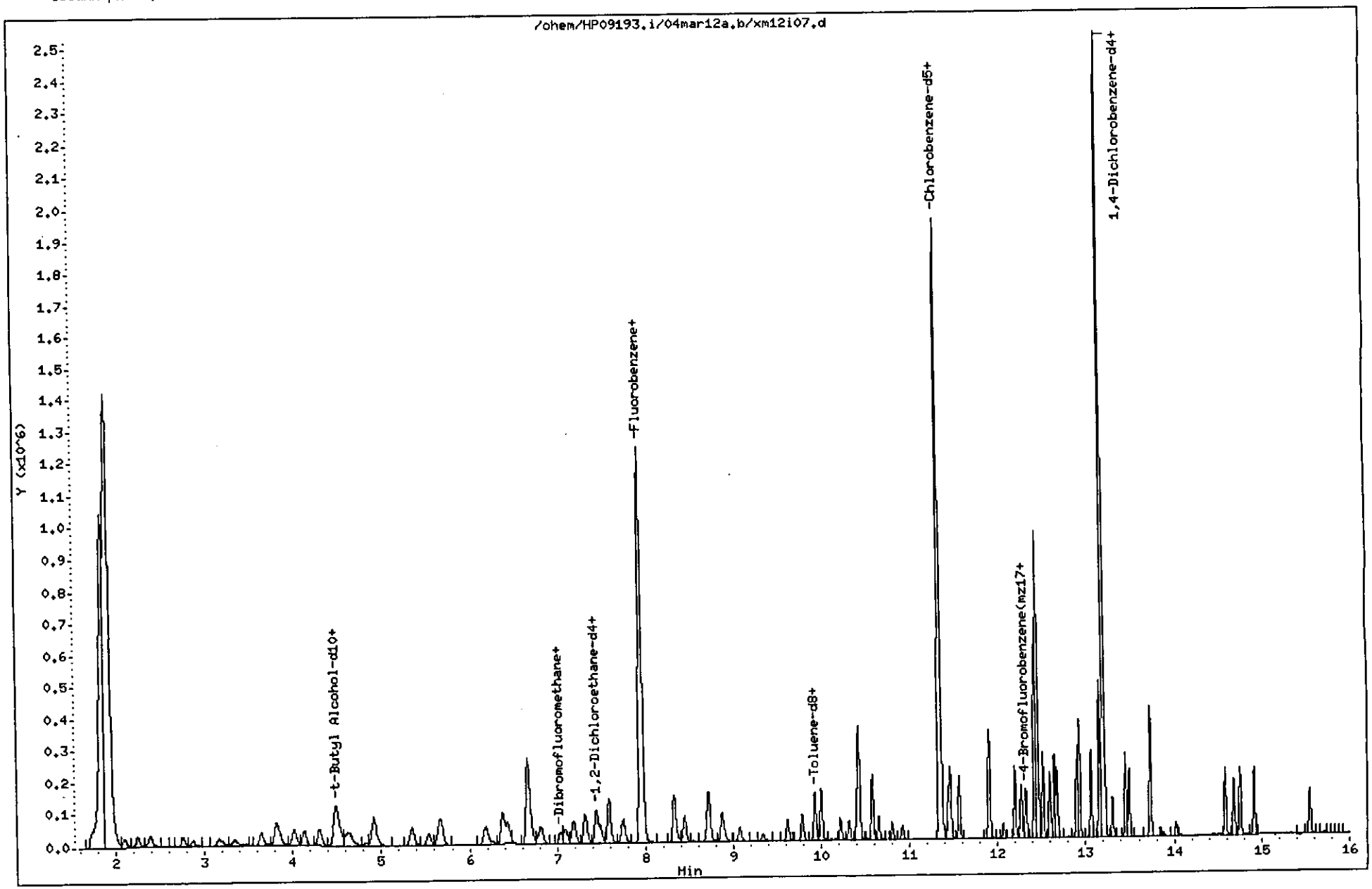
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1518 3/12/04

8125



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 43029 | 4.276 |
| 4) Chloromethane | (1) | 2.246 | 50 | 42633M | 4.472 |
| 5) Vinyl Chloride | (1) | 2.387 | 62 | 40413M | 4.441 |
| 7) Bromomethane | (1) | 2.760 | 94 | 28170 | 4.555 |
| 8) Chloroethane | (1) | 2.872 | 64 | 23022 | 4.461 |
| 12) Trichlorofluoromethane | (1) | 3.167 | 101 | 43722 | 4.198 |
| 13) Ethanol | (4) | 3.334 | 45 | 51215 | 237.126 |
| 16) Acrolein | (1) | 3.645 | 56 | 54987 | 44.472 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 28540 | 4.384 |
| 19) Freon 113 | (1) | 3.838 | 101 | 30088 | 4.483 |
| 20) Acetone | (1) | 3.851 | 58 | 7755M | 10.742 |
| 22) Methyl Iodide | (1) | 4.024 | 142 | 54849 | 4.341 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 57659 | 96.652 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 108585 | 4.478 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 52342 | 4.220 |
| 27) Methyl Acetate | (1) | 4.316 | 43 | 28562 | 4.768 |
| 28) Methylene Chloride | (1) | 4.479 | 84 | 36352 | 4.512 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.508 | 65 | 265397 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.630 | 59 | 101662 | 75.054 |
| 32) Acrylonitrile | (1) | 4.832 | 53 | 11864 | 4.262 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 32550 | 4.219 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.929 | 73 | 85679 | 4.016 |
| 36) n-Hexane | (1) | 5.349 | 57 | 42663 | 4.041 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 55116 | 4.283 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 36944 | 3.744 |
| 39) di-Isopropyl Ether | (1) | 5.667 | 45 | 87994 | 3.808 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 76572 | 3.615 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 34321 | 4.186 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 66871 | 8.406 |
| 48) 2,2-Dichloropropane | (1) | 6.392 | 77 | 42030 | 4.089 |
| 46) 2-Butanone | (1) | 6.379 | 72 | 8165 | 8.009 |
| 49) Propionitrile | (1) | 6.440 | 54 | 99600 | 90.074 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 144639 | 42.480 |
| 52) Bromochloromethane | (1) | 6.706 | 128 | 17955 | 3.972 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.790 | 71 | 8147 | 8.764 |
| 54) Chloroform | (1) | 6.825 | 83 | 53007 | 4.206 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 48944 | 4.361 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 49592 | 3.962 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 39846 | 4.169 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 39265 | 4.147 |
| 65) Benzene | (1) | 7.592 | 78 | 132822 | 4.307 |
| 61) Isobutyl Alcohol | (1) | 7.451 | 41 | 75192 | 223.148 |
| 66) 1,2-Dichloroethane | (1) | 7.599 | 62 | 41502 | 4.254 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 76030 | 3.696 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1511868 | 50.000 |
| 71) n-Heptane | (1) | 7.971 | 100 | 9767 | 4.341 |
| 72) n-Butanol | (1) | 8.324 | 56 | 115736 | 413.838 |
| 73) Trichloroethene | (1) | 8.449 | 95 | 32697 | 4.162 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 53112 | 3.812 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 31049 | 4.039 |
| 77) Dibromomethane | (1) | 8.876 | 93 | 19891 | 4.243 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 18892 | 205.872 |
| 76) Methyl Methacrylate | (1) | 8.872 | 69 | 21732 | 3.737 |
| 81) Bromodichloromethane | (1) | 9.078 | 83 | 36147 | 3.892 |
| 82) 2-Nitropropane | (1) | 9.335 | 41 | 16117M | 7.975 |
| 84) cis-1,3-Dichloropropene | (1) | 9.623 | 75 | 42573 | 3.582 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 60879 | 7.042 |
| 88) Toluene | (2) | 10.002 | 92 | 79954 | 4.040 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 37599 | 3.615 |
| 90) Ethyl Methacrylate | (2) | 10.320 | 69 | 32765 | 3.141 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 33655 | 4.631 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 41076 | 4.256 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 49365 | 4.175 |
| 95) 2-Hexanone | (2) | 10.653 | 43 | 49299 | 7.396 |
| 97) Dibromochloromethane | (2) | 10.801 | 129 | 29832 | 3.833 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 29232 | 3.948 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1153116 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 99569 | 4.330 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 31087 | 3.934 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 148420 | 4.031 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 60055 | 3.951 |
| 92) Xylene (Total) | (2) | | 106 | 113661 | 7.728 |
| 107) o-Xylene | (2) | 11.902 | 106 | 53606 | 3.777 |
| 108) Styrene | (2) | 11.908 | 104 | 84114 | 3.523 |
| 109) Bromoform | (2) | 12.069 | 173 | 21083 | 3.637 |
| 110) Isopropylbenzene | (2) | 12.200 | 105 | 134635 | 3.698 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 62470 | 203.972 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 46374 | 4.288 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.422 | 83 | 46017 | 4.333 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 14649 | 4.516 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 134687 | 41.315 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 187477 | 4.179 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 40417 | 4.077 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 129301 | 3.938 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 42676 | 4.115 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 29776 | 3.755 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 25190 | 3.702 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 131470 | 3.943 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 163447 | 3.945 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 90200 | 4.356 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 679894 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 142654 | 3.924 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 96027 | 4.416 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 84485 | 4.225 |
| 134) n-Butylbenzene | (3) | 13.455 | 91 | 124455 | 3.872 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.029 | 75 | 9342 | 4.334 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 62776 | 4.037 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 33193 | 4.212 |
| 140) Naphthalene | (3) | 14.761 | 128 | 160050 | 3.730 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 65136 | 4.167 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | 142 | 71432 | 2.318 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 29335 | 4.090 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

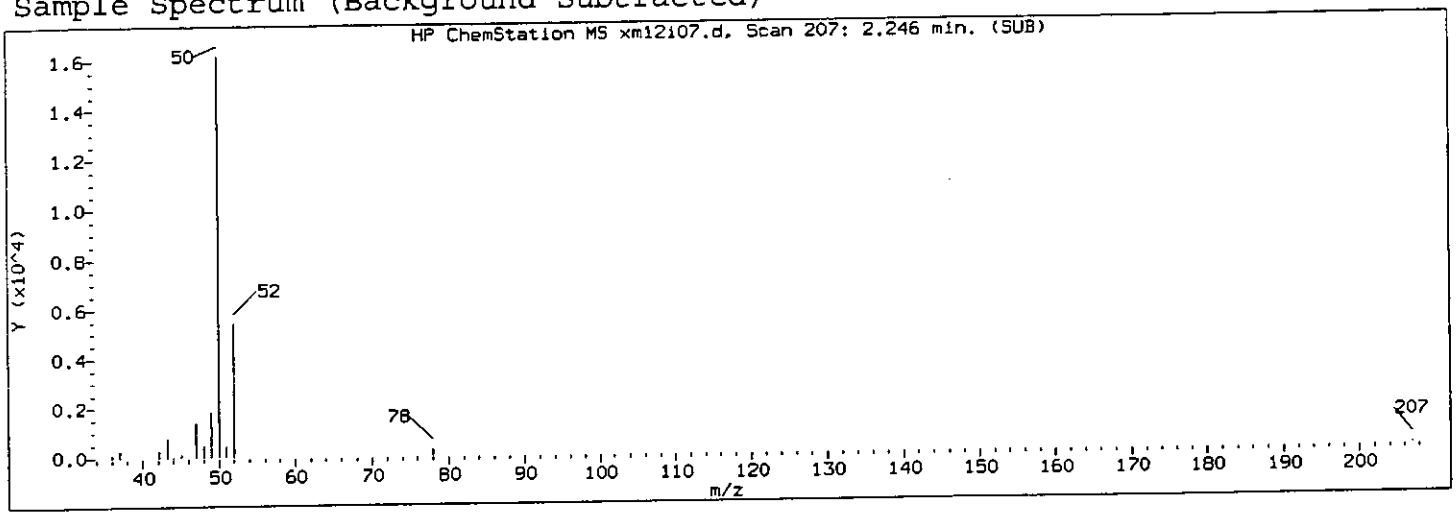
Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 8219M | 4.274 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 75072 | 3.936 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 45454 | 4.261 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 30192 | 4.139 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 5201 | 4.254 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 112823 | 3.971 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 47840 | 4.187 |

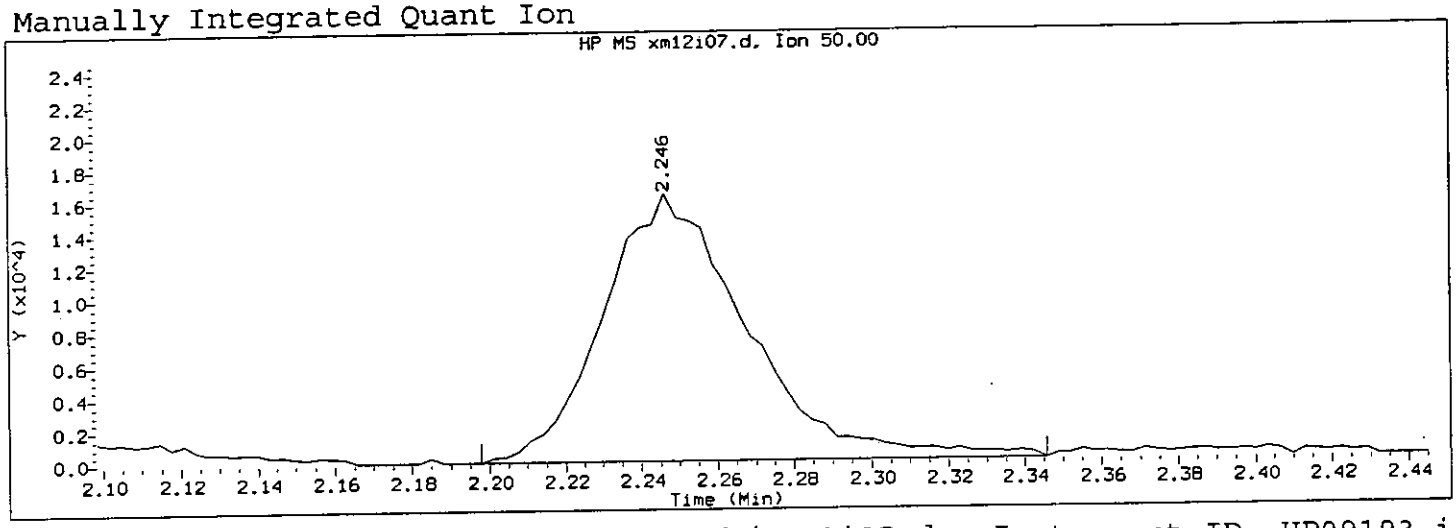
M = Compound was manually integrated.

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| | | |
|---|---|---|
| Compound Number | : | 4 |
| Compound Name | : | Chloromethane |
| Scan Number | : | 207 |
| Retention Time (minutes) | : | 2.246 |
| Quant Ion | : | 50 |
| Area (flag) | : | 42633 M |
| Concentration (ug/Kg) | : | 4.4720 |
| Integration start scan | : | 191 Integration stop scan: 237 |
| Y at integration start | : | 0 Y at integration end: 0 |

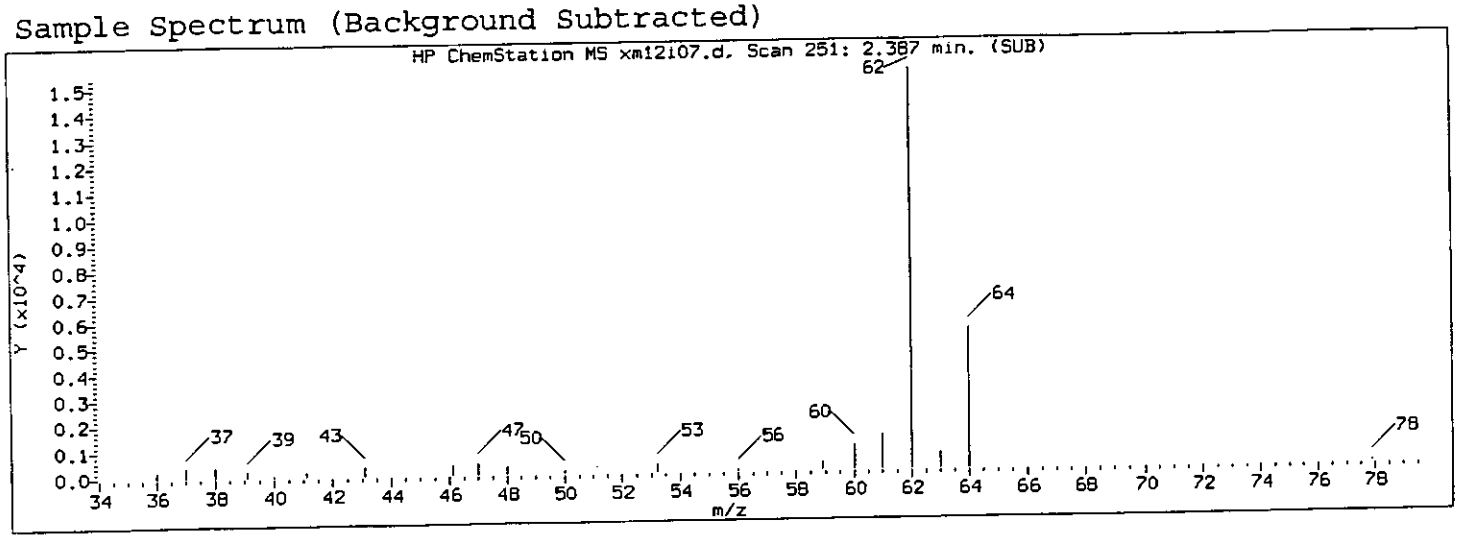
Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: LCM1518 3/12/04

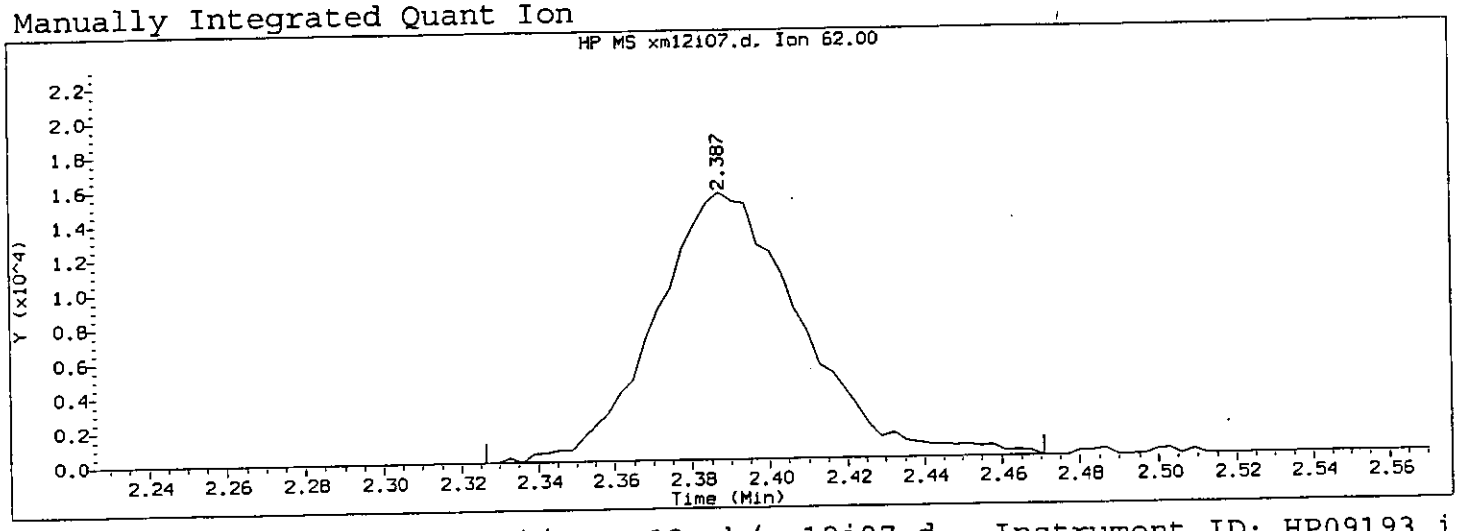
0138

GC/MS audit/management approval: [signature] 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| | | |
|---|---|---|
| Compound Number | : | 5 |
| Compound Name | : | Vinyl Chloride |
| Scan Number | : | 251 |
| Retention Time (minutes) | : | 2.387 |
| Quant Ion | : | 62 |
| Area (flag) | : | 40413 M |
| Concentration (ug/Kg) | : | 4.4413 |
| Integration start scan | : | 231 Integration stop scan: 276 |
| Y at integration start | : | 0 Y at integration end: 0 |

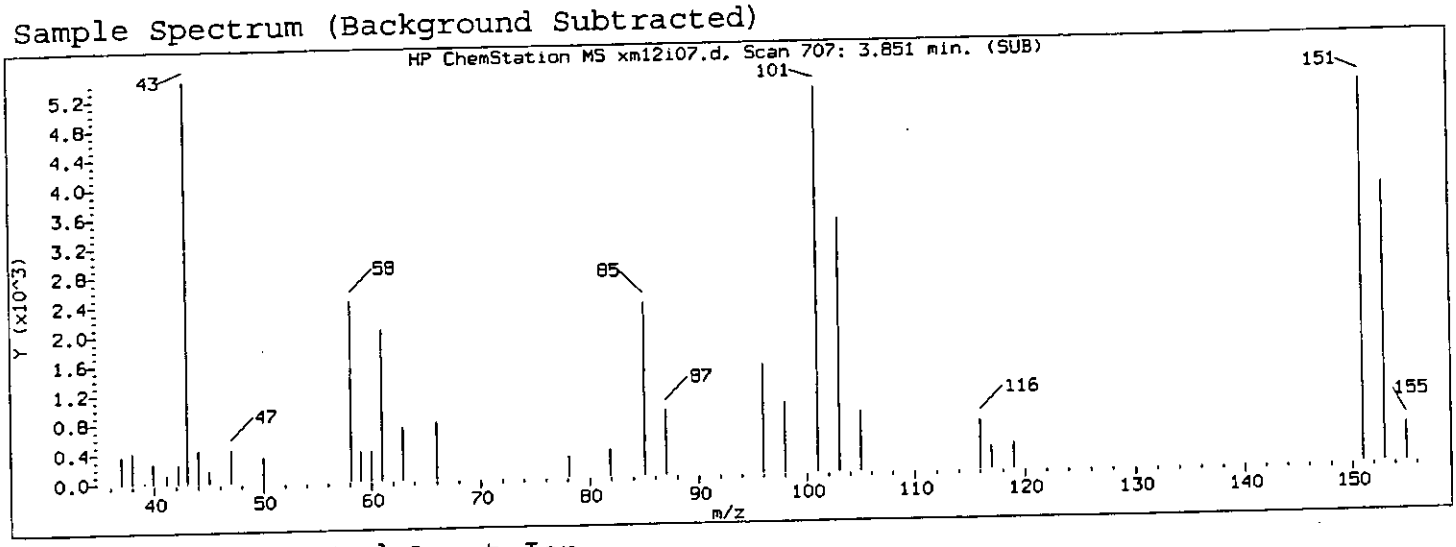
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

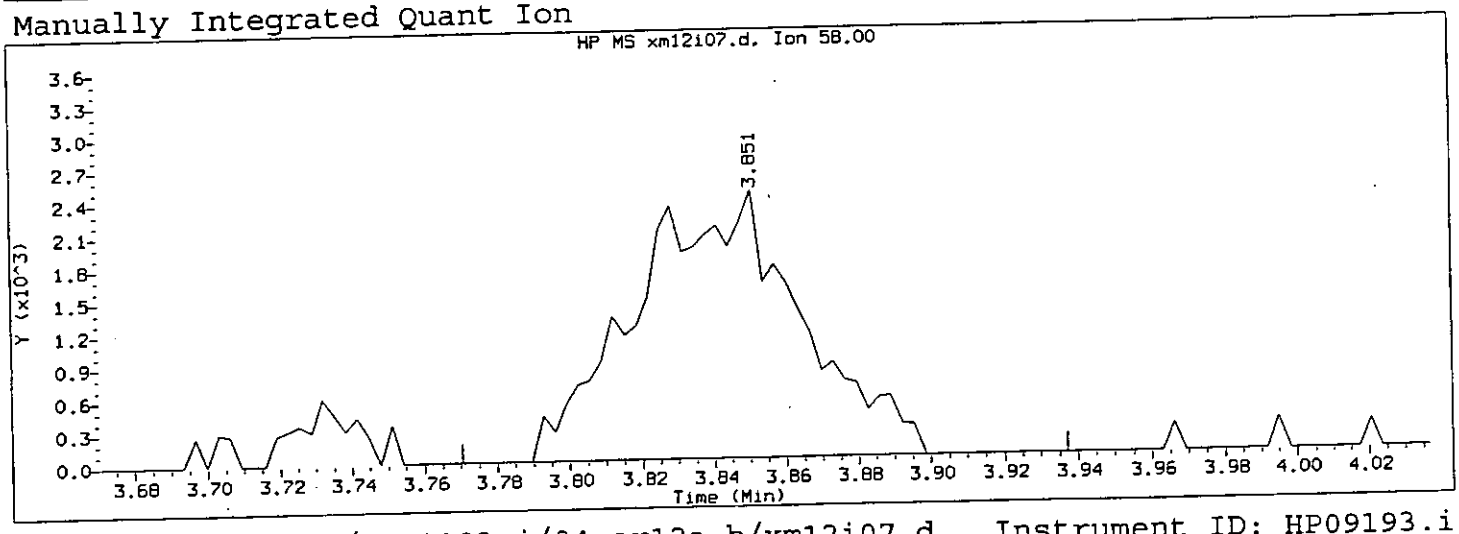
0131

GC/MS audit/management approval: [signature], 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| | | |
|---|---|---|
| Compound Number | : | 20 |
| Compound Name | : | Acetone |
| Scan Number | : | 707 |
| Retention Time (minutes) | : | 3.851 |
| Quant Ion | : | 58 |
| Area (flag) | : | 7755 M |
| Concentration (ug/Kg) | : | 10.7422 |
| Integration start scan | : | 681 Integration stop scan: 733 |
| Y at integration start | : | 0 Y at integration end: 0 |

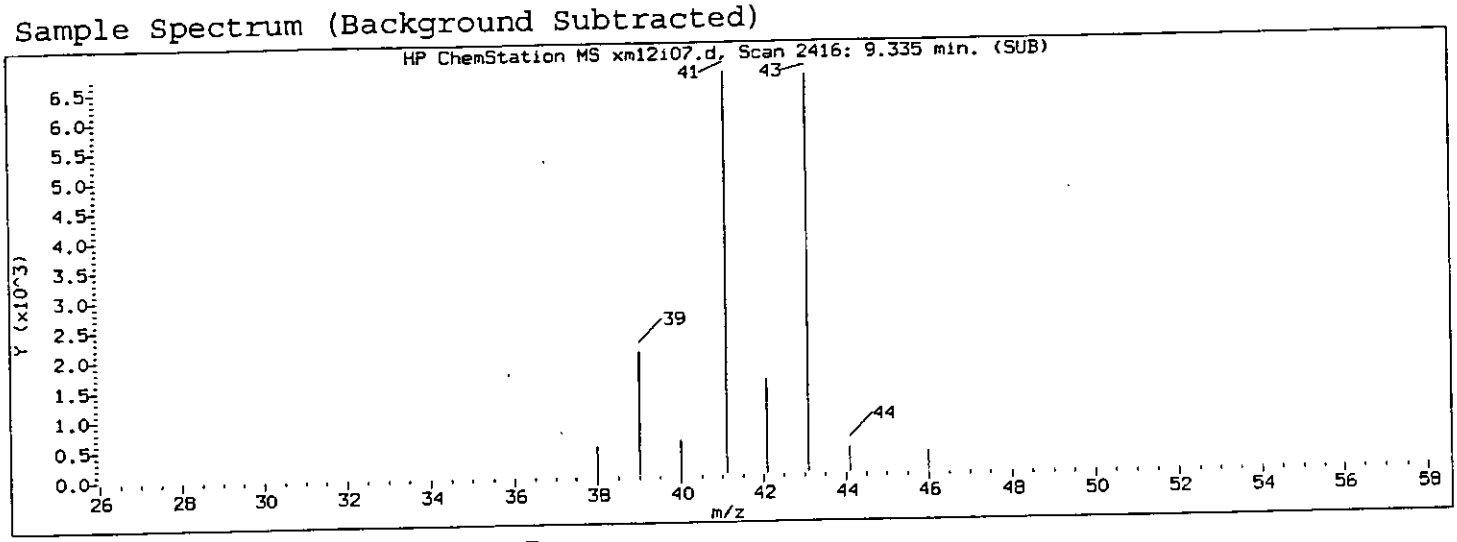
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

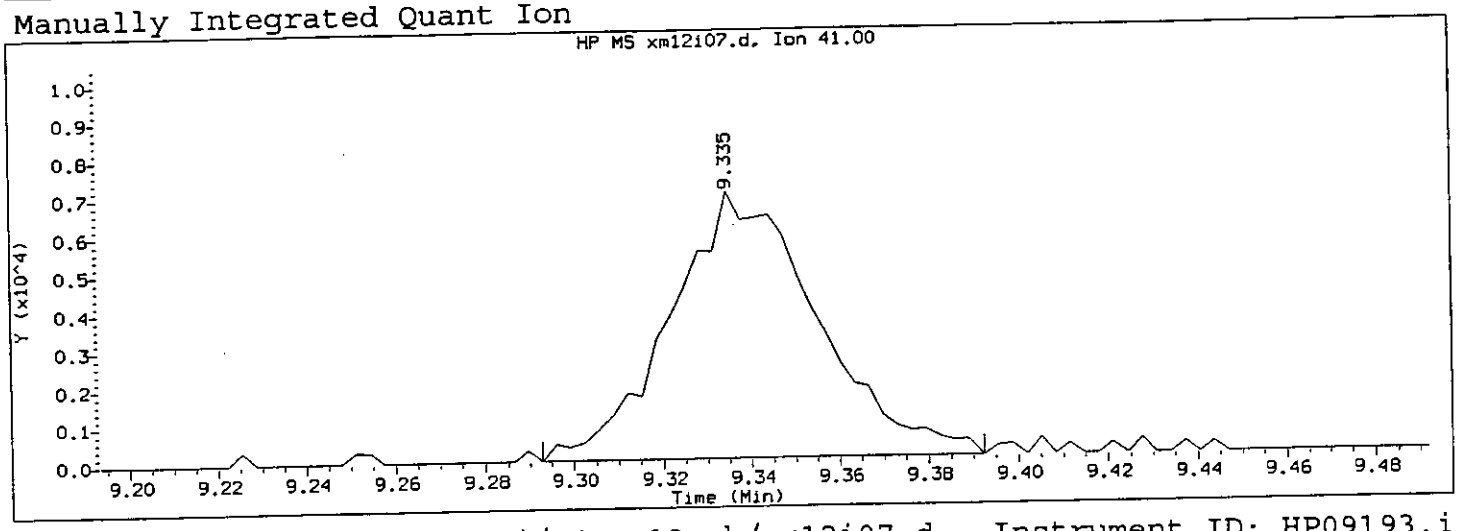
8132

GC/MS audit/management approval: [illegible] 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| | |
|---|---|
| Compound Number | : 82 |
| Compound Name | : 2-Nitropropane |
| Scan Number | : 2416 |
| Retention Time (minutes) | : 9.335 |
| Quant Ion | : 41 |
| Area (flag) | : 16117 M |
| Concentration (ug/Kg) | : 7.9747 |
| Integration start scan | : 2402 Integration stop scan: 2433 |
| Y at integration start | : 0 Y at integration end: 0 |

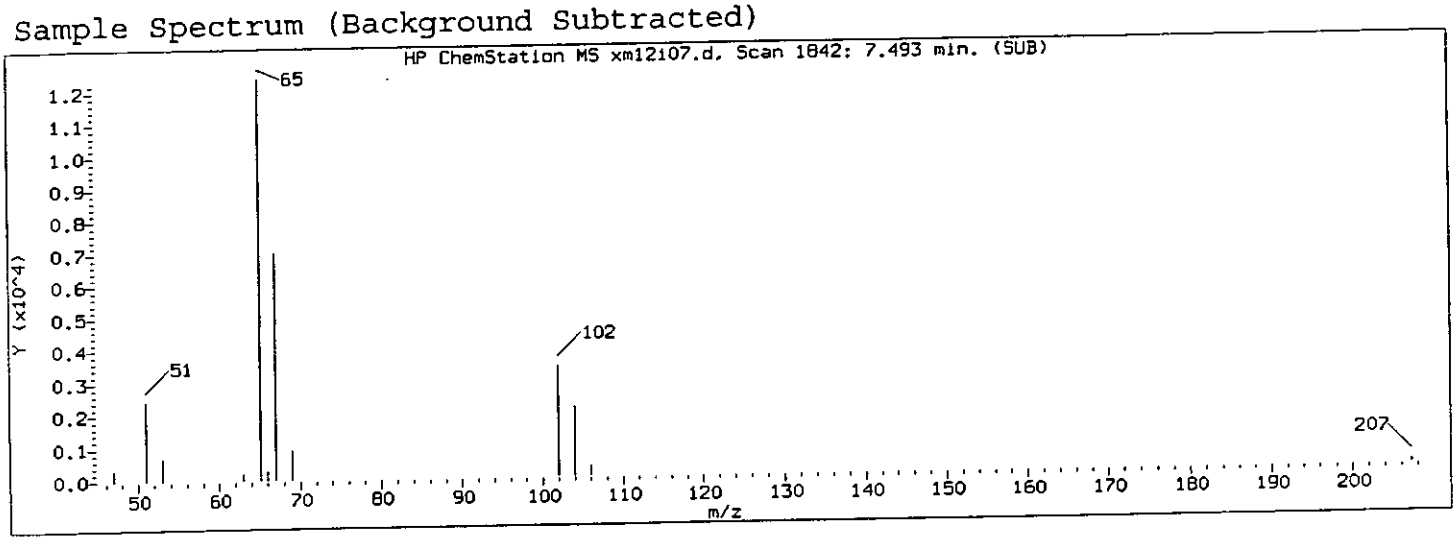
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

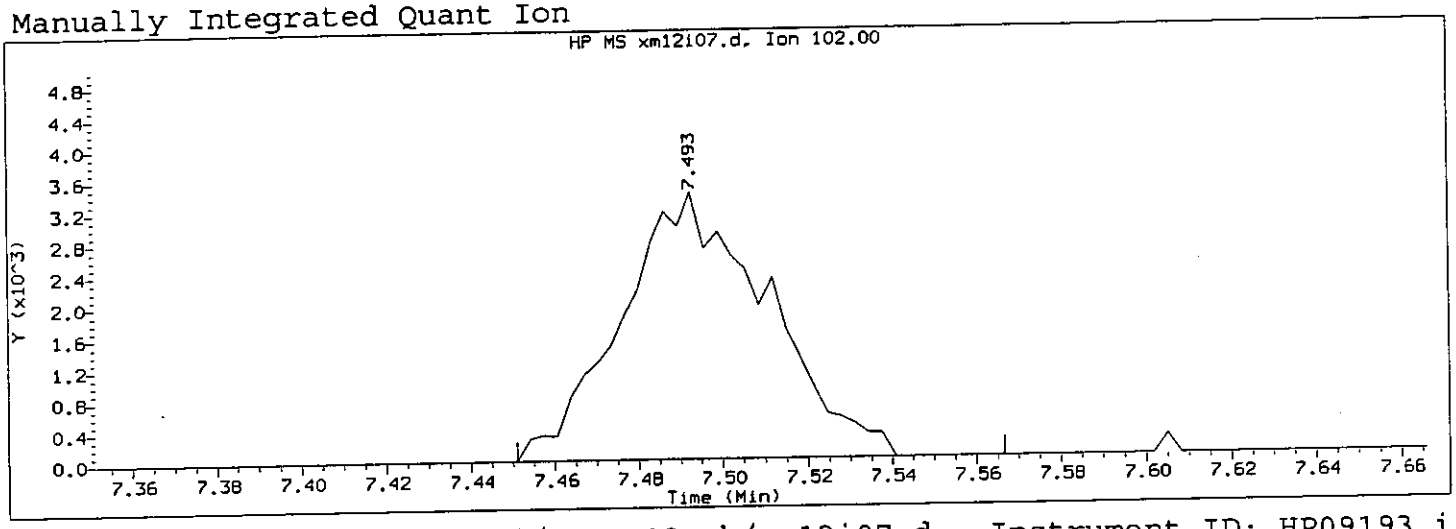
0133

GC/MS audit/management approval: [signature] 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12i07.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:13 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 12-MAR-2004 11:47
Date, time and analyst ID of latest file update: 12-Mar-2004 11:47 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| | | |
|---|---|---|
| Compound Number | : | 62 |
| Compound Name | : | 1,2-Dichloroethane-d4 |
| Scan Number | : | 1842 |
| Retention Time (minutes) | : | 7.493 |
| Quant Ion | : | 102 |
| Area (flag) | : | 8219 M |
| Concentration (ug/Kg) | : | 4.2743 |
| Integration start scan | : | 1828 Integration stop scan: 1864 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: LCM1518 3/12/04

8134

GC/MS audit/management approval: [signature] 3/12/04

Manual Integration Report for data file /chem/HP09193.i/04mar12a.b/xm12i07.d, generated on 03/12/2004 at 11:47

Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d
Date : 12-MAR-2004 11:40
Client ID: VSTD001
Sample Info: VSTD001;1 PPB MDL;2;3;MDL/LOQ;;

Column phase: DB-624

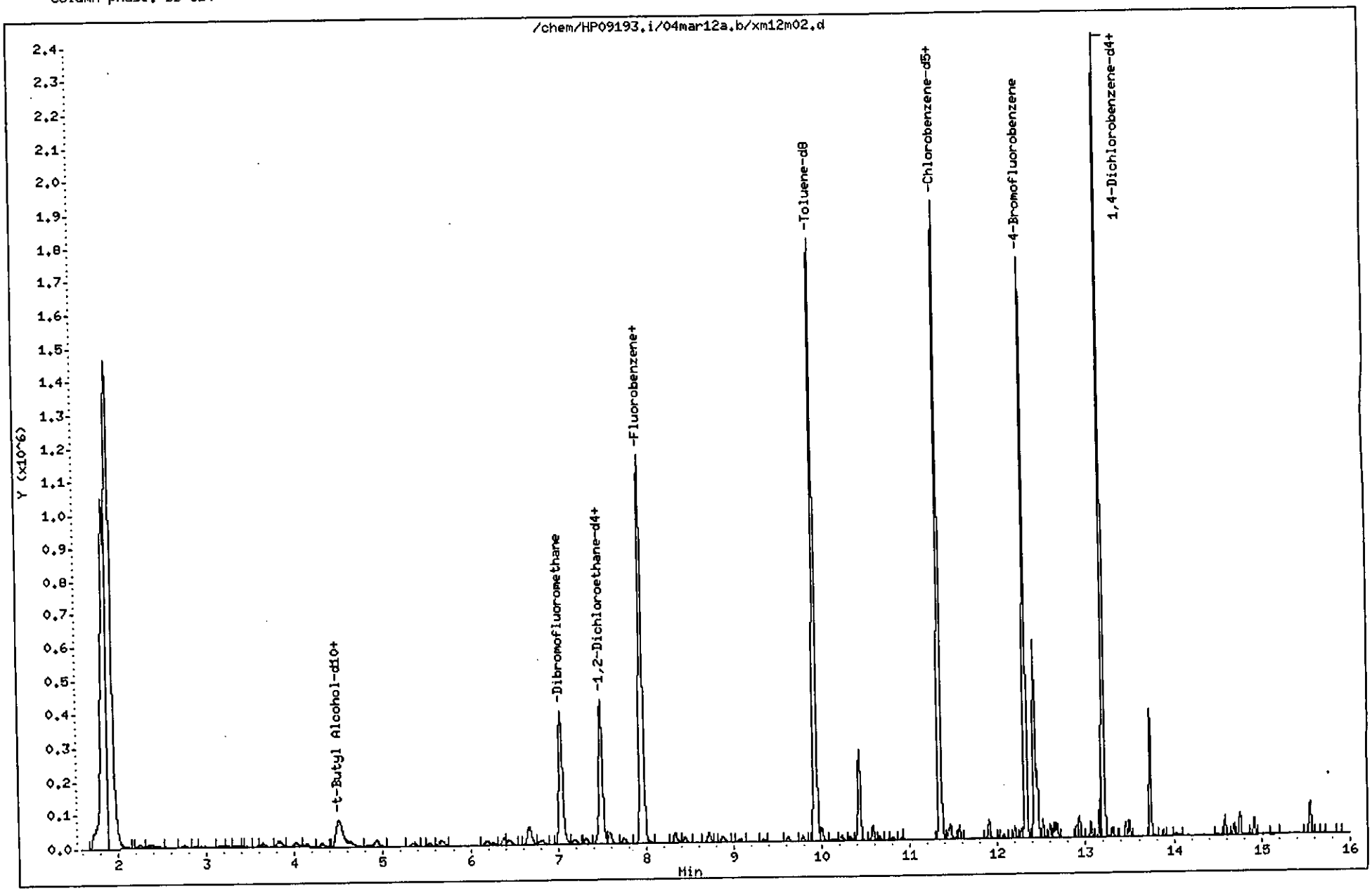
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
3/12/04



5135



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.108 | 85 | 7899 | 0.799 |
| 4) Chloromethane | (1) | 2.246 | 50 | 10813M | 1.155 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 8333 | 0.932 |
| 7) Bromomethane | (1) | 2.747 | 94 | 5925M | 0.975 |
| 8) Chloroethane | (1) | 2.872 | 64 | 4558 | 0.899 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 8778 | 0.858 |
| 13) Ethanol | (4) | 3.344 | 45 | 11607 | 65.538 |
| 16) Acrolein | (1) | 3.639 | 56 | 13462 | 11.084 |
| 17) 1,1-Dichloroethene | (1) | 3.815 | 96 | 5657 | 0.885 |
| 19) Freon 113 | (1) | 3.841 | 101 | 5127 | 0.778 |
| 20) Acetone | (1) | 3.844 | 58 | 3585 | 5.853 |
| 22) Methyl Iodide | (1) | 4.018 | 142 | 11350 | 0.914 |
| 23) 2-Propanol | (1) | 4.021 | 45 | 15586 | 26.597 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 22316 | 0.937 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 11582 | 0.951 |
| 27) Methyl Acetate | (1) | 4.316 | 43 | 7191 | 1.222 |
| 28) Methylene Chloride | (1) | 4.489 | 84 | 10214 | 1.291 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.512 | 65 | 217622 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.647 | 59 | 23094 | 20.793 |
| 32) Acrylonitrile | (1) | 4.842 | 53 | 2474 | 0.905 |
| 34) trans-1,2-Dichloroethene | (1) | 4.922 | 96 | 6529 | 0.862 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.929 | 73 | 18793 | 0.897 |
| 36) n-Hexane | (1) | 5.352 | 57 | 7222 | 0.696 |
| 37) 1,1-Dichloroethane | (1) | 5.539 | 63 | 11995 | 0.949 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683 | 53 | 6048 | 0.624 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 17445 | 0.769 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 14944 | 0.718 |
| 45) cis-1,2-Dichloroethene | (1) | 6.389 | 96 | 7415 | 0.921 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 13944 | 1.782 |
| 48) 2,2-Dichloropropane | (1) | 6.376 | 77 | 7811 | 0.774 |
| 46) 2-Butanone | (1) | 6.392 | 72 | 1722 | 1.720 |
| 49) Propionitrile | (1) | 6.444 | 54 | 22374 | 20.599 |
| 51) Methacrylonitrile | (1) | 6.671 | 67 | 28522 | 8.528 |
| 52) Bromochloromethane | (1) | 6.713 | 128 | 4072 | 0.917 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.796 | 71 | 1816 | 1.989 |
| 54) Chloroform | (1) | 6.832 | 83 | 11955 | 0.966 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 13142 | 1.192 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 8307 | 0.676 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 6695 | 0.713 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 7773 | 0.836 |
| 65) Benzene | (1) | 7.592 | 78 | 28577 | 0.943 |
| 61) Isobutyl Alcohol | (1) | 7.454 | 41 | 15192 | 45.898 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 9508 | 0.992 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 14560 | 0.721 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1485094 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 1589 | 0.719 |
| 72) n-Butanol | (1) | 8.334 | 56 | 19741 | 71.861 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 6818 | 0.883 |
| 74) Methylcyclohexane | (1) | 8.719 | 83 | 8581 | 0.627 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 6553 | 0.868 |
| 77) Dibromomethane | (1) | 8.876 | 93 | 4224 | 0.917 |
| 78) 1,4-Dioxane | (1) | 8.905 | 88 | 3026 | 33.570 |
| 76) Methyl Methacrylate | (1) | 8.873 | 69 | 3940 | 0.690 |
| 81) Bromodichloromethane | (1) | 9.078 | 83 | 7767 | 0.851 |
| 82) 2-Nitropropane | (1) | 9.344 | 41 | 5399 | 2.720 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 8320 | 0.713 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 11113 | 1.309 |
| 88) Toluene | (2) | 10.002 | 92 | 18697 | 0.964 |
| 89) trans-1,3-Dichloropropene | (2) | 10.224 | 75 | 8135 | 0.798 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 6327 | 0.619 |
| 91) 1,1,2-Trichloroethane | (2) | 10.413 | 97 | 9214 | 1.294 |
| 93) Tetrachloroethene | (2) | 10.577 | 166 | 8759 | 0.926 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 11330 | 0.978 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 10024M | 1.535 |
| 97) Dibromochloromethane | (2) | 10.801 | 129 | 6422 | 0.842 |
| 99) 1,2-Dibromoethane | (2) | 10.920 | 107 | 6484 | 0.894 |
| 100)*Chlorobenzene-d5 | (2) | 11.344 | 117 | 1130037 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 22085 | 0.980 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.443 | 131 | 6761 | 0.873 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 29463 | 0.817 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 11159 | 0.749 |
| 92) Xylene (Total) | (2) | | 106 | 20338 | 1.409 |
| 107) o-Xylene | (2) | 11.902 | 106 | 9179 | 0.660 |
| 108) Styrene | (2) | 11.908 | 104 | 14662 | 0.627 |
| 109) Bromoform | (2) | 12.069 | 173 | 4663 | 0.821 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 21312 | 0.597 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 9995 | 33.301 |
| 116) Bromobenzene | (3) | 12.457 | 156 | 11275 | 1.090 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 10259 | 1.010 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 3855 | 1.243 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 27958 | 8.967 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 35895 | 0.837 |
| 120) 2-Chlorotoluene | (3) | 12.595 | 126 | 8170 | 0.862 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 22707 | 0.723 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 8787 | 0.886 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 5065 | 0.668 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 5141 | 0.790 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 22247 | 0.698 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 26748M | 0.675 |
| 128) 1,3-Dichlorobenzene | (3) | 13.157 | 146 | 20596 | 1.040 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 650229 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.163 | 119 | 21628M | 0.622 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 26156 | 1.258 |
| 135) 1,2-Dichlorobenzene | (3) | 13.497 | 146 | 19360 | 1.012 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 21893 | 0.712 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 1916 | 0.929 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 15814 | 1.063 |
| 139) Hexachlorobutadiene | (3) | 14.684 | 225 | 6262 | 0.831 |
| 140) Naphthalene | (3) | 14.761 | 128 | 53409 | 1.302 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 16140 | 1.080 |
| 143) 2-Methylnaphthalene | (3) | 15.554 | 142 | 51489 | 3.608 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 356660 | 50.622 |

M = Compound was manually integrated.

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d  Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40  Analyst ID: LCM01518

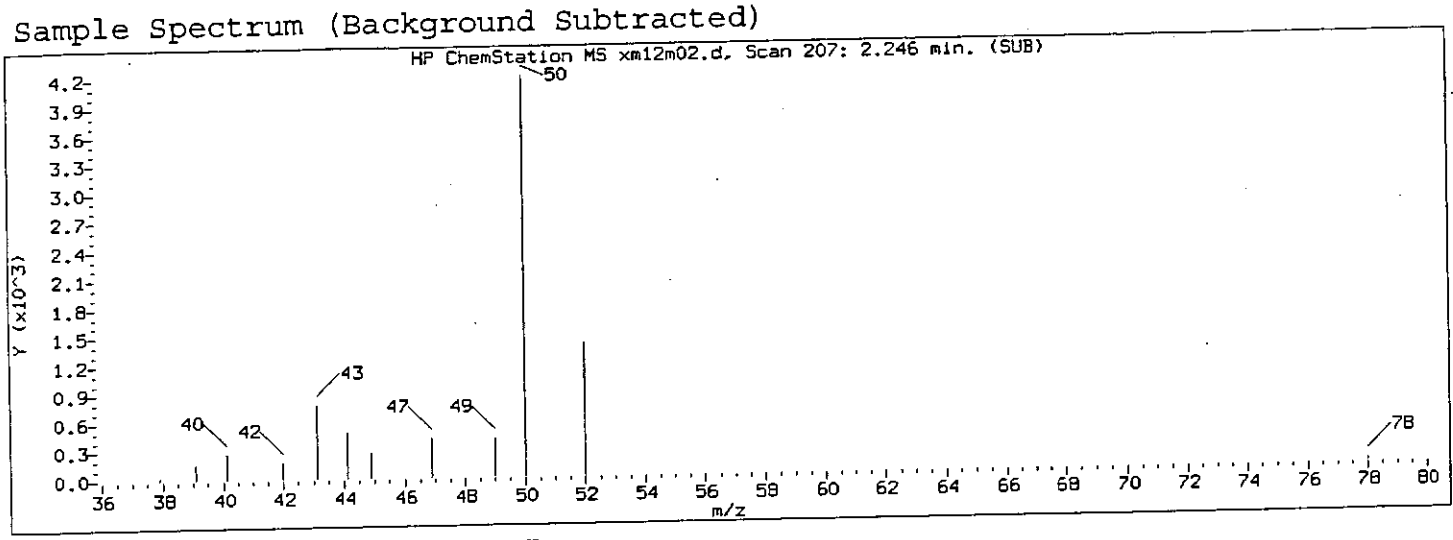
Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

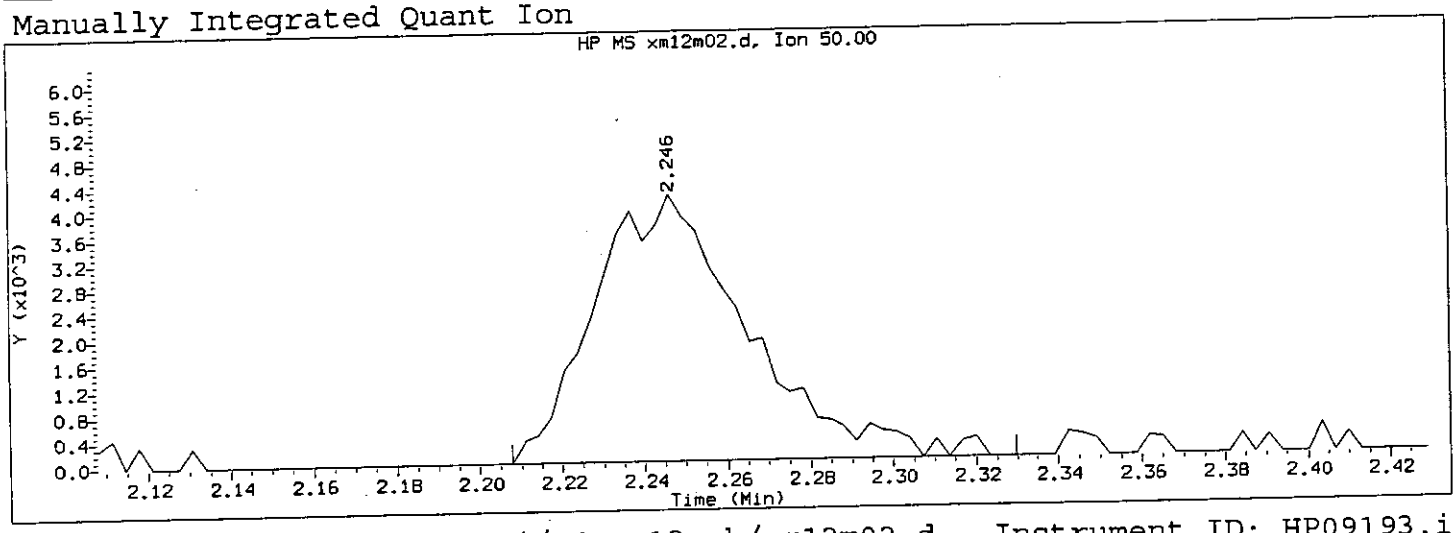
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 96860 | 51.280 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1388962 | 49.888 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 535753 | 47.847 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 11:52
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 4 |
| Compound Name | : | Chloromethane |
| Scan Number | : | 207 |
| Retention Time (minutes) | : | 2.246 |
| Quant Ion | : | 50 |
| Area (flag) | : | 10813 M |
| Concentration (ug/Kg) | : | 1.1547 |
| Integration start scan | : | 194 Integration stop scan: 232 |
| Y at integration start | : | 0 Y at integration end: 0 |

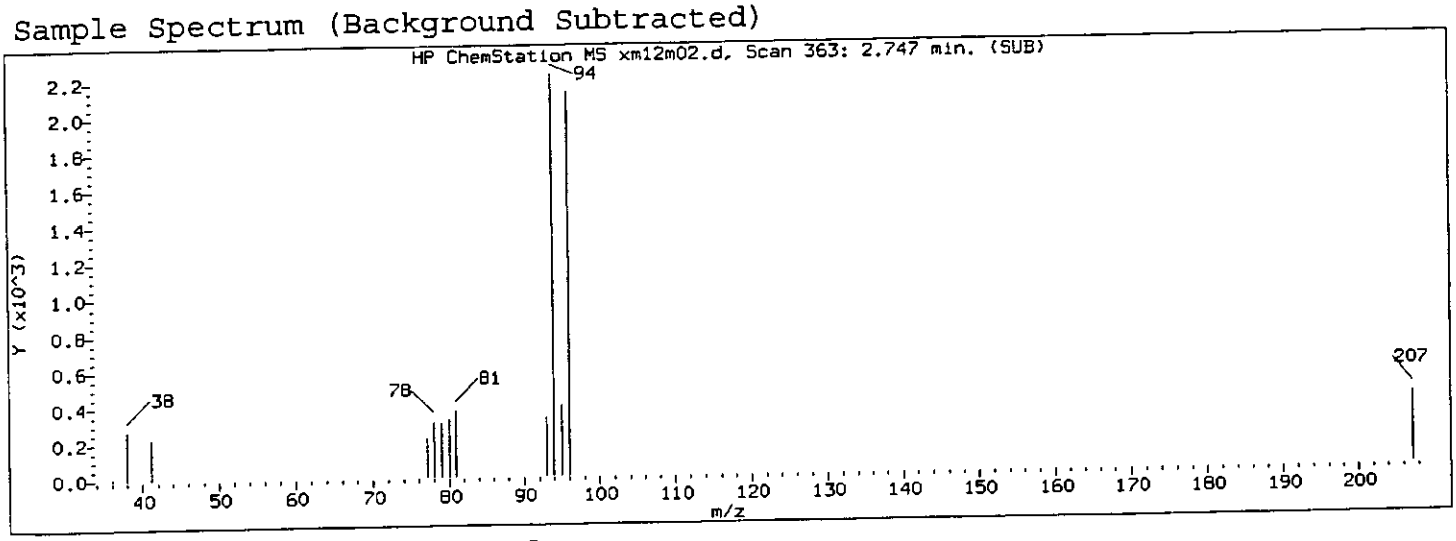
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

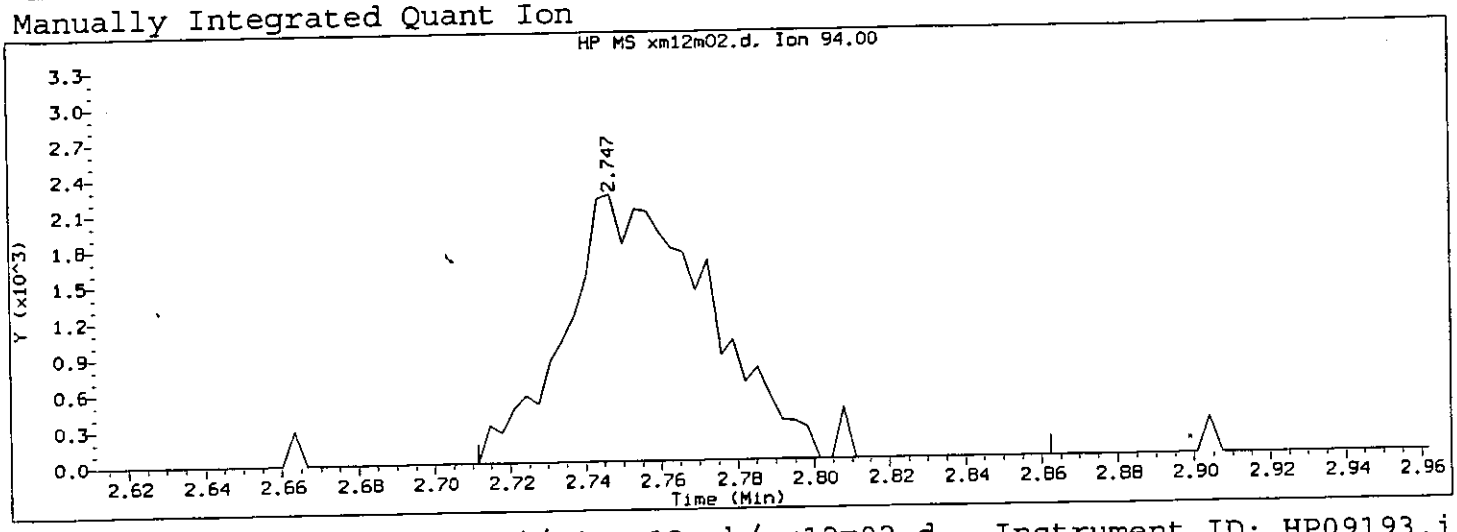
0148

GC/MS audit/management approval: [signature] 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 11:52
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

Compound Number : 7
Compound Name : Bromomethane
Scan Number : 363
Retention Time (minutes): 2.747
Quant Ion : 94
Area (flag) : 5925 M
Concentration (ug/Kg) : 0.9754
Integration start scan : 351 Integration stop scan: 398
Y at integration start : 0 Y at integration end: 0

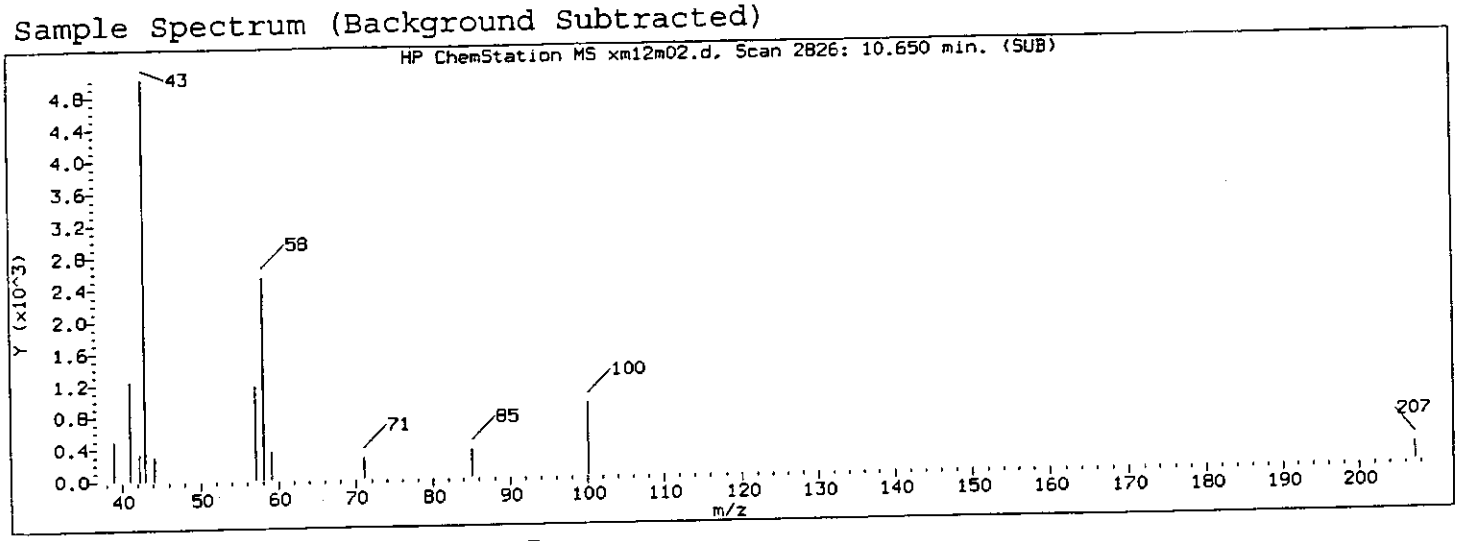
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

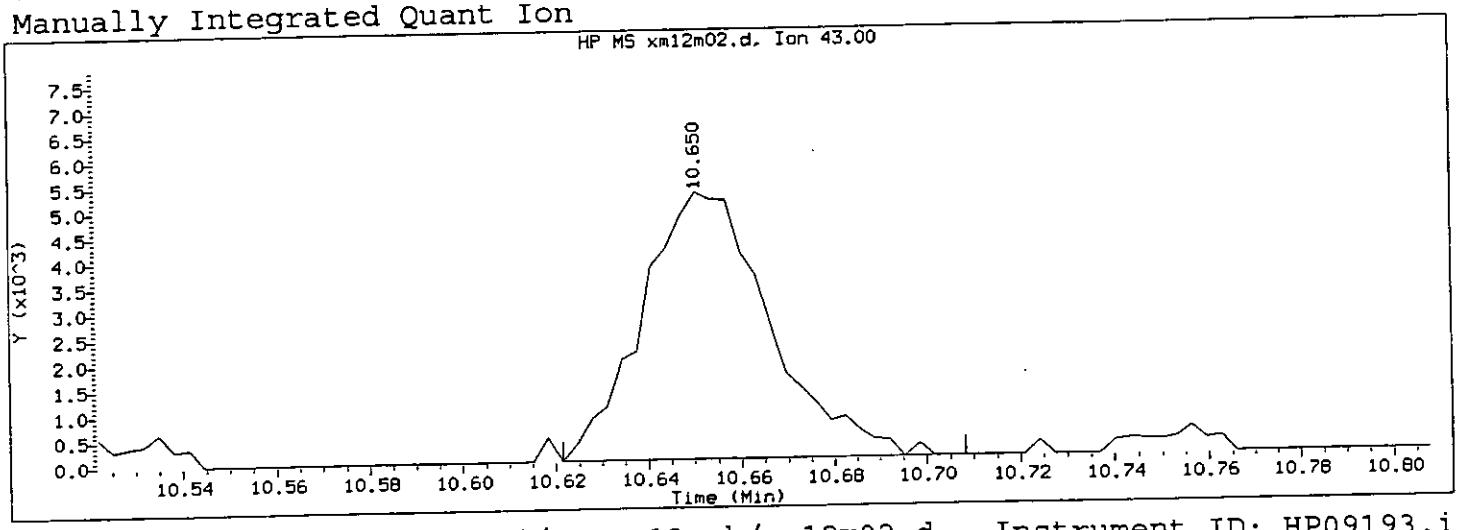
8141

GC/MS audit/management approval: [signature] 3/12/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 11:52
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 95 |
| Compound Name | : | 2-Hexanone |
| Scan Number | : | 2826 |
| Retention Time (minutes) | : | 10.650 |
| Quant Ion | : | 43 |
| Area (flag) | : | 10024 M |
| Concentration (ug/Kg) | : | 1.5347 |
| Integration start scan | : | 2816 Integration stop scan: 2843 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

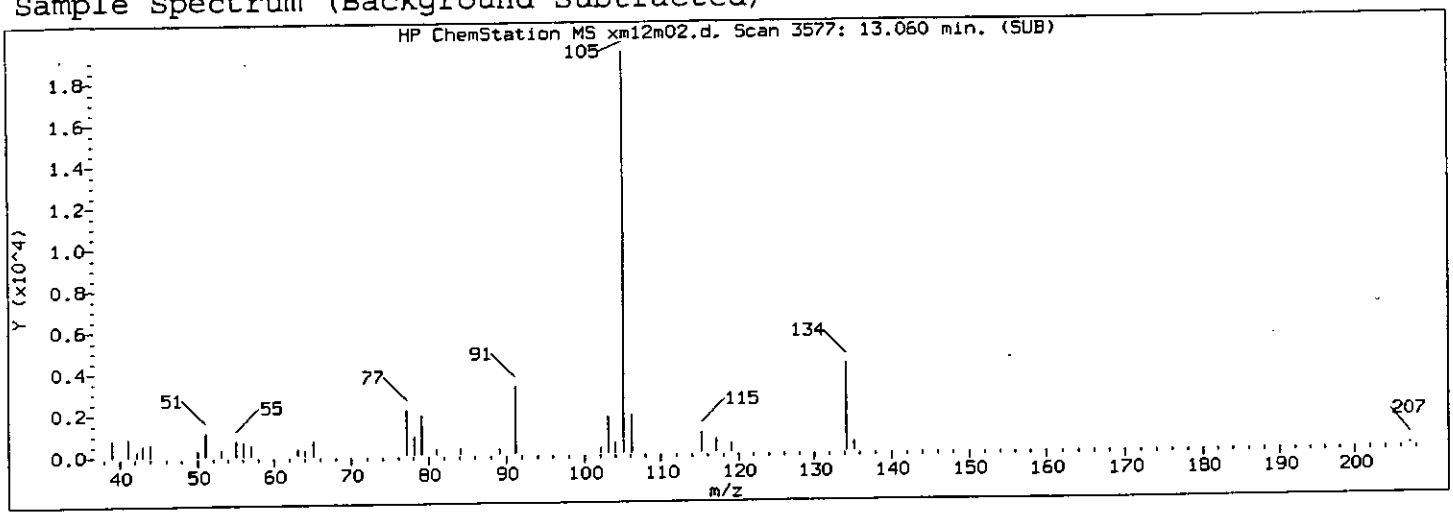
Analyst responsible for change: LCM1518 3/12/04

8142

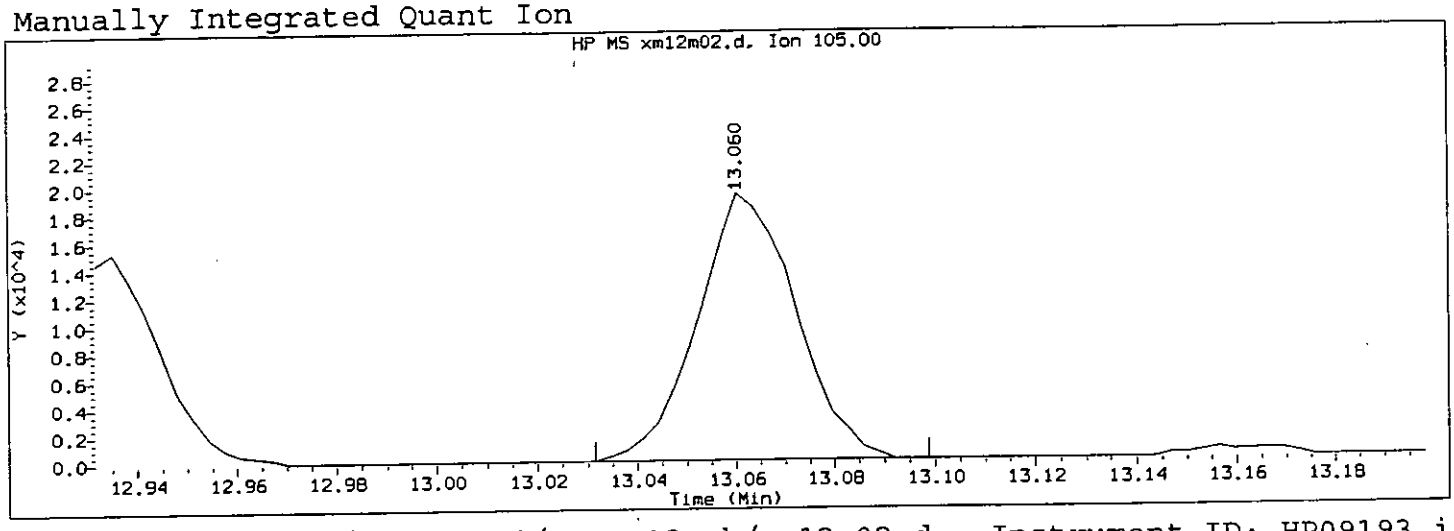
GC/MS audit/management approval: [signature], 3/12/04

Manual Integration Report for data file /chem/HP09193.i/04mar12a.b/xm12m02.d, generated on 03/12/2004 at 12:13

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 11:52
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 126 |
| Compound Name | : | sec-Butylbenzene |
| Scan Number | : | 3577 |
| Retention Time (minutes) | : | 13.060 |
| Quant Ion | : | 105 |
| Area (flag) | : | 26748 M |
| Concentration (ug/Kg) | : | 0.6752 |
| Integration start scan | : | 3567 Integration stop scan: 3588 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

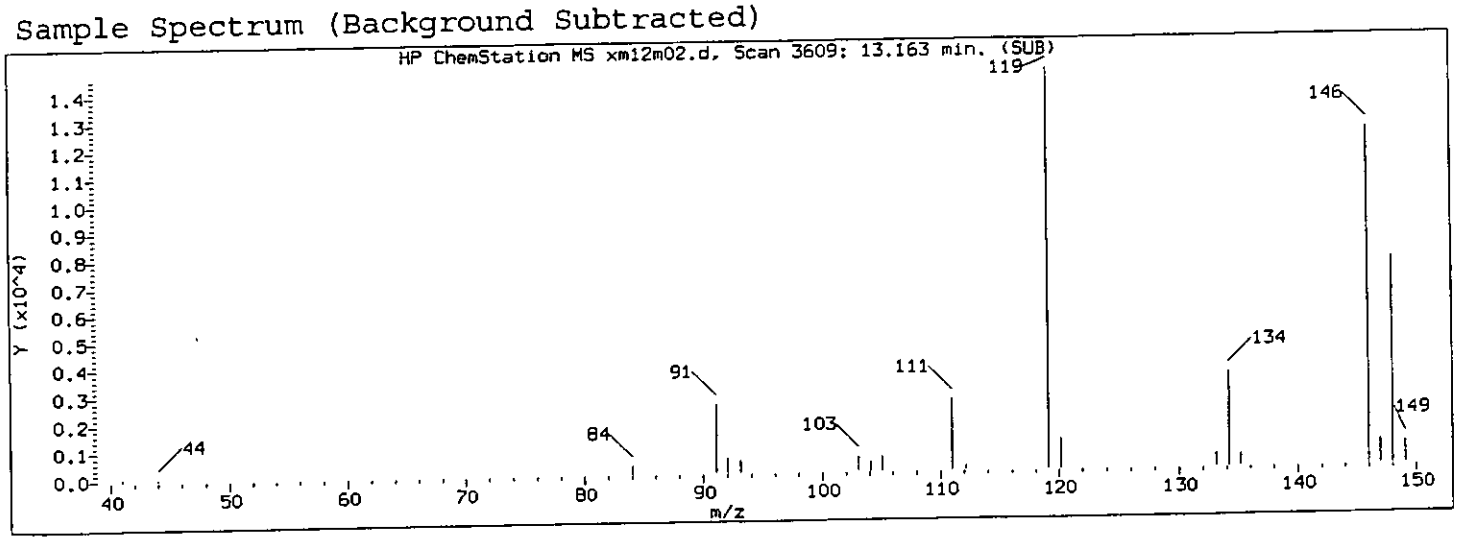
Analyst responsible for change: LCM1518 3/12/04

B143

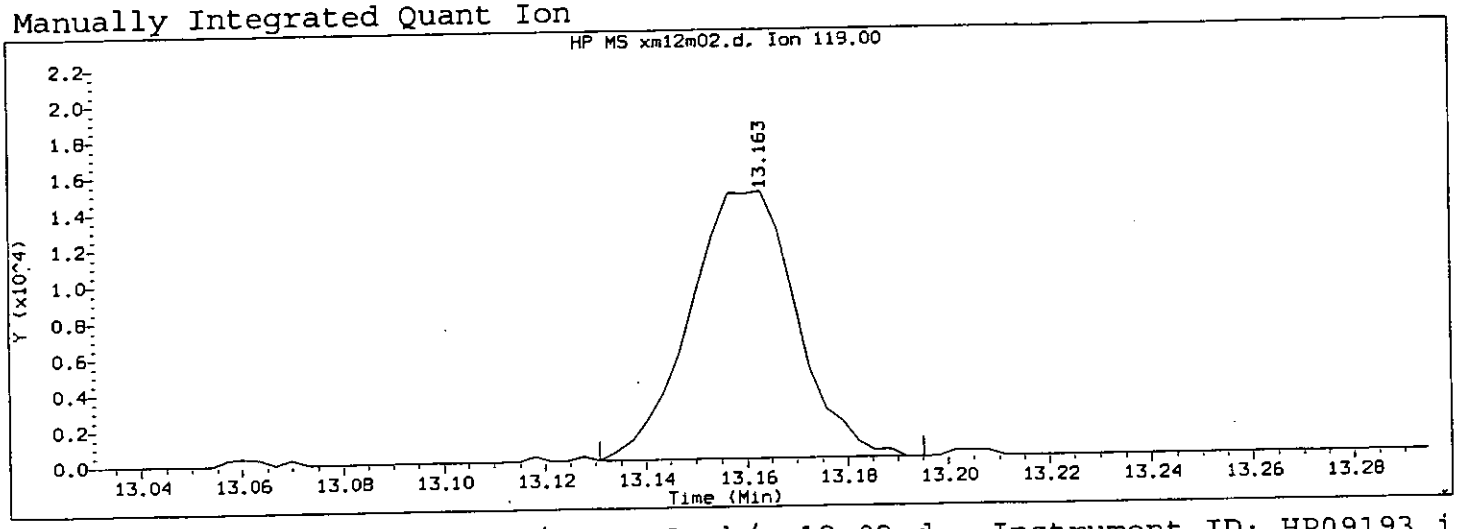
GC/MS audit/management approval: [signature] 3/12/04

Manual Integration Report for data file /chem/HP09193.i/04mar12a.b/xm12m02.d, generated on 03/12/2004 at 12:13

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar12a.b/xm12m02.d Instrument ID: HP09193.i
Injection date and time: 12-MAR-2004 11:40 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar12a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 12-MAR-2004 11:52
Date, time and analyst ID of latest file update: 12-Mar-2004 12:13 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 127 |
| Compound Name | : | p-Isopropyltoluene |
| Scan Number | : | 3609 |
| Retention Time (minutes) | : | 13.163 |
| Quant Ion | : | 119 |
| Area (flag) | : | 21628 M |
| Concentration (ug/Kg) | : | 0.6220 |
| Integration start scan | : | 3598 Integration stop scan: 3618 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 3/12/04

0144

GC/MS audit/management approval: [signature] 3/12/04

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/22/04 Time: 14:31

Lab File ID: xm22c03.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.3328 | 0.2890 | 43.43 | 50 | -13 | |
| # | Chloromethane | 0.3153 | 0.3056 | 48.47 | 50 | -3 | # |
| * | Vinyl Chloride | 0.3009 | 0.2890 | 48.01 | 50 | -4 | * |
| | Bromomethane | 0.2045 | 0.2092 | 51.13 | 50 | 2 | |
| | Chloroethane | 0.1707 | 0.1717 | 50.31 | 50 | 1 | |
| | Trichlorofluoromethane | 0.3444 | 0.3270 | 47.47 | 50 | -5 | |
| | Acrolein | 0.0409 | 0.0446 | 545.91 | 500 | 9 | |
| * | 1,1-Dichloroethene | 0.2153 | 0.2125 | 49.35 | 50 | -1 | * |
| | Freon 113 | 0.2220 | 0.2170 | 48.87 | 50 | -2 | |
| | Acetone | 0.0239 | 0.0247 | 104.68 | 100 | 5 | |
| | Methyl Iodide | 0.4179 | 0.4173 | 49.93 | 50 | 0 | |
| | 2-Propanol | 0.0197 | 0.0206 | 261.51 | 250 | 5 | |
| | Carbon Disulfide | 0.8019 | 0.7884 | 49.16 | 50 | -2 | |
| | Allyl Chloride | 0.4101 | 0.4248 | 51.79 | 50 | 4 | |
| | Methyl Acetate | 0.1981 | 0.2076 | 52.39 | 50 | 5 | |
| | Methylene Chloride | 0.2664 | 0.2629 | 49.34 | 50 | -1 | |
| | t-Butyl Alcohol | 1.2759 | 1.4206 | 278.35 | 250 | 11 | |
| | Acrylonitrile | 0.0921 | 0.1080 | 58.66 | 50 | 17 | |
| | trans-1,2-Dichloroethene | 0.2551 | 0.2590 | 50.76 | 50 | 2 | |
| | Methyl Tertiary Butyl Ether | 0.7055 | 0.7286 | 51.64 | 50 | 3 | |
| | n-Hexane | 0.3492 | 0.3532 | 50.57 | 50 | 1 | |
| # | 1,1-Dichloroethane | 0.4256 | 0.4396 | 51.65 | 50 | 3 | # |
| | 2-Chloro-1,3-Butadiene | 0.3264 | 0.3457 | 52.97 | 50 | 6 | |
| | di-Isopropyl Ether | 0.7642 | 0.8208 | 53.70 | 50 | 7 | |
| | Ethyl t-Butyl Ether | 0.7005 | 0.7427 | 53.01 | 50 | 6 | |
| | cis-1,2-Dichloroethene | 0.2711 | 0.2838 | 52.34 | 50 | 5 | |
| | 1,2-Dichloroethene (total) | 0.2631 | 0.2714 | 103.11 | 100 | 3 | |
| | 2,2-Dichloropropane | 0.3399 | 0.3300 | 48.54 | 50 | -3 | |
| | 2-Butanone | 0.0337 | 0.0411 | 122.02 | 100 | 22 | |
| | Propionitrile | 0.0366 | 0.0397 | 271.28 | 250 | 9 | |
| | Methacrylonitrile | 0.1126 | 0.1223 | 135.79 | 125 | 9 | |
| | Bromochloromethane | 0.1495 | 0.1566 | 52.39 | 50 | 5 | |
| | Tetrahydrofuran | 0.0307 | 0.0372 | 121.12 | 100 | 21 | |
| * | Chloroform | 0.4168 | 0.4322 | 51.86 | 50 | 4 | * |
| | 1,1,1-Trichloroethane | 0.3712 | 0.3711 | 49.99 | 50 | 0 | |
| | Cyclohexane | 0.4140 | 0.4310 | 52.06 | 50 | 4 | |

0145

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/22/04 Time: 14:31

Lab File ID: xm22c03.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3161 | 0.3309 | 52.34 | 50 | 5 | |
| | Carbon Tetrachloride | 0.3131 | 0.3229 | 51.56 | 50 | 3 | |
| | Benzene | 1.0199 | 1.0486 | 51.41 | 50 | 3 | |
| | Isobutyl Alcohol | 0.0111 | 0.0131 | 733.54 | 625 | 17 | |
| | 1,2-Dichloroethane | 0.3226 | 0.3300 | 51.14 | 50 | 2 | |
| | t-Amyl Methyl Ether | 0.6803 | 0.7223 | 53.09 | 50 | 6 | |
| | n-Heptane | 0.0744 | 0.0765 | 51.41 | 50 | 3 | |
| | n-Butanol | 0.0092 | 0.0110 | 1489.94 | 1250 | 19 | |
| | Trichloroethene | 0.2598 | 0.2682 | 51.61 | 50 | 3 | |
| | Methylcyclohexane | 0.4608 | 0.4928 | 53.47 | 50 | 7 | |
| * | 1,2-Dichloropropane | 0.2542 | 0.2681 | 52.72 | 50 | 5 | * |
| | Dibromomethane | 0.1550 | 0.1636 | 52.77 | 50 | 6 | |
| | 1,4-Dioxane | 0.0030 | 0.0037 | 756.95 | 625 | 21 | |
| | Methyl Methacrylate | 0.1923 | 0.2256 | 58.64 | 50 | 17 | |
| | Bromodichloromethane | 0.3071 | 0.3323 | 54.09 | 50 | 8 | |
| | 2-Nitropropane | 0.0668 | 0.0776 | 116.13 | 100 | 16 | |
| | cis-1,3-Dichloropropene | 0.3931 | 0.4327 | 55.04 | 50 | 10 | |
| | 4-Methyl-2-Pentanone | 0.2859 | 0.3555 | 124.33 | 100 | 24 | |
| * | Toluene | 0.8581 | 0.8810 | 51.34 | 50 | 3 | * |
| | trans-1,3-Dichloropropene | 0.4510 | 0.4813 | 53.36 | 50 | 7 | |
| | Ethyl Methacrylate | 0.4523 | 0.5264 | 58.20 | 50 | 16 | |
| | 1,1,2-Trichloroethane | 0.3151 | 0.3210 | 50.93 | 50 | 2 | |
| | Tetrachloroethene | 0.4185 | 0.4052 | 48.40 | 50 | -3 | |
| | 1,3-Dichloropropane | 0.5126 | 0.5328 | 51.97 | 50 | 4 | |
| | 2-Hexanone | 0.2890 | 0.3350 | 115.91 | 100 | 16 | |
| | Dibromochloromethane | 0.3375 | 0.3575 | 52.96 | 50 | 6 | |
| | 1,2-Dibromoethane | 0.3210 | 0.3398 | 52.92 | 50 | 6 | |
| # | Chlorobenzene | 0.9971 | 1.0010 | 50.20 | 50 | 0 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3426 | 0.3534 | 51.58 | 50 | 3 | |
| * | Ethylbenzene | 1.5965 | 1.6604 | 52.00 | 50 | 4 | * |
| | m+p-Xylene | 0.6590 | 0.6811 | 51.67 | 50 | 3 | |
| | Xylene (Total) | 0.6372 | 0.6677 | 104.82 | 100 | 5 | |
| | o-Xylene | 0.6154 | 0.6543 | 53.15 | 50 | 6 | |
| | Styrene | 1.0353 | 1.1215 | 54.16 | 50 | 8 | |
| # | Bromoform | 0.2513 | 0.2793 | 55.56 | 50 | 11 | # |
| | Isopropylbenzene | 1.5784 | 1.6742 | 53.03 | 50 | 6 | |

8146

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/22/04 Time: 14:31

Lab File ID: xm22c03.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Cyclohexanone | 0.0133 | 0.0145 | 682.26 | 625 | 9 | |
| | Bromobenzene | 0.7953 | 0.7940 | 49.91 | 50 | 0 | |
| # | 1,1,2,2-Tetrachloroethane | 0.7810 | 0.8298 | 53.12 | 50 | 6 | # |
| | 1,2,3-Trichloropropane | 0.2385 | 0.2481 | 52.01 | 50 | 4 | |
| | trans-1,4-Dichloro-2-Butene | 0.2397 | 0.2446 | 127.54 | 125 | 2 | |
| | n-Propylbenzene | 3.2990 | 3.3398 | 50.62 | 50 | 1 | |
| | 2-Chlorotoluene | 0.7290 | 0.7330 | 50.28 | 50 | 1 | |
| | 1,3,5-Trimethylbenzene | 2.4146 | 2.4478 | 50.69 | 50 | 1 | |
| | 4-Chlorotoluene | 0.7626 | 0.7596 | 49.80 | 50 | 0 | |
| | tert-Butylbenzene | 0.5832 | 0.6029 | 51.70 | 50 | 3 | |
| | Pentachloroethane | 0.5003 | 0.5303 | 52.99 | 50 | 6 | |
| | 1,2,4-Trimethylbenzene | 2.4519 | 2.4980 | 50.94 | 50 | 2 | |
| | sec-Butylbenzene | 3.0465 | 3.1484 | 51.67 | 50 | 3 | |
| | 1,3-Dichlorobenzene | 1.5230 | 1.5053 | 49.42 | 50 | -1 | |
| | p-Isopropyltoluene | 2.6737 | 2.7688 | 51.78 | 50 | 4 | |
| | 1,4-Dichlorobenzene | 1.5990 | 1.5589 | 48.75 | 50 | -3 | |
| | 1,2-Dichlorobenzene | 1.4705 | 1.4477 | 49.22 | 50 | -2 | |
| | n-Butylbenzene | 2.3636 | 2.4556 | 51.95 | 50 | 4 | |
| | 1,2-Dibromo-3-Chloropropane | 0.1585 | 0.1681 | 53.02 | 50 | 6 | |
| | 1,2,4-Trichlorobenzene | 1.1435 | 1.1532 | 50.42 | 50 | 1 | |
| | Hexachlorobutadiene | 0.5796 | 0.5823 | 50.24 | 50 | 0 | |
| | Naphthalene | 3.1554 | 3.1308 | 49.61 | 50 | -1 | |
| | 1,2,3-Trichlorobenzene | 1.1494 | 1.1359 | 49.41 | 50 | -1 | |
| | 2-Methylnaphthalene | 2.2660 | 1.8584 | 34.19 | 50 | -32 | |
| | Dibromofluoromethane | 0.2372 | 0.2351 | 49.55 | 50 | -1 | |
| | 1,2-Dichloroethane-d4 | 0.0636 | 0.0601 | 47.24 | 50 | -6 | |
| | Toluene-d8(mz100) | 0.8270 | 0.8270 | 50.00 | 50 | 0 | |
| | 4-Bromofluorobenzene(mz174) | 0.4626 | 0.4483 | 48.45 | 50 | -3 | |
| | Dibromofluoromethane(mz111) | 0.2412 | 0.2397 | 49.69 | 50 | -1 | |
| | 1,2-Dichloroethane-d4(mz104) | 0.0404 | 0.0388 | 48.03 | 50 | -4 | |
| | Toluene-d8 | 1.2319 | 1.2398 | 50.32 | 50 | 1 | |
| | 4-Bromofluorobenzene | 0.4954 | 0.4769 | 48.13 | 50 | -4 | |

Average %Drift 6

9147

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

Data File: /chem/HP09193.i/04mar22b.b/xm22c03.d
Date : 22-MAR-2004 14:31
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;2;2;;;

Column phase: DB-624

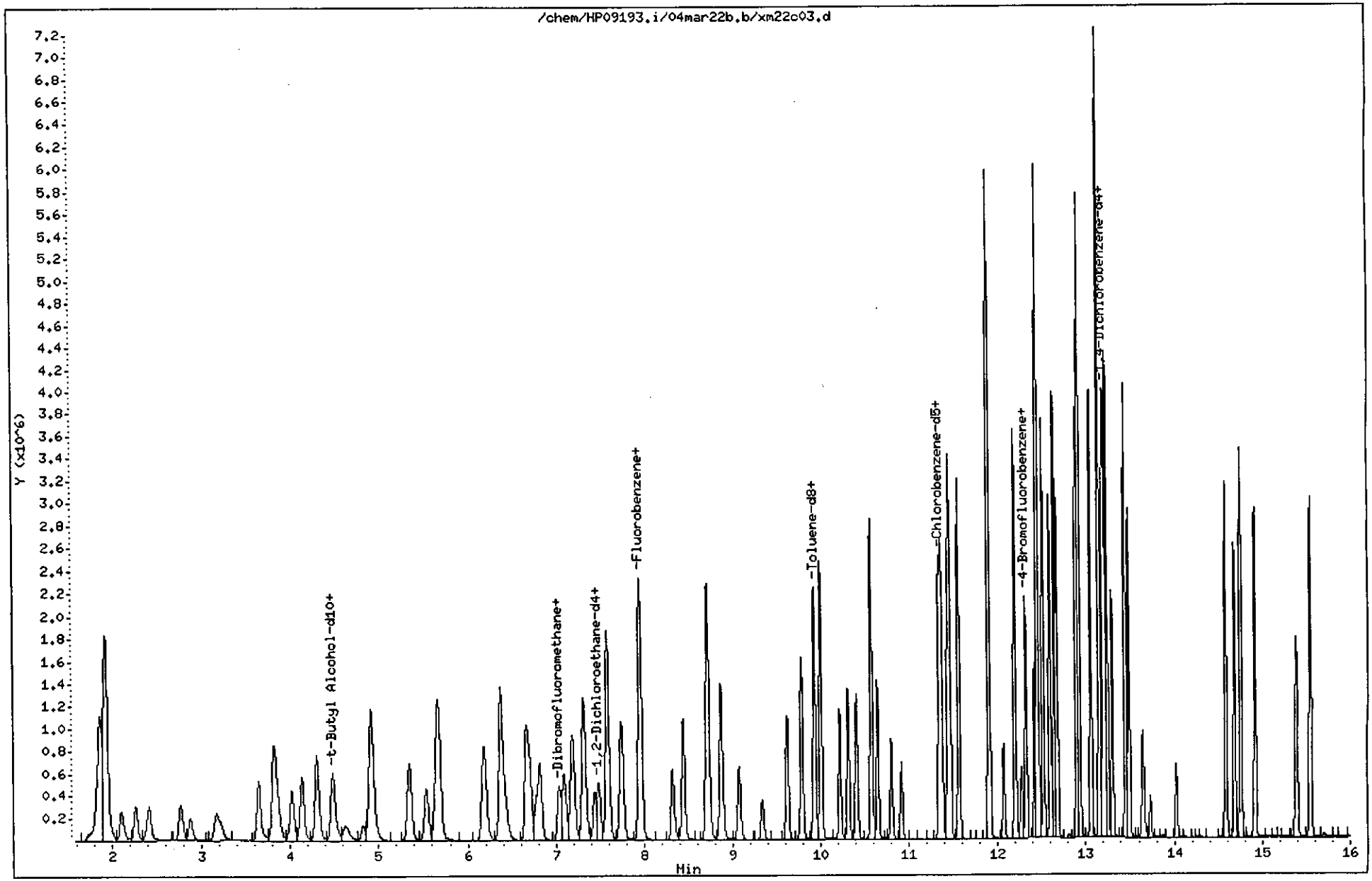
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
3/22/04



B148



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22c03.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 14:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 15:05 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 510151 | 43.428 |
| 4) Chloromethane | (1) | 2.265 | 50 | 539407 | 48.468 |
| 5) Vinyl Chloride | (1) | 2.416 | 62 | 510044 | 48.015 |
| 7) Bromomethane | (1) | 2.766 | 94 | 369181 | 51.133 |
| 8) Chloroethane | (1) | 2.872 | 64 | 303107 | 50.311 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 577142 | 47.470 |
| 16) Acrolein | (1) | 3.642 | 56 | 787990 | 545.912 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 375009 | 49.346 |
| 19) Freon 113 | (1) | 3.844 | 101 | 382932 | 48.870 |
| 20) Acetone | (1) | 3.831 | 58 | 87289 | 104.680 |
| 22) Methyl Iodide | (1) | 4.018 | 142 | 736565 | 49.930 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 182123 | 261.508 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 1391501 | 49.159 |
| 26) Allyl Chloride | (1) | 4.306 | 41 | 749792 | 51.787 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 366387 | 52.392 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 464020 | 49.339 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 250367 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.634 | 59 | 355672 | 278.347 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 190642 | 58.662 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 457187 | 50.763 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926 | 73 | 1285955 | 51.638 |
| 36) n-Hexane | (1) | 5.349 | 57 | 623329 | 50.572 |
| 37) 1,1-Dichloroethane | (1) | 5.539 | 63 | 775903 | 51.648 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683 | 53 | 610194 | 52.967 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 1448705 | 53.703 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 1310895 | 53.013 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 500952 | 52.342 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 958139 | 103.105 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 582387 | 48.537 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 145222 | 122.019 |
| 49) Propionitrile | (1) | 6.437 | 54 | 350189 | 271.281 |
| 51) Methacrylonitrile | (1) | 6.662 | 67 | 539764 | 135.794 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 276467 | 52.394 |
| 53) Tetrahydrofuran | (1) | 6.774 | 71 | 131446 | 121.121 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22c03.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 14:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 15:05 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.819 | 83 | 762909 | 51.858 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 655058 | 49.994 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 760719 | 52.058 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 584061 | 52.342 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 569904 | 51.564 |
| 65) Benzene | (1) | 7.586 | 78 | 1850777 | 51.408 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 288554 | 733.542 |
| 66) 1,2-Dichloroethane | (1) | 7.596 | 62 | 582498 | 51.143 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 1274841 | 53.090 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1764970 | 50.000 |
| 71) n-Heptane | (1) | 7.965 | 100 | 135038 | 51.412 |
| 72) n-Butanol | (1) | 8.321 | 56 | 486442 | 1489.943 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 473340 | 51.609 |
| 74) Methylcyclohexane | (1) | 8.719 | 83 | 869818 | 53.473 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 473117 | 52.715 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 288822 | 52.775 |
| 78) 1,4-Dioxane | (1) | 8.885 | 88 | 81091 | 756.952 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 398105 | 58.638 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 586442 | 54.092 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 273998 | 116.132 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 763783 | 55.043 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 1254826 | 124.332 |
| 88) Toluene | (2) | 10.002 | 92 | 1234350 | 51.335 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 674258 | 53.357 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 737558 | 58.196 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 449706 | 50.932 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 567662 | 48.404 |
| 94) 1,3-Dichloropropane | (2) | 10.577 | 76 | 746514 | 51.970 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 938718 | 115.910 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 500830 | 52.957 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 476059 | 52.921 |
| 100) *Chlorobenzene-d5 | (2) | 11.344 | 117 | 1401027 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 1402487 | 50.196 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.437 | 131 | 495147 | 51.576 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22c03.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 14:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 15:05 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 2326223 | 52.000 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 954178 | 51.670 |
| 92) Xylene (Total) | (2) | | 106 | 1870819 | 104.824 |
| 107) o-Xylene | (2) | 11.902 | 106 | 916641 | 53.154 |
| 108) Styrene | (2) | 11.908 | 104 | 1571241 | 54.163 |
| 109) Bromoform | (2) | 12.069 | 173 | 391273 | 55.558 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 2345543 | 53.032 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 253877 | 682.259 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 658006 | 49.914 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 687692 | 53.123 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 205640 | 52.010 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 506808 | 127.536 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 2767874 | 50.617 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 607504 | 50.279 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 2028657 | 50.688 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 629570 | 49.804 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 499699 | 51.697 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 439460 | 52.988 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 2070259 | 50.939 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 2609251 | 51.671 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 1247519 | 49.419 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 828766 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 2294688 | 51.778 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1291974 | 48.745 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1199793 | 49.225 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 2035079 | 51.945 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 139307 | 53.020 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 955751 | 50.423 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 482605 | 50.236 |
| 140) Naphthalene | (3) | 14.758 | 128 | 2594733 | 49.611 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 941397 | 49.411 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 1540164 | 34.187 |
| 55)$Dibromofluoromethane | (1) | 7.040 | 113 | 414867 | 49.547 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 106055 | 47.244 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22c03.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 14:31  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 15:05 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 87)$Toluene-d8(mz100) | (2) | 9.932 | 100 | 1158622 | 50.000 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 628019 | 48.451 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 423096 | 49.690 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 68555 | 48.028 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1736955 | 50.320 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 668207 | 48.133 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09193.i/04mar12a.b/xm12i07.d
/chem/HP09193.i/04mar12a.b/xm12i05.d
/chem/HP09193.i/04mar12a.b/xm12i04.d
/chem/HP09193.i/04mar12a.b/xm12i03.d
/chem/HP09193.i/04mar12a.b/xm12i02.d
/chem/HP09193.i/04mar12a.b/xm12i01.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP09193.i/04mar22b.b/xm22c03.d

RT Summary

| Internal Standard Name | File ID: xm22c03.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.505 | Yes |
| Fluorobenzene | 7.952 | 7.955 | Yes |
| Chlorobenzene-d5 | 11.344 | 11.346 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.205 | 13.204 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: xm22c03.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 250367 | 218847 | 109424 | 437694 | Yes |
| Fluorobenzene | 1764970 | 1537940 | 768970 | 3075880 | Yes |
| Chlorobenzene-d5 | 1401027 | 1173247 | 586624 | 2346494 | Yes |
| 1,4-Dichlorobenzene-d4 | 828766 | 689065 | 344532 | 1378130 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/29/04 Time: 08:34

Lab File ID: xm29c01.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF20 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.3328 | 0.3193 | 19.19 | 20 | -4 | |
| # | Chloromethane | 0.3153 | 0.3017 | 19.14 | 20 | -4 | # |
| * | Vinyl Chloride | 0.3009 | 0.2930 | 19.48 | 20 | -3 | * |
| | Bromomethane | 0.2045 | 0.2125 | 20.78 | 20 | 4 | |
| | Chloroethane | 0.1707 | 0.1728 | 20.25 | 20 | 1 | |
| | Trichlorofluoromethane | 0.3444 | 0.3815 | 22.15 | 20 | 11 | |
| | Acrolein | 0.0409 | 0.0410 | 200.43 | 200 | 0 | |
| * | 1,1-Dichloroethene | 0.2153 | 0.2161 | 20.08 | 20 | 0 | * |
| | Freon 113 | 0.2220 | 0.2302 | 20.74 | 20 | 4 | |
| | Acetone | 0.0239 | 0.0231 | 38.17 | 40 | -5 | |
| | Methyl Iodide | 0.4179 | 0.4184 | 20.02 | 20 | 0 | |
| | 2-Propanol | 0.0197 | 0.0201 | 203.90 | 200 | 2 | |
| | Carbon Disulfide | 0.8019 | 0.7829 | 19.53 | 20 | -2 | |
| | Allyl Chloride | 0.4101 | 0.2995 | 14.60 | 20 | -27 | |
| | Methyl Acetate | 0.1981 | 0.1702 | 17.18 | 20 | -14 | |
| | Methylene Chloride | 0.2664 | 0.2728 | 20.48 | 20 | 2 | |
| | t-Butyl Alcohol | 1.2759 | 1.3509 | 211.75 | 200 | 6 | |
| | Acrylonitrile | 0.0921 | 0.0862 | 18.73 | 20 | -6 | |
| | trans-1,2-Dichloroethene | 0.2551 | 0.2571 | 20.15 | 20 | 1 | |
| | Methyl Tertiary Butyl Ether | 0.7055 | 0.6891 | 19.54 | 20 | -2 | |
| | n-Hexane | 0.3492 | 0.3364 | 19.27 | 20 | -4 | |
| # | 1,1-Dichloroethane | 0.4256 | 0.4277 | 20.10 | 20 | 0 | # |
| | 2-Chloro-1,3-Butadiene | 0.3264 | 0.3286 | 20.14 | 20 | 1 | |
| | di-Isopropyl Ether | 0.7642 | 0.7369 | 19.29 | 20 | -4 | |
| | Ethyl t-Butyl Ether | 0.7005 | 0.6770 | 19.33 | 20 | -3 | |
| | cis-1,2-Dichloroethene | 0.2711 | 0.2676 | 19.74 | 20 | -1 | |
| | 1,2-Dichloroethene (total) | 0.2631 | 0.2623 | 39.89 | 40 | 0 | |
| | 2,2-Dichloropropane | 0.3399 | 0.3575 | 21.03 | 20 | 5 | |
| | 2-Butanone | 0.0337 | 0.0315 | 37.43 | 40 | -6 | |
| | Propionitrile | 0.0366 | 0.0359 | 196.53 | 200 | -2 | |
| | Methacrylonitrile | 0.1126 | 0.1120 | 99.43 | 100 | -1 | |
| | Bromochloromethane | 0.1495 | 0.1277 | 17.09 | 20 | -15 | |
| | Tetrahydrofuran | 0.0307 | 0.0274 | 35.62 | 40 | -11 | |
| * | Chloroform | 0.4168 | 0.4411 | 21.17 | 20 | 6 | * |
| | 1,1,1-Trichloroethane | 0.3712 | 0.3923 | 21.14 | 20 | 6 | |
| | Cyclohexane | 0.4140 | 0.4017 | 19.41 | 20 | -3 | |

0154

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/29/04 Time: 08:34

Lab File ID: xm29c01.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF20 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3161 | 0.3166 | 20.03 | 20 | 0 | |
| | Carbon Tetrachloride | 0.3131 | 0.3389 | 21.65 | 20 | 8 | |
| | Benzene | 1.0199 | 1.0232 | 20.06 | 20 | 0 | |
| | Isobutyl Alcohol | 0.0111 | 0.0112 | 502.20 | 500 | 0 | |
| | 1,2-Dichloroethane | 0.3226 | 0.3579 | 22.19 | 20 | 11 | |
| | t-Amyl Methyl Ether | 0.6803 | 0.6697 | 19.69 | 20 | -2 | |
| | n-Heptane | 0.0744 | 0.0778 | 20.91 | 20 | 5 | |
| | n-Butanol | 0.0092 | 0.0088 | 947.16 | 1000 | -5 | |
| | Trichloroethene | 0.2598 | 0.2642 | 20.34 | 20 | 2 | |
| | Methylcyclohexane | 0.4608 | 0.2870 | 12.46 | 20 | -38 | |
| * | 1,2-Dichloropropane | 0.2542 | 0.2544 | 20.01 | 20 | 0 | * |
| | Dibromomethane | 0.1550 | 0.1577 | 20.35 | 20 | 2 | |
| | 1,4-Dioxane | 0.0030 | 0.0029 | 473.45 | 500 | -5 | |
| | Methyl Methacrylate | 0.1923 | 0.1838 | 19.11 | 20 | -4 | |
| | Bromodichloromethane | 0.3071 | 0.3263 | 21.25 | 20 | 6 | |
| | 2-Nitropropane | 0.0668 | 0.0667 | 39.94 | 40 | 0 | |
| | cis-1,3-Dichloropropene | 0.3931 | 0.3923 | 19.96 | 20 | 0 | |
| | 4-Methyl-2-Pentanone | 0.2859 | 0.2753 | 38.51 | 40 | -4 | |
| * | Toluene | 0.8581 | 0.8502 | 19.81 | 20 | -1 | * |
| | trans-1,3-Dichloropropene | 0.4510 | 0.4569 | 20.26 | 20 | 1 | |
| | Ethyl Methacrylate | 0.4523 | 0.4284 | 18.94 | 20 | -5 | |
| | 1,1,2-Trichloroethane | 0.3151 | 0.3199 | 20.30 | 20 | 2 | |
| | Tetrachloroethene | 0.4185 | 0.4069 | 19.44 | 20 | -3 | |
| | 1,3-Dichloropropane | 0.5126 | 0.5193 | 20.26 | 20 | 1 | |
| | 2-Hexanone | 0.2890 | 0.2725 | 37.71 | 40 | -6 | |
| | Dibromochloromethane | 0.3375 | 0.3486 | 20.66 | 20 | 3 | |
| | 1,2-Dibromoethane | 0.3210 | 0.3200 | 19.94 | 20 | 0 | |
| # | Chlorobenzene | 0.9971 | 0.9939 | 19.93 | 20 | 0 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3426 | 0.3569 | 20.84 | 20 | 4 | |
| * | Ethylbenzene | 1.5965 | 1.6090 | 20.16 | 20 | 1 | * |
| | m+p-Xylene | 0.6590 | 0.6603 | 20.04 | 20 | 0 | |
| | Xylene (Total) | 0.6372 | 0.6417 | 40.29 | 40 | 1 | |
| | o-Xylene | 0.6154 | 0.6231 | 20.25 | 20 | 1 | |
| | Styrene | 1.0353 | 1.0311 | 19.92 | 20 | 0 | |
| # | Bromoform | 0.2513 | 0.2653 | 21.11 | 20 | 6 | # |
| | Isopropylbenzene | 1.5784 | 1.6167 | 20.48 | 20 | 2 | |

8155

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 03/29/04 Time: 08:34

Lab File ID: xm29c01.d Init. Calib. Date(s): 03/12/04 03/12/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF20 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Cyclohexanone | 0.0133 | 0.0100 | 375.06 | 500 | -25 | |
| | Bromobenzene | 0.7953 | 0.7937 | 19.96 | 20 | 0 | |
| # | 1,1,2,2-Tetrachloroethane | 0.7810 | 0.7762 | 19.88 | 20 | -1 | # |
| | 1,2,3-Trichloropropane | 0.2385 | 0.2509 | 21.04 | 20 | 5 | |
| | trans-1,4-Dichloro-2-Butene | 0.2397 | 0.2222 | 92.66 | 100 | -7 | |
| | n-Propylbenzene | 3.2990 | 3.2598 | 19.76 | 20 | -1 | |
| | 2-Chlorotoluene | 0.7290 | 0.7006 | 19.22 | 20 | -4 | |
| | 1,3,5-Trimethylbenzene | 2.4146 | 2.4086 | 19.95 | 20 | 0 | |
| | 4-Chlorotoluene | 0.7626 | 0.7366 | 19.32 | 20 | -3 | |
| | tert-Butylbenzene | 0.5832 | 0.6091 | 20.89 | 20 | 4 | |
| | Pentachloroethane | 0.5003 | 0.4976 | 19.89 | 20 | -1 | |
| | 1,2,4-Trimethylbenzene | 2.4519 | 2.5578 | 20.86 | 20 | 4 | |
| | sec-Butylbenzene | 3.0465 | 3.1450 | 20.65 | 20 | 3 | |
| | 1,3-Dichlorobenzene | 1.5230 | 1.5352 | 20.16 | 20 | 1 | |
| | p-Isopropyltoluene | 2.6737 | 2.7667 | 20.70 | 20 | 3 | |
| | 1,4-Dichlorobenzene | 1.5990 | 1.6005 | 20.02 | 20 | 0 | |
| | 1,2-Dichlorobenzene | 1.4705 | 1.4723 | 20.02 | 20 | 0 | |
| | n-Butylbenzene | 2.3636 | 2.3881 | 20.21 | 20 | 1 | |
| | 1,2-Dibromo-3-Chloropropane | 0.1585 | 0.1478 | 18.65 | 20 | -7 | |
| | 1,2,4-Trichlorobenzene | 1.1435 | 1.0401 | 18.19 | 20 | -9 | |
| | Hexachlorobutadiene | 0.5796 | 0.5561 | 19.19 | 20 | -4 | |
| | Naphthalene | 3.1554 | 2.5801 | 16.35 | 20 | -18 | |
| | 1,2,3-Trichlorobenzene | 1.1494 | 1.0341 | 17.99 | 20 | -10 | |
| | 2-Methylnaphthalene | 2.2660 | 0.8369 | 7.48 | 20 | -63 | |
| | Dibromofluoromethane | 0.2372 | 0.2414 | 50.89 | 50 | 2 | |
| | 1,2-Dichloroethane-d4 | 0.0636 | 0.0604 | 47.46 | 50 | -5 | |
| | Toluene-d8(mz100) | 0.8270 | 0.8223 | 49.72 | 50 | -1 | |
| | 4-Bromofluorobenzene(mz174) | 0.4626 | 0.4574 | 49.44 | 50 | -1 | |
| | Dibromofluoromethane(mz111) | 0.2412 | 0.2464 | 51.08 | 50 | 2 | |
| | 1,2-Dichloroethane-d4(mz104) | 0.0404 | 0.0380 | 47.04 | 50 | -6 | |
| | Toluene-d8 | 1.2319 | 1.2413 | 50.38 | 50 | 1 | |
| | 4-Bromofluorobenzene | 0.4954 | 0.4825 | 48.70 | 50 | -3 | |

Average %Drift 5

6156

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

Data File: /chem/HP09193.i/04mar29a.b/xm29c01.d
Date : 29-MAR-2004 08:34
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;2;2;;;

Column phase: DB-624

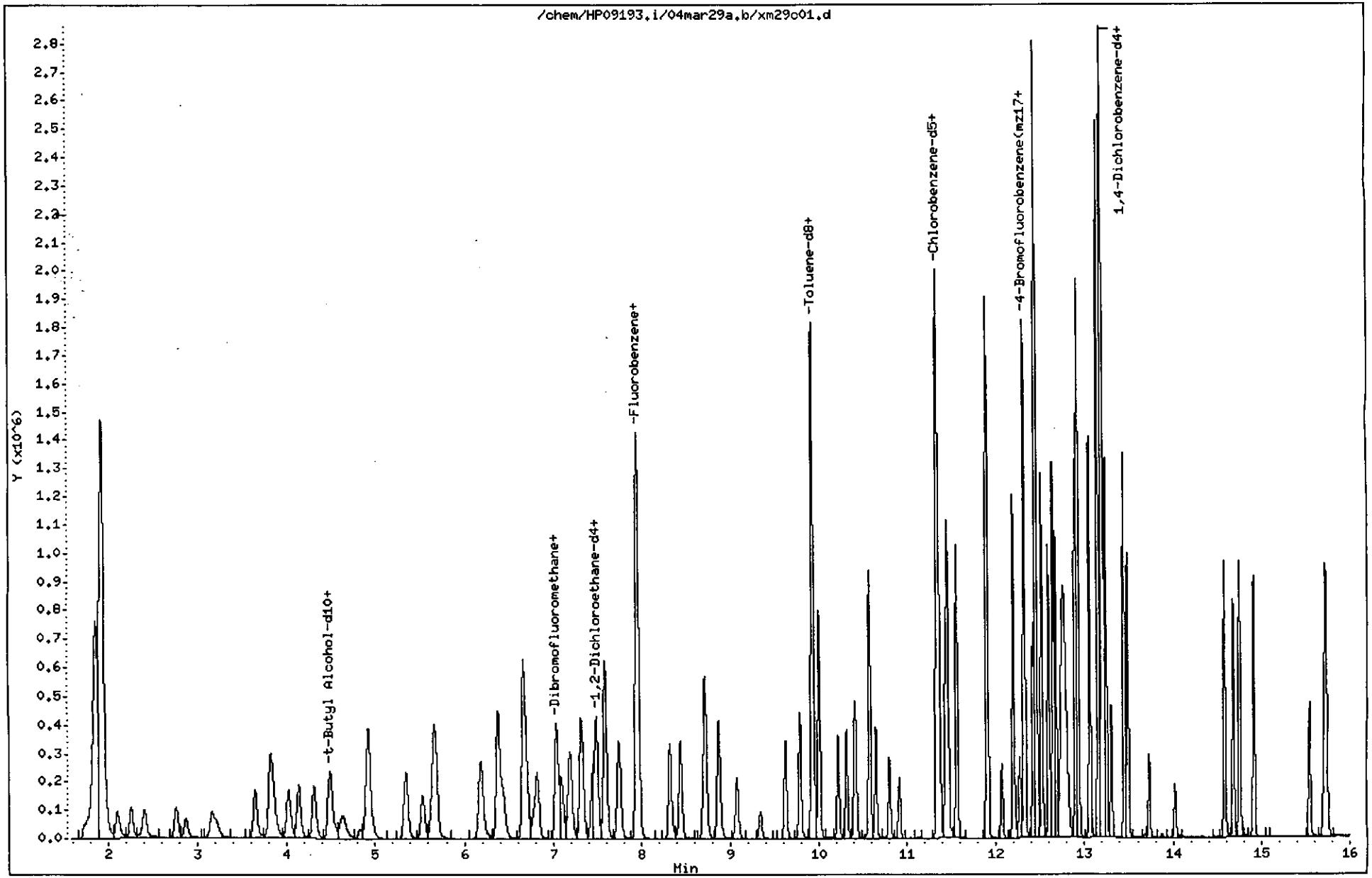
Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 11618
3/29/04



6157



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29c01.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 08:34  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 08:59 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 183097 | 19.192 |
| 4) Chloromethane | (1) | 2.259 | 50 | 172971 | 19.137 |
| 5) Vinyl Chloride | (1) | 2.403 | 62 | 168016 | 19.476 |
| 7) Bromomethane | (1) | 2.766 | 94 | 121834 | 20.778 |
| 8) Chloroethane | (1) | 2.869 | 64 | 99085 | 20.251 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 218749 | 22.154 |
| 16) Acrolein | (1) | 3.648 | 56 | 234956 | 200.428 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 123911 | 20.077 |
| 19) Freon 113 | (1) | 3.854 | 101 | 131981 | 20.740 |
| 20) Acetone | (1) | 3.838 | 58 | 26499 | 38.175 |
| 22) Methyl Iodide | (1) | 4.024 | 142 | 239908 | 20.025 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 115327 | 203.902 |
| 24) Carbon Disulfide | (1) | 4.139 | 76 | 448898 | 19.527 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 171708 | 14.603 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 97591 | 17.183 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 156388 | 20.475 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 187979 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.637 | 59 | 203151 | 211.750 |
| 32) Acrylonitrile | (1) | 4.829 | 53 | 49427 | 18.727 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 147392 | 20.151 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.929 | 73 | 395109 | 19.536 |
| 36) n-Hexane | (1) | 5.349 | 57 | 192855 | 19.266 |
| 37) 1,1-Dichloroethane | (1) | 5.538 | 63 | 245203 | 20.098 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683 | 53 | 188417 | 20.138 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 422516 | 19.286 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 388169 | 19.329 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 153434 | 19.740 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 300826 | 39.891 |
| 48) 2,2-Dichloropropane | (1) | 6.392 | 77 | 204948 | 21.032 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 36178 | 37.429 |
| 49) Propionitrile | (1) | 6.440 | 54 | 206037 | 196.531 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 320981 | 99.432 |
| 52) Bromochloromethane | (1) | 6.710 | 128 | 73229 | 17.088 |
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 31393 | 35.618 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29c01.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 08:34  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 08:59 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.825 | 83 | 252928 | 21.170 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 224939 | 21.138 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 230300 | 19.406 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 181544 | 20.033 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 194333 | 21.650 |
| 65) Benzene | (1) | 7.589 | 78 | 586635 | 20.064 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 160439 | 502.201 |
| 66) 1,2-Dichloroethane | (1) | 7.599 | 62 | 205230 | 22.187 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 383956 | 19.688 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1433401 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 44611 | 20.913 |
| 72) n-Butanol | (1) | 8.324 | 56 | 251140 | 947.161 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 151490 | 20.338 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 164568 | 12.457 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 145867 | 20.012 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 90438 | 20.348 |
| 78) 1,4-Dioxane | (1) | 8.889 | 88 | 41192 | 473.455 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 105382 | 19.112 |
| 81) Bromodichloromethane | (1) | 9.078 | 83 | 187075 | 21.247 |
| 82) 2-Nitropropane | (1) | 9.335 | 41 | 76533 | 39.941 |
| 84) cis-1,3-Dichloropropene | (1) | 9.623 | 75 | 224941 | 19.960 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 315667 | 38.512 |
| 88) Toluene | (2) | 10.005 | 92 | 386573 | 19.815 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 207764 | 20.264 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 194779 | 18.942 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 145437 | 20.301 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 185022 | 19.444 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 236108 | 20.258 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 247819 | 37.714 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 158522 | 20.659 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 145510 | 19.936 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1136753 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 451918 | 19.935 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 162304 | 20.836 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29c01.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 08:34  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 08:59 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 731634 | 20.157 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 300253 | 20.039 |
| 92) Xylene (Total) | (2) | | 106 | 583599 | 40.289 |
| 107) o-Xylene | (2) | 11.902 | 106 | 283346 | 20.250 |
| 108) Styrene | (2) | 11.908 | 104 | 468851 | 19.919 |
| 109) Bromoform | (2) | 12.069 | 173 | 120636 | 21.112 |
| 110) Isopropylbenzene | (2) | 12.200 | 105 | 735120 | 20.485 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 113238 | 375.058 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 221042 | 19.959 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 216185 | 19.878 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 69872 | 21.036 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 309356 | 92.664 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 907856 | 19.762 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 195124 | 19.223 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 670783 | 19.950 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 205142 | 19.317 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 169636 | 20.890 |
| 124) Pentachloroethane | (3) | 12.929 | 167 | 138568 | 19.888 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 712355 | 20.864 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 875875 | 20.646 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 427549 | 20.160 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 696250 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 770520 | 20.695 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 445750 | 20.019 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 410025 | 20.024 |
| 134) n-Butylbenzene | (3) | 13.455 | 91 | 665080 | 20.207 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 41171 | 18.652 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 289657 | 18.190 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 154887 | 19.191 |
| 140) Naphthalene | (3) | 14.758 | 128 | 718548 | 16.354 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 288006 | 17.993 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 233078 | 7.483 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 346050 | 50.888 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 86517 | 47.456 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29c01.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 08:34  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 08:59 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 934765 | 49.718 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 519936 | 49.438 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 353256 | 51.084 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.489 | 104 | 54531 | 47.040 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1411043 | 50.382 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 548526 | 48.698 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09193.i/04mar12a.b/xm12i07.d
/chem/HP09193.i/04mar12a.b/xm12i05.d
/chem/HP09193.i/04mar12a.b/xm12i04.d
/chem/HP09193.i/04mar12a.b/xm12i03.d
/chem/HP09193.i/04mar12a.b/xm12i02.d
/chem/HP09193.i/04mar12a.b/xm12i01.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP09193.i/04mar29a.b/xm29c01.d

RT Summary

| Internal Standard Name | File ID: xm29c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.505 | Yes |
| Fluorobenzene | 7.955 | 7.955 | Yes |
| Chlorobenzene-d5 | 11.347 | 11.346 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.205 | 13.204 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: xm29c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 187979 | 218847 | 109424 | 437694 | Yes |
| Fluorobenzene | 1433401 | 1537940 | 768970 | 3075880 | Yes |
| Chlorobenzene-d5 | 1136753 | 1173247 | 586624 | 2346494 | Yes |
| 1,4-Dichlorobenzene-d4 | 696250 | 689065 | 344532 | 1378130 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

# Raw QC Data

Data File: /chem/HP09193.i/04mar12a.b/xm12t01.d

Date : 12-MAR-2004 07:40

Client ID: BFB 50 NG MAR09

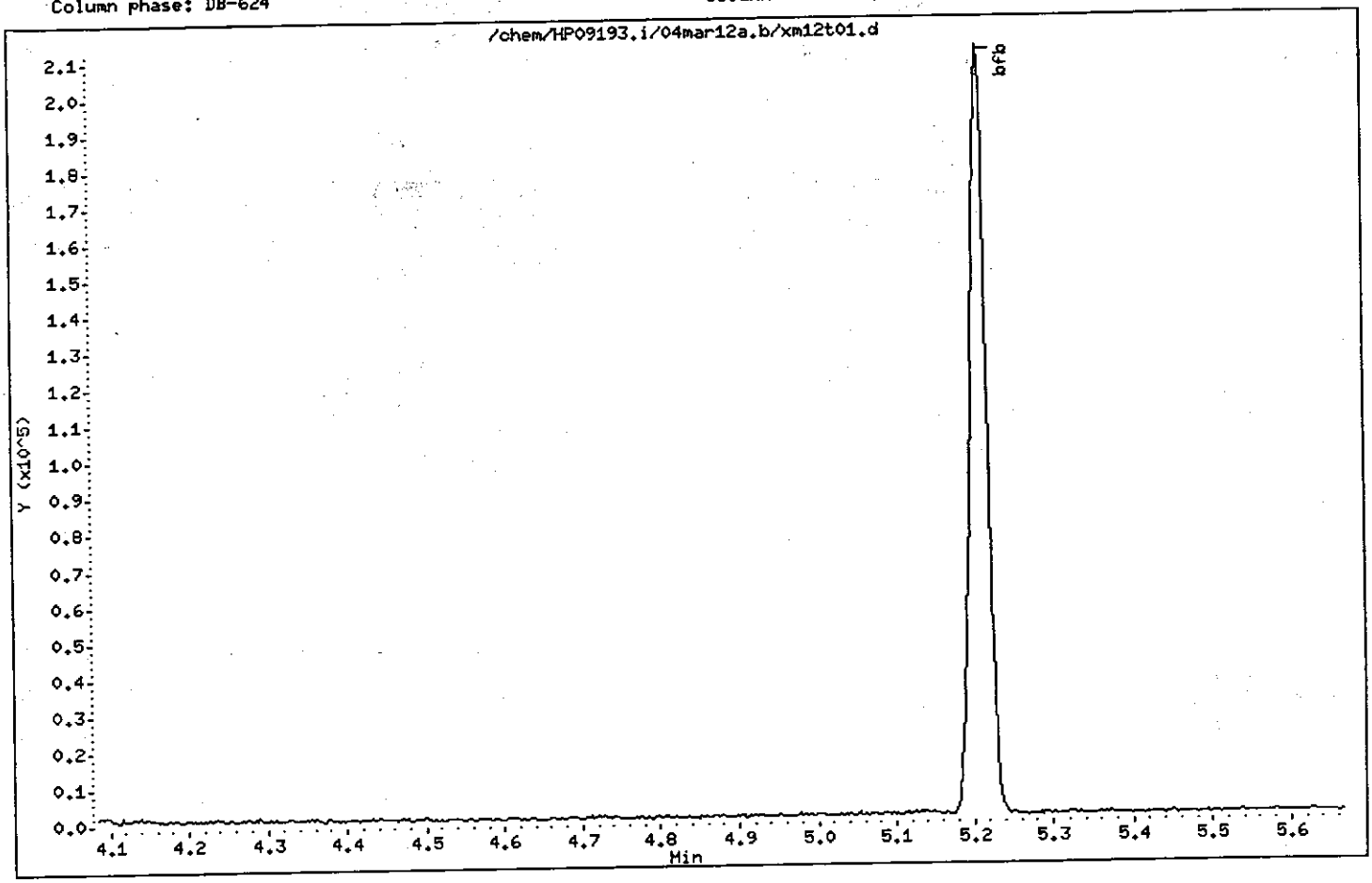
Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25




LCM|1518
3|12|04

Data File: /chem/HP09193.i/04mar12a.b/xm12t01.d

Date : 12-MAR-2004 07:40

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

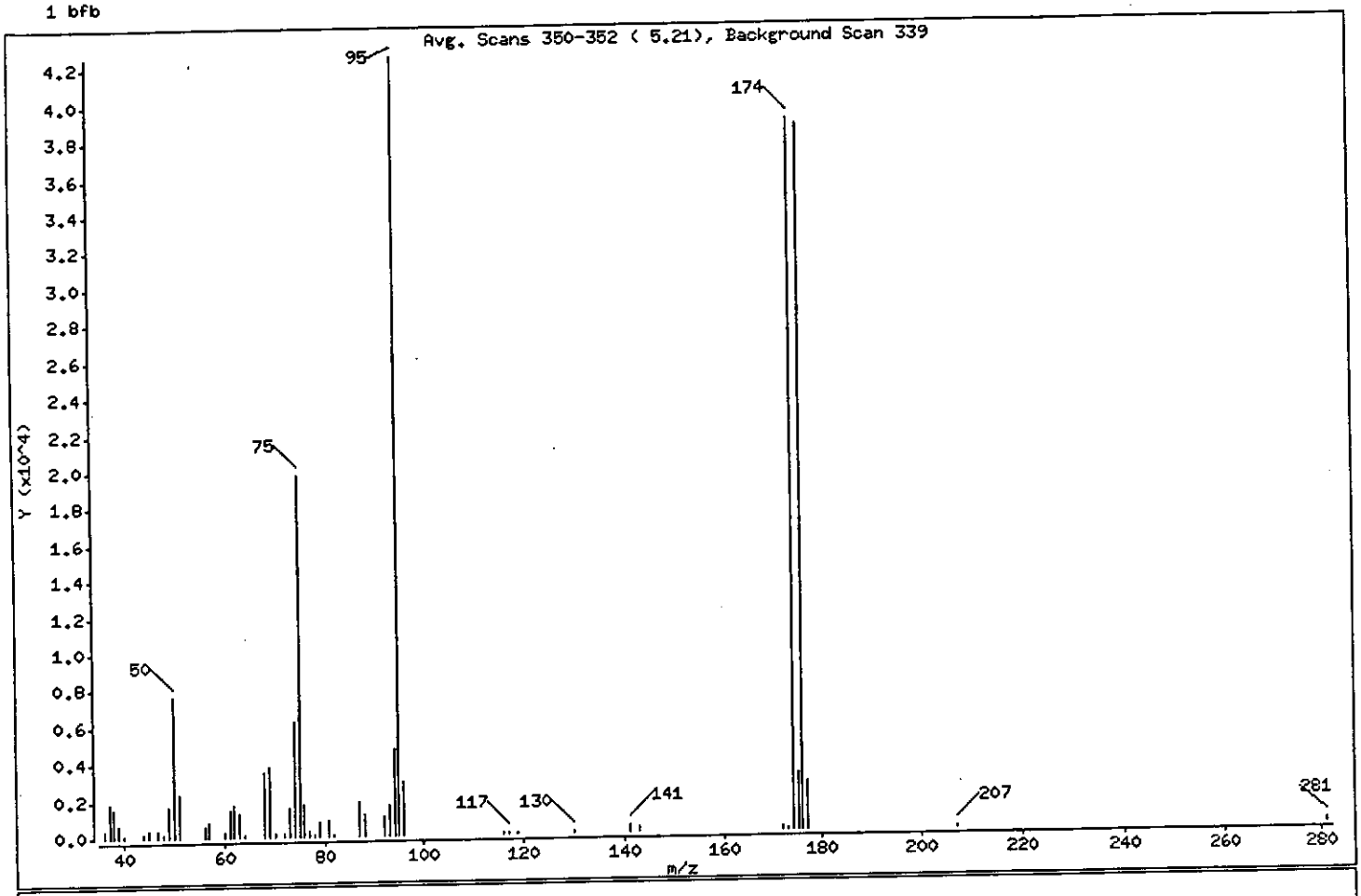
Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.82 |
| 75 | 30.00 - 60.00% of mass 95 | 46.54 |
| 96 | 5.00 - 9.00% of mass 95 | 6.82 |
| 173 | Less than 2.00% of mass 174 | 0.27 ( 0.29) |
| 174 | 50.00 - 100.00% of mass 95 | 91.54 |
| 175 | 5.00 - 9.00% of mass 174 | 7.37 ( 8.05) |
| 176 | 95.00 - 101.00% of mass 174 | 90.81 ( 99.19) |
| 177 | 5.00 - 9.00% of mass 176 | 6.13 ( 6.75) |

Data File: /chem/HP09193.i/04mar12a.b/xm12t01.d

Date : 12-MAR-2004 07:40

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

Data File: xm12t01.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 339

Location of Maximum: 95.00

Number of points: 53

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 397 | 60.00 | 317 | 78.00 | 107 | 130.00 | 113 |
| 37.00 | 1871 | 61.00 | 1519 | 79.00 | 803 | 141.00 | 379 |
| 38.00 | 1560 | 62.00 | 1738 | 81.00 | 852 | 143.00 | 312 |
| 39.00 | 645 | 63.00 | 1280 | 82.00 | 91 | 172.00 | 200 |
| 40.00 | 123 | 64.00 | 99 | 87.00 | 1851 | 173.00 | 114 |
| 44.00 | 185 | 68.00 | 3494 | 88.00 | 1191 | 174.00 | 39024 |
| 45.00 | 348 | 69.00 | 3838 | 92.00 | 1092 | 175.00 | 3142 |
| 47.00 | 369 | 70.00 | 208 | 93.00 | 1625 | 176.00 | 38712 |
| 48.00 | 170 | 72.00 | 190 | 94.00 | 4737 | 177.00 | 2615 |
| 49.00 | 1635 | 73.00 | 1537 | 95.00 | 42632 | 207.00 | 100 |
| 50.00 | 7596 | 74.00 | 6238 | 96.00 | 2909 | 281.00 | 174 |
| 51.00 | 2334 | 75.00 | 19840 | 116.00 | 86 | | |
| 56.00 | 596 | 76.00 | 1753 | 117.00 | 92 | | |
| 57.00 | 742 | 77.00 | 280 | 119.00 | 90 | | |

Data File: /chem/HP09193.i/04mar22b.b/xm22t02.d

Date : 22-MAR-2004 14:06

Client ID: BFB 50 NG MAR09

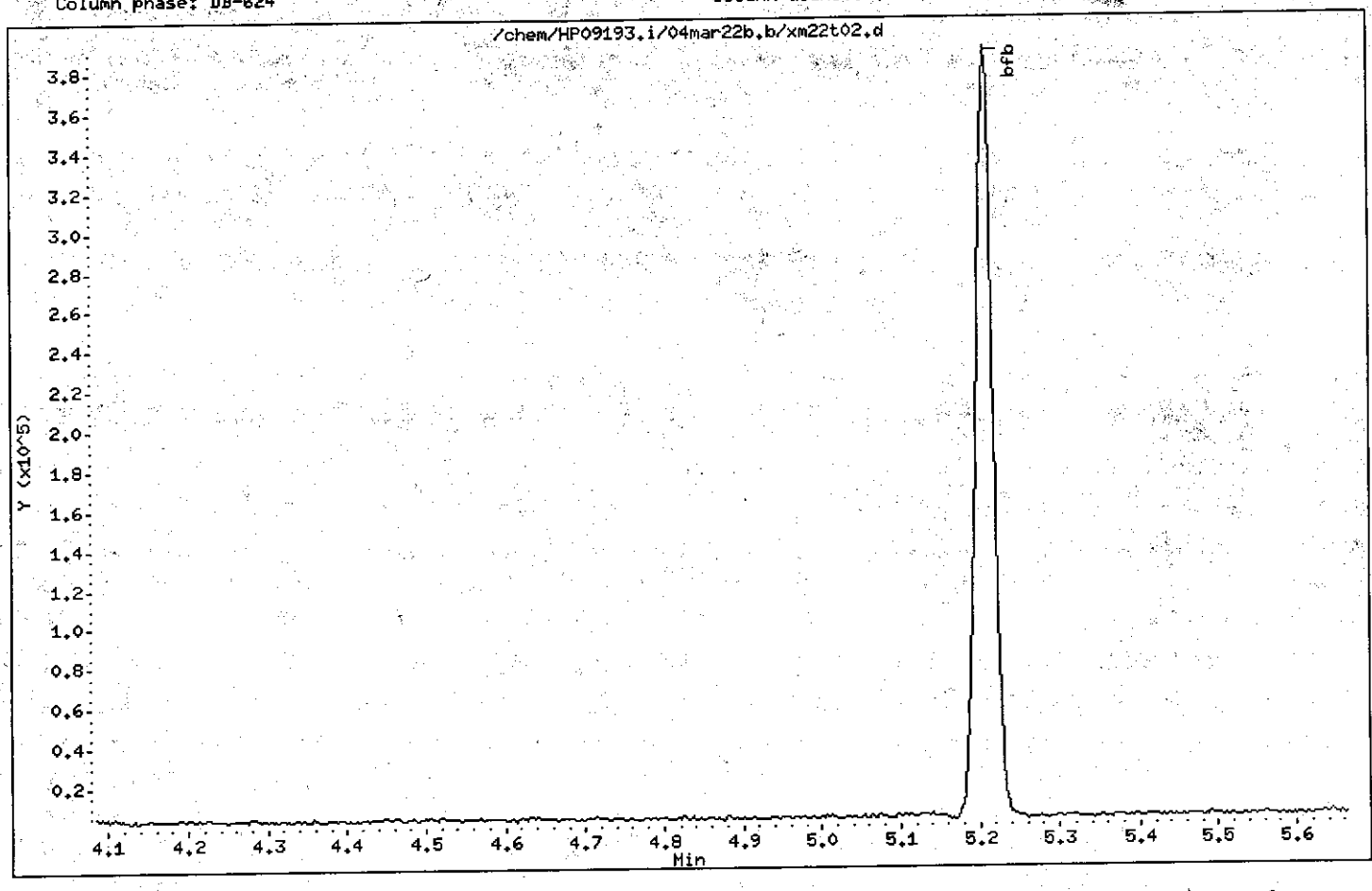
Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25




LCM|1518
3|22|04

Data File: /chem/HP09193.i/04mar22b.b/xm22t02.d

Date : 22-MAR-2004 14:06

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

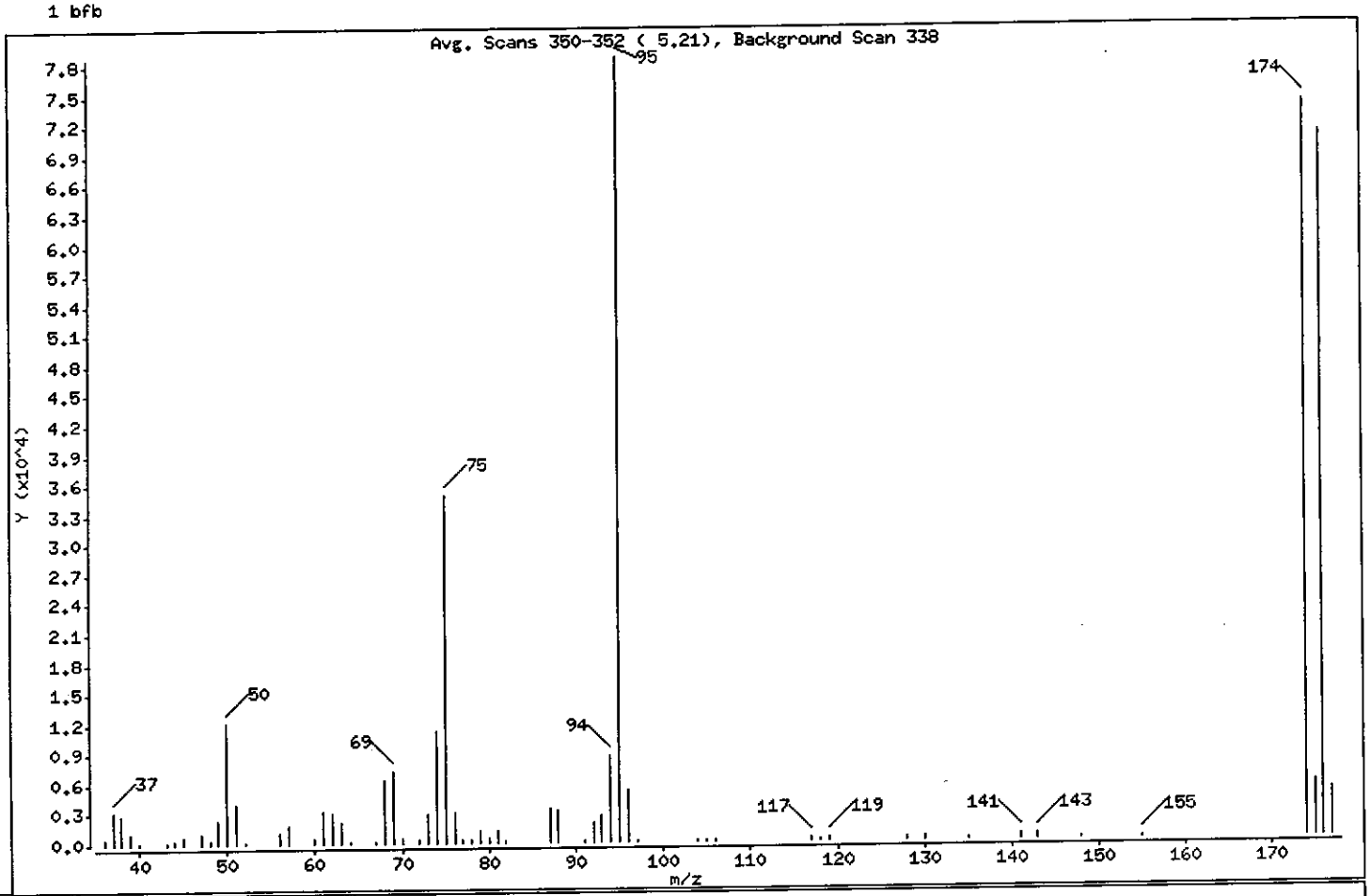
Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| | | |
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.50 |
| 75 | 30.00 - 60.00% of mass 95 | 44.41 |
| 96 | 5.00 - 9.00% of mass 95 | 6.66 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 93.78 |
| 175 | 5.00 - 9.00% of mass 174 | 7.23 ( 7.71) |
| 176 | 95.00 - 101.00% of mass 174 | 89.99 ( 95.95) |
| 177 | 5.00 - 9.00% of mass 176 | 6.15 ( 6.84) |

Data File: /chem/HP09193.i/04mar22b.b/xm22t02.d

Date : 22-MAR-2004 14:06

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

Data File: xm22t02.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 338

Location of Maximum: 95.00

Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 602 | 60.00 | 623 | 79.00 | 1265 | 117.00 | 365 |
| 37.00 | 3207 | 61.00 | 3187 | 80.00 | 475 | 118.00 | 218 |
| 38.00 | 2911 | 62.00 | 3062 | 81.00 | 1297 | 119.00 | 410 |
| 39.00 | 1077 | 63.00 | 2172 | 82.00 | 231 | 128.00 | 308 |
| 40.00 | 115 | 64.00 | 111 | 87.00 | 3418 | 130.00 | 350 |
| 43.00 | 213 | 67.00 | 143 | 88.00 | 3173 | 135.00 | 115 |
| 44.00 | 450 | 68.00 | 6404 | 91.00 | 218 | 141.00 | 572 |
| 45.00 | 788 | 69.00 | 7190 | 92.00 | 2002 | 143.00 | 617 |
| 47.00 | 1010 | 70.00 | 566 | 93.00 | 2743 | 148.00 | 95 |
| 48.00 | 320 | 72.00 | 364 | 94.00 | 8719 | 155.00 | 94 |
| 49.00 | 2429 | 73.00 | 2857 | 95.00 | 78760 | 174.00 | 73864 |
| 50.00 | 12207 | 74.00 | 11229 | 96.00 | 5249 | 175.00 | 5695 |
| 51.00 | 3974 | 75.00 | 34976 | 97.00 | 189 | 176.00 | 70872 |
| 52.00 | 215 | 76.00 | 3069 | 104.00 | 210 | 177.00 | 4846 |
| 56.00 | 1016 | 77.00 | 419 | 105.00 | 240 | | |
| 57.00 | 1882 | 78.00 | 318 | 106.00 | 205 | | |

Data File: /chem/HP09193.i/04mar29a.b/xm29t01.d

Date : 29-MAR-2004 08:11

Client ID: BFB 50 NG MAR09

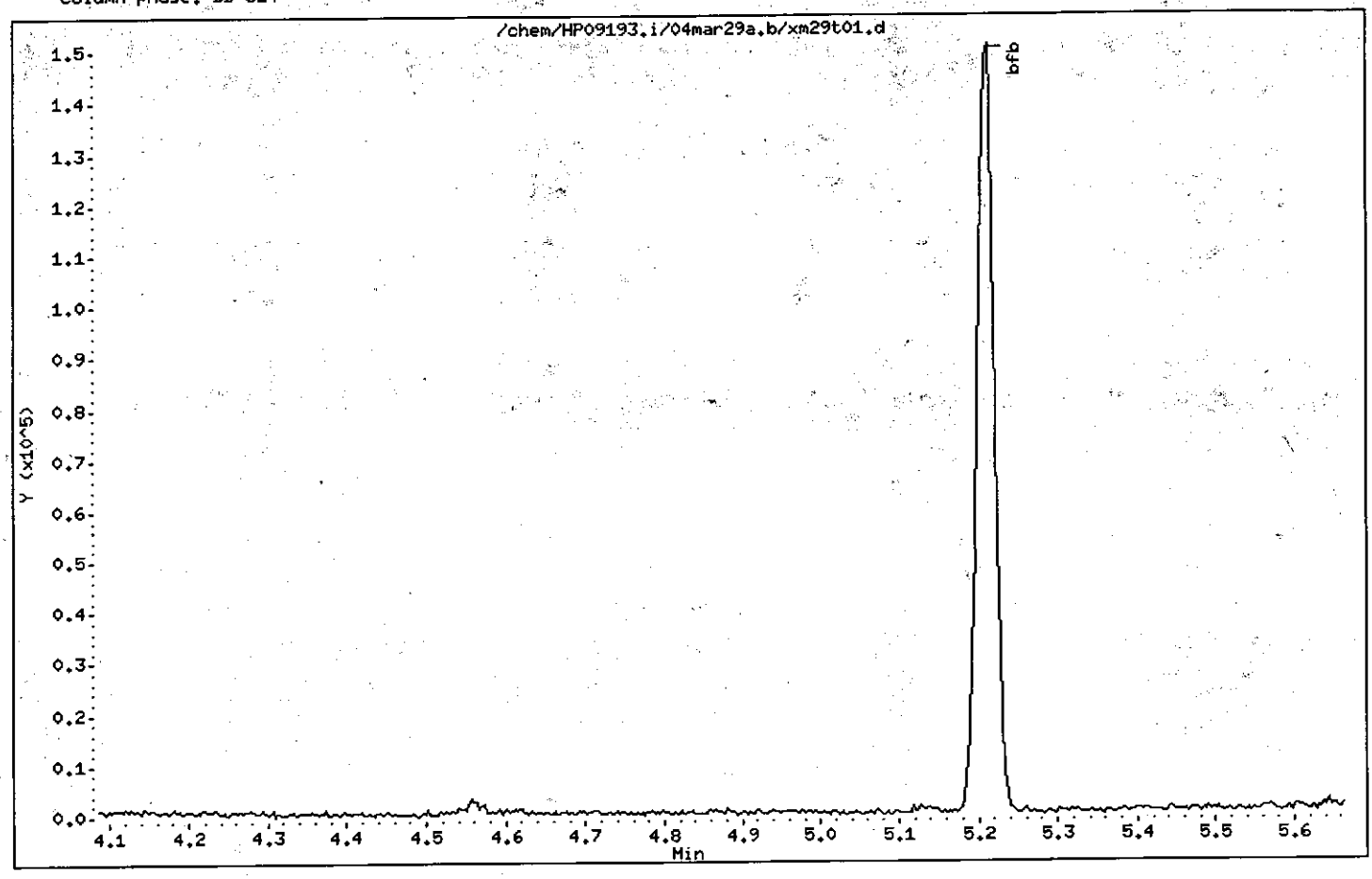
Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25




LCM1518
3/29/04

0170

Data File: /chem/HP09193.i/04mar29a.b/xm29t01.d

Date : 29-MAR-2004 08:11

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

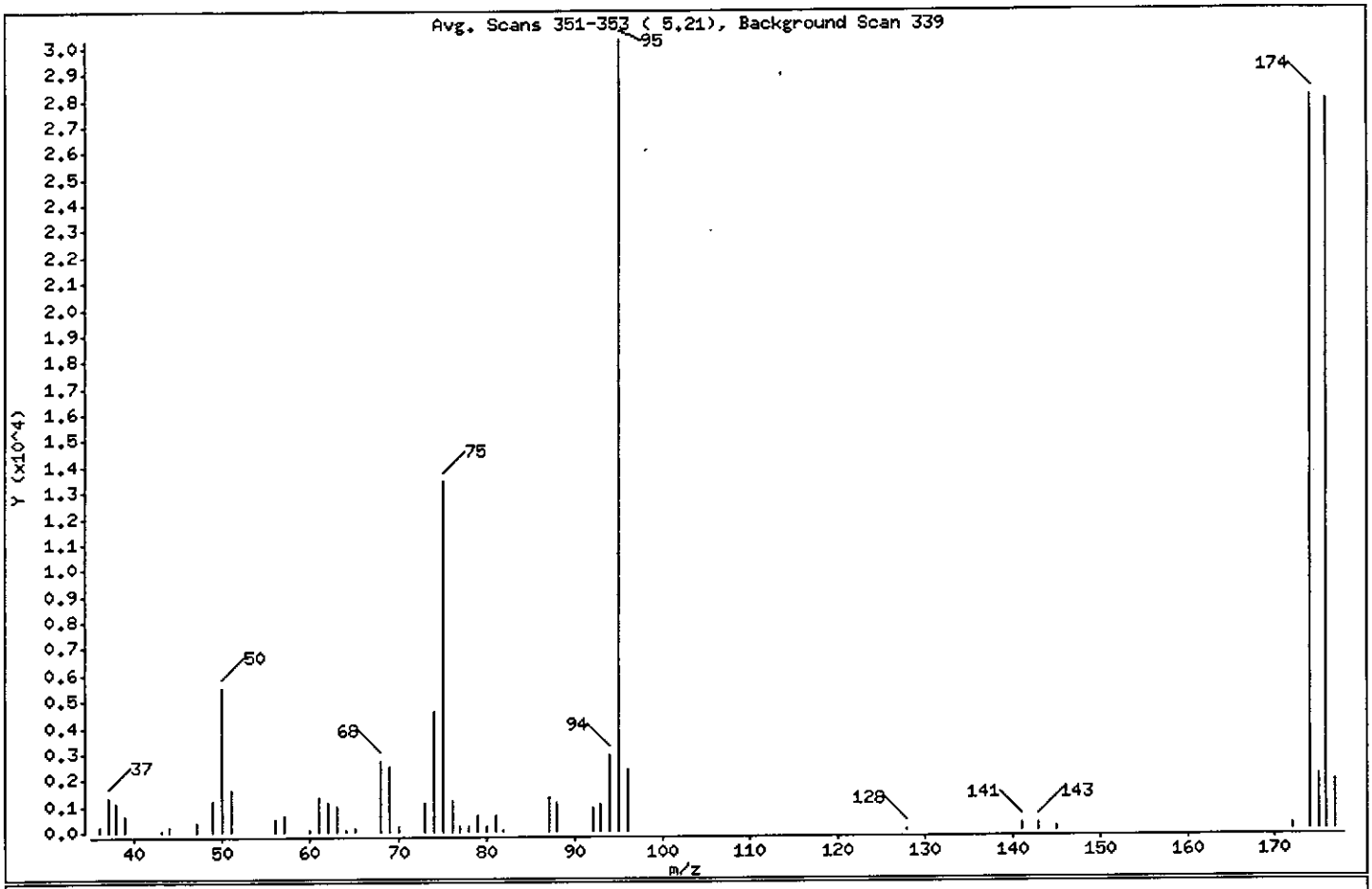
Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.09 |
| 75 | 30.00 - 60.00% of mass 95 | 44.46 |
| 96 | 5.00 - 9.00% of mass 95 | 7.93 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 92.70 |
| 175 | 5.00 - 9.00% of mass 174 | 6.80 ( 7.33) |
| 176 | 95.00 - 101.00% of mass 174 | 92.09 ( 99.34) |
| 177 | 5.00 - 9.00% of mass 176 | 6.28 ( 6.82) |

Data File: /chem/HP09193.i/04mar29a.b/xm29t01.d

Date : 29-MAR-2004 08:11

Client ID: BFB 50 NG MAR09

Instrument: HP09193.i

Sample Info: BFB 50 NG MAR09;BFB 50NG MAR09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

Data File: xm29t01.d

Spectrum: Avg. Scans 351-353 ( 5.21), Background Scan 339

Location of Maximum: 95.00

Number of points: 47

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 205 | 60.00 | 84 | 76.00 | 1175 | 95.00 | 30264 |
| 37.00 | 1351 | 61.00 | 1292 | 77.00 | 188 | 96.00 | 2400 |
| 38.00 | 1138 | 62.00 | 1141 | 78.00 | 194 | 128.00 | 97 |
| 39.00 | 646 | 63.00 | 954 | 79.00 | 658 | 141.00 | 262 |
| 43.00 | 85 | 64.00 | 95 | 80.00 | 196 | 143.00 | 302 |
| 44.00 | 208 | 65.00 | 125 | 81.00 | 639 | 145.00 | 119 |
| 47.00 | 356 | 68.00 | 2714 | 82.00 | 91 | 172.00 | 220 |
| 49.00 | 1173 | 69.00 | 2477 | 87.00 | 1315 | 174.00 | 28056 |
| 50.00 | 5476 | 70.00 | 242 | 88.00 | 1124 | 175.00 | 2058 |
| 51.00 | 1601 | 73.00 | 1141 | 92.00 | 876 | 176.00 | 27872 |
| 56.00 | 460 | 74.00 | 4623 | 93.00 | 1076 | 177.00 | 1901 |
| 57.00 | 632 | 75.00 | 13458 | 94.00 | 2896 | | |

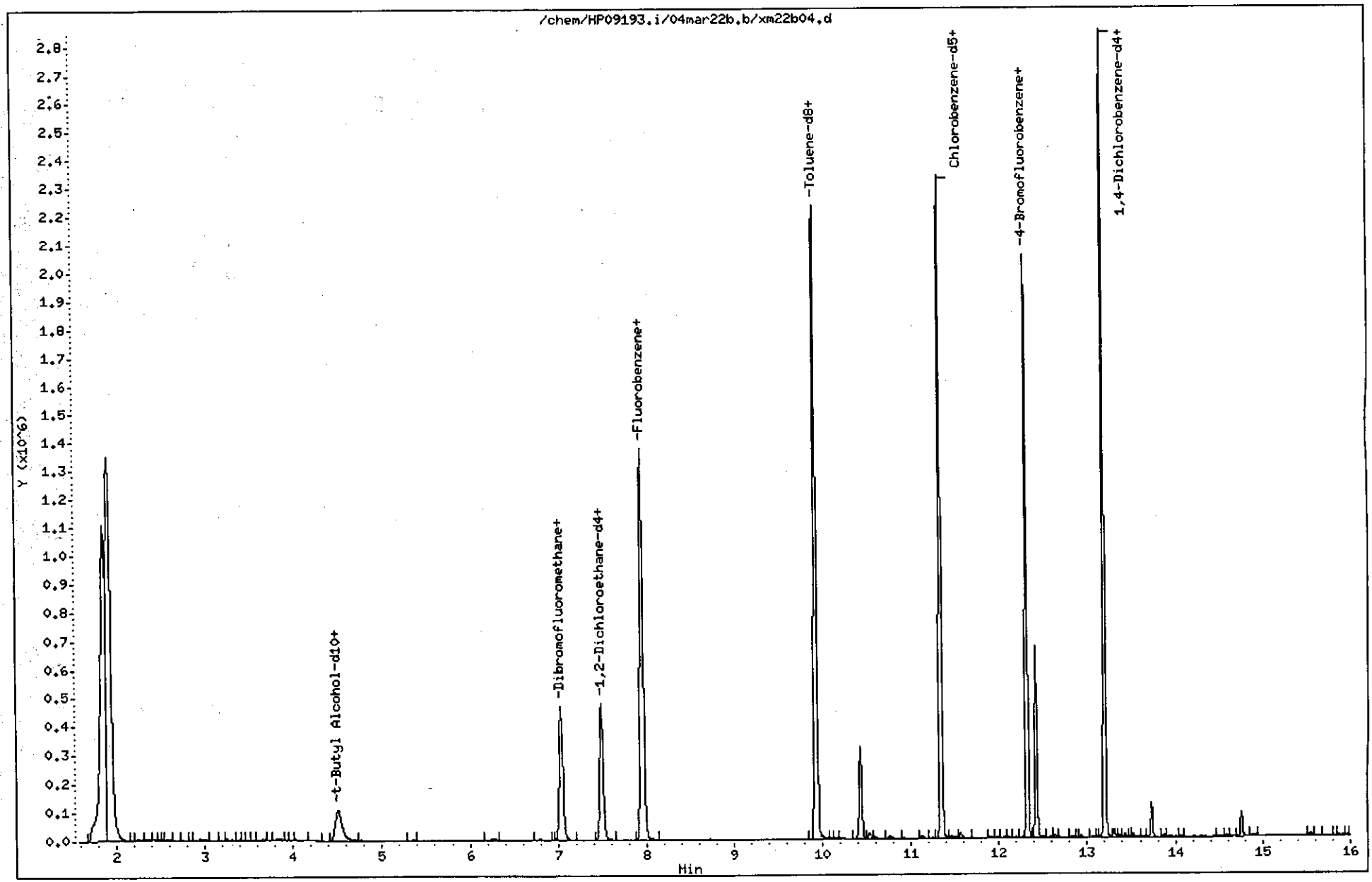
Data File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Date : 22-HAR-2004 16:29
Client ID: VBLKX61
Sample Info: VBLKX61;VBLKX61;2;3;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

6173



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22b04.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 16:29  Analyst ID: LCM01518

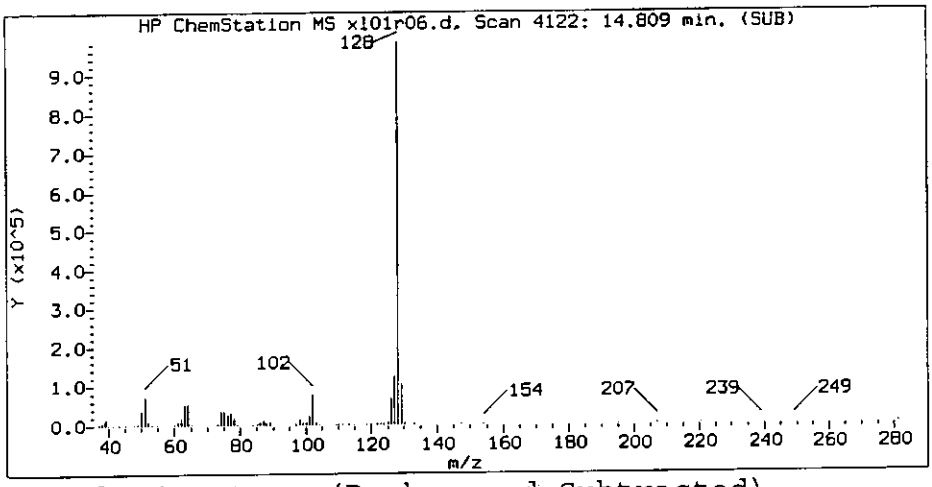
Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E+SM
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 16:59 msl01251

Sample Name: VBLKX61  Lab Sample ID: VBLKX61

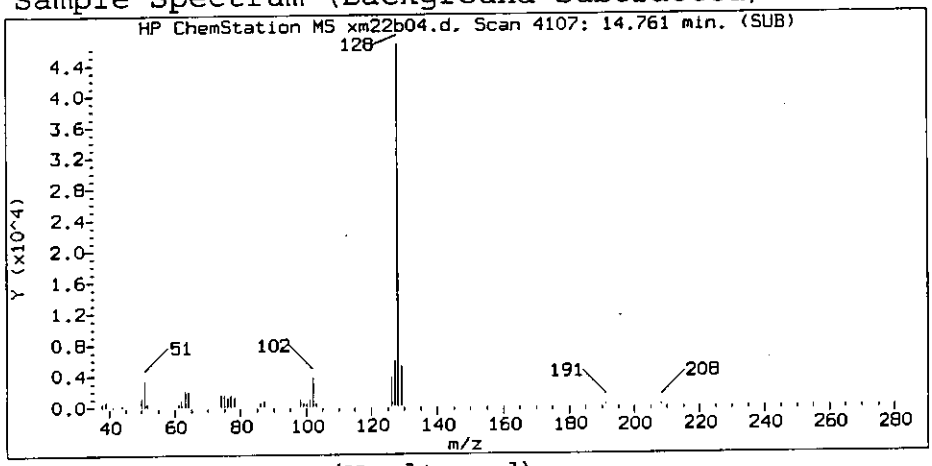
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 29)*t-Butyl Alcohol-d10 | (4) | 4.508 | 65 | 290585 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.958 | 96 | 1773114 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 1405600 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 762263 | 50.000 |
| 140) Naphthalene | (3) | 14.761 | 128 | 67766 | 1.409 |
| 143) 2-Methylnaphthalene | (3) | 15.547 | 142 | 5357 | 2.545 |
| 55)$Dibromofluoromethane | (1) | 7.040 | 113 | 415016 | 49.337 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 108136 | 47.950 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1697254 | 49.010 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 625895 | 44.939 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

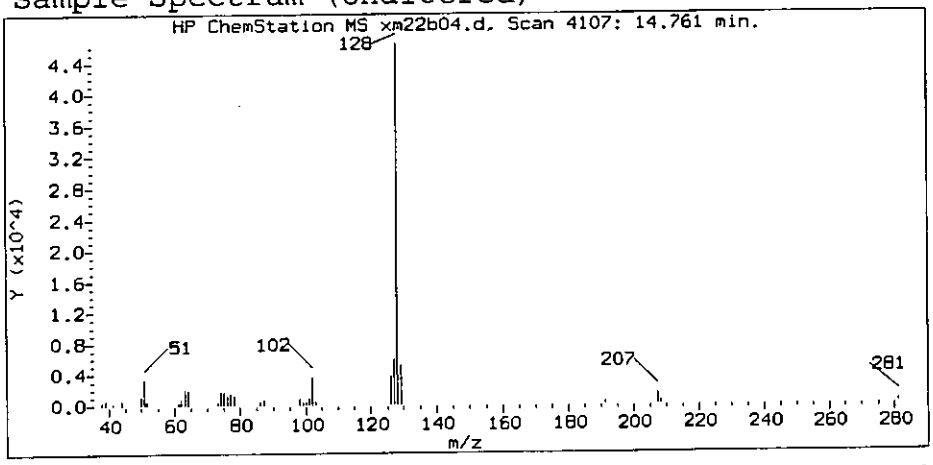
Reference Standard Spectrum for Naphthalene

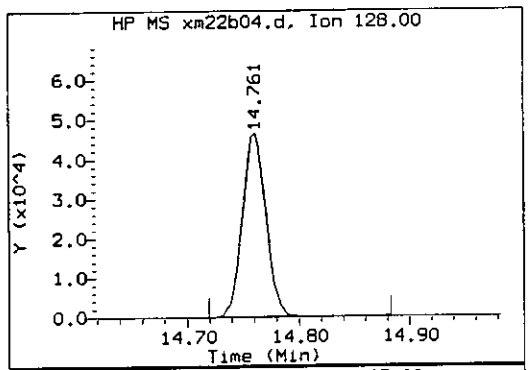


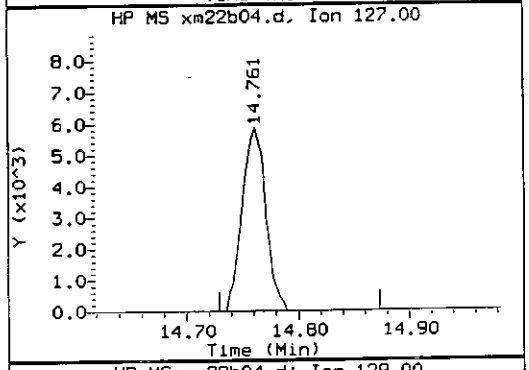

Sample Spectrum (Background Subtracted)

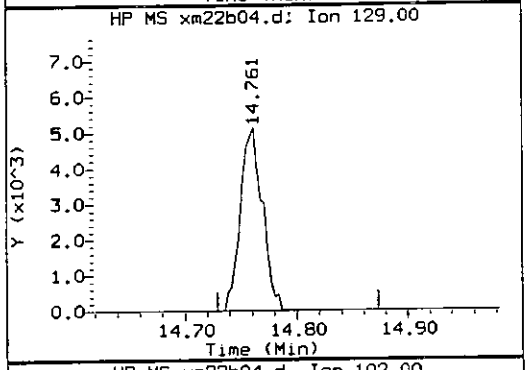


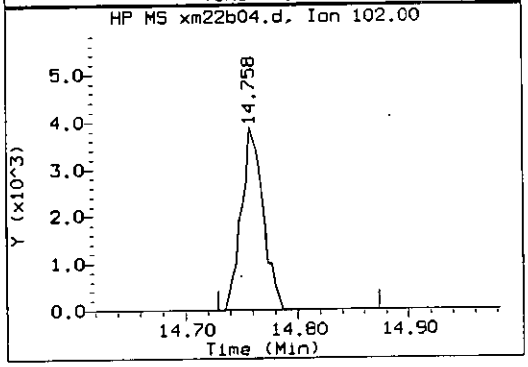

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Injection date and time: 22-MAR-2004 16:29

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E+SM
Calibration date and time: 22-MAR-2004 16:58
Date, time and analyst ID of latest file update: 22-Mar-2004 16:59 msl01251

Sample Name: VBLKX61

Lab Sample ID: VBLKX61

| | | |
|---|---|---|
| Compound Number | : | 140 |
| Compound Name | : | Naphthalene |
| Scan Number | : | 4107 |
| Retention Time (minutes) | : | 14.761 |
| Quant Ion | : | 128.0 |
| Area (flag) | : | 67766 |
| Concentration (ug/Kg) | : | 1.4087 |

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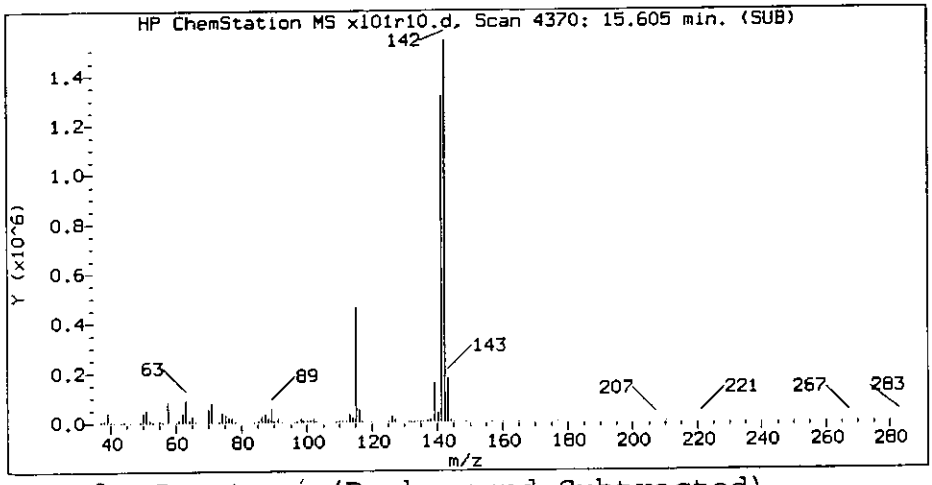
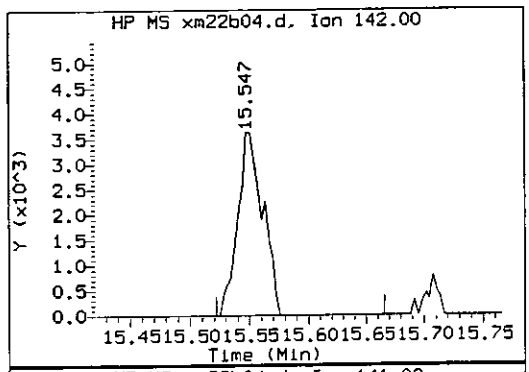
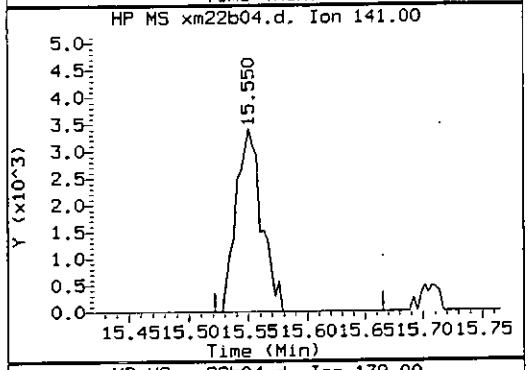
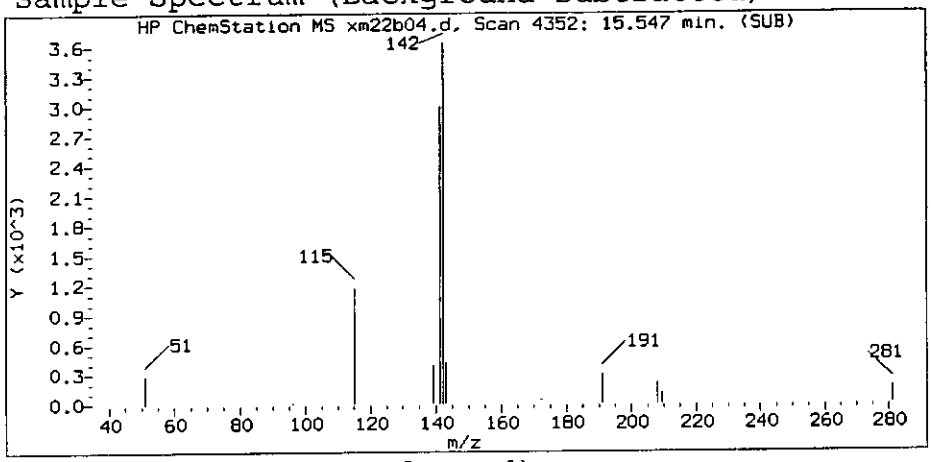
Reference Standard Spectrum for 2-Methylnaphthalene

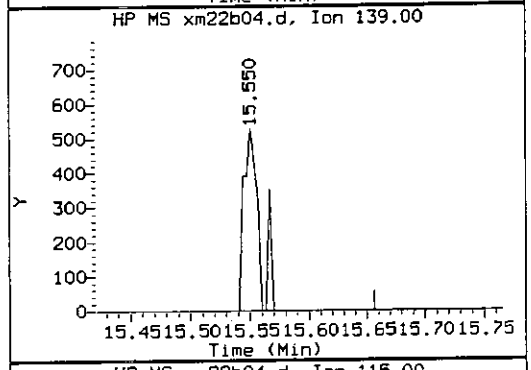


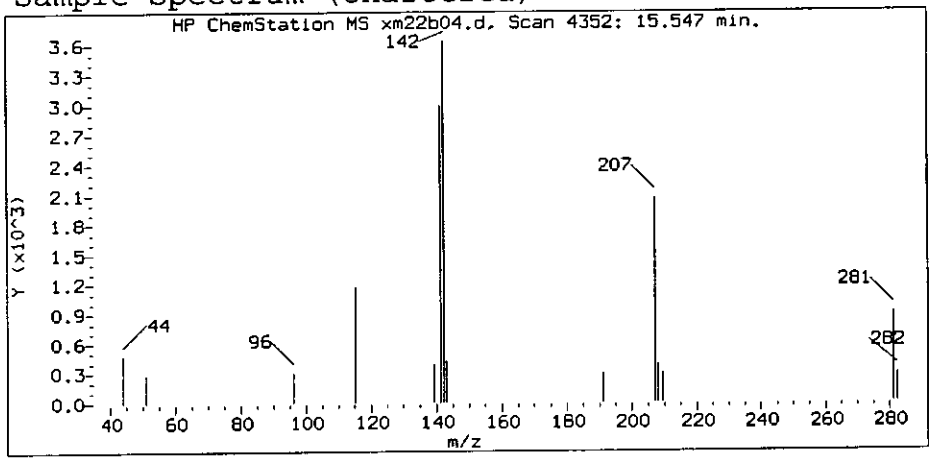



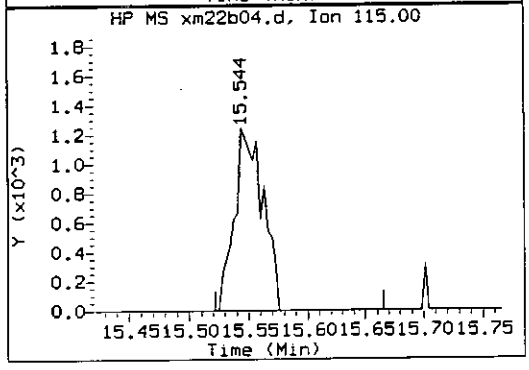

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Injection date and time: 22-MAR-2004 16:29

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E+SM
Calibration date and time: 22-MAR-2004 16:58
Date, time and analyst ID of latest file update: 22-Mar-2004 16:59 msl01251

Sample Name: VBLKX61

Lab Sample ID: VBLKX61

| | |
|---|---|
| Compound Number | : 143 |
| Compound Name | : 2-Methylnaphthalene |
| Scan Number | : 4352 |
| Retention Time (minutes) | : 15.547 |
| Quant Ion | : 142.0 |
| Area (flag) | : 5357 |
| Concentration (ug/Kg) | : 2.5454 |

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# VBLKX61

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX61

File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Sample: VBLKX61;VBLKX61;2;3;;;
Injected At:22-MAR-2004 16:29
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.508(-0.003) | 912 | 65 | 290585( 16) | 250.00 | |
| 69) Fluorobenzene | 7.958(-0.006) | 1987 | 96 | 1773114( 0) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347(-0.003) | 3043 | 117 | 1405600( 0) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205( 0.000) | 3622 | 152 | 762263( -8) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.040( 0.001) | 113 | 415016 | 49.337 | 99% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.001) | 102 | 108136 | 47.950 | 96% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1697254 | 49.010 | 98% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 625895 | 44.939 | 90% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 18) Ethyl Ether | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 16) Acrolein | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 11) n-Pentane | (1) | | | | ND | ND | | | 4.00 | 10.00 |
| 19) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | | | | ND | ND | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 26) Allyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 27) Methyl Acetate | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | | | | ND | ND | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | | | | ND | ND | | | 4.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 25) Acetonitrile | (1) | | | | ND | ND | | | 25.00 | 100.00 |
| 36) n-Hexane | (1) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX61

File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Sample: VBLKX61;VBLKX61;2;3;;;
Injected At:22-MAR-2004 16:29
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 37) 1,1-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 38) Vinyl Acetate | (1) | | | | | ND | ND | | | 2.00 | 10.00 |
| 39) di-Isopropyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 4.00 | 10.00 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 50) Ethyl Acetate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX61

File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Sample: VBLKX61;VBLKX61;2;3;;;
Injected At:22-MAR-2004 16:29
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67) Isopropyl Acetate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 74) Methylcyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 79) n-Propyl Acetate | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 96) Butyl Acetate | (2) | | | | | ND | ND | | | 2.00 | 10.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX61

File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Sample: VBLKX61;VBLKX61;2;3;;;
Injected At:22-MAR-2004 16:29
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

VBLKX61

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX61

File: /chem/HP09193.i/04mar22b.b/xm22b04.d
Sample: VBLKX61;VBLKX61;2;3;;;
Injected At:22-MAR-2004 16:29
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT · (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 135) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 134) n-Butylbenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 131) 1,3-Diethylbenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 132) 1,4-Diethylbenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 136) 1,2-Diethylbenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | ND | ND | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | | | | ND | ND | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | 14.761( 0.000) | 128 | 67766 | 1.409 | 1.41 | | J | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 143) 2-Methylnaphthalene | (3) | 15.547( 0.000) | 142 | 5357 | 2.545 | 2.55 | | J | 2.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: _____

Analyst: [signature] Date: 3/22/04

Auditor: [signature] Date: 3/25/04

Data File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Date : 29-MAR-2004 10:36
Client ID: VBLKX66
Sample Info: VBLKX66;VBLKX66;2;3;;;

Column phase: DB-624

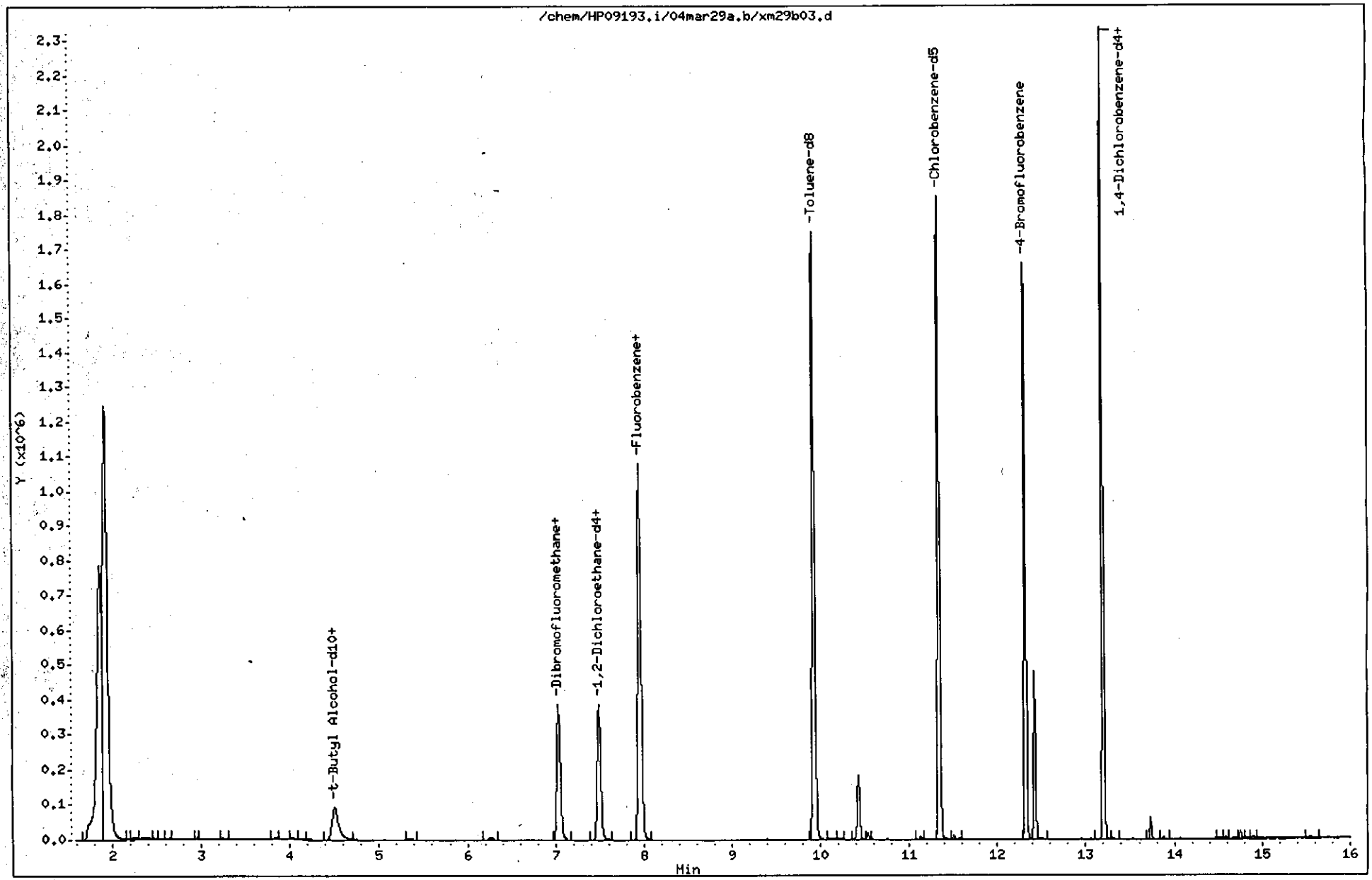
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM|1518
3|29|04



6182



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar29a.b/xm29b03.d  Instrument ID: HP09193.i
Injection date and time: 29-MAR-2004 10:36  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar29a.b/X8260SL.m Sublist used: 8260S-EM+SM
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 29-Mar-2004 11:06 lcm01518

Sample Name: VBLKX66  Lab Sample ID: VBLKX66

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 29)*t-Butyl Alcohol-d10 | (4) | 4.499 | 65 | 219335 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.958 | 96 | 1346790 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1081184 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 604337 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 332211 | 51.994 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 81846 | 47.781 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1287413 | 48.330 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 471918 | 44.050 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# VBLKX66

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# VBLKX66

File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Sample: VBLKX66;VBLKX66;2;3;;;
Injected At:29-MAR-2004 10:36
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-EM+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.499( 0.006) | 909 | 65 | 219335( 17) | 250.00 | |
| 69) Fluorobenzene | 7.958(-0.003) | 1987 | 96 | 1346790( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 1081184( -5) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205( 0.000) | 3622 | 152 | 604337( -13) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.000) | 113 | 332211 | 51.994 | 104% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 81846 | 47.781 | 96% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1287413 | 48.330 | 97% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 471918 | 44.050 | 88% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 16) Acrolein | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 19) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | | | | ND | ND | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 26) Allyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | | | | ND | ND | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | | | | ND | ND | | | 10.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 25) Acetonitrile | (1) | | | | ND | ND | | | 25.00 | 100.00 |
| 36) n-Hexane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 38) Vinyl Acetate | (1) | | | | ND | ND | | | 2.00 | 10.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX66

File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Sample: VBLKX66;VBLKX66;2;3;;;
Injected At:29-MAR-2004 10:36
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-EM+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 39) di-Isopropyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 7.00 | 10.00 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 50) Ethyl Acetate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 67) Isopropyl Acetate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX66

File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Sample: VBLKX66;VBLKX66;2;3;;;
Injected At:29-MAR-2004 10:36
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-EM+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 79) n-Propyl Acetate | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 6.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 2.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 96) Butyl Acetate | (2) | | | | | ND | ND | | | 2.00 | 10.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 2.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX66

File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Sample: VBLKX66;VBLKX66;2;3;;;
Injected At:29-MAR-2004 10:36
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-EM+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | | | | | ND | ND | | | 3.00 | 5.00 |
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 135) 1,2-Dichlorobenzene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 134) n-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 131) 1,3-Diethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 132) 1,4-Diethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

VBLKX66

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX66

File: /chem/HP09193.i/04mar29a.b/xm29b03.d
Sample: VBLKX66;VBLKX66;2;3;;;
Injected At:29-MAR-2004 10:36
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-EM+SM

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AC
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm29c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 136) 1,2-Diethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: LCM|1518 Date: 3|29|04

Auditor: Date: 3/30/04



8188

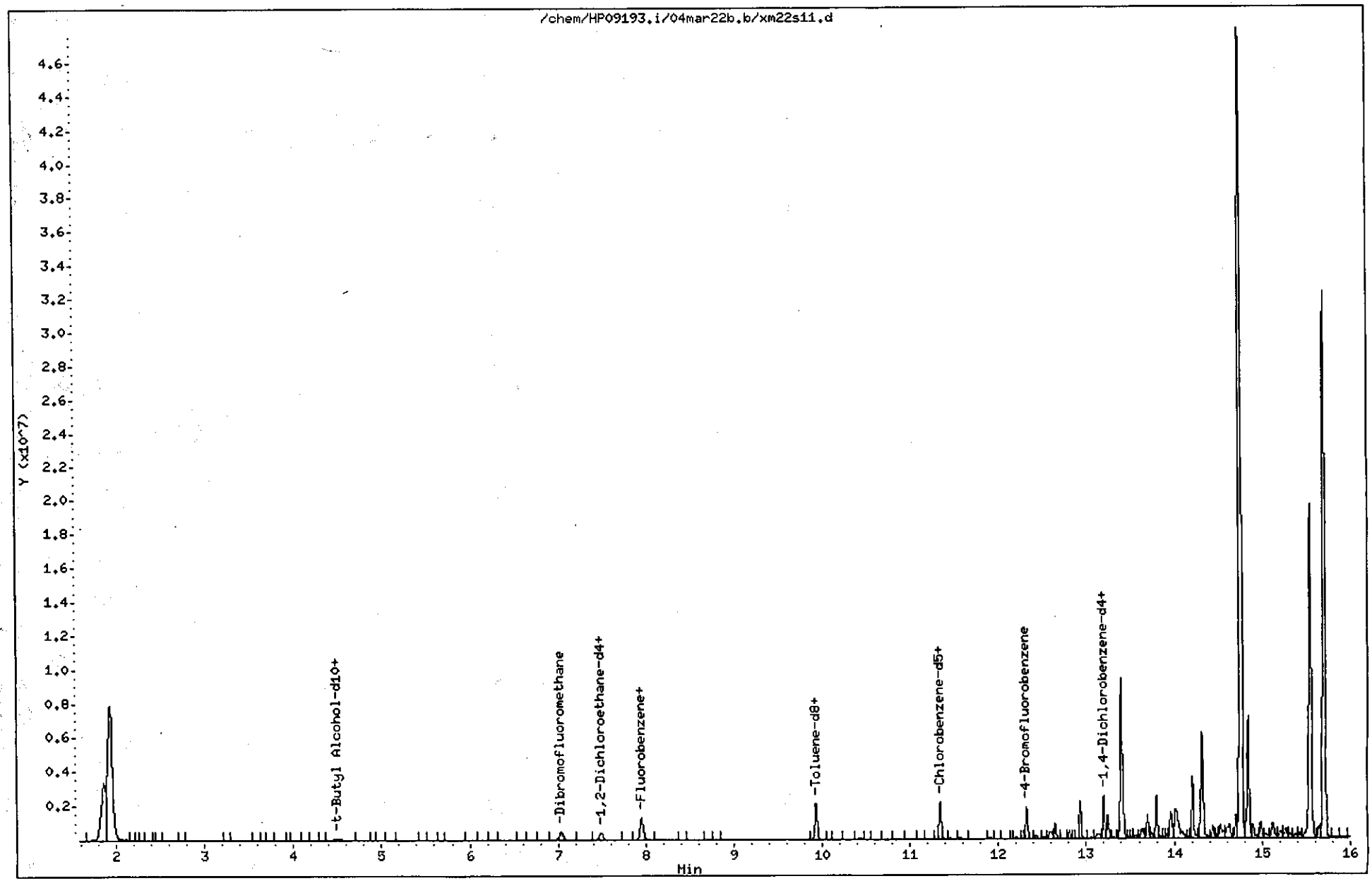
Data File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Date : 22-MAR-2004 19:39
Client ID: SEDT2
Sample Info: SEDT2;4232854;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: MSL01251
Column diameter: 0.25

Page 1



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s11.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 19:39  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E+SM-D
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 23:40 msl01251

Sample Name: SEDT2  Lab Sample ID: 4232854

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.838 | 58 | 10170 | 13.069 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 238508 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1676020 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1291527 | 50.000 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 26601 | 1.563 |
| 92) Xylene (Total) | (2) | | 106 | 51237 | 3.112 |
| 107) o-Xylene | (2) | 11.905 | 106 | 24636 | 1.550 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 48923 | 1.200 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 77384 | 1.727 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 418453 | 12.757 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 1095289 | 32.883 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 679238 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 100025 | 2.754 |
| 134) n-Butylbenzene | (3) | 13.404 | 91 | 833262 | 25.951 |
| 140) Naphthalene | (3) | 14.780 | 128 | 24170301 | 563.872 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 10299100 | 529.758 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 393854 | 49.534 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 99197 | 46.535 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1588569 | 49.923 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 576476 | 45.046 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# SEDT2

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232854**

File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Sample: SEDT2;4232854;2;0;;;
Injected At:**22-MAR-2004 19:39**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E+SM-D

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9800 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.505( 0.000) | 911 | 65 | 238508( -5) | 250.00 | |
| 69) Fluorobenzene | 7.955(-0.003) | 1986 | 96 | 1676020( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 1291527( -8) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.003) | 3621 | 152 | 679238( -18) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.001) | 113 | 393854 | 49.534 | 99% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.490( 0.001) | 102 | 99197 | 46.535 | 93% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1588569 | 49.923 | 100% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 576476 | 45.046 | 90% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 12) Trichlorofluoromethane | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 18) Ethyl Ether | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 16) Acrolein | (1) | | | | ND | ND | | | 16.72 | 83.61 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 11) n-Pentane | (1) | | | | ND | ND | | | 3.34 | 8.36 |
| 19) Freon 113 | (1) | | | | ND | ND | | | 1.67 | 8.36 |
| 20) Acetone | (1) | 3.838(-0.001) | 58 | 10170 | 13.069 | 10.93 | | J | 5.85 | 16.72 |
| 22) Methyl Iodide | (1) | | | | ND | ND | | | 2.51 | 4.18 |
| 23) 2-Propanol | (1) | | | | ND | ND | | | 50.17 | 83.61 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 26) Allyl Chloride | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 27) Methyl Acetate | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.67 | 4.18 |
| 30) t-Butyl Alcohol | (4) | | | | ND | ND | | | 16.72 | 83.61 |
| 32) Acrylonitrile | (1) | | | | ND | ND | | | 3.34 | 41.81 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.84 | 4.18 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | ND | ND | | | 0.42 | 4.18 |
| 25) Acetonitrile | (1) | | | | ND | ND | | | 20.90 | 83.61 |
| 36) n-Hexane | (1) | | | | ND | ND | | | 0.84 | 4.18 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4232854

File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Sample: SEDT2;4232854;2;0;;;
Injected At:22-MAR-2004 19:39
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E+SM-D

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9800 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 37) 1,1-Dichloroethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 38) Vinyl Acetate | (1) | | | | | ND | ND | | | 1.67 | 8.36 |
| 39) di-Isopropyl Ether | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 3.34 | 8.36 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 25.08 | 83.61 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 4.18 | 41.81 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 3.34 | 4.18 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.42 | 4.18 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 83.61 | 209.03 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 50) Ethyl Acetate | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 2.51 | 4.18 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232854**

File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Sample: SEDT2;4232854;2;0;;;
Injected At:**22-MAR-2004 19:39**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E+SM-D

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9800 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67) Isopropyl Acetate | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 91.97 | 209.03 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 74) Methylcyclohexane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 79) n-Propyl Acetate | (1) | | | | | ND | ND | | | 1.67 | 4.18 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 58.53 | 209.03 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 2.51 | 8.36 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 0.84 | 4.18 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 2.51 | 8.36 |
| 88) Toluene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.51 | 8.36 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 96) Butyl Acetate | (2) | | | | | ND | ND | | | 1.67 | 8.36 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232854**

File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Sample: SEDT2;4232854;2;0;;;
Injected At:**22-MAR-2004 19:39**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E+SM-D

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9800 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 26601 | 1.563 | 1.31 | | J | 0.84 | 4.18 |
| 92) Xylene (Total) | (2) | | | 106 | 51237 | 3.112 | 2.60 | | J | 0.84 | 4.18 |
| 107) o-Xylene | (2) | 11.905 | ( 0.000) | 106 | 24636 | 1.550 | 1.30 | | J | 0.84 | 4.18 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.84 | 4.18 |
| 110) Isopropylbenzene | (2) | 12.197 | ( 0.000) | 105 | 48923 | 1.200 | 1.00 | | J | 0.84 | 4.18 |
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 20.90 | 209.03 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 8.36 | 41.81 |
| 119) n-Propylbenzene | (3) | 12.518 | ( 0.000) | 91 | 77384 | 1.727 | 1.44 | | J | 0.84 | 4.18 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | ( 0.000) | 105 | 418453 | 12.757 | 10.67 | | | 0.84 | 4.18 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | ( 0.000) | 105 | 1095289 | 32.883 | 27.49 | | | 0.84 | 4.18 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 127) p-Isopropyltoluene | (3) | 13.160 | ( 0.000) | 119 | 100025 | 2.754 | 2.30 | | J | 0.84 | 4.18 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

SEDT2

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4232854

File: /chem/HP09193.i/04mar22b.b/xm22s11.d
Sample: SEDT2;4232854;2;0;;;
Injected At:22-MAR-2004 19:39
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E+SM-D

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9800 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 135) 1,2-Dichlorobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 134) n-Butylbenzene | (3) | 13.404 | ( 0.003) | 91 | 833262 | 25.951 | 21.70 | | | 0.84 | 4.18 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | | ND | ND | | | 1.67 | 4.18 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 139) Hexachlorobutadiene | (3) | | | | | ND | ND | | | 1.67 | 4.18 |
| 140) Naphthalene | (3) | 14.780 | (-0.002) | 128 | 24170301 | 563.872 | 471.46 | 1.41 | B E | 0.84 | 4.18 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | | ND | ND | | | 0.84 | 4.18 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | ( 0.000) | 142 | 10299100 | 529.758 | 442.94 | 2.55 | B E | 1.67 | 4.18 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NI6129 Batch

Analyst: [signature] Date: 3/22/04

Auditor: [signature] Date: 3/25/04

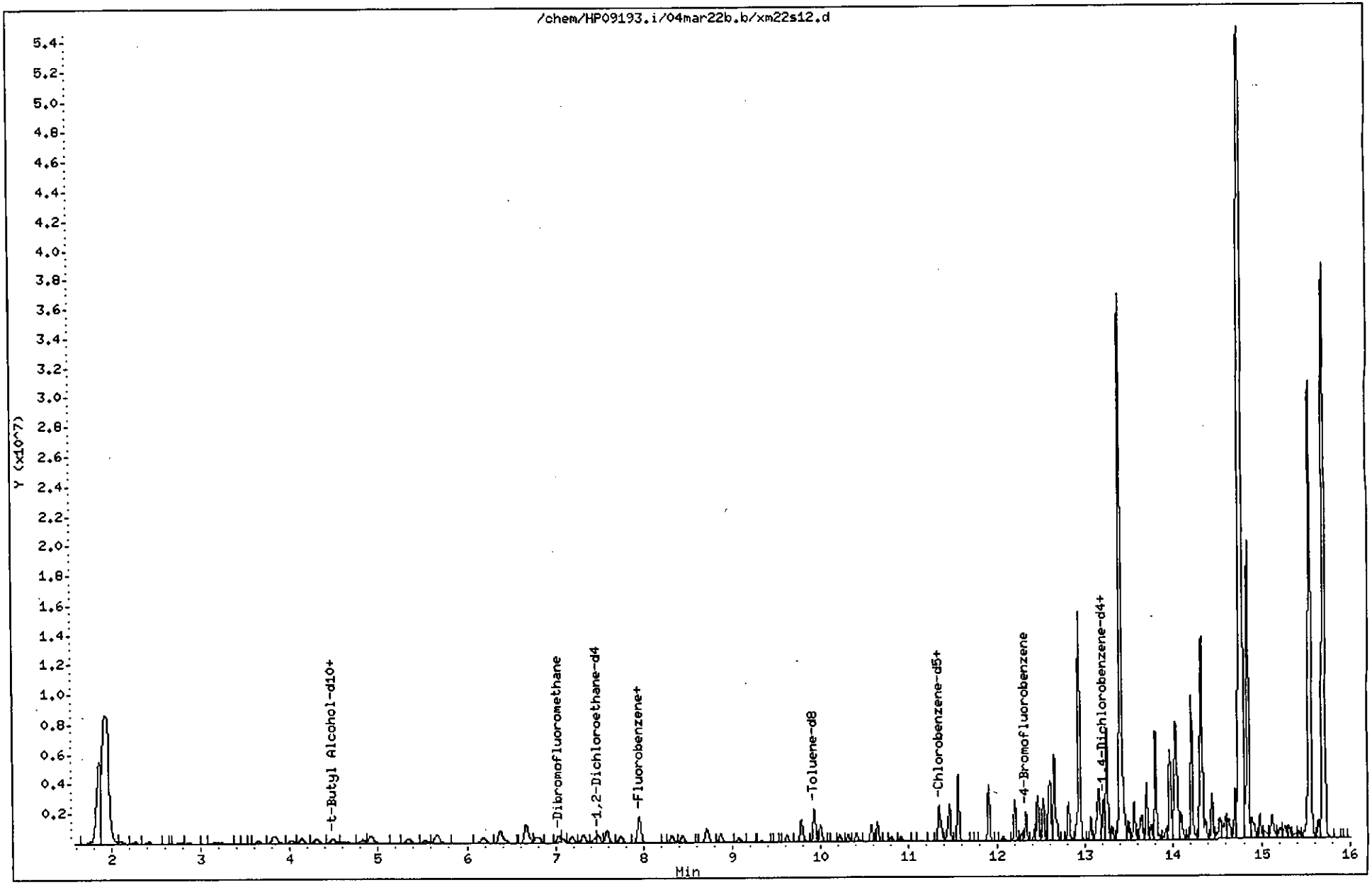
Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Date : 22-MAR-2004 20:11
Client ID: SEDT2MS
Sample Info: SEDT2MS;4232855;2;3;MS;;

Column phase: DB-624

Instrument: HP09193.i

Operator: MSL01251
Column diameter: 0.25

6196



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:11  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 23:09 msl01251

Sample Name: SEDT2MS  Lab Sample ID: 4232855

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.104 | 85 | 289734 | 23.656 |
| 4) Chloromethane | (1) | 2.262 | 50 | 251893 | 21.708 |
| 5) Vinyl Chloride | (1) | 2.419 | 62 | 235952 | 21.304 |
| 7) Bromomethane | (1) | 2.756 | 94 | 142489 | 18.928 |
| 8) Chloroethane | (1) | 2.868 | 64 | 126328 | 20.111 |
| 12) Trichlorofluoromethane | (1) | 3.157 | 101 | 253293 | 19.982 |
| 16) Acrolein | (1) | 3.638 | 56 | 238320 | 158.355 |
| 17) 1,1-Dichloroethene | (1) | 3.805 | 96 | 171720 | 21.672 |
| 19) Freon 113 | (1) | 3.841 | 101 | 171223 | 20.958 |
| 20) Acetone | (1) | 3.828 | 58 | 135061 | 159.897 |
| 22) Methyl Iodide | (1) | 4.017 | 142 | 316215 | 20.559 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 119312 | 164.313 |
| 24) Carbon Disulfide | (1) | 4.129 | 76 | 805894 | 27.307 |
| 26) Allyl Chloride | (1) | 4.306 | 41 | 298073 | 19.746 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 156694 | 21.490 |
| 28) Methylene Chloride | (1) | 4.482 | 84 | 202387 | 20.640 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 273155 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.633 | 59 | 279257 | 200.313 |
| 32) Acrylonitrile | (1) | 4.822 | 53 | 359505 | 106.099 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 198881 | 21.180 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.925 | 73 | 529462 | 20.392 |
| 36) n-Hexane | (1) | 5.342 | 57 | 273324 | 21.269 |
| 37) 1,1-Dichloroethane | (1) | 5.528 | 63 | 335579 | 21.425 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.679 | 53 | 277281 | 23.085 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 585005 | 20.799 |
| 42) Ethyl t-Butyl Ether | (1) | 6.186 | 59 | 520087 | 20.173 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 207776 | 20.822 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 406657 | 42.001 |
| 48) 2,2-Dichloropropane | (1) | 6.388 | 77 | 246627 | 19.714 |
| 46) 2-Butanone | (1) | 6.366 | 72 | 204181 | 164.543 |
| 49) Propionitrile | (1) | 6.440 | 54 | 222705 | 165.469 |
| 51) Methacrylonitrile | (1) | 6.664 | 67 | 674719 | 162.806 |
| 52) Bromochloromethane | (1) | 6.706 | 128 | 101338 | 18.419 |
| 53) Tetrahydrofuran | (1) | 6.773 | 71 | 137414 | 121.443 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:11  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 23:09 msl01251

Sample Name: SEDT2MS  Lab Sample ID: 4232855

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.822 | 83 | 316702 | 20.647 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 276763 | 20.259 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 336824 | 22.107 |
| 59) 1,1-Dichloropropene | (1) | 7.309 | 75 | 245684 | 21.117 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 236146 | 20.492 |
| 65) Benzene | (1) | 7.589 | 78 | 822966 | 21.924 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 221345 | 539.680 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 238853 | 20.114 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 490254 | 19.582 |
| 69)*Fluorobenzene | (1) | 7.951 | 96 | 1840215 | 50.000 |
| 71) n-Heptane | (1) | 7.967 | 100 | 48653 | 17.766 |
| 72) n-Butanol | (1) | 8.323 | 56 | 379492 | 1114.833 |
| 73) Trichloroethene | (1) | 8.445 | 95 | 197364 | 20.639 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 323653 | 19.083 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 198518 | 21.215 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 114864 | 20.130 |
| 78) 1,4-Dioxane | (1) | 8.895 | 88 | 64781 | 579.979 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 150133 | 21.209 |
| 81) Bromodichloromethane | (1) | 9.071 | 83 | 212953 | 18.839 |
| 82) 2-Nitropropane | (1) | 9.341 | 41 | 46240 | 18.797 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 284311 | 19.651 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 1139924 | 108.329 |
| 88) Toluene | (2) | 10.005 | 92 | 550440 | 23.065 |
| 89) trans-1,3-Dichloropropene | (2) | 10.223 | 75 | 251671 | 20.066 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 257990 | 20.510 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 174797 | 19.946 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 237437 | 20.399 |
| 94) 1,3-Dichloropropane | (2) | 10.579 | 76 | 286519 | 20.097 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 834326 | 103.798 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 178792 | 19.048 |
| 99) 1,2-Dibromoethane | (2) | 10.919 | 107 | 183080 | 20.506 |
| 100)*Chlorobenzene-d5 | (2) | 11.346 | 117 | 1390534 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 570255 | 20.564 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.439 | 131 | 183904 | 19.301 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:11  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 23:09 msl01251

Sample Name: SEDT2MS  Lab Sample ID: 4232855

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 1712073 | 38.561 |
| 105) m+p-Xylene | (2) | 11.564 | 106 | 1341571 | 73.196 |
| 92) Xylene (Total) | (2) | | 106 | 2137823 | 119.717 |
| 107) o-Xylene | (2) | 11.901 | 106 | 796252 | 46.521 |
| 108) Styrene | (2) | 11.908 | 104 | 595689 | 20.689 |
| 109) Bromoform | (2) | 12.068 | 173 | 131568 | 18.823 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 1747897 | 39.817 |
| 112) Cyclohexanone | (2) | 12.270 | 55 | 204673 | 554.181 |
| 116) Bromobenzene | (3) | 12.453 | 156 | 243917 | 22.488 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 258185 | 24.239 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 76840 | 23.620 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 333335 | 101.947 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 2065353 | 45.904 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 233259 | 23.463 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 3060588 | 92.940 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 232902 | 22.392 |
| 123) tert-Butylbenzene | (3) | 12.902 | 134 | 178272 | 22.415 |
| 124) Pentachloroethane | (3) | 12.928 | 167 | 133747 | 19.600 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 7885256 | 235.802 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 954764 | 22.979 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 437644 | 21.070 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 681912 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.159 | 119 | 1192852 | 32.713 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 448680 | 20.574 |
| 135) 1,2-Dichlorobenzene | (3) | 13.496 | 146 | 408422 | 20.365 |
| 134) n-Butylbenzene | (3) | 13.454 | 91 | 830687 | 25.769 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.032 | 75 | 183401M | 84.835 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.590 | 180 | 230969 | 14.810 |
| 139) Hexachlorobutadiene | (3) | 14.699 | 225 | 112927 | 14.287 |
| 140) Naphthalene | (3) | 14.796 | 128 | 32283755 | 750.199 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.924 | 180 | 208520 | 13.301 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | 142 | 16305294 | 1112.224 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 424165 | 48.586 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.492 | 102 | 110920 | 47.391 |

M = Compound was manually integrated.

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:11  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 23:09 msl01251

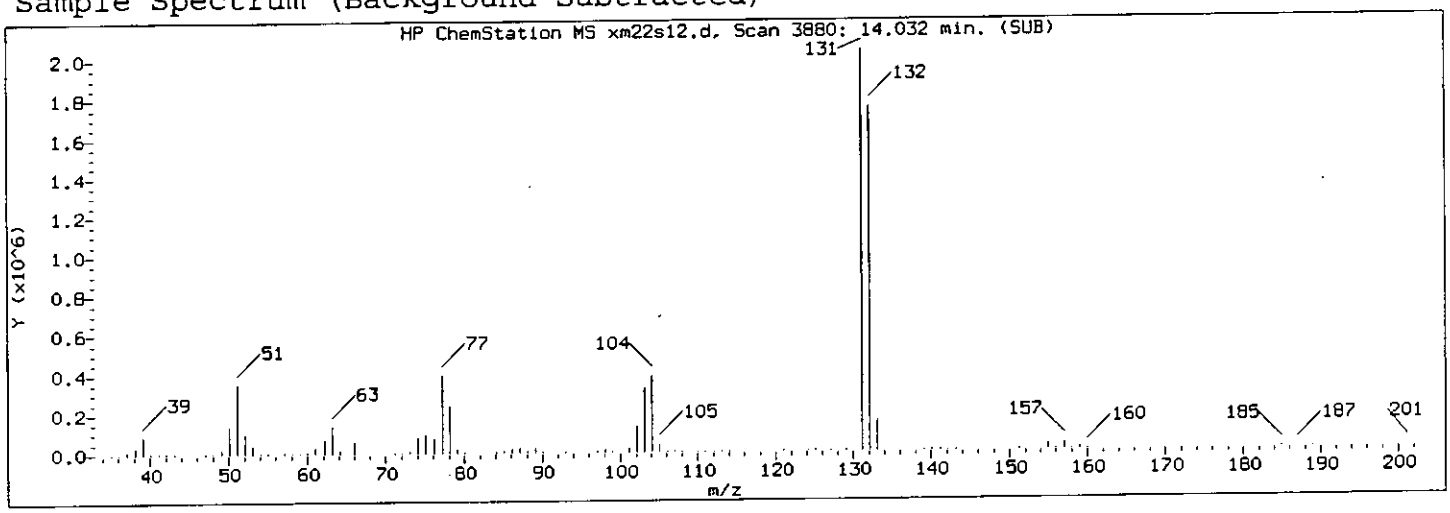
Sample Name: SEDT2MS  Lab Sample ID: 4232855

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1764377 | 51.500 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 620988 | 45.069 |

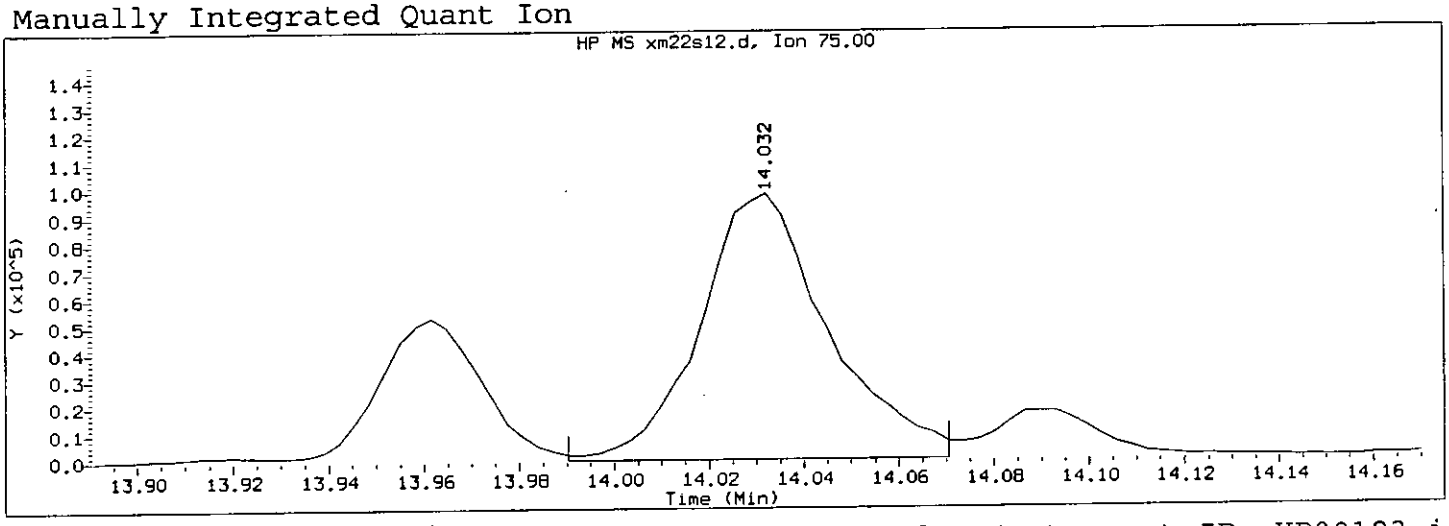
$ = Compound is a surrogate standard.

8260

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04mar22b.b/xm22s12.d Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:11 Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 22-MAR-2004 20:12
Date, time and analyst ID of latest file update: 22-Mar-2004 23:09 msl01251

Sample Name: SEDT2MS Lab Sample ID: 4232855

| | | |
|---|---|---|
| Compound Number | : | 137 |
| Compound Name | : | 1,2-Dibromo-3-Chloropropane |
| Scan Number | : | 3880 |
| Retention Time (minutes) | : | 14.032 |
| Quant Ion | : | 75 |
| Area (flag) | : | 183401 M |
| Concentration (ug/Kg) | : | 84.8355 |
| Integration start scan | : | 3866 Integration stop scan: 3891 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: [signature] 3/22/04

5261

GC/MS audit/management approval: [signature] 3/25/04

Manual Integration Report for data file /chem/HP09193.i/04mar22b.b/xm22s12.d, generated on 03/22/2004 at 23:09

# SEDT2MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4232855

File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Sample: SEDT2MS;4232855;2;3;MS;;
Injected At:**22-MAR-2004 20:11**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.502( 0.004) | 910 | 65 | 273155( 9) | 250.00 | |
| 69) Fluorobenzene | 7.951( 0.001) | 1985 | 96 | 1840215( 4) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.346(-0.003) | 3043 | 117 | 1390534( -1) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.204( 0.001) | 3622 | 152 | 681912( -18) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.000) | 113 | 424165 | 48.586 | 97% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.492( 0.000) | 102 | 110920 | 47.391 | 95% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1764377 | 51.500 | 103% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 620988 | 45.069 | 90% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.104( 0.000) | 85 | 289734 | 23.656 | 19.95 | | | 1.69 | 4.22 |
| 4) Chloromethane | (1) | 2.262( 0.000) | 50 | 251893 | 21.708 | 18.30 | | | 1.69 | 4.22 |
| 5) Vinyl Chloride | (1) | 2.419( 0.000) | 62 | 235952 | 21.304 | 17.96 | | | 0.84 | 4.22 |
| 7) Bromomethane | (1) | 2.756( 0.001) | 94 | 142489 | 18.928 | 15.96 | | | 1.69 | 4.22 |
| 8) Chloroethane | (1) | 2.868( 0.000) | 64 | 126328 | 20.111 | 16.96 | | | 1.69 | 4.22 |
| 12) Trichlorofluoromethane | (1) | 3.157( 0.001) | 101 | 253293 | 19.982 | 16.85 | | | 1.69 | 4.22 |
| 16) Acrolein | (1) | 3.638( 0.000) | 56 | 238320 | 158.355 | 133.52 | | | 16.86 | 84.32 |
| 17) 1,1-Dichloroethene | (1) | 3.805( 0.001) | 96 | 171720 | 21.672 | 18.27 | | | 0.84 | 4.22 |
| 19) Freon 113 | (1) | 3.841( 0.000) | 101 | 171223 | 20.958 | 17.67 | | | 1.69 | 8.43 |
| 20) Acetone | (1) | 3.828( 0.000) | 58 | 135061 | 159.897 | 134.82 | | | 5.90 | 16.86 |
| 22) Methyl Iodide | (1) | 4.017( 0.000) | 142 | 316215 | 20.559 | 17.33 | | | 2.53 | 4.22 |
| 23) 2-Propanol | (1) | 4.011( 0.000) | 45 | 119312 | 164.313 | 138.54 | | | 50.59 | 84.32 |
| 24) Carbon Disulfide | (1) | 4.129( 0.001) | 76 | 805894 | 27.307 | 23.02 | | | 0.84 | 4.22 |
| 26) Allyl Chloride | (1) | 4.306( 0.000) | 41 | 298073 | 19.746 | 16.65 | | | 0.84 | 4.22 |
| 27) Methyl Acetate | (1) | 4.306( 0.001) | 43 | 156694 | 21.490 | 18.12 | | | 0.84 | 4.22 |
| 28) Methylene Chloride | (1) | 4.482( 0.000) | 84 | 202387 | 20.640 | 17.40 | | | 1.69 | 4.22 |
| 30) t-Butyl Alcohol | (4) | 4.633(-0.001) | 59 | 279257 | 200.313 | 168.90 | | | 16.86 | 84.32 |
| 32) Acrylonitrile | (1) | 4.822( 0.000) | 53 | 359505 | 106.099 | 89.46 | | | 3.37 | 42.16 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916( 0.000) | 96 | 198881 | 21.180 | 17.86 | | | 0.84 | 4.22 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.925( 0.000) | 73 | 529462 | 20.392 | 17.19 | | | 0.42 | 4.22 |
| 36) n-Hexane | (1) | 5.342( 0.001) | 57 | 273324 | 21.269 | 17.93 | | | 0.84 | 4.22 |
| 37) 1,1-Dichloroethane | (1) | 5.528( 0.001) | 63 | 335579 | 21.425 | 18.06 | | | 0.84 | 4.22 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.679( 0.000) | 53 | 277281 | 23.085 | 19.46 | | | 0.84 | 4.22 |
| 39) di-Isopropyl Ether | (1) | 5.657( 0.000) | 45 | 585005 | 20.799 | 17.54 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



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# SEDT2MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4232855

File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Sample: SEDT2MS;4232855;2;3;MS;;
Injected At:22-MAR-2004 20:11
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | 6.186 | ( 0.000) | 59 | 520087 | 20.173 | 17.01 | | | 0.84 | 4.22 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | ( 0.000) | 96 | 207776 | 20.822 | 17.56 | | | 0.84 | 4.22 |
| 33) 1,2-Dichloroethene (total) | (1) | | | 96 | 406657 | 42.001 | 35.41 | | | 0.84 | 4.22 |
| 48) 2,2-Dichloropropane | (1) | 6.388 | ( 0.000) | 77 | 246627 | 19.714 | 16.62 | | | 0.84 | 4.22 |
| 46) 2-Butanone | (1) | 6.366 | ( 0.000) | 72 | 204181 | 164.543 | 138.74 | | | 3.37 | 8.43 |
| 49) Propionitrile | (1) | 6.440 | ( 0.000) | 54 | 222705 | 165.469 | 139.52 | | | 25.30 | 84.32 |
| 51) Methacrylonitrile | (1) | 6.664 | ( 0.000) | 67 | 674719 | 162.806 | 137.27 | | | 4.22 | 42.16 |
| 52) Bromochloromethane | (1) | 6.706 | ( 0.000) | 128 | 101338 | 18.419 | 15.53 | | | 0.84 | 4.22 |
| 53) Tetrahydrofuran | (1) | 6.773 | ( 0.000) | 71 | 137414 | 121.443 | 102.40 | | | 3.37 | 4.22 |
| 54) Chloroform | (1) | 6.822 | ( 0.000) | 83 | 316702 | 20.647 | 17.41 | | | 0.84 | 4.22 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | (-0.001) | 97 | 276763 | 20.259 | 17.08 | | | 0.84 | 4.22 |
| 58) Cyclohexane | (1) | 7.191 | ( 0.000) | 56 | 336824 | 22.107 | 18.64 | | | 0.84 | 4.22 |
| 59) 1,1-Dichloropropene | (1) | 7.309 | ( 0.000) | 75 | 245684 | 21.117 | 17.81 | | | 0.84 | 4.22 |
| 60) Carbon Tetrachloride | (1) | 7.329 | ( 0.000) | 117 | 236146 | 20.492 | 17.28 | | | 0.84 | 4.22 |
| 65) Benzene | (1) | 7.589 | ( 0.000) | 78 | 822966 | 21.924 | 18.49 | | | 0.42 | 4.22 |
| 61) Isobutyl Alcohol | (1) | 7.441 | ( 0.000) | 41 | 221345 | 539.680 | 455.04 | | | 84.32 | 210.79 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | ( 0.000) | 62 | 238853 | 20.114 | 16.96 | | | 0.84 | 4.22 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | ( 0.000) | 73 | 490254 | 19.582 | 16.51 | | | 0.84 | 4.22 |
| 71) n-Heptane | (1) | 7.967 | ( 0.000) | 100 | 48653 | 17.766 | 14.98 | | | 2.53 | 4.22 |
| 72) n-Butanol | (1) | 8.323 | ( 0.000) | 56 | 379492 | 1114.833 | 939.99 | | | 92.75 | 210.79 |
| 73) Trichloroethene | (1) | 8.445 | ( 0.000) | 95 | 197364 | 20.639 | 17.40 | | | 0.84 | 4.22 |
| 74) Methylcyclohexane | (1) | 8.718 | ( 0.000) | 83 | 323653 | 19.083 | 16.09 | | | 0.84 | 4.22 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | ( 0.000) | 63 | 198518 | 21.215 | 17.89 | | | 0.84 | 4.22 |
| 77) Dibromomethane | (1) | 8.872 | (-0.001) | 93 | 114864 | 20.130 | 16.97 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232855**

File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Sample: SEDT2MS;4232855;2;3;MS;;
Injected At:**22-MAR-2004 20:11**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | 8.895 | (-0.001) | 88 | 64781 | 579.979 | 489.02 | | | 59.02 | 210.79 |
| 76) Methyl Methacrylate | (1) | 8.866 | ( 0.000) | 69 | 150133 | 21.209 | 17.88 | | | 0.84 | 4.22 |
| 81) Bromodichloromethane | (1) | 9.071 | ( 0.000) | 83 | 212953 | 18.839 | 15.88 | | | 0.84 | 4.22 |
| 82) 2-Nitropropane | (1) | 9.341 | ( 0.000) | 41 | 46240 | 18.797 | 15.85 | | | 2.53 | 8.43 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | ( 0.000) | 75 | 284311 | 19.651 | 16.57 | | | 0.84 | 4.22 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | ( 0.000) | 43 | 1139924 | 108.329 | 91.34 | | | 2.53 | 8.43 |
| 88) Toluene | (2) | 10.005 | ( 0.000) | 92 | 550440 | 23.065 | 19.45 | | | 0.84 | 4.22 |
| 89) trans-1,3-Dichloropropene | (2) | 10.223 | ( 0.000) | 75 | 251671 | 20.066 | 16.92 | | | 0.84 | 4.22 |
| 90) Ethyl Methacrylate | (2) | 10.313 | ( 0.000) | 69 | 257990 | 20.510 | 17.29 | | | 0.84 | 4.22 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | ( 0.000) | 97 | 174797 | 19.946 | 16.82 | | | 0.84 | 4.22 |
| 93) Tetrachloroethene | (2) | 10.576 | ( 0.001) | 166 | 237437 | 20.399 | 17.20 | | | 0.84 | 4.22 |
| 94) 1,3-Dichloropropane | (2) | 10.579 | ( 0.000) | 76 | 286519 | 20.097 | 16.95 | | | 0.84 | 4.22 |
| 95) 2-Hexanone | (2) | 10.647 | ( 0.000) | 43 | 834326 | 103.798 | 87.52 | | | 2.53 | 8.43 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 178792 | 19.048 | 16.06 | | | 0.84 | 4.22 |
| 99) 1,2-Dibromoethane | (2) | 10.919 | ( 0.000) | 107 | 183080 | 20.506 | 17.29 | | | 0.84 | 4.22 |
| 101) Chlorobenzene | (2) | 11.372 | ( 0.000) | 112 | 570255 | 20.564 | 17.34 | | | 0.84 | 4.22 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.439 | ( 0.000) | 131 | 183904 | 19.301 | 16.27 | | | 0.84 | 4.22 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 1712073 | 38.561 | 32.51 | | | 0.84 | 4.22 |
| 105) m+p-Xylene | (2) | 11.564 | ( 0.000) | 106 | 1341571 | 73.196 | 61.72 | | | 0.84 | 4.22 |
| 92) Xylene (Total) | (2) | | | 106 | 2137823 | 119.717 | 100.94 | | | 0.84 | 4.22 |
| 107) o-Xylene | (2) | 11.901 | ( 0.000) | 106 | 796252 | 46.521 | 39.23 | | | 0.84 | 4.22 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 595689 | 20.689 | 17.44 | | | 0.84 | 4.22 |
| 109) Bromoform | (2) | 12.068 | ( 0.000) | 173 | 131568 | 18.823 | 15.87 | | | 0.84 | 4.22 |
| 110) Isopropylbenzene | (2) | 12.197 | ( 0.000) | 105 | 1747897 | 39.817 | 33.57 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232855**

File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Sample: SEDT2MS;4232855;2;3;MS;;
Injected At:**22-MAR-2004 20:11**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | 12.270 | ( 0.000) | 55 | 204673 | 554.181 | 467.27 | | | 21.08 | 210.79 |
| 116) Bromobenzene | (3) | 12.453 | ( 0.000) | 156 | 243917 | 22.488 | 18.96 | | | 0.84 | 4.22 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 258185 | 24.239 | 20.44 | | | 0.84 | 4.22 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | ( 0.000) | 110 | 76840 | 23.620 | 19.92 | | | 0.84 | 4.22 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | ( 0.000) | 53 | 333335 | 101.947 | 85.96 | | | 8.43 | 42.16 |
| 119) n-Propylbenzene | (3) | 12.521 | ( 0.000) | 91 | 2065353 | 45.904 | 38.70 | | | 0.84 | 4.22 |
| 120) 2-Chlorotoluene | (3) | 12.598 | ( 0.000) | 126 | 233259 | 23.463 | 19.78 | | | 0.84 | 4.22 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | ( 0.000) | 105 | 3060588 | 92.940 | 78.36 | | | 0.84 | 4.22 |
| 122) 4-Chlorotoluene | (3) | 12.678 | ( 0.000) | 126 | 232902 | 22.392 | 18.88 | | | 0.84 | 4.22 |
| 123) tert-Butylbenzene | (3) | 12.902 | ( 0.000) | 134 | 178272 | 22.415 | 18.90 | | | 0.84 | 4.22 |
| 124) Pentachloroethane | (3) | 12.928 | ( 0.000) | 167 | 133747 | 19.600 | 16.53 | | | 0.84 | 4.22 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | ( 0.000) | 105 | 7885256 | 235.802 | 198.82 | | | 0.84 | 4.22 |
| 126) sec-Butylbenzene | (3) | 13.063 | ( 0.000) | 105 | 954764 | 22.979 | 19.38 | | | 0.84 | 4.22 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | ( 0.000) | 146 | 437644 | 21.070 | 17.77 | | | 0.84 | 4.22 |
| 127) p-Isopropyltoluene | (3) | 13.159 | ( 0.000) | 119 | 1192852 | 32.713 | 27.58 | | | 0.84 | 4.22 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | ( 0.000) | 146 | 448680 | 20.574 | 17.35 | | | 0.84 | 4.22 |
| 135) 1,2-Dichlorobenzene | (3) | 13.496 | ( 0.000) | 146 | 408422 | 20.365 | 17.17 | | | 0.84 | 4.22 |
| 134) n-Butylbenzene | (3) | 13.454 | ( 0.000) | 91 | 830687 | 25.769 | 21.73 | | | 0.84 | 4.22 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.032 | ( 0.000) | 75 | 183401 | 84.835 | 71.53 | | | 1.69 | 4.22 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.590 | ( 0.000) | 180 | 230969 | 14.810 | 12.49 | | | 0.84 | 4.22 |
| 139) Hexachlorobutadiene | (3) | 14.699 | (-0.001) | 225 | 112927 | 14.287 | 12.05 | | | 1.69 | 4.22 |
| 140) Naphthalene | (3) | 14.796 | (-0.003) | 128 | 32283755 | 750.199 | 632.55 | 1.41 | B E | 0.84 | 4.22 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.924 | ( 0.000) | 180 | 208520 | 13.301 | 11.22 | | | 0.84 | 4.22 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | ( 0.000) | 142 | 16305294 | 1112.224 | 937.79 | 2.55 | B E | 1.69 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4232855

File: /chem/HP09193.i/04mar22b.b/xm22s12.d
Sample: SEDT2MS;4232855;2;3;MS;;
Injected At:22-MAR-2004 20:11
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N6131 Batch

Analyst: [signature] Date: 3/22/04

Auditor: [signature] Date: 3/25/04



8286

Data File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Date : 22-MAR-2004 20:38
Client ID: SEDT2MSD
Sample Info: SEDT2MSD;4232856;2;3;MSD;;

Column phase: DB-624

Instrument: HP09193.i

Operator: MSL01251
Column diameter: 0.25

8267

/chem/HP09193.i/04mar22b.b/xm22s13.d

Y (x10^7)

-t-Butyl Alcohol-d10+
-Dibromofluoromethane
-1,2-Dichloroethane-d4
-Fluorobenzene+
-Toluene-d8
-Chlorobenzene-d5+
-4-Bromofluorobenzene
-1,4-Dichlorobenzene-d4+

Min

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s13.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:38  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 21:02 Automation

Sample Name: SEDT2MSD  Lab Sample ID: 4232856

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.108 | 85 | 303392 | 23.032 |
| 4) Chloromethane | (1) | 2.269 | 50 | 257106 | 20.602 |
| 5) Vinyl Chloride | (1) | 2.416 | 62 | 243256 | 20.422 |
| 7) Bromomethane | (1) | 2.760 | 94 | 153566 | 18.968 |
| 8) Chloroethane | (1) | 2.872 | 64 | 134912 | 19.970 |
| 12) Trichlorofluoromethane | (1) | 3.157 | 101 | 265878 | 19.502 |
| 16) Acrolein | (1) | 3.642 | 56 | 259255 | 160.173 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 169547 | 19.896 |
| 19) Freon 113 | (1) | 3.841 | 101 | 172667 | 19.651 |
| 20) Acetone | (1) | 3.834 | 58 | 153364 | 169.680 |
| 22) Methyl Iodide | (1) | 4.021 | 142 | 319758 | 19.330 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 138301 | 177.095 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 649112 | 20.450 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 330422 | 20.352 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 176511 | 22.509 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 208159 | 19.738 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 311455 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.633 | 59 | 326403 | 205.340 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 402434 | 110.431 |
| 34) trans-1,2-Dichloroethene | (1) | 4.922 | 96 | 198261 | 19.632 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926 | 73 | 567635 | 20.327 |
| 36) n-Hexane | (1) | 5.346 | 57 | 294224 | 21.288 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 330467 | 19.617 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 275930 | 21.360 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 616301 | 20.374 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 555205 | 20.023 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 212630 | 19.812 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 410891 | 39.444 |
| 48) 2,2-Dichloropropane | (1) | 6.389 | 77 | 248301 | 18.455 |
| 46) 2-Butanone | (1) | 6.373 | 72 | 230472 | 172.693 |
| 49) Propionitrile | (1) | 6.437 | 54 | 250832 | 173.285 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 748756 | 167.988 |
| 52) Bromochloromethane | (1) | 6.700 | 128 | 112976 | 19.093 |
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 156044 | 128.227 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s13.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:38  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 21:02 Automation

Sample Name: SEDT2MSD  Lab Sample ID: 4232856

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.822 | 83 | 317344 | 19.237 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 275581 | 18.756 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 352758 | 21.528 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 248515 | 19.861 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 231575 | 18.685 |
| 65) Benzene | (1) | 7.589 | 78 | 817394 | 20.247 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 260575 | 590.733 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 246696 | 19.316 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 537165 | 19.949 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1979142 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 53621 | 18.206 |
| 72) n-Butanol | (1) | 8.324 | 56 | 456479 | 1246.867 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 199909 | 19.438 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 363917 | 19.951 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 206614 | 20.530 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 120913 | 19.703 |
| 78) 1,4-Dioxane | (1) | 8.889 | 88 | 81468 | 678.179 |
| 76) Methyl Methacrylate | (1) | 8.872 | 69 | 169363 | 22.246 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 221794 | 18.244 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 51268 | 19.378 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 300386 | 19.305 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 1286940 | 113.715 |
| 88) Toluene | (2) | 10.005 | 92 | 533937 | 20.661 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 270724 | 19.933 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 287064 | 21.074 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 187161 | 19.722 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 243442 | 19.314 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 311330 | 20.166 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 943771 | 108.425 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 192114 | 18.900 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 197242 | 20.401 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1505804 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 586944 | 19.545 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 193193 | 18.723 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s13.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:38  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 21:02 Automation

Sample Name: SEDT2MSD  Lab Sample ID: 4232856

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 1041094 | 21.653 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 863377 | 43.500 |
| 92) Xylene (Total) | (2) | | 106 | 1314792 | 67.855 |
| 107) o-Xylene | (2) | 11.902 | 106 | 451414 | 24.355 |
| 108) Styrene | (2) | 11.908 | 104 | 611233 | 19.604 |
| 109) Bromoform | (2) | 12.069 | 173 | 145169 | 19.179 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 1091059 | 22.952 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 246231 | 615.669 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 258844 | 21.503 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 283457 | 23.979 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 85167 | 23.589 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 375681 | 103.529 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 1278631 | 25.607 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 242047 | 21.938 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 1670846 | 45.718 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 247284 | 21.423 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 188652 | 21.373 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 156548 | 20.671 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 3049778 | 82.177 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 978377 | 21.217 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 474513 | 20.585 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 756792 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 1045260 | 25.829 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 492707 | 20.357 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 445717 | 20.026 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 792676 | 22.157 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 97262 | 40.539 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.591 | 180 | 256182 | 14.801 |
| 139) Hexachlorobutadiene | (3) | 14.690 | 225 | 116566 | 13.288 |
| 140) Naphthalene | (3) | 14.777 | 128 | 26354941 | 551.831 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 234589 | 13.484 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 13774753 | 709.002 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 447902 | 47.703 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 119350 | 47.414 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22s13.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 20:38  Analyst ID: MSL01251

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 21:02 Automation

Sample Name: SEDT2MSD  Lab Sample ID: 4232856

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1900879 | 51.237 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 682591 | 45.748 |

$ = Compound is a surrogate standard.

# SEDT2MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4232856

File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Sample: SEDT2MSD;4232856;2;3;MSD;;
Injected At:22-MAR-2004 20:38
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.505( 0.000) | 911 | 65 | 311455( 24) | 250.00 | |
| 69) Fluorobenzene | 7.952( 0.000) | 1985 | 96 | 1979142( 12) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 1505804( 7) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.003) | 3621 | 152 | 756792( -9) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.001) | 113 | 447902 | 47.703 | 95% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.496( 0.000) | 102 | 119350 | 47.414 | 95% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1900879 | 51.237 | 102% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 682591 | 45.748 | 91% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Reporting Qual. | Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.108( 0.000) | 85 | 303392 | 23.032 | 19.42 | | | 1.69 | 4.22 |
| 4) Chloromethane | (1) | 2.269( 0.000) | 50 | 257106 | 20.602 | 17.37 | | | 1.69 | 4.22 |
| 5) Vinyl Chloride | (1) | 2.416( 0.000) | 62 | 243256 | 20.422 | 17.22 | | | 0.84 | 4.22 |
| 7) Bromomethane | (1) | 2.760( 0.001) | 94 | 153566 | 18.968 | 15.99 | | | 1.69 | 4.22 |
| 8) Chloroethane | (1) | 2.872( 0.000) | 64 | 134912 | 19.970 | 16.84 | | | 1.69 | 4.22 |
| 12) Trichlorofluoromethane | (1) | 3.157( 0.001) | 101 | 265878 | 19.502 | 16.44 | | | 1.69 | 4.22 |
| 16) Acrolein | (1) | 3.642( 0.000) | 56 | 259255 | 160.173 | 135.05 | | | 16.86 | 84.32 |
| 17) 1,1-Dichloroethene | (1) | 3.806( 0.001) | 96 | 169547 | 19.896 | 16.78 | | | 0.84 | 4.22 |
| 19) Freon 113 | (1) | 3.841( 0.000) | 101 | 172667 | 19.651 | 16.57 | | | 1.69 | 8.43 |
| 20) Acetone | (1) | 3.834( 0.000) | 58 | 153364 | 169.680 | 143.07 | | | 5.90 | 16.86 |
| 22) Methyl Iodide | (1) | 4.021( 0.000) | 142 | 319758 | 19.330 | 16.30 | | | 2.53 | 4.22 |
| 23) 2-Propanol | (1) | 4.011( 0.000) | 45 | 138301 | 177.095 | 149.32 | | | 50.59 | 84.32 |
| 24) Carbon Disulfide | (1) | 4.130( 0.001) | 76 | 649112 | 20.450 | 17.24 | | | 0.84 | 4.22 |
| 26) Allyl Chloride | (1) | 4.300( 0.001) | 41 | 330422 | 20.352 | 17.16 | | | 0.84 | 4.22 |
| 27) Methyl Acetate | (1) | 4.313( 0.000) | 43 | 176511 | 22.509 | 18.98 | | | 0.84 | 4.22 |
| 28) Methylene Chloride | (1) | 4.486( 0.000) | 84 | 208159 | 19.738 | 16.64 | | | 1.69 | 4.22 |
| 30) t-Butyl Alcohol | (4) | 4.633( 0.000) | 59 | 326403 | 205.340 | 173.14 | | | 16.86 | 84.32 |
| 32) Acrylonitrile | (1) | 4.826( 0.000) | 53 | 402434 | 110.431 | 93.11 | | | 3.37 | 42.16 |
| 34) trans-1,2-Dichloroethene | (1) | 4.922(-0.001) | 96 | 198261 | 19.632 | 16.55 | | | 0.84 | 4.22 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.926( 0.000) | 73 | 567635 | 20.327 | 17.14 | | | 0.42 | 4.22 |
| 36) n-Hexane | (1) | 5.346( 0.000) | 57 | 294224 | 21.288 | 17.95 | | | 0.84 | 4.22 |
| 37) 1,1-Dichloroethane | (1) | 5.532( 0.001) | 63 | 330467 | 19.617 | 16.54 | | | 0.84 | 4.22 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680( 0.000) | 53 | 275930 | 21.360 | 18.01 | | | 0.84 | 4.22 |
| 39) di-Isopropyl Ether | (1) | 5.654( 0.000) | 45 | 616301 | 20.374 | 17.18 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



8212

# SEDT2MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4232856

File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Sample: SEDT2MSD;4232856;2;3;MSD;;
Injected At:**22-MAR-2004 20:38**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | ( 0.000) | 59 | 555205 | 20.023 | 16.88 | | | 0.84 | 4.22 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | ( 0.000) | 96 | 212630 | 19.812 | 16.71 | | | 0.84 | 4.22 |
| 33) 1,2-Dichloroethene (total) | (1) | | | 96 | 410891 | 39.444 | 33.26 | | | 0.84 | 4.22 |
| 48) 2,2-Dichloropropane | (1) | 6.389 | ( 0.000) | 77 | 248301 | 18.455 | 15.56 | | | 0.84 | 4.22 |
| 46) 2-Butanone | (1) | 6.373 | ( 0.000) | 72 | 230472 | 172.693 | 145.61 | | | 3.37 | 8.43 |
| 49) Propionitrile | (1) | 6.437 | ( 0.000) | 54 | 250832 | 173.285 | 146.11 | | | 25.30 | 84.32 |
| 51) Methacrylonitrile | (1) | 6.665 | ( 0.000) | 67 | 748756 | 167.988 | 141.64 | | | 4.22 | 42.16 |
| 52) Bromochloromethane | (1) | 6.700 | ( 0.000) | 128 | 112976 | 19.093 | 16.10 | | | 0.84 | 4.22 |
| 53) Tetrahydrofuran | (1) | 6.777 | ( 0.000) | 71 | 156044 | 128.227 | 108.12 | | | 3.37 | 4.22 |
| 54) Chloroform | (1) | 6.822 | ( 0.000) | 83 | 317344 | 19.237 | 16.22 | | | 0.84 | 4.22 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | ( 0.000) | 97 | 275581 | 18.756 | 15.81 | | | 0.84 | 4.22 |
| 58) Cyclohexane | (1) | 7.188 | ( 0.000) | 56 | 352758 | 21.528 | 18.15 | | | 0.84 | 4.22 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | ( 0.000) | 75 | 248515 | 19.861 | 16.75 | | | 0.84 | 4.22 |
| 60) Carbon Tetrachloride | (1) | 7.326 | ( 0.000) | 117 | 231575 | 18.685 | 15.75 | | | 0.84 | 4.22 |
| 65) Benzene | (1) | 7.589 | ( 0.000) | 78 | 817394 | 20.247 | 17.07 | | | 0.42 | 4.22 |
| 61) Isobutyl Alcohol | (1) | 7.441 | ( 0.000) | 41 | 260575 | 590.733 | 498.09 | | | 84.32 | 210.79 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | ( 0.001) | 62 | 246696 | 19.316 | 16.29 | | | 0.84 | 4.22 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | ( 0.000) | 73 | 537165 | 19.949 | 16.82 | | | 0.84 | 4.22 |
| 71) n-Heptane | (1) | 7.964 | ( 0.000) | 100 | 53621 | 18.206 | 15.35 | | | 2.53 | 4.22 |
| 72) n-Butanol | (1) | 8.324 | ( 0.000) | 56 | 456479 | 1246.867 | 1051.32 | | | 92.75 | 210.79 |
| 73) Trichloroethene | (1) | 8.442 | ( 0.000) | 95 | 199909 | 19.438 | 16.39 | | | 0.84 | 4.22 |
| 74) Methylcyclohexane | (1) | 8.718 | ( 0.000) | 83 | 363917 | 19.951 | 16.82 | | | 0.84 | 4.22 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | ( 0.000) | 63 | 206614 | 20.530 | 17.31 | | | 0.84 | 4.22 |
| 77) Dibromomethane | (1) | 8.866 | ( 0.000) | 93 | 120913 | 19.703 | 16.61 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles **4232856**

File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Sample: SEDT2MSD;4232856;2;3;MSD;;
Injected At:**22-MAR-2004 20:38**
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:**X040821AA**
Analyst:**MSL01251**
Instrument ID:**HP09193.i**
Standard Reference: xm22c03.d
Prep Factor:**0.84**
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | 8.889( 0.000) | 88 | 81468 | 678.179 | 571.82 | | | 59.02 | 210.79 |
| 76) Methyl Methacrylate | (1) | 8.872( 0.000) | 69 | 169363 | 22.246 | 18.76 | | | 0.84 | 4.22 |
| 81) Bromodichloromethane | (1) | 9.075( 0.000) | 83 | 221794 | 18.244 | 15.38 | | | 0.84 | 4.22 |
| 82) 2-Nitropropane | (1) | 9.338( 0.000) | 41 | 51268 | 19.378 | 16.34 | | | 2.53 | 8.43 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620( 0.000) | 75 | 300386 | 19.305 | 16.28 | | | 0.84 | 4.22 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784( 0.000) | 43 | 1286940 | 113.715 | 95.88 | | | 2.53 | 8.43 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 533937 | 20.661 | 17.42 | | | 0.84 | 4.22 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 270724 | 19.933 | 16.81 | | | 0.84 | 4.22 |
| 90) Ethyl Methacrylate | (2) | 10.313( 0.000) | 69 | 287064 | 21.074 | 17.77 | | | 0.84 | 4.22 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410( 0.000) | 97 | 187161 | 19.722 | 16.63 | | | 0.84 | 4.22 |
| 93) Tetrachloroethene | (2) | 10.580( 0.000) | 166 | 243442 | 19.314 | 16.28 | | | 0.84 | 4.22 |
| 94) 1,3-Dichloropropane | (2) | 10.580( 0.000) | 76 | 311330 | 20.166 | 17.00 | | | 0.84 | 4.22 |
| 95) 2-Hexanone | (2) | 10.650( 0.000) | 43 | 943771 | 108.425 | 91.42 | | | 2.53 | 8.43 |
| 97) Dibromochloromethane | (2) | 10.804( 0.000) | 129 | 192114 | 18.900 | 15.94 | | | 0.84 | 4.22 |
| 99) 1,2-Dibromoethane | (2) | 10.917( 0.000) | 107 | 197242 | 20.401 | 17.20 | | | 0.84 | 4.22 |
| 101) Chlorobenzene | (2) | 11.372( 0.000) | 112 | 586944 | 19.545 | 16.48 | | | 0.84 | 4.22 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440( 0.000) | 131 | 193193 | 18.723 | 15.79 | | | 0.84 | 4.22 |
| 103) Ethylbenzene | (2) | 11.462( 0.000) | 91 | 1041094 | 21.653 | 18.26 | | | 0.84 | 4.22 |
| 105) m+p-Xylene | (2) | 11.562( 0.000) | 106 | 863377 | 43.500 | 36.68 | | | 0.84 | 4.22 |
| 92) Xylene (Total) | (2) | | 106 | 1314792 | 67.855 | 57.21 | | | 0.84 | 4.22 |
| 107) o-Xylene | (2) | 11.902( 0.000) | 106 | 451414 | 24.355 | 20.54 | | | 0.84 | 4.22 |
| 108) Styrene | (2) | 11.908( 0.000) | 104 | 611233 | 19.604 | 16.53 | | | 0.84 | 4.22 |
| 109) Bromoform | (2) | 12.069( 0.000) | 173 | 145169 | 19.179 | 16.17 | | | 0.84 | 4.22 |
| 110) Isopropylbenzene | (2) | 12.197( 0.000) | 105 | 1091059 | 22.952 | 19.35 | | | 0.84 | 4.22 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4232856

File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Sample: SEDT2MSD;4232856;2;3;MSD;;
Injected At:22-MAR-2004 20:38
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | 12.271 | ( 0.000) | 55 | 246231 | 615.669 | 519.11 | | | 21.08 | 210.79 |
| 116) Bromobenzene | (3) | 12.454 | ( 0.000) | 156 | 258844 | 21.503 | 18.13 | | | 0.84 | 4.22 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 283457 | 23.979 | 20.22 | | | 0.84 | 4.22 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | ( 0.000) | 110 | 85167 | 23.589 | 19.89 | | | 0.84 | 4.22 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | ( 0.000) | 53 | 375681 | 103.529 | 87.29 | | | 8.43 | 42.16 |
| 119) n-Propylbenzene | (3) | 12.518 | ( 0.000) | 91 | 1278631 | 25.607 | 21.59 | | | 0.84 | 4.22 |
| 120) 2-Chlorotoluene | (3) | 12.598 | ( 0.000) | 126 | 242047 | 21.938 | 18.50 | | | 0.84 | 4.22 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | ( 0.000) | 105 | 1670846 | 45.718 | 38.55 | | | 0.84 | 4.22 |
| 122) 4-Chlorotoluene | (3) | 12.678 | ( 0.000) | 126 | 247284 | 21.423 | 18.06 | | | 0.84 | 4.22 |
| 123) tert-Butylbenzene | (3) | 12.900 | ( 0.000) | 134 | 188652 | 21.373 | 18.02 | | | 0.84 | 4.22 |
| 124) Pentachloroethane | (3) | 12.925 | ( 0.000) | 167 | 156548 | 20.671 | 17.43 | | | 0.84 | 4.22 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | ( 0.000) | 105 | 3049778 | 82.177 | 69.29 | | | 0.84 | 4.22 |
| 126) sec-Butylbenzene | (3) | 13.063 | ( 0.000) | 105 | 978377 | 21.217 | 17.89 | | | 0.84 | 4.22 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | ( 0.000) | 146 | 474513 | 20.585 | 17.36 | | | 0.84 | 4.22 |
| 127) p-Isopropyltoluene | (3) | 13.160 | ( 0.000) | 119 | 1045260 | 25.829 | 21.78 | | | 0.84 | 4.22 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | ( 0.000) | 146 | 492707 | 20.357 | 17.16 | | | 0.84 | 4.22 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | ( 0.000) | 146 | 445717 | 20.026 | 16.89 | | | 0.84 | 4.22 |
| 134) n-Butylbenzene | (3) | 13.452 | ( 0.000) | 91 | 792676 | 22.157 | 18.68 | | | 0.84 | 4.22 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | ( 0.000) | 75 | 97262 | 40.539 | 34.18 | | | 1.69 | 4.22 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.591 | (-0.001) | 180 | 256182 | 14.801 | 12.48 | | | 0.84 | 4.22 |
| 139) Hexachlorobutadiene | (3) | 14.690 | (-0.001) | 225 | 116566 | 13.288 | 11.20 | | | 1.69 | 4.22 |
| 140) Naphthalene | (3) | 14.777 | (-0.002) | 128 | 26354941 | 551.831 | 465.29 | 1.41 | B E | 0.84 | 4.22 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | ( 0.000) | 180 | 234589 | 13.484 | 11.37 | | | 0.84 | 4.22 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | ( 0.000) | 142 | 13774753 | 709.002 | 597.81 | 2.55 | B E | 1.69 | 4.22 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

# SEDT2MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4232856

File: /chem/HP09193.i/04mar22b.b/xm22s13.d
Sample: SEDT2MSD;4232856;2;3;MSD;;
Injected At:22-MAR-2004 20:38
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:MSL01251
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:0.84
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.9300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: IN 6133 Butch

Analyst: [signature] Date: 3/22/04

Auditor: [signature] Date: 3/25/04

Data File: /chem/HP09193.i/04mar22b.b/xm22101.d
Date : 22-MAR-2004 16:55
Client ID: LCSX61
Sample Info: LCSX61;LCSX61;2;3;LCS;;

Column phase: DB-624

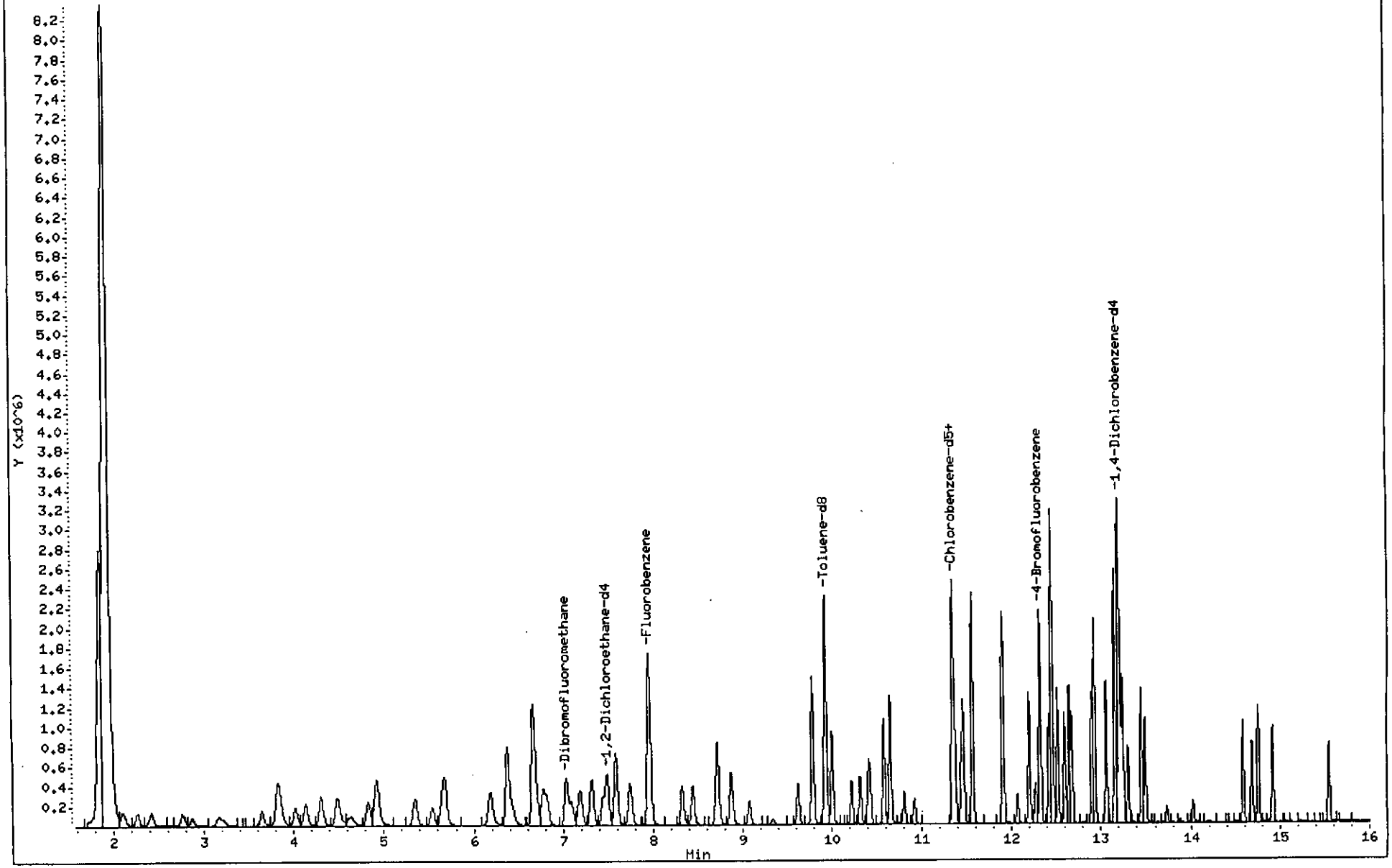
Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

luhrm 3/22/04

8217

/chem/HP09193.i/04mar22b.b/xm22101.d



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22l01.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 16:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 17:40 msl01251

Sample Name: LCSX61  Lab Sample ID: LCSX61

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 245215 | 20.198 |
| 4) Chloromethane | (1) | 2.265 | 50 | 226345 | 19.679 |
| 5) Vinyl Chloride | (1) | 2.416 | 62 | 200975 | 18.306 |
| 7) Bromomethane | (1) | 2.756 | 94 | 137605 | 18.441 |
| 8) Chloroethane | (1) | 2.865 | 64 | 115616 | 18.568 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 217168 | 17.283 |
| 16) Acrolein | (1) | 3.642 | 56 | 207118 | 138.839 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 141865 | 18.063 |
| 19) Freon 113 | (1) | 3.844 | 101 | 140789 | 17.385 |
| 20) Acetone | (1) | 3.828 | 58 | 129003 | 153.569 |
| 22) Methyl Iodide | (1) | 4.017 | 142 | 283793 | 18.614 |
| 23) 2-Propanol | (1) | 4.017 | 45 | 101822 | 141.467 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 540484 | 18.476 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 274838 | 18.368 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 159588 | 22.081 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 184558 | 18.988 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.512 | 65 | 262626 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.640 | 59 | 242012 | 180.557 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 351599 | 104.683 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 170469 | 18.314 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.929 | 73 | 517226 | 20.097 |
| 36) n-Hexane | (1) | 5.349 | 57 | 230099 | 18.064 |
| 37) 1,1-Dichloroethane | (1) | 5.538 | 63 | 291772 | 18.793 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683 | 53 | 232557 | 19.532 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 557008 | 19.979 |
| 42) Ethyl t-Butyl Ether | (1) | 6.190 | 59 | 499522 | 19.546 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 189592 | 19.168 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 360061 | 37.482 |
| 48) 2,2-Dichloropropane | (1) | 6.392 | 77 | 214448 | 17.293 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 201458 | 163.785 |
| 49) Propionitrile | (1) | 6.440 | 54 | 210828 | 158.030 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 665150 | 161.916 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 102995 | 18.886 |
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 139348 | 124.241 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22l01.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 16:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 17:40 msl01251

Sample Name: LCSX61  Lab Sample ID: LCSX61

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.822 | 83 | 290129 | 19.082 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 238258 | 17.594 |
| 58) Cyclohexane | (1) | 7.197 | 56 | 278878 | 18.466 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 207834 | 18.022 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 200682 | 17.569 |
| 65) Benzene | (1) | 7.586 | 78 | 711795 | 19.131 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 194571 | 478.596 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 230182 | 19.555 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 478344 | 19.275 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1824081 | 50.000 |
| 71) n-Heptane | (1) | 7.961 | 100 | 48299 | 17.793 |
| 72) n-Butanol | (1) | 8.327 | 56 | 299176 | 886.663 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 172539 | 18.203 |
| 74) Methylcyclohexane | (1) | 8.719 | 83 | 299539 | 17.818 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 183349 | 19.767 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 110703 | 19.573 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 50659 | 457.557 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 144814 | 20.639 |
| 81) Bromodichloromethane | (1) | 9.078 | 83 | 205621 | 18.351 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 45021 | 18.463 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 269397 | 18.785 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 1128935 | 108.234 |
| 88) Toluene | (2) | 10.005 | 92 | 463512 | 18.962 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 249469 | 19.419 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 255921 | 19.863 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 176279 | 19.638 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 205630 | 17.247 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 287517 | 19.689 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 839606 | 101.977 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 181058 | 18.832 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 177783 | 19.440 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 1424311 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 524922 | 18.480 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 180931 | 18.538 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22l01.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 16:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 17:40 msl01251

Sample Name: LCSX61  Lab Sample ID: LCSX61

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 837995 | 18.426 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 686723 | 36.579 |
| 92) Xylene (Total) | (2) | | 106 | 1019006 | 55.532 |
| 107) o-Xylene | (2) | 11.902 | 106 | 332283 | 18.953 |
| 108) Styrene | (2) | 11.908 | 104 | 536505 | 18.192 |
| 109) Bromoform | (2) | 12.069 | 173 | 132156 | 18.459 |
| 110) Isopropylbenzene | (2) | 12.200 | 105 | 834313 | 18.555 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 168536 | 445.513 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 245405 | 18.911 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 255677 | 20.064 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 80828 | 20.767 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 362438 | 92.653 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 993639 | 18.459 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 219943 | 18.492 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 721008 | 18.301 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 227257 | 18.263 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 174564 | 18.346 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 149432 | 18.304 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 743030 | 18.573 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 910423 | 18.315 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 454869 | 18.305 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 815819 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 790322 | 18.116 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 465848 | 17.855 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 436225 | 18.181 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 684220 | 17.742 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 46245 | 17.880 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 308354 | 16.526 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 152552 | 16.132 |
| 140) Naphthalene | (3) | 14.761 | 128 | 890635 | 17.299 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 310821 | 16.573 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | 142 | 401333 | 9.952 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 426523 | 49.288 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 111160 | 47.914 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04mar22b.b/xm22l01.d  Instrument ID: HP09193.i
Injection date and time: 22-MAR-2004 16:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04mar22b.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 12-MAR-2004 08:04
Date, time and analyst ID of latest file update: 22-Mar-2004 17:40 msl01251

Sample Name: LCSX61  Lab Sample ID: LCSX61

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1774935 | 50.580 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 679844 | 48.171 |

$ = Compound is a surrogate standard.

# LCSX61

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX61

File: /chem/HP09193.i/04mar22b.b/xm22101.d
Sample: LCSX61;LCSX61;2;3;LCS;;
Injected At:22-MAR-2004 16:55
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.512(-0.006) | 913 | 65 | 262626( 5) | 250.00 | |
| 69) Fluorobenzene | 7.955(-0.003) | 1986 | 96 | 1824081( 3) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347(-0.003) | 3043 | 117 | 1424311( 2) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.003) | 3621 | 152 | 815819( -2) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.001) | 113 | 426523 | 49.288 | 99% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 111160 | 47.914 | 96% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1774935 | 50.580 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 679844 | 48.171 | 96% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105( 0.000) | 85 | 245215 | 20.198 | 20.20 | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | 2.265( 0.000) | 50 | 226345 | 19.679 | 19.68 | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | 2.416( 0.000) | 62 | 200975 | 18.306 | 18.31 | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | 2.756( 0.001) | 94 | 137605 | 18.441 | 18.44 | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | 2.865( 0.001) | 64 | 115616 | 18.568 | 18.57 | | | 2.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | 3.161( 0.001) | 101 | 217168 | 17.283 | 17.28 | | | 2.00 | 5.00 |
| 16) Acrolein | (1) | 3.642( 0.000) | 56 | 207118 | 138.839 | 138.84 | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | 3.809( 0.001) | 96 | 141865 | 18.063 | 18.06 | | | 1.00 | 5.00 |
| 19) Freon 113 | (1) | 3.844( 0.000) | 101 | 140789 | 17.385 | 17.39 | | | 2.00 | 10.00 |
| 20) Acetone | (1) | 3.828( 0.001) | 58 | 129003 | 153.569 | 153.57 | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | 4.017( 0.000) | 142 | 283793 | 18.614 | 18.61 | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | 4.017( 0.000) | 45 | 101822 | 141.467 | 141.47 | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | 4.133( 0.001) | 76 | 540484 | 18.476 | 18.48 | | | 1.00 | 5.00 |
| 26) Allyl Chloride | (1) | 4.303( 0.001) | 41 | 274838 | 18.368 | 18.37 | | | 1.00 | 5.00 |
| 27) Methyl Acetate | (1) | 4.313( 0.000) | 43 | 159588 | 22.081 | 22.08 | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | 4.486( 0.000) | 84 | 184558 | 18.988 | 18.99 | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | 4.640( 0.000) | 59 | 242012 | 180.557 | 180.56 | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | 4.826( 0.000) | 53 | 351599 | 104.683 | 104.68 | | | 4.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919( 0.000) | 96 | 170469 | 18.314 | 18.31 | | | 1.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.929( 0.000) | 73 | 517226 | 20.097 | 20.10 | | | 0.50 | 5.00 |
| 36) n-Hexane | (1) | 5.349( 0.000) | 57 | 230099 | 18.064 | 18.06 | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | 5.538( 0.000) | 63 | 291772 | 18.793 | 18.79 | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.683( 0.000) | 53 | 232557 | 19.532 | 19.53 | | | 1.00 | 5.00 |
| 39) di-Isopropyl Ether | (1) | 5.654( 0.001) | 45 | 557008 | 19.979 | 19.98 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



6222

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX61

File: /chem/HP09193.i/04mar22b.b/xm22101.d
Sample: LCSX61;LCSX61;2;3;LCS;;
Injected At:22-MAR-2004 16:55
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | 6.190 | ( 0.000) | 59 | 499522 | 19.546 | 19.55 | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | ( 0.000) | 96 | 189592 | 19.168 | 19.17 | | | 1.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | 96 | 360061 | 37.482 | 37.48 | | | 1.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | 6.392 | ( 0.000) | 77 | 214448 | 17.293 | 17.29 | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | 6.376 | ( 0.000) | 72 | 201458 | 163.785 | 163.78 | | | 4.00 | 10.00 |
| 49) Propionitrile | (1) | 6.440 | ( 0.000) | 54 | 210828 | 158.030 | 158.03 | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | 6.668 | ( 0.000) | 67 | 665150 | 161.916 | 161.92 | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | 6.703 | ( 0.000) | 128 | 102995 | 18.886 | 18.89 | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | 6.777 | ( 0.000) | 71 | 139348 | 124.241 | 124.24 | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | 6.822 | ( 0.000) | 83 | 290129 | 19.082 | 19.08 | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | ( 0.000) | 97 | 238258 | 17.594 | 17.59 | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | 7.197 | ( 0.000) | 56 | 278878 | 18.466 | 18.47 | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | ( 0.000) | 75 | 207834 | 18.022 | 18.02 | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | 7.326 | ( 0.001) | 117 | 200682 | 17.569 | 17.57 | | | 1.00 | 5.00 |
| 65) Benzene | (1) | 7.586 | ( 0.000) | 78 | 711795 | 19.131 | 19.13 | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | 7.441 | ( 0.000) | 41 | 194571 | 478.596 | 478.60 | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | ( 0.001) | 62 | 230182 | 19.555 | 19.56 | | | 1.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | ( 0.000) | 73 | 478344 | 19.275 | 19.27 | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | 7.961 | ( 0.001) | 100 | 48299 | 17.793 | 17.79 | | | 3.00 | 5.00 |
| 72) n-Butanol | (1) | 8.327 | ( 0.000) | 56 | 299176 | 886.663 | 886.66 | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | 8.443 | ( 0.000) | 95 | 172539 | 18.203 | 18.20 | | | 1.00 | 5.00 |
| 74) Methylcyclohexane | (1) | 8.719 | ( 0.000) | 83 | 299539 | 17.818 | 17.82 | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | ( 0.000) | 63 | 183349 | 19.767 | 19.77 | | | 1.00 | 5.00 |
| 77) Dibromomethane | (1) | 8.869 | ( 0.000) | 93 | 110703 | 19.573 | 19.57 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE

# = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX61

File: /chem/HP09193.i/04mar22b.b/xm22101.d
Sample: LCSX61;LCSX61;2;3;LCS;;
Injected At:22-MAR-2004 16:55
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | 8.892 | ( 0.000) | 88 | 50659 | 457.557 | 457.56 | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | 8.869 | ( 0.000) | 69 | 144814 | 20.639 | 20.64 | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | 9.078 | ( 0.000) | 83 | 205621 | 18.351 | 18.35 | | | 1.00 | 5.00 |
| 82) 2-Nitropropane | (1) | 9.338 | ( 0.000) | 41 | 45021 | 18.463 | 18.46 | | | 3.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | ( 0.000) | 75 | 269397 | 18.785 | 18.79 | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | ( 0.001) | 43 | 1128935 | 108.234 | 108.23 | | | 3.00 | 10.00 |
| 88) Toluene | (2) | 10.005 | ( 0.000) | 92 | 463512 | 18.962 | 18.96 | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | ( 0.000) | 75 | 249469 | 19.419 | 19.42 | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | 10.317 | ( 0.000) | 69 | 255921 | 19.863 | 19.86 | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | ( 0.000) | 97 | 176279 | 19.638 | 19.64 | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 205630 | 17.247 | 17.25 | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | ( 0.000) | 76 | 287517 | 19.689 | 19.69 | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | 10.650 | ( 0.000) | 43 | 839606 | 101.977 | 101.98 | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 181058 | 18.832 | 18.83 | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | ( 0.000) | 107 | 177783 | 19.440 | 19.44 | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | 11.372 | ( 0.000) | 112 | 524922 | 18.480 | 18.48 | | | 1.00 | 5.00 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | ( 0.000) | 131 | 180931 | 18.538 | 18.54 | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 837995 | 18.426 | 18.43 | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 686723 | 36.579 | 36.58 | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | 106 | 1019006 | 55.532 | 55.53 | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | 11.902 | ( 0.000) | 106 | 332283 | 18.953 | 18.95 | | | 1.00 | 5.00 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 536505 | 18.192 | 18.19 | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | 12.069 | ( 0.000) | 173 | 132156 | 18.459 | 18.46 | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | 12.200 | ( 0.000) | 105 | 834313 | 18.555 | 18.56 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX61

File: /chem/HP09193.i/04mar22b.b/xm22101.d
Sample: LCSX61;LCSX61;2;3;LCS;;
Injected At:22-MAR-2004 16:55
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | 12.268 | ( 0.000) | 55 | 168536 | 445.513 | 445.51 | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | 12.454 | ( 0.000) | 156 | 245405 | 18.911 | 18.91 | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 255677 | 20.064 | 20.06 | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | ( 0.000) | 110 | 80828 | 20.767 | 20.77 | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | ( 0.000) | 53 | 362438 | 92.653 | 92.65 | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | 12.521 | ( 0.000) | 91 | 993639 | 18.459 | 18.46 | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | 12.598 | ( 0.000) | 126 | 219943 | 18.492 | 18.49 | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | ( 0.000) | 105 | 721008 | 18.301 | 18.30 | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | 12.675 | ( 0.000) | 126 | 227257 | 18.263 | 18.26 | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | 12.900 | ( 0.000) | 134 | 174564 | 18.346 | 18.35 | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | 12.925 | ( 0.000) | 167 | 149432 | 18.304 | 18.30 | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | ( 0.000) | 105 | 743030 | 18.573 | 18.57 | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | 13.063 | ( 0.000) | 105 | 910423 | 18.315 | 18.32 | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | ( 0.000) | 146 | 454869 | 18.305 | 18.31 | | | 1.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | 13.160 | ( 0.000) | 119 | 790322 | 18.116 | 18.12 | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | ( 0.000) | 146 | 465848 | 17.855 | 17.86 | | | 1.00 | 5.00 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | ( 0.000) | 146 | 436225 | 18.181 | 18.18 | | | 1.00 | 5.00 |
| 134) n-Butylbenzene | (3) | 13.452 | ( 0.000) | 91 | 684220 | 17.742 | 17.74 | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | ( 0.000) | 75 | 46245 | 17.880 | 17.88 | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | ( 0.000) | 180 | 308354 | 16.526 | 16.53 | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | 14.687 | ( 0.000) | 225 | 152552 | 16.132 | 16.13 | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | 14.761 | (-0.001) | 128 | 890635 | 17.299 | 17.30 | 1.41 | B | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | ( 0.000) | 180 | 310821 | 16.573 | 16.57 | | | 1.00 | 5.00 |
| 143) 2-Methylnaphthalene | (3) | 15.553 | (-0.001) | 142 | 401333 | 9.952 | 9.95 | 2.55 | B | 2.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX61

File: /chem/HP09193.i/04mar22b.b/xm22101.d
Sample: LCSX61;LCSX61;2;3;LCS;;
Injected At:22-MAR-2004 16:55
Calibration Time: 12-MAR-2004 08:04
Target Method: X8260SL.m
Blank Reference: xm22b04.d
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040821AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xm22c03.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: [signature] Date: 3/22/04

Auditor: [signature] Date: 3/25/04



8226

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation

Sodium Bisulfate Dilution Lot #: 04 060 01

Balance ID: 531

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Sample Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006126 | | | | | | | | | | | | | |
| Lab Number 4232749 | MC1105 | 3/8/04 | Sample ID (if no lab no.) | 3/10/04 | 1430 | 32.60 | 37.81 | 5.21 | 3/11/04 | 1753 | LC943 | Y | N |
| Bottle Code 93B | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006127 | | | | | | | | | | | | | |
| Lab Number 4232853 | MC1109 | 3/8/04 | Sample ID (if no lab no.) | 3/10/04 | 1120 | 32.69 | 38.78 | 6.09 | 3/11/04 | 1755 | LC943 | N | N |
| Bottle Code 93A | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006128 | | | | | | | | | | | | | |
| Lab Number 4232853 | MC1109 | 3/8/04 | Sample ID (if no lab no.) | 3/10/04 | 1120 | 32.73 | 38.63 | 5.90 | 3/11/04 | 1756 | LC943 | N | N |
| Bottle Code 93B | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006129 | | | | | | | | | | | | | |
| Lab Number 4232854 | MC1109 | 3/8/04 | Sample ID (if no lab no.) | 3/10/04 | 1430 | 32.76 | 38.74 | 5.98 | 3/11/04 | 1758 | LC943 | N | N |
| Bottle Code 93A | Comments | | | | | | | | | | | | |

Reviewed by: _____ Date: _____



044579 92

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation

Sodium Bisulfate Dilution Lot #: 04 060 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Sample Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006130 | | | | | | | | | | | | | |
| Lab Number: 4232854 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.88 | 38.96 | 6.08 | 3 11 04 | 1159 | LC943 | N | N |
| Bottle Code: 93B | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006131 | | | | | | | | | | | | | |
| Lab Number: 4232855 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.68 | 38.61 | 5.93 | 3 11 04 | 1801 11 04 | LC943 | N | N |
| Bottle Code: 93A | Comments | | | | | | | | | LC943 3-11-04 | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006132 | | | | | | | | | | | | | |
| Lab Number: 4232855 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.67 | 38.75 | 6.08 | 3 11 04 | 1802 | LC943 | N | N |
| Bottle Code: 93B | Comments | | | | | | | | | LC943 3-11-04 | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006133 | | | | | | | | | | | | | |
| Lab Number: 4232856 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 143 | 32.82 | 38.75 | 5.93 | 3 11 04 | 1804 | LC943 | N | N |
| Bottle Code: 93A | Comments | | | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation

Sodium Bisulfate Dilution Lot #: 04060 01

Balance ID: 5311 (8235)

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Sample Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006134 | | | | | | | | | | | | | |
| Lab Number: 42 32856 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.77 | 38.71 | 5.94 | 3 11 04 | 1805 | LC943 | N | N |
| Bottle Code: 93B | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006135 | | | | | | | | | | | | | |
| Lab Number: 42 32858 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.84 | 38.45 | 5.61 | 3 11 04 | 1807 | LC943 | N | N |
| Bottle Code: 93A | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006136 | | | | | | | | | | | | | |
| Lab Number: 42 32858 | MC1109 | 3 8 04 | Sample ID (if no lab no.) | 3 10 04 | 1430 | 32.82 | 38.96 | 6.14 | 3 11 04 | 1808 | LC943 | N | N |
| Bottle Code: 93B | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006137 | | | | | | | | | | | | | |
| Lab Number | MC1109 | 3 8 04 | Sample ID (if no lab no.) | | | 32.72 | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | | | |

Reviewed by: _____ Date: _____



044579 94

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation

Sodium Bisulfate Dilution Lot #: 040750 1

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Sample Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006643 | | | | | | | | | | | | | |
| Lab Number | SY/035 | 3/17/04 | Sample ID (if no lab no.) | | | 32.80 | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006644 | | | | | | | | | | | | | |
| Lab Number | SY/035 | 3/17/04 | Sample ID (if no lab no.) | | | 32.80 | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006645 | | | | | | | | | | | | | |
| Lab Number | SY/035 | 3/17/04 | Sample ID (if no lab no.) | | | 32.97 | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -006510 | | | | | | | | | | | | | |
| Lab Number 424/1035 | SY/035 | 3/17/04 | Sample ID (if no lab no.) | 3/24/04 | 1025 | 32.50 | 38.70 | 6.20 | 3/26/04 | — | SY/035 | N | — |
| Bottle Code 932 | Comments | | | | | | | | | | | | |

**Vials Sent into Field**

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation

Sodium Bisulfate Dilution Lot #: 04 07501

Balance ID: 331

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Sample Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted]A-006511 | [redacted] | 3/19/04 | Sample ID (if no lab no.) | 3/24/04 | 1045 | 32.80 | 39.64 | 6.84 | 3/26/04 | — | SY/035 | N | — |
| Lab Number 424/1635 | | | | | | | | | | | | | |
| Bottle Code 93A | Comments: Vials Sent into Field | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted]-006512 | [redacted] | 3/19/04 | Sample ID (if no lab no.) | 3/24/04 | 1045 | 32.65 | 38.87 | 6.22 | 3/26/04 | — | SY/035 | N | — |
| Lab Number 424/1634 | | | | | | | | | | | | | |
| Bottle Code 93B | Comments: Vials Sent into Field | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted]A-006513 | [redacted] | 3/19/04 | Sample ID (if no lab no.) | 3/24/04 | 1045 | 32.74 | 39.88 | 7.14 | 3/26/04 | — | SY/035 | N | — |
| Lab Number 424/1634 | | | | | | | | | | | | | |
| Bottle Code 93A | Comments: Vials Sent into Field | | | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Client: | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil prepared | Time prepared | Prepared by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [redacted]-006514 | [redacted] | 3/19/04 | Sample ID (if no lab no.) | 3/23/04 | 1600 | 30.99 | 32.99 | — | 3/24/04 | — | SY/035 | — | — |
| Lab Number 424/1640 | | | | | | | | | | | | | |
| Bottle Code 93A | Comments: Trip Blank — Vials Sent into Field | | | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst: LCM ** Shift #2 Analyst: _____ ** Shift #3 Analyst: _____ *

Comment Code:

| | | | |
|---|---|---|---|
| R | = Reinjection necessary | X | = Sample sent to be reextracted |
| S | = Surrogate problem | I | = Internal Standard problem |
| NU | = Not used | F | = Further dilution required |
| MR | = Meets requirements | IUO | = Internal use only |
| Cz | = Confirms z, (z = S, I or X) | T | = Injected outside valid tune period |

Other problems or comments are as follows:

8260B LOW LEVEL ENCORE SOILS

Data Directory Path is - D:\DATA\04MAR12A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XM12T01.D | BFB 50 NG MAR09 | BFB 50NG MAR09 | 12 Mar 04 | 07:40 | | | MR |
| XM12I01.D | VSTD300 | VSTD300 | 12 Mar 04 | 08:04 | | | MR |
| XM12I02.D | VSTD100 | VSTD100 | 12 Mar 04 | 08:31 | | | MR |
| XM12I03.D | VSTD050 | VSTD050 | 12 Mar 04 | 08:58 | | | MR |
| XM12I04.D | VSTD020 | VSTD020 | 12 Mar 04 | 09:26 | | | MR |
| XM12I05.D | VSTD010 | VSTD010 | 12 Mar 04 | 09:53 | | | MR |
| XM12I06.D | VSTD004 | VSTD004 | 12 Mar 04 | 10:19 | | | NU |
| XM12M01.D | VSTD001 | 1 PPB MDL | 12 Mar 04 | 10:46 | | | NU |
| XM12I07.D | VSTD004 | VSTD004 | 12 Mar 04 | 11:13 | | | MR |
| XM12M02.D | VSTD001 | 1 PPB MDL | 12 Mar 04 | 11:40 | | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst:_____** Shift #2 Analyst:___MSL_____** Shift #3 Analyst:_____*

Comment Code:

| | | | |
|---|---|---|---|
| R | = Reinjection necessary | X | = Sample sent to be reextracted |
| S | = Surrogate problem | I | = Internal Standard problem |
| NU | = Not used | F | = Further dilution required |
| MR | = Meets requirements | IUO | = Internal use only |
| Cz | = Confirms z, (z = S, I or X) | T | = Injected outside valid tune period |

Other problems or comments are as follows:

*_____*
*_____8260B LOW SOIL_____*
*_____*
*_____*

Data Directory Path is - D:\DATA\04MAR22B\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XM22T02.D | BFB 50 NG MAR09 | BFB 50NG MAR09 | 22 Mar 04 | 14:06 | | | MR |
| XM22C03.D | VSTD050 | VSTD050 | 22 Mar 04 | 14:31 | | | MR |
| XM22C04.D | VSTD050 | VSTD050 | 22 Mar 04 | 14:58 | | | NU |
| XM22B03.D | VBLKX61 | VBLKX61 | 22 Mar 04 | 15:25 | X040821AA | | NU |
| XM22C05.D | VSTD050 | VSTD050 | 22 Mar 04 | 16:02 | | | MR |
| XM22B04.D | VBLKX61 | VBLKX61 | 22 Mar 04 | 16:29 | X040821AA | | MR |
| XM22L01.D | LCSX61 | LCSX61 | 22 Mar 04 | 16:55 | X040821AA | | MR |
| XM22L02.D | LCS1X61 | LCS1X61 | 22 Mar 04 | 17:22 | X040821AA | | NU |
| XM22L03.D | LCS1X61 | LCS1X61 | 22 Mar 04 | 18:17 | X040821AA | | MR |
| XM22S10.D | SEDT1 | 4232853 | 22 Mar 04 | 19:12 | X040821AA | | MR |
| XM22S11.D | SEDT2 | 4232854 | 22 Mar 04 | 19:39 | X040821AA | | MR |
| XM22S12.D | SEDT2MS | 4232855 | 22 Mar 04 | 20:11 | X040821AA | | MR |
| XM22S13.D | SEDT2MSD | 4232856 | 22 Mar 04 | 20:38 | X040821AA | | MR |
| XM22S14.D | SEDT2MS1 | 4232855 | 22 Mar 04 | 21:05 | X040821AA | | MR |
| XM22S15.D | SEDT2MSD1 | 4232856 | 22 Mar 04 | 21:32 | X040821AA | | MR |
| XM22S16.D | T2-FD | 4232858 | 22 Mar 04 | 21:59 | X040821AA | | MR |
| XM22S20.D | MVB31 | 4238263 | 22 Mar 04 | 22:26 | X040821AA | | |
| XM22S21.D | MVI61 | 4237075 | 22 Mar 04 | 22:53 | X040821AA | | |
| XM22S22.D | MVI26 | 4237076 | 22 Mar 04 | 23:20 | X040821AA | | |
| XM22S23.D | MVI36 | 4237072 | 22 Mar 04 | 23:47 | X040821AA | | |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst: LCM ** Shift #2 Analyst: MSL ** Shift #3 Analyst: _____ *

Comment Code:

| | | | |
|---|---|---|---|
| R = | Reinjection necessary | X = | Sample sent to be reextracted |
| S = | Surrogate problem | I = | Internal Standard problem |
| NU = | Not used | F = | Further dilution required |
| MR = | Meets requirements | IUO = | Internal use only |
| Cz = | Confirms z, (z = S, I or X) | T = | Injected outside valid tune period |

Other problems or comments are as follows:

*

*8260B LOW SOIL APPX ENCORE

*

*

Data Directory Path is - D:\DATA\04MAR29A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XM29T01.D | BFB 50 NG MAR09 | BFB 50NG MAR09 | 29 Mar 04 | 08:11 | | | MR |
| XM29C01.D | VSTD020 | VSTD020 | 29 Mar 04 | 08:34 | | | MR |
| XM29B01.D | VBLKX66 | VBLKX66 | 29 Mar 04 | 09:01 | X040821AC | | NU |
| XM29C02.D | VSTD020 | VSTD020 | 29 Mar 04 | 09:29 | | | MR |
| XM29B02.D | VBLKX66 | VBLKX66 | 29 Mar 04 | 09:56 | X040821AC | | NU |
| XM29B03.D | VBLKX66 | VBLKX66 | 29 Mar 04 | 10:36 | X040821AC | | MR |
| XM29S01.D | STCKPRE | 4235623 | 29 Mar 04 | 11:13 | X040821AC | | CI |
| XM29S02.D | 5GPTB | 4241640 | 29 Mar 04 | 11:40 | X040821AC | | MR |
| XM29S03.D | 5GP21 | 4241634 | 29 Mar 04 | 12:07 | X040821AC | | MR |
| XM29S04.D | TGP2D | 4241635 | 29 Mar 04 | 12:34 | X040821AC | | MR |
| XM29S05.D | GLAUP | 4243034 | 29 Mar 04 | 13:14 | X040821BC | | I |
| XM29S06.D | GLADN | 4243035 | 29 Mar 04 | 13:41 | X040821BC | | I |
| XM29S07.D | GLADNMS | 4243036 | 29 Mar 04 | 14:08 | X040821BC | | MR |
| XM29S08.D | GLADNMSD | 4243037 | 29 Mar 04 | 14:35 | X040821BC | | MR |
| XM29S09.D | GLADNMS1 | 4243036 | 29 Mar 04 | 15:02 | X040821BC | | MR |
| XM29S10.D | GLADNMSD1 | 4243037 | 29 Mar 04 | 15:28 | X040821BC | | MR |
| XM29S11.D | GLAUPRE | 4243034 | 29 Mar 04 | 15:56 | X040821BC | | CI |
| XM29S12.D | GLADNRE | 4243035 | 29 Mar 04 | 16:23 | X040821BC | | CI |

# Semivolatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance Summary

## CASE NARRATIVE

**Client: Draper Aden Associates, Inc.**
**SDG #: RAV03**

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

**SAMPLE NUMBER(S) :**

| LL #'s | Sample Code | Matrix Soil | Comments |
|---|---|---|---|
| 4241628 | 5GP17 | X | |
| 4241629 | 5GP18 | X | |
| 4241630 | 5GP19 | X | |
| 4241631 | 5GP20 | X | Unspiked |
| 4241632 | 5GP20MS | X | Matrix Spike |
| 4241633 | 5GP20MSD | X | Matrix Spike Dup |
| 4241634 | 5GP21 | X | |
| 4241636 | 5GP22 | X | |
| 4241637 | 2222D | X | |
| 4241638 | 5GP23 | X | |
| 4241639 | 5GP24 | X | |

**LABORATORY SUBMITTED QC:**

| | | | |
|---|---|---|---|
| SBLKLB085 | SBLKLB0853 | X | Method Blank |
| 085LBLCS | 085LBLCS3 | X | Lab Control Sample |

**SAMPLE PREPARATION:**

No problems were encountered during the extraction of these samples.

**ANALYSIS:**

The method used for analysis was SW-846 8270C.

6237

## Case Narrative (continued)
## SDG: RAV03

All samples were analyzed for the SOW OLM03.2 list of semivolatile compounds.

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The recovery of fluoranthene in 085LBLCS3 was above QC limits. This compound was not detected in sample analysis therefore no further action was taken.

All other QC was within specifications.

### DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratchford for CJN Date: 4-1-04

Charles J. Neslund
Group Leader, GC/MS Semivolatiles

8238

# QC Summary

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: cc360.d DFTPP Injection Date: 03/20/04

Instrument ID: HP06667 DFTPP Injection Time: 07:21

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 47.1 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 58.5 |
| 70 | Less than 2.0% of mass 69 | 0.3 ( 0.52)1 |
| 127 | 40.0 - 60.0% of mass 198 | 54.7 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.55 |
| 275 | 10.0 - 30.0% of mass 198 | 21.8 |
| 365 | Greater than 1.00% of mass 198 | 2.41 |
| 441 | Present, and less than mass 443 | 7.25 |
| 442 | Greater than 40.0 % of mass 198 | 52.3 |
| 443 | 17.0 - 23.0% of mass 442 | 10.2 ( 19.5)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0754 | cc361.d | 03/20/04 | 07:46 |
| 02 | SSTD080 | STD0754 | cc362.d | 03/20/04 | 08:52 |
| 03 | SSTD120 | STD0754 | cc363.d | 03/20/04 | 09:35 |
| 04 | SSTD030 | STD0754 | cc364.d | 03/20/04 | 10:18 |
| 05 | SSTD015 | STD0754 | cc365.d | 03/20/04 | 11:01 |
| 06 | SSTD005 | STD0754 | cc366.d | 03/20/04 | 11:44 |
| 07 | SSTD001 | 8270MDL0754 | cc367.d | 03/20/04 | 12:27 |
| 08 | SSTD050 | ICV0754 | cc368.d | 03/20/04 | 13:10 |

8240

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: cc460.d DFTPP Injection Date: 03/26/04

Instrument ID: HP06667 DFTPP Injection Time: 04:55

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 45.0 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 56.2 |
| 70 | Less than 2.0% of mass 69 | 0.41 ( 0.72)1 |
| 127 | 40.0 - 60.0% of mass 198 | 53.9 / |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.51 |
| 275 | 10.0 - 30.0% of mass 198 | 19.7 |
| 365 | Greater than 1.00% of mass 198 | 2.44 |
| 441 | Present, and less than mass 443 | 11.7 |
| 442 | Greater than 40.0 % of mass 198 | 76.5 |
| 443 | 17.0 - 23.0% of mass 442 | 14.6 ( 19.1)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0754 | cc461.d | 03/26/04 | 05:17 |
| 02 | SBLKLB0853 | SBLKLB085 | cc462.d | 03/26/04 | 06:13 |
| 03 | 085LBLCS3 | 085LBLCS | cc463.d | 03/26/04 | 06:56 |
| 04 | 5GP20 | 4241631 | cc464.d | 03/26/04 | 07:39 |
| 05 | 5GP20MS | 4241632 | cc465.d | 03/26/04 | 08:21 |
| 06 | 5GP20MSD | 4241633 | cc466.d | 03/26/04 | 09:04 |
| 07 | 5GP17 | 4241628 | cc467.d | 03/26/04 | 09:47 |
| 08 | 5GP18 | 4241629 | cc468.d | 03/26/04 | 10:30 |
| 09 | 5GP19 | 4241630 | cc469.d | 03/26/04 | 11:12 |
| 10 | 5GP21 | 4241634 | cc470.d | 03/26/04 | 11:55 |
| 11 | 5GP22 | 4241636 | cc471.d | 03/26/04 | 12:38 |
| 12 | 2222D | 4241637 | cc472.d | 03/26/04 | 13:21 |
| 13 | 5GP23 | 4241638 | cc473.d | 03/26/04 | 14:04 |
| 14 | 5GP24 | 4241639 | cc474.d | 03/26/04 | 14:46 |

6241

# SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV03

| | LL #'s | EPA SAMPLE NO. | S1 (2FP) # | S2 (PHL) # | S3 (TBP) # | S4 (NBZ) # | S5 (TPH) # | S6 (FBP) # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 4241628 | 5GP17 | 94 | 91 | 86 | 66 | 116 | 104 | 0 |
| 02 | 4241629 | 5GP18 | 92 | 88 | 106 | 65 | 116 | 103 | 0 |
| 03 | 4241630 | 5GP19 | 91 | 86 | 100 | 63 | 112 | 98 | 0 |
| 04 | 4241631 | 5GP20 | 88 | 83 | 98 | 64 | 108 | 97 | 0 |
| 05 | 4241632 | 5GP20MS | 88 | 83 | 96 | 69 | 103 | 93 | 0 |
| 06 | 4241633 | 5GP20MSD | 92 | 85 | 100 | 72 | 107 | 97 | 0 |
| 07 | 4241634 | 5GP21 | 88 | 83 | 102 | 62 | 112 | 100 | 0 |
| 08 | 4241636 | 5GP22 | 89 | 84 | 97 | 63 | 113 | 95 | 0 |
| 09 | 4241637 | 2222D | 95 | 86 | 106 | 65 | 118 | 101 | 0 |
| 10 | 4241638 | 5GP23 | 94 | 86 | 101 | 63 | 115 | 98 | 0 |
| 11 | 4241639 | 5GP24 | 93 | 84 | 100 | 63 | 113 | 100 | 0 |
| 12 | SBLKLB085 | SBLKLB0853 | 92 | 85 | 102 | 65 | 111 | 100 | 0 |
| 13 | 085LBLCS | 085LBLCS3 | 92 | 88 | 102 | 73 | 108 | 95 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (41-119) |
| S2 (PHL) = Phenol-d6 | (45-120) |
| S3 (TBP) = 2,4,6-Tribromophenol | (46-136) |
| S4 (NBZ) = Nitrobenzene-d5 | (47-128) |
| S5 (TPH) = Terphenyl-d14 | (49-133) |
| S6 (FBP) = 2-Fluorobiphenyl | (55-123) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

8242



FORM II SV-1

# SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKLB0853

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: cc462.d Lab Sample ID: SBLKLB085

Date Extracted: 03/25/04 Extraction: Sonc

Date Analyzed: 03/26/04 Time Analyzed: 06:13

Matrix (soil/water): SOIL Level: (low/med) LOW

Instrument ID: HP06667

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 085LBLCS3 | 085LBLCS | cc463.d | 03/26/04 |
| 02 | 5GP20 | 4241631 | cc464.d | 03/26/04 |
| 03 | 5GP20MS | 4241632 | cc465.d | 03/26/04 |
| 04 | 5GP20MSD | 4241633 | cc466.d | 03/26/04 |
| 05 | 5GP17 | 4241628 | cc467.d | 03/26/04 |
| 06 | 5GP18 | 4241629 | cc468.d | 03/26/04 |
| 07 | 5GP19 | 4241630 | cc469.d | 03/26/04 |
| 08 | 5GP21 | 4241634 | cc470.d | 03/26/04 |
| 09 | 5GP22 | 4241636 | cc471.d | 03/26/04 |
| 10 | 2222D | 4241637 | cc472.d | 03/26/04 |
| 11 | 5GP23 | 4241638 | cc473.d | 03/26/04 |
| 12 | 5GP24 | 4241639 | cc474.d | 03/26/04 |

COMMENTS:

0243

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKLB0853

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLB085

Sample wt/vol: 30 (g/mL) G Lab File ID: cc462.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL UG/KG | Q |
|---|---|---|---|---|
| 108-95-2 | Phenol | | 33 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | | 33 | U |
| 95-57-8 | 2-Chlorophenol | | 33 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 33 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 33 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 33 | U |
| 95-48-7 | 2-Methylphenol | | 33 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | | 33 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | | 33 | U |
| 106-44-5 | 4-Methylphenol | | 67 | U |
| 67-72-1 | Hexachloroethane | | 33 | U |
| 98-95-3 | Nitrobenzene | | 33 | U |
| 78-59-1 | Isophorone | | 33 | U |
| 88-75-5 | 2-Nitrophenol | | 33 | U |
| 105-67-9 | 2,4-Dimethylphenol | | 33 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | | 33 | U |
| 120-83-2 | 2,4-Dichlorophenol | | 33 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 33 | U |
| 91-20-3 | Naphthalene | | 33 | U |
| 106-47-8 | 4-Chloroaniline | | 33 | U |
| 87-68-3 | Hexachlorobutadiene | | 67 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | 67 | U |
| 91-57-6 | 2-Methylnaphthalene | | 33 | U |
| 77-47-4 | Hexachlorocyclopentadiene | | 170 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | 33 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | | 33 | U |
| 91-58-7 | 2-Chloronaphthalene | | 33 | U |
| 88-74-4 | 2-Nitroaniline | | 33 | U |
| 131-11-3 | Dimethylphthalate | | 67 | U |
| 606-20-2 | 2,6-Dinitrotoluene | | 33 | U |

8244

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKLB0853

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLB085

Sample wt/vol: 30 (g/mL) G Lab File ID: cc462.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/KG | Q |
|---|---|---|---|---|---|
| 208-96-8 | Acenaphthylene | | | 33 | U |
| 99-09-2 | 3-Nitroaniline | | | 67 | U |
| 83-32-9 | Acenaphthene | | | 33 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 670 | U |
| 100-02-7 | 4-Nitrophenol | | | 170 | U |
| 132-64-9 | Dibenzofuran | | | 33 | U |
| 121-14-2 | 2,4-Dinitrotoluene | | | 67 | U |
| 84-66-2 | Diethylphthalate | | | 67 | U |
| 86-73-7 | Fluorene | | | 33 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | | | 33 | U |
| 100-01-6 | 4-Nitroaniline | | | 67 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 170 | U |
| 86-30-6 | N-Nitrosodiphenylamine | | | 33 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | | | 33 | U |
| 118-74-1 | Hexachlorobenzene | | | 33 | U |
| 87-86-5 | Pentachlorophenol | | | 170 | U |
| 85-01-8 | Phenanthrene | | | 33 | U |
| 120-12-7 | Anthracene | | | 33 | U |
| 86-74-8 | Carbazole | | | 33 | U |
| 84-74-2 | Di-n-butylphthalate | | | 67 | U |
| 206-44-0 | Fluoranthene | | | 33 | U |
| 129-00-0 | Pyrene | | | 33 | U |
| 85-68-7 | Butylbenzylphthalate | | | 67 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | | | 67 | U |
| 56-55-3 | Benzo(a)anthracene | | | 33 | U |
| 218-01-9 | Chrysene | | | 33 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | | | 170 | U |
| 117-84-0 | Di-n-octylphthalate | | | 67 | U |
| 205-99-2 | Benzo(b)fluoranthene | | | 33 | U |
| 207-08-9 | Benzo(k)fluoranthene | | | 33 | U |

9245

1C cont

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLB0853

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLB085

Sample wt/vol: 30 (g/mL) G Lab File ID: cc462.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL UG/KG | Q |
|---|---|---|---|---|
| 50-32-8 | Benzo(a)pyrene | | 33 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | | 33 | U |
| 53-70-3 | Dibenz(a,h)anthracene | | 33 | U |
| 191-24-2 | Benzo(g,h,i)perylene | | 33 | U |

8246

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:cc464.d
5GP20 4241631
AMT USED:30.0 g
FINAL VOL:1 ml

MATRIX SPIKE:cc465.d
5GP20MS 4241632
AMT USED: 30.0 g
FINAL VOL: 1 ml

SPIKE DUPLICATE:cc466.d
5GP20MSD 4241633
AMT USED: 30.0 g
FINAL VOL: 1 ml

INSTRUMENT: HP06667  DILUTION FACTOR: 1  BATCH: 04085SLB026

%MOISTURE: 0  EXTRACT SPIKE LEVEL: 3333.33

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 3333.33 | 3333.33 | ND | 2908.10 | 2883.42 | 87 | 87 | 30-137 | YES | 0 | 30 | YES |
| bis(2-Chloroethyl)ether | 3333.33 | 3333.33 | ND | 2660.37 | 2643.14 | 80 | 79 | 40-132 | YES | 1 | 30 | YES |
| 2-Chlorophenol | 3333.33 | 3333.33 | ND | 3044.95 | 3047.22 | 91 | 91 | 46-124 | YES | 0 | 30 | YES |
| 1,3-Dichlorobenzene | 3333.33 | 3333.33 | ND | 2838.82 | 2778.60 | 85 | 83 | 37-118 | YES | 2 | 30 | YES |
| 1,4-Dichlorobenzene | 3333.33 | 3333.33 | ND | 2890.86 | 2873.20 | 87 | 86 | 38-116 | YES | 1 | 30 | YES |
| 1,2-Dichlorobenzene | 3333.33 | 3333.33 | ND | 2980.25 | 2992.32 | 89 | 90 | 41-115 | YES | 1 | 30 | YES |
| 2-Methylphenol | 3333.33 | 3333.33 | ND | 3102.01 | 3093.80 | 93 | 93 | 42-125 | YES | 0 | 30 | YES |
| 2,2'-oxybis(1-Chloropropane | 3333.33 | 3333.33 | ND | 2804.69 | 2789.31 | 84 | 84 | 50-143 | YES | 0 | 30 | YES |
| N-Nitroso-di-n-propylamine | 3333.33 | 3333.33 | ND | 2416.04 | 2409.76 | 72 | 72 | 46-127 | YES | 0 | 30 | YES |
| 4-Methylphenol | 3333.33 | 3333.33 | ND | 3001.99 | 2945.44 | 90 | 88 | 40-132 | YES | 2 | 30 | YES |
| Hexachloroethane | 3333.33 | 3333.33 | ND | 2636.22 | 2584.00 | 79 | 78 | 20-135 | YES | 1 | 30 | YES |
| Nitrobenzene | 3333.33 | 3333.33 | ND | 2339.50 | 2425.34 | 70 | 73 | 39-137 | YES | 4 | 30 | YES |
| Isophorone | 3333.33 | 3333.33 | ND | 2471.56 | 2499.45 | 74 | 75 | 47-128 | YES | 1 | 30 | YES |
| 2-Nitrophenol | 3333.33 | 3333.33 | ND | 3125.40 | 3179.51 | 94 | 95 | 42-133 | YES | 1 | 30 | YES |
| 2,4-Dimethylphenol | 3333.33 | 3333.33 | ND | 2753.48 | 2815.91 | 83 | 84 | 44-131 | YES | 1 | 30 | YES |
| bis(2-Chloroethoxy)methane | 3333.33 | 3333.33 | ND | 2988.06 | 3090.07 | 90 | 93 | 50-136 | YES | 3 | 30 | YES |
| 2,4-Dichlorophenol | 3333.33 | 3333.33 | ND | 3149.95 | 3211.38 | 94 | 96 | 38-133 | YES | 2 | 30 | YES |
| 1,2,4-Trichlorobenzene | 3333.33 | 3333.33 | ND | 3138.06 | 3146.61 | 94 | 94 | 37-132 | YES | 0 | 30 | YES |
| Naphthalene | 3333.33 | 3333.33 | ND | 3226.77 | 3254.87 | 97 | 98 | 38-132 | YES | 1 | 30 | YES |
| 4-Chloroaniline | 3333.33 | 3333.33 | ND | 2626.40 | 2863.41 | 79 | 86 | 6-126 | YES | 8 | 30 | YES |
| Hexachlorobutadiene | 3333.33 | 3333.33 | ND | 2938.02 | 3035.23 | 88 | 91 | 38-134 | YES | 3 | 30 | YES |
| 4-Chloro-3-methylphenol | 3333.33 | 3333.33 | ND | 2799.56 | 2843.77 | 84 | 85 | 47-136 | YES | 1 | 30 | YES |
| 2-Methylnaphthalene | 3333.33 | 3333.33 | ND | 3267.47 | 3320.69 | 98 | 100 | 42-128 | YES | 2 | 30 | YES |
| Hexachlorocyclopentadiene | 6666.67 | 6666.67 | ND | 7321.23 | 7127.10 | 110 | 107 | 5-140 | YES | 3 | 30 | YES |
| 2,4,6-Trichlorophenol | 3333.33 | 3333.33 | ND | 3114.93 | 3196.34 | 93 | 96 | 41-132 | YES | 3 | 30 | YES |
| 2,4,5-Trichlorophenol | 3333.33 | 3333.33 | ND | 3338.76 | 3480.66 | 100 | 104 | 41-132 | YES | 4 | 30 | YES |
| 2-Chloronaphthalene | 3333.33 | 3333.33 | ND | 3018.00 | 3064.29 | 91 | 92 | 45-127 | YES | 1 | 30 | YES |
| 2-Nitroaniline | 3333.33 | 3333.33 | ND | 3195.67 | 3276.62 | 96 | 98 | 47-137 | YES | 2 | 30 | YES |
| Dimethylphthalate | 3333.33 | 3333.33 | ND | 3137.68 | 3202.67 | 94 | 96 | 52-125 | YES | 2 | 30 | YES |
| 2,6-Dinitrotoluene | 3333.33 | 3333.33 | ND | 2896.20 | 2982.25 | 87 | 89 | 52-124 | YES | 2 | 30 | YES |
| Acenaphthylene | 3333.33 | 3333.33 | ND | 3578.45 | 3641.64 | 107 | 109 | 46-128 | YES | 2 | 30 | YES |
| 3-Nitroaniline | 3333.33 | 3333.33 | ND | 2853.94 | 3006.39 | 86 | 90 | 26-131 | YES | 4 | 30 | YES |
| Acenaphthene | 3333.33 | 3333.33 | ND | 3291.19 | 3321.59 | 99 | 100 | 48-132 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 3333.33 | 3333.33 | ND | 2461.26 | 2839.60 | 74 | 85 | 20-143 | YES | 14 | 30 | YES |
| 4-Nitrophenol | 3333.33 | 3333.33 | ND | 2136.95 | 2215.24 | 64 | 66 | 14-172 | YES | 3 | 30 | YES |
| Dibenzofuran | 3333.33 | 3333.33 | ND | 3049.95 | 3123.31 | 91 | 94 | 39-129 | YES | 3 | 30 | YES |
| 2,4-Dinitrotoluene | 3333.33 | 3333.33 | ND | 3104.98 | 3118.96 | 93 | 94 | 47-138 | YES | 1 | 30 | YES |
| Diethylphthalate | 3333.33 | 3333.33 | ND | 3064.20 | 3151.13 | 92 | 95 | 53-128 | YES | 3 | 30 | YES |
| Fluorene | 3333.33 | 3333.33 | ND | 3063.69 | 3073.67 | 92 | 92 | 39-137 | YES | 0 | 30 | YES |
| 4-Chlorophenyl-phenylether | 3333.33 | 3333.33 | ND | 3422.97 | 3392.78 | 103 | 102 | 52-122 | YES | 1 | 30 | YES |
| 4-Nitroaniline | 3333.33 | 3333.33 | ND | 2575.29 | 2780.86 | 77 | 83 | 27-133 | YES | 8 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 3333.33 | 3333.33 | ND | 3300.95 | 3417.27 | 99 | 103 | 5-150 | YES | 4 | 30 | YES |
| N-Nitrosodiphenylamine | 3333.33 | 3333.33 | ND | 3149.39 | 3014.79 | 94 | 90 | 46-131 | YES | 4 | 30 | YES |
| 4-Bromophenyl-phenylether | 3333.33 | 3333.33 | ND | 3363.48 | 3264.40 | 101 | 98 | 49-133 | YES | 3 | 30 | YES |
| Hexachlorobenzene | 3333.33 | 3333.33 | ND | 3304.56 | 3242.76 | 99 | 97 | 44-133 | YES | 2 | 30 | YES |
| Pentachlorophenol | 3333.33 | 3333.33 | ND | 2342.28 | 2355.81 | 70 | 71 | 5-138 | YES | 1 | 30 | YES |
| Phenanthrene | 3333.33 | 3333.33 | ND | 3280.91 | 3319.09 | 98 | 100 | 29-143 | YES | 2 | 30 | YES |
| Anthracene | 3333.33 | 3333.33 | ND | 3530.11 | 3400.78 | 106 | 102 | 35-138 | YES | 4 | 30 | YES |
| Carbazole | 3333.33 | 3333.33 | ND | 3279.21 | 3180.78 | 98 | 95 | 41-133 | YES | 3 | 30 | YES |
| Di-n-butylphthalate | 3333.33 | 3333.33 | ND | 3480.66 | 3651.51 | 104 | 110 | 51-126 | YES | 6 | 30 | YES |
| Fluoranthene | 3333.33 | 3333.33 | ND | 3604.53 | 3589.94 | 108 | 108 | 19-145 | YES | 0 | 30 | YES |
| Pyrene | 3333.33 | 3333.33 | ND | 3563.61 | 3503.49 | 107 | 105 | 28-144 | YES | 2 | 30 | YES |
| Butylbenzylphthalate | 3333.33 | 3333.33 | ND | 3032.39 | 3112.12 | 91 | 93 | 40-141 | YES | 2 | 30 | YES |
| 3,3'-Dichlorobenzidine | 3333.33 | 3333.33 | ND | 2126.24 | 2367.95 | 64 | 71 | 2-129 | YES | 10 | 30 | YES |
| Benzo(a)anthracene | 3333.33 | 3333.33 | ND | 3311.15 | 3258.58 | 99 | 98 | 26-144 | YES | 1 | 30 | YES |
| Chrysene | 3333.33 | 3333.33 | ND | 3359.47 | 3292.32 | 101 | 99 | 23-150 | YES | 2 | 30 | YES |

0247

COMMENTS: _____

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:cc464.d
5GP20 4241631
AMT USED:30.0 g
FINAL VOL:1 ml

MATRIX SPIKE:cc465.d
5GP20MS 4241632
AMT USED: 30.0 g
FINAL VOL: 1 ml

SPIKE DUPLICATE:cc466.d
5GP20MSD 4241633
AMT USED: 30.0 g
FINAL VOL: 1 ml

INSTRUMENT: HP06667  DILUTION FACTOR: 1  BATCH: 04085SLB026

%MOISTURE: 0  EXTRACT SPIKE LEVEL: 3333.33

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | 3333.33 | 3333.33 | 259.91 | 3156.61 | 3051.66 | 87 | 84 | 48-137 | YES | 4 | 30 | YES |
| Di-n-octylphthalate | 3333.33 | 3333.33 | ND | 3489.96 | 3554.11 | 105 | 107 | 38-147 | YES | 2 | 30 | YES |
| Benzo(b)fluoranthene | 3333.33 | 3333.33 | ND | 3383.84 | 3408.25 | 102 | 102 | 32-140 | YES | 0 | 30 | YES |
| Benzo(k)fluoranthene | 3333.33 | 3333.33 | ND | 3327.55 | 3364.92 | 100 | 101 | 36-143 | YES | 1 | 30 | YES |
| Benzo(a)pyrene | 3333.33 | 3333.33 | ND | 3389.10 | 3443.35 | 102 | 103 | 23-154 | YES | 1 | 30 | YES |
| Indeno(1,2,3-cd)pyrene | 3333.33 | 3333.33 | ND | 3230.20 | 3316.40 | 97 | 99 | 36-141 | YES | 2 | 30 | YES |
| Dibenz(a,h)anthracene | 3333.33 | 3333.33 | ND | 3453.06 | 3535.29 | 104 | 106 | 19-163 | YES | 2 | 30 | YES |
| Benzo(g,h,i)perylene | 3333.33 | 3333.33 | ND | 3179.75 | 3248.27 | 95 | 97 | 17-152 | YES | 2 | 30 | YES |



COMMENTS: _____

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06667

Method: SW-846 8270C  File ID: cc463.d

LCS SAMPLE NO: 085LBLCS  BATCH: 04085SLB026  Sample Code: 085LBLCS3

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Phenol | 3333.33 | 2948.47 | 88 | 67 - 108 | YES |
| bis(2-Chloroethyl)ether | 3333.33 | 2815.37 | 84 | 66 - 104 | YES |
| 2-Chlorophenol | 3333.33 | 3098.01 | 93 | 74 - 104 | YES |
| 1,3-Dichlorobenzene | 3333.33 | 2960.95 | 89 | 62 - 105 | YES |
| 1,4-Dichlorobenzene | 3333.33 | 3023.33 | 91 | 62 - 104 | YES |
| 1,2-Dichlorobenzene | 3333.33 | 3094.81 | 93 | 64 - 101 | YES |
| 2-Methylphenol | 3333.33 | 3135.84 | 94 | 68 - 103 | YES |
| 2,2'-oxybis(1-Chloropropane | 3333.33 | 2911.20 | 87 | 66 - 138 | YES |
| N-Nitroso-di-n-propylamine | 3333.33 | 2480.57 | 74 | 62 - 109 | YES |
| 4-Methylphenol | 3333.33 | 3069.75 | 92 | 65 - 113 | YES |
| Hexachloroethane | 3333.33 | 2703.90 | 81 | 62 - 105 | YES |
| Nitrobenzene | 3333.33 | 2439.07 | 73 | 70 - 106 | YES |
| Isophorone | 3333.33 | 2554.93 | 77 | 70 - 103 | YES |
| 2-Nitrophenol | 3333.33 | 3179.01 | 95 | 76 - 111 | YES |
| 2,4-Dimethylphenol | 3333.33 | 2796.98 | 84 | 68 - 103 | YES |
| bis(2-Chloroethoxy)methane | 3333.33 | 3138.70 | 94 | 75 - 114 | YES |
| 2,4-Dichlorophenol | 3333.33 | 3219.58 | 97 | 76 - 104 | YES |
| 1,2,4-Trichlorobenzene | 3333.33 | 3222.72 | 97 | 72 - 102 | YES |
| Naphthalene | 3333.33 | 3265.99 | 98 | 73 - 103 | YES |
| 4-Chloroaniline | 3333.33 | 1959.44 | 59 | 14 - 104 | YES |
| Hexachlorobutadiene | 3333.33 | 3198.96 | 96 | 69 - 108 | YES |
| 4-Chloro-3-methylphenol | 3333.33 | 2896.18 | 87 | 72 - 117 | YES |
| 2-Methylnaphthalene | 3333.33 | 3403.23 | 102 | 70 - 102 | YES |
| Hexachlorocyclopentadiene | 6666.67 | 8191.93 | 123 | 9 - 154 | YES |
| 2,4,6-Trichlorophenol | 3333.33 | 3112.60 | 93 | 75 - 106 | YES |
| 2,4,5-Trichlorophenol | 3333.33 | 3385.60 | 102 | 76 - 110 | YES |
| 2-Chloronaphthalene | 3333.33 | 3050.01 | 92 | 72 - 103 | YES |
| 2-Nitroaniline | 3333.33 | 3153.06 | 95 | 76 - 117 | YES |
| Dimethylphthalate | 3333.33 | 3106.13 | 93 | 76 - 108 | YES |
| 2,6-Dinitrotoluene | 3333.33 | 2931.55 | 88 | 75 - 108 | YES |
| Acenaphthylene | 3333.33 | 3543.33 | 106 | 66 - 113 | YES |
| 3-Nitroaniline | 3333.33 | 2355.14 | 71 | 53 - 107 | YES |
| Acenaphthene | 3333.33 | 3305.77 | 99 | 76 - 109 | YES |
| 2,4-Dinitrophenol | 3333.33 | 2944.58 | 88 | 21 - 120 | YES |
| 4-Nitrophenol | 3333.33 | 2223.47 | 67 | 55 - 133 | YES |
| Dibenzofuran | 3333.33 | 3043.08 | 91 | 72 - 107 | YES |
| 2,4-Dinitrotoluene | 3333.33 | 3088.68 | 93 | 75 - 118 | YES |
| Diethylphthalate | 3333.33 | 3185.66 | 96 | 75 - 109 | YES |
| Fluorene | 3333.33 | 3093.86 | 93 | 66 - 115 | YES |
| 4-Chlorophenyl-phenylether | 3333.33 | 3382.62 | 101 | 70 - 108 | YES |
| 4-Nitroaniline | 3333.33 | 2417.55 | 73 | 48 - 96 | YES |
| 4,6-Dinitro-2-methylphenol | 3333.33 | 3447.81 | 103 | 41 - 121 | YES |
| N-Nitrosodiphenylamine | 3333.33 | 3128.92 | 94 | 67 - 105 | YES |
| 4-Bromophenyl-phenylether | 3333.33 | 3359.52 | 101 | 74 - 110 | YES |
| Hexachlorobenzene | 3333.33 | 3367.83 | 101 | 72 - 110 | YES |
| Pentachlorophenol | 3333.33 | 2512.68 | 75 | 47 - 110 | YES |
| Phenanthrene | 3333.33 | 3376.78 | 101 | 70 - 107 | YES |
| Anthracene | 3333.33 | 3516.05 | 105 | 71 - 107 | YES |
| Carbazole | 3333.33 | 3309.64 | 99 | 73 - 107 | YES |
| Di-n-butylphthalate | 3333.33 | 3503.35 | 105 | 73 - 109 | YES |
| Fluoranthene | 3333.33 | 3659.25 | 110 | 69 - 107 | NO |
| Pyrene | 3333.33 | 3515.99 | 105 | 71 - 110 | YES |
| Butylbenzylphthalate | 3333.33 | 3115.57 | 93 | 75 - 117 | YES |
| 3,3'-Dichlorobenzidine | 3333.33 | 1577.08 | 47 | 9 - 101 | YES |
| Benzo(a)anthracene | 3333.33 | 3373.33 | 101 | 74 - 107 | YES |
| Chrysene | 3333.33 | 3430.06 | 103 | 72 - 109 | YES |
| bis(2-Ethylhexyl)phthalate | 3333.33 | 3285.80 | 99 | 63 - 131 | YES |
| Di-n-octylphthalate | 3333.33 | 3630.63 | 109 | 67 - 115 | YES |
| Benzo(b)fluoranthene | 3333.33 | 3327.36 | 100 | 71 - 113 | YES |

NC = Could not calculate

Comments: _____

8249

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06667

Method: SW-846 8270C  File ID: cc463.d

LCS SAMPLE NO: 085LBLCS  BATCH: 04085SLB026  Sample Code: 085LBLCS3

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Benzo(k)fluoranthene | 3333.33 | 3541.26 | 106 | 75 - 112 | YES |
| Benzo(a)pyrene | 3333.33 | 3487.60 | 105 | 79 - 113 | YES |
| Indeno(1,2,3-cd)pyrene | 3333.33 | 3385.20 | 102 | 74 - 113 | YES |
| Dibenz(a,h)anthracene | 3333.33 | 3613.65 | 108 | 80 - 125 | YES |
| Benzo(g,h,i)perylene | 3333.33 | 3342.59 | 100 | 74 - 119 | YES |

NC = Could not calculate

Comments: _____

0258

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): cc461.d Date Analyzed: 03/26/04

Instrument ID: HP06667 Time Analyzed: 05:17

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 535745 | 11.043 | 2146281 | 13.402 | 1007007 | 16.672 |
| | UPPER LIMIT | 1071490 | 11.543 | 4292562 | 13.902 | 2014014 | 17.172 |
| | LOWER LIMIT | 267873 | 10.543 | 1073141 | 12.902 | 503504 | 16.172 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKLB0853 | 547210 | 11.042 | 2129773 | 13.402 | 975405 | 16.670 |
| 02 | 085LBLCS3 | 564319 | 11.038 | 2206948 | 13.411 | 1109398 | 16.667 |
| 03 | 5GP20 | 568466 | 11.043 | 2215470 | 13.404 | 1027531 | 16.663 |
| 04 | 5GP20MS | 522464 | 11.028 | 2062595 | 13.390 | 1002741 | 16.655 |
| 05 | 5GP20MSD | 551628 | 11.030 | 2094072 | 13.393 | 1010098 | 16.658 |
| 06 | 5GP17 | 515583 | 11.023 | 2071570 | 13.384 | 952751 | 16.654 |
| 07 | 5GP18 | 524940 | 11.022 | 2085403 | 13.392 | 944382 | 16.650 |
| 08 | 5GP19 | 522034 | 11.023 | 2092641 | 13.393 | 953078 | 16.652 |
| 09 | 5GP21 | 537718 | 11.033 | 2114933 | 13.393 | 964471 | 16.653 |
| 10 | 5GP22 | 497333 | 11.032 | 1991749 | 13.392 | 927015 | 16.661 |
| 11 | 2222D | 589011 | 11.025 | 2274767 | 13.397 | 1045278 | 16.658 |
| 12 | 5GP23 | 529807 | 11.033 | 2087225 | 13.394 | 971983 | 16.654 |
| 13 | 5GP24 | 569438 | 11.034 | 2255159 | 13.394 | 1029578 | 16.654 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk 8251
* Values outside of QC limits.

8C

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): cc461.d Date Analyzed: 03/26/04

Instrument ID: HP06667 Time Analyzed: 05:17

| | IS4(PHN) AREA | # | RT | # | IS5(CRY) AREA | # | RT | # | IS6(PRY) AREA | # | RT | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | | 1447217 | | 19.334 | | 1307191 | | 23.300 | | 1099401 | | 26.995 | |
| | UPPER LIMIT | | 2894434 | | 19.834 | | 2614382 | | 23.800 | | 2198802 | | 27.495 | |
| | LOWER LIMIT | | 723609 | | 18.834 | | 653596 | | 22.800 | | 549701 | | 26.495 | |
| | EPA SAMPLE NO. | | | | | | | | | | | | | |
| 01 | SBLKLB0853 | | 1477529 | | 19.328 | | 1274187 | | 23.299 | | 1048869 | | 26.995 | |
| 02 | 085LBLCS3 | | 1529251 | | 19.330 | | 1389360 | | 23.309 | | 1124403 | | 27.001 | |
| 03 | 5GP20 | | 1561894 | | 19.331 | | 1328936 | | 23.292 | | 1120654 | | 26.995 | |
| 04 | 5GP20MS | | 1391740 | | 19.326 | | 1265190 | | 23.291 | | 1028811 | | 26.988 | |
| 05 | 5GP20MSD | | 1447834 | | 19.330 | | 1331007 | | 23.293 | | 1046054 | | 26.989 | |
| 06 | 5GP17 | | 1421120 | | 19.326 | | 1192509 | | 23.282 | | 1031735 | | 26.979 | |
| 07 | 5GP18 | | 1434571 | | 19.327 | | 1206318 | | 23.281 | | 1024309 | | 26.981 | |
| 08 | 5GP19 | | 1472146 | | 19.321 | | 1217319 | | 23.284 | | 1047560 | | 26.989 | |
| 09 | 5GP21 | | 1502243 | | 19.323 | | 1243236 | | 23.289 | | 1058426 | | 26.988 | |
| 10 | 5GP22 | | 1404734 | | 19.329 | | 1150527 | | 23.286 | | 994845 | | 26.987 | |
| 11 | 2222D | | 1592624 | | 19.329 | | 1338828 | | 23.291 | | 1127560 | | 26.997 | |
| 12 | 5GP23 | | 1487174 | | 19.323 | | 1213926 | | 23.295 | | 1022602 | | 26.992 | |
| 13 | 5GP24 | | 1559800 | | 19.325 | | 1296734 | | 23.291 | | 1093820 | | 26.988 | |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

0252

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

# Sample Data

# GC/MS Semivolatile Soil MDL Study 2003

**Extraction Method:**
**SW-846 3550C**

**Analytical Method:**
**SW-846 8270C**
**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng283.d | ng284.d | ng285.d | ng286.d | ng287.d | ng288.d | ng289.d |
| **Injection Date** | 7/10/03 16:43 | 7/10/03 17:42 | 7/10/03 18:40 | 7/10/03 19:38 | 7/10/03 20:36 | 7/10/03 21:34 | 7/10/03 22:33 |
| **Lab Sample ID** | LOWA | LOWB | LOWC | LOWD | LOWE | LOWF | LOWG |
| **Client Sample ID** | SOILMDLA | SOILMDLB | SOILMDLC | SOILMDLD | SOILMDLE | SOILMDLF | SOILMDLG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Mean Concentration (ug/kg) | Standard Deviation | Student T value used | Sample MDL (ug/kg) | Sample Spike Level (ug/kg) | Average %Rec. | Nominal MDL (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane * | 71.285 | 71.932 | 77.530 | 79.267 | 55.560 | 72.918 | 65.821 | 70.616 | 8 | 3.143 | 25 | 166.65 | 42 | 25 |
| N-Nitrosodimethylamine | 13.748 | 13.304 | 11.915 | 12.778 | 17.875 | 29.339 | 15.640 | 16.371 | 6 | 3.143 | 19 | 33.33 | 49 | 19 |
| Pyridine | 12.369 | 10.243 | 15.929 | 8.505 | 13.791 | 20.978 | 11.609 | 13.346 | 4 | 3.143 | 13 | 33.33 | 40 | 13 |
| 2-Picoline | 18.942 | 16.278 | 19.372 | 15.293 | 18.389 | 27.389 | 18.299 | 19.137 | 4 | 3.143 | 12 | 33.33 | 57 | 12 |
| N-Nitrosomethylethylamine | 16.372 | 6.876 | 15.324 | 14.543 | 10.610 | 20.738 | 19.484 | 14.850 | 5 | 3.143 | 15 | 33.33 | 45 | 15 |
| Methyl methanesulfonate | 23.389 | 20.235 | 21.972 | 23.073 | 22.817 | 21.051 | 20.019 | 21.794 | 1 | 3.143 | 4 | 33.33 | 65 | 4 |
| N-Nitrosodiethylamine | 19.733 | 23.479 | 23.677 | 24.615 | 22.886 | 29.578 | 24.937 | 24.129 | 3 | 3.143 | 9 | 33.33 | 72 | 9 |
| Ethyl methanesulfonate | 29.359 | 27.685 | 31.764 | 31.039 | 26.484 | 31.216 | 29.975 | 29.643 | 2 | 3.143 | 6 | 33.33 | 89 | 6 |
| Aniline | 14.508 | 16.346 | 8.758 | 12.444 | 15.545 | 18.141 | 7.720 | 13.352 | 4 | 3.143 | 12 | 33.33 | 40 | 12 |
| Phenol | 28.660 | 25.865 | 31.029 | 29.634 | 25.856 | 37.184 | 26.949 | 29.311 | 4 | 3.143 | 12 | 33.33 | 88 | 12 |
| bis(2-Chloroethyl)ether | 21.098 | 21.346 | 19.529 | 19.828 | 23.090 | 34.027 | 19.491 | 22.630 | 5 | 3.143 | 16 | 33.33 | 68 | 16 |
| 2-Chlorophenol | 26.344 | 24.203 | 26.845 | 25.841 | 23.895 | 34.598 | 26.327 | 26.836 | 4 | 3.143 | 11 | 33.33 | 81 | 11 |
| 1,3-Dichlorobenzene | 17.039 | 16.814 | 19.316 | 13.468 | 19.137 | 33.098 | 14.704 | 19.082 | 7 | 3.143 | 21 | 33.33 | 57 | 21 |
| 1,4-Dichlorobenzene | 19.473 | 18.688 | 20.268 | 15.467 | 19.685 | 32.459 | 13.789 | 19.976 | 6 | 3.143 | 19 | 33.33 | 60 | 19 |
| Benzyl alcohol | 22.159 | 24.662 | 25.737 | 24.076 | 22.642 | 27.514 | 23.601 | 24.342 | 2 | 3.143 | 6 | 33.33 | 73 | 6 |
| 1,2-Dichlorobenzene | 17.504 | 17.087 | 22.092 | 13.988 | 19.238 | 34.935 | 17.247 | 20.299 | 7 | 3.143 | 22 | 33.33 | 61 | 22 |
| 2-Methylphenol | 25.098 | 21.173 | 23.532 | 26.598 | 27.481 | 31.616 | 25.379 | 25.840 | 3 | 3.143 | 10 | 33.33 | 78 | 10 |
| 2,2'-oxybis(1-Chloropropane) | 23.983 | 26.264 | 25.152 | 22.854 | 26.202 | 42.502 | 23.736 | 27.242 | 7 | 3.143 | 22 | 33.33 | 82 | 22 |
| bis(2-Chloroisopropyl)ether | 23.983 | 26.264 | 25.152 | 22.854 | 26.202 | 42.502 | 23.736 | 27.242 | 7 | 3.143 | 22 | 33.33 | 82 | 22 |
| N-Nitrosopyrrolidine | 27.401 | 23.732 | 28.049 | 27.634 | 27.998 | 35.254 | 31.306 | 28.768 | 4 | 3.143 | 11 | 33.33 | 86 | 11 |
| Acetophenone | 24.422 | 25.677 | 23.643 | 24.323 | 26.858 | 39.300 | 24.677 | 26.986 | 6 | 3.143 | 17 | 33.33 | 81 | 17 |
| N-Nitroso-di-n-propylamine | 21.360 | 19.095 | 23.490 | 22.654 | 21.845 | 35.218 | 24.381 | 24.006 | 5 | 3.143 | 16 | 33.33 | 72 | 16 |
| N-Nitrosomorpholine | 24.886 | 22.029 | 30.843 | 31.774 | 28.889 | 34.226 | 28.703 | 28.764 | 4 | 3.143 | 13 | 33.33 | 86 | 13 |
| 4-Methylphenol | 27.752 | 27.221 | 27.389 | 29.067 | 28.559 | 30.929 | 27.851 | 28.395 | 1 | 3.143 | 4 | 33.33 | 85 | 4 |
| o-Toluidine | 16.967 | 15.884 | 8.675 | 12.704 | 15.998 | 19.068 | 5.870 | 13.595 | 5 | 3.143 | 15 | 33.33 | 41 | 15 |
| Hexachloroethane | 12.487 | 14.728 | 14.868 | 10.048 | 16.411 | 26.020 | 6.320 | 14.697 | 6 | 3.143 | 18 | 33.33 | 44 | 18 |
| Nitrobenzene | 17.817 | 26.975 | 25.926 | 19.479 | 25.472 | 32.423 | 20.935 | 24.147 | 5 | 3.143 | 16 | 33.33 | 72 | 16 |

Analyst name and ID (printed): JOSEPH M. GZMBL/RK 346 Approved by: Chris Ratcliff /412

Signature: Joe 12.23.03 Title: Sr. Chemist

# GC/MS Semivolatile Soil MDL Study 2003

**Extraction Method:**
**SW-846 3550C**

**Analytical Method:**
**SW-846 8270C**
**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng283.d | ng284.d | ng285.d | ng286.d | ng287.d | ng288.d | ng289.d |
| **Injection Date** | 7/10/03 16:43 | 7/10/03 17:42 | 7/10/03 18:40 | 7/10/03 19:38 | 7/10/03 20:36 | 7/10/03 21:34 | 7/10/03 22:33 |
| **Lab Sample ID** | LOWA | LOWB | LOWC | LOWD | LOWE | LOWF | LOWG |
| **Client Sample ID** | SOILMDLA | SOILMDLB | SOILMDLC | SOILMDLD | SOILMDLE | SOILMDLF | SOILMDLG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Mean Concentration (ug/kg) | Standard Deviation | Student T value used | Sample MDL (ug/kg) | Sample Spike Level (ug/kg) | Average %Rec. | Nominal MDL (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosopiperidine | 26.240 | 20.180 | 31.093 | 27.590 | 24.142 | 29.210 | 29.724 | 26.883 | 4 | 3.143 | 12 | 33.33 | 81 | 12 |
| Isophorone | 20.494 | 21.298 | 22.784 | 23.360 | 21.838 | 30.820 | 23.818 | 23.487 | 3 | 3.143 | 11 | 33.33 | 70 | 11 |
| 2-Nitrophenol | 15.385 | 12.185 | 13.359 | 13.718 | 14.128 | 21.440 | 14.445 | 14.951 | 3 | 3.143 | 10 | 33.33 | 45 | 10 |
| 2,4-Dimethylphenol | 25.619 | 13.044 | 2.797 | 24.939 | 22.671 | 5.887 | 25.722 | 17.240 | 10 | 3.143 | 31 | 33.33 | 52 | 31 |
| O,O,O-triethylphosphorothioat | 25.222 | 25.869 | 31.792 | 23.007 | 26.086 | 35.053 | 22.688 | 27.102 | 5 | 3.143 | 14 | 33.33 | 81 | 14 |
| bis(2-Chloroethoxy)methane | 27.120 | 29.991 | 26.678 | 26.309 | 25.585 | 36.086 | 26.564 | 28.333 | 4 | 3.143 | 12 | 33.33 | 85 | 12 |
| Benzoic acid # | 77.021 | 80.156 | 46.800 | 71.850 | 24.691 | 114.208 | 51.629 | 66.622 | 28.749 | 3.143 | 90.358 | 166.65 | 40 | 90.358 |
| 2,4-Dichlorophenol | 22.062 | 22.852 | 24.309 | 23.151 | 20.632 | 22.275 | 22.363 | 22.521 | 1 | 3.143 | 4 | 33.33 | 68 | 4 |
| 1,2,4-Trichlorobenzene | 16.976 | 19.072 | 16.704 | 13.857 | 20.467 | 32.871 | 16.156 | 19.443 | 6 | 3.143 | 20 | 33.33 | 58 | 20 |
| Naphthalene | 22.687 | 21.733 | 22.426 | 20.226 | 24.100 | 36.626 | 20.112 | 23.987 | 6 | 3.143 | 18 | 33.33 | 72 | 18 |
| 4-Chloroaniline | 19.095 | 17.865 | 13.246 | 18.027 | 19.851 | 21.297 | 11.254 | 17.234 | 4 | 3.143 | 11 | 33.33 | 52 | 11 |
| 2,6-Dichlorophenol | 29.564 | 25.393 | 27.083 | 27.375 | 28.738 | 28.717 | 30.666 | 28.219 | 2 | 3.143 | 5 | 33.33 | 85 | 5 |
| Hexachloropropene | 20.679 | 15.233 | 19.069 | 12.035 | 15.489 | 26.006 | 16.911 | 17.917 | 5 | 3.143 | 14 | 33.33 | 54 | 14 |
| Hexachlorobutadiene | 7.767 | 12.098 | 14.561 | 3.722 | 15.828 | 21.368 | 7.486 | 11.633 | 6 | 3.143 | 19 | 33.33 | 36 | 19 |
| Caprolactam | 20.677 | 17.050 | 23.322 | 25.211 | 22.244 | 23.779 | 24.265 | 22.364 | 3 | 3.143 | 9 | 33.33 | 67 | 9 |
| N-Nitrosodi-n-butylamine | 19.563 | 18.277 | 22.752 | 21.867 | 19.311 | 22.789 | 20.599 | 20.737 | 2 | 3.143 | 6 | 33.33 | 62 | 6 |
| 4-Chloro-3-methylphenol | 22.843 | 23.525 | 25.333 | 24.786 | 21.064 | 29.633 | 22.868 | 24.265 | 3 | 3.143 | 9 | 33.33 | 73 | 9 |
| Safrole | 25.102 | 24.537 | 27.944 | 26.957 | 27.316 | 27.175 | 31.259 | 27.184 | 2 | 3.143 | 7 | 33.33 | 82 | 7 |
| 2-Methylnaphthalene | 22.826 | 23.340 | 23.409 | 23.594 | 22.724 | 35.385 | 20.571 | 24.550 | 5 | 3.143 | 15 | 33.33 | 74 | 15 |
| 1-Methylnaphthalene | 22.186 | 21.945 | 23.409 | 23.174 | 24.315 | 35.955 | 24.395 | 25.054 | 5 | 3.143 | 15 | 33.33 | 75 | 15 |
| Hexachlorocyclopentadiene * | 205.792 | 243.641 | 262.328 | 248.628 | 251.374 | 130.454 | 234.268 | 225.212 | 45 | 3.143 | 143 | 333.33 | 68 | 143 |
| 1,2,4,5-Tetrachlorobenzene | 20.701 | 17.304 | 23.071 | 18.334 | 20.754 | 33.764 | 19.183 | 21.873 | 6 | 3.143 | 18 | 33.33 | 66 | 18 |
| 2,4,6-Trichlorophenol | 16.347 | 13.466 | 14.902 | 20.326 | 16.893 | 25.329 | 20.186 | 18.207 | 4 | 3.143 | 13 | 33.33 | 55 | 13 |
| 2,4,5-Trichlorophenol | 18.853 | 13.739 | 17.486 | 22.371 | 16.643 | 20.051 | 17.400 | 18.078 | 3 | 3.143 | 9 | 33.33 | 54 | 9 |
| Isosafrole | 22.637 | 20.124 | 25.582 | 25.128 | 24.032 | 23.744 | 30.658 | 24.558 | 3 | 3.143 | 10 | 33.33 | 74 | 10 |
| Biphenyl | 29.307 | 30.093 | 30.708 | 29.171 | 29.948 | 39.150 | 31.315 | 31.385 | 4 | 3.143 | 11 | 33.33 | 94 | 11 |
| Diphenyl | 29.307 | 30.093 | 30.708 | 29.171 | 29.948 | 39.150 | 31.315 | 31.385 | 4 | 3.143 | 11 | 33.33 | 94 | 11 |

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Analyst name and ID (printed): JOSEPH M. Gemblen 346 Approved by: Chris Ratcliff/412

Signature: 12/23/03 Title: Sr. Chemist

# GC/MS Semivolatile Soil MDL Study 2003

**Extraction Method:**
**SW-846 3550C**

**Analytical Method:**
**SW-846 8270C**
**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng283.d | ng284.d | ng285.d | ng286.d | ng287.d | ng288.d | ng289.d |
| **Injection Date** | 7/10/03 16:43 | 7/10/03 17:42 | 7/10/03 18:40 | 7/10/03 19:38 | 7/10/03 20:36 | 7/10/03 21:34 | 7/10/03 22:33 |
| **Lab Sample ID** | LOWA | LOWB | LOWC | LOWD | LOWE | LOWF | LOWG |
| **Client Sample ID** | SOILMDLA | SOILMDLB | SOILMDLC | SOILMDLD | SOILMDLE | SOILMDLF | SOILMDLG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Mean Concentration (ug/kg) | Standard Deviation | Student T value used | Sample MDL (ug/kg) | Sample Spike Level (ug/kg) | Average %Rec. | Nominal MDL (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 29.307 | 30.093 | 30.708 | 29.171 | 29.948 | 39.150 | 31.315 | 31.385 | 4 | 3.143 | 11 | 33.33 | 94 | 11 |
| 2-Chloronaphthalene | 25.409 | 24.235 | 25.035 | 23.868 | 23.925 | 33.413 | 24.732 | 25.802 | 3 | 3.143 | 11 | 33.33 | 77 | 11 |
| Diphenyl ether | 27.989 | 29.240 | 29.404 | 26.542 | 26.956 | 38.359 | 29.563 | 29.722 | 4 | 3.143 | 13 | 33.33 | 89 | 13 |
| 2-Nitroaniline | 17.678 | 18.296 | 18.440 | 18.354 | 18.147 | 21.835 | 21.121 | 19.124 | 2 | 3.143 | 5 | 33.33 | 57 | 5 |
| 1,4-Naphthoquinone | 204.188 | 202.265 | 270.610 | 230.618 | 221.443 | 247.584 | 244.887 | 231.656 | 25 | 3.143 | 78 | 333.33 | 69 | 78 |
| 1,4-Dinitrobenzene | 9.938 | 10.666 | 15.088 | 17.035 | 11.990 | 11.898 | 12.025 | 12.663 | 3 | 3.143 | 8 | 33.33 | 38 | 8 |
| Dimethylphthalate | 29.180 | 27.282 | 33.434 | 30.767 | 28.524 | 34.225 | 32.771 | 30.883 | 3 | 3.143 | 8 | 33.33 | 93 | 8 |
| 1,3-Dinitrobenzene | 15.634 | 13.495 | 12.024 | 18.529 | 9.092 | 17.031 | 14.336 | 14.306 | 3 | 3.143 | 10 | 33.33 | 43 | 10 |
| 2,6-Dinitrotoluene | 20.224 | 21.239 | 20.215 | 21.410 | 20.233 | 21.107 | 16.432 | 20.123 | 2 | 3.143 | 5 | 33.33 | 60 | 5 |
| Acenaphthylene | 22.305 | 21.854 | 23.219 | 25.504 | 24.572 | 27.811 | 23.102 | 24.052 | 2 | 3.143 | 7 | 33.33 | 72 | 7 |
| 3-Nitroaniline | 17.833 | 16.675 | 14.196 | 19.841 | 20.985 | 19.831 | 14.388 | 17.678 | 3 | 3.143 | 9 | 33.33 | 53 | 9 |
| Acenaphthene | 28.450 | 26.463 | 30.114 | 27.859 | 27.632 | 36.535 | 28.498 | 29.364 | 3 | 3.143 | 11 | 33.33 | 88 | 11 |
| 2,4-Dinitrophenol * | 314.652 | 313.397 | 298.868 | 309.017 | 287.476 | 319.961 | 296.049 | 305.631 | 12 | 3.143 | 37 | 666.67 | 46 | 37 |
| Pentachlorobenzene | 27.055 | 25.299 | 27.336 | 28.974 | 18.425 | 32.474 | 25.877 | 26.491 | 4 | 3.143 | 13 | 33.33 | 79 | 13 |
| 4-Nitrophenol * | 226.661 | 232.757 | 212.331 | 215.800 | 229.943 | 269.647 | 220.372 | 229.644 | 19 | 3.143 | 60 | 666.67 | 34 | 60 |
| Dibenzofuran | 28.284 | 29.231 | 31.468 | 30.860 | 28.527 | 37.165 | 30.866 | 30.914 | 3 | 3.143 | 10 | 33.33 | 93 | 10 |
| 2,4-Dinitrotoluene | 17.535 | 17.049 | 24.874 | 19.227 | 18.284 | 23.643 | 19.145 | 19.965 | 3 | 3.143 | 10 | 33.33 | 60 | 10 |
| 1-Naphthylamine | 14.904 | 10.081 | 4.862 | 11.203 | 14.185 | 10.251 | 5.688 | 10.168 | 4 | 3.143 | 12 | 33.33 | 31 | 12 |
| 2,3,4,6-Tetrachlorophenol | 3.693 | 3.510 | 7.271 | 6.842 | 6.953 | 0.000 | 7.667 | 5.134 | 3 | 3.143 | 9 | 33.33 | 15 | 9 |
| 2-Naphthylamine | 14.656 | 8.941 | 1.749 | 12.694 | 15.514 | 6.834 | 8.883 | 9.896 | 5 | 3.143 | 15 | 33.33 | 30 | 15 |
| Diethylphthalate | 31.417 | 30.429 | 33.401 | 33.375 | 30.734 | 35.098 | 33.000 | 32.493 | 2 | 3.143 | 5 | 33.33 | 97 | 5 |
| Thionazin | 19.710 | 20.312 | 24.627 | 24.861 | 27.008 | 30.688 | 29.069 | 25.182 | 4 | 3.143 | 13 | 33.33 | 76 | 13 |
| Fluorene | 32.645 | 30.783 | 35.659 | 33.234 | 33.327 | 40.205 | 34.329 | 34.312 | 3 | 3.143 | 9 | 33.33 | 103 | 9 |
| 4-Chlorophenyl-phenylether | 29.855 | 27.516 | 28.945 | 32.396 | 29.299 | 35.101 | 30.657 | 30.538 | 3 | 3.143 | 8 | 33.33 | 92 | 8 |
| 5-Nitro-o-toluidine | 24.925 | 18.561 | 21.246 | 25.853 | 21.689 | 26.107 | 22.126 | 22.930 | 3 | 3.143 | 9 | 33.33 | 69 | 9 |
| 4-Nitroaniline | 21.394 | 21.138 | 27.823 | 25.384 | 20.895 | 25.192 | 24.894 | 23.817 | 3 | 3.143 | 6 | 33.33 | 71 | 8 |
| 4,6-Dinitro-2-methylphenol * | 158.414 | 174.159 | 150.112 | 145.791 | 133.950 | 157.200 | 138.893 | 151.217 | 14 | 3.143 | 42 | 666.67 | 23 | 42 |

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Analyst name and ID (printed): JOSEPH M GUMBLETON 246

Approved by: Chris Ratchford/412

Signature: [signature] 12/23/05

Title: Sr. Chemist

# GC/MS Semivolatile Soil MDL Study 2003

**Extraction Method:**
**SW-846 3550C**

**Analytical Method:**
**SW-846 8270C**
**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng283.d | ng284.d | ng285.d | ng286.d | ng287.d | ng288.d | ng289.d |
| **Injection Date** | 7/10/03 16:43 | 7/10/03 17:42 | 7/10/03 18:40 | 7/10/03 19:38 | 7/10/03 20:36 | 7/10/03 21:34 | 7/10/03 22:33 |
| **Lab Sample ID** | LOWA | LOWB | LOWC | LOWD | LOWE | LOWF | LOWG |
| **Client Sample ID** | SOILMDLA | SOILMDLB | SOILMDLC | SOILMDLD | SOILMDLE | SOILMDLF | SOILMDLG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Mean Concentration (ug/kg) | Standard Deviation | Student T value used | Sample MDL (ug/kg) | Sample Spike Level (ug/kg) | Average %Rec. | Nominal MDL (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Nitronaphthalene | 18.217 | 16.111 | 16.934 | 24.789 | 24.792 | 24.317 | 22.418 | 21.083 | 4 | 3.143 | 12 | 33.33 | 63 | 12 |
| N-Nitrosodiphenylamine | 27.509 | 22.953 | 29.208 | 28.890 | 26.944 | 33.984 | 29.410 | 28.414 | 3 | 3.143 | 10 | 33.33 | 85 | 10 |
| 1,2-Diphenylhydrazine | 26.736 | 25.223 | 29.622 | 28.191 | 25.993 | 33.582 | 28.930 | 28.325 | 3 | 3.143 | 9 | 33.33 | 85 | 9 |
| Tetraethyldithiopyrophosphate | 16.405 | 24.846 | 28.900 | 29.220 | 27.628 | 23.399 | 27.259 | 25.380 | 4 | 3.143 | 14 | 33.33 | 76 | 14 |
| 1,3,5-Trinitrobenzene * | 145.692 | 151.824 | 151.318 | 148.826 | 165.237 | 148.758 | 151.899 | 151.936 | 6 | 3.143 | 20 | 166.65 | 91 | 20 |
| Phenacetin | 23.863 | 21.134 | 28.077 | 28.612 | 24.309 | 28.571 | 25.544 | 25.730 | 3 | 3.143 | 9 | 33.33 | 77 | 9 |
| 4-Bromophenyl-phenylether | 17.111 | 21.575 | 27.196 | 28.296 | 25.195 | 28.024 | 21.945 | 24.192 | 4 | 3.143 | 13 | 33.33 | 73 | 13 |
| Hexachlorobenzene | 26.262 | 18.192 | 28.135 | 25.314 | 22.228 | 30.097 | 25.485 | 25.102 | 4 | 3.143 | 12 | 33.33 | 75 | 12 |
| Dimethoate | 30.283 | 28.041 | 34.745 | 31.911 | 31.165 | 38.865 | 32.760 | 32.539 | 3 | 3.143 | 11 | 33.33 | 98 | 11 |
| Diallate TRANS/CIS | 28.653 | 21.712 | 33.714 | 29.766 | 25.652 | 30.437 | 31.251 | 28.741 | 4 | 3.143 | 12 | 33.33 | 86 | 12 |
| Pentachlorophenol * | 346.473 | 324.515 | 313.381 | 292.519 | 317.378 | 365.417 | 309.755 | 324.205 | 24 | 3.143 | 77 | 666.67 | 49 | 77 |
| Pentachloronitrobenzene * | 132.884 | 128.959 | 138.627 | 142.824 | 134.929 | 150.596 | 136.504 | 137.903 | 7 | 3.143 | 22 | 166.65 | 83 | 22 |
| 4-Aminobiphenyl * | 158.364 | 141.675 | 140.252 | 145.489 | 156.203 | 218.848 | 132.892 | 156.246 | 29 | 3.143 | 91 | 166.65 | 94 | 91 |
| Pronamide | 22.715 | 26.783 | 29.229 | 29.765 | 26.190 | 30.914 | 25.981 | 27.368 | 3 | 3.143 | 9 | 33.33 | 82 | 9 |
| Phenanthrene | 31.952 | 31.087 | 34.505 | 36.022 | 33.934 | 36.929 | 32.571 | 33.857 | 2 | 3.143 | 7 | 33.33 | 102 | 7 |
| Anthracene | 29.268 | 28.758 | 33.363 | 32.052 | 30.978 | 32.875 | 33.213 | 31.501 | 2 | 3.143 | 6 | 33.33 | 95 | 6 |
| Carbazole | 32.433 | 29.673 | 34.276 | 35.047 | 31.649 | 36.706 | 32.274 | 33.151 | 2 | 3.143 | 7 | 33.33 | 99 | 7 |
| Di-n-butylphthalate | 31.530 | 31.219 | 33.588 | 32.734 | 32.165 | 37.255 | 32.617 | 33.015 | 2 | 3.143 | 6 | 33.33 | 99 | 6 |
| 4-Nitroquinoline-1-oxide | 219.890 | 218.111 | 230.957 | 221.828 | 228.426 | 231.689 | 228.360 | 225.609 | 6 | 3.143 | 17 | 333.33 | 68 | 17 |
| Methapyrilene @ | 131.768 | 151.893 | 186.498 | 140.167 | 174.394 | 144.260 | 159.841 | 155.546 | 19 | 3.143 | 61 | 833.30 | 19 | 61 |
| Isodrin | 27.859 | 22.530 | 22.057 | 30.293 | 27.426 | 37.731 | 30.550 | 28.349 | 5 | 3.143 | 17 | 33.33 | 85 | 17 |
| Fluoranthene | 27.894 | 26.871 | 32.187 | 31.584 | 30.404 | 33.251 | 31.627 | 30.545 | 2 | 3.143 | 7 | 33.33 | 92 | 7 |
| Benzidine | 64.397 | 7.637 | 42.668 | 53.365 | 58.851 | 44.318 | 17.920 | 41.308 | 21 | 3.143 | 66 | 333.33 | 12 | 66 |
| Pyrene | 33.989 | 31.094 | 37.071 | 37.328 | 34.698 | 38.599 | 37.259 | 35.720 | 3 | 3.143 | 8 | 33.33 | 107 | 8 |
| p-Dimethylaminoazobenzene | 19.541 | 21.807 | 26.738 | 22.246 | 21.463 | 21.011 | 23.420 | 22.318 | 2 | 3.143 | 7 | 33.33 | 67 | 7 |
| Chlorobenzilate | 31.506 | 30.744 | 30.037 | 38.011 | 34.338 | 32.873 | 34.615 | 33.161 | 3 | 3.143 | 9 | 33.33 | 99 | 9 |
| 3,3'-Dimethylbenzidine @ | 149.494 | 134.092 | 144.483 | 165.207 | 150.437 | 143.599 | 168.686 | 150.857 | 12 | 3.143 | 38 | 833.30 | 18 | 38 |
| Butylbenzylphthalate | 33.385 | 30.554 | 36.746 | 35.245 | 34.281 | 37.810 | 34.415 | 34.634 | 2 | 3.143 | 7 | 33.33 | 104 | 7 |

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Analyst name and ID (printed): JOSEPH M. Gamblin 346

Approved by: Chris Ratcliff/412

Signature: 12/23/03

Title: Sr. Chemist

# GC/MS Semivolatile Soil MDL Study 2003

**Extraction Method:**
**SW-846 3550C**

**Analytical Method:**
**SW-846 8270C**
**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng283.d | ng284.d | ng285.d | ng286.d | ng287.d | ng288.d | ng289.d |
| **Injection Data** | 7/10/03 16:43 | 7/10/03 17:42 | 7/10/03 18:40 | 7/10/03 19:38 | 7/10/03 20:36 | 7/10/03 21:34 | 7/10/03 22:33 |
| **Lab Sample ID** | LOWA | LOWB | LOWC | LOWD | LOWE | LOWF | LOWG |
| **Client Sample ID** | SOILMDLA | SOILMDLB | SOILMDLC | SOILMDLD | SOILMDLE | SOILMDLF | SOILMDLG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Concentration (ug/kg) | Mean Concentration (ug/kg) | Standard Deviation | Student T value used | Sample MDL (ug/kg) | Sample Spike Level (ug/kg) | Average %Rec. | Nominal MDL (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Acetylaminofluorene | 18.959 | 15.407 | 20.728 | 19.324 | 17.668 | 17.377 | 19.830 | 18.470 | 2 | 3.143 | 6 | 33.33 | 55 | 6 |
| 3,3'-Dichlorobenzidine | 19.163 | 16.196 | 9.189 | 16.108 | 14.611 | 16.647 | 10.986 | 14.700 | 3 | 3.143 | 11 | 33.33 | 44 | 11 |
| 4,4'-Methylenebis(2-Chloroani | 15.333 | 9.065 | 8.931 | 14.335 | 9.364 | 12.780 | 3.910 | 10.531 | 4 | 3.143 | 12 | 33.33 | 32 | 12 |
| Benzo(a)anthracene | 33.478 | 30.390 | 37.216 | 36.444 | 33.210 | 35.442 | 37.546 | 34.818 | 3 | 3.143 | 8 | 33.33 | 104 | 8 |
| Chrysene | 31.449 | 27.447 | 32.673 | 32.143 | 31.358 | 34.948 | 34.490 | 32.073 | 2 | 3.143 | 8 | 33.33 | 96 | 8 |
| bis(2-Ethylhexyl)phthalate $ | 29.329 | 46.410 | 31.079 | 21.916 | 24.408 | 25.205 | 47.432 | 32.254 | 10 | 3.143 | 33 | 33.33 | 97 | 33 |
| Di-n-octylphthalate | 21.234 | 21.352 | 25.853 | 24.434 | 23.246 | 26.398 | 25.086 | 23.943 | 2 | 3.143 | 7 | 33.33 | 72 | 7 |
| 7,12-Dimethylbenz[a]anthrace | 15.834 | 17.546 | 20.550 | 20.319 | 20.580 | 19.051 | 20.638 | 19.217 | 2 | 3.143 | 6 | 33.33 | 58 | 6 |
| Benzo(b)fluoranthene | 28.231 | 28.775 | 32.605 | 29.902 | 30.816 | 34.005 | 31.610 | 30.849 | 2 | 3.143 | 7 | 33.33 | 93 | 7 |
| Benzo(k)fluoranthene | 30.655 | 28.961 | 34.552 | 32.157 | 31.244 | 33.283 | 31.611 | 31.780 | 2 | 3.143 | 6 | 33.33 | 95 | 6 |
| Benzo(a)pyrene | 26.108 | 25.378 | 29.539 | 27.162 | 26.210 | 27.528 | 27.479 | 27.058 | 1 | 3.143 | 4 | 33.33 | 81 | 4 |
| 3-Methylcholanthrene | 19.251 | 17.561 | 18.023 | 23.219 | 20.176 | 19.023 | 20.901 | 19.736 | 2 | 3.143 | 6 | 33.33 | 59 | 6 |
| Indeno(1,2,3-cd)pyrene | 20.096 | 18.433 | 20.799 | 19.265 | 20.986 | 24.127 | 21.318 | 20.718 | 2 | 3.143 | 6 | 33.33 | 62 | 6 |
| Dibenz(a,h)anthracene | 23.101 | 19.971 | 22.482 | 23.694 | 21.182 | 23.500 | 20.851 | 22.112 | 1 | 3.143 | 5 | 33.33 | 66 | 5 |
| Benzo(g,h,i)perylene | 22.186 | 20.968 | 23.340 | 22.463 | 21.637 | 25.287 | 22.705 | 22.655 | 1 | 3.143 | 4 | 33.33 | 68 | 4 |
| 1,4-Phenylenediamine & | 8636.724 | 7358.623 | 9197.151 | 8215.903 | 8998.536 | 6017.174 | 6654.868 | 7868.426 | 1216.841 | 3.143 | 3830.817 | 33333.33 | 24 | 3830.817 |
| Benzaldehyde % | 14.368 | 14.895 | 15.036 | 14.054 | 12.741 | 17.119 | 13.611 | 14.546 | 1.378 | 3.143 | 4.330 | 33.33 | 44 | 4.330 |
| Atrazine % | 25.907 | 24.406 | 29.616 | 27.943 | 26.640 | 32.959 | 30.570 | 28.292 | 2.954 | 3.143 | 9.285 | 33.33 | 85 | 9.285 |

# = Taken from files jg135.d, jg136.d, jg137.d, jg138.d, jg139.d, jg140.d, jg141.d
* = Taken from files ng273.d, ng274.d, ng275.d, ng276.d, ng277.d, ng278.d, ng279.d
& = Taken from files ng323.d, ng324.d, ng325.d, ng326.d, ng327.d, ng328.d, ng329.d
@ = Taken from files ml493.d, ml494.d, ml495.d, ml496.d, ml497.d, ml498.d, ml499.d
% = Taken from files lh336.d, lh337.d, lh338.d, lh339.d, lh340.d, lh341.d, lh342.d
$ = Taken from files ml464.d, ml465.d, ml466, ml467.d, ml468.d, ml469.d, ml470.d

8529

Analyst name and ID (printed): JOSEPH M. Gamblin 346

Approved by: Chris Ratchford/412

Signature: [signature] 12.28.05

Title: Sr. Chemist

5GP17

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241628

Data file: /chem/HP06667.i/04mar26.b/cc467.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 09:47 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.023 | ( 0.019) | 708 | 152.0 | 515583 | ( -4) | 40.00 | |
| 54) Naphthalene-d8 | 13.384 | ( 0.018) | 947 | 136.0 | 2071570 | ( -3) | 40.00 | |
| 99) Acenaphthene-d10 | 16.654 | ( 0.018) | 1278 | 164.0 | 952751 | ( -5) | 40.00 | |
| 136) Phenanthrene-d10 | 19.326 | ( 0.009) | 1548 | 188.0 | 1421120 | ( -2) | 40.00 | |
| 168) Chrysene-d12 | 23.282 | ( 0.018) | 1946 | 240.0 | 1192509 | ( -9) | 40.00 | |
| 177) Perylene-d12 | 26.979 | ( 0.017) | 2318 | 264.0 | 1031735 | ( -6) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.593 | ( 0.000) | 112 | 3681576 | 188.198 | 94% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.203 | (-0.001) | 99 | 4520454 | 181.009 | 91% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.022 | ( 0.000) | 82 | 1658716 | 66.322 | 66% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.310 | ( 0.000) | 172 | 3595371 | 104.155 | 104% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.078 | (-0.001) | 330 | 728219 | 172.351 | 86% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.529 | ( 0.000) | 244 | 3083020 | 116.398 | 116% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |



0259

5GP17

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241628

Data file: /chem/HP06667.i/04mar26.b/cc467.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 09:47 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | Below MDL, Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.732 | ( 0.001) | 169 | 76533 | 3.443 | 114.75 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 138) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |

5GP17

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241628

Data file: /chem/HP06667.i/04mar26.b/cc467.d Blank Data file reference:**/chem/HP06667.i/04mar26.b/cc462.d**
Injection date and time: 26-MAR-2004 09:47 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

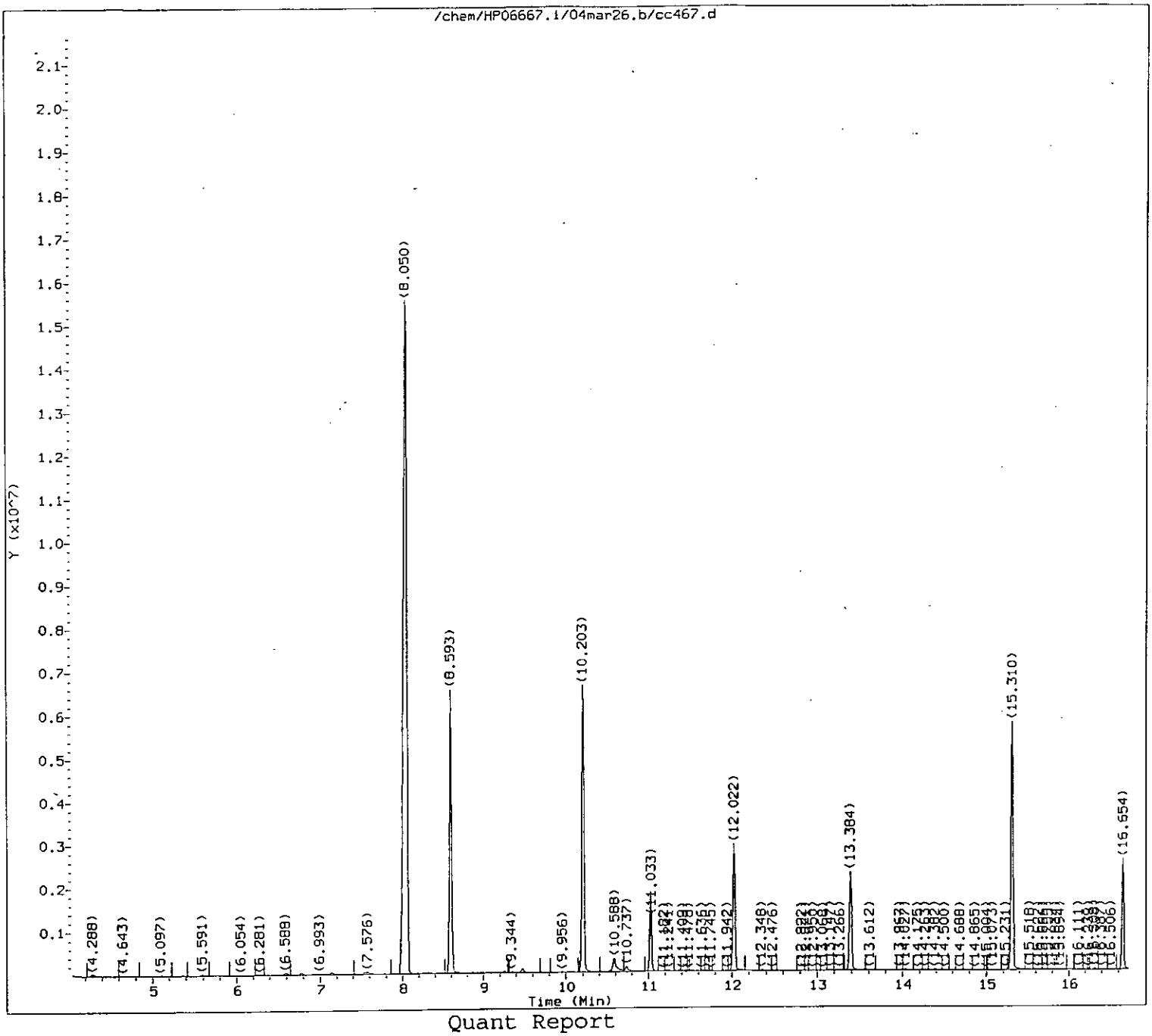
Total number of targets = 64

Comments:

Analyst: Susan J Schuening 1495 Date: 3/26/04
Auditor: MM/TR Date: 3/29/04



8261




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc467.d
Injection date and time: 26-MAR-2004 09:47

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

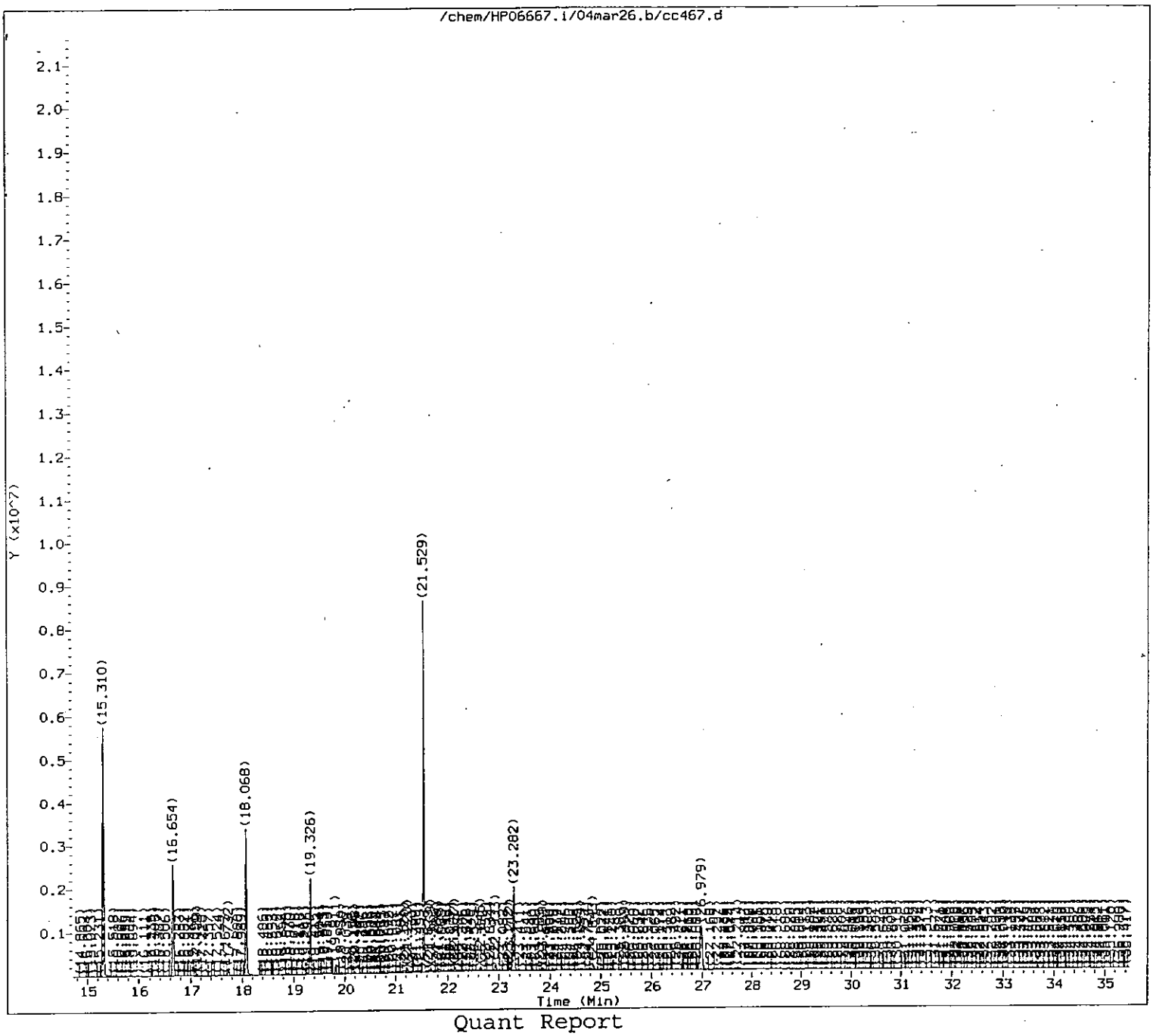
Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Sample Name: 5GP17

Lab Sample ID: 4241628

5262

Jaar 3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc467.d
Injection date and time: 26-MAR-2004 09:47
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42
Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Sample Name: 5GP17
Lab Sample ID: 4241628

0263

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc467.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 09:47  Analyst ID: sls01495

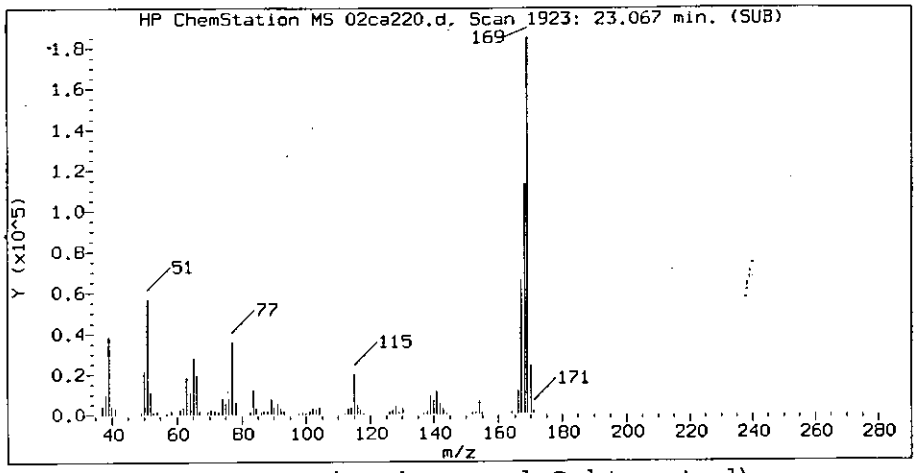
Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

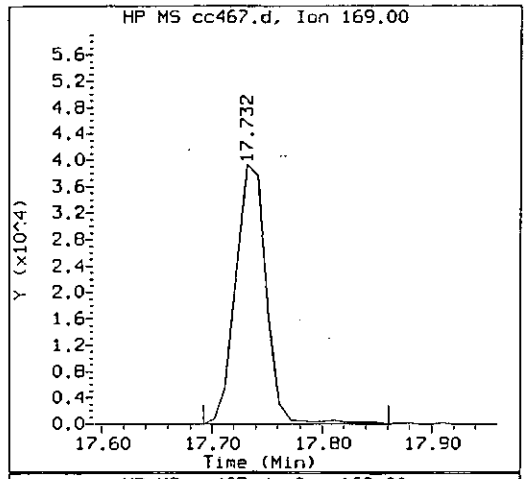
Sample Name: 5GP17  Lab Sample ID: 4241628

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.023 | 152 | 515583 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.384 | 136 | 2071570 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.654 | 164 | 952751 | 40.000 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.732 | 169 | 76533 | 3.443 |
| 136) | Phenanthrene-d10 | (4) | 19.326 | 188 | 1421120 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.282 | 240 | 1192509 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.979 | 264 | 1031735 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.593 | 112 | 3681576 | 188.198 |
| 16) | Phenol-d6 | (1) | 10.203 | 99 | 4520454 | 181.009 |
| 40) | Nitrobenzene-d5 | (2) | 12.022 | 82 | 1658716 | 66.322 |
| 80) | 2-Fluorobiphenyl | (3) | 15.310 | 172 | 3595371 | 104.155 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.078 | 330 | 728219 | 172.351 |
| 157) | Terphenyl-d14 | (5) | 21.529 | 244 | 3083020 | 116.398 |

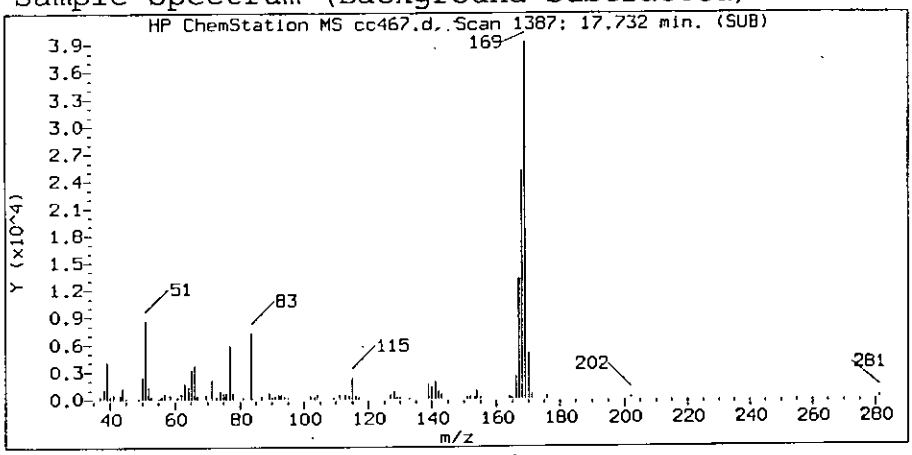
M = Compound was manually integrated.  A = User selected an alternate hit

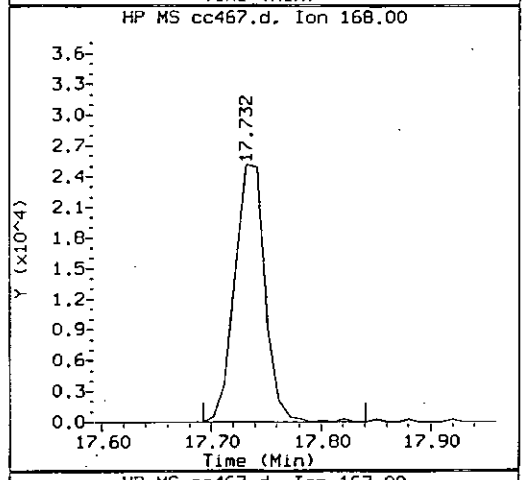
Reference Standard Spectrum for N-Nitrosodiphenylamine



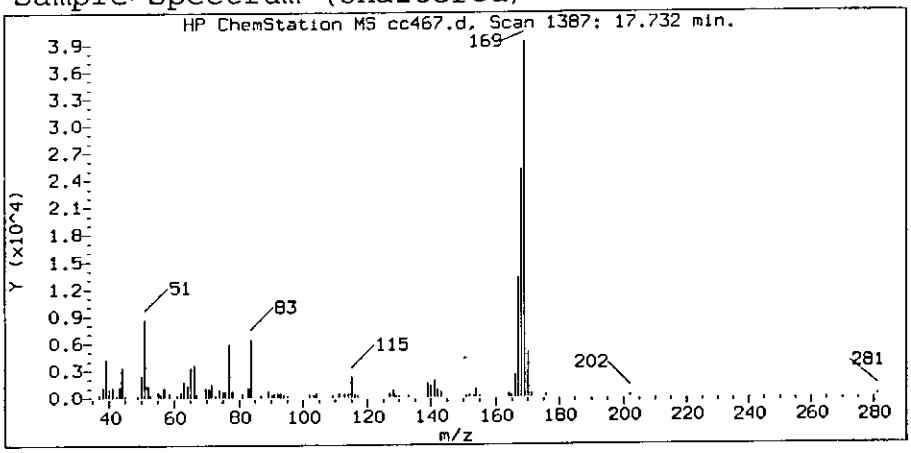



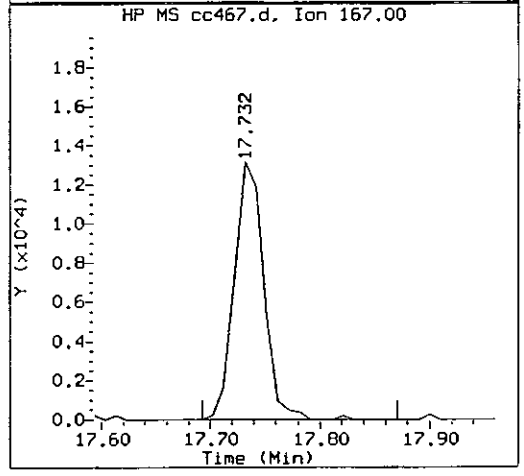

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06667.i/04mar26.b/cc467.d
Injection date and time: 26-MAR-2004 09:47

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:27 sls01495

Sample Name: 5GP17

Lab Sample ID: 4241628

| | |
|---|---|
| Compound Number | : 118 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1387 |
| Retention Time (minutes) | : 17.732 |
| Quant Ion | : 169.0 |
| Area (flag) | : 76533 |
| Concentration (ng/ul) | : 3.4426 |

8265

3/26/04

5GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241629

Data file: /chem/HP06667.i/04mar26.b/cc468.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 10:30 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.022 | ( 0.021) | 708 | 152.0 | 524940 | ( -2) | 40.00 | |
| 54) Naphthalene-d8 | 13.392 | ( 0.011) | 948 | 136.0 | 2085403 | ( -3) | 40.00 | |
| 99) Acenaphthene-d10 | 16.650 | ( 0.022) | 1278 | 164.0 | 944382 | ( -6) | 40.00 | |
| 136) Phenanthrene-d10 | 19.327 | ( 0.007) | 1549 | 188.0 | 1434571 | ( -1) | 40.00 | |
| 168) Chrysene-d12 | 23.281 | ( 0.019) | 1948 | 240.0 | 1206318 | ( -8) | 40.00 | |
| 177) Perylene-d12 | 26.981 | ( 0.015) | 2321 | 264.0 | 1024309 | ( -7) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.592 | ( 0.000) | 112 | 3670706 | 184.298 | 92% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.202 | (-0.001) | 99 | 4476482 | 176.053 | 88% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.020 | ( 0.000) | 82 | 1630409 | 64.758 | 65% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.306 | ( 0.000) | 172 | 3524849 | 103.017 | 103% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.082 | (-0.001) | 330 | 888211 | 212.080 | 106% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.535 | (-0.001) | 244 | 3098766 | 115.653 | 116% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |



0266

5GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241629

Data file: /chem/HP06667.i/04mar26.b/cc468.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 10:30 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | Below MDL, Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |



5267

5GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241629

Data file: /chem/HP06667.i/04mar26.b/cc468.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 10:30 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

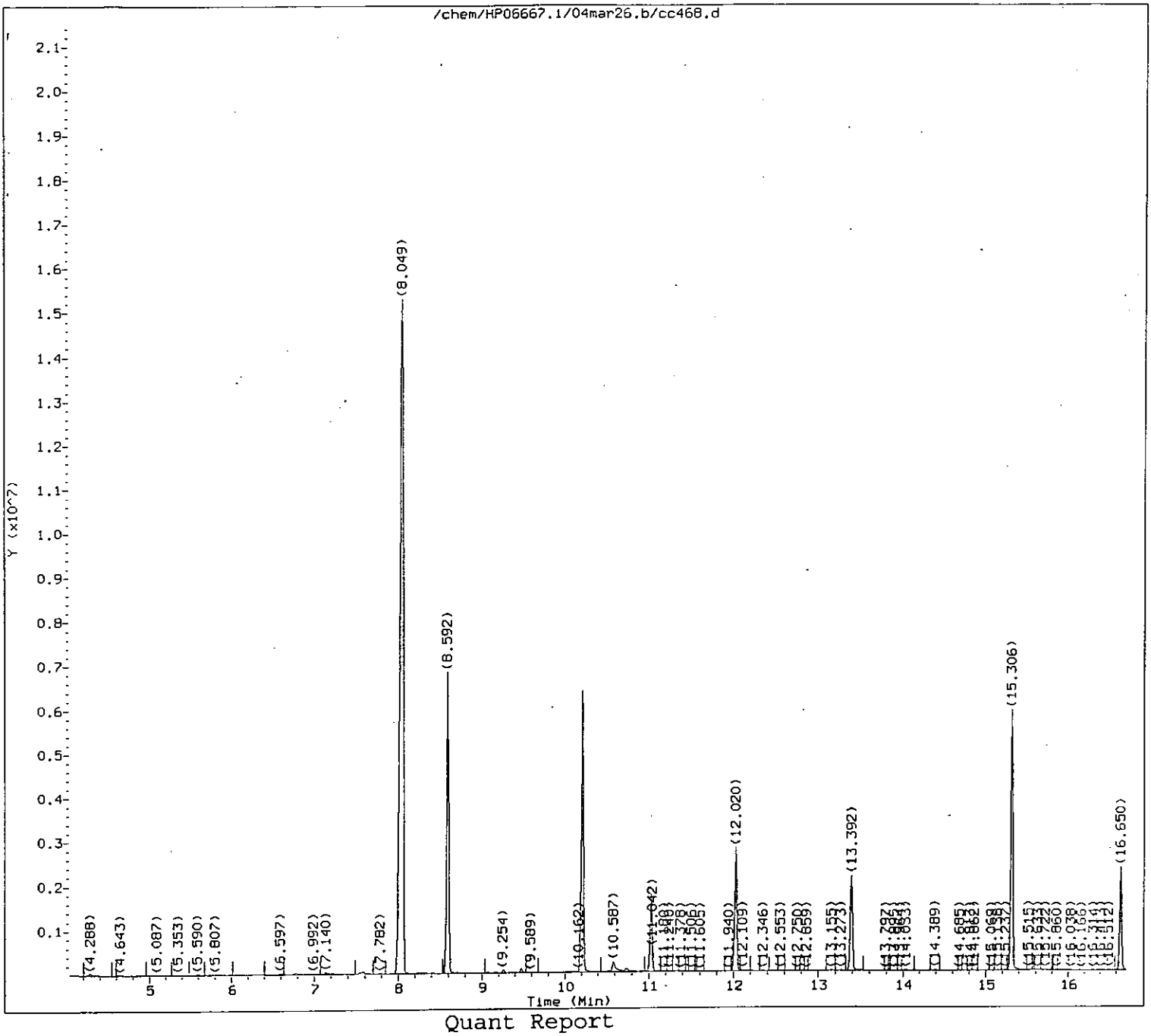
Total number of targets = 64

Comments:

Analyst: Susan J Schuning 1495 Date: 3/26/04
Auditor: MTW Date: 3/26/04



9268




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc468.d
Injection date and time: 26-MAR-2004 10:30

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

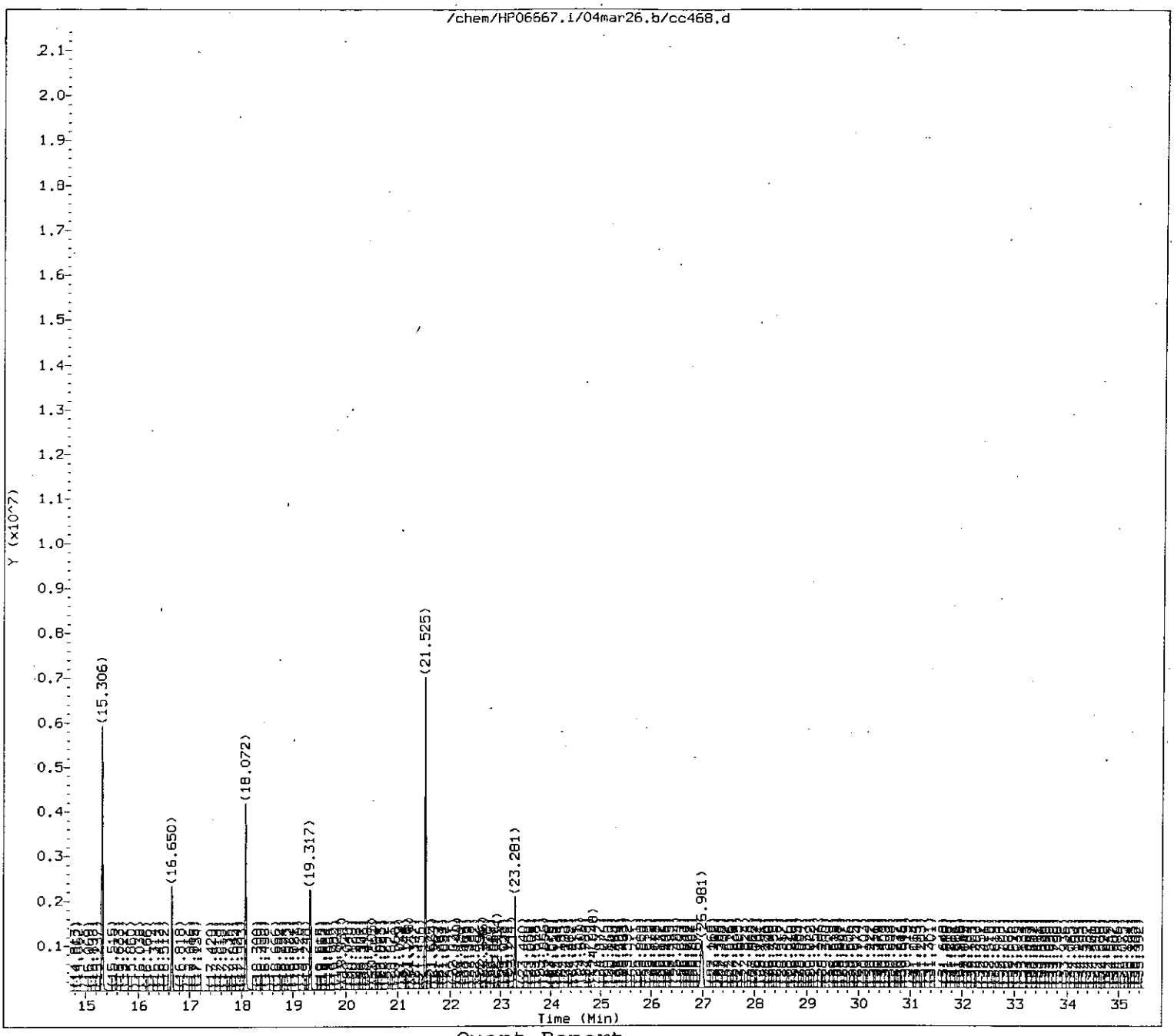
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Sample Name: 5GP18

Lab Sample ID: 4241629

5269

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc468.d Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 10:30 Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Sample Name: 5GP18 Lab Sample ID: 4241629

8270

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc468.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 10:30  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 11:09 sls01495

Sample Name: 5GP18  Lab Sample ID: 4241629

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.022 | 152 | 524940 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.392 | 136 | 2085403 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.650 | 164 | 944382 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.327 | 188 | 1434571 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.281 | 240 | 1206318 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.981 | 264 | 1024309 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.592 | 112 | 3670706 | 184.298 |
| 16) | Phenol-d6 | (1) | 10.202 | 99 | 4476482 | 176.053 |
| 40) | Nitrobenzene-d5 | (2) | 12.020 | 82 | 1630409 | 64.758 |
| 80) | 2-Fluorobiphenyl | (3) | 15.306 | 172 | 3524849 | 103.017 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.082 | 330 | 888211 | 212.080 |
| 157) | Terphenyl-d14 | (5) | 21.535 | 244 | 3098766 | 115.653 |

M = Compound was manually integrated.  A = User selected an alternate hit

5GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241630

Data file: /chem/HP06667.i/04mar26.b/cc469.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:12 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.023 | ( 0.020) | 708 | 152.0 | 522034 | ( -3) | 40.00 | |
| 54) Naphthalene-d8 | 13.393 | ( 0.010) | 948 | 136.0 | 2092641 | ( -2) | 40.00 | |
| 99) Acenaphthene-d10 | 16.652 | ( 0.020) | 1278 | 164.0 | 953078 | ( -5) | 40.00 | |
| 136) Phenanthrene-d10 | 19.321 | ( 0.013) | 1548 | 188.0 | 1472146 | ( 2) | 40.00 | |
| 168) Chrysene-d12 | 23.284 | ( 0.016) | 1947 | 240.0 | 1217319 | ( -7) | 40.00 | |
| 177) Perylene-d12 | 26.989 | ( 0.007) | 2320 | 264.0 | 1047560 | ( -5) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.592 | ( 0.000) | 112 | 3588885 | 181.193 | 91% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.212 | (-0.002) | 99 | 4325958 | 171.080 | 86% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.020 | ( 0.000) | 82 | 1590891 | 62.970 | 63% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.308 | ( 0.000) | 172 | 3399325 | 98.442 | 98% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.075 | (-0.001) | 330 | 847033 | 200.403 | 100% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.533 | ( 0.000) | 244 | 3040350 | 112.448 | 112% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |



6272

5GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241630

Data file: /chem/HP06667.i/04mar26.b/cc469.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:12 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | Below MDL, Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.738( 0.000) | 169 | 42893 | 1.863 | 62.08 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | Below MDL, Do not report | | | | 1.00 |

5GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241630

Data file: /chem/HP06667.i/04mar26.b/cc469.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:12 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

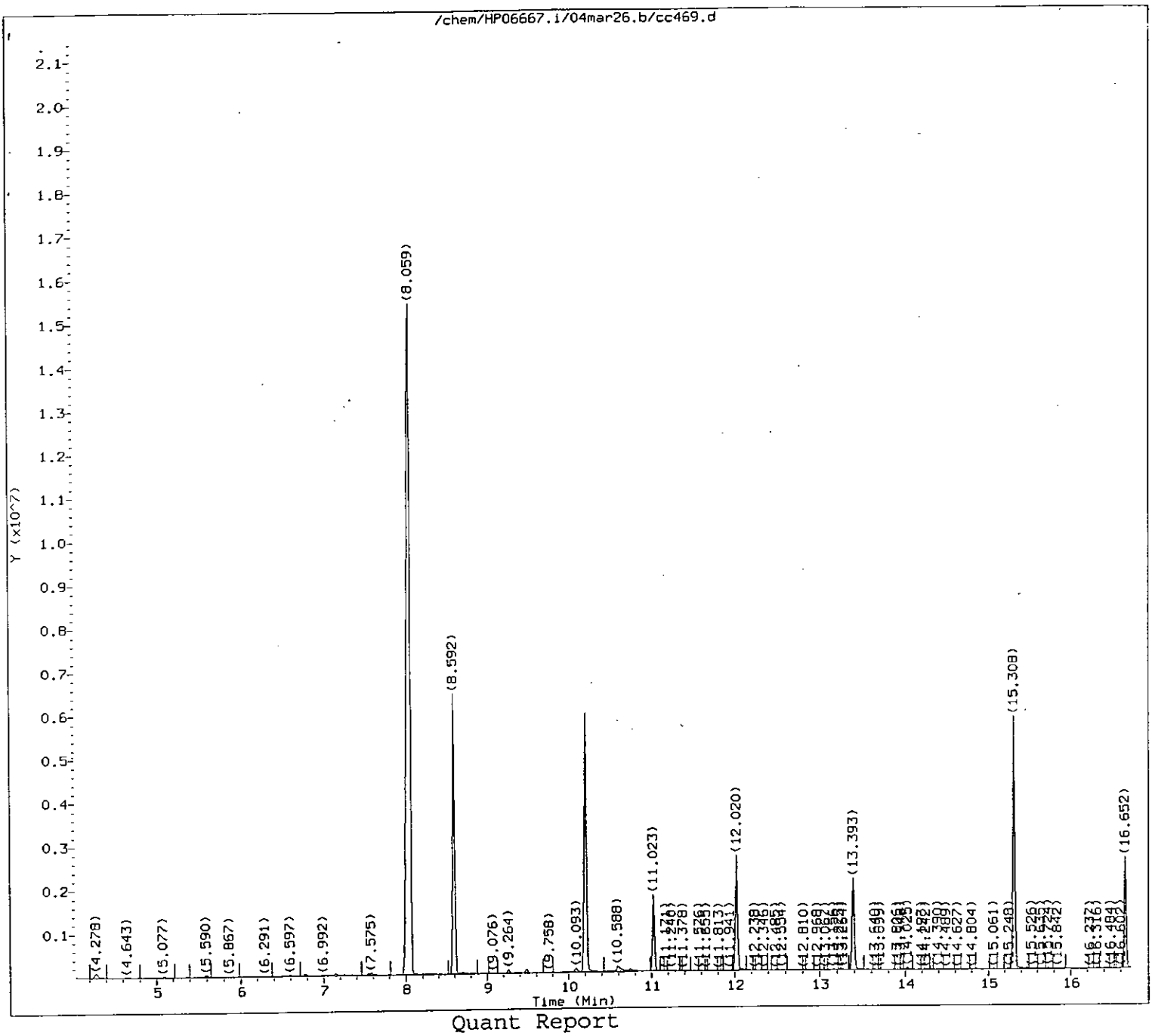
Total number of targets = 64

Comments:

Analyst: Susan J. Schenning 1491 Date: 3/26/04
Auditor: mm/jw Date: 3/29/04



8274




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc469.d
Injection date and time: 26-MAR-2004 11:12

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

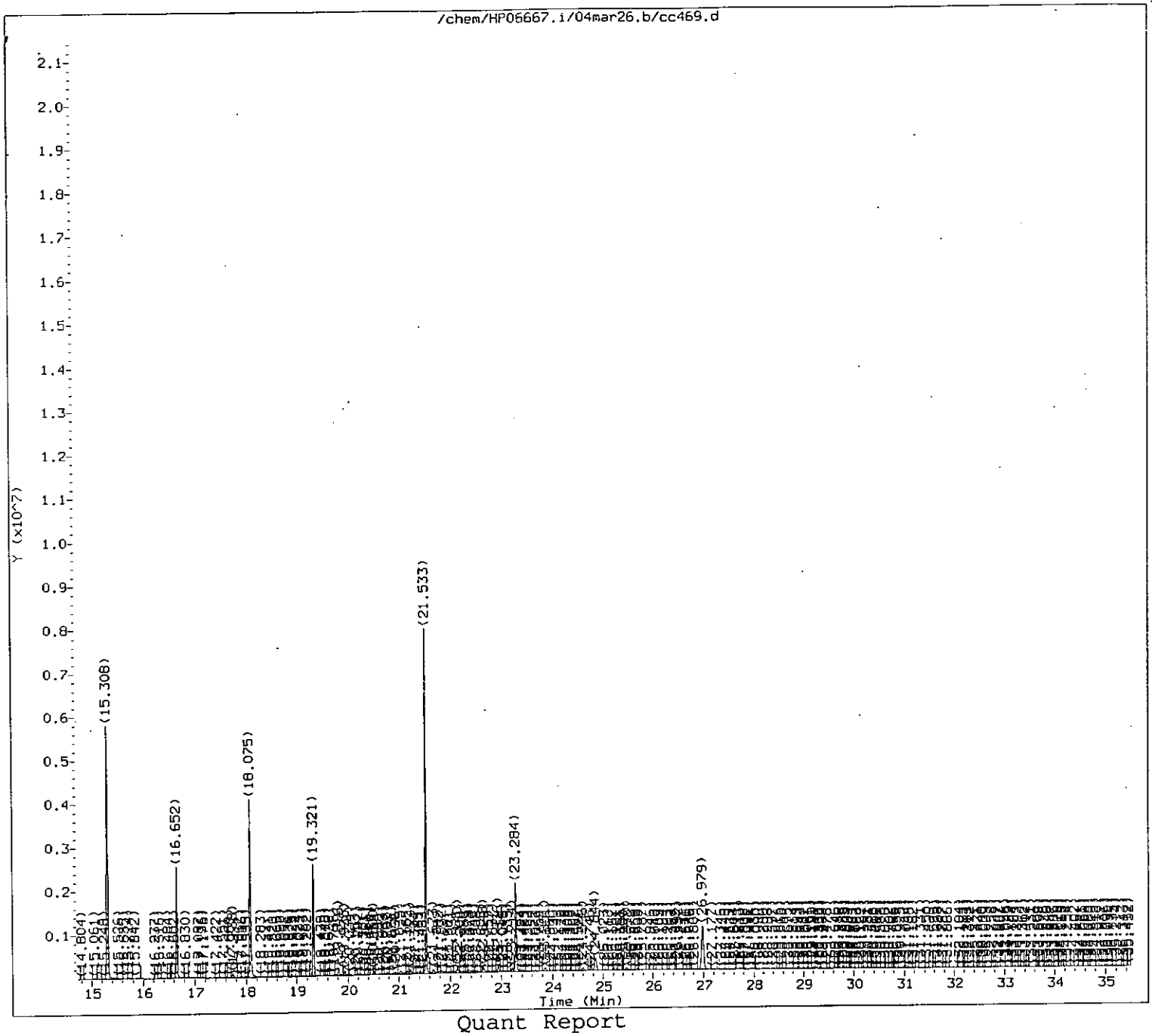
Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Sample Name: 5GP19

Lab Sample ID: 4241630

9275

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc469.d
Injection date and time: 26-MAR-2004 11:12

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Sample Name: 5GP19

Lab Sample ID: 4241630

0276

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc469.d
Injection date and time: 26-MAR-2004 11:12
Instrument ID: HP06667.i
Analyst ID: sls01495

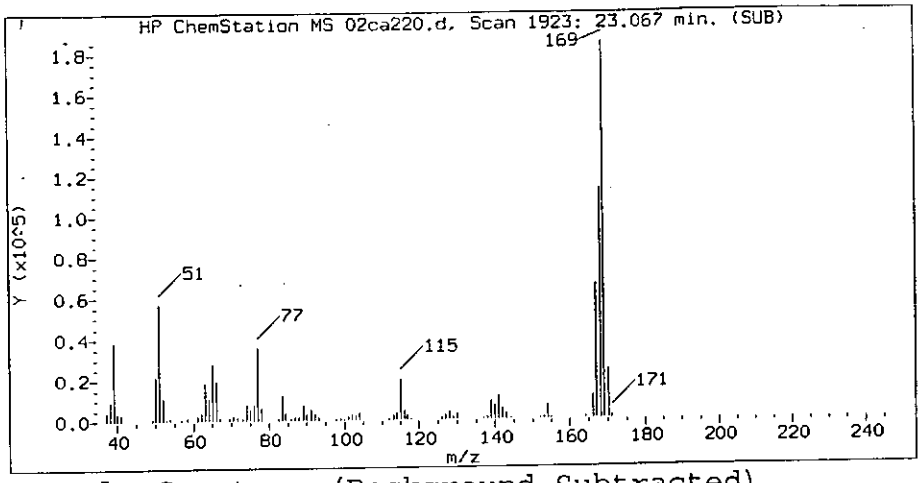
Method used: /chem/HP06667.i/04mar26.b/m8270.m
Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

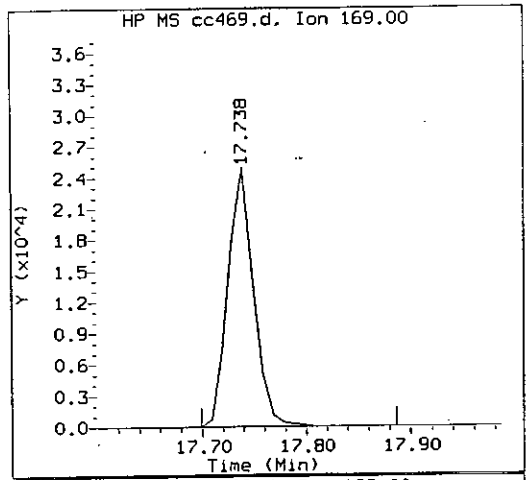
Sample Name: 5GP19
Lab Sample ID: 4241630

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.023 | 152 | 522034 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.393 | 136 | 2092641 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.652 | 164 | 953078 | 40.000 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.738 | 169 | 42893 | 1.863 |
| 136) | Phenanthrene-d10 | (4) | 19.321 | 188 | 1472146 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.284 | 240 | 1217319 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.989 | 264 | 1047560 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.592 | 112 | 3588885 | 181.193 |
| 16) | Phenol-d6 | (1) | 10.212 | 99 | 4325958 | 171.080 |
| 40) | Nitrobenzene-d5 | (2) | 12.020 | 82 | 1590891 | 62.970 |
| 80) | 2-Fluorobiphenyl | (3) | 15.308 | 172 | 3399325 | 98.442 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.075 | 330 | 847033 | 200.403 |
| 157) | Terphenyl-d14 | (5) | 21.533 | 244 | 3040350 | 112.448 |

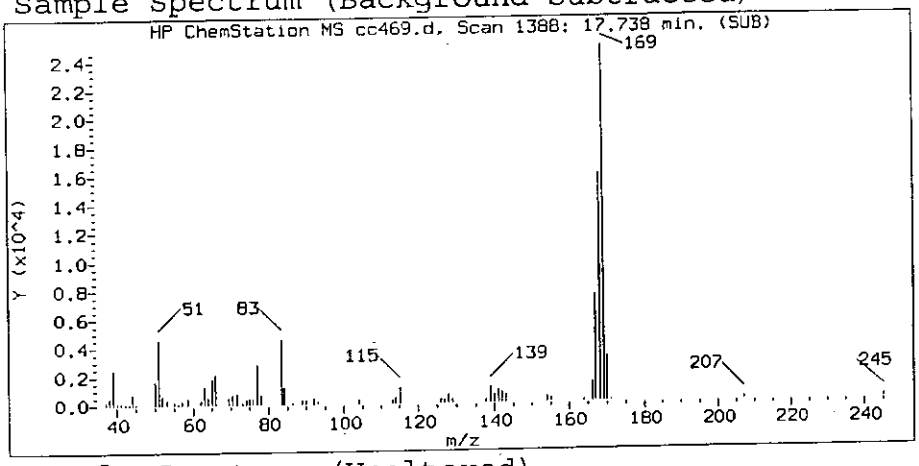
M = Compound was manually integrated.
A = User selected an alternate hit

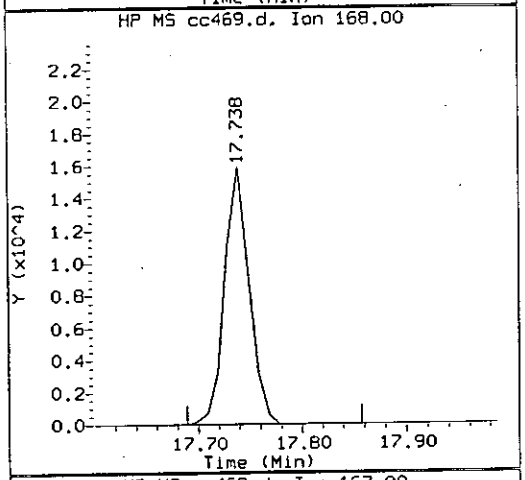
Reference Standard Spectrum for N-Nitrosodiphenylamine



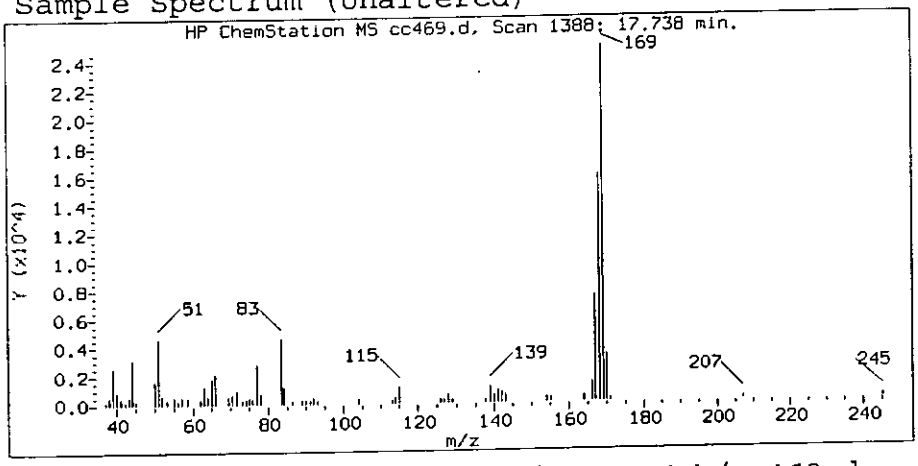



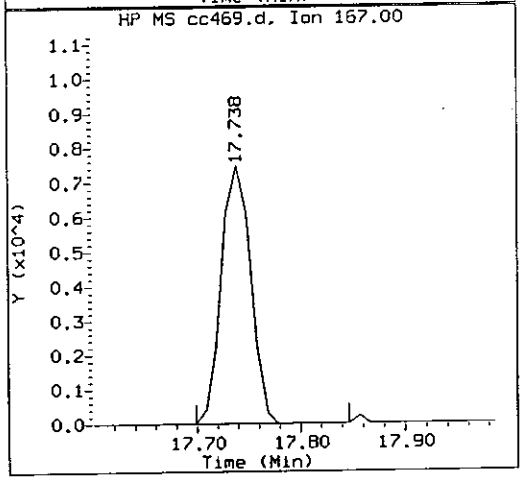

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06667.i/04mar26.b/cc469.d
Injection date and time: 26-MAR-2004 11:12

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 11:53 sls01495

Sample Name: 5GP19

Lab Sample ID: 4241630

| | |
|---|---|
| Compound Number | : 118 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1388 |
| Retention Time (minutes) | : 17.738 |
| Quant Ion | : 169.0 |
| Area (flag) | : 42893 |
| Concentration (ng/ul) | : 1.8625 |

8278
3/26/04

5GP20

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241631

Data file: /chem/HP06667.i/04mar26.b/cc464.d Blank Data file reference:**/chem/HP06667.i/04mar26.b/cc462.d**
Injection date and time: 26-MAR-2004 07:39 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.043( 0.000) | 710 | 152.0 | 568466( 6) | 40.00 | |
| 54) Naphthalene-d8 | 13.404(-0.001) | 949 | 136.0 | 2215470( 3) | 40.00 | |
| 99) Acenaphthene-d10 | 16.663( 0.009) | 1279 | 164.0 | 1027531( 2) | 40.00 | |
| 136) Phenanthrene-d10 | 19.331( 0.003) | 1549 | 188.0 | 1561894( 8) | 40.00 | |
| 168) Chrysene-d12 | 23.292( 0.008) | 1948 | 240.0 | 1328936( 2) | 40.00 | |
| 177) Perylene-d12 | 26.995( 0.000) | 2321 | 264.0 | 1120654( 2) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.603( 0.001) | 112 | 3816393 | 176.941 | 88% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.223(-0.001) | 99 | 4580442 | 166.349 | 83% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.041( 0.000) | 82 | 1714698 | 64.107 | 64% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.319( 0.000) | 172 | 3621597 | 97.280 | 97% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.086( 0.000) | 330 | 889489 | 195.199 | 98% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.532( 0.000) | 244 | 3200604 | 108.432 | 108% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | ND | ND | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | ND | ND | | | | 1.00 |
| 41) Nitrobenzene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 43) Isophorone | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | ND | ND | | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | ND | ND | | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | ND | ND | | | | 1.00 |
| 55) Naphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | ND | ND | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | ND | ND | | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | Below MDL, Do not report | | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |



6279

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06667.i/04mar26.b/cc464.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 07:39 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 100) Acenaphthene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | Below MDL, Do not report | | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | Below MDL, Do not report | | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 112) Fluorene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | Below MDL, Do not report | | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 139) Anthracene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 141) Carbazole | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | Below MDL, Do not report | | | | | 2.00 |
| 148) Fluoranthene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 155) Pyrene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | Below MDL, Do not report | | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | Below MDL, Do not report | | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 169) Chrysene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | 22.944( 0.000) | 149 | 280159 | 7.797 | 259.91 | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | Below MDL, Do not report | | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |

5GP20

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241631

Data file: /chem/HP06667.i/04mar26.b/cc464.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 07:39 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 182) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

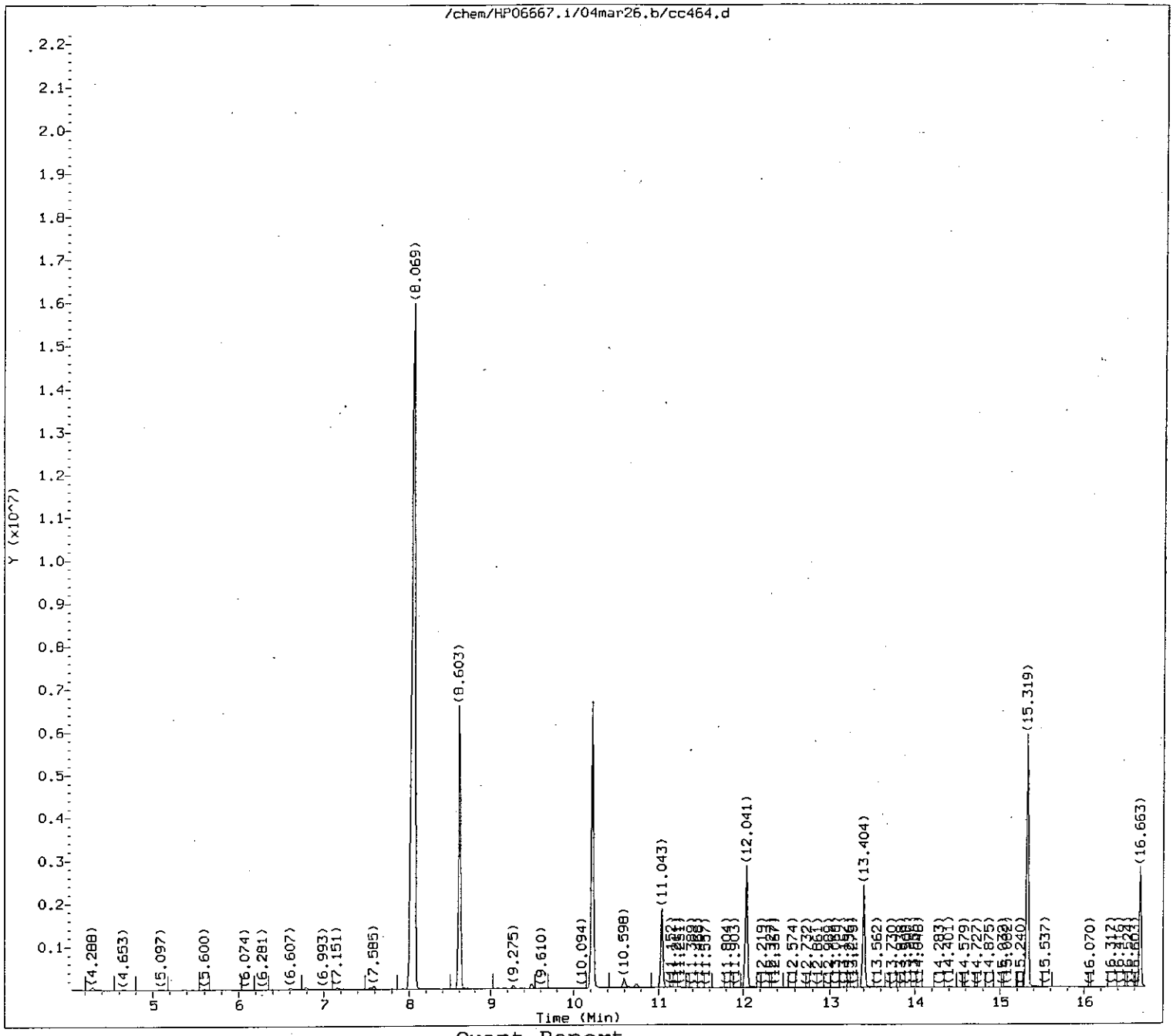
Total number of targets = 64

Comments:

Analyst: Susan L Schuering 1495 Date: 3/26/04
Auditor: [signature] Date: 3/29/04



0281




Quant Report

Target Revision 3.5

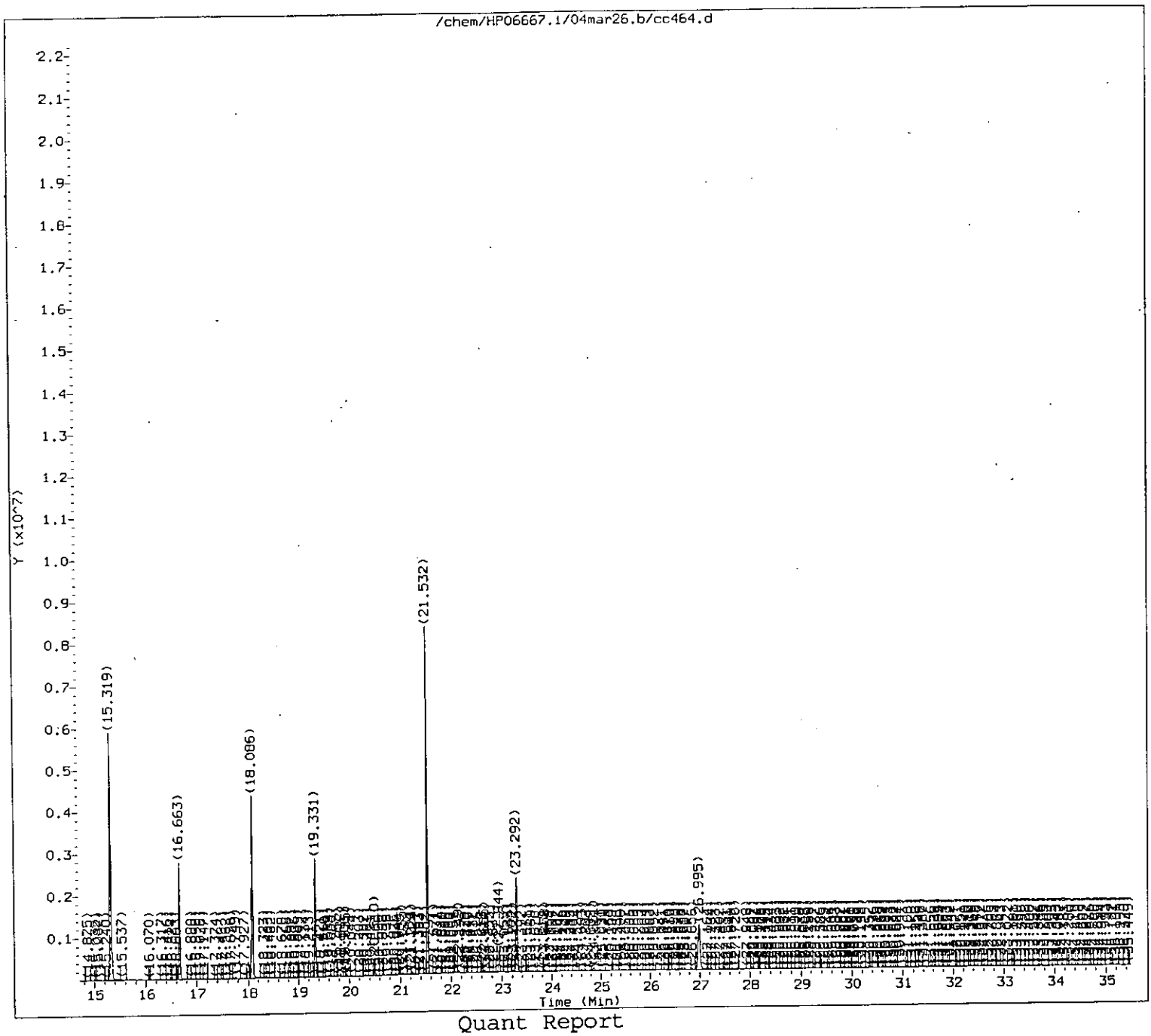
Data File: /chem/HP06667.i/04mar26.b/cc464.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 07:39  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

Sample Name: 5GP20  Lab Sample ID: 4241631

9282

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc464.d
Injection date and time: 26-MAR-2004 07:39

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

Sample Name: 5GP20

Lab Sample ID: 4241631

0283

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc464.d
Injection date and time: 26-MAR-2004 07:39
Instrument ID: HP06667.i
Analyst ID: sls01495

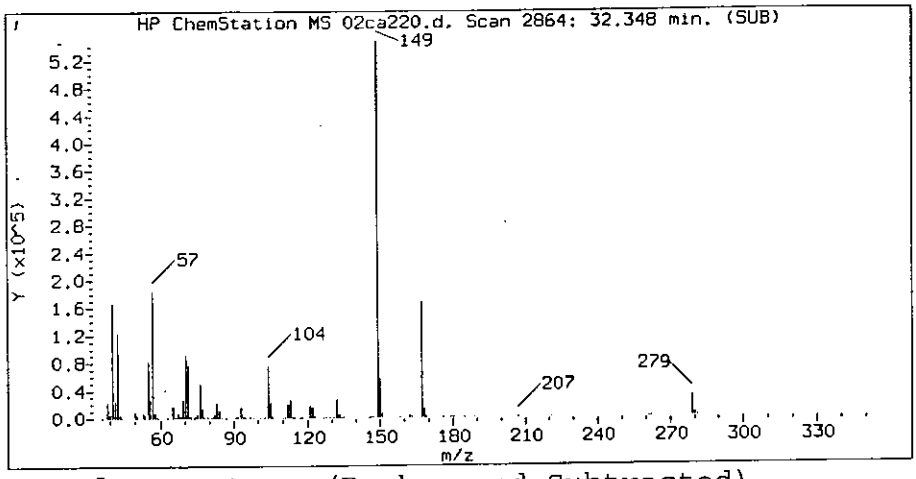
Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42
Sublist used: STC804
Date, time and analyst ID of latest file update: 26-Mar-2004 08:20 sls01495

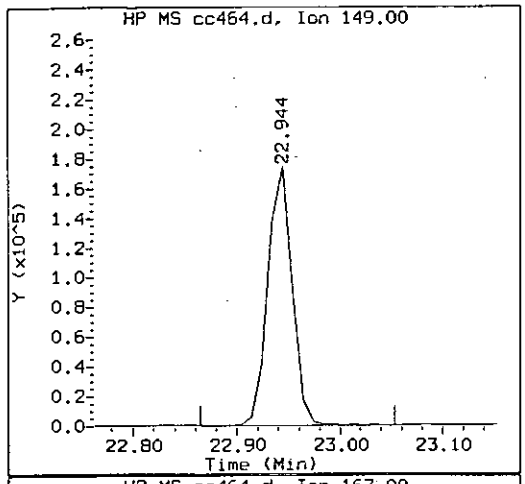
Sample Name: 5GP20
Lab Sample ID: 4241631

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.043 | 152 | 568466 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.404 | 136 | 2215470 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.663 | 164 | 1027531 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.331 | 188 | 1561894 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.292 | 240 | 1328936 | 40.000 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.944 | 149 | 280159 | 7.797 |
| 177) | Perylene-d12 | (6) | 26.995 | 264 | 1120654 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.603 | 112 | 3816393 | 176.941 |
| 16) | Phenol-d6 | (1) | 10.223 | 99 | 4580442 | 166.349 |
| 40) | Nitrobenzene-d5 | (2) | 12.041 | 82 | 1714698 | 64.107 |
| 80) | 2-Fluorobiphenyl | (3) | 15.319 | 172 | 3621597 | 97.280 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.086 | 330 | 889489 | 195.199 |
| 157) | Terphenyl-d14 | (5) | 21.532 | 244 | 3200604 | 108.432 |

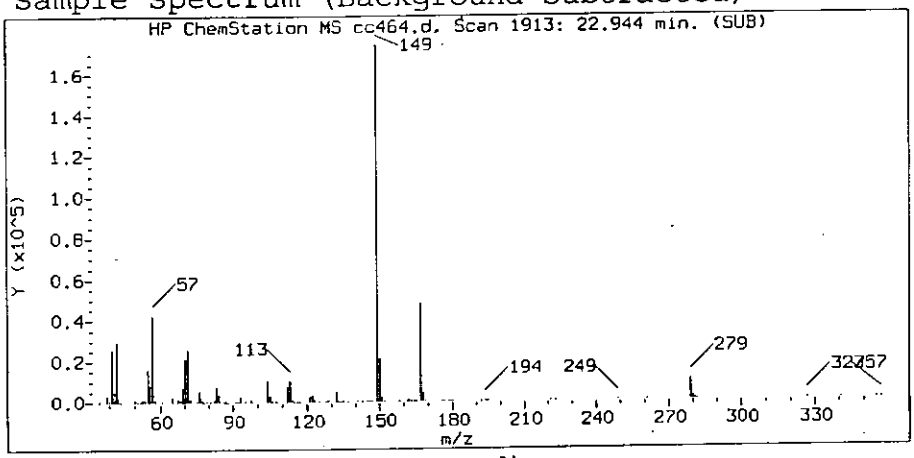
M = Compound was manually integrated.
A = User selected an alternate hit

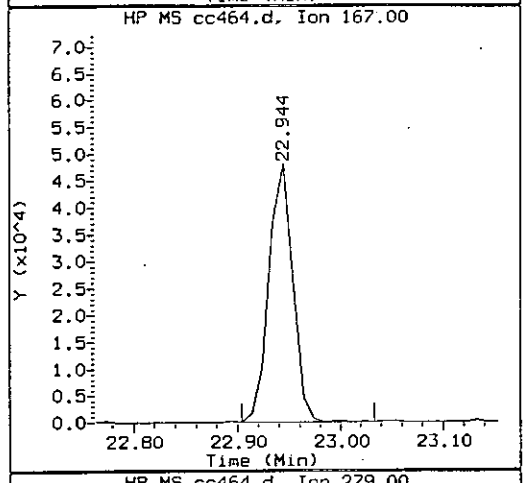
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



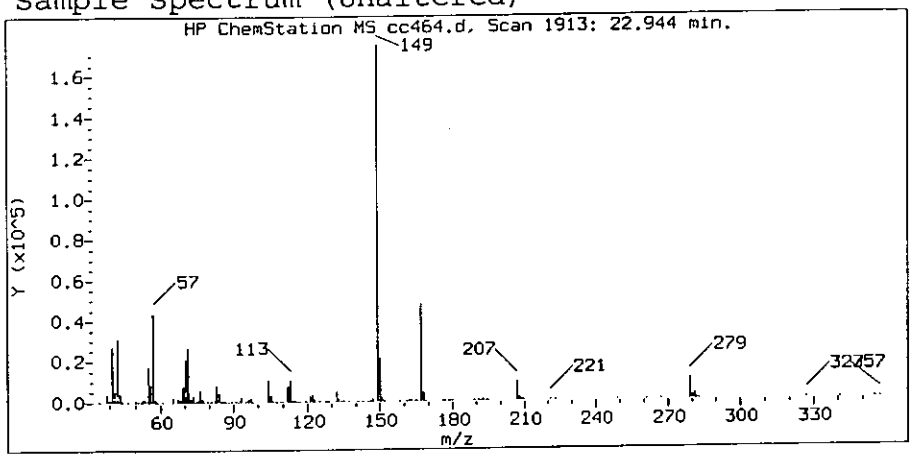



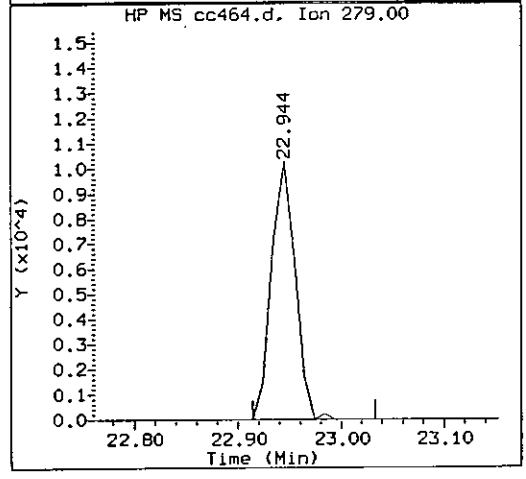

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06667.i/04mar26.b/cc464.d
Injection date and time: 26-MAR-2004 07:39

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: all

Date, time and analyst ID of latest file update: 26-Mar-2004 08:17 Automation

Sample Name: 5GP20

Lab Sample ID: 4241631

| | | |
|---|---|---|
| Compound Number | : | 170 |
| Compound Name | : | bis(2-Ethylhexyl)phthalate |
| Scan Number | : | 1913 |
| Retention Time (minutes) | : | 22.944 |
| Quant Ion | : | 149.0 |
| Area (flag) | : | 280159 |
| Concentration (ng/ul) | : | 7.7973 |

8285 3pr04

Hit Data Report for data file /chem/HP06667.i/04mar26.b/cc464.d, generated on 03/26/2004 at 08:21

5GP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241634

Data file: /chem/HP06667.i/04mar26.b/cc470.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:55 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.033 | ( 0.010) | 709 | 152.0 | 537718 | ( 0) | 40.00 | |
| 54) Naphthalene-d8 | 13.393 | ( 0.009) | 948 | 136.0 | 2114933 | ( -1) | 40.00 | |
| 99) Acenaphthene-d10 | 16.653 | ( 0.019) | 1278 | 164.0 | 964471 | ( -4) | 40.00 | |
| 136) Phenanthrene-d10 | 19.323 | ( 0.012) | 1548 | 188.0 | 1502243 | ( 4) | 40.00 | |
| 168) Chrysene-d12 | 23.289 | ( 0.011) | 1947 | 240.0 | 1243236 | ( -5) | 40.00 | |
| 177) Perylene-d12 | 26.988 | ( 0.008) | 2319 | 264.0 | 1058426 | ( -4) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.592 | ( 0.001) | 112 | 3597111 | 176.311 | 88% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.212 | (-0.001) | 99 | 4342306 | 166.718 | 83% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.020 | ( 0.000) | 82 | 1586310 | 62.127 | 62% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.309 | ( 0.000) | 172 | 3483994 | 99.702 | 100% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.076 | (-0.001) | 330 | 868830 | 203.132 | 102% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.536 | ( 0.000) | 244 | 3102310 | 112.347 | 112% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | ND | | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 43) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | ND | | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | ND | | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | ND | | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | ND | | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



6286

5GP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241634

Data file: /chem/HP06667.i/04mar26.b/cc470.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:55 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | Below MDL, Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |



0287

5GP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241634

Data file: /chem/HP06667.i/04mar26.b/cc470.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 11:55 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

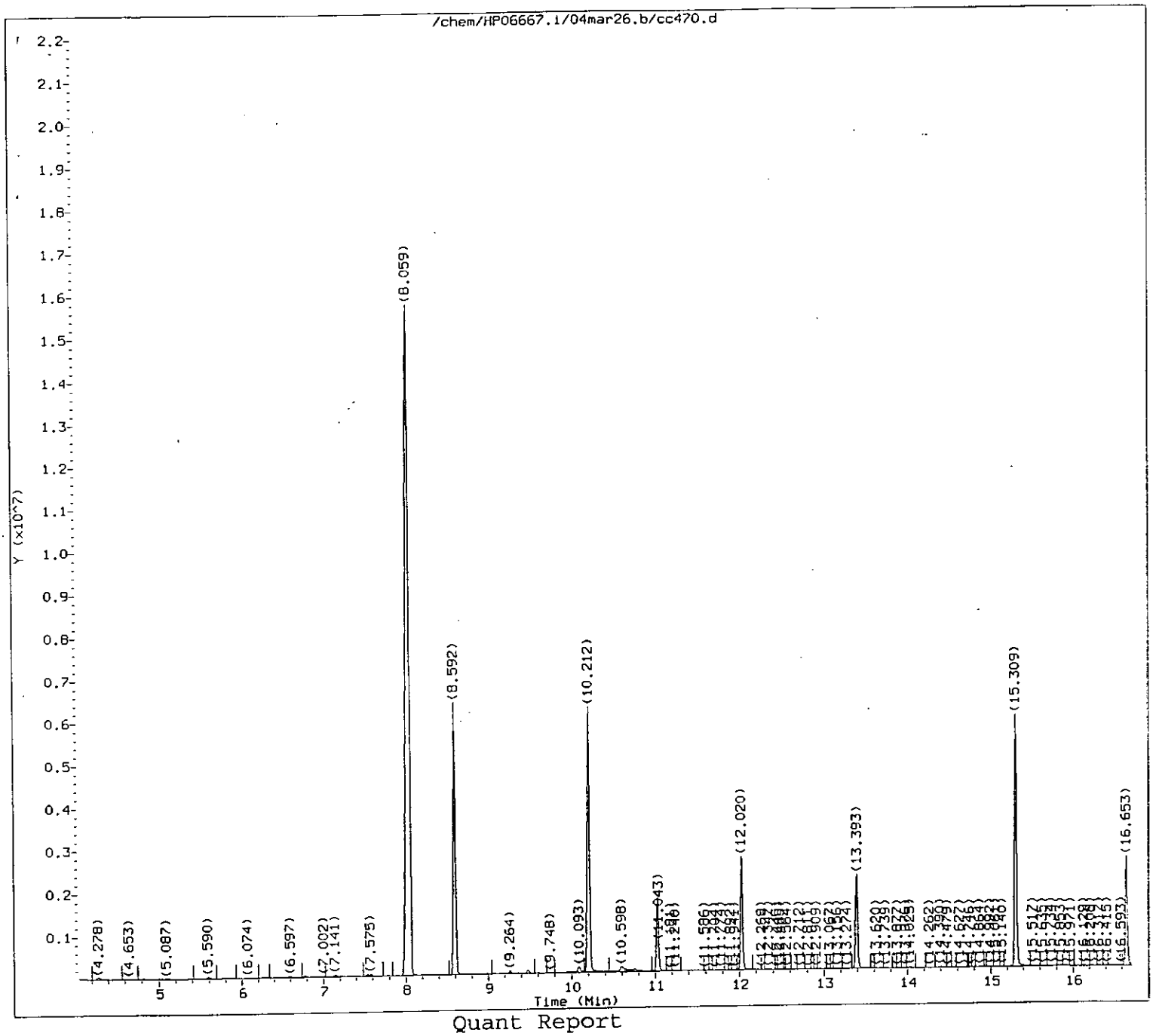
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: [signature] Date: 03/26/04
Auditor: [signature] Date: 3/28/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc470.d
Injection date and time: 26-MAR-2004 11:55

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

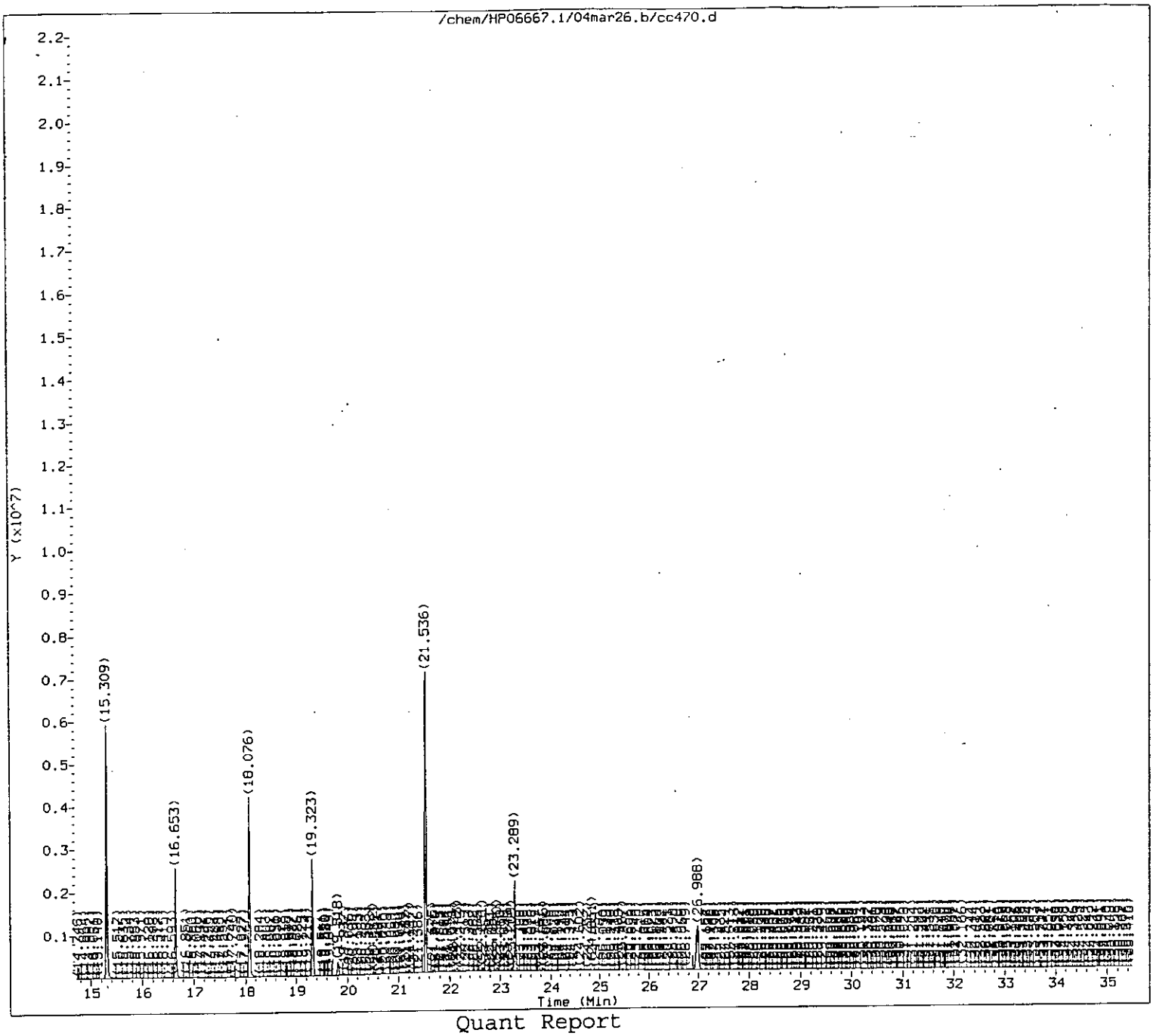
Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Sample Name: 5GP21

Lab Sample ID: 4241634

0289

lmh1980
03/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc470.d
Injection date and time: 26-MAR-2004 11:55

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Sample Name: 5GP21

Lab Sample ID: 4241634

8290

lmh1/8

B12e104

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc470.d
Injection date and time: 26-MAR-2004 11:55
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42
Sublist used: STC804
Date, time and analyst ID of latest file update: 26-Mar-2004 16:30 lmh00956

Sample Name: 5GP21
Lab Sample ID: 4241634

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.033 | 152 | 537718 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.393 | 136 | 2114933 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.653 | 164 | 964471 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.323 | 188 | 1502243 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.289 | 240 | 1243236 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.988 | 264 | 1058426 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.592 | 112 | 3597111 | 176.311 |
| 16) | Phenol-d6 | (1) | 10.212 | 99 | 4342306 | 166.718 |
| 40) | Nitrobenzene-d5 | (2) | 12.020 | 82 | 1586310 | 62.127 |
| 80) | 2-Fluorobiphenyl | (3) | 15.309 | 172 | 3483994 | 99.702 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.076 | 330 | 868830 | 203.132 |
| 157) | Terphenyl-d14 | (5) | 21.536 | 244 | 3102310 | 112.347 |

M = Compound was manually integrated.

A = User selected an alternate hit

5GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241636

Data file: /chem/HP06667.i/04mar26.b/cc471.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 12:38 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.032 | ( 0.011) | 709 | 152.0 | 497333 | ( -7) | 40.00 | |
| 54) Naphthalene-d8 | 13.392 | ( 0.010) | 948 | 136.0 | 1991749 | ( -7) | 40.00 | |
| 99) Acenaphthene-d10 | 16.661 | ( 0.011) | 1279 | 164.0 | 927015 | ( -8) | 40.00 | |
| 136) Phenanthrene-d10 | 19.329 | ( 0.005) | 1549 | 188.0 | 1404734 | ( -3) | 40.00 | |
| 168) Chrysene-d12 | 23.286 | ( 0.014) | 1948 | 240.0 | 1150527 | ( -12) | 40.00 | |
| 177) Perylene-d12 | 26.987 | ( 0.008) | 2321 | 264.0 | 994845 | ( -10) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.592 | ( 0.001) | 112 | 3345430 | 177.290 | 89% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.212 | (-0.001) | 99 | 4028424 | 167.226 | 84% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.029 | ( 0.000) | 82 | 1513541 | 62.943 | 63% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.307 | ( 0.000) | 172 | 3188002 | 94.918 | 95% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.083 | ( 0.000) | 330 | 799059 | 194.368 | 97% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.528 | ( 0.000) | 244 | 2880120 | 112.706 | 113% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | | ND | ND | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |



0292

5GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241636

Data file: /chem/HP06667.i/04mar26.b/cc471.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 12:38 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |

5GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241636

Data file: /chem/HP06667.i/04mar26.b/cc471.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 12:38 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

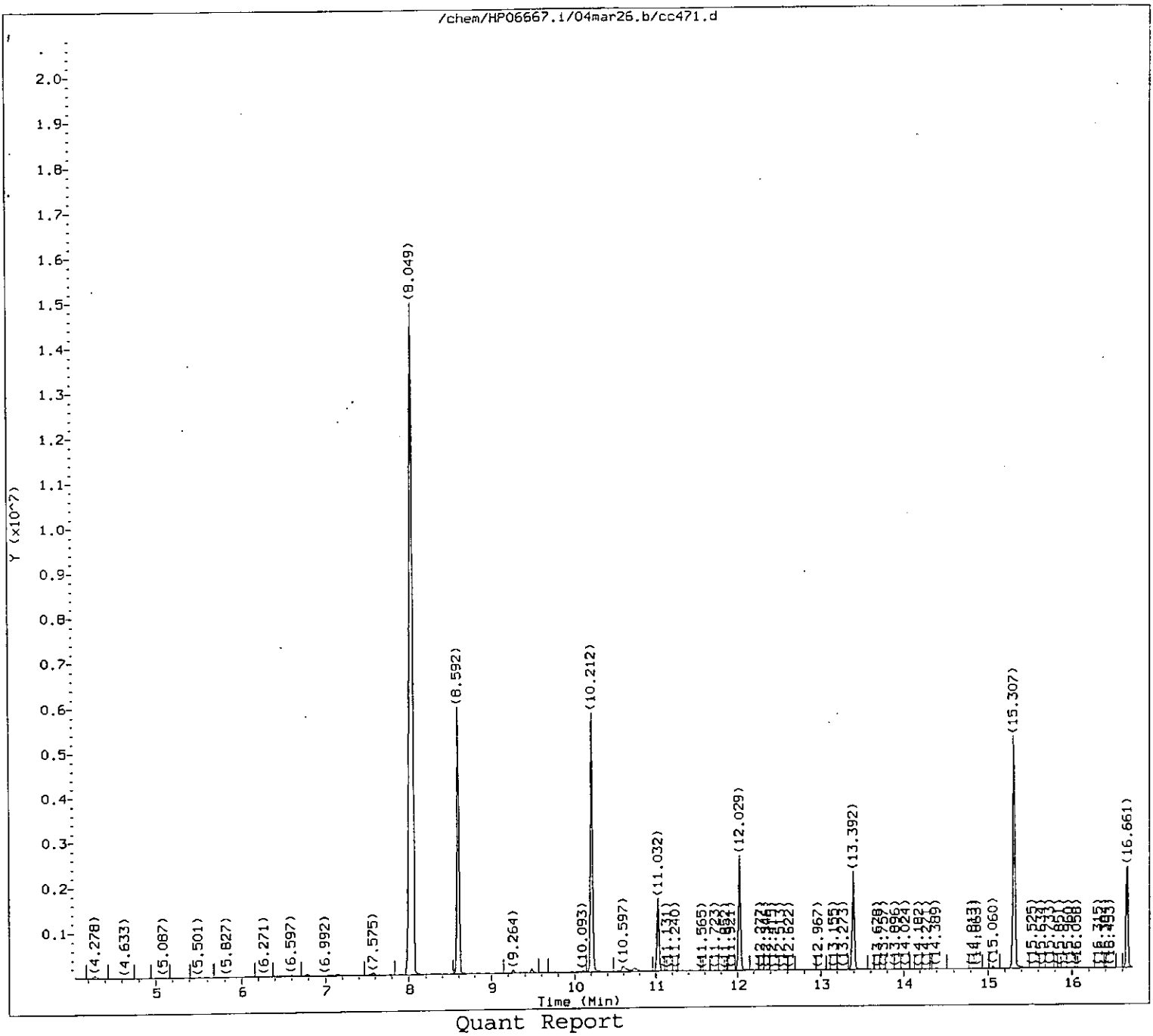
Total number of targets = 64

Comments:

Analyst: Date: 03/26/04
Auditor: Date: 3/28/04



8294




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc471.d
Injection date and time: 26-MAR-2004 12:38

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

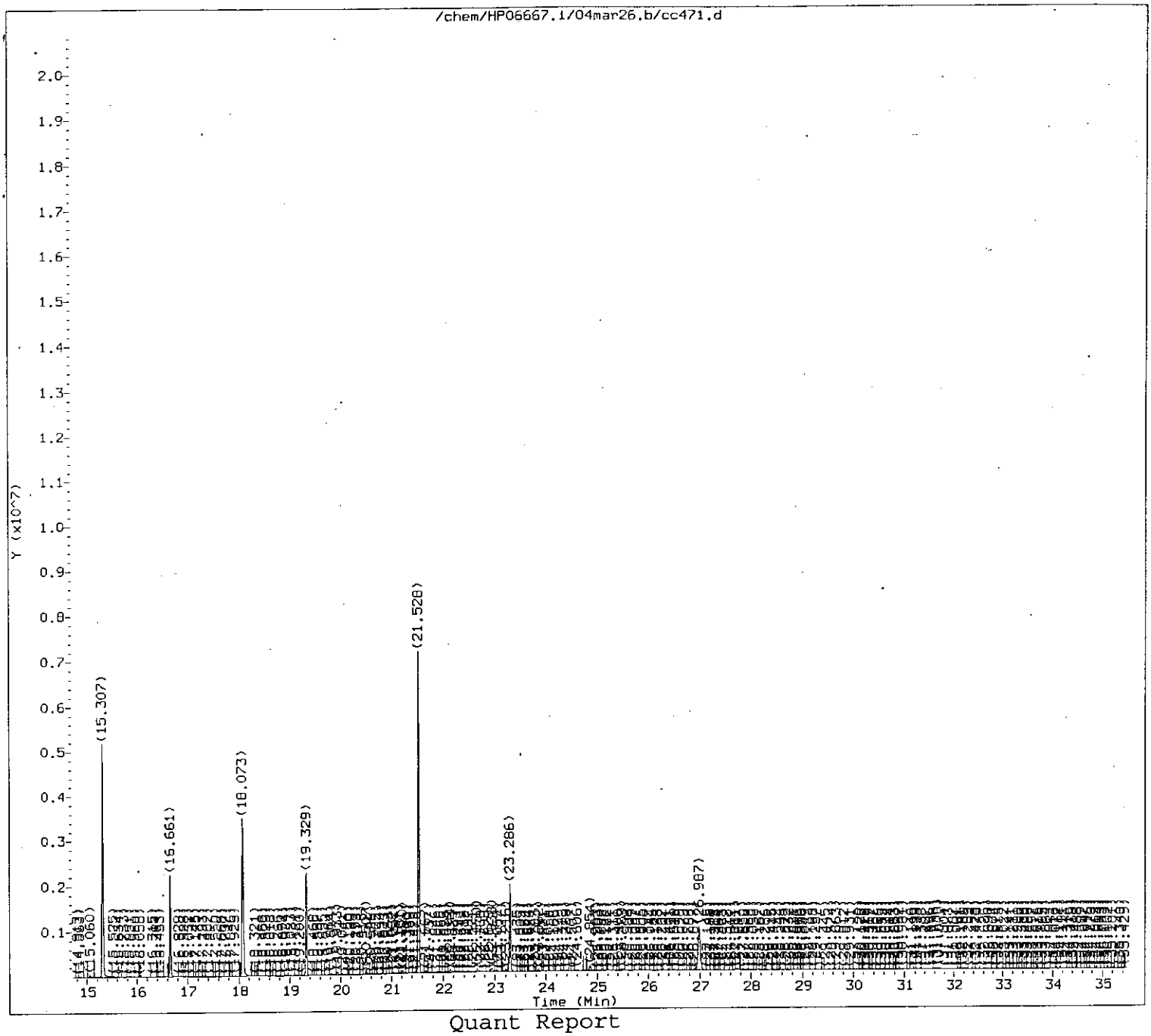
Sample Name: 5GP22

Lab Sample ID: 4241636

8295

lmh1950

B3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc471.d
Injection date and time: 26-MAR-2004 12:38

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

Sample Name: 5GP22

Lab Sample ID: 4241636

8296

lmh 1/95

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc471.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 12:38  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:31 lmh00956

Sample Name: 5GP22  Lab Sample ID: 4241636

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.032 | 152 | 497333 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.392 | 136 | 1991749 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.661 | 164 | 927015 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.329 | 188 | 1404734 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.286 | 240 | 1150527 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.987 | 264 | 994845 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.592 | 112 | 3345430 | 177.290 |
| 16) | Phenol-d6 | (1) | 10.212 | 99 | 4028424 | 167.226 |
| 40) | Nitrobenzene-d5 | (2) | 12.029 | 82 | 1513541 | 62.943 |
| 80) | 2-Fluorobiphenyl | (3) | 15.307 | 172 | 3188002 | 94.918 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.083 | 330 | 799059 | 194.368 |
| 157) | Terphenyl-d14 | (5) | 21.528 | 244 | 2880120 | 112.706 |

M = Compound was manually integrated.  A = User selected an alternate hit

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241637

Data file: /chem/HP06667.i/04mar26.b/cc472.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 13:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.025 | ( 0.017) | 696 | 152.0 | 589011 | ( 10) | 40.00 | |
| 54) Naphthalene-d8 | 13.397 | ( 0.006) | 936 | 136.0 | 2274767 | ( 6) | 40.00 | |
| 99) Acenaphthene-d10 | 16.658 | ( 0.014) | 1266 | 164.0 | 1045278 | ( 4) | 40.00 | |
| 136) Phenanthrene-d10 | 19.329 | ( 0.006) | 1536 | 188.0 | 1592624 | ( 10) | 40.00 | |
| 168) Chrysene-d12 | 23.291 | ( 0.009) | 1935 | 240.0 | 1338828 | ( 2) | 40.00 | |
| 177) Perylene-d12 | 26.997 | (-0.002) | 2308 | 264.0 | 1127560 | ( 3) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.613 | (-0.001) | 112 | 4224444 | 189.028 | 95% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.224 | (-0.003) | 99 | 4885263 | 171.230 | 86% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.023 | ( 0.000) | 82 | 1777117 | 64.709 | 65% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.313 | ( 0.000) | 172 | 3809776 | 100.597 | 101% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.082 | (-0.001) | 330 | 979661 | 211.337 | 106% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.530 | ( 0.000) | 244 | 3496439 | 117.580 | 118% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 43) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | | 1.00 |
| 55) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | ND | ND | | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



8298

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241637

Data file: /chem/HP06667.i/04mar26.b/cc472.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 13:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | Below MDL, Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | | Below MDL, Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | | Below MDL, Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241637

Data file: /chem/HP06667.i/04mar26.b/cc472.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 13:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

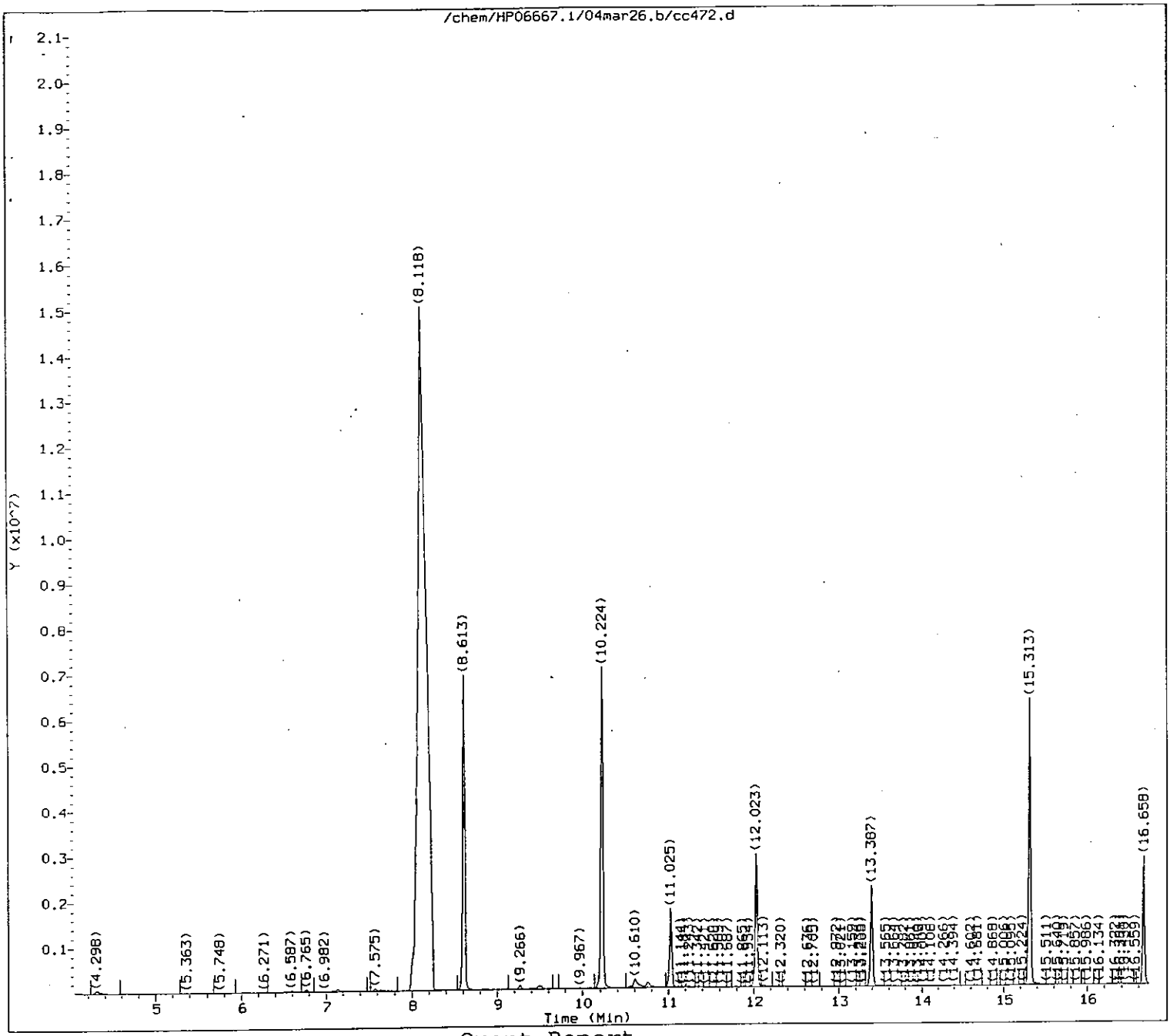
Total number of targets = 64

Comments:

Analyst: [signature] Date: 3/29/04
Auditor: [signature] Date: 3/30/04



8308




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc472.d
Injection date and time: 26-MAR-2004 13:21

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

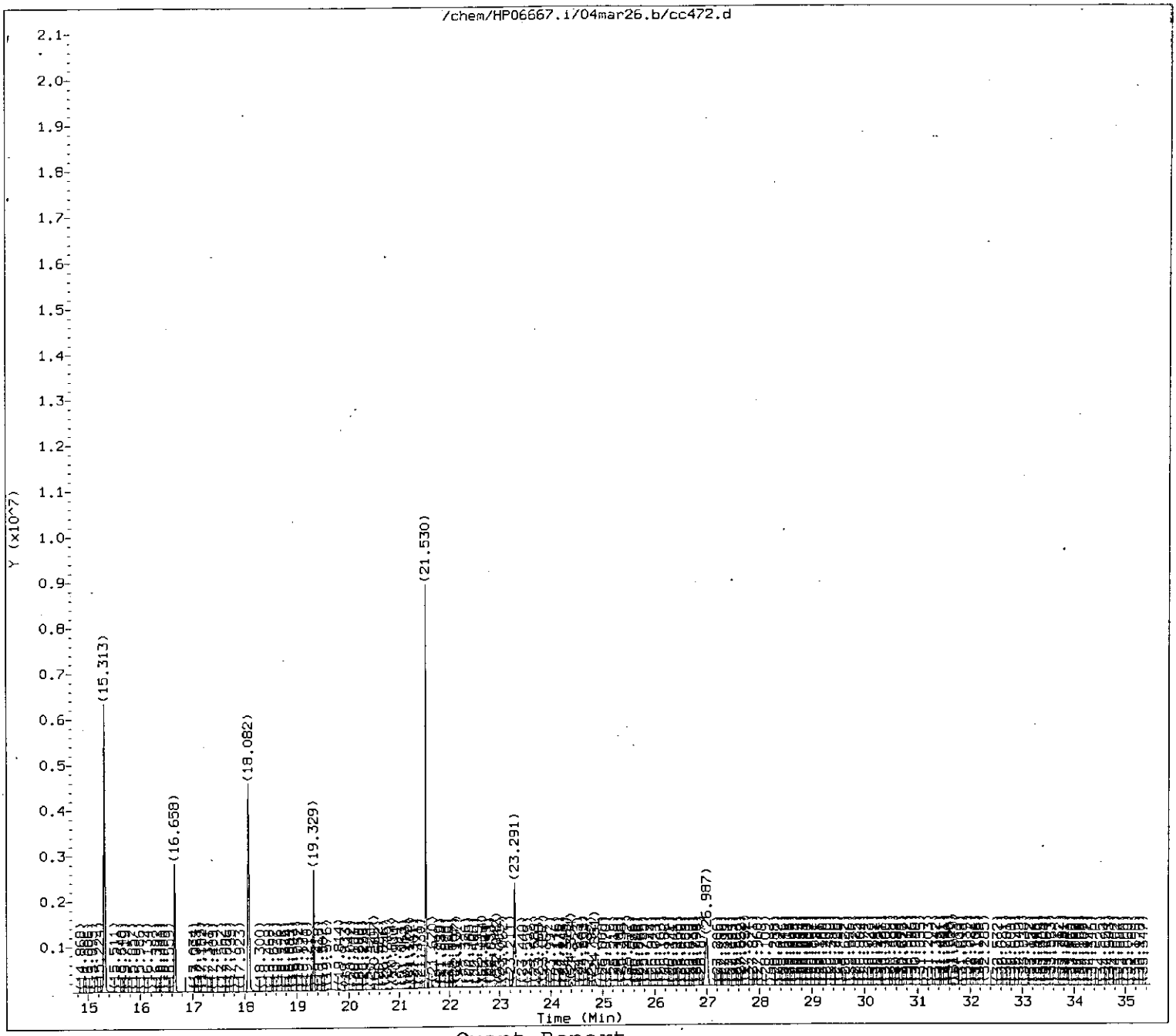
Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Sample Name: 2222D

Lab Sample ID: 4241637

0381

lmh/198
03/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc472.d
Injection date and time: 26-MAR-2004 13:21

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Sample Name: 2222D

Lab Sample ID: 4241637

0382

lmh1950
03/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc472.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 13:21  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:32 lmh00956

Sample Name: 2222D  Lab Sample ID: 4241637

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.025 | 152 | 589011 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.397 | 136 | 2274767 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.658 | 164 | 1045278 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.329 | 188 | 1592624 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.291 | 240 | 1338828 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.997 | 264 | 1127560 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.613 | 112 | 4224444 | 189.028 |
| 16) | Phenol-d6 | (1) | 10.224 | 99 | 4885263 | 171.230 |
| 40) | Nitrobenzene-d5 | (2) | 12.023 | 82 | 1777117 | 64.709 |
| 80) | 2-Fluorobiphenyl | (3) | 15.313 | 172 | 3809776 | 100.597 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.082 | 330 | 979661 | 211.337 |
| 157) | Terphenyl-d14 | (5) | 21.530 | 244 | 3496439 | 117.580 |

M = Compound was manually integrated.  A = User selected an alternate hit

5GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241638

Data file: /chem/HP06667.i/04mar26.b/cc473.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.033( 0.009) | 697 | 152.0 | 529807( -1) | 40.00 | |
| 54) Naphthalene-d8 | 13.394( 0.008) | 936 | 136.0 | 2087225( -3) | 40.00 | |
| 99) Acenaphthene-d10 | 16.654( 0.018) | 1266 | 164.0 | 971983( -3) | 40.00 | |
| 136) Phenanthrene-d10 | 19.323( 0.011) | 1536 | 188.0 | 1487174( 3) | 40.00 | |
| 168) Chrysene-d12 | 23.295( 0.005) | 1936 | 240.0 | 1213926( -7) | 40.00 | |
| 177) Perylene-d12 | 26.992( 0.003) | 2308 | 264.0 | 1022602( -7) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.603( 0.000) | 112 | 3781456 | 188.114 | 94% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.213(-0.001) | 99 | 4411249 | 171.894 | 86% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.031( 0.000) | 82 | 1583283 | 62.831 | 63% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.310( 0.000) | 172 | 3453455 | 98.065 | 98% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.077(-0.001) | 330 | 873400 | 202.622 | 101% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.534( 0.000) | 244 | 3113745 | 115.484 | 115% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Nitrobenzene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 43) Isophorone | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | ND | ND | | | | 1.00 |
| 55) Naphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | ND | ND | | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | Below MDL, Do not report | | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |



0354

5GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241638

Data file: /chem/HP06667.i/04mar26.b/cc473.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | Below MDL, Do not report | | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 112) Fluorene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, Do not report | | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 139) Anthracene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 141) Carbazole | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | Below MDL, Do not report | | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 155) Pyrene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | Below MDL, Do not report | | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | Below MDL, Do not report | | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 169) Chrysene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, Do not report | | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | Below MDL, Do not report | | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |

5GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241638

Data file: /chem/HP06667.i/04mar26.b/cc473.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

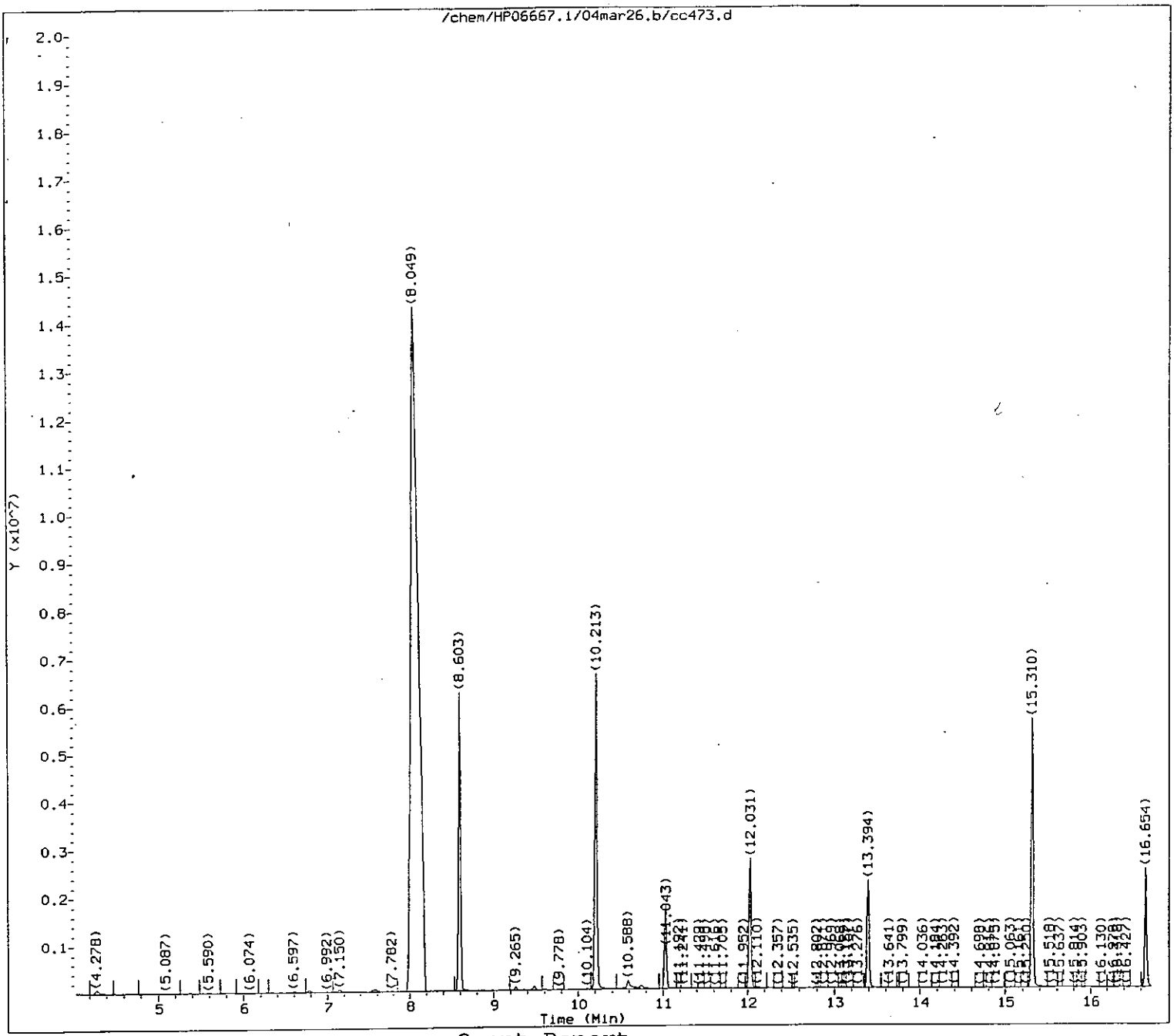
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: [signature] Date: 3/26/04
Auditor: Date: 3/28/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc473.d
Injection date and time: 26-MAR-2004 14:04

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

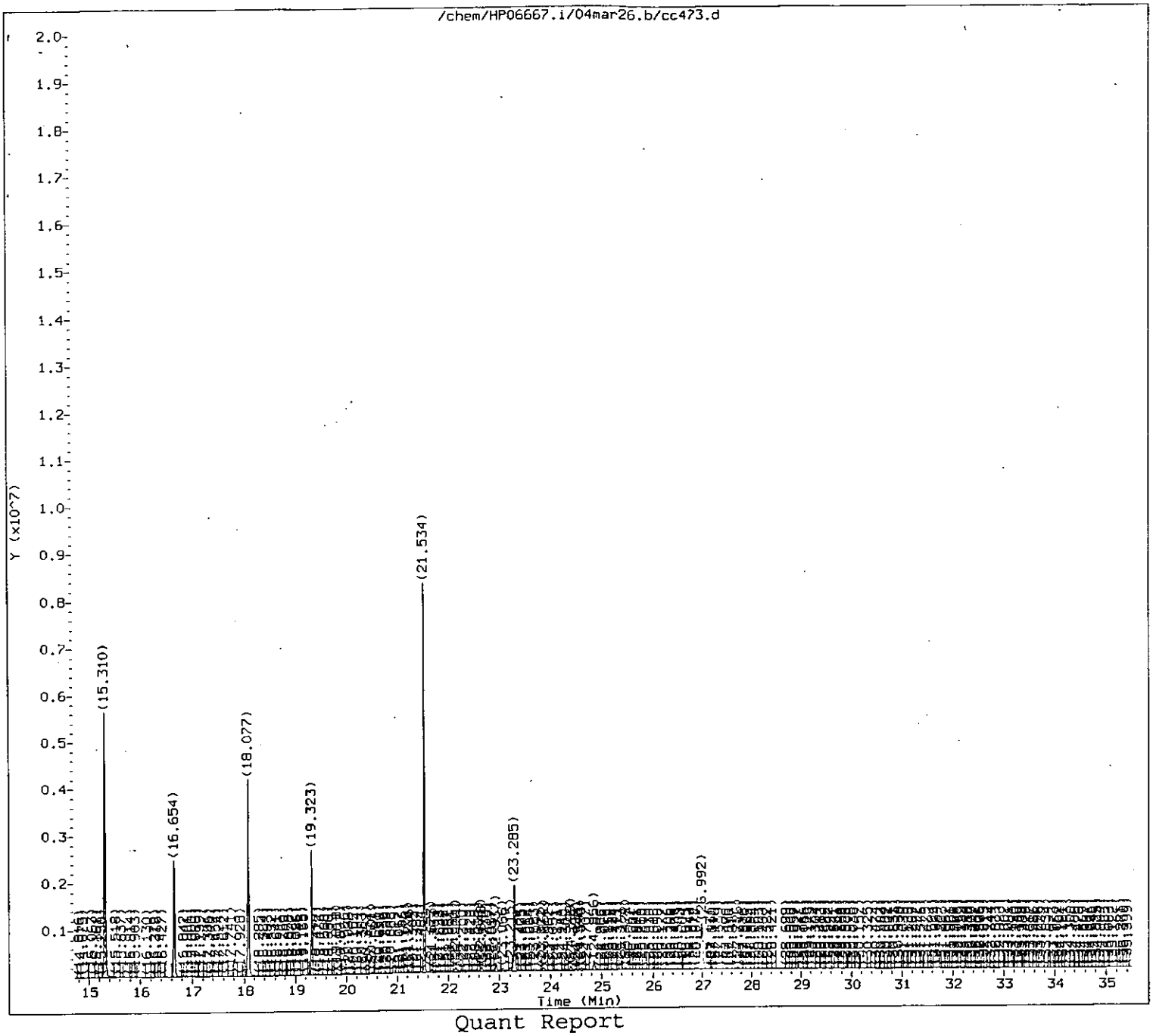
Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Sample Name: 5GP23

Lab Sample ID: 4241638

8387

lmh1950
03/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc473.d
Injection date and time: 26-MAR-2004 14:04

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Sample Name: 5GP23

Lab Sample ID: 4241638

0308

lmh1/96
3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc473.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 14:04  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:33 lmh00956

Sample Name: 5GP23  Lab Sample ID: 4241638

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.033 | 152 | 529807 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.394 | 136 | 2087225 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.654 | 164 | 971983 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.323 | 188 | 1487174 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.295 | 240 | 1213926 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.992 | 264 | 1022602 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.603 | 112 | 3781456 | 188.114 |
| 16) | Phenol-d6 | (1) | 10.213 | 99 | 4411249 | 171.894 |
| 40) | Nitrobenzene-d5 | (2) | 12.031 | 82 | 1583283 | 62.831 |
| 80) | 2-Fluorobiphenyl | (3) | 15.310 | 172 | 3453455 | 98.065 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.077 | 330 | 873400 | 202.622 |
| 157) | Terphenyl-d14 | (5) | 21.534 | 244 | 3113745 | 115.484 |

M = Compound was manually integrated.  A = User selected an alternate hit

5GP24

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241639

Data file: /chem/HP06667.i/04mar26.b/cc474.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:46 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.034( 0.009) | 697 | 152.0 | 569438( 6) | 40.00 | |
| 54) Naphthalene-d8 | 13.394( 0.008) | 936 | 136.0 | 2255159( 5) | 40.00 | |
| 99) Acenaphthene-d10 | 16.654( 0.018) | 1266 | 164.0 | 1029578( 2) | 40.00 | |
| 136) Phenanthrene-d10 | 19.325( 0.009) | 1536 | 188.0 | 1559800( 8) | 40.00 | |
| 168) Chrysene-d12 | 23.291( 0.008) | 1934 | 240.0 | 1296734( -1) | 40.00 | |
| 177) Perylene-d12 | 26.988( 0.007) | 2305 | 264.0 | 1093820( -1) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.603( 0.000) | 112 | 4033108 | 186.670 | 93% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.213(-0.001) | 99 | 4654728 | 168.758 | 84% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.031( 0.000) | 82 | 1725120 | 63.362 | 63% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.310( 0.000) | 172 | 3736043 | 100.154 | 100% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.078(-0.001) | 330 | 913743 | 200.123 | 100% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.533( 0.000) | 244 | 3266581 | 113.416 | 113% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | ND | ND | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | 1.00 |



5318

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06667.i/04mar26.b/cc474.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:46 Instrument ID: HP06667.i Batch: 040855[illegible]
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | Below MDL, | Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | Below MDL, | Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.742 | ( 0.000) | 169 | 79244 | 3.248 | 108.25 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | Below MDL, | Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, | Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 182) Benzo(g,h,i)perylene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |

5GP24

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241639

Data file: /chem/HP06667.i/04mar26.b/cc474.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 14:46 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

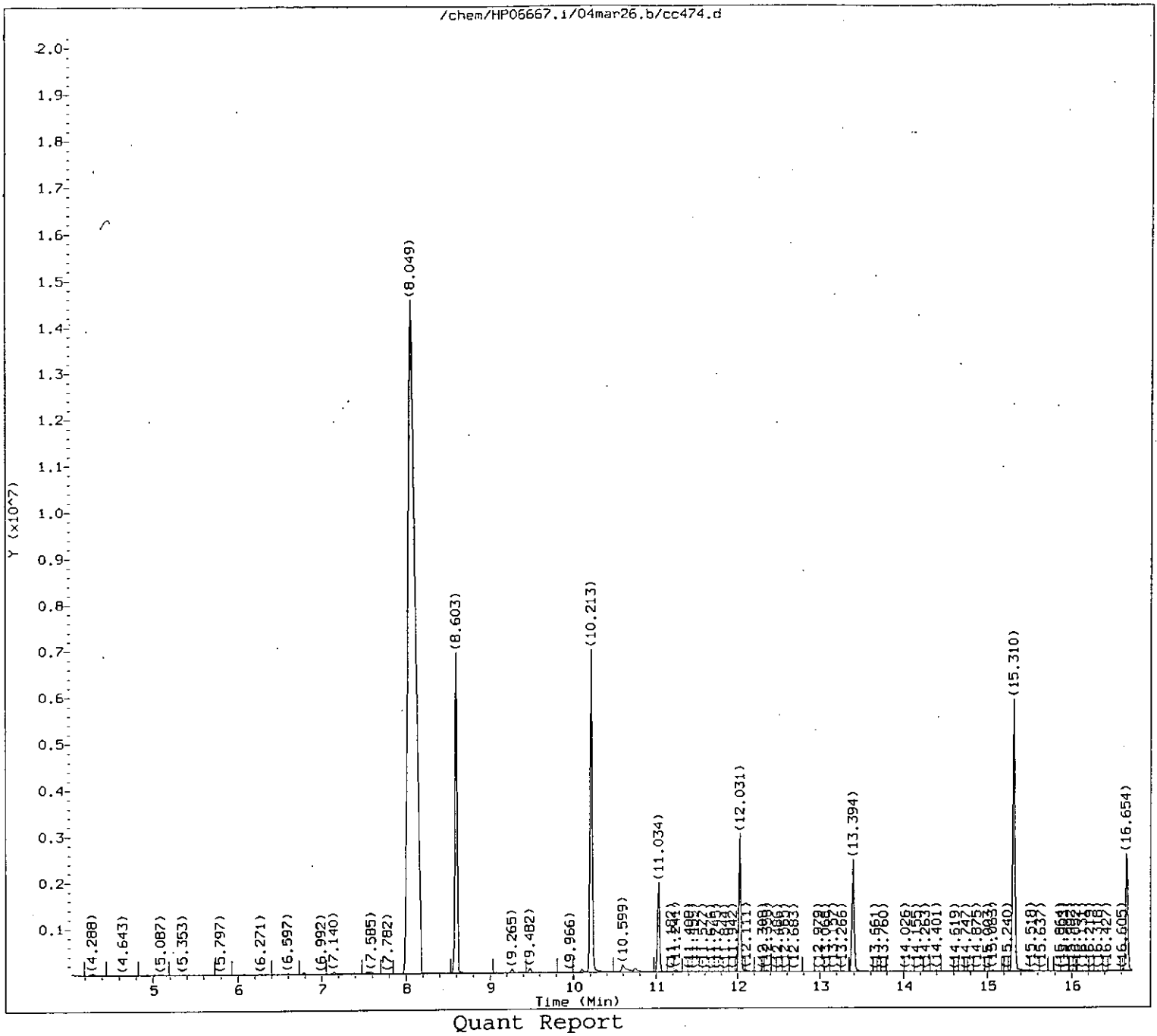
Total number of targets = 64

Comments:

Analyst: [signature] Date: 03/29/04
Auditor: Date: 3/29/04



8312




Quant Report

Target Revision 3.5

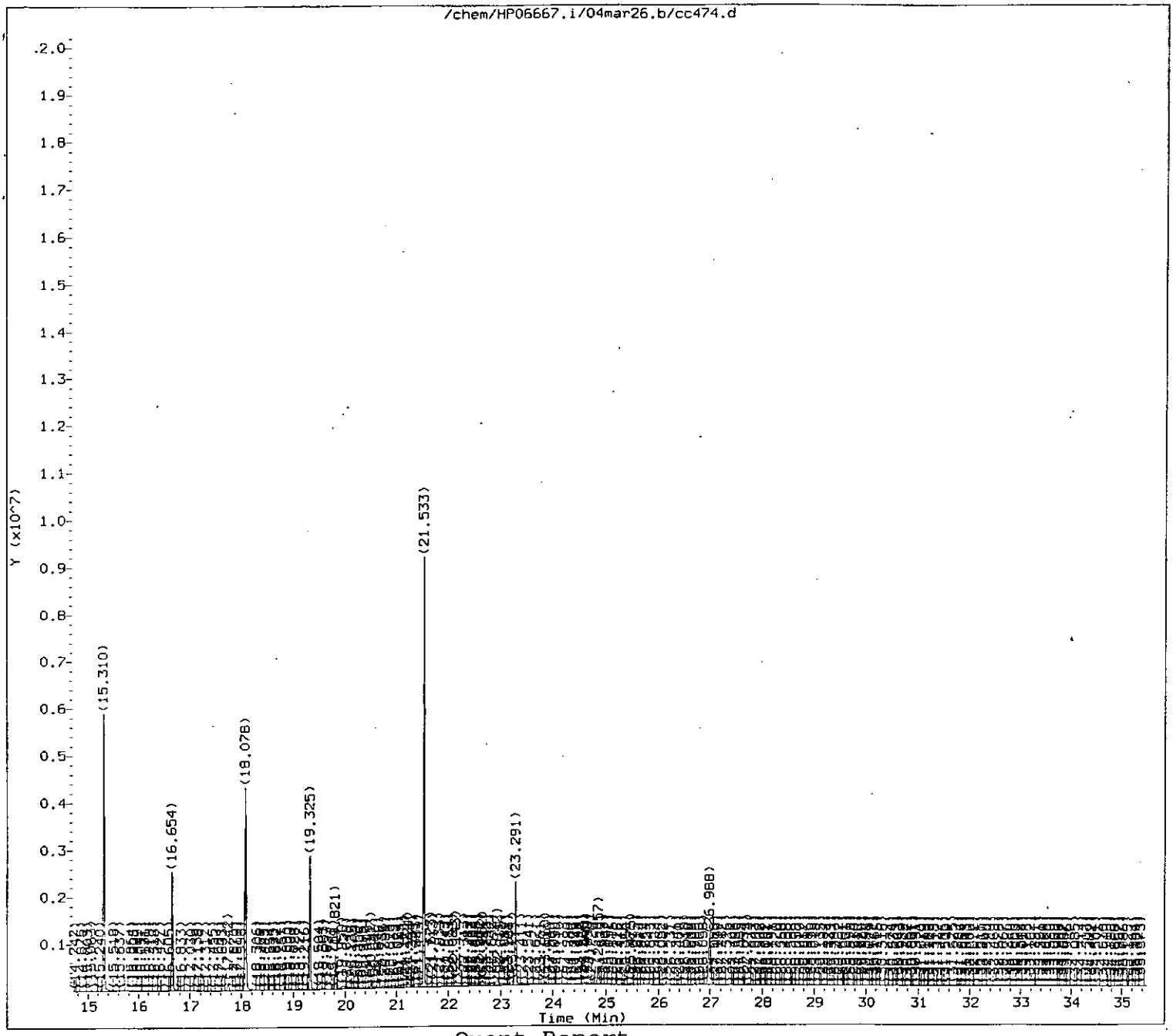
Data File: /chem/HP06667.i/04mar26.b/cc474.d Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 14:46 Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Sample Name: 5GP24 Lab Sample ID: 4241639

0313

lmh1950
3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc474.d
Injection date and time: 26-MAR-2004 14:46
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42
Sublist used: STC804
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Sample Name: 5GP24
Lab Sample ID: 4241639

0314

lmh1950
03/29/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc474.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 14:46  Analyst ID: sls01495

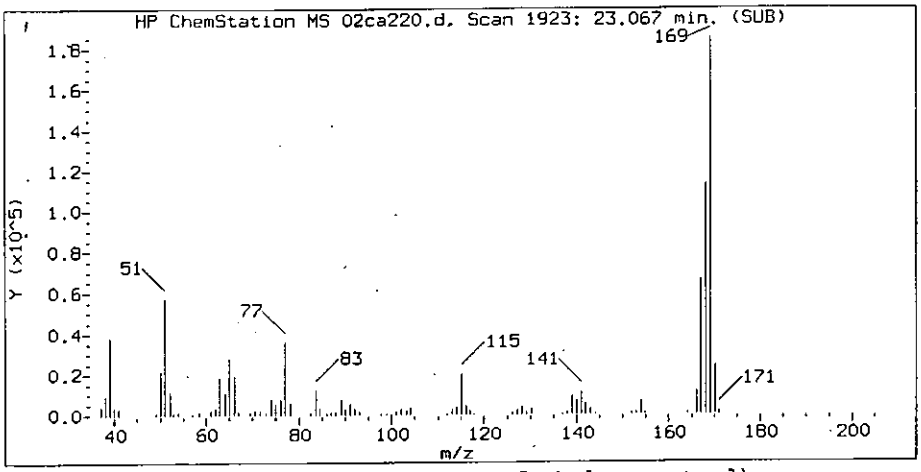
Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

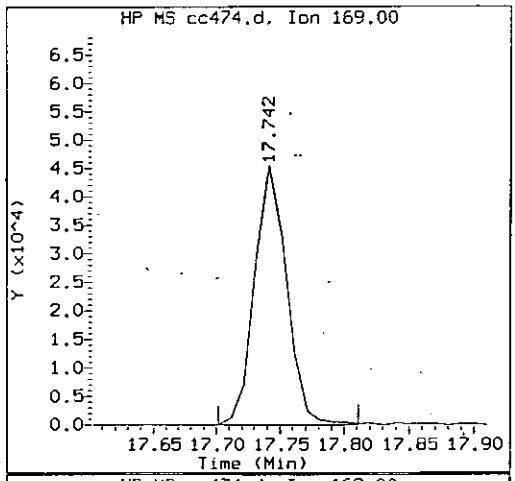
Sample Name: 5GP24  Lab Sample ID: 4241639

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.034 | 152 | 569438 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.394 | 136 | 2255159 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.654 | 164 | 1029578 | 40.000 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.742 | 169 | 79244M | 3.248 |
| 136) | Phenanthrene-d10 | (4) | 19.325 | 188 | 1559800 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.291 | 240 | 1296734 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.988 | 264 | 1093820 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.603 | 112 | 4033108 | 186.670 |
| 16) | Phenol-d6 | (1) | 10.213 | 99 | 4654728 | 168.758 |
| 40) | Nitrobenzene-d5 | (2) | 12.031 | 82 | 1725120 | 63.362 |
| 80) | 2-Fluorobiphenyl | (3) | 15.310 | 172 | 3736043 | 100.154 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.078 | 330 | 913743 | 200.123 |
| 157) | Terphenyl-d14 | (5) | 21.533 | 244 | 3266581 | 113.416 |

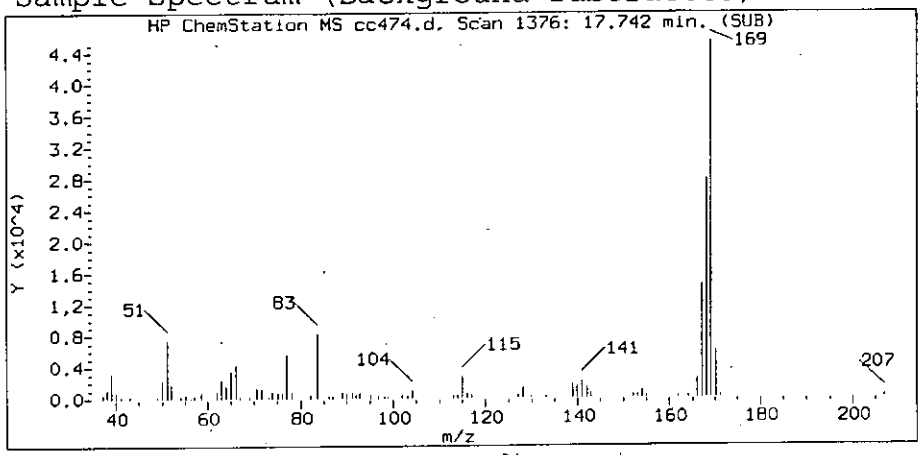
M = Compound was manually integrated.  A = User selected an alternate hit

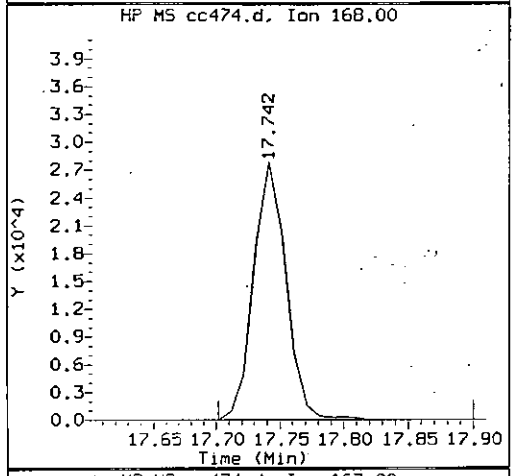
Reference Standard Spectrum for N-Nitrosodiphenylamine



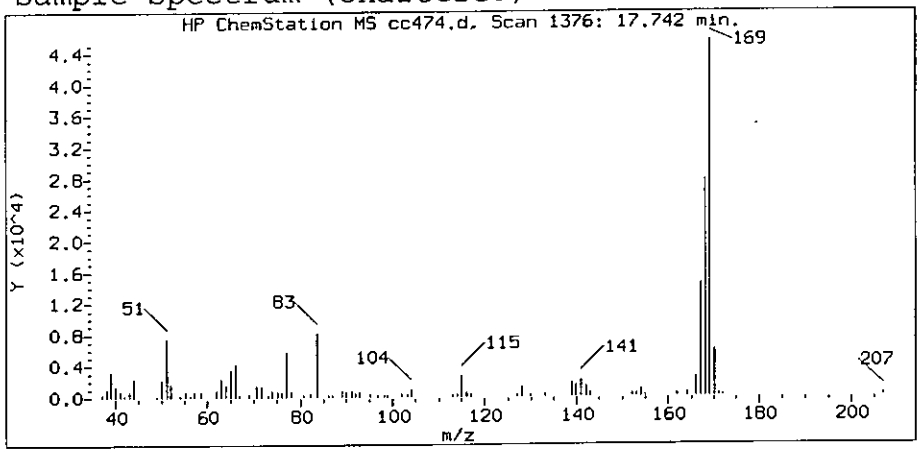



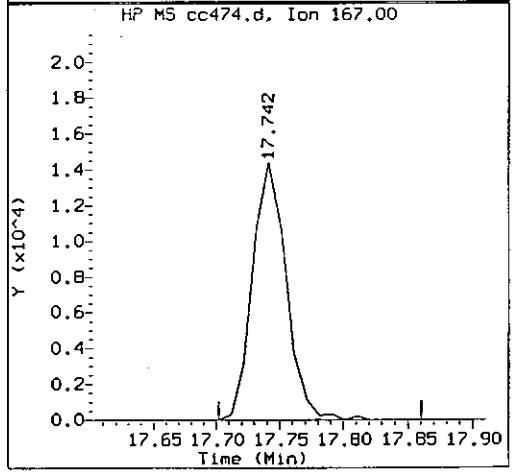

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06667.i/04mar26.b/cc474.d
Injection date and time: 26-MAR-2004 14:46

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

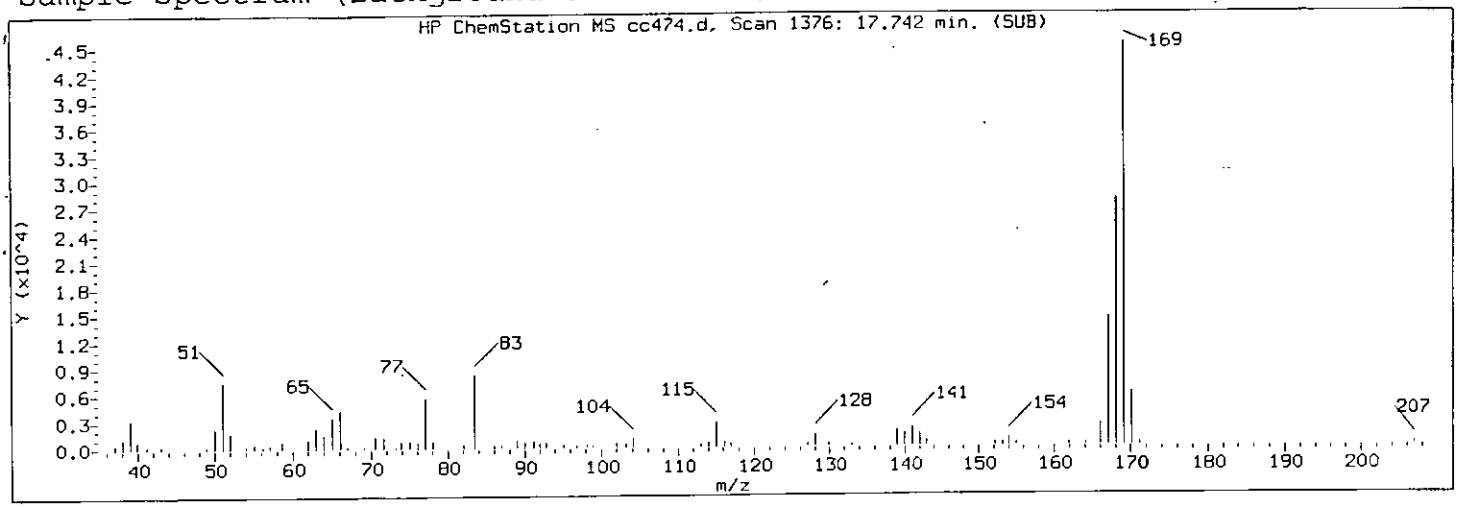
Sample Name: 5GP24

Lab Sample ID: 4241639

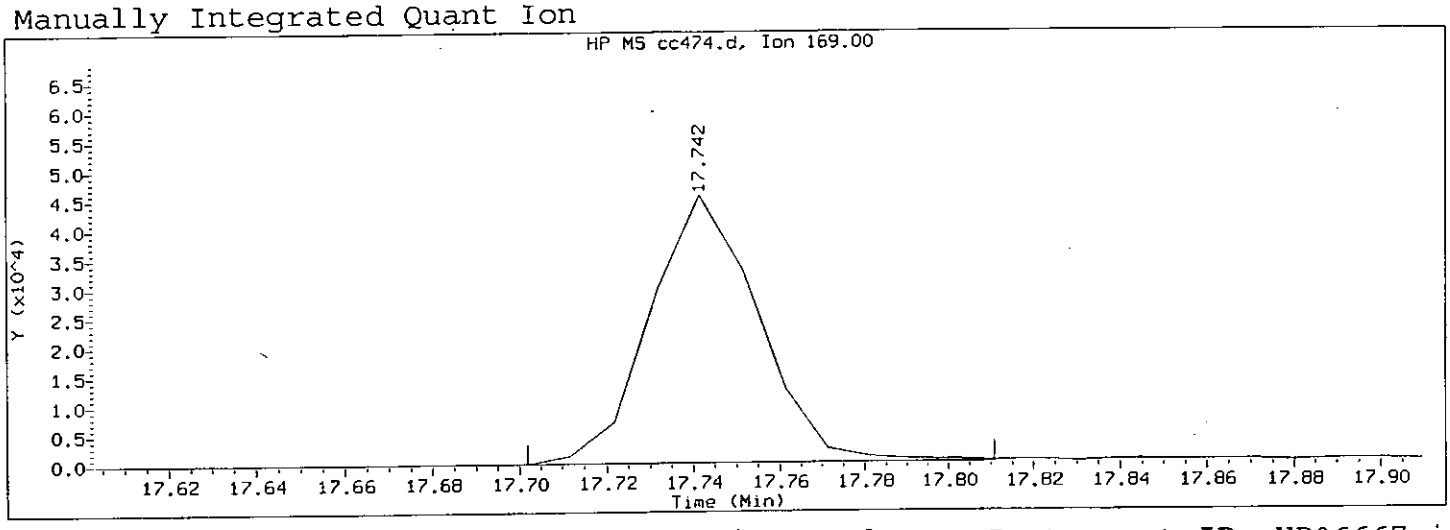
| | | |
|---|---|---|
| Compound Number | : | 118 |
| Compound Name | : | N-Nitrosodiphenylamine |
| Scan Number | : | 1376 |
| Retention Time (minutes) | : | 17.742 |
| Quant Ion | : | 169.0 |
| Area (flag) | : | 79244 M |
| Concentration (ng/ul) | : | 3.2476 |

lmh198 03/29/04 5316

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06667.i/04mar26.b/cc474.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 14:46  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 16:34 lmh00956

Sample Name: 5GP24  Lab Sample ID: 4241639

| | | |
|---|---|---|
| Compound Number | : | 118 |
| Compound Name | : | N-Nitrosodiphenylamine |
| Scan Number | : | 1376 |
| Retention Time (minutes) | : | 17.742 |
| Quant Ion | : | 169 |
| Area (flag) | : | 79244 M |
| Concentration (ng/ul) | : | 3.2476 |
| Integration start scan | : | 1371 Integration stop scan: 1382 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: lmh1950 03/29/04

GC/MS audit/management approval: BBW/TOR 3/29/04 03/17

Manual Integration Report for data file /chem/HP06667.i/04mar26.b/cc474.d, generated on 03/26/2004 at 16:34

# Standards Data

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP06667  Calibration Date(s): 03/20/04  03/20/04

Calibration Times: 07:46  11:44

Min $\overline{RRF}$ for SPCC(#) = 0.050  Max %RSD for CCC(*) = 30%

LAB FILE ID:  RRF5 = cc366.d  RRF15 = cc365.d  RRF30 = cc364.d
RRF50 = cc361.d  RRF80 = cc362.d  RRF120 = cc363.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.588 | 0.598 | 0.555 | 0.579 | 0.575 | 0.586 | | 0.580 | 3 | AVG | |
| | N-Nitrosodimethylamine | 0.996 | 1.027 | 0.994 | 1.004 | 1.013 | 1.007 | | 1.007 | 1 | AVG | |
| | Pyridine | 1.686 | 1.721 | 1.611 | 1.629 | 1.660 | 1.681 | | 1.665 | 2 | AVG | |
| | 2-Picoline | 1.685 | 1.708 | 1.664 | 1.723 | 1.728 | 1.729 | | 1.706 | 2 | AVG | |
| | N-Nitrosodiethylamine | 0.780 | 0.801 | 0.776 | 0.818 | 0.818 | 0.808 | | 0.800 | 2 | AVG | |
| | Ethyl methanesulfonate | 0.761 | 0.808 | 0.758 | 0.796 | 0.802 | 0.790 | | 0.786 | 3 | AVG | |
| | Aniline | 2.485 | 2.612 | 2.481 | 2.676 | 2.832 | 2.795 | | 2.647 | 6 | AVG | |
| * | Phenol | 2.050 | 2.084 | 2.015 | 2.143 | 2.179 | 2.140 | | 2.102 | 3 | AVG | * |
| | bis(2-Chloroethyl)ether | 1.640 | 1.616 | 1.648 | 1.656 | 1.575 | 1.529 | | 1.611 | 3 | AVG | |
| | 2-Chlorophenol | 1.518 | 1.566 | 1.534 | 1.636 | 1.653 | 1.644 | | 1.592 | 4 | AVG | |
| | 1,3-Dichlorobenzene | 1.585 | 1.598 | 1.555 | 1.650 | 1.666 | 1.675 | | 1.621 | 3 | AVG | |
| * | 1,4-Dichlorobenzene | 1.612 | 1.658 | 1.612 | 1.707 | 1.754 | 1.752 | | 1.682 | 4 | AVG | * |
| | Benzyl alcohol | 1.025 | 1.021 | 1.042 | 1.099 | 1.122 | 1.082 | | 1.065 | 4 | AVG | |
| | 1,2-Dichlorobenzene | 1.499 | 1.573 | 1.530 | 1.648 | 1.693 | 1.693 | | 1.606 | 5 | AVG | |
| | 2-Methylphenol | 1.412 | 1.493 | 1.440 | 1.550 | 1.578 | 1.541 | | 1.503 | 4 | AVG | |
| | 2,2'-oxybis(1-Chloropropane) | 2.403 | 2.460 | 2.328 | 2.471 | 2.480 | 2.410 | | 2.425 | 2 | AVG | |
| | bis(2-Chloroisopropyl)ether | 2.403 | 2.460 | 2.328 | 2.471 | 2.480 | 2.410 | | 2.425 | 2 | AVG | |
| | Acetophenone | 2.131 | 2.187 | 2.139 | 2.291 | 2.352 | 2.344 | | 2.241 | 5 | AVG | |
| # | N-Nitroso-di-n-propylamine | 1.209 | 1.259 | 1.211 | 1.284 | 1.151 | 1.072 | | 1.197 | 6 | AVG | # |
| | 4-Methylphenol | 1.479 | 1.518 | 1.473 | 1.577 | 1.599 | 1.402 | | 1.508 | 5 | AVG | |
| | o-Toluidine | 2.337 | 2.433 | 2.398 | 2.569 | 2.619 | 2.746 | | 2.517 | 6 | AVG | |
| | Hexachloroethane | 0.662 | 0.695 | 0.674 | 0.713 | 0.739 | 0.734 | | 0.703 | 4 | AVG | |
| | Nitrobenzene | 0.434 | 0.435 | 0.425 | 0.437 | 0.444 | 0.442 | | 0.436 | 2 | AVG | |
| | Isophorone | 0.807 | 0.823 | 0.812 | 0.837 | 0.836 | 0.828 | | 0.824 | 2 | AVG | |
| * | 2-Nitrophenol | 0.209 | 0.220 | 0.220 | 0.220 | 0.229 | 0.235 | | 0.222 | 4 | AVG | * |
| | 2,4-Dimethylphenol | 0.378 | 0.389 | 0.388 | 0.405 | 0.410 | 0.407 | | 0.396 | 3 | AVG | |
| | bis(2-Chloroethoxy)methane | 0.442 | 0.447 | 0.442 | 0.443 | 0.449 | 0.459 | | 0.447 | 1 | AVG | |
| | Benzoic acid | 0.261 | 0.293 | 0.304 | 0.336 | 0.304 | 0.294 | | 0.298 | 8 | AVG | |
| * | 2,4-Dichlorophenol | 0.276 | 0.282 | 0.281 | 0.293 | 0.300 | 0.299 | | 0.288 | 3 | AVG | * |
| | 1,2,4-Trichlorobenzene | 0.281 | 0.288 | 0.289 | 0.298 | 0.305 | 0.311 | | 0.295 | 4 | AVG | |
| | Naphthalene | 1.133 | 1.164 | 1.169 | 1.224 | 1.272 | 1.252 | | 1.202 | 5 | AVG | |
| | 4-Chloroaniline | 0.590 | 0.616 | 0.617 | 0.658 | 0.676 | 0.674 | | 0.639 | 6 | AVG | |
| * | Hexachlorobutadiene | 0.148 | 0.157 | 0.158 | 0.163 | 0.172 | 0.176 | | 0.162 | 6 | AVG | * |
| | Caprolactam | 0.128 | 0.131 | 0.128 | 0.129 | 0.122 | 0.119 | | 0.126 | 3 | AVG | |
| * | 4-Chloro-3-methylphenol | 0.304 | 0.322 | 0.317 | 0.334 | 0.334 | 0.339 | | 0.325 | 4 | AVG | * |
| | 2-Methylnaphthalene | 0.647 | 0.675 | 0.673 | 0.703 | 0.714 | 0.715 | | 0.688 | 4 | AVG | |
| | 1-Methylnaphthalene | 0.624 | 0.636 | 0.644 | 0.664 | 0.687 | 0.684 | | 0.656 | 4 | AVG | |
| # | Hexachlorocyclopentadiene | 0.248 | 0.293 | 0.304 | 0.321 | 0.334 | 0.345 | | 0.307 | 11 | AVG | # |
| * | 2,4,6-Trichlorophenol | 0.373 | 0.387 | 0.375 | 0.407 | 0.425 | 0.470 | | 0.406 | 9 | AVG | * |
| | 2,4,5-Trichlorophenol | 0.386 | 0.412 | 0.405 | 0.424 | 0.428 | 0.412 | | 0.411 | 4 | AVG | |
| | Biphenyl | 1.694 | 1.745 | 1.723 | 1.830 | 1.847 | 1.902 | | 1.790 | 5 | AVG | |
| | Diphenyl | 1.694 | 1.745 | 1.723 | 1.830 | 1.847 | 1.902 | | 1.790 | 5 | AVG | |
| | 1,1'-Biphenyl | 1.694 | 1.745 | 1.723 | 1.830 | 1.847 | 1.902 | | 1.790 | 5 | AVG | |
| | 2-Chloronaphthalene | 1.267 | 1.336 | 1.305 | 1.350 | 1.377 | 1.450 | | 1.348 | 5 | AVG | |
| | Diphenyl ether | 0.838 | 0.871 | 0.843 | 0.900 | 0.921 | 0.959 | | 0.889 | 5 | AVG | |
| | 2-Nitroaniline | 0.488 | 0.529 | 0.529 | 0.552 | 0.566 | 0.520 | | 0.531 | 5 | AVG | |
| | Dimethylphthalate | 1.503 | 1.548 | 1.508 | 1.572 | 1.563 | 1.440 | | 1.522 | 3 | AVG | |
| | 2,6-Dinitrotoluene | 0.378 | 0.393 | 0.384 | 0.404 | 0.371 | 0.381 | | 0.385 | 3 | AVG | |
| | Acenaphthylene | 1.696 | 1.741 | 1.706 | 1.781 | 1.788 | 1.809 | | 1.754 | 3 | AVG | |
| | 3-Nitroaniline | 0.396 | 0.400 | 0.393 | 0.415 | 0.414 | 0.424 | | 0.407 | 3 | AVG | |
| * | Acenaphthene | 1.099 | 1.126 | 1.100 | 1.137 | 1.155 | 1.171 | | 1.131 | 3 | AVG | * |
| # | 2,4-Dinitrophenol | 0.183 | 0.214 | 0.223 | 0.234 | 0.249 | 0.252 | | 0.226 | 11 | AVG | # |

8319

4/22/04

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06667 Calibration Date(s): 03/20/04 03/20/04

Calibration Times: 07:46 11:44

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = cc366.d RRF15 = cc365.d RRF30 = cc364.d
RRF50 = cc361.d RRF80 = cc362.d RRF120 = cc363.d

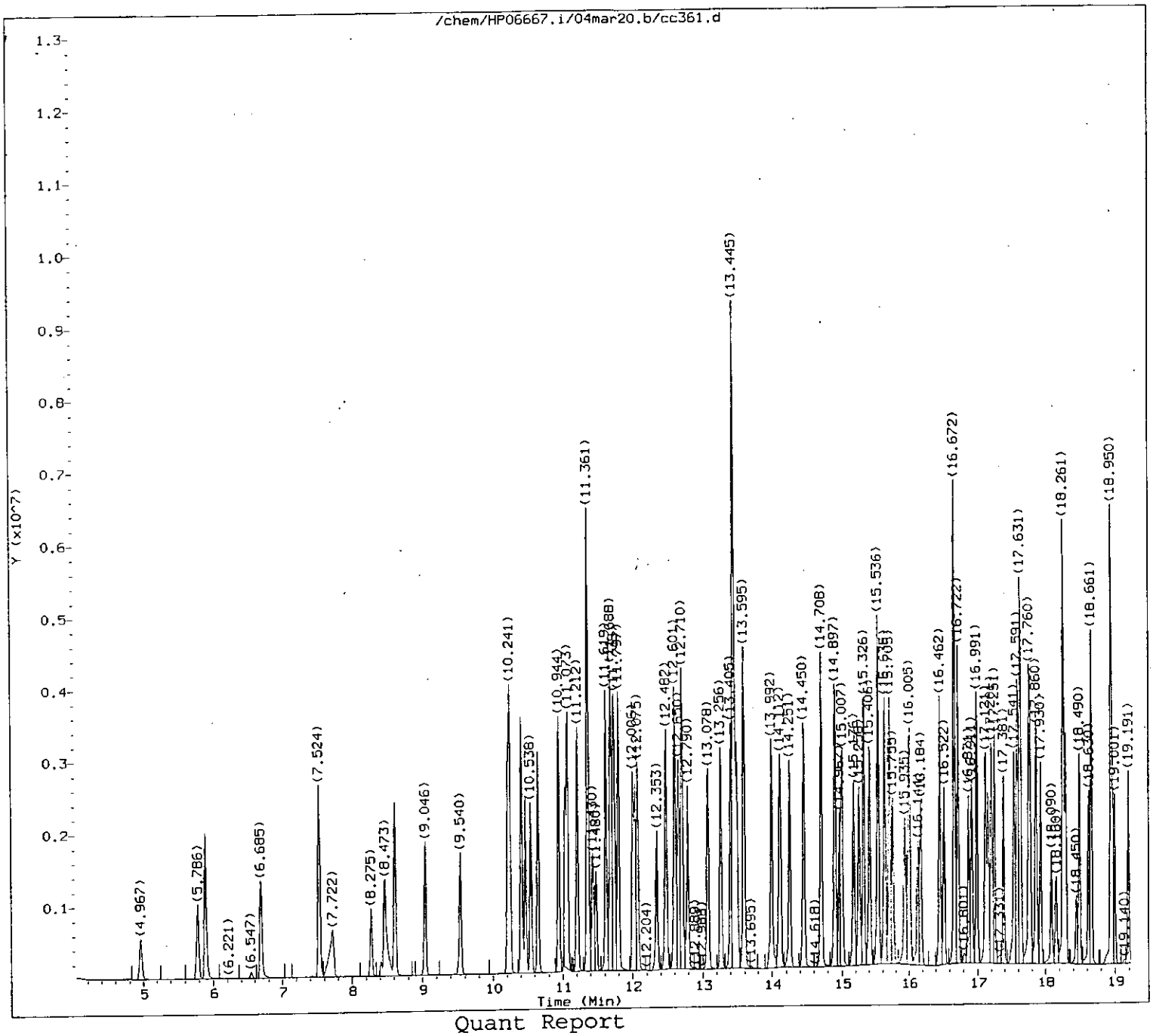
| COMPOUND | | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Nitrophenol | # | 0.210 | 0.224 | 0.213 | 0.221 | 0.239 | 0.235 | | 0.224 | 5 | AVG | # |
| Dibenzofuran | | 1.557 | 1.567 | 1.547 | 1.635 | 1.645 | 1.645 | | 1.599 | 3 | AVG | |
| 2,4-Dinitrotoluene | | 0.409 | 0.422 | 0.420 | 0.440 | 0.416 | 0.410 | | 0.420 | 3 | AVG | |
| 1-Naphthylamine | | 1.051 | 1.104 | 1.125 | 1.130 | 1.108 | 1.179 | | 1.116 | 4 | AVG | |
| 2,3,4,6-Tetrachlorophenol | | 0.270 | 0.275 | 0.271 | 0.296 | 0.301 | 0.306 | | 0.287 | 6 | AVG | |
| 2-Naphthylamine | | 1.121 | 1.155 | 1.182 | 1.307 | 1.305 | 1.291 | | 1.227 | 7 | AVG | |
| Diethylphthalate | | 1.387 | 1.373 | 1.326 | 1.297 | 1.417 | 1.309 | | 1.352 | 4 | AVG | |
| Fluorene | | 1.235 | 1.253 | 1.236 | 1.350 | 1.353 | 1.372 | | 1.300 | 5 | AVG | |
| 4-Chlorophenyl-phenylether | | 0.519 | 0.516 | 0.503 | 0.539 | 0.551 | 0.560 | | 0.531 | 4 | AVG | |
| 4-Nitroaniline | | 0.404 | 0.413 | 0.409 | 0.418 | 0.417 | 0.431 | | 0.415 | 2 | AVG | |
| 4,6-Dinitro-2-methylphenol | | 0.144 | 0.164 | 0.171 | 0.196 | 0.201 | 0.208 | | 0.181 | 14 | AVG | |
| N-Nitrosodiphenylamine (1) | * | 0.579 | 0.602 | 0.592 | 0.641 | 0.666 | 0.673 | | 0.626 | 6 | AVG | * |
| 1,2-Diphenylhydrazine | | 1.072 | 1.127 | 1.082 | 1.143 | 1.105 | 1.114 | | 1.107 | 2 | AVG | |
| 4-Bromophenyl-phenylether | | 0.197 | 0.202 | 0.200 | 0.215 | 0.222 | 0.232 | | 0.211 | 7 | AVG | |
| Hexachlorobenzene | | 0.227 | 0.239 | 0.231 | 0.257 | 0.259 | 0.269 | | 0.247 | 7 | AVG | |
| Pentachlorophenol | * | 0.143 | 0.162 | 0.165 | 0.178 | 0.188 | 0.198 | | 0.172 | 11 | AVG | * |
| Phenanthrene | | 1.064 | 1.104 | 1.085 | 1.201 | 1.261 | 1.269 | | 1.164 | 8 | AVG | |
| Anthracene | | 1.097 | 1.143 | 1.119 | 1.200 | 1.237 | 1.237 | | 1.172 | 5 | AVG | |
| Carbazole | | 1.054 | 1.070 | 1.055 | 1.136 | 1.178 | 1.177 | | 1.112 | 5 | AVG | |
| Di-n-butylphthalate | | 1.502 | 1.568 | 1.528 | 1.550 | 1.604 | 1.593 | | 1.558 | 2 | AVG | |
| Fluoranthene | * | 1.097 | 1.135 | 1.096 | 1.173 | 1.270 | 1.265 | | 1.173 | 7 | AVG | * |
| Benzidine | | 0.562 | 0.675 | 0.753 | 0.846 | 0.802 | 0.734 | | 0.729 | 14 | AVG | |
| Pyrene | | 1.328 | 1.330 | 1.323 | 1.428 | 1.376 | 1.399 | | 1.364 | 3 | AVG | |
| Butylbenzylphthalate | | 0.771 | 0.793 | 0.783 | 0.805 | 0.837 | 0.842 | | 0.805 | 4 | AVG | |
| 3,3'-Dichlorobenzidine | | 0.417 | 0.451 | 0.464 | 0.486 | 0.516 | 0.514 | | 0.475 | 8 | AVG | |
| 4,4'-Methylenebis(2-Chloroanil | | 0.187 | 0.211 | 0.213 | 0.230 | 0.238 | 0.242 | | 0.220 | 9 | AVG | |
| Benzo(a)anthracene | | 1.144 | 1.128 | 1.140 | 1.189 | 1.213 | 1.206 | | 1.170 | 3 | AVG | |
| Chrysene | | 1.041 | 1.058 | 1.040 | 1.088 | 1.125 | 1.120 | | 1.079 | 4 | AVG | |
| bis(2-Ethylhexyl)phthalate | | 0.999 | 1.063 | 1.069 | 1.092 | 1.123 | 1.143 | | 1.081 | 5 | AVG | |
| Di-n-octylphthalate | * | 1.804 | 1.986 | 1.924 | 2.073 | 2.116 | 2.255 | | 2.026 | 8 | AVG | * |
| 7,12-Dimethylbenz[a]anthracene | | 0.511 | 0.572 | 0.584 | 0.635 | 0.648 | 0.667 | | 0.603 | 10 | AVG | |
| Benzo(b)fluoranthene | | 1.202 | 1.210 | 1.214 | 1.304 | 1.400 | 1.391 | | 1.287 | 7 | AVG | |
| Benzo(k)fluoranthene | | 1.171 | 1.212 | 1.213 | 1.296 | 1.301 | 1.366 | | 1.260 | 6 | AVG | |
| Benzo(a)pyrene | * | 1.063 | 1.110 | 1.084 | 1.166 | 1.199 | 1.242 | | 1.144 | 6 | AVG | * |
| Indeno(1,2,3-cd)pyrene | | 1.234 | 1.319 | 1.273 | 1.366 | 1.396 | 1.433 | | 1.337 | 6 | AVG | |
| Dibenz(a,h)anthracene | | 0.968 | 1.034 | 1.008 | 1.087 | 1.123 | 1.156 | | 1.063 | 7 | AVG | |
| Benzo(g,h,i)perylene | | 1.014 | 1.087 | 1.028 | 1.136 | 1.150 | 1.143 | | 1.093 | 6 | AVG | |
| 2-Fluorophenol | | 1.514 | 1.493 | 1.480 | 1.540 | 1.546 | 1.533 | | 1.518 | 2 | AVG | |
| Phenol-d6 | | 1.849 | 1.947 | 1.872 | 1.981 | 2.010 | 1.966 | | 1.938 | 3 | AVG | |
| Nitrobenzene-d5 | | 0.467 | 0.479 | 0.471 | 0.488 | 0.500 | 0.493 | | 0.483 | 3 | AVG | |
| 2-Fluorobiphenyl | | 1.362 | 1.425 | 1.396 | 1.470 | 1.496 | 1.547 | | 1.449 | 5 | AVG | |
| 2,4,6-Tribromophenol | | 0.162 | 0.175 | 0.174 | 0.180 | 0.185 | 0.189 | | 0.177 | 5 | AVG | |
| Terphenyl-d14 | | 0.831 | 0.849 | 0.858 | 0.934 | 0.934 | 0.925 | | 0.888 | 5 | AVG | |
| | | | | | | | | Average %RSD | | 5 | | |

(1) Cannot be separated from Diphenylamine
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5 ,15, 30 standards.





8328




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc361.d
Injection date and time: 20-MAR-2004 07:46

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:32

Sublist used: all1

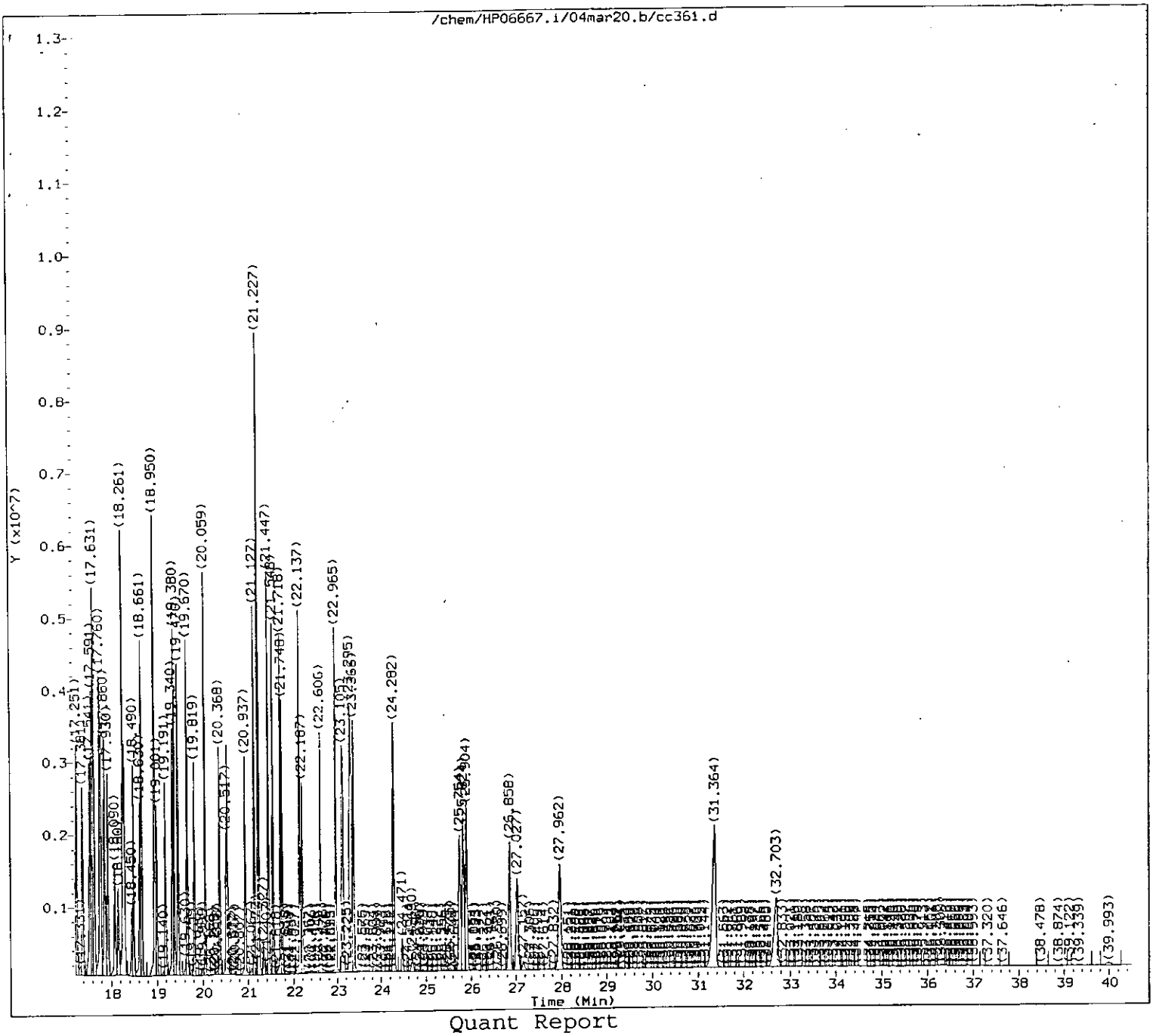
Date, time and analyst ID of latest file update: 20-Mar-2004 10:32 sls01495

Sample Name: SSTD050

Lab Sample ID: STD0754

8321

3/22/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc361.d
Injection date and time: 20-MAR-2004 07:46
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:32
Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:32 sls01495

Sample Name: SSTD050
Lab Sample ID: STD0754

8322

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc361.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 07:46  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:32
Date, time and analyst ID of latest file update: 20-Mar-2004 10:32 sls01495

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.967 | 88 | 495492 | 50.000 |
| 2) | N-Nitrosodimethylamine | (1) | 5.786 | 74 | 858751 | 50.000 |
| 3) | Pyridine | (1) | 5.885 | 79 | 1393711 | 50.000 |
| 5) | 2-Picoline | (1) | 7.524 | 93 | 1474156 | 50.000 |
| 10) | N-Nitrosodiethylamine | (1) | 9.046 | 102 | 700043 | 50.000 |
| 11) | Ethyl methanesulfonate | (1) | 9.540 | 109 | 681070 | 50.000 |
| 14) | Aniline | (1) | 10.409 | 93 | 2289009 | 50.000 |
| 17) | Phenol | (1) | 10.241 | 94 | 1832769 | 50.000 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.469 | 93 | 1416320 | 50.000 |
| 20) | 2-Chlorophenol | (1) | 10.647 | 128 | 1399097 | 50.000 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.944 | 146 | 1411013 | 50.000 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.033 | 152 | 684328 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.073 | 146 | 1460326 | 50.000 |
| 25) | Benzyl alcohol | (1) | 11.212 | 108 | 940221 | 50.000 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.361 | 146 | 1409795 | 50.000 |
| 28) | 2-Methylphenol | (1) | 11.361 | 108 | 1325904 | 50.000 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.430 | 45 | 2113429 | 50.000 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.430 | 45 | 2113429 | 50.000 |
| 32) | Acetophenone | (1) | 11.728 | 105 | 1959860 | 50.000 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.688 | 70 | 1098400 | 50.000 |
| 35) | 4-Methylphenol | (1) | 11.619 | 108 | 1348738 | 50.000 |
| 36) | o-Toluidine | (1) | 11.797 | 106 | 2197408 | 50.000 |
| 39) | Hexachloroethane | (1) | 12.006 | 117 | 610044 | 50.000 |
| 41) | Nitrobenzene | (2) | 12.075 | 77 | 1534582 | 50.000 |
| 43) | Isophorone | (2) | 12.482 | 82 | 2939490 | 50.000 |
| 44) | 2-Nitrophenol | (2) | 12.650 | 139 | 773773 | 50.000 |
| 46) | 2,4-Dimethylphenol | (2) | 12.601 | 107 | 1420198 | 50.000 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.790 | 93 | 1554647 | 50.000 |
| 49) | Benzoic acid | (2) | 12.700 | 105 | 1179234 | 50.000 |
| 51) | 2,4-Dichlorophenol | (2) | 13.078 | 162 | 1026966 | 50.000 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.256 | 180 | 1046111 | 50.000 |
| 54) | Naphthalene-d8 | (2) | 13.405 | 136 | 2808777 | 40.000 |
| 55) | Naphthalene | (2) | 13.445 | 128 | 4296733 | 50.000 |
| 57) | 4-Chloroaniline | (2) | 13.465 | 127 | 2310099 | 50.000 |
| 61) | Hexachlorobutadiene | (2) | 13.605 | 225 | 572665 | 50.000 |
| 65) | Caprolactam | (2) | 14.122 | 113 | 451730 | 50.000 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.251 | 107 | 1172397 | 50.000 |
| 72) | 2-Methylnaphthalene | (2) | 14.708 | 142 | 2467159 | 50.000 |
| 73) | 1-Methylnaphthalene | (2) | 14.907 | 142 | 2331807 | 50.000 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.967 | 237 | 520115 | 50.000 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.176 | 196 | 659529 | 50.000 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.256 | 196 | 686938 | 50.000 |
| 83) | Biphenyl | (3) | 15.536 | 154 | 2963494 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc361.d
Injection date and time: 20-MAR-2004 07:46
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:32
Sublist used: all1
Date, time and analyst ID of latest file update: 20-Mar-2004 10:32 sls01495

Sample Name: SSTD050
Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.536 | 154 | 2963494 | 50.000 |
| 85) | 1,1'-Biphenyl | (3) | 15.536 | 154 | 2963494 | 50.000 |
| 86) | 2-Chloronaphthalene | (3) | 15.635 | 162 | 2186899 | 50.000 |
| 89) | Diphenyl ether | (3) | 15.705 | 170 | 1456984 | 50.000 |
| 90) | 2-Nitroaniline | (3) | 15.755 | 138 | 893595 | 50.000 |
| 93) | Dimethylphthalate | (3) | 16.005 | 163 | 2545415 | 50.000 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.184 | 165 | 654102 | 50.000 |
| 96) | Acenaphthylene | (3) | 16.462 | 152 | 2884911 | 50.000 |
| 98) | 3-Nitroaniline | (3) | 16.522 | 138 | 671378 | 50.000 |
| 99) | Acenaphthene-d10 | (3) | 16.672 | 164 | 1295579 | 40.000 |
| 100) | Acenaphthene | (3) | 16.722 | 153 | 1841732 | 50.000 |
| 101) | 2,4-Dinitrophenol | (3) | 16.672 | 184 | 379558 | 50.000 |
| 104) | 4-Nitrophenol | (3) | 16.672 | 109 | 357598 | 50.000 |
| 105) | Dibenzofuran | (3) | 16.991 | 168 | 2647725 | 50.000 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.871 | 165 | 713126 | 50.000 |
| 107) | 1-Naphthylamine | (3) | 17.121 | 143 | 1829381 | 50.000 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.161 | 232 | 478885 | 50.000 |
| 109) | 2-Naphthylamine | (3) | 17.251 | 143 | 2117225 | 50.000 |
| 110) | Diethylphthalate | (3) | 17.201 | 149 | 2100960 | 50.000 |
| 112) | Fluorene | (3) | 17.631 | 166 | 2185773 | 50.000 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.541 | 204 | 873356 | 50.000 |
| 115) | 4-Nitroaniline | (3) | 17.601 | 138 | 677364 | 50.000 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.631 | 198 | 446753 | 50.000 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.760 | 169 | 1463769 | 50.000 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.860 | 77 | 2609171 | 50.000 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.490 | 248 | 490431 | 50.000 |
| 128) | Hexachlorobenzene | (4) | 18.671 | 284 | 586744 | 50.000 |
| 132) | Pentachlorophenol | (4) | 18.970 | 266 | 406901 | 50.000 |
| 136) | Phenanthrene-d10 | (4) | 19.340 | 188 | 1826964 | 40.000 |
| 138) | Phenanthrene | (4) | 19.380 | 178 | 2743224 | 50.000 |
| 139) | Anthracene | (4) | 19.470 | 178 | 2739561 | 50.000 |
| 141) | Carbazole | (4) | 19.670 | 167 | 2595121 | 50.000 |
| 143) | Di-n-butylphthalate | (4) | 20.059 | 149 | 3540468 | 50.000 |
| 148) | Fluoranthene | (4) | 21.127 | 202 | 2679097 | 50.000 |
| 153) | Benzidine | (5) | 21.237 | 184 | 4843022 | 150.000 |
| 155) | Pyrene | (5) | 21.447 | 202 | 2725025 | 50.000 |
| 162) | Butylbenzylphthalate | (5) | 22.137 | 149 | 1536897 | 50.000 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.125 | 252 | 928110 | 50.000 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.105 | 231 | 439393 | 50.000 |
| 167) | Benzo(a)anthracene | (5) | 23.295 | 228 | 2268897 | 50.000 |
| 168) | Chrysene-d12 | (5) | 23.316 | 240 | 1526878 | 40.000 |
| 169) | Chrysene | (5) | 23.366 | 228 | 2075715 | 50.000 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.965 | 149 | 2084878 | 50.000 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

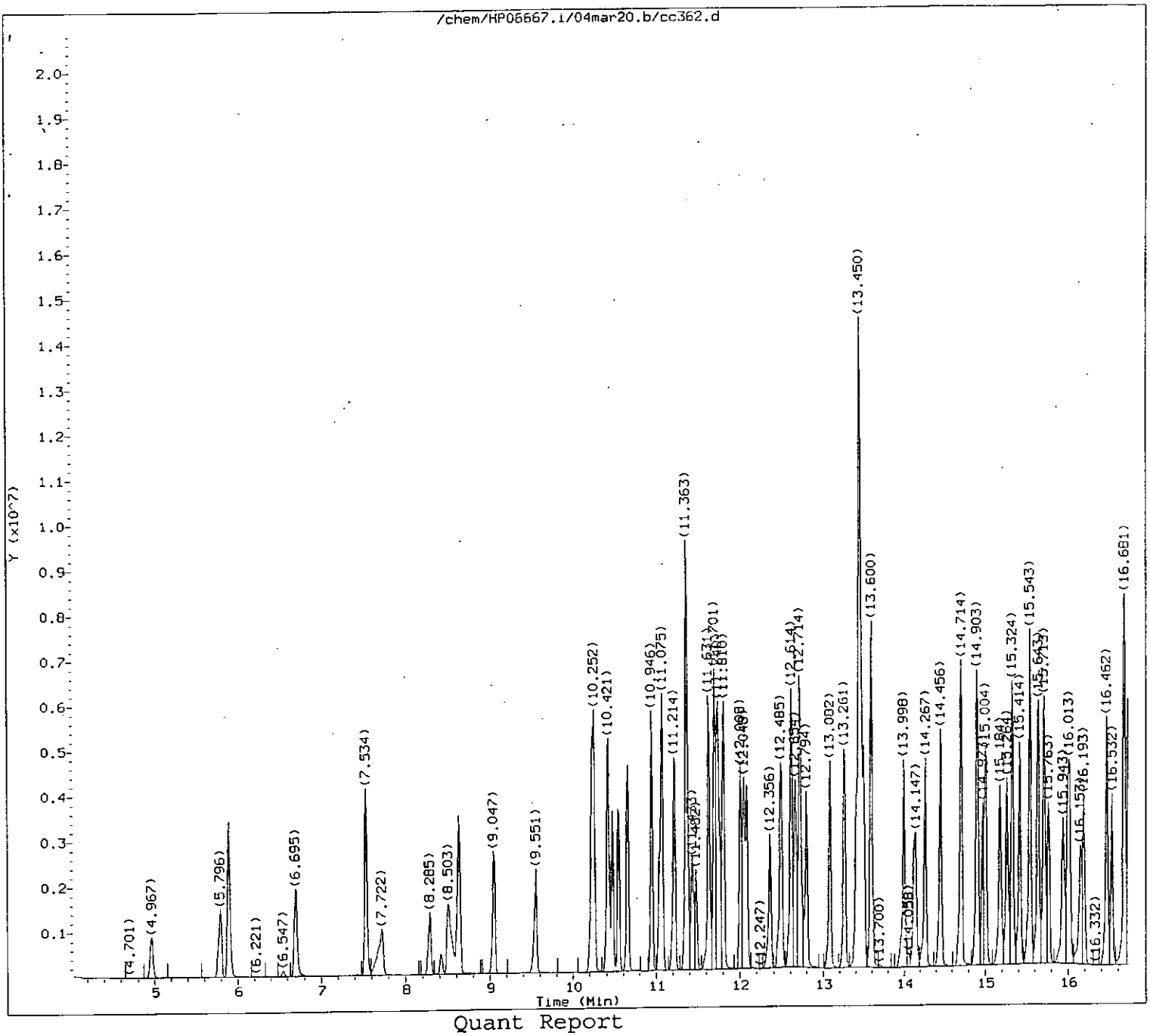
Data File: /chem/HP06667.i/04mar20.b/cc361.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 07:46  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:32
Date, time and analyst ID of latest file update: 20-Mar-2004 10:32 sls01495

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.282 | 149 | 3424676 | 50.000 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.754 | 256 | 1048809 | 50.000 |
| 174) | Benzo(b)fluoranthene | (6) | 25.824 | 252 | 2155185 | 50.000 |
| 175) | Benzo(k)fluoranthene | (6) | 25.904 | 252 | 2141018 | 50.000 |
| 176) | Benzo(a)pyrene | (6) | 26.858 | 252 | 1926796 | 50.000 |
| 177) | Perylene-d12 | (6) | 27.027 | 264 | 1321704 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.354 | 276 | 2256102 | 50.000 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.364 | 278 | 1796203 | 50.000 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.703 | 276 | 1876561 | 50.000 |
| 9) | 2-Fluorophenol | (1) | 8.621 | 112 | 1317389 | 50.000 |
| 16) | Phenol-d6 | (1) | 10.211 | 99 | 1694669 | 50.000 |
| 40) | Nitrobenzene-d5 | (2) | 12.036 | 82 | 1712238 | 50.000 |
| 80) | 2-Fluorobiphenyl | (3) | 15.326 | 172 | 2380020 | 50.000 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.090 | 330 | 291311 | 50.000 |
| 157) | Terphenyl-d14 | (5) | 21.548 | 244 | 1781860 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc362.d
Injection date and time: 20-MAR-2004 08:52

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:33

Sublist used: all1

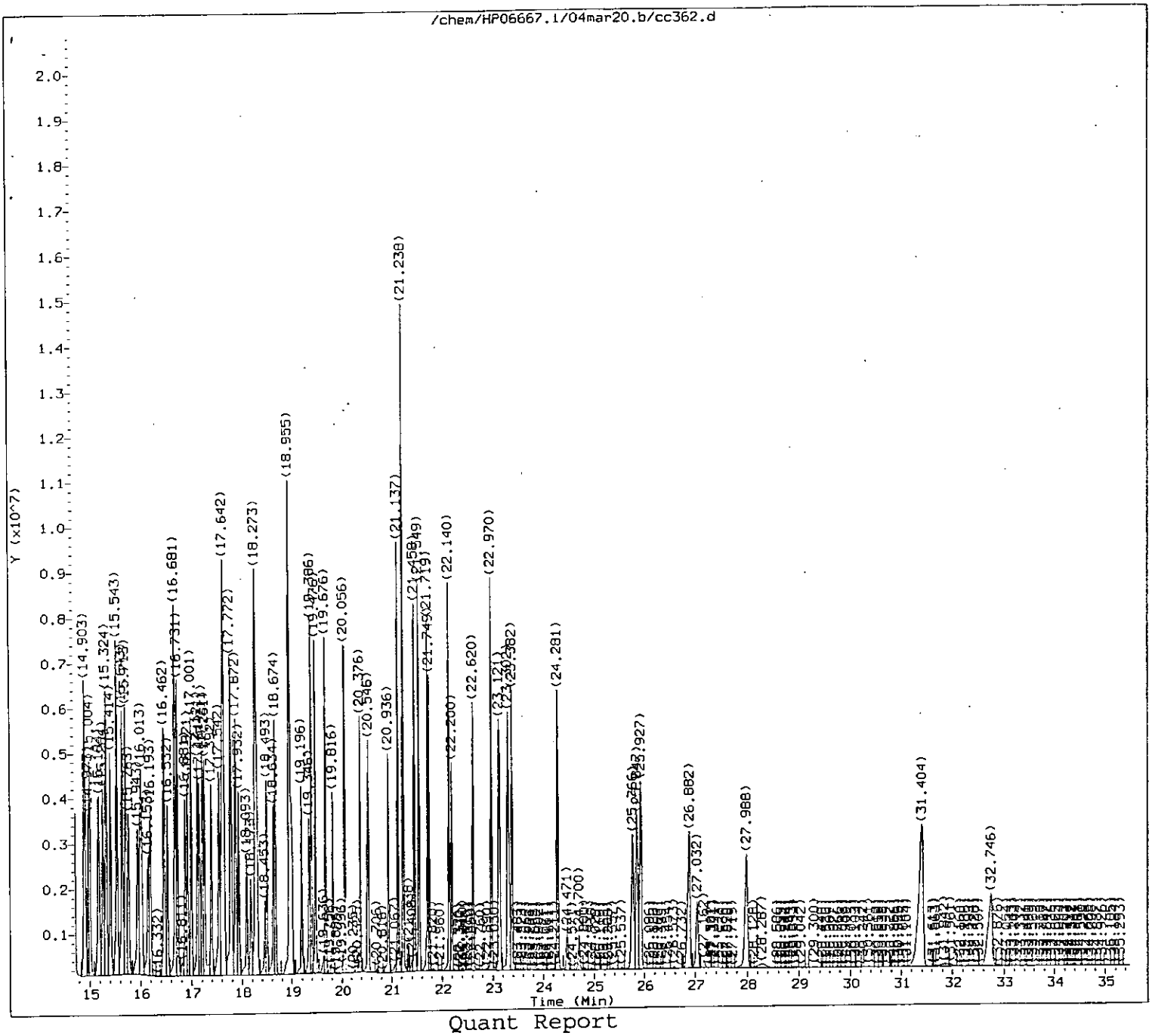
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD080

Lab Sample ID: STD0754

8326

3/22/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc362.d
Injection date and time: 20-MAR-2004 08:52

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:33

Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD080

Lab Sample ID: STD0754

8327

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc362.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 08:52  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD080  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.967 | 88 | 788504 | 79.726 |
| 2) | N-Nitrosodimethylamine | (1) | 5.796 | 74 | 1387863 | 80.344 |
| 3) | Pyridine | (1) | 5.895 | 79 | 2275272 | 80.747 |
| 5) | 2-Picoline | (1) | 7.534 | 93 | 2368813 | 80.114 |
| 10) | N-Nitrosodiethylamine | (1) | 9.047 | 102 | 1120552 | 79.960 |
| 11) | Ethyl methanesulfonate | (1) | 9.551 | 109 | 1099363 | 80.295 |
| 14) | Aniline | (1) | 10.421 | 93 | 3882167 | 82.273 |
| 17) | Phenol | (1) | 10.252 | 94 | 2986479 | 80.673 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.470 | 93 | 2158189 | 77.991 |
| 20) | 2-Chlorophenol | (1) | 10.659 | 128 | 2265488 | 80.421 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.946 | 146 | 2283521 | 80.399 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.045 | 152 | 685316 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.075 | 146 | 2403903 | 81.079 |
| 25) | Benzyl alcohol | (1) | 11.224 | 108 | 1537534 | 80.815 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.363 | 146 | 2320026 | 81.067 |
| 28) | 2-Methylphenol | (1) | 11.363 | 108 | 2163122 | 80.720 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.433 | 45 | 3399733 | 80.158 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.433 | 45 | 3399733 | 80.158 |
| 32) | Acetophenone | (1) | 11.740 | 105 | 3224405 | 81.057 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.701 | 70 | 1577254 | 75.620 |
| 35) | 4-Methylphenol | (1) | 11.631 | 108 | 2191646 | 80.561 |
| 36) | o-Toluidine | (1) | 11.810 | 106 | 3589695 | 80.774 |
| 39) | Hexachloroethane | (1) | 12.008 | 117 | 1012414 | 81.404 |
| 41) | Nitrobenzene | (2) | 12.088 | 77 | 2537961 | 80.653 |
| 43) | Isophorone | (2) | 12.485 | 82 | 4777708 | 79.958 |
| 44) | 2-Nitrophenol | (2) | 12.654 | 139 | 1310428 | 81.602 |
| 46) | 2,4-Dimethylphenol | (2) | 12.614 | 107 | 2342587 | 80.547 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.794 | 93 | 2562648 | 80.521 |
| 49) | Benzoic acid | (2) | 12.734 | 105 | 1734311 | 75.962 |
| 51) | 2,4-Dichlorophenol | (2) | 13.082 | 162 | 1712886 | 80.992 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.271 | 180 | 1744862 | 80.993 |
| 54) | Naphthalene-d8 | (2) | 13.410 | 136 | 2856280 | 40.000 |
| 55) | Naphthalene | (2) | 13.450 | 128 | 7265420 | 81.540 |
| 57) | 4-Chloroaniline | (2) | 13.470 | 127 | 3863600 | 81.101 |
| 61) | Hexachlorobutadiene | (2) | 13.600 | 225 | 983340 | 82.155 |
| 65) | Caprolactam | (2) | 14.147 | 113 | 699431 | 78.017 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.267 | 107 | 1905603 | 79.959 |
| 72) | 2-Methylnaphthalene | (2) | 14.714 | 142 | 4081221 | 80.662 |
| 73) | 1-Methylnaphthalene | (2) | 14.903 | 142 | 3922128 | 81.329 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.973 | 237 | 885937 | 81.520 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.184 | 196 | 1127890 | 81.679 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.264 | 196 | 1136321 | 80.349 |
| 83) | Biphenyl | (3) | 15.543 | 154 | 4904888 | 80.371 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc362.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 08:52  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD080  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.543 | 154 | 4904888 | 80.371 |
| 85) | 1,1'-Biphenyl | (3) | 15.543 | 154 | 4904888 | 80.371 |
| 86) | 2-Chloronaphthalene | (3) | 15.643 | 162 | 3657459 | 80.788 |
| 89) | Diphenyl ether | (3) | 15.713 | 170 | 2445725 | 80.935 |
| 90) | 2-Nitroaniline | (3) | 15.763 | 138 | 1503604 | 81.031 |
| 93) | Dimethylphthalate | (3) | 16.023 | 163 | 4150265 | 79.771 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.193 | 165 | 985402 | 76.610 |
| 96) | Acenaphthylene | (3) | 16.472 | 152 | 4747402 | 80.140 |
| 98) | 3-Nitroaniline | (3) | 16.532 | 138 | 1098763 | 79.921 |
| 99) | Acenaphthene-d10 | (3) | 16.671 | 164 | 1327831 | 40.000 |
| 100) | Acenaphthene | (3) | 16.731 | 153 | 3066188 | 80.605 |
| 101) | 2,4-Dinitrophenol | (3) | 16.681 | 184 | 660984 | 82.404 |
| 104) | 4-Nitrophenol | (3) | 16.681 | 109 | 633554 | 83.092 |
| 105) | Dibenzofuran | (3) | 17.001 | 168 | 4369288 | 80.252 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.881 | 165 | 1105890 | 77.767 |
| 107) | 1-Naphthylamine | (3) | 17.121 | 143 | 2943037 | 79.235 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.161 | 232 | 799490 | 80.717 |
| 109) | 2-Naphthylamine | (3) | 17.261 | 143 | 3465786 | 79.930 |
| 110) | Diethylphthalate | (3) | 17.211 | 149 | 3762563 | 83.522 |
| 112) | Fluorene | (3) | 17.642 | 166 | 3592278 | 80.089 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.552 | 204 | 1462597 | 80.841 |
| 115) | 4-Nitroaniline | (3) | 17.622 | 138 | 1107935 | 79.898 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.642 | 198 | 747341 | 80.999 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.772 | 169 | 2482941 | 81.555 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.872 | 77 | 4118812 | 78.680 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.503 | 248 | 825873 | 81.265 |
| 128) | Hexachlorobenzene | (4) | 18.674 | 284 | 965129 | 80.325 |
| 132) | Pentachlorophenol | (4) | 18.975 | 266 | 701328 | 82.194 |
| 136) | Phenanthrene-d10 | (4) | 19.346 | 188 | 1863003 | 40.000 |
| 138) | Phenanthrene | (4) | 19.386 | 178 | 4696993 | 81.930 |
| 139) | Anthracene | (4) | 19.476 | 178 | 4610313 | 81.238 |
| 141) | Carbazole | (4) | 19.676 | 167 | 4387633 | 81.425 |
| 143) | Di-n-butylphthalate | (4) | 20.066 | 149 | 5975151 | 81.352 |
| 148) | Fluoranthene | (4) | 21.137 | 202 | 4731385 | 83.166 |
| 153) | Benzidine | (5) | 21.238 | 184 | 7906500 | 233.558 |
| 155) | Pyrene | (5) | 21.458 | 202 | 4522887 | 78.513 |
| 162) | Butylbenzylphthalate | (5) | 22.140 | 149 | 2750480 | 81.526 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.141 | 252 | 1695298 | 82.344 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.111 | 231 | 782954 | 81.353 |
| 167) | Benzo(a)anthracene | (5) | 23.302 | 228 | 3989183 | 80.818 |
| 168) | Chrysene-d12 | (5) | 23.322 | 240 | 1643889 | 40.000 |
| 169) | Chrysene | (5) | 23.382 | 228 | 3697327 | 81.338 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.970 | 149 | 3690819 | 81.092 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

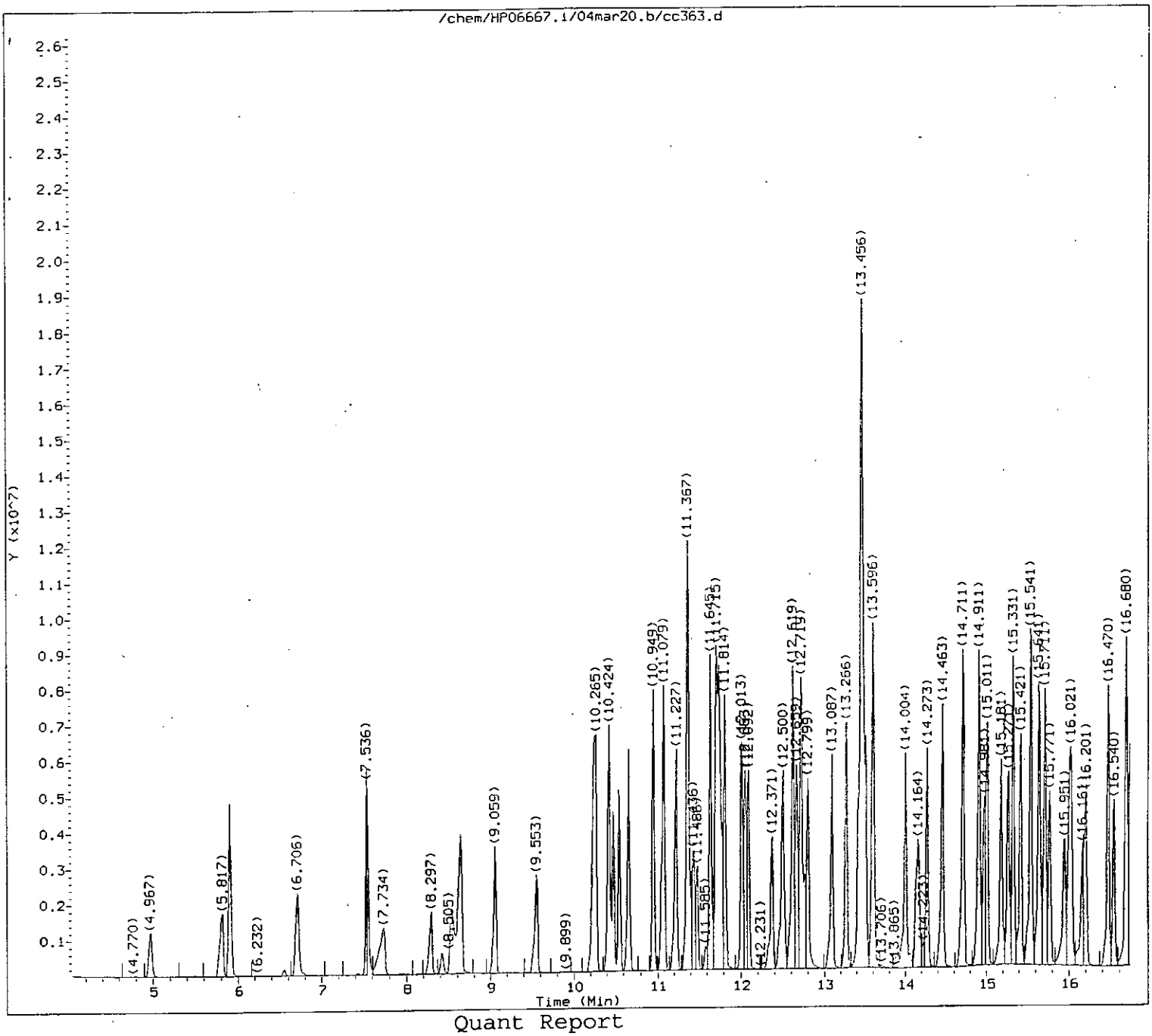
Data File: /chem/HP06667.i/04mar20.b/cc362.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 08:52  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD080  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.281 | 149 | 6096111 | 80.829 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.766 | 256 | 1866740 | 80.825 |
| 174) | Benzo(b)fluoranthene | (6) | 25.847 | 252 | 4034226 | 82.839 |
| 175) | Benzo(k)fluoranthene | (6) | 25.927 | 252 | 3748046 | 80.161 |
| 176) | Benzo(a)pyrene | (6) | 26.882 | 252 | 3453416 | 81.103 |
| 177) | Perylene-d12 | (6) | 27.032 | 264 | 1440284 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.414 | 276 | 4022688 | 80.896 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.414 | 278 | 3234547 | 81.292 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.746 | 276 | 3313002 | 80.500 |
| 9) | 2-Fluorophenol | (1) | 8.632 | 112 | 2118793 | 80.150 |
| 16) | Phenol-d6 | (1) | 10.232 | 99 | 2754941 | 80.578 |
| 40) | Nitrobenzene-d5 | (2) | 12.048 | 82 | 2855205 | 80.983 |
| 80) | 2-Fluorobiphenyl | (3) | 15.324 | 172 | 3972596 | 80.709 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.093 | 330 | 490901 | 81.090 |
| 157) | Terphenyl-d14 | (5) | 21.549 | 244 | 3071413 | 80.025 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc363.d
Injection date and time: 20-MAR-2004 09:35

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:33

Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD120

Lab Sample ID: STD0754

8331

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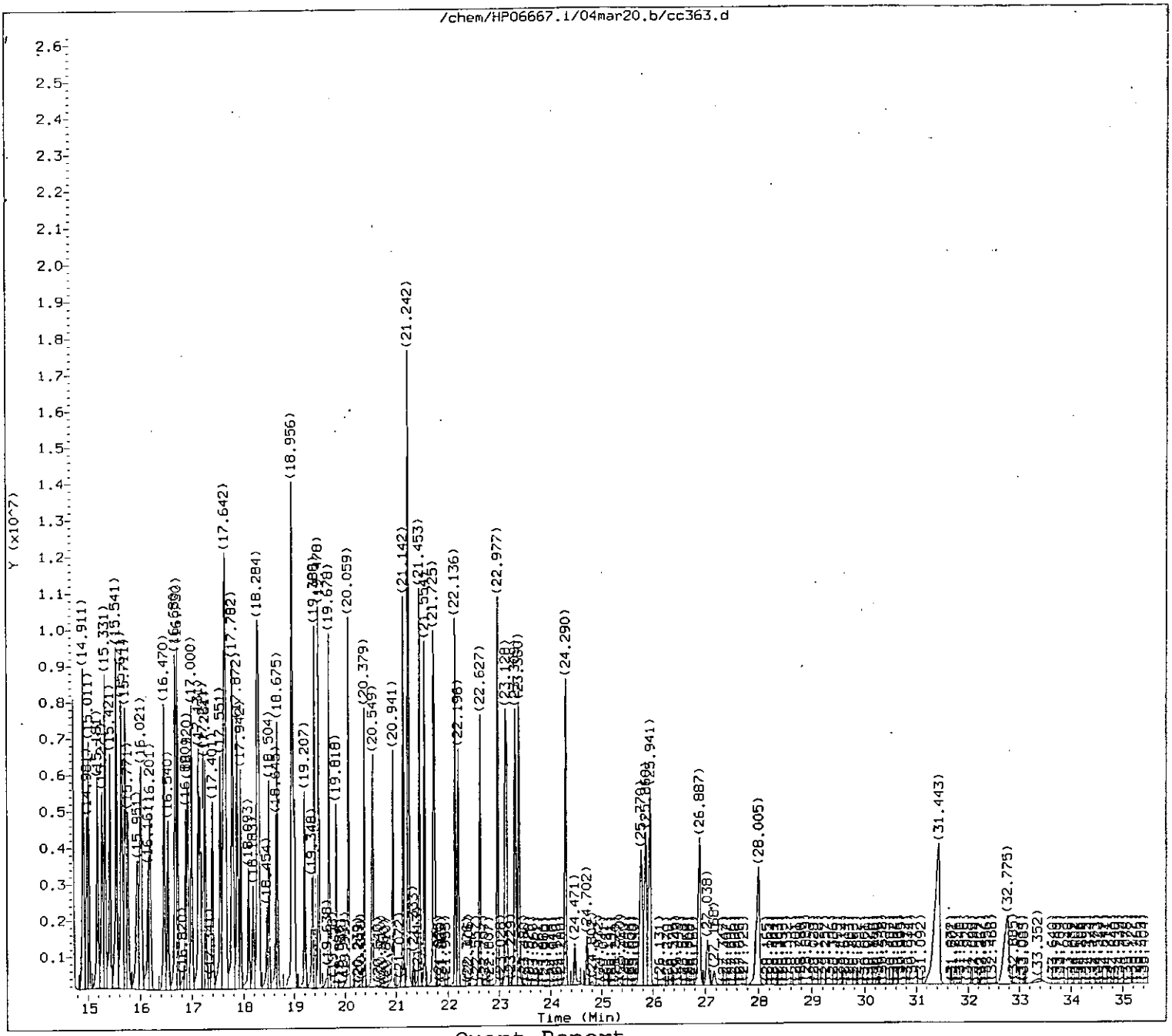



Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc363.d
Injection date and time: 20-MAR-2004 09:35

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:33

Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD120

Lab Sample ID: STD0754

8332

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc363.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 09:35  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD120  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 4.977 | 88 | 1119765 | 121.175 |
| 2) N-Nitrosodimethylamine | (1) | 5.817 | 74 | 1925431 | 119.922 |
| 3) Pyridine | (1) | 5.905 | 79 | 3214079 | 121.774 |
| 5) 2-Picoline | (1) | 7.536 | 93 | 3304935 | 120.144 |
| 10) N-Nitrosodiethylamine | (1) | 9.059 | 102 | 1544408 | 119.015 |
| 11) Ethyl methanesulfonate | (1) | 9.553 | 109 | 1510916 | 119.123 |
| 14) Aniline | (1) | 10.424 | 93 | 5342332 | 121.173 |
| 17) Phenol | (1) | 10.265 | 94 | 4091162 | 119.238 |
| 19) bis(2-Chloroethyl)ether | (1) | 10.473 | 93 | 2923510 | 115.675 |
| 20) 2-Chlorophenol | (1) | 10.662 | 128 | 3142462 | 119.985 |
| 21) 1,3-Dichlorobenzene | (1) | 10.949 | 146 | 3201058 | 120.808 |
| 22) 1,4-Dichlorobenzene-d4 | (1) | 11.039 | 152 | 637188 | 40.000 |
| 23) 1,4-Dichlorobenzene | (1) | 11.079 | 146 | 3348680 | 120.980 |
| 25) Benzyl alcohol | (1) | 11.227 | 108 | 2067946 | 117.918 |
| 26) 1,2-Dichlorobenzene | (1) | 11.367 | 146 | 3236263 | 121.078 |
| 28) 2-Methylphenol | (1) | 11.377 | 108 | 2946458 | 118.832 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | 11.436 | 45 | 4606913 | 117.864 |
| 30) bis(2-Chloroisopropyl)ether | (1) | 11.436 | 45 | 4606913 | 117.864 |
| 32) Acetophenone | (1) | 11.744 | 105 | 4479760 | 120.745 |
| 33) N-Nitroso-di-n-propylamine | (1) | 11.715 | 70 | 2048506 | 110.023 |
| 35) 4-Methylphenol | (1) | 11.645 | 108 | 2679100 | 110.230 |
| 36) o-Toluidine | (1) | 11.814 | 106 | 5248990 | 124.598 |
| 39) Hexachloroethane | (1) | 12.013 | 117 | 1402278 | 120.843 |
| 41) Nitrobenzene | (2) | 12.092 | 77 | 3487211 | 120.198 |
| 43) Isophorone | (2) | 12.500 | 82 | 6536296 | 119.160 |
| 44) 2-Nitrophenol | (2) | 12.659 | 139 | 1852711 | 123.442 |
| 46) 2,4-Dimethylphenol | (2) | 12.619 | 107 | 3210213 | 119.880 |
| 48) bis(2-Chloroethoxy)methane | (2) | 12.799 | 93 | 3621145 | 122.318 |
| 49) Benzoic acid | (2) | 12.759 | 105 | 2321467 | 113.408 |
| 51) 2,4-Dichlorophenol | (2) | 13.087 | 162 | 2358359 | 120.698 |
| 52) 1,2,4-Trichlorobenzene | (2) | 13.266 | 180 | 2457377 | 122.521 |
| 54) Naphthalene-d8 | (2) | 13.406 | 136 | 2631237 | 40.000 |
| 55) Naphthalene | (2) | 13.456 | 128 | 9883082 | 120.269 |
| 57) 4-Chloroaniline | (2) | 13.476 | 127 | 5323988 | 120.873 |
| 61) Hexachlorobutadiene | (2) | 13.606 | 225 | 1386634 | 123.777 |
| 65) Caprolactam | (2) | 14.164 | 113 | 941903 | 115.966 |
| 70) 4-Chloro-3-methylphenol | (2) | 14.273 | 107 | 2675402 | 121.234 |
| 72) 2-Methylnaphthalene | (2) | 14.711 | 142 | 5647553 | 120.775 |
| 73) 1-Methylnaphthalene | (2) | 14.911 | 142 | 5395395 | 120.961 |
| 74) Hexachlorocyclopentadiene | (3) | 14.971 | 237 | 1227088 | 124.206 |
| 77) 2,4,6-Trichlorophenol | (3) | 15.181 | 196 | 1672254 | 129.962 |
| 79) 2,4,5-Trichlorophenol | (3) | 15.271 | 196 | 1465844 | 117.338 |
| 83) Biphenyl | (3) | 15.541 | 154 | 6768378 | 122.752 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc363.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 09:35  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD120  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.541 | 154 | 6768378 | 122.752 |
| 85) | 1,1'-Biphenyl | (3) | 15.541 | 154 | 6768378 | 122.752 |
| 86) | 2-Chloronaphthalene | (3) | 15.641 | 162 | 5158175 | 124.942 |
| 89) | Diphenyl ether | (3) | 15.711 | 170 | 3411283 | 124.189 |
| 90) | 2-Nitroaniline | (3) | 15.771 | 138 | 1848310 | 114.214 |
| 93) | Dimethylphthalate | (3) | 16.021 | 163 | 5123938 | 113.333 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.201 | 165 | 1355107 | 118.631 |
| 96) | Acenaphthylene | (3) | 16.470 | 152 | 6436743 | 121.101 |
| 98) | 3-Nitroaniline | (3) | 16.540 | 138 | 1507951 | 121.857 |
| 99) | Acenaphthene-d10 | (3) | 16.670 | 164 | 1185931 | 40.000 |
| 100) | Acenaphthene | (3) | 16.730 | 153 | 4165754 | 121.731 |
| 101) | 2,4-Dinitrophenol | (3) | 16.690 | 184 | 896438 | 123.372 |
| 104) | 4-Nitrophenol | (3) | 16.690 | 109 | 836768 | 121.902 |
| 105) | Dibenzofuran | (3) | 17.000 | 168 | 5850813 | 120.215 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.890 | 165 | 1460303 | 116.604 |
| 107) | 1-Naphthylamine | (3) | 17.131 | 143 | 4196417 | 124.255 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.171 | 232 | 1089770 | 122.107 |
| 109) | 2-Naphthylamine | (3) | 17.261 | 143 | 4593933 | 119.079 |
| 110) | Diethylphthalate | (3) | 17.221 | 149 | 4658179 | 117.150 |
| 112) | Fluorene | (3) | 17.642 | 166 | 4881468 | 121.229 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.551 | 204 | 1992663 | 122.192 |
| 115) | 4-Nitroaniline | (3) | 17.632 | 138 | 1534039 | 122.548 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.652 | 198 | 1037904 | 123.963 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.772 | 169 | 3358754 | 122.386 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.872 | 77 | 5557940 | 119.307 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.504 | 248 | 1157678 | 124.987 |
| 128) | Hexachlorobenzene | (4) | 18.675 | 284 | 1341221 | 123.337 |
| 132) | Pentachlorophenol | (4) | 18.986 | 266 | 988230 | 126.343 |
| 136) | Phenanthrene-d10 | (4) | 19.348 | 188 | 1662675 | 40.000 |
| 138) | Phenanthrene | (4) | 19.388 | 178 | 6331365 | 122.470 |
| 139) | Anthracene | (4) | 19.478 | 178 | 6170193 | 121.210 |
| 141) | Carbazole | (4) | 19.678 | 167 | 5873333 | 121.411 |
| 143) | Di-n-butylphthalate | (4) | 20.059 | 149 | 7946217 | 120.813 |
| 148) | Fluoranthene | (4) | 21.142 | 202 | 6307439 | 122.786 |
| 153) | Benzidine | (5) | 21.242 | 184 | 9911668 | 332.801 |
| 155) | Pyrene | (5) | 21.453 | 202 | 6299850 | 119.853 |
| 162) | Butylbenzylphthalate | (5) | 22.146 | 149 | 3793457 | 122.085 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.148 | 252 | 2313001 | 122.017 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.118 | 231 | 1091438 | 122.775 |
| 167) | Benzo(a)anthracene | (5) | 23.309 | 228 | 5432053 | 120.356 |
| 168) | Chrysene-d12 | (5) | 23.330 | 240 | 1500889 | 40.000 |
| 169) | Chrysene | (5) | 23.390 | 228 | 5045065 | 121.037 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.977 | 149 | 5146150 | 122.533 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

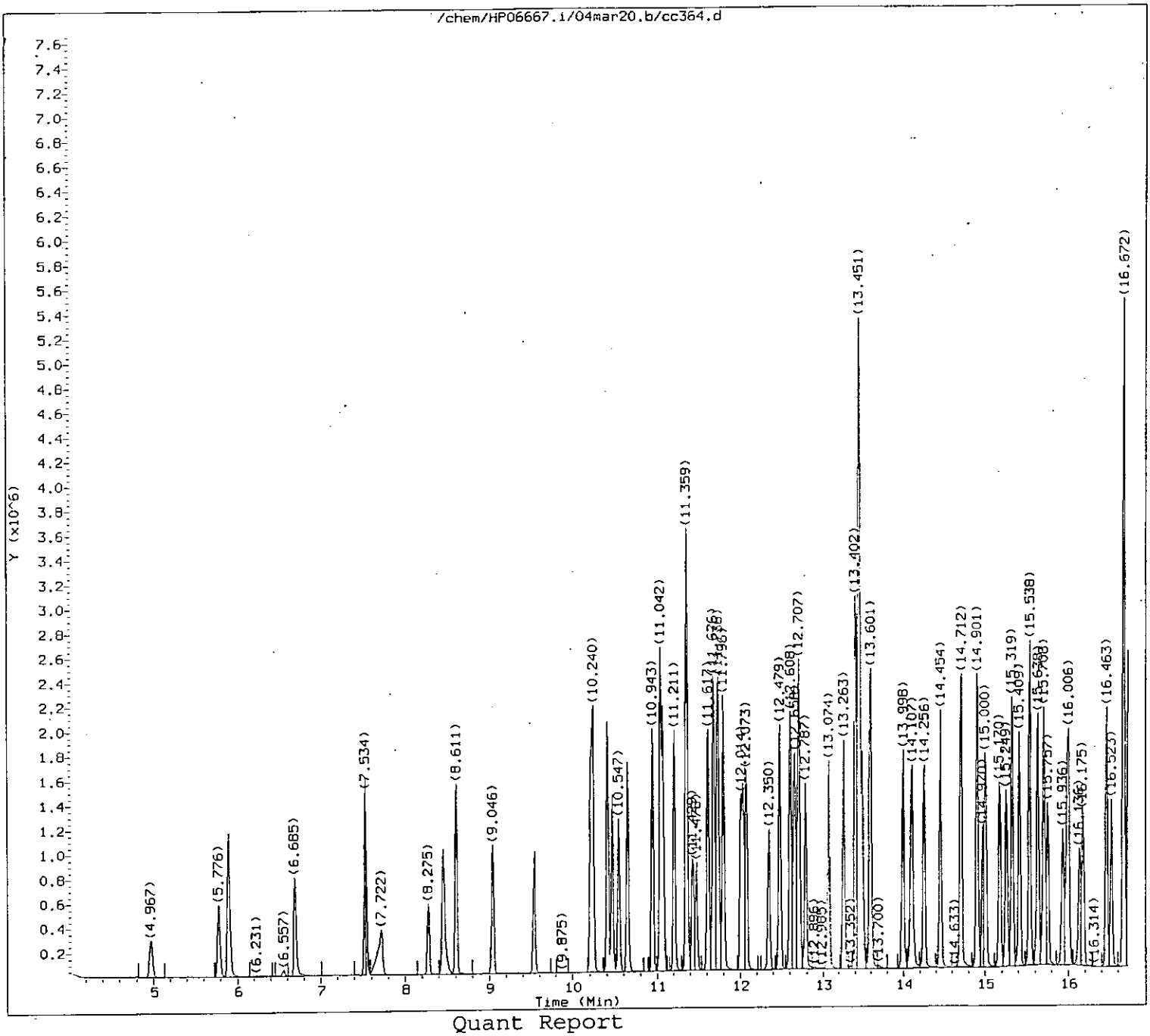
Data File: /chem/HP06667.i/04mar20.b/cc363.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 09:35  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:33
Date, time and analyst ID of latest file update: 20-Mar-2004 10:33 sls01495

Sample Name: SSTD120  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 172) Di-n-octylphthalate | (6) | 24.290 | 149 | 8605572 | 125.972 |
| 173) 7,12-Dimethylbenz[a]anthracene | (6) | 25.770 | 256 | 2544821 | 123.126 |
| 174) Benzo(b)fluoranthene | (6) | 25.860 | 252 | 5306673 | 122.229 |
| 175) Benzo(k)fluoranthene | (6) | 25.941 | 252 | 5214799 | 124.113 |
| 176) Benzo(a)pyrene | (6) | 26.887 | 252 | 4740332 | 123.963 |
| 177) Perylene-d12 | (6) | 27.038 | 264 | 1272105 | 40.000 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | 31.443 | 276 | 5469425 | 122.983 |
| 181) Dibenz(a,h)anthracene | (6) | 31.443 | 278 | 4411538 | 123.631 |
| 182) Benzo(g,h,i)perylene | (6) | 32.775 | 276 | 4362897 | 120.017 |
| 9) 2-Fluorophenol | (1) | 8.643 | 112 | 2930545 | 119.486 |
| 16) Phenol-d6 | (1) | 10.235 | 99 | 3757411 | 118.794 |
| 40) Nitrobenzene-d5 | (2) | 12.053 | 82 | 3894425 | 119.937 |
| 80) 2-Fluorobiphenyl | (3) | 15.331 | 172 | 5504192 | 123.421 |
| 120) 2,4,6-Tribromophenol | (3) | 18.103 | 330 | 671042 | 122.709 |
| 157) Terphenyl-d14 | (5) | 21.554 | 244 | 4167096 | 119.276 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc364.d
Injection date and time: 20-MAR-2004 10:18

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:55

Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:55 Automation

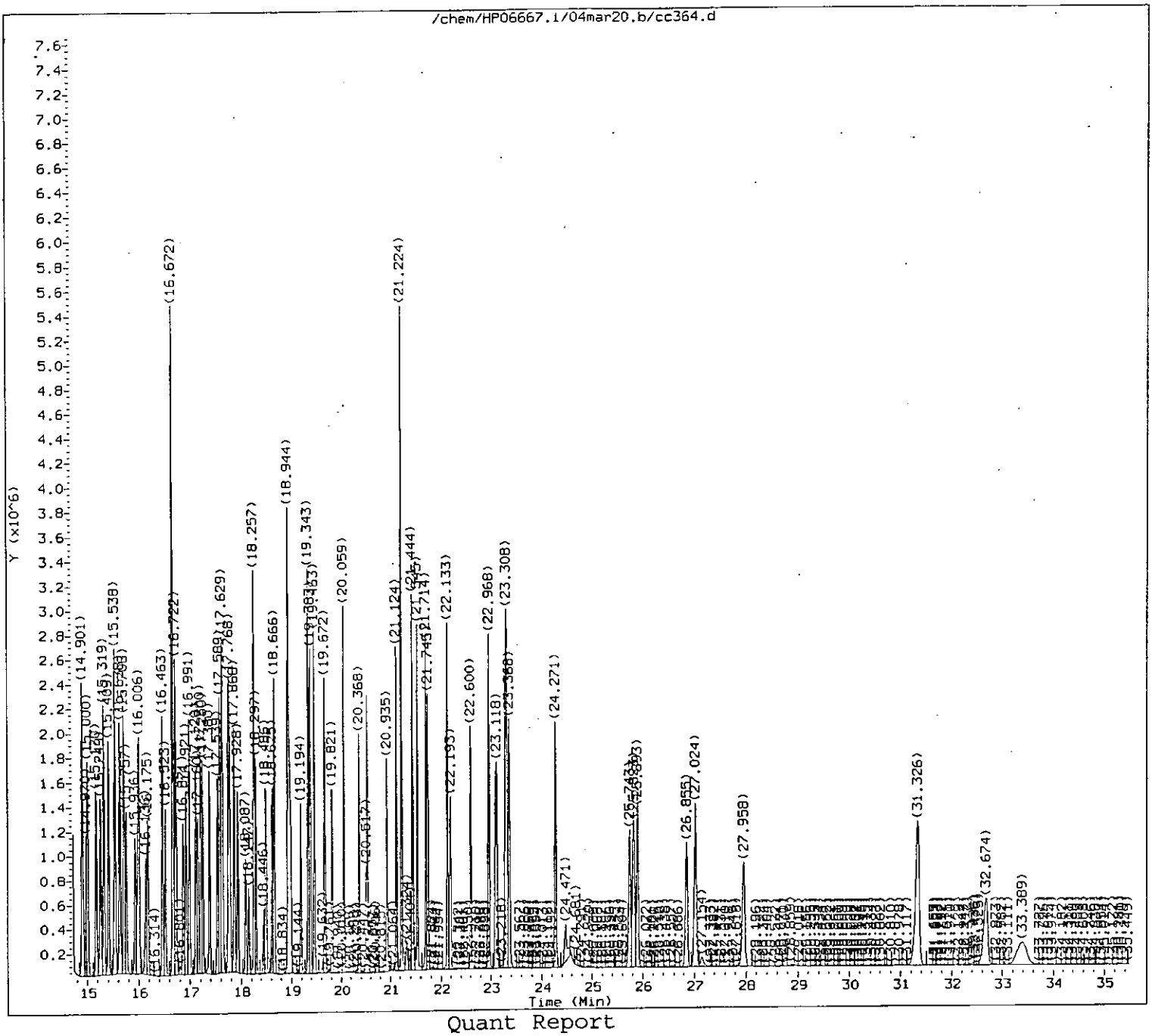
Sample Name: SSTD030

Lab Sample ID: STD0754



6336

3/22/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc364.d
Injection date and time: 20-MAR-2004 10:18

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 10:55

Sublist used: all1

Date, time and analyst ID of latest file update: 20-Mar-2004 10:55 Automation

Sample Name: SSTD030

Lab Sample ID: STD0754

6337

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc364.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 10:18  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:55
Date, time and analyst ID of latest file update: 20-Mar-2004 10:55 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.977 | 88 | 275874 | 29.000 |
| 2) | N-Nitrosodimethylamine | (1) | 5.786 | 74 | 494619 | 29.696 |
| 3) | Pyridine | (1) | 5.895 | 79 | 801439 | 29.374 |
| 5) | 2-Picoline | (1) | 7.534 | 93 | 827498 | 29.168 |
| 10) | N-Nitrosodiethylamine | (1) | 9.046 | 102 | 385921 | 28.916 |
| 11) | Ethyl methanesulfonate | (1) | 9.539 | 109 | 377039 | 28.906 |
| 14) | Aniline | (1) | 10.409 | 93 | 1234120 | 27.607 |
| 17) | Phenol | (1) | 10.240 | 94 | 1002453 | 28.528 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.468 | 93 | 819993 | 30.869 |
| 20) | 2-Chlorophenol | (1) | 10.646 | 128 | 762996 | 28.465 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.943 | 146 | 773382 | 28.506 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.042 | 152 | 663247 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.072 | 146 | 801629 | 28.337 |
| 25) | Benzyl alcohol | (1) | 11.211 | 108 | 518215 | 28.775 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.359 | 146 | 760913 | 27.967 |
| 28) | 2-Methylphenol | (1) | 11.359 | 108 | 716196 | 28.280 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.429 | 45 | 1157945 | 28.831 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.429 | 45 | 1157945 | 28.831 |
| 32) | Acetophenone | (1) | 11.726 | 105 | 1063786 | 28.121 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.676 | 70 | 602339 | 30.803 |
| 35) | 4-Methylphenol | (1) | 11.617 | 108 | 732643 | 29.213 |
| 36) | o-Toluidine | (1) | 11.796 | 106 | 1192882 | 27.853 |
| 39) | Hexachloroethane | (1) | 12.004 | 117 | 335491 | 28.300 |
| 41) | Nitrobenzene | (2) | 12.073 | 77 | 854023 | 29.196 |
| 43) | Isophorone | (2) | 12.479 | 82 | 1630272 | 29.409 |
| 44) | 2-Nitrophenol | (2) | 12.658 | 139 | 440892 | 29.150 |
| 46) | 2,4-Dimethylphenol | (2) | 12.608 | 107 | 779012 | 28.936 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.787 | 93 | 886394 | 29.573 |
| 49) | Benzoic acid | (2) | 12.697 | 105 | 812538 | 39.261 |
| 51) | 2,4-Dichlorophenol | (2) | 13.074 | 162 | 563293 | 28.737 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.263 | 180 | 579572 | 28.789 |
| 54) | Naphthalene-d8 | (2) | 13.402 | 136 | 2676610 | 40.000 |
| 55) | Naphthalene | (2) | 13.451 | 128 | 2346693 | 28.531 |
| 57) | 4-Chloroaniline | (2) | 13.461 | 127 | 1238526 | 28.196 |
| 61) | Hexachlorobutadiene | (2) | 13.601 | 225 | 316721 | 28.314 |
| 65) | Caprolactam | (2) | 14.097 | 113 | 256465 | 30.774 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.256 | 107 | 636832 | 28.760 |
| 72) | 2-Methylnaphthalene | (2) | 14.712 | 142 | 1351339 | 28.791 |
| 73) | 1-Methylnaphthalene | (2) | 14.901 | 142 | 1293228 | 28.862 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.970 | 237 | 280618 | 27.957 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.180 | 196 | 346908 | 26.854 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.249 | 196 | 374238 | 29.115 |
| 83) | Biphenyl | (3) | 15.538 | 154 | 1592671 | 28.318 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc364.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 10:18  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:55
Date, time and analyst ID of latest file update: 20-Mar-2004 10:55 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.538 | 154 | 1592671 | 28.318 |
| 85) | 1,1'-Biphenyl | (3) | 15.538 | 154 | 1592671 | 28.318 |
| 86) | 2-Chloronaphthalene | (3) | 15.638 | 162 | 1206171 | 28.566 |
| 89) | Diphenyl ether | (3) | 15.708 | 170 | 779106 | 27.926 |
| 90) | 2-Nitroaniline | (3) | 15.757 | 138 | 488809 | 29.297 |
| 93) | Dimethylphthalate | (3) | 16.006 | 163 | 1393307 | 29.744 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.185 | 165 | 354437 | 29.897 |
| 96) | Acenaphthylene | (3) | 16.463 | 152 | 1576862 | 28.901 |
| 98) | 3-Nitroaniline | (3) | 16.523 | 138 | 363003 | 28.654 |
| 99) | Acenaphthene-d10 | (3) | 16.672 | 164 | 1232257 | 40.000 |
| 100) | Acenaphthene | (3) | 16.722 | 153 | 1016681 | 28.932 |
| 101) | 2,4-Dinitrophenol | (3) | 16.672 | 184 | 274963 | 37.253 |
| 104) | 4-Nitrophenol | (3) | 16.662 | 109 | 197281 | 28.210 |
| 105) | Dibenzofuran | (3) | 16.991 | 168 | 1430098 | 28.691 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.871 | 165 | 388290 | 29.879 |
| 107) | 1-Naphthylamine | (3) | 17.120 | 143 | 1039738 | 29.721 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.160 | 232 | 250018 | 27.661 |
| 109) | 2-Naphthylamine | (3) | 17.250 | 143 | 1092044 | 27.883 |
| 110) | Diethylphthalate | (3) | 17.200 | 149 | 1225895 | 29.753 |
| 112) | Fluorene | (3) | 17.639 | 166 | 1142740 | 27.938 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.539 | 204 | 464532 | 28.018 |
| 115) | 4-Nitroaniline | (3) | 17.589 | 138 | 378222 | 29.304 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.629 | 198 | 226846 | 26.439 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.758 | 169 | 786906 | 27.626 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.868 | 77 | 1437539 | 29.218 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.496 | 248 | 266212 | 27.676 |
| 128) | Hexachlorobenzene | (4) | 18.666 | 284 | 306408 | 27.256 |
| 132) | Pentachlorophenol | (4) | 18.974 | 266 | 292124 | 36.176 |
| 136) | Phenanthrene-d10 | (4) | 19.343 | 188 | 1771232 | 40.000 |
| 138) | Phenanthrene | (4) | 19.383 | 178 | 1440698 | 27.025 |
| 139) | Anthracene | (4) | 19.463 | 178 | 1486236 | 28.012 |
| 141) | Carbazole | (4) | 19.672 | 167 | 1401603 | 27.848 |
| 143) | Di-n-butylphthalate | (4) | 20.059 | 149 | 2030098 | 29.224 |
| 148) | Fluoranthene | (4) | 21.134 | 202 | 1456241 | 27.384 |
| 153) | Benzidine | (5) | 21.224 | 184 | 2506364 | 86.519 |
| 155) | Pyrene | (5) | 21.444 | 202 | 1467463 | 28.735 |
| 162) | Butylbenzylphthalate | (5) | 22.133 | 149 | 868180 | 28.753 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.128 | 252 | 514201 | 28.110 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.098 | 231 | 236193 | 27.667 |
| 167) | Benzo(a)anthracene | (5) | 23.288 | 228 | 1264784 | 28.817 |
| 168) | Chrysene-d12 | (5) | 23.318 | 240 | 1478711 | 40.000 |
| 169) | Chrysene | (5) | 23.368 | 228 | 1153473 | 28.543 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.968 | 149 | 1185357 | 28.974 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

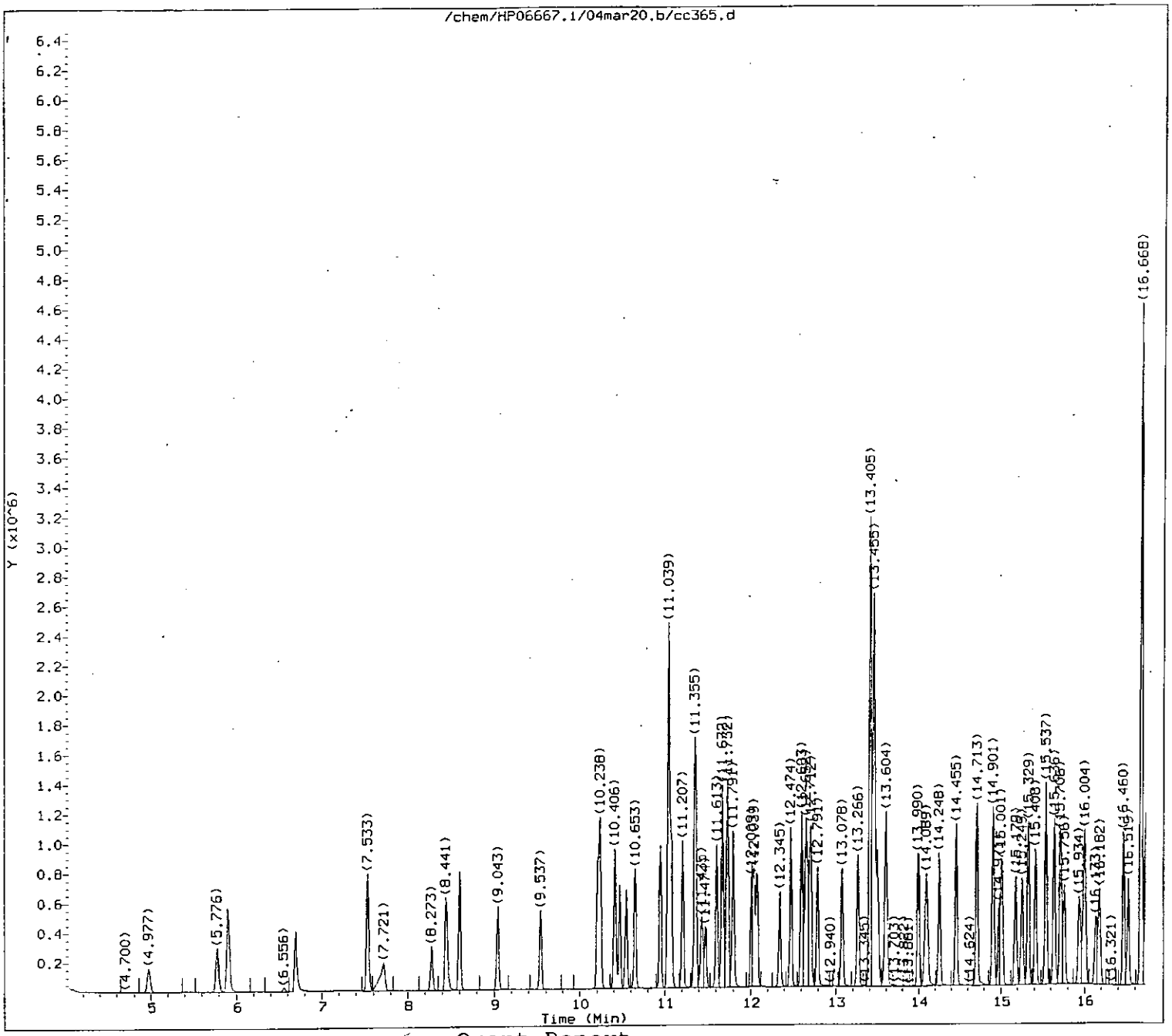
Data File: /chem/HP06667.i/04mar20.b/cc364.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 10:18  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 10:55
Date, time and analyst ID of latest file update: 20-Mar-2004 10:55 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.271 | 149 | 1944200 | 27.585 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.743 | 256 | 590405 | 27.664 |
| 174) | Benzo(b)fluoranthene | (6) | 25.823 | 252 | 1227129 | 27.439 |
| 175) | Benzo(k)fluoranthene | (6) | 25.903 | 252 | 1225860 | 28.116 |
| 176) | Benzo(a)pyrene | (6) | 26.855 | 252 | 1095924 | 27.733 |
| 177) | Perylene-d12 | (6) | 27.024 | 264 | 1347680 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.326 | 276 | 1286973 | 27.940 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.346 | 278 | 1018794 | 27.653 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.674 | 276 | 1038716 | 27.670 |
| 9) | 2-Fluorophenol | (1) | 8.611 | 112 | 735998 | 29.113 |
| 16) | Phenol-d6 | (1) | 10.211 | 99 | 931336 | 28.698 |
| 40) | Nitrobenzene-d5 | (2) | 12.033 | 82 | 945367 | 28.954 |
| 80) | 2-Fluorobiphenyl | (3) | 15.319 | 172 | 1290288 | 28.354 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.087 | 330 | 160841 | 28.712 |
| 157) | Terphenyl-d14 | (5) | 21.545 | 244 | 951477 | 28.197 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc365.d
Injection date and time: 20-MAR-2004 11:01

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 11:38

Sublist used: all1

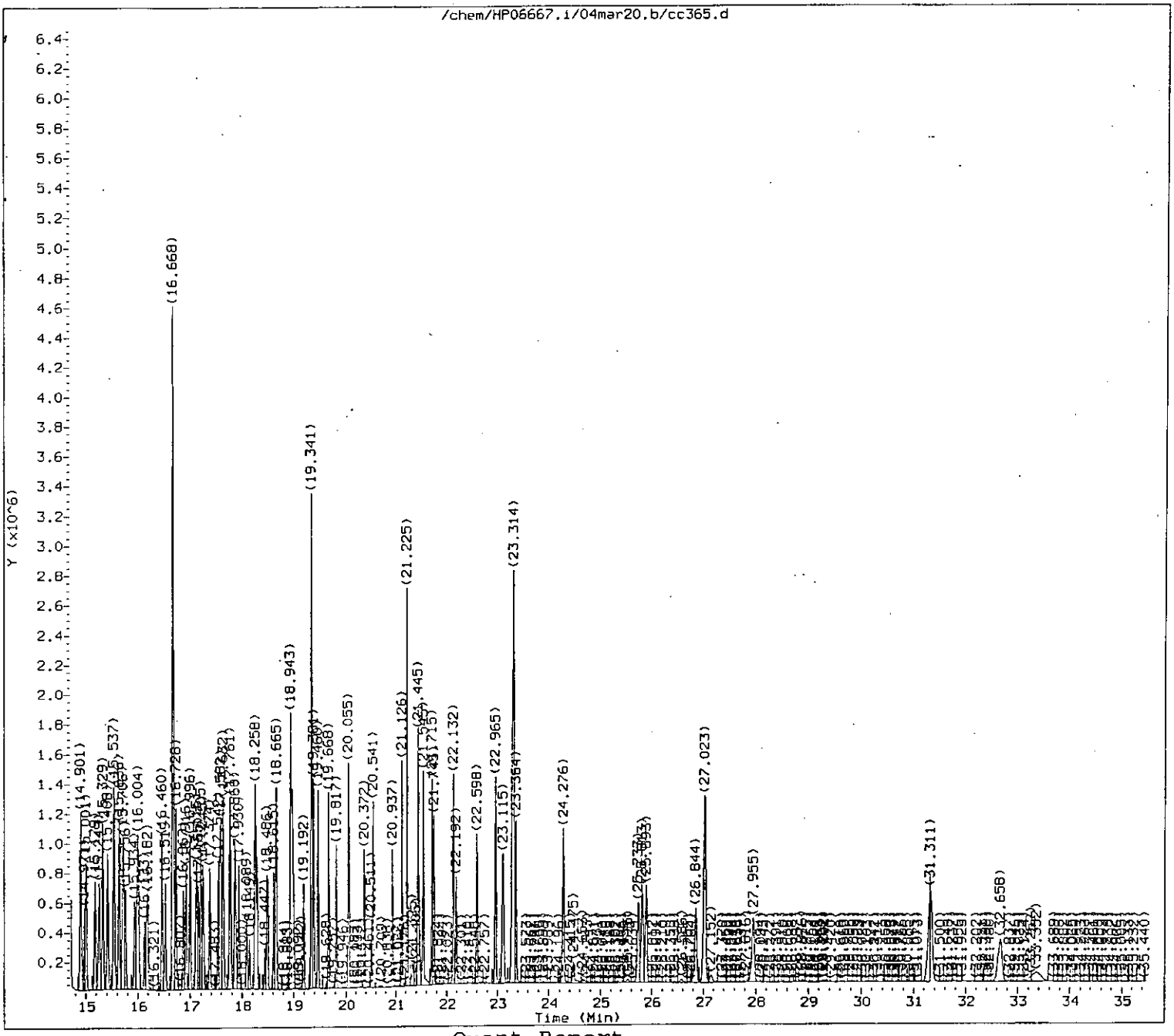
Date, time and analyst ID of latest file update: 20-Mar-2004 11:38 Automation

Sample Name: SSTD015

Lab Sample ID: STD0754

8341

3/24/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc365.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:01  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 11:38
Date, time and analyst ID of latest file update: 20-Mar-2004 11:38 Automation

Sample Name: SSTD015  Lab Sample ID: STD0754

8342

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc365.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:01  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 11:38
Date, time and analyst ID of latest file update: 20-Mar-2004 11:38 Automation

Sample Name: SSTD015  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.977 | 88 | 143092 | 15.510 |
| 2) | N-Nitrosodimethylamine | (1) | 5.776 | 74 | 245692 | 15.271 |
| 3) | Pyridine | (1) | 5.894 | 79 | 411633 | 15.547 |
| 5) | 2-Picoline | (1) | 7.533 | 93 | 408506 | 14.979 |
| 10) | N-Nitrosodiethylamine | (1) | 9.043 | 102 | 191628 | 14.945 |
| 11) | Ethyl methanesulfonate | (1) | 9.537 | 109 | 193162 | 15.318 |
| 14) | Aniline | (1) | 10.416 | 93 | 624592 | 14.622 |
| 17) | Phenol | (1) | 10.238 | 94 | 498334 | 14.798 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.465 | 93 | 386499 | 15.105 |
| 20) | 2-Chlorophenol | (1) | 10.653 | 128 | 374449 | 14.620 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.950 | 146 | 382294 | 14.722 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.039 | 152 | 637775 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.078 | 146 | 396581 | 14.661 |
| 25) | Benzyl alcohol | (1) | 11.207 | 108 | 244225 | 14.274 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.365 | 146 | 376128 | 14.497 |
| 28) | 2-Methylphenol | (1) | 11.355 | 108 | 357162 | 14.732 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.435 | 45 | 588298 | 15.186 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.435 | 45 | 588298 | 15.186 |
| 32) | Acetophenone | (1) | 11.732 | 105 | 523019 | 14.498 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.672 | 70 | 301030 | 15.797 |
| 35) | 4-Methylphenol | (1) | 11.613 | 108 | 362956 | 15.040 |
| 36) | o-Toluidine | (1) | 11.801 | 106 | 581872 | 14.295 |
| 39) | Hexachloroethane | (1) | 12.009 | 117 | 166200 | 14.662 |
| 41) | Nitrobenzene | (2) | 12.069 | 77 | 426982 | 14.943 |
| 43) | Isophorone | (2) | 12.474 | 82 | 808176 | 14.928 |
| 44) | 2-Nitrophenol | (2) | 12.652 | 139 | 215656 | 14.664 |
| 46) | 2,4-Dimethylphenol | (2) | 12.603 | 107 | 381366 | 14.587 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.791 | 93 | 438878 | 14.980 |
| 49) | Benzoic acid | (2) | 12.682 | 105 | 574571 | 28.702 |
| 51) | 2,4-Dichlorophenol | (2) | 13.078 | 162 | 276564 | 14.541 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.266 | 180 | 282299 | 14.469 |
| 54) | Naphthalene-d8 | (2) | 13.405 | 136 | 2617090 | 40.000 |
| 55) | Naphthalene | (2) | 13.445 | 128 | 1142112 | 14.355 |
| 57) | 4-Chloroaniline | (2) | 13.465 | 127 | 604069 | 14.243 |
| 61) | Hexachlorobutadiene | (2) | 13.604 | 225 | 154455 | 14.289 |
| 65) | Caprolactam | (2) | 14.089 | 113 | 128152 | 15.576 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.248 | 107 | 316139 | 14.680 |
| 72) | 2-Methylnaphthalene | (2) | 14.713 | 142 | 662407 | 14.544 |
| 73) | 1-Methylnaphthalene | (2) | 14.901 | 142 | 624007 | 14.388 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.971 | 237 | 130684 | 13.778 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.179 | 196 | 172535 | 14.067 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.259 | 196 | 183789 | 14.862 |
| 83) | Biphenyl | (3) | 15.537 | 154 | 777436 | 14.464 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc365.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:01  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all
Calibration date and time: 20-MAR-2004 11:38
Date, time and analyst ID of latest file update: 20-Mar-2004 11:38 Automation

Sample Name: SSTD015  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 84) Diphenyl | (3) | 15.537 | 154 | 777436 | 14.464 |
| 85) 1,1'-Biphenyl | (3) | 15.537 | 154 | 777436 | 14.464 |
| 86) 2-Chloronaphthalene | (3) | 15.636 | 162 | 595227 | 14.694 |
| 89) Diphenyl ether | (3) | 15.716 | 170 | 388265 | 14.543 |
| 90) 2-Nitroaniline | (3) | 15.756 | 138 | 235737 | 14.721 |
| 93) Dimethylphthalate | (3) | 16.004 | 163 | 689873 | 15.218 |
| 95) 2,6-Dinitrotoluene | (3) | 16.182 | 165 | 174962 | 15.243 |
| 96) Acenaphthylene | (3) | 16.460 | 152 | 775620 | 14.793 |
| 98) 3-Nitroaniline | (3) | 16.519 | 138 | 178151 | 14.665 |
| 99) Acenaphthene-d10 | (3) | 16.668 | 164 | 1188194 | 40.000 |
| 100) Acenaphthene | (3) | 16.728 | 153 | 501914 | 14.850 |
| 101) 2,4-Dinitrophenol | (3) | 16.668 | 184 | 190713 | 27.381 |
| 104) 4-Nitrophenol | (3) | 16.658 | 109 | 99906 | 14.852 |
| 105) Dibenzofuran | (3) | 16.996 | 168 | 698337 | 14.621 |
| 106) 2,4-Dinitrotoluene | (3) | 16.867 | 165 | 188012 | 15.003 |
| 107) 1-Naphthylamine | (3) | 17.115 | 143 | 491708 | 14.659 |
| 108) 2,3,4,6-Tetrachlorophenol | (3) | 17.155 | 232 | 122652 | 14.249 |
| 109) 2-Naphthylamine | (3) | 17.245 | 143 | 514669 | 13.882 |
| 110) Diethylphthalate | (3) | 17.205 | 149 | 611871 | 15.319 |
| 112) Fluorene | (3) | 17.632 | 166 | 558390 | 14.319 |
| 113) 4-Chlorophenyl-phenylether | (3) | 17.542 | 204 | 229898 | 14.500 |
| 115) 4-Nitroaniline | (3) | 17.582 | 138 | 184087 | 14.833 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | 17.622 | 198 | 105595 | 13.069 |
| 118) N-Nitrosodiphenylamine | (4) | 17.761 | 169 | 388777 | 14.223 |
| 119) 1,2-Diphenylhydrazine | (4) | 17.860 | 77 | 727636 | 15.172 |
| 126) 4-Bromophenyl-phenylether | (4) | 18.496 | 248 | 130404 | 14.146 |
| 128) Hexachlorobenzene | (4) | 18.665 | 284 | 154298 | 14.288 |
| 132) Pentachlorophenol | (4) | 18.973 | 266 | 209435 | 27.286 |
| 136) Phenanthrene-d10 | (4) | 19.341 | 188 | 1721687 | 40.000 |
| 138) Phenanthrene | (4) | 19.381 | 178 | 712625 | 13.985 |
| 139) Anthracene | (4) | 19.460 | 178 | 738080 | 14.444 |
| 141) Carbazole | (4) | 19.668 | 167 | 690826 | 14.288 |
| 143) Di-n-butylphthalate | (4) | 20.055 | 149 | 1012525 | 14.996 |
| 148) Fluoranthene | (4) | 21.126 | 202 | 732755 | 14.333 |
| 153) Benzidine | (5) | 21.225 | 184 | 1116221 | 39.890 |
| 155) Pyrene | (5) | 21.445 | 202 | 732664 | 14.551 |
| 162) Butylbenzylphthalate | (5) | 22.132 | 149 | 436626 | 14.643 |
| 165) 3,3'-Dichlorobenzidine | (5) | 23.125 | 252 | 248541 | 13.923 |
| 166) 4,4'-Methylenebis(2-Chloroanil | (5) | 23.094 | 231 | 116159 | 13.939 |
| 167) Benzo(a)anthracene | (5) | 23.294 | 228 | 621094 | 14.390 |
| 168) Chrysene-d12 | (5) | 23.314 | 240 | 1468902 | 40.000 |
| 169) Chrysene | (5) | 23.364 | 228 | 582994 | 14.616 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | 22.965 | 149 | 585695 | 14.526 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

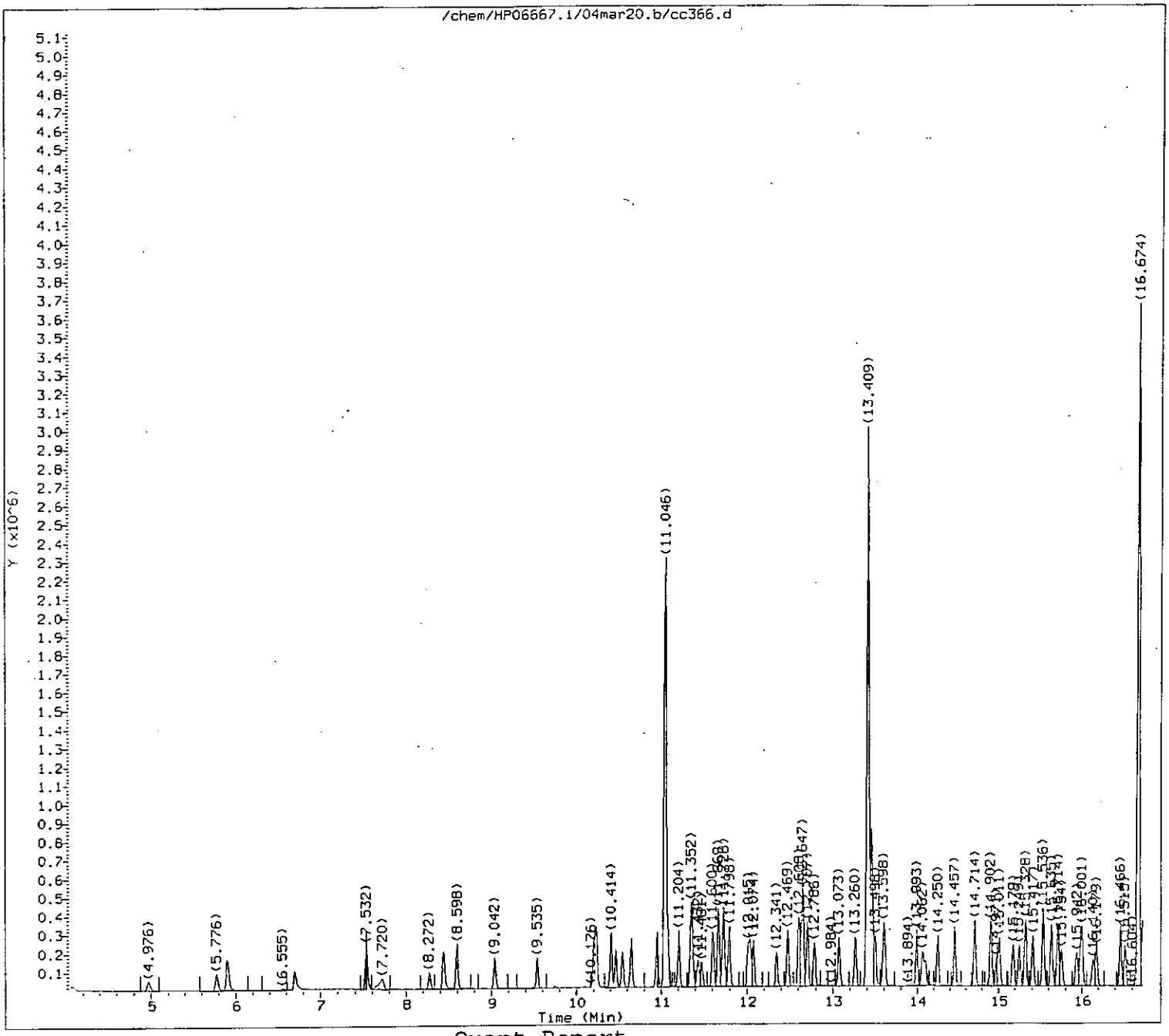
Data File: /chem/HP06667.i/04mar20.b/cc365.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:01  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 11:38
Date, time and analyst ID of latest file update: 20-Mar-2004 11:38 Automation

Sample Name: SSTD015  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.276 | 149 | 977695 | 14.388 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.743 | 256 | 281660 | 13.818 |
| 174) | Benzo(b)fluoranthene | (6) | 25.813 | 252 | 595615 | 13.921 |
| 175) | Benzo(k)fluoranthene | (6) | 25.893 | 252 | 596795 | 14.234 |
| 176) | Benzo(a)pyrene | (6) | 26.854 | 252 | 546461 | 14.352 |
| 177) | Perylene-d12 | (6) | 27.033 | 264 | 1312545 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.311 | 276 | 649424 | 14.578 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.321 | 278 | 509152 | 14.345 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.668 | 276 | 534973 | 14.704 |
| 9) | 2-Fluorophenol | (1) | 8.599 | 112 | 357145 | 14.752 |
| 16) | Phenol-d6 | (1) | 10.208 | 99 | 465679 | 14.938 |
| 40) | Nitrobenzene-d5 | (2) | 12.039 | 82 | 469605 | 14.767 |
| 80) | 2-Fluorobiphenyl | (3) | 15.329 | 172 | 634995 | 14.574 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.089 | 330 | 77798 | 14.518 |
| 157) | Terphenyl-d14 | (5) | 21.545 | 244 | 467454 | 14.144 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc366.d
Injection date and time: 20-MAR-2004 11:44

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m
Calibration date and time: 20-MAR-2004 12:21

Sublist used: all1

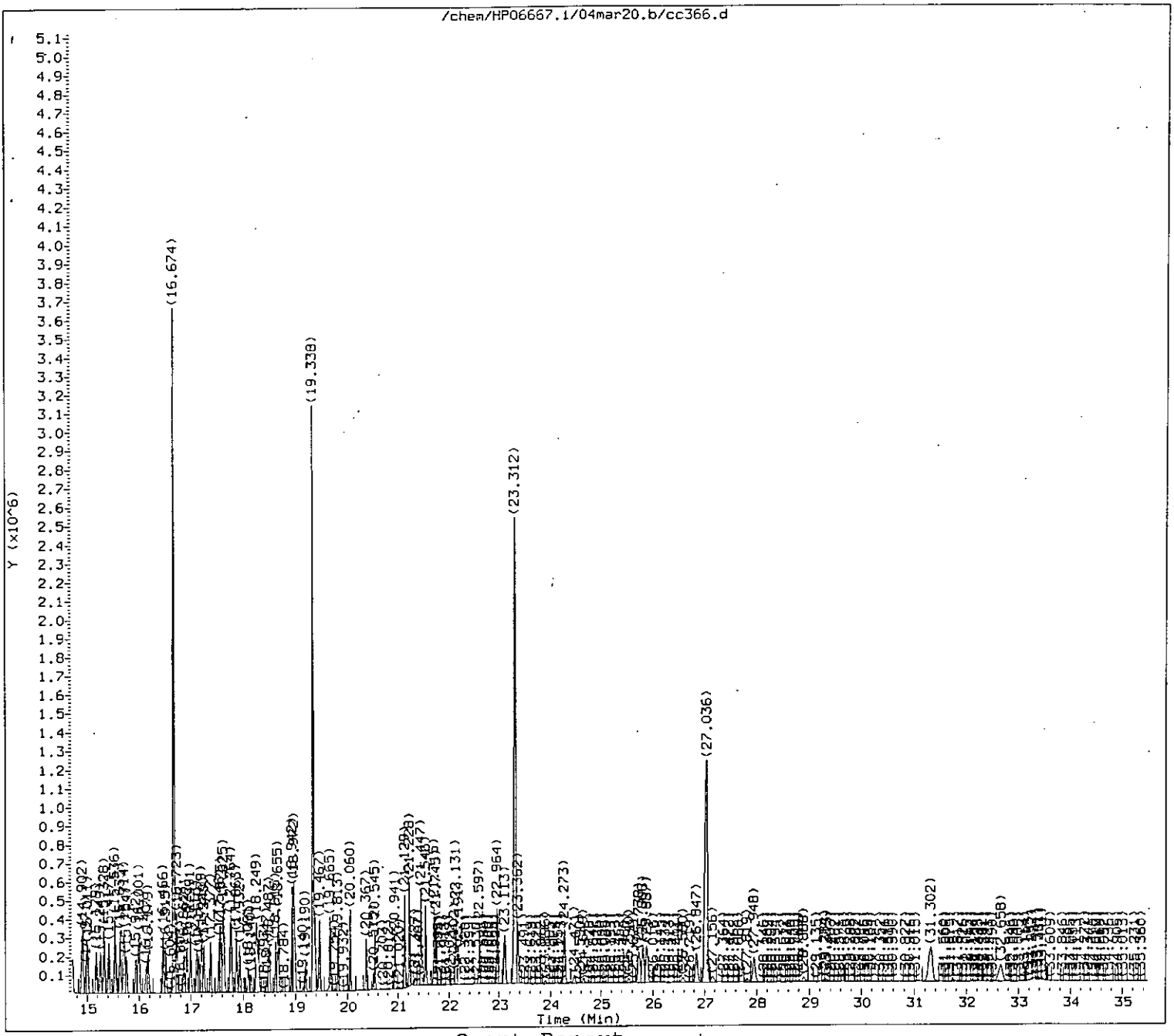
Date, time and analyst ID of latest file update: 20-Mar-2004 12:21 Automation

Sample Name: SSTD005

Lab Sample ID: STD0754

0346

3/22/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc366.d Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:44 Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m Sublist used: all1
Calibration date and time: 20-MAR-2004 12:21
Date, time and analyst ID of latest file update: 20-Mar-2004 12:21 Automation

Sample Name: SSTD005 Lab Sample ID: STD0754

8347

5/27/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc366.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:44  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 12:21
Date, time and analyst ID of latest file update: 20-Mar-2004 12:21 Automation

Sample Name: SSTD005  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 4.976 | 88 | 43153 | 5.065 |
| 2) N-Nitrosodimethylamine | (1) | 5.776 | 74 | 73119 | 4.945 |
| 3) Pyridine | (1) | 5.904 | 79 | 123800 | 5.064 |
| 5) 2-Picoline | (1) | 7.532 | 93 | 123706 | 4.937 |
| 10) N-Nitrosodiethylamine | (1) | 9.042 | 102 | 57308 | 4.877 |
| 11) Ethyl methanesulfonate | (1) | 9.535 | 109 | 55841 | 4.839 |
| 14) Aniline | (1) | 10.414 | 93 | 182448 | 4.694 |
| 17) Phenol | (1) | 10.236 | 94 | 150525 | 4.877 |
| 19) bis(2-Chloroethyl)ether | (1) | 10.463 | 93 | 120412 | 5.091 |
| 20) 2-Chlorophenol | (1) | 10.651 | 128 | 111425 | 4.767 |
| 21) 1,3-Dichlorobenzene | (1) | 10.947 | 146 | 116379 | 4.888 |
| 22) 1,4-Dichlorobenzene-d4 | (1) | 11.046 | 152 | 587411 | 40.000 |
| 23) 1,4-Dichlorobenzene | (1) | 11.076 | 146 | 118361 | 4.791 |
| 25) Benzyl alcohol | (1) | 11.204 | 108 | 75247 | 4.811 |
| 26) 1,2-Dichlorobenzene | (1) | 11.362 | 146 | 110096 | 4.668 |
| 28) 2-Methylphenol | (1) | 11.352 | 108 | 103697 | 4.700 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | 11.432 | 45 | 176425 | 4.954 |
| 30) bis(2-Chloroisopropyl)ether | (1) | 11.432 | 45 | 176425 | 4.954 |
| 32) Acetophenone | (1) | 11.728 | 105 | 156482 | 4.756 |
| 33) N-Nitroso-di-n-propylamine | (1) | 11.669 | 70 | 88749 | 5.047 |
| 35) 4-Methylphenol | (1) | 11.610 | 108 | 108622 | 4.906 |
| 36) o-Toluidine | (1) | 11.798 | 106 | 171627 | 4.643 |
| 39) Hexachloroethane | (1) | 12.005 | 117 | 48603 | 4.709 |
| 41) Nitrobenzene | (2) | 12.074 | 77 | 130206 | 4.975 |
| 43) Isophorone | (2) | 12.469 | 82 | 241974 | 4.896 |
| 44) 2-Nitrophenol | (2) | 12.657 | 139 | 62654 | 4.702 |
| 46) 2,4-Dimethylphenol | (2) | 12.598 | 107 | 113458 | 4.776 |
| 48) bis(2-Chloroethoxy)methane | (2) | 12.786 | 93 | 132586 | 4.947 |
| 49) Benzoic acid | (2) | 12.647 | 105 | 234681 | 13.109 |
| 51) 2,4-Dichlorophenol | (2) | 13.073 | 162 | 82920 | 4.794 |
| 52) 1,2,4-Trichlorobenzene | (2) | 13.270 | 180 | 84289 | 4.758 |
| 54) Naphthalene-d8 | (2) | 13.409 | 136 | 2399362 | 40.000 |
| 55) Naphthalene | (2) | 13.449 | 128 | 339810 | 4.712 |
| 57) 4-Chloroaniline | (2) | 13.459 | 127 | 177061 | 4.622 |
| 61) Hexachlorobutadiene | (2) | 13.607 | 225 | 44319 | 4.552 |
| 65) Caprolactam | (2) | 14.072 | 113 | 38353 | 5.070 |
| 70) 4-Chloro-3-methylphenol | (2) | 14.250 | 107 | 91263 | 4.681 |
| 72) 2-Methylnaphthalene | (2) | 14.714 | 142 | 193912 | 4.700 |
| 73) 1-Methylnaphthalene | (2) | 14.902 | 142 | 187020 | 4.751 |
| 74) Hexachlorocyclopentadiene | (3) | 14.971 | 237 | 34120 | 4.027 |
| 77) 2,4,6-Trichlorophenol | (3) | 15.179 | 196 | 51378 | 4.588 |
| 79) 2,4,5-Trichlorophenol | (3) | 15.249 | 196 | 53157 | 4.690 |
| 83) Biphenyl | (3) | 15.536 | 154 | 233535 | 4.732 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc366.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:44  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 12:21
Date, time and analyst ID of latest file update: 20-Mar-2004 12:21 Automation

Sample Name: SSTD005  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.536 | 154 | 233535 | 4.732 |
| 85) | 1,1'-Biphenyl | (3) | 15.536 | 154 | 233535 | 4.732 |
| 86) | 2-Chloronaphthalene | (3) | 15.635 | 162 | 174593 | 4.700 |
| 89) | Diphenyl ether | (3) | 15.714 | 170 | 115556 | 4.717 |
| 90) | 2-Nitroaniline | (3) | 15.754 | 138 | 67320 | 4.602 |
| 93) | Dimethylphthalate | (3) | 16.001 | 163 | 207177 | 4.937 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.179 | 165 | 52074 | 4.907 |
| 96) | Acenaphthylene | (3) | 16.466 | 152 | 233768 | 4.836 |
| 98) | 3-Nitroaniline | (3) | 16.515 | 138 | 54515 | 4.862 |
| 99) | Acenaphthene-d10 | (3) | 16.674 | 164 | 1102697 | 40.000 |
| 100) | Acenaphthene | (3) | 16.723 | 153 | 151455 | 4.856 |
| 101) | 2,4-Dinitrophenol | (3) | 16.674 | 184 | 75543 | 12.134 |
| 104) | 4-Nitrophenol | (3) | 16.664 | 109 | 57758 | 9.369 |
| 105) | Dibenzofuran | (3) | 16.991 | 168 | 214613 | 4.867 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.862 | 165 | 56429 | 4.876 |
| 107) | 1-Naphthylamine | (3) | 17.120 | 143 | 144843 | 4.708 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.159 | 232 | 37227 | 4.714 |
| 109) | 2-Naphthylamine | (3) | 17.249 | 143 | 154562 | 4.570 |
| 110) | Diethylphthalate | (3) | 17.199 | 149 | 191158 | 5.130 |
| 112) | Fluorene | (3) | 17.635 | 166 | 170188 | 4.750 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.546 | 204 | 71551 | 4.885 |
| 115) | 4-Nitroaniline | (3) | 17.575 | 138 | 55686 | 4.862 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.615 | 198 | 59416 | 7.993 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.754 | 169 | 119297 | 4.628 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.863 | 77 | 220846 | 4.842 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.497 | 248 | 40476 | 4.652 |
| 128) | Hexachlorobenzene | (4) | 18.665 | 284 | 46656 | 4.589 |
| 132) | Pentachlorophenol | (4) | 18.972 | 266 | 88467 | 12.453 |
| 136) | Phenanthrene-d10 | (4) | 19.338 | 188 | 1647638 | 40.000 |
| 138) | Phenanthrene | (4) | 19.378 | 178 | 219078 | 4.570 |
| 139) | Anthracene | (4) | 19.467 | 178 | 225859 | 4.678 |
| 141) | Carbazole | (4) | 19.665 | 167 | 217119 | 4.741 |
| 143) | Di-n-butylphthalate | (4) | 20.060 | 149 | 309341 | 4.822 |
| 148) | Fluoranthene | (4) | 21.129 | 202 | 225867 | 4.676 |
| 153) | Benzidine | (5) | 21.228 | 184 | 293503 | 11.577 |
| 155) | Pyrene | (5) | 21.447 | 202 | 231000 | 4.868 |
| 162) | Butylbenzylphthalate | (5) | 22.131 | 149 | 134126 | 4.788 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.123 | 252 | 72534 | 4.393 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.103 | 231 | 32542 | 4.246 |
| 167) | Benzo(a)anthracene | (5) | 23.291 | 228 | 199037 | 4.889 |
| 168) | Chrysene-d12 | (5) | 23.312 | 240 | 1391635 | 40.000 |
| 169) | Chrysene | (5) | 23.362 | 228 | 181071 | 4.825 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.964 | 149 | 173767 | 4.618 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

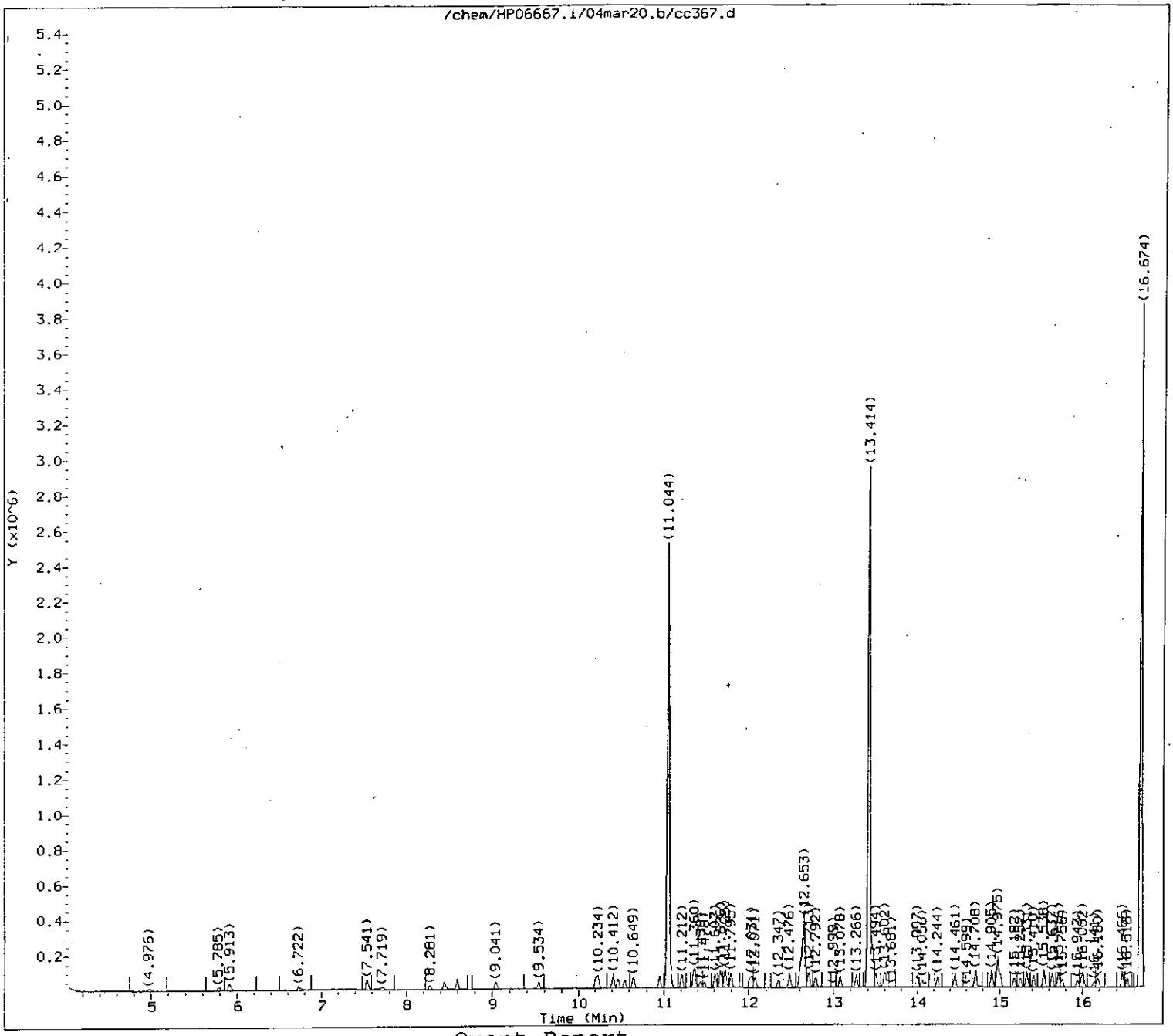
Data File: /chem/HP06667.i/04mar20.b/cc366.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 11:44  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 12:21
Date, time and analyst ID of latest file update: 20-Mar-2004 12:21 Automation

Sample Name: SSTD005  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.273 | 149 | 282698 | 4.452 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.738 | 256 | 80150 | 4.242 |
| 174) | Benzo(b)fluoranthene | (6) | 25.808 | 252 | 188405 | 4.671 |
| 175) | Benzo(k)fluoranthene | (6) | 25.887 | 252 | 183500 | 4.647 |
| 176) | Benzo(a)pyrene | (6) | 26.847 | 252 | 166593 | 4.646 |
| 177) | Perylene-d12 | (6) | 27.036 | 264 | 1253573 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.302 | 276 | 193347 | 4.615 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.312 | 278 | 151610 | 4.552 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.658 | 276 | 158957 | 4.640 |
| 9) | 2-Fluorophenol | (1) | 8.598 | 112 | 111183 | 4.989 |
| 16) | Phenol-d6 | (1) | 10.206 | 99 | 135762 | 4.771 |
| 40) | Nitrobenzene-d5 | (2) | 12.035 | 82 | 140133 | 4.838 |
| 80) | 2-Fluorobiphenyl | (3) | 15.328 | 172 | 187684 | 4.698 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.091 | 330 | 22379 | 4.576 |
| 157) | Terphenyl-d14 | (5) | 21.546 | 244 | 144526 | 4.676 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

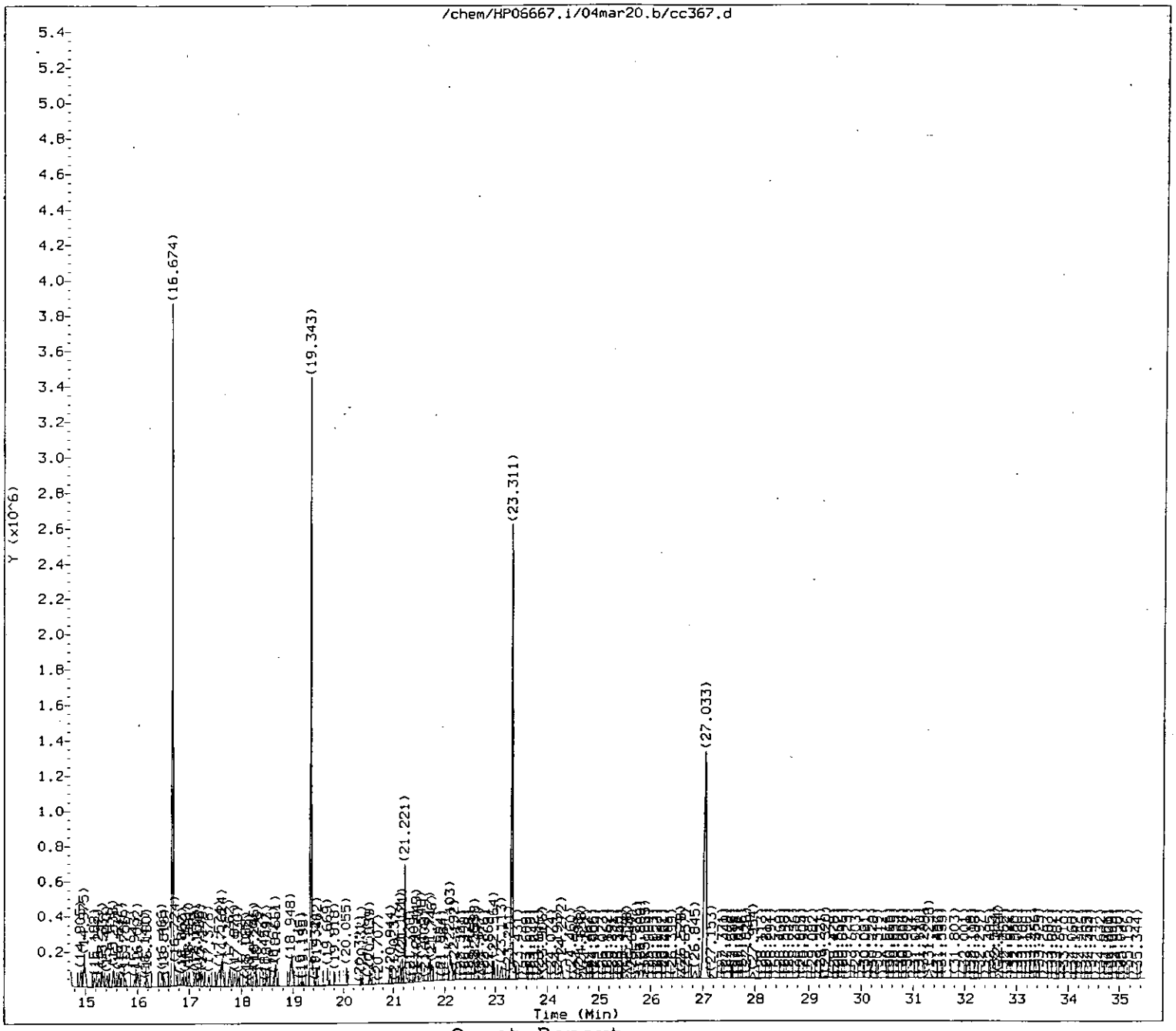
Data File: /chem/HP06667.i/04mar20.b/cc367.d Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 12:27 Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m Sublist used: all1
Calibration date and time: 20-MAR-2004 12:23
Date, time and analyst ID of latest file update: 20-Mar-2004 13:04 Automation

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

8351

3/22/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc367.d Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 12:27 Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m Sublist used: all1
Calibration date and time: 20-MAR-2004 12:23
Date, time and analyst ID of latest file update: 20-Mar-2004 13:04 Automation

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

0352

3/22/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc367.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 12:27  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 12:23
Date, time and analyst ID of latest file update: 20-Mar-2004 13:04 Automation

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.976 | 88 | 9835 | 1.074 |
| 2) | N-Nitrosodimethylamine | (1) | 5.785 | 74 | 17483 | 1.100 |
| 3) | Pyridine | (1) | 5.913 | 79 | 28579 | 1.087 |
| 5) | 2-Picoline | (1) | 7.541 | 93 | 28707 | 1.066 |
| 10) | N-Nitrosodiethylamine | (1) | 9.041 | 102 | 13242 | 1.048 |
| 11) | Ethyl methanesulfonate | (1) | 9.534 | 109 | 14401 | 1.161 |
| 14) | Aniline | (1) | 10.412 | 93 | 44946 | 1.075 |
| 17) | Phenol | (1) | 10.234 | 94 | 36860 | 1.111 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.471 | 93 | 28626 | 1.126 |
| 20) | 2-Chlorophenol | (1) | 10.649 | 128 | 25738 | 1.024 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.955 | 146 | 26828 | 1.048 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.044 | 152 | 631612 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.073 | 146 | 29226 | 1.100 |
| 25) | Benzyl alcohol | (1) | 11.212 | 108 | 19397 | 1.153 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.370 | 146 | 26959 | 1.063 |
| 28) | 2-Methylphenol | (1) | 11.350 | 108 | 25696 | 1.083 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.439 | 45 | 44800 | 1.170 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.439 | 45 | 44800 | 1.170 |
| 32) | Acetophenone | (1) | 11.725 | 105 | 38920 | 1.100 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.666 | 70 | 21969 | 1.162 |
| 35) | 4-Methylphenol | (1) | 11.607 | 108 | 26802 | 1.126 |
| 36) | o-Toluidine | (1) | 11.795 | 106 | 42844 | 1.078 |
| 39) | Hexachloroethane | (1) | 12.012 | 117 | 12022 | 1.083 |
| 41) | Nitrobenzene | (2) | 12.071 | 77 | 31222 | 1.134 |
| 43) | Isophorone | (2) | 12.476 | 82 | 59376 | 1.142 |
| 44) | 2-Nitrophenol | (2) | 12.653 | 139 | 14181 | 1.012 |
| 46) | 2,4-Dimethylphenol | (2) | 12.604 | 107 | 29111 | 1.165 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.792 | 93 | 32933 | 1.168 |
| 49) | Benzoic acid | (2) | 12.653 | 105 | 229465 | 12.185 |
| 51) | 2,4-Dichlorophenol | (2) | 13.078 | 162 | 19619 | 1.078 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.266 | 180 | 21581 | 1.158 |
| 54) | Naphthalene-d8 | (2) | 13.414 | 136 | 2523891 | 40.000 |
| 55) | Naphthalene | (2) | 13.454 | 128 | 82309 | 1.085 |
| 57) | 4-Chloroaniline | (2) | 13.464 | 127 | 42437 | 1.053 |
| 61) | Hexachlorobutadiene | (2) | 13.612 | 225 | 10895 | 1.064 |
| 65) | Caprolactam | (2) | 14.066 | 113 | 8916 | 1.121 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.244 | 107 | 22922 | 1.118 |
| 72) | 2-Methylnaphthalene | (2) | 14.708 | 142 | 51414 | 1.185 |
| 73) | 1-Methylnaphthalene | (2) | 14.905 | 142 | 49250 | 1.189 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.975 | 237 | 42891 | 4.766 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.182 | 196 | 12217 | 1.027 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.252 | 196 | 14096 | 1.171 |
| 83) | Biphenyl | (3) | 15.538 | 154 | 59554 | 1.136 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc367.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 12:27  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all
Calibration date and time: 20-MAR-2004 12:23
Date, time and analyst ID of latest file update: 20-Mar-2004 13:04 Automation

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.538 | 154 | 59554 | 1.136 |
| 85) | 1,1'-Biphenyl | (3) | 15.538 | 154 | 59554 | 1.136 |
| 86) | 2-Chloronaphthalene | (3) | 15.637 | 162 | 43588 | 1.105 |
| 89) | Diphenyl ether | (3) | 15.716 | 170 | 29132 | 1.120 |
| 90) | 2-Nitroaniline | (3) | 15.756 | 138 | 15556 | 1.001 |
| 93) | Dimethylphthalate | (3) | 16.002 | 163 | 52422 | 1.176 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.180 | 165 | 11802 | 1.047 |
| 96) | Acenaphthylene | (3) | 16.466 | 152 | 58353 | 1.137 |
| 98) | 3-Nitroaniline | (3) | 16.526 | 138 | 12032 | 1.010 |
| 99) | Acenaphthene-d10 | (3) | 16.674 | 164 | 1171197 | 40.000 |
| 100) | Acenaphthene | (3) | 16.724 | 153 | 38380 | 1.159 |
| 101) | 2,4-Dinitrophenol | (3) | 16.674 | 184 | 78823 | 11.920 |
| 104) | 4-Nitrophenol | (3) | 16.664 | 109 | 30226 | 4.616 |
| 105) | Dibenzofuran | (3) | 16.991 | 168 | 54170 | 1.157 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.872 | 165 | 13948 | 1.135 |
| 107) | 1-Naphthylamine | (3) | 17.119 | 143 | 37819 | 1.157 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.159 | 232 | 8200 | 0.978 |
| 109) | 2-Naphthylamine | (3) | 17.248 | 143 | 43635 | 1.215 |
| 110) | Diethylphthalate | (3) | 17.198 | 149 | 47570 | 1.202 |
| 112) | Fluorene | (3) | 17.634 | 166 | 41513 | 1.091 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.544 | 204 | 18087 | 1.163 |
| 115) | 4-Nitroaniline | (3) | 17.574 | 138 | 12843 | 1.056 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.624 | 198 | 26706 | 3.416 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.762 | 169 | 31099 | 1.147 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.871 | 77 | 54592 | 1.138 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.493 | 248 | 10385 | 1.135 |
| 128) | Hexachlorobenzene | (4) | 18.671 | 284 | 11797 | 1.103 |
| 132) | Pentachlorophenol | (4) | 18.977 | 266 | 26611 | 3.562 |
| 136) | Phenanthrene-d10 | (4) | 19.343 | 188 | 1732905 | 40.000 |
| 138) | Phenanthrene | (4) | 19.383 | 178 | 57039 | 1.131 |
| 139) | Anthracene | (4) | 19.462 | 178 | 55702 | 1.097 |
| 141) | Carbazole | (4) | 19.669 | 167 | 54465 | 1.131 |
| 143) | Di-n-butylphthalate | (4) | 20.055 | 149 | 77285 | 1.145 |
| 148) | Fluoranthene | (4) | 21.131 | 202 | 57629 | 1.134 |
| 153) | Benzidine | (5) | 21.221 | 184 | 317577 | 11.710 |
| 155) | Pyrene | (5) | 21.449 | 202 | 57347 | 1.130 |
| 162) | Butylbenzylphthalate | (5) | 22.132 | 149 | 35673 | 1.191 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.123 | 252 | 19073 | 1.080 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.103 | 231 | 7898 | 0.963 |
| 167) | Benzo(a)anthracene | (5) | 23.291 | 228 | 55013 | 1.263 |
| 168) | Chrysene-d12 | (5) | 23.311 | 240 | 1488618 | 40.000 |
| 169) | Chrysene | (5) | 23.361 | 228 | 46744 | 1.164 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.974 | 149 | 46253 | 1.149 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar20.b/cc367.d  Instrument ID: HP06667.i
Injection date and time: 20-MAR-2004 12:27  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 20-MAR-2004 12:23
Date, time and analyst ID of latest file update: 20-Mar-2004 13:04 Automation

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.272 | 149 | 71173 | 1.044 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.736 | 256 | 22285 | 1.098 |
| 174) | Benzo(b)fluoranthene | (6) | 25.806 | 252 | 47838 | 1.105 |
| 175) | Benzo(k)fluoranthene | (6) | 25.885 | 252 | 47945 | 1.131 |
| 176) | Benzo(a)pyrene | (6) | 26.845 | 252 | 44371 | 1.152 |
| 177) | Perylene-d12 | (6) | 27.033 | 264 | 1346005 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.298 | 276 | 49781 | 1.107 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.318 | 278 | 39196 | 1.096 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.653 | 276 | 41571 | 1.130 |
| 9) | 2-Fluorophenol | (1) | 8.597 | 112 | 26103 | 1.089 |
| 16) | Phenol-d6 | (1) | 10.205 | 99 | 32873 | 1.075 |
| 40) | Nitrobenzene-d5 | (2) | 12.031 | 82 | 33426 | 1.097 |
| 80) | 2-Fluorobiphenyl | (3) | 15.331 | 172 | 47449 | 1.118 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.098 | 330 | 5431 | 1.046 |
| 157) | Terphenyl-d14 | (5) | 21.548 | 244 | 39184 | 1.185 |

M = Compound was manually integrated.  A = User selected an alternate hit

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06667 Calibration Date: 03/26/04 Time: 05:17

Lab File ID: cc461.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 07:46 11:44

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.580 | 0.530 | 45.710 | 50.0 | -9 |
| | N-Nitrosodimethylamine | 1.007 | 0.866 | 43.000 | 50.0 | -14 |
| | Pyridine | 1.665 | 1.486 | 44.630 | 50.0 | -11 |
| | 2-Picoline | 1.706 | 1.511 | 44.290 | 50.0 | -11 |
| | N-Nitrosodiethylamine | 0.800 | 0.715 | 44.650 | 50.0 | -11 |
| | Ethyl methanesulfonate | 0.786 | 0.709 | 45.140 | 50.0 | -10 |
| | Aniline | 2.647 | 2.293 | 43.320 | 50.0 | -13 |
| * | Phenol | 2.102 | 1.858 | 44.190 | 50.0 | -12* |
| | bis(2-Chloroethyl)ether | 1.611 | 1.473 | 45.720 | 50.0 | -9 |
| | 2-Chlorophenol | 1.592 | 1.546 | 48.580 | 50.0 | -3 |
| | 1,3-Dichlorobenzene | 1.621 | 1.543 | 47.590 | 50.0 | -5 |
| * | 1,4-Dichlorobenzene | 1.682 | 1.639 | 48.700 | 50.0 | -3* |
| | Benzyl alcohol | 1.065 | 0.979 | 45.960 | 50.0 | -8 |
| | 1,2-Dichlorobenzene | 1.606 | 1.586 | 49.380 | 50.0 | -1 |
| | 2-Methylphenol | 1.503 | 1.452 | 48.310 | 50.0 | -3 |
| | 2,2'-oxybis(1-Chloropropane) | 2.425 | 1.916 | 39.490 | 50.0 | -21 |
| | bis(2-Chloroisopropyl)ether | 2.425 | 1.916 | 39.490 | 50.0 | -21 |
| | Acetophenone | 2.241 | 1.873 | 41.790 | 50.0 | -16 |
| # | N-Nitroso-di-n-propylamine | 1.197 | 0.969 | 40.460 | 50.0 | -19# |
| | 4-Methylphenol | 1.508 | 1.409 | 46.710 | 50.0 | -7 |
| | o-Toluidine | 2.517 | 2.184 | 43.390 | 50.0 | -13 |
| | Hexachloroethane | 0.703 | 0.622 | 44.270 | 50.0 | -11 |
| | Nitrobenzene | 0.436 | 0.332 | 38.080 | 50.0 | -24 |
| | Isophorone | 0.824 | 0.664 | 40.310 | 50.0 | -19 |
| * | 2-Nitrophenol | 0.222 | 0.218 | 49.020 | 50.0 | -2* |
| | 2,4-Dimethylphenol | 0.396 | 0.343 | 43.320 | 50.0 | -13 |
| | bis(2-Chloroethoxy)methane | 0.447 | 0.384 | 42.930 | 50.0 | -14 |
| | Benzoic acid | 0.298 | 0.247 | 41.320 | 50.0 | -17 |
| * | 2,4-Dichlorophenol | 0.288 | 0.280 | 48.630 | 50.0 | -3* |
| | 1,2,4-Trichlorobenzene | 0.295 | 0.293 | 49.560 | 50.0 | -1 |
| | Naphthalene | 1.202 | 1.230 | 51.150 | 50.0 | 2 |
| | 4-Chloroaniline | 0.639 | 0.618 | 48.370 | 50.0 | -3 |
| * | Hexachlorobutadiene | 0.162 | 0.159 | 48.980 | 50.0 | -2* |
| | Caprolactam | 0.126 | 0.123 | 48.760 | 50.0 | -2 |
| * | 4-Chloro-3-methylphenol | 0.325 | 0.277 | 42.570 | 50.0 | -15* |
| | 2-Methylnaphthalene | 0.688 | 0.697 | 50.670 | 50.0 | 1 |

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3/26/04

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06667 Calibration Date: 03/26/04 Time: 05:17

Lab File ID: cc461.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 07:46 11:44

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1-Methylnaphthalene | 0.656 | 0.665 | 50.630 | 50.0 | 1 |
| # | Hexachlorocyclopentadiene | 0.307 | 0.290 | 47.210 | 50.0 | -6# |
| * | 2,4,6-Trichlorophenol | 0.406 | 0.398 | 49.000 | 50.0 | -2* |
| | 2,4,5-Trichlorophenol | 0.411 | 0.438 | 53.220 | 50.0 | 6 |
| | Biphenyl | 1.790 | 1.725 | 48.160 | 50.0 | -4 |
| | Diphenyl | 1.790 | 1.725 | 48.160 | 50.0 | -4 |
| | 1,1'-Biphenyl | 1.790 | 1.725 | 48.160 | 50.0 | -4 |
| | 2-Chloronaphthalene | 1.348 | 1.299 | 48.200 | 50.0 | -4 |
| | Diphenyl ether | 0.889 | 0.889 | 50.040 | 50.0 | 0 |
| | 2-Nitroaniline | 0.531 | 0.523 | 49.260 | 50.0 | -1 |
| | Dimethylphthalate | 1.522 | 1.483 | 48.700 | 50.0 | -3 |
| | 2,6-Dinitrotoluene | 0.385 | 0.323 | 42.010 | 50.0 | -16 |
| | Acenaphthylene | 1.754 | 1.702 | 48.540 | 50.0 | -3 |
| | 3-Nitroaniline | 0.407 | 0.396 | 48.690 | 50.0 | -3 |
| * | Acenaphthene | 1.131 | 1.080 | 47.740 | 50.0 | -5* |
| # | 2,4-Dinitrophenol | 0.226 | 0.212 | 47.020 | 50.0 | -6# |
| # | 4-Nitrophenol | 0.224 | 0.158 | 35.370 | 50.0 | -29# |
| | Dibenzofuran | 1.599 | 1.514 | 47.330 | 50.0 | -5 |
| | 2,4-Dinitrotoluene | 0.420 | 0.394 | 46.970 | 50.0 | -6 |
| | 1-Naphthylamine | 1.116 | 1.160 | 51.980 | 50.0 | 4 |
| | 2,3,4,6-Tetrachlorophenol | 0.287 | 0.279 | 48.700 | 50.0 | -3 |
| | 2-Naphthylamine | 1.227 | 1.196 | 48.750 | 50.0 | -3 |
| | Diethylphthalate | 1.352 | 1.267 | 46.860 | 50.0 | -6 |
| | Fluorene | 1.300 | 1.238 | 47.620 | 50.0 | -5 |
| | 4-Chlorophenyl-phenylether | 0.531 | 0.558 | 52.530 | 50.0 | 5 |
| | 4-Nitroaniline | 0.415 | 0.418 | 50.250 | 50.0 | 1 |
| | 4,6-Dinitro-2-methylphenol | 0.181 | 0.185 | 51.270 | 50.0 | 3 |
| * | N-Nitrosodiphenylamine (1) | 0.626 | 0.586 | 46.810 | 50.0 | -6* |
| | 1,2-Diphenylhydrazine | 1.107 | 0.875 | 39.510 | 50.0 | -21 |
| | 4-Bromophenyl-phenylether | 0.211 | 0.210 | 49.630 | 50.0 | -1 |
| | Hexachlorobenzene | 0.247 | 0.232 | 47.020 | 50.0 | -6 |
| * | Pentachlorophenol | 0.172 | 0.145 | 42.150 | 50.0 | -16* |
| | Phenanthrene | 1.164 | 1.104 | 47.410 | 50.0 | -5 |
| | Anthracene | 1.172 | 1.128 | 48.130 | 50.0 | -4 |
| | Carbazole | 1.112 | 1.059 | 47.630 | 50.0 | -5 |
| | Di-n-butylphthalate | 1.558 | 1.557 | 49.980 | 50.0 | 0 |

8357

(1) Cannot be Separated from Diphenylamine

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06667 Calibration Date: 03/26/04 Time: 05:17

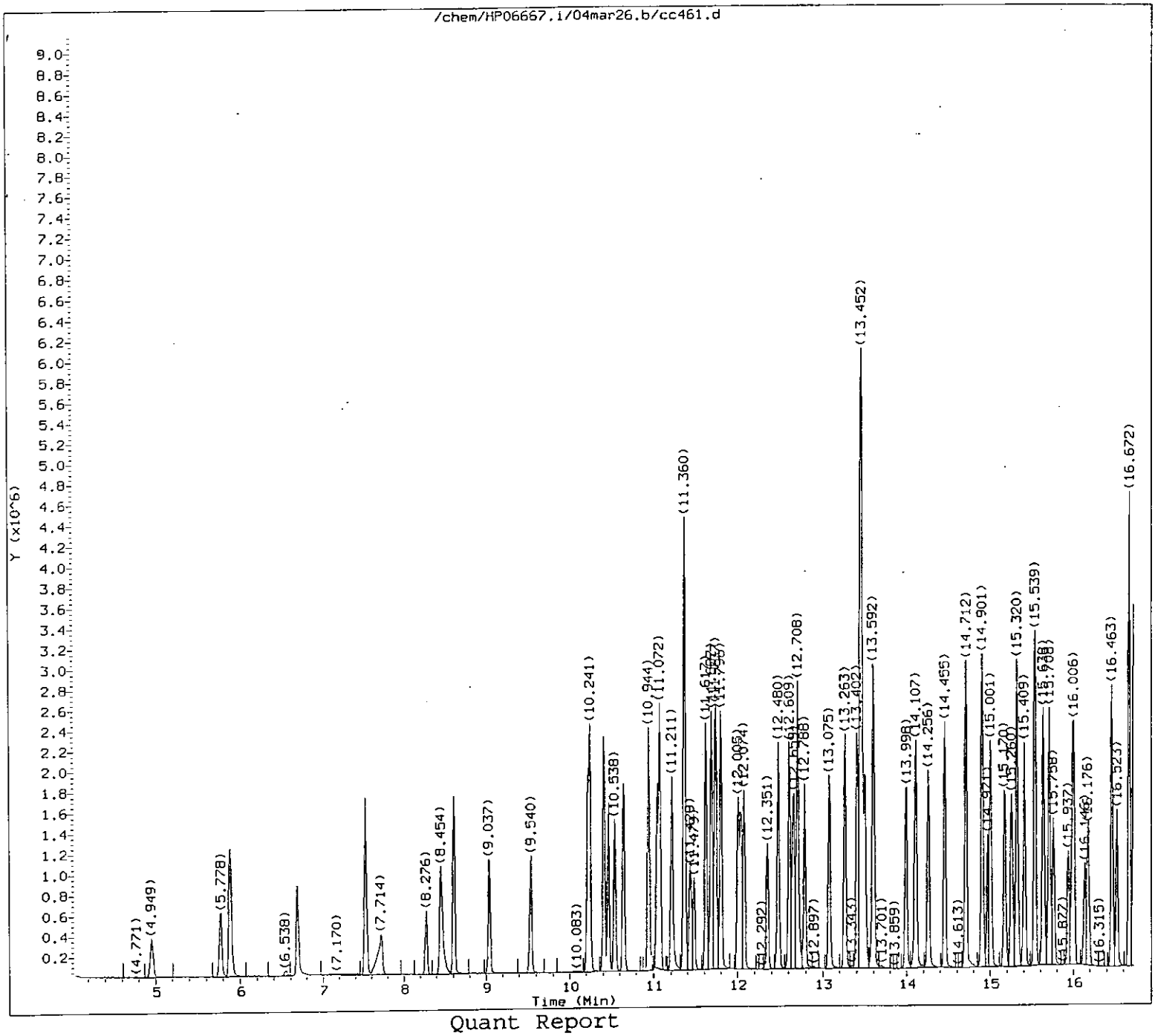
Lab File ID: cc461.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 07:46 11:44

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| * Fluoranthene | 1.173 | 1.218 | 51.960 | 50.0 | 4* |
| Benzidine | 0.729 | 0.796 | 163.810 | 150.0 | 9 |
| Pyrene | 1.364 | 1.328 | 48.680 | 50.0 | -3 |
| Butylbenzylphthalate | 0.805 | 0.720 | 44.720 | 50.0 | -11 |
| 3,3'-Dichlorobenzidine | 0.475 | 0.445 | 46.850 | 50.0 | -6 |
| 4,4'-Methylenebis(2-Chloroanil | 0.220 | 0.211 | 47.880 | 50.0 | -4 |
| Benzo(a)anthracene | 1.170 | 1.161 | 49.600 | 50.0 | -1 |
| Chrysene | 1.079 | 1.094 | 50.730 | 50.0 | 1 |
| bis(2-Ethylhexyl)phthalate | 1.081 | 0.982 | 45.400 | 50.0 | -9 |
| * Di-n-octylphthalate | 2.026 | 1.924 | 47.480 | 50.0 | -5* |
| 7,12-Dimethylbenz[a]anthracene | 0.603 | 0.631 | 52.340 | 50.0 | 5 |
| Benzo(b)fluoranthene | 1.287 | 1.226 | 47.610 | 50.0 | -5 |
| Benzo(k)fluoranthene | 1.260 | 1.284 | 50.930 | 50.0 | 2 |
| * Benzo(a)pyrene | 1.144 | 1.152 | 50.360 | 50.0 | 1* |
| Indeno(1,2,3-cd)pyrene | 1.337 | 1.370 | 51.240 | 50.0 | 2 |
| Dibenz(a,h)anthracene | 1.063 | 1.089 | 51.220 | 50.0 | 2 |
| Benzo(g,h,i)perylene | 1.093 | 1.148 | 52.500 | 50.0 | 5 |
| 2-Fluorophenol | 1.518 | 1.384 | 45.590 | 50.0 | -9 |
| Phenol-d6 | 1.938 | 1.725 | 44.510 | 50.0 | -11 |
| Nitrobenzene-d5 | 0.483 | 0.371 | 38.390 | 50.0 | -23 |
| 2-Fluorobiphenyl | 1.449 | 1.444 | 49.830 | 50.0 | 0 |
| 2,4,6-Tribromophenol | 0.177 | 0.169 | 47.750 | 50.0 | -4 |
| Terphenyl-d14 | 0.888 | 0.888 | 49.990 | 50.0 | 0 |
| | | | Average %Drift: | | 7 |

8358




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc461.d
Injection date and time: 26-MAR-2004 05:17

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 05:56

Sublist used: all1

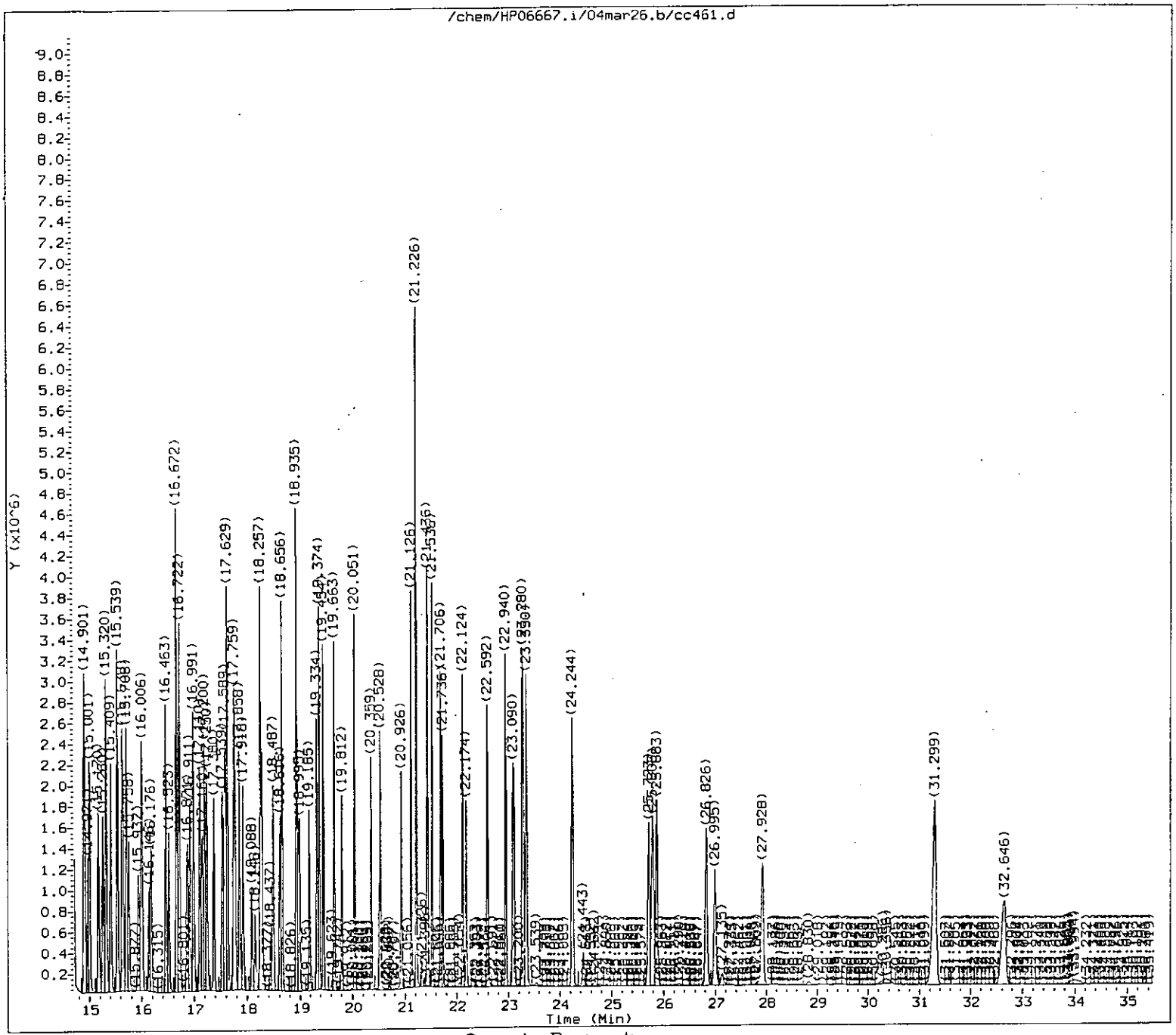
Date, time and analyst ID of latest file update: 26-Mar-2004 05:56 Automation

Sample Name: SSTD050

Lab Sample ID: STD0754

8359

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc461.d
Injection date and time: 26-MAR-2004 05:17
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 05:56
Sublist used: all1
Date, time and analyst ID of latest file update: 26-Mar-2004 05:56 Automation

Sample Name: SSTD050
Lab Sample ID: STD0754

8368

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc461.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 05:17  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 05:56
Date, time and analyst ID of latest file update: 26-Mar-2004 05:56 Automation

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.949 | 88 | 355147 | 45.706 |
| 2) | N-Nitrosodimethylamine | (1) | 5.778 | 74 | 579848 | 42.998 |
| 3) | Pyridine | (1) | 5.886 | 79 | 995112 | 44.628 |
| 5) | 2-Picoline | (1) | 7.526 | 93 | 1012043 | 44.288 |
| 10) | N-Nitrosodiethylamine | (1) | 9.047 | 102 | 478565 | 44.651 |
| 11) | Ethyl methanesulfonate | (1) | 9.540 | 109 | 475101 | 45.141 |
| 14) | Aniline | (1) | 10.409 | 93 | 1535521 | 43.316 |
| 17) | Phenol | (1) | 10.241 | 94 | 1244018 | 44.192 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.469 | 93 | 986368 | 45.723 |
| 20) | 2-Chlorophenol | (1) | 10.647 | 128 | 1035479 | 48.576 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.944 | 146 | 1033374 | 47.585 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.043 | 152 | 535745 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.072 | 146 | 1097454 | 48.703 |
| 25) | Benzyl alcohol | (1) | 11.211 | 108 | 655625 | 45.960 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.360 | 146 | 1062100 | 49.379 |
| 28) | 2-Methylphenol | (1) | 11.360 | 108 | 972211 | 48.311 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.429 | 45 | 1282798 | 39.492 |
| 30) | bis(2-Chloroisopropyl)ether | (1) | 11.429 | 45 | 1282798 | 39.492 |
| 32) | Acetophenone | (1) | 11.727 | 105 | 1253985 | 41.786 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.677 | 70 | 648945 | 40.463 |
| 35) | 4-Methylphenol | (1) | 11.617 | 108 | 943360 | 46.712 |
| 36) | o-Toluidine | (1) | 11.796 | 106 | 1462604 | 43.385 |
| 39) | Hexachloroethane | (1) | 12.005 | 117 | 416713 | 44.271 |
| 41) | Nitrobenzene | (2) | 12.074 | 77 | 891444 | 38.079 |
| 43) | Isophorone | (2) | 12.480 | 82 | 1782413 | 40.314 |
| 44) | 2-Nitrophenol | (2) | 12.659 | 139 | 584288 | 49.023 |
| 46) | 2,4-Dimethylphenol | (2) | 12.609 | 107 | 920556 | 43.320 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.788 | 93 | 1029354 | 42.934 |
| 49) | Benzoic acid | (2) | 12.678 | 105 | 661747 | 41.324 |
| 51) | 2,4-Dichlorophenol | (2) | 13.075 | 162 | 752340 | 48.629 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.263 | 180 | 785479 | 49.565 |
| 54) | Naphthalene-d8 | (2) | 13.402 | 136 | 2146281 | 40.000 |
| 55) | Naphthalene | (2) | 13.442 | 128 | 3299580 | 51.150 |
| 57) | 4-Chloroaniline | (2) | 13.462 | 127 | 1657460 | 48.371 |
| 61) | Hexachlorobutadiene | (2) | 13.602 | 225 | 426587 | 48.983 |
| 65) | Caprolactam | (2) | 14.107 | 113 | 329920 | 48.758 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.256 | 107 | 742315 | 42.566 |
| 72) | 2-Methylnaphthalene | (2) | 14.712 | 142 | 1870257 | 50.672 |
| 73) | 1-Methylnaphthalene | (2) | 14.901 | 142 | 1783014 | 50.632 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.971 | 237 | 365317 | 47.212 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.180 | 196 | 501108 | 49.000 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.260 | 196 | 550932 | 53.221 |
| 83) | Biphenyl | (3) | 15.539 | 154 | 2170797 | 48.164 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc461.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 05:17  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 05:56
Date, time and analyst ID of latest file update: 26-Mar-2004 05:56 Automation

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 84) | Diphenyl | (3) | 15.539 | 154 | 2170797 | 48.164 |
| 85) | 1,1'-Biphenyl | (3) | 15.539 | 154 | 2170797 | 48.164 |
| 86) | 2-Chloronaphthalene | (3) | 15.638 | 162 | 1634976 | 48.195 |
| 89) | Diphenyl ether | (3) | 15.708 | 170 | 1119477 | 50.037 |
| 90) | 2-Nitroaniline | (3) | 15.758 | 138 | 658100 | 49.263 |
| 93) | Dimethylphthalate | (3) | 16.006 | 163 | 1866275 | 48.698 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.186 | 165 | 407175 | 42.013 |
| 96) | Acenaphthylene | (3) | 16.463 | 152 | 2142702 | 48.538 |
| 98) | 3-Nitroaniline | (3) | 16.523 | 138 | 498518 | 48.688 |
| 99) | Acenaphthene-d10 | (3) | 16.672 | 164 | 1007007 | 40.000 |
| 100) | Acenaphthene | (3) | 16.722 | 153 | 1359685 | 47.739 |
| 101) | 2,4-Dinitrophenol | (3) | 16.672 | 184 | 267355 | 47.023 |
| 104) | 4-Nitrophenol | (3) | 16.672 | 109 | 199125 | 35.369 |
| 105) | Dibenzofuran | (3) | 16.991 | 168 | 1905710 | 47.329 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.871 | 165 | 496372 | 46.969 |
| 107) | 1-Naphthylamine | (3) | 17.110 | 143 | 1460472 | 51.977 |
| 108) | 2,3,4,6-Tetrachlorophenol | (3) | 17.160 | 232 | 351266 | 48.703 |
| 109) | 2-Naphthylamine | (3) | 17.250 | 143 | 1505784 | 48.749 |
| 110) | Diethylphthalate | (3) | 17.200 | 149 | 1594394 | 46.855 |
| 112) | Fluorene | (3) | 17.629 | 166 | 1558337 | 47.623 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.539 | 204 | 702574 | 52.527 |
| 115) | 4-Nitroaniline | (3) | 17.589 | 138 | 525658 | 50.252 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.629 | 198 | 334741 | 51.265 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.759 | 169 | 1059878 | 46.815 |
| 119) | 1,2-Diphenylhydrazine | (4) | 17.858 | 77 | 1582945 | 39.513 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.487 | 248 | 379299 | 49.630 |
| 128) | Hexachlorobenzene | (4) | 18.666 | 284 | 419884 | 47.016 |
| 132) | Pentachlorophenol | (4) | 18.965 | 266 | 262989 | 42.145 |
| 136) | Phenanthrene-d10 | (4) | 19.334 | 188 | 1447217 | 40.000 |
| 138) | Phenanthrene | (4) | 19.374 | 178 | 1996340 | 47.409 |
| 139) | Anthracene | (4) | 19.454 | 178 | 2040920 | 48.127 |
| 141) | Carbazole | (4) | 19.663 | 167 | 1915817 | 47.628 |
| 143) | Di-n-butylphthalate | (4) | 20.051 | 149 | 2816831 | 49.985 |
| 148) | Fluoranthene | (4) | 21.126 | 202 | 2204247 | 51.958 |
| 153) | Benzidine | (5) | 21.226 | 184 | 3901040 | 163.807 |
| 155) | Pyrene | (5) | 21.436 | 202 | 2169732 | 48.677 |
| 162) | Butylbenzylphthalate | (5) | 22.124 | 149 | 1176614 | 44.718 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.110 | 252 | 726539 | 46.847 |
| 166) | 4,4'-Methylenebis(2-Chloroanil | (5) | 23.090 | 231 | 344639 | 47.875 |
| 167) | Benzo(a)anthracene | (5) | 23.280 | 228 | 1896596 | 49.598 |
| 168) | Chrysene-d12 | (5) | 23.300 | 240 | 1307191 | 40.000 |
| 169) | Chrysene | (5) | 23.350 | 228 | 1788187 | 50.728 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.950 | 149 | 1604579 | 45.401 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc461.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 05:17  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 05:56
Date, time and analyst ID of latest file update: 26-Mar-2004 05:56 Automation

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 172) | Di-n-octylphthalate | (6) | 24.244 | 149 | 2644385 | 47.480 |
| 173) | 7,12-Dimethylbenz[a]anthracene | (6) | 25.723 | 256 | 867371 | 52.341 |
| 174) | Benzo(b)fluoranthene | (6) | 25.803 | 252 | 1684193 | 47.612 |
| 175) | Benzo(k)fluoranthene | (6) | 25.883 | 252 | 1763852 | 50.933 |
| 176) | Benzo(a)pyrene | (6) | 26.826 | 252 | 1583818 | 50.365 |
| 177) | Perylene-d12 | (6) | 26.995 | 264 | 1099401 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.299 | 276 | 1882906 | 51.240 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.299 | 278 | 1495928 | 51.218 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.656 | 276 | 1577339 | 52.505 |
| 9) | 2-Fluorophenol | (1) | 8.612 | 112 | 926730 | 45.591 |
| 16) | Phenol-d6 | (1) | 10.211 | 99 | 1155157 | 44.514 |
| 40) | Nitrobenzene-d5 | (2) | 12.034 | 82 | 994864 | 38.394 |
| 80) | 2-Fluorobiphenyl | (3) | 15.320 | 172 | 1817947 | 49.827 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.088 | 330 | 213248 | 47.751 |
| 157) | Terphenyl-d14 | (5) | 21.536 | 244 | 1451418 | 49.990 |

M = Compound was manually integrated.  A = User selected an alternate hit

# Raw QC Data

Data File: /chem/HP06667.i/04mar20.b/cc360.d

Page 1

Date : 20-MAR-2004 07:21

Client ID: DFTPP

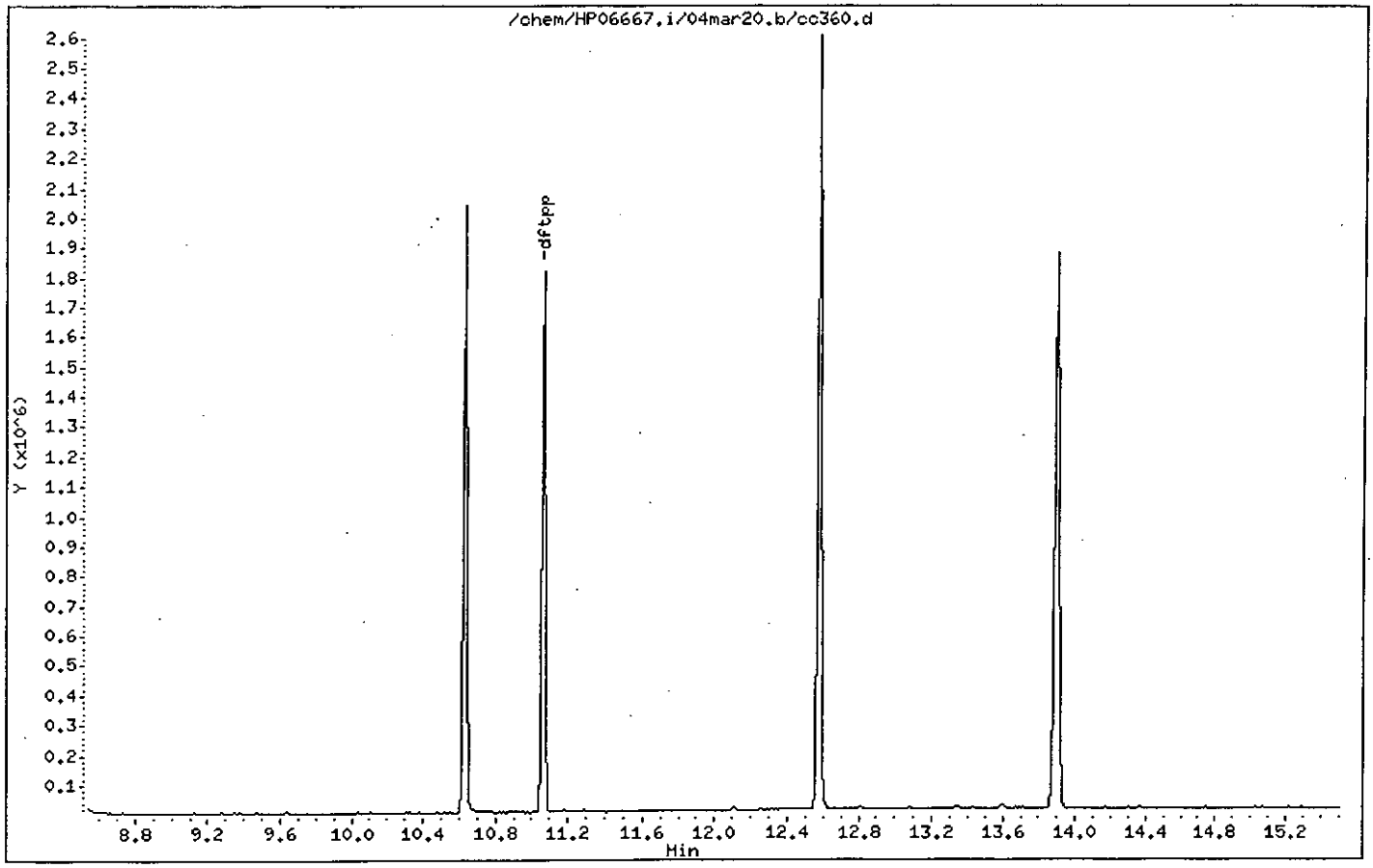
Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06667.i/04mar20.b/cc360.d

Date : 20-MAR-2004 07:21

Client ID: DFTPP

Instrument: HP06667.i

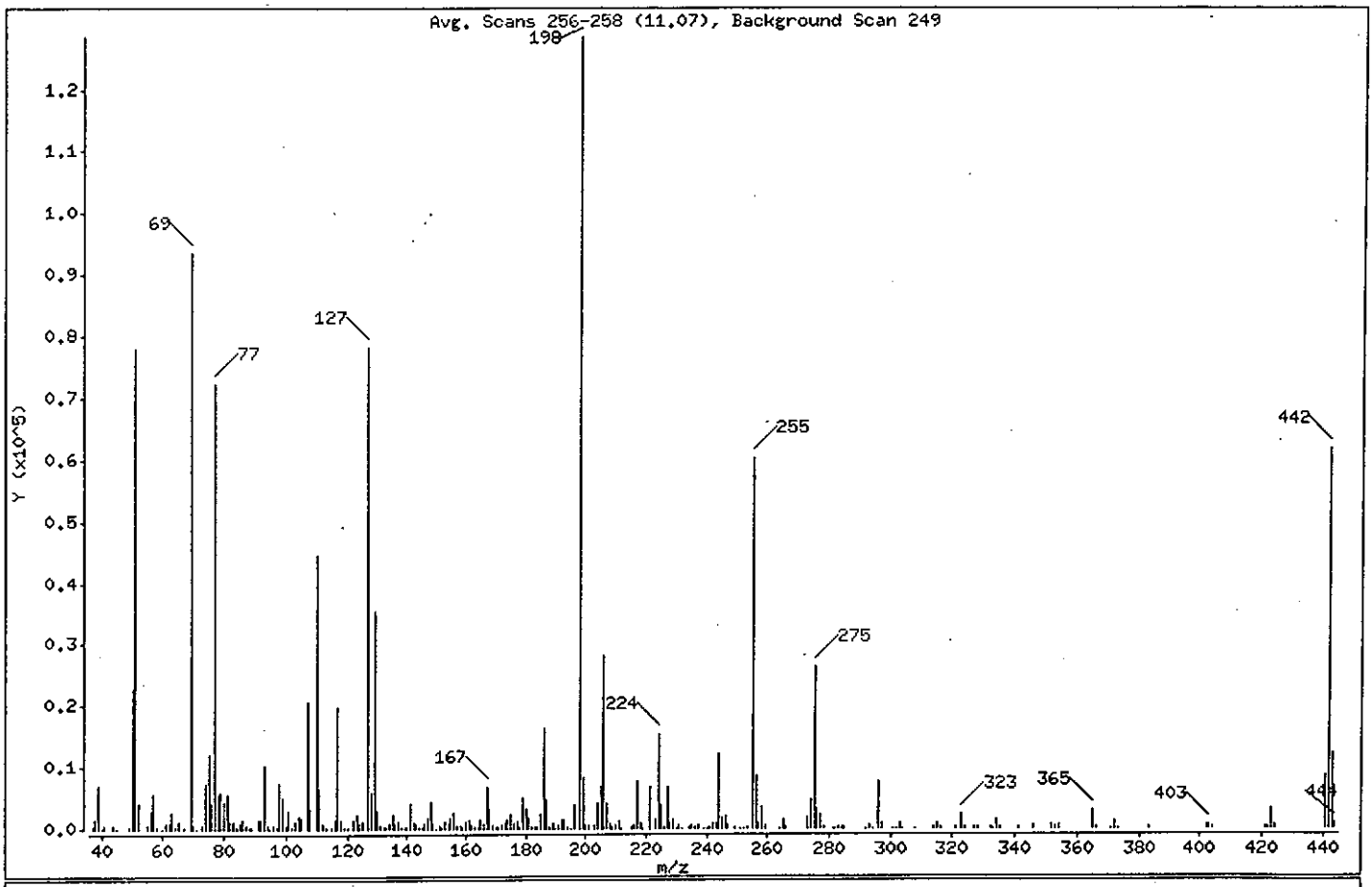
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| | | |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 47.07 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 58.48 |
| 70 | Less than 2.00% of mass 69 | 0.30 ( 0.52) |
| 127 | 40.00 - 60.00% of mass 198 | 54.65 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.55 |
| 275 | 10.00 - 30.00% of mass 198 | 21.78 |
| 365 | Greater than 1.00% of mass 198 | 2.41 |
| 441 | Present, but less than mass 443 | 7.25 |
| 442 | 40.00 - 99.99% of mass 198 | 52.32 |
| 443 | 17.00 - 23.00% of mass 442 | 10.22 ( 19.53) |

8366

Data File: /chem/HP06667.i/04mar20.b/cc360.d

Date : 20-MAR-2004 07:21

Client ID: DFTPP

Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

Data File: cc360.d

Spectrum: Avg. Scans 256-258 (11.07), Background Scan 249

Location of Maximum: 198.00

Number of points: 253

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 442 | 116.00 | 1598 | 182.00 | 249 | 257.00 | 752 |
| 38.00 | 1488 | 117.00 | 19792 | 183.00 | 150 | 258.00 | 3616 |
| 39.00 | 6995 | 118.00 | 1334 | 184.00 | 331 | 259.00 | 459 |
| 40.00 | 115 | 119.00 | 215 | 185.00 | 2354 | 264.00 | 77 |
| 41.00 | 459 | 120.00 | 289 | 186.00 | 16305 | 265.00 | 1460 |
| 44.00 | 656 | 122.00 | 1499 | 187.00 | 4701 | 266.00 | 224 |
| 45.00 | 119 | 123.00 | 2305 | 188.00 | 336 | 273.00 | 1826 |
| 49.00 | 268 | 124.00 | 964 | 189.00 | 913 | 274.00 | 4797 |
| 50.00 | 22664 | 125.00 | 1095 | 190.00 | 139 | 275.00 | 26240 |
| 51.00 | 78048 | 127.00 | 78296 | 191.00 | 493 | 276.00 | 3352 |
| 52.00 | 4103 | 128.00 | 5944 | 192.00 | 1542 | 277.00 | 2493 |
| 55.00 | 445 | 129.00 | 35336 | 193.00 | 1500 | 278.00 | 288 |
| 56.00 | 2887 | 130.00 | 2892 | 194.00 | 297 | 281.00 | 32 |
| 57.00 | 5651 | 131.00 | 557 | 195.00 | 128 | 282.00 | 69 |
| 58.00 | 296 | 132.00 | 260 | 196.00 | 3788 | 283.00 | 231 |
| 60.00 | 81 | 133.00 | 174 | 198.00 | 128456 | 284.00 | 176 |
| 61.00 | 839 | 134.00 | 873 | 199.00 | 8373 | 285.00 | 328 |
| 62.00 | 946 | 135.00 | 2293 | 200.00 | 627 | 292.00 | 84 |
| 63.00 | 2790 | 136.00 | 895 | 201.00 | 633 | 293.00 | 508 |
| 64.00 | 339 | 137.00 | 1208 | 203.00 | 655 | 294.00 | 106 |
| 65.00 | 1307 | 138.00 | 249 | 204.00 | 4152 | 296.00 | 7587 |
| 67.00 | 286 | 139.00 | 233 | 205.00 | 6784 | 297.00 | 1015 |
| 69.00 | 93720 | 140.00 | 406 | 206.00 | 28104 | 301.00 | 74 |
| 70.00 | 531 | 141.00 | 4092 | 207.00 | 4020 | 302.00 | 67 |
| 71.00 | 77 | 142.00 | 1136 | 208.00 | 1011 | 303.00 | 788 |
| 73.00 | 480 | 143.00 | 859 | 209.00 | 310 | 304.00 | 146 |
| 74.00 | 7434 | 144.00 | 167 | 210.00 | 681 | 308.00 | 67 |
| 75.00 | 12225 | 145.00 | 224 | 211.00 | 1152 | 314.00 | 279 |
| 76.00 | 4170 | 146.00 | 744 | 212.00 | 138 | 315.00 | 804 |
| 77.00 | 72288 | 147.00 | 1770 | 215.00 | 234 | 316.00 | 369 |
| 78.00 | 5585 | 148.00 | 4329 | 216.00 | 574 | 321.00 | 242 |
| 79.00 | 5781 | 149.00 | 925 | 217.00 | 7630 | 323.00 | 2328 |
| 80.00 | 4363 | 150.00 | 73 | 218.00 | 953 | 324.00 | 363 |
| 81.00 | 5649 | 151.00 | 568 | 219.00 | 66 | 327.00 | 298 |
| 82.00 | 1064 | 152.00 | 151 | 221.00 | 6759 | 328.00 | 309 |

Data File: /chem/HP06667.i/04mar20.b/cc360.d

Date : 20-MAR-2004 07:21

Client ID: DFTPP

Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

Data File: cc360.d

Spectrum: Avg. Scans 256-258 (11.07), Background Scan 249

Location of Maximum: 198.00

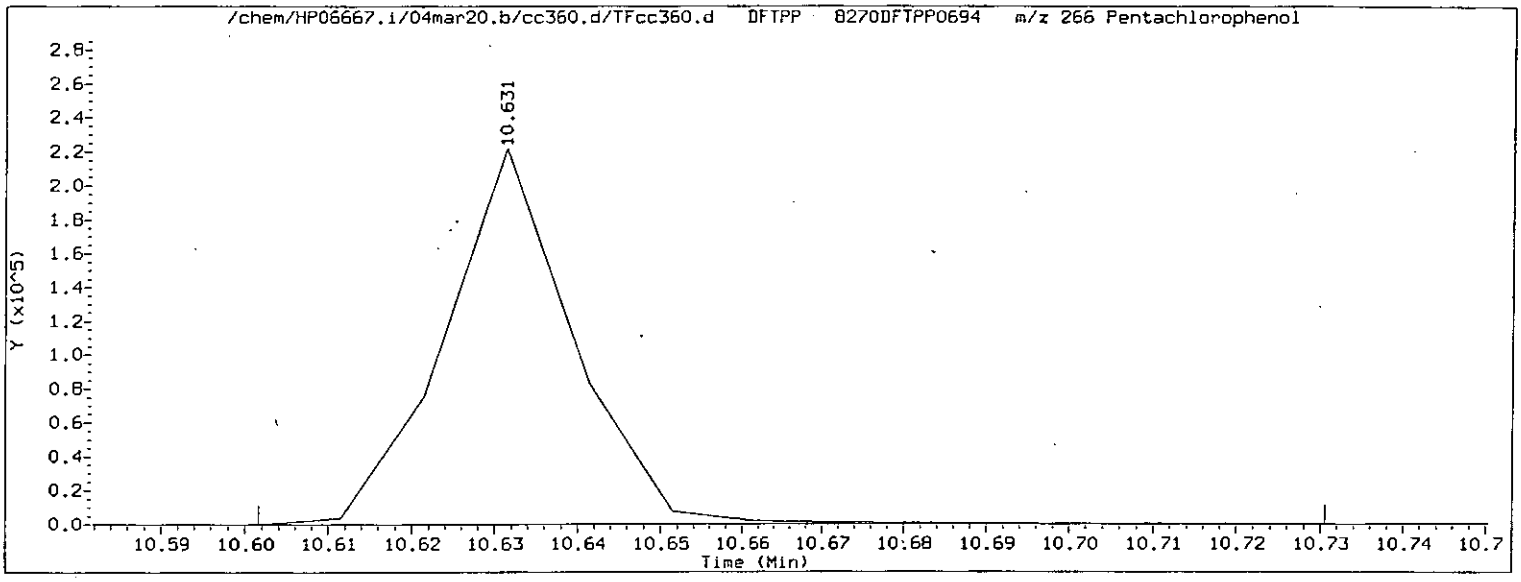
Number of points: 253

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 83.00 | 1274 | 153.00 | 1177 | 223.00 | 1516 | 332.00 | 199 |
| 84.00 | 224 | 154.00 | 951 | 224.00 | 15396 | 333.00 | 119 |
| 85.00 | 995 | 155.00 | 1819 | 225.00 | 3955 | 334.00 | 1464 |
| 86.00 | 1592 | 156.00 | 2570 | 226.00 | 284 | 335.00 | 281 |
| 87.00 | 643 | 157.00 | 643 | 227.00 | 6693 | 341.00 | 267 |
| 88.00 | 205 | 158.00 | 575 | 228.00 | 853 | 346.00 | 543 |
| 89.00 | 216 | 159.00 | 404 | 229.00 | 1329 | 352.00 | 716 |
| 91.00 | 1486 | 160.00 | 1035 | 230.00 | 129 | 353.00 | 344 |
| 92.00 | 1485 | 161.00 | 1584 | 231.00 | 462 | 354.00 | 669 |
| 93.00 | 10204 | 162.00 | 455 | 232.00 | 86 | 365.00 | 2963 |
| 94.00 | 622 | 163.00 | 166 | 234.00 | 401 | 366.00 | 433 |
| 95.00 | 28 | 164.00 | 170 | 235.00 | 468 | 371.00 | 147 |
| 96.00 | 690 | 165.00 | 1367 | 236.00 | 189 | 372.00 | 1120 |
| 97.00 | 228 | 166.00 | 876 | 237.00 | 469 | 373.00 | 140 |
| 98.00 | 7432 | 167.00 | 6649 | 239.00 | 141 | 383.00 | 231 |
| 99.00 | 4929 | 168.00 | 3117 | 240.00 | 109 | 402.00 | 446 |
| 100.00 | 448 | 169.00 | 527 | 241.00 | 302 | 403.00 | 622 |
| 101.00 | 2844 | 170.00 | 207 | 242.00 | 764 | 404.00 | 239 |
| 102.00 | 170 | 171.00 | 253 | 243.00 | 966 | 421.00 | 436 |
| 103.00 | 1139 | 172.00 | 555 | 244.00 | 12180 | 422.00 | 348 |
| 104.00 | 1924 | 173.00 | 792 | 245.00 | 1687 | 423.00 | 3191 |
| 105.00 | 1867 | 174.00 | 1499 | 246.00 | 2206 | 424.00 | 503 |
| 107.00 | 20672 | 175.00 | 2396 | 247.00 | 593 | 441.00 | 8507 |
| 108.00 | 3146 | 176.00 | 799 | 249.00 | 367 | 442.00 | 61800 |
| 110.00 | 44640 | 177.00 | 1196 | 251.00 | 77 | 443.00 | 11993 |
| 111.00 | 6560 | 178.00 | 292 | 252.00 | 82 | 444.00 | 819 |
| 112.00 | 785 | 179.00 | 4926 | 253.00 | 159 | | |
| 113.00 | 236 | 180.00 | 3310 | 255.00 | 60320 | | |
| 115.00 | 150 | 181.00 | 1767 | 256.00 | 8447 | | |

8368

# Assessment of GC Column Performance and Injection Port Inertness for

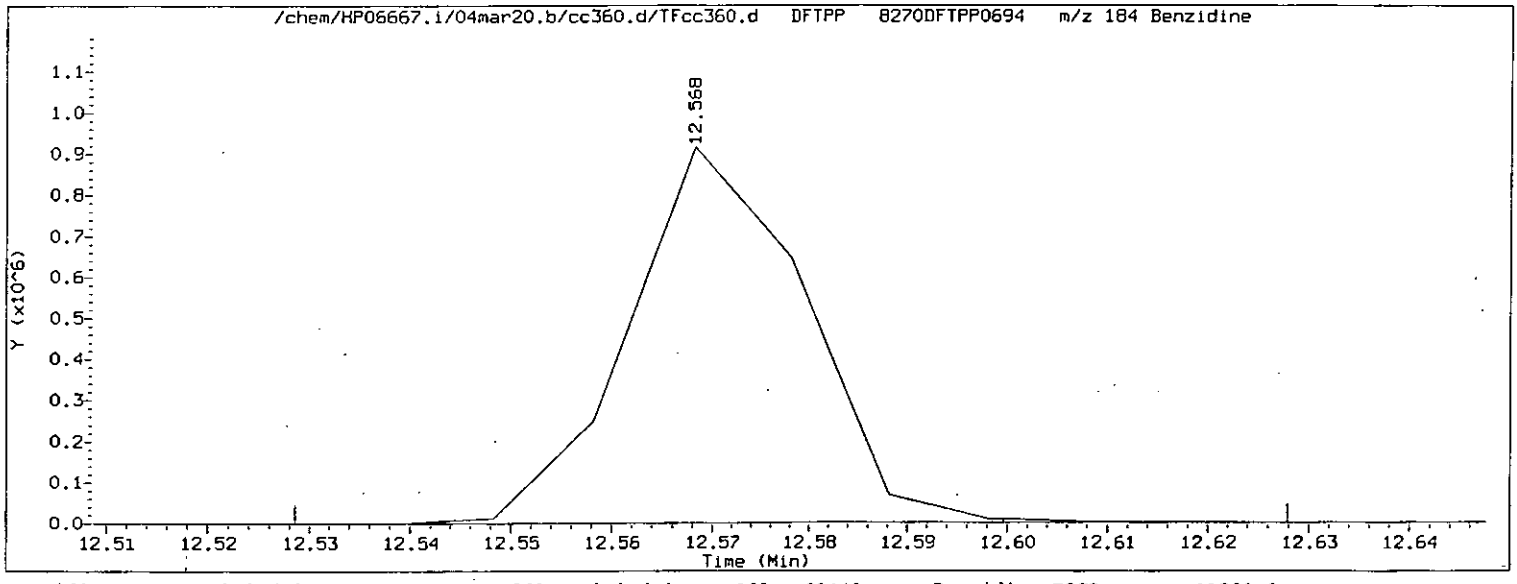
Instrument ID: HP06667.i  Injection Date: 20-MAR-2004 07:21  Operator: sls01495




Pentachlorophenol EICP peak height = 221952  EICP peak height at 10% = 22195  Pentachlorophenol EICP area = 235893

Pentachlorophenol EICP peak apex (min.) = 10.631
RT at 10% of front half of EICP (min.) = 10.614  'Front' peak width (min.) = 0.0174166667
RT at 10% of back half of EICP (min.) = 10.649  'Tailing' peak width (min.) = 0.0180500000

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0180500000}{0.0174166667} = 1.036$



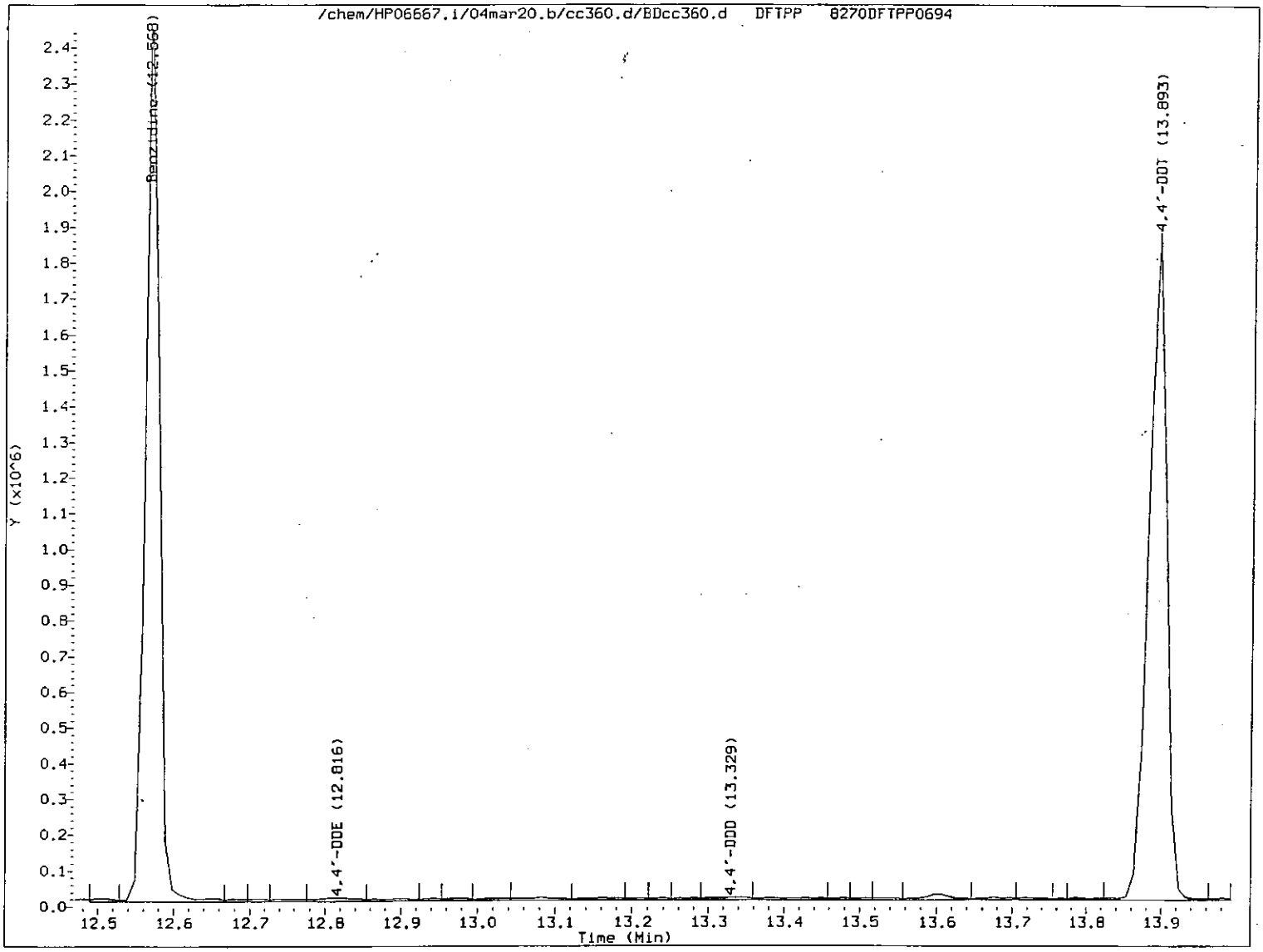

Benzidine EICP peak height = 914413  EICP peak height at 10% = 91441  Benzidine EICP area = 1128143

Benzidine EICP peak apex (min.) = 12.568
RT at 10% of front half of EICP (min.) = 12.552  'Front' peak width (min.) = 0.0166000000
RT at 10% of back half of EICP (min.) = 12.588  'Tailing' peak width (min.) = 0.0195500000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0195500000}{0.0166000000} = 1.178$ 8369

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06667.i  Injection Date: 20-MAR-2004 07:21  Operator: sls01495




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{34352 + 26491}{34352 + 26491 + 3034249} \times 100 = 2.0$$

0378


printed on 03/20/2004 at 07:43

Data File: /chem/HP06667.i/04mar26.b/cc460.d

Date : 26-MAR-2004 04:55

Client ID: DFTPP

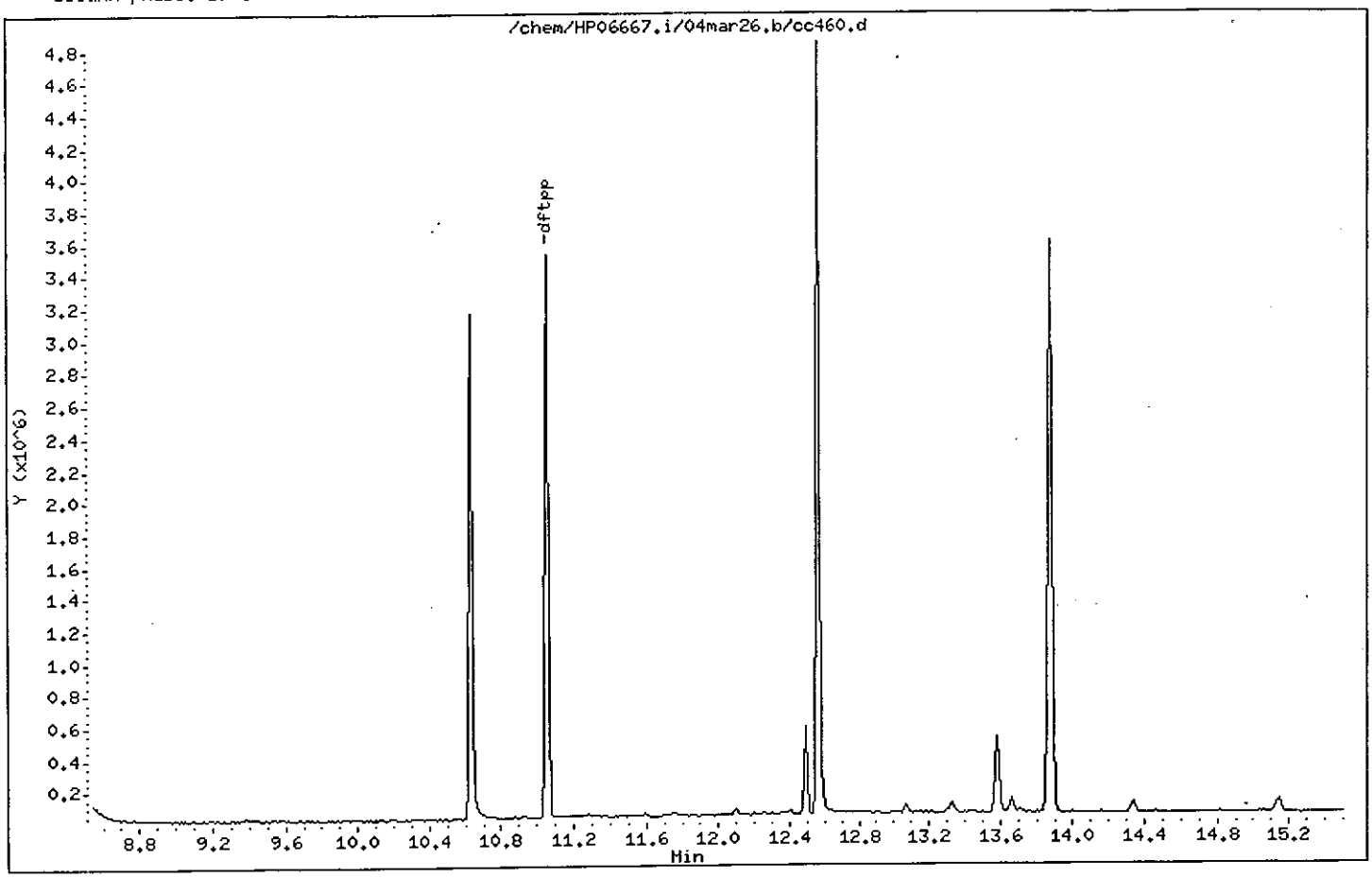
Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06667.i/04mar26.b/cc460.d

Date : 26-MAR-2004 04:55

Client ID: DFTPP

Instrument: HP06667.i

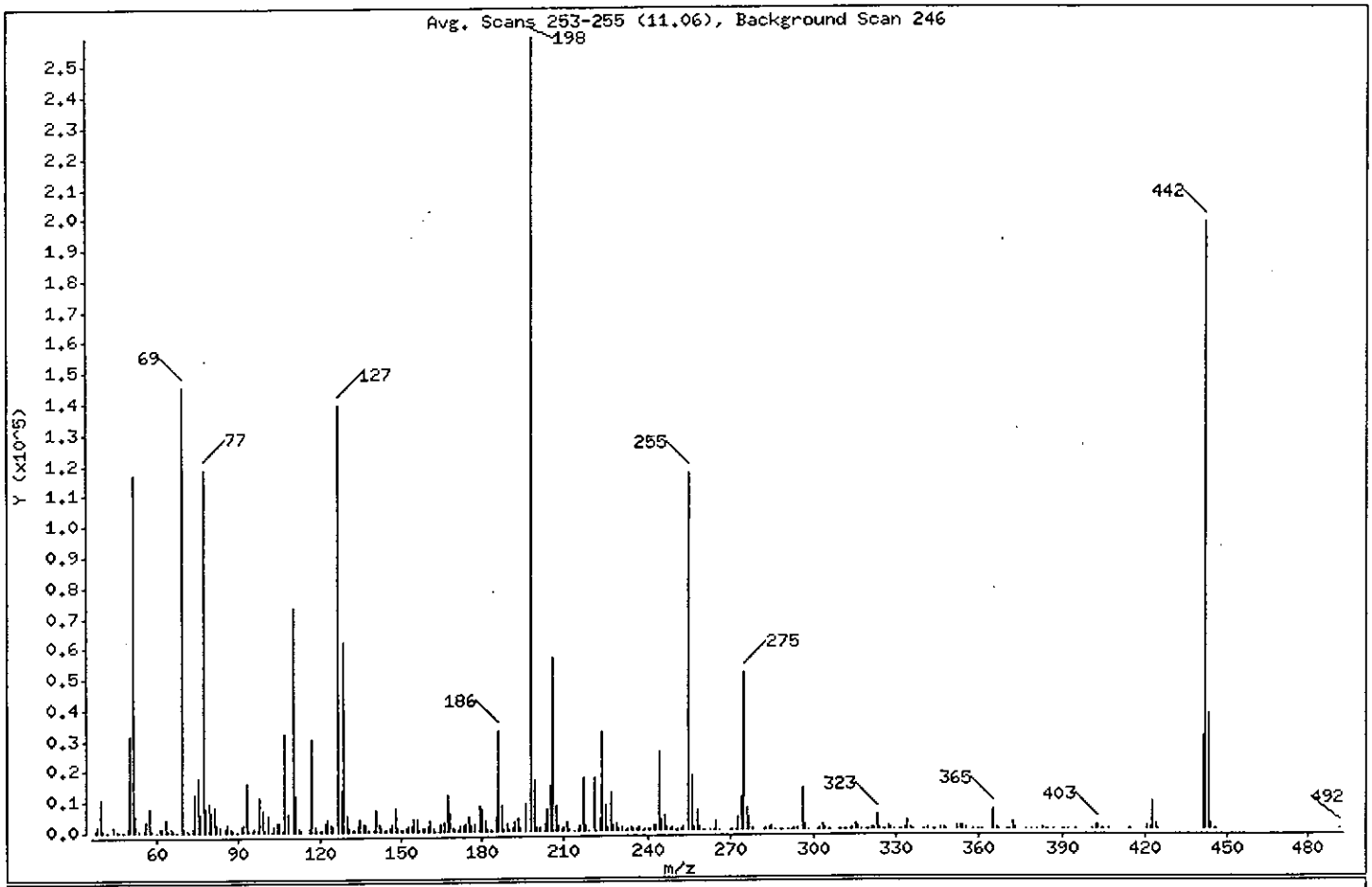
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 44.99 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 56.16 |
| 70 | Less than 2.00% of mass 69 | 0.41 ( 0.72) |
| 127 | 40.00 - 60.00% of mass 198 | 53.86 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.51 |
| 275 | 10.00 - 30.00% of mass 198 | 19.73 |
| 365 | Greater than 1.00% of mass 198 | 2.44 |
| 441 | Present, but less than mass 443 | 11.67 |
| 442 | 40.00 - 99.99% of mass 198 | 76.52 |
| 443 | 17.00 - 23.00% of mass 442 | 14.58 ( 19.06) |

B372

Data File: /chem/HP06667.i/04mar26.b/cc460.d

Date : 26-MAR-2004 04:55

Client ID: DFTPP

Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

Data File: cc460.d

Spectrum: Avg. Scans 253-255 (11.06), Background Scan 246

Location of Maximum: 198.00

Number of points: 319

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 632 | 125.00 | 1823 | 211.00 | 2703 | 306.00 | 91 |
| 38.00 | 2054 | 127.00 | 139584 | 212.00 | 503 | 309.00 | 170 |
| 39.00 | 11018 | 128.00 | 13592 | 214.00 | 205 | 310.00 | 235 |
| 40.00 | 304 | 129.00 | 62136 | 215.00 | 793 | 311.00 | 104 |
| 41.00 | 80 | 130.00 | 5260 | 216.00 | 1833 | 312.00 | 100 |
| 42.00 | 47 | 131.00 | 938 | 217.00 | 17472 | 313.00 | 129 |
| 44.00 | 1688 | 132.00 | 651 | 218.00 | 1889 | 314.00 | 800 |
| 45.00 | 334 | 133.00 | 500 | 219.00 | 208 | 315.00 | 1786 |
| 46.00 | 71 | 134.00 | 1641 | 221.00 | 17456 | 316.00 | 948 |
| 47.00 | 102 | 135.00 | 4031 | 222.00 | 291 | 317.00 | 113 |
| 48.00 | 83 | 136.00 | 2091 | 223.00 | 3915 | 319.00 | 74 |
| 49.00 | 1294 | 137.00 | 2264 | 224.00 | 32336 | 320.00 | 149 |
| 50.00 | 31320 | 138.00 | 359 | 225.00 | 8133 | 321.00 | 486 |
| 51.00 | 116616 | 140.00 | 357 | 226.00 | 1081 | 322.00 | 488 |
| 52.00 | 5571 | 141.00 | 7383 | 227.00 | 12449 | 323.00 | 4806 |
| 53.00 | 304 | 142.00 | 2484 | 228.00 | 1987 | 324.00 | 653 |
| 55.00 | 437 | 143.00 | 1298 | 229.00 | 2492 | 325.00 | 141 |
| 56.00 | 3788 | 144.00 | 392 | 230.00 | 341 | 326.00 | 202 |
| 57.00 | 7975 | 145.00 | 299 | 231.00 | 1136 | 327.00 | 909 |
| 58.00 | 352 | 146.00 | 1276 | 232.00 | 216 | 328.00 | 492 |
| 60.00 | 83 | 147.00 | 2129 | 233.00 | 332 | 329.00 | 242 |
| 61.00 | 1046 | 148.00 | 7807 | 234.00 | 904 | 331.00 | 133 |
| 62.00 | 1311 | 149.00 | 1139 | 235.00 | 630 | 332.00 | 260 |
| 63.00 | 4445 | 150.00 | 679 | 236.00 | 602 | 333.00 | 356 |
| 64.00 | 669 | 151.00 | 578 | 237.00 | 1176 | 334.00 | 2776 |
| 65.00 | 1389 | 152.00 | 1101 | 238.00 | 145 | 335.00 | 776 |
| 66.00 | 376 | 153.00 | 1836 | 239.00 | 672 | 336.00 | 136 |
| 67.00 | 142 | 154.00 | 1777 | 240.00 | 789 | 340.00 | 82 |
| 69.00 | 145536 | 155.00 | 4000 | 241.00 | 715 | 341.00 | 502 |
| 70.00 | 1051 | 156.00 | 4406 | 242.00 | 1976 | 343.00 | 76 |
| 71.00 | 337 | 157.00 | 633 | 243.00 | 2042 | 344.00 | 194 |
| 72.00 | 10 | 158.00 | 913 | 244.00 | 25656 | 346.00 | 731 |
| 73.00 | 1012 | 159.00 | 959 | 245.00 | 3548 | 347.00 | 493 |
| 74.00 | 12303 | 160.00 | 1894 | 246.00 | 5053 | 348.00 | 120 |
| 75.00 | 17984 | 161.00 | 3352 | 247.00 | 984 | 352.00 | 1312 |

Data File: /chem/HP06667.i/04mar26.b/cc460.d

Date : 26-MAR-2004 04:55

Client ID: DFTPP

Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

Data File: cc460.d

Spectrum: Avg. Scans 253-255 (11.06), Background Scan 246

Location of Maximum: 198.00

Number of points: 319

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 76.00 | 6252 | 162.00 | 894 | 248.00 | 501 | 353.00 | 1117 |
| 77.00 | 118672 | 163.00 | 129 | 249.00 | 1107 | 354.00 | 1377 |
| 78.00 | 8012 | 164.00 | 217 | 250.00 | 235 | 355.00 | 308 |
| 79.00 | 9830 | 165.00 | 2487 | 251.00 | 415 | 358.00 | 75 |
| 80.00 | 6612 | 166.00 | 2691 | 252.00 | 556 | 360.00 | 81 |
| 81.00 | 8589 | 167.00 | 12192 | 253.00 | 927 | 361.00 | 70 |
| 82.00 | 2573 | 168.00 | 5991 | 255.00 | 116656 | 365.00 | 6318 |
| 83.00 | 1955 | 169.00 | 935 | 256.00 | 17608 | 366.00 | 671 |
| 85.00 | 1120 | 170.00 | 700 | 257.00 | 1354 | 367.00 | 75 |
| 86.00 | 2658 | 171.00 | 535 | 258.00 | 6841 | 370.00 | 185 |
| 87.00 | 1206 | 172.00 | 1559 | 259.00 | 1101 | 371.00 | 211 |
| 88.00 | 530 | 173.00 | 1662 | 260.00 | 292 | 372.00 | 2253 |
| 89.00 | 243 | 174.00 | 2244 | 261.00 | 255 | 373.00 | 608 |
| 90.00 | 148 | 175.00 | 4897 | 263.00 | 207 | 377.00 | 181 |
| 91.00 | 1910 | 176.00 | 1588 | 264.00 | 13 | 379.00 | 180 |
| 92.00 | 2601 | 177.00 | 2322 | 265.00 | 2958 | 381.00 | 88 |
| 93.00 | 15927 | 179.00 | 8436 | 266.00 | 283 | 383.00 | 757 |
| 94.00 | 578 | 180.00 | 6956 | 270.00 | 77 | 384.00 | 120 |
| 95.00 | 379 | 181.00 | 3365 | 271.00 | 198 | 385.00 | 167 |
| 96.00 | 922 | 182.00 | 658 | 272.00 | 265 | 387.00 | 74 |
| 97.00 | 716 | 183.00 | 801 | 273.00 | 4060 | 390.00 | 198 |
| 98.00 | 11489 | 184.00 | 241 | 274.00 | 10541 | 391.00 | 259 |
| 99.00 | 7101 | 185.00 | 4555 | 275.00 | 51144 | 392.00 | 98 |
| 100.00 | 430 | 186.00 | 32688 | 276.00 | 7261 | 395.00 | 85 |
| 101.00 | 5082 | 187.00 | 8079 | 277.00 | 3891 | 401.00 | 159 |
| 102.00 | 58 | 188.00 | 769 | 278.00 | 417 | 402.00 | 931 |
| 103.00 | 1825 | 189.00 | 2094 | 282.00 | 76 | 403.00 | 1239 |
| 104.00 | 2945 | 190.00 | 490 | 283.00 | 317 | 404.00 | 153 |
| 105.00 | 2748 | 191.00 | 914 | 284.00 | 552 | 405.00 | 83 |
| 106.00 | 526 | 192.00 | 2964 | 285.00 | 1107 | 407.00 | 80 |
| 107.00 | 32120 | 193.00 | 4066 | 286.00 | 198 | 414.00 | 71 |
| 108.00 | 6018 | 194.00 | 935 | 288.00 | 173 | 415.00 | 77 |
| 110.00 | 73488 | 196.00 | 8717 | 289.00 | 274 | 421.00 | 1407 |
| 111.00 | 11847 | 198.00 | 259200 | 291.00 | 155 | 422.00 | 865 |
| 112.00 | 1291 | 199.00 | 16872 | 292.00 | 139 | 423.00 | 8704 |

Data File: /chem/HP06667.i/04mar26.b/cc460.d

Date : 26-MAR-2004 04:55

Client ID: DFTPP

Instrument: HP06667.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: sls01495

Column phase: DB-5

Column diameter: 0.25

Data File: cc460.d

Spectrum: Avg. Scans 253-255 (11.06), Background Scan 246

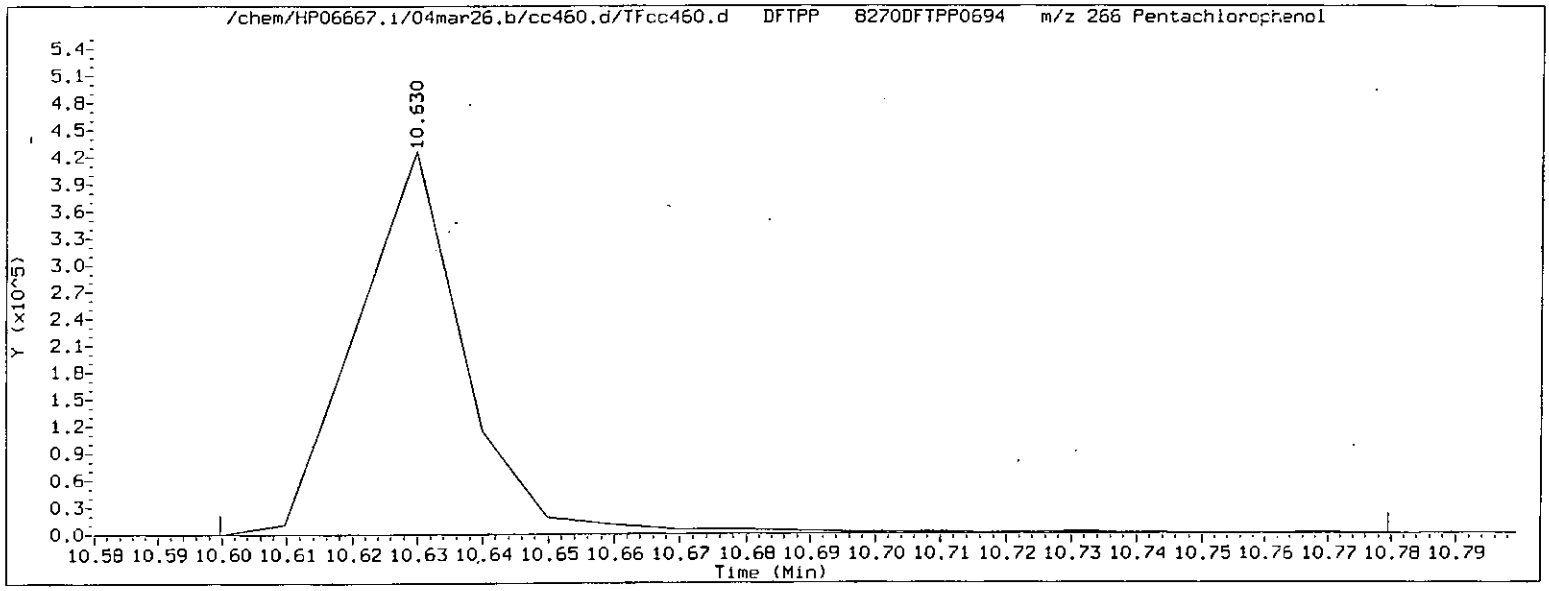
Location of Maximum: 198.00

Number of points: 319

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 113.00 | 450 | 200.00 | 1258 | 293.00 | 876 | 424.00 | 1759 |
| 116.00 | 1010 | 201.00 | 1341 | 294.00 | 362 | 425.00 | 102 |
| 117.00 | 30664 | 203.00 | 2235 | 296.00 | 13773 | 441.00 | 30264 |
| 118.00 | 1763 | 204.00 | 6989 | 297.00 | 1749 | 442.00 | 198336 |
| 119.00 | 417 | 205.00 | 14874 | 298.00 | 179 | 443.00 | 37808 |
| 120.00 | 763 | 206.00 | 56888 | 301.00 | 170 | 444.00 | 1542 |
| 121.00 | 565 | 207.00 | 8552 | 302.00 | 430 | 445.00 | 138 |
| 122.00 | 2684 | 208.00 | 1983 | 303.00 | 1599 | 446.00 | 114 |
| 123.00 | 4127 | 209.00 | 627 | 304.00 | 365 | 492.00 | 189 |
| 124.00 | 2520 | 210.00 | 1323 | 305.00 | 125 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

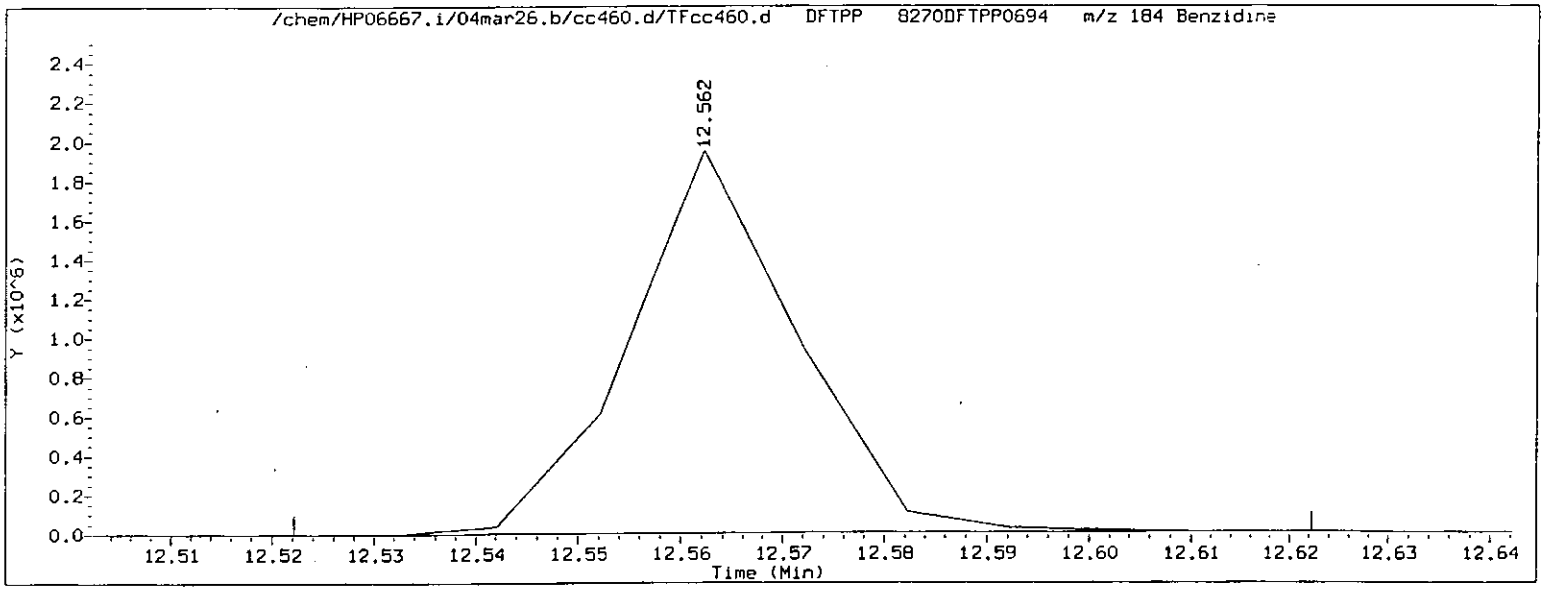
Instrument ID: HP06667.i  Injection Date: 26-MAR-2004 04:55  Operator: sls01495




Pentachlorophenol EICP peak height = 426368  EICP peak height at 10% = 42637  Pentachlorophenol EICP area = 490756

Pentachlorophenol EICP peak apex (min.) = 10.630
RT at 10% of front half of EICP (min.) = 10.611  'Front' peak width (min.) = 0.0185166667
RT at 10% of back half of EICP (min.) = 10.647  'Tailing' peak width (min.) = 0.0175666667

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0175666667}{0.0185166667} = 0.949$$



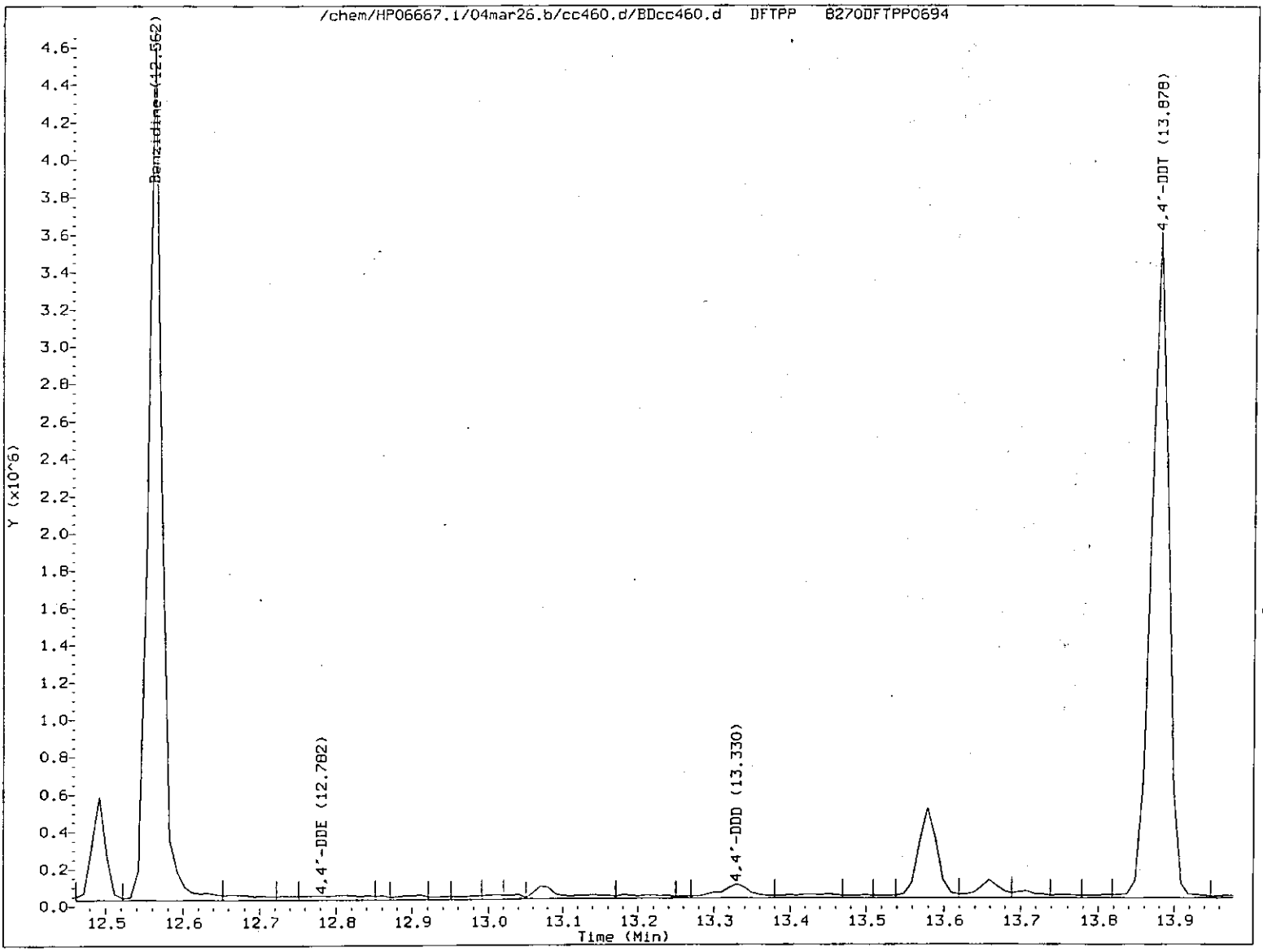

Benzidine EICP peak height = 1949994  EICP peak height at 10% = 194999  Benzidine EICP area = 2189151

Benzidine EICP peak apex (min.) = 12.562
RT at 10% of front half of EICP (min.) = 12.545  'Front' peak width (min.) = 0.0172500000  0376
RT at 10% of back half of EICP (min.) = 12.581  'Tailing' peak width (min.) = 0.0190000000

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0190000000}{0.0172500000} = 1.101$$

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06667.i  Injection Date: 26-MAR-2004 04:55  Operator: sls01495




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{126959 + 215301}{126959 + 215301 + 5670836} \times 100 = 5.7$$

8377

# SBLKLB0853 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLB085

Data file: /chem/HP06667.i/04mar26.b/cc462.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:13 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.042 | ( 0.000) | 698 | 152.0 | 547210 | ( 2) | 40.00 | |
| 54) Naphthalene-d8 | 13.402 | ( 0.000) | 937 | 136.0 | 2129773 | ( -1) | 40.00 | |
| 99) Acenaphthene-d10 | 16.670 | ( 0.002) | 1268 | 164.0 | 975405 | ( -3) | 40.00 | |
| 136) Phenanthrene-d10 | 19.328 | ( 0.007) | 1537 | 188.0 | 1477529 | ( 2) | 40.00 | |
| 168) Chrysene-d12 | 23.299 | ( 0.001) | 1938 | 240.0 | 1274187 | ( -3) | 40.00 | |
| 177) Perylene-d12 | 26.995 | ( 0.001) | 2311 | 264.0 | 1048869 | ( -5) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.603 | ( 0.001) | 112 | 3815383 | 183.766 | 92% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.222 | (-0.001) | 99 | 4504189 | 169.934 | 85% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.040 | ( 0.000) | 82 | 1668495 | 64.890 | 65% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.327 | (-0.001) | 172 | 3539084 | 100.144 | 100% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.092 | ( 0.000) | 330 | 885236 | 204.647 | 102% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.535 | ( 0.000) | 244 | 3134503 | 110.756 | 111% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 20) 2-Chlorophenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 28) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 35) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 39) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 41) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 43) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 44) 2-Nitrophenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 55) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 57) 4-Chloroaniline | (2) | | | | | ND | ND | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |
| 72) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |



0378

# SBLKLB0853 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLB085

Data file: /chem/HP06667.i/04mar26.b/cc462.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:13 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 74) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 90) 2-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 93) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 96) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 98) 3-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 100) Acenaphthene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | | | | Below MDL, | Do not report | | | | 20.00 |
| 104) 4-Nitrophenol | (3) | | | | Below MDL, | Do not report | | | | 5.00 |
| 105) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 110) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 112) Fluorene | (3) | | | | | ND | ND | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 115) 4-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | | | | | ND | ND | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 128) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 132) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 138) Phenanthrene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 139) Anthracene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 141) Carbazole | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | | | | Below MDL, | Do not report | | | | 2.00 |
| 148) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 155) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 169) Chrysene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, | Do not report | | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |

# SBLKLB0853 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLB085

Data file: /chem/HP06667.i/04mar26.b/cc462.d Blank Data file reference:**/chem/HP06667.i/04mar26.b/cc462.d**
Injection date and time: 26-MAR-2004 06:13 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 182) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

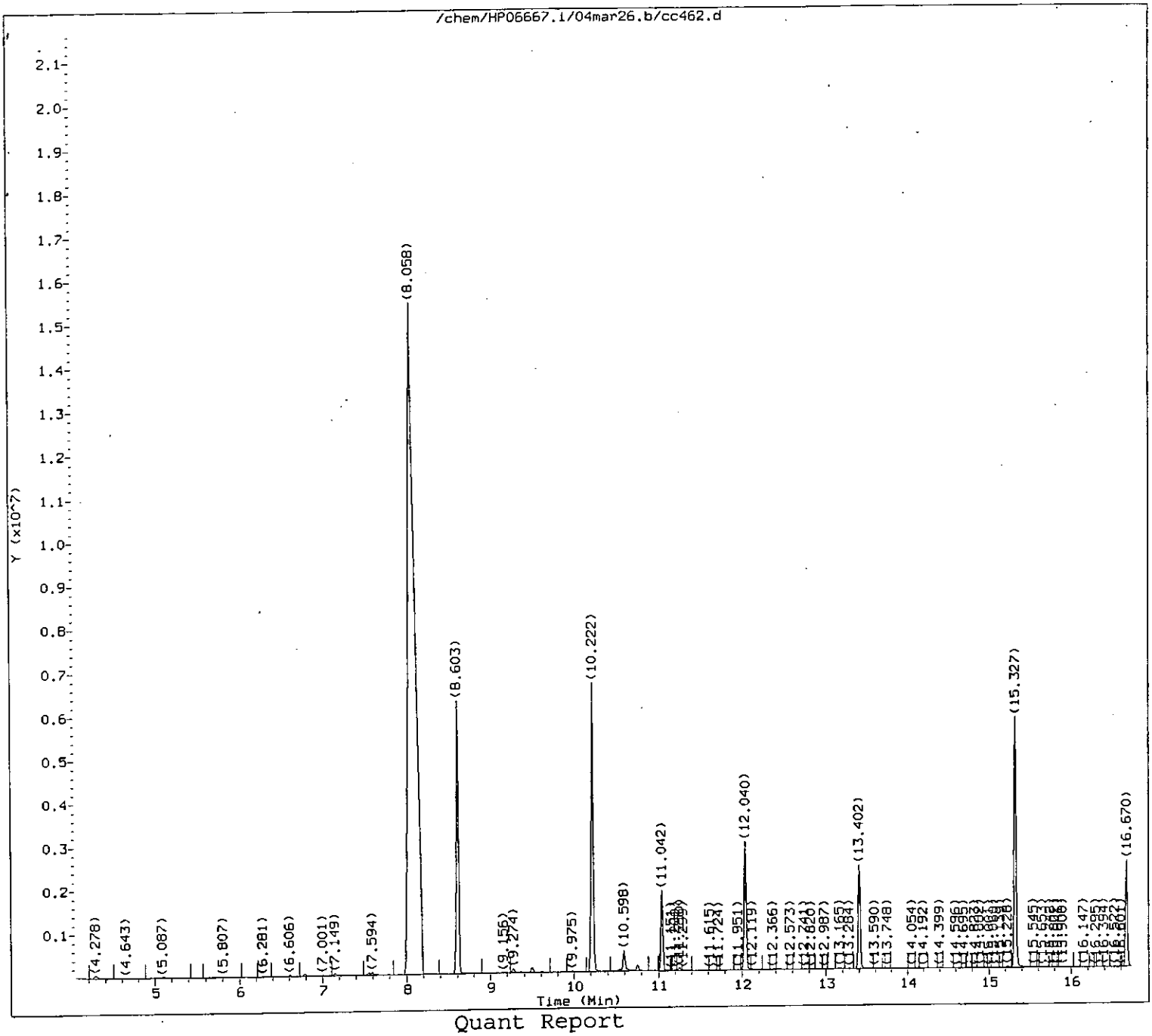
Total number of targets = 64

Comments:

Analyst: Susan J. Schenning MRT Date: 3/26/04
Auditor: [illegible] Date: 3/28/04



8380




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:13

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

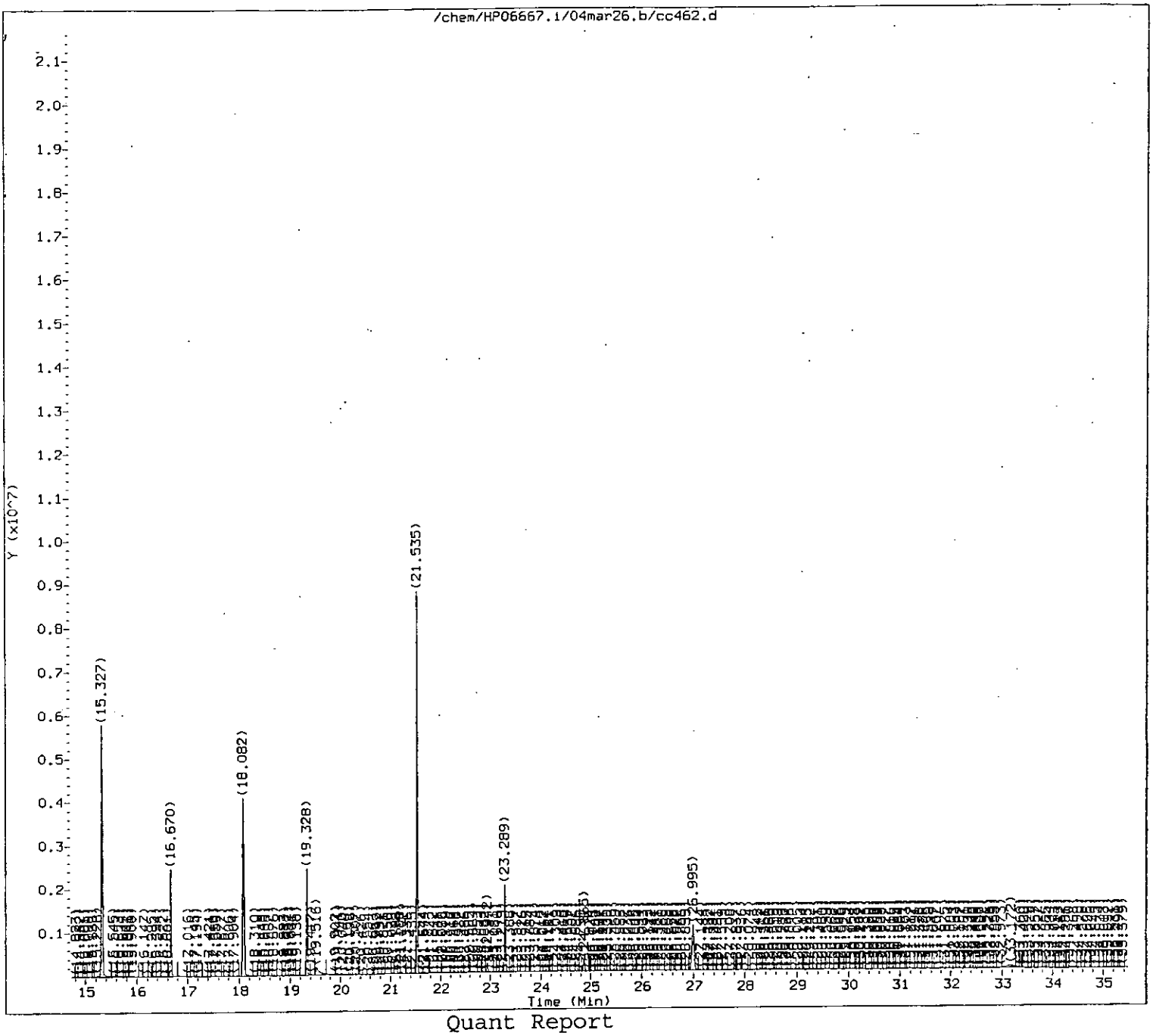
Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Sample Name: SBLKLB0853

Lab Sample ID: SBLKLB085

0381

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:13

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Sample Name: SBLKLB0853

Lab Sample ID: SBLKLB085

8382

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc462.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 06:13  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 06:55 sls01495

Sample Name: SBLKLB0853  Lab Sample ID: SBLKLB085

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.042 | 152 | 547210 | 40.000 |
| 54) | Naphthalene-d8 | (2) | 13.402 | 136 | 2129773 | 40.000 |
| 99) | Acenaphthene-d10 | (3) | 16.670 | 164 | 975405 | 40.000 |
| 136) | Phenanthrene-d10 | (4) | 19.328 | 188 | 1477529 | 40.000 |
| 168) | Chrysene-d12 | (5) | 23.299 | 240 | 1274187 | 40.000 |
| 177) | Perylene-d12 | (6) | 26.995 | 264 | 1048869 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.603 | 112 | 3815383 | 183.766 |
| 16) | Phenol-d6 | (1) | 10.222 | 99 | 4504189 | 169.934 |
| 40) | Nitrobenzene-d5 | (2) | 12.040 | 82 | 1668495 | 64.890 |
| 80) | 2-Fluorobiphenyl | (3) | 15.327 | 172 | 3539084 | 100.144 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.092 | 330 | 885236 | 204.647 |
| 157) | Terphenyl-d14 | (5) | 21.535 | 244 | 3134503 | 110.756 |

M = Compound was manually integrated.  A = User selected an alternate hit

5GP20MS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241632

Data file: /chem/HP06667.i/04mar26.b/cc465.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 08:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.028 | ( 0.015) | 708 | 152.0 | 522464 | ( -2) | 40.00 | |
| 54) Naphthalene-d8 | 13.390 | ( 0.012) | 946 | 136.0 | 2062595 | ( -4) | 40.00 | |
| 99) Acenaphthene-d10 | 16.655 | ( 0.017) | 1274 | 164.0 | 1002741 | ( 0) | 40.00 | |
| 136) Phenanthrene-d10 | 19.326 | ( 0.008) | 1542 | 188.0 | 1391740 | ( -4) | 40.00 | |
| 168) Chrysene-d12 | 23.291 | ( 0.009) | 1939 | 240.0 | 1265190 | ( -3) | 40.00 | |
| 177) Perylene-d12 | 26.988 | ( 0.007) | 2309 | 264.0 | 1028811 | ( -6) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.595 | ( 0.000) | 112 | 3473773 | 175.237 | 88% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.215 | (-0.002) | 99 | 4207212 | 166.247 | 83% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.030 | (-0.001) | 82 | 1721823 | 69.145 | 69% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.310 | ( 0.000) | 172 | 3361702 | 92.531 | 93% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.081 | (-0.001) | 330 | 855633 | 192.411 | 96% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.530 | ( 0.000) | 244 | 2897991 | 103.127 | 103% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | 10.235 | (-0.001) | 94 | 2395029 | 87.243 | 2908.10 | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | 10.463 | (-0.001) | 93 | 1679066 | 79.811 | 2660.37 | | | 1.00 |
| 20) 2-Chlorophenol | (1) | 10.641 | (-0.001) | 128 | 1898989 | 91.348 | 3044.95 | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | 10.928 | ( 0.000) | 146 | 1803601 | 85.165 | 2838.82 | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | 11.057 | ( 0.000) | 146 | 1905805 | 86.726 | 2890.86 | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | 11.355 | (-0.001) | 146 | 1875398 | 89.408 | 2980.25 | | | 1.00 |
| 28) 2-Methylphenol | (1) | 11.345 | ( 0.000) | 108 | 1826317 | 93.060 | 3102.02 | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | 11.425 | (-0.001) | 45 | 2665374 | 84.141 | 2804.69 | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | 11.673 | (-0.001) | 70 | 1133649 | 72.481 | 2416.04 | | | 1.00 |
| 35) 4-Methylphenol | (1) | 11.613 | (-0.001) | 108 | 1773703 | 90.060 | 3001.99 | | | 2.00 |
| 39) Hexachloroethane | (1) | 11.990 | ( 0.000) | 117 | 725969 | 79.087 | 2636.23 | | | 1.00 |
| 41) Nitrobenzene | (2) | 12.060 | ( 0.000) | 77 | 1578981 | 70.185 | 2339.50 | | | 1.00 |
| 43) Isophorone | (2) | 12.467 | ( 0.000) | 82 | 3150467 | 74.147 | 2471.56 | | | 1.00 |
| 44) 2-Nitrophenol | (2) | 12.645 | ( 0.000) | 139 | 1073944 | 93.762 | 3125.40 | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | 12.595 | ( 0.000) | 107 | 1686898 | 82.604 | 2753.48 | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | 12.774 | ( 0.000) | 93 | 2065391 | 89.642 | 2988.07 | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | 13.072 | (-0.001) | 162 | 1404984 | 94.499 | 3149.95 | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | 13.251 | ( 0.000) | 180 | 1433749 | 94.142 | 3138.06 | | | 1.00 |
| 55) Naphthalene | (2) | 13.440 | (-0.001) | 128 | 6001117 | 96.803 | 3226.77 | | | 1.00 |
| 57) 4-Chloroaniline | (2) | 13.450 | ( 0.000) | 127 | 2594563 | 78.792 | 2626.40 | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | 13.589 | ( 0.000) | 225 | 737670 | 88.141 | 2938.03 | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | 14.254 | (-0.001) | 107 | 1407563 | 83.987 | 2799.56 | | | 2.00 |

5GP20MS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241632

Data file: /chem/HP06667.i/04mar26.b/cc465.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 08:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 72) 2-Methylnaphthalene | (2) | 14.691( 0.001) | 142 | 3476926 | 98.024 | 3267.47 | | | 1.00 |
| 74) Hexachlorocyclopentadiene | (3) | 14.960( 0.000) | 237 | 1692295 | 219.637 | 7321.23 | | E | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | 15.170( 0.000) | 196 | 951610 | 93.448 | 3114.93 | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | 15.250( 0.000) | 196 | 1032468 | 100.163 | 3338.76 | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | 15.619( 0.000) | 162 | 3058450 | 90.540 | 3018.00 | | | 1.00 |
| 90) 2-Nitroaniline | (3) | 15.748( 0.000) | 138 | 1275305 | 95.870 | 3195.68 | | | 1.00 |
| 93) Dimethylphthalate | (3) | 15.998( 0.000) | 163 | 3592149 | 94.131 | 3137.68 | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | 16.177(-0.001) | 165 | 838501 | 86.886 | 2896.20 | | | 1.00 |
| 96) Acenaphthylene | (3) | 16.455(-0.001) | 152 | 4719066 | 107.353 | 3578.44 | | | 1.00 |
| 98) 3-Nitroaniline | (3) | 16.515(-0.001) | 138 | 872930 | 85.618 | 2853.94 | | | 2.00 |
| 100) Acenaphthene | (3) | 16.715(-0.001) | 153 | 2800236 | 98.736 | 3291.19 | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | 16.665(-0.001) | 184 | 418039 | 73.838 | 2461.26 | | | 20.00 |
| 104) 4-Nitrophenol | (3) | 16.665(-0.001) | 109 | 359394 | 64.109 | 2136.95 | | | 5.00 |
| 105) Dibenzofuran | (3) | 16.984(-0.001) | 168 | 3668599 | 91.499 | 3049.95 | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | 16.864(-0.001) | 165 | 980248 | 93.150 | 3104.99 | | | 2.00 |
| 110) Diethylphthalate | (3) | 17.193(-0.001) | 149 | 3114821 | 91.926 | 3064.20 | | | 2.00 |
| 112) Fluorene | (3) | 17.622(-0.001) | 166 | 2994826 | 91.911 | 3063.69 | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | 17.532(-0.001) | 204 | 1367710 | 102.689 | 3422.97 | | | 1.00 |
| 115) 4-Nitroaniline | (3) | 17.582(-0.001) | 138 | 804732 | 77.259 | 2575.29 | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | 17.622( 0.000) | 198 | 621830 | 99.029 | 3300.95 | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.752( 0.000) | 169 | 2057046 | 94.482 | 3149.39 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | 18.479( 0.000) | 248 | 741602 | 100.905 | 3363.49 | | | 1.00 |
| 128) Hexachlorobenzene | (4) | 18.659( 0.000) | 284 | 851417 | 99.137 | 3304.56 | | | 1.00 |
| 132) Pentachlorophenol | (4) | 18.958( 0.000) | 266 | 421670 | 70.268 | 2342.28 | | | 5.00 |
| 138) Phenanthrene | (4) | 19.366( 0.000) | 178 | 3985767 | 98.427 | 3280.91 | | | 1.00 |
| 139) Anthracene | (4) | 19.456(-0.001) | 178 | 4318873 | 105.903 | 3530.11 | | | 1.00 |
| 141) Carbazole | (4) | 19.655( 0.000) | 167 | 3805481 | 98.376 | 3279.21 | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | 20.044( 0.000) | 149 | 5658877 | 104.420 | 3480.66 | | | 2.00 |
| 148) Fluoranthene | (4) | 21.120( 0.000) | 202 | 4411646 | 108.136 | 3604.53 | | | 1.00 |
| 155) Pyrene | (5) | 21.440(-0.001) | 202 | 4612226 | 106.908 | 3563.61 | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | 22.120( 0.000) | 149 | 2316719 | 90.972 | 3032.39 | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | 23.110( 0.000) | 252 | 957484 | 63.787 | 2126.24 | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | 23.271( 0.000) | 228 | 3676412 | 99.334 | 3311.14 | | | 1.00 |
| 169) Chrysene | (5) | 23.351( 0.000) | 228 | 3438518 | 100.784 | 3359.47 | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | 22.940( 0.000) | 149 | 3239338 | 94.698 | 3156.61 | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | 24.243( 0.000) | 149 | 5456716 | 104.699 | 3489.96 | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | 25.800( 0.000) | 252 | 3360363 | 101.515 | 3383.83 | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | 25.880( 0.000) | 252 | 3235077 | 99.826 | 3327.55 | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | 26.828( 0.000) | 252 | 2992010 | 101.673 | 3389.10 | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | 31.313(-0.001) | 276 | 3332330 | 96.906 | 3230.20 | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | 31.313(-0.001) | 278 | 2831368 | 103.592 | 3453.06 | | | 1.00 |

5GP20MS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241632

Data file: /chem/HP06667.i/04mar26.b/cc465.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 08:21 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

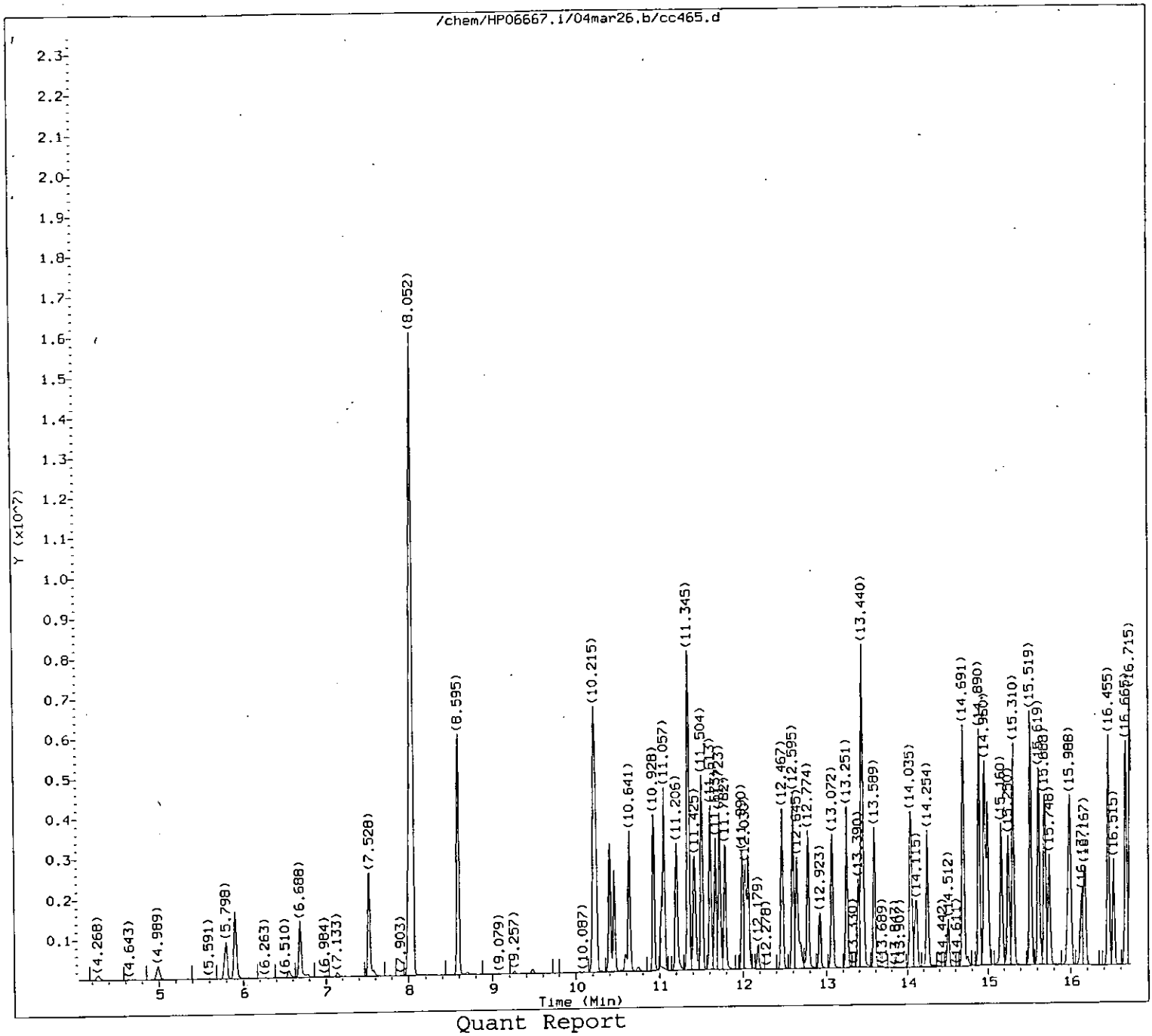
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 182) Benzo(g,h,i)perylene | (6) | 32.655 | ( 0.000) | 276 | 2681763 | 95.392 | 3179.74 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Susan J Schuening 1495 Date: 3/26/04
Auditor: [illegible] Date: 3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc465.d
Injection date and time: 26-MAR-2004 08:21

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

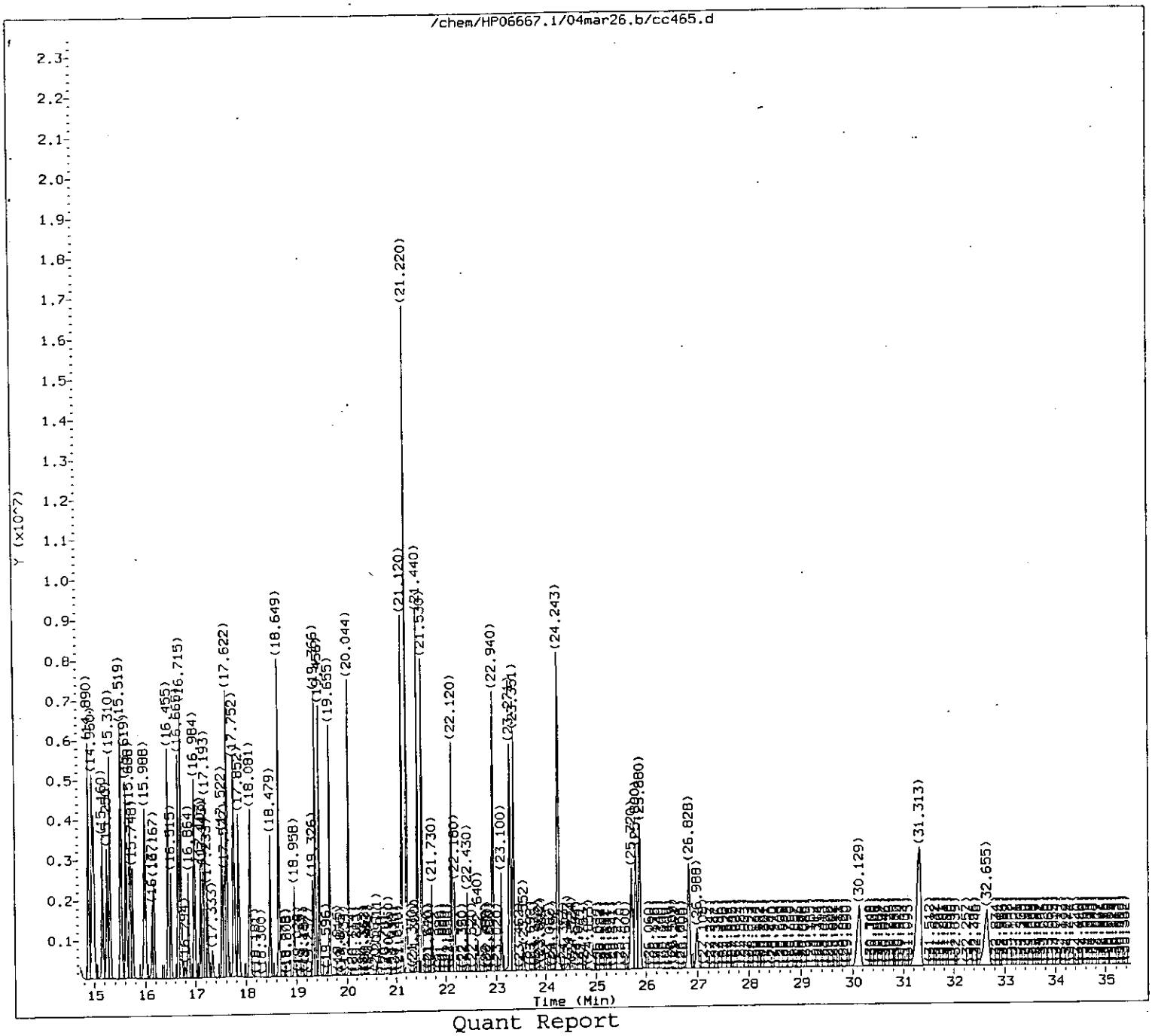
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Sample Name: 5GP20MS

Lab Sample ID: 4241632

8387

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc465.d
Injection date and time: 26-MAR-2004 08:21

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Sample Name: 5GP20MS

Lab Sample ID: 4241632

0388

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc465.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 08:21  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Sample Name: 5GP20MS  Lab Sample ID: 4241632

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 17) | Phenol | (1) | 10.235 | 94 | 2395029 | 87.243 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.463 | 93 | 1679066 | 79.811 |
| 20) | 2-Chlorophenol | (1) | 10.641 | 128 | 1898989 | 91.348 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.928 | 146 | 1803601 | 85.165 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.028 | 152 | 522464 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.057 | 146 | 1905805 | 86.726 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.355 | 146 | 1875398 | 89.408 |
| 28) | 2-Methylphenol | (1) | 11.345 | 108 | 1826317 | 93.060 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.425 | 45 | 2665374 | 84.141 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.673 | 70 | 1133649 | 72.481 |
| 35) | 4-Methylphenol | (1) | 11.613 | 108 | 1773703 | 90.060 |
| 39) | Hexachloroethane | (1) | 11.990 | 117 | 725969 | 79.087 |
| 41) | Nitrobenzene | (2) | 12.060 | 77 | 1578981 | 70.185 |
| 43) | Isophorone | (2) | 12.467 | 82 | 3150467 | 74.147 |
| 44) | 2-Nitrophenol | (2) | 12.645 | 139 | 1073944 | 93.762 |
| 46) | 2,4-Dimethylphenol | (2) | 12.595 | 107 | 1686898 | 82.604 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.774 | 93 | 2065391 | 89.642 |
| 51) | 2,4-Dichlorophenol | (2) | 13.072 | 162 | 1404984 | 94.499 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.251 | 180 | 1433749 | 94.142 |
| 54) | Naphthalene-d8 | (2) | 13.390 | 136 | 2062595 | 40.000 |
| 55) | Naphthalene | (2) | 13.440 | 128 | 6001117 | 96.803 |
| 57) | 4-Chloroaniline | (2) | 13.450 | 127 | 2594563 | 78.792 |
| 61) | Hexachlorobutadiene | (2) | 13.589 | 225 | 737670 | 88.141 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.254 | 107 | 1407563 | 83.987 |
| 72) | 2-Methylnaphthalene | (2) | 14.691 | 142 | 3476926 | 98.024 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.960 | 237 | 1692295 | 219.637 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.170 | 196 | 951610 | 93.448 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.250 | 196 | 1032468 | 100.163 |
| 86) | 2-Chloronaphthalene | (3) | 15.619 | 162 | 3058450 | 90.540 |
| 90) | 2-Nitroaniline | (3) | 15.748 | 138 | 1275305 | 95.870 |
| 93) | Dimethylphthalate | (3) | 15.998 | 163 | 3592149 | 94.131 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.177 | 165 | 838501 | 86.886 |
| 96) | Acenaphthylene | (3) | 16.455 | 152 | 4719066 | 107.353 |
| 98) | 3-Nitroaniline | (3) | 16.515 | 138 | 872930 | 85.618 |
| 99) | Acenaphthene-d10 | (3) | 16.655 | 164 | 1002741 | 40.000 |
| 100) | Acenaphthene | (3) | 16.715 | 153 | 2800236 | 98.736 |
| 101) | 2,4-Dinitrophenol | (3) | 16.665 | 184 | 418039 | 73.838 |
| 104) | 4-Nitrophenol | (3) | 16.665 | 109 | 359394 | 64.109 |
| 105) | Dibenzofuran | (3) | 16.984 | 168 | 3668599 | 91.499 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.864 | 165 | 980248 | 93.150 |
| 110) | Diethylphthalate | (3) | 17.193 | 149 | 3114821 | 91.926 |
| 112) | Fluorene | (3) | 17.622 | 166 | 2994826 | 91.911 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.532 | 204 | 1367710 | 102.689 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc465.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 08:21  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 09:34 sls01495

Sample Name: 5GP20MS  Lab Sample ID: 4241632

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 115) | 4-Nitroaniline | (3) | 17.582 | 138 | 804732 | 77.259 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.622 | 198 | 621830 | 99.029 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.752 | 169 | 2057046 | 94.482 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.479 | 248 | 741602 | 100.905 |
| 128) | Hexachlorobenzene | (4) | 18.659 | 284 | 851417 | 99.137 |
| 132) | Pentachlorophenol | (4) | 18.958 | 266 | 421670 | 70.268 |
| 136) | Phenanthrene-d10 | (4) | 19.326 | 188 | 1391740 | 40.000 |
| 138) | Phenanthrene | (4) | 19.366 | 178 | 3985767 | 98.427 |
| 139) | Anthracene | (4) | 19.456 | 178 | 4318873 | 105.903 |
| 141) | Carbazole | (4) | 19.655 | 167 | 3805481 | 98.376 |
| 143) | Di-n-butylphthalate | (4) | 20.044 | 149 | 5658877 | 104.420 |
| 148) | Fluoranthene | (4) | 21.120 | 202 | 4411646 | 108.136 |
| 155) | Pyrene | (5) | 21.440 | 202 | 4612226 | 106.908 |
| 162) | Butylbenzylphthalate | (5) | 22.120 | 149 | 2316719 | 90.972 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.110 | 252 | 957484 | 63.787 |
| 167) | Benzo(a)anthracene | (5) | 23.271 | 228 | 3676412 | 99.334 |
| 168) | Chrysene-d12 | (5) | 23.291 | 240 | 1265190 | 40.000 |
| 169) | Chrysene | (5) | 23.351 | 228 | 3438518 | 100.784 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.940 | 149 | 3239338 | 94.698 |
| 172) | Di-n-octylphthalate | (6) | 24.243 | 149 | 5456716 | 104.699 |
| 174) | Benzo(b)fluoranthene | (6) | 25.800 | 252 | 3360363 | 101.515 |
| 175) | Benzo(k)fluoranthene | (6) | 25.880 | 252 | 3235077 | 99.826 |
| 176) | Benzo(a)pyrene | (6) | 26.828 | 252 | 2992010 | 101.673 |
| 177) | Perylene-d12 | (6) | 26.988 | 264 | 1028811 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.313 | 276 | 3332330 | 96.906 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.313 | 278 | 2831368 | 103.592 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.655 | 276 | 2681763 | 95.392 |
| 9) | 2-Fluorophenol | (1) | 8.595 | 112 | 3473773 | 175.237 |
| 16) | Phenol-d6 | (1) | 10.215 | 99 | 4207212 | 166.247 |
| 40) | Nitrobenzene-d5 | (2) | 12.030 | 82 | 1721823 | 69.145 |
| 80) | 2-Fluorobiphenyl | (3) | 15.310 | 172 | 3361702 | 92.531 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.081 | 330 | 855633 | 192.411 |
| 157) | Terphenyl-d14 | (5) | 21.530 | 244 | 2897991 | 103.127 |

M = Compound was manually integrated.  A = User selected an alternate hit

5GP20MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241633

Data file: /chem/HP06667.i/04mar26.b/cc466.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.030( 0.013) | 696 | 152.0 | 551628( 3) | 40.00 | |
| 54) Naphthalene-d8 | 13.393( 0.010) | 934 | 136.0 | 2094072( -2) | 40.00 | |
| 99) Acenaphthene-d10 | 16.658( 0.014) | 1262 | 164.0 | 1010098( 0) | 40.00 | |
| 136) Phenanthrene-d10 | 19.330( 0.005) | 1530 | 188.0 | 1447834( 0) | 40.00 | |
| 168) Chrysene-d12 | 23.293( 0.007) | 1915 | 240.0 | 1331007( 2) | 40.00 | |
| 177) Perylene-d12 | 26.989( 0.006) | 2285 | 264.0 | 1046054( -5) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.597( 0.000) | 112 | 3862263 | 184.533 | 92% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.217(-0.002) | 99 | 4563300 | 170.785 | 85% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.033(-0.001) | 82 | 1813902 | 71.748 | 72% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.313( 0.000) | 172 | 3531958 | 96.509 | 97% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.084(-0.001) | 330 | 894735 | 199.739 | 100% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.532( 0.000) | 244 | 3166221 | 107.101 | 107% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | 10.237(-0.001) | 94 | 2507258 | 86.502 | 2883.41 | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | 10.465(-0.001) | 93 | 1761312 | 79.294 | 2643.13 | | | 1.00 |
| 20) 2-Chlorophenol | (1) | 10.643(-0.001) | 128 | 2006488 | 91.417 | 3047.22 | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | 10.931( 0.000) | 146 | 1863887 | 83.358 | 2778.60 | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | 11.060( 0.000) | 146 | 1999898 | 86.196 | 2873.20 | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | 11.347( 0.000) | 146 | 1988105 | 89.770 | 2992.32 | | | 1.00 |
| 28) 2-Methylphenol | (1) | 11.347( 0.000) | 108 | 1923153 | 92.814 | 3093.79 | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | 11.417( 0.000) | 45 | 2798722 | 83.679 | 2789.30 | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | 11.675(-0.001) | 70 | 1193816 | 72.293 | 2409.75 | | | 1.00 |
| 35) 4-Methylphenol | (1) | 11.616(-0.001) | 108 | 1837436 | 88.363 | 2945.44 | | | 2.00 |
| 39) Hexachloroethane | (1) | 11.993( 0.000) | 117 | 751308 | 77.520 | 2583.99 | | | 1.00 |
| 41) Nitrobenzene | (2) | 12.063( 0.000) | 77 | 1661899 | 72.760 | 2425.34 | | | 1.00 |
| 43) Isophorone | (2) | 12.469( 0.000) | 82 | 3234632 | 74.983 | 2499.45 | | | 1.00 |
| 44) 2-Nitrophenol | (2) | 12.648( 0.000) | 139 | 1109210 | 95.385 | 3179.51 | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | 12.598( 0.000) | 107 | 1751472 | 84.477 | 2815.91 | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | 12.777( 0.000) | 93 | 2168491 | 92.702 | 3090.07 | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | 13.065( 0.000) | 162 | 1454244 | 96.342 | 3211.39 | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | 13.253( 0.000) | 180 | 1459597 | 94.398 | 3146.61 | | | 1.00 |
| 55) Naphthalene | (2) | 13.432( 0.000) | 128 | 6145749 | 97.646 | 3254.87 | | | 1.00 |
| 57) 4-Chloroaniline | (2) | 13.452( 0.000) | 127 | 2871872 | 85.902 | 2863.41 | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | 13.592( 0.000) | 225 | 773706 | 91.057 | 3035.23 | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | 14.247( 0.000) | 107 | 1451608 | 85.313 | 2843.77 | | | 2.00 |



0391

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06667.i/04mar26.b/cc466.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 72) 2-Methylnaphthalene | (2) | 14.694( 0.001) | 142 | 3587483 | 99.621 | 3320.69 | | | 1.00 |
| 74) Hexachlorocyclopentadiene | (3) | 14.963( 0.000) | 237 | 1659508 | 213.813 | 7127.10 | | E | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | 15.163( 0.000) | 196 | 983645 | 95.890 | 3196.34 | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | 15.253( 0.000) | 196 | 1084247 | 104.420 | 3480.66 | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | 15.622( 0.000) | 162 | 3128148 | 91.929 | 3064.29 | | | 1.00 |
| 90) 2-Nitroaniline | (3) | 15.751( 0.000) | 138 | 1317203 | 98.299 | 3276.62 | | | 1.00 |
| 93) Dimethylphthalate | (3) | 16.000( 0.000) | 163 | 3693449 | 96.080 | 3202.67 | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | 16.170( 0.000) | 165 | 869750 | 89.468 | 2982.25 | | | 1.00 |
| 96) Acenaphthylene | (3) | 16.449( 0.000) | 152 | 4837637 | 109.249 | 3641.64 | | | 1.00 |
| 98) 3-Nitroaniline | (3) | 16.518(-0.001) | 138 | 926307 | 90.192 | 3006.39 | | | 2.00 |
| 100) Acenaphthene | (3) | 16.718(-0.001) | 153 | 2846836 | 99.648 | 3321.58 | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | 16.668(-0.001) | 184 | 485838 | 85.188 | 2839.61 | | | 20.00 |
| 104) 4-Nitrophenol | (3) | 16.668(-0.001) | 109 | 375295 | 66.457 | 2215.24 | | | 5.00 |
| 105) Dibenzofuran | (3) | 16.977( 0.000) | 168 | 3784398 | 93.699 | 3123.31 | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | 16.867(-0.001) | 165 | 991884 | 93.569 | 3118.96 | | | 2.00 |
| 110) Diethylphthalate | (3) | 17.196(-0.001) | 149 | 3226687 | 94.534 | 3151.13 | | | 2.00 |
| 112) Fluorene | (3) | 17.625(-0.001) | 166 | 3026625 | 92.210 | 3073.67 | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | 17.525( 0.000) | 204 | 1365593 | 101.783 | 3392.78 | | | 1.00 |
| 115) 4-Nitroaniline | (3) | 17.585(-0.001) | 138 | 875346 | 83.426 | 2780.86 | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | 17.615( 0.001) | 198 | 669688 | 102.518 | 3417.27 | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.745( 0.000) | 169 | 2048497 | 90.444 | 3014.80 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | 18.482( 0.000) | 248 | 748765 | 97.932 | 3264.40 | | | 1.00 |
| 128) Hexachlorobenzene | (4) | 18.652( 0.001) | 284 | 869167 | 97.283 | 3242.76 | | | 1.00 |
| 132) Pentachlorophenol | (4) | 18.961( 0.000) | 266 | 441201 | 70.675 | 2355.82 | | | 5.00 |
| 138) Phenanthrene | (4) | 19.370( 0.000) | 178 | 4194670 | 99.573 | 3319.09 | | | 1.00 |
| 139) Anthracene | (4) | 19.450( 0.000) | 178 | 4328344 | 102.023 | 3400.78 | | | 1.00 |
| 141) Carbazole | (4) | 19.659( 0.000) | 167 | 3840027 | 95.423 | 3180.78 | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | 20.037( 0.000) | 149 | 6175924 | 109.545 | 3651.51 | | | 2.00 |
| 148) Fluoranthene | (4) | 21.122( 0.000) | 202 | 4570885 | 107.698 | 3589.94 | | | 1.00 |
| 155) Pyrene | (5) | 21.442(-0.001) | 202 | 4770302 | 105.105 | 3503.49 | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | 22.112( 0.000) | 149 | 2501323 | 93.364 | 3112.12 | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | 23.112( 0.000) | 252 | 1121804 | 71.039 | 2367.95 | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | 23.273( 0.000) | 228 | 3806267 | 97.757 | 3258.58 | | | 1.00 |
| 169) Chrysene | (5) | 23.353( 0.000) | 228 | 3545090 | 98.770 | 3292.32 | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | 22.942( 0.000) | 149 | 3294557 | 91.550 | 3051.66 | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | 24.244( 0.000) | 149 | 5650149 | 106.623 | 3554.10 | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | 25.801( 0.000) | 252 | 3441333 | 102.247 | 3408.25 | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | 25.882( 0.000) | 252 | 3326233 | 100.947 | 3364.92 | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | 26.829( 0.000) | 252 | 3090850 | 103.300 | 3443.34 | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | 31.325(-0.001) | 276 | 3478600 | 99.492 | 3316.40 | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | 31.325(-0.001) | 278 | 2947376 | 106.059 | 3535.29 | | | 1.00 |

5GP20MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241633

Data file: /chem/HP06667.i/04mar26.b/cc466.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 182) Benzo(g,h,i)perylene | (6) | 32.658 | ( 0.000) | 276 | 2785473 | 97.448 | 3248.27 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

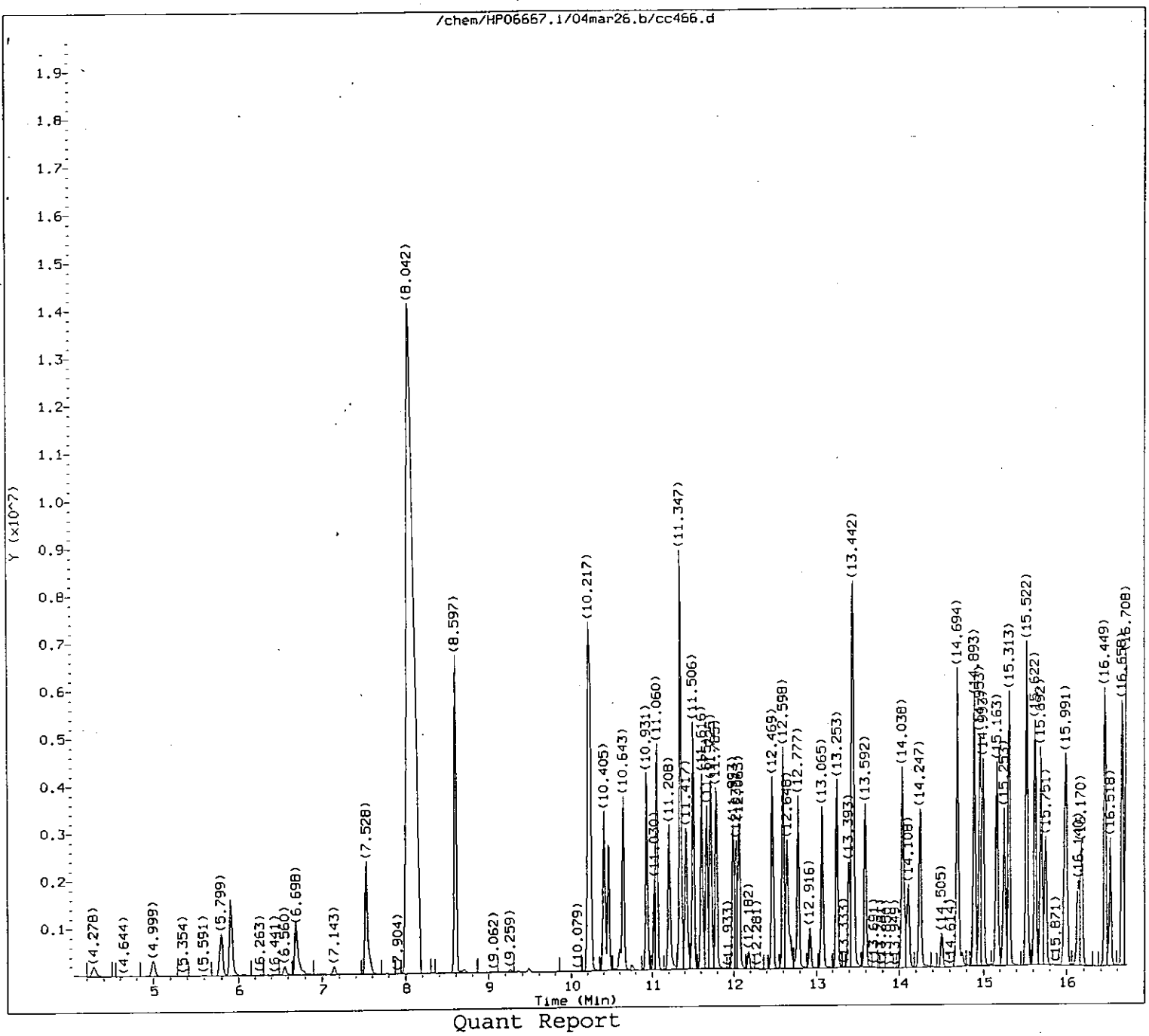
Total number of targets = 64

Comments:

Analyst: Susan J. Schuering 1487 Date: 3/26/04
Auditor: [illegible] Date: 3/26/04



0393




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc466.d
Injection date and time: 26-MAR-2004 09:04

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

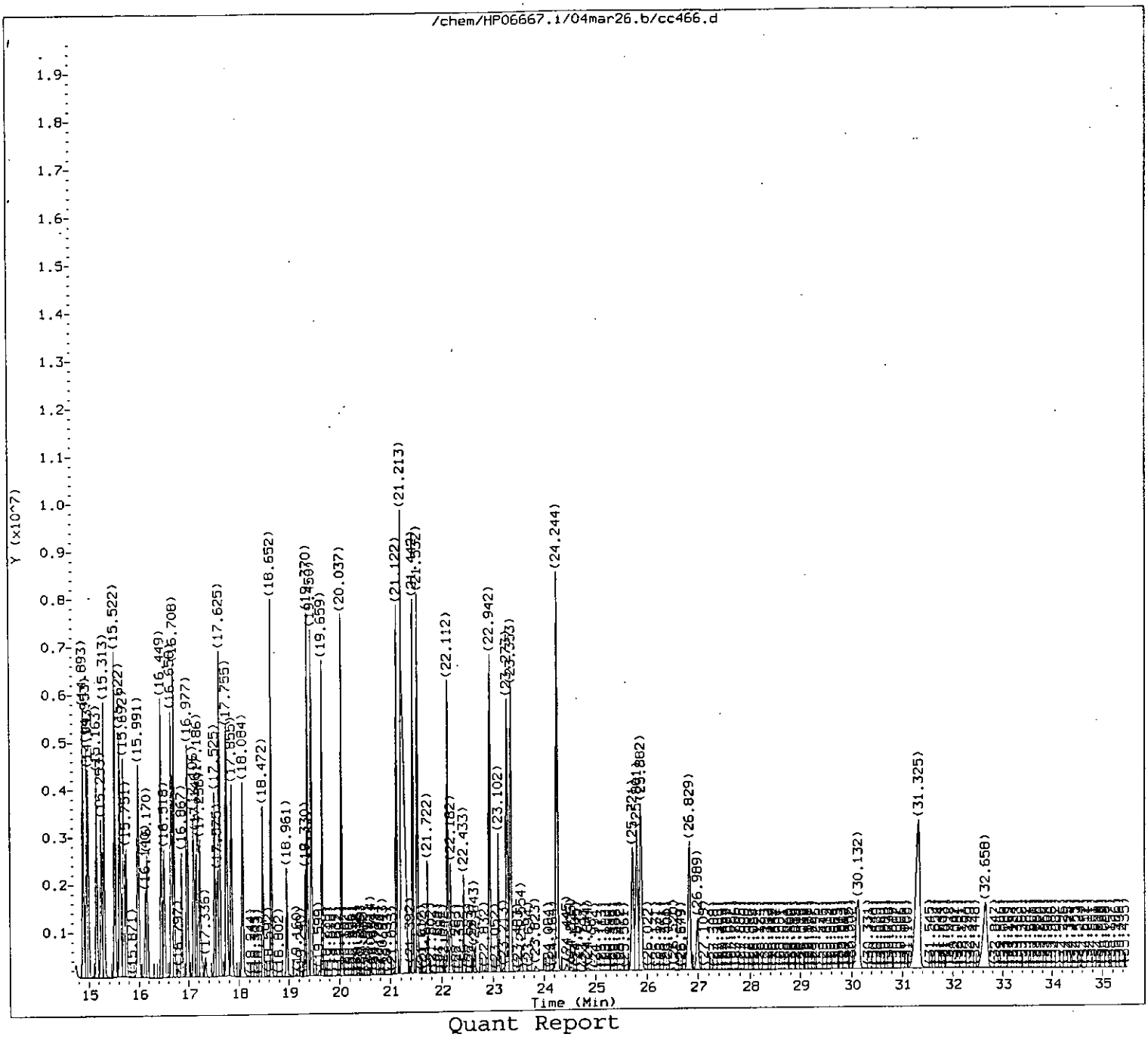
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Sample Name: 5GP20MSD

Lab Sample ID: 4241633

0394

3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc466.d
Injection date and time: 26-MAR-2004 09:04

Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Sample Name: 5GP20MSD

Lab Sample ID: 4241633

8395

3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc466.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 09:04  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Sample Name: 5GP20MSD  Lab Sample ID: 4241633

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 17) | Phenol | (1) | 10.237 | 94 | 2507258 | 86.502 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.465 | 93 | 1761312 | 79.294 |
| 20) | 2-Chlorophenol | (1) | 10.643 | 128 | 2006488 | 91.417 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.931 | 146 | 1863887 | 83.358 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.030 | 152 | 551628 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.060 | 146 | 1999898 | 86.196 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.347 | 146 | 1988105 | 89.770 |
| 28) | 2-Methylphenol | (1) | 11.347 | 108 | 1923153 | 92.814 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.417 | 45 | 2798722 | 83.679 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.675 | 70 | 1193816 | 72.293 |
| 35) | 4-Methylphenol | (1) | 11.616 | 108 | 1837436 | 88.363 |
| 39) | Hexachloroethane | (1) | 11.993 | 117 | 751308 | 77.520 |
| 41) | Nitrobenzene | (2) | 12.063 | 77 | 1661899 | 72.760 |
| 43) | Isophorone | (2) | 12.469 | 82 | 3234632 | 74.983 |
| 44) | 2-Nitrophenol | (2) | 12.648 | 139 | 1109210 | 95.385 |
| 46) | 2,4-Dimethylphenol | (2) | 12.598 | 107 | 1751472 | 84.477 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.777 | 93 | 2168491 | 92.702 |
| 51) | 2,4-Dichlorophenol | (2) | 13.065 | 162 | 1454244 | 96.342 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.253 | 180 | 1459597 | 94.398 |
| 54) | Naphthalene-d8 | (2) | 13.393 | 136 | 2094072 | 40.000 |
| 55) | Naphthalene | (2) | 13.432 | 128 | 6145749 | 97.646 |
| 57) | 4-Chloroaniline | (2) | 13.452 | 127 | 2871872 | 85.902 |
| 61) | Hexachlorobutadiene | (2) | 13.592 | 225 | 773706 | 91.057 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.247 | 107 | 1451608 | 85.313 |
| 72) | 2-Methylnaphthalene | (2) | 14.694 | 142 | 3587483 | 99.621 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.963 | 237 | 1659508 | 213.813 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.163 | 196 | 983645 | 95.890 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.253 | 196 | 1084247 | 104.420 |
| 86) | 2-Chloronaphthalene | (3) | 15.622 | 162 | 3128148 | 91.929 |
| 90) | 2-Nitroaniline | (3) | 15.751 | 138 | 1317203 | 98.299 |
| 93) | Dimethylphthalate | (3) | 16.000 | 163 | 3693449 | 96.080 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.170 | 165 | 869750 | 89.468 |
| 96) | Acenaphthylene | (3) | 16.449 | 152 | 4837637 | 109.249 |
| 98) | 3-Nitroaniline | (3) | 16.518 | 138 | 926307 | 90.192 |
| 99) | Acenaphthene-d10 | (3) | 16.658 | 164 | 1010098 | 40.000 |
| 100) | Acenaphthene | (3) | 16.718 | 153 | 2846836 | 99.648 |
| 101) | 2,4-Dinitrophenol | (3) | 16.668 | 184 | 485838 | 85.188 |
| 104) | 4-Nitrophenol | (3) | 16.668 | 109 | 375295 | 66.457 |
| 105) | Dibenzofuran | (3) | 16.977 | 168 | 3784398 | 93.699 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.867 | 165 | 991884 | 93.569 |
| 110) | Diethylphthalate | (3) | 17.196 | 149 | 3226687 | 94.534 |
| 112) | Fluorene | (3) | 17.625 | 166 | 3026625 | 92.210 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.525 | 204 | 1365593 | 101.783 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc466.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 09:04  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 09:47 sls01495

Sample Name: 5GP20MSD  Lab Sample ID: 4241633

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 115) | 4-Nitroaniline | (3) | 17.585 | 138 | 875346 | 83.426 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.615 | 198 | 669688 | 102.518 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.745 | 169 | 2048497 | 90.444 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.482 | 248 | 748765 | 97.932 |
| 128) | Hexachlorobenzene | (4) | 18.652 | 284 | 869167 | 97.283 |
| 132) | Pentachlorophenol | (4) | 18.961 | 266 | 441201 | 70.675 |
| 136) | Phenanthrene-d10 | (4) | 19.330 | 188 | 1447834 | 40.000 |
| 138) | Phenanthrene | (4) | 19.370 | 178 | 4194670 | 99.573 |
| 139) | Anthracene | (4) | 19.450 | 178 | 4328344 | 102.023 |
| 141) | Carbazole | (4) | 19.659 | 167 | 3840027 | 95.423 |
| 143) | Di-n-butylphthalate | (4) | 20.037 | 149 | 6175924 | 109.545 |
| 148) | Fluoranthene | (4) | 21.122 | 202 | 4570885 | 107.698 |
| 155) | Pyrene | (5) | 21.442 | 202 | 4770302 | 105.105 |
| 162) | Butylbenzylphthalate | (5) | 22.112 | 149 | 2501323 | 93.364 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.112 | 252 | 1121804 | 71.039 |
| 167) | Benzo(a)anthracene | (5) | 23.273 | 228 | 3806267 | 97.757 |
| 168) | Chrysene-d12 | (5) | 23.293 | 240 | 1331007 | 40.000 |
| 169) | Chrysene | (5) | 23.353 | 228 | 3545090 | 98.770 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.942 | 149 | 3294557 | 91.550 |
| 172) | Di-n-octylphthalate | (6) | 24.244 | 149 | 5650149 | 106.623 |
| 174) | Benzo(b)fluoranthene | (6) | 25.801 | 252 | 3441333 | 102.247 |
| 175) | Benzo(k)fluoranthene | (6) | 25.882 | 252 | 3326233 | 100.947 |
| 176) | Benzo(a)pyrene | (6) | 26.829 | 252 | 3090850 | 103.300 |
| 177) | Perylene-d12 | (6) | 26.989 | 264 | 1046054 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.325 | 276 | 3478600 | 99.492 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.325 | 278 | 2947376 | 106.059 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.658 | 276 | 2785473 | 97.448 |
| 9) | 2-Fluorophenol | (1) | 8.597 | 112 | 3862263 | 184.533 |
| 16) | Phenol-d6 | (1) | 10.217 | 99 | 4563300 | 170.785 |
| 40) | Nitrobenzene-d5 | (2) | 12.033 | 82 | 1813902 | 71.748 |
| 80) | 2-Fluorobiphenyl | (3) | 15.313 | 172 | 3531958 | 96.509 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.084 | 330 | 894735 | 199.739 |
| 157) | Terphenyl-d14 | (5) | 21.532 | 244 | 3166221 | 107.101 |

M = Compound was manually integrated.  A = User selected an alternate hit

# 085LBLCS3

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 085LBLCS

Data file: /chem/HP06667.i/04mar26.b/cc463.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:56 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 22) 1,4-Dichlorobenzene-d4 | 11.038 | ( 0.005) | 709 | 152.0 | 564319 | ( 5) | 40.00 | |
| 54) Naphthalene-d8 | 13.411 | (-0.009) | 948 | 136.0 | 2206948 | ( 3) | 40.00 | |
| 99) Acenaphthene-d10 | 16.667 | ( 0.005) | 1275 | 164.0 | 1109398 | ( 10) | 40.00 | |
| 136) Phenanthrene-d10 | 19.330 | ( 0.004) | 1542 | 188.0 | 1529251 | ( 6) | 40.00 | |
| 168) Chrysene-d12 | 23.309 | (-0.009) | 1940 | 240.0 | 1389360 | ( 6) | 40.00 | |
| 177) Perylene-d12 | 27.001 | (-0.006) | 2309 | 264.0 | 1124403 | ( 2) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.605 | ( 0.000) | 112 | 3924588 | 183.294 | 92% | | 41 - 119 |
| 16) Phenol-d6 | (1) | 10.225 | (-0.002) | 99 | 4831294 | 176.748 | 88% | | 45 - 120 |
| 40) Nitrobenzene-d5 | (2) | 12.041 | ( 0.000) | 82 | 1953832 | 73.330 | 73% | | 47 - 128 |
| 80) 2-Fluorobiphenyl | (3) | 15.321 | ( 0.000) | 172 | 3823461 | 95.123 | 95% | | 55 - 123 |
| 120) 2,4,6-Tribromophenol | (3) | 18.094 | (-0.001) | 330 | 1002491 | 203.763 | 102% | | 46 - 136 |
| 157) Terphenyl-d14 | (5) | 21.538 | ( 0.000) | 244 | 3337334 | 108.147 | 108% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17) Phenol | (1) | 10.255 | (-0.002) | 94 | 2622807 | 88.454 | 2948.47 | | | 1.00 |
| 19) bis(2-Chloroethyl)ether | (1) | 10.473 | (-0.001) | 93 | 1919243 | 84.461 | 2815.37 | | | 1.00 |
| 20) 2-Chlorophenol | (1) | 10.661 | (-0.002) | 128 | 2086866 | 92.940 | 3098.01 | | | 1.00 |
| 21) 1,3-Dichlorobenzene | (1) | 10.948 | (-0.001) | 146 | 2031902 | 88.829 | 2960.95 | | | 1.00 |
| 23) 1,4-Dichlorobenzene | (1) | 11.078 | (-0.001) | 146 | 2152807 | 90.700 | 3023.33 | | | 1.00 |
| 26) 1,2-Dichlorobenzene | (1) | 11.365 | (-0.001) | 146 | 2103502 | 92.844 | 3094.81 | | | 1.00 |
| 28) 2-Methylphenol | (1) | 11.365 | (-0.001) | 108 | 1994137 | 94.075 | 3135.84 | | | 1.00 |
| 29) 2,2'-oxybis(1-Chloropropane) | (1) | 11.435 | (-0.001) | 45 | 2988229 | 87.336 | 2911.20 | | | 1.00 |
| 33) N-Nitroso-di-n-propylamine | (1) | 11.683 | (-0.001) | 70 | 1257173 | 74.417 | 2480.57 | | | 1.00 |
| 35) 4-Methylphenol | (1) | 11.623 | (-0.001) | 108 | 1959040 | 92.093 | 3069.75 | | | 2.00 |
| 39) Hexachloroethane | (1) | 12.011 | (-0.001) | 117 | 804256 | 81.117 | 2703.90 | | | 1.00 |
| 41) Nitrobenzene | (2) | 12.080 | ( 0.000) | 77 | 1761393 | 73.172 | 2439.07 | | | 1.00 |
| 43) Isophorone | (2) | 12.487 | ( 0.000) | 82 | 3484658 | 76.648 | 2554.93 | | | 1.00 |
| 44) 2-Nitrophenol | (2) | 12.656 | ( 0.001) | 139 | 1168813 | 95.370 | 3179.01 | | | 1.00 |
| 46) 2,4-Dimethylphenol | (2) | 12.616 | ( 0.000) | 107 | 1833472 | 83.909 | 2796.98 | | | 1.00 |
| 48) bis(2-Chloroethoxy)methane | (2) | 12.795 | ( 0.000) | 93 | 2321344 | 94.161 | 3138.70 | | | 1.00 |
| 51) 2,4-Dichlorophenol | (2) | 13.093 | (-0.001) | 162 | 1536540 | 96.587 | 3219.58 | | | 1.00 |
| 52) 1,2,4-Trichlorobenzene | (2) | 13.262 | ( 0.001) | 180 | 1575482 | 96.682 | 3222.72 | | | 1.00 |
| 55) Naphthalene | (2) | 13.451 | ( 0.000) | 128 | 6499150 | 97.980 | 3265.99 | | | 1.00 |
| 57) 4-Chloroaniline | (2) | 13.461 | ( 0.001) | 127 | 2071162 | 58.783 | 1959.44 | | | 1.00 |
| 61) Hexachlorobutadiene | (2) | 13.600 | ( 0.001) | 225 | 859397 | 95.969 | 3198.96 | | | 2.00 |
| 70) 4-Chloro-3-methylphenol | (2) | 14.265 | ( 0.000) | 107 | 1558050 | 86.885 | 2896.18 | | | 2.00 |

# 085LBLCS3

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 085LBLCS

Data file: /chem/HP06667.i/04mar26.b/cc463.d Blank Data file reference:**/chem/HP06667.i/04mar26.b/cc462.d**
Injection date and time: 26-MAR-2004 06:56 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 72) 2-Methylnaphthalene | (2) | 14.712( 0.001) | 142 | 3874835 | 102.097 | 3403.23 | | | 1.00 |
| 74) Hexachlorocyclopentadiene | (3) | 14.971( 0.000) | 237 | 2094965 | 245.758 | 8191.93 | | E | 5.00 |
| 77) 2,4,6-Trichlorophenol | (3) | 15.181( 0.000) | 196 | 1052038 | 93.378 | 3112.60 | | | 1.00 |
| 79) 2,4,5-Trichlorophenol | (3) | 15.261( 0.000) | 196 | 1158311 | 101.568 | 3385.60 | | | 1.00 |
| 86) 2-Chloronaphthalene | (3) | 15.641( 0.000) | 162 | 3419654 | 91.500 | 3050.01 | | | 1.00 |
| 90) 2-Nitroaniline | (3) | 15.760( 0.000) | 138 | 1392136 | 94.592 | 3153.06 | | | 1.00 |
| 93) Dimethylphthalate | (3) | 16.010( 0.000) | 163 | 3934255 | 93.184 | 3106.13 | | | 2.00 |
| 95) 2,6-Dinitrotoluene | (3) | 16.189(-0.001) | 165 | 939010 | 87.946 | 2931.55 | | | 1.00 |
| 96) Acenaphthylene | (3) | 16.468(-0.001) | 152 | 5169779 | 106.300 | 3543.33 | | | 1.00 |
| 98) 3-Nitroaniline | (3) | 16.528(-0.001) | 138 | 796983 | 70.654 | 2355.14 | | | 2.00 |
| 100) Acenaphthene | (3) | 16.727(-0.001) | 153 | 3111812 | 99.173 | 3305.77 | | | 1.00 |
| 101) 2,4-Dinitrophenol | (3) | 16.677(-0.001) | 184 | 553325 | 88.337 | 2944.58 | | | 20.00 |
| 104) 4-Nitrophenol | (3) | 16.677(-0.001) | 109 | 413720 | 66.704 | 2223.47 | | | 5.00 |
| 105) Dibenzofuran | (3) | 16.996(-0.001) | 168 | 4049657 | 91.292 | 3043.08 | | | 1.00 |
| 106) 2,4-Dinitrotoluene | (3) | 16.877(-0.001) | 165 | 1078817 | 92.660 | 3088.68 | | | 2.00 |
| 110) Diethylphthalate | (3) | 17.206(-0.001) | 149 | 3582722 | 95.570 | 3185.66 | | | 2.00 |
| 112) Fluorene | (3) | 17.635(-0.001) | 166 | 3346001 | 92.816 | 3093.86 | | | 1.00 |
| 113) 4-Chlorophenyl-phenylether | (3) | 17.545(-0.001) | 204 | 1495348 | 101.478 | 3382.62 | | | 1.00 |
| 115) 4-Nitroaniline | (3) | 17.595(-0.001) | 138 | 835793 | 72.526 | 2417.55 | | | 2.00 |
| 116) 4,6-Dinitro-2-methylphenol | (4) | 17.635( 0.000) | 198 | 713669 | 103.434 | 3447.81 | | | 5.00 |
| 118) N-Nitrosodiphenylamine | (4) | 17.765(-0.001) | 169 | 2245599 | 93.868 | 3128.92 | | | 1.00 |
| 126) 4-Bromophenyl-phenylether | (4) | 18.492( 0.000) | 248 | 813915 | 100.786 | 3359.52 | | | 1.00 |
| 128) Hexachlorobenzene | (4) | 18.662( 0.000) | 284 | 953454 | 101.035 | 3367.83 | | | 1.00 |
| 132) Pentachlorophenol | (4) | 18.971(-0.001) | 266 | 497042 | 75.381 | 2512.68 | | | 5.00 |
| 138) Phenanthrene | (4) | 19.380(-0.001) | 178 | 4507557 | 101.303 | 3376.78 | | | 1.00 |
| 139) Anthracene | (4) | 19.460(-0.001) | 178 | 4726707 | 105.482 | 3516.05 | | | 1.00 |
| 141) Carbazole | (4) | 19.670(-0.001) | 167 | 4220284 | 99.289 | 3309.64 | | | 1.00 |
| 143) Di-n-butylphthalate | (4) | 20.049( 0.000) | 149 | 6258545 | 105.100 | 3503.35 | | | 2.00 |
| 148) Fluoranthene | (4) | 21.127( 0.000) | 202 | 4921127 | 109.777 | 3659.25 | | | 1.00 |
| 155) Pyrene | (5) | 21.448( 0.000) | 202 | 4997199 | 105.480 | 3515.99 | | | 1.00 |
| 162) Butylbenzylphthalate | (5) | 22.128( 0.000) | 149 | 2613880 | 93.467 | 3115.57 | | | 2.00 |
| 165) 3,3'-Dichlorobenzidine | (5) | 23.118( 0.000) | 252 | 779886 | 47.312 | 1577.08 | | | 2.00 |
| 167) Benzo(a)anthracene | (5) | 23.278( 0.000) | 228 | 4113047 | 101.200 | 3373.33 | | | 1.00 |
| 169) Chrysene | (5) | 23.359( 0.000) | 228 | 3855329 | 102.902 | 3430.06 | | | 1.00 |
| 170) bis(2-Ethylhexyl)phthalate | (5) | 22.948( 0.000) | 149 | 3702846 | 98.574 | 3285.80 | | | 5.00 |
| 172) Di-n-octylphthalate | (6) | 24.251( 0.000) | 149 | 6204116 | 108.919 | 3630.63 | | | 2.00 |
| 174) Benzo(b)fluoranthene | (6) | 25.820( 0.000) | 252 | 3611301 | 99.821 | 3327.36 | | | 1.00 |
| 175) Benzo(k)fluoranthene | (6) | 25.901( 0.000) | 252 | 3762740 | 106.238 | 3541.26 | | | 1.00 |
| 176) Benzo(a)pyrene | (6) | 26.851(-0.001) | 252 | 3365060 | 104.628 | 3487.61 | | | 1.00 |
| 179) Indeno(1,2,3-cd)pyrene | (6) | 31.360(-0.002) | 276 | 3816715 | 101.556 | 3385.20 | | | 1.00 |
| 181) Dibenz(a,h)anthracene | (6) | 31.349(-0.002) | 278 | 3238363 | 108.410 | 3613.65 | | | 1.00 |

# 085LBLCS3

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 085LBLCS

Data file: /chem/HP06667.i/04mar26.b/cc463.d Blank Data file reference:/chem/HP06667.i/04mar26.b/cc462.d
Injection date and time: 26-MAR-2004 06:56 Instrument ID: HP06667.i Batch: 04085SLB
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 06:42
Mid Level Daily Calibration Standard Reference: /chem/HP06667.i/04mar26.b/cc461.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 182) Benzo(g,h,i)perylene | (6) | 32.693 | (-0.001) | 276 | 3081045 | 100.278 | 3342.59 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

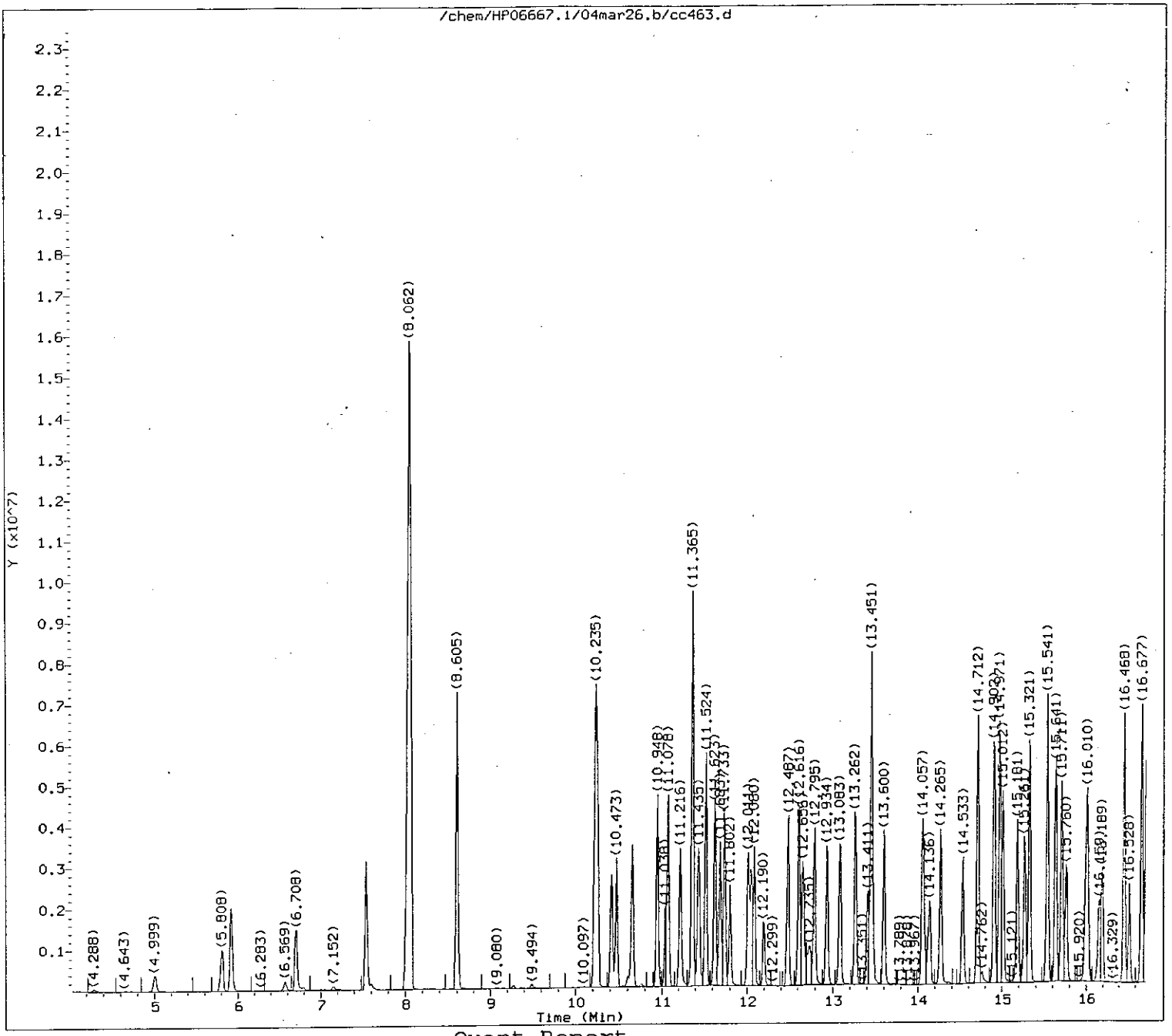
Total number of targets = 64

Comments:

Analyst: Susan J. Schoening 1442 Date: 3/26/04
Auditor: [illegible] Date: 3/28/04



0408




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc463.d
Injection date and time: 26-MAR-2004 06:56

Instrument ID: HP06667.i
Analyst ID: sls01495

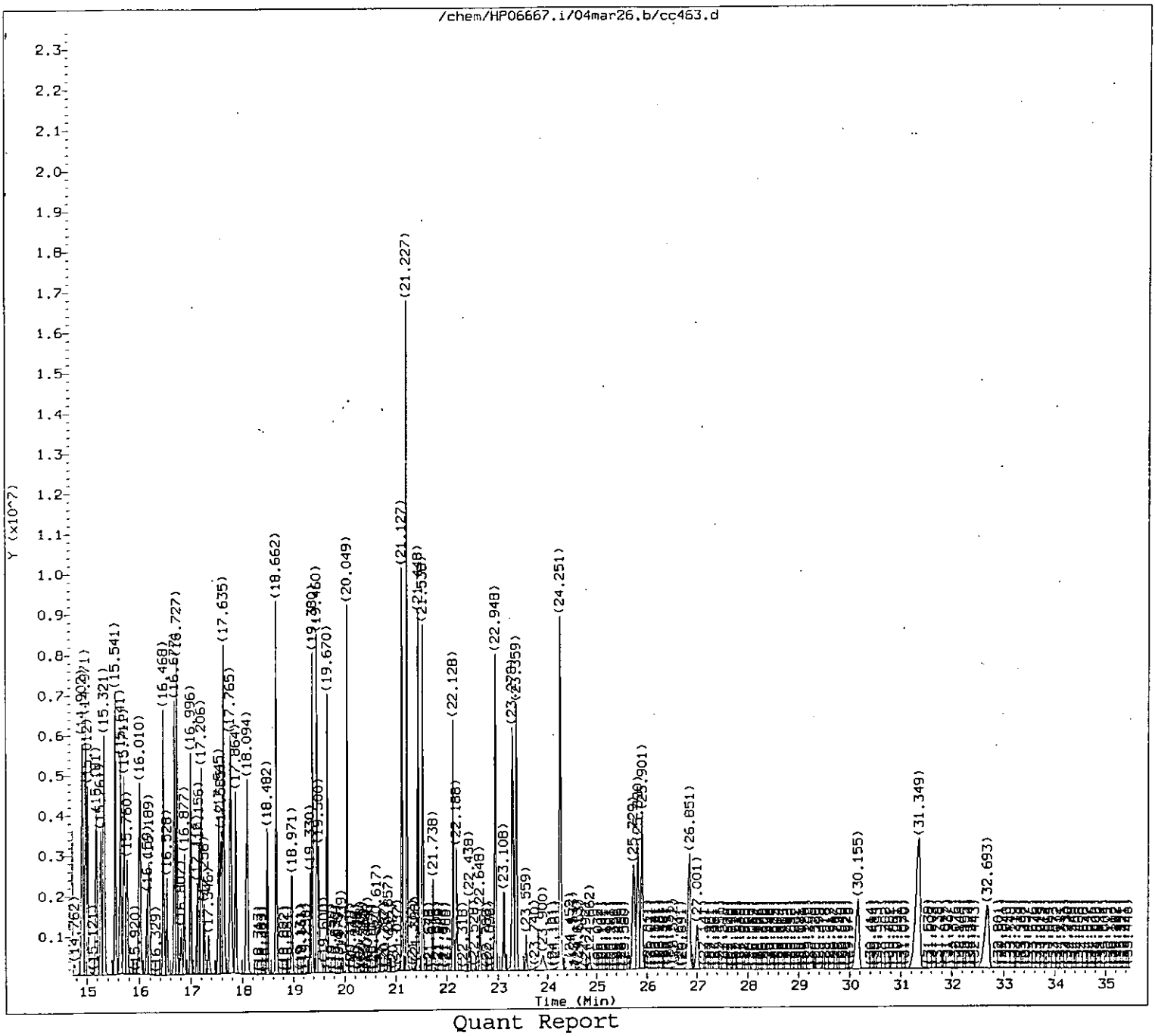
Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Sample Name: 085LBLCS3

Lab Sample ID: 085LBLCS




Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc463.d
Injection date and time: 26-MAR-2004 06:56
Instrument ID: HP06667.i
Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 06:42
Sublist used: STC804
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Sample Name: 085LBLCS3
Lab Sample ID: 085LBLCS

0482

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc463.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 06:56  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Sample Name: 085LBLCS3  Lab Sample ID: 085LBLCS

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 17) | Phenol | (1) | 10.255 | 94 | 2622807 | 88.454 |
| 19) | bis(2-Chloroethyl)ether | (1) | 10.473 | 93 | 1919243 | 84.461 |
| 20) | 2-Chlorophenol | (1) | 10.661 | 128 | 2086866 | 92.940 |
| 21) | 1,3-Dichlorobenzene | (1) | 10.948 | 146 | 2031902 | 88.829 |
| 22) | 1,4-Dichlorobenzene-d4 | (1) | 11.038 | 152 | 564319 | 40.000 |
| 23) | 1,4-Dichlorobenzene | (1) | 11.078 | 146 | 2152807 | 90.700 |
| 26) | 1,2-Dichlorobenzene | (1) | 11.365 | 146 | 2103502 | 92.844 |
| 28) | 2-Methylphenol | (1) | 11.365 | 108 | 1994137 | 94.075 |
| 29) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.435 | 45 | 2988229 | 87.336 |
| 33) | N-Nitroso-di-n-propylamine | (1) | 11.683 | 70 | 1257173 | 74.417 |
| 35) | 4-Methylphenol | (1) | 11.623 | 108 | 1959040 | 92.093 |
| 39) | Hexachloroethane | (1) | 12.011 | 117 | 804256 | 81.117 |
| 41) | Nitrobenzene | (2) | 12.080 | 77 | 1761393 | 73.172 |
| 43) | Isophorone | (2) | 12.487 | 82 | 3484658 | 76.648 |
| 44) | 2-Nitrophenol | (2) | 12.656 | 139 | 1168813 | 95.370 |
| 46) | 2,4-Dimethylphenol | (2) | 12.616 | 107 | 1833472 | 83.909 |
| 48) | bis(2-Chloroethoxy)methane | (2) | 12.795 | 93 | 2321344 | 94.161 |
| 51) | 2,4-Dichlorophenol | (2) | 13.093 | 162 | 1536540 | 96.587 |
| 52) | 1,2,4-Trichlorobenzene | (2) | 13.262 | 180 | 1575482 | 96.682 |
| 54) | Naphthalene-d8 | (2) | 13.411 | 136 | 2206948 | 40.000 |
| 55) | Naphthalene | (2) | 13.451 | 128 | 6499150 | 97.980 |
| 57) | 4-Chloroaniline | (2) | 13.461 | 127 | 2071162 | 58.783 |
| 61) | Hexachlorobutadiene | (2) | 13.600 | 225 | 859397 | 95.969 |
| 70) | 4-Chloro-3-methylphenol | (2) | 14.265 | 107 | 1558050 | 86.885 |
| 72) | 2-Methylnaphthalene | (2) | 14.712 | 142 | 3874835 | 102.097 |
| 74) | Hexachlorocyclopentadiene | (3) | 14.971 | 237 | 2094965 | 245.758 |
| 77) | 2,4,6-Trichlorophenol | (3) | 15.181 | 196 | 1052038 | 93.378 |
| 79) | 2,4,5-Trichlorophenol | (3) | 15.261 | 196 | 1158311 | 101.568 |
| 86) | 2-Chloronaphthalene | (3) | 15.641 | 162 | 3419654 | 91.500 |
| 90) | 2-Nitroaniline | (3) | 15.760 | 138 | 1392136 | 94.592 |
| 93) | Dimethylphthalate | (3) | 16.010 | 163 | 3934255 | 93.184 |
| 95) | 2,6-Dinitrotoluene | (3) | 16.189 | 165 | 939010 | 87.946 |
| 96) | Acenaphthylene | (3) | 16.468 | 152 | 5169779 | 106.300 |
| 98) | 3-Nitroaniline | (3) | 16.528 | 138 | 796983 | 70.654 |
| 99) | Acenaphthene-d10 | (3) | 16.667 | 164 | 1109398 | 40.000 |
| 100) | Acenaphthene | (3) | 16.727 | 153 | 3111812 | 99.173 |
| 101) | 2,4-Dinitrophenol | (3) | 16.677 | 184 | 553325 | 88.337 |
| 104) | 4-Nitrophenol | (3) | 16.677 | 109 | 413720 | 66.704 |
| 105) | Dibenzofuran | (3) | 16.996 | 168 | 4049657 | 91.292 |
| 106) | 2,4-Dinitrotoluene | (3) | 16.877 | 165 | 1078817 | 92.660 |
| 110) | Diethylphthalate | (3) | 17.206 | 149 | 3582722 | 95.570 |
| 112) | Fluorene | (3) | 17.635 | 166 | 3346001 | 92.816 |
| 113) | 4-Chlorophenyl-phenylether | (3) | 17.545 | 204 | 1495348 | 101.478 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06667.i/04mar26.b/cc463.d  Instrument ID: HP06667.i
Injection date and time: 26-MAR-2004 06:56  Analyst ID: sls01495

Method used: /chem/HP06667.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 06:42
Date, time and analyst ID of latest file update: 26-Mar-2004 07:37 sls01495

Sample Name: 085LBLCS3  Lab Sample ID: 085LBLCS

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 115) | 4-Nitroaniline | (3) | 17.595 | 138 | 835793 | 72.526 |
| 116) | 4,6-Dinitro-2-methylphenol | (4) | 17.635 | 198 | 713669 | 103.434 |
| 118) | N-Nitrosodiphenylamine | (4) | 17.765 | 169 | 2245599 | 93.868 |
| 126) | 4-Bromophenyl-phenylether | (4) | 18.492 | 248 | 813915 | 100.786 |
| 128) | Hexachlorobenzene | (4) | 18.662 | 284 | 953454 | 101.035 |
| 132) | Pentachlorophenol | (4) | 18.971 | 266 | 497042 | 75.381 |
| 136) | Phenanthrene-d10 | (4) | 19.330 | 188 | 1529251 | 40.000 |
| 138) | Phenanthrene | (4) | 19.380 | 178 | 4507557 | 101.303 |
| 139) | Anthracene | (4) | 19.460 | 178 | 4726707 | 105.482 |
| 141) | Carbazole | (4) | 19.670 | 167 | 4220284 | 99.289 |
| 143) | Di-n-butylphthalate | (4) | 20.049 | 149 | 6258545 | 105.100 |
| 148) | Fluoranthene | (4) | 21.127 | 202 | 4921127 | 109.777 |
| 155) | Pyrene | (5) | 21.448 | 202 | 4997199 | 105.480 |
| 162) | Butylbenzylphthalate | (5) | 22.128 | 149 | 2613880 | 93.467 |
| 165) | 3,3'-Dichlorobenzidine | (5) | 23.118 | 252 | 779886 | 47.312 |
| 167) | Benzo(a)anthracene | (5) | 23.278 | 228 | 4113047 | 101.200 |
| 168) | Chrysene-d12 | (5) | 23.309 | 240 | 1389360 | 40.000 |
| 169) | Chrysene | (5) | 23.359 | 228 | 3855329 | 102.902 |
| 170) | bis(2-Ethylhexyl)phthalate | (5) | 22.948 | 149 | 3702846 | 98.574 |
| 172) | Di-n-octylphthalate | (6) | 24.251 | 149 | 6204116 | 108.919 |
| 174) | Benzo(b)fluoranthene | (6) | 25.820 | 252 | 3611301 | 99.821 |
| 175) | Benzo(k)fluoranthene | (6) | 25.901 | 252 | 3762740 | 106.238 |
| 176) | Benzo(a)pyrene | (6) | 26.851 | 252 | 3365060 | 104.628 |
| 177) | Perylene-d12 | (6) | 27.001 | 264 | 1124403 | 40.000 |
| 179) | Indeno(1,2,3-cd)pyrene | (6) | 31.360 | 276 | 3816715 | 101.556 |
| 181) | Dibenz(a,h)anthracene | (6) | 31.349 | 278 | 3238363 | 108.410 |
| 182) | Benzo(g,h,i)perylene | (6) | 32.693 | 276 | 3081045 | 100.278 |
| 9) | 2-Fluorophenol | (1) | 8.605 | 112 | 3924588 | 183.294 |
| 16) | Phenol-d6 | (1) | 10.225 | 99 | 4831294 | 176.748 |
| 40) | Nitrobenzene-d5 | (2) | 12.041 | 82 | 1953832 | 73.330 |
| 80) | 2-Fluorobiphenyl | (3) | 15.321 | 172 | 3823461 | 95.123 |
| 120) | 2,4,6-Tribromophenol | (3) | 18.094 | 330 | 1002491 | 203.763 |
| 157) | Terphenyl-d14 | (5) | 21.538 | 244 | 3337334 | 108.147 |

M = Compound was manually integrated.  A = User selected an alternate hit

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06667 **HP #03**

*** Shift #1 Analyst: Susan J. Schanning *** Shift #2 Analyst: _____

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

Other problems or comments are as follows:

_____

_____

_____

_____

Data Directory Path is - D:\DATA\04MAR20\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | CC360.D | DFTPP | 8270DFTPP0694 | 20 Mar 2004 | 07:21 | | | MR |
| 2 | CC361.D | SSTD050 | STD0754 | 20 Mar 2004 | 07:46 | | | ICAL |
| 3 | CC362.D | SSTD080 | STD0754 | 20 Mar 2004 | 08:52 | | | ICAL |
| 4 | CC363.D | SSTD120 | STD0754 | 20 Mar 2004 | 09:35 | | | ICAL |
| 5 | CC364.D | SSTD030 | STD0754 | 20 Mar 2004 | 10:18 | | | ICAL |
| 6 | CC365.D | SSTD015 | STD0754 | 20 Mar 2004 | 11:01 | | | ICAL |
| 7 | CC366.D | SSTD005 | STD0754 | 20 Mar 2004 | 11:44 | | | ICAL |
| 8 | CC367.D | SSTD001 | 8270MDL0754 | 20 Mar 2004 | 12:27 | | | ICAL |
| 9 | CC368.D | SSTD050 | ICV0754 | 20 Mar 2004 | 13:10 | | | ICAL |
| 3 | CC369.D | SSTD050 | BAS0844 | 20 Mar 2004 | 13:53 | | | NU |
| 91 | CC370.D | SSTD080 | BAS0844 | 20 Mar 2004 | 14:37 | | | NU |
| 92 | CC371.D | SSTD120 | BAS0844 | 20 Mar 2004 | 15:21 | | | NU |
| 93 | CC372.D | SSTD030 | BAS0844 | 20 Mar 2004 | 16:05 | | | NU |
| 94 | CC373.D | SSTD015 | BAS0844 | 20 Mar 2004 | 16:49 | | | NU |
| 95 | CC374.D | SSTD005 | BAS0844 | 20 Mar 2004 | 17:33 | | | NU |
| 96 | CC375.D | SSTD001 | BASMDL0844 | 20 Mar 2004 | 18:17 | | | NU |

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06667 **HP #03**

*** Shift #1 Analyst:_____ *** Shift #2 Analyst: Heartenstine 1980

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

V8270C

Other problems or comments are as follows:

_____

_____

_____

_____

Data Directory Path is - D:\DATA\04MAR26\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | CC460.D | DFTPP | 8270DFTPP0694 | 26 Mar 2004 | 04:55 | | | MR |
| 2 | CC461.D | SSTD050 | STD0754 | 26 Mar 2004 | 05:17 | | | MR |
| 3 | CC462.D | SBLKLB0853 | SBLKLB085 | 26 Mar 2004 | 06:13 | 04085SLB | | MR |
| 4 | CC463.D | 085LBLCS3 | 085LBLCS | 26 Mar 2004 | 06:56 | 04085SLB | | MR |
| 5 | CC464.D | 5GP20 | 4241631 | 26 Mar 2004 | 07:39 | 04085SLB | | MR |
| 6 | CC465.D | 5GP20MS | 4241632 | 26 Mar 2004 | 08:21 | 04085SLB | | MR |
| 7 | CC466.D | 5GP20MSD | 4241633 | 26 Mar 2004 | 09:04 | 04085SLB | | MR |
| 8 | CC467.D | 5GP17 | 4241628 | 26 Mar 2004 | 09:47 | 04085SLB | | MR |
| 9 | CC468.D | 5GP18 | 4241629 | 26 Mar 2004 | 10:30 | 04085SLB | | MR |
| 10 | CC469.D | 5GP19 | 4241630 | 26 Mar 2004 | 11:12 | 04085SLB | | MR |
| 11 | CC470.D | 5GP21 | 4241634 | 26 Mar 2004 | 11:55 | 04085SLB | | MR |
| 12 | CC471.D | 5GP22 | 4241636 | 26 Mar 2004 | 12:38 | 04085SLB | | MR |
| 13 | CC472.D | 2222D | 4241637 | 26 Mar 2004 | 13:21 | 04085SLB | | MR |
| 14 | CC473.D | 5GP23 | 4241638 | 26 Mar 2004 | 14:04 | 04085SLB | | MR |
| 15 | CC474.D | 5GP24 | 4241639 | 26 Mar 2004 | 14:46 | 04085SLB | | MR |

# Extraction/Distillation/Digestion Logs

RUSH

# Organic Extraction Batchlog

Reviewed: Myer 3/24/04
Start Date: 3/23/04
Start Time: 1815:00
Tech 1: S. Applegate
Tech 2:

Prep Analysis # 00381 BNA Soil Extraction
Prep Group # 702 TC8 - Soil/Solid Dept: 26

BATCH NO. 04085SLB026

| QC | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANK6 | PBLKSS | 30.0 | SS0406826A | 1.0 | | | 1.0 | | | | |
| LCS6 | LCSNY | 30.0 | SS0406826A | | MS0407726A | 1.0 | | | | | |
| 4241632MS | 5GP20MS | 30.0 | SS0406826A | | MS0407726A | | | | | 2A | dumpy dry |
| 4241633MSD | 5GP20 | 30.0 | SS0406826A | | MS0407726A | | | | | 2A | |
| | | | | | | | | | | | SLA 3/25/04 |
| | | | | | | | | | | | |

| | Sample # | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4241628 | 5GP17 | 30.0 | SS0406826A | 1.0 | 1.0 | NA | NA | 2A | dumpy | 4688 4689 | 3/30/04 | S |
| 2 | 4241629 | 5GP18 | 30.0 | SS0406826A | | | | | | dumpy, dry | 4688 4689 | 3/30/04 | S |
| 3 | 4241630 | 5GP19 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 4 | 4241631 bkg | 5GP20 | 30.0 | SS0406826A | | | | | | dumpy dry | 4688 4689 | 3/30/04 | S |
| 5 | 4241634 | 5GP21 | 30.0 | SS0406826A | | | | | | dumpy dry | 4688 4689 | 3/30/04 | S |
| 6 | 4241636 | 5GP22 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 7 | 4241637 | 2222D | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 8 | 4241638 | 5GP23 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 9 | 4241639 | 5GP24 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

SLA 3/25/04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| DCM | 183031804 | Mech | A09E35 |
| MeOH | 02637 | | |
| Rack ID: | | Work Station: | Sam 3 |
| Internal Standard | 4800730 | Balance # | 3-3/2 |
| S-bath ID | °C | S-bath ID | °C N-Evap °C |

**Spike Solutions:**

SS0406826A BNA SURROGATE STANDARD
MS0407726A LCS SPIKE MIX KB1027

Documented temps are NIST corrected. 04085SLB026

8488

# Organochlorine Pesticides Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV03**

## LANCASTER LABORATORIES

## TCL Pesticides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **SOLID** | **COMMENTS** |
| BLANKA | PBLKSQ | | X | Method Blank |
| LCSA | LCSNW | | X | Laboratory Control Spike |
| 4241628 | 5GP17 | | X | |
| 4241629 | 5GP18 | | X | |
| 4241630 | 5GP19 | | X | |
| 4241631 | 5GP20 | | X | Background |
| 4241632MS | 5GP20MS | | X | Matrix Spike |
| 4241633MSD | 5GP20MSD | | X | Matrix Spike Dup |
| 4241634 | 5GP21 | | X | |
| 4241636 | 5GP22 | | X | |
| 4241637 | 2222D | | X | |
| 4241638 | 5GP23 | | X | |
| 4241639 | 5GP24 | | X | |
| | | | | |

### A. Sample Preparation:

Florisil cleanup was used to minimize interferences. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1D16082, 1D16082B, 3D16082, 3D16082B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

A retention time update was performed using calibration files 3D16082.06-.07 and the calibration name was changed to 2D16082.

### C. Quality Control:

All reported surrogates are within the QC limits.

The matrix spike data are within the QC limits.

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Lancaster Laboratories

The LCS data are within the QC limits.

**D. Data Interpretation:**

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.

No further interpretation is needed.

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

**Jenifer E. Hess, Group Leader** — **Date** 4/5/04

8412

# QC Summary

# 2F
# SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.: RAV03

GC Column (1): RTX-CLP  ID: .32  GC Column (2): RTXCLPII  ID: .32

| SAMPLE | SAMPLE CODE NO. | TCX 1 % REC # | TCX 2 % REC # | DCB 1 % REC # | DCB 2 % REC # | TOT OUT |
|---|---|---|---|---|---|---|
| 4241628 | 5GP17 | 96 | 92 | 99 | 91 | 0 |
| 4241629 | 5GP18 | 98 | 95 | 100 | 93 | 0 |
| 4241630 | 5GP19 | 96 | 92 | 99 | 90 | 0 |
| 4241631 | 5GP20 | 94 | 91 | 96 | 88 | 0 |
| 4241632 MS | 5GP20MS | 98 | 93 | 100 | 92 | 0 |
| 4241633 MSD | 5GP20MSD | 92 | 88 | 93 | 87 | 0 |
| 4241634 | 5GP21 | 99 | 97 | 103 | 95 | 0 |
| 4241636 | 5GP22 | 100 | 97 | 106 | 96 | 0 |
| 4241637 | 2222D | 89 | 85 | 92 | 82 | 0 |
| 4241638 | 5GP23 | 90 | 86 | 91 | 85 | 0 |
| 4241639 | 5GP24 | 86 | 83 | 91 | 85 | 0 |
| BLANKA | PBLKSQ | 100 | 96 | 96 | 94 | 0 |
| LCSA | LCSNW | 105 | 101 | 99 | 91 | 0 |

ⓢ VLT 4/4/04

| | | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|---|
| TCX | = Tetrachloro-m-xylene | (58 - 149) | 9.62 | ug/Kg |
| DCB | = Decachlorobiphenyl | (62 - 159) | 9.74 | ug/Kg |

# Column to be used to flag recovery values

* Values outside of QC Limits

D Surrogate diluted out

# 3F

## Soil Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV03

Laboratory Control Spike - Sample Code No.: LCSNW

| Compound | Spike Added (ug/kg) | LCS Concen (ug/kg) | LCSD Concen (ug/kg) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 3.34 | 3.29 | | 99 | | (70 - 134) | | 35 |
| gamma-BHC (Lindane) | 3.32 | 3.27 | | 98 | | (74 - 133) | | 35 |
| beta-BHC | 3.48 | 3.32 | | 95 | | (68 - 137) | | 35 |
| delta-BHC | 3.47 | 3.40 | | 98 | | (53 - 167) | | 35 |
| Heptachlor | 3.33 | 3.30 | | 99 | | (72 - 143) | | 35 |
| Aldrin | 3.33 | 3.29 | | 99 | | (74 - 137) | | 35 |
| Heptachlor epoxide | 3.45 | 3.53 | | 102 | | (72 - 132) | | 35 |
| 4,4'-DDE | 6.69 | 6.57 | | 98 | | (71 - 143) | | 35 |
| Endosulfan I | 3.35 | 3.36 | | 100 | | (71 - 130) | | 35 |
| Dieldrin | 6.71 | 6.53 | | 97 | | (71 - 133) | | 35 |
| Endrin | 6.74 | 6.52 | | 97 | | (68 - 133) | | 35 |
| 4,4'-DDD | 6.63 | 5.72 | | 86 | | (60 - 153) | | 35 |
| Endosulfan II | 6.85 | 7.03 | | 103 | | (73 - 134) | | 35 |
| 4,4'-DDT | 6.69 | 6.26 | | 94 | | (67 - 152) | | 35 |
| Endrin aldehyde | 6.71 | 5.50 | | 82 | | (47 - 145) | | 35 |
| Methoxychlor | 33.25 | 29.18 | | 88 | | (56 - 168) | | 35 |
| Endosulfan sulfate | 7.08 | 7.12 | | 101 | | (58 - 133) | | 35 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 17 outside limits

8415

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 040850020A

# 3F
## Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV03

Matrix Spike - Sample Code No.: 5GP20

| Compound | Spike Added (ug/kg) | Sample Concen (ug/kg) | MS Concen (ug/kg) | MSD Concen (ug/kg) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 4.09 | 0 | 4.17 | 3.87 | 102 | 95 | (64 - 134) | 7 | 35 |
| gamma-BHC (Lindane) | 4.07 | 0 | 4.00 | 3.68 | 98 | 90 | (43 - 154) | 8 | 35 |
| beta-BHC | 4.26 | 0 | 3.90 | 3.63 | 92 | 85 | (31 - 176) | 7 | 35 |
| delta-BHC | 4.25 | 0.45 | 4.17 | 3.83 | 88 | 80 | (68 - 158) | 9 | 35 |
| Heptachlor | 4.08 | 0 | 4.14 | 3.77 | 101 | 92 | (70 - 138) | 9 | 35 |
| Aldrin | 4.08 | 0 | 4.20 | 3.74 | 103 | 92 | (58 - 159) | 12 | 35 |
| Heptachlor epoxide | 4.22 | 0 | 4.30 | 3.99 | 102 | 95 | (69 - 133) | 7 | 35 |
| 4,4'-DDE | 8.19 | 0 | 8.32 | 7.71 | 102 | 94 | (48 - 175) | 8 | 35 |
| Endosulfan I | 4.11 | 0 | 4.09 | 3.78 | 100 | 92 | (41 - 166) | 8 | 35 |
| Dieldrin | 8.23 | 0 | 8.07 | 7.43 | 98 | 90 | (68 - 139) | 8 | 35 |
| Endrin | 8.26 | 0 | 8.36 | 7.65 | 101 | 93 | (48 - 188) | 9 | 35 |
| 4,4'-DDD | 8.12 | 1.68 | 7.72 | 6.95 | 74 | 65 | (52 - 181) | 10 | 35 |
| Endosulfan II | 8.39 | 0 | 9.03 | 8.10 | 108 | 97 | (65 - 144) | 11 | 35 |
| 4,4'-DDT | 8.20 | 0 | 8.29 | 7.76 | 101 | 95 | (62 - 166) | 7 | 35 |
| Endrin aldehyde | 8.22 | 0 | 6.72 | 6.29 | 82 | 77 | (63 - 125) | 7 | 35 |
| Methoxychlor | 40.74 | 0 | 37.44 | 35.09 | 92 | 86 | (74 - 162) | 6 | 35 |
| Endosulfan sulfate | 8.68 | 0 | 9.18 | 8.20 | 106 | 94 | (65 - 154) | 11 | 35 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 34 outside limits

5416

Comments:

Sample No.: 4241631 Batch: 040850020A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKSQ

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV03

Lab Sample ID BLANKA

Lab File ID: 3D16082.44R 3D16082B.44R

Matrix: (soil/water) SOIL

Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N

Date Extracted: 3/25/04

Date Analyzed (1): 3/26/04

Date Analyzed (2): 3/26/04

Time Analyzed (1): 09:49:15

Time Analyzed (2): 09:49:15

Instrument ID (1): H5262A

Instrument ID (2): H5262B

GC Column: RTX-CLP ID: 0.32 (mm)

GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | 5GP17 | 4241628 | 3/26/04 | 3/26/04 |
| 02 | 5GP18 | 4241629 | 3/26/04 | 3/26/04 |
| 03 | 5GP19 | 4241630 | 3/26/04 | 3/26/04 |
| 04 | 5GP20 | 4241631 | 3/26/04 | 3/26/04 |
| 05 | 5GP20MS | 4241632 | 3/26/04 | 3/26/04 |
| 06 | 5GP20MSD | 4241633 | 3/26/04 | 3/26/04 |
| 07 | 5GP21 | 4241634 | 3/26/04 | 3/26/04 |
| 08 | 5GP22 | 4241636 | 3/26/04 | 3/26/04 |
| 09 | 2222D | 4241637 | 3/26/04 | 3/26/04 |
| 10 | 5GP23 | 4241638 | 3/26/04 | 3/26/04 |
| 11 | 5GP24 | 4241639 | 3/26/04 | 3/26/04 |
| 12 | PBLKSQ | BLANKA | 3/26/04 | 3/26/04 |
| 13 | LCSNW | LCSA | 3/26/04 | 3/26/04 |

(5) VHT 04

5417

COMMENTS: _____

_____

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKSQ

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** SOIL **Lab Sample ID:** BLANKA

**Sample wt/vol:** 30 (g/ml) g **Lab File ID:** 3D16082.44R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SONC **Date Extracted:** 3/25/04

**Concentrated Extract Volume:** 10000 (uL) **Date Analyzed:** 3/26/04

**Injection Volume:** 1 (uL) **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/kg | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.17 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.17 | U |
| 319-85-7 | beta-BHC | 0.17 | U |
| 319-86-8 | delta-BHC | 0.17 | U |
| 76-44-8 | Heptachlor | 0.17 | U |
| 309-00-2 | Aldrin | 0.51 | U |
| 1024-57-3 | Heptachlor epoxide | 0.17 | U |
| 5103-74-2 | gamma-Chlordane | 0.30 | U |
| 5103-71-9 | alpha-Chlordane | 0.17 | U |
| 72-55-9 | 4,4'-DDE | 0.33 | U |
| 959-98-8 | Endosulfan I | 0.44 | U |
| 60-57-1 | Dieldrin | 0.33 | U |
| 72-20-8 | Endrin | 0.50 | U |
| 72-54-8 | 4,4'-DDD | 0.58 | U |
| 33213-65-9 | Endosulfan II | 0.33 | U |
| 50-29-3 | 4,4'-DDT | 0.33 | U |
| 7421-93-4 | Endrin aldehyde | 1.0 | U |
| 72-43-5 | Methoxychlor | 4.0 | U |
| 1031-07-8 | Endosulfan sulfate | 0.33 | U |
| 53494-70-5 | Endrin ketone | 0.33 | U |
| 12674-11-2 | Aroclor-1016 | 3.3 | U |
| 11104-28-2 | Aroclor-1221 | 10 | U |
| 11141-16-5 | Aroclor-1232 | 4.3 | U |
| 53469-21-9 | Aroclor-1242 | 4.0 | U |
| 12672-29-6 | Aroclor-1248 | 6.0 | U |
| 11097-69-1 | Aroclor-1254 | 3.3 | U |
| 11096-82-5 | Aroclor-1260 | 3.3 | U |
| 8001-35-2 | Toxaphene | 11 | U |

9418

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 01225 Name: TCL Pesticides in Solids

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| gamma-BHC (Lindane) | ug/kg | 0.83 | 0.17 |
| Heptachlor | ug/kg | 0.83 | 0.17 |
| Aldrin | ug/kg | 1.5 | 0.51 |
| 4,4'-DDT | ug/kg | 1.7 | 0.33 |
| Dieldrin | ug/kg | 1.7 | 0.33 |
| Endrin | ug/kg | 1.7 | 0.5 |
| Methoxychlor | ug/kg | 12 | 4 |
| alpha-BHC | ug/kg | 0.83 | 0.17 |
| beta-BHC | ug/kg | 0.83 | 0.17 |
| delta-BHC | ug/kg | 0.83 | 0.17 |
| Heptachlor epoxide | ug/kg | 0.83 | 0.17 |
| 4,4'-DDE | ug/kg | 1.7 | 0.33 |
| 4,4'-DDD | ug/kg | 1.7 | 0.58 |
| Toxaphene | ug/kg | 33 | 11 |
| Endosulfan I | ug/kg | 1.3 | 0.44 |
| Endosulfan II | ug/kg | 1.7 | 0.33 |
| Endosulfan sulfate | ug/kg | 1.7 | 0.33 |
| Endrin aldehyde | ug/kg | 3 | 1 |
| Aroclor-1016 | ug/kg | 17 | 3.3 |
| Aroclor-1221 | ug/kg | 30 | 10 |
| Aroclor-1232 | ug/kg | 17 | 4.3 |
| Aroclor-1242 | ug/kg | 17 | 4 |
| Aroclor-1248 | ug/kg | 18 | 6 |
| Aroclor-1254 | ug/kg | 17 | 3.3 |
| Aroclor-1260 | ug/kg | 17 | 3.3 |
| Endrin ketone | ug/kg | 1.7 | 0.33 |
| alpha-Chlordane | ug/kg | 0.83 | 0.17 |
| gamma-Chlordane | ug/kg | 0.9 | 0.3 |

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241628 F  5GP17  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16--H5262A
Result file : 3D16082.46R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 95.7%  Conc.: 9.203836
%SSR(DCB) : 98.8%  Conc.: 9.621759

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 113907 | 9.203836 |
| **Hcb** | 4.88 | 4.91 | 4.94 | 1321 | 0.062713 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 2217 | 0.143768 |
| **gamma-BHC** | 5.60 | 5.63 | 5.66 | 111 | 0.007229 |
| **delta-BHC** | 5.99 | 6.02 | 6.05 | 1106 | 0.075726 |
| **o,p-DDE** | 7.53 | 7.56 | 7.59 | 1726 | 0.219718 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 7306 | 0.554980 |
| **4,4'-DDE** | 7.99 | 8.00 | 8.05 | 10238 | 0.971304 |
| **o,p-DDT** | 8.55 | 8.61 | 8.61 | 1031 | 0.128948 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 11592 | 1.155615 |
| **4,4'-DDD** | 8.78 | 8.83 | 8.84 | 52835 | 6.187200 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 2628 | 0.262289 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 2151 | 0.261352 |
| **DCB** | 11.86 | 11.88 | 11.92 | 95231 | 9.621759 |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16--H5262B
Result file : 3D16082B.46R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 91.8%  Conc.: 8.826548
%SSR(DCB) : 90.9%  Conc.: 8.857179

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.03 | 4.07 | 148573 | 8.826548 |
| **Hcb** | 4.71 | 4.72 | 4.77 | 244 | 0.007606 |
| **alpha-BHC** | 4.91 | 4.96 | 4.97 | 1005 | 0.039053 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 2448 | 0.109524 |
| **Heptachlor** | 6.04 | 6.10 | 6.10 | 6858 | 0.288334 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 4075 | 0.230370 |
| **Hept. epoxide** | 7.27 | 7.29 | 7.33 | 12565 | 0.704793 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 1565 | 0.098906 |
| **4,4'-DDE** | 7.93 | 7.98 | 7.99 | 10827 | 0.774604 |
| **Endrin** | 8.54 | 8.56 | 8.60 | 2175 | 0.175616 |
| **o,p-DDT** | 8.58 | 8.64 | 8.64 | 9724 | 1.061314 |
| **4,4'-DDD** | 8.68 | 8.70 | 8.74 | 56590 | 5.778068 |
| **Endosulfan II** | 8.82 | 8.86 | 8.88 | 12853 | 1.106077 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 23200 | 2.372974 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 6146 | 0.668086 |
| **Endrin ketone** | 10.30 | 10.30 | 10.36 | 5636 | 0.519806 |
| **DCB** | 12.01 | 12.03 | 12.07 | 95726 | 8.857179 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.203836 | | | | 4.19 | |
| Hcb | A | 0.062713 | | | | ** 156.73 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | A | 0.971304 | <1.7 | 0.33 | J | 22.53 | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | B | 1.061314 | | | | ** 156.67 | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 6.187200 | 1.7 | 0.58 | | 6.84 | |
| Endosulfan II | | | <1.7 | <0.33 | | | 8421 |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 15:19:01

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241628 F 5GP17 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16-H5262A
Result file : 3D16082.46R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16-H5262B
Result file : 3D16082B.46R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.621759 | | | | 8.28 | |

Units: ug/kg X

Reviewed by: M-E, M, 1340 Date: 3/29/04
Verified by: [signature] Date: 3/29/04

8422

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 15:19:01

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4241628** F 5GP17 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 26, 2004 10:30:18
**Instrument** H5262A
**Result file** 3D16082.46R
**Calibration file** 2D16082
**Method file** PESTD

%SSR(TCX) 95.7% Conc: 9.203836
%SSR(DCB) 98.8% Conc: 9.621759

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 7.60 | 7.63 | 7.66 | 12632.16796 | 25.038787 | | | 2 |
| 8.13 | 8.16 | 8.19 | 16792.96289 | 25.52929 | | | 3 |
| 8.50 | 8.52 | 8.56 | 11559.32812 | 23.631749 | | | 4 |
| 8.73 | 8.76 | 8.79 | 11592.44433 | 37.412843 | | | 5 |
| 9.10 | 9.13 | 9.16 | 17301.74414 | 35.789406 | | | 6 |

Height summation: **69878.647462**
Concentration CF: **29.480415** L:

## Analysis Report (B)

**Injected on** Mar 26, 2004 10:30:18
**Instrument** H5262B
**Result file** 3D16082B.46R
**Calibration file** 2D16082B
**Method file** PESTDB

%SSR(TCX) 91.8% Conc: 8.826548
%SSR(DCB) 90.9% Conc: 8.857179

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 7801.266602 | 22.944362 | | | 1 |
| 8.10 | 8.13 | 8.16 | 19761.64843 | 27.759959 | | | 3 |
| 8.39 | 8.41 | 8.45 | 11652.78320 | 32.733273 | | | 4 |
| 8.84 | 8.86 | 8.90 | 12852.93847 | 34.744808 | | | 5 |
| 9.08 | 9.11 | 9.14 | 23199.54101 | 44.736667 | | | 6 |

Height summation: **75268.177736**
Concentration CF: **32.583814** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | B | 32.583814 | 17 | 3.3 | | 10.00 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M.S.M 1340 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

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# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241628 F 5GP17 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16--H5262A
Result file : 3D16082.46R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 95.7% Conc.: 9.203836
%SSR(DCB) : 98.8% Conc.: 9.621759

| | Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | | 4 | 107.92 | |
| | 5.35 | 5.40 | 5.41 | 10034.54589 | 23.661516 | | | 2 |
| | 6.01 | 6.02 | 6.07 | 1106.296387 | 3.107188 | | | 3 |
| | 6.29 | 6.29 | 6.35 | 770.260437 | 3.16044 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 787.914429 | 6.509581 | | | 6 |
| Height Summation | | | | **12699.017151** | | | | |
| Amount Avg CF: | | | | **9.109681** | Linear: | | | |
| **Aroclor-1221** | | | | | | 2 | 98.26 | |
| | 4.55 | 4.60 | 4.61 | 461.355225 | 2.820968 | | | 1 |
| | 4.77 | 4.77 | 4.83 | 1483.95813 | 15.66348 | | | 2 |
| Height Summation | | | | **1945.313355** | | | | |
| Amount Avg CF: | | | | **9.242224** | Linear: | | | |
| **Aroclor-1232** | | | | | | 5 | 118.80 | |
| | 5.35 | 5.40 | 5.41 | 10034.54589 | 51.874203 | | | 2 |
| | 6.01 | 6.02 | 6.07 | 1106.296387 | 6.749002 | | | 3 |
| | 6.19 | 6.20 | 6.25 | 822.942261 | 4.664412 | | | 4 |
| | 6.28 | 6.29 | 6.34 | 770.260437 | 6.81134 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 787.914429 | 13.750688 | | | 6 |
| Height Summation | | | | **13521.959412** | | | | |
| Amount Avg CF: | | | | **16.769929** | Linear: | | | |
| **Aroclor-1242** | | | | | | 5 | 120.04 | |
| | 5.35 | 5.40 | 5.41 | 10034.54589 | 27.021437 | | | 2 |
| | 6.01 | 6.02 | 6.07 | 1106.296387 | 3.618896 | | | 3 |
| | 6.19 | 6.20 | 6.25 | 822.942261 | 2.536422 | | | 4 |
| | 6.28 | 6.29 | 6.34 | 770.260437 | 3.726195 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 787.914429 | 6.286217 | | | 6 |
| Height Summation | | | | **13521.959412** | | | | |
| Amount Avg CF: | | | | **8.637833** | Linear: | | | |
| **Aroclor-1248** | | | | | | 6 | 80.79 | |
| | 5.35 | 5.40 | 5.41 | 10034.54589 | 55.181863 | | | 1 |
| | 6.01 | 6.02 | 6.07 | 1106.296387 | 7.992316 | | | 2 |
| | 6.75 | 6.78 | 6.81 | 3574.669189 | 8.150738 | | | 3 |
| | 7.32 | 7.36 | 7.38 | 3749.715332 | 14.489134 | | | 4 |
| | 7.62 | 7.63 | 7.68 | 12632.16796 | 37.881541 | | | 5 |
| | E 8.14 | 8.16 | 8.20 | 16792.96289 | 68.309894 | | | 6 |
| Height Summation | | | | **47890.357666** | | | | |
| Amount Avg CF: | | | | **32.000914** | Linear: | | | |
| **Aroclor-1254** | | | | | | 5 | 22.26 | |
| | 7.60 | 7.63 | 7.66 | 12632.16796 | 25.038787 | | | 2 |
| | 8.13 | 8.16 | 8.19 | 16792.96289 | 25.52929 | | | 3 |
| | 8.50 | 8.52 | 8.56 | 11559.32812 | 23.631749 | | | 4 |
| | 8.73 | 8.76 | 8.79 | 11592.44433 | 37.412843 | | | 5 |
| | 9.10 | 9.13 | 9.16 | 17301.74414 | 35.789406 | | | 6 |
| Height Summation | | | | **69878.647462** | | | | |
| Amount Avg CF: | | | | **29.480415** | Linear: | | | |
| **Aroclor-1260** | | | | | | 6 | 68.84 | |
| | 8.38 | 8.40 | 8.44 | 7429.317383 | 13.764373 | | | 1 |
| | 8.73 | 8.76 | 8.79 | 11592.44433 | 17.646575 | | | 2 |
| | 9.10 | 9.13 | 9.16 | 17301.74414 | 26.886486 | | | 3 |
| | 9.57 | 9.59 | 9.63 | 2150.918213 | 6.654188 | | | 4 |
| | 9.96 | 9.98 | 10.02 | 5045.694824 | 5.79805 | | | 5 |
| | 11.14 | 11.17 | 11.20 | 1120.872192 | 4.710089 | | | 6 |
| Height Summation | | | | **44640.991089** | | | | |
| Amount Avg CF: | | | | **12.576627** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16--H5262B
Result file : 3D16082B.46R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 91.8% Conc.: 8.826548
%SSR(DCB) : 90.9% Conc.: 8.857179

| | Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | | 4 | 75.05 | |
| | 4.72 | 4.76 | 4.78 | 7917.433594 | 22.481392 | | | 1 |
| | 5.91 | 5.93 | 5.97 | 609.039429 | 0.60446 | | | 3 |
| | 6.09 | 6.10 | 6.15 | 6857.956055 | 13.170197 | | | 4 |
| | 6.72 | 6.74 | 6.78 | 4075.224365 | 11.544453 | | | 6 |
| Height Summation | | | | **19459.653443** | | | | |
| Amount Avg CF: | | | | **11.950126** | Linear: | | | |
| **Aroclor-1221** | | | | | | 2 | 25.44 | |
| | 4.64 | 4.65 | 4.70 | 3529.356934 | 23.680602 | | | 2 |
| + | 4.72 | 4.72 | 4.78 | 244.30455 | 0.507904 | | | 3 |
| | 4.72 | 4.76 | 4.78 | 7917.433594 | 16.46019 | | | 3 |
| Height Summation | | | | **11446.790528** | | | | |
| Amount Avg CF: | | | | **20.070396** | Linear: | | | |
| **Aroclor-1232** | | | | | | 4 | 64.38 | |
| + | 4.72 | 4.72 | 4.78 | 244.30455 | 0.6314 | | | 1 |
| | 4.72 | 4.76 | 4.78 | 7917.433594 | 20.46245 | | | 1 |
| | 5.91 | 5.93 | 5.97 | 609.039429 | 1.283309 | | | 3 |
| | 6.09 | 6.10 | 6.15 | 6857.956055 | 28.12136 | | | 4 |
| | 6.71 | 6.74 | 6.77 | 4075.224365 | 25.514803 | | | 6 |
| Height Summation | | | | **19459.653443** | | | | |
| Amount Avg CF: | | | | **18.845481** | Linear: | | | |
| **Aroclor-1242** | | | | | | 4 | 73.46 | |
| + | 4.72 | 4.72 | 4.78 | 244.30455 | 0.747383 | | | 1 |
| | 4.72 | 4.76 | 4.78 | 7917.433594 | 24.221224 | | | 1 |
| | 5.91 | 5.93 | 5.97 | 609.039429 | 0.699069 | | | 3 |
| | 6.09 | 6.10 | 6.15 | 6857.956055 | 15.135969 | | | 4 |
| | 6.72 | 6.74 | 6.78 | 4075.224365 | 12.710251 | | | 6 |
| Height Summation | | | | **19459.653443** | | | | |
| Amount Avg CF: | | | | **13.191628** | Linear: | | | |
| **Aroclor-1248** | | | | | | 5 | 126.45 | |
| | 5.91 | 5.93 | 5.97 | 609.039429 | 1.203754 | | | 2 |
| | 6.71 | 6.74 | 6.77 | 4075.224365 | 7.615889 | | | 3 |
| | 7.21 | 7.22 | 7.27 | 7428.659668 | 15.524096 | | | 4 |
| | 7.57 | 7.61 | 7.63 | 8460.723633 | 17.402988 | | | 5 |
| | E 8.11 | 8.13 | 8.17 | 19761.64843 | 74.642676 | | | 6 |
| Height Summation | | | | **40335.295533** | | | | |
| Amount Avg CF: | | | | **23.277881** | Linear: | 5 | 25.15 | |
| **Aroclor-1254** | | | | | | | 37.13 | |
| | 6.35 | 6.38 | 6.41 | 7801.266602 | 22.944362 | | | 1 |
| E | 7.50 | 7.52 | 7.56 | 49897.26562 | 88.37819 | | | 2 |
| | 8.10 | 8.13 | 8.16 | 19761.64843 | 27.759959 | | | 3 |
| | 8.39 | 8.41 | 8.45 | 11652.78320 | 32.733273 | | | 4 |
| | 8.84 | 8.86 | 8.90 | 12852.93847 | 34.744808 | | | 5 |
| | 9.08 | 9.11 | 9.14 | 23199.54101 | 44.736667 | | | 6 |
| Height Summation | | | | **125165.443361** | | | | |
| Amount Avg CF: | | | | ~~41.688477~~ 32.5630 | Linear: | | | |

8424

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 15:19:22

M.E.H. 1376

3/29/04

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241628** F 5GP17 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16–H5262A
Result file : 3D16082.46R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 3 | 50.35 | |
| 6.18 | 6.20 | 6.24 | 822.942261 | 1.598844 | | | 1 |
| 6.91 | 6.95 | 6.97 | 2466.266113 | 3.770342 | | | 3 |
| 7.89 | 7.94 | 7.95 | 7306.383301 | 5.06399 | | | 5 |
| Height Summation | | | **10595.591675** | | | | |
| Amount Avg CF: | | | **3.477725** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 8.75 | 8.76 | 8.81 | 11592.44433( | 103.802399 | | | 2 |
| Height Summation | | | **11592.444336** | | | | |
| Amount Avg CF: | | | **103.802399** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:30:18
Instrument : CP16–H5262B
Result file : 3D16082B.46R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 6 | 45.50 | |
| 8.36 | 8.41 | 8.42 | 11652.78320: | 19.887977 | | | 1 |
| 8.62 | 8.64 | 8.68 | 9724.448242 | 13.739929 | | | 2 |
| 8.83 | 8.86 | 8.89 | 12852.93847: | 28.274851 | | | 3 |
| 9.08 | 9.11 | 9.14 | 23199.54101( | 34.957125 | | | 4 |
| 9.58 | 9.58 | 9.64 | 18845.60156: | 43.812349 | | | 5 |
| 9.88 | 9.91 | 9.94 | 51463.83984- | 52.855732 | | | 6 |
| Height Summation | | | **127739.152345** | | | | |
| Amount Avg CF: | | | **32.254661** | Linear: | | | |
| **Chlordane** | | | | | 4 | 111.17 | |
| 5.84 | 5.86 | 5.90 | 1773.229736 | 2.418068 | | | 1 |
| 6.05 | 6.10 | 6.11 | 6857.956055 | 6.800663 | | | 2 |
| 6.70 | 6.74 | 6.76 | 4075.224365 | 5.060197 | | | 3 |
| 7.51 | 7.52 | 7.57 | 49897.26562: | 27.959039 | | | 4 |
| Height Summation | | | **62603.675781** | | | | |
| Amount Avg CF: | | | **10.559492** | Linear: | | | |
| **Toxaphene** | | | | | 5 | 84.52 | |
| 8.12 | 8.13 | 8.18 | 19761.64843: | 164.171472 | | | 1 |
| 8.91 | 8.96 | 8.97 | 2207.769043 | 7.37383 | | | 3 |
| 9.25 | 9.29 | 9.31 | 6146.287598 | 28.343237 | | | 4 |
| 9.91 | 9.91 | 9.97 | 51463.83984- | 232.334001 | | | 5 |
| 10.41 | 10.42 | 10.47 | 14904.22753: | 123.246734 | | | 6 |
| Height Summation | | | **94483.772462** | | | | |
| Amount Avg CF: | | | **111.093855** | Linear: | | | |

9425

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 15:19:22

Sample Name: **4241628F AB5GP17 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 10:44:18am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.46R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.031 | | 0.0000 | 0.000 | 116.9 | 0.005 | BB | 0.015 | 129.63 | 0.013 |
| 2 | 3.070 | | 0.0000 | 0.000 | 5266.7 | 0.234 | BB | 0.050 | 1761.41 | 0.183 |
| 3 | 3.180 | | 0.0000 | 0.000 | 3914.3 | 0.174 | BB | 0.034 | 1902.92 | 0.198 |
| 4 | 3.243 | | 0.0000 | 0.000 | 14393.2 | 0.641 | BB | 0.034 | 6970.18 | 0.726 |
| 5 | 3.388 | | 0.0000 | 0.000 | 2736.7 | 0.122 | BB | 0.028 | 1633.36 | 0.170 |
| 6 | 3.493 | | 0.0000 | 0.000 | 967.4 | 0.043 | BB | 0.032 | 502.18 | 0.052 |
| 7 | 3.540 | | 0.0000 | 0.000 | 59804.0 | 2.663 | BB | 0.039 | 25592.65 | 2.665 |
| 8 | 3.623 | | 0.0000 | 0.000 | 1711.2 | 0.076 | BB | 0.026 | 1080.43 | 0.112 |
| 9 | 3.703 | | 0.0000 | 0.000 | 1649.0 | 0.073 | BB | 0.037 | 745.69 | 0.078 |
| 10 | 3.782 | | 0.0000 | 0.000 | 1684.5 | 0.075 | BB | 0.039 | 722.04 | 0.075 |
| 11 | 3.868 | | 0.0000 | 0.000 | 11917.8 | 0.531 | BB | 0.038 | 5193.22 | 0.541 |
| 12 | 3.983 | | 0.0000 | 0.000 | 10177.2 | 0.453 | BB | 0.048 | 3498.70 | 0.364 |
| 13 | 4.064 | | 0.0000 | 0.000 | 22383.9 | 0.997 | BB | 0.035 | 10552.07 | 1.099 |
| 14 | 4.191 | | 0.0000 | 0.000 | 20488.5 | 0.912 | BB | 0.034 | 10192.86 | 1.061 |
| 15 | 4.310 | TCX | 276.1151 | 31.895 | 218009.7 | 9.706 | BB | 0.032 | 113906.60 | 11.859 |
| 16 | 4.400 | | 0.0000 | 0.000 | 5992.2 | 0.267 | BB | 0.046 | 2171.74 | 0.226 |
| 17 | 4.459 | | 0.0000 | 0.000 | 797.2 | 0.035 | BB | 0.021 | 646.43 | 0.067 |
| 18 | 4.516 | | 0.0000 | 0.000 | 1853.4 | 0.083 | BB | 0.030 | 1040.39 | 0.108 |
| 19 | 4.601 | | 0.0000 | 0.000 | 672.6 | 0.030 | BB | 0.024 | 461.36 | 0.048 |
| 20 | 4.649 | | 0.0000 | 0.000 | 6790.3 | 0.302 | BB | 0.029 | 3843.41 | 0.400 |
| 21 | 4.735 | | 0.0000 | 0.000 | 11675.4 | 0.520 | BB | 0.028 | 6866.93 | 0.715 |
| 22 | 4.774 | | 0.0000 | 0.000 | 2405.1 | 0.107 | BB | 0.027 | 1483.96 | 0.154 |
| 23 | 4.914 | Hcb | 1.8814 | 0.217 | 2224.6 | 0.099 | BB | 0.028 | 1321.19 | 0.138 |
| 24 | 4.959 | | 0.0000 | 0.000 | 270768.1 | 12.055 | BB | 0.037 | 121891.20 | 12.690 |
| 25 | 5.073 | | 0.0000 | 0.000 | 380.9 | 0.017 | BB | 0.017 | 368.57 | 0.038 |
| 26 | 5.130 | | 0.0000 | 0.000 | 24882.9 | 1.108 | BB | 0.031 | 13315.75 | 1.386 |
| 27 | 5.190 | alpha-BHC | 4.3130 | 0.498 | 5131.1 | 0.228 | BB | 0.039 | 2216.70 | 0.231 |
| 28 | 5.280 | | 0.0000 | 0.000 | 2930.7 | 0.130 | BB | 0.027 | 1810.87 | 0.189 |
| 29 | 5.327 | | 0.0000 | 0.000 | 1322.2 | 0.059 | BB | 0.024 | 910.58 | 0.095 |
| 30 | 5.395 | | 0.0000 | 0.000 | 24226.1 | 1.079 | BB | 0.040 | 10034.55 | 1.045 |
| 31 | 5.513 | | 0.0000 | 0.000 | 4970.8 | 0.221 | BB | 0.028 | 2982.93 | 0.311 |
| 32 | 5.562 | | 0.0000 | 0.000 | 5917.3 | 0.263 | BB | 0.029 | 3368.02 | 0.351 |
| 33 | 5.628 | gamma-BHC | 0.2169 | 0.025 | 175.6 | 0.008 | BB | 0.026 | 111.30 | 0.012 |
| 34 | 5.687 | | 0.0000 | 0.000 | 1670.2 | 0.074 | BB | 0.040 | 690.30 | 0.072 |
| 35 | 5.808 | | 0.0000 | 0.000 | 20050.0 | 0.893 | BB | 0.040 | 8294.46 | 0.864 |
| 36 | 5.893 | | 0.0000 | 0.000 | 1522.4 | 0.068 | BB | 0.030 | 842.87 | 0.088 |
| 37 | 5.974 | | 0.0000 | 0.000 | 1624.5 | 0.072 | BB | 0.027 | 992.40 | 0.103 |
| 38 | 6.023 | delta-BHC | 2.2718 | 0.262 | 3007.4 | 0.134 | BB | 0.045 | 1106.30 | 0.115 |
| 39 | 6.197 | | 0.0000 | 0.000 | 1471.2 | 0.066 | BB | 0.030 | 822.94 | 0.086 |
| 40 | 6.290 | | 0.0000 | 0.000 | 1528.1 | 0.068 | BB | 0.033 | 770.26 | 0.080 |
| 41 | 6.387 | | 0.0000 | 0.000 | 9466.8 | 0.421 | BB | 0.058 | 2717.90 | 0.283 |
| 42 | 6.515 | | 0.0000 | 0.000 | 255418.6 | 11.372 | BB | 0.037 | 115720.20 | 12.048 |
| 43 | 6.658 | | 0.0000 | 0.000 | 25256.9 | 1.125 | BB | 0.040 | 10429.41 | 1.086 |
| 44 | 6.778 | | 0.0000 | 0.000 | 9133.1 | 0.407 | BB | 0.043 | 3574.67 | 0.372 |
| 45 | 6.891 | | 0.0000 | 0.000 | 1221.2 | 0.054 | BB | 0.026 | 787.91 | 0.082 |
| 46 | 6.947 | | 0.0000 | 0.000 | 6494.4 | 0.289 | BB | 0.044 | 2466.27 | 0.257 |
| 47 | 7.120 | | 0.0000 | 0.000 | 25073.3 | 1.116 | BB | 0.047 | 8827.88 | 0.919 |
| 48 | 7.249 | | 0.0000 | 0.000 | 13815.4 | 0.615 | BB | 0.027 | 8549.83 | 0.890 |
| 49 | 7.286 | | 0.0000 | 0.000 | 6541.1 | 0.291 | BB | 0.023 | 4829.69 | 0.503 |
| 50 | 7.362 | | 0.0000 | 0.000 | 16119.1 | 0.718 | BB | 0.072 | 3749.72 | 0.390 |
| 51 | 7.465 | | 0.0000 | 0.000 | 1169.7 | 0.052 | BB | 0.025 | 772.96 | 0.080 |
| 52 | 7.559 | o,p-DDE | 6.5916 | 0.761 | 3208.4 | 0.143 | BB | 0.031 | 1726.41 | 0.180 |
| 53 | 7.628 | | 0.0000 | 0.000 | 31174.1 | 1.388 | BV | 0.041 | 12632.17 | 1.315 |
| 54 | 7.684 | | 0.0000 | 0.000 | 16172.4 | 0.720 | VB | 0.057 | 4749.94 | 0.495 |
| 55 | 7.822 | | 0.0000 | 0.000 | 5688.2 | 0.253 | BB | 0.051 | 1867.52 | 0.194 |
| 56 | 7.944 | a. Chlordane | 16.6494 | 1.923 | 21707.3 | 0.966 | BV | 0.050 | 7306.38 | 0.761 |

8426

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.002 | 4,4'-DDE | 29.1391 | 3.366 | 24281.3 | 1.081 | VV | 0.040 | 10238.08 | 1.066 |
| 58 | 8.059 | | 0.0000 | 0.000 | 7467.9 | 0.332 | VB | 0.037 | 3380.29 | 0.352 |
| 59 | 8.162 | | 0.0000 | 0.000 | 39376.7 | 1.753 | BB | 0.039 | 16792.96 | 1.748 |
| 60 | 8.314 | | 0.0000 | 0.000 | 10478.3 | 0.467 | BB | 0.059 | 2969.28 | 0.309 |
| 61 | 8.400 | | 0.0000 | 0.000 | 20563.0 | 0.916 | BB | 0.046 | 7429.32 | 0.773 |
| 62 | 8.524 | | 0.0000 | 0.000 | 25116.1 | 1.118 | BV | 0.036 | 11559.33 | 1.203 |
| 63 | 8.608 | o,p-DDT | 3.8684 | 0.447 | 2628.0 | 0.117 | VB | 0.042 | 1031.37 | 0.107 |
| 64 | 8.680 | | 0.0000 | 0.000 | 2492.0 | 0.111 | BB | 0.028 | 1476.91 | 0.154 |
| 65 | 8.757 | Endrin | 34.6684 | 4.005 | 35723.9 | 1.591 | BV | 0.051 | 11592.44 | 1.207 |
| 66 | 8.831 | 4,4'-DDD | 185.6160 | 21.441 | 121652.1 | 5.416 | VV | 0.038 | 52834.67 | 5.501 |
| 67 | 8.887 | | 0.0000 | 0.000 | 31492.7 | 1.402 | VB | 0.061 | 8606.46 | 0.896 |
| 68 | 9.056 | Endosulfan II | 7.8687 | 0.909 | 5280.3 | 0.235 | BV | 0.033 | 2627.79 | 0.274 |
| 69 | 9.127 | | 0.0000 | 0.000 | 52393.2 | 2.333 | VB | 0.050 | 17301.74 | 1.801 |
| 70 | 9.256 | | 0.0000 | 0.000 | 3945.2 | 0.176 | BB | 0.046 | 1436.61 | 0.150 |
| 71 | 9.328 | | 0.0000 | 0.000 | 6665.8 | 0.297 | BV | 0.024 | 4622.32 | 0.481 |
| 72 | 9.371 | | 0.0000 | 0.000 | 56477.1 | 2.515 | VB | 0.050 | 18692.58 | 1.946 |
| 73 | 9.473 | | 0.0000 | 0.000 | 1628.5 | 0.073 | BB | 0.025 | 1077.88 | 0.112 |
| 74 | 9.503 | | 0.0000 | 0.000 | 4108.9 | 0.183 | BB | 0.023 | 2998.87 | 0.312 |
| 75 | 9.590 | Endrin aldehyde | 7.8406 | 0.906 | 3403.6 | 0.152 | BB | 0.026 | 2150.92 | 0.224 |
| 76 | 9.658 | | 0.0000 | 0.000 | 2398.3 | 0.107 | BB | 0.031 | 1286.95 | 0.134 |
| 77 | 9.734 | | 0.0000 | 0.000 | 4620.3 | 0.206 | BB | 0.053 | 1440.58 | 0.150 |
| 78 | 9.825 | | 0.0000 | 0.000 | 5004.6 | 0.223 | BB | 0.045 | 1861.39 | 0.194 |
| 79 | 9.908 | | 0.0000 | 0.000 | 1500.1 | 0.067 | BB | 0.031 | 796.32 | 0.083 |
| 80 | 9.984 | | 0.0000 | 0.000 | 10482.6 | 0.467 | BB | 0.035 | 5045.69 | 0.525 |
| 81 | 10.068 | | 0.0000 | 0.000 | 2275.2 | 0.101 | BB | 0.030 | 1258.32 | 0.131 |
| 82 | 10.130 | | 0.0000 | 0.000 | 560.2 | 0.025 | BB | 0.027 | 350.19 | 0.036 |
| 83 | 10.237 | | 0.0000 | 0.000 | 1592.1 | 0.071 | BB | 0.029 | 912.08 | 0.095 |
| 84 | 10.298 | | 0.0000 | 0.000 | 12581.3 | 0.560 | BB | 0.026 | 8097.05 | 0.843 |
| 85 | 10.352 | | 0.0000 | 0.000 | 36194.1 | 1.611 | BB | 0.030 | 20182.78 | 2.101 |
| 86 | 10.385 | | 0.0000 | 0.000 | 10453.9 | 0.465 | BB | 0.027 | 6444.06 | 0.671 |
| 87 | 10.588 | | 0.0000 | 0.000 | 1610.8 | 0.072 | BB | 0.051 | 524.35 | 0.055 |
| 88 | 10.685 | | 0.0000 | 0.000 | 1318.2 | 0.059 | BB | 0.037 | 600.31 | 0.063 |
| 89 | 10.744 | | 0.0000 | 0.000 | 37305.9 | 1.661 | BB | 0.040 | 15726.99 | 1.637 |
| 90 | 10.917 | | 0.0000 | 0.000 | 35663.0 | 1.588 | BB | 0.040 | 15005.12 | 1.562 |
| 91 | 11.049 | | 0.0000 | 0.000 | 15647.3 | 0.697 | BB | 0.043 | 6049.47 | 0.630 |
| 92 | 11.165 | | 0.0000 | 0.000 | 2686.0 | 0.120 | BB | 0.040 | 1120.87 | 0.117 |
| 93 | 11.218 | | 0.0000 | 0.000 | 1253.9 | 0.056 | BB | 0.027 | 762.38 | 0.079 |
| 94 | 11.296 | | 0.0000 | 0.000 | 91.1 | 0.004 | BB | 0.022 | 70.01 | 0.007 |
| 95 | 11.371 | | 0.0000 | 0.000 | 2060.5 | 0.092 | BB | 0.041 | 829.19 | 0.086 |
| 96 | 11.475 | | 0.0000 | 0.000 | 87531.2 | 3.897 | BB | 0.062 | 23571.86 | 2.454 |
| 97 | 11.739 | | 0.0000 | 0.000 | 1166.0 | 0.052 | BB | 0.037 | 519.28 | 0.054 |
| 98 | 11.878 | DCB | 288.6528 | 33.344 | 250717.0 | 11.163 | BB | 0.044 | 95230.70 | 9.915 |
| 99 | 12.156 | | 0.0000 | 0.000 | 1628.8 | 0.073 | BB | 0.072 | 375.38 | 0.039 |
| 100 | 12.232 | | 0.0000 | 0.000 | 1840.8 | 0.082 | BB | 0.053 | 575.71 | 0.060 |
| 101 | 12.356 | | 0.0000 | 0.000 | 1393.7 | 0.062 | BB | 0.068 | 341.77 | 0.036 |
| 102 | 12.483 | | 0.0000 | 0.000 | 2437.1 | 0.109 | BB | 0.138 | 294.17 | 0.031 |
| 103 | 12.542 | | 0.0000 | 0.000 | 790.6 | 0.035 | BB | 0.045 | 289.90 | 0.030 |
| 104 | 12.662 | | 0.0000 | 0.000 | 4432.4 | 0.197 | BB | 0.050 | 1488.55 | 0.155 |
| 105 | 12.733 | | 0.0000 | 0.000 | 1332.1 | 0.059 | BB | 0.038 | 580.18 | 0.060 |
| 106 | 12.878 | | 0.0000 | 0.000 | 8277.3 | 0.369 | BB | 0.105 | 1317.29 | 0.137 |
| 107 | 13.035 | | 0.0000 | 0.000 | 10837.3 | 0.483 | BB | 0.051 | 3516.63 | 0.366 |
| 108 | 13.319 | | 0.0000 | 0.000 | 3137.2 | 0.140 | BB | 0.066 | 787.25 | 0.082 |
| 109 | 13.426 | | 0.0000 | 0.000 | 453.3 | 0.020 | BB | 0.033 | 228.42 | 0.024 |
| 110 | 13.513 | | 0.0000 | 0.000 | 2038.8 | 0.091 | BB | 0.059 | 571.57 | 0.060 |
| 111 | 13.861 | | 0.0000 | 0.000 | 385.1 | 0.017 | BB | 0.065 | 98.18 | 0.010 |
| 112 | 13.967 | | 0.0000 | 0.000 | 300.0 | 0.013 | BB | 0.072 | 69.45 | 0.007 |

Total Area = 2246044.0, Total Amount = 865.693, Total Height = 960498.2, Sample Units = PPB

8427

Sample Name: **4241628F AB5GP17 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 10:44:18am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.46R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.469 | | 0.0000 | 0.000 | 33327.2 | 1.269 | BB | 0.034 | 16315.56 | 1.629 |
| 2 | 3.567 | | 0.0000 | 0.000 | 935.4 | 0.036 | BB | 0.020 | 792.13 | 0.079 |
| 3 | 3.609 | | 0.0000 | 0.000 | 3362.1 | 0.128 | BB | 0.027 | 2052.13 | 0.205 |
| 4 | 3.664 | | 0.0000 | 0.000 | 27467.0 | 1.046 | BB | 0.047 | 9781.90 | 0.977 |
| 5 | 3.736 | | 0.0000 | 0.000 | 6315.6 | 0.240 | BB | 0.020 | 5197.47 | 0.519 |
| 6 | 3.776 | | 0.0000 | 0.000 | 6308.8 | 0.240 | BB | 0.026 | 4100.83 | 0.409 |
| 7 | 3.847 | | 0.0000 | 0.000 | 1272.1 | 0.048 | BB | 0.022 | 950.63 | 0.095 |
| 8 | 3.895 | | 0.0000 | 0.000 | 1847.3 | 0.070 | BB | 0.029 | 1055.56 | 0.105 |
| 9 | 3.958 | | 0.0000 | 0.000 | 2045.8 | 0.078 | BB | 0.032 | 1075.38 | 0.107 |
| 10 | 4.035 | TCX | 264.7964 | 27.915 | 333716.8 | 12.705 | BB | 0.037 | 148572.90 | 14.835 |
| 11 | 4.198 | | 0.0000 | 0.000 | 372063.9 | 14.164 | BB | 0.043 | 142931.70 | 14.272 |
| 12 | 4.434 | | 0.0000 | 0.000 | 30449.1 | 1.159 | BB | 0.123 | 4114.58 | 0.411 |
| 13 | 4.590 | | 0.0000 | 0.000 | 9594.1 | 0.365 | BB | 0.046 | 3473.92 | 0.347 |
| 14 | 4.646 | | 0.0000 | 0.000 | 6355.8 | 0.242 | BB | 0.030 | 3529.36 | 0.352 |
| 15 | 4.722 | Hcb | 0.2282 | 0.024 | 287.0 | 0.011 | BB | 0.020 | 244.30 | 0.024 |
| 16 | 4.764 | | 0.0000 | 0.000 | 12956.5 | 0.493 | BB | 0.027 | 7917.43 | 0.791 |
| 17 | 4.854 | | 0.0000 | 0.000 | 44180.3 | 1.682 | BB | 0.039 | 18928.08 | 1.890 |
| 18 | 4.958 | alpha-BHC | 1.1716 | 0.124 | 1338.6 | 0.051 | BB | 0.022 | 1005.23 | 0.100 |
| 19 | 5.035 | | 0.0000 | 0.000 | 2330.1 | 0.089 | BB | 0.038 | 1032.28 | 0.103 |
| 20 | 5.114 | | 0.0000 | 0.000 | 54377.9 | 2.070 | BB | 0.055 | 16410.59 | 1.639 |
| 21 | 5.355 | | 0.0000 | 0.000 | 3581.2 | 0.136 | BB | 0.039 | 1512.96 | 0.151 |
| 22 | 5.413 | | 0.0000 | 0.000 | 4006.3 | 0.153 | BB | 0.028 | 2361.39 | 0.236 |
| 23 | 5.503 | | 0.0000 | 0.000 | 3138.9 | 0.119 | BB | 0.040 | 1318.81 | 0.132 |
| 24 | 5.551 | | 0.0000 | 0.000 | 1139.5 | 0.043 | BB | 0.033 | 573.99 | 0.057 |
| 25 | 5.646 | | 0.0000 | 0.000 | 2321.4 | 0.088 | BB | 0.037 | 1055.43 | 0.105 |
| 26 | 5.728 | | 0.0000 | 0.000 | 8369.2 | 0.319 | BB | 0.035 | 3982.03 | 0.398 |
| 27 | 5.800 | | 0.0000 | 0.000 | 5187.4 | 0.197 | BB | 0.024 | 3637.20 | 0.363 |
| 28 | 5.861 | | 0.0000 | 0.000 | 3406.4 | 0.130 | BB | 0.032 | 1773.23 | 0.177 |
| 29 | 5.934 | | 0.0000 | 0.000 | 993.5 | 0.038 | BB | 0.027 | 609.04 | 0.061 |
| 30 | 5.985 | delta-BHC | 3.2857 | 0.346 | 8486.2 | 0.323 | BB | 0.058 | 2448.30 | 0.244 |
| 31 | 6.099 | Heptachlor | 8.6500 | 0.912 | 10617.1 | 0.404 | BB | 0.026 | 6857.96 | 0.685 |
| 32 | 6.227 | | 0.0000 | 0.000 | 34763.9 | 1.323 | BB | 0.093 | 6218.84 | 0.621 |
| 33 | 6.376 | | 0.0000 | 0.000 | 16567.4 | 0.631 | BB | 0.035 | 7801.27 | 0.779 |
| 34 | 6.440 | | 0.0000 | 0.000 | 998.0 | 0.038 | BB | 0.023 | 725.39 | 0.072 |
| 35 | 6.482 | | 0.0000 | 0.000 | 1939.8 | 0.074 | BB | 0.028 | 1173.06 | 0.117 |
| 36 | 6.626 | | 0.0000 | 0.000 | 31910.7 | 1.215 | BB | 0.049 | 10884.27 | 1.087 |
| 37 | 6.738 | Telodrin | 6.9111 | 0.729 | 13202.0 | 0.503 | BB | 0.054 | 4075.22 | 0.407 |
| 38 | 6.939 | | 0.0000 | 0.000 | 42779.2 | 1.629 | BB | 0.045 | 15802.88 | 1.578 |
| 39 | 7.059 | | 0.0000 | 0.000 | 780.8 | 0.030 | BB | 0.032 | 410.55 | 0.041 |
| 40 | 7.138 | | 0.0000 | 0.000 | 10367.8 | 0.395 | BB | 0.050 | 3445.18 | 0.344 |
| 41 | 7.225 | | 0.0000 | 0.000 | 11599.1 | 0.442 | BB | 0.026 | 7428.66 | 0.742 |
| 42 | 7.291 | Hept. epoxide | 21.1438 | 2.229 | 30487.7 | 1.161 | BB | 0.040 | 12565.37 | 1.255 |
| 43 | 7.432 | | 0.0000 | 0.000 | 31235.2 | 1.189 | BV | 0.055 | 9443.47 | 0.943 |
| 44 | 7.516 | | 0.0000 | 0.000 | 114564.6 | 4.361 | VV | 0.038 | 49897.27 | 4.982 |
| 45 | 7.610 | | 0.0000 | 0.000 | 34723.8 | 1.322 | VB | 0.068 | 8460.72 | 0.845 |
| 46 | 7.823 | Endosulfan I | 2.9672 | 0.313 | 4888.6 | 0.186 | BV | 0.052 | 1564.97 | 0.156 |
| 47 | 7.906 | | 0.0000 | 0.000 | 10213.1 | 0.389 | VV | 0.037 | 4661.81 | 0.465 |
| 48 | 7.983 | 4,4'-DDE | 23.2381 | 2.450 | 28032.3 | 1.067 | VV | 0.043 | 10827.38 | 1.081 |
| 49 | 8.060 | | 0.0000 | 0.000 | 8725.0 | 0.332 | VV | 0.044 | 3297.61 | 0.329 |
| 50 | 8.133 | | 0.0000 | 0.000 | 52584.6 | 2.002 | VV | 0.044 | 19761.65 | 1.973 |
| 51 | 8.262 | | 0.0000 | 0.000 | 3881.2 | 0.148 | VV | 0.038 | 1697.24 | 0.169 |
| 52 | 8.309 | | 0.0000 | 0.000 | 7459.0 | 0.284 | VV | 0.038 | 3298.52 | 0.329 |
| 53 | 8.415 | | 0.0000 | 0.000 | 54286.7 | 2.067 | VB | 0.078 | 11652.78 | 1.164 |
| 54 | 8.563 | Endrin | 5.2685 | 0.555 | 5682.1 | 0.216 | BB | 0.044 | 2174.88 | 0.217 |
| 55 | 8.643 | o,p-DDT | 31.8394 | 3.357 | 19788.7 | 0.753 | BV | 0.034 | 9724.45 | 0.971 |
| 56 | 8.705 | 4,4'-DDD | 173.3420 | 18.274 | 129630.1 | 4.935 | VB | 0.038 | 56589.68 | 5.650 |

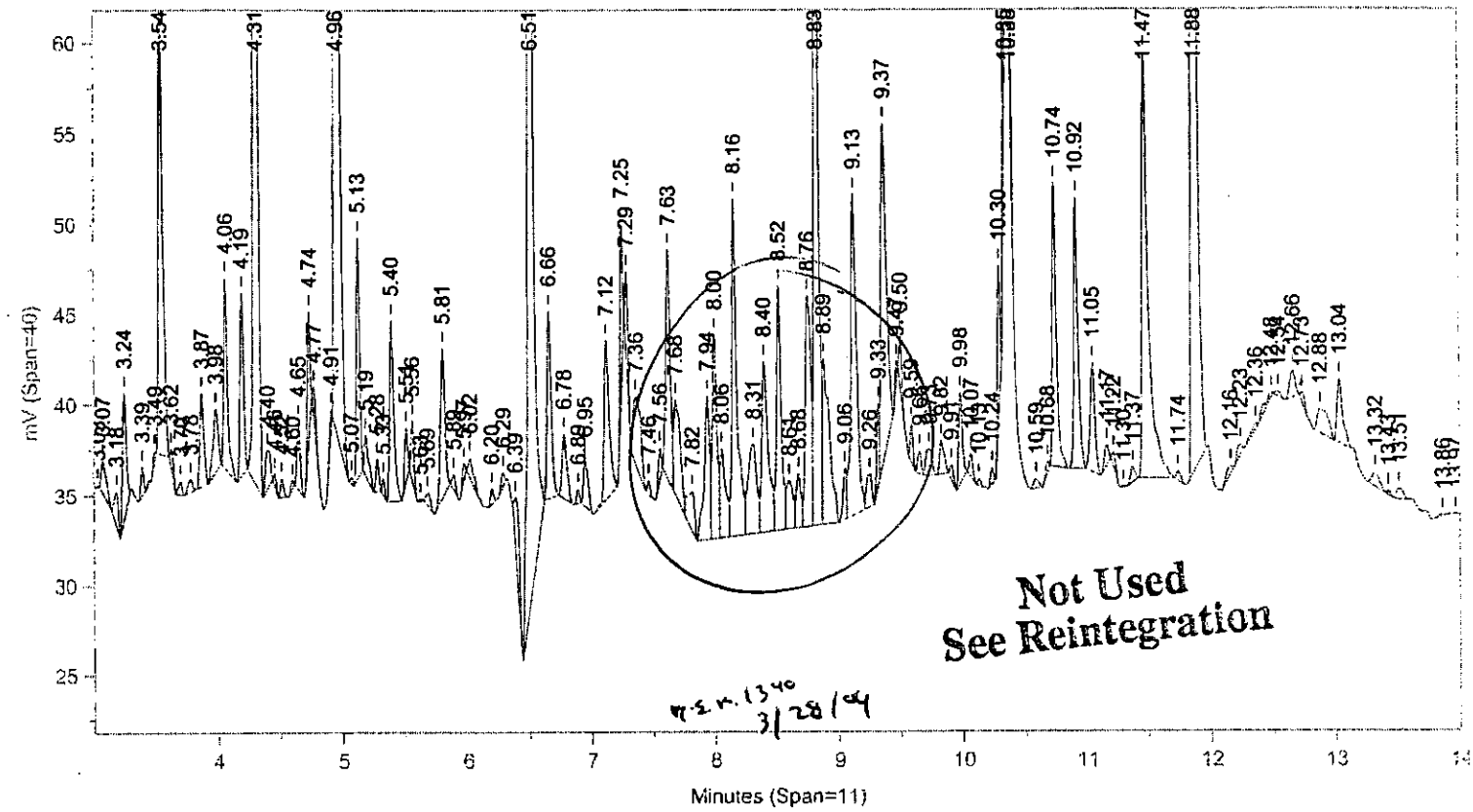
8428

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.860 | Endosulfan II | 33.1823 | 3.498 | 39694.0 | 1.511 | BV | 0.051 | 12852.94 | 1.283 |
| 58 | 8.961 | | 0.0000 | 0.000 | 4902.0 | 0.187 | VV | 0.037 | 2207.77 | 0.220 |
| 59 | 9.070 | | 0.0000 | 0.000 | 43729.3 | 1.665 | VV | 0.039 | 18717.08 | 1.869 |
| 60 | 9.106 | 4,4'-DDT | 71.1892 | 7.505 | 71111.3 | 2.707 | VV | 0.051 | 23199.54 | 2.316 |
| 61 | 9.221 | | 0.0000 | 0.000 | 9653.0 | 0.367 | VV | 0.054 | 2971.74 | 0.297 |
| 62 | 9.287 | Endrin aldehyde | 20.0426 | 2.113 | 17876.9 | 0.681 | VV | 0.048 | 6146.29 | 0.614 |
| 63 | 9.415 | | 0.0000 | 0.000 | 9209.1 | 0.351 | VB | 0.055 | 2796.39 | 0.279 |
| 64 | 9.503 | | 0.0000 | 0.000 | 752.9 | 0.029 | BB | 0.027 | 470.31 | 0.047 |
| 65 | 9.576 | | 0.0000 | 0.000 | 50077.2 | 1.906 | BB | 0.044 | 18845.60 | 1.882 |
| 66 | 9.691 | | 0.0000 | 0.000 | 1278.3 | 0.049 | BB | 0.034 | 622.94 | 0.062 |
| 67 | 9.775 | | 0.0000 | 0.000 | 6885.6 | 0.262 | BB | 0.038 | 3045.57 | 0.304 |
| 68 | 9.913 | | 0.0000 | 0.000 | 152485.9 | 5.805 | BB | 0.049 | 51463.84 | 5.139 |
| 69 | 10.034 | | 0.0000 | 0.000 | 4762.6 | 0.181 | BB | 0.071 | 1115.14 | 0.111 |
| 70 | 10.189 | | 0.0000 | 0.000 | 37997.0 | 1.447 | BB | 0.043 | 14699.93 | 1.468 |
| 71 | 10.304 | Endrin ketone | 15.5942 | 1.644 | 14043.1 | 0.535 | BB | 0.042 | 5635.53 | 0.563 |
| 72 | 10.416 | | 0.0000 | 0.000 | 35152.2 | 1.338 | BB | 0.039 | 14904.23 | 1.488 |
| 73 | 10.514 | | 0.0000 | 0.000 | 273.0 | 0.010 | BB | 0.022 | 205.15 | 0.020 |
| 74 | 10.570 | | 0.0000 | 0.000 | 2408.9 | 0.092 | BB | 0.037 | 1074.08 | 0.107 |
| 75 | 10.679 | | 0.0000 | 0.000 | 4043.5 | 0.154 | BB | 0.064 | 1056.70 | 0.106 |
| 76 | 10.904 | | 0.0000 | 0.000 | 71504.1 | 2.722 | BB | 0.064 | 18665.28 | 1.864 |
| 77 | 11.082 | | 0.0000 | 0.000 | 18025.4 | 0.686 | BB | 0.058 | 5222.83 | 0.521 |
| 78 | 11.279 | | 0.0000 | 0.000 | 374.1 | 0.014 | BB | 0.035 | 178.81 | 0.018 |
| 79 | 11.432 | | 0.0000 | 0.000 | 1891.6 | 0.072 | BB | 0.069 | 454.69 | 0.045 |
| 80 | 11.513 | | 0.0000 | 0.000 | 2025.4 | 0.077 | BB | 0.032 | 1046.89 | 0.105 |
| 81 | 11.604 | | 0.0000 | 0.000 | 1195.0 | 0.045 | BB | 0.036 | 549.93 | 0.055 |
| 82 | 11.676 | | 0.0000 | 0.000 | 412.8 | 0.016 | BB | 0.027 | 251.00 | 0.025 |
| 83 | 11.865 | | 0.0000 | 0.000 | 7023.2 | 0.267 | BB | 0.140 | 838.47 | 0.084 |
| 84 | 11.928 | | 0.0000 | 0.000 | 6552.8 | 0.249 | BB | 0.032 | 3438.27 | 0.343 |
| 85 | 12.026 | DCB | 265.7154 | 28.012 | 260313.6 | 9.910 | BB | 0.045 | 95725.59 | 9.558 |
| 86 | 12.235 | | 0.0000 | 0.000 | 6884.8 | 0.262 | BB | 0.079 | 1454.34 | 0.145 |
| 87 | 12.417 | | 0.0000 | 0.000 | 3154.9 | 0.120 | BB | 0.062 | 853.50 | 0.085 |
| 88 | 12.523 | | 0.0000 | 0.000 | 3359.0 | 0.128 | BB | 0.044 | 1279.30 | 0.128 |
| 89 | 12.668 | | 0.0000 | 0.000 | 2793.9 | 0.106 | BB | 0.067 | 693.71 | 0.069 |
| 90 | 12.927 | | 0.0000 | 0.000 | 3169.6 | 0.121 | BB | 0.091 | 577.41 | 0.058 |
| 91 | 13.074 | | 0.0000 | 0.000 | 958.7 | 0.036 | BB | 0.049 | 327.48 | 0.033 |
| 92 | 13.233 | | 0.0000 | 0.000 | 445.2 | 0.017 | BB | 0.042 | 175.07 | 0.017 |
| 93 | 13.341 | | 0.0000 | 0.000 | 23080.3 | 0.879 | BB | 0.050 | 7683.61 | 0.767 |
| 94 | 13.477 | | 0.0000 | 0.000 | 524.0 | 0.020 | BB | 0.041 | 212.32 | 0.021 |
| 95 | 13.640 | | 0.0000 | 0.000 | 3398.5 | 0.129 | BB | 0.118 | 479.20 | 0.048 |
| 96 | 13.792 | | 0.0000 | 0.000 | 458.3 | 0.017 | BB | 0.044 | 173.16 | 0.017 |

Total Area = 2626751.0, Total Amount = 948.566, Total Height = 1001507.0, Sample Units = PPB

LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.46R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 10:30:18 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

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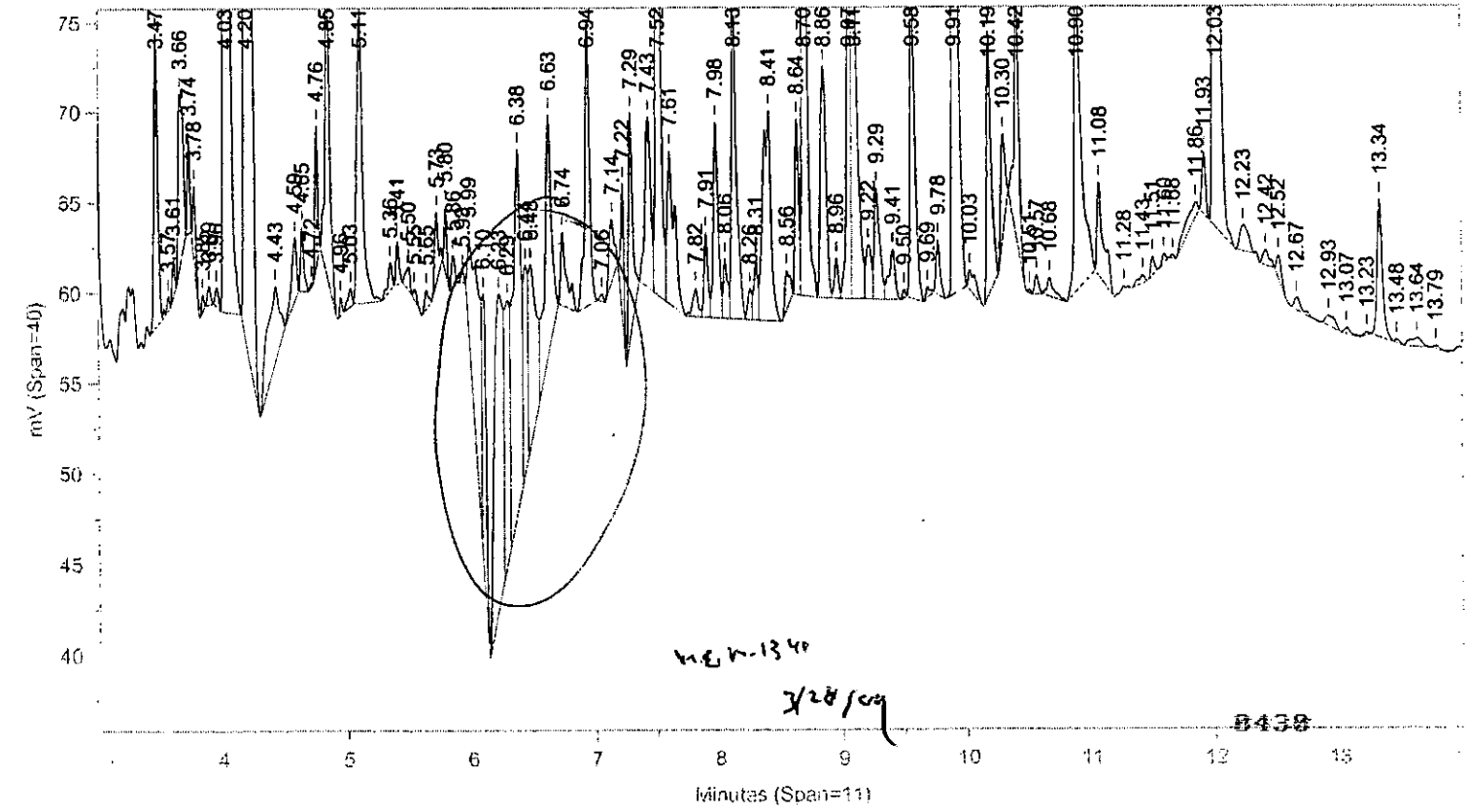
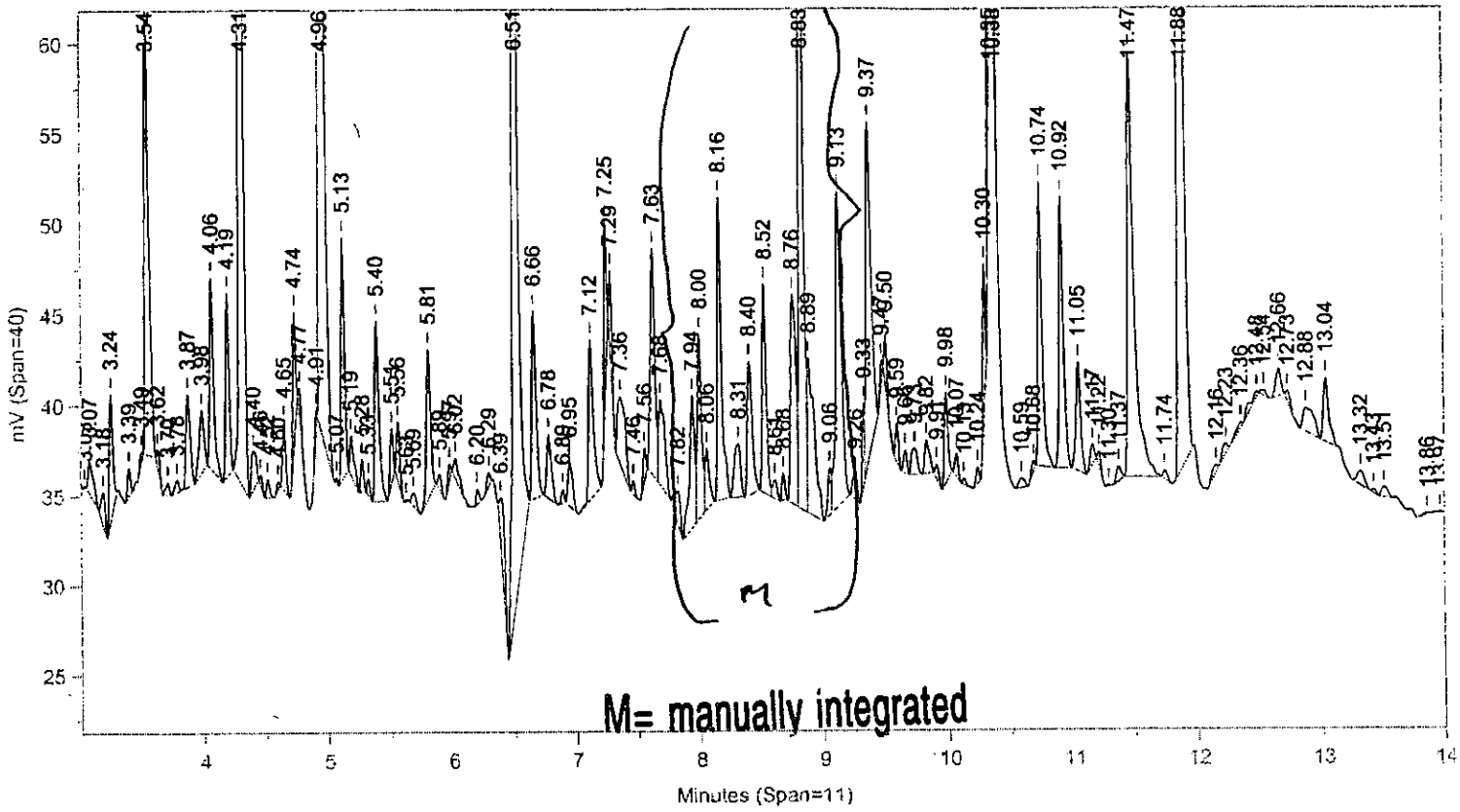



Instrument ID: CP16--H5262B Injected On: 3/26/2004 10:30:18 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

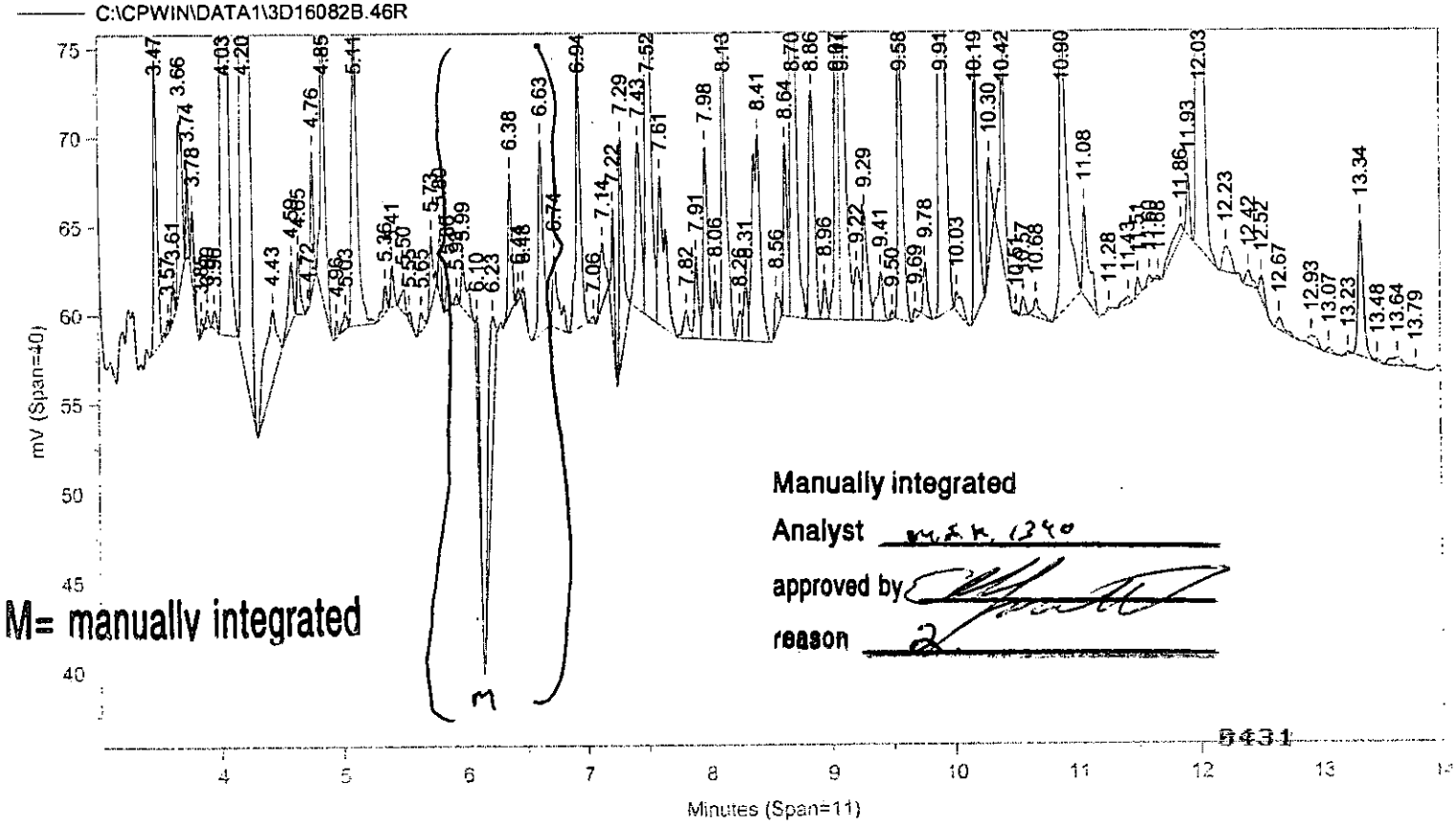
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.46R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 10:30:18 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.46R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 10:30:18 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 30
Analyst: 120

Dilution Factor: 10

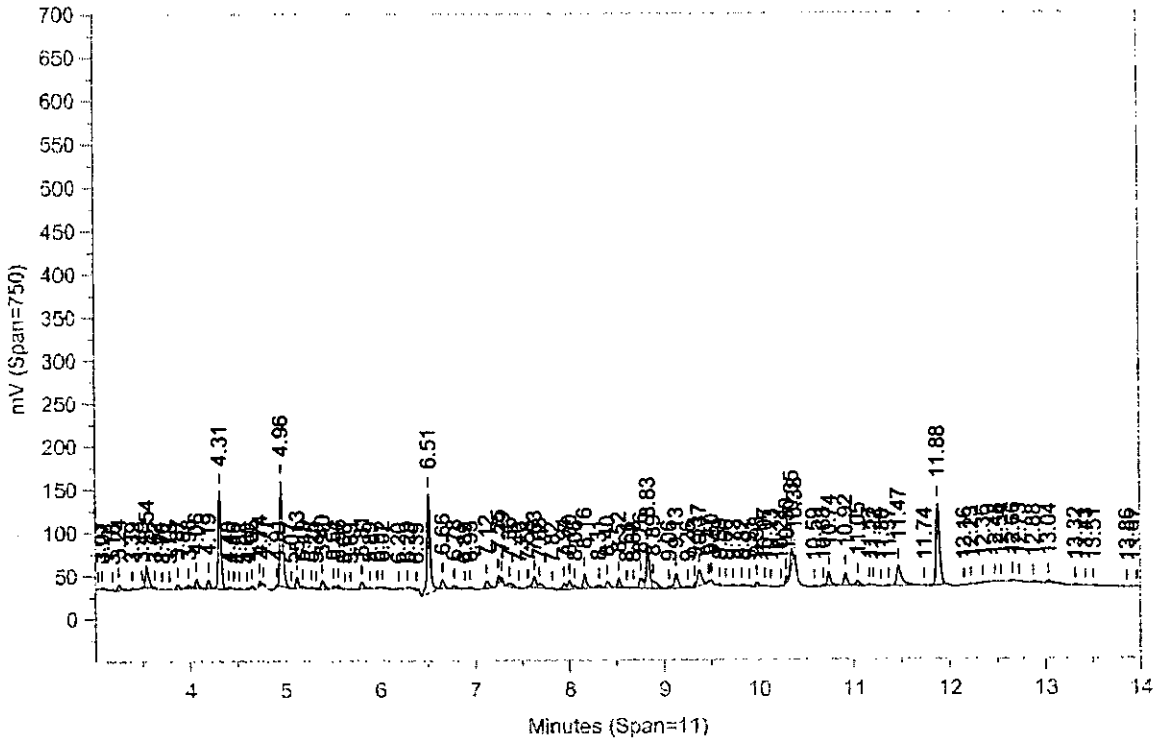
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 113907 | 9.204 | TCX | 4.035 | 148573 | 8.827 | TCX |
| 4.914 | 1321 | .063 | Hcb | 4.722 | 244 | .008 | Hcb |
| 5.19 | 2217 | .144 | alpha-BHC | 4.958 | 1005 | .039 | alpha-BHC |
| 5.628 | 111 | .007 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.023 | 1106 | .076 | delta-BHC | 5.985 | 2448 | .11 | delta-BHC |
| . | 0 | . | Heptachlor | 6.099 | 6858 | .288 | Heptachlor |
| . | 0 | . | Telodrin | 6.738 | 4075 | .23 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.291 | 12565 | .705 | Hept. epoxide |
| 7.559 | 1726 | .22 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.823 | 1565 | .099 | Endosulfan I |
| 7.944 | 7306 | .555 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.002 | 10238 | .971 | 4,4'-DDE | 7.983 | 10827 | .775 | 4,4'-DDE |
| 8.757 | 11592 | 1.156 | Endrin | 8.563 | 2175 | .176 | Endrin |
| 8.608 | 1031 | .129 | o,p-DDT | 8.643 | 9724 | 1.061 | o,p-DDT |
| 8.831 | 52835 | 6.187 | 4,4'-DDD | 8.705 | 56590 | 5.778 | 4,4'-DDD |
| 9.056 | 2628 | .262 | Endosulfan II | 8.86 | 12853 | 1.106 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.106 | 23200 | 2.373 | 4,4'-DDT |
| 9.59 | 2151 | .261 | Endrin aldehyde | 9.287 | 6146 | .668 | Endrin aldehyde |
| . | 0 | . | Endrin ketone | 10.304 | 5636 | .52 | Endrin ketone |
| 11.878 | 95231 | 9.622 | DCB | 12.026 | 95726 | 8.857 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/28/2004 3:15:46 PM
File Reported On: 3/28/2004 at 3:15:45 PM

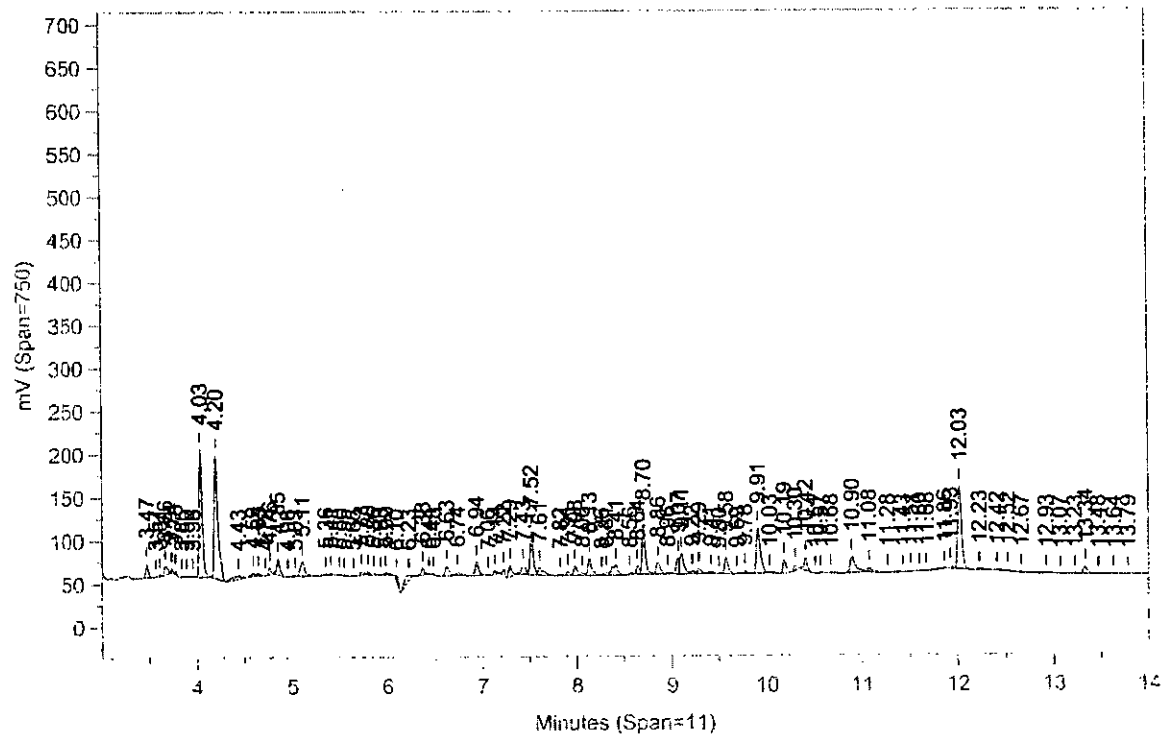
8432

10x REPLOTS

C:\CPWIN\DATA1\3D16082.46R




C:\CPWIN\DATA1\3D16082B.46R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4241629** F 5GP18 Sample ID: AB **Batchnumber: 040850020**A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262A
Result file : 3D16082.47R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 97.8% Conc.: 9.40711
%SSR(DCB) : 100.3% Conc.: 9.77042

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 116422 | 9.407110 |
| **Hcb** | 4.88 | 4.90 | 4.94 | 2212 | 0.104995 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 3381 | 0.219258 |
| **delta-BHC** | 5.99 | 6.02 | 6.05 | 1442 | 0.098727 |
| **Aldrin** | 6.72 | 6.72 | 6.78 | 148 | 0.011736 |
| **o,p-DDE** | 7.53 | 7.54 | 7.59 | 327 | 0.041657 |
| **Hept. epoxide** | 7.56 | 7.60 | 7.62 | 767 | 0.059700 |
| **g. Chlordane** | 7.72 | 7.78 | 7.78 | 2670 | 0.216172 |
| **a. Chlordane** | 7.90 | 7.93 | 7.96 | 1933 | 0.146864 |
| **4,4'-DDE** | 7.99 | 8.04 | 8.05 | 1154 | 0.109468 |
| **Endosulfan I** | 8.09 | 8.14 | 8.15 | 1051 | 0.089129 |
| **Dieldrin** | 8.41 | 8.43 | 8.47 | 714 | 0.065319 |
| **o,p-DDT** | 8.55 | 8.59 | 8.61 | 673 | 0.084133 |
| **4,4'-DDD** | 8.78 | 8.83 | 8.84 | 2450 | 0.286904 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 1490 | 0.148683 |
| **DCB** | 11.86 | 11.88 | 11.92 | 96702 | 9.770420 |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262B
Result file : 3D16082B.47R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 95.1% Conc.: 9.144304
%SSR(DCB) : 93.3% Conc.: 9.091508

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.03 | 4.07 | 153922 | 9.144304 |
| **Hcb** | 4.71 | 4.76 | 4.77 | 9477 | 0.295044 |
| **alpha-BHC** | 4.91 | 4.96 | 4.97 | 856 | 0.033238 |
| **delta-BHC** | 5.97 | 5.98 | 6.03 | 4291 | 0.191970 |
| **Telodrin** | 6.72 | 6.73 | 6.78 | 1167 | 0.065943 |
| **o,p-DDE** | 7.52 | 7.58 | 7.58 | 1478 | 0.140617 |
| **o,p-DDT** | 8.58 | 8.60 | 8.64 | 1270 | 0.138568 |
| **4,4'-DDD** | 8.68 | 8.70 | 8.74 | 1645 | 0.167913 |
| **Endosulfan II** | 8.82 | 8.87 | 8.88 | 280 | 0.024081 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 3511 | 0.381669 |
| **Endrin ketone** | 10.30 | 10.30 | 10.36 | 445 | 0.041041 |
| **DCB** | 12.01 | 12.03 | 12.07 | 98258 | 9.091508 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.407110 | | | | 2.83 | |
| Hcb | B | 0.295044 | | | | ** 95.02 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | B | 0.140617 | | | | ** 108.58 | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | B | 0.138568 | | | | ** 48.89 | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | 8434 |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:02:43

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4241629** F 5GP18 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

| Analysis Report (A) | | Analysis Report (B) | |
|---|---|---|---|
| Injected on | : MAR 26, 2004 10:50:46 | Injected on | : MAR 26, 2004 10:50:46 |
| Instrument | : CP16–H5262A | Instrument | : CP16–H5262B |
| Result file | : 3D16082.47R | Result file | : 3D16082B.47R |
| Calibration file | : 2D16082.CAL | Calibration file | : 2D16082B.CAL |
| Method file | : PESTD.MET | Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.770420 | | | | 7.20 | |

Units: ug/kg X

Reviewed by: M.E.V. 1340 Date: 3/26/04
Verified by: [signature] Date: 3/29/04

8435

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:02:43

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241629 F 5GP18 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 10:50:46 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.47R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 97.8% | Conc: | 9.40711 |
| %SSR(DCB) | 100.3% | Conc: | 9.77042 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 10:50:46 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.47R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 95.1% | Conc: | 9.144304 |
| %SSR(DCB) | 93.3% | Conc: | 9.091508 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M.E.M. 1340 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

8436

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241629F 5GP18 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262A
Result file : 3D16082.47R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 97.8% Conc.: 9.40711
%SSR(DCB) : 100.3% Conc.: 9.77042

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 46.75 | |
| 5.35 | 5.38 | 5.41 | 589.721313 | 1.390566 | | | 2 |
| 6.01 | 6.02 | 6.07 | 1442.319092 | 4.050955 | | | 3 |
| 6.29 | 6.29 | 6.35 | 1257.272705 | 5.158689 | | | 5 |
| 6.87 | 6.89 | 6.93 | 371.79776 | 3.071714 | | | 6 |
| Height Summation | | | **3661.110870** | | | | |
| Amount Avg CF: | | | **3.417981** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.77 | 4.78 | 4.83 | 5330.046875 | 56.259731 | | | 2 |
| Height Summation | | | **5330.046875** | | | | |
| Amount Avg CF: | | | **56.259731** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 46.74 | |
| 5.35 | 5.38 | 5.41 | 589.721313 | 3.048601 | | | 2 |
| 6.01 | 6.02 | 6.07 | 1442.319092 | 8.798921 | | | 3 |
| 6.28 | 6.29 | 6.34 | 1257.272705 | 11.117944 | | | 5 |
| 6.87 | 6.89 | 6.93 | 371.79776 | 6.488617 | | | 6 |
| Height Summation | | | **3661.110870** | | | | |
| Amount Avg CF: | | | **7.363521** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 51.30 | |
| 5.35 | 5.38 | 5.41 | 589.721313 | 1.588026 | | | 2 |
| 6.01 | 6.02 | 6.07 | 1442.319092 | 4.718087 | | | 3 |
| 6.28 | 6.29 | 6.34 | 1257.272705 | 6.082155 | | | 5 |
| 6.87 | 6.89 | 6.93 | 371.79776 | 2.966314 | | | 6 |
| Height Summation | | | **3661.110870** | | | | |
| Amount Avg CF: | | | **3.838646** | Linear: | | | |
| **Aroclor-1248** | | | | | 4 | 70.12 | |
| 5.35 | 5.38 | 5.41 | 589.721313 | 3.242989 | | | 1 |
| 6.01 | 6.02 | 6.07 | 1442.319092 | 10.419875 | | | 2 |
| 6.75 | 6.79 | 6.81 | 1129.591187 | 2.575623 | | | 3 |
| 8.14 | 8.14 | 8.20 | 1051.358521 | 4.276684 | | | 6 |
| Height Summation | | | **4212.990113** | | | | |
| Amount Avg CF: | | | **5.128793** | Linear: | | | |
| **Aroclor-1254** | | | | | 3 | 13.77 | |
| 6.44 | 6.46 | 6.50 | 370.596649 | 1.359529 | | | 1 |
| 8.13 | 8.14 | 8.19 | 1051.358521 | 1.598315 | | | 3 |
| 9.10 | 9.13 | 9.16 | 867.831238 | 1.795146 | | | 6 |
| Height Summation | | | **2289.786408** | | | | |
| Amount Avg CF: | | | **1.58433** | Linear: | | | |
| **Aroclor-1260** | | | | | 4 | 54.63 | |
| 8.38 | 8.43 | 8.44 | 713.683289 | 1.322248 | | | 1 |
| 9.10 | 9.13 | 9.16 | 867.831238 | 1.348588 | | | 3 |
| 9.96 | 9.98 | 10.02 | 377.857422 | 0.434199 | | | 5 |
| 11.14 | 11.18 | 11.20 | 124.815964 | 0.524497 | | | 6 |
| Height Summation | | | **2084.187913** | | | | |
| Amount Avg CF: | | | **0.907383** | Linear: | | | |
| **Chlordane** | | | | | 4 | 43.61 | |
| 6.91 | 6.94 | 6.97 | 1243.726196 | 1.901366 | | | 3 |
| 7.72 | 7.78 | 7.78 | 2670.036865 | 2.163397 | | | 4 |
| 7.89 | 7.93 | 7.95 | 1933.48645 | 1.340082 | | | 5 |
| 8.92 | 8.93 | 8.98 | 1596.301514 | 3.653206 | | | 6 |
| Height Summation | | | **7443.551025** | | | | |
| Amount Avg CF: | | | **2.264513** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262B
Result file : 3D16082B.47R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.1% Conc.: 9.144304
%SSR(DCB) : 93.3% Conc.: 9.091508

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 6 | 177.73 | |
| 4.72 | 4.76 | 4.78 | 9477.053711 | 26.909901 | | | 1 |
| 5.29 | 5.31 | 5.35 | 603.045227 | 1.216407 | | | 2 |
| 5.91 | 5.93 | 5.97 | 1052.319214 | 1.044407 | | | 3 |
| 6.09 | 6.12 | 6.15 | 897.004883 | 1.722631 | | | 4 |
| 6.23 | 6.29 | 6.29 | 296.898407 | 0.79305 | | | 5 |
| 6.72 | 6.73 | 6.78 | 1166.523438 | 3.304573 | | | 6 |
| Height Summation | | | **13492.844880** | | | | |
| Amount Avg CF: | | | **5.831828** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 44.82 | |
| 4.64 | 4.64 | 4.70 | 5661.674805 | 37.987619 | | | 2 |
| 4.72 | 4.76 | 4.78 | 9477.053711 | 19.70261 | | | 3 |
| Height Summation | | | **15138.728516** | | | | |
| Amount Avg CF: | | | **28.845115** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 116.46 | |
| 4.72 | 4.76 | 4.78 | 9477.053711 | 24.493258 | | | 1 |
| 5.29 | 5.31 | 5.35 | 603.045227 | 2.651564 | | | 2 |
| 5.91 | 5.93 | 5.97 | 1052.319214 | 2.217346 | | | 3 |
| 6.09 | 6.12 | 6.15 | 897.004883 | 3.678209 | | | 4 |
| 6.71 | 6.73 | 6.77 | 1166.523438 | 7.303553 | | | 6 |
| Height Summation | | | **13195.946473** | | | | |
| Amount Avg CF: | | | **8.068786** | Linear: | | | |
| **Aroclor-1242** | | | | | 6 | 175.27 | |
| 4.72 | 4.76 | 4.78 | 9477.053711 | 28.992455 | | | 1 |
| 5.29 | 5.31 | 5.35 | 603.045227 | 1.375026 | | | 2 |
| 5.91 | 5.93 | 5.97 | 1052.319214 | 1.207875 | | | 3 |
| 6.09 | 6.12 | 6.15 | 897.004883 | 1.97975 | | | 4 |
| 6.23 | 6.29 | 6.29 | 296.898407 | 0.920658 | | | 5 |
| 6.72 | 6.73 | 6.78 | 1166.523438 | 3.63828 | | | 6 |
| Height Summation | | | **13492.844880** | | | | |
| Amount Avg CF: | | | **6.352341** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 15.62 | |
| 5.29 | 5.31 | 5.35 | 603.045227 | 2.709828 | | | 1 |
| 5.91 | 5.93 | 5.97 | 1052.319214 | 2.079888 | | | 2 |
| 6.71 | 6.73 | 6.77 | 1166.523438 | 2.180031 | | | 3 |
| 7.57 | 7.58 | 7.63 | 1477.532471 | 3.039158 | | | 5 |
| 8.11 | 8.13 | 8.17 | 671.729492 | 2.537222 | | | 6 |
| Height Summation | | | **4971.149842** | | | | |
| Amount Avg CF: | | | **2.509225** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 70.74 | |
| 6.35 | 6.36 | 6.41 | 1595.413574 | 4.692282 | | | 1 |
| 7.50 | 7.51 | 7.56 | 2490.338867 | 4.410896 | | | 2 |
| 8.10 | 8.13 | 8.16 | 671.729492 | 0.943605 | | | 3 |
| 8.39 | 8.39 | 8.45 | 837.333801 | 2.352114 | | | 4 |
| 8.84 | 8.87 | 8.90 | 279.82489 | 0.756439 | | | 5 |
| Height Summation | | | **5874.640624** | | | | |
| Amount Avg CF: | | | **2.631067** | Linear: | | | |
| **Aroclor-1260** | | | | | 3 | 132.67 | |
| 8.36 | 8.39 | 8.42 | 837.333801 | 1.42909 | | | 1 |
| 8.83 | 8.87 | 8.89 | 279.82489 | 0.61558 | | | 3 |
| 9.88 | 9.92 | 9.94 | 10665.04882 | 10.95349 | | | 6 |
| Height Summation | | | **11782.207519** | | | | |
| Amount Avg CF: | | | **4.332722** | Linear: | | | |

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*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:02:58

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241629 F** 5GP18 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262A
Result file : 3D16082.47R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **2** | **98.34** | |
| 8.61 | 8.64 | 8.67 | 810.653931 | 7.458816 | | | 1 |
| 9.15 | 9.21 | 9.21 | 203.403122 | 1.340259 | | | 3 |
| Height Summation | | | **1014.057053** | | | | |
| Amount Avg CF: | | | **4.399538** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:50:46
Instrument : CP16--H5262B
Result file : 3D16082B.47R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **1** | | |
| 6.70 | 6.73 | 6.76 | 1166.523438 | 1.44847 | | | 3 |
| Height Summation | | | **1166.523438** | | | | |
| Amount Avg CF: | | | **1.44847** | Linear: | | | |
| **Toxaphene** | | | | | **5** | **91.38** | |
| 8.12 | 8.13 | 8.18 | 671.729492 | 5.580446 | | | 1 |
| 8.91 | 8.94 | 8.97 | 1267.206543 | 4.232402 | | | 3 |
| 9.25 | 9.29 | 9.31 | 3511.295898 | 16.192131 | | | 4 |
| 9.91 | 9.92 | 9.97 | 10665.048828 | 48.147466 | | | 5 |
| 10.41 | 10.42 | 10.47 | 6133.091309 | 50.716045 | | | 6 |
| Height Summation | | | **22248.372070** | | | | |
| Amount Avg CF: | | | **24.973698** | Linear: | | | |

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*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:02:58

Sample Name: **4241629F AB5GP18 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 11:04:46am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.47R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.078 | | 0.0000 | 0.000 | 5463.3 | 0.538 | BB | 0.077 | 1185.28 | 0.301 |
| 2 | 3.174 | | 0.0000 | 0.000 | 3383.1 | 0.333 | BB | 0.036 | 1584.87 | 0.403 |
| 3 | 3.252 | | 0.0000 | 0.000 | 1809.6 | 0.178 | BB | 0.044 | 686.61 | 0.174 |
| 4 | 3.305 | | 0.0000 | 0.000 | 2596.3 | 0.256 | BB | 0.039 | 1100.92 | 0.280 |
| 5 | 3.387 | | 0.0000 | 0.000 | 2036.9 | 0.201 | BB | 0.028 | 1194.44 | 0.303 |
| 6 | 3.440 | | 0.0000 | 0.000 | 218.4 | 0.022 | BB | 0.019 | 186.99 | 0.047 |
| 7 | 3.538 | | 0.0000 | 0.000 | 31871.8 | 3.140 | BB | 0.038 | 14059.67 | 3.571 |
| 8 | 3.624 | | 0.0000 | 0.000 | 1229.5 | 0.121 | BB | 0.030 | 690.14 | 0.175 |
| 9 | 3.703 | | 0.0000 | 0.000 | 2701.8 | 0.266 | BB | 0.049 | 919.02 | 0.233 |
| 10 | 3.870 | | 0.0000 | 0.000 | 1520.6 | 0.150 | BB | 0.064 | 395.25 | 0.100 |
| 11 | 3.987 | | 0.0000 | 0.000 | 12582.3 | 1.240 | BB | 0.051 | 4073.97 | 1.035 |
| 12 | 4.061 | | 0.0000 | 0.000 | 2379.1 | 0.234 | BB | 0.025 | 1564.20 | 0.397 |
| 13 | 4.175 | | 0.0000 | 0.000 | 4734.9 | 0.466 | BB | 0.045 | 1752.65 | 0.445 |
| 14 | 4.308 | TCX | 282.2133 | 45.096 | 244064.0 | 24.045 | BB | 0.035 | 116422.30 | 29.567 |
| 15 | 4.391 | | 0.0000 | 0.000 | 2434.6 | 0.240 | BB | 0.030 | 1375.23 | 0.349 |
| 16 | 4.509 | | 0.0000 | 0.000 | 2095.9 | 0.206 | BB | 0.039 | 888.02 | 0.226 |
| 17 | 4.649 | | 0.0000 | 0.000 | 8863.5 | 0.873 | BB | 0.030 | 4897.29 | 1.244 |
| 18 | 4.713 | | 0.0000 | 0.000 | 998.3 | 0.098 | BB | 0.025 | 668.53 | 0.170 |
| 19 | 4.778 | | 0.0000 | 0.000 | 14003.8 | 1.380 | BB | 0.044 | 5330.05 | 1.354 |
| 20 | 4.897 | Hcb | 3.1499 | 0.503 | 6747.1 | 0.665 | BB | 0.051 | 2211.96 | 0.562 |
| 21 | 5.034 | | 0.0000 | 0.000 | 2452.1 | 0.242 | BB | 0.054 | 749.93 | 0.190 |
| 22 | 5.136 | | 0.0000 | 0.000 | 428.5 | 0.042 | BB | 0.028 | 252.84 | 0.064 |
| 23 | 5.191 | alpha-BHC | 6.5777 | 1.051 | 8364.4 | 0.824 | BB | 0.041 | 3380.66 | 0.859 |
| 24 | 5.273 | | 0.0000 | 0.000 | 1385.8 | 0.137 | BB | 0.029 | 801.61 | 0.204 |
| 25 | 5.380 | | 0.0000 | 0.000 | 942.2 | 0.093 | BB | 0.027 | 589.72 | 0.150 |
| 26 | 5.436 | | 0.0000 | 0.000 | 2441.5 | 0.241 | BB | 0.055 | 741.68 | 0.188 |
| 27 | 5.573 | | 0.0000 | 0.000 | 426.9 | 0.042 | BB | 0.026 | 277.75 | 0.071 |
| 28 | 5.681 | | 0.0000 | 0.000 | 2995.8 | 0.295 | BB | 0.054 | 928.83 | 0.236 |
| 29 | 5.808 | | 0.0000 | 0.000 | 16754.0 | 1.651 | BB | 0.043 | 6482.91 | 1.646 |
| 30 | 5.973 | | 0.0000 | 0.000 | 1337.6 | 0.132 | BB | 0.030 | 731.31 | 0.186 |
| 31 | 6.020 | delta-BHC | 2.9618 | 0.473 | 2921.8 | 0.288 | BB | 0.034 | 1442.32 | 0.366 |
| 32 | 6.142 | | 0.0000 | 0.000 | 553.0 | 0.054 | BB | 0.056 | 165.10 | 0.042 |
| 33 | 6.288 | | 0.0000 | 0.000 | 4939.8 | 0.487 | BB | 0.065 | 1257.27 | 0.319 |
| 34 | 6.386 | | 0.0000 | 0.000 | 381.4 | 0.038 | BB | 0.024 | 262.26 | 0.067 |
| 35 | 6.462 | | 0.0000 | 0.000 | 599.0 | 0.059 | BB | 0.027 | 370.60 | 0.094 |
| 36 | 6.512 | | 0.0000 | 0.000 | 9116.5 | 0.898 | BB | 0.027 | 5598.29 | 1.422 |
| 37 | 6.554 | | 0.0000 | 0.000 | 1712.3 | 0.169 | BB | 0.027 | 1040.00 | 0.264 |
| 38 | 6.650 | | 0.0000 | 0.000 | 1408.1 | 0.139 | BB | 0.043 | 543.61 | 0.138 |
| 39 | 6.721 | Aldrin | 0.3521 | 0.056 | 185.7 | 0.018 | BB | 0.021 | 147.57 | 0.037 |
| 40 | 6.791 | | 0.0000 | 0.000 | 3701.5 | 0.365 | BB | 0.055 | 1129.59 | 0.287 |
| 41 | 6.887 | | 0.0000 | 0.000 | 591.2 | 0.058 | BB | 0.027 | 371.80 | 0.094 |
| 42 | 6.942 | | 0.0000 | 0.000 | 3210.5 | 0.316 | BB | 0.043 | 1243.73 | 0.316 |
| 43 | 7.117 | | 0.0000 | 0.000 | 29070.4 | 2.864 | BB | 0.050 | 9624.60 | 2.444 |
| 44 | 7.220 | | 0.0000 | 0.000 | 738.6 | 0.073 | BB | 0.022 | 548.66 | 0.139 |
| 45 | 7.281 | | 0.0000 | 0.000 | 2479.5 | 0.244 | BB | 0.049 | 835.89 | 0.212 |
| 46 | 7.411 | | 0.0000 | 0.000 | 110205.6 | 10.857 | BB | 0.043 | 42983.17 | 10.916 |
| 47 | 7.542 | o,p-DDE | 1.2497 | 0.200 | 392.2 | 0.039 | BB | 0.020 | 327.31 | 0.083 |
| 48 | 7.597 | Hept. epoxide | 1.7910 | 0.286 | 1901.2 | 0.187 | BB | 0.041 | 767.06 | 0.195 |
| 49 | 7.713 | | 0.0000 | 0.000 | 8669.9 | 0.854 | BV | 0.038 | 3756.02 | 0.954 |
| 50 | 7.776 | g. Chlordane | 6.4852 | 1.036 | 7485.7 | 0.737 | VB | 0.047 | 2670.04 | 0.678 |
| 51 | 7.935 | a. Chlordane | 4.4059 | 0.704 | 6853.1 | 0.675 | BV | 0.059 | 1933.49 | 0.491 |
| 52 | 8.042 | 4,4'-DDE | 3.2840 | 0.525 | 3967.9 | 0.391 | VV | 0.057 | 1153.86 | 0.293 |
| 53 | 8.138 | Endosulfan I | 2.6739 | 0.427 | 5796.4 | 0.571 | VV | 0.092 | 1051.36 | 0.267 |
| 54 | 8.288 | | 0.0000 | 0.000 | 5285.5 | 0.521 | VV | 0.073 | 1205.17 | 0.306 |
| 55 | 8.426 | Dieldrin | 1.9596 | 0.313 | 3653.1 | 0.360 | VV | 0.085 | 713.68 | 0.181 |
| 56 | 8.595 | o,p-DDT | 2.5240 | 0.403 | 2049.7 | 0.202 | VV | 0.051 | 672.92 | 0.171 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.642 | | 0.0000 | 0.000 | 3101.5 | 0.306 | VV | 0.064 | 810.65 | 0.206 |
| 58 | 8.831 | 4,4'-DDD | 8.6071 | 1.375 | 16107.4 | 1.587 | VV | 0.110 | 2449.98 | 0.622 |
| 59 | 8.930 | | 0.0000 | 0.000 | 6857.0 | 0.676 | VV | 0.072 | 1596.30 | 0.405 |
| 60 | 9.061 | Endosulfan II | 4.4605 | 0.713 | 5797.3 | 0.571 | VV | 0.065 | 1489.61 | 0.378 |
| 61 | 9.127 | | 0.0000 | 0.000 | 2032.1 | 0.200 | VB | 0.039 | 867.83 | 0.220 |
| 62 | 9.208 | | 0.0000 | 0.000 | 303.6 | 0.030 | BB | 0.025 | 203.40 | 0.052 |
| 63 | 9.391 | | 0.0000 | 0.000 | 2276.9 | 0.224 | BB | 0.039 | 966.20 | 0.245 |
| 64 | 9.476 | | 0.0000 | 0.000 | 1742.7 | 0.172 | BB | 0.031 | 926.10 | 0.235 |
| 65 | 9.500 | | 0.0000 | 0.000 | 1157.9 | 0.114 | BB | 0.022 | 888.08 | 0.226 |
| 66 | 9.667 | | 0.0000 | 0.000 | 1168.7 | 0.115 | BB | 0.033 | 581.98 | 0.148 |
| 67 | 9.752 | | 0.0000 | 0.000 | 1844.9 | 0.182 | BB | 0.046 | 673.95 | 0.171 |
| 68 | 9.863 | | 0.0000 | 0.000 | 1573.0 | 0.155 | BB | 0.046 | 564.91 | 0.143 |
| 69 | 9.983 | | 0.0000 | 0.000 | 1128.3 | 0.111 | BB | 0.050 | 377.86 | 0.096 |
| 70 | 10.135 | | 0.0000 | 0.000 | 166.6 | 0.016 | BB | 0.030 | 93.83 | 0.024 |
| 71 | 10.245 | | 0.0000 | 0.000 | 298.7 | 0.029 | BB | 0.044 | 114.19 | 0.029 |
| 72 | 10.353 | | 0.0000 | 0.000 | 38275.4 | 3.771 | BB | 0.064 | 9957.08 | 2.529 |
| 73 | 10.600 | | 0.0000 | 0.000 | 1297.3 | 0.128 | BB | 0.050 | 428.80 | 0.109 |
| 74 | 10.700 | | 0.0000 | 0.000 | 488.5 | 0.048 | BB | 0.045 | 182.95 | 0.046 |
| 75 | 10.918 | | 0.0000 | 0.000 | 13936.6 | 1.373 | BB | 0.041 | 5682.05 | 1.443 |
| 76 | 11.060 | | 0.0000 | 0.000 | 902.3 | 0.089 | BB | 0.048 | 315.18 | 0.080 |
| 77 | 11.179 | | 0.0000 | 0.000 | 371.9 | 0.037 | BB | 0.050 | 124.82 | 0.032 |
| 78 | 11.219 | | 0.0000 | 0.000 | 530.6 | 0.052 | BB | 0.031 | 288.61 | 0.073 |
| 79 | 11.367 | | 0.0000 | 0.000 | 673.7 | 0.066 | BB | 0.036 | 307.84 | 0.078 |
| 80 | 11.511 | | 0.0000 | 0.000 | 2256.7 | 0.222 | BB | 0.087 | 431.37 | 0.110 |
| 81 | 11.580 | | 0.0000 | 0.000 | 642.8 | 0.063 | BB | 0.030 | 353.28 | 0.090 |
| 82 | 11.748 | | 0.0000 | 0.000 | 368.7 | 0.036 | BB | 0.036 | 171.39 | 0.044 |
| 83 | 11.878 | DCB | 293.1126 | 46.837 | 260588.6 | 25.673 | BB | 0.045 | 96702.08 | 24.559 |
| 84 | 12.235 | | 0.0000 | 0.000 | 2996.6 | 0.295 | BB | 0.094 | 529.69 | 0.135 |
| 85 | 12.357 | | 0.0000 | 0.000 | 835.0 | 0.082 | BB | 0.047 | 299.00 | 0.076 |
| 86 | 12.474 | | 0.0000 | 0.000 | 3364.8 | 0.331 | BB | 0.178 | 314.89 | 0.080 |
| 87 | 12.551 | | 0.0000 | 0.000 | 1799.8 | 0.177 | BB | 0.055 | 541.06 | 0.137 |
| 88 | 12.661 | | 0.0000 | 0.000 | 5067.8 | 0.499 | BB | 0.053 | 1604.23 | 0.407 |
| 89 | 12.740 | | 0.0000 | 0.000 | 1029.0 | 0.101 | BB | 0.034 | 510.14 | 0.130 |
| 90 | 12.879 | | 0.0000 | 0.000 | 12924.2 | 1.273 | BB | 0.095 | 2276.40 | 0.578 |
| 91 | 13.084 | | 0.0000 | 0.000 | 9081.0 | 0.895 | BB | 0.116 | 1309.04 | 0.332 |
| 92 | 13.304 | | 0.0000 | 0.000 | 2545.9 | 0.251 | BB | 0.095 | 444.51 | 0.113 |
| 93 | 13.520 | | 0.0000 | 0.000 | 2372.1 | 0.234 | BB | 0.091 | 435.09 | 0.110 |

Total Area = 1015040.0, Total Amount = 625.808, Total Height = 393754.3, Sample Units = PPB

Sample Name: **4241629F AB5GP18 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 11:04:46am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.47R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.466 | | 0.0000 | 0.000 | 9235.2 | 0.826 | BB | 0.034 | 4556.05 | 1.072 |
| 2 | 3.533 | | 0.0000 | 0.000 | 1969.8 | 0.176 | BB | 0.025 | 1330.62 | 0.313 |
| 3 | 3.611 | | 0.0000 | 0.000 | 7062.1 | 0.631 | BB | 0.037 | 3209.49 | 0.755 |
| 4 | 3.676 | | 0.0000 | 0.000 | 1008.9 | 0.090 | BB | 0.028 | 591.29 | 0.139 |
| 5 | 3.756 | | 0.0000 | 0.000 | 3342.1 | 0.299 | BB | 0.051 | 1083.34 | 0.255 |
| 6 | 3.846 | | 0.0000 | 0.000 | 403.3 | 0.036 | BB | 0.032 | 212.20 | 0.050 |
| 7 | 3.899 | | 0.0000 | 0.000 | 3267.7 | 0.292 | BB | 0.031 | 1782.49 | 0.419 |
| 8 | 4.033 | TCX | 274.3291 | 46.380 | 341104.0 | 30.490 | BB | 0.037 | 153921.60 | 36.206 |
| 9 | 4.172 | | 0.0000 | 0.000 | 1607.2 | 0.144 | BB | 0.025 | 1080.17 | 0.254 |
| 10 | 4.254 | | 0.0000 | 0.000 | 17559.4 | 1.570 | BB | 0.052 | 5635.26 | 1.326 |
| 11 | 4.356 | | 0.0000 | 0.000 | 531.5 | 0.048 | BB | 0.021 | 427.05 | 0.100 |
| 12 | 4.433 | | 0.0000 | 0.000 | 3610.3 | 0.323 | BB | 0.059 | 1015.00 | 0.239 |
| 13 | 4.576 | | 0.0000 | 0.000 | 3405.6 | 0.304 | BB | 0.029 | 1982.66 | 0.466 |
| 14 | 4.644 | | 0.0000 | 0.000 | 11277.1 | 1.008 | BB | 0.033 | 5661.67 | 1.332 |
| 15 | 4.763 | Hcb | 8.8513 | 1.496 | 20056.5 | 1.793 | BB | 0.035 | 9477.05 | 2.229 |
| 16 | 4.851 | | 0.0000 | 0.000 | 940.1 | 0.084 | BB | 0.028 | 553.73 | 0.130 |
| 17 | 4.898 | | 0.0000 | 0.000 | 2684.5 | 0.240 | BB | 0.024 | 1829.05 | 0.430 |
| 18 | 4.956 | alpha-BHC | 0.9972 | 0.169 | 1342.8 | 0.120 | BB | 0.026 | 855.56 | 0.201 |
| 19 | 5.036 | | 0.0000 | 0.000 | 521.5 | 0.047 | BB | 0.040 | 218.47 | 0.051 |
| 20 | 5.173 | | 0.0000 | 0.000 | 3187.0 | 0.285 | BB | 0.089 | 595.79 | 0.140 |
| 21 | 5.308 | | 0.0000 | 0.000 | 1149.9 | 0.103 | BB | 0.032 | 603.05 | 0.142 |
| 22 | 5.408 | | 0.0000 | 0.000 | 3379.1 | 0.302 | BB | 0.050 | 1132.40 | 0.266 |
| 23 | 5.496 | | 0.0000 | 0.000 | 1077.6 | 0.096 | BB | 0.044 | 412.20 | 0.097 |
| 24 | 5.550 | | 0.0000 | 0.000 | 1516.9 | 0.136 | BB | 0.051 | 495.32 | 0.117 |
| 25 | 5.641 | | 0.0000 | 0.000 | 3884.3 | 0.347 | BB | 0.033 | 1963.25 | 0.462 |
| 26 | 5.720 | | 0.0000 | 0.000 | 1133.5 | 0.101 | BB | 0.027 | 702.52 | 0.165 |
| 27 | 5.764 | | 0.0000 | 0.000 | 1748.1 | 0.156 | BB | 0.033 | 890.54 | 0.209 |
| 28 | 5.927 | | 0.0000 | 0.000 | 3456.6 | 0.309 | BB | 0.055 | 1052.32 | 0.248 |
| 29 | 5.985 | delta-BHC | 5.7591 | 0.974 | 14402.1 | 1.287 | BV | 0.056 | 4291.31 | 1.009 |
| 30 | 6.115 | | 0.0000 | 0.000 | 2006.3 | 0.179 | VV | 0.037 | 897.00 | 0.211 |
| 31 | 6.197 | | 0.0000 | 0.000 | 4882.7 | 0.436 | VV | 0.065 | 1247.22 | 0.293 |
| 32 | 6.289 | | 0.0000 | 0.000 | 457.6 | 0.041 | VB | 0.026 | 296.90 | 0.070 |
| 33 | 6.364 | | 0.0000 | 0.000 | 3126.2 | 0.279 | BB | 0.033 | 1595.41 | 0.375 |
| 34 | 6.465 | | 0.0000 | 0.000 | 1800.2 | 0.161 | BB | 0.041 | 731.30 | 0.172 |
| 35 | 6.625 | | 0.0000 | 0.000 | 31781.7 | 2.841 | BB | 0.050 | 10604.86 | 2.494 |
| 36 | 6.728 | Telodrin | 1.9783 | 0.334 | 1747.1 | 0.156 | BB | 0.025 | 1166.52 | 0.274 |
| 37 | 6.814 | | 0.0000 | 0.000 | 1703.4 | 0.152 | BB | 0.035 | 808.88 | 0.190 |
| 38 | 6.952 | | 0.0000 | 0.000 | 3945.2 | 0.353 | BB | 0.026 | 2536.55 | 0.597 |
| 39 | 6.999 | | 0.0000 | 0.000 | 9790.5 | 0.875 | BB | 0.028 | 5793.25 | 1.363 |
| 40 | 7.128 | | 0.0000 | 0.000 | 135372.5 | 12.101 | BB | 0.053 | 42708.57 | 10.046 |
| 41 | 7.412 | | 0.0000 | 0.000 | 1301.7 | 0.116 | BB | 0.050 | 430.83 | 0.101 |
| 42 | 7.511 | | 0.0000 | 0.000 | 5812.7 | 0.520 | BV | 0.039 | 2490.34 | 0.586 |
| 43 | 7.580 | o,p-DDE | 4.2185 | 0.713 | 5058.1 | 0.452 | VB | 0.057 | 1477.53 | 0.348 |
| 44 | 7.783 | | 0.0000 | 0.000 | 1682.2 | 0.150 | BV | 0.065 | 433.35 | 0.102 |
| 45 | 7.869 | | 0.0000 | 0.000 | 1173.2 | 0.105 | VB | 0.041 | 476.05 | 0.112 |
| 46 | 7.998 | | 0.0000 | 0.000 | 6310.4 | 0.564 | BV | 0.080 | 1321.01 | 0.311 |
| 47 | 8.134 | | 0.0000 | 0.000 | 3238.7 | 0.289 | VV | 0.080 | 671.73 | 0.158 |
| 48 | 8.260 | | 0.0000 | 0.000 | 964.1 | 0.086 | VV | 0.032 | 500.93 | 0.118 |
| 49 | 8.313 | | 0.0000 | 0.000 | 613.7 | 0.055 | VV | 0.035 | 293.18 | 0.069 |
| 50 | 8.393 | | 0.0000 | 0.000 | 2090.3 | 0.187 | VB | 0.042 | 837.33 | 0.197 |
| 51 | 8.493 | | 0.0000 | 0.000 | 338.9 | 0.030 | BB | 0.062 | 91.76 | 0.022 |
| 52 | 8.600 | o,p-DDT | 4.1570 | 0.703 | 6309.4 | 0.564 | BV | 0.083 | 1269.65 | 0.299 |
| 53 | 8.704 | 4,4'-DDD | 5.0374 | 0.852 | 4896.2 | 0.438 | VB | 0.050 | 1644.52 | 0.387 |
| 54 | 8.870 | Endosulfan II | 0.7224 | 0.122 | 873.5 | 0.078 | BV | 0.052 | 279.82 | 0.066 |
| 55 | 8.942 | | 0.0000 | 0.000 | 4799.6 | 0.429 | VV | 0.063 | 1267.21 | 0.298 |
| 56 | 9.033 | | 0.0000 | 0.000 | 2498.8 | 0.223 | VV | 0.054 | 766.16 | 0.180 |

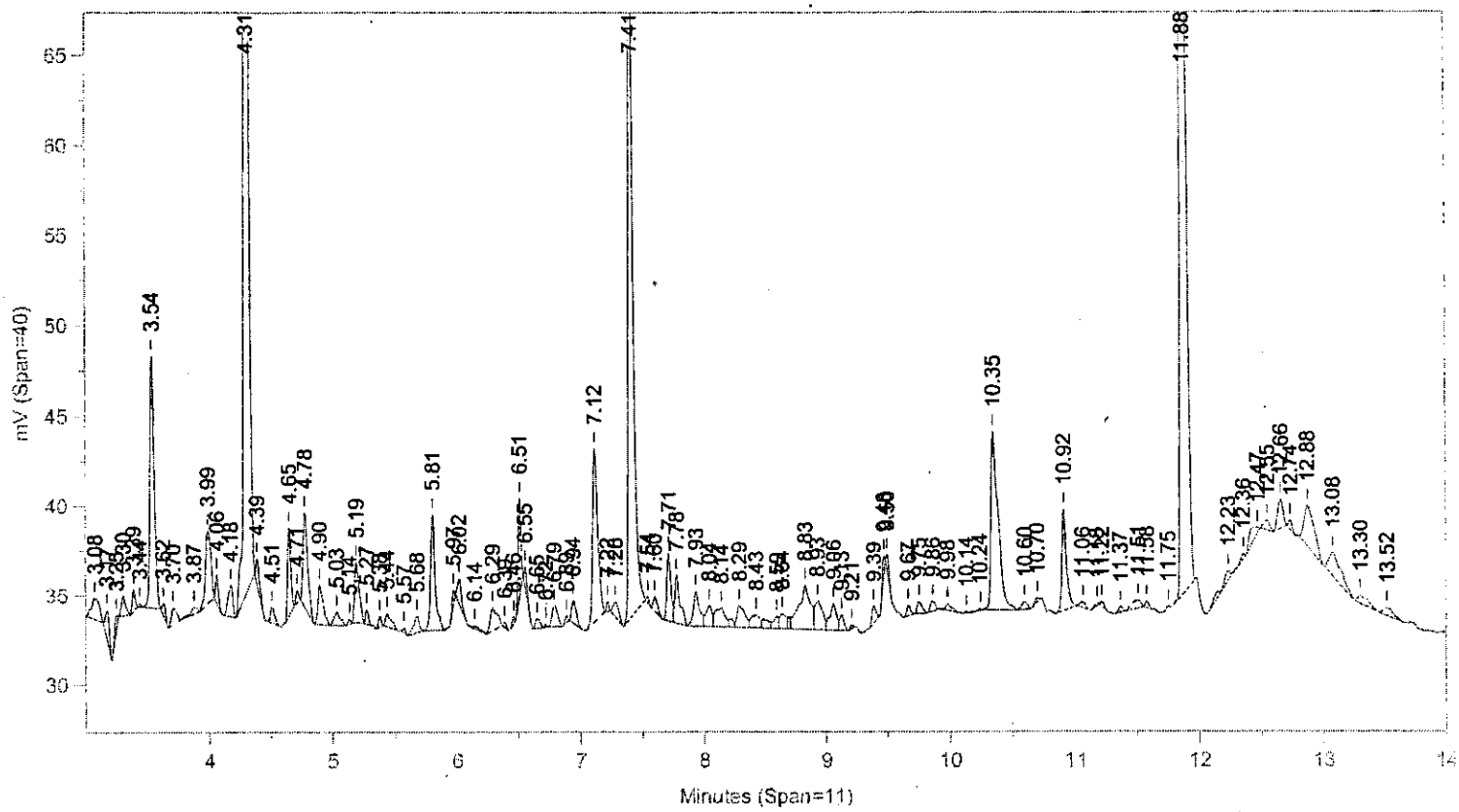
9441

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.214 | | 0.0000 | 0.000 | 4406.6 | 0.394 | VV | 0.095 | 771.81 | 0.182 |
| 58 | 9.288 | Endrin aldehyde | 11.4501 | 1.936 | 11493.4 | 1.027 | VV | 0.055 | 3511.30 | 0.826 |
| 59 | 9.418 | | 0.0000 | 0.000 | 9187.9 | 0.821 | VB | 0.048 | 3197.01 | 0.752 |
| 60 | 9.574 | | 0.0000 | 0.000 | 2031.9 | 0.182 | BB | 0.062 | 548.40 | 0.129 |
| 61 | 9.770 | | 0.0000 | 0.000 | 809.1 | 0.072 | BB | 0.046 | 292.49 | 0.069 |
| 62 | 9.916 | | 0.0000 | 0.000 | 33283.4 | 2.975 | BB | 0.052 | 10665.05 | 2.509 |
| 63 | 10.088 | | 0.0000 | 0.000 | 595.8 | 0.053 | BB | 0.038 | 258.43 | 0.061 |
| 64 | 10.203 | | 0.0000 | 0.000 | 2563.4 | 0.229 | BB | 0.070 | 607.49 | 0.143 |
| 65 | 10.303 | Endrin ketone | 1.2312 | 0.208 | 1102.4 | 0.099 | BB | 0.041 | 444.95 | 0.105 |
| 66 | 10.417 | | 0.0000 | 0.000 | 14705.5 | 1.314 | BB | 0.040 | 6133.09 | 1.443 |
| 67 | 10.590 | | 0.0000 | 0.000 | 516.8 | 0.046 | BB | 0.057 | 150.84 | 0.035 |
| 68 | 10.637 | | 0.0000 | 0.000 | 309.5 | 0.028 | BB | 0.028 | 182.47 | 0.043 |
| 69 | 10.869 | | 0.0000 | 0.000 | 1416.9 | 0.127 | BB | 0.067 | 355.00 | 0.084 |
| 70 | 11.077 | | 0.0000 | 0.000 | 5208.7 | 0.466 | BB | 0.089 | 979.68 | 0.230 |
| 71 | 11.401 | | 0.0000 | 0.000 | 2485.2 | 0.222 | BB | 0.105 | 395.32 | 0.093 |
| 72 | 11.513 | | 0.0000 | 0.000 | 2202.2 | 0.197 | BB | 0.035 | 1048.88 | 0.247 |
| 73 | 11.601 | | 0.0000 | 0.000 | 795.0 | 0.071 | BB | 0.031 | 430.42 | 0.101 |
| 74 | 11.798 | | 0.0000 | 0.000 | 1896.4 | 0.170 | BB | 0.072 | 436.32 | 0.103 |
| 75 | 11.869 | | 0.0000 | 0.000 | 2878.5 | 0.257 | BB | 0.069 | 696.01 | 0.164 |
| 76 | 12.025 | DCB | 272.7452 | 46.113 | 273460.3 | 24.444 | BB | 0.046 | 98258.16 | 23.112 |
| 77 | 12.229 | | 0.0000 | 0.000 | 8090.3 | 0.723 | BB | 0.104 | 1302.59 | 0.306 |
| 78 | 12.417 | | 0.0000 | 0.000 | 2230.8 | 0.199 | BB | 0.068 | 547.19 | 0.129 |
| 79 | 12.671 | | 0.0000 | 0.000 | 5374.3 | 0.480 | BB | 0.210 | 426.29 | 0.100 |
| 80 | 13.136 | | 0.0000 | 0.000 | 6131.4 | 0.548 | BB | 0.111 | 924.54 | 0.217 |
| 81 | 13.469 | | 0.0000 | 0.000 | 10633.0 | 0.950 | BB | 0.097 | 1817.95 | 0.428 |
| 82 | 13.819 | | 0.0000 | 0.000 | 4475.8 | 0.400 | BB | 0.135 | 550.79 | 0.130 |

Total Area = 1118724.0, Total Amount = 591.477, Total Height = 425131.8, Sample Units = PPB

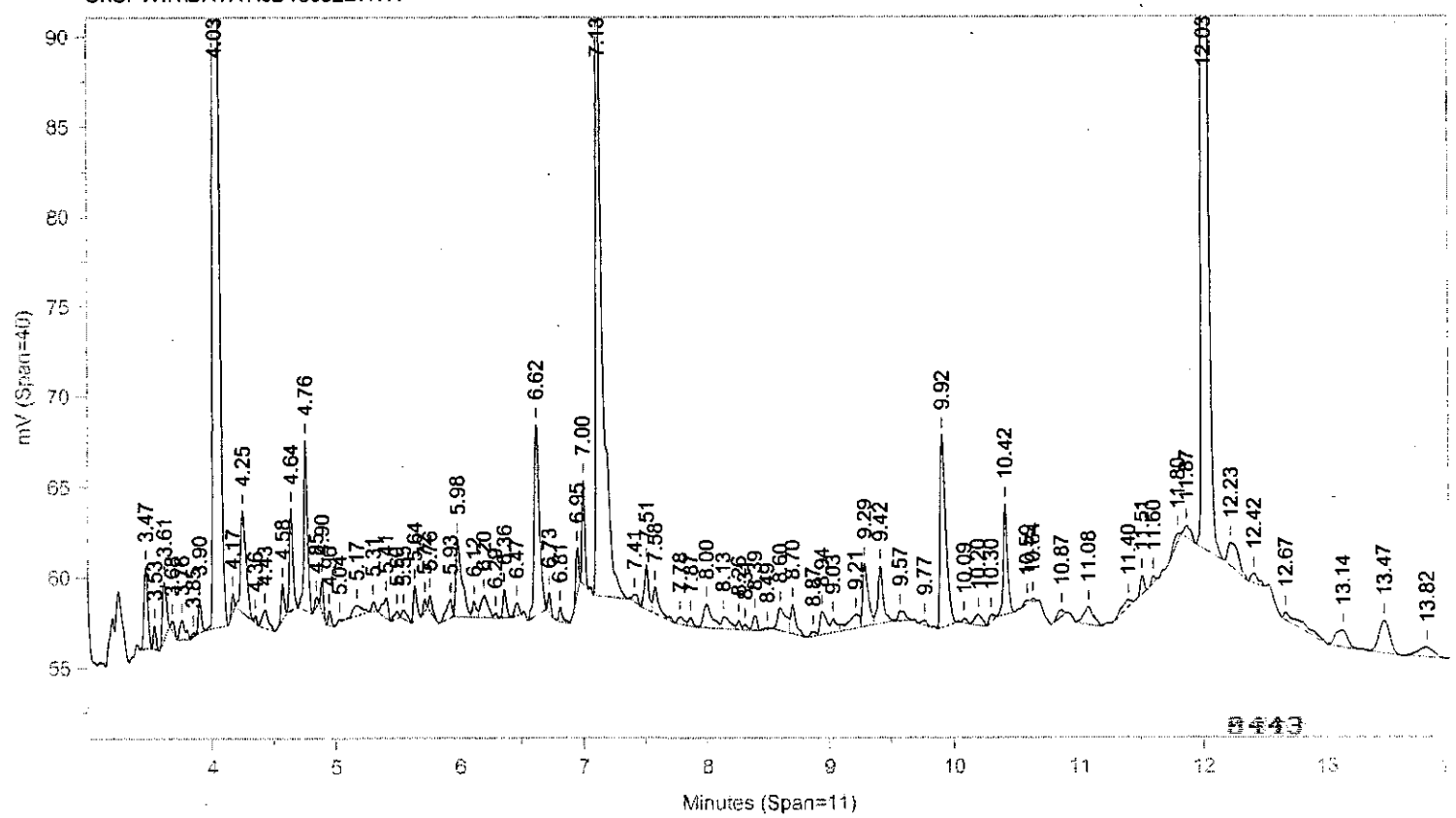
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.47R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 10:50:46 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.47R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 10:50:46 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 30
Analyst: 120

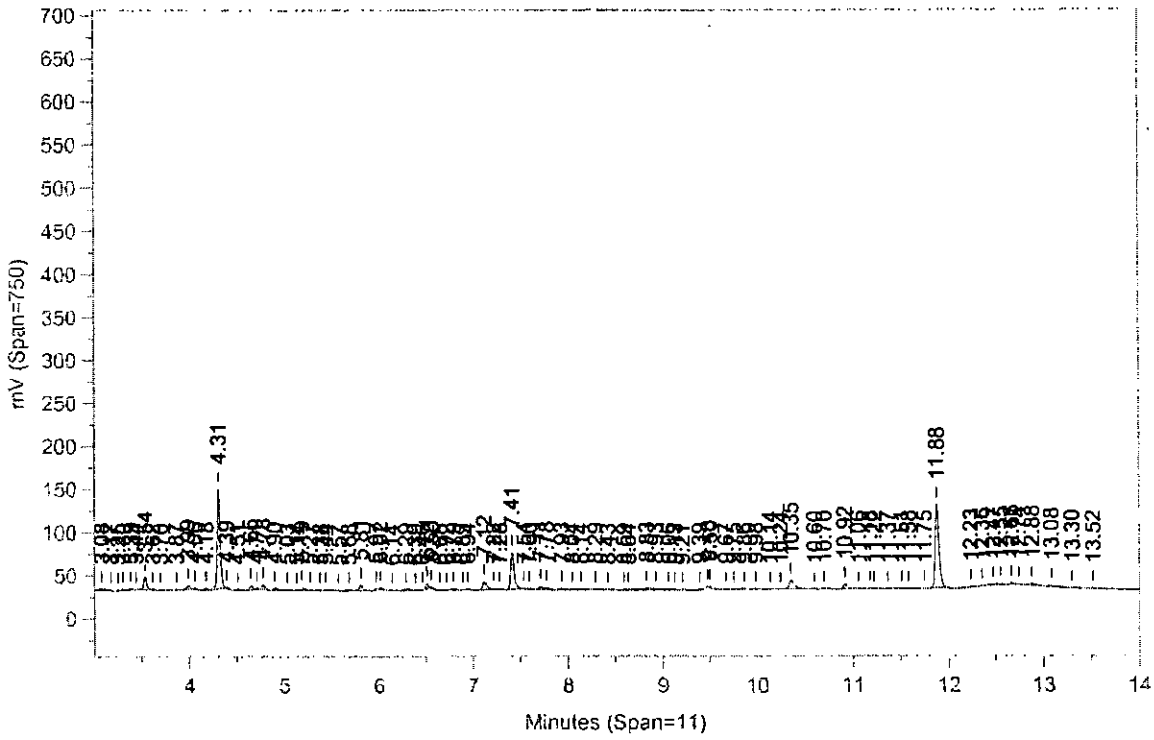
Dilution Factor: 10

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.308 | 116422 | 9.407 | TCX | 4.033 | 153922 | 9.144 | TCX |
| 4.897 | 2212 | .105 | Hcb | 4.763 | 9477 | .295 | Hcb |
| 5.191 | 3381 | .219 | alpha-BHC | 4.956 | 856 | .033 | alpha-BHC |
| 6.02 | 1442 | .099 | delta-BHC | 5.985 | 4291 | .192 | delta-BHC |
| 6.721 | 148 | .012 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Telodrin | 6.728 | 1167 | .066 | Telodrin |
| 7.542 | 327 | .042 | o,p-DDE | 7.58 | 1478 | .141 | o,p-DDE |
| 7.597 | 767 | .06 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.776 | 2670 | .216 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.935 | 1933 | .147 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.042 | 1154 | .109 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.138 | 1051 | .089 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.426 | 714 | .065 | Dieldrin | . | 0 | . | Dieldrin |
| 8.595 | 673 | .084 | o,p-DDT | 8.6 | 1270 | .139 | o,p-DDT |
| 8.831 | 2450 | .287 | 4,4'-DDD | 8.704 | 1645 | .168 | 4,4'-DDD |
| 9.061 | 1490 | .149 | Endosulfan II | 8.87 | 280 | .024 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.288 | 3511 | .382 | Endrin aldehyde |
| . | 0 | . | Endrin ketone | 10.303 | 445 | .041 | Endrin ketone |
| 11.878 | 96702 | 9.77 | DCB | 12.025 | 98258 | 9.092 | DCB |

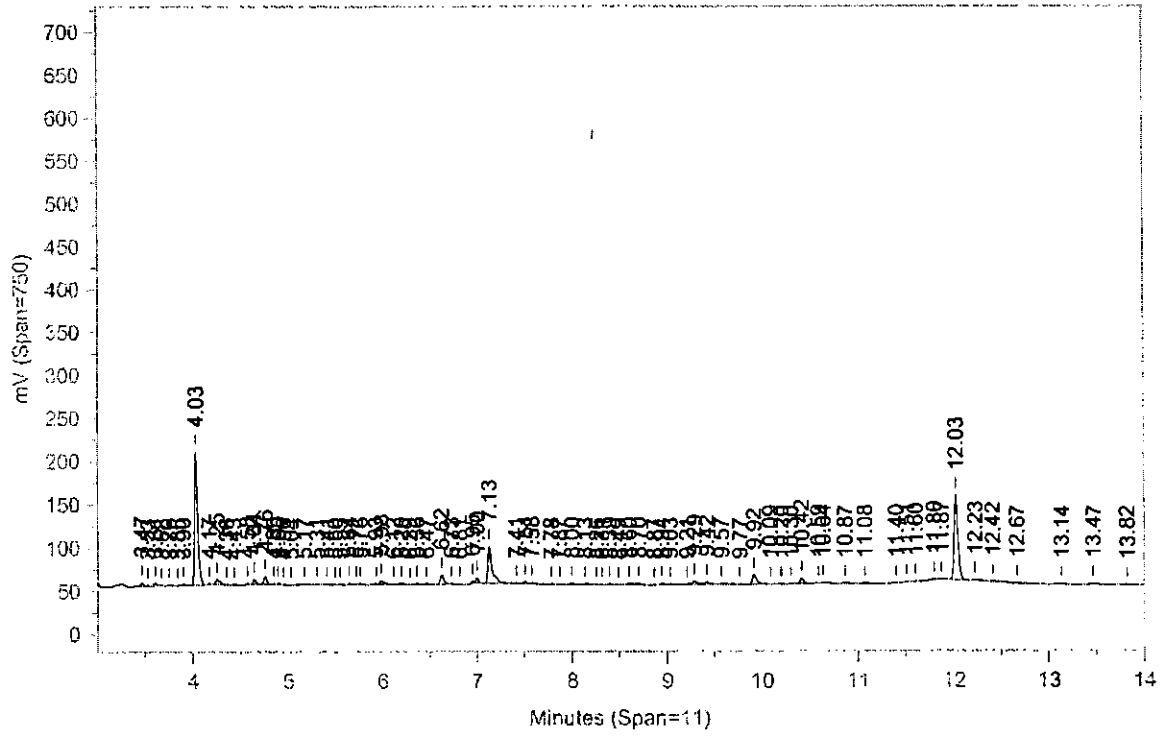
Files:
Area File: C:\CPWIN\DATA1\3D16082.47A
Area File: C:\CPWIN\DATA1\3D16082B.47A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:21:40 PM
File Reported On: 3/26/2004 at 3:21:47 PM

10x REPLOTS

C:\CPWIN\DATA1\3D16082.47R




C:\CPWIN\DATA1\3D16082B.47R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241630 F  5GP19  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262A
Result file : 3D16082.48R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 96.4%  Conc.: 9.274403
%SSR(DCB) : 98.6%  Conc.: 9.599458

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 114780 | 9.274403 |
| **Hcb** | 4.88 | 4.91 | 4.94 | 1143 | 0.054278 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 2392 | 0.155161 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 1430 | 0.097873 |
| **Heptachlor** | 6.29 | 6.33 | 6.35 | 748 | 0.045949 |
| **Aldrin** | 6.72 | 6.75 | 6.78 | 8459 | 0.672682 |
| **o,p-DDE** | 7.53 | 7.55 | 7.59 | 2035 | 0.258938 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 6126 | 0.465345 |
| **4,4'-DDE** | 7.99 | 8.00 | 8.05 | 4983 | 0.472715 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 7771 | 0.774696 |
| **4,4'-DDD** | 8.78 | 8.83 | 8.84 | 31794 | 3.723200 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 2547 | 0.254201 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 975 | 0.118438 |
| **Endo. sulfate** | 10.14 | 10.18 | 10.20 | 281 | 0.031809 |
| **DCB** | 11.86 | 11.88 | 11.92 | 95010 | 9.599458 |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262B
Result file : 3D16082B.48R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 92.3%  Conc.: 8.876749
%SSR(DCB) : 90%  Conc.: 8.768126

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 149418 | 8.876749 |
| **Hcb** | 4.71 | 4.77 | 4.77 | 9048 | 0.281681 |
| **alpha-BHC** | 4.91 | 4.96 | 4.97 | 2179 | 0.084661 |
| **gamma-BHC** | 5.43 | 5.48 | 5.49 | 3172 | 0.133010 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 6330 | 0.283155 |
| **Heptachlor** | 6.04 | 6.07 | 6.10 | 12571 | 0.528544 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 1505 | 0.085093 |
| **Hept. epoxide** | 7.27 | 7.29 | 7.33 | 7107 | 0.398651 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 28015 | 1.611121 |
| **a. Chlordane** | 7.71 | 7.77 | 7.77 | 364 | 0.021867 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 1718 | 0.108590 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 6073 | 0.434449 |
| **o,p-DDT** | 8.58 | 8.59 | 8.64 | 1728 | 0.188562 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 31514 | 3.217703 |
| **Endosulfan II** | 8.82 | 8.86 | 8.88 | 5819 | 0.500755 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 12776 | 1.306758 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 4878 | 0.530184 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 14905 | 1.374758 |
| **DCB** | 12.01 | 12.03 | 12.07 | 94763 | 8.768126 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.274403 | | | | 4.38 | |
| Hcb | B | 0.281681 | | | | ** 135.38 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | A | 0.472715 | <1.7 | 0.33 | J | 8.44 | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | DNQ |
| 4,4'-DDD | A | 3.723200 | 1.7 | 0.58 | | 14.57 | |
| Endosulfan II | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:05:14

# Lancaster Laboratories Single Component Data Summary

**Sample Name:** 4241630 F 5GP19 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262A
Result file : 3D16082.48R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262B
Result file : 3D16082B.48R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.599458 | | | | 9.05 | |

Units: ug/kg X

Reviewed by: M.E.W. 1240 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

0447

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:05:14

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241630 F 5GP19 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 11:11:18 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.48R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 96.4% | Conc: | 9.274403 |
| %SSR(DCB) | 98.6% | Conc: | 9.599458 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 11:11:18 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.48R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 92.3% | Conc: | 8.876749 |
| %SSR(DCB) | 90.0% | Conc: | 8.768126 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | * NO PARTNER DETECTED |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg Y

%Difference = High - Low divided by the Average times 100

Reviewed By: [signature] Date: 3/28/04

Verified By: [signature] Date: 3/29/04

5445

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241630 F 5GP19 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262A
Result file : 3D16082.48R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 96.4% Conc.: 9.274403
%SSR(DCB) : 98.6% Conc.: 9.599458

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **108.40** | |
| 5.35 | 5.40 | 5.41 | 6666.711914 | 15.720144 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1429.848145 | 4.015929 | | | 3 |
| 6.20 | 6.21 | 6.26 | 342.197784 | 0.909984 | | | 4 |
| + 6.29 | 6.30 | 6.35 | 519.468628 | 2.131421 | | | 5 |
| 6.29 | 6.33 | 6.35 | 747.910034 | 3.068734 | | | 5 |
| 6.87 | 6.89 | 6.93 | 409.782471 | 3.385535 | | | 6 |
| Height Summation | | | **9596.450348** | | | | |
| Amount Avg CF: | | | **5.420065** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 4.55 | 4.61 | 4.61 | 295.680969 | 1.807949 | | | 1 |
| Height Summation | | | **295.680969** | | | | |
| Amount Avg CF: | | | **1.807949** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **109.79** | |
| 5.35 | 5.40 | 5.41 | 6666.711914 | 34.463978 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1429.848145 | 8.722841 | | | 3 |
| 6.19 | 6.21 | 6.25 | 342.197784 | 1.939567 | | | 4 |
| + 6.28 | 6.30 | 6.34 | 519.468628 | 4.593612 | | | 5 |
| 6.28 | 6.33 | 6.34 | 747.910034 | 6.613698 | | | 5 |
| 6.87 | 6.89 | 6.93 | 409.782471 | 7.151527 | | | 6 |
| Height Summation | | | **9596.450348** | | | | |
| Amount Avg CF: | | | **11.778322** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **110.36** | |
| 5.35 | 5.40 | 5.41 | 6666.711914 | 17.952396 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1429.848145 | 4.677292 | | | 3 |
| 6.19 | 6.21 | 6.25 | 342.197784 | 1.054701 | | | 4 |
| + 6.28 | 6.30 | 6.34 | 519.468628 | 2.51297 | | | 5 |
| 6.28 | 6.33 | 6.34 | 747.910034 | 3.618073 | | | 5 |
| 6.87 | 6.89 | 6.93 | 409.782471 | 3.269367 | | | 6 |
| Height Summation | | | **9596.450348** | | | | |
| Amount Avg CF: | | | **6.114366** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **45.94** | |
| 5.35 | 5.40 | 5.41 | 6666.711914 | 36.661508 | | | 1 |
| 6.01 | 6.03 | 6.07 | 1429.848145 | 10.32978 | | | 2 |
| 6.75 | 6.75 | 6.81 | 8458.891602 | 19.287438 | | | 3 |
| 7.62 | 7.63 | 7.68 | 6463.508789 | 19.38287 | | | 5 |
| 8.14 | 8.16 | 8.20 | 8204.792969 | 33.375203 | | | 6 |
| Height Summation | | | **31223.753419** | | | | |
| Amount Avg CF: | | | **23.80736** | Linear: | | | |
| **Aroclor-1254** | | | | | **5** | **33.05** | |
| 7.60 | 7.63 | 7.66 | 6463.508789 | 12.811611 | | | 2 |
| 8.13 | 8.16 | 8.19 | 8204.792969 | 12.473233 | | | 3 |
| 8.50 | 8.51 | 8.56 | 12480.70605 | 25.515403 | | | 4 |
| 8.73 | 8.76 | 8.79 | 7771.298828 | 25.08068 | | | 5 |
| 9.10 | 9.13 | 9.16 | 9855.514648 | 20.386558 | | | 6 |
| Height Summation | | | **44775.821289** | | | | |
| Amount Avg CF: | | | **19.253497** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262B
Result file : 3D16082B.48R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 92.3% Conc.: 8.876749
%SSR(DCB) : 90% Conc.: 8.768126

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **4** | **150.96** | |
| 4.72 | 4.77 | 4.78 | 9047.830078 | 25.69113 | | | 1 |
| 5.29 | 5.32 | 5.35 | 521.249268 | 1.051415 | | | 2 |
| 5.91 | 5.93 | 5.97 | 679.624451 | 0.674514 | | | 3 |
| 6.72 | 6.74 | 6.78 | 1505.288818 | 4.26424 | | | 6 |
| Height Summation | | | **11753.992615** | | | | |
| Amount Avg CF: | | | **7.920325** | Linear: | | | |
| **Aroclor-1221** | | | | | **3** | **86.54** | |
| 4.44 | 4.44 | 4.50 | 7011.879883 | 31.000641 | | | 1 |
| E 4.64 | 4.65 | 4.70 | 14605.83593 | 97.999436 | | | 2 |
| 4.72 | 4.77 | 4.78 | 9047.830078 | 18.810262 | | | 3 |
| Height Summation | | | **30665.545899** | | | | |
| Amount Avg CF: | | | **49.270113** | Linear: | | | |
| **Aroclor-1232** | | | | | **4** | **111.17** | |
| 4.72 | 4.77 | 4.78 | 9047.830078 | 23.383938 | | | 1 |
| 5.29 | 5.32 | 5.35 | 521.249268 | 2.291911 | | | 2 |
| 5.91 | 5.93 | 5.97 | 679.624451 | 1.432039 | | | 3 |
| 6.71 | 6.74 | 6.77 | 1505.288818 | 9.424548 | | | 6 |
| Height Summation | | | **11753.992615** | | | | |
| Amount Avg CF: | | | **9.133109** | Linear: | | | |
| **Aroclor-1242** | | | | | **4** | **149.67** | |
| 4.72 | 4.77 | 4.78 | 9047.830078 | 27.679363 | | | 1 |
| 5.29 | 5.32 | 5.35 | 521.249268 | 1.18852 | | | 2 |
| 5.91 | 5.93 | 5.97 | 679.624451 | 0.780088 | | | 3 |
| 6.72 | 6.74 | 6.78 | 1505.288818 | 4.694858 | | | 6 |
| Height Summation | | | **11753.992615** | | | | |
| Amount Avg CF: | | | **8.585707** | Linear: | | | |
| **Aroclor-1248** | | | | | **6** | **119.55** | |
| 5.29 | 5.32 | 5.35 | 521.249268 | 2.342272 | | | 1 |
| 5.91 | 5.93 | 5.97 | 679.624451 | 1.343264 | | | 2 |
| 6.71 | 6.74 | 6.77 | 1505.288818 | 2.813124 | | | 3 |
| 7.21 | 7.22 | 7.27 | 6055.782227 | 12.655116 | | | 4 |
| 7.57 | 7.61 | 7.63 | 5283.959473 | 10.868655 | | | 5 |
| 8.11 | 8.13 | 8.17 | 9555.90332 | 36.094064 | | | 6 |
| Height Summation | | | **23601.807557** | | | | |
| Amount Avg CF: | | | **11.019416** | Linear: | | | |
| **Aroclor-1254** | | | | | **5** | **54.89** | |
| 6.35 | 6.38 | 6.41 | 13888.06543 | 40.84629 | | | 1 |
| 7.50 | 7.52 | 7.56 | 28015.10351 | 49.620437 | | | 2 |
| 8.10 | 8.13 | 8.16 | 9555.90332 | 13.42355 | | | 3 |
| 8.84 | 8.86 | 8.90 | 5818.918945 | 15.730039 | | | 5 |
| 9.08 | 9.11 | 9.14 | 12775.61328 | 24.635762 | | | 6 |
| Height Summation | | | **70053.604492** | | | | |
| Amount Avg CF: | | | **28.851216** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **90.20** | |
| 8.36 | 8.38 | 8.42 | 5951.612793 | 10.157705 | | | 1 |
| 8.62 | 8.64 | 8.68 | 4607.865234 | 6.510574 | | | 2 |
| 8.83 | 8.86 | 8.89 | 5818.918945 | 12.800891 | | | 3 |
| 9.08 | 9.11 | 9.14 | 12775.61328 | 19.250326 | | | 4 |
| 9.58 | 9.58 | 9.64 | 7247.521973 | 16.849075 | | | 5 |
| 9.88 | 9.91 | 9.94 | 55256.13281 | 56.750592 | | | 6 |
| Height Summation | | | **91657.665039** | | | | |
| Amount Avg CF: | | | **20.386527** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:05:35

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241630 F** 5GP19 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262A
Result file : 3D16082.48R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **6** | **66.77** | |
| 8.38 | 8.40 | 8.44 | 4592.583496 | 8.508727 | | | 1 |
| 8.73 | 8.76 | 8.79 | 7771.298828 | 11.829844 | | | 2 |
| 9.10 | 9.13 | 9.16 | 9855.514648 | 15.315228 | | | 3 |
| 9.57 | 9.59 | 9.63 | 974.744019 | 3.015517 | | | 4 |
| 9.96 | 9.98 | 10.02 | 3043.476563 | 3.497284 | | | 5 |
| 11.14 | 11.17 | 11.20 | 898.663452 | 3.776332 | | | 6 |
| Height Summation | | | **27136.281006** | | | | |
| Amount Avg CF: | | | **7.657155** | Linear: | | | |
| **Chlordane** | | | | | **5** | **85.69** | |
| 6.18 | 6.21 | 6.24 | 342.197784 | 0.664835 | | | 1 |
| + 6.29 | 6.30 | 6.35 | 519.468628 | 0.764401 | | | 2 |
| 6.29 | 6.33 | 6.35 | 747.910034 | 1.100554 | | | 2 |
| 6.91 | 6.95 | 6.97 | 4618.271484 | 7.060254 | | | 3 |
| 7.89 | 7.94 | 7.95 | 6126.333496 | 4.246108 | | | 5 |
| 8.92 | 8.92 | 8.98 | 4325.723145 | 9.899606 | | | 6 |
| Height Summation | | | **16160.435943** | | | | |
| Amount Avg CF: | | | **4.594271** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **67.91** | |
| 8.61 | 8.61 | 8.67 | 2656.141113 | 24.439118 | | | 1 |
| 8.75 | 8.76 | 8.81 | 7771.298828 | 69.586658 | | | 2 |
| Height Summation | | | **10427.439941** | | | | |
| Amount Avg CF: | | | **47.012888** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:11:18
Instrument : CP16--H5262B
Result file : 3D16082B.48R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **6** | **116.76** | |
| 5.84 | 5.87 | 5.90 | 962.590637 | 1.312639 | | | 1 |
| 6.05 | 6.07 | 6.11 | 12571.27246 | 12.466248 | | | 2 |
| 6.70 | 6.74 | 6.76 | 1505.288818 | 1.869114 | | | 3 |
| 7.51 | 7.52 | 7.57 | 28015.10351 | 15.697761 | | | 4 |
| 7.64 | 7.66 | 7.70 | 3170.625488 | 2.475586 | | | 5 |
| 7.71 | 7.77 | 7.77 | 363.619232 | 0.247998 | | | 6 |
| Height Summation | | | **46588.500152** | | | | |
| Amount Avg CF: | | | **5.678224** | Linear: | | | |
| **Toxaphene** | | | | | **5** | **106.89** | |
| 8.12 | 8.13 | 8.18 | 9555.90332 | 79.38643 | | | 1 |
| 8.91 | 8.96 | 8.97 | 1258.849365 | 4.204489 | | | 3 |
| 9.25 | 9.29 | 9.31 | 4877.611328 | 22.492812 | | | 4 |
| 9.91 | 9.91 | 9.97 | 55256.13281 | 249.454344 | | | 5 |
| 10.41 | 10.42 | 10.47 | 11781.09082 | 97.420746 | | | 6 |
| Height Summation | | | **82729.587646** | | | | |
| Amount Avg CF: | | | **90.591764** | Linear: | | | |

8456

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:05:35

Sample Name: **4241630F AB5GP19 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 11:25:18am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.48R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.077 | | 0.0000 | 0.000 | 2753.9 | 0.143 | BB | 0.051 | 892.34 | 0.115 |
| 2 | 3.184 | | 0.0000 | 0.000 | 2885.7 | 0.149 | BB | 0.033 | 1441.30 | 0.186 |
| 3 | 3.245 | | 0.0000 | 0.000 | 12063.7 | 0.625 | BB | 0.034 | 5974.85 | 0.770 |
| 4 | 3.306 | | 0.0000 | 0.000 | 1167.8 | 0.060 | BB | 0.031 | 631.37 | 0.081 |
| 5 | 3.391 | | 0.0000 | 0.000 | 2028.1 | 0.105 | BB | 0.028 | 1204.70 | 0.155 |
| 6 | 3.452 | | 0.0000 | 0.000 | 281.6 | 0.015 | BB | 0.026 | 182.12 | 0.023 |
| 7 | 3.542 | | 0.0000 | 0.000 | 51802.9 | 2.682 | BB | 0.042 | 20605.93 | 2.655 |
| 8 | 3.624 | | 0.0000 | 0.000 | 1203.5 | 0.062 | BB | 0.026 | 762.05 | 0.098 |
| 9 | 3.684 | | 0.0000 | 0.000 | 2375.9 | 0.123 | BB | 0.046 | 854.41 | 0.110 |
| 10 | 3.785 | | 0.0000 | 0.000 | 184.5 | 0.010 | BB | 0.024 | 126.01 | 0.016 |
| 11 | 3.873 | | 0.0000 | 0.000 | 9103.3 | 0.471 | BB | 0.041 | 3656.69 | 0.471 |
| 12 | 3.985 | | 0.0000 | 0.000 | 15342.9 | 0.794 | BB | 0.050 | 5115.45 | 0.659 |
| 13 | 4.066 | | 0.0000 | 0.000 | 10984.5 | 0.569 | BB | 0.026 | 6963.53 | 0.897 |
| 14 | 4.124 | | 0.0000 | 0.000 | 41387.5 | 2.143 | BB | 0.036 | 19181.96 | 2.472 |
| 15 | 4.192 | | 0.0000 | 0.000 | 6272.0 | 0.325 | BB | 0.028 | 3756.28 | 0.484 |
| 16 | 4.312 | TCX | 278.2321 | 35.672 | 229313.5 | 11.874 | BB | 0.033 | 114779.90 | 14.791 |
| 17 | 4.398 | | 0.0000 | 0.000 | 6508.2 | 0.337 | BB | 0.045 | 2433.82 | 0.314 |
| 18 | 4.514 | | 0.0000 | 0.000 | 1262.2 | 0.065 | BB | 0.033 | 633.48 | 0.082 |
| 19 | 4.607 | | 0.0000 | 0.000 | 486.0 | 0.025 | BB | 0.027 | 295.68 | 0.038 |
| 20 | 4.652 | | 0.0000 | 0.000 | 28654.4 | 1.484 | BB | 0.032 | 14935.15 | 1.925 |
| 21 | 4.738 | | 0.0000 | 0.000 | 35900.1 | 1.859 | BB | 0.056 | 10686.04 | 1.377 |
| 22 | 4.914 | Hcb | 1.6283 | 0.209 | 2540.5 | 0.132 | BB | 0.037 | 1143.48 | 0.147 |
| 23 | 4.961 | | 0.0000 | 0.000 | 153493.7 | 7.948 | BB | 0.037 | 68468.03 | 8.823 |
| 24 | 5.073 | | 0.0000 | 0.000 | 303.4 | 0.016 | BB | 0.018 | 273.97 | 0.035 |
| 25 | 5.132 | | 0.0000 | 0.000 | 14200.9 | 0.735 | BB | 0.031 | 7545.76 | 0.972 |
| 26 | 5.193 | alpha-BHC | 4.6548 | 0.597 | 5696.3 | 0.295 | BB | 0.040 | 2392.38 | 0.308 |
| 27 | 5.279 | | 0.0000 | 0.000 | 1167.6 | 0.060 | BB | 0.024 | 819.20 | 0.106 |
| 28 | 5.330 | | 0.0000 | 0.000 | 4078.2 | 0.211 | BB | 0.029 | 2321.20 | 0.299 |
| 29 | 5.398 | | 0.0000 | 0.000 | 15748.1 | 0.815 | BB | 0.039 | 6666.71 | 0.859 |
| 30 | 5.518 | | 0.0000 | 0.000 | 18091.3 | 0.937 | BB | 0.043 | 6965.22 | 0.898 |
| 31 | 5.686 | | 0.0000 | 0.000 | 4311.9 | 0.223 | BB | 0.068 | 1051.07 | 0.135 |
| 32 | 5.811 | | 0.0000 | 0.000 | 26756.1 | 1.385 | BB | 0.050 | 8876.56 | 1.144 |
| 33 | 5.974 | | 0.0000 | 0.000 | 2256.2 | 0.117 | BB | 0.029 | 1300.18 | 0.168 |
| 34 | 6.030 | delta-BHC | 2.9362 | 0.376 | 3726.0 | 0.193 | BB | 0.043 | 1429.85 | 0.184 |
| 35 | 6.148 | | 0.0000 | 0.000 | 343.1 | 0.018 | BB | 0.030 | 188.32 | 0.024 |
| 36 | 6.209 | | 0.0000 | 0.000 | 515.4 | 0.027 | BB | 0.025 | 342.20 | 0.044 |
| 37 | 6.296 | | 0.0000 | 0.000 | 1433.0 | 0.074 | BB | 0.046 | 519.47 | 0.067 |
| 38 | 6.327 | Heptachlor | 1.3785 | 0.177 | 1186.0 | 0.061 | BB | 0.026 | 747.91 | 0.096 |
| 39 | 6.388 | | 0.0000 | 0.000 | 7895.9 | 0.409 | BB | 0.068 | 1936.19 | 0.250 |
| 40 | 6.517 | | 0.0000 | 0.000 | 154514.0 | 8.001 | BB | 0.040 | 63735.47 | 8.213 |
| 41 | 6.661 | | 0.0000 | 0.000 | 26432.6 | 1.369 | BB | 0.040 | 10934.43 | 1.409 |
| 42 | 6.754 | Aldrin | 20.1805 | 2.587 | 22037.9 | 1.141 | BB | 0.043 | 8458.89 | 1.090 |
| 43 | 6.891 | | 0.0000 | 0.000 | 613.0 | 0.032 | BB | 0.025 | 409.78 | 0.053 |
| 44 | 6.949 | | 0.0000 | 0.000 | 11548.3 | 0.598 | BB | 0.042 | 4618.27 | 0.595 |
| 45 | 7.121 | | 0.0000 | 0.000 | 34585.1 | 1.791 | BB | 0.051 | 11279.45 | 1.454 |
| 46 | 7.251 | | 0.0000 | 0.000 | 7988.1 | 0.414 | BB | 0.026 | 5108.27 | 0.658 |
| 47 | 7.287 | | 0.0000 | 0.000 | 3197.7 | 0.166 | BB | 0.023 | 2281.19 | 0.294 |
| 48 | 7.406 | | 0.0000 | 0.000 | 13361.3 | 0.692 | BB | 0.064 | 3485.11 | 0.449 |
| 49 | 7.553 | o,p-DDE | 7.7681 | 0.996 | 3760.8 | 0.195 | BB | 0.031 | 2034.57 | 0.262 |
| 50 | 7.630 | | 0.0000 | 0.000 | 16793.4 | 0.870 | BV | 0.043 | 6463.51 | 0.833 |
| 51 | 7.714 | | 0.0000 | 0.000 | 21525.0 | 1.115 | VV | 0.060 | 5971.93 | 0.770 |
| 52 | 7.826 | | 0.0000 | 0.000 | 12375.3 | 0.641 | VB | 0.059 | 3492.53 | 0.450 |
| 53 | 7.942 | a. Chlordane | 13.9604 | 1.790 | 21301.1 | 1.103 | BV | 0.058 | 6126.33 | 0.789 |
| 54 | 8.004 | 4,4'-DDE | 14.1814 | 1.818 | 11332.8 | 0.587 | VV | 0.038 | 4982.67 | 0.642 |
| 55 | 8.059 | | 0.0000 | 0.000 | 2020.8 | 0.105 | VB | 0.031 | 1093.33 | 0.141 |
| 56 | 8.164 | | 0.0000 | 0.000 | 20547.6 | 1.064 | BV | 0.042 | 8204.79 | 1.057 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.314 | | 0.0000 | 0.000 | 7773.1 | 0.402 | VV | 0.063 | 2056.36 | 0.265 |
| 58 | 8.361 | | 0.0000 | 0.000 | 3226.6 | 0.167 | VV | 0.029 | 1859.07 | 0.240 |
| 59 | 8.401 | | 0.0000 | 0.000 | 14781.6 | 0.765 | VV | 0.054 | 4592.58 | 0.592 |
| 60 | 8.513 | | 0.0000 | 0.000 | 48893.0 | 2.532 | VV | 0.065 | 12480.71 | 1.608 |
| 61 | 8.612 | | 0.0000 | 0.000 | 8764.2 | 0.454 | VV | 0.055 | 2656.14 | 0.342 |
| 62 | 8.702 | | 0.0000 | 0.000 | 11428.6 | 0.592 | VV | 0.049 | 3877.69 | 0.500 |
| 63 | 8.758 | Endrin | 23.2409 | 2.980 | 26031.0 | 1.348 | VV | 0.056 | 7771.30 | 1.001 |
| 64 | 8.834 | 4,4'-DDD | 111.6960 | 14.320 | 85008.1 | 4.402 | VV | 0.045 | 31793.71 | 4.097 |
| 65 | 8.923 | | 0.0000 | 0.000 | 11920.3 | 0.617 | VB | 0.046 | 4325.72 | 0.557 |
| 66 | 9.058 | Endosulfan II | 7.6260 | 0.978 | 7111.0 | 0.368 | BV | 0.047 | 2546.76 | 0.328 |
| 67 | 9.128 | | 0.0000 | 0.000 | 31261.9 | 1.619 | VV | 0.053 | 9855.51 | 1.270 |
| 68 | 9.253 | | 0.0000 | 0.000 | 2720.4 | 0.141 | VB | 0.053 | 858.43 | 0.111 |
| 69 | 9.379 | | 0.0000 | 0.000 | 33851.6 | 1.753 | BB | 0.056 | 10091.06 | 1.300 |
| 70 | 9.475 | | 0.0000 | 0.000 | 1240.9 | 0.064 | BB | 0.021 | 969.03 | 0.125 |
| 71 | 9.504 | | 0.0000 | 0.000 | 3523.8 | 0.182 | BB | 0.024 | 2466.66 | 0.318 |
| 72 | 9.591 | Endrin aldehyde | 3.5532 | 0.456 | 1511.9 | 0.078 | BB | 0.026 | 974.74 | 0.126 |
| 73 | 9.662 | | 0.0000 | 0.000 | 2709.9 | 0.140 | BB | 0.032 | 1421.29 | 0.183 |
| 74 | 9.746 | | 0.0000 | 0.000 | 1270.4 | 0.066 | BB | 0.029 | 729.01 | 0.094 |
| 75 | 9.829 | | 0.0000 | 0.000 | 2413.3 | 0.125 | BB | 0.045 | 898.94 | 0.116 |
| 76 | 9.984 | | 0.0000 | 0.000 | 5955.3 | 0.308 | BB | 0.033 | 3043.48 | 0.392 |
| 77 | 10.071 | | 0.0000 | 0.000 | 2894.0 | 0.150 | BB | 0.032 | 1505.57 | 0.194 |
| 78 | 10.133 | | 0.0000 | 0.000 | 382.0 | 0.020 | BB | 0.023 | 280.57 | 0.036 |
| 79 | 10.185 | Endo. sulfate | 0.9543 | 0.122 | 439.3 | 0.023 | BB | 0.026 | 281.27 | 0.036 |
| 80 | 10.238 | | 0.0000 | 0.000 | 1154.1 | 0.060 | BB | 0.030 | 632.12 | 0.081 |
| 81 | 10.300 | | 0.0000 | 0.000 | 3466.2 | 0.179 | BB | 0.025 | 2304.62 | 0.297 |
| 82 | 10.353 | | 0.0000 | 0.000 | 32395.7 | 1.677 | BB | 0.029 | 18536.94 | 2.389 |
| 83 | 10.391 | | 0.0000 | 0.000 | 41689.2 | 2.159 | BB | 0.027 | 25623.57 | 3.302 |
| 84 | 10.594 | | 0.0000 | 0.000 | 905.2 | 0.047 | BB | 0.047 | 324.38 | 0.042 |
| 85 | 10.746 | | 0.0000 | 0.000 | 22870.7 | 1.184 | BB | 0.046 | 8286.58 | 1.068 |
| 86 | 10.919 | | 0.0000 | 0.000 | 33152.0 | 1.717 | BB | 0.041 | 13629.41 | 1.756 |
| 87 | 11.052 | | 0.0000 | 0.000 | 8225.6 | 0.426 | BB | 0.043 | 3207.88 | 0.413 |
| 88 | 11.168 | | 0.0000 | 0.000 | 1994.7 | 0.103 | BB | 0.037 | 898.66 | 0.116 |
| 89 | 11.219 | | 0.0000 | 0.000 | 757.9 | 0.039 | BB | 0.025 | 512.64 | 0.066 |
| 90 | 11.373 | | 0.0000 | 0.000 | 2075.0 | 0.107 | BB | 0.042 | 814.47 | 0.105 |
| 91 | 11.481 | | 0.0000 | 0.000 | 47835.0 | 2.477 | BB | 0.065 | 12211.63 | 1.574 |
| 92 | 11.696 | | 0.0000 | 0.000 | 845.9 | 0.044 | BB | 0.027 | 525.74 | 0.068 |
| 93 | 11.747 | | 0.0000 | 0.000 | 1268.0 | 0.066 | BB | 0.037 | 574.80 | 0.074 |
| 94 | 11.881 | DCB | 287.9837 | 36.922 | 267080.3 | 13.829 | BB | 0.047 | 95009.98 | 12.243 |
| 95 | 12.236 | | 0.0000 | 0.000 | 4956.9 | 0.257 | BB | 0.124 | 667.97 | 0.086 |
| 96 | 12.423 | | 0.0000 | 0.000 | 1425.1 | 0.074 | BB | 0.047 | 504.80 | 0.065 |
| 97 | 12.546 | | 0.0000 | 0.000 | 4830.3 | 0.250 | BB | 0.088 | 910.29 | 0.117 |
| 98 | 12.663 | | 0.0000 | 0.000 | 3683.5 | 0.191 | BB | 0.047 | 1303.95 | 0.168 |
| 99 | 12.735 | | 0.0000 | 0.000 | 1700.8 | 0.088 | BB | 0.043 | 654.12 | 0.084 |
| 100 | 12.882 | | 0.0000 | 0.000 | 6758.4 | 0.350 | BB | 0.087 | 1287.76 | 0.166 |
| 101 | 13.039 | | 0.0000 | 0.000 | 10610.6 | 0.549 | BB | 0.099 | 1795.27 | 0.231 |
| 102 | 13.324 | | 0.0000 | 0.000 | 3666.0 | 0.190 | BB | 0.073 | 837.07 | 0.108 |
| 103 | 13.513 | | 0.0000 | 0.000 | 2323.8 | 0.120 | BB | 0.065 | 594.80 | 0.077 |
| 104 | 13.861 | | 0.0000 | 0.000 | 520.5 | 0.027 | BB | 0.071 | 121.37 | 0.016 |
| 105 | 13.947 | | 0.0000 | 0.000 | 299.7 | 0.016 | BB | 0.042 | 119.11 | 0.015 |

Total Area = 1931244.0, Total Amount = 779.974, Total Height = 776006.9, Sample Units = PPB

Sample Name: **4241630F AB5GP19 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 11:25:18am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.48R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.472 | | 0.0000 | 0.000 | 28618.5 | 1.244 | BB | 0.036 | 13427.71 | 1.585 |
| 2 | 3.612 | | 0.0000 | 0.000 | 4613.4 | 0.201 | BB | 0.029 | 2648.88 | 0.313 |
| 3 | 3.668 | | 0.0000 | 0.000 | 15679.7 | 0.682 | BB | 0.043 | 6016.72 | 0.710 |
| 4 | 3.738 | | 0.0000 | 0.000 | 6573.0 | 0.286 | BB | 0.022 | 4993.74 | 0.590 |
| 5 | 3.778 | | 0.0000 | 0.000 | 4135.7 | 0.180 | BB | 0.026 | 2625.77 | 0.310 |
| 6 | 3.845 | | 0.0000 | 0.000 | 1837.2 | 0.080 | BB | 0.025 | 1201.95 | 0.142 |
| 7 | 3.901 | | 0.0000 | 0.000 | 1093.8 | 0.048 | BB | 0.026 | 699.40 | 0.083 |
| 8 | 3.950 | | 0.0000 | 0.000 | 433.7 | 0.019 | BB | 0.035 | 204.48 | 0.024 |
| 9 | 4.037 | TCX | 266.3025 | 30.892 | 335090.0 | 14.567 | BB | 0.037 | 149417.90 | 17.639 |
| 10 | 4.200 | | 0.0000 | 0.000 | 157396.5 | 6.842 | BB | 0.035 | 75087.48 | 8.864 |
| 11 | 4.273 | | 0.0000 | 0.000 | 18956.9 | 0.824 | BB | 0.029 | 10772.30 | 1.272 |
| 12 | 4.436 | | 0.0000 | 0.000 | 18551.2 | 0.806 | BB | 0.044 | 7011.88 | 0.828 |
| 13 | 4.591 | | 0.0000 | 0.000 | 5574.3 | 0.242 | BB | 0.039 | 2357.86 | 0.278 |
| 14 | 4.648 | | 0.0000 | 0.000 | 28509.0 | 1.239 | BB | 0.033 | 14605.84 | 1.724 |
| 15 | 4.766 | Hcb | 8.4504 | 0.980 | 14788.3 | 0.643 | BB | 0.027 | 9047.83 | 1.068 |
| 16 | 4.821 | | 0.0000 | 0.000 | 2685.1 | 0.117 | BB | 0.020 | 2201.06 | 0.260 |
| 17 | 4.855 | | 0.0000 | 0.000 | 14486.4 | 0.630 | BB | 0.029 | 8301.89 | 0.980 |
| 18 | 4.960 | alpha-BHC | 2.5398 | 0.295 | 3727.1 | 0.162 | BB | 0.029 | 2179.19 | 0.257 |
| 19 | 5.045 | | 0.0000 | 0.000 | 2540.9 | 0.110 | BB | 0.032 | 1340.71 | 0.158 |
| 20 | 5.117 | | 0.0000 | 0.000 | 45733.3 | 1.988 | BB | 0.049 | 15600.52 | 1.842 |
| 21 | 5.242 | | 0.0000 | 0.000 | 265.8 | 0.012 | BB | 0.021 | 208.20 | 0.025 |
| 22 | 5.320 | | 0.0000 | 0.000 | 927.7 | 0.040 | BB | 0.030 | 521.25 | 0.062 |
| 23 | 5.369 | | 0.0000 | 0.000 | 329.6 | 0.014 | BB | 0.030 | 186.03 | 0.022 |
| 24 | 5.412 | | 0.0000 | 0.000 | 1818.9 | 0.079 | BB | 0.023 | 1295.65 | 0.153 |
| 25 | 5.480 | gamma-BHC | 3.9903 | 0.463 | 18602.2 | 0.809 | BB | 0.098 | 3172.17 | 0.374 |
| 26 | 5.651 | | 0.0000 | 0.000 | 4239.8 | 0.184 | BB | 0.039 | 1807.52 | 0.213 |
| 27 | 5.728 | | 0.0000 | 0.000 | 13492.1 | 0.587 | BB | 0.060 | 3764.33 | 0.444 |
| 28 | 5.868 | | 0.0000 | 0.000 | 1944.7 | 0.085 | BB | 0.034 | 962.59 | 0.114 |
| 29 | 5.931 | | 0.0000 | 0.000 | 1276.0 | 0.055 | BB | 0.031 | 679.62 | 0.080 |
| 30 | 5.988 | delta-BHC | 8.4946 | 0.985 | 34120.7 | 1.483 | BV | 0.090 | 6329.67 | 0.747 |
| 31 | 6.073 | Heptachlor | 15.8563 | 1.839 | 52678.9 | 2.290 | VB | 0.070 | 12571.27 | 1.484 |
| 32 | 6.228 | | 0.0000 | 0.000 | 89564.2 | 3.894 | BV | 0.100 | 14893.97 | 1.758 |
| 33 | 6.296 | | 0.0000 | 0.000 | 32345.3 | 1.406 | VV | 0.046 | 11766.11 | 1.389 |
| 34 | 6.376 | | 0.0000 | 0.000 | 67068.1 | 2.916 | VV | 0.080 | 13888.07 | 1.640 |
| 35 | 6.477 | | 0.0000 | 0.000 | 52841.1 | 2.297 | VV | 0.113 | 7807.48 | 0.922 |
| 36 | 6.628 | | 0.0000 | 0.000 | 56289.9 | 2.447 | VB | 0.062 | 15079.43 | 1.780 |
| 37 | 6.739 | Telodrin | 2.5528 | 0.296 | 2746.0 | 0.119 | BB | 0.030 | 1505.29 | 0.178 |
| 38 | 6.818 | | 0.0000 | 0.000 | 4032.6 | 0.175 | BB | 0.028 | 2392.24 | 0.282 |
| 39 | 6.902 | | 0.0000 | 0.000 | 1288.3 | 0.056 | BB | 0.020 | 1053.43 | 0.124 |
| 40 | 6.942 | | 0.0000 | 0.000 | 16928.0 | 0.736 | BB | 0.035 | 7968.49 | 0.941 |
| 41 | 7.060 | | 0.0000 | 0.000 | 688.9 | 0.030 | BB | 0.032 | 353.68 | 0.042 |
| 42 | 7.146 | | 0.0000 | 0.000 | 31735.4 | 1.380 | BB | 0.049 | 10750.06 | 1.269 |
| 43 | 7.224 | | 0.0000 | 0.000 | 8045.3 | 0.350 | BB | 0.022 | 6055.78 | 0.715 |
| 44 | 7.295 | Hept. epoxide | 11.9595 | 1.387 | 18472.1 | 0.803 | BB | 0.043 | 7107.33 | 0.839 |
| 45 | 7.433 | | 0.0000 | 0.000 | 32286.0 | 1.404 | BV | 0.051 | 10450.29 | 1.234 |
| 46 | 7.518 | g. Chlordane | 48.3336 | 5.607 | 66725.6 | 2.901 | VV | 0.040 | 28015.10 | 3.307 |
| 47 | 7.610 | | 0.0000 | 0.000 | 13508.6 | 0.587 | VV | 0.043 | 5283.96 | 0.624 |
| 48 | 7.661 | | 0.0000 | 0.000 | 10444.3 | 0.454 | VB | 0.055 | 3170.63 | 0.374 |
| 49 | 7.766 | a. Chlordane | 0.6560 | 0.076 | 499.6 | 0.022 | BV | 0.023 | 363.62 | 0.043 |
| 50 | 7.815 | Endosulfan I | 3.2577 | 0.378 | 4284.7 | 0.186 | VV | 0.042 | 1718.20 | 0.203 |
| 51 | 7.865 | | 0.0000 | 0.000 | 3745.7 | 0.163 | VV | 0.029 | 2139.54 | 0.253 |
| 52 | 7.905 | | 0.0000 | 0.000 | 5337.8 | 0.232 | VV | 0.040 | 2244.78 | 0.265 |
| 53 | 7.985 | 4,4'-DDE | 13.0335 | 1.512 | 16817.7 | 0.731 | VV | 0.046 | 6072.70 | 0.717 |
| 54 | 8.060 | | 0.0000 | 0.000 | 4026.0 | 0.175 | VV | 0.043 | 1554.65 | 0.184 |
| 55 | 8.135 | | 0.0000 | 0.000 | 25198.2 | 1.095 | VV | 0.044 | 9555.90 | 1.128 |
| 56 | 8.262 | | 0.0000 | 0.000 | 1376.1 | 0.060 | VV | 0.032 | 724.29 | 0.086 |

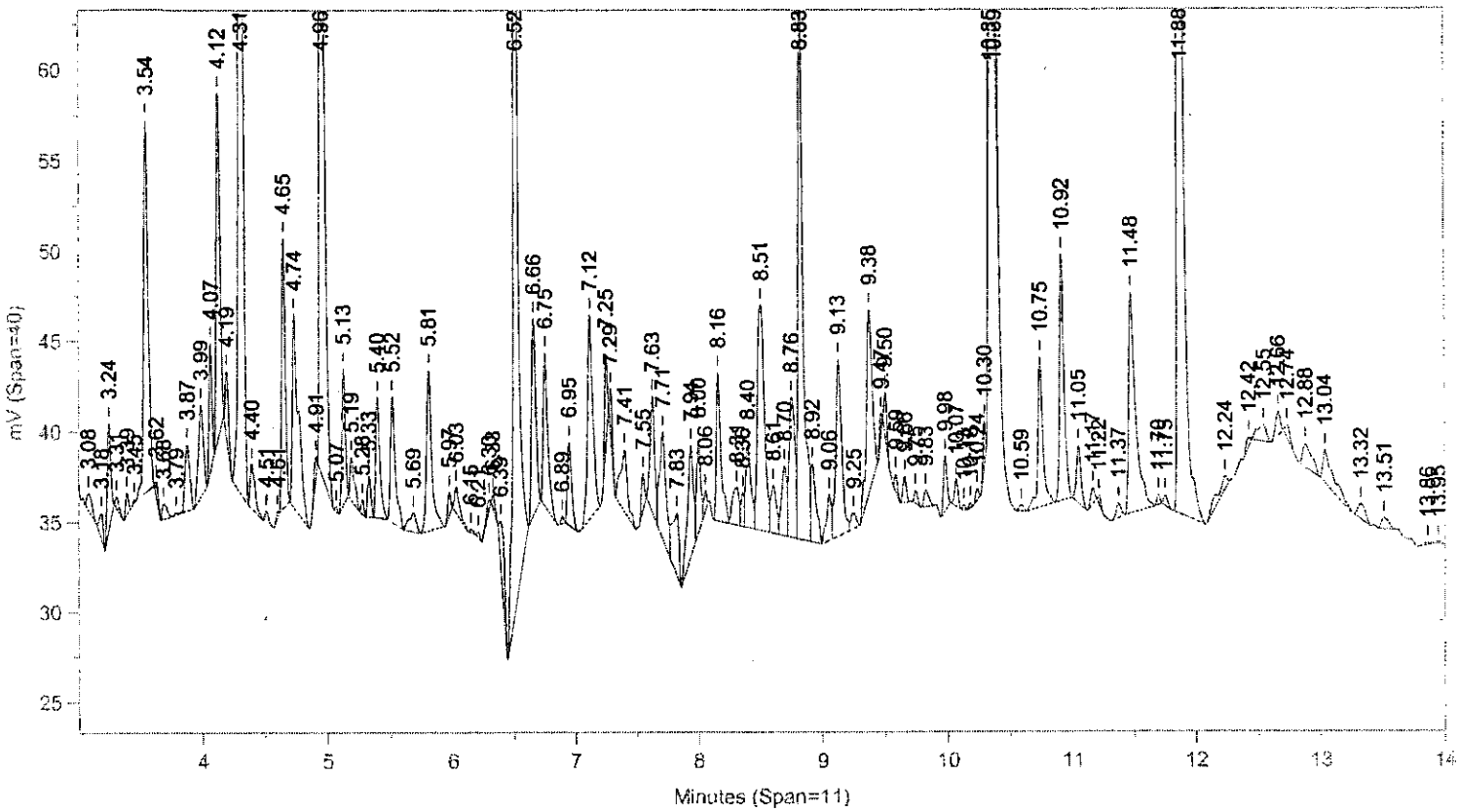
8453

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.311 | | 0.0000 | 0.000 | 3301.2 | 0.144 | VV | 0.035 | 1568.02 | 0.185 |
| 58 | 8.384 | | 0.0000 | 0.000 | 23542.4 | 1.023 | VB | 0.066 | 5951.61 | 0.703 |
| 59 | 8.594 | o,p-DDT | 5.6569 | 0.656 | 4084.0 | 0.178 | BB | 0.039 | 1727.73 | 0.204 |
| 60 | 8.645 | | 0.0000 | 0.000 | 9018.1 | 0.392 | BV | 0.033 | 4607.87 | 0.544 |
| 61 | 8.707 | 4,4'-DDD | 96.5311 | 11.198 | 71404.6 | 3.104 | VB | 0.038 | 31513.78 | 3.720 |
| 62 | 8.861 | Endosulfan II | 15.0226 | 1.743 | 18188.9 | 0.791 | BV | 0.052 | 5818.92 | 0.687 |
| 63 | 8.963 | | 0.0000 | 0.000 | 3382.1 | 0.147 | VV | 0.045 | 1258.85 | 0.149 |
| 64 | 9.073 | | 0.0000 | 0.000 | 26155.1 | 1.137 | VV | 0.042 | 10344.83 | 1.221 |
| 65 | 9.108 | 4,4'-DDT | 39.2028 | 4.548 | 44897.8 | 1.952 | VV | 0.059 | 12775.61 | 1.508 |
| 66 | 9.217 | | 0.0000 | 0.000 | 5072.5 | 0.221 | VV | 0.045 | 1858.47 | 0.219 |
| 67 | 9.288 | Endrin aldehyde | 15.9055 | 1.845 | 11871.9 | 0.516 | VV | 0.041 | 4877.61 | 0.576 |
| 68 | 9.377 | | 0.0000 | 0.000 | 2250.8 | 0.098 | VV | 0.031 | 1201.08 | 0.142 |
| 69 | 9.419 | | 0.0000 | 0.000 | 7068.0 | 0.307 | VV | 0.034 | 3479.52 | 0.411 |
| 70 | 9.467 | | 0.0000 | 0.000 | 16504.2 | 0.717 | VB | 0.049 | 5568.23 | 0.657 |
| 71 | 9.577 | | 0.0000 | 0.000 | 22502.8 | 0.978 | BB | 0.052 | 7247.52 | 0.856 |
| 72 | 9.774 | | 0.0000 | 0.000 | 2748.1 | 0.119 | BB | 0.032 | 1415.08 | 0.167 |
| 73 | 9.859 | | 0.0000 | 0.000 | 276.8 | 0.012 | BB | 0.025 | 183.30 | 0.022 |
| 74 | 9.915 | | 0.0000 | 0.000 | 166417.4 | 7.235 | BB | 0.050 | 55256.13 | 6.523 |
| 75 | 10.036 | | 0.0000 | 0.000 | 4781.0 | 0.208 | BB | 0.067 | 1190.20 | 0.141 |
| 76 | 10.191 | | 0.0000 | 0.000 | 19245.9 | 0.837 | BB | 0.044 | 7304.85 | 0.862 |
| 77 | 10.306 | Endrin ketone | 41:2427 | 4.784 | 52056.1 | 2.263 | BB | 0.058 | 14904.59 | 1.760 |
| 78 | 10.417 | | 0.0000 | 0.000 | 21663.2 | 0.942 | BB | 0.031 | 11781.09 | 1.391 |
| 79 | 10.564 | | 0.0000 | 0.000 | 637.6 | 0.028 | BB | 0.030 | 359.17 | 0.042 |
| 80 | 10.681 | | 0.0000 | 0.000 | 2490.4 | 0.108 | BB | 0.045 | 926.39 | 0.109 |
| 81 | 10.907 | | 0.0000 | 0.000 | 43643.3 | 1.897 | BB | 0.072 | 10136.68 | 1.197 |
| 82 | 11.084 | | 0.0000 | 0.000 | 9264.5 | 0.403 | BB | 0.052 | 2960.36 | 0.349 |
| 83 | 11.378 | | 0.0000 | 0.000 | 956.8 | 0.042 | BB | 0.053 | 301.70 | 0.036 |
| 84 | 11.432 | | 0.0000 | 0.000 | 676.9 | 0.029 | BB | 0.033 | 346.46 | 0.041 |
| 85 | 11.514 | | 0.0000 | 0.000 | 1295.2 | 0.056 | BB | 0.034 | 635.93 | 0.075 |
| 86 | 11.605 | | 0.0000 | 0.000 | 634.3 | 0.028 | BB | 0.028 | 376.87 | 0.044 |
| 87 | 11.680 | | 0.0000 | 0.000 | 750.2 | 0.033 | BB | 0.038 | 329.28 | 0.039 |
| 88 | 11.869 | | 0.0000 | 0.000 | 5732.8 | 0.249 | BB | 0.115 | 832.79 | 0.098 |
| 89 | 11.929 | | 0.0000 | 0.000 | 2010.9 | 0.087 | BB | 0.028 | 1197.86 | 0.141 |
| 90 | 12.028 | DCB | 263.0438 | 30.514 | 256961.9 | 11.171 | BB | 0.045 | 94763.14 | 11.187 |
| 91 | 12.231 | | 0.0000 | 0.000 | 7075.5 | 0.308 | BB | 0.102 | 1159.60 | 0.137 |
| 92 | 12.426 | | 0.0000 | 0.000 | 1834.8 | 0.080 | BB | 0.055 | 558.78 | 0.066 |
| 93 | 12.528 | | 0.0000 | 0.000 | 6758.3 | 0.294 | BB | 0.051 | 2190.76 | 0.259 |
| 94 | 12.670 | | 0.0000 | 0.000 | 1810.7 | 0.079 | BB | 0.063 | 475.25 | 0.056 |
| 95 | 12.912 | | 0.0000 | 0.000 | 154.5 | 0.007 | BB | 0.028 | 91.11 | 0.011 |
| 96 | 12.966 | | 0.0000 | 0.000 | 1015.1 | 0.044 | BB | 0.046 | 369.79 | 0.044 |
| 97 | 13.083 | | 0.0000 | 0.000 | 349.4 | 0.015 | BB | 0.035 | 164.88 | 0.019 |
| 98 | 13.235 | | 0.0000 | 0.000 | 328.1 | 0.014 | BB | 0.047 | 117.39 | 0.014 |
| 99 | 13.344 | | 0.0000 | 0.000 | 10200.3 | 0.443 | BB | 0.053 | 3201.72 | 0.378 |
| 100 | 13.478 | | 0.0000 | 0.000 | 538.2 | 0.023 | BB | 0.043 | 207.53 | 0.024 |
| 101 | 13.577 | | 0.0000 | 0.000 | 180.4 | 0.008 | BB | 0.040 | 75.44 | 0.009 |
| 102 | 13.657 | | 0.0000 | 0.000 | 719.0 | 0.031 | BB | 0.073 | 164.44 | 0.019 |
| 103 | 13.964 | | 0.0000 | 0.000 | 839.4 | 0.036 | BB | 0.104 | 134.80 | 0.016 |

Total Area = 2300308.0, Total Amount = 862.032, Total Height = 847069.6, Sample Units = PPB

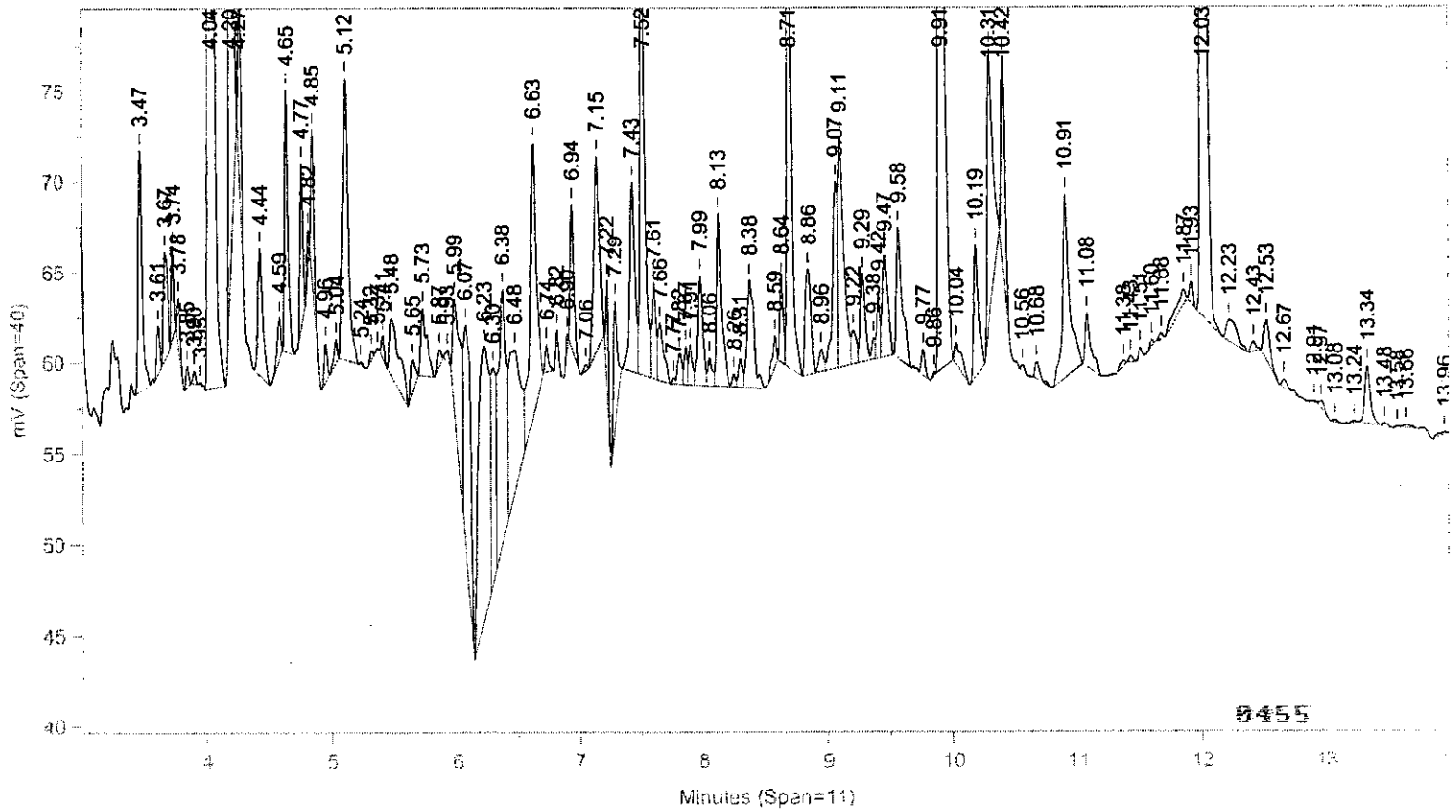
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.48R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 11:11:18 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.48R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 11:11:18 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 30
Dilution Factor: 10
Analyst: 120

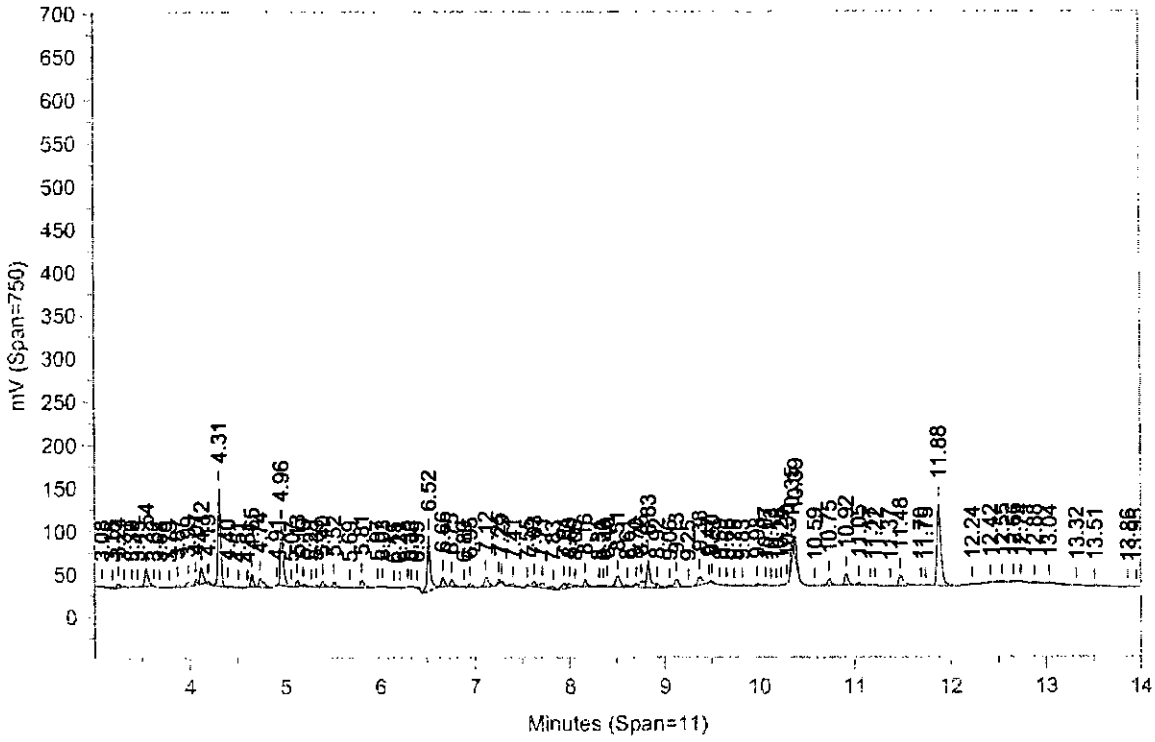
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 114780 | 9.274 | TCX | 4.037 | 149418 | 8.877 | TCX |
| 4.914 | 1143 | .054 | Hcb | 4.766 | 9048 | .282 | Hcb |
| 5.193 | 2392 | .155 | alpha-BHC | 4.96 | 2179 | .085 | alpha-BHC |
| . | 0 | . | gamma-BHC | 5.48 | 3172 | .133 | gamma-BHC |
| 6.03 | 1430 | .098 | delta-BHC | 5.988 | 6330 | .283 | delta-BHC |
| 6.327 | 748 | .046 | Heptachlor | 6.073 | 12571 | .529 | Heptachlor |
| . | 0 | . | Telodrin | 6.739 | 1505 | .085 | Telodrin |
| 6.754 | 8459 | .673 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Hept. epoxide | 7.295 | 7107 | .399 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.518 | 28015 | 1.611 | g. Chlordane |
| 7.553 | 2035 | .259 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.942 | 6126 | .465 | a. Chlordane | 7.766 | 364 | .022 | a. Chlordane |
| . | 0 | . | Endosulfan I | 7.815 | 1718 | .109 | Endosulfan I |
| 8.004 | 4983 | .473 | 4,4'-DDE | 7.985 | 6073 | .434 | 4,4'-DDE |
| . | 0 | . | o,p-DDT | 8.594 | 1728 | .189 | o,p-DDT |
| 8.834 | 31794 | 3.723 | 4,4'-DDD | 8.707 | 31514 | 3.218 | 4,4'-DDD |
| 8.758 | 7771 | .775 | Endrin | . | 0 | . | Endrin |
| 9.058 | 2547 | .254 | Endosulfan II | 8.861 | 5819 | .501 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.108 | 12776 | 1.307 | 4,4'-DDT |
| 9.591 | 975 | .118 | Endrin aldehyde | 9.288 | 4878 | .53 | Endrin aldehyde |
| 10.185 | 281 | .032 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.306 | 14905 | 1.375 | Endrin ketone |
| 11.881 | 95010 | 9.599 | DCB | 12.028 | 94763 | 8.768 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.48A
Area File: C:\CPWIN\DATA1\3D16082B.48A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:21:56 PM
File Reported On: 3/26/2004 at 3:22:03 PM

Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.48R

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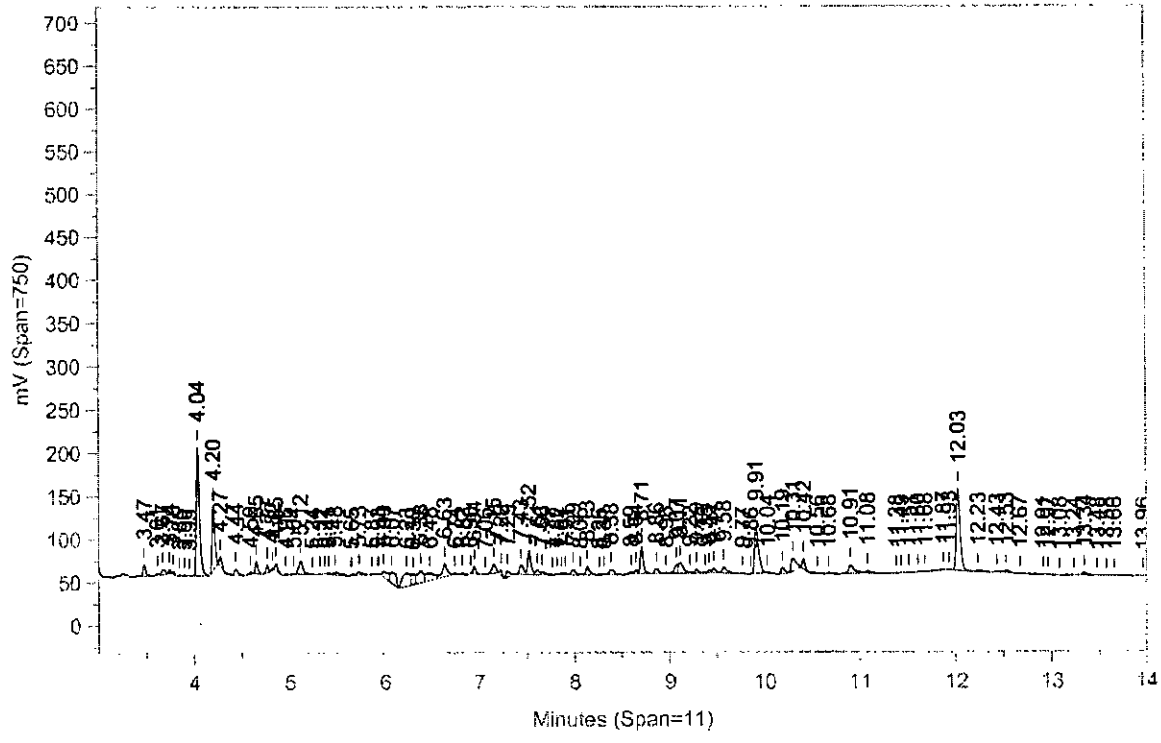



8457

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241631 F 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16-H5262A
Result file : 3D16082.49R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 84.4% Conc.: 9.078258
%SSR(DCB) : 96.2% Conc.: 9.365436

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 112352 | 9.078258 |
| **Hcb** | 4.88 | 4.91 | 4.94 | 930 | 0.044157 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 3906 | 0.253325 |
| **gamma-BHC** | 5.60 | 5.65 | 5.66 | 417 | 0.027060 |
| **delta-BHC** | 5.99 | 6.01 | 6.05 | 5385 | 0.368569 |
| **Heptachlor** | 6.29 | 6.33 | 6.35 | 1038 | 0.063791 |
| **Aldrin** | 6.72 | 6.76 | 6.78 | 8399 | 0.667942 |
| **Telodrin** | 7.02 | 7.04 | 7.08 | 221 | 0.016941 |
| **o,p-DDE** | 7.53 | 7.56 | 7.59 | 471 | 0.059968 |
| **g. Chlordane** | 7.72 | 7.78 | 7.78 | 53569 | 4.337068 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 2945 | 0.223727 |
| **4,4'-DDE** | 7.99 | 8.01 | 8.05 | 2789 | 0.264576 |
| **o,p-DDD** | 8.22 | 8.22 | 8.28 | 1394 | 0.209558 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 3949 | 0.393677 |
| **4,4'-DDD** | 8.78 | 8.84 | 8.84 | 11686 | 1.368444 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 1306 | 0.130312 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 513 | 0.062353 |
| **Methoxychlor** | 9.75 | 9.75 | 9.81 | 338 | 0.068702 |
| **Endo. sulfate** | 10.14 | 10.19 | 10.20 | 87 | 0.009810 |
| **DCB** | 11.86 | 11.88 | 11.92 | 92694 | 9.365436 |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16-H5262B
Result file : 3D16082B.49R
Calibration file : 2D16082B.CAL
Method file : PESTD8.MET
%SSR(TCX) : 90.7% Conc.: 8.721131
%SSR(DCB) : 88.4% Conc.: 8.611754

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 146798 | 8.721131 |
| **Hcb** | 4.71 | 4.77 | 4.77 | 8002 | 0.249131 |
| **gamma-BHC** | 5.43 | 5.48 | 5.49 | 3515 | 0.147374 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 7999 | 0.357813 |
| **Aldrin** | 6.49 | 6.52 | 6.55 | 5648 | 0.295708 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 4931 | 0.278763 |
| **Hept. epoxide** | 7.27 | 7.29 | 7.33 | 1891 | 0.106053 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 11030 | 0.634326 |
| **Endosulfan I** | 7.79 | 7.79 | 7.85 | 1035 | 0.065439 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 3576 | 0.255819 |
| **o,p-DDT** | 8.58 | 8.60 | 8.64 | 869 | 0.094864 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 10901 | 1.112995 |
| **Endosulfan II** | 8.82 | 8.86 | 8.88 | 3148 | 0.270874 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 6682 | 0.683518 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 5015 | 0.545080 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 497 | 0.045884 |
| **DCB** | 12.01 | 12.03 | 12.07 | 93073 | 8.611754 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.078258 | | | | 4.01 | |
| Hcb | B | 0.249131 | | | | ** 139.78 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | A | 0.368569 | <0.83 | 0.17 | J | 2.96 | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | B | 0.278763 | | | | ** 177.08 | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | A B | 0.634 / 4.337068 | < 0.9 | 0.3 | J | ** 148.96 | 1569 MATRIX |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | 0450 |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 1.368444 | <1.7 | 0.58 | J | 20.59 | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:10:49

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4241631** F 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16--H5262A
Result file : 3D16082.49R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16--H5262B
Result file : 3D16082B.49R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.365436 | | | | 8.38 | |

Units: ug/kg X

Reviewed by: M.S.M. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

#459

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:10:49

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241631 F 5GP20 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 26, 2004 11:31:51
**Instrument** H5262A
**Result file** 3D16082.49R
**Calibration file** 2D16082
**Method file** PESTD

%SSR(TCX) 94.4% Conc: 9.078258
%SSR(DCB) 96.2% Conc: 9.365436

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 7.60 | 7.63 | 7.66 | 3757.601318 | 7.44811 | | | 2 |
| 8.13 | 8.16 | 8.19 | 5344.543945 | 8.124976 | | | 3 |
| 8.50 | 8.52 | 8.56 | 4687.481934 | 9.583031 | | | 4 |
| 8.73 | 8.76 | 8.79 | 3949.140137 | 12.745247 | | | 5 |
| 9.10 | 9.13 | 9.16 | 5552.440918 | 11.485464 | | | 6 |
| Height summation: | | | **23291.208252** | | | | |
| Concentration | | CF: | **9.877366** | L: | | | |

## Analysis Report (B)

**Injected on** Mar 26, 2004 11:31:51
**Instrument** H5262B
**Result file** 3D16082B.49R
**Calibration file** 2D16082B
**Method file** PESTDB

%SSR(TCX) 90.7% Conc: 8.721131
%SSR(DCB) 88.4% Conc: 8.611754

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 8.10 | 8.14 | 8.16 | 5819.87793 | 8.17541 | | | 3 |
| 8.39 | 8.42 | 8.45 | 4158.277832 | 11.680818 | | | 4 |
| 8.84 | 8.86 | 8.90 | 3147.632324 | 8.508862 | | | 5 |
| 9.08 | 9.11 | 9.14 | 6682.461914 | 12.886077 | | | 6 |
| Height summation: | | | **19808.25** | | | | |
| Concentration | | CF: | **10.312792** | L: | | | |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | B | 10.312792 | <17 | 3.3 | J | 4.31 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M.S.M. 12W Date: 3/28/04

Verified By: [signature] Date: 3/29/04

8468

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name:** 4241631 F 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16–H5262A
Result file : 3D16082.49R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 94.4% Conc.: 9.078258
%SSR(DCB) : 96.2% Conc.: 9.365436

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 101.26 | |
| 5.35 | 5.40 | 5.41 | 3122.373779 | 7.362575 | | | 2 |
| 6.20 | 6.21 | 6.26 | 501.399475 | 1.333338 | | | 4 |
| + 6.29 | 6.29 | 6.35 | 631.518494 | 2.59117 | | | 5 |
| 6.29 | 6.33 | 6.35 | 1038.331177 | 4.260355 | | | 5 |
| 6.87 | 6.89 | 6.93 | 2487.858887 | 20.554158 | | | 6 |
| Height Summation | | | **7149.963318** | | | | |
| Amount Avg CF: | | | **8.377607** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.77 | 4.78 | 4.83 | 4485.245605 | 47.342681 | | | 2 |
| Height Summation | | | **4485.245605** | | | | |
| Amount Avg CF: | | | **47.342681** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 80.68 | |
| 5.35 | 5.40 | 5.41 | 3122.373779 | 16.141304 | | | 2 |
| 6.01 | 6.01 | 6.07 | 5384.507813 | 32.848388 | | | 3 |
| 6.19 | 6.21 | 6.25 | 501.399475 | 2.841917 | | | 4 |
| + 6.28 | 6.29 | 6.34 | 631.518494 | 5.584459 | | | 5 |
| 6.28 | 6.33 | 6.34 | 1038.331177 | 9.181865 | | | 5 |
| 6.87 | 6.89 | 6.93 | 2487.858887 | 43.418131 | | | 6 |
| Height Summation | | | **12534.471131** | | | | |
| Amount Avg CF: | | | **20.886321** | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 75.77 | |
| 5.35 | 5.40 | 5.41 | 3122.373779 | 8.408056 | | | 2 |
| 6.01 | 6.01 | 6.07 | 5384.507813 | 17.613699 | | | 3 |
| 6.19 | 6.21 | 6.25 | 501.399475 | 1.545383 | | | 4 |
| + 6.28 | 6.29 | 6.34 | 631.518494 | 3.05502 | | | 5 |
| 6.28 | 6.33 | 6.34 | 1038.331177 | 5.023008 | | | 5 |
| 6.87 | 6.89 | 6.93 | 2487.858887 | 19.848882 | | | 6 |
| Height Summation | | | **12534.471131** | | | | |
| Amount Avg CF: | | | **10.487806** | Linear: | | | |
| **Aroclor-1248** | | | | | 6 | 54.92 | |
| 5.35 | 5.40 | 5.41 | 3122.373779 | 17.170523 | | | 1 |
| 6.01 | 6.01 | 6.07 | 5384.507813 | 38.899782 | | | 2 |
| 6.75 | 6.76 | 6.81 | 8399.289063 | 19.151536 | | | 3 |
| 7.32 | 7.37 | 7.38 | 2239.129639 | 8.652136 | | | 4 |
| 7.62 | 7.63 | 7.68 | 3757.601318 | 11.268353 | | | 5 |
| 8.14 | 8.16 | 8.20 | 5344.543945 | 21.74037 | | | 6 |
| Height Summation | | | **28247.445557** | | | | |
| Amount Avg CF: | | | **19.48045** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 22.56 | |
| ~~7.60~~ | 7.63 | 7.66 | 3757.601318 | 7.44811 | | | 2 |
| 8.13 | 8.16 | 8.19 | 5344.543945 | 8.124976 | | | 3 |
| 8.50 | 8.52 | 8.56 | 4687.481934 | 9.583031 | | | 4 |
| 8.73 | 8.76 | 8.79 | 3949.140137 | 12.745247 | | | 5 |
| 9.10 | 9.13 | 9.16 | 5552.440918 | 11.485464 | | | 6 |
| Height Summation | | | **23291.208252** | | | | |
| Amount Avg CF: | | | **9.877366** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16–H5262B
Result file : 3D16082B.49R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 90.7% Conc.: 8.721131
%SSR(DCB) : 88.4% Conc.: 8.611754

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 95.58 | |
| 4.72 | 4.77 | 4.78 | 8002.287598 | 22.722333 | | | 1 |
| 5.29 | 5.32 | 5.35 | 1055.820801 | 2.129703 | | | 2 |
| 5.91 | 5.93 | 5.97 | 2617.09668 | 2.597419 | | | 3 |
| 6.72 | 6.74 | 6.78 | 4931.289551 | 13.969548 | | | 6 |
| Height Summation | | | **16606.494630** | | | | |
| Amount Avg CF: | | | **10.354751** | Linear: | | | |
| **Aroclor-1221** | | | | | 3 | 100.64 | |
| 4.44 | 4.44 | 4.50 | 5558.919434 | 24.57687 | | | 1 |
| E 4.64 | 4.65 | 4.70 | 15749.89746 | 105.675641 | | | 2 |
| 4.72 | 4.77 | 4.78 | 8002.287598 | 16.6366 | | | 3 |
| Height Summation | | | **29311.104493** | | | | |
| Amount Avg CF: | | | **48.963037** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 82.06 | |
| 4.72 | 4.77 | 4.78 | 8002.287598 | 20.681754 | | | 1 |
| 5.29 | 5.32 | 5.35 | 1055.820801 | 4.642399 | | | 2 |
| 5.91 | 5.93 | 5.97 | 2617.09668 | 5.514495 | | | 3 |
| 6.71 | 6.74 | 6.77 | 4931.289551 | 30.87459 | | | 6 |
| Height Summation | | | **16606.494630** | | | | |
| Amount Avg CF: | | | **15.42831** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 93.82 | |
| 4.72 | 4.77 | 4.78 | 8002.287598 | 24.480811 | | | 1 |
| 5.29 | 5.32 | 5.35 | 1055.820801 | 2.407417 | | | 2 |
| 5.91 | 5.93 | 5.97 | 2617.09668 | 3.003962 | | | 3 |
| 6.72 | 6.74 | 6.78 | 4931.289551 | 15.38024 | | | 6 |
| Height Summation | | | **16606.494630** | | | | |
| Amount Avg CF: | | | **11.318108** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 69.16 | |
| 5.29 | 5.32 | 5.35 | 1055.820801 | 4.744409 | | | 1 |
| 5.91 | 5.93 | 5.97 | 2617.09668 | 5.172639 | | | 2 |
| 6.71 | 6.74 | 6.77 | 4931.289551 | 9.215727 | | | 3 |
| 7.57 | 7.61 | 7.63 | 4577.055176 | 9.414613 | | | 5 |
| 8.11 | 8.14 | 8.17 | 5819.87793 | 21.982542 | | | 6 |
| Height Summation | | | **19001.140138** | | | | |
| Amount Avg CF: | | | **10.105986** | Linear: | | | |
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 9351.135742 | 27.502693 | | | 1 |
| 7.50 | 7.52 | 7.56 | 11030.02929 | 19.536422 | | | 2 |
| 8.10 | 8.14 | 8.16 | 5819.87793 | 8.17541 | | | 3 |
| 8.39 | 8.42 | 8.45 | 4158.277832 | 11.680818 | | | 4 |
| 8.84 | 8.86 | 8.90 | 3147.632324 | 8.508862 | | | 5 |
| 9.08 | 9.11 | 9.14 | 6682.461914 | 12.886077 | | | 6 |
| Height Summation | | | **40189.415039** | | | | |
| Amount Avg CF: | | | ~~14.715047~~ | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 40.06 | |
| + 8.36 | 8.39 | 8.42 | 3618.94751 | 6.176511 | | | 1 |
| 8.36 | 8.42 | 8.42 | 4158.277832 | 7.096994 | | | 1 |
| 8.62 | 8.65 | 8.68 | 2396.786377 | 3.386483 | | | 2 |
| 8.83 | 8.86 | 8.89 | 3147.632324 | 6.924396 | | | 3 |
| 9.08 | 9.11 | 9.14 | 6682.461914 | 10.06915 | | | 4 |
| 9.58 | 9.58 | 9.64 | 4078.244385 | 9.481123 | | | 5 |
| 9.88 | 9.92 | 9.94 | 12862.06933 | 13.209937 | | | 6 |
| Height Summation | | | **33325.472168** | | | | |
| Amount Avg CF: | | | **8.361347** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:11:38

5/28/04

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241631 F 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16-H5262A
Result file : 3D16082.49R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **6** | **71.53** | |
| 8.38 | 8.40 | 8.44 | 3209.857666 | 5.946936 | | | 1 |
| 8.73 | 8.76 | 8.79 | 3949.140137 | 6.011571 | | | 2 |
| 9.10 | 9.13 | 9.16 | 5552.440918 | 8.628357 | | | 3 |
| 9.57 | 9.59 | 9.63 | 513.161011 | 1.58754 | | | 4 |
| 9.96 | 9.99 | 10.02 | 1491.837158 | 1.714282 | | | 5 |
| 11.14 | 11.18 | 11.20 | 368.083984 | 1.546749 | | | 6 |
| Height Summation | | | **15084.520874** | | | | |
| Amount Avg CF: | | | **4.239239** | Linear: | | | |
| **Chlordane** | | | | | **5** | **105.72** | |
| 6.18 | 6.21 | 6.24 | 501.399475 | 0.974138 | | | 1 |
| + 6.29 | 6.29 | 6.35 | 631.518494 | 0.929283 | | | 2 |
| 6.29 | 6.33 | 6.35 | 1038.331177 | 1.52791 | | | 2 |
| 6.91 | 6.95 | 6.97 | 995.146057 | 1.521345 | | | 3 |
| 7.89 | 7.94 | 7.95 | 2945.392334 | 2.041426 | | | 5 |
| 8.92 | 8.93 | 8.98 | 3589.393799 | 8.214484 | | | 6 |
| Height Summation | | | **9069.662842** | | | | |
| Amount Avg CF: | | | **2.855861** | Linear: | | | |
| **Toxaphene** | | | | | **3** | **109.07** | |
| 8.61 | 8.61 | 8.67 | 847.809509 | 7.800684 | | | 1 |
| 8.75 | 8.76 | 8.81 | 3949.140137 | 35.361845 | | | 2 |
| 9.15 | 9.21 | 9.21 | 600.445862 | 3.956445 | | | 3 |
| Height Summation | | | **5397.395508** | | | | |
| Amount Avg CF: | | | **15.706325** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:31:51
Instrument : CP16-H5262B
Result file : 3D16082B.49R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **4** | **76.33** | |
| 5.84 | 5.87 | 5.90 | 591.199402 | 0.80619 | | | 1 |
| 6.70 | 6.74 | 6.76 | 4931.289551 | 6.123171 | | | 3 |
| 7.51 | 7.52 | 7.57 | 11030.02929 | 6.180479 | | | 4 |
| 7.64 | 7.67 | 7.70 | 2255.529541 | 1.76109 | | | 5 |
| Height Summation | | | **18808.047791** | | | | |
| Amount Avg CF: | | | **3.717733** | Linear: | | | |
| **Toxaphene** | | | | | **5** | **67.43** | |
| 8.12 | 8.14 | 8.18 | 5819.87793 | 48.349101 | | | 1 |
| 8.91 | 8.96 | 8.97 | 1136.787476 | 3.796809 | | | 3 |
| 9.25 | 9.29 | 9.31 | 5014.648438 | 23.124751 | | | 4 |
| 9.91 | 9.92 | 9.97 | 12862.06933 | 58.065936 | | | 5 |
| 10.41 | 10.42 | 10.47 | 3178.396973 | 26.282949 | | | 6 |
| Height Summation | | | **28011.780153** | | | | |
| Amount Avg CF: | | | **31.923909** | Linear: | | | |

9462

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:11:38

Sample Name: **4241631F AB5GP20 T 040850020A 08899**
Acquired from CP16--H5262A via port 1 on 3/26/04 11:45:51am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.49R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.074 | | 0.0000 | 0.000 | 2398.7 | 0.153 | BB | 0.049 | 807.72 | 0.128 |
| 2 | 3.182 | | 0.0000 | 0.000 | 3242.0 | 0.207 | BB | 0.034 | 1602.16 | 0.253 |
| 3 | 3.249 | | 0.0000 | 0.000 | 5607.8 | 0.358 | BB | 0.034 | 2759.72 | 0.436 |
| 4 | 3.308 | | 0.0000 | 0.000 | 1110.1 | 0.071 | BB | 0.037 | 494.59 | 0.078 |
| 5 | 3.392 | | 0.0000 | 0.000 | 1691.0 | 0.108 | BB | 0.028 | 1005.56 | 0.159 |
| 6 | 3.448 | | 0.0000 | 0.000 | 271.7 | 0.017 | BB | 0.021 | 214.87 | 0.034 |
| 7 | 3.544 | | 0.0000 | 0.000 | 57840.9 | 3.693 | BB | 0.049 | 19575.23 | 3.090 |
| 8 | 3.704 | | 0.0000 | 0.000 | 1670.7 | 0.107 | BB | 0.057 | 486.47 | 0.077 |
| 9 | 3.819 | | 0.0000 | 0.000 | 1042.2 | 0.067 | BB | 0.055 | 313.39 | 0.049 |
| 10 | 3.879 | | 0.0000 | 0.000 | 6311.8 | 0.403 | BB | 0.037 | 2842.78 | 0.449 |
| 11 | 3.986 | | 0.0000 | 0.000 | 15820.1 | 1.010 | BB | 0.046 | 5772.59 | 0.911 |
| 12 | 4.067 | | 0.0000 | 0.000 | 11743.2 | 0.750 | BB | 0.026 | 7483.55 | 1.181 |
| 13 | 4.127 | | 0.0000 | 0.000 | 39799.2 | 2.541 | BB | 0.036 | 18207.66 | 2.874 |
| 14 | 4.196 | | 0.0000 | 0.000 | 5933.3 | 0.379 | BB | 0.031 | 3140.31 | 0.496 |
| 15 | 4.314 | TCX | 272.3477 | 33.606 | 221963.6 | 14.170 | BB | 0.033 | 112352.40 | 17.737 |
| 16 | 4.396 | | 0.0000 | 0.000 | 5378.9 | 0.343 | BB | 0.039 | 2320.10 | 0.366 |
| 17 | 4.518 | | 0.0000 | 0.000 | 1955.3 | 0.125 | BB | 0.037 | 874.18 | 0.138 |
| 18 | 4.654 | | 0.0000 | 0.000 | 31775.6 | 2.029 | BB | 0.033 | 16174.98 | 2.554 |
| 19 | 4.739 | | 0.0000 | 0.000 | 3883.1 | 0.248 | BB | 0.025 | 2578.56 | 0.407 |
| 20 | 4.782 | | 0.0000 | 0.000 | 9085.7 | 0.580 | BB | 0.034 | 4485.25 | 0.708 |
| 21 | 4.907 | Hcb | 1.3247 | 0.163 | 1784.1 | 0.114 | BB | 0.032 | 930.27 | 0.147 |
| 22 | 4.963 | | 0.0000 | 0.000 | 167632.2 | 10.702 | BB | 0.038 | 74263.28 | 11.724 |
| 23 | 5.133 | | 0.0000 | 0.000 | 10588.0 | 0.676 | BB | 0.031 | 5727.99 | 0.904 |
| 24 | 5.194 | alpha-BHC | 7.5998 | 0.938 | 9477.9 | 0.605 | BB | 0.040 | 3905.93 | 0.617 |
| 25 | 5.282 | | 0.0000 | 0.000 | 2807.6 | 0.179 | BB | 0.025 | 1840.84 | 0.291 |
| 26 | 5.331 | | 0.0000 | 0.000 | 4357.6 | 0.278 | BB | 0.028 | 2552.01 | 0.403 |
| 27 | 5.399 | | 0.0000 | 0.000 | 8358.7 | 0.534 | BB | 0.045 | 3122.37 | 0.493 |
| 28 | 5.519 | | 0.0000 | 0.000 | 8741.0 | 0.558 | BB | 0.044 | 3327.91 | 0.525 |
| 29 | 5.653 | gamma-BHC | 0.8118 | 0.100 | 930.3 | 0.059 | BB | 0.037 | 416.60 | 0.066 |
| 30 | 5.814 | | 0.0000 | 0.000 | 14990.8 | 0.957 | BB | 0.038 | 6568.44 | 1.037 |
| 31 | 5.895 | | 0.0000 | 0.000 | 888.2 | 0.057 | BB | 0.028 | 530.18 | 0.084 |
| 32 | 6.009 | delta-BHC | 11.0571 | 1.364 | 20975.2 | 1.339 | BB | 0.065 | 5384.51 | 0.850 |
| 33 | 6.207 | | 0.0000 | 0.000 | 829.0 | 0.053 | BB | 0.028 | 501.40 | 0.079 |
| 34 | 6.292 | | 0.0000 | 0.000 | 1312.7 | 0.084 | BB | 0.035 | 631.52 | 0.100 |
| 35 | 6.330 | Heptachlor | 1.9137 | 0.236 | 1804.3 | 0.115 | BB | 0.029 | 1038.33 | 0.164 |
| 36 | 6.390 | | 0.0000 | 0.000 | 5051.4 | 0.322 | BB | 0.060 | 1397.51 | 0.221 |
| 37 | 6.518 | | 0.0000 | 0.000 | 73816.2 | 4.712 | BB | 0.049 | 24986.70 | 3.945 |
| 38 | 6.662 | | 0.0000 | 0.000 | 23195.8 | 1.481 | BB | 0.040 | 9550.13 | 1.508 |
| 39 | 6.756 | Aldrin | 20.0383 | 2.473 | 21935.4 | 1.400 | BB | 0.044 | 8399.29 | 1.326 |
| 40 | 6.891 | | 0.0000 | 0.000 | 4241.4 | 0.271 | BB | 0.028 | 2487.86 | 0.393 |
| 41 | 6.954 | | 0.0000 | 0.000 | 2446.8 | 0.156 | BB | 0.041 | 995.15 | 0.157 |
| 42 | 7.043 | Telodrin | 0.5082 | 0.063 | 312.0 | 0.020 | BB | 0.024 | 221.17 | 0.035 |
| 43 | 7.120 | | 0.0000 | 0.000 | 37166.1 | 2.373 | BB | 0.052 | 11807.92 | 1.864 |
| 44 | 7.253 | | 0.0000 | 0.000 | 2758.2 | 0.176 | BB | 0.025 | 1854.89 | 0.293 |
| 45 | 7.290 | | 0.0000 | 0.000 | 4037.3 | 0.258 | BB | 0.027 | 2507.22 | 0.396 |
| 46 | 7.375 | | 0.0000 | 0.000 | 11196.8 | 0.715 | BB | 0.083 | 2239.13 | 0.353 |
| 47 | 7.562 | o,p-DDE | 1.7990 | 0.222 | 864.2 | 0.055 | BB | 0.031 | 471.19 | 0.074 |
| 48 | 7.632 | | 0.0000 | 0.000 | 9066.7 | 0.579 | BV | 0.040 | 3757.60 | 0.593 |
| 49 | 7.717 | | 0.0000 | 0.000 | 9774.4 | 0.624 | VV | 0.043 | 3809.42 | 0.601 |
| 50 | 7.782 | g. Chlordane | 130.1120 | 16.055 | 115427.1 | 7.369 | VB | 0.036 | 53568.98 | 8.457 |
| 51 | 7.943 | a. Chlordane | 6.7118 | 0.828 | 7387.7 | 0.472 | BV | 0.042 | 2945.39 | 0.465 |
| 52 | 8.007 | 4,4'-DDE | 7.9373 | 0.979 | 7286.2 | 0.465 | VV | 0.044 | 2788.78 | 0.440 |
| 53 | 8.165 | | 0.0000 | 0.000 | 16040.8 | 1.024 | VV | 0.050 | 5344.54 | 0.844 |
| 54 | 8.219 | o,p-DDD | 6.2867 | 0.776 | 2392.7 | 0.153 | VV | 0.029 | 1393.79 | 0.220 |
| 55 | 8.319 | | 0.0000 | 0.000 | 4786.5 | 0.306 | VV | 0.064 | 1250.32 | 0.197 |
| 56 | 8.401 | | 0.0000 | 0.000 | 7906.3 | 0.505 | VV | 0.041 | 3209.86 | 0.507 |

8463

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.524 | | 0.0000 | 0.000 | 14316.8 | 0.914 | VV | 0.051 | 4687.48 | 0.740 |
| 58 | 8.613 | | 0.0000 | 0.000 | 2596.0 | 0.166 | VV | 0.051 | 847.81 | 0.134 |
| 59 | 8.704 | | 0.0000 | 0.000 | 4070.5 | 0.260 | VV | 0.049 | 1389.49 | 0.219 |
| 60 | 8.761 | Endrin | 11.8103 | 1.457 | 14405.6 | 0.920 | VV | 0.061 | 3949.14 | 0.623 |
| 61 | 8.836 | 4,4'-DDD | 41.0533 | 5.066 | 28963.7 | 1.849 | VV | 0.041 | 11685.62 | 1.845 |
| 62 | 8.932 | | 0.0000 | 0.000 | 9894.9 | 0.632 | VV | 0.046 | 3589.39 | 0.567 |
| 63 | 9.020 | | 0.0000 | 0.000 | 899.3 | 0.057 | VV | 0.028 | 530.92 | 0.084 |
| 64 | 9.062 | Endosulfan II | 3.9094 | 0.482 | 3358.4 | 0.214 | VV | 0.043 | 1305.56 | 0.206 |
| 65 | 9.130 | | 0.0000 | 0.000 | 15736.6 | 1.005 | VV | 0.047 | 5552.44 | 0.877 |
| 66 | 9.206 | | 0.0000 | 0.000 | 1120.2 | 0.072 | VV | 0.031 | 600.45 | 0.095 |
| 67 | 9.251 | | 0.0000 | 0.000 | 1798.5 | 0.115 | VB | 0.046 | 653.64 | 0.103 |
| 68 | 9.391 | | 0.0000 | 0.000 | 14996.7 | 0.957 | BB | 0.057 | 4374.19 | 0.691 |
| 69 | 9.478 | | 0.0000 | 0.000 | 14240.2 | 0.909 | BB | 0.054 | 4394.02 | 0.694 |
| 70 | 9.594 | Endrin aldehyde | 1.8706 | 0.231 | 762.5 | 0.049 | BB | 0.025 | 513.16 | 0.081 |
| 71 | 9.665 | | 0.0000 | 0.000 | 1120.4 | 0.072 | BB | 0.031 | 595.97 | 0.094 |
| 72 | 9.708 | | 0.0000 | 0.000 | 187.8 | 0.012 | BB | 0.018 | 170.22 | 0.027 |
| 73 | 9.755 | Methoxychlor | 2.0611 | 0.254 | 685.5 | 0.044 | BB | 0.034 | 337.87 | 0.053 |
| 74 | 9.832 | | 0.0000 | 0.000 | 2422.6 | 0.155 | BB | 0.082 | 492.73 | 0.078 |
| 75 | 9.988 | | 0.0000 | 0.000 | 3874.1 | 0.247 | BB | 0.043 | 1491.84 | 0.236 |
| 76 | 10.133 | | 0.0000 | 0.000 | 230.7 | 0.015 | BB | 0.027 | 142.60 | 0.023 |
| 77 | 10.190 | Endo. sulfate | 0.2943 | 0.036 | 133.1 | 0.008 | BB | 0.026 | 86.74 | 0.014 |
| 78 | 10.242 | | 0.0000 | 0.000 | 628.5 | 0.040 | BB | 0.030 | 351.86 | 0.056 |
| 79 | 10.303 | | 0.0000 | 0.000 | 2324.2 | 0.148 | BB | 0.027 | 1437.91 | 0.227 |
| 80 | 10.358 | | 0.0000 | 0.000 | 36766.7 | 2.347 | BB | 0.059 | 10451.44 | 1.650 |
| 81 | 10.597 | | 0.0000 | 0.000 | 927.2 | 0.059 | BB | 0.043 | 361.93 | 0.057 |
| 82 | 10.749 | | 0.0000 | 0.000 | 11177.4 | 0.714 | BB | 0.053 | 3546.38 | 0.560 |
| 83 | 10.922 | | 0.0000 | 0.000 | 8278.4 | 0.528 | BB | 0.049 | 2817.80 | 0.445 |
| 84 | 11.056 | | 0.0000 | 0.000 | 3328.1 | 0.212 | BB | 0.052 | 1067.82 | 0.169 |
| 85 | 11.176 | | 0.0000 | 0.000 | 835.5 | 0.053 | BB | 0.038 | 368.08 | 0.058 |
| 86 | 11.377 | | 0.0000 | 0.000 | 1873.3 | 0.120 | BB | 0.043 | 726.18 | 0.115 |
| 87 | 11.487 | | 0.0000 | 0.000 | 15545.0 | 0.992 | BB | 0.054 | 4842.64 | 0.765 |
| 88 | 11.755 | | 0.0000 | 0.000 | 657.3 | 0.042 | BB | 0.035 | 315.44 | 0.050 |
| 89 | 11.883 | DCB | 280.9631 | 34.669 | 258932.5 | 16.530 | BB | 0.047 | 92693.77 | 14.633 |
| 90 | 12.237 | | 0.0000 | 0.000 | 4587.2 | 0.293 | BB | 0.116 | 659.12 | 0.104 |
| 91 | 12.363 | | 0.0000 | 0.000 | 705.3 | 0.045 | BB | 0.049 | 242.04 | 0.038 |
| 92 | 12.436 | | 0.0000 | 0.000 | 1792.1 | 0.114 | BB | 0.055 | 544.65 | 0.086 |
| 93 | 12.553 | | 0.0000 | 0.000 | 2545.1 | 0.162 | BB | 0.065 | 649.56 | 0.103 |
| 94 | 12.667 | | 0.0000 | 0.000 | 4400.1 | 0.281 | BB | 0.051 | 1439.09 | 0.227 |
| 95 | 12.747 | | 0.0000 | 0.000 | 1258.6 | 0.080 | BB | 0.036 | 575.26 | 0.091 |
| 96 | 12.883 | | 0.0000 | 0.000 | 8255.3 | 0.527 | BB | 0.090 | 1523.82 | 0.241 |
| 97 | 13.045 | | 0.0000 | 0.000 | 10363.6 | 0.662 | BB | 0.132 | 1304.48 | 0.206 |
| 98 | 13.319 | | 0.0000 | 0.000 | 3096.3 | 0.198 | BB | 0.095 | 542.10 | 0.086 |
| 99 | 13.530 | | 0.0000 | 0.000 | 1124.1 | 0.072 | BB | 0.059 | 317.90 | 0.050 |
| 100 | 13.874 | | 0.0000 | 0.000 | 116.8 | 0.007 | BB | 0.042 | 46.86 | 0.007 |

Total Area = 1566425.0, Total Amount = 810.41, Total Height = 633437.8, Sample Units = PPB

Sample Name: **4241631F AB5GP20 T 040850020A 08899**
Acquired from CP16--H5262B via port 2 on 3/26/04 11:45:51am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.49R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.473 | | 0.0000 | 0.000 | 35367.4 | 1.942 | BB | 0.040 | 14657.01 | 2.099 |
| 2 | 3.615 | | 0.0000 | 0.000 | 6778.7 | 0.372 | BB | 0.031 | 3685.12 | 0.528 |
| 3 | 3.669 | | 0.0000 | 0.000 | 10763.8 | 0.591 | BB | 0.037 | 4879.35 | 0.699 |
| 4 | 3.744 | | 0.0000 | 0.000 | 1442.9 | 0.079 | BB | 0.022 | 1073.72 | 0.154 |
| 5 | 3.780 | | 0.0000 | 0.000 | 6236.5 | 0.342 | BB | 0.029 | 3556.34 | 0.509 |
| 6 | 3.847 | | 0.0000 | 0.000 | 607.8 | 0.033 | BB | 0.022 | 466.36 | 0.067 |
| 7 | 3.904 | | 0.0000 | 0.000 | 4796.0 | 0.263 | BB | 0.035 | 2277.39 | 0.326 |
| 8 | 3.980 | | 0.0000 | 0.000 | 532.4 | 0.029 | BB | 0.018 | 485.91 | 0.070 |
| 9 | 4.039 | TCX | 261.6339 | 38.801 | 327834.9 | 18.002 | BB | 0.037 | 146798.50 | 21.026 |
| 10 | 4.202 | | 0.0000 | 0.000 | 157390.1 | 8.643 | BB | 0.035 | 75329.17 | 10.789 |
| 11 | 4.277 | | 0.0000 | 0.000 | 28902.3 | 1.587 | BB | 0.033 | 14442.22 | 2.069 |
| 12 | 4.438 | | 0.0000 | 0.000 | 14865.4 | 0.816 | BB | 0.045 | 5558.92 | 0.796 |
| 13 | 4.593 | | 0.0000 | 0.000 | 5934.9 | 0.326 | BB | 0.037 | 2673.26 | 0.383 |
| 14 | 4.650 | | 0.0000 | 0.000 | 30474.7 | 1.673 | BB | 0.032 | 15749.90 | 2.256 |
| 15 | 4.768 | Hcb | 7.4739 | 1.108 | 13204.4 | 0.725 | BB | 0.028 | 8002.29 | 1.146 |
| 16 | 4.858 | | 0.0000 | 0.000 | 14457.1 | 0.794 | BB | 0.032 | 7416.49 | 1.062 |
| 17 | 5.049 | | 0.0000 | 0.000 | 11072.9 | 0.608 | BB | 0.029 | 6267.29 | 0.898 |
| 18 | 5.120 | | 0.0000 | 0.000 | 14326.9 | 0.787 | BB | 0.036 | 6561.04 | 0.940 |
| 19 | 5.316 | | 0.0000 | 0.000 | 2512.0 | 0.138 | BB | 0.040 | 1055.82 | 0.151 |
| 20 | 5.417 | | 0.0000 | 0.000 | 2593.7 | 0.142 | BB | 0.029 | 1496.90 | 0.214 |
| 21 | 5.482 | gamma-BHC | 4.4212 | 0.656 | 17044.0 | 0.936 | BB | 0.081 | 3514.73 | 0.503 |
| 22 | 5.646 | | 0.0000 | 0.000 | 11227.5 | 0.617 | BB | 0.030 | 6180.35 | 0.885 |
| 23 | 5.727 | | 0.0000 | 0.000 | 1889.9 | 0.104 | BB | 0.027 | 1153.74 | 0.165 |
| 24 | 5.769 | | 0.0000 | 0.000 | 5292.6 | 0.291 | BB | 0.032 | 2793.88 | 0.400 |
| 25 | 5.868 | | 0.0000 | 0.000 | 1161.2 | 0.064 | BB | 0.033 | 591.20 | 0.085 |
| 26 | 5.932 | | 0.0000 | 0.000 | 6705.9 | 0.368 | BV | 0.043 | 2617.10 | 0.375 |
| 27 | 5.993 | delta-BHC | 10.7344 | 1.592 | 74102.1 | 4.069 | VB | 0.154 | 7998.58 | 1.146 |
| 28 | 6.229 | | 0.0000 | 0.000 | 57324.1 | 3.148 | BV | 0.105 | 9102.16 | 1.304 |
| 29 | 6.302 | | 0.0000 | 0.000 | 24987.9 | 1.372 | VV | 0.055 | 7511.85 | 1.076 |
| 30 | 6.375 | | 0.0000 | 0.000 | 37185.5 | 2.042 | VV | 0.066 | 9351.14 | 1.339 |
| 31 | 6.487 | | 0.0000 | 0.000 | 20123.8 | 1.105 | VV | 0.069 | 4864.20 | 0.697 |
| 32 | 6.522 | Aldrin | 8.8712 | 1.316 | 14535.8 | 0.798 | VV | 0.043 | 5648.23 | 0.809 |
| 33 | 6.631 | | 0.0000 | 0.000 | 47550.2 | 2.611 | VB | 0.056 | 14251.69 | 2.041 |
| 34 | 6.736 | Telodrin | 8.3629 | 1.240 | 8706.8 | 0.478 | BB | 0.029 | 4931.29 | 0.706 |
| 35 | 6.817 | | 0.0000 | 0.000 | 3137.7 | 0.172 | BB | 0.039 | 1332.54 | 0.191 |
| 36 | 6.950 | | 0.0000 | 0.000 | 14135.8 | 0.776 | BB | 0.044 | 5339.04 | 0.765 |
| 37 | 7.148 | | 0.0000 | 0.000 | 12246.7 | 0.672 | BB | 0.034 | 6074.07 | 0.870 |
| 38 | 7.203 | | 0.0000 | 0.000 | 138302.8 | 7.594 | BB | 0.034 | 68373.54 | 9.793 |
| 39 | 7.290 | Hept. epoxide | 3.1816 | 0.472 | 2771.6 | 0.152 | BB | 0.024 | 1890.76 | 0.271 |
| 40 | 7.434 | | 0.0000 | 0.000 | 22403.6 | 1.230 | BV | 0.046 | 8140.32 | 1.166 |
| 41 | 7.521 | g. Chlordane | 19.0298 | 2.822 | 30968.9 | 1.701 | VV | 0.047 | 11030.03 | 1.580 |
| 42 | 7.610 | | 0.0000 | 0.000 | 16672.1 | 0.916 | VV | 0.061 | 4577.06 | 0.656 |
| 43 | 7.672 | | 0.0000 | 0.000 | 6772.9 | 0.372 | VB | 0.050 | 2255.53 | 0.323 |
| 44 | 7.790 | Endosulfan I | 1.9632 | 0.291 | 2792.2 | 0.153 | BV | 0.045 | 1035.43 | 0.148 |
| 45 | 7.905 | | 0.0000 | 0.000 | 4942.5 | 0.271 | VV | 0.048 | 1705.32 | 0.244 |
| 46 | 7.988 | 4,4'-DDE | 7.6746 | 1.138 | 9313.2 | 0.511 | VV | 0.043 | 3575.83 | 0.512 |
| 47 | 8.062 | | 0.0000 | 0.000 | 2048.5 | 0.112 | VV | 0.043 | 798.63 | 0.114 |
| 48 | 8.137 | | 0.0000 | 0.000 | 15622.1 | 0.858 | VV | 0.045 | 5819.88 | 0.834 |
| 49 | 8.266 | | 0.0000 | 0.000 | 1950.2 | 0.107 | VV | 0.035 | 919.00 | 0.132 |
| 50 | 8.388 | | 0.0000 | 0.000 | 9838.9 | 0.540 | VV | 0.045 | 3618.95 | 0.518 |
| 51 | 8.418 | | 0.0000 | 0.000 | 12329.9 | 0.677 | VB | 0.049 | 4158.28 | 0.596 |
| 52 | 8.599 | o,p-DDT | 2.8459 | 0.422 | 2103.4 | 0.116 | BB | 0.040 | 869.20 | 0.124 |
| 53 | 8.647 | | 0.0000 | 0.000 | 4691.5 | 0.258 | BV | 0.033 | 2396.79 | 0.343 |
| 54 | 8.710 | 4,4'-DDD | 33.3898 | 4.952 | 23696.9 | 1.301 | VB | 0.036 | 10900.53 | 1.561 |
| 55 | 8.859 | Endosulfan II | 8.1262 | 1.205 | 12446.2 | 0.683 | BV | 0.066 | 3147.63 | 0.451 |
| 56 | 8.961 | | 0.0000 | 0.000 | 3590.8 | 0.197 | VV | 0.053 | 1136.79 | 0.163 |

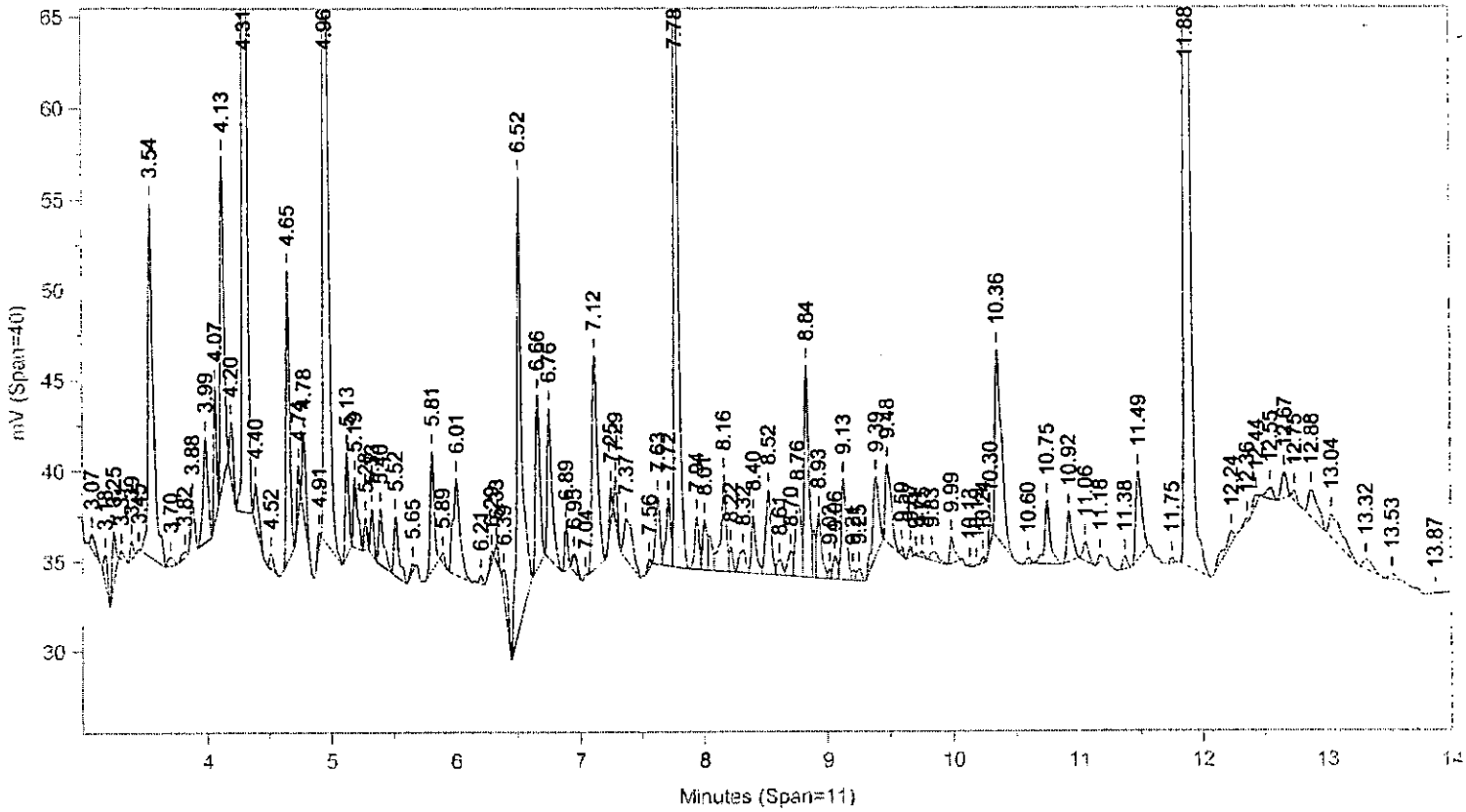
3465

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.111 | 4,4'-DDT | 20.5055 | 3.041 | 32103.4 | 1.763 | VV | 0.080 | 6682.46 | 0.957 |
| 58 | 9.226 | | 0.0000 | 0.000 | 3072.4 | 0.169 | VV | 0.052 | 975.62 | 0.140 |
| 59 | 9.292 | Endrin aldehyde | 16.3524 | 2.425 | 15966.3 | 0.877 | VV | 0.053 | 5014.65 | 0.718 |
| 60 | 9.419 | | 0.0000 | 0.000 | 14441.8 | 0.793 | VB | 0.097 | 2483.87 | 0.356 |
| 61 | 9.581 | | 0.0000 | 0.000 | 11828.8 | 0.650 | BB | 0.048 | 4078.24 | 0.584 |
| 62 | 9.691 | | 0.0000 | 0.000 | 257.2 | 0.014 | BB | 0.023 | 188.43 | 0.027 |
| 63 | 9.779 | | 0.0000 | 0.000 | 2581.0 | 0.142 | BB | 0.045 | 962.34 | 0.138 |
| 64 | 9.919 | | 0.0000 | 0.000 | 39557.1 | 2.172 | BB | 0.051 | 12862.07 | 1.842 |
| 65 | 10.039 | | 0.0000 | 0.000 | 359.8 | 0.020 | BB | 0.027 | 225.36 | 0.032 |
| 66 | 10.195 | | 0.0000 | 0.000 | 8349.0 | 0.458 | BB | 0.048 | 2899.44 | 0.415 |
| 67 | 10.313 | Endrin ketone | 1.3765 | 0.204 | 1371.9 | 0.075 | BB | 0.046 | 497.45 | 0.071 |
| 68 | 10.421 | | 0.0000 | 0.000 | 9945.9 | 0.546 | BB | 0.052 | 3178.40 | 0.455 |
| 69 | 10.520 | | 0.0000 | 0.000 | 242.3 | 0.013 | BB | 0.025 | 162.01 | 0.023 |
| 70 | 10.574 | | 0.0000 | 0.000 | 431.4 | 0.024 | BB | 0.034 | 213.86 | 0.031 |
| 71 | 10.653 | | 0.0000 | 0.000 | 253.3 | 0.014 | BB | 0.022 | 188.27 | 0.027 |
| 72 | 10.914 | | 0.0000 | 0.000 | 16890.9 | 0.928 | BB | 0.069 | 4066.40 | 0.582 |
| 73 | 11.086 | | 0.0000 | 0.000 | 4045.7 | 0.222 | BB | 0.071 | 947.73 | 0.136 |
| 74 | 11.519 | | 0.0000 | 0.000 | 2544.6 | 0.140 | BB | 0.060 | 710.99 | 0.102 |
| 75 | 11.608 | | 0.0000 | 0.000 | 725.1 | 0.040 | BB | 0.031 | 389.69 | 0.056 |
| 76 | 11.872 | | 0.0000 | 0.000 | 5095.3 | 0.280 | BB | 0.147 | 576.30 | 0.083 |
| 77 | 11.930 | | 0.0000 | 0.000 | 1158.3 | 0.064 | BB | 0.026 | 728.99 | 0.104 |
| 78 | 12.030 | DCB | 258.3526 | 38.314 | 256398.6 | 14.079 | BB | 0.046 | 93073.13 | 13.331 |
| 79 | 12.234 | | 0.0000 | 0.000 | 7372.5 | 0.405 | BB | 0.101 | 1220.22 | 0.175 |
| 80 | 12.419 | | 0.0000 | 0.000 | 1905.9 | 0.105 | BB | 0.062 | 510.95 | 0.073 |
| 81 | 12.676 | | 0.0000 | 0.000 | 3796.7 | 0.208 | BB | 0.139 | 456.48 | 0.065 |
| 82 | 13.090 | | 0.0000 | 0.000 | 662.1 | 0.036 | BB | 0.084 | 130.90 | 0.019 |
| 83 | 13.233 | | 0.0000 | 0.000 | 110.1 | 0.006 | BB | 0.029 | 63.33 | 0.009 |
| 84 | 13.348 | | 0.0000 | 0.000 | 5018.8 | 0.276 | BB | 0.047 | 1797.91 | 0.258 |
| 85 | 13.474 | | 0.0000 | 0.000 | 3059.3 | 0.168 | BB | 0.075 | 676.61 | 0.097 |
| 86 | 13.804 | | 0.0000 | 0.000 | 836.5 | 0.046 | BB | 0.076 | 182.61 | 0.026 |

Total Area = 1821093.0, Total Amount = 674.296, Total Height = 698182.8, Sample Units = PPB

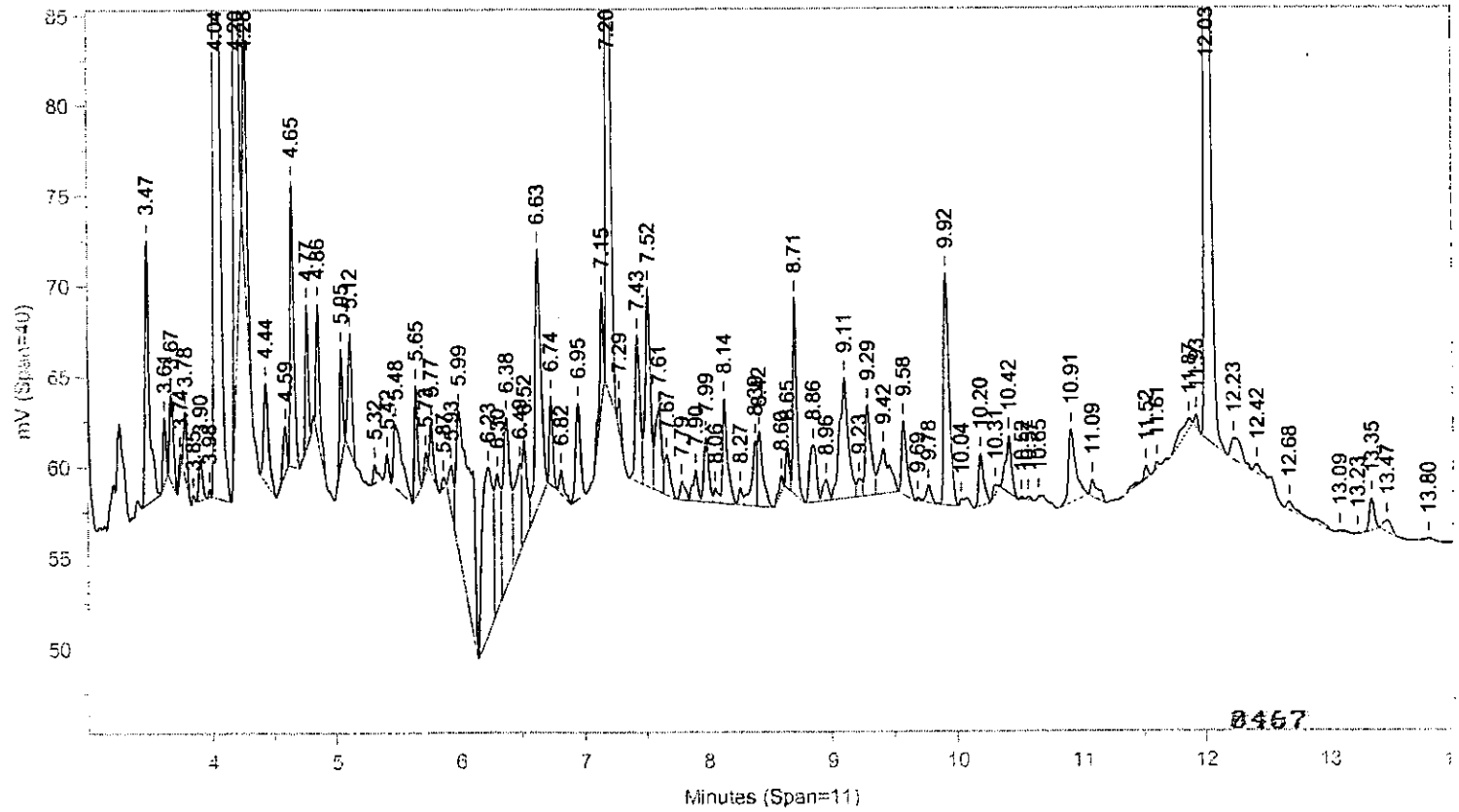
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.49R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 11:31:51 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.49R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 11:31:51 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6
Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

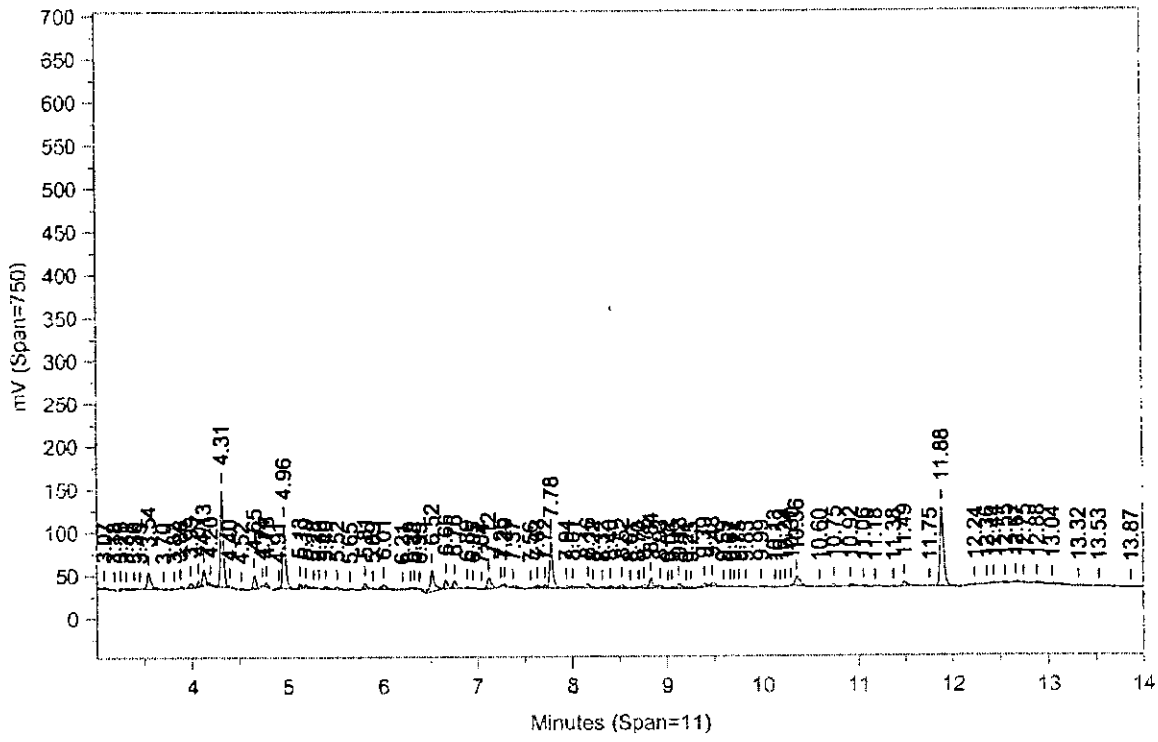
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.314 | 112352 | 9.078 | TCX | 4.039 | 146798 | 8.721 | TCX |
| 4.907 | 930 | .044 | Hcb | 4.768 | 8002 | .249 | Hcb |
| 5.194 | 3906 | .253 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.653 | 417 | .027 | gamma-BHC | 5.482 | 3515 | .147 | gamma-BHC |
| 6.009 | 5385 | .369 | delta-BHC | 5.993 | 7999 | .358 | delta-BHC |
| 6.33 | 1038 | .064 | Heptachlor | . | 0 | . | Heptachlor |
| 6.756 | 8399 | .668 | Aldrin | 6.522 | 5648 | .296 | Aldrin |
| 7.043 | 221 | .017 | Telodrin | 6.736 | 4931 | .279 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.29 | 1891 | .106 | Hept. epoxide |
| 7.782 | 53569 | 4.337 | g. Chlordane | 7.521 | 11030 | .634 | g. Chlordane |
| 7.562 | 471 | .06 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.79 | 1035 | .065 | Endosulfan I |
| 7.943 | 2945 | .224 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.007 | 2789 | .265 | 4,4'-DDE | 7.988 | 3576 | .256 | 4,4'-DDE |
| 8.219 | 1394 | .21 | o,p-DDD | . | 0 | . | o,p-DDD |
| . | 0 | . | o,p-DDT | 8.599 | 869 | .095 | o,p-DDT |
| 8.836 | 11686 | 1.368 | 4,4'-DDD | 8.71 | 10901 | 1.113 | 4,4'-DDD |
| 8.761 | 3949 | .394 | Endrin | . | 0 | . | Endrin |
| 9.062 | 1306 | .13 | Endosulfan II | 8.859 | 3148 | .271 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.111 | 6682 | .684 | 4,4'-DDT |
| 9.594 | 513 | .062 | Endrin aldehyde | 9.292 | 5015 | .545 | Endrin aldehyde |
| 9.755 | 338 | .069 | Methoxychlor | . | 0 | . | Methoxychlor |
| 10.19 | 87 | .01 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.313 | 497 | .046 | Endrin ketone |
| 11.883 | 92694 | 9.365 | DCB | 12.03 | 93073 | 8.612 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.49A
Area File: C:\CPWIN\DATA1\3D16082B.49A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:22:12 PM
File Reported On: 3/26/2004 at 3:22:19 PM

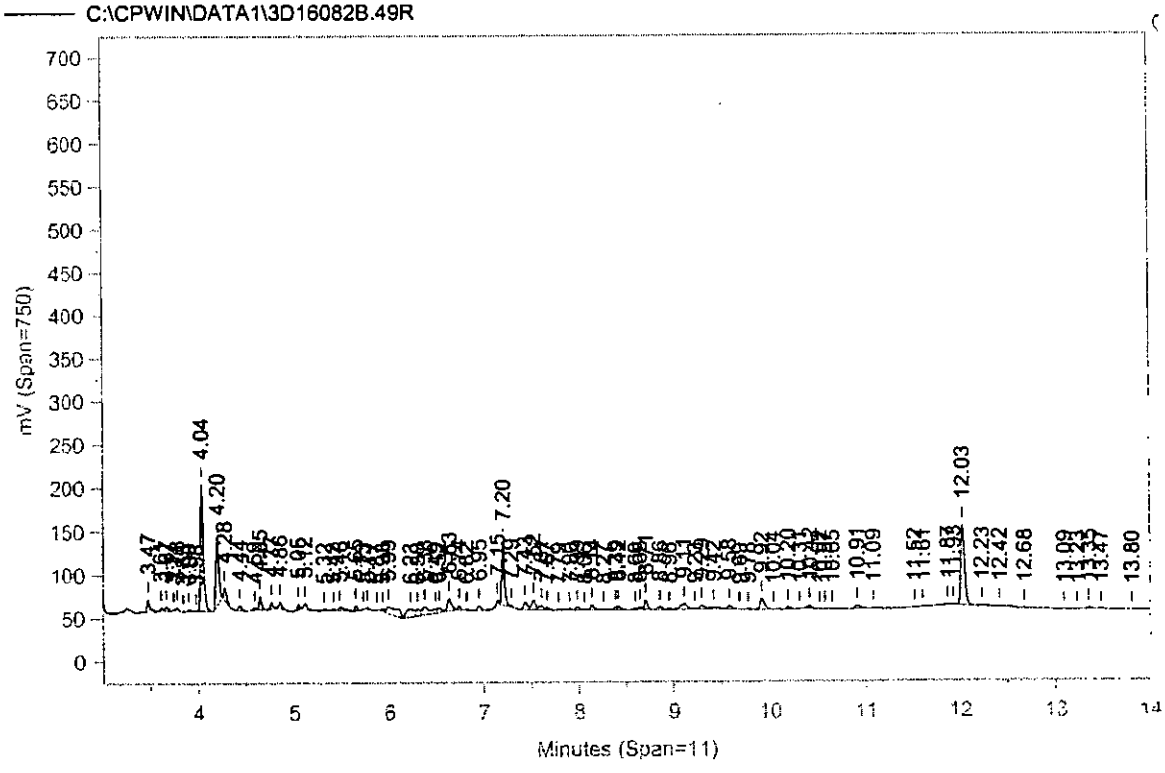
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.49R




C:\CPWIN\DATA1\3D16082B.49R




9469

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241634 F  5GP21  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262A
Result file : 3D16082.52R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 99.3%  Conc.: 9.549318
%SSR(DCB) : 102.5%  Conc.: 9.987314

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 118182 | 9.549318 |
| **Hcb** | 4.88 | 4.92 | 4.94 | 2381 | 0.113023 |
| **gamma-BHC** | 5.60 | 5.63 | 5.66 | 1153 | 0.074920 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 1593 | 0.109056 |
| **Heptachlor** | 6.29 | 6.33 | 6.35 | 16776 | 1.030643 |
| **o,p-DDE** | 7.53 | 7.57 | 7.59 | 895 | 0.113854 |
| **g. Chlordane** | 7.72 | 7.78 | 7.78 | 3955 | 0.320173 |
| **a. Chlordane** | 7.90 | 7.95 | 7.96 | 4599 | 0.349299 |
| **4,4'-DDE** | 7.99 | 8.00 | 8.05 | 7525 | 0.713911 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 13125 | 1.308416 |
| **4,4'-DDD** | 8.78 | 8.83 | 8.84 | 72513 | 8.491628 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 3925 | 0.391790 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 3421 | 0.415706 |
| **Endo. sulfate** | 10.14 | 10.18 | 10.20 | 284 | 0.032069 |
| **DCB** | 11.86 | 11.88 | 11.92 | 98849 | 9.987314 |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262B
Result file : 3D16082B.52R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 97%  Conc.: 9.331873
%SSR(DCB) : 95.4%  Conc.: 9.292594

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 157079 | 9.331873 |
| **Hcb** | 4.71 | 4.77 | 4.77 | 7141 | 0.222317 |
| **delta-BHC** | 5.97 | 5.98 | 6.03 | 2249 | 0.100625 |
| **Heptachlor** | 6.04 | 6.10 | 6.10 | 5679 | 0.238762 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 4091 | 0.231282 |
| **Hept. epoxide** | 7.27 | 7.29 | 7.33 | 12994 | 0.728807 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 106851 | 6.144875 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 1872 | 0.118279 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 10029 | 0.717483 |
| **Endrin** | 8.54 | 8.57 | 8.60 | 2081 | 0.168017 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 78057 | 7.969985 |
| **Endosulfan II** | 8.82 | 8.86 | 8.88 | 17187 | 1.479057 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 7497 | 0.814871 |
| **Endrin ketone** | 10.30 | 10.30 | 10.36 | 7518 | 0.693452 |
| **DCB** | 12.01 | 12.03 | 12.07 | 100431 | 9.292594 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.549318 | | | | 2.30 | |
| Hcb | B | 0.222317 | | | | ** 65.18 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | A(B) | 0.241 / 1.030643 | < 0.83 | 0.17 | J | ** 124.76 | 1559, MATRIX |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | B(A) | 0.32 / 6.144875 | < 0.9 | 0.3 | J | ** 180.19 | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | B | 0.717483 | <1.7 | 0.33 | J | 0.50 | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 8.491628 | 1.7 | 0.58 | | 6.34 | |
| Endosulfan II | B(A) | 0.39 / 1.479057 | <1.7 | 0.33 | J | ** 116.23 | 1561, MATRIX |
| 4,4'-DDT | | | <1.7 | <0.33 | | | 8470 |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 17:07:14

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241634 F 5GP21 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262A
Result file : 3D16082.52R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262B
Result file : 3D16082B.52R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.987314 | | | | 7.21 | |

Units: ug/kg X

Reviewed by: M.E.M. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/28/04

3471

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 17:07:14

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241634 F 5GP21 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 26, 2004 12:33:24
**Instrument** H5262A
**Result file** 3D16082.52R
**Calibration file** 2D16082
**Method file** PESTD

%SSR(TCX) 99.3% Conc: 9.549318
%SSR(DCB) 102.5% Conc: 9.987314

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 7.60 | 7.63 | 7.66 | 11901.39355 | 23.590286 | | | 2 |
| 8.13 | 8.16 | 8.19 | 18434.18164 | 28.024332 | | | 3 |
| 8.50 | 8.53 | 8.56 | 12849.22363 | 26.268795 | | | 4 |
| 8.73 | 8.76 | 8.79 | 13125.25976 | 42.359771 | | | 5 |
| 9.10 | 9.13 | 9.16 | 18400.91796 | 38.063095 | | | 6 |
| Height summation: | | | **74710.976564** | | | | |
| Concentration | | CF: | **31.661256** | L: | | | |

## Analysis Report (B)

**Injected on** Mar 26, 2004 12:33:24
**Instrument** H5262B
**Result file** 3D16082B.52R
**Calibration file** 2D16082B
**Method file** PESTDB

%SSR(TCX) 97.0% Conc: 9.331873
%SSR(DCB) 95.4% Conc: 9.292594

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 8968.378906 | 26.376964 | | | 1 |
| 8.10 | 8.14 | 8.16 | 19586.52539 | 27.513957 | | | 3 |
| 8.39 | 8.42 | 8.45 | 11567.96191 | 32.495005 | | | 4 |
| 8.84 | 8.86 | 8.90 | 17187.07226 | 46.46109 | | | 5 |
| Height summation: | | | **57309.938477** | | | | |
| Concentration | | CF: | **33.211754** | L: | | | |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | B | 33.211754 | 17 | 3.3 | | 4.78 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M. E. M. 0120 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

8472

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241634 F  5GP21  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262A
Result file : 3D16082.52R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 99.3% Conc.: 9.549318
%SSR(DCB) : 102.5% Conc.: 9.987314

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **145.91** | |
| 5.35 | 5.40 | 5.41 | 7148.088379 | 16.855233 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1593.217407 | 4.474774 | | | 3 |
| 6.20 | 6.22 | 6.26 | 262.863098 | 0.699014 | | | 4 |
| 6.29 | 6.33 | 6.35 | 16775.82421! | 68.832535 | | | 5 |
| 6.87 | 6.89 | 6.93 | 734.208252 | 6.065872 | | | 6 |
| Height Summation | | | **26514.201355** | | | | |
| Amount Avg CF: | | | **19.385486** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **129.66** | |
| 4.55 | 4.60 | 4.61 | 529.835693 | 3.239694 | | | 1 |
| E 4.77 | 4.78 | 4.83 | 7076.275879 | 74.691533 | | | 2 |
| Height Summation | | | **7606.111572** | | | | |
| Amount Avg CF: | | | **38.965614** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **145.64** | |
| 5.35 | 5.40 | 5.41 | 7148.088379 | 36.952483 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1593.217407 | 9.719481 | | | 3 |
| 6.19 | 6.22 | 6.25 | 262.863098 | 1.4899 | | | 4 |
| E 6.28 | 6.33 | 6.34 | 16775.82421! | 148.347033 | | | 5 |
| 6.87 | 6.89 | 6.93 | 734.208252 | 12.813408 | | | 6 |
| Height Summation | | | **26514.201355** | | | | |
| Amount Avg CF: | | | **41.864461** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **149.31** | |
| 5.35 | 5.40 | 5.41 | 7148.088379 | 19.248666 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1593.217407 | 5.211702 | | | 3 |
| 6.19 | 6.22 | 6.25 | 262.863098 | 0.810181 | | | 4 |
| E 6.28 | 6.33 | 6.34 | 16775.82421! | 81.154363 | | | 5 |
| 6.87 | 6.89 | 6.93 | 734.208252 | 5.857733 | | | 6 |
| Height Summation | | | **26514.201355** | | | | |
| Amount Avg CF: | | | **22.456529** | Linear: | | | |
| **Aroclor-1248** | | | | | **6** | **90.10** | |
| 5.35 | 5.40 | 5.41 | 7148.088379 | 39.308688 | | | 1 |
| 6.01 | 6.03 | 6.07 | 1593.217407 | 11.510023 | | | 2 |
| 6.75 | 6.78 | 6.81 | 4119.320801 | 9.392619 | | | 3 |
| 7.32 | 7.35 | 7.38 | 1421.028076 | 5.490941 | | | 4 |
| 7.62 | 7.63 | 7.68 | 11901.39355! | 35.690083 | | | 5 |
| E 8.14 | 8.16 | 8.20 | 18434.18164 | 74.985993 | | | 6 |
| Height Summation | | | **44617.229859** | | | | |
| Amount Avg CF: | | | **29.396391** | Linear: | | | |
| **Aroclor-1254** | | | | | **5** | **25.61** | |
| 7.60 | 7.63 | 7.66 | 11901.39355! | 23.590286 | | | 2 |
| 8.13 | 8.16 | 8.19 | 18434.18164 | 28.024332 | | | 3 |
| 8.50 | 8.53 | 8.56 | 12849.22363: | 26.268795 | | | 4 |
| 8.73 | 8.76 | 8.79 | 13125.25976( | 42.359771 | | | 5 |
| 9.10 | 9.13 | 9.16 | 18400.91796! | 38.063095 | | | 6 |
| Height Summation | | | **74710.976564** | | | | |
| Amount Avg CF: | | | **31.661256** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262B
Result file : 3D16082B.52R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 97% Conc.: 9.331873
%SSR(DCB) : 95.4% Conc.: 9.292594

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **81.81** | |
| 4.72 | 4.77 | 4.78 | 7141.01709 | 20.276773 | | | 1 |
| 5.29 | 5.31 | 5.35 | 1792.394043 | 3.61545 | | | 2 |
| 5.91 | 5.94 | 5.97 | 598.27887 | 0.593781 | | | 3 |
| 6.09 | 6.10 | 6.15 | 5678.896484 | 10.9059 | | | 4 |
| 6.72 | 6.74 | 6.78 | 4091.345703 | 11.590123 | | | 6 |
| Height Summation | | | **19301.932190** | | | | |
| Amount Avg CF: | | | **9.396405** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **91.44** | |
| E 4.64 | 4.65 | 4.70 | 10308.06835! | 69.1631 | | | 2 |
| 4.72 | 4.77 | 4.78 | 7141.01709 | 14.846035 | | | 3 |
| Height Summation | | | **17449.085449** | | | | |
| Amount Avg CF: | | | **42.004568** | Linear: | | | |
| **Aroclor-1232** | | | | | **6** | **82.93** | |
| 4.72 | 4.77 | 4.78 | 7141.01709 | 18.455817 | | | 1 |
| 5.29 | 5.31 | 5.35 | 1792.394043 | 7.88108 | | | 2 |
| 5.91 | 5.94 | 5.97 | 598.27887 | 1.260636 | | | 3 |
| 6.09 | 6.10 | 6.15 | 5678.896484 | 23.286573 | | | 4 |
| 6.23 | 6.23 | 6.29 | 9214.782227 | 52.604797 | | | 5 |
| 6.71 | 6.74 | 6.77 | 4091.345703 | 25.615738 | | | 6 |
| Height Summation | | | **28516.714417** | | | | |
| Amount Avg CF: | | | **21.51744** | Linear: | | | |
| **Aroclor-1242** | | | | | **6** | **78.26** | |
| 4.72 | 4.77 | 4.78 | 7141.01709 | 21.84599 | | | 1 |
| 5.29 | 5.31 | 5.35 | 1792.394043 | 4.086905 | | | 2 |
| 5.91 | 5.94 | 5.97 | 598.27887 | 0.686718 | | | 3 |
| 6.09 | 6.10 | 6.15 | 5678.896484 | 12.533705 | | | 4 |
| 6.23 | 6.23 | 6.29 | 9214.782227 | 28.574297 | | | 5 |
| 6.72 | 6.74 | 6.78 | 4091.345703 | 12.760532 | | | 6 |
| Height Summation | | | **28516.714417** | | | | |
| Amount Avg CF: | | | **13.414691** | Linear: | | | |
| **Aroclor-1248** | | | | | **6** | **124.52** | |
| 5.29 | 5.31 | 5.35 | 1792.394043 | 8.054256 | | | 1 |
| 5.91 | 5.94 | 5.97 | 598.27887 | 1.182486 | | | 2 |
| 6.71 | 6.74 | 6.77 | 4091.345703 | 7.646017 | | | 3 |
| 7.21 | 7.22 | 7.27 | 14218.35156: | 29.712905 | | | 4 |
| 7.57 | 7.61 | 7.63 | 5276.20459 | 10.852703 | | | 5 |
| E 8.11 | 8.14 | 8.17 | 19586.52539 | 73.98121 | | | 6 |
| Height Summation | | | **45563.100160** | | | | |
| Amount Avg CF: | | | **21.90493** | Linear: | (4) | 27.77% | |
| | | | | | ~~5~~ | ~~189.03~~ | |
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 8968.378906 | 26.376964 | | | 1 |
| E 7.50 | 7.52 | 7.56 | 106850.6484: | 189.254197 | | | 2 |
| 8.10 | 8.14 | 8.16 | 19586.52539 | 27.513957 | | | 3 |
| 8.39 | 8.42 | 8.45 | 11567.96191 | 32.495005 | | | 4 |
| 8.84 | 8.86 | 8.90 | 17187.07226( | 46.46109 | | | 5 |
| Height Summation | | | **164160.586915** | | | | |
| Amount Avg CF: | | | (33.248) ~~64.420243~~ | Linear: | | | |

8473

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 17:07:37

M. 2-M. 134
3/28/04

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241634F 5GP21 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262A
Result file : 3D16082.52R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **6** | **65.80** | |
| 8.38 | 8.40 | 8.44 | 7188.94043 | 13.319024 | | | 1 |
| 8.73 | 8.76 | 8.79 | 13125.25976 | 19.9799 | | | 2 |
| 9.10 | 9.13 | 9.16 | 18400.91796 | 28.594575 | | | 3 |
| 9.57 | 9.59 | 9.63 | 3421.248779 | 10.584145 | | | 4 |
| 9.96 | 9.99 | 10.02 | 4929.946289 | 5.665042 | | | 5 |
| 11.14 | 11.17 | 11.20 | 1152.156982 | 4.841553 | | | 6 |
| Height Summation | | | **48218.470215** | | | | |
| Amount Avg CF: | | | **13.830707** | Linear: | | | |
| **Chlordane** | | | | | **5** | **132.66** | |
| 6.18 | 6.22 | 6.24 | 262.863098 | 0.510701 | | | 1 |
| 6.29 | 6.33 | 6.35 | 16775.82421 | 24.685713 | | | 2 |
| 6.91 | 6.95 | 6.97 | 3542.172607 | 5.415151 | | | 3 |
| 7.72 | 7.78 | 7.78 | 3954.59082 | 3.204206 | | | 4 |
| 7.89 | 7.95 | 7.95 | 4598.575195 | 3.187232 | | | 5 |
| Height Summation | | | **29134.025939** | | | | |
| Amount Avg CF: | | | **7.400601** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **104.39** | |
| 8.61 | 8.61 | 8.67 | 1924.508057 | 17.707372 | | | 1 |
| 8.75 | 8.76 | 8.81 | 13125.25976 | 117.527712 | | | 2 |
| Height Summation | | | **15049.767823** | | | | |
| Amount Avg CF: | | | **67.617542** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:33:24
Instrument : CP16--H5262B
Result file : 3D16082B.52R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **5** | **101.60** | |
| + 8.36 | 8.39 | 8.42 | 9937.508789 | 16.960493 | | | 1 |
| 8.36 | 8.42 | 8.42 | 11567.96191 | 19.743211 | | | 1 |
| 8.62 | 8.65 | 8.68 | 10301.78808 | 14.555667 | | | 2 |
| 8.83 | 8.86 | 8.89 | 17187.07226 | 37.809401 | | | 3 |
| 9.58 | 9.58 | 9.64 | 52664.77734 | 122.435339 | | | 5 |
| 9.88 | 9.92 | 9.94 | 24745.82617 | 25.415102 | | | 6 |
| Height Summation | | | **116467.425782** | | | | |
| Amount Avg CF: | | | **43.991744** | Linear: | | | |
| **Chlordane** | | | | | **5** | **159.85** | |
| 5.84 | 5.86 | 5.90 | 2873.179199 | 3.918016 | | | 1 |
| 6.05 | 6.10 | 6.11 | 5678.896484 | 5.631453 | | | 2 |
| 6.70 | 6.74 | 6.76 | 4091.345703 | 5.080215 | | | 3 |
| 7.51 | 7.52 | 7.57 | 106850.6484 | 59.871846 | | | 4 |
| 7.64 | 7.66 | 7.70 | 3982.575684 | 3.109547 | | | 5 |
| Height Summation | | | **123476.645508** | | | | |
| Amount Avg CF: | | | **15.522215** | Linear: | | | |
| **Toxaphene** | | | | | **5** | **78.41** | |
| 8.12 | 8.14 | 8.18 | 19586.52539 | 162.716623 | | | 1 |
| 8.91 | 8.96 | 8.97 | 3397.535889 | 11.347588 | | | 3 |
| 9.25 | 9.29 | 9.31 | 7496.680664 | 34.570494 | | | 4 |
| 9.91 | 9.92 | 9.97 | 24745.82617 | 111.715271 | | | 5 |
| 10.41 | 10.42 | 10.47 | 8104.142578 | 67.015154 | | | 6 |
| Height Summation | | | **63330.710694** | | | | |
| Amount Avg CF: | | | **77.473026** | Linear: | | | |

9474

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 17:07:37

Sample Name: **4241634F AB5GP21 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 12:47:24pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.52R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.075 | | 0.0000 | 0.000 | 9101.0 | 0.198 | BB | 0.057 | 2667.59 | 0.143 |
| 2 | 3.178 | | 0.0000 | 0.000 | 3844.1 | 0.084 | BB | 0.035 | 1827.79 | 0.098 |
| 3 | 3.245 | | 0.0000 | 0.000 | 40684.6 | 0.885 | BB | 0.044 | 15452.82 | 0.828 |
| 4 | 3.392 | | 0.0000 | 0.000 | 3262.8 | 0.071 | BB | 0.029 | 1853.73 | 0.099 |
| 5 | 3.486 | | 0.0000 | 0.000 | 763.5 | 0.017 | BB | 0.038 | 336.59 | 0.018 |
| 6 | 3.543 | | 0.0000 | 0.000 | 34573.7 | 0.752 | BB | 0.035 | 16544.34 | 0.887 |
| 7 | 3.631 | | 0.0000 | 0.000 | 5693.7 | 0.124 | BB | 0.031 | 3084.57 | 0.165 |
| 8 | 3.707 | | 0.0000 | 0.000 | 813.6 | 0.018 | BB | 0.023 | 582.83 | 0.031 |
| 9 | 3.778 | | 0.0000 | 0.000 | 4244.3 | 0.092 | BB | 0.031 | 2305.25 | 0.124 |
| 10 | 3.867 | | 0.0000 | 0.000 | 10217.7 | 0.222 | BB | 0.046 | 3674.63 | 0.197 |
| 11 | 3.986 | | 0.0000 | 0.000 | 15691.8 | 0.341 | BB | 0.045 | 5759.20 | 0.309 |
| 12 | 4.067 | | 0.0000 | 0.000 | 12829.6 | 0.279 | BB | 0.030 | 7027.09 | 0.377 |
| 13 | 4.194 | | 0.0000 | 0.000 | 43202.4 | 0.940 | BB | 0.036 | 20051.36 | 1.075 |
| 14 | 4.313 | TCX | 286.4796 | 28.936 | 233351.3 | 5.075 | BB | 0.033 | 118182.30 | 6.334 |
| 15 | 4.435 | | 0.0000 | 0.000 | 9747.4 | 0.212 | BB | 0.050 | 3251.88 | 0.174 |
| 16 | 4.599 | | 0.0000 | 0.000 | 1571.8 | 0.034 | BB | 0.049 | 529.84 | 0.028 |
| 17 | 4.654 | | 0.0000 | 0.000 | 19384.4 | 0.422 | BB | 0.032 | 10142.18 | 0.544 |
| 18 | 4.740 | | 0.0000 | 0.000 | 1651.0 | 0.036 | BB | 0.026 | 1078.99 | 0.058 |
| 19 | 4.779 | | 0.0000 | 0.000 | 17038.9 | 0.371 | BB | 0.040 | 7076.28 | 0.379 |
| 20 | 4.919 | Hcb | 3.3907 | 0.342 | 4303.8 | 0.094 | BB | 0.030 | 2381.09 | 0.128 |
| 21 | 4.961 | | 0.0000 | 0.000 | 618902.4 | 13.461 | BB | 0.036 | 283815.00 | 15.212 |
| 22 | 5.077 | | 0.0000 | 0.000 | 1132.8 | 0.025 | BB | 0.018 | 1043.45 | 0.056 |
| 23 | 5.133 | | 0.0000 | 0.000 | 181806.8 | 3.954 | BB | 0.034 | 87906.18 | 4.712 |
| 24 | 5.286 | | 0.0000 | 0.000 | 2293.3 | 0.050 | BB | 0.030 | 1284.27 | 0.069 |
| 25 | 5.399 | | 0.0000 | 0.000 | 16317.9 | 0.355 | BB | 0.038 | 7148.09 | 0.383 |
| 26 | 5.516 | | 0.0000 | 0.000 | 38357.8 | 0.834 | BB | 0.037 | 17055.25 | 0.914 |
| 27 | 5.627 | gamma-BHC | 2.2476 | 0.227 | 2080.7 | 0.045 | BB | 0.030 | 1153.44 | 0.062 |
| 28 | 5.703 | | 0.0000 | 0.000 | 2395.3 | 0.052 | BB | 0.036 | 1113.93 | 0.060 |
| 29 | 5.811 | | 0.0000 | 0.000 | 24403.7 | 0.531 | BB | 0.045 | 9013.05 | 0.483 |
| 30 | 5.974 | | 0.0000 | 0.000 | 1973.9 | 0.043 | BB | 0.030 | 1090.63 | 0.058 |
| 31 | 6.029 | delta-BHC | 3.2717 | 0.330 | 3177.2 | 0.069 | BB | 0.033 | 1593.22 | 0.085 |
| 32 | 6.113 | | 0.0000 | 0.000 | 779.3 | 0.017 | BB | 0.027 | 472.71 | 0.025 |
| 33 | 6.219 | | 0.0000 | 0.000 | 445.2 | 0.010 | BB | 0.028 | 262.86 | 0.014 |
| 34 | 6.332 | Heptachlor | 30.9193 | 3.123 | 37796.7 | 0.822 | BB | 0.038 | 16775.82 | 0.899 |
| 35 | 6.406 | | 0.0000 | 0.000 | 4971.6 | 0.108 | BB | 0.027 | 3077.33 | 0.165 |
| 36 | 6.517 | | 0.0000 | 0.000 | 516918.6 | 11.242 | BB | 0.034 | 254078.00 | 13.618 |
| 37 | 6.667 | | 0.0000 | 0.000 | 8108.6 | 0.176 | BB | 0.040 | 3400.77 | 0.182 |
| 38 | 6.779 | | 0.0000 | 0.000 | 13161.6 | 0.286 | BB | 0.053 | 4119.32 | 0.221 |
| 39 | 6.893 | | 0.0000 | 0.000 | 1136.2 | 0.025 | BB | 0.026 | 734.21 | 0.039 |
| 40 | 6.948 | | 0.0000 | 0.000 | 7658.0 | 0.167 | BB | 0.036 | 3542.17 | 0.190 |
| 41 | 7.121 | | 0.0000 | 0.000 | 36143.0 | 0.786 | BB | 0.047 | 12914.97 | 0.692 |
| 42 | 7.252 | | 0.0000 | 0.000 | 17788.7 | 0.387 | BB | 0.027 | 10800.44 | 0.579 |
| 43 | 7.288 | | 0.0000 | 0.000 | 5517.3 | 0.120 | BB | 0.024 | 3847.54 | 0.206 |
| 44 | 7.351 | | 0.0000 | 0.000 | 2103.5 | 0.046 | BB | 0.025 | 1421.03 | 0.076 |
| 45 | 7.406 | | 0.0000 | 0.000 | 10855.1 | 0.236 | BB | 0.033 | 5505.72 | 0.295 |
| 46 | 7.468 | | 0.0000 | 0.000 | 11654.6 | 0.253 | BB | 0.033 | 5969.59 | 0.320 |
| 47 | 7.565 | o,p-DDE | 3.4156 | 0.345 | 1564.0 | 0.034 | BB | 0.029 | 894.59 | 0.048 |
| 48 | 7.631 | | 0.0000 | 0.000 | 27728.3 | 0.603 | BV | 0.039 | 11901.39 | 0.638 |
| 49 | 7.716 | | 0.0000 | 0.000 | 42978.7 | 0.935 | VB | 0.036 | 19792.01 | 1.061 |
| 50 | 7.780 | g. Chlordane | 9.6052 | 0.970 | 11900.9 | 0.259 | BB | 0.050 | 3954.59 | 0.212 |
| 51 | 7.947 | a. Chlordane | 10.4790 | 1.058 | 10692.0 | 0.233 | BB | 0.039 | 4598.58 | 0.246 |
| 52 | 8.005 | 4,4'-DDE | 21.4173 | 2.163 | 13146.5 | 0.286 | BB | 0.029 | 7525.01 | 0.403 |
| 53 | 8.062 | | 0.0000 | 0.000 | 2730.4 | 0.059 | BB | 0.025 | 1805.29 | 0.097 |
| 54 | 8.164 | | 0.0000 | 0.000 | 47870.5 | 1.041 | BB | 0.043 | 18434.18 | 0.988 |
| 55 | 8.319 | | 0.0000 | 0.000 | 11359.8 | 0.247 | BB | 0.061 | 3100.39 | 0.166 |
| 56 | 8.401 | | 0.0000 | 0.000 | 15910.0 | 0.346 | BB | 0.037 | 7188.94 | 0.385 |

8475

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.526 | | 0.0000 | 0.000 | 31610.8 | 0.688 | BV | 0.041 | 12849.22 | 0.689 |
| 58 | 8.613 | | 0.0000 | 0.000 | 4435.5 | 0.096 | VB | 0.038 | 1924.51 | 0.103 |
| 59 | 8.682 | | 0.0000 | 0.000 | 2418.3 | 0.053 | BB | 0.028 | 1445.11 | 0.077 |
| 60 | 8.758 | Endrin | 39.2525 | 3.965 | 40869.8 | 0.889 | BV | 0.052 | 13125.26 | 0.703 |
| 61 | 8.834 | 4,4'-DDD | 254.7488 | 25.731 | 203170.7 | 4.419 | VB | 0.047 | 72512.99 | 3.887 |
| 62 | 9.059 | Endosulfan II | 11.7537 | 1.187 | 8706.8 | 0.189 | BV | 0.037 | 3925.23 | 0.210 |
| 63 | 9.129 | | 0.0000 | 0.000 | 54387.6 | 1.183 | VB | 0.049 | 18400.92 | 0.986 |
| 64 | 9.244 | | 0.0000 | 0.000 | 3538.1 | 0.077 | BB | 0.055 | 1080.15 | 0.058 |
| 65 | 9.370 | | 0.0000 | 0.000 | 193910.3 | 4.217 | BB | 0.051 | 63917.78 | 3.426 |
| 66 | 9.471 | | 0.0000 | 0.000 | 855.0 | 0.019 | BB | 0.016 | 885.18 | 0.047 |
| 67 | 9.505 | | 0.0000 | 0.000 | 3093.5 | 0.067 | BB | 0.024 | 2179.18 | 0.117 |
| 68 | 9.593 | Endrin aldehyde | 12.4712 | 1.260 | 5549.9 | 0.121 | BB | 0.027 | 3421.25 | 0.183 |
| 69 | 9.652 | | 0.0000 | 0.000 | 2473.6 | 0.054 | BB | 0.032 | 1274.05 | 0.068 |
| 70 | 9.711 | | 0.0000 | 0.000 | 246.5 | 0.005 | BB | 0.018 | 232.52 | 0.012 |
| 71 | 9.746 | | 0.0000 | 0.000 | 1341.3 | 0.029 | BB | 0.026 | 857.11 | 0.046 |
| 72 | 9.826 | | 0.0000 | 0.000 | 2990.9 | 0.065 | BB | 0.029 | 1744.27 | 0.093 |
| 73 | 9.876 | | 0.0000 | 0.000 | 240.7 | 0.005 | BB | 0.019 | 214.71 | 0.012 |
| 74 | 9.907 | | 0.0000 | 0.000 | 1263.7 | 0.027 | BB | 0.028 | 765.06 | 0.041 |
| 75 | 9.986 | | 0.0000 | 0.000 | 9827.5 | 0.214 | BB | 0.033 | 4929.95 | 0.264 |
| 76 | 10.069 | | 0.0000 | 0.000 | 3485.6 | 0.076 | BB | 0.030 | 1938.67 | 0.104 |
| 77 | 10.128 | | 0.0000 | 0.000 | 494.4 | 0.011 | BB | 0.022 | 376.68 | 0.020 |
| 78 | 10.179 | Endo. sulfate | 0.9621 | 0.097 | 347.7 | 0.008 | BB | 0.020 | 283.56 | 0.015 |
| 79 | 10.237 | | 0.0000 | 0.000 | 1514.6 | 0.033 | BB | 0.028 | 892.77 | 0.048 |
| 80 | 10.301 | | 0.0000 | 0.000 | 62534.5 | 1.360 | BB | 0.030 | 35011.84 | 1.877 |
| 81 | 10.356 | | 0.0000 | 0.000 | 5384.0 | 0.117 | BB | 0.024 | 3690.90 | 0.198 |
| 82 | 10.394 | | 0.0000 | 0.000 | 45618.4 | 0.992 | BB | 0.029 | 25902.58 | 1.388 |
| 83 | 10.591 | | 0.0000 | 0.000 | 1620.9 | 0.035 | BB | 0.038 | 707.70 | 0.038 |
| 84 | 10.746 | | 0.0000 | 0.000 | 369263.7 | 8.031 | BB | 0.041 | 151275.60 | 8.108 |
| 85 | 10.858 | | 0.0000 | 0.000 | 167.6 | 0.004 | BB | 0.015 | 187.41 | 0.010 |
| 86 | 10.913 | | 0.0000 | 0.000 | 66702.3 | 1.451 | BB | 0.046 | 24406.75 | 1.308 |
| 87 | 11.053 | | 0.0000 | 0.000 | 3468.2 | 0.075 | BB | 0.038 | 1506.90 | 0.081 |
| 88 | 11.168 | | 0.0000 | 0.000 | 2350.7 | 0.051 | BB | 0.034 | 1152.16 | 0.062 |
| 89 | 11.222 | | 0.0000 | 0.000 | 777.7 | 0.017 | BB | 0.024 | 541.11 | 0.029 |
| 90 | 11.378 | | 0.0000 | 0.000 | 1890.1 | 0.041 | BB | 0.037 | 842.27 | 0.045 |
| 91 | 11.474 | | 0.0000 | 0.000 | 898327.4 | 19.538 | BB | 0.059 | 251901.30 | 13.501 |
| 92 | 11.882 | DCB | 299.6194 | 30.264 | 265464.5 | 5.774 | BB | 0.045 | 98848.77 | 5.298 |
| 93 | 12.154 | | 0.0000 | 0.000 | 2347.6 | 0.051 | BB | 0.055 | 705.89 | 0.038 |
| 94 | 12.233 | | 0.0000 | 0.000 | 1707.2 | 0.037 | BB | 0.040 | 709.76 | 0.038 |
| 95 | 12.296 | | 0.0000 | 0.000 | 2079.4 | 0.045 | BB | 0.041 | 839.35 | 0.045 |
| 96 | 12.360 | | 0.0000 | 0.000 | 184.5 | 0.004 | BB | 0.021 | 144.56 | 0.008 |
| 97 | 12.480 | | 0.0000 | 0.000 | 18172.1 | 0.395 | BB | 0.112 | 2708.64 | 0.145 |
| 98 | 12.666 | | 0.0000 | 0.000 | 4997.0 | 0.109 | BB | 0.046 | 1795.31 | 0.096 |
| 99 | 12.893 | | 0.0000 | 0.000 | 11049.4 | 0.240 | BB | 0.098 | 1885.65 | 0.101 |
| 100 | 13.040 | | 0.0000 | 0.000 | 20322.8 | 0.442 | BB | 0.054 | 6284.49 | 0.337 |
| 101 | 13.331 | | 0.0000 | 0.000 | 4125.4 | 0.090 | BB | 0.058 | 1182.60 | 0.063 |
| 102 | 13.436 | | 0.0000 | 0.000 | 837.7 | 0.018 | BB | 0.035 | 404.69 | 0.022 |
| 103 | 13.537 | | 0.0000 | 0.000 | 1279.0 | 0.028 | BB | 0.053 | 406.00 | 0.022 |
| 104 | 13.619 | | 0.0000 | 0.000 | 2944.9 | 0.064 | BB | 0.050 | 980.26 | 0.053 |
| 105 | 13.956 | | 0.0000 | 0.000 | 1787.1 | 0.039 | BB | 0.073 | 408.60 | 0.022 |

Total Area = 4597909.0, Total Amount = 990.034, Total Height = 1865751.0, Sample Units = PPB

Sample Name: **4241634F AB5GP21 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 12:47:24pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.52R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.472 | | 0.0000 | 0.000 | 41508.3 | 0.847 | BB | 0.049 | 13976.06 | 0.786 |
| 2 | 3.611 | | 0.0000 | 0.000 | 7682.7 | 0.157 | BB | 0.029 | 4441.15 | 0.250 |
| 3 | 3.665 | | 0.0000 | 0.000 | 43308.4 | 0.884 | BB | 0.036 | 20226.30 | 1.138 |
| 4 | 3.740 | | 0.0000 | 0.000 | 27102.5 | 0.553 | BB | 0.028 | 16072.99 | 0.904 |
| 5 | 3.890 | | 0.0000 | 0.000 | 9898.6 | 0.202 | BB | 0.044 | 3734.72 | 0.210 |
| 6 | 3.959 | | 0.0000 | 0.000 | 1104.8 | 0.023 | BB | 0.028 | 664.70 | 0.037 |
| 7 | 4.038 | TCX | 279.9562 | 24.396 | 353519.6 | 7.218 | BB | 0.038 | 157078.80 | 8.837 |
| 8 | 4.200 | | 0.0000 | 0.000 | 843070.9 | 17.213 | BB | 0.043 | 324078.50 | 18.233 |
| 9 | 4.417 | | 0.0000 | 0.000 | 4432.0 | 0.090 | BB | 0.071 | 1037.39 | 0.058 |
| 10 | 4.579 | | 0.0000 | 0.000 | 8513.0 | 0.174 | BB | 0.052 | 2718.87 | 0.153 |
| 11 | 4.649 | | 0.0000 | 0.000 | 20244.6 | 0.413 | BB | 0.033 | 10308.07 | 0.580 |
| 12 | 4.768 | Hcb | 6.6695 | 0.581 | 10852.2 | 0.222 | BB | 0.025 | 7141.02 | 0.402 |
| 13 | 4.857 | | 0.0000 | 0.000 | 278397.1 | 5.684 | BB | 0.040 | 115524.10 | 6.499 |
| 14 | 4.995 | | 0.0000 | 0.000 | 610.4 | 0.012 | BB | 0.026 | 386.00 | 0.022 |
| 15 | 5.045 | | 0.0000 | 0.000 | 1385.9 | 0.028 | BB | 0.025 | 939.31 | 0.053 |
| 16 | 5.098 | | 0.0000 | 0.000 | 26106.7 | 0.533 | BB | 0.061 | 7109.05 | 0.400 |
| 17 | 5.260 | | 0.0000 | 0.000 | 310.7 | 0.006 | BB | 0.026 | 201.54 | 0.011 |
| 18 | 5.308 | | 0.0000 | 0.000 | 3557.5 | 0.073 | BB | 0.033 | 1792.39 | 0.101 |
| 19 | 5.376 | | 0.0000 | 0.000 | 173.6 | 0.004 | BB | 0.019 | 149.47 | 0.008 |
| 20 | 5.416 | | 0.0000 | 0.000 | 5411.4 | 0.110 | BB | 0.028 | 3172.13 | 0.178 |
| 21 | 5.505 | | 0.0000 | 0.000 | 53417.2 | 1.091 | BB | 0.042 | 21350.63 | 1.201 |
| 22 | 5.648 | | 0.0000 | 0.000 | 3002.9 | 0.061 | BB | 0.036 | 1374.21 | 0.077 |
| 23 | 5.732 | | 0.0000 | 0.000 | 23548.0 | 0.481 | BB | 0.037 | 10486.71 | 0.590 |
| 24 | 5.862 | | 0.0000 | 0.000 | 5309.0 | 0.108 | BB | 0.031 | 2873.18 | 0.162 |
| 25 | 5.939 | | 0.0000 | 0.000 | 1608.8 | 0.033 | BB | 0.045 | 598.28 | 0.034 |
| 26 | 5.984 | delta-BHC | 3.0187 | 0.263 | 5362.4 | 0.109 | BB | 0.040 | 2249.37 | 0.127 |
| 27 | 6.102 | Heptachlor | 7.1629 | 0.624 | 8531.5 | 0.174 | BB | 0.025 | 5678.90 | 0.319 |
| 28 | 6.230 | | 0.0000 | 0.000 | 47943.8 | 0.979 | BB | 0.087 | 9214.78 | 0.518 |
| 29 | 6.296 | | 0.0000 | 0.000 | 250.7 | 0.005 | BB | 0.017 | 245.31 | 0.014 |
| 30 | 6.378 | | 0.0000 | 0.000 | 31896.4 | 0.651 | BB | 0.059 | 8968.38 | 0.505 |
| 31 | 6.618 | | 0.0000 | 0.000 | 94450.8 | 1.928 | BB | 0.044 | 35532.84 | 1.999 |
| 32 | 6.740 | Telodrin | 6.9384 | 0.605 | 8954.7 | 0.183 | BB | 0.036 | 4091.35 | 0.230 |
| 33 | 6.816 | | 0.0000 | 0.000 | 915.9 | 0.019 | BB | 0.021 | 734.35 | 0.041 |
| 34 | 6.902 | | 0.0000 | 0.000 | 1314.0 | 0.027 | BB | 0.020 | 1093.78 | 0.062 |
| 35 | 6.943 | | 0.0000 | 0.000 | 38200.6 | 0.780 | BB | 0.037 | 17093.96 | 0.962 |
| 36 | 7.059 | | 0.0000 | 0.000 | 1359.5 | 0.028 | BB | 0.037 | 620.54 | 0.035 |
| 37 | 7.137 | | 0.0000 | 0.000 | 17046.4 | 0.348 | BB | 0.040 | 7033.19 | 0.396 |
| 38 | 7.222 | | 0.0000 | 0.000 | 35914.1 | 0.733 | BB | 0.042 | 14218.35 | 0.800 |
| 39 | 7.294 | Hept. epoxide | 21.8642 | 1.905 | 33434.8 | 0.683 | BB | 0.043 | 12993.51 | 0.731 |
| 40 | 7.449 | | 0.0000 | 0.000 | 9746.3 | 0.199 | BB | 0.064 | 2522.28 | 0.142 |
| 41 | 7.518 | g. Chlordane | 184.3462 | 16.064 | 208217.1 | 4.251 | BB | 0.032 | 106850.70 | 6.011 |
| 42 | 7.611 | | 0.0000 | 0.000 | 8045.1 | 0.164 | BB | 0.025 | 5276.20 | 0.297 |
| 43 | 7.659 | | 0.0000 | 0.000 | 7287.8 | 0.149 | BB | 0.030 | 3982.58 | 0.224 |
| 44 | 7.818 | Endosulfan I | 3.5484 | 0.309 | 5846.6 | 0.119 | BB | 0.052 | 1871.51 | 0.105 |
| 45 | 7.909 | | 0.0000 | 0.000 | 8727.2 | 0.178 | BV | 0.035 | 4199.11 | 0.236 |
| 46 | 7.986 | 4,4'-DDE | 21.5245 | 1.876 | 22284.9 | 0.455 | VB | 0.037 | 10028.94 | 0.564 |
| 47 | 8.063 | | 0.0000 | 0.000 | 6015.4 | 0.123 | BV | 0.039 | 2579.27 | 0.145 |
| 48 | 8.136 | | 0.0000 | 0.000 | 49562.1 | 1.012 | VB | 0.042 | 19586.53 | 1.102 |
| 49 | 8.261 | | 0.0000 | 0.000 | 2049.2 | 0.042 | BV | 0.034 | 1017.08 | 0.057 |
| 50 | 8.307 | | 0.0000 | 0.000 | 2090.1 | 0.043 | VB | 0.035 | 994.77 | 0.056 |
| 51 | 8.385 | | 0.0000 | 0.000 | 21748.0 | 0.444 | BV | 0.036 | 9937.51 | 0.559 |
| 52 | 8.417 | | 0.0000 | 0.000 | 27684.3 | 0.565 | VB | 0.040 | 11567.96 | 0.651 |
| 53 | 8.565 | Endrin | 5.0405 | 0.439 | 5554.9 | 0.113 | BB | 0.044 | 2080.78 | 0.117 |
| 54 | 8.646 | | 0.0000 | 0.000 | 20701.7 | 0.423 | BV | 0.033 | 10301.79 | 0.580 |
| 55 | 8.708 | 4,4'-DDD | 239.0995 | 20.835 | 181911.2 | 3.714 | VB | 0.039 | 78057.03 | 4.391 |
| 56 | 8.862 | Endosulfan II | 44.3717 | 3.867 | 50598.4 | 1.033 | BV | 0.049 | 17187.07 | 0.967 |

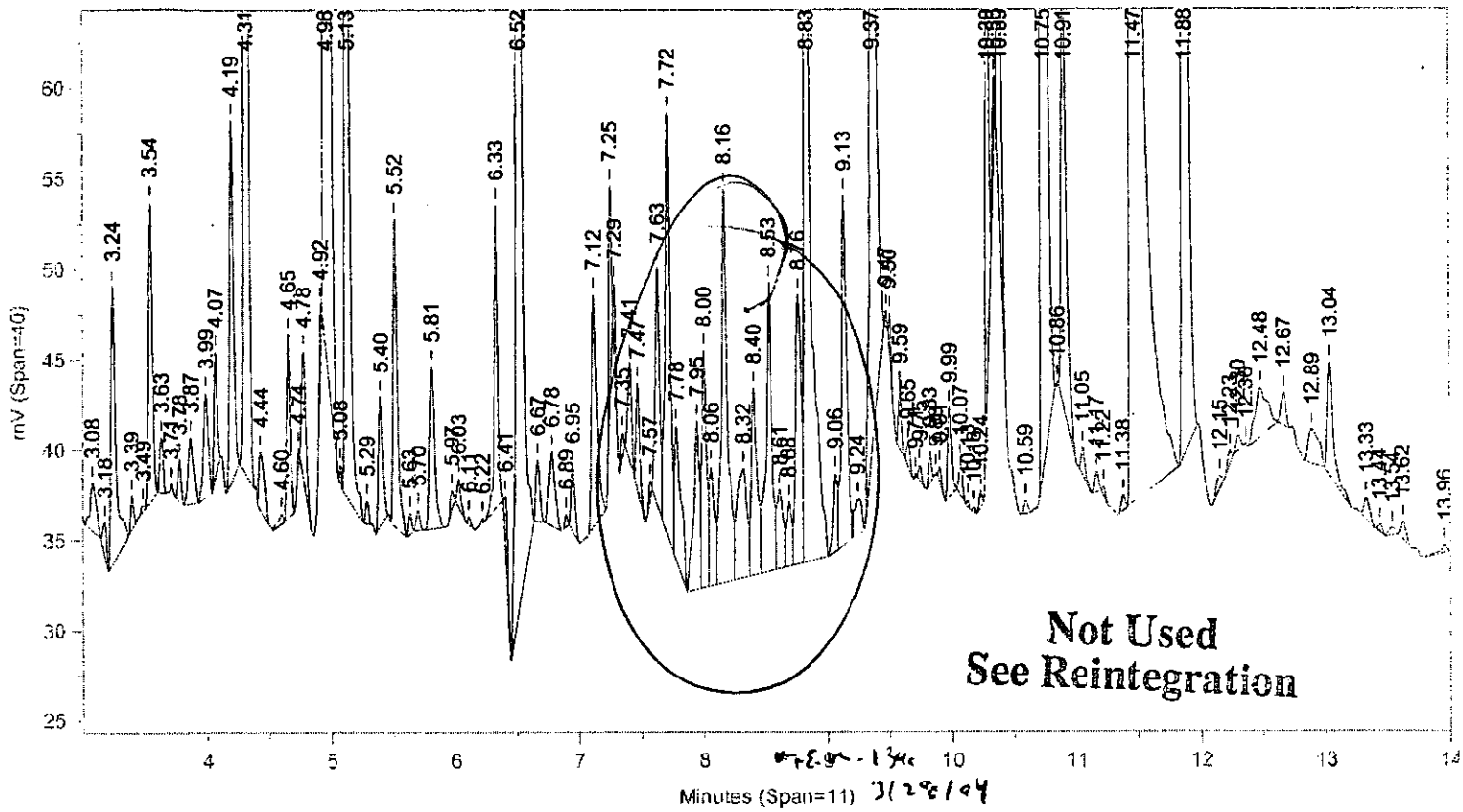
8477

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.964 | | 0.0000 | 0.000 | 7025.0 | 0.143 | VV | 0.034 | 3397.54 | 0.191 |
| 58 | 9.066 | | 0.0000 | 0.000 | 262003.5 | 5.349 | VV | 0.078 | 55760.40 | 3.137 |
| 59 | 9.218 | | 0.0000 | 0.000 | 21671.3 | 0.442 | VV | 0.054 | 6627.38 | 0.373 |
| 60 | 9.289 | Endrin aldehyde | 24.4461 | 2.130 | 26877.7 | 0.549 | VV | 0.060 | 7496.68 | 0.422 |
| 61 | 9.412 | | 0.0000 | 0.000 | 7629.9 | 0.156 | VV | 0.055 | 2328.75 | 0.131 |
| 62 | 9.515 | | 0.0000 | 0.000 | 268.1 | 0.005 | VB | 0.026 | 169.55 | 0.010 |
| 63 | 9.579 | | 0.0000 | 0.000 | 129877.6 | 2.652 | BB | 0.041 | 52664.78 | 2.963 |
| 64 | 9.694 | | 0.0000 | 0.000 | 579.9 | 0.012 | BB | 0.022 | 440.25 | 0.025 |
| 65 | 9.777 | | 0.0000 | 0.000 | 8350.7 | 0.170 | BB | 0.039 | 3585.58 | 0.202 |
| 66 | 9.915 | | 0.0000 | 0.000 | 72039.9 | 1.471 | BB | 0.049 | 24745.83 | 1.392 |
| 67 | 10.038 | | 0.0000 | 0.000 | 10568.2 | 0.216 | BB | 0.062 | 2826.45 | 0.159 |
| 68 | 10.190 | | 0.0000 | 0.000 | 358060.3 | 7.310 | BB | 0.046 | 129383.70 | 7.279 |
| 69 | 10.303 | Endrin ketone | 20.8036 | 1.813 | 18324.5 | 0.374 | BB | 0.041 | 7518.13 | 0.423 |
| 70 | 10.417 | | 0.0000 | 0.000 | 13438.2 | 0.274 | BB | 0.028 | 8104.14 | 0.456 |
| 71 | 10.563 | | 0.0000 | 0.000 | 1631.5 | 0.033 | BB | 0.059 | 459.61 | 0.026 |
| 72 | 10.757 | | 0.0000 | 0.000 | 10076.8 | 0.206 | BB | 0.049 | 3441.81 | 0.194 |
| 73 | 10.904 | | 0.0000 | 0.000 | 829121.9 | 16.928 | BB | 0.070 | 198674.60 | 11.177 |
| 74 | 11.437 | | 0.0000 | 0.000 | 2677.0 | 0.055 | BB | 0.049 | 914.48 | 0.051 |
| 75 | 11.548 | | 0.0000 | 0.000 | 2085.3 | 0.043 | BB | 0.057 | 609.03 | 0.034 |
| 76 | 11.610 | | 0.0000 | 0.000 | 3684.1 | 0.075 | BB | 0.057 | 1070.70 | 0.060 |
| 77 | 11.837 | | 0.0000 | 0.000 | 7375.8 | 0.151 | BB | 0.115 | 1066.80 | 0.060 |
| 78 | 11.932 | | 0.0000 | 0.000 | 13193.6 | 0.269 | BB | 0.034 | 6515.89 | 0.367 |
| 79 | 12.029 | DCB | 278.7778 | 24.293 | 271432.0 | 5.542 | BB | 0.045 | 100431.40 | 5.650 |
| 80 | 12.229 | | 0.0000 | 0.000 | 6757.5 | 0.138 | BB | 0.120 | 935.88 | 0.053 |
| 81 | 12.426 | | 0.0000 | 0.000 | 5547.1 | 0.113 | BB | 0.061 | 1505.72 | 0.085 |
| 82 | 12.529 | | 0.0000 | 0.000 | 5995.9 | 0.122 | BB | 0.047 | 2106.36 | 0.119 |
| 83 | 12.666 | | 0.0000 | 0.000 | 1141.7 | 0.023 | BB | 0.042 | 452.74 | 0.025 |
| 84 | 12.763 | | 0.0000 | 0.000 | 2577.6 | 0.053 | BB | 0.057 | 759.20 | 0.043 |
| 85 | 12.944 | | 0.0000 | 0.000 | 5001.2 | 0.102 | BB | 0.076 | 1093.11 | 0.061 |
| 86 | 13.238 | | 0.0000 | 0.000 | 209.0 | 0.004 | BB | 0.040 | 88.16 | 0.005 |
| 87 | 13.346 | | 0.0000 | 0.000 | 39243.8 | 0.801 | BB | 0.050 | 13108.92 | 0.738 |
| 88 | 13.471 | | 0.0000 | 0.000 | 2280.4 | 0.047 | BB | 0.042 | 910.57 | 0.051 |
| 89 | 13.582 | | 0.0000 | 0.000 | 11871.6 | 0.242 | BB | 0.073 | 2714.53 | 0.153 |
| 90 | 13.773 | | 0.0000 | 0.000 | 1588.7 | 0.032 | BB | 0.086 | 306.67 | 0.017 |

Total Area = 4897930.0, Total Amount = 1147.568, Total Height = 1777460.0, Sample Units = PPB

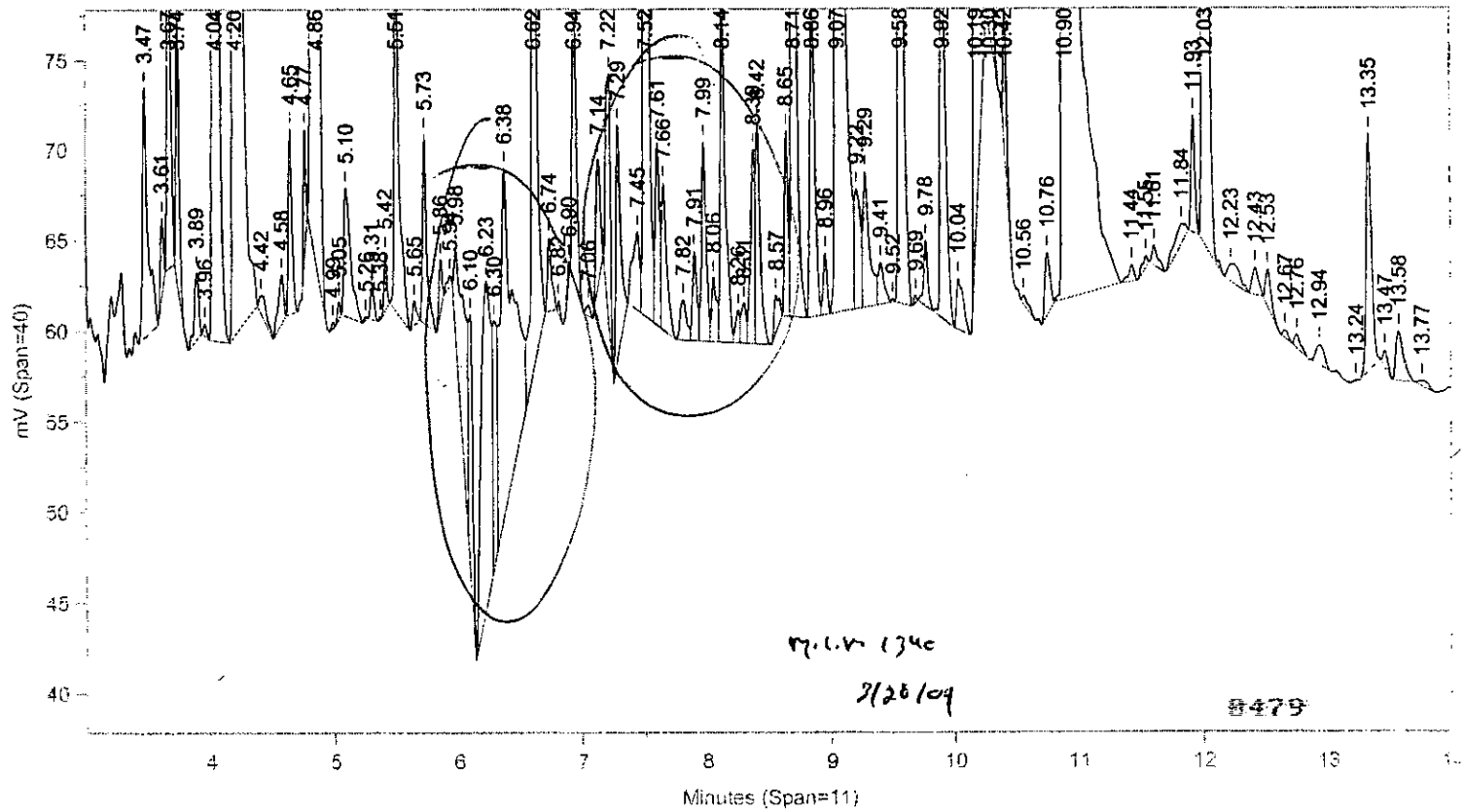
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.52R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 12:33:24 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.52R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 12:33:24 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

LANCASTER LABORATORIES

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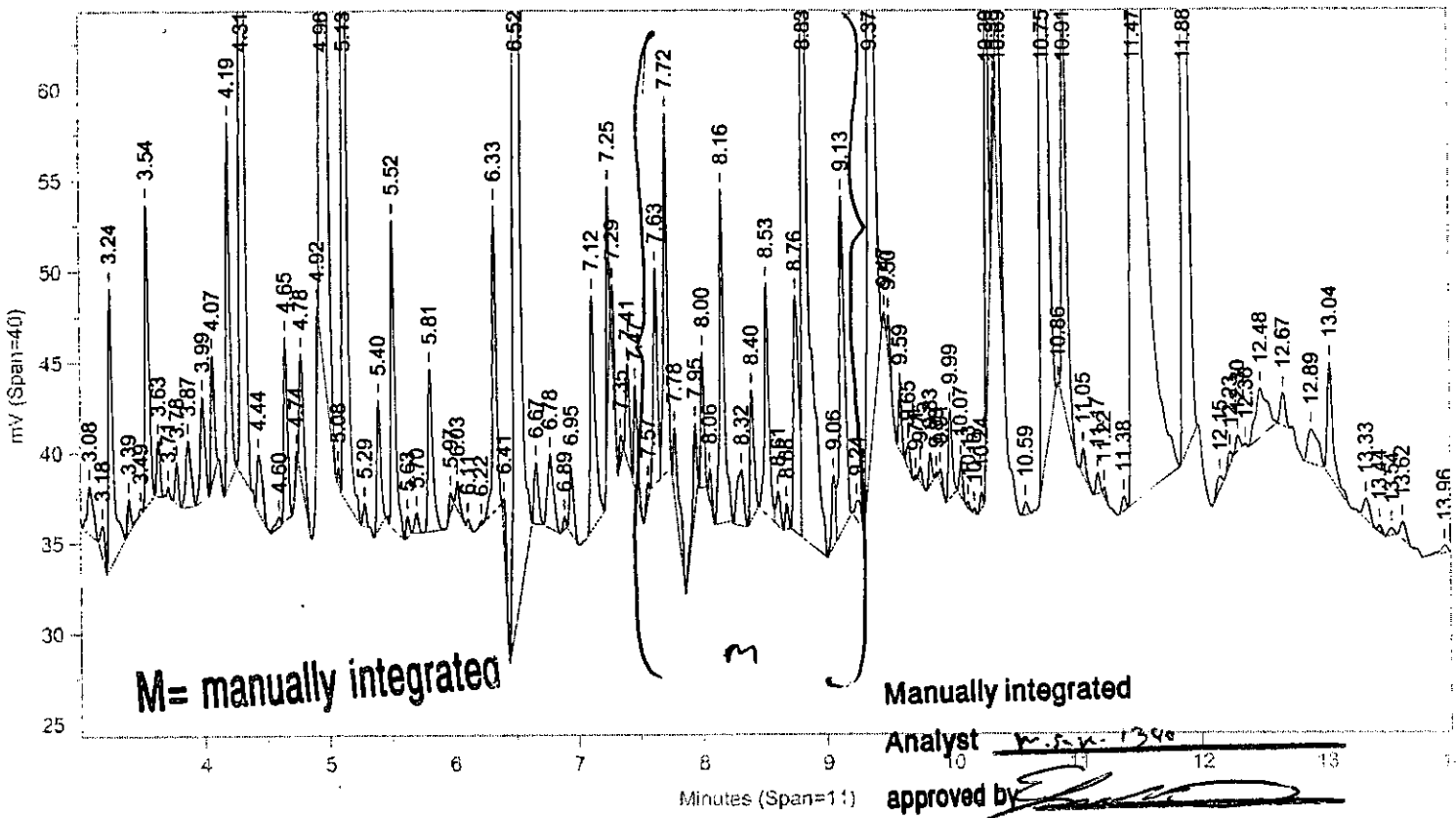
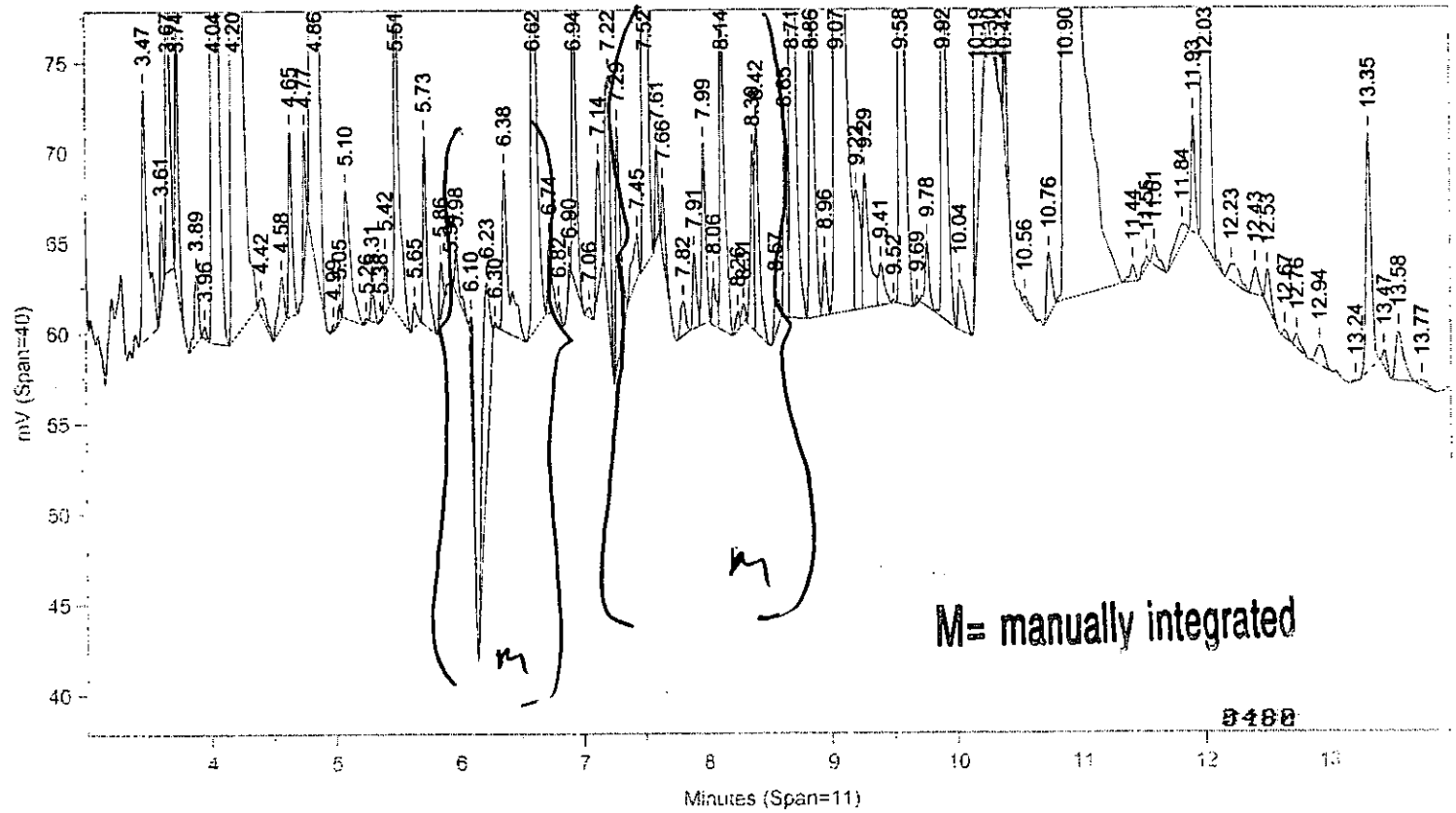



Instrument ID: CP16--H5262A Injected On: 3/26/2004 12:33:24 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.52R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 12:33:24 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.313 | 118182 | 9.549 | TCX | 4.038 | 157079 | 9.332 | TCX |
| 4.919 | 2381 | .113 | Hcb | 4.768 | 7141 | .222 | Hcb |
| 5.627 | 1153 | .075 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.029 | 1593 | .109 | delta-BHC | 5.984 | 2249 | .101 | delta-BHC |
| 6.332 | 16776 | 1.031 | Heptachlor | 6.102 | 5679 | .239 | Heptachlor |
| . | 0 | . | Telodrin | 6.74 | 4091 | .231 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.294 | 12994 | .729 | Hept. epoxide |
| 7.78 | 3955 | .32 | g. Chlordane | 7.518 | 106851 | 6.145 | g. Chlordane |
| 7.565 | 895 | .114 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.818 | 1872 | .118 | Endosulfan I |
| 7.947 | 4599 | .349 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.005 | 7525 | .714 | 4,4'-DDE | 7.986 | 10029 | .717 | 4,4'-DDE |
| 8.758 | 13125 | 1.308 | Endrin | 8.565 | 2081 | .168 | Endrin |
| 8.834 | 72513 | 8.492 | 4,4'-DDD | 8.708 | 78057 | 7.97 | 4,4'-DDD |
| 9.059 | 3925 | .392 | Endosulfan II | 8.862 | 17187 | 1.479 | Endosulfan II |
| 9.593 | 3421 | .416 | Endrin aldehyde | 9.289 | 7497 | .815 | Endrin aldehyde |
| 10.179 | 284 | .032 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.303 | 7518 | .693 | Endrin ketone |
| 11.882 | 98849 | 9.987 | DCB | 12.029 | 100431 | 9.293 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/28/2004 4:50:54 PM
File Reported On: 3/28/2004 at 4:50:54 PM

9481

10x REPLOTS

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241636F 5GP22 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262A
Result file : 3D16082.53R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 100.1% Conc.: 9.631122
%SSR(DCB) : 106% Conc.: 10.32095

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 119195 | 9.631122 |
| **Hcb** | 4.88 | 4.92 | 4.94 | 13387 | 0.635456 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 1846 | 0.119738 |
| **beta-BHC** | 5.74 | 5.75 | 5.80 | 161 | 0.018916 |
| **delta-BHC** | 5.99 | 6.02 | 6.05 | 2685 | 0.183788 |
| **Heptachlor** | 6.29 | 6.33 | 6.35 | 1117 | 0.068597 |
| **Aldrin** | 6.72 | 6.76 | 6.78 | 9064 | 0.720838 |
| **o,p-DDE** | 7.53 | 7.55 | 7.59 | 554 | 0.070558 |
| **g. Chlordane** | 7.72 | 7.78 | 7.78 | 16023 | 1.297229 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 1934 | 0.146939 |
| **4,4'-DDE** | 7.99 | 8.01 | 8.05 | 695 | 0.065890 |
| **Endosulfan I** | 8.09 | 8.10 | 8.15 | 353 | 0.029884 |
| **o,p-DDD** | 8.22 | 8.25 | 8.28 | 2006 | 0.301665 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 1159 | 0.115550 |
| **4,4'-DDD** | 8.78 | 8.83 | 8.84 | 568 | 0.066491 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 1342 | 0.133986 |
| **Mirex** | 9.99 | 9.99 | 10.05 | 1059 | 0.125326 |
| **Endo. sulfate** | 10.14 | 10.18 | 10.20 | 570 | 0.064468 |
| **DCB** | 11.86 | 11.88 | 11.92 | 102151 | 10.320950 |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262B
Result file : 3D16082B.53R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 97.4% Conc.: 9.366833
%SSR(DCB) : 96.1% Conc.: 9.360373

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 157667 | 9.366833 |
| **Hcb** | 4.71 | 4.73 | 4.77 | 425 | 0.013218 |
| **gamma-BHC** | 5.43 | 5.48 | 5.49 | 2576 | 0.107993 |
| **beta-BHC** | 5.56 | 5.57 | 5.62 | 824 | 0.068836 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 2641 | 0.118166 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 1018 | 0.057551 |
| **Hept. epoxide** | 7.27 | 7.30 | 7.33 | 2485 | 0.139363 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 93977 | 5.404526 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 3120 | 0.197154 |
| **4,4'-DDE** | 7.93 | 7.98 | 7.99 | 2467 | 0.176502 |
| **o,p-DDT** | 8.58 | 8.60 | 8.64 | 2677 | 0.292181 |
| **Endosulfan II** | 8.82 | 8.87 | 8.88 | 1054 | 0.090694 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 2384 | 0.243860 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 2745 | 0.298397 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 6190 | 0.570935 |
| **DCB** | 12.01 | 12.03 | 12.07 | 101164 | 9.360373 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.631122 | | | | 2.78 | |
| Hcb | A | 0.635456 | | | | ** 191.85 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | B (A) | 1.297 / 5.404526 | 0.9 | 0.3 | | ** 122.57 | 1569, MATRIX INTERFERENCE |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | 8482 |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 17:10:04

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241636F 5GP22 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262A
Result file : 3D16082.53R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262B
Result file : 3D16082B.53R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 10.320950 | | | | 9.76 | |

Units: ug/kg X

Reviewed by: [signature] Date: 3/28/04
Verified by: [signature] Date: 3/29/04

9483

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/28/04 17:10:04

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241636 F 5GP22 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 12:53:55 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.53R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 100.1% | Conc: | 9.631122 |
| %SSR(DCB) | 106.0% | Conc: | 10.32095 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 12:53:55 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.53R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 97.4% | Conc: | 9.366833 |
| %SSR(DCB) | 96.1% | Conc: | 9.360373 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | < MDL |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M. S. M. 1340 Date: 3/29/04

Verified By: [signature] Date: 3/29/04

3484

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241636 F  5GP22  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262A
Result file : 3D16082.53R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 100.1% Conc.: 9.631122
%SSR(DCB) : 106% Conc.: 10.32095

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 78.19 | |
| 5.35 | 5.39 | 5.41 | 391.131012 | 0.922289 | | | 2 |
| 6.01 | 6.02 | 6.07 | 2684.999512 | 7.541197 | | | 3 |
| 6.20 | 6.25 | 6.26 | 262.853394 | 0.698989 | | | 4 |
| + 6.29 | 6.29 | 6.35 | 356.492798 | 1.462718 | | | 5 |
| 6.29 | 6.33 | 6.35 | 1116.564209 | 4.581351 | | | 5 |
| 6.87 | 6.89 | 6.93 | 567.112671 | 4.685364 | | | 6 |
| Height Summation | | | **5022.660798** | | | | |
| Amount Avg CF: | | | **3.685838** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| E 4.77 | 4.78 | 4.83 | 7660.437012 | 80.857473 | | | 2 |
| Height Summation | | | **7660.437012** | | | | |
| Amount Avg CF: | | | **80.857473** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 78.58 | |
| 5.35 | 5.39 | 5.41 | 391.131012 | 2.021976 | | | 2 |
| 6.01 | 6.02 | 6.07 | 2684.999512 | 16.379938 | | | 3 |
| 6.19 | 6.25 | 6.25 | 262.853394 | 1.489845 | | | 4 |
| + 6.28 | 6.29 | 6.34 | 356.492798 | 3.152432 | | | 5 |
| 6.28 | 6.33 | 6.34 | 1116.564209 | 9.873672 | | | 5 |
| 6.87 | 6.89 | 6.93 | 567.112671 | 9.897254 | | | 6 |
| Height Summation | | | **5022.660798** | | | | |
| Amount Avg CF: | | | **7.932537** | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 80.53 | |
| 5.35 | 5.39 | 5.41 | 391.131012 | 1.053254 | | | 2 |
| 6.01 | 6.02 | 6.07 | 2684.999512 | 8.783119 | | | 3 |
| 6.19 | 6.25 | 6.25 | 262.853394 | 0.810151 | | | 4 |
| + 6.28 | 6.29 | 6.34 | 356.492798 | 1.724562 | | | 5 |
| 6.28 | 6.33 | 6.34 | 1116.564209 | 5.401467 | | | 5 |
| 6.87 | 6.89 | 6.93 | 567.112671 | 4.524594 | | | 6 |
| Height Summation | | | **5022.660798** | | | | |
| Amount Avg CF: | | | **4.114517** | Linear: | | | |
| **Aroclor-1248** | | | | | 6 | 97.56 | |
| 5.35 | 5.39 | 5.41 | 391.131012 | 2.150903 | | | 1 |
| 6.01 | 6.02 | 6.07 | 2684.999512 | 19.397482 | | | 2 |
| 6.75 | 6.76 | 6.81 | 9064.442383 | 20.668177 | | | 3 |
| 7.32 | 7.37 | 7.38 | 422.148132 | 1.631207 | | | 4 |
| 7.62 | 7.63 | 7.68 | 1299.394287 | 3.896644 | | | 5 |
| 8.14 | 8.17 | 8.20 | 1458.811035 | 5.934106 | | | 6 |
| Height Summation | | | **15320.926361** | | | | |
| Amount Avg CF: | | | **8.94642** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 28.77 | |
| 7.60 | 7.63 | 7.66 | 1299.394287 | 2.575588 | | | 2 |
| 8.13 | 8.17 | 8.19 | 1458.811035 | 2.217739 | | | 3 |
| 8.50 | 8.53 | 8.56 | 1423.791382 | 2.910782 | | | 4 |
| 8.73 | 8.76 | 8.79 | 1159.125488 | 3.7409 | | | 5 |
| 9.10 | 9.13 | 9.16 | 2163.795654 | 4.475905 | | | 6 |
| Height Summation | | | **7504.917846** | | | | |
| Amount Avg CF: | | | **3.184183** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16--H5262B
Result file : 3D16082B.53R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 97.4% Conc.: 9.366833
%SSR(DCB) : 96.1% Conc.: 9.360373

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 162.60 | |
| + 4.72 | 4.73 | 4.78 | 424.586304 | 1.205604 | | | 1 |
| 4.72 | 4.77 | 4.78 | 14185.75976( | 40.280176 | | | 1 |
| 5.91 | 5.95 | 5.97 | 284.652924 | 0.282513 | | | 3 |
| 6.09 | 6.11 | 6.15 | 1819.167236 | 3.493576 | | | 4 |
| 6.72 | 6.74 | 6.78 | 1018.075439 | 2.884044 | | | 6 |
| Height Summation | | | **17307.655365** | | | | |
| Amount Avg CF: | | | **11.735077** | Linear: | | | |
| **Aroclor-1221** | | | | | 3 | 58.30 | |
| 4.44 | 4.47 | 4.50 | 1896.950928 | 8.386723 | | | 1 |
| 4.64 | 4.64 | 4.70 | 2503.230957 | 16.795699 | | | 2 |
| + 4.72 | 4.73 | 4.78 | 424.586304 | 0.882707 | | | 3 |
| 4.72 | 4.77 | 4.78 | 14185.75976( | 29.491917 | | | 3 |
| Height Summation | | | **18585.941651** | | | | |
| Amount Avg CF: | | | **18.22478** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 126.88 | |
| + 4.72 | 4.73 | 4.78 | 424.586304 | 1.097335 | | | 1 |
| 4.72 | 4.77 | 4.78 | 14185.75976( | 36.662815 | | | 1 |
| 5.91 | 5.95 | 5.97 | 284.652924 | 0.599793 | | | 3 |
| 6.09 | 6.11 | 6.15 | 1819.167236 | 7.459578 | | | 4 |
| 6.71 | 6.74 | 6.77 | 1018.075439 | 6.374126 | | | 6 |
| Height Summation | | | **17307.655365** | | | | |
| Amount Avg CF: | | | **12.774078** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 161.11 | |
| + 4.72 | 4.73 | 4.78 | 424.586304 | 1.298906 | | | 1 |
| 4.72 | 4.77 | 4.78 | 14185.75976( | 43.397454 | | | 1 |
| 5.91 | 5.95 | 5.97 | 284.652924 | 0.326731 | | | 3 |
| 6.09 | 6.11 | 6.15 | 1819.167236 | 4.015024 | | | 4 |
| 6.72 | 6.74 | 6.78 | 1018.075439 | 3.175284 | | | 6 |
| Height Summation | | | **17307.655365** | | | | |
| Amount Avg CF: | | | **12.728623** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 112.67 | |
| 5.91 | 5.95 | 5.97 | 284.652924 | 0.562611 | | | 2 |
| 6.71 | 6.74 | 6.77 | 1018.075439 | 1.902607 | | | 3 |
| 8.11 | 8.14 | 8.17 | 2071.522461 | 7.824447 | | | 6 |
| Height Summation | | | **3374.250824** | | | | |
| Amount Avg CF: | | | **3.429888** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 199.34 | |
| 6.35 | 6.38 | 6.41 | 1864.240967 | 5.482933 | | | 1 |
| E 7.50 | 7.52 | 7.56 | 93977.03906: | 166.45242 | | | 2 |
| 8.10 | 8.14 | 8.16 | 2071.522461 | 2.909948 | | | 3 |
| 8.84 | 8.87 | 8.90 | 1053.888916 | 2.848934 | | | 5 |
| 9.08 | 9.11 | 9.14 | 2384.110596 | 4.597382 | | | 6 |
| Height Summation | | | **101350.802003** | | | | |
| Amount Avg CF: | | | **36.458323** | Linear: | | | |
| **Aroclor-1260** | | | | | 5 | 135.33 | |
| 8.36 | 8.39 | 8.42 | 3140.791992 | 5.360436 | | | 1 |
| 8.62 | 8.65 | 8.68 | 1883.320801 | 2.660993 | | | 2 |
| 8.83 | 8.87 | 8.89 | 1053.888916 | 2.318423 | | | 3 |
| 9.08 | 9.11 | 9.14 | 2384.110596 | 3.592384 | | | 4 |
| 9.88 | 9.92 | 9.94 | 29059.94726( | 29.845903 | | | 6 |
| Height Summation | | | **37522.059571** | | | | |
| Amount Avg CF: | | | **8.755628** | Linear: | | | |

+2 - .134
3/28/04

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 17:10:25

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241636**F 5GP22 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16-H5262A
Result file : 3D16082.53R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 5 | 40.14 | |
| 8.38 | 8.40 | 8.44 | 970.1745 | 1.797452 | | | 1 |
| 8.73 | 8.76 | 8.79 | 1159.125488 | 1.764476 | | | 2 |
| 9.10 | 9.13 | 9.16 | 2163.795654 | 3.362485 | | | 3 |
| 9.96 | 9.99 | 10.02 | 1058.729858 | 1.216595 | | | 5 |
| 11.14 | 11.17 | 11.20 | 685.07019 | 2.878778 | | | 6 |
| Height Summation | | | **6036.895690** | | | | |
| Amount Avg CF: | | | **2.203957** | Linear: | | | |
| **Chlordane** | | | | | 4 | 38.10 | |
| +6.29 | 6.29 | 6.35 | 356.492798 | 0.524581 | | | 2 |
| 6.29 | 6.33 | 6.35 | 1116.564209 | 1.64303 | | | 2 |
| 6.91 | 6.95 | 6.97 | 1937.45105 | 2.961908 | | | 3 |
| 7.89 | 7.94 | 7.95 | 1934.467651 | 1.340763 | | | 5 |
| 8.92 | 8.93 | 8.98 | 1272.609253 | 2.912422 | | | 6 |
| Height Summation | | | **6261.092163** | | | | |
| Amount Avg CF: | | | **2.214531** | Linear: | | | |
| **Toxaphene** | | | | | 3 | 62.33 | |
| 8.61 | 8.62 | 8.67 | 1043.139404 | 9.597911 | | | 1 |
| 8.75 | 8.76 | 8.81 | 1159.125488 | 10.379175 | | | 2 |
| 9.15 | 9.21 | 9.21 | 315.604614 | 2.079575 | | | 3 |
| Height Summation | | | **2517.869506** | | | | |
| Amount Avg CF: | | | **7.35222** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:53:55
Instrument : CP16-H5262B
Result file : 3D16082B.53R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 3 | 161.10 | |
| 5.84 | 5.89 | 5.90 | 960.820618 | 1.310225 | | | 1 |
| 6.70 | 6.74 | 6.76 | 1018.075439 | 1.264142 | | | 3 |
| 7.51 | 7.52 | 7.57 | 93977.03906: | 52.65835 | | | 4 |
| Height Summation | | | **95955.935120** | | | | |
| Amount Avg CF: | | | **18.410906** | Linear: | | | |
| **Toxaphene** | | | | | 5 | 118.09 | |
| 8.12 | 8.14 | 8.18 | 2071.522461 | 17.209338 | | | 1 |
| 8.91 | 8.96 | 8.97 | 974.085815 | 3.253394 | | | 3 |
| 9.25 | 9.29 | 9.31 | 2745.203125 | 12.65934 | | | 4 |
| 9.91 | 9.92 | 9.97 | 29059.94726( | 131.191412 | | | 5 |
| 10.41 | 10.42 | 10.47 | 7233.791504 | 59.818006 | | | 6 |
| Height Summation | | | **42084.550171** | | | | |
| Amount Avg CF: | | | **44.826298** | Linear: | | | |

8486

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/28/04 17:10:25

Sample Name: **4241636F AB5GP22 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 01:07:55pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.53R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.074 | | 0.0000 | 0.000 | 2616.4 | 0.171 | BB | 0.029 | 1498.75 | 0.219 |
| 2 | 3.144 | | 0.0000 | 0.000 | 293.2 | 0.019 | BB | 0.019 | 253.82 | 0.037 |
| 3 | 3.245 | | 0.0000 | 0.000 | 46403.3 | 3.032 | BB | 0.040 | 19555.08 | 2.859 |
| 4 | 3.392 | | 0.0000 | 0.000 | 2283.6 | 0.149 | BB | 0.029 | 1313.63 | 0.192 |
| 5 | 3.546 | | 0.0000 | 0.000 | 42476.1 | 2.775 | BB | 0.041 | 17434.80 | 2.549 |
| 6 | 3.711 | | 0.0000 | 0.000 | 2337.2 | 0.153 | BB | 0.058 | 674.73 | 0.099 |
| 7 | 3.870 | | 0.0000 | 0.000 | 1400.4 | 0.092 | BB | 0.059 | 397.10 | 0.058 |
| 8 | 3.988 | | 0.0000 | 0.000 | 12872.3 | 0.841 | BB | 0.052 | 4134.85 | 0.605 |
| 9 | 4.068 | | 0.0000 | 0.000 | 8600.6 | 0.562 | BB | 0.027 | 5388.10 | 0.788 |
| 10 | 4.127 | | 0.0000 | 0.000 | 17253.3 | 1.127 | BB | 0.040 | 7147.25 | 1.045 |
| 11 | 4.262 | | 0.0000 | 0.000 | 2063.2 | 0.135 | BB | 0.036 | 947.22 | 0.138 |
| 12 | 4.315 | TCX | 288.9337 | 39.934 | 237114.1 | 15.493 | BB | 0.033 | 119194.60 | 17.428 |
| 13 | 4.516 | | 0.0000 | 0.000 | 11283.9 | 0.737 | BB | 0.036 | 5262.61 | 0.769 |
| 14 | 4.650 | | 0.0000 | 0.000 | 10819.1 | 0.707 | BB | 0.029 | 6259.60 | 0.915 |
| 15 | 4.735 | | 0.0000 | 0.000 | 1357.7 | 0.089 | BB | 0.033 | 688.00 | 0.101 |
| 16 | 4.782 | | 0.0000 | 0.000 | 17919.2 | 1.171 | BB | 0.039 | 7660.44 | 1.120 |
| 17 | 4.919 | Hcb | 19.0637 | 2.635 | 22578.2 | 1.475 | BB | 0.028 | 13387.30 | 1.957 |
| 18 | 4.964 | | 0.0000 | 0.000 | 9426.4 | 0.616 | BB | 0.026 | 6106.54 | 0.893 |
| 19 | 5.130 | | 0.0000 | 0.000 | 8247.9 | 0.539 | BB | 0.047 | 2898.18 | 0.424 |
| 20 | 5.195 | alpha-BHC | 3.5921 | 0.496 | 3698.0 | 0.242 | BB | 0.033 | 1846.19 | 0.270 |
| 21 | 5.273 | | 0.0000 | 0.000 | 1144.4 | 0.075 | BB | 0.029 | 663.96 | 0.097 |
| 22 | 5.338 | | 0.0000 | 0.000 | 1265.8 | 0.083 | BB | 0.034 | 622.71 | 0.091 |
| 23 | 5.389 | | 0.0000 | 0.000 | 519.4 | 0.034 | BB | 0.022 | 391.13 | 0.057 |
| 24 | 5.493 | | 0.0000 | 0.000 | 2012.2 | 0.131 | BB | 0.056 | 597.05 | 0.087 |
| 25 | 5.586 | | 0.0000 | 0.000 | 2817.8 | 0.184 | BB | 0.034 | 1387.20 | 0.203 |
| 26 | 5.695 | | 0.0000 | 0.000 | 3566.7 | 0.233 | BB | 0.031 | 1888.24 | 0.276 |
| 27 | 5.748 | beta-BHC | 0.5675 | 0.078 | 175.3 | 0.011 | BB | 0.018 | 160.75 | 0.024 |
| 28 | 5.813 | | 0.0000 | 0.000 | 17917.2 | 1.171 | BB | 0.039 | 7687.11 | 1.124 |
| 29 | 6.024 | delta-BHC | 5.5136 | 0.762 | 12486.1 | 0.816 | BB | 0.078 | 2685.00 | 0.393 |
| 30 | 6.106 | | 0.0000 | 0.000 | 343.0 | 0.022 | BB | 0.023 | 252.49 | 0.037 |
| 31 | 6.147 | | 0.0000 | 0.000 | 823.5 | 0.054 | BB | 0.040 | 340.09 | 0.050 |
| 32 | 6.247 | | 0.0000 | 0.000 | 409.2 | 0.027 | BB | 0.026 | 262.85 | 0.038 |
| 33 | 6.292 | | 0.0000 | 0.000 | 589.1 | 0.038 | BB | 0.028 | 356.49 | 0.052 |
| 34 | 6.334 | Heptachlor | 2.0579 | 0.284 | 1982.2 | 0.130 | BB | 0.030 | 1116.56 | 0.163 |
| 35 | 6.390 | | 0.0000 | 0.000 | 2530.8 | 0.165 | BB | 0.056 | 758.10 | 0.111 |
| 36 | 6.519 | | 0.0000 | 0.000 | 437863.5 | 28.611 | BB | 0.033 | 223247.20 | 32.642 |
| 37 | 6.663 | | 0.0000 | 0.000 | 1799.3 | 0.118 | BB | 0.039 | 776.45 | 0.114 |
| 38 | 6.757 | Aldrin | 21.6251 | 2.989 | 23614.8 | 1.543 | BB | 0.043 | 9064.44 | 1.325 |
| 39 | 6.892 | | 0.0000 | 0.000 | 906.3 | 0.059 | BB | 0.027 | 567.11 | 0.083 |
| 40 | 6.951 | | 0.0000 | 0.000 | 4937.8 | 0.323 | BB | 0.042 | 1937.45 | 0.283 |
| 41 | 7.121 | | 0.0000 | 0.000 | 30596.6 | 1.999 | BB | 0.053 | 9676.15 | 1.415 |
| 42 | 7.255 | | 0.0000 | 0.000 | 503.9 | 0.033 | BB | 0.025 | 340.86 | 0.050 |
| 43 | 7.293 | | 0.0000 | 0.000 | 2368.2 | 0.155 | BB | 0.031 | 1272.29 | 0.186 |
| 44 | 7.373 | | 0.0000 | 0.000 | 695.4 | 0.045 | BB | 0.027 | 422.15 | 0.062 |
| 45 | 7.413 | | 0.0000 | 0.000 | 620.8 | 0.041 | BB | 0.024 | 433.54 | 0.063 |
| 46 | 7.465 | | 0.0000 | 0.000 | 370.9 | 0.024 | BB | 0.020 | 306.08 | 0.045 |
| 47 | 7.554 | o,p-DDE | 2.1168 | 0.293 | 884.6 | 0.058 | BB | 0.027 | 554.40 | 0.081 |
| 48 | 7.630 | | 0.0000 | 0.000 | 3586.1 | 0.234 | BB | 0.046 | 1299.39 | 0.190 |
| 49 | 7.718 | | 0.0000 | 0.000 | 5089.6 | 0.333 | BB | 0.028 | 3063.89 | 0.448 |
| 50 | 7.783 | g. Chlordane | 38.9169 | 5.379 | 37325.6 | 2.439 | BB | 0.039 | 16022.63 | 2.343 |
| 51 | 7.943 | a. Chlordane | 4.4082 | 0.609 | 7634.5 | 0.499 | BB | 0.066 | 1934.47 | 0.283 |
| 52 | 8.007 | 4,4'-DDE | 1.9767 | 0.273 | 1217.8 | 0.080 | BV | 0.029 | 694.52 | 0.102 |
| 53 | 8.054 | | 0.0000 | 0.000 | 819.1 | 0.054 | VB | 0.030 | 455.59 | 0.067 |
| 54 | 8.104 | Endosulfan I | 0.8965 | 0.124 | 779.0 | 0.051 | BV | 0.037 | 352.51 | 0.052 |
| 55 | 8.166 | | 0.0000 | 0.000 | 2777.8 | 0.182 | VB | 0.032 | 1458.81 | 0.213 |
| 56 | 8.247 | o,p-DDD | 9.0500 | 1.251 | 6136.4 | 0.401 | BB | 0.051 | 2006.41 | 0.293 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.401 | | 0.0000 | 0.000 | 2896.0 | 0.189 | BB | 0.050 | 970.17 | 0.142 |
| 58 | 8.525 | | 0.0000 | 0.000 | 4046.3 | 0.264 | BB | 0.047 | 1423.79 | 0.208 |
| 59 | 8.619 | | 0.0000 | 0.000 | 2705.5 | 0.177 | BV | 0.043 | 1043.14 | 0.153 |
| 60 | 8.692 | | 0.0000 | 0.000 | 779.3 | 0.051 | VB | 0.039 | 335.71 | 0.049 |
| 61 | 8.764 | Endrin | 3.4665 | 0.479 | 3507.7 | 0.229 | BV | 0.050 | 1159.13 | 0.169 |
| 62 | 8.830 | 4,4'-DDD | 1.9947 | 0.276 | 1343.3 | 0.088 | VB | 0.039 | 567.79 | 0.083 |
| 63 | 8.934 | | 0.0000 | 0.000 | 4845.5 | 0.317 | BB | 0.063 | 1272.61 | 0.186 |
| 64 | 9.064 | Endosulfan II | 4.0196 | 0.556 | 3033.1 | 0.198 | BB | 0.038 | 1342.37 | 0.196 |
| 65 | 9.131 | | 0.0000 | 0.000 | 4914.4 | 0.321 | BB | 0.038 | 2163.80 | 0.316 |
| 66 | 9.207 | | 0.0000 | 0.000 | 432.8 | 0.028 | BV | 0.023 | 315.60 | 0.046 |
| 67 | 9.251 | | 0.0000 | 0.000 | 363.8 | 0.024 | VB | 0.024 | 247.96 | 0.036 |
| 68 | 9.393 | | 0.0000 | 0.000 | 7622.3 | 0.498 | BB | 0.049 | 2589.20 | 0.379 |
| 69 | 9.481 | | 0.0000 | 0.000 | 1138.7 | 0.074 | BB | 0.027 | 697.66 | 0.102 |
| 70 | 9.507 | | 0.0000 | 0.000 | 1348.2 | 0.088 | BB | 0.022 | 1005.50 | 0.147 |
| 71 | 9.667 | | 0.0000 | 0.000 | 1931.7 | 0.126 | BB | 0.029 | 1109.73 | 0.162 |
| 72 | 9.752 | | 0.0000 | 0.000 | 1997.7 | 0.131 | BB | 0.050 | 667.37 | 0.098 |
| 73 | 9.856 | | 0.0000 | 0.000 | 3321.3 | 0.217 | BB | 0.071 | 783.76 | 0.115 |
| 74 | 9.989 | Mirex | 3.7598 | 0.520 | 2477.4 | 0.162 | BB | 0.039 | 1058.73 | 0.155 |
| 75 | 10.082 | | 0.0000 | 0.000 | 176.3 | 0.012 | BB | 0.023 | 127.41 | 0.019 |
| 76 | 10.184 | Endo. sulfate | 1.9340 | 0.267 | 1425.4 | 0.093 | BB | 0.042 | 570.04 | 0.083 |
| 77 | 10.239 | | 0.0000 | 0.000 | 2119.3 | 0.138 | BB | 0.036 | 978.48 | 0.143 |
| 78 | 10.359 | | 0.0000 | 0.000 | 16725.4 | 1.093 | BB | 0.033 | 8557.56 | 1.251 |
| 79 | 10.394 | | 0.0000 | 0.000 | 17413.8 | 1.138 | BB | 0.026 | 10993.13 | 1.607 |
| 80 | 10.589 | | 0.0000 | 0.000 | 1589.4 | 0.104 | BB | 0.047 | 563.56 | 0.082 |
| 81 | 10.700 | | 0.0000 | 0.000 | 1169.7 | 0.076 | BB | 0.043 | 452.16 | 0.066 |
| 82 | 10.794 | | 0.0000 | 0.000 | 515.9 | 0.034 | BB | 0.039 | 222.85 | 0.033 |
| 83 | 10.924 | | 0.0000 | 0.000 | 21770.7 | 1.423 | BB | 0.043 | 8491.50 | 1.242 |
| 84 | 11.069 | | 0.0000 | 0.000 | 2433.1 | 0.159 | BB | 0.060 | 673.44 | 0.098 |
| 85 | 11.173 | | 0.0000 | 0.000 | 1422.8 | 0.093 | BB | 0.035 | 685.07 | 0.100 |
| 86 | 11.225 | | 0.0000 | 0.000 | 671.8 | 0.044 | BB | 0.025 | 455.15 | 0.067 |
| 87 | 11.371 | | 0.0000 | 0.000 | 669.5 | 0.044 | BB | 0.035 | 323.23 | 0.047 |
| 88 | 11.488 | | 0.0000 | 0.000 | 4730.5 | 0.309 | BB | 0.066 | 1202.10 | 0.176 |
| 89 | 11.585 | | 0.0000 | 0.000 | 1031.1 | 0.067 | BB | 0.048 | 354.94 | 0.052 |
| 90 | 11.743 | | 0.0000 | 0.000 | 4620.2 | 0.302 | BB | 0.041 | 1879.80 | 0.275 |
| 91 | 11.885 | DCB | 309.6285 | 42.795 | 277720.3 | 18.147 | BB | 0.045 | 102150.90 | 14.936 |
| 92 | 12.231 | | 0.0000 | 0.000 | 4901.8 | 0.320 | BB | 0.092 | 890.95 | 0.130 |
| 93 | 12.432 | | 0.0000 | 0.000 | 6215.9 | 0.406 | BB | 0.080 | 1289.03 | 0.188 |
| 94 | 12.556 | | 0.0000 | 0.000 | 1118.3 | 0.073 | BB | 0.046 | 402.05 | 0.059 |
| 95 | 12.667 | | 0.0000 | 0.000 | 4726.0 | 0.309 | BB | 0.054 | 1459.52 | 0.213 |
| 96 | 12.745 | | 0.0000 | 0.000 | 1229.6 | 0.080 | BB | 0.035 | 592.51 | 0.087 |
| 97 | 12.884 | | 0.0000 | 0.000 | 9677.6 | 0.632 | BB | 0.100 | 1607.16 | 0.235 |
| 98 | 13.087 | | 0.0000 | 0.000 | 8615.7 | 0.563 | BB | 0.111 | 1296.95 | 0.190 |
| 99 | 13.306 | | 0.0000 | 0.000 | 3865.7 | 0.253 | BB | 0.089 | 726.46 | 0.106 |
| 100 | 13.514 | | 0.0000 | 0.000 | 3904.7 | 0.255 | BB | 0.082 | 797.20 | 0.117 |
| 101 | 13.863 | | 0.0000 | 0.000 | 533.9 | 0.035 | BB | 0.086 | 103.61 | 0.015 |
| 102 | 13.951 | | 0.0000 | 0.000 | 569.9 | 0.037 | BB | 0.043 | 219.99 | 0.032 |

Total Area = 1530425.0, Total Amount = 723.522, Total Height = 683925.8, Sample Units = PPB

Sample Name: **4241636F AB5GP22 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 01:07:55pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.53R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.407 | | 0.0000 | 0.000 | 7.5 | 0.000 | N | 0.003 | 46.38 | 0.007 |
| 2 | 3.473 | | 0.0000 | 0.000 | 24986.5 | 1.625 | BB | 0.037 | 11165.85 | 1.750 |
| 3 | 3.616 | | 0.0000 | 0.000 | 8854.0 | 0.576 | BB | 0.032 | 4584.96 | 0.718 |
| 4 | 3.687 | | 0.0000 | 0.000 | 1992.4 | 0.130 | BB | 0.031 | 1064.98 | 0.167 |
| 5 | 3.741 | | 0.0000 | 0.000 | 61005.6 | 3.968 | BB | 0.031 | 32502.38 | 5.093 |
| 6 | 3.906 | | 0.0000 | 0.000 | 10681.0 | 0.695 | BB | 0.054 | 3316.19 | 0.520 |
| 7 | 4.040 | TCX | 281.0050 | 35.338 | 353138.2 | 22.968 | BB | 0.037 | 157667.30 | 24.705 |
| 8 | 4.138 | | 0.0000 | 0.000 | 1354.2 | 0.088 | BB | 0.021 | 1094.59 | 0.172 |
| 9 | 4.213 | | 0.0000 | 0.000 | 9626.8 | 0.626 | BB | 0.027 | 6035.40 | 0.946 |
| 10 | 4.280 | | 0.0000 | 0.000 | 22793.8 | 1.483 | BB | 0.040 | 9591.24 | 1.503 |
| 11 | 4.349 | | 0.0000 | 0.000 | 7785.7 | 0.506 | BB | 0.027 | 4811.09 | 0.754 |
| 12 | 4.465 | | 0.0000 | 0.000 | 6993.9 | 0.455 | BB | 0.061 | 1896.95 | 0.297 |
| 13 | 4.596 | | 0.0000 | 0.000 | 3771.3 | 0.245 | BB | 0.031 | 2051.46 | 0.321 |
| 14 | 4.645 | | 0.0000 | 0.000 | 5040.1 | 0.328 | BB | 0.034 | 2503.23 | 0.392 |
| 15 | 4.727 | Hcb | 0.3966 | 0.050 | 471.1 | 0.031 | BB | 0.018 | 424.59 | 0.067 |
| 16 | 4.769 | | 0.0000 | 0.000 | 27098.9 | 1.763 | BB | 0.032 | 14185.76 | 2.223 |
| 17 | 4.860 | | 0.0000 | 0.000 | 14724.9 | 0.958 | BB | 0.054 | 4507.46 | 0.706 |
| 18 | 5.050 | | 0.0000 | 0.000 | 21672.9 | 1.410 | BB | 0.039 | 9292.01 | 1.456 |
| 19 | 5.128 | | 0.0000 | 0.000 | 284.1 | 0.018 | BB | 0.019 | 245.09 | 0.038 |
| 20 | 5.171 | | 0.0000 | 0.000 | 1806.8 | 0.118 | BB | 0.049 | 609.86 | 0.096 |
| 21 | 5.243 | | 0.0000 | 0.000 | 1295.4 | 0.084 | BB | 0.026 | 826.40 | 0.129 |
| 22 | 5.357 | | 0.0000 | 0.000 | 8525.2 | 0.554 | BB | 0.054 | 2618.62 | 0.410 |
| 23 | 5.413 | | 0.0000 | 0.000 | 1354.1 | 0.088 | BB | 0.024 | 936.09 | 0.147 |
| 24 | 5.481 | gamma-BHC | 3.2398 | 0.407 | 7677.4 | 0.499 | BB | 0.050 | 2575.55 | 0.404 |
| 25 | 5.566 | beta-BHC | 2.0651 | 0.260 | 2152.9 | 0.140 | BB | 0.044 | 823.58 | 0.129 |
| 26 | 5.647 | | 0.0000 | 0.000 | 4829.5 | 0.314 | BB | 0.034 | 2371.81 | 0.372 |
| 27 | 5.734 | | 0.0000 | 0.000 | 29688.2 | 1.931 | BB | 0.033 | 15127.65 | 2.370 |
| 28 | 5.890 | | 0.0000 | 0.000 | 1880.8 | 0.122 | BB | 0.033 | 960.82 | 0.151 |
| 29 | 5.946 | | 0.0000 | 0.000 | 462.8 | 0.030 | BB | 0.027 | 284.65 | 0.045 |
| 30 | 5.990 | delta-BHC | 3.5450 | 0.446 | 9424.2 | 0.613 | BB | 0.059 | 2641.49 | 0.414 |
| 31 | 6.110 | | 0.0000 | 0.000 | 2662.6 | 0.173 | BB | 0.024 | 1819.17 | 0.285 |
| 32 | 6.215 | | 0.0000 | 0.000 | 13707.6 | 0.892 | BB | 0.088 | 2583.94 | 0.405 |
| 33 | 6.297 | | 0.0000 | 0.000 | 461.7 | 0.030 | BV | 0.023 | 329.89 | 0.052 |
| 34 | 6.376 | | 0.0000 | 0.000 | 4374.1 | 0.284 | VB | 0.039 | 1864.24 | 0.292 |
| 35 | 6.467 | | 0.0000 | 0.000 | 5794.9 | 0.377 | BB | 0.094 | 1024.87 | 0.161 |
| 36 | 6.627 | | 0.0000 | 0.000 | 31685.0 | 2.061 | BB | 0.047 | 11157.32 | 1.748 |
| 37 | 6.737 | Telodrin | 1.7265 | 0.217 | 1620.2 | 0.105 | BB | 0.027 | 1018.08 | 0.160 |
| 38 | 6.820 | | 0.0000 | 0.000 | 2338.3 | 0.152 | BB | 0.031 | 1261.38 | 0.198 |
| 39 | 6.956 | | 0.0000 | 0.000 | 11126.4 | 0.724 | BB | 0.047 | 3922.64 | 0.615 |
| 40 | 7.062 | | 0.0000 | 0.000 | 1996.2 | 0.130 | BB | 0.040 | 822.15 | 0.129 |
| 41 | 7.150 | | 0.0000 | 0.000 | 11882.3 | 0.773 | BB | 0.029 | 6774.49 | 1.062 |
| 42 | 7.203 | | 0.0000 | 0.000 | 41972.7 | 2.730 | BB | 0.034 | 20284.29 | 3.178 |
| 43 | 7.304 | Hept. epoxide | 4.1809 | 0.526 | 7550.9 | 0.491 | BB | 0.051 | 2484.63 | 0.389 |
| 44 | 7.414 | | 0.0000 | 0.000 | 3263.1 | 0.212 | BB | 0.061 | 890.71 | 0.140 |
| 45 | 7.519 | g. Chlordane | 162.1358 | 20.389 | 178617.7 | 11.617 | BB | 0.032 | 93977.04 | 14.726 |
| 46 | 7.817 | Endosulfan I | 5.9146 | 0.744 | 9332.1 | 0.607 | BB | 0.050 | 3119.53 | 0.489 |
| 47 | 7.984 | 4,4'-DDE | 5.2951 | 0.666 | 7494.7 | 0.487 | BB | 0.051 | 2467.14 | 0.387 |
| 48 | 8.137 | | 0.0000 | 0.000 | 5230.9 | 0.340 | BB | 0.042 | 2071.52 | 0.325 |
| 49 | 8.388 | | 0.0000 | 0.000 | 12358.0 | 0.804 | BB | 0.066 | 3140.79 | 0.492 |
| 50 | 8.475 | | 0.0000 | 0.000 | 3556.0 | 0.231 | BB | 0.048 | 1232.33 | 0.193 |
| 51 | 8.599 | o,p-DDT | 8.7654 | 1.102 | 7006.1 | 0.456 | BV | 0.044 | 2677.15 | 0.419 |
| 52 | 8.652 | | 0.0000 | 0.000 | 6576.2 | 0.428 | VB | 0.058 | 1883.32 | 0.295 |
| 53 | 8.770 | | 0.0000 | 0.000 | 1012.9 | 0.066 | BB | 0.027 | 623.71 | 0.098 |
| 54 | 8.872 | Endosulfan II | 2.7208 | 0.342 | 3507.9 | 0.228 | BB | 0.055 | 1053.89 | 0.165 |
| 55 | 8.956 | | 0.0000 | 0.000 | 2549.8 | 0.166 | BB | 0.044 | 974.09 | 0.153 |
| 56 | 9.025 | | 0.0000 | 0.000 | 1825.3 | 0.119 | BV | 0.032 | 952.31 | 0.149 |

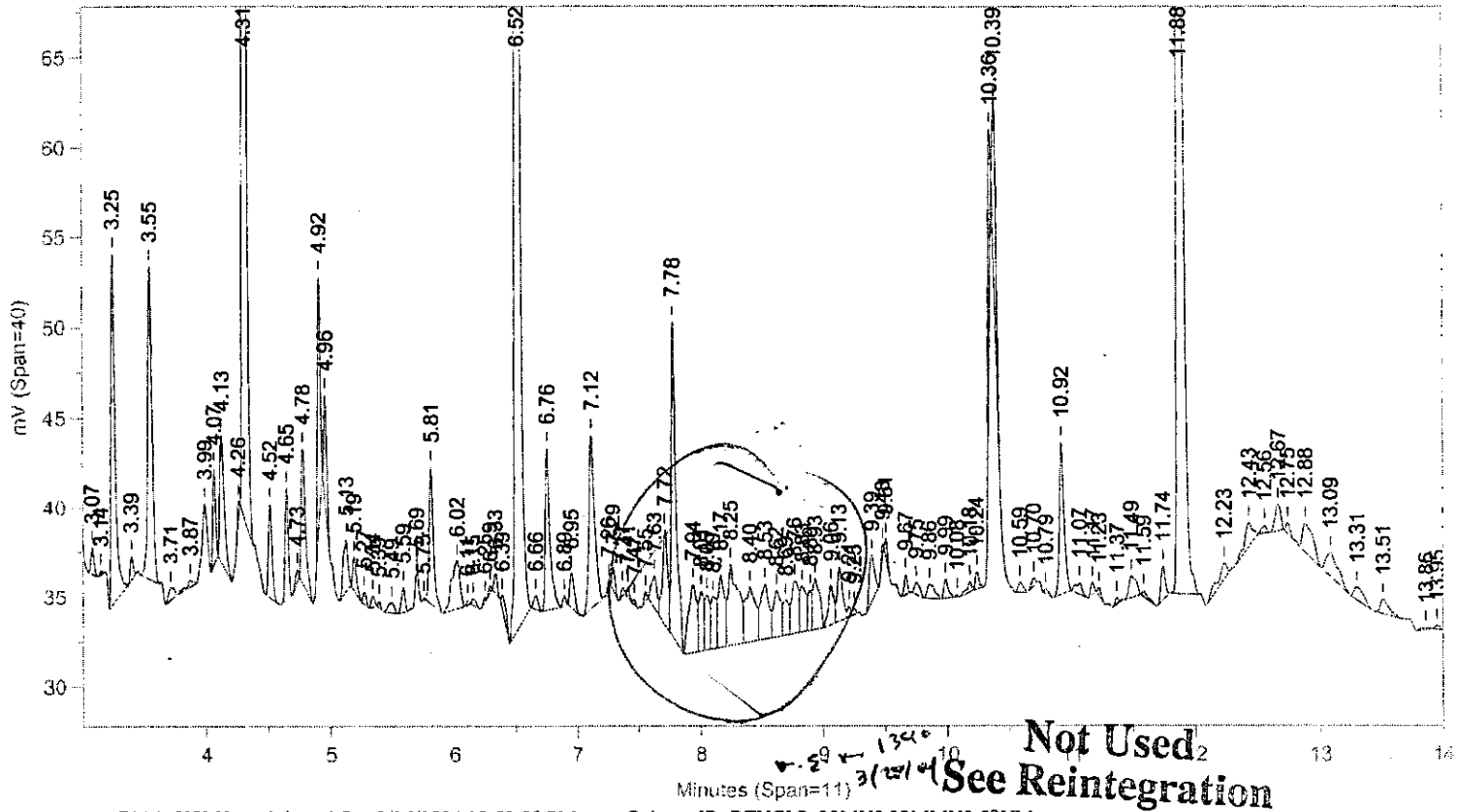
0489

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.110 | 4,4'-DDT | 7.3158 | 0.920 | 9791.7 | 0.637 | VB | 0.068 | 2384.11 | 0.374 |
| 58 | 9.218 | | 0.0000 | 0.000 | 1041.0 | 0.068 | BV | 0.044 | 394.07 | 0.062 |
| 59 | 9.292 | Endrin aldehyde | 8.9519 | 1.126 | 6892.7 | 0.448 | VB | 0.042 | 2745.20 | 0.430 |
| 60 | 9.386 | | 0.0000 | 0.000 | 1835.8 | 0.119 | BV | 0.027 | 1142.91 | 0.179 |
| 61 | 9.421 | | 0.0000 | 0.000 | 4875.7 | 0.317 | VB | 0.033 | 2445.41 | 0.383 |
| 62 | 9.508 | | 0.0000 | 0.000 | 1441.5 | 0.094 | BB | 0.030 | 792.28 | 0.124 |
| 63 | 9.573 | | 0.0000 | 0.000 | 2942.0 | 0.191 | BB | 0.063 | 783.14 | 0.123 |
| 64 | 9.775 | | 0.0000 | 0.000 | 4520.9 | 0.294 | BB | 0.093 | 813.83 | 0.128 |
| 65 | 9.920 | | 0.0000 | 0.000 | 88848.0 | 5.779 | BB | 0.051 | 29059.95 | 4.553 |
| 66 | 10.074 | | 0.0000 | 0.000 | 1226.1 | 0.080 | BB | 0.048 | 427.80 | 0.067 |
| 67 | 10.198 | | 0.0000 | 0.000 | 2252.4 | 0.146 | BB | 0.055 | 678.12 | 0.106 |
| 68 | 10.312 | Endrin ketone | 17.1281 | 2.154 | 22011.9 | 1.432 | BB | 0.059 | 6189.85 | 0.970 |
| 69 | 10.421 | | 0.0000 | 0.000 | 13482.7 | 0.877 | BB | 0.031 | 7233.79 | 1.133 |
| 70 | 10.565 | | 0.0000 | 0.000 | 1486.2 | 0.097 | BB | 0.045 | 553.99 | 0.087 |
| 71 | 10.681 | | 0.0000 | 0.000 | 4358.1 | 0.283 | BB | 0.055 | 1311.74 | 0.206 |
| 72 | 10.911 | | 0.0000 | 0.000 | 4584.1 | 0.298 | BB | 0.066 | 1166.26 | 0.183 |
| 73 | 11.125 | | 0.0000 | 0.000 | 6248.9 | 0.406 | BB | 0.111 | 939.81 | 0.147 |
| 74 | 11.394 | | 0.0000 | 0.000 | 6706.4 | 0.436 | BB | 0.065 | 1717.39 | 0.269 |
| 75 | 11.518 | | 0.0000 | 0.000 | 1527.5 | 0.099 | BB | 0.034 | 745.77 | 0.117 |
| 76 | 11.634 | | 0.0000 | 0.000 | 1618.3 | 0.105 | BB | 0.066 | 411.64 | 0.065 |
| 77 | 11.793 | | 0.0000 | 0.000 | 3116.7 | 0.203 | BB | 0.070 | 740.20 | 0.116 |
| 78 | 11.872 | | 0.0000 | 0.000 | 3284.9 | 0.214 | BB | 0.059 | 931.73 | 0.146 |
| 79 | 12.031 | DCB | 280.8112 | 35.313 | 277386.5 | 18.041 | BB | 0.046 | 101164.00 | 15.852 |
| 80 | 12.239 | | 0.0000 | 0.000 | 9569.6 | 0.622 | BB | 0.094 | 1704.65 | 0.267 |
| 81 | 12.417 | | 0.0000 | 0.000 | 999.6 | 0.065 | BB | 0.042 | 394.05 | 0.062 |
| 82 | 12.534 | | 0.0000 | 0.000 | 3773.6 | 0.245 | BB | 0.057 | 1105.26 | 0.173 |
| 83 | 12.676 | | 0.0000 | 0.000 | 4423.8 | 0.288 | BB | 0.194 | 380.73 | 0.060 |
| 84 | 13.130 | | 0.0000 | 0.000 | 5268.3 | 0.343 | BB | 0.122 | 717.64 | 0.112 |
| 85 | 13.300 | | 0.0000 | 0.000 | 390.0 | 0.025 | BB | 0.048 | 134.50 | 0.021 |
| 86 | 13.487 | | 0.0000 | 0.000 | 4908.7 | 0.319 | BB | 0.091 | 895.28 | 0.140 |
| 87 | 13.800 | | 0.0000 | 0.000 | 5812.3 | 0.378 | BB | 0.106 | 912.57 | 0.143 |

Total Area = 1537509.0, Total Amount = 795.197, Total Height = 638191.6, Sample Units = PPB

LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.53R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 12:53:55 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

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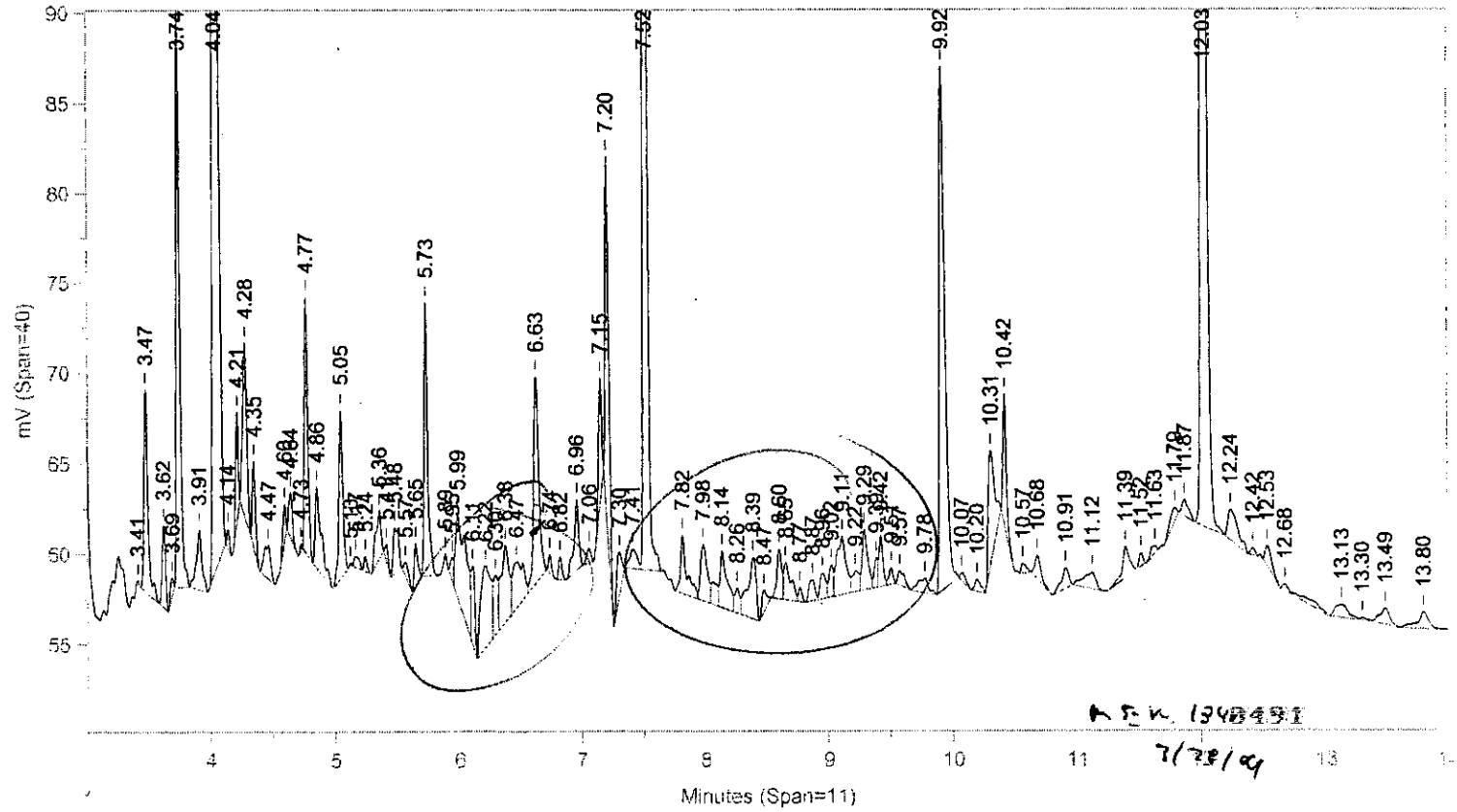


Instrument ID: CP16--H5262B Injected On: 3/26/2004 12:53:55 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

LANCASTER LABORATORIES

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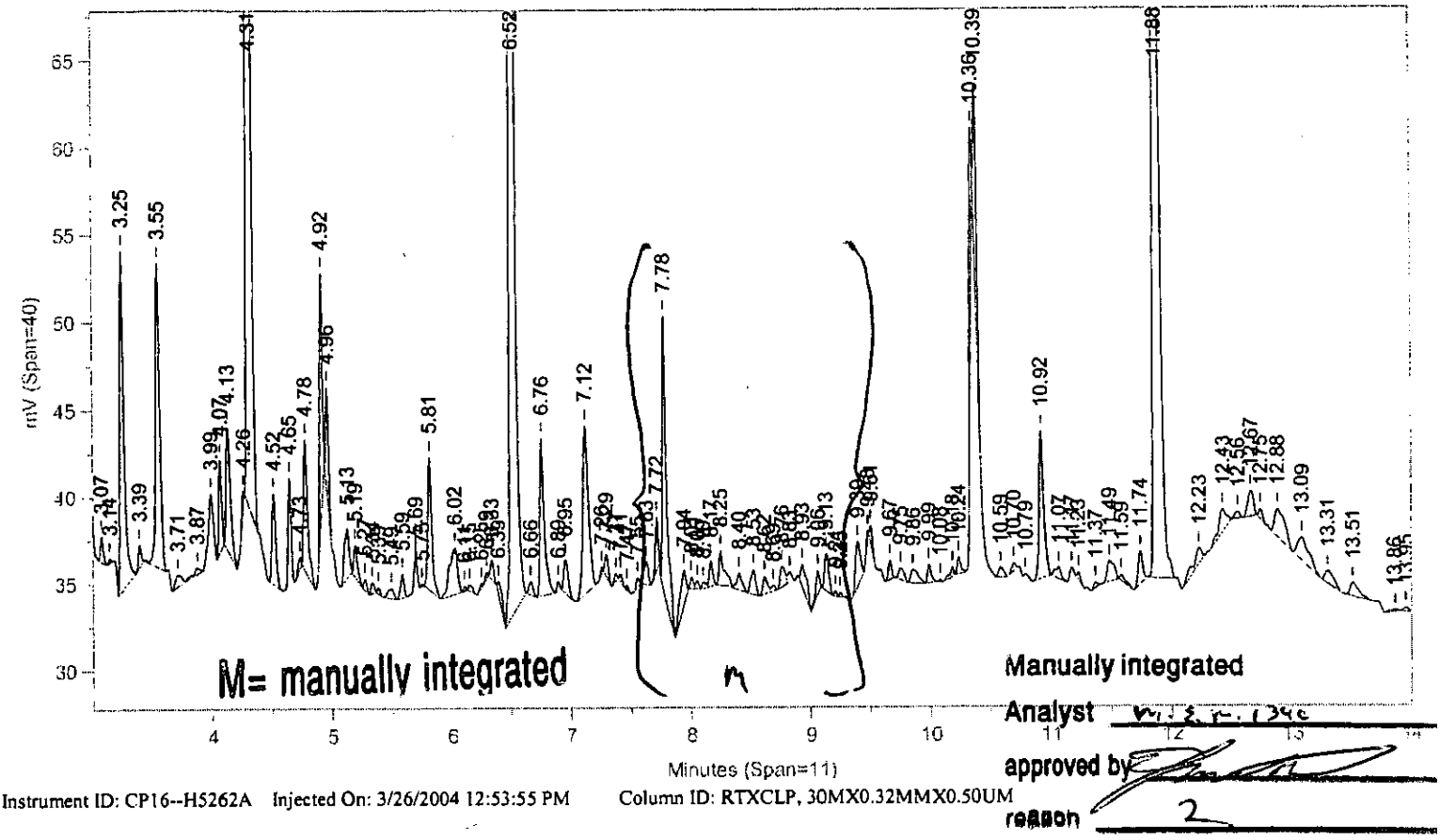


Instrument ID: CP16--H5262A Injected On: 3/26/2004 12:53:55 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

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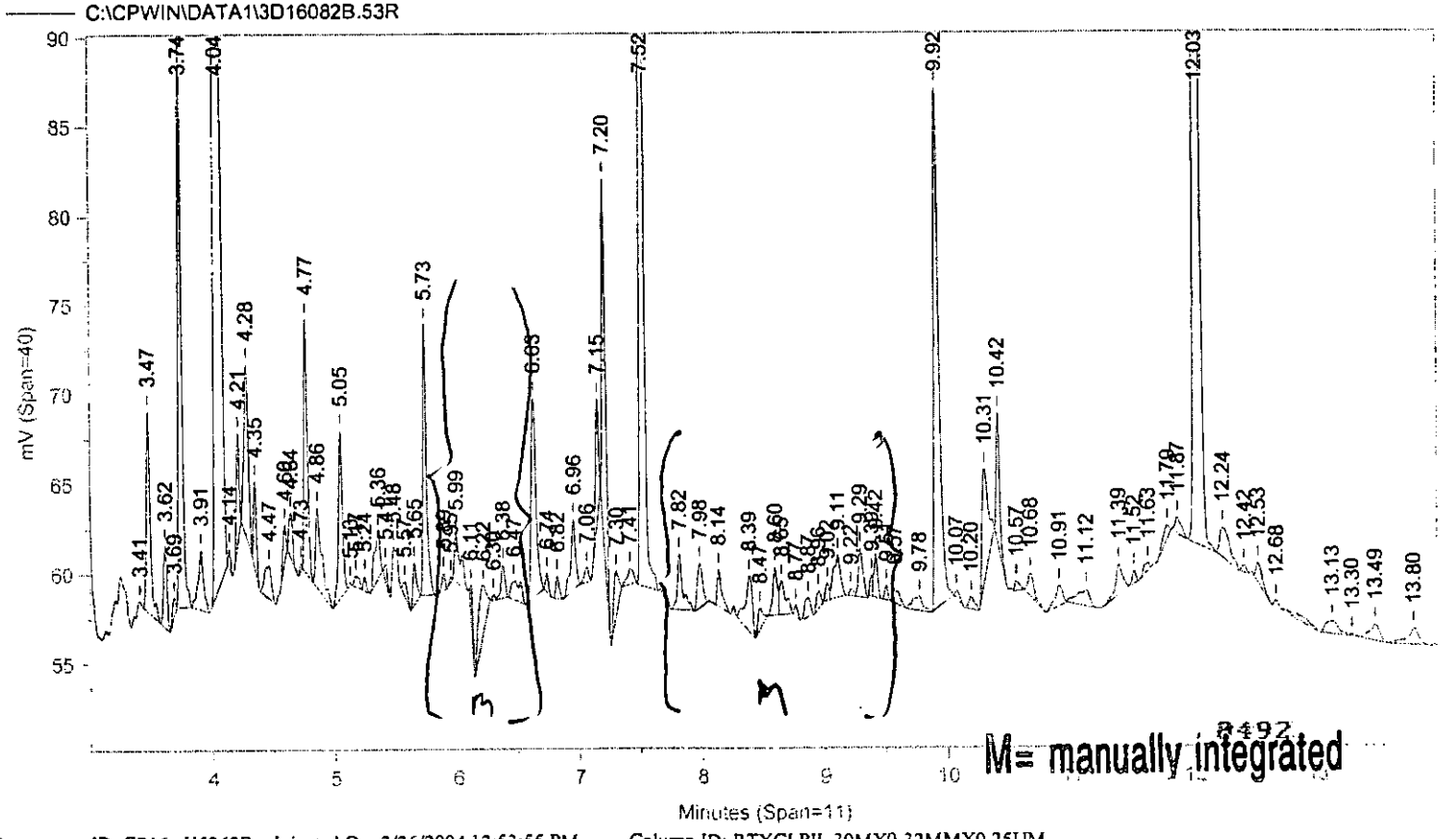



Instrument ID: CP16--H5262B Injected On: 3/26/2004 12:53:55 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

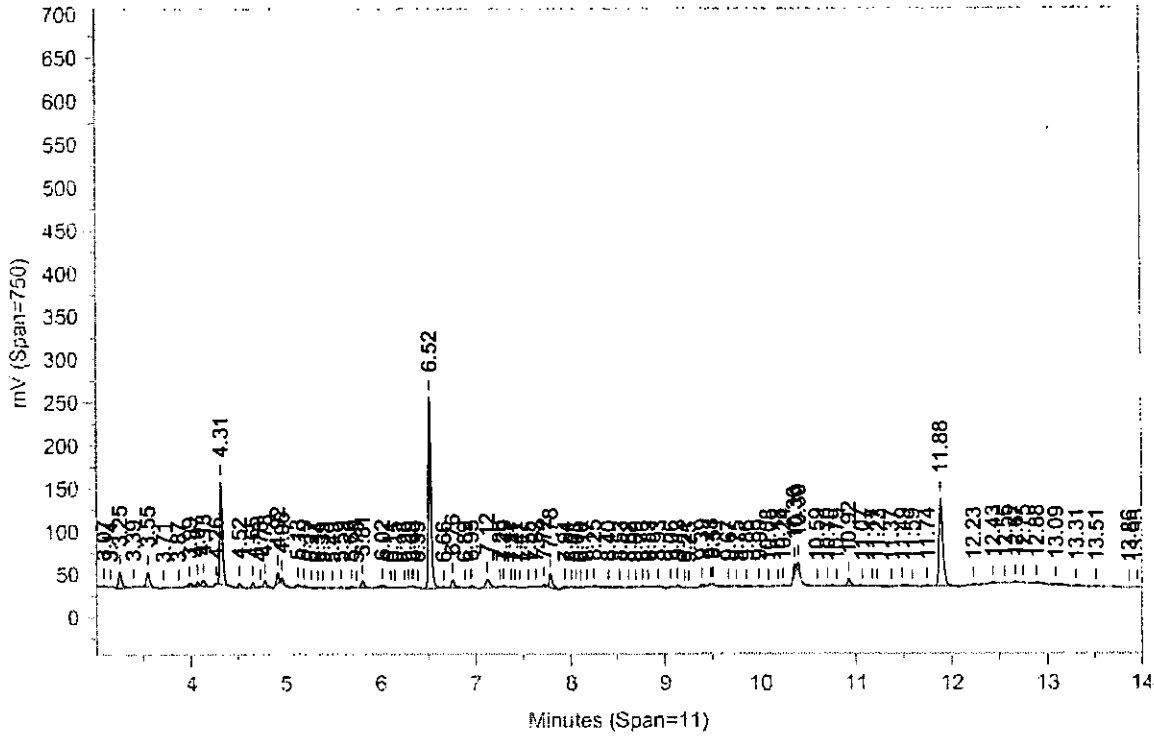
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.315 | 119195 | 9.631 | TCX | 4.04 | 157667 | 9.367 | TCX |
| 4.919 | 13387 | .635 | Hcb | 4.727 | 425 | .013 | Hcb |
| 5.195 | 1846 | .12 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | gamma-BHC | 5.481 | 2576 | .108 | gamma-BHC |
| 5.748 | 161 | .019 | beta-BHC | 5.566 | 824 | .069 | beta-BHC |
| 6.024 | 2685 | .184 | delta-BHC | 5.99 | 2641 | .118 | delta-BHC |
| 6.334 | 1117 | .069 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.737 | 1018 | .058 | Telodrin |
| 6.757 | 9064 | .721 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Hept. epoxide | 7.304 | 2485 | .139 | Hept. epoxide |
| 7.783 | 16023 | 1.297 | g. Chlordane | 7.519 | 93977 | 5.405 | g. Chlordane |
| 7.554 | 554 | .071 | o,p-DDE | . | 0 | . | o,p-DDE |
| 8.104 | 353 | .03 | Endosulfan I | 7.817 | 3120 | .197 | Endosulfan I |
| 7.943 | 1934 | .147 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.007 | 695 | .066 | 4,4'-DDE | 7.984 | 2467 | .177 | 4,4'-DDE |
| 8.247 | 2006 | .302 | o,p-DDD | . | 0 | . | o,p-DDD |
| . | 0 | . | o,p-DDT | 8.599 | 2677 | .292 | o,p-DDT |
| 8.764 | 1159 | .116 | Endrin | . | 0 | . | Endrin |
| 8.83 | 568 | .066 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.064 | 1342 | .134 | Endosulfan II | 8.872 | 1054 | .091 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.11 | 2384 | .244 | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.292 | 2745 | .298 | Endrin aldehyde |
| 9.989 | 1059 | .125 | Mirex | . | 0 | . | Mirex |
| 10.184 | 570 | .064 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.312 | 6190 | .571 | Endrin ketone |
| 11.885 | 102151 | 10.321 | DCB | 12.031 | 101164 | 9.36 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/28/2004 5:02:22 PM
File Reported On: 3/28/2004 at 5:02:21 PM

Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.53R

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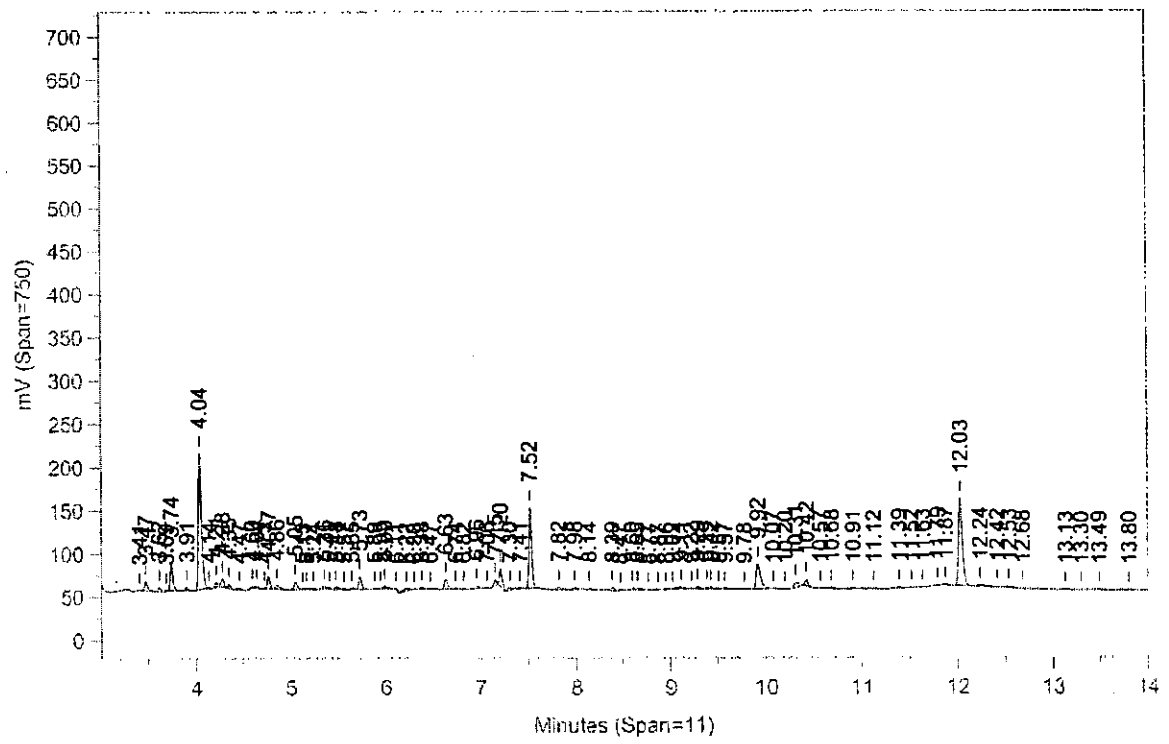



8494

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4241637** F 2222D Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16--H5262A
Result file : 3D16082.54R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 88.7% Conc.: 8.530822
%SSR(DCB) : 91.8% Conc.: 8.940418

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 105577 | 8.530822 |
| **Hcb** | 4.88 | 4.92 | 4.94 | 11513 | 0.546492 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 2700 | 0.175122 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 1907 | 0.130540 |
| **Heptachlor** | 6.29 | 6.33 | 6.35 | 1288 | 0.079132 |
| **Aldrin** | 6.72 | 6.76 | 6.78 | 20144 | 1.601951 |
| **o,p-DDE** | 7.53 | 7.55 | 7.59 | 587 | 0.074728 |
| **Hept. epoxide** | 7.56 | 7.60 | 7.62 | 2129 | 0.165703 |
| **g. Chlordane** | 7.72 | 7.78 | 7.78 | 1136 | 0.091939 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 2604 | 0.197797 |
| **4,4'-DDE** | 7.99 | 8.00 | 8.05 | 2154 | 0.204380 |
| **Endosulfan I** | 8.09 | 8.10 | 8.15 | 882 | 0.074783 |
| **o,p-DDD** | 8.22 | 8.25 | 8.28 | 486 | 0.073044 |
| **Dieldrin** | 8.41 | 8.42 | 8.47 | 1103 | 0.100914 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 2153 | 0.214595 |
| **4,4'-DDD** | 8.78 | 8.84 | 8.84 | 3825 | 0.447939 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 3357 | 0.335068 |
| **Endo. sulfate** | 10.14 | 10.14 | 10.20 | 92 | 0.010450 |
| **DCB** | 11.86 | 11.88 | 11.92 | 88487 | 8.940418 |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16--H5262B
Result file : 3D16082B.54R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 84.9% Conc.: 8.167047
%SSR(DCB) : 81.7% Conc.: 7.952788

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 137472 | 8.167047 |
| **Hcb** | 4.71 | 4.73 | 4.77 | 386 | 0.012006 |
| **alpha-BHC** | 4.91 | 4.96 | 4.97 | 540 | 0.020995 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 8576 | 0.383652 |
| **Hept. epoxide** | 7.27 | 7.30 | 7.33 | 2324 | 0.130336 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 103320 | 5.941853 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 2182 | 0.137898 |
| **4,4'-DDE** | 7.93 | 7.98 | 7.99 | 3016 | 0.215794 |
| **o,p-DDT** | 8.58 | 8.60 | 8.64 | 1924 | 0.210035 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 2404 | 0.245482 |
| **Endosulfan II** | 8.82 | 8.85 | 8.88 | 1280 | 0.110154 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 3596 | 0.367776 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 2832 | 0.307788 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 4353 | 0.401505 |
| **DCB** | 12.01 | 12.03 | 12.07 | 85951 | 7.952788 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 8.530822 | | | | 4.36 | |
| Hcb | A | 0.546492 | | | | ** 191.40 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | 8495 |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:31:45

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241637 F 2222D Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

| Analysis Report (A) | | Analysis Report (B) | |
|---|---|---|---|
| Injected on | : MAR 26, 2004 13:14:30 | Injected on | : MAR 26, 2004 13:14:30 |
| Instrument | : CP16--H5262A | Instrument | : CP16--H5262B |
| Result file | : 3D16082.54R | Result file | : 3D16082B.54R |
| Calibration file | : 2D16082.CAL | Calibration file | : 2D16082B.CAL |
| Method file | : PESTD.MET | Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 8.940418 | | | | 11.69 | |

Units: ug/kg X

Reviewed by: M. S. M. 1340 Date: 3/26/04
Verified by: [signature] Date: 3/29/04

8496

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:31:45

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4241637** F 2222D Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 13:14:30 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.54R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 88.7% | Conc: | 8.530822 |
| %SSR(DCB) | 91.8% | Conc: | 8.940418 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 13:14:30 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.54R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 84.9% | Conc: | 8.167047 |
| %SSR(DCB) | 81.7% | Conc: | 7.952788 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: m.s.m. 1340. Date: 3/28/04

Verified By: [signature] Date: 3/29/04

8497

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241637** F 2222D Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16--H5262A
Result file : 3D16082.54R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 88.7% Conc.: 8.530822
%SSR(DCB) : 91.8% Conc.: 8.940418

| | Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| X | **Aroclor-1016** | | | | | 3 | 19.31 | |
| | 6.01 | 6.03 | 6.07 | 1907.084717 | 5.356315 | | | 3 |
| | + 6.29 | 6.29 | 6.35 | 695.569397 | 2.853976 | | | 5 |
| | 6.29 | 6.33 | 6.35 | 1288.032837 | 5.284901 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 886.325073 | 7.322628 | | | 6 |
| | Height Summation | | | **4081.442627** | | | | |
| | Amount Avg CF: | | | | **5.987948** Linear: | | | |
| X | **Aroclor-1221** | | | | | 1 | | |
| | 4.77 | 4.78 | 4.83 | 4230.374512 | 44.652465 | | | 2 |
| | Height Summation | | | **4230.374512** | | | | |
| | Amount Avg CF: | | | | **44.652465** Linear: | | | |
| X | **Aroclor-1232** | | | | | 3 | 17.83 | |
| | 6.01 | 6.03 | 6.07 | 1907.084717 | 11.634241 | | | 3 |
| | + 6.28 | 6.29 | 6.34 | 695.569397 | 6.150855 | | | 5 |
| | 6.28 | 6.33 | 6.34 | 1288.032837 | 11.389953 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 886.325073 | 15.468151 | | | 6 |
| | Height Summation | | | **4081.442627** | | | | |
| | Amount Avg CF: | | | | **12.830782** Linear: | | | |
| X | **Aroclor-1242** | | | | | 3 | 7.42 | |
| | 6.01 | 6.03 | 6.07 | 1907.084717 | 6.238419 | | | 3 |
| | + 6.28 | 6.29 | 6.34 | 695.569397 | 3.364871 | | | 5 |
| | 6.28 | 6.33 | 6.34 | 1288.032837 | 6.23096 | | | 5 |
| | 6.87 | 6.89 | 6.93 | 886.325073 | 7.071366 | | | 6 |
| | Height Summation | | | **4081.442627** | | | | |
| | Amount Avg CF: | | | | **6.513582** Linear: | | | |
| X | **Aroclor-1248** | | | | | 3 | 92.22 | |
| | 6.01 | 6.03 | 6.07 | 1907.084717 | 13.777523 | | | 2 |
| | 6.75 | 6.76 | 6.81 | 20144.33398 | 45.931856 | | | 3 |
| | 8.14 | 8.17 | 8.20 | 1827.803223 | 7.435081 | | | 6 |
| | Height Summation | | | **23879.221924** | | | | |
| | Amount Avg CF: | | | | **22.381487** Linear: | | | |
| X | **Aroclor-1254** | | | | | 4 | 42.32 | |
| | 8.13 | 8.17 | 8.19 | 1827.803223 | 2.778695 | | | 3 |
| | 8.50 | 8.52 | 8.56 | 1644.001831 | 3.360977 | | | 4 |
| | 8.73 | 8.76 | 8.79 | 2152.692627 | 6.947487 | | | 5 |
| | 9.10 | 9.13 | 9.16 | 2911.87915 | 6.023348 | | | 6 |
| | Height Summation | | | **8536.376831** | | | | |
| | Amount Avg CF: | | | | **4.777627** Linear: | | | |
| X | **Aroclor-1260** | | | | | 5 | 53.25 | |
| | 8.38 | 8.42 | 8.44 | 1102.595703 | 2.04279 | | | 1 |
| | 8.73 | 8.76 | 8.79 | 2152.692627 | 3.276932 | | | 2 |
| | 9.10 | 9.13 | 9.16 | 2911.87915 | 4.524989 | | | 3 |
| | 9.96 | 9.99 | 10.02 | 653.923401 | 0.751429 | | | 5 |
| | 11.14 | 11.17 | 11.20 | 615.547058 | 2.58663 | | | 6 |
| | Height Summation | | | **7436.637939** | | | | |
| | Amount Avg CF: | | | | **2.636554** Linear: | | | |
| X | **Chlordane** | | | | | 4 | 72.34 | |
| | 6.29 | 6.33 | 6.35 | 1288.032837 | 1.895347 | | | 2 |
| | 6.91 | 6.95 | 6.97 | 1508.929321 | 2.306799 | | | 3 |
| | 7.89 | 7.94 | 7.95 | 2604.027588 | 1.804829 | | | 5 |
| | 8.92 | 8.93 | 8.98 | 2843.463867 | 6.507391 | | | 6 |
| | Height Summation | | | **8244.453613** | | | | |
| | Amount Avg CF: | | | | **3.128592** Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16--H5262B
Result file : 3D16082B.54R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 84.9% Conc.: 8.167047
%SSR(DCB) : 81.7% Conc.: 7.952788

| | Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| | **Aroclor-1016** | | | | | 1 | | |
| | + 4.72 | 4.73 | 4.78 | 385.633392 | 1.094998 | | | 1 |
| | 4.72 | 4.77 | 4.78 | 11385.64550 | 32.329309 | | | 1 |
| | Height Summation | | | **11385.645508** | | | | |
| | Amount Avg CF: | | | | **32.329309** Linear: | | | |
| | **Aroclor-1221** | | | | | 3 | 32.88 | |
| | 4.44 | 4.44 | 4.50 | 4194.324219 | 18.543777 | | | 1 |
| | 4.64 | 4.65 | 4.70 | 1766.75647 | 11.854244 | | | 2 |
| | + 4.72 | 4.73 | 4.78 | 385.633392 | 0.801724 | | | 3 |
| | 4.72 | 4.77 | 4.78 | 11385.64550 | 23.670535 | | | 3 |
| | Height Summation | | | **17346.726197** | | | | |
| | Amount Avg CF: | | | | **18.022852** Linear: | | | |
| | **Aroclor-1232** | | | | | 1 | | |
| | + 4.72 | 4.73 | 4.78 | 385.633392 | 0.996662 | | | 1 |
| | 4.72 | 4.77 | 4.78 | 11385.64550 | 29.425975 | | | 1 |
| | Height Summation | | | **11385.645508** | | | | |
| | Amount Avg CF: | | | | **29.425975** Linear: | | | |
| | **Aroclor-1242** | | | | | 1 | | |
| | + 4.72 | 4.73 | 4.78 | 385.633392 | 1.17974 | | | 1 |
| | 4.72 | 4.77 | 4.78 | 11385.64550 | 34.83127 | | | 1 |
| | Height Summation | | | **11385.645508** | | | | |
| | Amount Avg CF: | | | | **34.83127** Linear: | | | |
| | **Aroclor-1248** | | | | | 1 | | |
| | 8.11 | 8.14 | 8.17 | 2788.438232 | 10.532345 | | | 6 |
| | Height Summation | | | **2788.438232** | | | | |
| | Amount Avg CF: | | | | **10.532345** Linear: | | | |
| | **Aroclor-1254** | | | | | 5 | 184.26 | |
| | 6.35 | 6.38 | 6.41 | 5442.844238 | 16.007989 | | | 1 |
| | E 7.50 | 7.52 | 7.56 | 103320.3828 | 183.001379 | | | 2 |
| | 8.10 | 8.14 | 8.16 | 2788.438232 | 3.917028 | | | 3 |
| | 8.84 | 8.85 | 8.90 | 1280.019775 | 3.460224 | | | 5 |
| | 9.08 | 9.11 | 9.14 | 3595.589111 | 6.933528 | | | 6 |
| | Height Summation | | | **116427.274169** | | | | |
| | Amount Avg CF: | | | | **42.66403** Linear: | | | |
| | **Aroclor-1260** | | | | | 5 | 99.11 | |
| | 8.36 | 8.38 | 8.42 | 3136.554932 | 5.353204 | | | 1 |
| | 8.62 | 8.65 | 8.68 | 773.312805 | 1.092634 | | | 2 |
| | 8.83 | 8.85 | 8.89 | 1280.019775 | 2.815883 | | | 3 |
| | 9.08 | 9.11 | 9.14 | 3595.589111 | 5.417843 | | | 4 |
| | 9.88 | 9.92 | 9.94 | 16748.38281 | 17.20136 | | | 6 |
| | Height Summation | | | **25533.859436** | | | | |
| | Amount Avg CF: | | | | **6.376185** Linear: | | | |
| | **Chlordane** | | | | | 3 | 152.73 | |
| | 5.84 | 5.88 | 5.90 | 2967.756592 | 4.046987 | | | 1 |
| | 7.51 | 7.52 | 7.57 | 103320.3828 | 57.893725 | | | 4 |
| | 7.64 | 7.67 | 7.70 | 1221.535889 | 0.95376 | | | 5 |
| | Height Summation | | | **107509.675294** | | | | |
| | Amount Avg CF: | | | | **20.964824** Linear: 8498 | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:31:59

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241637 F** 2222D Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16–H5262A
Result file : 3D16082.54R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | 3 | 49.51 | |
| 8.61 | 8.62 | 8.67 | 890.47699 | 8.193267 | | | 1 |
| 8.75 | 8.76 | 8.81 | 2152.692627 | 19.275888 | | | 2 |
| 9.15 | 9.20 | 9.21 | 1424.976563 | 9.389424 | | | 3 |

Height Summation **4468.146180**
Amount Avg CF: **12.286193** Linear:

## Analysis Report (B)

Injected on : MAR 26, 2004 13:14:30
Instrument : CP16–H5262B
Result file : 3D16082B.54R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | 5 | 86.83 | |
| 8.12 | 8.14 | 8.18 | 2788.438232 | 23.165173 | | | 1 |
| 8.91 | 8.95 | 8.97 | 1574.708862 | 5.259443 | | | 3 |
| 9.25 | 9.29 | 9.31 | 2831.601807 | 13.057762 | | | 4 |
| 9.91 | 9.92 | 9.97 | 16748.38281 | 75.610736 | | | 5 |
| 10.41 | 10.42 | 10.47 | 6047.933594 | 50.011855 | | | 6 |

Height Summation **29991.065308**
Amount Avg CF: **33.420994** Linear:

8499

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:31:59

Sample Name: **4241637F AB2222D T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 01:28:30pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.54R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.072 | | 0.0000 | 0.000 | 2184.7 | 0.136 | BB | 0.046 | 796.28 | 0.112 |
| 2 | 3.183 | | 0.0000 | 0.000 | 1874.6 | 0.116 | BB | 0.028 | 1097.61 | 0.154 |
| 3 | 3.243 | | 0.0000 | 0.000 | 38216.6 | 2.373 | BB | 0.034 | 18809.85 | 2.636 |
| 4 | 3.309 | | 0.0000 | 0.000 | 1074.1 | 0.067 | BB | 0.026 | 689.96 | 0.097 |
| 5 | 3.393 | | 0.0000 | 0.000 | 2221.1 | 0.138 | BB | 0.031 | 1180.33 | 0.165 |
| 6 | 3.543 | | 0.0000 | 0.000 | 38156.0 | 2.369 | BB | 0.038 | 16645.20 | 2.333 |
| 7 | 3.626 | | 0.0000 | 0.000 | 738.8 | 0.046 | BB | 0.025 | 483.50 | 0.068 |
| 8 | 3.679 | | 0.0000 | 0.000 | 993.2 | 0.062 | BB | 0.072 | 230.45 | 0.032 |
| 9 | 3.876 | | 0.0000 | 0.000 | 3083.9 | 0.191 | BB | 0.058 | 887.14 | 0.124 |
| 10 | 3.992 | | 0.0000 | 0.000 | 14256.1 | 0.885 | BB | 0.052 | 4531.56 | 0.635 |
| 11 | 4.065 | | 0.0000 | 0.000 | 1407.4 | 0.087 | BB | 0.020 | 1151.47 | 0.161 |
| 12 | 4.125 | | 0.0000 | 0.000 | 69195.6 | 4.296 | BB | 0.042 | 27617.35 | 3.871 |
| 13 | 4.213 | | 0.0000 | 0.000 | 2095.8 | 0.130 | BB | 0.023 | 1531.99 | 0.215 |
| 14 | 4.313 | TCX | 255.9247 | 38.784 | 214400.7 | 13.310 | BB | 0.034 | 105577.30 | 14.798 |
| 15 | 4.397 | | 0.0000 | 0.000 | 3581.9 | 0.222 | BB | 0.033 | 1798.23 | 0.252 |
| 16 | 4.515 | | 0.0000 | 0.000 | 6111.6 | 0.379 | BB | 0.037 | 2733.32 | 0.383 |
| 17 | 4.649 | | 0.0000 | 0.000 | 6270.0 | 0.389 | BB | 0.029 | 3658.93 | 0.513 |
| 18 | 4.738 | | 0.0000 | 0.000 | 2642.5 | 0.164 | BB | 0.054 | 813.95 | 0.114 |
| 19 | 4.779 | | 0.0000 | 0.000 | 8970.8 | 0.557 | BB | 0.035 | 4230.37 | 0.593 |
| 20 | 4.918 | Hcb | 16.3948 | 2.485 | 17156.6 | 1.065 | BB | 0.025 | 11513.06 | 1.614 |
| 21 | 4.963 | | 0.0000 | 0.000 | 48339.4 | 3.001 | BB | 0.031 | 26286.84 | 3.684 |
| 22 | 5.131 | | 0.0000 | 0.000 | 4195.7 | 0.260 | BB | 0.037 | 1877.35 | 0.263 |
| 23 | 5.193 | alpha-BHC | 5.2536 | 0.796 | 5234.6 | 0.325 | BB | 0.032 | 2700.14 | 0.378 |
| 24 | 5.269 | | 0.0000 | 0.000 | 1412.0 | 0.088 | BB | 0.028 | 832.50 | 0.117 |
| 25 | 5.332 | | 0.0000 | 0.000 | 1395.2 | 0.087 | BB | 0.031 | 755.25 | 0.106 |
| 26 | 5.438 | | 0.0000 | 0.000 | 1103.5 | 0.069 | BB | 0.027 | 677.67 | 0.095 |
| 27 | 5.581 | | 0.0000 | 0.000 | 1983.5 | 0.123 | BB | 0.030 | 1089.86 | 0.153 |
| 28 | 5.693 | | 0.0000 | 0.000 | 3636.4 | 0.226 | BB | 0.044 | 1384.68 | 0.194 |
| 29 | 5.813 | | 0.0000 | 0.000 | 16935.3 | 1.051 | BB | 0.041 | 6844.25 | 0.959 |
| 30 | 5.977 | | 0.0000 | 0.000 | 1710.1 | 0.106 | BB | 0.027 | 1036.84 | 0.145 |
| 31 | 6.026 | delta-BHC | 3.9162 | 0.593 | 4701.0 | 0.292 | BB | 0.041 | 1907.08 | 0.267 |
| 32 | 6.103 | | 0.0000 | 0.000 | 332.3 | 0.021 | BB | 0.019 | 291.55 | 0.041 |
| 33 | 6.148 | | 0.0000 | 0.000 | 930.5 | 0.058 | BB | 0.035 | 441.23 | 0.062 |
| 34 | 6.290 | | 0.0000 | 0.000 | 1223.1 | 0.076 | BB | 0.029 | 695.57 | 0.097 |
| 35 | 6.331 | Heptachlor | 2.3740 | 0.360 | 2228.8 | 0.138 | BB | 0.029 | 1288.03 | 0.181 |
| 36 | 6.518 | | 0.0000 | 0.000 | 488387.9 | 30.320 | BB | 0.033 | 247683.10 | 34.716 |
| 37 | 6.664 | | 0.0000 | 0.000 | 3139.3 | 0.195 | BB | 0.040 | 1309.24 | 0.184 |
| 38 | 6.755 | Aldrin | 48.0585 | 7.283 | 50800.1 | 3.154 | BB | 0.042 | 20144.33 | 2.824 |
| 39 | 6.886 | | 0.0000 | 0.000 | 1637.4 | 0.102 | BB | 0.031 | 886.33 | 0.124 |
| 40 | 6.950 | | 0.0000 | 0.000 | 3495.4 | 0.217 | BB | 0.039 | 1508.93 | 0.211 |
| 41 | 7.121 | | 0.0000 | 0.000 | 27801.4 | 1.726 | BB | 0.052 | 8889.41 | 1.246 |
| 42 | 7.253 | | 0.0000 | 0.000 | 1134.0 | 0.070 | BB | 0.028 | 683.45 | 0.096 |
| 43 | 7.290 | | 0.0000 | 0.000 | 1841.4 | 0.114 | BB | 0.028 | 1085.05 | 0.152 |
| 44 | 7.407 | | 0.0000 | 0.000 | 3416.2 | 0.212 | BB | 0.056 | 1008.68 | 0.141 |
| 45 | 7.462 | | 0.0000 | 0.000 | 568.5 | 0.035 | BB | 0.022 | 426.46 | 0.060 |
| 46 | 7.513 | | 0.0000 | 0.000 | 291.0 | 0.018 | BB | 0.023 | 212.47 | 0.030 |
| 47 | 7.551 | o,p-DDE | 2.2418 | 0.340 | 777.1 | 0.048 | BB | 0.022 | 587.17 | 0.082 |
| 48 | 7.599 | Hept. epoxide | 4.9711 | 0.753 | 6889.9 | 0.428 | BB | 0.054 | 2129.06 | 0.298 |
| 49 | 7.716 | | 0.0000 | 0.000 | 11658.7 | 0.724 | BB | 0.040 | 4858.90 | 0.681 |
| 50 | 7.781 | g. Chlordane | 2.7582 | 0.418 | 1691.3 | 0.105 | BB | 0.025 | 1135.58 | 0.159 |
| 51 | 7.943 | a. Chlordane | 5.9339 | 0.899 | 11696.7 | 0.726 | BV | 0.075 | 2604.03 | 0.365 |
| 52 | 8.005 | 4,4'-DDE | 6.1314 | 0.929 | 6026.7 | 0.374 | VV | 0.047 | 2154.28 | 0.302 |
| 53 | 8.054 | | 0.0000 | 0.000 | 3311.0 | 0.206 | VV | 0.041 | 1361.01 | 0.191 |
| 54 | 8.098 | Endosulfan I | 2.2435 | 0.340 | 1966.2 | 0.122 | VV | 0.037 | 882.14 | 0.124 |
| 55 | 8.165 | | 0.0000 | 0.000 | 4856.7 | 0.302 | VB | 0.044 | 1827.80 | 0.256 |
| 56 | 8.246 | o,p-DDD | 2.1913 | 0.332 | 666.6 | 0.041 | BB | 0.023 | 485.82 | 0.068 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.285 | | 0.0000 | 0.000 | 800.3 | 0.050 | BB | 0.023 | 574.30 | 0.080 |
| 58 | 8.422 | Dieldrin | 3.0274 | 0.459 | 3497.8 | 0.217 | BV | 0.053 | 1102.60 | 0.155 |
| 59 | 8.524 | | 0.0000 | 0.000 | 4892.8 | 0.304 | VV | 0.050 | 1644.00 | 0.230 |
| 60 | 8.616 | | 0.0000 | 0.000 | 2960.7 | 0.184 | VV | 0.055 | 890.48 | 0.125 |
| 61 | 8.708 | | 0.0000 | 0.000 | 4733.5 | 0.294 | VV | 0.047 | 1678.93 | 0.235 |
| 62 | 8.758 | Endrin | 6.4379 | 0.976 | 8307.6 | 0.516 | VV | 0.064 | 2152.69 | 0.302 |
| 63 | 8.836 | 4,4'-DDD | 13.4382 | 2.036 | 11644.9 | 0.723 | VV | 0.051 | 3825.11 | 0.536 |
| 64 | 8.932 | | 0.0000 | 0.000 | 9790.4 | 0.608 | VB | 0.057 | 2843.46 | 0.399 |
| 65 | 9.061 | Endosulfan II | 10.0521 | 1.523 | 10003.7 | 0.621 | BV | 0.050 | 3356.95 | 0.471 |
| 66 | 9.129 | | 0.0000 | 0.000 | 8593.9 | 0.534 | VV | 0.049 | 2911.88 | 0.408 |
| 67 | 9.205 | | 0.0000 | 0.000 | 3935.3 | 0.244 | VV | 0.046 | 1424.98 | 0.200 |
| 68 | 9.293 | | 0.0000 | 0.000 | 580.4 | 0.036 | VB | 0.024 | 396.12 | 0.056 |
| 69 | 9.391 | | 0.0000 | 0.000 | 8731.5 | 0.542 | BB | 0.048 | 3018.35 | 0.423 |
| 70 | 9.479 | | 0.0000 | 0.000 | 814.3 | 0.051 | BB | 0.033 | 410.99 | 0.058 |
| 71 | 9.507 | | 0.0000 | 0.000 | 1630.7 | 0.101 | BB | 0.023 | 1186.79 | 0.166 |
| 72 | 9.666 | | 0.0000 | 0.000 | 3444.5 | 0.214 | BB | 0.032 | 1796.04 | 0.252 |
| 73 | 9.747 | | 0.0000 | 0.000 | 2724.8 | 0.169 | BB | 0.038 | 1182.15 | 0.166 |
| 74 | 9.850 | | 0.0000 | 0.000 | 4806.7 | 0.298 | BB | 0.067 | 1193.18 | 0.167 |
| 75 | 9.987 | | 0.0000 | 0.000 | 1178.1 | 0.073 | BB | 0.030 | 653.92 | 0.092 |
| 76 | 10.141 | Endo. sulfate | 0.3135 | 0.048 | 169.2 | 0.011 | BB | 0.031 | 92.40 | 0.013 |
| 77 | 10.241 | | 0.0000 | 0.000 | 1694.7 | 0.105 | BB | 0.037 | 766.22 | 0.107 |
| 78 | 10.358 | | 0.0000 | 0.000 | 8346.3 | 0.518 | BB | 0.036 | 3895.05 | 0.546 |
| 79 | 10.394 | | 0.0000 | 0.000 | 18207.3 | 1.130 | BB | 0.029 | 10607.99 | 1.487 |
| 80 | 10.587 | | 0.0000 | 0.000 | 2663.6 | 0.165 | BB | 0.046 | 958.73 | 0.134 |
| 81 | 10.695 | | 0.0000 | 0.000 | 717.7 | 0.045 | BB | 0.042 | 287.34 | 0.040 |
| 82 | 10.743 | | 0.0000 | 0.000 | 480.5 | 0.030 | BB | 0.025 | 320.39 | 0.045 |
| 83 | 10.801 | | 0.0000 | 0.000 | 531.2 | 0.033 | BB | 0.038 | 233.98 | 0.033 |
| 84 | 10.922 | | 0.0000 | 0.000 | 19508.2 | 1.211 | BB | 0.045 | 7281.01 | 1.021 |
| 85 | 11.068 | | 0.0000 | 0.000 | 4118.6 | 0.256 | BB | 0.055 | 1255.79 | 0.176 |
| 86 | 11.173 | | 0.0000 | 0.000 | 1408.0 | 0.087 | BB | 0.038 | 615.55 | 0.086 |
| 87 | 11.375 | | 0.0000 | 0.000 | 1504.1 | 0.093 | BB | 0.050 | 503.80 | 0.071 |
| 88 | 11.490 | | 0.0000 | 0.000 | 1082.2 | 0.067 | BB | 0.039 | 457.01 | 0.064 |
| 89 | 11.584 | | 0.0000 | 0.000 | 1041.2 | 0.065 | BB | 0.070 | 249.05 | 0.035 |
| 90 | 11.747 | | 0.0000 | 0.000 | 3035.5 | 0.188 | BB | 0.043 | 1185.20 | 0.166 |
| 91 | 11.884 | DCB | 268.2126 | 40.646 | 248325.0 | 15.416 | BB | 0.047 | 88487.18 | 12.403 |
| 92 | 12.239 | | 0.0000 | 0.000 | 6940.8 | 0.431 | BB | 0.158 | 730.96 | 0.102 |
| 93 | 12.368 | | 0.0000 | 0.000 | 669.6 | 0.042 | BB | 0.033 | 341.52 | 0.048 |
| 94 | 12.430 | | 0.0000 | 0.000 | 1224.2 | 0.076 | BB | 0.052 | 390.65 | 0.055 |
| 95 | 12.550 | | 0.0000 | 0.000 | 1200.2 | 0.075 | BB | 0.049 | 408.94 | 0.057 |
| 96 | 12.667 | | 0.0000 | 0.000 | 4525.9 | 0.281 | BB | 0.056 | 1342.62 | 0.188 |
| 97 | 12.747 | | 0.0000 | 0.000 | 2037.9 | 0.127 | BB | 0.044 | 764.07 | 0.107 |
| 98 | 12.884 | | 0.0000 | 0.000 | 6536.2 | 0.406 | BB | 0.095 | 1142.96 | 0.160 |
| 99 | 13.087 | | 0.0000 | 0.000 | 7586.9 | 0.471 | BB | 0.119 | 1066.93 | 0.150 |
| 100 | 13.326 | | 0.0000 | 0.000 | 4461.2 | 0.277 | BB | 0.093 | 802.39 | 0.112 |
| 101 | 13.516 | | 0.0000 | 0.000 | 6733.7 | 0.418 | BB | 0.138 | 810.76 | 0.114 |
| 102 | 13.864 | | 0.0000 | 0.000 | 583.6 | 0.036 | BB | 0.075 | 129.46 | 0.018 |
| 103 | 13.951 | | 0.0000 | 0.000 | 331.7 | 0.021 | BB | 0.042 | 131.34 | 0.018 |

Total Area = 1610783.0, Total Amount = 659.875, Total Height = 713452.2, Sample Units = PPB

Sample Name: **4241637F AB2222D T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 01:28:30pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.54R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.409 | | 0.0000 | 0.000 | 11.0 | 0.001 | BB | 0.004 | 45.90 | 0.007 |
| 2 | 3.471 | | 0.0000 | 0.000 | 10366.5 | 0.588 | BB | 0.044 | 3910.08 | 0.598 |
| 3 | 3.615 | | 0.0000 | 0.000 | 7425.9 | 0.421 | BB | 0.033 | 3703.93 | 0.567 |
| 4 | 3.692 | | 0.0000 | 0.000 | 942.3 | 0.053 | BB | 0.034 | 466.79 | 0.071 |
| 5 | 3.739 | | 0.0000 | 0.000 | 57370.6 | 3.254 | BB | 0.032 | 29988.42 | 4.589 |
| 6 | 3.903 | | 0.0000 | 0.000 | 5905.3 | 0.335 | BB | 0.064 | 1534.26 | 0.235 |
| 7 | 4.038 | TCX | 245.0114 | 33.192 | 309146.0 | 17.532 | BB | 0.037 | 137471.80 | 21.039 |
| 8 | 4.206 | | 0.0000 | 0.000 | 15703.1 | 0.891 | BB | 0.031 | 8394.63 | 1.285 |
| 9 | 4.280 | | 0.0000 | 0.000 | 91345.0 | 5.180 | BB | 0.048 | 31769.49 | 4.862 |
| 10 | 4.436 | | 0.0000 | 0.000 | 11874.5 | 0.673 | BB | 0.047 | 4194.32 | 0.642 |
| 11 | 4.586 | | 0.0000 | 0.000 | 2952.1 | 0.167 | BB | 0.037 | 1335.78 | 0.204 |
| 12 | 4.646 | | 0.0000 | 0.000 | 4256.8 | 0.241 | BB | 0.040 | 1766.76 | 0.270 |
| 13 | 4.728 | Hcb | 0.3602 | 0.049 | 475.5 | 0.027 | BB | 0.021 | 385.63 | 0.059 |
| 14 | 4.767 | | 0.0000 | 0.000 | 20670.3 | 1.172 | BB | 0.030 | 11385.65 | 1.742 |
| 15 | 4.856 | | 0.0000 | 0.000 | 16345.4 | 0.927 | BB | 0.054 | 5026.81 | 0.769 |
| 16 | 4.960 | alpha-BHC | 0.6299 | 0.085 | 1272.1 | 0.072 | BB | 0.039 | 540.42 | 0.083 |
| 17 | 5.048 | | 0.0000 | 0.000 | 79294.2 | 4.497 | BB | 0.040 | 33268.34 | 5.091 |
| 18 | 5.194 | | 0.0000 | 0.000 | 2553.2 | 0.145 | BB | 0.058 | 728.31 | 0.111 |
| 19 | 5.361 | | 0.0000 | 0.000 | 18883.9 | 1.071 | BB | 0.084 | 3767.51 | 0.577 |
| 20 | 5.501 | | 0.0000 | 0.000 | 20359.7 | 1.155 | BB | 0.083 | 4083.93 | 0.625 |
| 21 | 5.646 | | 0.0000 | 0.000 | 2757.9 | 0.156 | BB | 0.034 | 1340.43 | 0.205 |
| 22 | 5.732 | | 0.0000 | 0.000 | 31293.9 | 1.775 | BB | 0.034 | 15302.10 | 2.342 |
| 23 | 5.881 | | 0.0000 | 0.000 | 11177.5 | 0.634 | BV | 0.063 | 2967.76 | 0.454 |
| 24 | 5.987 | delta-BHC | 11.5096 | 1.559 | 85670.1 | 4.858 | VB | 0.166 | 8576.21 | 1.312 |
| 25 | 6.206 | | 0.0000 | 0.000 | 45730.1 | 2.593 | BV | 0.092 | 8327.14 | 1.274 |
| 26 | 6.295 | | 0.0000 | 0.000 | 17211.7 | 0.976 | VV | 0.052 | 5525.14 | 0.846 |
| 27 | 6.375 | | 0.0000 | 0.000 | 26227.7 | 1.487 | VV | 0.080 | 5442.84 | 0.833 |
| 28 | 6.450 | | 0.0000 | 0.000 | 20931.8 | 1.187 | VB | 0.079 | 4391.50 | 0.672 |
| 29 | 6.625 | | 0.0000 | 0.000 | 34286.7 | 1.944 | BB | 0.047 | 12073.09 | 1.848 |
| 30 | 6.818 | | 0.0000 | 0.000 | 2514.3 | 0.143 | BB | 0.033 | 1271.20 | 0.195 |
| 31 | 6.949 | | 0.0000 | 0.000 | 9678.4 | 0.549 | BB | 0.058 | 2786.62 | 0.426 |
| 32 | 7.055 | | 0.0000 | 0.000 | 5559.7 | 0.315 | BB | 0.042 | 2188.94 | 0.335 |
| 33 | 7.149 | | 0.0000 | 0.000 | 77420.6 | 4.391 | BB | 0.058 | 22350.85 | 3.421 |
| 34 | 7.301 | Hept. epoxide | 3.9101 | 0.530 | 6793.1 | 0.385 | BB | 0.049 | 2323.69 | 0.356 |
| 35 | 7.430 | | 0.0000 | 0.000 | 7603.7 | 0.431 | BV | 0.085 | 1499.59 | 0.229 |
| 36 | 7.518 | g. Chlordane | 178.2556 | 24.149 | 205904.1 | 11.677 | VV | 0.033 | 103320.40 | 15.812 |
| 37 | 7.671 | | 0.0000 | 0.000 | 4794.9 | 0.272 | VB | 0.065 | 1221.54 | 0.187 |
| 38 | 7.816 | Endosulfan I | 4.1369 | 0.560 | 7941.8 | 0.450 | BB | 0.061 | 2181.93 | 0.334 |
| 39 | 7.980 | 4,4'-DDE | 6.4738 | 0.877 | 12281.3 | 0.696 | BV | 0.068 | 3016.36 | 0.462 |
| 40 | 8.137 | | 0.0000 | 0.000 | 10431.8 | 0.592 | VV | 0.062 | 2788.44 | 0.427 |
| 41 | 8.254 | | 0.0000 | 0.000 | 3191.3 | 0.181 | VV | 0.037 | 1453.34 | 0.222 |
| 42 | 8.311 | | 0.0000 | 0.000 | 3622.9 | 0.205 | VV | 0.052 | 1151.46 | 0.176 |
| 43 | 8.385 | | 0.0000 | 0.000 | 10751.4 | 0.610 | VB | 0.057 | 3136.55 | 0.480 |
| 44 | 8.473 | | 0.0000 | 0.000 | 2833.6 | 0.161 | BB | 0.055 | 862.52 | 0.132 |
| 45 | 8.600 | o,p-DDT | 6.3010 | 0.854 | 3888.9 | 0.221 | BB | 0.034 | 1924.48 | 0.295 |
| 46 | 8.651 | | 0.0000 | 0.000 | 1365.4 | 0.077 | BV | 0.029 | 773.31 | 0.118 |
| 47 | 8.708 | 4,4'-DDD | 7.3644 | 0.998 | 4542.9 | 0.258 | VV | 0.031 | 2404.22 | 0.368 |
| 48 | 8.765 | | 0.0000 | 0.000 | 1381.7 | 0.078 | VB | 0.033 | 702.20 | 0.107 |
| 49 | 8.853 | Endosulfan II | 3.3046 | 0.448 | 4088.9 | 0.232 | BV | 0.053 | 1280.02 | 0.196 |
| 50 | 8.954 | | 0.0000 | 0.000 | 4727.0 | 0.268 | VV | 0.050 | 1574.71 | 0.241 |
| 51 | 9.023 | | 0.0000 | 0.000 | 6534.8 | 0.371 | VV | 0.044 | 2500.84 | 0.383 |
| 52 | 9.077 | | 0.0000 | 0.000 | 6979.9 | 0.396 | VV | 0.038 | 3043.70 | 0.466 |
| 53 | 9.112 | 4,4'-DDT | 11.0333 | 1.495 | 18099.3 | 1.026 | VV | 0.084 | 3595.59 | 0.550 |
| 54 | 9.291 | Endrin aldehyde | 9.2336 | 1.251 | 8235.4 | 0.467 | VV | 0.048 | 2831.60 | 0.433 |
| 55 | 9.384 | | 0.0000 | 0.000 | 3867.8 | 0.219 | VV | 0.032 | 1984.13 | 0.304 |
| 56 | 9.420 | | 0.0000 | 0.000 | 9965.2 | 0.565 | VB | 0.050 | 3353.12 | 0.513 |

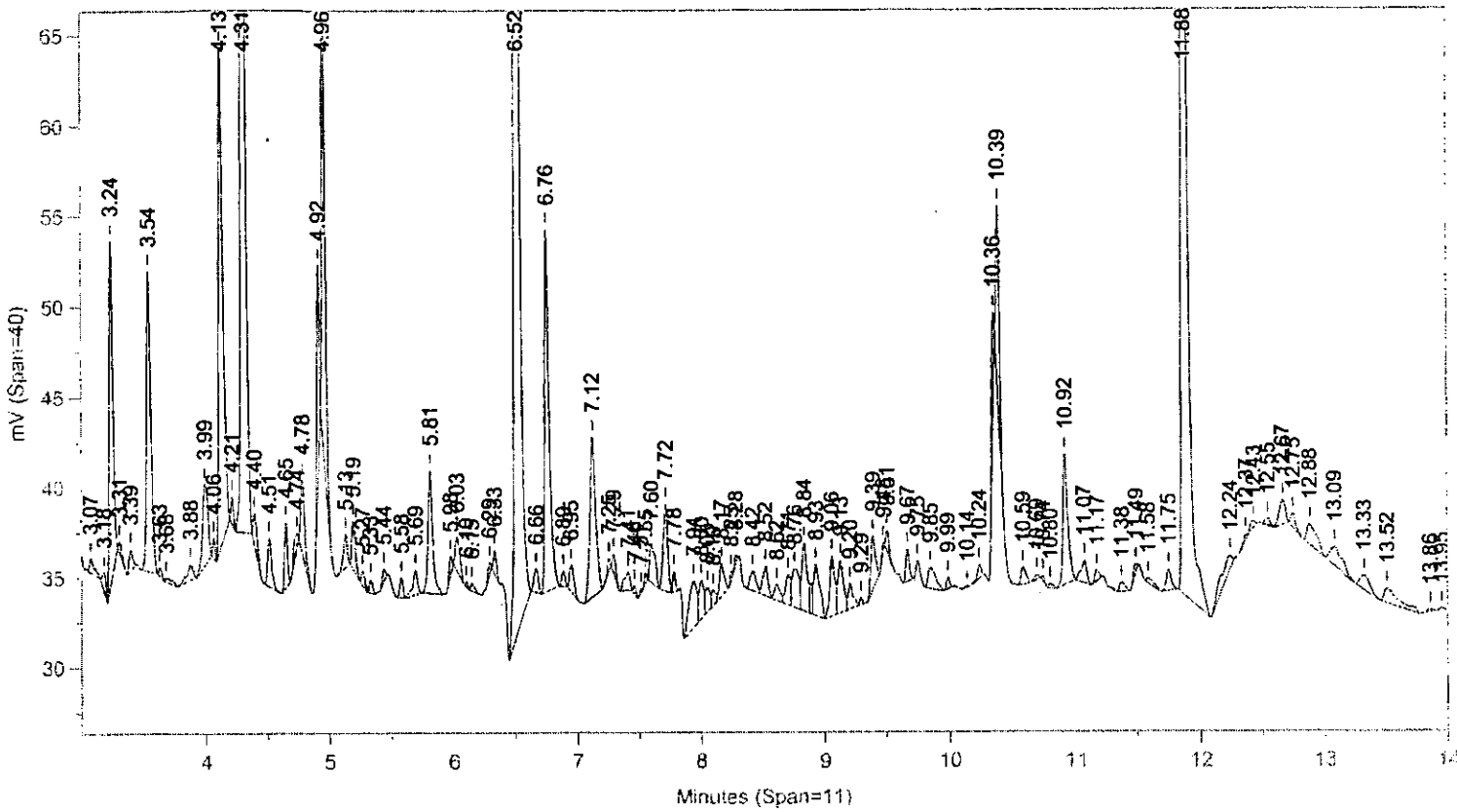
8582

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.574 | | 0.0000 | 0.000 | 3134.8 | 0.178 | BB | 0.060 | 867.14 | 0.133 |
| 58 | 9.771 | | 0.0000 | 0.000 | 5008.6 | 0.284 | BB | 0.088 | 949.62 | 0.145 |
| 59 | 9.919 | | 0.0000 | 0.000 | 49666.5 | 2.817 | BB | 0.049 | 16748.38 | 2.563 |
| 60 | 10.030 | | 0.0000 | 0.000 | 364.0 | 0.021 | BB | 0.026 | 237.60 | 0.036 |
| 61 | 10.082 | | 0.0000 | 0.000 | 1785.8 | 0.101 | BB | 0.047 | 626.63 | 0.096 |
| 62 | 10.196 | | 0.0000 | 0.000 | 2680.2 | 0.152 | BB | 0.055 | 817.82 | 0.125 |
| 63 | 10.312 | Endrin ketone | 12.0452 | 1.632 | 11790.3 | 0.669 | BB | 0.045 | 4352.96 | 0.666 |
| 64 | 10.372 | | 0.0000 | 0.000 | 409.9 | 0.023 | BB | 0.021 | 332.83 | 0.051 |
| 65 | 10.420 | | 0.0000 | 0.000 | 11096.4 | 0.629 | BB | 0.031 | 6047.93 | 0.926 |
| 66 | 10.572 | | 0.0000 | 0.000 | 825.7 | 0.047 | BB | 0.042 | 327.09 | 0.050 |
| 67 | 10.685 | | 0.0000 | 0.000 | 3377.8 | 0.192 | BB | 0.052 | 1080.06 | 0.165 |
| 68 | 10.913 | | 0.0000 | 0.000 | 3672.5 | 0.208 | BB | 0.058 | 1051.18 | 0.161 |
| 69 | 11.000 | | 0.0000 | 0.000 | 652.1 | 0.037 | BB | 0.043 | 255.07 | 0.039 |
| 70 | 11.134 | | 0.0000 | 0.000 | 2839.6 | 0.161 | BB | 0.066 | 714.10 | 0.109 |
| 71 | 11.394 | | 0.0000 | 0.000 | 3400.6 | 0.193 | BB | 0.077 | 736.08 | 0.113 |
| 72 | 11.518 | | 0.0000 | 0.000 | 1258.7 | 0.071 | BB | 0.034 | 611.88 | 0.094 |
| 73 | 11.608 | | 0.0000 | 0.000 | 737.5 | 0.042 | BB | 0.035 | 351.94 | 0.054 |
| 74 | 11.684 | | 0.0000 | 0.000 | 422.2 | 0.024 | BB | 0.032 | 222.93 | 0.034 |
| 75 | 11.802 | | 0.0000 | 0.000 | 2051.8 | 0.116 | BB | 0.108 | 317.05 | 0.049 |
| 76 | 11.870 | | 0.0000 | 0.000 | 3522.3 | 0.200 | BB | 0.058 | 1019.16 | 0.156 |
| 77 | 12.030 | DCB | 238.5836 | 32.322 | 231655.7 | 13.138 | BB | 0.045 | 85951.23 | 13.154 |
| 78 | 12.238 | | 0.0000 | 0.000 | 8059.6 | 0.457 | BB | 0.093 | 1449.97 | 0.222 |
| 79 | 12.417 | | 0.0000 | 0.000 | 2112.2 | 0.120 | BB | 0.063 | 556.91 | 0.085 |
| 80 | 12.531 | | 0.0000 | 0.000 | 1791.3 | 0.102 | BB | 0.046 | 650.61 | 0.100 |
| 81 | 12.683 | | 0.0000 | 0.000 | 8019.8 | 0.455 | BB | 0.251 | 532.60 | 0.082 |
| 82 | 13.084 | | 0.0000 | 0.000 | 434.8 | 0.025 | BB | 0.047 | 155.70 | 0.024 |
| 83 | 13.237 | | 0.0000 | 0.000 | 187.3 | 0.011 | BB | 0.037 | 85.05 | 0.013 |
| 84 | 13.344 | | 0.0000 | 0.000 | 2559.2 | 0.145 | BB | 0.087 | 489.42 | 0.075 |
| 85 | 13.494 | | 0.0000 | 0.000 | 544.6 | 0.031 | BB | 0.057 | 157.93 | 0.024 |
| 86 | 13.664 | | 0.0000 | 0.000 | 724.1 | 0.041 | BB | 0.080 | 150.57 | 0.023 |
| 87 | 13.798 | | 0.0000 | 0.000 | 1078.7 | 0.061 | BB | 0.053 | 342.09 | 0.052 |

Total Area = 1763306.0, Total Amount = 738.153, Total Height = 653426.0, Sample Units = PPB

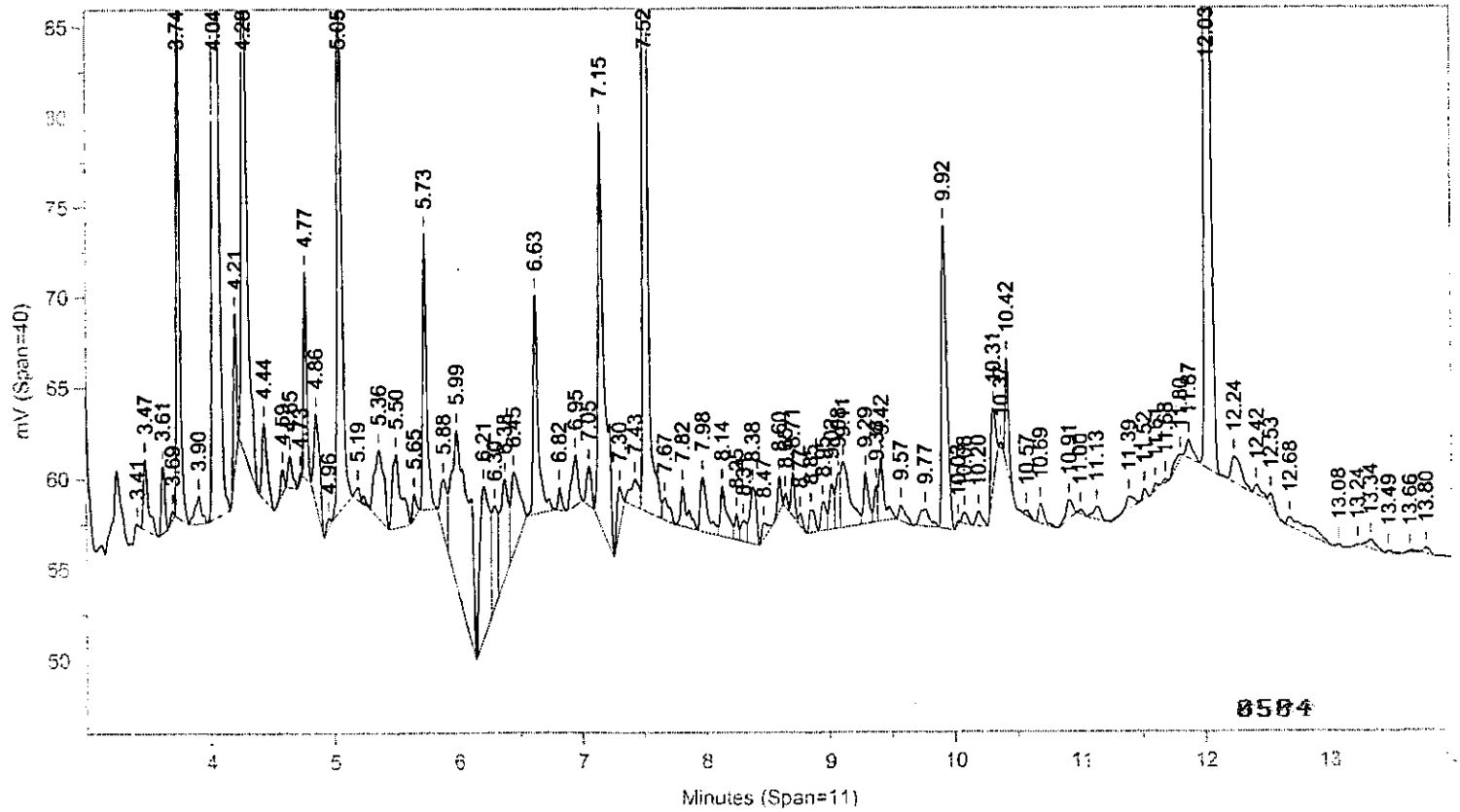
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.54R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 1:14:30 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.54R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 1:14:30 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 30
Analyst: 120

Dilution Factor: 10

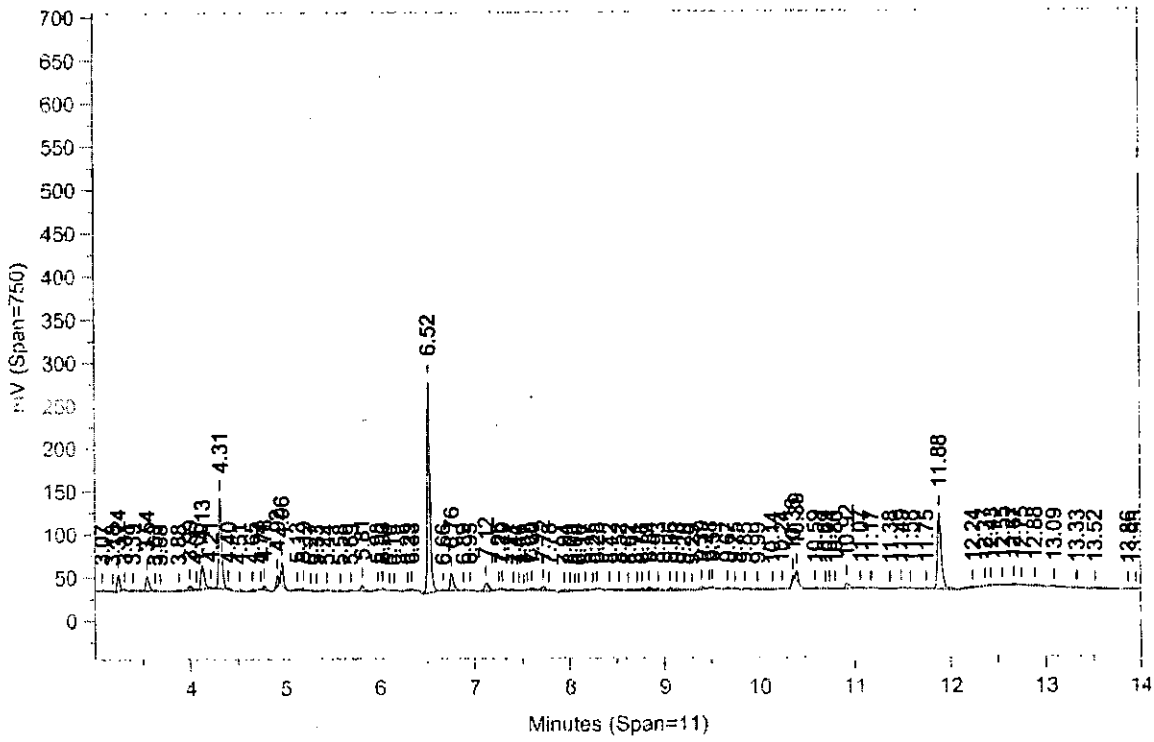
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.313 | 105577 | 8.531 | TCX | 4.038 | 137472 | 8.167 | TCX |
| 4.918 | 11513 | .546 | Hcb | 4.728 | 386 | .012 | Hcb |
| 5.193 | 2700 | .175 | alpha-BHC | 4.96 | 540 | .021 | alpha-BHC |
| 6.026 | 1907 | .131 | delta-BHC | 5.987 | 8576 | .384 | delta-BHC |
| 6.331 | 1288 | .079 | Heptachlor | . | 0 | . | Heptachlor |
| 6.755 | 20144 | 1.602 | Aldrin | . | 0 | . | Aldrin |
| 7.599 | 2129 | .166 | Hept. epoxide | 7.301 | 2324 | .13 | Hept. epoxide |
| 7.781 | 1136 | .092 | g. Chlordane | 7.518 | 103320 | 5.942 | g. Chlordane |
| 7.551 | 587 | .075 | o,p-DDE | . | 0 | . | o,p-DDE |
| 8.098 | 882 | .075 | Endosulfan I | 7.816 | 2182 | .138 | Endosulfan I |
| 7.943 | 2604 | .198 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.005 | 2154 | .204 | 4,4'-DDE | 7.98 | 3016 | .216 | 4,4'-DDE |
| 8.246 | 486 | .073 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.422 | 1103 | .101 | Dieldrin | . | 0 | . | Dieldrin |
| . | 0 | . | o,p-DDT | 8.6 | 1924 | .21 | o,p-DDT |
| 8.836 | 3825 | .448 | 4,4'-DDD | 8.708 | 2404 | .245 | 4,4'-DDD |
| 8.758 | 2153 | .215 | Endrin | . | 0 | . | Endrin |
| 9.061 | 3357 | .335 | Endosulfan II | 8.853 | 1280 | .11 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.112 | 3596 | .368 | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.291 | 2832 | .308 | Endrin aldehyde |
| 10.141 | 92 | .01 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.312 | 4353 | .402 | Endrin ketone |
| 11.884 | 88487 | 8.94 | DCB | 12.03 | 85951 | 7.953 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.54A
Area File: C:\CPWIN\DATA1\3D16082B.54A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:23:32 PM
File Reported On: 3/26/2004 at 3:23:39 PM

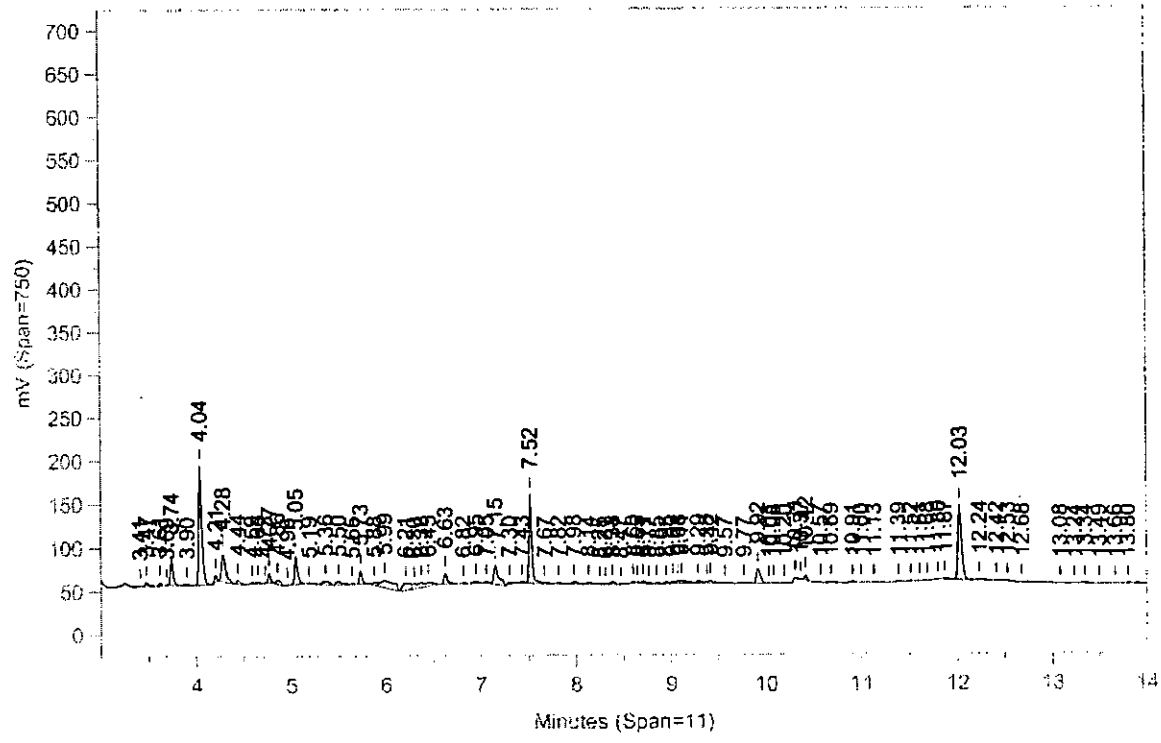
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.54R




C:\CPWIN\DATA1\3D16082B.54R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241638 F 5GP23 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16–H5262A
Result file : 3D16082.55R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 90.2% Conc.: 8.677379
%SSR(DCB) : 91.1% Conc.: 8.873139

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.32 | 4.35 | 107391 | 8.677379 |
| **Hcb** | 4.88 | 4.92 | 4.94 | 21589 | 1.024747 |
| **alpha-BHC** | 5.14 | 5.14 | 5.20 | 912 | 0.059145 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 747 | 0.051136 |
| **Heptachlor** | 6.29 | 6.29 | 6.35 | 636 | 0.039090 |
| **o,p-DDE** | 7.53 | 7.56 | 7.59 | 687 | 0.087388 |
| **a. Chlordane** | 7.90 | 7.95 | 7.96 | 3707 | 0.281584 |
| **4,4'-DDE** | 7.99 | 8.01 | 8.05 | 3897 | 0.369713 |
| **o,p-DDD** | 8.22 | 8.25 | 8.28 | 2943 | 0.442414 |
| **Endrin** | 8.72 | 8.77 | 8.78 | 3366 | 0.335556 |
| **Endosulfan II** | 9.02 | 9.07 | 9.08 | 1540 | 0.153714 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 174 | 0.021106 |
| **Methoxychlor** | 9.75 | 9.77 | 9.81 | 427 | 0.086885 |
| **Mirex** | 9.99 | 9.99 | 10.05 | 659 | 0.078033 |
| **DCB** | 11.86 | 11.89 | 11.92 | 87821 | 8.873139 |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16–H5262B
Result file : 3D16082B.55R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 86.5% Conc.: 8.316981
%SSR(DCB) : 85.3% Conc.: 8.30716

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 139996 | 8.316981 |
| **alpha-BHC** | 4.91 | 4.96 | 4.97 | 265 | 0.010280 |
| **gamma-BHC** | 5.43 | 5.49 | 5.49 | 366 | 0.015330 |
| **beta-BHC** | 5.56 | 5.58 | 5.62 | 517 | 0.043209 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 5429 | 0.242862 |
| **Hept. epoxide** | 7.27 | 7.30 | 7.33 | 2914 | 0.163431 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 140632 E | 8.087619 |
| **Endosulfan I** | 7.79 | 7.82 | 7.85 | 1228 | 0.077641 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 2449 | 0.175232 |
| **o,p-DDT** | 8.58 | 8.60 | 8.64 | 554 | 0.060475 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 25055 | 2.558254 |
| **Endosulfan II** | 8.82 | 8.87 | 8.88 | 1471 | 0.126583 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 2727 | 0.278932 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 1869 | 0.203160 |
| **Endo. sulfate** | 9.60 | 9.64 | 9.66 | 2799 | 0.288888 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 7602 | 0.701154 |
| **DCB** | 12.01 | 12.03 | 12.07 | 89781 | 8.307160 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 8.677379 | | | | 4.24 | |
| Hcb | | | | | | | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | 8587 |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:34:11

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4241638** F 5GP23 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16-H5262A
Result file : 3D16082.55R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16-H5262B
Result file : 3D16082B.55R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 8.873139 | | | | 6.59 | |

Units: ug/kg Y

Reviewed by: [signature] Date: 3/28/04
Verified by: [signature] Date: 3/29/04

3508

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:34:11

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241638 F 5GP23 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 13:35:03 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.55R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 90.2% | Conc: | 8.677379 |
| %SSR(DCB) | 91.1% | Conc: | 8.873139 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 13:35:03 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.55R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 86.5% | Conc: | 8.316981 |
| %SSR(DCB) | 85.3% | Conc: | 8.30716 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M. E. M. 1340 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

8589

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name:** 4241638 F 5GP23 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16--H5262A
Result file : 3D16082.55R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 90.2% Conc.: 8.677379
%SSR(DCB) : 91.1% Conc.: 8.873139

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 36.68 | |
| 5.35 | 5.40 | 5.41 | 832.357971 | 1.962705 | | | 2 |
| 6.01 | 6.03 | 6.07 | 747.055542 | 2.09821 | | | 3 |
| 6.20 | 6.20 | 6.26 | 397.390594 | 1.056754 | | | 4 |
| 6.29 | 6.29 | 6.35 | 636.265869 | 2.610649 | | | 5 |
| 6.87 | 6.90 | 6.93 | 389.604218 | 3.218827 | | | 6 |
| Height Summation | | | 3002.674194 | | | | |
| Amount Avg CF: | | | 2.189429 | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 117.90 | |
| 4.55 | 4.56 | 4.61 | 697.57428 | 4.265335 | | | 1 |
| 4.77 | 4.78 | 4.83 | 4454.546875 | 47.01865 | | | 2 |
| Height Summation | | | 5152.121155 | | | | |
| Amount Avg CF: | | | 25.641993 | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 35.91 | |
| 5.35 | 5.40 | 5.41 | 832.357971 | 4.302926 | | | 2 |
| 6.01 | 6.03 | 6.07 | 747.055542 | 4.55744 | | | 3 |
| 6.19 | 6.20 | 6.25 | 397.390594 | 2.252398 | | | 4 |
| 6.28 | 6.29 | 6.34 | 636.265869 | 5.626439 | | | 5 |
| 6.87 | 6.90 | 6.93 | 389.604218 | 6.799376 | | | 6 |
| Height Summation | | | 3002.674194 | | | | |
| Amount Avg CF: | | | 4.707716 | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 31.80 | |
| 5.35 | 5.40 | 5.41 | 832.357971 | 2.241408 | | | 2 |
| 6.01 | 6.03 | 6.07 | 747.055542 | 2.443754 | | | 3 |
| 6.19 | 6.20 | 6.25 | 397.390594 | 1.224813 | | | 4 |
| 6.28 | 6.29 | 6.34 | 636.265869 | 3.077986 | | | 5 |
| 6.87 | 6.90 | 6.93 | 389.604218 | 3.108379 | | | 6 |
| Height Summation | | | 3002.674194 | | | | |
| Amount Avg CF: | | | 2.419268 | Linear: | | | |
| **Aroclor-1248** | | | | | 6 | 101.26 | |
| 5.35 | 5.40 | 5.41 | 832.357971 | 4.577294 | | | 1 |
| 6.01 | 6.03 | 6.07 | 747.055542 | 5.39702 | | | 2 |
| 6.75 | 6.80 | 6.81 | 1274.216309 | 2.905389 | | | 3 |
| 7.32 | 7.37 | 7.38 | 174.401352 | 0.673898 | | | 4 |
| 7.62 | 7.63 | 7.68 | 2509.782715 | 7.526375 | | | 5 |
| 8.14 | 8.17 | 8.20 | 5015.635742 | 20.402448 | | | 6 |
| Height Summation | | | 10553.449631 | | | | |
| Amount Avg CF: | | | 6.913737 | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 33.18 | |
| 7.60 | 7.63 | 7.66 | 2509.782715 | 4.974753 | | | 2 |
| 8.13 | 8.17 | 8.19 | 5015.635742 | 7.624957 | | | 3 |
| 8.50 | 8.52 | 8.56 | 5834.80957 | 11.928613 | | | 4 |
| 8.73 | 8.77 | 8.79 | 3366.102295 | 10.863581 | | | 5 |
| 9.10 | 9.13 | 9.16 | 3512.934082 | 7.266656 | | | 6 |
| Height Summation | | | 20239.264404 | | | | |
| Amount Avg CF: | | | 8.531712 | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16--H5262B
Result file : 3D16082B.55R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 86.5% Conc.: 8.316981
%SSR(DCB) : 85.3% Conc.: 8.30716

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 153.27 | |
| 4.72 | 4.77 | 4.78 | 11370.70410: | 32.286883 | | | 1 |
| 5.29 | 5.33 | 5.35 | 583.435791 | 1.176852 | | | 2 |
| 5.91 | 5.94 | 5.97 | 1560.326782 | 1.548595 | | | 3 |
| 6.09 | 6.12 | 6.15 | 2211.744873 | 4.247492 | | | 4 |
| Height Summation | | | 15726.211548 | | | | |
| Amount Avg CF: | | | 9.814956 | Linear: | | | |
| **Aroclor-1221** | | | | | 3 | 72.83 | |
| 4.44 | 4.44 | 4.50 | 994.848083 | 4.398382 | | | 1 |
| 4.64 | 4.65 | 4.70 | 1774.877686 | 11.908734 | | | 2 |
| 4.72 | 4.77 | 4.78 | 11370.70410: | 23.639472 | | | 3 |
| Height Summation | | | 14140.429871 | | | | |
| Amount Avg CF: | | | 13.315529 | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 113.28 | |
| 4.72 | 4.77 | 4.78 | 11370.70410: | 29.38736 | | | 1 |
| 5.29 | 5.33 | 5.35 | 583.435791 | 2.565342 | | | 2 |
| 5.91 | 5.94 | 5.97 | 1560.326782 | 3.287771 | | | 3 |
| 6.09 | 6.12 | 6.15 | 2211.744873 | 9.06936 | | | 4 |
| Height Summation | | | 15726.211548 | | | | |
| Amount Avg CF: | | | 11.077458 | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 150.85 | |
| 4.72 | 4.77 | 4.78 | 11370.70410: | 34.785561 | | | 1 |
| 5.29 | 5.33 | 5.35 | 583.435791 | 1.330314 | | | 2 |
| 5.91 | 5.94 | 5.97 | 1560.326782 | 1.790978 | | | 3 |
| 6.09 | 6.12 | 6.15 | 2211.744873 | 4.881469 | | | 4 |
| Height Summation | | | 15726.211548 | | | | |
| Amount Avg CF: | | | 10.697081 | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 90.88 | |
| 5.29 | 5.33 | 5.35 | 583.435791 | 2.621712 | | | 1 |
| 5.91 | 5.94 | 5.97 | 1560.326782 | 3.083955 | | | 2 |
| 8.11 | 8.14 | 8.17 | 3251.94458 | 12.283077 | | | 6 |
| Height Summation | | | 5395.707153 | | | | |
| Amount Avg CF: | | | 5.996248 | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 212.79 | |
| 6.35 | 6.38 | 6.41 | 2997.537354 | 8.816079 | | | 1 |
| E 7.50 | 7.52 | 7.56 | 140632.2187! | 249.088218 | | | 2 |
| 8.10 | 8.14 | 8.16 | 3251.94458 | 4.568133 | | | 3 |
| 8.39 | 8.39 | 8.45 | 2855.110352 | 8.020153 | | | 4 |
| 8.84 | 8.87 | 8.90 | 1470.935181 | 3.976317 | | | 5 |
| 9.08 | 9.11 | 9.14 | 2726.999023 | 5.258589 | | | 6 |
| Height Summation | | | 153934.745240 | | | | |
| Amount Avg CF: | | | 46.621248 | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 63.26 | |
| 8.36 | 8.39 | 8.42 | 2855.110352 | 4.872859 | | | 1 |
| 8.62 | 8.65 | 8.68 | 1269.257446 | 1.793367 | | | 2 |
| 8.83 | 8.87 | 8.89 | 1470.935181 | 3.235873 | | | 3 |
| 9.08 | 9.11 | 9.14 | 2726.999023 | 4.109049 | | | 4 |
| 9.58 | 9.58 | 9.64 | 320.195587 | 0.744392 | | | 5 |
| 9.88 | 9.92 | 9.94 | 7097.30957 | 7.289264 | | | 6 |
| Height Summation | | | 15739.807159 | 8518 | | | |
| Amount Avg CF: | | | 3.674134 | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:34:29

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241638 F 5GP23 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16-H5262A
Result file : 3D16082.55R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **6** | **88.44** | |
| 8.38 | 8.40 | 8.44 | 3364.795166 | 6.233991 | | | 1 |
| 8.73 | 8.77 | 8.79 | 3366.102295 | 5.124042 | | | 2 |
| 9.10 | 9.13 | 9.16 | 3512.934082 | 5.459013 | | | 3 |
| 9.57 | 9.59 | 9.63 | 173.700851 | 0.53737 | | | 4 |
| 9.96 | 9.99 | 10.02 | 659.202759 | 0.757495 | | | 5 |
| 11.14 | 11.17 | 11.20 | 136.223465 | 0.572433 | | | 6 |
| Height Summation | | | **11212.958618** | | | | |
| Amount Avg CF: | | | **3.114057** | Linear: | | | |
| **Chlordane** | | | | | **5** | **64.76** | |
| 6.18 | 6.20 | 6.24 | 397.390594 | 0.772066 | | | 1 |
| 6.29 | 6.29 | 6.35 | 636.265869 | 0.936269 | | | 2 |
| 6.91 | 6.95 | 6.97 | 1931.114502 | 2.952221 | | | 3 |
| 7.72 | 7.72 | 7.78 | 5418.863281 | 4.390632 | | | 4 |
| 7.89 | 7.95 | 7.95 | 3707.087646 | 2.56935 | | | 5 |
| Height Summation | | | **12090.721892** | | | | |
| Amount Avg CF: | | | **2.324108** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **13.74** | |
| 8.61 | 8.62 | 8.67 | 2695.720215 | 24.803285 | | | 1 |
| 8.75 | 8.77 | 8.81 | 3366.102295 | 30.141141 | | | 2 |
| Height Summation | | | **6061.822510** | | | | |
| Amount Avg CF: | | | **27.472213** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:35:03
Instrument : CP16-H5262B
Result file : 3D16082B.55R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **2** | **138.29** | |
| E 7.51 | 7.52 | 7.57 | 140632.2187! | 78.800744 | | | 4 |
| 7.64 | 7.66 | 7.70 | 1130.142334 | 0.882401 | | | 5 |
| Height Summation | | | **141762.361084** | | | | |
| Amount Avg CF: | | | **39.841573** | Linear: | | | |
| **Toxaphene** | | | | | **5** | **81.17** | |
| 8.12 | 8.14 | 8.18 | 3251.94458 | 27.015789 | | | 1 |
| 8.91 | 8.96 | 8.97 | 1083.757324 | 3.619691 | | | 3 |
| 9.25 | 9.29 | 9.31 | 1869.038086 | 8.618957 | | | 4 |
| 9.91 | 9.92 | 9.97 | 7097.30957 | 32.040872 | | | 5 |
| 10.41 | 10.42 | 10.47 | 6661.519531 | 55.085748 | | | 6 |
| Height Summation | | | **19963.569091** | | | | |
| Amount Avg CF: | | | **25.276211** | Linear: | | | |

9511

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:34:29

Sample Name: **4241638F AB5GP23 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 01:49:03pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.55R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.044 | | 0.0000 | 0.000 | 2533.4 | 0.136 | BB | 0.033 | 1277.66 | 0.161 |
| 2 | 3.107 | | 0.0000 | 0.000 | 1666.0 | 0.089 | BB | 0.034 | 815.16 | 0.103 |
| 3 | 3.179 | | 0.0000 | 0.000 | 4455.8 | 0.239 | BB | 0.033 | 2224.14 | 0.281 |
| 4 | 3.246 | | 0.0000 | 0.000 | 52432.9 | 2.815 | BB | 0.041 | 21531.73 | 2.717 |
| 5 | 3.392 | | 0.0000 | 0.000 | 504.5 | 0.027 | BB | 0.022 | 388.40 | 0.049 |
| 6 | 3.436 | | 0.0000 | 0.000 | 1102.8 | 0.059 | BB | 0.029 | 643.00 | 0.081 |
| 7 | 3.545 | | 0.0000 | 0.000 | 22089.0 | 1.186 | BB | 0.037 | 10009.20 | 1.263 |
| 8 | 3.627 | | 0.0000 | 0.000 | 1021.4 | 0.055 | BB | 0.029 | 578.15 | 0.073 |
| 9 | 3.710 | | 0.0000 | 0.000 | 2111.8 | 0.113 | BB | 0.046 | 759.80 | 0.096 |
| 10 | 3.874 | | 0.0000 | 0.000 | 2112.8 | 0.113 | BB | 0.054 | 648.89 | 0.082 |
| 11 | 3.991 | | 0.0000 | 0.000 | 9748.6 | 0.523 | BB | 0.055 | 2967.56 | 0.374 |
| 12 | 4.068 | | 0.0000 | 0.000 | 2409.4 | 0.129 | BB | 0.026 | 1552.57 | 0.196 |
| 13 | 4.135 | | 0.0000 | 0.000 | 2377.0 | 0.128 | BB | 0.061 | 651.43 | 0.082 |
| 14 | 4.316 | TCX | 260.3214 | 42.162 | 224337.7 | 12.042 | BB | 0.035 | 107391.10 | 13.550 |
| 15 | 4.398 | | 0.0000 | 0.000 | 1090.0 | 0.059 | BB | 0.030 | 607.72 | 0.077 |
| 16 | 4.518 | | 0.0000 | 0.000 | 684.4 | 0.037 | BB | 0.024 | 471.60 | 0.060 |
| 17 | 4.557 | | 0.0000 | 0.000 | 1047.5 | 0.056 | BB | 0.025 | 697.57 | 0.088 |
| 18 | 4.654 | | 0.0000 | 0.000 | 4106.1 | 0.220 | BB | 0.029 | 2337.01 | 0.295 |
| 19 | 4.782 | | 0.0000 | 0.000 | 14443.7 | 0.775 | BB | 0.054 | 4454.55 | 0.562 |
| 20 | 4.921 | Hcb | 30.7424 | 4.979 | 38040.7 | 2.042 | BB | 0.029 | 21588.56 | 2.724 |
| 21 | 5.066 | | 0.0000 | 0.000 | 208.6 | 0.011 | BB | 0.022 | 161.48 | 0.020 |
| 22 | 5.136 | alpha-BHC | 1.7743 | 0.287 | 1892.2 | 0.102 | BB | 0.035 | 911.93 | 0.115 |
| 23 | 5.197 | | 0.0000 | 0.000 | 3257.4 | 0.175 | BB | 0.033 | 1665.43 | 0.210 |
| 24 | 5.275 | | 0.0000 | 0.000 | 1084.0 | 0.058 | BB | 0.033 | 551.03 | 0.070 |
| 25 | 5.337 | | 0.0000 | 0.000 | 446.6 | 0.024 | BB | 0.026 | 281.15 | 0.035 |
| 26 | 5.404 | | 0.0000 | 0.000 | 1876.0 | 0.101 | BB | 0.038 | 832.36 | 0.105 |
| 27 | 5.493 | | 0.0000 | 0.000 | 1158.1 | 0.062 | BB | 0.054 | 358.25 | 0.045 |
| 28 | 5.580 | | 0.0000 | 0.000 | 1461.1 | 0.078 | BB | 0.029 | 839.72 | 0.106 |
| 29 | 5.693 | | 0.0000 | 0.000 | 3434.6 | 0.184 | BB | 0.068 | 840.31 | 0.106 |
| 30 | 5.816 | | 0.0000 | 0.000 | 17548.4 | 0.942 | BB | 0.042 | 7003.17 | 0.884 |
| 31 | 5.978 | | 0.0000 | 0.000 | 1514.2 | 0.081 | BB | 0.028 | 916.79 | 0.116 |
| 32 | 6.029 | delta-BHC | 1.5341 | 0.248 | 1413.7 | 0.076 | BB | 0.032 | 747.06 | 0.094 |
| 33 | 6.203 | | 0.0000 | 0.000 | 668.9 | 0.036 | BB | 0.028 | 397.39 | 0.050 |
| 34 | 6.294 | Heptachlor | 1.1727 | 0.190 | 1193.6 | 0.064 | BB | 0.031 | 636.27 | 0.080 |
| 35 | 6.393 | | 0.0000 | 0.000 | 2429.6 | 0.130 | BB | 0.041 | 997.93 | 0.126 |
| 36 | 6.520 | | 0.0000 | 0.000 | 648623.8 | 34.818 | BB | 0.032 | 336677.00 | 42.481 |
| 37 | 6.670 | | 0.0000 | 0.000 | 2894.8 | 0.155 | BB | 0.041 | 1173.81 | 0.148 |
| 38 | 6.800 | | 0.0000 | 0.000 | 4768.7 | 0.256 | BB | 0.062 | 1274.22 | 0.161 |
| 39 | 6.895 | | 0.0000 | 0.000 | 607.3 | 0.033 | BB | 0.026 | 389.60 | 0.049 |
| 40 | 6.952 | | 0.0000 | 0.000 | 4792.5 | 0.257 | BB | 0.041 | 1931.11 | 0.244 |
| 41 | 7.126 | | 0.0000 | 0.000 | 25019.9 | 1.343 | BB | 0.048 | 8665.20 | 1.093 |
| 42 | 7.294 | | 0.0000 | 0.000 | 5103.3 | 0.274 | BB | 0.041 | 2067.28 | 0.261 |
| 43 | 7.366 | | 0.0000 | 0.000 | 320.6 | 0.017 | BB | 0.031 | 174.40 | 0.022 |
| 44 | 7.419 | | 0.0000 | 0.000 | 1758.1 | 0.094 | BB | 0.052 | 566.44 | 0.071 |
| 45 | 7.558 | o,p-DDE | 2.6216 | 0.425 | 1423.7 | 0.076 | BB | 0.035 | 686.64 | 0.087 |
| 46 | 7.634 | | 0.0000 | 0.000 | 6735.7 | 0.362 | BV | 0.045 | 2509.78 | 0.317 |
| 47 | 7.721 | | 0.0000 | 0.000 | 16088.0 | 0.864 | VV | 0.049 | 5418.86 | 0.684 |
| 48 | 7.783 | | 0.0000 | 0.000 | 20933.1 | 1.124 | VB | 0.057 | 6150.28 | 0.776 |
| 49 | 7.948 | a. Chlordane | 8.4475 | 1.368 | 17339.7 | 0.931 | BV | 0.078 | 3707.09 | 0.468 |
| 50 | 8.008 | 4,4'-DDE | 11.0914 | 1.796 | 11581.6 | 0.622 | VV | 0.050 | 3896.97 | 0.492 |
| 51 | 8.062 | | 0.0000 | 0.000 | 17466.1 | 0.938 | VV | 0.084 | 3454.60 | 0.436 |
| 52 | 8.169 | | 0.0000 | 0.000 | 19715.5 | 1.058 | VV | 0.066 | 5015.64 | 0.633 |
| 53 | 8.247 | o,p-DDD | 13.2724 | 2.150 | 7266.5 | 0.390 | VV | 0.041 | 2942.55 | 0.371 |
| 54 | 8.301 | | 0.0000 | 0.000 | 16008.1 | 0.859 | VV | 0.089 | 2998.83 | 0.378 |
| 55 | 8.404 | | 0.0000 | 0.000 | 15396.2 | 0.826 | VV | 0.076 | 3364.80 | 0.425 |
| 56 | 8.522 | | 0.0000 | 0.000 | 27652.4 | 1.484 | VV | 0.079 | 5834.81 | 0.736 |

8512

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.618 | | 0.0000 | 0.000 | 10109.5 | 0.543 | VV | 0.063 | 2695.72 | 0.340 |
| 58 | 8.687 | | 0.0000 | 0.000 | 6997.2 | 0.376 | VV | 0.059 | 1976.79 | 0.249 |
| 59 | 8.769 | Endrin | 10.0667 | 1.630 | 12837.5 | 0.689 | VV | 0.064 | 3366.10 | 0.425 |
| 60 | 8.841 | | 0.0000 | 0.000 | 85028.6 | 4.564 | VB | 0.051 | 27956.77 | 3.528 |
| 61 | 9.069 | Endosulfan II | 4.6114 | 0.747 | 5617.7 | 0.302 | BV | 0.061 | 1540.02 | 0.194 |
| 62 | 9.133 | | 0.0000 | 0.000 | 11432.6 | 0.614 | VV | 0.054 | 3512.93 | 0.443 |
| 63 | 9.248 | | 0.0000 | 0.000 | 1329.2 | 0.071 | VV | 0.046 | 477.14 | 0.060 |
| 64 | 9.335 | | 0.0000 | 0.000 | 182.4 | 0.010 | VB | 0.027 | 111.02 | 0.014 |
| 65 | 9.400 | | 0.0000 | 0.000 | 2463.6 | 0.132 | BB | 0.041 | 999.09 | 0.126 |
| 66 | 9.482 | | 0.0000 | 0.000 | 5811.4 | 0.312 | BB | 0.053 | 1824.79 | 0.230 |
| 67 | 9.595 | Endrin aldehyde | 0.6332 | 0.103 | 254.5 | 0.014 | BB | 0.024 | 173.70 | 0.022 |
| 68 | 9.668 | | 0.0000 | 0.000 | 678.2 | 0.036 | BB | 0.030 | 371.58 | 0.047 |
| 69 | 9.714 | | 0.0000 | 0.000 | 210.6 | 0.011 | BB | 0.021 | 166.43 | 0.021 |
| 70 | 9.769 | Methoxychlor | 2.6065 | 0.422 | 969.9 | 0.052 | BB | 0.038 | 427.29 | 0.054 |
| 71 | 9.869 | | 0.0000 | 0.000 | 1399.8 | 0.075 | BB | 0.065 | 361.42 | 0.046 |
| 72 | 9.989 | Mirex | 2.3410 | 0.379 | 1390.5 | 0.075 | BB | 0.035 | 659.20 | 0.083 |
| 73 | 10.079 | | 0.0000 | 0.000 | 1286.9 | 0.069 | BB | 0.029 | 729.59 | 0.092 |
| 74 | 10.248 | | 0.0000 | 0.000 | 2551.5 | 0.137 | BB | 0.083 | 514.36 | 0.065 |
| 75 | 10.401 | | 0.0000 | 0.000 | 70224.4 | 3.770 | BB | 0.050 | 23236.75 | 2.932 |
| 76 | 10.611 | | 0.0000 | 0.000 | 740.3 | 0.040 | BB | 0.037 | 337.42 | 0.043 |
| 77 | 10.704 | | 0.0000 | 0.000 | 4310.5 | 0.231 | BB | 0.075 | 954.90 | 0.120 |
| 78 | 10.807 | | 0.0000 | 0.000 | 211.4 | 0.011 | BB | 0.036 | 96.72 | 0.012 |
| 79 | 10.926 | | 0.0000 | 0.000 | 17718.5 | 0.951 | BB | 0.039 | 7541.32 | 0.952 |
| 80 | 11.059 | | 0.0000 | 0.000 | 41434.8 | 2.224 | BB | 0.040 | 17429.21 | 2.199 |
| 81 | 11.174 | | 0.0000 | 0.000 | 216.7 | 0.012 | BB | 0.027 | 136.22 | 0.017 |
| 82 | 11.226 | | 0.0000 | 0.000 | 507.7 | 0.027 | BB | 0.031 | 269.31 | 0.034 |
| 83 | 11.375 | | 0.0000 | 0.000 | 1872.6 | 0.101 | BB | 0.046 | 678.45 | 0.086 |
| 84 | 11.493 | | 0.0000 | 0.000 | 216.8 | 0.012 | BB | 0.034 | 104.94 | 0.013 |
| 85 | 11.587 | | 0.0000 | 0.000 | 607.6 | 0.033 | BB | 0.032 | 317.72 | 0.040 |
| 86 | 11.703 | | 0.0000 | 0.000 | 1196.1 | 0.064 | BB | 0.041 | 481.34 | 0.061 |
| 87 | 11.887 | DCB | 266.1942 | 43.113 | 233394.1 | 12.528 | BB | 0.044 | 87821.29 | 11.081 |
| 88 | 11.990 | | 0.0000 | 0.000 | 1921.5 | 0.103 | BB | 0.029 | 1108.87 | 0.140 |
| 89 | 12.240 | | 0.0000 | 0.000 | 4491.4 | 0.241 | BB | 0.103 | 729.84 | 0.092 |
| 90 | 12.368 | | 0.0000 | 0.000 | 745.2 | 0.040 | BB | 0.035 | 352.30 | 0.044 |
| 91 | 12.554 | | 0.0000 | 0.000 | 8754.0 | 0.470 | BB | 0.163 | 894.27 | 0.113 |
| 92 | 12.671 | | 0.0000 | 0.000 | 3672.6 | 0.197 | BB | 0.053 | 1158.00 | 0.146 |
| 93 | 12.751 | | 0.0000 | 0.000 | 1231.0 | 0.066 | BB | 0.042 | 489.52 | 0.062 |
| 94 | 12.890 | | 0.0000 | 0.000 | 6232.0 | 0.335 | BB | 0.100 | 1038.01 | 0.131 |
| 95 | 13.091 | | 0.0000 | 0.000 | 5822.9 | 0.313 | BB | 0.114 | 847.90 | 0.107 |
| 96 | 13.319 | | 0.0000 | 0.000 | 2447.2 | 0.131 | BB | 0.090 | 451.53 | 0.057 |
| 97 | 13.549 | | 0.0000 | 0.000 | 4369.8 | 0.235 | BB | 0.162 | 449.14 | 0.057 |
| 98 | 13.867 | | 0.0000 | 0.000 | 627.3 | 0.034 | BB | 0.102 | 102.84 | 0.013 |

Total Area = 1862916.0, Total Amount = 617.431, Total Height = 792527.5, Sample Units = PPB

Sample Name: **4241638F AB5GP23 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 01:49:03pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.55R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.418 | | 0.0000 | 0.000 | 865.2 | 0.058 | BB | 0.030 | 488.01 | 0.079 |
| 2 | 3.474 | | 0.0000 | 0.000 | 4248.8 | 0.285 | BB | 0.029 | 2478.35 | 0.401 |
| 3 | 3.542 | | 0.0000 | 0.000 | 531.3 | 0.036 | BB | 0.025 | 360.11 | 0.058 |
| 4 | 3.619 | | 0.0000 | 0.000 | 7259.1 | 0.486 | BB | 0.038 | 3154.60 | 0.510 |
| 5 | 3.693 | | 0.0000 | 0.000 | 459.9 | 0.031 | BB | 0.029 | 264.73 | 0.043 |
| 6 | 3.742 | | 0.0000 | 0.000 | 64832.8 | 4.345 | BB | 0.031 | 34895.96 | 5.646 |
| 7 | 3.849 | | 0.0000 | 0.000 | 664.1 | 0.045 | BB | 0.027 | 407.90 | 0.066 |
| 8 | 3.906 | | 0.0000 | 0.000 | 1649.4 | 0.111 | BB | 0.032 | 867.52 | 0.140 |
| 9 | 4.041 | TCX | 249.5094 | 28.044 | 307640.5 | 20.616 | BB | 0.037 | 139995.60 | 22.652 |
| 10 | 4.208 | | 0.0000 | 0.000 | 8793.3 | 0.589 | BB | 0.030 | 4826.18 | 0.781 |
| 11 | 4.258 | | 0.0000 | 0.000 | 8087.8 | 0.542 | BB | 0.051 | 2656.23 | 0.430 |
| 12 | 4.440 | | 0.0000 | 0.000 | 3286.3 | 0.220 | BB | 0.055 | 994.85 | 0.161 |
| 13 | 4.583 | | 0.0000 | 0.000 | 4401.5 | 0.295 | BB | 0.035 | 2077.79 | 0.336 |
| 14 | 4.654 | | 0.0000 | 0.000 | 3906.9 | 0.262 | BB | 0.037 | 1774.88 | 0.287 |
| 15 | 4.770 | | 0.0000 | 0.000 | 21421.8 | 1.436 | BB | 0.031 | 11370.70 | 1.840 |
| 16 | 4.860 | | 0.0000 | 0.000 | 8804.5 | 0.590 | BB | 0.057 | 2579.12 | 0.417 |
| 17 | 4.963 | alpha-BHC | 0.3084 | 0.035 | 338.5 | 0.023 | BB | 0.021 | 264.61 | 0.043 |
| 18 | 5.044 | | 0.0000 | 0.000 | 2930.4 | 0.196 | BB | 0.054 | 897.40 | 0.145 |
| 19 | 5.196 | | 0.0000 | 0.000 | 4435.2 | 0.297 | BB | 0.067 | 1095.25 | 0.177 |
| 20 | 5.326 | | 0.0000 | 0.000 | 935.4 | 0.063 | BB | 0.027 | 583.44 | 0.094 |
| 21 | 5.375 | | 0.0000 | 0.000 | 2711.1 | 0.182 | BB | 0.061 | 741.59 | 0.120 |
| 22 | 5.486 | gamma-BHC | 0.4599 | 0.052 | 1008.7 | 0.068 | BB | 0.046 | 365.60 | 0.059 |
| 23 | 5.576 | beta-BHC | 1.2963 | 0.146 | 1211.8 | 0.081 | BB | 0.039 | 516.97 | 0.084 |
| 24 | 5.646 | | 0.0000 | 0.000 | 3449.5 | 0.231 | BB | 0.033 | 1717.15 | 0.278 |
| 25 | 5.735 | | 0.0000 | 0.000 | 39496.0 | 2.647 | BB | 0.031 | 21251.81 | 3.439 |
| 26 | 5.936 | | 0.0000 | 0.000 | 7624.9 | 0.511 | BV | 0.081 | 1560.33 | 0.252 |
| 27 | 5.991 | delta-BHC | 7.2858 | 0.819 | 26563.7 | 1.780 | VV | 0.082 | 5428.95 | 0.878 |
| 28 | 6.117 | | 0.0000 | 0.000 | 4008.3 | 0.269 | VB | 0.030 | 2211.74 | 0.358 |
| 29 | 6.224 | | 0.0000 | 0.000 | 10954.6 | 0.734 | BV | 0.095 | 1928.64 | 0.312 |
| 30 | 6.302 | | 0.0000 | 0.000 | 3336.6 | 0.224 | VV | 0.040 | 1393.00 | 0.225 |
| 31 | 6.376 | | 0.0000 | 0.000 | 11792.7 | 0.790 | VV | 0.066 | 2997.54 | 0.485 |
| 32 | 6.483 | | 0.0000 | 0.000 | 5281.5 | 0.354 | VB | 0.071 | 1235.52 | 0.200 |
| 33 | 6.632 | | 0.0000 | 0.000 | 40877.6 | 2.739 | BB | 0.057 | 11908.91 | 1.927 |
| 34 | 6.821 | | 0.0000 | 0.000 | 1466.0 | 0.098 | BB | 0.027 | 898.72 | 0.145 |
| 35 | 6.905 | | 0.0000 | 0.000 | 1659.9 | 0.111 | BB | 0.028 | 975.76 | 0.158 |
| 36 | 6.952 | | 0.0000 | 0.000 | 686.2 | 0.046 | BB | 0.025 | 462.20 | 0.075 |
| 37 | 7.087 | | 0.0000 | 0.000 | 1369.4 | 0.092 | BB | 0.087 | 262.57 | 0.042 |
| 38 | 7.139 | | 0.0000 | 0.000 | 941.3 | 0.063 | BB | 0.030 | 526.02 | 0.085 |
| 39 | 7.204 | | 0.0000 | 0.000 | 22570.6 | 1.513 | BB | 0.049 | 7669.67 | 1.241 |
| 40 | 7.303 | Hept. epoxide | 4.9029 | 0.551 | 8662.2 | 0.580 | BB | 0.050 | 2913.73 | 0.471 |
| 41 | 7.441 | | 0.0000 | 0.000 | 6153.7 | 0.412 | BV | 0.068 | 1498.79 | 0.243 |
| 42 | 7.521 | g. Chlordane | 242.6286 | 27.270 | 275132.6 | 18.438 | VV | 0.033 | 140632.20 | 22.755 |
| 43 | 7.665 | | 0.0000 | 0.000 | 4023.4 | 0.270 | VB | 0.059 | 1130.14 | 0.183 |
| 44 | 7.819 | Endosulfan I | 2.3292 | 0.262 | 4001.8 | 0.268 | BV | 0.054 | 1228.49 | 0.199 |
| 45 | 7.912 | | 0.0000 | 0.000 | 2161.8 | 0.145 | VV | 0.048 | 755.53 | 0.122 |
| 46 | 7.990 | 4,4'-DDE | 5.2570 | 0.591 | 8403.4 | 0.563 | VV | 0.057 | 2449.39 | 0.396 |
| 47 | 8.065 | | 0.0000 | 0.000 | 2669.7 | 0.179 | VV | 0.053 | 832.79 | 0.135 |
| 48 | 8.139 | | 0.0000 | 0.000 | 11632.8 | 0.780 | VV | 0.060 | 3251.94 | 0.526 |
| 49 | 8.269 | | 0.0000 | 0.000 | 4155.3 | 0.278 | VV | 0.055 | 1261.37 | 0.204 |
| 50 | 8.392 | | 0.0000 | 0.000 | 10279.8 | 0.689 | VB | 0.060 | 2855.11 | 0.462 |
| 51 | 8.481 | | 0.0000 | 0.000 | 1379.7 | 0.092 | BB | 0.042 | 550.13 | 0.089 |
| 52 | 8.599 | o,p-DDT | 1.8142 | 0.204 | 1199.2 | 0.080 | BB | 0.036 | 554.11 | 0.090 |
| 53 | 8.650 | | 0.0000 | 0.000 | 2553.4 | 0.171 | BV | 0.034 | 1269.26 | 0.205 |
| 54 | 8.713 | 4,4'-DDD | 76.7476 | 8.626 | 59992.9 | 4.020 | VB | 0.040 | 25055.22 | 4.054 |
| 55 | 8.873 | Endosulfan II | 3.7975 | 0.427 | 4765.7 | 0.319 | BV | 0.054 | 1470.94 | 0.238 |
| 56 | 8.962 | | 0.0000 | 0.000 | 4024.1 | 0.270 | VV | 0.062 | 1083.76 | 0.175 |

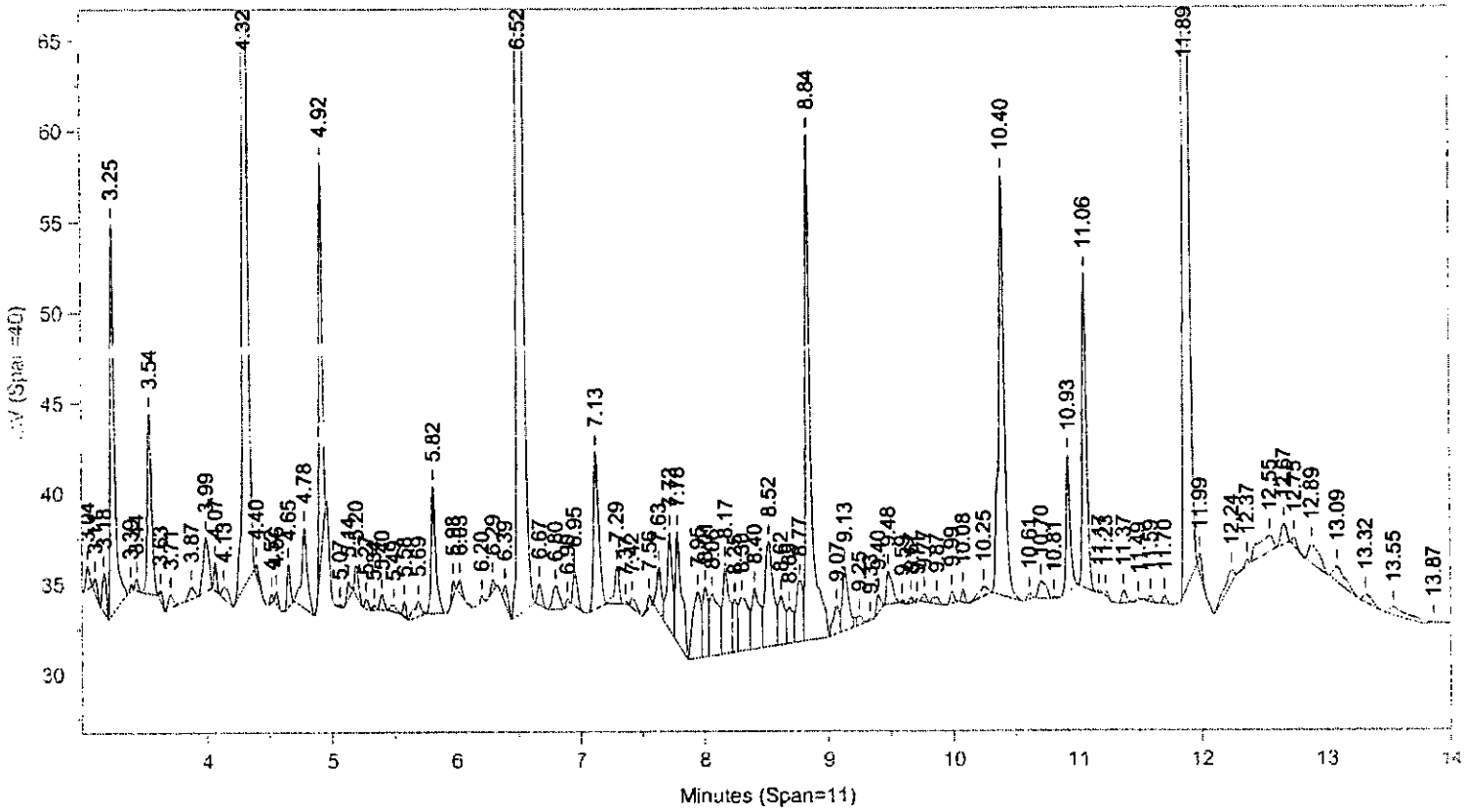
0514

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.034 | | 0.0000 | 0.000 | 1605.4 | 0.108 | VV | 0.036 | 749.56 | 0.121 |
| 58 | 9.114 | 4,4'-DDT | 8.3680 | 0.941 | 8717.5 | 0.584 | VB | 0.053 | 2727.00 | 0.441 |
| 59 | 9.294 | Endrin aldehyde | 6.0948 | 0.685 | 5979.2 | 0.401 | BV | 0.053 | 1869.04 | 0.302 |
| 60 | 9.422 | | 0.0000 | 0.000 | 11331.3 | 0.759 | VV | 0.064 | 2934.35 | 0.475 |
| 61 | 9.469 | | 0.0000 | 0.000 | 10749.6 | 0.720 | VB | 0.060 | 3003.94 | 0.486 |
| 62 | 9.576 | | 0.0000 | 0.000 | 481.1 | 0.032 | BB | 0.025 | 320.20 | 0.052 |
| 63 | 9.638 | Endo. sulfate | 8.6666 | 0.974 | 7093.9 | 0.475 | BB | 0.042 | 2798.63 | 0.453 |
| 64 | 9.782 | | 0.0000 | 0.000 | 1556.9 | 0.104 | BB | 0.045 | 579.12 | 0.094 |
| 65 | 9.923 | | 0.0000 | 0.000 | 21369.3 | 1.432 | BB | 0.050 | 7097.31 | 1.148 |
| 66 | 10.101 | | 0.0000 | 0.000 | 1512.5 | 0.101 | BB | 0.054 | 471.00 | 0.076 |
| 67 | 10.200 | | 0.0000 | 0.000 | 3177.9 | 0.213 | BB | 0.054 | 979.07 | 0.158 |
| 68 | 10.314 | Endrin ketone | 21.0346 | 2.364 | 27389.8 | 1.835 | BB | 0.060 | 7601.64 | 1.230 |
| 69 | 10.423 | | 0.0000 | 0.000 | 12877.7 | 0.863 | BB | 0.032 | 6661.52 | 1.078 |
| 70 | 10.529 | | 0.0000 | 0.000 | 2098.5 | 0.141 | BB | 0.096 | 363.58 | 0.059 |
| 71 | 10.651 | | 0.0000 | 0.000 | 325.7 | 0.022 | BB | 0.023 | 237.47 | 0.038 |
| 72 | 10.849 | | 0.0000 | 0.000 | 1234.6 | 0.083 | BB | 0.039 | 522.61 | 0.085 |
| 73 | 10.930 | | 0.0000 | 0.000 | 768.2 | 0.051 | BB | 0.050 | 254.08 | 0.041 |
| 74 | 11.091 | | 0.0000 | 0.000 | 41706.1 | 2.795 | BB | 0.042 | 16414.22 | 2.656 |
| 75 | 11.339 | | 0.0000 | 0.000 | 540.1 | 0.036 | BB | 0.041 | 219.45 | 0.036 |
| 76 | 11.410 | | 0.0000 | 0.000 | 412.7 | 0.028 | BB | 0.052 | 132.56 | 0.021 |
| 77 | 11.521 | | 0.0000 | 0.000 | 4060.9 | 0.272 | BB | 0.037 | 1849.62 | 0.299 |
| 78 | 11.608 | | 0.0000 | 0.000 | 688.8 | 0.046 | BB | 0.032 | 358.18 | 0.058 |
| 79 | 11.686 | | 0.0000 | 0.000 | 295.6 | 0.020 | BB | 0.035 | 141.26 | 0.023 |
| 80 | 11.874 | | 0.0000 | 0.000 | 9833.9 | 0.659 | BB | 0.117 | 1397.28 | 0.226 |
| 81 | 12.034 | DCB | 249.2148 | 28.011 | 245470.4 | 16.450 | BB | 0.046 | 89781.16 | 14.527 |
| 82 | 12.238 | | 0.0000 | 0.000 | 6265.8 | 0.420 | BB | 0.103 | 1011.69 | 0.164 |
| 83 | 12.423 | | 0.0000 | 0.000 | 1371.1 | 0.092 | BB | 0.055 | 414.34 | 0.067 |
| 84 | 12.539 | | 0.0000 | 0.000 | 2965.6 | 0.199 | BB | 0.053 | 928.44 | 0.150 |
| 85 | 12.675 | | 0.0000 | 0.000 | 1062.4 | 0.071 | BB | 0.069 | 257.31 | 0.042 |
| 86 | 13.101 | | 0.0000 | 0.000 | 861.9 | 0.058 | BB | 0.063 | 228.76 | 0.037 |
| 87 | 13.306 | | 0.0000 | 0.000 | 1807.5 | 0.121 | BB | 0.132 | 228.75 | 0.037 |
| 88 | 13.493 | | 0.0000 | 0.000 | 931.4 | 0.062 | BB | 0.071 | 219.94 | 0.036 |
| 89 | 13.796 | | 0.0000 | 0.000 | 1522.0 | 0.102 | BB | 0.079 | 322.34 | 0.052 |
| 90 | 13.973 | | 0.0000 | 0.000 | 466.2 | 0.031 | BB | 0.116 | 67.20 | 0.011 |

Total Area = 1492227.0, Total Amount = 889.716, Total Height = 618021.3, Sample Units = PPB

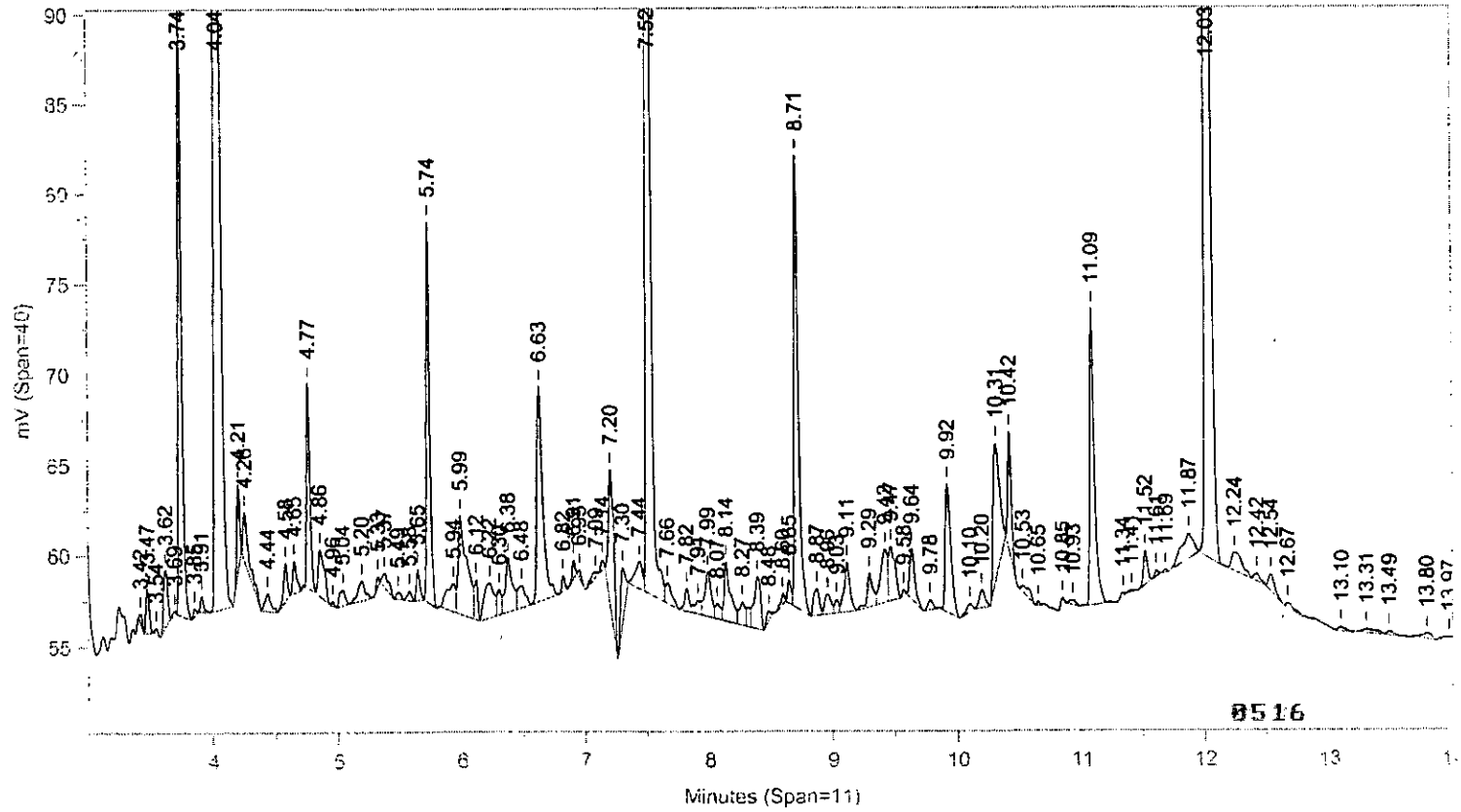
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.55R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 1:35:03 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.55R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 1:35:03 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 30
Analyst: 120

Dilution Factor: 10

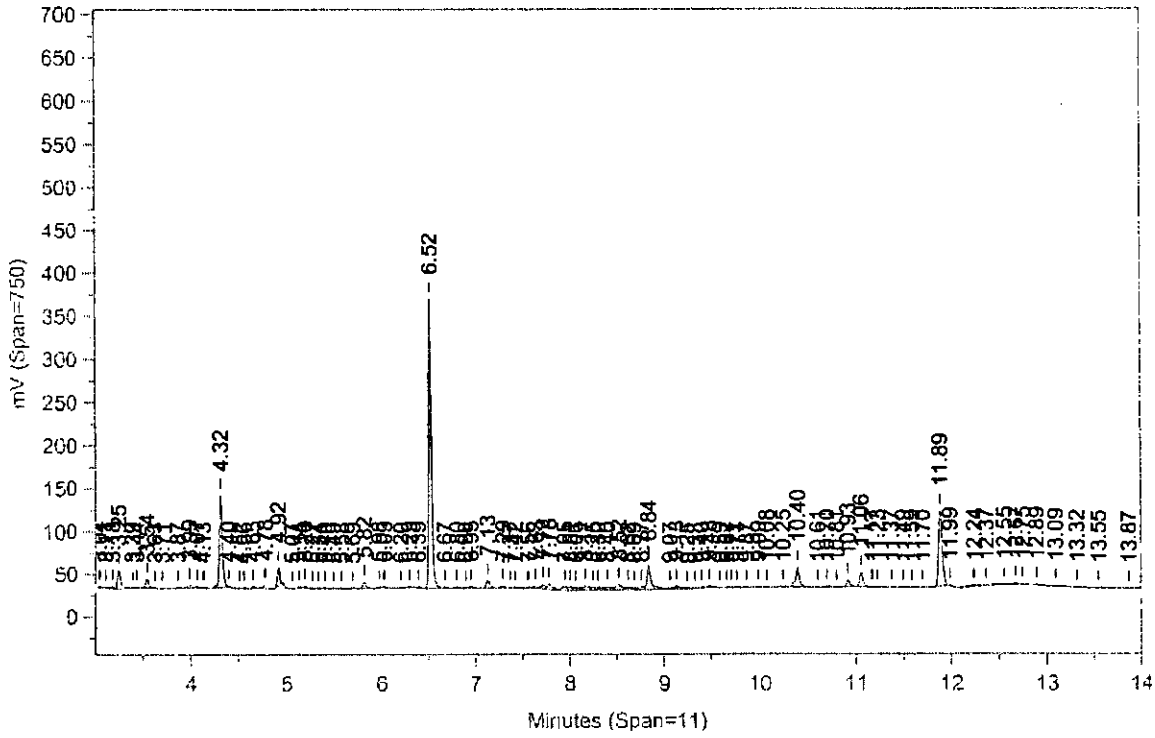
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.316 | 107391 | 8.677 | TCX | 4.041 | 139996 | 8.317 | TCX |
| 4.921 | 21589 | 1.025 | Hcb | . | 0 | . | Hcb |
| 5.136 | 912 | .059 | alpha-BHC | 4.963 | 265 | .01 | alpha-BHC |
| . | 0 | . | gamma-BHC | 5.486 | 366 | .015 | gamma-BHC |
| . | 0 | . | beta-BHC | 5.576 | 517 | .043 | beta-BHC |
| 6.029 | 747 | .051 | delta-BHC | 5.991 | 5429 | .243 | delta-BHC |
| 6.294 | 636 | .039 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Hept. epoxide | 7.303 | 2914 | .163 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.521 | 140632 | 8.088 | g. Chlordane |
| 7.558 | 687 | .087 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.819 | 1228 | .078 | Endosulfan I |
| 7.948 | 3707 | .282 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.008 | 3897 | .37 | 4,4'-DDE | 7.99 | 2449 | .175 | 4,4'-DDE |
| 8.247 | 2943 | .442 | o,p-DDD | . | 0 | . | o,p-DDD |
| . | 0 | . | o,p-DDT | 8.599 | 554 | .06 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.713 | 25055 | 2.558 | 4,4'-DDD |
| 8.769 | 3366 | .336 | Endrin | . | 0 | . | Endrin |
| 9.069 | 1540 | .154 | Endosulfan II | 8.873 | 1471 | .127 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.114 | 2727 | .279 | 4,4'-DDT |
| 9.595 | 174 | .021 | Endrin aldehyde | 9.294 | 1869 | .203 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.638 | 2799 | .289 | Endo. sulfate |
| 9.769 | 427 | .087 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.989 | 659 | .078 | Mirex | . | 0 | . | Mirex |
| . | 0 | . | Endrin ketone | 10.314 | 7602 | .701 | Endrin ketone |
| 11.887 | 87821 | 8.873 | DCB | 12.034 | 89781 | 8.307 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.55A
Area File: C:\CPWIN\DATA1\3D16082B.55A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:23:50 PM
File Reported On: 3/26/2004 at 3:23:55 PM

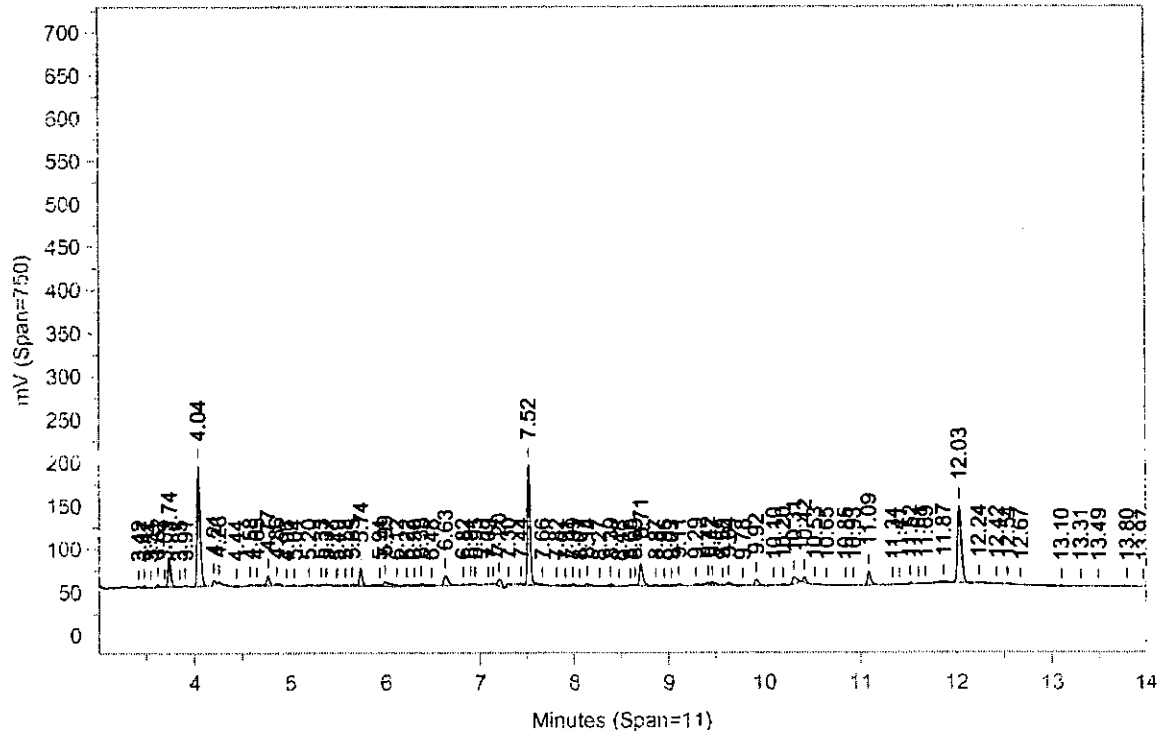
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.55R




C:\CPWIN\DATA1\3D16082B.55R




0518

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241639 F  5GP24  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262A
Result file : 3D16082.56R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 86.5%  Conc.: 8.317958
%SSR(DCB) : 91.3%  Conc.: 8.891903

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.32 | 4.35 | 102943 | 8.317958 |
| **Hcb** | 4.88 | 4.92 | 4.94 | 5878 | 0.279001 |
| **alpha-BHC** | 5.14 | 5.14 | 5.20 | 21143 | 1.371273 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 1314 | 0.089948 |
| **Heptachlor** | 6.29 | 6.34 | 6.35 | 12393 | 0.761367 |
| **o,p-DDE** | 7.53 | 7.57 | 7.59 | 1344 | 0.171043 |
| **a. Chlordane** | 7.90 | 7.95 | 7.96 | 7149 | 0.543061 |
| **4,4'-DDE** | 7.99 | 8.01 | 8.05 | 10648 | 1.010218 |
| **o,p-DDT** | 8.55 | 8.61 | 8.61 | 1260 | 0.157486 |
| **Endrin** | 8.72 | 8.76 | 8.78 | 12922 | 1.288128 |
| **4,4'-DDD** | 8.78 | 8.84 | 8.84 | 30728 | 3.598416 |
| **Endosulfan II** | 9.02 | 9.06 | 9.08 | 2415 | 0.241045 |
| **Endrin aldehyde** | 9.57 | 9.60 | 9.63 | 1519 | 0.184564 |
| **DCB** | 11.86 | 11.89 | 11.92 | 88007 | 8.891903 |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262B
Result file : 3D16082B.56R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 83.3%  Conc.: 8.016355
%SSR(DCB) : 84.8%  Conc.: 8.262414

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 134935 | 8.016355 |
| **delta-BHC** | 5.97 | 6.00 | 6.03 | 10604 | 0.474376 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 3749 | 0.211906 |
| **Hept. epoxide** | 7.27 | 7.30 | 7.33 | 11458 | 0.642674 |
| **g. Chlordane** | 7.52 | 7.52 | 7.58 | 78498 | 4.514338 |
| **Endosulfan I** | 7.79 | 7.83 | 7.85 | 1932 | 0.122124 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 11688 | 0.836204 |
| **Endrin** | 8.54 | 8.57 | 8.60 | 2519 | 0.203400 |
| **4,4'-DDD** | 8.68 | 8.71 | 8.74 | 31931 | 3.260295 |
| **Endosulfan II** | 8.82 | 8.87 | 8.88 | 11213 | 0.964908 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 24330 | 2.488585 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 6503 | 0.706890 |
| **Endrin ketone** | 10.30 | 10.31 | 10.36 | 816 | 0.075300 |
| **DCB** | 12.01 | 12.03 | 12.07 | 89298 | 8.262414 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 8.317958 | | | | 3.69 | |
| Hcb | | | | | | | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | A | 1.010218 | <1.7 | 0.33 | J | 18.85 | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | A | 3.598416 | 1.7 | 0.58 | | 9.86 | |
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | 8519 |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:36:42

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241639 F 5GP24 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16-H5262A
Result file : 3D16082.56R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16-H5262B
Result file : 3D16082B.56R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 8.891903 | | | | 7.34 | |

Units: ug/kg X

Reviewed by: W.S. M. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

8528

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:36:42

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241639 F 5GP24 Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 26, 2004 13:55:36
**Instrument** H5262A
**Result file** 3D16082.56R
**Calibration file** 2D16082
**Method file** PESTD

%SSR(TCX) 86.5% Conc: 8.317958
%SSR(DCB) 91.3% Conc: 8.891903

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 7.60 | 7.63 | 7.66 | 14336.75097 | 28.417517 | | | 2 |
| 8.13 | 8.17 | 8.19 | 18826.10351 | 28.620147 | | | 3 |
| 8.50 | 8.53 | 8.56 | 13656.12109 | 27.918407 | | | 4 |
| 8.73 | 8.76 | 8.79 | 12921.74414 | 41.702955 | | | 5 |
| 9.10 | 9.13 | 9.16 | 20184.1875 | 41.751865 | | | 6 |

Height summation: **79924.907228**
Concentration CF: **33.682178** L:

## Analysis Report (B)

**Injected on** Mar 26, 2004 13:55:36
**Instrument** H5262B
**Result file** 3D16082B.56R
**Calibration file** 2D16082B
**Method file** PESTDB

%SSR(TCX) 83.3% Conc: 8.016355
%SSR(DCB) 84.8% Conc: 8.262414

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 19990.99414 | 58.795658 | | | 1 |
| 8.10 | 8.14 | 8.16 | 21249.28515 | 29.8497 | | | 3 |
| 8.39 | 8.42 | 8.45 | 16610.90234 | 46.660887 | | | 4 |
| 8.84 | 8.87 | 8.90 | 11212.51855 | 30.31033 | | | 5 |
| 9.08 | 9.11 | 9.14 | 24329.82226 | 46.916237 | | | 6 |

Height summation: **93393.522462**
Concentration CF: **42.506562** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | B | 42.506562 | 17 | 3.3 | | 23.16 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M.E.M. 1340 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

0521

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241639 F  5GP24  Sample ID: AB  **Batchnumber: 040850020A**
Sample Amount: 30 g  Total Volume: 10 ml  Analyst: 120  SDG: RAV03  State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262A
Result file : 3D16082.56R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 86.5% Conc.: 8.317958
%SSR(DCB) : 91.3% Conc.: 8.891903

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 147.36 | |
| 5.35 | 5.40 | 5.41 | 1190.587524 | 2.807412 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1314.07666 | 3.690768 | | | 3 |
| 6.29 | 6.34 | 6.35 | 12392.81543 | 50.848703 | | | 5 |
| 6.87 | 6.90 | 6.93 | 736.541687 | 6.08515 | | | 6 |
| Height Summation | | | 15634.021301 | | | | |
| Amount Avg CF: | | | 15.858008 | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.77 | 4.78 | 4.83 | 4005.666504 | 42.280626 | | | 2 |
| Height Summation | | | 4005.666504 | | | | |
| Amount Avg CF: | | | 42.280626 | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 147.48 | |
| 5.35 | 5.40 | 5.41 | 1190.587524 | 6.154816 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1314.07666 | 8.016573 | | | 3 |
| E 6.28 | 6.34 | 6.34 | 12392.81543 | 109.588499 | | | 5 |
| 6.87 | 6.90 | 6.93 | 736.541687 | 12.854131 | | | 6 |
| Height Summation | | | 15634.021301 | | | | |
| Amount Avg CF: | | | 34.153505 | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 151.46 | |
| 5.35 | 5.40 | 5.41 | 1190.587524 | 3.206063 | | | 2 |
| 6.01 | 6.03 | 6.07 | 1314.07666 | 4.298582 | | | 3 |
| 6.28 | 6.34 | 6.34 | 12392.81543 | 59.951215 | | | 5 |
| 6.87 | 6.90 | 6.93 | 736.541687 | 5.87635 | | | 6 |
| Height Summation | | | 15634.021301 | | | | |
| Amount Avg CF: | | | 18.333053 | Linear: | | | |
| **Aroclor-1248** | | | | | 6 | 109.30 | |
| 5.35 | 5.40 | 5.41 | 1190.587524 | 6.547266 | | | 1 |
| 6.01 | 6.03 | 6.07 | 1314.07666 | 9.493402 | | | 2 |
| 6.75 | 6.78 | 6.81 | 3575.090576 | 8.151699 | | | 3 |
| 7.32 | 7.36 | 7.38 | 3061.915283 | 11.831431 | | | 4 |
| 7.62 | 7.63 | 7.68 | 14336.75097 | 42.993271 | | | 5 |
| E 8.14 | 8.17 | 8.20 | 18826.10351 | 76.580241 | | | 6 |
| Height Summation | | | 42304.524536 | | | | |
| Amount Avg CF: | | | 25.932885 | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 21.82 | |
| 7.60 | 7.63 | 7.66 | 14336.75097 | 28.417517 | | | 2 |
| 8.13 | 8.17 | 8.19 | 18826.10351 | 28.620147 | | | 3 |
| 8.50 | 8.53 | 8.56 | 13656.12109 | 27.918407 | | | 4 |
| 8.73 | 8.76 | 8.79 | 12921.74414 | 41.702955 | | | 5 |
| 9.10 | 9.13 | 9.16 | 20184.1875 | 41.751865 | | | 6 |
| Height Summation | | | 79924.907228 | | | | |
| Amount Avg CF: | | | 33.682178 | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 79.50 | |
| 8.38 | 8.40 | 8.44 | 8881.616211 | 16.455062 | | | 1 |
| 8.73 | 8.76 | 8.79 | 12921.74414 | 19.670099 | | | 2 |
| 9.10 | 9.13 | 9.16 | 20184.1875 | 31.365732 | | | 3 |
| 9.57 | 9.60 | 9.63 | 1518.954712 | 4.699114 | | | 4 |
| 9.96 | 9.99 | 10.02 | 4753.315918 | 5.462075 | | | 5 |
| 11.14 | 11.17 | 11.20 | 1044.309448 | 4.38836 | | | 6 |
| Height Summation | | | 49304.127930 | | | | |
| Amount Avg CF: | | | 13.673407 | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262B
Result file : 3D16082B.56R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 83.3% Conc.: 8.016355
%SSR(DCB) : 84.8% Conc.: 8.262414

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 110.13 | |
| 4.72 | 4.77 | 4.78 | 9413.583008 | 26.729678 | | | 1 |
| 5.29 | 5.33 | 5.35 | 628.63739 | 1.268029 | | | 2 |
| 5.91 | 5.94 | 5.97 | 2083.763428 | 2.068096 | | | 3 |
| 6.23 | 6.24 | 6.29 | 17406.08398 | 46.493664 | | | 5 |
| 6.72 | 6.74 | 6.78 | 3748.584961 | 10.619137 | | | 6 |
| Height Summation | | | 33280.652771 | | | | |
| Amount Avg CF: | | | 17.435721 | Linear: | | | |
| **Aroclor-1221** | | | | | 3 | 59.49 | |
| 4.44 | 4.44 | 4.50 | 995.045288 | 4.399254 | | | 1 |
| 4.64 | 4.65 | 4.70 | 2581.947754 | 17.323858 | | | 2 |
| 4.72 | 4.77 | 4.78 | 9413.583008 | 19.570655 | | | 3 |
| Height Summation | | | 12990.576050 | | | | |
| Amount Avg CF: | | | 13.764589 | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 128.38 | |
| 4.72 | 4.77 | 4.78 | 9413.583008 | 24.329219 | | | 1 |
| 5.29 | 5.33 | 5.35 | 628.63739 | 2.764092 | | | 2 |
| 5.91 | 5.94 | 5.97 | 2083.763428 | 4.390706 | | | 3 |
| E 6.23 | 6.24 | 6.29 | 17406.08398 | 99.366809 | | | 5 |
| 6.71 | 6.74 | 6.77 | 3748.584961 | 23.469728 | | | 6 |
| Height Summation | | | 33280.652771 | | | | |
| Amount Avg CF: | | | 30.864111 | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 112.46 | |
| 4.72 | 4.77 | 4.78 | 9413.583008 | 28.798284 | | | 1 |
| 5.29 | 5.33 | 5.35 | 628.63739 | 1.43338 | | | 2 |
| 5.91 | 5.94 | 5.97 | 2083.763428 | 2.39179 | | | 3 |
| 6.23 | 6.24 | 6.29 | 17406.08398 | 53.974864 | | | 5 |
| 6.72 | 6.74 | 6.78 | 3748.584961 | 11.691493 | | | 6 |
| Height Summation | | | 33280.652771 | | | | |
| Amount Avg CF: | | | 19.657962 | Linear: | | | |
| **Aroclor-1248** | | | | | 6 | 153.42 | |
| 5.29 | 5.33 | 5.35 | 628.63739 | 2.824829 | | | 1 |
| 5.91 | 5.94 | 5.97 | 2083.763428 | 4.118517 | | | 2 |
| 6.71 | 6.74 | 6.77 | 3748.584961 | 7.005457 | | | 3 |
| 7.21 | 7.24 | 7.27 | 3882.402832 | 8.11328 | | | 4 |
| 7.57 | 7.62 | 7.63 | 7364.480469 | 15.148109 | | | 5 |
| E 8.11 | 8.14 | 8.17 | 21249.28515 | 80.2617 | | | 6 |
| Height Summation | | | 38957.154236 | | | | |
| Amount Avg CF: | | | 19.578649 | Linear: | 5 | 29.00% | |
| | | | | | ~~6~~ | ~~69.85~~ | |
| **Aroclor-1254** | | | | | | | |
| 6.35 | 6.38 | 6.41 | 19990.99414 | 58.795658 | | | 1 |
| E 7.50 | 7.52 | 7.56 | 78497.94531 | 139.035802 | | | 2 |
| 8.10 | 8.14 | 8.16 | 21249.28515 | 29.8497 | | | 3 |
| 8.39 | 8.42 | 8.45 | 16610.90234 | 46.660887 | | | 4 |
| 8.84 | 8.87 | 8.90 | 11212.51855 | 30.31033 | | | 5 |
| 9.08 | 9.11 | 9.14 | 24329.82226 | 46.916237 | | | 6 |
| Height Summation | | | 171891.467775 | | | | |
| Amount Avg CF: | | | 42.5010 ~~58.594769~~ | Linear: | | | |

0522

MCM-1340
3/28/04

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:37:02

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4241639 F 5GP24 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262A
Result file : 3D16082.56R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 3 | 110.79 | |
| 6.29 | 6.34 | 6.35 | 12392.81543 | 18.236093 | | | 2 |
| 6.91 | 6.96 | 6.97 | 735.91626 | 1.125043 | | | 3 |
| 7.89 | 7.95 | 7.95 | 7149.466797 | 4.955233 | | | 5 |
| Height Summation | | | **20278.198487** | | | | |
| Amount Avg CF: | | | **8.105456** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 8.75 | 8.76 | 8.81 | 12921.74414 | 115.705368 | | | 2 |
| Height Summation | | | **12921.744141** | | | | |
| Amount Avg CF: | | | **115.705368** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 13:55:36
Instrument : CP16--H5262B
Result file : 3D16082B.56R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 6 | 35.87 | |
| 8.36 | 8.39 | 8.42 | 12044.91113 | 20.557227 | | | 1 |
| 8.62 | 8.65 | 8.68 | 11115.37988 | 15.705213 | | | 2 |
| 8.83 | 8.87 | 8.89 | 11212.51855 | 24.666133 | | | 3 |
| 9.08 | 9.11 | 9.14 | 24329.82226 | 36.660236 | | | 4 |
| 9.58 | 9.58 | 9.64 | 9575.082031 | 22.260199 | | | 5 |
| 9.88 | 9.92 | 9.94 | 38852.19921 | 39.902997 | | | 6 |
| Height Summation | | | **107129.913087** | | | | |
| Amount Avg CF: | | | **26.625334** | Linear: | | | |
| **Chlordane** | | | | | 3 | 144.45 | |
| 5.84 | 5.88 | 5.90 | 670.562866 | 0.914414 | | | 1 |
| 6.70 | 6.74 | 6.76 | 3748.584961 | 4.65461 | | | 3 |
| 7.51 | 7.52 | 7.57 | 78497.94531 | 43.984917 | | | 4 |
| Height Summation | | | **82917.093140** | | | | |
| Amount Avg CF: | | | **16.51798** | Linear: | | | |
| **Toxaphene** | | | | | 5 | 112.49 | |
| 8.12 | 8.14 | 8.18 | 21249.28515 | 176.530133 | | | 1 |
| 8.79 | 8.79 | 8.85 | 872.703003 | 7.387399 | | | 2 |
| 8.91 | 8.97 | 8.97 | 1819.051392 | 6.075534 | | | 3 |
| 9.25 | 9.29 | 9.31 | 6503.279785 | 29.989485 | | | 4 |
| 9.91 | 9.92 | 9.97 | 38852.19921 | 175.398628 | | | 5 |
| Height Summation | | | **69296.518555** | | | | |
| Amount Avg CF: | | | **79.076236** | Linear: | | | |

0523

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:37:02

Sample Name: **4241639F AB5GP24 T 040850020A 01225**
Acquired from CP16--H5262A via port 1 on 3/26/04 02:09:36pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.56R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.077 | | 0.0000 | 0.000 | 6457.7 | 0.309 | BB | 0.068 | 1574.22 | 0.184 |
| 2 | 3.187 | | 0.0000 | 0.000 | 2457.1 | 0.117 | BB | 0.031 | 1310.47 | 0.153 |
| 3 | 3.247 | | 0.0000 | 0.000 | 34165.3 | 1.633 | BB | 0.040 | 14226.27 | 1.660 |
| 4 | 3.395 | | 0.0000 | 0.000 | 2144.7 | 0.102 | BB | 0.028 | 1271.52 | 0.148 |
| 5 | 3.451 | | 0.0000 | 0.000 | 177.8 | 0.008 | BB | 0.021 | 143.09 | 0.017 |
| 6 | 3.546 | | 0.0000 | 0.000 | 41557.2 | 1.986 | BB | 0.037 | 18672.26 | 2.178 |
| 7 | 3.635 | | 0.0000 | 0.000 | 1324.3 | 0.063 | BB | 0.028 | 780.46 | 0.091 |
| 8 | 3.713 | | 0.0000 | 0.000 | 927.5 | 0.044 | BB | 0.038 | 409.89 | 0.048 |
| 9 | 3.784 | | 0.0000 | 0.000 | 225.7 | 0.011 | BB | 0.022 | 171.17 | 0.020 |
| 10 | 3.871 | | 0.0000 | 0.000 | 5477.9 | 0.262 | BB | 0.046 | 1975.33 | 0.230 |
| 11 | 3.991 | | 0.0000 | 0.000 | 9752.4 | 0.466 | BB | 0.046 | 3512.86 | 0.410 |
| 12 | 4.070 | | 0.0000 | 0.000 | 13407.0 | 0.641 | BB | 0.033 | 6846.94 | 0.799 |
| 13 | 4.197 | | 0.0000 | 0.000 | 7975.1 | 0.381 | BB | 0.032 | 4156.29 | 0.485 |
| 14 | 4.316 | TCX | 249.5387 | 30.916 | 202065.1 | 9.657 | BB | 0.033 | 102942.90 | 12.009 |
| 15 | 4.427 | | 0.0000 | 0.000 | 4154.5 | 0.199 | BB | 0.055 | 1255.39 | 0.146 |
| 16 | 4.518 | | 0.0000 | 0.000 | 994.3 | 0.048 | BB | 0.032 | 520.83 | 0.061 |
| 17 | 4.609 | | 0.0000 | 0.000 | 268.0 | 0.013 | BB | 0.026 | 169.37 | 0.020 |
| 18 | 4.655 | | 0.0000 | 0.000 | 5148.2 | 0.246 | BB | 0.031 | 2729.96 | 0.318 |
| 19 | 4.744 | | 0.0000 | 0.000 | 684.8 | 0.033 | BB | 0.024 | 471.35 | 0.055 |
| 20 | 4.784 | | 0.0000 | 0.000 | 9886.7 | 0.472 | BB | 0.041 | 4005.67 | 0.467 |
| 21 | 4.921 | Hcb | 8.3700 | 1.037 | 8297.5 | 0.397 | BB | 0.024 | 5877.77 | 0.686 |
| 22 | 4.966 | | 0.0000 | 0.000 | 97445.1 | 4.657 | BB | 0.035 | 46795.02 | 5.459 |
| 23 | 5.136 | alpha-BHC | 41.1382 | 5.097 | 40664.9 | 1.943 | BB | 0.032 | 21143.17 | 2.466 |
| 24 | 5.231 | | 0.0000 | 0.000 | 758.5 | 0.036 | BB | 0.020 | 623.08 | 0.073 |
| 25 | 5.286 | | 0.0000 | 0.000 | 1288.5 | 0.062 | BB | 0.029 | 752.42 | 0.088 |
| 26 | 5.400 | | 0.0000 | 0.000 | 2858.8 | 0.137 | BB | 0.040 | 1190.59 | 0.139 |
| 27 | 5.519 | | 0.0000 | 0.000 | 8630.9 | 0.412 | BB | 0.034 | 4288.61 | 0.500 |
| 28 | 5.696 | | 0.0000 | 0.000 | 3213.7 | 0.154 | BB | 0.056 | 964.78 | 0.113 |
| 29 | 5.816 | | 0.0000 | 0.000 | 20871.4 | 0.997 | BB | 0.045 | 7706.89 | 0.899 |
| 30 | 5.982 | | 0.0000 | 0.000 | 685.3 | 0.033 | BB | 0.027 | 416.01 | 0.049 |
| 31 | 6.032 | delta-BHC | 2.6985 | 0.334 | 2831.3 | 0.135 | BB | 0.036 | 1314.08 | 0.153 |
| 32 | 6.336 | Heptachlor | 22.8410 | 2.830 | 86703.0 | 4.144 | BB | 0.117 | 12392.82 | 1.446 |
| 33 | 6.521 | | 0.0000 | 0.000 | 388063.3 | 18.546 | BB | 0.034 | 187495.50 | 21.872 |
| 34 | 6.665 | | 0.0000 | 0.000 | 11644.0 | 0.556 | BB | 0.041 | 4748.57 | 0.554 |
| 35 | 6.784 | | 0.0000 | 0.000 | 9449.0 | 0.452 | BB | 0.044 | 3575.09 | 0.417 |
| 36 | 6.897 | | 0.0000 | 0.000 | 1156.1 | 0.055 | BB | 0.026 | 736.54 | 0.086 |
| 37 | 6.956 | | 0.0000 | 0.000 | 1583.2 | 0.076 | BB | 0.036 | 735.92 | 0.086 |
| 38 | 7.128 | | 0.0000 | 0.000 | 21537.1 | 1.029 | BB | 0.047 | 7693.06 | 0.897 |
| 39 | 7.255 | | 0.0000 | 0.000 | 9293.9 | 0.444 | BB | 0.027 | 5770.40 | 0.673 |
| 40 | 7.293 | | 0.0000 | 0.000 | 9442.4 | 0.451 | BB | 0.025 | 6380.43 | 0.744 |
| 41 | 7.360 | | 0.0000 | 0.000 | 11908.3 | 0.569 | BB | 0.065 | 3061.92 | 0.357 |
| 42 | 7.468 | | 0.0000 | 0.000 | 467.5 | 0.022 | BB | 0.022 | 351.04 | 0.041 |
| 43 | 7.570 | o,p-DDE | 5.1313 | 0.636 | 2178.8 | 0.104 | BB | 0.027 | 1343.95 | 0.157 |
| 44 | 7.635 | | 0.0000 | 0.000 | 35159.2 | 1.680 | BV | 0.041 | 14336.75 | 1.672 |
| 45 | 7.689 | | 0.0000 | 0.000 | 19559.5 | 0.935 | VB | 0.057 | 5753.09 | 0.671 |
| 46 | 7.879 | | 0.0000 | 0.000 | 2653.0 | 0.127 | BV | 0.062 | 712.35 | 0.083 |
| 47 | 7.949 | a. Chlordane | 16.2918 | 2.018 | 16551.4 | 0.791 | VV | 0.039 | 7149.47 | 0.834 |
| 48 | 8.008 | 4,4'-DDE | 30.3065 | 3.755 | 23850.6 | 1.140 | VV | 0.037 | 10648.25 | 1.242 |
| 49 | 8.065 | | 0.0000 | 0.000 | 6994.6 | 0.334 | VB | 0.033 | 3528.72 | 0.412 |
| 50 | 8.168 | | 0.0000 | 0.000 | 46269.0 | 2.211 | BV | 0.041 | 18826.10 | 2.196 |
| 51 | 8.322 | | 0.0000 | 0.000 | 14793.6 | 0.707 | VV | 0.065 | 3767.19 | 0.439 |
| 52 | 8.404 | | 0.0000 | 0.000 | 24504.5 | 1.171 | VV | 0.046 | 8881.62 | 1.036 |
| 53 | 8.530 | | 0.0000 | 0.000 | 32089.7 | 1.534 | VV | 0.039 | 13656.12 | 1.593 |
| 54 | 8.608 | o,p-DDT | 4.7246 | 0.585 | 3425.9 | 0.164 | VV | 0.045 | 1259.63 | 0.147 |
| 55 | 8.685 | | 0.0000 | 0.000 | 3540.8 | 0.169 | VV | 0.031 | 1881.24 | 0.219 |
| 56 | 8.764 | Endrin | 38.6439 | 4.788 | 40283.9 | 1.925 | VV | 0.052 | 12921.74 | 1.507 |

8524

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.837 | 4,4'-DDD | 107.9525 | 13.374 | 68933.1 | 3.294 | VV | 0.037 | 30728.14 | 3.585 |
| 58 | 8.896 | | 0.0000 | 0.000 | 28795.7 | 1.376 | VV | 0.060 | 7940.87 | 0.926 |
| 59 | 8.992 | | 0.0000 | 0.000 | 3596.9 | 0.172 | VV | 0.039 | 1545.43 | 0.180 |
| 60 | 9.060 | Endosulfan II | 7.2314 | 0.896 | 4666.3 | 0.223 | VV | 0.032 | 2414.96 | 0.282 |
| 61 | 9.133 | | 0.0000 | 0.000 | 62764.9 | 3.000 | VV | 0.052 | 20184.19 | 2.355 |
| 62 | 9.247 | | 0.0000 | 0.000 | 6100.6 | 0.292 | VB | 0.053 | 1914.89 | 0.223 |
| 63 | 9.334 | | 0.0000 | 0.000 | 2404.8 | 0.115 | BV | 0.024 | 1643.65 | 0.192 |
| 64 | 9.381 | | 0.0000 | 0.000 | 36451.8 | 1.742 | VB | 0.051 | 11874.46 | 1.385 |
| 65 | 9.479 | | 0.0000 | 0.000 | 1891.0 | 0.090 | BB | 0.027 | 1179.21 | 0.138 |
| 66 | 9.510 | | 0.0000 | 0.000 | 4313.6 | 0.206 | BB | 0.023 | 3149.53 | 0.367 |
| 67 | 9.596 | Endrin aldehyde | 5.5369 | 0.686 | 2317.5 | 0.111 | BB | 0.025 | 1518.95 | 0.177 |
| 68 | 9.661 | | 0.0000 | 0.000 | 2431.4 | 0.116 | BB | 0.032 | 1269.92 | 0.148 |
| 69 | 9.742 | | 0.0000 | 0.000 | 4759.3 | 0.227 | BB | 0.055 | 1446.35 | 0.169 |
| 70 | 9.830 | | 0.0000 | 0.000 | 5493.9 | 0.263 | BB | 0.036 | 2511.37 | 0.293 |
| 71 | 9.913 | | 0.0000 | 0.000 | 1276.2 | 0.061 | BB | 0.029 | 723.26 | 0.084 |
| 72 | 9.989 | | 0.0000 | 0.000 | 9376.9 | 0.448 | BB | 0.033 | 4753.32 | 0.554 |
| 73 | 10.069 | | 0.0000 | 0.000 | 815.8 | 0.039 | BB | 0.029 | 467.77 | 0.055 |
| 74 | 10.132 | | 0.0000 | 0.000 | 338.1 | 0.016 | BB | 0.025 | 221.59 | 0.026 |
| 75 | 10.242 | | 0.0000 | 0.000 | 1339.9 | 0.064 | BB | 0.031 | 719.31 | 0.084 |
| 76 | 10.304 | | 0.0000 | 0.000 | 2850.1 | 0.136 | BB | 0.025 | 1917.64 | 0.224 |
| 77 | 10.358 | | 0.0000 | 0.000 | 99430.9 | 4.752 | BB | 0.052 | 31709.30 | 3.699 |
| 78 | 10.591 | | 0.0000 | 0.000 | 1665.8 | 0.080 | BB | 0.042 | 664.19 | 0.077 |
| 79 | 10.750 | | 0.0000 | 0.000 | 24249.8 | 1.159 | BB | 0.050 | 8096.75 | 0.945 |
| 80 | 10.924 | | 0.0000 | 0.000 | 10024.3 | 0.479 | BB | 0.056 | 2999.74 | 0.350 |
| 81 | 11.056 | | 0.0000 | 0.000 | 10095.5 | 0.482 | BB | 0.055 | 3074.77 | 0.359 |
| 82 | 11.173 | | 0.0000 | 0.000 | 2299.7 | 0.110 | BB | 0.037 | 1044.31 | 0.122 |
| 83 | 11.225 | | 0.0000 | 0.000 | 573.3 | 0.027 | BB | 0.023 | 406.82 | 0.047 |
| 84 | 11.376 | | 0.0000 | 0.000 | 1190.4 | 0.057 | BB | 0.046 | 432.16 | 0.050 |
| 85 | 11.484 | | 0.0000 | 0.000 | 58244.9 | 2.784 | BB | 0.062 | 15767.15 | 1.839 |
| 86 | 11.699 | | 0.0000 | 0.000 | 301.6 | 0.014 | BB | 0.023 | 218.56 | 0.025 |
| 87 | 11.747 | | 0.0000 | 0.000 | 1173.2 | 0.056 | BB | 0.033 | 584.96 | 0.068 |
| 88 | 11.885 | DCB | 266.7571 | 33.049 | 232954.8 | 11.133 | BB | 0.044 | 88007.01 | 10.266 |
| 89 | 11.989 | | 0.0000 | 0.000 | 1755.3 | 0.084 | BB | 0.032 | 900.75 | 0.105 |
| 90 | 12.243 | | 0.0000 | 0.000 | 6363.8 | 0.304 | BB | 0.144 | 735.62 | 0.086 |
| 91 | 12.362 | | 0.0000 | 0.000 | 1071.0 | 0.051 | BB | 0.049 | 361.06 | 0.042 |
| 92 | 12.422 | | 0.0000 | 0.000 | 1312.7 | 0.063 | BB | 0.043 | 513.10 | 0.060 |
| 93 | 12.517 | | 0.0000 | 0.000 | 3114.3 | 0.149 | BB | 0.078 | 663.02 | 0.077 |
| 94 | 12.672 | | 0.0000 | 0.000 | 5681.9 | 0.272 | BB | 0.053 | 1788.23 | 0.209 |
| 95 | 12.746 | | 0.0000 | 0.000 | 1900.9 | 0.091 | BB | 0.045 | 709.72 | 0.083 |
| 96 | 12.884 | | 0.0000 | 0.000 | 4736.3 | 0.226 | BB | 0.099 | 795.17 | 0.093 |
| 97 | 13.046 | | 0.0000 | 0.000 | 6629.7 | 0.317 | BB | 0.058 | 1899.44 | 0.222 |
| 98 | 13.330 | | 0.0000 | 0.000 | 4054.3 | 0.194 | BB | 0.065 | 1033.79 | 0.121 |
| 99 | 13.444 | | 0.0000 | 0.000 | 227.3 | 0.011 | BB | 0.027 | 142.27 | 0.017 |
| 100 | 13.518 | | 0.0000 | 0.000 | 1750.4 | 0.084 | BB | 0.059 | 492.37 | 0.057 |
| 101 | 13.864 | | 0.0000 | 0.000 | 287.0 | 0.014 | BB | 0.062 | 77.16 | 0.009 |
| 102 | 13.954 | | 0.0000 | 0.000 | 533.4 | 0.025 | BB | 0.053 | 168.38 | 0.020 |

Total Area = 2092440.0, Total Amount = 807.162, Total Height = 857236.7, Sample Units = PPB

Sample Name: **4241639F AB5GP24 T 040850020A 01225**
Acquired from CP16--H5262B via port 2 on 3/26/04 02:09:36pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.56R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.476 | | 0.0000 | 0.000 | 20418.5 | 0.811 | BB | 0.032 | 10714.38 | 1.216 |
| 2 | 3.540 | | 0.0000 | 0.000 | 1561.8 | 0.062 | BB | 0.024 | 1104.41 | 0.125 |
| 3 | 3.620 | | 0.0000 | 0.000 | 4297.6 | 0.171 | BB | 0.031 | 2280.89 | 0.259 |
| 4 | 3.668 | | 0.0000 | 0.000 | 7443.7 | 0.296 | BB | 0.037 | 3353.88 | 0.381 |
| 5 | 3.742 | | 0.0000 | 0.000 | 35254.3 | 1.401 | BB | 0.029 | 20142.22 | 2.286 |
| 6 | 3.851 | | 0.0000 | 0.000 | 420.3 | 0.017 | BB | 0.022 | 318.10 | 0.036 |
| 7 | 3.903 | | 0.0000 | 0.000 | 2682.9 | 0.107 | BB | 0.037 | 1214.67 | 0.138 |
| 8 | 3.978 | | 0.0000 | 0.000 | 1002.8 | 0.040 | BB | 0.030 | 558.85 | 0.063 |
| 9 | 4.041 | TCX | 240.4906 | 26.044 | 298139.7 | 11.846 | BB | 0.037 | 134935.30 | 15.316 |
| 10 | 4.204 | | 0.0000 | 0.000 | 175340.6 | 6.967 | BB | 0.047 | 62829.89 | 7.132 |
| 11 | 4.367 | | 0.0000 | 0.000 | 6231.3 | 0.248 | BB | 0.060 | 1731.21 | 0.197 |
| 12 | 4.441 | | 0.0000 | 0.000 | 4219.6 | 0.168 | BB | 0.071 | 995.05 | 0.113 |
| 13 | 4.583 | | 0.0000 | 0.000 | 7879.7 | 0.313 | BB | 0.048 | 2714.12 | 0.308 |
| 14 | 4.653 | | 0.0000 | 0.000 | 5443.7 | 0.216 | BB | 0.035 | 2581.95 | 0.293 |
| 15 | 4.770 | | 0.0000 | 0.000 | 16053.9 | 0.638 | BB | 0.028 | 9413.58 | 1.068 |
| 16 | 4.860 | | 0.0000 | 0.000 | 69260.0 | 2.752 | BB | 0.039 | 29823.59 | 3.385 |
| 17 | 5.038 | | 0.0000 | 0.000 | 1868.9 | 0.074 | BB | 0.039 | 788.80 | 0.090 |
| 18 | 5.122 | | 0.0000 | 0.000 | 7745.0 | 0.308 | BB | 0.073 | 1771.22 | 0.201 |
| 19 | 5.325 | | 0.0000 | 0.000 | 1796.0 | 0.071 | BB | 0.048 | 628.64 | 0.071 |
| 20 | 5.420 | | 0.0000 | 0.000 | 3481.1 | 0.138 | BB | 0.027 | 2112.08 | 0.240 |
| 21 | 5.509 | | 0.0000 | 0.000 | 18305.7 | 0.727 | BB | 0.040 | 7648.88 | 0.868 |
| 22 | 5.651 | | 0.0000 | 0.000 | 1947.0 | 0.077 | BB | 0.040 | 813.09 | 0.092 |
| 23 | 5.736 | | 0.0000 | 0.000 | 20184.4 | 0.802 | BB | 0.037 | 9093.97 | 1.032 |
| 24 | 5.883 | | 0.0000 | 0.000 | 2291.3 | 0.091 | BB | 0.057 | 670.56 | 0.076 |
| 25 | 5.938 | | 0.0000 | 0.000 | 5136.1 | 0.204 | BV | 0.041 | 2083.76 | 0.237 |
| 26 | 5.995 | delta-BHC | 14.2313 | 1.541 | 120534.3 | 4.789 | VB | 0.189 | 10604.25 | 1.204 |
| 27 | 6.240 | | 0.0000 | 0.000 | 89878.3 | 3.571 | BV | 0.086 | 17406.08 | 1.976 |
| 28 | 6.301 | | 0.0000 | 0.000 | 48835.7 | 1.940 | VV | 0.053 | 15348.85 | 1.742 |
| 29 | 6.382 | | 0.0000 | 0.000 | 93264.9 | 3.706 | VV | 0.078 | 19990.99 | 2.269 |
| 30 | 6.444 | | 0.0000 | 0.000 | 73258.7 | 2.911 | VV | 0.102 | 11985.60 | 1.360 |
| 31 | 6.632 | | 0.0000 | 0.000 | 54833.2 | 2.179 | VB | 0.065 | 14140.29 | 1.605 |
| 32 | 6.744 | Telodrin | 6.3572 | 0.688 | 10663.8 | 0.424 | BB | 0.047 | 3748.58 | 0.425 |
| 33 | 6.945 | | 0.0000 | 0.000 | 29622.0 | 1.177 | BB | 0.042 | 11850.22 | 1.345 |
| 34 | 7.058 | | 0.0000 | 0.000 | 835.2 | 0.033 | BB | 0.031 | 454.49 | 0.052 |
| 35 | 7.140 | | 0.0000 | 0.000 | 11072.3 | 0.440 | BB | 0.058 | 3202.31 | 0.363 |
| 36 | 7.237 | | 0.0000 | 0.000 | 6245.4 | 0.248 | BB | 0.027 | 3882.40 | 0.441 |
| 37 | 7.296 | Hept. epoxide | 19.2802 | 2.088 | 23663.6 | 0.940 | BB | 0.034 | 11457.88 | 1.301 |
| 38 | 7.398 | | 0.0000 | 0.000 | 772.1 | 0.031 | BB | 0.021 | 615.65 | 0.070 |
| 39 | 7.452 | | 0.0000 | 0.000 | 8087.8 | 0.321 | BV | 0.042 | 3223.61 | 0.366 |
| 40 | 7.522 | g. Chlordane | 135.4302 | 14.667 | 165117.5 | 6.560 | VV | 0.035 | 78497.95 | 8.910 |
| 41 | 7.617 | | 0.0000 | 0.000 | 30276.7 | 1.203 | VB | 0.069 | 7364.48 | 0.836 |
| 42 | 7.829 | Endosulfan I | 3.6637 | 0.397 | 5999.9 | 0.238 | BV | 0.052 | 1932.35 | 0.219 |
| 43 | 7.912 | | 0.0000 | 0.000 | 13060.6 | 0.519 | VV | 0.040 | 5460.28 | 0.620 |
| 44 | 7.989 | 4,4'-DDE | 25.0861 | 2.717 | 30396.0 | 1.208 | VV | 0.043 | 11688.42 | 1.327 |
| 45 | 8.065 | | 0.0000 | 0.000 | 10869.8 | 0.432 | VV | 0.048 | 3785.78 | 0.430 |
| 46 | 8.139 | | 0.0000 | 0.000 | 58599.7 | 2.328 | VV | 0.046 | 21249.29 | 2.412 |
| 47 | 8.265 | | 0.0000 | 0.000 | 10470.9 | 0.416 | VV | 0.073 | 2376.20 | 0.270 |
| 48 | 8.387 | | 0.0000 | 0.000 | 29569.8 | 1.175 | VV | 0.041 | 12044.91 | 1.367 |
| 49 | 8.424 | | 0.0000 | 0.000 | 43779.6 | 1.739 | VB | 0.044 | 16610.90 | 1.885 |
| 50 | 8.568 | Endrin | 6.1020 | 0.661 | 5803.1 | 0.231 | BB | 0.038 | 2518.98 | 0.286 |
| 51 | 8.649 | | 0.0000 | 0.000 | 23169.1 | 0.921 | BV | 0.035 | 11115.38 | 1.262 |
| 52 | 8.711 | 4,4'-DDD | 97.8088 | 10.592 | 68798.8 | 2.734 | VV | 0.036 | 31930.92 | 3.624 |
| 53 | 8.793 | | 0.0000 | 0.000 | 1286.9 | 0.051 | VB | 0.025 | 872.70 | 0.099 |
| 54 | 8.873 | Endosulfan II | 28.9472 | 3.135 | 37667.0 | 1.497 | BV | 0.056 | 11212.52 | 1.273 |
| 55 | 8.969 | | 0.0000 | 0.000 | 4134.8 | 0.164 | VV | 0.038 | 1819.05 | 0.206 |
| 56 | 9.112 | 4,4'-DDT | 74.6575 | 8.085 | 104572.9 | 4.155 | VV | 0.072 | 24329.82 | 2.762 |

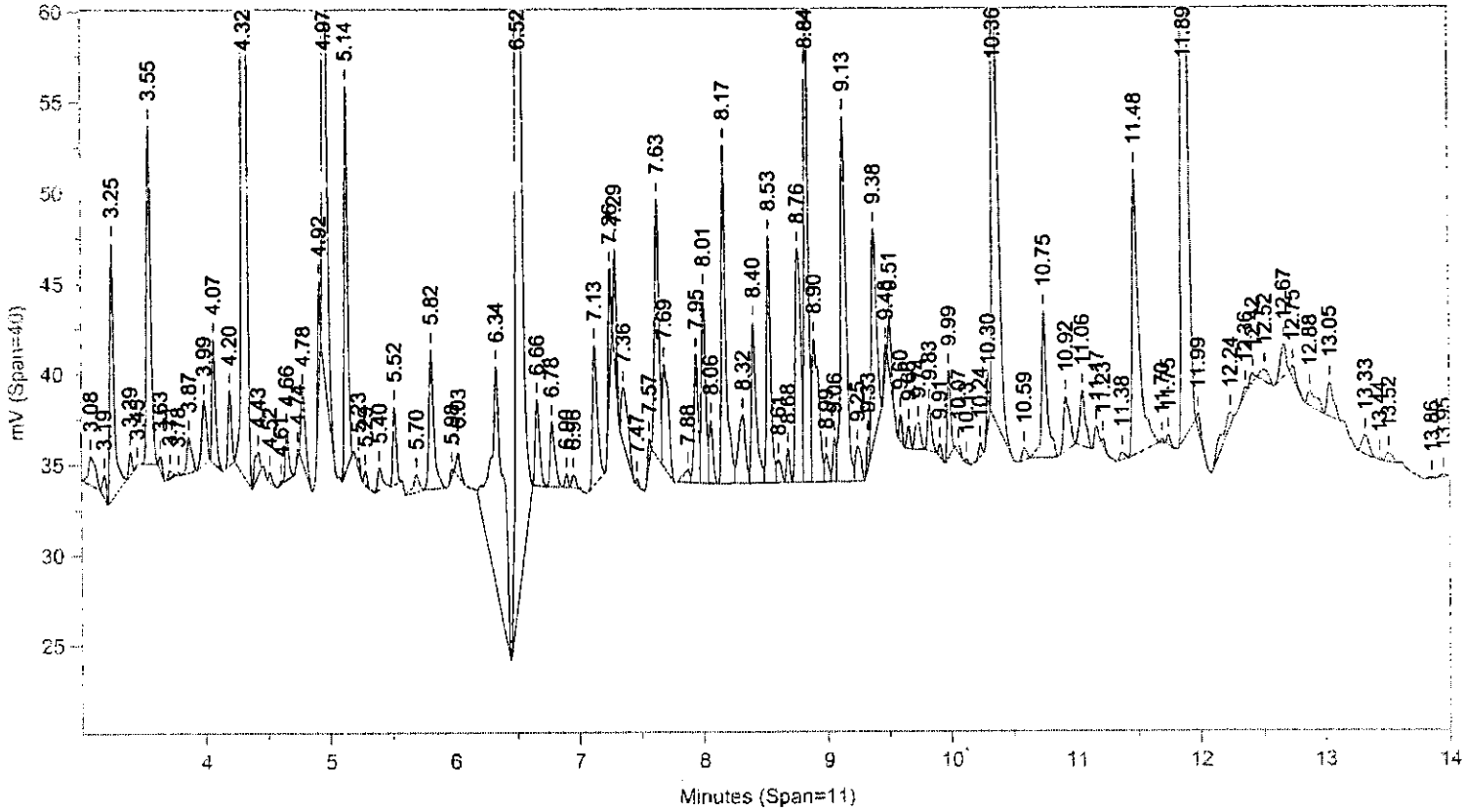
0526

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.239 | | 0.0000 | 0.000 | 8896.6 | 0.353 | VV | 0.051 | 2886.18 | 0.328 |
| 58 | 9.293 | Endrin aldehyde | 21.2067 | 2.297 | 17763.7 | 0.706 | VV | 0.046 | 6503.28 | 0.738 |
| 59 | 9.381 | | 0.0000 | 0.000 | 2666.3 | 0.106 | VV | 0.031 | 1456.05 | 0.165 |
| 60 | 9.416 | | 0.0000 | 0.000 | 5294.4 | 0.210 | VB | 0.044 | 2022.99 | 0.230 |
| 61 | 9.515 | | 0.0000 | 0.000 | 198.2 | 0.008 | BB | 0.022 | 150.54 | 0.017 |
| 62 | 9.578 | | 0.0000 | 0.000 | 28776.4 | 1.143 | BB | 0.050 | 9575.08 | 1.087 |
| 63 | 9.699 | | 0.0000 | 0.000 | 1465.3 | 0.058 | BB | 0.033 | 739.55 | 0.084 |
| 64 | 9.780 | | 0.0000 | 0.000 | 8264.5 | 0.328 | BB | 0.040 | 3462.17 | 0.393 |
| 65 | 9.918 | | 0.0000 | 0.000 | 115208.4 | 4.577 | BB | 0.049 | 38852.20 | 4.410 |
| 66 | 10.038 | | 0.0000 | 0.000 | 4134.6 | 0.164 | BB | 0.082 | 838.99 | 0.095 |
| 67 | 10.195 | | 0.0000 | 0.000 | 18868.9 | 0.750 | BB | 0.045 | 6976.04 | 0.792 |
| 68 | 10.313 | Endrin ketone | 2.2590 | 0.245 | 1891.3 | 0.075 | BB | 0.039 | 816.37 | 0.093 |
| 69 | 10.388 | | 0.0000 | 0.000 | 19606.4 | 0.779 | BB | 0.071 | 4601.34 | 0.522 |
| 70 | 10.574 | | 0.0000 | 0.000 | 1196.5 | 0.048 | BB | 0.060 | 333.41 | 0.038 |
| 71 | 10.681 | | 0.0000 | 0.000 | 2405.7 | 0.096 | BB | 0.039 | 1025.81 | 0.116 |
| 72 | 10.761 | | 0.0000 | 0.000 | 604.3 | 0.024 | BB | 0.032 | 311.96 | 0.035 |
| 73 | 10.911 | | 0.0000 | 0.000 | 45683.9 | 1.815 | BB | 0.066 | 11513.77 | 1.307 |
| 74 | 11.088 | | 0.0000 | 0.000 | 2834.1 | 0.113 | BB | 0.031 | 1543.05 | 0.175 |
| 75 | 11.158 | | 0.0000 | 0.000 | 1423.3 | 0.057 | BB | 0.029 | 832.11 | 0.094 |
| 76 | 11.283 | | 0.0000 | 0.000 | 3479.9 | 0.138 | BB | 0.049 | 1195.79 | 0.136 |
| 77 | 11.436 | | 0.0000 | 0.000 | 2634.6 | 0.105 | BB | 0.069 | 637.52 | 0.072 |
| 78 | 11.518 | | 0.0000 | 0.000 | 2052.8 | 0.082 | BB | 0.032 | 1062.20 | 0.121 |
| 79 | 11.610 | | 0.0000 | 0.000 | 1929.2 | 0.077 | BB | 0.045 | 715.89 | 0.081 |
| 80 | 11.677 | | 0.0000 | 0.000 | 559.2 | 0.022 | BB | 0.030 | 315.59 | 0.036 |
| 81 | 11.864 | | 0.0000 | 0.000 | 9165.6 | 0.364 | BB | 0.139 | 1098.18 | 0.125 |
| 82 | 11.934 | | 0.0000 | 0.000 | 1647.4 | 0.065 | BB | 0.027 | 1033.37 | 0.117 |
| 83 | 12.032 | DCB | 247.8724 | 26.844 | 242303.4 | 9.627 | BB | 0.045 | 89297.56 | 10.136 |
| 84 | 12.260 | | 0.0000 | 0.000 | 10581.2 | 0.420 | BB | 0.110 | 1608.96 | 0.183 |
| 85 | 12.421 | | 0.0000 | 0.000 | 3456.5 | 0.137 | BB | 0.072 | 800.15 | 0.091 |
| 86 | 12.679 | | 0.0000 | 0.000 | 2227.1 | 0.088 | BB | 0.045 | 818.17 | 0.093 |
| 87 | 13.087 | | 0.0000 | 0.000 | 394.1 | 0.016 | BB | 0.038 | 173.18 | 0.020 |
| 88 | 13.240 | | 0.0000 | 0.000 | 748.4 | 0.030 | BB | 0.050 | 251.42 | 0.029 |
| 89 | 13.352 | | 0.0000 | 0.000 | 11703.3 | 0.465 | BB | 0.053 | 3704.93 | 0.421 |
| 90 | 13.488 | | 0.0000 | 0.000 | 901.7 | 0.036 | BB | 0.044 | 339.41 | 0.039 |
| 91 | 13.658 | | 0.0000 | 0.000 | 1784.1 | 0.071 | BB | 0.096 | 308.74 | 0.035 |
| 92 | 13.800 | | 0.0000 | 0.000 | 573.3 | 0.023 | BB | 0.057 | 166.48 | 0.019 |

Total Area = 2516871.0, Total Amount = 923.393, Total Height = 881012.8, Sample Units = PPB

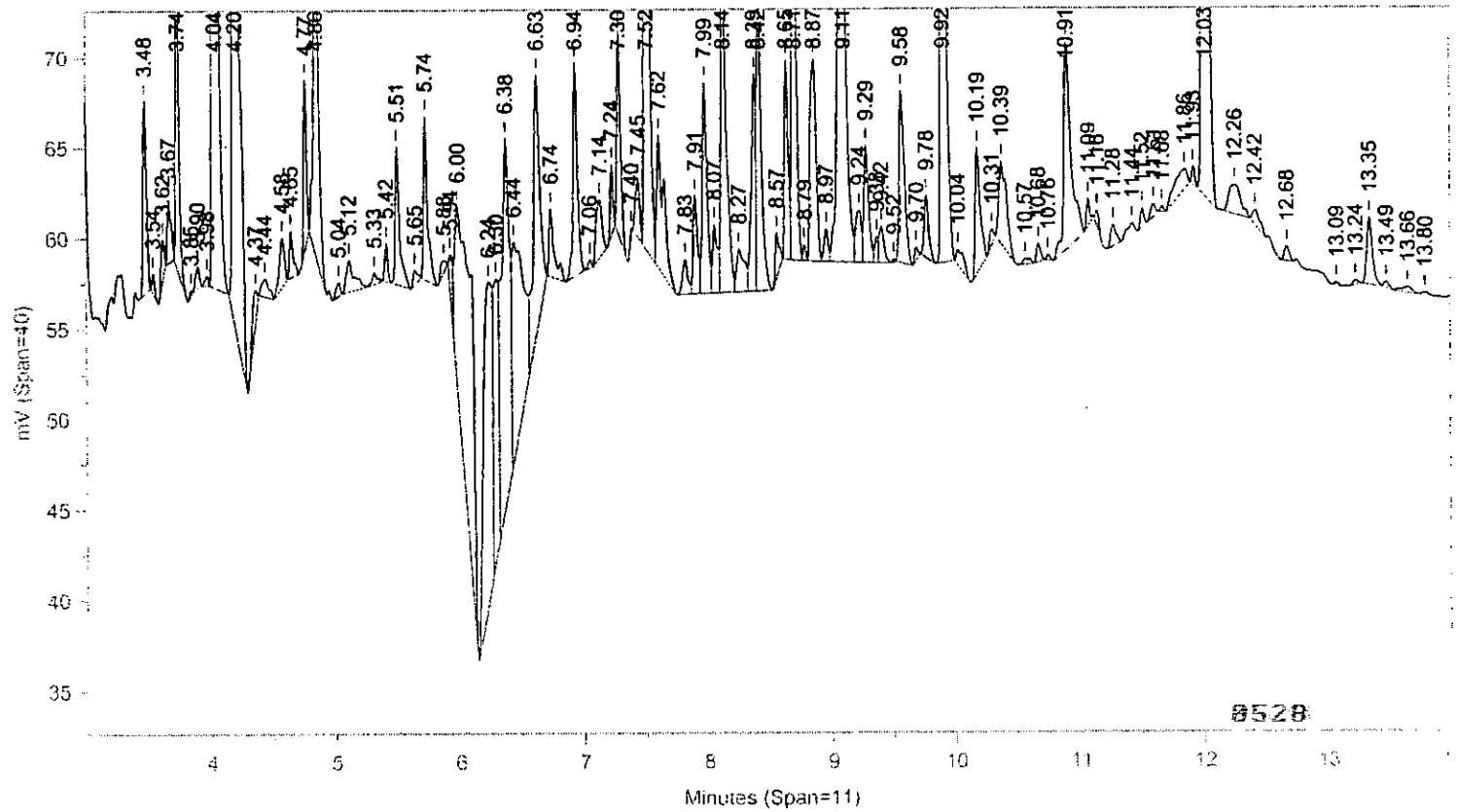
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.56R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 1:55:36 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.56R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 1:55:36 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 30
Analyst: 120

Dilution Factor: 10

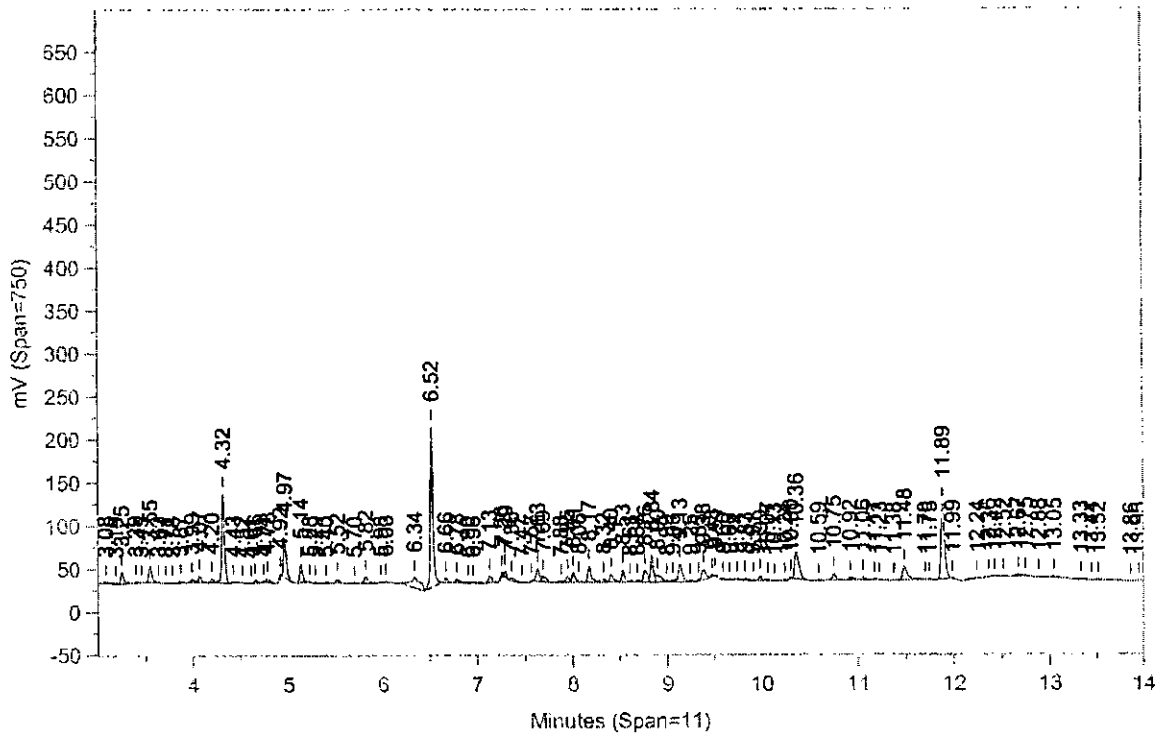
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.316 | 102943 | 8.318 | TCX | 4.041 | 134935 | 8.016 | TCX |
| 4.921 | 5878 | .279 | Hcb | . | 0 | . | Hcb |
| 5.136 | 21143 | 1.371 | alpha-BHC | . | 0 | . | alpha-BHC |
| 6.032 | 1314 | .09 | delta-BHC | 5.995 | 10604 | .474 | delta-BHC |
| 6.336 | 12393 | .761 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.744 | 3749 | .212 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.296 | 11458 | .643 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.522 | 78498 | 4.514 | g. Chlordane |
| 7.57 | 1344 | .171 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.829 | 1932 | .122 | Endosulfan I |
| 7.949 | 7149 | .543 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.008 | 10648 | 1.01 | 4,4'-DDE | 7.989 | 11688 | .836 | 4,4'-DDE |
| 8.764 | 12922 | 1.288 | Endrin | 8.568 | 2519 | .203 | Endrin |
| 8.608 | 1260 | .157 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.837 | 30728 | 3.598 | 4,4'-DDD | 8.711 | 31931 | 3.26 | 4,4'-DDD |
| 9.06 | 2415 | .241 | Endosulfan II | 8.873 | 11213 | .965 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.112 | 24330 | 2.489 | 4,4'-DDT |
| 9.596 | 1519 | .185 | Endrin aldehyde | 9.293 | 6503 | .707 | Endrin aldehyde |
| . | 0 | . | Endrin ketone | 10.313 | 816 | .075 | Endrin ketone |
| 11.885 | 88007 | 8.892 | DCB | 12.032 | 89298 | 8.262 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.56A
Area File: C:\CPWIN\DATA1\3D16082B.56A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:24:06 PM
File Reported On: 3/26/2004 at 3:24:11 PM

8529

10x REPLOTS

C:\CPWIN\DATA1\3D16082.56R

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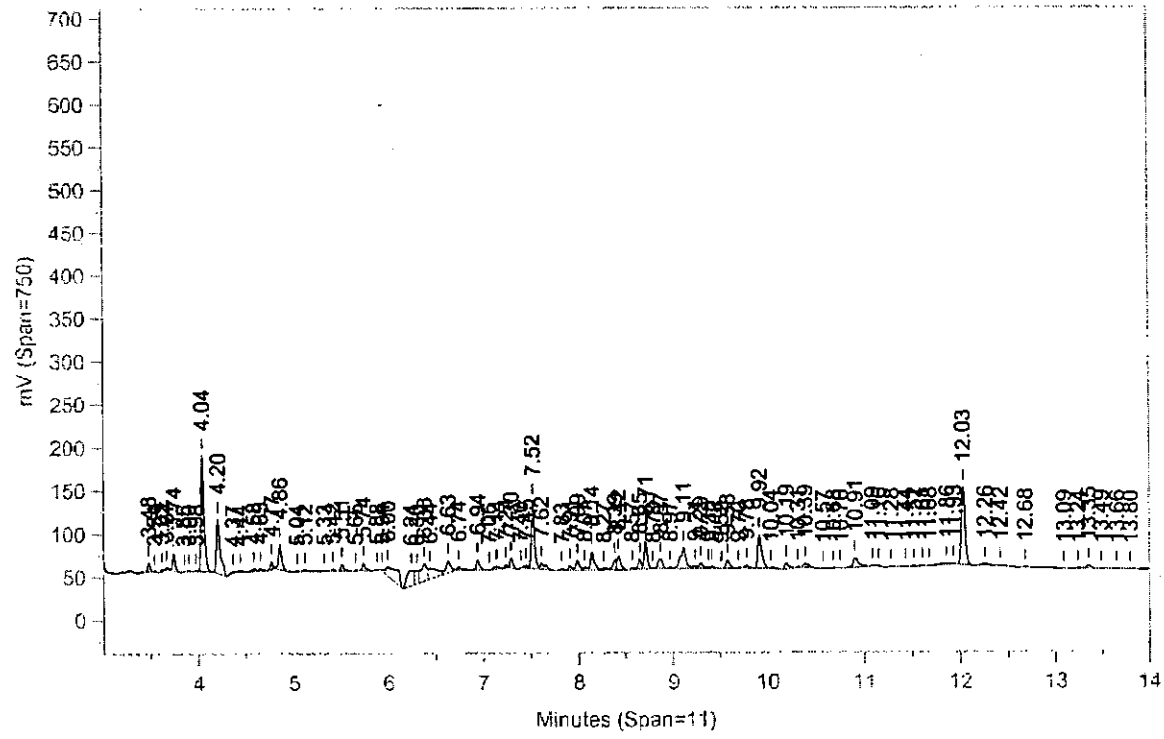

# Standards Data

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Calibration File: 1D16082

GC Column (1): RTX-CLP ID: 0.32 (mm) Update File:

Date(s) Analyzed: 3/22/04 3/22/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 | 4.34 | 4.31 | 4.37 |
| Hcb | 4.92 | 4.93 | 4.93 | 4.92 | 4.92 | 4.93 | 4.90 | 4.96 |
| alpha-BHC | 5.18 | 5.18 | 5.19 | 5.19 | 5.19 | 5.19 | 5.16 | 5.22 |
| gamma-BHC (Lindane) | 5.65 | 5.66 | 5.66 | 5.66 | 5.66 | 5.66 | 5.63 | 5.69 |
| beta-BHC | 5.79 | 5.79 | 5.79 | 5.79 | 5.79 | 5.79 | 5.76 | 5.82 |
| delta-BHC | 6.04 | 6.04 | 6.05 | 6.05 | 6.05 | 6.05 | 6.02 | 6.08 |
| Heptachlor | 6.34 | 6.34 | 6.34 | 6.34 | 6.34 | 6.34 | 6.31 | 6.37 |
| Aldrin | 6.77 | 6.77 | 6.77 | 6.77 | 6.77 | 6.77 | 6.74 | 6.80 |
| Telodrin | 7.07 | 7.07 | 7.07 | 7.07 | 7.07 | 7.07 | 7.04 | 7.10 |
| o,p-DDE | 7.58 | 7.58 | 7.58 | 7.58 | 7.58 | 7.58 | 7.55 | 7.61 |
| Heptachlor epoxide | 7.61 | 7.61 | 7.61 | 7.61 | 7.61 | 7.61 | 7.58 | 7.64 |
| gamma-Chlordane | 7.78 | 7.78 | 7.78 | 7.78 | 7.78 | 7.78 | 7.75 | 7.81 |
| alpha-Chlordane | 7.95 | 7.96 | 7.95 | 7.95 | 7.96 | 7.95 | 7.92 | 7.98 |
| 4,4'-DDE | 8.04 | 8.04 | 8.04 | 8.04 | 8.04 | 8.04 | 8.01 | 8.07 |
| Endosulfan I | 8.15 | 8.15 | 8.15 | 8.15 | 8.15 | 8.15 | 8.12 | 8.18 |
| o,p-DDD | 8.27 | 8.28 | 8.28 | 8.28 | 8.28 | 8.28 | 8.25 | 8.31 |
| Dieldrin | 8.46 | 8.47 | 8.47 | 8.47 | 8.47 | 8.47 | 8.44 | 8.50 |
| o,p-DDT | 8.61 | 8.61 | 8.61 | 8.61 | 8.61 | 8.61 | 8.58 | 8.64 |
| Endrin | 8.77 | 8.78 | 8.78 | 8.78 | 8.78 | 8.78 | 8.75 | 8.81 |
| 4,4'-DDD | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.80 | 8.86 |
| Kepone | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.80 | 8.86 |
| Endosulfan II | 9.07 | 9.07 | 9.07 | 9.07 | 9.08 | 9.07 | 9.04 | 9.10 |
| 4,4'-DDT | 9.20 | 9.20 | 9.20 | 9.20 | 9.20 | 9.20 | 9.17 | 9.23 |
| Endrin aldehyde | 9.62 | 9.62 | 9.62 | 9.62 | 9.63 | 9.62 | 9.59 | 9.65 |
| Methoxychlor | 9.81 | 9.81 | 9.81 | 9.81 | 9.81 | 9.81 | 9.78 | 9.84 |
| Mirex | 10.05 | 10.05 | 10.05 | 10.05 | 10.05 | 10.05 | 10.02 | 10.08 |
| Endosulfan sulfate | 10.19 | 10.20 | 10.19 | 10.19 | 10.20 | 10.19 | 10.16 | 10.22 |
| Endrin ketone | 10.56 | 10.57 | 10.56 | 10.56 | 10.57 | 10.56 | 10.53 | 10.59 |
| Decachlorobiphenyl | 11.93 | 11.93 | 11.93 | 11.93 | 11.93 | 11.93 | 11.90 | 11.96 |

0532

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 2D16082

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Update File: 3D16082.06R

Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | | | 4.32 | | | 4.32 | 4.29 | 4.35 |
| Hcb | | | 4.91 | | | 4.91 | 4.88 | 4.94 |
| alpha-BHC | | | 5.17 | | | 5.17 | 5.14 | 5.20 |
| gamma-BHC (Lindane) | | | 5.63 | | | 5.63 | 5.60 | 5.66 |
| beta-BHC | | | 5.77 | | | 5.77 | 5.74 | 5.80 |
| delta-BHC | | | 6.02 | | | 6.02 | 5.99 | 6.05 |
| Heptachlor | | | 6.32 | | | 6.32 | 6.29 | 6.35 |
| Aldrin | | | 6.75 | | | 6.75 | 6.72 | 6.78 |
| Telodrin | | | 7.05 | | | 7.05 | 7.02 | 7.08 |
| o,p-DDE | | | 7.56 | | | 7.56 | 7.53 | 7.59 |
| Heptachlor epoxide | | | 7.59 | | | 7.59 | 7.56 | 7.62 |
| gamma-Chlordane | | | 7.75 | | | 7.75 | 7.72 | 7.78 |
| alpha-Chlordane | | | 7.93 | | | 7.93 | 7.90 | 7.96 |
| 4,4'-DDE | | | 8.02 | | | 8.02 | 7.99 | 8.05 |
| Endosulfan I | | | 8.12 | | | 8.12 | 8.09 | 8.15 |
| o,p-DDD | | | 8.25 | | | 8.25 | 8.22 | 8.28 |
| Dieldrin | | | 8.44 | | | 8.44 | 8.41 | 8.47 |
| o,p-DDT | | | 8.58 | | | 8.58 | 8.55 | 8.61 |
| Endrin | | | 8.75 | | | 8.75 | 8.72 | 8.78 |
| Kepone | | | 8.80 | | | 8.80 | 8.77 | 8.83 |
| 4,4'-DDD | | | 8.81 | | | 8.81 | 8.78 | 8.84 |
| Endosulfan II | | | 9.05 | | | 9.05 | 9.02 | 9.08 |
| 4,4'-DDT | | | 9.17 | | | 9.17 | 9.14 | 9.20 |
| Endrin aldehyde | | | 9.60 | | | 9.60 | 9.57 | 9.63 |
| Methoxychlor | | | 9.78 | | | 9.78 | 9.75 | 9.81 |
| Mirex | | | 10.02 | | | 10.02 | 9.99 | 10.05 |
| Endosulfan sulfate | | | 10.17 | | | 10.17 | 10.14 | 10.20 |
| Endrin ketone | | | 10.54 | | | 10.54 | 10.51 | 10.57 |
| Decachlorobiphenyl | | | 11.89 | | | 11.89 | 11.86 | 11.92 |

3/24/04

8533

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 1D16082B

GC Column (2): RTXCLPII  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 | 4.06 | 4.03 | 4.09 |
| Hcb | 4.75 | 4.76 | 4.76 | 4.75 | 4.76 | 4.76 | 4.73 | 4.79 |
| alpha-BHC | 4.96 | 4.96 | 4.96 | 4.96 | 4.97 | 4.96 | 4.93 | 4.99 |
| gamma-BHC (Lindane) | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 | 5.45 | 5.51 |
| beta-BHC | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| delta-BHC | 6.02 | 6.02 | 6.02 | 6.02 | 6.02 | 6.02 | 5.99 | 6.05 |
| Heptachlor | 6.10 | 6.10 | 6.10 | 6.10 | 6.10 | 6.10 | 6.07 | 6.13 |
| Aldrin | 6.54 | 6.54 | 6.54 | 6.54 | 6.54 | 6.54 | 6.51 | 6.57 |
| Telodrin | 6.77 | 6.77 | 6.77 | 6.77 | 6.77 | 6.77 | 6.74 | 6.80 |
| Heptachlor epoxide | 7.32 | 7.32 | 7.32 | 7.32 | 7.32 | 7.32 | 7.29 | 7.35 |
| gamma-Chlordane | 7.57 | 7.57 | 7.57 | 7.57 | 7.57 | 7.57 | 7.54 | 7.60 |
| o,p-DDE | 7.58 | 7.58 | 7.58 | 7.58 | 7.58 | 7.58 | 7.55 | 7.61 |
| alpha-Chlordane | 7.76 | 7.76 | 7.76 | 7.76 | 7.76 | 7.76 | 7.73 | 7.79 |
| Endosulfan I | 7.84 | 7.84 | 7.84 | 7.84 | 7.84 | 7.84 | 7.81 | 7.87 |
| 4,4'-DDE | 7.98 | 7.99 | 7.99 | 7.99 | 7.99 | 7.99 | 7.96 | 8.02 |
| Dieldrin | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.17 | 8.23 |
| o,p-DDD | 8.25 | 8.25 | 8.25 | 8.25 | 8.25 | 8.25 | 8.22 | 8.28 |
| Endrin | 8.59 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.57 | 8.63 |
| o,p-DDT | 8.64 | 8.64 | 8.64 | 8.64 | 8.65 | 8.64 | 8.61 | 8.67 |
| 4,4'-DDD | 8.73 | 8.73 | 8.73 | 8.73 | 8.74 | 8.73 | 8.70 | 8.76 |
| Kepone | 8.74 | 8.74 | 8.74 | 8.74 | 8.74 | 8.74 | 8.71 | 8.77 |
| Endosulfan II | 8.87 | 8.87 | 8.87 | 8.87 | 8.87 | 8.87 | 8.84 | 8.90 |
| 4,4'-DDT | 9.14 | 9.14 | 9.14 | 9.14 | 9.14 | 9.14 | 9.11 | 9.17 |
| Endrin aldehyde | 9.31 | 9.31 | 9.31 | 9.31 | 9.31 | 9.31 | 9.28 | 9.34 |
| Endosulfan sulfate | 9.66 | 9.66 | 9.66 | 9.66 | 9.66 | 9.66 | 9.63 | 9.69 |
| Methoxychlor | 10.02 | 10.02 | 10.01 | 10.01 | 10.02 | 10.01 | 9.98 | 10.04 |
| Mirex | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.28 | 10.34 |
| Endrin ketone | 10.35 | 10.35 | 10.35 | 10.35 | 10.36 | 10.35 | 10.32 | 10.38 |
| Decachlorobiphenyl | 12.08 | 12.08 | 12.07 | 12.07 | 12.08 | 12.07 | 12.04 | 12.10 |

8534

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 2D16082B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Update File: 3D16082B.06R

Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | | | 4.04 | | | 4.04 | 4.01 | 4.07 |
| Hcb | | | 4.74 | | | 4.74 | 4.71 | 4.77 |
| alpha-BHC | | | 4.94 | | | 4.94 | 4.91 | 4.97 |
| gamma-BHC (Lindane) | | | 5.46 | | | 5.46 | 5.43 | 5.49 |
| beta-BHC | | | 5.59 | | | 5.59 | 5.56 | 5.62 |
| delta-BHC | | | 6.00 | | | 6.00 | 5.97 | 6.03 |
| Heptachlor | | | 6.07 | | | 6.07 | 6.04 | 6.10 |
| Aldrin | | | 6.52 | | | 6.52 | 6.49 | 6.55 |
| Telodrin | | | 6.75 | | | 6.75 | 6.72 | 6.78 |
| Heptachlor epoxide | | | 7.30 | | | 7.30 | 7.27 | 7.33 |
| gamma-Chlordane | | | 7.55 | | | 7.55 | 7.52 | 7.58 |
| o,p-DDE | | | 7.55 | | | 7.55 | 7.52 | 7.58 |
| alpha-Chlordane | | | 7.74 | | | 7.74 | 7.71 | 7.77 |
| Endosulfan I | | | 7.82 | | | 7.82 | 7.79 | 7.85 |
| 4,4'-DDE | | | 7.96 | | | 7.96 | 7.93 | 7.99 |
| Dieldrin | | | 8.17 | | | 8.17 | 8.14 | 8.20 |
| o,p-DDD | | | 8.22 | | | 8.22 | 8.19 | 8.25 |
| Endrin | | | 8.57 | | | 8.57 | 8.54 | 8.60 |
| o,p-DDT | | | 8.61 | | | 8.61 | 8.58 | 8.64 |
| 4,4'-DDD | | | 8.71 | | | 8.71 | 8.68 | 8.74 |
| Kepone | | | 8.71 | | | 8.71 | 8.68 | 8.74 |
| Endosulfan II | | | 8.85 | | | 8.85 | 8.82 | 8.88 |
| 4,4'-DDT | | | 9.11 | | | 9.11 | 9.08 | 9.14 |
| Endrin aldehyde | | | 9.28 | | | 9.28 | 9.25 | 9.31 |
| Endosulfan sulfate | | | 9.63 | | | 9.63 | 9.60 | 9.66 |
| Methoxychlor | | | 9.99 | | | 9.99 | 9.96 | 10.02 |
| Mirex | | | 10.27 | | | 10.27 | 10.24 | 10.30 |
| Endrin ketone | | | 10.33 | | | 10.33 | 10.30 | 10.36 |
| Decachlorobiphenyl | | | 12.04 | | | 12.04 | 12.01 | 12.07 |

3/26/4

8535



FORM VI-1

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Calibration File: 1D16082

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/22/04 3/22/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Tetrachloro-m-xylene | 4.40E+03 | 4.24E+03 | 4.06E+03 | 4.03E+03 | 3.89E+03 | 4.13E+03 | 4.8 |
| Hcb | 7.74E+03 | 7.17E+03 | 7.08E+03 | 6.72E+03 | 6.41E+03 | 7.02E+03 | 7.2 |
| alpha-BHC | 4.76E+03 | 5.00E+03 | 5.15E+03 | 5.37E+03 | 5.42E+03 | 5.14E+03 | 5.2 |
| gamma-BHC (Lindane) | 4.88E+03 | 5.08E+03 | 5.13E+03 | 5.27E+03 | 5.29E+03 | 5.13E+03 | 3.2 |
| beta-BHC | 2.96E+03 | 2.89E+03 | 2.82E+03 | 2.77E+03 | 2.72E+03 | 2.83E+03 | 3.4 |
| delta-BHC | 4.57E+03 | 4.78E+03 | 4.87E+03 | 5.04E+03 | 5.09E+03 | 4.87E+03 | 4.4 |
| Heptachlor | 5.71E+03 | 5.53E+03 | 5.35E+03 | 5.31E+03 | 5.23E+03 | 5.43E+03 | 3.6 |
| Aldrin | 4.24E+03 | 4.18E+03 | 4.15E+03 | 4.20E+03 | 4.18E+03 | 4.19E+03 | .8 |
| Telodrin | 4.68E+03 | 4.41E+03 | 4.40E+03 | 4.22E+03 | 4.06E+03 | 4.35E+03 | 5.4 |
| o,p-DDE | 2.76E+03 | 2.59E+03 | 2.62E+03 | 2.57E+03 | 2.55E+03 | 2.62E+03 | 3.3 |
| Heptachlor epoxide | 4.63E+03 | 4.35E+03 | 4.19E+03 | 4.16E+03 | 4.08E+03 | 4.28E+03 | 5.1 |
| gamma-Chlordane | 4.32E+03 | 4.19E+03 | 4.07E+03 | 4.05E+03 | 3.96E+03 | 4.12E+03 | 3.4 |
| alpha-Chlordane | 5.15E+03 | 4.42E+03 | 4.19E+03 | 4.15E+03 | 4.03E+03 | 4.39E+03 | 10.2 |
| 4,4'-DDE | 3.57E+03 | 3.48E+03 | 3.47E+03 | 3.55E+03 | 3.51E+03 | 3.51E+03 | 1.2 |
| Endosulfan I | 4.29E+03 | 3.99E+03 | 3.84E+03 | 3.82E+03 | 3.72E+03 | 3.93E+03 | 5.7 |
| o,p-DDD | 2.41E+03 | 2.18E+03 | 2.22E+03 | 2.15E+03 | 2.14E+03 | 2.22E+03 | 5.0 |
| Dieldrin | 3.78E+03 | 3.62E+03 | 3.57E+03 | 3.64E+03 | 3.60E+03 | 3.64E+03 | 2.2 |
| o,p-DDT | 2.92E+03 | 2.62E+03 | 2.66E+03 | 2.58E+03 | 2.55E+03 | 2.67E+03 | 5.6 |
| Endrin | 3.48E+03 | 3.36E+03 | 3.28E+03 | 3.32E+03 | 3.28E+03 | 3.34E+03 | 2.5 |
| 4,4'-DDD | 3.53E+03 | 2.72E+03 | 2.63E+03 | 2.68E+03 | 2.67E+03 | 2.85E+03 | 13.5 |
| Kepone | 9.49E+02 | 4.22E+02 | 1.10E+03 | 4.55E+02 | 9.84E+02 | 7.83E+02 | 40.8 |
| Endosulfan II | 3.61E+03 | 3.40E+03 | 3.28E+03 | 3.24E+03 | 3.17E+03 | 3.34E+03 | 5.1 |
| 4,4'-DDT | 2.95E+03 | 2.88E+03 | 2.84E+03 | 2.89E+03 | 2.84E+03 | 2.88E+03 | 1.5 |
| Endrin aldehyde | 3.07E+03 | 2.85E+03 | 2.65E+03 | 2.61E+03 | 2.55E+03 | 2.74E+03 | 7.8 |
| Methoxychlor | 1.93E+03 | 1.70E+03 | 1.57E+03 | 1.52E+03 | 1.47E+03 | 1.64E+03 | 11.3 |
| Mirex | 3.46E+03 | 3.00E+03 | 2.82E+03 | 2.52E+03 | 2.29E+03 | 2.82E+03 | 16.0 |
| Endosulfan sulfate | 3.22E+03 | 3.02E+03 | 2.86E+03 | 2.85E+03 | 2.77E+03 | 2.95E+03 | 6.1 |
| Endrin ketone | 3.38E+03 | 3.32E+03 | 3.20E+03 | 3.23E+03 | 3.16E+03 | 3.26E+03 | 2.7 |
| Decachlorobiphenyl | 4.03E+03 | 3.49E+03 | 3.14E+03 | 2.98E+03 | 2.85E+03 | 3.30E+03 | 14.4 |

Average % RSD: 6.9

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FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1D16082.CAL** Version = 13
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

**1 TCX**
Retention time = 4.336 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 16949.4 | 4402.447 | Manual | 3/22/2004 9:43:4 |
| 2 | 19.240 | 81656.0 | 4244.073 | Manual | 3/22/2004 9:48:4 |
| 3 | 38.480 | 156187.9 | 4058.937 | Manual | 3/22/2004 9:55:2 |
| 4 | 57.720 | 232489.6 | 4027.886 | Manual | 3/22/2004 10:09: |
| 5 | 76.960 | 299628.6 | 3893.303 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4125.329 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9929, Average error = 3.84%
Average CF = 4125.3290 with RSD = 4.83%

**2 Hcb**
Retention time = 4.925 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7738.4 | 7738.42 | Manual | 3/22/2004 9:43:4 |
| 2 | 2.500 | 17921.8 | 7168.728 | Manual | 3/22/2004 9:48:4 |
| 3 | 5.000 | 35396.6 | 7079.314 | Manual | 3/22/2004 9:55:2 |
| 4 | 10.000 | 67186.4 | 6718.643 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 128138.5 | 6406.925 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 7022.406 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9829, Average error = 5.24%
Average CF = 7022.4060 with RSD = 7.15%

8537

**3 alpha-BHC**
Retention time = 5.185 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4762.3 | 4762.253 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 25009.8 | 5001.954 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 51498.9 | 5149.89 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 81593.5 | 5367.995 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 108313.1 | 5415.655 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5139.549 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9938, Average error = 4.01%
Average CF = 5139.5490 with RSD = 5.24%

**4 gamma-BHC**
Retention time = 5.655 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4884.9 | 4884.867 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 25395.5 | 5079.1 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 51317.5 | 5131.754 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 80140.2 | 5272.379 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 105823.8 | 5291.19 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5131.858 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9978, Average error = 2.34%
Average CF = 5131.8580 with RSD = 3.22%

**5 beta-BHC**
Retention time = 5.787 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2963.7 | 2963.671 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 14464.3 | 2892.868 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 28174.1 | 2817.41 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 42065.7 | 2767.482 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 54437.9 | 2721.897 | Manual | 3/22/2004 10:19: |

8538

Calibration formula: Y = 2832.666 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9965, Average error = 2.70%
Average CF = 2832.6660 with RSD = 3.42%

**6 delta-BHC**
Retention time = 6.045 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4565.8 | 4565.775 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 23884.6 | 4776.916 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 48721.6 | 4872.165 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 76653.4 | 5042.986 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 101817.5 | 5090.875 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4869.744 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9956, Average error = 3.26%
Average CF = 4869.7440 with RSD = 4.36%

**7 Heptachlor**
Retention time = 6.343 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5713.5 | 5713.456 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 27632.2 | 5526.438 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 53487.3 | 5348.725 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 80652.7 | 5306.101 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 104674.0 | 5233.7 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5425.684 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9970, Average error = 2.86%
Average CF = 5425.6840 with RSD = 3.57%

**8 Aldrin**
Retention time = 6.769 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8539

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4244.1 | 4244.138 | Manual | 3/22/2004 9:43:4 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 20916.1 | 4183.214 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41490.7 | 4149.068 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 63814.1 | 4198.293 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 83668.3 | 4183.414 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4191.625 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.56%
Average CF = 4191.6260 with RSD = 0.82%

**9 Telodrin**
Retention time = 7.073 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4677.7 | 4677.73 | Manual | 3/22/2004 9:43:4 |
| 2 | 2.500 | 11027.0 | 4410.82 | Manual | 3/22/2004 9:48:4 |
| 3 | 5.000 | 21987.2 | 4397.448 | Manual | 3/22/2004 9:55:2 |
| 4 | 10.000 | 42163.7 | 4216.371 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 81124.1 | 4056.208 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4351.715 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9903, Average error = 3.96%
Average CF = 4351.7150 with RSD = 5.36%

**10 o,p-DDE**
Retention time = 7.583 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5528.5 | 2764.225 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 12932.9 | 2586.588 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 26235.6 | 2623.563 | Manual | 3/22/2004 9:55:2 |
| 4 | 20.000 | 51380.9 | 2569.044 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 102086.9 | 2552.172 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2619.119 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9986, Average error = 2.28%
Average CF = 2619.1190 with RSD = 3.26%

0548

**11 Hept. epoxide**

Retention time = 7.612 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4630.2 | 4630.21 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 21769.9 | 4353.986 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41853.7 | 4185.372 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 63275.4 | 4162.857 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 81637.9 | 4081.893 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4282.864 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9946, Average error = 3.91%
Average CF = 4282.8640 with RSD = 5.09%

**12 g. Chlordane**
Retention time = 7.777 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4319.8 | 4319.762 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 20936.5 | 4187.306 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 40697.2 | 4069.722 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 61608.3 | 4053.176 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 79114.9 | 3955.747 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4117.143 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 2.65%
Average CF = 4117.1430 with RSD = 3.40%

**13 a. Chlordane**
Retention time = 7.954 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5150.2 | 5150.225 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 22075.0 | 4415.008 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41913.0 | 4191.303 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 63093.6 | 4150.897 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 80689.2 | 4034.46 | Manual | 3/22/2004 10:19: |

0541

Calibration formula: Y = 4388.379 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9817, Average error = 7.19%
Average CF = 4388.3790 with RSD = 10.20%

**14 4,4'-DDE**
Retention time = 8.042 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7136.3 | 3568.136 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 34780.5 | 3478.049 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 69388.8 | 3469.44 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 107811.3 | 3546.424 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 140221.0 | 3505.525 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3513.515 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.00%
Average CF = 3513.5150 with RSD = 1.22%

**15 Endosulfan I**
Retention time = 8.147 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4292.0 | 4292.021 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 19959.3 | 3991.862 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 38358.9 | 3835.89 | Manual | 3/22/2004 9:55:2 |
| 4 | 15.200 | 58010.7 | 3816.493 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 74471.7 | 3723.584 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3931.97 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9932, Average error = 4.27%
Average CF = 3931.9700 with RSD = 5.68%

**16 o,p-DDD**
Retention time = 8.276 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8542

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4815.6 | 2407.815 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 10882.6 | 2176.524 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 22153.3 | 2215.327 | Manual | 3/22/2004 9:55:2 |
| 4 | 20.000 | 42934.6 | 2146.729 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 85551.2 | 2138.781 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2217.035 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 3.44%
Average CF = 2217.0350 with RSD = 5.00%

**17 Dieldrin**
Retention time = 8.465 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7554.8 | 3777.388 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 36245.1 | 3624.509 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 71407.4 | 3570.37 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 110610.6 | 3638.507 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 143973.8 | 3599.345 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3642.024 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.49%
Average CF = 3642.0240 with RSD = 2.20%

**18 o,p-DDT**
Retention time = 8.610 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5849.4 | 2924.685 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 13085.0 | 2616.992 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 26559.1 | 2655.905 | Manual | 3/22/2004 9:55:2 |
| 4 | 20.000 | 51562.6 | 2578.127 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 102196.0 | 2554.9 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2666.122 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9962, Average error = 3.88%
Average CF = 2666.1220 with RSD = 5.61%

8543

**19 Endrin**
Retention time = 8.775 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6963.9 | 3481.965 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33566.1 | 3356.61 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 65554.8 | 3277.742 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 100944.1 | 3320.53 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 131286.8 | 3282.17 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3343.803 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 1.81%
Average CF = 3343.8040 with RSD = 2.50%

**20 Kepone**
Retention time = 8.831 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 9486.3 | 948.634 | Manual | 3/22/2004 9:43:4 |
| 2 | 25.000 | 10558.0 | 422.32 | Manual | 3/22/2004 9:48:4 |
| 3 | 50.000 | 55152.0 | 1103.041 | Manual | 3/22/2004 9:55:2 |
| 4 | 100.000 | 45535.1 | 455.351 | Manual | 3/22/2004 10:09: |
| 5 | 200.000 | 196727.8 | 983.639 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 782.597 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8731, Average error = 35.14%
Average CF = 782.5969 with RSD = 40.79%

**21 4,4'-DDD**
Retention time = 8.832 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7062.4 | 3531.196 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 27189.6 | 2718.957 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 52672.6 | 2633.63 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 81507.9 | 2681.18 | Manual | 3/22/2004 10:09: |

9544

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 5 | 40.000 | 106691.6 | 2667.29 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2846.45 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9848, Average error = 9.62%
Average CF = 2846.4500 with RSD = 13.49%

**22 Endosulfan II**
Retention time = 9.073 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7211.5 | 3605.74 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33999.3 | 3399.925 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 65560.0 | 3277.998 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 98570.5 | 3242.45 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 126868.6 | 3171.715 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3339.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9939, Average error = 3.91%
Average CF = 3339.5650 with RSD = 5.10%

**23 4,4'-DDT**
Retention time = 9.196 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5895.0 | 2947.49 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 28847.7 | 2884.765 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 56752.1 | 2837.605 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 87735.3 | 2886.031 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 113707.3 | 2842.682 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2879.715 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.10%
Average CF = 2879.7150 with RSD = 1.53%

9545

**24 Endrin aldehyde**
Retention time = 9.623 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6137.4 | 3068.717 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 28473.2 | 2847.318 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 52935.7 | 2646.783 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 79282.9 | 2607.989 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 101832.2 | 2545.805 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2743.322 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9856, Average error = 6.26%
Average CF = 2743.3220 with RSD = 7.80%

**25 Methoxychlor**
Retention time = 9.807 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 19341.2 | 1934.122 | Manual | 3/22/2004 9:43:4 |
| 2 | 50.000 | 85047.9 | 1700.958 | Manual | 3/22/2004 9:48:4 |
| 3 | 100.000 | 156638.6 | 1566.386 | Manual | 3/22/2004 9:55:2 |
| 4 | 152.000 | 231587.9 | 1523.605 | Manual | 3/22/2004 10:09: |
| 5 | 200.000 | 294294.6 | 1471.473 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 1639.309 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9689, Average error = 8.70%
Average CF = 1639.3090 with RSD = 11.31%

**26 Mirex**
Retention time = 10.053 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 17289.3 | 3457.87 | Manual | 3/22/2004 9:43:4 |
| 2 | 12.500 | 37484.8 | 2998.785 | Manual | 3/22/2004 9:48:4 |
| 3 | 25.000 | 70446.9 | 2817.877 | Manual | 3/22/2004 9:55:2 |
| 4 | 50.000 | 125802.6 | 2516.052 | Manual | 3/22/2004 10:09: |
| 5 | 100.000 | 228905.4 | 2289.054 | Manual | 3/22/2004 10:19: |

9546

Calibration formula: Y = 2815.927 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.8954, Average error = 11.74%
Average CF = 2815.9280 with RSD = 16.01%

**27 Endo. sulfate**
Retention time = 10.194 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6449.9 | 3224.94 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 30229.3 | 3022.934 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 57265.8 | 2863.292 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 86704.8 | 2852.132 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 110954.9 | 2773.873 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2947.434 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9915, Average error = 4.79%
Average CF = 2947.4340 with RSD = 6.09%

**28 Endrin ketone**
Retention time = 10.564 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6761.5 | 3380.76 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33154.4 | 3315.444 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 64061.8 | 3203.088 | Manual | 3/22/2004 9:55:2 |
| 4 | 30.400 | 98307.8 | 3233.81 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 126595.6 | 3164.89 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3259.598 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9982, Average error = 2.17%
Average CF = 3259.5980 with RSD = 2.68%

**29 DCB**
Retention time = 11.926 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9547

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 15715.3 | 4029.566 | Manual | 3/22/2004 9:43:4 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 19.480 | 68001.1 | 3490.816 | Manual | 3/22/2004 9:48:4 |
| 3 | 38.960 | 122472.4 | 3143.542 | Manual | 3/22/2004 9:55:2 |
| 4 | 58.440 | 174348.6 | 2983.378 | Manual | 3/22/2004 10:09: |
| 5 | 77.920 | 221948.7 | 2848.418 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3299.144 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9394, Average error = 11.18%
Average CF = 3299.1440 with RSD = 14.36%

8548

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 2D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Tetrachloro-m-xylene | 4.40E+03 | 4.24E+03 | 4.06E+03 | 4.03E+03 | 3.89E+03 | 4.13E+03 | 4.8 |
| Hcb | 7.74E+03 | 7.17E+03 | 7.08E+03 | 6.72E+03 | 6.41E+03 | 7.02E+03 | 7.2 |
| alpha-BHC | 4.76E+03 | 5.00E+03 | 5.15E+03 | 5.37E+03 | 5.42E+03 | 5.14E+03 | 5.2 |
| gamma-BHC (Lindane) | 4.88E+03 | 5.08E+03 | 5.13E+03 | 5.27E+03 | 5.29E+03 | 5.13E+03 | 3.2 |
| beta-BHC | 2.96E+03 | 2.89E+03 | 2.82E+03 | 2.77E+03 | 2.72E+03 | 2.83E+03 | 3.4 |
| delta-BHC | 4.57E+03 | 4.78E+03 | 4.87E+03 | 5.04E+03 | 5.09E+03 | 4.87E+03 | 4.4 |
| Heptachlor | 5.71E+03 | 5.53E+03 | 5.35E+03 | 5.31E+03 | 5.23E+03 | 5.43E+03 | 3.6 |
| Aldrin | 4.24E+03 | 4.18E+03 | 4.15E+03 | 4.20E+03 | 4.18E+03 | 4.19E+03 | .8 |
| Telodrin | 4.68E+03 | 4.41E+03 | 4.40E+03 | 4.22E+03 | 4.06E+03 | 4.35E+03 | 5.4 |
| o,p-DDE | 2.76E+03 | 2.59E+03 | 2.62E+03 | 2.57E+03 | 2.55E+03 | 2.62E+03 | 3.3 |
| Heptachlor epoxide | 4.63E+03 | 4.35E+03 | 4.19E+03 | 4.16E+03 | 4.08E+03 | 4.28E+03 | 5.1 |
| gamma-Chlordane | 4.32E+03 | 4.19E+03 | 4.07E+03 | 4.05E+03 | 3.96E+03 | 4.12E+03 | 3.4 |
| alpha-Chlordane | 5.15E+03 | 4.42E+03 | 4.19E+03 | 4.15E+03 | 4.03E+03 | 4.39E+03 | 10.2 |
| 4,4'-DDE | 3.57E+03 | 3.48E+03 | 3.47E+03 | 3.55E+03 | 3.51E+03 | 3.51E+03 | 1.2 |
| Endosulfan I | 4.29E+03 | 3.99E+03 | 3.84E+03 | 3.82E+03 | 3.72E+03 | 3.93E+03 | 5.7 |
| o,p-DDD | 2.41E+03 | 2.18E+03 | 2.22E+03 | 2.15E+03 | 2.14E+03 | 2.22E+03 | 5.0 |
| Dieldrin | 3.78E+03 | 3.62E+03 | 3.57E+03 | 3.64E+03 | 3.60E+03 | 3.64E+03 | 2.2 |
| o,p-DDT | 2.92E+03 | 2.62E+03 | 2.66E+03 | 2.58E+03 | 2.55E+03 | 2.67E+03 | 5.6 |
| Endrin | 3.48E+03 | 3.36E+03 | 3.28E+03 | 3.32E+03 | 3.28E+03 | 3.34E+03 | 2.5 |
| Kepone | 9.49E+02 | 4.22E+02 | 1.10E+03 | 4.55E+02 | 9.84E+02 | 7.83E+02 | 40.8 |
| 4,4'-DDD | 3.53E+03 | 2.72E+03 | 2.63E+03 | 2.68E+03 | 2.67E+03 | 2.85E+03 | 13.5 |
| Endosulfan II | 3.61E+03 | 3.40E+03 | 3.28E+03 | 3.24E+03 | 3.17E+03 | 3.34E+03 | 5.1 |
| 4,4'-DDT | 2.95E+03 | 2.88E+03 | 2.84E+03 | 2.89E+03 | 2.84E+03 | 2.88E+03 | 1.5 |
| Endrin aldehyde | 3.07E+03 | 2.85E+03 | 2.65E+03 | 2.61E+03 | 2.55E+03 | 2.74E+03 | 7.8 |
| Methoxychlor | 1.93E+03 | 1.70E+03 | 1.57E+03 | 1.52E+03 | 1.47E+03 | 1.64E+03 | 11.3 |
| Mirex | 3.46E+03 | 3.00E+03 | 2.82E+03 | 2.52E+03 | 2.29E+03 | 2.82E+03 | 16.0 |
| Endosulfan sulfate | 3.22E+03 | 3.02E+03 | 2.86E+03 | 2.85E+03 | 2.77E+03 | 2.95E+03 | 6.1 |
| Endrin ketone | 3.38E+03 | 3.32E+03 | 3.20E+03 | 3.23E+03 | 3.16E+03 | 3.26E+03 | 2.7 |
| Decachlorobiphenyl | 4.03E+03 | 3.49E+03 | 3.14E+03 | 2.98E+03 | 2.85E+03 | 3.30E+03 | 14.4 |

Average % RSD: 6.9

8549

Calibration File Name: **C:\CPWIN\DATA1\2D16082.CAL** Version = 2
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

MIX E UPDATED BY 99.66
3/26/04

## 1 TCX

Retention time = 4.318 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 16949.4 | 4402.447 | Manual | 3/22/2004 9:43:4 |
| 2 | 19.240 | 81656.0 | 4244.073 | Manual | 3/22/2004 9:48:4 |
| 3 | 38.480 | 156187.9 | 4058.937 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 57.720 | 232489.6 | 4027.886 | Manual | 3/22/2004 10:09: |
| 5 | 76.960 | 299628.6 | 3893.303 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4125.329 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9929, Average error = 3.84%
Average CF = 4125.3290 with RSD = 4.83%

## 2 Hcb

Retention time = 4.908 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7738.4 | 7738.42 | Manual | 3/22/2004 9:43:4 |
| 2 | 2.500 | 17921.8 | 7168.728 | Manual | 3/22/2004 9:48:4 |
| 3 | 5.000 | 35396.6 | 7079.314 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 10.000 | 67186.4 | 6718.643 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 128138.5 | 6406.925 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 7022.406 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9829, Average error = 5.24%
Average CF = 7022.4060 with RSD = 7.15%

0550

## 3 alpha-BHC

Retention time = 5.165 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4762.3 | 4762.253 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 25009.8 | 5001.954 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 51498.9 | 5149.89 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 81593.5 | 5367.995 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 108313.1 | 5415.655 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5139.549 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9938, Average error = 4.01%
Average CF = 5139.5490 with RSD = 5.24%

**4 gamma-BHC**
Retention time = 5.634 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4884.9 | 4884.867 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 25395.5 | 5079.1 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 51317.5 | 5131.754 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 80140.2 | 5272.379 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 105823.8 | 5291.19 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5131.858 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9978, Average error = 2.34%
Average CF = 5131.8580 with RSD = 3.22%

**5 beta-BHC**
Retention time = 5.765 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2963.7 | 2963.671 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 14464.3 | 2892.868 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 28174.1 | 2817.41 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 42065.7 | 2767.482 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 54437.9 | 2721.897 | Manual | 3/22/2004 10:19: |

8551

Calibration formula: Y = 2832.666 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9965, Average error = 2.70%
Average CF = 2832.6660 with RSD = 3.42%

**6 delta-BHC**
Retention time = 6.022 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4565.8 | 4565.775 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 23884.6 | 4776.916 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 48721.6 | 4872.165 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 76653.4 | 5042.986 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 101817.5 | 5090.875 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4869.744 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9956, Average error = 3.26%
Average CF = 4869.7440 with RSD = 4.36%

**7 Heptachlor**
Retention time = 6.321 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5713.5 | 5713.456 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 27632.2 | 5526.438 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 53487.3 | 5348.725 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 80652.7 | 5306.101 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 104674.0 | 5233.7 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 5425.684 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9970, Average error = 2.86%
Average CF = 5425.6840 with RSD = 3.57%

**8 Aldrin**
Retention time = 6.747 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

0552

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4244.1 | 4244.138 | Manual | 3/22/2004 9:43:4 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 20916.1 | 4183.214 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41490.7 | 4149.068 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 63814.1 | 4198.293 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 83668.3 | 4183.414 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4191.625 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.56%
Average CF = 4191.6260 with RSD = 0.82%

**9 Telodrin**
Retention time = 7.049 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4677.7 | 4677.73 | Manual | 3/22/2004 9:43:4 |
| 2 | 2.500 | 11027.0 | 4410.82 | Manual | 3/22/2004 9:48:4 |
| 3 | 5.000 | 21987.2 | 4397.448 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 10.000 | 42163.7 | 4216.371 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 81124.1 | 4056.208 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4351.715 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9903, Average error = 3.96%
Average CF = 4351.7150 with RSD = 5.36%

**10 o,p-DDE**
Retention time = 7.557 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5528.5 | 2764.225 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 12932.9 | 2586.588 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 26235.6 | 2623.563 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 20.000 | 51380.9 | 2569.044 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 102086.9 | 2552.172 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2619.119 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9986, Average error = 2.28%
Average CF = 2619.1190 with RSD = 3.26%

8553

**11 Hept. epoxide**

Retention time = 7.588 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4630.2 | 4630.21 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 21769.9 | 4353.986 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41853.7 | 4185.372 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 63275.4 | 4162.857 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 81637.9 | 4081.893 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4282.864 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9946, Average error = 3.91%
Average CF = 4282.8640 with RSD = 5.09%

**12 g. Chlordane**
Retention time = 7.753 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4319.8 | 4319.762 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 20936.5 | 4187.306 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 40697.2 | 4069.722 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 61608.3 | 4053.176 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 79114.9 | 3955.747 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 4117.143 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 2.65%
Average CF = 4117.1430 with RSD = 3.40%

**13 a. Chlordane**
Retention time = 7.931 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5150.2 | 5150.225 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 22075.0 | 4415.008 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 41913.0 | 4191.303 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 63093.6 | 4150.897 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 80689.2 | 4034.46 | Manual | 3/22/2004 10:19: |

8554

Calibration formula: Y = 4388.379 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9817, Average error = 7.19%
Average CF = 4388.3790 with RSD = 10.20%

**14 4,4'-DDE**
Retention time = 8.019 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7136.3 | 3568.136 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 34780.5 | 3478.049 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 69388.8 | 3469.44 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 107811.3 | 3546.424 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 140221.0 | 3505.525 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3513.515 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.00%
Average CF = 3513.5150 with RSD = 1.22%

**15 Endosulfan I**
Retention time = 8.122 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4292.0 | 4292.021 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 19959.3 | 3991.862 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 38358.9 | 3835.89 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 15.200 | 58010.7 | 3816.493 | Manual | 3/22/2004 10:09: |
| 5 | 20.000 | 74471.7 | 3723.584 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3931.97 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9932, Average error = 4.27%
Average CF = 3931.9700 with RSD = 5.68%

**16 o,p-DDD**
Retention time = 8.247 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8555

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4815.6 | 2407.815 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 10882.6 | 2176.524 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 22153.3 | 2215.327 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 20.000 | 42934.6 | 2146.729 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 85551.2 | 2138.781 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2217.035 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 3.44%
Average CF = 2217.0350 with RSD = 5.00%

**17 Dieldrin**
Retention time = 8.440 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7554.8 | 3777.388 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 36245.1 | 3624.509 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 71407.4 | 3570.37 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 110610.6 | 3638.507 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 143973.8 | 3599.345 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3642.024 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.49%
Average CF = 3642.0240 with RSD = 2.20%

**18 o,p-DDT**
Retention time = 8.580 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5849.4 | 2924.685 | Manual | 3/22/2004 9:43:4 |
| 2 | 5.000 | 13085.0 | 2616.992 | Manual | 3/22/2004 9:48:4 |
| 3 | 10.000 | 26559.1 | 2655.905 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 20.000 | 51562.6 | 2578.127 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 102196.0 | 2554.9 | Manual | 3/22/2004 10:19: |

8556

Calibration formula: Y = 2666.122 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9962, Average error = 3.88%
Average CF = 2666.1220 with RSD = 5.61%

**19 Endrin**
Retention time = 8.750 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6963.9 | 3481.965 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33566.1 | 3356.61 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 65554.8 | 3277.742 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 100944.1 | 3320.53 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 131286.8 | 3282.17 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3343.803 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 1.81%
Average CF = 3343.8040 with RSD = 2.50%

**20 Kepone**
Retention time = 8.801 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 9486.3 | 948.634 | Manual | 3/22/2004 9:43:4 |
| 2 | 25.000 | 10558.0 | 422.32 | Manual | 3/22/2004 9:48:4 |
| 3 | 50.000 | 55152.0 | 1103.041 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 100.000 | 45535.1 | 455.351 | Manual | 3/22/2004 10:09: |
| 5 | 200.000 | 196727.8 | 983.639 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 782.597 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8731, Average error = 35.14%
Average CF = 782.5969 with RSD = 40.79%

**21 4,4'-DDD**
Retention time = 8.809 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7062.4 | 3531.196 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 27189.6 | 2718.957 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 52672.6 | 2633.63 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 81507.9 | 2681.18 | Manual | 3/22/2004 10:09: |

9557

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 5 | 40.000 | 106691.6 | 2667.29 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2846.45 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9848, Average error = 9.62%
Average CF = 2846.4500 with RSD = 13.49%

**22 Endosulfan II**
Retention time = 9.048 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7211.5 | 3605.74 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33999.3 | 3399.925 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 65560.0 | 3277.998 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 98570.5 | 3242.45 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 126868.6 | 3171.715 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3339.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9939, Average error = 3.91%
Average CF = 3339.5650 with RSD = 5.10%

**23 4,4'-DDT**
Retention time = 9.172 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5895.0 | 2947.49 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 28847.7 | 2884.765 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 56752.1 | 2837.605 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 87735.3 | 2886.031 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 113707.3 | 2842.682 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2879.715 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.10%
Average CF = 2879.7150 with RSD = 1.53%

8558

**24 Endrin aldehyde**
Retention time = 9.597 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6137.4 | 3068.717 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 28473.2 | 2847.318 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 52935.7 | 2646.783 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 79282.9 | 2607.989 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 101832.2 | 2545.805 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2743.322 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9856, Average error = 6.26%
Average CF = 2743.3220 with RSD = 7.80%

**25 Methoxychlor**
Retention time = 9.784 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 19341.2 | 1934.122 | Manual | 3/22/2004 9:43:4 |
| 2 | 50.000 | 85047.9 | 1700.958 | Manual | 3/22/2004 9:48:4 |
| 3 | 100.000 | 156638.6 | 1566.386 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 152.000 | 231587.9 | 1523.605 | Manual | 3/22/2004 10:09: |
| 5 | 200.000 | 294294.6 | 1471.473 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 1639.309 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9689, Average error = 8.70%
Average CF = 1639.3090 with RSD = 11.31%

**26 Mirex**
Retention time = 10.019 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 17289.3 | 3457.87 | Manual | 3/22/2004 9:43:4 |
| 2 | 12.500 | 37484.8 | 2998.785 | Manual | 3/22/2004 9:48:4 |
| 3 | 25.000 | 70446.9 | 2817.877 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 50.000 | 125802.6 | 2516.052 | Manual | 3/22/2004 10:09: |
| 5 | 100.000 | 228905.4 | 2289.054 | Manual | 3/22/2004 10:19: |

#559

Calibration formula: Y = 2815.927 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.8954, Average error = 11.74%
Average CF = 2815.9280 with RSD = 16.01%

**27 Endo. sulfate**
Retention time = 10.167 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6449.9 | 3224.94 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 30229.3 | 3022.934 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 57265.8 | 2863.292 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 86704.8 | 2852.132 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 110954.9 | 2773.873 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 2947.434 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9915, Average error = 4.79%
Average CF = 2947.4340 with RSD = 6.09%

**28 Endrin ketone**
Retention time = 10.537 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6761.5 | 3380.76 | Manual | 3/22/2004 9:43:4 |
| 2 | 10.000 | 33154.4 | 3315.444 | Manual | 3/22/2004 9:48:4 |
| 3 | 20.000 | 64061.8 | 3203.088 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 30.400 | 98307.8 | 3233.81 | Manual | 3/22/2004 10:09: |
| 5 | 40.000 | 126595.6 | 3164.89 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3259.598 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9982, Average error = 2.17%
Average CF = 3259.5980 with RSD = 2.68%

**29 DCB**
Retention time = 11.893 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8568

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 15715.3 | 4029.566 | Manual | 3/22/2004 9:43:4 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 19.480 | 68001.1 | 3490.816 | Manual | 3/22/2004 9:48:4 |
| 3 | 38.960 | 122472.4 | 3143.542 | 3D16082.06A | 3/26/2004 8:36:1 |
| 4 | 58.440 | 174348.6 | 2983.378 | Manual | 3/22/2004 10:09: |
| 5 | 77.920 | 221948.7 | 2848.418 | Manual | 3/22/2004 10:19: |

Calibration formula: Y = 3299.144 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9394, Average error = 11.18%
Average CF = 3299.1440 with RSD = 14.36%

9561

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 1D16082B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 6.48E+03 | 5.86E+03 | 5.40E+03 | 5.27E+03 | 5.04E+03 | 5.61E+03 | 10.2 |
| Hcb | 1.25E+04 | 1.12E+04 | 1.08E+04 | 9.94E+03 | 9.13E+03 | 1.07E+04 | 11.8 |
| alpha-BHC | 8.33E+03 | 8.66E+03 | 8.59E+03 | 8.69E+03 | 8.62E+03 | 8.58E+03 | 1.7 |
| gamma-BHC (Lindane) | 7.97E+03 | 8.05E+03 | 7.93E+03 | 7.96E+03 | 7.84E+03 | 7.95E+03 | .9 |
| beta-BHC | 4.43E+03 | 4.10E+03 | 3.89E+03 | 3.81E+03 | 3.71E+03 | 3.99E+03 | 7.1 |
| delta-BHC | 7.32E+03 | 7.55E+03 | 7.42E+03 | 7.51E+03 | 7.46E+03 | 7.45E+03 | 1.2 |
| Heptachlor | 8.51E+03 | 8.20E+03 | 7.76E+03 | 7.68E+03 | 7.50E+03 | 7.93E+03 | 5.3 |
| Aldrin | 6.52E+03 | 6.40E+03 | 6.30E+03 | 6.35E+03 | 6.27E+03 | 6.37E+03 | 1.5 |
| Telodrin | 6.34E+03 | 5.97E+03 | 5.99E+03 | 5.71E+03 | 5.47E+03 | 5.90E+03 | 5.5 |
| Heptachlor epoxide | 6.99E+03 | 6.05E+03 | 5.64E+03 | 5.58E+03 | 5.46E+03 | 5.94E+03 | 10.5 |
| gamma-Chlordane | 6.54E+03 | 5.99E+03 | 5.55E+03 | 5.50E+03 | 5.40E+03 | 5.80E+03 | 8.2 |
| o,p-DDE | 3.77E+03 | 3.51E+03 | 3.47E+03 | 3.32E+03 | 3.43E+03 | 3.50E+03 | 4.7 |
| alpha-Chlordane | 6.15E+03 | 5.67E+03 | 5.38E+03 | 5.34E+03 | 5.18E+03 | 5.54E+03 | 6.9 |
| Endosulfan I | 5.98E+03 | 5.35E+03 | 5.09E+03 | 5.04E+03 | 4.91E+03 | 5.27E+03 | 8.1 |
| 4,4'-DDE | 4.89E+03 | 4.68E+03 | 4.57E+03 | 4.62E+03 | 4.54E+03 | 4.66E+03 | 3.0 |
| Dieldrin | 5.05E+03 | 4.85E+03 | 4.74E+03 | 4.77E+03 | 4.67E+03 | 4.82E+03 | 3.0 |
| o,p-DDD | 2.81E+03 | 2.56E+03 | 2.61E+03 | 2.53E+03 | 2.51E+03 | 2.61E+03 | 4.6 |
| Endrin | 4.27E+03 | 4.17E+03 | 4.06E+03 | 4.08E+03 | 4.06E+03 | 4.13E+03 | 2.2 |
| o,p-DDT | 3.29E+03 | 2.99E+03 | 3.07E+03 | 2.97E+03 | 2.96E+03 | 3.05E+03 | 4.5 |
| 4,4'-DDD | 3.98E+03 | 3.13E+03 | 3.02E+03 | 3.11E+03 | 3.08E+03 | 3.26E+03 | 12.4 |
| Kepone | 1.11E+03 | 5.04E+02 | 1.31E+03 | 5.47E+02 | 1.18E+03 | 9.30E+02 | 40.5 |
| Endosulfan II | 4.20E+03 | 3.95E+03 | 3.78E+03 | 3.76E+03 | 3.68E+03 | 3.87E+03 | 5.3 |
| 4,4'-DDT | 3.32E+03 | 3.27E+03 | 3.21E+03 | 3.25E+03 | 3.26E+03 | 3.26E+03 | 1.2 |
| Endrin aldehyde | 3.42E+03 | 3.14E+03 | 2.96E+03 | 2.95E+03 | 2.87E+03 | 3.07E+03 | 7.2 |
| Endosulfan sulfate | 3.20E+03 | 3.33E+03 | 3.26E+03 | 3.20E+03 | 3.16E+03 | 3.23E+03 | 2.1 |
| Methoxychlor | 1.80E+03 | 1.68E+03 | 1.56E+03 | 1.55E+03 | 1.52E+03 | 1.62E+03 | 7.4 |
| Mirex | 3.42E+03 | 3.02E+03 | 2.86E+03 | 2.60E+03 | 2.40E+03 | 2.86E+03 | 13.8 |
| Endrin ketone | 3.94E+03 | 3.69E+03 | 3.48E+03 | 3.49E+03 | 3.46E+03 | 3.61E+03 | 5.7 |
| Decachlorobiphenyl | 4.34E+03 | 3.80E+03 | 3.40E+03 | 3.32E+03 | 3.15E+03 | 3.60E+03 | 13.3 |

Average % RSD: 7.2

8562



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1D16082B.CAL** Version = 14
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

**1 TCX**
Retention time = 4.061 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 24957.5 | 6482.462 | Manual | 3/22/2004 9:46:1 |
| 2 | 19.240 | 112735.1 | 5859.413 | Manual | 3/22/2004 9:51:0 |
| 3 | 38.480 | 207834.2 | 5401.097 | Manual | 3/22/2004 9:59:1 |
| 4 | 57.720 | 304184.7 | 5270.005 | Manual | 3/22/2004 10:13: |
| 5 | 76.960 | 387970.7 | 5041.199 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5610.835 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9714, Average error = 7.99%
Average CF = 5610.8350 with RSD = 10.18%

**2 Hcb**
Retention time = 4.755 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 12457.2 | 12457.16 | Manual | 3/22/2004 9:46:1 |
| 2 | 2.500 | 28079.7 | 11231.9 | Manual | 3/22/2004 9:51:0 |
| 3 | 5.000 | 53874.7 | 10774.94 | Manual | 3/22/2004 9:59:1 |
| 4 | 10.000 | 99362.5 | 9936.252 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 182689.0 | 9134.45 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 10706.94 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9438, Average error = 8.75%
Average CF = 10706.9400 with RSD = 11.82%

9563

**3 alpha-BHC**
Retention time = 4.963 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 8333.6 | 8333.569 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 43317.9 | 8663.574 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 85914.5 | 8591.447 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 132073.4 | 8689.04 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 172450.1 | 8622.505 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 8580.027 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.15%
Average CF = 8580.0270 with RSD = 1.66%

**4 gamma-BHC**
Retention time = 5.480 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7967.2 | 7967.157 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 40229.0 | 8045.798 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 79258.8 | 7925.88 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 121066.8 | 7964.921 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 156896.0 | 7844.8 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7949.711 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.65%
Average CF = 7949.7110 with RSD = 0.92%

**5 beta-BHC**
Retention time = 5.609 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4427.7 | 4427.652 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 20480.4 | 4096.076 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 38878.0 | 3887.801 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 57975.1 | 3814.154 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 74299.6 | 3714.981 | Manual | 3/22/2004 10:25: |

8564

Calibration formula: Y = 3988.133 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9878, Average error = 5.49%
Average CF = 3988.1330 with RSD = 7.09%

**6 delta-BHC**
Retention time = 6.020 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7322.1 | 7322.102 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 37764.9 | 7552.982 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 74194.3 | 7419.431 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 114100.0 | 7506.579 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 149114.9 | 7455.745 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7451.368 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.87%
Average CF = 7451.3680 with RSD = 1.18%

**7 Heptachlor**
Retention time = 6.096 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 8512.6 | 8512.596 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 40985.9 | 8197.182 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 77584.3 | 7758.428 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 116676.6 | 7676.092 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 149938.3 | 7496.915 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7928.243 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9927, Average error = 4.31%
Average CF = 7928.2430 with RSD = 5.25%

**8 Aldrin**
Retention time = 6.542 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9565

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6516.4 | 6516.441 | Manual | 3/22/2004 9:46:1 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 31981.3 | 6396.252 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 62991.8 | 6299.176 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 96593.4 | 6354.83 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 125357.3 | 6267.865 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 6366.913 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.12%
Average CF = 6366.9130 with RSD = 1.53%

**9 Telodrin**
Retention time = 6.771 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6338.0 | 6337.95 | Manual | 3/22/2004 9:46:1 |
| 2 | 2.500 | 14914.7 | 5965.892 | Manual | 3/22/2004 9:51:0 |
| 3 | 5.000 | 29965.8 | 5993.164 | Manual | 3/22/2004 9:59:1 |
| 4 | 10.000 | 57116.4 | 5711.64 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 109490.0 | 5474.5 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5896.629 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9891, Average error = 4.12%
Average CF = 5896.6290 with RSD = 5.50%

**10 Hept. epoxide**
Retention time = 7.319 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6989.0 | 6988.981 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 30261.3 | 6052.252 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 56352.8 | 5635.28 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 84779.5 | 5577.602 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 109199.7 | 5459.985 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5942.82 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9799, Average error = 7.78%
Average CF = 5942.8200 with RSD = 10.53%

0566

**11 g. Chlordane**

Retention time = 7.570 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6540.5 | 6540.502 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 29961.1 | 5992.21 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 55458.5 | 5545.851 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 83566.4 | 5497.792 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 108092.3 | 5404.615 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5796.194 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9864, Average error = 6.49%
Average CF = 5796.1940 with RSD = 8.17%

**12 o,p-DDE**
Retention time = 7.579 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7545.3 | 3772.655 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 17561.0 | 3512.194 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 34683.1 | 3468.315 | Manual | 3/22/2004 9:59:1 |
| 4 | 20.000 | 66497.3 | 3324.864 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 137376.7 | 3434.417 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3502.489 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.20%
Average CF = 3502.4890 with RSD = 4.74%

**13 a. Chlordane**
Retention time = 7.763 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6146.7 | 6146.723 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 28346.4 | 5669.278 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 53759.9 | 5375.993 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 81138.5 | 5338.063 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 103678.1 | 5183.905 | Manual | 3/22/2004 10:25: |

8567

Calibration formula: Y = 5542.792 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9895, Average error = 5.27%
Average CF = 5542.7930 with RSD = 6.87%

**14 Endosulfan I**
Retention time = 7.838 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5984.8 | 5984.787 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 26755.1 | 5351.016 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 50850.0 | 5085.002 | Manual | 3/22/2004 9:59:1 |
| 4 | 15.200 | 76617.1 | 5040.597 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 98198.9 | 4909.947 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5274.27 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9873, Average error = 5.97%
Average CF = 5274.2700 with RSD = 8.12%

**15 4,4'-DDE**
Retention time = 7.985 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 9773.9 | 4886.957 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 46814.8 | 4681.478 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 91408.7 | 4570.436 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 140440.9 | 4619.767 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 181518.1 | 4537.952 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 4659.318 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 2.14%
Average CF = 4659.3180 with RSD = 2.97%

**16 Dieldrin**
Retention time = 8.198 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8568

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 10103.0 | 5051.52 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 48497.5 | 4849.752 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 94774.0 | 4738.702 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 145003.6 | 4769.855 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 186972.8 | 4674.32 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 4816.83 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9982, Average error = 2.22%
Average CF = 4816.8300 with RSD = 3.02%

**17 o,p-DDD**
Retention time = 8.250 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5613.3 | 2806.65 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 12818.6 | 2563.728 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 26138.9 | 2613.89 | Manual | 3/22/2004 9:59:1 |
| 4 | 20.000 | 50660.0 | 2532.999 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 100426.2 | 2510.655 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 2605.584 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 3.21%
Average CF = 2605.5850 with RSD = 4.56%

**18 Endrin**
Retention time = 8.595 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 8536.1 | 4268.056 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 41707.4 | 4170.736 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 81122.5 | 4056.123 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 124182.2 | 4084.941 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 162427.6 | 4060.69 | Manual | 3/22/2004 10:25: |

8569

Calibration formula: Y = 4128.109 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.77%
Average CF = 4128.1090 with RSD = 2.20%

**19 o,p-DDT**
Retention time = 8.644 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6576.5 | 3288.25 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 14954.8 | 2990.97 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 30681.6 | 3068.155 | Manual | 3/22/2004 9:59:1 |
| 4 | 20.000 | 59303.6 | 2965.182 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 118341.3 | 2958.532 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3054.218 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9978, Average error = 3.25%
Average CF = 3054.2180 with RSD = 4.51%

**20 4,4'-DDD**
Retention time = 8.734 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7968.1 | 3984.047 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 31318.7 | 3131.867 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 60303.8 | 3015.191 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 94642.7 | 3113.248 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 123150.9 | 3078.772 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3264.625 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9879, Average error = 8.81%
Average CF = 3264.6250 with RSD = 12.39%

**21 Kepone**
Retention time = 8.744 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 11090.8 | 1109.085 | Manual | 3/22/2004 9:46:1 |
| 2 | 25.000 | 12601.4 | 504.0564 | Manual | 3/22/2004 9:51:0 |
| 3 | 50.000 | 65371.0 | 1307.419 | Manual | 3/22/2004 9:59:1 |
| 4 | 100.000 | 54700.4 | 547.0038 | Manual | 3/22/2004 10:13: |

8578

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 5 | 200.000 | 236351.0 | 1181.755 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 929.864 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8703, Average error = 34.79%
Average CF = 929.8639 with RSD = 40.45%

**22 Endosulfan II**
Retention time = 8.872 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 8390.4 | 4195.204 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 39521.1 | 3952.105 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 75600.5 | 3780.023 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 114369.7 | 3762.161 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 147106.6 | 3677.665 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3873.432 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9938, Average error = 4.14%
Average CF = 3873.4320 with RSD = 5.31%

**23 4,4'-DDT**
Retention time = 9.136 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6638.5 | 3319.24 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 32661.5 | 3266.148 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 64145.3 | 3207.263 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 98690.7 | 3246.404 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 130209.0 | 3255.225 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3258.856 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.83%
Average CF = 3258.8560 with RSD = 1.24%

0571

**24 Endrin aldehyde**
Retention time = 9.306 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6843.5 | 3421.728 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 31379.5 | 3137.954 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 59153.4 | 2957.668 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 89632.7 | 2948.445 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 114691.1 | 2867.278 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3066.614 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9891, Average error = 5.56%
Average CF = 3066.6140 with RSD = 7.23%

**25 Endo. sulfate**
Retention time = 9.658 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6399.8 | 3199.901 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 33309.1 | 3330.909 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 65216.6 | 3260.829 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 97237.1 | 3198.588 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 126231.0 | 3155.775 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3229.2 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 1.65%
Average CF = 3229.2000 with RSD = 2.11%

**26 Methoxychlor**
Retention time = 10.014 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 18049.7 | 1804.965 | Manual | 3/22/2004 9:46:1 |
| 2 | 50.000 | 83911.3 | 1678.227 | Manual | 3/22/2004 9:51:0 |
| 3 | 100.000 | 155542.2 | 1555.422 | Manual | 3/22/2004 9:59:1 |
| 4 | 152.000 | 235071.7 | 1546.524 | Manual | 3/22/2004 10:13: |
| 5 | 200.000 | 303389.3 | 1516.947 | Manual | 3/22/2004 10:25: |

3572

Calibration formula: Y = 1620.417 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9883, Average error = 5.98%
Average CF = 1620.4170 with RSD = 7.42%

**27 Mirex**
Retention time = 10.309 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 17080.7 | 3416.134 | Manual | 3/22/2004 9:46:1 |
| 2 | 12.500 | 37730.7 | 3018.458 | Manual | 3/22/2004 9:51:0 |
| 3 | 25.000 | 71515.4 | 2860.614 | Manual | 3/22/2004 9:59:1 |
| 4 | 50.000 | 129901.8 | 2598.036 | Manual | 3/22/2004 10:13: |
| 5 | 100.000 | 239520.5 | 2395.205 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 2857.689 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9273, Average error = 10.11%
Average CF = 2857.6900 with RSD = 13.77%

**28 Endrin ketone**
Retention time = 10.353 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7889.3 | 3944.67 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 36909.3 | 3690.93 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 69665.0 | 3483.249 | Manual | 3/22/2004 9:59:1 |
| 4 | 30.400 | 106129.0 | 3491.085 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 138376.5 | 3459.413 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3613.869 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9945, Average error = 4.51%
Average CF = 3613.8690 with RSD = 5.73%

**29 DCB**
Retention time = 12.074 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8573

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 16933.4 | 4341.895 | Manual | 3/22/2004 9:46:1 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 19.480 | 74015.3 | 3799.553 | Manual | 3/22/2004 9:51:0 |
| 3 | 38.960 | 132602.5 | 3403.555 | Manual | 3/22/2004 9:59:1 |
| 4 | 58.440 | 193896.9 | 3317.88 | Manual | 3/22/2004 10:13: |
| 5 | 77.920 | 245442.1 | 3149.924 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3602.562 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9518, Average error = 10.40%
Average CF = 3602.5620 with RSD = 13.25%

9574

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Calibration File: 2D16082B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 6.48E+03 | 5.86E+03 | 5.40E+03 | 5.27E+03 | 5.04E+03 | 5.61E+03 | 10.2 |
| Hcb | 1.25E+04 | 1.12E+04 | 1.08E+04 | 9.94E+03 | 9.13E+03 | 1.07E+04 | 11.8 |
| alpha-BHC | 8.33E+03 | 8.66E+03 | 8.59E+03 | 8.69E+03 | 8.62E+03 | 8.58E+03 | 1.7 |
| gamma-BHC (Lindane) | 7.97E+03 | 8.05E+03 | 7.93E+03 | 7.96E+03 | 7.84E+03 | 7.95E+03 | .9 |
| beta-BHC | 4.43E+03 | 4.10E+03 | 3.89E+03 | 3.81E+03 | 3.71E+03 | 3.99E+03 | 7.1 |
| delta-BHC | 7.32E+03 | 7.55E+03 | 7.42E+03 | 7.51E+03 | 7.46E+03 | 7.45E+03 | 1.2 |
| Heptachlor | 8.51E+03 | 8.20E+03 | 7.76E+03 | 7.68E+03 | 7.50E+03 | 7.93E+03 | 5.3 |
| Aldrin | 6.52E+03 | 6.40E+03 | 6.30E+03 | 6.35E+03 | 6.27E+03 | 6.37E+03 | 1.5 |
| Telodrin | 6.34E+03 | 5.97E+03 | 5.99E+03 | 5.71E+03 | 5.47E+03 | 5.90E+03 | 5.5 |
| Heptachlor epoxide | 6.99E+03 | 6.05E+03 | 5.64E+03 | 5.58E+03 | 5.46E+03 | 5.94E+03 | 10.5 |
| gamma-Chlordane | 6.54E+03 | 5.99E+03 | 5.55E+03 | 5.50E+03 | 5.40E+03 | 5.80E+03 | 8.2 |
| o,p-DDE | 3.77E+03 | 3.51E+03 | 3.47E+03 | 3.32E+03 | 3.43E+03 | 3.50E+03 | 4.7 |
| alpha-Chlordane | 6.15E+03 | 5.67E+03 | 5.38E+03 | 5.34E+03 | 5.18E+03 | 5.54E+03 | 6.9 |
| Endosulfan I | 5.98E+03 | 5.35E+03 | 5.09E+03 | 5.04E+03 | 4.91E+03 | 5.27E+03 | 8.1 |
| 4,4'-DDE | 4.89E+03 | 4.68E+03 | 4.57E+03 | 4.62E+03 | 4.54E+03 | 4.66E+03 | 3.0 |
| Dieldrin | 5.05E+03 | 4.85E+03 | 4.74E+03 | 4.77E+03 | 4.67E+03 | 4.82E+03 | 3.0 |
| o,p-DDD | 2.81E+03 | 2.56E+03 | 2.61E+03 | 2.53E+03 | 2.51E+03 | 2.61E+03 | 4.6 |
| Endrin | 4.27E+03 | 4.17E+03 | 4.06E+03 | 4.08E+03 | 4.06E+03 | 4.13E+03 | 2.2 |
| o,p-DDT | 3.29E+03 | 2.99E+03 | 3.07E+03 | 2.97E+03 | 2.96E+03 | 3.05E+03 | 4.5 |
| 4,4'-DDD | 3.98E+03 | 3.13E+03 | 3.02E+03 | 3.11E+03 | 3.08E+03 | 3.26E+03 | 12.4 |
| Kepone | 1.11E+03 | 5.04E+02 | 1.31E+03 | 5.47E+02 | 1.18E+03 | 9.30E+02 | 40.5 |
| Endosulfan II | 4.20E+03 | 3.95E+03 | 3.78E+03 | 3.76E+03 | 3.68E+03 | 3.87E+03 | 5.3 |
| 4,4'-DDT | 3.32E+03 | 3.27E+03 | 3.21E+03 | 3.25E+03 | 3.26E+03 | 3.26E+03 | 1.2 |
| Endrin aldehyde | 3.42E+03 | 3.14E+03 | 2.96E+03 | 2.95E+03 | 2.87E+03 | 3.07E+03 | 7.2 |
| Endosulfan sulfate | 3.20E+03 | 3.33E+03 | 3.26E+03 | 3.20E+03 | 3.16E+03 | 3.23E+03 | 2.1 |
| Methoxychlor | 1.80E+03 | 1.68E+03 | 1.56E+03 | 1.55E+03 | 1.52E+03 | 1.62E+03 | 7.4 |
| Mirex | 3.42E+03 | 3.02E+03 | 2.86E+03 | 2.60E+03 | 2.40E+03 | 2.86E+03 | 13.8 |
| Endrin ketone | 3.94E+03 | 3.69E+03 | 3.48E+03 | 3.49E+03 | 3.46E+03 | 3.61E+03 | 5.7 |
| Decachlorobiphenyl | 4.34E+03 | 3.80E+03 | 3.40E+03 | 3.32E+03 | 3.15E+03 | 3.60E+03 | 13.3 |

Average % RSD: 7.2

8575



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\2D16082B.CAL** Version = 1
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

MIKE UPDATED BY 99.66
3/24/4

## 1 TCX

Retention time = 4.043 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 24957.5 | 6482.462 | Manual | 3/22/2004 9:46:1 |
| 2 | 19.240 | 112735.1 | 5859.413 | Manual | 3/22/2004 9:51:0 |
| 3 | 38.480 | 207834.2 | 5401.097 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 57.720 | 304184.7 | 5270.005 | Manual | 3/22/2004 10:13: |
| 5 | 76.960 | 387970.7 | 5041.199 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5610.835 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9714, Average error = 7.99%
Average CF = 5610.8350 with RSD = 10.18%

## 2 Hcb

Retention time = 4.739 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 12457.2 | 12457.16 | Manual | 3/22/2004 9:46:1 |
| 2 | 2.500 | 28079.7 | 11231.9 | Manual | 3/22/2004 9:51:0 |
| 3 | 5.000 | 53874.7 | 10774.94 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 10.000 | 99362.5 | 9936.252 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 182689.0 | 9134.45 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 10706.94 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9438, Average error = 8.75%
Average CF = 10706.9400 with RSD = 11.82%

8576

## 3 alpha-BHC

Retention time = 4.943 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 8333.6 | 8333.569 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 43317.9 | 8663.574 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 85914.5 | 8591.447 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 132073.4 | 8689.04 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 172450.1 | 8622.505 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 8580.027 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.15%
Average CF = 8580.0270 with RSD = 1.66%

**4 gamma-BHC**
Retention time = 5.459 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7967.2 | 7967.157 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 40229.0 | 8045.798 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 79258.8 | 7925.88 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 121066.8 | 7964.921 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 156896.0 | 7844.8 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7949.711 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.65%
Average CF = 7949.7110 with RSD = 0.92%

**5 beta-BHC**
Retention time = 5.589 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4427.7 | 4427.652 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 20480.4 | 4096.076 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 38878.0 | 3887.801 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 57975.1 | 3814.154 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 74299.6 | 3714.981 | Manual | 3/22/2004 10:25: |

0577

Calibration formula: Y = 3988.133 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9878, Average error = 5.49%
Average CF = 3988.1330 with RSD = 7.09%

**6 delta-BHC**
Retention time = 6.000 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7322.1 | 7322.102 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 37764.9 | 7552.982 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 74194.3 | 7419.431 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 114100.0 | 7506.579 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 149114.9 | 7455.745 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7451.368 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.87%
Average CF = 7451.3680 with RSD = 1.18%

**7 Heptachlor**
Retention time = 6.074 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 8512.6 | 8512.596 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 40985.9 | 8197.182 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 77584.3 | 7758.428 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 116676.6 | 7676.092 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 149938.3 | 7496.915 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 7928.243 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9927, Average error = 4.31%
Average CF = 7928.2430 with RSD = 5.25%

**8 Aldrin**
Retention time = 6.519 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8578

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6516.4 | 6516.441 | Manual | 3/22/2004 9:46:1 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 31981.3 | 6396.252 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 62991.8 | 6299.176 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 96593.4 | 6354.83 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 125357.3 | 6267.865 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 6366.913 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.12%
Average CF = 6366.9130 with RSD = 1.53%

**9 Telodrin**
Retention time = 6.748 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6338.0 | 6337.95 | Manual | 3/22/2004 9:46:1 |
| 2 | 2.500 | 14914.7 | 5965.892 | Manual | 3/22/2004 9:51:0 |
| 3 | 5.000 | 29965.8 | 5993.164 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 10.000 | 57116.4 | 5711.64 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 109490.0 | 5474.5 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5896.629 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9891, Average error = 4.12%
Average CF = 5896.6290 with RSD = 5.50%

**10 Hept. epoxide**
Retention time = 7.296 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6989.0 | 6988.981 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 30261.3 | 6052.252 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 56352.8 | 5635.28 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 84779.5 | 5577.602 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 109199.7 | 5459.985 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5942.82 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9799, Average error = 7.78%
Average CF = 5942.8200 with RSD = 10.53%

8579

**11 g. Chlordane**

Retention time = 7.547 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6540.5 | 6540.502 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 29961.1 | 5992.21 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 55458.5 | 5545.851 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 83566.4 | 5497.792 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 108092.3 | 5404.615 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5796.194 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9864, Average error = 6.49%
Average CF = 5796.1940 with RSD = 8.17%

**12 o,p-DDE**
Retention time = 7.553 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7545.3 | 3772.655 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 17561.0 | 3512.194 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 34683.1 | 3468.315 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 20.000 | 66497.3 | 3324.864 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 137376.7 | 3434.417 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3502.489 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.20%
Average CF = 3502.4890 with RSD = 4.74%

**13 a. Chlordane**
Retention time = 7.740 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 6146.7 | 6146.723 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 28346.4 | 5669.278 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 53759.9 | 5375.993 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 81138.5 | 5338.063 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 103678.1 | 5183.905 | Manual | 3/22/2004 10:25: |

8588

Calibration formula: Y = 5542.792 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9895, Average error = 5.27%
Average CF = 5542.7930 with RSD = 6.87%

**14 Endosulfan I**
Retention time = 7.815 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5984.8 | 5984.787 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 26755.1 | 5351.016 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 50850.0 | 5085.002 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 15.200 | 76617.1 | 5040.597 | Manual | 3/22/2004 10:13: |
| 5 | 20.000 | 98198.9 | 4909.947 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 5274.27 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9873, Average error = 5.97%
Average CF = 5274.2700 with RSD = 8.12%

**15 4,4'-DDE**
Retention time = 7.963 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 9773.9 | 4886.957 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 46814.8 | 4681.478 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 91408.7 | 4570.436 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 140440.9 | 4619.767 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 181518.1 | 4537.952 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 4659.318 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 2.14%
Average CF = 4659.3180 with RSD = 2.97%

**16 Dieldrin**
Retention time = 8.174 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

0581

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 10103.0 | 5051.52 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 48497.5 | 4849.752 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 94774.0 | 4738.702 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 145003.6 | 4769.855 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 186972.8 | 4674.32 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 4816.83 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9982, Average error = 2.22%
Average CF = 4816.8300 with RSD = 3.02%

**17 o,p-DDD**
Retention time = 8.222 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5613.3 | 2806.65 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 12818.6 | 2563.728 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 26138.9 | 2613.89 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 20.000 | 50660.0 | 2532.999 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 100426.2 | 2510.655 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 2605.584 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 3.21%
Average CF = 2605.5850 with RSD = 4.56%

**18 Endrin**
Retention time = 8.571 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 8536.1 | 4268.056 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 41707.4 | 4170.736 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 81122.5 | 4056.123 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 124182.2 | 4084.941 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 162427.6 | 4060.69 | Manual | 3/22/2004 10:25: |

8582

Calibration formula: Y = 4128.109 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.77%
Average CF = 4128.1090 with RSD = 2.20%

**19 o,p-DDT**
Retention time = 8.614 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6576.5 | 3288.25 | Manual | 3/22/2004 9:46:1 |
| 2 | 5.000 | 14954.8 | 2990.97 | Manual | 3/22/2004 9:51:0 |
| 3 | 10.000 | 30681.6 | 3068.155 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 20.000 | 59303.6 | 2965.182 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 118341.3 | 2958.532 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3054.218 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9978, Average error = 3.25%
Average CF = 3054.2180 with RSD = 4.51%

**20 4,4'-DDD**
Retention time = 8.712 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7968.1 | 3984.047 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 31318.7 | 3131.867 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 60303.8 | 3015.191 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 94642.7 | 3113.248 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 123150.9 | 3078.772 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3264.625 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9879, Average error = 8.81%
Average CF = 3264.6250 with RSD = 12.39%

**21 Kepone**
Retention time = 8.714 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 11090.8 | 1109.085 | Manual | 3/22/2004 9:46:1 |
| 2 | 25.000 | 12601.4 | 504.0564 | Manual | 3/22/2004 9:51:0 |
| 3 | 50.000 | 65371.0 | 1307.419 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 100.000 | 54700.4 | 547.0038 | Manual | 3/22/2004 10:13: |

0583

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 5 | 200.000 | 236351.0 | 1181.755 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 929.864 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8703, Average error = 34.79%
Average CF = 929.8639 with RSD = 40.45%

**22 Endosulfan II**
Retention time = 8.848 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 8390.4 | 4195.204 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 39521.1 | 3952.105 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 75600.5 | 3780.023 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 114369.7 | 3762.161 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 147106.6 | 3677.665 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3873.432 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9938, Average error = 4.14%
Average CF = 3873.4320 with RSD = 5.31%

**23 4,4'-DDT**
Retention time = 9.113 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6638.5 | 3319.24 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 32661.5 | 3266.148 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 64145.3 | 3207.263 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 98690.7 | 3246.404 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 130209.0 | 3255.225 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3258.856 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.83%
Average CF = 3258.8560 with RSD = 1.24%

8584

**24 Endrin aldehyde**
Retention time = 9.282 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6843.5 | 3421.728 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 31379.5 | 3137.954 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 59153.4 | 2957.668 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 89632.7 | 2948.445 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 114691.1 | 2867.278 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3066.614 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9891, Average error = 5.56%
Average CF = 3066.6140 with RSD = 7.23%

**25 Endo. sulfate**
Retention time = 9.634 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6399.8 | 3199.901 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 33309.1 | 3330.909 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 65216.6 | 3260.829 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 97237.1 | 3198.588 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 126231.0 | 3155.775 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3229.2 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 1.65%
Average CF = 3229.2000 with RSD = 2.11%

**26 Methoxychlor**
Retention time = 9.993 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 18049.7 | 1804.965 | Manual | 3/22/2004 9:46:1 |
| 2 | 50.000 | 83911.3 | 1678.227 | Manual | 3/22/2004 9:51:0 |
| 3 | 100.000 | 155542.2 | 1555.422 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 152.000 | 235071.7 | 1546.524 | Manual | 3/22/2004 10:13: |
| 5 | 200.000 | 303389.3 | 1516.947 | Manual | 3/22/2004 10:25: |

8585

Calibration formula: Y = 1620.417 X
Fit type = Avg CF with equal weighting, forced to origin

Coefficient of determination = 0.9883, Average error = 5.98%
Average CF = 1620.4170 with RSD = 7.42%

**27 Mirex**
Retention time = 10.273 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 17080.7 | 3416.134 | Manual | 3/22/2004 9:46:1 |
| 2 | 12.500 | 37730.7 | 3018.458 | Manual | 3/22/2004 9:51:0 |
| 3 | 25.000 | 71515.4 | 2860.614 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 50.000 | 129901.8 | 2598.036 | Manual | 3/22/2004 10:13: |
| 5 | 100.000 | 239520.5 | 2395.205 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 2857.689 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9273, Average error = 10.11%
Average CF = 2857.6900 with RSD = 13.77%

**28 Endrin ketone**
Retention time = 10.329 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7889.3 | 3944.67 | Manual | 3/22/2004 9:46:1 |
| 2 | 10.000 | 36909.3 | 3690.93 | Manual | 3/22/2004 9:51:0 |
| 3 | 20.000 | 69665.0 | 3483.249 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 30.400 | 106129.0 | 3491.085 | Manual | 3/22/2004 10:13: |
| 5 | 40.000 | 138376.5 | 3459.413 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3613.869 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9945, Average error = 4.51%
Average CF = 3613.8690 with RSD = 5.73%

**29 DCB**
Retention time = 12.041 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8586

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 16933.4 | 4341.895 | Manual | 3/22/2004 9:46:1 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 19.480 | 74015.3 | 3799.553 | Manual | 3/22/2004 9:51:0 |
| 3 | 38.960 | 132602.5 | 3403.555 | 3D16082B.06A | 3/26/2004 8:43:3 |
| 4 | 58.440 | 193896.9 | 3317.88 | Manual | 3/22/2004 10:13: |
| 5 | 77.920 | 245442.1 | 3149.924 | Manual | 3/22/2004 10:25: |

Calibration formula: Y = 3602.562 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9518, Average error = 10.40%
Average CF = 3602.5620 with RSD = 13.25%

8587

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 1D16082

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.88 | 4.85 | 4.91 | 88 | 1 | 50 | 4957 | 11.7 |
| | | | | | | 2 | 100 | 9439 | |
| | | | | | | 3 | 200 | 18058 | |
| | | | | | | 4 | 500 | 40651 | |
| | | | | | | 5 | 1000 | 73545 | |
| | 2 | 5.40 | 5.37 | 5.43 | 141 | 1 | 50 | 8204 | 14.2 |
| | | | | | | 2 | 100 | 15518 | |
| | | | | | | 3 | 200 | 28978 | |
| | | | | | | 4 | 500 | 63916 | |
| | | | | | | 5 | 1000 | 114830 | |
| | 3 | 6.06 | 6.03 | 6.09 | 119 | 1 | 50 | 6740 | 9.6 |
| | | | | | | 2 | 100 | 11913 | |
| | | | | | | 3 | 200 | 24542 | |
| | | | | | | 4 | 500 | 56145 | |
| | | | | | | 5 | 1000 | 104477 | |
| | 4 | 6.25 | 6.22 | 6.28 | 125 | 1 | 50 | 7072 | 11.3 |
| | | | | | | 2 | 100 | 13485 | |
| | | | | | | 3 | 200 | 25668 | |
| | | | | | | 4 | 500 | 57594 | |
| | | | | | | 5 | 1000 | 106929 | |
| | 5 | 6.34 | 6.31 | 6.37 | 81 | 1 | 50 | 4382 | 7.1 |
| | | | | | | 2 | 100 | 8546 | |
| | | | | | | 3 | 200 | 16457 | |
| | | | | | | 4 | 500 | 38393 | |
| | | | | | | 5 | 1000 | 74028 | |
| | 6 | 6.93 | 6.90 | 6.96 | 40 | 1 | 50 | 2175 | 6.9 |
| | | | | | | 2 | 100 | 4245 | |
| | | | | | | 3 | 200 | 8104 | |
| | | | | | | 4 | 500 | 19242 | |
| | | | | | | 5 | 1000 | 36778 | |
| Aroclor-1221 | 1 | 4.59 | 4.56 | 4.62 | 55 | 1 | 200 | 10903 | |
| | 2 | 4.82 | 4.79 | 4.85 | 32 | 1 | 200 | 6316 | |
| | 3 | 4.88 | 4.85 | 4.91 | 126 | 1 | 200 | 25125 | |
| Aroclor-1232 | 1 | 4.88 | 4.85 | 4.91 | 99 | 1 | 200 | 19734 | |
| | 2 | 5.40 | 5.37 | 5.43 | 64 | 1 | 200 | 12896 | |
| | 3 | 6.06 | 6.03 | 6.09 | 55 | 1 | 200 | 10928 | |
| | 4 | 6.25 | 6.22 | 6.28 | 59 | 1 | 200 | 11762 | |
| | 5 | 6.33 | 6.30 | 6.36 | 38 | 1 | 200 | 7539 | |
| | 6 | 6.92 | 6.89 | 6.95 | 19 | 1 | 200 | 3820 | |

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# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 1D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.88 | 4.85 | 4.91 | 81 | 1 | 200 | 16192 | |
| | 2 | 5.40 | 5.37 | 5.43 | 124 | 1 | 200 | 24757 | |
| | 3 | 6.06 | 6.03 | 6.09 | 102 | 1 | 200 | 20380 | |
| | 4 | 6.25 | 6.22 | 6.28 | 108 | 1 | 200 | 21630 | |
| | 5 | 6.33 | 6.30 | 6.36 | 69 | 1 | 200 | 13781 | |
| | 6 | 6.92 | 6.89 | 6.95 | 42 | 1 | 200 | 8356 | |
| Aroclor-1248 | 1 | 5.39 | 5.36 | 5.42 | 61 | 1 | 200 | 12123 | |
| | 2 | 6.06 | 6.03 | 6.09 | 46 | 1 | 200 | 9228 | |
| | 3 | 6.81 | 6.78 | 6.84 | 146 | 1 | 200 | 29238 | |
| | 4 | 7.38 | 7.35 | 7.41 | 86 | 1 | 200 | 17253 | |
| | 5 | 7.68 | 7.65 | 7.71 | 111 | 1 | 200 | 22231 | |
| | 6 | 8.20 | 8.17 | 8.23 | 82 | 1 | 200 | 16389 | |
| Aroclor-1254 | 1 | 6.50 | 6.47 | 6.53 | 91 | 1 | 250 | 22716 | |
| | 2 | 7.66 | 7.63 | 7.69 | 168 | 1 | 250 | 42042 | |
| | 3 | 8.19 | 8.16 | 8.22 | 219 | 1 | 250 | 54816 | |
| | 4 | 8.56 | 8.53 | 8.59 | 163 | 1 | 250 | 40762 | |
| | 5 | 8.79 | 8.76 | 8.82 | 103 | 1 | 250 | 25821 | |
| | 6 | 9.16 | 9.13 | 9.19 | 161 | 1 | 250 | 40286 | |

8589

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 1D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.43 | 8.40 | 8.46 | 180 | 1 | 50 | 10761 | 15.2 |
| | | | | | | 2 | 100 | 19623 | |
| | | | | | | 3 | 200 | 36276 | |
| | | | | | | 4 | 500 | 79723 | |
| | | | | | | 5 | 1000 | 147307 | |
| | 2 | 8.79 | 8.76 | 8.82 | 219 | 1 | 50 | 13253 | 16.0 |
| | | | | | | 2 | 100 | 23896 | |
| | | | | | | 3 | 200 | 44117 | |
| | | | | | | 4 | 500 | 95904 | |
| | | | | | | 5 | 1000 | 178459 | |
| | 3 | 9.16 | 9.13 | 9.19 | 215 | 1 | 50 | 12304 | 11.5 |
| | | | | | | 2 | 100 | 22928 | |
| | | | | | | 3 | 200 | 43269 | |
| | | | | | | 4 | 500 | 97851 | |
| | | | | | | 5 | 1000 | 185111 | |
| | 4 | 9.63 | 9.60 | 9.66 | 108 | 1 | 50 | 6121 | 11.8 |
| | | | | | | 2 | 100 | 11673 | |
| | | | | | | 3 | 200 | 21930 | |
| | | | | | | 4 | 500 | 49269 | |
| | | | | | | 5 | 1000 | 91400 | |
| | 5 | 10.02 | 9.99 | 10.05 | 290 | 1 | 50 | 16649 | 11.6 |
| | | | | | | 2 | 100 | 31074 | |
| | | | | | | 3 | 200 | 58527 | |
| | | | | | | 4 | 500 | 131562 | |
| | | | | | | 5 | 1000 | 250921 | |
| | 6 | 11.21 | 11.18 | 11.24 | 79 | 1 | 50 | 4253 | 6.6 |
| | | | | | | 2 | 100 | 8329 | |
| | | | | | | 3 | 200 | 16019 | |
| | | | | | | 4 | 500 | 37819 | |
| | | | | | | 5 | 1000 | 72538 | |
| Chlordane (Technical) | 1 | 6.23 | 6.20 | 6.26 | 172 | 1 | 200.6 | 34417 | |
| | 2 | 6.34 | 6.31 | 6.37 | 227 | 1 | 200.6 | 45441 | |
| | 3 | 6.96 | 6.93 | 6.99 | 218 | 1 | 200.6 | 43739 | |
| | 4 | 7.78 | 7.75 | 7.81 | 411 | 1 | 200.6 | 82526 | |
| | 5 | 7.95 | 7.92 | 7.98 | 481 | 1 | 200.6 | 96476 | |
| | 6 | 8.98 | 8.95 | 9.01 | 146 | 1 | 200.6 | 29218 | |

8598

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 1D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.67 | 8.64 | 8.70 | 36 | 1 | 500 | 18114 | |
| | 2 | 8.81 | 8.78 | 8.84 | 37 | 1 | 500 | 18613 | |
| | 3 | 9.22 | 9.19 | 9.25 | 51 | 1 | 500 | 25294 | |
| | 4 | 9.58 | 9.55 | 9.61 | 51 | 1 | 500 | 25678 | |
| | 5 | 10.06 | 10.03 | 10.09 | 47 | 1 | 500 | 23561 | |
| | 6 | 10.52 | 10.49 | 10.55 | 54 | 1 | 500 | 27008 | |

8591

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 2D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.86 | 4.83 | 4.89 | 88 | 1 | 50 | 4957 | 11.7 |
| | | | | | | 2 | 100 | 9439 | |
| | | | | | | 3 | 200 | 18058 | |
| | | | | | | 4 | 500 | 40651 | |
| | | | | | | 5 | 1000 | 73545 | |
| | 2 | 5.38 | 5.35 | 5.41 | 141 | 1 | 50 | 8204 | 14.2 |
| | | | | | | 2 | 100 | 15518 | |
| | | | | | | 3 | 200 | 28978 | |
| | | | | | | 4 | 500 | 63916 | |
| | | | | | | 5 | 1000 | 114830 | |
| | 3 | 6.04 | 6.01 | 6.07 | 119 | 1 | 50 | 6740 | 9.6 |
| | | | | | | 2 | 100 | 11913 | |
| | | | | | | 3 | 200 | 24542 | |
| | | | | | | 4 | 500 | 56145 | |
| | | | | | | 5 | 1000 | 104477 | |
| | 4 | 6.23 | 6.20 | 6.26 | 125 | 1 | 50 | 7072 | 11.3 |
| | | | | | | 2 | 100 | 13485 | |
| | | | | | | 3 | 200 | 25668 | |
| | | | | | | 4 | 500 | 57594 | |
| | | | | | | 5 | 1000 | 106929 | |
| | 5 | 6.32 | 6.29 | 6.35 | 81 | 1 | 50 | 4382 | 7.1 |
| | | | | | | 2 | 100 | 8546 | |
| | | | | | | 3 | 200 | 16457 | |
| | | | | | | 4 | 500 | 38393 | |
| | | | | | | 5 | 1000 | 74028 | |
| | 6 | 6.90 | 6.87 | 6.93 | 40 | 1 | 50 | 2175 | 6.9 |
| | | | | | | 2 | 100 | 4245 | |
| | | | | | | 3 | 200 | 8104 | |
| | | | | | | 4 | 500 | 19242 | |
| | | | | | | 5 | 1000 | 36778 | |
| Aroclor-1221 | 1 | 4.58 | 4.55 | 4.61 | 55 | 1 | 200 | 10903 | |
| | 2 | 4.80 | 4.77 | 4.83 | 32 | 1 | 200 | 6316 | |
| | 3 | 4.86 | 4.83 | 4.89 | 126 | 1 | 200 | 25125 | |
| Aroclor-1232 | 1 | 4.86 | 4.83 | 4.89 | 99 | 1 | 200 | 19734 | |
| | 2 | 5.38 | 5.35 | 5.41 | 64 | 1 | 200 | 12896 | |
| | 3 | 6.04 | 6.01 | 6.07 | 55 | 1 | 200 | 10928 | |
| | 4 | 6.22 | 6.19 | 6.25 | 59 | 1 | 200 | 11762 | |
| | 5 | 6.31 | 6.28 | 6.34 | 38 | 1 | 200 | 7539 | |
| | 6 | 6.90 | 6.87 | 6.93 | 19 | 1 | 200 | 3820 | |

8592

# 6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Calibration File: 2D16082

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.86 | 4.83 | 4.89 | 81 | 1 | 200 | 16192 | |
| | 2 | 5.38 | 5.35 | 5.41 | 124 | 1 | 200 | 24757 | |
| | 3 | 6.04 | 6.01 | 6.07 | 102 | 1 | 200 | 20380 | |
| | 4 | 6.22 | 6.19 | 6.25 | 108 | 1 | 200 | 21630 | |
| | 5 | 6.31 | 6.28 | 6.34 | 69 | 1 | 200 | 13781 | |
| | 6 | 6.90 | 6.87 | 6.93 | 42 | 1 | 200 | 8356 | |
| Aroclor-1248 | 1 | 5.38 | 5.35 | 5.41 | 61 | 1 | 200 | 12123 | |
| | 2 | 6.04 | 6.01 | 6.07 | 46 | 1 | 200 | 9228 | |
| | 3 | 6.78 | 6.75 | 6.81 | 146 | 1 | 200 | 29238 | |
| | 4 | 7.35 | 7.32 | 7.38 | 86 | 1 | 200 | 17253 | |
| | 5 | 7.65 | 7.62 | 7.68 | 111 | 1 | 200 | 22231 | |
| | 6 | 8.17 | 8.14 | 8.20 | 82 | 1 | 200 | 16389 | |
| Aroclor-1254 | 1 | 6.47 | 6.44 | 6.50 | 91 | 1 | 250 | 22716 | |
| | 2 | 7.63 | 7.60 | 7.66 | 168 | 1 | 250 | 42042 | |
| | 3 | 8.16 | 8.13 | 8.19 | 219 | 1 | 250 | 54816 | |
| | 4 | 8.53 | 8.50 | 8.56 | 163 | 1 | 250 | 40762 | |
| | 5 | 8.76 | 8.73 | 8.79 | 103 | 1 | 250 | 25821 | |
| | 6 | 9.13 | 9.10 | 9.16 | 161 | 1 | 250 | 40286 | |

8593

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Calibration File: 2D16082

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.41 | 8.38 | 8.44 | 180 | 1 | 50 | 10761 | 15.2 |
| | | | | | | 2 | 100 | 19623 | |
| | | | | | | 3 | 200 | 36276 | |
| | | | | | | 4 | 500 | 79723 | |
| | | | | | | 5 | 1000 | 147307 | |
| | 2 | 8.76 | 8.73 | 8.79 | 219 | 1 | 50 | 13253 | 16.0 |
| | | | | | | 2 | 100 | 23896 | |
| | | | | | | 3 | 200 | 44117 | |
| | | | | | | 4 | 500 | 95904 | |
| | | | | | | 5 | 1000 | 178459 | |
| | 3 | 9.13 | 9.10 | 9.16 | 215 | 1 | 50 | 12304 | 11.5 |
| | | | | | | 2 | 100 | 22928 | |
| | | | | | | 3 | 200 | 43269 | |
| | | | | | | 4 | 500 | 97851 | |
| | | | | | | 5 | 1000 | 185111 | |
| | 4 | 9.60 | 9.57 | 9.63 | 108 | 1 | 50 | 6121 | 11.8 |
| | | | | | | 2 | 100 | 11673 | |
| | | | | | | 3 | 200 | 21930 | |
| | | | | | | 4 | 500 | 49269 | |
| | | | | | | 5 | 1000 | 91400 | |
| | 5 | 9.99 | 9.96 | 10.02 | 290 | 1 | 50 | 16649 | 11.6 |
| | | | | | | 2 | 100 | 31074 | |
| | | | | | | 3 | 200 | 58527 | |
| | | | | | | 4 | 500 | 131562 | |
| | | | | | | 5 | 1000 | 250921 | |
| | 6 | 11.17 | 11.14 | 11.20 | 79 | 1 | 50 | 4253 | 6.6 |
| | | | | | | 2 | 100 | 8329 | |
| | | | | | | 3 | 200 | 16019 | |
| | | | | | | 4 | 500 | 37819 | |
| | | | | | | 5 | 1000 | 72538 | |
| Chlordane (Technical) | 1 | 6.21 | 6.18 | 6.24 | 172 | 1 | 200.6 | 34417 | |
| | 2 | 6.32 | 6.29 | 6.35 | 227 | 1 | 200.6 | 45441 | |
| | 3 | 6.94 | 6.91 | 6.97 | 218 | 1 | 200.6 | 43739 | |
| | 4 | 7.75 | 7.72 | 7.78 | 411 | 1 | 200.6 | 82526 | |
| | 5 | 7.92 | 7.89 | 7.95 | 481 | 1 | 200.6 | 96476 | |
| | 6 | 8.95 | 8.92 | 8.98 | 146 | 1 | 200.6 | 29218 | |

0594

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Calibration File: 2D16082

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.64 | 8.61 | 8.67 | 36 | 1 | 500 | 18114 | |
| | 2 | 8.78 | 8.75 | 8.81 | 37 | 1 | 500 | 18613 | |
| | 3 | 9.18 | 9.15 | 9.21 | 51 | 1 | 500 | 25294 | |
| | 4 | 9.55 | 9.52 | 9.58 | 51 | 1 | 500 | 25678 | |
| | 5 | 10.02 | 9.99 | 10.05 | 47 | 1 | 500 | 23561 | |
| | 6 | 10.49 | 10.46 | 10.52 | 54 | 1 | 500 | 27008 | |

0595

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 1D16082B

GC Column (2): RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.77 | 4.74 | 4.80 | 117 | 1 | 50 | 6595 | 12.2 |
| | | | | | | 2 | 100 | 12717 | |
| | | | | | | 3 | 200 | 24544 | |
| | | | | | | 4 | 500 | 53773 | |
| | | | | | | 5 | 1000 | 97626 | |
| | 2 | 5.34 | 5.31 | 5.37 | 165 | 1 | 50 | 9595 | 14.5 |
| | | | | | | 2 | 100 | 18184 | |
| | | | | | | 3 | 200 | 34122 | |
| | | | | | | 4 | 500 | 74035 | |
| | | | | | | 5 | 1000 | 133846 | |
| | 3 | 5.96 | 5.93 | 5.99 | 336 | 1 | 50 | 19910 | 15.1 |
| | | | | | | 2 | 100 | 36700 | |
| | | | | | | 3 | 200 | 68410 | |
| | | | | | | 4 | 500 | 150183 | |
| | | | | | | 5 | 1000 | 271677 | |
| | 4 | 6.15 | 6.12 | 6.18 | 174 | 1 | 50 | 9993 | 13.3 |
| | | | | | | 2 | 100 | 18923 | |
| | | | | | | 3 | 200 | 35611 | |
| | | | | | | 4 | 500 | 78502 | |
| | | | | | | 5 | 1000 | 143714 | |
| | 5 | 6.28 | 6.25 | 6.31 | 125 | 1 | 50 | 7124 | 11.2 |
| | | | | | | 2 | 100 | 13253 | |
| | | | | | | 3 | 200 | 25366 | |
| | | | | | | 4 | 500 | 57381 | |
| | | | | | | 5 | 1000 | 107357 | |
| | 6 | 6.77 | 6.74 | 6.80 | 118 | 1 | 50 | 6628 | 12.1 |
| | | | | | | 2 | 100 | 12782 | |
| | | | | | | 3 | 200 | 24322 | |
| | | | | | | 4 | 500 | 54139 | |
| | | | | | | 5 | 1000 | 98070 | |
| Aroclor-1221 | 1 | 4.48 | 4.45 | 4.51 | 75 | 1 | 200 | 15079 | |
| | 2 | 4.68 | 4.65 | 4.71 | 50 | 1 | 200 | 9936 | |
| | 3 | 4.77 | 4.74 | 4.80 | 160 | 1 | 200 | 32067 | |
| Aroclor-1232 | 1 | 4.77 | 4.74 | 4.80 | 129 | 1 | 200 | 25795 | |
| | 2 | 5.34 | 5.31 | 5.37 | 76 | 1 | 200 | 15162 | |
| | 3 | 5.96 | 5.93 | 5.99 | 158 | 1 | 200 | 31639 | |
| | 4 | 6.14 | 6.11 | 6.17 | 81 | 1 | 200 | 16258 | |
| | 5 | 6.28 | 6.25 | 6.31 | 58 | 1 | 200 | 11678 | |
| | 6 | 6.77 | 6.74 | 6.80 | 53 | 1 | 200 | 10648 | |

0596

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 1D16082B

GC Column (2): RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.77 | 4.74 | 4.80 | 109 | 1 | 200 | 21792 | |
| | 2 | 5.34 | 5.31 | 5.37 | 146 | 1 | 200 | 29238 | |
| | 3 | 5.96 | 5.93 | 5.99 | 290 | 1 | 200 | 58081 | |
| | 4 | 6.14 | 6.11 | 6.17 | 151 | 1 | 200 | 30206 | |
| | 5 | 6.28 | 6.25 | 6.31 | 107 | 1 | 200 | 21499 | |
| | 6 | 6.77 | 6.74 | 6.80 | 107 | 1 | 200 | 21375 | |
| Aroclor-1248 | 1 | 5.33 | 5.30 | 5.36 | 74 | 1 | 200 | 14836 | |
| | 2 | 5.96 | 5.93 | 5.99 | 169 | 1 | 200 | 33730 | |
| | 3 | 6.77 | 6.74 | 6.80 | 178 | 1 | 200 | 35673 | |
| | 4 | 7.26 | 7.23 | 7.29 | 160 | 1 | 200 | 31902 | |
| | 5 | 7.63 | 7.60 | 7.66 | 162 | 1 | 200 | 32411 | |
| | 6 | 8.17 | 8.14 | 8.20 | 88 | 1 | 200 | 17650 | |
| Aroclor-1254 | 1 | 6.41 | 6.38 | 6.44 | 113 | 1 | 250 | 28334 | |
| | 2 | 7.56 | 7.53 | 7.59 | 188 | 1 | 250 | 47049 | |
| | 3 | 8.16 | 8.13 | 8.19 | 237 | 1 | 250 | 59323 | |
| | 4 | 8.45 | 8.42 | 8.48 | 119 | 1 | 250 | 29666 | |
| | 5 | 8.90 | 8.87 | 8.93 | 123 | 1 | 250 | 30827 | |
| | 6 | 9.14 | 9.11 | 9.17 | 173 | 1 | 250 | 43215 | |

8597

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 1D16082B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/22/04  3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.42 | 8.39 | 8.45 | 195 | 1 | 50 | 11433 | 13.7 |
| | | | | | | 2 | 100 | 21206 | |
| | | | | | | 3 | 200 | 39687 | |
| | | | | | | 4 | 500 | 86972 | |
| | | | | | | 5 | 1000 | 163436 | |
| | 2 | 8.68 | 8.65 | 8.71 | 236 | 1 | 50 | 13939 | 14.2 |
| | | | | | | 2 | 100 | 25702 | |
| | | | | | | 3 | 200 | 47405 | |
| | | | | | | 4 | 500 | 104521 | |
| | | | | | | 5 | 1000 | 197718 | |
| | 3 | 8.89 | 8.86 | 8.92 | 152 | 1 | 50 | 8536 | 9.6 |
| | | | | | | 2 | 100 | 15956 | |
| | | | | | | 3 | 200 | 30519 | |
| | | | | | | 4 | 500 | 70151 | |
| | | | | | | 5 | 1000 | 134442 | |
| | 4 | 9.14 | 9.11 | 9.17 | 221 | 1 | 50 | 12562 | 10.6 |
| | | | | | | 2 | 100 | 23600 | |
| | | | | | | 3 | 200 | 44497 | |
| | | | | | | 4 | 500 | 100793 | |
| | | | | | | 5 | 1000 | 194784 | |
| | 5 | 9.64 | 9.61 | 9.67 | 143 | 1 | 50 | 8039 | 9.9 |
| | | | | | | 2 | 100 | 15287 | |
| | | | | | | 3 | 200 | 28928 | |
| | | | | | | 4 | 500 | 65875 | |
| | | | | | | 5 | 1000 | 126866 | |
| | 6 | 9.95 | 9.92 | 9.98 | 325 | 1 | 50 | 18322 | 10.1 |
| | | | | | | 2 | 100 | 34660 | |
| | | | | | | 3 | 200 | 64897 | |
| | | | | | | 4 | 500 | 148217 | |
| | | | | | | 5 | 1000 | 288818 | |
| Chlordane (Technical) | 1 | 5.89 | 5.86 | 5.92 | 244 | 1 | 200.6 | 49035 | |
| | 2 | 6.10 | 6.07 | 6.13 | 336 | 1 | 200.6 | 67430 | |
| | 3 | 6.75 | 6.72 | 6.78 | 268 | 1 | 200.6 | 53851 | |
| | 4 | 7.57 | 7.54 | 7.60 | 595 | 1 | 200.6 | 119334 | |
| | 5 | 7.69 | 7.66 | 7.72 | 427 | 1 | 200.6 | 85640 | |
| | 6 | 7.76 | 7.73 | 7.79 | 489 | 1 | 200.6 | 98041 | |

8598

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Calibration File: 1D16082B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/22/04 3/22/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.18 | 8.15 | 8.21 | 40 | 1 | 500 | 20062 | |
| | 2 | 8.85 | 8.82 | 8.88 | 39 | 1 | 500 | 19689 | |
| | 3 | 8.98 | 8.95 | 9.01 | 100 | 1 | 500 | 49901 | |
| | 4 | 9.31 | 9.28 | 9.34 | 72 | 1 | 500 | 36142 | |
| | 5 | 9.97 | 9.94 | 10.00 | 74 | 1 | 500 | 36918 | |
| | 6 | 10.48 | 10.45 | 10.51 | 40 | 1 | 500 | 20155 | |

8599

# 6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Calibration File: 2D16082B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.75 | 4.72 | 4.78 | 117 | 1 | 50 | 6595 | 12.2 |
| | | | | | | 2 | 100 | 12717 | |
| | | | | | | 3 | 200 | 24544 | |
| | | | | | | 4 | 500 | 53773 | |
| | | | | | | 5 | 1000 | 97626 | |
| | 2 | 5.32 | 5.29 | 5.35 | 165 | 1 | 50 | 9595 | 14.5 |
| | | | | | | 2 | 100 | 18184 | |
| | | | | | | 3 | 200 | 34122 | |
| | | | | | | 4 | 500 | 74035 | |
| | | | | | | 5 | 1000 | 133846 | |
| | 3 | 5.94 | 5.91 | 5.97 | 336 | 1 | 50 | 19910 | 15.1 |
| | | | | | | 2 | 100 | 36700 | |
| | | | | | | 3 | 200 | 68410 | |
| | | | | | | 4 | 500 | 150183 | |
| | | | | | | 5 | 1000 | 271677 | |
| | 4 | 6.12 | 6.09 | 6.15 | 174 | 1 | 50 | 9993 | 13.3 |
| | | | | | | 2 | 100 | 18923 | |
| | | | | | | 3 | 200 | 35611 | |
| | | | | | | 4 | 500 | 78502 | |
| | | | | | | 5 | 1000 | 143714 | |
| | 5 | 6.26 | 6.23 | 6.29 | 125 | 1 | 50 | 7124 | 11.2 |
| | | | | | | 2 | 100 | 13253 | |
| | | | | | | 3 | 200 | 25366 | |
| | | | | | | 4 | 500 | 57381 | |
| | | | | | | 5 | 1000 | 107357 | |
| | 6 | 6.75 | 6.72 | 6.78 | 118 | 1 | 50 | 6628 | 12.1 |
| | | | | | | 2 | 100 | 12782 | |
| | | | | | | 3 | 200 | 24322 | |
| | | | | | | 4 | 500 | 54139 | |
| | | | | | | 5 | 1000 | 98070 | |
| Aroclor-1221 | 1 | 4.47 | 4.44 | 4.50 | 75 | 1 | 200 | 15079 | |
| | 2 | 4.67 | 4.64 | 4.70 | 50 | 1 | 200 | 9936 | |
| | 3 | 4.75 | 4.72 | 4.78 | 160 | 1 | 200 | 32067 | |
| Aroclor-1232 | 1 | 4.75 | 4.72 | 4.78 | 129 | 1 | 200 | 25795 | |
| | 2 | 5.32 | 5.29 | 5.35 | 76 | 1 | 200 | 15162 | |
| | 3 | 5.94 | 5.91 | 5.97 | 158 | 1 | 200 | 31639 | |
| | 4 | 6.12 | 6.09 | 6.15 | 81 | 1 | 200 | 16258 | |
| | 5 | 6.26 | 6.23 | 6.29 | 58 | 1 | 200 | 11678 | |
| | 6 | 6.74 | 6.71 | 6.77 | 53 | 1 | 200 | 10648 | |

3686

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Calibration File: 2D16082B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.75 | 4.72 | 4.78 | 109 | 1 | 200 | 21792 | |
| | 2 | 5.32 | 5.29 | 5.35 | 146 | 1 | 200 | 29238 | |
| | 3 | 5.94 | 5.91 | 5.97 | 290 | 1 | 200 | 58081 | |
| | 4 | 6.12 | 6.09 | 6.15 | 151 | 1 | 200 | 30206 | |
| | 5 | 6.26 | 6.23 | 6.29 | 107 | 1 | 200 | 21499 | |
| | 6 | 6.75 | 6.72 | 6.78 | 107 | 1 | 200 | 21375 | |
| Aroclor-1248 | 1 | 5.32 | 5.29 | 5.35 | 74 | 1 | 200 | 14836 | |
| | 2 | 5.94 | 5.91 | 5.97 | 169 | 1 | 200 | 33730 | |
| | 3 | 6.74 | 6.71 | 6.77 | 178 | 1 | 200 | 35673 | |
| | 4 | 7.24 | 7.21 | 7.27 | 160 | 1 | 200 | 31902 | |
| | 5 | 7.60 | 7.57 | 7.63 | 162 | 1 | 200 | 32411 | |
| | 6 | 8.14 | 8.11 | 8.17 | 88 | 1 | 200 | 17650 | |
| Aroclor-1254 | 1 | 6.38 | 6.35 | 6.41 | 113 | 1 | 250 | 28334 | |
| | 2 | 7.53 | 7.50 | 7.56 | 188 | 1 | 250 | 47049 | |
| | 3 | 8.13 | 8.10 | 8.16 | 237 | 1 | 250 | 59323 | |
| | 4 | 8.42 | 8.39 | 8.45 | 119 | 1 | 250 | 29666 | |
| | 5 | 8.87 | 8.84 | 8.90 | 123 | 1 | 250 | 30827 | |
| | 6 | 9.11 | 9.08 | 9.14 | 173 | 1 | 250 | 43215 | |

2681

# 6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262B  Calibration File: 2D16082B

GC Column (2): RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/25/04  3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.39 | 8.36 | 8.42 | 195 | 1 | 50 | 11433 | 13.7 |
| | | | | | | 2 | 100 | 21206 | |
| | | | | | | 3 | 200 | 39687 | |
| | | | | | | 4 | 500 | 86972 | |
| | | | | | | 5 | 1000 | 163436 | |
| | 2 | 8.65 | 8.62 | 8.68 | 236 | 1 | 50 | 13939 | 14.2 |
| | | | | | | 2 | 100 | 25702 | |
| | | | | | | 3 | 200 | 47405 | |
| | | | | | | 4 | 500 | 104521 | |
| | | | | | | 5 | 1000 | 197718 | |
| | 3 | 8.86 | 8.83 | 8.89 | 152 | 1 | 50 | 8536 | 9.6 |
| | | | | | | 2 | 100 | 15956 | |
| | | | | | | 3 | 200 | 30519 | |
| | | | | | | 4 | 500 | 70151 | |
| | | | | | | 5 | 1000 | 134442 | |
| | 4 | 9.11 | 9.08 | 9.14 | 221 | 1 | 50 | 12562 | 10.6 |
| | | | | | | 2 | 100 | 23600 | |
| | | | | | | 3 | 200 | 44497 | |
| | | | | | | 4 | 500 | 100793 | |
| | | | | | | 5 | 1000 | 194784 | |
| | 5 | 9.61 | 9.58 | 9.64 | 143 | 1 | 50 | 8039 | 9.9 |
| | | | | | | 2 | 100 | 15287 | |
| | | | | | | 3 | 200 | 28928 | |
| | | | | | | 4 | 500 | 65875 | |
| | | | | | | 5 | 1000 | 126866 | |
| | 6 | 9.91 | 9.88 | 9.94 | 325 | 1 | 50 | 18322 | 10.1 |
| | | | | | | 2 | 100 | 34660 | |
| | | | | | | 3 | 200 | 64897 | |
| | | | | | | 4 | 500 | 148217 | |
| | | | | | | 5 | 1000 | 288818 | |
| Chlordane (Technical) | 1 | 5.87 | 5.84 | 5.90 | 244 | 1 | 200.6 | 49035 | |
| | 2 | 6.08 | 6.05 | 6.11 | 336 | 1 | 200.6 | 67430 | |
| | 3 | 6.73 | 6.70 | 6.76 | 268 | 1 | 200.6 | 53851 | |
| | 4 | 7.54 | 7.51 | 7.57 | 595 | 1 | 200.6 | 119334 | |
| | 5 | 7.67 | 7.64 | 7.70 | 427 | 1 | 200.6 | 85640 | |
| | 6 | 7.74 | 7.71 | 7.77 | 489 | 1 | 200.6 | 98041 | |

8682

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Calibration File: 2D16082B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/25/04 3/25/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.15 | 8.12 | 8.18 | 40 | 1 | 500 | 20062 | |
| | 2 | 8.82 | 8.79 | 8.85 | 39 | 1 | 500 | 19689 | |
| | 3 | 8.94 | 8.91 | 8.97 | 100 | 1 | 500 | 49901 | |
| | 4 | 9.28 | 9.25 | 9.31 | 72 | 1 | 500 | 36142 | |
| | 5 | 9.94 | 9.91 | 9.97 | 74 | 1 | 500 | 36918 | |
| | 6 | 10.44 | 10.41 | 10.47 | 40 | 1 | 500 | 20155 | |

5683

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/22/04 03/22/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/22/04

Lab File ID: 1D16082.13R Time Analyzed: 13:17

Lab Standard ID: ICMAXAA Initial Calibration: 1D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.34 | 4.31 | 4.37 | 37:53 | 38.48 | -2.5 |
| alpha-BHC | 5.19 | 5.16 | 5.22 | 9.62 | 10.00 | -3.8 |
| gamma-BHC (Lindane) | 5.66 | 5.63 | 5.69 | 9.81 | 10.00 | -1.9 |
| beta-BHC | 5.79 | 5.76 | 5.82 | 9.96 | 10.00 | -0.4 |
| delta-BHC | 6.05 | 6.02 | 6.08 | 10.07 | 10.00 | 0.7 |
| Heptachlor | 6.34 | 6.31 | 6.37 | 9.72 | 10.00 | -2.8 |
| Aldrin | 6.77 | 6.74 | 6.80 | 10.14 | 10.00 | 1.4 |
| Heptachlor epoxide | 7.61 | 7.58 | 7.64 | 9.97 | 10.00 | -0.3 |
| gamma-Chlordane | 7.78 | 7.75 | 7.81 | 9.82 | 10.00 | -1.8 |
| alpha-Chlordane | 7.96 | 7.92 | 7.98 | 9.48 | 10.00 | -5.2 |
| 4,4'-DDE | 8.04 | 8.01 | 8.07 | 19.70 | 20.00 | -1.5 |
| Endosulfan I | 8.15 | 8.12 | 8.18 | 9.73 | 10.00 | -2.7 |
| Dieldrin | 8.47 | 8.44 | 8.50 | 19.15 | 20.00 | -4.3 |
| Endrin | 8.78 | 8.75 | 8.81 | 19.42 | 20.00 | -2.9 |
| 4,4'-DDD | 8.83 | 8.80 | 8.86 | 18.50 | 20.00 | -7.5 |
| Endosulfan II | 9.07 | 9.04 | 9.10 | 19.57 | 20.00 | -2.1 |
| 4,4'-DDT | 9.20 | 9.17 | 9.23 | 19.66 | 20.00 | -1.7 |
| Endrin aldehyde | 9.62 | 9.59 | 9.65 | 19.49 | 20.00 | -2.6 |
| Methoxychlor | 9.81 | 9.78 | 9.84 | 94.68 | 100.00 | -5.3 |
| Endosulfan sulfate | 10.20 | 10.16 | 10.22 | 19.48 | 20.00 | -2.6 |
| Endrin ketone | 10.57 | 10.53 | 10.59 | 19.70 | 20.00 | -1.5 |
| Decachlorobiphenyl | 11.93 | 11.90 | 11.96 | 35.82 | 38.96 | -8.0 |

Average of %D: 2.9

8664

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/22/04 03/22/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/22/04

Lab File ID: 1D16082B.13R Time Analyzed: 13:17

Lab Standard ID: ICMAXAA Initial Calibration: 1D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.06 | 4.03 | 4.09 | 36.89 | 38.48 | -4.1 |
| alpha-BHC | 4.96 | 4.93 | 4.99 | 9.75 | 10.00 | -2.5 |
| gamma-BHC (Lindane) | 5.48 | 5.45 | 5.51 | 9.91 | 10.00 | -0.9 |
| beta-BHC | 5.61 | 5.58 | 5.64 | 9.89 | 10.00 | -1.1 |
| delta-BHC | 6.02 | 5.99 | 6.05 | 10.15 | 10.00 | 1.5 |
| Heptachlor | 6.10 | 6.07 | 6.13 | 9.72 | 10.00 | -2.8 |
| Aldrin | 6.54 | 6.51 | 6.57 | 10.27 | 10.00 | 2.7 |
| Heptachlor epoxide | 7.32 | 7.29 | 7.35 | 9.76 | 10.00 | -2.4 |
| gamma-Chlordane | 7.57 | 7.54 | 7.60 | 9.61 | 10.00 | -3.9 |
| alpha-Chlordane | 7.76 | 7.73 | 7.79 | 9.69 | 10.00 | -3.1 |
| Endosulfan I | 7.84 | 7.81 | 7.87 | 9.71 | 10.00 | -2.9 |
| 4,4'-DDE | 7.99 | 7.96 | 8.02 | 19.58 | 20.00 | -2.1 |
| Dieldrin | 8.20 | 8.17 | 8.23 | 19.28 | 20.00 | -3.6 |
| Endrin | 8.60 | 8.57 | 8.63 | 19.54 | 20.00 | -2.3 |
| 4,4'-DDD | 8.74 | 8.70 | 8.76 | 18.54 | 20.00 | -7.3 |
| Endosulfan II | 8.87 | 8.84 | 8.90 | 19.70 | 20.00 | -1.5 |
| 4,4'-DDT | 9.14 | 9.11 | 9.17 | 19.57 | 20.00 | -2.2 |
| Endrin aldehyde | 9.31 | 9.28 | 9.34 | 19.42 | 20.00 | -2.9 |
| Endosulfan sulfate | 9.66 | 9.63 | 9.69 | 20.45 | 20.00 | 2.3 |
| Methoxychlor | 10.02 | 9.98 | 10.04 | 95.50 | 100.00 | -4.5 |
| Endrin ketone | 10.36 | 10.32 | 10.38 | 19.20 | 20.00 | -4.0 |
| Decachlorobiphenyl | 12.08 | 12.04 | 12.10 | 35.59 | 38.96 | -8.6 |
| | | | | | Average of %D: | 3.1 |

8605

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/22/04 03/22/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/22/04

Lab File ID: 1D16082.36R Time Analyzed: 21:11

Lab Standard ID: IC16XAA Initial Calibration: 1D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.33 | 4.31 | 4.37 | 10.13 | 9.62 | 5.3 |
| Decachlorobiphenyl | 11.92 | 11.90 | 11.96 | 10.64 | 9.74 | 9.2 |
| Aroclor-1016 | 4.88 | 4.85 | 4.91 | 203.36 | 200.00 | 1.7 |
| | 5.40 | 5.37 | 5.43 | | | |
| | 6.06 | 6.03 | 6.09 | | | |
| | 6.24 | 6.22 | 6.28 | | | |
| | 6.33 | 6.31 | 6.37 | | | |
| | 6.92 | 6.90 | 6.96 | | | |
| Aroclor-1260 | 8.43 | 8.40 | 8.46 | 202.19 | 200.00 | 1.1 |
| | 8.78 | 8.76 | 8.82 | | | |
| | 9.16 | 9.13 | 9.19 | | | |
| | 9.62 | 9.60 | 9.66 | | | |
| | 10.02 | 9.99 | 10.05 | | | |
| | 11.20 | 11.18 | 11.24 | | | |

Average of %D: 4.3

8606



FORM VII

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/22/04 03/22/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/22/04

Lab File ID: 1D16082B.36R Time Analyzed: 21:11

Lab Standard ID: IC16XAA Initial Calibration: 1D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.06 | 4.03 | 4.09 | 10.60 | 9.62 | 10.2 |
| Decachlorobiphenyl | 12.07 | 12.04 | 12.10 | 10.41 | 9.74 | 6.9 |
| Aroclor-1016 | 4.77 | 4.74 | 4.80 | 205.66 | 200.00 | 2.8 |
| | 5.33 | 5.31 | 5.37 | | | |
| | 5.96 | 5.93 | 5.99 | | | |
| | 6.14 | 6.12 | 6.18 | | | |
| | 6.28 | 6.25 | 6.31 | | | |
| | 6.77 | 6.74 | 6.80 | | | |
| Aroclor-1260 | 8.41 | 8.39 | 8.45 | 202.22 | 200.00 | 1.1 |
| | 8.67 | 8.65 | 8.71 | | | |
| | 8.88 | 8.86 | 8.92 | | | |
| | 9.14 | 9.11 | 9.17 | | | |
| | 9.63 | 9.61 | 9.67 | | | |
| | 9.94 | 9.92 | 9.98 | | | |

Average of %D: 5.3

9687

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/25/04 03/25/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082.41R Time Analyzed: 8:47

Lab Standard ID: PEMON Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.29 | 4.35 | 19.70 | 20.10 | -2.0 |
| alpha-BHC | 5.16 | 5.14 | 5.20 | 9.96 | 10.00 | -0.4 |
| gamma-BHC (Lindane) | 5.63 | 5.60 | 5.66 | 9.42 | 10.00 | -5.8 |
| beta-BHC | 5.76 | 5.74 | 5.80 | 9.86 | 10.00 | -1.4 |
| 4,4'-DDE | 8.01 | 7.99 | 8.05 | 0.54 | | |
| Endrin | 8.74 | 8.72 | 8.78 | 43.29 | 50.10 | -13.6 |
| 4,4'-DDT | 9.16 | 9.14 | 9.20 | 83.19 | 100.20 | -17.0 |
| Endrin aldehyde | 9.59 | 9.57 | 9.63 | 1.98 | | |
| Methoxychlor | 9.77 | 9.75 | 9.81 | 184.90 | 250.50 | -26.2 |
| Endrin ketone | 10.53 | 10.51 | 10.57 | 2.07 | | |
| Decachlorobiphenyl | 11.88 | 11.86 | 11.92 | 19.16 | 20.00 | -4.2 |

4'4-DDT % breakdown:0.8 Endrin % breakdown: 7.8 Combined % breakdown:8.6

8688

# 7D

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.41R Time Analyzed: 8:47

Lab Standard ID: PEMON Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 19.19 | 20.10 | -4.5 |
| alpha-BHC | 4.94 | 4.91 | 4.97 | 9.66 | 10.00 | -3.4 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 9.20 | 10.00 | -8.0 |
| beta-BHC | 5.58 | 5.56 | 5.62 | 9.29 | 10.00 | -7.1 |
| 4,4'-DDE | 7.95 | 7.93 | 7.99 | 0.51 | | |
| Endrin | 8.56 | 8.54 | 8.60 | 40.43 | 50.10 | -19.3 |
| 4,4'-DDD | 8.70 | 8.68 | 8.74 | 1.61 | | |
| 4,4'-DDT | 9.10 | 9.08 | 9.14 | 78.78 | 100.20 | -21.4 |
| Endrin aldehyde | 9.27 | 9.25 | 9.31 | 2.29 | | |
| Methoxychlor | 9.98 | 9.96 | 10.02 | 182.02 | 250.50 | -27.3 |
| Endrin ketone | 10.32 | 10.30 | 10.36 | 2.02 | | |
| Decachlorobiphenyl | 12.03 | 12.01 | 12.07 | 18.16 | 20.00 | -9.2 |

4'4-DDT % breakdown:2.9 Endrin % breakdown: 7.9 Combined % breakdown: 10.8

0609

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Init. Calib Date(s): 03/25/04  03/25/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 03/26/04

Lab File ID: 3D16082.42R  Time Analyzed: 9:07

Lab Standard ID: MIXA4OQ  Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.29 | 4.35 | 56.05 | 57.72 | -2.9 |
| alpha-BHC | 5.16 | 5.14 | 5.20 | 15.65 | 15.20 | 3.0 |
| gamma-BHC (Lindane) | 5.63 | 5.60 | 5.66 | 15.43 | 15.20 | 1.5 |
| beta-BHC | 5.76 | 5.74 | 5.80 | 14.84 | 15.20 | -2.4 |
| delta-BHC | 6.02 | 5.99 | 6.05 | 15.18 | 15.20 | -0.1 |
| Heptachlor | 6.31 | 6.29 | 6.35 | 14.74 | 15.20 | -3.0 |
| Aldrin | 6.74 | 6.72 | 6.78 | 15.08 | 15.20 | -0.8 |
| Heptachlor epoxide | 7.58 | 7.56 | 7.62 | 14.69 | 15.20 | -3.4 |
| gamma-Chlordane | 7.74 | 7.72 | 7.78 | 14.78 | 15.20 | -2.8 |
| alpha-Chlordane | 7.92 | 7.90 | 7.96 | 13.98 | 15.20 | -8.0 |
| 4,4'-DDE | 8.01 | 7.99 | 8.05 | 28.78 | 30.40 | -5.3 |
| Endosulfan I | 8.11 | 8.09 | 8.15 | 14.63 | 15.20 | -3.7 |
| Dieldrin | 8.43 | 8.41 | 8.47 | 29.52 | 30.40 | -2.9 |
| Endrin | 8.74 | 8.72 | 8.78 | 28.06 | 30.40 | -7.7 |
| Endosulfan II | 9.04 | 9.02 | 9.08 | 28.43 | 30.40 | -6.5 |
| 4,4'-DDT | 9.16 | 9.14 | 9.20 | 26.85 | 30.40 | -11.7 |
| Endrin aldehyde | 9.59 | 9.57 | 9.63 | 28.24 | 30.40 | -7.1 |
| Methoxychlor | 9.78 | 9.75 | 9.81 | 121.12 | 152.00 | -20.3 |
| Endosulfan sulfate | 10.16 | 10.14 | 10.20 | 28.08 | 30.40 | -7.6 |
| Endrin ketone | 10.53 | 10.51 | 10.57 | 29.62 | 30.40 | -2.6 |
| Decachlorobiphenyl | 11.88 | 11.86 | 11.92 | 51.84 | 58.44 | -11.3 |

Average of %D: ~~-5.5~~ 5.9

DDD 8.80 25.72 30.40 -15.4 @ MT 4/5/04

8610

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.42R Time Analyzed: 9:07

Lab Standard ID: MIXA4OQ Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 51.96 | 57.72 | -10.0 |
| alpha-BHC | 4.94 | 4.91 | 4.97 | 14.62 | 15.20 | -3.8 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 14.45 | 15.20 | -5.0 |
| beta-BHC | 5.58 | 5.56 | 5.62 | 13.71 | 15.20 | -9.8 |
| delta-BHC | 5.99 | 5.97 | 6.03 | 14.22 | 15.20 | -6.5 |
| Heptachlor | 6.07 | 6.04 | 6.10 | 14.01 | 15.20 | -7.8 |
| Aldrin | 6.51 | 6.49 | 6.55 | 14.43 | 15.20 | -5.1 |
| Heptachlor epoxide | 7.29 | 7.27 | 7.33 | 13.46 | 15.20 | -11.5 |
| gamma-Chlordane | 7.54 | 7.52 | 7.58 | 13.33 | 15.20 | -12.3 |
| alpha-Chlordane | 7.73 | 7.71 | 7.77 | 13.67 | 15.20 | -10.0 |
| Endosulfan I | 7.81 | 7.79 | 7.85 | 13.43 | 15.20 | -11.7 |
| 4,4'-DDE | 7.96 | 7.93 | 7.99 | 25.72 | 30.40 | -15.4 |
| Dieldrin | 8.17 | 8.14 | 8.20 | 27.36 | 30.40 | -10.0 |
| Endrin | 8.56 | 8.54 | 8.60 | 26.38 | 30.40 | -13.2 |
| 4,4'-DDD | 8.70 | 8.68 | 8.74 | 23.44 | 30.40 | -22.9 |
| Endosulfan II | 8.84 | 8.82 | 8.88 | 27.11 | 30.40 | -10.8 |
| 4,4'-DDT | 9.11 | 9.08 | 9.14 | 25.11 | 30.40 | -17.4 |
| Endrin aldehyde | 9.27 | 9.25 | 9.31 | 26.62 | 30.40 | -12.4 |
| Endosulfan sulfate | 9.63 | 9.60 | 9.66 | 27.74 | 30.40 | -8.8 |
| Methoxychlor | 9.98 | 9.96 | 10.02 | 117.77 | 152.00 | -22.5 |
| Endrin ketone | 10.32 | 10.30 | 10.36 | 27.45 | 30.40 | -9.7 |
| Decachlorobiphenyl | 12.03 | 12.01 | 12.07 | 49.84 | 58.44 | -14.7 |

Average of %D: 11.4

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/25/04 03/25/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082.43R Time Analyzed: 9:28

Lab Standard ID: AR164YN Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.29 | 4.35 | 15.53 | 15.39 | 0.9 |
| Decachlorobiphenyl | 11.88 | 11.86 | 11.92 | 15.64 | 15.58 | 0.4 |
| Aroclor-1016 | 4.85 | 4.83 | 4.89 | 452.69 | 500.00 | -9.5 |
| | 5.37 | 5.35 | 5.41 | | | |
| | 6.03 | 6.01 | 6.07 | | | |
| | 6.22 | 6.20 | 6.26 | | | |
| | 6.31 | 6.29 | 6.35 | | | |
| | 6.89 | 6.87 | 6.93 | | | |
| Aroclor-1260 | 8.40 | 8.38 | 8.44 | 421.15 | 500.00 | -15.8 |
| | 8.76 | 8.73 | 8.79 | | | |
| | 9.13 | 9.10 | 9.16 | | | |
| | 9.59 | 9.57 | 9.63 | | | |
| | 9.99 | 9.96 | 10.02 | | | |
| | 11.17 | 11.14 | 11.20 | | | |

Average of %D: 6.7

8612

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.43R Time Analyzed: 9:28

Lab Standard ID: AR164YN Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 15.40 | 15.39 | 0 |
| Decachlorobiphenyl | 12.03 | 12.01 | 12.07 | 15.08 | 15.58 | -3.2 |
| Aroclor-1016 | 4.74 | 4.72 | 4.78 | 422.05 | 500.00 | -15.6 |
| | 5.31 | 5.29 | 5.35 | | | |
| | 5.93 | 5.91 | 5.97 | | | |
| | 6.11 | 6.09 | 6.15 | | | |
| | 6.25 | 6.23 | 6.29 | | | |
| | 6.74 | 6.72 | 6.78 | | | |
| Aroclor-1260 | 8.38 | 8.36 | 8.42 | 404.65 | 500.00 | -19.1 |
| | 8.64 | 8.62 | 8.68 | | | |
| | 8.85 | 8.83 | 8.89 | | | |
| | 9.11 | 9.08 | 9.14 | | | |
| | 9.60 | 9.58 | 9.64 | | | |
| | 9.91 | 9.88 | 9.94 | | | |

Average of %D: 9.5

3613

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/25/04 03/25/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082.58R Time Analyzed: 14:36

Lab Standard ID: PEMOS Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.32 | 4.29 | 4.35 | 19.54 | 20.10 | -2.8 |
| alpha-BHC | 5.16 | 5.14 | 5.20 | 9.94 | 10.00 | -0.6 |
| gamma-BHC (Lindane) | 5.63 | 5.60 | 5.66 | 9.34 | 10.00 | -6.6 |
| beta-BHC | 5.76 | 5.74 | 5.80 | 9.71 | 10.00 | -2.9 |
| 4,4'-DDE | 8.01 | 7.99 | 8.05 | 0.50 | | |
| Endrin | 8.75 | 8.72 | 8.78 | 44.56 | 50.10 | -11.1 |
| 4,4'-DDT | 9.17 | 9.14 | 9.20 | 84.34 | 100.20 | -15.8 |
| Endrin aldehyde | 9.60 | 9.57 | 9.63 | 0.99 | | |
| Methoxychlor | 9.78 | 9.75 | 9.81 | 188.07 | 250.50 | -24.9 |
| Endrin ketone | 10.53 | 10.51 | 10.57 | 1.50 | | |
| Decachlorobiphenyl | 11.89 | 11.86 | 11.92 | 19.09 | 20.00 | -4.6 |

4'4-DDT % breakdown:0.7 Endrin % breakdown: 4.9 Combined % breakdown:5.6

9614

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.58R Time Analyzed: 14:36

Lab Standard ID: PEMOS Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 18.79 | 20.10 | -6.5 |
| alpha-BHC | 4.94 | 4.91 | 4.97 | 9.54 | 10.00 | -4.6 |
| gamma-BHC (Lindane) | 5.46 | 5.43 | 5.49 | 9.03 | 10.00 | -9.7 |
| beta-BHC | 5.58 | 5.56 | 5.62 | 9.14 | 10.00 | -8.6 |
| 4,4'-DDE | 7.96 | 7.93 | 7.99 | 0.44 | | |
| Endrin | 8.57 | 8.54 | 8.60 | 41.42 | 50.10 | -17.3 |
| 4,4'-DDD | 8.71 | 8.68 | 8.74 | 1.52 | | |
| 4,4'-DDT | 9.11 | 9.08 | 9.14 | 79.35 | 100.20 | -20.8 |
| Endrin aldehyde | 9.28 | 9.25 | 9.31 | 0.86 | | |
| Methoxychlor | 9.99 | 9.96 | 10.02 | 185.38 | 250.50 | -26.0 |
| Endrin ketone | 10.32 | 10.30 | 10.36 | 1.55 | | |
| Decachlorobiphenyl | 12.04 | 12.01 | 12.07 | 18.07 | 20.00 | -9.7 |

4'4-DDT % breakdown:2.6 Endrin % breakdown: 4.6 Combined % breakdown:7.2

8615

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H5262A  Init. Calib Date(s): 03/25/04  03/25/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 03/26/04

Lab File ID: 3D16082.59R  Time Analyzed: 14:57

Lab Standard ID: MIXA3QM  Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.32 | 4.29 | 4.35 | 37.63 | 38.48 | -2.2 |
| alpha-BHC | 5.16 | 5.14 | 5.20 | 9.77 | 10.00 | -2.3 |
| gamma-BHC (Lindane) | 5.63 | 5.60 | 5.66 | 9.80 | 10.00 | -2.0 |
| beta-BHC | 5.76 | 5.74 | 5.80 | 9.80 | 10.00 | -2.0 |
| delta-BHC | 6.02 | 5.99 | 6.05 | 9.50 | 10.00 | -5.0 |
| Heptachlor | 6.32 | 6.29 | 6.35 | 9.67 | 10.00 | -3.3 |
| Aldrin | 6.74 | 6.72 | 6.78 | 9.70 | 10.00 | -3.0 |
| Heptachlor epoxide | 7.58 | 7.56 | 7.62 | 9.69 | 10.00 | -3.1 |
| gamma-Chlordane | 7.75 | 7.72 | 7.78 | 9.81 | 10.00 | -1.9 |
| alpha-Chlordane | 7.93 | 7.90 | 7.96 | 9.33 | 10.00 | -6.7 |
| 4,4'-DDE | 8.01 | 7.99 | 8.05 | 18.56 | 20.00 | -7.2 |
| Endosulfan I | 8.12 | 8.09 | 8.15 | 9.70 | 10.00 | -3.0 |
| Dieldrin | 8.44 | 8.41 | 8.47 | 19.16 | 20.00 | -4.2 |
| Endrin | 8.75 | 8.72 | 8.78 | 18.52 | 20.00 | -7.4 |
| Endosulfan II | 9.04 | 9.02 | 9.08 | 18.92 | 20.00 | -5.4 |
| 4,4'-DDT | 9.17 | 9.14 | 9.20 | 17.31 | 20.00 | -13.5 |
| Endrin aldehyde | 9.59 | 9.57 | 9.63 | 18.71 | 20.00 | -6.5 |
| Methoxychlor | 9.78 | 9.75 | 9.81 | 81.88 | 100.00 | -18.1 |
| Endosulfan sulfate | 10.16 | 10.14 | 10.20 | 18.79 | 20.00 | -6.0 |
| Endrin ketone | 10.53 | 10.51 | 10.57 | 19.43 | 20.00 | -2.8 |
| Decachlorobiphenyl | 11.89 | 11.86 | 11.92 | 36.45 | 38.96 | -6.5 |

4.41-020

16.67 ~~Average of %D: 5.3~~ 20.00 -16.7

K.S.M. 1340
3/26/04

AVE. OF %D = 6.85 %

8616

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.59R Time Analyzed: 14:57

Lab Standard ID: MIXA3QM Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 34.63 | 38.48 | -10.0 |
| alpha-BHC | 4.94 | 4.91 | 4.97 | 9.34 | 10.00 | -6.6 |
| gamma-BHC (Lindane) | 5.46 | 5.43 | 5.49 | 9.37 | 10.00 | -6.3 |
| beta-BHC | 5.59 | 5.56 | 5.62 | 9.17 | 10.00 | -8.3 |
| delta-BHC | 6.00 | 5.97 | 6.03 | 9.12 | 10.00 | -8.8 |
| Heptachlor | 6.07 | 6.04 | 6.10 | 9.18 | 10.00 | -8.2 |
| Aldrin | 6.52 | 6.49 | 6.55 | 9.25 | 10.00 | -7.5 |
| Heptachlor epoxide | 7.29 | 7.27 | 7.33 | 8.78 | 10.00 | -12.2 |
| gamma-Chlordane | 7.54 | 7.52 | 7.58 | 8.75 | 10.00 | -12.5 |
| alpha-Chlordane | 7.73 | 7.71 | 7.77 | 8.92 | 10.00 | -10.8 |
| Endosulfan I | 7.81 | 7.79 | 7.85 | 8.85 | 10.00 | -11.5 |
| 4,4'-DDE | 7.96 | 7.93 | 7.99 | 16.60 | 20.00 | -17.0 |
| Dieldrin | 8.17 | 8.14 | 8.20 | 17.66 | 20.00 | -11.7 |
| Endrin | 8.57 | 8.54 | 8.60 | 17.02 | 20.00 | -14.9 |
| 4,4'-DDD | 8.71 | 8.68 | 8.74 | 14.90 | 20.00 | -25.5 |
| Endosulfan II | 8.84 | 8.82 | 8.88 | 17.59 | 20.00 | -12.1 |
| 4,4'-DDT | 9.11 | 9.08 | 9.14 | 15.87 | 20.00 | -20.7 |
| Endrin aldehyde | 9.28 | 9.25 | 9.31 | 17.47 | 20.00 | -12.7 |
| Endosulfan sulfate | 9.63 | 9.60 | 9.66 | 18.23 | 20.00 | -8.8 |
| Methoxychlor | 9.99 | 9.96 | 10.02 | 77.39 | 100.00 | -22.6 |
| Endrin ketone | 10.32 | 10.30 | 10.36 | 17.75 | 20.00 | -11.2 |
| Decachlorobiphenyl | 12.04 | 12.01 | 12.07 | 34.07 | 38.96 | -12.5 |

Average of %D: 12.4

8617

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262A Init. Calib Date(s): 03/25/04 03/25/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082.60R Time Analyzed: 15:17

Lab Standard ID: AR163FY Initial Calibration: 2D16082

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.29 | 4.35 | 8.19 | 7.70 | 6.4 |
| Decachlorobiphenyl | 11.89 | 11.86 | 11.92 | 8.61 | 7.79 | 10.5 |
| Aroclor-1016 | 4.86 | 4.83 | 4.89 | 204.35 | 200.00 | 2.2 |
| | 5.37 | 5.35 | 5.41 | | | |
| | 6.03 | 6.01 | 6.07 | | | |
| | 6.22 | 6.20 | 6.26 | | | |
| | 6.31 | 6.29 | 6.35 | | | |
| | 6.90 | 6.87 | 6.93 | | | |
| Aroclor-1260 | 8.40 | 8.38 | 8.44 | 190.39 | 200.00 | -4.8 |
| | 8.76 | 8.73 | 8.79 | | | |
| | 9.13 | 9.10 | 9.16 | | | |
| | 9.60 | 9.57 | 9.63 | | | |
| | 9.99 | 9.96 | 10.02 | | | |
| | 11.17 | 11.14 | 11.20 | | | |

Average of %D: 6.0

3618

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H5262B Init. Calib Date(s): 03/25/04 03/25/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/26/04

Lab File ID: 3D16082B.60R Time Analyzed: 15:17

Lab Standard ID: AR163FY Initial Calibration: 2D16082B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.04 | 4.01 | 4.07 | 8.17 | 7.70 | 6.1 |
| Decachlorobiphenyl | 12.04 | 12.01 | 12.07 | 8.09 | 7.79 | 3.9 |
| Aroclor-1016 | 4.75 | 4.72 | 4.78 | 192.62 | 200.00 | -3.7 |
| | 5.31 | 5.29 | 5.35 | | | |
| | 5.93 | 5.91 | 5.97 | | | |
| | 6.12 | 6.09 | 6.15 | | | |
| | 6.26 | 6.23 | 6.29 | | | |
| | 6.74 | 6.72 | 6.78 | | | |
| Aroclor-1260 | 8.39 | 8.36 | 8.42 | 178.56 | 200.00 | -10.7 |
| | 8.65 | 8.62 | 8.68 | | | |
| | 8.86 | 8.83 | 8.89 | | | |
| | 9.11 | 9.08 | 9.14 | | | |
| | 9.61 | 9.58 | 9.64 | | | |
| | 9.92 | 9.88 | 9.94 | | | |

Average of %D: 6.1

8619

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1D16082 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H5262A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | | CONDITIONER | 03/22/2004 | 09:10:34 | 1D16082 | 4.35 | 11.93 |
| 002 | | CONDITIONER | 03/22/2004 | 09:31:07 | 1D16082 | 4.33 | 11.93 |
| 003 | | CONDITIONER | 03/22/2004 | 09:51:40 | 1D16082 | 4.33 | 11.93 |
| 004 | | CONDITIONER | 03/22/2004 | 10:12:14 | 1D16082 | 4.33 | 11.93 |
| 005 | | CONDITIONER | 03/22/2004 | 10:32:51 | 1D16082 | 4.34 | 11.93 |
| 006 | PIBLKAA | IBLKX03B | 03/22/2004 | 10:53:27 | 1D16082 | 4.34 | 11.93 |
| 007 | PEMAA | EVALX03C | 03/22/2004 | 11:14:05 | 1D16082 | 4.34 | 11.93 |
| 008 | MIXA1AA | MIXA10424B | 03/22/2004 | 11:34:39 | 1D16082 | 4.34 | 11.93 |
| 009 | MIXA2AA | MIXA20424B | 03/22/2004 | 11:55:15 | 1D16082 | 4.34 | 11.93 |
| 010 | MIXA3AA | MIXA30424B | 03/22/2004 | 12:15:51 | 1D16082 | 4.34 | 11.93 |
| 011 | MIXA4AA | MIXA40424B | 03/22/2004 | 12:36:28 | 1D16082 | 4.34 | 11.92 |
| 012 | MIXA5AA | MIXA50424B | 03/22/2004 | 12:57:04 | 1D16082 | 4.34 | 11.93 |
| 013 | ICMAXAA | ICMAX0424B | 03/22/2004 | 13:17:40 | 1D16082 | 4.34 | 11.93 |
| 014 | MIXE1AA | MIXE10424A | 03/22/2004 | 13:38:14 | 1D16082 | 4.34 | 11.93 |
| 015 | MIXE2AA | MIXE20424A | 03/22/2004 | 13:58:51 | 1D16082 | 4.34 | 11.93 |
| 016 | MIXE3AA | MIXE30424A | 03/22/2004 | 14:19:28 | 1D16082 | 4.34 | 11.93 |
| 017 | MIXE4AA | MIXE40424A | 03/22/2004 | 14:40:05 | 1D16082 | 4.34 | 11.93 |
| 018 | MIXE5AA | MIXE50424A | 03/22/2004 | 15:00:39 | 1D16082 | 4.34 | 11.93 |
| 019 | TOXWXAA | TOXWX03B | 03/22/2004 | 15:21:14 | 1D16082 | 4.34 | 11.93 |
| 020 | CHLDXAA | CHLDX03B | 03/22/2004 | 15:41:48 | 1D16082 | 4.34 | 11.93 |
| 021 | AR161AA | AR1610424D | 03/22/2004 | 16:02:26 | 1D16082 | 4.34 | 11.93 |
| 022 | AR162AA | AR1620424D | 03/22/2004 | 16:23:02 | 1D16082 | 4.34 | 11.93 |
| 023 | AR163AA | AR1630424D | 03/22/2004 | 16:43:38 | 1D16082 | 4.34 | 11.93 |
| 024 | AR164AA | AR1640424E | 03/22/2004 | 17:04:11 | 1D16082 | 4.34 | 11.93 |
| 025 | AR165AA | AR1650424D | 03/22/2004 | 17:24:47 | 1D16082 | 4.34 | 11.93 |
| 026 | AR210AA | AR210424A | 03/22/2004 | 17:45:22 | 1D16082 | 4.34 | 11.93 |
| 027 | AR32XAA | AR32X03C | 03/22/2004 | 18:05:59 | 1D16082 | 4.33 | 11.93 |
| 028 | AR420AA | AR420424A | 03/22/2004 | 18:26:33 | 1D16082 | 4.34 | 11.93 |
| 029 | AR483AA | AR4830424A | 03/22/2004 | 18:47:09 | 1D16082 | 4.34 | 11.93 |
| 030 | AR543AA | AR5430424A | 03/22/2004 | 19:07:44 | 1D16082 | 4.33 | 11.92 |
| 031 | MDLAXAA | MDLAX0424B | 03/22/2004 | 19:28:22 | 1D16082 | 4.34 | 11.92 |
| 032 | MDLEXAA | MDLEX0424A | 03/22/2004 | 19:48:57 | 1D16082 | 4.33 | 11.92 |
| 033 | MD16XAA | MD16X0424A | 03/22/2004 | 20:09:32 | 1D16082 | 4.33 | 11.92 |

ICAL Dates

1D16082 03/22/2004 - 03/22/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.34 (4.31 - 4.37 Minutes)

11.93 (11.90 - 11.96 Minutes)

3628

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1D16082 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H5262A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | MDTXXAA | MDTXX03B | 03/22/2004 | 20:30:04 | 1D16082 | 4.33 | 11.92 |
| 035 | MDCHXAA | MDCHX03B | 03/22/2004 | 20:50:55 | 1D16082 | 4.33 | 11.92 |
| 036 | IC16XAA | IC16X0424B | 03/22/2004 | 21:11:58 | 1D16082 | 4.33 | 11.92 |
| 037 | PBLKM3 | BLANKA | 03/22/2004 | 21:32:35 | 1D16082 | 4.34 | 11.92 |
| 038 | LCSGU | LCSA | 03/22/2004 | 21:53:08 | 1D16082 | 4.33 | 11.92 |
| 039 | LCSDTQ | LCSDKEP | 03/22/2004 | 22:13:43 | 1D16082 | 4.33 | 11.92 |
| 040 | LCSGV | LCSKEP | 03/22/2004 | 22:34:17 | 1D16082 | 4.33 | 11.92 |
| 041 | CS1NV | 4236228 | 03/22/2004 | 22:54:56 | 1D16082 | 4.33 | 11.92 |
| 042 | CS1NVMS | 4236228 | 03/22/2004 | 23:15:29 | 1D16082 | 4.33 | 11.92 |
| 043 | CS1NVMSD | 4236228 | 03/22/2004 | 23:36:04 | 1D16082 | 4.33 | 11.92 |
| 044 | PBLKNS | BLANKA | 03/22/2004 | 23:56:36 | 1D16082 | 4.33 | 11.92 |
| 045 | LCSIV | LCSA | 03/23/2004 | 00:17:11 | 1D16082 | 4.33 | 11.92 |
| 046 | NVP1A | 4236126 | 03/23/2004 | 00:37:46 | 1D16082 | 4.33 | 11.92 |
| 047 | NVP1B | 4236129 | 03/23/2004 | 00:58:22 | 1D16082 | 4.33 | 11.92 |
| 048 | NVP1BMS | 4236129 | 03/23/2004 | 01:18:55 | 1D16082 | 4.33 | 11.92 |
| 049 | NVP1BMSD | 4236129 | 03/23/2004 | 01:39:30 | 1D16082 | 4.33 | 11.92 |
| 050 | BLAWT | 4237069 | 03/23/2004 | 02:00:04 | 1D16082 | 4.33 | 11.92 |
| 051 | PBLKMK | BLANKA | 03/23/2004 | 02:20:43 | 1D16082 | 4.33 | 11.92 |
| 052 | LCSHC | LCSA | 03/23/2004 | 02:41:19 | 1D16082 | 4.33 | 11.92 |
| 053 | LCSDU1 | LCSDA | 03/23/2004 | 03:01:56 | 1D16082 | 4.33 | 11.92 |
| 054 | RM316 | 4235159 | 03/23/2004 | 03:22:28 | 1D16082 | 4.33 | 11.92 |
| 055 | PEMNV | EVALX03C | 03/23/2004 | 03:43:04 | 1D16082 | 4.33 | 11.92 |
| 056 | MIXA3PT | MIXA30424B | 03/23/2004 | 04:03:40 | 1D16082 | 4.33 | 11.92 |
| 057 | MIXE3PM | MIXE30424A | 03/23/2004 | 04:24:18 | 1D16082 | 4.33 | 11.92 |
| 058 | AR163EL | AR1630424D | 03/23/2004 | 04:44:53 | 1D16082 | 4.33 | 11.92 |
| 059 | OO17- | 4235260 | 03/23/2004 | 05:05:28 | 1D16082 | 4.33 | 11.92 |
| 060 | OO18- | 4235261 | 03/23/2004 | 05:26:03 | 1D16082 | 4.33 | 11.92 |
| 061 | OO23- | 4235262 | 03/23/2004 | 05:46:43 | 1D16082 | 4.33 | 11.92 |
| 062 | OO04A | 4235263 | 03/23/2004 | 06:07:20 | 1D16082 | 4.33 | 11.92 |
| 063 | AA | MS04082 | 03/23/2004 | 06:27:58 | 1D16082 | | 11.93 |
| 064 | PEMNW | EVALX03C | 03/23/2004 | 06:48:33 | 1D16082 | 4.33 | 11.92 |
| 065 | MIXA2RQ | MIXA20424B | 03/23/2004 | 07:09:10 | 1D16082 | 4.33 | 11.92 |
| 066 | AR162DI | AR1620424D | 03/23/2004 | 07:29:47 | 1D16082 | 4.33 | 11.92 |

ICAL Dates

1D16082 03/22/2004 - 03/22/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.34 (4.31 - 4.37 Minutes)

11.93 (11.90 - 11.96 Minutes)

0621

# 8D
# ANALYTICAL SEQUENCE

Sequence: 3D16082 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H5262A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMOL | EVALX03C | 03/25/2004 | 20:26:31 | 2D16082 | 4.32 | 11.89 |
| 002 | MIXA3QJ | MIXA30424B | 03/25/2004 | 20:47:07 | 2D16082 | 4.32 | 11.89 |
| 003 | AR163FV | AR1630424D | 03/25/2004 | 21:07:42 | 2D16082 | 4.32 | 11.89 |
| 004 | DRQ12 | 4238281 | 03/25/2004 | 21:28:48 | 2D16082 | 4.32 | 11.89 |
| 005 | EW7W- | 4236900 | 03/25/2004 | 21:49:24 | 2D16082 | 4.32 | 11.89 |
| 006 | PBLKRV | BLANKA | 03/25/2004 | 22:10:01 | 2D16082 | 4.32 | 11.89 |
| 007 | LCSMZ | LCSA | 03/25/2004 | 22:30:34 | 2D16082 | 4.32 | 11.89 |
| 008 | NVP2C | 4238572 | 03/25/2004 | 22:51:10 | 2D16082 | 4.32 | 11.89 |
| 009 | NVP3C | 4238575 | 03/25/2004 | 23:11:46 | 2D16082 | 4.31 | 11.89 |
| 010 | NVP3CMS | 4238575 | 03/25/2004 | 23:32:23 | 2D16082 | 4.32 | 11.89 |
| 011 | NVP3CMSD | 4238575 | 03/25/2004 | 23:52:58 | 2D16082 | 4.32 | 11.89 |
| 012 | NVA-1 | 4238809 | 03/26/2004 | 00:13:33 | 2D16082 | 4.32 | 11.89 |
| 013 | NVA-1MS | 4238809 | 03/26/2004 | 00:34:08 | 2D16082 | 4.32 | 11.89 |
| 014 | NVA-2 | 4238812 | 03/26/2004 | 00:54:44 | 2D16082 | 4.32 | 11.89 |
| 015 | NVA-3 | 4238815 | 03/26/2004 | 01:15:20 | 2D16082 | 4.32 | 11.89 |
| 016 | VIDX7 | 4239291 | 03/26/2004 | 01:35:57 | 2D16082 | 4.32 | 11.89 |
| 017 | VID18 | 4239881 | 03/26/2004 | 01:56:30 | 2D16082 | 4.31 | 11.89 |
| 018 | PBLKRF | BLANKA | 03/26/2004 | 02:17:04 | 2D16082 | 4.31 | 11.89 |
| 019 | LCSMJ | LCSA | 03/26/2004 | 02:37:37 | 2D16082 | 4.31 | 11.89 |
| 020 | LCSDWU | LCSDA | 03/26/2004 | 02:58:13 | 2D16082 | 4.31 | 11.89 |
| 021 | S1112 | 4238771 | 03/26/2004 | 03:18:44 | 2D16082 | 4.31 | 11.88 |
| 022 | S2112 | 4238772 | 03/26/2004 | 03:39:16 | 2D16082 | 4.31 | 11.88 |
| 023 | S1234 | 4238774 | 03/26/2004 | 03:59:47 | 2D16082 | 4.31 | 11.88 |
| 024 | PEMOM | EVALX03C | 03/26/2004 | 04:20:20 | 2D16082 | 4.31 | 11.89 |
| 025 | MIXA2RX | MIXA20424B | 03/26/2004 | 04:40:52 | 2D16082 | 4.31 | 11.88 |
| 026 | AR162DP | AR1620424D | 03/26/2004 | 05:01:25 | 2D16082 | 4.31 | 11.88 |
| 027 | S2234 | 4238775 | 03/26/2004 | 05:21:55 | 2D16082 | 4.31 | 11.88 |
| 028 | NOELU | 4239878 | 03/26/2004 | 05:42:27 | 2D16082 | 4.31 | 11.88 |
| 029 | FIELU | 4239879 | 03/26/2004 | 06:02:58 | 2D16082 | 4.31 | 11.88 |
| 030 | 32211 | 4240047 | 03/26/2004 | 06:23:32 | 2D16082 | 4.31 | 11.88 |
| 031 | 32210 | 4240048 | 03/26/2004 | 06:44:03 | 2D16082 | 4.31 | 11.88 |
| 032 | 322FB | 4240049 | 03/26/2004 | 07:04:35 | 2D16082 | 4.31 | 11.88 |
| 033 | 3239A | 4240054 | 03/26/2004 | 07:25:04 | 2D16082 | 4.31 | 11.88 |

ICAL Dates

2D16082 03/25/2004 - 03/25/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.32 (4.29 - 4.35 Minutes)

11.89 (11.86 - 11.92 Minutes)

8622

# 8D
# ANALYTICAL SEQUENCE

Sequence: 3D16082 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H5262A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | 32313 | 4240055 | 03/26/2004 | 07:45:37 | 2D16082 | 4.31 | 11.88 |
| 035 | M23FB | 4240056 | 03/26/2004 | 08:06:10 | 2D16082 | 4.31 | 11.88 |
| 036 | AA | MS04085 | 03/26/2004 | 08:26:43 | 2D16082 | | |
| 037 | PEMON | EVALX03C | 03/26/2004 | 08:47:14 | 2D16082 | 4.31 | 11.88 |
| 038 | MIXA4OQ | MIXA40424B | 03/26/2004 | 09:07:45 | 2D16082 | 4.31 | 11.88 |
| 039 | AR164YN | AR1640424E | 03/26/2004 | 09:28:42 | 2D16082 | 4.31 | 11.88 |
| 040 | PBLKSQ | BLANKA | 03/26/2004 | 09:49:15 | 2D16082 | 4.31 | 11.88 |
| 041 | LCSNW | LCSA | 03/26/2004 | 10:09:46 | 2D16082 | 4.31 | 11.88 |
| 042 | 5GP17 | 4241628 | 03/26/2004 | 10:30:18 | 2D16082 | 4.31 | 11.88 |
| 043 | 5GP18 | 4241629 | 03/26/2004 | 10:50:46 | 2D16082 | 4.31 | 11.88 |
| 044 | 5GP19 | 4241630 | 03/26/2004 | 11:11:18 | 2D16082 | 4.31 | 11.88 |
| 045 | 5GP20 | 4241631 | 03/26/2004 | 11:31:51 | 2D16082 | 4.31 | 11.88 |
| 046 | 5GP20MS | 4241632 | 03/26/2004 | 11:52:23 | 2D16082 | 4.31 | 11.88 |
| 047 | 5GP20 MSD | 4241633 | 03/26/2004 | 12:12:52 | 2D16082 | 4.31 | 11.88 |
| 048 | 5GP21 | 4241634 | 03/26/2004 | 12:33:24 | 2D16082 | 4.31 | 11.88 |
| 049 | 5GP22 MS 4/7/04 | 4241636 | 03/26/2004 | 12:53:55 | 2D16082 | 4.31 | 11.88 |
| 050 | 2222D | 4241637 | 03/26/2004 | 13:14:30 | 2D16082 | 4.31 | 11.88 |
| 051 | 5GP23 | 4241638 | 03/26/2004 | 13:35:03 | 2D16082 | 4.32 | 11.89 |
| 052 | 5GP24 | 4241639 | 03/26/2004 | 13:55:36 | 2D16082 | 4.32 | 11.89 |
| 053 | NV453 | 4227389 | 03/26/2004 | 14:16:08 | 2D16082 | 4.32 | 11.89 |
| 054 | PEMOS | EVALX03C | 03/26/2004 | 14:36:43 | 2D16082 | 4.32 | 11.89 |
| 055 | MIXA3QM | MIXA30424B | 03/26/2004 | 14:57:18 | 2D16082 | 4.32 | 11.89 |
| 056 | AR163FY | AR1630424D | 03/26/2004 | 15:17:53 | 2D16082 | 4.31 | 11.89 |

| ICAL Dates | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 2D16082 | 03/25/2004 - 03/25/2004 | TCX = Tetrachloro-m-xylene | 4.32 | (4.29 - 4.35 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.89 | (11.86 - 11.92 Minutes) |

0623

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1D16082B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H5262B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | | CONDITIONER | 03/22/2004 | 09:10:34 | 1D16082B | 4.06 | 12.08 |
| 002 | | CONDITIONER | 03/22/2004 | 09:31:07 | 1D16082B | 4.06 | 12.07 |
| 003 | | CONDITIONER | 03/22/2004 | 09:51:40 | 1D16082B | 4.06 | 12.07 |
| 004 | | CONDITIONER | 03/22/2004 | 10:12:14 | 1D16082B | 4.06 | 12.07 |
| 005 | | CONDITIONER | 03/22/2004 | 10:32:51 | 1D16082B | 4.06 | 12.07 |
| 006 | PIBLKAA | IBLKX03B | 03/22/2004 | 10:53:27 | 1D16082B | 4.06 | 12.08 |
| 007 | PEMAA | EVALX03C | 03/22/2004 | 11:14:05 | 1D16082B | 4.06 | 12.08 |
| 008 | MIXA1AA | MIXA10424B | 03/22/2004 | 11:34:39 | 1D16082B | 4.06 | 12.08 |
| 009 | MIXA2AA | MIXA20424B | 03/22/2004 | 11:55:15 | 1D16082B | 4.06 | 12.08 |
| 010 | MIXA3AA | MIXA30424B | 03/22/2004 | 12:15:51 | 1D16082B | 4.06 | 12.07 |
| 011 | MIXA4AA | MIXA40424B | 03/22/2004 | 12:36:28 | 1D16082B | 4.06 | 12.07 |
| 012 | MIXA5AA | MIXA50424B | 03/22/2004 | 12:57:04 | 1D16082B | 4.06 | 12.07 |
| 013 | ICMAXAA | ICMAX0424B | 03/22/2004 | 13:17:40 | 1D16082B | 4.06 | 12.08 |
| 014 | MIXE1AA | MIXE10424A | 03/22/2004 | 13:38:14 | 1D16082B | 4.06 | 12.07 |
| 015 | MIXE2AA | MIXE20424A | 03/22/2004 | 13:58:51 | 1D16082B | 4.06 | 12.08 |
| 016 | MIXE3AA | MIXE30424A | 03/22/2004 | 14:19:28 | 1D16082B | 4.06 | 12.08 |
| 017 | MIXE4AA | MIXE40424A | 03/22/2004 | 14:40:05 | 1D16082B | 4.06 | 12.08 |
| 018 | MIXE5AA | MIXE50424A | 03/22/2004 | 15:00:39 | 1D16082B | 4.06 | 12.08 |
| 019 | TOXWXAA | TOXWX03B | 03/22/2004 | 15:21:14 | 1D16082B | 4.06 | 12.08 |
| 020 | CHLDXAA | CHLDX03B | 03/22/2004 | 15:41:48 | 1D16082B | 4.06 | 12.08 |
| 021 | AR161AA | AR1610424D | 03/22/2004 | 16:02:26 | 1D16082B | 4.06 | 12.08 |
| 022 | AR162AA | AR1620424D | 03/22/2004 | 16:23:02 | 1D16082B | 4.06 | 12.08 |
| 023 | AR163AA | AR1630424D | 03/22/2004 | 16:43:38 | 1D16082B | 4.06 | 12.08 |
| 024 | AR164AA | AR1640424E | 03/22/2004 | 17:04:11 | 1D16082B | 4.06 | 12.08 |
| 025 | AR165AA | AR1650424D | 03/22/2004 | 17:24:47 | 1D16082B | 4.06 | 12.08 |
| 026 | AR210AA | AR210424A | 03/22/2004 | 17:45:22 | 1D16082B | 4.06 | 12.07 |
| 027 | AR32XAA | AR32X03C | 03/22/2004 | 18:05:59 | 1D16082B | 4.06 | 12.07 |
| 028 | AR420AA | AR420424A | 03/22/2004 | 18:26:33 | 1D16082B | 4.06 | 12.07 |
| 029 | AR483AA | AR4830424A | 03/22/2004 | 18:47:09 | 1D16082B | 4.06 | 12.07 |
| 030 | AR543AA | AR5430424A | 03/22/2004 | 19:07:44 | 1D16082B | 4.06 | 12.07 |
| 031 | MDLAXAA | MDLAX0424B | 03/22/2004 | 19:28:22 | 1D16082B | 4.06 | 12.07 |
| 032 | MDLEXAA | MDLEX0424A | 03/22/2004 | 19:48:57 | 1D16082B | 4.06 | 12.07 |
| 033 | MD16XAA | MD16X0424A | 03/22/2004 | 20:09:32 | 1D16082B | 4.06 | 12.07 |

ICAL Dates

1D16082B 03/22/2004 - 03/22/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.06 (4.03 - 4.09 Minutes)

12.07 (12.04 - 12.10 Minutes)

8624

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1D16082B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H5262B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | MDTXXAA | MDTXX03B | 03/22/2004 | 20:30:04 | 1D16082B | 4.06 | 12.07 |
| 035 | MDCHXAA | MDCHX03B | 03/22/2004 | 20:50:55 | 1D16082B | 4.06 | 12.07 |
| 036 | IC16XAA | IC16X0424B | 03/22/2004 | 21:11:58 | 1D16082B | 4.06 | 12.07 |
| 037 | PBLKM3 | BLANKA | 03/22/2004 | 21:32:35 | 1D16082B | 4.06 | 12.07 |
| 038 | LCSGU | LCSA | 03/22/2004 | 21:53:08 | 1D16082B | 4.06 | 12.07 |
| 039 | LCSDTQ | LCSDKEP | 03/22/2004 | 22:13:43 | 1D16082B | 4.06 | 12.07 |
| 040 | LCSGV | LCSKEP | 03/22/2004 | 22:34:17 | 1D16082B | 4.06 | 12.07 |
| 041 | CS1NV | 4236228 | 03/22/2004 | 22:54:56 | 1D16082B | 4.06 | 12.07 |
| 042 | CS1NVMS | 4236228 | 03/22/2004 | 23:15:29 | 1D16082B | 4.06 | 12.07 |
| 043 | CS1NVMSD | 4236228 | 03/22/2004 | 23:36:04 | 1D16082B | 4.06 | 12.07 |
| 044 | PBLKNS | BLANKA | 03/22/2004 | 23:56:36 | 1D16082B | 4.06 | 12.07 |
| 045 | LCSIV | LCSA | 03/23/2004 | 00:17:11 | 1D16082B | 4.06 | 12.07 |
| 046 | NVP1A | 4236126 | 03/23/2004 | 00:37:46 | 1D16082B | 4.06 | 12.07 |
| 047 | NVP1B | 4236129 | 03/23/2004 | 00:58:22 | 1D16082B | 4.06 | 12.07 |
| 048 | NVP1BMS | 4236129 | 03/23/2004 | 01:18:55 | 1D16082B | 4.06 | 12.06 |
| 049 | NVP1BMSD | 4236129 | 03/23/2004 | 01:39:30 | 1D16082B | 4.06 | 12.07 |
| 050 | BLAWT | 4237069 | 03/23/2004 | 02:00:04 | 1D16082B | 4.06 | 12.07 |
| 051 | PBLKMK | BLANKA | 03/23/2004 | 02:20:43 | 1D16082B | 4.06 | 12.06 |
| 052 | LCSHC | LCSA | 03/23/2004 | 02:41:19 | 1D16082B | 4.06 | 12.06 |
| 053 | LCSDU1 | LCSDA | 03/23/2004 | 03:01:56 | 1D16082B | 4.06 | 12.07 |
| 054 | RM316 | 4235159 | 03/23/2004 | 03:22:28 | 1D16082B | 4.05 | 12.06 |
| 055 | PEMNV | EVALX03C | 03/23/2004 | 03:43:04 | 1D16082B | 4.06 | 12.07 |
| 056 | MIXA3PT | MIXA30424B | 03/23/2004 | 04:03:40 | 1D16082B | 4.06 | 12.07 |
| 057 | MIXE3PM | MIXE30424A | 03/23/2004 | 04:24:18 | 1D16082B | 4.06 | 12.07 |
| 058 | AR163EL | AR1630424D | 03/23/2004 | 04:44:53 | 1D16082B | 4.06 | 12.07 |
| 059 | OO17- | 4235260 | 03/23/2004 | 05:05:28 | 1D16082B | 4.06 | 12.06 |
| 060 | OO18- | 4235261 | 03/23/2004 | 05:26:03 | 1D16082B | 4.06 | 12.07 |
| 061 | OO23- | 4235262 | 03/23/2004 | 05:46:43 | 1D16082B | 4.06 | 12.07 |
| 062 | OO04A | 4235263 | 03/23/2004 | 06:07:20 | 1D16082B | 4.06 | 12.06 |
| 063 | AA | MS04082 | 03/23/2004 | 06:27:58 | 1D16082B | 4.05 | |
| 064 | PEMNW | EVALX03C | 03/23/2004 | 06:48:33 | 1D16082B | 4.06 | 12.07 |
| 065 | MIXA2RQ | MIXA20424B | 03/23/2004 | 07:09:10 | 1D16082B | 4.06 | 12.07 |
| 066 | AR162DI | AR1620424D | 03/23/2004 | 07:29:47 | 1D16082B | 4.06 | 12.07 |

ICAL Dates

1D16082B 03/22/2004 - 03/22/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

TCX 4.06 (4.03 - 4.09 Minutes)
DCB 12.07 (12.04 - 12.10 Minutes)

8625

# 8D
# ANALYTICAL SEQUENCE

Sequence: 3D16082B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H5262B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMOL | EVALX03C | 03/25/2004 | 20:26:31 | 2D16082B | 4.04 | 12.04 |
| 002 | MIXA3QJ | MIXA30424B | 03/25/2004 | 20:47:07 | 2D16082B | 4.04 | 12.04 |
| 003 | AR163FV | AR1630424D | 03/25/2004 | 21:07:42 | 2D16082B | 4.04 | 12.04 |
| 004 | DRQ12 | 4238281 | 03/25/2004 | 21:28:48 | 2D16082B | 4.04 | 12.04 |
| 005 | EW7W- | 4236900 | 03/25/2004 | 21:49:24 | 2D16082B | 4.04 | 12.04 |
| 006 | PBLKRV | BLANKA | 03/25/2004 | 22:10:01 | 2D16082B | 4.04 | 12.04 |
| 007 | LCSMZ | LCSA | 03/25/2004 | 22:30:34 | 2D16082B | 4.04 | 12.04 |
| 008 | NVP2C | 4238572 | 03/25/2004 | 22:51:10 | 2D16082B | 4.04 | 12.04 |
| 009 | NVP3C | 4238575 | 03/25/2004 | 23:11:46 | 2D16082B | 4.04 | 12.04 |
| 010 | NVP3CMS | 4238575 | 03/25/2004 | 23:32:23 | 2D16082B | 4.04 | 12.04 |
| 011 | NVP3CMSD | 4238575 | 03/25/2004 | 23:52:58 | 2D16082B | 4.04 | 12.04 |
| 012 | NVA-1 | 4238809 | 03/26/2004 | 00:13:33 | 2D16082B | 4.04 | 12.03 |
| 013 | NVA-1MS | 4238809 | 03/26/2004 | 00:34:08 | 2D16082B | 4.04 | 12.04 |
| 014 | NVA-2 | 4238812 | 03/26/2004 | 00:54:44 | 2D16082B | 4.04 | 12.04 |
| 015 | NVA-3 | 4238815 | 03/26/2004 | 01:15:20 | 2D16082B | 4.04 | 12.03 |
| 016 | VIDX7 | 4239291 | 03/26/2004 | 01:35:57 | 2D16082B | 4.04 | 12.03 |
| 017 | VID18 | 4239881 | 03/26/2004 | 01:56:30 | 2D16082B | 4.04 | 12.03 |
| 018 | PBLKRF | BLANKA | 03/26/2004 | 02:17:04 | 2D16082B | 4.04 | 12.03 |
| 019 | LCSMJ | LCSA | 03/26/2004 | 02:37:37 | 2D16082B | 4.04 | 12.03 |
| 020 | LCSDWU | LCSDA | 03/26/2004 | 02:58:13 | 2D16082B | 4.04 | 12.03 |
| 021 | S1112 | 4238771 | 03/26/2004 | 03:18:44 | 2D16082B | 4.03 | 12.03 |
| 022 | S2112 | 4238772 | 03/26/2004 | 03:39:16 | 2D16082B | 4.04 | 12.03 |
| 023 | S1234 | 4238774 | 03/26/2004 | 03:59:47 | 2D16082B | 4.04 | 12.03 |
| 024 | PEMOM | EVALX03C | 03/26/2004 | 04:20:20 | 2D16082B | 4.04 | 12.03 |
| 025 | MIXA2RX | MIXA20424B | 03/26/2004 | 04:40:52 | 2D16082B | 4.04 | 12.03 |
| 026 | AR162DP | AR1620424D | 03/26/2004 | 05:01:25 | 2D16082B | 4.04 | 12.03 |
| 027 | S2234 | 4238775 | 03/26/2004 | 05:21:55 | 2D16082B | 4.04 | 12.03 |
| 028 | NOELU | 4239878 | 03/26/2004 | 05:42:27 | 2D16082B | 4.04 | 12.03 |
| 029 | FIELU | 4239879 | 03/26/2004 | 06:02:58 | 2D16082B | 4.04 | 12.03 |
| 030 | 32211 | 4240047 | 03/26/2004 | 06:23:32 | 2D16082B | 4.04 | 12.03 |
| 031 | 32210 | 4240048 | 03/26/2004 | 06:44:03 | 2D16082B | 4.04 | 12.03 |
| 032 | 322FB | 4240049 | 03/26/2004 | 07:04:35 | 2D16082B | 4.04 | 12.03 |
| 033 | 3239A | 4240054 | 03/26/2004 | 07:25:04 | 2D16082B | 4.04 | 12.03 |

ICAL Dates

2D16082B 03/25/2004 - 03/25/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.04 (4.01 - 4.07 Minutes)

12.04 (12.01 - 12.07 Minutes)

8626

# 8D
# ANALYTICAL SEQUENCE

Sequence: 3D16082B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H5262B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | 32313 | 4240055 | 03/26/2004 | 07:45:37 | 2D16082B | 4.04 | 12.03 |
| 035 | M23FB | 4240056 | 03/26/2004 | 08:06:10 | 2D16082B | 4.04 | 12.03 |
| 036 | AA | MS04085 | 03/26/2004 | 08:26:43 | 2D16082B | 4.02 | |
| 037 | PEMON | EVALX03C | 03/26/2004 | 08:47:14 | 2D16082B | 4.04 | 12.03 |
| 038 | MIXA4OQ | MIXA40424B | 03/26/2004 | 09:07:45 | 2D16082B | 4.04 | 12.03 |
| 039 | AR164YN | AR1640424E | 03/26/2004 | 09:28:42 | 2D16082B | 4.04 | 12.03 |
| 040 | PBLKSQ | BLANKA | 03/26/2004 | 09:49:15 | 2D16082B | 4.04 | 12.03 |
| 041 | LCSNW | LCSA | 03/26/2004 | 10:09:46 | 2D16082B | 4.04 | 12.03 |
| 042 | 5GP17 | 4241628 | 03/26/2004 | 10:30:18 | 2D16082B | 4.03 | 12.03 |
| 043 | 5GP18 | 4241629 | 03/26/2004 | 10:50:46 | 2D16082B | 4.03 | 12.03 |
| 044 | 5GP19 | 4241630 | 03/26/2004 | 11:11:18 | 2D16082B | 4.04 | 12.03 |
| 045 | 5GP20 | 4241631 | 03/26/2004 | 11:31:51 | 2D16082B | 4.04 | 12.03 |
| 046 | 5GP20MS | 4241632 | 03/26/2004 | 11:52:23 | 2D16082B | 4.04 | 12.03 |
| 047 | 5GP20 MSD | 4241633 | 03/26/2004 | 12:12:52 | 2D16082B | 4.04 | 12.03 |
| 048 | 5GP21 | 4241634 | 03/26/2004 | 12:33:24 | 2D16082B | 4.04 | 12.03 |
| 049 | 5GP22 | 4241636 | 03/26/2004 | 12:53:55 | 2D16082B | 4.04 | 12.03 |
| 050 | 2222D | 4241637 | 03/26/2004 | 13:14:30 | 2D16082B | 4.04 | 12.03 |
| 051 | 5GP23 | 4241638 | 03/26/2004 | 13:35:03 | 2D16082B | 4.04 | 12.03 |
| 052 | 5GP24 | 4241639 | 03/26/2004 | 13:55:36 | 2D16082B | 4.04 | 12.03 |
| 053 | NV453 | 4227389 | 03/26/2004 | 14:16:08 | 2D16082B | 4.04 | 12.03 |
| 054 | PEMOS | EVALX03C | 03/26/2004 | 14:36:43 | 2D16082B | 4.04 | 12.04 |
| 055 | MIXA3QM | MIXA30424B | 03/26/2004 | 14:57:18 | 2D16082B | 4.04 | 12.04 |
| 056 | AR163FY | AR1630424D | 03/26/2004 | 15:17:53 | 2D16082B | 4.04 | 12.04 |

MSD 4/7/04

ICAL Dates

2D16082B 03/25/2004 - 03/25/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.04 (4.01 - 4.07 Minutes)

12.04 (12.01 - 12.07 Minutes)

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# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp16\C-Drive\CPWIN\DATA1\1D16082.seq

Chromatography Directory: \\cp16\C-Drive\cpwin\DATA1

Method Directory: \\cp16\C-Drive\cpwin\DATA1

Number of Entries: 66

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 1D16082.01R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 2 | CONDITIONER | MISC | AA | 1D16082.02R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 3 | CONDITIONER | MISC | AA | 1D16082.03R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 4 | CONDITIONER | MISC | AA | 1D16082.04R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 5 | CONDITIONER | MISC | AA | 1D16082.05R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 6 | IBLKX03B | PIBLK | AA | 1D16082.06R | PESTD.MET | 1000 | 10 | 1 | 048199999 | |
| 7 | EVALX03C | IPEM | AA | 1D16082.07R | EVALD.MET | 1 | 1 | 1 | 048199999 | |
| 8 | MIXA10424B | ICAL | AA | 1D16082.08R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 9 | MIXA20424B | ICAL | AA | 1D16082.09R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 10 | MIXA30424B | ICAL | AA | 1D16082.10R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 11 | MIXA40424B | ICAL | AA | 1D16082.11R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 12 | MIXA50424B | ICAL | AA | 1D16082.12R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 13 | ICMAX0424B | CCAL | AA | 1D16082.13R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 14 | MIXE10424A | ICAL | AA | 1D16082.14R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 15 | MIXE20424A | ICAL | AA | 1D16082.15R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 16 | MIXE30424A | ICAL | AA | 1D16082.16R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 17 | MIXE40424A | ICAL | AA | 1D16082.17R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 18 | MIXE50424A | ICAL | AA | 1D16082.18R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 19 | TOXWX03B | ICAL | AA | 1D16082.19R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 20 | CHLDX03B | ICAL | AA | 1D16082.20R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 21 | AR1610424D | ICAL | AA | 1D16082.21R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 22 | AR1620424D | ICAL | AA | 1D16082.22R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 23 | AR1630424D | ICAL | AA | 1D16082.23R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 24 | AR1640424E | ICAL | AA | 1D16082.24R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 25 | AR1650424D | ICAL | AA | 1D16082.25R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 26 | AR210424A | ICAL | AA | 1D16082.26R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 27 | AR32X03C | ICAL | AA | 1D16082.27R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 28 | AR420424A | ICAL | AA | 1D16082.28R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 29 | AR4830424A | ICAL | AA | 1D16082.29R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 30 | AR5430424A | ICAL | AA | 1D16082.30R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 31 | MDLAX0424B | ICAL | AA | 1D16082.31R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 32 | MDLEX0424A | ICAL | AA | 1D16082.32R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 33 | MD16X0424A | ICAL | AA | 1D16082.33R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 34 | MDTXX03B | ICAL | AA | 1D16082.34R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 35 | MDCHX03B | ICAL | AA | 1D16082.35R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 36 | IC16X0424B | CCAL | AA | 1D16082.36R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 37 | BLANKA 3/18/04 | BLK | AA | 1D16082.37R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 38 | LCSA 3/18/04 | LCS | AA | 1D16082.38R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 39 | LCSDKEP 3/18/04 | LCSD | AA | 1D16082.39R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 40 | LCSKEP 3/18/04 | LCS | AA | 1D16082.40R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 41 | 4236228 | T | AA | 1D16082.41R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 42 | 4236228MS | MS | AA | 1D16082.42R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 43 | 4236228MSD | MSD | AA | 1D16082.43R | PESTD.MET | 30 | 10 | 1 | 040780009A | 06001 |
| 44 | BLANKA 3/20/04F | BLK | AB | 1D16082.44R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |
| 45 | LCSA 3/20/04F | LCS | AB | 1D16082.45R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |
| 46 | 4236126F | T | AB | 1D16082.46R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |
| 47 | 4236129F | T | AB | 1D16082.47R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |
| 48 | 4236129MSF | MS | AB | 1D16082.48R | PESTD.MET | 200 | 10 | 1 | 040790015A | 6629 00950 |
| 49 | 4236129MSDF | MSD | AB | 1D16082.49R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |
| 50 | 4237069F | T | AB | 1D16082.50R | PESTD.MET | 200 | 10 | 1 | 040790015A | 00950 |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp16\C-Drive\CPWIN\DATA1\1D16082.seq

Chromatography Directory: \\cp16\C-Drive\cpwin\DATA1

Method Directory: \\cp16\C-Drive\cpwin\DATA1

Number of Entries: 66

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 51 BLANKA 3/19/04F | BLK | AB | 1D16082.51R | PESTD.MET | 1000 | 10 | 1 | 040780023A | 00177 |
| 52 LCSA 3/19/04F | LCS | AB | 1D16082.52R | PESTD.MET | 1000 | 10 | 1 | 040780023A | 00177 |
| 53 LCSDA 3/19/04F | LCSD | AB | 1D16082.53R | PESTD.MET | 1000 | 10 | 1 | 040780023A | 00177 |
| 54 4235159F | T | AB | 1D16082.54R | PESTD.MET | 1028 | 10 | 1 | 040780023A | 00177 |
| 55 EVALX03C | PEM | NV | 1D16082.55R | EVALD.MET | 1 | 1 | 1 | 048199999 | |
| 56 MIXA30424B | CCAL | PT | 1D16082.56R | PESTCCD.MET | 1 | 1 | 1 | 048199999 | |
| 57 MIXE30424A | CCAL | PM | 1D16082.57R | PESTCCD.MET | 1 | 1 | 1 | 048199999 | |
| 58 AR1630424D | CCAL | EL | 1D16082.58R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 59 4235260 RIF | T | AB | 1D16082.59R | PESTD.MET | 1005 | 10 | 1 | 040770012A | 00937 |
| 60 4235261F DF10 | T | AE | 1D16082.60R | PESTD.MET | 1031 | 100 | 1 | 040770012A | 00937 |
| 61 4235262F DF10 | T | AE | 1D16082.61R | PESTD.MET | 1016 | 100 | 1 | 040770012A | 00937 |
| 62 4235263 RIF | T | AB | 1D16082.62R | PESTD.MET | 968 | 10 | 1 | 040770012A | 00937 |
| 63 MS0408224A | T | AA | 1D16082.63R | PESTD.MET | 1 | 10 | 1 | 048199999 | |
| 64 EVALX03C | PEM | NW | 1D16082.64R | EVALD.MET | 1 | 1 | 1 | 048199999 | |
| 65 MIXA20424B | CCAL | RQ | 1D16082.65R | PESTD.MET | 1 | 1 | 1 | 048199999 | |
| 66 AR1620424D | CCAL | DI | 1D16082.66R | PESTD.MET | 1 | 1 | 1 | 048199999 | |

8629

Set-up by: _____ Date: 4/1/4

3/31/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp16\C-Drive\CPWIN\DATA1\3d16082.seq

Chromatography Directory: \\cp16\C-Drive\cpwin\DATA1

Method Directory: \\cp16\C-Drive\cpwin\DATA1

Number of Entries: 60

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | MISC | AA | 3d16082.01R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 2 CONDITIONER | MISC | AA | 3d16082.02R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 3 CONDITIONER | MISC | AA | 3d16082.03R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 4 CONDITIONER | MISC | AA | 3d16082.04R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 5 EVALX03C | PEM | OL | 3d16082.05R | EVALD.MET | 1 | 1 | 1 | 048499999 | |
| 6 MIXA30424B | CCAL | QJ | 3d16082.06R | PESTCCD.MET | 1 | 1 | 1 | 048499999 | |
| 7 AR1630424D | CCAL | FV | 3d16082.07R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 8 4238281F DF5 | T | AC | 3d16082.08R | PESTD.MET | 1026 | 50 | 1 | 040800002A | 01599 |
| 9 4236900F DF10 | T | AC | 3d16082.09R | PESTD.MET | 1006 | 100 | 1 | 040790014A | 01599 |
| 10 BLANKA 3/25/04F | BLK | AB | 3d16082.10R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 11 LCSA 3/25/04F | LCS | AB | 3d16082.11R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 12 4238572F | T | AB | 3d16082.12R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 13 4238575F | T | AB | 3d16082.13R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 14 4238575MSF | MS | AB | 3d16082.14R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 15 4238575MSDF | MSD | AB | 3d16082.15R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 16 4238809F | T | AB | 3d16082.16R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 17 4238809MSF | MS | AB | 3d16082.17R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 18 4238812F | T | AB | 3d16082.18R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 19 4238815F | T | AB | 3d16082.19R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 20 4239291F | T | AB | 3d16082.20R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 21 4239881F | T | AB | 3d16082.21R | PESTD.MET | 200 | 10 | 1 | 040850000A | 00950 |
| 22 BLANKA 3/25/04F | BLK | AB | 3d16082.22R | PESTD.MET | 1000 | 10 | 1 | 040840003A | 06010 |
| 23 LCSA 3/25/04F | LCS | AB | 3d16082.23R | PESTD.MET | 1000 | 10 | 1 | 040840003A | 06010 |
| 24 LCSDA 3/25/04F | LCSD | AB | 3d16082.24R | PESTD.MET | 1000 | 10 | 1 | 040840003A | 06010 |
| 25 4238771F | T | AB | 3d16082.25R | PESTD.MET | 816 | 10 | 1 | 040840003A | 00937 |
| 26 4238772F | T | AB | 3d16082.26R | PESTD.MET | 729 | 10 | 1 | 040840003A | 00937 |
| 27 4238774F | T | AB | 3d16082.27R | PESTD.MET | 1008 | 10 | 1 | 040840003A | 00937 |
| 28 EVALX03C | PEM | OM | 3d16082.28R | EVALD.MET | 1 | 1 | 1 | 048499999 | |
| 29 MIXA20424B | CCAL | RX | 3d16082.29R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 30 AR1620424D | CCAL | DP | 3d16082.30R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 31 4238775F | T | AB | 3d16082.31R | PESTD.MET | 994 | 10 | 1 | 040840003A | 00937 |
| 32 4239878F | T | AB | 3d16082.32R | PESTD.MET | 1015 | 10 | 1 | 040840003A | 00937 |
| 33 4239879F | T | AB | 3d16082.33R | PESTD.MET | 1043 | 10 | 1 | 040840003A | 00937 |
| 34 4240047F | T | AB | 3d16082.34R | PESTD.MET | 1046 | 10 | 1 | 040840003A | 01599 |
| 35 4240048F | T | AB | 3d16082.35R | PESTD.MET | 969 | 10 | 1 | 040840003A | 01599 |
| 36 4240049F | T | AB | 3d16082.36R | PESTD.MET | 944 | 10 | 1 | 040840003A | 01599 |
| 37 4240054F | T | AB | 3d16082.37R | PESTD.MET | 997 | 10 | 1 | 040840003A | 01599 |
| 38 4240055F | T | AB | 3d16082.38R | PESTD.MET | 956 | 10 | 1 | 040840003A | 01599 |
| 39 4240056F | T | AB | 3d16082.39R | PESTD.MET | 948 | 10 | 1 | 040840003A | 01599 |
| 40 MS0408524A | T | AA | 3d16082.40R | PESTD.MET | 1 | 10 | 1 | 048499999 | |
| 41 EVALX03C | PEM | ON | 3d16082.41R | EVALD.MET | 1 | 1 | 1 | 048499999 | |
| 42 MIXA40424B | CCAL | OQ | 3d16082.42R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 43 AR1640424E | CCAL | YN | 3d16082.43R | PESTD.MET | 1 | 1 | 1 | 048499999 | |
| 44 BLANKA 3/25/04F | BLK | AB | 3d16082.44R | PESTD.MET | 30 | 10 | 1 | 040850020A | 08899 |
| 45 LCSA 3/25/04F | LCS | AB | 3d16082.45R | PESTD.MET | 30 | 10 | 1 | 040850020A | 08899 |
| 46 4241628F | T | AB | 3d16082.46R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 47 4241629F | T | AB | 3d16082.47R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 48 4241630F | T | AB | 3d16082.48R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 49 4241631F | T | AB | 3d16082.49R | PESTD.MET | 30 | 10 | 1 | 040850020A | 08899 |
| 50 4241632MSF | MS | AB | 3d16082.50R | PESTD.MET | 30 | 10 | 1 | 040850020A | 08899 |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp16\C-Drive\CPWIN\DATA1\3d16082.seq

Chromatography Directory: \\cp16\C-Drive\cpwin\DATA1

Method Directory: \\cp16\C-Drive\cpwin\DATA1

Number of Entries: 60

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 4241633MSDF | MSD | AB | 3d16082.51R | PESTD.MET | 30 | 10 | 1 | 040850020A | 08899 |
| 52 | 4241634F | T | AB | 3d16082.52R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 53 | 4241636F | T | AB | 3d16082.53R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 54 | 4241637F | T | AB | 3d16082.54R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 55 | 4241638F | T | AB | 3d16082.55R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 56 | 4241639F | T | AB | 3d16082.56R | PESTD.MET | 30 | 10 | 1 | 040850020A | 01225 |
| 57 | 4227389 | T | AA | 3d16082.57R | PESTD.MET | 200 | 10 | 1 | 040710012A | 00950 |
| 58 | EVALX03C | PEM | OS | 3d16082.58R | EVALD.MET | 1 | 1 | 1 | 048599999 | |
| 59 | MIXA30424B | CCAL | QM | 3d16082.59R | PESTD.MET | 1 | 1 | 1 | 048599999 | |
| 60 | AR1630424D | CCAL | FY | 3d16082.60R | PESTD.MET | 1 | 1 | 1 | 048599999 | |

0631

Set-up by: _____ Date: 4/16/04

3/26/04

Sample Name: **EVALX03C AAPEMAA IPEM 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 11:28:05am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.07R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.221 | | 0.0000 | 0.000 | 11628.0 | 0.502 | BB | 0.176 | 1102.67 | 0.104 |
| 2 | 3.395 | | 0.0000 | 0.000 | 790.9 | 0.034 | BB | 0.071 | 185.70 | 0.018 |
| 3 | 3.557 | | 0.0000 | 0.000 | 262.6 | 0.011 | BB | 0.024 | 180.54 | 0.017 |
| 4 | 3.995 | | 0.0000 | 0.000 | 604.0 | 0.026 | BB | 0.047 | 215.31 | 0.020 |
| 5 | 4.335 | TCX | 19.4512 | 3.449 | 167960.1 | 7.246 | BB | 0.035 | 80242.75 | 7.588 |
| 6 | 4.780 | | 0.0000 | 0.000 | 306.1 | 0.013 | BB | 0.051 | 99.44 | 0.009 |
| 7 | 4.926 | Hcb | 0.0000 | 0.000 | 1887.0 | 0.081 | BB | 0.032 | 968.25 | 0.092 |
| 8 | 5.184 | alpha-BHC | 10.0753 | 1.787 | 95385.6 | 4.115 | BB | 0.031 | 51782.55 | 4.897 |
| 9 | 5.523 | | 0.0000 | 0.000 | 131.4 | 0.006 | BB | 0.047 | 46.95 | 0.004 |
| 10 | 5.654 | gamma-BHC | 9.4980 | 1.684 | 91626.2 | 3.953 | BB | 0.031 | 48742.32 | 4.609 |
| 11 | 5.786 | beta-BHC | 9.7687 | 1.732 | 56273.7 | 2.428 | BB | 0.034 | 27671.41 | 2.617 |
| 12 | 5.892 | | 0.0000 | 0.000 | 424.1 | 0.018 | BB | 0.028 | 255.87 | 0.024 |
| 13 | 6.045 | delta-BHC | 0.0115 | 0.002 | 295.0 | 0.013 | BB | 0.088 | 56.06 | 0.005 |
| 14 | 6.141 | | 0.0000 | 0.000 | 939.9 | 0.041 | BB | 0.034 | 466.90 | 0.044 |
| 15 | 6.548 | | 0.0000 | 0.000 | 7532.8 | 0.325 | BB | 0.033 | 3781.15 | 0.358 |
| 16 | 6.778 | Aldrin | 0.0109 | 0.002 | 240.8 | 0.010 | BB | 0.088 | 45.82 | 0.004 |
| 17 | 6.977 | | 0.0000 | 0.000 | 580.2 | 0.025 | BB | 0.069 | 141.07 | 0.013 |
| 18 | 7.148 | | 0.0000 | 0.000 | 396.3 | 0.017 | BB | 0.035 | 186.67 | 0.018 |
| 19 | 7.240 | | 0.0000 | 0.000 | 147.2 | 0.006 | BB | 0.026 | 92.77 | 0.009 |
| 20 | 7.286 | | 0.0000 | 0.000 | 761.5 | 0.033 | BB | 0.041 | 307.05 | 0.029 |
| 21 | 7.582 | o,p-DDE | 0.0000 | 0.000 | 256.8 | 0.011 | BB | 0.042 | 101.42 | 0.010 |
| 22 | 7.792 | g. Chlordane | 0.0319 | 0.006 | 223.4 | 0.010 | BB | 0.028 | 131.31 | 0.012 |
| 23 | 7.942 | a. Chlordane | 0.1525 | 0.027 | 3687.7 | 0.159 | BV | 0.092 | 669.31 | 0.063 |
| 24 | 8.041 | 4,4'-DDE | 0.4094 | 0.073 | 3295.3 | 0.142 | VB | 0.038 | 1438.42 | 0.136 |
| 25 | 8.607 | o,p-DDT | 146.1425 | 25.915 | 4498.3 | 0.194 | BB | 0.037 | 2006.77 | 0.190 |
| 26 | 8.776 | Endrin | 47.0421 | 8.342 | 332584.8 | 14.349 | BV | 0.035 | 157299.60 | 14.875 |
| 27 | 8.945 | | 0.0000 | 0.000 | 2874.6 | 0.124 | VV | 0.057 | 839.76 | 0.079 |
| 28 | 9.058 | Endosulfan II | 0.0579 | 0.010 | 693.6 | 0.030 | VB | 0.060 | 193.20 | 0.018 |
| 29 | 9.196 | 4,4'-DDT | 92.3175 | 16.371 | 558266.9 | 24.085 | BB | 0.035 | 265848.10 | 25.139 |
| 30 | 9.424 | | 0.0000 | 0.000 | 3912.6 | 0.169 | BB | 0.068 | 961.17 | 0.091 |
| 31 | 9.625 | Endrin aldehyde | 0.2970 | 0.053 | 3068.7 | 0.132 | BB | 0.063 | 814.72 | 0.077 |
| 32 | 9.806 | Methoxychlor | 209.3574 | 37.125 | 785129.7 | 33.872 | BB | 0.038 | 343201.40 | 32.454 |
| 33 | 10.267 | | 0.0000 | 0.000 | 380.5 | 0.016 | BB | 0.060 | 104.91 | 0.010 |
| 34 | 10.360 | | 0.0000 | 0.000 | 803.5 | 0.035 | BB | 0.048 | 276.15 | 0.026 |
| 35 | 10.431 | | 0.0000 | 0.000 | 2500.1 | 0.108 | BB | 0.033 | 1277.12 | 0.121 |
| 36 | 10.566 | Endrin ketone | 0.3634 | 0.064 | 3672.5 | 0.158 | BB | 0.052 | 1184.68 | 0.112 |
| 37 | 10.728 | | 0.0000 | 0.000 | 570.5 | 0.025 | BB | 0.059 | 162.33 | 0.015 |
| 38 | 10.957 | | 0.0000 | 0.000 | 3675.4 | 0.159 | BB | 0.036 | 1678.69 | 0.159 |
| 39 | 11.628 | | 0.0000 | 0.000 | 662.3 | 0.029 | BB | 0.039 | 284.53 | 0.027 |
| 40 | 11.928 | DCB | 18.9326 | 3.357 | 168971.9 | 7.290 | BB | 0.045 | 62461.28 | 5.906 |

Total Area = 2317903.0, Total Amount = 563.92, Total Height = 1057506.0, Sample Units = PPB

8632

Sample Name: **EVALX03C AAPEMAA IPEM 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 11:28:05am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.07R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

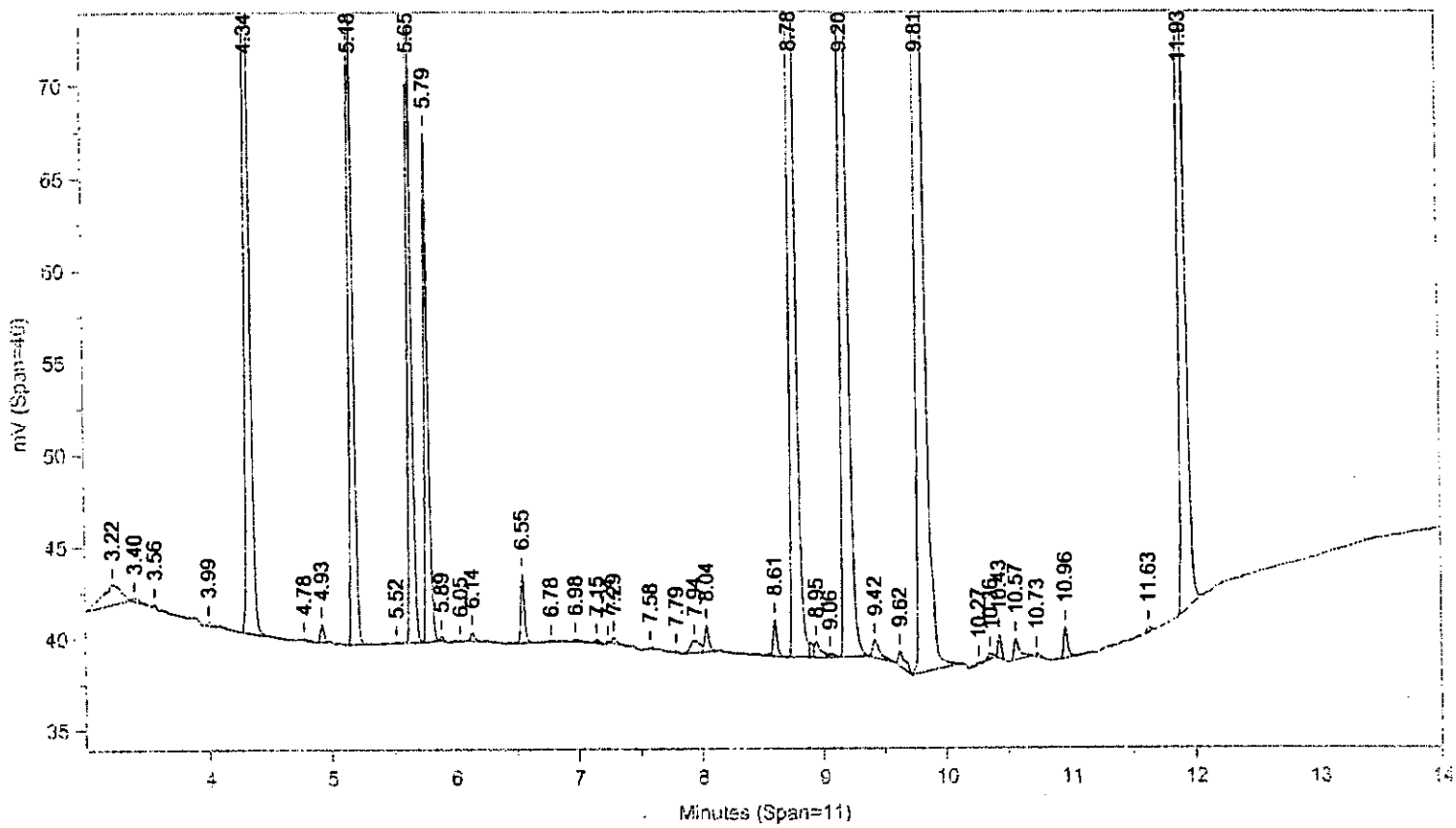
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.453 | | 0.0000 | 0.000 | 1038.6 | 0.036 | BB | 0.048 | 359.58 | 0.029 |
| 2 | 3.545 | | 0.0000 | 0.000 | 414.1 | 0.014 | BB | 0.034 | 200.99 | 0.016 |
| 3 | 3.628 | | 0.0000 | 0.000 | 1556.6 | 0.054 | BB | 0.043 | 602.33 | 0.048 |
| 4 | 3.718 | | 0.0000 | 0.000 | 971.4 | 0.034 | BB | 0.038 | 421.77 | 0.034 |
| 5 | 3.807 | | 0.0000 | 0.000 | 509.6 | 0.018 | BB | 0.038 | 225.86 | 0.018 |
| 6 | 4.060 | TCX | 19.6027 | 4.601 | 240417.7 | 8.411 | BB | 0.036 | 109987.80 | 8.798 |
| 7 | 4.276 | | 0.0000 | 0.000 | 513.4 | 0.018 | BB | 0.042 | 203.29 | 0.016 |
| 8 | 4.369 | | 0.0000 | 0.000 | 188.3 | 0.007 | BB | 0.031 | 100.65 | 0.008 |
| 9 | 4.449 | | 0.0000 | 0.000 | 1076.4 | 0.038 | BB | 0.080 | 224.75 | 0.018 |
| 10 | 4.605 | | 0.0000 | 0.000 | 3335.5 | 0.117 | BB | 0.034 | 1642.90 | 0.131 |
| 11 | 4.721 | | 0.0000 | 0.000 | 265.9 | 0.009 | BB | 0.053 | 83.52 | 0.007 |
| 12 | 4.814 | | 0.0000 | 0.000 | 654.1 | 0.023 | BB | 0.047 | 232.15 | 0.019 |
| 13 | 4.962 | alpha-BHC | 9.9715 | 2.340 | 157976.7 | 5.527 | BB | 0.031 | 85555.81 | 6.844 |
| 14 | 5.255 | | 0.0000 | 0.000 | 1039.9 | 0.036 | BB | 0.141 | 122.65 | 0.010 |
| 15 | 5.479 | gamma-BHC | 9.4542 | 2.219 | 141324.1 | 4.944 | BB | 0.031 | 75158.41 | 6.012 |
| 16 | 5.608 | beta-BHC | 9.5969 | 2.252 | 78312.9 | 2.740 | BB | 0.034 | 38273.53 | 3.062 |
| 17 | 5.752 | | 0.0000 | 0.000 | 1450.9 | 0.051 | BB | 0.039 | 615.50 | 0.049 |
| 18 | 5.979 | | 0.0000 | 0.000 | 5475.0 | 0.192 | BV | 0.115 | 792.61 | 0.063 |
| 19 | 6.170 | | 0.0000 | 0.000 | 1051.7 | 0.037 | VV | 0.035 | 494.64 | 0.040 |
| 20 | 6.250 | | 0.0000 | 0.000 | 3839.1 | 0.134 | VV | 0.103 | 622.44 | 0.050 |
| 21 | 6.460 | | 0.0000 | 0.000 | 4831.2 | 0.169 | VB | 0.118 | 681.92 | 0.055 |
| 22 | 6.668 | | 0.0000 | 0.000 | 4839.9 | 0.169 | BB | 0.125 | 645.98 | 0.052 |
| 23 | 6.902 | | 0.0000 | 0.000 | 2583.2 | 0.090 | BB | 0.084 | 511.50 | 0.041 |
| 24 | 7.021 | | 0.0000 | 0.000 | 426.6 | 0.015 | BB | 0.025 | 288.19 | 0.023 |
| 25 | 7.082 | | 0.0000 | 0.000 | 1864.3 | 0.065 | BB | 0.059 | 522.72 | 0.042 |
| 26 | 7.263 | | 0.0000 | 0.000 | 393.1 | 0.014 | BB | 0.038 | 171.62 | 0.014 |
| 27 | 7.304 | Hept. epoxide | 0.0592 | 0.014 | 827.9 | 0.029 | BV | 0.039 | 351.68 | 0.028 |
| 28 | 7.410 | | 0.0000 | 0.000 | 2085.2 | 0.073 | VB | 0.078 | 445.84 | 0.036 |
| 29 | 7.551 | g. Chlordane | 0.3160 | 0.074 | 4128.5 | 0.144 | BB | 0.038 | 1831.74 | 0.147 |
| 30 | 7.699 | | 0.0000 | 0.000 | 1399.9 | 0.049 | BB | 0.073 | 319.40 | 0.026 |
| 31 | 7.827 | Endosulfan I | 0.0988 | 0.023 | 2354.9 | 0.082 | BV | 0.075 | 521.16 | 0.042 |
| 32 | 7.984 | 4,4'-DDE | 0.4396 | 0.103 | 5231.1 | 0.183 | VV | 0.043 | 2048.43 | 0.164 |
| 33 | 8.090 | | 0.0000 | 0.000 | 3164.9 | 0.111 | VV | 0.103 | 510.33 | 0.041 |
| 34 | 8.207 | Dieldrin | 0.1083 | 0.025 | 2464.4 | 0.086 | VV | 0.079 | 521.69 | 0.042 |
| 35 | 8.333 | | 0.0000 | 0.000 | 1395.0 | 0.049 | VV | 0.070 | 330.07 | 0.026 |
| 36 | 8.432 | | 0.0000 | 0.000 | 777.8 | 0.027 | VB | 0.047 | 278.51 | 0.022 |
| 37 | 8.596 | Endrin | 46.4707 | 10.907 | 415942.5 | 14.552 | BV | 0.036 | 191836.00 | 15.345 |
| 38 | 8.735 | 4,4'-DDD | 0.5841 | 0.137 | 7626.6 | 0.267 | VB | 0.067 | 1906.82 | 0.153 |
| 39 | 8.924 | | 0.0000 | 0.000 | 4023.3 | 0.141 | BV | 0.056 | 1195.33 | 0.096 |
| 40 | 8.975 | | 0.0000 | 0.000 | 9383.6 | 0.328 | VV | 0.091 | 1721.59 | 0.138 |
| 41 | 9.136 | 4,4'-DDT | 92.0769 | 21.611 | 681821.0 | 23.854 | SBB | 0.038 | 300065.30 | 24.002 |
| 42 | 9.308 | Endrin aldehyde | 0.1993 | 0.047 | 2545.7 | 0.089 | TVB | 0.069 | 611.07 | 0.049 |
| 43 | 9.520 | | 0.0000 | 0.000 | 1943.6 | 0.068 | BB | 0.135 | 240.23 | 0.019 |
| 44 | 9.729 | | 0.0000 | 0.000 | 145.2 | 0.005 | BB | 0.033 | 72.26 | 0.006 |
| 45 | 9.809 | | 0.0000 | 0.000 | 225.3 | 0.008 | BB | 0.029 | 127.95 | 0.010 |
| 46 | 9.864 | | 0.0000 | 0.000 | 201.8 | 0.007 | BB | 0.037 | 91.09 | 0.007 |
| 47 | 10.014 | Methoxychlor | 217.6627 | 51.087 | 841177.0 | 29.429 | BB | 0.040 | 352704.30 | 28.213 |
| 48 | 10.177 | | 0.0000 | 0.000 | 2211.8 | 0.077 | BB | 0.027 | 1344.04 | 0.108 |
| 49 | 10.358 | Endrin ketone | 0.5090 | 0.119 | 5239.4 | 0.183 | BB | 0.047 | 1839.58 | 0.147 |
| 50 | 10.449 | | 0.0000 | 0.000 | 2927.3 | 0.102 | BB | 0.032 | 1537.50 | 0.123 |
| 51 | 10.660 | | 0.0000 | 0.000 | 843.8 | 0.030 | BB | 0.043 | 330.04 | 0.026 |
| 52 | 10.787 | | 0.0000 | 0.000 | 503.4 | 0.018 | BB | 0.046 | 181.20 | 0.014 |
| 53 | 11.650 | | 0.0000 | 0.000 | 731.5 | 0.026 | BB | 0.038 | 318.94 | 0.026 |
| 54 | 12.075 | DCB | 18.9087 | 4.438 | 200643.9 | 7.020 | BB | 0.049 | 68119.80 | 5.449 |

0633

Total Area = 2858317.0, Total Amount = 426.059, Total Height = 1250145.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1D16082.07R

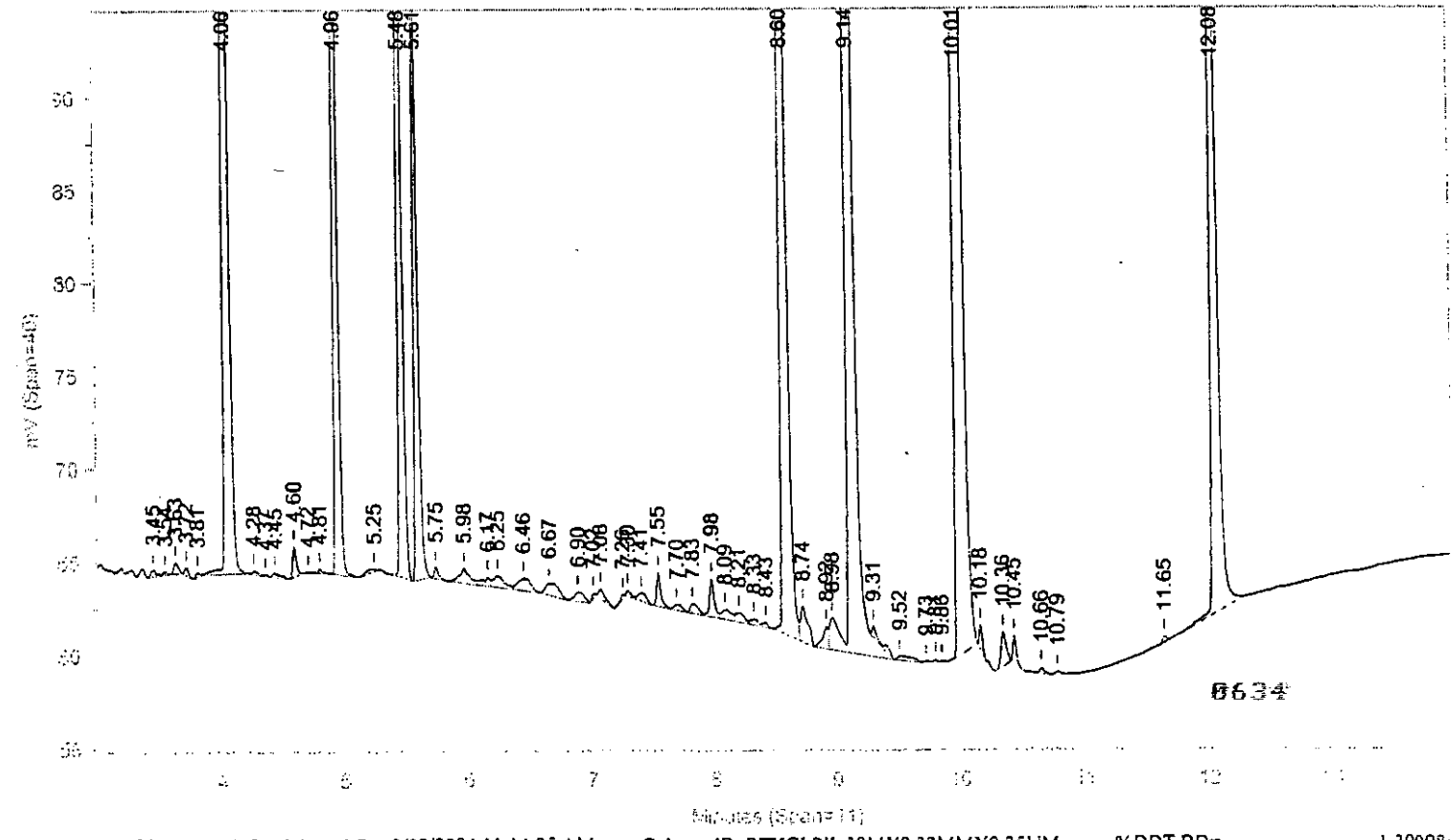
C:\CPWIN\DATA1\1D16082.07R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 11:14:05 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM %DDT BD= 0.538157
%ENDRIN BD= 1.255122

File: C:\CPWIN\DATA1\1D16082B.07R

C:\CPWIN\DATA1\1D16082B.07R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 11:14:05 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM %DDT BD= 1.300983
%ENDRIN BD= 1.261353

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

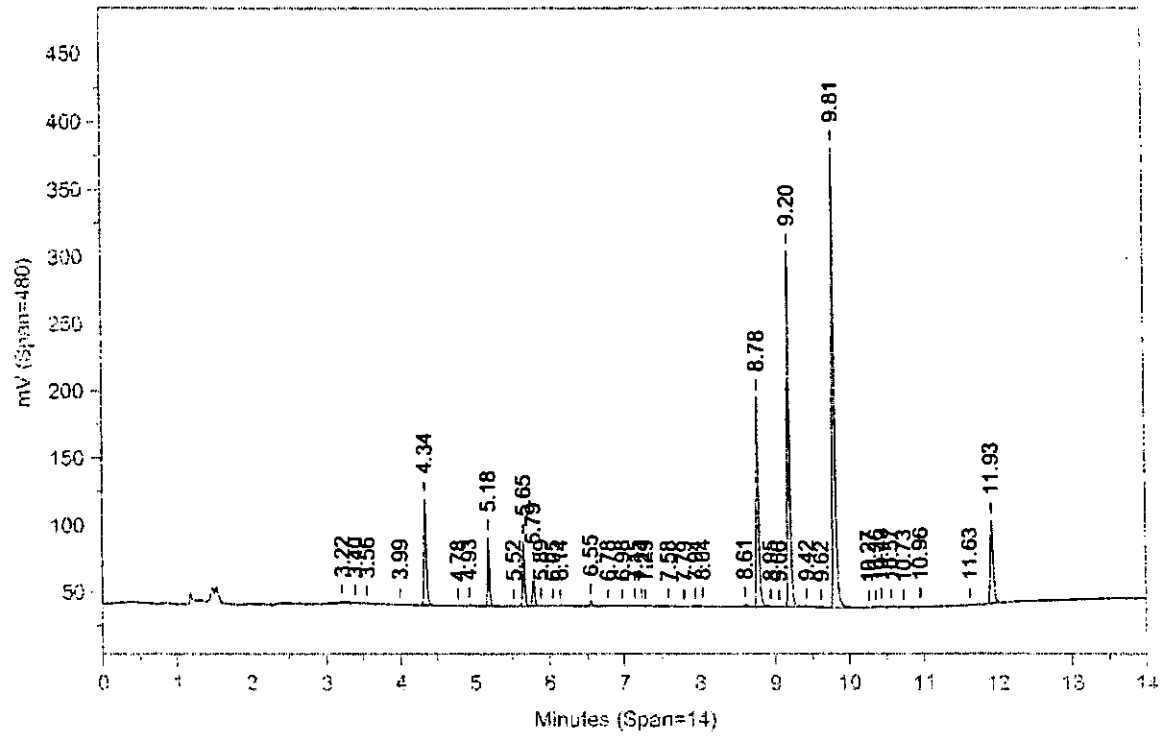
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.335 | 80243 | 19.451 | TCX | 4.06 | 109988 | 19.603 | TCX |
| 4.926 | 968 | . | Hcb | . | 0 | . | Hcb |
| 5.184 | 51783 | 10.075 | alpha-BHC | 4.962 | 85556 | 9.972 | alpha-BHC |
| 5.654 | 48742 | 9.498 | gamma-BHC | 5.479 | 75158 | 9.454 | gamma-BHC |
| 5.786 | 27671 | 9.769 | beta-BHC | 5.608 | 38274 | 9.597 | beta-BHC |
| 6.045 | 56 | .012 | delta-BHC | . | 0 | . | delta-BHC |
| 6.778 | 46 | .011 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Hept. epoxide | 7.304 | 352 | .059 | Hept. epoxide |
| 7.792 | 131 | .032 | g. Chlordane | 7.551 | 1832 | .316 | g. Chlordane |
| 7.582 | 101 | . | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.827 | 521 | .099 | Endosulfan I |
| 7.942 | 669 | .153 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.041 | 1438 | .409 | 4,4'-DDE | 7.984 | 2048 | .44 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.207 | 522 | .108 | Dieldrin |
| 8.776 | 157300 | 47.042 | Endrin | 8.596 | 191836 | 46.471 | Endrin |
| 8.607 | 2007 | 146.143 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.735 | 1907 | .584 | 4,4'-DDD |
| 9.058 | 193 | .058 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.196 | 265848 | 92.318 | 4,4'-DDT | 9.136 | 300065 | 92.077 | 4,4'-DDT |
| 9.625 | 815 | .297 | Endrin aldehyde | 9.308 | 611 | .199 | Endrin aldehyde |
| 9.806 | 343201 | 209.357 | Methoxychlor | 10.014 | 352704 | 217.663 | Methoxychlor |
| 10.566 | 1185 | .363 | Endrin ketone | 10.358 | 1840 | .509 | Endrin ketone |
| 11.928 | 62461 | 18.933 | DCB | 12.075 | 68120 | 18.909 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.07A
Area File: C:\CPWIN\DATA1\1D16082B.07A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/22/2004 9:39:12 PM
File Reported On: 3/22/2004 at 9:39:18 PM

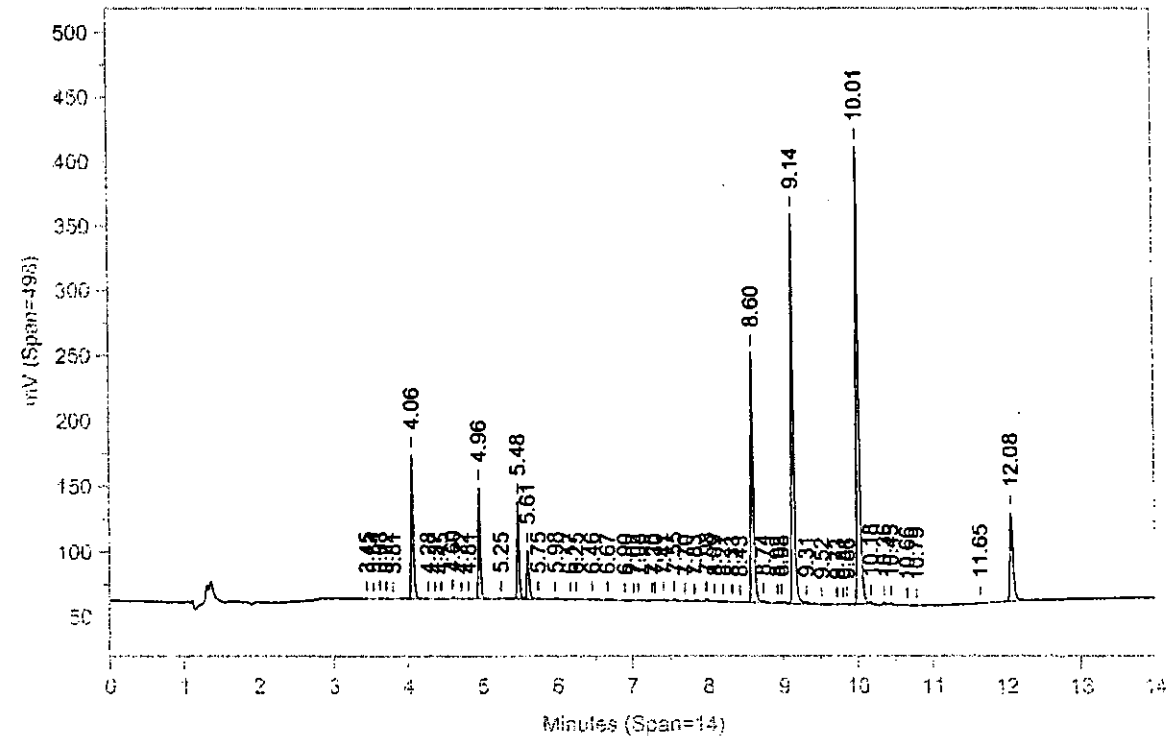
Files:

REPLOTS

C:\CPWIN\DATA1\1D16082.07R




C:\CPWIN\DATA1\1D16082B.07R




6636

Sample Name: **MIXA10424B AAMIXA1AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 11:48:39am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.08R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.252 | | 0.0000 | 0.000 | 11979.5 | 2.889 | BB | 0.198 | 1006.87 | 0.586 |
| 2 | 3.437 | | 0.0000 | 0.000 | 491.0 | 0.118 | BB | 0.046 | 178.25 | 0.104 |
| 3 | 3.559 | | 0.0000 | 0.000 | 1483.9 | 0.358 | BB | 0.028 | 876.85 | 0.511 |
| 4 | 3.895 | | 0.0000 | 0.000 | 843.7 | 0.203 | BB | 0.038 | 370.95 | 0.216 |
| 5 | 4.001 | | 0.0000 | 0.000 | 1442.7 | 0.348 | BB | 0.051 | 468.94 | 0.273 |
| 6 | 4.186 | | 0.0000 | 0.000 | 420.2 | 0.101 | BB | 0.052 | 133.67 | 0.078 |
| 7 | 4.336 | TCX | 4.0793 | 8.197 | 35623.9 | 8.591 | BB | 0.035 | 16949.42 | 9.873 |
| 8 | 4.799 | | 0.0000 | 0.000 | 226.9 | 0.055 | BB | 0.036 | 104.65 | 0.061 |
| 9 | 4.927 | | 0.0000 | 0.000 | 418.7 | 0.101 | BB | 0.034 | 204.36 | 0.119 |
| 10 | 5.063 | | 0.0000 | 0.000 | 287.6 | 0.069 | BB | 0.037 | 130.06 | 0.076 |
| 11 | 5.183 | alpha-BHC | 0.9274 | 1.864 | 8802.3 | 2.123 | BB | 0.031 | 4762.25 | 2.774 |
| 12 | 5.362 | | 0.0000 | 0.000 | 261.1 | 0.063 | BB | 0.041 | 105.53 | 0.061 |
| 13 | 5.525 | | 0.0000 | 0.000 | 409.5 | 0.099 | BB | 0.039 | 174.18 | 0.101 |
| 14 | 5.653 | gamma-BHC | 0.9694 | 1.948 | 9838.6 | 2.373 | BB | 0.034 | 4884.87 | 2.845 |
| 15 | 5.786 | beta-BHC | 0.9889 | 1.987 | 5935.5 | 1.431 | BB | 0.033 | 2963.67 | 1.726 |
| 16 | 5.883 | | 0.0000 | 0.000 | 186.8 | 0.045 | BB | 0.038 | 81.36 | 0.047 |
| 17 | 6.043 | delta-BHC | 0.9842 | 1.978 | 8860.0 | 2.137 | BB | 0.032 | 4565.78 | 2.659 |
| 18 | 6.342 | Heptachlor | 1.0428 | 2.095 | 11586.8 | 2.794 | BB | 0.034 | 5713.46 | 3.328 |
| 19 | 6.550 | | 0.0000 | 0.000 | 399.3 | 0.096 | BB | 0.053 | 124.90 | 0.073 |
| 20 | 6.768 | Aldrin | 1.0198 | 2.049 | 8723.6 | 2.104 | BB | 0.034 | 4244.14 | 2.472 |
| 21 | 6.983 | | 0.0000 | 0.000 | 356.7 | 0.086 | BB | 0.032 | 187.82 | 0.109 |
| 22 | 7.150 | | 0.0000 | 0.000 | 574.9 | 0.139 | BB | 0.038 | 249.64 | 0.145 |
| 23 | 7.441 | | 0.0000 | 0.000 | 552.3 | 0.133 | BB | 0.033 | 277.44 | 0.162 |
| 24 | 7.611 | Hept. epoxide | 1.0370 | 2.084 | 10357.8 | 2.498 | BV | 0.037 | 4630.21 | 2.697 |
| 25 | 7.776 | g. Chlordane | 1.0048 | 2.019 | 8968.2 | 2.163 | VB | 0.035 | 4319.76 | 2.516 |
| 26 | 7.953 | a. Chlordane | 1.1987 | 2.409 | 13084.2 | 3.155 | BV | 0.042 | 5150.23 | 3.000 |
| 27 | 8.040 | 4,4'-DDE | 2.0217 | 4.063 | 15308.1 | 3.692 | VV | 0.036 | 7136.27 | 4.157 |
| 28 | 8.146 | Endosulfan I | 1.0883 | 2.187 | 10378.6 | 2.503 | VV | 0.040 | 4292.02 | 2.500 |
| 29 | 8.463 | Dieldrin | 2.0907 | 4.201 | 16799.5 | 4.051 | VV | 0.037 | 7554.78 | 4.401 |
| 30 | 8.774 | Endrin | 2.1616 | 4.344 | 14225.9 | 3.431 | VV | 0.034 | 6963.93 | 4.056 |
| 31 | 8.830 | 4,4'-DDD | 2.5001 | 5.024 | 18387.3 | 4.434 | VV | 0.043 | 7062.39 | 4.114 |
| 32 | 9.073 | Endosulfan II | 2.0952 | 4.210 | 15870.4 | 3.827 | VV | 0.037 | 7211.48 | 4.201 |
| 33 | 9.195 | 4,4'-DDT | 1.9997 | 4.018 | 12470.3 | 3.007 | VB | 0.035 | 5894.98 | 3.434 |
| 34 | 9.424 | | 0.0000 | 0.000 | 4841.2 | 1.167 | BB | 0.078 | 1035.91 | 0.603 |
| 35 | 9.623 | Endrin aldehyde | 2.4514 | 4.926 | 15043.3 | 3.628 | BB | 0.041 | 6137.43 | 3.575 |
| 36 | 9.807 | Methoxychlor | 11.3014 | 22.709 | 46753.4 | 11.275 | BB | 0.040 | 19341.22 | 11.266 |
| 37 | 10.107 | | 0.0000 | 0.000 | 5804.6 | 1.400 | BB | 0.145 | 665.19 | 0.387 |
| 38 | 10.194 | Endo. sulfate | 2.0882 | 4.196 | 14489.8 | 3.494 | BB | 0.037 | 6449.88 | 3.757 |
| 39 | 10.432 | | 0.0000 | 0.000 | 6874.2 | 1.658 | BB | 0.044 | 2597.22 | 1.513 |
| 40 | 10.564 | Endrin ketone | 1.9945 | 4.008 | 14342.7 | 3.459 | BB | 0.035 | 6761.52 | 3.938 |
| 41 | 10.734 | | 0.0000 | 0.000 | 619.5 | 0.149 | BB | 0.082 | 125.57 | 0.073 |
| 42 | 10.958 | | 0.0000 | 0.000 | 1067.6 | 0.257 | BB | 0.044 | 408.61 | 0.238 |
| 43 | 11.160 | | 0.0000 | 0.000 | 14716.8 | 3.549 | BB | 0.093 | 2646.98 | 1.542 |
| 44 | 11.259 | | 0.0000 | 0.000 | 3397.1 | 0.819 | BB | 0.069 | 819.02 | 0.477 |
| 45 | 11.928 | DCB | 4.7201 | 9.485 | 41175.6 | 9.929 | BB | 0.044 | 15715.31 | 9.154 |

Total Area = 414681.8, Total Amount = 49.765, Total Height = 171678.9, Sample Units = PPB

Sample Name: **MIXA10424B AAMIXA1AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 11:48:39am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.08R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.451 | | 0.0000 | 0.000 | 1000.8 | 0.194 | BB | 0.039 | 426.32 | 0.198 |
| 2 | 3.550 | | 0.0000 | 0.000 | 392.7 | 0.076 | BB | 0.042 | 155.13 | 0.072 |
| 3 | 3.630 | | 0.0000 | 0.000 | 2724.6 | 0.527 | BB | 0.042 | 1069.68 | 0.496 |
| 4 | 3.720 | | 0.0000 | 0.000 | 1636.0 | 0.317 | BB | 0.038 | 714.24 | 0.331 |
| 5 | 3.811 | | 0.0000 | 0.000 | 424.0 | 0.082 | BB | 0.030 | 231.98 | 0.108 |
| 6 | 3.858 | | 0.0000 | 0.000 | 282.7 | 0.055 | BB | 0.032 | 147.54 | 0.068 |
| 7 | 3.956 | | 0.0000 | 0.000 | 261.9 | 0.051 | BB | 0.052 | 83.53 | 0.039 |
| 8 | 4.060 | TCX | 4.6723 | 9.164 | 51653.8 | 9.997 | BB | 0.034 | 24957.48 | 11.571 |
| 9 | 4.165 | | 0.0000 | 0.000 | 239.9 | 0.046 | BB | 0.040 | 99.75 | 0.046 |
| 10 | 4.374 | | 0.0000 | 0.000 | 116.2 | 0.022 | BB | 0.027 | 70.68 | 0.033 |
| 11 | 4.465 | | 0.0000 | 0.000 | 1061.7 | 0.205 | BB | 0.055 | 323.17 | 0.150 |
| 12 | 4.621 | | 0.0000 | 0.000 | 1526.8 | 0.295 | BB | 0.040 | 642.67 | 0.298 |
| 13 | 4.717 | | 0.0000 | 0.000 | 285.3 | 0.055 | BB | 0.043 | 111.13 | 0.052 |
| 14 | 4.880 | | 0.0000 | 0.000 | 712.9 | 0.138 | BB | 0.037 | 318.76 | 0.148 |
| 15 | 4.961 | alpha-BHC | 1.0240 | 2.008 | 14588.7 | 2.823 | BB | 0.029 | 8333.57 | 3.864 |
| 16 | 5.069 | | 0.0000 | 0.000 | 395.8 | 0.077 | BB | 0.042 | 157.46 | 0.073 |
| 17 | 5.240 | | 0.0000 | 0.000 | 1212.1 | 0.235 | BB | 0.094 | 214.66 | 0.100 |
| 18 | 5.306 | | 0.0000 | 0.000 | 596.8 | 0.115 | BB | 0.043 | 232.08 | 0.108 |
| 19 | 5.478 | ganuma-BHC | 1.0739 | 2.106 | 14485.8 | 2.804 | BB | 0.030 | 7967.16 | 3.694 |
| 20 | 5.608 | beta-BHC | 1.0929 | 2.144 | 9979.5 | 1.931 | BB | 0.038 | 4427.65 | 2.053 |
| 21 | 5.754 | | 0.0000 | 0.000 | 453.7 | 0.088 | BB | 0.050 | 151.16 | 0.070 |
| 22 | 5.944 | | 0.0000 | 0.000 | 794.8 | 0.154 | BB | 0.066 | 201.18 | 0.093 |
| 23 | 6.019 | delta-BHC | 1.0645 | 2.088 | 12619.6 | 2.442 | BV | 0.029 | 7322.10 | 3.395 |
| 24 | 6.095 | Heptachlor | 1.1220 | 2.201 | 16356.9 | 3.166 | VV | 0.032 | 8512.60 | 3.947 |
| 25 | 6.250 | | 0.0000 | 0.000 | 2013.6 | 0.390 | VB | 0.081 | 413.46 | 0.192 |
| 26 | 6.460 | | 0.0000 | 0.000 | 3643.9 | 0.705 | BV | 0.094 | 643.20 | 0.298 |
| 27 | 6.540 | Aldrin | 1.1184 | 2.194 | 12147.2 | 2.351 | VB | 0.031 | 6516.44 | 3.021 |
| 28 | 6.658 | | 0.0000 | 0.000 | 5294.8 | 1.025 | BB | 0.111 | 794.17 | 0.368 |
| 29 | 6.900 | | 0.0000 | 0.000 | 3145.5 | 0.609 | BB | 0.094 | 555.31 | 0.257 |
| 30 | 7.081 | | 0.0000 | 0.000 | 1937.8 | 0.375 | BB | 0.066 | 486.23 | 0.225 |
| 31 | 7.318 | Hept. epoxide | 1.0837 | 2.126 | 20098.5 | 3.890 | BV | 0.048 | 6988.98 | 3.240 |
| 32 | 7.569 | g. Chlordane | 1.1562 | 2.268 | 16714.1 | 3.235 | VV | 0.043 | 6540.50 | 3.032 |
| 33 | 7.703 | | 0.0000 | 0.000 | 3059.9 | 0.592 | VV | 0.069 | 736.14 | 0.341 |
| 34 | 7.761 | a. Chlordane | 1.1676 | 2.290 | 13547.9 | 2.622 | VV | 0.037 | 6146.72 | 2.850 |
| 35 | 7.837 | Endosulfan I | 1.1899 | 2.334 | 14684.3 | 2.842 | VV | 0.041 | 5984.79 | 2.775 |
| 36 | 7.984 | 4,4'-DDE | 2.1513 | 4.220 | 21460.9 | 4.153 | VV | 0.037 | 9773.91 | 4.531 |
| 37 | 8.093 | | 0.0000 | 0.000 | 3783.0 | 0.732 | VV | 0.087 | 728.74 | 0.338 |
| 38 | 8.196 | Dieldrin | 2.2548 | 4.423 | 22903.8 | 4.433 | VV | 0.038 | 10103.04 | 4.684 |
| 39 | 8.327 | | 0.0000 | 0.000 | 1931.6 | 0.374 | VV | 0.075 | 431.98 | 0.200 |
| 40 | 8.420 | o,p-DDD | 0.1163 | 0.228 | 1069.5 | 0.207 | VB | 0.057 | 315.08 | 0.146 |
| 41 | 8.594 | Endrin | 2.2294 | 4.373 | 21134.1 | 4.090 | BV | 0.041 | 8536.11 | 3.957 |
| 42 | 8.734 | 4,4'-DDD | 2.4348 | 4.776 | 21326.6 | 4.127 | VB | 0.045 | 7968.09 | 3.694 |
| 43 | 8.872 | Endosulfan II | 2.1569 | 4.231 | 20176.7 | 3.905 | BV | 0.040 | 8390.41 | 3.890 |
| 44 | 8.974 | | 0.0000 | 0.000 | 9919.3 | 1.920 | VV | 0.092 | 1801.64 | 0.835 |
| 45 | 9.135 | 4,4'-DDT | 1.9537 | 3.832 | 17083.0 | 3.306 | VV | 0.043 | 6638.48 | 3.078 |
| 46 | 9.306 | Endrin aldehyde | 2.4779 | 4.860 | 18869.8 | 3.652 | VB | 0.046 | 6843.45 | 3.173 |
| 47 | 9.531 | | 0.0000 | 0.000 | 572.9 | 0.111 | BB | 0.080 | 118.82 | 0.055 |
| 48 | 9.657 | Endo. sulfate | 2.1132 | 4.145 | 13745.1 | 2.660 | BB | 0.036 | 6399.80 | 2.967 |
| 49 | 9.810 | | 0.0000 | 0.000 | 304.0 | 0.059 | BB | 0.056 | 90.17 | 0.042 |
| 50 | 9.947 | | 0.0000 | 0.000 | 262.4 | 0.051 | BB | 0.030 | 145.71 | 0.068 |
| 51 | 10.015 | Methoxychlor | 10.3207 | 20.243 | 41681.4 | 8.067 | BB | 0.038 | 18049.65 | 8.368 |
| 52 | 10.237 | | 0.0000 | 0.000 | 305.0 | 0.059 | BB | 0.040 | 128.15 | 0.059 |
| 53 | 10.353 | Endrin ketone | 2.1988 | 4.313 | 18193.5 | 3.521 | BB | 0.038 | 7889.34 | 3.658 |
| 54 | 10.446 | | 0.0000 | 0.000 | 518.4 | 0.100 | BB | 0.028 | 307.82 | 0.143 |
| 55 | 10.781 | | 0.0000 | 0.000 | 3052.3 | 0.591 | BB | 0.052 | 987.53 | 0.458 |
| 56 | 11.948 | | 0.0000 | 0.000 | 730.5 | 0.141 | BB | 0.039 | 309.96 | 0.144 |

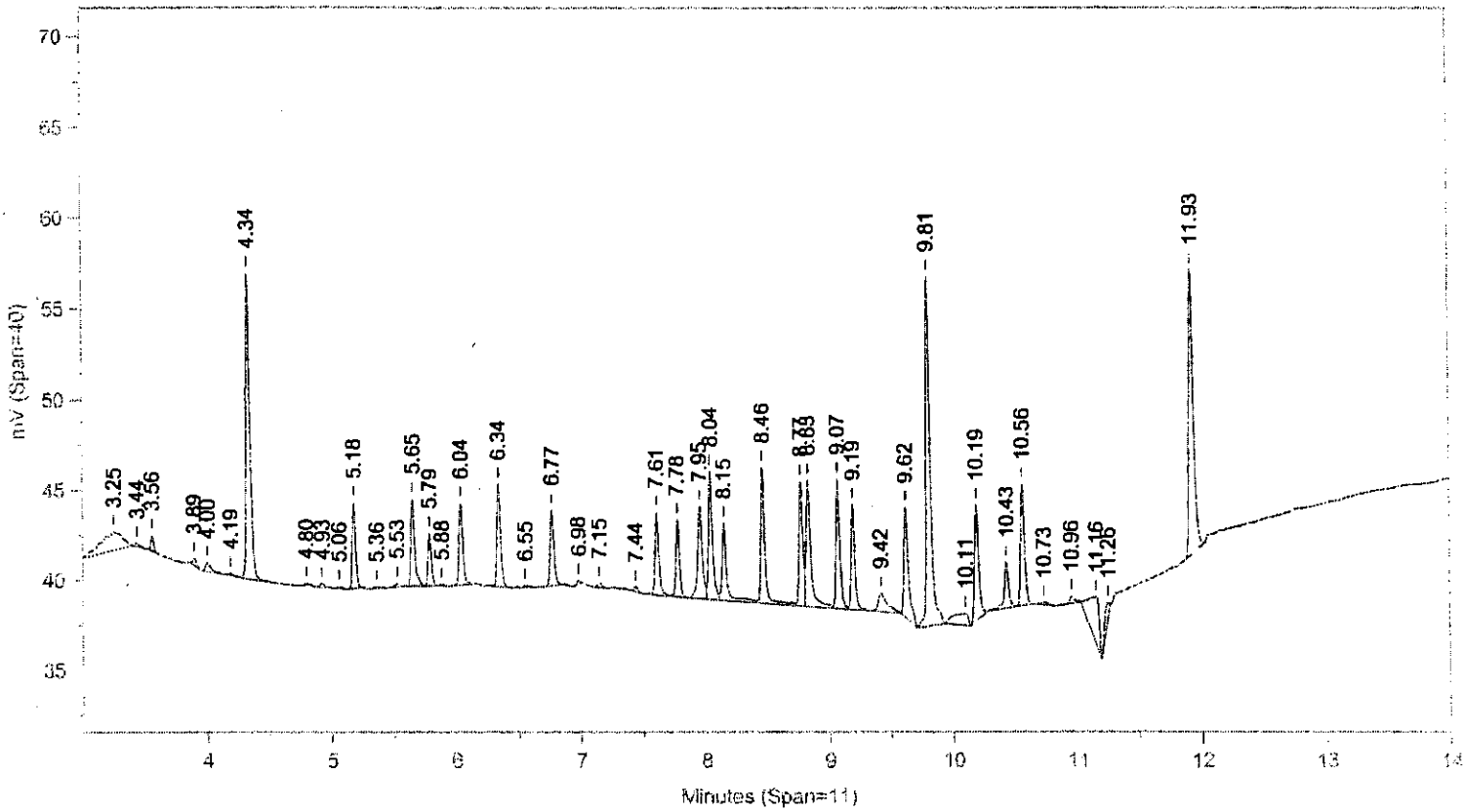
8638

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 12.076 DCB | | 4.8102 | 9.435 | 47170.3 | 9.129 | BB | 0.046 | 16933.39 | 7.851 |
| 58 | 12.591 | | 0.0000 | 0.000 | 414.0 | 0.080 | BB | 0.055 | 126.49 | 0.059 |

Total Area = 516698.6, Total Amount = 50.983, Total Height = 215695.4, Sample Units = PPB

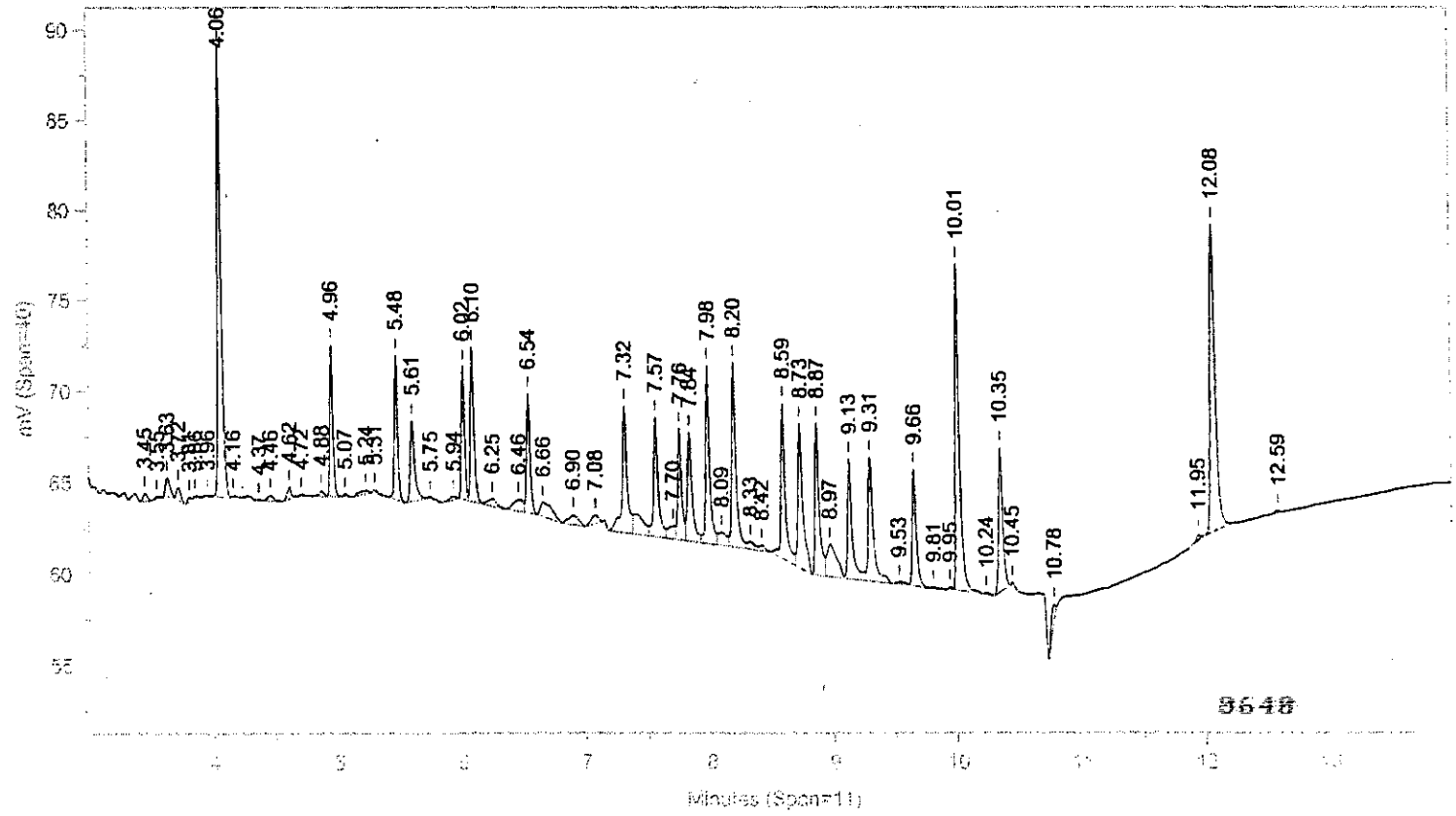
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.08R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 11:34:39 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.08R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 11:34:39 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

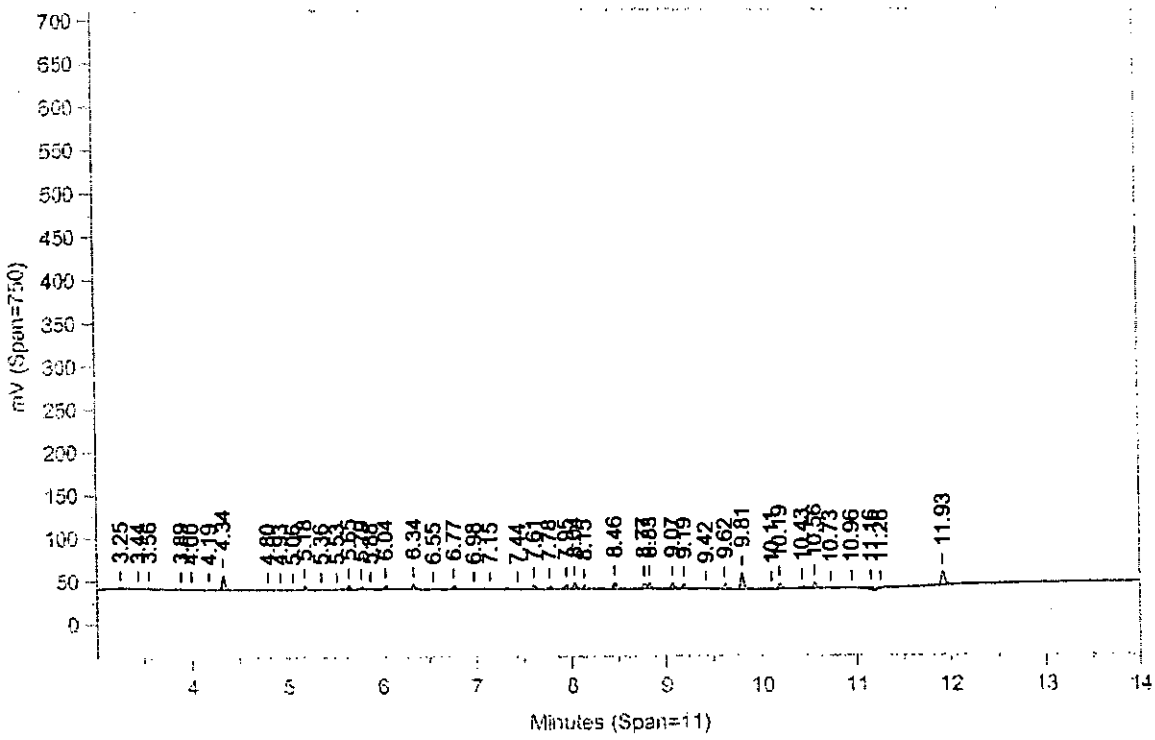
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 16949 | 4.079 | TCX | 4.06 | 24957 | 4.672 | TCX |
| 5.183 | 4762 | .927 | alpha-BHC | 4.961 | 8334 | 1.024 | alpha-BHC |
| 5.653 | 4885 | .969 | gamma-BHC | 5.478 | 7967 | 1.074 | gamma-BHC |
| 5.786 | 2964 | .989 | beta-BHC | 5.608 | 4428 | 1.093 | beta-BHC |
| 6.043 | 4566 | .984 | delta-BHC | 6.019 | 7322 | 1.064 | delta-BHC |
| 6.342 | 5713 | 1.043 | Heptachlor | 6.095 | 8513 | 1.122 | Heptachlor |
| 6.768 | 4244 | 1.02 | Aldrin | 6.54 | 6516 | 1.118 | Aldrin |
| 7.611 | 4630 | 1.037 | Hept. epoxide | 7.318 | 6989 | 1.084 | Hept. epoxide |
| 7.776 | 4320 | 1.005 | g. Chlordane | 7.569 | 6541 | 1.156 | g. Chlordane |
| 7.953 | 5150 | 1.199 | a. Chlordane | 7.761 | 6147 | 1.168 | a. Chlordane |
| 8.146 | 4292 | 1.088 | Endosulfan I | 7.837 | 5985 | 1.19 | Endosulfan I |
| 8.04 | 7136 | 2.022 | 4,4'-DDE | 7.984 | 9774 | 2.151 | 4,4'-DDE |
| 8.463 | 7555 | 2.091 | Dieldrin | 8.196 | 10103 | 2.255 | Dieldrin |
| . | 0 | . | o,p-DDD | 8.42 | 315 | .116 | o,p-DDD |
| 8.774 | 6964 | 2.162 | Endrin | 8.594 | 8536 | 2.229 | Endrin |
| 8.83 | 7062 | 2.5 | 4,4'-DDD | 8.734 | 7968 | 2.435 | 4,4'-DDD |
| 9.073 | 7211 | 2.095 | Endosulfan II | 8.872 | 8390 | 2.157 | Endosulfan II |
| 9.195 | 5895 | 2. | 4,4'-DDT | 9.135 | 6638 | 1.954 | 4,4'-DDT |
| 9.623 | 6137 | 2.451 | Endrin aldehyde | 9.306 | 6843 | 2.478 | Endrin aldehyde |
| 10.194 | 6450 | 2.088 | Endo. sulfate | 9.657 | 6400 | 2.113 | Endo. sulfate |
| 9.807 | 19341 | 11.301 | Methoxychlor | 10.015 | 18050 | 10.321 | Methoxychlor |
| 10.564 | 6762 | 1.994 | Endrin ketone | 10.353 | 7889 | 2.199 | Endrin ketone |
| 11.928 | 15715 | 4.72 | DCB | 12.076 | 16933 | 4.81 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.08A
Area File: C:\CPWIN\DATA1\1D16082B.08A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/22/2004 9:25:46 PM
File Reported On: 3/22/2004 at 9:25:52 PM

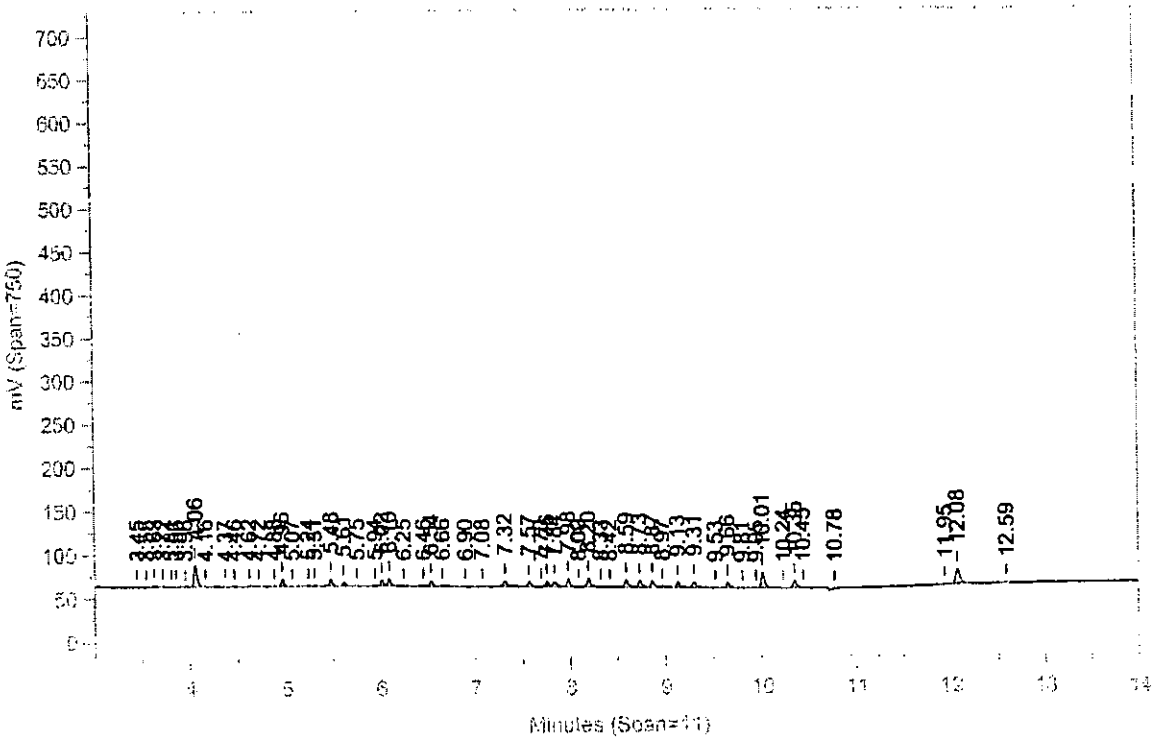
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.08R




C:\CPWIN\DATA1\1D16082B.08R



Sample Name: **MIXA20424B AAMIXA2AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 12:09:15pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.09R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.226 | | 0.0000 | 0.000 | 12108.8 | 0.716 | BB | 0.175 | 1150.25 | 0.150 |
| 2 | 3.408 | | 0.0000 | 0.000 | 736.0 | 0.044 | BB | 0.087 | 141.62 | 0.019 |
| 3 | 3.559 | | 0.0000 | 0.000 | 770.7 | 0.046 | BB | 0.027 | 474.29 | 0.062 |
| 4 | 3.895 | | 0.0000 | 0.000 | 833.8 | 0.049 | BB | 0.036 | 382.04 | 0.050 |
| 5 | 4.002 | | 0.0000 | 0.000 | 1713.8 | 0.101 | BB | 0.040 | 716.02 | 0.094 |
| 6 | 4.336 | TCX | 19.9011 | 8.541 | 169351.5 | 10.014 | BB | 0.035 | 81655.96 | 10.680 |
| 7 | 4.795 | | 0.0000 | 0.000 | 228.4 | 0.014 | BB | 0.051 | 75.19 | 0.010 |
| 8 | 4.927 | | 0.0000 | 0.000 | 2040.9 | 0.121 | BB | 0.033 | 1029.42 | 0.135 |
| 9 | 5.062 | | 0.0000 | 0.000 | 280.0 | 0.017 | BB | 0.038 | 121.78 | 0.016 |
| 10 | 5.184 | alpha-BHC | 4.9086 | 2.107 | 46335.9 | 2.740 | BB | 0.031 | 25009.77 | 3.271 |
| 11 | 5.360 | | 0.0000 | 0.000 | 310.5 | 0.018 | BB | 0.048 | 108.44 | 0.014 |
| 12 | 5.528 | | 0.0000 | 0.000 | 264.2 | 0.016 | BB | 0.034 | 128.01 | 0.017 |
| 13 | 5.655 | gamma-BHC | 5.0662 | 2.174 | 48154.0 | 2.847 | BB | 0.032 | 25395.50 | 3.322 |
| 14 | 5.786 | beta-BHC | 4.9506 | 2.125 | 29064.3 | 1.719 | BB | 0.033 | 14464.34 | 1.892 |
| 15 | 5.891 | | 0.0000 | 0.000 | 442.0 | 0.026 | BB | 0.032 | 228.71 | 0.030 |
| 16 | 6.044 | delta-BHC | 5.1306 | 2.202 | 44151.5 | 2.611 | BB | 0.031 | 23884.58 | 3.124 |
| 17 | 6.148 | | 0.0000 | 0.000 | 291.2 | 0.017 | BB | 0.033 | 145.00 | 0.019 |
| 18 | 6.260 | | 0.0000 | 0.000 | 135.8 | 0.008 | BB | 0.038 | 59.46 | 0.008 |
| 19 | 6.343 | Heptachlor | 5.1060 | 2.191 | 56009.4 | 3.312 | BB | 0.034 | 27632.19 | 3.614 |
| 20 | 6.548 | | 0.0000 | 0.000 | 12595.3 | 0.745 | BB | 0.033 | 6417.97 | 0.839 |
| 21 | 6.769 | Aldrin | 5.0518 | 2.168 | 42839.8 | 2.533 | BB | 0.034 | 20916.07 | 2.736 |
| 22 | 6.983 | | 0.0000 | 0.000 | 1253.7 | 0.074 | BB | 0.068 | 308.91 | 0.040 |
| 23 | 7.147 | | 0.0000 | 0.000 | 599.0 | 0.035 | BB | 0.035 | 281.27 | 0.037 |
| 24 | 7.243 | | 0.0000 | 0.000 | 1711.1 | 0.101 | BB | 0.104 | 273.36 | 0.036 |
| 25 | 7.441 | | 0.0000 | 0.000 | 341.8 | 0.020 | BB | 0.037 | 156.05 | 0.020 |
| 26 | 7.612 | Hept. epoxide | 4.9634 | 2.130 | 45381.1 | 2.683 | BV | 0.035 | 21769.93 | 2.847 |
| 27 | 7.777 | g. Chlordane | 4.9898 | 2.141 | 43674.4 | 2.582 | VB | 0.035 | 20936.53 | 2.738 |
| 28 | 7.955 | a. Chlordane | 5.0856 | 2.183 | 48039.6 | 2.841 | BV | 0.036 | 22075.04 | 2.887 |
| 29 | 8.041 | 4,4'-DDE | 9.9019 | 4.249 | 69574.3 | 4.114 | VV | 0.033 | 34780.49 | 4.549 |
| 30 | 8.147 | Endosulfan I | 5.0897 | 2.184 | 44591.7 | 2.637 | VV | 0.037 | 19959.31 | 2.611 |
| 31 | 8.465 | Dieldrin | 10.0685 | 4.321 | 76121.4 | 4.501 | VV | 0.035 | 36245.09 | 4.741 |
| 32 | 8.700 | | 0.0000 | 0.000 | 449.1 | 0.027 | VV | 0.041 | 181.92 | 0.024 |
| 33 | 8.776 | Endrin | 10.4727 | 4.494 | 67904.6 | 4.015 | VV | 0.034 | 33566.10 | 4.390 |
| 34 | 8.832 | 4,4'-DDD | 9.3538 | 4.014 | 60651.5 | 3.586 | VV | 0.037 | 27189.57 | 3.556 |
| 35 | 9.074 | Endosulfan II | 10.0812 | 4.326 | 73823.2 | 4.365 | VV | 0.036 | 33999.25 | 4.447 |
| 36 | 9.196 | 4,4'-DDT | 9.9727 | 4.280 | 60600.3 | 3.583 | VB | 0.035 | 28847.65 | 3.773 |
| 37 | 9.424 | | 0.0000 | 0.000 | 4866.1 | 0.288 | BB | 0.082 | 987.61 | 0.129 |
| 38 | 9.624 | Endrin aldehyde | 11.1930 | 4.804 | 65342.8 | 3.864 | BB | 0.038 | 28473.18 | 3.724 |
| 39 | 9.808 | Methoxychlor | 50.5545 | 21.696 | 192540.3 | 11.385 | BB | 0.038 | 85047.91 | 11.124 |
| 40 | 10.021 | Mirex | 0.3727 | 0.160 | 6156.9 | 0.364 | BB | 0.127 | 808.17 | 0.106 |
| 41 | 10.195 | Endo. sulfate | 10.0760 | 4.324 | 67708.5 | 4.004 | BB | 0.037 | 30229.34 | 3.954 |
| 42 | 10.383 | | 0.0000 | 0.000 | 471.4 | 0.028 | BB | 0.043 | 182.55 | 0.024 |
| 43 | 10.432 | | 0.0000 | 0.000 | 5268.5 | 0.312 | BB | 0.033 | 2659.37 | 0.348 |
| 44 | 10.565 | Endrin ketone | 9.9212 | 4.258 | 72790.3 | 4.304 | BB | 0.037 | 33154.44 | 4.337 |
| 45 | 10.726 | | 0.0000 | 0.000 | 664.9 | 0.039 | BB | 0.067 | 166.39 | 0.022 |
| 46 | 10.957 | | 0.0000 | 0.000 | 345.2 | 0.020 | BB | 0.032 | 178.08 | 0.023 |
| 47 | 11.160 | | 0.0000 | 0.000 | 14341.9 | 0.848 | BB | 0.089 | 2682.77 | 0.351 |
| 48 | 11.259 | | 0.0000 | 0.000 | 3447.4 | 0.204 | BB | 0.066 | 875.79 | 0.115 |
| 49 | 11.628 | | 0.0000 | 0.000 | 6639.6 | 0.393 | BB | 0.350 | 315.80 | 0.041 |
| 50 | 11.928 | DCB | 20.8025 | 8.928 | 184184.7 | 10.891 | BB | 0.045 | 68001.10 | 8.894 |
| 51 | 12.645 | | 0.0000 | 0.000 | 3054.4 | 0.181 | BB | 0.698 | 72.97 | 0.010 |

Total Area = 1691197.0, Total Amount = 233.014, Total Height = 764542.6, Sample Units = PPB

Sample Name: **MIXA20424B AAMIXA2AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 12:09:15pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: C:\CPWIN\DATA1\1D16082B.09R
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

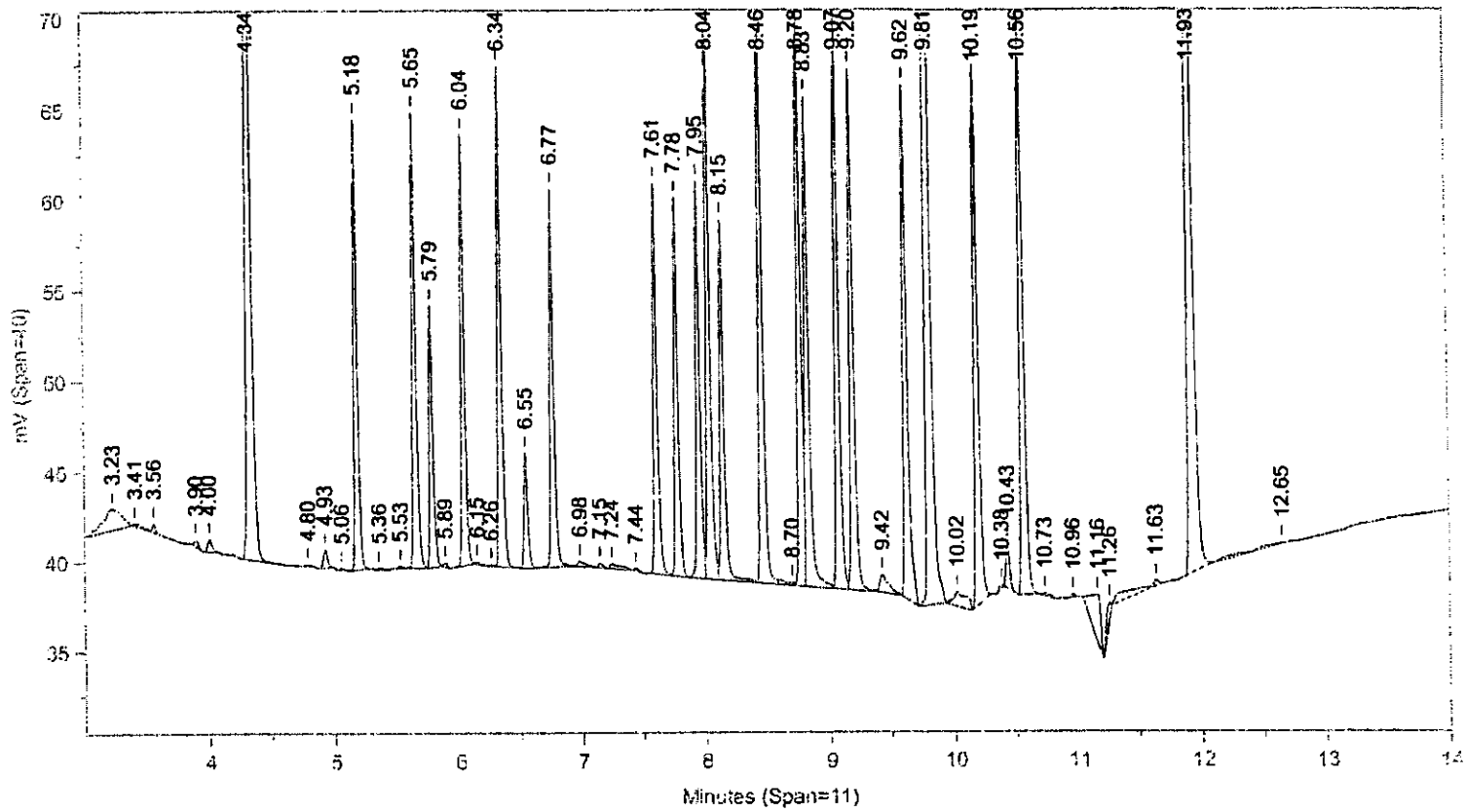
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.061 | | 0.0000 | 0.000 | 404.5 | 0.019 | BB | 0.047 | 144.86 | 0.015 |
| 2 | 3.453 | | 0.0000 | 0.000 | 841.8 | 0.039 | BB | 0.043 | 325.09 | 0.034 |
| 3 | 3.552 | | 0.0000 | 0.000 | 518.4 | 0.024 | BB | 0.041 | 209.35 | 0.022 |
| 4 | 3.632 | | 0.0000 | 0.000 | 3346.5 | 0.156 | BB | 0.044 | 1261.64 | 0.132 |
| 5 | 3.722 | | 0.0000 | 0.000 | 1674.6 | 0.078 | BB | 0.037 | 757.32 | 0.079 |
| 6 | 3.801 | | 0.0000 | 0.000 | 1040.6 | 0.049 | BB | 0.031 | 551.85 | 0.058 |
| 7 | 3.933 | | 0.0000 | 0.000 | 551.3 | 0.026 | BB | 0.073 | 125.30 | 0.013 |
| 8 | 4.061 | TCX | 21.1126 | 8.841 | 242096.0 | 11.304 | BB | 0.036 | 112735.10 | 11.752 |
| 9 | 4.276 | | 0.0000 | 0.000 | 488.1 | 0.023 | BB | 0.043 | 189.11 | 0.020 |
| 10 | 4.377 | | 0.0000 | 0.000 | 233.0 | 0.011 | BB | 0.031 | 126.93 | 0.013 |
| 11 | 4.468 | | 0.0000 | 0.000 | 1640.3 | 0.077 | BB | 0.066 | 416.24 | 0.043 |
| 12 | 4.607 | | 0.0000 | 0.000 | 3691.5 | 0.172 | BB | 0.038 | 1640.11 | 0.171 |
| 13 | 4.711 | | 0.0000 | 0.000 | 281.2 | 0.013 | BB | 0.035 | 134.17 | 0.014 |
| 14 | 4.816 | | 0.0000 | 0.000 | 324.1 | 0.015 | BB | 0.025 | 218.60 | 0.023 |
| 15 | 4.882 | | 0.0000 | 0.000 | 500.3 | 0.023 | BB | 0.030 | 273.89 | 0.029 |
| 16 | 4.963 | alpha-BHC | 5.3080 | 2.223 | 77239.6 | 3.606 | BB | 0.030 | 43317.87 | 4.516 |
| 17 | 5.063 | | 0.0000 | 0.000 | 300.9 | 0.014 | BB | 0.033 | 153.98 | 0.016 |
| 18 | 5.264 | | 0.0000 | 0.000 | 1066.0 | 0.050 | BB | 0.153 | 116.24 | 0.012 |
| 19 | 5.309 | | 0.0000 | 0.000 | 392.9 | 0.018 | BB | 0.026 | 252.99 | 0.026 |
| 20 | 5.381 | | 0.0000 | 0.000 | 275.8 | 0.013 | BB | 0.041 | 111.81 | 0.012 |
| 21 | 5.479 | gamma-BHC | 5.3798 | 2.253 | 73363.7 | 3.425 | BB | 0.030 | 40228.99 | 4.194 |
| 22 | 5.608 | beta-BHC | 5.1429 | 2.154 | 41730.2 | 1.948 | BB | 0.034 | 20480.38 | 2.135 |
| 23 | 5.752 | | 0.0000 | 0.000 | 798.0 | 0.037 | BB | 0.037 | 355.12 | 0.037 |
| 24 | 6.020 | delta-BHC | 5.4556 | 2.285 | 69629.9 | 3.251 | BV | 0.031 | 37764.91 | 3.937 |
| 25 | 6.096 | Heptachlor | 5.4154 | 2.268 | 82007.3 | 3.829 | VV | 0.033 | 40985.91 | 4.273 |
| 26 | 6.259 | | 0.0000 | 0.000 | 2800.3 | 0.131 | VB | 0.080 | 583.61 | 0.061 |
| 27 | 6.460 | | 0.0000 | 0.000 | 2985.3 | 0.139 | BV | 0.087 | 574.95 | 0.060 |
| 28 | 6.541 | Aldrin | 5.3884 | 2.256 | 60814.3 | 2.839 | VB | 0.032 | 31981.26 | 3.334 |
| 29 | 6.650 | | 0.0000 | 0.000 | 4439.3 | 0.207 | BB | 0.119 | 619.16 | 0.065 |
| 30 | 6.902 | | 0.0000 | 0.000 | 3783.9 | 0.177 | BB | 0.104 | 603.58 | 0.063 |
| 31 | 7.078 | | 0.0000 | 0.000 | 4908.5 | 0.229 | BB | 0.089 | 914.35 | 0.095 |
| 32 | 7.319 | Hept. epoxide | 5.2093 | 2.181 | 76766.8 | 3.584 | BV | 0.042 | 30261.26 | 3.155 |
| 33 | 7.570 | g. Chlordane | 5.3958 | 2.260 | 69289.8 | 3.235 | VV | 0.039 | 29961.05 | 3.123 |
| 34 | 7.762 | a. Chlordane | 5.3965 | 2.260 | 60900.6 | 2.843 | VV | 0.036 | 28346.39 | 2.955 |
| 35 | 7.838 | Endosulfan I | 5.3169 | 2.227 | 58166.2 | 2.716 | VV | 0.036 | 26755.08 | 2.789 |
| 36 | 7.985 | 4,4'-DDE | 10.3005 | 4.313 | 100660.9 | 4.700 | VV | 0.036 | 46814.78 | 4.880 |
| 37 | 8.197 | Dieldrin | 10.6993 | 4.480 | 102706.7 | 4.795 | VV | 0.035 | 48497.52 | 5.056 |
| 38 | 8.417 | o,p-DDD | 0.1517 | 0.064 | 1024.3 | 0.048 | VB | 0.052 | 327.51 | 0.034 |
| 39 | 8.595 | Endrin | 10.8845 | 4.558 | 87910.9 | 4.105 | BV | 0.035 | 41707.36 | 4.348 |
| 40 | 8.733 | 4,4'-DDD | 9.2869 | 3.889 | 68457.4 | 3.196 | VB | 0.036 | 31318.67 | 3.265 |
| 41 | 8.872 | Endosulfan II | 10.2870 | 4.308 | 88107.8 | 4.114 | BV | 0.037 | 39521.05 | 4.120 |
| 42 | 8.970 | | 0.0000 | 0.000 | 8813.6 | 0.412 | VB | 0.082 | 1787.03 | 0.186 |
| 43 | 9.136 | 4,4'-DDT | 9.7906 | 4.100 | 69746.5 | 3.256 | BV | 0.036 | 32661.48 | 3.405 |
| 44 | 9.306 | Endrin aldehyde | 11.1904 | 4.686 | 71689.9 | 3.347 | VB | 0.038 | 31379.54 | 3.271 |
| 45 | 9.658 | Endo. sulfate | 10.7304 | 4.493 | 74232.8 | 3.466 | BB | 0.037 | 33309.09 | 3.472 |
| 46 | 9.946 | | 0.0000 | 0.000 | 808.6 | 0.038 | BB | 0.029 | 467.35 | 0.049 |
| 47 | 10.015 | Methoxychlor | 49.4560 | 20.710 | 197389.2 | 9.216 | BB | 0.039 | 83911.34 | 8.748 |
| 48 | 10.237 | | 0.0000 | 0.000 | 869.2 | 0.041 | BB | 0.034 | 427.73 | 0.045 |
| 49 | 10.354 | Endrin ketone | 10.3054 | 4.315 | 88449.7 | 4.130 | BB | 0.040 | 36909.30 | 3.848 |
| 50 | 10.661 | | 0.0000 | 0.000 | 8516.5 | 0.398 | BB | 0.110 | 1295.12 | 0.135 |
| 51 | 10.785 | | 0.0000 | 0.000 | 3315.0 | 0.155 | BB | 0.071 | 775.09 | 0.081 |
| 52 | 11.023 | | 0.0000 | 0.000 | 3249.4 | 0.152 | BB | 1.481 | 36.56 | 0.004 |
| 53 | 11.167 | | 0.0000 | 0.000 | 600.1 | 0.028 | BB | 0.040 | 247.01 | 0.026 |
| 54 | 11.656 | | 0.0000 | 0.000 | 505.1 | 0.024 | BB | 0.039 | 217.31 | 0.023 |
| 55 | 12.076 | DCB | 21.1972 | 8.877 | 214937.4 | 10.035 | BB | 0.048 | 74015.30 | 7.716 |
| 56 | 12.580 | | 0.0000 | 0.000 | 496.6 | 0.023 | BB | 0.057 | 144.89 | 0.015 |

8644

Total Area = 2141779.0, Total Amount = 238.801, Total Height = 959249.6, Sample Units = PPB

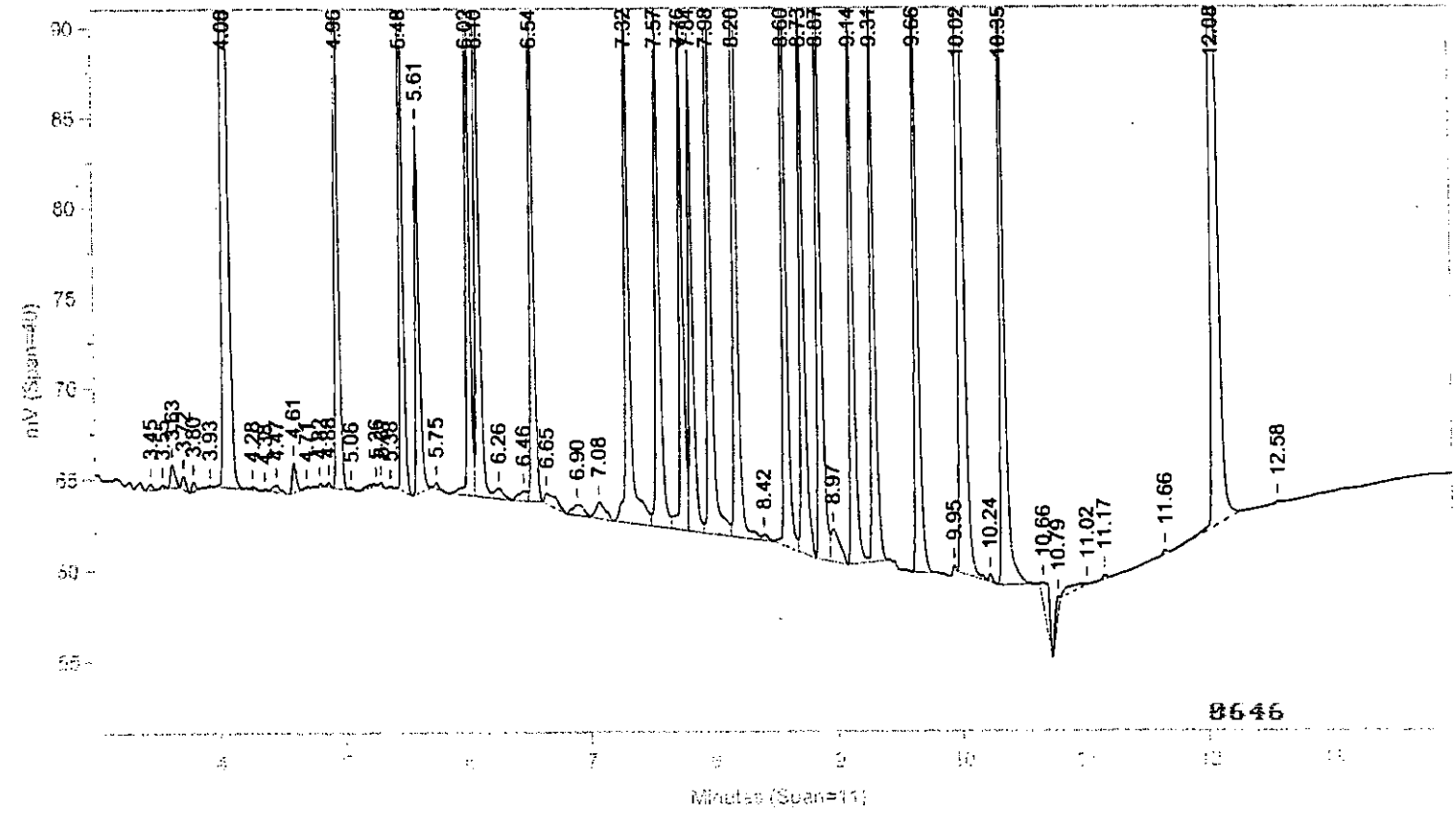
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.09R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 11:55:15 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.09R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 11:55:15 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

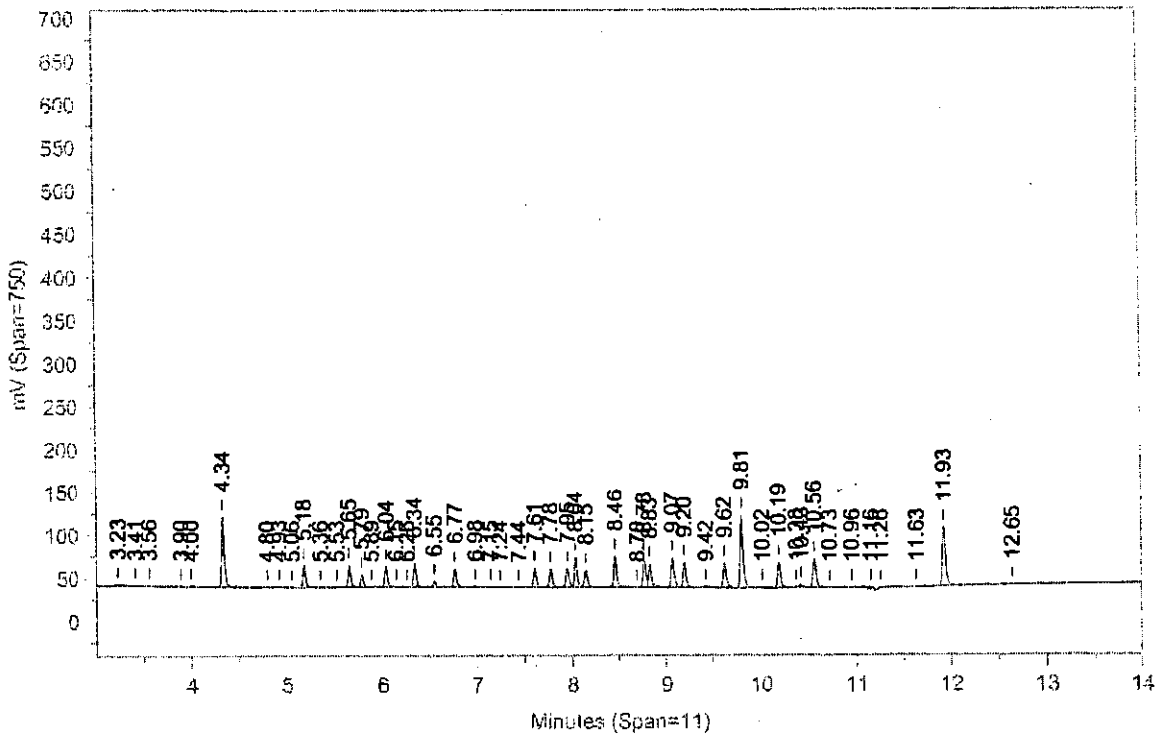
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 81656 | 19.901 | TCX | 4.061 | 112735 | 21.113 | TCX |
| 5.184 | 25010 | 4.909 | alpha-BHC | 4.963 | 43318 | 5.308 | alpha-BHC |
| 5.655 | 25396 | 5.066 | gamma-BHC | 5.479 | 40229 | 5.38 | gamma-BHC |
| 5.786 | 14464 | 4.951 | beta-BHC | 5.608 | 20480 | 5.143 | beta-BHC |
| 6.044 | 23885 | 5.131 | delta-BHC | 6.02 | 37765 | 5.456 | delta-BHC |
| 6.343 | 27632 | 5.106 | Heptachlor | 6.096 | 40986 | 5.415 | Heptachlor |
| 6.769 | 20916 | 5.052 | Aldrin | 6.541 | 31981 | 5.388 | Aldrin |
| 7.612 | 21770 | 4.963 | Hept. epoxide | 7.319 | 30261 | 5.209 | Hept. epoxide |
| 7.777 | 20937 | 4.99 | g. Chlordane | 7.57 | 29961 | 5.396 | g. Chlordane |
| 7.955 | 22075 | 5.086 | a. Chlordane | 7.762 | 28346 | 5.397 | a. Chlordane |
| 8.147 | 19959 | 5.09 | Endosulfan I | 7.838 | 26755 | 5.317 | Endosulfan I |
| 8.041 | 34780 | 9.902 | 4,4'-DDE | 7.985 | 46815 | 10.3 | 4,4'-DDE |
| 8.465 | 36245 | 10.068 | Dieldrin | 8.197 | 48498 | 10.699 | Dieldrin |
| . | 0 | . | o,p-DDD | 8.417 | 328 | .152 | o,p-DDD |
| 8.776 | 33566 | 10.473 | Endrin | 8.595 | 41707 | 10.884 | Endrin |
| 8.832 | 27190 | 9.354 | 4,4'-DDD | 8.733 | 31319 | 9.287 | 4,4'-DDD |
| 9.074 | 33999 | 10.081 | Endosulfan II | 8.872 | 39521 | 10.287 | Endosulfan II |
| 9.196 | 28848 | 9.973 | 4,4'-DDT | 9.136 | 32661 | 9.791 | 4,4'-DDT |
| 9.624 | 28473 | 11.193 | Endrin aldehyde | 9.306 | 31380 | 11.19 | Endrin aldehyde |
| 10.195 | 30229 | 10.076 | Endo. sulfate | 9.658 | 33309 | 10.73 | Endo. sulfate |
| 9.808 | 85048 | 50.554 | Methoxychlor | 10.015 | 83911 | 49.456 | Methoxychlor |
| 10.021 | 808 | .373 | Mirex | . | 0 | . | Mirex |
| 10.565 | 33154 | 9.921 | Endrin ketone | 10.354 | 36909 | 10.305 | Endrin ketone |
| 11.928 | 68001 | 20.802 | DCB | 12.076 | 74015 | 21.197 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.09A
Area File: C:\CPWIN\DATA1\1D16082B.09A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/22/2004 9:26:04 PM
File Reported On: 3/22/2004 at 9:26:10 PM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.09R

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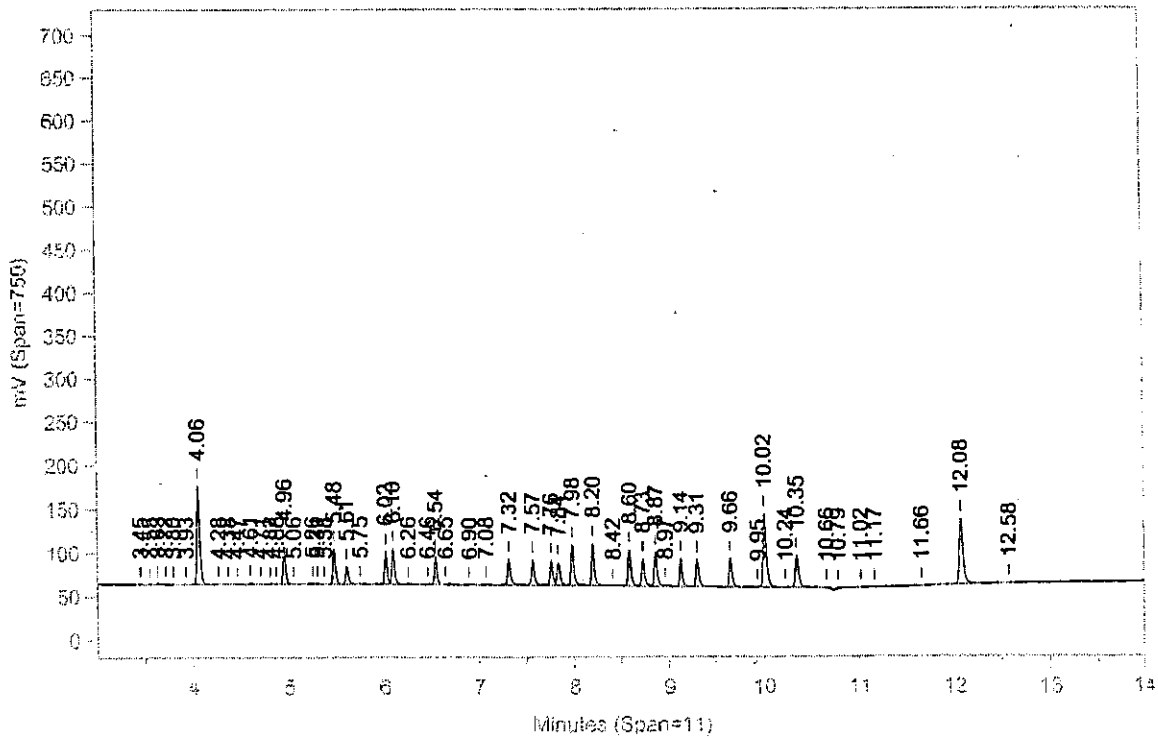


Sample Name: **MIXA30424B AAMIXA3AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 12:29:51pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.10R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.231 | | 0.0000 | 0.000 | 12150.6 | 0.389 | BB | 0.170 | 1194.07 | 0.083 |
| 2 | 3.419 | | 0.0000 | 0.000 | 700.9 | 0.022 | BB | 0.082 | 142.59 | 0.010 |
| 3 | 3.560 | | 0.0000 | 0.000 | 774.9 | 0.025 | BB | 0.027 | 471.67 | 0.033 |
| 4 | 3.894 | | 0.0000 | 0.000 | 844.1 | 0.027 | BB | 0.038 | 368.11 | 0.026 |
| 5 | 4.002 | | 0.0000 | 0.000 | 2459.6 | 0.079 | BB | 0.042 | 981.75 | 0.068 |
| 6 | 4.130 | | 0.0000 | 0.000 | 141.9 | 0.005 | BB | 0.024 | 97.76 | 0.007 |
| 7 | 4.336 | TCX | 38.0672 | 8.566 | 328182.6 | 10.515 | BB | 0.035 | 156187.90 | 10.835 |
| 8 | 4.766 | | 0.0000 | 0.000 | 279.6 | 0.009 | BB | 0.053 | 88.57 | 0.006 |
| 9 | 4.927 | | 0.0000 | 0.000 | 3751.3 | 0.120 | BB | 0.031 | 1998.58 | 0.139 |
| 10 | 4.989 | | 0.0000 | 0.000 | 274.8 | 0.009 | BB | 0.023 | 197.76 | 0.014 |
| 11 | 5.067 | | 0.0000 | 0.000 | 175.6 | 0.006 | BB | 0.036 | 81.31 | 0.006 |
| 12 | 5.185 | alpha-BHC | 10.0724 | 2.267 | 95367.1 | 3.056 | BB | 0.031 | 51498.90 | 3.573 |
| 13 | 5.528 | | 0.0000 | 0.000 | 339.2 | 0.011 | BB | 0.036 | 157.97 | 0.011 |
| 14 | 5.655 | gamma-BHC | 10.1750 | 2.290 | 96663.6 | 3.097 | BB | 0.031 | 51317.54 | 3.560 |
| 15 | 5.787 | beta-BHC | 9.7474 | 2.193 | 56619.7 | 1.814 | BB | 0.033 | 28174.10 | 1.955 |
| 16 | 5.892 | | 0.0000 | 0.000 | 834.0 | 0.027 | BB | 0.030 | 462.54 | 0.032 |
| 17 | 6.045 | delta-BHC | 10.3241 | 2.323 | 89550.5 | 2.869 | BB | 0.031 | 48721.65 | 3.380 |
| 18 | 6.143 | | 0.0000 | 0.000 | 480.7 | 0.015 | BB | 0.035 | 228.08 | 0.016 |
| 19 | 6.254 | | 0.0000 | 0.000 | 245.4 | 0.008 | BB | 0.038 | 108.49 | 0.008 |
| 20 | 6.343 | Heptachlor | 9.8898 | 2.225 | 108352.9 | 3.472 | BB | 0.034 | 53487.25 | 3.711 |
| 21 | 6.549 | | 0.0000 | 0.000 | 1884.0 | 0.060 | BB | 0.035 | 886.48 | 0.061 |
| 22 | 6.769 | Aldrin | 9.9939 | 2.249 | 82470.0 | 2.642 | BB | 0.033 | 41490.68 | 2.878 |
| 23 | 6.982 | | 0.0000 | 0.000 | 913.9 | 0.029 | BB | 0.068 | 222.75 | 0.015 |
| 24 | 7.146 | | 0.0000 | 0.000 | 358.6 | 0.011 | BB | 0.038 | 155.65 | 0.011 |
| 25 | 7.238 | | 0.0000 | 0.000 | 441.8 | 0.014 | BB | 0.034 | 217.28 | 0.015 |
| 26 | 7.612 | Hept. epoxide | 9.6289 | 2.167 | 87654.8 | 2.808 | BV | 0.035 | 41853.72 | 2.904 |
| 27 | 7.777 | g. Chlordane | 9.7858 | 2.202 | 84742.8 | 2.715 | VV | 0.035 | 40697.22 | 2.823 |
| 28 | 7.954 | a. Chlordane | 9.6420 | 2.170 | 89100.9 | 2.855 | VV | 0.035 | 41913.03 | 2.908 |
| 29 | 8.042 | 4,4'-DDE | 19.7707 | 4.449 | 137188.1 | 4.395 | VV | 0.033 | 69388.80 | 4.814 |
| 30 | 8.147 | Endosulfan I | 9.8020 | 2.206 | 83552.5 | 2.677 | VV | 0.036 | 38358.90 | 2.661 |
| 31 | 8.465 | Dieldrin | 19.7961 | 4.455 | 147633.1 | 4.730 | VV | 0.034 | 71407.39 | 4.954 |
| 32 | 8.606 | o,p-DDT | 0.2300 | 0.052 | 1052.8 | 0.034 | VV | 0.048 | 362.91 | 0.025 |
| 33 | 8.775 | Endrin | 20.2584 | 4.559 | 131908.3 | 4.226 | VV | 0.034 | 65554.84 | 4.548 |
| 34 | 8.832 | 4,4'-DDD | 18.1569 | 4.086 | 114164.6 | 3.658 | VV | 0.036 | 52672.60 | 3.654 |
| 35 | 9.073 | Endosulfan II | 19.5108 | 4.390 | 141646.7 | 4.538 | VV | 0.036 | 65559.95 | 4.548 |
| 36 | 9.196 | 4,4'-DDT | 19.6208 | 4.415 | 118360.3 | 3.792 | VB | 0.035 | 56752.11 | 3.937 |
| 37 | 9.423 | | 0.0000 | 0.000 | 1476.5 | 0.047 | BB | 0.040 | 613.70 | 0.043 |
| 38 | 9.477 | | 0.0000 | 0.000 | 624.7 | 0.020 | BB | 0.036 | 291.97 | 0.020 |
| 39 | 9.623 | Endrin aldehyde | 20.3215 | 4.573 | 121977.0 | 3.908 | BB | 0.038 | 52935.66 | 3.672 |
| 40 | 9.807 | Methoxychlor | 93.6474 | 21.073 | 356027.1 | 11.407 | BB | 0.038 | 156638.60 | 10.866 |
| 41 | 9.987 | | 0.0000 | 0.000 | 211.4 | 0.007 | BB | 0.042 | 83.00 | 0.006 |
| 42 | 10.194 | Endo. sulfate | 19.2349 | 4.328 | 127215.5 | 4.076 | BB | 0.037 | 57265.83 | 3.973 |
| 43 | 10.368 | | 0.0000 | 0.000 | 1454.5 | 0.047 | BB | 0.032 | 749.95 | 0.052 |
| 44 | 10.432 | | 0.0000 | 0.000 | 4155.5 | 0.133 | BB | 0.033 | 2077.82 | 0.144 |
| 45 | 10.564 | Endrin ketone | 19.2988 | 4.343 | 143370.3 | 4.594 | BB | 0.037 | 64061.76 | 4.444 |
| 46 | 10.726 | | 0.0000 | 0.000 | 502.7 | 0.016 | BB | 0.043 | 193.93 | 0.013 |
| 47 | 10.956 | | 0.0000 | 0.000 | 166.5 | 0.005 | BB | 0.029 | 94.56 | 0.007 |
| 48 | 11.106 | | 0.0000 | 0.000 | 306.1 | 0.010 | BB | 0.069 | 73.58 | 0.005 |
| 49 | 11.626 | | 0.0000 | 0.000 | 4112.4 | 0.132 | BB | 0.144 | 476.86 | 0.033 |
| 50 | 11.926 | DCB | 37.4197 | 8.420 | 338276.1 | 10.838 | BB | 0.046 | 122472.40 | 8.496 |

8649

Total Area = 3121138.0, Total Amount = 444.395, Total Height = 1441491.0, Sample Units = PPB

Sample Name: **MIXA30424B AAMIXA3AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 12:29:51pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.10R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

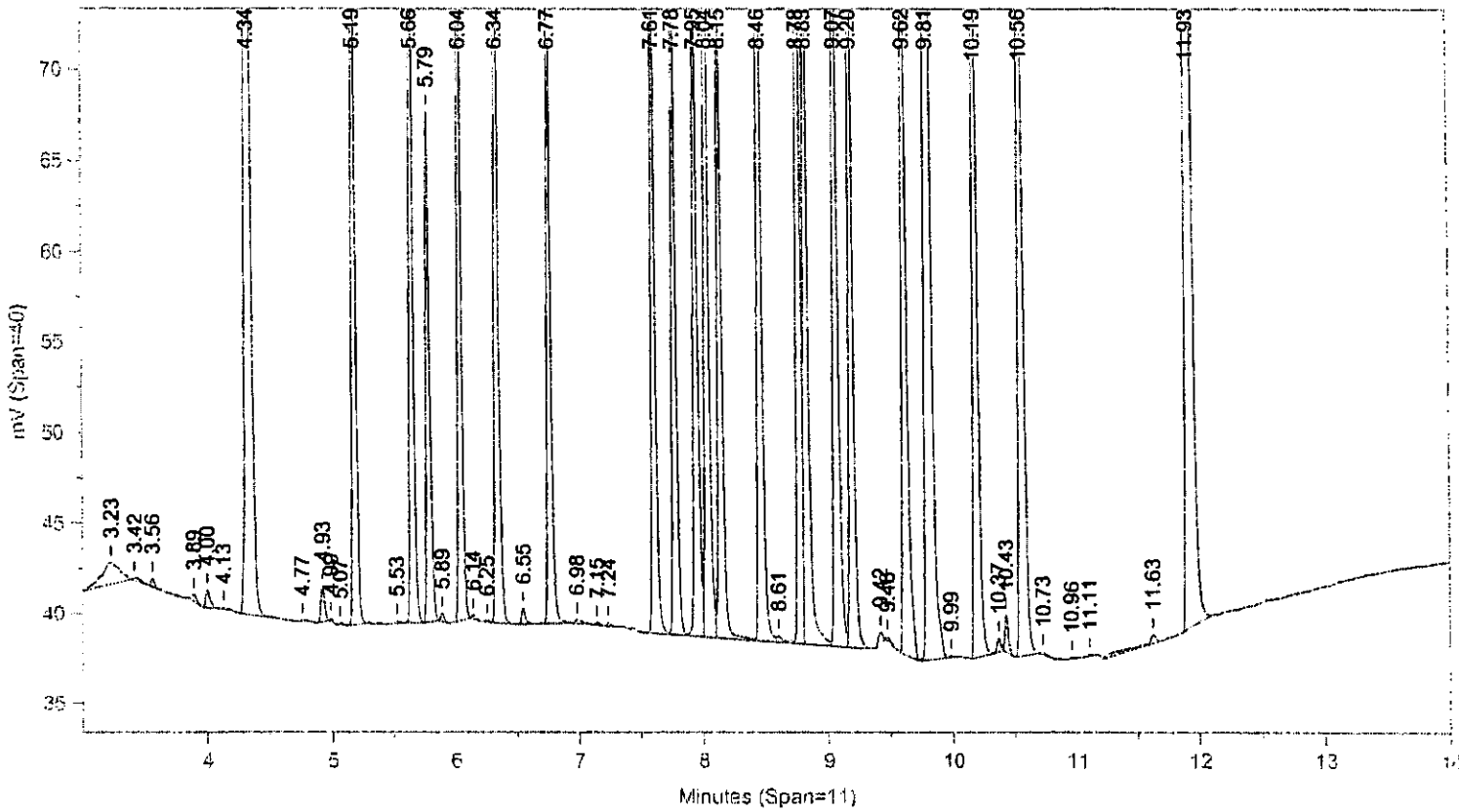
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.455 | | 0.0000 | 0.000 | 870.5 | 0.022 | BB | 0.045 | 319.96 | 0.018 |
| 2 | 3.548 | | 0.0000 | 0.000 | 730.3 | 0.018 | BB | 0.040 | 307.92 | 0.017 |
| 3 | 3.632 | | 0.0000 | 0.000 | 3069.7 | 0.077 | BB | 0.043 | 1186.13 | 0.066 |
| 4 | 3.718 | | 0.0000 | 0.000 | 1567.2 | 0.039 | BB | 0.038 | 695.08 | 0.038 |
| 5 | 3.798 | | 0.0000 | 0.000 | 1665.8 | 0.042 | BB | 0.030 | 934.46 | 0.052 |
| 6 | 3.940 | | 0.0000 | 0.000 | 484.8 | 0.012 | BB | 0.067 | 120.93 | 0.007 |
| 7 | 4.061 | TCX | 38.3946 | 8.548 | 459772.5 | 11.528 | BB | 0.037 | 207834.20 | 11.489 |
| 8 | 4.276 | | 0.0000 | 0.000 | 430.3 | 0.011 | BB | 0.038 | 187.76 | 0.010 |
| 9 | 4.467 | | 0.0000 | 0.000 | 1629.5 | 0.041 | BB | 0.072 | 374.95 | 0.021 |
| 10 | 4.606 | | 0.0000 | 0.000 | 6642.0 | 0.167 | BB | 0.035 | 3158.85 | 0.175 |
| 11 | 4.711 | | 0.0000 | 0.000 | 131.9 | 0.003 | BB | 0.030 | 73.60 | 0.004 |
| 12 | 4.817 | | 0.0000 | 0.000 | 744.7 | 0.019 | BB | 0.027 | 456.47 | 0.025 |
| 13 | 4.882 | | 0.0000 | 0.000 | 557.0 | 0.014 | BB | 0.027 | 340.42 | 0.019 |
| 14 | 4.963 | alpha-BHC | 10.3858 | 2.312 | 157641.9 | 3.953 | BB | 0.031 | 85914.48 | 4.749 |
| 15 | 5.264 | | 0.0000 | 0.000 | 1414.5 | 0.035 | BB | 0.161 | 146.32 | 0.008 |
| 16 | 5.480 | gamma-BHC | 10.4388 | 2.324 | 149237.8 | 3.742 | BB | 0.031 | 79258.80 | 4.381 |
| 17 | 5.609 | beta-BHC | 9.7910 | 2.180 | 79888.2 | 2.003 | BB | 0.034 | 38878.01 | 2.149 |
| 18 | 5.751 | | 0.0000 | 0.000 | 1551.4 | 0.039 | BB | 0.035 | 737.17 | 0.041 |
| 19 | 5.934 | | 0.0000 | 0.000 | 481.4 | 0.012 | BB | 0.051 | 156.46 | 0.009 |
| 20 | 6.020 | delta-BHC | 10.5135 | 2.341 | 134714.2 | 3.378 | BV | 0.030 | 74194.31 | 4.101 |
| 21 | 6.096 | Heptachlor | 10.1327 | 2.256 | 156153.5 | 3.915 | VV | 0.034 | 77584.28 | 4.289 |
| 22 | 6.250 | | 0.0000 | 0.000 | 1798.3 | 0.045 | VB | 0.064 | 467.06 | 0.026 |
| 23 | 6.461 | | 0.0000 | 0.000 | 2483.3 | 0.062 | BV | 0.078 | 531.05 | 0.029 |
| 24 | 6.542 | Aldrin | 10.4323 | 2.323 | 121099.7 | 3.036 | VB | 0.032 | 62991.76 | 3.482 |
| 25 | 6.703 | | 0.0000 | 0.000 | 2744.8 | 0.069 | BB | 0.094 | 488.44 | 0.027 |
| 26 | 6.900 | | 0.0000 | 0.000 | 2964.5 | 0.074 | BB | 0.095 | 517.38 | 0.029 |
| 27 | 7.081 | | 0.0000 | 0.000 | 4407.2 | 0.111 | BB | 0.075 | 980.46 | 0.054 |
| 28 | 7.256 | | 0.0000 | 0.000 | 1732.5 | 0.043 | BV | 0.043 | 665.71 | 0.037 |
| 29 | 7.319 | Hept. epoxide | 9.5783 | 2.132 | 123740.7 | 3.103 | VV | 0.037 | 56352.80 | 3.115 |
| 30 | 7.570 | g. Chlordane | 9.8117 | 2.184 | 118717.6 | 2.977 | VV | 0.036 | 55458.51 | 3.066 |
| 31 | 7.763 | a. Chlordane | 10.0715 | 2.242 | 111145.5 | 2.787 | VV | 0.034 | 53759.93 | 2.972 |
| 32 | 7.838 | Endosulfan I | 9.9705 | 2.220 | 109488.1 | 2.745 | VV | 0.036 | 50850.02 | 2.811 |
| 33 | 7.985 | 4,4'-DDE | 20.0031 | 4.453 | 193215.0 | 4.845 | VV | 0.035 | 91408.72 | 5.053 |
| 34 | 8.198 | Dieldrin | 20.5651 | 4.578 | 198407.3 | 4.975 | VV | 0.035 | 94774.04 | 5.239 |
| 35 | 8.420 | o,p-DDD | 0.1744 | 0.039 | 764.4 | 0.019 | VB | 0.045 | 283.46 | 0.016 |
| 36 | 8.539 | | 0.0000 | 0.000 | 127.9 | 0.003 | BB | 0.036 | 59.75 | 0.003 |
| 37 | 8.595 | Endrin | 20.7671 | 4.623 | 167997.9 | 4.212 | BV | 0.035 | 81122.45 | 4.484 |
| 38 | 8.734 | 4,4'-DDD | 17.9577 | 3.998 | 128298.9 | 3.217 | VV | 0.035 | 60303.82 | 3.333 |
| 39 | 8.872 | Endosulfan II | 19.6680 | 4.379 | 177410.8 | 4.448 | VB | 0.039 | 75600.46 | 4.179 |
| 40 | 9.136 | 4,4'-DDT | 19.3522 | 4.308 | 136696.9 | 3.428 | BV | 0.036 | 64145.26 | 3.546 |
| 41 | 9.306 | Endrin aldehyde | 20.5764 | 4.581 | 136343.4 | 3.419 | VV | 0.038 | 59153.36 | 3.270 |
| 42 | 9.426 | | 0.0000 | 0.000 | 318.2 | 0.008 | VB | 0.021 | 247.30 | 0.014 |
| 43 | 9.463 | | 0.0000 | 0.000 | 860.6 | 0.022 | BB | 0.023 | 632.25 | 0.035 |
| 44 | 9.658 | Endo. sulfate | 20.7043 | 4.609 | 150718.3 | 3.779 | BB | 0.039 | 65216.57 | 3.605 |
| 45 | 10.014 | Methoxychlor | 92.8032 | 20.661 | 373489.7 | 9.365 | BB | 0.040 | 155542.20 | 8.598 |
| 46 | 10.176 | | 0.0000 | 0.000 | 459.9 | 0.012 | BB | 0.023 | 333.92 | 0.018 |
| 47 | 10.236 | | 0.0000 | 0.000 | 1460.1 | 0.037 | BB | 0.031 | 778.11 | 0.043 |
| 48 | 10.353 | Endrin ketone | 19.3538 | 4.309 | 162374.3 | 4.071 | BB | 0.039 | 69664.98 | 3.851 |
| 49 | 10.660 | | 0.0000 | 0.000 | 1043.1 | 0.026 | BB | 0.070 | 248.32 | 0.014 |
| 50 | 10.787 | | 0.0000 | 0.000 | 1374.6 | 0.034 | BB | 0.063 | 362.35 | 0.020 |
| 51 | 11.648 | | 0.0000 | 0.000 | 1136.4 | 0.028 | BB | 0.041 | 456.64 | 0.025 |
| 52 | 12.074 | DCB | 37.7349 | 8.401 | 394704.8 | 9.897 | BB | 0.050 | 132602.50 | 7.330 |
| 53 | 12.580 | | 0.0000 | 0.000 | 1242.8 | 0.031 | BB | 0.122 | 170.32 | 0.009 |

Total Area = 3988147.0, Total Amount = 449.181, Total Height = 1809031.0, Sample Units = PPB

6656

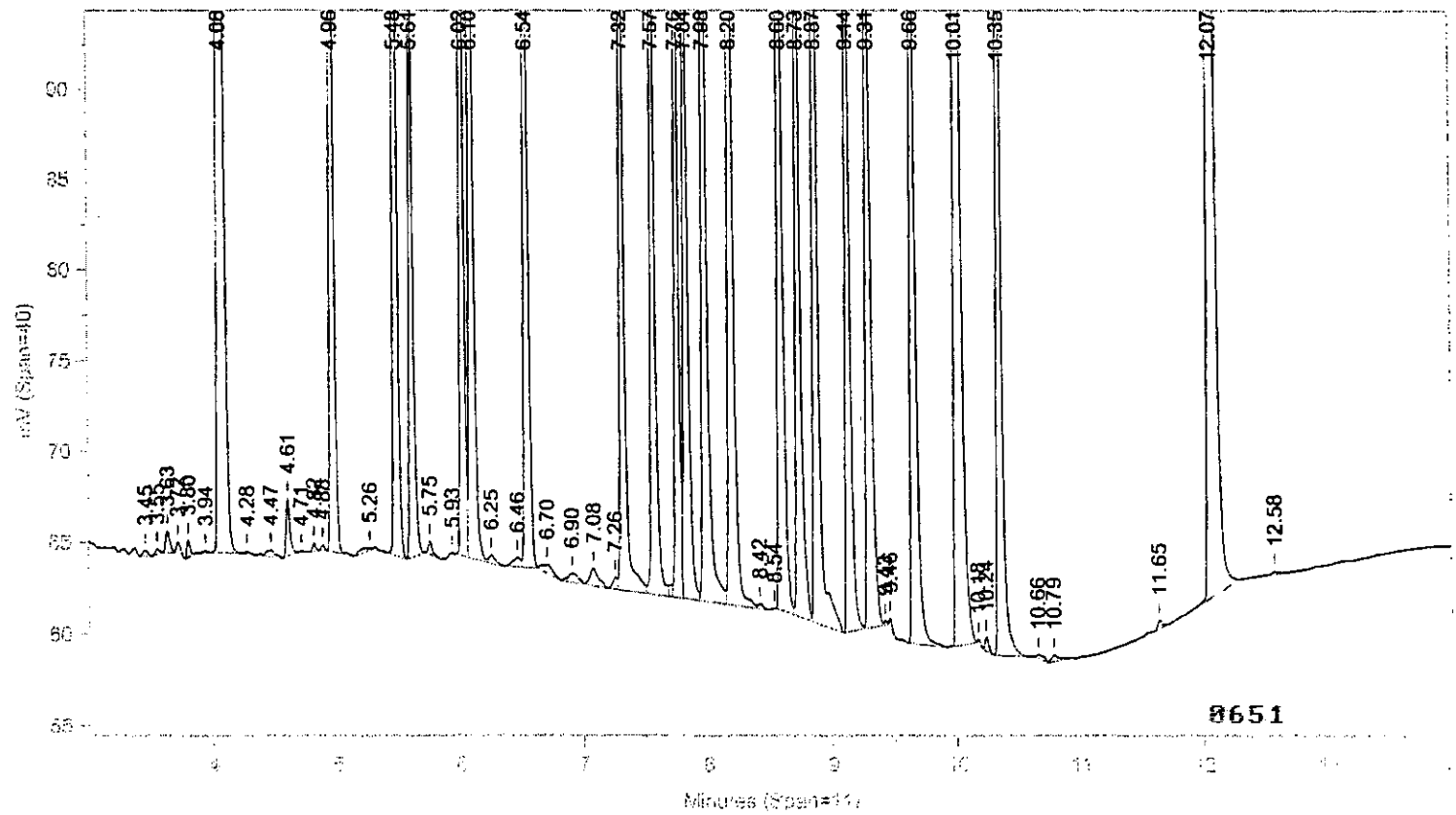
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.10R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 12:15:51 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.10R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 12:15:51 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

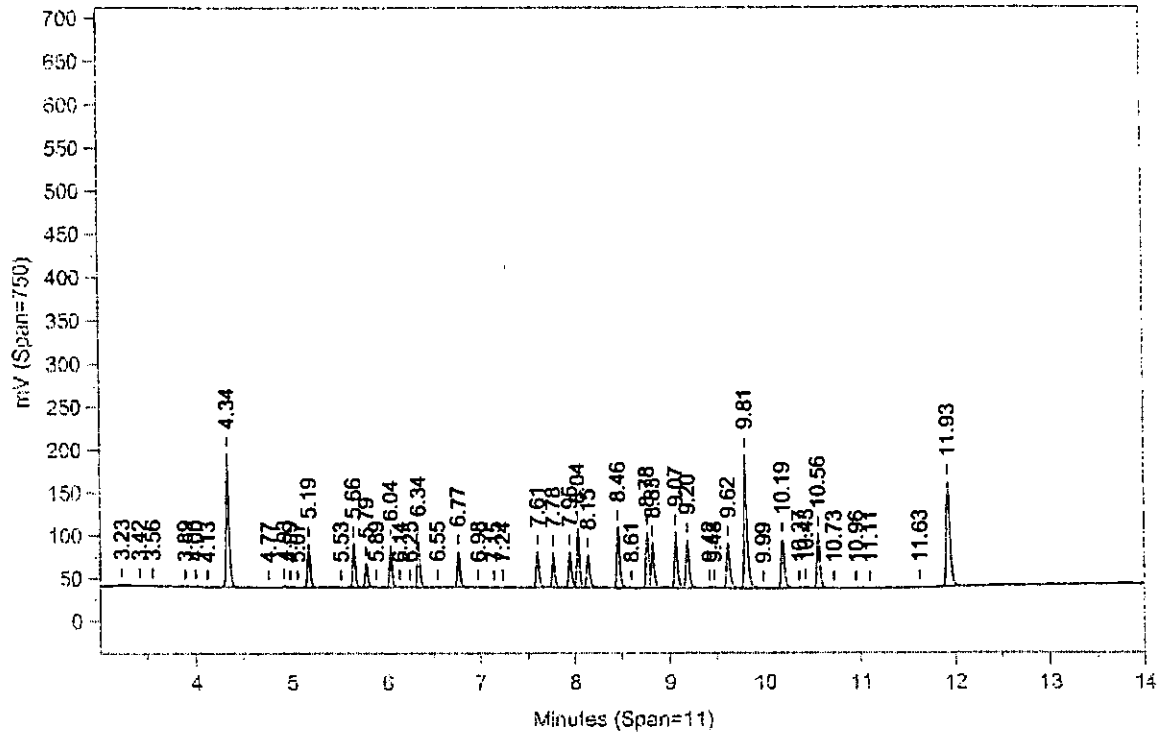
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 156188 | 38.067 | TCX | 4.061 | 207834 | 38.395 | TCX |
| 5.185 | 51499 | 10.072 | alpha-BHC | 4.963 | 85914 | 10.386 | alpha-BHC |
| 5.655 | 51318 | 10.175 | gamma-BHC | 5.48 | 79259 | 10.439 | gamma-BHC |
| 5.787 | 28174 | 9.747 | beta-BHC | 5.609 | 38878 | 9.791 | beta-BHC |
| 6.045 | 48722 | 10.324 | delta-BHC | 6.02 | 74194 | 10.513 | delta-BHC |
| 6.343 | 53487 | 9.89 | Heptachlor | 6.096 | 77584 | 10.133 | Heptachlor |
| 6.769 | 41491 | 9.994 | Aldrin | 6.542 | 62992 | 10.432 | Aldrin |
| 7.612 | 41854 | 9.629 | Hept. epoxide | 7.319 | 56353 | 9.578 | Hept. epoxide |
| 7.777 | 40697 | 9.786 | g. Chlordane | 7.57 | 55459 | 9.812 | g. Chlordane |
| 7.954 | 41913 | 9.642 | a. Chlordane | 7.763 | 53760 | 10.071 | a. Chlordane |
| 8.147 | 38359 | 9.802 | Endosulfan I | 7.838 | 50850 | 9.97 | Endosulfan I |
| 8.042 | 69389 | 19.771 | 4,4'-DDE | 7.985 | 91409 | 20.003 | 4,4'-DDE |
| 8.465 | 71407 | 19.796 | Dieldrin | 8.198 | 94774 | 20.565 | Dieldrin |
| . | 0 | . | o,p-DDD | 8.42 | 283 | .174 | o,p-DDD |
| 8.775 | 65555 | 20.258 | Endrin | 8.595 | 81122 | 20.767 | Endrin |
| 8.606 | 363 | .23 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.832 | 52673 | 18.157 | 4,4'-DDD | 8.734 | 60304 | 17.958 | 4,4'-DDD |
| 9.073 | 65560 | 19.511 | Endosulfan II | 8.872 | 75600 | 19.668 | Endosulfan II |
| 9.196 | 56752 | 19.621 | 4,4'-DDT | 9.136 | 64145 | 19.352 | 4,4'-DDT |
| 9.623 | 52936 | 20.322 | Endrin aldehyde | 9.306 | 59153 | 20.576 | Endrin aldehyde |
| 10.194 | 57266 | 19.235 | Endo. sulfate | 9.658 | 65217 | 20.704 | Endo. sulfate |
| 9.807 | 156639 | 93.647 | Methoxychlor | 10.014 | 155542 | 92.803 | Methoxychlor |
| 10.564 | 64062 | 19.299 | Endrin ketone | 10.353 | 69665 | 19.354 | Endrin ketone |
| 11.926 | 122472 | 37.42 | DCB | 12.074 | 132602 | 37.735 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.10A
Area File: C:\CPWIN\DATA1\1D16082B.10A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/22/2004 9:26:20 PM
File Reported On: 3/22/2004 at 9:26:27 PM

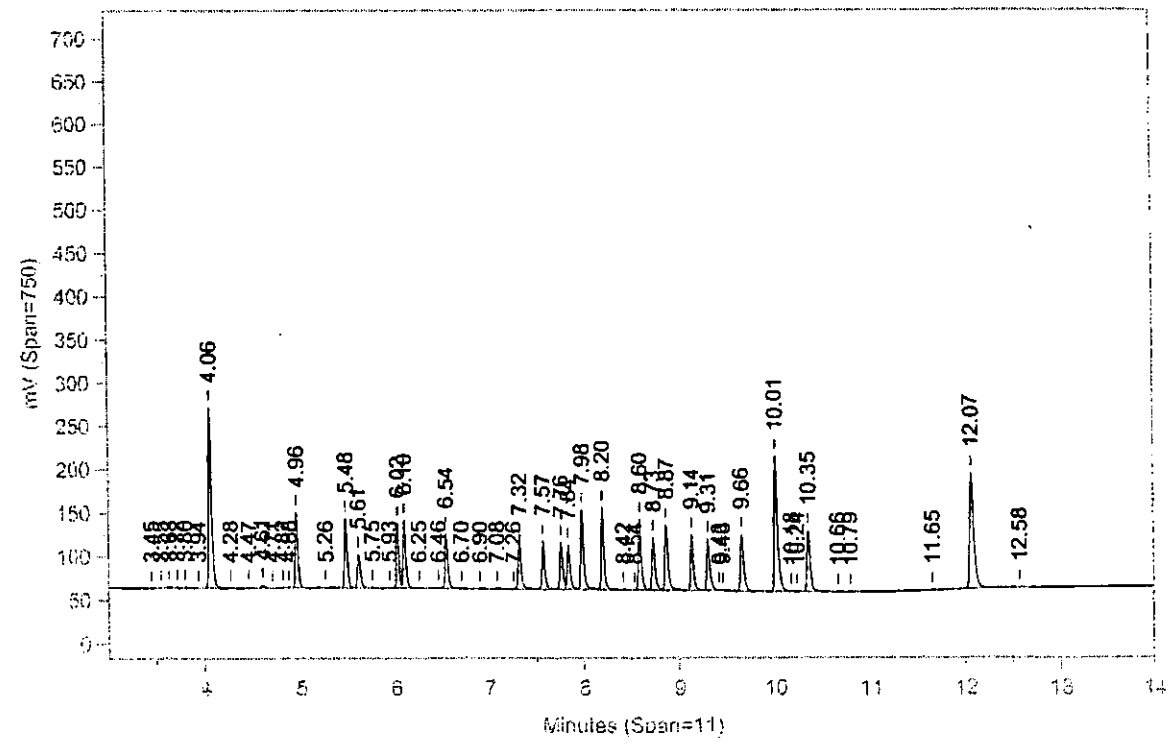
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.10R




C:\CPWIN\DATA1\1D16082B.10R



Sample Name: **MIXA40424B AAMIXA4AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 12:50:28pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.11R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.215 | | 0.0000 | 0.000 | 12315.7 | 0.261 | BB | 0.138 | 1485.19 | 0.068 |
| 2 | 3.404 | | 0.0000 | 0.000 | 134.4 | 0.003 | BB | 0.030 | 73.67 | 0.003 |
| 3 | 3.560 | | 0.0000 | 0.000 | 1180.1 | 0.025 | BB | 0.028 | 702.54 | 0.032 |
| 4 | 3.896 | | 0.0000 | 0.000 | 1113.8 | 0.024 | BB | 0.039 | 473.31 | 0.022 |
| 5 | 4.003 | | 0.0000 | 0.000 | 2974.5 | 0.063 | BB | 0.037 | 1345.39 | 0.062 |
| 6 | 4.336 | TCX | 56.7379 | 8.446 | 488163.2 | 10.358 | BB | 0.035 | 232489.60 | 10.655 |
| 7 | 4.796 | | 0.0000 | 0.000 | 278.0 | 0.006 | BB | 0.053 | 87.29 | 0.004 |
| 8 | 4.927 | | 0.0000 | 0.000 | 5692.3 | 0.121 | BB | 0.031 | 3042.76 | 0.139 |
| 9 | 4.990 | | 0.0000 | 0.000 | 431.1 | 0.009 | BB | 0.024 | 301.21 | 0.014 |
| 10 | 5.062 | | 0.0000 | 0.000 | 257.3 | 0.005 | BB | 0.031 | 139.10 | 0.006 |
| 11 | 5.186 | alpha-BHC | 15.9419 | 2.373 | 150373.4 | 3.191 | BB | 0.031 | 81593.52 | 3.740 |
| 12 | 5.363 | | 0.0000 | 0.000 | 389.8 | 0.008 | BB | 0.046 | 142.03 | 0.007 |
| 13 | 5.527 | | 0.0000 | 0.000 | 402.5 | 0.009 | BB | 0.038 | 175.62 | 0.008 |
| 14 | 5.656 | gamma-BHC | 15.7980 | 2.352 | 150846.3 | 3.201 | BB | 0.031 | 80140.16 | 3.673 |
| 15 | 5.787 | beta-BHC | 14.6645 | 2.183 | 85263.4 | 1.809 | BB | 0.034 | 42065.73 | 1.928 |
| 16 | 5.893 | | 0.0000 | 0.000 | 1189.3 | 0.025 | BB | 0.030 | 669.89 | 0.031 |
| 17 | 6.045 | delta-BHC | 16.0793 | 2.394 | 141323.1 | 2.999 | BB | 0.031 | 76653.39 | 3.513 |
| 18 | 6.143 | | 0.0000 | 0.000 | 552.7 | 0.012 | BB | 0.029 | 320.57 | 0.015 |
| 19 | 6.255 | | 0.0000 | 0.000 | 196.1 | 0.004 | BB | 0.035 | 94.07 | 0.004 |
| 20 | 6.343 | Heptachlor | 14.9094 | 2.219 | 163914.7 | 3.478 | BB | 0.034 | 80652.73 | 3.696 |
| 21 | 6.551 | | 0.0000 | 0.000 | 517.6 | 0.011 | BB | 0.044 | 194.11 | 0.009 |
| 22 | 6.770 | Aldrin | 15.3422 | 2.284 | 126104.4 | 2.676 | BB | 0.033 | 63814.05 | 2.925 |
| 23 | 6.982 | | 0.0000 | 0.000 | 1115.8 | 0.024 | BB | 0.062 | 297.67 | 0.014 |
| 24 | 7.149 | | 0.0000 | 0.000 | 527.8 | 0.011 | BB | 0.035 | 251.18 | 0.012 |
| 25 | 7.239 | | 0.0000 | 0.000 | 649.4 | 0.014 | BB | 0.034 | 321.22 | 0.015 |
| 26 | 7.612 | Hept. epoxide | 14.6713 | 2.184 | 131717.5 | 2.795 | BV | 0.035 | 63275.43 | 2.900 |
| 27 | 7.776 | g. Chlordane | 14.9078 | 2.219 | 127494.3 | 2.705 | VV | 0.034 | 61608.27 | 2.824 |
| 28 | 7.954 | a. Chlordane | 14.4968 | 2.158 | 132388.9 | 2.809 | VV | 0.035 | 63093.64 | 2.892 |
| 29 | 8.041 | 4,4'-DDE | 30.7705 | 4.581 | 211494.9 | 4.488 | VV | 0.033 | 107811.30 | 4.941 |
| 30 | 8.147 | Endosulfan I | 14.8385 | 2.209 | 124859.3 | 2.649 | VV | 0.036 | 58010.70 | 2.659 |
| 31 | 8.465 | Dieldrin | 30.6534 | 4.563 | 225071.3 | 4.776 | VV | 0.034 | 110610.60 | 5.070 |
| 32 | 8.607 | o,p-DDT | 0.3700 | 0.055 | 862.4 | 0.018 | VB | 0.037 | 384.93 | 0.018 |
| 33 | 8.700 | | 0.0000 | 0.000 | 399.6 | 0.008 | BV | 0.029 | 226.42 | 0.010 |
| 34 | 8.775 | Endrin | 30.9530 | 4.608 | 202168.6 | 4.290 | VV | 0.033 | 100944.10 | 4.626 |
| 35 | 8.832 | 4,4'-DDD | 28.3484 | 4.220 | 174949.7 | 3.712 | VV | 0.036 | 81507.87 | 3.736 |
| 36 | 9.073 | Endosulfan II | 29.4426 | 4.383 | 213907.3 | 4.539 | VV | 0.036 | 98570.48 | 4.518 |
| 37 | 9.196 | 4,4'-DDT | 30.4721 | 4.536 | 181949.4 | 3.861 | VB | 0.035 | 87735.33 | 4.021 |
| 38 | 9.422 | | 0.0000 | 0.000 | 1596.6 | 0.034 | BB | 0.040 | 668.24 | 0.031 |
| 39 | 9.477 | | 0.0000 | 0.000 | 638.9 | 0.014 | BB | 0.028 | 375.26 | 0.017 |
| 40 | 9.622 | Endrin aldehyde | 29.9880 | 4.464 | 182182.0 | 3.866 | BB | 0.038 | 79282.86 | 3.634 |
| 41 | 9.806 | Methoxychlor | 139.9014 | 20.826 | 524914.0 | 11.138 | BB | 0.038 | 231587.90 | 10.614 |
| 42 | 10.194 | Endo. sulfate | 29.2986 | 4.361 | 193973.6 | 4.116 | BB | 0.037 | 86704.82 | 3.974 |
| 43 | 10.367 | | 0.0000 | 0.000 | 2174.1 | 0.046 | BB | 0.033 | 1092.77 | 0.050 |
| 44 | 10.431 | | 0.0000 | 0.000 | 5399.5 | 0.115 | BB | 0.033 | 2759.05 | 0.126 |
| 45 | 10.563 | Endrin ketone | 29.8819 | 4.448 | 218292.5 | 4.632 | BB | 0.037 | 98307.82 | 4.506 |
| 46 | 10.727 | | 0.0000 | 0.000 | 643.3 | 0.014 | BB | 0.039 | 278.14 | 0.013 |
| 47 | 10.957 | | 0.0000 | 0.000 | 732.2 | 0.016 | BB | 0.045 | 272.25 | 0.012 |
| 48 | 11.158 | | 0.0000 | 0.000 | 15865.0 | 0.337 | BB | 0.094 | 2826.70 | 0.130 |
| 49 | 11.258 | | 0.0000 | 0.000 | 3833.5 | 0.081 | BB | 0.059 | 1083.56 | 0.050 |
| 50 | 11.626 | | 0.0000 | 0.000 | 7319.4 | 0.155 | BB | 0.174 | 700.92 | 0.032 |
| 51 | 11.925 | DCB | 53.3040 | 7.935 | 487196.6 | 10.338 | BB | 0.047 | 174348.60 | 7.991 |
| 52 | 12.537 | | 0.0000 | 0.000 | 2295.9 | 0.049 | BB | 0.518 | 73.84 | 0.003 |
| 53 | 13.254 | | 0.0000 | 0.000 | 1158.5 | 0.025 | BB | 0.154 | 125.57 | 0.006 |
| 54 | 13.631 | | 0.0000 | 0.000 | 1475.0 | 0.031 | BB | 0.284 | 86.56 | 0.004 |

8654

Total Area = 4712861.0, Total Amount = 671.772, Total Height = 2181880.0, Sample Units = PPB

Sample Name: **MIXA40424B AAMIXA4AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 12:50:28pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.11R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

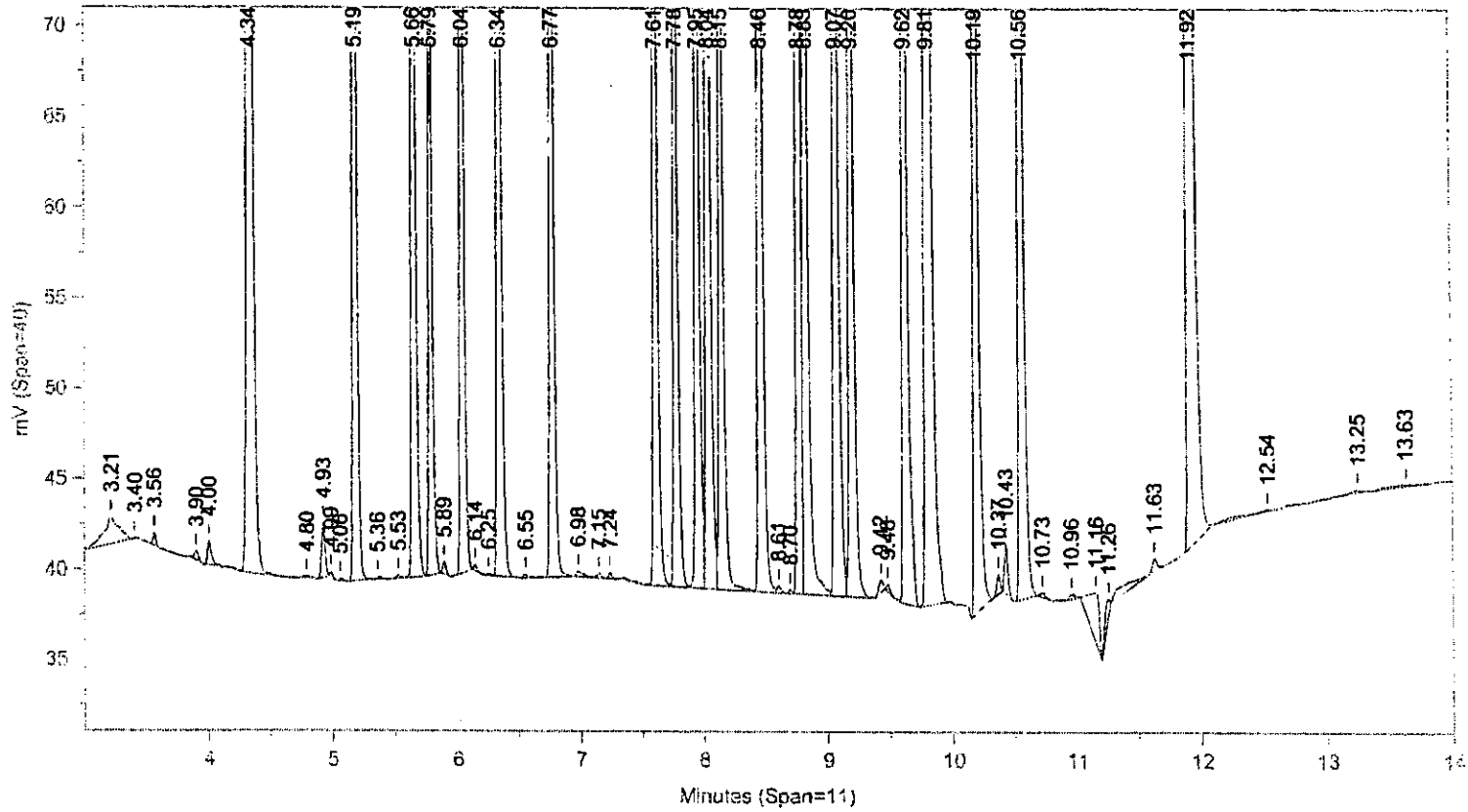
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.445 | | 0.0000 | 0.000 | 956.3 | 0.016 | BB | 0.041 | 387.77 | 0.014 |
| 2 | 3.549 | | 0.0000 | 0.000 | 482.8 | 0.008 | BB | 0.035 | 226.88 | 0.008 |
| 3 | 3.633 | | 0.0000 | 0.000 | 4120.9 | 0.068 | BB | 0.042 | 1643.24 | 0.060 |
| 4 | 3.722 | | 0.0000 | 0.000 | 1783.0 | 0.029 | BB | 0.036 | 815.34 | 0.030 |
| 5 | 3.798 | | 0.0000 | 0.000 | 2403.8 | 0.039 | BB | 0.030 | 1354.75 | 0.050 |
| 6 | 3.924 | | 0.0000 | 0.000 | 695.4 | 0.011 | BB | 0.085 | 135.58 | 0.005 |
| 7 | 4.061 | TCX | 55.6137 | 8.207 | 682778.1 | 11.218 | BB | 0.037 | 304184.70 | 11.125 |
| 8 | 4.277 | | 0.0000 | 0.000 | 694.2 | 0.011 | BB | 0.038 | 306.80 | 0.011 |
| 9 | 4.377 | | 0.0000 | 0.000 | 302.0 | 0.005 | BB | 0.031 | 161.80 | 0.006 |
| 10 | 4.473 | Hcb | 0.1297 | 0.019 | 2012.2 | 0.033 | BB | 0.070 | 479.38 | 0.018 |
| 11 | 4.606 | | 0.0000 | 0.000 | 11094.2 | 0.182 | BB | 0.038 | 4868.04 | 0.178 |
| 12 | 4.817 | | 0.0000 | 0.000 | 1239.0 | 0.020 | BB | 0.027 | 751.20 | 0.027 |
| 13 | 4.881 | | 0.0000 | 0.000 | 517.8 | 0.009 | BB | 0.025 | 343.36 | 0.013 |
| 14 | 4.963 | alpha-BHC | 15.7930 | 2.331 | 247250.4 | 4.062 | BB | 0.031 | 132073.40 | 4.830 |
| 15 | 5.243 | | 0.0000 | 0.000 | 1080.3 | 0.018 | BB | 0.127 | 141.27 | 0.005 |
| 16 | 5.306 | | 0.0000 | 0.000 | 740.8 | 0.012 | BB | 0.046 | 269.52 | 0.010 |
| 17 | 5.480 | gamma-BHC | 15.7235 | 2.320 | 231488.9 | 3.803 | BB | 0.032 | 121066.80 | 4.428 |
| 18 | 5.609 | beta-BHC | 14.6162 | 2.157 | 120206.7 | 1.975 | BB | 0.035 | 57975.14 | 2.120 |
| 19 | 5.751 | | 0.0000 | 0.000 | 2270.6 | 0.037 | BB | 0.034 | 1098.55 | 0.040 |
| 20 | 6.021 | delta-BHC | 15.9045 | 2.347 | 215632.1 | 3.543 | BV | 0.031 | 114100.00 | 4.173 |
| 21 | 6.097 | Heptachlor | 15.0931 | 2.227 | 239341.1 | 3.932 | VV | 0.034 | 116676.60 | 4.267 |
| 22 | 6.252 | | 0.0000 | 0.000 | 2619.4 | 0.043 | VB | 0.071 | 612.70 | 0.022 |
| 23 | 6.470 | | 0.0000 | 0.000 | 2496.7 | 0.041 | BV | 0.082 | 504.70 | 0.018 |
| 24 | 6.542 | Aldrin | 15.7467 | 2.324 | 187732.0 | 3.084 | VB | 0.032 | 96593.41 | 3.533 |
| 25 | 6.661 | | 0.0000 | 0.000 | 2636.3 | 0.043 | BB | 0.129 | 340.98 | 0.012 |
| 26 | 6.897 | | 0.0000 | 0.000 | 3174.5 | 0.052 | BB | 0.100 | 530.47 | 0.019 |
| 27 | 7.078 | | 0.0000 | 0.000 | 5443.8 | 0.089 | BB | 0.075 | 1202.85 | 0.044 |
| 28 | 7.257 | | 0.0000 | 0.000 | 2058.7 | 0.034 | BV | 0.044 | 785.80 | 0.029 |
| 29 | 7.320 | Hept. epoxide | 14.5096 | 2.141 | 185077.5 | 3.041 | VV | 0.036 | 84779.55 | 3.101 |
| 30 | 7.571 | g. Chlordane | 14.7329 | 2.174 | 180717.4 | 2.969 | VV | 0.036 | 83566.44 | 3.056 |
| 31 | 7.763 | a. Chlordane | 15.0580 | 2.222 | 168870.0 | 2.774 | VV | 0.035 | 81138.55 | 2.968 |
| 32 | 7.839 | Endosulfan I | 14.9022 | 2.199 | 166516.6 | 2.736 | VV | 0.036 | 76617.07 | 2.802 |
| 33 | 7.985 | 4,4'-DDE | 30.6355 | 4.521 | 298009.3 | 4.896 | VV | 0.035 | 140440.90 | 5.137 |
| 34 | 8.198 | Dieldrin | 31.0399 | 4.581 | 305223.2 | 5.015 | VV | 0.035 | 145003.60 | 5.303 |
| 35 | 8.422 | o,p-DDD | 0.3129 | 0.046 | 919.5 | 0.015 | VB | 0.045 | 338.57 | 0.012 |
| 36 | 8.596 | Endrin | 31.3130 | 4.621 | 262318.4 | 4.310 | BV | 0.035 | 124182.20 | 4.542 |
| 37 | 8.734 | 4,4'-DDD | 28.5744 | 4.217 | 202079.5 | 3.320 | VV | 0.036 | 94642.73 | 3.461 |
| 38 | 8.872 | Endosulfan II | 29.7668 | 4.393 | 267709.5 | 4.398 | VB | 0.039 | 114369.70 | 4.183 |
| 39 | 9.136 | 4,4'-DDT | 30.0582 | 4.436 | 214322.5 | 3.521 | BV | 0.036 | 98690.69 | 3.610 |
| 40 | 9.305 | Endrin aldehyde | 30.6463 | 4.523 | 210599.2 | 3.460 | VV | 0.039 | 89632.72 | 3.278 |
| 41 | 9.426 | | 0.0000 | 0.000 | 2404.2 | 0.040 | VV | 0.033 | 1218.66 | 0.045 |
| 42 | 9.463 | | 0.0000 | 0.000 | 4095.4 | 0.067 | VB | 0.037 | 1863.02 | 0.068 |
| 43 | 9.658 | Endo. sulfate | 30.5622 | 4.510 | 225147.6 | 3.699 | BB | 0.039 | 97237.08 | 3.556 |
| 44 | 10.014 | Methoxychlor | 142.4664 | 21.024 | 563574.3 | 9.259 | BB | 0.040 | 235071.70 | 8.598 |
| 45 | 10.176 | | 0.0000 | 0.000 | 715.5 | 0.012 | BB | 0.023 | 526.81 | 0.019 |
| 46 | 10.237 | | 0.0000 | 0.000 | 2299.7 | 0.038 | BB | 0.032 | 1200.74 | 0.044 |
| 47 | 10.353 | Endrin ketone | 29.5585 | 4.362 | 249059.5 | 4.092 | BB | 0.039 | 106129.00 | 3.882 |
| 48 | 10.657 | | 0.0000 | 0.000 | 10507.6 | 0.173 | BB | 0.105 | 1662.80 | 0.061 |
| 49 | 10.784 | | 0.0000 | 0.000 | 3589.6 | 0.059 | BB | 0.055 | 1091.08 | 0.040 |
| 50 | 11.650 | | 0.0000 | 0.000 | 1752.5 | 0.029 | BB | 0.040 | 731.52 | 0.027 |
| 51 | 12.073 | DCB | 54.8662 | 8.097 | 584291.7 | 9.600 | BB | 0.050 | 193896.90 | 7.092 |
| 52 | 12.580 | | 0.0000 | 0.000 | 594.3 | 0.010 | BB | 0.056 | 175.83 | 0.006 |
| 53 | 12.925 | | 0.0000 | 0.000 | 548.5 | 0.009 | BB | 0.066 | 137.97 | 0.005 |
| 54 | 13.143 | | 0.0000 | 0.000 | 618.1 | 0.010 | BB | 0.095 | 108.31 | 0.004 |
| 55 | 13.803 | | 0.0000 | 0.000 | 1721.5 | 0.028 | BB | 0.384 | 74.80 | 0.003 |

9655

Total Area = 6086534.0, Total Amount = 677.623, Total Height = 2734160.0, Sample Units = PPB

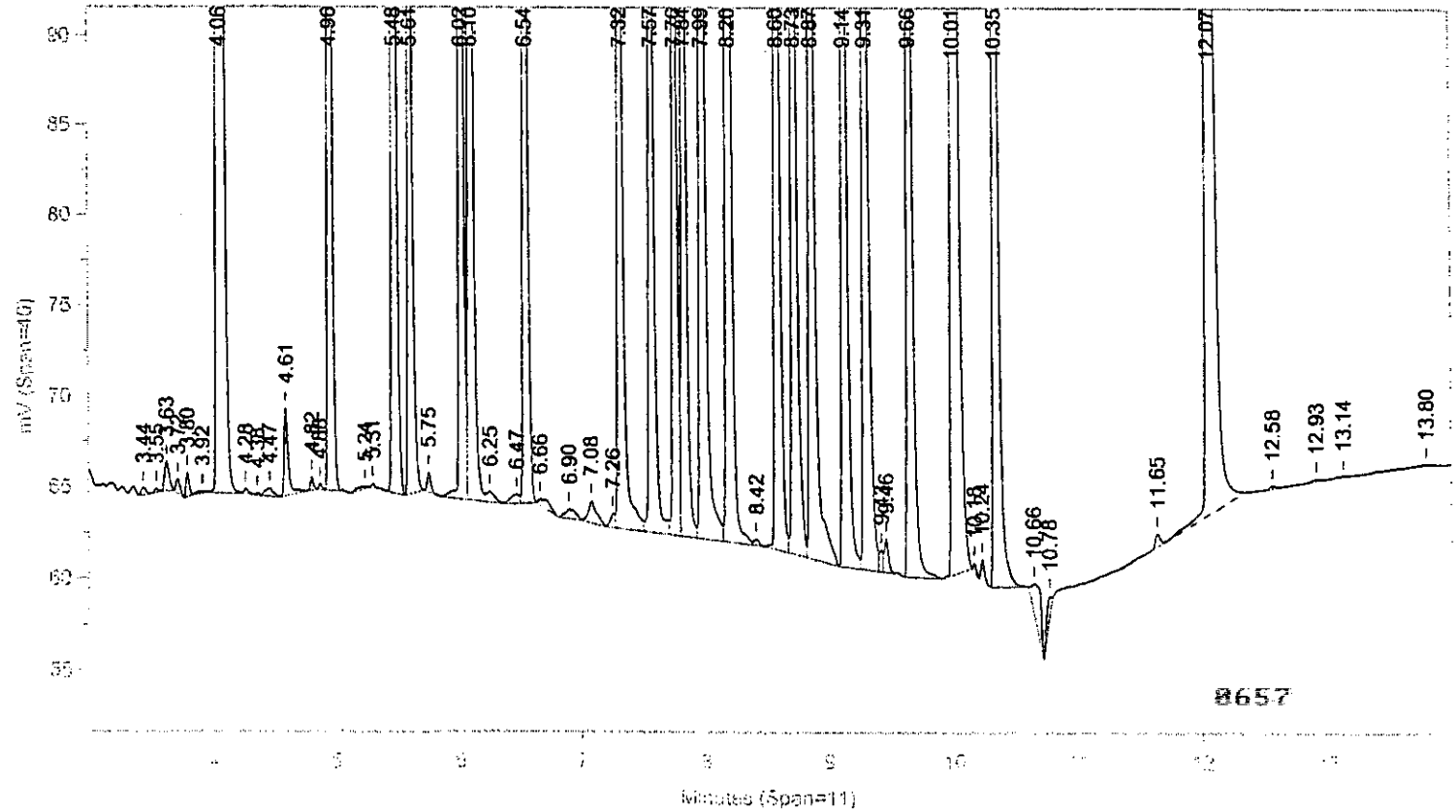
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.11R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 12:36:28 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.11R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 12:36:28 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

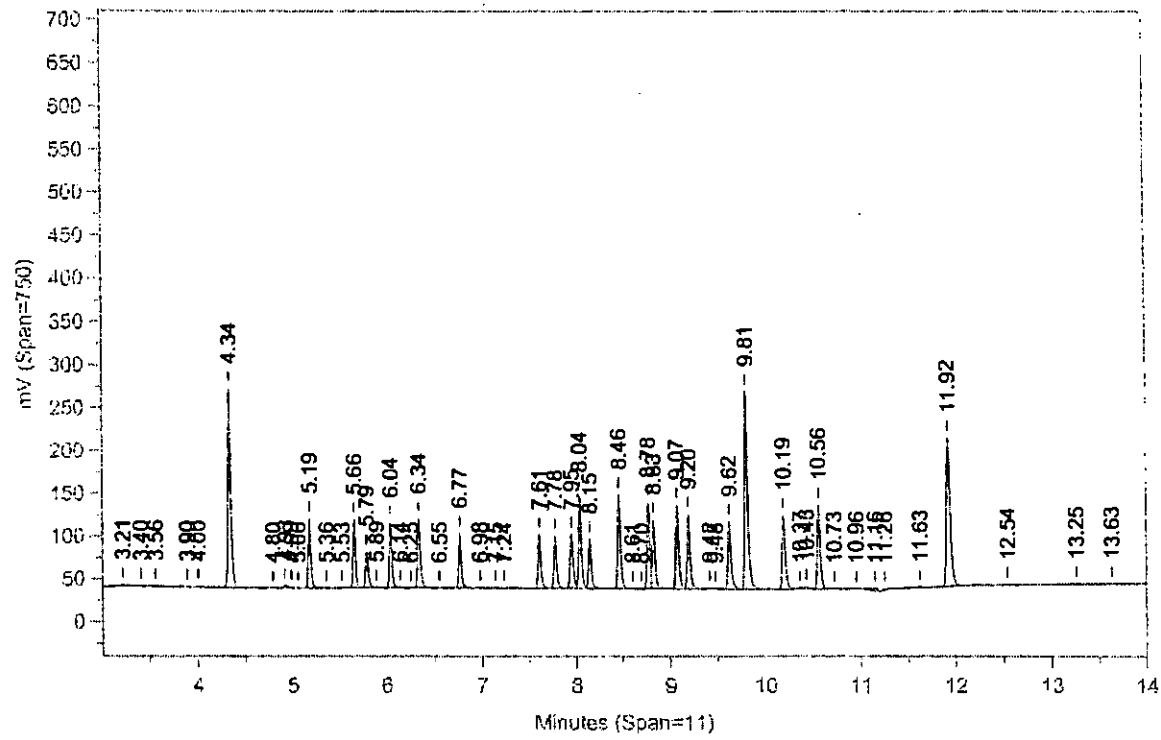
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 232490 | 56.738 | TCX | 4.061 | 304185 | 55.614 | TCX |
| . | 0 | . | Hcb | 4.473 | 479 | .13 | Hcb |
| 5.186 | 81594 | 15.942 | alpha-BHC | 4.963 | 132073 | 15.793 | alpha-BHC |
| 5.656 | 80140 | 15.798 | gamma-BHC | 5.48 | 121067 | 15.723 | gamma-BHC |
| 5.787 | 42066 | 14.665 | beta-BHC | 5.609 | 57975 | 14.616 | beta-BHC |
| 6.045 | 76653 | 16.079 | delta-BHC | 6.021 | 114100 | 15.905 | delta-BHC |
| 6.343 | 80653 | 14.909 | Heptachlor | 6.097 | 116677 | 15.093 | Heptachlor |
| 6.77 | 63814 | 15.342 | Aldrin | 6.542 | 96593 | 15.747 | Aldrin |
| 7.612 | 63275 | 14.671 | Hept. epoxide | 7.32 | 84780 | 14.51 | Hept. epoxide |
| 7.776 | 61608 | 14.908 | g. Chlordane | 7.571 | 83566 | 14.733 | g. Chlordane |
| 7.954 | 63094 | 14.497 | a. Chlordane | 7.763 | 81139 | 15.058 | a. Chlordane |
| 8.147 | 58011 | 14.838 | Endosulfan I | 7.839 | 76617 | 14.902 | Endosulfan I |
| 8.041 | 107811 | 30.771 | 4,4'-DDE | 7.985 | 140441 | 30.635 | 4,4'-DDE |
| 8.465 | 110611 | 30.653 | Dieldrin | 8.198 | 145004 | 31.04 | Dieldrin |
| . | 0 | . | o,p-DDD | 8.422 | 339 | .313 | o,p-DDD |
| 8.775 | 100944 | 30.953 | Endrin | 8.596 | 124182 | 31.313 | Endrin |
| 8.607 | 385 | .37 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.832 | 81508 | 28.348 | 4,4'-DDD | 8.734 | 94643 | 28.574 | 4,4'-DDD |
| 9.073 | 98570 | 29.443 | Endosulfan II | 8.872 | 114370 | 29.767 | Endosulfan II |
| 9.196 | 87735 | 30.472 | 4,4'-DDT | 9.136 | 98691 | 30.058 | 4,4'-DDT |
| 9.622 | 79283 | 29.988 | Endrin aldehyde | 9.305 | 89633 | 30.646 | Endrin aldehyde |
| 10.194 | 86705 | 29.299 | Endo. sulfate | 9.658 | 97237 | 30.562 | Endo. sulfate |
| 9.806 | 231588 | 139.901 | Methoxychlor | 10.014 | 235072 | 142.466 | Methoxychlor |
| 10.563 | 98308 | 29.882 | Endrin ketone | 10.353 | 106129 | 29.558 | Endrin ketone |
| 11.925 | 174349 | 53.304 | DCB | 12.073 | 193897 | 54.866 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.11A
Area File: C:\CPWIN\DATA1\1D16082B.11A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/22/2004 9:26:38 PM
File Reported On: 3/22/2004 at 9:26:44 PM

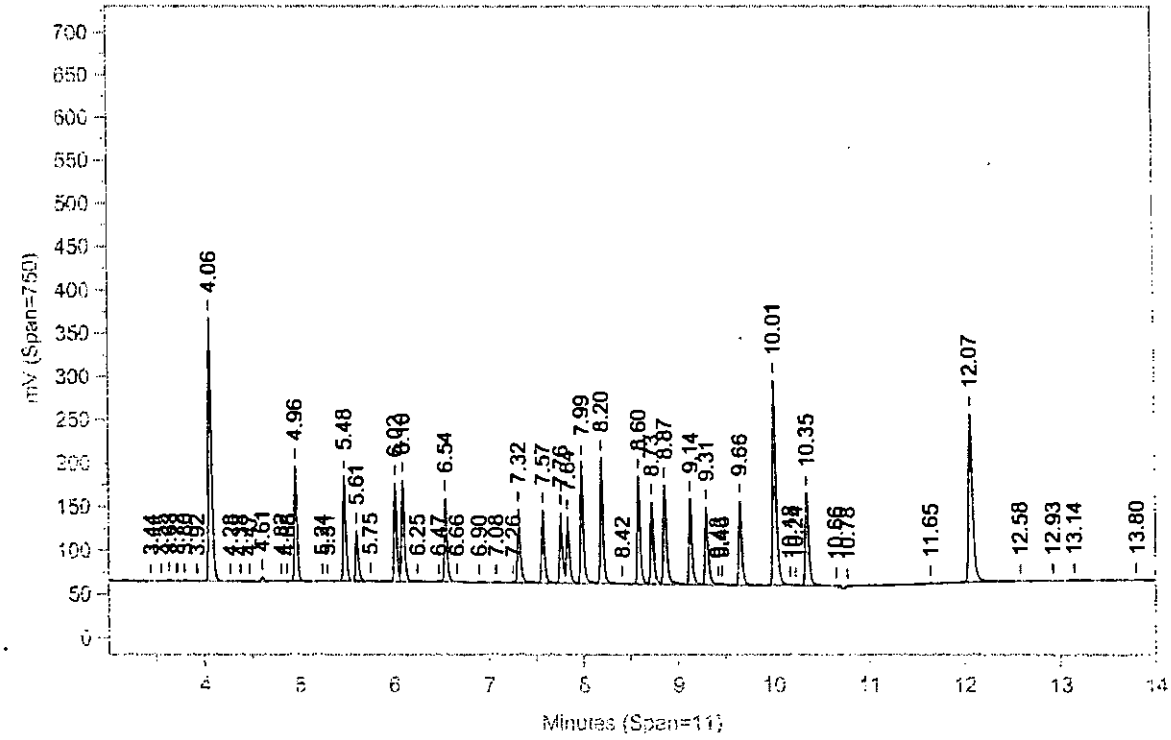
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.11R




C:\CPWIN\DATA1\1D16082B.11R




8659

Sample Name: **MIXA50424B AAMIXA5AA ICAL 048199999**
Acquired from CP16–H5262A via port 1 on 3/22/04 01:11:04pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.12R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.212 | | 0.0000 | 0.000 | 12540.1 | 0.207 | BB | 0.150 | 1395.72 | 0.049 |
| 2 | 3.445 | | 0.0000 | 0.000 | 713.7 | 0.012 | BB | 0.060 | 196.93 | 0.007 |
| 3 | 3.562 | | 0.0000 | 0.000 | 2254.3 | 0.037 | BB | 0.030 | 1260.01 | 0.045 |
| 4 | 3.898 | | 0.0000 | 0.000 | 1026.0 | 0.017 | BB | 0.039 | 432.92 | 0.015 |
| 5 | 4.004 | | 0.0000 | 0.000 | 3691.6 | 0.061 | BB | 0.039 | 1563.52 | 0.055 |
| 6 | 4.338 | TCX | 72.9240 | 8.419 | 628941.1 | 10.366 | BB | 0.035 | 299628.60 | 10.616 |
| 7 | 4.800 | | 0.0000 | 0.000 | 249.2 | 0.004 | BB | 0.034 | 121.50 | 0.004 |
| 8 | 4.929 | | 0.0000 | 0.000 | 7542.4 | 0.124 | BB | 0.032 | 3968.57 | 0.141 |
| 9 | 4.991 | | 0.0000 | 0.000 | 524.5 | 0.009 | BB | 0.024 | 364.65 | 0.013 |
| 10 | 5.061 | | 0.0000 | 0.000 | 240.9 | 0.004 | BB | 0.031 | 131.27 | 0.005 |
| 11 | 5.187 | alpha-BHC | 21.1396 | 2.441 | 200029.7 | 3.297 | BB | 0.031 | 108313.20 | 3.838 |
| 12 | 5.362 | | 0.0000 | 0.000 | 191.3 | 0.003 | BB | 0.036 | 87.54 | 0.003 |
| 13 | 5.528 | | 0.0000 | 0.000 | 426.2 | 0.007 | BB | 0.038 | 186.21 | 0.007 |
| 14 | 5.657 | gamma-BHC | 20.7607 | 2.397 | 199298.6 | 3.285 | BB | 0.031 | 105823.80 | 3.749 |
| 15 | 5.788 | beta-BHC | 19.1329 | 2.209 | 110103.4 | 1.815 | BB | 0.034 | 54437.94 | 1.929 |
| 16 | 5.894 | | 0.0000 | 0.000 | 1601.8 | 0.026 | BB | 0.030 | 895.93 | 0.032 |
| 17 | 6.046 | delta-BHC | 21.1458 | 2.441 | 187842.6 | 3.096 | BB | 0.031 | 101817.50 | 3.608 |
| 18 | 6.144 | | 0.0000 | 0.000 | 735.7 | 0.012 | BB | 0.029 | 421.45 | 0.015 |
| 19 | 6.253 | | 0.0000 | 0.000 | 234.5 | 0.004 | BB | 0.035 | 111.69 | 0.004 |
| 20 | 6.344 | Heptachlor | 19.3512 | 2.234 | 211873.8 | 3.492 | BB | 0.034 | 104674.10 | 3.709 |
| 21 | 6.550 | | 0.0000 | 0.000 | 8208.4 | 0.135 | BB | 0.033 | 4109.20 | 0.146 |
| 22 | 6.771 | Aldrin | 20.0701 | 2.317 | 164902.7 | 2.718 | BB | 0.033 | 83668.27 | 2.964 |
| 23 | 6.983 | | 0.0000 | 0.000 | 1271.3 | 0.021 | BB | 0.066 | 321.33 | 0.011 |
| 24 | 7.151 | | 0.0000 | 0.000 | 1159.8 | 0.019 | BB | 0.039 | 490.28 | 0.017 |
| 25 | 7.241 | | 0.0000 | 0.000 | 924.3 | 0.015 | BB | 0.034 | 450.70 | 0.016 |
| 26 | 7.613 | Hept. epoxide | 19.0239 | 2.196 | 169042.7 | 2.786 | BV | 0.035 | 81637.87 | 2.893 |
| 27 | 7.778 | g. Chlordane | 19.1982 | 2.216 | 165093.1 | 2.721 | VV | 0.035 | 79114.94 | 2.803 |
| 28 | 7.956 | a. Chlordane | 18.4709 | 2.132 | 168875.5 | 2.783 | VV | 0.035 | 80689.20 | 2.859 |
| 29 | 8.043 | 4,4'-DDE | 39.9776 | 4.615 | 277100.3 | 4.567 | VV | 0.033 | 140221.00 | 4.968 |
| 30 | 8.149 | Endosulfan I | 19.0136 | 2.195 | 158919.3 | 2.619 | VV | 0.036 | 74471.69 | 2.639 |
| 31 | 8.466 | Dieldrin | 39.7639 | 4.591 | 292952.2 | 4.828 | VV | 0.034 | 143973.80 | 5.101 |
| 32 | 8.608 | o,p-DDT | 1.0162 | 0.117 | 1130.1 | 0.019 | VB | 0.036 | 524.83 | 0.019 |
| 33 | 8.702 | | 0.0000 | 0.000 | 588.2 | 0.010 | BV | 0.030 | 326.69 | 0.012 |
| 34 | 8.778 | Endrin | 39.7541 | 4.590 | 264151.8 | 4.353 | VV | 0.034 | 131286.80 | 4.652 |
| 35 | 8.834 | 4,4'-DDD | 37.3442 | 4.311 | 225989.0 | 3.725 | VV | 0.035 | 106691.60 | 3.780 |
| 36 | 9.075 | Endosulfan II | 37.9717 | 4.384 | 274156.4 | 4.518 | VV | 0.036 | 126868.60 | 4.495 |
| 37 | 9.198 | 4,4'-DDT | 39.4951 | 4.560 | 236441.7 | 3.897 | VB | 0.035 | 113707.30 | 4.029 |
| 38 | 9.360 | | 0.0000 | 0.000 | 114.6 | 0.002 | BB | 0.022 | 85.60 | 0.003 |
| 39 | 9.425 | | 0.0000 | 0.000 | 1307.5 | 0.022 | BB | 0.039 | 563.95 | 0.020 |
| 40 | 9.480 | | 0.0000 | 0.000 | 1035.8 | 0.017 | BB | 0.030 | 579.90 | 0.021 |
| 41 | 9.625 | Endrin aldehyde | 37.9072 | 4.376 | 232057.6 | 3.825 | BB | 0.038 | 101832.20 | 3.608 |
| 42 | 9.808 | Methoxychlor | 178.7456 | 20.636 | 664134.3 | 10.946 | BB | 0.038 | 294294.60 | 10.427 |
| 43 | 10.196 | Endo. sulfate | 37.6011 | 4.341 | 248000.9 | 4.087 | BB | 0.037 | 110954.90 | 3.931 |
| 44 | 10.370 | | 0.0000 | 0.000 | 2906.1 | 0.048 | BB | 0.033 | 1486.46 | 0.053 |
| 45 | 10.434 | | 0.0000 | 0.000 | 9972.2 | 0.164 | BB | 0.034 | 4905.61 | 0.174 |
| 46 | 10.566 | Endrin ketone | 38.6958 | 4.467 | 281589.9 | 4.641 | BB | 0.037 | 126595.60 | 4.485 |
| 47 | 10.729 | | 0.0000 | 0.000 | 829.6 | 0.014 | BB | 0.042 | 325.79 | 0.012 |
| 48 | 10.958 | | 0.0000 | 0.000 | 1682.2 | 0.028 | BB | 0.037 | 755.20 | 0.027 |
| 49 | 11.076 | | 0.0000 | 0.000 | 215.4 | 0.004 | BB | 0.050 | 71.26 | 0.003 |
| 50 | 11.160 | | 0.0000 | 0.000 | 5531.7 | 0.091 | BB | 0.055 | 1689.25 | 0.060 |
| 51 | 11.262 | | 0.0000 | 0.000 | 3341.4 | 0.055 | BB | 0.071 | 785.77 | 0.028 |
| 52 | 11.628 | | 0.0000 | 0.000 | 7026.1 | 0.116 | BB | 0.128 | 915.66 | 0.032 |
| 53 | 11.927 | DCB | 67.6655 | 7.812 | 616133.1 | 10.154 | BB | 0.046 | 221948.70 | 7.864 |
| 54 | 12.537 | | 0.0000 | 0.000 | 434.9 | 0.007 | BB | 0.057 | 127.08 | 0.005 |
| 55 | 13.696 | | 0.0000 | 0.000 | 10340.5 | 0.170 | BB | 2.424 | 71.09 | 0.003 |

8668

Total Area = 6067622.0, Total Amount = 866.169, Total Height = 2822375.0, Sample Units = PPB

Sample Name: **MIXA50424B AAMIXA5AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 01:11:04pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.12R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.453 | | 0.0000 | 0.000 | 1065.2 | 0.014 | BB | 0.044 | 407.20 | 0.012 |
| 2 | 3.551 | | 0.0000 | 0.000 | 418.3 | 0.005 | BB | 0.040 | 173.36 | 0.005 |
| 3 | 3.633 | | 0.0000 | 0.000 | 4060.0 | 0.052 | BB | 0.043 | 1562.31 | 0.044 |
| 4 | 3.722 | | 0.0000 | 0.000 | 1744.3 | 0.022 | BB | 0.038 | 757.58 | 0.021 |
| 5 | 3.800 | | 0.0000 | 0.000 | 2929.6 | 0.037 | BB | 0.029 | 1666.63 | 0.047 |
| 6 | 3.885 | | 0.0000 | 0.000 | 152.0 | 0.002 | BB | 0.034 | 73.51 | 0.002 |
| 7 | 3.958 | | 0.0000 | 0.000 | 267.3 | 0.003 | BB | 0.046 | 96.91 | 0.003 |
| 8 | 4.062 | TCX | 70.0154 | 8.049 | 878120.8 | 11.176 | BB | 0.038 | 387970.70 | 11.006 |
| 9 | 4.275 | | 0.0000 | 0.000 | 1170.3 | 0.015 | BB | 0.042 | 465.57 | 0.013 |
| 10 | 4.381 | | 0.0000 | 0.000 | 189.7 | 0.002 | BB | 0.030 | 104.09 | 0.003 |
| 11 | 4.471 | Hcb | 0.2541 | 0.029 | 1698.1 | 0.022 | BB | 0.064 | 442.93 | 0.013 |
| 12 | 4.608 | | 0.0000 | 0.000 | 12816.7 | 0.163 | BB | 0.034 | 6299.95 | 0.179 |
| 13 | 4.715 | | 0.0000 | 0.000 | 354.2 | 0.005 | BB | 0.044 | 132.97 | 0.004 |
| 14 | 4.817 | | 0.0000 | 0.000 | 1604.5 | 0.020 | BB | 0.027 | 973.46 | 0.028 |
| 15 | 4.885 | | 0.0000 | 0.000 | 393.8 | 0.005 | BB | 0.026 | 251.94 | 0.007 |
| 16 | 4.965 | alpha-BHC | 20.3811 | 2.343 | 327386.3 | 4.167 | BB | 0.032 | 172450.10 | 4.892 |
| 17 | 5.238 | | 0.0000 | 0.000 | 1196.7 | 0.015 | BB | 0.116 | 172.63 | 0.005 |
| 18 | 5.310 | | 0.0000 | 0.000 | 709.6 | 0.009 | BB | 0.045 | 264.64 | 0.008 |
| 19 | 5.481 | gamma-BHC | 20.0656 | 2.307 | 303625.8 | 3.864 | BB | 0.032 | 156896.00 | 4.451 |
| 20 | 5.610 | beta-BHC | 18.7004 | 2.150 | 154305.4 | 1.964 | BB | 0.035 | 74299.62 | 2.108 |
| 21 | 5.753 | | 0.0000 | 0.000 | 3034.9 | 0.039 | BB | 0.034 | 1494.72 | 0.042 |
| 22 | 6.022 | delta-BHC | 20.4102 | 2.346 | 283292.1 | 3.605 | BV | 0.032 | 149114.90 | 4.230 |
| 23 | 6.098 | Heptachlor | 19.1691 | 2.204 | 309841.5 | 3.943 | VV | 0.034 | 149938.30 | 4.254 |
| 24 | 6.250 | | 0.0000 | 0.000 | 2686.5 | 0.034 | VB | 0.060 | 741.70 | 0.021 |
| 25 | 6.467 | | 0.0000 | 0.000 | 1990.4 | 0.025 | BV | 0.079 | 420.29 | 0.012 |
| 26 | 6.543 | Aldrin | 20.0599 | 2.306 | 245327.8 | 3.122 | VB | 0.033 | 125357.30 | 3.556 |
| 27 | 6.656 | | 0.0000 | 0.000 | 2775.7 | 0.035 | BB | 0.087 | 531.40 | 0.015 |
| 28 | 6.900 | | 0.0000 | 0.000 | 3217.8 | 0.041 | BB | 0.106 | 506.92 | 0.014 |
| 29 | 7.081 | | 0.0000 | 0.000 | 5290.8 | 0.067 | BB | 0.067 | 1324.96 | 0.038 |
| 30 | 7.260 | | 0.0000 | 0.000 | 2094.9 | 0.027 | BV | 0.038 | 928.51 | 0.026 |
| 31 | 7.321 | Hept. epoxide | 18.5496 | 2.132 | 237512.7 | 3.023 | VV | 0.036 | 109199.70 | 3.098 |
| 32 | 7.572 | g. Chlordane | 18.8719 | 2.169 | 235104.6 | 2.992 | VV | 0.036 | 108092.30 | 3.066 |
| 33 | 7.764 | a. Chlordane | 18.9634 | 2.180 | 218341.7 | 2.779 | VV | 0.035 | 103678.10 | 2.941 |
| 34 | 7.840 | Endosulfan I | 18.8601 | 2.168 | 213639.3 | 2.719 | VV | 0.036 | 98198.94 | 2.786 |
| 35 | 7.987 | 4,4'-DDE | 39.2943 | 4.517 | 388250.4 | 4.941 | VV | 0.036 | 181518.10 | 5.150 |
| 36 | 8.199 | Dieldrin | 39.4216 | 4.532 | 397243.0 | 5.056 | VV | 0.035 | 186972.80 | 5.304 |
| 37 | 8.426 | o,p-DDD | 0.6429 | 0.074 | 998.8 | 0.013 | VB | 0.047 | 357.42 | 0.010 |
| 38 | 8.597 | Endrin | 40.1575 | 4.616 | 342098.4 | 4.354 | BV | 0.035 | 162427.60 | 4.608 |
| 39 | 8.736 | 4,4'-DDD | 37.4660 | 4.307 | 266238.6 | 3.388 | VV | 0.036 | 123151.00 | 3.494 |
| 40 | 8.874 | Endosulfan II | 38.1786 | 4.389 | 343456.9 | 4.371 | VB | 0.039 | 147106.60 | 4.173 |
| 41 | 9.138 | 4,4'-DDT | 39.8590 | 4.582 | 281163.1 | 3.578 | BV | 0.036 | 130209.00 | 3.694 |
| 42 | 9.307 | Endrin aldehyde | 38.3379 | 4.407 | 270508.6 | 3.443 | VV | 0.039 | 114691.10 | 3.254 |
| 43 | 9.428 | | 0.0000 | 0.000 | 2964.2 | 0.038 | VV | 0.033 | 1493.41 | 0.042 |
| 44 | 9.466 | | 0.0000 | 0.000 | 5350.7 | 0.068 | VB | 0.036 | 2485.79 | 0.071 |
| 45 | 9.660 | Endo. sulfate | 39.5384 | 4.545 | 292358.8 | 3.721 | BB | 0.039 | 126231.00 | 3.581 |
| 46 | 10.016 | Methoxychlor | 185.5208 | 21.326 | 724534.4 | 9.221 | BB | 0.040 | 303389.30 | 8.607 |
| 47 | 10.178 | | 0.0000 | 0.000 | 936.2 | 0.012 | BB | 0.024 | 661.76 | 0.019 |
| 48 | 10.238 | | 0.0000 | 0.000 | 3038.6 | 0.039 | BB | 0.032 | 1584.60 | 0.045 |
| 49 | 10.355 | Endrin ketone | 38.4830 | 4.424 | 328029.7 | 4.175 | BB | 0.040 | 138376.50 | 3.926 |
| 50 | 10.660 | | 0.0000 | 0.000 | 9055.1 | 0.115 | BB | 0.099 | 1518.22 | 0.043 |
| 51 | 10.788 | | 0.0000 | 0.000 | 2969.6 | 0.038 | BB | 0.055 | 893.24 | 0.025 |
| 52 | 10.933 | | 0.0000 | 0.000 | 980.4 | 0.012 | BB | 0.179 | 91.49 | 0.003 |
| 53 | 11.651 | | 0.0000 | 0.000 | 2327.9 | 0.030 | BB | 0.041 | 940.57 | 0.027 |
| 54 | 12.075 | DCB | 68.7097 | 7.898 | 734763.6 | 9.351 | BB | 0.050 | 245442.10 | 6.963 |
| 55 | 12.587 | | 0.0000 | 0.000 | 647.3 | 0.008 | BB | 0.061 | 177.77 | 0.005 |
| 56 | 12.922 | | 0.0000 | 0.000 | 548.8 | 0.007 | BB | 0.062 | 146.95 | 0.004 |

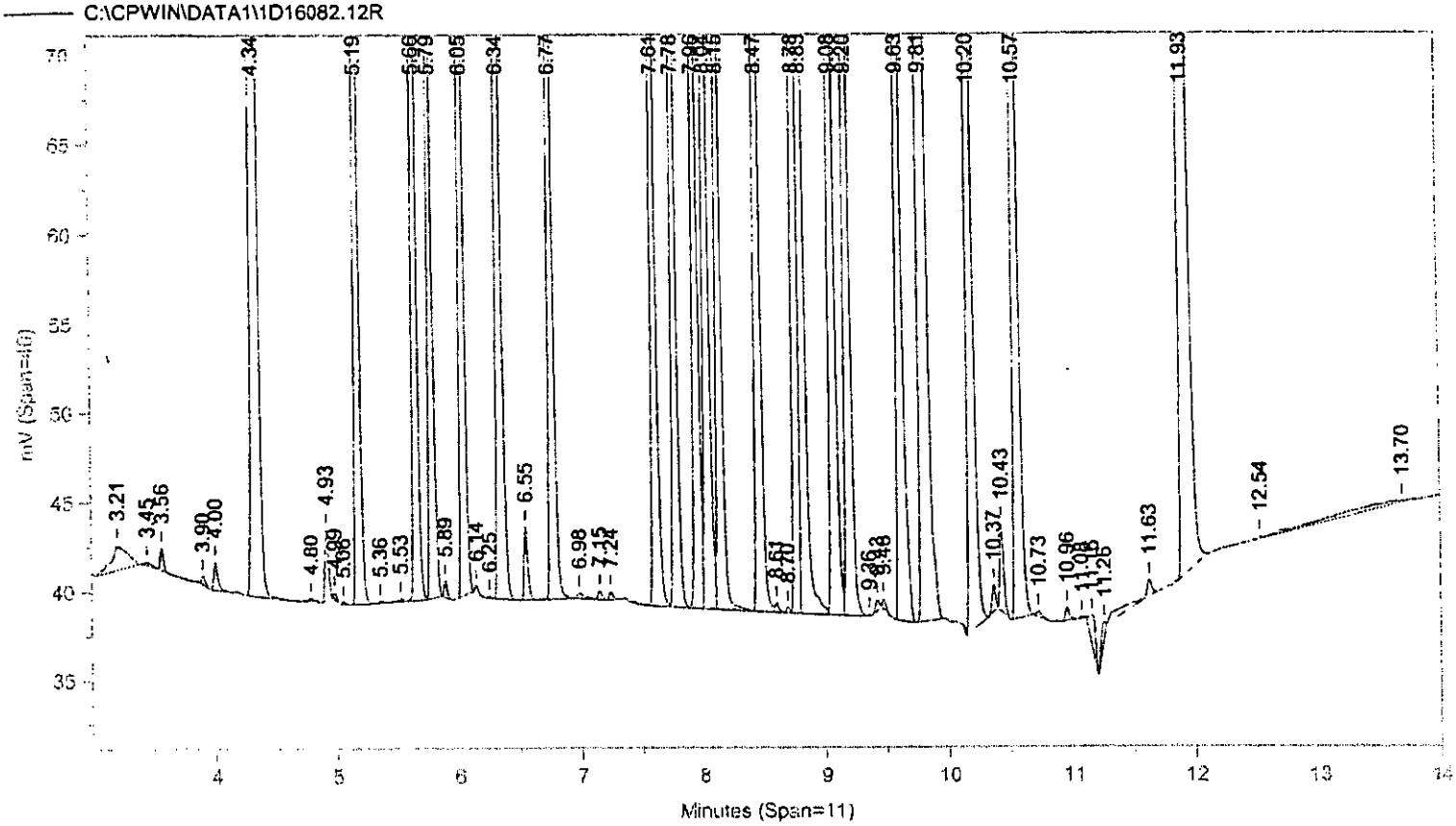
8662

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 13.157 | | 0.0000 | 0.000 | 536.0 | 0.007 | BB | 0.103 | 86.40 | 0.002 |

Total Area = 7857359.0, Total Amount = 869.911, Total Height = 3524943.0, Sample Units = PPB

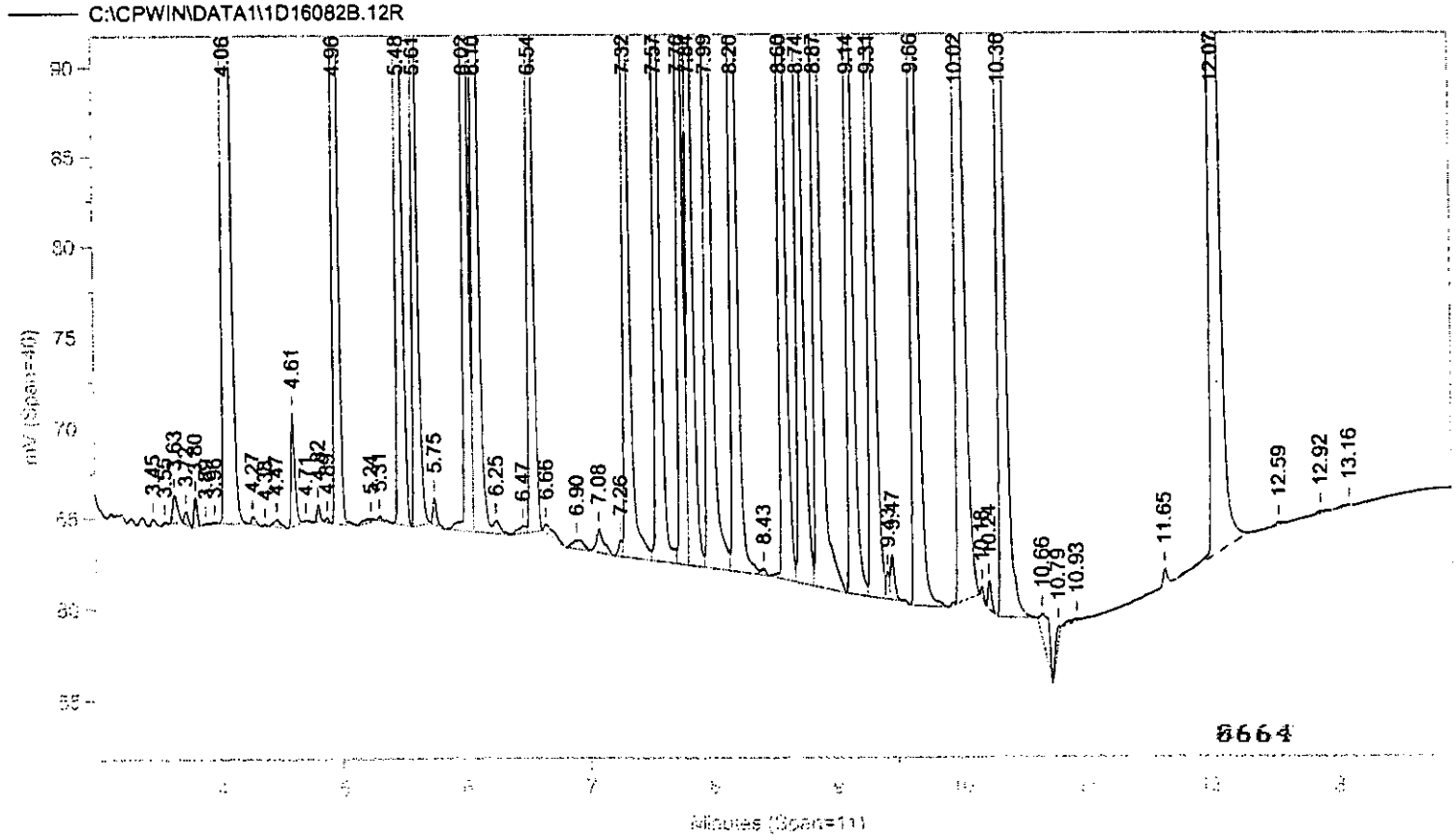
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.12R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 12:57:04 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.12R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 12:57:04 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

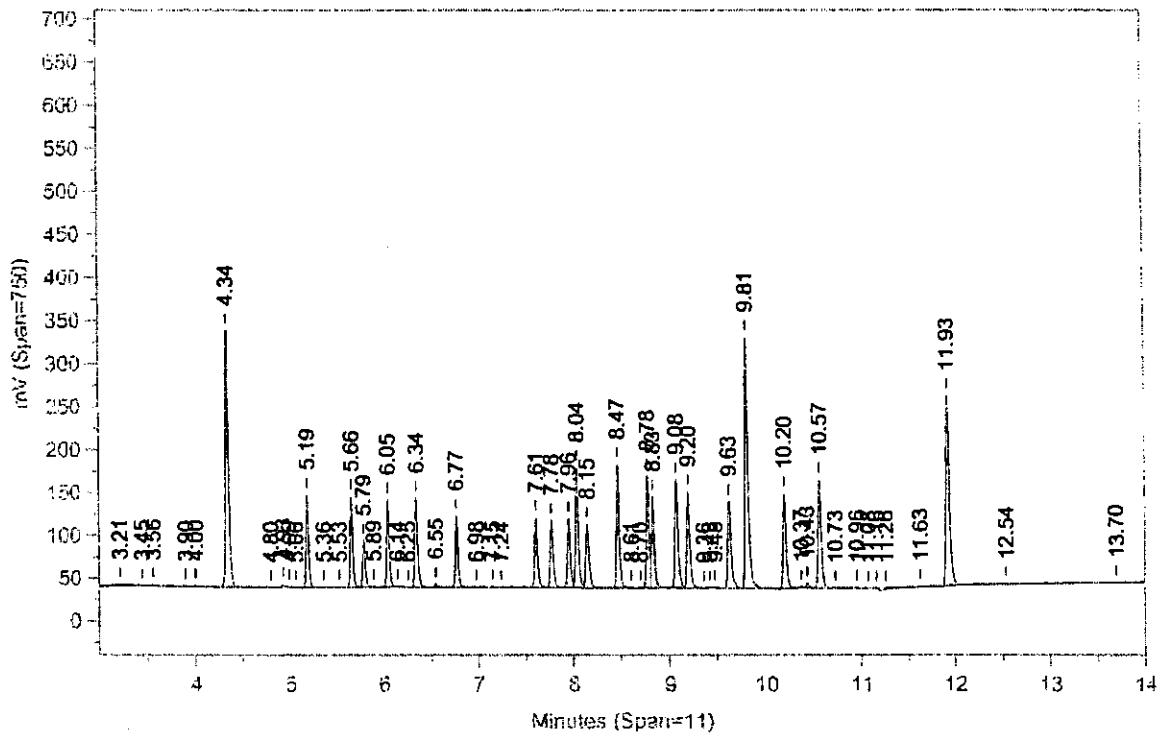
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.338 | 299629 | 72.924 | TCX | 4.062 | 387971 | 70.015 | TCX |
| . | 0 | . | Hcb | 4.471 | 443 | .254 | Hcb |
| 5.187 | 108313 | 21.14 | alpha-BHC | 4.965 | 172450 | 20.381 | alpha-BHC |
| 5.657 | 105824 | 20.761 | gamma-BHC | 5.481 | 156896 | 20.066 | gamma-BHC |
| 5.788 | 54438 | 19.133 | beta-BHC | 5.61 | 74300 | 18.7 | beta-BHC |
| 6.046 | 101817 | 21.146 | delta-BHC | 6.022 | 149115 | 20.41 | delta-BHC |
| 6.344 | 104674 | 19.351 | Heptachlor | 6.098 | 149938 | 19.169 | Heptachlor |
| 6.771 | 83668 | 20.07 | Aldrin | 6.543 | 125357 | 20.06 | Aldrin |
| 7.613 | 81638 | 19.024 | Hept. epoxide | 7.321 | 109200 | 18.55 | Hept. epoxide |
| 7.778 | 79115 | 19.198 | g. Chlordane | 7.572 | 108092 | 18.872 | g. Chlordane |
| 7.956 | 80689 | 18.471 | a. Chlordane | 7.764 | 103678 | 18.963 | a. Chlordane |
| 8.149 | 74472 | 19.014 | Endosulfan I | 7.84 | 98199 | 18.86 | Endosulfan I |
| 8.043 | 140221 | 39.978 | 4,4'-DDE | 7.987 | 181518 | 39.294 | 4,4'-DDE |
| 8.466 | 143974 | 39.764 | Dieldrin | 8.199 | 186973 | 39.422 | Dieldrin |
| . | 0 | . | o,p-DDD | 8.426 | 357 | .643 | o,p-DDD |
| 8.778 | 131287 | 39.754 | Endrin | 8.597 | 162428 | 40.157 | Endrin |
| 8.608 | 525 | 1.016 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.834 | 106692 | 37.344 | 4,4'-DDD | 8.736 | 123151 | 37.466 | 4,4'-DDD |
| 9.075 | 126869 | 37.972 | Endosulfan II | 8.874 | 147107 | 38.179 | Endosulfan II |
| 9.198 | 113707 | 39.495 | 4,4'-DDT | 9.138 | 130209 | 39.859 | 4,4'-DDT |
| 9.625 | 101832 | 37.907 | Endrin aldehyde | 9.307 | 114691 | 38.338 | Endrin aldehyde |
| 10.196 | 110955 | 37.601 | Endo. sulfate | 9.66 | 126231 | 39.538 | Endo. sulfate |
| 9.808 | 294295 | 178.746 | Methoxychlor | 10.016 | 303389 | 185.521 | Methoxychlor |
| 10.566 | 126596 | 38.696 | Endrin ketone | 10.355 | 138376 | 38.483 | Endrin ketone |
| 11.927 | 221949 | 67.666 | DCB | 12.075 | 245442 | 68.71 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.12A
Area File: C:\CPWIN\DATA1\1D16082B.12A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/22/2004 9:26:54 PM
File Reported On: 3/22/2004 at 9:27:01 PM

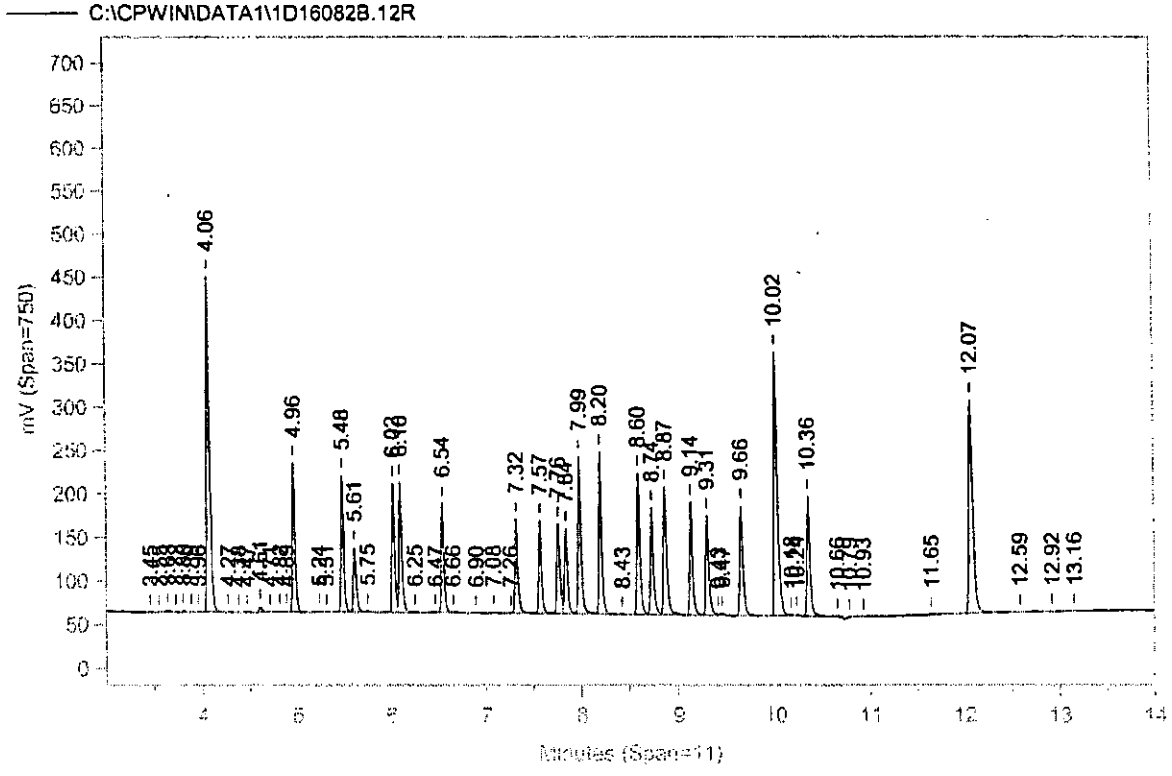
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.12R




C:\CPWIN\DATA1\1D16082B.12R




5555

Sample Name: **ICMAX0424B AAICMAXAA CCAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 01:31:40pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.13R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.204 | | 0.0000 | 0.000 | 4861.1 | 0.158 | BB | 0.056 | 1456.94 | 0.102 |
| 2 | 3.442 | | 0.0000 | 0.000 | 873.3 | 0.028 | BB | 0.066 | 219.50 | 0.015 |
| 3 | 3.561 | | 0.0000 | 0.000 | 445.6 | 0.014 | BB | 0.028 | 268.18 | 0.019 |
| 4 | 3.896 | | 0.0000 | 0.000 | 909.5 | 0.030 | BB | 0.038 | 396.54 | 0.028 |
| 5 | 4.003 | | 0.0000 | 0.000 | 2146.9 | 0.070 | BB | 0.036 | 990.66 | 0.069 |
| 6 | 4.337 | TCX | 37.5320 | 8.094 | 323480.7 | 10.522 | BB | 0.035 | 154831.80 | 10.829 |
| 7 | 4.800 | | 0.0000 | 0.000 | 327.0 | 0.011 | BB | 0.045 | 121.61 | 0.009 |
| 8 | 4.928 | Hcb | 0.0000 | 0.000 | 3695.5 | 0.120 | BB | 0.031 | 1959.25 | 0.137 |
| 9 | 5.065 | | 0.0000 | 0.000 | 157.8 | 0.005 | BB | 0.039 | 67.02 | 0.005 |
| 10 | 5.186 | alpha-BHC | 9.6236 | 2.075 | 91113.3 | 2.964 | BB | 0.031 | 49460.71 | 3.459 |
| 11 | 5.390 | | 0.0000 | 0.000 | 265.1 | 0.009 | BB | 0.074 | 59.77 | 0.004 |
| 12 | 5.539 | | 0.0000 | 0.000 | 149.2 | 0.005 | BB | 0.055 | 45.40 | 0.003 |
| 13 | 5.656 | gamma-BHC | 9.8121 | 2.116 | 94690.5 | 3.080 | BB | 0.031 | 50354.54 | 3.522 |
| 14 | 5.787 | beta-BHC | 9.9633 | 2.149 | 56854.0 | 1.849 | BB | 0.034 | 28222.79 | 1.974 |
| 15 | 5.893 | | 0.0000 | 0.000 | 857.7 | 0.028 | BB | 0.030 | 474.89 | 0.033 |
| 16 | 6.046 | delta-BHC | 10.0700 | 2.172 | 90220.6 | 2.935 | BB | 0.031 | 49038.25 | 3.430 |
| 17 | 6.143 | | 0.0000 | 0.000 | 418.9 | 0.014 | BB | 0.030 | 230.68 | 0.016 |
| 18 | 6.344 | Heptachlor | 9.7155 | 2.095 | 106177.6 | 3.454 | BB | 0.034 | 52713.17 | 3.687 |
| 19 | 6.549 | | 0.0000 | 0.000 | 3472.6 | 0.113 | BB | 0.035 | 1642.82 | 0.115 |
| 20 | 6.770 | Aldrin | 10.1449 | 2.188 | 84389.6 | 2.745 | BB | 0.033 | 42523.69 | 2.974 |
| 21 | 6.985 | | 0.0000 | 0.000 | 507.2 | 0.016 | BB | 0.047 | 178.57 | 0.012 |
| 22 | 7.153 | | 0.0000 | 0.000 | 912.3 | 0.030 | BB | 0.050 | 301.22 | 0.021 |
| 23 | 7.239 | | 0.0000 | 0.000 | 555.7 | 0.018 | BB | 0.032 | 287.92 | 0.020 |
| 24 | 7.613 | Hept. epoxide | 9.9695 | 2.150 | 89252.7 | 2.903 | BV | 0.035 | 42697.83 | 2.986 |
| 25 | 7.778 | g. Chlordane | 9.8177 | 2.117 | 84577.5 | 2.751 | VV | 0.035 | 40420.84 | 2.827 |
| 26 | 7.956 | a. Chlordane | 9.4814 | 2.045 | 88657.7 | 2.884 | VV | 0.036 | 41607.77 | 2.910 |
| 27 | 8.043 | 4,4'-DDE | 19.6985 | 4.248 | 136245.4 | 4.432 | VV | 0.033 | 69210.85 | 4.841 |
| 28 | 8.148 | Endosulfan I | 9.7301 | 2.098 | 83118.1 | 2.704 | VV | 0.036 | 38258.45 | 2.676 |
| 29 | 8.466 | Dieldrin | 19.1456 | 4.129 | 143627.1 | 4.672 | VV | 0.034 | 69728.59 | 4.877 |
| 30 | 8.609 | o,p-DDT | 22.6676 | 4.889 | 970.4 | 0.032 | VV | 0.052 | 311.26 | 0.022 |
| 31 | 8.777 | Endrin | 19.4215 | 4.189 | 129009.7 | 4.196 | VV | 0.033 | 64941.77 | 4.542 |
| 32 | 8.834 | 4,4'-DDD | 18.4986 | 3.989 | 114768.1 | 3.733 | VV | 0.036 | 52655.23 | 3.683 |
| 33 | 9.075 | Endosulfan II | 19.5703 | 4.221 | 142161.7 | 4.624 | VV | 0.036 | 65356.34 | 4.571 |
| 34 | 9.197 | 4,4'-DDT | 19.6561 | 4.239 | 117942.4 | 3.836 | VB | 0.035 | 56604.04 | 3.959 |
| 35 | 9.424 | | 0.0000 | 0.000 | 1691.8 | 0.055 | BB | 0.040 | 697.00 | 0.049 |
| 36 | 9.478 | | 0.0000 | 0.000 | 548.2 | 0.018 | BB | 0.031 | 294.99 | 0.021 |
| 37 | 9.625 | Endrin aldehyde | 19.4868 | 4.203 | 121258.0 | 3.944 | BB | 0.038 | 53458.48 | 3.739 |
| 38 | 9.808 | Methoxychlor | 94.6770 | 20.418 | 350402.9 | 11.397 | BB | 0.038 | 155204.80 | 10.855 |
| 39 | 10.196 | Endo. sulfate | 19.4766 | 4.200 | 127249.6 | 4.139 | BB | 0.037 | 57406.01 | 4.015 |
| 40 | 10.371 | | 0.0000 | 0.000 | 1486.6 | 0.048 | BB | 0.034 | 726.63 | 0.051 |
| 41 | 10.433 | | 0.0000 | 0.000 | 2086.2 | 0.068 | BB | 0.031 | 1113.05 | 0.078 |
| 42 | 10.565 | Endrin ketone | 19.7040 | 4.249 | 142078.2 | 4.621 | BB | 0.037 | 64227.27 | 4.492 |
| 43 | 10.959 | | 0.0000 | 0.000 | 912.4 | 0.030 | BB | 0.041 | 369.73 | 0.026 |
| 44 | 11.183 | | 0.0000 | 0.000 | 609.1 | 0.020 | BB | 0.127 | 80.23 | 0.006 |
| 45 | 11.629 | | 0.0000 | 0.000 | 1046.9 | 0.034 | BB | 0.042 | 417.55 | 0.029 |
| 46 | 11.928 | DCB | 35.8242 | 7.726 | 327205.0 | 10.643 | BB | 0.046 | 118189.30 | 8.266 |

Total Area = 3074388.0, Total Amount = 463.687, Total Height = 1429824.0, Sample Units = PPB

9667

Sample Name: **ICMAX0424B AAICMAXAA CCAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 01:31:40pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.13R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

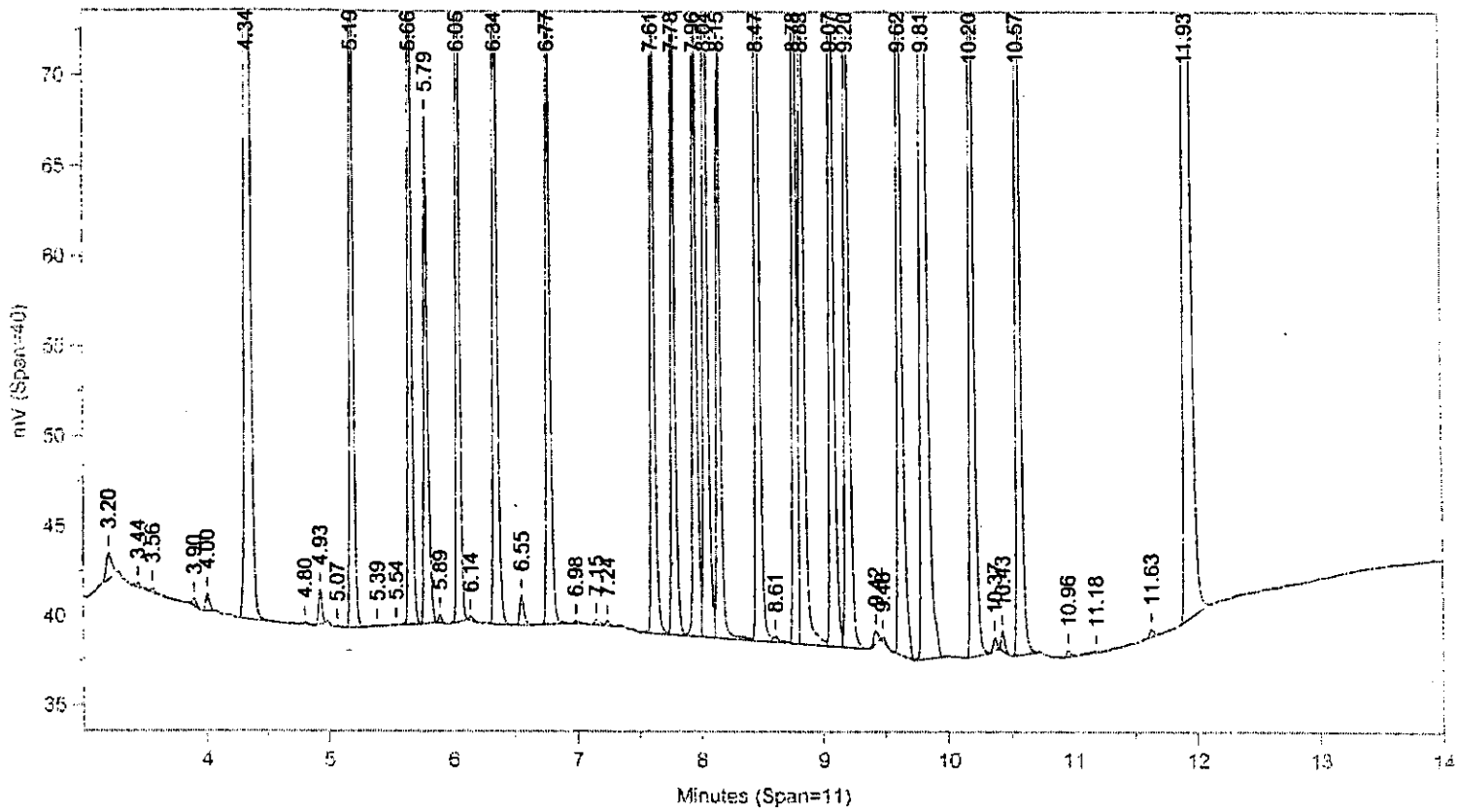
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.454 | | 0.0000 | 0.000 | 1186.1 | 0.030 | BB | 0.047 | 424.17 | 0.024 |
| 2 | 3.544 | | 0.0000 | 0.000 | 322.9 | 0.008 | BB | 0.046 | 115.84 | 0.006 |
| 3 | 3.632 | | 0.0000 | 0.000 | 3639.1 | 0.091 | BB | 0.045 | 1358.10 | 0.075 |
| 4 | 3.723 | | 0.0000 | 0.000 | 1695.1 | 0.042 | BB | 0.039 | 730.43 | 0.040 |
| 5 | 3.800 | | 0.0000 | 0.000 | 1718.5 | 0.043 | BB | 0.030 | 964.25 | 0.053 |
| 6 | 3.933 | | 0.0000 | 0.000 | 468.8 | 0.012 | BB | 0.057 | 136.91 | 0.008 |
| 7 | 4.062 | TCX | 36.8910 | 8.351 | 459188.0 | 11.494 | BB | 0.037 | 206989.60 | 11.477 |
| 8 | 4.277 | | 0.0000 | 0.000 | 882.3 | 0.022 | BB | 0.058 | 255.46 | 0.014 |
| 9 | 4.375 | | 0.0000 | 0.000 | 193.8 | 0.005 | BB | 0.029 | 109.62 | 0.006 |
| 10 | 4.448 | | 0.0000 | 0.000 | 989.7 | 0.025 | BB | 0.075 | 219.97 | 0.012 |
| 11 | 4.608 | | 0.0000 | 0.000 | 6639.4 | 0.166 | BB | 0.035 | 3200.14 | 0.177 |
| 12 | 4.817 | | 0.0000 | 0.000 | 860.9 | 0.022 | BB | 0.029 | 496.70 | 0.028 |
| 13 | 4.964 | alpha-BHC | 9.7544 | 2.208 | 153958.9 | 3.854 | BB | 0.031 | 83692.66 | 4.640 |
| 14 | 5.216 | | 0.0000 | 0.000 | 1437.9 | 0.036 | BB | 0.094 | 254.28 | 0.014 |
| 15 | 5.481 | gamma-BHC | 9.9138 | 2.244 | 147924.4 | 3.703 | BB | 0.031 | 78811.72 | 4.370 |
| 16 | 5.610 | beta-BHC | 9.8942 | 2.240 | 81483.4 | 2.040 | BB | 0.034 | 39459.28 | 2.188 |
| 17 | 5.754 | | 0.0000 | 0.000 | 1726.3 | 0.043 | BB | 0.040 | 724.45 | 0.040 |
| 18 | 5.953 | | 0.0000 | 0.000 | 678.6 | 0.017 | BB | 0.071 | 158.92 | 0.009 |
| 19 | 6.022 | delta-BHC | 10.1489 | 2.298 | 137440.0 | 3.440 | BV | 0.030 | 75623.30 | 4.193 |
| 20 | 6.097 | Heptachlor | 9.7243 | 2.201 | 154070.3 | 3.856 | VV | 0.033 | 77096.70 | 4.275 |
| 21 | 6.251 | | 0.0000 | 0.000 | 1549.5 | 0.039 | VB | 0.065 | 397.21 | 0.022 |
| 22 | 6.467 | | 0.0000 | 0.000 | 2318.6 | 0.058 | BV | 0.081 | 474.71 | 0.026 |
| 23 | 6.543 | Aldrin | 10.2705 | 2.325 | 125879.5 | 3.151 | VB | 0.032 | 65391.23 | 3.626 |
| 24 | 6.658 | | 0.0000 | 0.000 | 3083.1 | 0.077 | BB | 0.104 | 494.07 | 0.027 |
| 25 | 6.900 | | 0.0000 | 0.000 | 2515.0 | 0.063 | BB | 0.090 | 466.92 | 0.026 |
| 26 | 7.080 | | 0.0000 | 0.000 | 5214.4 | 0.131 | BB | 0.076 | 1138.59 | 0.063 |
| 27 | 7.321 | Hept. epoxide | 9.7567 | 2.209 | 130115.2 | 3.257 | BV | 0.037 | 57982.11 | 3.215 |
| 28 | 7.571 | g. Chlordane | 9.6080 | 2.175 | 121636.0 | 3.045 | VV | 0.036 | 55689.85 | 3.088 |
| 29 | 7.764 | a. Chlordane | 9.6899 | 2.194 | 112089.6 | 2.806 | VV | 0.035 | 53709.24 | 2.978 |
| 30 | 7.840 | Endosulfan I | 9.7052 | 2.197 | 109949.2 | 2.752 | VV | 0.036 | 51187.65 | 2.838 |
| 31 | 7.986 | 4,4'-DDE | 19.5763 | 4.432 | 193071.6 | 4.833 | VV | 0.035 | 91212.11 | 5.057 |
| 32 | 8.199 | Dieldrin | 19.2848 | 4.366 | 194941.4 | 4.879 | VV | 0.035 | 92891.42 | 5.150 |
| 33 | 8.423 | | 0.0000 | 0.000 | 742.4 | 0.019 | VB | 0.042 | 296.88 | 0.016 |
| 34 | 8.597 | Endrin | 19.5354 | 4.422 | 168471.0 | 4.217 | BV | 0.035 | 80644.33 | 4.471 |
| 35 | 8.735 | 4,4'-DDD | 18.5388 | 4.197 | 128692.8 | 3.221 | VV | 0.035 | 60523.32 | 3.356 |
| 36 | 8.874 | Endosulfan II | 19.7017 | 4.460 | 179362.2 | 4.489 | VB | 0.039 | 76313.30 | 4.231 |
| 37 | 9.138 | 4,4'-DDT | 19.5653 | 4.429 | 136199.1 | 3.409 | BB | 0.036 | 63760.50 | 3.535 |
| 38 | 9.307 | Endrin aldehyde | 19.4224 | 4.397 | 141852.5 | 3.551 | BB | 0.040 | 59560.94 | 3.302 |
| 39 | 9.660 | Endo. sulfate | 20.4520 | 4.630 | 152022.5 | 3.805 | BB | 0.038 | 66043.76 | 3.662 |
| 40 | 9.949 | | 0.0000 | 0.000 | 201.2 | 0.005 | BB | 0.029 | 116.19 | 0.006 |
| 41 | 10.016 | Methoxychlor | 95.5047 | 21.620 | 371322.8 | 9.294 | BB | 0.040 | 154757.40 | 8.581 |
| 42 | 10.176 | | 0.0000 | 0.000 | 407.4 | 0.010 | BB | 0.024 | 286.97 | 0.016 |
| 43 | 10.238 | | 0.0000 | 0.000 | 1403.7 | 0.035 | BB | 0.030 | 769.49 | 0.043 |
| 44 | 10.355 | Endrin ketone | 19.2041 | 4.347 | 160414.6 | 4.015 | BB | 0.039 | 69400.94 | 3.848 |
| 45 | 10.662 | | 0.0000 | 0.000 | 385.7 | 0.010 | BB | 0.043 | 150.30 | 0.008 |
| 46 | 10.790 | | 0.0000 | 0.000 | 469.0 | 0.012 | BB | 0.039 | 199.74 | 0.011 |
| 47 | 11.032 | | 0.0000 | 0.000 | 256.4 | 0.006 | BB | 0.069 | 61.60 | 0.003 |
| 48 | 11.654 | | 0.0000 | 0.000 | 1090.0 | 0.027 | BB | 0.041 | 441.02 | 0.024 |
| 49 | 12.076 | DCB | 35.5931 | 8.058 | 389851.7 | 9.758 | BB | 0.051 | 128226.50 | 7.110 |
| 50 | 12.929 | | 0.0000 | 0.000 | 362.9 | 0.009 | BB | 0.070 | 86.37 | 0.005 |
| 51 | 13.832 | | 0.0000 | 0.000 | 2797.9 | 0.070 | BB | 0.591 | 78.94 | 0.004 |

9558

Total Area = 3995173.0, Total Amount = 441.735, Total Height = 1803575.0, Sample Units = PPB

LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.13R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 1:17:40 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

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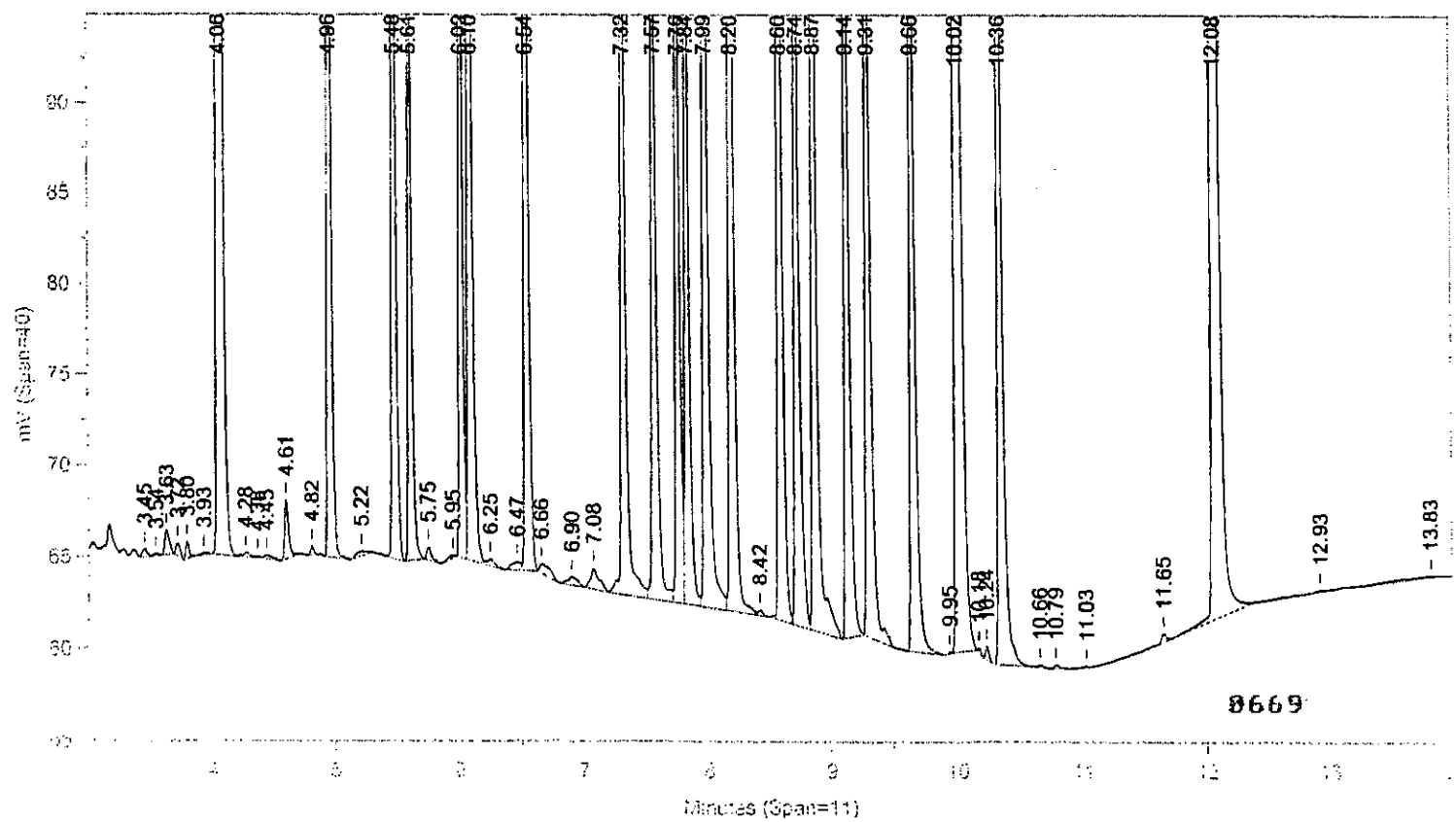


Instrument ID: CP16--H5262B Injected On: 3/22/2004 1:17:40 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.337 | 154832 | 37.532 | TCX | 4.062 | 206990 | 36.891 | TCX |
| 4.928 | 1959 | . | Hcb | . | 0 | . | Hcb |
| 5.186 | 49461 | 9.624 | alpha-BHC | 4.964 | 83693 | 9.754 | alpha-BHC |
| 5.656 | 50355 | 9.812 | gamma-BHC | 5.481 | 78812 | 9.914 | gamma-BHC |
| 5.787 | 28223 | 9.963 | beta-BHC | 5.61 | 39459 | 9.894 | beta-BHC |
| 6.046 | 49038 | 10.07 | delta-BHC | 6.022 | 75623 | 10.149 | delta-BHC |
| 6.344 | 52713 | 9.715 | Heptachlor | 6.097 | 77097 | 9.724 | Heptachlor |
| 6.77 | 42524 | 10.145 | Aldrin | 6.543 | 65391 | 10.27 | Aldrin |
| 7.613 | 42698 | 9.969 | Hept. epoxide | 7.321 | 57982 | 9.757 | Hept. epoxide |
| 7.778 | 40421 | 9.818 | g. Chlordane | 7.571 | 55690 | 9.608 | g. Chlordane |
| 7.956 | 41608 | 9.481 | a. Chlordane | 7.764 | 53709 | 9.69 | a. Chlordane |
| 8.148 | 38258 | 9.73 | Endosulfan I | 7.84 | 51188 | 9.705 | Endosulfan I |
| 8.043 | 69211 | 19.698 | 4,4'-DDE | 7.986 | 91212 | 19.576 | 4,4'-DDE |
| 8.466 | 69729 | 19.146 | Dieldrin | 8.199 | 92891 | 19.285 | Dieldrin |
| 8.777 | 64942 | 19.422 | Endrin | 8.597 | 80644 | 19.535 | Endrin |
| 8.609 | 311 | 22.668 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.834 | 52655 | 18.499 | 4,4'-DDD | 8.735 | 60522 | 18.539 | 4,4'-DDD |
| 9.075 | 65356 | 19.57 | Endosulfan II | 8.874 | 76313 | 19.702 | Endosulfan II |
| 9.197 | 56604 | 19.656 | 4,4'-DDT | 9.138 | 63760 | 19.565 | 4,4'-DDT |
| 9.625 | 53458 | 19.487 | Endrin aldehyde | 9.307 | 59561 | 19.422 | Endrin aldehyde |
| 10.196 | 57406 | 19.477 | Endo. sulfate | 9.66 | 66044 | 20.452 | Endo. sulfate |
| 9.808 | 155205 | 94.677 | Methoxychlor | 10.016 | 154757 | 95.505 | Methoxychlor |
| 10.565 | 64227 | 19.704 | Endrin ketone | 10.355 | 69401 | 19.204 | Endrin ketone |
| 11.928 | 118189 | 35.824 | DCB | 12.076 | 128227 | 35.593 | DCB |

Files:
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Area File: C:\CPWIN\DATA1\1D16082B.13A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
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Format B: C:\CPWIN\DATA1\PESTD.FMTB
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File Reported On: 3/22/2004 at 9:39:34 PM

Files:

10x REPLOTS

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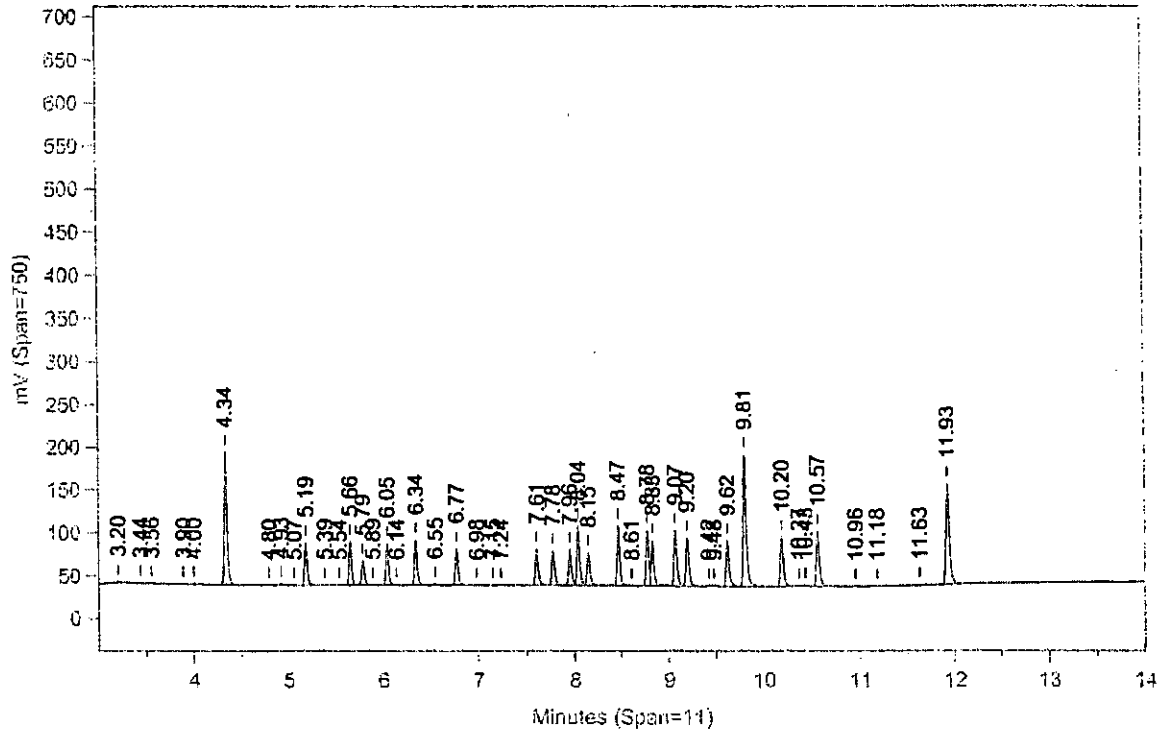
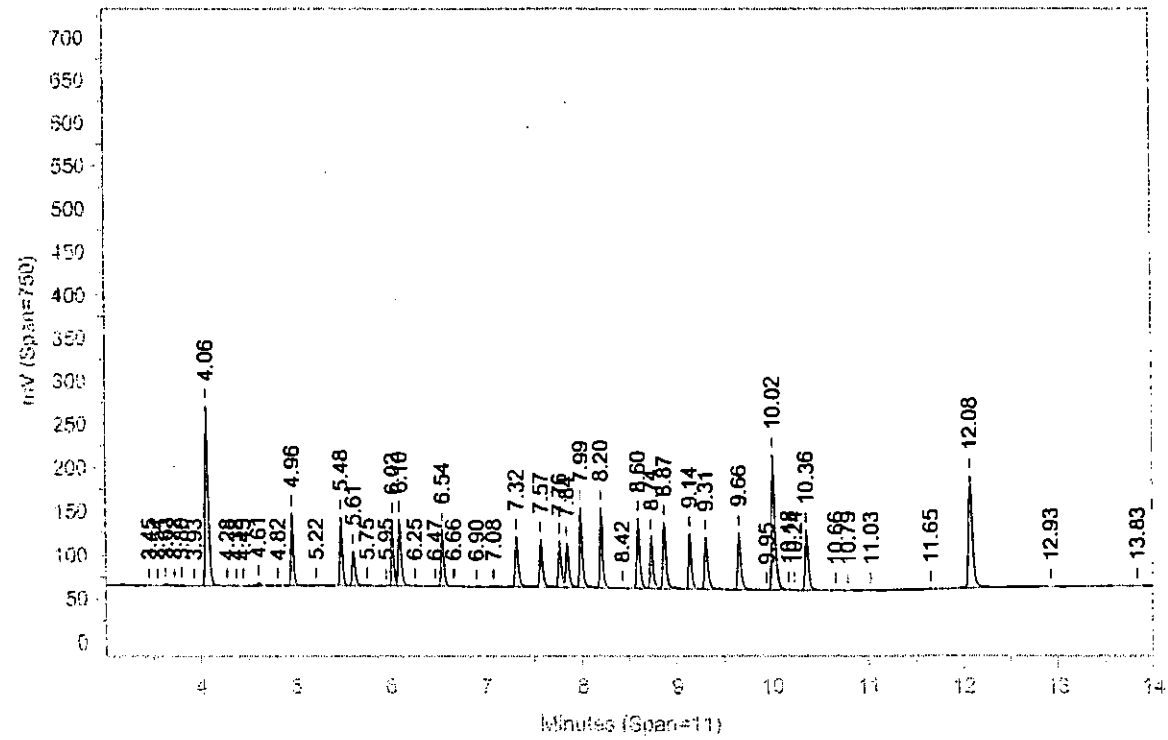



C:\CPWIN\DATA1\1D16082B.13R



Sample Name: **TOXWX03B AATOXWXAA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 03:35:14pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.19R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.204 | | 0.0000 | 0.000 | 719.9 | 0.045 | BB | 0.031 | 383.91 | 0.059 |
| 2 | 3.250 | | 0.0000 | 0.000 | 1611.4 | 0.101 | BB | 0.120 | 224.14 | 0.035 |
| 3 | 3.557 | | 0.0000 | 0.000 | 370.7 | 0.023 | BB | 0.027 | 230.62 | 0.036 |
| 4 | 3.804 | | 0.0000 | 0.000 | 371.2 | 0.023 | BB | 0.029 | 215.63 | 0.033 |
| 5 | 3.999 | | 0.0000 | 0.000 | 700.2 | 0.044 | BB | 0.040 | 291.80 | 0.045 |
| 6 | 4.088 | | 0.0000 | 0.000 | 878.6 | 0.055 | BB | 0.041 | 356.15 | 0.055 |
| 7 | 4.337 | TCX | 19.7271 | 17.946 | 169480.1 | 10.628 | BB | 0.035 | 81380.67 | 12.604 |
| 8 | 4.927 | Hcb | 0.1464 | 0.133 | 1928.9 | 0.121 | BB | 0.031 | 1027.88 | 0.159 |
| 9 | 4.992 | | 0.0000 | 0.000 | 198.9 | 0.012 | BB | 0.031 | 108.68 | 0.017 |
| 10 | 5.184 | alpha-BHC | 0.3125 | 0.284 | 2963.6 | 0.186 | BB | 0.031 | 1605.87 | 0.249 |
| 11 | 5.529 | | 0.0000 | 0.000 | 123.6 | 0.008 | BB | 0.039 | 52.42 | 0.008 |
| 12 | 5.627 | gamma-BHC | 0.1931 | 0.176 | 2392.4 | 0.150 | BB | 0.040 | 990.89 | 0.153 |
| 13 | 5.833 | | 0.0000 | 0.000 | 159.9 | 0.010 | BB | 0.057 | 46.59 | 0.007 |
| 14 | 5.893 | | 0.0000 | 0.000 | 441.7 | 0.028 | BB | 0.031 | 238.22 | 0.037 |
| 15 | 6.039 | delta-BHC | 0.0217 | 0.020 | 337.1 | 0.021 | BB | 0.053 | 105.80 | 0.016 |
| 16 | 6.159 | | 0.0000 | 0.000 | 706.2 | 0.044 | BB | 0.032 | 362.93 | 0.056 |
| 17 | 6.211 | | 0.0000 | 0.000 | 672.1 | 0.042 | BB | 0.035 | 319.52 | 0.049 |
| 18 | 6.330 | Heptachlor | 0.0231 | 0.021 | 236.3 | 0.015 | BB | 0.031 | 125.31 | 0.019 |
| 19 | 6.400 | | 0.0000 | 0.000 | 551.6 | 0.035 | BB | 0.048 | 190.76 | 0.030 |
| 20 | 6.548 | | 0.0000 | 0.000 | 1292.7 | 0.081 | BB | 0.042 | 511.58 | 0.079 |
| 21 | 6.619 | | 0.0000 | 0.000 | 216.1 | 0.014 | BB | 0.032 | 111.34 | 0.017 |
| 22 | 6.753 | Aldrin | 0.0596 | 0.054 | 750.9 | 0.047 | BB | 0.050 | 249.83 | 0.039 |
| 23 | 6.841 | | 0.0000 | 0.000 | 975.3 | 0.061 | BB | 0.044 | 365.58 | 0.057 |
| 24 | 6.933 | | 0.0000 | 0.000 | 288.7 | 0.018 | BB | 0.029 | 167.09 | 0.026 |
| 25 | 6.969 | | 0.0000 | 0.000 | 117.0 | 0.007 | BB | 0.018 | 106.95 | 0.017 |
| 26 | 7.024 | | 0.0000 | 0.000 | 5511.5 | 0.346 | BB | 0.044 | 2077.34 | 0.322 |
| 27 | 7.188 | | 0.0000 | 0.000 | 466.0 | 0.029 | BB | 0.034 | 229.78 | 0.036 |
| 28 | 7.225 | | 0.0000 | 0.000 | 196.2 | 0.012 | BB | 0.021 | 157.61 | 0.024 |
| 29 | 7.271 | | 0.0000 | 0.000 | 209.4 | 0.013 | BB | 0.023 | 152.43 | 0.024 |
| 30 | 7.318 | | 0.0000 | 0.000 | 169.9 | 0.011 | BB | 0.020 | 139.97 | 0.022 |
| 31 | 7.371 | | 0.0000 | 0.000 | 1535.3 | 0.096 | BB | 0.030 | 860.69 | 0.133 |
| 32 | 7.423 | | 0.0000 | 0.000 | 1055.3 | 0.066 | BB | 0.026 | 682.01 | 0.106 |
| 33 | 7.479 | | 0.0000 | 0.000 | 4369.7 | 0.274 | BB | 0.030 | 2394.40 | 0.371 |
| 34 | 7.537 | | 0.0000 | 0.000 | 2243.6 | 0.141 | BB | 0.032 | 1176.66 | 0.182 |
| 35 | 7.620 | Hept. epoxide | 0.1746 | 0.159 | 1174.1 | 0.074 | BB | 0.026 | 747.66 | 0.116 |
| 36 | 7.709 | | 0.0000 | 0.000 | 2775.9 | 0.174 | BV | 0.052 | 885.72 | 0.137 |
| 37 | 7.752 | g. Chlordane | 0.3858 | 0.351 | 3221.4 | 0.202 | VV | 0.034 | 1588.54 | 0.246 |
| 38 | 7.813 | | 0.0000 | 0.000 | 3998.2 | 0.251 | VB | 0.044 | 1522.47 | 0.236 |
| 39 | 7.947 | a. Chlordane | 1.4467 | 1.316 | 24956.2 | 1.565 | BV | 0.066 | 6348.68 | 0.983 |
| 40 | 8.062 | 4,4'-DDE | 0.3657 | 0.333 | 2372.7 | 0.149 | VV | 0.031 | 1285.04 | 0.199 |
| 41 | 8.104 | | 0.0000 | 0.000 | 3600.8 | 0.226 | VV | 0.030 | 1994.05 | 0.309 |
| 42 | 8.149 | Endosulfan I | 1.2881 | 1.172 | 15114.8 | 0.948 | VV | 0.050 | 5064.71 | 0.784 |
| 43 | 8.231 | | 0.0000 | 0.000 | 8278.4 | 0.519 | VV | 0.061 | 2274.41 | 0.352 |
| 44 | 8.321 | | 0.0000 | 0.000 | 7585.6 | 0.476 | VV | 0.041 | 3067.52 | 0.475 |
| 45 | 8.417 | | 0.0000 | 0.000 | 32384.8 | 2.031 | VV | 0.051 | 10666.83 | 1.652 |
| 46 | 8.465 | Dieldrin | 2.5169 | 2.290 | 21299.7 | 1.336 | VB | 0.039 | 9166.45 | 1.420 |
| 47 | 8.584 | o,p-DDT | 5.6193 | 5.112 | 45510.4 | 2.854 | BV | 0.051 | 14981.85 | 2.320 |
| 48 | 8.672 | | 0.0000 | 0.000 | 49473.0 | 3.102 | VV | 0.046 | 18113.66 | 2.805 |
| 49 | 8.806 | Kepone | 23.7842 | 21.637 | 73430.0 | 4.605 | VV | 0.066 | 18613.40 | 2.883 |
| 50 | 8.884 | | 0.0000 | 0.000 | 37775.1 | 2.369 | VV | 0.038 | 16669.75 | 2.582 |
| 51 | 8.937 | | 0.0000 | 0.000 | 29142.9 | 1.828 | VV | 0.048 | 10134.57 | 1.570 |
| 52 | 9.054 | | 0.0000 | 0.000 | 59803.1 | 3.750 | VV | 0.063 | 15745.01 | 2.439 |
| 53 | 9.092 | Endosulfan II | 4.2629 | 3.878 | 31847.3 | 1.997 | VV | 0.037 | 14236.27 | 2.205 |
| 54 | 9.171 | | 0.0000 | 0.000 | 70969.6 | 4.450 | VV | 0.061 | 19278.29 | 2.986 |
| 55 | 9.215 | 4,4'-DDT | 8.7835 | 7.991 | 59129.7 | 3.708 | VV | 0.039 | 25294.05 | 3.917 |
| 56 | 9.289 | | 0.0000 | 0.000 | 2701.6 | 0.169 | VB | 0.026 | 1712.76 | 0.265 |

8672

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.354 | | 0.0000 | 0.000 | 2270.6 | 0.142 | BB | 0.027 | 1398.09 | 0.217 |
| 58 | 9.417 | | 0.0000 | 0.000 | 24572.2 | 1.541 | BB | 0.038 | 10856.31 | 1.681 |
| 59 | 9.495 | | 0.0000 | 0.000 | 35405.8 | 2.220 | BB | 0.032 | 18422.71 | 2.853 |
| 60 | 9.584 | | 0.0000 | 0.000 | 68744.6 | 4.311 | BB | 0.045 | 25678.14 | 3.977 |
| 61 | 9.655 | | 0.0000 | 0.000 | 17695.1 | 1.110 | BB | 0.035 | 8312.44 | 1.287 |
| 62 | 9.741 | | 0.0000 | 0.000 | 19019.9 | 1.193 | BB | 0.025 | 12905.90 | 1.999 |
| 63 | 9.794 | Methoxychlor | 9.4439 | 8.591 | 29529.5 | 1.852 | BB | 0.032 | 15481.55 | 2.398 |
| 64 | 9.873 | | 0.0000 | 0.000 | 6733.4 | 0.422 | BB | 0.024 | 4772.59 | 0.739 |
| 65 | 9.932 | | 0.0000 | 0.000 | 60234.0 | 3.777 | BB | 0.048 | 20935.96 | 3.243 |
| 66 | 10.056 | Mirex | 8.3671 | 7.612 | 65174.8 | 4.087 | BB | 0.046 | 23561.14 | 3.649 |
| 67 | 10.114 | | 0.0000 | 0.000 | 13167.2 | 0.826 | BB | 0.028 | 7833.97 | 1.213 |
| 68 | 10.174 | Endo. sulfate | 3.8839 | 3.533 | 19148.6 | 1.201 | BB | 0.028 | 11447.56 | 1.773 |
| 69 | 10.270 | | 0.0000 | 0.000 | 28102.3 | 1.762 | BB | 0.032 | 14520.31 | 2.249 |
| 70 | 10.350 | | 0.0000 | 0.000 | 25966.9 | 1.628 | BB | 0.037 | 11715.29 | 1.814 |
| 71 | 10.422 | | 0.0000 | 0.000 | 13141.4 | 0.824 | BB | 0.033 | 6716.02 | 1.040 |
| 72 | 10.523 | | 0.0000 | 0.000 | 67153.1 | 4.211 | BB | 0.041 | 27008.37 | 4.183 |
| 73 | 10.609 | | 0.0000 | 0.000 | 1998.9 | 0.125 | BB | 0.022 | 1487.51 | 0.230 |
| 74 | 10.647 | | 0.0000 | 0.000 | 16659.1 | 1.045 | BB | 0.026 | 10587.33 | 1.640 |
| 75 | 10.713 | | 0.0000 | 0.000 | 36471.9 | 2.287 | BB | 0.035 | 17298.15 | 2.679 |
| 76 | 10.793 | | 0.0000 | 0.000 | 3750.4 | 0.235 | BB | 0.022 | 2849.50 | 0.441 |
| 77 | 10.830 | | 0.0000 | 0.000 | 6346.5 | 0.398 | BB | 0.024 | 4458.95 | 0.691 |
| 78 | 10.880 | | 0.0000 | 0.000 | 5892.6 | 0.370 | BB | 0.026 | 3752.82 | 0.581 |
| 79 | 10.958 | | 0.0000 | 0.000 | 4949.6 | 0.310 | BB | 0.034 | 2421.04 | 0.375 |
| 80 | 11.044 | | 0.0000 | 0.000 | 6156.5 | 0.386 | BB | 0.038 | 2679.02 | 0.415 |
| 81 | 11.214 | | 0.0000 | 0.000 | 7978.6 | 0.500 | BB | 0.040 | 3302.78 | 0.512 |
| 82 | 11.297 | | 0.0000 | 0.000 | 11216.4 | 0.703 | BB | 0.040 | 4659.05 | 0.722 |
| 83 | 11.430 | | 0.0000 | 0.000 | 5044.7 | 0.316 | BB | 0.052 | 1603.77 | 0.248 |
| 84 | 11.588 | | 0.0000 | 0.000 | 3691.6 | 0.231 | BB | 0.041 | 1492.73 | 0.231 |
| 85 | 11.688 | | 0.0000 | 0.000 | 8826.9 | 0.554 | BB | 0.053 | 2795.72 | 0.433 |
| 86 | 11.825 | | 0.0000 | 0.000 | 375.0 | 0.024 | BB | 0.031 | 201.81 | 0.031 |
| 87 | 11.929 | DCB | 19.1170 | 17.391 | 175228.2 | 10.988 | BB | 0.046 | 63069.63 | 9.768 |
| 88 | 12.081 | | 0.0000 | 0.000 | 2104.6 | 0.132 | BB | 0.039 | 901.01 | 0.140 |
| 89 | 12.135 | | 0.0000 | 0.000 | 441.0 | 0.028 | BB | 0.025 | 292.06 | 0.045 |
| 90 | 12.222 | | 0.0000 | 0.000 | 2645.3 | 0.166 | BB | 0.038 | 1165.48 | 0.181 |
| 91 | 12.295 | | 0.0000 | 0.000 | 485.3 | 0.030 | BB | 0.032 | 255.52 | 0.040 |
| 92 | 12.432 | | 0.0000 | 0.000 | 1100.9 | 0.069 | BB | 0.070 | 262.03 | 0.041 |
| 93 | 12.566 | | 0.0000 | 0.000 | 1000.6 | 0.063 | BB | 0.064 | 259.85 | 0.040 |
| 94 | 12.654 | | 0.0000 | 0.000 | 299.0 | 0.019 | BB | 0.039 | 126.53 | 0.020 |
| 95 | 12.756 | | 0.0000 | 0.000 | 1461.2 | 0.092 | BB | 0.043 | 561.28 | 0.087 |
| 96 | 12.883 | | 0.0000 | 0.000 | 1604.6 | 0.101 | BB | 0.069 | 390.08 | 0.060 |
| 97 | 13.285 | | 0.0000 | 0.000 | 810.2 | 0.051 | BB | 0.094 | 144.10 | 0.022 |
| 98 | 13.911 | | 0.0000 | 0.000 | 1276.8 | 0.080 | BB | 0.392 | 54.34 | 0.008 |

Total Area = 1594663.0, Total Amount = 109.923, Total Height = 645671.1, Sample Units = PPB

Sample Name: **TOXWX03B AATOXWXAA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 03:35:14pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.19R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.453 | | 0.0000 | 0.000 | 1211.2 | 0.066 | BB | 0.050 | 406.55 | 0.053 |
| 2 | 3.549 | | 0.0000 | 0.000 | 392.0 | 0.021 | BB | 0.031 | 213.60 | 0.028 |
| 3 | 3.632 | | 0.0000 | 0.000 | 2921.1 | 0.159 | BB | 0.042 | 1170.75 | 0.153 |
| 4 | 3.723 | | 0.0000 | 0.000 | 937.1 | 0.051 | BB | 0.036 | 430.74 | 0.056 |
| 5 | 3.813 | | 0.0000 | 0.000 | 706.5 | 0.038 | BB | 0.041 | 284.43 | 0.037 |
| 6 | 3.885 | | 0.0000 | 0.000 | 260.9 | 0.014 | BB | 0.031 | 139.50 | 0.018 |
| 7 | 4.061 | TCX | 20.0730 | 22.217 | 245303.0 | 13.332 | BB | 0.036 | 112626.60 | 14.714 |
| 8 | 4.316 | | 0.0000 | 0.000 | 483.1 | 0.026 | BB | 0.037 | 215.14 | 0.028 |
| 9 | 4.372 | | 0.0000 | 0.000 | 389.9 | 0.021 | BB | 0.030 | 215.09 | 0.028 |
| 10 | 4.445 | | 0.0000 | 0.000 | 962.3 | 0.052 | BB | 0.070 | 228.94 | 0.030 |
| 11 | 4.607 | | 0.0000 | 0.000 | 3468.0 | 0.188 | BB | 0.035 | 1663.24 | 0.217 |
| 12 | 4.715 | | 0.0000 | 0.000 | 398.1 | 0.022 | BB | 0.056 | 117.87 | 0.015 |
| 13 | 4.815 | | 0.0000 | 0.000 | 249.3 | 0.014 | BB | 0.025 | 166.74 | 0.022 |
| 14 | 4.962 | alpha-BHC | 0.3356 | 0.371 | 5046.4 | 0.274 | BB | 0.029 | 2879.51 | 0.376 |
| 15 | 5.238 | | 0.0000 | 0.000 | 1469.0 | 0.080 | BB | 0.111 | 219.77 | 0.029 |
| 16 | 5.381 | | 0.0000 | 0.000 | 224.6 | 0.012 | BB | 0.032 | 115.38 | 0.015 |
| 17 | 5.460 | gamma-BHC | 0.2139 | 0.237 | 3651.0 | 0.198 | BB | 0.036 | 1700.76 | 0.222 |
| 18 | 5.654 | | 0.0000 | 0.000 | 1736.8 | 0.094 | BB | 0.086 | 335.05 | 0.044 |
| 19 | 5.751 | | 0.0000 | 0.000 | 1357.8 | 0.074 | BB | 0.053 | 425.00 | 0.056 |
| 20 | 5.949 | | 0.0000 | 0.000 | 1419.3 | 0.077 | BB | 0.056 | 424.33 | 0.055 |
| 21 | 6.013 | delta-BHC | 0.0218 | 0.024 | 215.1 | 0.012 | BV | 0.022 | 162.75 | 0.021 |
| 22 | 6.054 | | 0.0000 | 0.000 | 1348.1 | 0.073 | VV | 0.031 | 735.48 | 0.096 |
| 23 | 6.119 | Heptachlor | 0.0727 | 0.081 | 968.9 | 0.053 | VB | 0.028 | 576.65 | 0.075 |
| 24 | 6.257 | | 0.0000 | 0.000 | 3454.3 | 0.188 | BB | 0.077 | 744.49 | 0.097 |
| 25 | 6.393 | | 0.0000 | 0.000 | 2437.0 | 0.132 | BV | 0.040 | 1018.55 | 0.133 |
| 26 | 6.456 | | 0.0000 | 0.000 | 2671.8 | 0.145 | VB | 0.077 | 577.55 | 0.075 |
| 27 | 6.678 | | 0.0000 | 0.000 | 7714.0 | 0.419 | BB | 0.046 | 2814.29 | 0.368 |
| 28 | 6.768 | Telodrin | 0.1126 | 0.125 | 901.1 | 0.049 | BB | 0.023 | 663.78 | 0.087 |
| 29 | 6.860 | | 0.0000 | 0.000 | 3506.7 | 0.191 | BB | 0.050 | 1160.57 | 0.152 |
| 30 | 6.950 | | 0.0000 | 0.000 | 500.6 | 0.027 | BB | 0.024 | 347.82 | 0.045 |
| 31 | 7.002 | | 0.0000 | 0.000 | 310.5 | 0.017 | BB | 0.022 | 231.40 | 0.030 |
| 32 | 7.040 | | 0.0000 | 0.000 | 1599.5 | 0.087 | BB | 0.026 | 1010.70 | 0.132 |
| 33 | 7.109 | | 0.0000 | 0.000 | 10346.5 | 0.562 | BB | 0.036 | 4852.86 | 0.634 |
| 34 | 7.222 | | 0.0000 | 0.000 | 2456.2 | 0.133 | BB | 0.037 | 1098.58 | 0.144 |
| 35 | 7.305 | Hept. epoxide | 0.6401 | 0.708 | 12806.0 | 0.696 | BV | 0.056 | 3804.17 | 0.497 |
| 36 | 7.437 | | 0.0000 | 0.000 | 11130.6 | 0.605 | VV | 0.051 | 3668.72 | 0.479 |
| 37 | 7.555 | g. Chlordane | 0.4274 | 0.473 | 4919.2 | 0.267 | VV | 0.033 | 2477.07 | 0.324 |
| 38 | 7.597 | o,p-DDE | 0.4773 | 0.528 | 3418.4 | 0.186 | VV | 0.034 | 1671.62 | 0.218 |
| 39 | 7.659 | | 0.0000 | 0.000 | 34928.3 | 1.898 | VB | 0.049 | 11770.62 | 1.538 |
| 40 | 7.804 | | 0.0000 | 0.000 | 3488.1 | 0.190 | BV | 0.030 | 1967.13 | 0.257 |
| 41 | 7.877 | | 0.0000 | 0.000 | 23209.4 | 1.261 | VV | 0.084 | 4627.44 | 0.605 |
| 42 | 8.015 | | 0.0000 | 0.000 | 17471.9 | 0.950 | VV | 0.073 | 4004.87 | 0.523 |
| 43 | 8.101 | | 0.0000 | 0.000 | 2762.9 | 0.150 | VV | 0.033 | 1396.52 | 0.182 |
| 44 | 8.176 | Dieldrin | 4.1649 | 4.610 | 63054.2 | 3.427 | VB | 0.052 | 20061.68 | 2.621 |
| 45 | 8.318 | | 0.0000 | 0.000 | 21566.2 | 1.172 | BB | 0.032 | 11182.30 | 1.461 |
| 46 | 8.400 | | 0.0000 | 0.000 | 16791.0 | 0.913 | BB | 0.038 | 7372.82 | 0.963 |
| 47 | 8.476 | | 0.0000 | 0.000 | 5884.2 | 0.320 | BB | 0.025 | 3876.19 | 0.506 |
| 48 | 8.512 | | 0.0000 | 0.000 | 16745.8 | 0.910 | BB | 0.037 | 7599.06 | 0.993 |
| 49 | 8.598 | Endrin | 0.8872 | 0.982 | 5523.4 | 0.300 | BB | 0.025 | 3662.31 | 0.478 |
| 50 | 8.716 | 4,4'-DDD | 4.8707 | 5.391 | 53506.5 | 2.908 | BV | 0.056 | 15900.86 | 2.077 |
| 51 | 8.801 | | 0.0000 | 0.000 | 30751.5 | 1.671 | VV | 0.036 | 14339.81 | 1.873 |
| 52 | 8.852 | Endosulfan II | 5.0830 | 5.626 | 44056.3 | 2.395 | VV | 0.037 | 19688.61 | 2.572 |
| 53 | 8.975 | | 0.0000 | 0.000 | 151463.5 | 8.232 | VV | 0.051 | 49900.77 | 6.519 |
| 54 | 9.075 | | 0.0000 | 0.000 | 33110.1 | 1.800 | VB | 0.036 | 15189.45 | 1.984 |
| 55 | 9.217 | | 0.0000 | 0.000 | 55002.7 | 2.989 | BV | 0.042 | 21573.93 | 2.819 |
| 56 | 9.311 | Endrin aldehyde | 11.7857 | 13.044 | 101374.2 | 5.510 | VV | 0.047 | 36142.13 | 4.722 |

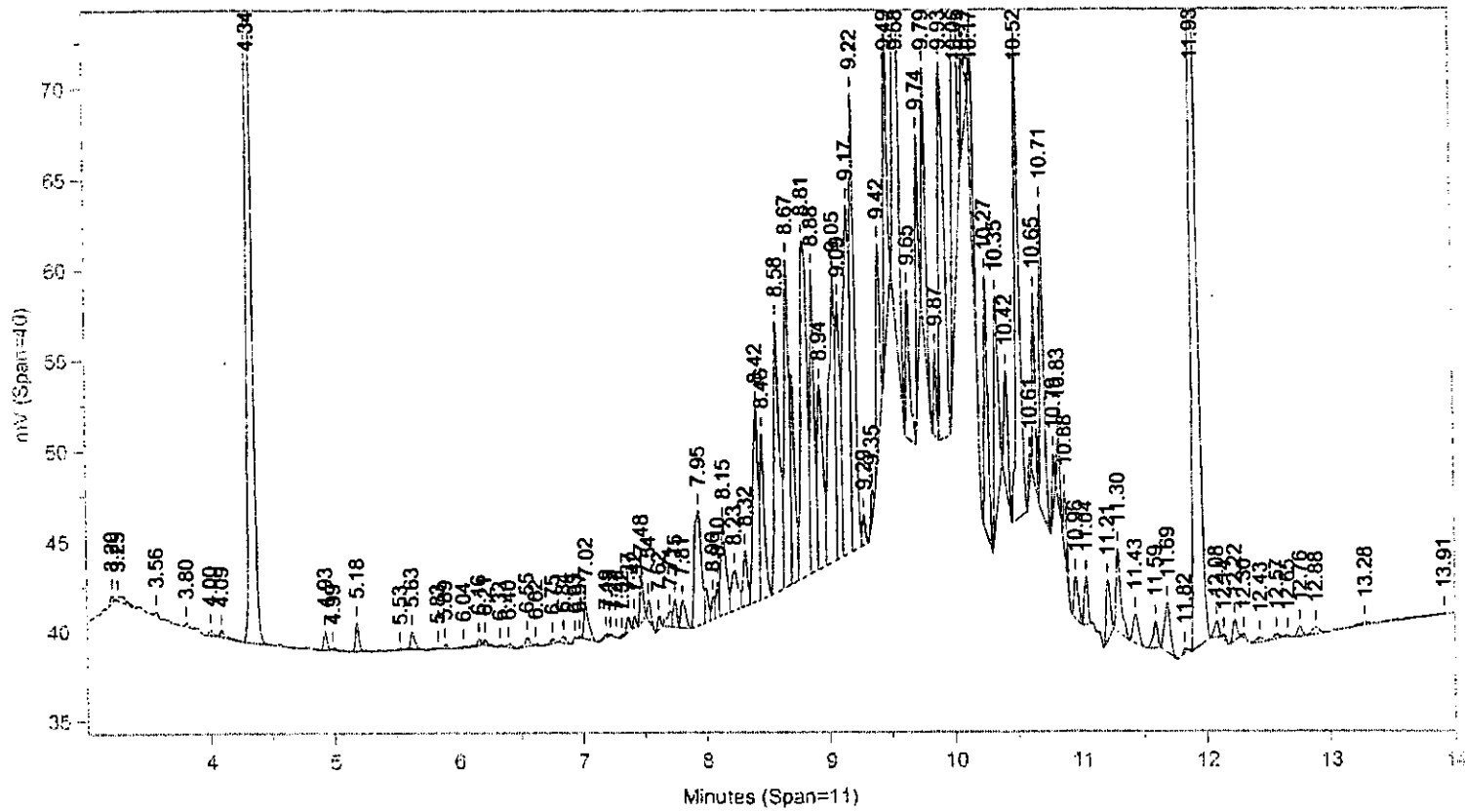
8674

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.392 | | 0.0000 | 0.000 | 38080.5 | 2.070 | VV | 0.027 | 23310.14 | 3.045 |
| 58 | 9.420 | | 0.0000 | 0.000 | 67431.7 | 3.665 | VV | 0.039 | 29156.54 | 3.809 |
| 59 | 9.494 | | 0.0000 | 0.000 | 18811.0 | 1.022 | VB | 0.041 | 7703.18 | 1.006 |
| 60 | 9.591 | | 0.0000 | 0.000 | 31639.5 | 1.720 | BB | 0.041 | 12995.97 | 1.698 |
| 61 | 9.646 | Endo. sulfate | 4.1322 | 4.573 | 20236.9 | 1.100 | BB | 0.025 | 13343.57 | 1.743 |
| 62 | 9.728 | | 0.0000 | 0.000 | 10899.2 | 0.592 | BB | 0.032 | 5659.74 | 0.739 |
| 63 | 9.768 | | 0.0000 | 0.000 | 3909.7 | 0.212 | BB | 0.019 | 3388.12 | 0.443 |
| 64 | 9.806 | | 0.0000 | 0.000 | 16569.8 | 0.901 | BB | 0.035 | 7793.52 | 1.018 |
| 65 | 9.909 | | 0.0000 | 0.000 | 6357.6 | 0.346 | BB | 0.024 | 4363.06 | 0.570 |
| 66 | 9.972 | | 0.0000 | 0.000 | 82998.8 | 4.511 | BB | 0.037 | 36917.85 | 4.823 |
| 67 | 10.041 | Methoxychlor | 13.5898 | 15.041 | 50229.2 | 2.730 | BB | 0.038 | 22021.19 | 2.877 |
| 68 | 10.104 | | 0.0000 | 0.000 | 23997.0 | 1.304 | BB | 0.028 | 14514.60 | 1.896 |
| 69 | 10.220 | | 0.0000 | 0.000 | 16671.5 | 0.906 | BB | 0.027 | 10179.72 | 1.330 |
| 70 | 10.287 | Mirex | 4.6817 | 5.182 | 29453.6 | 1.601 | BB | 0.037 | 13378.86 | 1.748 |
| 71 | 10.421 | | 0.0000 | 0.000 | 25371.4 | 1.379 | BB | 0.042 | 10140.38 | 1.325 |
| 72 | 10.477 | | 0.0000 | 0.000 | 44363.9 | 2.411 | BB | 0.037 | 20154.55 | 2.633 |
| 73 | 10.569 | | 0.0000 | 0.000 | 10784.1 | 0.586 | BB | 0.041 | 4392.24 | 0.574 |
| 74 | 10.637 | | 0.0000 | 0.000 | 14352.4 | 0.780 | BB | 0.027 | 8772.44 | 1.146 |
| 75 | 10.709 | | 0.0000 | 0.000 | 39652.2 | 2.155 | BB | 0.038 | 17526.10 | 2.290 |
| 76 | 10.777 | | 0.0000 | 0.000 | 7397.2 | 0.402 | BB | 0.027 | 4594.21 | 0.600 |
| 77 | 10.850 | | 0.0000 | 0.000 | 3329.3 | 0.181 | BB | 0.027 | 2041.62 | 0.267 |
| 78 | 10.883 | | 0.0000 | 0.000 | 4832.4 | 0.263 | BB | 0.030 | 2687.47 | 0.351 |
| 79 | 10.981 | | 0.0000 | 0.000 | 10480.7 | 0.570 | BB | 0.059 | 2983.08 | 0.390 |
| 80 | 11.087 | | 0.0000 | 0.000 | 7614.0 | 0.414 | BB | 0.033 | 3831.27 | 0.501 |
| 81 | 11.170 | | 0.0000 | 0.000 | 1779.7 | 0.097 | BB | 0.032 | 938.40 | 0.123 |
| 82 | 11.312 | | 0.0000 | 0.000 | 4523.5 | 0.246 | BB | 0.032 | 2365.97 | 0.309 |
| 83 | 11.359 | | 0.0000 | 0.000 | 4682.4 | 0.254 | BB | 0.025 | 3072.31 | 0.401 |
| 84 | 11.450 | | 0.0000 | 0.000 | 2184.7 | 0.119 | BB | 0.050 | 727.32 | 0.095 |
| 85 | 11.536 | | 0.0000 | 0.000 | 1470.3 | 0.080 | BB | 0.034 | 726.53 | 0.095 |
| 86 | 11.656 | | 0.0000 | 0.000 | 1029.7 | 0.056 | BB | 0.052 | 329.34 | 0.043 |
| 87 | 11.727 | | 0.0000 | 0.000 | 348.4 | 0.019 | BB | 0.025 | 235.11 | 0.031 |
| 88 | 11.816 | | 0.0000 | 0.000 | 5366.6 | 0.292 | BB | 0.058 | 1547.09 | 0.202 |
| 89 | 11.908 | | 0.0000 | 0.000 | 1283.4 | 0.070 | BB | 0.031 | 700.30 | 0.091 |
| 90 | 12.007 | | 0.0000 | 0.000 | 1363.5 | 0.074 | BB | 0.036 | 623.00 | 0.081 |
| 91 | 12.077 | DCB | 18.7809 | 20.787 | 197786.4 | 10.750 | BB | 0.049 | 67659.51 | 8.839 |
| 92 | 12.266 | | 0.0000 | 0.000 | 883.3 | 0.048 | BB | 0.038 | 389.18 | 0.051 |
| 93 | 12.374 | | 0.0000 | 0.000 | 2156.0 | 0.117 | BB | 0.047 | 760.62 | 0.099 |
| 94 | 12.590 | | 0.0000 | 0.000 | 299.9 | 0.016 | BB | 0.044 | 112.85 | 0.015 |
| 95 | 12.680 | | 0.0000 | 0.000 | 168.8 | 0.009 | BB | 0.027 | 104.17 | 0.014 |
| 96 | 12.743 | | 0.0000 | 0.000 | 190.6 | 0.010 | BB | 0.034 | 93.25 | 0.012 |
| 97 | 12.834 | | 0.0000 | 0.000 | 1898.3 | 0.103 | BB | 0.058 | 548.94 | 0.072 |
| 98 | 13.022 | | 0.0000 | 0.000 | 1667.3 | 0.091 | BB | 0.055 | 503.06 | 0.066 |
| 99 | 13.227 | | 0.0000 | 0.000 | 258.5 | 0.014 | BB | 0.064 | 66.95 | 0.009 |
| 100 | 13.381 | | 0.0000 | 0.000 | 275.6 | 0.015 | BB | 0.049 | 92.99 | 0.012 |
| 101 | 13.623 | | 0.0000 | 0.000 | 832.1 | 0.045 | BB | 0.106 | 130.47 | 0.017 |

Total Area = 1839895.0, Total Amount = 90.351, Total Height = 765429.4, Sample Units = PPB

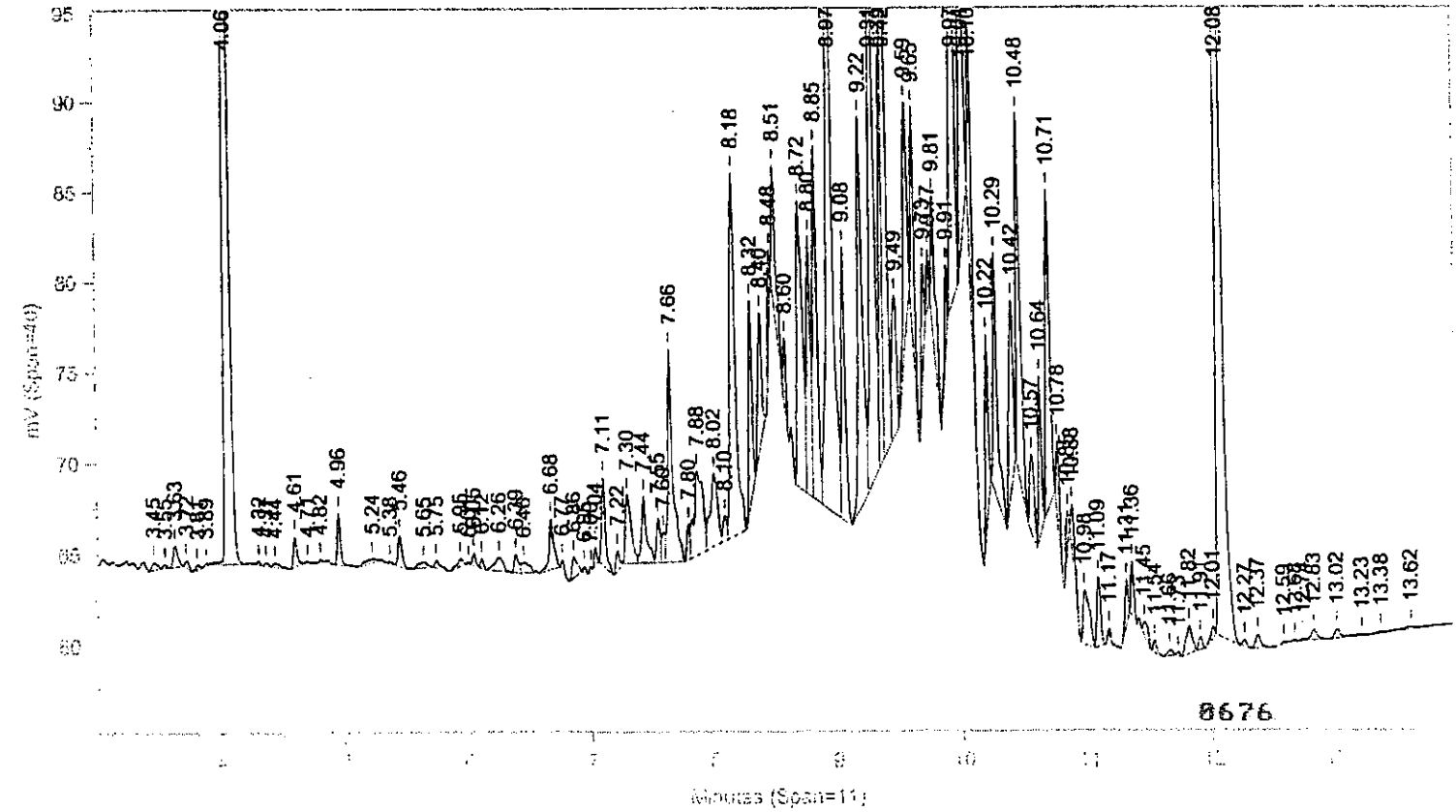
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.19R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 3:21:14 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.19R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 3:21:14 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

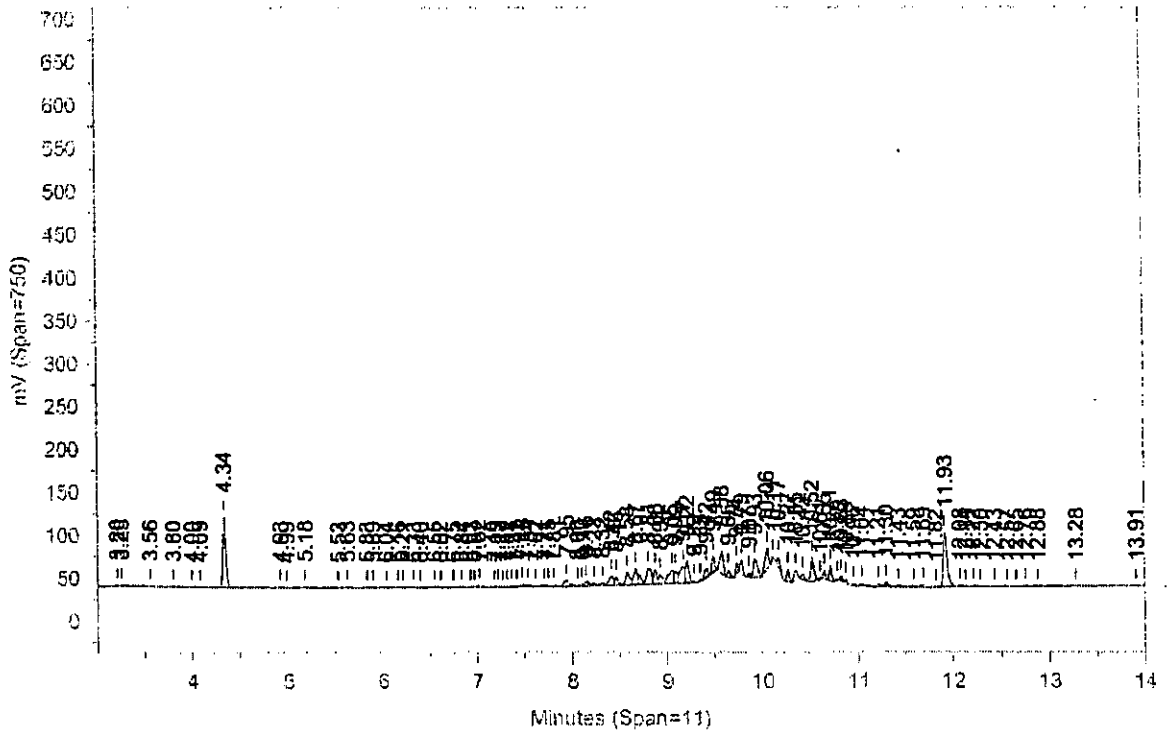
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.337 | 81381 | 19.727 | TCX | 4.061 | 112627 | 20.073 | TCX |
| 4.927 | 1028 | .146 | Hcb | . | 0 | . | Hcb |
| 5.184 | 1606 | .312 | alpha-BHC | 4.962 | 2880 | .336 | alpha-BHC |
| 5.627 | 991 | .193 | gamma-BHC | 5.46 | 1701 | .214 | gamma-BHC |
| 6.039 | 106 | .022 | delta-BHC | 6.013 | 163 | .022 | delta-BHC |
| 6.33 | 125 | .023 | Heptachlor | 6.119 | 577 | .073 | Heptachlor |
| 6.753 | 250 | .06 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Telodrin | 6.768 | 664 | .113 | Telodrin |
| 7.62 | 748 | .175 | Hept. epoxide | 7.305 | 3804 | .64 | Hept. epoxide |
| 7.752 | 1589 | .386 | g. Chlordane | 7.555 | 2477 | .427 | g. Chlordane |
| . | 0 | . | o,p-DDE | 7.597 | 1672 | .477 | o,p-DDE |
| 7.947 | 6349 | 1.447 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.062 | 1285 | .366 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.149 | 5065 | 1.288 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.465 | 9166 | 2.517 | Dieldrin | 8.176 | 20062 | 4.165 | Dieldrin |
| 8.584 | 14982 | 5.619 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | Endrin | 8.598 | 3662 | .887 | Endrin |
| . | 0 | . | 4,4'-DDD | 8.716 | 15901 | 4.871 | 4,4'-DDD |
| 8.806 | 18613 | 23.784 | Kepone | . | 0 | . | Kepone |
| 9.092 | 14236 | 4.263 | Endosulfan II | 8.852 | 19689 | 5.083 | Endosulfan II |
| 9.215 | 25294 | 8.784 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.311 | 36142 | 11.786 | Endrin aldehyde |
| 10.174 | 11448 | 3.884 | Endo. sulfate | 9.646 | 13344 | 4.132 | Endo. sulfate |
| 9.794 | 15482 | 9.444 | Methoxychlor | 10.041 | 22021 | 13.59 | Methoxychlor |
| 10.056 | 23561 | 8.367 | Mirex | 10.287 | 13379 | 4.682 | Mirex |
| 11.929 | 63070 | 19.117 | DCB | 12.077 | 67660 | 18.781 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.19A
Area File: C:\CPWIN\DATA1\1D16082B.19A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:19:50 AM
File Reported On: 3/23/2004 at 8:19:57 AM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.19R

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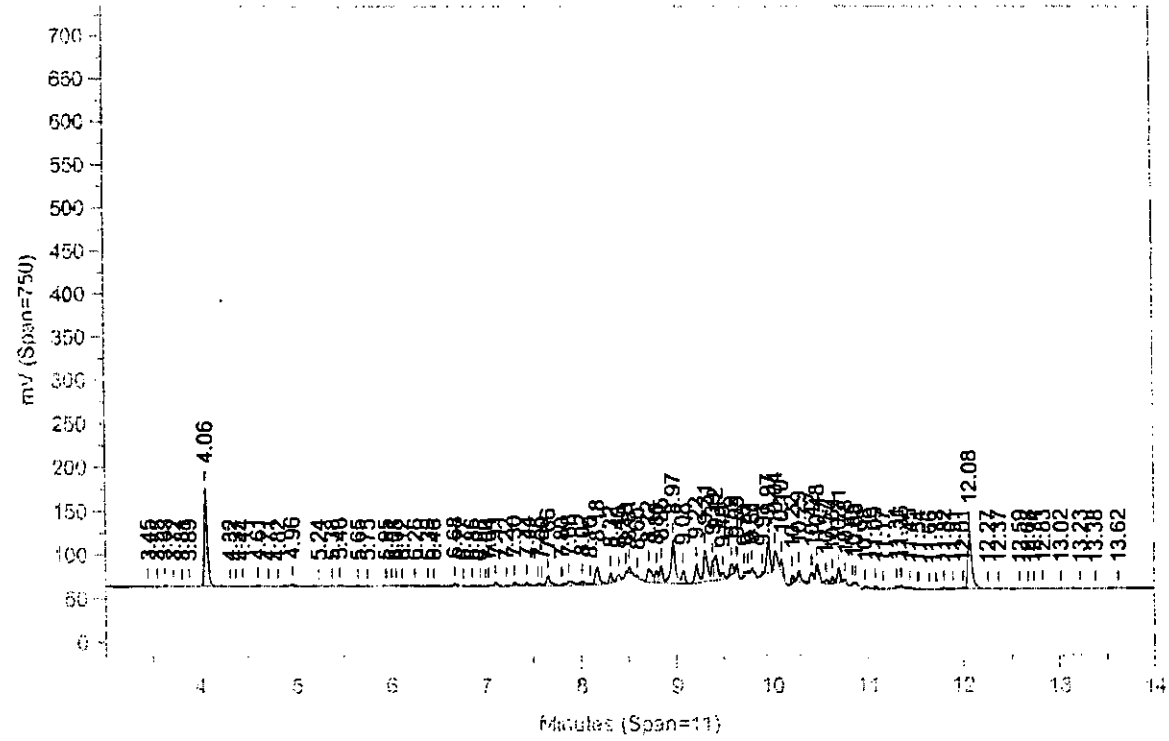



8678

Sample Name: **AR1610424D AAAR161AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 04:16:26pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.21R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.240 | | 0.0000 | 0.000 | 10150.6 | 1.898 | BB | 0.186 | 907.20 | 0.427 |
| 2 | 3.407 | | 0.0000 | 0.000 | 686.8 | 0.128 | BB | 0.072 | 159.03 | 0.075 |
| 3 | 3.559 | | 0.0000 | 0.000 | 336.1 | 0.063 | BB | 0.026 | 218.72 | 0.103 |
| 4 | 4.000 | | 0.0000 | 0.000 | 711.0 | 0.133 | BB | 0.044 | 270.46 | 0.127 |
| 5 | 4.243 | | 0.0000 | 0.000 | 109.3 | 0.020 | BB | 0.022 | 82.58 | 0.039 |
| 6 | 4.338 | TCX | 2.1137 | 12.981 | 18846.8 | 3.524 | BB | 0.036 | 8719.77 | 4.101 |
| 7 | 4.595 | | 0.0000 | 0.000 | 1691.3 | 0.316 | BB | 0.036 | 785.47 | 0.369 |
| 8 | 4.817 | | 0.0000 | 0.000 | 1764.1 | 0.330 | BB | 0.031 | 950.35 | 0.447 |
| 9 | 4.880 | | 0.0000 | 0.000 | 10410.2 | 1.947 | BB | 0.035 | 4957.26 | 2.331 |
| 10 | 5.065 | | 0.0000 | 0.000 | 1439.4 | 0.269 | BB | 0.037 | 641.63 | 0.302 |
| 11 | 5.297 | | 0.0000 | 0.000 | 182.4 | 0.034 | BB | 0.063 | 47.98 | 0.023 |
| 12 | 5.400 | | 0.0000 | 0.000 | 24230.0 | 4.531 | BB | 0.049 | 8204.17 | 3.858 |
| 13 | 5.577 | | 0.0000 | 0.000 | 2364.4 | 0.442 | BB | 0.039 | 1013.58 | 0.477 |
| 14 | 5.660 | gamma-BHC | 0.2633 | 1.617 | 1851.5 | 0.346 | BB | 0.023 | 1351.11 | 0.635 |
| 15 | 5.696 | | 0.0000 | 0.000 | 4072.5 | 0.762 | BB | 0.026 | 2572.92 | 1.210 |
| 16 | 5.796 | beta-BHC | 0.0530 | 0.325 | 305.2 | 0.057 | BB | 0.034 | 149.99 | 0.071 |
| 17 | 5.959 | | 0.0000 | 0.000 | 4581.7 | 0.857 | BB | 0.039 | 1968.70 | 0.926 |
| 18 | 6.033 | delta-BHC | 0.5826 | 3.578 | 4474.1 | 0.837 | BB | 0.026 | 2837.25 | 1.334 |
| 19 | 6.062 | | 0.0000 | 0.000 | 9319.5 | 1.743 | BB | 0.023 | 6739.78 | 3.170 |
| 20 | 6.142 | | 0.0000 | 0.000 | 1021.5 | 0.191 | BB | 0.027 | 636.81 | 0.299 |
| 21 | 6.194 | | 0.0000 | 0.000 | 164.5 | 0.031 | BB | 0.019 | 147.64 | 0.069 |
| 22 | 6.248 | | 0.0000 | 0.000 | 15859.8 | 2.966 | BB | 0.037 | 7072.33 | 3.326 |
| 23 | 6.337 | Heptachlor | 0.8076 | 4.960 | 8116.8 | 1.518 | BB | 0.031 | 4381.93 | 2.061 |
| 24 | 6.453 | | 0.0000 | 0.000 | 313.5 | 0.059 | BB | 0.024 | 218.61 | 0.103 |
| 25 | 6.500 | | 0.0000 | 0.000 | 2979.3 | 0.557 | BB | 0.024 | 2030.81 | 0.955 |
| 26 | 6.537 | | 0.0000 | 0.000 | 3744.4 | 0.700 | BB | 0.026 | 2444.05 | 1.149 |
| 27 | 6.584 | | 0.0000 | 0.000 | 2140.3 | 0.400 | BB | 0.025 | 1401.68 | 0.659 |
| 28 | 6.810 | | 0.0000 | 0.000 | 17385.1 | 3.251 | BB | 0.047 | 6117.81 | 2.877 |
| 29 | 6.926 | | 0.0000 | 0.000 | 3365.2 | 0.629 | BB | 0.026 | 2174.52 | 1.023 |
| 30 | 6.980 | | 0.0000 | 0.000 | 3980.3 | 0.744 | BB | 0.032 | 2063.36 | 0.970 |
| 31 | 7.129 | | 0.0000 | 0.000 | 2656.3 | 0.497 | BB | 0.042 | 1045.04 | 0.491 |
| 32 | 7.264 | | 0.0000 | 0.000 | 784.1 | 0.147 | BB | 0.028 | 468.67 | 0.220 |
| 33 | 7.324 | | 0.0000 | 0.000 | 6179.4 | 1.156 | BB | 0.031 | 3367.28 | 1.584 |
| 34 | 7.376 | | 0.0000 | 0.000 | 377.5 | 0.071 | BB | 0.019 | 336.66 | 0.158 |
| 35 | 7.598 | Hept. epoxide | 0.1627 | 0.999 | 1700.2 | 0.318 | BV | 0.041 | 697.03 | 0.328 |
| 36 | 7.665 | | 0.0000 | 0.000 | 13306.2 | 2.488 | VB | 0.047 | 4762.61 | 2.240 |
| 37 | 7.975 | a. Chlordane | 0.2143 | 1.316 | 4490.2 | 0.840 | BV | 0.080 | 940.43 | 0.442 |
| 38 | 8.032 | 4,4'-DDE | 0.8802 | 5.405 | 10691.5 | 1.999 | VV | 0.058 | 3092.57 | 1.454 |
| 39 | 8.198 | | 0.0000 | 0.000 | 5928.7 | 1.109 | VV | 0.036 | 2719.29 | 1.279 |
| 40 | 8.250 | o,p-DDD | 2.3242 | 14.273 | 12094.1 | 2.262 | VV | 0.039 | 5152.82 | 2.423 |
| 41 | 8.332 | | 0.0000 | 0.000 | 8859.1 | 1.657 | VV | 0.062 | 2389.33 | 1.124 |
| 42 | 8.433 | | 0.0000 | 0.000 | 27223.4 | 5.091 | VV | 0.042 | 10761.17 | 5.061 |
| 43 | 8.565 | | 0.0000 | 0.000 | 5728.6 | 1.071 | VV | 0.054 | 1758.61 | 0.827 |
| 44 | 8.715 | | 0.0000 | 0.000 | 5545.2 | 1.037 | VV | 0.043 | 2171.39 | 1.021 |
| 45 | 8.791 | Endrin | 3.9634 | 24.340 | 54848.7 | 10.256 | VV | 0.069 | 13252.85 | 6.232 |
| 46 | 8.958 | | 0.0000 | 0.000 | 15863.4 | 2.966 | VB | 0.043 | 6126.65 | 2.881 |
| 47 | 9.090 | Endosulfan II | 0.1867 | 1.147 | 1730.7 | 0.324 | BV | 0.046 | 623.61 | 0.293 |
| 48 | 9.163 | | 0.0000 | 0.000 | 36961.4 | 6.912 | VV | 0.050 | 12304.39 | 5.786 |
| 49 | 9.302 | | 0.0000 | 0.000 | 16090.6 | 3.009 | VV | 0.037 | 7159.53 | 3.367 |
| 50 | 9.364 | | 0.0000 | 0.000 | 7737.0 | 1.447 | VV | 0.035 | 3686.48 | 1.734 |
| 51 | 9.422 | | 0.0000 | 0.000 | 1390.6 | 0.260 | VB | 0.034 | 691.13 | 0.325 |
| 52 | 9.483 | | 0.0000 | 0.000 | 1491.9 | 0.279 | BB | 0.028 | 899.98 | 0.423 |
| 53 | 9.543 | | 0.0000 | 0.000 | 911.6 | 0.170 | BB | 0.025 | 606.79 | 0.285 |
| 54 | 9.629 | Endrin aldehyde | 2.2313 | 13.703 | 11161.4 | 2.087 | BB | 0.030 | 6121.26 | 2.879 |
| 55 | 9.683 | | 0.0000 | 0.000 | 4246.1 | 0.794 | BB | 0.026 | 2699.52 | 1.270 |
| 56 | 9.747 | | 0.0000 | 0.000 | 2536.8 | 0.474 | BB | 0.029 | 1450.63 | 0.682 |

8679

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.812 | Methoxychlor | 0.0698 | 0.429 | 143.4 | 0.027 | BB | 0.021 | 114.43 | 0.054 |
| 58 | 9.862 | | 0.0000 | 0.000 | 1653.4 | 0.309 | BB | 0.034 | 802.95 | 0.378 |
| 59 | 9.942 | | 0.0000 | 0.000 | 1713.5 | 0.320 | BB | 0.030 | 964.25 | 0.453 |
| 60 | 10.021 | | 0.0000 | 0.000 | 42634.3 | 7.972 | BB | 0.043 | 16649.01 | 7.830 |
| 61 | 10.266 | | 0.0000 | 0.000 | 413.2 | 0.077 | BB | 0.037 | 187.23 | 0.088 |
| 62 | 10.317 | | 0.0000 | 0.000 | 212.4 | 0.040 | BB | 0.027 | 132.76 | 0.062 |
| 63 | 10.395 | | 0.0000 | 0.000 | 7338.0 | 1.372 | BB | 0.027 | 4453.20 | 2.094 |
| 64 | 10.428 | | 0.0000 | 0.000 | 2683.1 | 0.502 | BB | 0.022 | 2044.69 | 0.962 |
| 65 | 10.488 | | 0.0000 | 0.000 | 4848.3 | 0.907 | BB | 0.036 | 2240.96 | 1.054 |
| 66 | 10.730 | | 0.0000 | 0.000 | 795.5 | 0.149 | BB | 0.037 | 361.33 | 0.170 |
| 67 | 10.864 | | 0.0000 | 0.000 | 4502.7 | 0.842 | BB | 0.042 | 1789.67 | 0.842 |
| 68 | 10.958 | | 0.0000 | 0.000 | 5300.0 | 0.991 | BB | 0.036 | 2424.00 | 1.140 |
| 69 | 11.207 | | 0.0000 | 0.000 | 9527.1 | 1.781 | BB | 0.037 | 4253.45 | 2.000 |
| 70 | 11.627 | | 0.0000 | 0.000 | 3218.7 | 0.602 | BB | 0.039 | 1374.84 | 0.647 |
| 71 | 11.929 | DCB | 2.4307 | 14.927 | 20929.5 | 3.914 | BB | 0.043 | 8019.32 | 3.771 |
| 72 | 12.305 | | 0.0000 | 0.000 | 1404.6 | 0.263 | BB | 0.265 | 88.18 | 0.041 |
| 73 | 12.723 | | 0.0000 | 0.000 | 1446.8 | 0.271 | BB | 0.225 | 107.35 | 0.050 |
| 74 | 13.756 | | 0.0000 | 0.000 | 8883.4 | 1.661 | BB | 1.820 | 81.34 | 0.038 |

Total Area = 534780.3, Total Amount = 16.284, Total Height = 212642.3, Sample Units = PPB

Sample Name: **AR1610424D AAAR161AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 04:16:26pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.21R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.449 | | 0.0000 | 0.000 | 980.2 | 0.129 | BB | 0.044 | 375.46 | 0.138 |
| 2 | 3.547 | | 0.0000 | 0.000 | 321.1 | 0.042 | BB | 0.031 | 174.88 | 0.064 |
| 3 | 3.631 | | 0.0000 | 0.000 | 2282.9 | 0.300 | BB | 0.047 | 813.50 | 0.298 |
| 4 | 3.727 | | 0.0000 | 0.000 | 1040.0 | 0.137 | BB | 0.039 | 443.25 | 0.163 |
| 5 | 3.816 | | 0.0000 | 0.000 | 554.1 | 0.073 | BB | 0.042 | 219.41 | 0.080 |
| 6 | 3.962 | | 0.0000 | 0.000 | 655.2 | 0.086 | BB | 0.105 | 104.31 | 0.038 |
| 7 | 4.062 TCX | | 2.3077 | 10.391 | 26935.2 | 3.542 | BB | 0.035 | 12947.94 | 4.748 |
| 8 | 4.240 | | 0.0000 | 0.000 | 578.6 | 0.076 | BB | 0.030 | 324.62 | 0.119 |
| 9 | 4.375 | | 0.0000 | 0.000 | 276.4 | 0.036 | BB | 0.036 | 128.53 | 0.047 |
| 10 | 4.483 | | 0.0000 | 0.000 | 3181.8 | 0.418 | BB | 0.044 | 1211.14 | 0.444 |
| 11 | 4.684 | | 0.0000 | 0.000 | 3385.7 | 0.445 | BB | 0.042 | 1341.44 | 0.492 |
| 12 | 4.770 Hcb | | 0.6160 | 2.774 | 15207.4 | 2.000 | BB | 0.038 | 6595.21 | 2.418 |
| 13 | 5.033 | | 0.0000 | 0.000 | 331.5 | 0.044 | BB | 0.059 | 93.69 | 0.034 |
| 14 | 5.093 | | 0.0000 | 0.000 | 1705.5 | 0.224 | BB | 0.034 | 836.71 | 0.307 |
| 15 | 5.247 | | 0.0000 | 0.000 | 941.4 | 0.124 | BB | 0.090 | 173.88 | 0.064 |
| 16 | 5.338 | | 0.0000 | 0.000 | 31162.6 | 4.098 | BB | 0.054 | 9594.76 | 3.518 |
| 17 | 5.492 gamma-BHC | | 0.1231 | 0.554 | 2083.3 | 0.274 | BB | 0.035 | 978.40 | 0.359 |
| 18 | 5.627 beta-BHC | | 0.7584 | 3.415 | 4563.4 | 0.600 | BB | 0.025 | 3024.55 | 1.109 |
| 19 | 5.675 | | 0.0000 | 0.000 | 7388.2 | 0.972 | BB | 0.030 | 4060.02 | 1.489 |
| 20 | 5.814 | | 0.0000 | 0.000 | 7455.2 | 0.980 | BV | 0.052 | 2385.53 | 0.875 |
| 21 | 5.962 | | 0.0000 | 0.000 | 62995.6 | 8.285 | VV | 0.053 | 19910.15 | 7.301 |
| 22 | 6.144 | | 0.0000 | 0.000 | 26396.4 | 3.472 | VV | 0.044 | 9993.44 | 3.664 |
| 23 | 6.283 | | 0.0000 | 0.000 | 19671.0 | 2.587 | VV | 0.046 | 7124.44 | 2.612 |
| 24 | 6.411 | | 0.0000 | 0.000 | 13611.2 | 1.790 | VV | 0.036 | 6272.00 | 2.300 |
| 25 | 6.469 | | 0.0000 | 0.000 | 15170.3 | 1.995 | VV | 0.039 | 6539.43 | 2.398 |
| 26 | 6.521 Aldrin | | 0.7008 | 3.156 | 12361.2 | 1.626 | VB | 0.046 | 4461.75 | 1.636 |
| 27 | 6.707 | | 0.0000 | 0.000 | 1352.9 | 0.178 | BB | 0.085 | 266.12 | 0.098 |
| 28 | 6.770 Telodrin | | 1.1240 | 5.061 | 11659.4 | 1.533 | BB | 0.029 | 6627.57 | 2.430 |
| 29 | 6.825 | | 0.0000 | 0.000 | 3210.2 | 0.422 | BB | 0.032 | 1666.26 | 0.611 |
| 30 | 6.932 | | 0.0000 | 0.000 | 14943.0 | 1.965 | BB | 0.043 | 5779.33 | 2.119 |
| 31 | 7.077 | | 0.0000 | 0.000 | 646.8 | 0.085 | BB | 0.061 | 176.74 | 0.065 |
| 32 | 7.130 | | 0.0000 | 0.000 | 2653.4 | 0.349 | BB | 0.037 | 1179.70 | 0.433 |
| 33 | 7.262 | | 0.0000 | 0.000 | 1522.8 | 0.200 | BB | 0.025 | 1015.16 | 0.372 |
| 34 | 7.323 Hept. epoxide | | 0.8630 | 3.886 | 11864.2 | 1.560 | BV | 0.039 | 5128.80 | 1.881 |
| 35 | 7.484 | | 0.0000 | 0.000 | 1153.2 | 0.152 | VV | 0.032 | 608.01 | 0.223 |
| 36 | 7.564 g. Chlordane | | 0.9864 | 4.442 | 14526.0 | 1.910 | VV | 0.042 | 5717.62 | 2.097 |
| 37 | 7.690 | | 0.0000 | 0.000 | 1932.9 | 0.254 | VB | 0.058 | 558.74 | 0.205 |
| 38 | 7.843 Endosulfan I | | 0.0620 | 0.279 | 1366.1 | 0.180 | BB | 0.070 | 326.89 | 0.120 |
| 39 | 7.950 | | 0.0000 | 0.000 | 961.0 | 0.126 | BV | 0.059 | 272.02 | 0.100 |
| 40 | 8.016 | | 0.0000 | 0.000 | 2287.3 | 0.301 | VV | 0.039 | 983.38 | 0.361 |
| 41 | 8.129 | | 0.0000 | 0.000 | 4665.6 | 0.614 | VV | 0.035 | 2209.91 | 0.810 |
| 42 | 8.166 | | 0.0000 | 0.000 | 6422.9 | 0.845 | VV | 0.035 | 3101.03 | 1.137 |
| 43 | 8.211 Dieldrin | | 1.2842 | 5.783 | 14623.4 | 1.923 | VV | 0.039 | 6185.67 | 2.268 |
| 44 | 8.294 | | 0.0000 | 0.000 | 8430.2 | 1.109 | VB | 0.053 | 2639.57 | 0.968 |
| 45 | 8.417 | | 0.0000 | 0.000 | 27807.2 | 3.657 | BB | 0.041 | 11433.21 | 4.192 |
| 46 | 8.596 Endrin | | 0.6339 | 2.854 | 6221.8 | 0.818 | BV | 0.040 | 2616.63 | 0.959 |
| 47 | 8.677 | | 0.0000 | 0.000 | 46296.5 | 6.089 | VB | 0.055 | 13938.69 | 5.111 |
| 48 | 8.886 Endosulfan II | | 2.2038 | 9.924 | 35806.5 | 4.709 | BV | 0.070 | 8536.42 | 3.130 |
| 49 | 9.022 | | 0.0000 | 0.000 | 6861.3 | 0.902 | VV | 0.056 | 2058.14 | 0.755 |
| 50 | 9.142 4,4'-DDT | | 3.8547 | 17.358 | 45238.2 | 5.950 | VV | 0.060 | 12562.04 | 4.606 |
| 51 | 9.254 | | 0.0000 | 0.000 | 22970.2 | 3.021 | VV | 0.042 | 9136.36 | 3.350 |
| 52 | 9.324 Endrin aldehyde | | 1.6470 | 7.416 | 12795.1 | 1.683 | VB | 0.042 | 5050.69 | 1.852 |
| 53 | 9.474 | | 0.0000 | 0.000 | 2891.5 | 0.380 | BB | 0.039 | 1222.98 | 0.448 |
| 54 | 9.636 Endo. sulfate | | 2.4895 | 11.210 | 19620.8 | 2.580 | BB | 0.041 | 8039.21 | 2.948 |
| 55 | 9.729 | | 0.0000 | 0.000 | 7024.5 | 0.924 | BB | 0.034 | 3441.40 | 1.262 |
| 56 | 9.803 | | 0.0000 | 0.000 | 2749.0 | 0.362 | BB | 0.030 | 1549.32 | 0.568 |

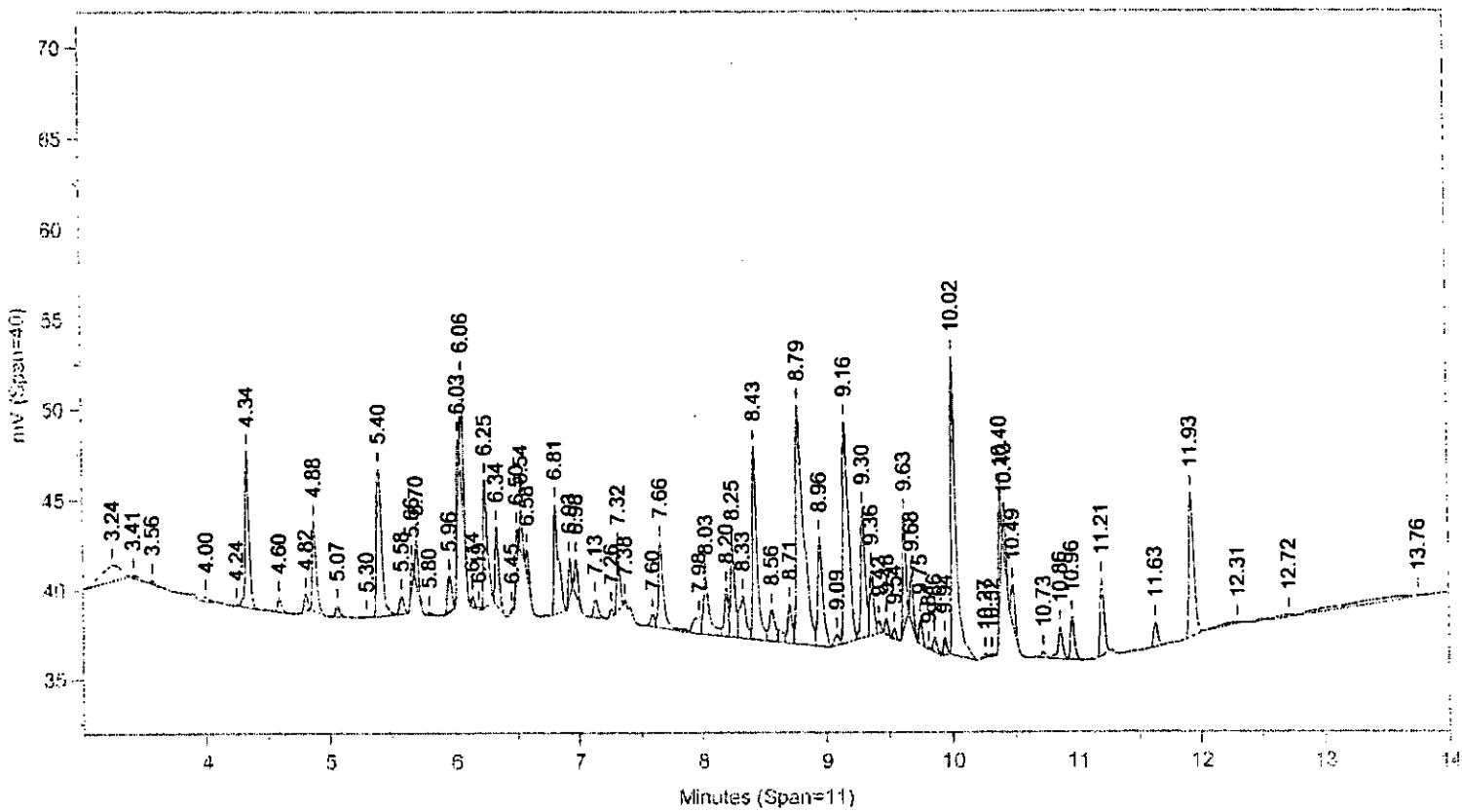
8681

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.851 | | 0.0000 | 0.000 | 1828.4 | 0.240 | BB | 0.034 | 889.11 | 0.326 |
| 58 | 9.946 | | 0.0000 | 0.000 | 49311.5 | 6.485 | BB | 0.045 | 18322.23 | 6.719 |
| 59 | 10.120 | | 0.0000 | 0.000 | 1072.3 | 0.141 | BB | 0.036 | 502.30 | 0.184 |
| 60 | 10.339 | Endrin ketone | 0.1722 | 0.776 | 1268.3 | 0.167 | BB | 0.034 | 622.39 | 0.228 |
| 61 | 10.419 | | 0.0000 | 0.000 | 49459.7 | 6.505 | BB | 0.080 | 10343.44 | 3.793 |
| 62 | 10.717 | | 0.0000 | 0.000 | 587.4 | 0.077 | BB | 0.032 | 301.64 | 0.111 |
| 63 | 10.790 | | 0.0000 | 0.000 | 708.5 | 0.093 | BB | 0.033 | 358.98 | 0.132 |
| 64 | 10.959 | | 0.0000 | 0.000 | 5249.7 | 0.690 | BB | 0.043 | 2042.26 | 0.749 |
| 65 | 11.166 | | 0.0000 | 0.000 | 13080.5 | 1.720 | BB | 0.045 | 4841.29 | 1.775 |
| 66 | 11.651 | | 0.0000 | 0.000 | 3759.8 | 0.494 | BB | 0.042 | 1491.21 | 0.547 |
| 67 | 12.077 | DCB | 2.3808 | 10.721 | 24486.1 | 3.220 | BB | 0.048 | 8577.01 | 3.145 |
| 68 | 12.586 | | 0.0000 | 0.000 | 1990.7 | 0.262 | BB | 0.224 | 148.08 | 0.054 |
| 69 | 13.840 | | 0.0000 | 0.000 | 5814.3 | 0.765 | BB | 0.841 | 115.29 | 0.042 |

Total Area = 760356.6, Total Amount = 22.207, Total Height = 272711.3, Sample Units = PPB

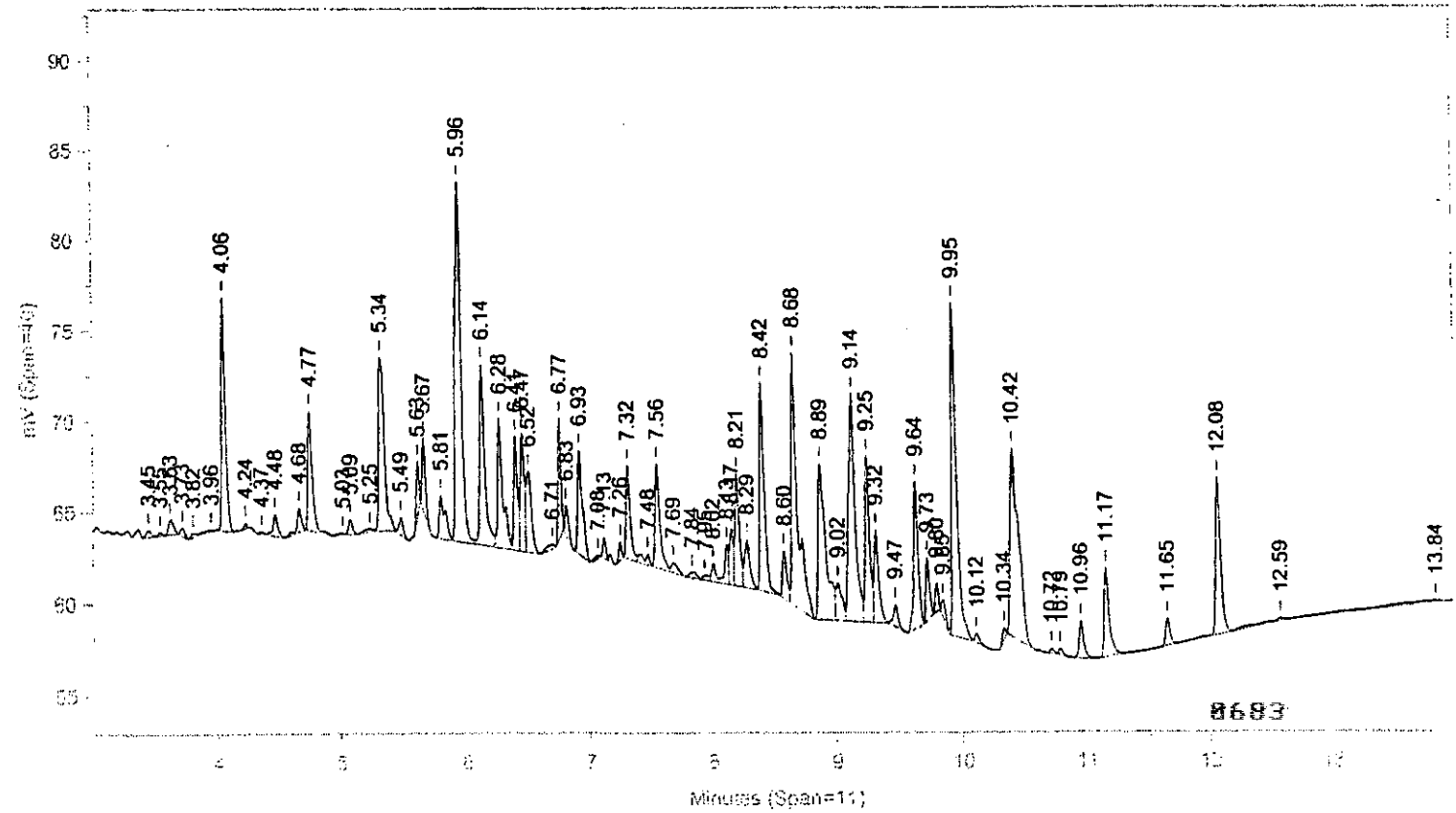
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.21R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 4:02:26 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.21R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 4:02:26 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6
Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

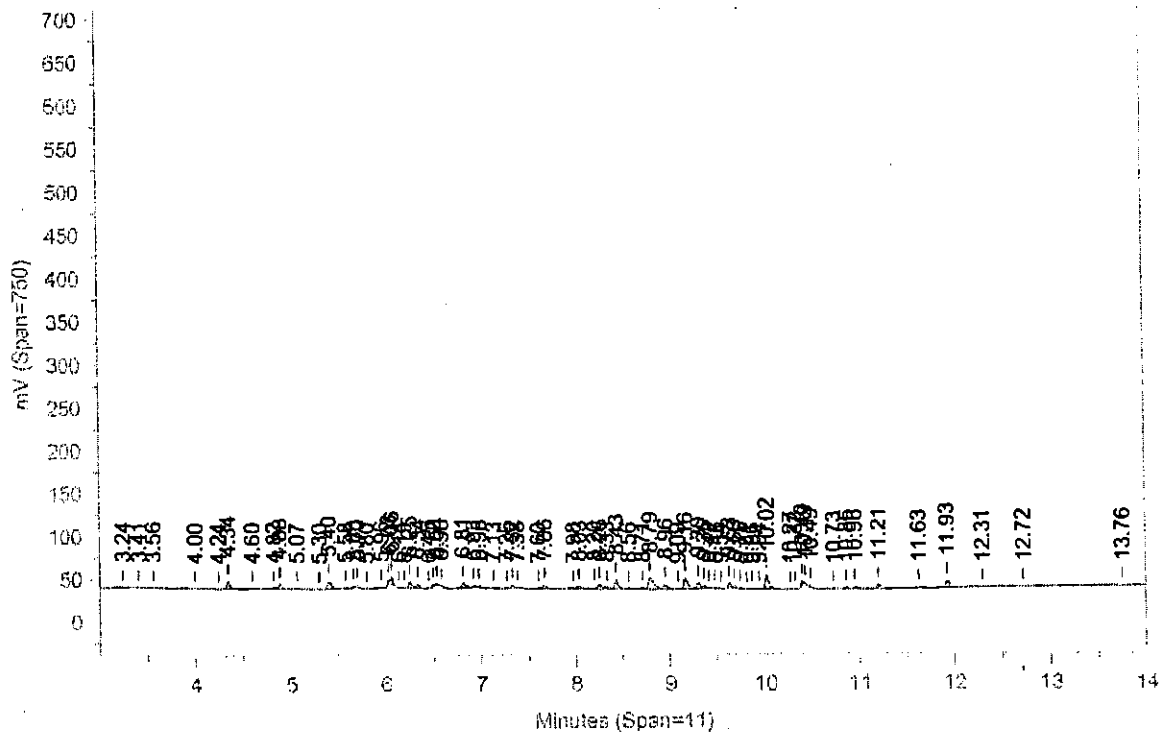
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.338 | 8720 | 2.114 | TCX | 4.062 | 12948 | 2.308 | TCX |
| . | 0 | . | Hcb | 4.77 | 6595 | .616 | Hcb |
| 5.66 | 1351 | .263 | gamma-BHC | 5.492 | 978 | .123 | gamma-BHC |
| 5.796 | 150 | .053 | beta-BHC | 5.627 | 3025 | .758 | beta-BHC |
| 6.033 | 2837 | .583 | delta-BHC | . | 0 | . | delta-BHC |
| 6.337 | 4382 | .808 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.521 | 4462 | .701 | Aldrin |
| . | 0 | . | Telodrin | 6.77 | 6628 | 1.124 | Telodrin |
| 7.598 | 697 | .163 | Hept. epoxide | 7.323 | 5129 | .863 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.564 | 5718 | .986 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.843 | 327 | .062 | Endosulfan I |
| 7.975 | 940 | .214 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.032 | 3093 | .88 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.211 | 6186 | 1.284 | Dieldrin |
| 8.25 | 5153 | 2.324 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.791 | 13253 | 3.963 | Endrin | 8.596 | 2617 | .634 | Endrin |
| 9.09 | 624 | .187 | Endosulfan II | 8.886 | 8536 | 2.204 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.142 | 12562 | 3.855 | 4,4'-DDT |
| 9.629 | 6121 | 2.231 | Endrin aldehyde | 9.324 | 5051 | 1.647 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.636 | 8039 | 2.49 | Endo. sulfate |
| 9.812 | 114 | .07 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.339 | 622 | .172 | Endrin ketone |
| 11.929 | 8019 | 2.431 | DCB | 12.077 | 8577 | 2.381 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.21A
Area File: C:\CPWIN\DATA1\1D16082B.21A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:20:24 AM
File Reported On: 3/23/2004 at 8:20:29 AM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.21R

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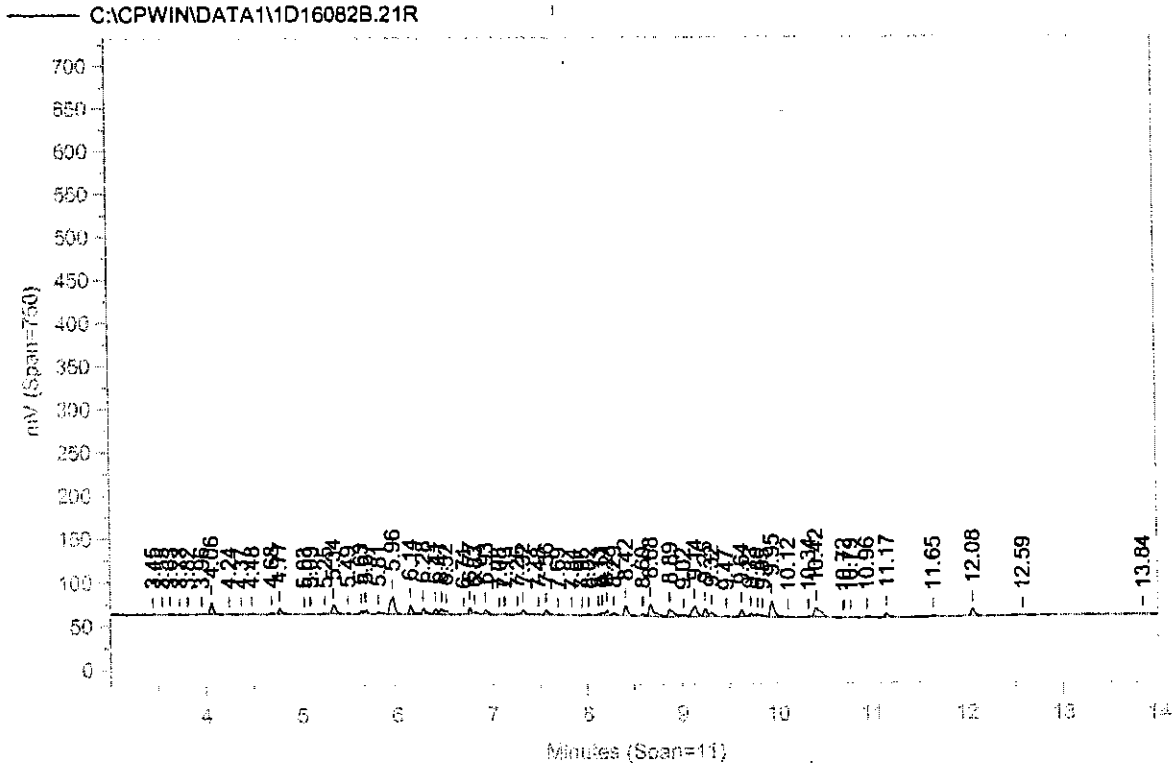



0685

Sample Name: **AR1620424D AAAR162AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 04:37:02pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.22R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.025 | | 0.0000 | 0.000 | 124.6 | 0.013 | BB | 0.023 | 88.61 | 0.023 |
| 2 | 3.250 | | 0.0000 | 0.000 | 1392.3 | 0.148 | BB | 0.098 | 236.48 | 0.061 |
| 3 | 3.445 | | 0.0000 | 0.000 | 449.6 | 0.048 | BB | 0.045 | 166.68 | 0.043 |
| 4 | 3.560 | | 0.0000 | 0.000 | 552.2 | 0.059 | BB | 0.030 | 306.53 | 0.079 |
| 5 | 3.896 | | 0.0000 | 0.000 | 1084.9 | 0.116 | BB | 0.040 | 456.29 | 0.117 |
| 6 | 4.005 | | 0.0000 | 0.000 | 1271.8 | 0.135 | BB | 0.043 | 497.68 | 0.128 |
| 7 | 4.244 | | 0.0000 | 0.000 | 188.3 | 0.020 | BB | 0.022 | 144.21 | 0.037 |
| 8 | 4.337 TCX | | 4.1185 | 13.618 | 36677.2 | 3.906 | BB | 0.036 | 16989.97 | 4.355 |
| 9 | 4.595 | | 0.0000 | 0.000 | 3350.2 | 0.357 | BB | 0.035 | 1578.89 | 0.405 |
| 10 | 4.817 | | 0.0000 | 0.000 | 2847.8 | 0.303 | BB | 0.029 | 1631.14 | 0.418 |
| 11 | 4.880 | | 0.0000 | 0.000 | 19967.7 | 2.127 | BB | 0.035 | 9439.14 | 2.420 |
| 12 | 5.064 | | 0.0000 | 0.000 | 2998.5 | 0.319 | BB | 0.036 | 1381.35 | 0.354 |
| 13 | 5.399 | | 0.0000 | 0.000 | 46734.1 | 4.978 | BB | 0.050 | 15517.92 | 3.978 |
| 14 | 5.577 | | 0.0000 | 0.000 | 4585.8 | 0.488 | BB | 0.039 | 1957.55 | 0.502 |
| 15 | 5.660 | gamma-BHC | 0.4974 | 1.645 | 3635.8 | 0.387 | BB | 0.024 | 2552.38 | 0.654 |
| 16 | 5.696 | | 0.0000 | 0.000 | 8024.1 | 0.855 | BB | 0.026 | 5077.17 | 1.302 |
| 17 | 5.795 | beta-BHC | 0.0916 | 0.303 | 560.3 | 0.060 | BB | 0.036 | 259.39 | 0.066 |
| 18 | 5.959 | | 0.0000 | 0.000 | 8925.7 | 0.951 | BB | 0.039 | 3838.15 | 0.984 |
| 19 | 6.033 | delta-BHC | 1.0683 | 3.532 | 8699.3 | 0.927 | BB | 0.028 | 5202.28 | 1.334 |
| 20 | 6.061 | | 0.0000 | 0.000 | 17478.1 | 1.862 | BB | 0.024 | 11913.40 | 3.054 |
| 21 | 6.141 | | 0.0000 | 0.000 | 1979.9 | 0.211 | BB | 0.027 | 1232.46 | 0.316 |
| 22 | 6.194 | | 0.0000 | 0.000 | 318.4 | 0.034 | BB | 0.018 | 292.81 | 0.075 |
| 23 | 6.248 | | 0.0000 | 0.000 | 30329.4 | 3.230 | BB | 0.037 | 13485.14 | 3.457 |
| 24 | 6.336 | Heptachlor | 1.5750 | 5.208 | 15700.1 | 1.672 | BB | 0.031 | 8545.72 | 2.191 |
| 25 | 6.454 | | 0.0000 | 0.000 | 629.5 | 0.067 | BB | 0.025 | 424.26 | 0.109 |
| 26 | 6.499 | | 0.0000 | 0.000 | 5756.1 | 0.613 | BB | 0.025 | 3802.39 | 0.975 |
| 27 | 6.532 | | 0.0000 | 0.000 | 5034.8 | 0.536 | BB | 0.021 | 3956.22 | 1.014 |
| 28 | 6.584 | | 0.0000 | 0.000 | 6891.3 | 0.734 | BB | 0.029 | 3923.76 | 1.006 |
| 29 | 6.810 | | 0.0000 | 0.000 | 33675.8 | 3.587 | BB | 0.048 | 11676.53 | 2.993 |
| 30 | 6.926 | | 0.0000 | 0.000 | 6674.3 | 0.711 | BB | 0.026 | 4245.36 | 1.088 |
| 31 | 6.980 | | 0.0000 | 0.000 | 7566.6 | 0.806 | BB | 0.031 | 4024.27 | 1.032 |
| 32 | 7.128 | | 0.0000 | 0.000 | 5714.4 | 0.609 | BB | 0.046 | 2085.43 | 0.535 |
| 33 | 7.263 | | 0.0000 | 0.000 | 1484.0 | 0.158 | BB | 0.027 | 906.91 | 0.232 |
| 34 | 7.323 | | 0.0000 | 0.000 | 11821.7 | 1.259 | BB | 0.031 | 6408.95 | 1.643 |
| 35 | 7.376 | | 0.0000 | 0.000 | 733.1 | 0.078 | BB | 0.019 | 638.95 | 0.164 |
| 36 | 7.416 | | 0.0000 | 0.000 | 838.5 | 0.089 | BB | 0.023 | 598.18 | 0.153 |
| 37 | 7.598 | Hept. epoxide | 0.2851 | 0.943 | 2591.3 | 0.276 | BV | 0.035 | 1220.94 | 0.313 |
| 38 | 7.664 | | 0.0000 | 0.000 | 22954.9 | 2.445 | VB | 0.042 | 9013.54 | 2.311 |
| 39 | 7.977 | a. Chlordane | 0.1956 | 0.647 | 3693.4 | 0.393 | BV | 0.072 | 858.33 | 0.220 |
| 40 | 8.032 | 4,4'-DDE | 1.5078 | 4.986 | 14738.9 | 1.570 | VV | 0.046 | 5297.81 | 1.358 |
| 41 | 8.197 | | 0.0000 | 0.000 | 9692.0 | 1.032 | VV | 0.034 | 4811.93 | 1.234 |
| 42 | 8.250 | o,p-DDD | 4.3225 | 14.293 | 21782.7 | 2.320 | VV | 0.038 | 9583.19 | 2.457 |
| 43 | 8.332 | | 0.0000 | 0.000 | 14429.3 | 1.537 | VV | 0.057 | 4188.08 | 1.074 |
| 44 | 8.433 | | 0.0000 | 0.000 | 46751.0 | 4.979 | VV | 0.040 | 19623.49 | 5.030 |
| 45 | 8.564 | | 0.0000 | 0.000 | 6923.9 | 0.737 | VV | 0.044 | 2617.02 | 0.671 |
| 46 | 8.632 | o,p-DDT | 0.2257 | 0.746 | 1484.4 | 0.158 | VV | 0.041 | 601.74 | 0.154 |
| 47 | 8.714 | | 0.0000 | 0.000 | 7709.3 | 0.821 | VV | 0.036 | 3570.86 | 0.915 |
| 48 | 8.790 | Endrin | 7.1463 | 23.630 | 100711.9 | 10.727 | VV | 0.070 | 23895.95 | 6.126 |
| 49 | 8.958 | | 0.0000 | 0.000 | 25893.0 | 2.758 | VB | 0.039 | 10972.60 | 2.813 |
| 50 | 9.089 | Endosulfan II | 0.2118 | 0.700 | 1233.9 | 0.131 | BB | 0.029 | 707.48 | 0.181 |
| 51 | 9.163 | | 0.0000 | 0.000 | 68902.6 | 7.339 | BV | 0.050 | 22928.49 | 5.878 |
| 52 | 9.303 | | 0.0000 | 0.000 | 31961.1 | 3.404 | VV | 0.038 | 13902.25 | 3.564 |
| 53 | 9.364 | | 0.0000 | 0.000 | 17552.2 | 1.869 | VB | 0.039 | 7558.87 | 1.938 |
| 54 | 9.484 | | 0.0000 | 0.000 | 3272.6 | 0.349 | BB | 0.029 | 1876.04 | 0.481 |
| 55 | 9.543 | | 0.0000 | 0.000 | 1768.0 | 0.188 | BB | 0.025 | 1178.05 | 0.302 |
| 56 | 9.628 | Endrin aldehyde | 4.2551 | 14.070 | 21184.8 | 2.256 | BB | 0.030 | 11673.11 | 2.992 |

8686

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.683 | | 0.0000 | 0.000 | 7756.6 | 0.826 | BB | 0.026 | 4961.68 | 1.272 |
| 58 | 9.746 | | 0.0000 | 0.000 | 4638.9 | 0.494 | BB | 0.028 | 2726.53 | 0.699 |
| 59 | 9.811 | Methoxychlor | 0.1078 | 0.356 | 217.4 | 0.023 | BB | 0.021 | 176.66 | 0.045 |
| 60 | 9.861 | | 0.0000 | 0.000 | 2934.6 | 0.313 | BB | 0.032 | 1537.06 | 0.394 |
| 61 | 9.941 | | 0.0000 | 0.000 | 3994.0 | 0.425 | BB | 0.031 | 2164.82 | 0.555 |
| 62 | 10.021 | | 0.0000 | 0.000 | 79721.7 | 8.491 | BB | 0.043 | 31073.73 | 7.966 |
| 63 | 10.267 | | 0.0000 | 0.000 | 178.1 | 0.019 | BB | 0.030 | 99.91 | 0.026 |
| 64 | 10.316 | | 0.0000 | 0.000 | 109.4 | 0.012 | BB | 0.024 | 75.42 | 0.019 |
| 65 | 10.395 | | 0.0000 | 0.000 | 15651.7 | 1.667 | BB | 0.028 | 9214.97 | 2.362 |
| 66 | 10.488 | | 0.0000 | 0.000 | 9949.3 | 1.060 | BB | 0.037 | 4468.89 | 1.146 |
| 67 | 10.732 | | 0.0000 | 0.000 | 1304.8 | 0.139 | BB | 0.035 | 618.11 | 0.158 |
| 68 | 10.864 | | 0.0000 | 0.000 | 8978.7 | 0.956 | BB | 0.042 | 3560.67 | 0.913 |
| 69 | 10.958 | | 0.0000 | 0.000 | 2508.2 | 0.267 | BB | 0.037 | 1129.65 | 0.290 |
| 70 | 11.207 | | 0.0000 | 0.000 | 18905.7 | 2.014 | BB | 0.038 | 8329.09 | 2.135 |
| 71 | 11.283 | | 0.0000 | 0.000 | 351.8 | 0.037 | BB | 0.025 | 234.72 | 0.060 |
| 72 | 11.628 | | 0.0000 | 0.000 | 6822.6 | 0.727 | BB | 0.041 | 2777.66 | 0.712 |
| 73 | 11.929 | DCB | 4.6345 | 15.324 | 40005.5 | 4.261 | BB | 0.044 | 15289.78 | 3.920 |
| 74 | 13.495 | | 0.0000 | 0.000 | 4375.4 | 0.466 | BB | 1.484 | 49.13 | 0.013 |
| 75 | 13.802 | | 0.0000 | 0.000 | 573.7 | 0.061 | BB | 0.224 | 42.64 | 0.011 |

Total Area = 938905.6, Total Amount = 30.243, Total Height = 390093.4, Sample Units = PPB

Sample Name: **AR1620424D AAAR162AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 04:37:02pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.22R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.460 | | 0.0000 | 0.000 | 902.0 | 0.065 | BB | 0.047 | 322.37 | 0.062 |
| 2 | 3.551 | | 0.0000 | 0.000 | 278.7 | 0.020 | BB | 0.034 | 136.83 | 0.026 |
| 3 | 3.632 | | 0.0000 | 0.000 | 4721.1 | 0.338 | BB | 0.043 | 1818.63 | 0.348 |
| 4 | 3.721 | | 0.0000 | 0.000 | 2024.2 | 0.145 | BB | 0.041 | 822.58 | 0.157 |
| 5 | 3.814 | | 0.0000 | 0.000 | 277.9 | 0.020 | BB | 0.026 | 178.80 | 0.034 |
| 6 | 3.953 | | 0.0000 | 0.000 | 675.6 | 0.048 | BB | 0.101 | 111.42 | 0.021 |
| 7 | 4.062 | TCX | 4.5583 | 8.706 | 53176.1 | 3.809 | BB | 0.035 | 25576.10 | 4.896 |
| 8 | 4.205 | | 0.0000 | 0.000 | 153.6 | 0.011 | BB | 0.024 | 107.16 | 0.021 |
| 9 | 4.240 | | 0.0000 | 0.000 | 1727.3 | 0.124 | BB | 0.039 | 745.50 | 0.143 |
| 10 | 4.482 | | 0.0000 | 0.000 | 5678.3 | 0.407 | BB | 0.040 | 2356.41 | 0.451 |
| 11 | 4.621 | | 0.0000 | 0.000 | 959.5 | 0.069 | BB | 0.037 | 428.55 | 0.082 |
| 12 | 4.684 | | 0.0000 | 0.000 | 4874.9 | 0.349 | BB | 0.033 | 2455.74 | 0.470 |
| 13 | 4.769 | Hcb | 1.1877 | 2.268 | 29112.8 | 2.085 | BB | 0.038 | 12716.91 | 2.434 |
| 14 | 5.092 | | 0.0000 | 0.000 | 4204.3 | 0.301 | BB | 0.043 | 1643.86 | 0.315 |
| 15 | 5.231 | | 0.0000 | 0.000 | 479.5 | 0.034 | BB | 0.071 | 111.93 | 0.021 |
| 16 | 5.338 | | 0.0000 | 0.000 | 59554.1 | 4.266 | BB | 0.055 | 18184.23 | 3.481 |
| 17 | 5.492 | gamma-BHC | 0.2301 | 0.440 | 3909.4 | 0.280 | BB | 0.036 | 1829.57 | 0.350 |
| 18 | 5.627 | beta-BHC | 1.4796 | 2.826 | 9100.8 | 0.652 | BB | 0.026 | 5900.79 | 1.130 |
| 19 | 5.675 | | 0.0000 | 0.000 | 14280.6 | 1.023 | BB | 0.030 | 7868.40 | 1.506 |
| 20 | 5.814 | | 0.0000 | 0.000 | 4358.7 | 0.312 | BB | 0.024 | 3063.72 | 0.587 |
| 21 | 5.849 | | 0.0000 | 0.000 | 1665.9 | 0.119 | BB | 0.020 | 1404.10 | 0.269 |
| 22 | 5.962 | | 0.0000 | 0.000 | 115727.6 | 8.289 | BV | 0.053 | 36700.27 | 7.026 |
| 23 | 6.144 | | 0.0000 | 0.000 | 48812.2 | 3.496 | VV | 0.043 | 18922.79 | 3.623 |
| 24 | 6.283 | | 0.0000 | 0.000 | 35815.7 | 2.565 | VV | 0.045 | 13252.87 | 2.537 |
| 25 | 6.410 | | 0.0000 | 0.000 | 24805.2 | 1.777 | VV | 0.036 | 11599.93 | 2.221 |
| 26 | 6.468 | | 0.0000 | 0.000 | 27350.0 | 1.959 | VV | 0.038 | 11926.70 | 2.283 |
| 27 | 6.521 | Aldrin | 1.3144 | 2.510 | 22745.9 | 1.629 | VB | 0.045 | 8368.84 | 1.602 |
| 28 | 6.661 | | 0.0000 | 0.000 | 1786.7 | 0.128 | BB | 0.058 | 511.95 | 0.098 |
| 29 | 6.769 | Telodrin | 2.1677 | 4.140 | 22741.6 | 1.629 | BB | 0.030 | 12782.05 | 2.447 |
| 30 | 6.825 | | 0.0000 | 0.000 | 6586.0 | 0.472 | BB | 0.034 | 3247.33 | 0.622 |
| 31 | 6.931 | | 0.0000 | 0.000 | 29310.5 | 2.099 | BB | 0.044 | 11087.66 | 2.123 |
| 32 | 7.130 | | 0.0000 | 0.000 | 3539.0 | 0.253 | BB | 0.028 | 2130.48 | 0.408 |
| 33 | 7.179 | | 0.0000 | 0.000 | 1148.1 | 0.082 | BB | 0.023 | 830.35 | 0.159 |
| 34 | 7.264 | | 0.0000 | 0.000 | 3005.9 | 0.215 | BB | 0.027 | 1882.84 | 0.360 |
| 35 | 7.323 | Hept. epoxide | 1.5658 | 2.990 | 19544.0 | 1.400 | BB | 0.035 | 9305.11 | 1.781 |
| 36 | 7.485 | | 0.0000 | 0.000 | 1888.0 | 0.135 | BB | 0.029 | 1079.89 | 0.207 |
| 37 | 7.564 | g. Chlordane | 1.7318 | 3.307 | 24525.0 | 1.757 | BV | 0.041 | 10037.62 | 1.922 |
| 38 | 7.692 | | 0.0000 | 0.000 | 2547.1 | 0.182 | VB | 0.053 | 808.49 | 0.155 |
| 39 | 7.847 | Endosulfan I | 0.0582 | 0.111 | 1176.7 | 0.084 | BB | 0.064 | 306.78 | 0.059 |
| 40 | 7.945 | | 0.0000 | 0.000 | 1100.7 | 0.079 | BV | 0.048 | 385.01 | 0.074 |
| 41 | 8.016 | | 0.0000 | 0.000 | 4161.1 | 0.298 | VV | 0.036 | 1920.32 | 0.368 |
| 42 | 8.128 | | 0.0000 | 0.000 | 7809.8 | 0.559 | VV | 0.032 | 4064.32 | 0.778 |
| 43 | 8.165 | | 0.0000 | 0.000 | 11345.1 | 0.813 | VV | 0.032 | 5889.91 | 1.128 |
| 44 | 8.211 | Dieldrin | 2.4046 | 4.593 | 27821.8 | 1.993 | VV | 0.040 | 11582.75 | 2.217 |
| 45 | 8.295 | | 0.0000 | 0.000 | 15858.4 | 1.136 | VB | 0.052 | 5082.38 | 0.973 |
| 46 | 8.416 | | 0.0000 | 0.000 | 55788.4 | 3.996 | BB | 0.044 | 21205.90 | 4.060 |
| 47 | 8.595 | Endrin | 1.2074 | 2.306 | 11448.4 | 0.820 | BV | 0.038 | 4984.23 | 0.954 |
| 48 | 8.677 | | 0.0000 | 0.000 | 62097.0 | 4.448 | VV | 0.040 | 25701.67 | 4.920 |
| 49 | 8.743 | Kepone | 10.4278 | 19.916 | 27011.0 | 1.935 | VB | 0.046 | 9696.46 | 1.856 |
| 50 | 8.886 | Endosulfan II | 4.1193 | 7.867 | 60586.3 | 4.339 | BV | 0.063 | 15956.02 | 3.055 |
| 51 | 9.023 | | 0.0000 | 0.000 | 9459.9 | 0.678 | VV | 0.055 | 2870.79 | 0.550 |
| 52 | 9.142 | 4,4'-DDT | 7.2417 | 13.831 | 84548.8 | 6.056 | VV | 0.060 | 23599.55 | 4.518 |
| 53 | 9.254 | | 0.0000 | 0.000 | 42196.8 | 3.022 | VV | 0.041 | 17147.16 | 3.283 |
| 54 | 9.324 | Endrin aldehyde | 3.1632 | 6.041 | 24996.4 | 1.790 | VB | 0.043 | 9700.38 | 1.857 |
| 55 | 9.475 | | 0.0000 | 0.000 | 6734.2 | 0.482 | BB | 0.041 | 2728.66 | 0.522 |
| 56 | 9.636 | Endo. sulfate | 4.7340 | 9.041 | 37548.2 | 2.689 | BB | 0.041 | 15286.92 | 2.926 |

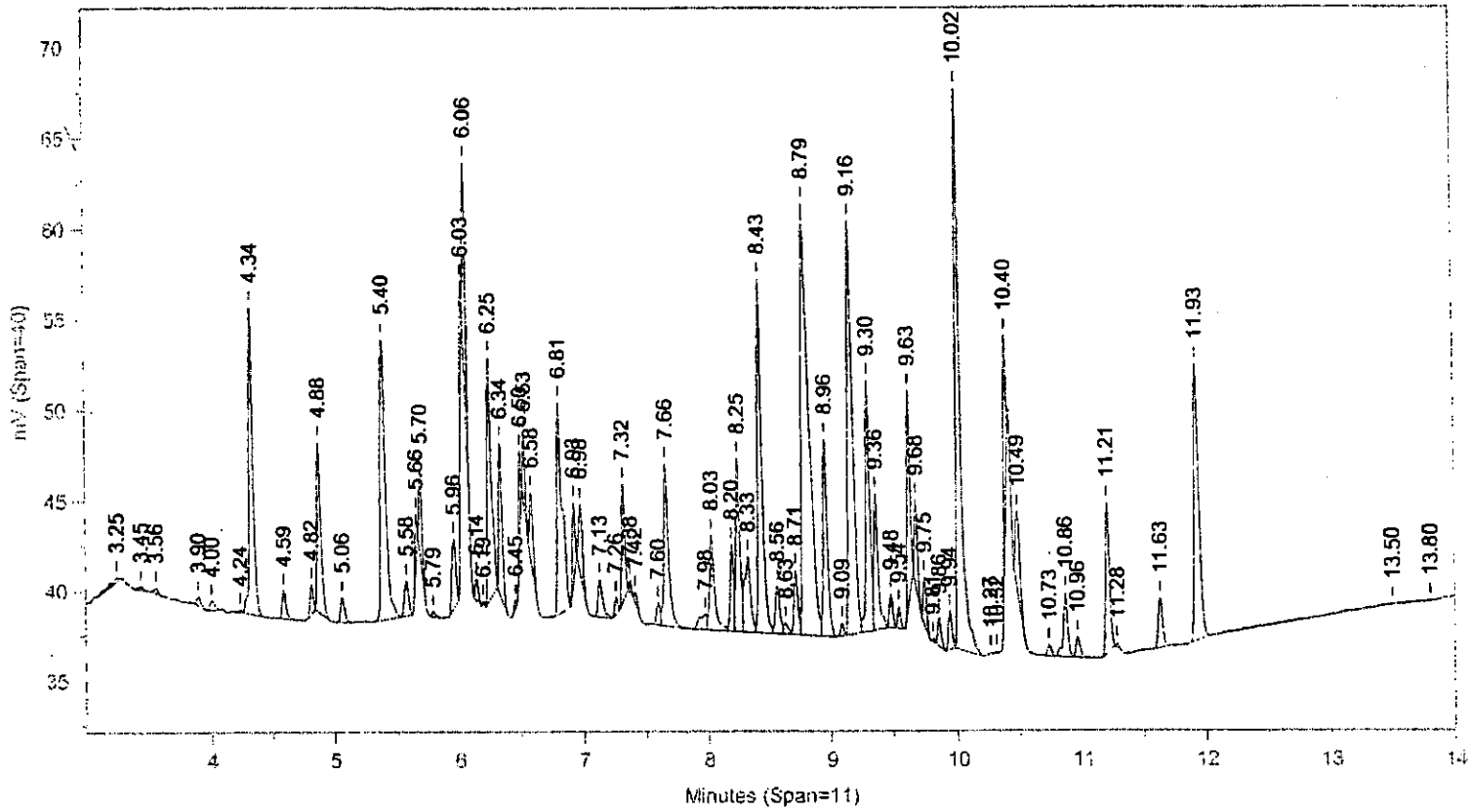
8688

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.728 | | 0.0000 | 0.000 | 13652.4 | 0.978 | BB | 0.034 | 6667.18 | 1.276 |
| 58 | 9.802 | | 0.0000 | 0.000 | 5166.0 | 0.370 | BB | 0.030 | 2912.07 | 0.557 |
| 59 | 9.851 | | 0.0000 | 0.000 | 3396.8 | 0.243 | BB | 0.033 | 1729.61 | 0.331 |
| 60 | 9.946 | | 0.0000 | 0.000 | 94375.8 | 6.760 | BB | 0.045 | 34659.50 | 6.635 |
| 61 | 10.118 | | 0.0000 | 0.000 | 2087.8 | 0.150 | BB | 0.036 | 974.67 | 0.187 |
| 62 | 10.339 | Endrin ketone | 0.2555 | 0.488 | 1883.2 | 0.135 | BB | 0.034 | 923.29 | 0.177 |
| 63 | 10.419 | | 0.0000 | 0.000 | 90092.1 | 6.453 | BB | 0.075 | 19994.42 | 3.828 |
| 64 | 10.718 | | 0.0000 | 0.000 | 1107.6 | 0.079 | BB | 0.033 | 556.38 | 0.107 |
| 65 | 10.790 | | 0.0000 | 0.000 | 1463.7 | 0.105 | BB | 0.035 | 693.50 | 0.133 |
| 66 | 10.958 | | 0.0000 | 0.000 | 10200.3 | 0.731 | BB | 0.043 | 3966.99 | 0.759 |
| 67 | 11.165 | | 0.0000 | 0.000 | 26040.5 | 1.865 | BB | 0.046 | 9454.77 | 1.810 |
| 68 | 11.652 | | 0.0000 | 0.000 | 7500.1 | 0.537 | BB | 0.042 | 2971.34 | 0.569 |
| 69 | 12.077 | DCB | 4.5121 | 8.618 | 46482.4 | 3.329 | BB | 0.048 | 16255.06 | 3.112 |
| 70 | 12.585 | | 0.0000 | 0.000 | 614.1 | 0.044 | BB | 0.073 | 140.88 | 0.027 |
| 71 | 12.782 | | 0.0000 | 0.000 | 310.7 | 0.022 | BB | 0.089 | 58.20 | 0.011 |
| 72 | 13.964 | | 0.0000 | 0.000 | 6122.1 | 0.438 | BB | 2.744 | 37.19 | 0.007 |

Total Area = 1396178.0, Total Amount = 52.359, Total Height = 522363.0, Sample Units = PPB

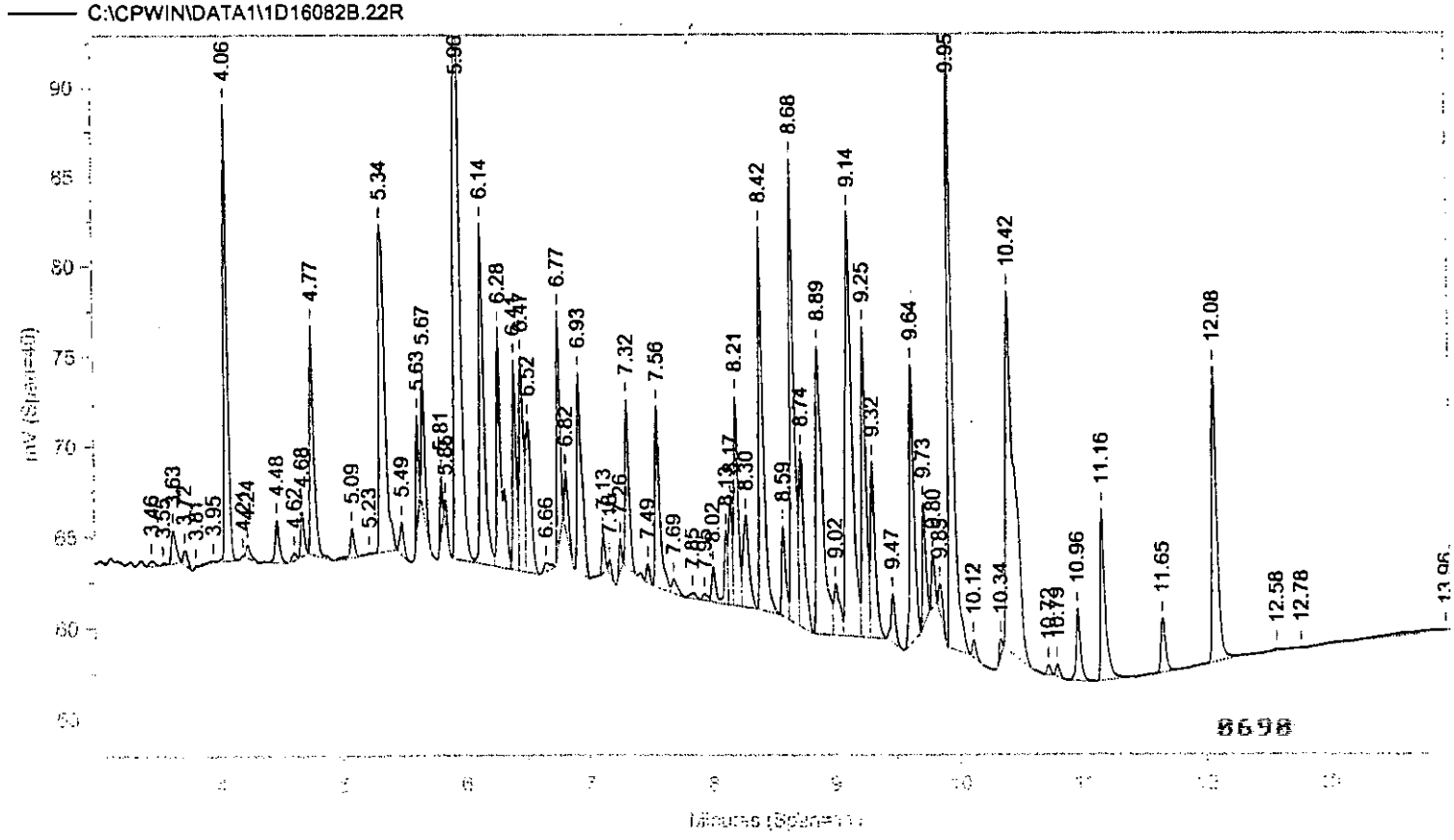
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.22R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 4:23:02 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.22R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 4:23:02 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

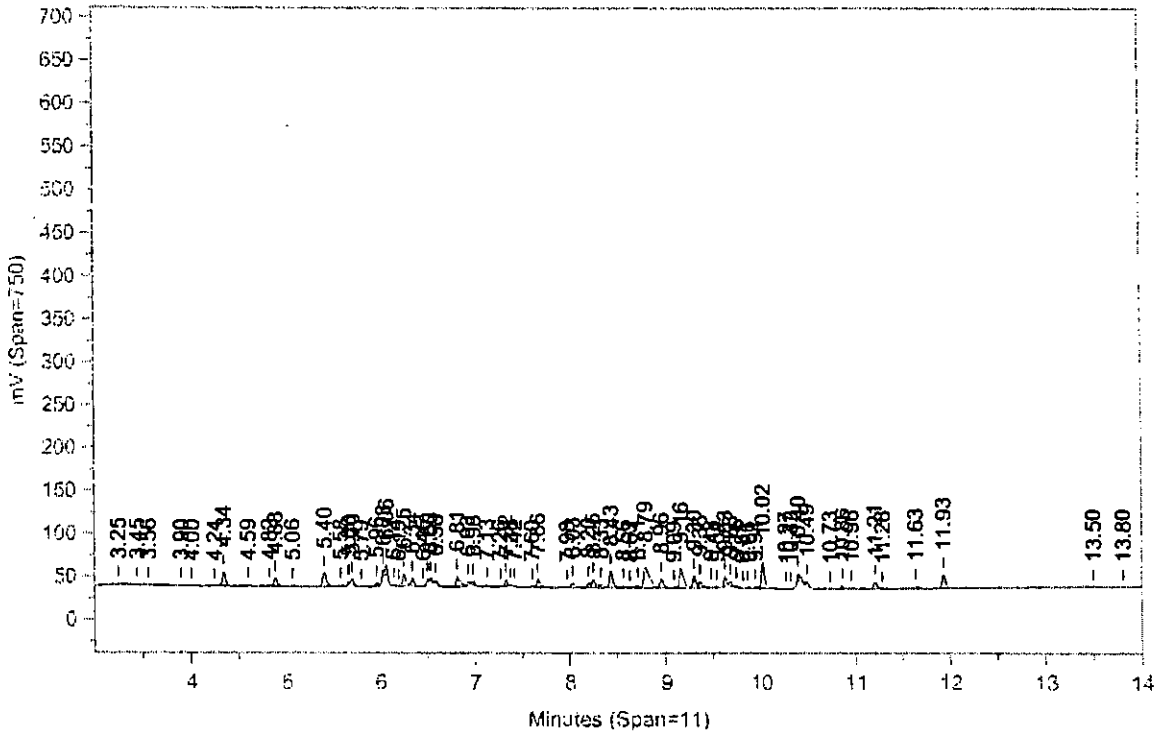
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.337 | 16990 | 4.118 | TCX | 4.062 | 25576 | 4.558 | TCX |
| . | 0 | . | Hcb | 4.769 | 12717 | 1.188 | Hcb |
| 5.66 | 2552 | .497 | gamma-BHC | 5.492 | 1830 | .23 | gamma-BHC |
| 5.795 | 259 | .092 | beta-BHC | 5.627 | 5901 | 1.48 | beta-BHC |
| 6.033 | 5202 | 1.068 | delta-BHC | . | 0 | . | delta-BHC |
| 6.336 | 8546 | 1.575 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.521 | 8369 | 1.314 | Aldrin |
| . | 0 | . | Telodrin | 6.769 | 12782 | 2.168 | Telodrin |
| 7.598 | 1221 | .285 | Hept. epoxide | 7.323 | 9305 | 1.566 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.564 | 10038 | 1.732 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.847 | 307 | .058 | Endosulfan I |
| 7.977 | 858 | .196 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.032 | 5298 | 1.508 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.211 | 11583 | 2.405 | Dieldrin |
| 8.25 | 9583 | 4.323 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.79 | 23896 | 7.146 | Endrin | 8.595 | 4984 | 1.207 | Endrin |
| 8.632 | 602 | .226 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | Kepone | 8.743 | 9696 | 10.428 | Kepone |
| 9.089 | 707 | .212 | Endosulfan II | 8.886 | 15956 | 4.119 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.142 | 23600 | 7.242 | 4,4'-DDT |
| 9.628 | 11673 | 4.255 | Endrin aldehyde | 9.324 | 9700 | 3.163 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.636 | 15287 | 4.734 | Endo. sulfate |
| 9.811 | 177 | .108 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.339 | 923 | .255 | Endrin ketone |
| 11.929 | 15290 | 4.634 | DCB | 12.077 | 16255 | 4.512 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.22A
Area File: C:\CPWIN\DATA1\1D16082B.22A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:20:38 AM
File Reported On: 3/23/2004 at 8:20:44 AM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.22R

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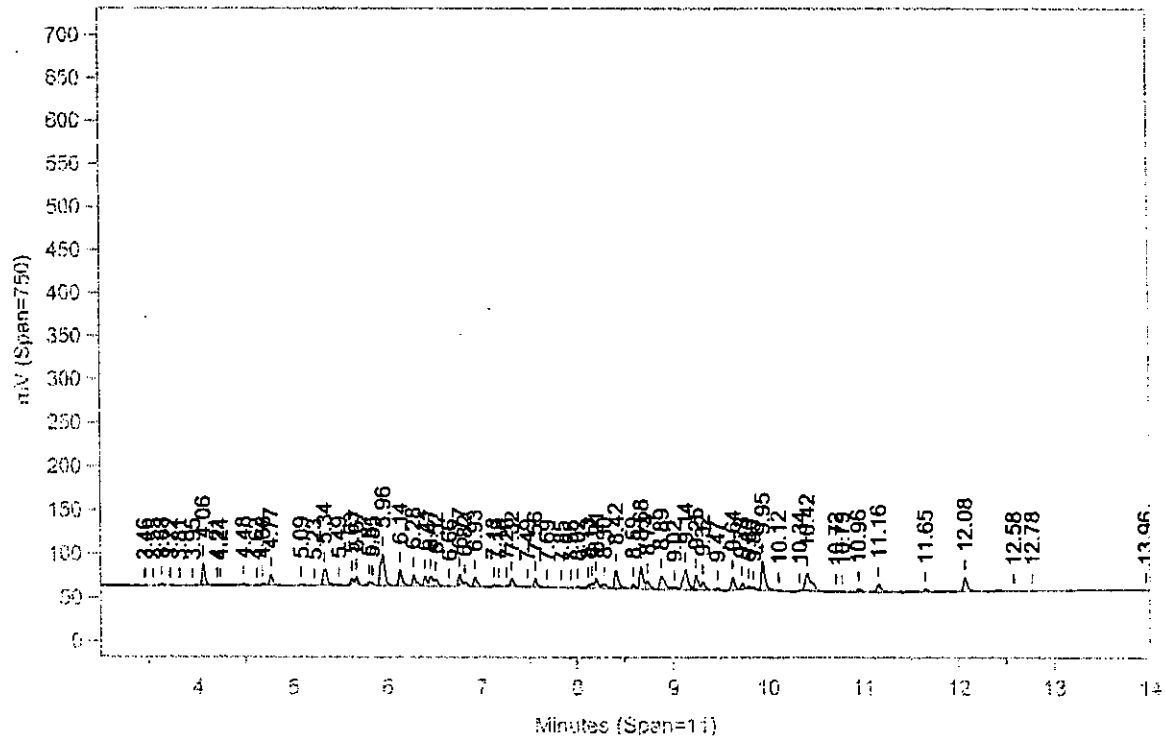



8692

Sample Name: **AR1630424D AAAR163AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 04:57:38pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.23R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.255 | | 0.0000 | 0.000 | 9357.0 | 0.520 | BB | 0.180 | 865.16 | 0.113 |
| 2 | 3.427 | | 0.0000 | 0.000 | 420.0 | 0.023 | BB | 0.053 | 132.50 | 0.017 |
| 3 | 3.558 | | 0.0000 | 0.000 | 886.6 | 0.049 | BB | 0.040 | 371.23 | 0.048 |
| 4 | 3.895 | | 0.0000 | 0.000 | 536.1 | 0.030 | BB | 0.039 | 230.14 | 0.030 |
| 5 | 4.002 | | 0.0000 | 0.000 | 795.9 | 0.044 | BB | 0.043 | 306.27 | 0.040 |
| 6 | 4.245 | | 0.0000 | 0.000 | 468.2 | 0.026 | BB | 0.024 | 324.79 | 0.042 |
| 7 | 4.338 | TCX | 8.0930 | 13.127 | 72187.7 | 4.013 | BB | 0.036 | 33386.20 | 4.357 |
| 8 | 4.595 | | 0.0000 | 0.000 | 6832.0 | 0.380 | BB | 0.036 | 3150.66 | 0.411 |
| 9 | 4.818 | | 0.0000 | 0.000 | 5548.3 | 0.308 | BB | 0.029 | 3213.37 | 0.419 |
| 10 | 4.880 | | 0.0000 | 0.000 | 38632.1 | 2.148 | BB | 0.036 | 18058.40 | 2.357 |
| 11 | 5.065 | | 0.0000 | 0.000 | 5403.2 | 0.300 | BB | 0.037 | 2446.66 | 0.319 |
| 12 | 5.400 | | 0.0000 | 0.000 | 87851.1 | 4.884 | BB | 0.051 | 28978.14 | 3.782 |
| 13 | 5.578 | | 0.0000 | 0.000 | 9231.7 | 0.513 | BB | 0.039 | 3941.66 | 0.514 |
| 14 | 5.661 | gamma-BHC | 1.0534 | 1.709 | 7527.5 | 0.418 | BB | 0.023 | 5405.87 | 0.705 |
| 15 | 5.696 | | 0.0000 | 0.000 | 13849.8 | 0.770 | BB | 0.026 | 9026.79 | 1.178 |
| 16 | 5.794 | beta-BHC | 0.1668 | 0.271 | 939.5 | 0.052 | BB | 0.033 | 472.60 | 0.062 |
| 17 | 5.959 | | 0.0000 | 0.000 | 17609.8 | 0.979 | BB | 0.038 | 7624.20 | 0.995 |
| 18 | 6.033 | delta-BHC | 2.0981 | 3.403 | 15740.0 | 0.875 | BB | 0.026 | 10217.32 | 1.333 |
| 19 | 6.062 | | 0.0000 | 0.000 | 33902.7 | 1.885 | BB | 0.023 | 24542.08 | 3.203 |
| 20 | 6.142 | | 0.0000 | 0.000 | 3881.2 | 0.216 | BB | 0.026 | 2474.32 | 0.323 |
| 21 | 6.196 | | 0.0000 | 0.000 | 644.0 | 0.036 | BB | 0.019 | 565.64 | 0.074 |
| 22 | 6.249 | | 0.0000 | 0.000 | 57465.9 | 3.195 | BB | 0.037 | 25667.81 | 3.350 |
| 23 | 6.337 | Heptachlor | 3.0331 | 4.920 | 30484.0 | 1.695 | BB | 0.031 | 16456.77 | 2.148 |
| 24 | 6.454 | | 0.0000 | 0.000 | 1283.0 | 0.071 | BB | 0.023 | 913.65 | 0.119 |
| 25 | 6.500 | | 0.0000 | 0.000 | 10369.6 | 0.576 | BB | 0.024 | 7197.32 | 0.939 |
| 26 | 6.533 | | 0.0000 | 0.000 | 9446.5 | 0.525 | BB | 0.021 | 7358.47 | 0.960 |
| 27 | 6.585 | | 0.0000 | 0.000 | 12499.5 | 0.695 | BB | 0.028 | 7493.40 | 0.978 |
| 28 | 6.811 | | 0.0000 | 0.000 | 64285.1 | 3.574 | BB | 0.048 | 22261.30 | 2.905 |
| 29 | 6.927 | | 0.0000 | 0.000 | 12518.1 | 0.696 | BB | 0.026 | 8104.09 | 1.058 |
| 30 | 6.980 | | 0.0000 | 0.000 | 14132.8 | 0.786 | BB | 0.032 | 7363.51 | 0.961 |
| 31 | 7.129 | | 0.0000 | 0.000 | 8995.4 | 0.500 | BB | 0.038 | 3976.66 | 0.519 |
| 32 | 7.264 | | 0.0000 | 0.000 | 2878.1 | 0.160 | BB | 0.027 | 1779.91 | 0.232 |
| 33 | 7.324 | | 0.0000 | 0.000 | 22266.7 | 1.238 | BB | 0.030 | 12193.25 | 1.591 |
| 34 | 7.377 | | 0.0000 | 0.000 | 1508.5 | 0.084 | BB | 0.020 | 1285.97 | 0.168 |
| 35 | 7.416 | | 0.0000 | 0.000 | 1415.2 | 0.079 | BB | 0.021 | 1118.45 | 0.146 |
| 36 | 7.598 | Hept. epoxide | 0.5320 | 0.863 | 4890.2 | 0.272 | BV | 0.036 | 2278.35 | 0.297 |
| 37 | 7.665 | | 0.0000 | 0.000 | 43426.8 | 2.414 | VB | 0.042 | 17042.00 | 2.224 |
| 38 | 7.979 | a. Chlordane | 0.2739 | 0.444 | 4327.1 | 0.241 | BV | 0.060 | 1202.10 | 0.157 |
| 39 | 8.033 | 4,4'-DDE | 2.8314 | 4.593 | 25681.7 | 1.428 | VV | 0.043 | 9948.12 | 1.298 |
| 40 | 8.198 | | 0.0000 | 0.000 | 18846.9 | 1.048 | VV | 0.034 | 9143.39 | 1.193 |
| 41 | 8.250 | o,p-DDD | 8.1386 | 13.201 | 40395.6 | 2.246 | VV | 0.037 | 18043.59 | 2.355 |
| 42 | 8.332 | | 0.0000 | 0.000 | 27679.5 | 1.539 | VV | 0.057 | 8042.26 | 1.050 |
| 43 | 8.434 | | 0.0000 | 0.000 | 85953.4 | 4.778 | VV | 0.039 | 36276.30 | 4.734 |
| 44 | 8.565 | | 0.0000 | 0.000 | 12519.2 | 0.696 | VV | 0.042 | 4990.46 | 0.651 |
| 45 | 8.634 | o,p-DDT | 0.3733 | 0.606 | 2146.7 | 0.119 | VV | 0.036 | 995.24 | 0.130 |
| 46 | 8.716 | | 0.0000 | 0.000 | 14680.3 | 0.816 | VV | 0.036 | 6821.48 | 0.890 |
| 47 | 8.791 | Endrin | 13.1936 | 21.401 | 129849.9 | 7.219 | VV | 0.049 | 44116.95 | 5.757 |
| 48 | 8.853 | 4,4'-DDD | 4.4738 | 7.257 | 26223.7 | 1.458 | VV | 0.034 | 12734.35 | 1.662 |
| 49 | 8.959 | | 0.0000 | 0.000 | 48232.0 | 2.681 | VB | 0.039 | 20660.12 | 2.696 |
| 50 | 9.090 | Endosulfan II | 0.4266 | 0.692 | 2507.8 | 0.139 | BV | 0.029 | 1424.62 | 0.186 |
| 51 | 9.164 | | 0.0000 | 0.000 | 132231.1 | 7.351 | VV | 0.051 | 43269.32 | 5.647 |
| 52 | 9.304 | | 0.0000 | 0.000 | 62165.1 | 3.456 | VV | 0.039 | 26586.83 | 3.470 |
| 53 | 9.365 | | 0.0000 | 0.000 | 35718.8 | 1.986 | VB | 0.039 | 15093.07 | 1.970 |
| 54 | 9.486 | | 0.0000 | 0.000 | 6996.0 | 0.389 | BB | 0.029 | 3980.78 | 0.519 |
| 55 | 9.545 | | 0.0000 | 0.000 | 3911.1 | 0.217 | BB | 0.026 | 2459.93 | 0.321 |
| 56 | 9.629 | Endrin aldehyde | 7.9938 | 12.967 | 40168.4 | 2.233 | BB | 0.031 | 21929.58 | 2.862 |

8693

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.684 | | 0.0000 | 0.000 | 14079.3 | 0.783 | BB | 0.026 | 8934.75 | 1.166 |
| 58 | 9.747 | | 0.0000 | 0.000 | 8597.0 | 0.478 | BB | 0.028 | 5062.80 | 0.661 |
| 59 | 9.813 | Methoxychlor | 0.2135 | 0.346 | 430.8 | 0.024 | BB | 0.021 | 349.96 | 0.046 |
| 60 | 9.863 | | 0.0000 | 0.000 | 5750.2 | 0.320 | BB | 0.031 | 3045.35 | 0.397 |
| 61 | 9.943 | | 0.0000 | 0.000 | 8596.2 | 0.478 | BB | 0.031 | 4559.54 | 0.595 |
| 62 | 10.022 | | 0.0000 | 0.000 | 148716.3 | 8.267 | BB | 0.042 | 58527.29 | 7.638 |
| 63 | 10.267 | | 0.0000 | 0.000 | 153.0 | 0.009 | BB | 0.028 | 91.56 | 0.012 |
| 64 | 10.397 | | 0.0000 | 0.000 | 86124.8 | 4.788 | BB | 0.048 | 30090.08 | 3.927 |
| 65 | 10.490 | | 0.0000 | 0.000 | 22026.7 | 1.224 | BB | 0.038 | 9629.33 | 1.257 |
| 66 | 10.734 | | 0.0000 | 0.000 | 2570.8 | 0.143 | BB | 0.035 | 1236.16 | 0.161 |
| 67 | 10.818 | | 0.0000 | 0.000 | 530.6 | 0.029 | BB | 0.027 | 325.84 | 0.043 |
| 68 | 10.866 | | 0.0000 | 0.000 | 13799.4 | 0.767 | BB | 0.036 | 6460.50 | 0.843 |
| 69 | 10.960 | | 0.0000 | 0.000 | 2045.2 | 0.114 | BB | 0.035 | 963.35 | 0.126 |
| 70 | 11.209 | | 0.0000 | 0.000 | 36570.1 | 2.033 | BB | 0.038 | 16018.70 | 2.090 |
| 71 | 11.284 | | 0.0000 | 0.000 | 642.9 | 0.036 | BB | 0.026 | 414.15 | 0.054 |
| 72 | 11.630 | | 0.0000 | 0.000 | 13572.9 | 0.755 | BB | 0.041 | 5511.11 | 0.719 |
| 73 | 11.932 | DCB | 8.7543 | 14.200 | 77909.9 | 4.331 | BB | 0.045 | 28881.56 | 3.769 |
| 74 | 12.313 | | 0.0000 | 0.000 | 591.4 | 0.033 | BB | 0.183 | 53.90 | 0.007 |
| 75 | 12.426 | | 0.0000 | 0.000 | 187.5 | 0.010 | BB | 0.062 | 50.69 | 0.007 |
| 76 | 13.523 | | 0.0000 | 0.000 | 5608.7 | 0.312 | BB | 0.698 | 133.93 | 0.017 |

Total Area = 1798848.0, Total Amount = 61.649, Total Height = 766283.8, Sample Units = PPB

Sample Name: **AR1630424D AAAR163AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 04:57:38pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.23R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.458 | | 0.0000 | 0.000 | 801.0 | 0.031 | BB | 0.041 | 328.01 | 0.034 |
| 2 | 3.548 | | 0.0000 | 0.000 | 358.2 | 0.014 | BB | 0.036 | 166.89 | 0.017 |
| 3 | 3.631 | | 0.0000 | 0.000 | 2652.8 | 0.101 | BB | 0.045 | 975.05 | 0.101 |
| 4 | 3.727 | | 0.0000 | 0.000 | 1157.5 | 0.044 | BB | 0.041 | 475.68 | 0.049 |
| 5 | 3.820 | | 0.0000 | 0.000 | 501.6 | 0.019 | BB | 0.041 | 205.25 | 0.021 |
| 6 | 3.944 | | 0.0000 | 0.000 | 622.4 | 0.024 | BB | 0.066 | 157.72 | 0.016 |
| 7 | 4.062 | TCX | 8.7260 | 10.961 | 103062.7 | 3.926 | BB | 0.035 | 48960.27 | 5.059 |
| 8 | 4.204 | | 0.0000 | 0.000 | 349.2 | 0.013 | BB | 0.022 | 268.78 | 0.028 |
| 9 | 4.241 | | 0.0000 | 0.000 | 2809.5 | 0.107 | BB | 0.034 | 1373.97 | 0.142 |
| 10 | 4.483 | | 0.0000 | 0.000 | 9973.2 | 0.380 | BB | 0.037 | 4482.51 | 0.463 |
| 11 | 4.609 | | 0.0000 | 0.000 | 1252.4 | 0.048 | BB | 0.034 | 616.28 | 0.064 |
| 12 | 4.684 | | 0.0000 | 0.000 | 9901.4 | 0.377 | BB | 0.033 | 4970.60 | 0.514 |
| -13 | 4.770 | Hcb | 2.2923 | 2.879 | 55313.1 | 2.107 | BB | 0.038 | 24543.51 | 2.536 |
| 14 | 5.031 | | 0.0000 | 0.000 | 254.3 | 0.010 | BB | 0.047 | 89.72 | 0.009 |
| 15 | 5.093 | | 0.0000 | 0.000 | 6420.5 | 0.245 | BB | 0.034 | 3145.24 | 0.325 |
| 16 | 5.257 | | 0.0000 | 0.000 | 638.1 | 0.024 | BB | 0.086 | 123.04 | 0.013 |
| -17 | 5.338 | | 0.0000 | 0.000 | 113408.8 | 4.320 | BB | 0.055 | 34121.75 | 3.526 |
| 18 | 5.493 | gamma-BHC | 0.4582 | 0.576 | 7991.4 | 0.304 | BB | 0.037 | 3642.76 | 0.376 |
| 19 | 5.628 | beta-BHC | 2.8670 | 3.601 | 17346.4 | 0.661 | BB | 0.025 | 11433.98 | 1.181 |
| 20 | 5.675 | | 0.0000 | 0.000 | 27100.6 | 1.032 | BB | 0.030 | 14973.94 | 1.547 |
| 21 | 5.814 | | 0.0000 | 0.000 | 30269.6 | 1.153 | BV | 0.055 | 9124.40 | 0.943 |
| -22 | 5.963 | | 0.0000 | 0.000 | 219396.9 | 8.358 | VV | 0.053 | 68409.89 | 7.069 |
| -23 | 6.145 | | 0.0000 | 0.000 | 93002.0 | 3.543 | VV | 0.044 | 35610.50 | 3.680 |
| -24 | 6.284 | | 0.0000 | 0.000 | 69339.5 | 2.642 | VV | 0.046 | 25365.53 | 2.621 |
| 25 | 6.411 | | 0.0000 | 0.000 | 46537.0 | 1.773 | VV | 0.036 | 21762.48 | 2.249 |
| 26 | 6.469 | | 0.0000 | 0.000 | 50664.9 | 1.930 | VV | 0.038 | 22150.06 | 2.289 |
| 27 | 6.522 | Aldrin | 2.4886 | 3.126 | 44397.7 | 1.691 | VB | 0.047 | 15844.41 | 1.637 |
| 28 | 6.664 | | 0.0000 | 0.000 | 328.7 | 0.013 | BB | 0.034 | 162.15 | 0.017 |
| 29 | 6.710 | | 0.0000 | 0.000 | 228.8 | 0.009 | BB | 0.021 | 184.38 | 0.019 |
| -30 | 6.770 | Telodrin | 4.1247 | 5.181 | 43647.8 | 1.663 | BB | 0.030 | 24321.61 | 2.513 |
| 31 | 6.826 | | 0.0000 | 0.000 | 12498.2 | 0.476 | BB | 0.033 | 6376.02 | 0.659 |
| 32 | 6.933 | | 0.0000 | 0.000 | 57001.2 | 2.172 | BB | 0.045 | 21073.42 | 2.177 |
| 33 | 7.132 | | 0.0000 | 0.000 | 7240.3 | 0.276 | BB | 0.027 | 4388.93 | 0.453 |
| 34 | 7.181 | | 0.0000 | 0.000 | 2483.5 | 0.095 | BB | 0.025 | 1679.68 | 0.174 |
| 35 | 7.266 | | 0.0000 | 0.000 | 5773.0 | 0.220 | BB | 0.028 | 3464.69 | 0.358 |
| 36 | 7.324 | Hept. epoxide | 2.9968 | 3.764 | 37699.1 | 1.436 | BB | 0.035 | 17809.21 | 1.840 |
| 37 | 7.425 | | 0.0000 | 0.000 | 623.4 | 0.024 | BB | 0.024 | 428.45 | 0.044 |
| 38 | 7.486 | | 0.0000 | 0.000 | 4219.2 | 0.161 | BV | 0.031 | 2263.49 | 0.234 |
| 39 | 7.565 | g. Chlordane | 3.2648 | 4.101 | 47098.4 | 1.794 | VV | 0.041 | 18923.38 | 1.955 |
| 40 | 7.692 | | 0.0000 | 0.000 | 4116.1 | 0.157 | VB | 0.047 | 1468.40 | 0.152 |
| 41 | 7.857 | Endosulfan I | 0.0652 | 0.082 | 1254.3 | 0.048 | BB | 0.061 | 343.72 | 0.036 |
| 42 | 7.940 | | 0.0000 | 0.000 | 1859.9 | 0.071 | BV | 0.042 | 736.03 | 0.076 |
| 43 | 8.018 | | 0.0000 | 0.000 | 8023.8 | 0.306 | VV | 0.036 | 3692.93 | 0.382 |
| 44 | 8.130 | | 0.0000 | 0.000 | 13733.3 | 0.523 | VV | 0.029 | 7770.95 | 0.803 |
| 45 | 8.166 | | 0.0000 | 0.000 | 23046.7 | 0.878 | VV | 0.034 | 11240.58 | 1.161 |
| 46 | 8.212 | Dieldrin | 4.5184 | 5.675 | 51353.5 | 1.956 | VV | 0.039 | 21764.37 | 2.249 |
| 47 | 8.296 | | 0.0000 | 0.000 | 30736.4 | 1.171 | VB | 0.052 | 9899.40 | 1.023 |
| -48 | 8.417 | | 0.0000 | 0.000 | 106870.8 | 4.071 | BB | 0.045 | 39686.72 | 4.101 |
| 49 | 8.596 | Endrin | 2.3676 | 2.974 | 22338.0 | 0.851 | BV | 0.038 | 9773.67 | 1.010 |
| -50 | 8.678 | | 0.0000 | 0.000 | 130173.6 | 4.959 | VB | 0.046 | 47404.81 | 4.898 |
| -51 | 8.887 | Endosulfan II | 7.8792 | 9.897 | 111837.4 | 4.261 | BV | 0.061 | 30519.36 | 3.153 |
| 52 | 9.025 | | 0.0000 | 0.000 | 15970.3 | 0.608 | VV | 0.055 | 4867.98 | 0.503 |
| -53 | 9.143 | 4,4'-DDT | 13.6542 | 17.151 | 162336.1 | 6.184 | VV | 0.061 | 44496.98 | 4.598 |
| 54 | 9.255 | | 0.0000 | 0.000 | 80631.3 | 3.072 | VV | 0.042 | 32129.20 | 3.320 |
| 55 | 9.325 | Endrin aldehyde | 6.0497 | 7.599 | 47397.9 | 1.806 | VB | 0.043 | 18552.21 | 1.917 |
| 56 | 9.476 | | 0.0000 | 0.000 | 14427.8 | 0.550 | BB | 0.042 | 5723.81 | 0.591 |

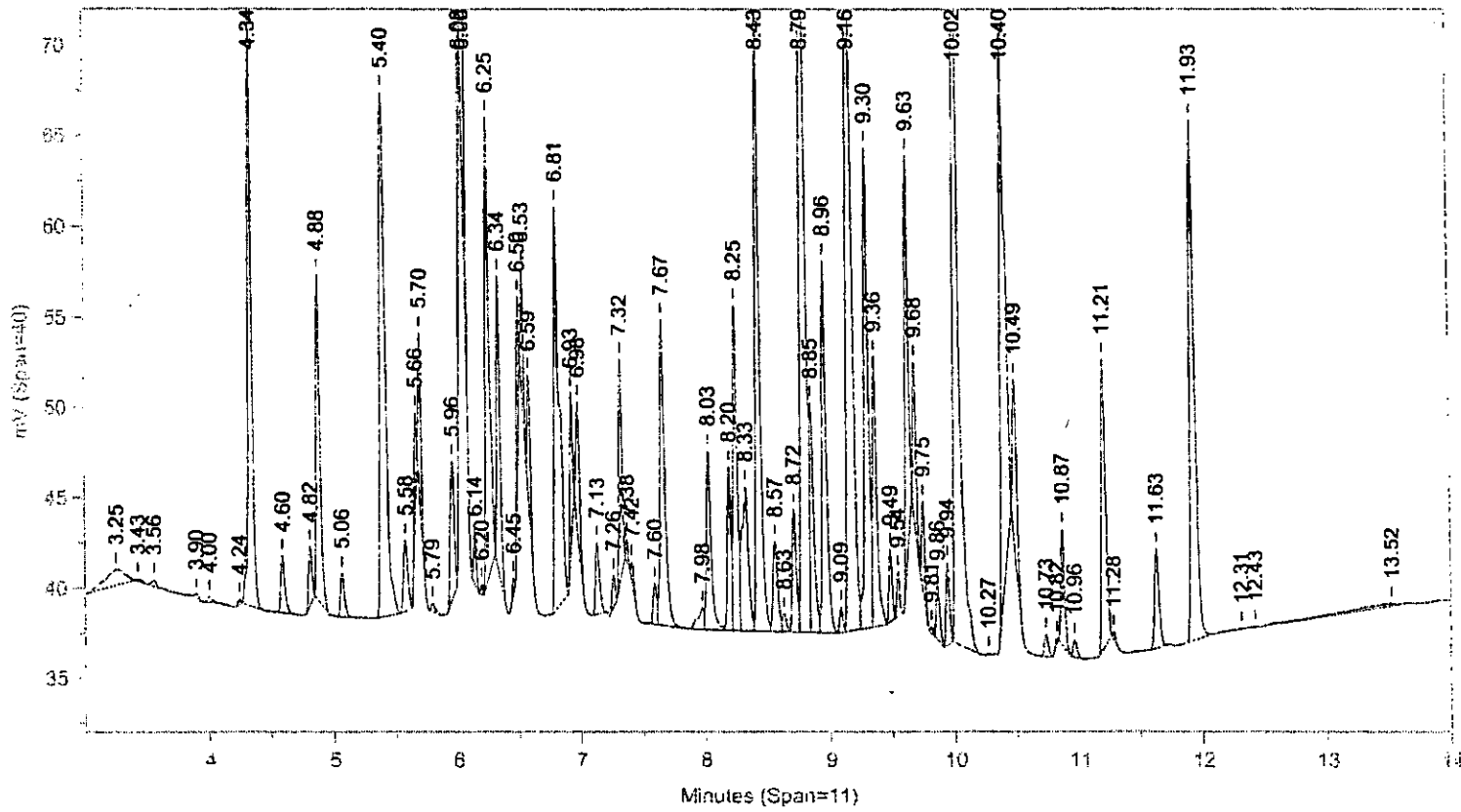
8695

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.638 | Endo. sulfate | 8.9582 | 11.252 | 71970.8 | 2.742 | BB | 0.041 | 28927.67 | 2.989 |
| 58 | 9.730 | | 0.0000 | 0.000 | 26119.9 | 0.995 | BB | 0.034 | 12794.59 | 1.322 |
| 59 | 9.804 | | 0.0000 | 0.000 | 9959.9 | 0.379 | BB | 0.029 | 5634.24 | 0.582 |
| 60 | 9.852 | | 0.0000 | 0.000 | 6396.9 | 0.244 | BB | 0.033 | 3222.47 | 0.333 |
| 61 | 9.947 | | 0.0000 | 0.000 | 179612.4 | 6.843 | BB | 0.046 | 64896.53 | 6.706 |
| 62 | 10.122 | | 0.0000 | 0.000 | 4137.3 | 0.158 | BB | 0.034 | 2042.73 | 0.211 |
| 63 | 10.338 | Endrin ketone | 0.3403 | 0.427 | 2251.6 | 0.086 | BB | 0.031 | 1229.67 | 0.127 |
| 64 | 10.421 | | 0.0000 | 0.000 | 178299.0 | 6.793 | BB | 0.077 | 38761.46 | 4.005 |
| 65 | 10.719 | | 0.0000 | 0.000 | 2208.1 | 0.084 | BB | 0.033 | 1106.36 | 0.114 |
| 66 | 10.791 | | 0.0000 | 0.000 | 2859.6 | 0.109 | BB | 0.035 | 1368.79 | 0.141 |
| 67 | 10.960 | | 0.0000 | 0.000 | 20754.9 | 0.791 | BB | 0.044 | 7867.31 | 0.813 |
| 68 | 11.167 | | 0.0000 | 0.000 | 51784.8 | 1.973 | BB | 0.047 | 18558.59 | 1.918 |
| 69 | 11.654 | | 0.0000 | 0.000 | 15477.8 | 0.590 | BB | 0.044 | 5920.89 | 0.612 |
| 70 | 12.079 | DCB | 8.5618 | 10.754 | 89979.3 | 3.428 | BB | 0.049 | 30844.32 | 3.187 |
| 71 | 12.594 | | 0.0000 | 0.000 | 286.0 | 0.011 | BB | 0.050 | 95.57 | 0.010 |
| 72 | 13.717 | | 0.0000 | 0.000 | 2345.0 | 0.089 | BB | 0.645 | 60.63 | 0.006 |

Total Area = 2624914.0, Total Amount = 79.613, Total Height = 967800.7, Sample Units = PPB

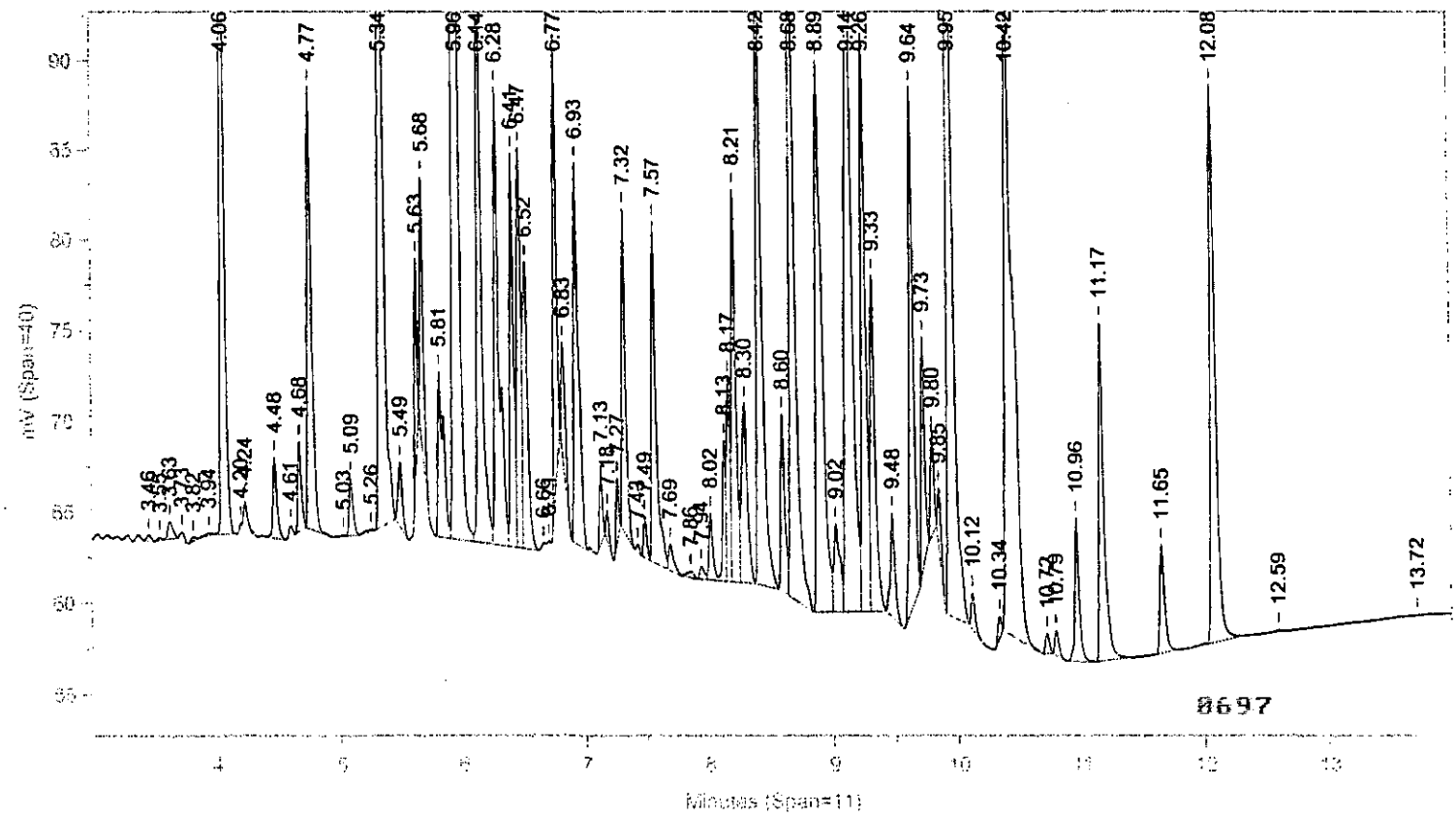
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.23R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 4:43:38 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.23R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 4:43:38 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

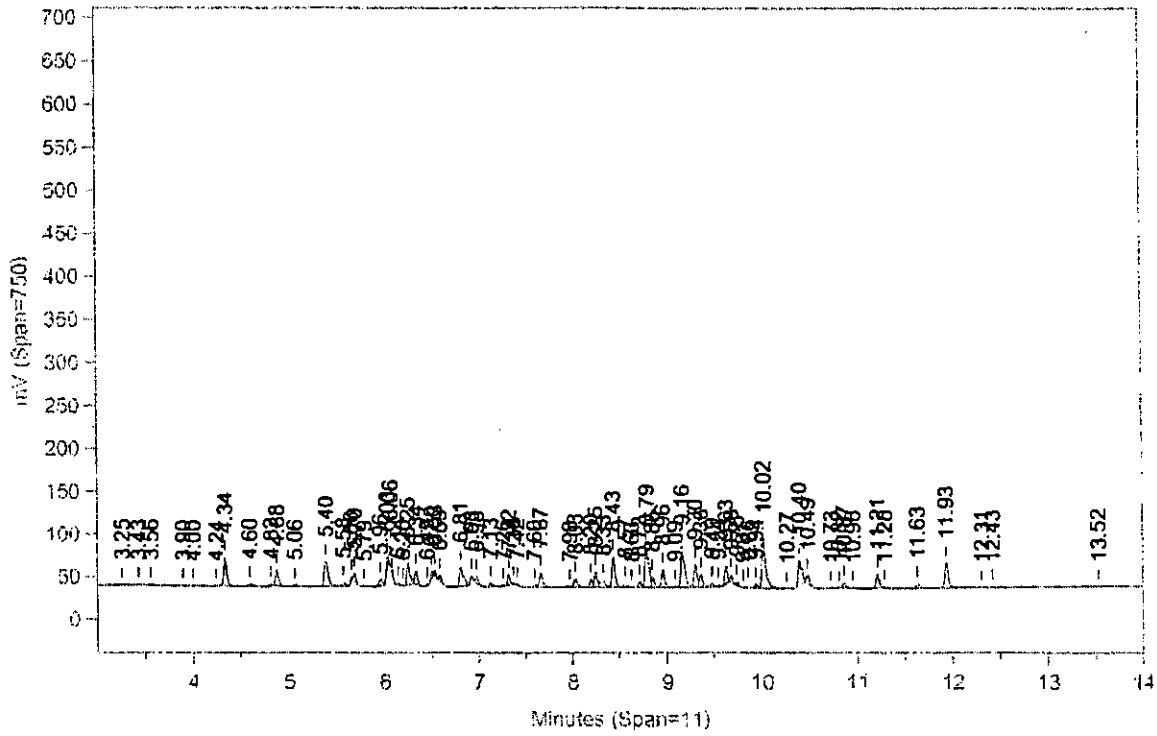
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.338 | 33386 | 8.093 | TCX | 4.062 | 48960 | 8.726 | TCX |
| . | 0 | . | Hcb | 4.77 | 24544 | 2.292 | Hcb |
| 5.661 | 5406 | 1.053 | gamma-BHC | 5.493 | 3643 | .458 | gamma-BHC |
| 5.794 | 473 | .167 | beta-BHC | 5.628 | 11434 | 2.867 | beta-BHC |
| 6.033 | 10217 | 2.098 | delta-BHC | . | 0 | . | delta-BHC |
| 6.337 | 16457 | 3.033 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.522 | 15844 | 2.489 | Aldrin |
| . | 0 | . | Telodrin | 6.77 | 24322 | 4.125 | Telodrin |
| 7.598 | 2278 | .532 | Hept. epoxide | 7.324 | 17809 | 2.997 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.565 | 18923 | 3.265 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.857 | 344 | .065 | Endosulfan I |
| 7.979 | 1202 | .274 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.033 | 9948 | 2.831 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.212 | 21764 | 4.518 | Dieldrin |
| 8.25 | 18044 | 8.139 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.791 | 44117 | 13.194 | Endrin | 8.596 | 9774 | 2.368 | Endrin |
| 8.634 | 995 | .373 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.853 | 12734 | 4.474 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.09 | 1425 | .427 | Endosulfan II | 8.887 | 30519 | 7.879 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.143 | 44497 | 13.654 | 4,4'-DDT |
| 9.629 | 21930 | 7.994 | Endrin aldehyde | 9.325 | 18552 | 6.05 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.638 | 28928 | 8.958 | Endo. sulfate |
| 9.813 | 350 | .213 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.338 | 1230 | .34 | Endrin ketone |
| 11.932 | 28882 | 8.754 | DCB | 12.079 | 30844 | 8.562 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.23A
Area File: C:\CPWIN\DATA1\1D16082B.23A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:20:54 AM
File Reported On: 3/23/2004 at 8:21:00 AM

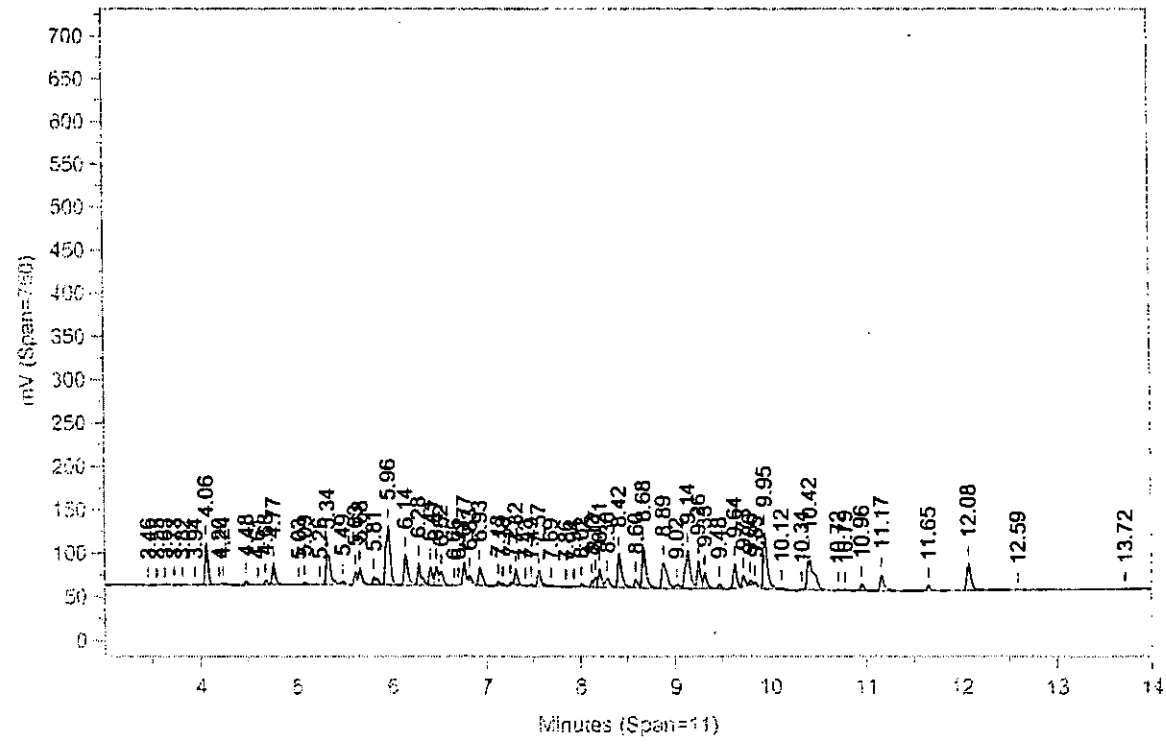
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.23R




C:\CPWIN\DATA1\1D16082B.23R




8699

Sample Name: **AR1640424E AAAR164AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 05:18:11pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.24R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.208 | | 0.0000 | 0.000 | 316.8 | 0.008 | BB | 0.032 | 166.60 | 0.010 |
| 2 | 3.264 | | 0.0000 | 0.000 | 2282.9 | 0.057 | BB | 0.104 | 365.54 | 0.021 |
| 3 | 3.434 | | 0.0000 | 0.000 | 267.3 | 0.007 | BB | 0.039 | 115.57 | 0.007 |
| 4 | 3.545 | | 0.0000 | 0.000 | 1203.6 | 0.030 | BB | 0.044 | 454.33 | 0.026 |
| 5 | 3.893 | | 0.0000 | 0.000 | 557.7 | 0.014 | BB | 0.038 | 246.60 | 0.014 |
| 6 | 4.000 | | 0.0000 | 0.000 | 794.2 | 0.020 | BB | 0.043 | 307.21 | 0.018 |
| 7 | 4.242 | | 0.0000 | 0.000 | 1173.9 | 0.029 | BB | 0.025 | 774.43 | 0.045 |
| 8 | 4.336 | TCX | 15.7899 | 11.251 | 141599.8 | 3.538 | BB | 0.036 | 65138.41 | 3.794 |
| 9 | 4.593 | | 0.0000 | 0.000 | 16550.8 | 0.414 | BB | 0.036 | 7607.85 | 0.443 |
| 10 | 4.816 | | 0.0000 | 0.000 | 12786.1 | 0.319 | BB | 0.029 | 7388.72 | 0.430 |
| 11 | 4.878 | | 0.0000 | 0.000 | 86263.0 | 2.155 | BB | 0.035 | 40651.19 | 2.368 |
| 12 | 5.063 | | 0.0000 | 0.000 | 13184.0 | 0.329 | BB | 0.038 | 5853.13 | 0.341 |
| 13 | 5.397 | | 0.0000 | 0.000 | 195739.4 | 4.891 | BB | 0.051 | 63915.55 | 3.723 |
| 14 | 5.575 | | 0.0000 | 0.000 | 21730.6 | 0.543 | BB | 0.039 | 9263.79 | 0.540 |
| 15 | 5.658 | gamma-BHC | 2.4980 | 1.780 | 17168.0 | 0.429 | BB | 0.022 | 12819.63 | 0.747 |
| 16 | 5.693 | | 0.0000 | 0.000 | 31210.9 | 0.780 | BB | 0.026 | 20149.53 | 1.174 |
| 17 | 5.791 | beta-BHC | 0.4015 | 0.286 | 2270.5 | 0.057 | BB | 0.033 | 1137.34 | 0.066 |
| 18 | 5.957 | | 0.0000 | 0.000 | 41696.9 | 1.042 | BB | 0.039 | 17951.02 | 1.046 |
| 19 | 6.031 | | 0.0000 | 0.000 | 34191.5 | 0.854 | BB | 0.024 | 23613.38 | 1.375 |
| 20 | 6.059 | delta-BHC | 11.5294 | 8.215 | 79461.0 | 1.985 | BB | 0.024 | 56144.99 | 3.270 |
| 21 | 6.139 | | 0.0000 | 0.000 | 8626.2 | 0.216 | BB | 0.026 | 5583.65 | 0.325 |
| 22 | 6.193 | | 0.0000 | 0.000 | 1506.0 | 0.038 | BB | 0.019 | 1339.62 | 0.078 |
| 23 | 6.246 | | 0.0000 | 0.000 | 129882.6 | 3.245 | BB | 0.038 | 57593.91 | 3.355 |
| 24 | 6.335 | Heptachlor | 7.0762 | 5.042 | 70941.2 | 1.772 | BB | 0.031 | 38393.33 | 2.236 |
| 25 | 6.452 | | 0.0000 | 0.000 | 2852.7 | 0.071 | BB | 0.022 | 2160.20 | 0.126 |
| 26 | 6.497 | | 0.0000 | 0.000 | 24648.2 | 0.616 | BB | 0.023 | 17512.00 | 1.020 |
| 27 | 6.530 | | 0.0000 | 0.000 | 20073.3 | 0.502 | BB | 0.021 | 15852.96 | 0.923 |
| 28 | 6.583 | | 0.0000 | 0.000 | 28949.5 | 0.723 | BB | 0.029 | 16890.79 | 0.984 |
| 29 | 6.808 | | 0.0000 | 0.000 | 146623.5 | 3.663 | BB | 0.049 | 50157.90 | 2.922 |
| 30 | 6.925 | | 0.0000 | 0.000 | 29192.5 | 0.729 | BB | 0.025 | 19241.61 | 1.121 |
| 31 | 6.978 | | 0.0000 | 0.000 | 30383.1 | 0.759 | BB | 0.032 | 15942.26 | 0.929 |
| 32 | 7.127 | | 0.0000 | 0.000 | 21088.8 | 0.527 | BB | 0.037 | 9449.42 | 0.550 |
| 33 | 7.203 | | 0.0000 | 0.000 | 522.5 | 0.013 | BB | 0.020 | 429.13 | 0.025 |
| 34 | 7.263 | | 0.0000 | 0.000 | 6751.0 | 0.169 | BB | 0.027 | 4130.63 | 0.241 |
| 35 | 7.322 | | 0.0000 | 0.000 | 49980.6 | 1.249 | BB | 0.030 | 27375.25 | 1.595 |
| 36 | 7.376 | | 0.0000 | 0.000 | 3469.1 | 0.087 | BB | 0.019 | 3050.34 | 0.178 |
| 37 | 7.415 | | 0.0000 | 0.000 | 3712.9 | 0.093 | BB | 0.023 | 2640.87 | 0.154 |
| 38 | 7.597 | o,p-DDE | 2.0732 | 1.477 | 11154.5 | 0.279 | BV | 0.034 | 5430.05 | 0.316 |
| 39 | 7.663 | | 0.0000 | 0.000 | 98027.5 | 2.449 | VB | 0.043 | 38262.37 | 2.229 |
| 40 | 7.978 | a. Chlordane | 0.4877 | 0.347 | 6063.2 | 0.151 | BV | 0.047 | 2140.10 | 0.125 |
| 41 | 8.031 | 4,4'-DDE | 6.3738 | 4.542 | 55958.0 | 1.398 | VV | 0.042 | 22394.47 | 1.304 |
| 42 | 8.197 | | 0.0000 | 0.000 | 42120.7 | 1.052 | VV | 0.033 | 21154.95 | 1.232 |
| 43 | 8.248 | o,p-DDD | 18.3791 | 13.096 | 91233.1 | 2.279 | VV | 0.037 | 40747.19 | 2.374 |
| 44 | 8.330 | | 0.0000 | 0.000 | 64727.0 | 1.617 | VV | 0.059 | 18437.01 | 1.074 |
| 45 | 8.431 | | 0.0000 | 0.000 | 188272.0 | 4.704 | VV | 0.039 | 79722.91 | 4.644 |
| 46 | 8.564 | | 0.0000 | 0.000 | 28917.4 | 0.722 | VV | 0.042 | 11601.21 | 0.676 |
| 47 | 8.632 | o,p-DDT | 0.8746 | 0.623 | 5155.6 | 0.129 | VV | 0.037 | 2331.89 | 0.136 |
| 48 | 8.714 | | 0.0000 | 0.000 | 34147.1 | 0.853 | VV | 0.036 | 15907.20 | 0.927 |
| 49 | 8.789 | Endrin | 28.6811 | 20.436 | 283784.3 | 7.090 | VV | 0.049 | 95903.81 | 5.586 |
| 50 | 8.851 | 4,4'-DDD | 10.3078 | 7.345 | 62969.6 | 1.573 | VV | 0.036 | 29340.77 | 1.709 |
| 51 | 8.957 | | 0.0000 | 0.000 | 111924.8 | 2.796 | VB | 0.039 | 47580.57 | 2.772 |
| 52 | 9.088 | Endosulfan II | 1.1090 | 0.790 | 6896.9 | 0.172 | BV | 0.031 | 3703.56 | 0.216 |
| 53 | 9.161 | | 0.0000 | 0.000 | 303893.3 | 7.593 | VV | 0.052 | 97851.07 | 5.700 |
| 54 | 9.301 | | 0.0000 | 0.000 | 143224.7 | 3.578 | VV | 0.040 | 60181.57 | 3.506 |
| 55 | 9.363 | | 0.0000 | 0.000 | 86009.3 | 2.149 | VB | 0.040 | 35667.54 | 2.078 |
| 56 | 9.484 | | 0.0000 | 0.000 | 17480.3 | 0.437 | BB | 0.030 | 9811.22 | 0.572 |

8788

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.543 | | 0.0000 | 0.000 | 9606.5 | 0.240 | BB | 0.027 | 6009.10 | 0.350 |
| 58 | 9.627 | Endrin aldehyde | 17.9597 | 12.797 | 88652.6 | 2.215 | BB | 0.030 | 49269.38 | 2.870 |
| 59 | 9.682 | | 0.0000 | 0.000 | 31410.3 | 0.785 | BB | 0.026 | 20269.09 | 1.181 |
| 60 | 9.745 | | 0.0000 | 0.000 | 20058.4 | 0.501 | BB | 0.028 | 12135.37 | 0.707 |
| 61 | 9.810 | Methoxychlor | 0.4651 | 0.331 | 900.1 | 0.022 | BB | 0.020 | 762.38 | 0.044 |
| 62 | 9.860 | | 0.0000 | 0.000 | 13801.3 | 0.345 | BB | 0.031 | 7337.96 | 0.427 |
| 63 | 9.941 | | 0.0000 | 0.000 | 21905.9 | 0.547 | BB | 0.032 | 11469.39 | 0.668 |
| 64 | 10.020 | | 0.0000 | 0.000 | 335262.4 | 8.377 | BB | 0.042 | 131562.00 | 7.664 |
| 65 | 10.395 | | 0.0000 | 0.000 | 192454.8 | 4.808 | BB | 0.047 | 68955.56 | 4.017 |
| 66 | 10.488 | | 0.0000 | 0.000 | 53157.1 | 1.328 | BB | 0.039 | 22663.42 | 1.320 |
| 67 | 10.732 | | 0.0000 | 0.000 | 6265.7 | 0.157 | BB | 0.035 | 3001.63 | 0.175 |
| 68 | 10.816 | | 0.0000 | 0.000 | 1406.4 | 0.035 | BB | 0.032 | 735.59 | 0.043 |
| 69 | 10.863 | | 0.0000 | 0.000 | 33018.9 | 0.825 | BB | 0.036 | 15458.56 | 0.900 |
| 70 | 10.957 | | 0.0000 | 0.000 | 1372.9 | 0.034 | BB | 0.030 | 756.50 | 0.044 |
| 71 | 11.207 | | 0.0000 | 0.000 | 86745.1 | 2.167 | BB | 0.038 | 37818.54 | 2.203 |
| 72 | 11.282 | | 0.0000 | 0.000 | 1422.6 | 0.036 | BB | 0.023 | 1044.06 | 0.061 |
| 73 | 11.628 | | 0.0000 | 0.000 | 32649.1 | 0.816 | BB | 0.041 | 13263.01 | 0.773 |
| 74 | 11.930 | DCB | 16.3380 | 11.641 | 146292.4 | 3.655 | BB | 0.045 | 53901.33 | 3.140 |
| 75 | 12.538 | | 0.0000 | 0.000 | 233.1 | 0.006 | BB | 0.048 | 80.53 | 0.005 |
| 76 | 13.437 | | 0.0000 | 0.000 | 3241.1 | 0.081 | BB | 0.496 | 109.01 | 0.006 |
| 77 | 13.654 | | 0.0000 | 0.000 | 584.1 | 0.015 | BB | 0.130 | 75.00 | 0.004 |
| 78 | 13.799 | | 0.0000 | 0.000 | 361.0 | 0.009 | BB | 0.090 | 67.03 | 0.004 |

Total Area = 4002413.0, Total Amount = 140.344, Total Height = 1716723.0, Sample Units = PPB

Sample Name: **AR1640424E AAAR164AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 05:18:11pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.24R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.410 | | 0.0000 | 0.000 | 30.7 | 0.001 | BB | 0.007 | 70.55 | 0.003 |
| 2 | 3.456 | | 0.0000 | 0.000 | 677.5 | 0.011 | BB | 0.043 | 263.16 | 0.012 |
| 3 | 3.546 | | 0.0000 | 0.000 | 390.3 | 0.007 | BB | 0.036 | 181.31 | 0.008 |
| 4 | 3.630 | | 0.0000 | 0.000 | 2660.7 | 0.045 | BB | 0.046 | 974.11 | 0.045 |
| 5 | 3.723 | | 0.0000 | 0.000 | 1082.9 | 0.018 | BB | 0.039 | 460.60 | 0.021 |
| 6 | 3.817 | | 0.0000 | 0.000 | 613.0 | 0.010 | BB | 0.038 | 269.45 | 0.013 |
| 7 | 3.943 | | 0.0000 | 0.000 | 636.5 | 0.011 | BB | 0.075 | 141.31 | 0.007 |
| 8 | 4.061 | TCX | 16.2969 | 9.387 | 196961.5 | 3.341 | BB | 0.036 | 91439.09 | 4.249 |
| 9 | 4.203 | | 0.0000 | 0.000 | 744.1 | 0.013 | BB | 0.023 | 535.41 | 0.025 |
| 10 | 4.239 | | 0.0000 | 0.000 | 6142.5 | 0.104 | BB | 0.032 | 3198.63 | 0.149 |
| 11 | 4.375 | | 0.0000 | 0.000 | 192.1 | 0.003 | BB | 0.032 | 100.45 | 0.005 |
| 12 | 4.481 | | 0.0000 | 0.000 | 23326.7 | 0.396 | BB | 0.037 | 10579.48 | 0.492 |
| 13 | 4.606 | | 0.0000 | 0.000 | 2270.3 | 0.039 | BB | 0.032 | 1196.94 | 0.056 |
| 14 | 4.682 | | 0.0000 | 0.000 | 23189.3 | 0.393 | BB | 0.034 | 11529.02 | 0.536 |
| 15 | 4.768 | Hcb | 5.0223 | 2.893 | 124056.9 | 2.105 | BB | 0.038 | 53773.38 | 2.499 |
| 16 | 5.032 | | 0.0000 | 0.000 | 162.2 | 0.003 | BB | 0.022 | 120.87 | 0.006 |
| 17 | 5.091 | | 0.0000 | 0.000 | 15802.9 | 0.268 | BB | 0.035 | 7479.02 | 0.348 |
| 18 | 5.240 | | 0.0000 | 0.000 | 550.1 | 0.009 | BB | 0.059 | 155.83 | 0.007 |
| 19 | 5.336 | | 0.0000 | 0.000 | 251497.9 | 4.266 | BB | 0.057 | 74035.23 | 3.441 |
| 20 | 5.491 | gamma-BHC | 1.1170 | 0.643 | 19827.5 | 0.336 | BB | 0.037 | 8879.96 | 0.413 |
| 21 | 5.626 | beta-BHC | 6.4780 | 3.731 | 41031.4 | 0.696 | BB | 0.026 | 25835.19 | 1.201 |
| 22 | 5.673 | | 0.0000 | 0.000 | 60722.2 | 1.030 | BB | 0.031 | 32898.96 | 1.529 |
| 23 | 5.813 | | 0.0000 | 0.000 | 72525.5 | 1.230 | BV | 0.057 | 21313.74 | 0.990 |
| 24 | 5.960 | | 0.0000 | 0.000 | 486249.1 | 8.249 | VV | 0.054 | 150183.20 | 6.979 |
| 25 | 6.143 | | 0.0000 | 0.000 | 210307.4 | 3.568 | VV | 0.045 | 78502.47 | 3.648 |
| 26 | 6.282 | | 0.0000 | 0.000 | 159906.3 | 2.713 | VV | 0.046 | 57381.16 | 2.667 |
| 27 | 6.409 | | 0.0000 | 0.000 | 101919.0 | 1.729 | VV | 0.035 | 47901.12 | 2.226 |
| 28 | 6.467 | | 0.0000 | 0.000 | 117035.1 | 1.985 | VV | 0.040 | 48893.52 | 2.272 |
| 29 | 6.520 | Aldrin | 5.5894 | 3.220 | 98320.9 | 1.668 | VB | 0.046 | 35587.30 | 1.654 |
| 30 | 6.663 | | 0.0000 | 0.000 | 389.7 | 0.007 | BB | 0.034 | 191.94 | 0.009 |
| 31 | 6.710 | | 0.0000 | 0.000 | 507.1 | 0.009 | BB | 0.022 | 378.03 | 0.018 |
| 32 | 6.768 | Telodrin | 9.1813 | 5.289 | 96848.8 | 1.643 | BB | 0.030 | 54138.77 | 2.516 |
| 33 | 6.823 | | 0.0000 | 0.000 | 29687.0 | 0.504 | BB | 0.034 | 14666.48 | 0.682 |
| 34 | 6.931 | | 0.0000 | 0.000 | 136386.2 | 2.314 | BB | 0.047 | 47900.95 | 2.226 |
| 35 | 7.130 | | 0.0000 | 0.000 | 17194.7 | 0.292 | BB | 0.028 | 10260.09 | 0.477 |
| 36 | 7.179 | | 0.0000 | 0.000 | 6643.5 | 0.113 | BB | 0.025 | 4405.92 | 0.205 |
| 37 | 7.264 | | 0.0000 | 0.000 | 13442.3 | 0.228 | BB | 0.027 | 8280.72 | 0.385 |
| 38 | 7.322 | Hept. epoxide | 6.6788 | 3.847 | 85762.7 | 1.455 | BB | 0.036 | 39691.16 | 1.844 |
| 39 | 7.422 | | 0.0000 | 0.000 | 1200.6 | 0.020 | BB | 0.024 | 836.30 | 0.039 |
| 40 | 7.485 | | 0.0000 | 0.000 | 11216.7 | 0.190 | BV | 0.033 | 5724.79 | 0.266 |
| 41 | 7.563 | g. Chlordane | 7.3449 | 4.231 | 108613.4 | 1.843 | VV | 0.043 | 42572.68 | 1.978 |
| 42 | 7.690 | | 0.0000 | 0.000 | 8400.2 | 0.143 | VB | 0.042 | 3299.24 | 0.153 |
| 43 | 7.859 | Endosulfan I | 0.0899 | 0.052 | 1415.2 | 0.024 | BB | 0.050 | 474.17 | 0.022 |
| 44 | 7.939 | | 0.0000 | 0.000 | 3838.6 | 0.065 | BV | 0.037 | 1726.00 | 0.080 |
| 45 | 8.016 | | 0.0000 | 0.000 | 19065.6 | 0.323 | VV | 0.036 | 8919.93 | 0.415 |
| 46 | 8.129 | | 0.0000 | 0.000 | 32136.8 | 0.545 | VV | 0.030 | 17829.61 | 0.829 |
| 47 | 8.165 | | 0.0000 | 0.000 | 50401.7 | 0.855 | VV | 0.032 | 26104.89 | 1.213 |
| 48 | 8.210 | Dieldrin | 10.1595 | 5.852 | 118825.8 | 2.016 | VV | 0.040 | 48936.55 | 2.274 |
| 49 | 8.294 | | 0.0000 | 0.000 | 70762.6 | 1.200 | VB | 0.051 | 23012.49 | 1.069 |
| 50 | 8.415 | | 0.0000 | 0.000 | 238645.5 | 4.048 | BB | 0.046 | 86972.25 | 4.042 |
| 51 | 8.595 | Endrin | 5.5634 | 3.205 | 52782.2 | 0.895 | BV | 0.038 | 22966.21 | 1.067 |
| 52 | 8.676 | | 0.0000 | 0.000 | 282602.2 | 4.794 | VB | 0.045 | 104521.30 | 4.857 |
| 53 | 8.884 | Endosulfan II | 18.1108 | 10.432 | 248466.0 | 4.215 | BV | 0.059 | 70151.05 | 3.260 |
| 54 | 9.023 | | 0.0000 | 0.000 | 32969.9 | 0.559 | VV | 0.053 | 10325.38 | 0.480 |
| 55 | 9.141 | 4,4'-DDT | 30.9291 | 17.816 | 369094.3 | 6.261 | VV | 0.061 | 100793.40 | 4.684 |
| 56 | 9.253 | | 0.0000 | 0.000 | 180090.3 | 3.055 | VV | 0.042 | 72093.98 | 3.350 |

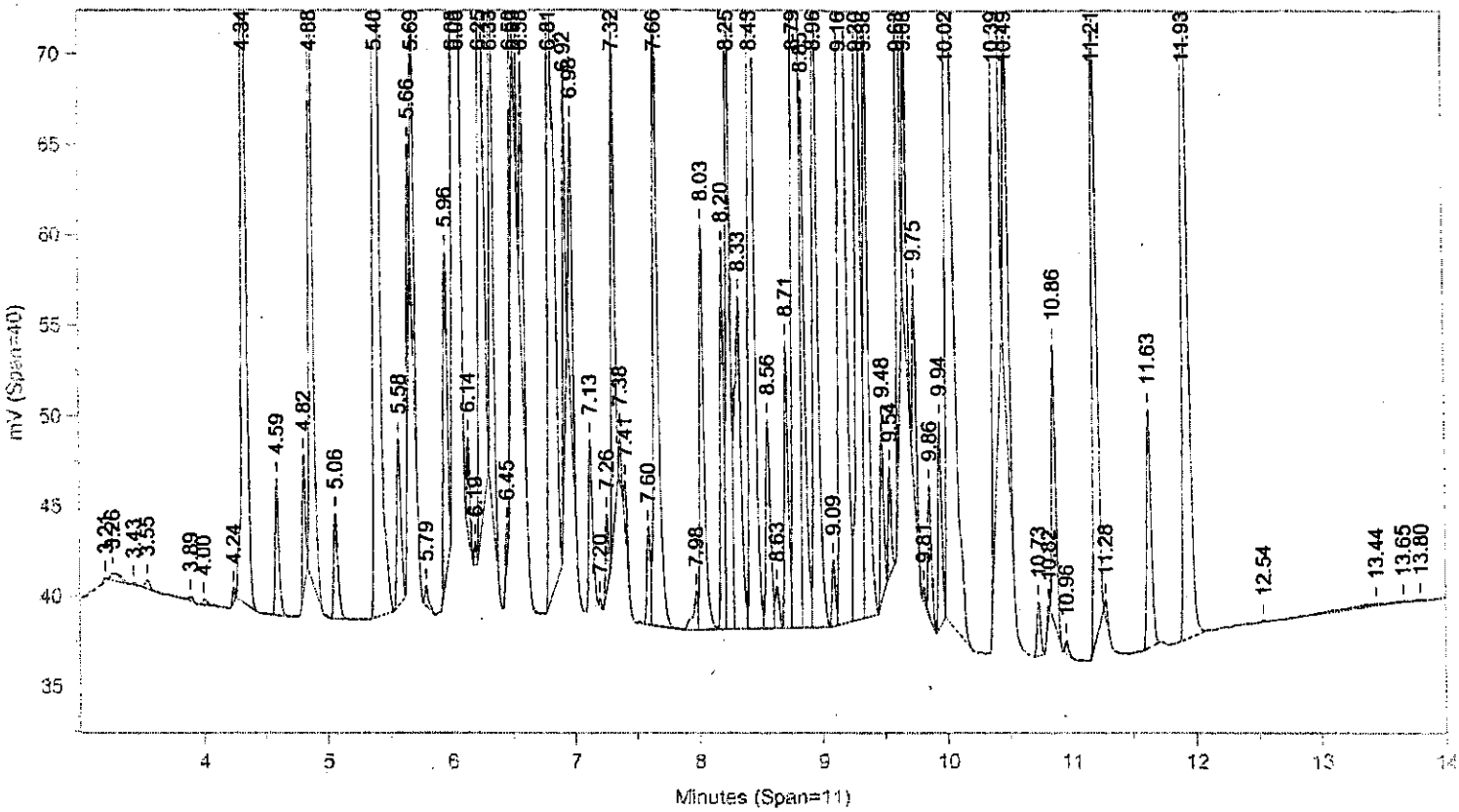
9782

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.323 | Endrin aldehyde | 13.8867 | 7.999 | 110421.0 | 1.873 | VB | 0.043 | 42585.17 | 1.979 |
| 58 | 9.474 | | 0.0000 | 0.000 | 36973.5 | 0.627 | BB | 0.043 | 14416.21 | 0.670 |
| 59 | 9.635 | Endo. sulfate | 20.3998 | 11.751 | 165738.3 | 2.812 | BB | 0.042 | 65874.97 | 3.061 |
| 60 | 9.728 | | 0.0000 | 0.000 | 60415.8 | 1.025 | BB | 0.034 | 29438.32 | 1.368 |
| 61 | 9.802 | | 0.0000 | 0.000 | 23466.1 | 0.398 | BB | 0.030 | 13191.96 | 0.613 |
| 62 | 9.850 | | 0.0000 | 0.000 | 15855.3 | 0.269 | BB | 0.032 | 8194.89 | 0.381 |
| 63 | 9.945 | | 0.0000 | 0.000 | 410804.5 | 6.969 | BB | 0.046 | 148217.30 | 6.888 |
| 64 | 10.120 | | 0.0000 | 0.000 | 10384.0 | 0.176 | BB | 0.034 | 5063.12 | 0.235 |
| 65 | 10.333 | Endrin ketone | 0.7164 | 0.413 | 4547.9 | 0.077 | BB | 0.029 | 2588.89 | 0.120 |
| 66 | 10.418 | | 0.0000 | 0.000 | 418636.0 | 7.102 | BB | 0.078 | 89480.57 | 4.158 |
| 67 | 10.717 | | 0.0000 | 0.000 | 5508.6 | 0.093 | BB | 0.033 | 2769.37 | 0.129 |
| 68 | 10.790 | | 0.0000 | 0.000 | 7025.5 | 0.119 | BB | 0.035 | 3381.54 | 0.157 |
| 69 | 10.958 | | 0.0000 | 0.000 | 51166.9 | 0.868 | BB | 0.044 | 19322.60 | 0.898 |
| 70 | 11.165 | | 0.0000 | 0.000 | 124904.5 | 2.119 | BB | 0.048 | 43811.45 | 2.036 |
| 71 | 11.652 | | 0.0000 | 0.000 | 38077.5 | 0.646 | BB | 0.044 | 14397.77 | 0.669 |
| 72 | 11.967 | | 0.0000 | 0.000 | 251.8 | 0.004 | BB | 0.033 | 127.16 | 0.006 |
| 73 | 12.078 | DCB | 16.0408 | 9.240 | 168559.8 | 2.859 | BB | 0.049 | 57788.07 | 2.685 |
| 74 | 12.587 | | 0.0000 | 0.000 | 514.5 | 0.009 | BB | 0.088 | 97.84 | 0.005 |
| 75 | 13.857 | | 0.0000 | 0.000 | 5348.7 | 0.091 | BB | 1.244 | 71.68 | 0.003 |

Total Area = 5894823.0, Total Amount = 173.605, Total Height = 2151874.0, Sample Units = PPB

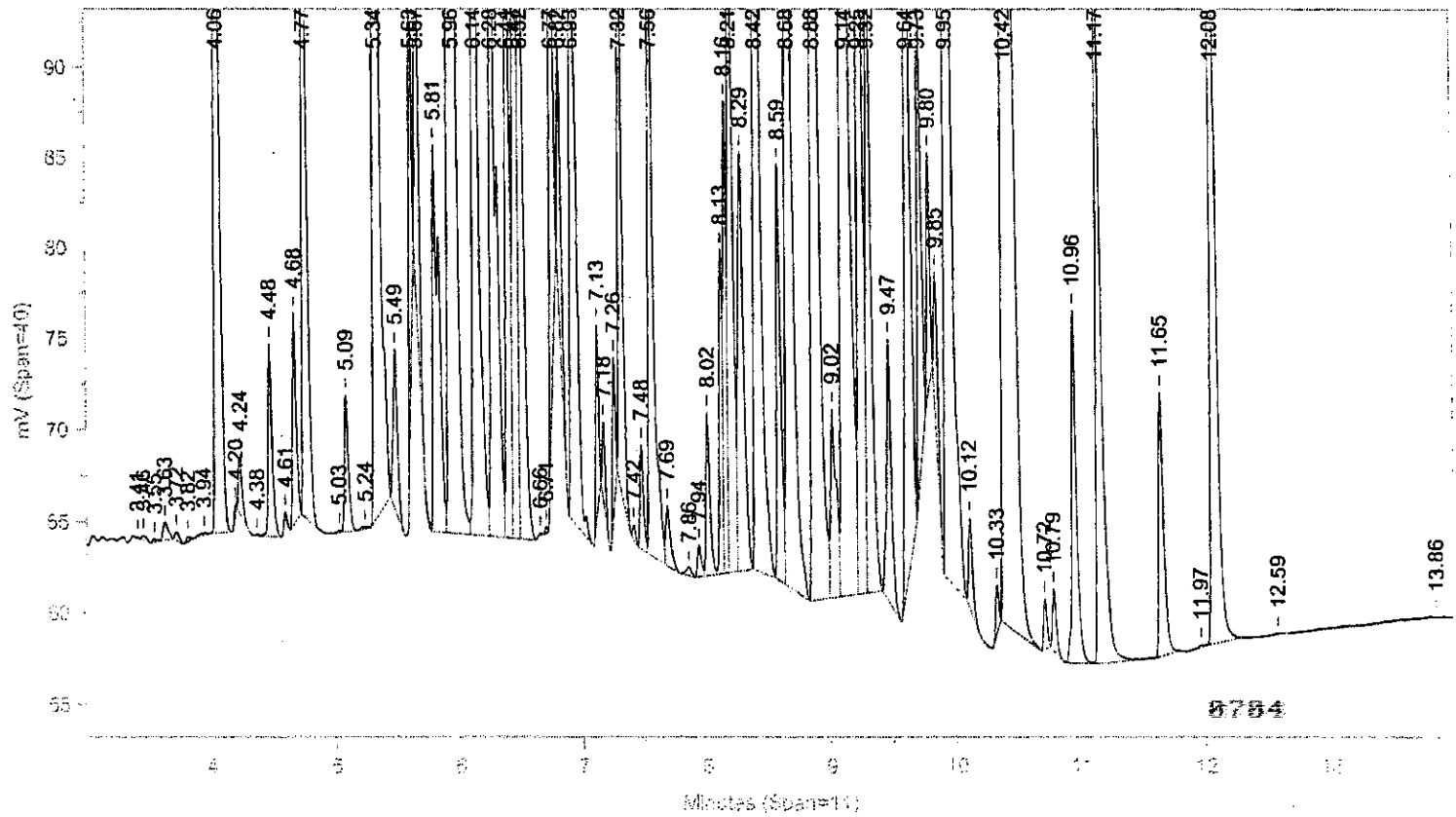
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.24R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 5:04:11 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.24R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 5:04:11 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

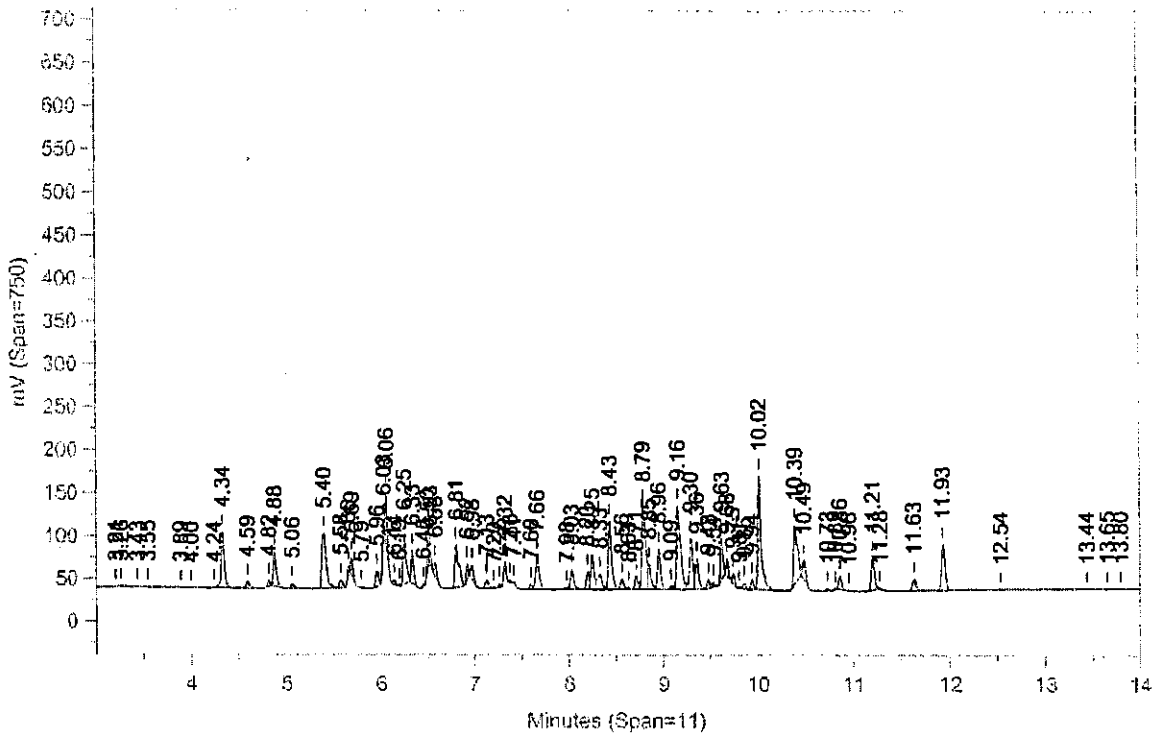
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 65138 | 15.79 | TCX | 4.061 | 91439 | 16.297 | TCX |
| . | 0 | . | Hcb | 4.768 | 53773 | 5.022 | Hcb |
| 5.658 | 12820 | 2.498 | gamma-BHC | 5.491 | 8880 | 1.117 | gamma-BHC |
| 5.791 | 1137 | .402 | beta-BHC | 5.626 | 25835 | 6.478 | beta-BHC |
| 6.059 | 56145 | 11.529 | delta-BHC | . | 0 | . | delta-BHC |
| 6.335 | 38393 | 7.076 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.52 | 35587 | 5.589 | Aldrin |
| . | 0 | . | Telodrin | 6.768 | 54139 | 9.181 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.322 | 39691 | 6.679 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.563 | 42573 | 7.345 | g. Chlordane |
| 7.597 | 5430 | 2.073 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.859 | 474 | .09 | Endosulfan I |
| 7.978 | 2140 | .488 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.031 | 22394 | 6.374 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.21 | 48937 | 10.159 | Dieldrin |
| 8.248 | 40747 | 18.379 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.789 | 95904 | 28.681 | Endrin | 8.595 | 22966 | 5.563 | Endrin |
| 8.632 | 2332 | .875 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.851 | 29341 | 10.308 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.088 | 3704 | 1.109 | Endosulfan II | 8.884 | 70151 | 18.111 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.141 | 100793 | 30.929 | 4,4'-DDT |
| 9.627 | 49269 | 17.96 | Endrin aldehyde | 9.323 | 42585 | 13.887 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.635 | 65875 | 20.4 | Endo. sulfate |
| 9.81 | 762 | .465 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.333 | 2589 | .716 | Endrin ketone |
| 11.93 | 53901 | 16.338 | DCB | 12.078 | 57788 | 16.041 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.24A
Area File: C:\CPWIN\DATA1\1D16082B.24A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:21:10 AM
File Reported On: 3/23/2004 at 8:21:15 AM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.24R

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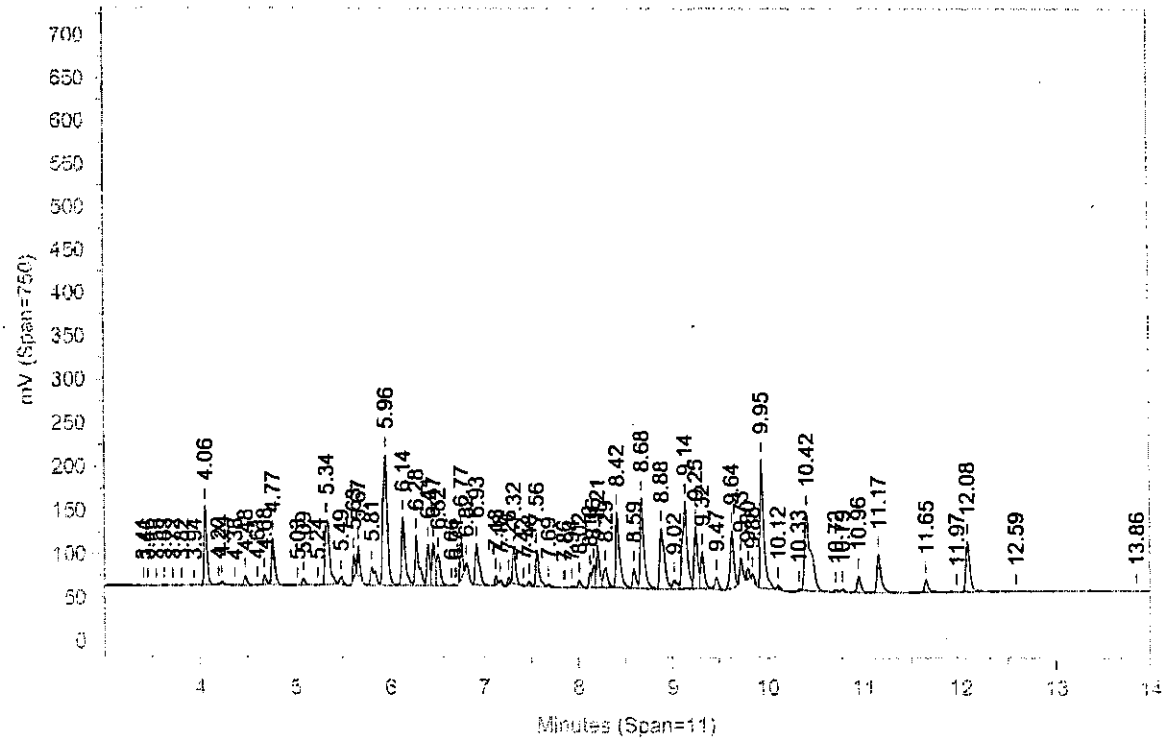



8786

Sample Name: **AR1650424D AAAR165AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 05:38:47pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.25R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.061 | | 0.0000 | 0.000 | 364.0 | 0.005 | BB | 0.031 | 196.55 | 0.006 |
| 2 | 3.214 | | 0.0000 | 0.000 | 1085.9 | 0.015 | BB | 0.052 | 350.72 | 0.011 |
| 3 | 3.428 | | 0.0000 | 0.000 | 332.3 | 0.004 | BB | 0.052 | 107.49 | 0.003 |
| 4 | 3.543 | | 0.0000 | 0.000 | 2295.5 | 0.031 | BB | 0.047 | 811.74 | 0.025 |
| 5 | 3.708 | | 0.0000 | 0.000 | 370.3 | 0.005 | BB | 0.045 | 136.19 | 0.004 |
| 6 | 3.894 | | 0.0000 | 0.000 | 547.1 | 0.007 | BB | 0.038 | 237.06 | 0.007 |
| 7 | 4.004 | | 0.0000 | 0.000 | 1016.2 | 0.014 | BB | 0.045 | 377.08 | 0.011 |
| 8 | 4.132 | | 0.0000 | 0.000 | 82.5 | 0.001 | BB | 0.021 | 65.28 | 0.002 |
| 9 | 4.244 | | 0.0000 | 0.000 | 2232.1 | 0.030 | BB | 0.025 | 1494.67 | 0.045 |
| 10 | 4.337 | TCX | 37.4799 | 14.226 | 341377.4 | 4.570 | BB | 0.037 | 154617.10 | 4.697 |
| 11 | 4.595 | | 0.0000 | 0.000 | 32082.5 | 0.430 | BB | 0.037 | 14578.86 | 0.443 |
| 12 | 4.817 | | 0.0000 | 0.000 | 24169.0 | 0.324 | BB | 0.029 | 13937.97 | 0.423 |
| 13 | 4.878 | | 0.0000 | 0.000 | 159777.6 | 2.139 | BB | 0.036 | 73545.15 | 2.234 |
| 14 | 5.064 | | 0.0000 | 0.000 | 25523.5 | 0.342 | BB | 0.038 | 11221.12 | 0.341 |
| 15 | 5.171 | alpha-BHC | 0.0274 | 0.010 | 496.2 | 0.007 | BB | 0.059 | 140.81 | 0.004 |
| 16 | 5.398 | | 0.0000 | 0.000 | 362389.5 | 4.851 | BB | 0.053 | 114829.90 | 3.489 |
| 17 | 5.576 | | 0.0000 | 0.000 | 40829.0 | 0.547 | BB | 0.039 | 17437.81 | 0.530 |
| 18 | 5.659 | gamma-BHC | 4.1255 | 1.566 | 30912.6 | 0.414 | BB | 0.024 | 21171.58 | 0.643 |
| 19 | 5.694 | | 0.0000 | 0.000 | 57857.4 | 0.775 | BB | 0.026 | 36995.83 | 1.124 |
| 20 | 5.792 | beta-BHC | 0.7248 | 0.275 | 3936.5 | 0.053 | BB | 0.032 | 2053.14 | 0.062 |
| 21 | 5.892 | | 0.0000 | 0.000 | 268.5 | 0.004 | BB | 0.021 | 216.18 | 0.007 |
| 22 | 5.958 | | 0.0000 | 0.000 | 78602.8 | 1.052 | BB | 0.039 | 33876.00 | 1.029 |
| 23 | 6.031 | delta-BHC | 9.1007 | 3.454 | 61995.0 | 0.830 | BB | 0.023 | 44318.17 | 1.346 |
| 24 | 6.060 | | 0.0000 | 0.000 | 150097.8 | 2.009 | BB | 0.024 | 104477.10 | 3.174 |
| 25 | 6.140 | | 0.0000 | 0.000 | 15238.5 | 0.204 | BB | 0.025 | 10041.03 | 0.305 |
| 26 | 6.194 | | 0.0000 | 0.000 | 2794.7 | 0.037 | BB | 0.018 | 2535.55 | 0.077 |
| 27 | 6.246 | | 0.0000 | 0.000 | 240072.8 | 3.214 | BB | 0.037 | 106929.30 | 3.249 |
| 28 | 6.335 | Heptachlor | 13.6441 | 5.179 | 136204.7 | 1.823 | BB | 0.031 | 74028.48 | 2.249 |
| 29 | 6.452 | | 0.0000 | 0.000 | 5981.5 | 0.080 | BB | 0.025 | 3945.94 | 0.120 |
| 30 | 6.497 | | 0.0000 | 0.000 | 45192.1 | 0.605 | BB | 0.023 | 32880.64 | 0.999 |
| 31 | 6.530 | | 0.0000 | 0.000 | 37149.1 | 0.497 | BB | 0.021 | 29543.01 | 0.898 |
| 32 | 6.583 | | 0.0000 | 0.000 | 54259.4 | 0.726 | BB | 0.029 | 31710.26 | 0.963 |
| 33 | 6.808 | | 0.0000 | 0.000 | 105598.4 | 1.414 | BB | 0.026 | 67662.49 | 2.056 |
| 34 | 6.842 | | 0.0000 | 0.000 | 10406.7 | 0.139 | BB | 0.017 | 10352.18 | 0.315 |
| 35 | 6.925 | | 0.0000 | 0.000 | 55191.5 | 0.739 | BB | 0.025 | 36778.22 | 1.117 |
| 36 | 6.978 | | 0.0000 | 0.000 | 57533.6 | 0.770 | BB | 0.032 | 30091.32 | 0.914 |
| 37 | 7.127 | | 0.0000 | 0.000 | 40397.2 | 0.541 | BB | 0.037 | 18141.84 | 0.551 |
| 38 | 7.262 | | 0.0000 | 0.000 | 14559.0 | 0.195 | BB | 0.028 | 8668.24 | 0.263 |
| 39 | 7.322 | | 0.0000 | 0.000 | 91144.5 | 1.220 | BB | 0.030 | 51287.07 | 1.558 |
| 40 | 7.375 | | 0.0000 | 0.000 | 7522.6 | 0.101 | BB | 0.020 | 6407.38 | 0.195 |
| 41 | 7.414 | | 0.0000 | 0.000 | 7121.8 | 0.095 | BB | 0.023 | 5181.94 | 0.157 |
| 42 | 7.597 | o,p-DDE | 4.0419 | 1.534 | 21745.6 | 0.291 | BV | 0.034 | 10586.28 | 0.322 |
| 43 | 7.663 | | 0.0000 | 0.000 | 181619.2 | 2.431 | VB | 0.043 | 70650.78 | 2.146 |
| 44 | 7.978 | a. Chlordane | 0.8896 | 0.338 | 10211.6 | 0.137 | BV | 0.044 | 3903.91 | 0.119 |
| 45 | 8.030 | 4,4'-DDE | 11.9456 | 4.534 | 104261.1 | 1.396 | VV | 0.041 | 41971.13 | 1.275 |
| 46 | 8.196 | | 0.0000 | 0.000 | 80908.2 | 1.083 | VV | 0.033 | 40593.56 | 1.233 |
| 47 | 8.248 | o,p-DDD | 34.4557 | 13.078 | 170346.3 | 2.281 | VV | 0.037 | 76389.40 | 2.321 |
| 48 | 8.304 | | 0.0000 | 0.000 | 33574.2 | 0.449 | VV | 0.021 | 26197.43 | 0.796 |
| 49 | 8.330 | | 0.0000 | 0.000 | 89280.7 | 1.195 | VV | 0.043 | 34985.85 | 1.063 |
| 50 | 8.431 | | 0.0000 | 0.000 | 342402.5 | 4.584 | VV | 0.039 | 147307.10 | 4.475 |
| 51 | 8.563 | | 0.0000 | 0.000 | 55603.8 | 0.744 | VV | 0.041 | 22392.20 | 0.680 |
| 52 | 8.632 | o,p-DDT | 1.7256 | 0.655 | 10123.8 | 0.136 | VV | 0.037 | 4600.56 | 0.140 |
| 53 | 8.713 | | 0.0000 | 0.000 | 65511.9 | 0.877 | VV | 0.036 | 30312.05 | 0.921 |
| 54 | 8.788 | Endrin | 53.3701 | 20.257 | 522393.0 | 6.994 | VV | 0.049 | 178459.00 | 5.422 |
| 55 | 8.850 | 4,4'-DDD | 19.0789 | 7.241 | 112321.2 | 1.504 | VV | 0.034 | 54307.16 | 1.650 |
| 56 | 8.957 | | 0.0000 | 0.000 | 213999.0 | 2.865 | VB | 0.039 | 92085.84 | 2.798 |

9787

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.088 | Endosulfan II | 2.2714 | 0.862 | 14729.7 | 0.197 | BV | 0.032 | 7585.63 | 0.230 |
| 58 | 9.160 | | 0.0000 | 0.000 | 572109.5 | 7.659 | VV | 0.052 | 185111.20 | 5.624 |
| 59 | 9.300 | | 0.0000 | 0.000 | 268915.5 | 3.600 | VV | 0.040 | 112284.20 | 3.411 |
| 60 | 9.362 | | 0.0000 | 0.000 | 162483.8 | 2.175 | VB | 0.040 | 68285.44 | 2.075 |
| 61 | 9.483 | | 0.0000 | 0.000 | 35089.0 | 0.470 | BB | 0.030 | 19593.52 | 0.595 |
| 62 | 9.542 | | 0.0000 | 0.000 | 17833.5 | 0.239 | BB | 0.026 | 11552.17 | 0.351 |
| 63 | 9.626 | Endrin aldehyde | 33.3173 | 12.646 | 162568.9 | 2.176 | BB | 0.030 | 91400.17 | 2.777 |
| 64 | 9.681 | | 0.0000 | 0.000 | 59058.6 | 0.791 | BB | 0.026 | 37741.51 | 1.147 |
| 65 | 9.744 | | 0.0000 | 0.000 | 37871.3 | 0.507 | BB | 0.028 | 22478.54 | 0.683 |
| 66 | 9.809 | Methoxychlor | 0.9667 | 0.367 | 1877.1 | 0.025 | BB | 0.020 | 1584.77 | 0.048 |
| 67 | 9.860 | | 0.0000 | 0.000 | 27738.1 | 0.371 | BB | 0.031 | 14943.79 | 0.454 |
| 68 | 9.940 | | 0.0000 | 0.000 | 43455.6 | 0.582 | BB | 0.032 | 22706.64 | 0.690 |
| 69 | 10.018 | | 0.0000 | 0.000 | 623627.1 | 8.349 | BB | 0.041 | 250921.10 | 7.623 |
| 70 | 10.265 | | 0.0000 | 0.000 | 103.5 | 0.001 | BB | 0.023 | 74.23 | 0.002 |
| 71 | 10.310 | | 0.0000 | 0.000 | 637.3 | 0.009 | BB | 0.029 | 367.94 | 0.011 |
| 72 | 10.393 | | 0.0000 | 0.000 | 366171.3 | 4.902 | BB | 0.046 | 132312.70 | 4.020 |
| 73 | 10.486 | | 0.0000 | 0.000 | 101146.3 | 1.354 | BB | 0.038 | 44075.98 | 1.339 |
| 74 | 10.730 | | 0.0000 | 0.000 | 12489.1 | 0.167 | BB | 0.034 | 6050.38 | 0.184 |
| 75 | 10.814 | | 0.0000 | 0.000 | 2786.1 | 0.037 | BB | 0.027 | 1688.57 | 0.051 |
| 76 | 10.862 | | 0.0000 | 0.000 | 64652.3 | 0.866 | BB | 0.035 | 30361.60 | 0.922 |
| 77 | 10.955 | | 0.0000 | 0.000 | 1619.2 | 0.022 | BB | 0.028 | 948.68 | 0.029 |
| 78 | 11.205 | | 0.0000 | 0.000 | 166567.7 | 2.230 | BB | 0.038 | 72538.04 | 2.204 |
| 79 | 11.280 | | 0.0000 | 0.000 | 2999.2 | 0.040 | BB | 0.025 | 1995.04 | 0.061 |
| 80 | 11.541 | | 0.0000 | 0.000 | 157.2 | 0.002 | BB | 0.041 | 64.04 | 0.002 |
| 81 | 11.626 | | 0.0000 | 0.000 | 64965.7 | 0.870 | BB | 0.041 | 26294.75 | 0.799 |
| 82 | 11.727 | | 0.0000 | 0.000 | 330.1 | 0.004 | BB | 0.028 | 200.03 | 0.006 |
| 83 | 11.927 | DCB | 36.3041 | 13.779 | 335333.8 | 4.489 | BB | 0.047 | 119772.40 | 3.639 |
| 84 | 12.168 | | 0.0000 | 0.000 | 366.1 | 0.005 | BB | 0.060 | 102.02 | 0.003 |
| 85 | 12.424 | | 0.0000 | 0.000 | 416.9 | 0.006 | BB | 0.121 | 57.45 | 0.002 |
| 86 | 12.541 | | 0.0000 | 0.000 | 279.4 | 0.004 | BB | 0.049 | 94.48 | 0.003 |
| 87 | 13.326 | | 0.0000 | 0.000 | 1057.7 | 0.014 | BB | 0.283 | 62.19 | 0.002 |
| 88 | 13.434 | | 0.0000 | 0.000 | 281.2 | 0.004 | BB | 0.069 | 67.89 | 0.002 |
| 89 | 13.521 | | 0.0000 | 0.000 | 144.3 | 0.002 | BB | 0.043 | 55.63 | 0.002 |
| 90 | 13.681 | | 0.0000 | 0.000 | 422.9 | 0.006 | BB | 0.118 | 59.66 | 0.002 |
| 91 | 13.891 | | 0.0000 | 0.000 | 85.9 | 0.001 | BB | 0.030 | 47.48 | 0.001 |

Total Area = 7469682.0, Total Amount = 263.469, Total Height = 3291601.0, Sample Units = PPB

Sample Name: **AR1650424D AAAR165AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 05:38:47pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.25R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.416 | | 0.0000 | 0.000 | 1079.7 | 0.010 | BB | 0.053 | 341.20 | 0.008 |
| 2 | 3.544 | | 0.0000 | 0.000 | 412.1 | 0.004 | BB | 0.032 | 215.63 | 0.005 |
| 3 | 3.633 | | 0.0000 | 0.000 | 2740.8 | 0.024 | BB | 0.043 | 1051.46 | 0.026 |
| 4 | 3.723 | | 0.0000 | 0.000 | 1442.3 | 0.013 | BB | 0.041 | 583.98 | 0.014 |
| 5 | 3.814 | | 0.0000 | 0.000 | 748.9 | 0.007 | BB | 0.034 | 372.60 | 0.009 |
| 6 | 3.931 | | 0.0000 | 0.000 | 689.5 | 0.006 | BB | 0.061 | 187.29 | 0.005 |
| 7 | 4.061 | TCX | 37.6642 | 10.998 | 469702.7 | 4.161 | BB | 0.037 | 211327.70 | 5.126 |
| 8 | 4.203 | | 0.0000 | 0.000 | 1497.2 | 0.013 | BB | 0.022 | 1138.89 | 0.028 |
| 9 | 4.239 | | 0.0000 | 0.000 | 11779.7 | 0.104 | BB | 0.033 | 5956.43 | 0.144 |
| 10 | 4.380 | | 0.0000 | 0.000 | 203.7 | 0.002 | BB | 0.029 | 117.33 | 0.003 |
| 11 | 4.482 | | 0.0000 | 0.000 | 45469.2 | 0.403 | BB | 0.037 | 20424.61 | 0.495 |
| 12 | 4.607 | | 0.0000 | 0.000 | 5747.2 | 0.051 | BB | 0.032 | 2990.73 | 0.073 |
| 13 | 4.683 | | 0.0000 | 0.000 | 44458.3 | 0.394 | BB | 0.034 | 22023.63 | 0.534 |
| 14 | 4.769 | Hcb | 9.1180 | 2.662 | 230220.0 | 2.039 | BB | 0.039 | 97626.34 | 2.368 |
| 15 | 5.029 | | 0.0000 | 0.000 | 305.6 | 0.003 | BB | 0.021 | 240.43 | 0.006 |
| 16 | 5.092 | | 0.0000 | 0.000 | 31327.0 | 0.278 | BB | 0.036 | 14527.21 | 0.352 |
| 17 | 5.220 | | 0.0000 | 0.000 | 431.9 | 0.004 | BB | 0.045 | 159.17 | 0.004 |
| 18 | 5.336 | | 0.0000 | 0.000 | 462227.8 | 4.095 | BB | 0.058 | 133845.60 | 3.246 |
| 19 | 5.492 | gamma-BHC | 2.1805 | 0.637 | 39126.6 | 0.347 | BB | 0.038 | 17334.16 | 0.420 |
| 20 | 5.626 | beta-BHC | 12.1217 | 3.540 | 75858.1 | 0.672 | BB | 0.026 | 48343.15 | 1.173 |
| 21 | 5.674 | | 0.0000 | 0.000 | 111796.7 | 0.990 | BB | 0.031 | 59747.26 | 1.449 |
| 22 | 5.813 | | 0.0000 | 0.000 | 140270.6 | 1.243 | BV | 0.058 | 40642.41 | 0.986 |
| 23 | 5.961 | | 0.0000 | 0.000 | 885459.6 | 7.844 | VV | 0.054 | 271676.70 | 6.589 |
| 24 | 6.143 | | 0.0000 | 0.000 | 395061.6 | 3.500 | VV | 0.046 | 143713.80 | 3.486 |
| 25 | 6.282 | | 0.0000 | 0.000 | 305906.1 | 2.710 | VV | 0.047 | 107356.60 | 2.604 |
| 26 | 6.409 | | 0.0000 | 0.000 | 186310.2 | 1.650 | VV | 0.035 | 87574.99 | 2.124 |
| 27 | 6.467 | | 0.0000 | 0.000 | 214936.6 | 1.904 | VV | 0.040 | 89582.91 | 2.173 |
| 28 | 6.520 | Aldrin | 10.4199 | 3.043 | 186338.0 | 1.651 | VB | 0.047 | 66342.90 | 1.609 |
| 29 | 6.662 | | 0.0000 | 0.000 | 814.2 | 0.007 | BB | 0.032 | 425.70 | 0.010 |
| 30 | 6.715 | | 0.0000 | 0.000 | 793.3 | 0.007 | BB | 0.021 | 638.44 | 0.015 |
| 31 | 6.768 | Telodrin | 16.6315 | 4.856 | 177273.9 | 1.570 | BB | 0.030 | 98069.70 | 2.379 |
| 32 | 6.824 | | 0.0000 | 0.000 | 55748.4 | 0.494 | BB | 0.035 | 26824.37 | 0.651 |
| 33 | 6.931 | | 0.0000 | 0.000 | 260683.5 | 2.309 | BB | 0.049 | 89286.00 | 2.166 |
| 34 | 7.130 | | 0.0000 | 0.000 | 33366.1 | 0.296 | BB | 0.028 | 19888.67 | 0.482 |
| 35 | 7.179 | | 0.0000 | 0.000 | 13168.0 | 0.117 | BB | 0.025 | 8634.93 | 0.209 |
| 36 | 7.267 | | 0.0000 | 0.000 | 29603.5 | 0.262 | BB | 0.030 | 16643.65 | 0.404 |
| 37 | 7.322 | Hept. epoxide | 12.4949 | 3.648 | 161344.6 | 1.429 | BB | 0.036 | 74254.75 | 1.801 |
| 38 | 7.484 | | 0.0000 | 0.000 | 21609.9 | 0.191 | BV | 0.032 | 11168.70 | 0.271 |
| 39 | 7.563 | g. Chlordane | 13.6861 | 3.996 | 201472.6 | 1.785 | VV | 0.042 | 79327.07 | 1.924 |
| 40 | 7.690 | | 0.0000 | 0.000 | 14285.6 | 0.127 | VB | 0.040 | 5999.00 | 0.145 |
| 41 | 7.855 | Endosulfan I | 0.1097 | 0.032 | 1400.6 | 0.012 | BB | 0.040 | 578.71 | 0.014 |
| 42 | 7.938 | | 0.0000 | 0.000 | 7626.0 | 0.068 | BV | 0.036 | 3535.46 | 0.086 |
| 43 | 8.016 | | 0.0000 | 0.000 | 37956.0 | 0.336 | VV | 0.036 | 17810.50 | 0.432 |
| 44 | 8.128 | | 0.0000 | 0.000 | 61478.9 | 0.545 | VV | 0.030 | 33902.82 | 0.822 |
| 45 | 8.164 | | 0.0000 | 0.000 | 97477.7 | 0.864 | VV | 0.032 | 50479.55 | 1.224 |
| 46 | 8.209 | Dieldrin | 19.1736 | 5.599 | 221078.5 | 1.958 | VV | 0.040 | 92355.77 | 2.240 |
| 47 | 8.293 | | 0.0000 | 0.000 | 139086.4 | 1.232 | VB | 0.053 | 44148.02 | 1.071 |
| 48 | 8.414 | | 0.0000 | 0.000 | 444902.2 | 3.941 | BB | 0.045 | 163435.90 | 3.964 |
| 49 | 8.594 | Endrin | 10.7340 | 3.134 | 102639.4 | 0.909 | BV | 0.039 | 44311.04 | 1.075 |
| 50 | 8.675 | | 0.0000 | 0.000 | 523927.3 | 4.641 | VB | 0.044 | 197718.30 | 4.795 |
| 51 | 8.884 | Endosulfan II | 34.7088 | 10.135 | 470429.3 | 4.167 | BV | 0.058 | 134442.20 | 3.261 |
| 52 | 9.023 | | 0.0000 | 0.000 | 62008.5 | 0.549 | VV | 0.053 | 19506.27 | 0.473 |
| 53 | 9.140 | 4,4'-DDT | 59.7707 | 17.453 | 704454.9 | 6.241 | VV | 0.060 | 194784.10 | 4.724 |
| 54 | 9.252 | | 0.0000 | 0.000 | 337375.1 | 2.989 | VV | 0.042 | 135447.40 | 3.285 |
| 55 | 9.322 | Endrin aldehyde | 26.4795 | 7.732 | 207546.7 | 1.839 | VB | 0.043 | 81202.30 | 1.969 |
| 56 | 9.473 | | 0.0000 | 0.000 | 76575.8 | 0.678 | BB | 0.043 | 29372.25 | 0.712 |

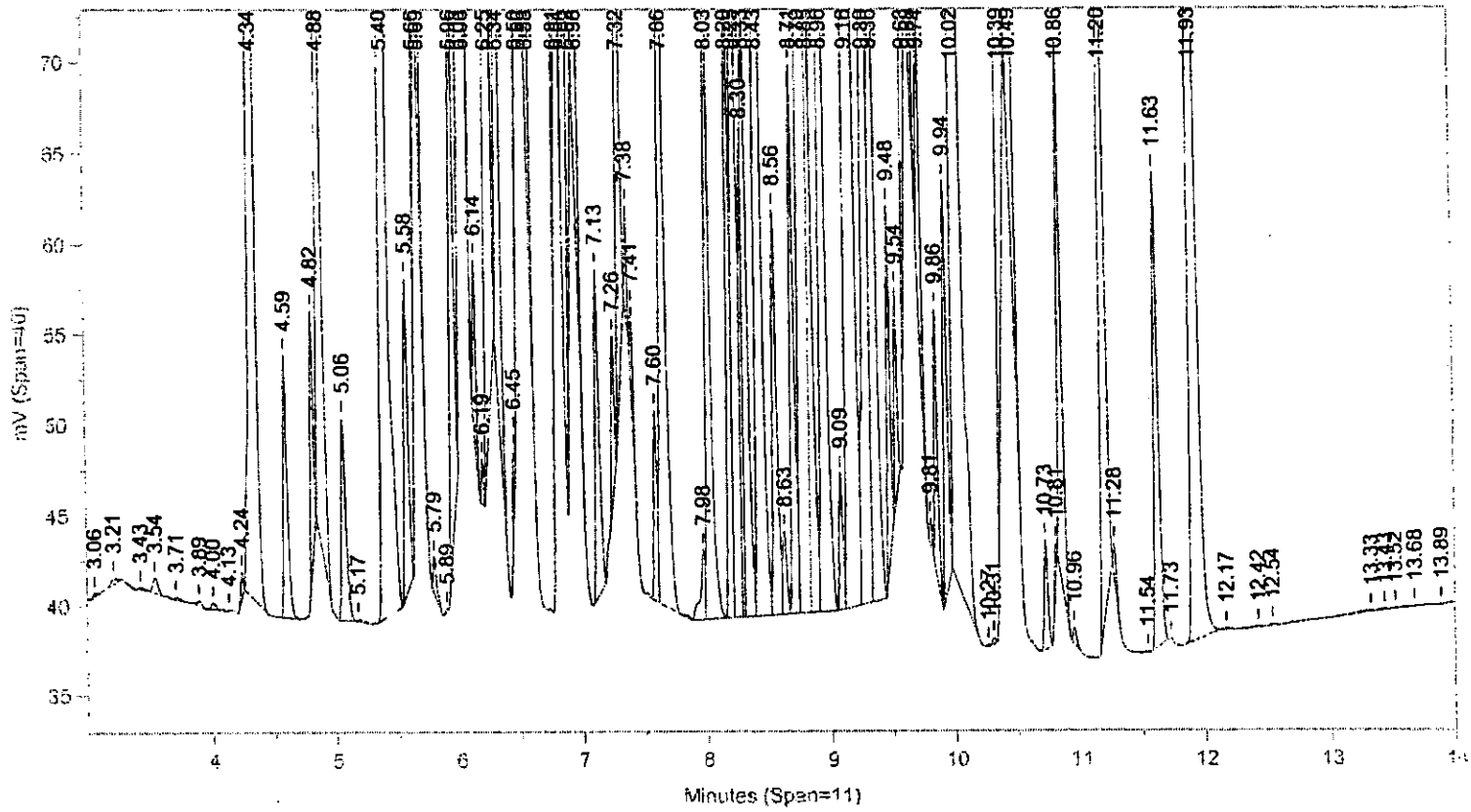
8789

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.634 | Endo. sulfate | 39.2872 | 11.472 | 318902.2 | 2.825 | BB | 0.042 | 126866.30 | 3.077 |
| 58 | 9.727 | | 0.0000 | 0.000 | 114433.1 | 1.014 | BB | 0.034 | 56332.42 | 1.366 |
| 59 | 9.801 | | 0.0000 | 0.000 | 45826.7 | 0.406 | BB | 0.030 | 25736.07 | 0.624 |
| 60 | 9.848 | | 0.0000 | 0.000 | 29908.4 | 0.265 | BB | 0.031 | 16010.70 | 0.388 |
| 61 | 9.944 | | 0.0000 | 0.000 | 786612.2 | 6.968 | BB | 0.045 | 288817.80 | 7.005 |
| 62 | 10.119 | | 0.0000 | 0.000 | 21354.6 | 0.189 | BB | 0.034 | 10401.81 | 0.252 |
| 63 | 10.332 | Endrin ketone | 1.4795 | 0.432 | 9425.1 | 0.083 | BB | 0.029 | 5346.71 | 0.130 |
| 64 | 10.417 | | 0.0000 | 0.000 | 799059.3 | 7.079 | BB | 0.077 | 173833.00 | 4.216 |
| 65 | 10.716 | | 0.0000 | 0.000 | 11684.6 | 0.104 | BB | 0.033 | 5922.25 | 0.144 |
| 66 | 10.789 | | 0.0000 | 0.000 | 14442.1 | 0.128 | BB | 0.035 | 6942.36 | 0.168 |
| 67 | 10.957 | | 0.0000 | 0.000 | 103016.2 | 0.913 | BB | 0.044 | 38737.49 | 0.940 |
| 68 | 11.163 | | 0.0000 | 0.000 | 242513.2 | 2.148 | BB | 0.047 | 86238.49 | 2.092 |
| 69 | 11.650 | | 0.0000 | 0.000 | 78281.7 | 0.693 | BB | 0.044 | 29350.57 | 0.712 |
| 70 | 11.969 | | 0.0000 | 0.000 | 731.2 | 0.006 | BB | 0.043 | 281.94 | 0.007 |
| 71 | 12.075 | DCB | 36.4062 | 10.631 | 386915.1 | 3.428 | BB | 0.049 | 131155.60 | 3.181 |
| 72 | 12.584 | | 0.0000 | 0.000 | 5168.4 | 0.046 | BB | 0.083 | 1034.12 | 0.025 |
| 73 | 12.881 | | 0.0000 | 0.000 | 1423.8 | 0.013 | BB | 0.080 | 295.39 | 0.007 |
| 74 | 13.143 | | 0.0000 | 0.000 | 219.0 | 0.002 | BB | 0.065 | 56.11 | 0.001 |
| 75 | 13.613 | | 0.0000 | 0.000 | 844.3 | 0.007 | BB | 0.215 | 65.33 | 0.002 |

Total Area = 11288440.0, Total Amount = 342.466, Total Height = 4123061.0, Sample Units = PPB

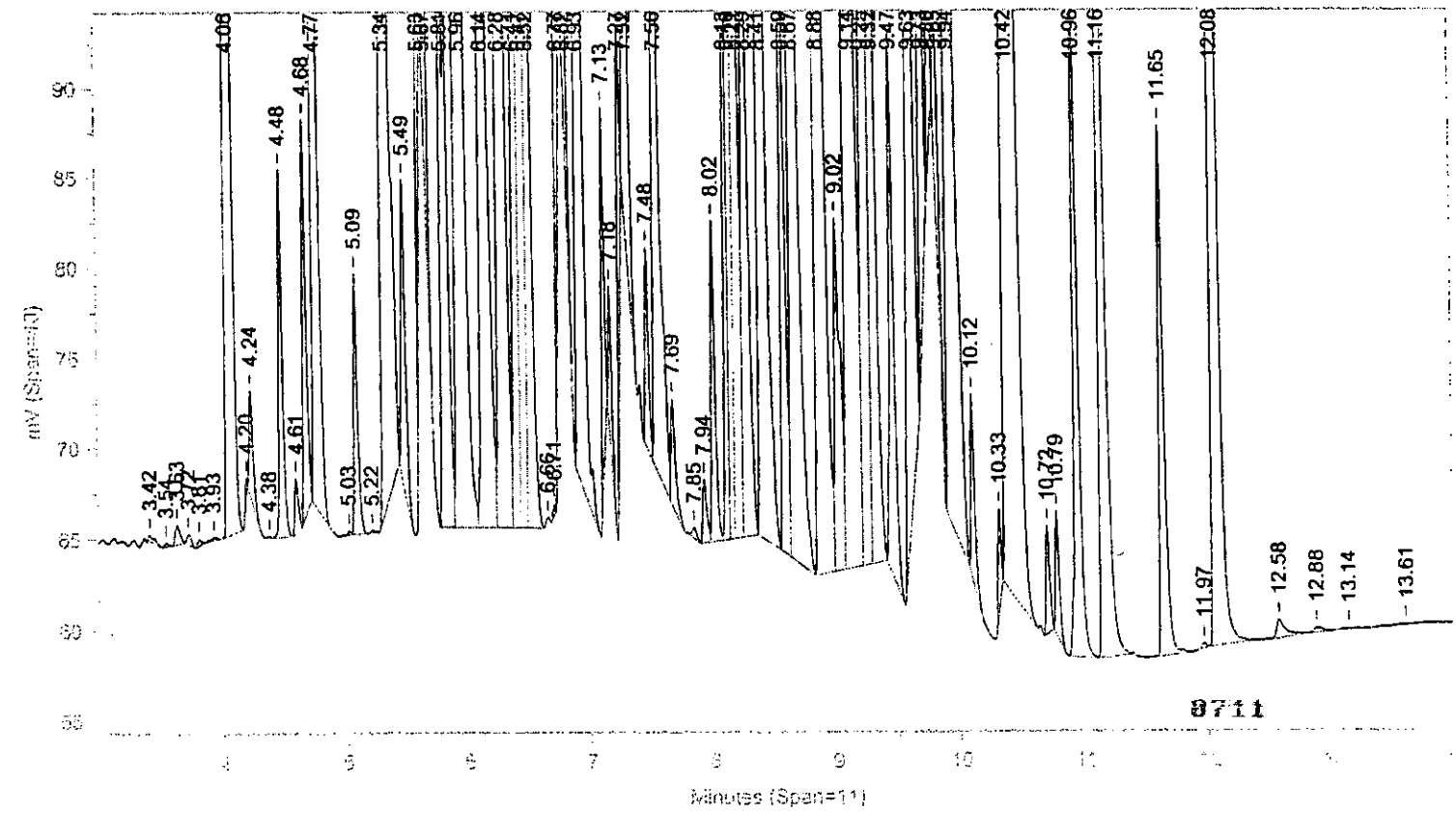
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.25R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 5:24:47 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.25R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 5:24:47 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

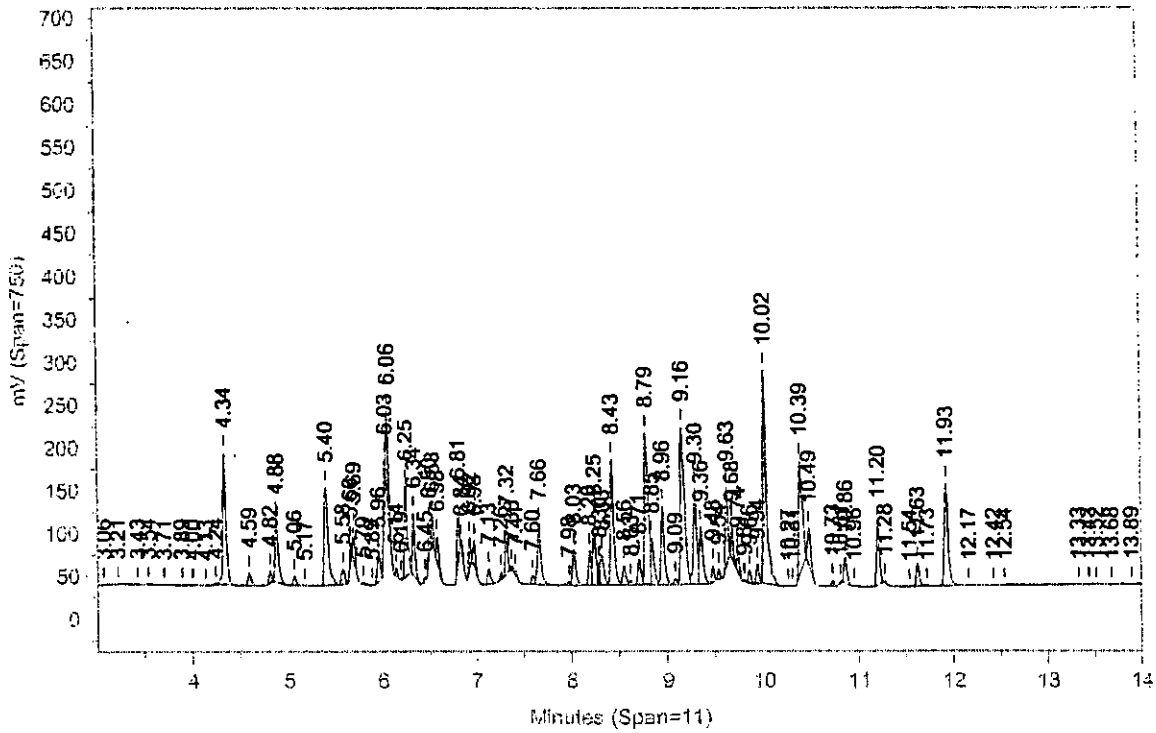
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.337 | 154617 | 37.48 | TCX | 4.061 | 211328 | 37.664 | TCX |
| . | 0 | . | Hcb | 4.769 | 97626 | 9.118 | Hcb |
| 5.171 | 141 | .027 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.659 | 21172 | 4.126 | gamma-BHC | 5.492 | 17334 | 2.18 | gamma-BHC |
| 5.792 | 2053 | .725 | beta-BHC | 5.626 | 48343 | 12.122 | beta-BHC |
| 6.031 | 44318 | 9.101 | delta-BHC | . | 0 | . | delta-BHC |
| 6.335 | 74028 | 13.644 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.52 | 66343 | 10.42 | Aldrin |
| . | 0 | . | Telodrin | 6.768 | 98070 | 16.631 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.322 | 74255 | 12.495 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.563 | 79327 | 13.686 | g. Chlordane |
| 7.597 | 10586 | 4.042 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.855 | 579 | .11 | Endosulfan I |
| 7.978 | 3904 | .89 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.03 | 41971 | 11.946 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.209 | 92356 | 19.174 | Dieldrin |
| 8.248 | 76389 | 34.456 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.788 | 178459 | 53.37 | Endrin | 8.594 | 44311 | 10.734 | Endrin |
| 8.632 | 4601 | 1.726 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.85 | 54307 | 19.079 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.088 | 7586 | 2.271 | Endosulfan II | 8.884 | 134442 | 34.709 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.14 | 194784 | 59.771 | 4,4'-DDT |
| 9.626 | 91400 | 33.317 | Endrin aldehyde | 9.322 | 81202 | 26.479 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.634 | 126866 | 39.287 | Endo. sulfate |
| 9.809 | 1585 | .967 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.332 | 5347 | 1.479 | Endrin ketone |
| 11.927 | 119772 | 36.304 | DCB | 12.075 | 131156 | 36.406 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.25A
Area File: C:\CPWIN\DATA1\1D16082B.25A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:21:24 AM
File Reported On: 3/23/2004 at 8:21:30 AM

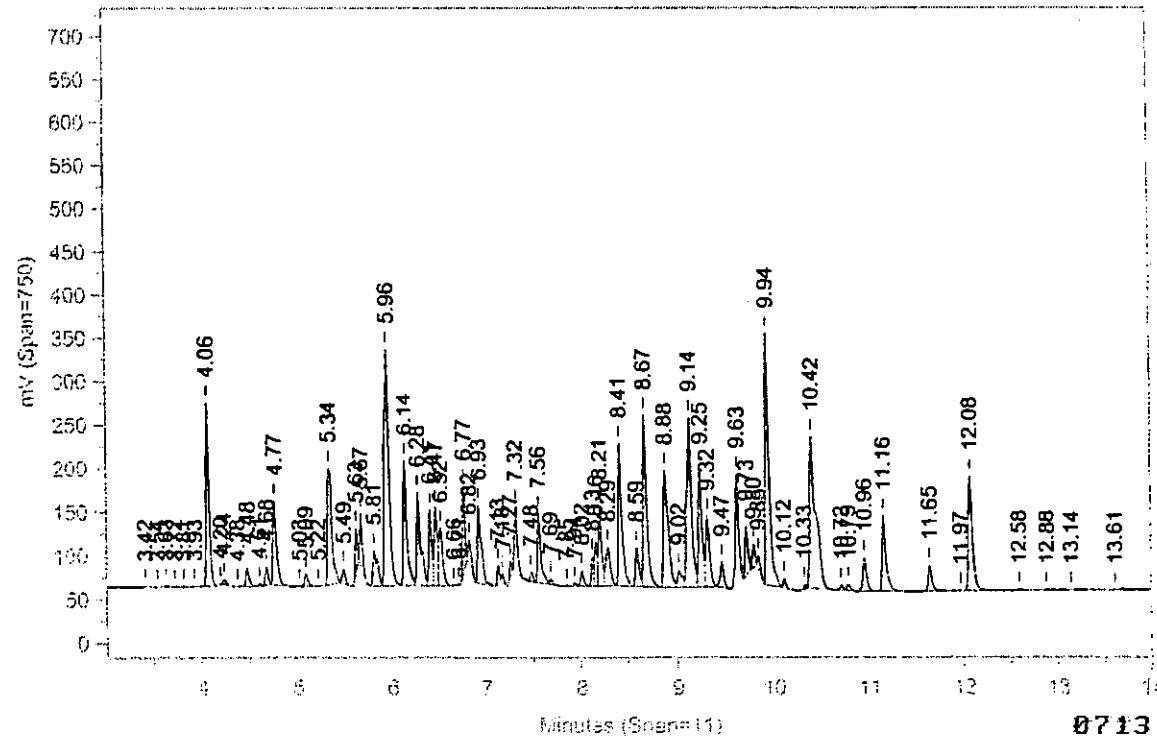
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.25R




C:\CPWIN\DATA1\1D16082B.25R




0713

Sample Name: **AR210424A AAAR210AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 05:59:22pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.26R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.248 | | 0.0000 | 0.000 | 1016.8 | 0.299 | BB | 0.105 | 160.76 | 0.116 |
| 2 | 3.430 | | 0.0000 | 0.000 | 463.6 | 0.136 | BB | 0.053 | 144.98 | 0.105 |
| 3 | 3.540 | | 0.0000 | 0.000 | 17725.1 | 5.217 | BB | 0.040 | 7334.08 | 5.293 |
| 4 | 3.996 | | 0.0000 | 0.000 | 551.9 | 0.162 | BB | 0.041 | 224.07 | 0.162 |
| 5 | 4.131 | | 0.0000 | 0.000 | 4865.9 | 1.432 | BB | 0.037 | 2184.46 | 1.577 |
| 6 | 4.242 | | 0.0000 | 0.000 | 1660.2 | 0.489 | BB | 0.026 | 1052.94 | 0.760 |
| 7 | 4.335 TCX | | 8.1045 | 47.584 | 72473.6 | 21.331 | BB | 0.036 | 33433.83 | 24.129 |
| 8 | 4.593 | | 0.0000 | 0.000 | 23646.4 | 6.960 | BB | 0.036 | 10902.97 | 7.869 |
| 9 | 4.815 | | 0.0000 | 0.000 | 11018.2 | 3.243 | BB | 0.029 | 6316.25 | 4.558 |
| 10 | 4.877 | | 0.0000 | 0.000 | 52801.8 | 15.541 | BB | 0.035 | 25125.40 | 18.133 |
| 11 | 5.062 | | 0.0000 | 0.000 | 389.4 | 0.115 | BB | 0.034 | 190.61 | 0.138 |
| 12 | 5.403 | | 0.0000 | 0.000 | 5215.1 | 1.535 | BB | 0.046 | 1883.05 | 1.359 |
| 13 | 5.490 | | 0.0000 | 0.000 | 4203.8 | 1.237 | BB | 0.038 | 1837.91 | 1.326 |
| 14 | 5.581 | | 0.0000 | 0.000 | 7900.8 | 2.325 | BB | 0.035 | 3731.13 | 2.693 |
| 15 | 5.657 gamma-BHC | | 0.0454 | 0.267 | 278.8 | 0.082 | BB | 0.020 | 233.11 | 0.168 |
| 16 | 5.694 | | 0.0000 | 0.000 | 1270.3 | 0.374 | BB | 0.028 | 763.33 | 0.551 |
| 17 | 5.792 beta-BHC | | 0.0436 | 0.256 | 317.8 | 0.094 | BB | 0.043 | 123.58 | 0.089 |
| 18 | 5.888 | | 0.0000 | 0.000 | 163.4 | 0.048 | BB | 0.029 | 94.26 | 0.068 |
| 19 | 5.962 | | 0.0000 | 0.000 | 1672.8 | 0.492 | BB | 0.040 | 701.43 | 0.506 |
| 20 | 6.030 | | 0.0000 | 0.000 | 689.2 | 0.203 | BB | 0.027 | 431.34 | 0.311 |
| 21 | 6.059 delta-BHC | | 0.3571 | 2.097 | 2604.0 | 0.766 | BB | 0.025 | 1739.20 | 1.255 |
| 22 | 6.148 | | 0.0000 | 0.000 | 351.7 | 0.104 | BB | 0.038 | 154.56 | 0.112 |
| 23 | 6.246 | | 0.0000 | 0.000 | 4291.5 | 1.263 | BB | 0.035 | 2029.59 | 1.465 |
| 24 | 6.334 Heptachlor | | 0.2120 | 1.245 | 2211.1 | 0.651 | BB | 0.032 | 1150.31 | 0.830 |
| 25 | 6.497 | | 0.0000 | 0.000 | 572.6 | 0.169 | BB | 0.025 | 375.71 | 0.271 |
| 26 | 6.542 | | 0.0000 | 0.000 | 1157.6 | 0.341 | BB | 0.040 | 484.43 | 0.350 |
| 27 | 6.807 | | 0.0000 | 0.000 | 1603.0 | 0.472 | BB | 0.046 | 586.19 | 0.423 |
| 28 | 6.923 | | 0.0000 | 0.000 | 253.9 | 0.075 | BB | 0.024 | 174.01 | 0.126 |
| 29 | 6.978 | | 0.0000 | 0.000 | 1449.3 | 0.427 | BB | 0.036 | 666.68 | 0.481 |
| 30 | 7.146 | | 0.0000 | 0.000 | 464.9 | 0.137 | BB | 0.045 | 173.49 | 0.125 |
| 31 | 7.261 | | 0.0000 | 0.000 | 388.7 | 0.114 | BB | 0.028 | 230.04 | 0.166 |
| 32 | 7.321 | | 0.0000 | 0.000 | 871.2 | 0.256 | BB | 0.028 | 517.17 | 0.373 |
| 33 | 7.376 | | 0.0000 | 0.000 | 510.4 | 0.150 | BB | 0.024 | 347.71 | 0.251 |
| 34 | 7.661 | | 0.0000 | 0.000 | 1961.9 | 0.577 | BB | 0.047 | 695.99 | 0.502 |
| 35 | 7.973 a. Chlordane | | 0.1612 | 0.947 | 3563.6 | 1.049 | BV | 0.084 | 707.47 | 0.511 |
| 36 | 8.032 4,4'-DDE | | 0.1713 | 1.006 | 1362.4 | 0.401 | VB | 0.038 | 601.89 | 0.434 |
| 37 | 8.194 | | 0.0000 | 0.000 | 2209.8 | 0.650 | BV | 0.042 | 880.68 | 0.636 |
| 38 | 8.430 | | 0.0000 | 0.000 | 1954.1 | 0.575 | VV | 0.070 | 465.10 | 0.336 |
| 39 | 8.557 | | 0.0000 | 0.000 | 3906.7 | 1.150 | VV | 0.085 | 768.16 | 0.554 |
| 40 | 8.823 Kepone | | 1.2693 | 7.453 | 6000.3 | 1.766 | VV | 0.101 | 993.37 | 0.717 |
| 41 | 8.922 | | 0.0000 | 0.000 | 3982.9 | 1.172 | VB | 0.097 | 684.05 | 0.494 |
| 42 | 9.088 Endosulfan II | | 0.0869 | 0.510 | 1257.5 | 0.370 | BV | 0.072 | 290.15 | 0.209 |
| 43 | 9.161 | | 0.0000 | 0.000 | 2099.1 | 0.618 | VB | 0.056 | 627.17 | 0.453 |
| 44 | 9.421 | | 0.0000 | 0.000 | 5784.2 | 1.702 | BB | 0.075 | 1288.80 | 0.930 |
| 45 | 9.857 | | 0.0000 | 0.000 | 5333.0 | 1.570 | BB | 0.155 | 574.46 | 0.415 |
| 46 | 10.019 | | 0.0000 | 0.000 | 908.2 | 0.267 | BB | 0.079 | 192.39 | 0.139 |
| 47 | 10.264 | | 0.0000 | 0.000 | 323.6 | 0.095 | BB | 0.056 | 95.78 | 0.069 |
| 48 | 10.431 | | 0.0000 | 0.000 | 4577.3 | 1.347 | BB | 0.045 | 1686.44 | 1.217 |
| 49 | 10.956 | | 0.0000 | 0.000 | 1245.7 | 0.367 | BB | 0.039 | 536.23 | 0.387 |
| 50 | 11.353 | | 0.0000 | 0.000 | 462.7 | 0.136 | BB | 0.163 | 47.25 | 0.034 |
| 51 | 11.627 | | 0.0000 | 0.000 | 213.8 | 0.063 | BB | 0.037 | 96.27 | 0.069 |
| 52 | 11.926 DCB | | 6.5806 | 38.637 | 58570.2 | 17.238 | BB | 0.045 | 21710.34 | 15.668 |
| 53 | 12.333 | | 0.0000 | 0.000 | 640.5 | 0.189 | BB | 0.164 | 65.25 | 0.047 |
| 54 | 13.815 | | 0.0000 | 0.000 | 8352.0 | 2.458 | BB | 2.447 | 56.88 | 0.041 |

0714

Total Area = 339764.4, Total Amount = 17.032, Total Height = 138562.7, Sample Units = PPB

Sample Name: **AR210424A AAAR210AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 05:59:22pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.26R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.413 | | 0.0000 | 0.000 | 5014.5 | 1.081 | BB | 0.023 | 3629.03 | 1.991 |
| 2 | 3.549 | | 0.0000 | 0.000 | 415.5 | 0.090 | BB | 0.036 | 194.64 | 0.107 |
| 3 | 3.630 | | 0.0000 | 0.000 | 2126.2 | 0.458 | BB | 0.048 | 733.18 | 0.402 |
| 4 | 3.723 | | 0.0000 | 0.000 | 1010.1 | 0.218 | BB | 0.040 | 420.97 | 0.231 |
| 5 | 3.814 | | 0.0000 | 0.000 | 903.0 | 0.195 | BB | 0.045 | 336.34 | 0.185 |
| 6 | 3.929 | | 0.0000 | 0.000 | 5707.6 | 1.230 | BB | 0.043 | 2227.91 | 1.222 |
| 7 | 4.060 | TCX | 8.7045 | 41.816 | 103008.6 | 22.197 | BB | 0.035 | 48839.32 | 26.794 |
| 8 | 4.202 | | 0.0000 | 0.000 | 1342.7 | 0.289 | BB | 0.024 | 932.22 | 0.511 |
| 9 | 4.237 | | 0.0000 | 0.000 | 2813.8 | 0.606 | BB | 0.028 | 1663.92 | 0.913 |
| 10 | 4.381 | | 0.0000 | 0.000 | 358.6 | 0.077 | BB | 0.033 | 183.29 | 0.101 |
| 11 | 4.481 | | 0.0000 | 0.000 | 32735.8 | 7.054 | BB | 0.036 | 15079.09 | 8.273 |
| 12 | 4.606 | | 0.0000 | 0.000 | 1187.2 | 0.256 | BB | 0.033 | 601.12 | 0.330 |
| 13 | 4.682 | | 0.0000 | 0.000 | 20082.1 | 4.327 | BB | 0.034 | 9936.19 | 5.451 |
| 14 | 4.768 | Hcb | 2.9949 | 14.388 | 78662.2 | 16.950 | BB | 0.041 | 32066.53 | 17.592 |
| 15 | 5.086 | | 0.0000 | 0.000 | 676.7 | 0.146 | BB | 0.042 | 270.88 | 0.149 |
| 16 | 5.221 | | 0.0000 | 0.000 | 1084.5 | 0.234 | BB | 0.062 | 289.30 | 0.159 |
| 17 | 5.328 | | 0.0000 | 0.000 | 11013.8 | 2.373 | BB | 0.057 | 3202.78 | 1.757 |
| 18 | 5.412 | | 0.0000 | 0.000 | 9313.0 | 2.007 | BB | 0.037 | 4179.96 | 2.293 |
| 19 | 5.626 | beta-BHC | 0.1591 | 0.764 | 1020.6 | 0.220 | BB | 0.027 | 634.43 | 0.348 |
| 20 | 5.672 | | 0.0000 | 0.000 | 2220.7 | 0.479 | BB | 0.031 | 1180.69 | 0.648 |
| 21 | 5.812 | | 0.0000 | 0.000 | 2627.9 | 0.566 | BV | 0.060 | 729.51 | 0.400 |
| 22 | 5.960 | | 0.0000 | 0.000 | 17231.4 | 3.713 | VV | 0.056 | 5094.81 | 2.795 |
| 23 | 6.143 | | 0.0000 | 0.000 | 7560.9 | 1.629 | VV | 0.047 | 2675.12 | 1.468 |
| 24 | 6.280 | | 0.0000 | 0.000 | 6622.9 | 1.427 | VV | 0.052 | 2132.89 | 1.170 |
| 25 | 6.409 | | 0.0000 | 0.000 | 3249.1 | 0.700 | VV | 0.046 | 1174.30 | 0.644 |
| 26 | 6.466 | | 0.0000 | 0.000 | 4852.3 | 1.046 | VB | 0.069 | 1164.33 | 0.639 |
| 27 | 6.655 | | 0.0000 | 0.000 | 817.7 | 0.176 | BB | 0.047 | 290.12 | 0.159 |
| 28 | 6.765 | Telodrin | 0.0896 | 0.431 | 816.3 | 0.176 | BB | 0.026 | 528.43 | 0.290 |
| 29 | 6.846 | | 0.0000 | 0.000 | 1024.3 | 0.221 | BB | 0.034 | 502.27 | 0.276 |
| 30 | 6.928 | | 0.0000 | 0.000 | 1397.8 | 0.301 | BB | 0.038 | 614.77 | 0.337 |
| 31 | 7.080 | | 0.0000 | 0.000 | 2770.7 | 0.597 | BB | 0.080 | 577.70 | 0.317 |
| 32 | 7.179 | | 0.0000 | 0.000 | 269.4 | 0.058 | BB | 0.023 | 191.91 | 0.105 |
| 33 | 7.258 | | 0.0000 | 0.000 | 1638.6 | 0.353 | BB | 0.030 | 901.89 | 0.495 |
| 34 | 7.322 | Hept. epoxide | 0.2190 | 1.052 | 3004.2 | 0.647 | BV | 0.038 | 1301.37 | 0.714 |
| 35 | 7.414 | | 0.0000 | 0.000 | 2155.4 | 0.464 | VB | 0.078 | 459.54 | 0.252 |
| 36 | 7.559 | g. Chlordane | 0.2179 | 1.047 | 3178.0 | 0.685 | BV | 0.042 | 1262.90 | 0.693 |
| 37 | 7.631 | | 0.0000 | 0.000 | 1962.7 | 0.423 | VV | 0.049 | 671.58 | 0.368 |
| 38 | 7.692 | | 0.0000 | 0.000 | 2074.7 | 0.447 | VB | 0.061 | 562.54 | 0.309 |
| 39 | 7.856 | Endosulfan I | 0.0860 | 0.413 | 1785.5 | 0.385 | BV | 0.066 | 453.67 | 0.249 |
| 40 | 7.938 | | 0.0000 | 0.000 | 1585.5 | 0.342 | VV | 0.062 | 428.19 | 0.235 |
| 41 | 8.011 | 4,4'-DDE | 0.1509 | 0.725 | 1662.0 | 0.358 | VV | 0.039 | 702.96 | 0.386 |
| 42 | 8.090 | | 0.0000 | 0.000 | 2133.5 | 0.460 | VV | 0.062 | 574.77 | 0.315 |
| 43 | 8.164 | | 0.0000 | 0.000 | 6396.4 | 1.378 | VV | 0.085 | 1247.12 | 0.684 |
| 44 | 8.416 | | 0.0000 | 0.000 | 2248.3 | 0.484 | VB | 0.057 | 661.12 | 0.363 |
| 45 | 8.533 | | 0.0000 | 0.000 | 2966.9 | 0.639 | BV | 0.175 | 282.38 | 0.155 |
| 46 | 8.670 | o,p-DDT | 0.2701 | 1.297 | 2784.4 | 0.600 | VV | 0.056 | 824.80 | 0.453 |
| 47 | 8.740 | Kepone | 1.1569 | 5.558 | 4860.7 | 1.047 | VB | 0.075 | 1075.72 | 0.590 |
| 48 | 8.907 | | 0.0000 | 0.000 | 3235.2 | 0.697 | BV | 0.058 | 934.26 | 0.513 |
| 49 | 8.974 | | 0.0000 | 0.000 | 10324.6 | 2.225 | VV | 0.092 | 1867.65 | 1.025 |
| 50 | 9.146 | 4,4'-DDT | 0.1853 | 0.890 | 2620.0 | 0.565 | VV | 0.072 | 603.91 | 0.331 |
| 51 | 9.247 | | 0.0000 | 0.000 | 602.4 | 0.130 | VB | 0.043 | 233.70 | 0.128 |
| 52 | 9.518 | | 0.0000 | 0.000 | 275.4 | 0.059 | BB | 0.055 | 83.02 | 0.046 |
| 53 | 9.943 | | 0.0000 | 0.000 | 979.1 | 0.211 | BB | 0.065 | 251.35 | 0.138 |
| 54 | 10.341 | Endrin ketone | 0.1456 | 0.699 | 1737.2 | 0.374 | BB | 0.055 | 526.02 | 0.289 |
| 55 | 10.448 | | 0.0000 | 0.000 | 971.0 | 0.209 | BB | 0.035 | 464.57 | 0.255 |
| 56 | 11.164 | | 0.0000 | 0.000 | 132.0 | 0.028 | BB | 0.045 | 48.63 | 0.027 |

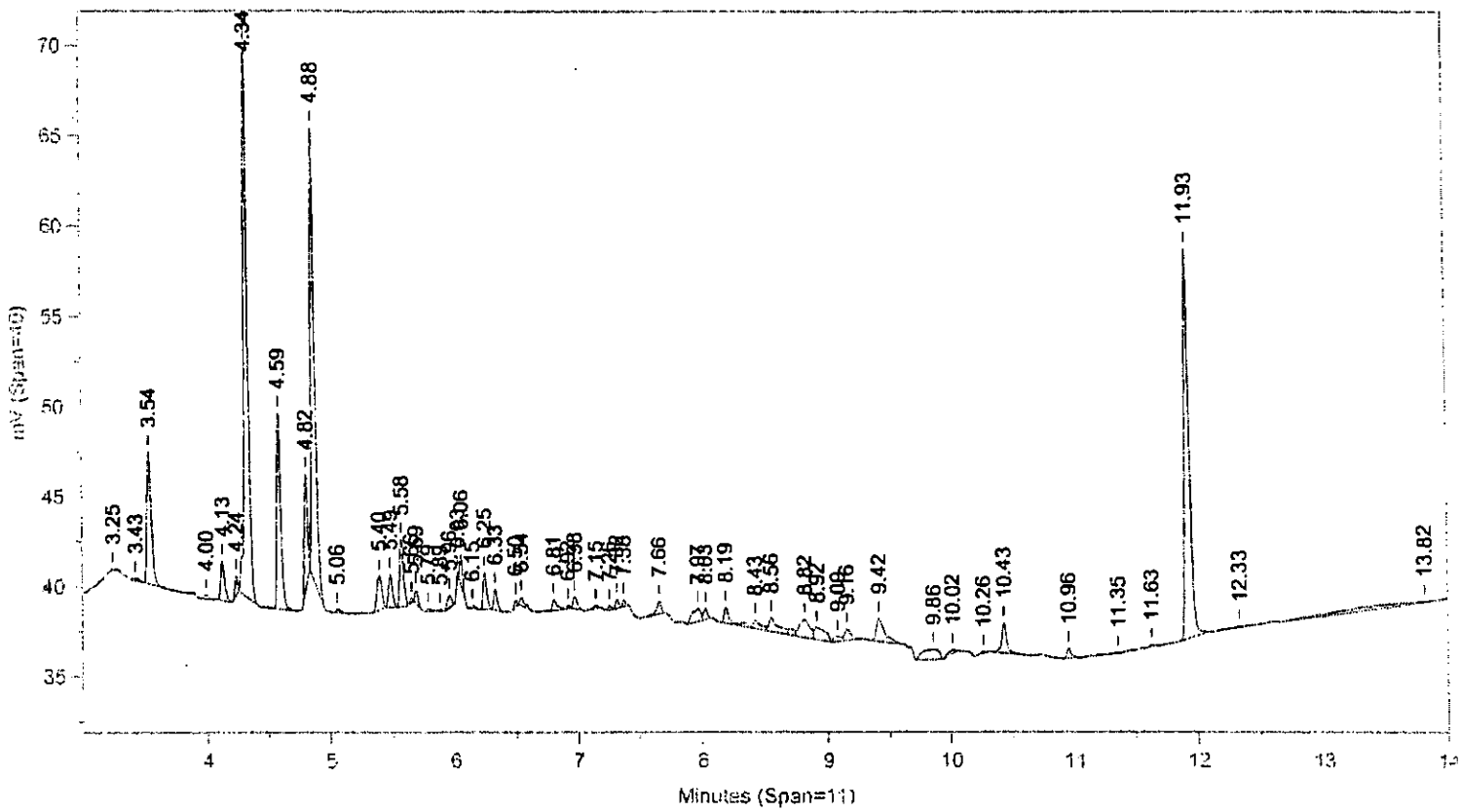
8715

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 11.560 | | 0.0000 | 0.000 | 378.5 | 0.082 | BB | 0.068 | 92.89 | 0.051 |
| 58 | 11.650 | | 0.0000 | 0.000 | 275.4 | 0.059 | BB | 0.047 | 98.05 | 0.054 |
| 59 | 12.074 | DCB | 6.4364 | 30.921 | 67457.8 | 14.536 | BB | 0.048 | 23187.69 | 12.721 |
| 60 | 12.581 | | 0.0000 | 0.000 | 417.0 | 0.090 | BB | 0.051 | 135.37 | 0.074 |
| 61 | 13.873 | | 0.0000 | 0.000 | 4291.0 | 0.925 | BB | 1.222 | 58.50 | 0.032 |

Total Area = 464071.1, Total Amount = 20.816, Total Height = 182274.1, Sample Units = PPB

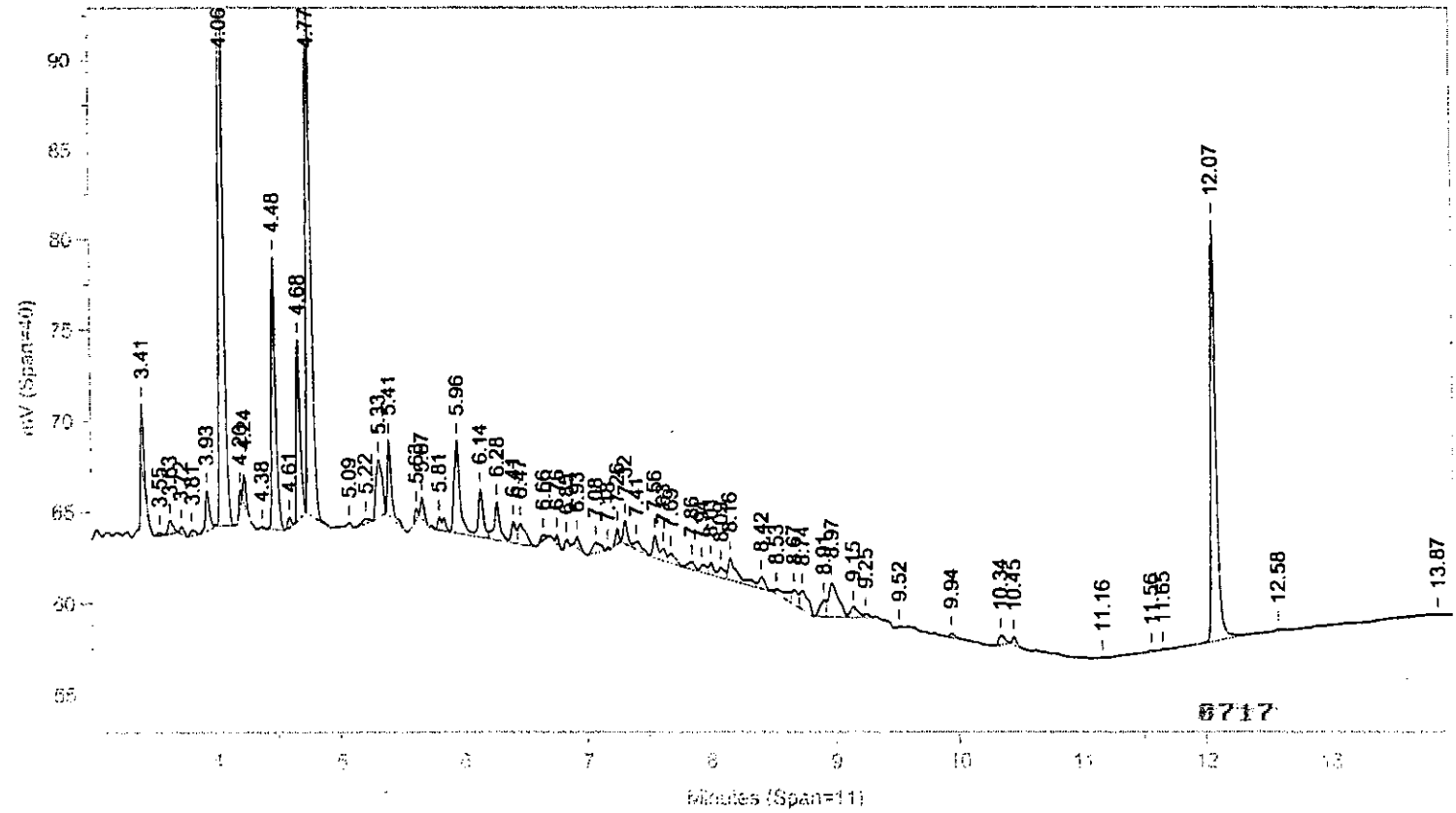
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.26R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 5:45:22 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.26R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 5:45:22 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

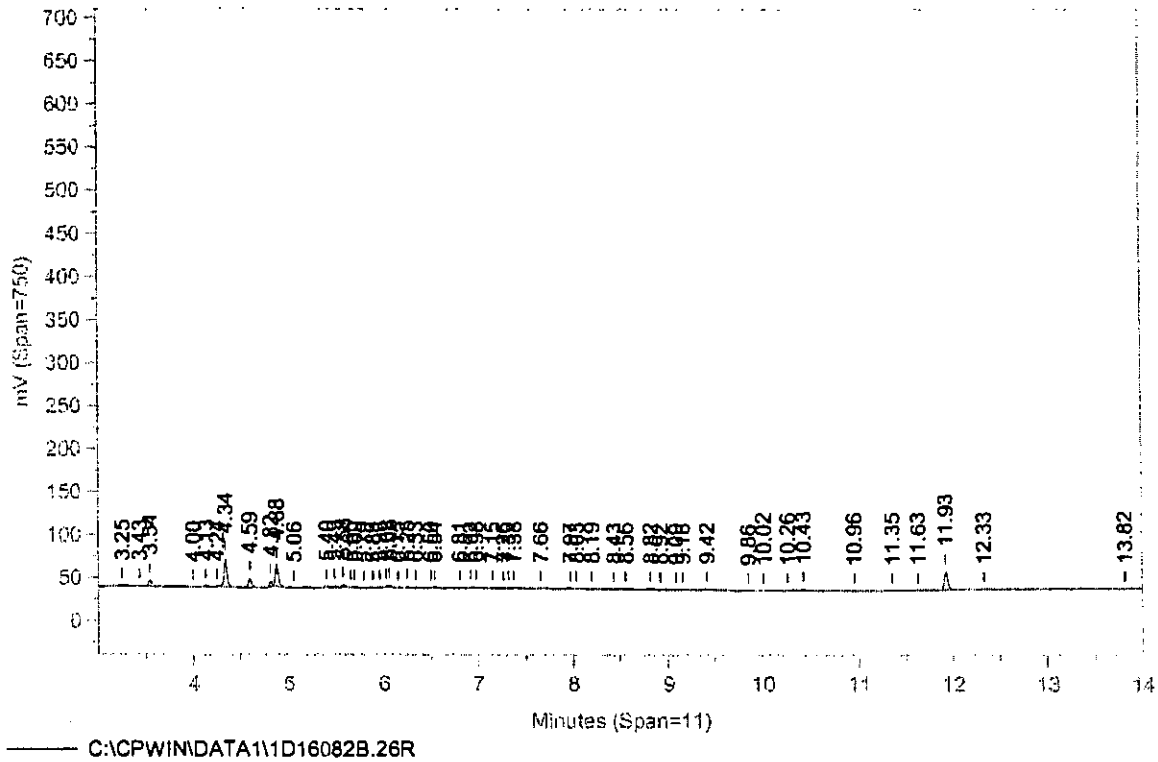
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.335 | 33434 | 8.105 | TCX | 4.06 | 48839 | 8.704 | TCX |
| . | 0 | . | Hcb | 4.768 | 32067 | 2.995 | Hcb |
| 5.792 | 124 | .044 | beta-BHC | 5.626 | 634 | .159 | beta-BHC |
| 5.657 | 233 | .045 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.059 | 1739 | .357 | delta-BHC | . | 0 | . | delta-BHC |
| 6.334 | 1150 | .212 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.765 | 528 | .09 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.322 | 1301 | .219 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.559 | 1263 | .218 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.856 | 454 | .086 | Endosulfan I |
| 7.973 | 707 | .161 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.032 | 602 | .171 | 4,4'-DDE | 8.011 | 703 | .151 | 4,4'-DDE |
| . | 0 | . | o,p-DDT | 8.67 | 825 | .27 | o,p-DDT |
| 8.823 | 993 | 1.269 | Kepone | 8.74 | 1076 | 1.157 | Kepone |
| 9.088 | 290 | .087 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.146 | 604 | .185 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 10.341 | 526 | .146 | Endrin ketone |
| 11.926 | 21710 | 6.581 | DCB | 12.074 | 23188 | 6.436 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.26A
Area File: C:\CPWIN\DATA1\1D16082B.26A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:21:40 AM
File Reported On: 3/23/2004 at 8:21:46 AM

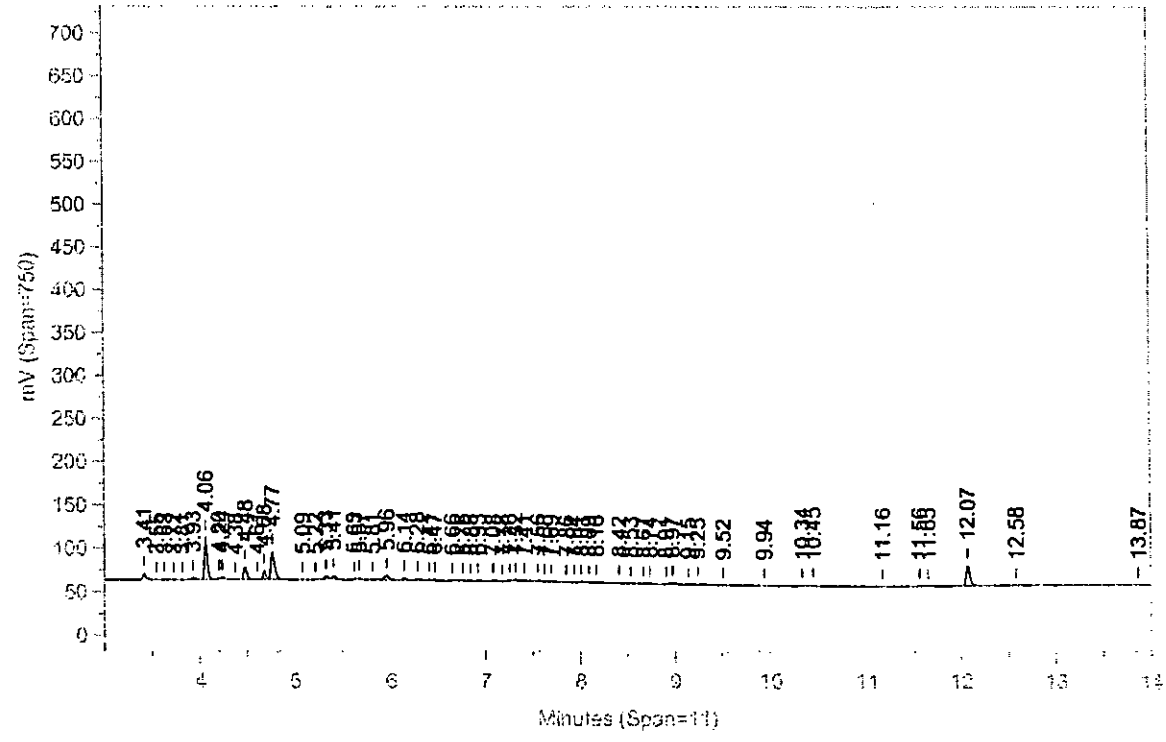
8718

10x REPLOTS

C:\CPWIN\DATA1\1D16082.26R




C:\CPWIN\DATA1\1D16082B.26R



Sample Name: **AR32X03C AAAR32XAA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 06:19:59pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.27R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.247 | | 0.0000 | 0.000 | 1000.7 | 0.160 | BB | 0.092 | 182.04 | 0.071 |
| 2 | 3.540 | | 0.0000 | 0.000 | 9893.3 | 1.579 | BB | 0.041 | 4017.12 | 1.575 |
| 3 | 3.895 | | 0.0000 | 0.000 | 382.3 | 0.061 | BB | 0.041 | 155.23 | 0.061 |
| 4 | 3.996 | | 0.0000 | 0.000 | 582.2 | 0.093 | BB | 0.042 | 230.12 | 0.090 |
| 5 | 4.131 | | 0.0000 | 0.000 | 3440.4 | 0.549 | BB | 0.042 | 1357.61 | 0.532 |
| 6 | 4.241 | | 0.0000 | 0.000 | 890.7 | 0.142 | BB | 0.024 | 608.67 | 0.239 |
| 7 | 4.335 | TCX | 10.1427 | 38.795 | 89746.8 | 14.326 | BB | 0.036 | 41841.95 | 16.408 |
| 8 | 4.593 | | 0.0000 | 0.000 | 13749.7 | 2.195 | BB | 0.036 | 6359.09 | 2.494 |
| 9 | 4.815 | | 0.0000 | 0.000 | 7244.0 | 1.156 | BB | 0.029 | 4156.23 | 1.630 |
| 10 | 4.877 | | 0.0000 | 0.000 | 41926.2 | 6.693 | BB | 0.035 | 19734.35 | 7.739 |
| 11 | 5.062 | | 0.0000 | 0.000 | 2391.3 | 0.382 | BB | 0.037 | 1070.32 | 0.420 |
| 12 | 5.252 | | 0.0000 | 0.000 | 117.1 | 0.019 | BB | 0.029 | 66.46 | 0.026 |
| 13 | 5.397 | | 0.0000 | 0.000 | 35500.2 | 5.667 | BB | 0.046 | 12895.55 | 5.057 |
| 14 | 5.486 | | 0.0000 | 0.000 | 1235.4 | 0.197 | BB | 0.031 | 659.78 | 0.259 |
| 15 | 5.579 | | 0.0000 | 0.000 | 7372.6 | 1.177 | BB | 0.037 | 3298.25 | 1.293 |
| 16 | 5.658 | gamma-BHC | 0.4636 | 1.773 | 3291.7 | 0.525 | BB | 0.023 | 2378.97 | 0.933 |
| 17 | 5.693 | | 0.0000 | 0.000 | 6591.9 | 1.052 | BB | 0.026 | 4186.75 | 1.642 |
| 18 | 5.791 | beta-BHC | 0.0686 | 0.262 | 448.7 | 0.072 | BB | 0.039 | 194.20 | 0.076 |
| 19 | 5.890 | | 0.0000 | 0.000 | 108.0 | 0.017 | BB | 0.025 | 73.46 | 0.029 |
| 20 | 5.957 | | 0.0000 | 0.000 | 7881.6 | 1.258 | BB | 0.039 | 3387.98 | 1.329 |
| 21 | 6.030 | | 0.0000 | 0.000 | 7059.0 | 1.127 | BB | 0.025 | 4619.34 | 1.811 |
| 22 | 6.059 | delta-BHC | 2.2440 | 8.583 | 15410.6 | 2.460 | BB | 0.024 | 10927.56 | 4.285 |
| 23 | 6.139 | | 0.0000 | 0.000 | 1483.8 | 0.237 | BB | 0.026 | 947.25 | 0.371 |
| 24 | 6.192 | | 0.0000 | 0.000 | 201.9 | 0.032 | BB | 0.018 | 191.07 | 0.075 |
| 25 | 6.246 | | 0.0000 | 0.000 | 26109.2 | 4.168 | BB | 0.037 | 11762.49 | 4.612 |
| 26 | 6.334 | Heptachlor | 1.3896 | 5.315 | 14020.6 | 2.238 | BB | 0.031 | 7539.48 | 2.957 |
| 27 | 6.451 | | 0.0000 | 0.000 | 484.2 | 0.077 | BB | 0.023 | 354.97 | 0.139 |
| 28 | 6.497 | | 0.0000 | 0.000 | 4563.6 | 0.728 | BB | 0.024 | 3121.12 | 1.224 |
| 29 | 6.530 | | 0.0000 | 0.000 | 3840.6 | 0.613 | BB | 0.022 | 2927.63 | 1.148 |
| 30 | 6.582 | | 0.0000 | 0.000 | 4594.1 | 0.733 | BB | 0.027 | 2788.45 | 1.093 |
| 31 | 6.807 | | 0.0000 | 0.000 | 27558.5 | 4.399 | BB | 0.047 | 9680.17 | 3.796 |
| 32 | 6.924 | | 0.0000 | 0.000 | 5912.9 | 0.944 | BB | 0.026 | 3819.90 | 1.498 |
| 33 | 6.978 | | 0.0000 | 0.000 | 9194.3 | 1.468 | BB | 0.032 | 4715.23 | 1.849 |
| 34 | 7.126 | | 0.0000 | 0.000 | 5463.4 | 0.872 | BB | 0.039 | 2341.47 | 0.918 |
| 35 | 7.201 | | 0.0000 | 0.000 | 329.0 | 0.053 | BB | 0.021 | 264.30 | 0.104 |
| 36 | 7.261 | | 0.0000 | 0.000 | 8350.1 | 1.333 | BB | 0.031 | 4514.10 | 1.770 |
| 37 | 7.319 | | 0.0000 | 0.000 | 1020.8 | 0.163 | BB | 0.022 | 775.62 | 0.304 |
| 38 | 7.376 | | 0.0000 | 0.000 | 7810.5 | 1.247 | BB | 0.026 | 5075.35 | 1.990 |
| 39 | 7.415 | | 0.0000 | 0.000 | 7737.2 | 1.235 | BB | 0.024 | 5361.94 | 2.103 |
| 40 | 7.523 | | 0.0000 | 0.000 | 414.9 | 0.066 | BB | 0.028 | 243.60 | 0.096 |
| 41 | 7.633 | Hept. epoxide | 1.0811 | 4.135 | 11099.7 | 1.772 | BV | 0.040 | 4630.38 | 1.816 |
| 42 | 7.681 | | 0.0000 | 0.000 | 17554.4 | 2.802 | VB | 0.049 | 6016.89 | 2.359 |
| 43 | 7.976 | a. Chlordane | 0.3993 | 1.527 | 6798.7 | 1.085 | BV | 0.065 | 1752.43 | 0.687 |
| 44 | 8.034 | 4,4'-DDE | 0.5054 | 1.933 | 4437.6 | 0.708 | VV | 0.042 | 1775.89 | 0.696 |
| 45 | 8.092 | | 0.0000 | 0.000 | 3179.7 | 0.508 | VV | 0.047 | 1137.66 | 0.446 |
| 46 | 8.195 | | 0.0000 | 0.000 | 6174.2 | 0.986 | VV | 0.044 | 2348.87 | 0.921 |
| 47 | 8.354 | | 0.0000 | 0.000 | 3286.5 | 0.525 | VV | 0.059 | 921.36 | 0.361 |
| 48 | 8.430 | | 0.0000 | 0.000 | 1362.4 | 0.217 | VV | 0.057 | 400.66 | 0.157 |
| 49 | 8.557 | | 0.0000 | 0.000 | 2966.8 | 0.474 | VB | 0.036 | 1366.64 | 0.536 |
| 50 | 8.825 | Kepone | 1.0678 | 4.084 | 4444.5 | 0.709 | BV | 0.089 | 835.65 | 0.328 |
| 51 | 8.924 | | 0.0000 | 0.000 | 4939.0 | 0.788 | VB | 0.061 | 1351.22 | 0.530 |
| 52 | 9.084 | Endosulfan II | 0.0707 | 0.271 | 943.1 | 0.151 | BV | 0.067 | 236.23 | 0.093 |
| 53 | 9.159 | | 0.0000 | 0.000 | 2131.7 | 0.340 | VV | 0.059 | 605.71 | 0.238 |
| 54 | 9.295 | | 0.0000 | 0.000 | 878.2 | 0.140 | VB | 0.045 | 328.73 | 0.129 |
| 55 | 9.425 | | 0.0000 | 0.000 | 5296.2 | 0.845 | BB | 0.070 | 1254.58 | 0.492 |
| 56 | 9.623 | Endrin aldehyde | 0.0952 | 0.364 | 423.1 | 0.068 | BB | 0.027 | 261.08 | 0.102 |

8728

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.860 | | 0.0000 | 0.000 | 5462.5 | 0.872 | BB | 0.156 | 581.81 | 0.228 |
| 58 | 10.019 | | 0.0000 | 0.000 | 20570.8 | 3.284 | BB | 0.157 | 2187.76 | 0.858 |
| 59 | 10.200 | Endo. sulfate | 0.2353 | 0.900 | 3209.4 | 0.512 | BB | 0.077 | 693.65 | 0.272 |
| 60 | 10.310 | | 0.0000 | 0.000 | 1725.4 | 0.275 | BB | 0.121 | 237.36 | 0.093 |
| 61 | 10.430 | | 0.0000 | 0.000 | 5600.4 | 0.894 | BB | 0.053 | 1751.13 | 0.687 |
| 62 | 10.729 | | 0.0000 | 0.000 | 954.2 | 0.152 | BB | 0.069 | 229.00 | 0.090 |
| 63 | 10.860 | | 0.0000 | 0.000 | 289.1 | 0.046 | BB | 0.049 | 98.35 | 0.039 |
| 64 | 10.954 | | 0.0000 | 0.000 | 2163.6 | 0.345 | BB | 0.038 | 946.39 | 0.371 |
| 65 | 11.152 | | 0.0000 | 0.000 | 13685.1 | 2.185 | BB | 0.059 | 3881.21 | 1.522 |
| 66 | 11.255 | | 0.0000 | 0.000 | 6806.3 | 1.086 | BB | 0.058 | 1971.48 | 0.773 |
| 67 | 11.625 | | 0.0000 | 0.000 | 24089.0 | 3.845 | BB | 0.663 | 605.86 | 0.238 |
| 68 | 11.925 | DCB | 8.3812 | 32.057 | 73655.1 | 11.757 | BB | 0.044 | 27650.79 | 10.843 |
| 69 | 12.385 | | 0.0000 | 0.000 | 726.3 | 0.116 | BB | 0.149 | 81.08 | 0.032 |
| 70 | 13.790 | | 0.0000 | 0.000 | 6254.1 | 0.998 | BB | 2.146 | 48.58 | 0.019 |

Total Area = 626460.9, Total Amount = 26.145, Total Height = 255013.6, Sample Units = PPB

Sample Name: **AR32X03C AAAR32XAA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 06:19:59pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.27R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.412 | | 0.0000 | 0.000 | 2680.3 | 0.276 | BB | 0.023 | 1927.99 | 0.546 |
| 2 | 3.544 | | 0.0000 | 0.000 | 335.8 | 0.035 | BB | 0.032 | 173.12 | 0.049 |
| 3 | 3.628 | | 0.0000 | 0.000 | 2152.8 | 0.221 | BB | 0.046 | 783.36 | 0.222 |
| 4 | 3.726 | | 0.0000 | 0.000 | 1070.7 | 0.110 | BB | 0.041 | 435.75 | 0.123 |
| 5 | 3.814 | | 0.0000 | 0.000 | 703.1 | 0.072 | BB | 0.042 | 278.09 | 0.079 |
| 6 | 3.930 | | 0.0000 | 0.000 | 3281.7 | 0.338 | BB | 0.041 | 1319.02 | 0.374 |
| 7 | 4.060 | TCX | 10.8326 | 35.839 | 128956.0 | 13.268 | BB | 0.035 | 60779.76 | 17.219 |
| 8 | 4.202 | | 0.0000 | 0.000 | 695.6 | 0.072 | BB | 0.023 | 493.46 | 0.140 |
| 9 | 4.237 | | 0.0000 | 0.000 | 2248.4 | 0.231 | BB | 0.029 | 1296.69 | 0.367 |
| 10 | 4.382 | | 0.0000 | 0.000 | 212.5 | 0.022 | BB | 0.037 | 96.39 | 0.027 |
| 11 | 4.481 | | 0.0000 | 0.000 | 19433.1 | 1.999 | BB | 0.036 | 8890.71 | 2.519 |
| 12 | 4.606 | | 0.0000 | 0.000 | 1529.4 | 0.157 | BB | 0.033 | 766.72 | 0.217 |
| 13 | 4.681 | | 0.0000 | 0.000 | 13099.4 | 1.348 | BB | 0.033 | 6563.58 | 1.860 |
| 14 | 4.767 | Hcb | 2.4092 | 7.971 | 61862.9 | 6.365 | BB | 0.040 | 25795.04 | 7.308 |
| 15 | 5.090 | | 0.0000 | 0.000 | 3518.6 | 0.362 | BB | 0.041 | 1415.38 | 0.401 |
| 16 | 5.238 | | 0.0000 | 0.000 | 954.0 | 0.098 | BB | 0.076 | 208.97 | 0.059 |
| 17 | 5.335 | | 0.0000 | 0.000 | 43842.4 | 4.511 | BB | 0.048 | 15162.14 | 4.296 |
| 18 | 5.411 | | 0.0000 | 0.000 | 2871.1 | 0.295 | BB | 0.024 | 1963.77 | 0.556 |
| 19 | 5.490 | gamma-BHC | 0.1864 | 0.617 | 2754.6 | 0.283 | BB | 0.031 | 1481.78 | 0.420 |
| 20 | 5.625 | beta-BHC | 1.3147 | 4.350 | 8076.9 | 0.831 | BB | 0.026 | 5243.21 | 1.485 |
| 21 | 5.673 | | 0.0000 | 0.000 | 12407.8 | 1.277 | BB | 0.030 | 6930.69 | 1.964 |
| 22 | 5.812 | | 0.0000 | 0.000 | 12451.0 | 1.281 | BB | 0.052 | 3979.61 | 1.127 |
| 23 | 5.960 | | 0.0000 | 0.000 | 98867.3 | 10.172 | BV | 0.052 | 31638.99 | 8.964 |
| 24 | 6.142 | | 0.0000 | 0.000 | 41730.5 | 4.294 | VV | 0.043 | 16258.36 | 4.606 |
| 25 | 6.280 | | 0.0000 | 0.000 | 30083.3 | 3.095 | VV | 0.043 | 11678.00 | 3.308 |
| 26 | 6.408 | | 0.0000 | 0.000 | 19059.7 | 1.961 | VV | 0.036 | 8944.45 | 2.534 |
| 27 | 6.466 | | 0.0000 | 0.000 | 22392.9 | 2.304 | VV | 0.040 | 9375.20 | 2.656 |
| 28 | 6.518 | Aldrin | 0.9877 | 3.268 | 16282.3 | 1.675 | VB | 0.043 | 6288.29 | 1.782 |
| 29 | 6.646 | | 0.0000 | 0.000 | 1075.1 | 0.111 | BB | 0.037 | 485.37 | 0.138 |
| 30 | 6.767 | Telodrin | 1.8058 | 5.974 | 18870.7 | 1.942 | BB | 0.030 | 10648.19 | 3.017 |
| 31 | 6.833 | | 0.0000 | 0.000 | 8098.0 | 0.833 | BB | 0.042 | 3198.60 | 0.906 |
| 32 | 6.929 | | 0.0000 | 0.000 | 25554.9 | 2.629 | BB | 0.043 | 9829.44 | 2.785 |
| 33 | 7.033 | | 0.0000 | 0.000 | 817.7 | 0.084 | BB | 0.039 | 352.99 | 0.100 |
| 34 | 7.129 | | 0.0000 | 0.000 | 4169.1 | 0.429 | BB | 0.026 | 2643.45 | 0.749 |
| 35 | 7.179 | | 0.0000 | 0.000 | 8886.5 | 0.914 | BB | 0.030 | 4992.12 | 1.414 |
| 36 | 7.262 | | 0.0000 | 0.000 | 16898.8 | 1.739 | BB | 0.030 | 9399.85 | 2.663 |
| 37 | 7.324 | Hept. epoxide | 1.7296 | 5.722 | 19808.9 | 2.038 | BB | 0.032 | 10278.65 | 2.912 |
| 38 | 7.420 | | 0.0000 | 0.000 | 1705.6 | 0.175 | BB | 0.054 | 528.89 | 0.150 |
| 39 | 7.562 | g. Chlordane | 0.3708 | 1.227 | 4639.9 | 0.477 | BV | 0.036 | 2149.19 | 0.609 |
| 40 | 7.625 | | 0.0000 | 0.000 | 29669.4 | 3.053 | VB | 0.050 | 9836.12 | 2.787 |
| 41 | 7.854 | Endosulfan I | 0.0999 | 0.331 | 1556.7 | 0.160 | BB | 0.049 | 526.93 | 0.149 |
| 42 | 7.938 | | 0.0000 | 0.000 | 3151.3 | 0.324 | BV | 0.048 | 1090.08 | 0.309 |
| 43 | 8.014 | 4,4'-DDE | 0.3332 | 1.102 | 3500.3 | 0.360 | VV | 0.038 | 1552.54 | 0.440 |
| 44 | 8.091 | | 0.0000 | 0.000 | 3300.2 | 0.340 | VV | 0.044 | 1253.88 | 0.355 |
| 45 | 8.165 | | 0.0000 | 0.000 | 8243.1 | 0.848 | VV | 0.056 | 2469.94 | 0.700 |
| 46 | 8.322 | | 0.0000 | 0.000 | 297.9 | 0.031 | VB | 0.032 | 157.13 | 0.045 |
| 47 | 8.393 | | 0.0000 | 0.000 | 1091.9 | 0.112 | BB | 0.041 | 448.53 | 0.127 |
| 48 | 8.448 | | 0.0000 | 0.000 | 1270.5 | 0.131 | BB | 0.028 | 758.45 | 0.215 |
| 49 | 8.627 | o,p-DDT | 0.1787 | 0.591 | 1487.1 | 0.153 | BV | 0.045 | 545.70 | 0.155 |
| 50 | 8.673 | | 0.0000 | 0.000 | 2831.9 | 0.291 | VV | 0.054 | 881.38 | 0.250 |
| 51 | 8.738 | 4,4'-DDD | 0.3569 | 1.181 | 5185.1 | 0.533 | VB | 0.074 | 1165.20 | 0.330 |
| 52 | 8.908 | | 0.0000 | 0.000 | 6914.5 | 0.711 | BV | 0.056 | 2043.77 | 0.579 |
| 53 | 8.975 | | 0.0000 | 0.000 | 12409.6 | 1.277 | VV | 0.095 | 2171.14 | 0.615 |
| 54 | 9.141 | 4,4'-DDT | 0.2984 | 0.987 | 5486.2 | 0.564 | VV | 0.094 | 972.29 | 0.275 |
| 55 | 9.251 | | 0.0000 | 0.000 | 3082.6 | 0.317 | VV | 0.065 | 787.76 | 0.223 |
| 56 | 9.323 | Endrin aldehyde | 0.2270 | 0.751 | 4087.7 | 0.421 | VB | 0.098 | 696.14 | 0.197 |

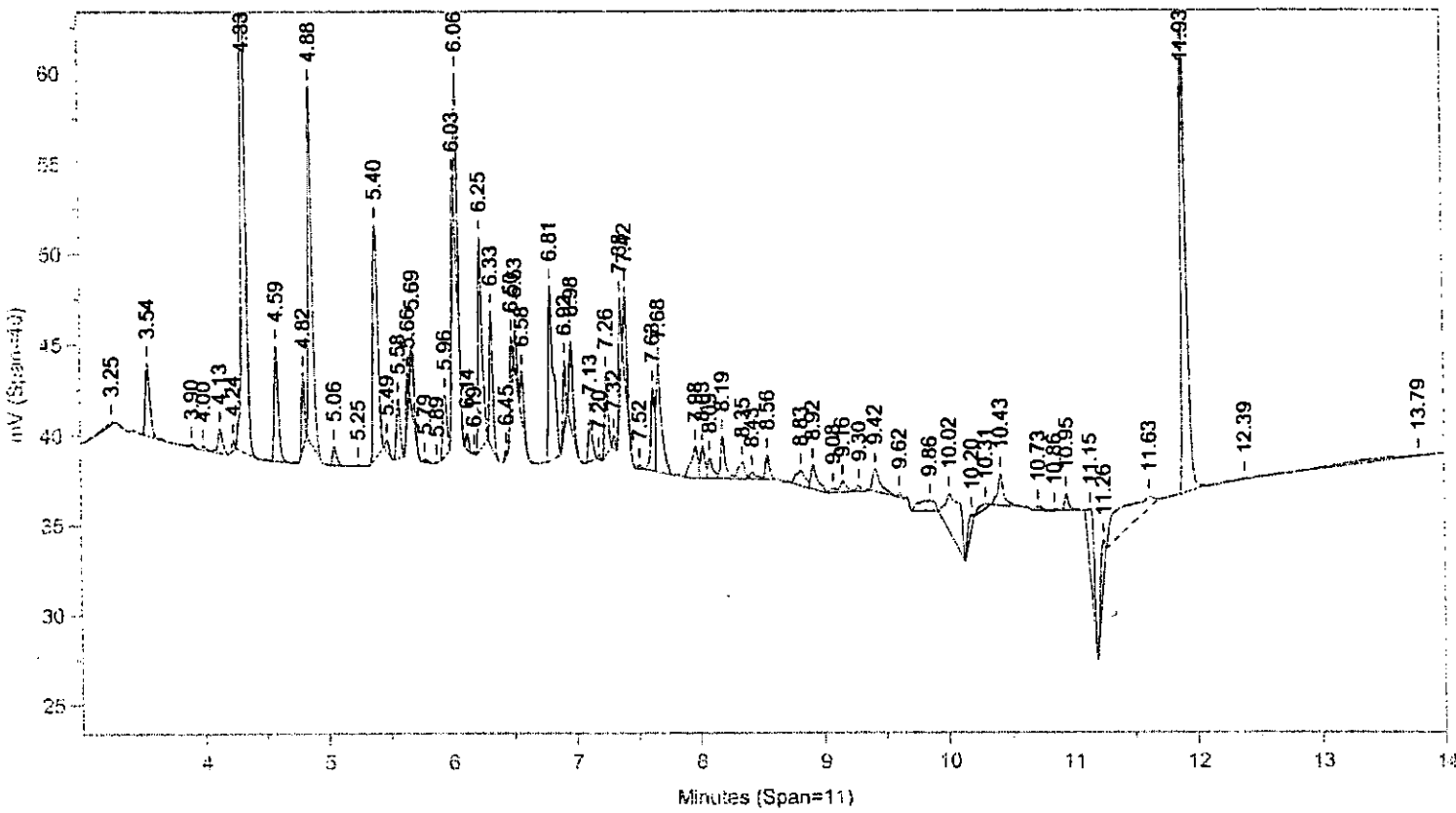
6722

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.521 | | 0.0000 | 0.000 | 381.5 | 0.039 | BB | 0.065 | 97.31 | 0.028 |
| 58 | 9.629 | Endo. sulfate | 0.6364 | 2.105 | 4430.4 | 0.456 | BB | 0.036 | 2054.91 | 0.582 |
| 59 | 9.721 | | 0.0000 | 0.000 | 4057.7 | 0.417 | BB | 0.058 | 1164.76 | 0.330 |
| 60 | 9.809 | | 0.0000 | 0.000 | 807.0 | 0.083 | BB | 0.062 | 216.62 | 0.061 |
| 61 | 9.944 | | 0.0000 | 0.000 | 2088.8 | 0.215 | BB | 0.044 | 792.04 | 0.224 |
| 62 | 10.260 | | 0.0000 | 0.000 | 594.1 | 0.061 | BB | 0.060 | 165.05 | 0.047 |
| 63 | 10.341 | Endrin ketone | 0.1177 | 0.389 | 1011.0 | 0.104 | BB | 0.040 | 425.23 | 0.120 |
| 64 | 10.447 | | 0.0000 | 0.000 | 88261.7 | 9.081 | BB | 0.529 | 2781.35 | 0.788 |
| 65 | 10.782 | | 0.0000 | 0.000 | 5524.6 | 0.568 | BB | 0.058 | 1592.98 | 0.451 |
| 66 | 10.963 | | 0.0000 | 0.000 | 15332.9 | 1.578 | BB | 0.262 | 976.16 | 0.277 |
| 67 | 11.163 | | 0.0000 | 0.000 | 456.1 | 0.047 | BB | 0.037 | 205.08 | 0.058 |
| 68 | 11.649 | | 0.0000 | 0.000 | 465.6 | 0.048 | BB | 0.044 | 175.52 | 0.050 |
| 69 | 11.837 | | 0.0000 | 0.000 | 251.8 | 0.026 | BB | 0.069 | 60.97 | 0.017 |
| 70 | 12.073 | DCB | 8.3411 | 27.596 | 84808.0 | 8.726 | BB | 0.047 | 30049.35 | 8.513 |
| 71 | 12.577 | | 0.0000 | 0.000 | 745.2 | 0.077 | BB | 0.104 | 119.24 | 0.034 |
| 72 | 13.884 | | 0.0000 | 0.000 | 5080.9 | 0.523 | BB | 1.366 | 62.00 | 0.018 |

Total Area = 971942.8, Total Amount = 30.226, Total Height = 352970.7, Sample Units = PPB

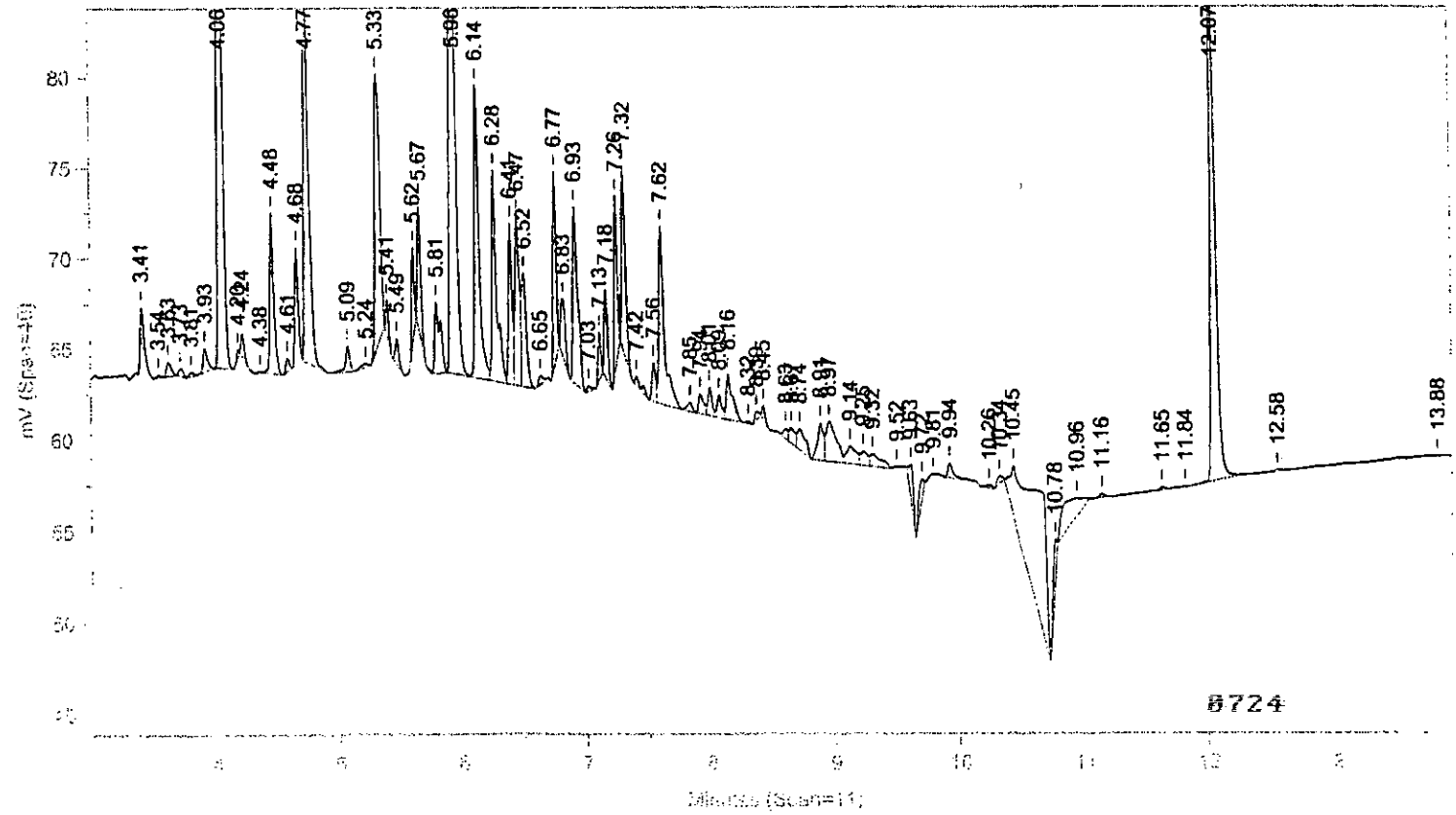
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.27R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 6:05:59 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.27R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 6:05:59 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

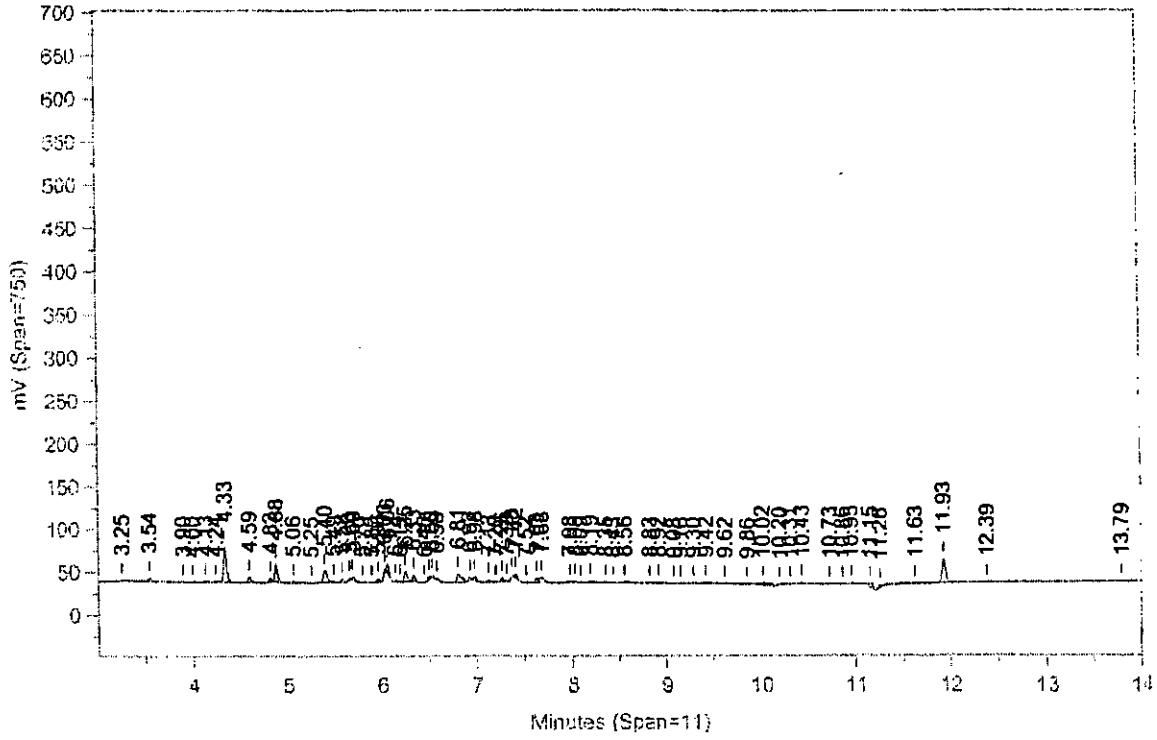
Dilution Factor: 1

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.335 | 41842 | 10.143 | TCX | 4.06 | 60780 | 10.833 | TCX |
| . | 0 | . | Hcb | 4.767 | 25795 | 2.409 | Hcb |
| 5.658 | 2379 | .464 | gamma-BHC | 5.49 | 1482 | .186 | gamma-BHC |
| 5.791 | 194 | .069 | beta-BHC | 5.625 | 5243 | 1.315 | beta-BHC |
| 6.059 | 10928 | 2.244 | delta-BHC | . | 0 | . | delta-BHC |
| 6.334 | 7539 | 1.39 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.518 | 6288 | .988 | Aldrin |
| . | 0 | . | Telodrin | 6.767 | 10648 | 1.806 | Telodrin |
| 7.633 | 4630 | 1.081 | Hept. epoxide | 7.324 | 10279 | 1.73 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.562 | 2149 | .371 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.854 | 527 | .1 | Endosulfan I |
| 7.976 | 1752 | .399 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.034 | 1776 | .505 | 4,4'-DDE | 8.014 | 1553 | .333 | 4,4'-DDE |
| . | 0 | . | o,p-DDT | 8.627 | 546 | .179 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.738 | 1165 | .357 | 4,4'-DDD |
| 8.825 | 836 | 1.068 | Kepone | . | 0 | . | Kepone |
| 9.084 | 236 | .071 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.141 | 972 | .298 | 4,4'-DDT |
| 9.623 | 261 | .095 | Endrin aldehyde | 9.323 | 696 | .227 | Endrin aldehyde |
| 10.2 | 694 | .235 | Endo. sulfate | 9.629 | 2055 | .636 | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.341 | 425 | .118 | Endrin ketone |
| 11.925 | 27651 | 8.381 | DCB | 12.073 | 30049 | 8.341 | DCB |

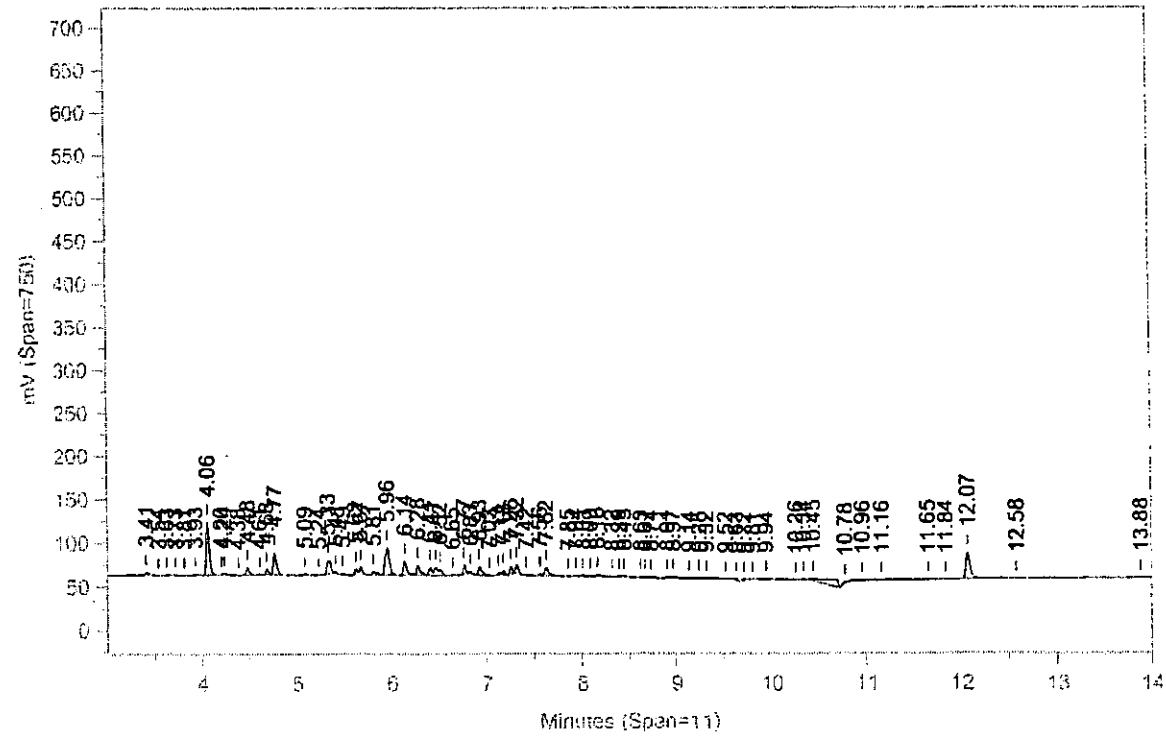
Files:
Area File: C:\CPWIN\DATA1\1D16082.27A
Area File: C:\CPWIN\DATA1\1D16082B.27A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:21:56 AM
File Reported On: 3/23/2004 at 8:22:01 AM

Files:
10x REPLOTS

C:\CPWIN\DATA1\1D16082.27R




C:\CPWIN\DATA1\1D16082B.27R




8726

Sample Name: **AR420424A AAAR420AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 06:40:33pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.28R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.213 | | 0.0000 | 0.000 | 340.8 | 0.043 | BB | 0.038 | 148.19 | 0.042 |
| 2 | 3.263 | | 0.0000 | 0.000 | 1596.2 | 0.201 | BB | 0.097 | 275.61 | 0.077 |
| 3 | 3.555 | | 0.0000 | 0.000 | 789.8 | 0.099 | BB | 0.037 | 356.20 | 0.100 |
| 4 | 3.999 | | 0.0000 | 0.000 | 756.7 | 0.095 | BB | 0.041 | 304.49 | 0.085 |
| 5 | 4.242 | | 0.0000 | 0.000 | 450.8 | 0.057 | BB | 0.025 | 298.29 | 0.084 |
| 6 | 4.336 | TCX | 8.1498 | 30.530 | 72537.4 | 9.114 | BB | 0.036 | 33620.44 | 9.432 |
| 7 | 4.593 | | 0.0000 | 0.000 | 6384.0 | 0.802 | BB | 0.036 | 2956.09 | 0.829 |
| 8 | 4.816 | | 0.0000 | 0.000 | 4995.6 | 0.628 | BB | 0.029 | 2876.78 | 0.807 |
| 9 | 4.878 | | 0.0000 | 0.000 | 34704.7 | 4.360 | BB | 0.036 | 16192.48 | 4.543 |
| 10 | 5.063 | | 0.0000 | 0.000 | 4568.6 | 0.574 | BB | 0.037 | 2060.45 | 0.578 |
| 11 | 5.298 | | 0.0000 | 0.000 | 124.2 | 0.016 | BB | 0.030 | 68.15 | 0.019 |
| 12 | 5.398 | | 0.0000 | 0.000 | 75103.6 | 9.436 | BB | 0.051 | 24757.35 | 6.946 |
| 13 | 5.576 | | 0.0000 | 0.000 | 7939.8 | 0.998 | BB | 0.039 | 3379.97 | 0.948 |
| 14 | 5.658 | gamma-BHC | 0.8938 | 3.348 | 6251.8 | 0.786 | BB | 0.023 | 4586.98 | 1.287 |
| 15 | 5.694 | | 0.0000 | 0.000 | 12073.2 | 1.517 | BB | 0.026 | 7663.29 | 2.150 |
| 16 | 5.791 | beta-BHC | 0.1433 | 0.537 | 843.1 | 0.106 | BB | 0.035 | 405.90 | 0.114 |
| 17 | 5.957 | | 0.0000 | 0.000 | 15028.4 | 1.888 | BB | 0.039 | 6431.77 | 1.804 |
| 18 | 6.031 | delta-BHC | 1.8082 | 6.774 | 12862.1 | 1.616 | BB | 0.024 | 8805.32 | 2.470 |
| 19 | 6.059 | | 0.0000 | 0.000 | 29013.2 | 3.645 | BB | 0.024 | 20380.33 | 5.718 |
| 20 | 6.139 | | 0.0000 | 0.000 | 3269.9 | 0.411 | BB | 0.026 | 2076.16 | 0.582 |
| 21 | 6.193 | | 0.0000 | 0.000 | 486.6 | 0.061 | BB | 0.018 | 442.95 | 0.124 |
| 22 | 6.246 | | 0.0000 | 0.000 | 48812.7 | 6.133 | BB | 0.038 | 21629.88 | 6.068 |
| 23 | 6.334 | Heptachlor | 2.5400 | 9.515 | 25573.4 | 3.213 | BB | 0.031 | 13781.46 | 3.866 |
| 24 | 6.451 | | 0.0000 | 0.000 | 999.7 | 0.126 | BB | 0.023 | 735.52 | 0.206 |
| 25 | 6.497 | | 0.0000 | 0.000 | 8036.4 | 1.010 | BB | 0.023 | 5811.72 | 1.630 |
| 26 | 6.530 | | 0.0000 | 0.000 | 8371.3 | 1.052 | BB | 0.022 | 6353.59 | 1.783 |
| 27 | 6.582 | | 0.0000 | 0.000 | 10630.7 | 1.336 | BB | 0.028 | 6284.09 | 1.763 |
| 28 | 6.808 | | 0.0000 | 0.000 | 56241.1 | 7.066 | BB | 0.048 | 19398.02 | 5.442 |
| 29 | 6.924 | | 0.0000 | 0.000 | 12711.5 | 1.597 | BB | 0.025 | 8355.90 | 2.344 |
| 30 | 6.978 | | 0.0000 | 0.000 | 17211.7 | 2.163 | BB | 0.032 | 8929.13 | 2.505 |
| 31 | 7.126 | | 0.0000 | 0.000 | 10696.1 | 1.344 | BB | 0.038 | 4648.51 | 1.304 |
| 32 | 7.203 | | 0.0000 | 0.000 | 925.6 | 0.116 | BB | 0.022 | 694.99 | 0.195 |
| 33 | 7.262 | | 0.0000 | 0.000 | 18714.3 | 2.351 | BB | 0.031 | 10161.99 | 2.851 |
| 34 | 7.320 | | 0.0000 | 0.000 | 2627.1 | 0.330 | BB | 0.022 | 1977.49 | 0.555 |
| 35 | 7.377 | | 0.0000 | 0.000 | 16158.9 | 2.030 | BB | 0.026 | 10526.60 | 2.953 |
| 36 | 7.415 | | 0.0000 | 0.000 | 16203.8 | 2.036 | BB | 0.024 | 11139.76 | 3.125 |
| 37 | 7.522 | | 0.0000 | 0.000 | 867.7 | 0.109 | BB | 0.028 | 519.52 | 0.146 |
| 38 | 7.634 | Hept. epoxide | 2.5078 | 9.394 | 25824.5 | 3.245 | BV | 0.040 | 10740.53 | 3.013 |
| 39 | 7.681 | | 0.0000 | 0.000 | 39989.7 | 5.025 | VV | 0.051 | 13059.38 | 3.664 |
| 40 | 7.832 | | 0.0000 | 0.000 | 800.1 | 0.101 | VB | 0.041 | 323.58 | 0.091 |
| 41 | 7.977 | a. Chlordane | 0.8702 | 3.260 | 12116.8 | 1.522 | BV | 0.053 | 3818.65 | 1.071 |
| 42 | 8.035 | 4,4'-DDE | 1.2614 | 4.725 | 10392.7 | 1.306 | VV | 0.039 | 4432.08 | 1.243 |
| 43 | 8.093 | | 0.0000 | 0.000 | 7988.4 | 1.004 | VV | 0.042 | 3137.99 | 0.880 |
| 44 | 8.195 | | 0.0000 | 0.000 | 16144.1 | 2.028 | VV | 0.041 | 6561.69 | 1.841 |
| 45 | 8.355 | | 0.0000 | 0.000 | 9397.3 | 1.181 | VV | 0.059 | 2651.91 | 0.744 |
| 46 | 8.430 | | 0.0000 | 0.000 | 1594.7 | 0.200 | VV | 0.038 | 707.96 | 0.199 |
| 47 | 8.491 | Dieldrin | 0.2307 | 0.864 | 2961.9 | 0.372 | VV | 0.059 | 840.13 | 0.236 |
| 48 | 8.557 | | 0.0000 | 0.000 | 12999.0 | 1.633 | VV | 0.041 | 5266.89 | 1.478 |
| 49 | 8.636 | o,p-DDT | 0.2866 | 1.074 | 2357.4 | 0.296 | VV | 0.051 | 764.21 | 0.214 |
| 50 | 8.816 | Kepone | 1.3976 | 5.236 | 6188.8 | 0.778 | VV | 0.094 | 1093.79 | 0.307 |
| 51 | 8.925 | | 0.0000 | 0.000 | 11226.7 | 1.411 | VB | 0.045 | 4140.84 | 1.162 |
| 52 | 9.084 | Endosulfan II | 0.0598 | 0.224 | 656.4 | 0.082 | BV | 0.055 | 199.68 | 0.056 |
| 53 | 9.161 | | 0.0000 | 0.000 | 3444.9 | 0.433 | VV | 0.047 | 1211.59 | 0.340 |
| 54 | 9.272 | | 0.0000 | 0.000 | 301.8 | 0.038 | VB | 0.039 | 127.64 | 0.036 |
| 55 | 9.424 | | 0.0000 | 0.000 | 3774.6 | 0.474 | BB | 0.056 | 1113.49 | 0.312 |
| 56 | 9.540 | | 0.0000 | 0.000 | 726.3 | 0.091 | BB | 0.038 | 318.07 | 0.089 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.859 | | 0.0000 | 0.000 | 5402.2 | 0.679 | BB | 0.122 | 735.20 | 0.206 |
| 58 | 10.017 | | 0.0000 | 0.000 | 858.5 | 0.108 | BB | 0.081 | 175.84 | 0.049 |
| 59 | 10.264 | | 0.0000 | 0.000 | 324.2 | 0.041 | BB | 0.040 | 135.86 | 0.038 |
| 60 | 10.317 | | 0.0000 | 0.000 | 293.1 | 0.037 | BB | 0.033 | 148.58 | 0.042 |
| 61 | 10.432 | | 0.0000 | 0.000 | 5933.0 | 0.745 | BB | 0.042 | 2355.30 | 0.661 |
| 62 | 10.957 | | 0.0000 | 0.000 | 3313.8 | 0.416 | BB | 0.038 | 1441.42 | 0.404 |
| 63 | 11.310 | | 0.0000 | 0.000 | 458.8 | 0.058 | BB | 0.086 | 88.60 | 0.025 |
| 64 | 11.630 | | 0.0000 | 0.000 | 673.6 | 0.085 | BB | 0.095 | 118.45 | 0.033 |
| 65 | 11.926 | DCB | 6.5451 | 24.519 | 57721.4 | 7.252 | BB | 0.045 | 21593.21 | 6.058 |
| 66 | 13.590 | | 0.0000 | 0.000 | 7124.1 | 0.895 | BB | 1.137 | 104.44 | 0.029 |

Total Area = 795891.4, Total Amount = 26.694, Total Height = 356442.5, Sample Units = PPB

Sample Name: **AR420424A AAAR420AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 06:40:33pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.28R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.483 | | 0.0000 | 0.000 | 870.6 | 0.068 | BB | 0.049 | 295.59 | 0.058 |
| 2 | 3.555 | | 0.0000 | 0.000 | 463.8 | 0.036 | BB | 0.037 | 209.29 | 0.041 |
| 3 | 3.631 | | 0.0000 | 0.000 | 2425.8 | 0.190 | BB | 0.045 | 891.16 | 0.175 |
| 4 | 3.726 | | 0.0000 | 0.000 | 895.8 | 0.070 | BB | 0.039 | 383.27 | 0.075 |
| 5 | 3.823 | | 0.0000 | 0.000 | 525.7 | 0.041 | BB | 0.045 | 196.52 | 0.039 |
| 6 | 3.969 | | 0.0000 | 0.000 | 596.1 | 0.047 | BB | 0.109 | 91.35 | 0.018 |
| 7 | 4.060 | TCX | 8.7380 | 27.074 | 103753.2 | 8.126 | BB | 0.035 | 49027.61 | 9.651 |
| 8 | 4.239 | | 0.0000 | 0.000 | 5373.3 | 0.421 | BB | 0.053 | 1698.09 | 0.334 |
| 9 | 4.481 | | 0.0000 | 0.000 | 9457.0 | 0.741 | BB | 0.038 | 4171.23 | 0.821 |
| 10 | 4.606 | | 0.0000 | 0.000 | 1210.1 | 0.095 | BB | 0.032 | 627.53 | 0.124 |
| 11 | 4.682 | | 0.0000 | 0.000 | 8992.3 | 0.704 | BB | 0.033 | 4501.56 | 0.886 |
| 12 | 4.768 | Hcb | 2.0353 | 6.306 | 49897.8 | 3.908 | BB | 0.038 | 21791.87 | 4.290 |
| 13 | 5.030 | | 0.0000 | 0.000 | 322.9 | 0.025 | BB | 0.054 | 99.28 | 0.020 |
| 14 | 5.091 | | 0.0000 | 0.000 | 5573.2 | 0.436 | BB | 0.035 | 2681.83 | 0.528 |
| 15 | 5.227 | | 0.0000 | 0.000 | 670.2 | 0.052 | BB | 0.065 | 171.86 | 0.034 |
| 16 | 5.336 | | 0.0000 | 0.000 | 96989.1 | 7.596 | BB | 0.055 | 29238.13 | 5.755 |
| 17 | 5.491 | gamma-BHC | 0.3912 | 1.212 | 6875.7 | 0.538 | BB | 0.037 | 3109.76 | 0.612 |
| 18 | 5.625 | beta-BHC | 2.5120 | 7.783 | 15289.4 | 1.197 | BB | 0.025 | 10018.07 | 1.972 |
| 19 | 5.673 | | 0.0000 | 0.000 | 23356.9 | 1.829 | BB | 0.030 | 12812.72 | 2.522 |
| 20 | 5.812 | | 0.0000 | 0.000 | 24395.6 | 1.911 | BB | 0.053 | 7682.80 | 1.512 |
| 21 | 5.960 | | 0.0000 | 0.000 | 183706.7 | 14.387 | BV | 0.053 | 58081.38 | 11.433 |
| 22 | 6.143 | | 0.0000 | 0.000 | 77664.3 | 6.082 | VV | 0.043 | 30206.49 | 5.946 |
| 23 | 6.281 | | 0.0000 | 0.000 | 57657.7 | 4.516 | VV | 0.045 | 21498.64 | 4.232 |
| 24 | 6.408 | | 0.0000 | 0.000 | 37782.3 | 2.959 | VV | 0.035 | 17836.10 | 3.511 |
| 25 | 6.466 | | 0.0000 | 0.000 | 45156.8 | 3.537 | VV | 0.039 | 19073.60 | 3.755 |
| 26 | 6.519 | Aldrin | 2.1096 | 6.536 | 35899.5 | 2.812 | VB | 0.045 | 13431.40 | 2.644 |
| 27 | 6.712 | | 0.0000 | 0.000 | 705.0 | 0.055 | BB | 0.052 | 223.86 | 0.044 |
| 28 | 6.768 | Telodrin | 3.6250 | 11.232 | 38171.3 | 2.989 | BB | 0.030 | 21375.16 | 4.208 |
| 29 | 6.828 | | 0.0000 | 0.000 | 16244.7 | 1.272 | BB | 0.043 | 6295.50 | 1.239 |
| 30 | 6.930 | | 0.0000 | 0.000 | 55356.8 | 4.335 | BB | 0.044 | 20741.40 | 4.083 |
| 31 | 7.032 | | 0.0000 | 0.000 | 1441.9 | 0.113 | BB | 0.028 | 852.87 | 0.168 |
| 32 | 7.129 | | 0.0000 | 0.000 | 8499.9 | 0.666 | BB | 0.026 | 5399.84 | 1.063 |
| 33 | 7.179 | | 0.0000 | 0.000 | 21340.7 | 1.671 | BB | 0.031 | 11570.60 | 2.278 |
| 34 | 7.263 | | 0.0000 | 0.000 | 35312.5 | 2.766 | BB | 0.030 | 19612.67 | 3.861 |
| 35 | 7.325 | Hept. epoxide | 3.6160 | 11.204 | 41579.0 | 3.256 | BB | 0.032 | 21489.05 | 4.230 |
| 36 | 7.422 | | 0.0000 | 0.000 | 2199.5 | 0.172 | BV | 0.028 | 1292.36 | 0.254 |
| 37 | 7.478 | | 0.0000 | 0.000 | 2458.2 | 0.193 | VB | 0.032 | 1275.60 | 0.251 |
| 38 | 7.563 | g. Chlordane | 0.9072 | 2.811 | 10768.8 | 0.843 | BV | 0.034 | 5258.17 | 1.035 |
| 39 | 7.626 | | 0.0000 | 0.000 | 66355.0 | 5.197 | VV | 0.052 | 21450.67 | 4.222 |
| 40 | 7.857 | Endosulfan I | 0.1569 | 0.486 | 2018.1 | 0.158 | VB | 0.041 | 827.29 | 0.163 |
| 41 | 7.938 | | 0.0000 | 0.000 | 8419.7 | 0.659 | BV | 0.045 | 3127.77 | 0.616 |
| 42 | 8.015 | 4,4'-DDE | 0.9632 | 2.984 | 10128.4 | 0.793 | VV | 0.038 | 4487.95 | 0.883 |
| 43 | 8.091 | | 0.0000 | 0.000 | 7406.9 | 0.580 | VV | 0.038 | 3253.56 | 0.640 |
| 44 | 8.165 | | 0.0000 | 0.000 | 19811.2 | 1.552 | VV | 0.048 | 6906.99 | 1.360 |
| 45 | 8.320 | | 0.0000 | 0.000 | 600.1 | 0.047 | VB | 0.033 | 302.33 | 0.060 |
| 46 | 8.388 | | 0.0000 | 0.000 | 3591.1 | 0.281 | BB | 0.031 | 1916.41 | 0.377 |
| 47 | 8.452 | | 0.0000 | 0.000 | 8419.1 | 0.659 | BB | 0.033 | 4213.09 | 0.829 |
| 48 | 8.627 | o,p-DDT | 0.1224 | 0.379 | 698.5 | 0.055 | BV | 0.031 | 373.79 | 0.074 |
| 49 | 8.673 | | 0.0000 | 0.000 | 819.8 | 0.064 | VB | 0.033 | 416.12 | 0.082 |
| 50 | 8.907 | | 0.0000 | 0.000 | 13723.5 | 1.075 | BV | 0.048 | 4740.06 | 0.933 |
| 51 | 8.971 | | 0.0000 | 0.000 | 11756.0 | 0.921 | VV | 0.091 | 2147.58 | 0.423 |
| 52 | 9.143 | 4,4'-DDT | 0.5123 | 1.587 | 7311.5 | 0.573 | VV | 0.073 | 1669.37 | 0.329 |
| 53 | 9.268 | | 0.0000 | 0.000 | 5705.0 | 0.447 | VB | 0.157 | 604.91 | 0.119 |
| 54 | 9.511 | | 0.0000 | 0.000 | 265.6 | 0.021 | BB | 0.050 | 88.81 | 0.017 |
| 55 | 9.602 | | 0.0000 | 0.000 | 1136.4 | 0.089 | BB | 0.047 | 402.72 | 0.079 |
| 56 | 9.810 | | 0.0000 | 0.000 | 991.2 | 0.078 | BB | 0.044 | 375.53 | 0.074 |

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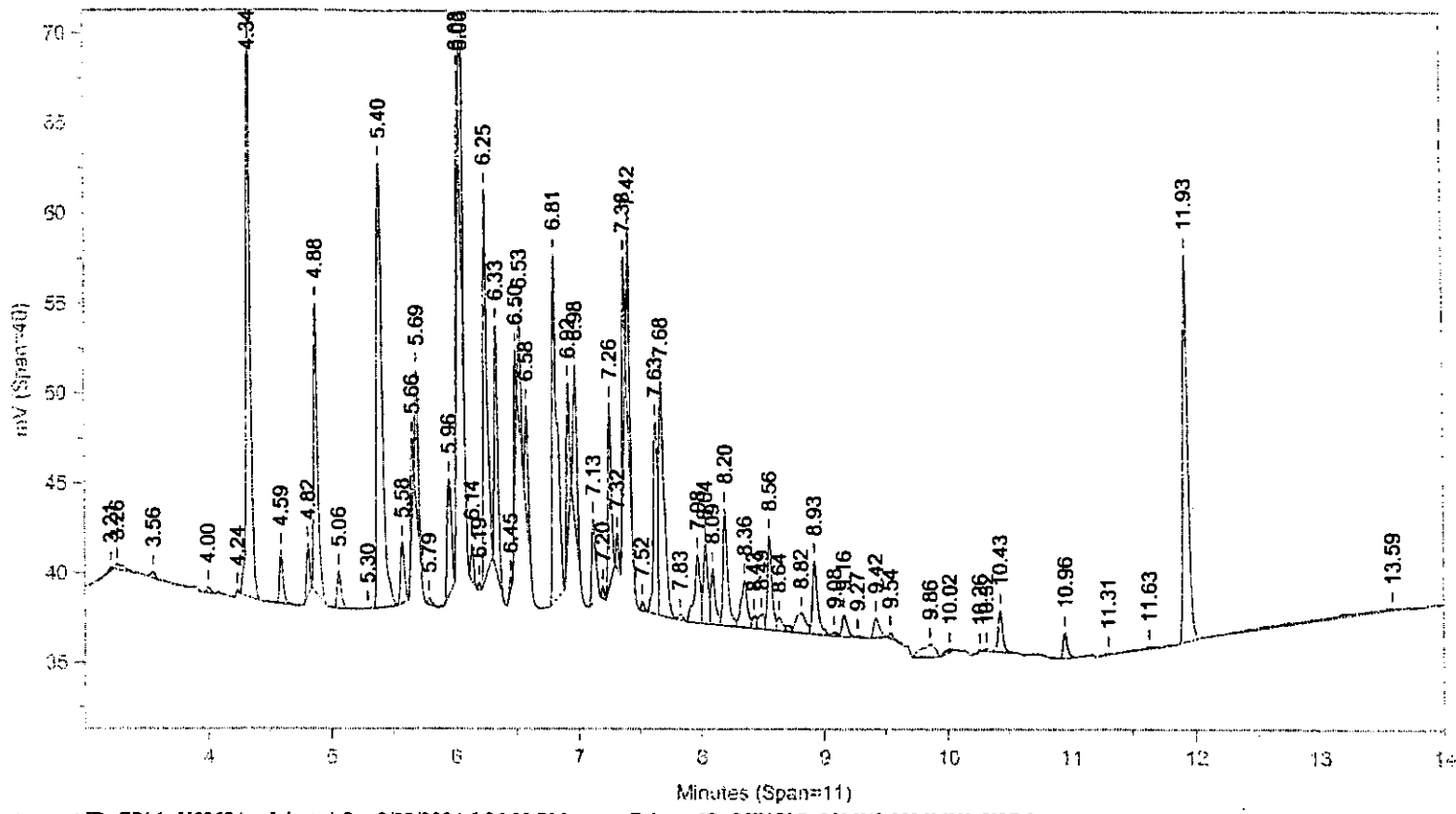
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.944 | | 0.0000 | 0.000 | 474.5 | 0.037 | BB | 0.041 | 192.83 | 0.038 |
| 58 | 10.342 | Endrin ketone | 0.2002 | 0.620 | 2483.2 | 0.194 | BB | 0.057 | 723.55 | 0.142 |
| 59 | 10.449 | | 0.0000 | 0.000 | 2603.3 | 0.204 | BB | 0.035 | 1250.15 | 0.246 |
| 60 | 11.647 | | 0.0000 | 0.000 | 361.7 | 0.028 | BB | 0.050 | 121.67 | 0.024 |
| 61 | 12.074 | DCB | 6.3852 | 19.784 | 65798.1 | 5.153 | BB | 0.048 | 23002.94 | 4.528 |
| 62 | 12.585 | | 0.0000 | 0.000 | 578.7 | 0.045 | BB | 0.097 | 99.78 | 0.020 |
| 63 | 13.857 | | 0.0000 | 0.000 | 5523.5 | 0.433 | BB | 0.851 | 108.14 | 0.021 |

Total Area = 1276860.0, Total Amount = 32.274, Total Height = 508018.3, Sample Units = PPB

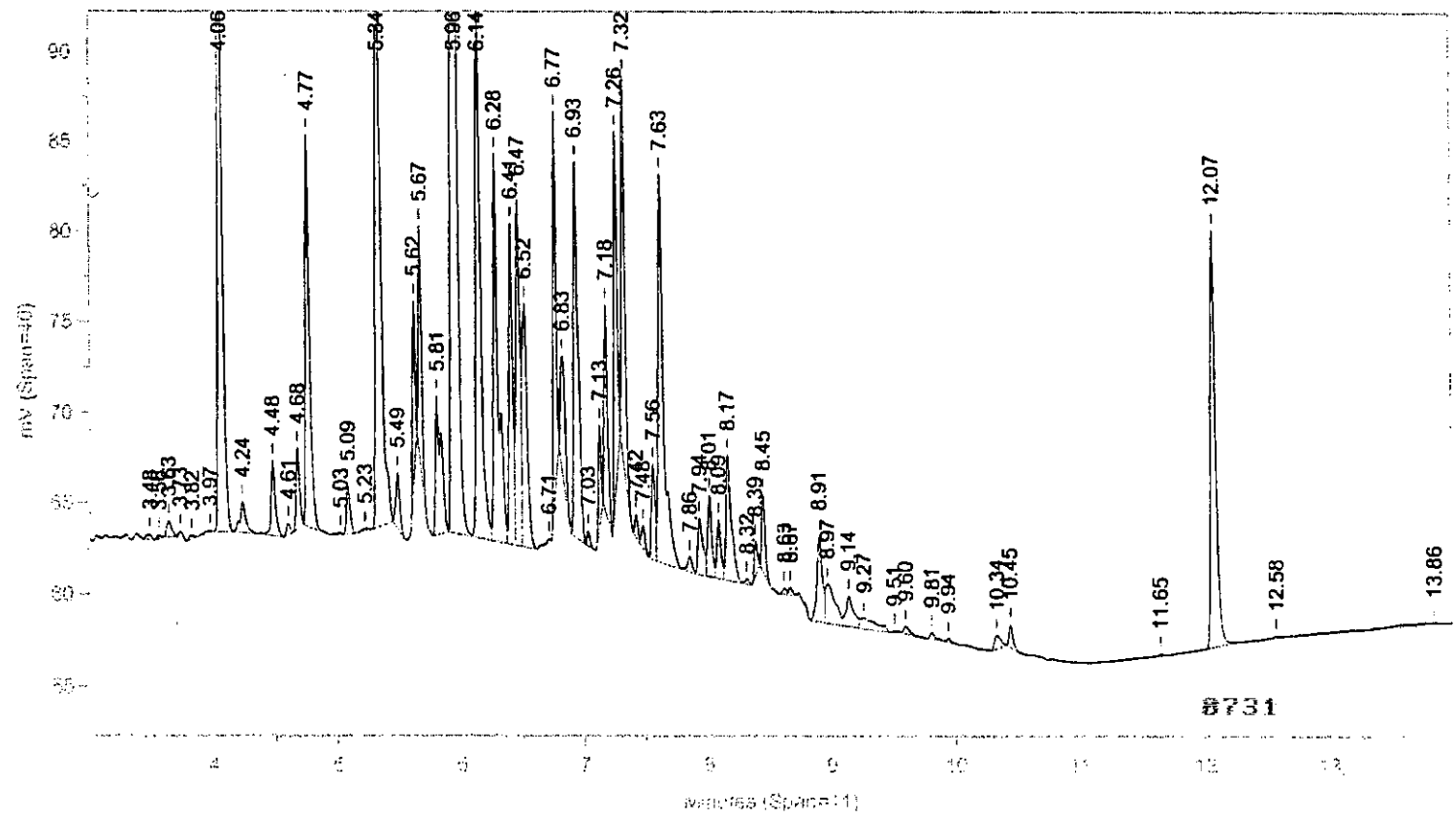
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.28R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 6:26:33 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.28R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 6:26:33 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External .

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.336 | 33620 | 8.15 | TCX | 4.06 | 49028 | 8.738 | TCX |
| . | 0 | . | Hcb | 4.768 | 21792 | 2.035 | Hcb |
| 5.658 | 4587 | .894 | gamma-BHC | 5.491 | 3110 | .391 | gamma-BHC |
| 5.791 | 406 | .143 | beta-BHC | 5.625 | 10018 | 2.512 | beta-BHC |
| 6.031 | 8805 | 1.808 | delta-BHC | . | 0 | . | delta-BHC |
| 6.334 | 13781 | 2.54 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.519 | 13431 | 2.11 | Aldrin |
| . | 0 | . | Telodrin | 6.768 | 21375 | 3.625 | Telodrin |
| 7.634 | 10741 | 2.508 | Hept. epoxide | 7.325 | 21489 | 3.616 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.563 | 5258 | .907 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.857 | 827 | .157 | Endosulfan I |
| 7.977 | 3819 | .87 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.035 | 4432 | 1.261 | 4,4'-DDE | 8.015 | 4488 | .963 | 4,4'-DDE |
| 8.491 | 840 | .231 | Dieldrin | . | 0 | . | Dieldrin |
| 8.636 | 764 | .287 | o,p-DDT | 8.627 | 374 | .122 | o,p-DDT |
| 8.816 | 1094 | 1.398 | Kepone | . | 0 | . | Kepone |
| 9.084 | 200 | .06 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.143 | 1669 | .512 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 10.342 | 724 | .2 | Endrin ketone |
| 11.926 | 21593 | 6.545 | DCB | 12.074 | 23003 | 6.385 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.28A
Area File: C:\CPWIN\DATA1\1D16082B.28A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:22:10 AM
File Reported On: 3/23/2004 at 8:22:16 AM

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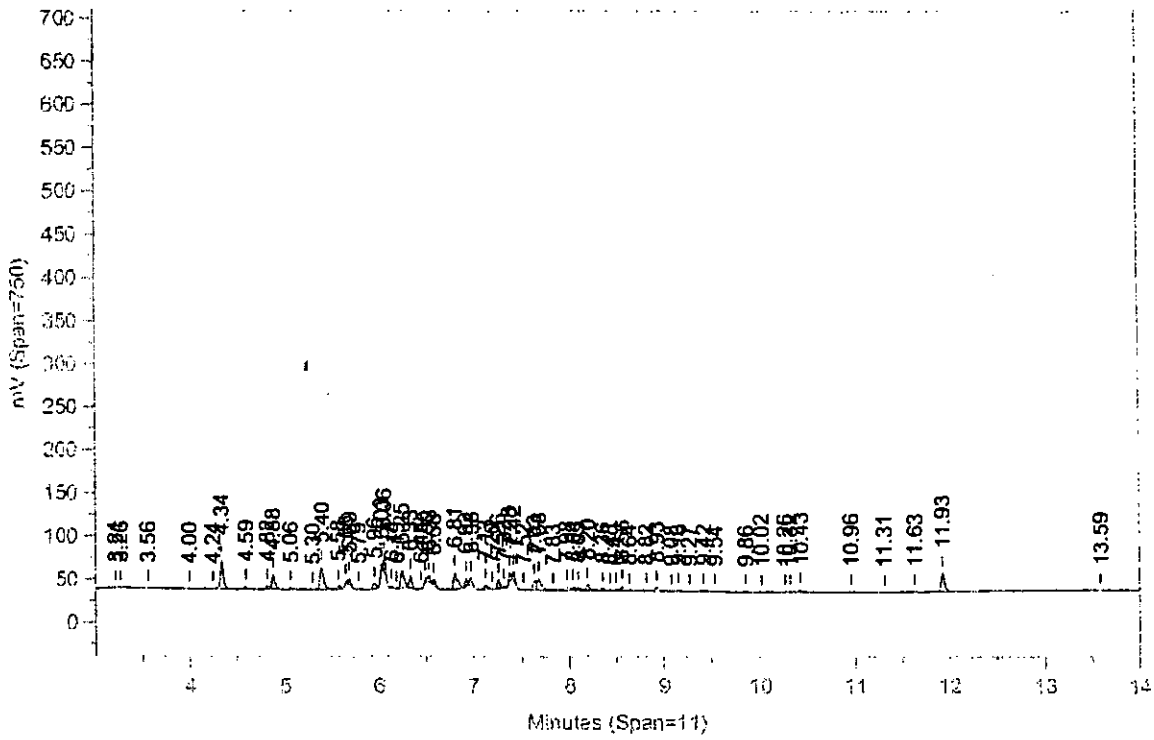
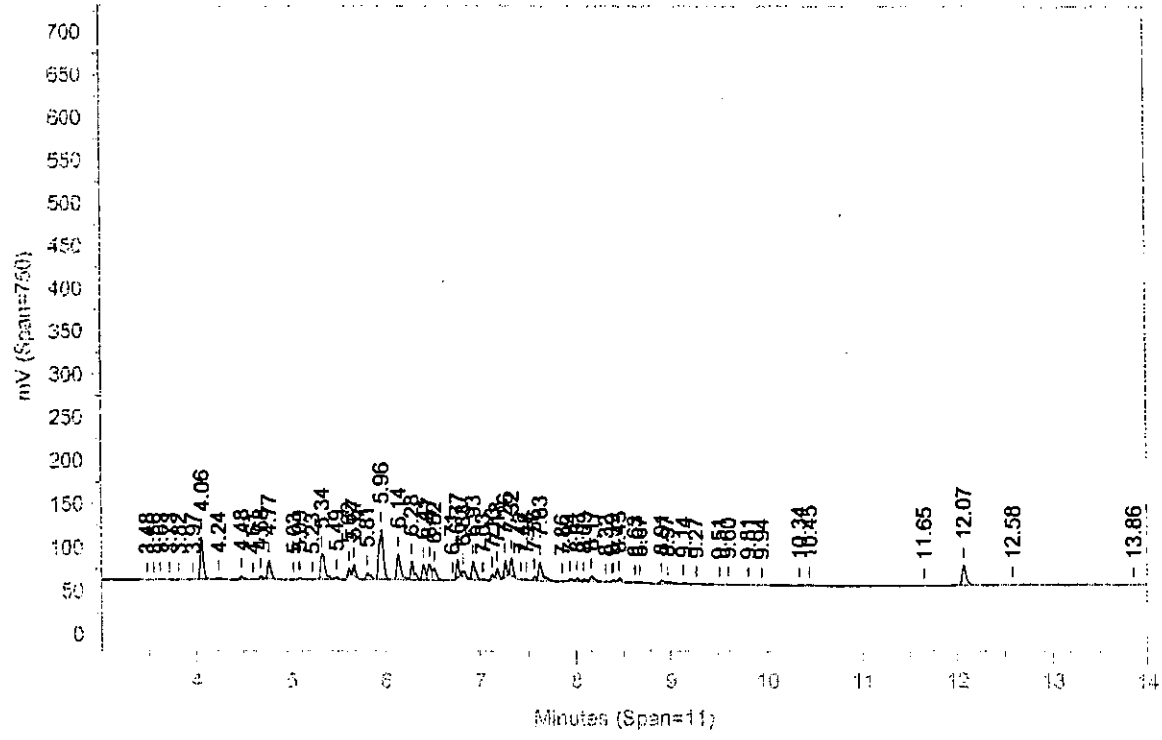
10x REPLOTS

C:\CPWIN\DATA1\1D16082.28R




C:\CPWIN\DATA1\1D16082B.28R



Sample Name: **AR4830424A AAAR483AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 07:01:09pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.29R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.254 | | 0.0000 | 0.000 | 8146.8 | 0.948 | BB | 0.182 | 747.20 | 0.195 |
| 2 | 3.558 | | 0.0000 | 0.000 | 573.0 | 0.067 | BB | 0.029 | 324.86 | 0.085 |
| 3 | 3.999 | | 0.0000 | 0.000 | 699.2 | 0.081 | BB | 0.043 | 272.16 | 0.071 |
| 4 | 4.335 | TCX | 8.1758 | 26.449 | 71193.9 | 8.283 | BB | 0.035 | 33727.85 | 8.794 |
| 5 | 4.593 | | 0.0000 | 0.000 | 384.5 | 0.045 | BB | 0.034 | 189.13 | 0.049 |
| 6 | 4.813 | | 0.0000 | 0.000 | 440.9 | 0.051 | BB | 0.031 | 235.61 | 0.061 |
| 7 | 4.878 | | 0.0000 | 0.000 | 2502.9 | 0.291 | BB | 0.029 | 1425.67 | 0.372 |
| 8 | 5.062 | | 0.0000 | 0.000 | 1306.3 | 0.152 | BB | 0.037 | 582.75 | 0.152 |
| 9 | 5.394 | | 0.0000 | 0.000 | 33477.8 | 3.895 | BB | 0.046 | 12122.75 | 3.161 |
| 10 | 5.569 | | 0.0000 | 0.000 | 1441.4 | 0.168 | BB | 0.037 | 645.54 | 0.168 |
| 11 | 5.658 | gamma-BHC | 0.4545 | 1.471 | 3223.6 | 0.375 | BB | 0.023 | 2332.67 | 0.608 |
| 12 | 5.693 | | 0.0000 | 0.000 | 3705.5 | 0.431 | BB | 0.025 | 2494.98 | 0.651 |
| 13 | 5.891 | | 0.0000 | 0.000 | 94.9 | 0.011 | BB | 0.024 | 65.75 | 0.017 |
| 14 | 5.952 | | 0.0000 | 0.000 | 3850.1 | 0.448 | BB | 0.036 | 1785.82 | 0.466 |
| 15 | 6.030 | | 0.0000 | 0.000 | 11358.2 | 1.321 | BB | 0.025 | 7557.41 | 1.970 |
| 16 | 6.058 | delta-BHC | 1.8950 | 6.130 | 11400.9 | 1.326 | BB | 0.021 | 9228.13 | 2.406 |
| 17 | 6.139 | | 0.0000 | 0.000 | 5150.9 | 0.599 | BB | 0.028 | 3028.26 | 0.790 |
| 18 | 6.192 | | 0.0000 | 0.000 | 726.4 | 0.085 | BB | 0.019 | 620.91 | 0.162 |
| 19 | 6.246 | | 0.0000 | 0.000 | 8951.5 | 1.041 | BB | 0.026 | 5812.71 | 1.516 |
| 20 | 6.277 | | 0.0000 | 0.000 | 1681.4 | 0.196 | BB | 0.020 | 1422.80 | 0.371 |
| 21 | 6.334 | Heptachlor | 1.1146 | 3.606 | 10510.7 | 1.223 | BB | 0.029 | 6047.62 | 1.577 |
| 22 | 6.451 | | 0.0000 | 0.000 | 1162.1 | 0.135 | BB | 0.023 | 857.81 | 0.224 |
| 23 | 6.497 | | 0.0000 | 0.000 | 16864.3 | 1.962 | BB | 0.025 | 11437.42 | 2.982 |
| 24 | 6.529 | | 0.0000 | 0.000 | 9942.1 | 1.157 | BB | 0.021 | 8050.86 | 2.099 |
| 25 | 6.581 | | 0.0000 | 0.000 | 12867.2 | 1.497 | BB | 0.029 | 7524.12 | 1.962 |
| 26 | 6.807 | | 0.0000 | 0.000 | 82100.1 | 9.552 | BB | 0.047 | 29237.59 | 7.623 |
| 27 | 6.924 | | 0.0000 | 0.000 | 23259.2 | 2.706 | BB | 0.027 | 14198.20 | 3.702 |
| 28 | 6.978 | | 0.0000 | 0.000 | 13028.4 | 1.516 | BB | 0.029 | 7413.82 | 1.933 |
| 29 | 7.126 | | 0.0000 | 0.000 | 14555.3 | 1.693 | BB | 0.036 | 6651.91 | 1.734 |
| 30 | 7.203 | | 0.0000 | 0.000 | 1476.5 | 0.172 | BB | 0.023 | 1058.14 | 0.276 |
| 31 | 7.261 | | 0.0000 | 0.000 | 26792.4 | 3.117 | BB | 0.030 | 14895.67 | 3.884 |
| 32 | 7.320 | | 0.0000 | 0.000 | 8373.1 | 0.974 | BB | 0.024 | 5825.41 | 1.519 |
| 33 | 7.376 | | 0.0000 | 0.000 | 26577.0 | 3.092 | BB | 0.026 | 17253.06 | 4.498 |
| 34 | 7.415 | | 0.0000 | 0.000 | 22065.7 | 2.567 | BB | 0.025 | 14868.24 | 3.877 |
| 35 | 7.520 | | 0.0000 | 0.000 | 359.9 | 0.042 | BB | 0.025 | 238.73 | 0.062 |
| 36 | 7.637 | Hept. epoxide | 4.2087 | 13.616 | 39675.4 | 4.616 | BV | 0.037 | 18025.29 | 4.700 |
| 37 | 7.678 | | 0.0000 | 0.000 | 81146.6 | 9.441 | VV | 0.061 | 22231.00 | 5.796 |
| 38 | 7.832 | | 0.0000 | 0.000 | 1455.9 | 0.169 | VB | 0.040 | 607.56 | 0.158 |
| 39 | 7.914 | | 0.0000 | 0.000 | 3175.3 | 0.369 | BV | 0.033 | 1628.31 | 0.425 |
| 40 | 7.977 | a. Chlordane | 1.8842 | 6.096 | 20803.8 | 2.420 | VV | 0.042 | 8268.64 | 2.156 |
| 41 | 8.035 | 4,4'-DDE | 2.9249 | 9.462 | 22597.2 | 2.629 | VV | 0.037 | 10276.80 | 2.679 |
| 42 | 8.093 | | 0.0000 | 0.000 | 16895.4 | 1.966 | VV | 0.040 | 7046.71 | 1.837 |
| 43 | 8.195 | | 0.0000 | 0.000 | 38419.9 | 4.470 | VV | 0.039 | 16389.10 | 4.273 |
| 44 | 8.356 | | 0.0000 | 0.000 | 17054.5 | 1.984 | VV | 0.049 | 5761.18 | 1.502 |
| 45 | 8.431 | | 0.0000 | 0.000 | 4203.9 | 0.489 | VV | 0.045 | 1567.57 | 0.409 |
| 46 | 8.492 | Dieldrin | 0.4527 | 1.465 | 4657.8 | 0.542 | VV | 0.047 | 1648.78 | 0.430 |
| 47 | 8.557 | | 0.0000 | 0.000 | 28463.9 | 3.312 | VV | 0.040 | 11830.62 | 3.085 |
| 48 | 8.636 | o,p-DDT | 0.5239 | 1.695 | 3570.5 | 0.415 | VV | 0.043 | 1396.75 | 0.364 |
| 49 | 8.710 | | 0.0000 | 0.000 | 1246.9 | 0.145 | VV | 0.042 | 490.82 | 0.128 |
| 50 | 8.809 | Kepone | 2.5848 | 8.362 | 9694.6 | 1.128 | VV | 0.080 | 2022.87 | 0.527 |
| 51 | 8.925 | | 0.0000 | 0.000 | 24612.1 | 2.863 | VB | 0.043 | 9643.52 | 2.514 |
| 52 | 9.087 | Endosulfan II | 0.1004 | 0.325 | 988.3 | 0.115 | BV | 0.049 | 335.30 | 0.087 |
| 53 | 9.161 | | 0.0000 | 0.000 | 7388.4 | 0.860 | VV | 0.048 | 2548.42 | 0.664 |
| 54 | 9.275 | | 0.0000 | 0.000 | 878.5 | 0.102 | VB | 0.049 | 297.27 | 0.078 |
| 55 | 9.423 | | 0.0000 | 0.000 | 3383.3 | 0.394 | BB | 0.053 | 1062.31 | 0.277 |
| 56 | 9.540 | | 0.0000 | 0.000 | 1336.1 | 0.155 | BB | 0.033 | 670.95 | 0.175 |

8734

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.859 | | 0.0000 | 0.000 | 5620.4 | 0.654 | BB | 0.109 | 859.36 | 0.224 |
| 58 | 10.019 | | 0.0000 | 0.000 | 4472.0 | 0.520 | BB | 0.102 | 733.77 | 0.191 |
| 59 | 10.264 | | 0.0000 | 0.000 | 252.6 | 0.029 | BB | 0.039 | 106.72 | 0.028 |
| 60 | 10.315 | | 0.0000 | 0.000 | 171.9 | 0.020 | BB | 0.028 | 102.28 | 0.027 |
| 61 | 10.431 | | 0.0000 | 0.000 | 11598.9 | 1.349 | BB | 0.046 | 4207.25 | 1.097 |
| 62 | 10.955 | | 0.0000 | 0.000 | 3253.8 | 0.379 | BB | 0.038 | 1423.62 | 0.371 |
| 63 | 11.201 | | 0.0000 | 0.000 | 237.3 | 0.028 | BB | 0.038 | 104.37 | 0.027 |
| 64 | 11.560 | | 0.0000 | 0.000 | 201.7 | 0.023 | BB | 0.052 | 64.48 | 0.017 |
| 65 | 11.630 | | 0.0000 | 0.000 | 313.3 | 0.036 | BB | 0.047 | 111.24 | 0.029 |
| 66 | 11.926 | DCB | 6.5914 | 21.324 | 58088.9 | 6.758 | BB | 0.045 | 21745.93 | 5.670 |
| 67 | 12.563 | | 0.0000 | 0.000 | 1064.2 | 0.124 | BB | 0.321 | 55.32 | 0.014 |
| 68 | 13.409 | | 0.0000 | 0.000 | 2176.2 | 0.253 | BB | 0.578 | 62.78 | 0.016 |
| 69 | 13.875 | | 0.0000 | 0.000 | 190.4 | 0.022 | BB | 0.088 | 36.03 | 0.009 |

Total Area = 859533.9, Total Amount = 30.911, Total Height = 383544.5, Sample Units = PPB

Sample Name: **AR4830424A AAAR483AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 07:01:09pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.29R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.456 | | 0.0000 | 0.000 | 822.6 | 0.061 | BB | 0.052 | 263.71 | 0.049 |
| 2 | 3.547 | | 0.0000 | 0.000 | 297.0 | 0.022 | BB | 0.032 | 156.20 | 0.029 |
| 3 | 3.630 | | 0.0000 | 0.000 | 2449.3 | 0.181 | BB | 0.048 | 852.76 | 0.158 |
| 4 | 3.726 | | 0.0000 | 0.000 | 971.7 | 0.072 | BB | 0.039 | 420.58 | 0.078 |
| 5 | 3.826 | | 0.0000 | 0.000 | 361.2 | 0.027 | BB | 0.043 | 140.65 | 0.026 |
| 6 | 3.951 | | 0.0000 | 0.000 | 427.4 | 0.032 | BB | 0.055 | 130.44 | 0.024 |
| 7 | 4.060 TCX | | 8.7226 | 23.002 | 104072.0 | 7.671 | BB | 0.035 | 48941.29 | 9.051 |
| 8 | 4.232 | | 0.0000 | 0.000 | 593.2 | 0.044 | BB | 0.070 | 141.05 | 0.026 |
| 9 | 4.374 | | 0.0000 | 0.000 | 184.9 | 0.014 | BB | 0.037 | 82.66 | 0.015 |
| 10 | 4.474 | | 0.0000 | 0.000 | 1488.3 | 0.110 | BB | 0.063 | 392.56 | 0.073 |
| 11 | 4.606 | | 0.0000 | 0.000 | 1326.2 | 0.098 | BB | 0.036 | 620.05 | 0.115 |
| 12 | 4.681 | | 0.0000 | 0.000 | 798.5 | 0.059 | BB | 0.037 | 361.55 | 0.067 |
| 13 | 4.768 Hcb | | 0.2008 | 0.530 | 4680.6 | 0.345 | BB | 0.036 | 2150.29 | 0.398 |
| 14 | 5.090 | | 0.0000 | 0.000 | 2091.0 | 0.154 | BB | 0.045 | 772.85 | 0.143 |
| 15 | 5.258 | | 0.0000 | 0.000 | 1008.2 | 0.074 | BB | 0.115 | 146.21 | 0.027 |
| 16 | 5.334 | | 0.0000 | 0.000 | 42853.5 | 3.159 | BB | 0.048 | 14836.28 | 2.744 |
| 17 | 5.492 gamma-BHC | | 0.1004 | 0.265 | 1591.0 | 0.117 | BB | 0.033 | 798.08 | 0.148 |
| 18 | 5.625 beta-BHC | | 1.1952 | 3.152 | 7444.9 | 0.549 | BB | 0.026 | 4766.51 | 0.881 |
| 19 | 5.672 | | 0.0000 | 0.000 | 7026.4 | 0.518 | BB | 0.028 | 4246.25 | 0.785 |
| 20 | 5.811 | | 0.0000 | 0.000 | 6101.7 | 0.450 | BV | 0.042 | 2425.08 | 0.448 |
| 21 | 5.959 | | 0.0000 | 0.000 | 112373.7 | 8.283 | VV | 0.056 | 33730.34 | 6.238 |
| 22 | 6.140 | | 0.0000 | 0.000 | 42896.8 | 3.162 | VV | 0.044 | 16108.63 | 2.979 |
| 23 | 6.281 | | 0.0000 | 0.000 | 20007.9 | 1.475 | VV | 0.032 | 10325.51 | 1.909 |
| 24 | 6.328 | | 0.0000 | 0.000 | 15614.7 | 1.151 | VV | 0.036 | 7215.14 | 1.334 |
| 25 | 6.408 | | 0.0000 | 0.000 | 63536.3 | 4.683 | VV | 0.035 | 29910.55 | 5.531 |
| 26 | 6.466 | | 0.0000 | 0.000 | 60535.3 | 4.462 | VV | 0.038 | 26659.77 | 4.930 |
| 27 | 6.517 Aldrin | | 2.7711 | 7.307 | 49179.7 | 3.625 | VB | 0.046 | 17643.36 | 3.263 |
| 28 | 6.663 | | 0.0000 | 0.000 | 1167.1 | 0.086 | BB | 0.063 | 307.96 | 0.057 |
| 29 | 6.767 Telodrin | | 6.0497 | 15.953 | 105953.2 | 7.810 | BB | 0.050 | 35672.69 | 6.597 |
| 30 | 6.930 | | 0.0000 | 0.000 | 80892.4 | 5.962 | BB | 0.043 | 31350.37 | 5.798 |
| 31 | 7.029 | | 0.0000 | 0.000 | 977.0 | 0.072 | BB | 0.025 | 642.98 | 0.119 |
| 32 | 7.129 | | 0.0000 | 0.000 | 11906.8 | 0.878 | BB | 0.026 | 7514.23 | 1.390 |
| 33 | 7.179 | | 0.0000 | 0.000 | 32476.6 | 2.394 | BB | 0.031 | 17442.50 | 3.226 |
| 34 | 7.262 | | 0.0000 | 0.000 | 57626.4 | 4.248 | BB | 0.030 | 31901.63 | 5.900 |
| 35 | 7.324 Hept. epoxide | | 5.7179 | 15.078 | 66571.2 | 4.907 | BB | 0.033 | 33980.47 | 6.284 |
| 36 | 7.422 | | 0.0000 | 0.000 | 5801.8 | 0.428 | BV | 0.030 | 3267.94 | 0.604 |
| 37 | 7.481 | | 0.0000 | 0.000 | 4263.7 | 0.314 | VB | 0.031 | 2316.31 | 0.428 |
| 38 | 7.563 g. Chlordane | | 2.1603 | 5.697 | 26685.2 | 1.967 | BV | 0.036 | 12521.78 | 2.316 |
| 39 | 7.627 | | 0.0000 | 0.000 | 111737.4 | 8.236 | VB | 0.057 | 32410.69 | 5.994 |
| 40 | 7.859 Endosulfan I | | 0.2968 | 0.783 | 3119.4 | 0.230 | BB | 0.033 | 1565.27 | 0.289 |
| 41 | 7.938 | | 0.0000 | 0.000 | 19952.8 | 1.471 | BV | 0.044 | 7591.83 | 1.404 |
| 42 | 8.014 4,4'-DDE | | 2.3533 | 6.206 | 24689.0 | 1.820 | VV | 0.038 | 10964.83 | 2.028 |
| 43 | 8.092 | | 0.0000 | 0.000 | 16807.0 | 1.239 | VV | 0.037 | 7573.38 | 1.401 |
| 44 | 8.165 | | 0.0000 | 0.000 | 46787.1 | 3.449 | VV | 0.044 | 17649.59 | 3.264 |
| 45 | 8.320 | | 0.0000 | 0.000 | 1515.6 | 0.112 | VB | 0.038 | 658.65 | 0.122 |
| 46 | 8.388 | | 0.0000 | 0.000 | 9128.9 | 0.673 | BB | 0.033 | 4609.41 | 0.852 |
| 47 | 8.451 | | 0.0000 | 0.000 | 19672.2 | 1.450 | BB | 0.034 | 9754.57 | 1.804 |
| 48 | 8.625 o,p-DDT | | 0.4393 | 1.158 | 3525.4 | 0.260 | BV | 0.044 | 1341.69 | 0.248 |
| 49 | 8.674 | | 0.0000 | 0.000 | 10524.5 | 0.776 | VB | 0.094 | 1874.60 | 0.347 |
| 50 | 8.907 | | 0.0000 | 0.000 | 43493.3 | 3.206 | BV | 0.066 | 10931.96 | 2.022 |
| 51 | 9.142 4,4'-DDT | | 0.9328 | 2.460 | 11829.2 | 0.872 | VV | 0.065 | 3039.92 | 0.562 |
| 52 | 9.251 | | 0.0000 | 0.000 | 2442.9 | 0.180 | VV | 0.059 | 691.94 | 0.128 |
| 53 | 9.323 Endrin aldehyde | | 0.1875 | 0.494 | 3347.3 | 0.247 | VB | 0.097 | 574.91 | 0.106 |
| 54 | 9.603 | | 0.0000 | 0.000 | 2479.0 | 0.183 | BB | 0.052 | 799.64 | 0.148 |
| 55 | 9.810 | | 0.0000 | 0.000 | 1465.3 | 0.108 | BB | 0.043 | 567.70 | 0.105 |
| 56 | 9.944 | | 0.0000 | 0.000 | 1423.9 | 0.105 | BB | 0.054 | 437.74 | 0.081 |

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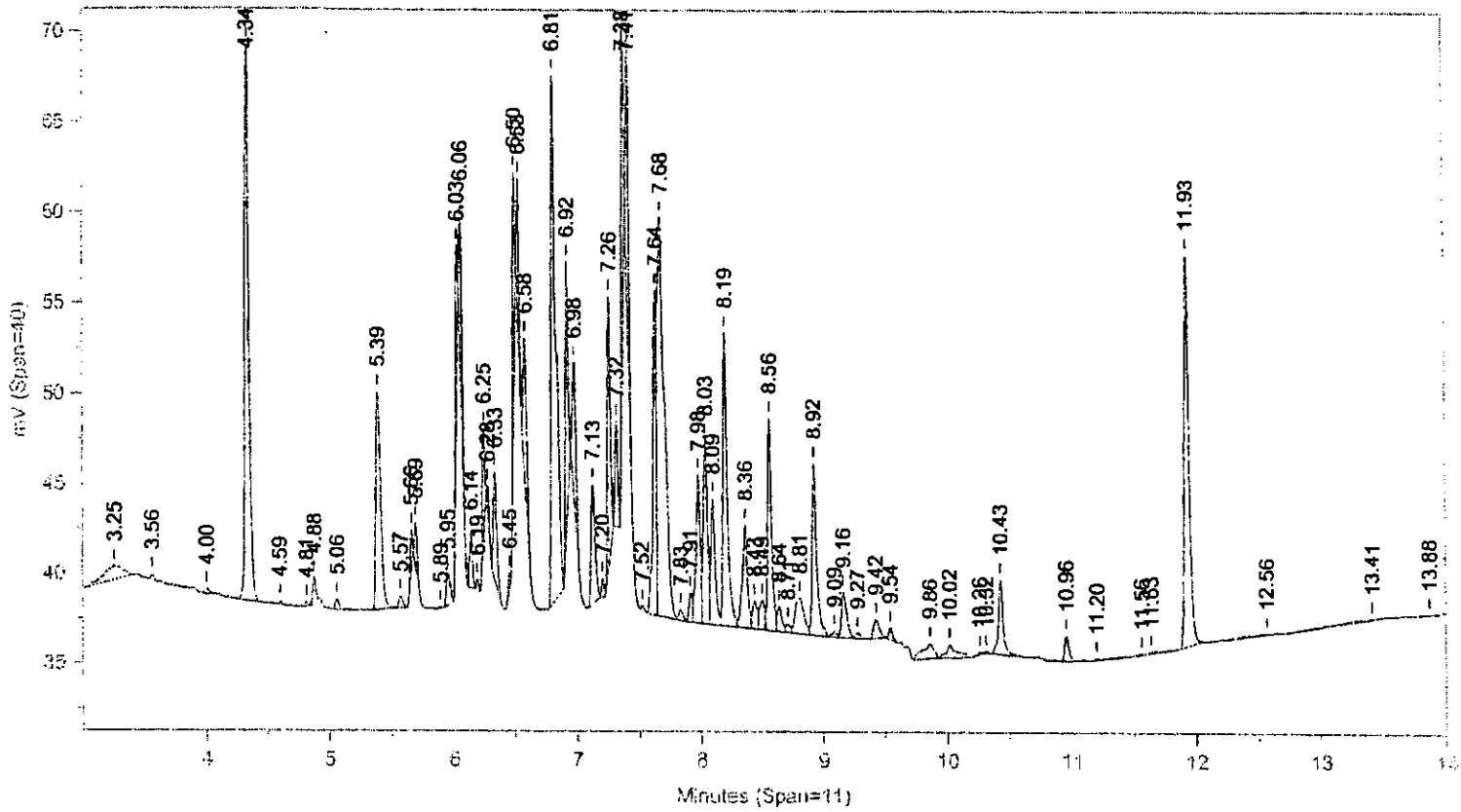
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.342 | Endrin ketone | 0.3420 | 0.902 | 4262.6 | 0.314 | BB | 0.057 | 1235.79 | 0.229 |
| 58 | 10.449 | | 0.0000 | 0.000 | 2163.9 | 0.159 | BB | 0.032 | 1134.04 | 0.210 |
| 59 | 10.622 | | 0.0000 | 0.000 | 1255.5 | 0.093 | BB | 0.119 | 176.10 | 0.033 |
| 60 | 10.793 | | 0.0000 | 0.000 | 442.8 | 0.033 | BB | 0.066 | 112.17 | 0.021 |
| 61 | 11.153 | | 0.0000 | 0.000 | 216.1 | 0.016 | BB | 0.033 | 108.98 | 0.020 |
| 62 | 11.649 | | 0.0000 | 0.000 | 672.6 | 0.050 | BB | 0.076 | 147.68 | 0.027 |
| 63 | 11.820 | | 0.0000 | 0.000 | 283.5 | 0.021 | BB | 0.074 | 63.72 | 0.012 |
| 64 | 12.073 | DCB | 6.4521 | 17.014 | 66634.8 | 4.911 | BB | 0.048 | 23244.16 | 4.299 |
| 65 | 12.577 | | 0.0000 | 0.000 | 1214.9 | 0.090 | BB | 0.096 | 210.44 | 0.039 |
| 66 | 13.424 | | 0.0000 | 0.000 | 299.8 | 0.022 | BB | 0.083 | 60.41 | 0.011 |
| 67 | 13.630 | | 0.0000 | 0.000 | 268.8 | 0.020 | BB | 0.077 | 58.57 | 0.011 |

Total Area = 1356711.0, Total Amount = 37.922, Total Height = 540747.6, Sample Units = PPB

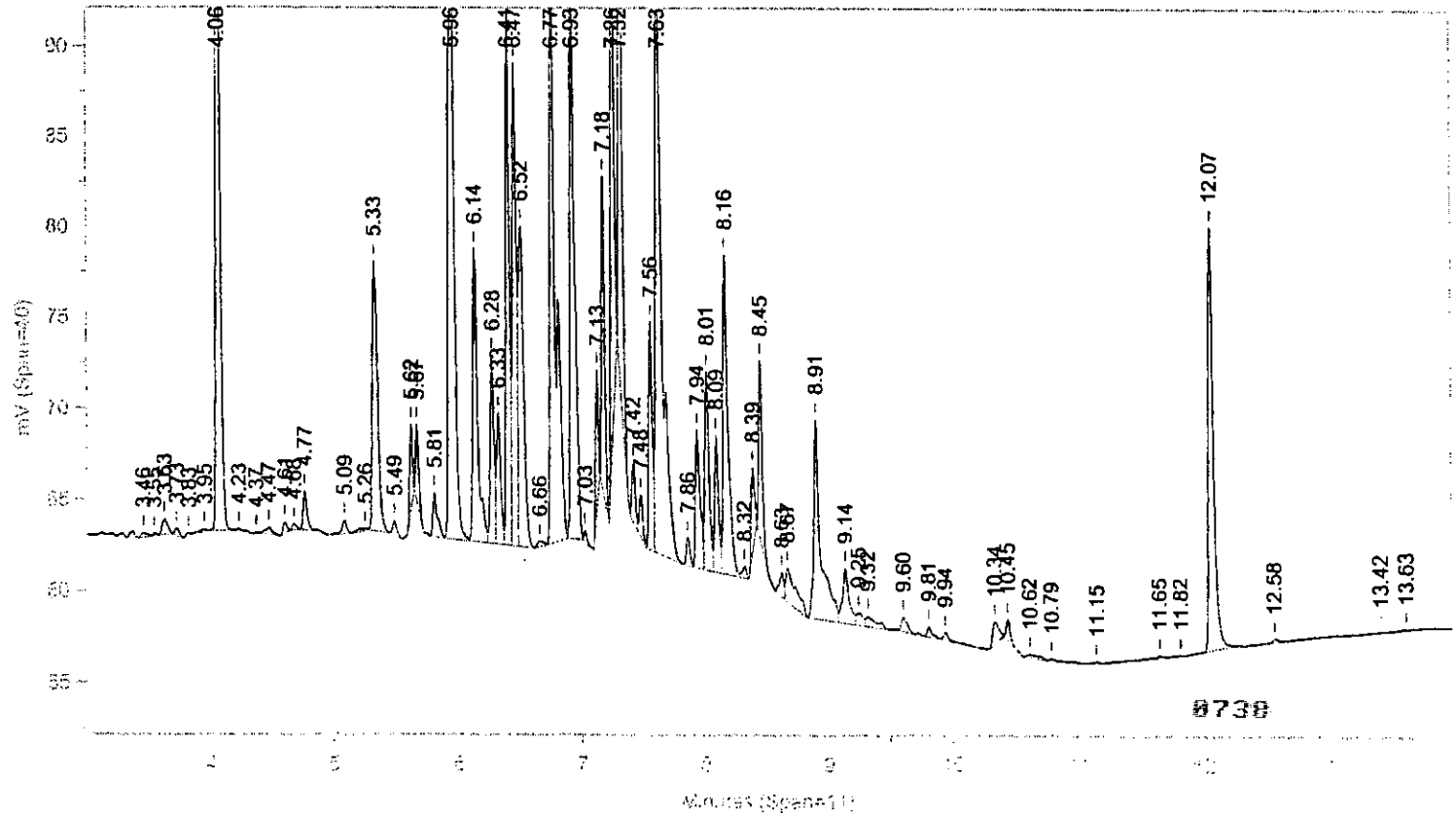
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.29R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 6:47:09 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.29R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 6:47:09 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

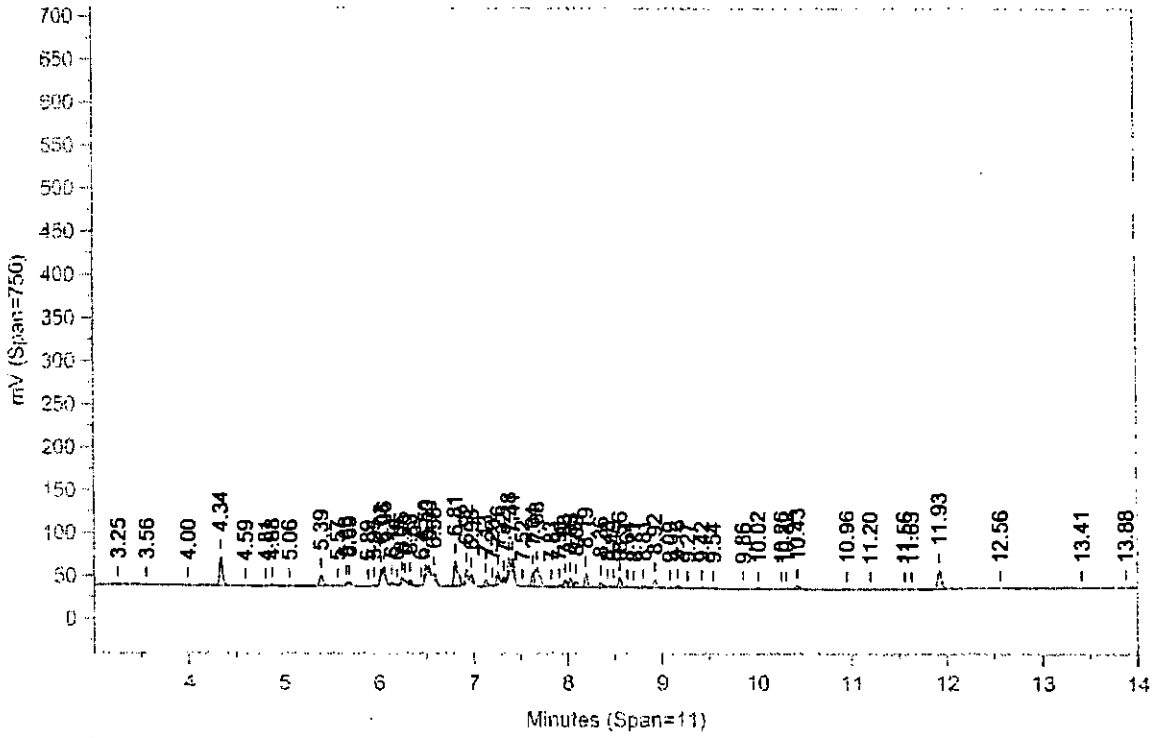
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.335 | 33728 | 8.176 | TCX | 4.06 | 48941 | 8.723 | TCX |
| . | 0 | . | Hcb | 4.768 | 2150 | .201 | Hcb |
| 5.658 | 2333 | .455 | gamma-BHC | 5.492 | 798 | .1 | gamma-BHC |
| . | 0 | . | beta-BHC | 5.625 | 4767 | 1.195 | beta-BHC |
| 6.058 | 9228 | 1.895 | delta-BHC | . | 0 | . | delta-BHC |
| 6.334 | 6048 | 1.115 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.517 | 17643 | 2.771 | Aldrin |
| . | 0 | . | Telodrin | 6.767 | 35673 | 6.05 | Telodrin |
| 7.637 | 18025 | 4.209 | Hept. epoxide | 7.324 | 33980 | 5.718 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.563 | 12522 | 2.16 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.859 | 1565 | .297 | Endosulfan I |
| 7.977 | 8269 | 1.884 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.035 | 10277 | 2.925 | 4,4'-DDE | 8.014 | 10965 | 2.353 | 4,4'-DDE |
| 8.492 | 1649 | .453 | Dieldrin | . | 0 | . | Dieldrin |
| 8.636 | 1397 | .524 | o,p-DDT | 8.625 | 1342 | .439 | o,p-DDT |
| 8.809 | 2023 | 2.585 | Kepone | . | 0 | . | Kepone |
| 9.087 | 335 | .1 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.142 | 3040 | .933 | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.323 | 575 | .187 | Endrin aldehyde |
| . | 0 | . | Endrin ketone | 10.342 | 1236 | .342 | Endrin ketone |
| 11.926 | 21746 | 6.591 | DCB | 12.073 | 23244 | 6.452 | DCB |

Files:
Area File: C:\CPWIN\DATA1\ID16082.29A
Area File: C:\CPWIN\DATA1\ID16082B.29A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\ID16082.CAL
Calibration File B: C:\CPWIN\DATA1\ID16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:22:26 AM
File Reported On: 3/23/2004 at 8:22:31 AM

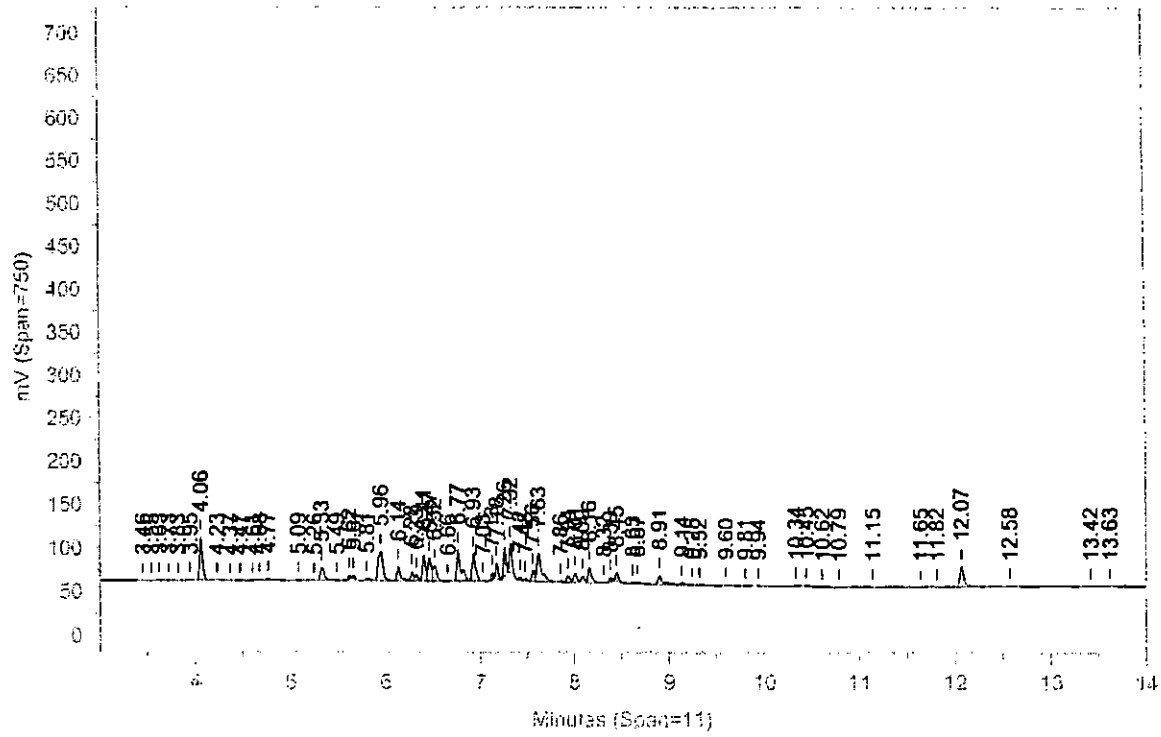
0739

10x REPLOTS

C:\CPWIN\DATA1\1D16082.29R




C:\CPWIN\DATA1\1D16082B.29R



Sample Name: **AR5430424A AAAR543AA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 07:21:44pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.30R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.206 | | 0.0000 | 0.000 | 424.7 | 0.031 | BB | 0.055 | 128.06 | 0.023 |
| 2 | 3.257 | | 0.0000 | 0.000 | 296.9 | 0.022 | BB | 0.035 | 140.48 | 0.026 |
| 3 | 3.556 | | 0.0000 | 0.000 | 512.4 | 0.037 | BB | 0.027 | 318.18 | 0.058 |
| 4 | 3.997 | | 0.0000 | 0.000 | 685.4 | 0.050 | BB | 0.041 | 275.36 | 0.050 |
| 5 | 4.333 TCX | | 8.1966 | 20.010 | 70865.8 | 5.150 | BB | 0.035 | 33813.55 | 6.159 |
| 6 | 4.807 | | 0.0000 | 0.000 | 260.0 | 0.019 | BB | 0.039 | 111.05 | 0.020 |
| 7 | 4.877 | | 0.0000 | 0.000 | 328.6 | 0.024 | BB | 0.025 | 217.12 | 0.040 |
| 8 | 4.923 Hcb | | 0.0452 | 0.110 | 513.6 | 0.037 | BB | 0.027 | 317.29 | 0.058 |
| 9 | 5.394 | | 0.0000 | 0.000 | 1658.4 | 0.121 | BB | 0.048 | 581.26 | 0.106 |
| 10 | 5.573 | | 0.0000 | 0.000 | 147.9 | 0.011 | BB | 0.036 | 69.02 | 0.013 |
| 11 | 5.655 gamma-BHC | | 0.0184 | 0.045 | 146.9 | 0.011 | BB | 0.026 | 94.66 | 0.017 |
| 12 | 5.889 | | 0.0000 | 0.000 | 164.5 | 0.012 | BB | 0.029 | 95.28 | 0.017 |
| 13 | 5.955 | | 0.0000 | 0.000 | 209.4 | 0.015 | BB | 0.035 | 101.02 | 0.018 |
| 14 | 6.028 | | 0.0000 | 0.000 | 627.9 | 0.046 | BB | 0.023 | 454.36 | 0.083 |
| 15 | 6.055 delta-BHC | | 0.0750 | 0.183 | 445.2 | 0.032 | BB | 0.020 | 365.15 | 0.067 |
| 16 | 6.137 | | 0.0000 | 0.000 | 1062.7 | 0.077 | BB | 0.038 | 468.22 | 0.085 |
| 17 | 6.244 | | 0.0000 | 0.000 | 1218.8 | 0.089 | BB | 0.044 | 464.31 | 0.085 |
| 18 | 6.330 Heptachlor | | 0.0454 | 0.111 | 415.8 | 0.030 | BB | 0.028 | 246.58 | 0.045 |
| 19 | 6.495 | | 0.0000 | 0.000 | 68291.7 | 4.963 | BB | 0.050 | 22715.86 | 4.138 |
| 20 | 6.805 | | 0.0000 | 0.000 | 30416.8 | 2.210 | BB | 0.038 | 13234.63 | 2.411 |
| 21 | 6.922 | | 0.0000 | 0.000 | 7571.7 | 0.550 | BB | 0.030 | 4240.63 | 0.772 |
| 22 | 6.976 | | 0.0000 | 0.000 | 1068.8 | 0.078 | BB | 0.025 | 711.43 | 0.130 |
| 23 | 7.124 | | 0.0000 | 0.000 | 2001.9 | 0.145 | BB | 0.038 | 870.50 | 0.159 |
| 24 | 7.201 | | 0.0000 | 0.000 | 348.5 | 0.025 | BB | 0.023 | 251.23 | 0.046 |
| 25 | 7.259 | | 0.0000 | 0.000 | 6053.4 | 0.440 | BB | 0.027 | 3701.80 | 0.674 |
| 26 | 7.319 | | 0.0000 | 0.000 | 46112.2 | 3.351 | BB | 0.029 | 26337.44 | 4.797 |
| 27 | 7.375 | | 0.0000 | 0.000 | 37725.2 | 2.741 | BB | 0.043 | 14679.93 | 2.674 |
| 28 | 7.593 o,p-DDE | | 1.9277 | 4.706 | 7565.8 | 0.550 | BB | 0.025 | 5048.99 | 0.920 |
| 29 | 7.658 | | 0.0000 | 0.000 | 103662.6 | 7.533 | BV | 0.041 | 42041.98 | 7.658 |
| 30 | 7.712 | | 0.0000 | 0.000 | 38747.7 | 2.816 | VB | 0.035 | 18584.38 | 3.385 |
| 31 | 7.829 | | 0.0000 | 0.000 | 1472.2 | 0.107 | BB | 0.031 | 791.64 | 0.144 |
| 32 | 7.910 | | 0.0000 | 0.000 | 6612.5 | 0.481 | BV | 0.033 | 3292.06 | 0.600 |
| 33 | 7.975 a. Chlordane | | 4.1830 | 10.212 | 42821.5 | 3.112 | VV | 0.039 | 18356.66 | 3.344 |
| 34 | 8.032 4,4'-DDE | | 9.2792 | 22.653 | 73551.1 | 5.345 | VV | 0.038 | 32602.66 | 5.938 |
| 35 | 8.090 | | 0.0000 | 0.000 | 26097.0 | 1.896 | VV | 0.037 | 11717.13 | 2.134 |
| 36 | 8.193 | | 0.0000 | 0.000 | 134848.4 | 9.799 | VV | 0.041 | 54816.39 | 9.985 |
| 37 | 8.351 | | 0.0000 | 0.000 | 35049.1 | 2.547 | VV | 0.060 | 9667.26 | 1.761 |
| 38 | 8.428 | | 0.0000 | 0.000 | 59973.2 | 4.358 | VV | 0.050 | 20036.71 | 3.650 |
| 39 | 8.555 | | 0.0000 | 0.000 | 96991.4 | 7.048 | VV | 0.040 | 40761.75 | 7.425 |
| 40 | 8.629 o,p-DDT | | 1.3734 | 3.353 | 8279.3 | 0.602 | VV | 0.038 | 3661.72 | 0.667 |
| 41 | 8.710 | | 0.0000 | 0.000 | 10623.8 | 0.772 | VV | 0.036 | 4895.41 | 0.892 |
| 42 | 8.790 Endrin | | 7.7222 | 18.852 | 92865.7 | 6.748 | VV | 0.060 | 25821.47 | 4.703 |
| 43 | 8.923 | | 0.0000 | 0.000 | 64978.3 | 4.722 | VV | 0.052 | 20969.19 | 3.819 |
| 44 | 9.018 | | 0.0000 | 0.000 | 8924.8 | 0.649 | VV | 0.036 | 4120.53 | 0.751 |
| 45 | 9.085 Endosulfan II | | 1.0129 | 2.473 | 6843.7 | 0.497 | VV | 0.034 | 3382.56 | 0.616 |
| 46 | 9.159 | | 0.0000 | 0.000 | 115356.3 | 8.383 | VV | 0.048 | 40286.41 | 7.338 |
| 47 | 9.272 | | 0.0000 | 0.000 | 11954.9 | 0.869 | VV | 0.049 | 4063.32 | 0.740 |
| 48 | 9.359 | | 0.0000 | 0.000 | 1557.6 | 0.113 | VB | 0.026 | 992.15 | 0.181 |
| 49 | 9.418 | | 0.0000 | 0.000 | 1481.2 | 0.108 | BB | 0.038 | 646.18 | 0.118 |
| 50 | 9.539 | | 0.0000 | 0.000 | 25826.1 | 1.877 | BB | 0.038 | 11236.91 | 2.047 |
| 51 | 9.622 Endrin aldehyde | | 0.5083 | 1.241 | 1929.5 | 0.140 | BB | 0.023 | 1394.38 | 0.254 |
| 52 | 9.678 | | 0.0000 | 0.000 | 1914.8 | 0.139 | BB | 0.027 | 1202.74 | 0.219 |
| 53 | 9.744 | | 0.0000 | 0.000 | 1986.9 | 0.144 | BB | 0.032 | 1044.86 | 0.190 |
| 54 | 9.857 | | 0.0000 | 0.000 | 15082.7 | 1.096 | BB | 0.036 | 7047.84 | 1.284 |
| 55 | 9.943 | | 0.0000 | 0.000 | 2765.5 | 0.201 | BB | 0.030 | 1541.22 | 0.281 |
| 56 | 10.016 | | 0.0000 | 0.000 | 12259.2 | 0.891 | BB | 0.038 | 5443.01 | 0.991 |

8741

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.308 | | 0.0000 | 0.000 | 868.5 | 0.063 | BB | 0.091 | 159.95 | 0.029 |
| 58 | 10.390 | | 0.0000 | 0.000 | 17061.3 | 1.240 | BB | 0.051 | 5538.83 | 1.009 |
| 59 | 10.808 | | 0.0000 | 0.000 | 320.7 | 0.023 | BB | 0.027 | 198.97 | 0.036 |
| 60 | 10.955 | | 0.0000 | 0.000 | 1111.9 | 0.081 | BB | 0.044 | 422.25 | 0.077 |
| 61 | 11.101 | | 0.0000 | 0.000 | 92.7 | 0.007 | BB | 0.038 | 41.17 | 0.007 |
| 62 | 11.201 | | 0.0000 | 0.000 | 468.0 | 0.034 | BB | 0.035 | 223.01 | 0.041 |
| 63 | 11.295 | | 0.0000 | 0.000 | 240.0 | 0.017 | BB | 0.058 | 69.33 | 0.013 |
| 64 | 11.626 | | 0.0000 | 0.000 | 385.8 | 0.028 | BB | 0.051 | 124.97 | 0.023 |
| 65 | 11.924 | DCB | 6.5745 | 16.050 | 58212.7 | 4.230 | BB | 0.045 | 21690.36 | 3.951 |
| 66 | 13.616 | | 0.0000 | 0.000 | 5756.2 | 0.418 | BB | 1.337 | 71.73 | 0.013 |

Total Area = 1376116.0, Total Amount = 40.962, Total Height = 549012.5, Sample Units = PPB

Sample Name: **AR5430424A AAAR543AA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 07:21:44pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.30R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.454 | | 0.0000 | 0.000 | 1199.3 | 0.074 | BB | 0.047 | 427.24 | 0.067 |
| 2 | 3.544 | | 0.0000 | 0.000 | 471.2 | 0.029 | BB | 0.036 | 215.53 | 0.034 |
| 3 | 3.626 | | 0.0000 | 0.000 | 2509.6 | 0.154 | BB | 0.047 | 897.29 | 0.141 |
| 4 | 3.723 | | 0.0000 | 0.000 | 838.2 | 0.051 | BB | 0.039 | 359.68 | 0.056 |
| 5 | 3.822 | | 0.0000 | 0.000 | 674.9 | 0.041 | BB | 0.049 | 228.99 | 0.036 |
| 6 | 4.058 | TCX | 8.8300 | 12.071 | 107173.1 | 6.570 | BB | 0.036 | 49543.80 | 7.782 |
| 7 | 4.370 | | 0.0000 | 0.000 | 282.6 | 0.017 | BB | 0.034 | 138.68 | 0.022 |
| 8 | 4.460 | | 0.0000 | 0.000 | 704.0 | 0.043 | BB | 0.061 | 193.85 | 0.030 |
| 9 | 4.604 | | 0.0000 | 0.000 | 1456.7 | 0.089 | BB | 0.036 | 682.60 | 0.107 |
| 10 | 4.686 | | 0.0000 | 0.000 | 268.6 | 0.016 | BB | 0.037 | 119.84 | 0.019 |
| 11 | 4.766 | Hcb | 0.0406 | 0.056 | 1870.0 | 0.115 | BB | 0.072 | 434.96 | 0.068 |
| 12 | 5.019 | | 0.0000 | 0.000 | 166.6 | 0.010 | BB | 0.042 | 66.60 | 0.010 |
| 13 | 5.234 | | 0.0000 | 0.000 | 1025.3 | 0.063 | BB | 0.101 | 169.46 | 0.027 |
| 14 | 5.333 | | 0.0000 | 0.000 | 2110.9 | 0.129 | BB | 0.051 | 690.29 | 0.108 |
| 15 | 5.668 | | 0.0000 | 0.000 | 3219.5 | 0.197 | BB | 0.083 | 644.84 | 0.101 |
| 16 | 5.744 | | 0.0000 | 0.000 | 792.4 | 0.049 | BB | 0.062 | 213.98 | 0.034 |
| 17 | 5.956 | | 0.0000 | 0.000 | 9015.6 | 0.553 | BV | 0.074 | 2019.88 | 0.317 |
| 18 | 6.136 | | 0.0000 | 0.000 | 3360.9 | 0.206 | VV | 0.043 | 1314.68 | 0.207 |
| 19 | 6.274 | | 0.0000 | 0.000 | 5108.6 | 0.313 | VV | 0.092 | 926.92 | 0.146 |
| 20 | 6.405 | | 0.0000 | 0.000 | 90558.8 | 5.551 | VB | 0.053 | 28334.25 | 4.451 |
| 21 | 6.661 | | 0.0000 | 0.000 | 1537.3 | 0.094 | BB | 0.062 | 410.58 | 0.064 |
| 22 | 6.765 | Telodrin | 2.7240 | 3.724 | 35868.2 | 2.199 | BB | 0.037 | 16062.30 | 2.523 |
| 23 | 6.928 | | 0.0000 | 0.000 | 15684.4 | 0.961 | BB | 0.037 | 7049.98 | 1.107 |
| 24 | 7.127 | | 0.0000 | 0.000 | 1480.4 | 0.091 | BB | 0.024 | 1033.73 | 0.162 |
| 25 | 7.177 | | 0.0000 | 0.000 | 10452.5 | 0.641 | BB | 0.031 | 5570.92 | 0.875 |
| 26 | 7.261 | | 0.0000 | 0.000 | 33886.0 | 2.077 | BB | 0.029 | 19796.21 | 3.110 |
| 27 | 7.318 | Hept. epoxide | 6.3297 | 8.653 | 76900.7 | 4.714 | BB | 0.034 | 37616.29 | 5.909 |
| 28 | 7.421 | | 0.0000 | 0.000 | 11675.8 | 0.716 | BV | 0.031 | 6284.16 | 0.987 |
| 29 | 7.481 | | 0.0000 | 0.000 | 19363.8 | 1.187 | VV | 0.033 | 9786.30 | 1.537 |
| 30 | 7.560 | g. Chlordane | 8.1172 | 11.096 | 109399.4 | 6.706 | VV | 0.039 | 47048.98 | 7.391 |
| 31 | 7.639 | | 0.0000 | 0.000 | 53489.1 | 3.279 | VV | 0.038 | 23411.93 | 3.678 |
| 32 | 7.685 | | 0.0000 | 0.000 | 45529.1 | 2.791 | VB | 0.042 | 18274.71 | 2.871 |
| 33 | 7.857 | Endosulfan I | 0.6513 | 0.890 | 6772.5 | 0.415 | BB | 0.033 | 3434.88 | 0.540 |
| 34 | 7.935 | | 0.0000 | 0.000 | 43245.7 | 2.651 | BV | 0.041 | 17487.29 | 2.747 |
| 35 | 8.012 | 4,4'-DDE | 7.1397 | 9.760 | 75982.1 | 4.658 | VV | 0.038 | 33265.93 | 5.225 |
| 36 | 8.089 | | 0.0000 | 0.000 | 29772.3 | 1.825 | VV | 0.043 | 11494.70 | 1.806 |
| 37 | 8.162 | | 0.0000 | 0.000 | 154885.6 | 9.494 | VV | 0.044 | 59323.32 | 9.319 |
| 38 | 8.293 | | 0.0000 | 0.000 | 14871.7 | 0.912 | VB | 0.056 | 4447.91 | 0.699 |
| 39 | 8.410 | | 0.0000 | 0.000 | 17261.1 | 1.058 | BB | 0.034 | 8526.32 | 1.339 |
| 40 | 8.448 | | 0.0000 | 0.000 | 55982.9 | 3.432 | BB | 0.031 | 29666.19 | 4.660 |
| 41 | 8.590 | Endrin | 1.8385 | 2.513 | 19208.9 | 1.177 | BV | 0.042 | 7589.65 | 1.192 |
| 42 | 8.672 | o,p-DDT | 8.6713 | 11.854 | 73542.6 | 4.508 | VB | 0.046 | 26484.12 | 4.160 |
| 43 | 8.900 | Endosulfan II | 7.9585 | 10.879 | 117921.3 | 7.228 | BV | 0.064 | 30826.53 | 4.842 |
| 44 | 8.994 | | 0.0000 | 0.000 | 18674.4 | 1.145 | VV | 0.046 | 6746.71 | 1.060 |
| 45 | 9.056 | | 0.0000 | 0.000 | 10527.3 | 0.645 | VV | 0.035 | 5057.31 | 0.794 |
| 46 | 9.139 | 4,4'-DDT | 13.2609 | 18.128 | 145961.5 | 8.947 | VV | 0.056 | 43215.34 | 6.788 |
| 47 | 9.270 | | 0.0000 | 0.000 | 18606.1 | 1.141 | VV | 0.053 | 5873.09 | 0.923 |
| 48 | 9.316 | Endrin aldehyde | 1.1262 | 1.540 | 10684.1 | 0.655 | VV | 0.052 | 3453.68 | 0.543 |
| 49 | 9.442 | | 0.0000 | 0.000 | 7914.3 | 0.485 | VB | 0.048 | 2734.40 | 0.430 |
| 50 | 9.600 | | 0.0000 | 0.000 | 34940.0 | 2.142 | BB | 0.049 | 11881.87 | 1.866 |
| 51 | 9.724 | | 0.0000 | 0.000 | 2574.0 | 0.158 | BB | 0.032 | 1358.91 | 0.213 |
| 52 | 9.808 | | 0.0000 | 0.000 | 20708.4 | 1.269 | BB | 0.043 | 8006.20 | 1.258 |
| 53 | 9.941 | | 0.0000 | 0.000 | 17912.2 | 1.098 | BB | 0.046 | 6555.50 | 1.030 |
| 54 | 10.338 | Endrin ketone | 0.0522 | 0.071 | 366.7 | 0.022 | BB | 0.032 | 188.54 | 0.030 |
| 55 | 10.418 | | 0.0000 | 0.000 | 15344.8 | 0.941 | BB | 0.051 | 4979.00 | 0.782 |
| 56 | 10.716 | | 0.0000 | 0.000 | 807.4 | 0.049 | BB | 0.048 | 280.84 | 0.044 |

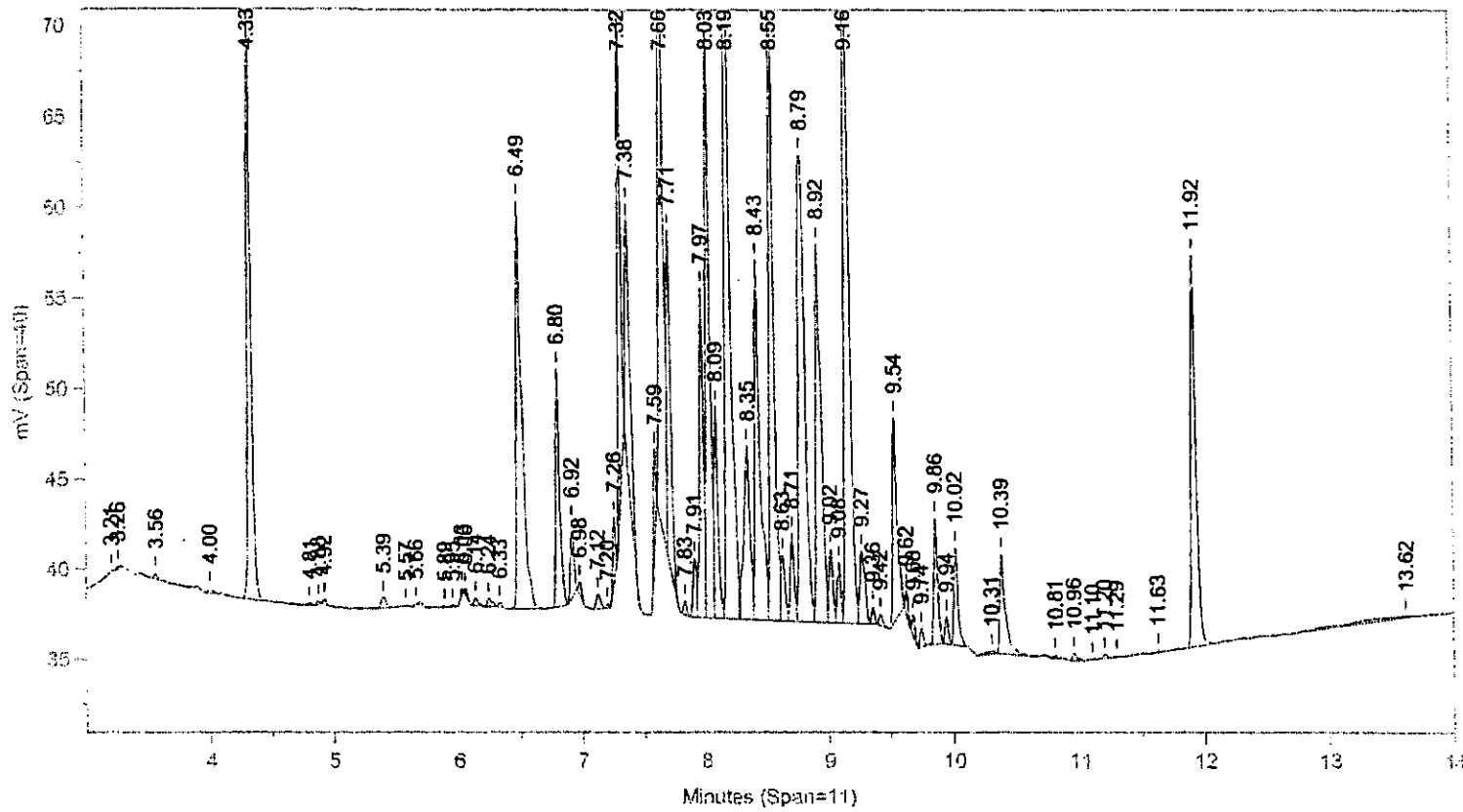
9743

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.951 | | 0.0000 | 0.000 | 401.3 | 0.025 | BB | 0.048 | 139.29 | 0.022 |
| 58 | 11.160 | | 0.0000 | 0.000 | 886.8 | 0.054 | BB | 0.052 | 285.61 | 0.045 |
| 59 | 11.564 | | 0.0000 | 0.000 | 273.8 | 0.017 | BB | 0.091 | 50.23 | 0.008 |
| 60 | 11.647 | | 0.0000 | 0.000 | 347.3 | 0.021 | BB | 0.042 | 138.27 | 0.022 |
| 61 | 12.071 | DCB | 6.4132 | 8.767 | 66711.9 | 4.089 | BB | 0.048 | 23103.89 | 3.629 |
| 62 | 13.558 | | 0.0000 | 0.000 | 210.3 | 0.013 | BB | 0.073 | 48.28 | 0.008 |

Total Area = 1631373.0, Total Amount = 73.153, Total Height = 636613.3, Sample Units = PPB

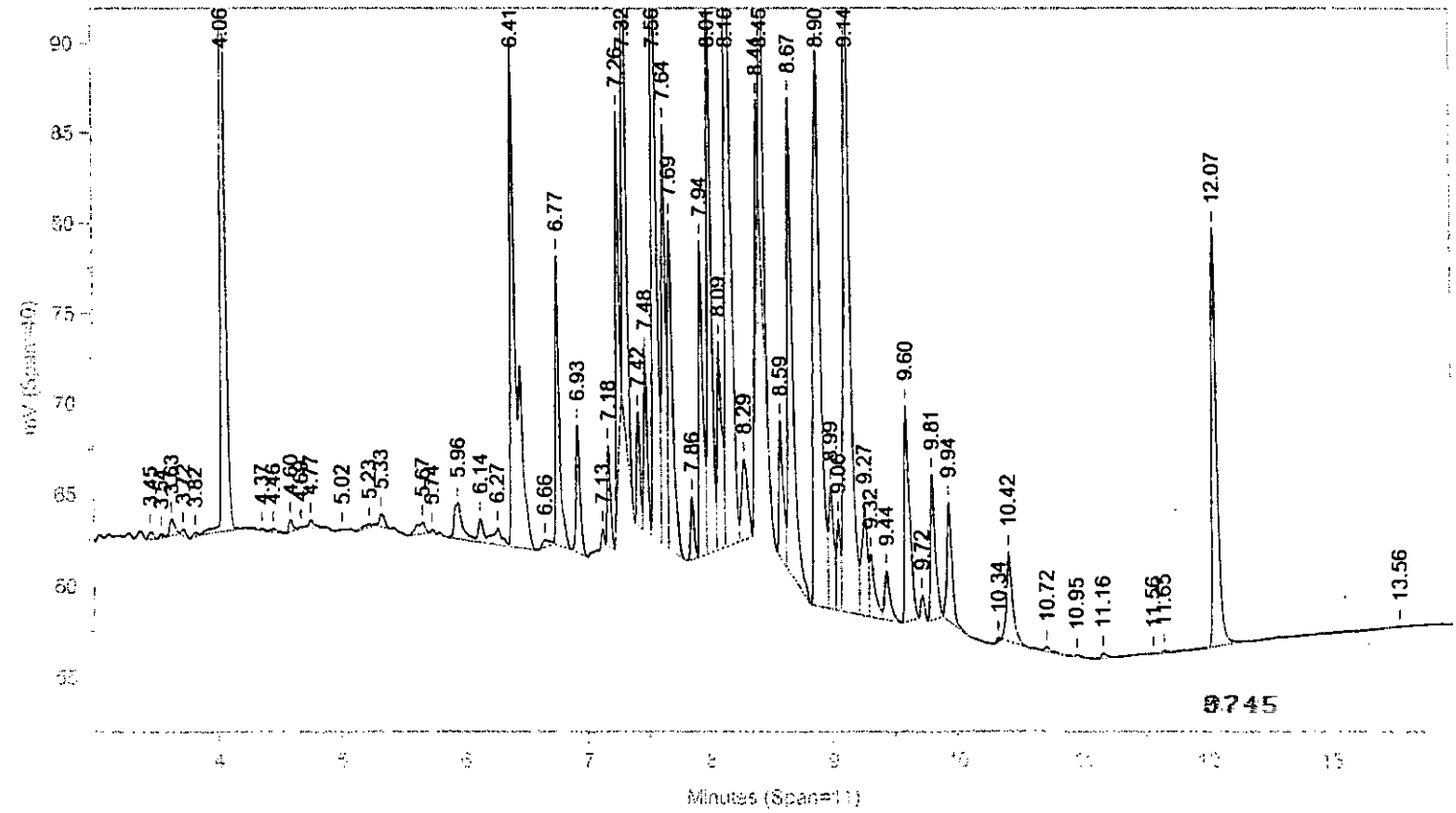
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.30R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 7:07:44 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.30R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 7:07:44 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

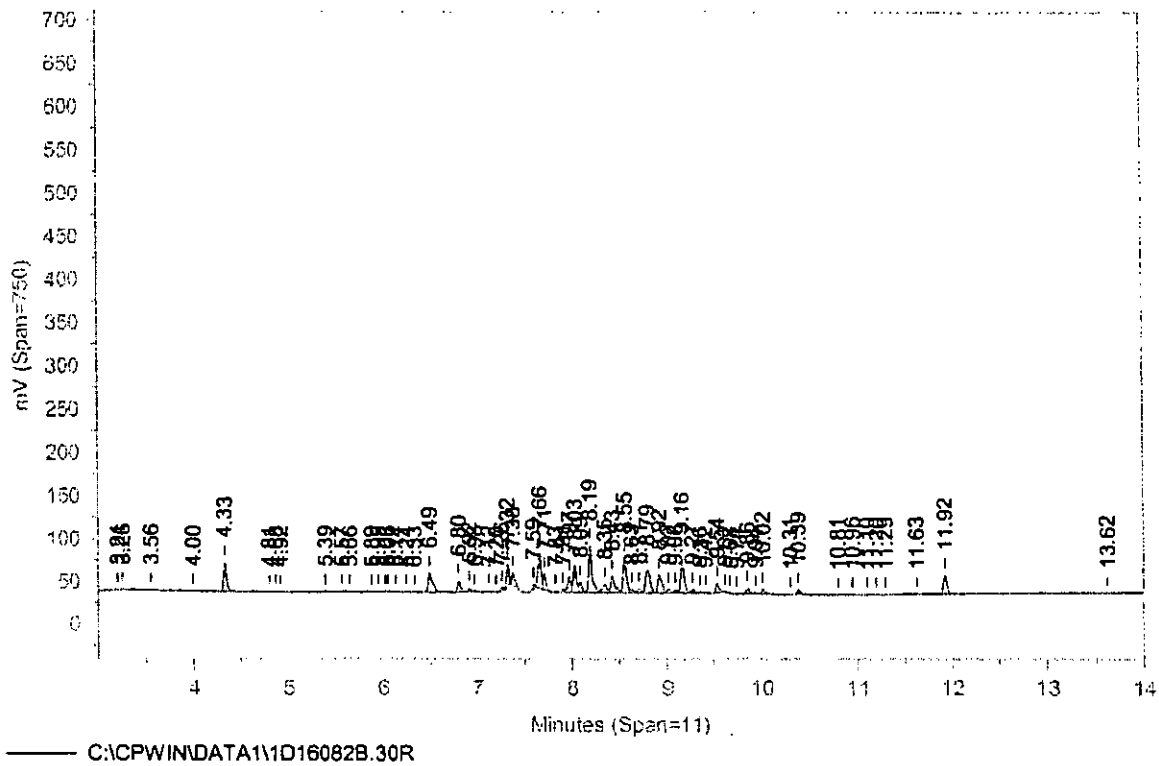
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.333 | 33814 | 8.197 | TCX | 4.058 | 49544 | 8.83 | TCX |
| 4.923 | 317 | .045 | Hcb | 4.766 | 435 | .041 | Hcb |
| 5.655 | 95 | .018 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.055 | 365 | .075 | delta-BHC | . | 0 | . | delta-BHC |
| 6.33 | 247 | .045 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.765 | 16062 | 2.724 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.318 | 37616 | 6.33 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.56 | 47049 | 8.117 | g. Chlordane |
| 7.593 | 5049 | 1.928 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.857 | 3435 | .651 | Endosulfan I |
| 7.975 | 18357 | 4.183 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.032 | 32603 | 9.279 | 4,4'-DDE | 8.012 | 33266 | 7.14 | 4,4'-DDE |
| 8.79 | 25821 | 7.722 | Endrin | 8.59 | 7590 | 1.839 | Endrin |
| 8.629 | 3662 | 1.373 | o,p-DDT | 8.672 | 26484 | 8.671 | o,p-DDT |
| 9.085 | 3383 | 1.013 | Endosulfan II | 8.9 | 30827 | 7.958 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.139 | 43215 | 13.261 | 4,4'-DDT |
| 9.622 | 1394 | .508 | Endrin aldehyde | 9.316 | 3454 | 1.126 | Endrin aldehyde |
| . | 0 | . | Endrin ketone | 10.338 | 189 | .052 | Endrin ketone |
| 11.924 | 21690 | 6.575 | DCB | 12.071 | 23104 | 6.413 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.30A
Area File: C:\CPWIN\DATA1\1D16082B.30A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 8:22:40 AM
File Reported On: 3/23/2004 at 8:22:46 AM

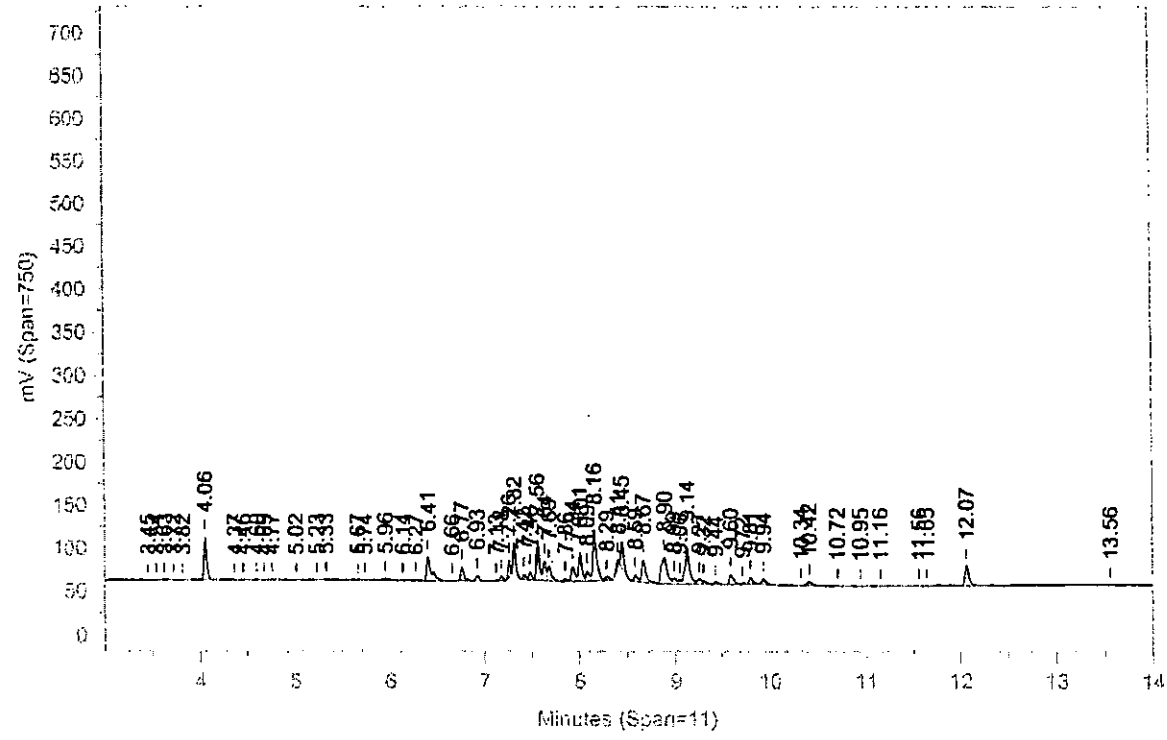
8746

10x REPLOTS

C:\CPWIN\DATA1\1D16082.30R




C:\CPWIN\DATA1\1D16082B.30R



Sample Name: **MDLAX0424B AAMDLAXAA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 07:42:22pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.31R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.281 | | 0.0000 | 0.000 | 8290.6 | 4.945 | BB | 0.218 | 634.04 | 1.266 |
| 2 | 3.444 | | 0.0000 | 0.000 | 454.3 | 0.271 | BB | 0.054 | 140.82 | 0.281 |
| 3 | 3.560 | | 0.0000 | 0.000 | 3311.4 | 1.975 | BB | 0.032 | 1710.39 | 3.416 |
| 4 | 3.896 | | 0.0000 | 0.000 | 972.6 | 0.580 | BB | 0.042 | 383.11 | 0.765 |
| 5 | 4.003 | | 0.0000 | 0.000 | 1427.9 | 0.852 | BB | 0.051 | 464.78 | 0.928 |
| 6 | 4.335 | TCX | 0.8392 | 4.876 | 7515.8 | 4.482 | BB | 0.036 | 3462.05 | 6.914 |
| 7 | 4.802 | | 0.0000 | 0.000 | 729.2 | 0.435 | BB | 0.055 | 218.99 | 0.437 |
| 8 | 5.064 | | 0.0000 | 0.000 | 254.9 | 0.152 | BB | 0.032 | 131.67 | 0.263 |
| 9 | 5.182 | alpha-BHC | 0.1839 | 1.068 | 1729.6 | 1.032 | BB | 0.031 | 945.06 | 1.887 |
| 10 | 5.361 | | 0.0000 | 0.000 | 245.1 | 0.146 | BB | 0.042 | 96.36 | 0.192 |
| 11 | 5.526 | | 0.0000 | 0.000 | 363.9 | 0.217 | BB | 0.036 | 168.93 | 0.337 |
| 12 | 5.652 | gamma-BHC | 0.1738 | 1.010 | 1471.6 | 0.878 | BB | 0.028 | 891.73 | 1.781 |
| 13 | 5.699 | | 0.0000 | 0.000 | 256.5 | 0.153 | BB | 0.024 | 180.60 | 0.361 |
| 14 | 5.785 | beta-BHC | 0.2186 | 1.270 | 1252.1 | 0.747 | BB | 0.034 | 619.19 | 1.237 |
| 15 | 6.041 | delta-BHC | 0.1888 | 1.097 | 1739.2 | 1.037 | BB | 0.032 | 919.58 | 1.836 |
| 16 | 6.341 | Heptachlor | 0.2155 | 1.252 | 2416.5 | 1.441 | BB | 0.034 | 1169.25 | 2.335 |
| 17 | 6.581 | | 0.0000 | 0.000 | 450.5 | 0.269 | BB | 0.059 | 126.68 | 0.253 |
| 18 | 6.766 | Aldrin | 0.2311 | 1.343 | 2242.7 | 1.338 | BB | 0.039 | 968.82 | 1.935 |
| 19 | 6.982 | | 0.0000 | 0.000 | 1062.9 | 0.634 | BB | 0.067 | 265.88 | 0.531 |
| 20 | 7.150 | | 0.0000 | 0.000 | 881.8 | 0.526 | BB | 0.042 | 353.77 | 0.706 |
| 21 | 7.609 | Hept. epoxide | 0.2526 | 1.468 | 2923.6 | 1.744 | BV | 0.045 | 1081.92 | 2.161 |
| 22 | 7.773 | g. Chlordane | 0.2275 | 1.322 | 2303.9 | 1.374 | VB | 0.041 | 936.85 | 1.871 |
| 23 | 7.953 | a. Chlordane | 0.3818 | 2.218 | 6046.2 | 3.606 | BV | 0.060 | 1675.57 | 3.346 |
| 24 | 8.038 | 4,4'-DDE | 0.5090 | 2.957 | 4816.9 | 2.873 | VV | 0.045 | 1788.41 | 3.571 |
| 25 | 8.144 | Endosulfan I | 0.2832 | 1.646 | 4210.0 | 2.511 | VV | 0.063 | 1113.67 | 2.224 |
| 26 | 8.461 | Dieldrin | 0.4852 | 2.819 | 6478.6 | 3.864 | VV | 0.061 | 1767.29 | 3.529 |
| 27 | 8.773 | Endrin | 0.4736 | 2.752 | 3401.4 | 2.029 | VV | 0.036 | 1583.65 | 3.163 |
| 28 | 8.828 | Kepone | 6.0427 | 35.109 | 14626.5 | 8.723 | VV | 0.052 | 4729.02 | 9.444 |
| 29 | 9.070 | Endosulfan II | 0.4765 | 2.768 | 3768.6 | 2.248 | VV | 0.039 | 1591.23 | 3.178 |
| 30 | 9.193 | 4,4'-DDT | 0.4223 | 2.454 | 2412.1 | 1.439 | VB | 0.033 | 1216.07 | 2.429 |
| 31 | 9.423 | | 0.0000 | 0.000 | 5593.7 | 3.336 | BB | 0.077 | 1217.18 | 2.431 |
| 32 | 9.620 | Endrin aldehyde | 0.5189 | 3.015 | 4259.5 | 2.540 | BB | 0.050 | 1423.43 | 2.843 |
| 33 | 9.806 | Methoxychlor | 2.8139 | 16.349 | 14097.4 | 8.408 | BB | 0.051 | 4612.84 | 9.212 |
| 34 | 10.040 | Mirex | 0.2438 | 1.416 | 6820.4 | 4.068 | BB | 0.166 | 686.51 | 1.371 |
| 35 | 10.192 | Endo. sulfate | 0.5317 | 3.089 | 3923.4 | 2.340 | BB | 0.042 | 1567.13 | 3.130 |
| 36 | 10.430 | | 0.0000 | 0.000 | 6619.2 | 3.948 | BB | 0.048 | 2278.76 | 4.551 |
| 37 | 10.561 | Endrin ketone | 0.4310 | 2.504 | 2948.8 | 1.759 | BB | 0.035 | 1404.80 | 2.805 |
| 38 | 10.726 | | 0.0000 | 0.000 | 522.0 | 0.311 | BB | 0.081 | 107.93 | 0.216 |
| 39 | 10.953 | | 0.0000 | 0.000 | 1856.9 | 1.107 | BB | 0.037 | 825.43 | 1.648 |
| 40 | 11.258 | | 0.0000 | 0.000 | 3240.7 | 1.933 | BB | 0.063 | 857.66 | 1.713 |
| 41 | 11.768 | | 0.0000 | 0.000 | 12403.4 | 7.397 | BB | 1.243 | 166.24 | 0.332 |
| 42 | 11.924 | DCB | 1.0668 | 6.198 | 9031.4 | 5.386 | BB | 0.043 | 3519.61 | 7.029 |
| 43 | 13.579 | | 0.0000 | 0.000 | 8298.4 | 4.949 | BB | 1.922 | 71.97 | 0.144 |

Total Area = 167672.0, Total Amount = 17.212, Total Height = 50074.91, Sample Units = PPB

8748

Sample Name: **MDLAX0424B AAMDLAXAA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 07:42:22pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.31R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.456 | | 0.0000 | 0.000 | 1017.1 | 0.506 | BB | 0.043 | 394.83 | 0.611 |
| 2 | 3.547 | | 0.0000 | 0.000 | 459.8 | 0.229 | BB | 0.041 | 188.65 | 0.292 |
| 3 | 3.629 | | 0.0000 | 0.000 | 3603.7 | 1.794 | BB | 0.043 | 1396.08 | 2.161 |
| 4 | 3.721 | | 0.0000 | 0.000 | 1849.0 | 0.920 | BB | 0.040 | 765.45 | 1.185 |
| 5 | 3.816 | | 0.0000 | 0.000 | 359.4 | 0.179 | BB | 0.035 | 169.97 | 0.263 |
| 6 | 3.962 | | 0.0000 | 0.000 | 699.8 | 0.348 | BB | 0.116 | 100.27 | 0.155 |
| 7 | 4.060 | TCX | 0.9690 | 7.827 | 11392.8 | 5.671 | BB | 0.035 | 5437.12 | 8.417 |
| 8 | 4.167 | | 0.0000 | 0.000 | 580.7 | 0.289 | BB | 0.058 | 165.96 | 0.257 |
| 9 | 4.276 | | 0.0000 | 0.000 | 773.5 | 0.385 | BB | 0.046 | 281.32 | 0.436 |
| 10 | 4.376 | | 0.0000 | 0.000 | 154.3 | 0.077 | BB | 0.023 | 111.59 | 0.173 |
| 11 | 4.467 | | 0.0000 | 0.000 | 1558.0 | 0.776 | BB | 0.060 | 433.37 | 0.671 |
| 12 | 4.621 | | 0.0000 | 0.000 | 683.5 | 0.340 | BB | 0.027 | 426.75 | 0.661 |
| 13 | 4.718 | | 0.0000 | 0.000 | 403.3 | 0.201 | BB | 0.058 | 115.61 | 0.179 |
| 14 | 4.881 | | 0.0000 | 0.000 | 914.7 | 0.455 | BB | 0.041 | 367.58 | 0.569 |
| 15 | 4.961 | alpha-BHC | 0.2019 | 1.631 | 2985.7 | 1.486 | BB | 0.029 | 1732.08 | 2.681 |
| 16 | 5.061 | | 0.0000 | 0.000 | 491.1 | 0.244 | BB | 0.049 | 168.21 | 0.260 |
| 17 | 5.224 | | 0.0000 | 0.000 | 1157.7 | 0.576 | BB | 0.084 | 229.72 | 0.356 |
| 18 | 5.305 | | 0.0000 | 0.000 | 771.7 | 0.384 | BB | 0.041 | 310.60 | 0.481 |
| 19 | 5.477 | gamma-BHC | 0.2173 | 1.755 | 3498.0 | 1.741 | BB | 0.034 | 1727.73 | 2.675 |
| 20 | 5.609 | beta-BHC | 0.3177 | 2.566 | 7175.1 | 3.572 | BB | 0.094 | 1266.84 | 1.961 |
| 21 | 5.954 | | 0.0000 | 0.000 | 462.5 | 0.230 | BB | 0.054 | 142.99 | 0.221 |
| 22 | 6.018 | delta-BHC | 0.2349 | 1.897 | 3297.5 | 1.641 | BV | 0.031 | 1750.38 | 2.710 |
| 23 | 6.095 | Heptachlor | 0.2383 | 1.925 | 3816.9 | 1.900 | VV | 0.034 | 1889.09 | 2.925 |
| 24 | 6.252 | | 0.0000 | 0.000 | 2423.0 | 1.206 | VB | 0.089 | 454.05 | 0.703 |
| 25 | 6.468 | | 0.0000 | 0.000 | 3512.4 | 1.748 | BV | 0.089 | 654.77 | 1.014 |
| 26 | 6.539 | Aldrin | 0.2445 | 1.974 | 3185.8 | 1.586 | VB | 0.034 | 1556.40 | 2.410 |
| 27 | 6.658 | | 0.0000 | 0.000 | 5903.6 | 2.939 | BB | 0.110 | 897.88 | 1.390 |
| 28 | 6.900 | | 0.0000 | 0.000 | 3221.5 | 1.604 | BB | 0.097 | 551.47 | 0.854 |
| 29 | 7.082 | | 0.0000 | 0.000 | 991.7 | 0.494 | BB | 0.053 | 313.21 | 0.485 |
| 30 | 7.254 | | 0.0000 | 0.000 | 372.2 | 0.185 | BB | 0.031 | 199.78 | 0.309 |
| 31 | 7.316 | Hept. epoxide | 0.3047 | 2.461 | 4850.2 | 2.414 | BV | 0.045 | 1810.92 | 2.804 |
| 32 | 7.423 | | 0.0000 | 0.000 | 3583.2 | 1.784 | VV | 0.089 | 667.64 | 1.034 |
| 33 | 7.568 | g. Chlordane | 0.2835 | 2.290 | 4643.4 | 2.311 | VV | 0.047 | 1643.39 | 2.544 |
| 34 | 7.703 | | 0.0000 | 0.000 | 1556.7 | 0.775 | VV | 0.063 | 414.29 | 0.641 |
| 35 | 7.759 | a. Chlordane | 0.2494 | 2.015 | 3156.7 | 1.571 | VV | 0.038 | 1382.52 | 2.140 |
| 36 | 7.836 | Endosulfan I | 0.2907 | 2.348 | 4556.0 | 2.268 | VV | 0.050 | 1533.10 | 2.373 |
| 37 | 7.982 | 4,4'-DDE | 0.4815 | 3.889 | 5649.3 | 2.812 | VV | 0.042 | 2243.31 | 3.473 |
| 38 | 8.092 | | 0.0000 | 0.000 | 2158.8 | 1.075 | VV | 0.082 | 438.79 | 0.679 |
| 39 | 8.195 | Dieldrin | 0.4910 | 3.966 | 6516.6 | 3.244 | VV | 0.046 | 2365.23 | 3.662 |
| 40 | 8.333 | | 0.0000 | 0.000 | 1276.5 | 0.635 | VV | 0.067 | 318.29 | 0.493 |
| 41 | 8.425 | | 0.0000 | 0.000 | 772.1 | 0.384 | VB | 0.048 | 267.78 | 0.415 |
| 42 | 8.533 | | 0.0000 | 0.000 | 130.4 | 0.065 | BB | 0.029 | 75.22 | 0.116 |
| 43 | 8.593 | Endrin | 0.4214 | 3.404 | 4976.6 | 2.477 | BV | 0.048 | 1739.74 | 2.693 |
| 44 | 8.739 | 4,4'-DDD | 1.6441 | 13.280 | 15852.2 | 7.891 | VB | 0.049 | 5367.45 | 8.310 |
| 45 | 8.870 | Endosulfan II | 0.4926 | 3.979 | 5532.2 | 2.754 | BV | 0.048 | 1908.15 | 2.954 |
| 46 | 8.975 | | 0.0000 | 0.000 | 10083.9 | 5.020 | VV | 0.095 | 1767.80 | 2.737 |
| 47 | 9.134 | 4,4'-DDT | 0.4800 | 3.877 | 6773.1 | 3.372 | VV | 0.072 | 1564.37 | 2.422 |
| 48 | 9.305 | Endrin aldehyde | 0.5659 | 4.571 | 7129.2 | 3.549 | VB | 0.068 | 1735.33 | 2.687 |
| 49 | 9.516 | | 0.0000 | 0.000 | 604.2 | 0.301 | BB | 0.087 | 116.20 | 0.180 |
| 50 | 9.650 | Endo. sulfate | 0.3291 | 2.658 | 1602.7 | 0.798 | BB | 0.025 | 1062.70 | 1.645 |
| 51 | 9.794 | | 0.0000 | 0.000 | 497.9 | 0.248 | BB | 0.074 | 111.89 | 0.173 |
| 52 | 9.947 | | 0.0000 | 0.000 | 432.2 | 0.215 | BB | 0.033 | 217.77 | 0.337 |
| 53 | 10.013 | Methoxychlor | 2.3108 | 18.665 | 8864.6 | 4.413 | BB | 0.039 | 3744.47 | 5.797 |
| 54 | 10.351 | Endrin ketone | 0.5886 | 4.754 | 5722.8 | 2.849 | BB | 0.045 | 2127.27 | 3.293 |
| 55 | 10.446 | | 0.0000 | 0.000 | 1396.6 | 0.695 | BB | 0.032 | 727.32 | 1.126 |
| 56 | 10.781 | | 0.0000 | 0.000 | 2400.1 | 1.195 | BB | 0.057 | 702.86 | 1.088 |

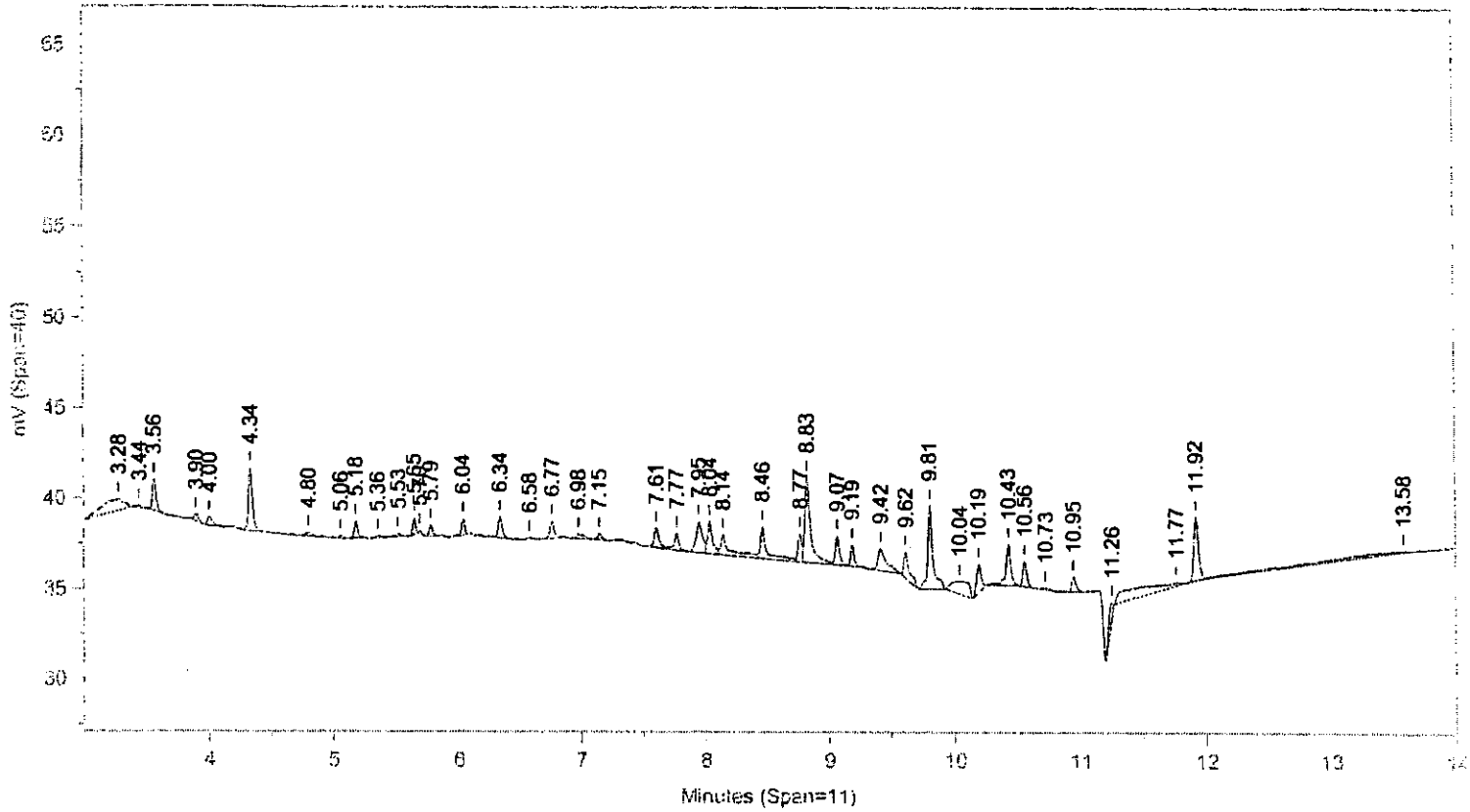
8749

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.950 | | 0.0000 | 0.000 | 5494.4 | 2.735 | BB | 0.235 | 389.38 | 0.603 |
| 58 | 11.653 | | 0.0000 | 0.000 | 595.1 | 0.296 | BB | 0.277 | 35.78 | 0.055 |
| 59 | 12.071 | DCB | 1.0237 | 8.269 | 10343.2 | 5.149 | BB | 0.047 | 3688.02 | 5.710 |
| 60 | 12.581 | | 0.0000 | 0.000 | 887.7 | 0.442 | BB | 0.118 | 125.69 | 0.195 |
| 61 | 13.844 | | 0.0000 | 0.000 | 5131.8 | 2.555 | BB | 0.844 | 101.35 | 0.157 |

Total Area = 200886.4, Total Amount = 12.381, Total Height = 64593.77, Sample Units = PPB

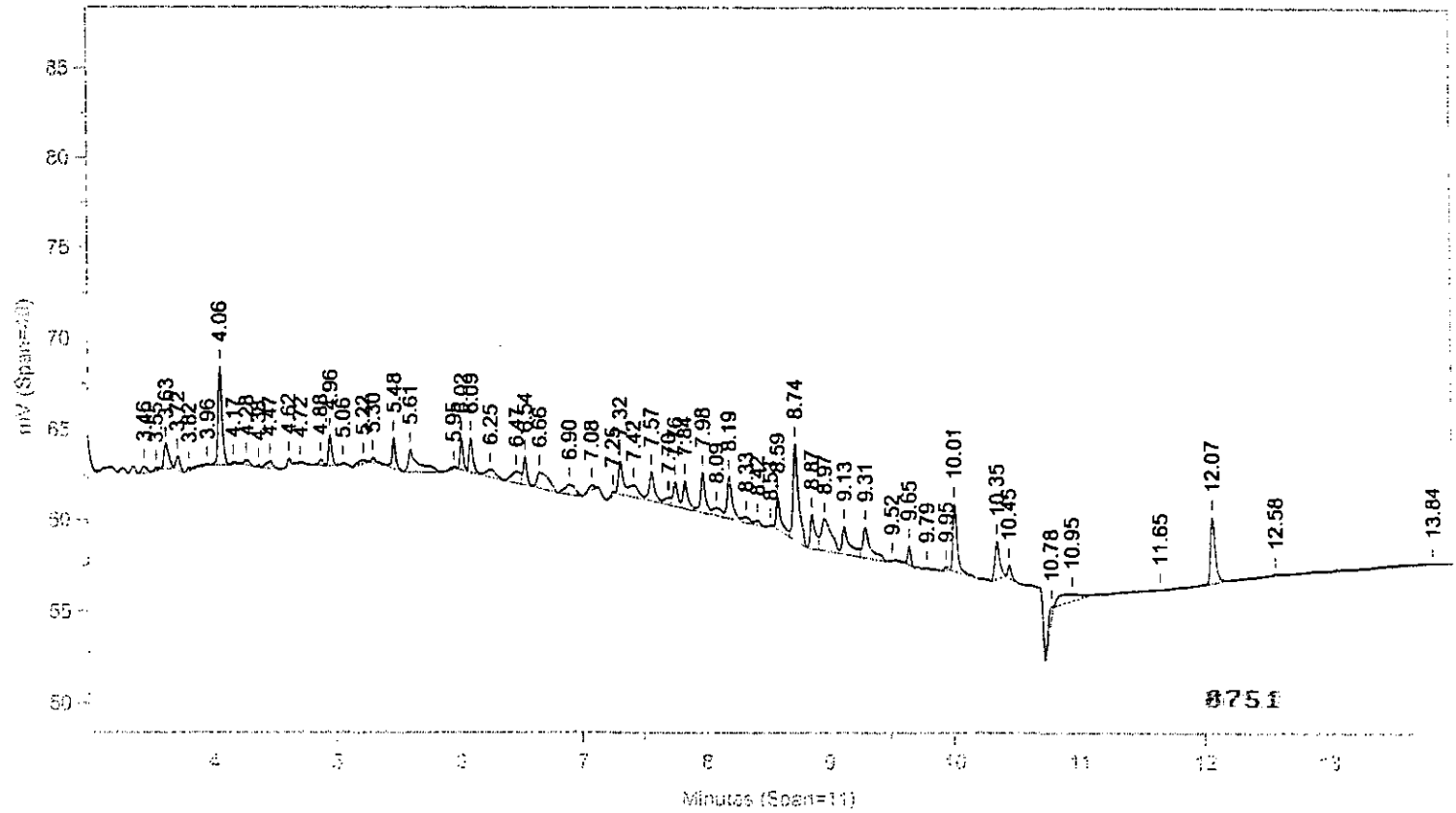
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.31R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 7:28:22 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.31R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 7:28:22 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

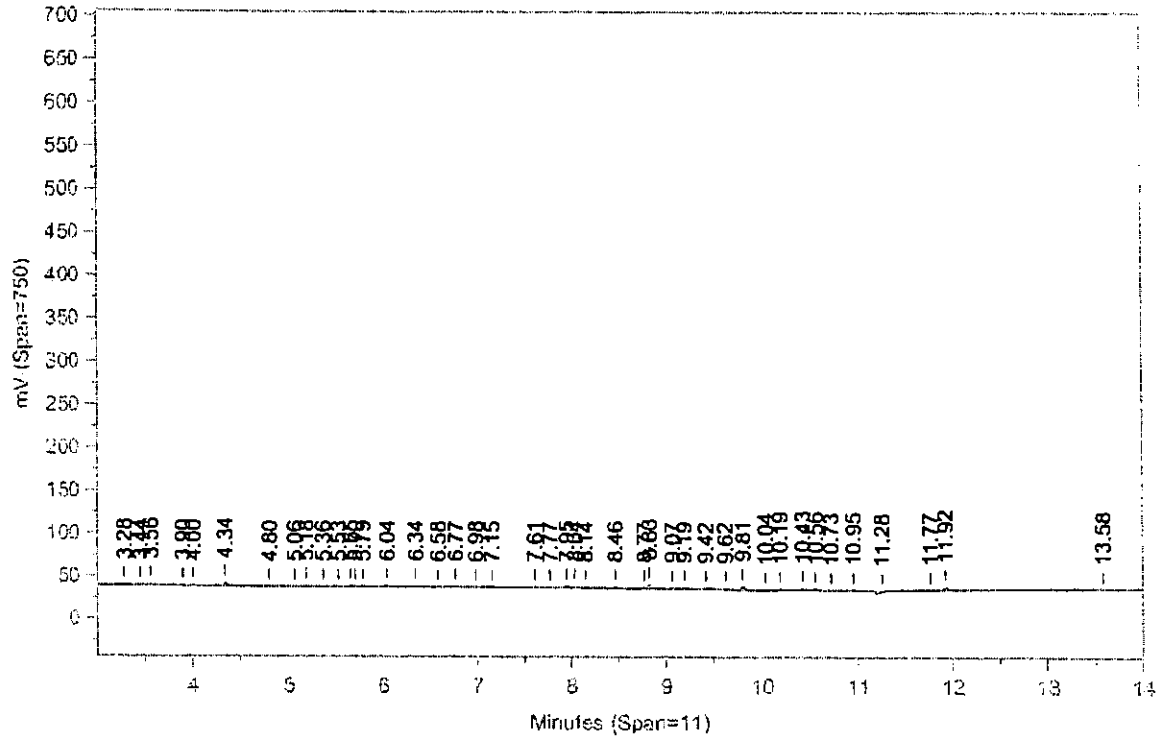
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.335 | 3462 | .839 | TCX | 4.06 | 5437 | .969 | TCX |
| 5.182 | 945 | .184 | alpha-BHC | 4.961 | 1732 | .202 | alpha-BHC |
| 5.652 | 892 | .174 | gamma-BHC | 5.477 | 1728 | .217 | gamma-BHC |
| 5.785 | 619 | .219 | beta-BHC | 5.609 | 1267 | .318 | beta-BHC |
| 6.041 | 920 | .189 | delta-BHC | 6.018 | 1750 | .235 | delta-BHC |
| 6.341 | 1169 | .216 | Heptachlor | 6.095 | 1889 | .238 | Heptachlor |
| 6.766 | 969 | .231 | Aldrin | 6.539 | 1556 | .244 | Aldrin |
| 7.609 | 1082 | .253 | Hept. epoxide | 7.316 | 1811 | .305 | Hept. epoxide |
| 7.773 | 937 | .228 | g. Chlordane | 7.568 | 1643 | .284 | g. Chlordane |
| 7.953 | 1676 | .382 | a. Chlordane | 7.759 | 1383 | .249 | a. Chlordane |
| 8.144 | 1114 | .283 | Endosulfan I | 7.836 | 1533 | .291 | Endosulfan I |
| 8.038 | 1788 | .509 | 4,4'-DDE | 7.982 | 2243 | .481 | 4,4'-DDE |
| 8.461 | 1767 | .485 | Dieldrin | 8.195 | 2365 | .491 | Dieldrin |
| 8.773 | 1584 | .474 | Endrin | 8.593 | 1740 | .421 | Endrin |
| . | 0 | . | 4,4'-DDD | 8.739 | 5367 | 1.644 | 4,4'-DDD |
| 8.828 | 4729 | 6.043 | Kepone | . | 0 | . | Kepone |
| 9.07 | 1591 | .476 | Endosulfan II | 8.87 | 1908 | .493 | Endosulfan II |
| 9.193 | 1216 | .422 | 4,4'-DDT | 9.134 | 1564 | .48 | 4,4'-DDT |
| 9.62 | 1423 | .519 | Endrin aldehyde | 9.305 | 1735 | .566 | Endrin aldehyde |
| 10.192 | 1567 | .532 | Endo. sulfate | 9.65 | 1063 | .329 | Endo. sulfate |
| 9.806 | 4613 | 2.814 | Methoxychlor | 10.013 | 3744 | 2.311 | Methoxychlor |
| 10.04 | 687 | .244 | Mirex | . | 0 | . | Mirex |
| 10.561 | 1405 | .431 | Endrin ketone | 10.351 | 2127 | .589 | Endrin ketone |
| 11.924 | 3520 | 1.067 | DCB | 12.071 | 3688 | 1.024 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.31A
Area File: C:\CPWIN\DATA1\1D16082B.31A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 9:48:30 AM
File Reported On: 3/23/2004 at 9:49:03 AM

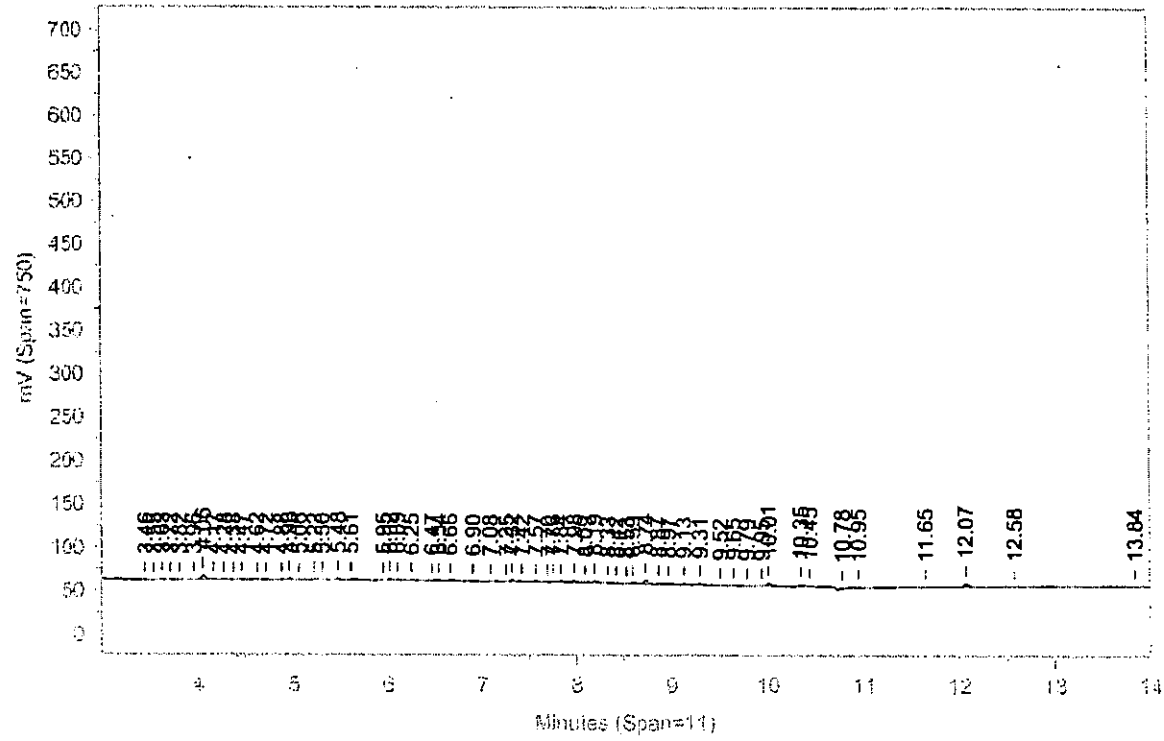
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.31R




C:\CPWIN\DATA1\1D16082B.31R




8753

Sample Name: **MD16X0424A AAMD16XAA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 08:23:32pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.33R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.202 | | 0.0000 | 0.000 | 323.6 | 0.195 | BB | 0.038 | 140.18 | 0.242 |
| 2 | 3.263 | | 0.0000 | 0.000 | 2101.6 | 1.266 | BB | 0.098 | 358.75 | 0.620 |
| 3 | 3.436 | | 0.0000 | 0.000 | 240.7 | 0.145 | BB | 0.036 | 110.90 | 0.192 |
| 4 | 3.557 | | 0.0000 | 0.000 | 585.9 | 0.353 | BB | 0.029 | 337.56 | 0.583 |
| 5 | 3.893 | | 0.0000 | 0.000 | 683.5 | 0.412 | BB | 0.039 | 290.40 | 0.502 |
| 6 | 3.999 | | 0.0000 | 0.000 | 922.0 | 0.555 | BB | 0.044 | 347.16 | 0.600 |
| 7 | 4.333 TCX | | 0.4442 | 12.215 | 4114.2 | 2.478 | BB | 0.037 | 1832.43 | 3.166 |
| 8 | 4.590 | | 0.0000 | 0.000 | 338.5 | 0.204 | BB | 0.033 | 168.87 | 0.292 |
| 9 | 4.809 | | 0.0000 | 0.000 | 874.5 | 0.527 | BB | 0.041 | 355.68 | 0.615 |
| 10 | 4.876 | | 0.0000 | 0.000 | 2110.9 | 1.271 | BB | 0.035 | 993.87 | 1.717 |
| 11 | 5.060 | | 0.0000 | 0.000 | 507.2 | 0.305 | BB | 0.036 | 232.62 | 0.402 |
| 12 | 5.250 | | 0.0000 | 0.000 | 129.7 | 0.078 | BB | 0.041 | 52.51 | 0.091 |
| 13 | 5.395 | | 0.0000 | 0.000 | 5242.0 | 3.157 | BB | 0.049 | 1794.21 | 3.100 |
| 14 | 5.575 | | 0.0000 | 0.000 | 461.3 | 0.278 | BB | 0.040 | 192.20 | 0.332 |
| 15 | 5.656 gamma-BHC | | 0.0565 | 1.553 | 425.2 | 0.256 | BB | 0.024 | 289.89 | 0.501 |
| 16 | 5.693 | | 0.0000 | 0.000 | 1094.1 | 0.659 | BB | 0.028 | 652.93 | 1.128 |
| 17 | 5.957 | | 0.0000 | 0.000 | 932.0 | 0.561 | BB | 0.040 | 392.25 | 0.678 |
| 18 | 6.029 | | 0.0000 | 0.000 | 1047.3 | 0.631 | BB | 0.029 | 609.28 | 1.053 |
| 19 | 6.057 delta-BHC | | 0.2791 | 7.674 | 1918.4 | 1.155 | BB | 0.024 | 1359.02 | 2.348 |
| 20 | 6.139 | | 0.0000 | 0.000 | 188.1 | 0.113 | BB | 0.028 | 113.14 | 0.195 |
| 21 | 6.244 | | 0.0000 | 0.000 | 3406.1 | 2.051 | BB | 0.037 | 1525.51 | 2.636 |
| 22 | 6.332 Heptachlor | | 0.1679 | 4.616 | 1708.8 | 1.029 | BB | 0.031 | 910.76 | 1.574 |
| 23 | 6.495 | | 0.0000 | 0.000 | 659.3 | 0.397 | BB | 0.026 | 423.49 | 0.732 |
| 24 | 6.543 | | 0.0000 | 0.000 | 8023.4 | 4.832 | BB | 0.041 | 3266.93 | 5.645 |
| 25 | 6.806 | | 0.0000 | 0.000 | 3811.2 | 2.295 | BB | 0.048 | 1314.25 | 2.271 |
| 26 | 6.921 | | 0.0000 | 0.000 | 669.8 | 0.403 | BB | 0.025 | 448.96 | 0.776 |
| 27 | 6.976 | | 0.0000 | 0.000 | 1043.9 | 0.629 | BB | 0.033 | 527.97 | 0.912 |
| 28 | 7.150 | | 0.0000 | 0.000 | 3721.9 | 2.241 | BB | 0.048 | 1291.70 | 2.232 |
| 29 | 7.260 | | 0.0000 | 0.000 | 183.6 | 0.111 | BB | 0.029 | 106.17 | 0.183 |
| 30 | 7.319 | | 0.0000 | 0.000 | 1348.8 | 0.812 | BB | 0.031 | 726.19 | 1.255 |
| 31 | 7.592 o,p-DDE | | 0.0429 | 1.180 | 239.3 | 0.144 | BB | 0.035 | 112.36 | 0.194 |
| 32 | 7.660 | | 0.0000 | 0.000 | 1867.8 | 1.125 | BB | 0.035 | 895.69 | 1.548 |
| 33 | 7.962 a. Chlordane | | 0.1881 | 5.173 | 4268.9 | 2.571 | BV | 0.086 | 825.54 | 1.426 |
| 34 | 8.027 4,4'-DDE | | 0.3245 | 8.923 | 6319.1 | 3.806 | VV | 0.092 | 1140.09 | 1.970 |
| 35 | 8.193 | | 0.0000 | 0.000 | 2573.8 | 1.550 | VV | 0.046 | 930.41 | 1.608 |
| 36 | 8.245 | | 0.0000 | 0.000 | 4100.3 | 2.469 | VV | 0.046 | 1488.19 | 2.571 |
| 37 | 8.327 | | 0.0000 | 0.000 | 3819.6 | 2.300 | VV | 0.072 | 880.69 | 1.522 |
| 38 | 8.428 | | 0.0000 | 0.000 | 8327.2 | 5.015 | VV | 0.051 | 2729.23 | 4.716 |
| 39 | 8.561 | | 0.0000 | 0.000 | 3254.9 | 1.960 | VV | 0.076 | 710.04 | 1.227 |
| 40 | 8.710 | | 0.0000 | 0.000 | 2435.1 | 1.467 | VV | 0.051 | 795.13 | 1.374 |
| 41 | 8.786 Endrin | | 0.9853 | 27.095 | 16600.3 | 9.997 | VV | 0.084 | 3294.59 | 5.693 |
| 42 | 8.953 | | 0.0000 | 0.000 | 5406.3 | 3.256 | VB | 0.055 | 1650.16 | 2.851 |
| 43 | 9.083 Endosulfan II | | 0.0944 | 2.595 | 1143.6 | 0.689 | BV | 0.060 | 315.13 | 0.545 |
| 44 | 9.158 | | 0.0000 | 0.000 | 8330.8 | 5.017 | VB | 0.050 | 2764.61 | 4.777 |
| 45 | 9.298 | | 0.0000 | 0.000 | 2763.6 | 1.664 | BV | 0.033 | 1409.34 | 2.435 |
| 46 | 9.359 | | 0.0000 | 0.000 | 811.1 | 0.488 | VB | 0.026 | 529.33 | 0.915 |
| 47 | 9.421 | | 0.0000 | 0.000 | 1405.1 | 0.846 | BB | 0.037 | 628.12 | 1.085 |
| 48 | 9.623 Endrin aldehyde | | 0.4882 | 13.426 | 2411.7 | 1.452 | BB | 0.030 | 1339.37 | 2.314 |
| 49 | 9.678 | | 0.0000 | 0.000 | 1158.8 | 0.698 | BB | 0.027 | 716.91 | 1.239 |
| 50 | 9.746 | | 0.0000 | 0.000 | 637.3 | 0.384 | BB | 0.033 | 322.84 | 0.558 |
| 51 | 9.811 Methoxychlor | | 0.0366 | 1.007 | 87.0 | 0.052 | BB | 0.024 | 60.00 | 0.104 |
| 52 | 9.857 | | 0.0000 | 0.000 | 712.6 | 0.429 | BB | 0.053 | 225.97 | 0.390 |
| 53 | 10.017 | | 0.0000 | 0.000 | 11706.5 | 7.050 | BB | 0.051 | 3847.96 | 6.649 |
| 54 | 10.262 | | 0.0000 | 0.000 | 234.2 | 0.141 | BB | 0.032 | 120.95 | 0.209 |
| 55 | 10.313 | | 0.0000 | 0.000 | 224.3 | 0.135 | BB | 0.029 | 129.28 | 0.223 |
| 56 | 10.391 | | 0.0000 | 0.000 | 1101.4 | 0.663 | BB | 0.025 | 741.00 | 1.280 |

0754

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.427 | | 0.0000 | 0.000 | 3046.1 | 1.834 | BB | 0.026 | 1929.08 | 3.333 |
| 58 | 10.858 | | 0.0000 | 0.000 | 771.8 | 0.465 | BB | 0.036 | 357.48 | 0.618 |
| 59 | 10.953 | | 0.0000 | 0.000 | 6164.8 | 3.713 | BB | 0.037 | 2757.50 | 4.765 |
| 60 | 11.200 | | 0.0000 | 0.000 | 1797.3 | 1.082 | BB | 0.036 | 833.50 | 1.440 |
| 61 | 11.623 | | 0.0000 | 0.000 | 1320.2 | 0.795 | BB | 0.064 | 342.53 | 0.592 |
| 62 | 11.924 | DCB | 0.5288 | 14.542 | 4772.0 | 2.874 | BB | 0.046 | 1744.60 | 3.014 |
| 63 | 12.730 | | 0.0000 | 0.000 | 3957.5 | 2.383 | BB | 0.845 | 78.09 | 0.135 |
| 64 | 13.723 | | 0.0000 | 0.000 | 3460.7 | 2.084 | BB | 0.916 | 63.00 | 0.109 |

Total Area = 166048.5, Total Amount = 3.636, Total Height = 57874.47, Sample Units = PPB

Sample Name: **MD16X0424A AAMD16XAA ICAL 048199999**
Acquired from CP16–H5262B via port 2 on 3/22/04 08:23:32pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.33R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.460 | | 0.0000 | 0.000 | 1143.1 | 0.497 | BB | 0.049 | 389.06 | 0.527 |
| 2 | 3.549 | | 0.0000 | 0.000 | 530.3 | 0.231 | BB | 0.040 | 221.45 | 0.300 |
| 3 | 3.629 | | 0.0000 | 0.000 | 2656.1 | 1.156 | BB | 0.045 | 990.82 | 1.342 |
| 4 | 3.722 | | 0.0000 | 0.000 | 1453.6 | 0.632 | BB | 0.044 | 554.79 | 0.751 |
| 5 | 3.813 | | 0.0000 | 0.000 | 359.0 | 0.156 | BB | 0.029 | 203.78 | 0.276 |
| 6 | 3.964 | | 0.0000 | 0.000 | 515.1 | 0.224 | BB | 0.122 | 70.48 | 0.095 |
| 7 | 4.058 | TCX | 0.5030 | 7.463 | 6341.1 | 2.759 | BB | 0.037 | 2822.13 | 3.822 |
| 8 | 4.164 | | 0.0000 | 0.000 | 315.0 | 0.137 | BB | 0.031 | 172.01 | 0.233 |
| 9 | 4.228 | | 0.0000 | 0.000 | 119.0 | 0.052 | BB | 0.020 | 101.23 | 0.137 |
| 10 | 4.274 | | 0.0000 | 0.000 | 867.8 | 0.378 | BB | 0.049 | 295.96 | 0.401 |
| 11 | 4.379 | | 0.0000 | 0.000 | 200.0 | 0.087 | BB | 0.025 | 130.88 | 0.177 |
| 12 | 4.471 | | 0.0000 | 0.000 | 2019.6 | 0.879 | BB | 0.066 | 506.30 | 0.686 |
| 13 | 4.623 | | 0.0000 | 0.000 | 400.9 | 0.174 | BB | 0.035 | 190.60 | 0.258 |
| 14 | 4.686 | | 0.0000 | 0.000 | 823.1 | 0.358 | BB | 0.043 | 320.88 | 0.435 |
| 15 | 4.766 | Hcb | 0.1353 | 2.007 | 3072.9 | 1.337 | BB | 0.035 | 1448.13 | 1.961 |
| 16 | 4.883 | | 0.0000 | 0.000 | 561.9 | 0.244 | BB | 0.046 | 203.35 | 0.275 |
| 17 | 5.085 | | 0.0000 | 0.000 | 1193.3 | 0.519 | BB | 0.074 | 268.03 | 0.363 |
| 18 | 5.245 | | 0.0000 | 0.000 | 1040.5 | 0.453 | BB | 0.110 | 157.62 | 0.213 |
| 19 | 5.334 | | 0.0000 | 0.000 | 6941.1 | 3.020 | BB | 0.055 | 2093.89 | 2.836 |
| 20 | 5.487 | gamma-BHC | 0.0231 | 0.342 | 469.9 | 0.204 | BB | 0.043 | 183.35 | 0.248 |
| 21 | 5.624 | beta-BHC | 0.1652 | 2.451 | 1062.1 | 0.462 | BB | 0.027 | 658.70 | 0.892 |
| 22 | 5.671 | | 0.0000 | 0.000 | 1728.2 | 0.752 | BB | 0.030 | 945.28 | 1.280 |
| 23 | 5.758 | | 0.0000 | 0.000 | 208.2 | 0.091 | BB | 0.026 | 131.75 | 0.178 |
| 24 | 5.808 | | 0.0000 | 0.000 | 1133.9 | 0.493 | BB | 0.041 | 457.35 | 0.619 |
| 25 | 5.958 | | 0.0000 | 0.000 | 17899.2 | 7.787 | BV | 0.063 | 4727.62 | 6.402 |
| 26 | 6.140 | | 0.0000 | 0.000 | 6726.9 | 2.927 | VV | 0.048 | 2351.96 | 3.185 |
| 27 | 6.278 | | 0.0000 | 0.000 | 6524.9 | 2.839 | VV | 0.059 | 1843.50 | 2.496 |
| 28 | 6.407 | | 0.0000 | 0.000 | 3862.9 | 1.681 | VV | 0.040 | 1599.17 | 2.166 |
| 29 | 6.465 | | 0.0000 | 0.000 | 8732.2 | 3.799 | VB | 0.074 | 1977.49 | 2.678 |
| 30 | 6.660 | | 0.0000 | 0.000 | 5471.1 | 2.380 | BB | 0.053 | 1726.98 | 2.339 |
| 31 | 6.764 | Teladrin | 0.2385 | 3.538 | 2408.0 | 1.048 | BB | 0.029 | 1406.15 | 1.904 |
| 32 | 6.824 | | 0.0000 | 0.000 | 624.4 | 0.272 | BB | 0.030 | 342.43 | 0.464 |
| 33 | 6.927 | | 0.0000 | 0.000 | 4040.8 | 1.758 | BB | 0.047 | 1431.16 | 1.938 |
| 34 | 7.078 | | 0.0000 | 0.000 | 583.8 | 0.254 | BB | 0.047 | 205.72 | 0.279 |
| 35 | 7.252 | | 0.0000 | 0.000 | 769.0 | 0.335 | BB | 0.028 | 451.25 | 0.611 |
| 36 | 7.319 | Hept. epoxide | 0.2597 | 3.852 | 4543.9 | 1.977 | BV | 0.049 | 1543.06 | 2.090 |
| 37 | 7.421 | | 0.0000 | 0.000 | 4631.4 | 2.015 | VV | 0.105 | 733.98 | 0.994 |
| 38 | 7.553 | g. Chlordane | 0.4427 | 6.569 | 8590.9 | 3.738 | VV | 0.056 | 2566.14 | 3.475 |
| 39 | 7.693 | | 0.0000 | 0.000 | 3038.2 | 1.322 | VV | 0.093 | 547.28 | 0.741 |
| 40 | 7.846 | Endosulfan I | 0.1018 | 1.511 | 2806.4 | 1.221 | VV | 0.087 | 537.04 | 0.727 |
| 41 | 7.972 | 4,4'-DDE | 0.1011 | 1.499 | 1793.1 | 0.780 | VV | 0.063 | 470.84 | 0.638 |
| 42 | 8.125 | | 0.0000 | 0.000 | 3066.8 | 1.334 | VV | 0.065 | 791.90 | 1.072 |
| 43 | 8.161 | | 0.0000 | 0.000 | 2107.5 | 0.917 | VV | 0.037 | 942.97 | 1.277 |
| 44 | 8.207 | Dieldrin | 0.3605 | 5.349 | 4767.3 | 2.074 | VV | 0.046 | 1736.67 | 2.352 |
| 45 | 8.290 | | 0.0000 | 0.000 | 3481.6 | 1.515 | VV | 0.077 | 755.83 | 1.024 |
| 46 | 8.413 | | 0.0000 | 0.000 | 6450.6 | 2.806 | VB | 0.039 | 2759.57 | 3.737 |
| 47 | 8.540 | | 0.0000 | 0.000 | 362.6 | 0.158 | BB | 0.048 | 126.53 | 0.171 |
| 48 | 8.591 | Endrin | 0.1299 | 1.928 | 1562.9 | 0.680 | BV | 0.049 | 536.43 | 0.726 |
| 49 | 8.673 | o,p-DDT | 1.0714 | 15.897 | 8616.4 | 3.749 | VV | 0.044 | 3272.34 | 4.431 |
| 50 | 8.737 | 4,4'-DDD | 0.4425 | 6.566 | 5359.7 | 2.332 | VB | 0.062 | 1444.65 | 1.956 |
| 51 | 8.883 | Endosulfan II | 0.5252 | 7.793 | 7906.9 | 3.440 | BV | 0.065 | 2034.34 | 2.755 |
| 52 | 8.974 | | 0.0000 | 0.000 | 7632.1 | 3.320 | VV | 0.084 | 1514.32 | 2.051 |
| 53 | 9.138 | 4,4'-DDT | 0.7845 | 11.639 | 8490.1 | 3.694 | VB | 0.055 | 2556.50 | 3.462 |
| 54 | 9.250 | | 0.0000 | 0.000 | 3494.7 | 1.520 | BB | 0.034 | 1704.22 | 2.308 |
| 55 | 9.320 | Endrin aldehyde | 0.2834 | 4.204 | 1791.3 | 0.779 | BB | 0.034 | 868.97 | 1.177 |
| 56 | 9.633 | Endo. sulfate | 0.5336 | 7.918 | 4235.9 | 1.843 | BB | 0.041 | 1723.22 | 2.334 |

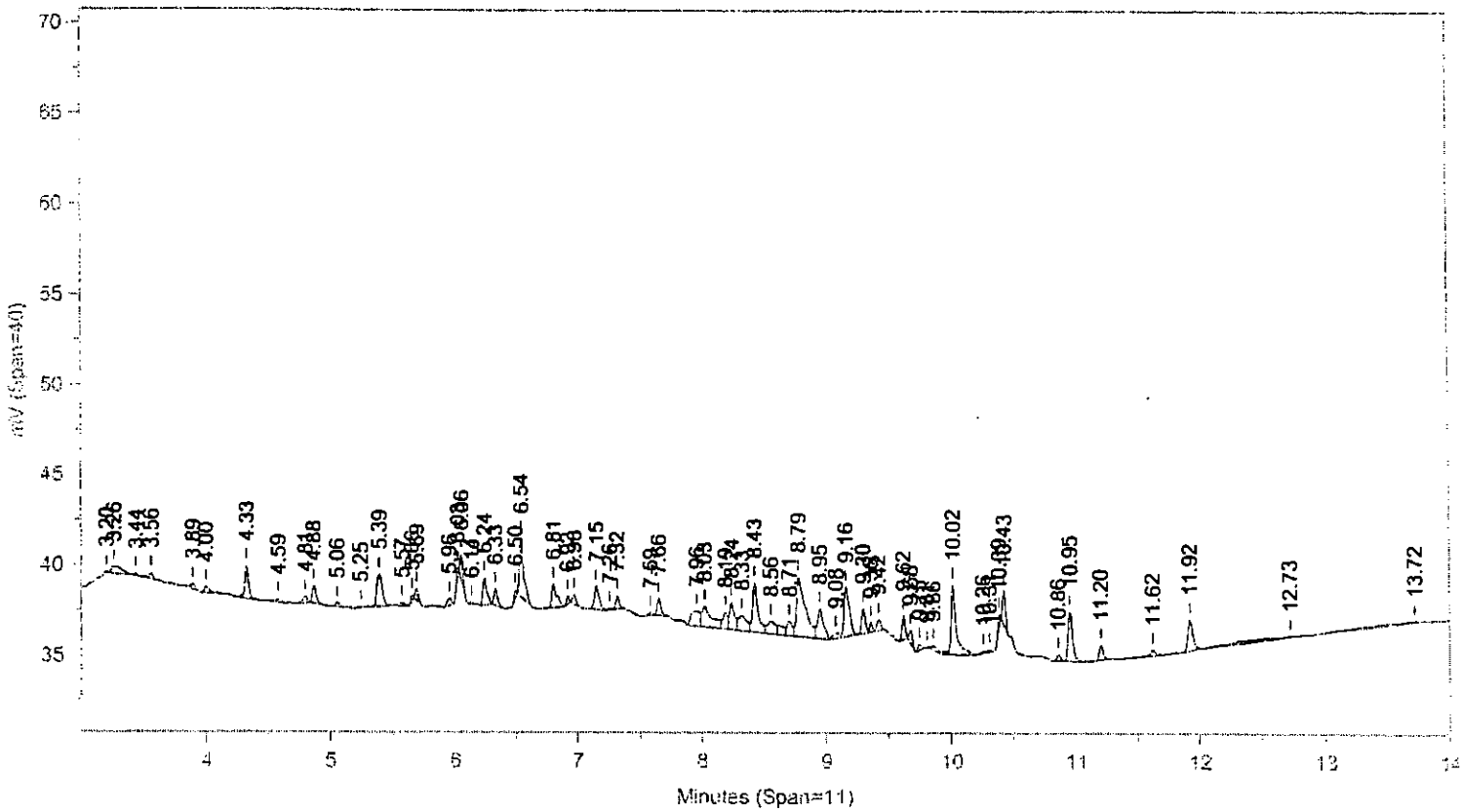
#756

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.725 | | 0.0000 | 0.000 | 1500.9 | 0.653 | BB | 0.034 | 745.11 | 1.009 |
| 58 | 9.800 | | 0.0000 | 0.000 | 734.5 | 0.320 | BB | 0.030 | 407.79 | 0.552 |
| 59 | 9.942 | | 0.0000 | 0.000 | 11776.3 | 5.123 | BB | 0.048 | 4080.58 | 5.526 |
| 60 | 10.340 | Endrin ketone | 0.1261 | 1.871 | 1046.9 | 0.455 | BB | 0.038 | 455.83 | 0.617 |
| 61 | 10.447 | | 0.0000 | 0.000 | 13728.7 | 5.973 | BB | 0.068 | 3387.70 | 4.588 |
| 62 | 10.791 | | 0.0000 | 0.000 | 348.4 | 0.152 | BB | 0.039 | 148.29 | 0.201 |
| 63 | 10.954 | | 0.0000 | 0.000 | 973.9 | 0.424 | BB | 0.040 | 408.26 | 0.553 |
| 64 | 11.161 | | 0.0000 | 0.000 | 2539.1 | 1.105 | BB | 0.042 | 996.92 | 1.350 |
| 65 | 11.650 | | 0.0000 | 0.000 | 945.1 | 0.411 | BB | 0.048 | 325.50 | 0.441 |
| 66 | 11.904 | | 0.0000 | 0.000 | 133.5 | 0.058 | BB | 0.038 | 58.21 | 0.079 |
| 67 | 12.071 | DCB | 0.5124 | 7.603 | 5348.5 | 2.327 | BB | 0.048 | 1846.09 | 2.500 |
| 68 | 12.590 | | 0.0000 | 0.000 | 1049.2 | 0.456 | BB | 0.145 | 120.87 | 0.164 |
| 69 | 12.898 | | 0.0000 | 0.000 | 204.6 | 0.089 | BB | 0.060 | 56.49 | 0.077 |
| 70 | 13.863 | | 0.0000 | 0.000 | 1997.1 | 0.869 | BB | 0.578 | 57.59 | 0.078 |

Total Area = 229855.9, Total Amount = 6.74, Total Height = 73843.3, Sample Units = PPB

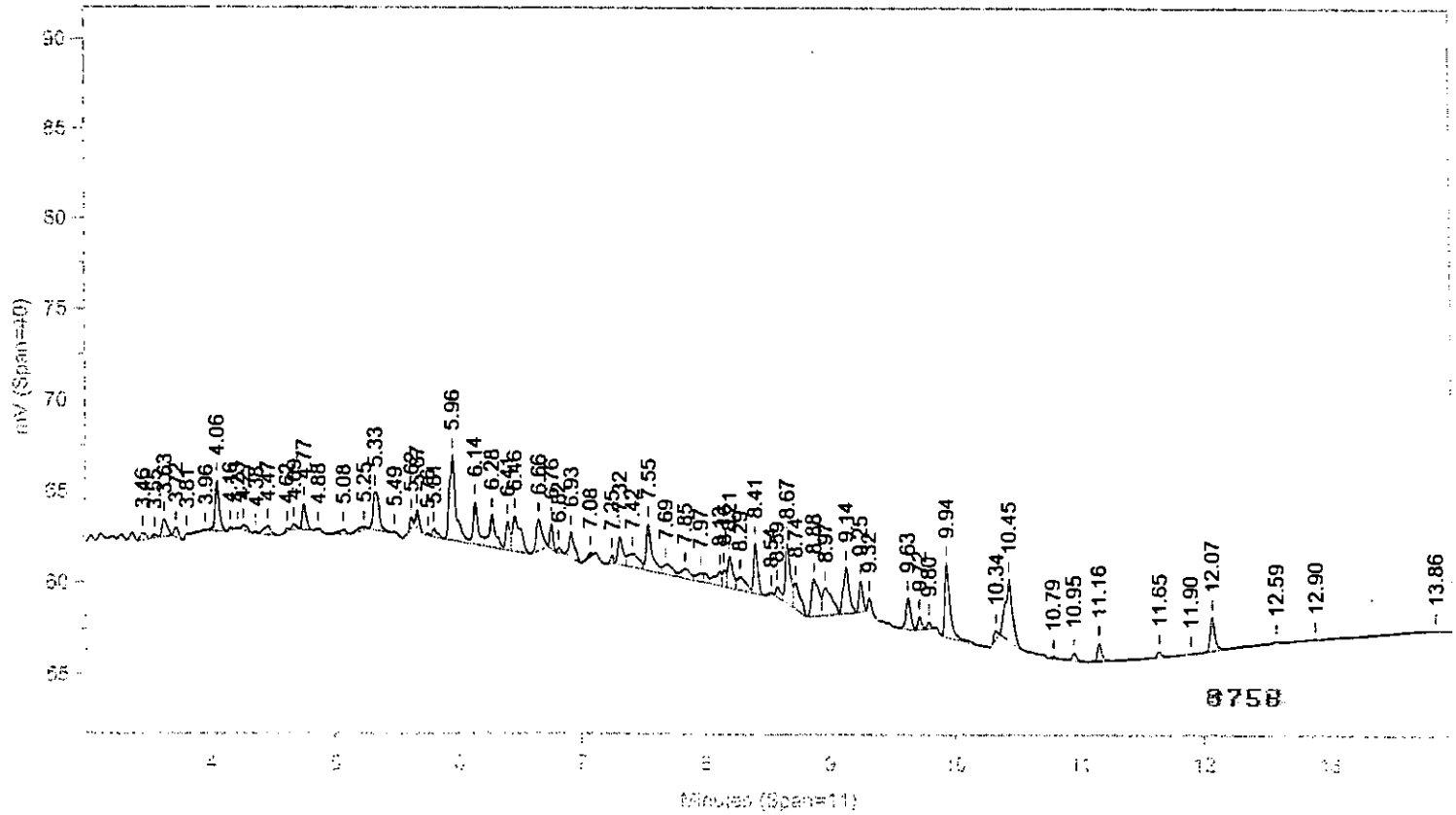
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.33R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 8:09:32 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.33R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 8:09:32 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

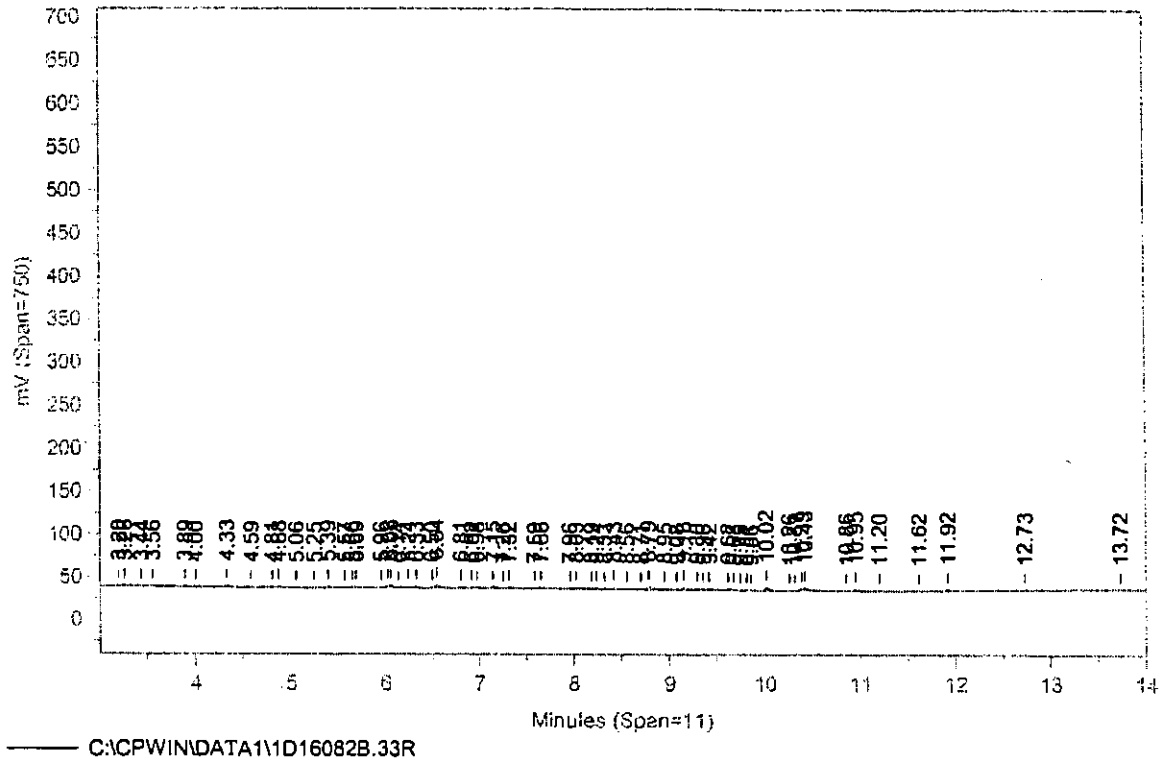
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.333 | 1832 | .444 | TCX | 4.058 | 2822 | .503 | TCX |
| . | 0 | . | Hcb | 4.766 | 1448 | .135 | Hcb |
| 5.656 | 290 | .056 | gamma-BHC | 5.487 | 183 | .023 | gamma-BHC |
| . | 0 | . | beta-BHC | 5.624 | 659 | .165 | beta-BHC |
| 6.057 | 1359 | .279 | delta-BHC | . | 0 | . | delta-BHC |
| 6.332 | 911 | .168 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.764 | 1406 | .238 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.319 | 1543 | .26 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.553 | 2566 | .443 | g. Chlordane |
| 7.592 | 112 | .043 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.846 | 537 | .102 | Endosulfan I |
| 7.962 | 826 | .188 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.027 | 1140 | .324 | 4,4'-DDE | 7.972 | 471 | .101 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.207 | 1737 | .361 | Dieldrin |
| 8.786 | 3295 | .985 | Endrin | 8.591 | 536 | .13 | Endrin |
| . | 0 | . | o,p-DDT | 8.673 | 3272 | 1.071 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.737 | 1445 | .443 | 4,4'-DDD |
| 9.083 | 315 | .094 | Endosulfan II | 8.883 | 2034 | .525 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.138 | 2557 | .784 | 4,4'-DDT |
| 9.623 | 1339 | .488 | Endrin aldehyde | 9.32 | 869 | .283 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.633 | 1723 | .534 | Endo. sulfate |
| 9.811 | 60 | .037 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.34 | 456 | .126 | Endrin ketone |
| 11.924 | 1745 | .529 | DCB | 12.071 | 1846 | .512 | DCB |

Files:
Area File: C:\CPWIN\DATA1\ID16082.33A
Area File: C:\CPWIN\DATA1\ID16082B.33A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\ID16082.CAL
Calibration File B: C:\CPWIN\DATA1\ID16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 9:50:48 AM
File Reported On: 3/23/2004 at 9:51:39 AM

Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.33R

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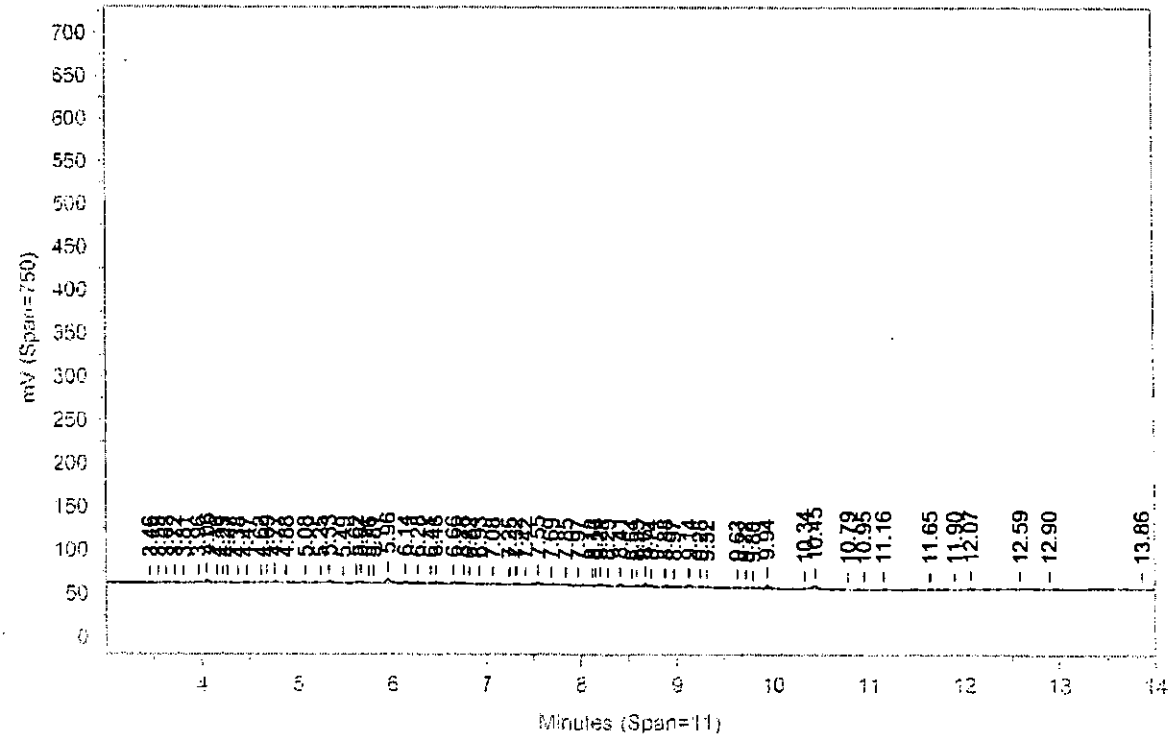



8768

Sample Name: **MDTXX03B AAMDTXXAA ICAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 08:44:04pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.34R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.206 | | 0.0000 | 0.000 | 287.5 | 0.265 | BB | 0.038 | 126.66 | 0.334 |
| 2 | 3.305 | | 0.0000 | 0.000 | 2297.1 | 2.121 | BB | 0.100 | 383.21 | 1.012 |
| 3 | 3.555 | | 0.0000 | 0.000 | 366.9 | 0.339 | BB | 0.027 | 227.21 | 0.600 |
| 4 | 3.996 | | 0.0000 | 0.000 | 628.3 | 0.580 | BB | 0.039 | 267.35 | 0.706 |
| 5 | 4.085 | | 0.0000 | 0.000 | 690.3 | 0.637 | BB | 0.038 | 299.82 | 0.792 |
| 6 | 4.331 | TCX | 0.8767 | 19.308 | 7887.5 | 7.283 | BB | 0.036 | 3616.55 | 9.549 |
| 7 | 5.057 | | 0.0000 | 0.000 | 180.1 | 0.166 | BB | 0.037 | 81.90 | 0.216 |
| 8 | 5.807 | beta-BHC | 0.0160 | 0.353 | 217.5 | 0.201 | BB | 0.080 | 45.39 | 0.120 |
| 9 | 6.543 | | 0.0000 | 0.000 | 1388.5 | 1.282 | BB | 0.039 | 589.99 | 1.558 |
| 10 | 6.864 | | 0.0000 | 0.000 | 605.1 | 0.559 | BB | 0.125 | 80.82 | 0.213 |
| 11 | 6.971 | | 0.0000 | 0.000 | 192.9 | 0.178 | BB | 0.028 | 116.26 | 0.307 |
| 12 | 7.146 | | 0.0000 | 0.000 | 491.4 | 0.454 | BB | 0.040 | 207.21 | 0.547 |
| 13 | 7.263 | | 0.0000 | 0.000 | 130.8 | 0.121 | BB | 0.039 | 55.64 | 0.147 |
| 14 | 7.571 | o,p-DDE | 0.0227 | 0.499 | 164.6 | 0.152 | BB | 0.046 | 59.34 | 0.157 |
| 15 | 7.944 | a. Chlordane | 0.2379 | 5.239 | 6639.5 | 6.131 | BV | 0.106 | 1043.86 | 2.756 |
| 16 | 8.140 | Endosulfan I | 0.1534 | 3.379 | 2483.9 | 2.294 | VV | 0.069 | 603.18 | 1.593 |
| 17 | 8.223 | | 0.0000 | 0.000 | 2552.6 | 2.357 | VV | 0.088 | 482.68 | 1.274 |
| 18 | 8.315 | | 0.0000 | 0.000 | 1606.7 | 1.484 | VV | 0.056 | 476.25 | 1.257 |
| 19 | 8.410 | | 0.0000 | 0.000 | 2995.3 | 2.766 | VV | 0.065 | 770.22 | 2.034 |
| 20 | 8.457 | Dieldrin | 0.1938 | 4.269 | 2322.0 | 2.144 | VV | 0.055 | 705.94 | 1.864 |
| 21 | 8.577 | | 0.0000 | 0.000 | 3948.5 | 3.646 | VV | 0.069 | 955.19 | 2.522 |
| 22 | 8.664 | | 0.0000 | 0.000 | 3001.1 | 2.771 | VV | 0.046 | 1079.41 | 2.850 |
| 23 | 8.799 | Endrin | 0.3284 | 7.233 | 4877.2 | 4.504 | VV | 0.074 | 1098.06 | 2.899 |
| 24 | 8.876 | | 0.0000 | 0.000 | 2672.6 | 2.468 | VV | 0.043 | 1034.23 | 2.731 |
| 25 | 8.928 | | 0.0000 | 0.000 | 2048.7 | 1.892 | VV | 0.053 | 642.66 | 1.697 |
| 26 | 9.000 | | 0.0000 | 0.000 | 1120.5 | 1.035 | VV | 0.035 | 539.77 | 1.425 |
| 27 | 9.052 | Endosulfan II | 0.1816 | 3.999 | 1121.3 | 1.035 | VV | 0.031 | 606.37 | 1.601 |
| 28 | 9.163 | | 0.0000 | 0.000 | 3120.1 | 2.881 | VV | 0.060 | 862.13 | 2.276 |
| 29 | 9.208 | 4,4'-DDT | 0.3818 | 8.408 | 2525.9 | 2.332 | VB | 0.038 | 1099.39 | 2.903 |
| 30 | 9.416 | | 0.0000 | 0.000 | 2715.6 | 2.508 | BB | 0.041 | 1095.83 | 2.893 |
| 31 | 9.487 | | 0.0000 | 0.000 | 1236.0 | 1.141 | BB | 0.029 | 702.09 | 1.854 |
| 32 | 9.576 | | 0.0000 | 0.000 | 2629.4 | 2.428 | BB | 0.043 | 1012.22 | 2.673 |
| 33 | 9.646 | Endrin aldehyde | 0.1501 | 3.305 | 1328.8 | 1.227 | BB | 0.054 | 411.65 | 1.087 |
| 34 | 9.737 | | 0.0000 | 0.000 | 815.3 | 0.753 | BB | 0.026 | 518.76 | 1.370 |
| 35 | 9.788 | Methoxychlor | 0.4648 | 10.238 | 1557.1 | 1.438 | BB | 0.034 | 761.99 | 2.012 |
| 36 | 9.866 | | 0.0000 | 0.000 | 314.0 | 0.290 | BB | 0.025 | 209.11 | 0.552 |
| 37 | 9.920 | | 0.0000 | 0.000 | 1581.6 | 1.461 | BB | 0.048 | 546.09 | 1.442 |
| 38 | 10.050 | Mirex | 0.3963 | 8.729 | 3077.2 | 2.842 | BB | 0.046 | 1115.98 | 2.947 |
| 39 | 10.107 | | 0.0000 | 0.000 | 498.3 | 0.460 | BB | 0.027 | 308.58 | 0.815 |
| 40 | 10.165 | Endo. sulfate | 0.1440 | 3.171 | 668.8 | 0.618 | BB | 0.026 | 424.39 | 1.121 |
| 41 | 10.263 | | 0.0000 | 0.000 | 1274.2 | 1.177 | BB | 0.031 | 686.12 | 1.812 |
| 42 | 10.343 | | 0.0000 | 0.000 | 589.5 | 0.544 | BB | 0.032 | 305.31 | 0.806 |
| 43 | 10.427 | | 0.0000 | 0.000 | 8527.5 | 7.874 | BB | 0.036 | 3939.64 | 10.402 |
| 44 | 10.516 | | 0.0000 | 0.000 | 2152.4 | 1.988 | BB | 0.034 | 1046.90 | 2.764 |
| 45 | 10.641 | | 0.0000 | 0.000 | 651.4 | 0.602 | BB | 0.026 | 425.49 | 1.123 |
| 46 | 10.706 | | 0.0000 | 0.000 | 1537.4 | 1.420 | BB | 0.036 | 717.75 | 1.895 |
| 47 | 10.786 | | 0.0000 | 0.000 | 184.8 | 0.171 | BB | 0.021 | 145.96 | 0.385 |
| 48 | 10.951 | | 0.0000 | 0.000 | 2745.3 | 2.535 | BB | 0.035 | 1303.04 | 3.440 |
| 49 | 11.213 | | 0.0000 | 0.000 | 321.4 | 0.297 | BB | 0.040 | 132.88 | 0.351 |
| 50 | 11.291 | | 0.0000 | 0.000 | 557.2 | 0.515 | BB | 0.046 | 201.34 | 0.532 |
| 51 | 11.429 | | 0.0000 | 0.000 | 308.3 | 0.285 | BB | 0.056 | 91.18 | 0.241 |
| 52 | 11.583 | | 0.0000 | 0.000 | 178.5 | 0.165 | BB | 0.053 | 56.59 | 0.149 |
| 53 | 11.684 | | 0.0000 | 0.000 | 408.0 | 0.377 | BB | 0.055 | 124.51 | 0.329 |
| 54 | 11.923 | DCB | 0.9930 | 21.871 | 8864.0 | 8.185 | BB | 0.045 | 3276.11 | 8.650 |
| 55 | 12.079 | | 0.0000 | 0.000 | 80.9 | 0.075 | BB | 0.035 | 38.55 | 0.102 |
| 56 | 12.218 | | 0.0000 | 0.000 | 143.4 | 0.132 | BB | 0.040 | 60.26 | 0.159 |

8761

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 13.624 | | 0.0000 | 0.000 | 4782.4 | 4.416 | BB | 1.352 | 58.97 | 0.156 |

Total Area = 108293.3, Total Amount = 4.54, Total Height = 37873.93, Sample Units = PPB

Sample Name: **MDTXX03B AAMDTXXAA ICAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 08:44:04pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.34R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.482 | | 0.0000 | 0.000 | 1189.8 | 0.633 | BB | 0.056 | 354.90 | 0.715 |
| 2 | 3.546 | | 0.0000 | 0.000 | 566.5 | 0.301 | BB | 0.031 | 305.39 | 0.615 |
| 3 | 3.628 | | 0.0000 | 0.000 | 2211.2 | 1.176 | BB | 0.046 | 807.81 | 1.627 |
| 4 | 3.720 | | 0.0000 | 0.000 | 995.6 | 0.530 | BB | 0.044 | 377.52 | 0.760 |
| 5 | 3.809 | | 0.0000 | 0.000 | 660.8 | 0.352 | BB | 0.043 | 256.94 | 0.517 |
| 6 | 3.952 | | 0.0000 | 0.000 | 513.4 | 0.273 | BB | 0.084 | 101.63 | 0.205 |
| 7 | 4.056 | TCX | 0.9661 | 19.387 | 11419.3 | 6.075 | BB | 0.035 | 5420.81 | 10.916 |
| 8 | 4.171 | | 0.0000 | 0.000 | 303.1 | 0.161 | BB | 0.039 | 129.47 | 0.261 |
| 9 | 4.261 | | 0.0000 | 0.000 | 638.8 | 0.340 | BB | 0.075 | 141.05 | 0.284 |
| 10 | 4.457 | | 0.0000 | 0.000 | 792.3 | 0.421 | BB | 0.055 | 241.46 | 0.486 |
| 11 | 4.710 | | 0.0000 | 0.000 | 1950.9 | 1.038 | BB | 0.146 | 222.21 | 0.447 |
| 12 | 4.874 | | 0.0000 | 0.000 | 735.6 | 0.391 | BB | 0.057 | 215.02 | 0.433 |
| 13 | 5.236 | | 0.0000 | 0.000 | 1126.7 | 0.599 | BB | 0.097 | 194.42 | 0.392 |
| 14 | 5.444 | | 0.0000 | 0.000 | 452.3 | 0.241 | BB | 0.045 | 168.74 | 0.340 |
| 15 | 5.660 | | 0.0000 | 0.000 | 2257.9 | 1.201 | BB | 0.097 | 386.68 | 0.779 |
| 16 | 5.750 | | 0.0000 | 0.000 | 724.8 | 0.386 | BB | 0.076 | 159.90 | 0.322 |
| 17 | 6.005 | delta-BHC | 0.0691 | 1.388 | 4908.9 | 2.611 | BV | 0.159 | 515.24 | 1.038 |
| 18 | 6.257 | | 0.0000 | 0.000 | 4914.3 | 2.614 | VV | 0.116 | 707.07 | 1.424 |
| 19 | 6.474 | | 0.0000 | 0.000 | 5549.1 | 2.952 | VB | 0.127 | 730.51 | 1.471 |
| 20 | 6.673 | | 0.0000 | 0.000 | 5614.7 | 2.987 | BB | 0.116 | 803.87 | 1.619 |
| 21 | 6.916 | | 0.0000 | 0.000 | 3173.8 | 1.688 | BB | 0.091 | 584.27 | 1.177 |
| 22 | 7.098 | | 0.0000 | 0.000 | 3939.9 | 2.096 | BB | 0.086 | 763.31 | 1.537 |
| 23 | 7.250 | | 0.0000 | 0.000 | 927.5 | 0.493 | BB | 0.037 | 413.28 | 0.832 |
| 24 | 7.306 | Hept. epoxide | 0.1465 | 2.941 | 3902.8 | 2.076 | BV | 0.075 | 870.91 | 1.754 |
| 25 | 7.424 | | 0.0000 | 0.000 | 5837.1 | 3.105 | VV | 0.099 | 985.45 | 1.984 |
| 26 | 7.549 | g. Chlordane | 0.1604 | 3.220 | 4605.5 | 2.450 | VV | 0.083 | 929.94 | 1.873 |
| 27 | 7.655 | | 0.0000 | 0.000 | 5792.3 | 3.081 | VV | 0.107 | 898.34 | 1.809 |
| 28 | 7.864 | Endosulfan I | 0.1602 | 3.215 | 6171.4 | 3.283 | VV | 0.122 | 845.06 | 1.702 |
| 29 | 7.966 | 4,4'-DDE | 0.1529 | 3.068 | 4840.5 | 2.575 | VV | 0.113 | 712.39 | 1.435 |
| 30 | 8.084 | | 0.0000 | 0.000 | 2655.7 | 1.413 | VV | 0.059 | 752.68 | 1.516 |
| 31 | 8.168 | Dieldrin | 0.3036 | 6.091 | 8391.5 | 4.464 | VV | 0.096 | 1462.15 | 2.944 |
| 32 | 8.311 | | 0.0000 | 0.000 | 4152.6 | 2.209 | VV | 0.062 | 1122.82 | 2.261 |
| 33 | 8.393 | | 0.0000 | 0.000 | 3858.5 | 2.053 | VB | 0.066 | 972.23 | 1.958 |
| 34 | 8.508 | | 0.0000 | 0.000 | 10350.9 | 5.506 | BV | 0.145 | 1192.67 | 2.402 |
| 35 | 8.708 | 4,4'-DDD | 0.3606 | 7.236 | 4602.7 | 2.449 | VV | 0.065 | 1177.19 | 2.371 |
| 36 | 8.791 | | 0.0000 | 0.000 | 1879.1 | 1.000 | VV | 0.033 | 942.61 | 1.898 |
| 37 | 8.845 | Endosulfan II | 0.1574 | 3.159 | 1182.2 | 0.629 | VV | 0.032 | 609.80 | 1.228 |
| 38 | 8.969 | | 0.0000 | 0.000 | 12741.8 | 6.778 | VV | 0.064 | 3329.16 | 6.704 |
| 39 | 9.061 | | 0.0000 | 0.000 | 1673.6 | 0.890 | VB | 0.033 | 838.55 | 1.689 |
| 40 | 9.211 | | 0.0000 | 0.000 | 3482.4 | 1.853 | BV | 0.056 | 1032.73 | 2.080 |
| 41 | 9.304 | Endrin aldehyde | 0.5363 | 10.762 | 4998.2 | 2.659 | VV | 0.051 | 1644.63 | 3.312 |
| 42 | 9.413 | | 0.0000 | 0.000 | 4849.0 | 2.580 | VB | 0.061 | 1329.82 | 2.678 |
| 43 | 9.493 | | 0.0000 | 0.000 | 559.8 | 0.298 | BB | 0.033 | 285.47 | 0.575 |
| 44 | 9.584 | | 0.0000 | 0.000 | 1328.3 | 0.707 | BB | 0.040 | 560.33 | 1.128 |
| 45 | 9.639 | Endo. sulfate | 0.1855 | 3.723 | 904.0 | 0.481 | BB | 0.025 | 599.11 | 1.206 |
| 46 | 9.720 | | 0.0000 | 0.000 | 459.1 | 0.244 | BB | 0.030 | 252.35 | 0.508 |
| 47 | 9.800 | | 0.0000 | 0.000 | 782.1 | 0.416 | BB | 0.032 | 404.90 | 0.815 |
| 48 | 9.901 | | 0.0000 | 0.000 | 149.2 | 0.079 | BB | 0.017 | 144.18 | 0.290 |
| 49 | 9.964 | | 0.0000 | 0.000 | 4117.0 | 2.190 | BB | 0.040 | 1711.53 | 3.447 |
| 50 | 10.034 | Methoxychlor | 0.5224 | 10.483 | 1915.0 | 1.019 | BB | 0.038 | 846.48 | 1.705 |
| 51 | 10.098 | | 0.0000 | 0.000 | 945.4 | 0.503 | BB | 0.027 | 582.90 | 1.174 |
| 52 | 10.215 | | 0.0000 | 0.000 | 697.2 | 0.371 | BB | 0.028 | 415.07 | 0.836 |
| 53 | 10.281 | | 0.0000 | 0.000 | 561.2 | 0.299 | BB | 0.023 | 406.83 | 0.819 |
| 54 | 10.336 | Endrin ketone | 0.2983 | 5.986 | 3590.1 | 1.910 | BB | 0.056 | 1078.11 | 2.171 |
| 55 | 10.461 | | 0.0000 | 0.000 | 3000.3 | 1.596 | BB | 0.051 | 985.19 | 1.984 |
| 56 | 10.561 | | 0.0000 | 0.000 | 335.2 | 0.178 | BB | 0.040 | 140.13 | 0.282 |

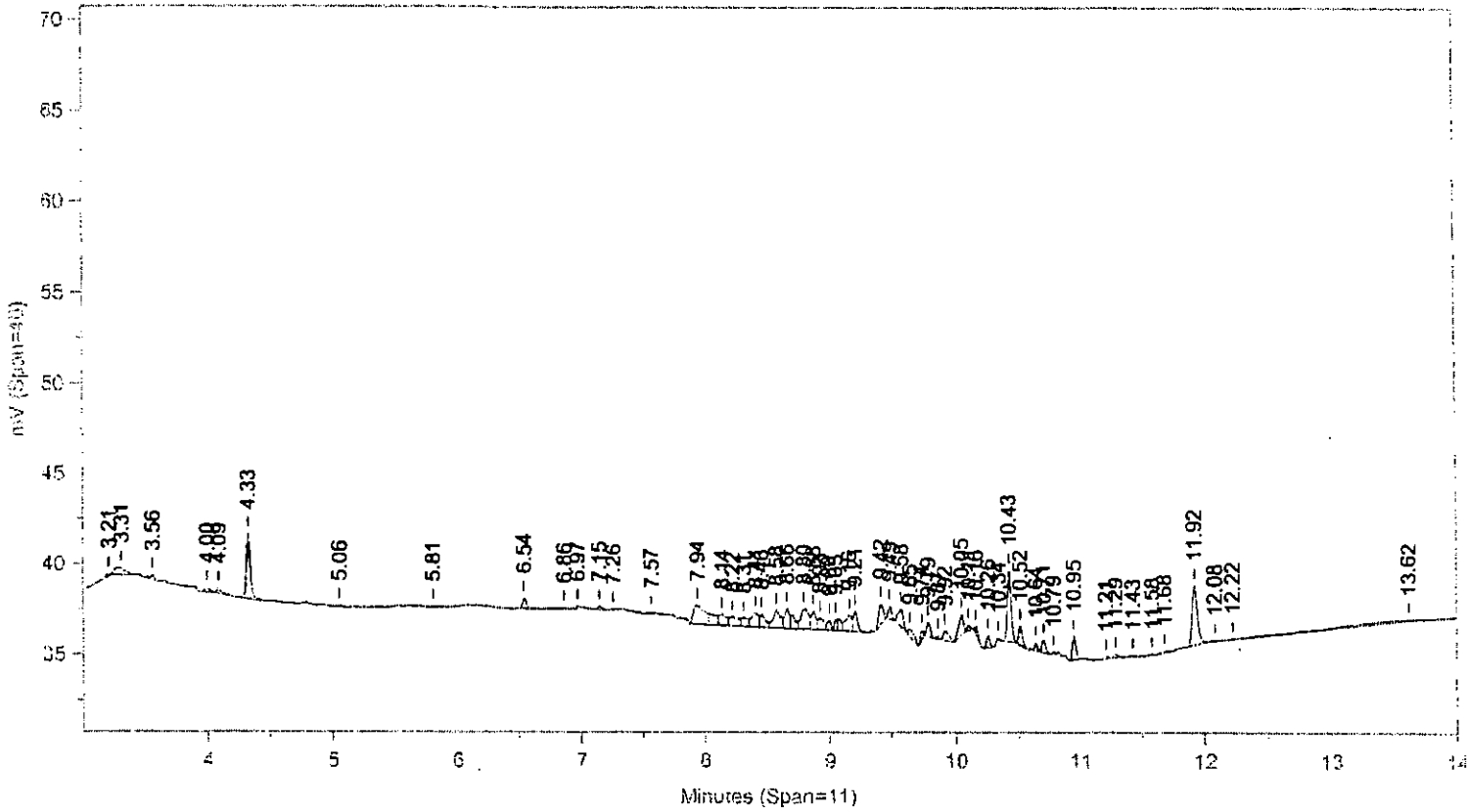
8763

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 10.632 | | 0.0000 | 0.000 | 609.2 | 0.324 | BB | 0.027 | 375.54 | 0.756 |
| 58 | 10.703 | | 0.0000 | 0.000 | 1548.2 | 0.824 | BB | 0.038 | 685.28 | 1.380 |
| 59 | 10.841 | | 0.0000 | 0.000 | 900.8 | 0.479 | BB | 0.080 | 187.26 | 0.377 |
| 60 | 10.976 | | 0.0000 | 0.000 | 369.0 | 0.196 | BB | 0.050 | 123.17 | 0.248 |
| 61 | 11.083 | | 0.0000 | 0.000 | 318.9 | 0.170 | BB | 0.032 | 163.82 | 0.330 |
| 62 | 11.309 | | 0.0000 | 0.000 | 231.0 | 0.123 | BB | 0.039 | 97.63 | 0.197 |
| 63 | 11.354 | | 0.0000 | 0.000 | 224.2 | 0.119 | BB | 0.027 | 137.27 | 0.276 |
| 64 | 11.807 | | 0.0000 | 0.000 | 336.8 | 0.179 | BB | 0.056 | 100.02 | 0.201 |
| 65 | 12.070 | DCB | 0.9639 | 19.342 | 10246.1 | 5.451 | BB | 0.049 | 3472.40 | 6.993 |
| 66 | 12.581 | | 0.0000 | 0.000 | 637.0 | 0.339 | BB | 0.058 | 183.75 | 0.370 |
| 67 | 13.809 | | 0.0000 | 0.000 | 1677.1 | 0.892 | BB | 0.404 | 69.11 | 0.139 |

Total Area = 187977.1, Total Amount = 4.983, Total Height = 49658.43, Sample Units = PPB

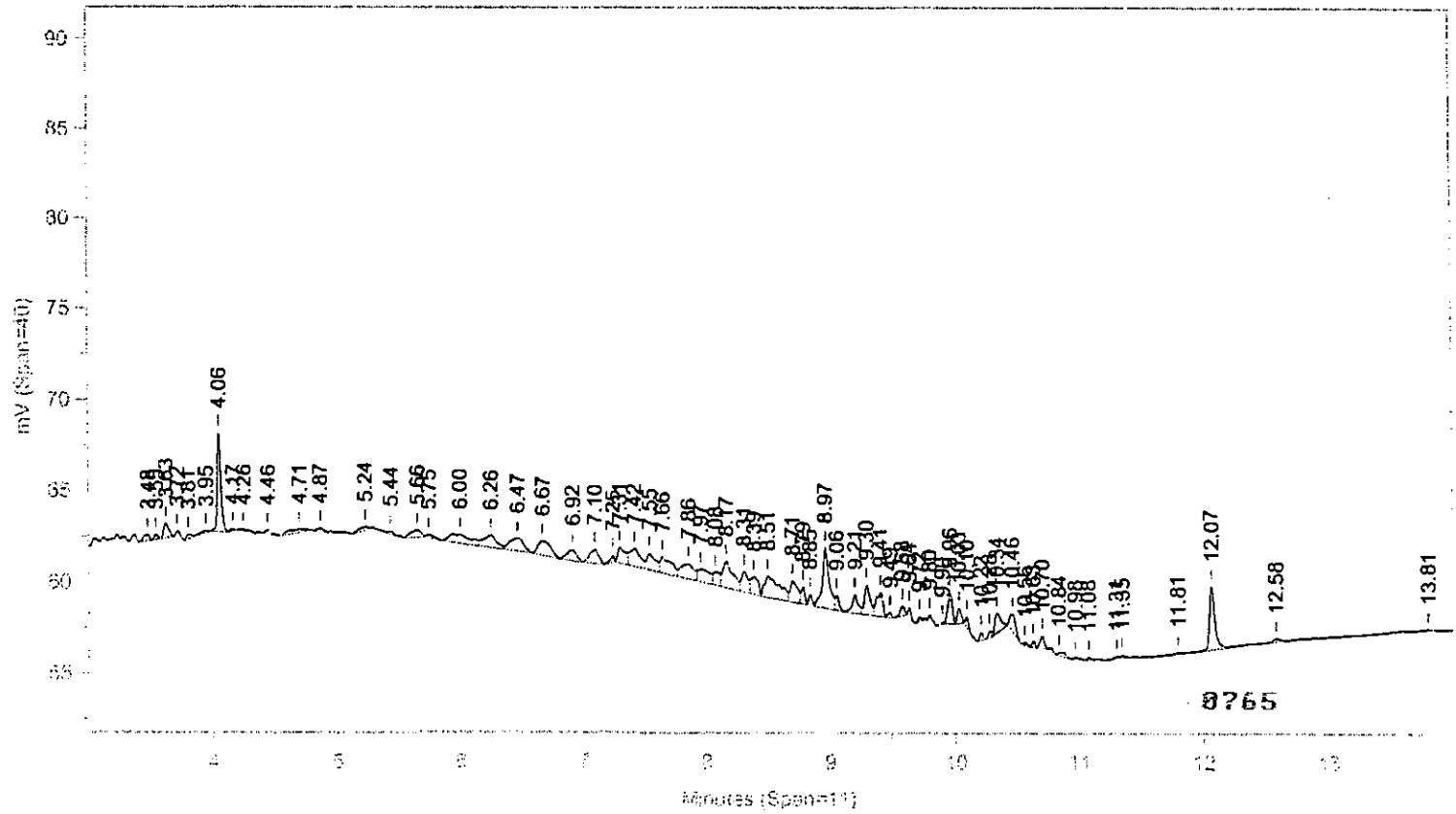
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.34R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 8:30:04 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.34R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 8:30:04 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

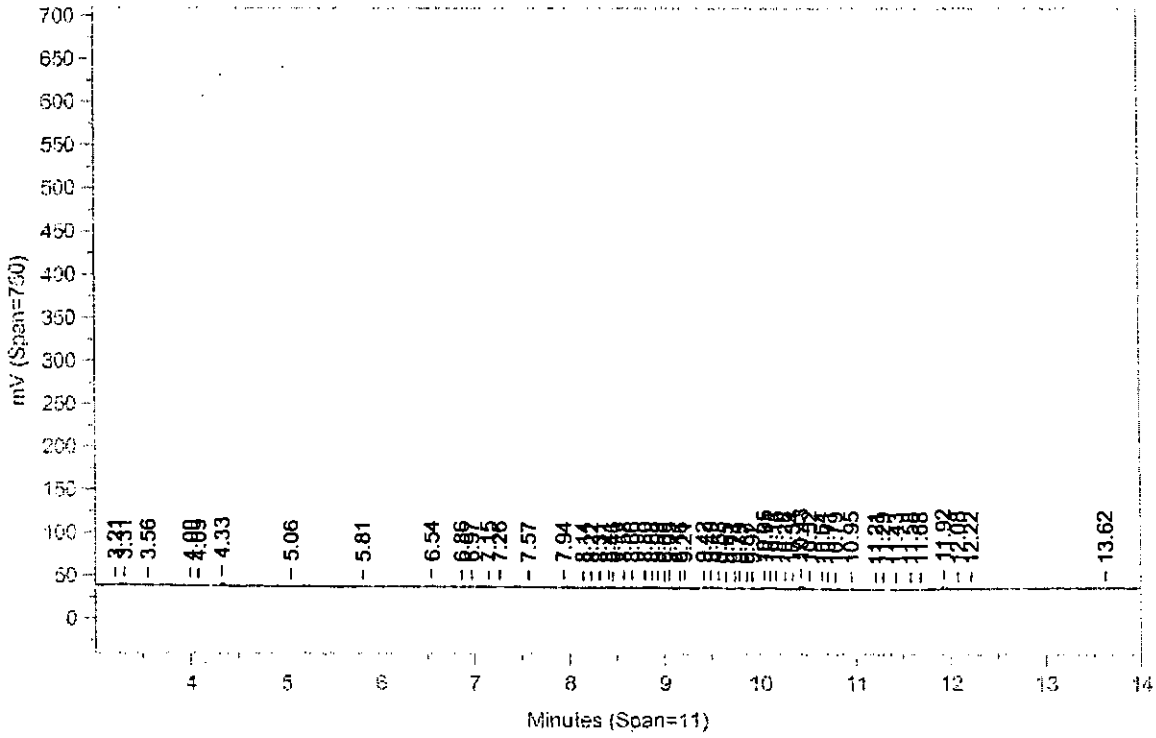
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.331 | 3617 | .877 | TCX | 4.056 | 5421 | .966 | TCX |
| 5.807 | 45 | .016 | beta-BHC | . | 0 | . | beta-BHC |
| . | 0 | . | delta-BHC | 6.005 | 515 | .069 | delta-BHC |
| . | 0 | . | Hept. epoxide | 7.306 | 871 | .147 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.549 | 930 | .16 | g. Chlordane |
| 7.571 | 59 | .023 | o,p-DDE | . | 0 | . | o,p-DDE |
| 8.14 | 603 | .153 | Endosulfan I | 7.864 | 845 | .16 | Endosulfan I |
| 7.944 | 1044 | .238 | a. Chlordane | . | 0 | . | a. Chlordane |
| . | 0 | . | 4,4'-DDE | 7.966 | 712 | .153 | 4,4'-DDE |
| 8.457 | 706 | .194 | Dieldrin | 8.168 | 1462 | .304 | Dieldrin |
| . | 0 | . | 4,4'-DDD | 8.708 | 1177 | .361 | 4,4'-DDD |
| 8.799 | 1098 | .328 | Endrin | . | 0 | . | Endrin |
| 9.052 | 606 | .182 | Endosulfan II | 8.845 | 610 | .157 | Endosulfan II |
| 9.208 | 1099 | .382 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| 9.646 | 412 | .15 | Endrin aldehyde | 9.304 | 1645 | .536 | Endrin aldehyde |
| 10.165 | 424 | .144 | Endo. sulfate | 9.639 | 599 | .186 | Endo. sulfate |
| 9.788 | 762 | .465 | Methoxychlor | 10.034 | 846 | .522 | Methoxychlor |
| 10.05 | 1116 | .396 | Mirex | . | 0 | . | Mirex |
| . | 0 | . | Endrin ketone | 10.336 | 1078 | .298 | Endrin ketone |
| 11.923 | 3276 | .993 | DCB | 12.07 | 3472 | .964 | DCB |

Files:
Area File: C:\CPWIN\DATA1\ID16082.34A
Area File: C:\CPWIN\DATA1\ID16082B.34A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\ID16082.CAL
Calibration File B: C:\CPWIN\DATA1\ID16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 9:52:12 AM
File Reported On: 3/23/2004 at 9:52:38 AM

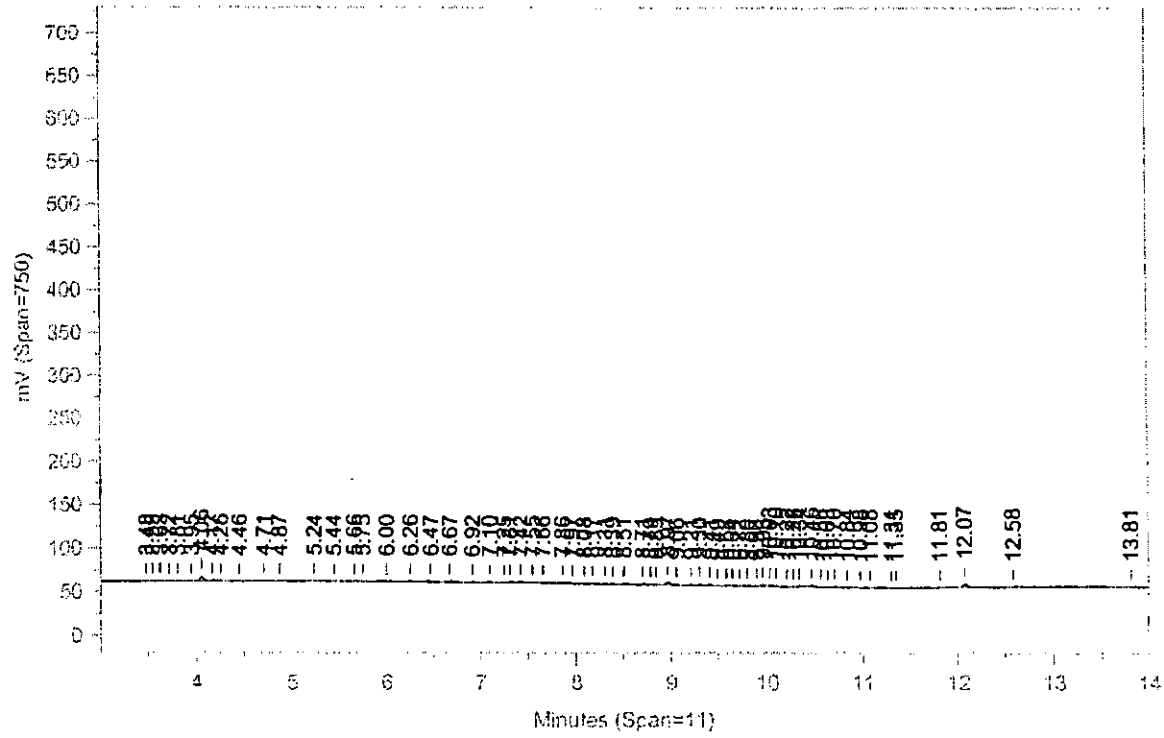
8766

10x REPLOTS

C:\CPWIN\DATA1\1D16082.34R




C:\CPWIN\DATA1\1D16082B.34R




6767

Sample Name: **IC16X0424B AAIC16XAA CCAL 048199999**
Acquired from CP16--H5262A via port 1 on 3/22/04 09:25:58pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082.36R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.283 | | 0.0000 | 0.000 | 7241.3 | 0.393 | BB | 0.209 | 578.65 | 0.074 |
| 2 | 3.436 | | 0.0000 | 0.000 | 378.6 | 0.021 | BB | 0.054 | 117.48 | 0.015 |
| 3 | 3.557 | | 0.0000 | 0.000 | 1538.4 | 0.083 | BB | 0.042 | 608.05 | 0.078 |
| 4 | 3.894 | | 0.0000 | 0.000 | 698.6 | 0.038 | BB | 0.039 | 300.84 | 0.039 |
| 5 | 4.000 | | 0.0000 | 0.000 | 1108.0 | 0.060 | BB | 0.050 | 367.71 | 0.047 |
| 6 | 4.241 | | 0.0000 | 0.000 | 455.6 | 0.025 | BB | 0.024 | 316.01 | 0.041 |
| 7 | 4.334 | TCX | 10.1328 | 16.679 | 88510.7 | 4.798 | BB | 0.035 | 41801.19 | 5.366 |
| 8 | 4.592 | | 0.0000 | 0.000 | 6822.6 | 0.370 | BB | 0.036 | 3191.24 | 0.410 |
| 9 | 4.814 | | 0.0000 | 0.000 | 5506.1 | 0.298 | BB | 0.029 | 3199.75 | 0.411 |
| 10 | 4.877 | | 0.0000 | 0.000 | 38760.9 | 2.101 | BB | 0.036 | 18110.26 | 2.325 |
| 11 | 5.061 | | 0.0000 | 0.000 | 5562.1 | 0.301 | BB | 0.037 | 2472.21 | 0.317 |
| 12 | 5.253 | | 0.0000 | 0.000 | 147.7 | 0.008 | BB | 0.031 | 78.85 | 0.010 |
| 13 | 5.396 | | 0.0000 | 0.000 | 87809.7 | 4.760 | BB | 0.051 | 28902.21 | 3.710 |
| 14 | 5.574 | | 0.0000 | 0.000 | 9065.6 | 0.491 | BB | 0.039 | 3891.50 | 0.500 |
| 15 | 5.657 | gamma-BHC | 0.9651 | 1.589 | 6902.3 | 0.374 | BB | 0.023 | 4952.90 | 0.636 |
| 16 | 5.692 | | 0.0000 | 0.000 | 14766.9 | 0.800 | BB | 0.026 | 9473.27 | 1.216 |
| 17 | 5.790 | beta-BHC | 0.1745 | 0.287 | 988.6 | 0.054 | BB | 0.033 | 494.27 | 0.063 |
| 18 | 5.887 | | 0.0000 | 0.000 | 96.4 | 0.005 | BB | 0.024 | 67.68 | 0.009 |
| 19 | 5.955 | | 0.0000 | 0.000 | 17637.1 | 0.956 | BB | 0.039 | 7553.68 | 0.970 |
| 20 | 6.029 | | 0.0000 | 0.000 | 13569.9 | 0.736 | BB | 0.029 | 7693.43 | 0.988 |
| 21 | 6.058 | delta-BHC | 4.9235 | 8.104 | 35790.9 | 1.940 | BB | 0.025 | 23975.97 | 3.077 |
| 22 | 6.137 | | 0.0000 | 0.000 | 3673.8 | 0.199 | BB | 0.026 | 2348.65 | 0.301 |
| 23 | 6.191 | | 0.0000 | 0.000 | 694.5 | 0.038 | BB | 0.019 | 610.46 | 0.078 |
| 24 | 6.244 | | 0.0000 | 0.000 | 57663.2 | 3.126 | BB | 0.038 | 25566.97 | 3.282 |
| 25 | 6.332 | Heptachlor | 3.0400 | 5.004 | 30354.8 | 1.645 | BB | 0.031 | 16494.04 | 2.117 |
| 26 | 6.449 | | 0.0000 | 0.000 | 1306.2 | 0.071 | BB | 0.025 | 876.68 | 0.113 |
| 27 | 6.495 | | 0.0000 | 0.000 | 10946.7 | 0.593 | BB | 0.026 | 7104.73 | 0.912 |
| 28 | 6.528 | | 0.0000 | 0.000 | 9310.3 | 0.505 | BB | 0.021 | 7491.92 | 0.962 |
| 29 | 6.580 | | 0.0000 | 0.000 | 13002.3 | 0.705 | BB | 0.029 | 7452.78 | 0.957 |
| 30 | 6.806 | | 0.0000 | 0.000 | 64511.4 | 3.497 | BB | 0.048 | 22257.34 | 2.857 |
| 31 | 6.922 | | 0.0000 | 0.000 | 12898.5 | 0.699 | BB | 0.027 | 8080.84 | 1.037 |
| 32 | 6.976 | | 0.0000 | 0.000 | 13709.9 | 0.743 | BB | 0.031 | 7373.76 | 0.946 |
| 33 | 7.124 | | 0.0000 | 0.000 | 8800.7 | 0.477 | BB | 0.037 | 3977.25 | 0.511 |
| 34 | 7.259 | | 0.0000 | 0.000 | 2826.9 | 0.153 | BB | 0.027 | 1731.31 | 0.222 |
| 35 | 7.319 | | 0.0000 | 0.000 | 22502.3 | 1.220 | BB | 0.031 | 12218.10 | 1.568 |
| 36 | 7.372 | | 0.0000 | 0.000 | 1448.4 | 0.079 | BB | 0.019 | 1298.18 | 0.167 |
| 37 | 7.412 | | 0.0000 | 0.000 | 1519.6 | 0.082 | BB | 0.023 | 1090.69 | 0.140 |
| 38 | 7.593 | o,p-DDE | 0.8766 | 1.443 | 4769.6 | 0.259 | BV | 0.035 | 2295.98 | 0.295 |
| 39 | 7.660 | | 0.0000 | 0.000 | 43638.6 | 2.365 | VB | 0.043 | 17017.78 | 2.184 |
| 40 | 7.973 | a. Chlordane | 0.3216 | 0.529 | 5511.8 | 0.299 | BV | 0.065 | 1411.41 | 0.181 |
| 41 | 8.027 | 4,4'-DDE | 2.8732 | 4.730 | 26729.4 | 1.449 | VV | 0.044 | 10095.17 | 1.296 |
| 42 | 8.193 | | 0.0000 | 0.000 | 18856.3 | 1.022 | VV | 0.034 | 9235.72 | 1.185 |
| 43 | 8.244 | | 0.0000 | 0.000 | 40785.1 | 2.211 | VV | 0.037 | 18202.90 | 2.336 |
| 44 | 8.326 | | 0.0000 | 0.000 | 28420.9 | 1.541 | VV | 0.058 | 8110.71 | 1.041 |
| 45 | 8.428 | | 0.0000 | 0.000 | 86637.5 | 4.696 | VV | 0.040 | 36524.24 | 4.688 |
| 46 | 8.560 | | 0.0000 | 0.000 | 12830.9 | 0.695 | VV | 0.043 | 5014.77 | 0.644 |
| 47 | 8.628 | o,p-DDT | 0.4067 | 0.669 | 2502.2 | 0.136 | VV | 0.038 | 1084.27 | 0.139 |
| 48 | 8.709 | | 0.0000 | 0.000 | 15137.5 | 0.821 | VV | 0.036 | 6970.10 | 0.895 |
| 49 | 8.785 | Endrin | 13.2313 | 21.780 | 130971.0 | 7.099 | VV | 0.049 | 44242.73 | 5.679 |
| 50 | 8.847 | 4,4'-DDD | 4.5899 | 7.555 | 27404.3 | 1.485 | VV | 0.035 | 13064.81 | 1.677 |
| 51 | 8.953 | | 0.0000 | 0.000 | 48730.9 | 2.641 | VB | 0.039 | 20789.79 | 2.669 |
| 52 | 9.084 | Endosulfan II | 0.4515 | 0.743 | 2782.3 | 0.151 | BV | 0.031 | 1507.83 | 0.194 |
| 53 | 9.157 | | 0.0000 | 0.000 | 133144.5 | 7.217 | VV | 0.051 | 43407.22 | 5.572 |
| 54 | 9.297 | | 0.0000 | 0.000 | 63353.0 | 3.434 | VV | 0.040 | 26660.80 | 3.422 |
| 55 | 9.359 | | 0.0000 | 0.000 | 36375.6 | 1.972 | VB | 0.040 | 15306.00 | 1.965 |
| 56 | 9.479 | | 0.0000 | 0.000 | 7096.1 | 0.385 | BB | 0.030 | 4004.90 | 0.514 |

0768

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.538 | | 0.0000 | 0.000 | 3727.1 | 0.202 | BB | 0.025 | 2441.39 | 0.313 |
| 58 | 9.623 | Endrin aldehyde | 7.9444 | 13.077 | 39810.8 | 2.158 | BB | 0.030 | 21794.10 | 2.797 |
| 59 | 9.678 | | 0.0000 | 0.000 | 13975.1 | 0.757 | BB | 0.026 | 8889.15 | 1.141 |
| 60 | 9.741 | | 0.0000 | 0.000 | 8598.5 | 0.466 | BB | 0.028 | 5051.41 | 0.648 |
| 61 | 9.805 | Methoxychlor | 0.1815 | 0.299 | 366.5 | 0.020 | BB | 0.021 | 297.56 | 0.038 |
| 62 | 9.856 | | 0.0000 | 0.000 | 5707.7 | 0.309 | BB | 0.031 | 3039.48 | 0.390 |
| 63 | 9.936 | | 0.0000 | 0.000 | 8684.9 | 0.471 | BB | 0.031 | 4620.85 | 0.593 |
| 64 | 10.015 | | 0.0000 | 0.000 | 149486.8 | 8.103 | BB | 0.043 | 57986.06 | 7.443 |
| 65 | 10.390 | | 0.0000 | 0.000 | 84936.4 | 4.604 | BB | 0.047 | 30024.85 | 3.854 |
| 66 | 10.483 | | 0.0000 | 0.000 | 22513.8 | 1.220 | BB | 0.038 | 9777.74 | 1.255 |
| 67 | 10.726 | | 0.0000 | 0.000 | 2652.1 | 0.144 | BB | 0.035 | 1272.59 | 0.163 |
| 68 | 10.858 | | 0.0000 | 0.000 | 18776.9 | 1.018 | BB | 0.044 | 7180.68 | 0.922 |
| 69 | 10.953 | | 0.0000 | 0.000 | 553.1 | 0.030 | BB | 0.029 | 316.00 | 0.041 |
| 70 | 11.201 | | 0.0000 | 0.000 | 36867.6 | 1.998 | BB | 0.038 | 16148.86 | 2.073 |
| 71 | 11.277 | | 0.0000 | 0.000 | 602.4 | 0.033 | BB | 0.024 | 413.72 | 0.053 |
| 72 | 11.621 | | 0.0000 | 0.000 | 13587.5 | 0.736 | BB | 0.041 | 5535.07 | 0.710 |
| 73 | 11.922 | DCB | 10.6375 | 17.510 | 95456.6 | 5.174 | BB | 0.045 | 35094.75 | 4.505 |
| 74 | 12.995 | | 0.0000 | 0.000 | 997.8 | 0.054 | BB | 0.283 | 58.78 | 0.008 |
| 75 | 13.610 | | 0.0000 | 0.000 | 3401.3 | 0.184 | BB | 0.911 | 62.24 | 0.008 |

Total Area = 1844908.0, Total Amount = 60.75, Total Height = 779073.3, Sample Units = PPB

Sample Name: **IC16X0424B AAIC16XAA CCAL 048199999**
Acquired from CP16--H5262B via port 2 on 3/22/04 09:25:58pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\1D16082B.36R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.459 | | 0.0000 | 0.000 | 984.4 | 0.036 | BB | 0.042 | 394.93 | 0.040 |
| 2 | 3.549 | | 0.0000 | 0.000 | 751.4 | 0.028 | BB | 0.041 | 304.69 | 0.031 |
| 3 | 3.630 | | 0.0000 | 0.000 | 2994.5 | 0.111 | BB | 0.046 | 1085.66 | 0.109 |
| 4 | 3.721 | | 0.0000 | 0.000 | 1550.7 | 0.057 | BB | 0.041 | 627.26 | 0.063 |
| 5 | 3.820 | | 0.0000 | 0.000 | 333.7 | 0.012 | BB | 0.038 | 145.26 | 0.015 |
| 6 | 3.940 | | 0.0000 | 0.000 | 632.0 | 0.023 | BB | 0.078 | 135.69 | 0.014 |
| 7 | 4.059 | TCX | 10.6033 | 10.559 | 125989.4 | 4.665 | BB | 0.035 | 59493.27 | 5.995 |
| 8 | 4.201 | | 0.0000 | 0.000 | 308.2 | 0.011 | BB | 0.019 | 265.77 | 0.027 |
| 9 | 4.237 | | 0.0000 | 0.000 | 2828.2 | 0.105 | BB | 0.033 | 1422.15 | 0.143 |
| 10 | 4.480 | | 0.0000 | 0.000 | 10728.5 | 0.397 | BB | 0.038 | 4679.06 | 0.472 |
| 11 | 4.607 | | 0.0000 | 0.000 | 1711.5 | 0.063 | BB | 0.036 | 792.09 | 0.080 |
| 12 | 4.681 | | 0.0000 | 0.000 | 9834.5 | 0.364 | BB | 0.033 | 4938.79 | 0.498 |
| 13 | 4.767 | Hcb | 2.2835 | 2.274 | 55924.0 | 2.071 | BB | 0.038 | 24449.39 | 2.464 |
| 14 | 5.089 | | 0.0000 | 0.000 | 7211.2 | 0.267 | BB | 0.037 | 3248.10 | 0.327 |
| 15 | 5.257 | | 0.0000 | 0.000 | 447.0 | 0.017 | BB | 0.086 | 86.22 | 0.009 |
| 16 | 5.334 | | 0.0000 | 0.000 | 114059.5 | 4.223 | BB | 0.055 | 34268.36 | 3.453 |
| 17 | 5.490 | gamma-BHC | 0.4678 | 0.466 | 8454.4 | 0.313 | BB | 0.038 | 3718.64 | 0.375 |
| 18 | 5.624 | beta-BHC | 2.8863 | 2.874 | 17746.8 | 0.657 | BB | 0.026 | 11511.04 | 1.160 |
| 19 | 5.672 | | 0.0000 | 0.000 | 27537.4 | 1.020 | BB | 0.030 | 15180.78 | 1.530 |
| 20 | 5.811 | | 0.0000 | 0.000 | 29041.4 | 1.075 | BB | 0.053 | 9126.10 | 0.920 |
| 21 | 5.959 | | 0.0000 | 0.000 | 216471.8 | 8.015 | BV | 0.053 | 68641.22 | 6.917 |
| 22 | 6.141 | | 0.0000 | 0.000 | 91496.7 | 3.388 | VV | 0.043 | 35533.82 | 3.581 |
| 23 | 6.280 | | 0.0000 | 0.000 | 68414.5 | 2.533 | VV | 0.045 | 25318.51 | 2.551 |
| 24 | 6.406 | | 0.0000 | 0.000 | 46822.3 | 1.734 | VV | 0.036 | 21823.15 | 2.199 |
| 25 | 6.465 | | 0.0000 | 0.000 | 51522.1 | 1.908 | VV | 0.038 | 22373.99 | 2.255 |
| 26 | 6.517 | Aldrin | 2.5089 | 2.498 | 43641.8 | 1.616 | VB | 0.046 | 15974.10 | 1.610 |
| 27 | 6.709 | | 0.0000 | 0.000 | 698.9 | 0.026 | BB | 0.047 | 247.20 | 0.025 |
| 28 | 6.766 | Telodrin | 4.1173 | 4.100 | 43656.5 | 1.616 | BB | 0.030 | 24278.25 | 2.447 |
| 29 | 6.821 | | 0.0000 | 0.000 | 13174.2 | 0.488 | BB | 0.034 | 6507.83 | 0.656 |
| 30 | 6.928 | | 0.0000 | 0.000 | 57400.5 | 2.125 | BB | 0.045 | 21245.48 | 2.141 |
| 31 | 7.029 | | 0.0000 | 0.000 | 274.7 | 0.010 | BB | 0.020 | 234.15 | 0.024 |
| 32 | 7.127 | | 0.0000 | 0.000 | 7280.0 | 0.270 | BB | 0.027 | 4417.40 | 0.445 |
| 33 | 7.176 | | 0.0000 | 0.000 | 2604.7 | 0.096 | BB | 0.024 | 1798.06 | 0.181 |
| 34 | 7.261 | | 0.0000 | 0.000 | 5729.7 | 0.212 | BB | 0.027 | 3542.82 | 0.357 |
| 35 | 7.319 | Hept. epoxide | 3.0461 | 3.033 | 38648.6 | 1.431 | BB | 0.036 | 18102.33 | 1.824 |
| 36 | 7.418 | | 0.0000 | 0.000 | 641.0 | 0.024 | BB | 0.026 | 405.88 | 0.041 |
| 37 | 7.481 | | 0.0000 | 0.000 | 4156.0 | 0.154 | BB | 0.030 | 2280.81 | 0.230 |
| 38 | 7.560 | g. Chlordane | 3.3130 | 3.299 | 47575.0 | 1.761 | BV | 0.041 | 19203.02 | 1.935 |
| 39 | 7.687 | | 0.0000 | 0.000 | 4123.2 | 0.153 | VB | 0.048 | 1442.83 | 0.145 |
| 40 | 7.851 | Endosulfan I | 0.0664 | 0.066 | 1237.8 | 0.046 | BB | 0.059 | 350.16 | 0.035 |
| 41 | 7.936 | | 0.0000 | 0.000 | 1644.6 | 0.061 | BV | 0.038 | 722.87 | 0.073 |
| 42 | 8.012 | 4,4'-DDE | 0.8045 | 0.801 | 8282.4 | 0.307 | VV | 0.037 | 3748.28 | 0.378 |
| 43 | 8.125 | | 0.0000 | 0.000 | 14733.9 | 0.546 | VV | 0.031 | 7926.31 | 0.799 |
| 44 | 8.161 | | 0.0000 | 0.000 | 21827.9 | 0.808 | VV | 0.032 | 11302.62 | 1.139 |
| 45 | 8.206 | Dieldrin | 4.5821 | 4.563 | 53052.5 | 1.964 | VV | 0.040 | 22071.21 | 2.224 |
| 46 | 8.290 | | 0.0000 | 0.000 | 31438.4 | 1.164 | VV | 0.052 | 10028.88 | 1.011 |
| 47 | 8.411 | | 0.0000 | 0.000 | 108467.8 | 4.016 | VB | 0.045 | 39794.93 | 4.010 |
| 48 | 8.591 | Endrin | 2.3839 | 2.374 | 22720.1 | 0.841 | BV | 0.038 | 9841.07 | 0.992 |
| 49 | 8.672 | o,p-DDT | 15.6038 | 15.539 | 132639.6 | 4.911 | VB | 0.046 | 47657.39 | 4.803 |
| 50 | 8.881 | Endosulfan II | 7.9061 | 7.873 | 113246.3 | 4.193 | BV | 0.062 | 30623.75 | 3.086 |
| 51 | 9.019 | | 0.0000 | 0.000 | 17048.9 | 0.631 | VV | 0.056 | 5101.50 | 0.514 |
| 52 | 9.137 | 4,4'-DDT | 13.7726 | 13.715 | 166777.1 | 6.175 | VV | 0.062 | 44883.07 | 4.523 |
| 53 | 9.249 | | 0.0000 | 0.000 | 84027.5 | 3.111 | VV | 0.043 | 32850.98 | 3.311 |
| 54 | 9.319 | Endrin aldehyde | 6.2931 | 6.267 | 53180.8 | 1.969 | VV | 0.046 | 19298.63 | 1.945 |
| 55 | 9.470 | | 0.0000 | 0.000 | 18060.2 | 0.669 | VB | 0.048 | 6267.93 | 0.632 |
| 56 | 9.631 | Endo. sulfate | 8.9994 | 8.962 | 72537.8 | 2.686 | BB | 0.042 | 29060.92 | 2.929 |

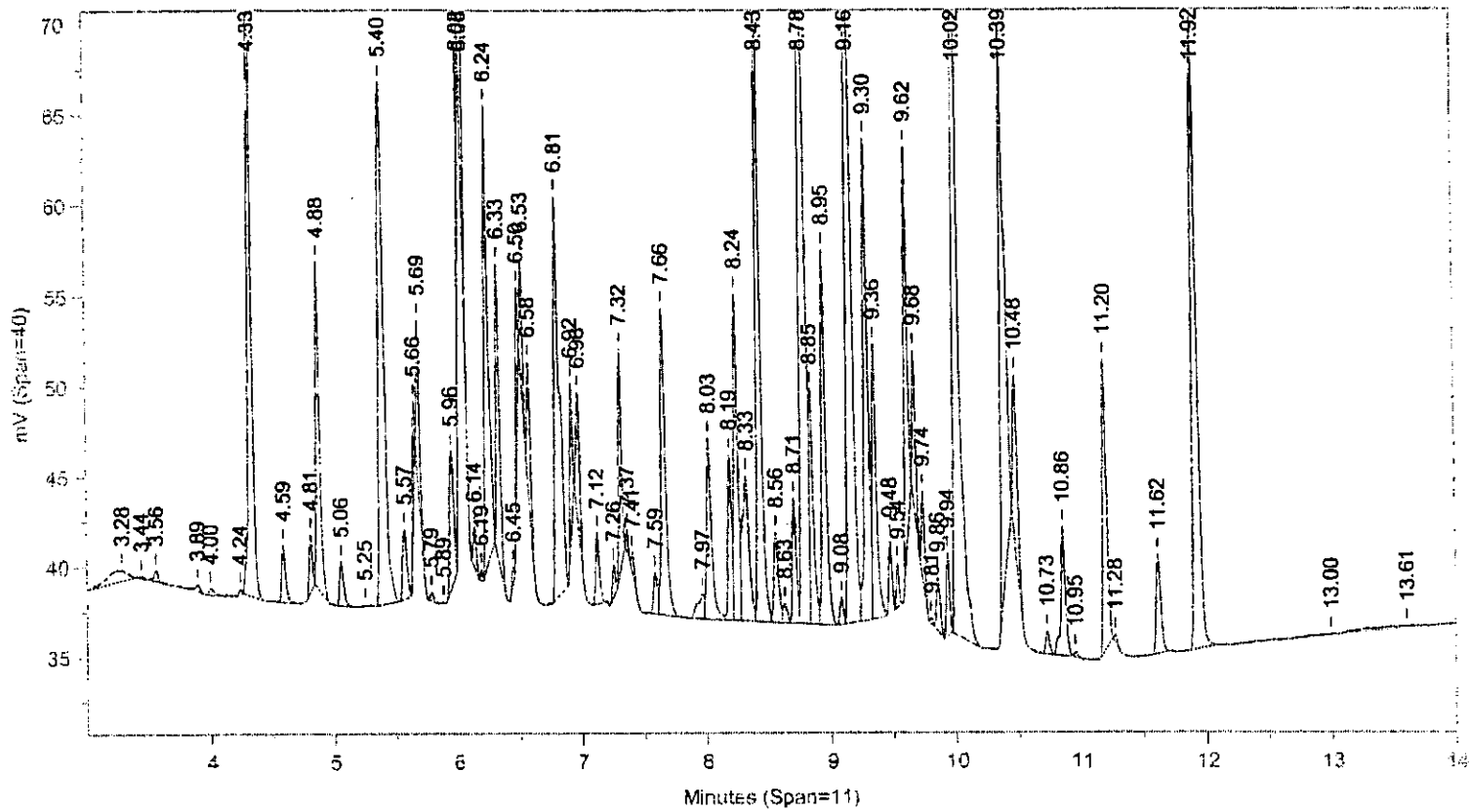
8778

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.724 | | 0.0000 | 0.000 | 26542.6 | 0.983 | BB | 0.034 | 12843.48 | 1.294 |
| 58 | 9.797 | | 0.0000 | 0.000 | 9975.6 | 0.369 | BB | 0.029 | 5669.38 | 0.571 |
| 59 | 9.845 | | 0.0000 | 0.000 | 6402.0 | 0.237 | BB | 0.033 | 3217.84 | 0.324 |
| 60 | 9.941 | | 0.0000 | 0.000 | 179942.4 | 6.662 | BB | 0.046 | 64872.53 | 6.537 |
| 61 | 10.115 | | 0.0000 | 0.000 | 4005.2 | 0.148 | BB | 0.033 | 1993.45 | 0.201 |
| 62 | 10.330 | Mirex | 0.3731 | 0.372 | 1880.7 | 0.070 | BB | 0.029 | 1066.31 | 0.107 |
| 63 | 10.414 | | 0.0000 | 0.000 | 180746.9 | 6.692 | BB | 0.077 | 38950.06 | 3.925 |
| 64 | 10.712 | | 0.0000 | 0.000 | 2276.6 | 0.084 | BB | 0.033 | 1166.56 | 0.118 |
| 65 | 10.785 | | 0.0000 | 0.000 | 3057.4 | 0.113 | BB | 0.036 | 1435.07 | 0.145 |
| 66 | 10.953 | | 0.0000 | 0.000 | 20899.3 | 0.774 | BB | 0.044 | 7986.92 | 0.805 |
| 67 | 11.160 | | 0.0000 | 0.000 | 52157.6 | 1.931 | BB | 0.047 | 18629.69 | 1.877 |
| 68 | 11.646 | | 0.0000 | 0.000 | 15876.4 | 0.588 | BB | 0.044 | 6030.54 | 0.608 |
| 69 | 12.071 | DCB | 10.4075 | 10.364 | 111142.1 | 4.115 | BB | 0.049 | 37493.56 | 3.778 |
| 70 | 12.594 | | 0.0000 | 0.000 | 271.9 | 0.010 | BB | 0.068 | 66.73 | 0.007 |
| 71 | 13.653 | | 0.0000 | 0.000 | 949.7 | 0.035 | BB | 0.300 | 52.73 | 0.005 |
| 72 | 13.853 | | 0.0000 | 0.000 | 446.9 | 0.017 | BB | 0.108 | 69.02 | 0.007 |

Total Area = 2700898.0, Total Amount = 100.419, Total Height = 992318.6, Sample Units = PPB

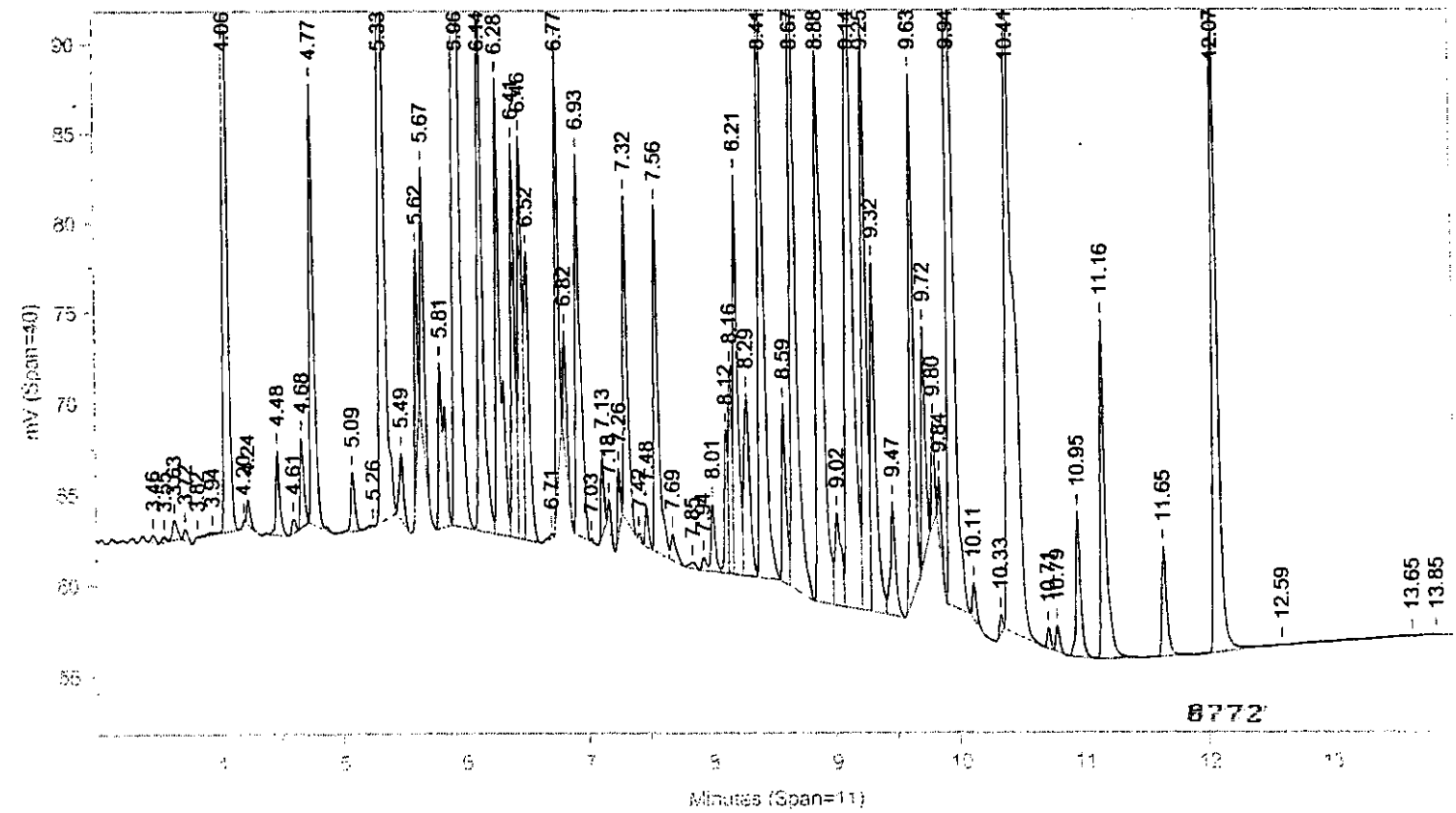
LANCASTER LABORATORIES

C:\CPWIN\DATA1\1D16082.36R




Instrument ID: CP16--H5262A Injected On: 3/22/2004 9:11:58 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\1D16082B.36R




Instrument ID: CP16--H5262B Injected On: 3/22/2004 9:11:58 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

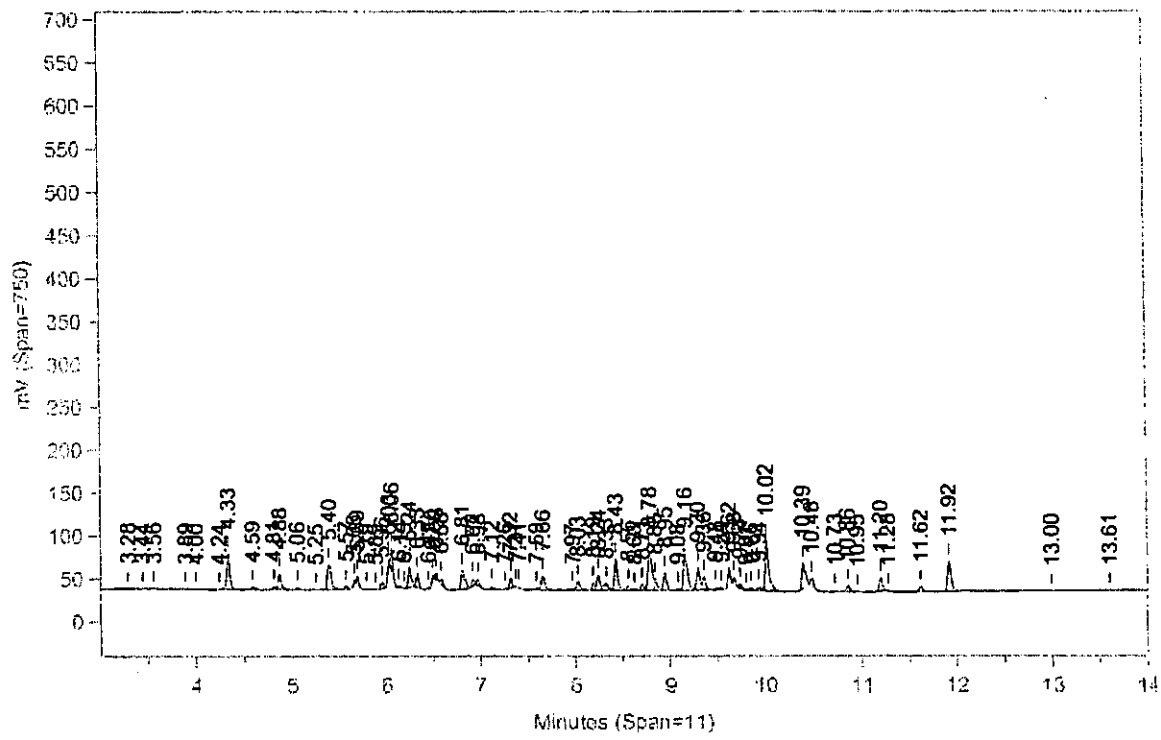
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.334 | 41801 | 10.133 | TCX | 4.059 | 59493 | 10.603 | TCX |
| . | 0 | . | Hcb | 4.767 | 24449 | 2.284 | Hcb |
| 5.657 | 4953 | .965 | gamma-BHC | 5.49 | 3719 | .468 | gamma-BHC |
| 5.79 | 494 | .174 | beta-BHC | 5.624 | 11511 | 2.886 | beta-BHC |
| 6.058 | 23976 | 4.923 | delta-BHC | . | 0 | . | delta-BHC |
| 6.332 | 16494 | 3.04 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.517 | 15974 | 2.509 | Aldrin |
| . | 0 | . | Telodrin | 6.766 | 24278 | 4.117 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.319 | 18102 | 3.046 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.56 | 19203 | 3.313 | g. Chlordane |
| 7.593 | 2296 | .877 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.851 | 350 | .066 | Endosulfan I |
| 7.973 | 1411 | .322 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.027 | 10095 | 2.873 | 4,4'-DDE | 8.012 | 3748 | .804 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.206 | 22071 | 4.582 | Dieldrin |
| 8.785 | 44243 | 13.231 | Endrin | 8.591 | 9841 | 2.384 | Endrin |
| 8.628 | 1084 | .407 | o,p-DDT | 8.672 | 47657 | 15.604 | o,p-DDT |
| 8.847 | 13065 | 4.59 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.084 | 1508 | .452 | Endosulfan II | 8.881 | 30624 | 7.906 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.137 | 44883 | 13.773 | 4,4'-DDT |
| 9.623 | 21794 | 7.944 | Endrin aldehyde | 9.319 | 19299 | 6.293 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.631 | 29061 | 8.999 | Endo. sulfate |
| 9.805 | 298 | .182 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Mirex | 10.33 | 1066 | .373 | Mirex |
| 11.922 | 35095 | 10.638 | DCB | 12.071 | 37494 | 10.407 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1D16082.36A
Area File: C:\CPWIN\DATA1\1D16082B.36A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1D16082.CAL
Calibration File B: C:\CPWIN\DATA1\1D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/23/2004 9:54:16 AM
File Reported On: 3/23/2004 at 9:55:03 AM

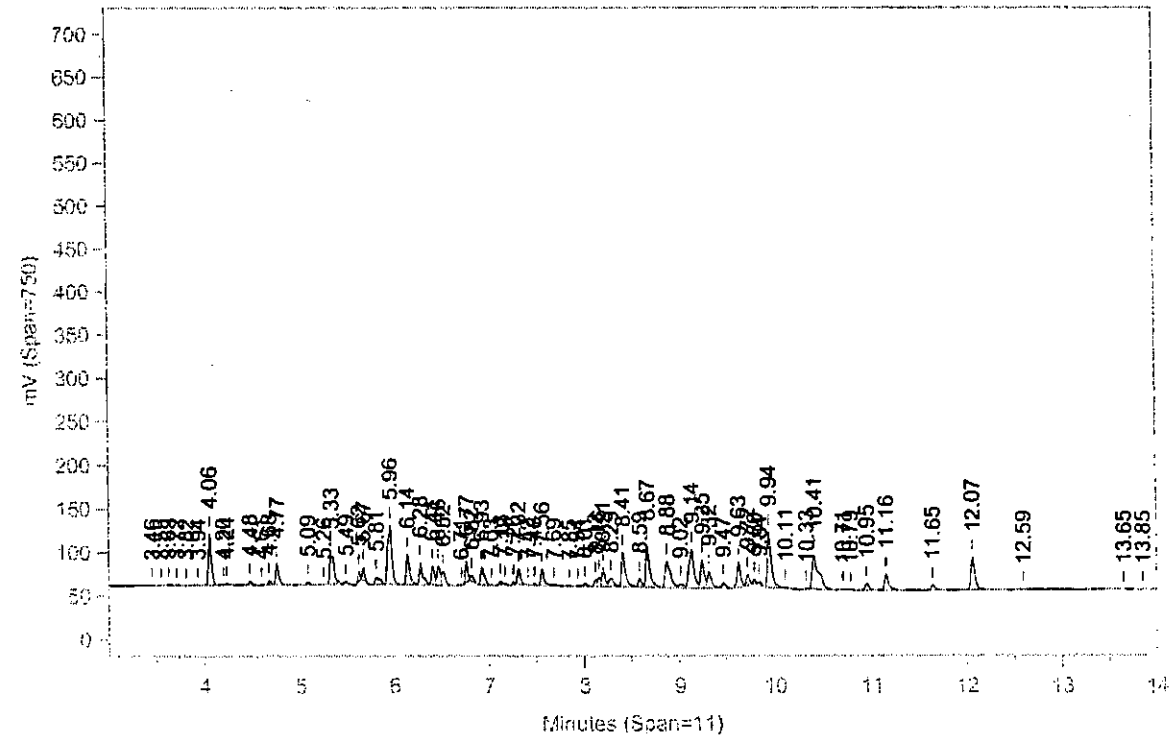
Files:

10x REPLOTS

C:\CPWIN\DATA1\1D16082.36R




C:\CPWIN\DATA1\1D16082B.36R




8774

Sample Name: **MIXA30424B QJMIXA3QJ CCAL 048499999**
Acquired from CP16--H5262A via port 1 on 3/25/04 09:01:07pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.06R**
Method File: C:\CPWIN\DATA1\PESTCCD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.194 | | 0.0000 | 0.000 | 1017.5 | 0.033 | BB | 0.048 | 355.12 | 0.026 |
| 2 | 3.443 | | 0.0000 | 0.000 | 466.3 | 0.015 | BB | 0.060 | 129.16 | 0.009 |
| 3 | 3.547 | | 0.0000 | 0.000 | 1134.6 | 0.037 | BB | 0.035 | 544.86 | 0.039 |
| 4 | 3.885 | | 0.0000 | 0.000 | 1008.8 | 0.033 | BB | 0.049 | 340.04 | 0.025 |
| 5 | 3.986 | | 0.0000 | 0.000 | 2344.4 | 0.076 | BB | 0.041 | 948.22 | 0.069 |
| 6 | 4.115 | | 0.0000 | 0.000 | 340.6 | 0.011 | BB | 0.057 | 99.09 | 0.007 |
| 7 | 4.318 | TCX | 37.1229 | 8.793 | 326824.4 | 10.628 | BB | 0.036 | 153144.00 | 11.065 |
| 8 | 4.908 | Hcb | 0.2867 | 0.068 | 3877.2 | 0.126 | BB | 0.032 | 2013.21 | 0.145 |
| 9 | 5.165 | alpha-BHC | 9.6865 | 2.294 | 93324.9 | 3.035 | BB | 0.031 | 49783.99 | 3.597 |
| 10 | 5.506 | | 0.0000 | 0.000 | 245.2 | 0.008 | BB | 0.031 | 133.82 | 0.010 |
| 11 | 5.634 | gamma-BHC | 9.6514 | 2.286 | 94651.9 | 3.078 | BB | 0.032 | 49529.58 | 3.579 |
| 12 | 5.765 | beta-BHC | 9.7533 | 2.310 | 56629.6 | 1.841 | BB | 0.034 | 27627.81 | 1.996 |
| 13 | 5.871 | | 0.0000 | 0.000 | 805.6 | 0.026 | BB | 0.030 | 449.42 | 0.032 |
| 14 | 6.022 | delta-BHC | 9.5336 | 2.258 | 86576.3 | 2.815 | BB | 0.031 | 46425.96 | 3.354 |
| 15 | 6.119 | | 0.0000 | 0.000 | 321.2 | 0.010 | BB | 0.027 | 197.59 | 0.014 |
| 16 | 6.232 | | 0.0000 | 0.000 | 141.8 | 0.005 | BB | 0.031 | 76.12 | 0.006 |
| 17 | 6.321 | Heptachlor | 9.6184 | 2.278 | 107135.4 | 3.484 | BB | 0.034 | 52186.45 | 3.771 |
| 18 | 6.526 | | 0.0000 | 0.000 | 4379.3 | 0.142 | BB | 0.035 | 2069.90 | 0.150 |
| 19 | 6.747 | Aldrin | 9.6322 | 2.281 | 81038.5 | 2.635 | BB | 0.033 | 40374.66 | 2.917 |
| 20 | 6.958 | | 0.0000 | 0.000 | 677.9 | 0.022 | BB | 0.058 | 193.13 | 0.014 |
| 21 | 7.127 | | 0.0000 | 0.000 | 589.9 | 0.019 | BB | 0.042 | 234.05 | 0.017 |
| 22 | 7.214 | | 0.0000 | 0.000 | 352.6 | 0.011 | BB | 0.030 | 199.09 | 0.014 |
| 23 | 7.588 | Hept. epoxide | 9.6728 | 2.291 | 87628.2 | 2.850 | BV | 0.035 | 41427.23 | 2.993 |
| 24 | 7.753 | g. Chlordane | 9.7943 | 2.320 | 86872.0 | 2.825 | VB | 0.036 | 40324.43 | 2.914 |
| 25 | 7.931 | a. Chlordane | 9.3856 | 2.223 | 86648.6 | 2.818 | BV | 0.035 | 41187.73 | 2.976 |
| 26 | 8.019 | 4,4'-DDE | 18.6730 | 4.423 | 133324.9 | 4.335 | VV | 0.034 | 65607.94 | 4.740 |
| 27 | 8.122 | Endosulfan I | 9.6658 | 2.289 | 85156.7 | 2.769 | VV | 0.037 | 38005.66 | 2.746 |
| 28 | 8.440 | Dieldrin | 19.2499 | 4.559 | 145993.5 | 4.747 | VV | 0.035 | 70108.75 | 5.066 |
| 29 | 8.582 | o,p-DDT | 0.1455 | 0.034 | 1265.5 | 0.041 | VV | 0.054 | 387.82 | 0.028 |
| 30 | 8.682 | | 0.0000 | 0.000 | 734.1 | 0.024 | VV | 0.052 | 237.56 | 0.017 |
| 31 | 8.750 | Endrin | 18.5411 | 4.391 | 126439.9 | 4.112 | VV | 0.034 | 61997.78 | 4.480 |
| 32 | 8.809 | 4,4'-DDD | 16.7767 | 3.974 | 110556.2 | 3.595 | VV | 0.039 | 47754.12 | 3.450 |
| 33 | 9.048 | Endosulfan II | 18.9844 | 4.496 | 140293.6 | 4.562 | VV | 0.037 | 63399.78 | 4.581 |
| 34 | 9.172 | 4,4'-DDT | 17.6831 | 4.188 | 109235.2 | 3.552 | VB | 0.036 | 50922.28 | 3.679 |
| 35 | 9.405 | | 0.0000 | 0.000 | 927.2 | 0.030 | BB | 0.036 | 430.72 | 0.031 |
| 36 | 9.450 | | 0.0000 | 0.000 | 460.7 | 0.015 | BB | 0.027 | 280.25 | 0.020 |
| 37 | 9.597 | Endrin aldehyde | 18.7457 | 4.440 | 122774.0 | 3.992 | BB | 0.040 | 51425.52 | 3.716 |
| 38 | 9.784 | Methoxychlor | 85.1049 | 20.157 | 336469.9 | 10.941 | BB | 0.040 | 139513.20 | 10.080 |
| 39 | 10.167 | Endo. sulfate | 18.9834 | 4.496 | 127033.3 | 4.131 | BB | 0.038 | 55952.23 | 4.043 |
| 40 | 10.340 | | 0.0000 | 0.000 | 1634.0 | 0.053 | BB | 0.032 | 848.72 | 0.061 |
| 41 | 10.407 | | 0.0000 | 0.000 | 6551.1 | 0.213 | BB | 0.036 | 2994.04 | 0.216 |
| 42 | 10.537 | Endrin ketone | 19.3574 | 4.585 | 142988.7 | 4.650 | BB | 0.038 | 63097.27 | 4.559 |
| 43 | 10.702 | | 0.0000 | 0.000 | 355.5 | 0.012 | BB | 0.043 | 137.21 | 0.010 |
| 44 | 10.932 | | 0.0000 | 0.000 | 769.3 | 0.025 | BB | 0.037 | 346.31 | 0.025 |
| 45 | 11.073 | | 0.0000 | 0.000 | 4043.5 | 0.131 | BB | 0.194 | 348.17 | 0.025 |
| 46 | 11.427 | | 0.0000 | 0.000 | 7559.0 | 0.246 | BB | 0.434 | 290.04 | 0.021 |
| 47 | 11.595 | | 0.0000 | 0.000 | 1222.4 | 0.040 | BB | 0.044 | 461.29 | 0.033 |
| 48 | 11.893 | DCB | 36.1596 | 8.564 | 343535.9 | 11.171 | BB | 0.048 | 119295.80 | 8.620 |
| 49 | 12.503 | | 0.0000 | 0.000 | 220.0 | 0.007 | BB | 0.049 | 75.37 | 0.005 |
| 50 | 12.680 | | 0.0000 | 0.000 | 352.1 | 0.011 | BB | 0.094 | 62.31 | 0.005 |
| 51 | 13.645 | | 0.0000 | 0.000 | 274.5 | 0.009 | BB | 0.124 | 36.96 | 0.003 |

6775

Total Area = 3075203.0, Total Amount = 422.208, Total Height = 1384012.0, Sample Units = PPB

Sample Name: **MIXA30424B QJMIXA3QJ CCAL 048499999**
Acquired from CP16--H5262B via port 2 on 3/25/04 09:01:07pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.06R**
Method File: C:\CPWIN\DATA1\PESTCCDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.074 | | 0.0000 | 0.000 | 421.5 | 0.011 | BB | 0.052 | 135.49 | 0.008 |
| 2 | 3.449 | | 0.0000 | 0.000 | 721.4 | 0.020 | BB | 0.053 | 227.20 | 0.014 |
| 3 | 3.533 | | 0.0000 | 0.000 | 405.4 | 0.011 | BB | 0.035 | 192.32 | 0.012 |
| 4 | 3.615 | | 0.0000 | 0.000 | 2222.2 | 0.061 | BB | 0.044 | 842.03 | 0.052 |
| 5 | 3.710 | | 0.0000 | 0.000 | 1436.5 | 0.039 | BB | 0.040 | 592.64 | 0.036 |
| 6 | 3.782 | | 0.0000 | 0.000 | 1426.9 | 0.039 | BB | 0.029 | 812.48 | 0.050 |
| 7 | 4.043 | TCX | 34.8474 | 8.861 | 441109.3 | 12.012 | BB | 0.038 | 195522.90 | 12.002 |
| 8 | 4.257 | | 0.0000 | 0.000 | 692.8 | 0.019 | BB | 0.037 | 308.28 | 0.019 |
| 9 | 4.364 | | 0.0000 | 0.000 | 191.7 | 0.005 | BB | 0.030 | 104.94 | 0.006 |
| 10 | 4.453 | | 0.0000 | 0.000 | 1570.9 | 0.043 | BB | 0.068 | 384.08 | 0.024 |
| 11 | 4.587 | | 0.0000 | 0.000 | 6112.9 | 0.166 | BB | 0.034 | 3003.68 | 0.184 |
| 12 | 4.697 | | 0.0000 | 0.000 | 293.6 | 0.008 | BB | 0.043 | 113.98 | 0.007 |
| 13 | 4.796 | | 0.0000 | 0.000 | 791.6 | 0.022 | BB | 0.029 | 459.06 | 0.028 |
| 14 | 4.863 | | 0.0000 | 0.000 | 718.7 | 0.020 | BB | 0.030 | 398.19 | 0.024 |
| 15 | 4.943 | alpha-BHC | 9.2555 | 2.354 | 146494.6 | 3.989 | BB | 0.031 | 79412.44 | 4.875 |
| 16 | 5.039 | | 0.0000 | 0.000 | 285.6 | 0.008 | BB | 0.038 | 124.81 | 0.008 |
| 17 | 5.289 | | 0.0000 | 0.000 | 3225.5 | 0.088 | BB | 0.121 | 444.55 | 0.027 |
| 18 | 5.459 | gamma-BHC | 9.2632 | 2.356 | 139381.1 | 3.796 | BB | 0.032 | 73640.05 | 4.520 |
| 19 | 5.589 | beta-BHC | 9.0720 | 2.307 | 76018.5 | 2.070 | BB | 0.035 | 36180.27 | 2.221 |
| 20 | 5.730 | | 0.0000 | 0.000 | 1305.9 | 0.036 | BB | 0.033 | 655.18 | 0.040 |
| 21 | 6.000 | delta-BHC | 9.0797 | 2.309 | 126527.5 | 3.446 | BV | 0.031 | 67656.22 | 4.153 |
| 22 | 6.074 | Heptachlor | 9.0827 | 2.310 | 150001.1 | 4.085 | VV | 0.035 | 72009.94 | 4.420 |
| 23 | 6.232 | | 0.0000 | 0.000 | 2467.0 | 0.067 | VB | 0.078 | 527.73 | 0.032 |
| 24 | 6.519 | Aldrin | 9.1632 | 2.330 | 115009.2 | 3.132 | BV | 0.033 | 58341.11 | 3.581 |
| 25 | 6.636 | | 0.0000 | 0.000 | 416.2 | 0.011 | VB | 0.038 | 184.49 | 0.011 |
| 26 | 6.906 | | 0.0000 | 0.000 | 2648.2 | 0.072 | BB | 0.091 | 484.72 | 0.030 |
| 27 | 7.058 | | 0.0000 | 0.000 | 2913.6 | 0.079 | BB | 0.073 | 663.74 | 0.041 |
| 28 | 7.236 | | 0.0000 | 0.000 | 595.3 | 0.016 | BB | 0.033 | 300.45 | 0.018 |
| 29 | 7.296 | Hept. epoxide | 8.7640 | 2.229 | 109931.0 | 2.994 | BB | 0.035 | 52082.60 | 3.197 |
| 30 | 7.547 | g. Chlordane | 8.7135 | 2.216 | 108666.5 | 2.959 | BV | 0.036 | 50504.90 | 3.100 |
| 31 | 7.740 | a. Chlordane | 8.8735 | 2.256 | 102097.6 | 2.780 | VV | 0.035 | 49183.80 | 3.019 |
| 32 | 7.815 | Endosulfan I | 8.7681 | 2.230 | 99311.8 | 2.705 | VV | 0.036 | 46245.56 | 2.839 |
| 33 | 7.963 | 4,4'-DDE | 16.6222 | 4.227 | 170521.0 | 4.644 | VV | 0.037 | 77448.23 | 4.754 |
| 34 | 8.174 | Dieldrin | 17.6701 | 4.493 | 179649.7 | 4.892 | VV | 0.035 | 85113.84 | 5.225 |
| 35 | 8.396 | | 0.0000 | 0.000 | 544.6 | 0.015 | VB | 0.048 | 191.00 | 0.012 |
| 36 | 8.571 | Endrin | 17.2198 | 4.379 | 147999.7 | 4.030 | BB | 0.035 | 71085.31 | 4.364 |
| 37 | 8.712 | 4,4'-DDD | 14.9787 | 3.809 | 108212.5 | 2.947 | BV | 0.037 | 48899.89 | 3.002 |
| 38 | 8.848 | Endosulfan II | 17.4877 | 4.447 | 149513.6 | 4.072 | VB | 0.037 | 67737.41 | 4.158 |
| 39 | 9.113 | 4,4'-DDT | 16.3772 | 4.165 | 118063.8 | 3.215 | BB | 0.037 | 53370.92 | 3.276 |
| 40 | 9.282 | Endrin aldehyde | 17.5326 | 4.458 | 128949.6 | 3.512 | BB | 0.040 | 53765.64 | 3.300 |
| 41 | 9.439 | | 0.0000 | 0.000 | 1303.5 | 0.035 | BB | 0.027 | 815.42 | 0.050 |
| 42 | 9.634 | Endo. sulfate | 18.3383 | 4.663 | 141689.5 | 3.859 | BB | 0.040 | 59218.08 | 3.635 |
| 43 | 9.993 | Methoxychlor | 79.9931 | 20.342 | 336834.3 | 9.173 | BB | 0.043 | 129622.10 | 7.957 |
| 44 | 10.210 | | 0.0000 | 0.000 | 1418.8 | 0.039 | BB | 0.031 | 764.80 | 0.047 |
| 45 | 10.329 | Endrin ketone | 18.0016 | 4.578 | 157303.3 | 4.284 | BB | 0.040 | 65055.38 | 3.993 |
| 46 | 10.767 | | 0.0000 | 0.000 | 768.2 | 0.021 | BB | 0.040 | 321.00 | 0.020 |
| 47 | 10.909 | | 0.0000 | 0.000 | 467.2 | 0.013 | BB | 0.107 | 72.90 | 0.004 |
| 48 | 11.134 | | 0.0000 | 0.000 | 351.6 | 0.010 | BB | 0.100 | 58.63 | 0.004 |
| 49 | 11.537 | | 0.0000 | 0.000 | 212.2 | 0.006 | BB | 0.044 | 81.24 | 0.005 |
| 50 | 11.620 | | 0.0000 | 0.000 | 1201.9 | 0.033 | BB | 0.044 | 457.73 | 0.028 |
| 51 | 11.807 | | 0.0000 | 0.000 | 167.4 | 0.005 | BB | 0.057 | 49.30 | 0.003 |
| 52 | 12.041 | DCB | 34.1432 | 8.682 | 380603.2 | 10.365 | BB | 0.052 | 123002.80 | 7.551 |
| 53 | 12.561 | | 0.0000 | 0.000 | 636.0 | 0.017 | BB | 0.089 | 118.58 | 0.007 |
| 54 | 12.884 | | 0.0000 | 0.000 | 267.6 | 0.007 | BB | 0.066 | 67.32 | 0.004 |

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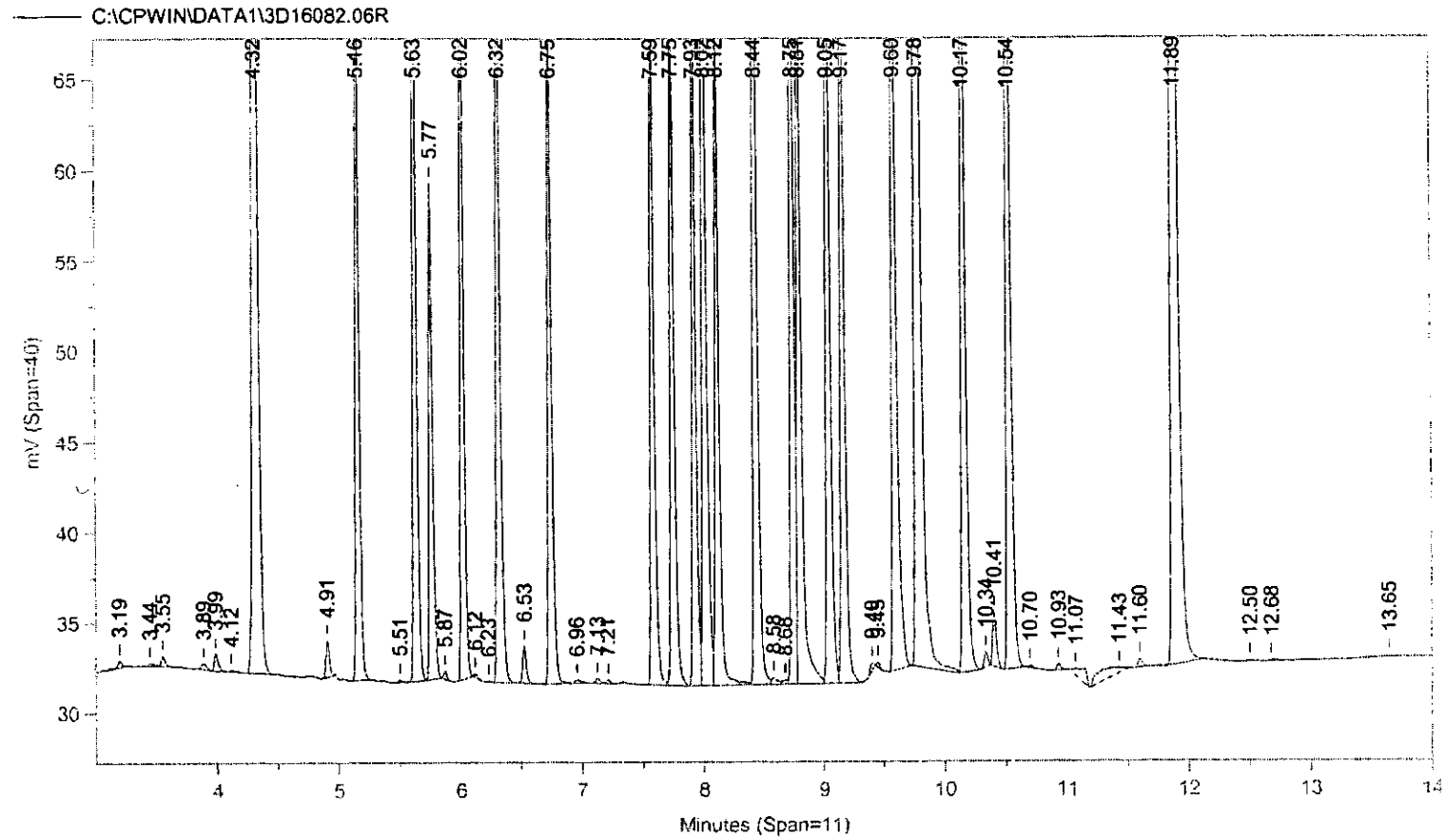
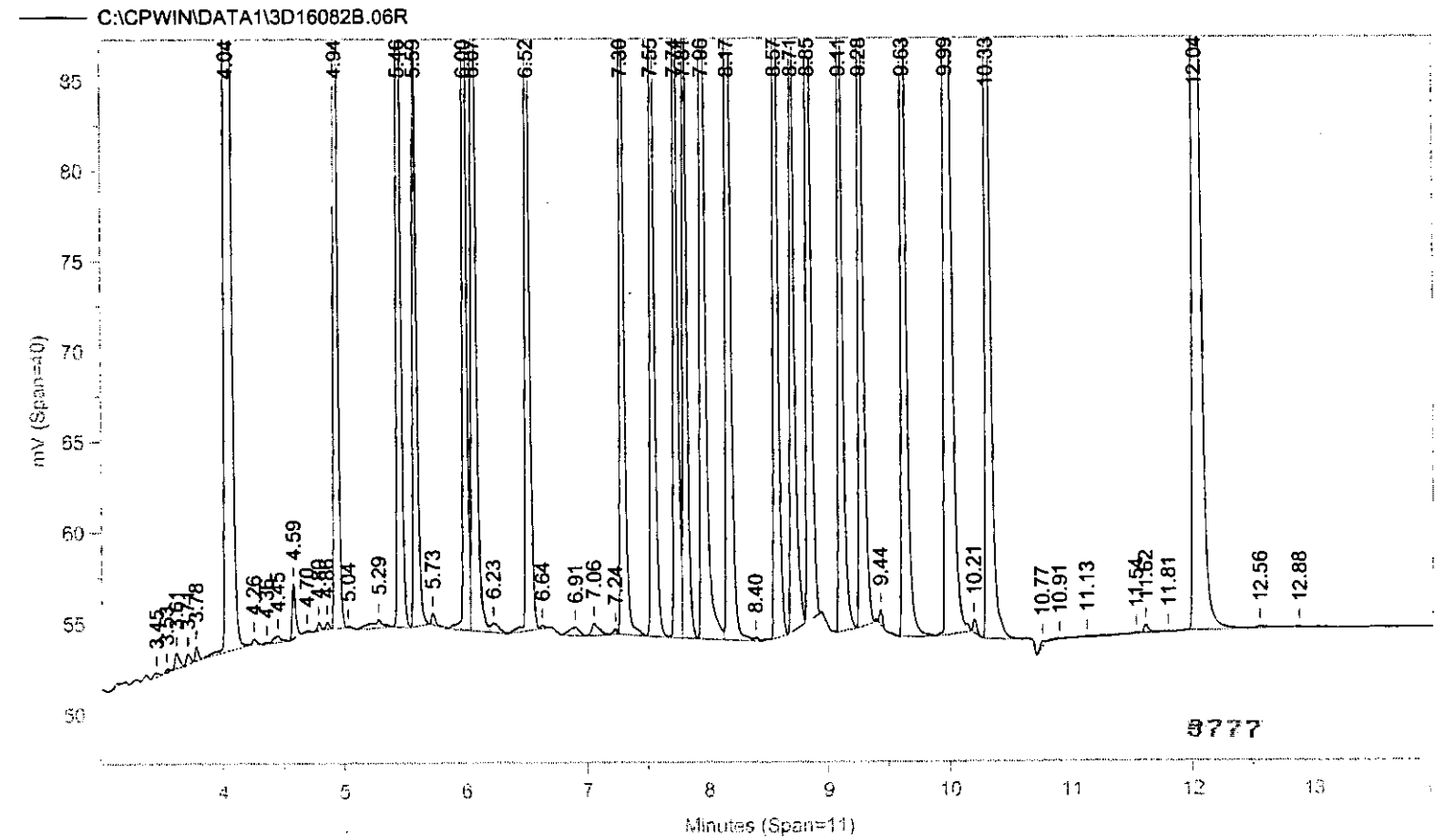
Total Area = 3672091.0, Total Amount = 393.247, Total Height = 1629058.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\3D16082.06R




Instrument ID: CP16--H5262A Injected On: 3/25/2004 8:47:07 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

File: C:\CPWIN\DATA1\3D16082B.06R




Instrument ID: CP16--H5262B Injected On: 3/25/2004 8:47:07 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

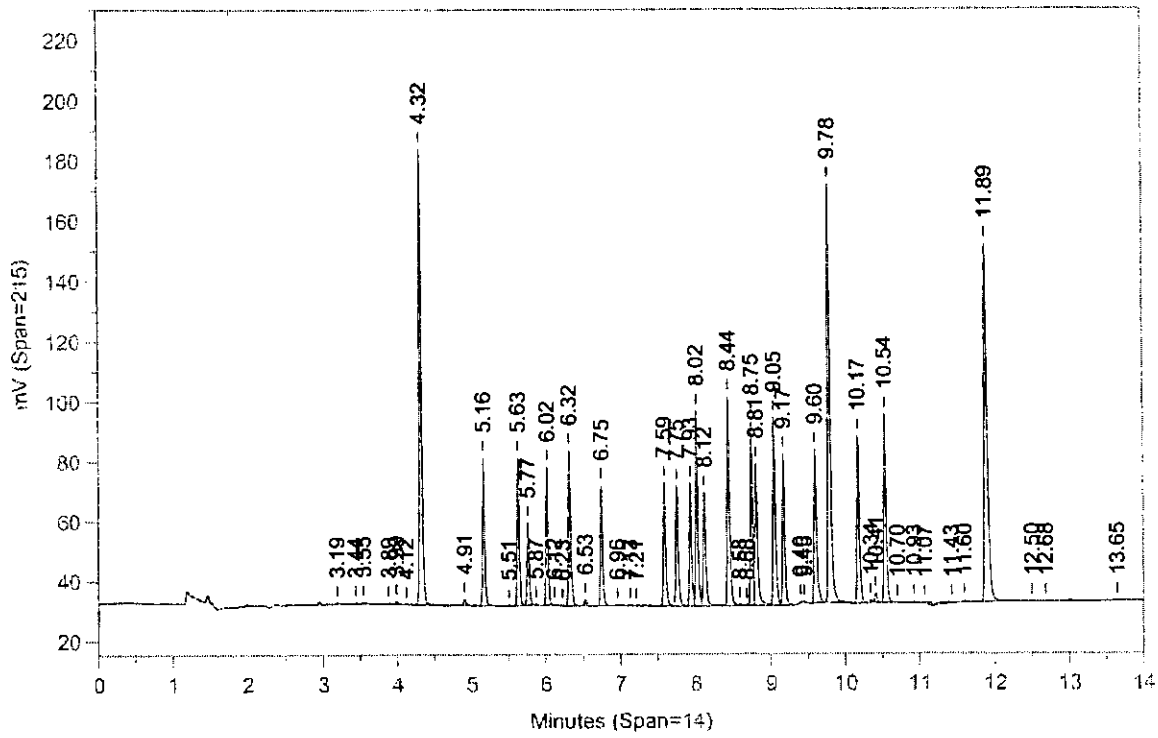
| RT A | Height A | Amount A | Compound A | RPD A | RT B | Height B | Amount B | Compound B | RPD B |
|---|---|---|---|---|---|---|---|---|---|
| 4.318 | 153144 | 37.123 | TCX | -3.5 | 4.043 | 195523 | 34.847 | TCX | -9.4 |
| 4.908 | 2013 | .287 | Hcb | -94.3 | . | 0 | . | Hcb | ERR |
| 5.165 | 49784 | 9.686 | alpha-BHC | -3.1 | 4.943 | 79412 | 9.255 | alpha-BHC | -7.4 |
| 5.634 | 49530 | 9.651 | gamma-BHC | -3.5 | 5.459 | 73640 | 9.263 | gamma-BHC | -7.4 |
| 5.765 | 27628 | 9.753 | beta-BHC | -2.5 | 5.589 | 36180 | 9.072 | beta-BHC | -9.3 |
| 6.022 | 46426 | 9.534 | delta-BHC | -4.7 | 6. | 67656 | 9.08 | delta-BHC | -9.2 |
| 6.321 | 52186 | 9.618 | Heptachlor | -3.8 | 6.074 | 72010 | 9.083 | Heptachlor | -9.2 |
| 6.747 | 40375 | 9.632 | Aldrin | -3.7 | 6.519 | 58341 | 9.163 | Aldrin | -8.4 |
| 7.588 | 41427 | 9.673 | Hept. epoxide | -3.3 | 7.296 | 52083 | 8.764 | Hept. epoxide | -12.4 |
| 7.753 | 40324 | 9.794 | g. Chlordane | -2.1 | 7.547 | 50505 | 8.713 | g. Chlordane | -12.9 |
| 7.931 | 41188 | 9.386 | a. Chlordane | -6.1 | 7.74 | 49184 | 8.873 | a. Chlordane | -11.3 |
| 8.122 | 38006 | 9.666 | Endosulfan I | -3.3 | 7.815 | 46246 | 8.768 | Endosulfan I | -12.3 |
| 8.019 | 65608 | 18.673 | 4,4'-DDE | -6.6 | 7.963 | 77448 | 16.622 | 4,4'-DDE | -16.9 |
| 8.44 | 70109 | 19.25 | Dieldrin | -3.8 | 8.174 | 85114 | 17.67 | Dieldrin | -11.6 |
| 8.75 | 61998 | 18.541 | Endrin | -7.3 | 8.571 | 71085 | 17.22 | Endrin | -13.9 |
| 8.582 | 388 | .145 | o,p-DDT | -98.5 | . | 0 | . | o,p-DDT | ERR |
| 8.809 | 47754 | 16.777 | 4,4'-DDD | -16.1 | 8.712 | 48900 | 14.979 | 4,4'-DDD | -25.1 |
| 9.048 | 63400 | 18.984 | Endosulfan II | -5.1 | 8.848 | 67737 | 17.488 | Endosulfan II | -12.6 |
| 9.172 | 50922 | 17.683 | 4,4'-DDT | -11.6 | 9.113 | 53371 | 16.377 | 4,4'-DDT | -18.1 |
| 9.597 | 51426 | 18.746 | Endrin aldehyde | -6.3 | 9.282 | 53766 | 17.533 | Endrin aldehyde | -12.3 |
| 10.167 | 55952 | 18.983 | Endo. sulfate | -5.1 | 9.634 | 59218 | 18.338 | Endo. sulfate | -8.3 |
| 9.784 | 139513 | 85.105 | Methoxychlor | -14.9 | 9.993 | 129622 | 79.993 | Methoxychlor | -20. |
| 10.537 | 63097 | 19.357 | Endrin ketone | -3.2 | 10.329 | 65055 | 18.002 | Endrin ketone | -10. |
| 11.893 | 119296 | 36.16 | DCB | -7.2 | 12.041 | 123003 | 34.143 | DCB | -12.4 |

Files:
Area File: C:\CPWIN\DATA1\3D16082.06A
Area File: C:\CPWIN\DATA1\3D16082B.06A
Method A: C:\CPWIN\DATA1\PESTCCD.ME`
Method B: C:\CPWIN\DATA1\PESTCCDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTCCD.FMTA
Format B: C:\CPWIN\DATA1\PESTCCD.FMTB
Area File Created On: 3/26/2004 8:52:58 AM
File Reported On: 3/26/2004 at 8:53:04 AM

Files:

REPLOTS

C:\CPWIN\DATA1\3D16082.06R

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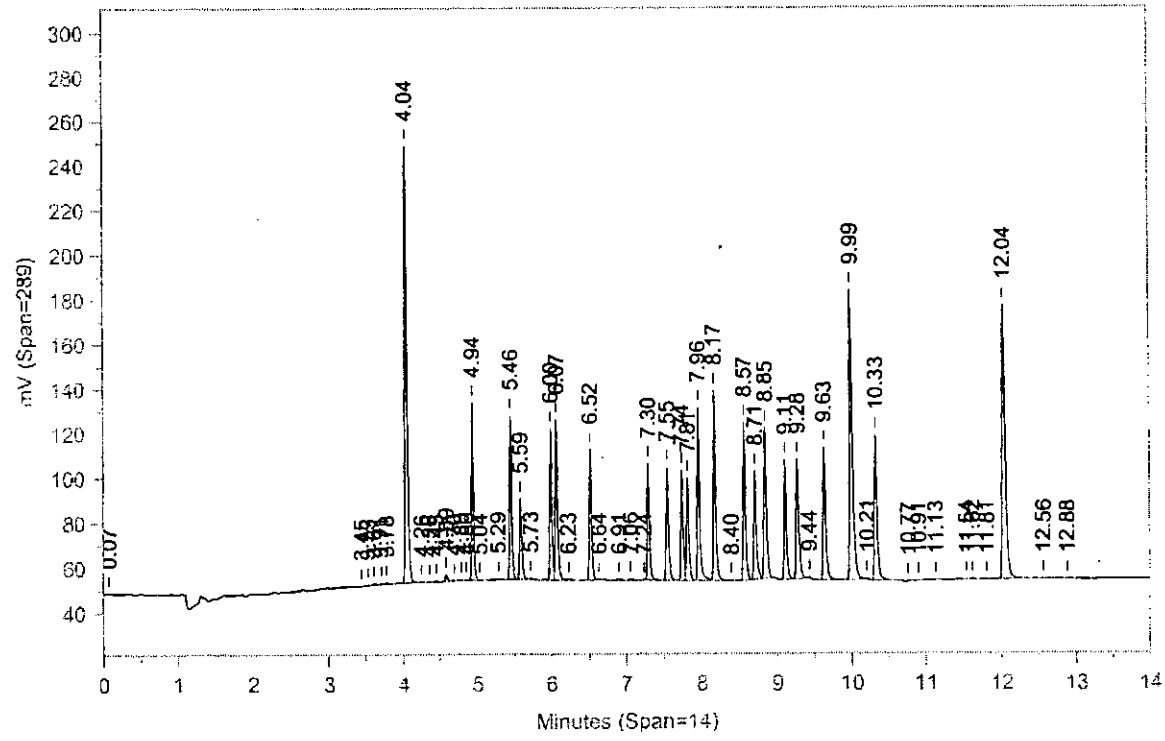


8779

Sample Name: **AR1630424D FVAR163FV CCAL 048499999**
Acquired from CP16--H5262A via port 1 on 3/25/04 09:21:42pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.07R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.191 | | 0.0000 | 0.000 | 513.6 | 0.029 | BB | 0.074 | 115.77 | 0.016 |
| 2 | 3.283 | | 0.0000 | 0.000 | 161.6 | 0.009 | BB | 0.055 | 48.90 | 0.007 |
| 3 | 3.544 | | 0.0000 | 0.000 | 1573.8 | 0.089 | BB | 0.041 | 634.70 | 0.085 |
| 4 | 3.888 | | 0.0000 | 0.000 | 373.3 | 0.021 | BB | 0.041 | 150.17 | 0.020 |
| 5 | 3.987 | | 0.0000 | 0.000 | 1004.4 | 0.057 | BB | 0.049 | 339.05 | 0.046 |
| 6 | 4.113 | | 0.0000 | 0.000 | 245.1 | 0.014 | BB | 0.041 | 98.54 | 0.013 |
| 7 | 4.225 | | 0.0000 | 0.000 | 483.2 | 0.027 | BB | 0.024 | 335.39 | 0.045 |
| 8 | 4.317 | TCX | 8.1348 | 10.200 | 73058.7 | 4.115 | BB | 0.036 | 33558.77 | 4.519 |
| 9 | 4.575 | | 0.0000 | 0.000 | 7142.0 | 0.402 | BB | 0.036 | 3299.14 | 0.444 |
| 10 | 4.797 | | 0.0000 | 0.000 | 5777.0 | 0.325 | BB | 0.029 | 3298.42 | 0.444 |
| 11 | 4.859 | | 0.0000 | 0.000 | 39624.6 | 2.232 | BB | 0.036 | 18312.58 | 2.466 |
| 12 | 5.043 | | 0.0000 | 0.000 | 5709.8 | 0.322 | BB | 0.037 | 2571.67 | 0.346 |
| 13 | 5.231 | | 0.0000 | 0.000 | 139.3 | 0.008 | BB | 0.026 | 88.44 | 0.012 |
| 14 | 5.377 | | 0.0000 | 0.000 | 90284.7 | 5.086 | BB | 0.051 | 29566.86 | 3.982 |
| 15 | 5.555 | | 0.0000 | 0.000 | 9508.1 | 0.536 | BB | 0.039 | 4037.32 | 0.544 |
| 16 | 5.638 | gamma-BHC | 1.0481 | 1.314 | 7453.6 | 0.420 | BB | 0.023 | 5378.69 | 0.724 |
| 17 | 5.673 | | 0.0000 | 0.000 | 14138.9 | 0.796 | BB | 0.026 | 9095.52 | 1.225 |
| 18 | 5.770 | beta-BHC | 0.1734 | 0.217 | 989.1 | 0.056 | BB | 0.034 | 491.30 | 0.066 |
| 19 | 5.936 | | 0.0000 | 0.000 | 17988.7 | 1.013 | BB | 0.039 | 7776.09 | 1.047 |
| 20 | 6.010 | delta-BHC | 1.9998 | 2.508 | 15559.3 | 0.876 | BB | 0.027 | 9738.54 | 1.312 |
| 21 | 6.038 | | 0.0000 | 0.000 | 32911.7 | 1.854 | BB | 0.025 | 22230.87 | 2.994 |
| 22 | 6.118 | | 0.0000 | 0.000 | 3881.9 | 0.219 | BB | 0.027 | 2436.11 | 0.328 |
| 23 | 6.171 | | 0.0000 | 0.000 | 612.9 | 0.035 | BB | 0.018 | 555.91 | 0.075 |
| 24 | 6.225 | | 0.0000 | 0.000 | 57896.9 | 3.261 | BB | 0.038 | 25455.38 | 3.428 |
| 25 | 6.313 | Heptachlor | 3.0144 | 3.780 | 30275.6 | 1.705 | BB | 0.031 | 16355.45 | 2.203 |
| 26 | 6.430 | | 0.0000 | 0.000 | 1327.0 | 0.075 | BB | 0.025 | 899.24 | 0.121 |
| 27 | 6.476 | | 0.0000 | 0.000 | 10796.3 | 0.608 | BB | 0.026 | 7054.67 | 0.950 |
| 28 | 6.509 | | 0.0000 | 0.000 | 9887.6 | 0.557 | BB | 0.022 | 7596.33 | 1.023 |
| 29 | 6.561 | | 0.0000 | 0.000 | 11780.5 | 0.664 | BB | 0.028 | 6926.14 | 0.933 |
| 30 | 6.786 | | 0.0000 | 0.000 | 65415.0 | 3.685 | BB | 0.049 | 22386.35 | 3.015 |
| 31 | 6.902 | | 0.0000 | 0.000 | 12783.3 | 0.720 | BB | 0.027 | 7986.14 | 1.076 |
| 32 | 6.956 | | 0.0000 | 0.000 | 13346.6 | 0.752 | BB | 0.031 | 7163.14 | 0.965 |
| 33 | 7.103 | | 0.0000 | 0.000 | 9086.1 | 0.512 | BB | 0.037 | 4048.33 | 0.545 |
| 34 | 7.239 | | 0.0000 | 0.000 | 2802.1 | 0.158 | BB | 0.027 | 1706.76 | 0.230 |
| 35 | 7.299 | | 0.0000 | 0.000 | 22866.7 | 1.288 | BB | 0.031 | 12280.54 | 1.654 |
| 36 | 7.352 | | 0.0000 | 0.000 | 1371.0 | 0.077 | BB | 0.019 | 1232.93 | 0.166 |
| 37 | 7.391 | | 0.0000 | 0.000 | 1419.0 | 0.080 | BB | 0.022 | 1065.97 | 0.144 |
| 38 | 7.573 | Hept. epoxide | 0.5396 | 0.677 | 4767.7 | 0.269 | BV | 0.034 | 2311.03 | 0.311 |
| 39 | 7.640 | | 0.0000 | 0.000 | 45267.1 | 2.550 | VB | 0.044 | 17180.08 | 2.314 |
| 40 | 7.955 | a. Chlordane | 0.1820 | 0.228 | 1697.1 | 0.096 | BV | 0.035 | 798.61 | 0.108 |
| 41 | 8.006 | 4,4'-DDE | 2.8020 | 3.514 | 24860.1 | 1.400 | VV | 0.042 | 9844.89 | 1.326 |
| 42 | 8.172 | | 0.0000 | 0.000 | 18204.6 | 1.025 | VV | 0.034 | 8898.14 | 1.198 |
| 43 | 8.224 | o,p-DDD | 8.0920 | 10.147 | 40621.2 | 2.288 | VV | 0.038 | 17940.23 | 2.416 |
| 44 | 8.306 | | 0.0000 | 0.000 | 28270.2 | 1.592 | VV | 0.058 | 8145.32 | 1.097 |
| 45 | 8.407 | | 0.0000 | 0.000 | 86526.8 | 4.874 | VV | 0.040 | 35835.26 | 4.826 |
| 46 | 8.540 | | 0.0000 | 0.000 | 12469.0 | 0.702 | VV | 0.043 | 4838.94 | 0.652 |
| 47 | 8.607 | o,p-DDT | 0.3751 | 0.470 | 2257.3 | 0.127 | VV | 0.038 | 1000.14 | 0.135 |
| 48 | 8.689 | | 0.0000 | 0.000 | 14964.7 | 0.843 | VV | 0.037 | 6788.35 | 0.914 |
| 49 | 8.765 | Endrin | 12.7806 | 16.026 | 128261.6 | 7.225 | VV | 0.050 | 42735.97 | 5.755 |
| 50 | 8.826 | 4,4'-DDD | 4.6307 | 5.807 | 28279.5 | 1.593 | VV | 0.036 | 13181.17 | 1.775 |
| 51 | 8.932 | | 0.0000 | 0.000 | 48460.9 | 2.730 | VB | 0.040 | 19958.34 | 2.688 |
| 52 | 9.063 | Endosulfan II | 0.3878 | 0.486 | 2219.0 | 0.125 | BB | 0.029 | 1294.99 | 0.174 |
| 53 | 9.137 | | 0.0000 | 0.000 | 128792.6 | 7.255 | BV | 0.053 | 40542.34 | 5.460 |
| 54 | 9.277 | | 0.0000 | 0.000 | 62262.9 | 3.507 | VV | 0.040 | 25680.00 | 3.458 |
| 55 | 9.338 | | 0.0000 | 0.000 | 35193.4 | 1.982 | VB | 0.040 | 14683.85 | 1.978 |
| 56 | 9.458 | | 0.0000 | 0.000 | 6730.0 | 0.379 | BB | 0.030 | 3780.95 | 0.509 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.517 | | 0.0000 | 0.000 | 3471.6 | 0.196 | BB | 0.026 | 2229.93 | 0.300 |
| 58 | 9.602 | Endrin aldehyde | 7.4891 | 9.391 | 37914.0 | 2.136 | BB | 0.031 | 20544.96 | 2.767 |
| 59 | 9.657 | | 0.0000 | 0.000 | 13339.3 | 0.751 | BB | 0.027 | 8292.35 | 1.117 |
| 60 | 9.719 | | 0.0000 | 0.000 | 7717.8 | 0.435 | BB | 0.028 | 4666.26 | 0.628 |
| 61 | 9.783 | Methoxychlor | 0.1756 | 0.220 | 343.7 | 0.019 | BB | 0.020 | 287.89 | 0.039 |
| 62 | 9.836 | | 0.0000 | 0.000 | 4904.3 | 0.276 | BB | 0.032 | 2555.96 | 0.344 |
| 63 | 9.915 | | 0.0000 | 0.000 | 8585.8 | 0.484 | BB | 0.032 | 4424.68 | 0.596 |
| 64 | 9.995 | Mirex | 19.3233 | 24.230 | 147374.1 | 8.301 | BB | 0.045 | 54412.96 | 7.328 |
| 65 | 10.369 | | 0.0000 | 0.000 | 79113.0 | 4.456 | BB | 0.048 | 27254.23 | 3.670 |
| 66 | 10.462 | | 0.0000 | 0.000 | 21275.7 | 1.198 | BB | 0.039 | 9104.04 | 1.226 |
| 67 | 10.705 | | 0.0000 | 0.000 | 2633.0 | 0.148 | BB | 0.036 | 1228.77 | 0.165 |
| 68 | 10.835 | | 0.0000 | 0.000 | 18560.6 | 1.045 | BB | 0.045 | 6885.11 | 0.927 |
| 69 | 11.177 | | 0.0000 | 0.000 | 35388.5 | 1.993 | BB | 0.039 | 15115.02 | 2.036 |
| 70 | 11.594 | | 0.0000 | 0.000 | 14344.0 | 0.808 | BB | 0.045 | 5365.02 | 0.723 |
| 71 | 11.894 | DCB | 8.6011 | 10.785 | 78776.2 | 4.437 | BB | 0.046 | 28376.35 | 3.821 |
| 72 | 13.722 | | 0.0000 | 0.000 | 1296.9 | 0.073 | BB | 0.459 | 47.12 | 0.006 |

Total Area = 1775333.0, Total Amount = 79.75, Total Height = 742545.3, Sample Units = PPB

Sample Name: **AR1630424D FVAR163FV CCAL 048499999**
Acquired from CP16--H5262B via port 2 on 3/25/04 09:21:42pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.07R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.027 | | 0.0000 | 0.000 | 299.9 | 0.012 | BB | 0.047 | 107.03 | 0.012 |
| 2 | 3.448 | | 0.0000 | 0.000 | 555.9 | 0.022 | BB | 0.039 | 237.87 | 0.027 |
| 3 | 3.537 | | 0.0000 | 0.000 | 486.8 | 0.019 | BB | 0.037 | 218.69 | 0.024 |
| 4 | 3.617 | | 0.0000 | 0.000 | 1630.2 | 0.065 | BB | 0.047 | 577.08 | 0.065 |
| 5 | 3.717 | | 0.0000 | 0.000 | 1065.3 | 0.043 | BB | 0.043 | 415.91 | 0.047 |
| 6 | 3.798 | | 0.0000 | 0.000 | 276.0 | 0.011 | BB | 0.029 | 157.36 | 0.018 |
| 7 | 4.042 | TCX | 8.0525 | 10.841 | 99529.9 | 3.980 | BB | 0.037 | 45181.13 | 5.058 |
| 8 | 4.220 | | 0.0000 | 0.000 | 6087.1 | 0.243 | BB | 0.054 | 1863.22 | 0.209 |
| 9 | 4.363 | | 0.0000 | 0.000 | 178.5 | 0.007 | BB | 0.027 | 111.65 | 0.013 |
| 10 | 4.462 | | 0.0000 | 0.000 | 10336.1 | 0.413 | BB | 0.039 | 4455.74 | 0.499 |
| 11 | 4.587 | | 0.0000 | 0.000 | 1102.6 | 0.044 | BB | 0.033 | 563.25 | 0.063 |
| 12 | 4.663 | | 0.0000 | 0.000 | 9759.2 | 0.390 | BB | 0.034 | 4766.17 | 0.534 |
| 13 | 4.749 | Hcb | 2.1507 | 2.896 | 53739.2 | 2.149 | BB | 0.039 | 23027.90 | 2.578 |
| 14 | 5.071 | | 0.0000 | 0.000 | 7460.5 | 0.298 | BB | 0.039 | 3210.62 | 0.359 |
| 15 | 5.214 | | 0.0000 | 0.000 | 528.6 | 0.021 | BB | 0.054 | 162.48 | 0.018 |
| 16 | 5.317 | | 0.0000 | 0.000 | 109470.2 | 4.378 | BB | 0.056 | 32381.47 | 3.625 |
| 17 | 5.471 | gamma-BHC | 0.4528 | 0.610 | 8059.9 | 0.322 | BB | 0.037 | 3599.72 | 0.403 |
| 18 | 5.605 | beta-BHC | 2.7297 | 3.675 | 16828.9 | 0.673 | BB | 0.026 | 10886.47 | 1.219 |
| 19 | 5.652 | | 0.0000 | 0.000 | 25692.2 | 1.027 | BB | 0.030 | 14062.31 | 1.574 |
| 20 | 5.792 | | 0.0000 | 0.000 | 27722.7 | 1.109 | BB | 0.054 | 8564.76 | 0.959 |
| 21 | 5.939 | | 0.0000 | 0.000 | 203256.2 | 8.129 | BV | 0.054 | 63201.06 | 7.076 |
| 22 | 6.121 | | 0.0000 | 0.000 | 86704.1 | 3.468 | VV | 0.044 | 33028.73 | 3.698 |
| 23 | 6.260 | | 0.0000 | 0.000 | 64084.0 | 2.563 | VV | 0.046 | 23252.85 | 2.603 |
| 24 | 6.387 | | 0.0000 | 0.000 | 43945.9 | 1.758 | VV | 0.036 | 20408.75 | 2.285 |
| 25 | 6.445 | | 0.0000 | 0.000 | 48345.7 | 1.933 | VV | 0.039 | 20880.61 | 2.338 |
| 26 | 6.498 | Aldrin | 2.3955 | 3.225 | 42870.8 | 1.715 | VB | 0.047 | 15251.75 | 1.708 |
| 27 | 6.693 | | 0.0000 | 0.000 | 213.4 | 0.009 | BB | 0.024 | 147.76 | 0.017 |
| 28 | 6.746 | Telodrin | 3.8123 | 5.132 | 40635.0 | 1.625 | BB | 0.030 | 22479.69 | 2.517 |
| 29 | 6.801 | | 0.0000 | 0.000 | 11692.5 | 0.468 | BB | 0.034 | 5811.53 | 0.651 |
| 30 | 6.908 | | 0.0000 | 0.000 | 55470.4 | 2.218 | BB | 0.047 | 19741.20 | 2.210 |
| 31 | 7.107 | | 0.0000 | 0.000 | 6929.8 | 0.277 | BB | 0.028 | 4149.94 | 0.465 |
| 32 | 7.156 | | 0.0000 | 0.000 | 2513.2 | 0.101 | BB | 0.026 | 1638.65 | 0.183 |
| 33 | 7.241 | | 0.0000 | 0.000 | 5349.5 | 0.214 | BB | 0.027 | 3310.81 | 0.371 |
| 34 | 7.299 | Hept. epoxide | 2.8359 | 3.818 | 36459.2 | 1.458 | BB | 0.036 | 16853.41 | 1.887 |
| 35 | 7.401 | | 0.0000 | 0.000 | 524.2 | 0.021 | BB | 0.025 | 344.52 | 0.039 |
| 36 | 7.462 | | 0.0000 | 0.000 | 4242.5 | 0.170 | BV | 0.032 | 2215.88 | 0.248 |
| 37 | 7.540 | g. Chlordane | 3.0865 | 4.155 | 45926.3 | 1.837 | VV | 0.043 | 17889.69 | 2.003 |
| 38 | 7.666 | | 0.0000 | 0.000 | 3740.4 | 0.150 | VB | 0.048 | 1310.83 | 0.147 |
| 39 | 7.834 | Endosulfan I | 0.0397 | 0.053 | 571.1 | 0.023 | BB | 0.045 | 209.26 | 0.023 |
| 40 | 7.914 | | 0.0000 | 0.000 | 1285.5 | 0.051 | BV | 0.035 | 615.77 | 0.069 |
| 41 | 7.992 | 4,4'-DDE | 0.7296 | 0.982 | 7259.4 | 0.290 | VV | 0.036 | 3399.26 | 0.381 |
| 42 | 8.105 | | 0.0000 | 0.000 | 13569.1 | 0.543 | VV | 0.031 | 7400.43 | 0.829 |
| 43 | 8.141 | | 0.0000 | 0.000 | 19939.9 | 0.797 | VV | 0.033 | 10214.30 | 1.144 |
| 44 | 8.186 | Dieldrin | 4.1908 | 5.642 | 49863.1 | 1.994 | VV | 0.041 | 20186.14 | 2.260 |
| 45 | 8.270 | | 0.0000 | 0.000 | 30225.4 | 1.209 | VV | 0.053 | 9427.53 | 1.055 |
| 46 | 8.392 | | 0.0000 | 0.000 | 103018.1 | 4.120 | VB | 0.047 | 36382.82 | 4.073 |
| 47 | 8.571 | Endrin | 2.1465 | 2.890 | 20585.8 | 0.823 | BV | 0.039 | 8860.96 | 0.992 |
| 48 | 8.653 | | 0.0000 | 0.000 | 120247.8 | 4.809 | VB | 0.047 | 42486.47 | 4.757 |
| 49 | 8.861 | Endosulfan II | 6.9931 | 9.415 | 103566.0 | 4.142 | BV | 0.064 | 27087.40 | 3.033 |
| 50 | 8.999 | | 0.0000 | 0.000 | 15724.5 | 0.629 | VV | 0.056 | 4646.04 | 0.520 |
| 51 | 9.117 | 4,4'-DDT | 12.3617 | 16.643 | 156187.3 | 6.246 | VV | 0.065 | 40284.89 | 4.510 |
| 52 | 9.229 | | 0.0000 | 0.000 | 80397.7 | 3.215 | VV | 0.044 | 30397.39 | 3.403 |
| 53 | 9.299 | Endrin aldehyde | 5.8021 | 7.811 | 51842.4 | 2.073 | VV | 0.049 | 17792.73 | 1.992 |
| 54 | 9.450 | | 0.0000 | 0.000 | 17400.6 | 0.696 | VB | 0.049 | 5868.47 | 0.657 |
| 55 | 9.611 | Endo. sulfate | 8.1467 | 10.968 | 66925.1 | 2.677 | BB | 0.042 | 26307.40 | 2.945 |
| 56 | 9.704 | | 0.0000 | 0.000 | 23502.5 | 0.940 | BB | 0.034 | 11392.40 | 1.275 |

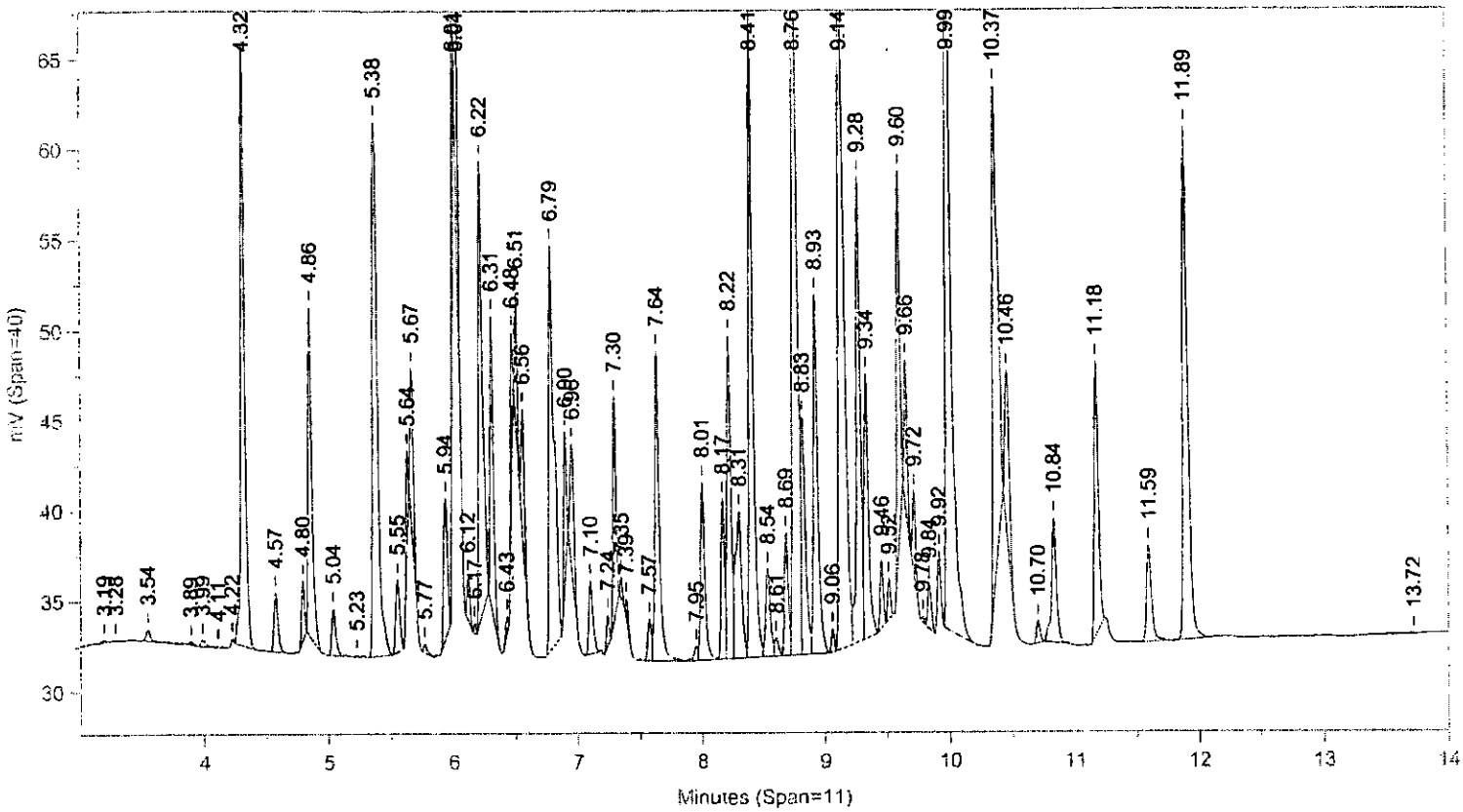
8782

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.776 | | 0.0000 | 0.000 | 8012.8 | 0.320 | BB | 0.030 | 4480.61 | 0.502 |
| 58 | 9.826 | | 0.0000 | 0.000 | 5977.2 | 0.239 | BB | 0.032 | 3080.54 | 0.345 |
| 59 | 9.921 | | 0.0000 | 0.000 | 168855.6 | 6.753 | BB | 0.049 | 57216.52 | 6.406 |
| 60 | 10.094 | | 0.0000 | 0.000 | 3645.8 | 0.146 | BB | 0.034 | 1791.58 | 0.201 |
| 61 | 10.309 | Endrin ketone | 0.2516 | 0.339 | 1621.9 | 0.065 | BB | 0.030 | 909.40 | 0.102 |
| 62 | 10.393 | | 0.0000 | 0.000 | 170031.9 | 6.800 | BB | 0.080 | 35267.54 | 3.948 |
| 63 | 10.694 | | 0.0000 | 0.000 | 1997.5 | 0.080 | BB | 0.035 | 949.37 | 0.106 |
| 64 | 10.765 | | 0.0000 | 0.000 | 2806.8 | 0.112 | BB | 0.036 | 1305.96 | 0.146 |
| 65 | 10.931 | | 0.0000 | 0.000 | 19897.1 | 0.796 | BB | 0.046 | 7268.47 | 0.814 |
| 66 | 11.137 | | 0.0000 | 0.000 | 49692.9 | 1.987 | BB | 0.050 | 16711.71 | 1.871 |
| 67 | 11.531 | | 0.0000 | 0.000 | 165.3 | 0.007 | BB | 0.035 | 78.19 | 0.009 |
| 68 | 11.620 | | 0.0000 | 0.000 | 14951.2 | 0.598 | BB | 0.046 | 5473.74 | 0.613 |
| 69 | 12.042 | DCB | 8.1000 | 10.905 | 86621.9 | 3.464 | BB | 0.049 | 29180.80 | 3.267 |
| 70 | 13.111 | | 0.0000 | 0.000 | 358.9 | 0.014 | BB | 0.122 | 49.12 | 0.005 |

Total Area = 2500461.0, Total Amount = 74.278, Total Height = 893191.6, Sample Units = PPB

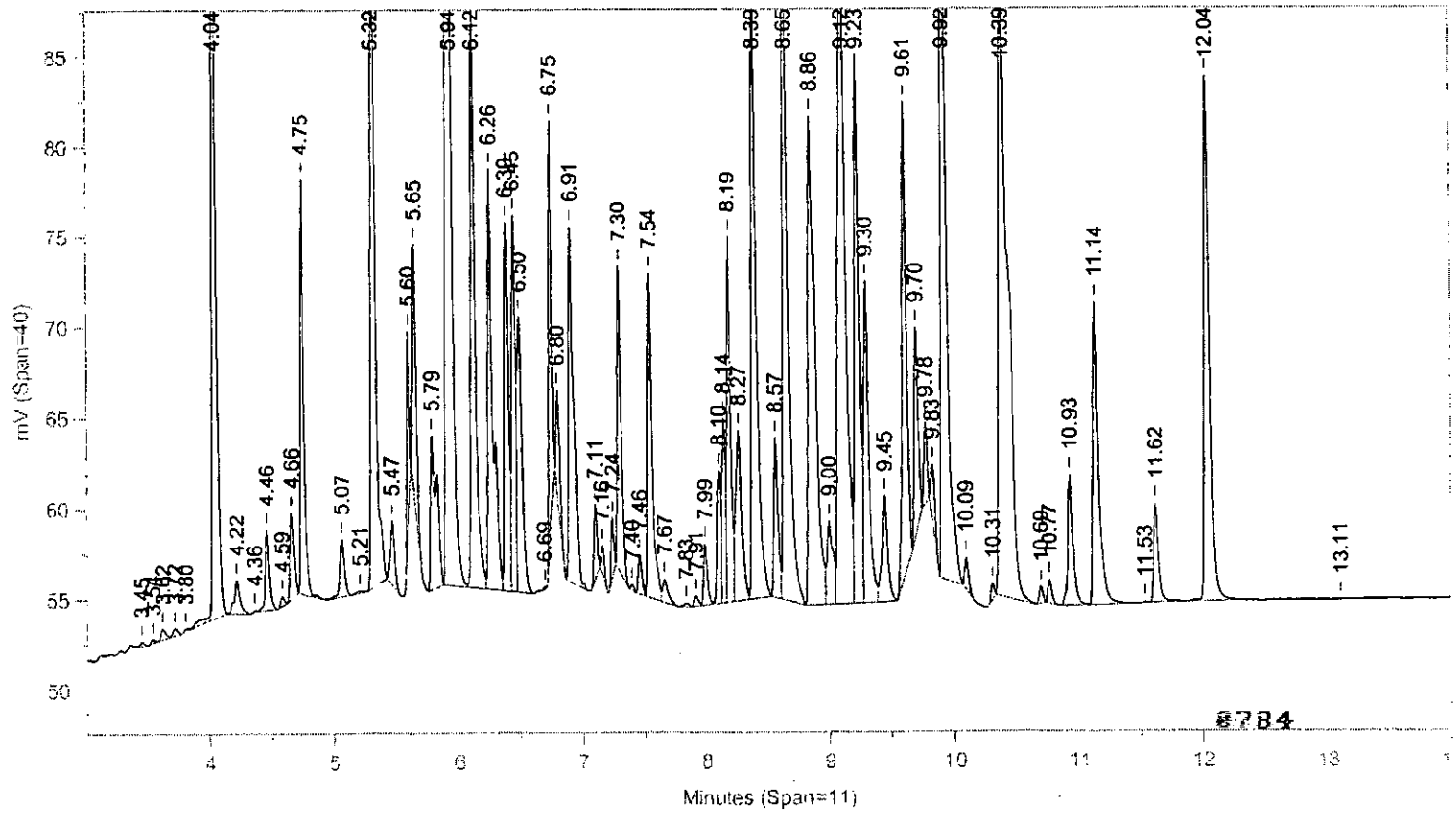
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.07R




Instrument ID: CP16--H5262A Injected On: 3/25/2004 9:07:42 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.07R




Instrument ID: CP16--H5262B Injected On: 3/25/2004 9:07:42 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

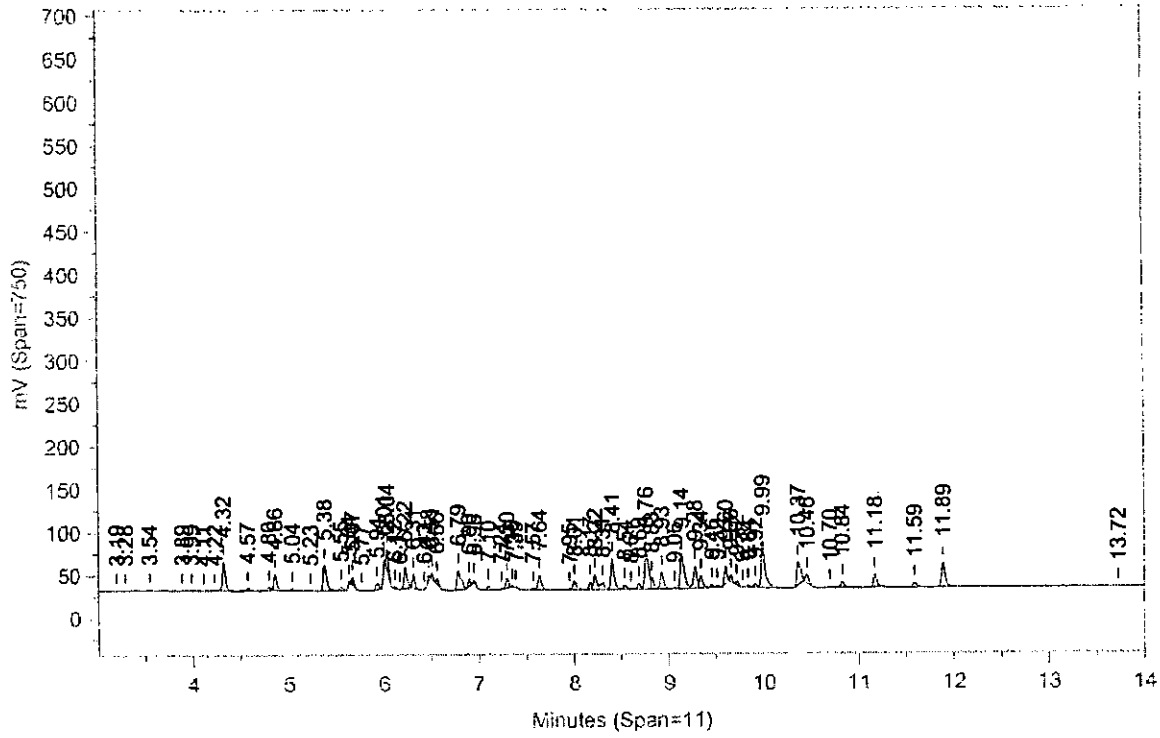
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 33559 | 8.135 | TCX | 4.042 | 45181 | 8.052 | TCX |
| . | 0 | . | Hcb | 4.749 | 23028 | 2.151 | Hcb |
| 5.638 | 5379 | 1.048 | gamma-BHC | 5.471 | 3600 | .453 | gamma-BHC |
| 5.77 | 491 | .173 | beta-BHC | 5.605 | 10886 | 2.73 | beta-BHC |
| 6.01 | 9739 | 2. | delta-BHC | . | 0 | . | delta-BHC |
| 6.313 | 16355 | 3.014 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.498 | 15252 | 2.395 | Aldrin |
| . | 0 | . | Telodrin | 6.746 | 22480 | 3.812 | Telodrin |
| 7.573 | 2311 | .54 | Hept. epoxide | 7.299 | 16853 | 2.836 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.54 | 17890 | 3.086 | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.834 | 209 | .04 | Endosulfan I |
| 7.955 | 799 | .182 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.006 | 9845 | 2.802 | 4,4'-DDE | 7.992 | 3399 | .73 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.186 | 20186 | 4.191 | Dieldrin |
| 8.224 | 17940 | 8.092 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.765 | 42736 | 12.781 | Endrin | 8.571 | 8861 | 2.146 | Endrin |
| 8.607 | 1000 | .375 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.826 | 13181 | 4.631 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.063 | 1295 | .388 | Endosulfan II | 8.861 | 27087 | 6.993 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.117 | 40285 | 12.362 | 4,4'-DDT |
| 9.602 | 20545 | 7.489 | Endrin aldehyde | 9.299 | 17793 | 5.802 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.611 | 26307 | 8.147 | Endo. sulfate |
| 9.783 | 288 | .176 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.995 | 54413 | 19.323 | Mirex | . | 0 | . | Mirex |
| . | 0 | . | Endrin ketone | 10.309 | 909 | .252 | Endrin ketone |
| 11.894 | 28376 | 8.601 | DCB | 12.042 | 29181 | 8.1 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.07A
Area File: C:\CPWIN\DATA1\3D16082B.07A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 8:53:14 AM
File Reported On: 3/26/2004 at 8:53:20 AM

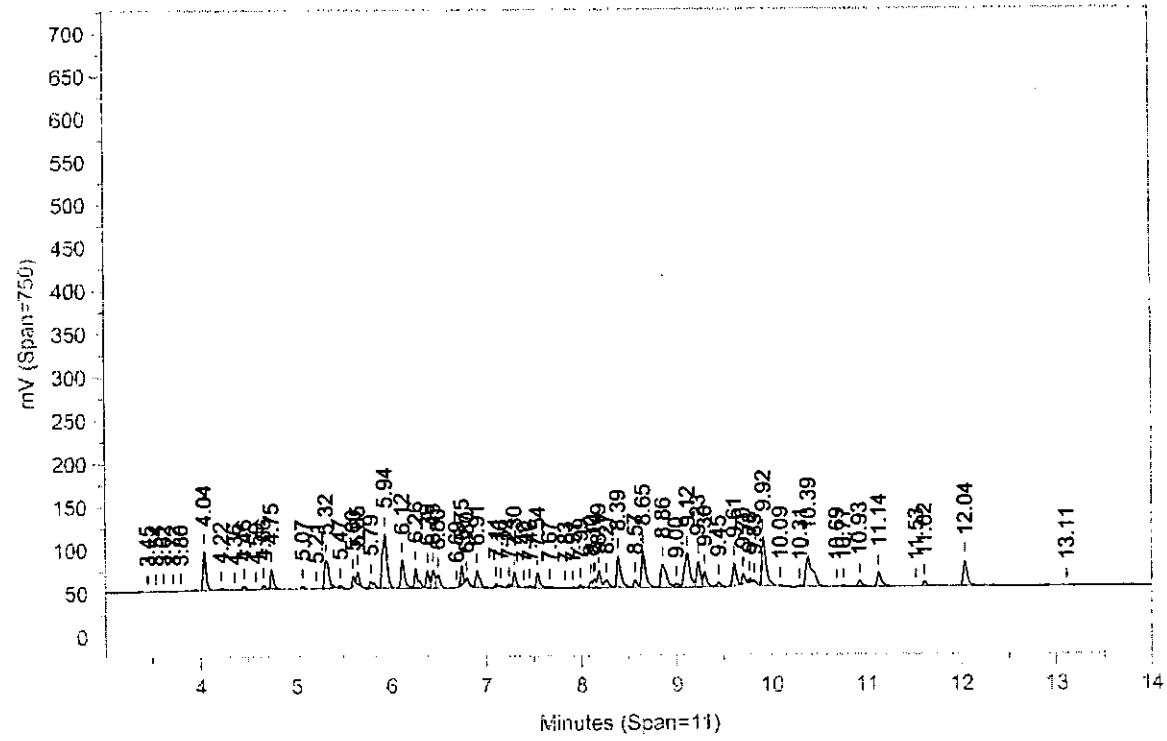
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.07R




C:\CPWIN\DATA1\3D16082B.07R




8786

Sample Name: **EVALX03C ONPEMON PEM 048499999**
Acquired from CP16--H5262A via port 1 on 3/26/04 09:01:14am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.41R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.111 | | 0.0000 | 0.000 | 340.5 | 0.015 | BB | 0.072 | 79.02 | 0.008 |
| 2 | 3.190 | | 0.0000 | 0.000 | 373.6 | 0.017 | BB | 0.031 | 197.70 | 0.020 |
| 3 | 3.458 | | 0.0000 | 0.000 | 561.5 | 0.025 | BB | 0.072 | 130.45 | 0.013 |
| 4 | 3.541 | | 0.0000 | 0.000 | 1580.2 | 0.070 | BB | 0.036 | 730.01 | 0.074 |
| 5 | 3.984 | | 0.0000 | 0.000 | 889.7 | 0.039 | BB | 0.046 | 322.22 | 0.033 |
| 6 | 4.107 | | 0.0000 | 0.000 | 274.4 | 0.012 | BB | 0.044 | 104.08 | 0.011 |
| 7 | 4.312 | TCX | 19.7003 | 5.113 | 172743.4 | 7.648 | BB | 0.035 | 81270.29 | 8.243 |
| 8 | 4.775 | | 0.0000 | 0.000 | 504.0 | 0.022 | BB | 0.046 | 184.37 | 0.019 |
| 9 | 4.899 | Hcb | 0.1466 | 0.038 | 2017.1 | 0.089 | BB | 0.033 | 1029.36 | 0.104 |
| 10 | 5.156 | alpha-BHC | 9.9571 | 2.584 | 95816.3 | 4.242 | BB | 0.031 | 51174.91 | 5.190 |
| 11 | 5.625 | gamma-BHC | 9.4176 | 2.444 | 91974.8 | 4.072 | BB | 0.032 | 48329.57 | 4.902 |
| 12 | 5.757 | beta-BHC | 9.8629 | 2.560 | 57637.7 | 2.552 | BB | 0.034 | 27938.18 | 2.834 |
| 13 | 5.862 | | 0.0000 | 0.000 | 448.2 | 0.020 | BB | 0.028 | 267.63 | 0.027 |
| 14 | 6.112 | | 0.0000 | 0.000 | 1171.4 | 0.052 | BB | 0.044 | 442.79 | 0.045 |
| 15 | 6.291 | | 0.0000 | 0.000 | 110.4 | 0.005 | BB | 0.035 | 52.78 | 0.005 |
| 16 | 6.515 | | 0.0000 | 0.000 | 790.7 | 0.035 | BB | 0.026 | 507.28 | 0.051 |
| 17 | 6.847 | | 0.0000 | 0.000 | 139.2 | 0.006 | BB | 0.044 | 53.03 | 0.005 |
| 18 | 6.954 | | 0.0000 | 0.000 | 245.7 | 0.011 | BB | 0.070 | 58.31 | 0.006 |
| 19 | 7.124 | | 0.0000 | 0.000 | 1126.1 | 0.050 | BB | 0.042 | 449.37 | 0.046 |
| 20 | 7.257 | | 0.0000 | 0.000 | 741.1 | 0.033 | BB | 0.042 | 294.97 | 0.030 |
| 21 | 7.563 | o,p-DDE | 0.0464 | 0.012 | 343.4 | 0.015 | BV | 0.047 | 121.42 | 0.012 |
| 22 | 7.758 | g. Chlordane | 0.0680 | 0.018 | 1516.6 | 0.067 | VB | 0.090 | 280.02 | 0.028 |
| 23 | 8.010 | 4,4'-DDE | 0.5403 | 0.140 | 5263.8 | 0.233 | BV | 0.046 | 1898.53 | 0.193 |
| 24 | 8.317 | | 0.0000 | 0.000 | 850.6 | 0.038 | VV | 0.054 | 262.35 | 0.027 |
| 25 | 8.438 | Dieldrin | 0.0315 | 0.008 | 339.2 | 0.015 | VV | 0.049 | 114.90 | 0.012 |
| 26 | 8.574 | o,p-DDT | 0.7231 | 0.188 | 4281.9 | 0.190 | VV | 0.037 | 1927.90 | 0.196 |
| 27 | 8.740 | Endrin | 43.2867 | 11.234 | 318081.4 | 14.082 | VV | 0.037 | 144742.10 | 14.680 |
| 28 | 8.874 | | 0.0000 | 0.000 | 8972.6 | 0.397 | VV | 0.083 | 1808.23 | 0.183 |
| 29 | 9.029 | Endosulfan II | 0.2101 | 0.055 | 2035.0 | 0.090 | VB | 0.048 | 701.70 | 0.071 |
| 30 | 9.162 | 4,4'-DDT | 83.1937 | 21.592 | 524399.8 | 23.217 | BB | 0.036 | 239574.00 | 24.298 |
| 31 | 9.394 | | 0.0000 | 0.000 | 2598.5 | 0.115 | BB | 0.081 | 532.72 | 0.054 |
| 32 | 9.589 | Endrin aldehyde | 1.9814 | 0.514 | 12874.3 | 0.570 | BB | 0.039 | 5435.56 | 0.551 |
| 33 | 9.774 | Methoxychlor | 184.9045 | 47.989 | 746218.7 | 33.037 | BB | 0.041 | 303115.60 | 30.743 |
| 34 | 10.328 | | 0.0000 | 0.000 | 1257.6 | 0.056 | BB | 0.037 | 570.85 | 0.058 |
| 35 | 10.397 | | 0.0000 | 0.000 | 1570.7 | 0.070 | BB | 0.035 | 739.75 | 0.075 |
| 36 | 10.527 | Endrin ketone | 2.0712 | 0.538 | 16838.9 | 0.746 | BB | 0.042 | 6751.31 | 0.685 |
| 37 | 10.696 | | 0.0000 | 0.000 | 273.6 | 0.012 | BB | 0.045 | 100.37 | 0.010 |
| 38 | 10.924 | | 0.0000 | 0.000 | 283.8 | 0.013 | BB | 0.034 | 138.41 | 0.014 |
| 39 | 11.586 | | 0.0000 | 0.000 | 958.9 | 0.042 | BB | 0.049 | 323.40 | 0.033 |
| 40 | 11.883 | DCB | 19.1628 | 4.973 | 180260.7 | 7.981 | BB | 0.048 | 63220.80 | 6.412 |

Total Area = 2258706.0, Total Amount = 385.304, Total Height = 985976.3, Sample Units = PPB

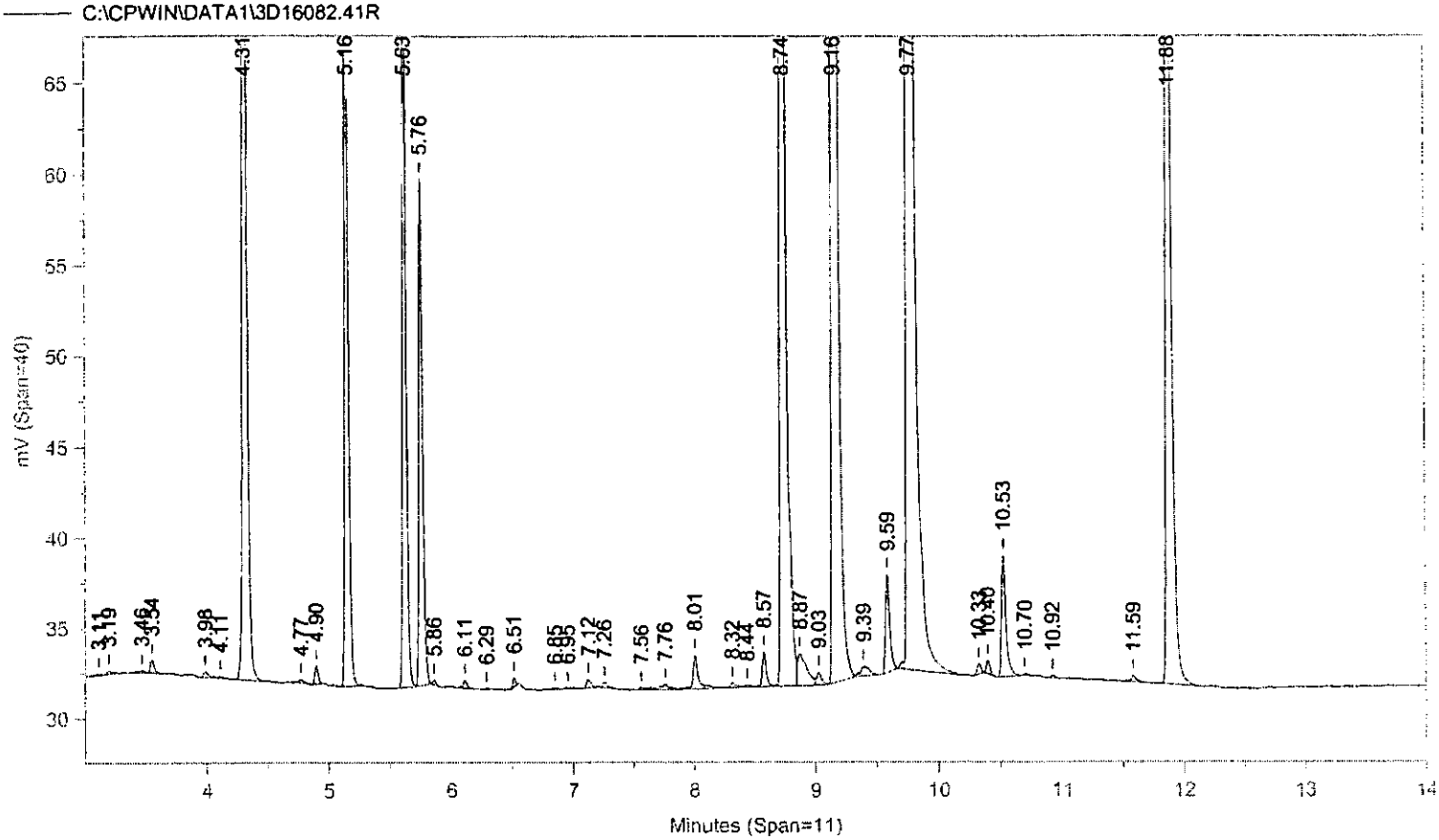
Sample Name: **EVALX03C ONPEMON PEM 048499999**
Acquired from CP16--H5262B via port 2 on 3/26/04 09:01:14am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.41R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.456 | | 0.0000 | 0.000 | 810.3 | 0.030 | BB | 0.050 | 268.10 | 0.024 |
| 2 | 3.535 | | 0.0000 | 0.000 | 598.5 | 0.022 | BB | 0.035 | 285.89 | 0.025 |
| 3 | 3.616 | | 0.0000 | 0.000 | 1639.9 | 0.061 | BB | 0.049 | 555.20 | 0.049 |
| 4 | 3.727 | | 0.0000 | 0.000 | 790.9 | 0.029 | BB | 0.051 | 256.98 | 0.023 |
| 5 | 3.806 | | 0.0000 | 0.000 | 226.3 | 0.008 | BB | 0.028 | 135.77 | 0.012 |
| 6 | 4.037 | TCX | 19.1859 | 5.139 | 242000.8 | 8.960 | BB | 0.037 | 107649.00 | 9.596 |
| 7 | 4.249 | | 0.0000 | 0.000 | 1511.1 | 0.056 | BB | 0.048 | 528.25 | 0.047 |
| 8 | 4.364 | | 0.0000 | 0.000 | 135.2 | 0.005 | BB | 0.030 | 74.70 | 0.007 |
| 9 | 4.445 | | 0.0000 | 0.000 | 1343.6 | 0.050 | BB | 0.059 | 379.30 | 0.034 |
| 10 | 4.580 | | 0.0000 | 0.000 | 3116.8 | 0.115 | BB | 0.034 | 1540.00 | 0.137 |
| 11 | 4.689 | | 0.0000 | 0.000 | 229.8 | 0.009 | BB | 0.044 | 86.57 | 0.008 |
| 12 | 4.788 | | 0.0000 | 0.000 | 286.1 | 0.011 | BB | 0.023 | 204.94 | 0.018 |
| 13 | 4.859 | | 0.0000 | 0.000 | 282.6 | 0.010 | BB | 0.032 | 145.57 | 0.013 |
| 14 | 4.935 | alpha-BHC | 9.6577 | 2.587 | 154399.5 | 5.717 | BB | 0.031 | 82863.05 | 7.386 |
| 15 | 5.230 | | 0.0000 | 0.000 | 610.1 | 0.023 | BB | 0.102 | 99.57 | 0.009 |
| 16 | 5.451 | gamma-BHC | 9.2044 | 2.466 | 139627.6 | 5.170 | BB | 0.032 | 73171.98 | 6.523 |
| 17 | 5.580 | beta-BHC | 9.2880 | 2.488 | 77899.1 | 2.884 | BB | 0.035 | 37041.66 | 3.302 |
| 18 | 5.723 | | 0.0000 | 0.000 | 822.6 | 0.030 | BB | 0.033 | 419.03 | 0.037 |
| 19 | 5.951 | | 0.0000 | 0.000 | 169.8 | 0.006 | BB | 0.019 | 145.53 | 0.013 |
| 20 | 5.987 | delta-BHC | 0.0429 | 0.011 | 642.6 | 0.024 | BB | 0.034 | 319.34 | 0.028 |
| 21 | 6.139 | | 0.0000 | 0.000 | 858.6 | 0.032 | BV | 0.041 | 347.76 | 0.031 |
| 22 | 6.221 | | 0.0000 | 0.000 | 1615.7 | 0.060 | VB | 0.076 | 352.08 | 0.031 |
| 23 | 6.457 | | 0.0000 | 0.000 | 2837.3 | 0.105 | BB | 0.111 | 427.17 | 0.038 |
| 24 | 6.636 | | 0.0000 | 0.000 | 4666.8 | 0.173 | BB | 0.097 | 801.97 | 0.071 |
| 25 | 6.889 | | 0.0000 | 0.000 | 2162.7 | 0.080 | BB | 0.088 | 410.31 | 0.037 |
| 26 | 6.991 | | 0.0000 | 0.000 | 469.1 | 0.017 | BB | 0.026 | 295.93 | 0.026 |
| 27 | 7.051 | | 0.0000 | 0.000 | 1444.2 | 0.053 | BB | 0.060 | 400.52 | 0.036 |
| 28 | 7.224 | | 0.0000 | 0.000 | 1255.4 | 0.046 | BB | 0.060 | 348.33 | 0.031 |
| 29 | 7.394 | | 0.0000 | 0.000 | 1211.2 | 0.045 | BB | 0.079 | 254.02 | 0.023 |
| 30 | 7.514 | | 0.0000 | 0.000 | 1539.3 | 0.057 | BB | 0.058 | 441.24 | 0.039 |
| 31 | 7.800 | Endosulfan I | 0.0572 | 0.015 | 1287.6 | 0.048 | BB | 0.071 | 301.49 | 0.027 |
| 32 | 7.955 | 4,4'-DDE | 0.5133 | 0.138 | 6345.6 | 0.235 | BV | 0.044 | 2391.79 | 0.213 |
| 33 | 8.061 | | 0.0000 | 0.000 | 1780.5 | 0.066 | VV | 0.079 | 375.95 | 0.034 |
| 34 | 8.180 | Dieldrin | 0.0536 | 0.014 | 1306.6 | 0.048 | VV | 0.084 | 258.24 | 0.023 |
| 35 | 8.313 | | 0.0000 | 0.000 | 683.0 | 0.025 | VB | 0.073 | 156.53 | 0.014 |
| 36 | 8.441 | | 0.0000 | 0.000 | 418.1 | 0.015 | BB | 0.044 | 159.17 | 0.014 |
| 37 | 8.562 | Endrin | 40.4286 | 10.830 | 368702.3 | 13.651 | BV | 0.037 | 166893.70 | 14.877 |
| 38 | 8.704 | 4,4'-DDD | 1.6134 | 0.432 | 14385.5 | 0.533 | VB | 0.046 | 5267.23 | 0.470 |
| 39 | 8.891 | | 0.0000 | 0.000 | 731.7 | 0.027 | BV | 0.030 | 409.16 | 0.036 |
| 40 | 8.953 | | 0.0000 | 0.000 | 2560.9 | 0.095 | VV | 0.069 | 618.76 | 0.055 |
| 41 | 9.105 | 4,4'-DDT | 78.7779 | 21.102 | 625456.9 | 23.157 | VV | 0.041 | 256725.90 | 22.885 |
| 42 | 9.274 | Endrin aldehyde | 2.2932 | 0.614 | 23222.3 | 0.860 | VV | 0.055 | 7032.44 | 0.627 |
| 43 | 9.486 | | 0.0000 | 0.000 | 976.4 | 0.036 | VB | 0.047 | 344.96 | 0.031 |
| 44 | 9.574 | | 0.0000 | 0.000 | 308.9 | 0.011 | BB | 0.049 | 104.25 | 0.009 |
| 45 | 9.716 | | 0.0000 | 0.000 | 2192.6 | 0.081 | BB | 0.081 | 452.42 | 0.040 |
| 46 | 9.983 | Methoxychlor | 182.0199 | 48.758 | 772971.6 | 28.619 | BB | 0.044 | 294948.20 | 26.292 |
| 47 | 10.145 | | 0.0000 | 0.000 | 1389.1 | 0.051 | BB | 0.025 | 908.11 | 0.081 |
| 48 | 10.320 | Endrin ketone | 2.0227 | 0.542 | 20230.7 | 0.749 | BB | 0.046 | 7309.95 | 0.652 |
| 49 | 10.628 | | 0.0000 | 0.000 | 325.4 | 0.012 | BB | 0.033 | 164.19 | 0.015 |
| 50 | 10.756 | | 0.0000 | 0.000 | 993.4 | 0.037 | BB | 0.089 | 186.35 | 0.017 |
| 51 | 11.611 | | 0.0000 | 0.000 | 804.9 | 0.030 | BB | 0.044 | 305.85 | 0.027 |
| 52 | 11.826 | | 0.0000 | 0.000 | 2659.2 | 0.098 | BB | 0.150 | 295.68 | 0.026 |
| 53 | 12.030 | DCB | 18.1570 | 4.864 | 199153.3 | 7.374 | BB | 0.051 | 65411.78 | 5.831 |
| 54 | 13.023 | | 0.0000 | 0.000 | 3800.9 | 0.141 | BB | 0.200 | 316.84 | 0.028 |
| 55 | 13.933 | | 0.0000 | 0.000 | 2996.5 | 0.111 | BB | 0.211 | 237.15 | 0.021 |

0788

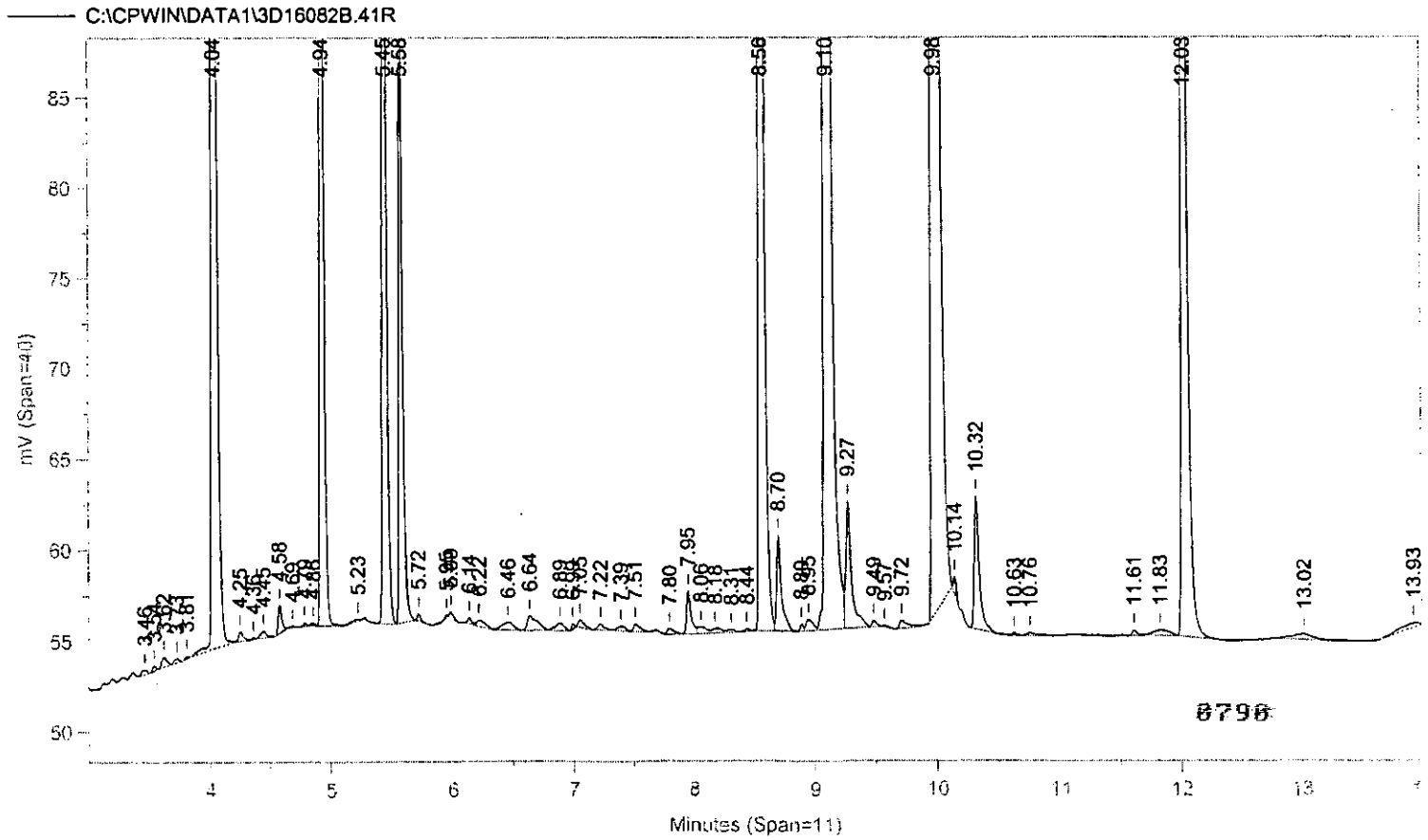
Total Area = 2700888.0, Total Amount = 373.316, Total Height = 1121826.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\3D16082.41R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 8:47:14 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM %DDT BD= 0.786229
%ENDRIN BD= 7.765853

File: C:\CPWIN\DATA1\3D16082B.41R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 8:47:14 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM %DDT BD= 2.89692
%ENDRIN BD= 7.913648

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 81270 | 19.7 | TCX | 4.037 | 107649 | 19.186 | TCX |
| 4.899 | 1029 | .147 | Hcb | . | 0 | . | Hcb |
| 5.156 | 51175 | 9.957 | alpha-BHC | 4.935 | 82863 | 9.658 | alpha-BHC |
| 5.625 | 48330 | 9.418 | gamma-BHC | 5.451 | 73172 | 9.204 | gamma-BHC |
| 5.757 | 27938 | 9.863 | beta-BHC | 5.58 | 37042 | 9.288 | beta-BHC |
| . | 0 | . | delta-BHC | 5.987 | 319 | .043 | delta-BHC |
| 7.563 | 121 | .046 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.758 | 280 | .068 | g. Chlordane | . | 0 | . | g. Chlordane |
| . | 0 | . | Endosulfan I | 7.8 | 301 | .057 | Endosulfan I |
| 8.01 | 1899 | .54 | 4,4'-DDE | 7.955 | 2392 | .513 | 4,4'-DDE |
| 8.438 | 115 | .032 | Dieldrin | 8.18 | 258 | .054 | Dieldrin |
| 8.74 | 144742 | 43.287 | Endrin | 8.562 | 166894 | 40.429 | Endrin |
| 8.574 | 1928 | .723 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.704 | 5267 | 1.613 | 4,4'-DDD |
| 9.029 | 702 | .21 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.162 | 239574 | 83.194 | 4,4'-DDT | 9.105 | 256726 | 78.778 | 4,4'-DDT |
| 9.589 | 5436 | 1.981 | Endrin aldehyde | 9.274 | 7032 | 2.293 | Endrin aldehyde |
| 9.774 | 303116 | 184.905 | Methoxychlor | 9.983 | 294948 | 182.02 | Methoxychlor |
| 10.527 | 6751 | 2.071 | Endrin ketone | 10.32 | 7310 | 2.023 | Endrin ketone |
| 11.883 | 63221 | 19.163 | DCB | 12.03 | 65412 | 18.157 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.41A
Area File: C:\CPWIN\DATA1\3D16082B.41A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/26/2004 9:13:56 AM
File Reported On: 3/26/2004 at 9:14:02 AM

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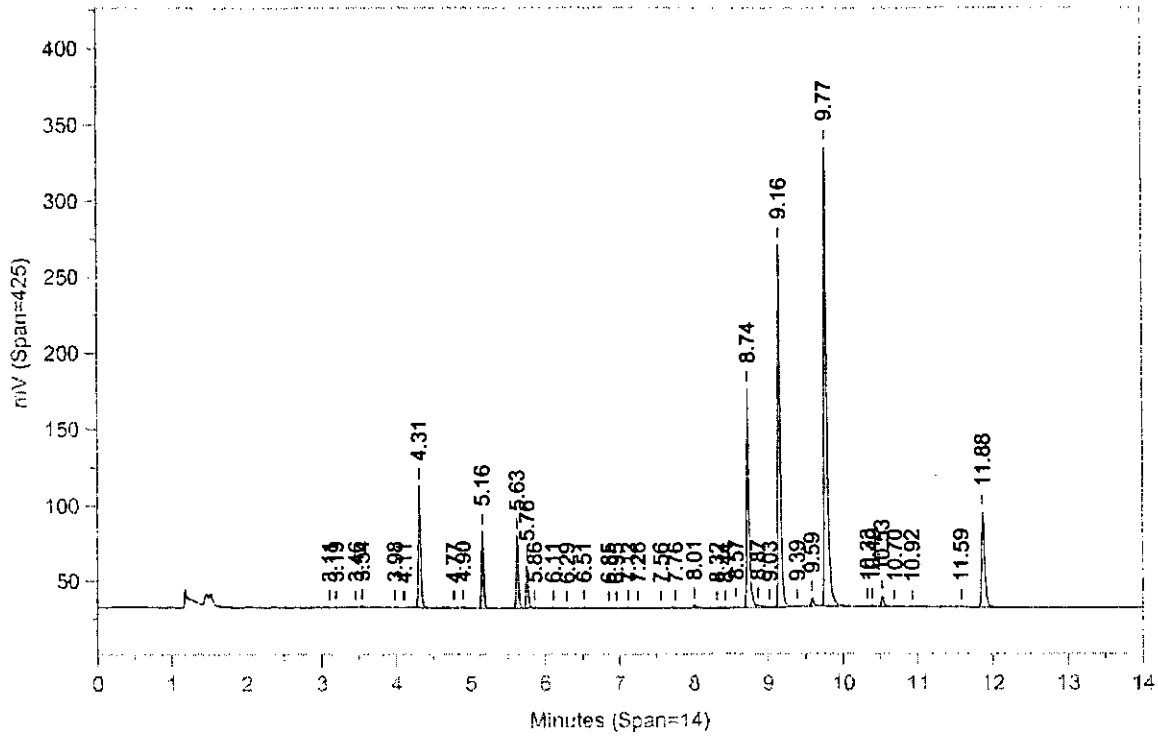
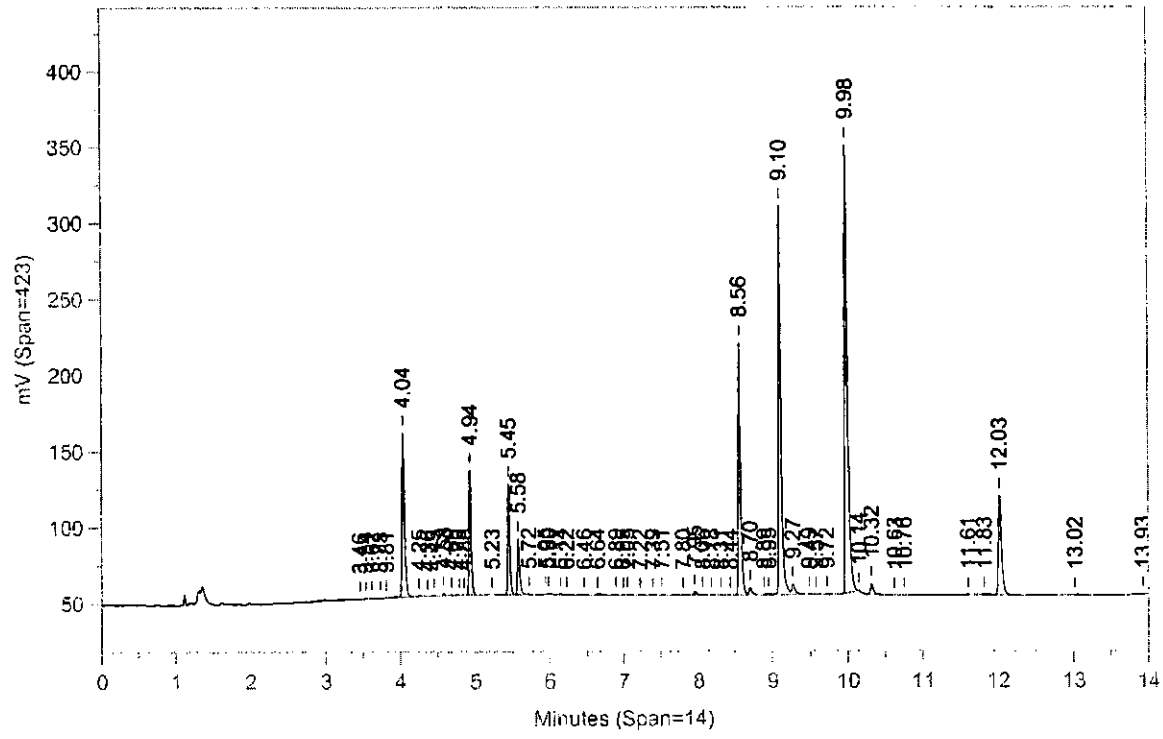
REPLOTS

C:\CPWIN\DATA1\3D16082.41R




C:\CPWIN\DATA1\3D16082B.41R



Sample Name: **MIXA40424B OQMIXA4OQ CCAL 048499999**
Acquired from CP16--H5262A via port 1 on 3/26/04 09:21:45am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.42R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.110 | | 0.0000 | 0.000 | 397.6 | 0.009 | BB | 0.039 | 169.56 | 0.008 |
| 2 | 3.193 | | 0.0000 | 0.000 | 1240.1 | 0.027 | BB | 0.037 | 559.14 | 0.027 |
| 3 | 3.303 | | 0.0000 | 0.000 | 117.0 | 0.003 | BB | 0.046 | 42.45 | 0.002 |
| 4 | 3.459 | | 0.0000 | 0.000 | 823.6 | 0.018 | BB | 0.066 | 206.96 | 0.010 |
| 5 | 3.543 | | 0.0000 | 0.000 | 1721.5 | 0.037 | BB | 0.035 | 809.14 | 0.039 |
| 6 | 3.880 | | 0.0000 | 0.000 | 912.9 | 0.020 | BB | 0.046 | 327.86 | 0.016 |
| 7 | 3.980 | | 0.0000 | 0.000 | 3925.2 | 0.085 | BB | 0.039 | 1690.53 | 0.081 |
| 8 | 4.111 | | 0.0000 | 0.000 | 272.0 | 0.006 | BB | 0.049 | 93.42 | 0.004 |
| 9 | 4.313 | TCX | 56.0544 | 8.011 | 487787.6 | 10.585 | BB | 0.035 | 231243.00 | 11.104 |
| 10 | 4.775 | | 0.0000 | 0.000 | 600.7 | 0.013 | BB | 0.068 | 147.09 | 0.007 |
| 11 | 4.901 | Hcb | 0.4432 | 0.063 | 5890.4 | 0.128 | BB | 0.032 | 3112.57 | 0.149 |
| 12 | 4.964 | | 0.0000 | 0.000 | 398.1 | 0.009 | BB | 0.024 | 272.08 | 0.013 |
| 13 | 5.158 | alpha-BHC | 15.6546 | 2.237 | 148456.8 | 3.221 | BB | 0.031 | 80457.36 | 3.863 |
| 14 | 5.501 | | 0.0000 | 0.000 | 255.3 | 0.006 | BB | 0.028 | 150.12 | 0.007 |
| 15 | 5.627 | gamma-BHC | 15.4329 | 2.206 | 149213.9 | 3.238 | BB | 0.031 | 79199.21 | 3.803 |
| 16 | 5.758 | beta-BHC | 14.8363 | 2.120 | 85557.1 | 1.857 | BB | 0.034 | 42026.16 | 2.018 |
| 17 | 5.864 | | 0.0000 | 0.000 | 1242.5 | 0.027 | BB | 0.030 | 689.33 | 0.033 |
| 18 | 6.015 | delta-BHC | 15.1807 | 2.169 | 136575.9 | 2.964 | BB | 0.031 | 73926.03 | 3.550 |
| 19 | 6.111 | | 0.0000 | 0.000 | 433.8 | 0.009 | BB | 0.027 | 272.69 | 0.013 |
| 20 | 6.223 | | 0.0000 | 0.000 | 176.0 | 0.004 | BB | 0.028 | 105.92 | 0.005 |
| 21 | 6.313 | Heptachlor | 14.7367 | 2.106 | 162386.4 | 3.524 | BB | 0.034 | 79956.56 | 3.839 |
| 22 | 6.517 | | 0.0000 | 0.000 | 75.5 | 0.002 | BB | 0.025 | 50.98 | 0.002 |
| 23 | 6.739 | Aldrin | 15.0793 | 2.155 | 124949.2 | 2.711 | BB | 0.033 | 63206.89 | 3.035 |
| 24 | 6.967 | | 0.0000 | 0.000 | 333.2 | 0.007 | BB | 0.060 | 92.16 | 0.004 |
| 25 | 7.122 | | 0.0000 | 0.000 | 527.2 | 0.011 | BB | 0.041 | 214.78 | 0.010 |
| 26 | 7.206 | | 0.0000 | 0.000 | 545.0 | 0.012 | BB | 0.030 | 303.55 | 0.015 |
| 27 | 7.327 | | 0.0000 | 0.000 | 293.8 | 0.006 | BB | 0.045 | 109.38 | 0.005 |
| 28 | 7.580 | Hept. epoxide | 14.6866 | 2.099 | 132149.0 | 2.868 | BV | 0.035 | 62900.67 | 3.020 |
| 29 | 7.744 | g. Chlordane | 14.7763 | 2.112 | 130536.0 | 2.833 | VV | 0.036 | 60836.07 | 2.921 |
| 30 | 7.922 | a. Chlordane | 13.9804 | 1.998 | 129675.3 | 2.814 | VV | 0.035 | 61351.39 | 2.946 |
| 31 | 8.011 | 4,4'-DDE | 28.7844 | 4.114 | 206135.1 | 4.473 | VV | 0.034 | 101134.50 | 4.856 |
| 32 | 8.114 | Endosulfan I | 14.6326 | 2.091 | 128384.8 | 2.786 | VV | 0.037 | 57535.06 | 2.763 |
| 33 | 8.314 | | 0.0000 | 0.000 | 1025.3 | 0.022 | VV | 0.059 | 291.21 | 0.014 |
| 34 | 8.431 | Dieldrin | 29.5197 | 4.219 | 223610.0 | 4.852 | VV | 0.035 | 107511.40 | 5.163 |
| 35 | 8.574 | o,p-DDT | 0.1604 | 0.023 | 1069.0 | 0.023 | VV | 0.042 | 427.63 | 0.021 |
| 36 | 8.673 | | 0.0000 | 0.000 | 524.7 | 0.011 | VV | 0.037 | 237.95 | 0.011 |
| 37 | 8.742 | Endrin | 28.0624 | 4.010 | 187466.7 | 4.068 | VV | 0.033 | 93835.30 | 4.506 |
| 38 | 8.801 | Kepone | 93.5317 | 13.367 | 171564.5 | 3.723 | VV | 0.039 | 73197.60 | 3.515 |
| 39 | 9.040 | Endosulfan II | 28.4311 | 4.063 | 212106.1 | 4.603 | VV | 0.037 | 94947.60 | 4.559 |
| 40 | 9.164 | 4,4'-DDT | 26.8520 | 3.837 | 166987.2 | 3.623 | VB | 0.036 | 77326.16 | 3.713 |
| 41 | 9.395 | | 0.0000 | 0.000 | 364.5 | 0.008 | BB | 0.028 | 213.27 | 0.010 |
| 42 | 9.444 | | 0.0000 | 0.000 | 1656.4 | 0.036 | BB | 0.034 | 807.67 | 0.039 |
| 43 | 9.588 | Endrin aldehyde | 28.2395 | 4.036 | 184656.1 | 4.007 | BB | 0.040 | 77470.13 | 3.720 |
| 44 | 9.775 | Methoxychlor | 121.1225 | 17.310 | 488932.6 | 10.609 | BB | 0.041 | 198557.20 | 9.534 |
| 45 | 10.158 | Endo. sulfate | 28.0836 | 4.013 | 189832.0 | 4.119 | BB | 0.038 | 82774.42 | 3.975 |
| 46 | 10.331 | | 0.0000 | 0.000 | 2915.6 | 0.063 | BB | 0.033 | 1464.46 | 0.070 |
| 47 | 10.397 | | 0.0000 | 0.000 | 1717.2 | 0.037 | BB | 0.033 | 879.91 | 0.042 |
| 48 | 10.527 | Endrin ketone | 29.6224 | 4.233 | 220541.2 | 4.786 | BB | 0.038 | 96557.20 | 4.637 |
| 49 | 10.925 | | 0.0000 | 0.000 | 1219.1 | 0.026 | BB | 0.038 | 534.83 | 0.026 |
| 50 | 11.294 | | 0.0000 | 0.000 | 4791.2 | 0.104 | BB | 0.185 | 430.87 | 0.021 |
| 51 | 11.585 | | 0.0000 | 0.000 | 1868.6 | 0.041 | BB | 0.044 | 702.27 | 0.034 |
| 52 | 11.882 | DCB | 51.8361 | 7.408 | 503260.7 | 10.920 | BB | 0.049 | 171014.90 | 8.212 |
| 53 | 12.486 | | 0.0000 | 0.000 | 312.8 | 0.007 | BB | 0.044 | 118.32 | 0.006 |
| 54 | 12.648 | | 0.0000 | 0.000 | 79.8 | 0.002 | BB | 0.029 | 45.59 | 0.002 |

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Total Area = 4608490.0, Total Amount = 699.74, Total Height = 2082538.0, Sample Units = PPB

Sample Name: **MIXA40424B OQMIXA4OQ CCAL 048499999**
Acquired from CP16--H5262B via port 2 on 3/26/04 09:21:45am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.42R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.450 | | 0.0000 | 0.000 | 776.6 | 0.014 | BB | 0.054 | 240.74 | 0.010 |
| 2 | 3.533 | | 0.0000 | 0.000 | 536.8 | 0.009 | BB | 0.033 | 271.82 | 0.011 |
| 3 | 3.612 | | 0.0000 | 0.000 | 2970.8 | 0.052 | BB | 0.044 | 1114.18 | 0.045 |
| 4 | 3.710 | | 0.0000 | 0.000 | 1365.4 | 0.024 | BB | 0.046 | 497.01 | 0.020 |
| 5 | 3.776 | | 0.0000 | 0.000 | 3245.5 | 0.057 | BB | 0.030 | 1780.99 | 0.072 |
| 6 | 4.038 | TCX | 51.9610 | 8.721 | 668568.4 | 11.707 | BB | 0.038 | 291544.50 | 11.741 |
| 7 | 4.252 | | 0.0000 | 0.000 | 865.4 | 0.015 | BB | 0.039 | 374.36 | 0.015 |
| 8 | 4.361 | | 0.0000 | 0.000 | 178.1 | 0.003 | BB | 0.034 | 86.32 | 0.003 |
| 9 | 4.451 | | 0.0000 | 0.000 | 1670.3 | 0.029 | BB | 0.061 | 456.18 | 0.018 |
| 10 | 4.581 | | 0.0000 | 0.000 | 9255.8 | 0.162 | BB | 0.033 | 4636.80 | 0.187 |
| 11 | 4.695 | | 0.0000 | 0.000 | 123.3 | 0.002 | BB | 0.023 | 87.78 | 0.004 |
| 12 | 4.791 | | 0.0000 | 0.000 | 1178.8 | 0.021 | BB | 0.028 | 701.67 | 0.028 |
| 13 | 4.857 | | 0.0000 | 0.000 | 363.1 | 0.006 | BB | 0.027 | 228.22 | 0.009 |
| 14 | 4.937 | alpha-BHC | 14.6243 | 2.454 | 237411.8 | 4.157 | BB | 0.032 | 125476.80 | 5.053 |
| 15 | 5.234 | | 0.0000 | 0.000 | 794.6 | 0.014 | BB | 0.160 | 82.73 | 0.003 |
| 16 | 5.280 | | 0.0000 | 0.000 | 513.0 | 0.009 | BB | 0.030 | 288.93 | 0.012 |
| 17 | 5.343 | | 0.0000 | 0.000 | 340.7 | 0.006 | BB | 0.035 | 162.84 | 0.007 |
| 18 | 5.452 | gamma-BHC | 14.4455 | 2.424 | 222285.9 | 3.892 | BB | 0.032 | 114837.80 | 4.625 |
| 19 | 5.582 | beta-BHC | 13.7096 | 2.301 | 115927.4 | 2.030 | BB | 0.035 | 54675.67 | 2.202 |
| 20 | 5.723 | | 0.0000 | 0.000 | 2186.6 | 0.038 | BB | 0.035 | 1047.80 | 0.042 |
| 21 | 5.993 | delta-BHC | 14.2192 | 2.386 | 201834.0 | 3.534 | BV | 0.032 | 105952.20 | 4.267 |
| 22 | 6.067 | Heptachlor | 14.0148 | 2.352 | 234729.8 | 4.110 | VV | 0.035 | 111112.50 | 4.475 |
| 23 | 6.220 | | 0.0000 | 0.000 | 3391.9 | 0.059 | VB | 0.086 | 660.10 | 0.027 |
| 24 | 6.512 | Aldrin | 14.4270 | 2.421 | 183463.7 | 3.212 | BB | 0.033 | 91855.62 | 3.699 |
| 25 | 6.640 | | 0.0000 | 0.000 | 1900.9 | 0.033 | BB | 0.130 | 244.55 | 0.010 |
| 26 | 6.877 | | 0.0000 | 0.000 | 2714.2 | 0.048 | BB | 0.097 | 465.37 | 0.019 |
| 27 | 7.048 | | 0.0000 | 0.000 | 3263.1 | 0.057 | BB | 0.067 | 808.04 | 0.033 |
| 28 | 7.227 | | 0.0000 | 0.000 | 494.2 | 0.009 | BB | 0.033 | 251.17 | 0.010 |
| 29 | 7.288 | Hept. epoxide | 13.4555 | 2.258 | 170009.1 | 2.977 | BB | 0.035 | 79963.34 | 3.220 |
| 30 | 7.539 | g. Chlordane | 13.3332 | 2.238 | 167799.1 | 2.938 | BV | 0.036 | 77281.98 | 3.112 |
| 31 | 7.731 | a. Chlordane | 13.6738 | 2.295 | 160042.3 | 2.802 | VV | 0.035 | 75791.28 | 3.052 |
| 32 | 7.807 | Endosulfan I | 13.4269 | 2.253 | 155576.4 | 2.724 | VV | 0.037 | 70817.06 | 2.852 |
| 33 | 7.955 | 4,4'-DDE | 25.7172 | 4.316 | 270988.5 | 4.745 | VV | 0.038 | 119824.60 | 4.825 |
| 34 | 8.166 | Dieldrin | 27.3609 | 4.592 | 286326.1 | 5.014 | VV | 0.036 | 131793.00 | 5.307 |
| 35 | 8.391 | | 0.0000 | 0.000 | 697.4 | 0.012 | VB | 0.045 | 255.64 | 0.010 |
| 36 | 8.563 | Endrin | 26.3778 | 4.427 | 232849.4 | 4.077 | BV | 0.036 | 108890.60 | 4.385 |
| 37 | 8.704 | 4,4'-DDD | 23.4430 | 3.934 | 179476.9 | 3.143 | VV | 0.039 | 76532.57 | 3.082 |
| 38 | 8.840 | Endosulfan II | 27.1106 | 4.550 | 251925.3 | 4.411 | VB | 0.040 | 105011.10 | 4.229 |
| 39 | 9.105 | 4,4'-DDT | 25.1072 | 4.214 | 187064.5 | 3.275 | BB | 0.038 | 81820.81 | 3.295 |
| 40 | 9.273 | Endrin aldehyde | 26.6248 | 4.469 | 197462.2 | 3.458 | BV | 0.040 | 81647.95 | 3.288 |
| 41 | 9.393 | | 0.0000 | 0.000 | 389.4 | 0.007 | VB | 0.020 | 325.63 | 0.013 |
| 42 | 9.430 | | 0.0000 | 0.000 | 2054.9 | 0.036 | BB | 0.026 | 1307.20 | 0.053 |
| 43 | 9.626 | Endo. sulfate | 27.7392 | 4.656 | 217690.0 | 3.812 | BB | 0.041 | 89575.41 | 3.607 |
| 44 | 9.985 | Methoxychlor | 117.7719 | 19.766 | 509546.7 | 8.922 | BB | 0.045 | 190839.60 | 7.685 |
| 45 | 10.202 | | 0.0000 | 0.000 | 2368.1 | 0.041 | BB | 0.031 | 1267.25 | 0.051 |
| 46 | 10.320 | Endrin ketone | 27.4515 | 4.607 | 239638.5 | 4.196 | BB | 0.040 | 99206.02 | 3.995 |
| 47 | 10.629 | | 0.0000 | 0.000 | 1523.3 | 0.027 | BB | 0.106 | 240.14 | 0.010 |
| 48 | 10.757 | | 0.0000 | 0.000 | 833.8 | 0.015 | BB | 0.036 | 381.54 | 0.015 |
| 49 | 10.883 | | 0.0000 | 0.000 | 445.2 | 0.008 | BB | 0.066 | 112.80 | 0.005 |
| 50 | 11.608 | | 0.0000 | 0.000 | 2726.8 | 0.048 | BB | 0.064 | 713.33 | 0.029 |
| 51 | 12.030 | DCB | 49.8369 | 8.364 | 570950.9 | 9.997 | BB | 0.053 | 179540.40 | 7.230 |
| 52 | 12.860 | | 0.0000 | 0.000 | 286.8 | 0.005 | BB | 0.043 | 111.58 | 0.004 |

Total Area = 5711022.0, Total Amount = 595.832, Total Height = 2483194.0, Sample Units = PPB

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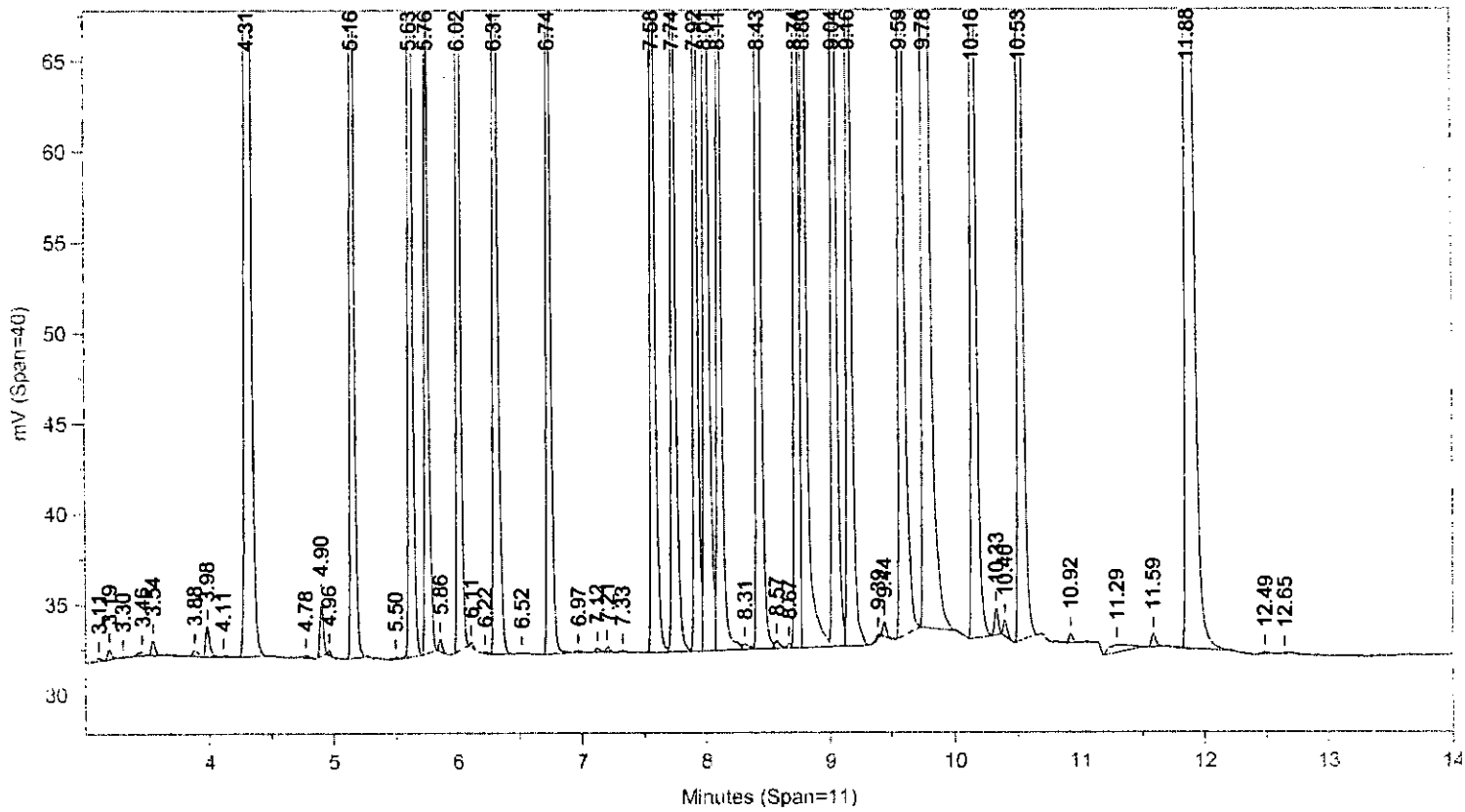
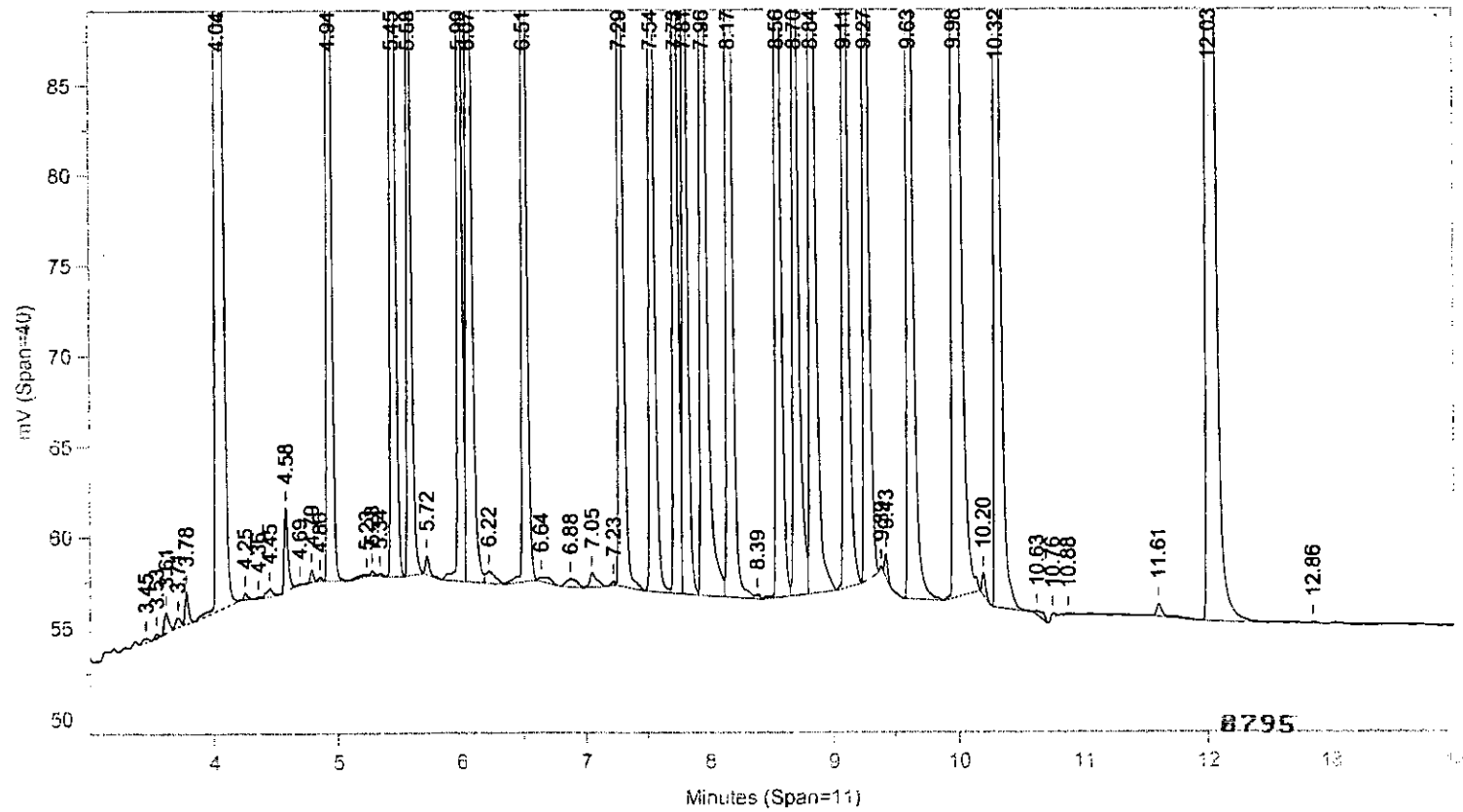
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.42R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 9:07:45 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.42R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 9:07:45 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.313 | 231243 | 56.054 | TCX | 4.038 | 291545 | 51.961 | TCX |
| 4.901 | 3113 | .443 | Hcb | . | 0 | . | Hcb |
| 5.158 | 80457 | 15.655 | alpha-BHC | 4.937 | 125477 | 14.624 | alpha-BHC |
| 5.627 | 79199 | 15.433 | gamma-BHC | 5.452 | 114838 | 14.446 | gamma-BHC |
| 5.758 | 42026 | 14.836 | beta-BHC | 5.582 | 54676 | 13.71 | beta-BHC |
| 6.015 | 73926 | 15.181 | delta-BHC | 5.993 | 105952 | 14.219 | delta-BHC |
| 6.313 | 79957 | 14.737 | Heptachlor | 6.067 | 111112 | 14.015 | Heptachlor |
| 6.739 | 63207 | 15.079 | Aldrin | 6.512 | 91856 | 14.427 | Aldrin |
| 7.58 | 62901 | 14.687 | Hept. epoxide | 7.288 | 79963 | 13.455 | Hept. epoxide |
| 7.744 | 60836 | 14.776 | g. Chlordane | 7.539 | 77282 | 13.333 | g. Chlordane |
| 7.922 | 61351 | 13.98 | a. Chlordane | 7.731 | 75791 | 13.674 | a. Chlordane |
| 8.114 | 57535 | 14.633 | Endosulfan I | 7.807 | 70817 | 13.427 | Endosulfan I |
| 8.011 | 101134 | 28.784 | 4,4'-DDE | 7.955 | 119825 | 25.717 | 4,4'-DDE |
| 8.431 | 107511 | 29.52 | Dieldrin | 8.166 | 131793 | 27.361 | Dieldrin |
| 8.742 | 93835 | 28.062 | Endrin | 8.563 | 108891 | 26.378 | Endrin |
| 8.574 | 428 | .16 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD ) 25.72 | 8.704 | 76533 | 23.443 | 4,4'-DDD |
| 8.801 | 73198 | 93.532 | Kepone | . | 0 | . | Kepone |
| 9.04 | 94948 | 28.431 | Endosulfan II | 8.84 | 105011 | 27.111 | Endosulfan II |
| 9.164 | 77326 | 26.852 | 4,4'-DDT | 9.105 | 81821 | 25.107 | 4,4'-DDT |
| 9.588 | 77470 | 28.24 | Endrin aldehyde | 9.273 | 81648 | 26.625 | Endrin aldehyde |
| 10.158 | 82774 | 28.084 | Endo. sulfate | 9.626 | 89575 | 27.739 | Endo. sulfate |
| 9.775 | 198557 | 121.122 | Methoxychlor | 9.985 | 190840 | 117.772 | Methoxychlor |
| 10.527 | 96557 | 29.622 | Endrin ketone | 10.32 | 99206 | 27.451 | Endrin ketone |
| 11.882 | 171015 | 51.836 | DCB | 12.03 | 179540 | 49.837 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.42A
Area File: C:\CPWIN\DATA1\3D16082B.42A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 10:39:56 AM
File Reported On: 3/26/2004 at 10:40:02 AM

3/26/04

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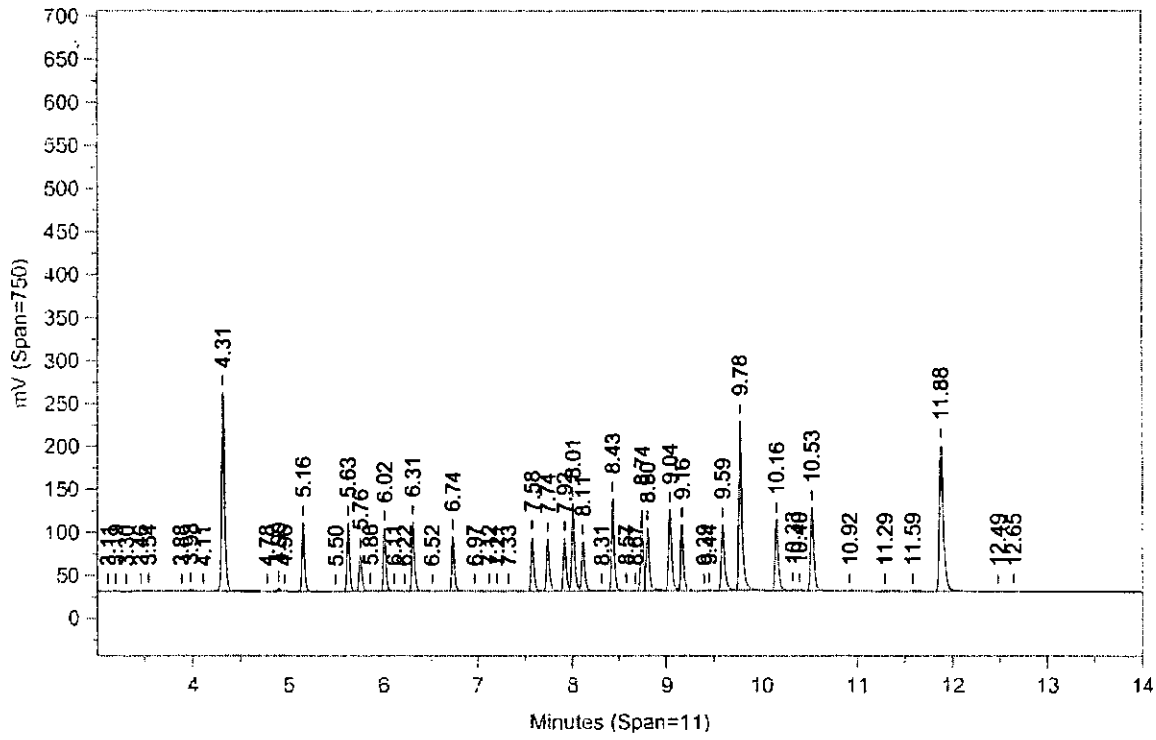
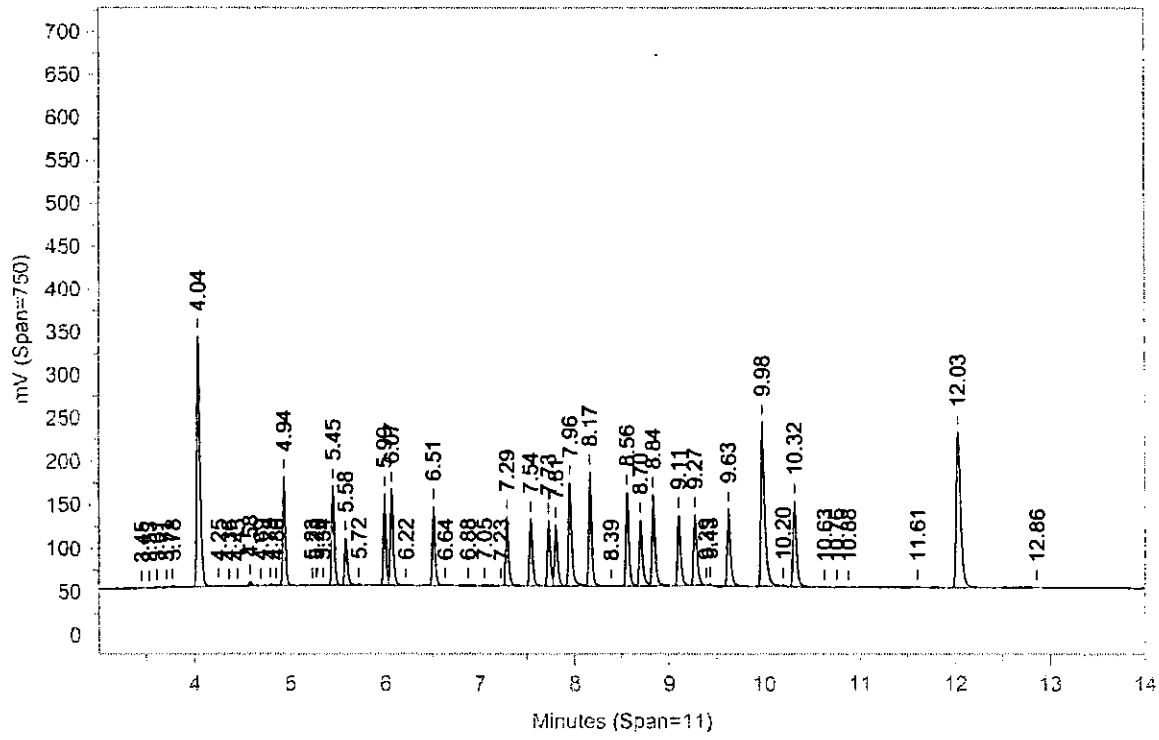
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.42R




C:\CPWIN\DATA1\3D16082B.42R




8797

Sample Name: **AR1640424E YNAR164YN CCAL 048499999**
Acquired from CP16--H5262A via port 1 on 3/26/04 09:42:42am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.43R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.041 | | 0.0000 | 0.000 | 320.2 | 0.008 | BB | 0.033 | 161.78 | 0.010 |
| 2 | 3.194 | | 0.0000 | 0.000 | 1212.3 | 0.031 | BB | 0.044 | 458.82 | 0.028 |
| 3 | 3.428 | | 0.0000 | 0.000 | 224.2 | 0.006 | BB | 0.035 | 105.88 | 0.007 |
| 4 | 3.539 | | 0.0000 | 0.000 | 1888.9 | 0.048 | BB | 0.048 | 655.66 | 0.040 |
| 5 | 3.693 | | 0.0000 | 0.000 | 1323.3 | 0.034 | BB | 0.049 | 453.03 | 0.028 |
| 6 | 3.821 | | 0.0000 | 0.000 | 270.7 | 0.007 | BB | 0.025 | 180.25 | 0.011 |
| 7 | 3.873 | | 0.0000 | 0.000 | 359.8 | 0.009 | BB | 0.044 | 136.94 | 0.008 |
| 8 | 3.984 | | 0.0000 | 0.000 | 882.4 | 0.023 | BB | 0.044 | 333.71 | 0.021 |
| 9 | 4.144 | | 0.0000 | 0.000 | 546.5 | 0.014 | BB | 0.039 | 230.64 | 0.014 |
| 10 | 4.220 | | 0.0000 | 0.000 | 1152.8 | 0.030 | BB | 0.025 | 774.25 | 0.048 |
| 11 | 4.312 | TCX | 15.5293 | 13.312 | 141367.3 | 3.628 | BB | 0.037 | 64063.43 | 3.942 |
| 12 | 4.570 | | 0.0000 | 0.000 | 17187.1 | 0.441 | BB | 0.037 | 7795.36 | 0.480 |
| 13 | 4.791 | | 0.0000 | 0.000 | 13252.4 | 0.340 | BB | 0.029 | 7655.01 | 0.471 |
| 14 | 4.853 | | 0.0000 | 0.000 | 86254.8 | 2.214 | BB | 0.036 | 40095.30 | 2.467 |
| 15 | 5.037 | | 0.0000 | 0.000 | 13855.9 | 0.356 | BB | 0.038 | 6106.78 | 0.376 |
| 16 | 5.371 | | 0.0000 | 0.000 | 196825.4 | 5.051 | BB | 0.051 | 63822.85 | 3.928 |
| 17 | 5.548 | | 0.0000 | 0.000 | 22068.8 | 0.566 | BB | 0.039 | 9364.03 | 0.576 |
| 18 | 5.631 | gamma-BHC | 2.4234 | 2.077 | 17010.5 | 0.437 | BB | 0.023 | 12436.42 | 0.765 |
| 19 | 5.666 | | 0.0000 | 0.000 | 30762.0 | 0.789 | BB | 0.026 | 20036.16 | 1.233 |
| 20 | 5.764 | beta-BHC | 0.4078 | 0.350 | 2281.3 | 0.059 | BB | 0.033 | 1155.21 | 0.071 |
| 21 | 5.860 | | 0.0000 | 0.000 | 147.8 | 0.004 | BB | 0.023 | 108.01 | 0.007 |
| 22 | 5.930 | | 0.0000 | 0.000 | 40829.6 | 1.048 | BB | 0.039 | 17615.60 | 1.084 |
| 23 | 6.003 | | 0.0000 | 0.000 | 29129.9 | 0.748 | BB | 0.028 | 17166.32 | 1.056 |
| 24 | 6.031 | delta-BHC | 10.8159 | 9.272 | 78631.1 | 2.018 | BB | 0.025 | 52670.78 | 3.241 |
| 25 | 6.111 | | 0.0000 | 0.000 | 8593.8 | 0.221 | BB | 0.026 | 5462.26 | 0.336 |
| 26 | 6.165 | | 0.0000 | 0.000 | 1481.4 | 0.038 | BB | 0.019 | 1324.88 | 0.082 |
| 27 | 6.218 | | 0.0000 | 0.000 | 126447.0 | 3.245 | BB | 0.038 | 55787.56 | 3.433 |
| 28 | 6.306 | Heptachlor | 6.8705 | 5.890 | 68682.2 | 1.763 | BB | 0.031 | 37277.29 | 2.294 |
| 29 | 6.423 | | 0.0000 | 0.000 | 3148.7 | 0.081 | BB | 0.025 | 2111.22 | 0.130 |
| 30 | 6.469 | | 0.0000 | 0.000 | 23447.4 | 0.602 | BB | 0.026 | 15182.41 | 0.934 |
| 31 | 6.501 | | 0.0000 | 0.000 | 19836.6 | 0.509 | BB | 0.022 | 15206.70 | 0.936 |
| 32 | 6.553 | | 0.0000 | 0.000 | 28919.3 | 0.742 | BB | 0.029 | 16576.82 | 1.020 |
| 33 | 6.778 | | 0.0000 | 0.000 | 144466.6 | 3.707 | BB | 0.049 | 49198.74 | 3.028 |
| 34 | 6.895 | | 0.0000 | 0.000 | 28502.8 | 0.731 | BB | 0.026 | 18556.18 | 1.142 |
| 35 | 6.948 | | 0.0000 | 0.000 | 28983.6 | 0.744 | BB | 0.032 | 15162.93 | 0.933 |
| 36 | 7.096 | | 0.0000 | 0.000 | 21161.6 | 0.543 | BB | 0.038 | 9351.75 | 0.575 |
| 37 | 7.172 | | 0.0000 | 0.000 | 476.9 | 0.012 | BB | 0.019 | 419.76 | 0.026 |
| 38 | 7.232 | | 0.0000 | 0.000 | 6568.3 | 0.169 | BB | 0.027 | 3992.46 | 0.246 |
| 39 | 7.291 | | 0.0000 | 0.000 | 48972.6 | 1.257 | BB | 0.030 | 27031.71 | 1.663 |
| 40 | 7.345 | | 0.0000 | 0.000 | 3331.7 | 0.086 | BB | 0.020 | 2774.72 | 0.171 |
| 41 | 7.383 | | 0.0000 | 0.000 | 3195.7 | 0.082 | BB | 0.022 | 2438.29 | 0.150 |
| 42 | 7.566 | o,p-DDE | 2.0525 | 1.759 | 11293.0 | 0.290 | BV | 0.035 | 5375.70 | 0.331 |
| 43 | 7.632 | | 0.0000 | 0.000 | 99081.3 | 2.543 | VB | 0.044 | 37207.27 | 2.290 |
| 44 | 7.947 | a. Chlordane | 0.3909 | 0.335 | 3427.5 | 0.088 | BV | 0.033 | 1715.61 | 0.106 |
| 45 | 7.999 | 4,4'-DDE | 6.2089 | 5.322 | 55181.8 | 1.416 | VB | 0.042 | 21815.02 | 1.342 |
| 46 | 8.165 | | 0.0000 | 0.000 | 39485.2 | 1.013 | BV | 0.033 | 20141.80 | 1.240 |
| 47 | 8.216 | | 0.0000 | 0.000 | 91834.3 | 2.357 | VV | 0.039 | 39675.24 | 2.442 |
| 48 | 8.298 | | 0.0000 | 0.000 | 64042.3 | 1.644 | VV | 0.059 | 18197.38 | 1.120 |
| 49 | 8.399 | | 0.0000 | 0.000 | 185359.4 | 4.757 | VV | 0.040 | 76714.08 | 4.721 |
| 50 | 8.532 | | 0.0000 | 0.000 | 28146.1 | 0.722 | VV | 0.043 | 10956.15 | 0.674 |
| 51 | 8.600 | o,p-DDT | 0.8679 | 0.744 | 4922.4 | 0.126 | VB | 0.035 | 2314.04 | 0.142 |
| 52 | 8.681 | | 0.0000 | 0.000 | 32736.9 | 0.840 | BV | 0.036 | 15095.66 | 0.929 |
| 53 | 8.757 | Endrin | 27.1578 | 23.280 | 270345.7 | 6.938 | VV | 0.050 | 90810.35 | 5.588 |
| 54 | 8.817 | 4,4'-DDD | 10.3601 | 8.881 | 65781.6 | 1.688 | VV | 0.037 | 29489.61 | 1.815 |
| 55 | 8.925 | | 0.0000 | 0.000 | 108982.9 | 2.797 | VB | 0.041 | 44701.13 | 2.751 |
| 56 | 9.055 | Endosulfan II | 0.9771 | 0.838 | 5922.7 | 0.152 | BV | 0.030 | 3263.18 | 0.201 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.128 | | 0.0000 | 0.000 | 289102.8 | 7.419 | VV | 0.054 | 89217.87 | 5.490 |
| 58 | 9.268 | | 0.0000 | 0.000 | 139321.1 | 3.575 | VV | 0.041 | 56675.76 | 3.488 |
| 59 | 9.330 | | 0.0000 | 0.000 | 84650.2 | 2.172 | VB | 0.041 | 33998.08 | 2.092 |
| 60 | 9.450 | | 0.0000 | 0.000 | 16140.6 | 0.414 | BB | 0.030 | 8951.29 | 0.551 |
| 61 | 9.509 | | 0.0000 | 0.000 | 8457.0 | 0.217 | BB | 0.027 | 5184.42 | 0.319 |
| 62 | 9.594 | Endrin aldehyde | 16.5454 | 14.183 | 82812.6 | 2.125 | BB | 0.030 | 45389.46 | 2.793 |
| 63 | 9.648 | | 0.0000 | 0.000 | 28177.9 | 0.723 | BB | 0.027 | 17681.93 | 1.088 |
| 64 | 9.711 | | 0.0000 | 0.000 | 17763.8 | 0.456 | BB | 0.028 | 10444.33 | 0.643 |
| 65 | 9.776 | Methoxychlor | 0.4050 | 0.347 | 750.3 | 0.019 | BB | 0.019 | 663.94 | 0.041 |
| 66 | 9.827 | | 0.0000 | 0.000 | 11179.3 | 0.287 | BB | 0.032 | 5801.41 | 0.357 |
| 67 | 9.907 | | 0.0000 | 0.000 | 20417.3 | 0.524 | BB | 0.032 | 10525.53 | 0.648 |
| 68 | 9.986 | | 0.0000 | 0.000 | 324684.7 | 8.332 | BB | 0.045 | 120396.20 | 7.409 |
| 69 | 10.360 | | 0.0000 | 0.000 | 175903.3 | 4.514 | BB | 0.048 | 61215.62 | 3.767 |
| 70 | 10.453 | | 0.0000 | 0.000 | 47771.7 | 1.226 | BB | 0.039 | 20523.55 | 1.263 |
| 71 | 10.696 | | 0.0000 | 0.000 | 6051.0 | 0.155 | BB | 0.035 | 2863.07 | 0.176 |
| 72 | 10.827 | | 0.0000 | 0.000 | 43870.2 | 1.126 | BB | 0.045 | 16154.95 | 0.994 |
| 73 | 10.924 | | 0.0000 | 0.000 | 1770.2 | 0.045 | BB | 0.031 | 962.58 | 0.059 |
| 74 | 11.168 | | 0.0000 | 0.000 | 81314.9 | 2.087 | BB | 0.039 | 34392.87 | 2.116 |
| 75 | 11.585 | | 0.0000 | 0.000 | 34881.1 | 0.895 | BB | 0.046 | 12740.69 | 0.784 |
| 76 | 11.883 | DCB | 15.6435 | 13.410 | 148453.5 | 3.810 | BB | 0.048 | 51610.26 | 3.176 |
| 77 | 12.575 | | 0.0000 | 0.000 | 504.3 | 0.013 | BB | 0.197 | 42.61 | 0.003 |
| 78 | 13.509 | | 0.0000 | 0.000 | 557.8 | 0.014 | BB | 0.049 | 189.77 | 0.012 |
| 79 | 13.624 | | 0.0000 | 0.000 | 1610.0 | 0.041 | BB | 0.059 | 454.49 | 0.028 |

Total Area = 3896690.0, Total Amount = 116.656, Total Height = 1624991.0, Sample Units = PPB

Sample Name: **AR1640424E YNAR164YN CCAL 048499999**
Acquired from CP16--H5262B via port 2 on 3/26/04 09:42:42am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.43R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.464 | | 0.0000 | 0.000 | 732.1 | 0.013 | BB | 0.040 | 301.55 | 0.015 |
| 2 | 3.537 | | 0.0000 | 0.000 | 509.7 | 0.009 | BB | 0.033 | 255.25 | 0.013 |
| 3 | 3.610 | | 0.0000 | 0.000 | 1381.1 | 0.025 | BB | 0.043 | 532.73 | 0.027 |
| 4 | 3.726 | | 0.0000 | 0.000 | 859.8 | 0.015 | BB | 0.049 | 291.32 | 0.015 |
| 5 | 3.807 | | 0.0000 | 0.000 | 480.9 | 0.009 | BB | 0.040 | 201.18 | 0.010 |
| 6 | 3.933 | | 0.0000 | 0.000 | 673.2 | 0.012 | BB | 0.075 | 149.03 | 0.008 |
| 7 | 4.038 | TCX | 15.3979 | 10.767 | 189313.8 | 3.396 | BB | 0.037 | 86394.92 | 4.375 |
| 8 | 4.179 | | 0.0000 | 0.000 | 787.4 | 0.014 | BB | 0.024 | 556.96 | 0.028 |
| 9 | 4.216 | | 0.0000 | 0.000 | 6951.8 | 0.125 | BB | 0.035 | 3338.57 | 0.169 |
| 10 | 4.358 | | 0.0000 | 0.000 | 114.1 | 0.002 | BB | 0.023 | 84.31 | 0.004 |
| 11 | 4.457 | | 0.0000 | 0.000 | 24190.4 | 0.434 | BB | 0.038 | 10686.33 | 0.541 |
| 12 | 4.581 | | 0.0000 | 0.000 | 2237.1 | 0.040 | BB | 0.033 | 1134.10 | 0.057 |
| 13 | 4.658 | | 0.0000 | 0.000 | 22504.8 | 0.404 | BB | 0.033 | 11199.48 | 0.567 |
| 14 | 4.743 | Hcb | 4.7801 | 3.343 | 120787.6 | 2.167 | BB | 0.039 | 51180.12 | 2.592 |
| 15 | 5.065 | | 0.0000 | 0.000 | 17654.8 | 0.317 | BB | 0.038 | 7655.09 | 0.388 |
| 16 | 5.203 | | 0.0000 | 0.000 | 423.5 | 0.008 | BB | 0.054 | 131.44 | 0.007 |
| 17 | 5.310 | | 0.0000 | 0.000 | 243514.0 | 4.369 | BB | 0.057 | 70994.98 | 3.595 |
| 18 | 5.465 | gamma-BHC | 1.0785 | 0.754 | 19280.6 | 0.346 | BB | 0.037 | 8573.79 | 0.434 |
| 19 | 5.598 | beta-BHC | 6.3181 | 4.418 | 38966.4 | 0.699 | BB | 0.026 | 25197.36 | 1.276 |
| 20 | 5.646 | | 0.0000 | 0.000 | 58078.2 | 1.042 | BB | 0.031 | 31229.72 | 1.581 |
| 21 | 5.785 | | 0.0000 | 0.000 | 65243.1 | 1.171 | BB | 0.055 | 19925.41 | 1.009 |
| 22 | 5.933 | | 0.0000 | 0.000 | 447047.0 | 8.020 | BV | 0.054 | 137633.60 | 6.970 |
| 23 | 6.115 | | 0.0000 | 0.000 | 194475.0 | 3.489 | VV | 0.045 | 72469.12 | 3.670 |
| 24 | 6.253 | | 0.0000 | 0.000 | 148071.3 | 2.657 | VV | 0.047 | 52537.51 | 2.660 |
| 25 | 6.380 | | 0.0000 | 0.000 | 97427.2 | 1.748 | VV | 0.036 | 44680.37 | 2.263 |
| 26 | 6.438 | | 0.0000 | 0.000 | 107104.1 | 1.922 | VV | 0.039 | 46056.20 | 2.332 |
| 27 | 6.491 | Aldrin | 5.3692 | 3.754 | 97448.8 | 1.748 | VB | 0.048 | 34185.33 | 1.731 |
| 28 | 6.634 | | 0.0000 | 0.000 | 492.0 | 0.009 | BB | 0.030 | 271.13 | 0.014 |
| 29 | 6.686 | | 0.0000 | 0.000 | 293.2 | 0.005 | BB | 0.022 | 226.30 | 0.011 |
| 30 | 6.739 | Telodrin | 8.3495 | 5.838 | 89742.8 | 1.610 | BB | 0.030 | 49233.86 | 2.493 |
| 31 | 6.794 | | 0.0000 | 0.000 | 26000.9 | 0.466 | BB | 0.034 | 12895.51 | 0.653 |
| 32 | 6.901 | | 0.0000 | 0.000 | 129787.0 | 2.328 | BB | 0.049 | 44260.41 | 2.241 |
| 33 | 7.100 | | 0.0000 | 0.000 | 16404.9 | 0.294 | BB | 0.028 | 9663.97 | 0.489 |
| 34 | 7.149 | | 0.0000 | 0.000 | 5936.4 | 0.107 | BB | 0.026 | 3861.96 | 0.196 |
| 35 | 7.234 | | 0.0000 | 0.000 | 12278.8 | 0.220 | BB | 0.027 | 7528.73 | 0.381 |
| 36 | 7.292 | Hept. epoxide | 6.2391 | 4.363 | 81891.2 | 1.469 | BB | 0.037 | 37077.74 | 1.878 |
| 37 | 7.392 | | 0.0000 | 0.000 | 1167.7 | 0.021 | BB | 0.026 | 760.77 | 0.039 |
| 38 | 7.455 | | 0.0000 | 0.000 | 10972.6 | 0.197 | BV | 0.033 | 5492.58 | 0.278 |
| 39 | 7.533 | g. Chlordane | 6.7771 | 4.739 | 103846.5 | 1.863 | VV | 0.044 | 39281.17 | 1.989 |
| 40 | 7.659 | | 0.0000 | 0.000 | 8346.9 | 0.150 | VB | 0.044 | 3188.48 | 0.161 |
| 41 | 7.830 | Endosulfan I | 0.0602 | 0.042 | 790.4 | 0.014 | BB | 0.041 | 317.74 | 0.016 |
| 42 | 7.908 | | 0.0000 | 0.000 | 3246.8 | 0.058 | BV | 0.036 | 1518.91 | 0.077 |
| 43 | 7.985 | 4,4'-DDE | 1.7472 | 1.222 | 17806.2 | 0.319 | VV | 0.036 | 8140.93 | 0.412 |
| 44 | 8.097 | | 0.0000 | 0.000 | 31722.7 | 0.569 | VV | 0.031 | 17031.16 | 0.862 |
| 45 | 8.134 | | 0.0000 | 0.000 | 46177.6 | 0.828 | VV | 0.033 | 23455.74 | 1.188 |
| 46 | 8.179 | Dieldrin | 9.3339 | 6.527 | 110799.2 | 1.988 | VV | 0.041 | 44959.61 | 2.277 |
| 47 | 8.263 | | 0.0000 | 0.000 | 71877.6 | 1.290 | VV | 0.055 | 21827.53 | 1.105 |
| 48 | 8.384 | | 0.0000 | 0.000 | 226313.1 | 4.060 | VB | 0.047 | 79510.51 | 4.026 |
| 49 | 8.564 | Endrin | 4.9559 | 3.466 | 47407.1 | 0.851 | BV | 0.039 | 20458.68 | 1.036 |
| 50 | 8.645 | | 0.0000 | 0.000 | 261871.5 | 4.698 | VB | 0.047 | 92550.33 | 4.687 |
| 51 | 8.853 | Endosulfan II | 15.9063 | 11.123 | 229643.0 | 4.120 | BV | 0.062 | 61612.11 | 3.120 |
| 52 | 8.992 | | 0.0000 | 0.000 | 31967.3 | 0.574 | VV | 0.055 | 9690.48 | 0.491 |
| 53 | 9.109 | 4,4'-DDT | 27.5959 | 19.297 | 347277.8 | 6.230 | VV | 0.064 | 89931.20 | 4.554 |
| 54 | 9.221 | | 0.0000 | 0.000 | 180239.7 | 3.234 | VV | 0.045 | 67219.08 | 3.404 |
| 55 | 9.291 | Endrin aldehyde | 13.2110 | 9.238 | 115258.2 | 2.068 | VV | 0.047 | 40512.96 | 2.052 |
| 56 | 9.442 | | 0.0000 | 0.000 | 41134.9 | 0.738 | VB | 0.049 | 14107.35 | 0.714 |

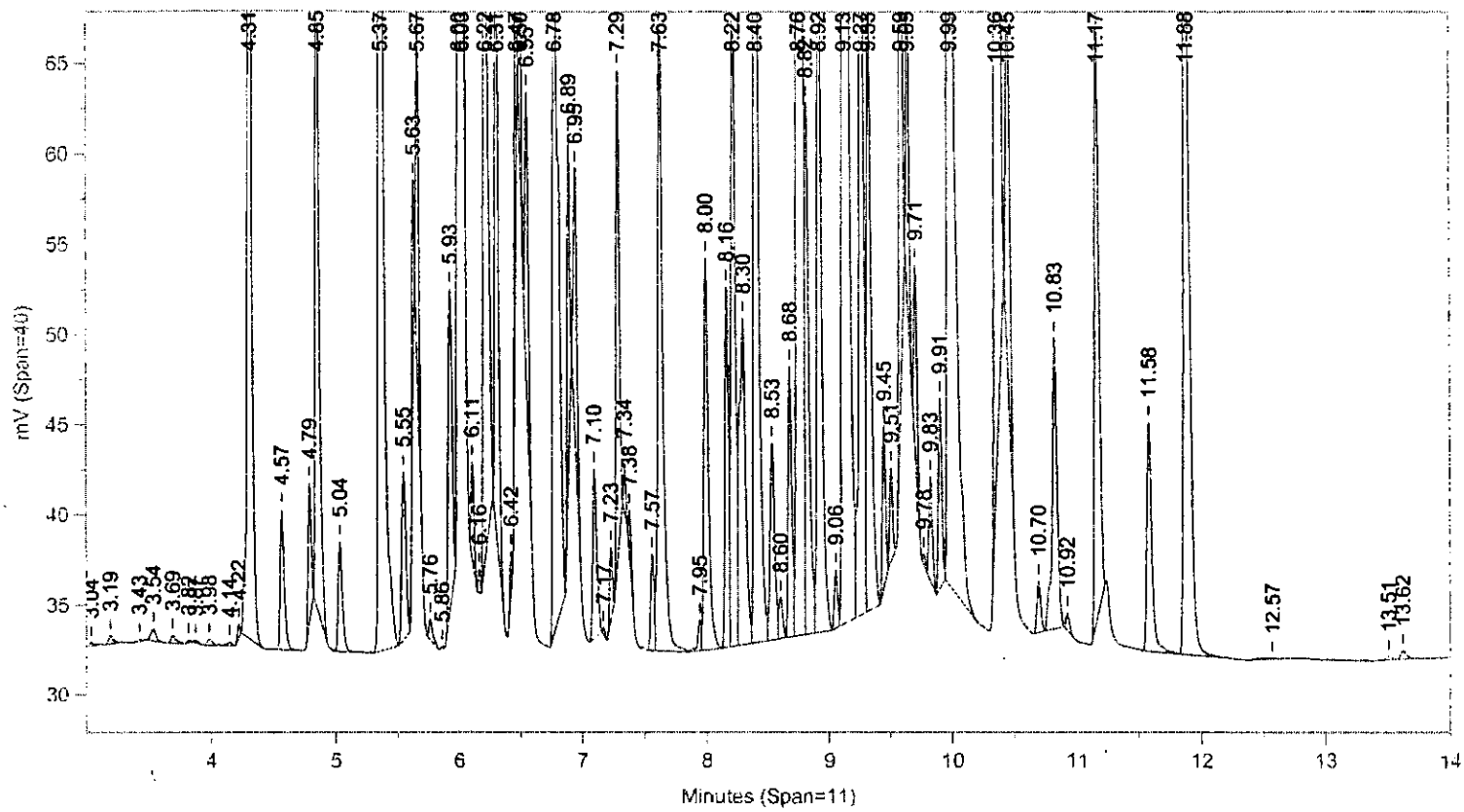
8888

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.603 | | 0.0000 | 0.000 | 152158.3 | 2.730 | BB | 0.043 | 59531.73 | 3.015 |
| 58 | 9.695 | | 0.0000 | 0.000 | 53862.3 | 0.966 | BB | 0.035 | 25827.98 | 1.308 |
| 59 | 9.768 | | 0.0000 | 0.000 | 18751.7 | 0.336 | BB | 0.030 | 10568.88 | 0.535 |
| 60 | 9.818 | | 0.0000 | 0.000 | 14802.5 | 0.266 | BB | 0.034 | 7195.78 | 0.364 |
| 61 | 9.913 | | 0.0000 | 0.000 | 383012.0 | 6.872 | BB | 0.049 | 129872.40 | 6.577 |
| 62 | 10.086 | | 0.0000 | 0.000 | 8934.7 | 0.160 | BB | 0.033 | 4456.54 | 0.226 |
| 63 | 10.300 | Mirex | 0.8049 | 0.563 | 4073.5 | 0.073 | BB | 0.030 | 2300.23 | 0.116 |
| 64 | 10.385 | | 0.0000 | 0.000 | 397706.0 | 7.135 | BB | 0.082 | 80694.90 | 4.086 |
| 65 | 10.685 | | 0.0000 | 0.000 | 4426.2 | 0.079 | BB | 0.034 | 2169.36 | 0.110 |
| 66 | 10.757 | | 0.0000 | 0.000 | 6669.3 | 0.120 | BB | 0.035 | 3162.71 | 0.160 |
| 67 | 10.922 | | 0.0000 | 0.000 | 48632.4 | 0.872 | BB | 0.047 | 17396.37 | 0.881 |
| 68 | 11.128 | | 0.0000 | 0.000 | 119839.4 | 2.150 | BB | 0.051 | 38978.71 | 1.974 |
| 69 | 11.610 | | 0.0000 | 0.000 | 37942.6 | 0.681 | BB | 0.047 | 13369.68 | 0.677 |
| 70 | 11.921 | | 0.0000 | 0.000 | 238.3 | 0.004 | BB | 0.042 | 93.88 | 0.005 |
| 71 | 12.031 | DCB | 15.0828 | 10.547 | 162858.1 | 2.922 | BB | 0.050 | 54336.86 | 2.752 |
| 72 | 13.292 | | 0.0000 | 0.000 | 2750.0 | 0.049 | BB | 0.083 | 554.38 | 0.028 |
| 73 | 13.833 | | 0.0000 | 0.000 | 310.9 | 0.006 | BB | 0.086 | 60.24 | 0.003 |

Total Area = 5573920.0, Total Amount = 143.008, Total Height = 1974733.0, Sample Units = PPB

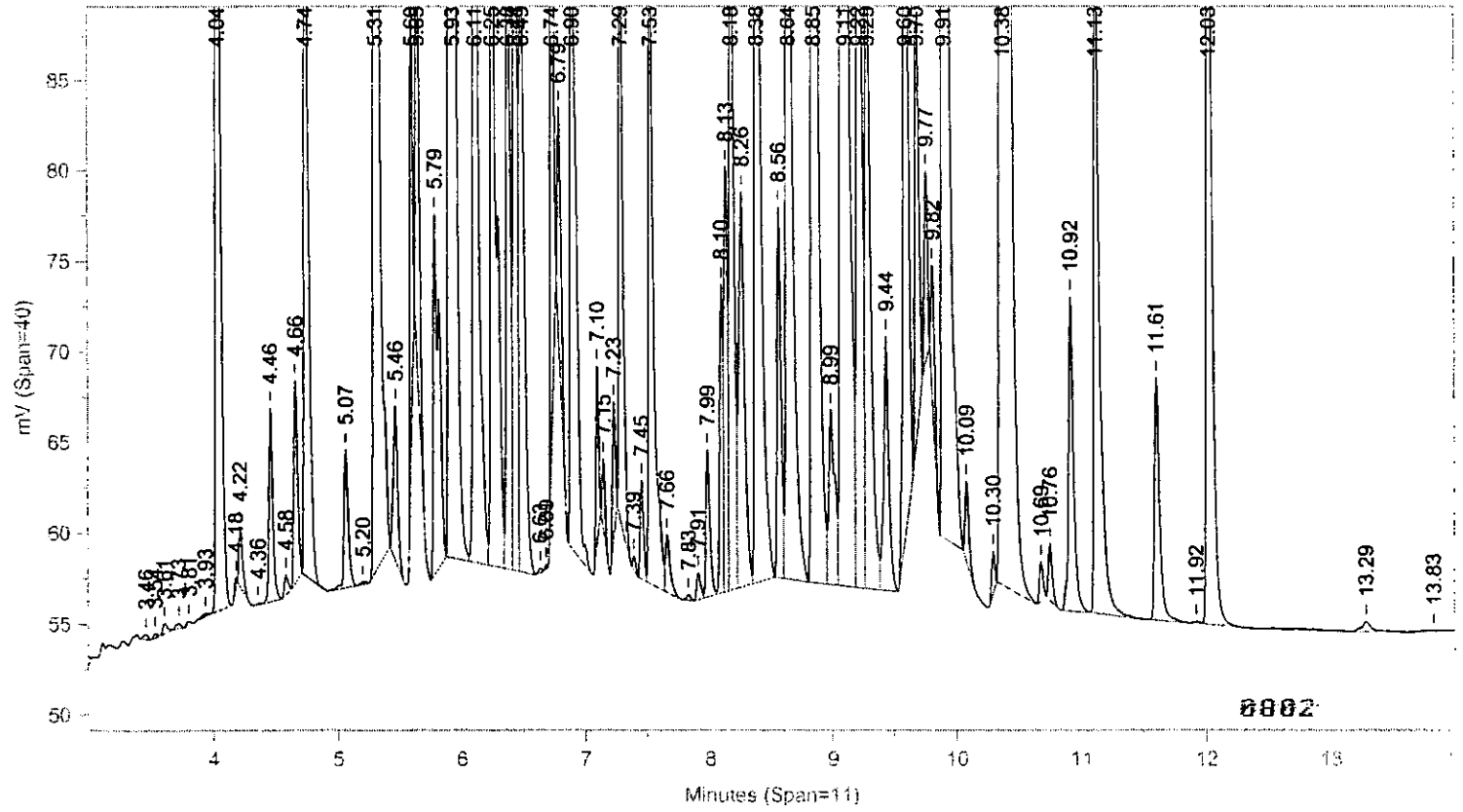
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.43R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 9:28:42 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.43R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 9:28:42 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 1
Dilution Factor: 1
Analyst: 120

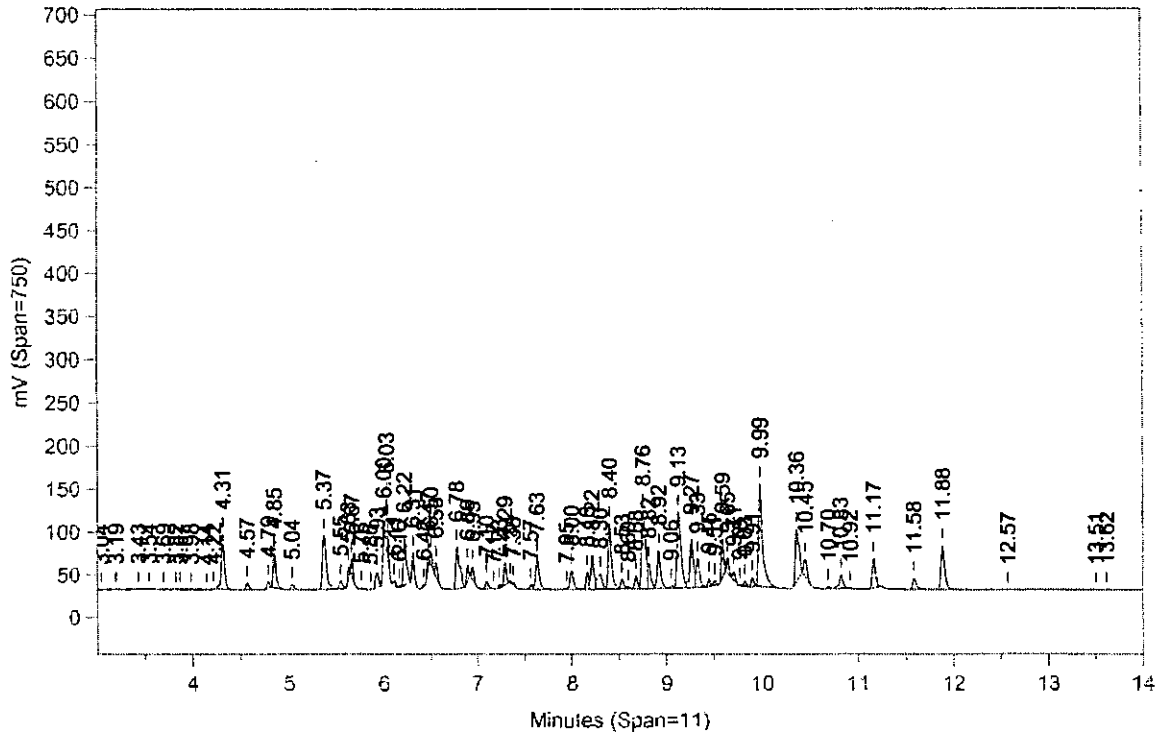
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 64063 | 15.529 | TCX | 4.038 | 86395 | 15.398 | TCX |
| . | 0 | . | Hcb | 4.743 | 51180 | 4.78 | Hcb |
| 5.631 | 12436 | 2.423 | gamma-BHC | 5.465 | 8574 | 1.079 | gamma-BHC |
| 5.764 | 1155 | .408 | beta-BHC | 5.598 | 25197 | 6.318 | beta-BHC |
| 6.031 | 52671 | 10.816 | delta-BHC | . | 0 | . | delta-BHC |
| 6.306 | 37277 | 6.871 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.491 | 34185 | 5.369 | Aldrin |
| . | 0 | . | Telodrin | 6.739 | 49234 | 8.349 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.292 | 37078 | 6.239 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.533 | 39281 | 6.777 | g. Chlordane |
| 7.566 | 5376 | 2.052 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.83 | 318 | .06 | Endosulfan I |
| 7.947 | 1716 | .391 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.999 | 21815 | 6.209 | 4,4'-DDE | 7.985 | 8141 | 1.747 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.179 | 44960 | 9.334 | Dieldrin |
| 8.757 | 90810 | 27.158 | Endrin | 8.564 | 20459 | 4.956 | Endrin |
| 8.6 | 2314 | .868 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.817 | 29490 | 10.36 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.055 | 3263 | .977 | Endosulfan II | 8.853 | 61612 | 15.906 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.109 | 89931 | 27.596 | 4,4'-DDT |
| 9.594 | 45389 | 16.545 | Endrin aldehyde | 9.291 | 40513 | 13.211 | Endrin aldehyde |
| 9.776 | 664 | .405 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Mirex | 10.3 | 2300 | .805 | Mirex |
| 11.883 | 51610 | 15.644 | DCB | 12.031 | 54337 | 15.083 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.43A
Area File: C:\CPWIN\DATA1\3D16082B.43A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 10:59:02 AM
File Reported On: 3/26/2004 at 10:59:09 AM

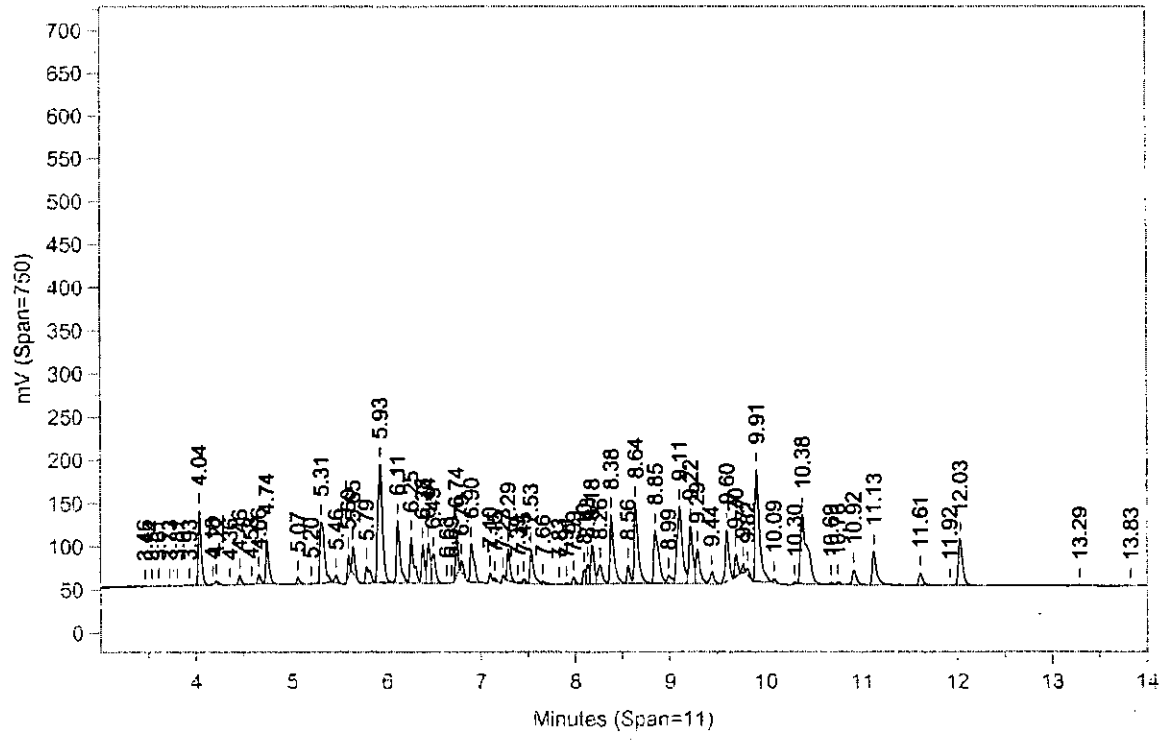
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.43R




C:\CPWIN\DATA1\3D16082B.43R



Sample Name: **EVALX03C OSPEMOS PEM 048599999**
Acquired from CP16--H5262A via port 1 on 3/26/04 02:50:43pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.58R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.053 | | 0.0000 | 0.000 | 246.1 | 0.011 | BB | 0.039 | 103.92 | 0.010 |
| 2 | 3.195 | | 0.0000 | 0.000 | 400.4 | 0.018 | BB | 0.033 | 204.63 | 0.021 |
| 3 | 3.546 | | 0.0000 | 0.000 | 1535.1 | 0.069 | BB | 0.034 | 760.82 | 0.077 |
| 4 | 3.694 | | 0.0000 | 0.000 | 317.4 | 0.014 | BB | 0.048 | 109.69 | 0.011 |
| 5 | 3.990 | | 0.0000 | 0.000 | 1191.9 | 0.053 | BB | 0.045 | 439.89 | 0.044 |
| 6 | 4.111 | | 0.0000 | 0.000 | 92.7 | 0.004 | BB | 0.022 | 71.54 | 0.007 |
| 7 | 4.317 | TCX | 19.5380 | 5.028 | 171355.5 | 7.657 | BB | 0.035 | 80600.82 | 8.129 |
| 8 | 4.778 | | 0.0000 | 0.000 | 909.3 | 0.041 | BB | 0.067 | 227.64 | 0.023 |
| 9 | 4.904 | Hcb | 0.1451 | 0.037 | 1982.0 | 0.089 | BB | 0.032 | 1018.65 | 0.103 |
| 10 | 5.041 | | 0.0000 | 0.000 | 189.8 | 0.008 | BB | 0.030 | 104.99 | 0.011 |
| 11 | 5.162 | alpha-BHC | 9.9384 | 2.557 | 95182.9 | 4.253 | BB | 0.031 | 51078.91 | 5.151 |
| 12 | 5.337 | | 0.0000 | 0.000 | 235.4 | 0.011 | BB | 0.041 | 95.62 | 0.010 |
| 13 | 5.630 | gamma-BHC | 9.3367 | 2.403 | 91225.0 | 4.076 | BB | 0.032 | 47914.61 | 4.832 |
| 14 | 5.762 | beta-BHC | 9.7111 | 2.499 | 56856.4 | 2.541 | BB | 0.034 | 27508.41 | 2.774 |
| 15 | 5.867 | | 0.0000 | 0.000 | 448.2 | 0.020 | BB | 0.028 | 269.20 | 0.027 |
| 16 | 6.119 | | 0.0000 | 0.000 | 2019.0 | 0.090 | BB | 0.073 | 460.97 | 0.046 |
| 17 | 6.304 | Heptachlor | 0.0095 | 0.002 | 115.4 | 0.005 | BB | 0.037 | 51.63 | 0.005 |
| 18 | 6.563 | | 0.0000 | 0.000 | 874.6 | 0.039 | BB | 0.050 | 291.67 | 0.029 |
| 19 | 6.843 | | 0.0000 | 0.000 | 401.4 | 0.018 | BB | 0.091 | 73.83 | 0.007 |
| 20 | 6.998 | | 0.0000 | 0.000 | 505.8 | 0.023 | BB | 0.092 | 91.94 | 0.009 |
| 21 | 7.128 | | 0.0000 | 0.000 | 1277.0 | 0.057 | BB | 0.041 | 516.35 | 0.052 |
| 22 | 7.209 | | 0.0000 | 0.000 | 112.7 | 0.005 | BB | 0.021 | 87.47 | 0.009 |
| 23 | 7.263 | | 0.0000 | 0.000 | 581.8 | 0.026 | BB | 0.037 | 264.18 | 0.027 |
| 24 | 7.426 | | 0.0000 | 0.000 | 368.6 | 0.016 | BB | 0.056 | 109.90 | 0.011 |
| 25 | 7.570 | o,p-DDE | 0.0262 | 0.007 | 155.6 | 0.007 | BB | 0.038 | 68.69 | 0.007 |
| 26 | 7.723 | | 0.0000 | 0.000 | 117.5 | 0.005 | BB | 0.027 | 72.15 | 0.007 |
| 27 | 8.015 | 4,4'-DDE | 0.5017 | 0.129 | 6174.9 | 0.276 | BV | 0.058 | 1762.86 | 0.178 |
| 28 | 8.322 | | 0.0000 | 0.000 | 601.0 | 0.027 | VB | 0.048 | 209.06 | 0.021 |
| 29 | 8.449 | Dieldrin | 0.0171 | 0.004 | 177.1 | 0.008 | BV | 0.047 | 62.34 | 0.006 |
| 30 | 8.580 | o,p-DDT | 0.7249 | 0.187 | 4383.4 | 0.196 | VB | 0.038 | 1932.54 | 0.195 |
| 31 | 8.746 | Endrin | 44.5597 | 11.467 | 319161.0 | 14.262 | BV | 0.036 | 148998.80 | 15.026 |
| 32 | 8.879 | | 0.0000 | 0.000 | 912.2 | 0.041 | VB | 0.030 | 501.01 | 0.051 |
| 33 | 9.033 | Endosulfan II | 0.1044 | 0.027 | 767.5 | 0.034 | BB | 0.037 | 348.58 | 0.035 |
| 34 | 9.168 | 4,4'-DDT | 84.3442 | 21.705 | 524194.2 | 23.424 | BB | 0.036 | 242887.20 | 24.495 |
| 35 | 9.401 | | 0.0000 | 0.000 | 3595.7 | 0.161 | BB | 0.083 | 725.34 | 0.073 |
| 36 | 9.595 | Endrin aldehyde | 0.9898 | 0.255 | 6577.0 | 0.294 | BB | 0.040 | 2715.45 | 0.274 |
| 37 | 9.779 | Methoxychlor | 188.0682 | 48.396 | 746213.5 | 33.345 | BB | 0.040 | 308301.80 | 31.092 |
| 38 | 10.329 | | 0.0000 | 0.000 | 803.1 | 0.036 | BB | 0.036 | 368.26 | 0.037 |
| 39 | 10.403 | | 0.0000 | 0.000 | 2892.5 | 0.129 | BB | 0.036 | 1320.99 | 0.133 |
| 40 | 10.533 | Endrin ketone | 1.4978 | 0.385 | 12160.3 | 0.543 | BB | 0.042 | 4882.15 | 0.492 |
| 41 | 10.700 | | 0.0000 | 0.000 | 182.2 | 0.008 | BB | 0.033 | 90.76 | 0.009 |
| 42 | 10.929 | | 0.0000 | 0.000 | 2527.7 | 0.113 | BB | 0.078 | 542.11 | 0.055 |
| 43 | 11.589 | | 0.0000 | 0.000 | 817.1 | 0.037 | BB | 0.044 | 307.53 | 0.031 |
| 44 | 11.888 | DCB | 19.0874 | 4.912 | 176760.0 | 7.899 | BB | 0.047 | 62972.24 | 6.351 |
| 45 | 13.320 | | 0.0000 | 0.000 | 229.5 | 0.010 | BB | 0.076 | 50.31 | 0.005 |

Total Area = 2237828.0, Total Amount = 388.6, Total Height = 991577.4, Sample Units = PPB

Sample Name: **EVALX03C OSPEMOS PEM 048599999**
Acquired from CP16--H5262B via port 2 on 3/26/04 02:50:43pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.58R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

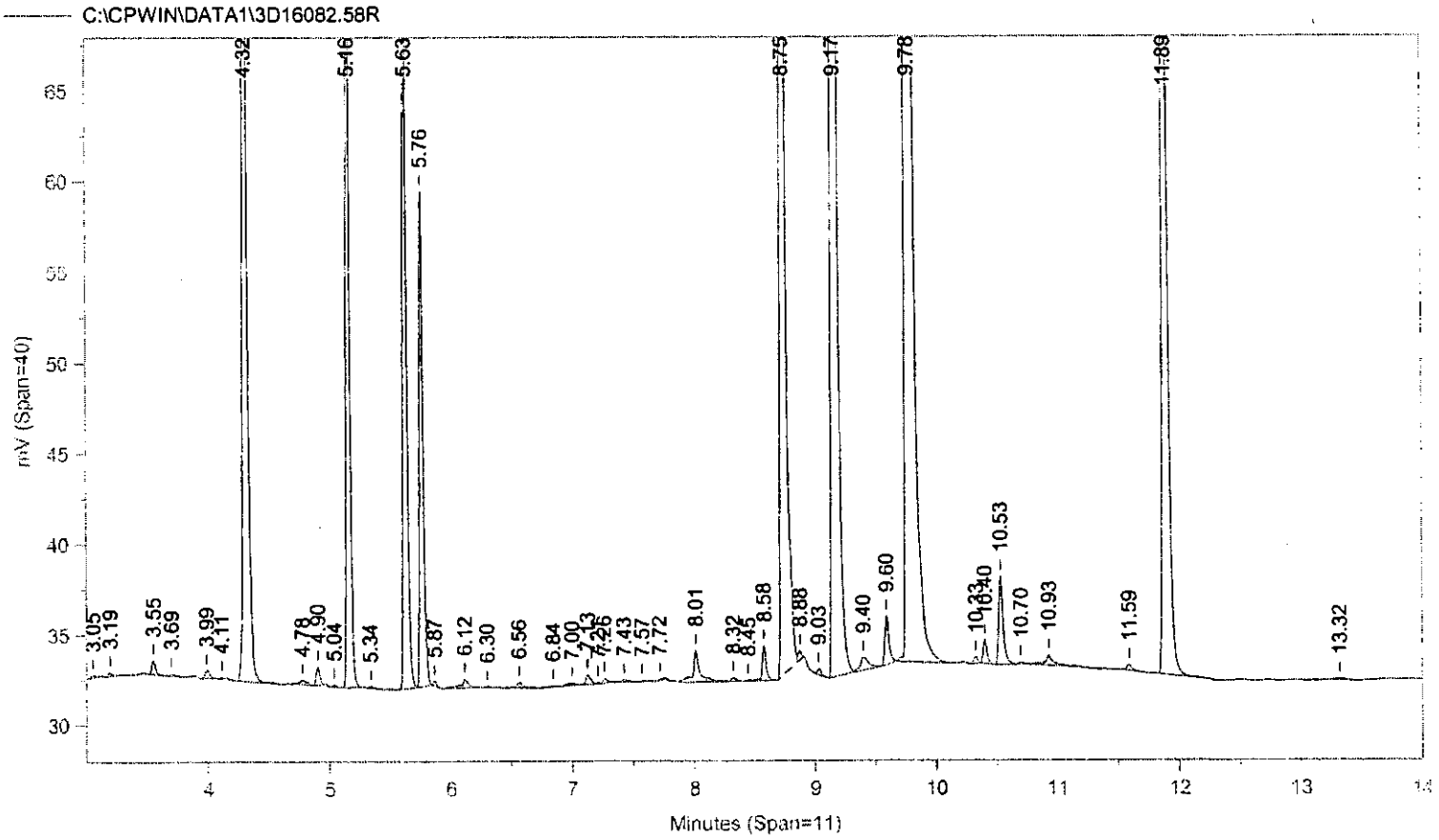
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.449 | | 0.0000 | 0.000 | 772.9 | 0.029 | BB | 0.055 | 235.79 | 0.021 |
| 2 | 3.538 | | 0.0000 | 0.000 | 445.3 | 0.017 | BB | 0.035 | 213.30 | 0.019 |
| 3 | 3.619 | | 0.0000 | 0.000 | 1825.0 | 0.068 | BB | 0.047 | 645.93 | 0.058 |
| 4 | 3.724 | | 0.0000 | 0.000 | 671.0 | 0.025 | BB | 0.046 | 240.62 | 0.021 |
| 5 | 3.804 | | 0.0000 | 0.000 | 336.1 | 0.013 | BB | 0.033 | 171.88 | 0.015 |
| 6 | 4.041 | TCX | 18.7927 | 5.006 | 236525.7 | 8.865 | BB | 0.037 | 105442.90 | 9.399 |
| 7 | 4.257 | | 0.0000 | 0.000 | 1364.7 | 0.051 | BB | 0.047 | 486.69 | 0.043 |
| 8 | 4.364 | | 0.0000 | 0.000 | 230.1 | 0.009 | BB | 0.030 | 128.63 | 0.011 |
| 9 | 4.445 | | 0.0000 | 0.000 | 1256.2 | 0.047 | BB | 0.056 | 373.27 | 0.033 |
| 10 | 4.584 | | 0.0000 | 0.000 | 3517.0 | 0.132 | BB | 0.037 | 1577.56 | 0.141 |
| 11 | 4.700 | | 0.0000 | 0.000 | 177.4 | 0.007 | BB | 0.037 | 79.46 | 0.007 |
| 12 | 4.792 | | 0.0000 | 0.000 | 320.0 | 0.012 | BB | 0.026 | 207.03 | 0.018 |
| 13 | 4.860 | | 0.0000 | 0.000 | 351.2 | 0.013 | BB | 0.031 | 189.17 | 0.017 |
| 14 | 4.940 | alpha-BHC | 9.5442 | 2.543 | 151341.0 | 5.673 | BB | 0.031 | 81889.89 | 7.300 |
| 15 | 5.217 | | 0.0000 | 0.000 | 820.6 | 0.031 | BB | 0.102 | 134.52 | 0.012 |
| 16 | 5.280 | | 0.0000 | 0.000 | 346.4 | 0.013 | BB | 0.029 | 196.67 | 0.018 |
| 17 | 5.455 | gamma-BHC | 9.0254 | 2.404 | 136582.0 | 5.119 | BB | 0.032 | 71749.20 | 6.396 |
| 18 | 5.585 | beta-BHC | 9.1364 | 2.434 | 76771.7 | 2.878 | BB | 0.035 | 36437.07 | 3.248 |
| 19 | 5.725 | | 0.0000 | 0.000 | 925.3 | 0.035 | BB | 0.038 | 410.03 | 0.037 |
| 20 | 5.990 | delta-BHC | 0.1140 | 0.030 | 5537.3 | 0.208 | BV | 0.109 | 849.43 | 0.076 |
| 21 | 6.149 | | 0.0000 | 0.000 | 2810.8 | 0.105 | VV | 0.073 | 646.10 | 0.058 |
| 22 | 6.221 | | 0.0000 | 0.000 | 3217.6 | 0.121 | VB | 0.092 | 581.83 | 0.052 |
| 23 | 6.453 | | 0.0000 | 0.000 | 3172.1 | 0.119 | BB | 0.111 | 474.61 | 0.042 |
| 24 | 6.638 | | 0.0000 | 0.000 | 5205.3 | 0.195 | BB | 0.100 | 871.10 | 0.078 |
| 25 | 6.887 | | 0.0000 | 0.000 | 2802.5 | 0.105 | BB | 0.092 | 508.32 | 0.045 |
| 26 | 6.999 | | 0.0000 | 0.000 | 367.8 | 0.014 | BB | 0.029 | 209.81 | 0.019 |
| 27 | 7.056 | | 0.0000 | 0.000 | 1538.2 | 0.058 | BB | 0.068 | 376.69 | 0.034 |
| 28 | 7.228 | | 0.0000 | 0.000 | 861.5 | 0.032 | BB | 0.045 | 322.41 | 0.029 |
| 29 | 7.403 | | 0.0000 | 0.000 | 2674.6 | 0.100 | BV | 0.099 | 449.71 | 0.040 |
| 30 | 7.545 | g. Chlordane | 0.0643 | 0.017 | 2109.8 | 0.079 | VV | 0.094 | 372.41 | 0.033 |
| 31 | 7.687 | | 0.0000 | 0.000 | 1097.5 | 0.041 | VB | 0.070 | 260.17 | 0.023 |
| 32 | 7.803 | Endosulfan I | 0.0616 | 0.016 | 1411.0 | 0.053 | BB | 0.072 | 324.74 | 0.029 |
| 33 | 7.960 | 4,4'-DDE | 0.4401 | 0.117 | 5305.8 | 0.199 | BV | 0.043 | 2050.70 | 0.183 |
| 34 | 8.194 | Dieldrin | 0.0437 | 0.012 | 1006.6 | 0.038 | VV | 0.080 | 210.43 | 0.019 |
| 35 | 8.310 | | 0.0000 | 0.000 | 452.6 | 0.017 | VB | 0.062 | 121.64 | 0.011 |
| 36 | 8.444 | | 0.0000 | 0.000 | 366.5 | 0.014 | BB | 0.046 | 132.62 | 0.012 |
| 37 | 8.567 | Endrin | 41.4189 | 11.034 | 373611.3 | 14.004 | BV | 0.036 | 170981.80 | 15.242 |
| 38 | 8.709 | 4,4'-DDD | 1.5178 | 0.404 | 13729.4 | 0.515 | VB | 0.046 | 4955.11 | 0.442 |
| 39 | 8.897 | | 0.0000 | 0.000 | 961.7 | 0.036 | BV | 0.034 | 469.71 | 0.042 |
| 40 | 8.951 | | 0.0000 | 0.000 | 3503.2 | 0.131 | VV | 0.071 | 818.82 | 0.073 |
| 41 | 9.109 | 4,4'-DDT | 79.3532 | 21.140 | 626801.6 | 23.494 | SBB | 0.040 | 258600.50 | 23.052 |
| 42 | 9.279 | Endrin aldehyde | 0.8591 | 0.229 | 5892.5 | 0.221 | TVB | 0.037 | 2634.55 | 0.235 |
| 43 | 9.493 | | 0.0000 | 0.000 | 894.5 | 0.034 | BB | 0.048 | 312.60 | 0.028 |
| 44 | 9.717 | | 0.0000 | 0.000 | 1169.7 | 0.044 | BB | 0.059 | 328.53 | 0.029 |
| 45 | 9.988 | Methoxychlor | 185.3814 | 49.387 | 773277.5 | 28.984 | BB | 0.043 | 300395.20 | 26.778 |
| 46 | 10.151 | | 0.0000 | 0.000 | 1662.9 | 0.062 | BB | 0.026 | 1064.73 | 0.095 |
| 47 | 10.325 | Endrin ketone | 1.5491 | 0.413 | 14489.8 | 0.543 | BB | 0.043 | 5598.26 | 0.499 |
| 48 | 10.631 | | 0.0000 | 0.000 | 457.8 | 0.017 | BB | 0.040 | 193.14 | 0.017 |
| 49 | 10.764 | | 0.0000 | 0.000 | 745.3 | 0.028 | BB | 0.085 | 146.26 | 0.013 |
| 50 | 11.521 | | 0.0000 | 0.000 | 158.6 | 0.006 | BB | 0.037 | 71.00 | 0.006 |
| 51 | 11.611 | | 0.0000 | 0.000 | 759.6 | 0.028 | BB | 0.042 | 300.43 | 0.027 |
| 52 | 12.036 | DCB | 18.0660 | 4.813 | 191488.3 | 7.177 | BB | 0.049 | 65084.02 | 5.802 |
| 53 | 12.570 | | 0.0000 | 0.000 | 441.7 | 0.017 | BB | 0.088 | 84.04 | 0.007 |
| 54 | 12.856 | | 0.0000 | 0.000 | 3388.6 | 0.127 | BB | 0.279 | 202.15 | 0.018 |

Total Area = 2667951.0, Total Amount = 375.368, Total Height = 1121813.0, Sample Units = PPB

9886

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\3D16082.58R

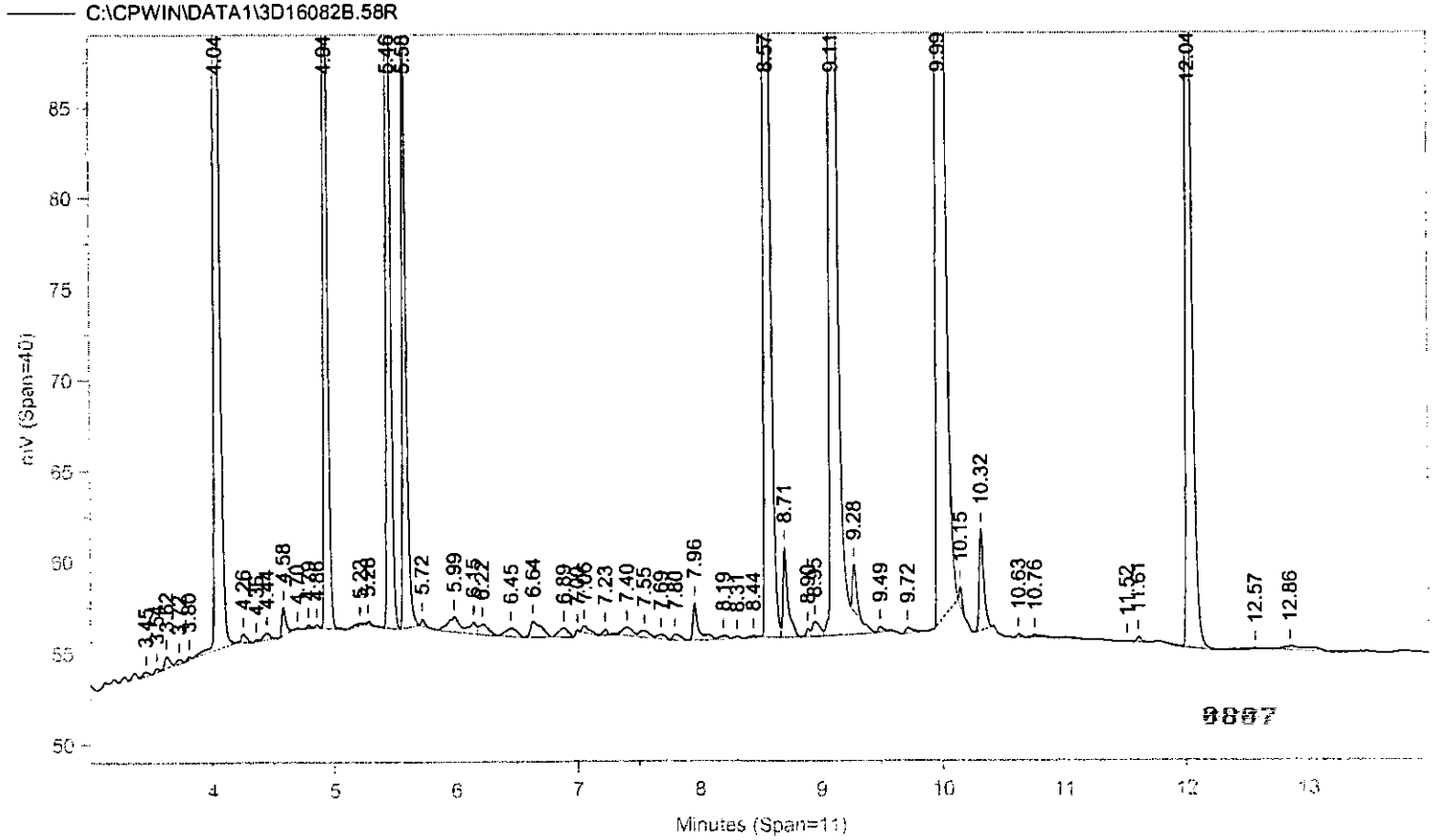



Instrument ID: CP16--H5262A Injected On: 3/26/2004 2:36:43 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

%DDT BD= 0.7205626

%ENDRIN BD= 4.85171

File: C:\CPWIN\DATA1\3D16082B.58R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 2:36:43 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

%DDT BD= 2.637667

%ENDRIN BD= 4.593827

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

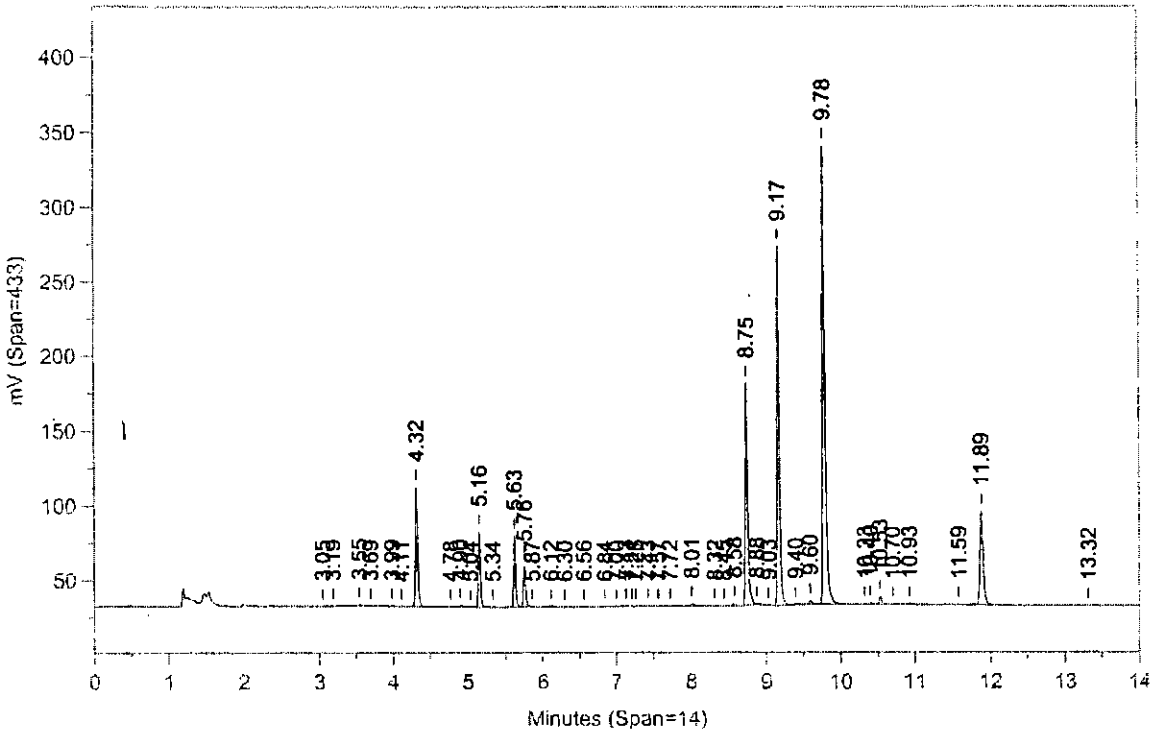
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 80601 | 19.538 | TCX | 4.041 | 105443 | 18.793 | TCX |
| 4.904 | 1019 | .145 | Hcb | . | 0 | . | Hcb |
| 5.162 | 51079 | 9.938 | alpha-BHC | 4.94 | 81890 | 9.544 | alpha-BHC |
| 5.63 | 47915 | 9.337 | gamma-BHC | 5.455 | 71749 | 9.025 | gamma-BHC |
| 5.762 | 27508 | 9.711 | beta-BHC | 5.585 | 36437 | 9.136 | beta-BHC |
| . | 0 | . | delta-BHC | 5.99 | 849 | .114 | delta-BHC |
| 6.304 | 52 | .01 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | g. Chlordane | 7.545 | 372 | .064 | g. Chlordane |
| 7.57 | 69 | .026 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.803 | 325 | .062 | Endosulfan I |
| 8.015 | 1763 | .502 | 4,4'-DDE | 7.96 | 2051 | .44 | 4,4'-DDE |
| 8.449 | 62 | .017 | Dieldrin | 8.194 | 210 | .044 | Dieldrin |
| 8.746 | 148999 | 44.56 | Endrin | 8.567 | 170982 | 41.419 | Endrin |
| 8.58 | 1933 | .725 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.709 | 4955 | 1.518 | 4,4'-DDD |
| 9.033 | 349 | .104 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.168 | 242887 | 84.344 | 4,4'-DDT | 9.109 | 258601 | 79.353 | 4,4'-DDT |
| 9.595 | 2715 | .99 | Endrin aldehyde | 9.279 | 2635 | .859 | Endrin aldehyde |
| 9.779 | 308302 | 188.068 | Methoxychlor | 9.988 | 300395 | 185.381 | Methoxychlor |
| 10.533 | 4882 | 1.498 | Endrin ketone | 10.325 | 5598 | 1.549 | Endrin ketone |
| 11.888 | 62972 | 19.087 | DCB | 12.036 | 65084 | 18.066 | DCB |

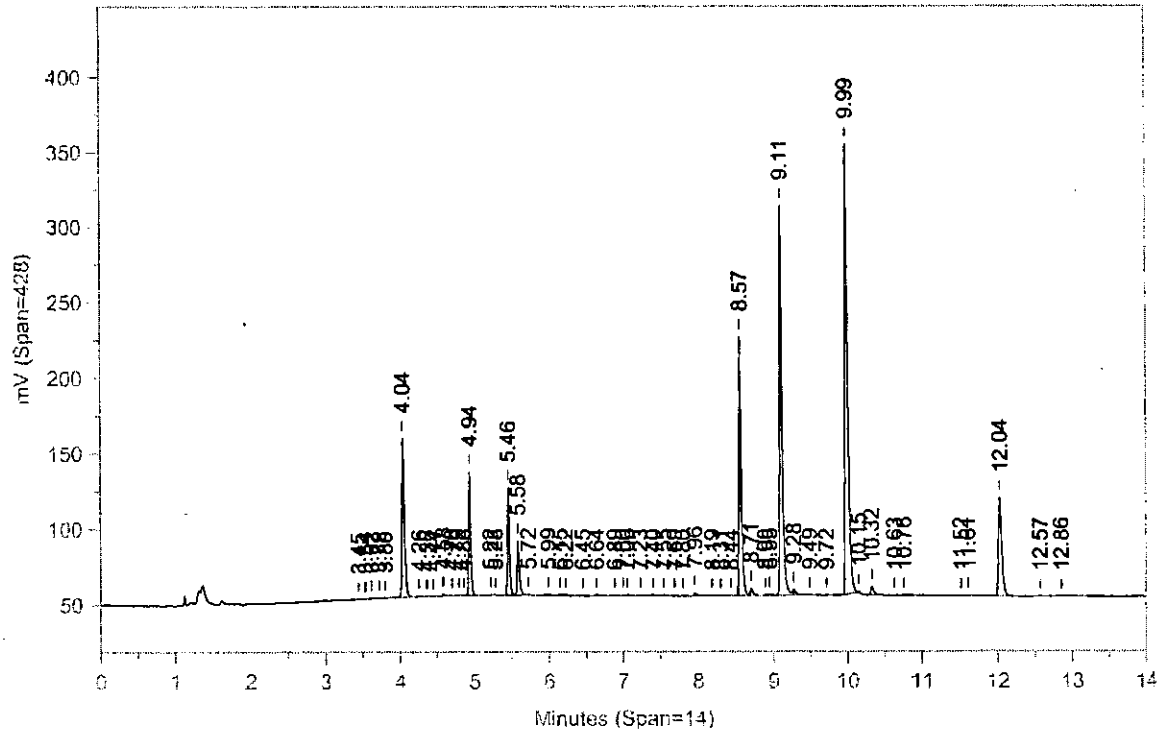
Files:
Area File: C:\CPWIN\DATA1\3D16082.58A
Area File: C:\CPWIN\DATA1\3D16082B.58A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/26/2004 3:24:38 PM
File Reported On: 3/26/2004 at 3:24:44 PM

Files:
REPLOTS

C:\CPWIN\DATA1\3D16082.58R




C:\CPWIN\DATA1\3D16082B.58R




8889

Sample Name: **MIXA30424B QMMIXA3QM CCAL 048599999**
Acquired from CP16--H5262A via port 1 on 3/26/04 03:11:18pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.59R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.115 | | 0.0000 | 0.000 | 190.9 | 0.006 | BB | 0.031 | 103.73 | 0.008 |
| 2 | 3.196 | | 0.0000 | 0.000 | 847.5 | 0.028 | BB | 0.038 | 369.15 | 0.027 |
| 3 | 3.297 | | 0.0000 | 0.000 | 89.8 | 0.003 | BB | 0.040 | 37.13 | 0.003 |
| 4 | 3.433 | | 0.0000 | 0.000 | 595.6 | 0.019 | BB | 0.061 | 162.18 | 0.012 |
| 5 | 3.546 | | 0.0000 | 0.000 | 1468.1 | 0.048 | BB | 0.035 | 696.44 | 0.051 |
| 6 | 3.885 | | 0.0000 | 0.000 | 784.2 | 0.025 | BB | 0.048 | 273.91 | 0.020 |
| 7 | 3.984 | | 0.0000 | 0.000 | 2791.3 | 0.091 | BB | 0.041 | 1140.11 | 0.083 |
| 8 | 4.317 | TCX | 37.6340 | 8.124 | 328632.3 | 10.673 | BB | 0.035 | 155252.70 | 11.269 |
| 9 | 4.905 | Hcb | 0.2900 | 0.063 | 3873.5 | 0.126 | BB | 0.032 | 2036.35 | 0.148 |
| 10 | 4.968 | | 0.0000 | 0.000 | 337.9 | 0.011 | BB | 0.026 | 217.82 | 0.016 |
| 11 | 5.162 | alpha-BHC | 9.7680 | 2.109 | 93642.6 | 3.041 | BB | 0.031 | 50202.96 | 3.644 |
| 12 | 5.508 | | 0.0000 | 0.000 | 279.2 | 0.009 | BB | 0.034 | 138.03 | 0.010 |
| 13 | 5.631 | gamma-BHC | 9.7961 | 2.115 | 95178.9 | 3.091 | BB | 0.032 | 50272.20 | 3.649 |
| 14 | 5.762 | beta-BHC | 9.8019 | 2.116 | 57060.6 | 1.853 | BB | 0.034 | 27765.44 | 2.015 |
| 15 | 5.868 | | 0.0000 | 0.000 | 769.8 | 0.025 | BB | 0.029 | 440.98 | 0.032 |
| 16 | 6.019 | delta-BHC | 9.4989 | 2.051 | 86585.0 | 2.812 | BB | 0.031 | 46257.09 | 3.358 |
| 17 | 6.118 | | 0.0000 | 0.000 | 473.5 | 0.015 | BB | 0.040 | 196.46 | 0.014 |
| 18 | 6.229 | | 0.0000 | 0.000 | 149.9 | 0.005 | BB | 0.028 | 88.49 | 0.006 |
| 19 | 6.318 | Heptachlor | 9.6688 | 2.087 | 107372.2 | 3.487 | BB | 0.034 | 52459.96 | 3.808 |
| 20 | 6.522 | | 0.0000 | 0.000 | 100.7 | 0.003 | BB | 0.026 | 65.50 | 0.005 |
| 21 | 6.743 | Aldrin | 9.7026 | 2.095 | 81194.9 | 2.637 | BB | 0.033 | 40669.54 | 2.952 |
| 22 | 6.957 | | 0.0000 | 0.000 | 418.1 | 0.014 | BB | 0.065 | 107.61 | 0.008 |
| 23 | 7.124 | | 0.0000 | 0.000 | 439.2 | 0.014 | BB | 0.041 | 180.34 | 0.013 |
| 24 | 7.210 | | 0.0000 | 0.000 | 392.3 | 0.013 | BB | 0.031 | 211.82 | 0.015 |
| 25 | 7.334 | | 0.0000 | 0.000 | 99.3 | 0.003 | BB | 0.031 | 53.02 | 0.004 |
| 26 | 7.428 | | 0.0000 | 0.000 | 632.7 | 0.021 | BB | 0.061 | 172.02 | 0.012 |
| 27 | 7.584 | Hept. epoxide | 9.6907 | 2.092 | 87499.5 | 2.842 | BV | 0.035 | 41503.95 | 3.013 |
| 28 | 7.749 | g. Chlordane | 9.8064 | 2.117 | 86879.5 | 2.822 | VV | 0.036 | 40374.28 | 2.931 |
| 29 | 7.926 | a. Chlordane | 9.3276 | 2.014 | 86289.8 | 2.802 | VV | 0.035 | 40933.19 | 2.971 |
| 30 | 8.015 | 4,4'-DDE | 18.5616 | 4.007 | 133209.0 | 4.326 | VV | 0.034 | 65216.37 | 4.734 |
| 31 | 8.118 | Endosulfan I | 9.6958 | 2.093 | 84650.6 | 2.749 | VV | 0.037 | 38123.79 | 2.767 |
| 32 | 8.435 | Dieldrin | 19.1593 | 4.136 | 146057.5 | 4.744 | VV | 0.035 | 69778.47 | 5.065 |
| 33 | 8.579 | o,p-DDT | 0.1809 | 0.039 | 1520.7 | 0.049 | VV | 0.053 | 482.39 | 0.035 |
| 34 | 8.746 | Endrin | 18.5225 | 3.999 | 128594.1 | 4.176 | VV | 0.035 | 61935.75 | 4.496 |
| 35 | 8.805 | Kepone | 60.6357 | 13.090 | 123658.5 | 4.016 | VV | 0.043 | 47453.27 | 3.445 |
| 36 | 9.044 | Endosulfan II | 18.9222 | 4.085 | 142731.8 | 4.636 | VV | 0.038 | 63191.84 | 4.587 |
| 37 | 9.168 | 4,4'-DDT | 17.3059 | 3.736 | 107927.7 | 3.505 | VB | 0.036 | 49836.15 | 3.617 |
| 38 | 9.400 | | 0.0000 | 0.000 | 637.9 | 0.021 | BB | 0.035 | 302.28 | 0.022 |
| 39 | 9.447 | | 0.0000 | 0.000 | 822.6 | 0.027 | BB | 0.031 | 441.37 | 0.032 |
| 40 | 9.593 | Endrin aldehyde | 18.7085 | 4.039 | 123627.0 | 4.015 | BB | 0.040 | 51323.51 | 3.725 |
| 41 | 9.780 | Methoxychlor | 81.8812 | 17.676 | 329112.1 | 10.689 | BB | 0.041 | 134228.50 | 9.743 |
| 42 | 10.163 | Endo. sulfate | 18.7927 | 4.057 | 126409.9 | 4.106 | BB | 0.038 | 55390.23 | 4.021 |
| 43 | 10.336 | | 0.0000 | 0.000 | 1825.6 | 0.059 | BB | 0.033 | 914.09 | 0.066 |
| 44 | 10.402 | | 0.0000 | 0.000 | 1942.0 | 0.063 | BB | 0.036 | 905.27 | 0.066 |
| 45 | 10.532 | Endrin ketone | 19.4348 | 4.195 | 144112.7 | 4.680 | BB | 0.038 | 63349.74 | 4.598 |
| 46 | 10.929 | | 0.0000 | 0.000 | 2095.8 | 0.068 | BB | 0.039 | 890.47 | 0.065 |
| 47 | 11.099 | | 0.0000 | 0.000 | 1908.7 | 0.062 | BB | 0.111 | 286.31 | 0.021 |
| 48 | 11.388 | | 0.0000 | 0.000 | 3182.6 | 0.103 | BB | 0.304 | 174.24 | 0.013 |
| 49 | 11.589 | | 0.0000 | 0.000 | 1186.0 | 0.039 | BB | 0.047 | 424.70 | 0.031 |
| 50 | 11.780 | | 0.0000 | 0.000 | 275.1 | 0.009 | BB | 0.045 | 102.21 | 0.007 |
| 51 | 11.888 | DCB | 36.4458 | 7.868 | 346997.3 | 11.270 | BB | 0.048 | 120240.10 | 8.728 |
| 52 | 12.488 | | 0.0000 | 0.000 | 600.4 | 0.019 | BB | 0.094 | 106.32 | 0.008 |
| 53 | 12.693 | | 0.0000 | 0.000 | 485.3 | 0.016 | BB | 0.104 | 77.75 | 0.006 |
| 54 | 13.569 | | 0.0000 | 0.000 | 392.9 | 0.013 | BB | 0.077 | 85.17 | 0.006 |

8016

Total Area = 3079033.0, Total Amount = 463.232, Total Height = 1377643.0, Sample Units = PPB

Sample Name: **MIXA30424B QMMIXA3QM CCAL 048599999**
Acquired from CP16--H5262B via port 2 on 3/26/04 03:11:18pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.59R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

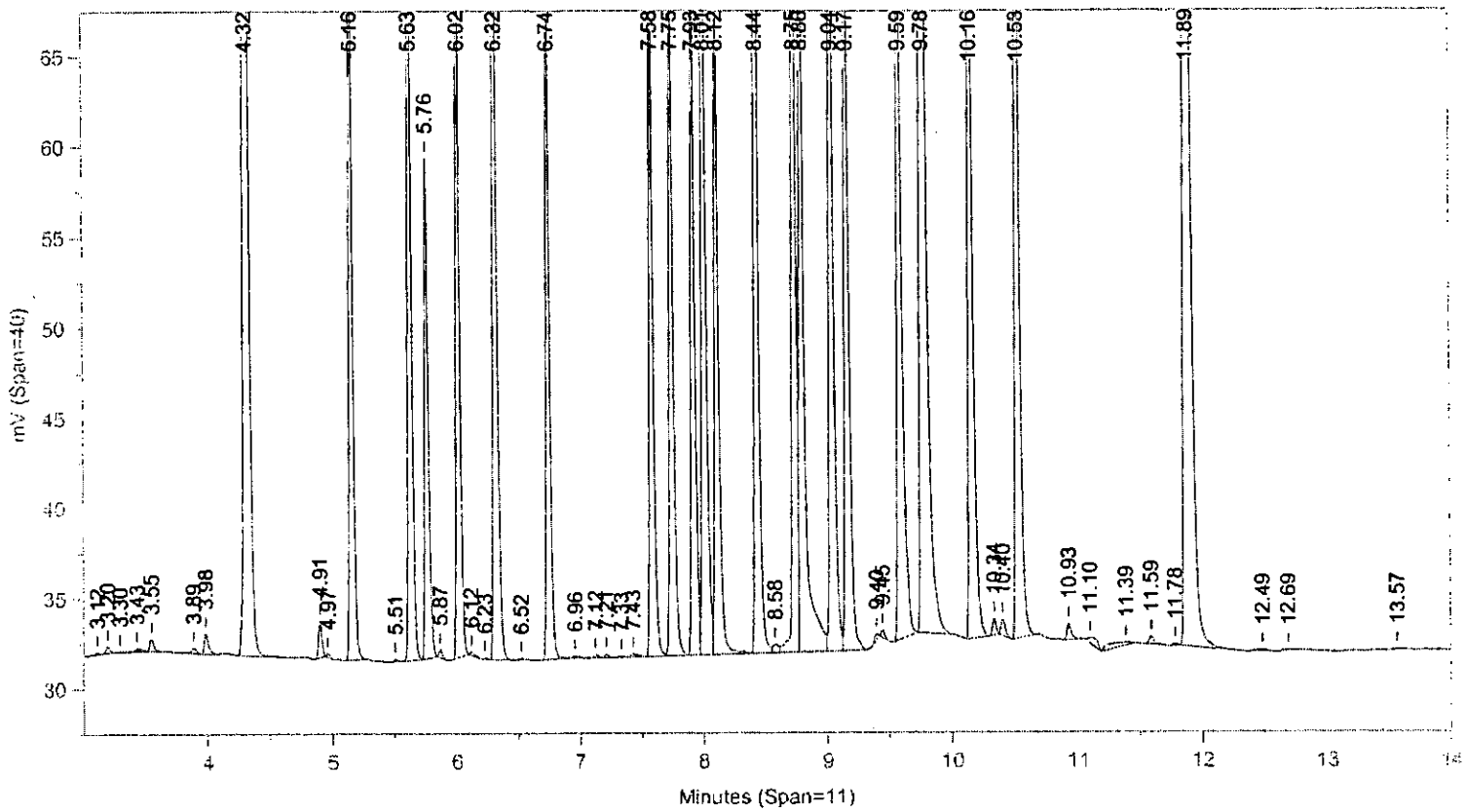
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.447 | | 0.0000 | 0.000 | 568.7 | 0.014 | BB | 0.050 | 188.91 | 0.011 |
| 2 | 3.536 | | 0.0000 | 0.000 | 604.3 | 0.015 | BB | 0.040 | 250.30 | 0.015 |
| 3 | 3.616 | | 0.0000 | 0.000 | 2351.2 | 0.059 | BB | 0.045 | 865.62 | 0.053 |
| 4 | 3.713 | | 0.0000 | 0.000 | 1146.5 | 0.029 | BB | 0.043 | 444.33 | 0.027 |
| 5 | 3.778 | | 0.0000 | 0.000 | 1705.9 | 0.043 | BB | 0.028 | 1011.75 | 0.061 |
| 6 | 4.041 | TCX | 34.6295 | 8.881 | 442658.2 | 11.104 | BB | 0.038 | 194300.30 | 11.802 |
| 7 | 4.257 | | 0.0000 | 0.000 | 673.1 | 0.017 | BB | 0.043 | 262.78 | 0.016 |
| 8 | 4.364 | | 0.0000 | 0.000 | 228.3 | 0.006 | BB | 0.036 | 106.44 | 0.006 |
| 9 | 4.452 | | 0.0000 | 0.000 | 1472.0 | 0.037 | BB | 0.064 | 380.77 | 0.023 |
| 10 | 4.584 | | 0.0000 | 0.000 | 6248.9 | 0.157 | BB | 0.034 | 3046.43 | 0.185 |
| 11 | 4.694 | | 0.0000 | 0.000 | 245.9 | 0.006 | BB | 0.039 | 104.58 | 0.006 |
| 12 | 4.794 | | 0.0000 | 0.000 | 628.9 | 0.016 | BB | 0.026 | 398.49 | 0.024 |
| 13 | 4.858 | | 0.0000 | 0.000 | 338.2 | 0.008 | BB | 0.025 | 226.14 | 0.014 |
| 14 | 4.940 | alpha-BHC | 9.3400 | 2.395 | 148768.3 | 3.732 | BB | 0.031 | 80137.05 | 4.867 |
| 15 | 5.220 | | 0.0000 | 0.000 | 818.0 | 0.021 | BB | 0.098 | 139.62 | 0.008 |
| 16 | 5.283 | | 0.0000 | 0.000 | 333.9 | 0.008 | BB | 0.029 | 194.77 | 0.012 |
| 17 | 5.456 | gamma-BHC | 9.3744 | 2.404 | 141514.8 | 3.550 | BB | 0.032 | 74523.60 | 4.526 |
| 18 | 5.585 | beta-BHC | 9.1689 | 2.352 | 77290.3 | 1.939 | BB | 0.035 | 36566.88 | 2.221 |
| 19 | 5.727 | | 0.0000 | 0.000 | 1358.1 | 0.034 | BB | 0.035 | 652.84 | 0.040 |
| 20 | 5.996 | delta-BHC | 9.1234 | 2.340 | 127801.0 | 3.206 | BV | 0.031 | 67981.98 | 4.129 |
| 21 | 6.071 | Heptachlor | 9.1801 | 2.354 | 152509.5 | 3.826 | VV | 0.035 | 72782.05 | 4.421 |
| 22 | 6.227 | | 0.0000 | 0.000 | 2817.9 | 0.071 | VB | 0.082 | 570.06 | 0.035 |
| 23 | 6.515 | Aldrin | 9.2451 | 2.371 | 116484.4 | 2.922 | BB | 0.033 | 58862.74 | 3.575 |
| 24 | 6.626 | | 0.0000 | 0.000 | 511.0 | 0.013 | BB | 0.035 | 240.71 | 0.015 |
| 25 | 6.877 | | 0.0000 | 0.000 | 2440.8 | 0.061 | BB | 0.097 | 421.50 | 0.026 |
| 26 | 7.054 | | 0.0000 | 0.000 | 1523.0 | 0.038 | BB | 0.047 | 537.14 | 0.033 |
| 27 | 7.232 | | 0.0000 | 0.000 | 515.5 | 0.013 | BB | 0.036 | 238.30 | 0.014 |
| 28 | 7.292 | Hept. epoxide | 8.7842 | 2.253 | 110676.5 | 2.776 | BV | 0.035 | 52203.05 | 3.171 |
| 29 | 7.543 | g. Chlordane | 8.7470 | 2.243 | 109441.0 | 2.745 | VV | 0.036 | 50699.20 | 3.079 |
| 30 | 7.735 | a. Chlordane | 8.9219 | 2.288 | 104864.1 | 2.631 | VV | 0.035 | 49452.33 | 3.004 |
| 31 | 7.810 | Endosulfan I | 8.8533 | 2.271 | 103456.3 | 2.595 | VV | 0.037 | 46694.90 | 2.836 |
| 32 | 7.959 | 4,4'-DDE | 16.5997 | 4.257 | 178618.7 | 4.481 | VV | 0.038 | 77343.41 | 4.698 |
| 33 | 8.169 | Dieldrin | 17.6648 | 4.530 | 186793.9 | 4.686 | VB | 0.037 | 85088.42 | 5.168 |
| 34 | 8.566 | Endrin | 17.0186 | 4.365 | 148245.7 | 3.719 | BV | 0.035 | 70254.65 | 4.267 |
| 35 | 8.708 | 4,4'-DDD | 14.8988 | 3.821 | 112152.4 | 2.813 | VV | 0.038 | 48639.08 | 2.954 |
| 36 | 8.843 | Endosulfan II | 17.5866 | 4.510 | 161628.4 | 4.055 | VB | 0.040 | 68120.55 | 4.138 |
| 37 | 9.109 | 4,4'-DDT | 15.8658 | 4.069 | 116973.1 | 2.934 | BB | 0.038 | 51704.20 | 3.140 |
| 38 | 9.277 | Endrin aldehyde | 17.4678 | 4.480 | 128904.5 | 3.234 | BB | 0.040 | 53566.97 | 3.254 |
| 39 | 9.434 | | 0.0000 | 0.000 | 2220.9 | 0.056 | BB | 0.038 | 974.46 | 0.059 |
| 40 | 9.630 | Endo. sulfate | 18.2343 | 4.676 | 141491.6 | 3.549 | BB | 0.040 | 58882.29 | 3.576 |
| 41 | 9.989 | Methoxychlor | 77.3870 | 19.847 | 332999.1 | 8.353 | BB | 0.044 | 125399.20 | 7.617 |
| 42 | 10.205 | | 0.0000 | 0.000 | 1477.6 | 0.037 | BB | 0.032 | 778.37 | 0.047 |
| 43 | 10.323 | Endrin ketone | 17.7508 | 4.552 | 155923.1 | 3.911 | BB | 0.041 | 64149.10 | 3.896 |
| 44 | 10.637 | | 0.0000 | 0.000 | 1021.0 | 0.026 | BB | 0.104 | 163.15 | 0.010 |
| 45 | 10.763 | | 0.0000 | 0.000 | 793.6 | 0.020 | BB | 0.044 | 300.62 | 0.018 |
| 46 | 10.896 | | 0.0000 | 0.000 | 318.3 | 0.008 | BB | 0.069 | 76.72 | 0.005 |
| 47 | 11.499 | | 0.0000 | 0.000 | 276494.4 | 6.936 | BB | 0.197 | 23378.79 | 1.420 |
| 48 | 12.035 | DCB | 34.0720 | 8.738 | 374950.5 | 9.406 | BB | 0.051 | 122746.50 | 7.455 |
| 49 | 12.974 | | 0.0000 | 0.000 | 2817.2 | 0.071 | BB | 0.180 | 260.32 | 0.016 |
| 50 | 13.294 | | 0.0000 | 0.000 | 546.3 | 0.014 | BB | 0.113 | 80.45 | 0.005 |

9811

Total Area = 3986365.0, Total Amount = 389.914, Total Height = 1646393.0, Sample Units = PPB

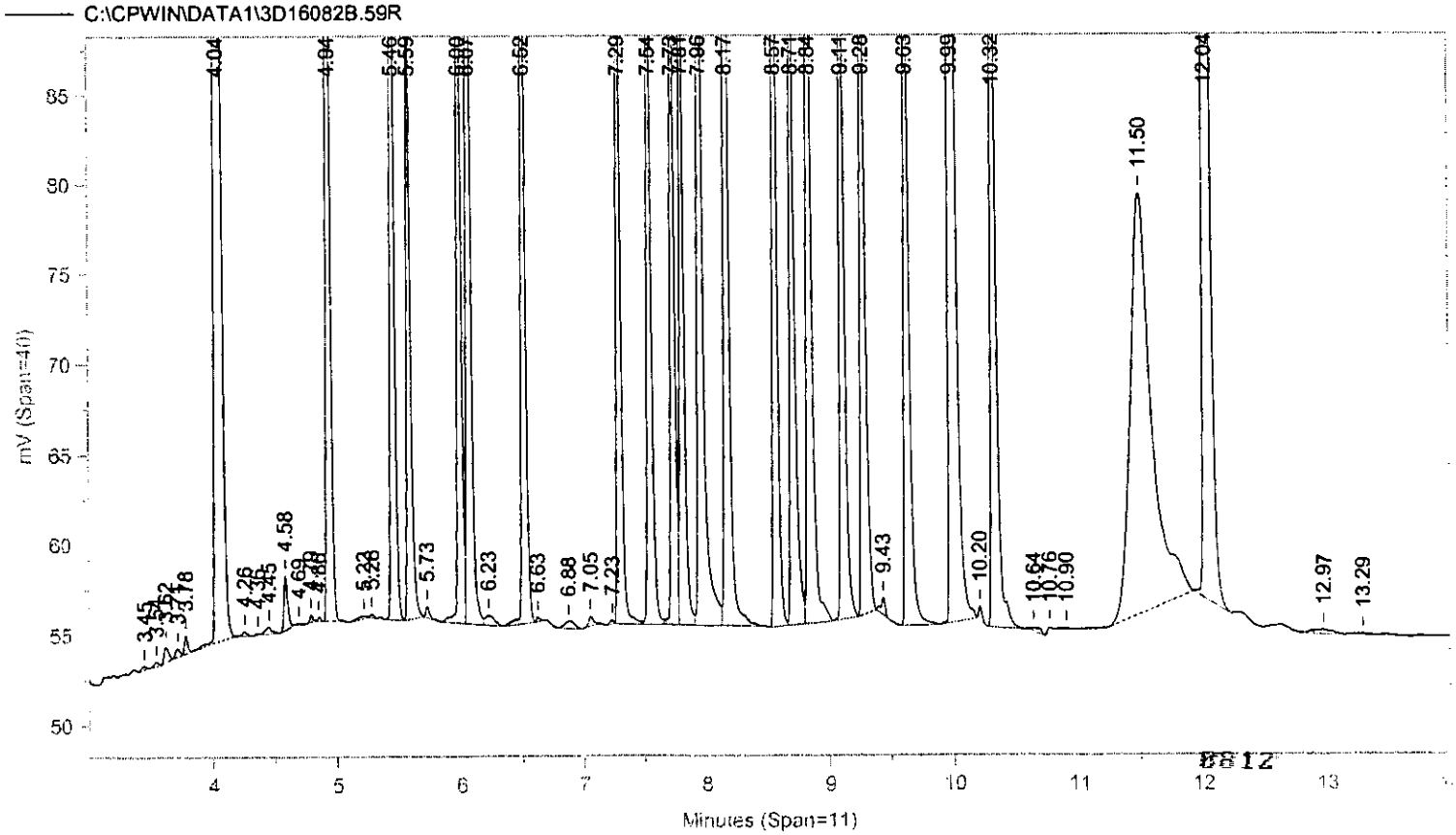
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.59R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 2:57:18 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.59R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 2:57:18 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 155253 | 37.634 | TCX | 4.041 | 194300 | 34.629 | TCX |
| 4.905 | 2036 | .29 | Hcb | . | 0 | . | Hcb |
| 5.162 | 50203 | 9.768 | alpha-BHC | 4.94 | 80137 | 9.34 | alpha-BHC |
| 5.631 | 50272 | 9.796 | gamma-BHC | 5.456 | 74524 | 9.374 | gamma-BHC |
| 5.762 | 27765 | 9.802 | beta-BHC | 5.585 | 36567 | 9.169 | beta-BHC |
| 6.019 | 46257 | 9.499 | delta-BHC | 5.996 | 67982 | 9.123 | delta-BHC |
| 6.318 | 52460 | 9.669 | Heptachlor | 6.071 | 72782 | 9.18 | Heptachlor |
| 6.743 | 40670 | 9.703 | Aldrin | 6.515 | 58863 | 9.245 | Aldrin |
| 7.584 | 41504 | 9.691 | Hept. epoxide | 7.292 | 52203 | 8.784 | Hept. epoxide |
| 7.749 | 40374 | 9.806 | g. Chlordane | 7.543 | 50699 | 8.747 | g. Chlordane |
| 7.926 | 40933 | 9.328 | a. Chlordane | 7.735 | 49452 | 8.922 | a. Chlordane |
| 8.118 | 38124 | 9.696 | Endosulfan I | 7.81 | 46695 | 8.853 | Endosulfan I |
| 8.015 | 65216 | 18.562 | 4,4'-DDE | 7.959 | 77343 | 16.6 | 4,4'-DDE |
| 8.435 | 69778 | 19.159 | Dieldrin | 8.169 | 85088 | 17.665 | Dieldrin |
| 8.746 | 61936 | 18.523 | Endrin | 8.566 | 70255 | 17.019 | Endrin |
| 8.579 | 482 | .181 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.708 | 48639 | 14.899 | 4,4'-DDD |
| 8.805 | 47453 | 60.636 | Kepone | . | 0 | . | Kepone |
| 9.044 | 63192 | 18.922 | Endosulfan II | 8.843 | 68121 | 17.587 | Endosulfan II |
| 9.168 | 49836 | 17.306 | 4,4'-DDT | 9.109 | 51704 | 15.866 | 4,4'-DDT |
| 9.593 | 51324 | 18.709 | Endrin aldehyde | 9.277 | 53567 | 17.468 | Endrin aldehyde |
| 10.163 | 55390 | 18.793 | Endo. sulfate | 9.63 | 58882 | 18.234 | Endo. sulfate |
| 9.78 | 134229 | 81.881 | Methoxychlor | 9.989 | 125399 | 77.387 | Methoxychlor |
| 10.532 | 63350 | 19.435 | Endrin ketone | 10.323 | 64149 | 17.751 | Endrin ketone |
| 11.888 | 120240 | 36.446 | DCB | 12.035 | 122746 | 34.072 | DCB |

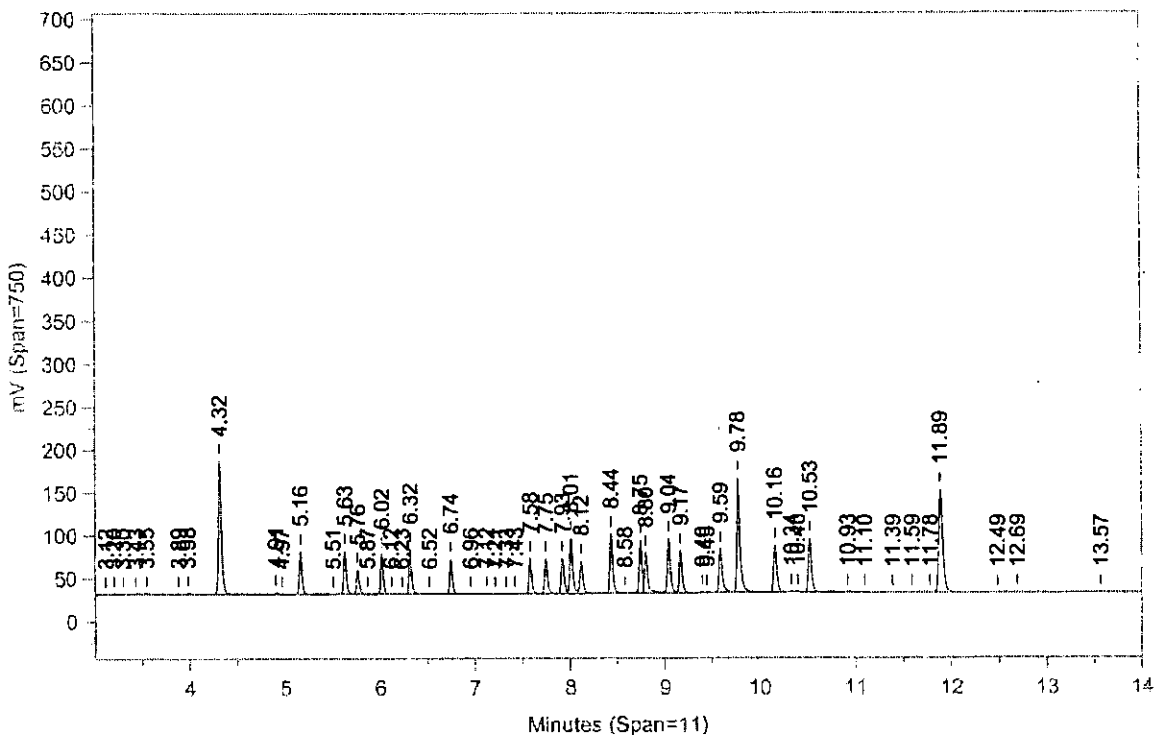
Files:
Area File: C:\CPWIN\DATA1\3D16082.59A
Area File: C:\CPWIN\DATA1\3D16082B.59A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:24:54 PM
File Reported On: 3/26/2004 at 3:25:00 PM

M.E.M 136
3/26/04

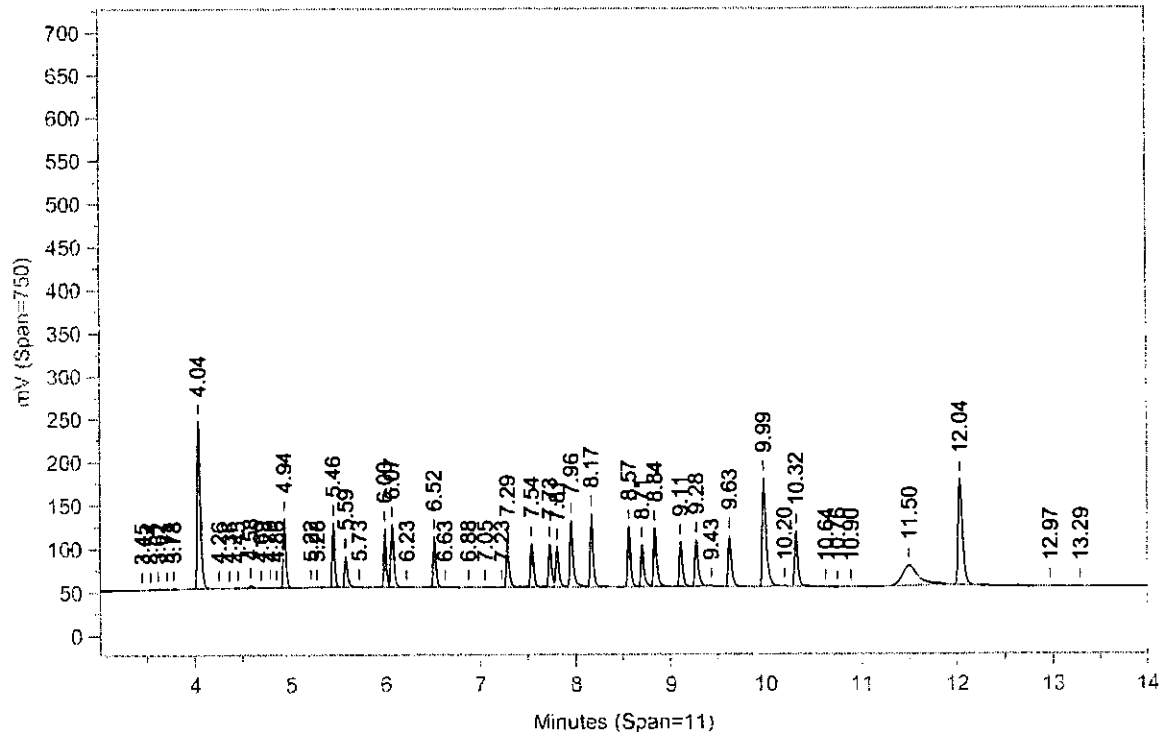
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.59R




C:\CPWIN\DATA1\3D16082B.59R




6814

Sample Name: **AR1630424D FYAR163FY CCAL 048599999**
Acquired from CP16--H5262A via port 1 on 3/26/04 03:31:53pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.60R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.110 | | 0.0000 | 0.000 | 245.0 | 0.014 | BB | 0.058 | 70.95 | 0.010 |
| 2 | 3.193 | | 0.0000 | 0.000 | 162.8 | 0.009 | BB | 0.039 | 69.29 | 0.009 |
| 3 | 3.291 | | 0.0000 | 0.000 | 67.2 | 0.004 | BB | 0.033 | 33.98 | 0.005 |
| 4 | 3.543 | | 0.0000 | 0.000 | 1990.9 | 0.112 | BB | 0.040 | 836.65 | 0.113 |
| 5 | 3.883 | | 0.0000 | 0.000 | 419.9 | 0.024 | BB | 0.049 | 143.20 | 0.019 |
| 6 | 3.985 | | 0.0000 | 0.000 | 774.9 | 0.044 | BB | 0.045 | 284.10 | 0.038 |
| 7 | 4.110 | | 0.0000 | 0.000 | 282.8 | 0.016 | BB | 0.041 | 113.99 | 0.015 |
| 8 | 4.222 | | 0.0000 | 0.000 | 484.0 | 0.027 | BB | 0.025 | 324.70 | 0.044 |
| 9 | 4.315 | TCX | 8.1920 | 9.918 | 73714.4 | 4.142 | BB | 0.036 | 33794.68 | 4.571 |
| 10 | 4.572 | | 0.0000 | 0.000 | 7215.2 | 0.405 | BB | 0.036 | 3345.14 | 0.452 |
| 11 | 4.794 | | 0.0000 | 0.000 | 5810.7 | 0.326 | BB | 0.029 | 3310.59 | 0.448 |
| 12 | 4.856 | | 0.0000 | 0.000 | 39803.4 | 2.236 | BB | 0.036 | 18458.04 | 2.497 |
| 13 | 5.040 | | 0.0000 | 0.000 | 5787.1 | 0.325 | BB | 0.037 | 2600.44 | 0.352 |
| 14 | 5.227 | | 0.0000 | 0.000 | 178.8 | 0.010 | BB | 0.031 | 96.69 | 0.013 |
| 15 | 5.374 | | 0.0000 | 0.000 | 90697.0 | 5.096 | BB | 0.051 | 29687.13 | 4.015 |
| 16 | 5.551 | | 0.0000 | 0.000 | 9609.6 | 0.540 | BB | 0.039 | 4078.88 | 0.552 |
| 17 | 5.634 | gamma-BHC | 0.9694 | 1.174 | 6759.2 | 0.380 | BB | 0.023 | 4975.04 | 0.673 |
| 18 | 5.669 | | 0.0000 | 0.000 | 14873.9 | 0.836 | BB | 0.026 | 9421.83 | 1.274 |
| 19 | 5.767 | beta-BHC | 0.1736 | 0.210 | 972.0 | 0.055 | BB | 0.033 | 491.88 | 0.067 |
| 20 | 5.865 | | 0.0000 | 0.000 | 76.1 | 0.004 | BB | 0.022 | 57.45 | 0.008 |
| 21 | 5.932 | | 0.0000 | 0.000 | 18097.2 | 1.017 | BB | 0.039 | 7768.70 | 1.051 |
| 22 | 6.006 | | 0.0000 | 0.000 | 13085.8 | 0.735 | BB | 0.029 | 7475.34 | 1.011 |
| 23 | 6.034 | delta-BHC | 4.7808 | 5.788 | 35044.1 | 1.969 | BB | 0.025 | 23281.13 | 3.149 |
| 24 | 6.114 | | 0.0000 | 0.000 | 3869.0 | 0.217 | BB | 0.026 | 2464.90 | 0.333 |
| 25 | 6.168 | | 0.0000 | 0.000 | 628.8 | 0.035 | BB | 0.019 | 562.37 | 0.076 |
| 26 | 6.221 | | 0.0000 | 0.000 | 57908.5 | 3.254 | BB | 0.038 | 25478.64 | 3.446 |
| 27 | 6.309 | Heptachlor | 2.9947 | 3.626 | 30189.9 | 1.696 | BB | 0.031 | 16248.34 | 2.198 |
| 28 | 6.425 | | 0.0000 | 0.000 | 1214.9 | 0.068 | BB | 0.025 | 806.90 | 0.109 |
| 29 | 6.472 | | 0.0000 | 0.000 | 10984.0 | 0.617 | BB | 0.026 | 7013.18 | 0.949 |
| 30 | 6.505 | | 0.0000 | 0.000 | 9290.4 | 0.522 | BB | 0.022 | 6996.78 | 0.946 |
| 31 | 6.557 | | 0.0000 | 0.000 | 12974.9 | 0.729 | BB | 0.029 | 7464.98 | 1.010 |
| 32 | 6.782 | | 0.0000 | 0.000 | 65580.9 | 3.685 | BB | 0.049 | 22377.59 | 3.027 |
| 33 | 6.898 | | 0.0000 | 0.000 | 12919.0 | 0.726 | BB | 0.026 | 8321.29 | 1.125 |
| 34 | 6.952 | | 0.0000 | 0.000 | 13277.8 | 0.746 | BB | 0.032 | 6969.33 | 0.943 |
| 35 | 7.099 | | 0.0000 | 0.000 | 9027.4 | 0.507 | BB | 0.037 | 4047.25 | 0.547 |
| 36 | 7.236 | | 0.0000 | 0.000 | 2777.5 | 0.156 | BB | 0.028 | 1679.79 | 0.227 |
| 37 | 7.295 | | 0.0000 | 0.000 | 22596.1 | 1.270 | BB | 0.030 | 12378.88 | 1.674 |
| 38 | 7.348 | | 0.0000 | 0.000 | 1373.2 | 0.077 | BB | 0.020 | 1172.29 | 0.159 |
| 39 | 7.387 | | 0.0000 | 0.000 | 1376.0 | 0.077 | BB | 0.022 | 1029.37 | 0.139 |
| 40 | 7.569 | o,p-DDE | 0.8696 | 1.053 | 4501.8 | 0.253 | BV | 0.033 | 2277.68 | 0.308 |
| 41 | 7.636 | | 0.0000 | 0.000 | 45841.2 | 2.576 | VB | 0.045 | 17057.75 | 2.307 |
| 42 | 7.951 | a. Chlordane | 0.1890 | 0.229 | 1822.4 | 0.102 | BV | 0.037 | 829.40 | 0.112 |
| 43 | 8.002 | 4,4'-DDE | 2.7829 | 3.369 | 25358.1 | 1.425 | VV | 0.043 | 9777.66 | 1.322 |
| 44 | 8.168 | | 0.0000 | 0.000 | 17570.1 | 0.987 | VV | 0.033 | 8812.23 | 1.192 |
| 45 | 8.220 | o,p-DDD | 8.0562 | 9.753 | 41736.5 | 2.345 | VV | 0.039 | 17860.99 | 2.416 |
| 46 | 8.302 | | 0.0000 | 0.000 | 28513.1 | 1.602 | VV | 0.058 | 8160.55 | 1.104 |
| 47 | 8.403 | | 0.0000 | 0.000 | 86939.6 | 4.885 | VV | 0.041 | 35577.68 | 4.812 |
| 48 | 8.536 | | 0.0000 | 0.000 | 12548.6 | 0.705 | VV | 0.044 | 4778.10 | 0.646 |
| 49 | 8.603 | o,p-DDT | 0.3910 | 0.473 | 2367.1 | 0.133 | VV | 0.038 | 1042.33 | 0.141 |
| 50 | 8.685 | | 0.0000 | 0.000 | 14662.1 | 0.824 | VV | 0.037 | 6677.54 | 0.903 |
| 51 | 8.761 | Endrin | 12.6307 | 15.291 | 125971.3 | 7.078 | VV | 0.050 | 42234.65 | 5.712 |
| 52 | 8.821 | 4,4'-DDD | 4.7097 | 5.702 | 30671.8 | 1.723 | VV | 0.038 | 13405.84 | 1.813 |
| 53 | 8.928 | | 0.0000 | 0.000 | 48693.3 | 2.736 | VB | 0.041 | 19773.72 | 2.674 |
| 54 | 9.059 | Endosulfan II | 0.3785 | 0.458 | 2165.5 | 0.122 | BB | 0.029 | 1264.10 | 0.171 |
| 55 | 9.133 | | 0.0000 | 0.000 | 128258.6 | 7.207 | BV | 0.053 | 40313.08 | 5.452 |
| 56 | 9.272 | | 0.0000 | 0.000 | 62954.9 | 3.537 | VV | 0.041 | 25668.31 | 3.472 |

8815

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.334 | | 0.0000 | 0.000 | 35086.2 | 1.971 | VB | 0.040 | 14769.68 | 1.998 |
| 58 | 9.454 | | 0.0000 | 0.000 | 6714.0 | 0.377 | BB | 0.030 | 3760.37 | 0.509 |
| 59 | 9.513 | | 0.0000 | 0.000 | 3427.3 | 0.193 | BB | 0.026 | 2164.27 | 0.293 |
| 60 | 9.598 | Endrin aldehyde | 7.5420 | 9.131 | 38026.8 | 2.137 | BB | 0.031 | 20690.14 | 2.798 |
| 61 | 9.653 | | 0.0000 | 0.000 | 13119.1 | 0.737 | BB | 0.026 | 8293.09 | 1.122 |
| 62 | 9.715 | | 0.0000 | 0.000 | 7480.3 | 0.420 | BB | 0.027 | 4606.92 | 0.623 |
| 63 | 9.779 | Methoxychlor | 0.1756 | 0.213 | 321.4 | 0.018 | BB | 0.019 | 287.90 | 0.039 |
| 64 | 9.832 | | 0.0000 | 0.000 | 4652.5 | 0.261 | BB | 0.032 | 2404.03 | 0.325 |
| 65 | 9.911 | | 0.0000 | 0.000 | 8570.9 | 0.482 | BB | 0.032 | 4396.93 | 0.595 |
| 66 | 9.990 | Mirex | 19.1521 | 23.186 | 147894.5 | 8.310 | BB | 0.046 | 53930.94 | 7.294 |
| 67 | 10.365 | | 0.0000 | 0.000 | 78876.1 | 4.432 | BB | 0.049 | 26851.05 | 3.632 |
| 68 | 10.457 | | 0.0000 | 0.000 | 20969.4 | 1.178 | BB | 0.038 | 9110.71 | 1.232 |
| 69 | 10.701 | | 0.0000 | 0.000 | 2523.8 | 0.142 | BB | 0.035 | 1187.34 | 0.161 |
| 70 | 10.831 | | 0.0000 | 0.000 | 18344.2 | 1.031 | BB | 0.045 | 6838.24 | 0.925 |
| 71 | 10.929 | | 0.0000 | 0.000 | 339.0 | 0.019 | BB | 0.029 | 195.38 | 0.026 |
| 72 | 11.173 | | 0.0000 | 0.000 | 35125.3 | 1.974 | BB | 0.040 | 14740.78 | 1.994 |
| 73 | 11.590 | | 0.0000 | 0.000 | 14496.2 | 0.815 | BB | 0.045 | 5363.64 | 0.725 |
| 74 | 11.889 | DCB | 8.6128 | 10.427 | 80695.6 | 4.534 | BB | 0.047 | 28414.90 | 3.843 |
| 75 | 12.380 | | 0.0000 | 0.000 | 343.6 | 0.019 | BB | 0.055 | 103.60 | 0.014 |

Total Area = 1779723.0, Total Amount = 82.601, Total Height = 739353.2, Sample Units = PPB

Sample Name: **AR1630424D FYAR163FY CCAL 048599999**
Acquired from CP16--H5262B via port 2 on 3/26/04 03:31:53pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.60R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

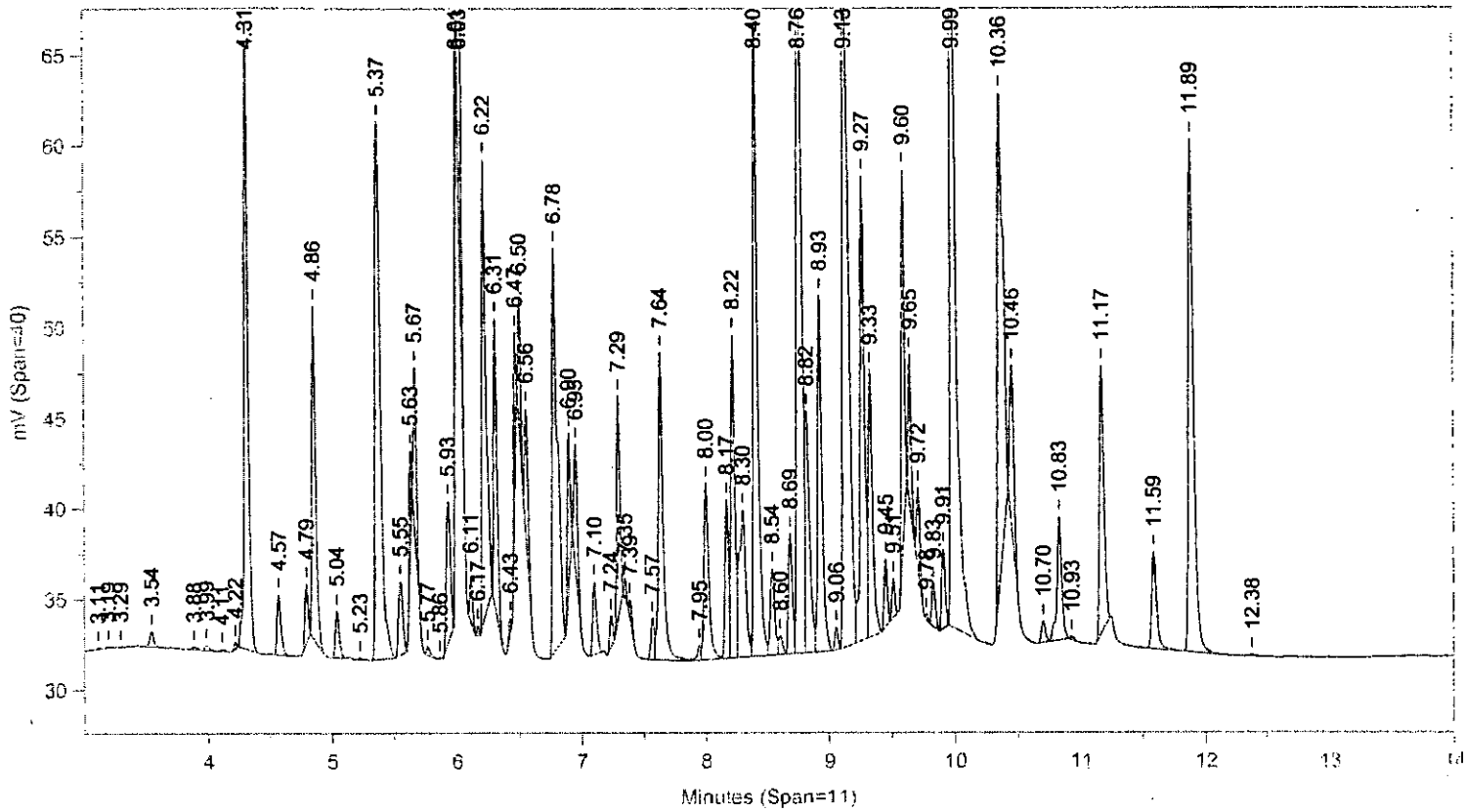
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.446 | | 0.0000 | 0.000 | 500.0 | 0.020 | BB | 0.042 | 198.98 | 0.022 |
| 2 | 3.534 | | 0.0000 | 0.000 | 490.1 | 0.020 | BB | 0.036 | 228.42 | 0.026 |
| 3 | 3.614 | | 0.0000 | 0.000 | 1364.1 | 0.055 | BB | 0.044 | 512.40 | 0.058 |
| 4 | 3.720 | | 0.0000 | 0.000 | 774.2 | 0.031 | BB | 0.042 | 309.02 | 0.035 |
| 5 | 3.811 | | 0.0000 | 0.000 | 346.6 | 0.014 | BB | 0.047 | 122.98 | 0.014 |
| 6 | 4.040 | TCX | 8.1682 | 11.054 | 100814.0 | 4.071 | BB | 0.037 | 45830.34 | 5.156 |
| 7 | 4.218 | | 0.0000 | 0.000 | 5963.5 | 0.241 | BB | 0.053 | 1870.67 | 0.210 |
| 8 | 4.362 | | 0.0000 | 0.000 | 217.9 | 0.009 | BB | 0.034 | 107.54 | 0.012 |
| 9 | 4.459 | | 0.0000 | 0.000 | 10021.3 | 0.405 | BB | 0.037 | 4468.71 | 0.503 |
| 10 | 4.585 | | 0.0000 | 0.000 | 1050.8 | 0.042 | BB | 0.032 | 540.47 | 0.061 |
| 11 | 4.660 | | 0.0000 | 0.000 | 9839.2 | 0.397 | BB | 0.034 | 4869.76 | 0.548 |
| 12 | 4.745 | Hcb | 2.1660 | 2.931 | 53908.7 | 2.177 | BB | 0.039 | 23191.38 | 2.609 |
| 13 | 5.067 | | 0.0000 | 0.000 | 7049.8 | 0.285 | BB | 0.037 | 3181.34 | 0.358 |
| 14 | 5.220 | | 0.0000 | 0.000 | 588.8 | 0.024 | BB | 0.065 | 149.85 | 0.017 |
| 15 | 5.312 | | 0.0000 | 0.000 | 110350.9 | 4.456 | BB | 0.056 | 32802.86 | 3.690 |
| 16 | 5.467 | gamma-BHC | 0.4563 | 0.618 | 8049.5 | 0.325 | BB | 0.037 | 3627.64 | 0.408 |
| 17 | 5.601 | beta-BHC | 2.7339 | 3.700 | 16792.7 | 0.678 | BB | 0.026 | 10903.19 | 1.227 |
| 18 | 5.648 | | 0.0000 | 0.000 | 26648.8 | 1.076 | BB | 0.031 | 14437.41 | 1.624 |
| 19 | 5.788 | | 0.0000 | 0.000 | 8004.5 | 0.323 | BB | 0.024 | 5618.57 | 0.632 |
| 20 | 5.822 | | 0.0000 | 0.000 | 3271.9 | 0.132 | BB | 0.021 | 2629.90 | 0.296 |
| 21 | 5.935 | | 0.0000 | 0.000 | 204315.0 | 8.250 | BV | 0.054 | 63556.52 | 7.150 |
| 22 | 6.117 | | 0.0000 | 0.000 | 87645.3 | 3.539 | VV | 0.044 | 33196.00 | 3.734 |
| 23 | 6.256 | | 0.0000 | 0.000 | 64797.0 | 2.616 | VV | 0.046 | 23459.32 | 2.639 |
| 24 | 6.383 | | 0.0000 | 0.000 | 43096.7 | 1.740 | VV | 0.035 | 20431.95 | 2.298 |
| 25 | 6.441 | | 0.0000 | 0.000 | 50378.9 | 2.034 | VV | 0.040 | 21158.56 | 2.380 |
| 26 | 6.494 | Aldrin | 2.4109 | 3.263 | 42259.3 | 1.706 | VB | 0.046 | 15349.98 | 1.727 |
| 27 | 6.685 | | 0.0000 | 0.000 | 222.4 | 0.009 | BB | 0.022 | 169.74 | 0.019 |
| 28 | 6.742 | Telodrin | 3.8147 | 5.162 | 41064.8 | 1.658 | BB | 0.030 | 22493.85 | 2.530 |
| 29 | 6.797 | | 0.0000 | 0.000 | 11484.4 | 0.464 | BB | 0.033 | 5878.99 | 0.661 |
| 30 | 6.904 | | 0.0000 | 0.000 | 55202.7 | 2.229 | BB | 0.047 | 19696.53 | 2.216 |
| 31 | 7.103 | | 0.0000 | 0.000 | 6962.5 | 0.281 | BB | 0.028 | 4113.57 | 0.463 |
| 32 | 7.152 | | 0.0000 | 0.000 | 2373.4 | 0.096 | BB | 0.025 | 1602.30 | 0.180 |
| 33 | 7.237 | | 0.0000 | 0.000 | 5370.4 | 0.217 | BB | 0.027 | 3282.09 | 0.369 |
| 34 | 7.295 | Hept. epoxide | 2.8184 | 3.814 | 36251.1 | 1.464 | BB | 0.036 | 16749.05 | 1.884 |
| 35 | 7.397 | | 0.0000 | 0.000 | 582.9 | 0.024 | BB | 0.025 | 387.95 | 0.044 |
| 36 | 7.457 | | 0.0000 | 0.000 | 4250.2 | 0.172 | BV | 0.032 | 2238.48 | 0.252 |
| 37 | 7.536 | g. Chlordane | 3.0500 | 4.127 | 45599.8 | 1.841 | VV | 0.043 | 17678.42 | 1.989 |
| 38 | 7.662 | | 0.0000 | 0.000 | 3944.6 | 0.159 | VB | 0.048 | 1374.06 | 0.155 |
| 39 | 7.833 | Endosulfan I | 0.0419 | 0.057 | 710.4 | 0.029 | BB | 0.054 | 221.21 | 0.025 |
| 40 | 7.913 | | 0.0000 | 0.000 | 1371.2 | 0.055 | BV | 0.038 | 608.57 | 0.068 |
| 41 | 7.988 | 4,4'-DDE | 0.7155 | 0.968 | 7267.9 | 0.293 | VV | 0.036 | 3333.79 | 0.375 |
| 42 | 8.100 | | 0.0000 | 0.000 | 12763.5 | 0.515 | VV | 0.029 | 7329.79 | 0.825 |
| 43 | 8.136 | | 0.0000 | 0.000 | 20830.4 | 0.841 | VV | 0.035 | 10006.93 | 1.126 |
| 44 | 8.182 | Dieldrin | 4.1533 | 5.620 | 48604.4 | 1.963 | VV | 0.040 | 20005.89 | 2.251 |
| 45 | 8.266 | | 0.0000 | 0.000 | 30582.7 | 1.235 | VV | 0.054 | 9386.86 | 1.056 |
| 46 | 8.387 | | 0.0000 | 0.000 | 101732.1 | 4.108 | VB | 0.047 | 35934.47 | 4.042 |
| 47 | 8.567 | Endrin | 2.1000 | 2.842 | 19956.8 | 0.806 | BV | 0.038 | 8668.92 | 0.975 |
| 48 | 8.648 | | 0.0000 | 0.000 | 118893.0 | 4.801 | VB | 0.048 | 41673.95 | 4.688 |
| 49 | 8.856 | Endosulfan II | 6.8948 | 9.330 | 101830.1 | 4.112 | BV | 0.064 | 26706.68 | 3.004 |
| 50 | 8.995 | | 0.0000 | 0.000 | 15271.5 | 0.617 | VV | 0.057 | 4479.66 | 0.504 |
| 51 | 9.113 | 4,4'-DDT | 12.1694 | 16.468 | 153558.4 | 6.200 | VV | 0.065 | 39658.28 | 4.461 |
| 52 | 9.225 | | 0.0000 | 0.000 | 80974.7 | 3.270 | VV | 0.045 | 30224.98 | 3.400 |
| 53 | 9.295 | Endrin aldehyde | 5.7845 | 7.828 | 51114.7 | 2.064 | VV | 0.048 | 17738.98 | 1.996 |
| 54 | 9.445 | | 0.0000 | 0.000 | 17044.4 | 0.688 | VB | 0.049 | 5820.35 | 0.655 |
| 55 | 9.606 | Endo. sulfate | 8.0551 | 10.901 | 66245.0 | 2.675 | BB | 0.042 | 26011.65 | 2.926 |
| 56 | 9.699 | | 0.0000 | 0.000 | 23377.2 | 0.944 | BB | 0.035 | 11145.14 | 1.254 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.772 | | 0.0000 | 0.000 | 7815.8 | 0.316 | BB | 0.029 | 4421.04 | 0.497 |
| 58 | 9.821 | | 0.0000 | 0.000 | 6034.2 | 0.244 | BB | 0.035 | 2904.04 | 0.327 |
| 59 | 9.917 | | 0.0000 | 0.000 | 167543.5 | 6.765 | BB | 0.050 | 56392.38 | 6.344 |
| 60 | 10.090 | | 0.0000 | 0.000 | 3526.8 | 0.142 | BB | 0.033 | 1760.10 | 0.198 |
| 61 | 10.305 | Endrin ketone | 0.2693 | 0.364 | 1740.1 | 0.070 | BB | 0.030 | 973.26 | 0.109 |
| 62 | 10.389 | | 0.0000 | 0.000 | 169515.7 | 6.845 | BB | 0.082 | 34631.74 | 3.896 |
| 63 | 10.690 | | 0.0000 | 0.000 | 1825.0 | 0.074 | BB | 0.035 | 875.14 | 0.098 |
| 64 | 10.760 | | 0.0000 | 0.000 | 2709.8 | 0.109 | BB | 0.036 | 1270.73 | 0.143 |
| 65 | 10.926 | | 0.0000 | 0.000 | 19549.5 | 0.789 | BB | 0.046 | 7154.64 | 0.805 |
| 66 | 11.133 | | 0.0000 | 0.000 | 52037.4 | 2.101 | BB | 0.052 | 16538.19 | 1.860 |
| 67 | 11.615 | | 0.0000 | 0.000 | 15342.3 | 0.619 | BB | 0.047 | 5485.68 | 0.617 |
| 68 | 12.036 | DCB | 8.0942 | 10.953 | 84987.9 | 3.432 | BB | 0.049 | 29159.94 | 3.280 |

Total Area = 2476605.0, Total Amount = 73.897, Total Height = 888941.8, Sample Units = PPB

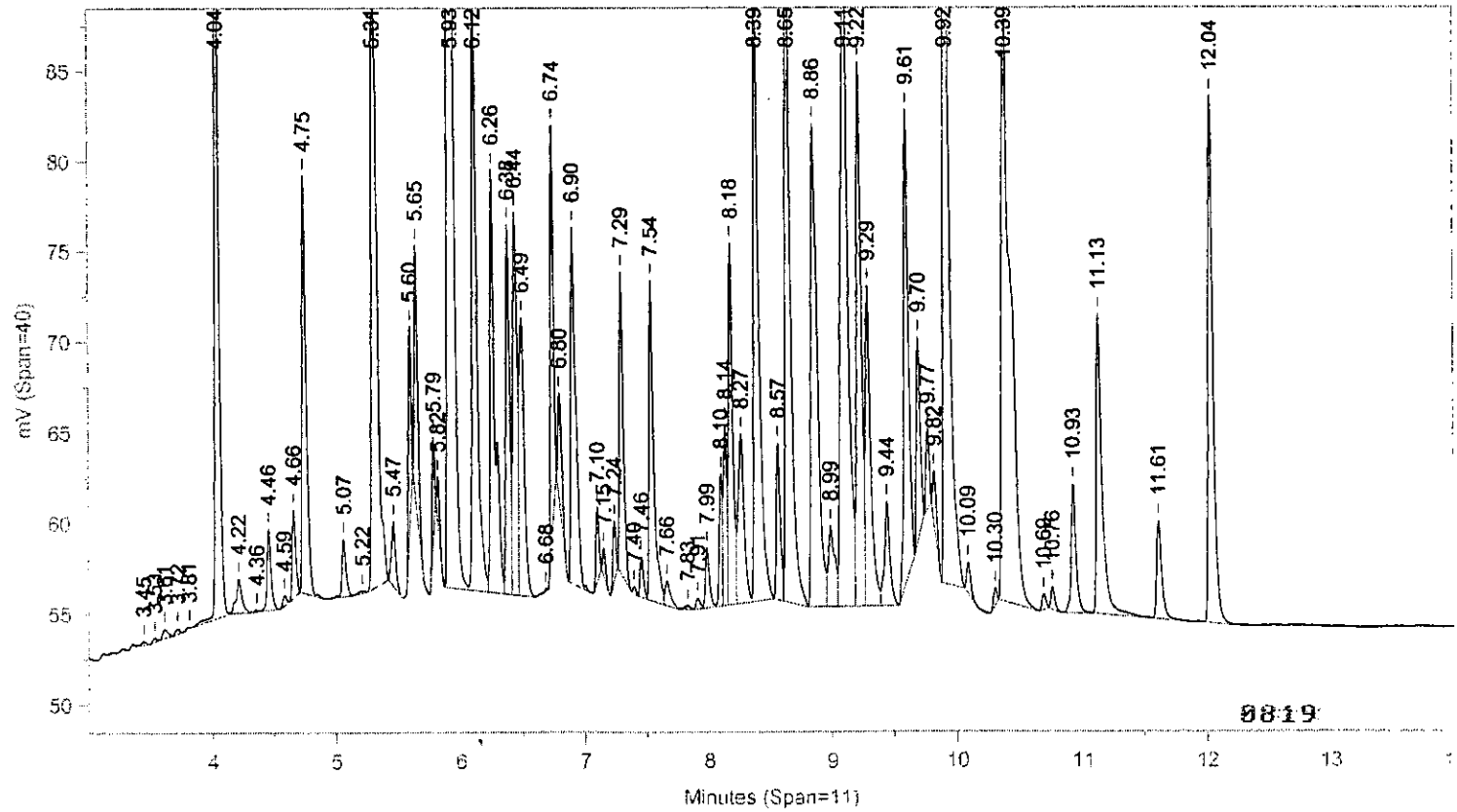
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.60R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 3:17:53 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.60R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 3:17:53 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

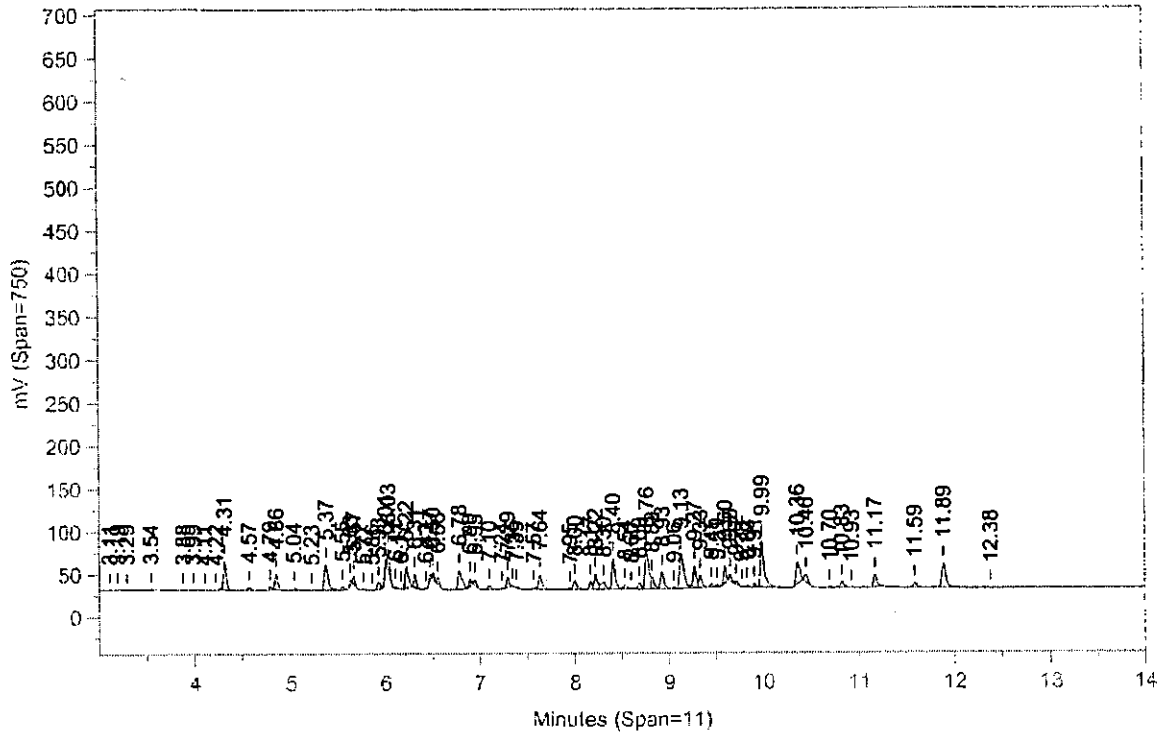
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.315 | 33795 | 8.192 | TCX | 4.04 | 45830 | 8.168 | TCX |
| . | 0 | . | Hcb | 4.745 | 23191 | 2.166 | Hcb |
| 5.634 | 4975 | .969 | gamma-BHC | 5.467 | 3628 | .456 | gamma-BHC |
| 5.767 | 492 | .174 | beta-BHC | 5.601 | 10903 | 2.734 | beta-BHC |
| 6.034 | 23281 | 4.781 | delta-BHC | . | 0 | . | delta-BHC |
| 6.309 | 16248 | 2.995 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Aldrin | 6.494 | 15350 | 2.411 | Aldrin |
| . | 0 | . | Telodrin | 6.742 | 22494 | 3.815 | Telodrin |
| . | 0 | . | Hept. epoxide | 7.295 | 16749 | 2.818 | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.536 | 17678 | 3.05 | g. Chlordane |
| 7.569 | 2278 | .87 | o,p-DDE | . | 0 | . | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.833 | 221 | .042 | Endosulfan I |
| 7.951 | 829 | .189 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.002 | 9778 | 2.783 | 4,4'-DDE | 7.988 | 3334 | .716 | 4,4'-DDE |
| . | 0 | . | Dieldrin | 8.182 | 20006 | 4.153 | Dieldrin |
| 8.22 | 17861 | 8.056 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.761 | 42235 | 12.631 | Endrin | 8.567 | 8669 | 2.1 | Endrin |
| 8.603 | 1042 | .391 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.821 | 13406 | 4.71 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.059 | 1264 | .379 | Endosulfan II | 8.856 | 26707 | 6.895 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 9.113 | 39658 | 12.169 | 4,4'-DDT |
| 9.598 | 20690 | 7.542 | Endrin aldehyde | 9.295 | 17739 | 5.785 | Endrin aldehyde |
| . | 0 | . | Endo. sulfate | 9.606 | 26012 | 8.055 | Endo. sulfate |
| 9.779 | 288 | .176 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.99 | 53931 | 19.152 | Mirex | . | 0 | . | Mirex |
| . | 0 | . | Endrin ketone | 10.305 | 973 | .269 | Endrin ketone |
| 11.889 | 28415 | 8.613 | DCB | 12.036 | 29160 | 8.094 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.60A
Area File: C:\CPWIN\DATA1\3D16082B.60A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:36:52 PM
File Reported On: 3/26/2004 at 3:36:57 PM

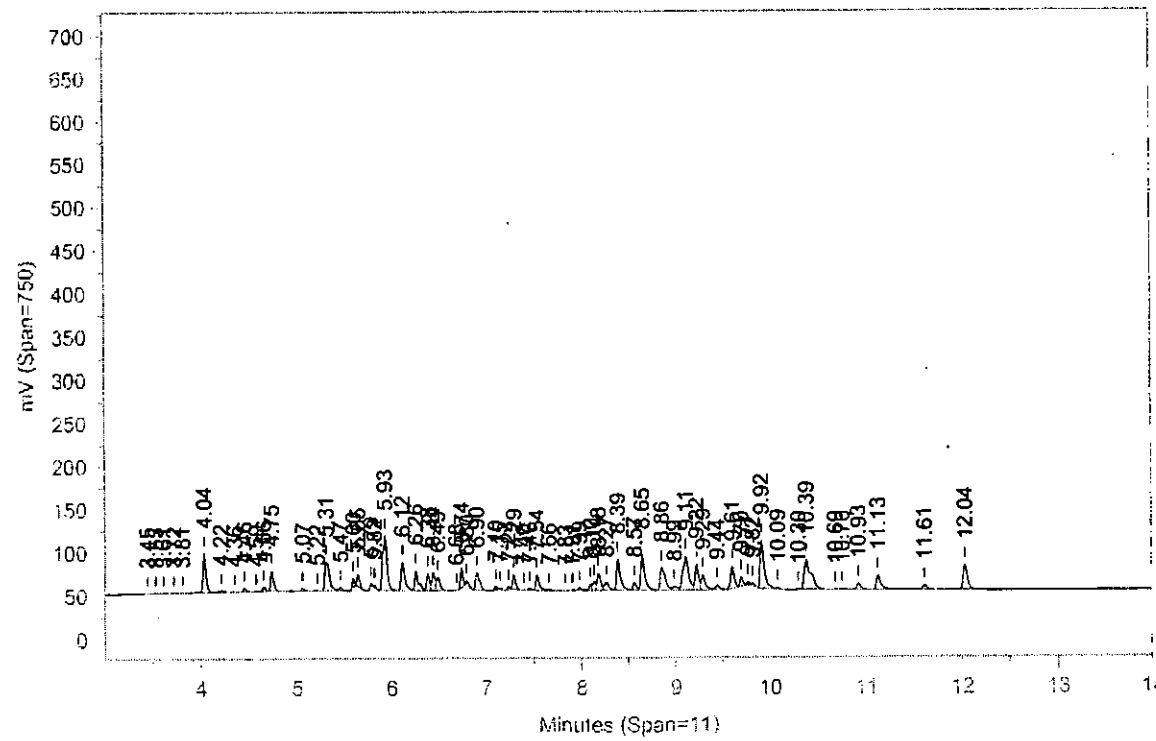
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.60R




C:\CPWIN\DATA1\3D16082B.60R




8821

# Raw QC Data

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 3/25/04F PBLKSQ Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16–H5262A
Result file : 3D16082.44R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 100.4% Conc.: 9.6562
%SSR(DCB) : 96.4% Conc.: 9.393705

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 119505 | 9.656200 |
| **Hcb** | 4.88 | 4.91 | 4.94 | 3437 | 0.163151 |
| **alpha-BHC** | 5.14 | 5.19 | 5.20 | 1165 | 0.075588 |
| **delta-BHC** | 5.99 | 6.03 | 6.05 | 4405 | 0.301531 |
| **Aldrin** | 6.72 | 6.73 | 6.78 | 110 | 0.008769 |
| **Hept. epoxide** | 7.56 | 7.61 | 7.62 | 959 | 0.074620 |
| **a. Chlordane** | 7.90 | 7.94 | 7.96 | 1074 | 0.081559 |
| **4,4'-DDE** | 7.99 | 8.05 | 8.05 | 726 | 0.068904 |
| **Dieldrin** | 8.41 | 8.44 | 8.47 | 731 | 0.066884 |
| **o,p-DDT** | 8.55 | 8.60 | 8.61 | 514 | 0.064252 |
| **Kepone** | 8.77 | 8.79 | 8.83 | 995 | 0.423735 |
| **Endosulfan II** | 9.02 | 9.07 | 9.08 | 1251 | 0.124871 |
| **Methoxychlor** | 9.75 | 9.76 | 9.81 | 379 | 0.077037 |
| **DCB** | 11.86 | 11.88 | 11.92 | 92974 | 9.393705 |

## Analysis Report (B)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16–H5262B
Result file : 3D16082B.44R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 96.2% Conc.: 9.249744
%SSR(DCB) : 93.6% Conc.: 9.121324

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 155696 | 9.249744 |
| **Hcb** | 4.71 | 4.77 | 4.77 | 7276 | 0.226507 |
| **gamma-BHC** | 5.43 | 5.49 | 5.49 | 150 | 0.006303 |
| **beta-BHC** | 5.56 | 5.60 | 5.62 | 425 | 0.035506 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 2519 | 0.112666 |
| **Hept. epoxide** | 7.27 | 7.27 | 7.33 | 198 | 0.011110 |
| **o,p-DDE** | 7.52 | 7.57 | 7.58 | 985 | 0.093757 |
| **Endosulfan I** | 7.79 | 7.81 | 7.85 | 264 | 0.016663 |
| **4,4'-DDE** | 7.93 | 7.99 | 7.99 | 994 | 0.071084 |
| **o,p-DDT** | 8.58 | 8.62 | 8.64 | 481 | 0.052443 |
| **Endosulfan II** | 8.82 | 8.88 | 8.88 | 130 | 0.011230 |
| **Endrin aldehyde** | 9.25 | 9.29 | 9.31 | 1117 | 0.121439 |
| **Endrin ketone** | 10.30 | 10.32 | 10.36 | 408 | 0.037672 |
| **DCB** | 12.01 | 12.03 | 12.07 | 98580 | 9.121324 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.656200 | | | | 4.30 | |
| Hcb | B | 0.226507 | | | | 32.52 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | A | 0.064252 | | | | 20.24 | |
| Endrin | | | <1.7 | <0.5 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | 8823 |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 15:35:08

# Lancaster Laboratories Single Component Data Summary

**Sample Name: BLANKA** 3/25/04F PBLKSQ Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

Analysis Report (A)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262A
Result file : 3D16082.44R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262B
Result file : 3D16082B.44R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | A | 9.393705 | | | | 2.94 | |

Units: ug/kg Y

Reviewed by: M.E.M. 1340 Date: 3/26/04
Verified by: [signature] Date: 3/29/04

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%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 15:35:08

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: BLANKA** 3/25/04F PBLKSQ BLK Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: State:
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 09:49:15 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.44R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

%SSR(TCX) 100.4% Conc: 9.6562
%SSR(DCB) 96.4% Conc: 9.393705

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 09:49:15 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.44R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

%SSR(TCX) 96.2% Conc: 9.249744
%SSR(DCB) 93.6% Conc: 9.121324

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M.S.M. 1346 Date: 3/28/04

Verified By: [signature] Date: 3/29/04

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# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: BLANKA** 3/25/04F PBLKSQ Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262A
Result file : 3D16082.44R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 100.4% Conc.: 9.6562
%SSR(DCB) : 96.4% Conc.: 9.393705

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 74.66 | |
| 5.35 | 5.38 | 5.41 | 1388.858765 | 3.274937 | | | 2 |
| 6.01 | 6.03 | 6.07 | 4405.143066 | 12.372461 | | | 3 |
| 6.29 | 6.29 | 6.35 | 1057.285278 | 4.338125 | | | 5 |
| Height Summation | | | **6851.287109** | | | | |
| Amount Avg CF: | | | **6.661841** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.77 | 4.78 | 4.83 | 3762.233398 | 39.71114 | | | 2 |
| Height Summation | | | **3762.233398** | | | | |
| Amount Avg CF: | | | **39.71114** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 74.64 | |
| 5.35 | 5.38 | 5.41 | 1388.858765 | 7.179791 | | | 2 |
| 6.01 | 6.03 | 6.07 | 4405.143066 | 26.873738 | | | 3 |
| 6.28 | 6.29 | 6.34 | 1057.285278 | 9.349474 | | | 5 |
| Height Summation | | | **6851.287109** | | | | |
| Amount Avg CF: | | | **14.467668** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 74.85 | |
| 5.35 | 5.38 | 5.41 | 1388.858765 | 3.739976 | | | 2 |
| 6.01 | 6.03 | 6.07 | 4405.143066 | 14.41002 | | | 3 |
| 6.28 | 6.29 | 6.34 | 1057.285278 | 5.1147 | | | 5 |
| Height Summation | | | **6851.287109** | | | | |
| Amount Avg CF: | | | **7.754899** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 139.60 | |
| 5.35 | 5.38 | 5.41 | 1388.858765 | 7.637597 | | | 1 |
| 6.01 | 6.03 | 6.07 | 4405.143066 | 31.824469 | | | 2 |
| 6.75 | 6.80 | 6.81 | 1218.272461 | 2.777829 | | | 3 |
| 7.32 | 7.37 | 7.38 | 378.789215 | 1.463665 | | | 4 |
| 8.14 | 8.16 | 8.20 | 583.499329 | 2.373541 | | | 6 |
| Height Summation | | | **7974.562836** | | | | |
| Amount Avg CF: | | | **9.21542** | Linear: | | | |
| **Aroclor-1254** | | | | | 4 | 39.90 | |
| 6.44 | 6.45 | 6.50 | 353.987396 | 1.298598 | | | 1 |
| 7.60 | 7.61 | 7.66 | 958.755859 | 1.900393 | | | 2 |
| 8.13 | 8.16 | 8.19 | 583.499329 | 0.887058 | | | 3 |
| 8.50 | 8.52 | 8.56 | 410.647156 | 0.839522 | | | 4 |
| Height Summation | | | **2306.889740** | | | | |
| Amount Avg CF: | | | **1.231393** | Linear: | | | |
| **Aroclor-1260** | | | | | 3 | 56.93 | |
| 8.38 | 8.38 | 8.44 | 691.73468 | 1.281584 | | | 1 |
| 9.96 | 9.99 | 10.02 | 277.194397 | 0.318526 | | | 5 |
| 11.14 | 11.18 | 11.20 | 247.60675 | 1.040484 | | | 6 |
| Height Summation | | | **1216.535827** | | | | |
| Amount Avg CF: | | | **0.880198** | Linear: | | | |
| **Chlordane** | | | | | 2 | 72.67 | |
| 7.89 | 7.94 | 7.95 | 1073.738281 | 0.744199 | | | 5 |
| 8.92 | 8.94 | 8.98 | 1012.58905 | 2.317354 | | | 6 |
| Height Summation | | | **2086.327331** | | | | |
| Amount Avg CF: | | | **1.530777** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262B
Result file : 3D16082B.44R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 96.2% Conc.: 9.249744
%SSR(DCB) : 93.6% Conc.: 9.121324

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 171.14 | |
| 4.72 | 4.77 | 4.78 | 7275.601074 | 20.658921 | | | 1 |
| 5.29 | 5.31 | 5.35 | 402.976349 | 0.812846 | | | 2 |
| 5.91 | 5.93 | 5.97 | 650.442932 | 0.645552 | | | 3 |
| 6.09 | 6.12 | 6.15 | 547.097778 | 1.050661 | | | 4 |
| Height Summation | | | **8876.118133** | | | | |
| Amount Avg CF: | | | **5.791995** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 92.75 | |
| E 4.64 | 4.64 | 4.70 | 10847.58398 | 72.783038 | | | 2 |
| 4.72 | 4.77 | 4.78 | 7275.601074 | 15.125833 | | | 3 |
| Height Summation | | | **18123.185058** | | | | |
| Amount Avg CF: | | | **43.954436** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 140.75 | |
| 4.72 | 4.77 | 4.78 | 7275.601074 | 18.803647 | | | 1 |
| 5.29 | 5.31 | 5.35 | 402.976349 | 1.77187 | | | 2 |
| 5.91 | 5.93 | 5.97 | 650.442932 | 1.370551 | | | 3 |
| 6.09 | 6.12 | 6.15 | 547.097778 | 2.243399 | | | 4 |
| Height Summation | | | **8876.118133** | | | | |
| Amount Avg CF: | | | **6.047367** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 169.54 | |
| 4.72 | 4.77 | 4.78 | 7275.601074 | 22.257713 | | | 1 |
| 5.29 | 5.31 | 5.35 | 402.976349 | 0.918842 | | | 2 |
| 5.91 | 5.93 | 5.97 | 650.442932 | 0.746593 | | | 3 |
| 6.09 | 6.12 | 6.15 | 547.097778 | 1.207481 | | | 4 |
| Height Summation | | | **8876.118133** | | | | |
| Amount Avg CF: | | | **6.282657** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 37.44 | |
| 5.29 | 5.31 | 5.35 | 402.976349 | 1.810804 | | | 1 |
| 5.91 | 5.93 | 5.97 | 650.442932 | 1.285587 | | | 2 |
| 8.11 | 8.14 | 8.17 | 220.062485 | 0.831209 | | | 6 |
| Height Summation | | | **1273.481766** | | | | |
| Amount Avg CF: | | | **1.3092** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 80.43 | |
| 6.35 | 6.37 | 6.41 | 965.334595 | 2.839153 | | | 1 |
| 7.50 | 7.52 | 7.56 | 2064.313721 | 3.656319 | | | 2 |
| 8.10 | 8.14 | 8.16 | 220.062485 | 0.30913 | | | 3 |
| 8.39 | 8.40 | 8.45 | 760.115295 | 2.135203 | | | 4 |
| 8.84 | 8.88 | 8.90 | 130.492325 | 0.352754 | | | 5 |
| Height Summation | | | **4140.318421** | | | | |
| Amount Avg CF: | | | **1.858512** | Linear: | | | |
| **Aroclor-1260** | | | | | 4 | 96.21 | |
| 8.36 | 8.40 | 8.42 | 760.115295 | 1.2973 | | | 1 |
| + 8.62 | 8.62 | 8.68 | 480.513062 | 0.67893 | | | 2 |
| 8.62 | 8.67 | 8.68 | 560.735779 | 0.792278 | | | 2 |
| 8.83 | 8.88 | 8.89 | 130.492325 | 0.287067 | | | 3 |
| 9.88 | 9.92 | 9.94 | 3400.235352 | 3.492198 | | | 6 |
| Height Summation | | | **4851.578751** | | | | |
| Amount Avg CF: | | | **1.467211** | Linear: | | | |
| **Chlordane** | | | | | 1 | | |
| 7.51 | 7.52 | 7.57 | 2064.313721 | 1.156701 | | | 4 |
| + 7.51 | 7.57 | 7.57 | 985.145813 | 0.552009 | | | 4 |
| Height Summation | | | **2064.313721** | | | | |
| Amount Avg CF: | | | **1.156701** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 15:35:32

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: BLANKA** 3/25/04F PBLKSQ Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262A
Result file : 3D16082.44R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **2** | **114.77** | |
| 8.75 | 8.79 | 8.81 | 994.841003 | 8.90812 | | | 2 |
| 9.52 | 9.55 | 9.58 | 142.756363 | 0.92658 | | | 4 |
| Height Summation | | | **1137.597366** | | | | |
| Amount Avg CF: | | | **4.91735** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 09:49:15
Instrument : CP16--H5262B
Result file : 3D16082B.44R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **5** | **126.99** | |
| 8.12 | 8.14 | 8.18 | 220.062485 | 1.828187 | | | 1 |
| 8.91 | 8.96 | 8.97 | 982.476013 | 3.281417 | | | 3 |
| 9.25 | 9.29 | 9.31 | 1117.221191 | 5.151999 | | | 4 |
| 9.91 | 9.92 | 9.97 | 3400.235352 | 15.350395 | | | 5 |
| 10.41 | 10.42 | 10.47 | 5356.940918 | 44.297866 | | | 6 |
| Height Summation | | | **11076.935959** | | | | |
| Amount Avg CF: | | | **13.981973** | Linear: | | | |

8827

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 15:35:32

Sample Name: **BLANKA 3/25/04F ABPBLKSQ BLK 040850020A 08899**
Acquired from CP16--H5262A via port 1 on 3/26/04 10:03:15am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.44R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.094 | | 0.0000 | 0.000 | 5929.8 | 0.725 | BB | 0.063 | 1557.58 | 0.474 |
| 2 | 3.176 | | 0.0000 | 0.000 | 2575.9 | 0.315 | BB | 0.035 | 1229.25 | 0.374 |
| 3 | 3.253 | | 0.0000 | 0.000 | 1984.1 | 0.243 | BB | 0.038 | 876.07 | 0.267 |
| 4 | 3.305 | | 0.0000 | 0.000 | 1110.0 | 0.136 | BB | 0.034 | 539.60 | 0.164 |
| 5 | 3.388 | | 0.0000 | 0.000 | 2532.0 | 0.310 | BB | 0.028 | 1505.18 | 0.458 |
| 6 | 3.446 | | 0.0000 | 0.000 | 313.3 | 0.038 | BB | 0.024 | 220.96 | 0.067 |
| 7 | 3.541 | | 0.0000 | 0.000 | 32601.8 | 3.987 | BB | 0.037 | 14531.65 | 4.424 |
| 8 | 3.627 | | 0.0000 | 0.000 | 591.9 | 0.072 | BB | 0.027 | 361.39 | 0.110 |
| 9 | 3.704 | | 0.0000 | 0.000 | 1493.0 | 0.183 | BB | 0.034 | 737.23 | 0.224 |
| 10 | 3.866 | | 0.0000 | 0.000 | 575.7 | 0.070 | BB | 0.051 | 188.84 | 0.057 |
| 11 | 3.991 | | 0.0000 | 0.000 | 9096.4 | 1.112 | BB | 0.052 | 2926.50 | 0.891 |
| 12 | 4.065 | | 0.0000 | 0.000 | 11946.3 | 1.461 | BB | 0.030 | 6549.20 | 1.994 |
| 13 | 4.177 | | 0.0000 | 0.000 | 6356.6 | 0.777 | BB | 0.043 | 2448.06 | 0.745 |
| 14 | 4.311 | TCX | 289.6860 | 46.918 | 250340.5 | 30.614 | BB | 0.035 | 119505.00 | 36.381 |
| 15 | 4.394 | | 0.0000 | 0.000 | 2400.1 | 0.294 | BB | 0.030 | 1351.85 | 0.412 |
| 16 | 4.499 | | 0.0000 | 0.000 | 403.0 | 0.049 | BB | 0.037 | 182.38 | 0.056 |
| 17 | 4.649 | | 0.0000 | 0.000 | 8438.3 | 1.032 | BB | 0.035 | 3998.58 | 1.217 |
| 18 | 4.717 | | 0.0000 | 0.000 | 846.2 | 0.103 | BB | 0.026 | 552.45 | 0.168 |
| 19 | 4.783 | | 0.0000 | 0.000 | 9424.2 | 1.152 | BB | 0.042 | 3762.23 | 1.145 |
| 20 | 4.910 | Hcb | 4.8945 | 0.793 | 9898.5 | 1.210 | BB | 0.048 | 3437.14 | 1.046 |
| 21 | 5.038 | | 0.0000 | 0.000 | 2519.4 | 0.308 | BB | 0.043 | 965.33 | 0.294 |
| 22 | 5.193 | alpha-BHC | 2.2676 | 0.367 | 1883.7 | 0.230 | BB | 0.027 | 1165.46 | 0.355 |
| 23 | 5.273 | | 0.0000 | 0.000 | 11104.9 | 1.358 | BB | 0.029 | 6289.59 | 1.915 |
| 24 | 5.381 | | 0.0000 | 0.000 | 2457.3 | 0.300 | BB | 0.029 | 1388.86 | 0.423 |
| 25 | 5.437 | | 0.0000 | 0.000 | 854.1 | 0.104 | BB | 0.047 | 305.72 | 0.093 |
| 26 | 5.683 | | 0.0000 | 0.000 | 1812.6 | 0.222 | BB | 0.054 | 561.22 | 0.171 |
| 27 | 5.812 | | 0.0000 | 0.000 | 11970.5 | 1.464 | BB | 0.043 | 4666.66 | 1.421 |
| 28 | 5.973 | | 0.0000 | 0.000 | 2137.9 | 0.261 | BB | 0.031 | 1156.12 | 0.352 |
| 29 | 6.027 | delta-BHC | 9.0459 | 1.465 | 8738.1 | 1.069 | BB | 0.033 | 4405.14 | 1.341 |
| 30 | 6.289 | | 0.0000 | 0.000 | 3593.4 | 0.439 | BB | 0.057 | 1057.29 | 0.322 |
| 31 | 6.455 | | 0.0000 | 0.000 | 598.6 | 0.073 | BB | 0.028 | 353.99 | 0.108 |
| 32 | 6.514 | | 0.0000 | 0.000 | 16658.8 | 2.037 | BB | 0.047 | 5931.27 | 1.806 |
| 33 | 6.647 | | 0.0000 | 0.000 | 1245.6 | 0.152 | BB | 0.041 | 512.55 | 0.156 |
| 34 | 6.730 | Aldrin | 0.2631 | 0.043 | 179.1 | 0.022 | BB | 0.027 | 110.27 | 0.034 |
| 35 | 6.796 | | 0.0000 | 0.000 | 3809.2 | 0.466 | BB | 0.052 | 1218.27 | 0.371 |
| 36 | 6.970 | | 0.0000 | 0.000 | 2582.9 | 0.316 | BB | 0.069 | 623.08 | 0.190 |
| 37 | 7.125 | | 0.0000 | 0.000 | 10394.0 | 1.271 | BB | 0.048 | 3639.05 | 1.108 |
| 38 | 7.287 | | 0.0000 | 0.000 | 1265.1 | 0.155 | BB | 0.043 | 489.72 | 0.149 |
| 39 | 7.371 | | 0.0000 | 0.000 | 918.1 | 0.112 | BB | 0.040 | 378.79 | 0.115 |
| 40 | 7.519 | | 0.0000 | 0.000 | 854.1 | 0.104 | BB | 0.036 | 390.25 | 0.119 |
| 41 | 7.606 | Hept. epoxide | 2.2386 | 0.363 | 3259.3 | 0.399 | BV | 0.057 | 958.76 | 0.292 |
| 42 | 7.716 | | 0.0000 | 0.000 | 7919.3 | 0.968 | VV | 0.045 | 2935.83 | 0.894 |
| 43 | 7.821 | | 0.0000 | 0.000 | 1159.7 | 0.142 | VB | 0.045 | 429.90 | 0.131 |
| 44 | 7.938 | a. Chlordane | 2.4468 | 0.396 | 4781.6 | 0.585 | BV | 0.074 | 1073.74 | 0.327 |
| 45 | 8.048 | 4,4'-DDE | 2.0671 | 0.335 | 2295.7 | 0.281 | VV | 0.053 | 726.28 | 0.221 |
| 46 | 8.161 | | 0.0000 | 0.000 | 3207.6 | 0.392 | VV | 0.092 | 583.50 | 0.178 |
| 47 | 8.292 | | 0.0000 | 0.000 | 5770.4 | 0.706 | VV | 0.076 | 1267.47 | 0.386 |
| 48 | 8.384 | | 0.0000 | 0.000 | 1684.7 | 0.206 | VV | 0.041 | 691.73 | 0.211 |
| 49 | 8.439 | Dieldrin | 2.0065 | 0.325 | 2729.8 | 0.334 | VV | 0.062 | 730.78 | 0.222 |
| 50 | 8.521 | | 0.0000 | 0.000 | 1664.7 | 0.204 | VV | 0.068 | 410.65 | 0.125 |
| 51 | 8.597 | o,p-DDT | 1.9276 | 0.312 | 2036.6 | 0.249 | VV | 0.066 | 513.91 | 0.156 |
| 52 | 8.795 | Kepone | 12.7120 | 2.059 | 9492.3 | 1.161 | VV | 0.159 | 994.84 | 0.303 |
| 53 | 8.938 | | 0.0000 | 0.000 | 3550.2 | 0.434 | VV | 0.058 | 1012.59 | 0.308 |
| 54 | 9.067 | Endosulfan II | 3.7461 | 0.607 | 3789.4 | 0.463 | VV | 0.050 | 1251.04 | 0.381 |
| 55 | 9.218 | | 0.0000 | 0.000 | 881.8 | 0.108 | VB | 0.048 | 308.52 | 0.094 |
| 56 | 9.396 | | 0.0000 | 0.000 | 2249.2 | 0.275 | BB | 0.042 | 901.58 | 0.274 |

0828

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.479 | | 0.0000 | 0.000 | 2363.6 | 0.289 | BB | 0.036 | 1086.76 | 0.331 |
| 58 | 9.547 | | 0.0000 | 0.000 | 337.2 | 0.041 | BB | 0.039 | 142.76 | 0.043 |
| 59 | 9.672 | | 0.0000 | 0.000 | 1683.3 | 0.206 | BB | 0.040 | 706.61 | 0.215 |
| 60 | 9.758 | Methoxychlor | 2.3111 | 0.374 | 972.2 | 0.119 | BB | 0.043 | 378.86 | 0.115 |
| 61 | 9.861 | | 0.0000 | 0.000 | 1269.8 | 0.155 | BB | 0.043 | 488.66 | 0.149 |
| 62 | 9.985 | | 0.0000 | 0.000 | 972.2 | 0.119 | BB | 0.058 | 277.19 | 0.084 |
| 63 | 10.133 | | 0.0000 | 0.000 | 301.8 | 0.037 | BB | 0.032 | 159.36 | 0.049 |
| 64 | 10.251 | | 0.0000 | 0.000 | 336.1 | 0.041 | BB | 0.030 | 186.94 | 0.057 |
| 65 | 10.357 | | 0.0000 | 0.000 | 2811.6 | 0.344 | BB | 0.030 | 1545.67 | 0.471 |
| 66 | 10.395 | | 0.0000 | 0.000 | 1648.0 | 0.202 | BB | 0.029 | 949.29 | 0.289 |
| 67 | 10.601 | | 0.0000 | 0.000 | 639.5 | 0.078 | BB | 0.042 | 251.80 | 0.077 |
| 68 | 10.695 | | 0.0000 | 0.000 | 1245.6 | 0.152 | BB | 0.068 | 304.51 | 0.093 |
| 69 | 10.810 | | 0.0000 | 0.000 | 448.9 | 0.055 | BB | 0.064 | 117.04 | 0.036 |
| 70 | 10.921 | | 0.0000 | 0.000 | 14026.0 | 1.715 | BB | 0.043 | 5483.27 | 1.669 |
| 71 | 11.081 | | 0.0000 | 0.000 | 789.0 | 0.096 | BB | 0.043 | 304.24 | 0.093 |
| 72 | 11.184 | | 0.0000 | 0.000 | 1034.7 | 0.127 | BB | 0.070 | 247.61 | 0.075 |
| 73 | 11.381 | | 0.0000 | 0.000 | 1140.3 | 0.139 | BB | 0.092 | 206.71 | 0.063 |
| 74 | 11.582 | | 0.0000 | 0.000 | 972.1 | 0.119 | BB | 0.054 | 299.11 | 0.091 |
| 75 | 11.746 | | 0.0000 | 0.000 | 343.3 | 0.042 | BB | 0.027 | 213.79 | 0.065 |
| 76 | 11.881 | DCB | 281.8112 | 45.643 | 255809.9 | 31.283 | BB | 0.046 | 92973.55 | 28.304 |
| 77 | 12.237 | | 0.0000 | 0.000 | 1271.3 | 0.155 | BB | 0.050 | 424.72 | 0.129 |
| 78 | 12.479 | | 0.0000 | 0.000 | 2989.5 | 0.366 | BB | 0.174 | 285.74 | 0.087 |
| 79 | 12.552 | | 0.0000 | 0.000 | 1134.6 | 0.139 | BB | 0.047 | 401.32 | 0.122 |
| 80 | 12.661 | | 0.0000 | 0.000 | 3737.9 | 0.457 | BB | 0.053 | 1183.48 | 0.360 |
| 81 | 12.742 | | 0.0000 | 0.000 | 1218.8 | 0.149 | BB | 0.043 | 469.95 | 0.143 |
| 82 | 12.881 | | 0.0000 | 0.000 | 5394.1 | 0.660 | BB | 0.099 | 907.09 | 0.276 |
| 83 | 13.086 | | 0.0000 | 0.000 | 6712.5 | 0.821 | BB | 0.124 | 902.75 | 0.275 |
| 84 | 13.311 | | 0.0000 | 0.000 | 2441.9 | 0.299 | BB | 0.123 | 330.60 | 0.101 |
| 85 | 13.540 | | 0.0000 | 0.000 | 2786.4 | 0.341 | BB | 0.119 | 389.65 | 0.119 |

Total Area = 817739.6, Total Amount = 617.424, Total Height = 328479.9, Sample Units = PPB

Sample Name: **BLANKA 3/25/04F ABPBLKSQ BLK 040850020A 08899**
Acquired from CP16--H5262B via port 2 on 3/26/04 10:03:15am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.44R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.470 | | 0.0000 | 0.000 | 22938.5 | 2.478 | BB | 0.034 | 11167.30 | 3.172 |
| 2 | 3.536 | | 0.0000 | 0.000 | 1093.8 | 0.118 | BB | 0.020 | 921.50 | 0.262 |
| 3 | 3.615 | | 0.0000 | 0.000 | 6812.0 | 0.736 | BB | 0.041 | 2747.72 | 0.780 |
| 4 | 3.739 | | 0.0000 | 0.000 | 389.2 | 0.042 | BB | 0.027 | 244.62 | 0.069 |
| 5 | 3.799 | | 0.0000 | 0.000 | 1312.4 | 0.142 | BB | 0.030 | 719.95 | 0.205 |
| 6 | 3.849 | | 0.0000 | 0.000 | 109.8 | 0.012 | BB | 0.020 | 91.54 | 0.026 |
| 7 | 3.902 | | 0.0000 | 0.000 | 4538.2 | 0.490 | BB | 0.033 | 2308.75 | 0.656 |
| 8 | 4.036 | TCX | 277.4923 | 48.258 | 355583.8 | 38.419 | BB | 0.038 | 155696.40 | 44.226 |
| 9 | 4.174 | | 0.0000 | 0.000 | 264.8 | 0.029 | BB | 0.018 | 248.15 | 0.070 |
| 10 | 4.226 | | 0.0000 | 0.000 | 18587.0 | 2.008 | BB | 0.072 | 4280.69 | 1.216 |
| 11 | 4.361 | | 0.0000 | 0.000 | 3390.0 | 0.366 | BB | 0.027 | 2094.12 | 0.595 |
| 12 | 4.433 | | 0.0000 | 0.000 | 549.7 | 0.059 | BB | 0.033 | 275.06 | 0.078 |
| 13 | 4.579 | | 0.0000 | 0.000 | 3439.7 | 0.372 | BB | 0.027 | 2133.75 | 0.606 |
| 14 | 4.637 | | 0.0000 | 0.000 | 22411.2 | 2.421 | BB | 0.034 | 10847.58 | 3.081 |
| 15 | 4.765 | Hcb | 6.7952 | 1.182 | 15712.4 | 1.698 | BB | 0.036 | 7275.60 | 2.067 |
| 16 | 4.858 | | 0.0000 | 0.000 | 638.3 | 0.069 | BB | 0.033 | 318.34 | 0.090 |
| 17 | 4.904 | | 0.0000 | 0.000 | 10626.1 | 1.148 | BB | 0.031 | 5656.39 | 1.607 |
| 18 | 5.074 | | 0.0000 | 0.000 | 1013.2 | 0.109 | BB | 0.080 | 211.05 | 0.060 |
| 19 | 5.183 | | 0.0000 | 0.000 | 2239.8 | 0.242 | BB | 0.090 | 413.47 | 0.117 |
| 20 | 5.305 | | 0.0000 | 0.000 | 738.7 | 0.080 | BB | 0.031 | 402.98 | 0.114 |
| 21 | 5.411 | | 0.0000 | 0.000 | 3179.6 | 0.344 | BB | 0.059 | 904.81 | 0.257 |
| 22 | 5.487 | gamma-BHC | 0.1891 | 0.033 | 386.5 | 0.042 | BB | 0.043 | 150.32 | 0.043 |
| 23 | 5.596 | beta-BHC | 1.0652 | 0.185 | 1363.5 | 0.147 | BB | 0.053 | 424.80 | 0.121 |
| 24 | 5.660 | | 0.0000 | 0.000 | 874.8 | 0.095 | BB | 0.049 | 297.04 | 0.084 |
| 25 | 5.723 | | 0.0000 | 0.000 | 965.3 | 0.104 | BB | 0.026 | 616.58 | 0.175 |
| 26 | 5.766 | | 0.0000 | 0.000 | 1255.5 | 0.136 | BB | 0.028 | 743.42 | 0.211 |
| 27 | 5.930 | | 0.0000 | 0.000 | 2586.5 | 0.279 | BB | 0.066 | 650.44 | 0.185 |
| 28 | 5.988 | delta-BHC | 3.3800 | 0.588 | 8244.4 | 0.891 | BB | 0.055 | 2518.55 | 0.715 |
| 29 | 6.119 | | 0.0000 | 0.000 | 1065.5 | 0.115 | BB | 0.032 | 547.10 | 0.155 |
| 30 | 6.209 | | 0.0000 | 0.000 | 2364.4 | 0.255 | BV | 0.057 | 692.37 | 0.197 |
| 31 | 6.335 | | 0.0000 | 0.000 | 895.7 | 0.097 | VV | 0.024 | 619.50 | 0.176 |
| 32 | 6.365 | | 0.0000 | 0.000 | 2337.3 | 0.253 | VV | 0.040 | 965.33 | 0.274 |
| 33 | 6.472 | | 0.0000 | 0.000 | 4120.3 | 0.445 | VB | 0.062 | 1116.41 | 0.317 |
| 34 | 6.625 | | 0.0000 | 0.000 | 22850.4 | 2.469 | BB | 0.058 | 6595.60 | 1.873 |
| 35 | 6.820 | | 0.0000 | 0.000 | 2268.4 | 0.245 | BB | 0.065 | 579.40 | 0.165 |
| 36 | 6.939 | | 0.0000 | 0.000 | 2236.7 | 0.242 | BB | 0.048 | 777.89 | 0.221 |
| 37 | 7.064 | | 0.0000 | 0.000 | 3496.0 | 0.378 | BB | 0.078 | 750.94 | 0.213 |
| 38 | 7.274 | Hept. epoxide | 0.3333 | 0.058 | 705.0 | 0.076 | BB | 0.059 | 198.08 | 0.056 |
| 39 | 7.408 | | 0.0000 | 0.000 | 2810.5 | 0.304 | BV | 0.078 | 597.59 | 0.170 |
| 40 | 7.516 | | 0.0000 | 0.000 | 4761.3 | 0.514 | VV | 0.038 | 2064.31 | 0.586 |
| 41 | 7.570 | o,p-DDE | 2.8127 | 0.489 | 5536.7 | 0.598 | VB | 0.094 | 985.15 | 0.280 |
| 42 | 7.813 | Endosulfan I | 0.4999 | 0.087 | 788.3 | 0.085 | BV | 0.050 | 263.65 | 0.075 |
| 43 | 7.876 | | 0.0000 | 0.000 | 1184.7 | 0.128 | VV | 0.043 | 463.84 | 0.132 |
| 44 | 7.993 | 4,4'-DDE | 2.1325 | 0.371 | 4882.7 | 0.528 | VV | 0.082 | 993.60 | 0.282 |
| 45 | 8.138 | | 0.0000 | 0.000 | 1045.7 | 0.113 | VV | 0.079 | 220.06 | 0.063 |
| 46 | 8.267 | | 0.0000 | 0.000 | 928.8 | 0.100 | VB | 0.039 | 394.91 | 0.112 |
| 47 | 8.399 | | 0.0000 | 0.000 | 2453.3 | 0.265 | BB | 0.054 | 760.12 | 0.216 |
| 48 | 8.623 | o,p-DDT | 1.5733 | 0.274 | 1439.7 | 0.156 | BV | 0.050 | 480.51 | 0.136 |
| 49 | 8.670 | | 0.0000 | 0.000 | 2210.8 | 0.239 | VV | 0.066 | 560.74 | 0.159 |
| 50 | 8.769 | | 0.0000 | 0.000 | 591.0 | 0.064 | VB | 0.039 | 250.93 | 0.071 |
| 51 | 8.877 | Endosulfan II | 0.3369 | 0.059 | 402.2 | 0.043 | BV | 0.051 | 130.49 | 0.037 |
| 52 | 8.957 | | 0.0000 | 0.000 | 3834.1 | 0.414 | VV | 0.065 | 982.48 | 0.279 |
| 53 | 9.037 | | 0.0000 | 0.000 | 4949.5 | 0.535 | VB | 0.082 | 1001.96 | 0.285 |
| 54 | 9.293 | Endrin aldehyde | 3.6432 | 0.634 | 3199.6 | 0.346 | BB | 0.048 | 1117.22 | 0.317 |
| 55 | 9.400 | | 0.0000 | 0.000 | 3093.0 | 0.334 | BB | 0.075 | 684.33 | 0.194 |
| 56 | 9.760 | | 0.0000 | 0.000 | 1816.1 | 0.196 | BB | 0.072 | 423.02 | 0.120 |

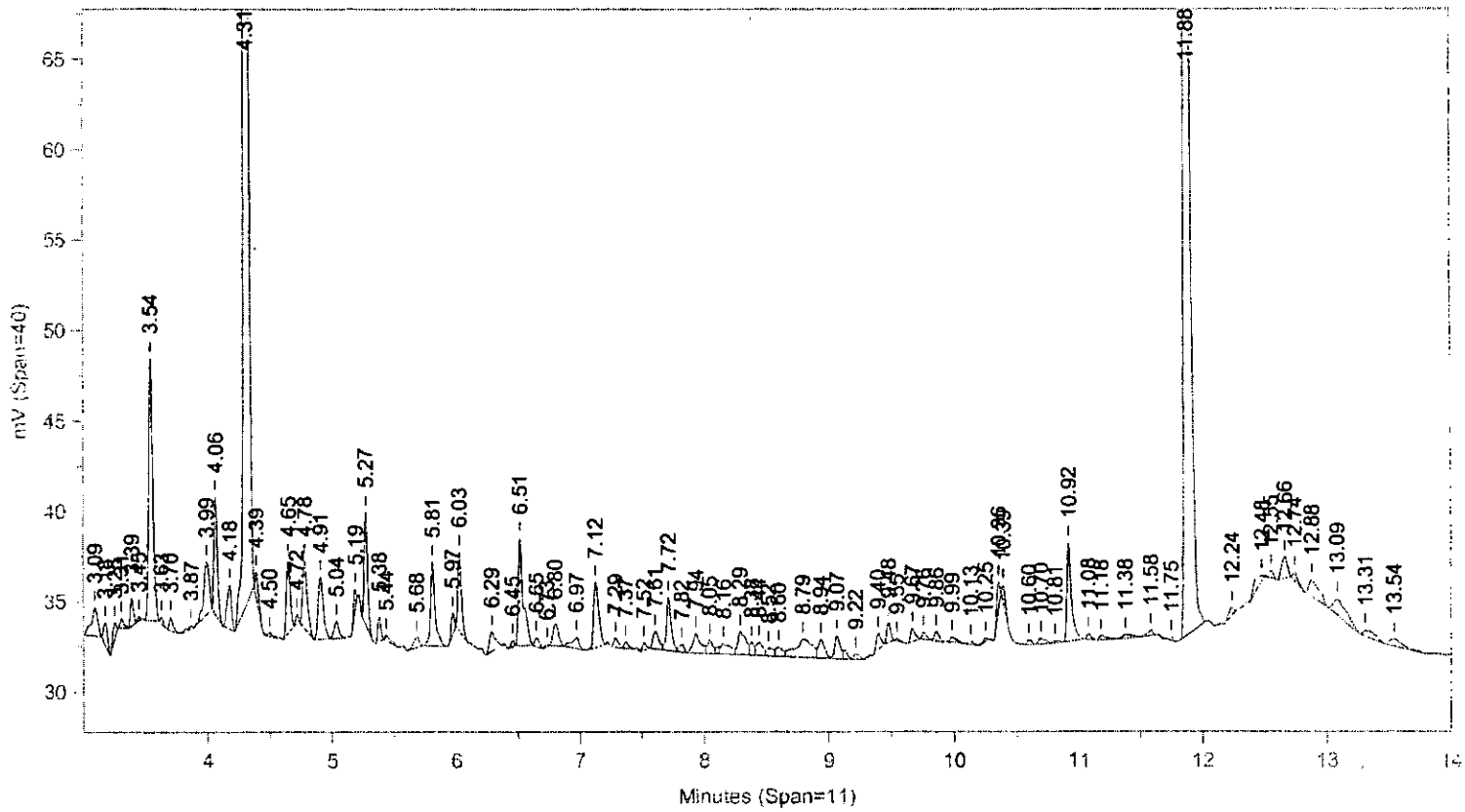
5838

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.919 | | 0.0000 | 0.000 | 10549.8 | 1.140 | BB | 0.052 | 3400.24 | 0.966 |
| 58 | 10.084 | | 0.0000 | 0.000 | 2390.0 | 0.258 | BB | 0.114 | 350.80 | 0.100 |
| 59 | 10.320 | Endrin ketone | 1.1302 | 0.197 | 1354.3 | 0.146 | BB | 0.055 | 408.43 | 0.116 |
| 60 | 10.419 | | 0.0000 | 0.000 | 12753.7 | 1.378 | BB | 0.040 | 5356.94 | 1.522 |
| 61 | 10.716 | | 0.0000 | 0.000 | 2298.4 | 0.248 | BB | 0.102 | 375.07 | 0.107 |
| 62 | 10.940 | | 0.0000 | 0.000 | 367.3 | 0.040 | BB | 0.060 | 101.23 | 0.029 |
| 63 | 11.067 | | 0.0000 | 0.000 | 432.5 | 0.047 | BB | 0.101 | 71.16 | 0.020 |
| 64 | 11.148 | | 0.0000 | 0.000 | 677.8 | 0.073 | BB | 0.045 | 251.96 | 0.072 |
| 65 | 11.517 | | 0.0000 | 0.000 | 2068.1 | 0.223 | BB | 0.079 | 438.77 | 0.125 |
| 66 | 11.607 | | 0.0000 | 0.000 | 781.1 | 0.084 | BB | 0.038 | 344.24 | 0.098 |
| 67 | 11.871 | | 0.0000 | 0.000 | 8846.5 | 0.956 | BB | 0.136 | 1086.59 | 0.309 |
| 68 | 12.028 | DCB | 273.6397 | 47.588 | 292113.3 | 31.561 | BB | 0.049 | 98580.39 | 28.002 |
| 69 | 12.230 | | 0.0000 | 0.000 | 4868.6 | 0.526 | BB | 0.099 | 819.41 | 0.233 |
| 70 | 12.411 | | 0.0000 | 0.000 | 5018.5 | 0.542 | BB | 0.148 | 565.15 | 0.161 |
| 71 | 12.673 | | 0.0000 | 0.000 | 1512.4 | 0.163 | BB | 0.079 | 320.91 | 0.091 |

Total Area = 925544.8, Total Amount = 575.023, Total Height = 352049.7, Sample Units = PPB

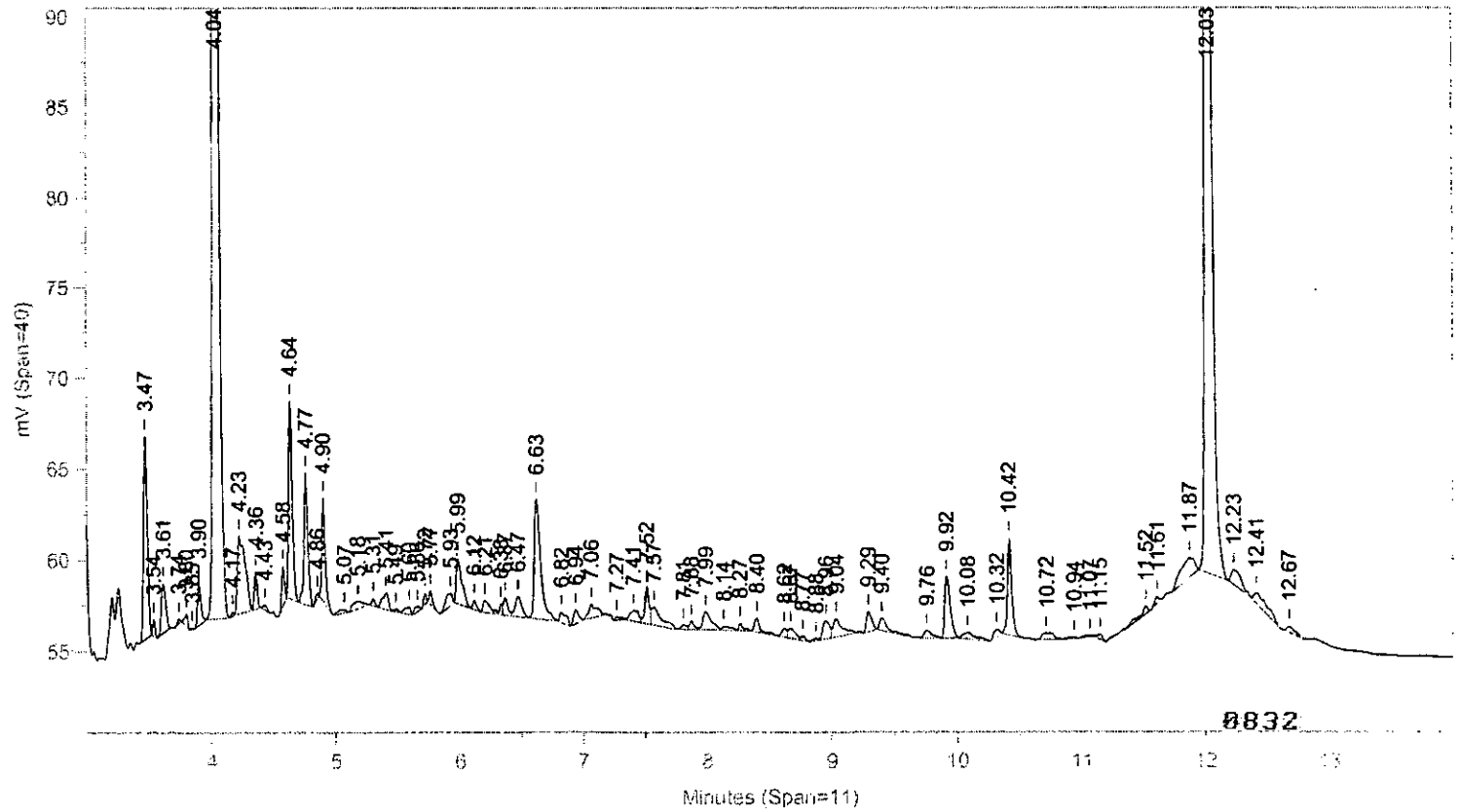
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.44R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 9:49:15 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.44R




8832

Instrument ID: CP16--H5262B Injected On: 3/26/2004 9:49:15 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6
Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

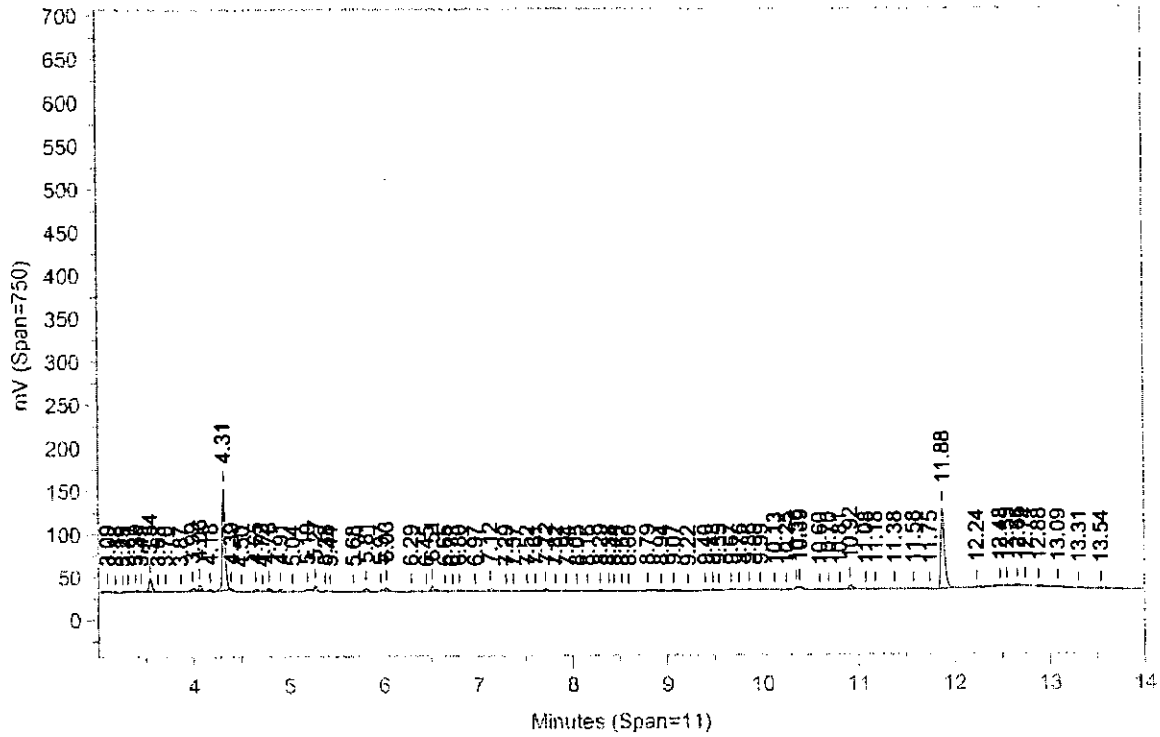
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.311 | 119505 | 9.656 | TCX | 4.036 | 155696 | 9.25 | TCX |
| 4.91 | 3437 | .163 | Hcb | 4.765 | 7276 | .227 | Hcb |
| 5.193 | 1165 | .076 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | gamma-BHC | 5.487 | 150 | .006 | gamma-BHC |
| . | 0 | . | beta-BHC | 5.596 | 425 | .036 | beta-BHC |
| 6.027 | 4405 | .302 | delta-BHC | 5.988 | 2519 | .113 | delta-BHC |
| 6.73 | 110 | .009 | Aldrin | . | 0 | . | Aldrin |
| 7.606 | 959 | .075 | Hept. epoxide | 7.274 | 198 | .011 | Hept. epoxide |
| . | 0 | . | o,p-DDE | 7.57 | 985 | .094 | o,p-DDE |
| . | 0 | . | Endosulfan I | 7.813 | 264 | .017 | Endosulfan I |
| 7.938 | 1074 | .082 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.048 | 726 | .069 | 4,4'-DDE | 7.993 | 994 | .071 | 4,4'-DDE |
| 8.439 | 731 | .067 | Dieldrin | . | 0 | . | Dieldrin |
| 8.597 | 514 | .064 | o,p-DDT | 8.623 | 481 | .052 | o,p-DDT |
| 8.795 | 995 | .424 | Kepone | . | 0 | . | Kepone |
| 9.067 | 1251 | .125 | Endosulfan II | 8.877 | 130 | .011 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.293 | 1117 | .121 | Endrin aldehyde |
| 9.758 | 379 | .077 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | Endrin ketone | 10.32 | 408 | .038 | Endrin ketone |
| 11.881 | 92974 | 9.394 | DCB | 12.028 | 98580 | 9.121 | DCB |

Files:
Area File: C:\CPWIN\DATA1\3D16082.44A
Area File: C:\CPWIN\DATA1\3D16082B.44A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:20:52 PM
File Reported On: 3/26/2004 at 3:20:59 PM

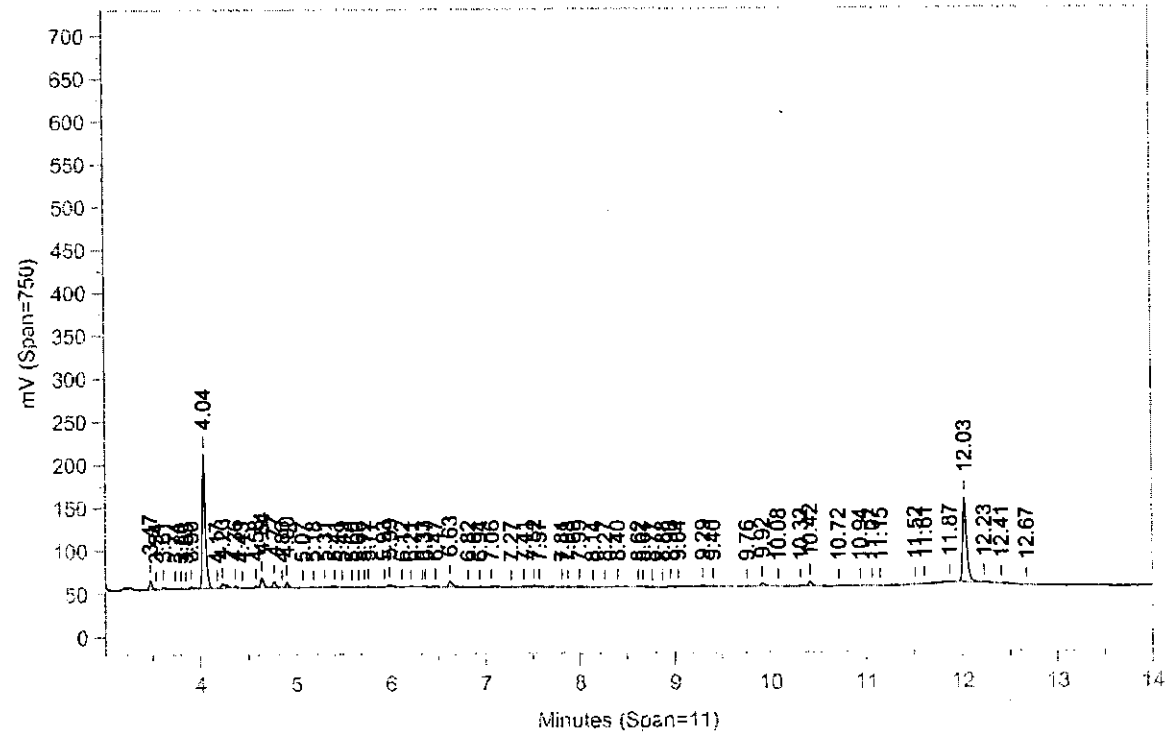
6833

10x REPLOTS

C:\CPWIN\DATA1\3D16082.44R




C:\CPWIN\DATA1\3D16082B.44R



# Lancaster Laboratories Single Component Data Summary

**Sample Name:** LCSA 3/25/04F LCSNW Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 10:09:46
Instrument : CP16--H5262A
Result file : 3D16082.45R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 104.5% Conc.: 10.057002
%SSR(DCB) : 99.5% Conc.: 9.691169

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.29 | 4.31 | 4.35 | 124465 | 10.057002 |
| Hcb | 4.88 | 4.90 | 4.94 | 2264 | 0.107453 |
| alpha-BHC | 5.14 | 5.16 | 5.20 | 50778 | 3.293292 |
| gamma-BHC | 5.60 | 5.62 | 5.66 | 50360 | 3.271091 |
| beta-BHC | 5.74 | 5.76 | 5.80 | 27174 | 3.197727 |
| delta-BHC | 5.99 | 6.01 | 6.05 | 49608 | 3.395657 |
| Heptachlor | 6.29 | 6.31 | 6.35 | 53707 | 3.299538 |
| Aldrin | 6.72 | 6.74 | 6.78 | 41375 | 3.290306 |
| Hept. epoxide | 7.56 | 7.58 | 7.62 | 45397 | 3.533190 |
| g. Chlordane | 7.72 | 7.74 | 7.78 | 42204 | 3.416963 |
| a. Chlordane | 7.90 | 7.92 | 7.96 | 41984 | 3.189066 |
| 4,4'-DDE | 7.99 | 8.01 | 8.05 | 69249 | 6.569742 |
| Endosulfan I | 8.09 | 8.11 | 8.15 | 39632 | 3.359768 |
| o,p-DDD | 8.22 | 8.24 | 8.28 | 1145 | 0.172223 |
| Dieldrin | 8.41 | 8.43 | 8.47 | 71350 | 6.530295 |
| o,p-DDT | 8.55 | 8.58 | 8.61 | 556 | 0.069550 |
| Endrin | 8.72 | 8.74 | 8.78 | 65437 | 6.523230 |
| Kepone / 4,4'-DDD | 8.77 | 8.80 | 8.83 | 48814 | 20.791384 / 5.716 |
| Endosulfan II | 9.02 | 9.04 | 9.08 | 70395 | 7.026335 |
| 4,4'-DDT | 9.14 | 9.16 | 9.20 | 54081 | 6.259987 |
| Endrin aldehyde | 9.57 | 9.59 | 9.63 | 45281 | 5.501978 |
| Methoxychlor | 9.75 | 9.77 | 9.81 | 143520 | 29.182964 |
| Endo. sulfate | 10.14 | 10.16 | 10.20 | 62961 | 7.120431 |
| Endrin ketone | 10.51 | 10.53 | 10.57 | 68433 | 6.998105 |
| DCB | 11.86 | 11.88 | 11.92 | 95918 | 9.691169 |

## Analysis Report (B)

Injected on : MAR 26, 2004 10:09:46
Instrument : CP16--H5262B
Result file : 3D16082B.45R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 101% Conc.: 9.714797
%SSR(DCB) : 90.9% Conc.: 8.858341

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.01 | 4.04 | 4.07 | 163524 | 9.714797 |
| Hcb | 4.71 | 4.76 | 4.77 | 8933 | 0.278107 |
| alpha-BHC | 4.91 | 4.93 | 4.97 | 82621 | 3.209815 |
| gamma-BHC | 5.43 | 5.45 | 5.49 | 76031 | 3.187987 |
| beta-BHC | 5.56 | 5.58 | 5.62 | 39699 | 3.318129 |
| delta-BHC | 5.97 | 5.99 | 6.03 | 73072 | 3.268832 |
| Heptachlor | 6.04 | 6.07 | 6.10 | 75662 | 3.181112 |
| Aldrin | 6.49 | 6.51 | 6.55 | 62422 | 3.268063 |
| Hept. epoxide | 7.27 | 7.29 | 7.33 | 58656 | 3.290042 |
| g. Chlordane | 7.52 | 7.54 | 7.58 | 53278 | 3.063975 |
| a. Chlordane | 7.71 | 7.73 | 7.77 | 52128 | 3.134860 |
| Endosulfan I | 7.79 | 7.80 | 7.85 | 49536 | 3.130675 |
| 4,4'-DDE | 7.93 | 7.95 | 7.99 | 84789 | 6.065874 |
| Dieldrin | 8.14 | 8.16 | 8.20 | 89868 | 6.218994 |
| Endrin | 8.54 | 8.56 | 8.60 | 77366 | 6.247106 |
| 4,4'-DDD | 8.68 | 8.70 | 8.74 | 52348 | 5.345012 |
| Endosulfan II | 8.82 | 8.84 | 8.88 | 78624 | 6.766063 |
| 4,4'-DDT | 9.08 | 9.10 | 9.14 | 58664 | 6.000519 |
| Endrin aldehyde | 9.25 | 9.27 | 9.31 | 48778 | 5.302049 |
| Endo. sulfate | 9.60 | 9.62 | 9.66 | 68538 | 7.074793 |
| Methoxychlor | 9.96 | 9.98 | 10.02 | 138622 | 28.515745 |
| Endrin ketone | 10.30 | 10.32 | 10.36 | 69813 | 6.439357 |
| DCB | 12.01 | 12.03 | 12.07 | 95738 | 8.858341 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 10.057002 | | | | 3.46 | |
| Hcb | B | 0.278107 | | | | ** 88.52 | |
| alpha-BHC | A | 3.293292 | 0.83 | 0.17 | | 2.57 | |
| gamma-BHC | A | 3.271091 | 0.83 | 0.17 | | 2.57 | |
| beta-BHC | B | 3.318129 | 0.83 | 0.17 | | 3.70 | |
| delta-BHC | A | 3.395657 | 0.83 | 0.17 | | 3.81 | |
| Heptachlor | A | 3.299538 | 0.83 | 0.17 | | 3.65 | |
| Aldrin | A | 3.290306 | 1.5 | 0.51 | | 0.68 | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | A | 3.533190 | 0.83 | 0.17 | | 7.13 | |
| g. Chlordane | A | 3.416963 | 0.9 | 0.3 | | 10.89 | |
| a. Chlordane | A | 3.189066 | 0.83 | 0.17 | | 1.71 | |
| 4,4'-DDE | A | 6.569742 | 1.7 | 0.33 | | 7.98 | 8835 |
| Endosulfan I | A | 3.359768 | 1.3 | 0.44 | | 7.06 | |
| o,p-DDD | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 15:57:28

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** LCSA 3/25/04F LCSNW Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

**Analysis Report (A)**

Injected on : MAR 26, 2004 10:09:46
Instrument : CP16–H5262A
Result file : 3D16082.45R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 10:09:46
Instrument : CP16–H5262B
Result file : 3D16082B.45R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dieldrin | A | 6.530295 | 1.7 | 0.33 | | 4.88 | |
| o,p-DDT | | | | | | | |
| Endrin | A | 6.523230 | 1.7 | 0.5 | | 4.32 | |
| Kepone | | | | | | | |
| 4,4'-DDD | P | 5.716 | <1.7 | <0.58 | | | |
| Endosulfan II | A | 7.026335 | 1.7 | 0.33 | | 3.77 | |
| 4,4'-DDT | A | 6.259987 | 1.7 | 0.33 | | 4.23 | |
| Endrin aldehyde | A | 5.501978 | 3 | 1 | | 3.70 | |
| Methoxychlor | A | 29.182964 | 12 | 4 | | 2.31 | |
| Mirex | | | | | | | |
| Endo. sulfate | A | 7.120431 | 1.7 | 0.33 | | 0.64 | |
| Endrin ketone | A | 6.998105 | 1.7 | 0.33 | | 8.32 | |
| DCB | A | 9.691169 | | | | 8.98 | |

Units: ug/kg X

Reviewed by: M.E.M. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

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%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 15:57:28

Sample Name: **LCSA 3/25/04F ABLCSNW LCS 040850020A 08899**
Acquired from CP16--H5262A via port 1 on 3/26/04 10:23:46am by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.45R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.093 | | 0.0000 | 0.000 | 3256.5 | 0.103 | BB | 0.063 | 863.48 | 0.061 |
| 2 | 3.180 | | 0.0000 | 0.000 | 2131.3 | 0.067 | BB | 0.035 | 1014.63 | 0.071 |
| 3 | 3.257 | | 0.0000 | 0.000 | 1014.2 | 0.032 | BB | 0.037 | 459.21 | 0.032 |
| 4 | 3.305 | | 0.0000 | 0.000 | 1395.9 | 0.044 | BB | 0.034 | 692.69 | 0.049 |
| 5 | 3.388 | | 0.0000 | 0.000 | 1631.4 | 0.052 | BB | 0.029 | 953.28 | 0.067 |
| 6 | 3.449 | | 0.0000 | 0.000 | 365.0 | 0.012 | BB | 0.030 | 200.96 | 0.014 |
| 7 | 3.540 | | 0.0000 | 0.000 | 16358.0 | 0.517 | BB | 0.039 | 6966.39 | 0.489 |
| 8 | 3.627 | | 0.0000 | 0.000 | 1031.6 | 0.033 | BB | 0.032 | 537.45 | 0.038 |
| 9 | 3.702 | | 0.0000 | 0.000 | 1112.2 | 0.035 | BB | 0.030 | 613.24 | 0.043 |
| 10 | 3.865 | | 0.0000 | 0.000 | 455.7 | 0.014 | BB | 0.049 | 155.97 | 0.011 |
| 11 | 3.987 | | 0.0000 | 0.000 | 8100.7 | 0.256 | BB | 0.052 | 2578.74 | 0.181 |
| 12 | 4.063 | | 0.0000 | 0.000 | 2075.4 | 0.066 | BB | 0.026 | 1322.17 | 0.093 |
| 13 | 4.176 | | 0.0000 | 0.000 | 3544.5 | 0.112 | BB | 0.045 | 1310.63 | 0.092 |
| 14 | 4.311 | TCX | 301.7101 | 6.453 | 258346.2 | 8.170 | BB | 0.035 | 124465.30 | 8.743 |
| 15 | 4.395 | | 0.0000 | 0.000 | 2887.9 | 0.091 | BB | 0.029 | 1652.12 | 0.116 |
| 16 | 4.499 | | 0.0000 | 0.000 | 668.5 | 0.021 | BB | 0.035 | 319.05 | 0.022 |
| 17 | 4.647 | | 0.0000 | 0.000 | 2469.7 | 0.078 | BB | 0.034 | 1204.10 | 0.085 |
| 18 | 4.715 | | 0.0000 | 0.000 | 966.4 | 0.031 | BB | 0.028 | 577.42 | 0.041 |
| 19 | 4.783 | | 0.0000 | 0.000 | 6758.4 | 0.214 | BB | 0.042 | 2659.61 | 0.187 |
| 20 | 4.902 | Heb | 3.2236 | 0.069 | 6338.1 | 0.200 | BB | 0.047 | 2263.74 | 0.159 |
| 21 | 5.038 | | 0.0000 | 0.000 | 1485.1 | 0.047 | BB | 0.057 | 434.80 | 0.031 |
| 22 | 5.156 | alpha-BHC | 98.7988 | 2.113 | 100681.7 | 3.184 | BB | 0.033 | 50778.11 | 3.567 |
| 23 | 5.273 | | 0.0000 | 0.000 | 3703.9 | 0.117 | BB | 0.029 | 2162.70 | 0.152 |
| 24 | 5.381 | | 0.0000 | 0.000 | 1726.1 | 0.055 | BB | 0.029 | 975.89 | 0.069 |
| 25 | 5.438 | | 0.0000 | 0.000 | 1114.7 | 0.035 | BB | 0.055 | 335.47 | 0.024 |
| 26 | 5.625 | gamma-BHC | 98.1327 | 2.099 | 96147.4 | 3.041 | BB | 0.032 | 50360.32 | 3.537 |
| 27 | 5.756 | beta-BHC | 95.9318 | 2.052 | 49559.3 | 1.567 | BB | 0.030 | 27174.27 | 1.909 |
| 28 | 5.810 | | 0.0000 | 0.000 | 3197.9 | 0.101 | BB | 0.021 | 2510.51 | 0.176 |
| 29 | 6.013 | delta-BHC | 101.8697 | 2.179 | 97624.5 | 3.087 | BB | 0.033 | 49607.93 | 3.485 |
| 30 | 6.311 | Heptachlor | 98.9861 | 2.117 | 112010.5 | 3.542 | BB | 0.035 | 53706.76 | 3.773 |
| 31 | 6.457 | | 0.0000 | 0.000 | 479.0 | 0.015 | BB | 0.026 | 302.43 | 0.021 |
| 32 | 6.512 | | 0.0000 | 0.000 | 1285.6 | 0.041 | BB | 0.026 | 834.23 | 0.059 |
| 33 | 6.557 | | 0.0000 | 0.000 | 1808.6 | 0.057 | BB | 0.036 | 848.25 | 0.060 |
| 34 | 6.645 | | 0.0000 | 0.000 | 510.7 | 0.016 | BB | 0.043 | 196.17 | 0.014 |
| 35 | 6.737 | Aldrin | 98.7092 | 2.111 | 84885.0 | 2.684 | BB | 0.034 | 41375.19 | 2.906 |
| 36 | 6.954 | | 0.0000 | 0.000 | 1863.0 | 0.059 | BB | 0.073 | 423.88 | 0.030 |
| 37 | 7.124 | | 0.0000 | 0.000 | 4651.0 | 0.147 | BB | 0.045 | 1731.82 | 0.122 |
| 38 | 7.216 | | 0.0000 | 0.000 | 652.7 | 0.021 | BB | 0.034 | 316.55 | 0.022 |
| 39 | 7.286 | | 0.0000 | 0.000 | 797.4 | 0.025 | BB | 0.044 | 304.08 | 0.021 |
| 40 | 7.371 | | 0.0000 | 0.000 | 617.5 | 0.020 | BB | 0.040 | 258.56 | 0.018 |
| 41 | 7.456 | | 0.0000 | 0.000 | 239.5 | 0.008 | BB | 0.027 | 147.03 | 0.010 |
| 42 | 7.577 | Hept. epoxide | 105.9957 | 2.267 | 98959.9 | 3.129 | BV | 0.036 | 45396.51 | 3.189 |
| 43 | 7.742 | g. Chlordane | 102.5089 | 2.192 | 96120.0 | 3.040 | VB | 0.038 | 42204.38 | 2.965 |
| 44 | 7.920 | a. Chlordane | 95.6720 | 2.046 | 89054.0 | 2.816 | BV | 0.035 | 41984.49 | 2.949 |
| 45 | 8.008 | 4,4'-DDE | 197.0923 | 4.215 | 141476.9 | 4.474 | VV | 0.034 | 69248.66 | 4.864 |
| 46 | 8.112 | Endosulfan I | 100.7930 | 2.156 | 87360.5 | 2.763 | VV | 0.037 | 39631.52 | 2.784 |
| 47 | 8.239 | o,p-DDD | 5.1667 | 0.111 | 2763.2 | 0.087 | VV | 0.040 | 1145.47 | 0.080 |
| 48 | 8.292 | | 0.0000 | 0.000 | 4438.3 | 0.140 | VV | 0.074 | 996.83 | 0.070 |
| 49 | 8.429 | Dieldrin | 195.9088 | 4.190 | 150746.9 | 4.767 | VV | 0.035 | 71350.47 | 5.012 |
| 50 | 8.576 | o,p-DDT | 2.0865 | 0.045 | 2130.3 | 0.067 | VV | 0.064 | 556.29 | 0.039 |
| 51 | 8.739 | Endrin | 195.6969 | 4.186 | 134309.6 | 4.247 | VV | 0.034 | 65437.20 | 4.597 |
| 52 | 8.798 | Kepone | 623.7415 | 13.341 | 111034.4 | 3.511 | VV | 0.038 | 48813.82 | 3.429 |
| 53 | 8.933 | | 0.0000 | 0.000 | 3882.7 | 0.123 | VV | 0.053 | 1211.04 | 0.085 |
| 54 | 9.037 | Endosulfan II | 210.7900 | 4.508 | 157272.3 | 4.974 | VV | 0.037 | 70394.71 | 4.945 |
| 55 | 9.162 | 4,4'-DDT | 187.7996 | 4.017 | 116817.5 | 3.694 | VB | 0.036 | 54080.93 | 3.799 |
| 56 | 9.395 | | 0.0000 | 0.000 | 1249.8 | 0.040 | BV | 0.033 | 629.01 | 0.044 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.440 | | 0.0000 | 0.000 | 458.0 | 0.014 | VB | 0.029 | 263.88 | 0.019 |
| 58 | 9.475 | | 0.0000 | 0.000 | 574.3 | 0.018 | BB | 0.028 | 336.73 | 0.024 |
| 59 | 9.586 | Endrin aldehyde | 165.0593 | 3.530 | 114201.8 | 3.611 | BB | 0.042 | 45281.10 | 3.181 |
| 60 | 9.774 | Methoxychlor | 875.4890 | 18.725 | 338826.6 | 10.715 | BB | 0.039 | 143519.70 | 10.081 |
| 61 | 10.156 | Endo. sulfate | 213.6129 | 4.569 | 141659.0 | 4.480 | BB | 0.037 | 62961.01 | 4.423 |
| 62 | 10.355 | | 0.0000 | 0.000 | 16663.2 | 0.527 | BB | 0.073 | 3829.68 | 0.269 |
| 63 | 10.525 | Endrin ketone | 209.9431 | 4.490 | 152820.5 | 4.833 | BB | 0.037 | 68433.03 | 4.807 |
| 64 | 10.692 | | 0.0000 | 0.000 | 956.9 | 0.030 | BB | 0.066 | 240.79 | 0.017 |
| 65 | 10.804 | | 0.0000 | 0.000 | 382.1 | 0.012 | BB | 0.051 | 123.88 | 0.009 |
| 66 | 10.920 | | 0.0000 | 0.000 | 15323.0 | 0.485 | BB | 0.043 | 5916.80 | 0.416 |
| 67 | 11.079 | | 0.0000 | 0.000 | 860.3 | 0.027 | BB | 0.041 | 350.59 | 0.025 |
| 68 | 11.180 | | 0.0000 | 0.000 | 1180.8 | 0.037 | BB | 0.068 | 290.09 | 0.020 |
| 69 | 11.376 | | 0.0000 | 0.000 | 790.5 | 0.025 | BB | 0.078 | 168.85 | 0.012 |
| 70 | 11.579 | | 0.0000 | 0.000 | 1113.9 | 0.035 | BB | 0.064 | 289.66 | 0.020 |
| 71 | 11.757 | | 0.0000 | 0.000 | 941.7 | 0.030 | BB | 0.043 | 364.24 | 0.026 |
| 72 | 11.880 | DCB | 290.7351 | 6.218 | 257185.2 | 8.133 | BB | 0.045 | 95917.69 | 6.738 |
| 73 | 11.982 | | 0.0000 | 0.000 | 1718.3 | 0.054 | BB | 0.027 | 1044.95 | 0.073 |
| 74 | 12.223 | | 0.0000 | 0.000 | 4684.7 | 0.148 | BB | 0.080 | 975.99 | 0.069 |
| 75 | 12.553 | | 0.0000 | 0.000 | 9286.8 | 0.294 | BB | 0.201 | 770.95 | 0.054 |
| 76 | 12.660 | | 0.0000 | 0.000 | 3563.3 | 0.113 | BB | 0.053 | 1116.58 | 0.078 |
| 77 | 12.743 | | 0.0000 | 0.000 | 1271.5 | 0.040 | BB | 0.043 | 487.64 | 0.034 |
| 78 | 12.879 | | 0.0000 | 0.000 | 5064.5 | 0.160 | BB | 0.094 | 899.82 | 0.063 |
| 79 | 13.084 | | 0.0000 | 0.000 | 6167.3 | 0.195 | BB | 0.122 | 841.02 | 0.059 |
| 80 | 13.309 | | 0.0000 | 0.000 | 258.5 | 0.008 | BB | 0.038 | 113.27 | 0.008 |
| 81 | 13.530 | | 0.0000 | 0.000 | 2666.6 | 0.084 | BB | 0.107 | 416.46 | 0.029 |

Total Area = 3162184.0, Total Amount = 4675.453, Total Height = 1423631.0, Sample Units = PPB

Sample Name: **LCSA 3/25/04F ABLCSNW LCS 040850020A 08899**
Acquired from CP16--H5262B via port 2 on 3/26/04 10:23:46am by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.45R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.467 | | 0.0000 | 0.000 | 7624.5 | 0.202 | BB | 0.035 | 3628.87 | 0.213 |
| 2 | 3.537 | | 0.0000 | 0.000 | 1236.7 | 0.033 | BB | 0.023 | 890.71 | 0.052 |
| 3 | 3.613 | | 0.0000 | 0.000 | 3492.9 | 0.092 | BB | 0.042 | 1398.87 | 0.082 |
| 4 | 3.774 | | 0.0000 | 0.000 | 6302.8 | 0.167 | BB | 0.044 | 2366.44 | 0.139 |
| 5 | 3.902 | | 0.0000 | 0.000 | 4064.9 | 0.107 | BB | 0.034 | 2019.28 | 0.118 |
| 6 | 4.036 | TCX | 291.4439 | 7.203 | 366369.9 | 9.687 | BB | 0.037 | 163524.40 | 9.577 |
| 7 | 4.170 | | 0.0000 | 0.000 | 219.0 | 0.006 | BB | 0.018 | 201.14 | 0.012 |
| 8 | 4.223 | | 0.0000 | 0.000 | 859.7 | 0.023 | BB | 0.032 | 450.40 | 0.026 |
| 9 | 4.252 | | 0.0000 | 0.000 | 2632.9 | 0.070 | BB | 0.047 | 940.37 | 0.055 |
| 10 | 4.360 | | 0.0000 | 0.000 | 1131.3 | 0.030 | BB | 0.025 | 760.57 | 0.045 |
| 11 | 4.439 | | 0.0000 | 0.000 | 1362.5 | 0.036 | BB | 0.051 | 444.37 | 0.026 |
| 12 | 4.578 | | 0.0000 | 0.000 | 3449.0 | 0.091 | BB | 0.027 | 2138.11 | 0.125 |
| 13 | 4.636 | | 0.0000 | 0.000 | 6750.8 | 0.178 | BB | 0.032 | 3489.84 | 0.204 |
| 14 | 4.765 | Hcb | 8.3432 | 0.206 | 18240.6 | 0.482 | BB | 0.034 | 8933.02 | 0.523 |
| 15 | 4.935 | alpha-BHC | 96.2944 | 2.380 | 157115.3 | 4.154 | BB | 0.032 | 82620.88 | 4.839 |
| 16 | 5.214 | | 0.0000 | 0.000 | 2134.7 | 0.056 | BB | 0.127 | 281.14 | 0.016 |
| 17 | 5.450 | gamma-BHC | 95.6396 | 2.364 | 145631.2 | 3.851 | BB | 0.032 | 76030.72 | 4.453 |
| 18 | 5.580 | beta-BHC | 99.5439 | 2.460 | 81536.0 | 2.156 | BB | 0.034 | 39699.42 | 2.325 |
| 19 | 5.721 | | 0.0000 | 0.000 | 805.1 | 0.021 | BB | 0.024 | 558.04 | 0.033 |
| 20 | 5.762 | | 0.0000 | 0.000 | 662.9 | 0.018 | BB | 0.025 | 443.87 | 0.026 |
| 21 | 5.929 | | 0.0000 | 0.000 | 1850.6 | 0.049 | BB | 0.074 | 418.01 | 0.024 |
| 22 | 5.991 | delta-BHC | 98.0650 | 2.424 | 135399.9 | 3.580 | BV | 0.031 | 73071.82 | 4.279 |
| 23 | 6.065 | Heptachlor | 95.4333 | 2.358 | 156430.4 | 4.136 | VV | 0.034 | 75661.88 | 4.431 |
| 24 | 6.207 | | 0.0000 | 0.000 | 2484.8 | 0.066 | VB | 0.068 | 608.69 | 0.036 |
| 25 | 6.368 | | 0.0000 | 0.000 | 1236.4 | 0.033 | BV | 0.039 | 534.91 | 0.031 |
| 26 | 6.510 | Aldrin | 98.0419 | 2.423 | 122139.8 | 3.229 | VB | 0.033 | 62422.41 | 3.656 |
| 27 | 6.620 | | 0.0000 | 0.000 | 14682.6 | 0.388 | BB | 0.050 | 4902.17 | 0.287 |
| 28 | 6.820 | | 0.0000 | 0.000 | 2103.3 | 0.056 | BB | 0.067 | 525.04 | 0.031 |
| 29 | 6.937 | | 0.0000 | 0.000 | 1445.1 | 0.038 | BB | 0.045 | 536.97 | 0.031 |
| 30 | 7.057 | | 0.0000 | 0.000 | 4289.3 | 0.113 | BB | 0.064 | 1110.93 | 0.065 |
| 31 | 7.199 | | 0.0000 | 0.000 | 763.2 | 0.020 | BB | 0.051 | 250.64 | 0.015 |
| 32 | 7.286 | Hept. epoxide | 98.7013 | 2.439 | 124734.8 | 3.298 | BV | 0.035 | 58656.39 | 3.435 |
| 33 | 7.537 | g. Chlordane | 91.9192 | 2.272 | 116213.4 | 3.073 | VV | 0.036 | 53278.18 | 3.120 |
| 34 | 7.729 | a. Chlordane | 94.0458 | 2.324 | 107436.7 | 2.841 | VV | 0.034 | 52127.63 | 3.053 |
| 35 | 7.804 | Endosulfan I | 93.9202 | 2.321 | 107321.6 | 2.838 | VV | 0.036 | 49536.07 | 2.901 |
| 36 | 7.953 | 4,4'-DDE | 181.9762 | 4.497 | 187979.4 | 4.970 | VV | 0.037 | 84788.51 | 4.966 |
| 37 | 8.164 | Dieldrin | 186.5698 | 4.611 | 191439.2 | 5.062 | VV | 0.036 | 89867.50 | 5.263 |
| 38 | 8.397 | | 0.0000 | 0.000 | 1727.5 | 0.046 | VB | 0.042 | 691.49 | 0.040 |
| 39 | 8.499 | | 0.0000 | 0.000 | 214.1 | 0.006 | BB | 0.036 | 97.78 | 0.006 |
| 40 | 8.561 | Endrin | 187.4132 | 4.632 | 162268.8 | 4.290 | BV | 0.035 | 77366.20 | 4.531 |
| 41 | 8.702 | 4,4'-DDD | 160.3504 | 3.963 | 117409.4 | 3.104 | VV | 0.037 | 52348.38 | 3.066 |
| 42 | 8.838 | Endosulfan II | 202.9819 | 5.016 | 178071.7 | 4.708 | VV | 0.038 | 78623.66 | 4.605 |
| 43 | 9.041 | | 0.0000 | 0.000 | 2053.6 | 0.054 | VV | 0.043 | 796.73 | 0.047 |
| 44 | 9.104 | 4,4'-DDT | 180.0156 | 4.449 | 129632.4 | 3.427 | VB | 0.037 | 58664.48 | 3.436 |
| 45 | 9.271 | Endrin aldehyde | 159.0615 | 3.931 | 115015.2 | 3.041 | BB | 0.039 | 48778.02 | 2.857 |
| 46 | 9.429 | | 0.0000 | 0.000 | 11809.8 | 0.312 | BB | 0.044 | 4480.34 | 0.262 |
| 47 | 9.624 | Endo. sulfate | 212.2438 | 5.245 | 162162.2 | 4.288 | BB | 0.039 | 68537.77 | 4.014 |
| 48 | 9.919 | | 0.0000 | 0.000 | 4663.1 | 0.123 | BB | 0.035 | 2222.05 | 0.130 |
| 49 | 9.983 | Methoxychlor | 855.4724 | 21.142 | 340687.2 | 9.008 | BB | 0.041 | 138622.20 | 8.118 |
| 50 | 10.146 | | 0.0000 | 0.000 | 891.8 | 0.024 | BB | 0.024 | 615.32 | 0.036 |
| 51 | 10.199 | | 0.0000 | 0.000 | 1187.5 | 0.031 | BB | 0.029 | 673.22 | 0.039 |
| 52 | 10.317 | Endrin ketone | 193.1807 | 4.774 | 155420.4 | 4.109 | BB | 0.037 | 69812.98 | 4.089 |
| 53 | 10.419 | | 0.0000 | 0.000 | 9093.6 | 0.240 | BB | 0.032 | 4761.43 | 0.279 |
| 54 | 10.700 | | 0.0000 | 0.000 | 599.8 | 0.016 | BB | 0.043 | 233.14 | 0.014 |
| 55 | 10.926 | | 0.0000 | 0.000 | 434.1 | 0.011 | BB | 0.059 | 122.60 | 0.007 |
| 56 | 11.007 | | 0.0000 | 0.000 | 242.5 | 0.006 | BB | 0.052 | 77.34 | 0.005 |

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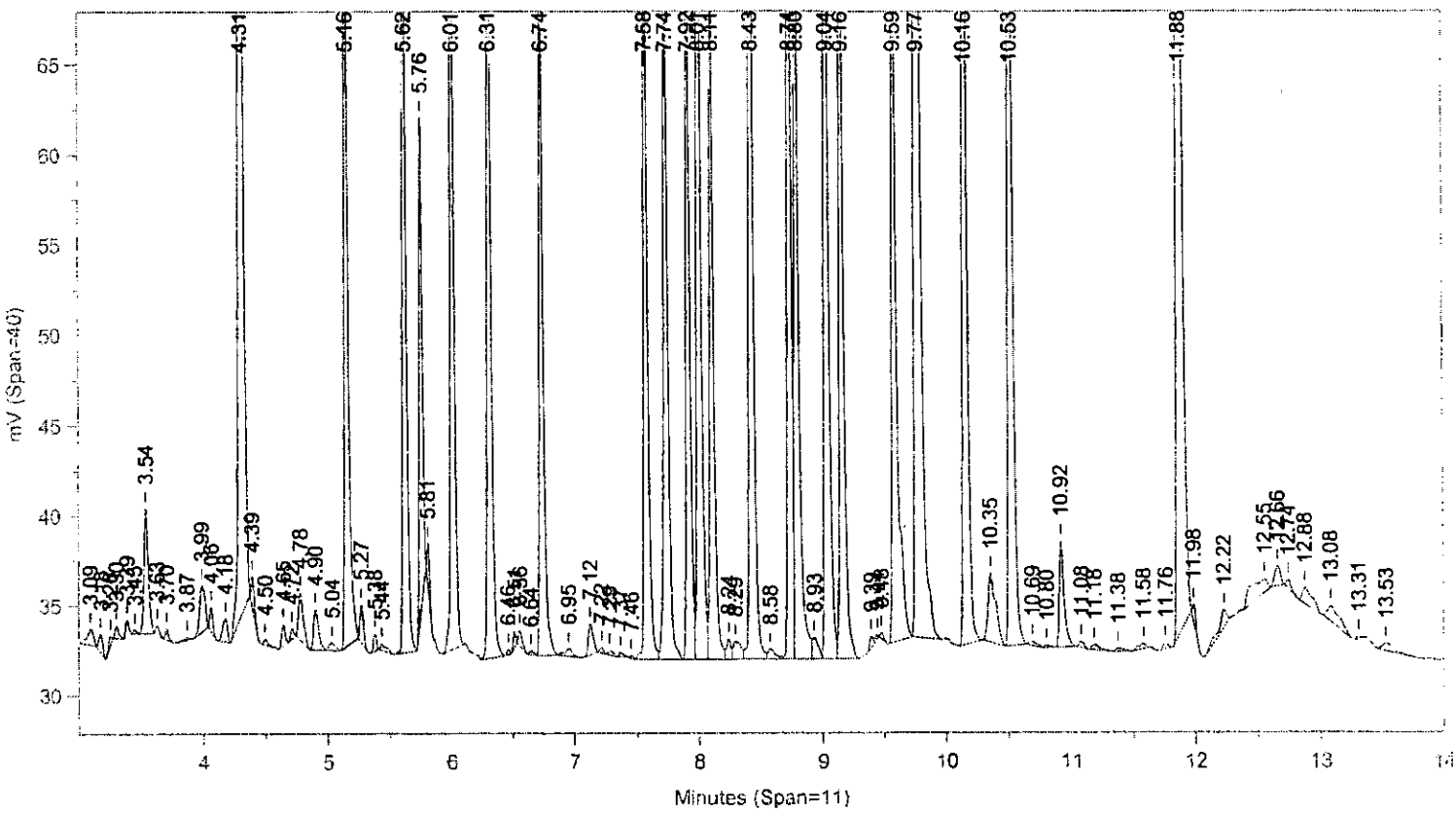
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 11.151 | | 0.0000 | 0.000 | 456.5 | 0.012 | BB | 0.050 | 151.14 | 0.009 |
| 58 | 11.515 | | 0.0000 | 0.000 | 3024.6 | 0.080 | BB | 0.033 | 1515.35 | 0.089 |
| 59 | 11.600 | | 0.0000 | 0.000 | 1101.5 | 0.029 | BB | 0.048 | 383.59 | 0.022 |
| 60 | 11.691 | | 0.0000 | 0.000 | 358.2 | 0.009 | BB | 0.042 | 143.62 | 0.008 |
| 61 | 11.880 | | 0.0000 | 0.000 | 9917.5 | 0.262 | BB | 0.145 | 1137.71 | 0.067 |
| 62 | 12.027 | DCB | 265.7502 | 6.568 | 272528.8 | 7.206 | BB | 0.047 | 95738.16 | 5.607 |
| 63 | 12.233 | | 0.0000 | 0.000 | 5165.8 | 0.137 | BB | 0.101 | 855.46 | 0.050 |
| 64 | 12.412 | | 0.0000 | 0.000 | 4791.7 | 0.127 | BB | 0.136 | 585.91 | 0.034 |
| 65 | 12.674 | | 0.0000 | 0.000 | 1632.4 | 0.043 | BB | 0.078 | 348.48 | 0.020 |

Total Area = 3782135.0, Total Amount = 4046.407, Total Height = 1707503.0, Sample Units = PPB

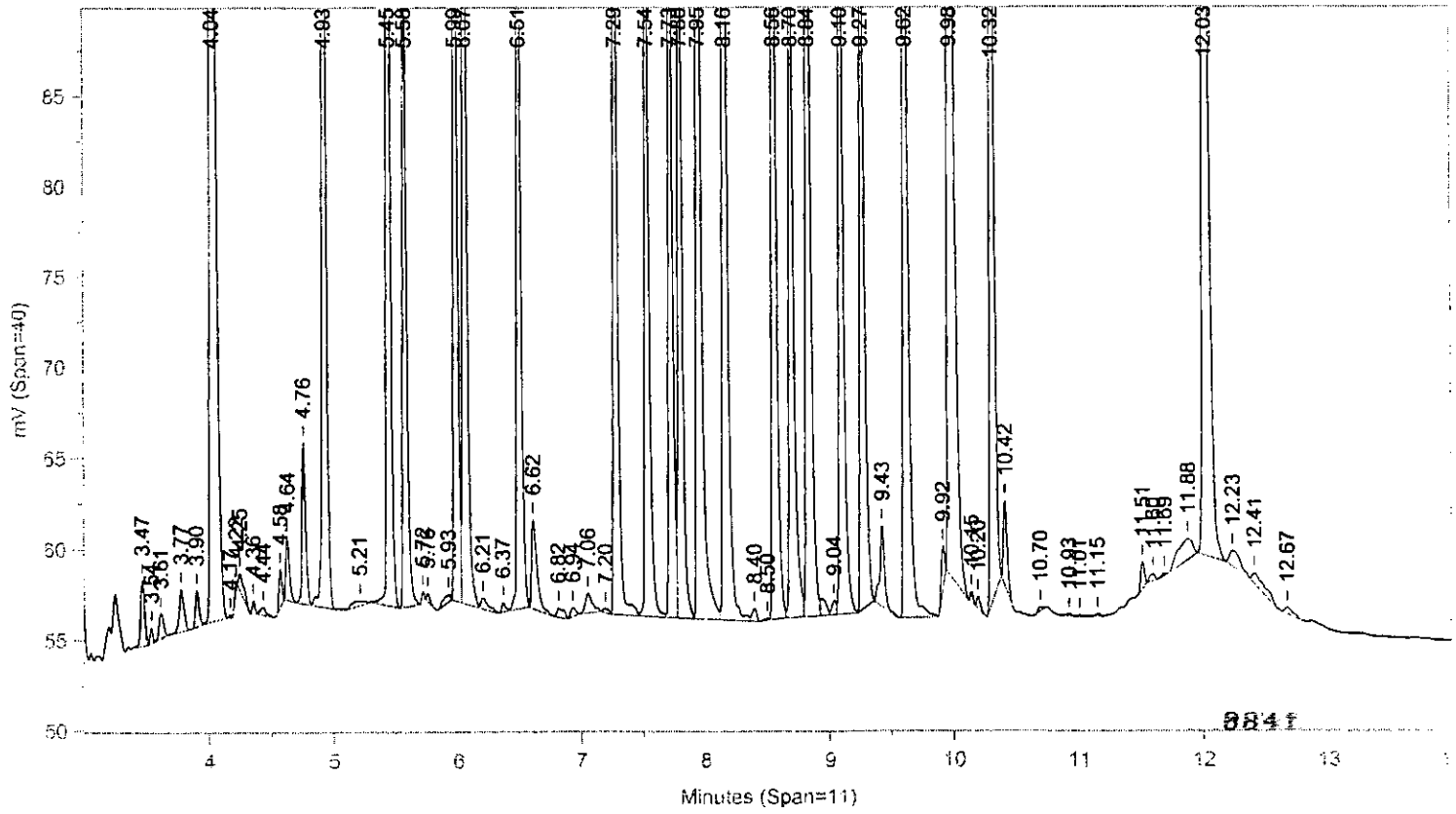
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.45R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 10:09:46 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.45R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 10:09:46 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6

Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 30
Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.311 | 124465 | 10.057 | TCX | 4.036 | 163524 | 9.715 | TCX |
| 4.902 | 2264 | .107 | Hcb | 4.765 | 8933 | .278 | Hcb |
| 5.156 | 50778 | 3.293 | alpha-BHC | 4.935 | 82621 | 3.21 | alpha-BHC |
| 5.625 | 50360 | 3.271 | gamma-BHC | 5.45 | 76031 | 3.188 | gamma-BHC |
| 5.756 | 27174 | 3.198 | beta-BHC | 5.58 | 39699 | 3.318 | beta-BHC |
| 6.013 | 49608 | 3.396 | delta-BHC | 5.991 | 73072 | 3.269 | delta-BHC |
| 6.311 | 53707 | 3.3 | Heptachlor | 6.065 | 75662 | 3.181 | Heptachlor |
| 6.737 | 41375 | 3.29 | Aldrin | 6.51 | 62422 | 3.268 | Aldrin |
| 7.577 | 45397 | 3.533 | Hept. epoxide | 7.286 | 58656 | 3.29 | Hept. epoxide |
| 7.742 | 42204 | 3.417 | g. Chlordane | 7.537 | 53278 | 3.064 | g. Chlordane |
| 7.92 | 41984 | 3.189 | a. Chlordane | 7.729 | 52128 | 3.135 | a. Chlordane |
| 8.112 | 39632 | 3.36 | Endosulfan I | 7.804 | 49536 | 3.131 | Endosulfan I |
| 8.008 | 69249 | 6.57 | 4,4'-DDE | 7.953 | 84789 | 6.066 | 4,4'-DDE |
| 8.429 | 71350 | 6.53 | Dieldrin | 8.164 | 89868 | 6.219 | Dieldrin |
| 8.239 | 1145 | .172 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.739 | 65437 | 6.523 | Endrin | 8.561 | 77366 | 6.247 | Endrin |
| 8.576 | 556 | .07 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.702 | 52348 | 5.345 | 4,4'-DDD |
| 8.798 | 48814 | 20.791 | Kepone | . | 0 | . | Kepone |
| 9.037 | 70395 | 7.026 | Endosulfan II | 8.838 | 78624 | 6.766 | Endosulfan II |
| 9.162 | 54081 | 6.26 | 4,4'-DDT | 9.104 | 58664 | 6.001 | 4,4'-DDT |
| 9.586 | 45281 | 5.502 | Endrin aldehyde | 9.271 | 48778 | 5.302 | Endrin aldehyde |
| 10.156 | 62961 | 7.12 | Endo. sulfate | 9.624 | 68538 | 7.075 | Endo. sulfate |
| 9.774 | 143520 | 29.183 | Methoxychlor | 9.983 | 138622 | 28.516 | Methoxychlor |
| 10.525 | 68433 | 6.998 | Endrin ketone | 10.317 | 69813 | 6.439 | Endrin ketone |
| 11.88 | 95918 | 9.691 | DCB | 12.027 | 95738 | 8.858 | DCB |

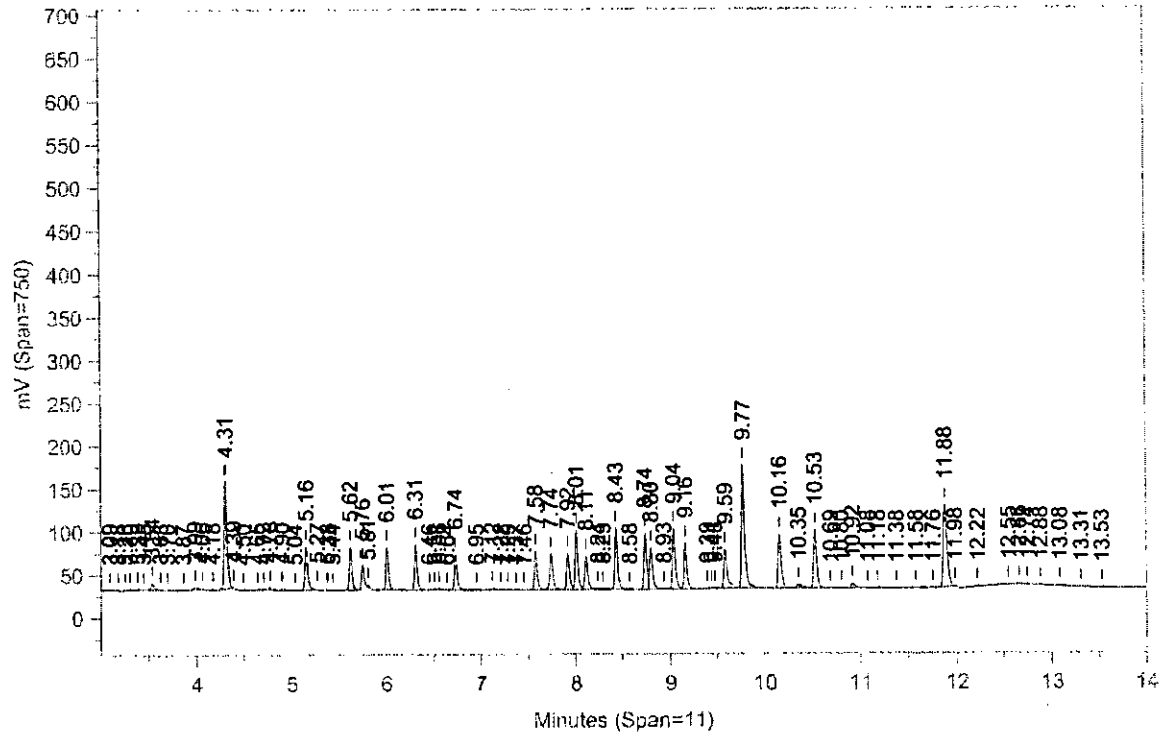
Files:
Area File: C:\CPWIN\DATA1\3D16082.45A
Area File: C:\CPWIN\DATA1\3D16082B.45A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:21:08 PM
File Reported On: 3/26/2004 at 3:21:15 PM

N.S.W. 1340
3/28/04

Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.45R

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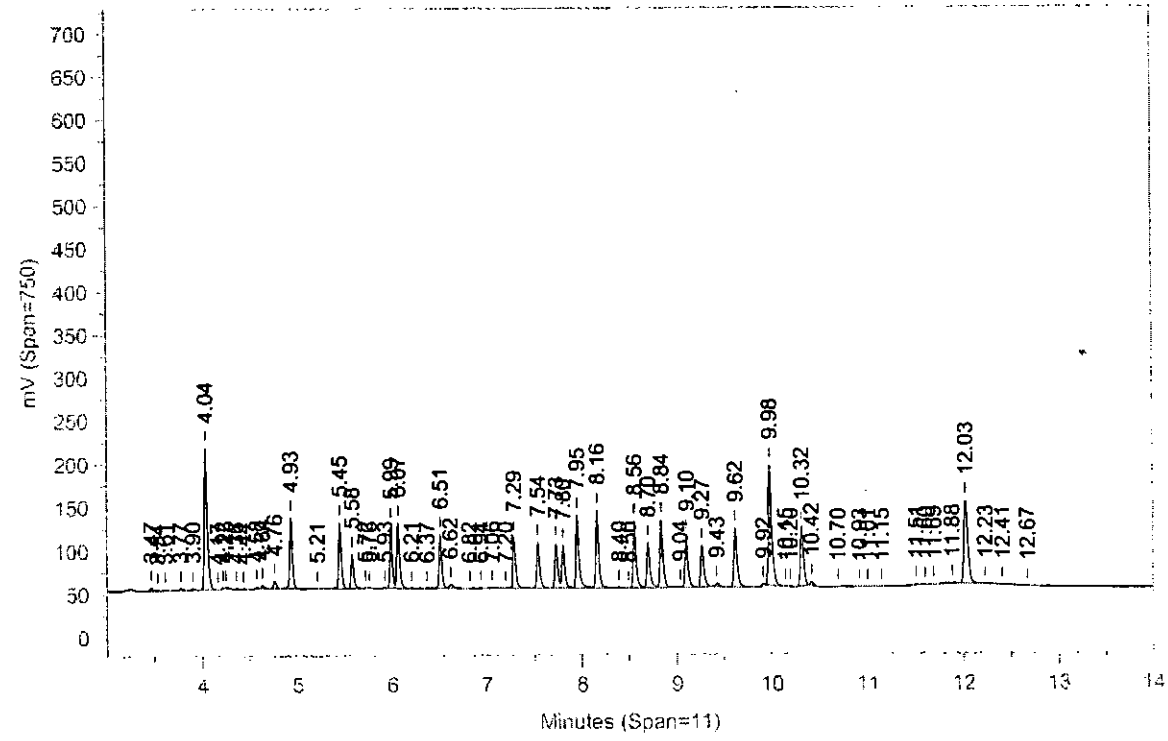


8843

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241632MSF 5GP20MS Sample ID: AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16--H5262A
Result file : 3D16082.50R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 97.6% Conc.: 9.392435
%SSR(DCB) : 100% Conc.: 9.742694

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.29 | 4.31 | 4.35 | 116241 | 9.392435 |
| Hcb | 4.88 | 4.90 | 4.94 | 1195 | 0.056714 |
| alpha-BHC | 5.14 | 5.16 | 5.20 | 52438 | 3.400953 |
| gamma-BHC | 5.60 | 5.63 | 5.66 | 50254 | 3.264206 |
| beta-BHC | 5.74 | 5.76 | 5.80 | 26301 | 3.094975 |
| delta-BHC | 5.99 | 6.02 | 6.05 | 49762 | 3.406182 |
| Heptachlor | 6.29 | 6.31 | 6.35 | 54951 | 3.376010 |
| Aldrin | 6.72 | 6.74 | 6.78 | 43098 | 3.427333 |
| Hept. epoxide | 7.56 | 7.58 | 7.62 | 45073 | 3.508016 |
| g. Chlordane | 7.72 | 7.74 | 7.78 | 41969 | 3.397924 |
| a. Chlordane | 7.90 | 7.92 | 7.96 | 41859 | 3.179554 |
| 4,4'-DDE | 7.99 | 8.01 | 8.05 | 71569 | 6.789917 |
| Endosulfan I | 8.09 | 8.11 | 8.15 | 39353 | 3.336195 |
| o,p-DDD | 8.22 | 8.24 | 8.28 | 1245 | 0.187137 |
| Dieldrin | 8.41 | 8.43 | 8.47 | 71925 | 6.582891 |
| Endrin | 8.72 | 8.74 | 8.78 | 68445 | 6.823111 |
| Kepone (4,4'-DDO | 8.77 | 8.80 | 8.83 | 51950 | 22.127172 (LOCK) |
| Endosulfan II | 9.02 | 9.04 | 9.08 | 73808 | 7.366983 |
| 4,4'-DDT | 9.14 | 9.16 | 9.20 | 57064 | 6.605283 |
| Endrin aldehyde | 9.57 | 9.59 | 9.63 | 45007 | 5.468699 |
| Methoxychlor | 9.75 | 9.78 | 9.81 | 150235 | 30.548384 |
| Endo. sulfate | 10.14 | 10.16 | 10.20 | 66234 | 7.490591 |
| Endrin ketone | 10.51 | 10.53 | 10.57 | 69575 | 7.114894 |
| DCB | 11.86 | 11.88 | 11.92 | 96428 | 9.742694 |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16--H5262B
Result file : 3D16082B.50R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 92.9% Conc.: 8.935396
%SSR(DCB) : 91.6% Conc.: 8.925162

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.01 | 4.04 | 4.07 | 150405 | 8.935396 |
| Hcb | 4.71 | 4.77 | 4.77 | 8648 | 0.269227 |
| alpha-BHC | 4.91 | 4.94 | 4.97 | 76846 | 2.985466 |
| gamma-BHC | 5.43 | 5.45 | 5.49 | 70418 | 2.952664 |
| beta-BHC | 5.56 | 5.58 | 5.62 | 38082 | 3.182906 |
| delta-BHC | 5.97 | 5.99 | 6.03 | 75816 | 3.391595 |
| Heptachlor | 6.04 | 6.07 | 6.10 | 78866 | 3.315843 |
| Aldrin | 6.49 | 6.51 | 6.55 | 63932 | 3.347084 |
| Telodrin | 6.72 | 6.74 | 6.78 | 610 | 0.034461 |
| Hept. epoxide | 7.27 | 7.29 | 7.33 | 58746 | 3.295044 |
| g. Chlordane | 7.52 | 7.54 | 7.58 | 54105 | 3.111497 |
| a. Chlordane | 7.71 | 7.73 | 7.77 | 50835 | 3.057099 |
| Endosulfan I | 7.79 | 7.81 | 7.85 | 48347 | 3.055497 |
| 4,4'-DDE | 7.93 | 7.96 | 7.99 | 85585 | 6.122875 |
| Dieldrin | 8.14 | 8.17 | 8.20 | 90112 | 6.235912 |
| Endrin | 8.54 | 8.56 | 8.60 | 79224 | 6.397105 |
| 4,4'-DDD | 8.68 | 8.70 | 8.74 | 61675 | 6.297255 |
| Endosulfan II | 8.82 | 8.84 | 8.88 | 83300 | 7.168504 |
| 4,4'-DDT | 9.08 | 9.11 | 9.14 | 66110 | 6.762095 |
| Endrin aldehyde | 9.25 | 9.27 | 9.31 | 50455 | 5.484308 |
| Endo. sulfate | 9.60 | 9.63 | 9.66 | 72511 | 7.484920 |
| Methoxychlor | 9.96 | 9.99 | 10.02 | 147575 | 30.357323 |
| Endrin ketone | 10.30 | 10.32 | 10.36 | 72245 | 6.663665 |
| DCB | 12.01 | 12.03 | 12.07 | 96460 | 8.925162 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.392435 | | | | 4.99 | |
| Hcb | B | 0.269227 | | | | ** 130.40 | |
| alpha-BHC | A | 3.400953 | 0.83 | 0.17 | | 13.01 | |
| gamma-BHC | A | 3.264206 | 0.83 | 0.17 | | 10.02 | |
| beta-BHC | B | 3.182906 | 0.83 | 0.17 | | 2.80 | |
| delta-BHC | A | 3.406182 | 0.83 | 0.17 | | 0.43 | |
| Heptachlor | A | 3.376010 | 0.83 | 0.17 | | 1.80 | |
| Aldrin | A | 3.427333 | 1.5 | 0.51 | | 2.37 | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | A | 3.508016 | 0.83 | 0.17 | | 6.26 | |
| g. Chlordane | A | 3.397924 | 0.9 | 0.3 | | 8.80 | |
| a. Chlordane | A | 3.179554 | 0.83 | 0.17 | | 3.93 | |
| 4,4'-DDE | A | 6.789917 | 1.7 | 0.33 | | 10.33 | |
| Endosulfan I | A | 3.336195 | 1.3 | 0.44 | | 8.78 | 8844 |
| o,p-DDD | | | | | | | |
| Dieldrin | A | 6.582891 | 1.7 | 0.33 | | 5.41 | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:17:12

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241632 MSF 5GP20MS Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

Analysis Report (A)

| | |
|---|---|
| Injected on | : MAR 26, 2004 11:52:23 |
| Instrument | : CP16–H5262A |
| Result file | : 3D16082.50R |
| Calibration file | : 2D16082.CAL |
| Method file | : PESTD.MET |

Analysis Report (B)

| | |
|---|---|
| Injected on | : MAR 26, 2004 11:52:23 |
| Instrument | : CP16–H5262B |
| Result file | : 3D16082B.50R |
| Calibration file | : 2D16082B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| o,p-DDT | | | | | | | |
| Endrin | A | 6.823111 | 1.7 | 0.5 | | 6.44 | |
| Kepone | | | | | | | |
| 4,4'-DDD | (A) | 6.2973 | <1.7 | <0.58 | | | |
| Endosulfan II | A | 7.366983 | 1.7 | 0.33 | | 2.73 | |
| 4,4'-DDT | B | 6.762095 | 1.7 | 0.33 | | 2.35 | |
| Endrin aldehyde | B | 5.484308 | 3 | 1 | | 0.29 | |
| Methoxychlor | A | 30.548384 | 12 | 4 | | 0.63 | |
| Mirex | | | | | | | |
| Endo. sulfate | A | 7.490591 | 1.7 | 0.33 | | 0.08 | |
| Endrin ketone | A | 7.114894 | 1.7 | 0.33 | | 6.55 | |
| DCB | A | 9.742694 | | | | 8.76 | |

Units: ug/kg X

Reviewed by: M.E.M. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

9845

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:17:12

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241632 MSF 5GP20MS MS Sample ID:AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 11:52:23 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.50R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 97.6% | Conc: | 9.392435 |
| %SSR(DCB) | 100.0% | Conc: | 9.742694 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 11:52:23 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.50R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 92.9% | Conc: | 8.935396 |
| %SSR(DCB) | 91.6% | Conc: | 8.925162 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: [illegible] Date: 3/28/04

Verified By: [signature] Date: 3/29/04

3846

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241632** MSF 5GP20MS Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16--H5262A
Result file : 3D16082.50R
Calibration file : 2D16082.CAL
Method file : PESTD.MET
%SSR(TCX) : 97.6% Conc.: 9.392435
%SSR(DCB) : 100% Conc.: 9.742694

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **136.62** | |
| 5.35 | 5.40 | 5.41 | 1611.457764 | 3.799826 | | | 2 |
| 6.01 | 6.02 | 6.07 | 49761.69531: | 139.76269 | | | 3 |
| 6.20 | 6.21 | 6.26 | 244.283447 | 0.649607 | | | 4 |
| 6.29 | 6.31 | 6.35 | 54951.49218! | 225.470324 | | | 5 |
| 6.87 | 6.89 | 6.93 | 741.097839 | 6.122792 | | | 6 |
| Height Summation | | | **107310.026551** | | | | |
| Amount Avg CF: | | | **75.161048** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 4.77 | 4.78 | 4.83 | 2931.957764 | 30.947411 | | | 2 |
| Height Summation | | | **2931.957764** | | | | |
| Amount Avg CF: | | | **30.947411** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **136.49** | |
| 5.35 | 5.40 | 5.41 | 1611.457764 | 8.33053 | | | 2 |
| E 6.01 | 6.02 | 6.07 | 49761.69531: | 303.573056 | | | 3 |
| 6.19 | 6.21 | 6.25 | 244.283447 | 1.384591 | | | 4 |
| E 6.28 | 6.31 | 6.34 | 54951.49218! | 485.930868 | | | 5 |
| 6.87 | 6.89 | 6.93 | 741.097839 | 12.933645 | | | 6 |
| Height Summation | | | **107310.026551** | | | | |
| Amount Avg CF: | | | **162.430538** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **137.62** | |
| 5.35 | 5.40 | 5.41 | 1611.457764 | 4.3394 | | | 2 |
| E 6.01 | 6.02 | 6.07 | 49761.69531: | 162.779507 | | | 3 |
| 6.19 | 6.21 | 6.25 | 244.283447 | 0.752916 | | | 4 |
| E 6.28 | 6.31 | 6.34 | 54951.49218! | 265.832147 | | | 5 |
| 6.87 | 6.89 | 6.93 | 741.097839 | 5.9127 | | | 6 |
| Height Summation | | | **107310.026551** | | | | |
| Amount Avg CF: | | | **87.923334** | Linear: | | | |
| **Aroclor-1248** | | | | | **2** | **134.62** | |
| 5.35 | 5.40 | 5.41 | 1611.457764 | 8.861711 | | | 1 |
| E 6.01 | 6.02 | 6.07 | 49761.69531: | 359.497871 | | | 2 |
| Height Summation | | | **51373.153077** | | | | |
| Amount Avg CF: | | | **184.179791** | Linear: | | | |
| **Aroclor-1254** | | | | | **2** | **131.63** | |
| 8.50 | 8.52 | 8.56 | 3873.487793 | 7.918911 | | | 4 |
| E 8.73 | 8.74 | 8.79 | 68445.42968! | 220.897169 | | | 5 |
| Height Summation | | | **72318.917481** | | | | |
| Amount Avg CF: | | | **114.40804** | Linear: | | | |
| **Aroclor-1260** | | | | | **5** | **91.43** | |
| 8.38 | 8.43 | 8.44 | 71925.13281: | 133.256433 | | | 1 |
| 8.73 | 8.74 | 8.79 | 68445.42968! | 104.190916 | | | 2 |
| 9.57 | 9.59 | 9.63 | 45007.21093! | 139.236546 | | | 4 |
| 9.96 | 9.99 | 10.02 | 953.919067 | 1.096156 | | | 5 |
| 11.14 | 11.18 | 11.20 | 350.294037 | 1.471993 | | | 6 |
| Height Summation | | | **186681.986543** | | | | |
| Amount Avg CF: | | | **75.850409** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16--H5262B
Result file : 3D16082B.50R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 92.9% Conc.: 8.935396
%SSR(DCB) : 91.6% Conc.: 8.925162

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **3** | **149.97** | |
| 4.72 | 4.77 | 4.78 | 8647.789063 | 24.555221 | | | 1 |
| 5.29 | 5.31 | 5.35 | 345.922821 | 0.697763 | | | 2 |
| 6.72 | 6.74 | 6.78 | 609.603516 | 1.726908 | | | 6 |
| Height Summation | | | **9603.315400** | | | | |
| Amount Avg CF: | | | **8.993297** | Linear: | | | |
| **Aroclor-1221** | | | | | **3** | **28.08** | |
| 4.44 | 4.44 | 4.50 | 4030.220215 | 17.818247 | | | 1 |
| 4.64 | 4.65 | 4.70 | 1551.368042 | 10.409072 | | | 2 |
| 4.72 | 4.77 | 4.78 | 8647.789063 | 17.978585 | | | 3 |
| Height Summation | | | **14229.377320** | | | | |
| Amount Avg CF: | | | **15.401968** | Linear: | | | |
| **Aroclor-1232** | | | | | **3** | **123.75** | |
| 4.72 | 4.77 | 4.78 | 8647.789063 | 22.35004 | | | 1 |
| 5.29 | 5.31 | 5.35 | 345.922821 | 1.521008 | | | 2 |
| 6.71 | 6.74 | 6.77 | 609.603516 | 3.816701 | | | 6 |
| Height Summation | | | **9603.315400** | | | | |
| Amount Avg CF: | | | **9.22925** | Linear: | | | |
| **Aroclor-1242** | | | | | **3** | **149.34** | |
| 4.72 | 4.77 | 4.78 | 8647.789063 | 26.455547 | | | 1 |
| 5.29 | 5.31 | 5.35 | 345.922821 | 0.788752 | | | 2 |
| 6.72 | 6.74 | 6.78 | 609.603516 | 1.901298 | | | 6 |
| Height Summation | | | **9603.315400** | | | | |
| Amount Avg CF: | | | **9.715199** | Linear: | | | |
| **Aroclor-1248** | | | | | **4** | **196.77** | |
| 5.29 | 5.31 | 5.35 | 345.922821 | 1.55443 | | | 1 |
| 6.71 | 6.74 | 6.77 | 609.603516 | 1.139244 | | | 3 |
| 7.21 | 7.23 | 7.27 | 708.312317 | 1.480201 | | | 4 |
| E 8.11 | 8.17 | 8.17 | 90111.98437! | 340.366324 | | | 6 |
| Height Summation | | | **91775.823029** | | | | |
| Amount Avg CF: | | | **86.13505** | Linear: | | | |
| **Aroclor-1254** | | | | | **4** | **72.46** | |
| 6.35 | 6.37 | 6.41 | 6874.496582 | 20.218632 | | | 1 |
| E 7.50 | 7.54 | 7.56 | 54104.52734! | 95.830105 | | | 2 |
| E 8.84 | 8.84 | 8.90 | 83300.13281: | 225.181748 | | | 5 |
| E 9.08 | 9.11 | 9.14 | 66110.08593! | 127.482907 | | | 6 |
| Height Summation | | | **210389.242677** | | | | |
| Amount Avg CF: | | | **117.178348** | Linear: | | | |
| **Aroclor-1260** | | | | | **5** | **93.50** | |
| 8.36 | 8.39 | 8.42 | 2877.631592 | 4.911296 | | | 1 |
| 8.83 | 8.84 | 8.89 | 83300.13281: | 183.249832 | | | 3 |
| 9.08 | 9.11 | 9.14 | 66110.08593! | 99.61484 | | | 4 |
| + 9.58 | 9.58 | 9.64 | 359.275452 | 0.835245 | | | 5 |
| 9.58 | 9.63 | 9.64 | 72510.92187! | 168.573755 | | | 5 |
| 9.88 | 9.92 | 9.94 | 3691.750977 | 3.791598 | | | 6 |
| Height Summation | | | **228490.523195** | | | | |
| Amount Avg CF: | | | **92.028264** | Linear: | | | |

8847

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:17:55

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name:** **4241632** MSF 5GP20MS Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16–H5262A
Result file : 3D16082.50R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **5** | **104.98** | |
| 6.18 | 6.21 | 6.24 | 244.283447 | 0.474603 | | | 1 |
| E 6.29 | 6.31 | 6.35 | 54951.49218 | 80.861408 | | | 2 |
| 7.72 | 7.74 | 7.78 | 41969.21484 | 34.005545 | | | 4 |
| 7.89 | 7.92 | 7.95 | 41859.26171 | 29.012287 | | | 5 |
| 8.92 | 8.93 | 8.98 | 2905.37207 | 6.649071 | | | 6 |
| Height Summation | | | **141929.624268** | | | | |
| Amount Avg CF: | | | **30.200583** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **14.99** | |
| 8.75 | 8.80 | 8.81 | 51949.96875 | 465.176389 | | | 2 |
| 9.15 | 9.16 | 9.21 | 57063.98828 | 376.004772 | | | 3 |
| Height Summation | | | **109013.957031** | | | | |
| Amount Avg CF: | | | **420.590581** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 11:52:23
Instrument : CP16–H5262B
Result file : 3D16082B.50R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **6** | **125.90** | |
| 5.84 | 5.87 | 5.90 | 589.481995 | 0.803848 | | | 1 |
| E 6.05 | 6.07 | 6.11 | 78866.42187 | 78.207547 | | | 2 |
| 6.70 | 6.74 | 6.76 | 609.603516 | 0.756943 | | | 3 |
| 7.51 | 7.54 | 7.57 | 54104.52734 | 30.316502 | | | 4 |
| 7.64 | 7.67 | 7.70 | 1536.122437 | 1.199386 | | | 5 |
| 7.71 | 7.73 | 7.77 | 50834.59765 | 34.670599 | | | 6 |
| Height Summation | | | **186540.754823** | | | | |
| Amount Avg CF: | | | **24.325804** | Linear: | | | |
| **Toxaphene** | | | | | **6** | **120.71** | |
| 8.12 | 8.17 | 8.18 | 90111.98437 | 748.612504 | | | 1 |
| 8.79 | 8.84 | 8.85 | 83300.13281 | 705.132585 | | | 2 |
| 8.91 | 8.96 | 8.97 | 1135.617798 | 3.792903 | | | 3 |
| 9.25 | 9.27 | 9.31 | 50454.77343 | 232.669163 | | | 4 |
| 9.91 | 9.92 | 9.97 | 3691.750977 | 16.666445 | | | 5 |
| 10.41 | 10.42 | 10.47 | 3592.308594 | 29.705686 | | | 6 |
| Height Summation | | | **232286.567995** | | | | |
| Amount Avg CF: | | | **289.429881** | Linear: | | | |

8548

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:17:55

Sample Name: **4241632MSF AB5GP20MS MS 040850020A 08899**
Acquired from CP16--H5262A via port 1 on 3/26/04 12:06:23pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.50R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.038 | | 0.0000 | 0.000 | 364.3 | 0.010 | BB | 0.022 | 280.60 | 0.018 |
| 2 | 3.092 | | 0.0000 | 0.000 | 2012.3 | 0.057 | BB | 0.049 | 683.22 | 0.044 |
| 3 | 3.179 | | 0.0000 | 0.000 | 4397.7 | 0.124 | BB | 0.037 | 1982.97 | 0.127 |
| 4 | 3.255 | | 0.0000 | 0.000 | 3052.8 | 0.086 | BB | 0.034 | 1483.25 | 0.095 |
| 5 | 3.309 | | 0.0000 | 0.000 | 2279.7 | 0.064 | BB | 0.036 | 1043.92 | 0.067 |
| 6 | 3.391 | | 0.0000 | 0.000 | 1102.6 | 0.031 | BB | 0.024 | 769.24 | 0.049 |
| 7 | 3.445 | | 0.0000 | 0.000 | 656.4 | 0.019 | BB | 0.031 | 353.64 | 0.023 |
| 8 | 3.543 | | 0.0000 | 0.000 | 39738.8 | 1.121 | BB | 0.039 | 16962.86 | 1.084 |
| 9 | 3.625 | | 0.0000 | 0.000 | 1102.8 | 0.031 | BB | 0.026 | 699.52 | 0.045 |
| 10 | 3.706 | | 0.0000 | 0.000 | 1033.8 | 0.029 | BB | 0.042 | 414.71 | 0.027 |
| 11 | 3.822 | | 0.0000 | 0.000 | 474.9 | 0.013 | BB | 0.050 | 159.72 | 0.010 |
| 12 | 3.871 | | 0.0000 | 0.000 | 2032.3 | 0.057 | BB | 0.042 | 803.80 | 0.051 |
| 13 | 3.990 | | 0.0000 | 0.000 | 10855.6 | 0.306 | BB | 0.057 | 3197.99 | 0.204 |
| 14 | 4.066 | | 0.0000 | 0.000 | 10384.9 | 0.293 | BB | 0.026 | 6601.23 | 0.422 |
| 15 | 4.126 | | 0.0000 | 0.000 | 22943.9 | 0.647 | BB | 0.036 | 10577.31 | 0.676 |
| 16 | 4.194 | | 0.0000 | 0.000 | 3343.3 | 0.094 | BB | 0.031 | 1785.07 | 0.114 |
| 17 | 4.313 | TCX | 281.7730 | 5.882 | 232674.7 | 6.562 | BB | 0.033 | 116240.70 | 7.432 |
| 18 | 4.395 | | 0.0000 | 0.000 | 2676.3 | 0.075 | BB | 0.032 | 1398.93 | 0.089 |
| 19 | 4.514 | | 0.0000 | 0.000 | 1911.5 | 0.054 | BB | 0.054 | 592.47 | 0.038 |
| 20 | 4.653 | | 0.0000 | 0.000 | 3467.3 | 0.098 | BB | 0.031 | 1875.88 | 0.120 |
| 21 | 4.738 | | 0.0000 | 0.000 | 3584.9 | 0.101 | BB | 0.031 | 1945.65 | 0.124 |
| 22 | 4.782 | | 0.0000 | 0.000 | 5979.4 | 0.169 | BB | 0.034 | 2931.96 | 0.187 |
| 23 | 4.903 | Hcb | 1.7014 | 0.036 | 2036.1 | 0.057 | BB | 0.028 | 1194.81 | 0.076 |
| 24 | 4.963 | | 0.0000 | 0.000 | 111831.1 | 3.154 | BB | 0.037 | 49844.34 | 3.187 |
| 25 | 5.158 | alpha-BHC | 102.0286 | 2.130 | 109719.0 | 3.094 | BB | 0.035 | 52438.10 | 3.353 |
| 26 | 5.281 | | 0.0000 | 0.000 | 1505.0 | 0.042 | BB | 0.025 | 994.53 | 0.064 |
| 27 | 5.331 | | 0.0000 | 0.000 | 2762.1 | 0.078 | BB | 0.029 | 1610.05 | 0.103 |
| 28 | 5.396 | | 0.0000 | 0.000 | 4450.3 | 0.126 | BB | 0.046 | 1611.46 | 0.103 |
| 29 | 5.520 | | 0.0000 | 0.000 | 1189.4 | 0.034 | BB | 0.030 | 669.71 | 0.043 |
| 30 | 5.627 | gamma-BHC | 97.9262 | 2.044 | 95768.6 | 2.701 | BB | 0.032 | 50254.32 | 3.213 |
| 31 | 5.759 | beta-BHC | 92.8493 | 1.938 | 47766.9 | 1.347 | BB | 0.030 | 26301.09 | 1.682 |
| 32 | 5.812 | | 0.0000 | 0.000 | 3464.3 | 0.098 | BB | 0.021 | 2774.82 | 0.177 |
| 33 | 6.016 | delta-BHC | 102.1854 | 2.133 | 97801.5 | 2.758 | BB | 0.033 | 49761.70 | 3.181 |
| 34 | 6.209 | | 0.0000 | 0.000 | 366.8 | 0.010 | BB | 0.025 | 244.28 | 0.016 |
| 35 | 6.314 | Heptachlor | 101.2803 | 2.114 | 130946.4 | 3.693 | BB | 0.040 | 54951.49 | 3.513 |
| 36 | 6.517 | | 0.0000 | 0.000 | 36414.6 | 1.027 | BB | 0.062 | 9737.09 | 0.623 |
| 37 | 6.663 | | 0.0000 | 0.000 | 11658.8 | 0.329 | BB | 0.037 | 5192.88 | 0.332 |
| 38 | 6.741 | Aldrin | 102.8200 | 2.146 | 93717.0 | 2.643 | BB | 0.036 | 43098.29 | 2.755 |
| 39 | 6.887 | | 0.0000 | 0.000 | 1494.8 | 0.042 | BB | 0.034 | 741.10 | 0.047 |
| 40 | 6.969 | | 0.0000 | 0.000 | 1735.4 | 0.049 | BB | 0.038 | 753.52 | 0.048 |
| 41 | 7.126 | | 0.0000 | 0.000 | 12248.1 | 0.345 | BB | 0.048 | 4295.87 | 0.275 |
| 42 | 7.253 | | 0.0000 | 0.000 | 1979.2 | 0.056 | BB | 0.025 | 1322.56 | 0.085 |
| 43 | 7.290 | | 0.0000 | 0.000 | 3157.7 | 0.089 | BB | 0.025 | 2072.21 | 0.132 |
| 44 | 7.402 | | 0.0000 | 0.000 | 7349.3 | 0.207 | BB | 0.085 | 1445.49 | 0.092 |
| 45 | 7.515 | | 0.0000 | 0.000 | 306.5 | 0.009 | BB | 0.024 | 212.91 | 0.014 |
| 46 | 7.581 | Hepι epoxide | 105.2405 | 2.197 | 105306.1 | 2.970 | BV | 0.039 | 45073.07 | 2.882 |
| 47 | 7.745 | g. Chlordane | 101.9377 | 2.128 | 99798.8 | 2.815 | VB | 0.040 | 41969.21 | 2.683 |
| 48 | 7.923 | a. Chlordane | 95.3866 | 1.991 | 89603.5 | 2.527 | BV | 0.036 | 41859.26 | 2.676 |
| 49 | 8.012 | 4,4'-DDE | 203.6975 | 4.252 | 146059.6 | 4.119 | VV | 0.034 | 71569.42 | 4.576 |
| 50 | 8.115 | Endosulfan I | 100.0858 | 2.089 | 94360.5 | 2.661 | VV | 0.040 | 39353.45 | 2.516 |
| 51 | 8.239 | o,p-DDD | 5.6141 | 0.117 | 3148.3 | 0.089 | VV | 0.042 | 1244.67 | 0.080 |
| 52 | 8.292 | | 0.0000 | 0.000 | 8946.7 | 0.252 | VV | 0.072 | 2083.56 | 0.133 |
| 53 | 8.432 | Dieldrin | 197.4867 | 4.122 | 152390.5 | 4.298 | VV | 0.035 | 71925.13 | 4.598 |
| 54 | 8.524 | | 0.0000 | 0.000 | 14563.0 | 0.411 | VV | 0.063 | 3873.49 | 0.248 |
| 55 | 8.743 | Endrin | 204.6933 | 4.273 | 144798.7 | 4.084 | VV | 0.035 | 68445.43 | 4.376 |
| 56 | 8.801 | Kepone | 663.8152 | 13.856 | 134135.4 | 3.783 | VV | 0.043 | 51949.97 | 3.321 |

8649

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 8.930 | | 0.0000 | 0.000 | 8108.5 | 0.229 | VV | 0.047 | 2905.37 | 0.186 |
| 58 | 9.040 | Endosulfan II | 221.0095 | 4.613 | 162099.7 | 4.572 | VV | 0.037 | 73807.56 | 4.719 |
| 59 | 9.164 | 4,4'-DDT | 198.1585 | 4.136 | 131202.3 | 3.700 | VB | 0.038 | 57063.99 | 3.648 |
| 60 | 9.394 | | 0.0000 | 0.000 | 6890.1 | 0.194 | BB | 0.052 | 2198.24 | 0.141 |
| 61 | 9.478 | | 0.0000 | 0.000 | 686.7 | 0.019 | BB | 0.022 | 517.22 | 0.033 |
| 62 | 9.508 | | 0.0000 | 0.000 | 1423.8 | 0.040 | BB | 0.023 | 1025.22 | 0.066 |
| 63 | 9.590 | Endrin aldehyde | 164.0610 | 3.425 | 111707.4 | 3.151 | BB | 0.041 | 45007.21 | 2.877 |
| 64 | 9.776 | Methoxychlor | 916.4515 | 19.130 | 345033.1 | 9.731 | BB | 0.038 | 150234.70 | 9.605 |
| 65 | 9.987 | | 0.0000 | 0.000 | 2546.0 | 0.072 | BB | 0.044 | 953.92 | 0.061 |
| 66 | 10.082 | | 0.0000 | 0.000 | 151.3 | 0.004 | BB | 0.024 | 106.89 | 0.007 |
| 67 | 10.160 | Endo. sulfate | 224.7177 | 4.691 | 149110.3 | 4.205 | BB | 0.038 | 66234.07 | 4.235 |
| 68 | 10.357 | | 0.0000 | 0.000 | 22942.5 | 0.647 | BB | 0.073 | 5219.51 | 0.334 |
| 69 | 10.528 | Endrin ketone | 213.4468 | 4.455 | 152362.4 | 4.297 | BB | 0.036 | 69575.09 | 4.448 |
| 70 | 10.658 | | 0.0000 | 0.000 | 596.2 | 0.017 | BB | 0.024 | 411.88 | 0.026 |
| 71 | 10.749 | | 0.0000 | 0.000 | 1067.1 | 0.030 | BB | 0.027 | 649.16 | 0.042 |
| 72 | 10.842 | | 0.0000 | 0.000 | 462.3 | 0.013 | BB | 0.045 | 173.08 | 0.011 |
| 73 | 10.923 | | 0.0000 | 0.000 | 13111.2 | 0.370 | BB | 0.047 | 4676.04 | 0.299 |
| 74 | 11.065 | | 0.0000 | 0.000 | 3314.4 | 0.093 | BB | 0.055 | 995.59 | 0.064 |
| 75 | 11.179 | | 0.0000 | 0.000 | 803.6 | 0.023 | BB | 0.038 | 350.29 | 0.022 |
| 76 | 11.381 | | 0.0000 | 0.000 | 1669.4 | 0.047 | BB | 0.036 | 771.47 | 0.049 |
| 77 | 11.492 | | 0.0000 | 0.000 | 7882.8 | 0.222 | BB | 0.059 | 2219.08 | 0.142 |
| 78 | 11.756 | | 0.0000 | 0.000 | 1746.4 | 0.049 | BB | 0.047 | 615.32 | 0.039 |
| 79 | 11.884 | DCB | 292.2808 | 6.101 | 254564.5 | 7.180 | BB | 0.044 | 96427.65 | 6.165 |
| 80 | 12.230 | | 0.0000 | 0.000 | 7393.9 | 0.209 | BB | 0.107 | 1152.55 | 0.074 |
| 81 | 12.429 | | 0.0000 | 0.000 | 4350.7 | 0.123 | BB | 0.058 | 1243.52 | 0.080 |
| 82 | 12.552 | | 0.0000 | 0.000 | 1676.6 | 0.047 | BB | 0.051 | 545.40 | 0.035 |
| 83 | 12.666 | | 0.0000 | 0.000 | 4633.5 | 0.131 | BB | 0.050 | 1532.24 | 0.098 |
| 84 | 12.747 | | 0.0000 | 0.000 | 1675.9 | 0.047 | BB | 0.042 | 662.56 | 0.042 |
| 85 | 12.892 | | 0.0000 | 0.000 | 7667.4 | 0.216 | BB | 0.087 | 1472.62 | 0.094 |
| 86 | 13.088 | | 0.0000 | 0.000 | 6497.2 | 0.183 | BB | 0.120 | 899.19 | 0.057 |
| 87 | 13.317 | | 0.0000 | 0.000 | 1861.3 | 0.052 | BB | 0.082 | 377.45 | 0.024 |
| 88 | 13.541 | | 0.0000 | 0.000 | 1565.2 | 0.044 | BB | 0.059 | 444.68 | 0.028 |

Total Area = 3545655.0, Total Amount = 4790.647, Total Height = 1564123.0, Sample Units = PPB

Sample Name: **4241632MSF AB5GP20MS MS 040850020A 08899**
Acquired from CP16--H5262B via port 2 on 3/26/04 12:06:23pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.50R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.472 | | 0.0000 | 0.000 | 26899.5 | 0.636 | BB | 0.035 | 12651.92 | 0.677 |
| 2 | 3.615 | | 0.0000 | 0.000 | 1943.2 | 0.046 | BB | 0.029 | 1097.98 | 0.059 |
| 3 | 3.666 | | 0.0000 | 0.000 | 6516.3 | 0.154 | BB | 0.036 | 3017.00 | 0.161 |
| 4 | 3.778 | | 0.0000 | 0.000 | 9483.7 | 0.224 | BB | 0.040 | 3954.06 | 0.211 |
| 5 | 3.846 | | 0.0000 | 0.000 | 716.7 | 0.017 | BB | 0.024 | 492.07 | 0.026 |
| 6 | 3.904 | | 0.0000 | 0.000 | 4470.7 | 0.106 | BB | 0.037 | 1999.51 | 0.107 |
| 7 | 4.038 | TCX | 268.0619 | 6.436 | 335589.1 | 7.931 | BB | 0.037 | 150405.10 | 8.043 |
| 8 | 4.201 | | 0.0000 | 0.000 | 104752.5 | 2.476 | BB | 0.035 | 50480.28 | 2.700 |
| 9 | 4.277 | | 0.0000 | 0.000 | 17226.3 | 0.407 | BB | 0.032 | 8854.62 | 0.474 |
| 10 | 4.437 | | 0.0000 | 0.000 | 10426.5 | 0.246 | BB | 0.043 | 4030.22 | 0.216 |
| 11 | 4.587 | | 0.0000 | 0.000 | 5211.3 | 0.123 | BB | 0.037 | 2356.65 | 0.126 |
| 12 | 4.648 | | 0.0000 | 0.000 | 2755.5 | 0.065 | BB | 0.030 | 1551.37 | 0.083 |
| 13 | 4.767 | Hcb | 8.0768 | 0.194 | 16084.6 | 0.380 | BB | 0.031 | 8647.79 | 0.462 |
| 14 | 4.856 | | 0.0000 | 0.000 | 9748.9 | 0.230 | BB | 0.030 | 5357.29 | 0.286 |
| 15 | 4.937 | alpha-BHC | 89.5640 | 2.150 | 137763.5 | 3.256 | BB | 0.030 | 76846.13 | 4.109 |
| 16 | 5.049 | | 0.0000 | 0.000 | 10167.9 | 0.240 | BB | 0.029 | 5749.29 | 0.307 |
| 17 | 5.119 | | 0.0000 | 0.000 | 6916.2 | 0.163 | BB | 0.034 | 3374.93 | 0.180 |
| 18 | 5.310 | | 0.0000 | 0.000 | 471.4 | 0.011 | BB | 0.023 | 345.92 | 0.018 |
| 19 | 5.380 | | 0.0000 | 0.000 | 532.1 | 0.013 | BB | 0.032 | 276.54 | 0.015 |
| 20 | 5.453 | gamma-BHC | 88.5799 | 2.127 | 136968.0 | 3.237 | BB | 0.032 | 70418.48 | 3.766 |
| 21 | 5.582 | beta-BHC | 95.4872 | 2.293 | 75056.9 | 1.774 | BB | 0.033 | 38081.56 | 2.036 |
| 22 | 5.725 | | 0.0000 | 0.000 | 1170.5 | 0.028 | BB | 0.025 | 767.31 | 0.041 |
| 23 | 5.765 | | 0.0000 | 0.000 | 2715.3 | 0.064 | BB | 0.030 | 1524.99 | 0.082 |
| 24 | 5.871 | | 0.0000 | 0.000 | 998.6 | 0.024 | BB | 0.028 | 589.48 | 0.032 |
| 25 | 5.993 | delta-BHC | 101.7479 | 2.443 | 157841.3 | 3.730 | BV | 0.035 | 75816.07 | 4.054 |
| 26 | 6.068 | Heptachlor | 99.4753 | 2.388 | 180090.1 | 4.256 | VB | 0.038 | 78866.42 | 4.218 |
| 27 | 6.223 | | 0.0000 | 0.000 | 41238.0 | 0.975 | BV | 0.102 | 6748.35 | 0.361 |
| 28 | 6.293 | | 0.0000 | 0.000 | 14567.4 | 0.344 | VV | 0.045 | 5375.19 | 0.287 |
| 29 | 6.374 | | 0.0000 | 0.000 | 32660.0 | 0.772 | VV | 0.079 | 6874.50 | 0.368 |
| 30 | 6.512 | Aldrin | 100.4125 | 2.411 | 149954.5 | 3.544 | VV | 0.039 | 63931.77 | 3.419 |
| 31 | 6.626 | | 0.0000 | 0.000 | 28296.6 | 0.669 | VB | 0.050 | 9454.31 | 0.506 |
| 32 | 6.738 | Telodrin | 1.0338 | 0.025 | 905.6 | 0.021 | BB | 0.025 | 609.60 | 0.033 |
| 33 | 6.819 | | 0.0000 | 0.000 | 2767.5 | 0.065 | BB | 0.053 | 870.02 | 0.047 |
| 34 | 6.944 | | 0.0000 | 0.000 | 8813.1 | 0.208 | BB | 0.047 | 3148.76 | 0.168 |
| 35 | 7.058 | | 0.0000 | 0.000 | 3019.2 | 0.071 | BB | 0.040 | 1254.33 | 0.067 |
| 36 | 7.149 | | 0.0000 | 0.000 | 14964.7 | 0.354 | BB | 0.038 | 6577.62 | 0.352 |
| 37 | 7.230 | | 0.0000 | 0.000 | 880.5 | 0.021 | BB | 0.021 | 708.31 | 0.038 |
| 38 | 7.289 | Hept. epoxide | 98.8513 | 2.373 | 120242.5 | 2.842 | BB | 0.034 | 58745.55 | 3.142 |
| 39 | 7.434 | | 0.0000 | 0.000 | 13810.6 | 0.326 | BV | 0.049 | 4687.81 | 0.251 |
| 40 | 7.540 | g. Chlordane | 93.3449 | 2.241 | 125896.5 | 2.975 | VV | 0.039 | 54104.53 | 2.893 |
| 41 | 7.672 | | 0.0000 | 0.000 | 3863.1 | 0.091 | VV | 0.042 | 1536.12 | 0.082 |
| 42 | 7.732 | a. Chlordane | 91.7130 | 2.202 | 104995.0 | 2.482 | VV | 0.034 | 50834.60 | 2.718 |
| 43 | 7.807 | Endosulfan I | 91.6649 | 2.201 | 101841.2 | 2.407 | VV | 0.035 | 48346.55 | 2.585 |
| 44 | 7.905 | | 0.0000 | 0.000 | 980.0 | 0.023 | VV | 0.025 | 663.10 | 0.035 |
| 45 | 7.956 | 4,4'-DDE | 183.6862 | 4.410 | 188997.4 | 4.467 | VV | 0.037 | 85585.27 | 4.577 |
| 46 | 8.166 | Dieldrin | 187.0774 | 4.492 | 197071.0 | 4.658 | VV | 0.036 | 90111.98 | 4.819 |
| 47 | 8.319 | | 0.0000 | 0.000 | 592.7 | 0.014 | VV | 0.031 | 321.23 | 0.017 |
| 48 | 8.385 | | 0.0000 | 0.000 | 13267.9 | 0.314 | VB | 0.077 | 2877.63 | 0.154 |
| 49 | 8.564 | Endrin | 191.9131 | 4.608 | 174548.8 | 4.125 | BV | 0.037 | 79223.84 | 4.237 |
| 50 | 8.705 | 4,4'-DDD | 188.9176 | 4.536 | 136711.3 | 3.231 | VV | 0.037 | 61674.52 | 3.298 |
| 51 | 8.840 | Endosulfan II | 215.0551 | 5.163 | 188988.7 | 4.467 | VV | 0.038 | 83300.13 | 4.455 |
| 52 | 8.962 | | 0.0000 | 0.000 | 3933.9 | 0.093 | VV | 0.058 | 1135.62 | 0.061 |
| 53 | 9.028 | | 0.0000 | 0.000 | 2928.9 | 0.069 | VV | 0.032 | 1509.01 | 0.081 |
| 54 | 9.106 | 4,4'-DDT | 202.8629 | 4.871 | 155191.3 | 3.668 | VV | 0.039 | 66110.09 | 3.535 |
| 55 | 9.274 | Endrin aldehyde | 164.5293 | 3.950 | 120855.3 | 2.856 | VV | 0.040 | 50454.77 | 2.698 |
| 56 | 9.431 | | 0.0000 | 0.000 | 21974.0 | 0.519 | VB | 0.058 | 6354.20 | 0.340 |

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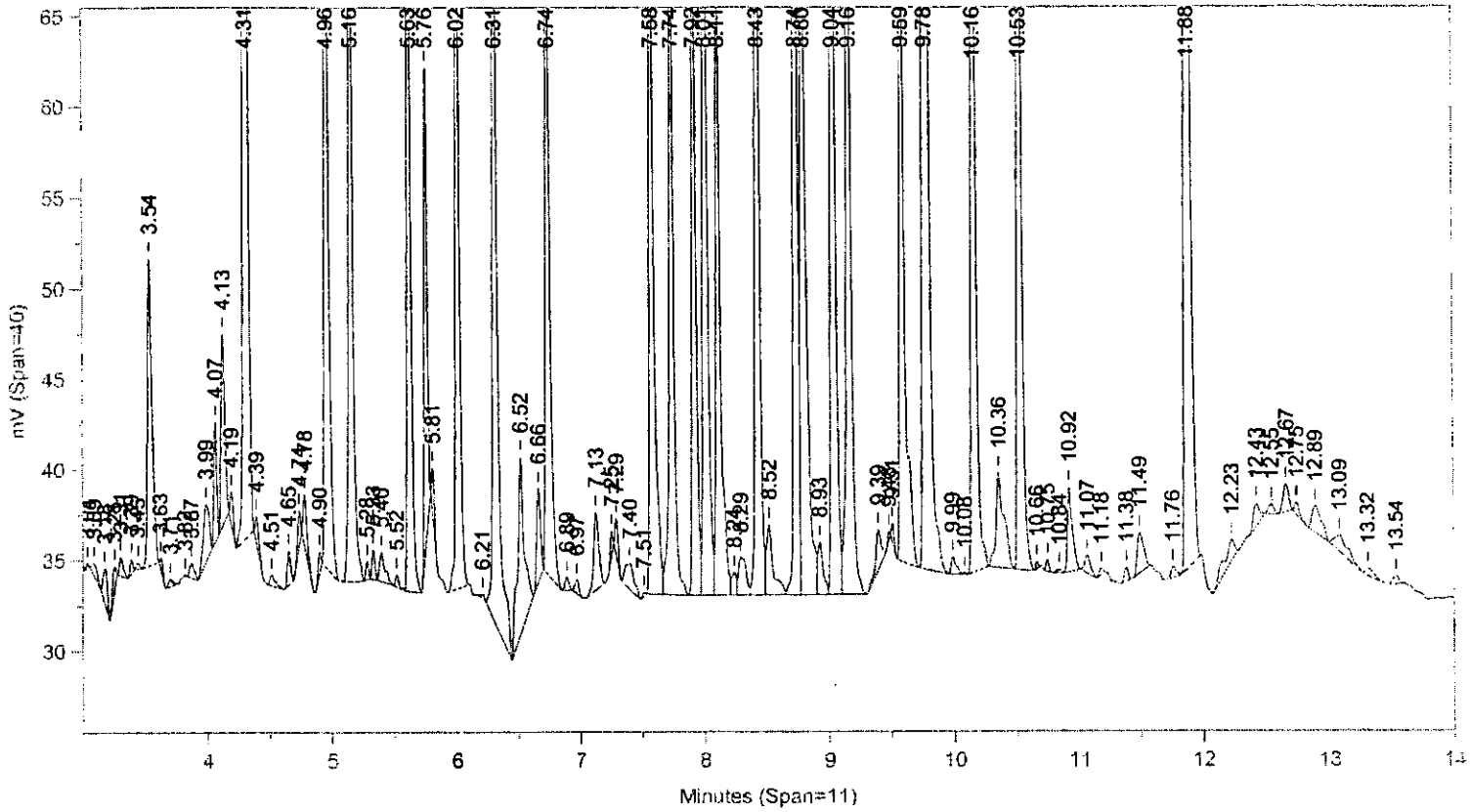
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.578 | | 0.0000 | 0.000 | 556.2 | 0.013 | BB | 0.026 | 359.28 | 0.019 |
| 58 | 9.626 | Endo. sulfate | 224.5476 | 5.391 | 158483.9 | 3.746 | BB | 0.036 | 72510.92 | 3.878 |
| 59 | 9.775 | | 0.0000 | 0.000 | 846.0 | 0.020 | BB | 0.029 | 489.12 | 0.026 |
| 60 | 9.862 | | 0.0000 | 0.000 | 629.7 | 0.015 | BB | 0.028 | 381.35 | 0.020 |
| 61 | 9.919 | | 0.0000 | 0.000 | 7568.2 | 0.179 | BB | 0.034 | 3691.75 | 0.197 |
| 62 | 9.985 | Methoxychlor | 910.7197 | 21.866 | 347867.7 | 8.222 | BB | 0.039 | 147574.60 | 7.892 |
| 63 | 10.149 | | 0.0000 | 0.000 | 631.0 | 0.015 | BB | 0.021 | 495.90 | 0.027 |
| 64 | 10.199 | | 0.0000 | 0.000 | 2528.5 | 0.060 | BB | 0.034 | 1235.94 | 0.066 |
| 65 | 10.320 | Endrin ketone | 199.9099 | 4.800 | 158181.8 | 3.739 | BB | 0.036 | 72244.84 | 3.863 |
| 66 | 10.420 | | 0.0000 | 0.000 | 6179.0 | 0.146 | BB | 0.029 | 3592.31 | 0.192 |
| 67 | 10.526 | | 0.0000 | 0.000 | 793.0 | 0.019 | BB | 0.052 | 255.06 | 0.014 |
| 68 | 10.618 | | 0.0000 | 0.000 | 742.8 | 0.018 | BB | 0.029 | 420.09 | 0.022 |
| 69 | 10.687 | | 0.0000 | 0.000 | 1398.6 | 0.033 | BB | 0.048 | 487.68 | 0.026 |
| 70 | 10.916 | | 0.0000 | 0.000 | 3705.8 | 0.088 | BB | 0.044 | 1398.59 | 0.075 |
| 71 | 10.990 | | 0.0000 | 0.000 | 1624.6 | 0.038 | BB | 0.040 | 677.77 | 0.036 |
| 72 | 11.091 | | 0.0000 | 0.000 | 2942.4 | 0.070 | BB | 0.066 | 743.11 | 0.040 |
| 73 | 11.278 | | 0.0000 | 0.000 | 117.9 | 0.003 | BB | 0.021 | 94.36 | 0.005 |
| 74 | 11.436 | | 0.0000 | 0.000 | 2049.3 | 0.048 | BB | 0.053 | 644.50 | 0.034 |
| 75 | 11.517 | | 0.0000 | 0.000 | 1377.5 | 0.033 | BB | 0.031 | 731.73 | 0.039 |
| 76 | 11.606 | | 0.0000 | 0.000 | 1232.0 | 0.029 | BB | 0.055 | 374.27 | 0.020 |
| 77 | 11.670 | | 0.0000 | 0.000 | 1050.5 | 0.025 | BB | 0.043 | 403.19 | 0.022 |
| 78 | 11.874 | | 0.0000 | 0.000 | 12575.7 | 0.297 | BB | 0.150 | 1395.23 | 0.075 |
| 79 | 12.030 | DCB | 267.7549 | 6.429 | 266092.7 | 6.289 | BB | 0.046 | 96460.35 | 5.158 |
| 80 | 12.239 | | 0.0000 | 0.000 | 6451.4 | 0.152 | BB | 0.107 | 1001.89 | 0.054 |
| 81 | 12.417 | | 0.0000 | 0.000 | 4958.4 | 0.117 | BB | 0.155 | 534.58 | 0.029 |
| 82 | 12.670 | | 0.0000 | 0.000 | 923.9 | 0.022 | BB | 0.044 | 347.04 | 0.019 |
| 83 | 12.749 | | 0.0000 | 0.000 | 564.7 | 0.013 | BB | 0.040 | 235.87 | 0.013 |
| 84 | 13.237 | | 0.0000 | 0.000 | 170.9 | 0.004 | BB | 0.044 | 65.38 | 0.003 |
| 85 | 13.353 | | 0.0000 | 0.000 | 1195.7 | 0.028 | BB | 0.060 | 333.84 | 0.018 |
| 86 | 13.807 | | 0.0000 | 0.000 | 393.6 | 0.009 | BB | 0.060 | 109.81 | 0.006 |

Total Area = 4231108.0, Total Amount = 4164.987, Total Height = 1869973.0, Sample Units = PPB

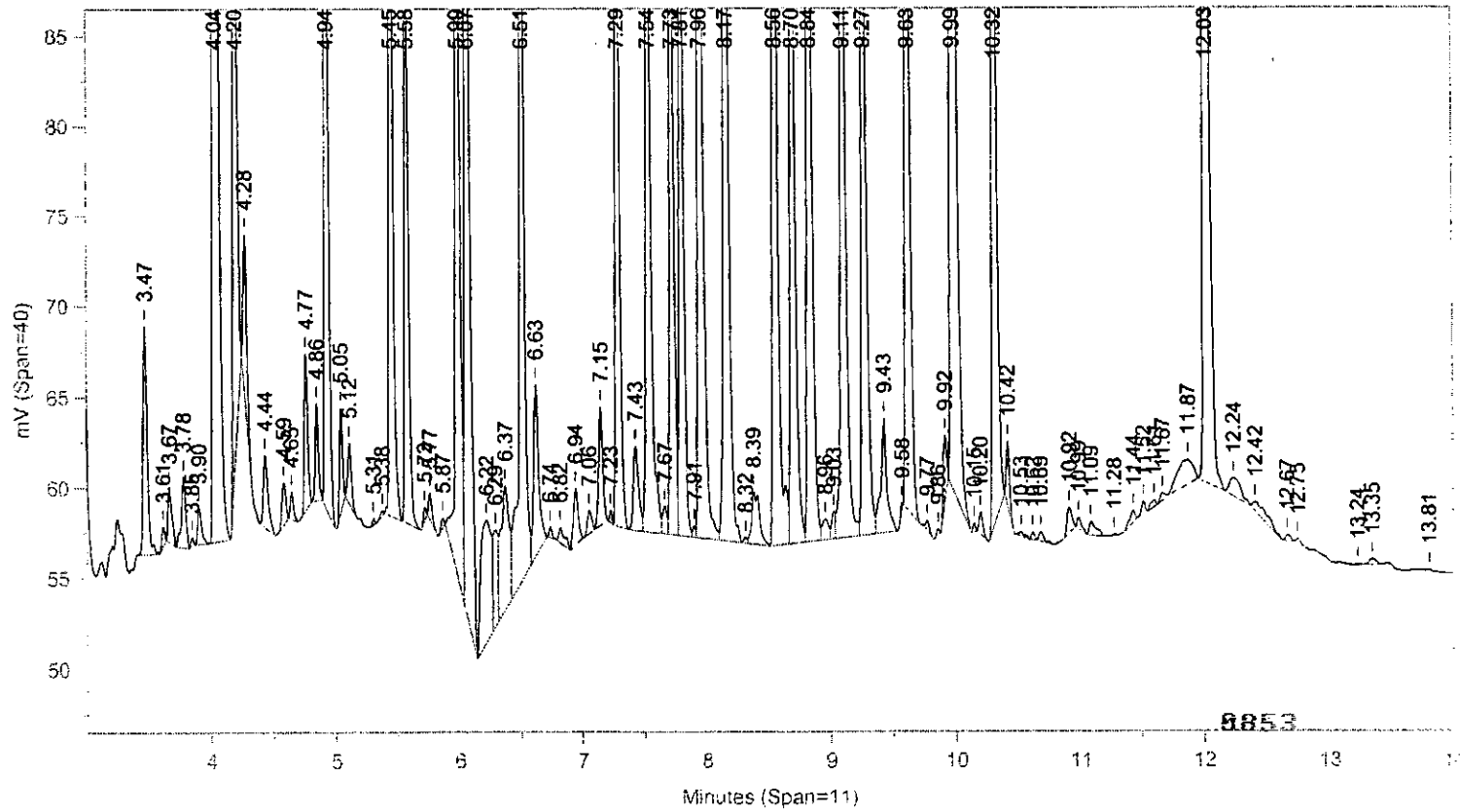
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.50R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 11:52:23 AM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.50R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 11:52:23 AM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6
Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02
Area Reject: 0
Calibration Type: External
Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04
Area Reject: 0
Calibration Type: External
Quantiation: Height

Sample Weight: 30
Dilution Factor: 10
Analyst: 120

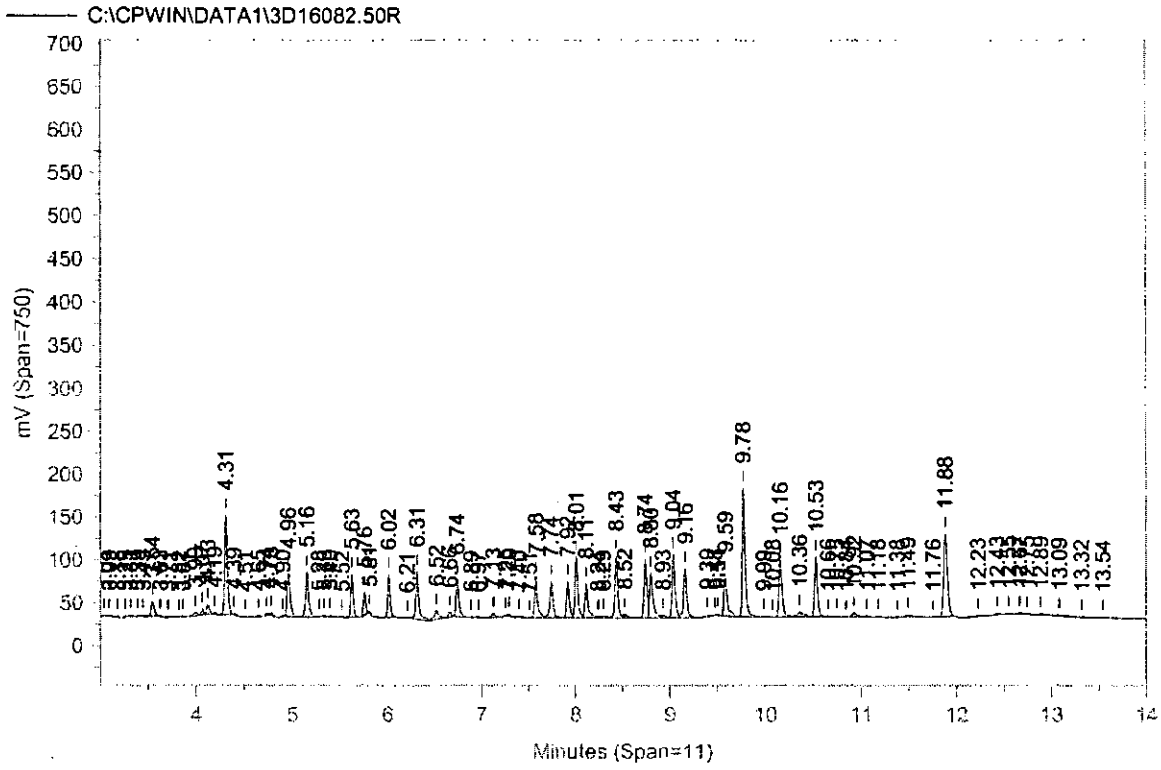
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.313 | 116241 | 9.392 | TCX | 4.038 | 150405 | 8.935 | TCX |
| 4.903 | 1195 | .057 | Hcb | 4.767 | 8648 | .269 | Hcb |
| 5.158 | 52438 | 3.401 | alpha-BHC | 4.937 | 76846 | 2.985 | alpha-BHC |
| 5.627 | 50254 | 3.264 | gamma-BHC | 5.453 | 70418 | 2.953 | gamma-BHC |
| 5.759 | 26301 | 3.095 | beta-BHC | 5.582 | 38082 | 3.183 | beta-BHC |
| 6.016 | 49762 | 3.406 | delta-BHC | 5.993 | 75816 | 3.392 | delta-BHC |
| 6.314 | 54951 | 3.376 | Heptachlor | 6.068 | 78866 | 3.316 | Heptachlor |
| 6.741 | 43098 | 3.427 | Aldrin | 6.512 | 63932 | 3.347 | Aldrin |
| . | 0 | . | Telodrin | 6.738 | 610 | .034 | Telodrin |
| 7.581 | 45073 | 3.508 | Hept. epoxide | 7.289 | 58746 | 3.295 | Hept. epoxide |
| 7.745 | 41969 | 3.398 | g. Chlordane | 7.54 | 54105 | 3.111 | g. Chlordane |
| 7.923 | 41859 | 3.18 | a. Chlordane | 7.732 | 50835 | 3.057 | a. Chlordane |
| 8.115 | 39353 | 3.336 | Endosulfan I | 7.807 | 48347 | 3.055 | Endosulfan I |
| 8.012 | 71569 | 6.79 | 4,4'-DDE | 7.956 | 85585 | 6.123 | 4,4'-DDE |
| 8.432 | 71925 | 6.583 | Dieldrin | 8.166 | 90112 | 6.236 | Dieldrin |
| 8.239 | 1245 | .187 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.743 | 68445 | 6.823 | Endrin | 8.564 | 79224 | 6.397 | Endrin |
| . | 0 | . | 4,4'-DDD | 8.705 | 61675 | 6.297 | 4,4'-DDD |
| 8.801 | 51950 | 22.127 | Kepone | . | 0 | . | Kepone |
| 9.04 | 73808 | 7.367 | Endosulfan II | 8.84 | 83300 | 7.169 | Endosulfan II |
| 9.164 | 57064 | 6.605 | 4,4'-DDT | 9.106 | 66110 | 6.762 | 4,4'-DDT |
| 9.59 | 45007 | 5.469 | Endrin aldehyde | 9.274 | 50455 | 5.484 | Endrin aldehyde |
| 10.16 | 66234 | 7.491 | Endo. sulfate | 9.626 | 72511 | 7.485 | Endo. sulfate |
| 9.776 | 150235 | 30.548 | Methoxychlor | 9.985 | 147575 | 30.357 | Methoxychlor |
| 10.528 | 69575 | 7.115 | Endrin ketone | 10.32 | 72245 | 6.664 | Endrin ketone |
| 11.884 | 96428 | 9.743 | DCB | 12.03 | 96460 | 8.925 | DCB |

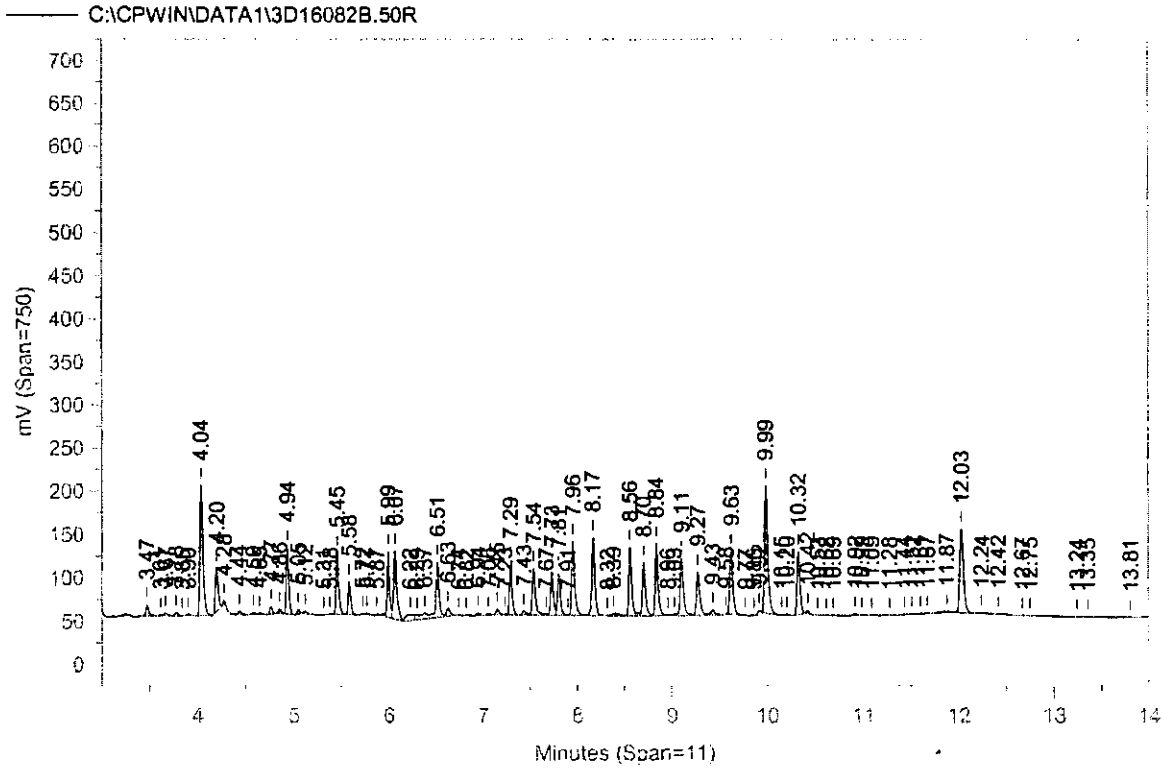
Files:
Area File: C:\CPWIN\DATA1\3D16082.50A
Area File: C:\CPWIN\DATA1\3D16082B.50A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:22:28 PM
File Reported On: 3/26/2004 at 3:22:35 PM

W.S.M. 1340
3/26/04

Files:

10x REPLOTS




8855

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4241633 MSDF 5GP20[illegible] Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

4/4/04

## Analysis Report (A)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16-H5262A
Result file : 3D16082.51R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 92.1% Conc.: 6.859809
%SSR(DCB) : 93.2% Conc.: 9.075339

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.29 | 4.31 | 4.35 | 109649 | 8.859809 |
| **Hcb** | 4.88 | 4.90 | 4.94 | 1241 | 0.058922 |
| **alpha-BHC** | 5.14 | 5.16 | 5.20 | 48689 | 3.157822 |
| **gamma-BHC** | 5.60 | 5.63 | 5.66 | 46237 | 3.003251 |
| **beta-BHC** | 5.74 | 5.76 | 5.80 | 24489 | 2.881686 |
| **delta-BHC** | 5.99 | 6.01 | 6.05 | 45641 | 3.124111 |
| **Heptachlor** | 6.29 | 6.31 | 6.35 | 50011 | 3.072503 |
| **Aldrin** | 6.72 | 6.74 | 6.78 | 38388 | 3.052725 |
| **Hept. epoxide** | 7.56 | 7.58 | 7.62 | 41781 | 3.251776 |
| **g. Chlordane** | 7.72 | 7.74 | 7.78 | 38981 | 3.155964 |
| **a. Chlordane** | 7.90 | 7.92 | 7.96 | 38998 | 2.962190 |
| **4,4'-DDE** | 7.99 | 8.01 | 8.05 | 66324 | 6.292270 |
| **Endosulfan I** | 8.09 | 8.11 | 8.15 | 36401 | 3.085930 |
| **o,p-DDD** | 8.22 | 8.24 | 8.28 | 1277 | 0.192006 |
| **Dieldrin** | 8.41 | 8.43 | 8.47 | 66261 | 6.064516 |
| **Endrin** | 8.72 | 8.74 | 8.78 | 62651 | 6.245448 |
| **Kepone** / 4,4'-DDD | 8.77 | 8.80 | 8.83 | 48402 | 20.615879 / 15.4681 |
| **Endosulfan II** | 9.02 | 9.04 | 9.08 | 66204 | 6.608013 |
| **4,4'-DDT** | 9.14 | 9.16 | 9.20 | 53305 | 6.170143 |
| **Endrin aldehyde** | 9.57 | 9.59 | 9.63 | 42228 | 5.131056 |
| **Methoxychlor** | 9.75 | 9.77 | 9.81 | 140807 | 28.631315 |
| **Endo. sulfate** | 10.14 | 10.16 | 10.20 | 59189 | 6.693830 |
| **Endrin ketone** | 10.51 | 10.53 | 10.57 | 63632 | 6.507186 |
| **DCB** | 11.86 | 11.88 | 11.92 | 89823 | 9.075339 |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16-H5262B
Result file : 3D16082B.51R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 88% Conc.: 8.462464
%SSR(DCB) : 87.2% Conc.: 8.494781

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.01 | 4.04 | 4.07 | 142444 | 8.462464 |
| **Hcb** | 4.71 | 4.77 | 4.77 | 8773 | 0.273117 |
| **alpha-BHC** | 4.91 | 4.94 | 4.97 | 73266 | 2.846375 |
| **gamma-BHC** | 5.43 | 5.45 | 5.49 | 67123 | 2.814469 |
| **beta-BHC** | 5.56 | 5.58 | 5.62 | 35480 | 2.965500 |
| **delta-BHC** | 5.97 | 5.99 | 6.03 | 67419 | 3.015941 |
| **Heptachlor** | 6.04 | 6.07 | 6.10 | 71359 | 3.000201 |
| **Aldrin** | 6.49 | 6.51 | 6.55 | 58169 | 3.045393 |
| **Telodrin** | 6.72 | 6.74 | 6.78 | 697 | 0.039413 |
| **Hept. epoxide** | 7.27 | 7.29 | 7.33 | 54106 | 3.034805 |
| **g. Chlordane** | 7.52 | 7.54 | 7.58 | 50948 | 2.929996 |
| **a. Chlordane** | 7.71 | 7.73 | 7.77 | 47018 | 2.827552 |
| **Endosulfan I** | 7.79 | 7.81 | 7.85 | 44881 | 2.836484 |
| **4,4'-DDE** | 7.93 | 7.96 | 7.99 | 79757 | 5.705918 |
| **Dieldrin** | 8.14 | 8.17 | 8.20 | 83334 | 5.766845 |
| **Endrin** | 8.54 | 8.56 | 8.60 | 72559 | 5.858958 |
| **o,p-DDT** | 8.58 | 8.64 | 8.64 | 886 | 0.096718 |
| **4,4'-DDD** | 8.68 | 8.70 | 8.74 | 55384 | 5.654984 |
| **Endosulfan II** | 8.82 | 8.84 | 8.88 | 75089 | 6.461870 |
| **4,4'-DDT** | 9.08 | 9.11 | 9.14 | 61900 | 6.331419 |
| **Endrin aldehyde** | 9.25 | 9.27 | 9.31 | 46970 | 5.105536 |
| **Endo. sulfate** | 9.60 | 9.63 | 9.66 | 64177 | 6.624635 |
| **Methoxychlor** | 9.96 | 9.98 | 10.02 | 138654 | 28.522247 |
| **Endrin ketone** | 10.30 | 10.32 | 10.36 | 66431 | 6.127437 |
| **DCB** | 12.01 | 12.03 | 12.07 | 91809 | 8.494781 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 8.859809 | | | | 4.59 | |
| Hcb | B | 0.273117 | | | | ** 129.02 | |
| alpha-BHC | A | 3.157822 | 0.83 | 0.17 | | 10.37 | |
| gamma-BHC | A | 3.003251 | 0.83 | 0.17 | | 6.49 | |
| beta-BHC | B | 2.965500 | 0.83 | 0.17 | | 2.87 | |
| delta-BHC | A | 3.124111 | 0.83 | 0.17 | | 3.52 | |
| Heptachlor | A | 3.072503 | 0.83 | 0.17 | | 2.38 | |
| Aldrin | A | 3.052725 | 1.5 | 0.51 | | 0.24 | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | A | 3.251776 | 0.83 | 0.17 | | 6.90 | |
| g. Chlordane | A | 3.155964 | 0.9 | 0.3 | | 7.43 | |
| a. Chlordane | A | 2.962190 | 0.83 | 0.17 | | 4.65 | |
| 4,4'-DDE | A | 6.292270 | 1.7 | 0.33 | | 9.77 | |
| Endosulfan I | A | 3.085930 | 1.3 | 0.44 | | 8.42 | 8856 |
| o,p-DDD | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:23:37

# Lancaster Laboratories Single Component Data Summary

**Sample Name:** **4241633** MSDF 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

**Analysis Report (A)**

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16-H5262A
Result file : 3D16082.51R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16-H5262B
Result file : 3D16082B.51R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dieldrin | A | 6.064516 | 1.7 | 0.33 | | 5.03 | |
| o,p-DDT | | | | | | | |
| Endrin | A | 6.245448 | 1.7 | 0.5 | | 6.39 | |
| Kepone | | | | | | | |
| 4,4'-DDD | (A) | 5.6681 | <1.7 | <0.58 | | | |
| Endosulfan II | A | 6.608013 | 1.7 | 0.33 | | 2.24 | |
| 4,4'-DDT | B | 6.331419 | 1.7 | 0.33 | | 2.58 | |
| Endrin aldehyde | A | 5.131056 | 3 | 1 | | 0.50 | |
| Methoxychlor | A | 28.631315 | 12 | 4 | | 0.38 | |
| Mirex | | | | | | | |
| Endo. sulfate | A | 6.693830 | 1.7 | 0.33 | | 1.04 | |
| Endrin ketone | A | 6.507186 | 1.7 | 0.33 | | 6.01 | |
| DCB | A | 9.075339 | | | | 6.61 | |

Units: ug/kg Y

Reviewed by: m.s.m. 1340 Date: 3/28/04
Verified by: [signature] Date: 3/29/04

0857

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/26/04 16:23:37

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241633 MSDF 5GP20 MSD Sample ID:AB **Batchnumber:** 040850020A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV03 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 12:12:52 |
| **Instrument** | H5262A |
| **Result file** | 3D16082.51R |
| **Calibration file** | 2D16082 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 92.1% | Conc: | 8.859809 |
| %SSR(DCB) | 93.2% | Conc: | 9.075339 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 26, 2004 12:12:52 |
| **Instrument** | H5262B |
| **Result file** | 3D16082B.51R |
| **Calibration file** | 2D16082B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 88.0% | Conc: | 8.462464 |
| %SSR(DCB) | 87.2% | Conc: | 8.494781 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 40 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg X

%Difference = High - Low divided by the Average times 100

Reviewed By: M. E M. 1340 Date: 3/25/04

Verified By: [signature] Date: 3/29/04

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# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name:** **4241633** MSDF 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16--H5262A
Result file : 3D16082.51R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

%SSR(TCX) : 92.1% Conc.: 8.859809

%SSR(DCB) : 93.2% Conc.: 9.075339

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **4** | **116.42** | |
| 5.35 | 5.39 | 5.41 | 1853.514526 | 4.370598 | | | 2 |
| 6.01 | 6.01 | 6.07 | 45640.85546! | 128.188735 | | | 3 |
| 6.29 | 6.31 | 6.35 | 50011.29687! | 205.200312 | | | 5 |
| 6.87 | 6.89 | 6.93 | 374.489136 | 3.093949 | | | 6 |
| Height Summation | | | **97880.156006** | | | | |
| Amount Avg CF: | | | **85.213399** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 4.77 | 4.78 | 4.83 | 3282.408203 | 34.646487 | | | 2 |
| Height Summation | | | **3282.408203** | | | | |
| Amount Avg CF: | | | **34.646487** | Linear: | | | |
| **Aroclor-1232** | | | | | **4** | **116.24** | |
| 5.35 | 5.39 | 5.41 | 1853.514526 | 9.581858 | | | 2 |
| E 6.01 | 6.01 | 6.07 | 45640.85546! | 278.433721 | | | 3 |
| E 6.28 | 6.31 | 6.34 | 50011.29687! | 442.245186 | | | 5 |
| 6.87 | 6.89 | 6.93 | 374.489136 | 6.535587 | | | 6 |
| Height Summation | | | **97880.156006** | | | | |
| Amount Avg CF: | | | **184.199088** | Linear: | | | |
| **Aroclor-1242** | | | | | **4** | **117.15** | |
| 5.35 | 5.39 | 5.41 | 1853.514526 | 4.99122 | | | 2 |
| E 6.01 | 6.01 | 6.07 | 45640.85546! | 149.299495 | | | 3 |
| E 6.28 | 6.31 | 6.34 | 50011.29687! | 241.933565 | | | 5 |
| 6.87 | 6.89 | 6.93 | 374.489136 | 2.987786 | | | 6 |
| Height Summation | | | **97880.156006** | | | | |
| Amount Avg CF: | | | **99.803017** | Linear: | | | |
| **Aroclor-1248** | | | | | **3** | **164.59** | |
| 5.35 | 5.39 | 5.41 | 1853.514526 | 10.192826 | | | 1 |
| E 6.01 | 6.01 | 6.07 | 45640.85546! | 329.727319 | | | 2 |
| 7.32 | 7.37 | 7.38 | 305.985565 | 1.182347 | | | 4 |
| Height Summation | | | **47800.355560** | | | | |
| Amount Avg CF: | | | **113.700831** | Linear: | | | |
| **Aroclor-1254** | | | | | **2** | **130.61** | |
| 8.50 | 8.52 | 8.56 | 3929.694824 | 8.03382 | | | 4 |
| E 8.73 | 8.74 | 8.79 | 62650.64843! | 202.195398 | | | 5 |
| Height Summation | | | **66580.343262** | | | | |
| Amount Avg CF: | | | **105.114609** | Linear: | | | |
| **Aroclor-1260** | | | | | **5** | **92.24** | |
| 8.38 | 8.43 | 8.44 | 66261.33593! | 122.763058 | | | 1 |
| 8.73 | 8.74 | 8.79 | 62650.64843! | 95.369822 | | | 2 |
| 9.57 | 9.59 | 9.63 | 42228.41796! | 130.639934 | | | 4 |
| 9.96 | 9.99 | 10.02 | 864.71167 | 0.993647 | | | 5 |
| 11.14 | 11.17 | 11.20 | 115.103828 | 0.483685 | | | 6 |
| Height Summation | | | **172120.217843** | | | | |
| Amount Avg CF: | | | **70.050029** | Linear: | | | |
| **Chlordane** | | | | | **5** | **103.61** | |
| E 6.29 | 6.31 | 6.35 | 50011.29687! | 73.591884 | | | 2 |
| 6.91 | 6.96 | 6.97 | 579.240967 | 0.885524 | | | 3 |
| 7.72 | 7.74 | 7.78 | 38980.65625 | 31.584066 | | | 4 |
| 7.89 | 7.92 | 7.95 | 38997.63671! | 27.02892 | | | 5 |
| 8.92 | 8.93 | 8.98 | 2565.804932 | 5.871957 | | | 6 |
| Height Summation | | | **131134.635743** | | | | |
| Amount Avg CF: | | | **27.79247** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16--H5262B
Result file : 3D16082B.51R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 88% Conc.: 8.462464

%SSR(DCB) : 87.2% Conc.: 8.494781

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **3** | **150.29** | |
| 4.72 | 4.77 | 4.78 | 8772.741211 | 24.91002 | | | 1 |
| 5.29 | 5.31 | 5.35 | 228.497025 | 0.460903 | | | 2 |
| 6.72 | 6.74 | 6.78 | 697.203247 | 1.975064 | | | 6 |
| Height Summation | | | **9698.441483** | | | | |
| Amount Avg CF: | | | **9.115329** | Linear: | | | |
| **Aroclor-1221** | | | | | **3** | **21.03** | |
| 4.44 | 4.44 | 4.50 | 2935.58667 | 12.978697 | | | 1 |
| 4.64 | 4.65 | 4.70 | 2952.102295 | 19.80745 | | | 2 |
| 4.72 | 4.77 | 4.78 | 8772.741211 | 18.238358 | | | 3 |
| Height Summation | | | **14660.430176** | | | | |
| Amount Avg CF: | | | **17.008168** | Linear: | | | |
| **Aroclor-1232** | | | | | **3** | **124.76** | |
| 4.72 | 4.77 | 4.78 | 8772.741211 | 22.672976 | | | 1 |
| 5.29 | 5.31 | 5.35 | 228.497025 | 1.004692 | | | 2 |
| 6.71 | 6.74 | 6.77 | 697.203247 | 4.365159 | | | 6 |
| Height Summation | | | **9698.441483** | | | | |
| Amount Avg CF: | | | **9.347609** | Linear: | | | |
| **Aroclor-1242** | | | | | **3** | **149.73** | |
| 4.72 | 4.77 | 4.78 | 8772.741211 | 26.837804 | | | 1 |
| 5.29 | 5.31 | 5.35 | 228.497025 | 0.521005 | | | 2 |
| 6.72 | 6.74 | 6.78 | 697.203247 | 2.174513 | | | 6 |
| Height Summation | | | **9698.441483** | | | | |
| Amount Avg CF: | | | **9.844441** | Linear: | | | |
| **Aroclor-1248** | | | | | **4** | **197.00** | |
| 5.29 | 5.31 | 5.35 | 228.497025 | 1.026768 | | | 1 |
| 6.71 | 6.74 | 6.77 | 697.203247 | 1.302952 | | | 3 |
| 7.21 | 7.23 | 7.27 | 600.533752 | 1.25497 | | | 4 |
| E 8.11 | 8.17 | 8.17 | 83333.73437! | 314.763869 | | | 6 |
| Height Summation | | | **84859.968399** | | | | |
| Amount Avg CF: | | | **79.58714** | Linear: | | | |
| **Aroclor-1254** | | | | | **4** | **92.12** | |
| 6.35 | 6.38 | 6.41 | 5909.875977 | 17.381579 | | | 1 |
| E 7.50 | 7.54 | 7.56 | 50948.48437! | 90.240112 | | | 2 |
| 8.39 | 8.42 | 8.45 | 3183.603516 | 8.942907 | | | 4 |
| E 9.08 | 9.11 | 9.14 | 61899.55078 | 119.363552 | | | 6 |
| Height Summation | | | **121941.514649** | | | | |
| Amount Avg CF: | | | **58.982038** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **110.10** | |
| 8.36 | 8.39 | 8.42 | 2542.923584 | 4.340045 | | | 1 |
| 8.62 | 8.64 | 8.68 | 886.193909 | 1.252127 | | | 2 |
| 8.83 | 8.84 | 8.89 | 75088.83593! | 165.18601 | | | 3 |
| 9.08 | 9.11 | 9.14 | 61899.55078 | 93.270395 | | | 4 |
| + 9.58 | 9.58 | 9.64 | 620.84967 | 1.443354 | | | 5 |
| 9.58 | 9.63 | 9.64 | 64176.82031! | 149.198594 | | | 5 |
| 9.88 | 9.92 | 9.94 | 3736.677002 | 3.837739 | | | 6 |
| Height Summation | | | **208331.001527** | | | | |
| Amount Avg CF: | | | **69.514152** | Linear: | | | |

8859

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:24:18

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** **4241633** MSDF 5GP20 Sample ID: AB **Batchnumber: 040850020A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV03 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16–H5262A
Result file : 3D16082.51R
Calibration file : 2D16082.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **2** | **14.81** | |
| 8.75 | 8.80 | 8.81 | 48401.76953 | 433.404695 | | | 2 |
| 9.15 | 9.16 | 9.21 | 53304.75 | 351.234482 | | | 3 |
| Height Summation | | | **101706.519531** | | | | |
| Amount Avg CF: | | | **392.319589** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 26, 2004 12:12:52
Instrument : CP16--H5262B
Result file : 3D16082B.51R
Calibration file : 2D16082B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Height | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **6** | **124.77** | |
| 5.84 | 5.87 | 5.90 | 390.720001 | 0.532806 | | | 1 |
| E 6.05 | 6.07 | 6.11 | 71358.96875 | 70.762814 | | | 2 |
| 6.70 | 6.74 | 6.76 | 697.203247 | 0.865716 | | | 3 |
| 7.51 | 7.54 | 7.57 | 50948.48437 | 28.54807 | | | 4 |
| 7.64 | 7.67 | 7.70 | 1286.058594 | 1.004139 | | | 5 |
| 7.71 | 7.73 | 7.77 | 47017.59765 | 32.0673 | | | 6 |
| Height Summation | | | **171699.032623** | | | | |
| Amount Avg CF: | | | **22.296808** | Linear: | | | |
| **Toxaphene** | | | | | **6** | **121.84** | |
| 8.12 | 8.17 | 8.18 | 83333.73437 | 692.301651 | | | 1 |
| 8.79 | 8.84 | 8.85 | 75088.83593 | 635.624257 | | | 2 |
| 8.91 | 8.96 | 8.97 | 780.555115 | 2.607012 | | | 3 |
| 9.25 | 9.27 | 9.31 | 46970.12890 | 216.599934 | | | 4 |
| 9.91 | 9.92 | 9.97 | 3736.677002 | 16.869264 | | | 5 |
| 10.41 | 10.42 | 10.47 | 1937.081665 | 16.018206 | | | 6 |
| Height Summation | | | **211847.013001** | | | | |
| Amount Avg CF: | | | **263.336721** | Linear: | | | |

8868

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/26/04 16:24:18

Sample Name: **4241633MSDF AB5GP20 MSD 040850020A 08899**
Acquired from CP16--H5262A via port 1 on 3/26/04 12:26:52pm by 120
RTXCLP, 30MX0.32MMX0.50UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082.51R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2D16082.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.035 | | 0.0000 | 0.000 | 118.5 | 0.004 | BB | 0.016 | 125.91 | 0.009 |
| 2 | 3.072 | | 0.0000 | 0.000 | 2624.7 | 0.080 | BB | 0.038 | 1160.87 | 0.080 |
| 3 | 3.178 | | 0.0000 | 0.000 | 4612.1 | 0.140 | BB | 0.045 | 1692.39 | 0.117 |
| 4 | 3.251 | | 0.0000 | 0.000 | 3115.0 | 0.094 | BB | 0.034 | 1512.84 | 0.105 |
| 5 | 3.305 | | 0.0000 | 0.000 | 828.3 | 0.025 | BB | 0.035 | 397.95 | 0.028 |
| 6 | 3.390 | | 0.0000 | 0.000 | 1786.6 | 0.054 | BB | 0.027 | 1101.61 | 0.076 |
| 7 | 3.449 | | 0.0000 | 0.000 | 318.8 | 0.010 | BB | 0.025 | 212.88 | 0.015 |
| 8 | 3.542 | | 0.0000 | 0.000 | 34061.5 | 1.033 | BB | 0.043 | 13283.89 | 0.920 |
| 9 | 3.703 | | 0.0000 | 0.000 | 1452.4 | 0.044 | BB | 0.048 | 504.93 | 0.035 |
| 10 | 3.817 | | 0.0000 | 0.000 | 694.7 | 0.021 | BB | 0.044 | 265.97 | 0.018 |
| 11 | 3.876 | | 0.0000 | 0.000 | 3460.7 | 0.105 | BB | 0.039 | 1495.69 | 0.104 |
| 12 | 3.984 | | 0.0000 | 0.000 | 11735.2 | 0.356 | BB | 0.053 | 3702.18 | 0.256 |
| 13 | 4.065 | | 0.0000 | 0.000 | 2792.6 | 0.085 | BB | 0.024 | 1930.56 | 0.134 |
| 14 | 4.126 | | 0.0000 | 0.000 | 16759.2 | 0.508 | BB | 0.037 | 7603.02 | 0.526 |
| 15 | 4.190 | | 0.0000 | 0.000 | 3440.4 | 0.104 | BB | 0.030 | 1910.28 | 0.132 |
| 16 | 4.312 | TCX | 265.7943 | 5.991 | 234796.5 | 7.122 | BB | 0.036 | 109648.90 | 7.592 |
| 17 | 4.516 | | 0.0000 | 0.000 | 2011.3 | 0.061 | BB | 0.044 | 760.90 | 0.053 |
| 18 | 4.652 | | 0.0000 | 0.000 | 5312.2 | 0.161 | BB | 0.030 | 2905.05 | 0.201 |
| 19 | 4.737 | | 0.0000 | 0.000 | 3067.4 | 0.093 | BB | 0.028 | 1840.75 | 0.127 |
| 20 | 4.782 | | 0.0000 | 0.000 | 6760.7 | 0.205 | BB | 0.034 | 3282.41 | 0.227 |
| 21 | 4.901 | Hcb | 1.7677 | 0.040 | 2044.3 | 0.062 | BB | 0.027 | 1241.33 | 0.086 |
| 22 | 4.962 | | 0.0000 | 0.000 | 114850.7 | 3.484 | BB | 0.038 | 50141.44 | 3.472 |
| 23 | 5.157 | alpha-BHC | 94.7347 | 2.135 | 99803.4 | 3.027 | BB | 0.034 | 48689.35 | 3.371 |
| 24 | 5.280 | | 0.0000 | 0.000 | 2848.8 | 0.086 | BB | 0.027 | 1733.85 | 0.120 |
| 25 | 5.330 | | 0.0000 | 0.000 | 2119.0 | 0.064 | BB | 0.027 | 1323.76 | 0.092 |
| 26 | 5.394 | | 0.0000 | 0.000 | 4490.2 | 0.136 | BB | 0.040 | 1853.51 | 0.128 |
| 27 | 5.517 | | 0.0000 | 0.000 | 2640.4 | 0.080 | BB | 0.032 | 1355.55 | 0.094 |
| 28 | 5.626 | gamma-BHC | 90.0975 | 2.031 | 88058.5 | 2.671 | BB | 0.032 | 46236.77 | 3.201 |
| 29 | 5.758 | beta-BHC | 86.4506 | 1.948 | 43686.4 | 1.325 | BB | 0.030 | 24488.56 | 1.695 |
| 30 | 5.811 | | 0.0000 | 0.000 | 3838.0 | 0.116 | BB | 0.022 | 2860.21 | 0.198 |
| 31 | 5.867 | | 0.0000 | 0.000 | 3642.5 | 0.110 | BB | 0.037 | 1632.12 | 0.113 |
| 32 | 6.015 | delta-BHC | 93.7233 | 2.112 | 90360.6 | 2.741 | BB | 0.033 | 45640.86 | 3.160 |
| 33 | 6.313 | Heptachlor | 92.1751 | 2.078 | 120152.7 | 3.645 | BB | 0.040 | 50011.30 | 3.463 |
| 34 | 6.516 | | 0.0000 | 0.000 | 16455.6 | 0.499 | BB | 0.039 | 7081.50 | 0.490 |
| 35 | 6.562 | | 0.0000 | 0.000 | 2365.1 | 0.072 | BB | 0.026 | 1514.95 | 0.105 |
| 36 | 6.662 | | 0.0000 | 0.000 | 16449.1 | 0.499 | BB | 0.037 | 7322.24 | 0.507 |
| 37 | 6.739 | Aldrin | 91.5817 | 2.064 | 83031.2 | 2.519 | BB | 0.036 | 38387.64 | 2.658 |
| 38 | 6.890 | | 0.0000 | 0.000 | 636.7 | 0.019 | BB | 0.028 | 374.49 | 0.026 |
| 39 | 6.956 | | 0.0000 | 0.000 | 1418.7 | 0.043 | BB | 0.041 | 579.24 | 0.040 |
| 40 | 7.123 | | 0.0000 | 0.000 | 13321.8 | 0.404 | BB | 0.048 | 4588.36 | 0.318 |
| 41 | 7.250 | | 0.0000 | 0.000 | 2045.8 | 0.062 | BB | 0.030 | 1149.32 | 0.080 |
| 42 | 7.289 | | 0.0000 | 0.000 | 2944.5 | 0.089 | BB | 0.026 | 1921.59 | 0.133 |
| 43 | 7.371 | | 0.0000 | 0.000 | 623.1 | 0.019 | BB | 0.034 | 305.99 | 0.021 |
| 44 | 7.580 | Hept. epoxide | 97.5533 | 2.199 | 100015.9 | 3.034 | BV | 0.040 | 41780.74 | 2.893 |
| 45 | 7.744 | g. Chlordane | 94.6789 | 2.134 | 93072.3 | 2.823 | VV | 0.040 | 38980.66 | 2.699 |
| 46 | 7.922 | a. Chlordane | 88.8657 | 2.003 | 85409.7 | 2.591 | VV | 0.037 | 38997.64 | 2.700 |
| 47 | 8.010 | 4,4'-DDE | 188.7681 | 4.255 | 137142.8 | 4.160 | VV | 0.034 | 66323.95 | 4.592 |
| 48 | 8.114 | Endosulfan I | 92.5779 | 2.087 | 88693.4 | 2.690 | VV | 0.041 | 36401.36 | 2.520 |
| 49 | 8.237 | o,p-DDD | 5.7602 | 0.130 | 3384.6 | 0.103 | VV | 0.044 | 1277.05 | 0.088 |
| 50 | 8.297 | | 0.0000 | 0.000 | 6810.3 | 0.207 | VV | 0.070 | 1610.98 | 0.112 |
| 51 | 8.431 | Dieldrin | 181.9355 | 4.101 | 141667.7 | 4.297 | VV | 0.036 | 66261.34 | 4.588 |
| 52 | 8.524 | | 0.0000 | 0.000 | 14103.7 | 0.428 | VV | 0.060 | 3929.69 | 0.272 |
| 53 | 8.742 | Endrin | 187.3634 | 4.223 | 131675.4 | 3.994 | VV | 0.035 | 62650.65 | 4.338 |
| 54 | 8.800 | Kepone | 618.4764 | 13.940 | 125836.8 | 3.817 | VV | 0.043 | 48401.77 | 3.351 |
| 55 | 8.928 | | 0.0000 | 0.000 | 7611.8 | 0.231 | VV | 0.049 | 2565.80 | 0.178 |
| 56 | 9.039 | Endosulfan II | 198.2404 | 4.468 | 147066.0 | 4.461 | VV | 0.037 | 66203.68 | 4.584 |

3861

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.163 | 4,4'-DDT | 185.1043 | 4.172 | 123076.0 | 3.733 | VB | 0.038 | 53304.75 | 3.691 |
| 58 | 9.393 | | 0.0000 | 0.000 | 6355.7 | 0.193 | BB | 0.051 | 2070.74 | 0.143 |
| 59 | 9.477 | | 0.0000 | 0.000 | 576.1 | 0.017 | BB | 0.024 | 405.62 | 0.028 |
| 60 | 9.506 | | 0.0000 | 0.000 | 1301.4 | 0.039 | BB | 0.023 | 950.74 | 0.066 |
| 61 | 9.588 | Endrin aldehyde | 153.9317 | 3.469 | 102568.0 | 3.111 | BB | 0.040 | 42228.42 | 2.924 |
| 62 | 9.775 | Methoxychlor | 858.9395 | 19.359 | 324216.3 | 9.835 | BB | 0.038 | 140806.70 | 9.749 |
| 63 | 9.986 | | 0.0000 | 0.000 | 2350.5 | 0.071 | BB | 0.045 | 864.71 | 0.060 |
| 64 | 10.158 | Endo. sulfate | 200.8149 | 4.526 | 132490.7 | 4.019 | BB | 0.037 | 59188.86 | 4.098 |
| 65 | 10.357 | | 0.0000 | 0.000 | 24547.3 | 0.745 | BB | 0.075 | 5454.05 | 0.378 |
| 66 | 10.527 | Endrin ketone | 195.2156 | 4.400 | 140315.7 | 4.256 | BB | 0.037 | 63632.43 | 4.406 |
| 67 | 10.696 | | 0.0000 | 0.000 | 185.9 | 0.006 | BB | 0.033 | 94.28 | 0.007 |
| 68 | 10.750 | | 0.0000 | 0.000 | 3529.3 | 0.107 | BB | 0.044 | 1333.55 | 0.092 |
| 69 | 10.921 | | 0.0000 | 0.000 | 6885.0 | 0.209 | BB | 0.045 | 2574.42 | 0.178 |
| 70 | 11.054 | | 0.0000 | 0.000 | 1704.2 | 0.052 | BB | 0.050 | 567.02 | 0.039 |
| 71 | 11.174 | | 0.0000 | 0.000 | 217.1 | 0.007 | BB | 0.031 | 115.10 | 0.008 |
| 72 | 11.224 | | 0.0000 | 0.000 | 659.9 | 0.020 | BB | 0.032 | 347.85 | 0.024 |
| 73 | 11.372 | | 0.0000 | 0.000 | 888.7 | 0.027 | BB | 0.041 | 357.73 | 0.025 |
| 74 | 11.492 | | 0.0000 | 0.000 | 7905.3 | 0.240 | BB | 0.055 | 2389.58 | 0.165 |
| 75 | 11.882 | DCB | 272.2602 | 6.136 | 241170.4 | 7.316 | BB | 0.045 | 89822.56 | 6.219 |
| 76 | 12.230 | | 0.0000 | 0.000 | 4782.4 | 0.145 | BB | 0.082 | 975.02 | 0.068 |
| 77 | 12.364 | | 0.0000 | 0.000 | 711.7 | 0.022 | BB | 0.057 | 207.82 | 0.014 |
| 78 | 12.558 | | 0.0000 | 0.000 | 10736.1 | 0.326 | BB | 0.187 | 955.26 | 0.066 |
| 79 | 12.665 | | 0.0000 | 0.000 | 4425.7 | 0.134 | BB | 0.052 | 1421.05 | 0.098 |
| 80 | 12.743 | | 0.0000 | 0.000 | 1292.8 | 0.039 | BB | 0.037 | 584.28 | 0.040 |
| 81 | 12.885 | | 0.0000 | 0.000 | 7867.6 | 0.239 | BB | 0.096 | 1368.05 | 0.095 |
| 82 | 13.047 | | 0.0000 | 0.000 | 811.9 | 0.025 | BB | 0.037 | 363.71 | 0.025 |
| 83 | 13.313 | | 0.0000 | 0.000 | 2599.7 | 0.079 | BB | 0.092 | 469.16 | 0.032 |
| 84 | 13.537 | | 0.0000 | 0.000 | 2429.9 | 0.074 | BB | 0.126 | 322.41 | 0.022 |

Total Area = 3296667.0, Total Amount = 4436.811, Total Height = 1444334.0, Sample Units = PPB

Sample Name: **4241633MSDF AB5GP20 MSD 040850020A 08899**
Acquired from CP16--H5262B via port 2 on 3/26/04 12:26:52pm by 120
RTXCLPII, 30MX0.32MMX0.25UM
140 at 15/min to 300 hold 6
Data File: **C:\CPWIN\DATA1\3D16082B.51R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2D16082B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.470 | | 0.0000 | 0.000 | 9901.0 | 0.252 | BB | 0.031 | 5315.82 | 0.308 |
| 2 | 3.533 | | 0.0000 | 0.000 | 1642.2 | 0.042 | BB | 0.025 | 1079.79 | 0.063 |
| 3 | 3.612 | | 0.0000 | 0.000 | 2007.4 | 0.051 | BB | 0.029 | 1166.37 | 0.068 |
| 4 | 3.665 | | 0.0000 | 0.000 | 7847.1 | 0.200 | BB | 0.038 | 3465.76 | 0.201 |
| 5 | 3.738 | | 0.0000 | 0.000 | 343.9 | 0.009 | BB | 0.016 | 363.06 | 0.021 |
| 6 | 3.779 | | 0.0000 | 0.000 | 6395.1 | 0.163 | BB | 0.033 | 3230.22 | 0.187 |
| 7 | 3.844 | | 0.0000 | 0.000 | 504.4 | 0.013 | BB | 0.021 | 406.43 | 0.024 |
| 8 | 3.903 | | 0.0000 | 0.000 | 6777.4 | 0.173 | BB | 0.040 | 2849.73 | 0.165 |
| 9 | 4.037 | TCX | 253.8739 | 6.568 | 318046.2 | 8.105 | BB | 0.037 | 142444.50 | 8.256 |
| 10 | 4.201 | | 0.0000 | 0.000 | 169829.0 | 4.328 | BB | 0.051 | 55173.50 | 3.198 |
| 11 | 4.438 | | 0.0000 | 0.000 | 7812.1 | 0.199 | BB | 0.044 | 2935.59 | 0.170 |
| 12 | 4.591 | | 0.0000 | 0.000 | 4826.8 | 0.123 | BB | 0.036 | 2253.61 | 0.131 |
| 13 | 4.649 | | 0.0000 | 0.000 | 5865.1 | 0.149 | BB | 0.033 | 2952.10 | 0.171 |
| 14 | 4.766 | Hcb | 8.1935 | 0.212 | 16279.8 | 0.415 | BB | 0.031 | 8772.74 | 0.508 |
| 15 | 4.856 | | 0.0000 | 0.000 | 6629.6 | 0.169 | BB | 0.027 | 4144.47 | 0.240 |
| 16 | 4.936 | alpha-BHC | 85.3912 | 2.209 | 132455.4 | 3.375 | BB | 0.030 | 73265.92 | 4.247 |
| 17 | 5.048 | | 0.0000 | 0.000 | 8056.8 | 0.205 | BB | 0.028 | 4731.06 | 0.274 |
| 18 | 5.118 | | 0.0000 | 0.000 | 8848.6 | 0.225 | BB | 0.043 | 3460.74 | 0.201 |
| 19 | 5.313 | | 0.0000 | 0.000 | 344.0 | 0.009 | BB | 0.025 | 228.50 | 0.013 |
| 20 | 5.371 | | 0.0000 | 0.000 | 537.9 | 0.014 | BB | 0.034 | 264.36 | 0.015 |
| 21 | 5.452 | gamma-BHC | 84.4341 | 2.184 | 131393.3 | 3.348 | BB | 0.033 | 67122.65 | 3.891 |
| 22 | 5.582 | beta-BHC | 88.9650 | 2.302 | 73265.9 | 1.867 | BB | 0.034 | 35480.43 | 2.057 |
| 23 | 5.725 | | 0.0000 | 0.000 | 1184.2 | 0.030 | BB | 0.025 | 777.34 | 0.045 |
| 24 | 5.766 | | 0.0000 | 0.000 | 3369.3 | 0.086 | BB | 0.033 | 1714.04 | 0.099 |
| 25 | 5.871 | | 0.0000 | 0.000 | 756.2 | 0.019 | BB | 0.032 | 390.72 | 0.023 |
| 26 | 5.908 | | 0.0000 | 0.000 | 566.7 | 0.014 | BB | 0.042 | 226.80 | 0.013 |
| 27 | 5.992 | delta-BHC | 90.4782 | 2.341 | 131081.5 | 3.340 | BV | 0.032 | 67418.66 | 3.908 |
| 28 | 6.067 | Heptachlor | 90.0060 | 2.329 | 159929.4 | 4.075 | VB | 0.037 | 71358.97 | 4.136 |
| 29 | 6.223 | | 0.0000 | 0.000 | 48813.7 | 1.244 | BV | 0.136 | 5963.87 | 0.346 |
| 30 | 6.376 | | 0.0000 | 0.000 | 26991.8 | 0.688 | VV | 0.076 | 5909.88 | 0.343 |
| 31 | 6.511 | Aldrin | 91.3618 | 2.364 | 133033.6 | 3.390 | VV | 0.038 | 58169.25 | 3.372 |
| 32 | 6.625 | | 0.0000 | 0.000 | 26301.0 | 0.670 | VB | 0.052 | 8498.03 | 0.493 |
| 33 | 6.738 | Telodrin | 1.1824 | 0.031 | 1126.9 | 0.029 | BB | 0.027 | 697.20 | 0.040 |
| 34 | 6.818 | | 0.0000 | 0.000 | 1589.1 | 0.040 | BB | 0.043 | 622.65 | 0.036 |
| 35 | 6.948 | | 0.0000 | 0.000 | 8625.5 | 0.220 | BB | 0.045 | 3192.40 | 0.185 |
| 36 | 7.062 | | 0.0000 | 0.000 | 529.8 | 0.014 | BB | 0.045 | 195.70 | 0.011 |
| 37 | 7.147 | | 0.0000 | 0.000 | 13332.4 | 0.340 | BB | 0.040 | 5490.42 | 0.318 |
| 38 | 7.230 | | 0.0000 | 0.000 | 712.7 | 0.018 | BB | 0.020 | 600.53 | 0.035 |
| 39 | 7.288 | Hept. epoxide | 91.0442 | 2.355 | 109925.7 | 2.801 | BB | 0.034 | 54105.91 | 3.136 |
| 40 | 7.433 | | 0.0000 | 0.000 | 18883.3 | 0.481 | BV | 0.047 | 6681.23 | 0.387 |
| 41 | 7.539 | g. Chlordane | 87.8999 | 2.274 | 119101.9 | 3.035 | VV | 0.039 | 50948.48 | 2.953 |
| 42 | 7.669 | | 0.0000 | 0.000 | 3327.0 | 0.085 | VV | 0.043 | 1286.06 | 0.075 |
| 43 | 7.731 | a. Chlordane | 84.8266 | 2.195 | 97112.9 | 2.475 | VV | 0.034 | 47017.60 | 2.725 |
| 44 | 7.807 | Endosulfan I | 85.0945 | 2.202 | 94297.2 | 2.403 | VV | 0.035 | 44881.14 | 2.601 |
| 45 | 7.905 | | 0.0000 | 0.000 | 1394.6 | 0.036 | VV | 0.025 | 933.52 | 0.054 |
| 46 | 7.956 | 4,4'-DDE | 171.1776 | 4.429 | 176337.4 | 4.494 | VV | 0.037 | 79757.06 | 4.623 |
| 47 | 8.166 | Dieldrin | 173.0054 | 4.476 | 182242.3 | 4.644 | VV | 0.036 | 83333.73 | 4.830 |
| 48 | 8.313 | | 0.0000 | 0.000 | 356.2 | 0.009 | VV | 0.027 | 219.53 | 0.013 |
| 49 | 8.386 | | 0.0000 | 0.000 | 5670.2 | 0.144 | VV | 0.037 | 2542.92 | 0.147 |
| 50 | 8.419 | | 0.0000 | 0.000 | 8377.9 | 0.213 | VB | 0.044 | 3183.60 | 0.185 |
| 51 | 8.563 | Endrin | 175.7687 | 4.547 | 146317.8 | 3.729 | BB | 0.034 | 72559.25 | 4.206 |
| 52 | 8.643 | o,p-DDT | 2.9015 | 0.075 | 1089.8 | 0.028 | BB | 0.020 | 886.19 | 0.051 |
| 53 | 8.704 | 4,4'-DDD | 169.6495 | 4.389 | 115556.1 | 2.945 | BB | 0.035 | 55384.20 | 3.210 |
| 54 | 8.840 | Endosulfan II | 193.8561 | 5.015 | 168344.5 | 4.290 | BV | 0.037 | 75088.84 | 4.352 |
| 55 | 8.962 | | 0.0000 | 0.000 | 2382.0 | 0.061 | VB | 0.051 | 780.56 | 0.045 |
| 56 | 9.105 | 4,4'-DDT | 189.9426 | 4.914 | 144690.4 | 3.687 | BV | 0.039 | 61899.55 | 3.588 |

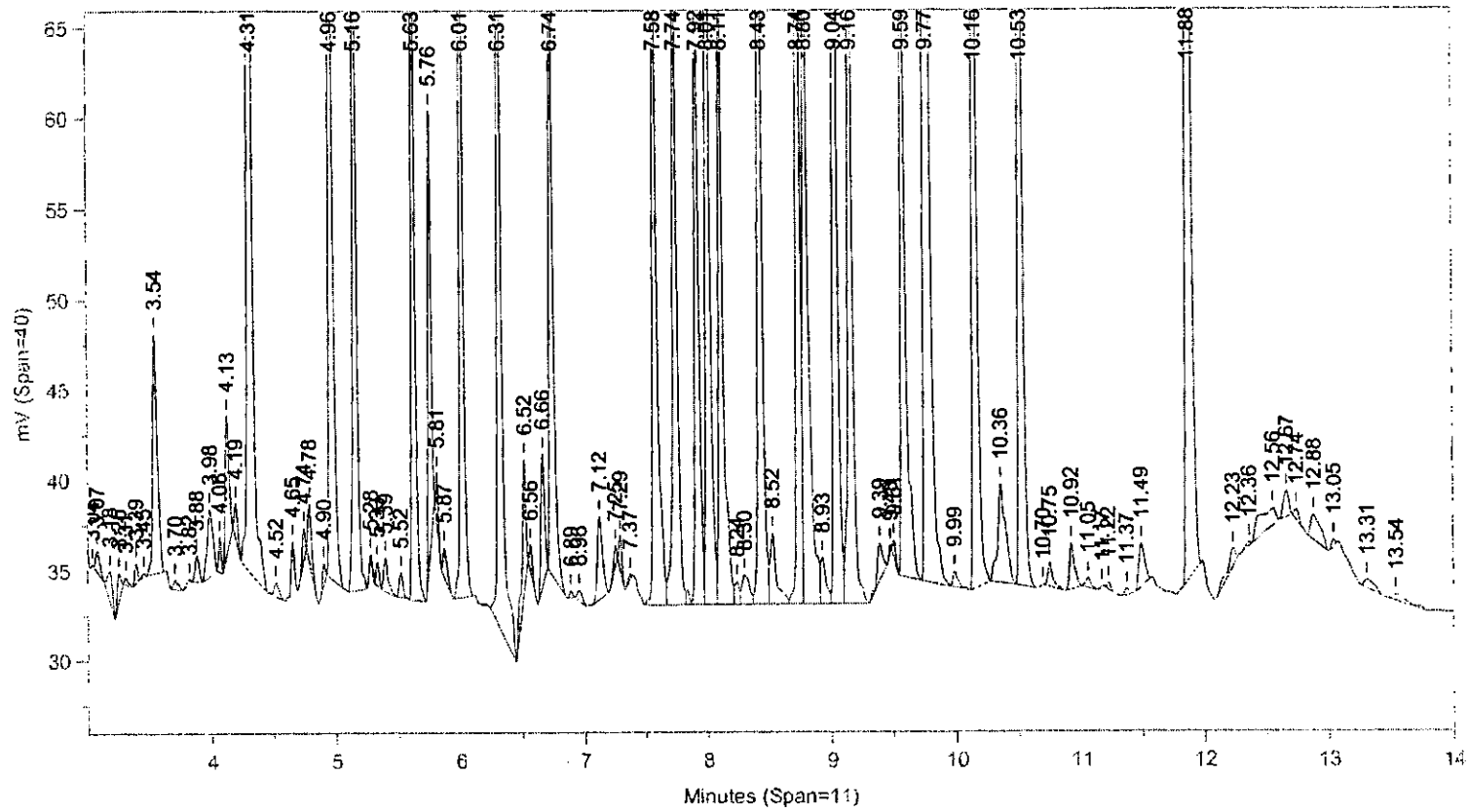
0863

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 9.274 | Endrin aldehyde | 153.1661 | 3.963 | 112707.2 | 2.872 | VV | 0.040 | 46970.13 | 2.722 |
| 58 | 9.430 | | 0.0000 | 0.000 | 15862.9 | 0.404 | VB | 0.053 | 4980.09 | 0.289 |
| 59 | 9.578 | | 0.0000 | 0.000 | 890.7 | 0.023 | BB | 0.024 | 620.85 | 0.036 |
| 60 | 9.625 | Endo. sulfate | 198.7390 | 5.142 | 140380.1 | 3.577 | BB | 0.036 | 64176.82 | 3.720 |
| 61 | 9.775 | | 0.0000 | 0.000 | 1370.6 | 0.035 | BB | 0.035 | 655.71 | 0.038 |
| 62 | 9.855 | | 0.0000 | 0.000 | 116.9 | 0.003 | BB | 0.019 | 100.36 | 0.006 |
| 63 | 9.918 | | 0.0000 | 0.000 | 7796.1 | 0.199 | BB | 0.035 | 3736.68 | 0.217 |
| 64 | 9.984 | Methoxychlor | 855.6674 | 22.137 | 323641.5 | 8.247 | BB | 0.039 | 138653.80 | 8.037 |
| 65 | 10.148 | | 0.0000 | 0.000 | 688.4 | 0.018 | BB | 0.022 | 515.82 | 0.030 |
| 66 | 10.198 | | 0.0000 | 0.000 | 3491.4 | 0.089 | BB | 0.037 | 1568.80 | 0.091 |
| 67 | 10.319 | Endrin ketone | 183.8231 | 4.756 | 146072.7 | 3.722 | BB | 0.037 | 66431.27 | 3.850 |
| 68 | 10.419 | | 0.0000 | 0.000 | 3290.7 | 0.084 | BB | 0.028 | 1937.08 | 0.112 |
| 69 | 10.567 | | 0.0000 | 0.000 | 348.4 | 0.009 | BB | 0.031 | 185.01 | 0.011 |
| 70 | 10.649 | | 0.0000 | 0.000 | 292.2 | 0.007 | BB | 0.029 | 168.27 | 0.010 |
| 71 | 10.915 | | 0.0000 | 0.000 | 8440.4 | 0.215 | BB | 0.075 | 1887.56 | 0.109 |
| 72 | 11.086 | | 0.0000 | 0.000 | 2591.8 | 0.066 | BB | 0.072 | 602.97 | 0.035 |
| 73 | 11.516 | | 0.0000 | 0.000 | 1662.5 | 0.042 | BB | 0.034 | 825.96 | 0.048 |
| 74 | 11.603 | | 0.0000 | 0.000 | 1145.9 | 0.029 | BB | 0.047 | 402.28 | 0.023 |
| 75 | 11.684 | | 0.0000 | 0.000 | 250.7 | 0.006 | BB | 0.032 | 132.37 | 0.008 |
| 76 | 11.872 | | 0.0000 | 0.000 | 4364.5 | 0.111 | BB | 0.124 | 585.44 | 0.034 |
| 77 | 11.926 | | 0.0000 | 0.000 | 534.2 | 0.014 | BB | 0.027 | 329.81 | 0.019 |
| 78 | 12.029 | DCB | 254.8434 | 6.593 | 251150.0 | 6.400 | BB | 0.046 | 91808.92 | 5.321 |
| 79 | 12.236 | | 0.0000 | 0.000 | 7673.6 | 0.196 | BB | 0.099 | 1290.82 | 0.075 |
| 80 | 12.416 | | 0.0000 | 0.000 | 6076.8 | 0.155 | BB | 0.141 | 717.64 | 0.042 |
| 81 | 12.674 | | 0.0000 | 0.000 | 3327.0 | 0.085 | BB | 0.130 | 424.96 | 0.025 |
| 82 | 13.094 | | 0.0000 | 0.000 | 1141.4 | 0.029 | BB | 0.117 | 162.48 | 0.009 |
| 83 | 13.347 | | 0.0000 | 0.000 | 2871.8 | 0.073 | BB | 0.048 | 1007.15 | 0.058 |
| 84 | 13.477 | | 0.0000 | 0.000 | 1781.5 | 0.045 | BB | 0.082 | 362.13 | 0.021 |
| 85 | 13.800 | | 0.0000 | 0.000 | 1337.0 | 0.034 | BB | 0.107 | 208.19 | 0.012 |

Total Area = 3924259.0, Total Amount = 3865.292, Total Height = 1725273.0, Sample Units = PPB

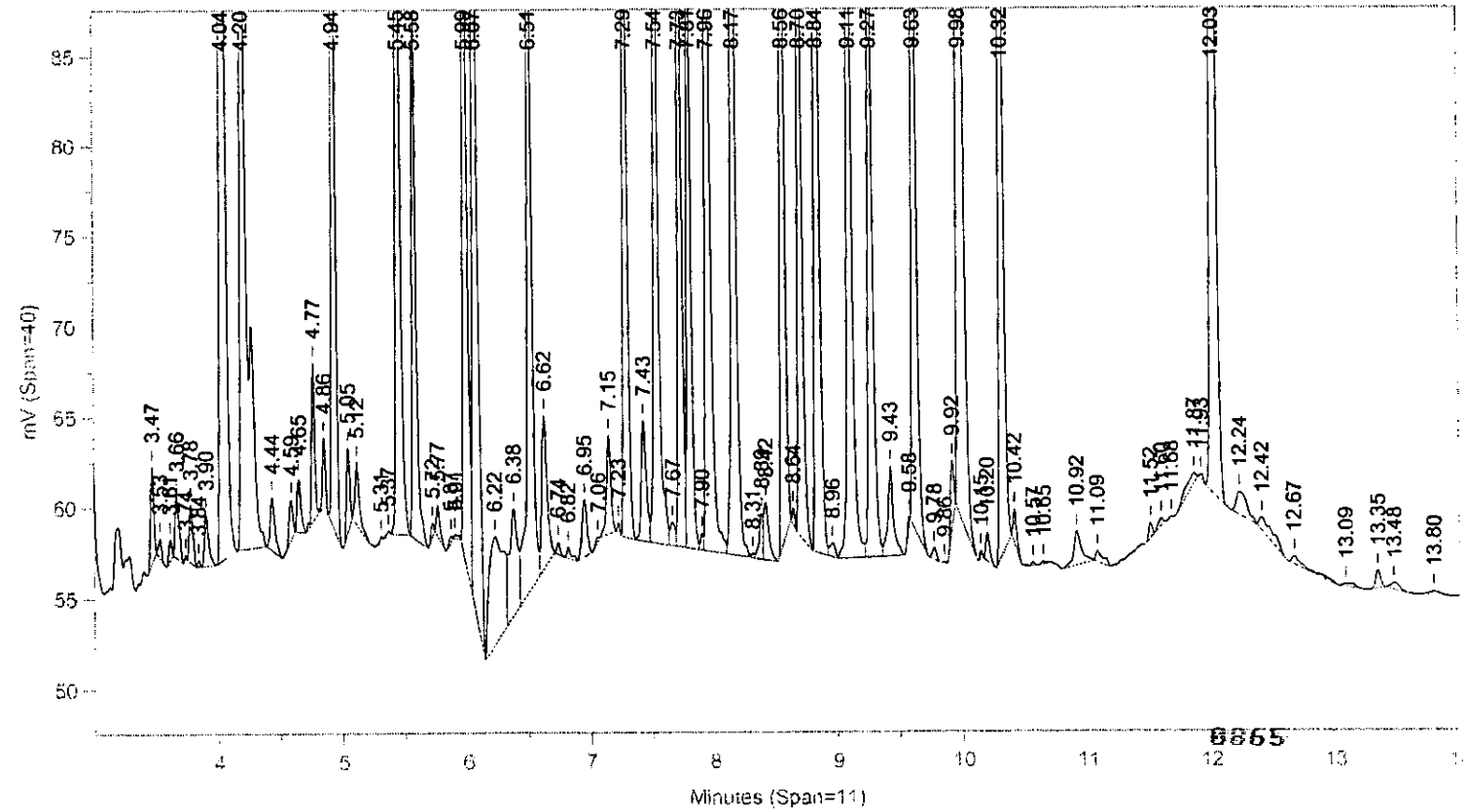
LANCASTER LABORATORIES

C:\CPWIN\DATA1\3D16082.51R




Instrument ID: CP16--H5262A Injected On: 3/26/2004 12:12:52 PM Column ID: RTXCLP, 30MX0.32MMX0.50UM

C:\CPWIN\DATA1\3D16082B.51R




Instrument ID: CP16--H5262B Injected On: 3/26/2004 12:12:52 PM Column ID: RTXCLPII, 30MX0.32MMX0.25UM

Oven Parameters: 140 at 15/min to 300 hold 6
Volume Inj: 1

Detector A Parameters:
Threshold: 3 Width: 0.02 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 0.5 Width: 0.04 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 109649 | 8.86 | TCX | 4.037 | 142444 | 8.462 | TCX |
| 4.901 | 1241 | .059 | Hcb | 4.766 | 8773 | .273 | Hcb |
| 5.157 | 48689 | 3.158 | alpha-BHC | 4.936 | 73266 | 2.846 | alpha-BHC |
| 5.626 | 46237 | 3.003 | gamma-BHC | 5.452 | 67123 | 2.814 | gamma-BHC |
| 5.758 | 24489 | 2.882 | beta-BHC | 5.582 | 35480 | 2.966 | beta-BHC |
| 6.015 | 45641 | 3.124 | delta-BHC | 5.992 | 67419 | 3.016 | delta-BHC |
| 6.313 | 50011 | 3.073 | Heptachlor | 6.067 | 71359 | 3. | Heptachlor |
| 6.739 | 38388 | 3.053 | Aldrin | 6.511 | 58169 | 3.045 | Aldrin |
| . | 0 | . | Telodrin | 6.738 | 697 | .039 | Telodrin |
| 7.58 | 41781 | 3.252 | Hept. epoxide | 7.288 | 54106 | 3.035 | Hept. epoxide |
| 7.744 | 38981 | 3.156 | g. Chlordane | 7.539 | 50948 | 2.93 | g. Chlordane |
| 7.922 | 38998 | 2.962 | a. Chlordane | 7.731 | 47018 | 2.828 | a. Chlordane |
| 8.114 | 36401 | 3.086 | Endosulfan I | 7.807 | 44881 | 2.836 | Endosulfan I |
| 8.01 | 66324 | 6.292 | 4,4'-DDE | 7.956 | 79757 | 5.706 | 4,4'-DDE |
| 8.431 | 66261 | 6.065 | Dieldrin | 8.166 | 83334 | 5.767 | Dieldrin |
| 8.237 | 1277 | .192 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.742 | 62651 | 6.245 | Endrin | 8.563 | 72559 | 5.859 | Endrin |
| . | 0 | . | o,p-DDT | 8.643 | 886 | .097 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.704 | 55384 | 5.655 | 4,4'-DDD |
| 8.8 | 48402 | 20.616 | Kepone | . | 0 | . | Kepone |
| 9.039 | 66204 | 6.608 | Endosulfan II | 8.84 | 75089 | 6.462 | Endosulfan II |
| 9.163 | 53305 | 6.17 | 4,4'-DDT | 9.105 | 61900 | 6.331 | 4,4'-DDT |
| 9.588 | 42228 | 5.131 | Endrin aldehyde | 9.274 | 46970 | 5.106 | Endrin aldehyde |
| 10.158 | 59189 | 6.694 | Endo. sulfate | 9.625 | 64177 | 6.625 | Endo. sulfate |
| 9.775 | 140807 | 28.631 | Methoxychlor | 9.984 | 138654 | 28.522 | Methoxychlor |
| 10.527 | 63632 | 6.507 | Endrin ketone | 10.319 | 66431 | 6.127 | Endrin ketone |
| 11.882 | 89823 | 9.075 | DCB | 12.029 | 91809 | 8.495 | DCB |

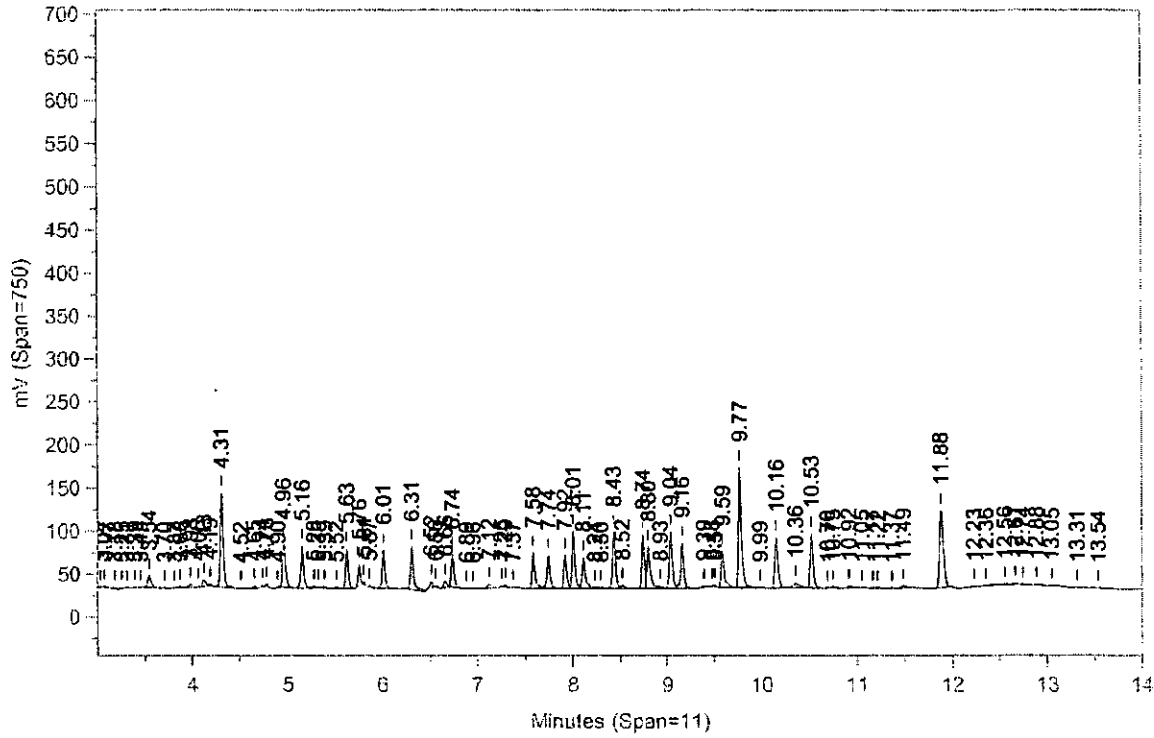
Files:
Area File: C:\CPWIN\DATA1\3D16082.51A
Area File: C:\CPWIN\DATA1\3D16082B.51A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2D16082.CAL
Calibration File B: C:\CPWIN\DATA1\2D16082B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/26/2004 3:22:44 PM
File Reported On: 3/26/2004 at 3:22:51 PM

M.E.M. 134c
3/28/04

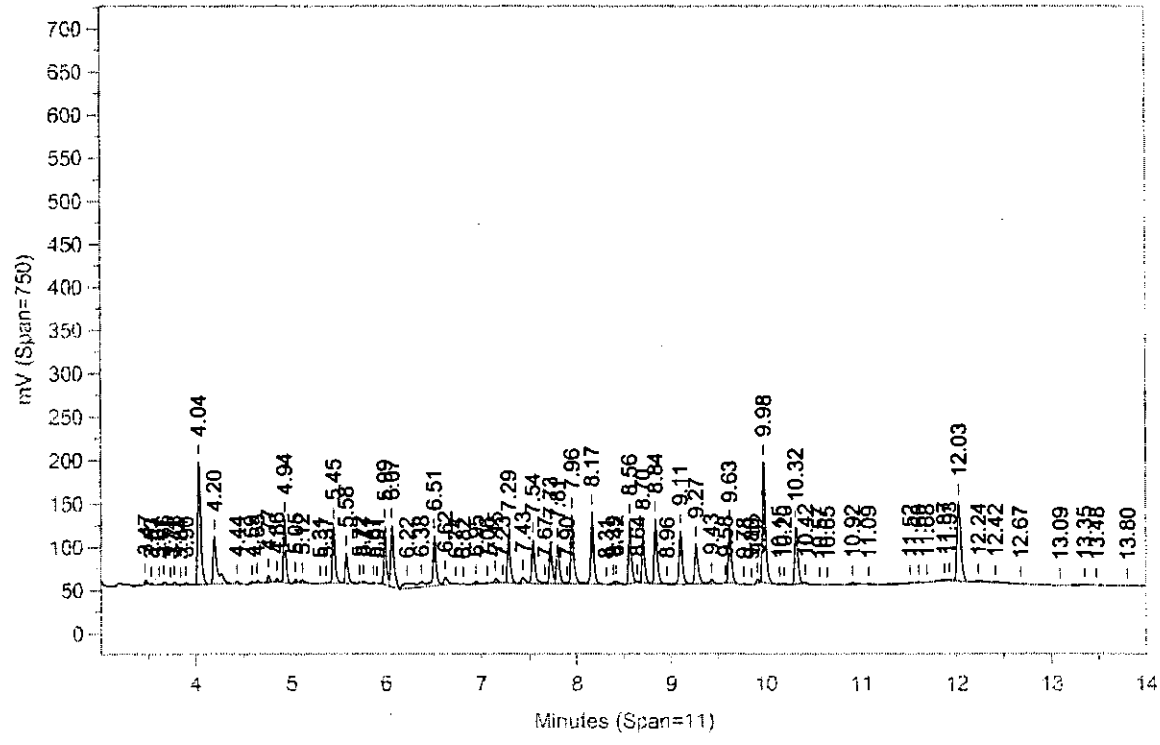
Files:

10x REPLOTS

C:\CPWIN\DATA1\3D16082.51R




C:\CPWIN\DATA1\3D16082B.51R

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# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: 2014

Prep Analysis # 06006 PPL Pesticide Solid Extraction

Prep Group # 103 8081 Pesticides - soils Dept: 24

Start Date: 03/25/04

Start Time: 1800

Tech 1: WJZ

Tech 2:

BATCH NO. 040850020A

| QC | Sample Code | Amt (g) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKSQ | 30 | SS0407124A | 1.0 | | | 10 | NA | NA | NA | |
| LCSA | LCSNW | 30 | SS0407124A | | MS0408224A | 1.0 | | | | | |
| 4241632MS | 5GP20MS | 30 | SS0407124A | | MS0408224A | | | | | 21A | |
| 4241633MSD | 5GP20 MSD | 30 | SS0407124A | | MS0408224A | | | | | | |
| | | | | | | | | | | | |
| | MS 4/2/04 | | | | | | | | | | |

WJZ

| | Sample # | Sample Code | Amt (g) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4241628 | 5GP17 | 30 | SS0407124A | 1.0 | 10 | NA | NA | 21A | brown soils | 1225 | 3/30/04 | S |
| 2 | 4241629 | 5GP18 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 3 | 4241630 | 5GP19 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 4 | 4241631 bkg | 5GP20 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 5 | 4241634 | 5GP21 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 6 | 4241636 | 5GP22 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 7 | 4241637 | 2222D | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 8 | 4241638 | 5GP23 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 9 | 4241639 | 5GP24 | 30 | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

WJZ

**Additional Comment:** @ WJZ 03/25/04

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | *Lot No. |
|---|---|---|---|
| 1:1 Acetone/Hexane | | Hexane | 125032503 |
| Hexane A10E33 | | | |
| Na2SO4 026838 | | | |
| Rack ID: | | Work Station: | |
| Internal Standard | | Balance # | 2910 |
| S-bath ID 2 | 9 °C | S-bath ID | °C |
| N-Evap | 31 °C | | |

**Spike Solutions:**

SS0407124A SW846 SURROGATE STANDARD

MS0408224A SW846 SPIKE

9869

ML 1555

Documented temps are NIST corrected. 040850020A

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 06006 PPL Pesticide Solid Extraction

**Prep Group #** 103 8081 Pesticides - soils

Verified: DAH

Start Date: 3-25-04

Start Time: 12:01 AM

Tech 1: W 1240

Tech 2:

**BATCH NO.** 040850020A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2 | 2 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4241632MS | | | | | | 1225 |
| 4 | 4241633MSD | | | | | | 1225 |
| 5 | 4241628 | | | | | | 1225 |
| 6 | 4241629 | | | | | | 1225 |
| 7 | 4241630 | | | | | | 1225 |
| 8 | 4241631 | | | | | | 1225 |
| 9 | 4241634 | | | | | | 1225 |
| 10 | 4241636 | | | | | | 1225 |
| 11 | 4241637 | | | | | | 1225 |
| 12 | 4241638 | | | | | | 1225 |
| 13 | 4241639 | | | | | | 1225 |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

W 1240

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 10% Acetone/Hexane | | 12%03258AA | |
| | | | |
| Florisil | 20904CAR | | |

| S-Evap/bath | °C | S-Evap/bath | °C | N-Evap | °C |
|---|---|---|---|---|---|
| | | | | | 37 |

The documented temperatures are NIST corrected.

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# Miscellaneous Analysis Data

# Case Narrative
# Conformance/Nonconformance Summary

8872

Lancaster Laboratories

*Where quality is a science.*

**CLIENT: Draper Aden Associates, Inc.**
**SDG:** RAV03

**LANCASTER LABORATORIES**

**MISCELLANEOUS WET CHEMISTRY**

**SAMPLE NUMBERS:**

| Sample # | Sample Code | Comments |
|---|---|---|
| 4241628 | 5GP17 | |
| 4241629 | 5GP18 | |
| 4241630 | 5GP19 | |
| 4241631 | 5GP20 | Background |
| 4241632 | 5GP20 | |
| 4241633 | 5GP20 | Duplicate |
| 4241634 | 5GP21 | |
| 4241635 | TGP2D | 4241634 |
| 4241636 | 5GP22 | |
| 4241637 | 2222D | |
| 4241638 | 5GP23 | |
| 4241639 | 5GP24 | |

**ANALYSIS:**
Samples use the moisture data from previously analyzed samples listed in the comment section above.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**
QC was within specification.

**DATA INTERPRETATION:**
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 4-2-04
Sandra J. Miller
Specialist/Coordinator

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# QC Summary

# Lancaster Laboratories

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: RAV03

| Sample Information | Duplicate Analysis | | | | | | | | | | | Matrix: SOIL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| 4241628 | 5GP17 | 04086820001 | Moisture | OD | 3/26/04 | 4241631 | 18.44 | 4241633 | 17.58 | % | 5 | 15 |
| 4241629 | 5GP18 | | | | | | | | | | | |
| 4241630 | 5GP19 | | | | | | | | | | | |
| 4241631 | 5GP20 | | | | | | | | | | | |
| 4241632 | 5GP20 | | | | | | | | | | | |
| 4241633 | 5GP20 | | | | | | | | | | | |
| 4241634 | 5GP21 | | | | | | | | | | | |
| 4241635 | TGP2D | | | | | | | | | | | |
| 4241636 | 5GP22 | | | | | | | | | | | |
| 4241637 | 2222D | | | | | | | | | | | |
| 4241638 | 5GP23 | | | | | | | | | | | |
| 4241639 | 5GP24 | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG: RAV03

| Sample Info. | Laboratory Control Standards | | | | | | | | Matrix: SOIL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
| 4241628 | 5GP17 | 04086820001 | Moisture | OD | 3/26/04 | 89.5 | 89.43 | 89.44 | % | 88.6 - 90.4 | 0 | 1 |
| 4241629 | 5GP18 | | | | | | | | | | | |
| 4241630 | 5GP19 | | | | | | | | | | | |
| 4241631 | 5GP20 | | | | | | | | | | | |
| 4241632 | 5GP20 | | | | | | | | | | | |
| 4241633 | 5GP20 | | | | | | | | | | | |
| 4241634 | 5GP21 | | | | | | | | | | | |
| 4241635 | TGP2D | | | | | | | | | | | |
| 4241636 | 5GP22 | | | | | | | | | | | |
| 4241637 | 2222D | | | | | | | | | | | |
| 4241638 | 5GP23 | | | | | | | | | | | |
| 4241639 | 5GP24 | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

| ANALYSIS | LL # | MDL |
|---|---|---|
| Acidity | 476 | 2 mg/l |
| Acidity | 4530 | 3 mg/l |
| Alkalinity to pH 4.5 | 202 | 0.41 mg/l as CaCO3 |
| Ammonia Nitrogen | 573 | 4.2 mg/kg |
| Ammonia Nitrogen | 221 | 0.11 mg/l |
| Ammonia Nitrogen | 6914 | 0.03 mg/l |
| BOD | 235 | 0.80 mg/l |
| Carbonaceous BOD | 1364 | 0.80 mg/l |
| Chemical Oxygen Demand | 1553 | 2.1 mg/l |
| Chemical Oxygen Demand | 234 | 300 mg/kg |
| Chemical Oxygen Demand | 4001 | 8.2 mg/l |
| Chloride | 1124 | 0.20 mg/l |
| Chlorine Residual | 240 | 0.04 mg/l |
| Dissolved Oxygen | 428 | 0.09 mg/l |
| | | |
| Ferrous Iron | 8344 | 0.008 mg/l |
| Fluoride | 263 | 0.03 mg/l |
| Fluoride Distillation | 2200 | 0.03 mg/l |
| Hexane Extractable Materials(Silica-Gel Treated) | 8078 | 1.3 mg/l |
| Hexane Extractable Materials | 8079 | 1.7 mg/l |
| Hexavalent Chromium | 276 | 0.003 mg/l |
| Hexavalent Chromium | 425 | 0.50 mg/kg |
| Hexavalent Chromium | 1446 | 0.0007 mg/l |
| Hexavalent Chromium | 4858 | 0.38 mg/kg |
| Hexavalent Chromium | 4859 | 0.004 mg/l |
| | | |
| | | |
| M.B.A.S. | 225 | 0.035 mg/l |
| Moisture | 111 | 0.5 % |
| Moisture | 1353 | 0.5 % |
| | | |
| | | |
| | | |
| | | |
| | | |

| ANALYSIS | LL # | MDL |
|---|---|---|
| Oil and Grease | 231 | 2.5 mg/l |
| Oil and Grease | 236 | 430 mg/kg |
| Oil and Grease | 429 | 0.40 mg/l |
| Oil and Grease | 2446 | 233 mg/kg |
| Orthophosphate | 226 | 0.01 mg/l |
| | | |
| Petroleum Hydrocarbons | 1126, 8140 | 0.40 mg/l |
| Petroleum Hydrocarbons | 1554 | 0.50 mg/l |
| Petroleum Hydrocarbons | 1562 | 23 mg/kg |
| Petroleum Hydrocarbons | 1663 | 21 mg/kg |
| | | |
| Petroleum Hydrocarbons | 8129 | 9 mg/kg |
| Petroleum Hydrocarbons | 8141 | 12.6 mg/kg |
| Silica | 559 | 0.024 mg/l |
| Soluble BOD | 541 | 0.80 mg/l |
| Specific Conductance | 280 | 1.7 umhos/cm |
| Specific Gravity | 1443 | 0.005 |
| Sulfate | 1125 | 1.5 mg/l |
| Sulfide | 230 | 0.022 mg/l |
| Sulfide, Acid Volatile | 1630 | 0.39 micromol/g |
| Sulfide Titration | 1333 | 0.53 mg/l |
| Sulfide Titration | 1122 | 27 mg/kg |
| Sulfide Titration | 487 | 8.4 mg/kg |
| Sulfite | 229 | 1.2 mg/l |
| Total Dissolved Solids | 212 | 9.7 mg/l |
| Total Hardness | 216 | 0.49 mg/l as CaCO3 |
| Total Solids | 203 | 6.3 mg/l |
| Total Suspended Solids | 206 | 3.0 mg/l |
| Turbidity | 279 | 0.09 NTU |
| UV Absorbance | 7120 | 0.006cm-1 |
| | | |
| | | |
| | | |
| | | |
| | | |

Revised 1/31/04

# Raw Data

B1
Oven 2
3rd Shelf
Left Side



# Batch#: 04086820001

## LLENS Worksheet for Moisture

3/29/03 jfb

Oven ID #: 7493 Time In: 1540 Time Out: 0745 13

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P15

| # | Sample ID | Date Added | Comments | Analysis# |
|---|---|---|---|---|
| 1) | LCS 89.5% | 03/26/04 12:40 | | |
| 2) | LCD 89.5% | 03/26/04 12:40 | | |
| 3) | 4241467 | 03/26/04 12:39 | soft clay 75A | 00111 |
| 4) | 4241628 | 03/26/04 12:39 | Sandy clay 77A | 00111 |
| 5) | 4241629 | 03/26/04 12:39 | | 00111 |
| 6) | 4241630 | 03/26/04 12:39 | | 00111 |
| 7) | 4241631 | 03/26/04 12:39 | 21A | 00111 |
| 8) | 4241632MS | 03/26/04 12:39 | | 00118 |
| 9) | 4241633MSD | 03/26/04 12:39 | | 00121 |
| 10) | 4241634 | 03/26/04 12:39 | 77A | 00111 |
| 11) | 4241636 | 03/26/04 12:39 | | 00111 |
| 12) | 4241637 | 03/26/04 12:39 | | 00111 |
| 13) | 4241638 | 03/26/04 12:39 | | 00111 |
| 14) | 4241639 | 03/26/04 12:39 | | 00111 |
| 15) | 4241642 | 03/26/04 12:39 | Sandy soil | 00111 |
| 16) | 4241643 | 03/26/04 12:39 | Sandy clay pieces | 00111 |
| 17) | 4241644 | 03/26/04 12:39 | Sandy soil | 00111 |
| 18) | 4241645 | 03/26/04 12:39 | 21A | 00111 |
| 19) | 4241646MS | 03/26/04 12:39 | | 00118 |
| 20) | 4241647MSD | 03/26/04 12:39 | | 00121 |
| 21) | 4241648 | 03/26/04 12:39 | 77A | 00111 |
| 22) | 4241649 | 03/26/04 12:39 | | 00111 |

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Signature: Scott Freisler 1201 Date: 3/26/04

Printed by 00943 on 03/26/2004 at 12:42

LLC943 3/29/04

# Batch#: 04086820001

## LLENS Batch Chronology Report - Moisture

| # | Operation | Instrument | Date | Time | Analyst |
|---|---|---|---|---|---|
| 1) | Batch Creation | | 03/26/2004 | 12:39 | 00943 |
| 2) | Pre-Drying Wt. | 009001 | 03/26/2004 | 13:45 | 01201 |
| 3) | Pre-Drying Wt. | 009001 | 03/26/2004 | 14:51 | 01201 |
| 4) | Dry Sample Wt. | 009001 | 03/27/2004 | 14:05 | 01201 |
| 5) | Calculate/Transmit | LLENS2 | 03/27/2004 | 14:16 | 01201 |

Oil → 7801

4241634 4241635 LLC993 3/30/04

Comments: LLC993 3/29/04

8886

Printed by 01201 on 03/27/2004 at 14:16

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture |
|---|---|---|---|---|---|---|---|---|---|
| LCS 89.5% | A | | | 1.1456 | 5.0036 | 1.6743 | | | 89.43 |
| LCD 89.5% | A | | | 1.1312 | 5.0272 | 1.6621 | | | 89.44 |
| 4241467 | A | 00111 | | 1.1389 | 7.7169 | 7.3484 | | | 19.53 |
| 4241628 | A | 00111 | | 1.1368 | 6.9839 | 6.9491 | | | 16.78 |
| 4241629 | A | 00111 | | 1.1503 | 8.1523 | 7.9506 | | | 16.58 |
| 4241630 | A | 00111 | | 1.1363 | 7.9718 | 7.7515 | | | 17.02 |
| 4241631 | A | 00111 | | 1.1343 | 8.9009 | 8.3936 | | | 18.44 |
| 4241632MS | A | 00118 | | | | | | | 18.44 |
| 4241633MSD | A | 00118 | | | | | | | 18.44 |
| 4241633MSD | A | 00121 | | 1.1459 | 9.3268 | 8.8334 | 0.87 | 4.81 | 17.58 |
| 4241634 | A | 00111 | | 1.1457 | 8.1066 | 7.9974 | | | 15.48 |
| 4241636 | A | 00111 | | 1.1517 | 8.1287 | 8.0269 | | | 15.42 |
| 4241637 | A | 00111 | | 1.1513 | 7.4584 | 7.4732 | | | 15.24 |
| 4241638 | A | 00111 | | 1.1506 | 8.5933 | 8.3647 | | | 16.05 |
| 4241639 | A | 00111 | | 1.1320 | 8.2774 | 7.8916 | | | 18.34 |
| 4241642 | B | 00111 | | 1.1251 | 6.4497 | 6.3950 | | | 18.29 |
| 4241643 | B | 00111 | | 1.1494 | 8.0280 | 8.0413 | | | 14.15 |
| 4241644 | B | 00111 | | 1.1411 | 6.7279 | 6.5409 | | | 19.74 |
| 4241645 | B | 00111 | | 1.1338 | 7.8143 | 7.3735 | | | 20.15 |
| 4241646MS | B | 00118 | | | | | | | 20.15 |
| 4241647MSD | B | 00118 | | | | | | | 20.15 |
| 4241647MSD | B | 00121 | | 1.1403 | 8.4686 | 7.9428 | | | 19.67 |
| 4241648 | B | 00111 | | 1.1510 | 7.1114 | 6.8133 | | | 20.38 |
| 4241649 | B | 00111 | | 1.1404 | 7.8579 | 7.4597 | | | 19.58 |

Printed by 01201 on 03/27/2004 at 14:16

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SEVERN TRENT STL

**STL North Canton**
4101 Shuffel Drive NW
North Canton, OH 44720

Tel: 330 497 9396 Fax: 330 497 0772
www.stl-inc.com

# ANALYTICAL REPORT

PROJECT NO. BN02271-01

RAAP, RADFORD, VIRGINIA

Lot #: A4B190299

Janet Frazier

Draper Aden & Associates Inc
2206 South Main Street
Blacksburg, VA 24060

SEVERN TRENT LABORATORIES, INC.

Jeffrey C. Smith
Project Manager

March 4, 2004

SEVERN TRENT STL

# *CASE NARRATIVE*

# CASE NARRATIVE

A4B190299

The following report contains the analytical results for eighteen solid samples submitted to STL North Canton by Draper Aden & Associates Inc from the RAAP, Radford, Virginia Site, project number BN02271-01. The samples were received February 19, 2004, according to documented sample acceptance procedures.

STL utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Janet Frazier on March 01, 2004. A summary of QC data for these analyses is included at the back of the report.

STL North Canton attests to the validity of the laboratory data generated by STL facilities reported herein. All analyses performed by STL facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. STL's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

## SUPPLEMENTAL QC INFORMATION

### SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.3°C.

See STL's Cooler Receipt Form for additional information.

### METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

# CASE NARRATIVE (continued)

## METALS (continued)

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes for 5GP-20 (14') and 7GP-20 (14.5')due to the sample concentration reading greater than four times the spike amount. See the Matrix Spike Report for the affected analytes which will be flagged with "NC, MSB".

The matrix spike/matrix spike duplicate(s) for 5GP-20 (14') and 7GP-20 (14.5') had RPD's and/or recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

## GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive of mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

## QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

### QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

### LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

| Volatile (GC or GC/MS) | Semivolatile (GC/MS) | Metals |
|---|---|---|
| Methylene chloride | Phthalate Esters | Copper |
| Acetone | | Iron |
| 2-Butanone | | Zinc |
| | | Lead* |

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*

## QUALITY CONTROL ELEMENTS OF SW-846 METHODS
## (Continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

**MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

**SURROGATE COMPOUNDS**

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepped and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepped and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, and PAH methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

***STL North Canton Certifications and Approvals:***

*Alabama (#41170), California (#01144CA), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Ohio (#6090), OhioVAP (#CL0024), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), Utah (#QUAN9), Virginia (#00011), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)*

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SEVERN TRENT STL

# *EXECUTIVE SUMMARY*

# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **5GP-17 (15') 02/17/04 11:15 001** | | | | |
| Mercury | 0.076 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.2 | 1.2 | mg/kg | SW846 6010B |
| Lead | 10.1 | 0.37 | mg/kg | SW846 6010B |
| Thallium | 0.79 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 18300 | 24.7 | mg/kg | SW846 6010B |
| Antimony | 0.32 B | 7.4 | mg/kg | SW846 6010B |
| Barium | 53.3 | 24.7 | mg/kg | SW846 6010B |
| Calcium | 604 B,J,E | 616 | mg/kg | SW846 6010B |
| Chromium | 20.8 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 5.6 B | 6.2 | mg/kg | SW846 6010B |
| Copper | 9.7 | 3.1 | mg/kg | SW846 6010B |
| Iron | 21400 J | 12.3 | mg/kg | SW846 6010B |
| Magnesium | 698 J,E | 616 | mg/kg | SW846 6010B |
| Manganese | 380 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 7.0 E | 4.9 | mg/kg | SW846 6010B |
| Potassium | 826 J,E | 616 | mg/kg | SW846 6010B |
| Vanadium | 54.1 | 6.2 | mg/kg | SW846 6010B |
| Zinc | 22.4 | 2.5 | mg/kg | SW846 6010B |
| Percent Solids | 81.1 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-18 (13') 02/17/04 11:45 002** | | | | |
| Mercury | 0.065 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.8 | 1.2 | mg/kg | SW846 6010B |
| Lead | 10.6 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 0.61 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 15000 | 24.1 | mg/kg | SW846 6010B |
| Barium | 22.2 B | 24.1 | mg/kg | SW846 6010B |
| Calcium | 639 J | 602 | mg/kg | SW846 6010B |
| Chromium | 23.5 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 4.4 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 7.5 | 3.0 | mg/kg | SW846 6010B |
| Iron | 23500 J | 12.0 | mg/kg | SW846 6010B |
| Magnesium | 598 B,J | 602 | mg/kg | SW846 6010B |
| Manganese | 225 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 4.7 B | 4.8 | mg/kg | SW846 6010B |
| Potassium | 439 B,J | 602 | mg/kg | SW846 6010B |
| Vanadium | 45.5 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 18.5 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 83.0 | 10.0 | % | MCAWW 160.3 MOD |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **5GP-19 (15') 02/17/04 12:15 003** | | | | |
| Mercury | 0.13 | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.4 | 1.2 | mg/kg | SW846 6010B |
| Lead | 9.9 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 0.65 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 17400 | 24.1 | mg/kg | SW846 6010B |
| Antimony | 0.37 B | 7.2 | mg/kg | SW846 6010B |
| Barium | 62.1 | 24.1 | mg/kg | SW846 6010B |
| Calcium | 1970 J | 603 | mg/kg | SW846 6010B |
| Chromium | 18.8 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 3.7 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 8.8 | 3.0 | mg/kg | SW846 6010B |
| Iron | 15300 J | 12.1 | mg/kg | SW846 6010B |
| Magnesium | 527 B,J | 603 | mg/kg | SW846 6010B |
| Manganese | 247 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 6.7 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 719 J | 603 | mg/kg | SW846 6010B |
| Vanadium | 44.7 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 20.6 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 83.0 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-20 (14') 02/17/04 12:45 004** | | | | |
| Mercury | 0.12 | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 2.7 | 1.2 | mg/kg | SW846 6010B |
| Lead | 8.4 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 1.1 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 18900 | 24.1 | mg/kg | SW846 6010B |
| Barium | 59.8 | 24.1 | mg/kg | SW846 6010B |
| Calcium | 1000 J | 604 | mg/kg | SW846 6010B |
| Chromium | 19.8 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 3.7 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 8.8 | 3.0 | mg/kg | SW846 6010B |
| Iron | 14700 J | 12.1 | mg/kg | SW846 6010B |
| Magnesium | 576 B,J | 604 | mg/kg | SW846 6010B |
| Manganese | 207 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 7.0 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 781 J | 604 | mg/kg | SW846 6010B |
| Vanadium | 42.2 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 21.5 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 82.9 | 10.0 | % | MCAWW 160.3 MOD |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **5GP-21 (14') 02/17/04 13:45 005** | | | | |
| Mercury | 0.083 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.1 | 1.2 | mg/kg | SW846 6010B |
| Lead | 27.4 | 0.35 | mg/kg | SW846 6010B |
| Thallium | 1.2 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 12800 | 23.6 | mg/kg | SW846 6010B |
| Antimony | 0.41 B | 7.1 | mg/kg | SW846 6010B |
| Barium | 44.0 | 23.6 | mg/kg | SW846 6010B |
| Beryllium | 0.086 B | 0.59 | mg/kg | SW846 6010B |
| Calcium | 12000 J | 590 | mg/kg | SW846 6010B |
| Chromium | 17.9 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 9.5 | 5.9 | mg/kg | SW846 6010B |
| Copper | 8.5 | 3.0 | mg/kg | SW846 6010B |
| Iron | 16500 J | 11.8 | mg/kg | SW846 6010B |
| Magnesium | 1330 J | 590 | mg/kg | SW846 6010B |
| Manganese | 520 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 9.3 | 4.7 | mg/kg | SW846 6010B |
| Potassium | 1180 J | 590 | mg/kg | SW846 6010B |
| Sodium | 1190 | 590 | mg/kg | SW846 6010B |
| Vanadium | 32.6 | 5.9 | mg/kg | SW846 6010B |
| Zinc | 21.6 | 2.4 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.62 | 0.59 | mg/kg | SW846 9012A |
| Percent Solids | 84.7 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-22 (14') 02/17/04 14:15 006** | | | | |
| Mercury | 0.056 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 2.8 | 1.2 | mg/kg | SW846 6010B |
| Lead | 9.9 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 0.66 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 12700 | 23.8 | mg/kg | SW846 6010B |
| Barium | 78.8 | 23.8 | mg/kg | SW846 6010B |
| Beryllium | 0.21 B | 0.60 | mg/kg | SW846 6010B |
| Calcium | 345 B,J | 596 | mg/kg | SW846 6010B |
| Chromium | 15.6 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 4.2 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 6.5 | 3.0 | mg/kg | SW846 6010B |
| Iron | 12900 J | 11.9 | mg/kg | SW846 6010B |
| Magnesium | 497 B,J | 596 | mg/kg | SW846 6010B |
| Manganese | 331 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 5.3 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 508 B,J | 596 | mg/kg | SW846 6010B |
| Vanadium | 36.1 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 17.5 | 2.4 | mg/kg | SW846 6010B |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **5GP-22 (14') 02/17/04 14:15 006** | | | | |
| Percent Solids | 83.9 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-22-22 (14') 02/17/04 14:15 007** | | | | |
| Mercury | 0.062 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.7 | 1.2 | mg/kg | SW846 6010B |
| Lead | 10.2 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 1.1 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 13900 | 23.9 | mg/kg | SW846 6010B |
| Barium | 91.2 | 23.9 | mg/kg | SW846 6010B |
| Beryllium | 0.28 B | 0.60 | mg/kg | SW846 6010B |
| Calcium | 339 B,J | 596 | mg/kg | SW846 6010B |
| Chromium | 18.7 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 4.4 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 6.6 | 3.0 | mg/kg | SW846 6010B |
| Iron | 14800 J | 11.9 | mg/kg | SW846 6010B |
| Magnesium | 527 B,J | 596 | mg/kg | SW846 6010B |
| Manganese | 372 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 6.1 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 531 B,J | 596 | mg/kg | SW846 6010B |
| Vanadium | 38.8 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 19.9 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 83.8 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-23 (14') 02/17/04 14:45 008** | | | | |
| Mercury | 0.096 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.7 | 1.2 | mg/kg | SW846 6010B |
| Lead | 21.9 | 0.36 | mg/kg | SW846 6010B |
| Selenium | 0.36 B | 0.60 | mg/kg | SW846 6010B |
| Thallium | 0.91 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 16600 | 24.2 | mg/kg | SW846 6010B |
| Barium | 57.6 | 24.2 | mg/kg | SW846 6010B |
| Calcium | 12000 J | 604 | mg/kg | SW846 6010B |
| Chromium | 22.2 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 5.0 B | 6.0 | mg/kg | SW846 6010B |
| Copper | 9.2 | 3.0 | mg/kg | SW846 6010B |
| Iron | 18100 J | 12.1 | mg/kg | SW846 6010B |
| Magnesium | 906 J | 604 | mg/kg | SW846 6010B |
| Manganese | 268 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 7.0 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 833 J | 604 | mg/kg | SW846 6010B |
| Sodium | 204 B | 604 | mg/kg | SW846 6010B |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **5GP-23 (14') 02/17/04 14:45 008** | | | | |
| Vanadium | 45.0 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 20.6 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 82.8 | 10.0 | % | MCAWW 160.3 MOD |
| **5GP-24 (14') 02/17/04 15:05 009** | | | | |
| Mercury | 0.081 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 3.6 | 1.2 | mg/kg | SW846 6010B |
| Lead | 24.0 | 0.37 | mg/kg | SW846 6010B |
| Thallium | 0.74 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 13000 | 24.4 | mg/kg | SW846 6010B |
| Antimony | 0.38 B | 7.3 | mg/kg | SW846 6010B |
| Barium | 49.5 | 24.4 | mg/kg | SW846 6010B |
| Beryllium | 0.12 B | 0.61 | mg/kg | SW846 6010B |
| Calcium | 18700 J | 609 | mg/kg | SW846 6010B |
| Chromium | 25.7 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 3.7 B | 6.1 | mg/kg | SW846 6010B |
| Copper | 7.5 | 3.0 | mg/kg | SW846 6010B |
| Iron | 17100 J | 12.2 | mg/kg | SW846 6010B |
| Magnesium | 864 J | 609 | mg/kg | SW846 6010B |
| Manganese | 245 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 5.3 | 4.9 | mg/kg | SW846 6010B |
| Potassium | 856 J | 609 | mg/kg | SW846 6010B |
| Sodium | 208 B | 609 | mg/kg | SW846 6010B |
| Vanadium | 36.6 | 6.1 | mg/kg | SW846 6010B |
| Zinc | 18.7 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 82.1 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-17 (11') 02/18/04 09:40 010** | | | | |
| Mercury | 0.067 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 26.4 | 1.2 | mg/kg | SW846 6010B |
| Lead | 120 | 0.37 | mg/kg | SW846 6010B |
| Selenium | 3.1 | 0.62 | mg/kg | SW846 6010B |
| Thallium | 2.1 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 13500 | 25.0 | mg/kg | SW846 6010B |
| Antimony | 1.2 B | 7.5 | mg/kg | SW846 6010B |
| Barium | 244 | 25.0 | mg/kg | SW846 6010B |
| Beryllium | 0.43 B | 0.62 | mg/kg | SW846 6010B |
| Cadmium | 0.29 B | 0.62 | mg/kg | SW846 6010B |
| Calcium | 39100 J | 624 | mg/kg | SW846 6010B |
| Chromium | 45.6 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 10.4 | 6.2 | mg/kg | SW846 6010B |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **7GP-17 (11') 02/18/04 09:40 010** | | | | |
| Copper | 36.3 | 3.1 | mg/kg | SW846 6010B |
| Iron | 24200 J | 12.5 | mg/kg | SW846 6010B |
| Magnesium | 4050 J | 624 | mg/kg | SW846 6010B |
| Manganese | 272 | 1.9 | mg/kg | SW846 6010B |
| Nickel | 28.1 | 5.0 | mg/kg | SW846 6010B |
| Potassium | 3640 J | 624 | mg/kg | SW846 6010B |
| Sodium | 611 B | 624 | mg/kg | SW846 6010B |
| Vanadium | 46.0 | 6.2 | mg/kg | SW846 6010B |
| Zinc | 165 | 2.5 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.30 B | 0.62 | mg/kg | SW846 9012A |
| Percent Solids | 80.1 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-18 (14') 02/18/04 10:05 011** | | | | |
| Mercury | 0.051 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 2.7 | 1.2 | mg/kg | SW846 6010B |
| Lead | 8.9 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 0.74 B | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 17500 | 24.2 | mg/kg | SW846 6010B |
| Antimony | 0.35 B | 7.2 | mg/kg | SW846 6010B |
| Barium | 59.3 | 24.2 | mg/kg | SW846 6010B |
| Calcium | 770 J | 604 | mg/kg | SW846 6010B |
| Chromium | 23.2 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 8.2 | 6.0 | mg/kg | SW846 6010B |
| Copper | 10.6 | 3.0 | mg/kg | SW846 6010B |
| Iron | 25800 J | 12.1 | mg/kg | SW846 6010B |
| Magnesium | 932 J | 604 | mg/kg | SW846 6010B |
| Manganese | 257 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 8.3 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 1460 J | 604 | mg/kg | SW846 6010B |
| Vanadium | 50.0 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 26.6 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 82.8 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-19 (14') 02/18/04 10:20 012** | | | | |
| Mercury | 0.052 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 30.5 | 1.2 | mg/kg | SW846 6010B |
| Lead | 95.3 | 0.37 | mg/kg | SW846 6010B |
| Selenium | 3.7 | 0.61 | mg/kg | SW846 6010B |
| Thallium | 2.1 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 14300 | 24.4 | mg/kg | SW846 6010B |
| Antimony | 1.2 B | 7.3 | mg/kg | SW846 6010B |

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# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **7GP-19 (14') 02/18/04 10:20 012** | | | | |
| Barium | 273 | 24.4 | mg/kg | SW846 6010B |
| Beryllium | 0.50 B | 0.61 | mg/kg | SW846 6010B |
| Cadmium | 0.10 B | 0.61 | mg/kg | SW846 6010B |
| Calcium | 39700 J | 610 | mg/kg | SW846 6010B |
| Chromium | 38.4 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 8.7 | 6.1 | mg/kg | SW846 6010B |
| Copper | 28.0 | 3.0 | mg/kg | SW846 6010B |
| Iron | 16100 J | 12.2 | mg/kg | SW846 6010B |
| Magnesium | 3010 J | 610 | mg/kg | SW846 6010B |
| Manganese | 133 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 18.9 | 4.9 | mg/kg | SW846 6010B |
| Potassium | 3770 J | 610 | mg/kg | SW846 6010B |
| Sodium | 446 B | 610 | mg/kg | SW846 6010B |
| Vanadium | 50.6 | 6.1 | mg/kg | SW846 6010B |
| Zinc | 39.4 | 2.4 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.29 B | 0.61 | mg/kg | SW846 9012A |
| Percent Solids | 82.0 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-20 (14.5') 02/18/04 10:45 013** | | | | |
| Mercury | 0.084 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 8.3 | 1.2 | mg/kg | SW846 6010B |
| Lead | 66.5 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 1.3 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 11300 | 23.9 | mg/kg | SW846 6010B |
| Antimony | 0.94 B | 7.2 | mg/kg | SW846 6010B |
| Barium | 114 | 23.9 | mg/kg | SW846 6010B |
| Calcium | 10400 J | 598 | mg/kg | SW846 6010B |
| Chromium | 75.3 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 6.6 | 6.0 | mg/kg | SW846 6010B |
| Copper | 15.7 | 3.0 | mg/kg | SW846 6010B |
| Iron | 19800 J | 12.0 | mg/kg | SW846 6010B |
| Magnesium | 2990 J | 598 | mg/kg | SW846 6010B |
| Manganese | 173 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 15.5 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 2280 J | 598 | mg/kg | SW846 6010B |
| Sodium | 316 B | 598 | mg/kg | SW846 6010B |
| Vanadium | 43.2 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 46.1 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 83.6 | 10.0 | % | MCAWW 160.3 MOD |

(Continued on next page)

# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **7GP-21 (13.5') 02/18/04 11:00 014** | | | | |
| Mercury | 0.054 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 2.8 | 1.2 | mg/kg | SW846 6010B |
| Lead | 12.4 | 0.36 | mg/kg | SW846 6010B |
| Thallium | 1.4 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 17700 | 24.0 | mg/kg | SW846 6010B |
| Antimony | 0.42 B | 7.2 | mg/kg | SW846 6010B |
| Barium | 79.6 | 24.0 | mg/kg | SW846 6010B |
| Calcium | 699 J | 601 | mg/kg | SW846 6010B |
| Chromium | 23.3 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 23.6 | 6.0 | mg/kg | SW846 6010B |
| Copper | 12.8 | 3.0 | mg/kg | SW846 6010B |
| Iron | 28900 J | 12.0 | mg/kg | SW846 6010B |
| Magnesium | 1380 J | 601 | mg/kg | SW846 6010B |
| Manganese | 705 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 9.4 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 1920 J | 601 | mg/kg | SW846 6010B |
| Vanadium | 55.9 | 6.0 | mg/kg | SW846 6010B |
| Zinc | 32.5 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 83.2 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-22 (13') 02/18/04 11:20 015** | | | | |
| Mercury | 0.043 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 21.0 | 1.2 | mg/kg | SW846 6010B |
| Lead | 109 | 0.36 | mg/kg | SW846 6010B |
| Selenium | 2.5 | 0.60 | mg/kg | SW846 6010B |
| Thallium | 1.8 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 12700 | 24.2 | mg/kg | SW846 6010B |
| Antimony | 0.99 B | 7.2 | mg/kg | SW846 6010B |
| Barium | 211 | 24.2 | mg/kg | SW846 6010B |
| Beryllium | 0.12 B | 0.60 | mg/kg | SW846 6010B |
| Cadmium | 0.043 B | 0.60 | mg/kg | SW846 6010B |
| Calcium | 30400 J | 604 | mg/kg | SW846 6010B |
| Chromium | 38.4 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 8.1 | 6.0 | mg/kg | SW846 6010B |
| Copper | 23.7 | 3.0 | mg/kg | SW846 6010B |
| Iron | 16300 J | 12.1 | mg/kg | SW846 6010B |
| Magnesium | 2870 J | 604 | mg/kg | SW846 6010B |
| Manganese | 167 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 19.0 | 4.8 | mg/kg | SW846 6010B |
| Potassium | 3050 J | 604 | mg/kg | SW846 6010B |
| Sodium | 395 B | 604 | mg/kg | SW846 6010B |
| Vanadium | 42.7 | 6.0 | mg/kg | SW846 6010B |

(Continued on next page)

# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **7GP-22 (13') 02/18/04 11:20 015** | | | | |
| Zinc | 39.9 | 2.4 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.53 B | 0.60 | mg/kg | SW846 9012A |
| Percent Solids | 82.7 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-22-22 (13') 02/18/04 11:20 016** | | | | |
| Mercury | 0.048 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 29.8 | 1.2 | mg/kg | SW846 6010B |
| Lead | 104 | 0.37 | mg/kg | SW846 6010B |
| Selenium | 4.1 | 0.61 | mg/kg | SW846 6010B |
| Thallium | 2.1 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 14700 | 24.6 | mg/kg | SW846 6010B |
| Antimony | 0.90 B | 7.4 | mg/kg | SW846 6010B |
| Barium | 279 | 24.6 | mg/kg | SW846 6010B |
| Beryllium | 0.55 B | 0.61 | mg/kg | SW846 6010B |
| Cadmium | 0.083 B | 0.61 | mg/kg | SW846 6010B |
| Calcium | 40300 J | 614 | mg/kg | SW846 6010B |
| Chromium | 41.6 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 9.1 | 6.1 | mg/kg | SW846 6010B |
| Copper | 29.9 | 3.1 | mg/kg | SW846 6010B |
| Iron | 15300 J | 12.3 | mg/kg | SW846 6010B |
| Magnesium | 3180 J | 614 | mg/kg | SW846 6010B |
| Manganese | 146 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 19.8 | 4.9 | mg/kg | SW846 6010B |
| Potassium | 3680 J | 614 | mg/kg | SW846 6010B |
| Sodium | 487 B | 614 | mg/kg | SW846 6010B |
| Vanadium | 49.2 | 6.1 | mg/kg | SW846 6010B |
| Zinc | 39.0 | 2.5 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.38 B | 0.61 | mg/kg | SW846 9012A |
| Percent Solids | 81.4 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-23 (12.5') 02/18/04 11:40 017** | | | | |
| Mercury | 0.098 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 21.4 | 1.2 | mg/kg | SW846 6010B |
| Lead | 236 | 0.37 | mg/kg | SW846 6010B |
| Selenium | 2.7 | 0.62 | mg/kg | SW846 6010B |
| Thallium | 2.3 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 13100 | 24.8 | mg/kg | SW846 6010B |
| Antimony | 1.2 B | 7.5 | mg/kg | SW846 6010B |
| Barium | 221 | 24.8 | mg/kg | SW846 6010B |
| Beryllium | 0.082 B | 0.62 | mg/kg | SW846 6010B |
| Cadmium | 0.047 B | 0.62 | mg/kg | SW846 6010B |

(Continued on next page)

# EXECUTIVE SUMMARY - Detection Highlights

**A4B190299**

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|---|---|---|---|---|
| **7GP-23 (12.5') 02/18/04 11:40 017** | | | | |
| Calcium | 44100 J | 621 | mg/kg | SW846 6010B |
| Chromium | 61.4 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 8.3 | 6.2 | mg/kg | SW846 6010B |
| Copper | 26.0 | 3.1 | mg/kg | SW846 6010B |
| Iron | 19000 J | 12.4 | mg/kg | SW846 6010B |
| Magnesium | 2880 J | 621 | mg/kg | SW846 6010B |
| Manganese | 169 | 1.9 | mg/kg | SW846 6010B |
| Nickel | 25.6 | 5.0 | mg/kg | SW846 6010B |
| Potassium | 3530 J | 621 | mg/kg | SW846 6010B |
| Sodium | 556 B | 621 | mg/kg | SW846 6010B |
| Vanadium | 42.7 | 6.2 | mg/kg | SW846 6010B |
| Zinc | 43.3 | 2.5 | mg/kg | SW846 6010B |
| Cyanide, Total | 0.74 | 0.62 | mg/kg | SW846 9012A |
| Percent Solids | 80.5 | 10.0 | % | MCAWW 160.3 MOD |
| **7GP-24 (14') 02/18/04 12:00 018** | | | | |
| Mercury | 0.024 B | 0.12 | mg/kg | SW846 7471A |
| Arsenic | 2.1 | 1.2 | mg/kg | SW846 6010B |
| Lead | 9.2 | 0.35 | mg/kg | SW846 6010B |
| Thallium | 1.7 | 1.2 | mg/kg | SW846 6010B |
| Aluminum | 14000 | 23.6 | mg/kg | SW846 6010B |
| Antimony | 0.84 B | 7.1 | mg/kg | SW846 6010B |
| Barium | 101 | 23.6 | mg/kg | SW846 6010B |
| Calcium | 1150 J | 589 | mg/kg | SW846 6010B |
| Chromium | 20.1 | 1.2 | mg/kg | SW846 6010B |
| Cobalt | 11.7 | 5.9 | mg/kg | SW846 6010B |
| Copper | 11.5 | 2.9 | mg/kg | SW846 6010B |
| Iron | 23500 J | 11.8 | mg/kg | SW846 6010B |
| Magnesium | 3760 J | 589 | mg/kg | SW846 6010B |
| Manganese | 375 | 1.8 | mg/kg | SW846 6010B |
| Nickel | 12.6 | 4.7 | mg/kg | SW846 6010B |
| Potassium | 1910 J | 589 | mg/kg | SW846 6010B |
| Vanadium | 39.2 | 5.9 | mg/kg | SW846 6010B |
| Zinc | 62.7 | 2.4 | mg/kg | SW846 6010B |
| Percent Solids | 84.9 | 10.0 | % | MCAWW 160.3 MOD |

SEVERN TRENT STL

# *METHOD SUMMARY*

# ANALYTICAL METHODS SUMMARY

**A4B190299**

| PARAMETER | ANALYTICAL METHOD |
|---|---|
| Cyanide, Total | SW846 9012A |
| Inductively Coupled Plasma (ICP) Metals | SW846 6010B |
| Mercury in Solid Waste (Manual Cold-Vapor) | SW846 7471A |
| Total Residue as Percent Solids | MCAWW 160.3 MOD |
| Trace Inductively Coupled Plasma (ICP) Metals | SW846 6010B |

**References:**

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SEVERN TRENT STL

# *SAMPLE SUMMARY*

# SAMPLE SUMMARY

**A4B190299**

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|---|---|---|---|---|
| F9VHN | 001 | 5GP-17 (15') | 02/17/04 | 11:15 |
| F9VHX | 002 | 5GP-18 (13') | 02/17/04 | 11:45 |
| F9VH2 | 003 | 5GP-19 (15') | 02/17/04 | 12:15 |
| F9VH3 | 004 | 5GP-20 (14') | 02/17/04 | 12:45 |
| F9VH4 | 005 | 5GP-21 (14') | 02/17/04 | 13:45 |
| F9VH7 | 006 | 5GP-22 (14') | 02/17/04 | 14:15 |
| F9VH8 | 007 | 5GP-22-22 (14') | 02/17/04 | 14:15 |
| F9VH9 | 008 | 5GP-23 (14') | 02/17/04 | 14:45 |
| F9VJA | 009 | 5GP-24 (14') | 02/17/04 | 15:05 |
| F9VJD | 010 | 7GP-17 (11') | 02/18/04 | 09:40 |
| F9VJE | 011 | 7GP-18 (14') | 02/18/04 | 10:05 |
| F9VJF | 012 | 7GP-19 (14') | 02/18/04 | 10:20 |
| F9VJH | 013 | 7GP-20 (14.5') | 02/18/04 | 10:45 |
| F9VJM | 014 | 7GP-21 (13.5') | 02/18/04 | 11:00 |
| F9VJQ | 015 | 7GP-22 (13') | 02/18/04 | 11:20 |
| F9VJR | 016 | 7GP-22-22 (13') | 02/18/04 | 11:20 |
| F9VJV | 017 | 7GP-23 (12.5') | 02/18/04 | 11:40 |
| F9VJ0 | 018 | 7GP-24 (14') | 02/18/04 | 12:00 |

**NOTE(S):**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.

This report must not be reproduced, except in full, without the written approval of the laboratory.

- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SEVERN TRENT STL

# *SHIPPING AND RECEIVING DOCUMENTS*

# CHAIN OF CUSTODY RECORD



**Laboratory:** Severn Trent Laboratories, Inc., 4101 Shuffel Drive NW, North Canton, OH 44720, 330-497-9396

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | **Location:** | HWMU5 |
| **Address:** | 0 | **Address:** | 2206 South Main Street | **Event:** | Geoprobe borings |
| | 0 | | Blacksburg, Virginia 24060 | **DAA JN:** | B02271-01 |
| **Phone:** | 0 | **Phone:** | (540) 552-0444 | **Lab JN:** | |
| **Fax:** | 0 | **Fax:** | (540) 552-0291 | | |
| **Fax:** | 0 | | | | |

**Project Specific (PS) or Batch (B) QC:** ☑ YES ☐ NO
**Sample Collection for Project Complete?** ☑ YES ☐ NO
**Carrier:** _____
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑ YES ☐ NO
Bill: ☐ Client ☑ Consultant
Preserved and shipped on ice: ☑ YES ☐ NO

**GENERAL NOTES:** Report results at or greater than QL.

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TAL Inorganics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | |
| Required pH of Sample | | | | | | | | | | | | | |
| Box 2 - Preservative | | | | | | | | | | | | | |
| Box 5 - Sample Container Type | | | | | P | | | | | | | | |
| 5GP-17 (15') | 2/17 | 11:15 | S | 1 | X | | | | | | | | |
| 5GP-18 (13') | 2/17 | 11:45 | S | 1 | X | | | | | | | | |
| 5GP-19 (15') | 2/17 | 12:15 | S | 1 | X | | | | | | | | |
| 5GP-20 (14') | 2/17 | 12:45 | S | 1 | X | | | | | | | | |
| 5GP-20 MS (14') | 2/17 | 12:45 | S | 1 | X | | | | | | | | |
| 5GP-20 MSD (14') | 2/17 | 12:45 | S | 1 | X | | | | | | | | |
| 5GP-21 (14') | 2/17 | 13:45 | S | 1 | X | | | | | | | | |
| 5GP-22 (14') | 2/17 | 14:15 | S | 1 | X | | | | | | | | |
| 5GP-22-22 (14') | 2/17 | 14:15 | S | 1 | X | | | | | | | | |
| 5GP-23 (14') | 2/17 | 14:45 | S | 1 | X | | | | | | | | |
| 5GP-24 (14') | 2/17 | 15:05 | S | 1 | X | | | | | | | | |

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 2/17/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: | |
| Sampler Signature: Darren Kidwell | Time: 11:00 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): James Arellano | Date: 2-19-04 | #2 Received by (Signature): | Date: | 30 DYS ORG/6 MTHS INORG | |
| Sampler Signature: | Time: | Company Name: STL N. Canton | Time: 10:00 | Company Name: | Time: | | |

STL North Canton

# CHAIN OF CUSTODY RECORD

**Laboratory:** Severn Trent Laboratories, Inc., 4101 Shuffel Drive NW, North Canton, OH 44720, 330-497-9396

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU7<br>**Event:** Geoprobe borings<br>**DAA JN:** B02271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑YES ☐NO<br>**Sample Collection for Project Complete?** ☑YES ☐NO<br>**Carrier:**<br>**Tracking Number:** | | |

| **Box 1: Matrix** | | **Box 2: Preservative** | | **Box 3: Filtered/Unfiltered** | **Box 4: Sample Type** | **Invoice** |
|---|---|---|---|---|---|---|
| SW Surface Water | T Trip Blank | A HCL | E NaOH | F Filtered | G Grab | **Copy to Consultant:** ☑YES ☐NO |
| GW Groundwater | E Equipment Blank | B $HNO_3$ | F ZnAc | U Unfiltered | C Composite | **Bill:** ☐Client ☑Consultant |
| L Leachate | P Product | C $H_2SO_4$ | G Other (Specify) | **Box 5: Sample Container Type** | | **Preserved and shipped on ice:** ☑YES ☐NO |
| S Soil | O Other | D $Na_2S_2O_3$ | H None | P Plastic V VOA<br>AG Amber Glass CG Clear Glass | | |

**GENERAL NOTES:** Report results at or greater than QL.

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TAL Inorganics |
|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G |
| **Box 3 - Filtered/Unfiltered** | | | | | U |
| **Required pH of Sample** | | | | | |
| **Box 2 - Preservative** | | | | | |
| **Box 5 - Sample Container Type** | | | | | P |
| 7GP-17 (11') | 2/18 | 9:40 | S | 1 | X |
| 7GP-18 (14') | 2/18 | 10:05 | S | 1 | X |
| 7GP-19 (14') | 2/18 | 10:20 | S | 1 | X |
| 7GP-20 (14.5') | 2/18 | 10:45 | S | 1 | X |
| 7GP-20 MS (14.5') | 2/18 | 10:45 | S | 1 | X |
| 7GP-20 MSD (14.5') | 2/18 | 10:45 | S | 1 | X |
| 7GP-21 (13.5') | 2/18 | 11:00 | S | 1 | X |
| 7GP-22 (14') | 2/18 | 11:20 | S | 1 | X |
| 7GP-22-22 (14') | 2/18 | 11:20 | S | 1 | X |
| 7GP-23 (14') | 2/18 | 11:40 | S | 1 | X |
| 7GP-24 (14') | 2/18 | 12:00 | S | 1 | X |

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARLEEN KIDWELL | Date: 2/18/04 | #1 Relinquished by (Signature): Darlene Kidwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested | |
| Sampler Signature: Darlene Kidwell | Time: 0900 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): [illegible] | Date: 2-18-04 | #2 Received by (Signature): | Date: | 30 DYS ORG/6 MTHS INORG | |
| Sampler Signature: | Time: | Company Name: STL, Canton | Time: 10:00 | Company Name: | Time: | | |

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STL North Canton

RSR280

**Severn Trent Laboratories, Inc.**
**Sample Control Record**

Client: 385158

Lot #: A4B190299

Case Number/SDG: BN02271-01

Storage Location: W47

| Laboratory Sample I.D. | Transferred By | Date | Entered | Removed | Reason | Date Returned |
|---|---|---|---|---|---|---|
| F9VHN | EARLES | 2/19/04 | Yes | | Storage | |
| F9VHX | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH2 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH3 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH4 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH7 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH8 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VH9 | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJA | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJD | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJE | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJF | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJH | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJM | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJQ | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJR | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJV | EARLES | 2/19/04 | Yes | | Storage | |
| F9VJ0 | EARLES | 2/19/04 | Yes | | Storage | |

A4B190299

# STL Cooler Receipt Form/Narrative
## North Canton Facility

Lot Number: ~~A4B190253~~

Client: Draper Aden Project: EAA? Quote#: 15452

Cooler Received on: 2-19-04 Opened on: 2-19-04 by: [signature] (Signature)

Fedx ☐ Client Drop Off ☐ UPS ☑ Airborne ☐ FAS ☐ Other: _____

Cooler ☑ Safe ☐ Foam Box ☐ Client Cooler ☐ Other: _____

STL Cooler No#: K373

1. Were custody seals on the outside of the cooler? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1
   Were the custody seals signed and dated? Yes ☑ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☑ No ☐ NA ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☑ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☑ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☑ Vermiculite ☐ Foam ☐ None ☐ Other : _____

6. Cooler temperature upon receipt 3.3 °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☑ ICE/$H_2O$ Slurry ☐

COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Did all bottle labels and tags agree with the custody papers? Yes ☐ No ☑
9. Were samples at the correct pH? (record on back) Yes ☐ No ☐ NA ☑
10. Were correct bottles used for the tests indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Was a sufficient amount of sample sent in each bottle? Yes ☑ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning: _____

| √ | MACRO | MACRO |
|---|---|---|
| | ***1. CHAIN OF CUSTODY*** | |
| ✓ | SR1A | The chain of custody and sample bottles did not agree. The following discrepancies occurred Depths are not on bottles. log per coc<br>Includes CN for JES |
| | ***2. SAMPLE CONDITION*** | |
| | SR2A | Sample(s) _____ were received or requested after the recommended holding time had expired. |
| | SR2B | Sample(s) were received with insufficient volume. |
| | SR2C | Sample(s) were received in a broken container. |
| | ***3. SAMPLE PRESERVATION*** | |
| | SR3A | Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s).<br>*Nitric Acid Lot #120503-HNO3; Sulfuric Acid Lot # 101503-H2SO4; Sodium Hydroxide Lot # 111401-NaOH; Hydrochloric Acid Lot # 100902-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH3COO2ZN/NaOH* |
| | SR3B | Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM) |
| | ***4. Other (see below or back)*** | |

# STL Cooler Receipt Form/Narrative
## North Canton Facility

| Client ID | pH | Date | Initials |
|---|---|---|---|
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| Cooler | Temp | Method | Coolant |
|---|---|---|---|
| | | | |
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**Discrepancies Cont.**

*Macro Name:*

*Macro Name:*

*Macro Name:*

*Other Anomalies:*

# *METALS DATA*

# *FORMS DATA*

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-17 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-001 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 11:15 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **18300** | **24.7** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AG** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.2** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **10.1** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.32 B** | **7.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **53.3** | **24.7** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHN1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.62 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHN1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.79 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AF** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHN1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **604 B,J,E** | **616** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-17 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-001 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **20.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **5.6 B** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **9.7** | **3.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **21400 J** | **12.3** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **698 J,E** | **616** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **380** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **7.0 E** | **4.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **826 J,E** | **616** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHN1AX |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 616 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHN1A0 |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-17 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-001 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **54.1** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **22.4** | **2.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHN1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:43 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.076 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VHN1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:30 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

E Matrix interference.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-18 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-002 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 11:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **15000** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **10.6** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Antimony | ND | 7.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1AN |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **22.2 B** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.61 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **639 J** | **602** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-18 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **23.5** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **4.4 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **7.5** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **23500 J** | **12.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **598 B,J** | **602** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **225** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **4.7 B** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **439 B,J** | **602** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 602 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VHX1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-18 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **45.5** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **18.5** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VHX1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.065 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VHX1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:34 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-19 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-003 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:15 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **17400** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **9.9** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.37 B** | **7.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **62.1** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH21AK |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH21AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.65 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH21AR |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **1970 J** | **603** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-19 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **18.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **3.7 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **8.8** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **15300 J** | **12.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **527 B,J** | **603** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **247** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **6.7** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **719 J** | **603** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH21A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 603 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH21AA |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-19 (15')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **44.7** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **20.6** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH21AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 08:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.13** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH21AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:35 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-20 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-004 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **18900** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **8.4** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Antimony | ND | 7.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31CC |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **59.8** | **24.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31CJ |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.1 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31A5** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31CM |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **1000 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-20 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **19.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **3.7 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **8.8** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **14700 J** | **12.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **576 B,J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **207** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **7.0** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **781 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31DM |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 604 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH31AA |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-20 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **42.2** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **21.5** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH31AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:02 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.12** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH31AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:36 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-21 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-005 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 13:45 **Date Received..:** 02/19/04
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **12800** | **23.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **27.4** | **0.35** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.41 B** | **7.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **44.0** | **23.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH41AK |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.086 B** | **0.59** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.2** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:22 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH41AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **12000 J** | **590** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-21 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-005 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **17.9** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **9.5** | **5.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **8.5** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **16500 J** | **11.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **1330 J** | **590** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **520** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **9.3** | **4.7** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **1180 J** | **590** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH41A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **1190** | **590** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-21 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-005 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **32.6** | **5.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **21.6** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH41AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:17 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.083 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH41AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:39 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-006 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:15 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **12700** | **23.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **2.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **9.9** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Antimony | ND | 7.1 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH71AN |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **78.8** | **23.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH71AK |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.21 B** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.66 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH71AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **345 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-006 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **15.6** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **4.2 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **6.5** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **12900 J** | **11.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **497 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **331** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **5.3** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **508 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH71A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 596 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH71AA |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-006 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **36.1** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **17.5** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH71AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.056 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH71AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:41 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-007 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:15 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **13900** | **23.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **10.2** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Antimony | ND | 7.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH81AN |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **91.2** | **23.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH81AK |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.28 B** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.1 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH81AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **339 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **18.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **4.4 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **6.6** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **14800 J** | **11.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **527 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **372** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **6.1** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **531 B,J** | **596** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH81A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 596 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH81AA |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22-22 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **38.8** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **19.9** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH81AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:37 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.062 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH81AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:42 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-23 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-008 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **16600** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **21.9** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Antimony | ND | 7.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH91AN |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **57.6** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **0.36 B** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH91AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.91 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH91AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **12000 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-23 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.2** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **5.0 B** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **9.2** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **18100 J** | **12.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **906 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **268** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **7.0** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **833 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VH91A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **204 B** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-23 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **45.0** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **20.6** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VH91AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:42 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.096 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VH91AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:43 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-009 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 15:05 **Date Received..:** 02/19/04
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **13000** | **24.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **3.6** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **24.0** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.38 B** | **7.3** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **49.5** | **24.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJA1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.12 B** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.74 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJA1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **18700 J** | **609** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **25.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **3.7 B** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **7.5** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **17100 J** | **12.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **864 J** | **609** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **245** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **5.3** | **4.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **856 J** | **609** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJA1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **208 B** | **609** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **36.6** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **18.7** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJA1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:47 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.081 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJA1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:45 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-17 (11')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-010 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 09:40 **Date Received..:** 02/19/04
**% Moisture.....:** 20

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **13500** | **25.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **26.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **120** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **1.2 B** | **7.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **244** | **25.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **3.1** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.43 B** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **2.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cadmium** | **0.29 B** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **39100 J** | **624** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-17 (11')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **45.6** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **10.4** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **36.3** | **3.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **24200 J** | **12.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **4050 J** | **624** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **272** | **1.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **28.1** | **5.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **3640 J** | **624** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJD1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **611 B** | **624** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-17 (11')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **46.0** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **165** | **2.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJD1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:52 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.067 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJD1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:48 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-18 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-011 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:05 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **17500** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **8.9** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.35 B** | **7.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **59.3** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJE1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJE1AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **0.74 B** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJE1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **770 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-18 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **23.2** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **8.2** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **10.6** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **25800 J** | **12.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **932 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **257** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **8.3** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **1460 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJE1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 604 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJE1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-18 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **50.0** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **26.6** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJE1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 09:57 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.051 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJE1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:49 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-19 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-012 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:20 **Date Received..:** 02/19/04
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **14300** | **24.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **30.5** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **95.3** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **1.2 B** | **7.3** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **273** | **24.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **3.7** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.50 B** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **2.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cadmium** | **0.10 B** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **39700 J** | **610** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-19 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **38.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **8.7** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **28.0** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **16100 J** | **12.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **3010 J** | **610** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **133** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **18.9** | **4.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **3770 J** | **610** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJF1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **446 B** | **610** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-19 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **50.6** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **39.4** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJF1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:01 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.052 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJF1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:50 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-20 (14.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-013 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **11300** | **23.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **8.3** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **66.5** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.94 B** | **7.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1CC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **114** | **23.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJH1A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJH1CJ |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.3** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1A5** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:26 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJH1CM |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **10400 J** | **598** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-20 (14.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **75.3** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **6.6** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **15.7** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **19800 J** | **12.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **2990 J** | **598** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **173** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **15.5** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **2280 J** | **598** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJH1DM |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **316 B** | **598** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-20 (14.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **43.2** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **46.1** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJH1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:06 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.084 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJH1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:52 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-21 (13.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-014 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:00 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **17700** | **24.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **2.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **12.4** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.42 B** | **7.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **79.6** | **24.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJM1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJM1AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:31 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJM1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **699 J** | **601** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-21 (13.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **23.3** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **23.6** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **12.8** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **28900 J** | **12.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **1380 J** | **601** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **705** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **9.4** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **1920 J** | **601** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJM1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 601 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJM1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-21 (13.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **55.9** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **32.5** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJM1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:32 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.054 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJM1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:56 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-015 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:20 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **12700** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **21.0** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **109** | **0.36** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.99 B** | **7.3** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **211** | **24.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **2.5** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.12 B** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cadmium** | **0.043 B** | **0.60** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **30400 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-015 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **38.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **8.1** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **23.7** | **3.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **16300 J** | **12.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **2870 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **167** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **19.0** | **4.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **3050 J** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJQ1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **395 B** | **604** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-015 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **42.7** | **6.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **39.9** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJQ1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:36 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.043 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJQ1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:58 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-016 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:20 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **14700** | **24.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **29.8** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **104** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.90 B** | **7.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **279** | **24.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **4.1** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.55 B** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **2.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cadmium** | **0.083 B** | **0.61** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **40300 J** | **614** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **41.6** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **9.1** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **29.9** | **3.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **15300 J** | **12.3** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **3180 J** | **614** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **146** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **19.8** | **4.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **3680 J** | **614** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJR1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **487 B** | **614** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22-22 (13')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **49.2** | **6.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **39.0** | **2.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJR1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:41 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.048 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJR1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 12:59 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-23 (12.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-017 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:40 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **13100** | **24.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **21.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **236** | **0.37** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **1.2 B** | **7.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **221** | **24.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Selenium** | **2.7** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Beryllium** | **0.082 B** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **2.3** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cadmium** | **0.047 B** | **0.62** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **44100 J** | **621** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-23 (12.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-017 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **61.4** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **8.3** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **26.0** | **3.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **19000 J** | **12.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **2880 J** | **621** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **169** | **1.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **25.6** | **5.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **3530 J** | **621** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJV1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Sodium** | **556 B** | **621** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-23 (12.5')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-017 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **42.7** | **6.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **43.3** | **2.5** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJV1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:46 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.098 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJV1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 13:00 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-018 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 12:00 **Date Received..:** 02/19/04
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 4051099 | | | | | | |
| **Aluminum** | **14000** | **23.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Arsenic** | **2.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Lead** | **9.2** | **0.35** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Antimony** | **0.84 B** | **7.1** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Barium** | **101** | **23.6** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJ01AK |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Beryllium | ND | 0.59 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJ01AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Thallium** | **1.7** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJ01AR |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Calcium** | **1150 J** | **589** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

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**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-018 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **20.1** | **1.2** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Cobalt** | **11.7** | **5.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Copper** | **11.5** | **2.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Iron** | **23500 J** | **11.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Magnesium** | **3760 J** | **589** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Manganese** | **375** | **1.8** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Nickel** | **12.6** | **4.7** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Potassium** | **1910 J** | **589** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJ01A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| Sodium | ND | 589 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9VJ01AA |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |

(Continued on next page)

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-24 (14')**

**TOTAL Metals**

**Lot-Sample #...:** A4B190299-018 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **39.2** | **5.9** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Zinc** | **62.7** | **2.4** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9VJ01AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 10:51 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | | |
| **Mercury** | **0.024 B** | **0.12** | **mg/kg** | **SW846 7471A** | **02/20/04** | **F9VJ01AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 13:04 | Analyst ID.....: 001086 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

# Metals Data Reporting Form

## Initial Calibration Verification Standard

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn **Acceptable Range:** 90% - 110%

**Standard Source:** Ultra **Standard ID:**

| Elemen | WL/ Mass | True Conc | Ck5ICV 02/20/04 11:17 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 2.5 | 2.27 | **90.8** | | | | | | | | |

Version 4.91.3 *Form 2A Equivalent*

# Metals Data Reporting Form

## Initial Calibration Verification Standard

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 90% - 110%

**Standard Source:** Ultra **Standard ID:**

| Elemen | WL/ Mass | True Conc | ICV 02/23/04 7:55 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 12500.0 | 12862.67 | **102.9** | | | | | | | | |
| Antimony | 206.838 | 250.0 | 252.66 | **101.1** | | | | | | | | |
| Arsenic | 189.042 | 250.0 | 242.51 | **97.0** | | | | | | | | |
| Barium | 493.409 | 1000.0 | 999.76 | **100.0** | | | | | | | | |
| Beryllium | 313.042 | 1000.0 | 1022.26 | **102.2** | | | | | | | | |
| Cadmium | 226.502 | 250.0 | 249.70 | **99.9** | | | | | | | | |
| Calcium | 317.933 | 25000.0 | 24580.83 | **98.3** | | | | | | | | |
| Chromium | 267.716 | 1000.0 | 1010.89 | **101.1** | | | | | | | | |
| Cobalt | 228.616 | 1000.0 | 1003.71 | **100.4** | | | | | | | | |
| Copper | 324.753 | 1000.0 | 1030.29 | **103.0** | | | | | | | | |
| Iron | 271.441 | 12500.0 | 12724.31 | **101.8** | | | | | | | | |
| Lead | 220.353 | 250.0 | 255.02 | **102.0** | | | | | | | | |
| Magnesium | 279.078 | 25000.0 | 24333.53 | **97.3** | | | | | | | | |
| Manganese | 257.61 | 1000.0 | 1004.73 | **100.5** | | | | | | | | |
| Nickel | 231.604 | 1000.0 | 1003.66 | **100.4** | | | | | | | | |
| Potassium | 766.491 | 25000.0 | 25976.88 | **103.9** | | | | | | | | |
| Selenium | 196.026 | 250.0 | 250.02 | **100.0** | | | | | | | | |
| Silver | 328.068 | 500.0 | 496.92 | **99.4** | | | | | | | | |
| Sodium | 330.232 | 25000.0 | 24676.84 | **98.7** | | | | | | | | |
| Thallium | 190.864 | 500.0 | 507.60 | **101.5** | | | | | | | | |
| Vanadium | 292.402 | 1000.0 | 991.63 | **99.2** | | | | | | | | |
| Zinc | 213.856 | 1000.0 | 1000.34 | **100.0** | | | | | | | | |

# Metals Data Reporting Form

## Continuing Calibration Verification

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | Ck2CCV 02/20/04 11:20 AM Found | % Rec | Ck2CCV 02/20/04 11:35 AM Found | % Rec | Ck2CCV 02/20/04 11:47 AM Found | % Rec | Ck2CCV 02/20/04 12:02 PM Found | % Rec | Ck2CCV 02/20/04 12:16 PM Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 5.0 | 4.98 | **99.7** | 4.77 | **95.4** | 4.94 | **98.8** | 4.97 | **99.4** | 5.03 | **100.5** |

# Metals Data Reporting Form

## Continuing Calibration Verification

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | Ck2CCV 02/20/04 12:31 PM Found | % Rec | Ck2CCV 02/20/04 12:46 PM Found | % Rec | Ck2CCV 02/20/04 1:01 PM Found | % Rec | Ck2CCV 02/20/04 1:06 PM Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 5.0 | 5.10 | **102.1** | 5.06 | **101.3** | 5.03 | **100.5** | 5.03 | **100.6** | | |

# Metals Data Reporting Form

## Continuing Calibration Verification

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 90% - 110%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | CCV 02/23/04 8:22 AM Found | % Rec | CCV 02/23/04 9:21 AM Found | % Rec | CCV 02/23/04 10:21 AM Found | % Rec | CCV 02/23/04 11:20 AM Found | % Rec | CCV 02/23/04 11:37 AM Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 25000.0 | 25115.66 | **100.5** | 25329.96 | **101.3** | 25218.18 | **100.9** | 25590.94 | **102.4** | 25642.48 | **102.6** |
| Antimony | 206.838 | 500.0 | 510.43 | **102.1** | 513.55 | **102.7** | 519.21 | **103.8** | 524.74 | **104.9** | 527.46 | **105.5** |
| Arsenic | 189.042 | 500.0 | 494.24 | **98.8** | 501.78 | **100.4** | 505.44 | **101.1** | 509.95 | **102.0** | 508.56 | **101.7** |
| Barium | 493.409 | 2000.0 | 2057.05 | **102.9** | 2083.43 | **104.2** | 2076.93 | **103.8** | 2098.16 | **104.9** | 2100.13 | **105.0** |
| Beryllium | 313.042 | 2000.0 | 1976.63 | **98.8** | 2001.50 | **100.1** | 2000.42 | **100.0** | 2021.31 | **101.1** | 2023.57 | **101.2** |
| Cadmium | 226.502 | 500.0 | 489.31 | **97.9** | 494.26 | **98.9** | 494.52 | **98.9** | 499.27 | **99.9** | 499.84 | **100.0** |
| Calcium | 317.933 | 50000.0 | 47167.19 | **94.3** | 47783.02 | **95.6** | 47693.01 | **95.4** | 48331.22 | **96.7** | 48494.08 | **97.0** |
| Chromium | 267.716 | 2000.0 | 1960.54 | **98.0** | 1977.72 | **98.9** | 1976.55 | **98.8** | 1996.35 | **99.8** | 2005.80 | **100.3** |
| Cobalt | 228.616 | 2000.0 | 1958.73 | **97.9** | 1979.78 | **99.0** | 1979.25 | **99.0** | 1998.52 | **99.9** | 2007.85 | **100.4** |
| Copper | 324.753 | 2000.0 | 2028.40 | **101.4** | 2056.06 | **102.8** | 2046.97 | **102.3** | 2071.86 | **103.6** | 2083.18 | **104.2** |
| Iron | 271.441 | 25000.0 | 24720.59 | **98.9** | 24819.98 | **99.3** | 24739.99 | **99.0** | 24975.92 | **99.9** | 25092.14 | **100.4** |
| Lead | 220.353 | 500.0 | 494.09 | **98.8** | 497.99 | **99.6** | 498.37 | **99.7** | 504.39 | **100.9** | 503.43 | **100.7** |
| Magnesium | 279.078 | 50000.0 | 47922.29 | **95.8** | 48444.57 | **96.9** | 48581.75 | **97.2** | 49101.35 | **98.2** | 49362.30 | **98.7** |
| Manganese | 257.61 | 2000.0 | 1981.12 | **99.1** | 1995.96 | **99.8** | 1991.70 | **99.6** | 2011.89 | **100.6** | 2020.11 | **101.0** |
| Nickel | 231.604 | 2000.0 | 1943.01 | **97.2** | 1963.76 | **98.2** | 1965.45 | **98.3** | 1986.03 | **99.3** | 1977.92 | **98.9** |
| Potassium | 766.491 | 50000.0 | 52584.70 | **105.2** | 53574.57 | **107.1** | 53609.93 | **107.2** | 54455.27 | **108.9** | 54322.29 | **108.6** |
| Selenium | 196.026 | 500.0 | 496.53 | **99.3** | 502.85 | **100.6** | 505.15 | **101.0** | 512.04 | **102.4** | 515.54 | **103.1** |
| Silver | 328.068 | 1000.0 | 995.77 | **99.6** | 1011.73 | **101.2** | 1011.03 | **101.1** | 1023.57 | **102.4** | 1024.23 | **102.4** |
| Sodium | 330.232 | 50000.0 | 49538.28 | **99.1** | 50097.60 | **100.2** | 49941.12 | **99.9** | 50955.52 | **101.9** | 50629.91 | **101.3** |
| Thallium | 190.864 | 1000.0 | 1020.52 | **102.1** | 1029.57 | **103.0** | 1033.42 | **103.3** | 1036.92 | **103.7** | 1057.10 | **105.7** |
| Vanadium | 292.402 | 2000.0 | 1972.79 | **98.6** | 1993.28 | **99.7** | 1990.11 | **99.5** | 2010.26 | **100.5** | 2021.13 | **101.1** |
| Zinc | 213.856 | 2000.0 | 1997.47 | **99.9** | 2024.34 | **101.2** | 2025.99 | **101.3** | 2059.80 | **103.0** | 2058.14 | **102.9** |

# Metals Data Reporting Form

## Continuing Calibration Verification

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 90% - 110%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | CCV 02/23/04 12:36 PM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 25000.0 | 25442.63 | **101.8** | | | | | | | | |
| Antimony | 206.838 | 500.0 | 524.09 | **104.8** | | | | | | | | |
| Arsenic | 189.042 | 500.0 | 506.58 | **101.3** | | | | | | | | |
| Barium | 493.409 | 2000.0 | 2084.26 | **104.2** | | | | | | | | |
| Beryllium | 313.042 | 2000.0 | 2010.91 | **100.5** | | | | | | | | |
| Cadmium | 226.502 | 500.0 | 495.31 | **99.1** | | | | | | | | |
| Calcium | 317.933 | 50000.0 | 48189.63 | **96.4** | | | | | | | | |
| Chromium | 267.716 | 2000.0 | 1989.99 | **99.5** | | | | | | | | |
| Cobalt | 228.616 | 2000.0 | 1989.45 | **99.5** | | | | | | | | |
| Copper | 324.753 | 2000.0 | 2069.02 | **103.5** | | | | | | | | |
| Iron | 271.441 | 25000.0 | 24923.14 | **99.7** | | | | | | | | |
| Lead | 220.353 | 500.0 | 498.30 | **99.7** | | | | | | | | |
| Magnesium | 279.078 | 50000.0 | 49010.71 | **98.0** | | | | | | | | |
| Manganese | 257.61 | 2000.0 | 2001.42 | **100.1** | | | | | | | | |
| Nickel | 231.604 | 2000.0 | 1957.58 | **97.9** | | | | | | | | |
| Potassium | 766.491 | 50000.0 | 53909.40 | **107.8** | | | | | | | | |
| Selenium | 196.026 | 500.0 | 512.65 | **102.5** | | | | | | | | |
| Silver | 328.068 | 1000.0 | 1019.43 | **101.9** | | | | | | | | |
| Sodium | 330.232 | 50000.0 | 50064.99 | **100.1** | | | | | | | | |
| Thallium | 190.864 | 1000.0 | 1047.04 | **104.7** | | | | | | | | |
| Vanadium | 292.402 | 2000.0 | 2005.71 | **100.3** | | | | | | | | |
| Zinc | 213.856 | 2000.0 | 2048.61 | **102.4** | | | | | | | | |

# Metals Data Reporting Form

## Contract Required Detection Limit Standard

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn **Acceptable Range:** 50% - 150%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | Ck3CRA\MRL 02/20/04 11:19 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.2 | 0.17 | **83.4** | | | | | | | | |

# Metals Data Reporting Form

## Contract Required Detection Limit Standard

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 50% - 150%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | CRI\MRL 02/23/04 8:06 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 200.0 | 207.38 | **103.7** | | | | | | | | |
| Antimony | 206.838 | 10.0 | 11.92 | **119.2** | | | | | | | | |
| Arsenic | 189.042 | 15.0 | 14.62 | **97.5** | | | | | | | | |
| Barium | 493.409 | 10.0 | 10.26 | **102.6** | | | | | | | | |
| Beryllium | 313.042 | 5.0 | 5.03 | **100.6** | | | | | | | | |
| Cadmium | 226.502 | 5.0 | 5.08 | **101.5** | | | | | | | | |
| Calcium | 317.933 | 5000.0 | 4717.39 | **94.3** | | | | | | | | |
| Chromium | 267.716 | 5.0 | 5.22 | **104.5** | | | | | | | | |
| Cobalt | 228.616 | 5.0 | 4.86 | **97.2** | | | | | | | | |
| Copper | 324.753 | 15.0 | 15.84 | **105.6** | | | | | | | | |
| Iron | 271.441 | 300.0 | 299.70 | **99.9** | | | | | | | | |
| Lead | 220.353 | 10.0 | 9.37 | **93.7** | | | | | | | | |
| Magnesium | 279.078 | 5000.0 | 4813.82 | **96.3** | | | | | | | | |
| Manganese | 257.61 | 15.0 | 15.12 | **100.8** | | | | | | | | |
| Nickel | 231.604 | 25.0 | 25.60 | **102.4** | | | | | | | | |
| Potassium | 766.491 | 5000.0 | 5214.86 | **104.3** | | | | | | | | |
| Selenium | 196.026 | 20.0 | 19.12 | **95.6** | | | | | | | | |
| Silver | 328.068 | 5.0 | 4.88 | **97.6** | | | | | | | | |
| Sodium | 330.232 | 5000.0 | 5011.63 | **100.2** | | | | | | | | |
| Thallium | 190.864 | 15.0 | 17.44 | **116.3** | | | | | | | | |
| Vanadium | 292.402 | 7.0 | 6.81 | **97.3** | | | | | | | | |
| Zinc | 213.856 | 40.0 | 40.52 | **101.3** | | | | | | | | |

# STL North Canton

## Metals Data Reporting Form

### Initial Calibration Blank Results

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn

**Standard Source:** **Standard ID:**

| Element | WL/ Mass | Report Limit | Ck4ICB 02/20/04 11:18 AM Found | Q | Found | Q | Found | Q | Found | Q | Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.6 | 0.1 | U | | | | | | | | |

U Result is less than the IDL

B Result is between IDL and RL

# STL North Canton

## Metals Data Reporting Form

### Initial Calibration Blank Results

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc

**Standard Source:** **Standard ID:**

| Element | WL/ Mass | Report Limit | ICB 02/23/04 8:02 AM Found | Q | Found | Q | Found | Q | Found | Q | Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 200 | 7.2 | U | | | | | | | | |
| Antimony | 206.838 | 60 | **2.8** | **B** | | | | | | | | |
| Arsenic | 189.042 | 10 | 2.6 | U | | | | | | | | |
| Barium | 493.409 | 200 | 0.1 | U | | | | | | | | |
| Beryllium | 313.042 | 5 | **0.1** | **B** | | | | | | | | |
| Cadmium | 226.502 | 5 | 0.2 | U | | | | | | | | |
| Calcium | 317.933 | 5000 | **145.0** | **B** | | | | | | | | |
| Chromium | 267.716 | 10 | 0.8 | U | | | | | | | | |
| Cobalt | 228.616 | 50 | 0.4 | U | | | | | | | | |
| Copper | 324.753 | 25 | 0.6 | U | | | | | | | | |
| Iron | 271.441 | 100 | 13.1 | U | | | | | | | | |
| Lead | 220.353 | 3 | 1.1 | U | | | | | | | | |
| Magnesium | 279.078 | 5000 | **71.2** | **B** | | | | | | | | |
| Manganese | 257.61 | 15 | 0.1 | U | | | | | | | | |
| Nickel | 231.604 | 40 | 1.0 | U | | | | | | | | |
| Potassium | 766.491 | 5000 | **261.0** | **B** | | | | | | | | |
| Selenium | 196.026 | 5 | 3.4 | U | | | | | | | | |
| Silver | 328.068 | 10 | 0.8 | U | | | | | | | | |
| Sodium | 330.232 | 5000 | 182.0 | U | | | | | | | | |
| Thallium | 190.864 | 10 | 3.5 | U | | | | | | | | |
| Vanadium | 292.402 | 50 | 0.6 | U | | | | | | | | |
| Zinc | 213.856 | 20 | 4.0 | U | | | | | | | | |



U Result is less than the IDL

B Result is between IDL and RL

*Form 3 Equivalent*

# STL North Canton

## Metals Data Reporting Form

### Continuing Calibration Blank Results

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn

**Standard Source:** **Standard ID:**

| Element | WL/ Mass | Report Limit | Ck1CCB 02/20/04 11:22 AM Found | Q | Ck1CCB 02/20/04 11:36 AM Found | Q | Ck1CCB 02/20/04 11:48 AM Found | Q | Ck1CCB 02/20/04 12:03 PM Found | Q | Ck1CCB 02/20/04 12:18 PM Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.6 | 0.1 | U | 0.1 | U | 0.1 | U | **-0.1** | **B** | 0.1 | U |

U Result is less than the IDL

B Result is between IDL and RL

# STL North Canton

## Metals Data Reporting Form

### Continuing Calibration Blank Results

**Instrument:** CVAA **Units:** ug/L

**Chart Number:** hg10220b.prn

**Standard Source:** **Standard ID:**

| Element | WL/ Mass | Report Limit | Ck1CCB 02/20/04 12:32 PM Found | Q | Ck1CCB 02/20/04 12:47 PM Found | Q | Ck1CCB 02/20/04 1:03 PM Found | Q | Ck1CCB 02/20/04 1:07 PM Found | Q | Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.6 | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | | |

U Result is less than the IDL

B Result is between IDL and RL

# STL North Canton

## Metals Data Reporting Form

### Continuing Calibration Blank Results

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc

**Standard Source:** _____ **Standard ID:** _____

| Element | WL/ Mass | Report Limit | CCB 02/23/04 8:28 AM Found | Q | CCB 02/23/04 9:28 AM Found | Q | CCB 02/23/04 10:27 AM Found | Q | CCB 02/23/04 11:26 AM Found | Q | CCB 02/23/04 11:43 AM Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 200 | **13.2** | **B** | **11.1** | **B** | **12.3** | **B** | **10.4** | **B** | **7.9** | **B** |
| Antimony | 206.838 | 60 | **2.8** | **B** | 2.2 | U | 2.2 | U | 2.2 | U | 2.2 | U |
| Arsenic | 189.042 | 10 | 2.6 | U | 2.6 | U | 2.6 | U | 2.6 | U | 2.6 | U |
| Barium | 493.409 | 200 | **0.2** | **B** | **0.3** | **B** | **0.3** | **B** | **0.2** | **B** | **0.2** | **B** |
| Beryllium | 313.042 | 5 | **0.2** | **B** | **0.2** | **B** | **0.2** | **B** | **0.2** | **B** | **0.2** | **B** |
| Cadmium | 226.502 | 5 | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U |
| Calcium | 317.933 | 5000 | **154.0** | **B** | **147.0** | **B** | **148.0** | **B** | **145.0** | **B** | **146.0** | **B** |
| Chromium | 267.716 | 10 | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U |
| Cobalt | 228.616 | 50 | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U |
| Copper | 324.753 | 25 | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U |
| Iron | 271.441 | 100 | 13.1 | U | 13.1 | U | 13.1 | U | 13.1 | U | 13.1 | U |
| Lead | 220.353 | 3 | 1.1 | U | **-1.5** | **B** | **-1.9** | **B** | **-2.2** | **B** | **-1.5** | **B** |
| Magnesium | 279.078 | 5000 | **83.0** | **B** | **75.1** | **B** | **74.8** | **B** | **70.9** | **B** | **76.1** | **B** |
| Manganese | 257.61 | 15 | **0.2** | **B** | **0.2** | **B** | **0.2** | **B** | **0.1** | **B** | **0.1** | **B** |
| Nickel | 231.604 | 40 | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U |
| Potassium | 766.491 | 5000 | **280.0** | **B** | **270.0** | **B** | **280.0** | **B** | **271.0** | **B** | **282.0** | **B** |
| Selenium | 196.026 | 5 | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U | 3.4 | U |
| Silver | 328.068 | 10 | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U | 0.8 | U |
| Sodium | 330.232 | 5000 | 182.0 | U | **-340.0** | **B** | **-330.0** | **B** | **-380.0** | **B** | **-340.0** | **B** |
| Thallium | 190.864 | 10 | 3.5 | U | **3.7** | **B** | 3.5 | U | **4.2** | **B** | **5.6** | **B** |
| Vanadium | 292.402 | 50 | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U | 0.6 | U |
| Zinc | 213.856 | 20 | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U |

Version 4.91.3

U Result is less than the IDL

B Result is between IDL and RL

*Form 3 Equivalent*

# STL North Canton

## Metals Data Reporting Form

### Continuing Calibration Blank Results

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc

**Standard Source:** **Standard ID:**

| Element | WL/ Mass | Report Limit | CCB 02/23/04 12:42 PM Found | Q | Found | Q | Found | Q | Found | Q | Found | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 200 | **11.0** | **B** | | | | | | | | |
| Antimony | 206.838 | 60 | **3.0** | **B** | | | | | | | | |
| Arsenic | 189.042 | 10 | 2.6 | U | | | | | | | | |
| Barium | 493.409 | 200 | **0.2** | **B** | | | | | | | | |
| Beryllium | 313.042 | 5 | **0.2** | **B** | | | | | | | | |
| Cadmium | 226.502 | 5 | 0.2 | U | | | | | | | | |
| Calcium | 317.933 | 5000 | **146.0** | **B** | | | | | | | | |
| Chromium | 267.716 | 10 | 0.8 | U | | | | | | | | |
| Cobalt | 228.616 | 50 | 0.4 | U | | | | | | | | |
| Copper | 324.753 | 25 | 0.6 | U | | | | | | | | |
| Iron | 271.441 | 100 | 13.1 | U | | | | | | | | |
| Lead | 220.353 | 3 | 1.1 | U | | | | | | | | |
| Magnesium | 279.078 | 5000 | **76.6** | **B** | | | | | | | | |
| Manganese | 257.61 | 15 | **0.2** | **B** | | | | | | | | |
| Nickel | 231.604 | 40 | 1.0 | U | | | | | | | | |
| Potassium | 766.491 | 5000 | **273.0** | **B** | | | | | | | | |
| Selenium | 196.026 | 5 | 3.4 | U | | | | | | | | |
| Silver | 328.068 | 10 | 0.8 | U | | | | | | | | |
| Sodium | 330.232 | 5000 | **-370.0** | **B** | | | | | | | | |
| Thallium | 190.864 | 10 | 3.5 | U | | | | | | | | |
| Vanadium | 292.402 | 50 | 0.6 | U | | | | | | | | |
| Zinc | 213.856 | 20 | 4.0 | U | | | | | | | | |

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **MB Lot-Sample #:** A4B200000-099 **Prep Batch #...:** 4051099 | | | | | | |
| Aluminum | ND | 20.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AK |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Arsenic | ND | 1.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AF |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Antimony | ND | 6.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AL |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Lead | ND | 0.30 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AG |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 12:17 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Barium | ND | 20.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AM |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Selenium | ND | 0.50 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AH |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Beryllium | ND | 0.50 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AN |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Thallium | ND | 1.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AJ |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Cadmium | ND | 0.50 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AP |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| **Calcium** | **24.4 B** | **500** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9WC21AQ** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |
| Chromium | ND | 1.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AR |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | | Instrument ID..: I6 | |

(Continued on next page)

**METHOD BLANK REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Cobalt | ND | 5.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AT |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Copper | ND | 2.5 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AU |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| **Iron** | **8.6 B** | **10.0** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9WC21AV** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| **Magnesium** | **8.7 B** | **500** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9WC21AW** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Manganese | ND | 1.5 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AX |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Nickel | ND | 4.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21A0 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| **Potassium** | **29.6 B** | **500** | **mg/kg** | **SW846 6010B** | **02/20-02/23/04** | **F9WC21A1** |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Silver | ND | 1.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21A2 |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Sodium | ND | 500 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AA |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Vanadium | ND | 5.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AC |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Zinc | ND | 2.0 | mg/kg | SW846 6010B | 02/20-02/23/04 | F9WC21AD |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 08:33 | Analyst ID.....: 001637 | Instrument ID..: I6 | | |
| Mercury | ND | 0.10 | mg/kg | SW846 7471A | 02/20/04 | F9WC21AE |
| | | Dilution Factor: 1 | | | | |
| | | Analysis Time..: 12:28 | Analyst ID.....: 001086 | Instrument ID..: H1 | | |

(Continued on next page)

## METHOD BLANK REPORT

## TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

# Metals Data Reporting Form

## Interference Check Standard A

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | Reporting Limit | True Conc | ICSA 02/23/04 8:13 AM Found | Found | Found | Found | Found |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | | 500000 | 488000 | | | | |
| Antimony | 206.838 | 60 | | -3 | | | | |
| Arsenic | 189.042 | 10 | | 5 | | | | |
| Barium | 493.409 | 200 | | 2 | | | | |
| Beryllium | 313.042 | 5 | | 0 | | | | |
| Cadmium | 226.502 | 5 | | -1 | | | | |
| Calcium | 317.933 | | 500000 | 514000 | | | | |
| Chromium | 267.716 | 10 | | 0 | | | | |
| Cobalt | 228.616 | 50 | | 3 | | | | |
| Copper | 324.753 | 25 | | 2 | | | | |
| Iron | 271.441 | | 200000 | 188000 | | | | |
| Lead | 220.353 | 3 | | -2 | | | | |
| Magnesium | 279.078 | | 500000 | 473000 | | | | |
| Manganese | 257.61 | 15 | | 14 | | | | |
| Nickel | 231.604 | 40 | | 3 | | | | |
| Potassium | 766.491 | 5000 | | 262 | | | | |
| Selenium | 196.026 | 5 | | -4 | | | | |
| Silver | 328.068 | 10 | | 0 | | | | |
| Sodium | 330.232 | 5000 | | -250 | | | | |
| Thallium | 190.864 | 10 | | 1 | | | | |
| Vanadium | 292.402 | 50 | | -2 | | | | |
| Zinc | 213.856 | 20 | | 18 | | | | |

# Metals Data Reporting Form

## Interference Check Standard AB

**Instrument:** ICPST **Units:** ug/L

**Chart Number:** i60223a.arc **Acceptable Range:** 80% - 120%

**Standard Source:** Ultra **Standard ID:**

| Element | WL/ Mass | True Conc | ICSAB 02/23/04 8:17 AM Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec | Found | % Rec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 500000 | 482747.7 | **96.5** | | | | | | | | |
| Antimony | 206.838 | 1000 | 989.9 | **99.0** | | | | | | | | |
| Arsenic | 189.042 | 1000 | 954.2 | **95.4** | | | | | | | | |
| Barium | 493.409 | 500 | 515.1 | **103.0** | | | | | | | | |
| Beryllium | 313.042 | 500 | 487.1 | **97.4** | | | | | | | | |
| Cadmium | 226.502 | 1000 | 906.1 | **90.6** | | | | | | | | |
| Calcium | 317.933 | 500000 | 507480.9 | **101.5** | | | | | | | | |
| Chromium | 267.716 | 500 | 471.9 | **94.4** | | | | | | | | |
| Cobalt | 228.616 | 500 | 466.0 | **93.2** | | | | | | | | |
| Copper | 324.753 | 500 | 551.5 | **110.3** | | | | | | | | |
| Iron | 271.441 | 200000 | 186717.1 | **93.4** | | | | | | | | |
| Lead | 220.353 | 1000 | 939.2 | **93.9** | | | | | | | | |
| Magnesium | 279.078 | 500000 | 469187.4 | **93.8** | | | | | | | | |
| Manganese | 257.61 | 500 | 494.1 | **98.8** | | | | | | | | |
| Nickel | 231.604 | 1000 | 908.3 | **90.8** | | | | | | | | |
| Potassium | 766.491 | 10000 | 11719.9 | **117.2** | | | | | | | | |
| Selenium | 196.026 | 1000 | 944.3 | **94.4** | | | | | | | | |
| Silver | 328.068 | 1000 | 1031.2 | **103.1** | | | | | | | | |
| Sodium | 330.232 | 10000 | 10216.8 | **102.2** | | | | | | | | |
| Thallium | 190.864 | 1000 | 957.5 | **95.8** | | | | | | | | |
| Vanadium | 292.402 | 500 | 478.5 | **95.7** | | | | | | | | |
| Zinc | 213.856 | 1000 | 1017.1 | **101.7** | | | | | | | | |

**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #:** A4B190299-004 **Prep Batch #...:** 4051099 | | | | | | | |
| Aluminum | NC,MSB | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31A9 |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CA |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Arsenic | 84 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31AV |
| | 80 | (75 - 125) | 4.9 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31AW |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Antimony | 38 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CD |
| | 28 N,* | (75 - 125) | 32 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CE |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Lead | 94 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31A0 |
| | 85 | (75 - 125) | 8.6 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31A1 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Barium | 101 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CG |
| | 90 | (75 - 125) | 9.7 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CH |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Selenium | 86 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31A3 |
| | 81 | (75 - 125) | 5.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31A4 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Beryllium | 89 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CK |
| | 84 | (75 - 125) | 5.8 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CL |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |
| Thallium | 89 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31A6 |
| | 85 | (75 - 125) | 5.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31A7 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | Analyst ID.....: 001637 | |

(Continued on next page)

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Cadmium | 85 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CN |
| | 80 | (75 - 125) | 5.4 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CP |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Calcium | 88 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CR |
| | 82 | (75 - 125) | 5.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CT |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Chromium | 126 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31CV |
| | 104 | (75 - 125) | 11 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31CW |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Cobalt | 91 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31C0 |
| | 84 | (75 - 125) | 6.7 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31C1 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Copper | 116 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31C3 |
| | 104 | (75 - 125) | 9.0 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31C4 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Iron | NC,MSB | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31C6 |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31C7 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Magnesium | 91 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31C9 |
| | 81 | (75 - 125) | 9.8 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31DA |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Manganese | 51 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31DD |
| | 22 N | (75 - 125) | 7.7 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31DE |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Nickel | 99 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31DG |
| | 89 | (75 - 125) | 9.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31DH |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |

(Continued on next page)

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Potassium | 101 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31DK |
| | 90 | (75 - 125) | 10 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31DL |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Silver | 100 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31DN |
| | 95 | (75 - 125) | 5.4 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31DP |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Sodium | 90 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31AC |
| | 84 | (75 - 125) | 7.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31AD |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Vanadium | 116 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31AF |
| | 105 | (75 - 125) | 5.9 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31AG |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Zinc | 133 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VH31AJ |
| | 106 | (75 - 125) | 17 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VH31AK |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 09:07 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Mercury | 97 | (10 - 209) | | | SW846 7471A | 02/20/04 | F9VH31AM |
| | 91 | (10 - 209) | 3.7 | (0-20) | SW846 7471A | 02/20/04 | F9VH31AN |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 12:37 | | | Instrument ID..: H1 | Analyst ID.....: 001086 | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #:** A4B190299-004 **Prep Batch #...:** 4051099 | | | | | | | | | |
| Aluminum | | | | | | | | | |
| | 18900 | 241 | 33900 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VH31A9 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 18900 | 241 | 28100 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VH31CA |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Arsenic | | | | | | | | | |
| | 2.7 | 241 | 205 | mg/kg | 84 | | SW846 6010B | 02/20-02/23/04 | F9VH31AV |
| | 2.7 | 241 | 195 | mg/kg | 80 | 4.9 | SW846 6010B | 02/20-02/23/04 | F9VH31AW |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Antimony | | | | | | | | | |
| | ND | 60.4 | 23.1 N | mg/kg | 38 | | SW846 6010B | 02/20-02/23/04 | F9VH31CD |
| | ND | 60.4 | 16.7 | mg/kg | 28 | 32 | SW846 6010B | 02/20-02/23/04 | F9VH31CE |
| | | | Qualifiers: N,* | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Lead | | | | | | | | | |
| | 8.4 | 60.4 | 65.1 | mg/kg | 94 | | SW846 6010B | 02/20-02/23/04 | F9VH31A0 |
| | 8.4 | 60.4 | 59.8 | mg/kg | 85 | 8.6 | SW846 6010B | 02/20-02/23/04 | F9VH31A1 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Barium | | | | | | | | | |
| | 59.8 | 241 | 304 | mg/kg | 101 | | SW846 6010B | 02/20-02/23/04 | F9VH31CG |
| | 59.8 | 241 | 276 | mg/kg | 90 | 9.7 | SW846 6010B | 02/20-02/23/04 | F9VH31CH |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Selenium | | | | | | | | | |
| | ND | 241 | 206 | mg/kg | 86 | | SW846 6010B | 02/20-02/23/04 | F9VH31A3 |
| | ND | 241 | 196 | mg/kg | 81 | 5.2 | SW846 6010B | 02/20-02/23/04 | F9VH31A4 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |

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**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Beryllium | | | | | | | | | |
| | ND | 6.0 | 5.4 | mg/kg | 89 | | SW846 6010B | 02/20-02/23/04 | F9VH31CK |
| | ND | 6.0 | 5.1 | mg/kg | 84 | 5.8 | SW846 6010B | 02/20-02/23/04 | F9VH31CL |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Thallium | | | | | | | | | |
| | 1.1 | 241 | 216 | mg/kg | 89 | | SW846 6010B | 02/20-02/23/04 | F9VH31A6 |
| | 1.1 | 241 | 205 | mg/kg | 85 | 5.2 | SW846 6010B | 02/20-02/23/04 | F9VH31A7 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Cadmium | | | | | | | | | |
| | ND | 6.0 | 5.1 | mg/kg | 85 | | SW846 6010B | 02/20-02/23/04 | F9VH31CN |
| | ND | 6.0 | 4.8 | mg/kg | 80 | 5.4 | SW846 6010B | 02/20-02/23/04 | F9VH31CP |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Calcium | | | | | | | | | |
| | 1000 | 6040 | 6290 | mg/kg | 88 | | SW846 6010B | 02/20-02/23/04 | F9VH31CR |
| | 1000 | 6040 | 5970 | mg/kg | 82 | 5.2 | SW846 6010B | 02/20-02/23/04 | F9VH31CT |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Chromium | | | | | | | | | |
| | 19.8 | 24.1 | 50.2 N | mg/kg | 126 | | SW846 6010B | 02/20-02/23/04 | F9VH31CV |
| | 19.8 | 24.1 | 45.0 | mg/kg | 104 | 11 | SW846 6010B | 02/20-02/23/04 | F9VH31CW |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Cobalt | | | | | | | | | |
| | 3.7 | 60.4 | 58.4 | mg/kg | 91 | | SW846 6010B | 02/20-02/23/04 | F9VH31C0 |
| | 3.7 | 60.4 | 54.6 | mg/kg | 84 | 6.7 | SW846 6010B | 02/20-02/23/04 | F9VH31C1 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Copper | | | | | | | | | |
| | 8.8 | 30.2 | 43.9 | mg/kg | 116 | | SW846 6010B | 02/20-02/23/04 | F9VH31C3 |
| | 8.8 | 30.2 | 40.1 | mg/kg | 104 | 9.0 | SW846 6010B | 02/20-02/23/04 | F9VH31C4 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |

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**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Iron | | | | | | | | | |
| | 14700 | 121 | 18900 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VH31C6 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 14700 | 121 | 17900 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VH31C7 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Magnesium | | | | | | | | | |
| | 576 | 6040 | 6040 | mg/kg | 91 | | SW846 6010B | 02/20-02/23/04 | F9VH31C9 |
| | 576 | 6040 | 5470 | mg/kg | 81 | 9.8 | SW846 6010B | 02/20-02/23/04 | F9VH31DA |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Manganese | | | | | | | | | |
| | 207 | 60.4 | 238 N | mg/kg | 51 | | SW846 6010B | 02/20-02/23/04 | F9VH31DD |
| | 207 | 60.4 | 220 N | mg/kg | 22 | 7.7 | SW846 6010B | 02/20-02/23/04 | F9VH31DE |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Nickel | | | | | | | | | |
| | 7.0 | 60.4 | 66.5 | mg/kg | 99 | | SW846 6010B | 02/20-02/23/04 | F9VH31DG |
| | 7.0 | 60.4 | 60.6 | mg/kg | 89 | 9.2 | SW846 6010B | 02/20-02/23/04 | F9VH31DH |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Potassium | | | | | | | | | |
| | 781 | 6040 | 6880 | mg/kg | 101 | | SW846 6010B | 02/20-02/23/04 | F9VH31DK |
| | 781 | 6040 | 6220 | mg/kg | 90 | 10 | SW846 6010B | 02/20-02/23/04 | F9VH31DL |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Silver | | | | | | | | | |
| | ND | 6.0 | 6.0 | mg/kg | 100 | | SW846 6010B | 02/20-02/23/04 | F9VH31DN |
| | ND | 6.0 | 5.7 | mg/kg | 95 | 5.4 | SW846 6010B | 02/20-02/23/04 | F9VH31DP |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Sodium | | | | | | | | | |
| | ND | 6040 | 5420 | mg/kg | 90 | | SW846 6010B | 02/20-02/23/04 | F9VH31AC |
| | ND | 6040 | 5040 | mg/kg | 84 | 7.2 | SW846 6010B | 02/20-02/23/04 | F9VH31AD |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |

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## MATRIX SPIKE SAMPLE DATA REPORT

## TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Vanadium | | | | | | | | | |
| | 42.2 | 60.4 | 112 | mg/kg | 116 | | SW846 6010B | 02/20-02/23/04 | F9VH31AF |
| | 42.2 | 60.4 | 106 | mg/kg | 105 | 5.9 | SW846 6010B | 02/20-02/23/04 | F9VH31AG |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Zinc | | | | | | | | | |
| | 21.5 | 60.4 | 102 N | mg/kg | 133 | | SW846 6010B | 02/20-02/23/04 | F9VH31AJ |
| | 21.5 | 60.4 | 85.3 | mg/kg | 106 | 17 | SW846 6010B | 02/20-02/23/04 | F9VH31AK |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 09:07 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Mercury | | | | | | | | | |
| | 0.12 | 0.20 | 0.32 | mg/kg | 97 | | SW846 7471A | 02/20/04 | F9VH31AM |
| | 0.12 | 0.20 | 0.31 | mg/kg | 91 | 3.7 | SW846 7471A | 02/20/04 | F9VH31AN |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 12:37 | | Instrument ID..: H1 | | | Analyst ID.....: 001086 | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #:** A4B190299-013 **Prep Batch #...:** 4051099 | | | | | | | |
| Aluminum | NC,MSB | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1A9 |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CA |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Arsenic | 85 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1AV |
| | 84 | (75 - 125) | 0.69 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1AW |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Antimony | 41 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CD |
| | 40 N | (75 - 125) | 4.4 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CE |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Lead | 171 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1A0 |
| | 202 N | (75 - 125) | 10 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1A1 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Barium | 106 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CG |
| | 107 | (75 - 125) | 0.84 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CH |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Selenium | 84 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1A3 |
| | 85 | (75 - 125) | 0.30 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1A4 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Beryllium | 82 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CK |
| | 79 | (75 - 125) | 4.6 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CL |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Thallium | 85 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1A6 |
| | 85 | (75 - 125) | 0.74 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1A7 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |

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**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Cadmium | 81 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CN |
| | 81 | (75 - 125) | 0.58 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CP |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Calcium | 294 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CR |
| | 266 N | (75 - 125) | 6.1 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CT |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Chromium | 0.0 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CV |
| | 20 N | (75 - 125) | 0.0 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1CW |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Cobalt | 90 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C0 |
| | 87 | (75 - 125) | 2.6 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1C1 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Copper | 115 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C3 |
| | 111 | (75 - 125) | 2.0 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1C4 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Iron | NC,MSB | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C6 |
| | NC,MSB | (75 - 125) | | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1C7 |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Magnesium | 69 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C9 |
| | 77 | (75 - 125) | 6.8 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1DA |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Manganese | 242 N | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1DD |
| | 206 N | (75 - 125) | 6.9 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1DE |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Nickel | 90 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1DG |
| | 91 | (75 - 125) | 1.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1DH |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |

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## MATRIX SPIKE SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Potassium | 97 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1DK |
| | 99 | (75 - 125) | 1.5 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1DL |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Silver | 95 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1DN |
| | 97 | (75 - 125) | 2.3 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1DP |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Sodium | 87 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1AC |
| | 88 | (75 - 125) | 1.3 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1AD |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Vanadium | 94 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1AF |
| | 91 | (75 - 125) | 1.7 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1AG |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Zinc | 77 | (75 - 125) | | | SW846 6010B | 02/20-02/23/04 | F9VJH1AJ |
| | 89 | (75 - 125) | 7.2 | (0-20) | SW846 6010B | 02/20-02/23/04 | F9VJH1AK |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 10:11 | | | Instrument ID..: I6 | Analyst ID.....: 001637 | |
| Mercury | 101 | (10 - 209) | | | SW846 7471A | 02/20/04 | F9VJH1AM |
| | 86 | (10 - 209) | 11 | (0-20) | SW846 7471A | 02/20/04 | F9VJH1AN |
| | | Dilution Factor: 1 | | | | | |
| | | Analysis Time..: 12:53 | | | Instrument ID..: H1 | Analyst ID.....: 001086 | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| **MS Lot-Sample #:** A4B190299-013 **Prep Batch #...:** 4051099 | | | | | | | | | |
| Aluminum | | | | | | | | | |
| | 11300 | 239 | 20000 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VJH1A9 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 11300 | 239 | 16700 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VJH1CA |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Arsenic | | | | | | | | | |
| | 8.3 | 239 | 211 | mg/kg | 85 | | SW846 6010B | 02/20-02/23/04 | F9VJH1AV |
| | 8.3 | 239 | 210 | mg/kg | 84 | 0.69 | SW846 6010B | 02/20-02/23/04 | F9VJH1AW |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Antimony | | | | | | | | | |
| | 0.94 | 59.8 | 25.7 N | mg/kg | 41 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CD |
| | 0.94 | 59.8 | 24.6 N | mg/kg | 40 | 4.4 | SW846 6010B | 02/20-02/23/04 | F9VJH1CE |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Lead | | | | | | | | | |
| | 66.5 | 59.8 | 169 N | mg/kg | 171 | | SW846 6010B | 02/20-02/23/04 | F9VJH1A0 |
| | 66.5 | 59.8 | 187 N | mg/kg | 202 | 10 | SW846 6010B | 02/20-02/23/04 | F9VJH1A1 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Barium | | | | | | | | | |
| | 114 | 239 | 367 | mg/kg | 106 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CG |
| | 114 | 239 | 370 | mg/kg | 107 | 0.84 | SW846 6010B | 02/20-02/23/04 | F9VJH1CH |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Selenium | | | | | | | | | |
| | ND | 239 | 202 | mg/kg | 84 | | SW846 6010B | 02/20-02/23/04 | F9VJH1A3 |
| | ND | 239 | 203 | mg/kg | 85 | 0.30 | SW846 6010B | 02/20-02/23/04 | F9VJH1A4 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |
| Beryllium | | | | | | | | | |
| | ND | 6.0 | 4.9 | mg/kg | 82 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CK |
| | ND | 6.0 | 4.7 | mg/kg | 79 | 4.6 | SW846 6010B | 02/20-02/23/04 | F9VJH1CL |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | Instrument ID..: I6 | | | Analyst ID.....: 001637 | | |

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**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Thallium | | | | | | | | | |
| | 1.3 | 239 | 204 | mg/kg | 85 | | SW846 6010B | 02/20-02/23/04 | F9VJH1A6 |
| | 1.3 | 239 | 205 | mg/kg | 85 | 0.74 | SW846 6010B | 02/20-02/23/04 | F9VJH1A7 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Cadmium | | | | | | | | | |
| | ND | 6.0 | 4.8 | mg/kg | 81 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CN |
| | ND | 6.0 | 4.9 | mg/kg | 81 | 0.58 | SW846 6010B | 02/20-02/23/04 | F9VJH1CP |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Calcium | | | | | | | | | |
| | 10400 | 5980 | 28000 N | mg/kg | 294 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CR |
| | 10400 | 5980 | 26400 N | mg/kg | 266 | 6.1 | SW846 6010B | 02/20-02/23/04 | F9VJH1CT |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Chromium | | | | | | | | | |
| | 75.3 | 23.9 | 61.3 N | mg/kg | 0.0 | | SW846 6010B | 02/20-02/23/04 | F9VJH1CV |
| | 75.3 | 23.9 | 80.0 N | mg/kg | 20 | 0.0 | SW846 6010B | 02/20-02/23/04 | F9VJH1CW |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Cobalt | | | | | | | | | |
| | 6.6 | 59.8 | 60.2 | mg/kg | 90 | | SW846 6010B | 02/20-02/23/04 | F9VJH1C0 |
| | 6.6 | 59.8 | 58.6 | mg/kg | 87 | 2.6 | SW846 6010B | 02/20-02/23/04 | F9VJH1C1 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Copper | | | | | | | | | |
| | 15.7 | 29.9 | 50.0 | mg/kg | 115 | | SW846 6010B | 02/20-02/23/04 | F9VJH1C3 |
| | 15.7 | 29.9 | 49.0 | mg/kg | 111 | 2.0 | SW846 6010B | 02/20-02/23/04 | F9VJH1C4 |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Iron | | | | | | | | | |
| | 19800 | 120 | 22300 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C6 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | 19800 | 120 | 21300 | mg/kg | | | SW846 6010B | 02/20-02/23/04 | F9VJH1C7 |
| | | | Qualifiers: NC,MSB | | | | | | |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |

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**MATRIX SPIKE SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Magnesium | | | | | | | | | |
| | 2990 | 5980 | 7110 N | mg/kg | 69 | | SW846 6010B | 02/20-02/23/04 | F9VJH1C9 |
| | 2990 | 5980 | 7620 | mg/kg | 77 | 6.8 | SW846 6010B | 02/20-02/23/04 | F9VJH1DA |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Manganese | | | | | | | | | |
| | 173 | 59.8 | 317 N | mg/kg | 242 | | SW846 6010B | 02/20-02/23/04 | F9VJH1DD |
| | 173 | 59.8 | 296 N | mg/kg | 206 | 6.9 | SW846 6010B | 02/20-02/23/04 | F9VJH1DE |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Nickel | | | | | | | | | |
| | 15.5 | 59.8 | 69.2 | mg/kg | 90 | | SW846 6010B | 02/20-02/23/04 | F9VJH1DG |
| | 15.5 | 59.8 | 70.0 | mg/kg | 91 | 1.2 | SW846 6010B | 02/20-02/23/04 | F9VJH1DH |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Potassium | | | | | | | | | |
| | 2280 | 5980 | 8080 | mg/kg | 97 | | SW846 6010B | 02/20-02/23/04 | F9VJH1DK |
| | 2280 | 5980 | 8210 | mg/kg | 99 | 1.5 | SW846 6010B | 02/20-02/23/04 | F9VJH1DL |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Silver | | | | | | | | | |
| | ND | 6.0 | 5.7 | mg/kg | 95 | | SW846 6010B | 02/20-02/23/04 | F9VJH1DN |
| | ND | 6.0 | 5.8 | mg/kg | 97 | 2.3 | SW846 6010B | 02/20-02/23/04 | F9VJH1DP |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Sodium | | | | | | | | | |
| | 316 | 5980 | 5530 | mg/kg | 87 | | SW846 6010B | 02/20-02/23/04 | F9VJH1AC |
| | 316 | 5980 | 5600 | mg/kg | 88 | 1.3 | SW846 6010B | 02/20-02/23/04 | F9VJH1AD |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Vanadium | | | | | | | | | |
| | 43.2 | 59.8 | 99.4 | mg/kg | 94 | | SW846 6010B | 02/20-02/23/04 | F9VJH1AF |
| | 43.2 | 59.8 | 97.8 | mg/kg | 91 | 1.7 | SW846 6010B | 02/20-02/23/04 | F9VJH1AG |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

## TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|---|---|
| Zinc | | | | | | | | | |
| | 46.1 | 59.8 | 92.4 | mg/kg | 77 | | SW846 6010B | 02/20-02/23/04 | F9VJH1AJ |
| | 46.1 | 59.8 | 99.3 | mg/kg | 89 | 7.2 | SW846 6010B | 02/20-02/23/04 | F9VJH1AK |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 10:11 | | Instrument ID..: I6 | | | Analyst ID.....: 001637 | |
| Mercury | | | | | | | | | |
| | 0.084 | 0.20 | 0.29 | mg/kg | 101 | | SW846 7471A | 02/20/04 | F9VJH1AM |
| | 0.084 | 0.20 | 0.26 | mg/kg | 86 | 11 | SW846 7471A | 02/20/04 | F9VJH1AN |
| | | | Dilution Factor: 1 | | | | | | |
| | | | Analysis Time..: 12:53 | | Instrument ID..: H1 | | | Analyst ID.....: 001086 | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|
| **LCS Lot-Sample#:** A4B200000-099 **Prep Batch #...:** 4051099 | | | | | |
| Arsenic | 89 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A7 |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Aluminum | 97 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CC |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Lead | 92 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A8 |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Antimony | 91 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CD |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Selenium | 90 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A9 |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Barium | 94 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CE |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Thallium | 92 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CA |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Beryllium | 90 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CF |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Cadmium | 89 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CG |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |
| Calcium | 85 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CH |
| | | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | Instrument ID..: I6 | | | |

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## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|
| Chromium | 93 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CJ |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Cobalt | 91 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CK |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Copper | 98 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CL |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Iron | 107 | (73 - 137) | SW846 6010B | 02/20-02/23/04 | F9WC21CM |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Magnesium | 84 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CN |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Manganese | 92 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CP |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Nickel | 90 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CQ |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Potassium | 94 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CR |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Silver | 102 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21CT |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Sodium | 88 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A3 |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Vanadium | 91 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A4 |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |

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## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|
| Zinc | 94 | (80 - 120) | SW846 6010B | 02/20-02/23/04 | F9WC21A5 |
| | Dilution Factor: 1 | Analysis Time..: 08:38 | Analyst ID.....: 001637 | | |
| | Instrument ID..: I6 | | | | |
| Mercury | 94 | (52 - 127) | SW846 7471A | 02/20/04 | F9WC21A6 |
| | Dilution Factor: 1 | Analysis Time..: 12:29 | Analyst ID.....: 001086 | | |
| | Instrument ID..: H1 | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**LABORATORY CONTROL SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| **LCS Lot-Sample#:** A4B200000-099 **Prep Batch #...:** 4051099 | | | | | | | |
| Arsenic | 200 | 178 | mg/kg | 89 | SW846 6010B | 02/20-02/23/04 | F9WC21A7 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Aluminum | 200 | 193 | mg/kg | 97 | SW846 6010B | 02/20-02/23/04 | F9WC21CC |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Lead | 50.0 | 45.8 | mg/kg | 92 | SW846 6010B | 02/20-02/23/04 | F9WC21A8 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Antimony | 50.0 | 45.6 | mg/kg | 91 | SW846 6010B | 02/20-02/23/04 | F9WC21CD |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Selenium | 200 | 181 | mg/kg | 90 | SW846 6010B | 02/20-02/23/04 | F9WC21A9 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Barium | 200 | 188 | mg/kg | 94 | SW846 6010B | 02/20-02/23/04 | F9WC21CE |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Thallium | 200 | 185 | mg/kg | 92 | SW846 6010B | 02/20-02/23/04 | F9WC21CA |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Beryllium | 5.0 | 4.5 | mg/kg | 90 | SW846 6010B | 02/20-02/23/04 | F9WC21CF |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Cadmium | 5.0 | 4.5 | mg/kg | 89 | SW846 6010B | 02/20-02/23/04 | F9WC21CG |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Calcium | 5000 | 4250 | mg/kg | 85 | SW846 6010B | 02/20-02/23/04 | F9WC21CH |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |

(Continued on next page)

**LABORATORY CONTROL SAMPLE DATA REPORT**

**TOTAL Metals**

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Chromium | 20.0 | 18.6 | mg/kg | 93 | SW846 6010B | 02/20-02/23/04 | F9WC21CJ |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Cobalt | 50.0 | 45.3 | mg/kg | 91 | SW846 6010B | 02/20-02/23/04 | F9WC21CK |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Copper | 25.0 | 24.6 | mg/kg | 98 | SW846 6010B | 02/20-02/23/04 | F9WC21CL |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Iron | 100 | 107 | mg/kg | 107 | SW846 6010B | 02/20-02/23/04 | F9WC21CM |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Magnesium | 5000 | 4200 | mg/kg | 84 | SW846 6010B | 02/20-02/23/04 | F9WC21CN |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Manganese | 50.0 | 46.1 | mg/kg | 92 | SW846 6010B | 02/20-02/23/04 | F9WC21CP |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Nickel | 50.0 | 45.2 | mg/kg | 90 | SW846 6010B | 02/20-02/23/04 | F9WC21CQ |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Potassium | 5000 | 4680 | mg/kg | 94 | SW846 6010B | 02/20-02/23/04 | F9WC21CR |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Silver | 5.0 | 5.1 | mg/kg | 102 | SW846 6010B | 02/20-02/23/04 | F9WC21CT |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Sodium | 5000 | 4410 | mg/kg | 88 | SW846 6010B | 02/20-02/23/04 | F9WC21A3 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Vanadium | 50.0 | 45.4 | mg/kg | 91 | SW846 6010B | 02/20-02/23/04 | F9WC21A4 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |

(Continued on next page)

## LABORATORY CONTROL SAMPLE DATA REPORT

### TOTAL Metals

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|---|
| Zinc | 50.0 | 46.9 | mg/kg | 94 | SW846 6010B | 02/20-02/23/04 | F9WC21A5 |
| | | | Dilution Factor: 1 | | Analysis Time..: 08:38 | Analyst ID.....: 001637 | |
| | | | Instrument ID..: I6 | | | | |
| Mercury | 0.83 | 0.79 | mg/kg | 94 | SW846 7471A | 02/20/04 | F9WC21A6 |
| | | | Dilution Factor: 1 | | Analysis Time..: 12:29 | Analyst ID.....: 001086 | |
| | | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

# STL North Canton

## Metals Data Reporting Form

## Serial Dilution RPD Report

**Serial Dilution Sample ID:** F9VHNL

**Original Sample ID:** F9VHN **Client ID:** 5GP-17 (15')L

**Matrix:** Soil **Units:** ug/L **Prep Date:** 02/20/04 **Prep Batch:** 4051099

**Weight:** NA **Volume:** NA **Percent Moisture:** NA

| Element | WL/ Mass | OS Conc | Q | Serial Dilution Conc | Q | Percent Diff | OS DF | Ser Dil DF | Instr | OS Anal Date | OS Anal Time | Ser Dil Anal Date | Ser Dil Anal Time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.215 | 149000 | | 158000 | | 6.6 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Antimony | 206.838 | 2.6 | B | 11.0 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Arsenic | 189.042 | 26.3 | | 24.9 | B | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Barium | 493.409 | 432 | | 451 | B | 4.4 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Beryllium | 313.042 | 0.035 | U | 0.18 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Cadmium | 226.502 | 0.20 | U | 1.0 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Calcium | 317.933 | 4900 | B | 5510 | B E | 12.5 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Chromium | 267.716 | 169 | | 179 | | 6.2 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Cobalt | 228.616 | 45.4 | B | 47.0 | B | 3.6 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Copper | 324.753 | 79.0 | | 81.8 | B | 3.6 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Iron | 271.441 | 174000 | | 183000 | | 5.2 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Lead | 220.353 | 82.1 | | 82.1 | | 0.0 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Magnesium | 279.078 | 5660 | | 6290 | B E | 11.0 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Manganese | 257.61 | 3080 | | 3260 | | 5.8 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Nickel | 231.604 | 57.1 | | 64.2 | B E | 12.4 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Potassium | 766.491 | 6700 | | 7630 | B E | 13.8 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Selenium | 196.026 | 3.4 | U | 17.0 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Silver | 328.068 | 0.81 | U | 4.1 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Sodium | 330.232 | 416 | B | 910 | U | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Thallium | 190.864 | 6.4 | B | 21.6 | B | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Vanadium | 292.402 | 439 | | 460 | | 4.7 | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |
| Zinc | 213.856 | 182 | | 200 | | | 1 | 5 | ICPST | 02/23/04 | 8:43 | 02/23/04 | 8:48 |

Comments:

Version 4.91.3

U Result is less than the IDL
B Result is between IDL and RL
E Serial dilution percent difference not within limits

*Form 9 Equivalent*

# STL North Canton

Metals Data Reporting Form

## Instrument Detection Limits

**Instrument:** CVAA **Units:** ppb

| Element | Wavelength | Reporting Limit | IDL | Date of IDL |
|---|---|---|---|---|
| Mercury | 253.700 | 0.6 | 0.10 | 12/16/03 |

# STL North Canton

## Metals Data Reporting Form

### Instrument Detection Limits

**Instrument:** ICPST **Units:** ppb

| Element | Wavelength | Reporting Limit | IDL | Date of IDL |
|---|---|---|---|---|
| Aluminum | 308.215 | 200.0 | 7.2 | 01/08/04 |
| Antimony | 206.838 | 60.0 | 2.2 | 01/08/04 |
| Arsenic | 189.042 | 10.0 | 2.6 | 01/08/04 |
| Barium | 493.409 | 200.0 | 0.15 | 01/08/04 |
| Beryllium | 313.042 | 5.0 | 0.035 | 01/08/04 |
| Cadmium | 226.502 | 5.0 | 0.20 | 01/08/04 |
| Calcium | 317.933 | 5000.0 | 83.2 | 01/08/04 |
| Chromium | 267.716 | 10.0 | 0.85 | 01/08/04 |
| Cobalt | 228.616 | 50.0 | 0.40 | 01/08/04 |
| Copper | 324.753 | 25.0 | 0.56 | 01/08/04 |
| Iron | 271.441 | 100.0 | 13.1 | 01/08/04 |
| Lead | 220.353 | 3.0 | 1.1 | 01/08/04 |
| Magnesium | 279.078 | 5000.0 | 6.1 | 01/08/04 |
| Manganese | 257.610 | 15.0 | 0.094 | 01/08/04 |
| Nickel | 231.604 | 40.0 | 1.0 | 01/08/04 |
| Potassium | 766.491 | 5000.0 | 27.8 | 01/08/04 |
| Selenium | 196.026 | 5.0 | 3.4 | 01/08/04 |
| Silver | 328.068 | 10.0 | 0.81 | 01/08/04 |
| Sodium | 330.232 | 5000.0 | 182 | 01/08/04 |
| Thallium | 190.864 | 10.0 | 3.5 | 01/08/04 |
| Vanadium | 292.402 | 50.0 | 0.64 | 01/08/04 |
| Zinc | 213.856 | 20.0 | 4.0 | 01/08/04 |

# STL North Canton

## Metals Data Reporting Form

### Inter-Element Correction Factors

**Instrument:** ICPST **Date of IEC's:** 01/07/04

| Interfering Element | Wavelength /Mass | Correction Factor(s) |
|---|---|---|
| Aluminum | 308.215 | Pb(-0.000076257), Se(-0.000002664), Zn(0.000016) |
| Chromium | 267.716 | As(-0.00397), Fe(0.00222), Sb(0.010107216), Tl(0.000307) |
| Copper | 324.753 | Pb(0.000023976), Zn(0.000806) |
| Iron | 271.441 | As(-0.00001), Cd(0.000095), Cr(0.000004), Mn(0.000002), Pb(0.000046287), Sb(0.00001998), Se(-0.00014985), Tl(-0.00002), V(0.000028), Zn(0.000088) |
| Manganese | 257.61 | Ag(0.00015), Se(0.00050616), Tl(-0.00601) |
| Molybdenum | 202.03 | Al(0.014736), As(-0.00027), Cr(-0.0001), Cu(0.000493), Fe(0.00273), Pb(-0.0005994), Sb(-0.00286713), V(-0.00341) |
| Nickel | 231.604 | Cd(-0.00002), Co(0.000204), Pb(0.000135864), Sb(-0.00010323), Zn(0.005054) |
| Vanadium | 292.402 | Al(-0.00197), Be(0.00012), Cr(0.00024), Cu(-0.0003), Fe(0.009254), Pb(-0.00019314), Sb(-0.004256406), Tl(0.002622) |

# STL North Canton

## Metals Data Reporting Form

### Linear Dynamic Ranges

**Instrument:** ICPST **Units:** ppb

| Element | Wavelength /Mass | Linear Range | Date of Linear Range |
|---|---|---|---|
| Aluminum | 308.21 | 500000 | 01/07/04 |
| Antimony | 206.84 | 10000 | 01/07/04 |
| Arsenic | 189.04 | 10000 | 01/07/04 |
| Barium | 493.41 | 25000 | 01/07/04 |
| Beryllium | 313.04 | 4000 | 01/07/04 |
| Cadmium | 226.50 | 2500 | 01/07/04 |
| Calcium | 317.93 | 600000 | 01/12/04 |
| Chromium | 267.72 | 50000 | 01/07/04 |
| Cobalt | 228.62 | 50000 | 01/07/04 |
| Copper | 324.75 | 30000 | 01/07/04 |
| Iron | 271.44 | 600000 | 01/07/04 |
| Lead | 220.35 | 15000 | 01/07/04 |
| Magnesium | 279.08 | 600000 | 01/07/04 |
| Manganese | 257.61 | 30000 | 01/07/04 |
| Nickel | 231.60 | 50000 | 01/07/04 |
| Potassium | 766.49 | 600000 | 01/07/04 |
| Selenium | 196.03 | 10000 | 01/07/04 |
| Silver | 328.07 | 2000 | 01/07/04 |
| Sodium | 330.23 | 600000 | 01/07/04 |
| Thallium | 190.86 | 20000 | 01/07/04 |
| Vanadium | 292.40 | 50000 | 01/07/04 |
| Zinc | 213.86 | 10000 | 01/07/04 |

Severn Trent Laboratories, Inc.

Batch Number 4051099

Metals Prep Log/ Batch Summary

Initials mc/kw

Prep Date: 2/20/04

Due Date: 2004/03/04

| Lot | Work Order | | | | ICP Weight | ICPMS Weight | Hg Weight |
|---|---|---|---|---|---|---|---|
| A4B200000 | F9WC2 | B | Due Date: | / / 0 | | | |
| Solid | Total | | | SDG: | | | |
| A4B200000 | F9WC2 | C | Due Date: | / / 0 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VHN | | Due Date: | 3/04/04 | 1.00g | | 0.60g |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VHX | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH2 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH3 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH3 | D | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH3 | S | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH4 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH7 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH8 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VH9 | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJA | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJD | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJE | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJF | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJH | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJH | D | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJH | S | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |
| A4B190299 | F9VJM | | Due Date: | 3/04/04 | | | |
| Solid | Total | | | SDG: | | | |

# Severn Trent Laboratories, Inc.
## Metals Prep Log/ Batch Summary

Batch Number 4051099

Initials mlku

Prep Date: 2/20/04

Due Date: 2004/03/04

| Lot | Work Order | | | ICP Weight | ICPMS Weight | Hg Weight |
|---|---|---|---|---|---|---|
| A4B190299 | F9VJQ | Due Date: | 3/04/04 | | | |
| Solid | Total | | SDG: | | | |
| A4B190299 | F9VJR | Due Date: | 3/04/04 | | | |
| Solid | Total | | SDG: | | | |
| A4B190299 | F9VJV | Due Date: | 3/04/04 | | | |
| Solid | Total | | SDG: | | | |
| A4B190299 | F9VJ0 | Due Date: | 3/04/04 | | | |
| Solid | Total | | SDG: | | | |

LEVEL 2

BLANK AND CHECK STANDARD ON BATCH ✓

MS/MSD AND PDS ON BATCH ✓

CURVE PREPARED FOR Hg

CORRECT SPIKES ADDED ✓

SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

**Comments:**

B - BLANK ; C - CHECK SAMPLE ; L - CHECK SAMPLE DUPLICATE ; P - SERIAL DILUTION ; S - MATRIX SPIKE SAMPLE ; D - MATRIX SPIKE DUPLICATE SAMPLE

ICP ELEMENTS WITHIN THE BATCH:

AG AL AS BA BE CA CD CO CR CU FE KX MG MN NA NI PB SB SE TL VX ZN

ICPMS ELEMENTS WITHIN THE BATCH:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MS/MSD 1: F9VH3 | (ICP-1) | (ICP-2A) | RCRA | non - RCRA | (Hg) | (Ag) | ICPMS-1 | ICPMS-2 |
| MS/MSD2: F9VJH | (ICP-1) | (ICP-2A) | RCRA | non - RCRA | (Hg) | (Ag) | ICPMS-1 | ICPMS-2 |
| MS/MSD3: | ICP-1 | ICP-2A | RCRA | non - RCRA | Hg | Ag | ICPMS-1 | ICPMS-2 |
| LCS/LCSD : F9WC2 | (ICP-1) | (ICP-2A) | | | (Hg) | (Ag) | ICPMS-1 | ICPMS-2 |
| STANDARD NUMBERS | 4A14 | 4B75 | | | 4MR102 | 4B71 | | |

Prep Method(s): SW846 3050B,SW846 7471A

```
:       Instrument Upload                                    Run Log - Page  1 :
:       Started Fri Feb 20 11:32:40 2004 by LISTM                              :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG10220B.PRN;1                       :
```

| # | WorkOrder | Dilution | Date | Time | Batch | Lot | Instrument |
|---|---|---|---|---|---|---|---|
| 1 | STD1REP1 | 1 | 20-FEB-2004 | 11:09:47 | | | H1 |
| 2 | STD2REP1 | 1 | 20-FEB-2004 | 11:10:53 | | | H1 |
| 3 | STD3REP1 | 1 | 20-FEB-2004 | 11:11:58 | | | H1 |
| 4 | STD4REP1 | 1 | 20-FEB-2004 | 11:13:25 | | | H1 |
| 5 | STD5REP1 | 1 | 20-FEB-2004 | 11:14:34 | | | H1 |
| 6 | STD6REP1 | 1 | 20-FEB-2004 | 11:15:51 | | | H1 |
| 7 | CK5ICV | 1 | 20-FEB-2004 | 11:17:04 | | | H1 |
| 8 | CK4ICB | 1 | 20-FEB-2004 | 11:18:32 | | | H1 |
| 9 | CK3CRA\MRL | 1 | 20-FEB-2004 | 11:19:37 | | | H1 |
| 10 | CK2CCV | 1 | 20-FEB-2004 | 11:20:46 | | | H1 |
| 11 | CK1CCB | 1 | 20-FEB-2004 | 11:22:06 | | | H1 |
| 12 | F9R35B | 1 | 20-FEB-2004 | 11:23:22 | 4050108 | A4B190000 | H1 |
| 13 | F9R35C | 1 | 20-FEB-2004 | 11:24:26 | 4050108 | A4B190000 | H1 |
| 14 | F9QP5 | 1 | 20-FEB-2004 | 11:25:35 | 4050108 | A4B180158 | H1 |
| 15 | F9Q5D | 1 | 20-FEB-2004 | 11:26:44 | 4050108 | A4B180158 | H1 |
| 16 | F9Q5T | 1 | 20-FEB-2004 | 11:27:53 | 4050108 | A4B180158 | H1 |
| 17 | F9Q57 | 1 | 20-FEB-2004 | 11:29:08 | 4050108 | A4B180158 | H1 |
| 18 | F9NM8 | 1 | 20-FEB-2004 | 11:30:14 | 4050108 | 4B17119 | H1 |
| 19 | F9QF0 | 1 | 20-FEB-2004 | 11:31:42 | 4050108 | A4B180125 | H1 |
| 20 | F9QF0S | 1 | 20-FEB-2004 | 11:32:57 | 4050108 | A4B180125 | H1 |
| 21 | F9QF0D | 1 | 20-FEB-2004 | 11:34:03 | 4050108 | A4B180125 | H1 |
| 22 | CK2CCV | 1 | 20-FEB-2004 | 11:35:17 | | | H1 |
| 23 | CK1CCB | 1 | 20-FEB-2004 | 11:36:42 | | | H1 |
| 24 | F9QC2BT | 1 | 20-FEB-2004 | 11:38:07 | 4049169 | A4B180000 | H1 |
| 25 | F9QC2CT | 1 | 20-FEB-2004 | 11:39:28 | 4049169 | A4B180000 | H1 |
| 26 | F9JM0T | 1 | 20-FEB-2004 | 11:40:35 | 4049168 | A4B130119 | H1 |
| 27 | F9JM0TS | 1 | 20-FEB-2004 | 11:42:01 | 4049168 | A4B130119 | H1 |
| 28 | F9JM0TD | 1 | 20-FEB-2004 | 11:43:21 | 4049168 | A4B130119 | H1 |
| 29 | F9JM5T | 1 | 20-FEB-2004 | 11:44:47 | 4049168 | A4B130121 | H1 |
| 30 | F9JM6T | 1 | 20-FEB-2004 | 11:46:06 | 4049168 | A4B130122 | H1 |
| 31 | CK2CCV | 1 | 20-FEB-2004 | 11:47:15 | | | H1 |
| 32 | CK1CCB | 1 | 20-FEB-2004 | 11:48:39 | | | H1 |
| 33 | CK2CCV | 1 | 20-FEB-2004 | 12:02:45 | | | H1 |
| 34 | CK1CCB | 1 | 20-FEB-2004 | 12:03:49 | | | H1 |
| 35 | F9WC4B | 1 | 20-FEB-2004 | 12:04:57 | 4051100 | A4B200000 | H1 |
| 36 | F9WC4C | 1 | 20-FEB-2004 | 12:06:02 | 4051100 | A4B200000 | H1 |
| 37 | F9R7L | 1 | 20-FEB-2004 | 12:07:13 | 4051100 | A4B190104 | H1 |
| 38 | F9R7W | 1 | 20-FEB-2004 | 12:08:20 | 4051100 | A4B190104 | H1 |
| 39 | F9R7T | 1 | 20-FEB-2004 | 12:09:40 | 4051100 | A4B190104 | H1 |
| 40 | F9R7X | 1 | 20-FEB-2004 | 12:10:47 | 4051100 | A4B190104 | H1 |
| 41 | F9TG0 | 1 | 20-FEB-2004 | 12:12:02 | 4051100 | A4B190146 | H1 |
| 42 | F9TG9 | 1 | 20-FEB-2004 | 12:13:09 | 4051100 | A4B190146 | H1 |
| 43 | F9TG9S | 1 | 20-FEB-2004 | 12:14:15 | 4051100 | A4B190146 | H1 |
| 44 | F9TG9D | 1 | 20-FEB-2004 | 12:15:25 | 4051100 | A4B190146 | H1 |

---------- (continued) ----------

| # | WorkOrder | Dilution | Date | Time | Batch | Lot | Instrument |
|---|---|---|---|---|---|---|---|
| 45 | CK2CCV | 1 | 20-FEB-2004 | 12:16:33 | | | H1 |
| 46 | CK1CCB | 1 | 20-FEB-2004 | 12:18:29 | | | H1 |
| 47 | F9TR5 | 1 | 20-FEB-2004 | 12:19:36 | 4051100 | A4B190192 | H1 |
| 48 | F9TT0 | 1 | 20-FEB-2004 | 12:20:47 | 4051100 | A4B190192 | H1 |
| 49 | F9TT8 | 1 | 20-FEB-2004 | 12:21:57 | 4051100 | A4B190192 | H1 |
| 50 | F9TT9 | 1 | 20-FEB-2004 | 12:23:24 | 4051100 | A4B190192 | H1 |
| 51 | F9VEF | 1 | 20-FEB-2004 | 12:24:30 | 4051100 | 4B17119 | H1 |
| 52 | F9VEL | 1 | 20-FEB-2004 | 12:25:39 | 4051100 | 4B17119 | H1 |
| 53 | F9VEP | 1 | 20-FEB-2004 | 12:26:58 | 4051100 | 4B17119 | H1 |
| 54 | F9WC2B | 1 | 20-FEB-2004 | 12:28:15 | 4051099 | A4B200000 | H1 |
| 55 | F9WC2C | 1 | 20-FEB-2004 | 12:29:21 | 4051099 | A4B200000 | H1 |
| 56 | F9VHN | 1 | 20-FEB-2004 | 12:30:31 | 4051099 | A4B190299 | H1 |
| 57 | CK2CCV | 1 | 20-FEB-2004 | 12:31:50 | | | H1 |
| 58 | CK1CCB | 1 | 20-FEB-2004 | 12:32:58 | | | H1 |
| 59 | F9VHX | 1 | 20-FEB-2004 | 12:34:03 | 4051099 | A4B190299 | H1 |
| 60 | F9VH2 | 1 | 20-FEB-2004 | 12:35:18 | 4051099 | A4B190299 | H1 |
| 61 | F9VH3 | 1 | 20-FEB-2004 | 12:36:26 | 4051099 | A4B190299 | H1 |
| 62 | F9VH3S | 1 | 20-FEB-2004 | 12:37:31 | 4051099 | A4B190299 | H1 |
| 63 | F9VH3D | 1 | 20-FEB-2004 | 12:38:38 | 4051099 | A4B190299 | H1 |
| 64 | F9VH4 | 1 | 20-FEB-2004 | 12:39:49 | 4051099 | A4B190299 | H1 |
| 65 | F9VH7 | 1 | 20-FEB-2004 | 12:41:09 | 4051099 | A4B190299 | H1 |
| 66 | F9VH8 | 1 | 20-FEB-2004 | 12:42:48 | 4051099 | A4B190299 | H1 |
| 67 | F9VH9 | 1 | 20-FEB-2004 | 12:43:53 | 4051099 | A4B190299 | H1 |
| 68 | F9VJA | 1 | 20-FEB-2004 | 12:45:10 | 4051099 | A4B190299 | H1 |
| 69 | CK2CCV | 1 | 20-FEB-2004 | 12:46:15 | | | H1 |
| 70 | CK1CCB | 1 | 20-FEB-2004 | 12:47:21 | | | H1 |
| 71 | F9VJD | 1 | 20-FEB-2004 | 12:48:26 | 4051099 | A4B190299 | H1 |
| 72 | F9VJE | 1 | 20-FEB-2004 | 12:49:37 | 4051099 | A4B190299 | H1 |
| 73 | F9VJF | 1 | 20-FEB-2004 | 12:50:47 | 4051099 | A4B190299 | H1 |
| 74 | F9VJH | 1 | 20-FEB-2004 | 12:52:24 | 4051099 | A4B190299 | H1 |
| 75 | F9VJHS | 1 | 20-FEB-2004 | 12:53:35 | 4051099 | A4B190299 | H1 |
| 76 | F9VJHD | 1 | 20-FEB-2004 | 12:55:22 | 4051099 | A4B190299 | H1 |
| 77 | F9VJM | 1 | 20-FEB-2004 | 12:56:48 | 4051099 | A4B190299 | H1 |
| 78 | F9VJQ | 1 | 20-FEB-2004 | 12:58:10 | 4051099 | A4B190299 | H1 |
| 79 | F9VJR | 1 | 20-FEB-2004 | 12:59:16 | 4051099 | A4B190299 | H1 |
| 80 | F9VJV | 1 | 20-FEB-2004 | 13:00:34 | 4051099 | A4B190299 | H1 |
| 81 | CK2CCV | 1 | 20-FEB-2004 | 13:01:49 | | | H1 |
| 82 | CK1CCB | 1 | 20-FEB-2004 | 13:03:00 | | | H1 |
| 83 | F9VJ0 | 1 | 20-FEB-2004 | 13:04:06 | 4051099 | A4B190299 | H1 |
| 84 | CRA\MRL | 1 | 20-FEB-2004 | 13:05:35 | | | H1 |
| 85 | CK2CCV | 1 | 20-FEB-2004 | 13:06:43 | | | H1 |
| 86 | CK1CCB | 1 | 20-FEB-2004 | 13:07:53 | | | H1 |
| 87 | CK2CCV | 1 | 20-FEB-2004 | 13:16:19 | | | H1 |
| 88 | CK1CCB | 1 | 20-FEB-2004 | 13:17:26 | | | H1 |

(continued)

```
--------------------------------------------------------------------------------
:       Instrument Upload                                  Run Log - Page  3 :
:       Started Fri Feb 20 11:32:40 2004 by LISTM                             :
:       Data File: UPL$CAN_DATA_ROOT:<LHG>HG10220B.PRN;1                      :
--------------------------------------------------------------------------------
```

| # | WorkOrder | Dilution | Date | Time | Batch | Lot | Instrument |
|---|---|---|---|---|---|---|---|
| 89 | F9JM0TS | 1 | 20-FEB-2004 | 13:18:33 | 4049168 | A4B130119 | H1 |
| 90 | F9Q5T | 5 | 20-FEB-2004 | 13:19:47 | 4050108 | A4B180158 | H1 |
| 91 | CK2CCV | 1 | 20-FEB-2004 | 13:21:05 | | | H1 |
| 92 | CK1CCB | 1 | 20-FEB-2004 | 13:22:39 | | | H1 |

```
---------------------------------- End of Report -----------------------------
```

```
:       Instrument Upload                                    Run Log - Page  1 :
:       Started Mon Feb 23 11:05:12 2004 by COUNTSK                            :
:       Data File: UPL$CAN_DATA_ROOT:<TJA>I60223A.ARC;1                        :
```

| # | WorkOrder | Dilution | Date | Time | Batch | Lot | Instrument |
|---|---|---|---|---|---|---|---|
| 1 | S0 | 1 | 23-FEB-2004 | 07:38:00 | | | I6 |
| 2 | CALSTD | 1 | 23-FEB-2004 | 07:42:00 | | | I6 |
| 3 | CAL | 1 | 23-FEB-2004 | 07:47:00 | | | I6 |
| 4 | S100 | 1 | 23-FEB-2004 | 07:51:00 | | | I6 |
| 5 | ICV | 1 | 23-FEB-2004 | 07:55:00 | | | I6 |
| 6 | ICB | 1 | 23-FEB-2004 | 08:02:00 | | | I6 |
| 7 | CRI\MRL | 1 | 23-FEB-2004 | 08:06:00 | | | I6 |
| 8 | ICSA | 1 | 23-FEB-2004 | 08:13:00 | | | I6 |
| 9 | ICSAB | 1 | 23-FEB-2004 | 08:17:00 | | | I6 |
| 10 | CCV | 1 | 23-FEB-2004 | 08:22:00 | | | I6 |
| 11 | CCB | 1 | 23-FEB-2004 | 08:28:00 | | | I6 |
| 12 | F9WC2B | 1 | 23-FEB-2004 | 08:33:00 | 4051099 | A4B200000 | I6 |
| 13 | F9WC2C | 1 | 23-FEB-2004 | 08:38:00 | 4051099 | A4B200000 | I6 |
| 14 | F9VHN | 1 | 23-FEB-2004 | 08:43:00 | 4051099 | A4B190299 | I6 |
| 15 | F9VHNL | 1 | 23-FEB-2004 | 08:48:00 | | | I6 |
| 16 | F9VHX | 1 | 23-FEB-2004 | 08:52:00 | 4051099 | A4B190299 | I6 |
| 17 | F9VH2 | 1 | 23-FEB-2004 | 08:57:00 | 4051099 | A4B190299 | I6 |
| 18 | F9VH3 | 1 | 23-FEB-2004 | 09:02:00 | 4051099 | A4B190299 | I6 |
| 19 | F9VH3S | 1 | 23-FEB-2004 | 09:07:00 | 4051099 | A4B190299 | I6 |
| 20 | F9VH3D | 1 | 23-FEB-2004 | 09:12:00 | 4051099 | A4B190299 | I6 |
| 21 | F9VH4 | 1 | 23-FEB-2004 | 09:17:00 | 4051099 | A4B190299 | I6 |
| 22 | CCV | 1 | 23-FEB-2004 | 09:21:00 | | | I6 |
| 23 | CCB | 1 | 23-FEB-2004 | 09:28:00 | | | I6 |
| 24 | F9VH7 | 1 | 23-FEB-2004 | 09:32:00 | 4051099 | A4B190299 | I6 |
| 25 | F9VH8 | 1 | 23-FEB-2004 | 09:37:00 | 4051099 | A4B190299 | I6 |
| 26 | F9VH9 | 1 | 23-FEB-2004 | 09:42:00 | 4051099 | A4B190299 | I6 |
| 27 | F9VJA | 1 | 23-FEB-2004 | 09:47:00 | 4051099 | A4B190299 | I6 |
| 28 | F9VJD | 1 | 23-FEB-2004 | 09:52:00 | 4051099 | A4B190299 | I6 |
| 29 | F9VJE | 1 | 23-FEB-2004 | 09:57:00 | 4051099 | A4B190299 | I6 |
| 30 | F9VJF | 1 | 23-FEB-2004 | 10:01:00 | 4051099 | A4B190299 | I6 |
| 31 | F9VJH | 1 | 23-FEB-2004 | 10:06:00 | 4051099 | A4B190299 | I6 |
| 32 | F9VJHS | 1 | 23-FEB-2004 | 10:11:00 | 4051099 | A4B190299 | I6 |
| 33 | F9VJHD | 1 | 23-FEB-2004 | 10:16:00 | 4051099 | A4B190299 | I6 |
| 34 | CCV | 1 | 23-FEB-2004 | 10:21:00 | | | I6 |
| 35 | CCB | 1 | 23-FEB-2004 | 10:27:00 | | | I6 |
| 36 | F9VJM | 1 | 23-FEB-2004 | 10:32:00 | 4051099 | A4B190299 | I6 |
| 37 | F9VJQ | 1 | 23-FEB-2004 | 10:36:00 | 4051099 | A4B190299 | I6 |
| 38 | F9VJR | 1 | 23-FEB-2004 | 10:41:00 | 4051099 | A4B190299 | I6 |
| 39 | F9VJV | 1 | 23-FEB-2004 | 10:46:00 | 4051099 | A4B190299 | I6 |
| 40 | F9VJ0 | 1 | 23-FEB-2004 | 10:51:00 | 4051099 | A4B190299 | I6 |
| 41 | F9WDGB | 1 | 23-FEB-2004 | 10:56:00 | 4051106 | A4B200000 | I6 |
| 42 | F9WDGC | 1 | 23-FEB-2004 | 11:01:00 | 4051106 | A4B200000 | I6 |
| 43 | F9PCM | 1 | 23-FEB-2004 | 11:06:00 | 4051106 | 4B17225 | I6 |
| 44 | F9PCML | 1 | 23-FEB-2004 | 11:11:00 | | | I6 |

---------- (continued) ----------

| # | WorkOrder | Dilution | Date | Time | Batch | Lot | Instrument |
|---|---|---|---|---|---|---|---|
| 45 | F9TFH | 1 | 23-FEB-2004 | 11:15:00 | 4051106 | A4B190142 | I6 |
| 46 | CCV | 1 | 23-FEB-2004 | 11:20:00 | | | I6 |
| 47 | CCB | 1 | 23-FEB-2004 | 11:26:00 | | | I6 |
| 48 | CCV | 1 | 23-FEB-2004 | 11:37:00 | | | I6 |
| 49 | CCB | 1 | 23-FEB-2004 | 11:43:00 | | | I6 |
| 50 | F9WDEC | 1 | 23-FEB-2004 | 11:52:00 | | | I6 |
| 51 | F9VC5 | 5 | 23-FEB-2004 | 11:57:00 | 4051105 | A4B190277 | I6 |
| 52 | F9VLL | 5 | 23-FEB-2004 | 12:02:00 | 4051105 | 4B19300 | I6 |
| 53 | F9LKA | 5 | 23-FEB-2004 | 12:07:00 | | | I6 |
| 54 | F9LKAF | 5 | 23-FEB-2004 | 12:11:00 | | | I6 |
| 55 | F9WC2B | 1 | 23-FEB-2004 | 12:17:00 | | | I6 |
| 56 | F9VH4 | 1 | 23-FEB-2004 | 12:22:00 | | | I6 |
| 57 | F9VJH | 1 | 23-FEB-2004 | 12:26:00 | | | I6 |
| 58 | F9VJM | 1 | 23-FEB-2004 | 12:31:00 | | | I6 |
| 59 | CCV | 1 | 23-FEB-2004 | 12:36:00 | | | I6 |
| 60 | CCB | 1 | 23-FEB-2004 | 12:42:00 | | | I6 |
| 61 | F9TWJ | 1 | 23-FEB-2004 | 12:49:00 | 4051106 | 4B17225 | I6 |
| 62 | F9T3T | 1 | 23-FEB-2004 | 12:54:00 | 4051106 | A4B190236 | I6 |
| 63 | F9T37 | 1 | 23-FEB-2004 | 12:59:00 | 4051106 | A4B190236 | I6 |
| 64 | F9T4A | 1 | 23-FEB-2004 | 13:04:00 | 4051106 | A4B190236 | I6 |
| 65 | F9VPK | 1 | 23-FEB-2004 | 13:08:00 | 4051106 | A4B190310 | I6 |
| 66 | F9VP5 | 1 | 23-FEB-2004 | 13:13:00 | 4051106 | A4B190310 | I6 |
| 67 | F9R99F | 1 | 23-FEB-2004 | 13:18:00 | 4051106 | 4B17111 | I6 |
| 68 | F9R99FS | 1 | 23-FEB-2004 | 13:23:00 | 4051106 | 4B17111 | I6 |
| 69 | F9R99FD | 1 | 23-FEB-2004 | 13:28:00 | 4051106 | 4B17111 | I6 |
| 70 | F9TAGF | 1 | 23-FEB-2004 | 13:33:00 | 4051106 | 4B17111 | I6 |
| 71 | CCV | 1 | 23-FEB-2004 | 13:37:00 | | | I6 |
| 72 | CCB | 1 | 23-FEB-2004 | 13:44:00 | | | I6 |
| 73 | F9TALF | 1 | 23-FEB-2004 | 13:48:00 | 4051106 | 4B17111 | I6 |
| 74 | F9TAQF | 1 | 23-FEB-2004 | 13:53:00 | 4051106 | 4B17111 | I6 |
| 75 | F9TARF | 1 | 23-FEB-2004 | 13:58:00 | 4051106 | 4B17111 | I6 |
| 76 | F9TA0F | 1 | 23-FEB-2004 | 14:03:00 | 4051106 | 4B17111 | I6 |
| 77 | F9TA2F | 1 | 23-FEB-2004 | 14:08:00 | 4051106 | 4B17111 | I6 |
| 78 | F9TA3F | 1 | 23-FEB-2004 | 14:12:00 | 4051106 | 4B17111 | I6 |
| 79 | F9TA5F | 1 | 23-FEB-2004 | 14:17:00 | 4051106 | 4B17111 | I6 |
| 80 | F9TA9F | 1 | 23-FEB-2004 | 14:22:00 | 4051106 | 4B17111 | I6 |
| 81 | F9WDCBF | 1 | 23-FEB-2004 | 14:27:00 | 4051104 | A4B200000 | I6 |
| 82 | F9WDCCF | 1 | 23-FEB-2004 | 14:32:00 | 4051104 | A4B200000 | I6 |
| 83 | CCV | 1 | 23-FEB-2004 | 14:37:00 | | | I6 |
| 84 | CCB | 1 | 23-FEB-2004 | 14:43:00 | | | I6 |
| 85 | F9VMFF | 1 | 23-FEB-2004 | 14:48:00 | 4051104 | A4B190306 | I6 |
| 86 | F9VMFFL | 1 | 23-FEB-2004 | 14:53:00 | | | I6 |
| 87 | F9VMFFS | 1 | 23-FEB-2004 | 14:58:00 | 4051104 | A4B190306 | I6 |
| 88 | F9VMFFD | 1 | 23-FEB-2004 | 15:02:00 | 4051104 | A4B190306 | I6 |

(continued)

# *INSTRUMENT PRINTOUTS*

# STL North Canton Hg Data Review Checklist

Run/Project Information

Run Date: 2-20-04 Analyst: DB/mc Instrument: HI

Prep Batches Run: see run log

Circle Methods used: 7470A / 245.1 : CORP-MT-0005 Rev 1 (7471/245.1 : CORP-MT-0007 Rev 1)
CLP - AQ : CORP-MT-0006 Rev 0 CLP - SOL : CORP-MT-0008 Rev 0
1631 : NC-MT-0001 Rev 1

Review Items

| A. Calibration/Instrument Run QC | Yes | No | N/A | 2nd Level |
|---|---|---|---|---|
| 1. Instrument calibrated per manufacturer's instructions and at SOP specified levels? | ✓ | | | ✓ |
| 2. ICV/CCV analyzed at appropriate frequency and within control limits? | ✓ | | | ✓ |
| 3. ICB/CCB analyzed at appropriate frequency and within +/- RL? | ✓ | | | ✓ |
| 4. CRA run? | ✓ | | | ✓ |
| **B. Sample Results** | | | | |
| 1. Were samples with concentrations > high calibration standard diluted and reanalyzed? | ✓ | | | ✓ |
| 2. All reported results bracketed by in control QC? | ✓ | | | ✓ |
| 3. Sample analyses done within holding time? | ✓ | | | ✓ |
| **C. Preparation/ Matrix QC** | | | | |
| 1. LCS done per prep batch and within QC limits? | ✓ | | | ✓ |
| 2. Method blank done per prep batch and < RL? | ✓ | | | ✓ |
| 3. MS run at required frequency and within limits? | ✓ | | | ✓ |
| 4. MSD or DU run at required frequency and RPD within SOP limits? | ✓ | | | ✓ |
| **D. Other** | | | | |
| 1. Are all nonconformances documented appropriately? | ✓ | | | ✓ |
| 2. Current IDL/MDL data on file? | ✓ | | | ✓ |
| 3. Calculations and Transcription checked for error? | ✓ | | | ✓ |
| 4. All client/project specific requirements met? | ✓ | | | ✓ |
| 5. Date of analysis verified as correct? | ✓ | | | ✓ |

Level I Analyst: Michaelyn Lisk Date: 2-20-04

Comments:

2nd Level Reviewer: [signature] Date: 2/20/04

Curve Prepared Date: 2-20-04 Time: 8:40 am - 9:10 am

ICV HPS 329319 SnCl2 4MR103

CAL CCV HPS 320313 NACL/NH2OH/HCL 4MR104

Revised 05/15/2001
N:\METALS\SOPS\HGCHECKLIST

13:29:44 20 Feb 2004 Protocol: HGPPB

***POST-RUN REPORT***

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|
| *** Standard: 1 Rep: 1 | | | | Seq: 0 | | 11:09:47 20 Feb 2004 HG | | |
| Hg | .0000 | ppb | 6071 | | | | | |
| *** Standard: 2 Rep: 1 | | | | Seq: 1 | | 11:10:53 20 Feb 2004 HG | | |
| Hg | .2000 | ppb | 29632 | | | | | |
| *** Standard: 3 Rep: 1 | | | | Seq: 2 | | 11:11:58 20 Feb 2004 HG | | |
| Hg | .5000 | ppb | 70788 | | | | | |
| *** Standard: 4 Rep: 1 | | | | Seq: 3 | | 11:13:25 20 Feb 2004 HG | | |
| Hg | 1.000 | ppb | 147840 | | | | | |
| *** Standard: 5 Rep: 1 | | | | Seq: 4 | | 11:14:34 20 Feb 2004 HG | | |
| Hg | 5.000 | ppb | 733481 | | | | | |
| *** Standard: 6 Rep: 1 | | | | Seq: 5 | | 11:15:51 20 Feb 2004 HG | | |
| Hg | 10.00 | ppb | 1422046 | | | | | |

Michaelyn Lest

RunFold: HG10220B Seq: 6 Batch:

Prnt: R/T On Pump: On

Rev: 4.2 11:15:54 20 Feb 2004 Xmit: Off Gas: 0.70 LPM

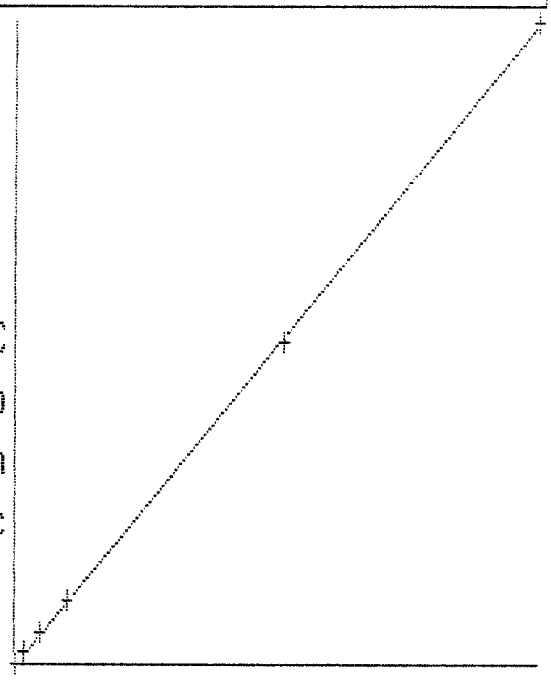
State: Idle Macro SCOTT 66: F3 Print User: SMI A/S: On

CALIBRATION: Line proto: HGPPB

| | Hg Conc. | Calc. | Dev. | Accepted |
|---|---|---|---|---|
| S1 | .0000 | .0073 | .0073 | Quadratic |
| S2 | .2000 | .1726 | -.0274 | Wtdlinear |
| S3 | .5000 | .4614 | -.0386 | |
| S4 | 1.000 | 1.002 | .0022 | Accept |
| S5 | 5.000 | 5.112 | .1121 | |
| S6 | 10.00 | 9.944 | -.0556 | |

A .00000000 r .999888

B 7.01788e-6 C -3.53481e-2




| | Mean | | |
|---|---|---|---|
| S1 | 6071 | 0 SD | 6071 |
| S2 | 29632 | 0 %RSD | 29632 |
| S3 | 70788 | 0 %RSD | 70788 |
| S4 | 147840 | 0 %RSD | 147840 |
| S5 | 733481 | 0 %RSD | 733481 |
| S6 | 1422046 | 0 %RSD | 1422046 |

New cal coefficients stored

11:17:04 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Check Standard: 5 Ck5ICV Seq: 6 11:17:04 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 90.80 | 2.270 | 2.500 | ppb | .0000 % |

*** Check Standard: 4 Ck4ICB Seq: 7 11:18:32 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | -159200 | -.0159 | .0000 | ppb | .0000 % |

*** Check Standard: 3 Ck3CRA\MRL Seq: 8 11:19:37 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 83.45 | .1669 | .2000 | ppb | .0000 % |

*** Check Standard: 2 Ck2CCV Seq: 9 11:20:46 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 99.65 | 4.983 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 10 11:22:06 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0344 | .2000 | ppb | .0000 % |

*** Sample ID: F9R35B Seq: 11 11:23:22 20 Feb 2004 HG

4050108

| | | | | | |
|---|---|---|---|---|---|
| Hg | -.0157 | ppb | .0000 % | -.0157 | |

*** Sample ID: F9R35C Seq: 12 11:24:26 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | 5.005 | ppb | .0000 % | 5.005 | |

*** Sample ID: F9QP5 Seq: 13 11:25:35 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .1228 | ppb | .0000 % | .1228 | |

*** Sample ID: F9Q5D Seq: 14 11:26:44 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .1209 | ppb | .0000 % | .1209 | |

*** Sample ID: F9Q5T Seq: 15 11:27:53 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | 33.10 | ppb | .0000 % | 33.10 | |

*** Sample ID: F9Q57 Seq: 16 11:29:08 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | 4.662 | ppb | .0000 % | 4.662 | |

*** Sample ID: F9NM8 Seq: 17 11:30:14 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .3467 | ppb | .0000 % | .3467 | |

11:31:42 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Sample ID: F9QF0 Seq: 18 11:31:42 20 Feb 2004 HG

SOLID

Hg .2031 ppb .0000 % .2031

*** Sample ID: F9QF0S Seq: 19 11:32:57 20 Feb 2004 HG

SOLID

Hg 1.098 ppb .0000 % 1.098

*** Sample ID: F9QF0D Seq: 20 11:34:03 20 Feb 2004 HG

SOLID

Hg 1.096 ppb .0000 % 1.096

*** Check Standard: 2 Ck2CCV Seq: 21 11:35:17 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 95.40 | 4.770 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 22 11:36:42 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0437 | .2000 | ppb | .0000 % |

TCLP recombinate

*** Sample ID: F9QC2BT Seq: 23 11:38:07 20 Feb 2004 HG

4049169

Hg -.0106 ppb .0000 % -.0106

*** Sample ID: F9QC2CT Seq: 24 11:39:28 20 Feb 2004 HG

SOLID

Hg 4.554 ppb .0000 % 4.554

*** Sample ID: F9JM0T Seq: 25 11:40:35 20 Feb 2004 HG

SOLID

Hg -.0180 ppb .0000 % -.0180

*** Sample ID: F9JM0TS Seq: 26 11:42:01 20 Feb 2004 HG

rerun

SOLID

Hg .1834 ppb .0000 % .1834

*** Sample ID: F9JM0TD Seq: 27 11:43:21 20 Feb 2004 HG

SOLID

Hg 4.302 ppb .0000 % 4.302

*** Sample ID: F9JM5T Seq: 28 11:44:47 20 Feb 2004 HG

SOLID

Hg -.0016 ppb .0000 % -.0016

*** Sample ID: F9JM6T Seq: 29 11:46:06 20 Feb 2004 HG

SOLID

Hg .0233 ppb .0000 % .0233

11:47:15 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Check Standard: 2 Ck2CCV Seq: 30 11:47:15 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 98.80 | 4.940 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 31 11:48:39 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0126 | .2000 | ppb | .0000 % |

*** Check Standard: 2 Ck2CCV Seq: 32 12:02:45 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 99.45 | 4.972 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 33 12:03:49 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.1005 | .2000 | ppb | .0000 % |

*** Sample ID: F9WC4B Seq: 34 12:04:57 20 Feb 2004 HG

4051100

| | | | | | |
|---|---|---|---|---|---|
| Hg | -.0226 | ppb | .0000 % | -.0226 | |

*** Sample ID: F9WC4C Seq: 35 12:06:02 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | 4.769 | ppb | .0000 % | 4.769 | |

*** Sample ID: F9R7L Seq: 36 12:07:13 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .1092 | ppb | .0000 % | .1092 | |

*** Sample ID: F9R7W Seq: 37 12:08:20 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .0558 | ppb | .0000 % | .0558 | |

*** Sample ID: F9R7T Seq: 38 12:09:40 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .0790 | ppb | .0000 % | .0790 | |

*** Sample ID: F9R7X Seq: 39 12:10:47 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .0836 | ppb | .0000 % | .0836 | |

*** Sample ID: F9TG0 Seq: 40 12:12:02 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .0647 | ppb | .0000 % | .0647 | |

*** Sample ID: F9TG9 Seq: 41 12:13:09 20 Feb 2004 HG

SOLID

| | | | | | |
|---|---|---|---|---|---|
| Hg | .2722 | ppb | .0000 % | .2722 | |

12:14:15 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|
| *** Sample ID: F9TG9S | | | | Seq: 42 | | 12:14:15 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | 1.257 | ppb | .0000 % | 1.257 | | | | |
| *** Sample ID: F9TG9D | | | | Seq: 43 | | 12:15:25 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | 1.424 | ppb | .0000 % | 1.424 | | | | |

*** Check Standard: 2 Ck2CCV Seq: 44 12:16:33 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 100.5 | 5.026 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 45 12:18:29 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0125 | .2000 | ppb | .0000 % |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *** Sample ID: F9TR5 | | | | Seq: 46 | | 12:19:36 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .0772 | ppb | .0000 % | .0772 | | | | |
| *** Sample ID: F9TT0 | | | | Seq: 47 | | 12:20:47 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .2507 | ppb | .0000 % | .2507 | | | | |
| *** Sample ID: F9TT8 | | | | Seq: 48 | | 12:21:57 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .1094 | ppb | .0000 % | .1094 | | | | |
| *** Sample ID: F9TT9 | | | | Seq: 49 | | 12:23:24 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .1225 | ppb | .0000 % | .1225 | | | | |
| *** Sample ID: F9VEF | | | | Seq: 50 | | 12:24:30 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .3171 | ppb | .0000 % | .3171 | | | | |
| *** Sample ID: F9VEL | | | | Seq: 51 | | 12:25:39 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | .0427 | ppb | .0000 % | .0427 | | | | |
| *** Sample ID: F9VEP | | | | Seq: 52 | | 12:26:58 20 Feb 2004 HG | | |
| | | | SOLID | | | | | |
| Hg | -.0214 | ppb | .0000 % | -.0214 | | | | |
| *** Sample ID: F9WC2B | | | | Seq: 53 | | 12:28:15 20 Feb 2004 HG | | |
| | | | 4051099 | | | | | |
| Hg | -.0016 | ppb | .0000 % | -.0016 | | | | |

12:29:21 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Sample ID: F9WC2C Seq: 54 12:29:21 20 Feb 2004 HG

SOLID

Hg 4.718 ppb .0000 % 4.718

*** Sample ID: F9VHN Seq: 55 12:30:31 20 Feb 2004 HG

SOLID

Hg .3696 ppb .0000 % .3696

*** Check Standard: 2 Ck2CCV Seq: 56 12:31:50 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 102.1 | 5.103 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 57 12:32:58 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0544 | .2000 | ppb | .0000 % |

*** Sample ID: F9VHX Seq: 58 12:34:03 20 Feb 2004 HG

SOLID

Hg .3235 ppb .0000 % .3235

*** Sample ID: F9VH2 Seq: 59 12:35:18 20 Feb 2004 HG

SOLID

Hg .6517 ppb .0000 % .6517

*** Sample ID: F9VH3 Seq: 60 12:36:26 20 Feb 2004 HG

SOLID

Hg .6153 ppb .0000 % .6153

*** Sample ID: F9VH3S Seq: 61 12:37:31 20 Feb 2004 HG

SOLID

Hg 1.585 ppb .0000 % 1.585

*** Sample ID: F9VH3D Seq: 62 12:38:38 20 Feb 2004 HG

SOLID

Hg 1.528 ppb .0000 % 1.528

*** Sample ID: F9VH4 Seq: 63 12:39:49 20 Feb 2004 HG

SOLID

Hg .4231 ppb .0000 % .4231

*** Sample ID: F9VH7 Seq: 64 12:41:09 20 Feb 2004 HG

SOLID

Hg .2805 ppb .0000 % .2805

*** Sample ID: F9VH8 Seq: 65 12:42:48 20 Feb 2004 HG

SOLID

Hg .3122 ppb .0000 % .3122

12:43:53 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Sample ID: F9VH9 Seq: 66 12:43:53 20 Feb 2004 HG

SOLID

Hg .4768 ppb .0000 % .4768

*** Sample ID: F9VJA Seq: 67 12:45:10 20 Feb 2004 HG

SOLID

Hg .3968 ppb .0000 % .3968

*** Check Standard: 2 Ck2CCV Seq: 68 12:46:15 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 101.3 | 5.063 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 69 12:47:21 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0949 | .2000 | ppb | .0000 % |

*** Sample ID: F9VJD Seq: 70 12:48:26 20 Feb 2004 HG

SOLID

Hg .3214 ppb .0000 % .3214

*** Sample ID: F9VJE Seq: 71 12:49:37 20 Feb 2004 HG

SOLID

Hg .2552 ppb .0000 % .2552

*** Sample ID: F9VJF Seq: 72 12:50:47 20 Feb 2004 HG

SOLID

Hg .2572 ppb .0000 % .2572

*** Sample ID: F9VJH Seq: 73 12:52:24 20 Feb 2004 HG

SOLID

Hg .4236 ppb .0000 % .4236

*** Sample ID: F9VJHS Seq: 74 12:53:35 20 Feb 2004 HG

SOLID

Hg 1.431 ppb .0000 % 1.431

*** Sample ID: F9VJHD Seq: 75 12:55:22 20 Feb 2004 HG

SOLID

Hg 1.287 ppb .0000 % 1.287

*** Sample ID: F9VJM Seq: 76 12:56:48 20 Feb 2004 HG

SOLID

Hg .2694 ppb .0000 % .2694

*** Sample ID: F9VJQ Seq: 77 12:58:10 20 Feb 2004 HG

SOLID

Hg .2154 ppb .0000 % .2154

12:59:16 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Sample ID: F9VJR Seq: 78 12:59:16 20 Feb 2004 HG

SOLID

Hg .2348 ppb .0000 % .2348

*** Sample ID: F9VJV Seq: 79 13:00:34 20 Feb 2004 HG

SOLID

Hg .4742 ppb .0000 % .4742

*** Check Standard: 2 Ck2CCV Seq: 80 13:01:49 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 100.5 | 5.026 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 81 13:03:00 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0549 | .2000 | ppb | .0000 % |

*** Sample ID: F9VJ0 Seq: 82 13:04:06 20 Feb 2004 HG

SOLID

Hg .1200 ppb .0000 % .1200

*** Sample ID: CRA\MRL Seq: 83 13:05:35 20 Feb 2004 HG

SOLID

Hg .1713 ppb .0000 % .1713

*** Check Standard: 2 Ck2CCV Seq: 84 13:06:43 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 100.6 | 5.028 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 85 13:07:53 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0650 | .2000 | ppb | .0000 % |

*** Check Standard: 2 Ck2CCV Seq: 86 13:16:19 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 100.7 | 5.033 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 87 13:17:26 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0653 | .2000 | ppb | .0000 % |

*** Sample ID: F9JM0TS Seq: 88 13:18:33 20 Feb 2004 HG

SOLID

Hg 4.413 ppb .0000 % 4.413

*** Sample ID: F9Q5T/5 Seq: 89 13:19:47 20 Feb 2004 HG

SOLID

Hg 9.435 ppb .0000 % 9.435

13:21:05 20 Feb 2004 Protocol: HGPPB

| Line | Conc. | Units | SD/RSD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|

*** Check Standard: 2 Ck2CCV Seq: 90 13:21:05 20 Feb 2004 HG

| Line | Flag | %Rcv. | Found | True | Units | SD/RSD |
|---|---|---|---|---|---|---|
| Hg | | 100.8 | 5.040 | 5.000 | ppb | .0000 % |

*** Check Standard: 1 Ck1CCB Seq: 91 13:22:39 20 Feb 2004 HG

| Line | Flag | Found | Range(+/-) | Units | SD/RSD |
|---|---|---|---|---|---|
| Hg | | -.0225 | .2000 | ppb | .0000 % |

| | | | | | |
|---|---|---|---|---|---|
| SCAL2 | STD 4B68 | ICSAB | STD 4A42 | CAL2 (2X)- CAL3 | STD — |
| CRI | STD 4B95 | ICV | STD 4A25 | SCAL (2X)- CAL 2 | STD — |
| CLP CRI | STD — | CCV | STD 4B101 | ICSAB 4.0 | STD. — |

## STL North Canton ICP Data Review Checklist

**Run/Project Information:**

Run Date: 2-23-04 Analyst: KLC Instrument: I6

Prep Batches Run: 4051099 4051106 4051105 4047313 4051104 4051102 4054106 4054107 4054105 4054104 4054109 4054113 4054110 4055106 4055111

Cu/MnRatio: 0.239

Circle Methods used: (6010B / 200.7: CORP-MT-0001 Rev 3.2)
CLP ILM03.0 / ILM04.0: CORP-MT-0002 Rev 1.1
6010A/200.7: CORP-MT-0001NC, Rev 2

A4B190299
SDG 4B17111
A4B190191
A4B190294
A4B200183
SDG 4B17119
A4B210114
A4B200193
SDG 4B20151
A4B200186
A4B210110

Review Items

| A. Calibration/Instrument Run QC | Yes | No | N/A | 2nd Level |
|---|---|---|---|---|
| 1. Instrument calibrated per manufacturer's instructions (2 exposures/sample) and at SOP specified levels ? | ✓ | | | ✓ |
| 2. ICV/CCV analyzed at appropriate frequency and within control limits ? *(ICV (2nd source):200.7=95 –105%, 6010B/CLP, 90-110%) (CCV: 90 – 110%)* | ✓ | | | ✓ |
| 3. ICB/CCB analyzed at appropriate frequency and within +/- RL or +/- CRDL (CLP) ? | ✓ | | | ✓ |
| 4. High Std. (HCAL) reanalyzed before samples and recovered within QC limits ? (6010A 95-105%, CLP.6010B- N/A) | | | ✓ | |
| 5. CRI run at SOP or project-specific frequency? Recovered within QC limits? (6010A +/- 50%, project specific limits may vary) | ✓ | | | ✓ |
| 6. ICSA/ICSAB run at required frequency and within SOP limits ? | ✓ | | | ✓ |
| **B. Sample Results** | | | | |
| 1. Were samples with concentrations > the linear range for any parameter diluted and reanalyzed ? | ✓ | | | ✓ |
| 2. All reported results bracketed by in control QC ? | ✓ | | | ✓ |
| 3. Sample analyses done within holding time ? | ✓ | | | ✓ |
| **C. Preparation/Matrix QC** | | | | |
| 1. LCS done per prep batch and within QC limits ? | ✓ | | | ✓ |
| 2. Method blank done per prep batch and < RL or CRDL (CLP) ? | ✓ | | | ✓ |
| 3. MS/MSD run at required frequency and within limits ? | ✓ | | | ✓ |
| 4. MSD or DU run at required frequency and RPD within SOP limits ? | ✓ | | | ✓ |
| 5. Serial dilution done per prep batch (or per SDG for CLP) ? | ✓ | | | ✓ |
| 6. Post digest spike analyzed if required? | | | ✓ | |
| **D. ther** | | | | ✓ |
| 1. Are all nonconformances documented appropriately ? | ✓ | | | ✓ |
| 2. Current IDL/MDL/LR/IEC data on file ? | ✓ | | | ✓ |
| 3. Calculations checked for error ? | ✓ | | | ✓ |
| 4. Transcriptions checked for error ? | ✓ | | | ✓ |
| 5. All client/project specific requirements met ? | ✓ | | | ✓ |
| 6. Date/time of analysis verified as correct ? | ✓ | | | ✓ |

Level I Analyst: Karin L. Counts Date: 2-23-04 Time: 07:38 - 12:42
Comments: Karin L. Counts 2-24-04 12:49 - 04:40 - 11:34
Karin L. Counts 2-25-04 11:51 - 02:03

Level II Reviewer: Date: 2-23-04 Time: 0738-1242
Comments: 2-24-04 1249-1134
Beatrice M Bowsher 2-25-04 11:51-02:03

n:\metals\icpchk.doc
Revision 2.0, 07/05/01

# Clouseau
# Nonconformance Memo

SEVERN TRENT STL

NCM #: **01-04437**
NCM Initiated By: Patrick OMeara
Date Opened: 04/03/2001
Date Closed: 04/05/2001

Classification: **Anomaly**
Status: **CLOSED**
Production Area: Metals
Tests: None
Lot #'s (Sample #'s): ,
QC Batches: None.,

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

## Problem Description / Root Cause

| Name | Date | Description |
|---|---|---|
| Patrick OMeara | 04/03/2001 | Stock standard solutions used for ICP ICSA solutions commonly have low level contamination for certain elements, especially zinc.<br><br>Verified contamination is not corrected by interelement correction factors (IEC's) since instrumental determination of the presence of the analyte is due not to spectral interference but due to actual presence of the element in the solution. Contamination can be verified by performing a wavelength scan of the standard solution. If contamination exists, the peak apex will be directly at the expected wavelength for the element of concern. If the presence of the analyte is due to interference from another analyte which produces a peak near the element of concern, the peak apex of the interfering analyte will not be exactly at the wavelength for the element of concern, and an IEC would be generated.<br><br>If contamination for an element such as zinc is suspected, an IEC would be inappropriate, and the concentration during analysis of the daily ICSA solution may exceed SOP criteria. In these cases, this NCM will be referenced and a copy of this NCM will be included with the run.<br><br>Zinc contamination in ICSA stock solutions has been verified in this lab at various times with wavelength scans. An example scan is included with the I6 ICP analytical run from 4/3/01. |

## Corrective Action

| Name | Date | Corrective Action |
|---|---|---|

## Client Notification Summary

| Client | Project Manager | Notified | Response | How Notified | Note |
|---|---|---|---|---|---|
| | Response | Response Note | | | |

## Quality Assurance Verification

| Verified By | Due Date | Status | Notes |
|---|---|---|---|
| LEESOND | | Verified/completed | |

Date Printed: 12/20/02

Method: TOTAL Sample Name: S0 Operator:
Run Time: 02/23/04 07:38 Filename: I60223A
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | .00092 | .01794 | -.00244 | .05083 | .00016 | .00657 |
| SDev | .00205 | .00009 | .00972 | .00632 | .00023 | .00007 |
| %RSD | 221.636 | .50209 | 398.605 | 12.4434 | 141.421 | 1.11927 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | .02123 | -.02654 | -.00056 | .00442 | .0107 | -.00035 |
| SDev | .00022 | .01215 | .00023 | .00026 | .00041 | .00247 |
| %RSD | 1.06844 | 45.7788 | 41.2209 | 5.92443 | 3.90023 | 690.6 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | .0282 | .00307 | .00095 | .00214 | .0244 | -.00046 |
| SDev | .01762 | .00146 | .00033 | .00022 | .00078 | .00009 |
| %RSD | 62.5016 | 47.5033 | 34.5207 | 10.4723 | 3.22761 | 19.8026 |

| Elems | Sn | Tl | V | Zn | 2203/1 | 2203/2 |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | .02414 | -.03521 | .00062 | .00373 | .20289 | .00155 |
| SDev | .00444 | .0078 | .00098 | .00015 | .03008 | .01569 |
| %RSD | 18.3939 | 22.1559 | 156.218 | 4.16285 | 14.8288 | 1012.04 |

| Elems | 2068/2 | 2068/1 | 1960/1 | 1960/2 | *Y |
|---|---|---|---|---|---|
| Units | count | count | count | count | |
| Avge | -.00099 | -.01452 | -.02229 | .01439 | 15141.2 |
| SDev | .00196 | .0181 | .00368 | .00293 | 61.8718 |
| %RSD | 197.599 | 124.655 | 16.5357 | 20.3591 | .40863 |

Method: TOTAL Sample Name: CALSTD Operator:
Run Time: 02/23/04 07:42 Filename: I60223A
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | As | B | Ba | Be | Cd |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | 8.70631 | 3.96041 | 69.4281 | 10.688 | 45.2015 | 101.197 |
| SDev | .00024 | .00506 | .15679 | .01005 | .09675 | .13949 |
| %RSD | .00282 | .12791 | .22583 | .09404 | .21405 | .13784 |

| Elems | Co | Cr | Cu | Mn | Mo | Ni |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | 3.42449 | 13.9556 | 3.54273 | 14.8126 | 3.81315 | 6.83488 |
| SDev | .00456 | .02395 | .00707 | .01647 | .02843 | .00683 |
| %RSD | .13323 | .17165 | .19972 | .1112 | .74565 | .10001 |

| Elems | Sn | Tl | V | Zn | 2203/1 | 2203/2 |
|---|---|---|---|---|---|---|
| Units | count | count | count | count | count | count |
| Avge | 75.5499 | 6.22698 | 4.6037 | 10.4774 | 24.7494 | 10.8925 |
| SDev | .02105 | .04313 | .00489 | .00125 | .05461 | .00576 |
| %RSD | .02786 | .69268 | .10624 | .012 | .22066 | .05295 |

| Elems | 2068/2 | 2068/1 | 1960/1 | 1960/2 | *Y |
|---|---|---|---|---|---|
| Units | count | count | count | count | |
| Avge | .59985 | 5.08228 | 1.85737 | 1.67932 | 14793.8 |
| SDev | .0021 | .0049 | .00167 | .00078 | 44.9013 |
| %RSD | .35132 | .0966 | .08992 | .04657 | .30351 |

Method: TOTAL  Sample Name: CAL 2  Operator:
Run Time: 02/23/04 07:47  Filename: I60223A
Mode: IR  Type: X  Corr. Factor:  1.00000
Lab ID.:  Cust. Smpl. ID.:  Cust. ID.:

| Elems | Al | Fe | *Y |
|---|---|---|---|
| Units | count | count | |
| Avge | 8.17865 | 10.3455 | 14949.2 |
| SDev | .00668 | .01231 | 7.42462 |
| %RSD | .08176 | .11904 | .04966 |

Method: TOTAL Sample Name: S100 Operator:
Run Time: 02/23/04 07:51 Filename: I60223A
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

| Elems | Ca | K | Mg | Na3302 | *Y |
|---|---|---|---|---|---|
| Units | count | count | count | count | |
| Avge | 32.9971 | 146.489 | 37.5706 | 4.04574 | 14931.8 |
| SDev | .01706 | .11678 | .03376 | .0078 | 13.0815 |
| %RSD | .05172 | .07972 | .08988 | .19295 | .0876 |

Method: TOTAL Sample Name: ICV Operator: KLC
Run Time: 02/23/04 07:55 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 496.9 | 12860. | 242.5 | Q943.4 | 999.8 | 1022. |
| SDev | .3497 | 29.3 | 4.132 | 2.304 | 4.79 | 6.18 |
| %RSD | .0704 | .2278 | 1.704 | .2442 | .4792 | .6046 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 24580. | 249.7 | 1004. | 1011. | 1030. | 12720. |
| SDev | 272.8 | 3.055 | 7.847 | 6.028 | 2.914 | 79.93 |
| %RSD | 1.11 | 1.224 | .7818 | .5963 | .2829 | .6281 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 25980. | 24330. | 1005. | 988.7 | 24680. | 1004. |
| SDev | 25.36 | 287.1 | 4.588 | .638 | 163.3 | 10.89 |
| %RSD | .0976 | 1.18 | .4566 | .0645 | .6617 | 1.085 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 255.0 | 250.0 | 252.7 | 983.9 | 507.6 | 991.6 |
| SDev | 1.771 | 1.141 | 1.861 | 11.82 | 1.023 | 2.293 |
| %RSD | .6946 | .4565 | .7366 | 1.201 | .2015 | .2312 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1000. | 248.2 | 258.4 | 249.4 | 254.3 | 244.9 |
| SDev | 6.814 | 4.106 | .6056 | 3.537 | 4.556 | 2.082 |
| %RSD | .6811 | 1.654 | .2344 | 1.418 | 1.792 | .8502 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 252.6 | 15000.5 |
| SDev | .6714 | 127.986 |
| %RSD | .2658 | .85321 |

Method: TOTAL  Sample Name: ICB  Operator: KLC
Run Time: 02/23/04 08:02  Filename: I60223A
Mode: CONC  Type: Q  Corr. Factor: 1.00000
Lab ID.: N.CANTON  Cust. Smpl. ID.:  Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.2055 | 2.819 | -.6782 | 3.425 | .0777 | .1027 |
| SDev | .2755 | 2.744 | .7672 | .232 | .0899 | .0516 |
| %RSD | 134 | 97.36 | 113.1 | 6.774 | 115.7 | 50.25 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 144.5 | -.0259 | -.0973 | -.2183 | -.0228 | -8.098 |
| SDev | 1.488 | .234 | .055 | .2486 | .6093 | 5.546 |
| %RSD | 1.03 | 904 | 56.59 | 113.9 | 2675 | 68.48 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 261.4 | 71.19 | .0525 | 1.556 | -153.2 | -.0465 |
| SDev | 9.644 | 4.401 | .0003 | .9601 | 22.26 | 1.01 |
| %RSD | 3.689 | 6.182 | .5798 | 61.7 | 14.53 | 2170 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0058 | .4900 | 2.831 | -1.101 | .4627 | -.3926 |
| SDev | .5478 | 2.551 | 1.333 | .1566 | 4.372 | .294 |
| %RSD | 9466 | 520.6 | 47.09 | 14.23 | 944.8 | 74.87 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0001 | -.4287 | .2227 | 2.720 | 2.886 | 1.292 |
| SDev | .0322 | .719 | 1.18 | 1.132 | 1.433 | 1.492 |
| %RSD | 27840 | 167.7 | 529.9 | 41.63 | 49.66 | 115.4 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | .0894 | 14746.5 |
| SDev | 3.079 | 14.8492 |
| %RSD | 3445 | .10069 |

Method: TOTAL Sample Name: CRI\MRL Operator: KLC
Run Time: 02/23/04 08:06 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4.879 | 207.4 | 14.62 | 199.9 | 10.26 | 5.030 |
| SDev | .5742 | 1.206 | .5542 | .2415 | .0187 | .0123 |
| %RSD | 11.77 | .5816 | 3.791 | .1208 | .1827 | .2443 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4717. | 5.077 | 4.860 | 5.223 | 15.84 | 299.7 |
| SDev | .6301 | .0149 | .6737 | .1097 | .3248 | 4.619 |
| %RSD | .0134 | .294 | 13.86 | 2.101 | 2.051 | 1.541 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5215. | 4814. | 15.12 | 9.952 | 5012. | 25.60 |
| SDev | 22.26 | .472 | .0378 | .4029 | 17.03 | .03 |
| %RSD | .4269 | .0098 | .2502 | 4.048 | .3397 | .1171 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 9.372 | 19.12 | 11.92 | 100.5 | 17.44 | 6.812 |
| SDev | .4393 | 2.546 | .3657 | .782 | 2.242 | .6253 |
| %RSD | 4.688 | 13.32 | 3.067 | .7782 | 12.85 | 9.18 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 40.52 | 7.414 | 10.35 | 9.257 | 13.25 | 18.18 |
| SDev | .059 | .2228 | .5474 | .4877 | .7918 | .0509 |
| %RSD | .1455 | 3.005 | 5.289 | 5.269 | 5.974 | .2798 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 19.58 | 14705.8 |
| SDev | 3.792 | 1.06066 |
| %RSD | 19.36 | .00721 |

Method: TOTAL Sample Name: ICSA Operator: KLC
Run Time: 02/23/04 08:13 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0405 | 487500. | 4.793 | 2.182 | 1.483 | .1077 |
| SDev | .2946 | 581.4 | .9581 | .0522 | .042 | .0062 |
| %RSD | 727.6 | .1193 | 19.99 | 2.39 | 2.833 | 5.773 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 514100. | -.7805 | 3.277 | -.4608 | 1.827 | 188100. |
| SDev | 656 | .1142 | .1134 | .1652 | .3812 | 23.74 |
| %RSD | .1276 | 14.63 | 3.459 | 35.86 | 20.87 | .0126 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 261.8 | 472700. | 14.31 | -2.823 | -253.3 | 2.559 |
| SDev | 5.643 | 225.1 | .0337 | .0551 | 131 | .1744 |
| %RSD | 2.156 | .0476 | .2354 | 1.952 | 51.73 | 6.814 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -2.001 | -3.793 | -2.508 | .8948 | 1.299 | -1.852 |
| SDev | .3643 | 5.646 | .2546 | 1.862 | .1258 | .3449 |
| %RSD | 18.21 | 148.9 | 10.15 | 208 | 9.686 | 18.62 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 18.08 | -46.20 | 20.07 | .9583 | -4.239 | -9.078 |
| SDev | .1579 | 2.253 | .5784 | 3.125 | 1.178 | 9.125 |
| %RSD | .873 | 4.876 | 2.883 | 326.1 | 27.8 | 100.5 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.155 | 13808.2 |
| SDev | 3.91 | 32.8805 |
| %RSD | 338.6 | .23812 |

Method: TOTAL Sample Name: ICSAB Operator: KLC
Run Time: 02/23/04 08:17 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1031. | 482700. | 954.2 | 976.9 | 515.1 | 487.1 |
| SDev | .9002 | 413.9 | 1.774 | .262 | .3688 | .8751 |
| %RSD | .0873 | .0857 | .1859 | .0268 | .0716 | .1797 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 507500. | 906.1 | 466.0 | 471.9 | 551.5 | 186700. |
| SDev | 1289 | 2.141 | 1.044 | .6808 | 1.195 | 403.5 |
| %RSD | .254 | .2363 | .2241 | .1443 | .2167 | .2161 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 11720. | 469200. | 494.1 | 961.0 | 10220. | 908.3 |
| SDev | 36.07 | 1132 | .5891 | 4.375 | 88.23 | 2.562 |
| %RSD | .3078 | .2412 | .1192 | .4552 | .8636 | .282 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 939.2 | 944.3 | 989.9 | 944.4 | 957.5 | 478.5 |
| SDev | 3.662 | 1.029 | 4.126 | 1.499 | 1.172 | .4999 |
| %RSD | .39 | .109 | .4168 | .1588 | .1224 | .1045 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1017. | 902.9 | 957.3 | 995.9 | 987.0 | 946.1 |
| SDev | 1.049 | 7.024 | 1.984 | 2.363 | 5.006 | 7.687 |
| %RSD | .1031 | .778 | .2073 | .2373 | .5072 | .8124 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 943.3 | 13824.5 |
| SDev | 2.295 | 55.8614 |
| %RSD | .2433 | .40407 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 08:22 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 995.8 | 25120. | 494.2 | 4964. | 2057. | 1977. |
| SDev | .6738 | 42.75 | 2.098 | 2.466 | 2.822 | .8759 |
| %RSD | .0677 | .1702 | .4245 | .0497 | .1372 | .0443 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47170. | 489.3 | 1959. | 1961. | 2028. | 24720. |
| SDev | 44.28 | .2016 | 1.995 | .9671 | 1.561 | 6.8 |
| %RSD | .0939 | .0412 | .1019 | .0493 | .0769 | .0275 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 52580. | 47920. | 1981. | 1960. | 49540. | 1943. |
| SDev | 103 | 24.01 | .4266 | 11.91 | 22.8 | 2.168 |
| %RSD | .1959 | .0501 | .0215 | .6077 | .046 | .1116 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 494.1 | 496.5 | 510.4 | 4815. | 1021. | 1973. |
| SDev | .6276 | .8314 | .8239 | 7.831 | 2.078 | .4392 |
| %RSD | .127 | .1674 | .1614 | .1627 | .2036 | .0223 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1997. | 489.4 | 496.4 | 510.4 | 510.5 | 496.1 |
| SDev | 1.206 | 3.397 | .7551 | 4.906 | 3.684 | 2.106 |
| %RSD | .0604 | .6942 | .1521 | .9612 | .7218 | .4244 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 496.7 | 14630 |
| SDev | .1952 | 1.41421 |
| %RSD | .0393 | .00966 |

Method: TOTAL Sample Name: CCB Operator: KLC
Run Time: 02/23/04 08:28 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.3538 | 13.16 | 1.046 | 6.515 | .2054 | .2193 |
| SDev | .9728 | 1.843 | .2517 | 1.267 | .1263 | .0688 |
| %RSD | 275 | 14 | 24.07 | 19.44 | 61.46 | 31.39 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 153.9 | -.0462 | -.2189 | .1655 | .1698 | 1.559 |
| SDev | 4.365 | .1381 | .3365 | .0428 | .3908 | 1.623 |
| %RSD | 2.836 | 299 | 153.7 | 25.88 | 230.2 | 104.1 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 279.8 | 82.95 | .1546 | 3.211 | -148.0 | .2702 |
| SDev | 4.852 | 3.646 | .0133 | 1.974 | 25.89 | .5067 |
| %RSD | 1.734 | 4.396 | 8.627 | 61.47 | 17.49 | 187.5 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.8773 | -1.155 | 2.828 | 1.910 | 2.218 | -.0629 |
| SDev | .0905 | .974 | 3.895 | .6285 | .4511 | .1596 |
| %RSD | 10.31 | 84.31 | 137.7 | 32.9 | 20.34 | 253.6 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0673 | -2.331 | -.1519 | 3.129 | 2.678 | -3.014 |
| SDev | .0218 | 3.689 | 1.978 | .5612 | 5.56 | 4.65 |
| %RSD | 32.41 | 158.3 | 1302 | 17.94 | 207.6 | 154.3 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.2271 | 14698.8 |
| SDev | .8615 | 12.3744 |
| %RSD | 379.3 | .08418 |

Method: TOTAL Sample Name: F9WC2B 4051099 Operator: KLC
Run Time: 02/23/04 08:33 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.2059 | 8.590 | -.9968 | 2.337 | 1.059 | .0510 |
| SDev | .0111 | 2.666 | 1.58 | .6533 | .1816 | .0178 |
| %RSD | 5.377 | 31.04 | 158.5 | 27.95 | 17.15 | 34.93 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 244.0 | -.0958 | -.2593 | 1.064 | .9499 | 86.45 |
| SDev | .4492 | .0736 | .0551 | .0109 | .5082 | 9.181 |
| %RSD | .1841 | 76.89 | 21.23 | 1.021 | 53.5 | 10.62 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 295.9 | 87.18 | 1.837 | .3912 | -181.7 | .4496 |
| SDev | 1.269 | 4.442 | .1328 | .0975 | 30.32 | .1969 |
| %RSD | .429 | 5.095 | 7.227 | 24.94 | 16.69 | 43.81 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | H7.760 | -.4440 | 1.372 | 25.89 | -.1636 | -.2511 |
| SDev | 4.255 | .9206 | 1.491 | .5229 | 1.192 | .4167 |
| %RSD | 54.83 | 207.3 | 108.7 | 2.02 | 728.3 | 165.9 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2.975 | 5.426 | 8.925 | 3.225 | .4465 | .0575 |
| SDev | .1905 | 1.003 | 5.879 | .8935 | 1.789 | 1.092 |
| %RSD | 6.403 | 18.48 | 65.87 | 27.7 | 400.6 | 1900 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.6944 | 14689.8 |
| SDev | 1.925 | 19.4454 |
| %RSD | 277.3 | .13237 |

Method: TOTAL Sample Name: F9WC2C Operator: KLC
Run Time: 02/23/04 08:38 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 51.24 | 1930. | 1779. | 843.8 | 1877. | 45.02 |
| SDev | .2927 | 3.121 | 1.097 | 3.183 | 4.365 | .0089 |
| %RSD | .5712 | .1617 | .0617 | .3772 | .2325 | .0197 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 42520. | 44.69 | 453.2 | 185.6 | 245.8 | 1070. |
| SDev | 3.163 | .1691 | .0314 | .1061 | .5489 | .2608 |
| %RSD | .0074 | .3785 | .0069 | .0572 | .2233 | .0244 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 46750. | 41960. | 460.9 | 862.1 | 44080. | 451.8 |
| SDev | 86.54 | 23.08 | .3271 | 1.982 | 35.23 | .1974 |
| %RSD | .1851 | .055 | .071 | .2299 | .0799 | .0437 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 457.6 | 1805. | 456.4 | 1763. | 1849. | 453.9 |
| SDev | 1.352 | 4.887 | 1.078 | 1.294 | 20.6 | .4616 |
| %RSD | .2954 | .2707 | .2362 | .0734 | 1.114 | .1017 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 468.8 | 463.1 | 454.8 | 460.4 | 454.4 | 1804. |
| SDev | .4302 | .4804 | 2.266 | .9909 | 1.121 | 3.727 |
| %RSD | .0918 | .1037 | .4983 | .2152 | .2468 | .2067 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1806. | 14493.5 |
| SDev | 5.465 | 2.82842 |
| %RSD | .3027 | .01951 |

Method: TOTAL Sample Name: F9VHN Operator: KLC
Run Time: 02/23/04 08:43 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.9704 | 148600. | 26.29 | 4.161 | 432.1 | -1.432 |
| SDev | .3964 | .9833 | 1.641 | .6047 | .5504 | .0167 |
| %RSD | 40.85 | .0007 | 6.24 | 14.53 | .1274 | 1.166 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4897. | -1.523 | 45.41 | 168.9 | 78.98 | 173800. |
| SDev | 8.269 | .2186 | .2962 | .4682 | .0418 | 248.2 |
| %RSD | .1689 | 14.36 | .6523 | .2772 | .053 | .1428 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 6703. | 5664. | 3084. | 5.280 | 416.1 | 57.10 |
| SDev | 19.44 | 8.84 | 5.054 | 1.868 | 78.54 | .7312 |
| %RSD | .29 | .1561 | .1639 | 35.38 | 18.87 | 1.281 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 82.11 | .9902 | 2.594 | 29.11 | 6.404 | 438.9 |
| SDev | .85 | 1.546 | .7234 | .1828 | .6959 | .3026 |
| %RSD | 1.035 | 156.1 | 27.89 | .6279 | 10.87 | .069 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 181.9 | 63.59 | 91.36 | .8664 | 3.457 | -6.600 |
| SDev | .4441 | 3.565 | .5054 | 2.231 | 2.198 | .6192 |
| %RSD | .2442 | 5.606 | .5532 | 257.5 | 63.59 | 9.383 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 4.780 | 15539 |
| SDev | 2.009 | 10.6066 |
| %RSD | 42.03 | .06825 |

Method: TOTAL Sample Name: F9VHNL Operator: KLC
Run Time: 02/23/04 08:48 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0956 | 31690. | 4.978 | 1.322 | 90.23 | -.3025 |
| SDev | .1308 | 78.7 | .8745 | .4137 | .2725 | .0077 |
| %RSD | 136.8 | .2484 | 17.57 | 31.28 | .302 | 2.529 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1102. | -.4279 | 9.406 | 35.87 | 16.36 | 36560. |
| SDev | 2.732 | .0512 | .2441 | .2062 | .021 | 45.46 |
| %RSD | .2479 | 11.96 | 2.595 | .5749 | .1285 | .1243 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1525. | 1258. | 652.6 | .5570 | -9.909 | 12.84 |
| SDev | 11.98 | 3.771 | 1.229 | .4046 | 87.46 | .1331 |
| %RSD | .7855 | .2999 | .1883 | 72.64 | 882.6 | 1.037 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 16.43 | -.8357 | 1.522 | 5.870 | 4.311 | 91.90 |
| SDev | .2133 | 1.46 | 1.244 | .1929 | .0975 | .3274 |
| %RSD | 1.298 | 174.7 | 81.74 | 3.287 | 2.262 | .3563 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 40.07 | 11.50 | 18.89 | 1.277 | 1.645 | .3196 |
| SDev | .031 | .1716 | .4054 | .9587 | 2.344 | 4.655 |
| %RSD | .0774 | 1.493 | 2.146 | 75.07 | 142.5 | 1457 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.413 | 14946.8 |
| SDev | .1343 | 39.2444 |
| %RSD | 9.508 | .26256 |

Method: TOTAL Sample Name: F9VHX Operator: KLC
Run Time: 02/23/04 08:52 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.3689 | 124700. | 31.45 | 1.451 | 184.6 | -.1453 |
| SDev | .1313 | 251.6 | 1.571 | .1986 | .4622 | .0169 |
| %RSD | 35.59 | .2018 | 4.997 | 13.69 | .2504 | 11.61 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5302. | -1.773 | 36.35 | 195.1 | 62.41 | 195200. |
| SDev | 4.984 | .0834 | .6661 | .1086 | .0003 | 96.88 |
| %RSD | .094 | 4.705 | 1.832 | .0557 | .0006 | .0496 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 3642. | 4961. | 1865. | 3.142 | -361.5 | 38.76 |
| SDev | 2.498 | 2.045 | 1.809 | .9473 | 23 | 1.001 |
| %RSD | .0686 | .0412 | .097 | 30.15 | 6.362 | 2.582 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 87.94 | -.4591 | .7571 | 29.30 | 5.036 | 377.5 |
| SDev | .4921 | .187 | 1.708 | .4025 | .8725 | .4119 |
| %RSD | .5595 | 40.74 | 225.6 | 1.374 | 17.33 | .1091 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 153.8 | 71.99 | 95.91 | .6739 | .7987 | -8.677 |
| SDev | .1284 | 1.771 | 1.622 | 1.204 | 1.96 | 2.55 |
| %RSD | .0834 | 2.46 | 1.691 | 178.7 | 245.4 | 29.39 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 3.644 | 14885.5 |
| SDev | .9926 | 0 |
| %RSD | 27.24 | 0 |

Method: TOTAL  Sample Name: F9VH2  Operator: KLC
Run Time: 02/23/04 08:57  Filename: I60223A
Mode: CONC  Type: S  Corr. Factor: 1.00000
Lab ID.: N.CANTON  Cust. Smpl. ID.:  Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.7274 | 144500. | 27.94 | 3.239 | 514.8 | .2592 |
| SDev | .0427 | 77.51 | 1.06 | .5063 | .1747 | .0053 |
| %RSD | 5.864 | .0536 | 3.793 | 15.63 | .0339 | 2.039 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 16320. | -1.191 | 30.65 | 156.2 | 72.93 | 127000. |
| SDev | .792 | .0082 | .0938 | .2058 | .148 | 61.7 |
| %RSD | .0049 | .6917 | .3059 | .1318 | .2029 | .0486 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5962. | 4372. | 2048. | 2.658 | 232.3 | 55.56 |
| SDev | 17.07 | 4.737 | .4003 | .2241 | 171.2 | .1194 |
| %RSD | .2863 | .1084 | .0195 | 8.432 | 73.68 | .2149 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 81.75 | .0236 | 3.059 | 28.99 | 5.358 | 371.0 |
| SDev | 1.616 | 2.165 | 2.015 | 1.212 | 2.349 | .2132 |
| %RSD | 1.977 | 9159 | 65.87 | 4.182 | 43.84 | .0575 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 171.0 | 64.13 | 90.54 | 1.878 | 3.649 | -2.702 |
| SDev | .0385 | .8942 | 1.977 | 1.245 | 2.4 | 7.471 |
| %RSD | .0225 | 1.395 | 2.183 | 66.25 | 65.77 | 276.5 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1.385 | 15495.8 |
| SDev | .4831 | 48.4368 |
| %RSD | 34.9 | .31258 |

Method: TOTAL Sample Name: F9VH3 Operator: KLC
Run Time: 02/23/04 09:02 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.7834 | 156500. | 22.35 | 3.365 | 495.1 | -.0456 |
| SDev | .147 | 356.8 | .6461 | 1.035 | .9537 | .0052 |
| %RSD | 18.77 | .2279 | 2.891 | 30.77 | .1926 | 11.42 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 8303. | -1.150 | 30.47 | 164.2 | 72.99 | 121400. |
| SDev | 6.971 | .145 | .0455 | .0398 | .3837 | 80.94 |
| %RSD | .084 | 12.61 | .1495 | .0243 | .5257 | .0667 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 6474. | 4774. | 1715. | 2.488 | 110.8 | 58.07 |
| SDev | 18.28 | .3328 | .7928 | .7332 | 143.7 | .5796 |
| %RSD | .2823 | .007 | .0462 | 29.47 | 129.7 | .9981 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 69.42 | -2.962 | .9777 | 28.16 | 9.509 | 349.7 |
| SDev | .0709 | .3867 | 2.971 | 1.78 | .828 | .4132 |
| %RSD | .1021 | 13.05 | 303.9 | 6.322 | 8.708 | .1181 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 178.4 | 51.65 | 78.29 | .3986 | 1.267 | -12.19 |
| SDev | .0932 | 2.725 | 1.254 | .8608 | 4.885 | 2.02 |
| %RSD | .0523 | 5.277 | 1.602 | 216 | 385.6 | 16.57 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1.643 | 15390 |
| SDev | .4286 | 31.8198 |
| %RSD | 26.08 | .20675 |

Method: TOTAL Sample Name: F9VH3S Operator: KLC
Run Time: 02/23/04 09:07 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 49.91 | 280700. | 1701. | 712.7 | 2521. | 44.37 |
| SDev | .386 | 1387 | .5685 | 2.15 | 11.36 | .0241 |
| %RSD | .7735 | .4939 | .0334 | .3017 | .4505 | .0543 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 52130. | 42.32 | 483.6 | 415.5 | 363.5 | 156900. |
| SDev | 136.5 | .0209 | .5424 | .0018 | 2.172 | 49.39 |
| %RSD | .2619 | .0495 | .1122 | .0004 | .5975 | .0315 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 57010. | 50030. | 1970. | 814.7 | 44930. | 550.9 |
| SDev | 385.8 | 61 | .9068 | 2.535 | 236.9 | .1832 |
| %RSD | .6768 | .1219 | .046 | .3111 | .5272 | .0332 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 539.7 | 1710. | 191.8 | 1575. | 1793. | 927.5 |
| SDev | .2697 | .5433 | 1.191 | .7995 | 5.543 | 1.028 |
| %RSD | .05 | .0318 | .6213 | .0508 | .3092 | .1109 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 842.1 | 516.6 | 551.2 | 195.3 | 190.0 | 1706. |
| SDev | .7842 | 1.666 | .4274 | 1.602 | .9863 | 2.706 |
| %RSD | .0931 | .3225 | .0775 | .8202 | .5192 | .1586 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1713. | 15038.8 |
| SDev | 2.165 | 37.8302 |
| %RSD | .1264 | .25155 |

Method: TOTAL Sample Name: F9VH3D Operator: KLC
Run Time: 02/23/04 09:12 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47.29 | 232900. | 1620. | 616.1 | 2287. | 41.88 |
| SDev | .1496 | 163.6 | .4591 | .6955 | .7366 | .0155 |
| %RSD | .3164 | .0702 | .0283 | .1129 | .0322 | .037 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 49470. | 40.11 | 452.2 | 373.1 | 332.1 | 148000. |
| SDev | 86.44 | .0407 | .3732 | .071 | .6989 | 192.4 |
| %RSD | .1747 | .1016 | .0825 | .019 | .2104 | .13 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 51490. | 45360. | 1824. | 767.9 | 41800. | 502.3 |
| SDev | 94.03 | 68.87 | 1.591 | .4252 | 36.46 | .9178 |
| %RSD | .1826 | .1518 | .0872 | .0554 | .0872 | .1827 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 495.2 | 1623. | 138.6 | 1489. | 1702. | 874.3 |
| SDev | .2952 | 3.838 | .3933 | 5.736 | 1.472 | 1.032 |
| %RSD | .0596 | .2365 | .2838 | .3852 | .0865 | .118 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 706.8 | 472.9 | 506.3 | 140.3 | 137.7 | 1611. |
| SDev | .8518 | .4271 | .2294 | .721 | .9496 | 8.291 |
| %RSD | .1205 | .0903 | .0453 | .5139 | .6895 | .5146 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1629. | 15070.8 |
| SDev | 1.614 | .35355 |
| %RSD | .0991 | .00234 |

Method: TOTAL Sample Name: F9VH4 Operator: KLC
Run Time: 02/23/04 09:17 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.315 | 108200. | 26.33 | 6.171 | 373.0 | .7251 |
| SDev | .1516 | 8.96 | 1.84 | 1.051 | .0002 | .0081 |
| %RSD | 11.53 | .0083 | 6.988 | 17.04 | .0001 | 1.114 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 101400. | -.9175 | 80.24 | 151.9 | 72.18 | 139800. |
| SDev | 98.77 | .0939 | .369 | .2138 | .1976 | 149.4 |
| %RSD | .0974 | 10.24 | .4599 | .1407 | .2737 | .1069 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 9961. | 11240. | 4404. | 5.413 | 10110. | 79.08 |
| SDev | 4.181 | 12.94 | 3.489 | 1.48 | 45.9 | .6466 |
| %RSD | .042 | .1151 | .0792 | 27.34 | .454 | .8177 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 231.9 | -.5113 | 3.454 | 28.41 | 12.71 | 275.9 |
| SDev | .3255 | .4631 | .4676 | .3297 | 4.296 | .1348 |
| %RSD | .1404 | 90.56 | 13.54 | 1.16 | 33.79 | .0489 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 182.9 | 217.1 | 239.3 | 1.337 | 4.510 | -5.927 |
| SDev | .3636 | 1.662 | .3419 | 1.028 | .1881 | 1.725 |
| %RSD | .1987 | .7658 | .1429 | 76.85 | 4.17 | 29.09 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 2.193 | 15062.5 |
| SDev | 1.555 | 2.82842 |
| %RSD | 70.93 | .01877 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 09:21 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1012. | 25330. | 501.8 | 5043. | 2083. | 2002. |
| SDev | 6.898 | 189.9 | 7.174 | 34.47 | 18.38 | 15.85 |
| %RSD | .6818 | .7496 | 1.43 | .6835 | .8822 | .7918 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47780. | 494.3 | 1980. | 1978. | 2056. | 24820. |
| SDev | 360.4 | 3.515 | 15.83 | 14.39 | 16.31 | 205.2 |
| %RSD | .7542 | .7112 | .7995 | .7274 | .7933 | .8268 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 53570. | 48440. | 1996. | 1978. | 50100. | 1964. |
| SDev | 336.1 | 359.1 | 15.7 | 2.144 | 262.7 | 14.29 |
| %RSD | .6274 | .7412 | .7865 | .1084 | .5245 | .7278 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 498.0 | 502.8 | 513.6 | 4868. | 1030. | 1993. |
| SDev | 2.558 | 9.096 | 3.219 | 35.84 | 4.837 | 16.38 |
| %RSD | .5136 | 1.809 | .6269 | .7361 | .4698 | .8216 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2024. | 493.9 | 500.0 | 517.5 | 511.6 | 506.4 |
| SDev | 14.75 | 3.356 | 2.159 | 5.504 | 2.078 | 11.85 |
| %RSD | .7286 | .6796 | .4317 | 1.064 | .4063 | 2.34 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 501.1 | 14481.5 |
| SDev | 7.72 | 82.0244 |
| %RSD | 1.541 | .5664 |

Method: TOTAL Sample Name: CCB Operator: KLC
Run Time: 02/23/04 09:28 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .2653 | 11.05 | .5088 | 4.415 | .2446 | .1916 |
| SDev | .8988 | 1.859 | .6041 | 1.785 | .0725 | .0947 |
| %RSD | 338.7 | 16.83 | 118.7 | 40.43 | 29.66 | 49.41 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 147.4 | -.1073 | .3365 | -.1138 | .2478 | -3.063 |
| SDev | 2.412 | .1056 | .3379 | .2202 | .5574 | 1.178 |
| %RSD | 1.637 | 98.4 | 100.4 | 193.5 | 224.9 | 38.46 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 269.6 | 75.10 | .1928 | 3.551 | -341.0 | .0308 |
| SDev | .6318 | 3.652 | .1438 | 2.032 | 37.76 | .0567 |
| %RSD | .2343 | 4.863 | 74.56 | 57.21 | 11.07 | 184.3 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.472 | .5929 | 1.032 | 1.280 | 3.728 | .0878 |
| SDev | 1.033 | .0245 | 1.357 | .1128 | 1.372 | .2165 |
| %RSD | 70.19 | 4.128 | 131.5 | 8.813 | 36.8 | 246.6 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .1000 | -1.032 | -1.691 | 3.022 | .0378 | 5.188 |
| SDev | .1682 | 2.167 | 2.631 | 1.071 | 2.569 | 2.564 |
| %RSD | 168.2 | 209.9 | 155.6 | 35.43 | 6796 | 49.42 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.701 | 14651.8 |
| SDev | 1.243 | 13.7886 |
| %RSD | 73.08 | .0941 |

Method: TOTAL Sample Name: F9VH7 Operator: KLC
Run Time: 02/23/04 09:32 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.458 | 106800. | 23.70 | 2.306 | 661.5 | 1.778 |
| SDev | .69 | 32.28 | 1.808 | .6918 | .5028 | .0084 |
| %RSD | 47.34 | .0302 | 7.628 | 29.99 | .076 | .4707 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2894. | -1.001 | 35.15 | 131.3 | 54.82 | 107900. |
| SDev | 4.245 | .0795 | .6271 | .3674 | .3658 | 147.9 |
| %RSD | .1467 | 7.941 | 1.784 | .2799 | .6672 | .1371 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4268. | 4169. | 2775. | 2.607 | -299.8 | 44.42 |
| SDev | 15.74 | 4.943 | 4.021 | .0823 | 175.6 | .3403 |
| %RSD | .3687 | .1186 | .1449 | 3.157 | 58.55 | .766 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 82.90 | -.0303 | 1.723 | 26.94 | 5.525 | 302.8 |
| SDev | .2592 | .7932 | .3627 | .1677 | 5.218 | .8109 |
| %RSD | .3127 | 2615 | 21.04 | .6226 | 94.44 | .2678 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 147.0 | 69.65 | 89.51 | 1.678 | 1.746 | -1.276 |
| SDev | .1255 | 1.198 | .2095 | 4.059 | 2.57 | .9238 |
| %RSD | .0854 | 1.72 | .2341 | 241.9 | 147.2 | 72.4 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | .5916 | 16197.5 |
| SDev | 1.65 | 31.1127 |
| %RSD | 279 | .19208 |

Method: TOTAL Sample Name: F9VH8 Operator: KLC
Run Time: 02/23/04 09:37 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.541 | 116100. | 31.01 | 1.929 | 764.6 | 2.314 |
| SDev | .6087 | 189 | .1286 | .472 | .5557 | .0121 |
| %RSD | 39.49 | .1627 | .4147 | 24.47 | .0727 | .5243 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2844. | -1.078 | 36.90 | 157.0 | 55.03 | 124200. |
| SDev | .1571 | .0525 | .4587 | .4452 | .0314 | 8.734 |
| %RSD | .0055 | 4.87 | 1.243 | .2835 | .057 | .007 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4450. | 4422. | 3121. | 2.632 | -440.1 | 51.01 |
| SDev | 2.117 | .724 | .1231 | .1807 | 30.27 | .3621 |
| %RSD | .0476 | .0164 | .0039 | 6.864 | 6.878 | .71 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 85.78 | -.4491 | 1.234 | 27.20 | 8.921 | 325.7 |
| SDev | .2963 | 2.745 | 1.414 | .3586 | 1.309 | .2482 |
| %RSD | .3454 | 611.4 | 114.6 | 1.319 | 14.67 | .0762 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 166.5 | 72.37 | 92.48 | 2.520 | .5919 | .8433 |
| SDev | .245 | .1077 | .4981 | 3.105 | .5698 | 5.775 |
| %RSD | .1471 | .1489 | .5386 | 123.2 | 96.28 | 684.9 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.094 | 16545.5 |
| SDev | 1.233 | 4.24264 |
| %RSD | 112.7 | .02564 |

Method: TOTAL Sample Name: F9VH9 Operator: KLC
Run Time: 02/23/04 09:42 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.7870 | 137300. | 30.50 | 3.074 | 477.2 | .1783 |
| SDev | .5134 | 52.81 | 1.308 | .8164 | .3335 | .0172 |
| %RSD | 65.23 | .0385 | 4.289 | 26.55 | .0699 | 9.671 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 99360. | -.9938 | 41.66 | 183.7 | 75.93 | 149700. |
| SDev | 163.5 | .1266 | .3637 | .1015 | .2382 | 84.21 |
| %RSD | .1645 | 12.74 | .873 | .0553 | .3137 | .0563 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 6898. | 7500. | 2217. | 1.412 | 1689. | 57.81 |
| SDev | 30.01 | 6.748 | 1.649 | .0945 | 130.2 | .1886 |
| %RSD | .4351 | .09 | .0744 | 6.689 | 7.71 | .3262 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 181.4 | 2.951 | 1.594 | 34.63 | 7.549 | 372.7 |
| SDev | .0875 | .9173 | .421 | 1.119 | 2.049 | .144 |
| %RSD | .0482 | 31.09 | 26.41 | 3.231 | 27.14 | .0386 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 170.6 | 166.0 | 189.1 | 2.357 | 1.213 | -1.744 |
| SDev | .2487 | 2.356 | 1.045 | 2.128 | 1.694 | 1.572 |
| %RSD | .1458 | 1.419 | .5527 | 90.27 | 139.6 | 90.12 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 5.294 | 15180.2 |
| SDev | .5906 | 13.7886 |
| %RSD | 11.16 | .09083 |

Method: TOTAL Sample Name: F9VJA Operator: KLC
Run Time: 02/23/04 09:47 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.7385 | 107100. | 29.91 | 4.522 | 406.4 | .9851 |
| SDev | .4257 | 38.94 | .1477 | .0146 | .5263 | .0134 |
| %RSD | 57.64 | .0364 | .4936 | .3236 | .1295 | 1.362 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 153200. | -.8759 | 30.23 | 210.8 | 61.37 | 140200. |
| SDev | 63.61 | .0056 | .0149 | .5343 | .017 | 21.95 |
| %RSD | .0415 | .637 | .0492 | .2534 | .0277 | .0157 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 7024. | 7095. | 2014. | 1.238 | 1704. | 43.50 |
| SDev | 8.514 | 2.993 | .2351 | .4471 | 48.02 | .5067 |
| %RSD | .1212 | .0422 | .0117 | 36.1 | 2.817 | 1.165 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 196.9 | -1.518 | 3.137 | 27.46 | 6.102 | 300.1 |
| SDev | .4997 | 1.156 | .2143 | 1.475 | 1.199 | .0148 |
| %RSD | .2537 | 76.13 | 6.83 | 5.371 | 19.65 | .0049 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 153.6 | 180.9 | 205.0 | -.2720 | 4.839 | -8.040 |
| SDev | .1952 | .7413 | .3791 | .164 | .4031 | 3.453 |
| %RSD | .1271 | .4098 | .185 | 60.3 | 8.331 | 42.95 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1.739 | 14883.2 |
| SDev | 3.457 | 7.42462 |
| %RSD | 198.8 | .04988 |

Method: TOTAL Sample Name: F9VJD Operator: KLC
Run Time: 02/23/04 09:52 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.7923 | 108500. | 211.1 | 123.7 | 1956. | 3.447 |
| SDev | .0111 | 85.55 | .9299 | .9271 | 1.93 | .0173 |
| %RSD | 1.396 | .0788 | .4405 | .7494 | .0987 | .501 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 313100. | 2.315 | 83.22 | 364.9 | 290.6 | 193600. |
| SDev | 451 | .0662 | .1021 | .9536 | .4917 | 192.4 |
| %RSD | .1441 | 2.862 | .1227 | .2614 | .1692 | .0994 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 29180. | 32410. | 2181. | 25.17 | 4893. | 225.0 |
| SDev | 25.29 | 36.79 | 1.444 | .4424 | 73.97 | .1587 |
| %RSD | .0867 | .1135 | .0662 | 1.757 | 1.512 | .0705 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 964.6 | 24.54 | 9.279 | 41.40 | 17.02 | 368.7 |
| SDev | .6996 | 1.188 | 2.611 | .5105 | .1581 | .4829 |
| %RSD | .0725 | 4.841 | 28.14 | 1.233 | .9287 | .131 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1318. | 954.8 | 969.4 | 6.069 | 10.88 | 18.25 |
| SDev | .2198 | .5763 | 1.337 | 1.407 | 4.617 | 3.615 |
| %RSD | .0167 | .0604 | .1379 | 23.18 | 42.43 | 19.8 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 27.68 | 15920.5 |
| SDev | 3.586 | 40.3051 |
| %RSD | 12.96 | .25316 |

Method: TOTAL Sample Name: F9VJE Operator: KLC
Run Time: 02/23/04 09:57 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.8973 | 145200. | 22.27 | 4.289 | 490.7 | -1.212 |
| SDev | .2898 | 55.03 | 2.194 | .4233 | .5207 | .0082 |
| %RSD | 32.3 | .0379 | 9.855 | 9.87 | .1061 | .6771 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 6370. | -1.690 | 67.54 | 191.8 | 87.44 | 213700. |
| SDev | 8.76 | .0061 | .2406 | .3975 | .2616 | 12.83 |
| %RSD | .1375 | .3617 | .3562 | .2072 | .2991 | .006 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 12070. | 7716. | 2125. | 2.295 | 646.4 | 68.53 |
| SDev | 2.145 | 1.141 | .5629 | .2857 | 43.13 | .2416 |
| %RSD | .0178 | .0148 | .0265 | 12.45 | 6.672 | .3526 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 73.86 | -.9664 | 2.934 | 23.23 | 6.150 | 413.9 |
| SDev | .7226 | 1.355 | .0059 | 1.157 | 1.386 | .2384 |
| %RSD | .9784 | 140.2 | .2021 | 4.981 | 22.54 | .0576 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 220.3 | 56.27 | 82.64 | .2719 | 4.263 | -10.29 |
| SDev | .1663 | 1.084 | .5421 | .2293 | .1056 | 3.56 |
| %RSD | .0755 | 1.927 | .656 | 84.31 | 2.476 | 34.6 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 3.688 | 15697 |
| SDev | .2537 | 7.07106 |
| %RSD | 6.877 | .04504 |

Method: TOTAL Sample Name: F9VJF Operator: KLC
Run Time: 02/23/04 10:01 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.6689 | 117300. | 249.8 | 148.3 | 2235. | 4.121 |
| SDev | .619 | 139.7 | 1.888 | .5516 | 4.047 | .0287 |
| %RSD | 92.55 | .1191 | .7557 | .3719 | .181 | .6962 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 325300. | .8551 | 71.36 | 314.5 | 229.3 | 131900. |
| SDev | 1052 | .1547 | .7029 | .635 | .4122 | 279.8 |
| %RSD | .3233 | 18.09 | .985 | .2019 | .1798 | .2122 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 30950. | 24700. | 1094. | 22.36 | 3660. | 155.4 |
| SDev | 55.25 | 64.69 | 1.361 | .3084 | 25.75 | .1077 |
| %RSD | .1785 | .262 | .1244 | 1.379 | .7035 | .0693 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 781.7 | 30.19 | 9.808 | 27.19 | 16.98 | 414.7 |
| SDev | 3.835 | 1.59 | .1316 | 1.033 | .2372 | .6984 |
| %RSD | .4906 | 5.265 | 1.342 | 3.801 | 1.397 | .1684 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 322.8 | 767.2 | 788.9 | 3.733 | 12.84 | 26.88 |
| SDev | .4482 | 5.204 | 3.151 | .3825 | .3883 | 2.592 |
| %RSD | .1389 | .6783 | .3994 | 10.25 | 3.024 | 9.642 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 31.85 | 15737.5 |
| SDev | 1.089 | 16.2634 |
| %RSD | 3.421 | .10334 |

Method: TOTAL Sample Name: F9VJH Operator: KLC
Run Time: 02/23/04 10:06 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.9325 | 94650. | 69.63 | 22.09 | 950.5 | -6.276 |
| SDev | .2811 | 26.59 | 1.218 | .3688 | .1293 | .0042 |
| %RSD | 30.14 | .0281 | 1.75 | 1.67 | .0136 | .0666 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 87020. | -.8671 | 54.87 | 629.2 | 131.1 | 165700. |
| SDev | 68.06 | .0489 | .2637 | .1674 | .0502 | 81.09 |
| %RSD | .0782 | 5.637 | .4807 | .0266 | .0383 | .0489 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 19020. | 24970. | 1444. | 25.33 | 2637. | 129.2 |
| SDev | 26.57 | 6.117 | .6524 | .4804 | 11.9 | .1549 |
| %RSD | .1397 | .0245 | .0452 | 1.896 | .4513 | .1199 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 555.6 | 1.802 | 7.895 | 31.02 | 10.18 | 361.3 |
| SDev | .7269 | .4965 | .5286 | .7767 | 1.572 | .2395 |
| %RSD | .1308 | 27.55 | 6.696 | 2.504 | 15.45 | .0663 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 385.3 | 543.5 | 561.6 | 1.870 | 10.90 | -7.761 |
| SDev | 3.388 | 1.701 | 1.939 | .0981 | .7435 | .3165 |
| %RSD | .8793 | .313 | .3453 | 5.249 | 6.82 | 4.078 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 6.577 | 15085.5 |
| SDev | .5863 | 33.234 |
| %RSD | 8.916 | .2203 |

Method: TOTAL Sample Name: F9VJHS Operator: KLC
Run Time: 02/23/04 10:11 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47.52 | 167200. | 1765. | 835.2 | 3066. | 41.20 |
| SDev | .0457 | 200.6 | 3.032 | .5529 | 6.421 | .0263 |
| %RSD | .0962 | .12 | .1718 | .0662 | .2094 | .0638 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 234200. | 40.39 | 502.8 | 512.1 | 417.9 | 186000. |
| SDev | 163.3 | .041 | .1085 | .2673 | .5324 | 1.845 |
| %RSD | .0697 | .1015 | .0216 | .0522 | .1274 | .001 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 67560. | 59450. | 2653. | 842.6 | 46170. | 578.2 |
| SDev | 46.13 | 13.73 | .7698 | 1.982 | 42.69 | .5994 |
| %RSD | .0683 | .0231 | .029 | .2353 | .0925 | .1037 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1412. | 1689. | 215.0 | 1559. | 1702. | 831.0 |
| SDev | 1.134 | .3155 | 1.431 | .1719 | 7.785 | .1921 |
| %RSD | .0803 | .0187 | .6653 | .011 | .4574 | .0231 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 772.5 | 1396. | 1420. | 211.1 | 217.0 | 1672. |
| SDev | .1706 | 3.391 | .007 | 2.956 | .6691 | 7.561 |
| %RSD | .0221 | .2429 | .0005 | 1.401 | .3083 | .4523 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1698. | 15628.8 |
| SDev | 3.302 | 8.13172 |
| %RSD | .1945 | .05203 |

Method: TOTAL Sample Name: F9VJHD Operator: KLC
Run Time: 02/23/04 10:16 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 48.61 | 139900. | 1752. | 827.7 | 3092. | 39.36 |
| SDev | .0886 | 57.52 | .684 | .4187 | 1.59 | .0447 |
| %RSD | .1822 | .0411 | .039 | .0506 | .0514 | .1135 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 220200. | 40.62 | 490.0 | 668.7 | 409.7 | 178100. |
| SDev | 284 | .1484 | 1.156 | 1.288 | .3959 | 284.2 |
| %RSD | .1289 | .3653 | .2359 | .1926 | .0966 | .1596 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 68600. | 63640. | 2476. | 804.4 | 46760. | 585.3 |
| SDev | 54.14 | 105.7 | 3.801 | .8545 | 59.45 | 1.425 |
| %RSD | .0789 | .1661 | .1535 | .1062 | .1271 | .2435 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1564. | 1694. | 205.8 | 1548. | 1715. | 817.3 |
| SDev | 1.98 | 3.5 | .1461 | 2.838 | 9.773 | 1.298 |
| %RSD | .1266 | .2066 | .071 | .1833 | .5699 | .1588 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 830.2 | 1556. | 1568. | 204.2 | 206.6 | 1683. |
| SDev | .3025 | 3.513 | 1.215 | .5419 | .4895 | 6.721 |
| %RSD | .0364 | .2258 | .0775 | .2653 | .237 | .3993 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1700. | 15243.2 |
| SDev | 1.892 | 12.3744 |
| %RSD | .1113 | .08117 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 10:21 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1011. | 25220. | 505.4 | 5042. | 2077. | 2000. |
| SDev | 1.177 | 22.25 | .5573 | 4.83 | 3.225 | 2.342 |
| %RSD | .1164 | .0882 | .1103 | .0958 | .1553 | .1171 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47690. | 494.5 | 1979. | 1977. | 2047. | 24740. |
| SDev | 83.54 | .5277 | 1.289 | 1.122 | 3.715 | 48.33 |
| %RSD | .1752 | .1067 | .0652 | .0568 | .1815 | .1954 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 53610. | 48580. | 1992. | 1983. | 49940. | 1965. |
| SDev | 176.4 | 82.8 | 1.329 | 6.556 | 108.5 | .6261 |
| %RSD | .329 | .1704 | .0667 | .3306 | .2173 | .0319 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 498.4 | 505.1 | 519.2 | 4861. | 1033. | 1990. |
| SDev | .5217 | .6172 | 1.23 | 6.064 | 6.93 | .4849 |
| %RSD | .1047 | .1222 | .237 | .1247 | .6706 | .0244 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2026. | 491.1 | 502.0 | 518.9 | 519.4 | 503.2 |
| SDev | 1.068 | 1.137 | 1.35 | 2.962 | .3659 | 1.241 |
| %RSD | .0527 | .2315 | .2688 | .5707 | .0705 | .2465 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 506.1 | 14550 |
| SDev | 1.545 | 9.89949 |
| %RSD | .3052 | .06803 |

Method: TOTAL Sample Name: CCB Operator: KLC
Run Time: 02/23/04 10:27 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.1743 | 12.26 | .9631 | 4.040 | .2446 | .1829 |
| SDev | .0554 | 5.576 | .5028 | 1.46 | .108 | .0802 |
| %RSD | 31.8 | 45.5 | 52.2 | 36.14 | 44.15 | 43.82 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 148.1 | -.1056 | .1766 | .2394 | -.1332 | -6.527 |
| SDev | 3.055 | .1305 | .0006 | .0535 | .3111 | 2.805 |
| %RSD | 2.062 | 123.5 | .3599 | 22.35 | 233.6 | 42.98 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 279.9 | 74.83 | .1653 | 3.158 | -329.8 | .1505 |
| SDev | .8835 | 1.417 | .0777 | 1.868 | 59.78 | .0567 |
| %RSD | .3157 | 1.893 | 46.98 | 59.15 | 18.13 | 37.65 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.849 | .2093 | .9772 | 1.046 | 2.574 | -.3864 |
| SDev | .7564 | 3.339 | .6005 | 1.816 | 2.372 | .1315 |
| %RSD | 40.92 | 1595 | 61.46 | 173.6 | 92.15 | 34.04 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0481 | -1.246 | -2.149 | 2.384 | .2748 | 4.980 |
| SDev | .1641 | .6414 | 1.454 | .4843 | .6585 | 5.384 |
| %RSD | 341 | 51.47 | 67.66 | 20.32 | 239.6 | 108.1 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -2.172 | 14644.5 |
| SDev | 2.318 | 19.799 |
| %RSD | 106.7 | .13519 |

Method: TOTAL Sample Name: F9VJM Operator: KLC
Run Time: 02/23/04 10:32 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.902 | 147500. | 23.46 | .9148 | 661.7 | -3.374 |
| SDev | .0057 | 4235 | .9491 | .8504 | 18.88 | .0032 |
| %RSD | .3006 | 2.871 | 4.046 | 92.96 | 2.854 | .0945 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5816. | -1.938 | 195.9 | 193.5 | 106.6 | 240200. |
| SDev | 175.2 | .2266 | 6.027 | 5.742 | 2.836 | 7292 |
| %RSD | 3.012 | 11.69 | 3.077 | 2.967 | 2.66 | 3.036 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 15990. | 11490. | 5859. | 2.754 | 268.9 | 78.42 |
| SDev | 383.8 | 347 | 174.4 | 1.139 | 69.1 | 1.833 |
| %RSD | 2.4 | 3.02 | 2.976 | 41.38 | 25.7 | 2.337 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 103.2 | -5.401 | 3.501 | 15.92 | 12.69 | 464.6 |
| SDev | 2.205 | .0534 | .0495 | 2.113 | 5.588 | 13.93 |
| %RSD | 2.137 | .9896 | 1.415 | 13.27 | 44.02 | 2.999 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 270.3 | 83.88 | 112.8 | .2058 | 5.146 | -14.86 |
| SDev | 7.694 | 2.621 | 1.997 | 1.863 | 1.004 | .2689 |
| %RSD | 2.847 | 3.125 | 1.77 | 905.3 | 19.52 | 1.81 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.6785 | 15977.5 |
| SDev | .2144 | 374.767 |
| %RSD | 31.6 | 2.34558 |

Method: TOTAL Sample Name: F9VJQ Operator: KLC
Run Time: 02/23/04 10:36 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.5959 | 105200. | 173.6 | 117.2 | 1745. | .9757 |
| SDev | .3533 | 203.7 | 1.27 | .3854 | 1.597 | .0138 |
| %RSD | 59.28 | .1937 | .7314 | .3288 | .0916 | 1.411 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 251100. | .3589 | 67.02 | 317.2 | 196.1 | 134500. |
| SDev | 16.88 | .0385 | .1182 | .0969 | .4959 | 49.29 |
| %RSD | .0067 | 10.72 | .1763 | .0305 | .2529 | .0366 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 25210. | 23720. | 1378. | 13.80 | 3267. | 157.3 |
| SDev | 35.88 | 22.61 | 1.052 | .1647 | 34.46 | .5106 |
| %RSD | .1423 | .0953 | .0763 | 1.193 | 1.055 | .3245 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 898.4 | 20.62 | 8.153 | 32.70 | 14.87 | 353.6 |
| SDev | .8191 | .6643 | 1.45 | 2.035 | 2.21 | .1481 |
| %RSD | .0912 | 3.222 | 17.79 | 6.224 | 14.86 | .0419 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 330.4 | 885.1 | 905.0 | 4.196 | 10.13 | 21.67 |
| SDev | .5436 | 2.173 | 2.313 | .3715 | 2.36 | 4.099 |
| %RSD | .1645 | .2456 | .2556 | 8.853 | 23.3 | 18.92 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 20.09 | 15658 |
| SDev | 1.051 | 21.9203 |
| %RSD | 5.229 | .13999 |

Method: TOTAL Sample Name: F9VJR Operator: KLC
Run Time: 02/23/04 10:41 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0520 | 120000. | 242.8 | 159.1 | 2272. | 4.475 |
| SDev | .01 | 35.73 | 1.042 | .1385 | 1.601 | .0321 |
| %RSD | 19.22 | .0298 | .4291 | .087 | .0705 | .7173 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 328100. | .6795 | 74.20 | 338.5 | 243.1 | 124500. |
| SDev | 402 | .0367 | .2208 | 1.13 | .1719 | 125.5 |
| %RSD | .1225 | 5.403 | .2975 | .3339 | .0707 | .1008 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 29950. | 25880. | 1190. | 20.39 | 3966. | 161.6 |
| SDev | 18.54 | 19.69 | .7244 | .3015 | 65.46 | .9786 |
| %RSD | .0619 | .0761 | .0609 | 1.478 | 1.651 | .6054 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 845.4 | 33.13 | 7.294 | 41.93 | 17.39 | 400.4 |
| SDev | 2.399 | .4215 | 1.058 | 1.615 | .7358 | .6215 |
| %RSD | .2838 | 1.272 | 14.5 | 3.852 | 4.231 | .1552 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 317.4 | 830.9 | 852.6 | 3.327 | 9.275 | 29.35 |
| SDev | .4111 | 3.59 | 1.805 | .9117 | 1.131 | .271 |
| %RSD | .1295 | .432 | .2117 | 27.41 | 12.19 | .9233 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 35.03 | 15804.2 |
| SDev | .4967 | 13.7886 |
| %RSD | 1.418 | .08724 |

Method: TOTAL Sample Name: F9VJV Operator: KLC
Run Time: 02/23/04 10:46 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.081 | 105300. | 172.0 | 112.5 | 1777. | .6599 |
| SDev | .2716 | 49.67 | 2.235 | .2612 | .1702 | .0226 |
| %RSD | 25.13 | .0472 | 1.3 | .2321 | .0096 | 3.429 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 355200. | .3790 | 66.87 | 494.5 | 209.6 | 153300. |
| SDev | 107.4 | .086 | .2987 | .0056 | .2214 | 18.38 |
| %RSD | .0302 | 22.68 | .4468 | .0011 | .1056 | .012 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 28390. | 23150. | 1364. | 16.32 | 4474. | 206.0 |
| SDev | 23.87 | 4.163 | .4504 | .4962 | 86.47 | .33 |
| %RSD | .0841 | .018 | .033 | 3.039 | 1.933 | .1602 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1903. | 21.54 | 9.358 | 63.50 | 18.16 | 343.6 |
| SDev | 2.913 | 1.858 | .3505 | .655 | .6544 | .4827 |
| %RSD | .153 | 8.627 | 3.745 | 1.031 | 3.604 | .1405 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 348.5 | 1886. | 1912. | 3.519 | 12.27 | 21.66 |
| SDev | .0338 | 2.256 | 5.493 | 1.622 | .2844 | 1.598 |
| %RSD | .0097 | .1196 | .2873 | 46.1 | 2.317 | 7.377 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 21.48 | 15594 |
| SDev | 3.584 | 16.9706 |
| %RSD | 16.68 | .10882 |

Method: TOTAL Sample Name: F9VJ0 Operator: KLC
Run Time: 02/23/04 10:51 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.827 | 118600. | 17.90 | -.4704 | 859.5 | -7.487 |
| SDev | .1472 | 82.87 | .533 | .133 | .9301 | .0083 |
| %RSD | 8.057 | .0699 | 2.978 | 28.28 | .1082 | .1105 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 9744. | -1.070 | 99.04 | 170.8 | 97.43 | 199400. |
| SDev | 7.324 | .1091 | .0059 | .3111 | .195 | 204.6 |
| %RSD | .0752 | 10.2 | .0059 | .1821 | .2001 | .1026 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 16180. | 31930. | 3183. | -1.073 | 506.1 | 106.7 |
| SDev | 1.963 | 51.11 | 2.13 | .6765 | 15.07 | .3495 |
| %RSD | .0121 | .1601 | .0669 | 63.02 | 2.978 | .3275 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 77.95 | -3.061 | 7.168 | 4.082 | 14.54 | 332.6 |
| SDev | .325 | 1.28 | .5152 | 1.692 | 1.288 | .2608 |
| %RSD | .4169 | 41.81 | 7.188 | 41.44 | 8.861 | .0784 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 532.5 | 62.88 | 85.48 | 2.781 | 9.358 | -13.90 |
| SDev | .2142 | .7759 | .8747 | .6548 | 1.099 | 1.085 |
| %RSD | .0402 | 1.234 | 1.023 | 23.54 | 11.75 | 7.806 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 2.349 | 16470.2 |
| SDev | 2.46 | 7.42462 |
| %RSD | 104.7 | .04507 |

Method: TOTAL Sample Name: F9WDGB 4051106 Operator: KLC
Run Time: 02/23/04 10:56 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.6187 | 29.92 | -.1832 | -2.881 | .3185 | -.0176 |
| SDev | .2195 | 2.512 | .3268 | .8518 | .0351 | .0096 |
| %RSD | 35.48 | 8.393 | 178.3 | 29.57 | 11.03 | 54.51 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 298.9 | -.0242 | .1803 | -.5006 | .0127 | 31.06 |
| SDev | 2.089 | .0829 | .223 | .4551 | .0242 | 3.882 |
| %RSD | .6989 | 342.8 | 123.7 | 90.9 | 191 | 12.5 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 262.0 | 91.46 | 3.091 | -1.754 | -637.8 | .0328 |
| SDev | 27.23 | .0549 | .0451 | .001 | 215.3 | .3361 |
| %RSD | 10.39 | .06 | 1.459 | .0565 | 33.75 | 1026 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.470 | -1.546 | -.4178 | 1.875 | 5.519 | -.4051 |
| SDev | .4812 | .1538 | .2378 | .9494 | .6269 | .1249 |
| %RSD | 32.74 | 9.947 | 56.92 | 50.64 | 11.36 | 30.84 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2.691 | -4.343 | -.0354 | .8757 | -1.064 | 3.753 |
| SDev | .1358 | .8895 | .2774 | .1669 | .4399 | .8517 |
| %RSD | 5.046 | 20.48 | 784 | 19.07 | 41.36 | 22.69 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -4.192 | 14751.8 |
| SDev | .6558 | 29.3449 |
| %RSD | 15.64 | .19892 |

Method: TOTAL Sample Name: F9WDGC Operator: KLC
Run Time: 02/23/04 11:01 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 54.04 | 1990. | 1863. | 902.0 | 1912. | 45.99 |
| SDev | .7885 | 1.358 | 4.219 | 1.69 | 1.859 | .0223 |
| %RSD | 1.459 | .0682 | .2264 | .1874 | .0972 | .0485 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 43800. | 45.77 | 461.7 | 187.7 | 249.4 | 987.7 |
| SDev | 20.21 | .0809 | .2335 | .1018 | .6766 | 1.621 |
| %RSD | .0461 | .1767 | .0506 | .0542 | .2712 | .1641 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 49720. | 43810. | 465.2 | 871.6 | 46220. | 462.2 |
| SDev | 141 | 19.17 | .181 | 7.623 | 141.7 | .8592 |
| %RSD | .2836 | .0438 | .0389 | .8745 | .3065 | .1859 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 461.9 | 1930. | 479.1 | 1765. | 1885. | 464.2 |
| SDev | 1.135 | 6.145 | 1.071 | 1.585 | 2.165 | .0779 |
| %RSD | .2457 | .3184 | .2236 | .0898 | .1148 | .0168 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 487.6 | 459.2 | 463.2 | 478.1 | 479.6 | 1921. |
| SDev | .3398 | 2.307 | .5498 | 2.409 | 2.809 | 2.658 |
| %RSD | .0697 | .5024 | .1187 | .504 | .5857 | .1384 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1935. | 14560.2 |
| SDev | 7.886 | 37.8302 |
| %RSD | .4076 | .25981 |

Method: TOTAL Sample Name: F9PCM Operator: KLC
Run Time: 02/23/04 11:06 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.1296 | 113.8 | 2.381 | 1408. | 44.47 | .0378 |
| SDev | .239 | 2.131 | .7963 | 1.906 | .0644 | .0012 |
| %RSD | 184.5 | 1.874 | 33.44 | .1353 | .1449 | 3.054 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 52920. | .2431 | .8179 | 1.353 | 112.0 | 483.1 |
| SDev | 148.3 | .0638 | .0003 | .3217 | .158 | 5.933 |
| %RSD | .2802 | 26.24 | .0396 | 23.78 | .141 | 1.228 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 31710. | 17970. | 32.03 | 44.87 | 291800. | 4.182 |
| SDev | 64.79 | 48.72 | .0474 | 1.626 | 143 | .0795 |
| %RSD | .2044 | .2711 | .1478 | 3.623 | .049 | 1.902 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0182 | 4.077 | 2.167 | 2.090 | 6.163 | -.0418 |
| SDev | .8177 | 2.088 | .4388 | 1.026 | .9958 | .0807 |
| %RSD | 4498 | 51.21 | 20.25 | 49.06 | 16.16 | 193 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 239.5 | -2.298 | 1.120 | 3.301 | 1.600 | 10.43 |
| SDev | .1683 | .2586 | 1.097 | .4174 | .4494 | 2.053 |
| %RSD | .0703 | 11.25 | 97.92 | 12.64 | 28.08 | 19.69 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | .9054 | 14288 |
| SDev | 2.105 | 26.87 |
| %RSD | 232.5 | .18806 |

Method: TOTAL Sample Name: F9PCML Operator: KLC
Run Time: 02/23/04 11:11 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0755 | 30.15 | .4800 | 283.0 | 9.125 | .0180 |
| SDev | .1061 | 4.282 | 1.644 | 7.246 | .3874 | .0483 |
| %RSD | 140.5 | 14.2 | 342.5 | 2.56 | 4.246 | 268.6 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 10590. | -.0506 | -.0003 | .5357 | 22.88 | 95.58 |
| SDev | 295.5 | .0743 | .335 | .411 | 1.895 | 14.58 |
| %RSD | 2.79 | 146.8 | 112900 | 76.72 | 8.282 | 15.25 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5898. | 3738. | 6.579 | 8.113 | 59690. | 1.330 |
| SDev | 127.2 | 107.1 | .2033 | .4359 | 1399 | .6358 |
| %RSD | 2.157 | 2.866 | 3.091 | 5.373 | 2.344 | 47.82 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.240 | .1359 | 1.392 | 1.307 | .0010 | -.1790 |
| SDev | .2001 | 2.611 | .1211 | 2.132 | 2.398 | .4835 |
| %RSD | 16.14 | 1921 | 8.697 | 163.1 | 241100 | 270.1 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 50.69 | -2.705 | -.5085 | 2.728 | .7256 | 2.792 |
| SDev | 1.441 | .0166 | .3083 | .9475 | .2915 | 1.499 |
| %RSD | 2.842 | .6144 | 60.62 | 34.74 | 40.17 | 53.71 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.190 | 14182.8 |
| SDev | 3.166 | 310.066 |
| %RSD | 266.1 | 2.18622 |

Method: TOTAL Sample Name: F9TFH Operator: KLC
Run Time: 02/23/04 11:15 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.3169 | 44.74 | 8.610 | 8530. | 45.47 | .0385 |
| SDev | .1192 | .3773 | .953 | 10.73 | .1071 | .0048 |
| %RSD | 37.63 | .8433 | 11.07 | .1257 | .2355 | 12.39 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 52250. | .2566 | 3.568 | 1.567 | 9.863 | 62.72 |
| SDev | 157.4 | .0361 | .1219 | .4012 | .2405 | 2.987 |
| %RSD | .3011 | 14.08 | 3.415 | 25.61 | 2.438 | 4.762 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 72340. | 25830. | 14.98 | 256.7 | H1045e3 | 8.386 |
| SDev | 105 | 56.46 | .0529 | 1.852 | 1997 | .1198 |
| %RSD | .1451 | .2186 | .353 | .7215 | .1912 | 1.428 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .7877 | -.9310 | 7.380 | -2.454 | 8.821 | 1.059 |
| SDev | .1075 | .7581 | 1.027 | 1.202 | 1.943 | .4105 |
| %RSD | 13.65 | 81.43 | 13.91 | 49 | 22.03 | 38.75 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 574.2 | -.0401 | 1.201 | 10.23 | 5.957 | 6.676 |
| SDev | .9761 | .7144 | .5179 | 2.717 | .1828 | 2.652 |
| %RSD | .17 | 1781 | 43.13 | 26.56 | 3.069 | 39.72 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -4.729 | 13627.5 |
| SDev | .1873 | 2.82842 |
| %RSD | 3.96 | .02075 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 11:20 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1024. | 25590. | 510.0 | 5106. | 2098. | 2021. |
| SDev | 1.058 | 16.14 | .1104 | .3805 | 2.23 | 4.975 |
| %RSD | .1034 | .0631 | .0216 | .0075 | .1063 | .2461 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 48330. | 499.3 | 1999. | 1996. | 2072. | 24980. |
| SDev | 180.4 | 1.219 | 4.941 | 5.245 | 1.081 | 77.2 |
| %RSD | .3732 | .2442 | .2472 | .2627 | .0522 | .3091 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 54460. | 49100. | 2012. | 1997. | 50960. | 1986. |
| SDev | 71.93 | 166.7 | 4.05 | 6.33 | 241.4 | 6.905 |
| %RSD | .1321 | .3395 | .2013 | .3169 | .4737 | .3477 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 504.4 | 512.0 | 524.7 | 4896. | 1037. | 2010. |
| SDev | 1.607 | .309 | .2596 | 17.16 | 1.231 | 4.087 |
| %RSD | .3186 | .0603 | .0495 | .3505 | .1187 | .2033 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2060. | 496.5 | 508.3 | 523.5 | 525.3 | 513.5 |
| SDev | 4.279 | 2.542 | 1.14 | 2.142 | 1.459 | 2.359 |
| %RSD | .2077 | .5119 | .2243 | .4092 | .2777 | .4594 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 511.3 | 14401.5 |
| SDev | .7143 | 50.9117 |
| %RSD | .1397 | .35351 |

Method: TOTAL Sample Name: CCB Operator: KLC
Run Time: 02/23/04 11:26 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.6236 | 10.37 | .7720 | 8.437 | .1692 | .1717 |
| SDev | .3792 | 2.499 | .5615 | 2.204 | .0363 | .0945 |
| %RSD | 60.81 | 24.1 | 72.74 | 26.12 | 21.47 | 55.07 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 144.8 | -.0257 | -.1065 | -.0088 | -.4988 | -10.38 |
| SDev | 2.499 | .0366 | .0567 | .2786 | .1657 | 3.042 |
| %RSD | 1.725 | 142.4 | 53.25 | 3180 | 33.22 | 29.3 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 271.1 | 70.91 | .1212 | 2.790 | -379.7 | .4311 |
| SDev | 2.671 | 3.139 | .118 | 2.14 | 32.9 | .284 |
| %RSD | .9855 | 4.427 | 97.34 | 76.68 | 8.665 | 65.88 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -2.223 | .5543 | 1.911 | -.0076 | 4.197 | -.1192 |
| SDev | .3171 | .1641 | 1.72 | .1414 | 1.187 | .0072 |
| %RSD | 14.26 | 29.6 | 89.99 | 1861 | 28.27 | 6.057 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .0155 | -5.187 | -.7433 | 1.170 | 2.281 | 2.554 |
| SDev | .036 | 1.991 | .5185 | 1.072 | 2.043 | 2.481 |
| %RSD | 231.8 | 38.38 | 69.76 | 91.65 | 89.56 | 97.16 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.4440 | 14569.8 |
| SDev | .9928 | .35355 |
| %RSD | 223.6 | .00242 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 11:37 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1024. | 25640. | 508.6 | 5105. | 2100. | 2024. |
| SDev | .5268 | 47.36 | 3.397 | 4.928 | .9283 | 1.592 |
| %RSD | .0514 | .1847 | .6679 | .0965 | .0442 | .0787 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 48490. | 499.8 | 2008. | 2006. | 2083. | 25090. |
| SDev | 59.73 | .1932 | 1.213 | 2.962 | 2.369 | 18.09 |
| %RSD | .1232 | .0386 | .0604 | .1477 | .1137 | .0721 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 54320. | 49360. | 2020. | 2007. | 50630. | 1978. |
| SDev | 142.9 | 60.04 | 2.09 | 11.21 | 208.8 | 5.199 |
| %RSD | .2631 | .1216 | .1035 | .5588 | .4124 | .2629 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 503.4 | 515.5 | 527.5 | 4950. | 1057. | 2021. |
| SDev | .1963 | 1.296 | .8063 | .0235 | .5961 | 2.862 |
| %RSD | .039 | .2513 | .1529 | .0005 | .0564 | .1416 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2058. | 498.9 | 505.7 | 527.3 | 527.5 | 522.2 |
| SDev | 2.104 | 1.573 | 1.08 | 2.742 | .16 | 3.079 |
| %RSD | .1022 | .3152 | .2135 | .52 | .0303 | .5896 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 512.2 | 14467.8 |
| SDev | .4052 | 3.18198 |
| %RSD | .0791 | .02199 |

Method: TOTAL Sample Name: CCB Operator: KLC
Run Time: 02/23/04 11:43 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.1101 | 7.903 | -.2937 | 6.384 | .1948 | .1739 |
| SDev | .4571 | .9455 | .0378 | 3.456 | .11 | .0849 |
| %RSD | 415.3 | 11.96 | 12.87 | 54.14 | 56.46 | 48.82 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 146.1 | .0852 | .1762 | .3836 | .0688 | -5.396 |
| SDev | 2.242 | .2128 | .6771 | .4523 | .2731 | 2.07 |
| %RSD | 1.535 | 249.7 | 384.3 | 117.9 | 397.1 | 38.36 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 281.9 | 76.08 | .1302 | 2.931 | -337.9 | .4122 |
| SDev | 10.14 | 2.667 | .1064 | 1.753 | 103.5 | .5963 |
| %RSD | 3.597 | 3.506 | 81.77 | 59.79 | 30.63 | 144.7 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.461 | 1.023 | 1.383 | 1.720 | 5.641 | .0884 |
| SDev | 1.295 | .1253 | .8565 | 1.286 | .1012 | .0507 |
| %RSD | 88.66 | 12.25 | 61.94 | 74.78 | 1.794 | 57.3 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0658 | -3.767 | -.3090 | 1.113 | 1.518 | 6.087 |
| SDev | .1516 | .6919 | 2.287 | 1.311 | .6296 | 1.084 |
| %RSD | 230.5 | 18.37 | 740 | 117.8 | 41.48 | 17.81 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.505 | 14589 |
| SDev | .3534 | 65.0538 |
| %RSD | 23.47 | .44591 |

Method: TOTAL Sample Name: F9WDEC 4051105 Operator: KLC
Run Time: 02/23/04 11:52 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 50.28 | 1896. | 1773. | 861.9 | 1812. | 43.57 |
| SDev | .3273 | 6.742 | 3.083 | 1.744 | 3.872 | .0516 |
| %RSD | .651 | .3557 | .1738 | .2024 | .2137 | .1185 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 41970. | 43.63 | 441.3 | 179.5 | 239.4 | 933.2 |
| SDev | 52.52 | .0678 | .4954 | .3645 | 1.501 | 9.838 |
| %RSD | .1251 | .1555 | .1122 | .2031 | .6267 | 1.054 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 47890. | 41950. | 445.4 | 832.4 | 43820. | 436.8 |
| SDev | 109.1 | 70.27 | .3816 | 6.411 | 45.13 | 1.18 |
| %RSD | .2277 | .1675 | .0857 | .7702 | .103 | .2701 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 436.8 | 1853. | 456.6 | 1698. | 1826. | 443.8 |
| SDev | .8233 | 1.469 | 1.539 | 2.475 | .4484 | .1929 |
| %RSD | .1885 | .0793 | .337 | .1458 | .0246 | .0435 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 470.0 | 442.4 | 434.0 | 459.9 | 455.0 | 1863. |
| SDev | .1735 | 2.388 | 2.427 | .734 | 2.674 | 1.53 |
| %RSD | .0369 | .5399 | .5592 | .1596 | .5876 | .0821 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 1848. | 14559.5 |
| SDev | 2.966 | 4.24264 |
| %RSD | .1605 | .02914 |

Method: TOTAL Sample Name: F9VC5/5 Operator: KLC
Run Time: 02/23/04 11:57 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .1049 | 39.04 | 18.87 | 2376. | 159.2 | .0103 |
| SDev | .0234 | 2.879 | .2596 | 2.182 | .4762 | .0051 |
| %RSD | 22.34 | 7.375 | 1.376 | .0918 | .2991 | 49.73 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 39060. | .1196 | 4.624 | 18.78 | 1.582 | 932.8 |
| SDev | 88.96 | .0686 | .2299 | .1645 | .0702 | 4.415 |
| %RSD | .2277 | 57.35 | 4.973 | .8761 | 4.436 | .4733 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 102500. | 30110. | 51.77 | 8.622 | 433700. | 46.58 |
| SDev | 423.6 | 36.3 | .1187 | 3.487 | 1552 | .5067 |
| %RSD | .4132 | .1206 | .2293 | 40.45 | .3578 | 1.088 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.864 | .7590 | 2.424 | 4.243 | 6.127 | 12.36 |
| SDev | 1.037 | .8701 | 1.706 | .4998 | 2.048 | .2347 |
| %RSD | 55.62 | 114.6 | 70.4 | 11.78 | 33.43 | 1.898 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 10.32 | -3.281 | -1.157 | 3.048 | 2.112 | 6.106 |
| SDev | .0617 | .3535 | 1.378 | 2.644 | 1.238 | 3.212 |
| %RSD | .5977 | 10.77 | 119.1 | 86.75 | 58.62 | 52.61 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -1.910 | 14094.5 |
| SDev | 2.908 | 15.5563 |
| %RSD | 152.2 | .11037 |

Method: TOTAL Sample Name: F9VLL/5 Operator: KLC
Run Time: 02/23/04 12:02 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .1174 | 27.74 | 4.053 | 3100. | 102.4 | .0488 |
| SDev | .3691 | .7905 | .1424 | .1031 | .1317 | .0036 |
| %RSD | 314.3 | 2.849 | 3.513 | .0033 | .1286 | 7.457 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 44940. | -.0984 | 4.129 | 6.657 | 1.533 | 860.4 |
| SDev | 33.41 | .1014 | .0043 | .5851 | .0175 | 14.18 |
| %RSD | .0743 | 103.1 | .1052 | 8.789 | 1.139 | 1.648 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 55900. | 38180. | 77.12 | .5755 | 491500. | 24.83 |
| SDev | 142.2 | 25.75 | .0447 | .0036 | 1035 | .5008 |
| %RSD | .2543 | .0674 | .058 | .6282 | .2106 | 2.017 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.610 | 2.015 | 2.590 | -.5592 | 4.417 | 2.288 |
| SDev | .1967 | .0467 | .1791 | .2291 | 3.812 | .0467 |
| %RSD | 12.22 | 2.319 | 6.914 | 40.96 | 86.31 | 2.04 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4.356 | -3.687 | -.5729 | 3.469 | 2.151 | 5.761 |
| SDev | .0424 | 1.942 | .6746 | .9345 | .1981 | 1.823 |
| %RSD | .9728 | 52.67 | 117.7 | 26.94 | 9.208 | 31.64 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | .1443 | 14103.8 |
| SDev | .9802 | 18.0312 |
| %RSD | 679.4 | .12784 |

Method: TOTAL Sample Name: F9LKA/5 Operator: KLC
Run Time: 02/23/04 12:07 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.3565 | 25990. | 26.13 | 339.5 | 72.92 | 1.109 |
| SDev | .3054 | 40.31 | 1.256 | 1.575 | .063 | .0164 |
| %RSD | 85.66 | .1551 | 4.809 | .4638 | .0863 | 1.477 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 35810. | -.0959 | 19.89 | 46.99 | 33.92 | 44420. |
| SDev | .0359 | .0454 | .176 | .0156 | .0212 | 12.56 |
| %RSD | .0001 | 47.36 | .8847 | .0333 | .0624 | .0283 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 15380. | 24500. | 258.7 | 12.74 | 466500. | 48.89 |
| SDev | 4.085 | 4.182 | .0017 | .0992 | 572.5 | .5363 |
| %RSD | .0266 | .0171 | .0007 | .778 | .1227 | 1.097 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 15.31 | .2486 | 3.218 | -2.995 | 4.817 | 39.20 |
| SDev | .0821 | 1.446 | 1.293 | .2337 | .6743 | .0405 |
| %RSD | .5359 | 581.5 | 40.2 | 7.802 | 14 | .1033 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 110.8 | 9.308 | 18.31 | 2.544 | 3.554 | 5.142 |
| SDev | .0881 | .6375 | .4413 | 1.42 | 2.648 | 4.267 |
| %RSD | .0795 | 6.85 | 2.41 | 55.83 | 74.51 | 82.98 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -2.195 | 14383.2 |
| SDev | .037 | 45.6084 |
| %RSD | 1.686 | .31709 |

Method: TOTAL Sample Name: F9LKAF/5 Operator: KLC
Run Time: 02/23/04 12:11 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0391 | 629.9 | 5.266 | 334.5 | 18.56 | .0471 |
| SDev | .1148 | 2.309 | 1.405 | 1.604 | .1239 | .0137 |
| %RSD | 293.4 | .3665 | 26.68 | .4796 | .6674 | 29 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 37130. | .0239 | .5722 | 1.050 | 2.007 | 961.6 |
| SDev | 92.91 | .0235 | .1168 | .0704 | .0658 | 15.34 |
| %RSD | .2502 | 98.5 | 20.4 | 6.701 | 3.276 | 1.595 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 9161. | 19420. | 28.99 | 11.66 | 496300. | 2.256 |
| SDev | 6.325 | 56.01 | .1262 | .5684 | 231 | .1158 |
| %RSD | .069 | .2884 | .4355 | 4.875 | .0466 | 5.131 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.576 | .8626 | 3.234 | -1.433 | 5.867 | .8147 |
| SDev | .8819 | .296 | 2.674 | 1.451 | 1.795 | .0851 |
| %RSD | 55.96 | 34.31 | 82.68 | 101.3 | 30.6 | 10.44 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 8.832 | -4.800 | .0339 | 2.348 | 3.676 | 1.566 |
| SDev | .1208 | .7923 | 1.718 | 1.1 | 4.558 | 5.73 |
| %RSD | 1.368 | 16.5 | 5070 | 46.84 | 124 | 365.8 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | .5112 | 14145.8 |
| SDev | 2.417 | 8.83883 |
| %RSD | 472.8 | .06248 |

Method: TOTAL Sample Name: F9WC2B 4051099 Operator: KLC
Run Time: 02/23/04 12:17 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | .1221 | 21.86 | -.1019 | -.1952 | .9683 | -.0101 |
| SDev | .0108 | 18.97 | .017 | 1.226 | .017 | .008 |
| %RSD | 8.852 | 86.78 | 16.73 | 628.4 | 1.758 | 79.53 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 252.6 | .0354 | .4169 | 1.060 | .7760 | 86.98 |
| SDev | 1.482 | .0847 | .0001 | .0668 | .4779 | 4.955 |
| %RSD | .5867 | 239.2 | .0205 | 6.301 | 61.58 | 5.697 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 311.5 | 89.71 | 2.146 | -.0764 | -68.52 | .3099 |
| SDev | 5.217 | 1.838 | .4955 | .1534 | 95.52 | .675 |
| %RSD | 1.675 | 2.049 | 23.09 | 200.9 | 139.4 | 217.8 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.471 | -.6491 | -.1170 | 27.07 | 3.665 | -.3416 |
| SDev | .3308 | 2.878 | 1.957 | .302 | .7582 | .2919 |
| %RSD | 22.49 | 443.4 | 1672 | 1.116 | 20.69 | 85.46 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 4.210 | -1.918 | -1.247 | 1.614 | -.9813 | 4.546 |
| SDev | 1.725 | 3.468 | 1.236 | 1.382 | 2.244 | 1.107 |
| %RSD | 40.98 | 180.8 | 99.08 | 85.62 | 228.6 | 24.36 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -3.243 | 14711.8 |
| SDev | 4.868 | 13.7886 |
| %RSD | 150.1 | .09372 |

Method: TOTAL Sample Name: F9VH4 Operator: KLC
Run Time: 02/23/04 12:22 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.234 | 107900. | 27.51 | 4.778 | 369.8 | .7045 |
| SDev | .2803 | 467.1 | .59 | .0753 | 1.102 | .0077 |
| %RSD | 22.71 | .4331 | 2.145 | 1.577 | .2981 | 1.094 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 101000. | -.3765 | 80.48 | 151.0 | 72.29 | 139000. |
| SDev | 90.28 | .0032 | .1814 | .5326 | .0395 | 38.14 |
| %RSD | .0894 | .8437 | .2253 | .3526 | .0547 | .0274 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 9953. | 11250. | 4382. | 2.683 | 9901. | 77.52 |
| SDev | 11.68 | 5.483 | 2.015 | .1006 | 126.3 | .3475 |
| %RSD | .1173 | .0487 | .046 | 3.75 | 1.275 | .4483 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 228.7 | -.9751 | .3973 | 26.58 | 10.44 | 274.3 |
| SDev | .7428 | 2.017 | .6763 | 1.077 | .4624 | .2536 |
| %RSD | .3248 | 206.8 | 170.2 | 4.053 | 4.429 | .0925 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 183.4 | 216.7 | 234.7 | .4492 | .3715 | -2.230 |
| SDev | .035 | .4015 | 1.314 | .7055 | 1.366 | 1.068 |
| %RSD | .0191 | .1853 | .5598 | 157.1 | 367.8 | 47.9 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.3489 | 15098 |
| SDev | 2.49 | 7.07106 |
| %RSD | 713.8 | .04683 |

Method: TOTAL Sample Name: F9VJH Operator: KLC
Run Time: 02/23/04 12:26 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.5812 | 94290. | 68.67 | 22.21 | 941.8 | -6.238 |
| SDev | .3238 | 145.9 | .4746 | .5509 | .1348 | .0135 |
| %RSD | 55.72 | .1548 | .6911 | 2.481 | .0143 | .2165 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 86920. | .0031 | 54.70 | 626.6 | 131.7 | 165200. |
| SDev | 54.94 | .0511 | .4198 | .3615 | .3996 | 71.64 |
| %RSD | .0632 | 1667 | .7674 | .0577 | .3035 | .0434 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 18960. | 24990. | 1439. | 25.95 | 2543. | 127.3 |
| SDev | 41.34 | 11.63 | .8659 | .0471 | 119.5 | .4874 |
| %RSD | .218 | .0466 | .0602 | .1814 | 4.698 | .3827 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 548.3 | -.8665 | 7.382 | 34.51 | 11.01 | 360.7 |
| SDev | 1.982 | .644 | .5324 | .1128 | 2.133 | .2465 |
| %RSD | .3615 | 74.32 | 7.213 | .3268 | 19.36 | .0684 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 382.5 | 538.9 | 553.0 | 2.325 | 9.907 | -8.126 |
| SDev | .4636 | 4.448 | .751 | 1.737 | .0691 | 1.36 |
| %RSD | .1212 | .8255 | .1358 | 74.72 | .6977 | 16.74 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 2.758 | 15035.8 |
| SDev | .2865 | 25.1023 |
| %RSD | 10.39 | .16695 |

Method: TOTAL Sample Name: F9VJM Operator: KLC
Run Time: 02/23/04 12:31 Filename: I60223A
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.924 | 143500. | 22.32 | -.3245 | 639.6 | -3.370 |
| SDev | .2021 | 148.7 | 1.687 | .594 | .4338 | .0083 |
| %RSD | 10.5 | .1036 | 7.559 | 183 | .0678 | .2451 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 5662. | -.9342 | 189.7 | 187.9 | 104.2 | 232900. |
| SDev | .6108 | .0772 | .2214 | .1193 | .1531 | 20.57 |
| %RSD | .0108 | 8.261 | .1167 | .0635 | .1469 | .0088 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 15560. | 11170. | 5679. | 1.131 | 72.98 | 74.73 |
| SDev | 37.05 | 2.023 | 1.88 | .6749 | 76.41 | .9257 |
| %RSD | .2381 | .0181 | .0331 | 59.69 | 104.7 | 1.239 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 99.29 | -3.349 | 2.863 | 15.30 | 11.89 | 451.0 |
| SDev | 1.58 | .0387 | 1.926 | 1.027 | 3.521 | .4284 |
| %RSD | 1.591 | 1.156 | 67.3 | 6.713 | 29.61 | .095 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 262.6 | 81.57 | 108.1 | -1.630 | 5.106 | -9.069 |
| SDev | .0801 | .9569 | 2.846 | .8157 | 2.481 | .9438 |
| %RSD | .0305 | 1.173 | 2.632 | 50.04 | 48.59 | 10.41 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.4940 | 16283.2 |
| SDev | .4131 | 42.0729 |
| %RSD | 83.64 | .25838 |

Method: TOTAL Sample Name: CCV Operator: KLC
Run Time: 02/23/04 12:36 Filename: I60223A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: N.CANTON Cust. Smpl. ID.: Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 1019. | 25440. | 506.6 | 5068. | 2084. | 2011. |
| SDev | 1.708 | 76.98 | 2.015 | 21.91 | 9.238 | .5512 |
| %RSD | .1675 | .3026 | .3978 | .4323 | .4432 | .0274 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 48190. | 495.3 | 1989. | 1990. | 2069. | 24920. |
| SDev | 97.24 | .5848 | 1.122 | 1.151 | 9.993 | 23.32 |
| %RSD | .2018 | .1181 | .0564 | .0578 | .483 | .0935 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 53910. | 49010. | 2001. | 1987. | 50060. | 1958. |
| SDev | 294.7 | 56.97 | .3318 | 9.673 | 111.3 | 1.354 |
| %RSD | .5467 | .1162 | .0166 | .4869 | .2224 | .0692 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 498.3 | 512.7 | 524.1 | 4895. | 1047. | 2006. |
| SDev | 1.056 | .067 | 1.249 | 2.196 | 6.156 | 1.394 |
| %RSD | .212 | .0131 | .2382 | .0449 | .588 | .0695 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 2049. | 495.0 | 499.9 | 526.5 | 522.9 | 516.9 |
| SDev | .8003 | 2.306 | 2.735 | 3.068 | 3.403 | 2.036 |
| %RSD | .0391 | .4658 | .547 | .5827 | .6509 | .394 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | 510.5 | 14548.8 |
| SDev | .9162 | 24.3952 |
| %RSD | .1795 | .16767 |

Method: TOTAL  Sample Name:  CCB  Operator: KLC
Run Time: 02/23/04 12:42  Filename: I60223A
Mode: CONC  Type: Q  Corr. Factor:  1.00000
Lab ID.: N.CANTON  Cust. Smpl. ID.:  Cust. ID.:

| Elems | Ag | Al | As | B | Ba | Be |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.5106 | 10.97 | .6568 | 4.625 | .2181 | .1679 |
| SDev | .2654 | 1.676 | .802 | 1.507 | .0359 | .0806 |
| %RSD | 51.98 | 15.28 | 122.1 | 32.59 | 16.47 | 48.01 |

| Elems | Ca | Cd | Co | Cr | Cu | Fe |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 146.4 | .0542 | -.1793 | .0578 | .2455 | 3.530 |
| SDev | 2.325 | .0301 | .1688 | .5789 | .277 | 3.946 |
| %RSD | 1.588 | 55.57 | 94.15 | 1001 | 112.8 | 111.8 |

| Elems | K | Mg | Mn | Mo | Na3302 | Ni |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | 273.4 | 76.62 | .2372 | 2.745 | -372.0 | .4893 |
| SDev | 13.67 | 2.199 | .1297 | 1.008 | 181.5 | .3096 |
| %RSD | 4.999 | 2.871 | 54.7 | 36.72 | 48.79 | 63.26 |

| Elems | Pb | Se | Sb | Sn | Tl | V |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -1.076 | .1163 | 2.956 | .2927 | 2.089 | .1416 |
| SDev | .9454 | 1.508 | .538 | .3236 | 2.904 | .1281 |
| %RSD | 87.85 | 1297 | 18.2 | 110.6 | 139 | 90.43 |

| Elems | Zn | 2203/1 | 2203/2 | 2068/2 | 2068/1 | 1960/1 |
|---|---|---|---|---|---|---|
| Units | PPB | PPB | PPB | PPB | PPB | PPB |
| Avge | -.0387 | -5.586 | 1.175 | 1.116 | 3.875 | .6808 |
| SDev | .0206 | 3.008 | .0846 | .8124 | .401 | .4061 |
| %RSD | 53.27 | 53.86 | 7.198 | 72.82 | 10.35 | 59.64 |

| Elems | 1960/2 | *Y |
|---|---|---|
| Units | PPB | |
| Avge | -.1656 | 14700.5 |
| SDev | 2.058 | 4.94974 |
| %RSD | 1243 | .03367 |

# *MISCELLANEOUS DATA*

# Metals Internal Chain of Custody

**Date Prepared:** 02/20/04 **Prep Analyst:** Karen Counts

| Laboratory Sample ID | | | Lab ID | Method | Analysis Date | Analyst | Instrument |
|---|---|---|---|---|---|---|---|
| A4B190299 | 1 | | F9VHN | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 1 | | F9VHN | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 2 | | F9VHX | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 2 | | F9VHX | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 3 | | F9VH2 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 3 | | F9VH2 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 4 | | F9VH3 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 4 | S | F9VH3 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 4 | D | F9VH3 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 4 | | F9VH3 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 4 | S | F9VH3 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 4 | D | F9VH3 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 5 | | F9VH4 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 5 | | F9VH4 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 6 | | F9VH7 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 6 | | F9VH7 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 7 | | F9VH8 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 7 | | F9VH8 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 8 | | F9VH9 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 8 | | F9VH9 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 9 | | F9VJA | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 9 | | F9VJA | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 10 | | F9VJD | SW846 6010B | 02/23/04 | Karen Counts | I6 |

U - Unfiltered F - Filtered T - TCLP L - SPLP East W - SPLP West

# Metals Internal Chain of Custody

**Date Prepared:** 02/20/04 **Prep Analyst:** Karen Counts

| Laboratory Sample ID | | | Lab ID | Method | Analysis Date | Analyst | Instrument |
|---|---|---|---|---|---|---|---|
| A4B190299 | 10 | | F9VJD | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 11 | | F9VJE | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 11 | | F9VJE | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 12 | | F9VJF | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 12 | | F9VJF | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 13 | | F9VJH | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 13 | S | F9VJH | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 13 | D | F9VJH | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 13 | | F9VJH | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 13 | S | F9VJH | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 13 | D | F9VJH | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 14 | | F9VJM | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 14 | | F9VJM | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 15 | | F9VJQ | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 15 | | F9VJQ | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 16 | | F9VJR | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 16 | | F9VJR | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 17 | | F9VJV | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 17 | | F9VJV | SW846 7471A | 02/20/04 | Michaelyn List | H1 |
| A4B190299 | 18 | | F9VJ0 | SW846 6010B | 02/23/04 | Karen Counts | I6 |
| A4B190299 | 18 | | F9VJ0 | SW846 7471A | 02/20/04 | Michaelyn List | H1 |

U - Unfiltered F - Filtered T - TCLP L - SPLP East W - SPLP West

| Preparation Type | Matrix | Amount of Standard added to LCS & MS/MSD | | Initial Sample Vol/Wt | Final Sample Volume |
|---|---|---|---|---|---|
| | | Amount | Standard name | | |
| ICP | water | 1 mL<br>1 mL<br>1.0 mL | Ag<br>ICP-1<br>ICP-2A | 50 mL | 50 mL |
| ICPMS | water | 0.5ml<br>0.5ml | ICPMS-1<br>ICPMS-2 | 50 mL | 50 mL |
| Cd, Cr, Pb, Tl, Ag, Sb, As, Se - GFAA | water | 1 mL | Graphite | 50 mL | 50 mL |
| Hg - CVAA | water | 5 mL (LCS)<br>1 mL (MS/MSD) | HG-1<br>HG-1 | 100 mL | 100 mL |
| Hg - CVAF (low level) | water | 0.2 mL (LCS/MS/MSD) | HG ICAL | 40 ml | 40 ml |
| ICP | solid | 2 mL<br>2 mL<br>2 mL | Ag<br>ICP-1<br>ICP-2A | 1.00 +/- .02g | 100 mL |
| ICPMS | solid | 1ml<br>1ml | ICPMS-1<br>ICPMS-2 | 1.00 +/- .02g | 100ml |
| As, Se, Cd, Cr, Pb, Tl, Ag, Sb - GFAA | solid | 2 mL | Graphite | 1.00 +/- .02g | 100 mL |
| Hg - CVAA | solid | 5 mL (LCS)<br>1 mL (MS/MSD) | HG-1<br>HG-1 | 0.60 +/- .01g | 100 mL |
| ICP | TCLP | 1 mL (LCS)<br>1 mL(LCS) | Ag<br>ICP-1 | 50 mL | 50 mL |
| ICP | TCLP | 0.5 mL(MS/MSD) | TCLP Spike I RCRA | 50 mL | 50 mL |
| ICP | TCLP | 1 mL(MS/MSD) | TCLP Spike II Non-RCRA | 50 mL | 50 mL |
| Hg - CVAA | TCLP | 5 mL (LCS)<br>5 mL (MS/MSD) | HG-1<br>HG-1 | 100 mL | 100 mL |

| Mercury Standards Preparation | | | |
|---|---|---|---|
| Final Concentration | Spiking Standard | | |
| | Amount | Standard | Concentration |
| Calibration Standards: | | | |
| 0.0002 ppm | 0.2 mL | HG-2 | 0.1 ppm |
| 0.0005 ppm | 0.5 mL | HG-2 | 0.1 ppm |
| 0.001 ppm | 1 mL | HG-2 | 0.1 ppm |
| 0.005 ppm | 5 mL | HG-2 | 0.1 ppm |
| 0.010 ppm | 10 mL | HG-2 | 0.1 ppm |
| ICV Preparation | | | |
| 0.0025 ppm | 2.5 mL | HG-1 | 0.1 ppm |
| CCV Preparation: | | | |
| 0.005 ppm | 5 mL | HG-2 | 0.1 ppm |

| Low Level Mercury Standards Preparation | | | |
|---|---|---|---|
| Final Concentration | Spiking Standard | | |
| | Amount | Standard | Concentration |
| Calibration Standards: | | | |
| 0.5 ppt | 20 ul | HG ICAL | 1.0 ppb |
| 1.0 ppt | 40 ul | HG ICAL | 1.0 ppb |
| 2 ppt | 80 ul | HG ICAL | 1.0 ppb |
| 5 ppt | 200 ul | HG ICAL | 1.0 ppb |
| 10 ppt | 400 ul | HG ICAL | 1.0 ppb |
| 25 ppt | 1000 ul | HG ICAL | 1.0 ppb |
| ICV Preparation | | | |
| 5 ppt | 200 ul | HG ICV | 1.0 ppb |
| CCV Preparation: | | | |
| 5 ppt | 200 ul | HG ICAL | 1.0 ppb |

# SPIKING STANDARD DEFINITIONS

| Elements | Ag | ICP-1 | ICP-2A | ICPMS-1 | ICPMS-2 | GFAA | HG-1 | HG-2 | HG ICAL | HG ICV | TCLP Spike I | TCLP Spike II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag | 2.5 ppm | | | 10ppm | | 0.25 ppm | | | | | 100 ppm | |
| Al | | 100 ppm | | | 100ppm | | | | | | | 100 ppm |
| As | | 100 ppm | | 10ppm | | 2.0 ppm | | | | | 500 ppm | |
| Ba | | 100 ppm | | 10ppm | | | | | | | 5000 ppm | |
| Be | | 2.5 ppm | | 10ppm | | | | | | | | 2.5 ppm |
| Cd | | 2.5 ppm | | 10ppm | | 0.2 ppm | | | | | 100 ppm | |
| Ca | | | 2500 ppm | | 100ppm | | | | | | | |
| Co | | 25 ppm | | 10ppm | | | | | | | | 25 ppm |
| Cr | | 10 ppm | | 10ppm | | 0.5 ppm | | | | | 500 ppm | |
| Cu | | 12.5 ppm | | 10ppm | | | | | | | | 12.5 ppm |
| Fe | | 50 ppm | | | 100ppm | | | | | | | 50 ppm |
| Hg | | | | | | | 0.1 ppm | 0.1 ppm | 1.0 ppb | 1.0 ppb | | |
| K | | | 2500 ppm | | 100ppm | | | | | | | |
| Mg | | | 2500 ppm | | 100ppm | | | | | | | |
| Mn | | 25 ppm | | 10ppm | | | | | | | | 25 ppm |
| Na | | | 2500 ppm | | 100ppm | | | | | | | |
| Ni | | 25 ppm | | 10ppm | | | | | | | | 25 ppm |
| Pb | | 25 ppm | | 10ppm | | 2.0 ppm | | | | | 500 ppm | |
| Sb | | 25 ppm | | 10ppm | | 2.0 ppm | | | | | | 25 ppm |
| Se | | 100 ppm | | 10ppm | | 2.0 ppm | | | | | 100 ppm | |
| Tl | | 100 ppm | | 10ppm | | 2.0 ppm | | | | | | 100 ppm |
| V | | 25 ppm | | 10ppm | | | | | | | | 25 ppm |
| Zn | | 25 ppm | | 10ppm | | | | | | | | 25 ppm |
| B | | 50 ppm | | 10ppm | | | | | | | | 50 ppm |
| Sr | | 50 ppm | | 10ppm | | | | | | | | |
| Mo | | 50 ppm | | 10ppm | | | | | | | | 50 ppm |
| W | | 50 ppm | | 10ppm | | | | | | | | |
| Sn | | 100 ppm | | 10ppm | | | | | | | | 100 ppm |
| Zr | | 50 ppm | | 10ppm | | | | | | | | |
| Ti | | 50 ppm | | 10ppm | | | | | | | | |

STL North Canton
Revised 4/5/02
N:\Metals\Preplog.xls

DATE: 2-20-04

# METALS PREPARATION REAGENTS

Reagents listed on this form are used for the entire day's prep batches unless otherwise noted on the individual prep log.

| REAGENT NAME | REAGENT NUMBER |
|---|---|
| 1:1 $HNO_3$ (nitric acid) | 4MR109 |
| 1:1 HCl ( hydrochloric acid) | 4MR40 |
| $HNO_3$ (nitric acid) | 4MR84 |
| HCl (hydrochloric acid) | 4MR85 |
| $KMnO_4$ (potassium permanganate) | 4MR96 |
| $K_2S_2O_8$ (potassium persulfate) | 4MR44 |
| $H_2O_2$ (hydrogen peroxide) | 4MR58 |
| $H_2SO_4$ (sulfuric acid) | 3MR743 |
| $HCl/HNO_3$ (aqua regia) | 4MR110 |

## Waters

Hg time in the water bath 10:30 am

Hg time out of the water bath 12:30 pm

## Solids

Hg time in the water bath 10:00 am

Hg time out of the water bath 10:30 am

Times listed are for the waters and solids for that day unless otherwise noted.

STL North Canton
Revision Date: 12/06/01
n:\metals\reagent1.doc

# *GENERAL CHEMISTRY DATA*

# *QC SUMMARY*

**METHOD BLANK REPORT**

**General Chemistry**

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | | Work Order #: F9XJ51AA | | MB Lot-Sample #: | A4B200000-341 | |
| | ND | 0.50 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| Cyanide, Total | | Work Order #: F94MD1AA | | MB Lot-Sample #: | A4B240000-380 | |
| | ND | 0.50 | mg/kg | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | |
| Percent Solids | | Work Order #: F91X31AA | | MB Lot-Sample #: | A4B200000-596 | |
| | ND | 10.0 | % | MCAWW 160.3 MOD | 02/20-02/21/04 | 4051596 |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|
| Cyanide, Total | | Work Order #: F9XJ51AC | LCS Lot-Sample#: A4B200000-341 | | |
| | 86 | (65 - 124) | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | |
| Cyanide, Total | | Work Order #: F94MD1AC | LCS Lot-Sample#: A4B240000-380 | | |
| | 92 | (65 - 124) | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** A4B190299 **Matrix.....:** SOLID

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | | | Work Order #: F9XJ51AC | | LCS Lot-Sample#: A4B200000-341 | | |
| | 42.7 | 36.8 | mg/kg | 86 | SW846 9012A | 02/20/04 | 4051341 |
| | | | Dilution Factor: 1 | | | | |
| Cyanide, Total | | | Work Order #: F94MD1AC | | LCS Lot-Sample#: A4B240000-380 | | |
| | 2.0 | 1.8 | mg/kg | 92 | SW846 9012A | 02/24/04 | 4055380 |
| | | | Dilution Factor: 1 | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | | WO#: F9VH31AQ-MS/F9VH31AR-MSD | | | | MS Lot-Sample #: A4B190299-004 | |
| | 87 | (23 - 155) | | | SW846 9012A | 02/20/04 | 4051341 |
| | 87 | (23 - 155) | 0.95 | (0-94) | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | | |
| Cyanide, Total | | WO#: F9VJH1DR-MS/F9VJH1DT-MSD | | | | MS Lot-Sample #: A4B190299-013 | |
| | 108 | (23 - 155) | | | SW846 9012A | 02/24/04 | 4055380 |
| | 68 | (23 - 155) | 45 | (0-94) | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

## MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** A4B190299 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | | | WO#: F9VH31AQ-MS/F9VH31AR-MSD | | | | MS Lot-Sample #: A4B190299-004 | | |
| | ND | 2.4 | 2.1 | mg/kg | 87 | | SW846 9012A | 02/20/04 | 4051341 |
| | ND | 2.4 | 2.1 | mg/kg | 87 | 0.95 | SW846 9012A | 02/20/04 | 4051341 |
| | | | Dilution Factor: 1 | | | | | | |
| Cyanide, Total | | | WO#: F9VJH1DR-MS/F9VJH1DT-MSD | | | | MS Lot-Sample #: A4B190299-013 | | |
| | ND | 2.4 | 2.7 | mg/kg | 108 | | SW846 9012A | 02/24/04 | 4055380 |
| | ND | 2.4 | 1.7 | mg/kg | 68 | 45 | SW846 9012A | 02/24/04 | 4055380 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

**SAMPLE DUPLICATE EVALUATION REPORT**

**General Chemistry**

**Client Lot #...:** A4B190299 **Work Order #...:** F9VH3-SMP **Matrix.....:** SO
F9VH3-DUP
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Percent Solids | | | | | | SD Lot-Sample #: A4B190299-004 | | |
| | 82.9 | 81.7 | % | 1.4 | (0-20) | MCAWW 160.3 MOD | 02/20-02/21/04 | 4051596 |

Dilution Factor: 1

**SAMPLE DUPLICATE EVALUATION REPORT**

**General Chemistry**

**Client Lot #...:** A4B190299 **Work Order #...:** F9VJH-SMP **Matrix.....:** SO
F9VJH-DUP
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Percent Solids | | | | | | SD Lot-Sample #: A4B190299-013 | | |
| | 83.6 | 82.0 | % | 1.9 | (0-20) | MCAWW 160.3 MOD | 02/20-02/21/04 | 4051596 |

Dilution Factor: 1

# *SAMPLE DATA*

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-17 (15')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-001 **Work Order #...:** F9VHN **Matrix.....:** SO
**Date Sampled...:** 02/17/04 11:15 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **81.1** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-18 (13')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-002 **Work Order #...:** F9VHX **Matrix.....:** SO
**Date Sampled...:** 02/17/04 11:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.0** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-19 (15')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-003 **Work Order #...:** F9VH2 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:15 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.0** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-20 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-004 **Work Order #...:** F9VH3 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 12:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **82.9** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-21 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-005 **Work Order #...:** F9VH4 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 13:45 **Date Received..:** 02/19/04
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.62** | **0.59** | **mg/kg** | **SW846 9012A** | **02/20/04** | **4051341** |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **84.7** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-006 **Work Order #...:** F9VH7 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:15 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.9** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-22-22 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-007 **Work Order #...:** F9VH8 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:15 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.8** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-23 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-008 **Work Order #...:** F9VH9 **Matrix.....:** SO
**Date Sampled...:** 02/17/04 14:45 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **82.8** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 5GP-24 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-009 **Work Order #...:** F9VJA **Matrix.....:** SO
**Date Sampled...:** 02/17/04 15:05 **Date Received..:** 02/19/04
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 02/20/04 | 4051341 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **82.1** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-17 (11')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-010 **Work Order #...:** F9VJD **Matrix.....:** SO
**Date Sampled...:** 02/18/04 09:40 **Date Received..:** 02/19/04
**% Moisture.....:** 20

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.30 B** | **0.62** | **mg/kg** | **SW846 9012A** | **02/24/04** | **4055380** |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.1** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-18 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-011 **Work Order #...:** F9VJE **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:05 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **82.8** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-19 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-012 **Work Order #...:** F9VJF **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:20 **Date Received..:** 02/19/04
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.29 B** | **0.61** | **mg/kg** | **SW846 9012A** | **02/24/04** | **4055380** |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.0** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-20 (14.5')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-013 **Work Order #...:** F9VJH **Matrix.....:** SO
**Date Sampled...:** 02/18/04 10:45 **Date Received..:** 02/19/04
**% Moisture.....:** 16

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.6** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-21 (13.5')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-014 **Work Order #...:** F9VJM **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:00 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.2** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22 (13')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-015 **Work Order #...:** F9VJQ **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:20 **Date Received..:** 02/19/04
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.53 B** | **0.60** | **mg/kg** | **SW846 9012A** | **02/24/04** | **4055380** |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.7** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-22-22 (13')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-016 **Work Order #...:** F9VJR **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:20 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.38 B** | **0.61** | **mg/kg** | **SW846 9012A** | **02/24/04** | **4055380** |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **81.4** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-23 (12.5')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-017 **Work Order #...:** F9VJV **Matrix.....:** SO
**Date Sampled...:** 02/18/04 11:40 **Date Received..:** 02/19/04
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| **Cyanide, Total** | **0.74** | **0.62** | **mg/kg** | **SW846 9012A** | **02/24/04** | **4055380** |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **80.5** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**DRAPER ADEN & ASSOCIATES INC**

**Client Sample ID: 7GP-24 (14')**

**General Chemistry**

**Lot-Sample #...:** A4B190299-018 **Work Order #...:** F9VJ0 **Matrix.....:** SO
**Date Sampled...:** 02/18/04 12:00 **Date Received..:** 02/19/04
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 02/24/04 | 4055380 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **84.9** | **10.0** | **%** | **MCAWW 160.3 MOD** | **02/20-02/21/04** | **4051596** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

# *SUPPORTIVE RAW DATA*

# STL North Canton General Chemistry Data Review Checklist

**Parameter(s):** Cyanide

**Batch(es):** 405340, 1, 2

**Method #/SOP#:** 335.1, 9012A

| Review Items | Level I Review | | | Level II Review | | |
|---|---|---|---|---|---|---|
| | YES | NO | N/A | YES | NO | N/A |
| **A. Initial Calibration** | | | | | | |
| 1. Initial calibration correlation coefficient ≥ 0.995? | ✓ | | | ✓ | | |
| 2. Calibration curve consist of the minimum number of calibration standards? | ✓ | | | ✓ | | |
| 3. ICV analyzed at immediately after calibration and within control limits ? (TRAACS Nitrate/Nitrite, Cyanide 85-115%; all others 90-110%) | ✓ | | | ✓ | | |
| 4. ICB analyzed immediately after ICV and within criteria (± RL)? | ✓ | | | ✓ | | |
| **B. Continuing Calibration** | | | | | | |
| 1. CCV analyzed every 10 samples, at end of sequence and within criteria? | ✓ | | | ✓ | | |
| 2. CCB analyzed every 10 samples, at end of sequence & within criteria (±RL)? | ✓ | | | ✓ | | |
| **C. Sample Results** | | | | | | |
| 1. Were samples with concentrations > the linear range diluted and reanalyzed ? | | | ✓ | | | ✓ |
| 2. All reported results bracketed by in control QC ? | ✓ | | | ✓ | | |
| 3. Sample analyses done within holding time ? | ✓ | | | ✓ | | |
| **D. Quality Control** | | | | | | |
| 1. LCS per prep batch and within QC limits ? *(LCSD, where applicable)* | ✓ | | | ✓ | | |
| 2. Method blank done per prep batch and < RL. Method blank RL supports the lowest RL reported for the batch? | ✓ | | | ✓ | | |
| 3. MS/MSD run at required frequency and evaluated? MS/MSD reported properly and calculated correctly? | ✓ | | | ✓ | | |
| 4. Duplicate samples run at required frequency (duplicate sample performed per matrix encountered)? | | | ✓ | | | ✓ |
| **E. Titrant** | | | | | | |
| 1. Titrant standardized? | | | ✓ | | | ✓ |
| 2. If no, standardization expires | | | | | | |
| **F. Other** | | | | | | |
| 1. Are all nonconformances documented appropriately (NCM or narrative)? | | | ✓ | | | ✓ 2/20/04 |
| 2. Calculations checked for error ? | ✓ | | | ✓ | | |
| 3. Transcriptions checked for error ? | ✓ | | | ✓ | | |
| 4. All client/project specific requirements met ? | ✓ | | | ✓ | | |
| 5. Date/time of preparation and analysis verified as correct ? | ✓ | | | ✓ | | |
| 6. Units verified as correct? | ✓ | | | ✓ | | |
| 7. Dilutions have been properly applied and RL's adjusted appropriately? | | | ✓ | | | ✓ |
| 8. SOP followed? | ✓ | | | ✓ | | |
| 9. Calculations checked at minimum frequency (at least 20%, 100% for QC)? | ✓ | | | ✓ | | |
| 10. All reagent and standard numbers recorded in logbook? | ✓ | | | ✓ | | |
| 11. Edits dated and initialed | ✓ | | | ✓ | | |

**Comment on any "NO" response(s):**

**Level I reviewer:** Bruce Woodward **Date:** 2/20/04

**Level II Reviewer:** Melissa A. Fuller-Kirkpatrick **Date:** 2/20/04

Level I review:

N:\QAQC\LAB_FORM\Wet Chemistry Forms\Wet Chem_LevelI.doc
Corporate Policy, QA-012
Revision date: 08/25/00

# STL NORTH CANTON

TRAACS ANALYTICAL REPORT

Name of Run : 040220D
Date of Report : 2/20/04
Date of Run : 2/20/04
Operator : BW
Comment :

Name of Analysis : CN-NONCLPCHANNEL2.ANL
System No. : 2
Type of System : TRAACS
Start/Stop time : 14:55 - 15:38

---

| | | | |
|---|---|---|---|
| Channel Type : | Real | Data | Data |
| Channel : | 2 | 1 | 2 |
| Method : | CN-Method 2 | Weight | Dilution |
| Unit : | mg/L | | |
| Calibr. Fit : | Linear | | |
| Corr. Coeff. : | 0.9997 ✓ | | |
| Base : | 52 | | |
| Gain : | 74 | | |
| Sensitivity : | 0.1456 | | |
| Sample Limit 1 : | | | |
| Sample Limit 2 : | | | |

| Pk | Cup | | Sample Id | Conc | Conc | Conc | |
|---|---|---|---|---|---|---|---|
| 0 | 0 | B | Baseline | -0.0036 | 0.0000 | 0.0000 | |
| 1 | 1 | P | Primer | 0.2018 | 1.0000 | 1.0000 | |
| 2 | 1 | C | .200 PPM | 0.2003 | 1.0000 | 1.0000 | cy4057 |
| 3 | 2 | C | .100 PPM | 0.0979 | 1.0000 | 1.0000 | 58 |
| 4 | 3 | C | .050 PPM | 0.0525 | 1.0000 | 1.0000 | 59 |
| 5 | 4 | C | .025 PPM | 0.0262 | 1.0000 | 1.0000 | 60 |
| 6 | 5 | C | .010 PPM | 0.0084 | 1.0000 | 1.0000 | 61 |
| 7 | 6 | C | .005 PPM | 0.0047 | 1.0000 | 1.0000 | 62 |
| 8 | 1 | H1 | High | 0.1982 | 1.0000 | 1.0000 | |
| 9 | 0 | L1 | Low | -0.0017 | 1.0000 | 1.0000 | |
| 10 | 0 | L1 | Low | -0.0015 | 1.0000 | 1.0000 | |
| 11 | 2 | D | Drift | 0.0967 | 1.0000 | 1.0000 | |
| 12 | 7 | QC1 | ICV | 0.0956 | 1.0000 | 1.0000 | cy4063 |
| 13 | 8 | QC2 | ICB | -0.0008 | 1.0000 | 1.0000 | |
| 14 | 5 | QC1 | 0.01 | 0.0086 | 1.0000 | 1.0000 | |
| 15 | 9 | QC3 | PREP BLK | -0.1331 ✓ | 0.0200 | 1.0000 | |
| 16 | 10 | QC4 | LCS | 36.8298 /42.7 | 0.0200 | 10.0000 | |
| 17 | 11 | S | F9NX6 | -0.1103 | 0.0200 | 1.0000 | |
| 18 | 12 | S | F9VHN | -0.1103 | 0.0200 | 1.0000 | |
| 19 | 13 | S | F9VHX | -0.1349 | 0.0200 | 1.0000 | |
| 20 | 14 | S | F9VH2 | -0.1227 | 0.0200 | 1.0000 | |
| 21 | 15 | S | F9VH3 | -0.1095 | 0.0200 | 1.0000 | 86.58%, |
| 22 | 16 | S | F9VH3 MS | 1.7317 /2 | 0.0200 | 1.0000 | 87.41% |
| 23 | 17 | S | F9VH3 MSD | 1.7483 /2 | 0.0200 | 1.0000 | |
| 24 | 18 | S | F9VH4 | 0.5269 | 0.0200 | 1.0000 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 25 | 19 | S | F9VH7 | -0.1333 | 0.0200 | 1.0000 |
| 26 | 20 | S | F9VH8 | -0.1280 | 0.0200 | 1.0000 |
| 27 | 5 | QC10.01 | | 0.0078 | 1.0000 | 1.0000 |
| 28 | 2 | QC1 CCV | | 0.0980 | 1.0000 | 1.0000 |
| 29 | 8 | QC2 CCB | | -0.0028 | 1.0000 | 1.0000 |
| 30 | 21 | S | F9VH9 | -0.0649 | 0.0200 | 1.0000 |
| 31 | 22 | S | F9VJA | -0.0308 | 0.0200 | 1.0000 |
| 32 | 23 | S | F9R70 | 0.0732 | 0.0200 | 1.0000 |
| 33 | 24 | S | F9J4T | -0.1025 | 0.0200 | 1.0000 |
| 34 | 25 | S | BLK AM | -0.0023 | 1.0000 | 1.0000 |
| 35 | 26 | S | LCS AM | -0.0017 | 1.0000 | 1.0000 |
| 36 | 27 | S | F9GJM | 0.0035 | 1.0000 | 1.0000 |
| 37 | 28 | S | F9GJQ | 0.0073 | 1.0000 | 1.0000 |
| 38 | 29 | S | F9GJT | -0.0017 | 1.0000 | 1.0000 |
| 39 | 30 | S | F9GJW | -0.0010 | 1.0000 | 1.0000 |
| 40 | 5 | QC100.01 | | 0.0077 | 1.0000 | 1.0000 |
| 41 | 2 | QC1 CCV | | 0.1007 | 1.0000 | 1.0000 |
| 42 | 8 | QC2 CCB | | -0.0021 | 1.0000 | 1.0000 |
| 43 | 31 | S | F9GJX | -0.0017 | 1.0000 | 1.0000 |
| 44 | 32 | S | F9GJ0 | -0.0023 | 1.0000 | 1.0000 |
| 45 | 33 | S | F9GJ2 | 0.0005 | 1.0000 | 1.0000 |
| 46 | 34 | S | F9GJ9 | 0.0025 | 1.0000 | 1.0000 |
| 47 | 5 | QC100.01 | | 0.0077 | 1.0000 | 1.0000 |
| 48 | 2 | QC1 CCV | | 0.1003 | 1.0000 | 1.0000 |
| 49 | 8 | QC2 CCB | | -0.0014 | 1.0000 | 1.0000 |
| 50 | 2 | D | Drift | 0.0967 | 1.0000 | 1.0000 |
| 51 | 0 | B | FinalBase | -0.0036 | 1.0000 | 1.0000 |

Total - Chloro = Amenable

0.0043 - 0.0035 = 0.0008

0.0008 - 0.0073 = ND

0.002 - (0.0017) ND = ND

ND - ND ND

ND - ND = ND

0.0017 - ND = ND

0.0016 - 0.0005 = 0.0011

ND - 0.0025 = ND

---

QC Limits

| | |
|---|---|
| Channel : | 2 |
| QC 1 | Unused |
| QC 2 | Unused |
| QC 3 | Unused |
| QC 4 | Unused |
| QC 5 | Unused |
| QC 6 | Unused |
| QC 7 | Unused |
| QC 8 | Unused |
| QC 9 | Unused |
| QC10 | Unused |

---

CORRECTIONS

| | |
|---|---|
| Channel : | 2 |
| Baseline : | Yes |
| Drift : | Yes |
| Carry over : | Yes |
| %: | 3.0 |

* ... Sample offscale
+ ... Result higher than sample limit
- ... Result lower than sample limit
P ... Standard passed
F ... Standard failed
N ... Value not calculated or not used
R ... Resample after offscale
M ... Peak marker moved manually
D ... Diluted sample

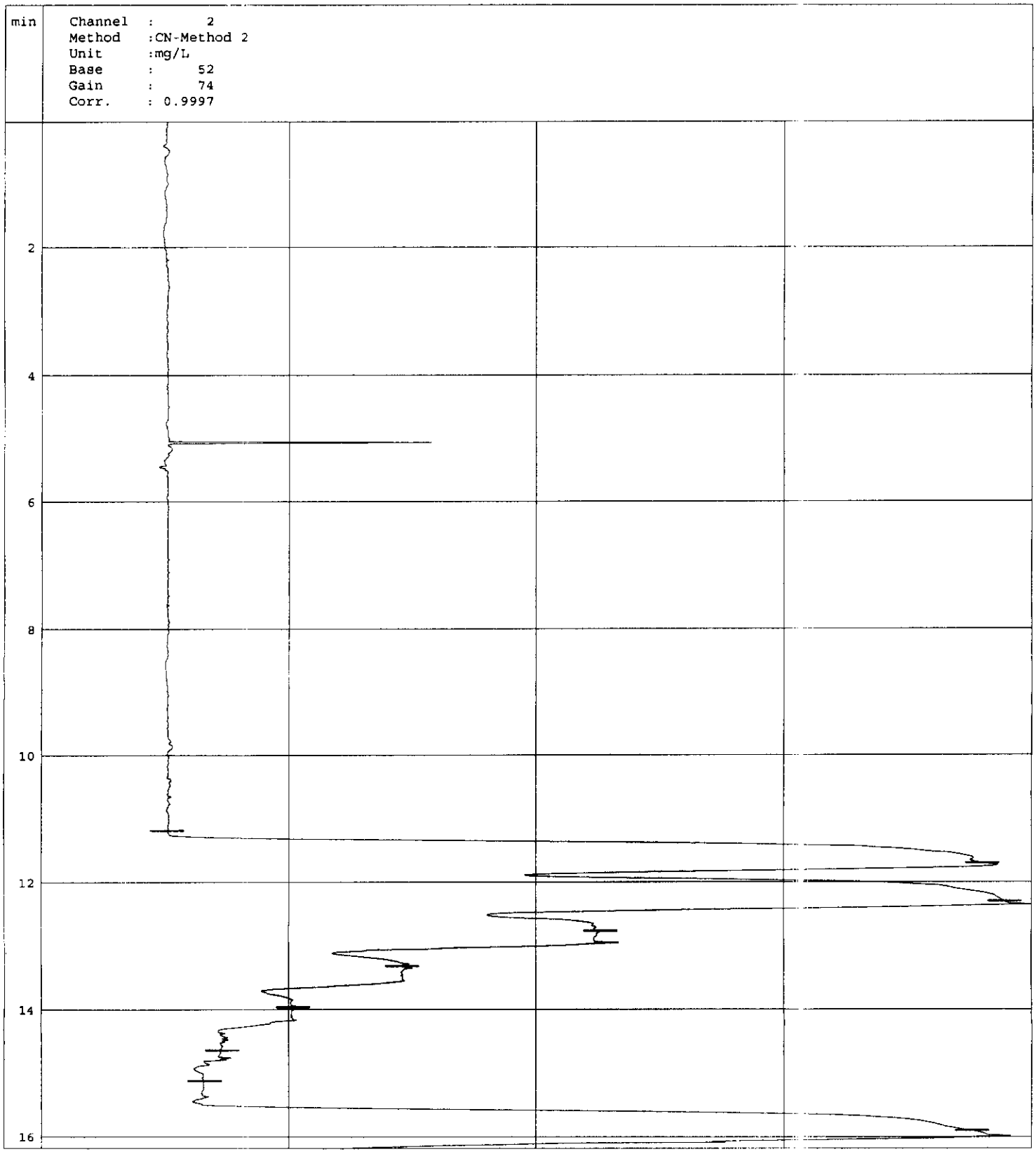
** <END OF REPORT> **

# STL NORTH CANTON

TRAACS ANALYTICAL REPORT

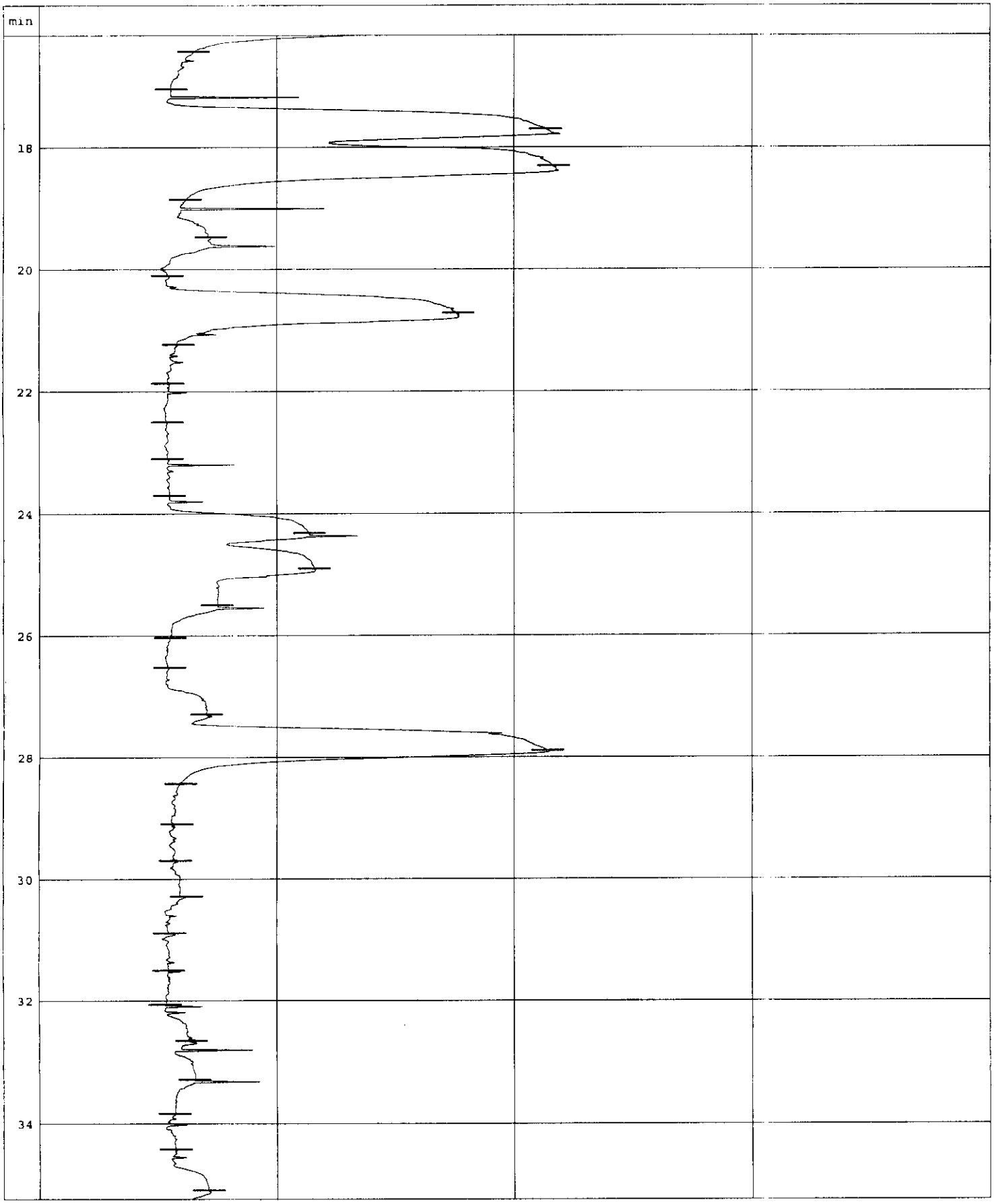
Name of run :040220D.RUN
Comment :

Name of analysis :CN-NONCLPCHANNEL2.ANL



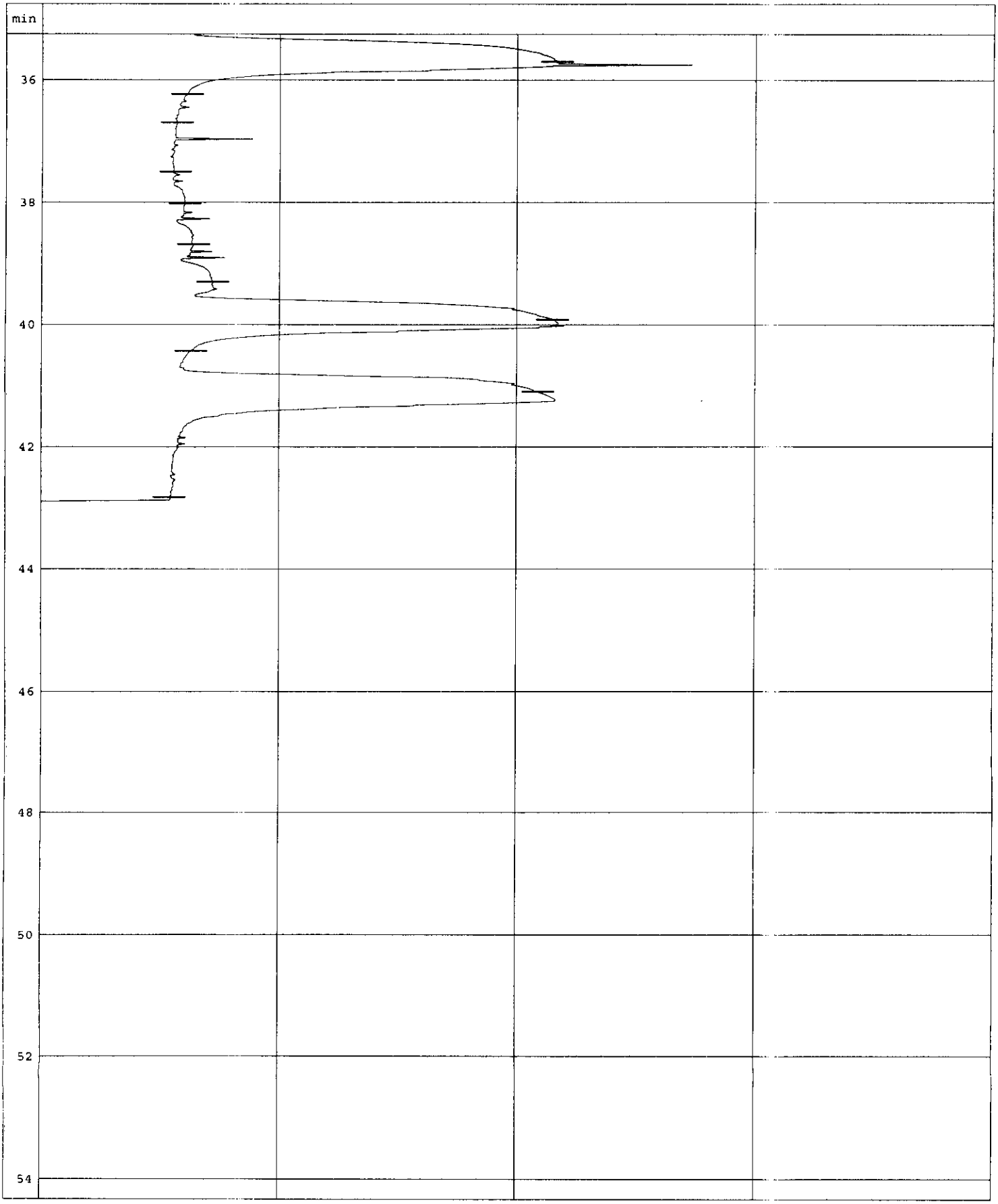
Name of run :040220D.RUN
Comment :

Name of analysis :CN-NONCLPCHANNEL2.ANL



Name of run :040220D.RUN
Comment :

Name of analysis :CN-NONCLPCHANNEL2.ANL



# STL NORTH CANTON

TRAACS ANALYTICAL REPORT

Name of Run : 040216B
Date of Report : 2/20/04
Date of Run : 2/16/04
Operator : CL
Comment : Total CN

Name of Analysis : CN-NONCLPCHANNEL2.ANL
System No. : 2
Type of System : TRAACS
Start/Stop time : 15:38 - 16:20

| | | | |
|---|---|---|---|
| Channel Type : | Real | Data | Data |
| Channel : | 2 | 1 | 2 |
| Method : | CN-Method 2 | Weight | Dilution |
| Unit : | mg/L | | |
| Calibr. Fit : | Linear | | |
| Corr. Coeff. : | 1.0000 | | |
| Base : | 51 | | |
| Gain : | 74 | | |
| Sensitivity : | 0.1236 | | |
| Sample Limit 1 : | | | |
| Sample Limit 2 : | | | |

| Pk | Cup | | Sample Id | Conc | Conc | Conc |
|---|---|---|---|---|---|---|
| 0 | 0 | B | Baseline | -0.0017 | 0.0000 | 0.0000 |
| 1 | 1 | P | Primer | 0.2025 | 1.0000 | 1.0000 |
| 2 | 1 | C | .200 PPM | 0.2000 | 1.0000 | 1.0000 |
| 3 | 2 | C | .100 PPM | 0.0996 | 1.0000 | 1.0000 |
| 4 | 3 | C | .050 PPM | 0.0506 | 1.0000 | 1.0000 |
| 5 | 4 | C | .025 PPM | 0.0254 | 1.0000 | 1.0000 |
| 6 | 5 | C | .010 PPM | 0.0098 | 1.0000 | 1.0000 |
| 7 | 6 | C | .005 PPM | 0.0046 | 1.0000 | 1.0000 |
| 8 | 1 | H1 | High | 0.1993 | 1.0000 | 1.0000 |
| 9 | 0 | L1 | Low | -0.0002 | 1.0000 | 1.0000 |
| 10 | 0 | L1 | Low | 0.0001 | 1.0000 | 1.0000 |
| 11 | 2 | D | Drift | 0.0994 | 1.0000 | 1.0000 |
| 12 | 7 | QC1 | ICV | 0.0997 | 1.0000 | 1.0000 |
| 13 | 8 | QC2 | ICB | -0.0009 | 1.0000 | 1.0000 |
| 14 | 5 | QC10 | .01 | 0.0093 | 1.0000 | 1.0000 |
| 15 | 9 | QC3 | BLANK | -0.0013 | 1.0000 | 1.0000 |
| 16 | 10 | QC4 | LCS ERA | 0.8475 | 1.0000 | 5.0000 |
| 17 | 11 | S | LCS 0.04 | 0.0376 | 1.0000 | 1.0000 |
| 18 | 12 | S | F9GKH | 0.0001 | 1.0000 | 1.0000 |
| 19 | 13 | S | F9CQL | -0.0004 | 1.0000 | 1.0000 |
| 20 | 14 | S | F9CCN | -0.0010 | 1.0000 | 1.0000 |
| 21 | 15 | S | F9CCN MS | 0.0375 | 1.0000 | 1.0000 |
| 22 | 16 | S | F9CCN MSD | 0.0386 | 1.0000 | 1.0000 |
| 23 | 17 | S | F9HKE | 0.0000 | 1.0000 | 1.0000 |
| 24 | 18 | S | F9JG9 | 0.0021 | 1.0000 | 1.0000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 25 | 19 | S | F9JHC | -0.0012 | 1.0000 | 1.0000 |
| 26 | 20 | S | F9GJM | 0.0043 | 1.0000 | 1.0000 |
| 27 | 5 | QC10.01 | | 0.0081 | 1.0000 | 1.0000 |
| 28 | 2 | QC1 CCV | | 0.1036 | 1.0000 | 1.0000 |
| 29 | 8 | QC2 CCB | | -0.0018 | 1.0000 | 1.0000 |
| 30 | 21 | S | F9GJQ | 0.0008 | 1.0000 | 1.0000 |
| 31 | 22 | S | F9GJT | 0.0020 | 1.0000 | 1.0000 |
| 32 | 24 | S | F9GJW | -0.0002 | 1.0000 | 1.0000 |
| 33 | 25 | S | F9GJX | -0.0016 | 1.0000 | 1.0000 |
| 34 | 26 | S | F9GJ0 | 0.0017 | 1.0000 | 1.0000 |
| 35 | 27 | S | F9GJ2 | 0.0016 | 1.0000 | 1.0000 |
| 36 | 28 | S | F9GJ9 | -0.0017 | 1.0000 | 1.0000 |
| 37 | 29 | S | F884P | 0.0049 | 1.0000 | 1.0000 |
| 38 | 30 | S | F884T | 0.0061 | 1.0000 | 1.0000 |
| 39 | 31 | S | F9C53 | 0.0060 | 1.0000 | 1.0000 |
| 40 | 5 | QC100.01 | | 0.0084 | 1.0000 | 1.0000 |
| 41 | 2 | QC1 CCV | | 0.0979 | 1.0000 | 1.0000 |
| 42 | 8 | QC2 CCB | | -0.0008 | 1.0000 | 1.0000 |
| 43 | 32 | S | F9C6L | 0.0102 | 1.0000 | 1.0000 |
| 44 | 5 | QC10.01 | | 0.0076 | 1.0000 | 1.0000 |
| 45 | 2 | QC1 CCV | | 0.0992 | 1.0000 | 1.0000 |
| 46 | 8 | QC2 CCB | | -0.0007 | 1.0000 | 1.0000 |
| 47 | 2 | D | Drift | 0.0994 | 1.0000 | 1.0000 |
| 48 | 0 | B | FinalBase | -0.0017 | 1.0000 | 1.0000 |

---

QC Limits

| | |
|---|---|
| Channel : | 2 |
| QC 1 | Unused |
| QC 2 | Unused |
| QC 3 | Unused |
| QC 4 | Unused |
| QC 5 | Unused |
| QC 6 | Unused |
| QC 7 | Unused |
| QC 8 | Unused |
| QC 9 | Unused |
| QC10 | Unused |

---

CORRECTIONS

| | |
|---|---|
| Channel : | 2 |
| Baseline : | Yes |
| Drift : | Yes |
| Carry over : | Yes |
| %: | 3.7 |

---

* ... Sample offscale

+ ... Result higher than sample limit
- ... Result lower than sample limit
P ... Standard passed
F ... Standard failed
N ... Value not calculated or not used
R ... Resample after offscale
M ... Peak marker moved manually
D ... Diluted sample

** <END OF REPORT> **

STL – NORTH CANTON
CYANIDE DISTILLATION LOGSHEET

Prep/Anal Date 2/20/04 | Analyst(s) Brule | Batch 4051340/1/2
LCS No P095502 | MS/MSD No cy40560 | MS Prep Date 2/20/04
Start Time 13:45 | End Time 14:45 | Cool Down Time 15:00

| Sample | Type T | Type C | Type F | pH >12 | S | Cl2 | Sample Volume (mL) | Final Volume (mL) | Comments |
|---|---|---|---|---|---|---|---|---|---|
| BLANK | T | C | F | — | — | — | 50 | 50 | |
| LCS | T | C | F | — | — | — | ↓ | | TV=42.7mg/kg |
| F9NX6 | T | C | F | | | | 1g+50 | | |
| F9UHN | T | C | F | | | | | | |
| F9UHX | T | C | F | | | | | | |
| F9UH2 | T | C | F | | | | | | |
| F9UH3 | T | C | F | | | | | | |
| MS | T | C | F | | | | | | 2mL 20 ppm |
| MSD | T | C | F | | | | | | ↓ |
| F9UH4 | T | C | F | | | | | | |
| F9UH7 | T | C | F | | | | | | |
| F9UH8 | T | C | F | | | | | | |
| F9UH9 | T | C | F | | | | | | |
| F9UJA | T | C | F | | | | | | |
| F9R70 | T | C | F | | | | | | |
| F9J4T | T | C | F | | | | ↓ | | |
| BK-Am | T | C | F | | | | 50 | | |
| LCS | T | C | F | | | | | | |
| F9GJM | T | C | F | | | | | | |
| JQ | T | C | F | | | | | | |
| JT | T | C | F | | | | | | |
| JW | T | C | F | | | | | | |
| JX | T | C | F | | | | | | |
| JO | T | C | F | | | | | | |
| J2 | T | C | F | | | | | | |
| J9 | T | C | F | | | | ↓ | ↓ | |

Type: T = Total C = Chlorinated F = Free

S and Cl2 Column – a check mark in these columns indicates the sample was checked for this interference. If the interference is present, the analyst will address this in the comments section.

I:\WC\40\FORMS_FORMS\Wet Chem\CN Distillation Log.doc Revision 0, 06/01/01 DTE

Chloramine T WR40133 Pyridine WR40137
Phosphate B WR40019 Sulfamic Acid WR40020
NaOH WR40024
STL North Canton WR 31187

## STL North Canton General Chemistry Data Review Checklist

**Parameter(s):** Total Solids

**Batch(es):** 405596

**Method #/SOP#:** SM (160.3 MOD)

| Review Items | Level I Review | | | Level II Review | | |
|---|---|---|---|---|---|---|
| **A. Initial Calibration** | YES | NO | N/A | YES | NO | N/A |
| 1. Initial calibration correlation coefficient ≥ 0.995? | | | ✓ | | | ✓ |
| 2. Calibration curve consist of the minimum number of calibration standards? | | | ✓ | | | ✓ |
| 3. ICV analyzed at immediately after calibration and within control limits ? (TRAACS Nitrate/Nitrite, Cyanide 85-115%; all others 90-110%) | | | ✓ | | | ✓ |
| 4. ICB analyzed immediately after ICV and within criteria (± RL)? | | | ✓ | | | ✓ |
| **B. Continuing Calibration** | | | | | | |
| 1. CCV analyzed every 10 samples, at end of sequence and within criteria? | | | ✓ | | | ✓ |
| 2. CCB analyzed every 10 samples, at end of sequence & within criteria (±RL)? | | | ✓ | | | ✓ |
| **C. Sample Results** | | | | | | |
| 1. Were samples with concentrations > the linear range diluted and reanalyzed ? | | | ✓ | | | ✓ |
| 2. All reported results bracketed by in control QC ? | ✓ | | | ✓ | | |
| 3. Sample analyses done within holding time ? | ✓ | | | ✓ | | |
| **D. Quality Control** | | | | | | |
| 1. LCS per prep batch and within QC limits ? *(LCSD, where applicable)* | | | ✓ | | | ✓ |
| 2. Method blank done per prep batch and < RL. Method blank RL supports the lowest RL reported for the batch? | ✓ | | | ✓ | | |
| 3. MS/MSD run at required frequency and evaluated? MS/MSD reported properly and calculated correctly? | | | ✓ | | | ✓ |
| 4. Duplicate samples run at required frequency (duplicate sample performed per matrix encountered)? | ✓ | | | ✓ | | |
| **E. Titrant** | | | | | | |
| 1. Titrant standardized? | | | ✓ | | | ✓ |
| 2. If no, standardization expires | | | ✓ | | | |
| **F. Other** | | | | | | |
| 1. Are all nonconformances documented appropriately (NCM or narrative)? | | | ✓ | | | ✓ |
| 2. Calculations checked for error ? | | | ✓ | | | ✓ |
| 3. Transcriptions checked for error ? | ✓ | | | ✓ | | |
| 4. All client/project specific requirements met ? | ✓ | | | ✓ | | |
| 5. Date/time of preparation and analysis verified as correct ? | ✓ | | | ✓ | | |
| 6. Units verified as correct? | | | ✓ | ✓ | | |
| 7. Dilutions have been properly applied and RL's adjusted appropriately? | | | ✓ | | | ✓ |
| 8. SOP followed? | ✓ | | | ✓ | | |
| 9. Calculations checked at minimum frequency (at least 20%, 100% for QC)? | | | ✓ | | | ✓ |
| 10. All reagent and standard numbers recorded in logbook? | | | ✓ | | | ✓ |
| 11. Edits dated and initialed | | | ✓ | | | ✓ |

**Comment on any "NO" response(s):**

**Level I reviewer:** Tia Anderson **Date:** 2/21/04

**Level II Reviewer:** Angela Dena **Date:** 2/23/04

Level I review:

N:\QAQC\LAB_FORM\Wet Chemistry Forms\Wet Chem_LevelI.doc
Corporate Policy, QA-012
Revision date: 08/25/00

STL North Canton

Percent Total Solid/Percent Moisture Logsheet

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Analysis | TS | | | Batch | 405396 | | | |
| Prep Date | 2/20/04 | Time In | 21:30 | Analyst | DB | | | |
| | | | | | TA | | | |
| Anal date | 2/21/04 | Time Out | 2:00PM | RL | 10 | | | |

| Sample Id | Tare wt | Wet wt | Dry wt | Result TS % | Result MS % | comments | | |
|---|---|---|---|---|---|---|---|---|
| BLANK C | 4.386 | 4.284 | 4.2672 | 3.40 | ND | | | |
| F9VHN | 4.386 | 11.989 | 10.5535 | 81.119 | 18.881 | | | |
| F9VHX | 4.386 | 11.3546 | 10.1697 | 82.997 | 17.003 | | | |
| F9VH2 | 4.386 | 11.3535 | 10.1656 | 82.951 | 17.049 | | | |
| F9VH3-1 | 4.386 | 14.0436 | 12.3877 | 82.854 | 17.146 | | | |
| F9VH3-2 | 4.386 | 15.3007 | 13.3079 | 81.742 | 18.258 | | | |
| F9VH4 | 4.386 | 15.1357 | 13.4901 | 84.692 | 15.308 | | | |
| F9VH7 | 4.386 | 11.0542 | 9.9835 | 83.943 | 16.057 | | | |
| F9VH8 | 4.386 | 13.3587 | 11.9094 | 83.848 | 16.152 | | | |
| F9VH9 | 4.386 | 10.2651 | 9.2544 | 82.809 | 17.191 | | | |
| F9VJA | 4.386 | 10.994 | 9.8107 | 82.093 | 17.907 | | | |
| F9VJD | 4.386 | 13.9521 | 12.0476 | 80.091 | 19.909 | | | |
| F9VJE | 4.386 | 10.3189 | 9.2961 | 82.761 | 17.239 | | | |
| F9VJF | 4.386 | 12.1241 | 10.7327 | 82.019 | 17.981 | | | |
| F9VJH-1 | 4.386 | 11.4087 | 10.2554 | 83.578 | 16.422 | | | |
| F9VJH-2 | 4.386 | 10.5598 | 9.4489 | 82.006 | 17.994 | | | |
| F9VJM | 4.386 | 19.774 | 17.1856 | 83.179 | 16.821 | | | |
| F9VJQ | 4.386 | 14.8315 | 13.0274 | 82.728 | 17.272 | | | |
| F9VJR | 4.386 | 13.2061 | 11.5693 | 81.442 | 18.558 | | | |
| F9VJV | 4.386 | 13.516 | 11.737 | 80.515 | 19.485 | | | |
| F9VJ0 | 4.386 | 12.2187 | 11.0361 | 84.902 | 15.098 | | | |
| F9TVC | 4.386 | 15.0096 | 14.2587 | 92.932 | 7.068 | | | |
| F9TVH | 4.386 | 19.5165 | 17.0111 | 83.441 | 16.559 | | | |
| TS0220C | 4.386 | | | 100.000 | 0.000 | | | |

Parameter(s): CYANIDE [TOTAL]

Batch(es): 4055379/80

Method #/SOP#: 335.2

| Review Items | Level I Review | | | Level II Review | | |
|---|---|---|---|---|---|---|
| **A. Initial Calibration** | YES | NO | N/A | YES | NO | N/A |
| 1. Initial calibration correlation coefficient ≥ 0.995? | ✓ | | | ✓ | | |
| 2. Calibration curve consist of the minimum number of calibration standards? | ✓ | | | ✓ | | |
| 3. ICV analyzed at immediately after calibration and within control limits ? (TRAACS Nitrate/Nitrite, Cyanide 85-115%; all others 90-110%) | ✓ | | | ✓ | | |
| 4. ICB analyzed immediately after ICV and within criteria (± RL)? | ✓ | | | ✓ | | |
| **B. Continuing Calibration** | | | | | | |
| 1. CCV analyzed every 10 samples, at end of sequence and within criteria? | ✓ | | | ✓ | | |
| 2. CCB analyzed every 10 samples, at end of sequence & within criteria (±RL)? | ✓ | | | ✓ | | |
| **C. Sample Results** | | | | | | |
| 1. Were samples with concentrations > the linear range diluted and reanalyzed ? | | | ✓ | | | ✓ |
| 2. All reported results bracketed by in control QC ? | ✓ | | | ✓ | | |
| 3. Sample analyses done within holding time ? | ✓ | | | ✓ | | |
| **D. Quality Control** | | | | | | |
| 1. LCS per prep batch and within QC limits ? *(LCSD, where applicable)* | ✓ | | | ✓ | | |
| 2. Method blank done per prep batch and < RL. Method blank RL supports the lowest RL reported for the batch? | ✓ | | | ✓ | | |
| 3. MS/MSD run at required frequency and evaluated? MS/MSD reported properly and calculated correctly? | ✓ | | | ✓ | | |
| 4. Duplicate samples run at required frequency (duplicate sample performed per matrix encountered)? | | | ✓ | | | ✓ |
| **E. Titrant** | | | | | | |
| 1. Titrant standardized? | | | ✓ | | | ✓ |
| 2. If no, standardization expires | | | | | | |
| **F. Other** | | | | | | |
| 1. Are all nonconformances documented appropriately (NCM or narrative)? | | | ✓ | | | ✓ |
| 2. Calculations checked for error ? | ✓ | | | ✓ | | |
| 3. Transcriptions checked for error ? | ✓ | | | ✓ | | |
| 4. All client/project specific requirements met ? | ✓ | | | ✓ | | |
| 5. Date/time of preparation and analysis verified as correct ? | ✓ | | | ✓ | | |
| 6. Units verified as correct? | ✓ | | | ✓ | | |
| 7. Dilutions have been properly applied and RL's adjusted appropriately? | | | ✓ | | | ✓ |
| 8. SOP followed? | ✓ | | | ✓ | | |
| 9. Calculations checked at minimum frequency (at least 20%, 100% for QC)? | ✓ | | | ✓ | | |
| 10. All reagent and standard numbers recorded in logbook? | ✓ | | | ✓ | | |
| 11. Edits dated and initialed | ✓ | | | ✓ | | |

**Comment on any "NO" response(s):**

**Level I reviewer:** Courtney Tean **Date:** 2/24/04

**Level II Reviewer:** Angela Diaz **Date:** 2/25/04

Level I review:

# STL NORTH CANTON

TRAACS ANALYTICAL REPORT

Name of Run : 040224C
Date of Report : 2/24/04
Date of Run : 2/24/04
Operator : CT
Comment :

Name of Analysis : CN-NONCLPCHANNEL2.ANL
System No. : 2
Type of System : TRAACS
Start/Stop time : 14:57 - 15:39

---

| | | | |
|---|---|---|---|
| Channel Type : | Real | Data | Data |
| Channel : | 2 | 1 | 2 |
| Method : | CN-Method 2 | Weight | Dilution |
| Unit : | mg/L | | |
| Calibr. Fit : | Linear | | |
| Corr. Coeff. : | 0.9998 ✓ | | |
| Base : | 51 | | |
| Gain : | 74 | | |
| Sensitivity : | 0.1325 | | |
| Sample Limit 1 : | | | |
| Sample Limit 2 : | | | |

| Pk | Cup | | Sample Id | Conc | Conc | Conc | |
|---|---|---|---|---|---|---|---|
| 0 | 0 | B | Baseline | -0.0027 | 0.0000 | 0.0000 | |
| 1 | 1 | P | Primer | 0.2006 | 1.0000 | 1.0000 | |
| 2 | 1 | C | .200 PPM | 0.2007 | 1.0000 | 1.0000 | |
| 3 | 2 | C | .100 PPM | 0.0975 | 1.0000 | 1.0000 | |
| 4 | 3 | C | .050 PPM | 0.0516 | 1.0000 | 1.0000 | |
| 5 | 4 | C | .025 PPM | 0.0257 | 1.0000 | 1.0000 | |
| 6 | 5 | C | .010 PPM | 0.0095 | 1.0000 | 1.0000 | |
| 7 | 6 | C | .005 PPM | 0.0049 | 1.0000 | 1.0000 | |
| 8 | 1 | H1 | High | 0.2018 | 1.0000 | 1.0000 | |
| 9 | 0 | L1 | Low | -0.0012 | 1.0000 | 1.0000 | |
| 10 | 0 | L1 | Low | -0.0010 | 1.0000 | 1.0000 | |
| 11 | 2 | D | Drift | 0.0996 | 1.0000 | 1.0000 | |
| 12 | 7 | QC1 | ICV | 0.0995 ✓ | 1.0000 | 1.0000 | |
| 13 | 8 | QC2 | ICB | 0.0004 ✓ | 1.0000 | 1.0000 | |
| 14 | 5 | QC1 | 0.01 | 0.0094 | 1.0000 | 1.0000 | |
| 15 | 9 | QC3 | BLANK | -0.0017 | 1.0000 | 1.0000 | |
| 16 | 10 | QC4 | LCS | 0.0366 | 1.0000 | 1.0000 | TV=0.04 92% |
| 17 | 11 | S | F9VHW | -0.0015 | 1.0000 | 1.0000 | |
| 18 | 12 | S | F9VH5 | -0.0010 | 1.0000 | 1.0000 | |
| 19 | 13 | S | F91E5 | -0.0019 | 1.0000 | 1.0000 | |
| 20 | 14 | S | F91E5 MS | 0.0330 | 1.0000 | 1.0000 | TV=0.04 82% |
| 21 | 15 | S | F91E5 MSD | 0.0323 | 1.0000 | 1.0000 | L 81% |
| 22 | 16 | S | F91F6 | -0.0021 | 1.0000 | 1.0000 | |
| 23 | 17 | S | F91GK | -0.0022 | 1.0000 | 1.0000 | |
| 24 | 18 | S | F91H0 | -0.0024 | 1.0000 | 1.0000 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25 | 19 | S | F91JC | -0.0026 | 1.0000 | 1.0000 | | |
| 26 | 20 | S | F91JE | -0.0029 | 1.0000 | 1.0000 | | |
| 27 | 5 | QC10.01 | | 0.0082 | 1.0000 | 1.0000 | | |
| 28 | 2 | QC1 CCV | | 0.0990✓ | 1.0000 | 1.0000 | | |
| 29 | 8 | QC2 CCB | | -0.0013✓ | 1.0000 | 1.0000 | | |
| 30 | 21 | S | F91JH | -0.0020 | 1.0000 | 1.0000 | | |
| 31 | 22 | S | F91JM | -0.0023 | 1.0000 | 1.0000 | | |
| 32 | 23 | S | F91JR | -0.0025 | 1.0000 | 1.0000 | | |
| 33 | 24 | S | F9VJD | 0.2389 | 0.0200 | 1.0000 | | |
| 34 | 25 | S | F9VJE | -0.1646 | 0.0200 | 1.0000 | | |
| 35 | 26 | S | F9VJF | 0.2352 | 0.0200 | 1.0000 | | |
| 36 | 27 | S | F9VJH | 0.0603 | 0.0200 | 1.0000 | | |
| 37 | 28 | S | F9VJH MS | 2.2223 | 0.0200 | 1.0000 | TV=2.0 | 108% |
| 38 | 29 | S | F9VJH MSD | 1.4109 | 0.0200 | 1.0000 | 1 | 68% |
| 39 | 30 | S | F9VJM | 0.0434 | 0.0200 | 1.0000 | | |
| 40 | 5 | QC100.01 | | 0.0092 | 1.0000 | 1.0000 | | |
| 41 | 2 | QC1 CCV | | 0.1024✓ | 1.0000 | 1.0000 | | |
| 42 | 8 | QC2 CCB | | -0.0013✓ | 1.0000 | 1.0000 | | |
| 43 | 31 | S | F9VJQ | 0.4422 | 0.0200 | 1.0000 | | |
| 44 | 32 | S | F9VJR | 0.3062 | 0.0200 | 1.0000 | | |
| 45 | 33 | S | F9VJV | 0.5951 | 0.0200 | 1.0000 | | |
| 46 | 34 | S | F9VJ0 | -0.0697 | 0.0200 | 1.0000 | | |
| 47 | 5 | QC10.01 | | 0.0085 | 1.0000 | 1.0000 | | |
| 48 | 2 | QC1 CCV | | 0.1007✓ | 1.0000 | 1.0000 | | |
| 49 | 8 | QC2 CCB | | 0.0002✓ | 1.0000 | 1.0000 | | |
| 50 | 2 | D | Drift | 0.0996 | 1.0000 | 1.0000 | | |
| 51 | 0 | B | FinalBase | -0.0027 | 1.0000 | 1.0000 | | |

---

QC Limits

| | |
|---|---|
| Channel | : |
| QC 1 | Unused |
| QC 2 | Unused |
| QC 3 | Unused |
| QC 4 | Unused |
| QC 5 | Unused |
| QC 6 | Unused |
| QC 7 | Unused |
| QC 8 | Unused |
| QC 9 | Unused |
| QC10 | Unused |

$CN^-$ Reagent #5 2/24/04

| | |
|---|---|
| Chloramine T | WR 40147 |
| Sulfamic Acid | WR 40020 |
| Mag. Chloride | WR 31187 |
| Sodium Hydroxide | WR 40024 |
| pyridine Barb. | WR 40037 |
| phosphate buffer | WR 40019 |

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CORRECTIONS

| | | |
|---|---|---|
| Channel | : | 2 |
| Baseline | : | Yes |
| Drift | : | Yes |
| Carry over | : | Yes |
| | %: | 3.3 |

---

* ... Sample offscale
+ ... Result higher than sample limit
- ... Result lower than sample limit
P ... Standard passed
F ... Standard failed
N ... Value not calculated or not used
R ... Resample after offscale
M ... Peak marker moved manually
D ... Diluted sample

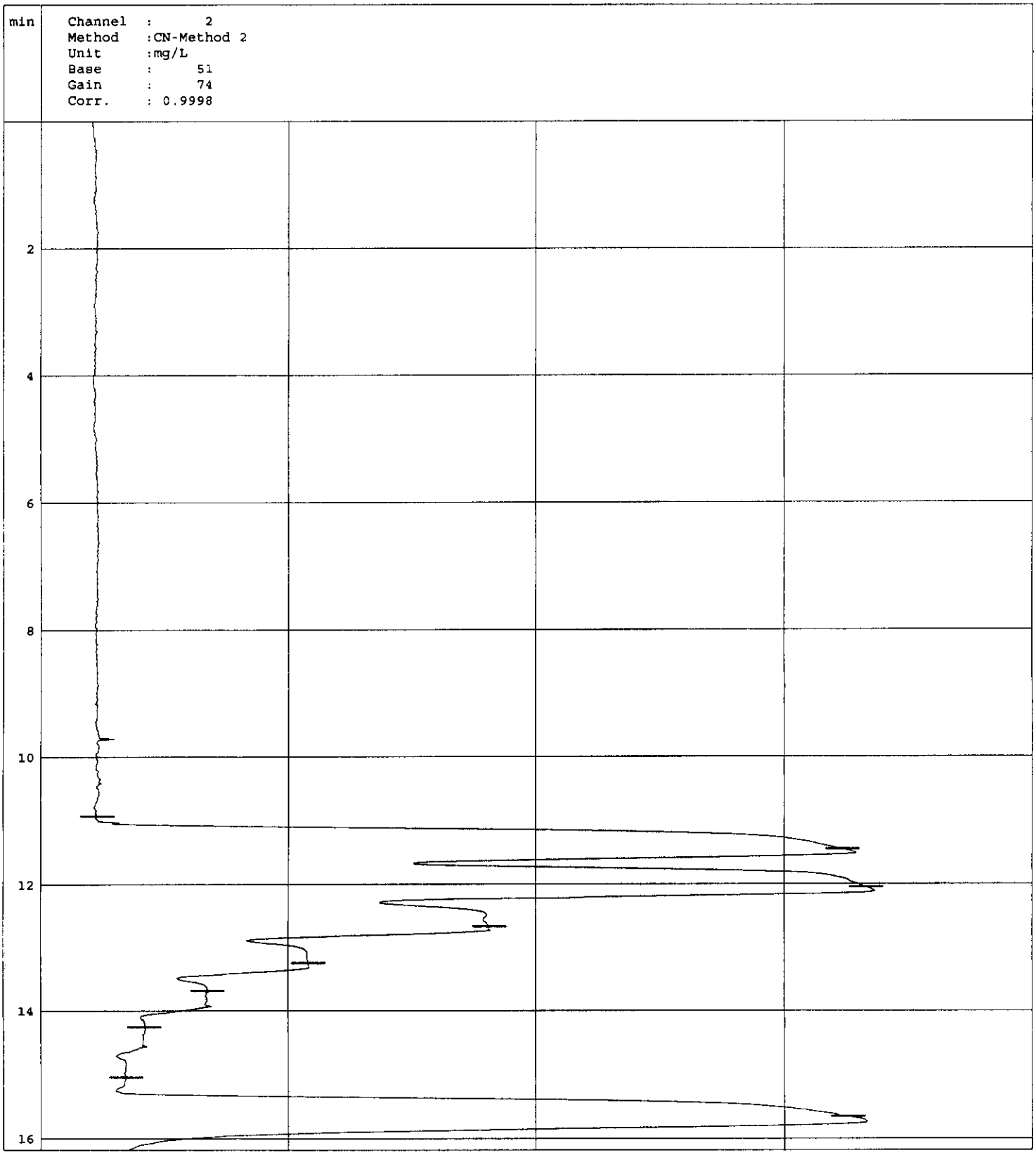
** <END OF REPORT> **

# STL NORTH CANTON

TRAACS ANALYTICAL REPORT

Name of run :040224C.RUN
Comment :

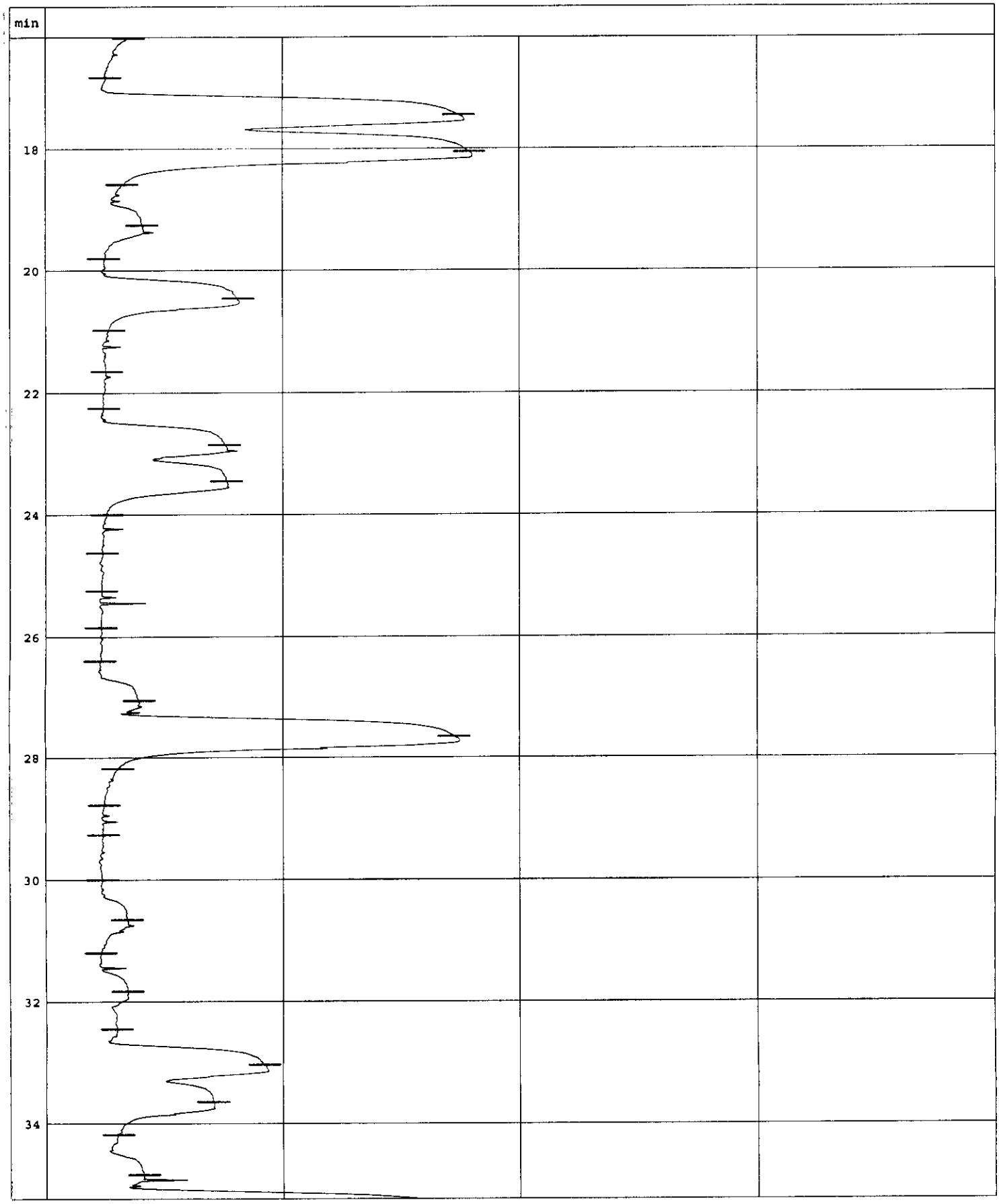
Name of analysis :CN-NONCLPCHANNEL2.ANL



Name of run :040224C.RUN

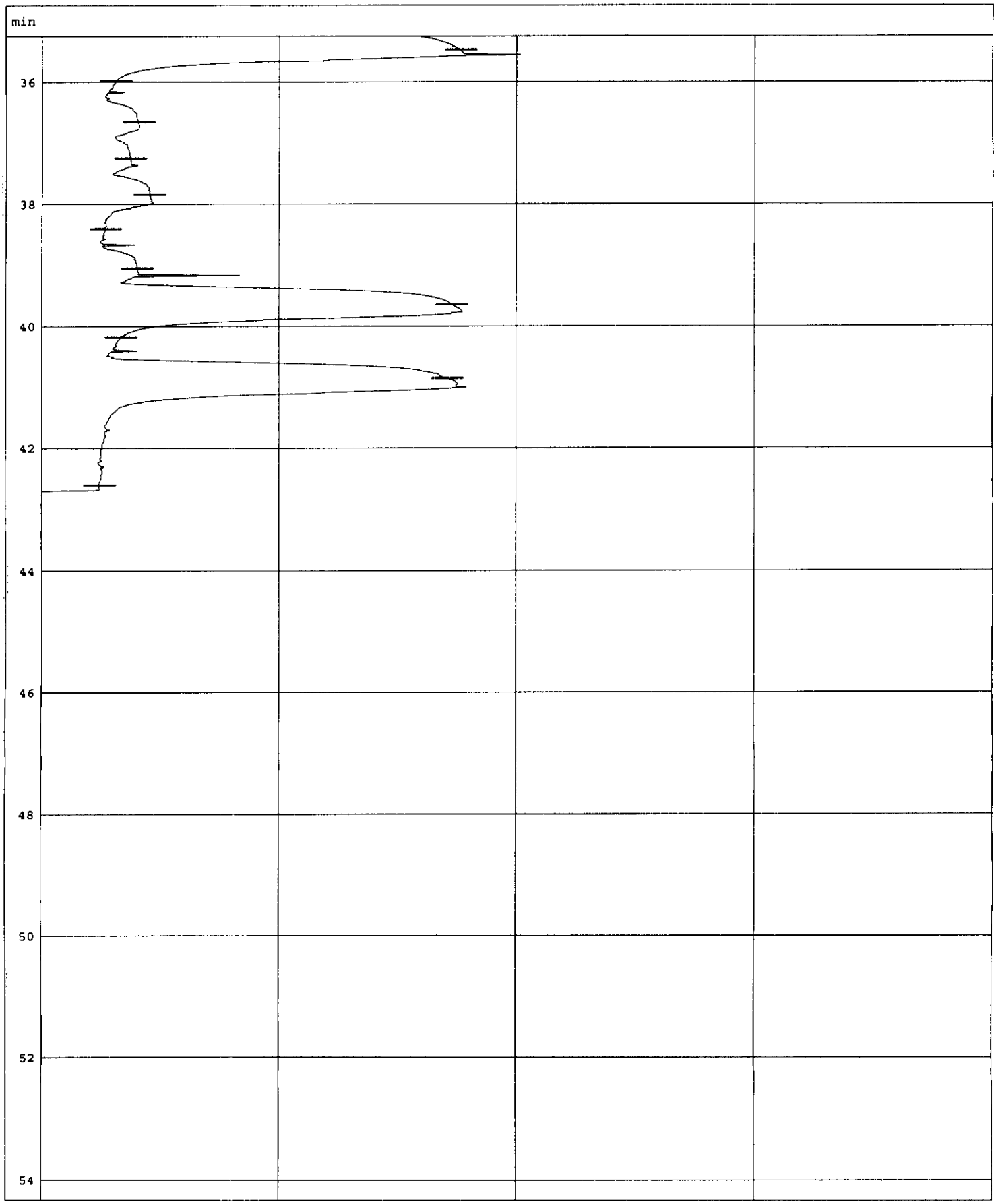
Name of analysis :CN-NONCLPCHANNEL2.ANL

Comment :



Name of run :040224C.RUN
Comment :

Name of analysis :CN-NONCLPCHANNEL2.ANL



STL – NORTH CANTON
CYANIDE DISTILLATION LOGSHEET

Prep/Anal Date 2/24/04 Analyst(s) CT Batch 4055380/79
LCS No CY4056 MS/MSD No CY4056 MS Prep Date 2/20/04
Start Time 1:00 pm End Time 2:00 pm Cool Down Time 15 mins

| Sample | Type T | C | F | pH >12 | S | Cl2 | Sample Volume (mL) | Final Volume (mL) | Comments |
|---|---|---|---|---|---|---|---|---|---|
| BLANK | T | C | F | | | | 50 | 50 | |
| LCS | T | C | F | | | | | | 2 mls 2° 1ppm CY4056 |
| F9VHW | T | C | F | | | | | | |
| 1VH5 | T | C | F | | | | | | |
| F91E5 | T | C | F | | | | | | |
| 1MS | T | C | F | | | | | | 2 mls 2° 1ppm CY4056 |
| 1MSD | T | C | F | | | | | | |
| F91F6 | T | C | F | | | | | | |
| 1GR | T | C | F | | | | | | |
| 1HO | T | C | F | | | | | | |
| 1JC | T | C | F | | | | | | |
| 1JE | T | C | F | | | | | | |
| 1JH | T | C | F | | | | | | |
| 1JM | T | C | F | | | | | | |
| 1JR | T | C | F | | | | | | |
| F9VJD | T | C | F | | | | 19 | | |
| VJE | T | C | F | | | | | | |
| VJF | T | C | F | | | | | | |
| VJH | T | C | F | | | | | | |
| MS | T | C | F | | | | | | 2 mls 2° 1ppm CY4056 |
| MSD | T | C | F | | | | | | |
| VJM | T | C | F | | | | | | |
| VJQ | T | C | F | | | | | | |
| VJR | T | C | F | | | | | | |
| VJV | T | C | F | | | | | | |
| VJO | T | C | F | | | | | | |

Type: T = Total C = Chlorinated F = Free
S and Cl2 Column – a check mark in these columns indicates the sample was checked for this interference. If the interference is present, the analyst will address this in the comments section.
I:\WC\ACCTLAB_PCR\MWet Chem SOP\Distillation Log.doc Revision 0, 06/01/01 DJL

1 of

**STL North Canton**

**Sample Control Chain of Custody for General Chemistry**

| Lot Number | Sample | Suffix | Lab ID | Test | Prep Date | Prepared by | Analysis Date | Analyzed by |
|---|---|---|---|---|---|---|---|---|
| A4B190299 | 1 | | F9VHN1A4 | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 1 | | F9VHN1AA | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 2 | | F9VHX1AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 2 | | F9VHX1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 3 | | F9VH21AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 3 | | F9VH21AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 4 | | F9VH31AP | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 4 | | F9VH31AT | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 4 | S | F9VH31AQ | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 4 | D | F9VH31AR | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 4 | X | F9VH31DQ | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 5 | | F9VH41AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 5 | | F9VH41AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 6 | | F9VH71AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 6 | | F9VH71AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 7 | | F9VH81AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 7 | | F9VH81AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 8 | | F9VH91AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 8 | | F9VH91AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 9 | | F9VJA1AF | Cyanide, Total (9012A, Automated) | 02/20/04 | Bruce Woodward | 02/20/04 | Bruce Woodward |
| A4B190299 | 9 | | F9VJA1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 10 | | F9VJD1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 10 | | F9VJD1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 11 | | F9VJE1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 11 | | F9VJE1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 12 | | F9VJF1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 12 | | F9VJF1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |

**STL North Canton**

**Sample Control Chain of Custody for General Chemistry**

| Lot Number | Sample | Suffix | Lab ID | Test | Prep Date | Prepared by | Analysis Date | Analyzed by |
|---|---|---|---|---|---|---|---|---|
| A4B190299 | 13 | | F9VJH1AP | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 13 | | F9VJH1AT | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 13 | S | F9VJH1DR | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 13 | D | F9VJH1DT | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 13 | X | F9VJH1DQ | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 14 | | F9VJM1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 14 | | F9VJM1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 15 | | F9VJQ1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 15 | | F9VJQ1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 16 | | F9VJR1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 16 | | F9VJR1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 17 | | F9VJV1AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 17 | | F9VJV1AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |
| A4B190299 | 18 | | F9VJ01AF | Cyanide, Total (9012A, Automated) | 02/24/04 | Courtaney Tenn | 02/24/04 | Courtaney Tenn |
| A4B190299 | 18 | | F9VJ01AG | Solids, Percent (as TS - 160.3 MOD) - Solids | 02/20/04 | Deborah Bolgrin | 02/21/04 | Tia Anderson |

*END OF REPORT*

Lancaster Laboratories
Where quality is a science.

Unit 7
02-04 soil event

Dear Client:

Enclosed please find the requested data package.

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt, at (717) 656-2300.

Sincerely yours,

LANCASTER LABORATORIES
Data Packages Department

# CHAIN OF CUSTODY RECORD

11200/885258/4218994-009

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | | |
| **Address:** | 0 | **Address:** | 2206 South Main Street | **Location:** | HWMU5 |
| | 0 | | Blacksburg, Virginia 24060 | | |
| **Phone:** | 0 | **Phone:** | (540) 552-0444 | **Event:** | Geoprobe borings |
| **Fax:** | 0 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | 0 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑ YES ☐ NO
**Sample Collection for Project Complete?** ☑ YES ☐ NO
**Carrier:** _____
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
**Copy to Consultant:** ☑ YES ☐ NO
**Bill:** ☐ Client ☑ Consultant
**Preserved and shipped on ice:** ☑ YES ☐ NO

| Box 4 - Sample Type | G | G | G | C | G | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | |
| Required pH of Sample | <2 | <2 | | | <2 | | | | |
| Box 2 - Preservative | methanol | NaHSO4 | H | H | A | | | | |
| Box 5 - Sample Container Type | 40 mL voa | 40mL voa | CG (2 oz.) | CG | 40mL voa | | | | |

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | TCL Organics | TCL Organics | Moisture | TCLP (Full Waste Characterizatio | 8260 |
|---|---|---|---|---|---|---|---|---|---|
| 5GP-17 (15') | 2/17 | 11:15 | S | 4 | X | X | X | | |
| 5GP-18 (13') | 2/17 | 11:45 | S | 4 | X | X | X | | |
| 5GP-19 (15') | 2/17 | 12:15 | S | 4 | X | X | X | | |
| 5GP-20 (14') | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-20 MS (14') | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-20 MSD (14') | 2/17 | 12:45 | S | 4 | X | X | X | | |
| 5GP-21 (14') | 2/17 | 13:45 | S | 4 | X | X | X | | |
| 5GP-22 (14') | 2/17 | 14:15 | S | 4 | X | X | X | | |
| 5GP-22-22 (14') | 2/17 | 14:15 | S | 4 | X | X | X | | |
| 5GP-23 (14') | 2/17 | 14:45 | S | 4 | X | X | X | | |
| 5GP-24 (14') | 2/17 | 15:05 | S | 4 | X | X | X | | |
| Unit 5 Composite | 2/17 | 15:30 | S | 1 | | | | X | |
| Trip blanks | | | | | X | X | | | X |
| | | | | | | | | | |

**GENERAL NOTES:** Report results at or greater than QL. TCLP composites to include reactivity, corrosivity, ignitability.

**Clients Special Instructions:** level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 2/17/04 | #1 Relinquished by (Signature): Dawn Colwell | Date: 2/18/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Dawn Colwell | Time: 17:00 | Company Name: DAA | Time: 17:00 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# Data Package

***Type I Data Package***

***Analytical Data Report Package***
***for***
***Draper Aden Associates, Inc.***

*RAAP-Radford, VA Geoprobe Boring #B02271-01*
*Soil, and Methanol Samples*
*Collected on 02/18/04*
*Sample No. 4219010-4219025*

*SDG# RAV02*

*PA Cert. # 36-037*
*NY Cert. # 10670*
*NJ Cert. # PA011*
*NC Cert. # 521*

***Prepared by*** Patricia Weirich

***Quality Assurance Review*** Raymond D Dreyer

***Date*** 3/8/04

***Delivery Date*** 3/12/04

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Lancaster Laboratories, Inc. * 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 * 717-656-2300 Fax: 717-656-2681

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## Sample Reference List for SDG Number RAV02 with a Data Package Type of I

**11200 - Draper Aden Associates, Inc.**
RAAP-Radford, VA Geoprobe Boring #B02271-01

| Lab Sample Number | Lab Sample Code | Client Sample Description |
|---|---|---|
| 4219010 | 7GP17 | 7GP-17(11') Grab Soil Sample |
| 4219011 | 7GP18 | 7GP-18(14') Grab Soil Sample |
| 4219012 | 7GP19 | 7GP-19(14') Grab Soil Sample |
| 4219013 | 7GP20 | 7GP-20(14.5') Unspiked Grab Soil Sample |
| 4219014 | 7GP20 | 7GP-20(14.5')MS Matrix Spike Grab Soil Sample |
| 4219015 | 7GP20 | 7GP-20(14.5')MSD Matrix Spike Dup/Dup Grab Soil |
| 4219016 | 7GP21 | 7GP-21(13.5') Grab Soil Sample |
| 4219017 | 7GP22 | 7GP-22(13') Grab Soil Sample |
| 4219018 | 72222 | 7GP-22-22(13') Grab Soil Sample |
| 4219019 | 7GP23 | 7GP-23(12.5') Grab Soil Sample |
| 4219020 | 7GP24 | 7GP-24(14') Grab Soil Sample |
| 4219021 | UNIT7 | Unit 7 Composite Soil Sample |
| 4219022 | UN7NV | Unit 7 Composite Soil SampleTCLP NON-VOLATILE EXTRACTION |
| 4219023 | UN7ZH | Unit 7 Composite Soil SampleTCLP ZERO HEADSPACE EXTRACTION |
| 4219025 | 7GPTM | Trip Blank NaHSO4/Methanol Sample |

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Sample Administration
# Receipt Documentation Log

**Client/Project:** Draper Aden Associates (VA)

**Date of Receipt:** 2/19/04

**Time of Receipt:** 0915

**Source Code:** ~~So 60~~ 2/19/04

**Shipping Container Sealed:** (Y) / N

**COC Seal Present:** Y / (N)

**COC Seal Intact:** Y / (N)

**Package:** (Chilled) / Not Chilled

**Unpacker Emp. No.:** 1025

| Temperature of Shipping Containers | |
|---|---|
| (#1) | (#2) |
| Thermometer ID: 2041 | Thermometer ID: 2041 |
| Temp.: 3.5C | Temp.: 3.3C |
| ~~Temp. Bottle~~ / Surface Temp. | (Temp. Bottle) / Surface Temp. |
| (Wet Ice) / Dry Ice / Ice Packs | (Wet Ice) / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |
| (#3) | #4 |
| Thermometer ID: 2041 | Thermometer ID: |
| Temp.: 3.3C | Temp.: |
| (Temp. Bottle) / Surface Temp. | Temp. Bottle / Surface Temp. |
| (Wet Ice) / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? Y / N Loose / Bagged |

**Paperwork Discrepancy/Unpacking Problems:** received 7 mesh tripblanks & 6 regular tripblanks

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| [signature] | 2/19/04 | 1055 | Unpacking |
| [signature] | 2/19/04 | 1100 | Place in Storage or (Entry) |
| | | | Remove from Storage |
| | | | Place in Storage or Entry |
| | | | Entry |

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# METHODOLOGY SUMMARY/REFERENCE

## *1163 GC/MS Volatiles Water Preparation*

An undiluted aliquot of the water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Waste, SW-846, Method 5030B, Revision 2, December 1996.

**********

## *6292 TCL by 8260 (soil)*

The sample or extract of the sample is analyzed by purge and trap GC/MS.

Reference: Test Methods for Evaluating Solid Waste, SW-846, Method 8260B, Revision 2, December 1996

**********

## *3636 TCLP Volatiles (leachate)*

The zero headspace extracted sample is purged and the volatile compounds are collected on a sorbent trap which is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8260B, Revision 2, December 1996

**********

## *0371 ICP Metals (water/soil)*

The solution resulting from the metals digestion is analyzed by ICP.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 6010B, December 1996

## 0259 Mercury (water)

The solution resulting from the mercury digestion is analyzed by Cold Vapor AA.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 7470A, September 1994

**********

## 5713 Mercury Digestion (water, SW-846)

The sample is heated at 95 C with nitric acid, sulfuric acid, potassium persulfate, and potassium permanganate. Excess potassium permanganate is reduced with sodium chloride/hydroxylamine hydrochloride. Mercuric ions are reduced to mercury metal using stannous chloride.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 7470A, September 1994

**********

## 5705 Metals Digestion (water, total, SW-846)

The sample is digested with nitric and hydrochloric acids.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 3010A, July 1992

**********

## 0816 Water Sample Herbicide Extraction

The water sample is hydrolyzed, acidified and solvent extracted. The acids are converted to methyl esters using derivatization. Florisil cleanup is used to minimize interference.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 8151A, December 1996

**********

## 0817 Water Sample Pesticide Extraction

Pesticides are extracted from the water with methylene chloride. The extract is then dried and concentrated. If necessary, florisil cleanup is used to minimize interferences.

Reference: Test Methods for Evaluating Solid Wastes,
SW-846, Method 3510C, December 1996

## 0949/4731 TCLP Semivolatiles

The sample is leached by the TCLP method. The leachate is then solvent extracted and analyzed by GC/MS.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 8270C, December 1996

**********

## 1123 Cyanide (reactivity) SW-846 Interim Method (water/solid)

The sample is acidified with sulfuric acid in a closed system. The hydrogen cyanide gas is trapped in a sodium hydroxide solution and quantitatively analyzed using an automated colorimetric procedure. Prep # is 1121.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 9012A, December 1996

**********

## 0946 TCLP Zero Headspace Extraction

For liquid wastes (containing <0.5% solids), the TCLP volatile extract is defined as the filtrate resulting from filtration of the waste in a zero headspace extractor through a 0.6 to 0.8 um glass fiber filter.

For wastes containing >0.5% solids (and free standing liquid), the waste is filtered through a glass fiber filter in a zero headspace extractor into a Tedlar bag. The solid portion is then extracted for 18 hours with extraction fluid 1 (pH of 4.93 +0.05) at a volume 20 times the weight of the solid. Following the extraction, the leachate is filtered through a glass fiber filter into the Tedlar bag containing the initial filtrate and these filtrates are combined for the final leachate.

For waste not containing any free standing liquid, the sample is extracted with a volume of extraction fluid 1 at a volume 20 times the sample weight for 18 hours in a zero headspace extractor. The extract is then filtered into zero headspace vials and the leachate is defined as the filtrate.

Reference: Test Methods for Evaluating Solid Waste1
SW-846, Method 1311, July 1992

## 0947 TCLP Non-volatile Extraction

For the liquid wastes (containing <0.5% solids), the TCLP non-volatile extract is defined as the filtrate resulting from filtration of the waste through a 0.6 to 0.8 um glass fiber filter.

For wastes containing >0.5% solids (and free standing liquid), the waste is filtered through a glass fiber filter and the filtrate is stored for later use. The solid portion is then evaluated for buffering capacity and extracted for 18 hours with the appropriate extraction fluid (pH of 4.93 +0.05 or pH of 2.88 +0.05) at a volume 20 times the weight of the solid. Following the extraction, the leachate is filtered through a glass fiber filter and the final and initial filtrates are combined.

For waste not containing any free standing liquid, the sample is extracted with a volume of the appropriate extraction fluid at a volume 20 times the sample weight for 18 hours. The extract is then filtered and the leachate is defined as the filtrate.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 1311, July 1992

**********

## 0496 Corrosivity (water/solids)

Determination of corrosivity is based on the pH value.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7, September 1994

**********

## 0542 Ignitability (solid)

Ignitability is determined empirically by exposing the sample to air, water, and friction. The vapors of the sample are then exposed to a flame using a closed cup apparatus.

Reference: 40 CFR, Part 261.21

**********

## 0111 Moisture (solid)

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and
Wastes USEPA 600/4-79-020, Method 160.3 (modified)

## 0118 Moisture (solid)

This value reflects the background moisture value. It is used to calculate dry weight reports for matrix spike and matrix spike duplicate samples.

Reference: See background sample moisture method reference

**********

## 0121 Moisture Duplicate (solid)

This analysis is required to check the precision of the moisture analysis. The value is not used in report calculations.

Reference: See background sample moisture method reference

**********

## 1121 Reactivity Prep (water/solid)

The sample is acidified to pH 2, and gases are collected in a scrubber containing sodium hydroxide. This is followed by analysis for sulfide and/or cyanide content.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7.3, December 1996

**********

## 1122 Sulfide (Reactivity)

Excess iodine is added to a portion of the scrubber solution which contains sodium hydroxide. The iodine oxidizes the sulfide to sulfur under acidic conditions. The excess iodine is back titrated with sodium thiosulfate.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Chapter 7 and Method 9034

**********

## 0394 pH (solids)

The activity of hydrogen ions in the sample is measured on a 1:1 slurry of sample and deionized water using a glass electrode and a reference electrode.

Reference: Test Methods for Evaluating Solid Waste
SW-846, Method 9045C, (modified) September 1994

## 0950 TCLP Pesticides (leachate)

The leachate sample is solvent extracted and quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 8081A, December 1996

**********

## 0952 TCLP Herbicides (leachate)

The leachate sample is hydrolyzed, acidified, solvent extracted and converted to the methyl esters. The resulting extract is quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 8151A, December 1996

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 885259. Samples arrived at the laboratory on Thursday, February 19, 2004.

| Client Description | Lancaster Labs Number |
|---|---|
| 7GP-17(11') Grab Soil Sample | 4219010 |
| 7GP-18(14') Grab Soil Sample | 4219011 |
| 7GP-19(14') Grab Soil Sample | 4219012 |
| 7GP-20(14.5') Unspiked Grab Soil Sample | 4219013 |
| 7GP-20(14.5')MS Matrix Spike Grab Soil Sample | 4219014 |
| 7GP-20(14.5')MSD Matrix Spike Dup/Dup Grab Soil | 4219015 |
| 7GP-21(13.5') Grab Soil Sample | 4219016 |
| 7GP-22(13') Grab Soil Sample | 4219017 |
| 7GP-22-22(13') Grab Soil Sample | 4219018 |
| 7GP-23(12.5') Grab Soil Sample | 4219019 |
| 7GP-24(14') Grab Soil Sample | 4219020 |
| Unit 7 Composite Soil Sample | 4219021 |
| Unit 7 Composite Soil Sample | 4219022 |
| Unit 7 Composite Soil Sample | 4219023 |
| Trip Blank NaHSO4/Methanol Sample | 4219025 |

METHODOLOGY

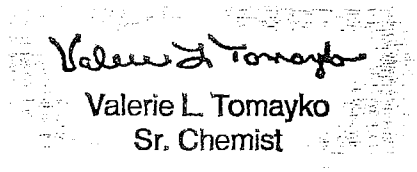
The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Draper Aden Associates, Inc. Attn: Ms. Janet Frazier
1 COPY TO Data Package Group

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300.

Respectfully Submitted,

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219010**

**7GP-17(11') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 09:40 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:24
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.3 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 3. | 6. | ug/kg | 1.05 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 3. | 6. | ug/kg | 1.05 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 3. | 6. | ug/kg | 1.05 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 3. | 6. | ug/kg | 1.05 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05460 | Benzene | 71-43-2 | 2. | J | 0.6 | 6. | ug/kg | 1.05 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05466 | Toluene | 108-88-3 | 3. | J | 1. | 6. | ug/kg | 1.05 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 1.05 |
| 06293 | Acetone | 67-64-1 | 29. | | 9. | 25. | ug/kg | 1.05 |
| 06294 | Carbon Disulfide | 75-15-0 | 3. | J | 1. | 6. | ug/kg | 1.05 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 5. | 13. | ug/kg | 1.05 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 1.05 |

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219010**

**7GP-17(11') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 09:40 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:24
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 6. | ug/kg | 1.05 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | 13. | ug/kg | 1.05 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | 13. | ug/kg | 1.05 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 6. | ug/kg | 1.05 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 17:55 | Lauren C Marzario | 1.05 |

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
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717-656-2300 Fax: 717-656-2681

# Analysis Report

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219011**

**7GP-18(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:05 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.7 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.89 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.89 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.89 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.89 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05460 | Benzene | 71-43-2 | 0.8 | J | 0.5 | 5. | ug/kg | 0.89 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 06293 | Acetone | 67-64-1 | N.D. | | 7. | 21. | ug/kg | 0.89 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.89 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 11. | ug/kg | 0.89 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.89 |

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219011**

**7GP-18(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:05 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.89 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 11. | ug/kg | 0.89 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 11. | ug/kg | 0.89 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.89 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 18:22 | Lauren C Marzario | 0.89 |

0215

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219012**

**7GP-19(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.8 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 6. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 6. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 6. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 6. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | 2. | J | 0.6 | 6. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | 2. | J | 1. | 6. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | 10. | J | 8. | 24. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | 2. | J | 1. | 6. | ug/kg | 0.97 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 5. | 12. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 0.97 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219012**

**7GP-19(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 6. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | 12. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | 12. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 6. | ug/kg | 0.97 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 18:49 | Lauren C Marzario | 0.97 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219013**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 19.1 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 6. | ug/kg | 0.9 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 6. | ug/kg | 0.9 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 6. | ug/kg | 0.9 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 6. | ug/kg | 0.9 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05460 | Benzene | 71-43-2 | 3. | J | 0.6 | 6. | ug/kg | 0.9 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05466 | Toluene | 108-88-3 | 6. | | 1. | 6. | ug/kg | 0.9 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 06293 | Acetone | 67-64-1 | 16. | J | 8. | 22. | ug/kg | 0.9 |
| 06294 | Carbon Disulfide | 75-15-0 | 3. | J | 1. | 6. | ug/kg | 0.9 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 11. | ug/kg | 0.9 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 0.9 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219013**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | | 1. | 6. | ug/kg | 0.9 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | | 3. | 11. | ug/kg | 0.9 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | | 3. | 11. | ug/kg | 0.9 |
| 06301 | Xylene (Total) | 1330-20-7 | 1. | J | 1. | 6. | ug/kg | 0.9 |

Matrix QC was performed on this sample for the GCMS volatile analysis. Please see the attached QC summary report for compounds showing a matrix bias.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 19:16 | Lauren C Marzario | 0.9 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219014**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 19.1 | 0.50 | 0.50 | % | 1 |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | 22. | 2. | 6. | ug/kg | 0.96 |
| 05445 | Vinyl Chloride | 75-01-4 | 21. | 1. | 6. | ug/kg | 0.96 |
| 05446 | Bromomethane | 74-83-9 | 20. | 2. | 6. | ug/kg | 0.96 |
| 05447 | Chloroethane | 75-00-3 | 20. | 2. | 6. | ug/kg | 0.96 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05450 | Methylene Chloride | 75-09-2 | 21. | 2. | 6. | ug/kg | 0.96 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 20. | 1. | 6. | ug/kg | 0.96 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05455 | Chloroform | 67-66-3 | 22. | 1. | 6. | ug/kg | 0.96 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 20. | 1. | 6. | ug/kg | 0.96 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 20. | 1. | 6. | ug/kg | 0.96 |
| 05460 | Benzene | 71-43-2 | 23. | 0.6 | 6. | ug/kg | 0.96 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 24. | 1. | 6. | ug/kg | 0.96 |
| 05462 | Trichloroethene | 79-01-6 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 20. | 1. | 6. | ug/kg | 0.96 |
| 05465 | Bromodichloromethane | 75-27-4 | 21. | 1. | 6. | ug/kg | 0.96 |
| 05466 | Toluene | 108-88-3 | 28. | 1. | 6. | ug/kg | 0.96 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 23. | 1. | 6. | ug/kg | 0.96 |
| 05468 | Tetrachloroethene | 127-18-4 | 20. | 1. | 6. | ug/kg | 0.96 |
| 05470 | Dibromochloromethane | 124-48-1 | 22. | 1. | 6. | ug/kg | 0.96 |
| 05472 | Chlorobenzene | 108-90-7 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05474 | Ethylbenzene | 100-41-4 | 19. | 1. | 6. | ug/kg | 0.96 |
| 05477 | Styrene | 100-42-5 | 16. | 1. | 6. | ug/kg | 0.96 |
| 05478 | Bromoform | 75-25-2 | 21. | 1. | 6. | ug/kg | 0.96 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 29. | 1. | 6. | ug/kg | 0.96 |
| 06293 | Acetone | 67-64-1 | 190. | 8. | 24. | ug/kg | 0.96 |
| 06294 | Carbon Disulfide | 75-15-0 | 23. | 1. | 6. | ug/kg | 0.96 |
| 06296 | 2-Butanone | 78-93-3 | 190. | 5. | 12. | ug/kg | 0.96 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 21. | 1. | 6. | ug/kg | 0.96 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 19. | 1. | 6. | ug/kg | 0.96 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 120. | 4. | 12. | ug/kg | 0.96 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219014**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06300 | 2-Hexanone | 591-78-6 | 110. | 4. | 12. | ug/kg | 0.96 |
| 06301 | Xylene (Total) | 1330-20-7 | 56. | 1. | 6. | ug/kg | 0.96 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 19:43 | Lauren C Marzario | 0.96 |

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*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219015**

**7GP-20(14.5')MSD Matrix Spike Dup/Dup Grab Soil**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 19.1 | 0.50 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 16.6 | 0.50 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | 21. | 2. | 6. | ug/kg | 0.93 |
| 05445 | Vinyl Chloride | 75-01-4 | 20. | 1. | 6. | ug/kg | 0.93 |
| 05446 | Bromomethane | 74-83-9 | 19. | 2. | 6. | ug/kg | 0.93 |
| 05447 | Chloroethane | 75-00-3 | 18. | 2. | 6. | ug/kg | 0.93 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 18. | 1. | 6. | ug/kg | 0.93 |
| 05450 | Methylene Chloride | 75-09-2 | 19. | 2. | 6. | ug/kg | 0.93 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 17. | 1. | 6. | ug/kg | 0.93 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 19. | 1. | 6. | ug/kg | 0.93 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 17. | 1. | 6. | ug/kg | 0.93 |
| 05455 | Chloroform | 67-66-3 | 20. | 1. | 6. | ug/kg | 0.93 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 18. | 1. | 6. | ug/kg | 0.93 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 18. | 1. | 6. | ug/kg | 0.93 |
| 05460 | Benzene | 71-43-2 | 20. | 0.6 | 6. | ug/kg | 0.93 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 22. | 1. | 6. | ug/kg | 0.93 |
| 05462 | Trichloroethene | 79-01-6 | 16. | 1. | 6. | ug/kg | 0.93 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 18. | 1. | 6. | ug/kg | 0.93 |
| 05465 | Bromodichloromethane | 75-27-4 | 18. | 1. | 6. | ug/kg | 0.93 |
| 05466 | Toluene | 108-88-3 | 21. | 1. | 6. | ug/kg | 0.93 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 21. | 1. | 6. | ug/kg | 0.93 |
| 05468 | Tetrachloroethene | 127-18-4 | 16. | 1. | 6. | ug/kg | 0.93 |
| 05470 | Dibromochloromethane | 124-48-1 | 20. | 1. | 6. | ug/kg | 0.93 |
| 05472 | Chlorobenzene | 108-90-7 | 15. | 1. | 6. | ug/kg | 0.93 |
| 05474 | Ethylbenzene | 100-41-4 | 15. | 1. | 6. | ug/kg | 0.93 |
| 05477 | Styrene | 100-42-5 | 13. | 1. | 6. | ug/kg | 0.93 |
| 05478 | Bromoform | 75-25-2 | 19. | 1. | 6. | ug/kg | 0.93 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 27. | 1. | 6. | ug/kg | 0.93 |
| 06293 | Acetone | 67-64-1 | 200. | 8. | 23. | ug/kg | 0.93 |
| 06294 | Carbon Disulfide | 75-15-0 | 20. | 1. | 6. | ug/kg | 0.93 |
| 06296 | 2-Butanone | 78-93-3 | 200. | 5. | 11. | ug/kg | 0.93 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219015**

**7GP-20(14.5')MSD Matrix Spike Dup/Dup Grab Soil**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 10:45 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP20 SDG#: RAV02-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 19. | 1. | 6. | ug/kg | 0.93 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 17. | 1. | 6. | ug/kg | 0.93 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 120. | 3. | 11. | ug/kg | 0.93 |
| 06300 | 2-Hexanone | 591-78-6 | 120. | 3. | 11. | ug/kg | 0.93 |
| 06301 | Xylene (Total) | 1330-20-7 | 44. | 1. | 6. | ug/kg | 0.93 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 20:10 | Lauren C Marzario | 0.93 |

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*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219016**

**7GP-21(13.5') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:00 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP21 SDG#: RAV02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.4 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 5. | ug/kg | 0.82 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05460 | Benzene | 71-43-2 | 1. | J | 0.5 | 5. | ug/kg | 0.82 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06293 | Acetone | 67-64-1 | 34. | | 7. | 20. | ug/kg | 0.82 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | 5. | ug/kg | 0.82 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 10. | ug/kg | 0.82 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 5. | ug/kg | 0.82 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219016**

**7GP-21(13.5') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:00 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP21 SDG#: RAV02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.82 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.82 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.82 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 20:38 | Lauren C Marzario | 0.82 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219017**

**7GP-22(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.5 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 6. | ug/kg | 0.99 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 6. | ug/kg | 0.99 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 6. | ug/kg | 0.99 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 6. | ug/kg | 0.99 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05460 | Benzene | 71-43-2 | 2. | J | 0.6 | 6. | ug/kg | 0.99 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05466 | Toluene | 108-88-3 | 3. | J | 1. | 6. | ug/kg | 0.99 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 0.99 |
| 06293 | Acetone | 67-64-1 | 12. | J | 8. | 24. | ug/kg | 0.99 |
| 06294 | Carbon Disulfide | 75-15-0 | 3. | J | 1. | 6. | ug/kg | 0.99 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 5. | 12. | ug/kg | 0.99 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 0.99 |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4219017**

**7GP-22(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 6. | ug/kg | 0.99 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | 12. | ug/kg | 0.99 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | 12. | ug/kg | 0.99 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 6. | ug/kg | 0.99 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 21:05 | Lauren C Marzario | 0.99 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219018**

**7GP-22-22(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

72222 SDG#: RAV02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 18.6 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 6. | ug/kg | 0.95 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 6. | ug/kg | 0.95 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 6. | ug/kg | 0.95 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 6. | ug/kg | 0.95 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05460 | Benzene | 71-43-2 | 2. | J | 0.6 | 6. | ug/kg | 0.95 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05466 | Toluene | 108-88-3 | 4. | J | 1. | 6. | ug/kg | 0.95 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 06293 | Acetone | 67-64-1 | 17. | J | 8. | 23. | ug/kg | 0.95 |
| 06294 | Carbon Disulfide | 75-15-0 | 4. | J | 1. | 6. | ug/kg | 0.95 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 5. | 12. | ug/kg | 0.95 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 0.95 |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4219018**

**7GP-22-22(13') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:20 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

72222 SDG#: RAV02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | | 1. | 6. | ug/kg | 0.95 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | | 4. | 12. | ug/kg | 0.95 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | | 4. | 12. | ug/kg | 0.95 |
| 06301 | Xylene (Total) | 1330-20-7 | 1. | J | 1. | 6. | ug/kg | 0.95 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/23/2004 11:55 | Lauren C Marzario | 0.95 |

88Z9

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4219019**

**7GP-23(12.5') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:40 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 19.7 | | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | 6. | ug/kg | 0.89 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | 6. | ug/kg | 0.89 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | 6. | ug/kg | 0.89 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | 6. | ug/kg | 0.89 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05460 | Benzene | 71-43-2 | 2. | J | 0.6 | 6. | ug/kg | 0.89 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05466 | Toluene | 108-88-3 | 4. | J | 1. | 6. | ug/kg | 0.89 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 06293 | Acetone | 67-64-1 | 21. | J | 8. | 22. | ug/kg | 0.89 |
| 06294 | Carbon Disulfide | 75-15-0 | 4. | J | 1. | 6. | ug/kg | 0.89 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | 11. | ug/kg | 0.89 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | 6. | ug/kg | 0.89 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219019**

**7GP-23(12.5') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 11:40 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | | 1. | 6. | ug/kg | 0.89 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | | 3. | 11. | ug/kg | 0.89 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | | 3. | 11. | ug/kg | 0.89 |
| 06301 | Xylene (Total) | 1330-20-7 | 1. | J | 1. | 6. | ug/kg | 0.89 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/23/2004 12:22 | Lauren C Marzario | 0.89 |

8831

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219020**

**7GP-24(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:00 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV02-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.2 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | 5. | ug/kg | 0.83 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | 5. | ug/kg | 0.83 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | 5. | ug/kg | 0.83 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | 5. | ug/kg | 0.83 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05460 | Benzene | 71-43-2 | N.D. | 0.5 | 5. | ug/kg | 0.83 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 06293 | Acetone | 67-64-1 | 25. | 7. | 20. | ug/kg | 0.83 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | 10. | ug/kg | 0.83 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | 5. | ug/kg | 0.83 |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4219020**

**7GP-24(14') Grab Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:00 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV02-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 0.83 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 0.83 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 0.83 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 0.83 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 02/20/2004 14:56 | Scott W Freisher | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/23/2004 12:49 | Lauren C Marzario | 0.83 |

6833

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219021**

**Unit 7 Composite Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAV02-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00394 | pH | n.a. | 9.1 | 0.010 | 0.010 | Std. Units | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | | | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 9.07 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | | |
| 00542 | Ignitability | n.a. | See Below | | | | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | | |
| 01121 | Reactivity | n.a. | See Below | | | see below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27.0 | 100. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 98.4 | 98.4 | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00394 | pH | SW-846 9045C (modified) | 1 | 02/23/2004 20:00 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 02/23/2004 20:00 | Luz M Groff | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4219021**

**Unit 7 Composite Soil Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAV02-10

| | | | | | | |
|---|---|---|---|---|---|---|
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 02/24/2004 05:27 | Susan A Engle | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 02/26/2004 08:00 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 02/26/2004 08:00 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 02/26/2004 15:11 | Kyle W Eckenroad | 1 |

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*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219022**

**Unit 7 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN7NV SDG#: RAV02-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.00016 | 0.00020 | mg/l | 1 |

The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

| | | | | | |
|---|---|---|---|---|---|
| Arsenic | 5.0 | Cadmium | 1.0 | Lead | 5.0 |
| Barium | 100.0 | Chromium | 5.0 | Mercury | 0.2 |
| Selenium | 1.0 | | | | |
| Silver | 5.0 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 07035 | Arsenic | 7440-38-2 | 0.0054 J | 0.0049 | 0.0100 | mg/l | 1 |
| 07036 | Selenium | 7782-49-2 | 0.0121 | 0.0047 | 0.0100 | mg/l | 1 |
| 07046 | Barium | 7440-39-3 | 0.320 | 0.00048 | 0.0050 | mg/l | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00087 | 0.0050 | mg/l | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0110 | 0.0022 | 0.0050 | mg/l | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0093 | 0.0200 | mg/l | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0018 | 0.0050 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000010 | 0.000050 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | 0.00050 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000020 | 0.00010 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00035 | 0.0025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | 0.0050 | mg/l | 1 |

The pesticide/herbicide analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima:

| | | | |
|---|---|---|---|
| Chlordane | 0.03 | Methoxychlor | 10.0 |
| Endrin | 0.02 | Toxaphene | 0.5 |
| Heptachlor (and epoxide) | 0.008 | 2,4-D | 10.0 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219022**

**Unit 7 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN7NV SDG#: RAV02-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Lindane | 0.4 | 2,4,5-TP(Silvex) | 1.0 | | | |
| | The limits are published in March 29, 1990 Federal Register, pp. 11845-6. | | | | | | |
| 00952 | TCLP Herbicides | | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | 0.010 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | 0.0010 | mg/l | 1 |
| | The DCAA surrogate is outside the QC limits. Since the recovery is out of specification high, and there are no analytes of interest, this data is reported. | | | | | | |
| 00949 | TCLP Acid Base/Neutrals | | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.006 | 0.030 | mg/l | 1 |
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.006 | 0.030 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.003 | 0.030 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.009 | 0.076 | mg/l | 1 |
| | The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, 12/94). If the TCLP extract contains any one of the Toxicity Characteristic (TC) constituents in an amount equal to or exceeding the concentrations specified in 40 CFR part 261.24, the waste possesses the characteristic of toxicity and is a hazardous waste. These limits are listed below in mg/L. Other limits may apply for analyses performed under other regulations. | | | | | | |

Total Methylphenols 200.0 Nitrobenzene 2.0

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219022**

**Unit 7 Composite Soil Sample**
**TCLP NON-VOLATILE EXTRACTION**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:25
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN7NV SDG#: RAV02-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | 1,4-Dichlorobenzene | 7.5 | Pentachlorophenol | 100.0 | | | |
| | 2,4-Dinitrotoluene | 0.13 | Pyridine | 5.0 | | | |
| | Hexachlorobenzene | 0.13 | 2,4,5-Trichlorophenol | 400.0 | | | |
| | Hexachlorobutadiene | 0.5 | 2,4,6-Trichlorophenol | 2.0 | | | |
| | Hexachloroethane | 3.0 | | | | | |

Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 02/25/2004 10:54 | Damary Valentin | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 02/25/2004 05:53 | Joanne M Gates | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 02/25/2004 17:36 | Richard A Shober | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 02/25/2004 13:55 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 02/25/2004 00:10 | Ian D Spotts | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 02/24/2004 21:50 | Karen L Beyer | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 02/25/2004 02:00 | Darin P Wagner | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 02/23/2004 12:30 | Carlene A Landis | n.a. |
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 02/24/2004 15:30 | Andrew G Newton | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 02/24/2004 21:20 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 02/24/2004 17:30 | Nelli S Markaryan | 1 |

5838

*=This limit was used in the evaluation of the final result



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# Analysis Report

Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219023**

**Unit 7 Composite Soil Sample**
**TCLP ZERO HEADSPACE EXTRACTION**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:26
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN7ZH SDG#: RAV02-12

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | 0.10 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | 0.10 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | 0.10 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | 0.20 | mg/l | 20 |

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, 12/94).
If the TCLP extract contains any one of the Toxicity Characteristic (TC) constituents in an amount equal to or exceeding the concentrations specified in 40 CFR Part 261.24, the waste possesses the characteristic of toxicity and is a hazardous waste. These limits are listed below in mg/L. Other limits may apply for analyses performed under other regulations.

| | | | |
|---|---|---|---|
| Benzene | 0.5 | 1,1-Dichloroethene | 0.7 |
| Carbon Tetrachloride | 0.5 | Methyl Ethyl Ketone (2-Butanone) | 200.0 |
| Chlorobenzene | 100.0 | Tetrachloroethene | 0.7 |
| Chloroform | 6.0 | Trichloroethene | 0.5 |
| 1,2-Dichloroethane | 0.5 | Vinyl Chloride | 0.2 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 02/25/2004 02:06 | Scott M Evans | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 02/23/2004 13:30 | Melvin O Strother | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 02/25/2004 02:06 | Scott M Evans | n.a. |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. TL 4219023**

**Unit 7 Composite Soil Sample**
**TCLP ZERO HEADSPACE EXTRACTION**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected:02/18/2004 12:30 by DWK

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:26
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UN7ZH SDG#: RAV02-12

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. G5 4219025**

**Trip Blank NaHSO4/Methanol Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected: n.a.

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:26
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GPTM SDG#: RAV02-14TB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | 5. | ug/kg | 1 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | 5. | ug/kg | 1 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | 5. | ug/kg | 1 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | 5. | ug/kg | 1 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05460 | Benzene | 71-43-2 | N.D. | 0.5 | 5. | ug/kg | 1 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | 5. | ug/kg | 1 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | 5. | ug/kg | 1 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | 5. | ug/kg | 1 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | 5. | ug/kg | 1 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | 5. | ug/kg | 1 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | 20. | ug/kg | 1 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | 5. | ug/kg | 1 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | 10. | ug/kg | 1 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | 5. | ug/kg | 1 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | 5. | ug/kg | 1 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | 10. | ug/kg | 1 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | 10. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. G5 4219025**

**Trip Blank NaHSO4/Methanol Sample**
**RAAP-Radford, VA Geoprobe Boring #B02271-01**

Collected: n.a.

Account Number: 11200

Submitted: 02/19/2004 09:15
Reported: 02/27/2004 at 14:26
Discard: 03/29/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GPTM SDG#: RAV02-14TB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | 5. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 02/20/2004 12:58 | Lauren C Marzario | 1 |

8842

*=This limit was used in the evaluation of the final result

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# Volatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance Summary

**CASE NARRATIVE**
**Client: Draper Aden Associates, Inc.**
**SDG#: RAV02**

LANCASTER LABORATORIES
VOLATILES BY GC/MS

**SAMPLE NUMBER(S) :**

| | | Matrix | | |
|---|---|---|---|---|
| LL #'s | Sample Code | Soil | Water | Comments |
| 4219010 | 7GP17 | X | | |
| 4219011 | 7GP18 | X | | |
| 4219012 | 7GP19 | X | | |
| 4219013 | 7GP20 | X | | Unspiked |
| 4219014 | 7GP20MS | X | | Matrix Spike |
| 4219015 | 7GP20MSD | X | | Matrix Spike Dup |
| 4219016 | 7GP21 | X | | |
| 4219017 | 7GP22 | X | | |
| 4219018 | 72222 | X | | |
| 4219019 | 7GP23 | X | | |
| 4219020 | 7GP24 | X | | |
| 4219023 | UN7ZH | | X | 20 X Dilution |
| 4219025 | 7GPTM | X | | Client Blank |

**LABORATORY SUBMITTED QC:**

| | | | | |
|---|---|---|---|---|
| VBLKX06 | VBLKX06 | X | | Method Blank |
| VBLKX07 | VBLKX07 | X | | Method Blank |
| VBLKN36 | VBLKN36 | | X | Method Blank |
| 4218086 | MM500 | | X | Unspiked<br>20 X Dilution |
| 4218087 | MM500MS | | X | Matrix Spike<br>20 X Dilution |
| 4218088 | MM500MSD | | X | Matrix Spike Dup<br>20 X Dilution |
| 4219274 | EXBLKB | | X | Extraction Blank |

| | | | | |
|---|---|---|---|---|
| 4221333 | EXBLKD | | X | Extraction Blank |
| LCSN36 | LCSN36 | | X | Lab Control Sample |
| LCSX06 | LCSX06 | X | | Lab Control Sample |

## SAMPLE PREPARATION:

The soil samples were collected in the field using EnCore™ samplers. Once submitted to Lancaster Laboratories, the samples were transferred into the appropriate pre-weighed containers and were re-weighed to determine the weight of the sample. Since an approximate amount of sample is collected in the field, the dilution factors may vary from sample to sample.

The weights for several samples were found to be outside the SW-846 Method 5035 requirement of 4.5g to 5.5g (EnCore™ sampler) when these samples were re-weighed at the laboratory. Please see the Vial Preparation sheets following the QC Raw Data section for more information.

No other problems were encountered during the sample preparation for the VOA fraction.

## ANALYSIS:

The method used for analysis was EPA SW846 Method 8260B.

All field samples for TCLP were analyzed at a twenty times dilution due to the leachate matrix and the action reporting limits of the TCLP.

No other problems were encountered during the analysis of these samples.

## QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Only client requested compounds are addressed in this narrative.

The relative percent difference (RPD) for toluene between 7GP20MS and 7GP20MSD was outside QC limits. RPDs are laboratory advisory limits only for this method.

All other QC was within specifications.

## DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Richard S. Rodgers Date 3/4/04

Richard S. Rodgers, B.S., GC/MS Volatiles

# QC Summary

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf16t01.d BFB Injection Date: 02/16/04

Instrument ID: HP09193 BFB Injection Time: 09:21

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.6 |
| 75 | 30.0 - 60.0% of mass 95 | 44.4 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 90.8 |
| 175 | 5.0 - 9.0% of mass 174 | 6.7 ( 7.3)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.9 ( 99.1)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.8 ( 6.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | xf16i01.d | 02/16/04 | 09:47 |
| 02 | VSTD020 | VSTD020 | xf16i04.d | 02/16/04 | 11:45 |
| 03 | VSTD010 | VSTD010 | xf16i05.d | 02/16/04 | 12:12 |
| 04 | VSTD004 | VSTD004 | xf16i06.d | 02/16/04 | 12:39 |
| 05 | VSTD100 | VSTD100 | xf16i07.d | 02/16/04 | 13:06 |
| 06 | VSTD050 | VSTD050 | xf16i09.d | 02/16/04 | 14:27 |
| 07 | VSTD001 | 1PPBMDL | xf16m02.d | 02/16/04 | 14:54 |

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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf20t03.d BFB Injection Date: 02/20/04

Instrument ID: HP09193 BFB Injection Time: 10:03

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.3 |
| 75 | 30.0 - 60.0% of mass 95 | 43.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 92.7 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.9 ( 6.6)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD100 | VSTD100 | xf20c01.d | 02/20/04 | 10:28 |
| 02 | VBLKX06 | VBLKX06 | xf20b01.d | 02/20/04 | 11:22 |
| 03 | LCSX06 | LCSX06 | xf20s01.d | 02/20/04 | 11:49 |
| 04 | 5GPTM | 4219009 | xf18s02.d | 02/20/04 | 12:31 |
| 05 | 7GPTM | 4219025 | xf18s03.d | 02/20/04 | 12:58 |
| 06 | 5GP17 | 4218994 | xf18s04.d | 02/20/04 | 13:25 |
| 07 | 5GP18 | 4218995 | xf18s05.d | 02/20/04 | 13:52 |
| 08 | 5GP20 | 4218997 | xf18s06.d | 02/20/04 | 14:19 |
| 09 | 5GP20MS | 4218998 | xf18s07.d | 02/20/04 | 14:46 |
| 10 | 5GP20MSD | 4218999 | xf18s08.d | 02/20/04 | 15:13 |
| 11 | 5GP21 | 4219000 | xf18s09.d | 02/20/04 | 15:40 |
| 12 | 5GP22 | 4219001 | xf18s10.d | 02/20/04 | 16:07 |
| 13 | 52222 | 4219002 | xf20s11.d | 02/20/04 | 16:34 |
| 14 | 5GP23 | 4219003 | xf20s12.d | 02/20/04 | 17:01 |
| 15 | 5GP24 | 4219004 | xf20s13.d | 02/20/04 | 17:28 |
| 16 | 7GP17 | 4219010 | xf20s14.d | 02/20/04 | 17:55 |
| 17 | 7GP18 | 4219011 | xf20s15.d | 02/20/04 | 18:22 |
| 18 | 7GP19 | 4219012 | xf20s16.d | 02/20/04 | 18:49 |
| 19 | 7GP20 | 4219013 | xf20s17.d | 02/20/04 | 19:16 |
| 20 | 7GP20MS | 4219014 | xf20s18.d | 02/20/04 | 19:43 |
| 21 | 7GP20MSD | 4219015 | xf20s19.d | 02/20/04 | 20:10 |
| 22 | 7GP21 | 4219016 | xf20s20.d | 02/20/04 | 20:38 |



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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf20t03.d BFB Injection Date: 02/20/04

Instrument ID: HP09193 BFB Injection Time: 10:03

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.3 |
| 75 | 30.0 - 60.0% of mass 95 | 43.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.2 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 92.7 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.9 ( 6.6)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 23 | 7GP22 | 4219017 | xf20s21.d | 02/20/04 | 21:05 |
| 24 | 5GP19 | 4218996 | xf20s22.d | 02/20/04 | 21:31 |

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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: nf02t07.d  BFB Injection Date: 02/02/04

Instrument ID: HP07159  BFB Injection Time: 11:30

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.4 |
| 75 | 30.0 - 60.0% of mass 95 | 47.6 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.0 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 95.8 |
| 175 | 5.0 - 9.0% of mass 174 | 7.8 ( 8.1)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 92.2 ( 96.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.7 ( 7.2)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | nf02i10.d | 02/02/04 | 11:54 |
| 02 | VSTD100 | VSTD100 | nf02i11.d | 02/02/04 | 12:19 |
| 03 | VSTD050 | VSTD050 | nf02i12.d | 02/02/04 | 12:44 |
| 04 | VSTD020 | VSTD020 | nf02i13.d | 02/02/04 | 13:09 |
| 05 | VSTD010 | VSTD010 | nf02i14.d | 02/02/04 | 13:35 |
| 06 | VSTD004 | VSTD004 | nf02i15.d | 02/02/04 | 14:00 |
| 07 | VSTD001 | VSTD001 | nf02m16.d | 02/02/04 | 14:25 |
| 08 | VSTD0.5 | VSTD0.5 | nf02m20.d | | 17:29 |



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5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: nf24t04.d BFB Injection Date: 02/24/04

Instrument ID: HP07159 BFB Injection Time: 18:58

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.5 |
| 75 | 30.0 - 60.0% of mass 95 | 47.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 5.8 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 94.0 |
| 175 | 5.0 - 9.0% of mass 174 | 6.6 ( 7.0)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 91.2 ( 97.0)1 |
| 177 | 5.0 - 9.0% of mass 176 | 7.2 ( 7.8)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD150 | VSTD150 | nf24c03.d | 02/24/04 | 19:25 |
| 02 | VBLKN36 | VBLKN36 | nf24b02.d | 02/24/04 | 20:31 |
| 03 | LCSN36 | LCSN36 | nf24s30.d | 02/24/04 | 20:55 |
| 04 | EXBLKB | 4219274 | nf24s31.d | 02/24/04 | 21:34 |
| 05 | MM500 | 4218086 | nf24s32.d | 02/24/04 | 21:58 |
| 06 | MM500MS | 4218087 | nf24s33.d | 02/24/04 | 22:23 |
| 07 | MM500MSD | 4218088 | nf24s34.d | 02/24/04 | 22:48 |
| 08 | MM800 | 4218089 | nf24s35.d | 02/24/04 | 23:12 |
| 09 | S105Z | 4218609 | nf24s36.d | 02/24/04 | 23:38 |
| 10 | S105ZMS | 4218609 | nf24s37.d | 02/25/04 | 00:02 |
| 11 | EXBLKC | 4217864 | nf24s38.d | 02/25/04 | 00:28 |
| 12 | I1VOA | 4217216 | nf24s39.d | 02/25/04 | 00:52 |
| 13 | EXBLKD | 4221333 | nf24s40.d | 02/25/04 | 01:17 |
| 14 | UN5ZH | 4219007 | nf24s41.d | 02/25/04 | 01:42 |
| 15 | UN7ZH | 4219023 | nf24s42.d | 02/25/04 | 02:06 |
| 16 | ZH5SL | 4219914 | nf24s43.d | 02/25/04 | 02:31 |
| 17 | ZH5SLMS | 4219914 | nf24s44.d | 02/25/04 | 02:55 |
| 18 | ZHSP1 | 4220721 | nf24s45.d | 02/25/04 | 03:21 |
| 19 | ZHSP2 | 4220724 | nf24s46.d | 02/25/04 | 03:46 |
| 20 | ZH439 | 4220302 | nf24s47.d | 02/25/04 | 04:10 |
| 21 | ZH407 | 4219670 | nf24s48.d | 02/25/04 | 04:35 |

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02

Level: (low/med) LOW

| | LL #'s | EPA SAMPLE NO. | S1 (DBF)# | S2 (DCA)# | S3 (TOL)# | S4 (BFB)# | TOT OUT |
|---|---|---|---|---|---|---|---|
| 01 | 4219010 | 7GP17 | 107 | 100 | 103 | 93 | 0 |
| 02 | 4219011 | 7GP18 | 107 | 100 | 101 | 93 | 0 |
| 03 | 4219012 | 7GP19 | 108 | 101 | 106 | 86 | 0 |
| 04 | 4219013 | 7GP20 | 107 | 98 | 105 | 88 | 0 |
| 05 | 4219014 | 7GP20MS | 107 | 100 | 109 | 89 | 0 |
| 06 | 4219015 | 7GP20MSD | 106 | 101 | 108 | 90 | 0 |
| 07 | 4219016 | 7GP21 | 107 | 99 | 102 | 92 | 0 |
| 08 | 4219017 | 7GP22 | 106 | 99 | 105 | 87 | 0 |
| 09 | 4219018 | 72222 | 107 | 101 | 113 | 86 | 0 |
| 10 | 4219019 | 7GP23 | 108 | 105 | 113 | 85 | 0 |
| 11 | 4219020 | 7GP24 | 107 | 101 | 107 | 95 | 0 |
| 12 | 4219025 | 7GPTM | 105 | 99 | 101 | 95 | 0 |
| 13 | VBLKX06 | VBLKX06 | 102 | 98 | 101 | 98 | 0 |
| 14 | VBLKX07 | VBLKX07 | 109 | 104 | 105 | 98 | 0 |
| 15 | LCSX06 | LCSX06 | 103 | 101 | 103 | 100 | 0 |

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| | QC LIMITS |
|---|---|
| S1 (DBF) = Dibromofluoromethane | (70-129) |
| S2 (DCA) = 1,2-Dichloroethane-d4 | (70-121) |
| S3 (TOL) = Toluene-d8 | (70-130) |
| S4 (BFB) = 4-Bromofluorobenzene | (70-128) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out



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2A

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02

| | LL #'s | EPA SAMPLE NO. | S1 (DBF)# | S2 (DCA)# | S3 (TOL)# | S4 (BFB)# | TOT OUT |
|---|---|---|---|---|---|---|---|
| 01 | 4219023 | UN7ZH | 93 | 95 | 99 | 100 | 0 |
| 02 | VBLKN36 | VBLKN36 | 93 | 93 | 100 | 99 | 0 |
| 03 | 4219274 | EXBLKB | 94 | 94 | 100 | 100 | 0 |
| 04 | 4221333 | EXBLKD | 94 | 93 | 100 | 99 | 0 |
| 05 | 4218086 | MM500 | 95 | 93 | 99 | 100 | 0 |
| 06 | 4218087 | MM500MS | 96 | 95 | 99 | 102 | 0 |
| 07 | 4218088 | MM500MSD | 95 | 90 | 99 | 102 | 0 |
| 08 | LCSN36 | LCSN36 | 94 | 92 | 100 | 103 | 0 |

| | QC LIMITS |
|---|---|
| S1 (DBF) = Dibromofluoromethane | (81-120) |
| S2 (DCA) = 1,2-Dichloroethane-d4 | (82-112) |
| S3 (TOL) = Toluene-d8 | (85-112) |
| S4 (BFB) = 4-Bromofluorobenzene | (83-113) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 107-02-8 | Acrolein | | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 7 | U |
| 74-88-4 | Methyl Iodide | | 3 | U |
| 67-63-0 | 2-Propanol | | 60 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 79-20-9 | Methyl Acetate | | 2 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 20 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 0.5 | U |
| 110-54-3 | n-Hexane | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 78-93-3 | 2-Butanone | | 4 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 107-12-0 | Propionitrile | | 30 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 126-98-7 | Methacrylonitrile | | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 4 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 1 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 3 | U |
| 71-36-3 | n-Butanol | | 110 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-87-2 | Methylcyclohexane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 3 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |
| 591-78-6 | 2-Hexanone | | 3 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 108-94-1 | Cyclohexanone | | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 10 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX06

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX06

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb20a.b/xf20b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/20/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |
| 91-57-6 | 2-Methylnaphthalene | | 2 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX07

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX07

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb23c.b/xf23b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/23/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 107-02-8 | Acrolein | | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 7 | U |
| 74-88-4 | Methyl Iodide | | 3 | U |
| 67-63-0 | 2-Propanol | | 60 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 79-20-9 | Methyl Acetate | | 2 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 20 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 0.5 | U |
| 110-54-3 | n-Hexane | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 78-93-3 | 2-Butanone | | 4 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 107-12-0 | Propionitrile | | 30 | U |

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLKX07

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX07

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb23c.b/xf23b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/23/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 126-98-7 | Methacrylonitrile | | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 4 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 1 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 3 | U |
| 71-36-3 | n-Butanol | | 110 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-87-2 | Methylcyclohexane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 3 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |

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FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX07

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX07

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb23c.b/xf23b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/23/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |
| 591-78-6 | 2-Hexanone | | 3 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 108-94-1 | Cyclohexanone | | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 10 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKX07

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: VBLKX07

Sample wt/vol: 5.00 (g/mL) g Lab File ID: HP09193.i/04feb23c.b/xf23b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/23/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/Kg | Q |
|---|---|---|---|---|
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |
| 91-57-6 | 2-Methylnaphthalene | | 2 | U |

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKN36

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKN36

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24b02.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/24/04

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 0.8 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 78-93-3 | 2-Butanone | | 3 | U |
| 67-66-3 | Chloroform | | 0.8 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 0.5 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 108-88-3 | Toluene | | 0.7 | U |
| 127-18-4 | Tetrachloroethene | | 0.8 | U |
| 108-90-7 | Chlorobenzene | | 0.8 | U |
| 100-41-4 | Ethylbenzene | | 0.8 | U |
| 1330-20-7 | m+p-Xylene | | 0.8 | U |
| 95-47-6 | o-Xylene | | 0.8 | U |
| 108-94-1 | Cyclohexanone | | 55 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EXBLKB

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: 4219274

Sample wt/vol: 0.25 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24s31.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/24/04

Column: (pack/cap) CAP Dilution Factor: 20.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or /Kg) | MDL | mg/L | Q |
|---|---|---|---|---|---|
| 75-01-4 | Vinyl Chloride | | 0.020 | | U |
| 75-35-4 | 1,1-Dichloroethene | | 0.016 | | U |
| 76-13-1 | Freon 113 | | 0.040 | | U |
| 75-15-0 | Carbon Disulfide | | 0.020 | | U |
| 75-09-2 | Methylene Chloride | | 0.040 | | U |
| 78-93-3 | 2-Butanone | | 0.060 | | U |
| 67-66-3 | Chloroform | | 0.016 | | U |
| 56-23-5 | Carbon Tetrachloride | | 0.020 | | U |
| 78-83-1 | Isobutyl Alcohol | | 2.000 | | U |
| 71-43-2 | Benzene | | 0.010 | | U |
| 107-06-2 | 1,2-Dichloroethane | | 0.020 | | U |
| 79-01-6 | Trichloroethene | | 0.020 | | U |
| 108-88-3 | Toluene | | 0.014 | | U |
| 127-18-4 | Tetrachloroethene | | 0.016 | | U |
| 108-90-7 | Chlorobenzene | | 0.016 | | U |
| 100-41-4 | Ethylbenzene | | 0.016 | | U |
| 1330-20-7 | m+p-Xylene | | 0.016 | | U |
| 95-47-6 | o-Xylene | | 0.016 | | U |
| 108-94-1 | Cyclohexanone | | 1.100 | | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.020 | | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 0.020 | | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EXBLKD

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: 4221333

Sample wt/vol: 0.25 (g/mL) mL Lab File ID: HP07159.i/04feb24b.b/nf24s40.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 02/25/04

Column: (pack/cap) CAP Dilution Factor: 20.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or mg/Kg) mg/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | 0.100 | U |
| 75-35-4 | 1,1-Dichloroethene | 0.100 | U |
| 76-13-1 | Freon 113 | 0.200 | U |
| 75-15-0 | Carbon Disulfide | 0.100 | U |
| 75-09-2 | Methylene Chloride | 0.100 | U |
| 78-93-3 | 2-Butanone | 0.200 | U |
| 67-66-3 | Chloroform | 0.100 | U |
| 56-23-5 | Carbon Tetrachloride | 0.100 | U |
| 78-83-1 | Isobutyl Alcohol | 5.000 | U |
| 71-43-2 | Benzene | 0.100 | U |
| 107-06-2 | 1,2-Dichloroethane | 0.100 | U |
| 79-01-6 | Trichloroethene | 0.100 | U |
| 108-88-3 | Toluene | 0.100 | U |
| 127-18-4 | Tetrachloroethene | 0.100 | U |
| 108-90-7 | Chlorobenzene | 0.100 | U |
| 100-41-4 | Ethylbenzene | 0.100 | U |
| 1330-20-7 | m+p-Xylene | 0.100 | U |
| 95-47-6 | o-Xylene | 0.100 | U |
| 108-94-1 | Cyclohexanone | 5.000 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 0.100 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 0.100 | U |

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf20b01.d Lab Sample ID: VBLKX06

Date Analyzed: 02/20/04 Time Analyzed: 11:22

Matrix (soil/water) SOIL Level: (low/med) LOW

Instrument ID: HP09193

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSX06 | LCSX06 | xf20s01.d | 11:49 |
| 02 | 5GPTM | 4219009 | xf18s02.d | 12:31 |
| 03 | 7GPTM | 4219025 | xf18s03.d | 12:58 |
| 04 | 5GP17 | 4218994 | xf18s04.d | 13:25 |
| 05 | 5GP18 | 4218995 | xf18s05.d | 13:52 |
| 06 | 5GP20 | 4218997 | xf18s06.d | 14:19 |
| 07 | 5GP20MS | 4218998 | xf18s07.d | 14:46 |
| 08 | 5GP20MSD | 4218999 | xf18s08.d | 15:13 |
| 09 | 5GP21 | 4219000 | xf18s09.d | 15:40 |
| 10 | 5GP22 | 4219001 | xf18s10.d | 16:07 |
| 11 | 52222 | 4219002 | xf20s11.d | 16:34 |
| 12 | 5GP23 | 4219003 | xf20s12.d | 17:01 |
| 13 | 5GP24 | 4219004 | xf20s13.d | 17:28 |
| 14 | 7GP17 | 4219010 | xf20s14.d | 17:55 |
| 15 | 7GP18 | 4219011 | xf20s15.d | 18:22 |
| 16 | 7GP19 | 4219012 | xf20s16.d | 18:49 |
| 17 | 7GP20 | 4219013 | xf20s17.d | 19:16 |
| 18 | 7GP20MS | 4219014 | xf20s18.d | 19:43 |
| 19 | 7GP20MSD | 4219015 | xf20s19.d | 20:10 |
| 20 | 7GP21 | 4219016 | xf20s20.d | 20:38 |
| 21 | 7GP22 | 4219017 | xf20s21.d | 21:05 |
| 22 | 5GP19 | 4218996 | xf20s22.d | 21:31 |

COMMENTS:

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: xf23b01.d Lab Sample ID: VBLKX07

Date Analyzed: 02/23/04 Time Analyzed: 11:19

Matrix (soil/water) SOIL Level: (low/med) LOW

Instrument ID: HP09193

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | 72222 | 4219018 | xf23s01.d | 11:55 |
| 02 | 7GP23 | 4219019 | xf23s02.d | 12:22 |
| 03 | 7GP24 | 4219020 | xf23s03.d | 12:49 |

COMMENTS:

_____

_____

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: nf24b02.d Lab Sample ID: VBLKN36

Date Analyzed: 02/24/04 Time Analyzed: 20:31

Matrix (soil/water) WATER Level: (low/med) LOW

Instrument ID: HP07159

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSN36 | LCSN36 | nf24s30.d | 20:55 |
| 02 | EXBLKB | 4219274 | nf24s31.d | 21:34 |
| 03 | MM500 | 4218086 | nf24s32.d | 21:58 |
| 04 | MM500MS | 4218087 | nf24s33.d | 22:23 |
| 05 | MM500MSD | 4218088 | nf24s34.d | 22:48 |
| 06 | MM800 | 4218089 | nf24s35.d | 23:12 |
| 07 | S105Z | 4218609 | nf24s36.d | 23:38 |
| 08 | S105ZMS | 4218609 | nf24s37.d | 00:02 |
| 09 | EXBLKC | 4217864 | nf24s38.d | 00:28 |
| 10 | I1VOA | 4217216 | nf24s39.d | 00:52 |
| 11 | EXBLKD | 4221333 | nf24s40.d | 01:17 |
| 12 | UN5ZH | 4219007 | nf24s41.d | 01:42 |
| 13 | UN7ZH | 4219023 | nf24s42.d | 02:06 |
| 14 | ZH5SL | 4219914 | nf24s43.d | 02:31 |
| 15 | ZH5SLMS | 4219914 | nf24s44.d | 02:55 |
| 16 | ZHSP1 | 4220721 | nf24s45.d | 03:21 |
| 17 | ZHSP2 | 4220724 | nf24s46.d | 03:46 |
| 18 | ZH439 | 4220302 | nf24s47.d | 04:10 |
| 19 | ZH407 | 4219670 | nf24s48.d | 04:35 |

COMMENTS:

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: xf20s17.d
7GP20 4219013
Method: SW-846 8260B
Dilution Factor: 0.90
Instrument: HP09193

Matrix Spike: xf20s18.d
7GP20MS 4219014
Matrix/Level: SL
MS Dilution Factor: 0.96

Spike Duplicate: xf20s19.d
7GP20MSD 4219015
Batch: X040511BA
MSD Dilution Factor: 0.93
Moisture: 19

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | 23.6 | 22.9 | ND | 21.8 | 21.2 | 92 | 93 | 21-155 | YES | 1 | 30 |
| Vinyl Chloride | 23.6 | 22.9 | ND | 21.2 | 20.1 | 90 | 88 | 23-154 | YES | 2 | 30 |
| Bromomethane | 23.6 | 22.9 | ND | 20.1 | 18.6 | 85 | 81 | 19-147 | YES | 5 | 30 |
| Chloroethane | 23.6 | 22.9 | ND | 19.7 | 17.8 | 83 | 78 | 33-147 | YES | 6 | 30 |
| 1,1-Dichloroethene | 23.6 | 22.9 | ND | 19.2 | 17.8 | 81 | 78 | 48-147 | YES | 4 | 30 |
| Acetone | 177.0 | 172.0 | 15.8 | 193 | 202 | 100 | 108 | 9 -178 | YES | 8 | 30 |
| Carbon Disulfide | 23.6 | 22.9 | 3.19 | 22.8 | 20.2 | 83 | 74 | 37-147 | YES | 11 | 30 |
| Methylene Chloride | 23.6 | 22.9 | ND | 20.9 | 19.4 | 89 | 85 | 59-135 | YES | 5 | 30 |
| trans-1,2-Dichloroethene | 23.6 | 22.9 | ND | 18.8 | 17.1 | 79 | 75 | 54-135 | YES | 5 | 30 |
| 1,1-Dichloroethane | 23.6 | 22.9 | ND | 20.2 | 18.5 | 86 | 81 | 60-133 | YES | 6 | 30 |
| cis-1,2-Dichloroethene | 23.6 | 22.9 | ND | 19.1 | 17.3 | 81 | 76 | 57-131 | YES | 6 | 30 |
| 2-Butanone | 177.0 | 172.0 | ND | 190 | 199 | 107 | 116 | 24-149 | YES | 8 | 30 |
| Chloroform | 23.6 | 22.9 | ND | 21.7 | 19.5 | 92 | 85 | 57-135 | YES | 8 | 30 |
| 1,1,1-Trichloroethane | 23.6 | 22.9 | ND | 20.4 | 18.5 | 86 | 81 | 53-137 | YES | 6 | 30 |
| Carbon Tetrachloride | 23.6 | 22.9 | ND | 19.9 | 18.0 | 84 | 79 | 46-138 | YES | 6 | 30 |
| Benzene | 23.6 | 22.9 | 3.05 | 22.6 | 19.7 | 83 | 73 | 52-141 | YES | 13 | 30 |
| 1,2-Dichloroethane | 23.6 | 22.9 | ND | 24.1 | 22.1 | 102 | 97 | 57-137 | YES | 5 | 30 |
| Trichloroethene | 23.6 | 22.9 | ND | 18.8 | 16.3 | 80 | 71 | 47-140 | YES | 12 | 30 |
| 1,2-Dichloropropane | 23.6 | 22.9 | ND | 20.2 | 18.1 | 86 | 79 | 60-129 | YES | 8 | 30 |
| Bromodichloromethane | 23.6 | 22.9 | ND | 20.8 | 18.4 | 88 | 80 | 57-126 | YES | 10 | 30 |
| cis-1,3-Dichloropropene | 23.6 | 22.9 | ND | 18.7 | 16.8 | 79 | 73 | 50-129 | YES | 8 | 30 |
| 4-Methyl-2-Pentanone | 118.0 | 115.0 | ND | 118 | 122 | 100 | 106 | 34-143 | YES | 6 | 30 |
| Toluene | 23.6 | 22.9 | 6.42 | 28.1 | 21.4 | 92 | 66 | 45-142 | NO | 33 | 30 |
| trans-1,3-Dichloropropene | 23.6 | 22.9 | ND | 21.3 | 18.9 | 90 | 82 | 51-127 | YES | 9 | 30 |
| 1,1,2-Trichloroethane | 23.6 | 22.9 | ND | 22.9 | 21.1 | 97 | 92 | 50-147 | YES | 5 | 30 |
| Tetrachloroethene | 23.6 | 22.9 | ND | 19.5 | 16.4 | 83 | 71 | 39-160 | YES | 16 | 30 |
| 2-Hexanone | 118.0 | 115.0 | ND | 112 | 122 | 95 | 106 | 27-149 | YES | 11 | 30 |
| Dibromochloromethane | 23.6 | 22.9 | ND | 22.1 | 20.0 | 94 | 87 | 53-130 | YES | 8 | 30 |
| Chlorobenzene | 23.6 | 22.9 | ND | 18.5 | 15.2 | 78 | 66 | 59-125 | YES | 17 | 30 |
| Ethylbenzene | 23.6 | 22.9 | ND | 18.9 | 15.0 | 80 | 65 | 40-143 | YES | 21 | 30 |
| Xylene (Total) | 70.8 | 68.7 | 1.42 | 55.9 | 44.4 | 77 | 63 | 40-143 | YES | 20 | 30 |
| Styrene | 23.6 | 22.9 | ND | 15.9 | 12.9 | 67 | 56 | 46-137 | YES | 18 | 30 |
| Bromoform | 23.6 | 22.9 | ND | 20.6 | 19.1 | 87 | 84 | 46-128 | YES | 4 | 30 |
| 1,1,2,2-Tetrachloroethane | 23.6 | 22.9 | ND | 29.2 | 26.8 | 124 | 117 | 37-151 | YES | 6 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: nf24s32.d
MM500 4218086
Method: SW-846 8260B
Instrument: HP07159

Matrix Spike: nf24s33.d
MM500MS 4218087
Matrix/Level: WL
Dilution Factor: 20.00

Spike Duplicate: nf24s34.d
MM500MSD 4218088
Batch: N040552AB

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 400.0 | 400.0 | ND | 430 | 432 | 108 | 108 | 70-151 | YES | 0 | 30 |
| 1,1-Dichloroethene | 400.0 | 400.0 | ND | 424 | 418 | 106 | 104 | 78-146 | YES | 1 | 30 |
| Freon 113 | 400.0 | 400.0 | ND | 452 | 451 | 113 | 113 | 73-166 | YES | 0 | 30 |
| Carbon Disulfide | 400.0 | 400.0 | ND | 458 | 458 | 115 | 115 | 77-155 | YES | 0 | 30 |
| Methylene Chloride | 400.0 | 400.0 | ND | 391 | 387 | 98 | 97 | 79-133 | YES | 1 | 30 |
| 2-Butanone | 3000.0 | 3000.0 | 4470 | 6950 | 7210 | 83 | 91 | 42-140 | YES | 4 | 30 |
| Chloroform | 400.0 | 400.0 | ND | 395 | 393 | 99 | 98 | 82-131 | YES | 0 | 30 |
| Carbon Tetrachloride | 400.0 | 400.0 | ND | 412 | 407 | 103 | 102 | 73-144 | YES | 1 | 30 |
| Isobutyl Alcohol | 10000.0 | 10000.0 | ND | 6560 | 6770 | 66 | 68 | 51-140 | YES | 3 | 30 |
| Benzene | 400.0 | 400.0 | ND | 407 | 407 | 102 | 102 | 83-128 | YES | 0 | 30 |
| 1,2-Dichloroethane | 400.0 | 400.0 | ND | 376 | 374 | 94 | 93 | 73-136 | YES | 0 | 30 |
| Trichloroethene | 400.0 | 400.0 | ND | 398 | 393 | 100 | 98 | 75-135 | YES | 1 | 30 |
| Toluene | 400.0 | 400.0 | 68.8 | 475 | 474 | 102 | 101 | 83-127 | YES | 0 | 30 |
| Tetrachloroethene | 400.0 | 400.0 | ND | 388 | 385 | 97 | 96 | 75-143 | YES | 1 | 30 |
| Chlorobenzene | 400.0 | 400.0 | ND | 390 | 392 | 97 | 98 | 83-120 | YES | 0 | 30 |
| Ethylbenzene | 400.0 | 400.0 | ND | 413 | 416 | 103 | 104 | 82-129 | YES | 1 | 30 |
| m+p-Xylene | 800.0 | 800.0 | ND | 806 | 819 | 101 | 102 | 82-130 | YES | 2 | 30 |
| o-Xylene | 400.0 | 400.0 | ND | 393 | 403 | 98 | 101 | 82-130 | YES | 2 | 30 |
| Cyclohexanone | 10000.0 | 10000.0 | ND | 6670 | 6680 | 67 | 67 | 21-139 | YES | 0 | 30 |
| 1,4-Dichlorobenzene | 400.0 | 400.0 | ND | 387 | 393 | 97 | 98 | 81-122 | YES | 1 | 30 |
| 1,2-Dichlorobenzene | 400.0 | 400.0 | ND | 380 | 385 | 95 | 96 | 82-117 | YES | 1 | 30 |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: xf20s01.d
Inst: HP09193
Dilution Factor: 1.0

Injected: 02/20/04 at 11:49
Sample: LCSX06

Method: SW-846 8260B
Matrix/Level: SL
Batch: X040511AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Chloromethane | 20.00 | 21.44 | 107 | 44-139 | YES |
| Vinyl Chloride | 20.00 | 21.67 | 108 | 48-135 | YES |
| Bromomethane | 20.00 | 19.92 | 100 | 35-146 | YES |
| Chloroethane | 20.00 | 20.04 | 100 | 50-137 | YES |
| 1,1-Dichloroethene | 20.00 | 19.80 | 99 | 69-133 | YES |
| Acetone | 150.00 | 136.74 | 91 | 29-165 | YES |
| Carbon Disulfide | 20.00 | 19.79 | 99 | 70-129 | YES |
| Methylene Chloride | 20.00 | 19.24 | 96 | 81-121 | YES |
| trans-1,2-Dichloroethene | 20.00 | 19.88 | 99 | 77-124 | YES |
| 1,1-Dichloroethane | 20.00 | 20.34 | 102 | 79-124 | YES |
| cis-1,2-Dichloroethene | 20.00 | 19.19 | 96 | 83-118 | YES |
| 2-Butanone | 150.00 | 139.57 | 93 | 31-147 | YES |
| Chloroform | 20.00 | 20.40 | 102 | 81-117 | YES |
| 1,1,1-Trichloroethane | 20.00 | 20.42 | 102 | 74-121 | YES |
| Carbon Tetrachloride | 20.00 | 20.53 | 103 | 63-124 | YES |
| Benzene | 20.00 | 20.22 | 101 | 83-118 | YES |
| 1,2-Dichloroethane | 20.00 | 20.62 | 103 | 76-126 | YES |
| Trichloroethene | 20.00 | 20.05 | 100 | 81-114 | YES |
| 1,2-Dichloropropane | 20.00 | 19.84 | 99 | 78-119 | YES |
| Bromodichloromethane | 20.00 | 19.44 | 97 | 77-116 | YES |
| cis-1,3-Dichloropropene | 20.00 | 19.45 | 97 | 80-113 | YES |
| 4-Methyl-2-Pentanone | 100.00 | 92.48 | 92 | 55-135 | YES |
| Toluene | 20.00 | 19.33 | 97 | 81-116 | YES |
| trans-1,3-Dichloropropene | 20.00 | 19.84 | 99 | 72-119 | YES |
| 1,1,2-Trichloroethane | 20.00 | 19.18 | 96 | 83-114 | YES |
| Tetrachloroethene | 20.00 | 20.69 | 103 | 79-122 | YES |
| 2-Hexanone | 100.00 | 86.17 | 86 | 41-144 | YES |
| Dibromochloromethane | 20.00 | 19.42 | 97 | 73-116 | YES |
| Chlorobenzene | 20.00 | 19.20 | 96 | 81-112 | YES |
| Ethylbenzene | 20.00 | 19.44 | 97 | 82-115 | YES |
| m+p-Xylene | 40.00 | 38.96 | 97 | 82-117 | YES |
| Xylene (Total) | 60.00 | 58.39 | 97 | 82-117 | YES |
| o-Xylene | 20.00 | 19.43 | 97 | 82-117 | YES |
| Styrene | 20.00 | 18.87 | 94 | 79-116 | YES |
| Bromoform | 20.00 | 19.04 | 95 | 63-116 | YES |
| 1,1,2,2-Tetrachloroethane | 20.00 | 18.36 | 92 | 64-121 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

8872

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: nf24s30.d
Inst: HP07159
Dilution Factor: 1.0

Injected: 02/24/04 at 20:55
Sample: LCSN36

Method: SW-846 8260B
Matrix/Level: WL
Batch: N040552AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Vinyl Chloride | 20.00 | 18.59 | 93 | 71-129 | YES |
| 1,1-Dichloroethene | 20.00 | 18.82 | 94 | 79-130 | YES |
| Freon 113 | 20.00 | 18.88 | 94 | 73-140 | YES |
| Carbon Disulfide | 20.00 | 19.91 | 100 | 73-143 | YES |
| Methylene Chloride | 20.00 | 18.27 | 91 | 80-128 | YES |
| 2-Butanone | 150.00 | 147.71 | 98 | 45-154 | YES |
| Chloroform | 20.00 | 18.04 | 90 | 86-124 | YES |
| Carbon Tetrachloride | 20.00 | 17.70 | 89 | 77-130 | YES |
| Isobutyl Alcohol | 500.00 | 407.85 | 82 | 59-134 | YES |
| Benzene | 20.00 | 18.58 | 93 | 85-117 | YES |
| 1,2-Dichloroethane | 20.00 | 17.75 | 89 | 77-132 | YES |
| Trichloroethene | 20.00 | 17.76 | 89 | 87-117 | YES |
| Toluene | 20.00 | 18.40 | 92 | 85-115 | YES |
| Tetrachloroethene | 20.00 | 18.57 | 93 | 82-126 | YES |
| Chlorobenzene | 20.00 | 18.35 | 92 | 85-115 | YES |
| Ethylbenzene | 20.00 | 18.56 | 93 | 82-119 | YES |
| m+p-Xylene | 40.00 | 36.93 | 92 | 84-120 | YES |
| o-Xylene | 20.00 | 18.42 | 92 | 84-120 | YES |
| Cyclohexanone | 500.00 | 422.28 | 84 | 19-158 | YES |
| 1,4-Dichlorobenzene | 20.00 | 18.33 | 92 | 84-116 | YES |
| 1,2-Dichlorobenzene | 20.00 | 18.36 | 92 | 81-112 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xf20c01.d Date Analyzed: 02/20/04

Instrument ID: HP09193 Time Analyzed: 10:28

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) AREA # | IS1(TBA) RT # | IS2(FBZ) AREA # | IS2(FBZ) RT # | IS3(CBZ) AREA # | IS3(CBZ) RT # | IS4(DCB) AREA # | IS4(DCB) RT # |
|---|---|---|---|---|---|---|---|---|
| 12 HOUR STD | 135522 | 4.505 | 1266290 | 7.958 | 1000818 | 11.346 | 570512 | 13.201 |
| UPPER LIMIT | 271044 | 5.005 | 2532580 | 8.458 | 2001636 | 11.846 | 1141024 | 13.701 |
| LOWER LIMIT | 67761 | 4.005 | 633145 | 7.458 | 500409 | 10.846 | 285256 | 12.701 |
| EPA SAMPLE NO. | | | | | | | | |
| 01 VBLKX06 | 135106 | 4.502 | 1244404 | 7.952 | 985904 | 11.344 | 550687 | 13.201 |
| 02 LCSX06 | | | 1186869 | 7.952 | 932602 | 11.343 | 526036 | 13.201 |
| 03 5GPTM | | | 1241140 | 7.952 | 986851 | 11.343 | 541841 | 13.201 |
| 04 7GPTM | | | 1095005 | 7.952 | 861307 | 11.343 | 461853 | 13.201 |
| 05 5GP17 | | | 1091311 | 7.951 | 846235 | 11.346 | 449061 | 13.201 |
| 06 5GP18 | | | 1122121 | 7.952 | 893422 | 11.343 | 486995 | 13.201 |
| 07 5GP20 | | | 1035190 | 7.955 | 805411 | 11.343 | 404563 | 13.201 |
| 08 5GP20MS | | | 1081350 | 7.955 | 842038 | 11.347 | 461865 | 13.201 |
| 09 5GP20MSD | | | 1077707 | 7.951 | 820331 | 11.343 | 410618 | 13.201 |
| 10 5GP21 | | | 1082785 | 7.955 | 853764 | 11.343 | 453402 | 13.204 |
| 11 5GP22 | | | 1084943 | 7.951 | 845975 | 11.343 | 431017 | 13.201 |
| 12 52222 | | | 1014479 | 7.955 | 737865 | 11.343 | 323933 | 13.201 |
| 13 5GP23 | | | 1022786 | 7.952 | 770274 | 11.343 | 346240 | 13.201 |
| 14 5GP24 | | | 1041670 | 7.952 | 803069 | 11.343 | 380446 | 13.204 |
| 15 7GP17 | | | 1064329 | 7.955 | 832786 | 11.343 | 416079 | 13.201 |
| 16 7GP18 | | | 1045559 | 7.955 | 823281 | 11.343 | 417066 | 13.201 |
| 17 7GP19 | | | 970494 | 7.952 | 714880 | 11.347 | 297543 | 13.201 |
| 18 7GP20 | | | 992011 | 7.954 | 746930 | 11.343 | 327862 | 13.204 |
| 19 7GP20MS | | | 1053590 | 7.955 | 770638 | 11.343 | 306089 | 13.204 |
| 20 7GP20MSD | | | 1095668 | 7.951 | 802161 | 11.343 | 333037 | 13.201 |
| 21 7GP21 | | | 1007842 | 7.951 | 783236 | 11.346 | 384661 | 13.204 |
| 22 7GP22 | | | 1042990 | 7.952 | 775846 | 11.347 | 336749 | 13.201 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xf20c01.d Date Analyzed: 02/20/04

Instrument ID: HP09193 Time Analyzed: 10:28

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) AREA # | RT # | IS2(FBZ) AREA # | RT # | IS3(CBZ) AREA # | RT # | IS4(DCB) AREA # | RT # |
|---|---|---|---|---|---|---|---|---|
| 12 HOUR STD | 135522 | 4.505 | 1266290 | 7.958 | 1000818 | 11.346 | 570512 | 13.201 |
| UPPER LIMIT | 271044 | 5.005 | 2532580 | 8.458 | 2001636 | 11.846 | 1141024 | 13.701 |
| LOWER LIMIT | 67761 | 4.005 | 633145 | 7.458 | 500409 | 10.846 | 285256 | 12.701 |
| EPA SAMPLE NO. | | | | | | | | |
| 23 5GP19 | | | 1049523 | 7.955 | 810481 | 11.343 | 389551 | 13.205 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): xf23c06.d Date Analyzed: 02/23/04

Instrument ID: HP09193 Time Analyzed: 10:52

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) AREA # | RT # | IS2(FBZ) AREA # | RT # | IS3(CBZ) AREA # | RT # | IS4(DCB) AREA # | RT # |
|---|---|---|---|---|---|---|---|---|
| 12 HOUR STD | 146451 | 4.492 | 1389673 | 7.955 | 1052442 | 11.343 | 615414 | 13.201 |
| UPPER LIMIT | 292902 | 4.992 | 2779346 | 8.455 | 2104884 | 11.843 | 1230828 | 13.701 |
| LOWER LIMIT | 73226 | 3.992 | 694836 | 7.455 | 526221 | 10.843 | 307707 | 12.701 |
| EPA SAMPLE NO. | | | | | | | | |
| 01 VBLKX07 | 172002 | 4.512 | 1457279 | 7.955 | 1108501 | 11.343 | 593965 | 13.201 |
| 02 72222 | | | 1318244 | 7.948 | 906381 | 11.343 | 354028 | 13.201 |
| 03 7GP23 | | | 1305527 | 7.952 | 885875 | 11.343 | 336376 | 13.201 |
| 04 7GP24 | | | 1370259 | 7.951 | 1016867 | 11.343 | 521201 | 13.201 |

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): nf24c03.d Date Analyzed: 02/24/04

Instrument ID: HP07159 Time Analyzed: 19:25

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | | IS1(FBZ) AREA # | RT # | IS2(CBZ) AREA # | RT # | IS3(DCB) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 1037153 | 7.970 | 814583 | 11.349 | 443611 | 13.200 |
| | UPPER LIMIT | 2074306 | 8.470 | 1629166 | 11.849 | 887222 | 13.700 |
| | LOWER LIMIT | 518576 | 7.470 | 407292 | 10.849 | 221806 | 12.700 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | VBLKN36 | 1002998 | 7.966 | 773708 | 11.351 | 388007 | 13.203 |
| 02 | LCSN36 | 1016012 | 7.970 | 788005 | 11.352 | 425281 | 13.200 |
| 03 | EXBLKB | 1051668 | 7.967 | 815941 | 11.349 | 397895 | 13.201 |
| 04 | MM500 | 1045894 | 7.970 | 820309 | 11.352 | 425007 | 13.200 |
| 05 | MM500MS | 1023135 | 7.970 | 806738 | 11.352 | 436008 | 13.200 |
| 06 | MM500MSD | 1030024 | 7.969 | 802774 | 11.351 | 433415 | 13.202 |
| 07 | MM800 | 1034594 | 7.971 | 806888 | 11.353 | 425591 | 13.201 |
| 08 | S105Z | 1011646 | 7.969 | 789829 | 11.351 | 422075 | 13.203 |
| 09 | S105ZMS | 1004365 | 7.970 | 788951 | 11.352 | 427600 | 13.200 |
| 10 | EXBLKC | 1057625 | 7.972 | 819519 | 11.354 | 409178 | 13.202 |
| 11 | I1VOA | 1037661 | 7.969 | 798040 | 11.351 | 404285 | 13.203 |
| 12 | EXBLKD | 1034638 | 7.967 | 799941 | 11.352 | 404590 | 13.204 |
| 13 | UN5ZH | 1035102 | 7.969 | 807350 | 11.355 | 401306 | 13.203 |
| 14 | UN7ZH | 1017391 | 7.969 | 790516 | 11.354 | 396645 | 13.202 |
| 15 | ZH5SL | 1014736 | 7.969 | 802674 | 11.351 | 404352 | 13.202 |
| 16 | ZH5SLMS | 962309 | 7.967 | 765601 | 11.352 | 407495 | 13.201 |
| 17 | ZHSP1 | 968621 | 7.967 | 756401 | 11.353 | 380430 | 13.201 |
| 18 | ZHSP2 | 997235 | 7.969 | 780479 | 11.351 | 395769 | 13.202 |
| 19 | ZH439 | 958466 | 7.972 | 755712 | 11.351 | 387835 | 13.202 |
| 20 | ZH407 | 931085 | 7.969 | 727825 | 11.351 | 380085 | 13.200 |

IS1 (FBZ)=Fluorobenzene
IS2 (CBZ)=Chlorobenzene-d5
IS3 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8877



FORM VIII VOA

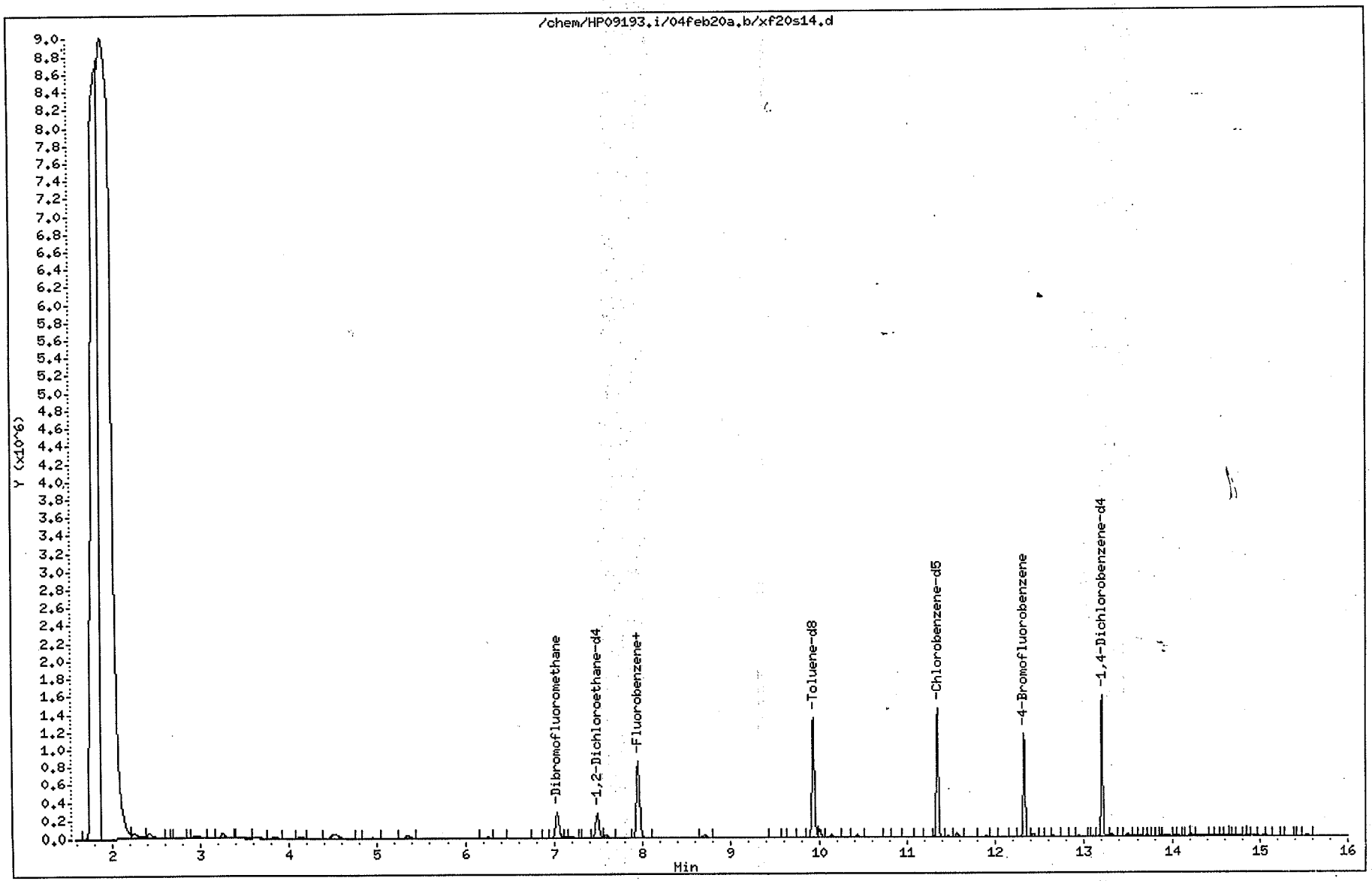
# Sample Data

Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d
Date : 20-FEB-2004 17:55
Client ID: 7GP17
Sample Info: 7GP17;4219010;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:55  Analyst ID: LCM01518

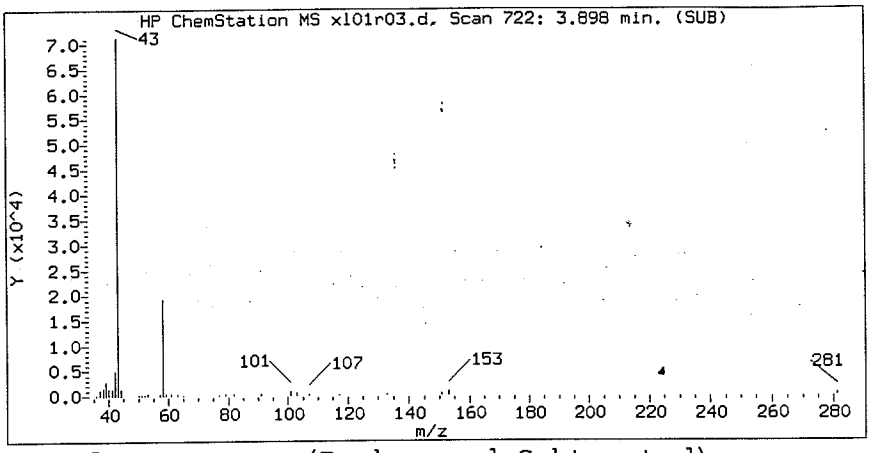
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 18:18 msl01251

Sample Name: 7GP17  Lab Sample ID: 4219010

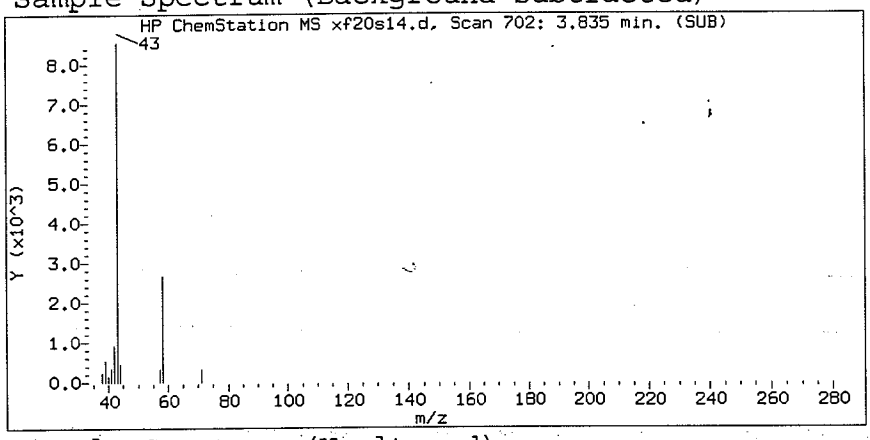
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.835 | 58 | 8963 | 22.977 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 44398 | 2.510 |
| 65) Benzene | (1) | 7.592 | 78 | 41765 | 1.849 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1064329 | 50.000 |
| 88) Toluene | (2) | 10.005 | 92 | 41349 | 2.716 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 832786 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 416079 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 243972 | 53.256 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 57303 | 49.909 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1026942 | 51.292 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 355897 | 46.504 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

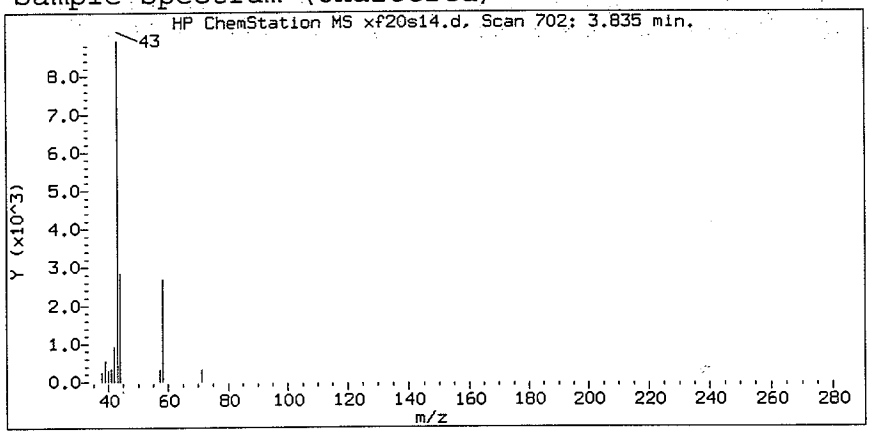
Reference Standard Spectrum for Acetone

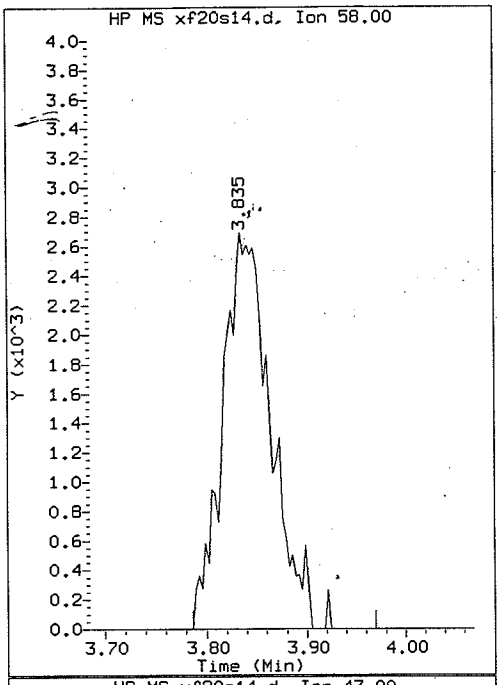


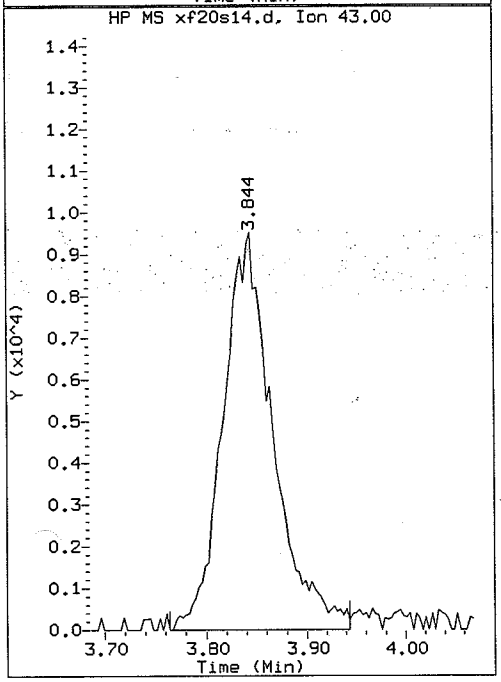

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 18:18 msl01251

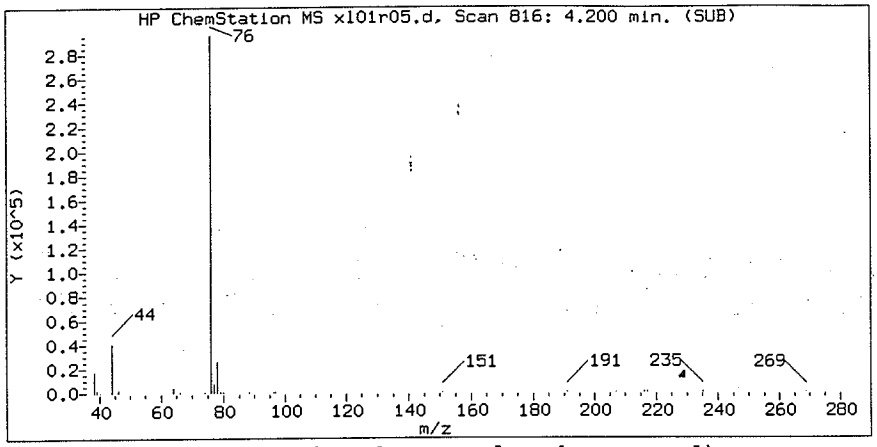
Sample Name: 7GP17  Lab Sample ID: 4219010

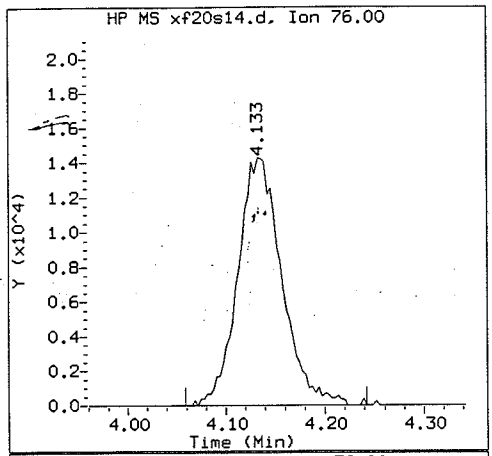
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 702 |
| Retention Time (minutes) | : 3.835 |
| Quant Ion | : 58.0 |
| Area (flag) | : 8963 |
| Concentration (ug/Kg) | : 22.9771 |

✓

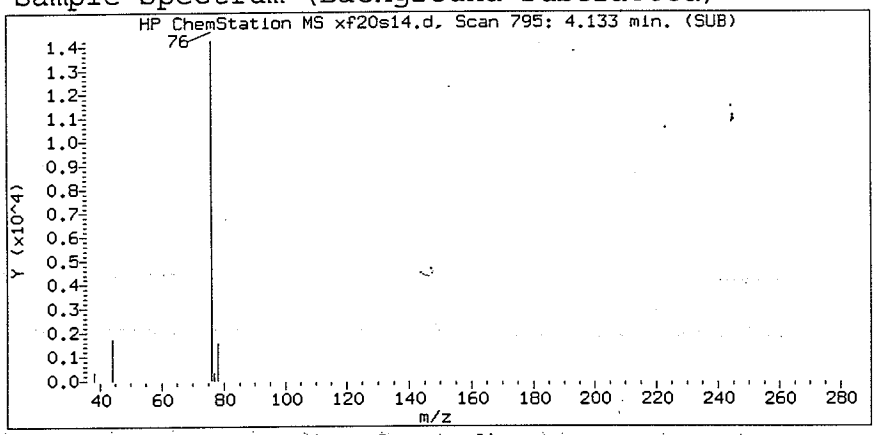
8981

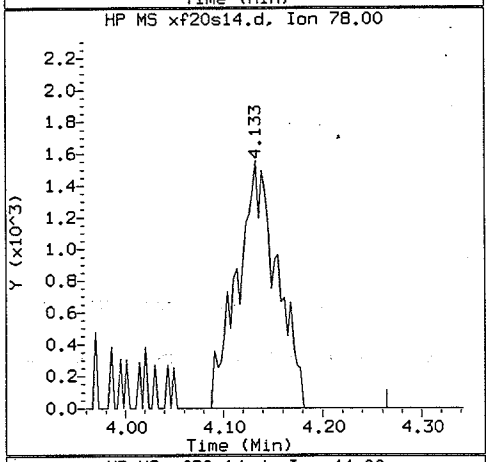
Reference Standard Spectrum for Carbon Disulfide



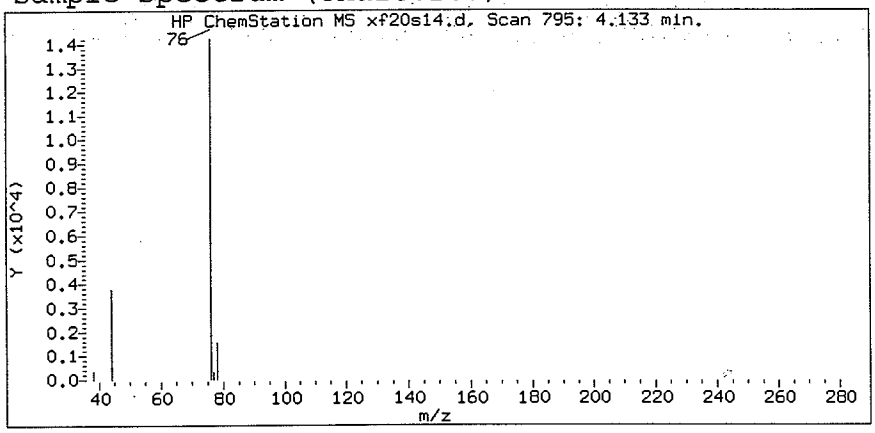



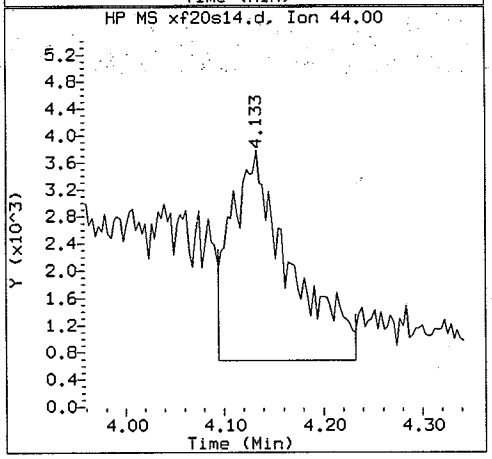

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



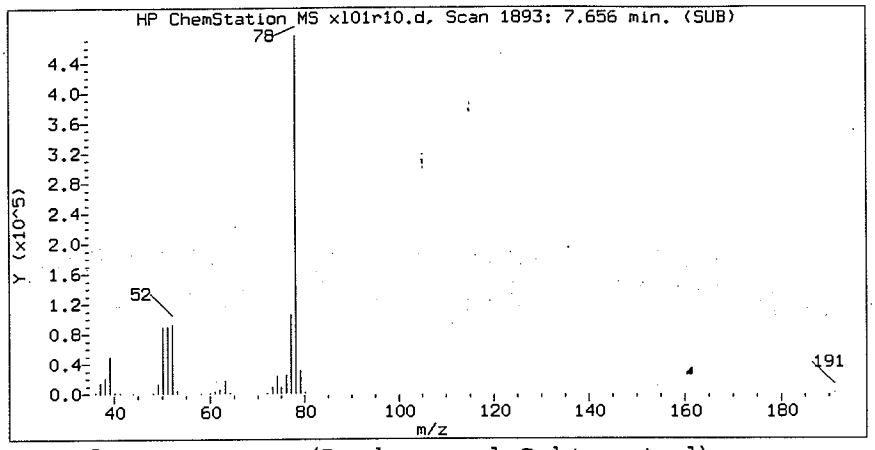

Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:55 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 18:18 msl01251

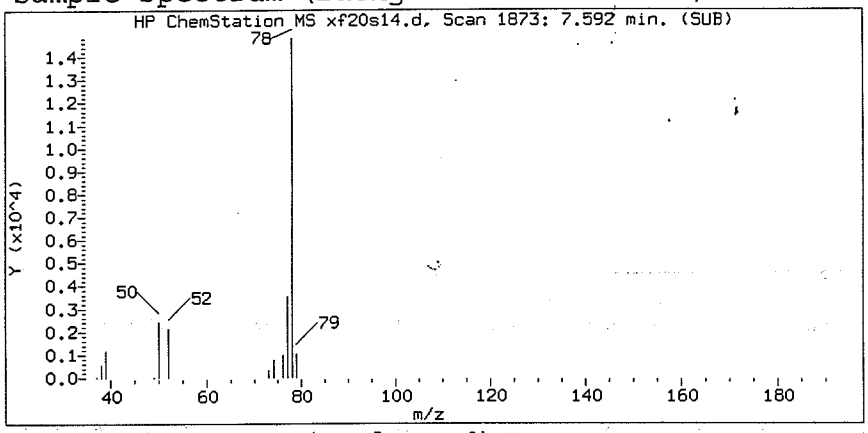
Sample Name: 7GP17 Lab Sample ID: 4219010

| | |
|---|---|
| Compound Number | : 24 |
| Compound Name | : Carbon Disulfide |
| Scan Number | : 795 |
| Retention Time (minutes) | : 4.133 |
| Quant Ion | : 76.0 |
| Area (flag) | : 44398 |
| Concentration (ug/Kg) | : 2.5099 |

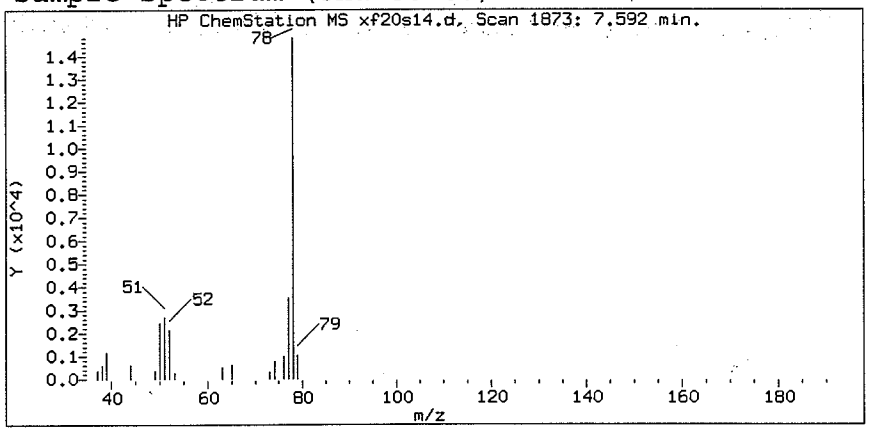
Reference Standard Spectrum for Benzene

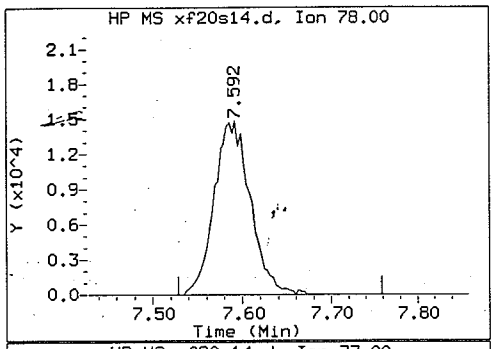


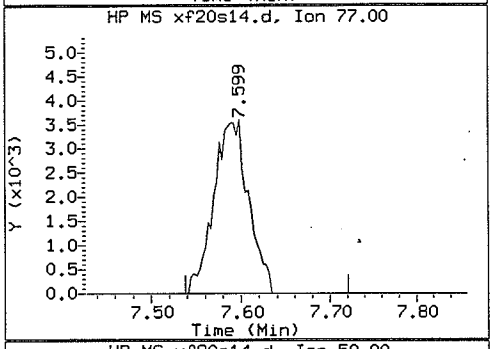

Sample Spectrum (Background Subtracted)

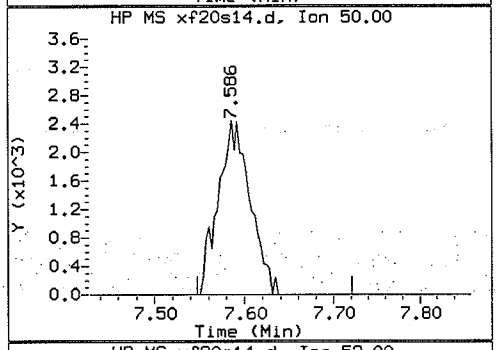


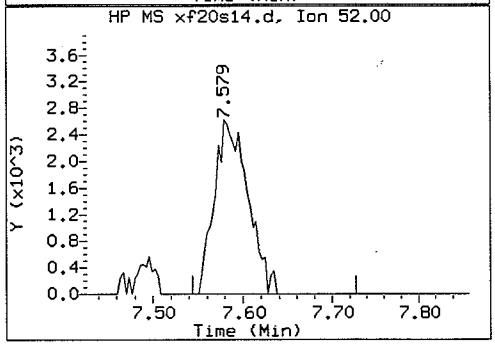

Sample Spectrum (Unaltered)



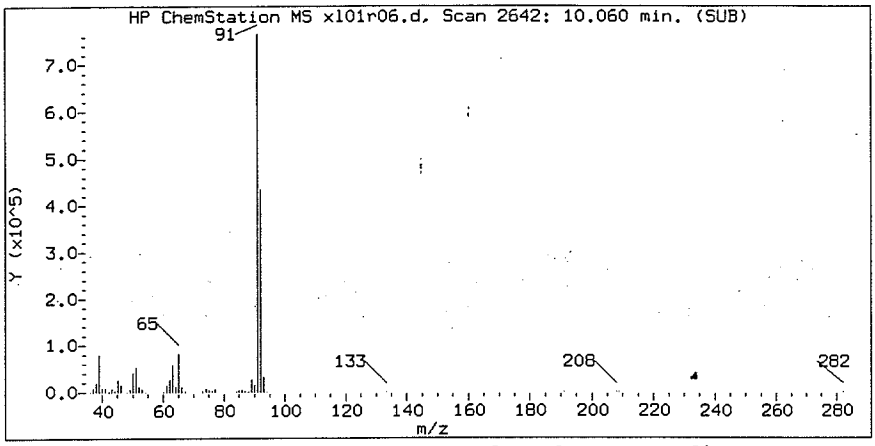

Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 18:18 msl01251

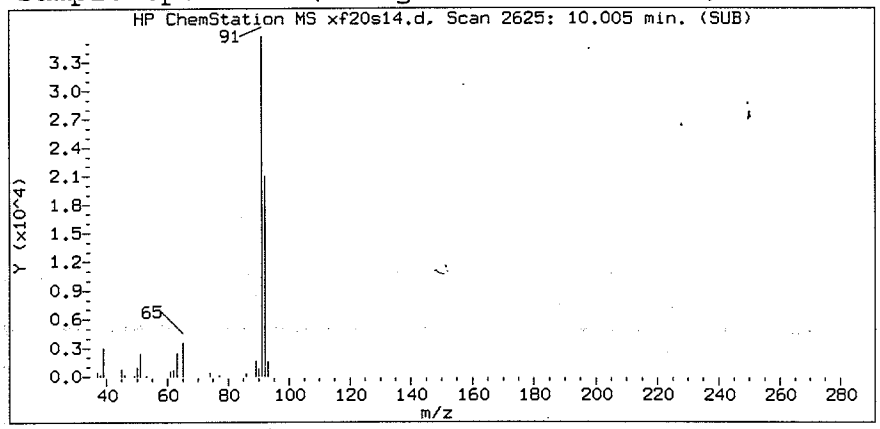
Sample Name: 7GP17  Lab Sample ID: 4219010

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1873 |
| Retention Time (minutes) | : 7.592 |
| Quant Ion | : 78.0 |
| Area (flag) | : 41765 |
| Concentration (ug/Kg) | : 1.8491 |

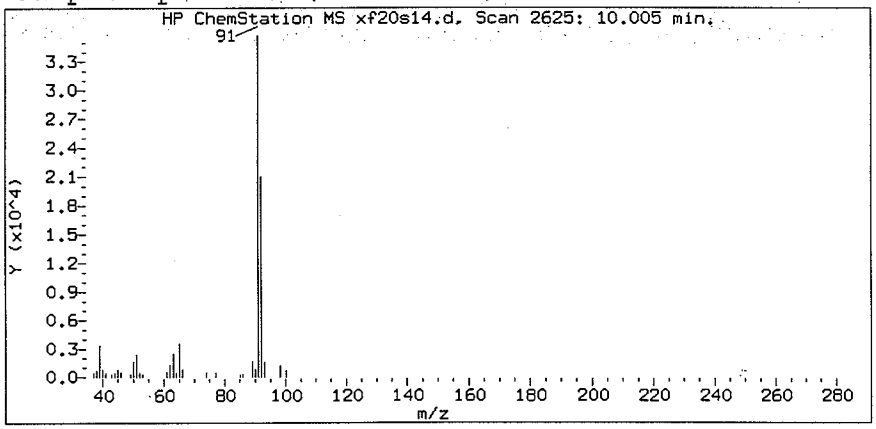
Reference Standard Spectrum for Toluene

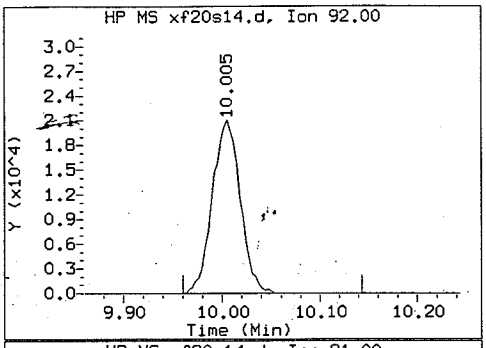


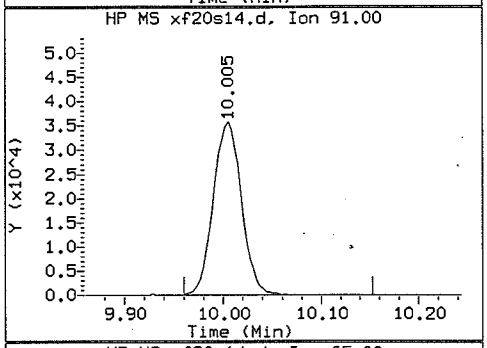

Sample Spectrum (Background Subtracted)

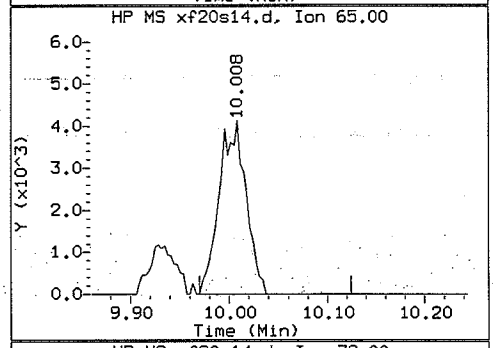


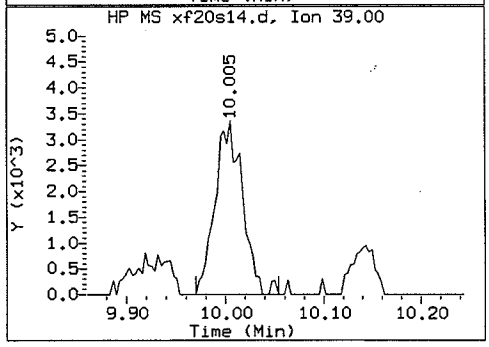

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s14.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 17:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 20-Feb-2004 18:18 msl01251

Sample Name: 7GP17  Lab Sample ID: 4219010

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2625 |
| Retention Time (minutes) | : 10.005 |
| Quant Ion | : 92.0 |
| Area (flag) | : 41349 |
| Concentration (ug/Kg) | : 2.7157 |

# 7GP17

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219010

File: /chem/HP09193.i/04feb20a.b/xf20s14.d
Sample: 7GP17;4219010;2;0;;;
Injected At:20-FEB-2004 17:55
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.05
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 4.7700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1064329( -16) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 832786( -17) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 416079( -27) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.000) | 113 | 243972 | 53.256 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.496(-0.001) | 102 | 57303 | 49.909 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1026942 | 51.292 | 103% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 355897 | 46.504 | 93% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.10 | 5.24 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.10 | 5.24 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.10 | 5.24 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 20) Acetone | (1) | 3.835( 0.001) | 58 | 8963 | 22.977 | 24.09 | | | 7.34 | 20.96 |
| 24) Carbon Disulfide | (1) | 4.133( 0.000) | 76 | 44398 | 2.510 | 2.63 | | J | 1.05 | 5.24 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.10 | 5.24 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 4.19 | 10.48 |
| 54) Chloroform | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 65) Benzene | (1) | 7.592(-0.001) | 78 | 41765 | 1.849 | 1.94 | | J | 0.52 | 5.24 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 1.05 | 5.24 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 3.14 | 10.48 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 41349 | 2.716 | 2.85 | | J | 1.05 | 5.24 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 1.05 | 5.24 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

7GP17

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219010

File: /chem/HP09193.i/04feb20a.b/xf20s14.d
Sample: 7GP17;4219010;2;0;;;
Injected At:20-FEB-2004 17:55
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.05
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 4.7700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.14 | 10.48 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.05 | 5.24 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.05 | 5.24 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4094

Analyst: [signature] Date: 2/20/04

Auditor: [signature] Date: 2/23/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s15.d
Date : 20-FEB-2004 18:22
Client ID: 7GP18
Sample Info: 7GP18;4219011;2;0;;;

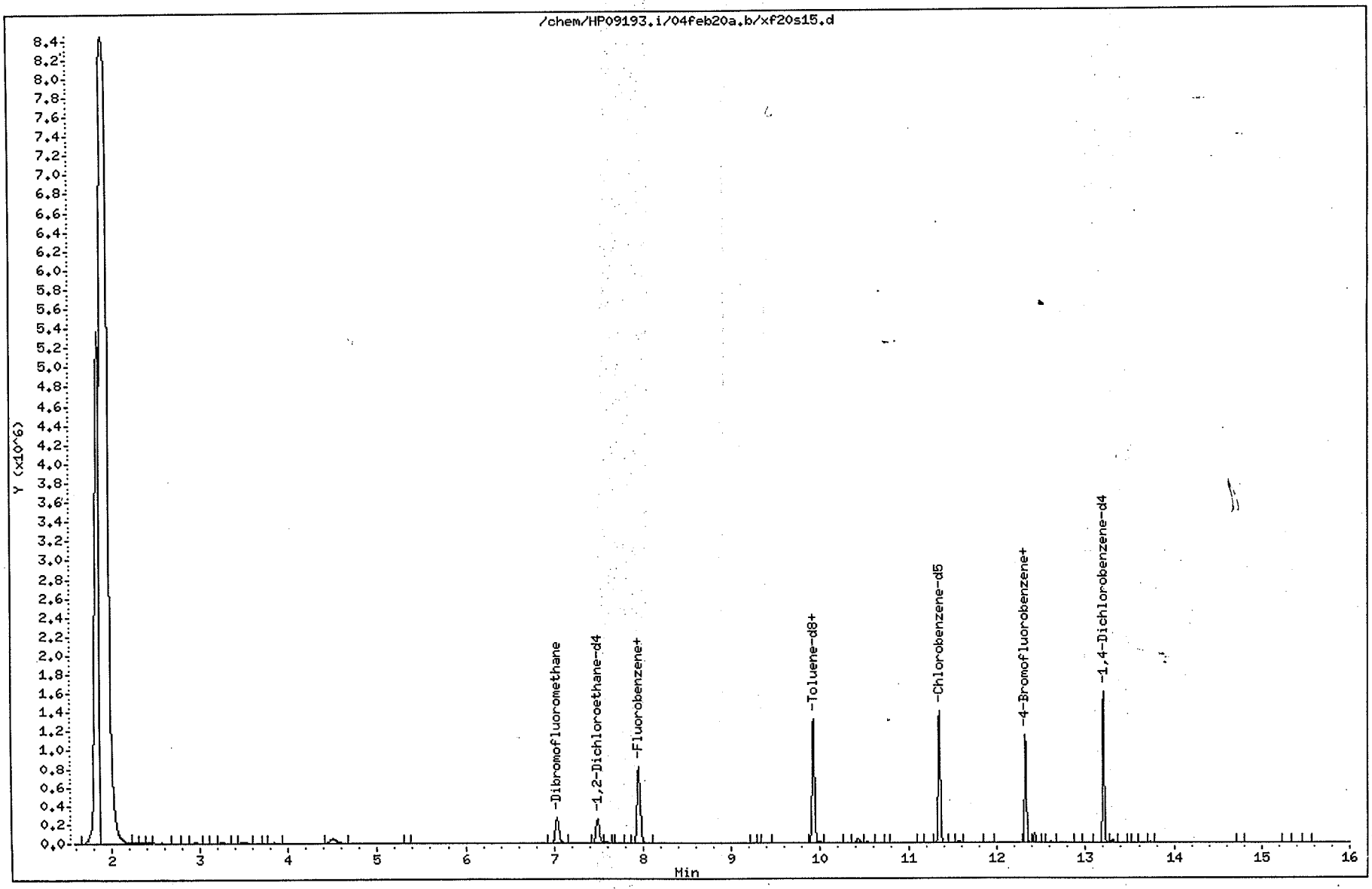
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

4 COMP
125Y
2-22-04

/chem/HP09193.i/04feb20a.b/xf20s15.d



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s15.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 18:22  Analyst ID: LCM01518

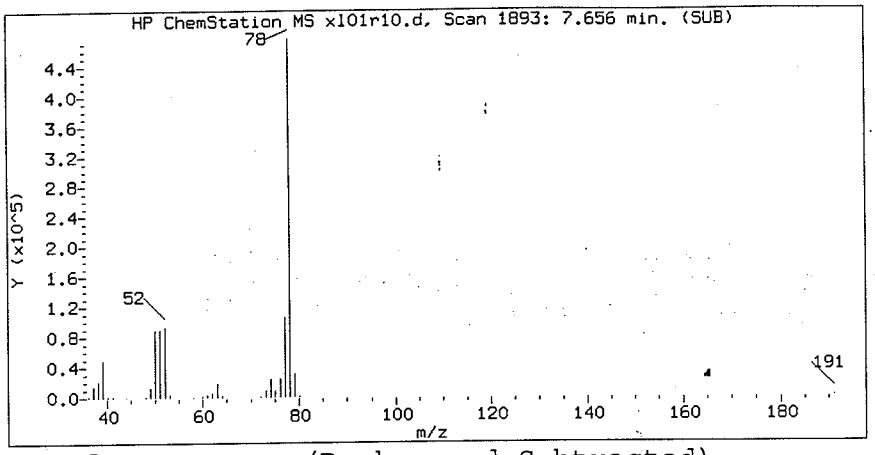
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 22:48 acp01254

Sample Name: 7GP18  Lab Sample ID: 4219011

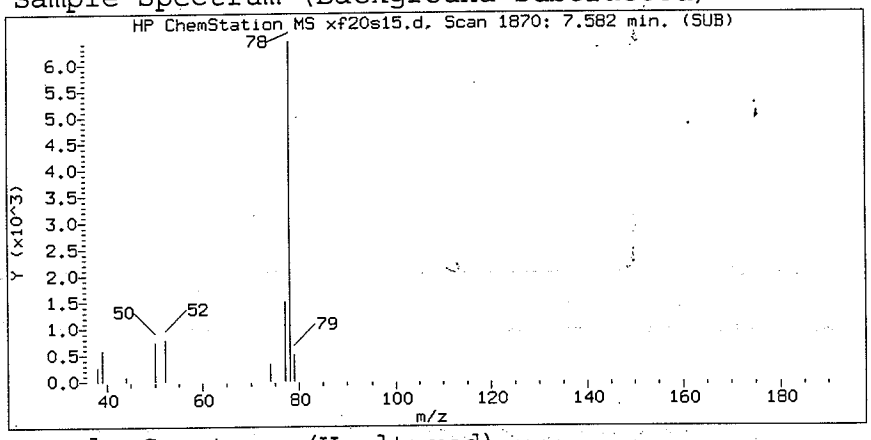
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) Benzene | (1) | 7.582 | 78 | 17505 | 0.789 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1045559 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 823281 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 417066 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 240301 | 53.397 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 56153 | 49.785 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1001623 | 50.605 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 350123 | 46.278 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

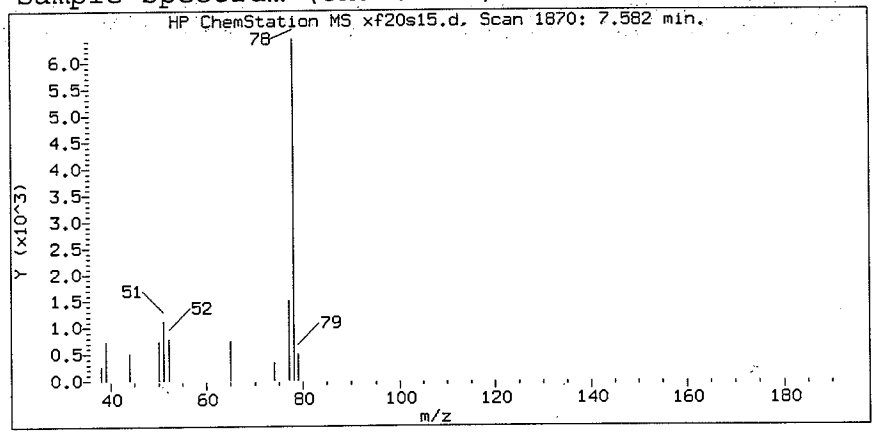
Reference Standard Spectrum for Benzene

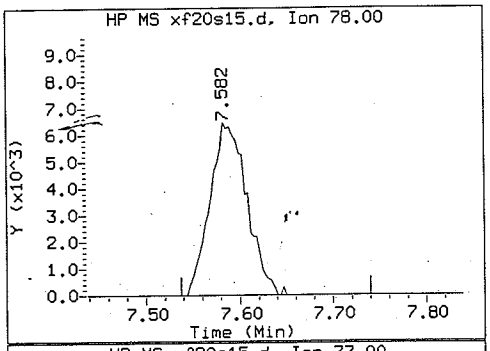


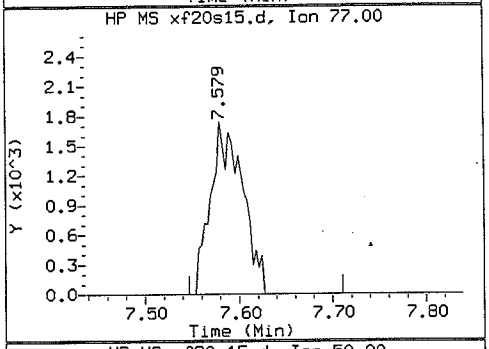

Sample Spectrum (Background Subtracted)

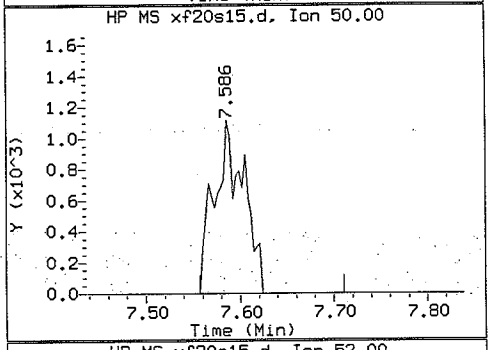


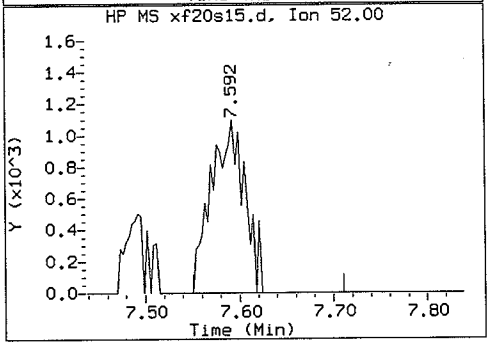

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s15.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 18:22  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 22:48 acp01254

Sample Name: 7GP18  Lab Sample ID: 4219011

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1870 |
| Retention Time (minutes) | : 7.582 |
| Quant Ion | : 78.0 |
| Area (flag) | : 17505 |
| Concentration (ug/Kg) | : 0.7889 |

7GP18

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219011

File: /chem/HP09193.i/04feb20a.b/xf20s15.d
Sample: 7GP18;4219011;2;0;;;
Injected At:20-FEB-2004 18:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.89
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.6400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1045559( -17) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 823281( -18) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 417066( -27) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( 0.000) | 113 | 240301 | 53.397 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 56153 | 49.785 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1001623 | 50.605 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325(-0.001) | 95 | 350123 | 46.278 | 93% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.77 | 4.43 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.77 | 4.43 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.77 | 4.43 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 20) Acetone | (1) | | | | ND | ND | | | 6.21 | 17.73 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.77 | 4.43 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.55 | 8.87 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 65) Benzene | (1) | 7.582( 0.000) | 78 | 17505 | 0.789 | 0.70 | | J | 0.44 | 4.43 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.89 | 4.43 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.66 | 8.87 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.89 | 4.43 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.89 | 4.43 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



6898

7GP18

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219011

File: /chem/HP09193.i/04feb20a.b/xf20s15.d
Sample: 7GP18;4219011;2;0;;;
Injected At:20-FEB-2004 18:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.89
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.6400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.66 | 8.87 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.89 | 4.43 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.89 | 4.43 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4659

Analyst: dcmf 1254 Date: 2.22.04

Auditor: Barb Small Date: 2/28/04



5891

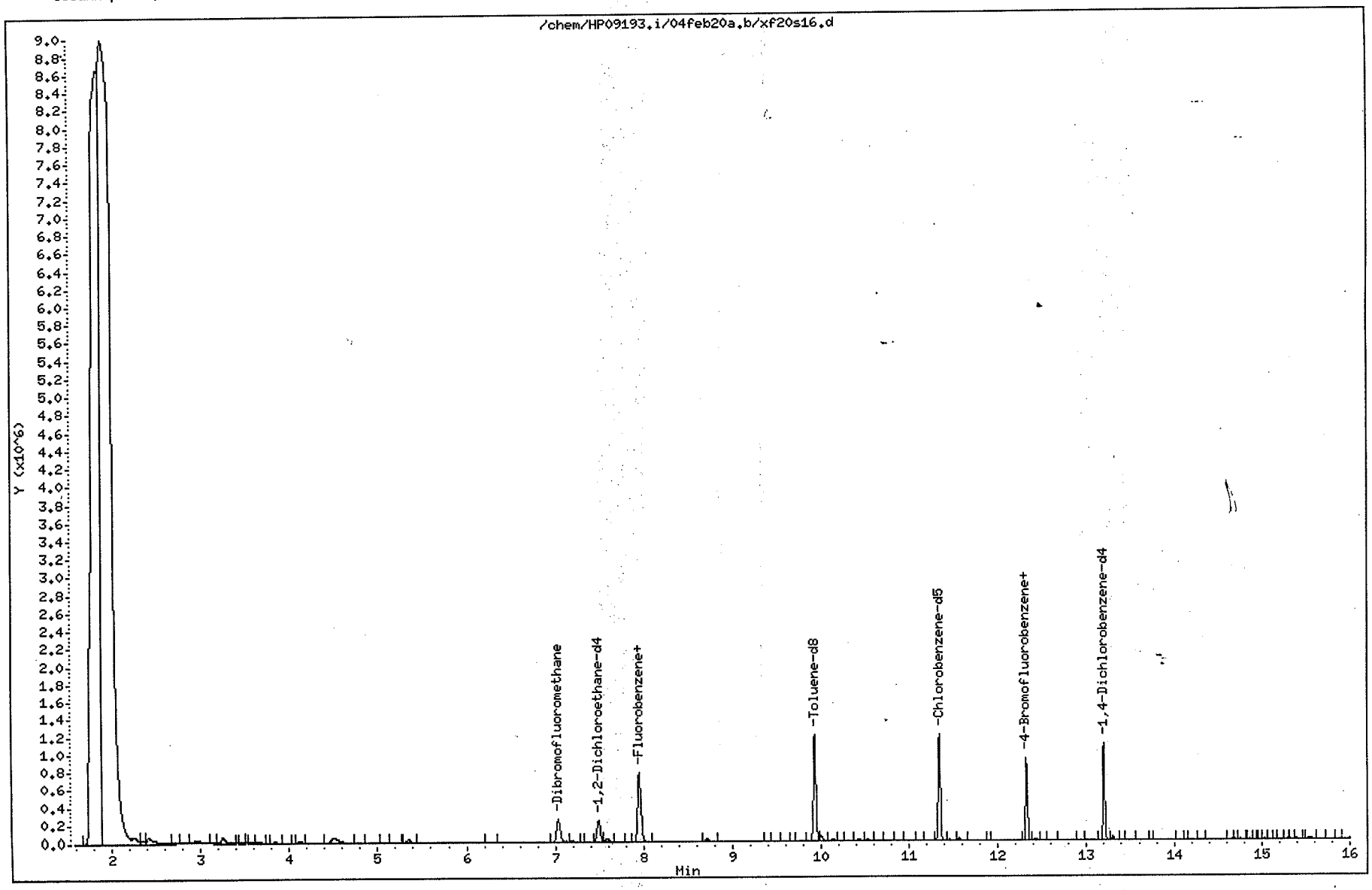
Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d
Date : 20-FEB-2004 18:49
Client ID: 7GP19
Sample Info: 7GP19;4219012;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

temp
125C
2.22.04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 18:49  Analyst ID: LCM01518

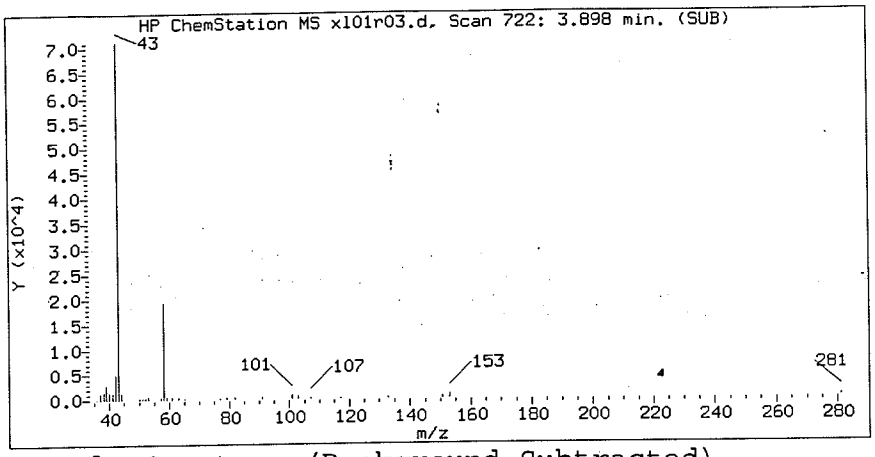
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 22:58 acp01254

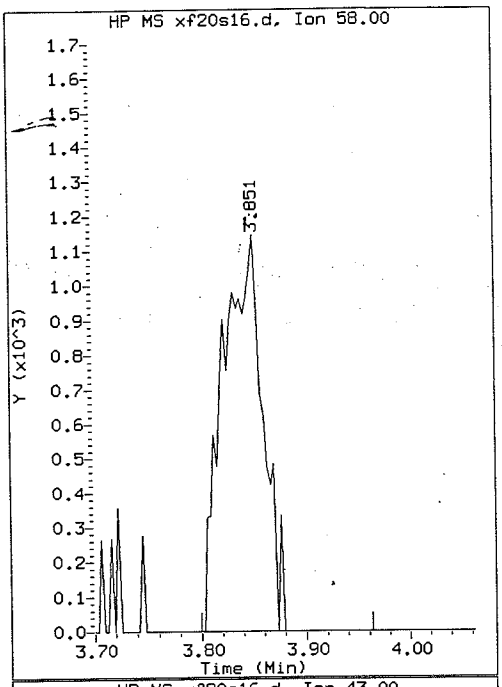
Sample Name: 7GP19  Lab Sample ID: 4219012

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.851 | 58 | 3066 | 8.620 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 30278 | 1.877 |
| 65) Benzene | (1) | 7.586 | 78 | 42019 | 2.040 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 970494 | 50.000 |
| 88) Toluene | (2) | 10.002 | 92 | 26113 | 1.998 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 714880 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 297543 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.040 | 113 | 224585 | 53.764 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 52669 | 50.308 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 911879 | 53.057 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 281239 | 42.810 |

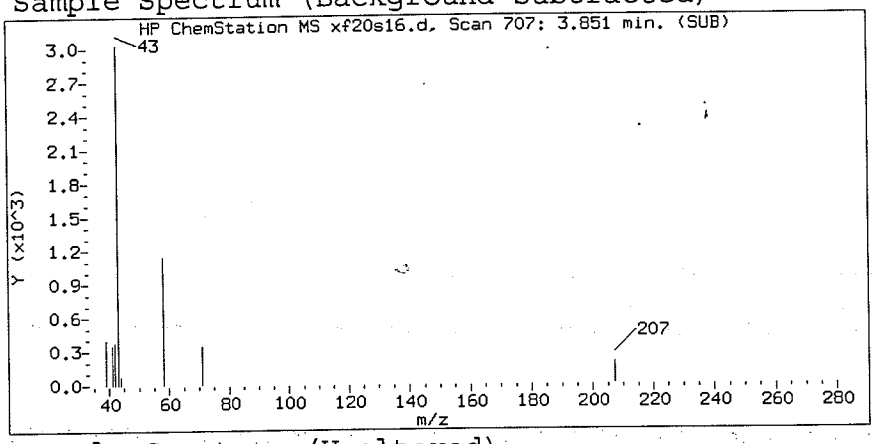
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

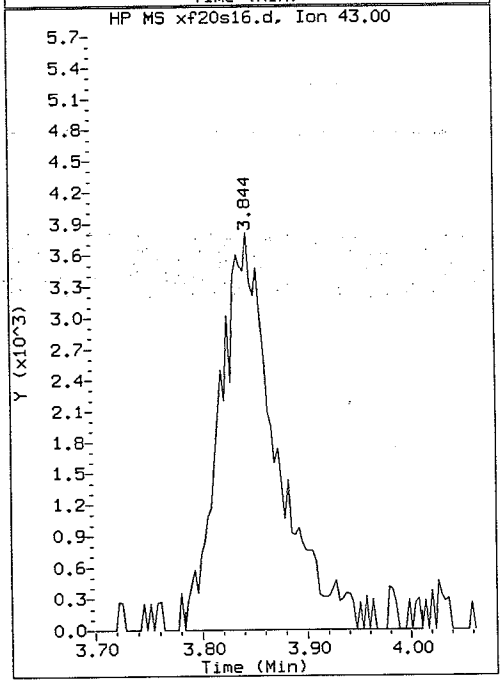
Reference Standard Spectrum for Acetone



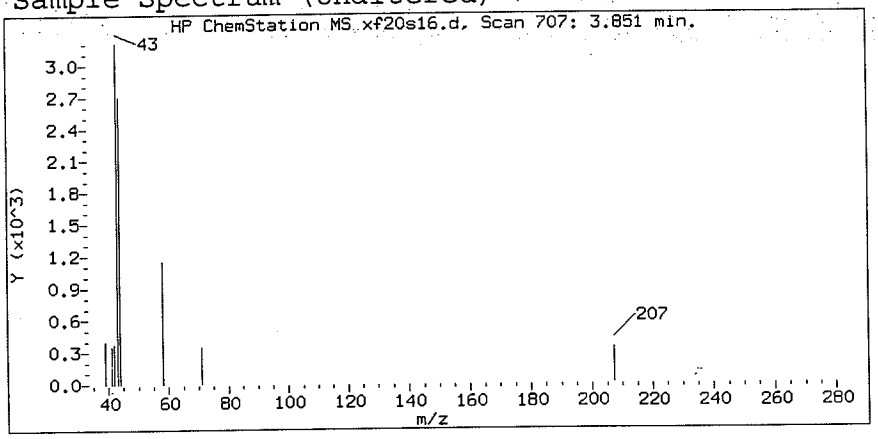




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d
Injection date and time: 20-FEB-2004 18:49

Instrument ID: HP09193.i
Analyst ID: LCM01518

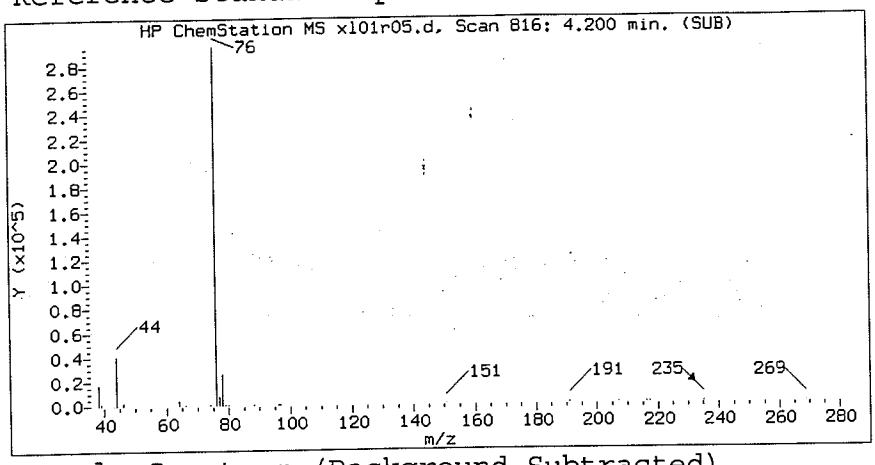
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 22:58 acp01254

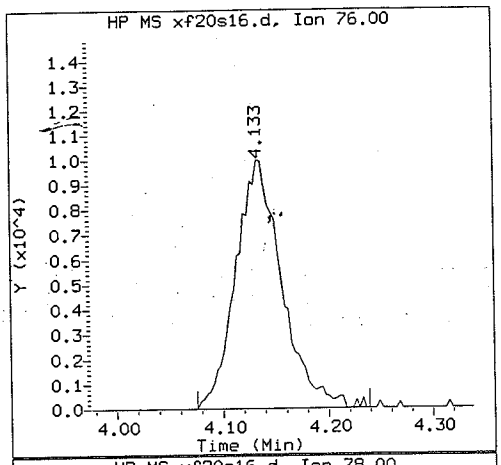
Sample Name: 7GP19

Lab Sample ID: 4219012

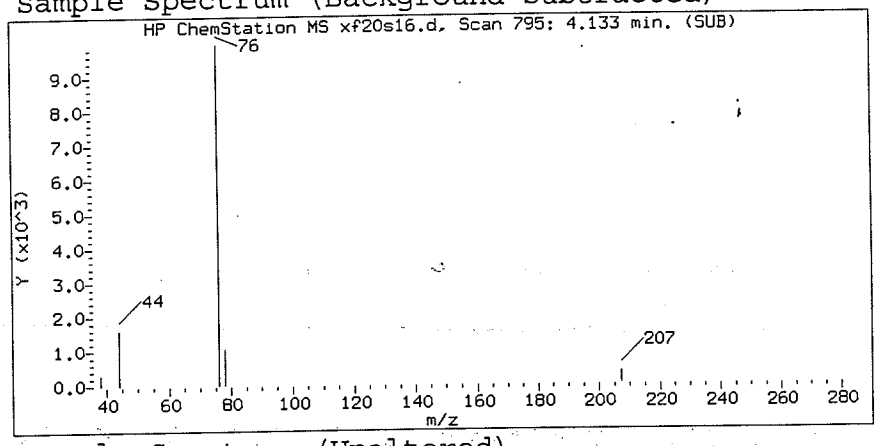
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 707 |
| Retention Time (minutes) | : 3.851 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3066 |
| Concentration (ug/Kg) | : 8.6198 |

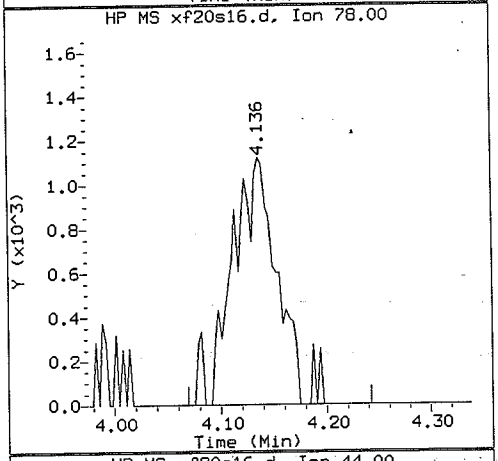
Reference Standard Spectrum for Carbon Disulfide



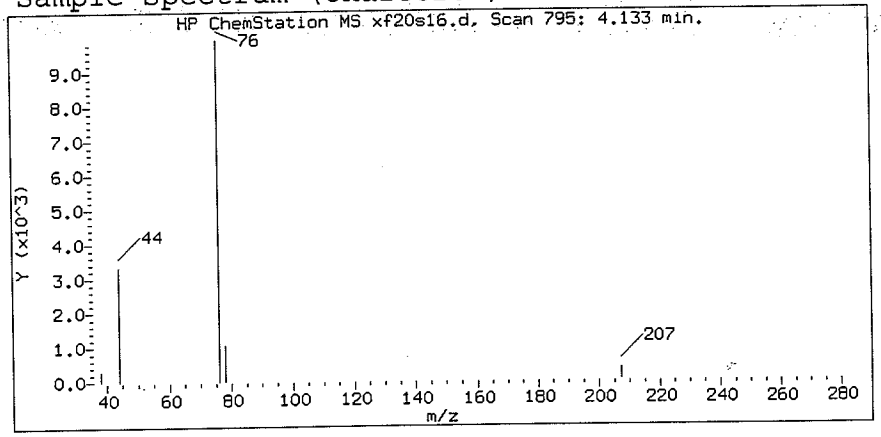



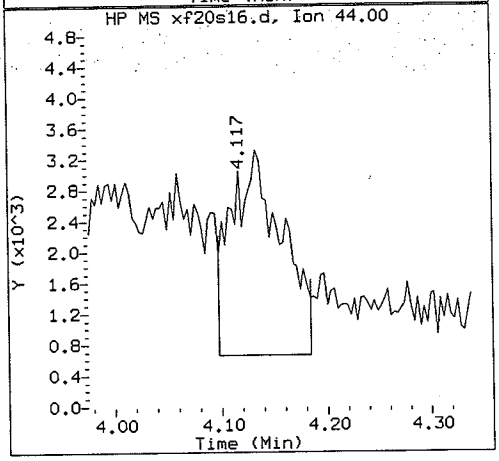

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



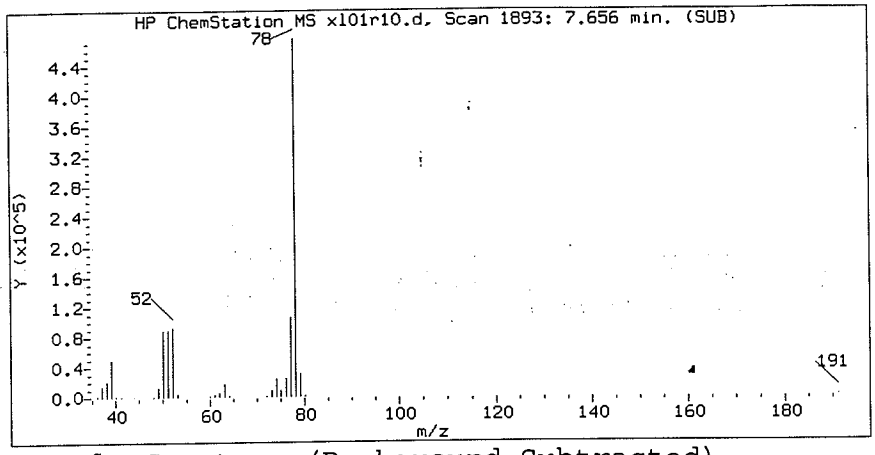

Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 18:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 22:58 acp01254

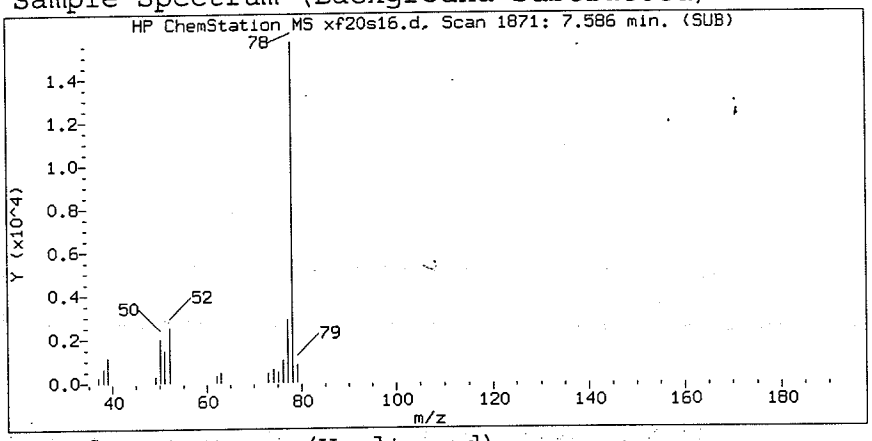
Sample Name: 7GP19 Lab Sample ID: 4219012

| | |
|---|---|
| Compound Number | : 24 |
| Compound Name | : Carbon Disulfide |
| Scan Number | : 795 |
| Retention Time (minutes) | : 4.133 |
| Quant Ion | : 76.0 |
| Area (flag) | : 30278 |
| Concentration (ug/Kg) | : 1.8771 |

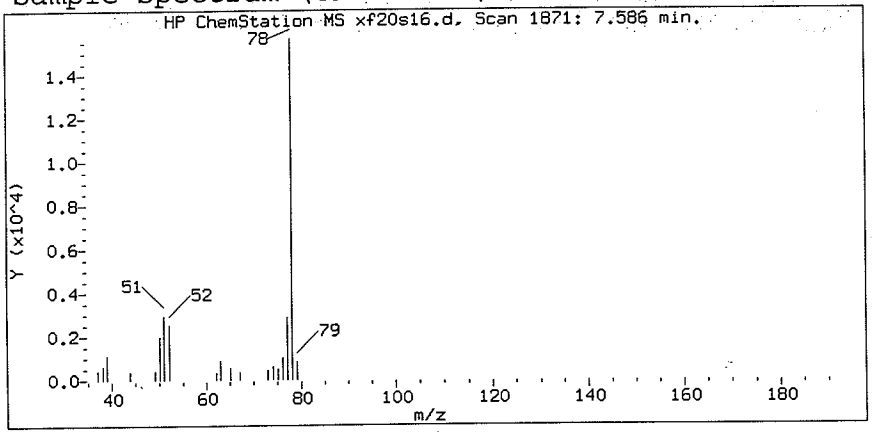
Reference Standard Spectrum for Benzene

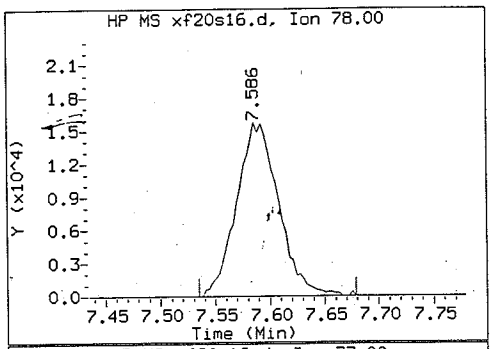


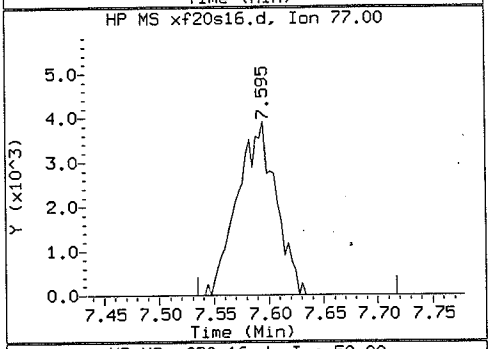

Sample Spectrum (Background Subtracted)

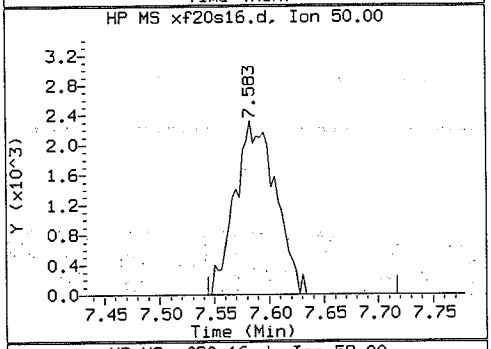


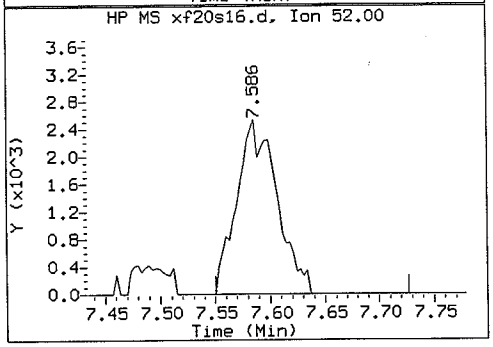

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 18:49  Analyst ID: LCM01518

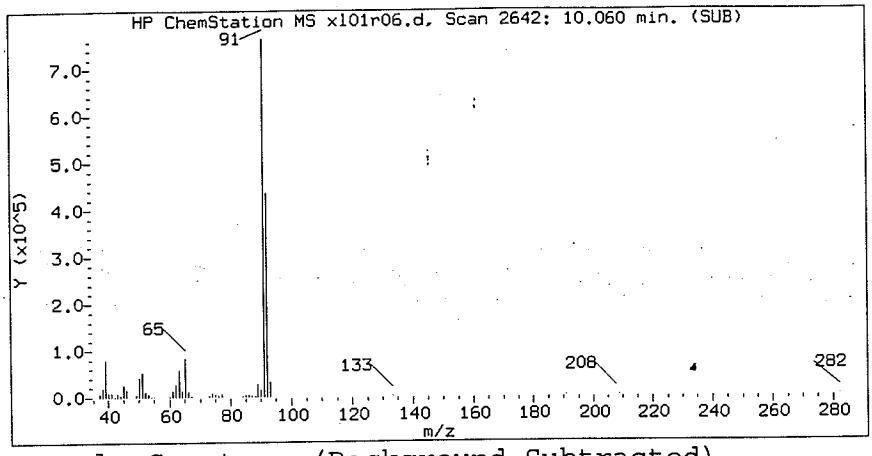
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 22:58 acp01254

Sample Name: 7GP19  Lab Sample ID: 4219012

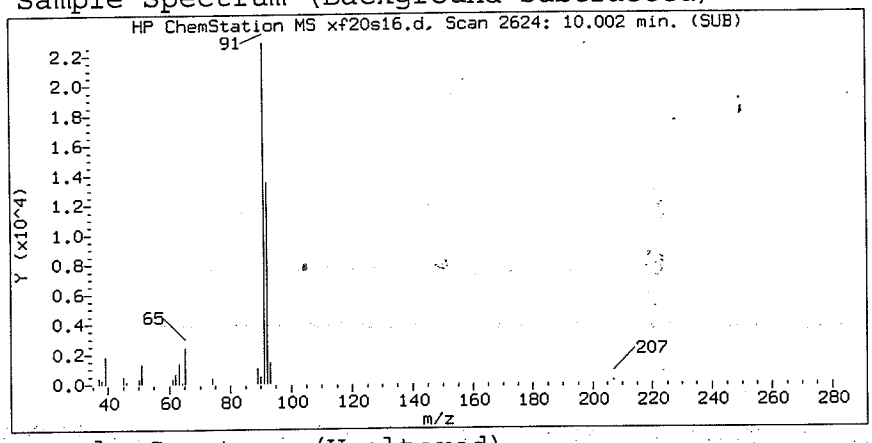
| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1871 |
| Retention Time (minutes) | : 7.586 |
| Quant Ion | : 78.0 |
| Area (flag) | : 42019 |
| Concentration (ug/Kg) | : 2.0402 |

8895

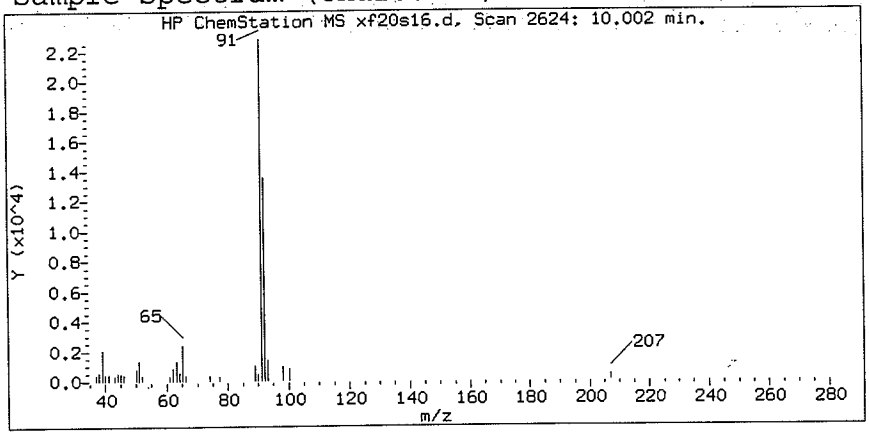
Reference Standard Spectrum for Toluene

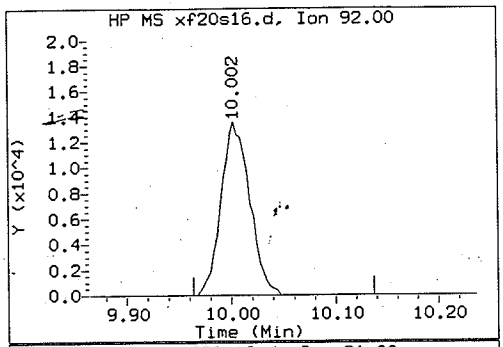


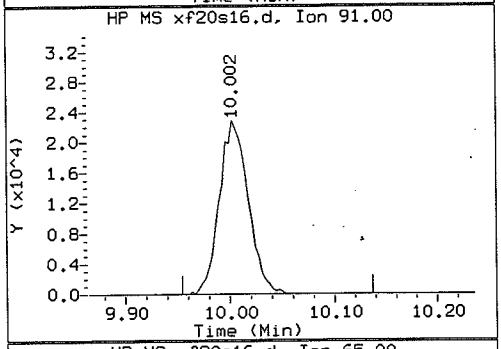

Sample Spectrum (Background Subtracted)

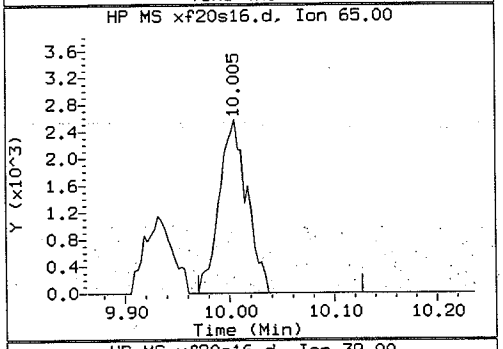


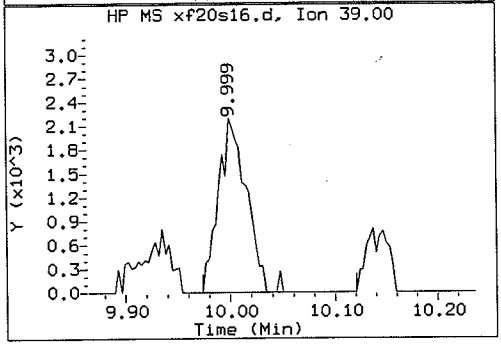

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s16.d
Injection date and time: 20-FEB-2004 18:49

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 22:58 acp01254

Sample Name: 7GP19

Lab Sample ID: 4219012

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2624 |
| Retention Time (minutes) | : 10.002 |
| Quant Ion | : 92.0 |
| Area (flag) | : 26113 |
| Concentration (ug/Kg) | : 1.9979 |

8897

7GP19

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219012

File: /chem/HP09193.i/04feb20a.b/xf20s16.d
Sample: 7GP19;4219012;2;0;;;
Injected At:20-FEB-2004 18:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.97
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.1400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 970494( -23) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 714880( -29) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 297543( -48) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.040(-0.001) | 113 | 224585 | 53.764 | 108% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 52669 | 50.308 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 911879 | 53.057 | 106% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 281239 | 42.810 | 86% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.95 | 4.86 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.95 | 4.86 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.95 | 4.86 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 20) Acetone | (1) | 3.851(-0.002) | 58 | 3066 | 8.620 | 8.39 | | J | 6.81 | 19.46 |
| 24) Carbon Disulfide | (1) | 4.133( 0.000) | 76 | 30278 | 1.877 | 1.83 | | J | 0.97 | 4.86 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.95 | 4.86 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.89 | 9.73 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 42019 | 2.040 | 1.98 | | J | 0.49 | 4.86 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.97 | 4.86 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.92 | 9.73 |
| 88) Toluene | (2) | 10.002( 0.000) | 92 | 26113 | 1.998 | 1.94 | | J | 0.97 | 4.86 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.97 | 4.86 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



dw=dc
.822

8.39
0.822=10.2

8898

7GP19

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219012

File: /chem/HP09193.i/04feb20a.b/xf20s16.d
Sample: 7GP19;4219012;2;0;;;
Injected At:20-FEB-2004 18:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.97
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.1400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.92 | 9.73 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.97 | 4.86 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.97 | 4.86 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4695

Analyst: temp 1254 Date: 2.22.04

Auditor: [signature] Date: 2/23/04



8899

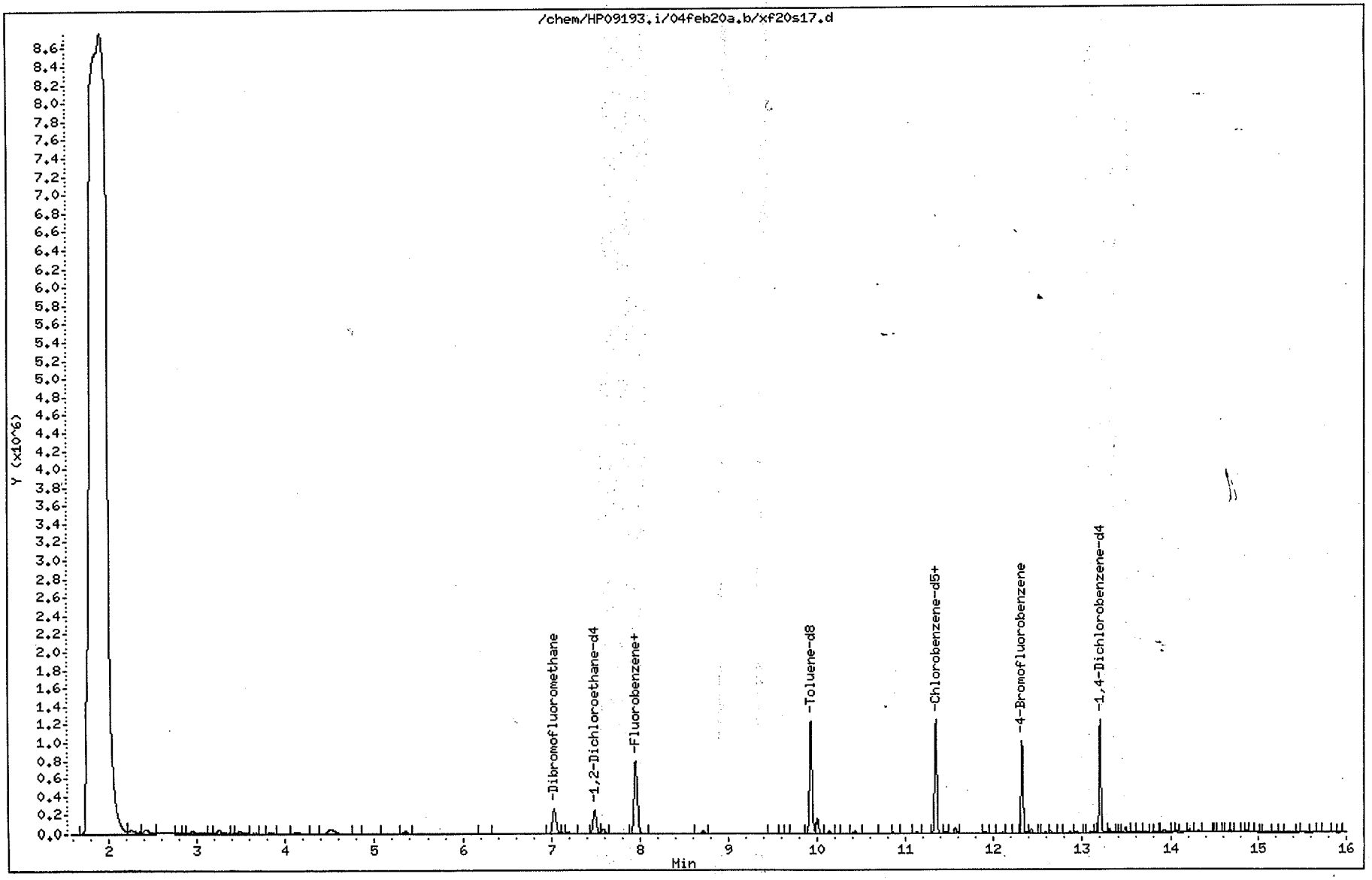
Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d
Date : 20-FEB-2004 19:16
Client ID: 7GP20
Sample Info: 7GP20;4219013;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

7GMP
1254
2.22.04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16 Analyst ID: LCM01518

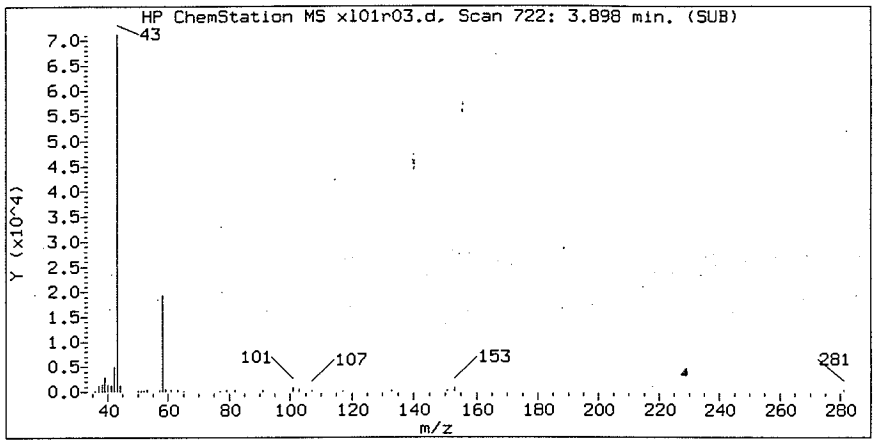
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

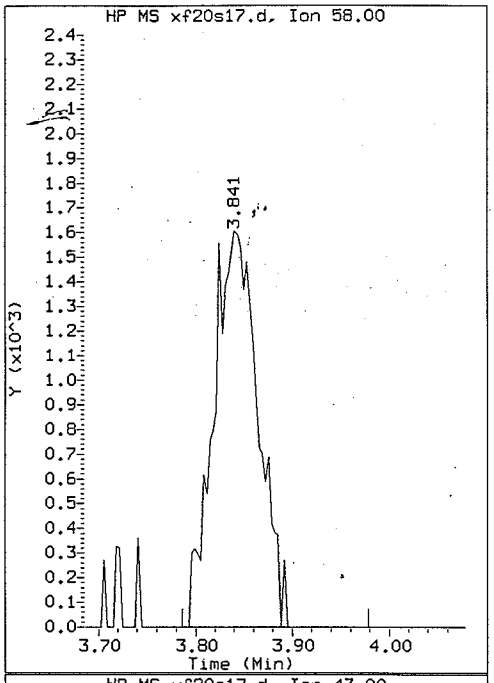
Sample Name: 7GP20 Lab Sample ID: 4219013

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.841 | 58 | 5188 | 14.269 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 47453 | 2.878 |
| 65) Benzene | (1) | 7.582 | 78 | 57974 | 2.754 |
| 69)*Fluorobenzene | (1) | 7.954 | 96 | 992011 | 50.000 |
| 88) Toluene | (2) | 10.005 | 92 | 79153 | 5.796 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 746930 | 50.000 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 13285 | 1.280 |
| 92) Xylene (Total) | (2) | | 106 | 13285 | 1.280 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 327862 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 227790 | 53.349 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 52399 | 48.965 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 945624 | 52.659 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 302816 | 44.116 |

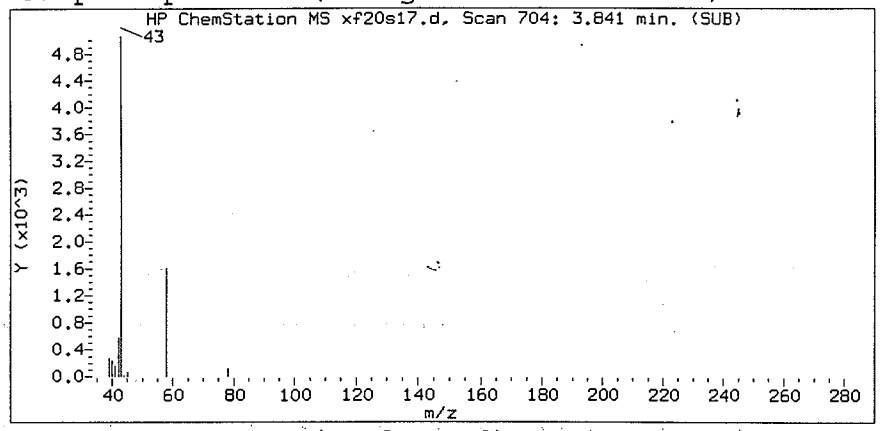
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

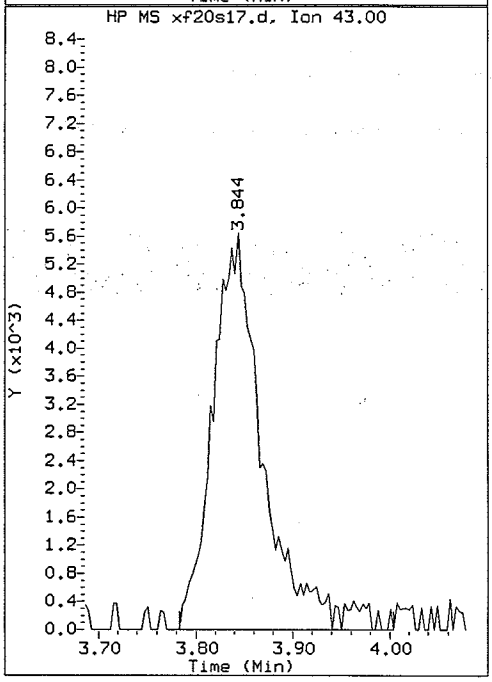
Reference Standard Spectrum for Acetone



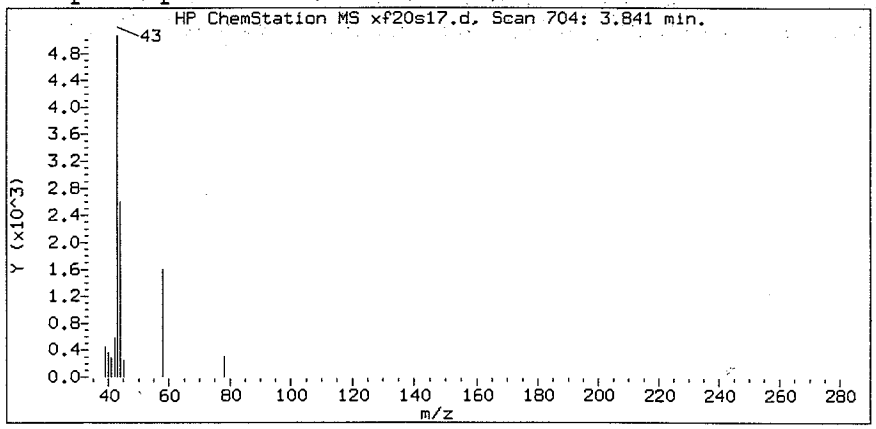




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



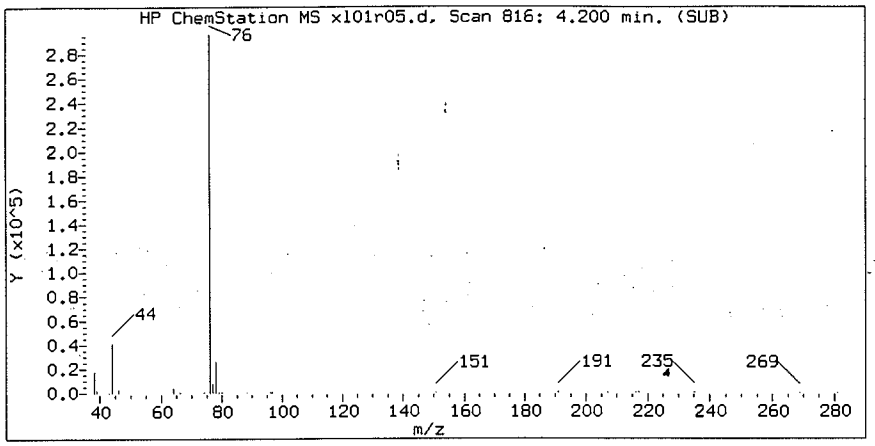

Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16  Analyst ID: LCM01518

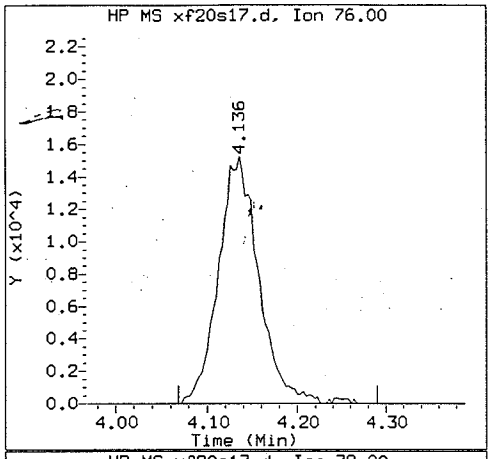
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

Sample Name: 7GP20  Lab Sample ID: 4219013

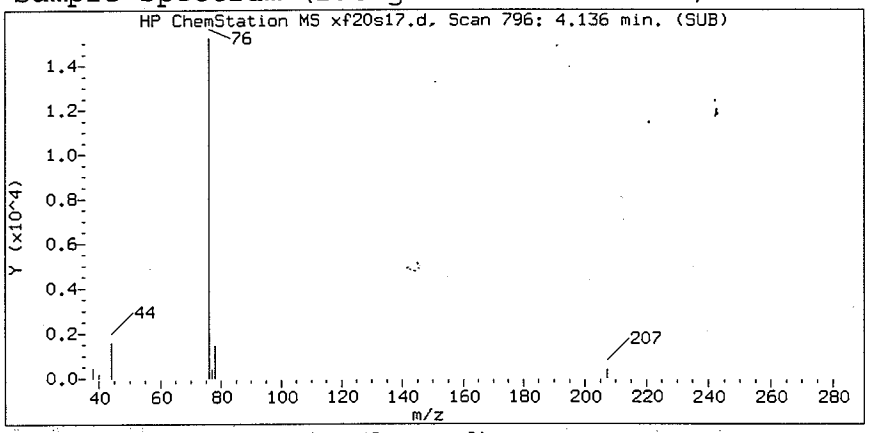
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 704 |
| Retention Time (minutes) | : 3.841 |
| Quant Ion | : 58.0 |
| Area (flag) | : 5188 |
| Concentration (ug/Kg) | : 14.2693 |

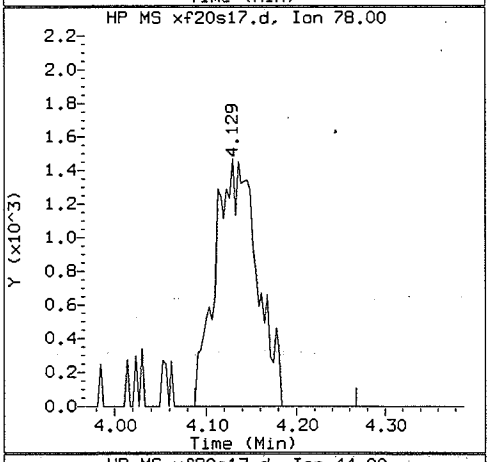
Reference Standard Spectrum for Carbon Disulfide



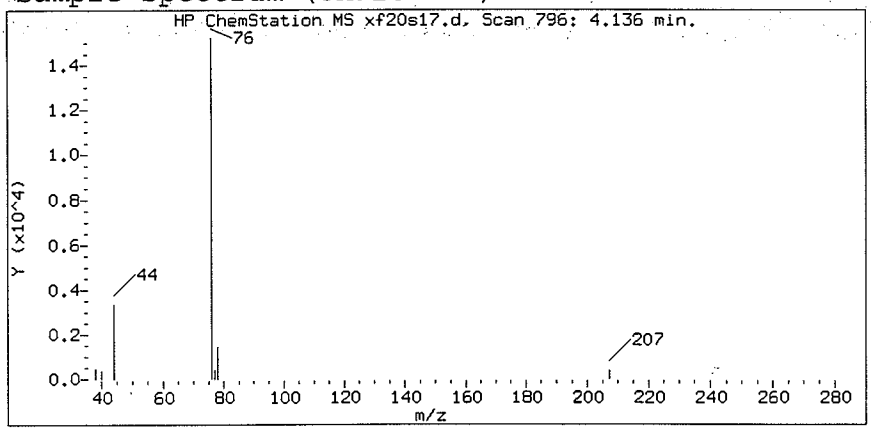



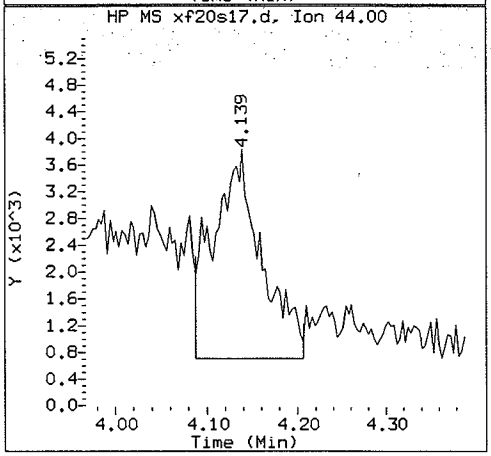

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



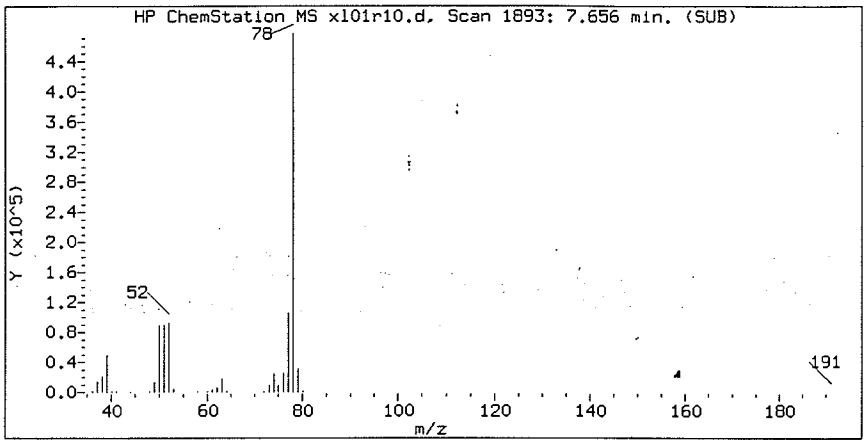

Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

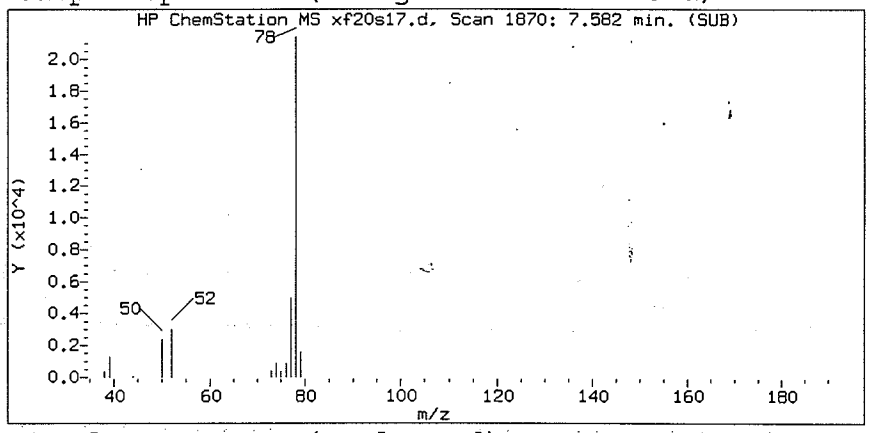
Sample Name: 7GP20  Lab Sample ID: 4219013

| | |
|---|---|
| Compound Number | : 24 |
| Compound Name | : Carbon Disulfide |
| Scan Number | : 796 |
| Retention Time (minutes) | : 4.136 |
| Quant Ion | : 76.0 |
| Area (flag) | : 47453 |
| Concentration (ug/Kg) | : 2.8781 |

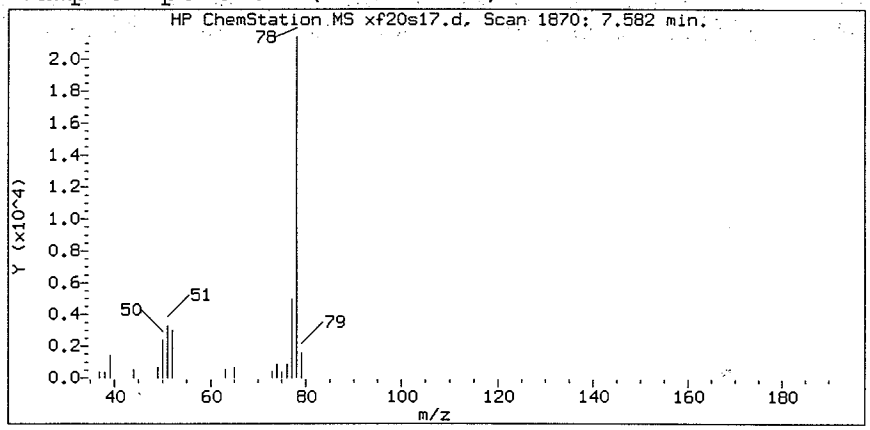
Reference Standard Spectrum for Benzene

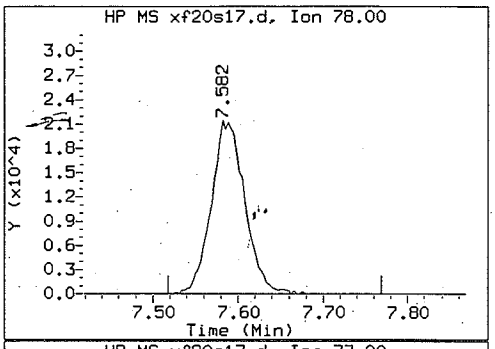


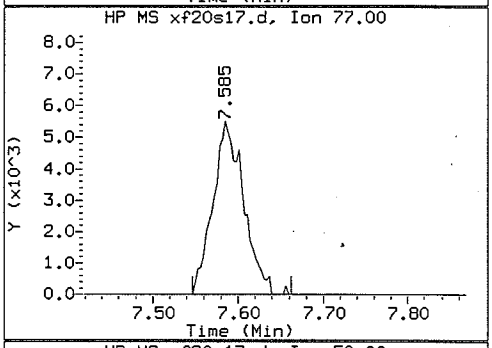

Sample Spectrum (Background Subtracted)

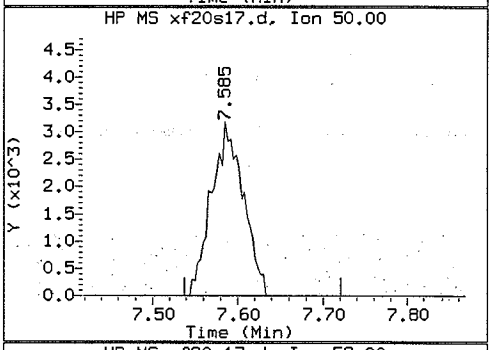


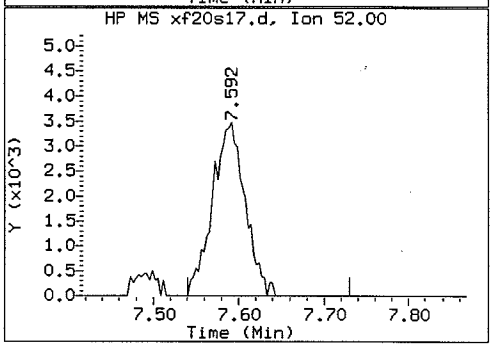

Sample Spectrum (Unaltered)



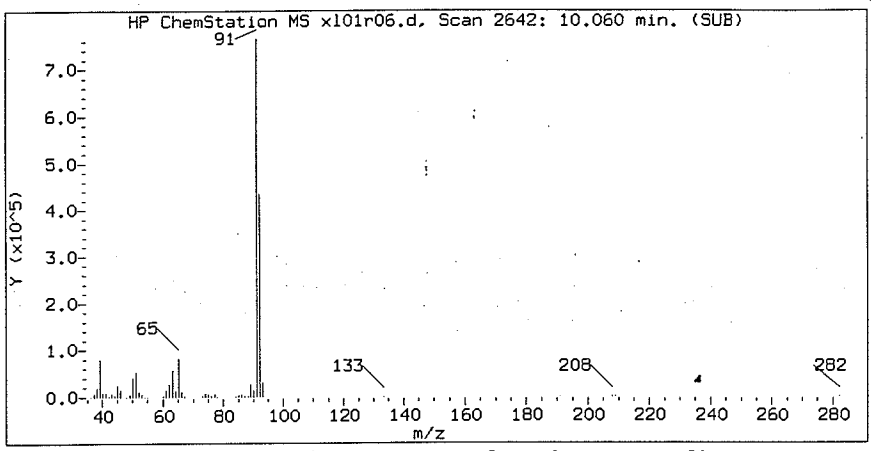

Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

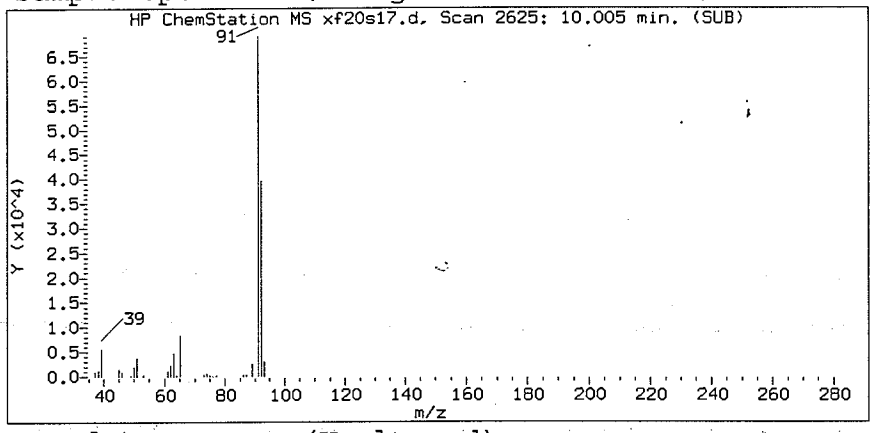
Sample Name: 7GP20  Lab Sample ID: 4219013

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1870 |
| Retention Time (minutes) | : 7.582 |
| Quant Ion | : 78.0 |
| Area (flag) | : 57974 |
| Concentration (ug/Kg) | : 2.7539 |

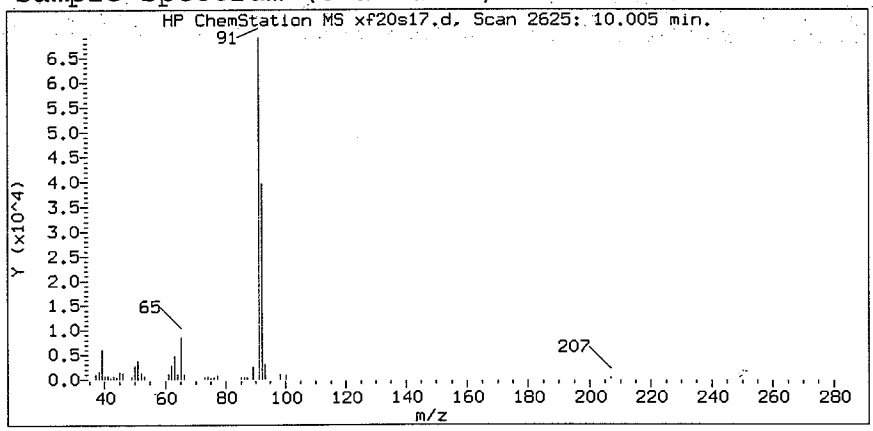
Reference Standard Spectrum for Toluene

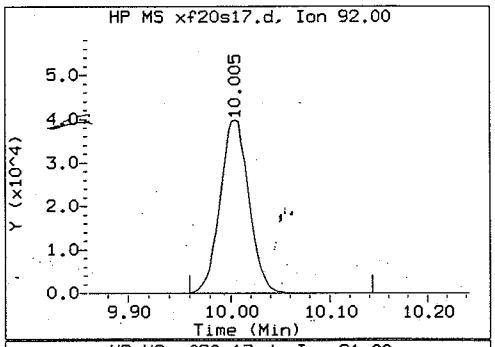


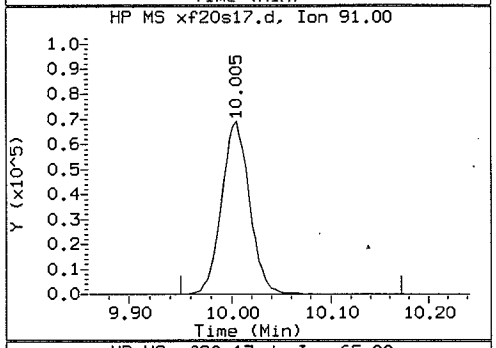

Sample Spectrum (Background Subtracted)

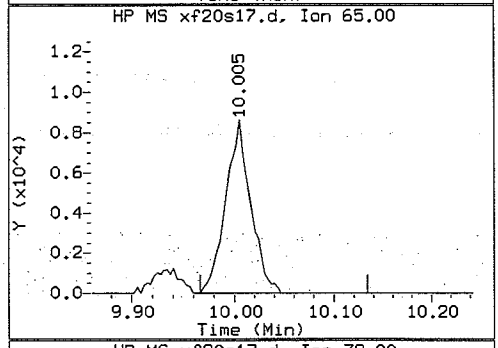


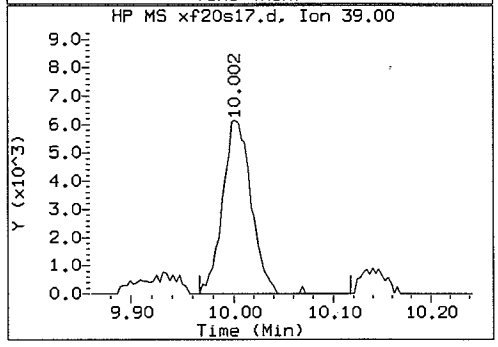

Sample Spectrum (Unaltered)



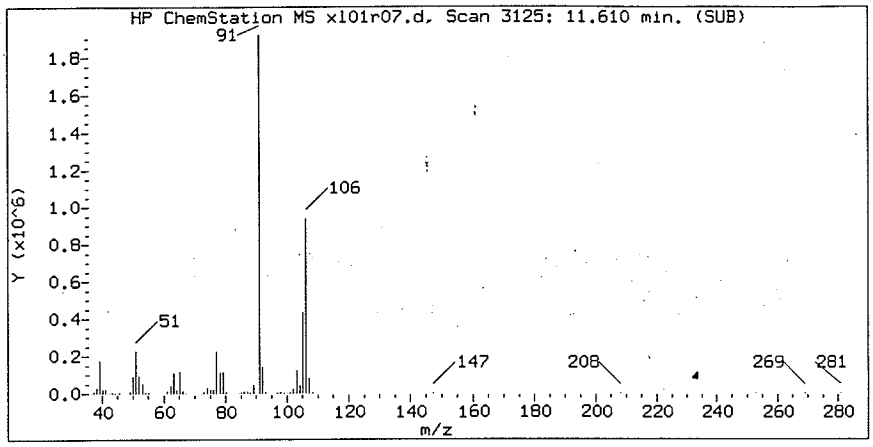

Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

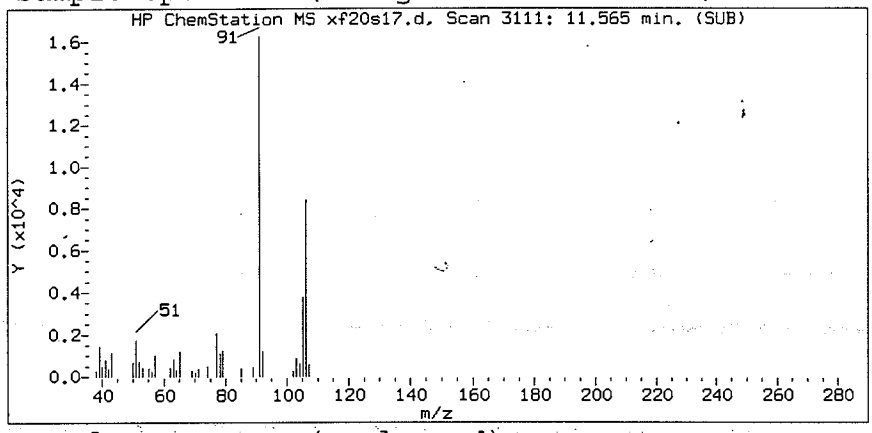
Sample Name: 7GP20 Lab Sample ID: 4219013

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2625 |
| Retention Time (minutes) | : 10.005 |
| Quant Ion | : 92.0 |
| Area (flag) | : 79153 |
| Concentration (ug/Kg) | : 5.7961 |

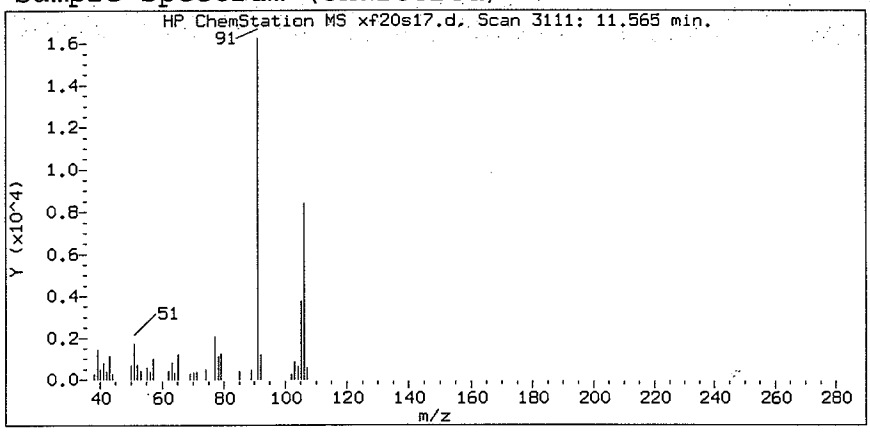
Reference Standard Spectrum for m+p-Xylene

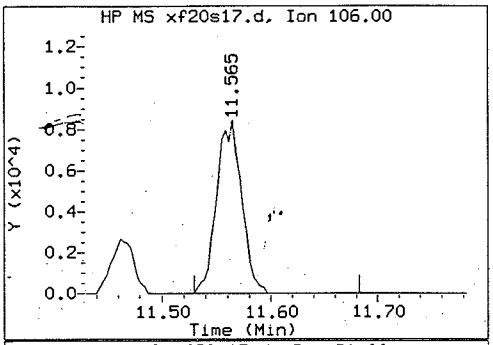


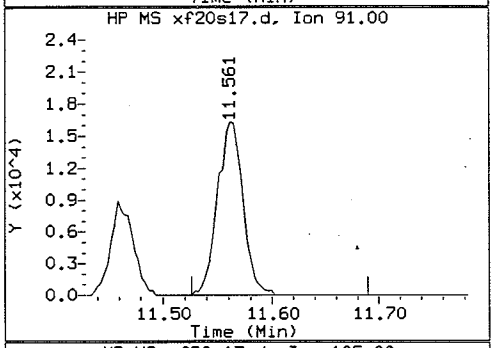

Sample Spectrum (Background Subtracted)

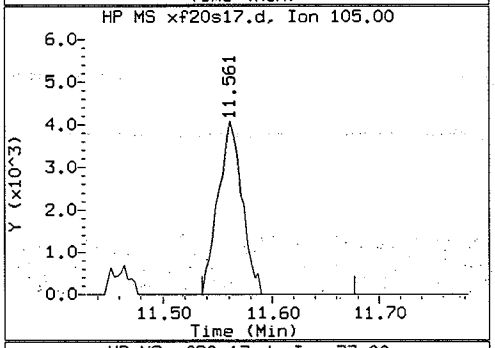


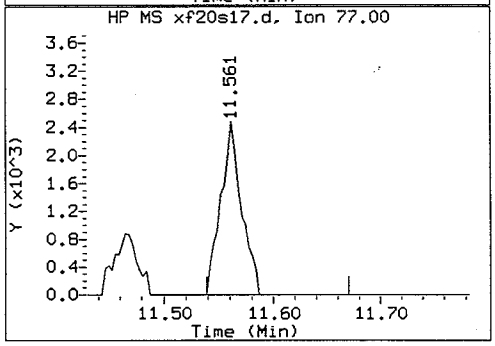

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s17.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:16 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:24 acp01254

Sample Name: 7GP20 Lab Sample ID: 4219013

| | |
|---|---|
| Compound Number | : 105 |
| Compound Name | : m+p-Xylene |
| Scan Number | : 3111 |
| Retention Time (minutes) | : 11.565 |
| Quant Ion | : 106.0 |
| Area (flag) | : 13285 |
| Concentration (ug/Kg) | : 1.2800 |

# 7GP20

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219013

File: /chem/HP09193.i/04feb20a.b/xf20s17.d
Sample: 7GP20;4219013;2;0;;;
Injected At:20-FEB-2004 19:16
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.90
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.5700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.954( 0.003) | 1986 | 96 | 992011( -22) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 746930( -25) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.204(-0.003) | 3622 | 152 | 327862( -43) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 227790 | 53.349 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 52399 | 48.965 | 98% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 945624 | 52.659 | 105% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325(-0.001) | 95 | 302816 | 44.116 | 88% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.80 | 4.49 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.80 | 4.49 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.80 | 4.49 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 20) Acetone | (1) | 3.841( 0.000) | 58 | 5188 | 14.269 | 12.81 | | J | 6.28 | 17.95 |
| 24) Carbon Disulfide | (1) | 4.136( 0.000) | 76 | 47453 | 2.878 | 2.58 | | J | 0.90 | 4.49 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.80 | 4.49 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.59 | 8.98 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 65) Benzene | (1) | 7.582( 0.000) | 78 | 57974 | 2.754 | 2.47 | | J | 0.45 | 4.49 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.90 | 4.49 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.69 | 8.98 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 79153 | 5.796 | 5.20 | | | 0.90 | 4.49 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.90 | 4.49 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

7GP20

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219013

File: /chem/HP09193.i/04feb20a.b/xf20s17.d
Sample: 7GP20;4219013;2;0;;;
Injected At:20-FEB-2004 19:16
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.90
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.5700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.69 | 8.98 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 105) m+p-Xylene | (2) | 11.565 | (-0.001) | 106 | 13285 | 1.280 | 1.15 | | J | 0.90 | 4.49 |
| 92) Xylene (Total) | (2) | | | 106 | 13285 | 1.280 | 1.15 | | J | 0.90 | 4.49 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.90 | 4.49 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.90 | 4.49 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4683

Analyst: Acmp 1254 Date: 2.22.04

Auditor: [signature] Date: 2/23/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s20.d
Date : 20-FEB-2004 20:38
Client ID: 7GP21
Sample Info: 7GP21;4219016;2;0;;;

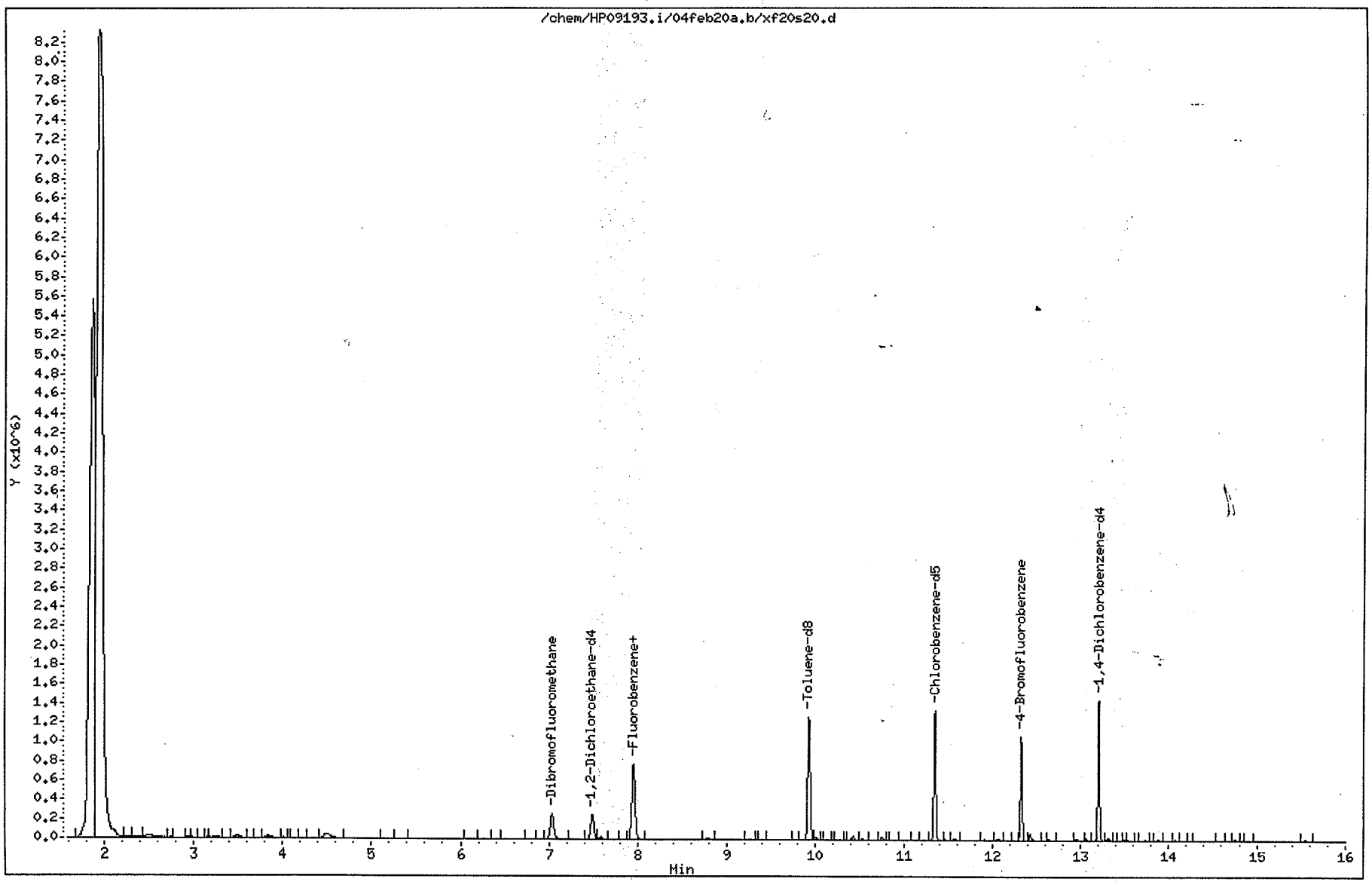
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

Acmp
1254
2.22.04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s20.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 20:38 Analyst ID: LCM01518

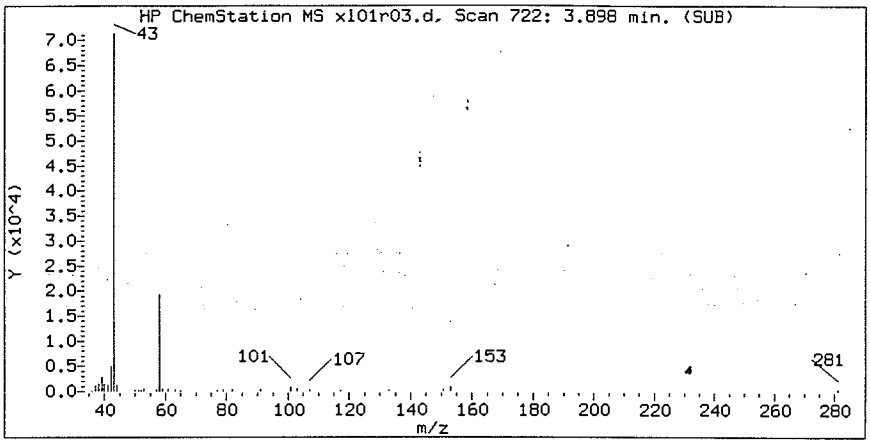
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 23:31 acp01254

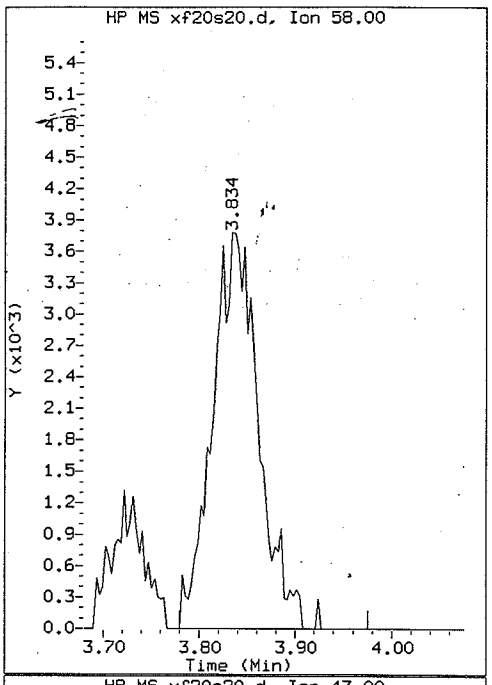
Sample Name: 7GP21 Lab Sample ID: 4219016

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.834 | 58 | 12593 | 34.092 |
| 65) Benzene | (1) | 7.585 | 78 | 26123 | 1.221 |
| 69) *Fluorobenzene | (1) | 7.951 | 96 | 1007842 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.346 | 117 | 783236 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 384661 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.033 | 113 | 231764 | 53.427 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 53633 | 49.330 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 962909 | 51.136 |
| 113) $4-Bromofluorobenzene | (2) | 12.325 | 95 | 331775 | 46.095 |

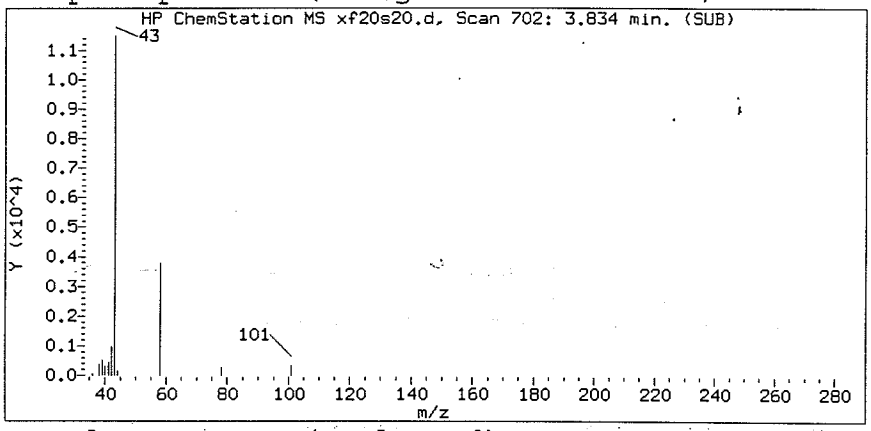
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

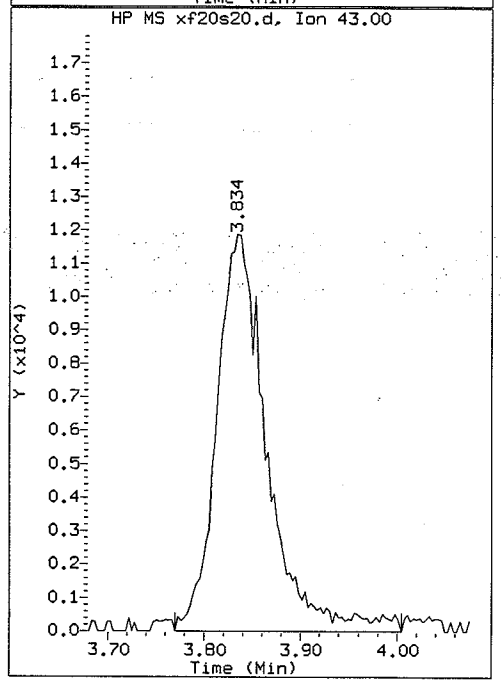
Reference Standard Spectrum for Acetone



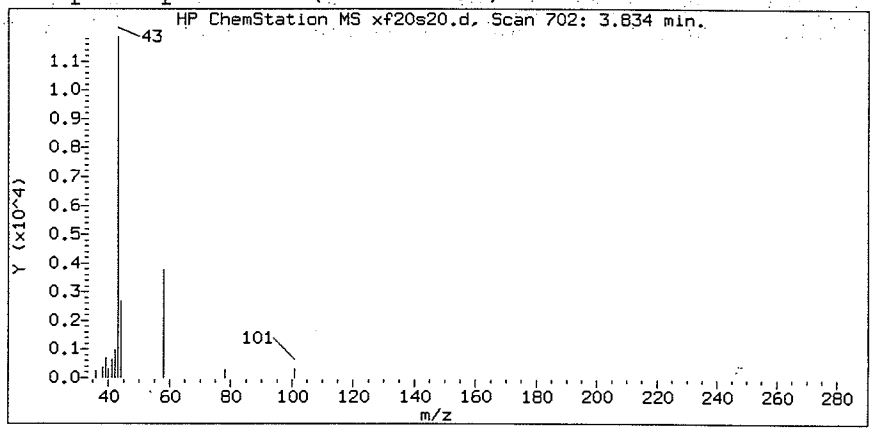




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



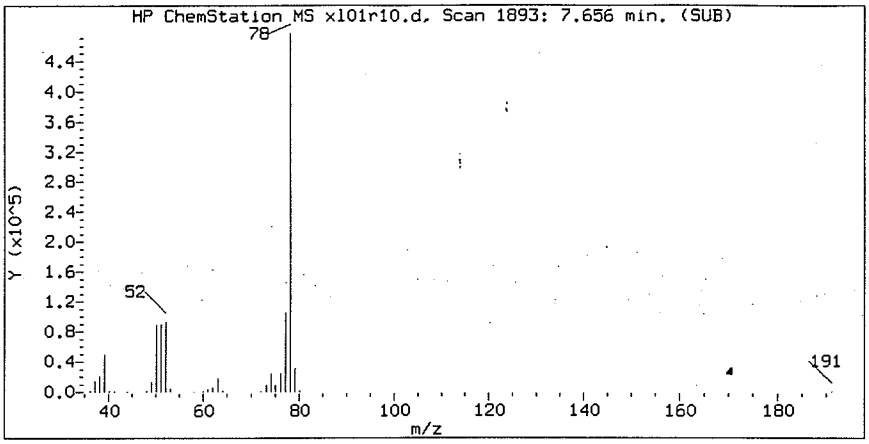

Data File: /chem/HP09193.i/04feb20a.b/xf20s20.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 20:38  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:31 acp01254

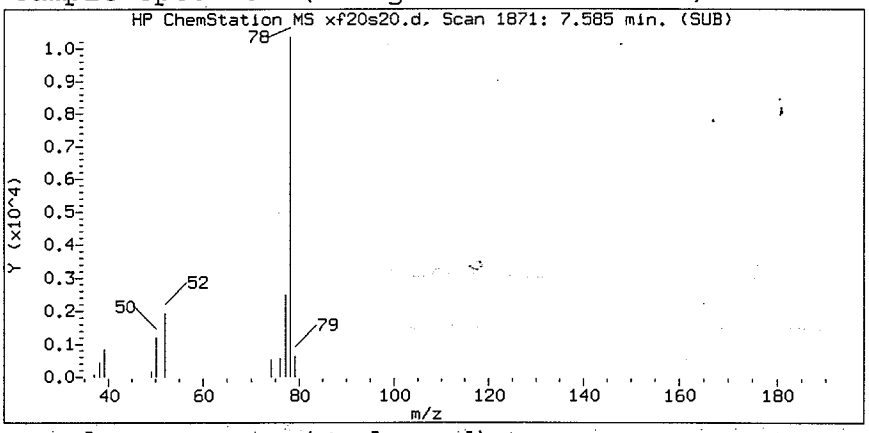
Sample Name: 7GP21  Lab Sample ID: 4219016

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 702 |
| Retention Time (minutes) | : 3.834 |
| Quant Ion | : 58.0 |
| Area (flag) | : 12593 |
| Concentration (ug/Kg) | : 34.0922 |

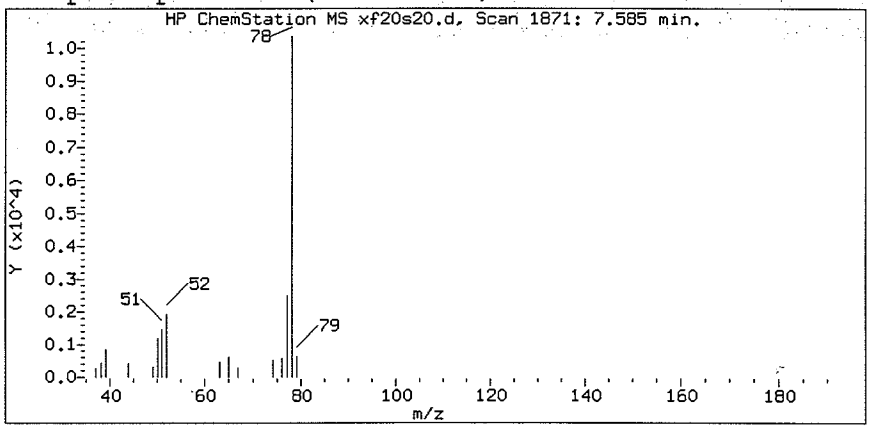
Reference Standard Spectrum for Benzene

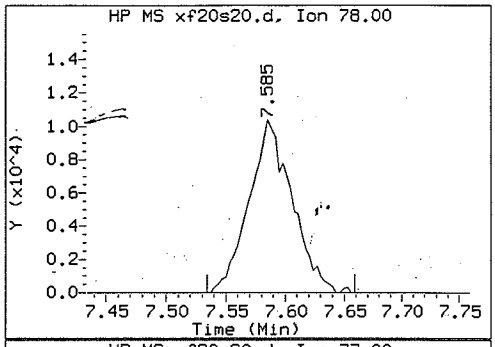


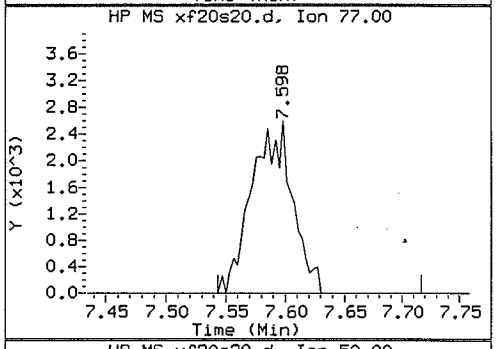

Sample Spectrum (Background Subtracted)

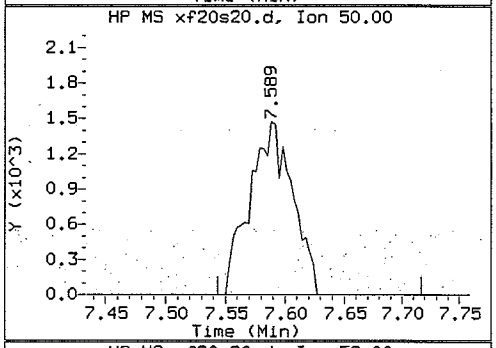


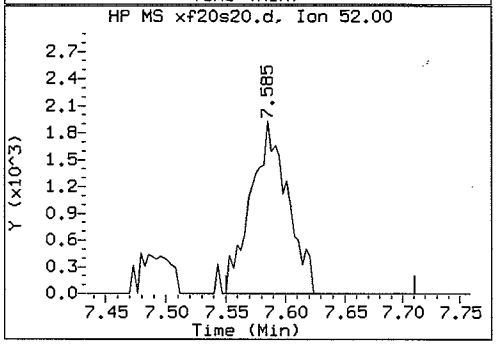

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s20.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 20:38  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:31 acp01254

Sample Name: 7GP21  Lab Sample ID: 4219016

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1871 |
| Retention Time (minutes) | : 7.585 |
| Quant Ion | : 78.0 |
| Area (flag) | : 26123 |
| Concentration (ug/Kg) | : 1.2214 |

# 7GP21

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219016

File: /chem/HP09193.i/04feb20a.b/xf20s20.d
Sample: 7GP21;4219016;2;0;;;
Injected At:20-FEB-2004 20:38
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.951( 0.007) | 1985 | 96 | 1007842( -20) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.346( 0.000) | 3043 | 117 | 783236( -22) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.204(-0.003) | 3622 | 152 | 384661( -33) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.033( 0.000) | 113 | 231764 | 53.427 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 53633 | 49.330 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 962909 | 51.136 | 102% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 331775 | 46.095 | 92% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.64 | 4.11 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.64 | 4.11 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.64 | 4.11 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 20) Acetone | (1) | 3.834( 0.000) | 58 | 12593 | 34.092 | 27.99 | | | 5.75 | 16.42 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.64 | 4.11 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.28 | 8.21 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 65) Benzene | (1) | 7.585( 0.000) | 78 | 26123 | 1.221 | 1.00 | | J | 0.41 | 4.11 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.82 | 4.11 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.46 | 8.21 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.82 | 4.11 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.82 | 4.11 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

7GP21

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219016

File: /chem/HP09193.i/04feb20a.b/xf20s20.d
Sample: 7GP21;4219016;2;0;;;
Injected At:20-FEB-2004 20:38
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.82
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.46 | 8.21 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.82 | 4.11 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.82 | 4.11 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4682

Analyst: Memo 1254 Date: 2.22.04

Auditor: [signature] Date: 2/23/04



9114

Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d
Date : 20-FEB-2004 21:05
Client ID: 7GP22
Sample Info: 7GP22;4219017;2;0;;;

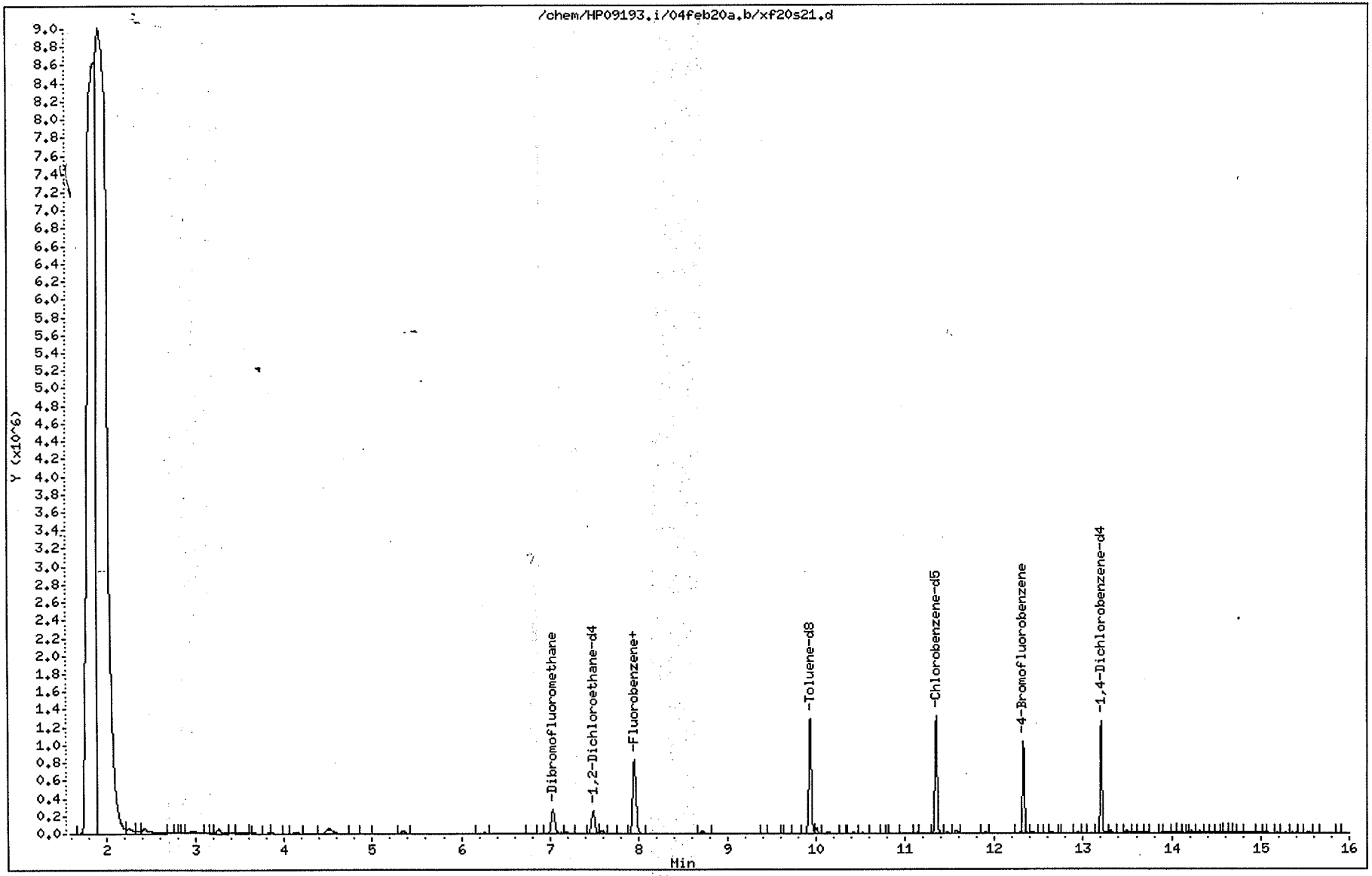
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

Acmp
1254
2.22.04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:05  Analyst ID: LCM01518

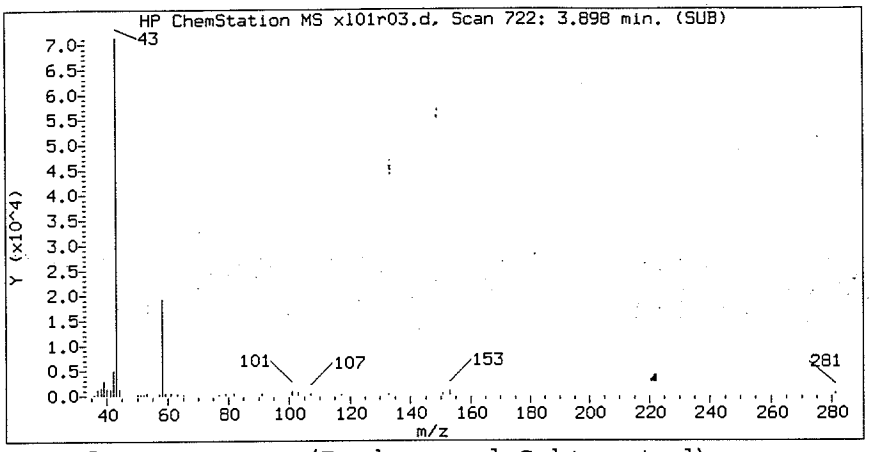
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 22-Feb-2004 23:51 acp01254

Sample Name: 7GP22  Lab Sample ID: 4219017

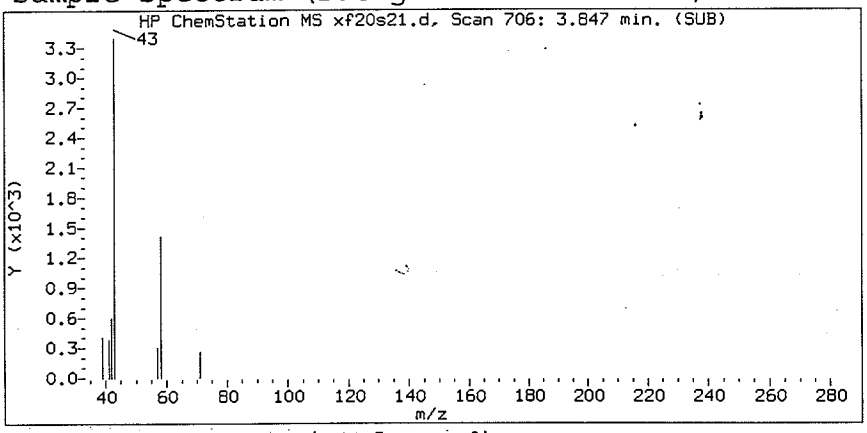
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.847 | 58 | 3816 | 9.983 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 49901 | 2.879 |
| 65) Benzene | (1) | 7.586 | 78 | 35928 | 1.623 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1042990 | 50.000 |
| 88) Toluene | (2) | 10.002 | 92 | 32558 | 2.295 |
| 100)*Chlorobenzene-d5 | (2) | 11.347 | 117 | 775846 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 336749 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 238979 | 53.234 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 55812 | 49.605 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 982026 | 52.648 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 311546 | 43.697 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

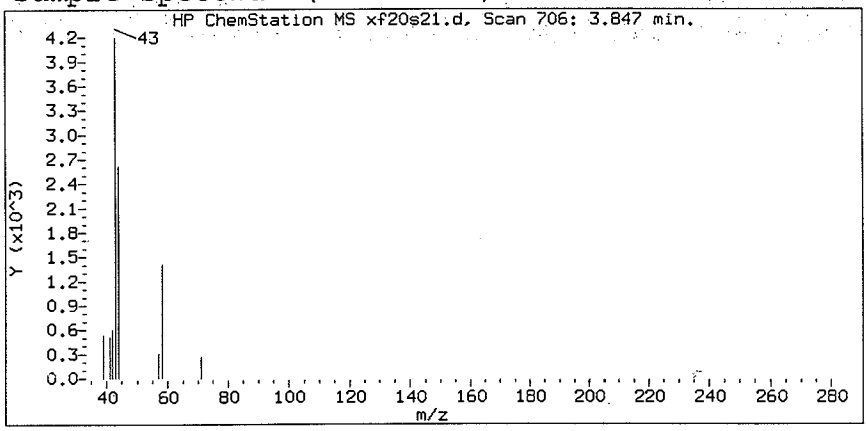
Reference Standard Spectrum for Acetone

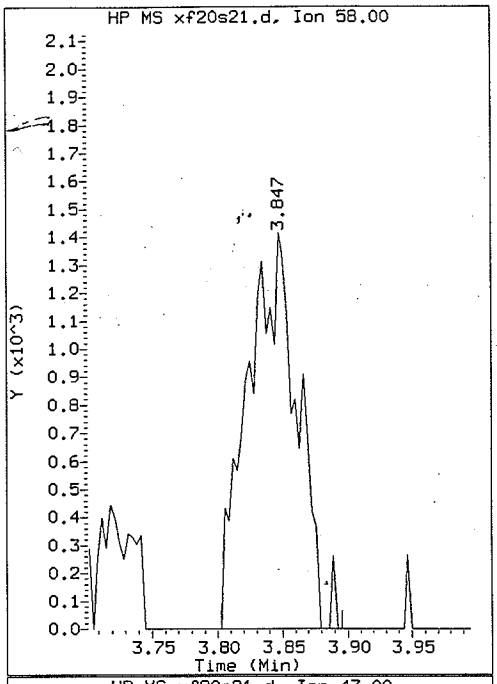


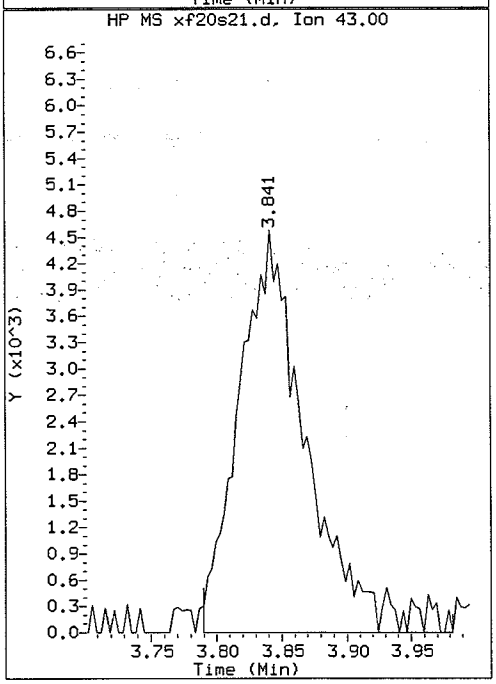

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



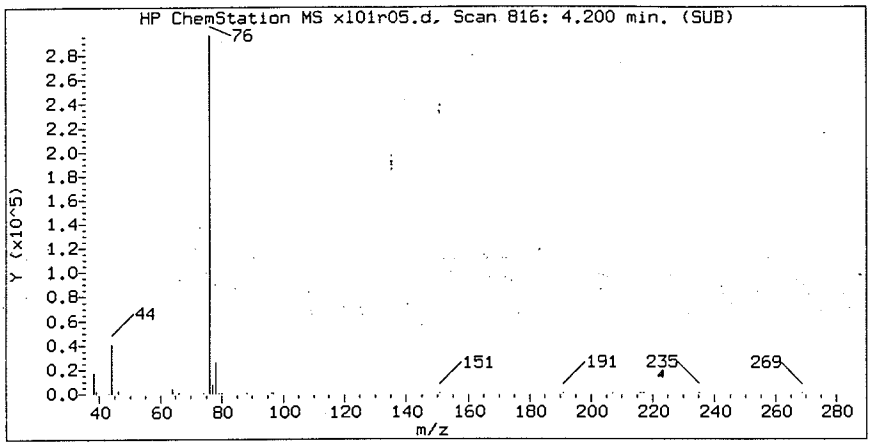

Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:05  Analyst ID: LCM01518

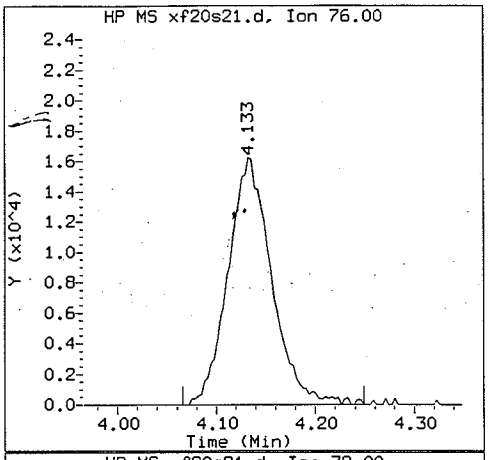
Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:51 acp01254

Sample Name: 7GP22  Lab Sample ID: 4219017

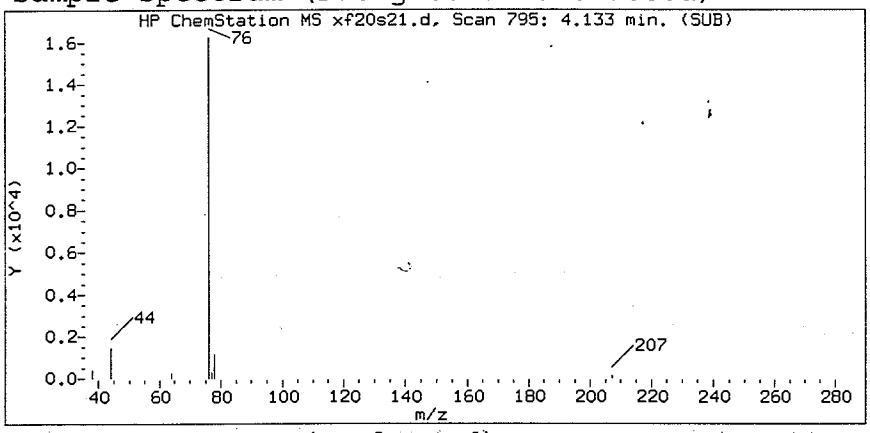
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 706 |
| Retention Time (minutes) | : 3.847 |
| Quant Ion | : 58.0 |
| Area (flag) | : 3816 |
| Concentration (ug/Kg) | : 9.9827 ✓ |

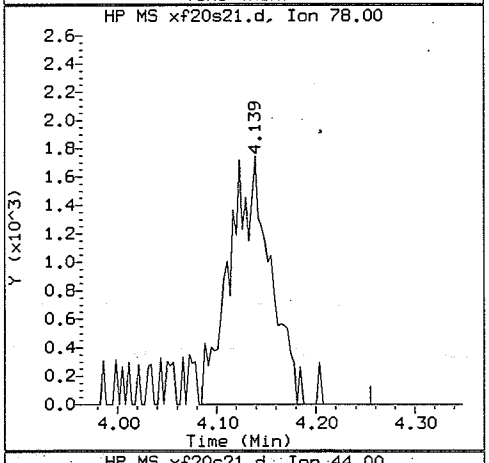
Reference Standard Spectrum for Carbon Disulfide



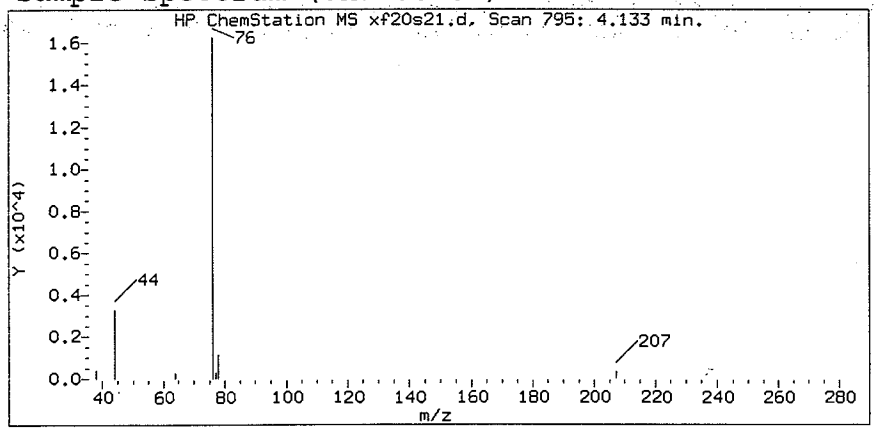



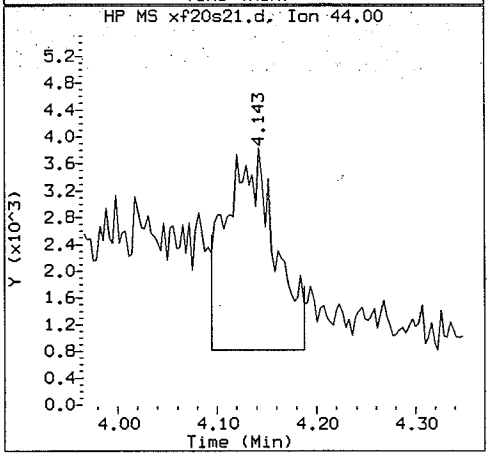

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



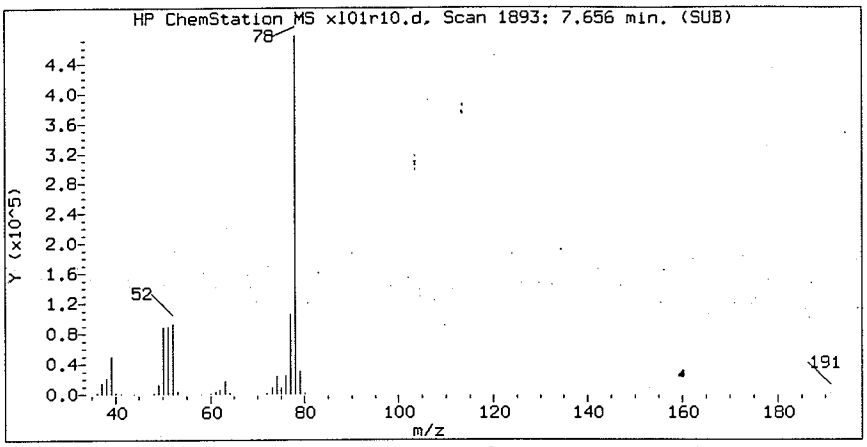

Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:05  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:51 acp01254

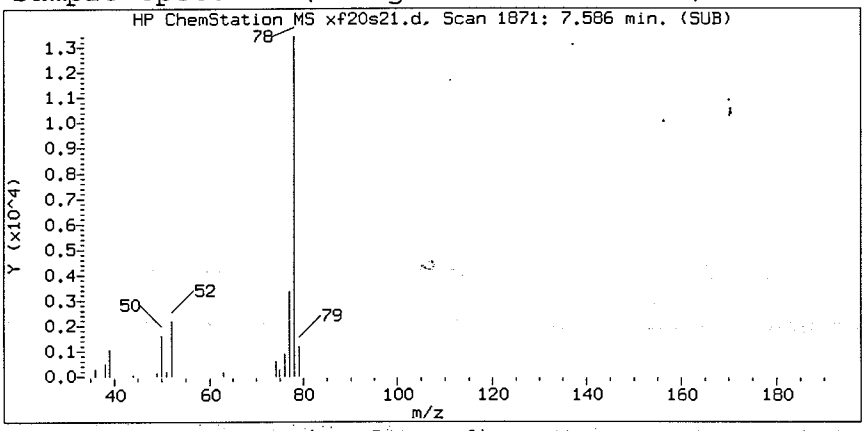
Sample Name: 7GP22  Lab Sample ID: 4219017

| | | |
|---|---|---|
| Compound Number | : | 24 |
| Compound Name | : | Carbon Disulfide |
| Scan Number | : | 795 |
| Retention Time (minutes) | : | 4.133 |
| Quant Ion | : | 76.0 |
| Area (flag) | : | 49901 |
| Concentration (ug/Kg) | : | 2.8787 ✓ |

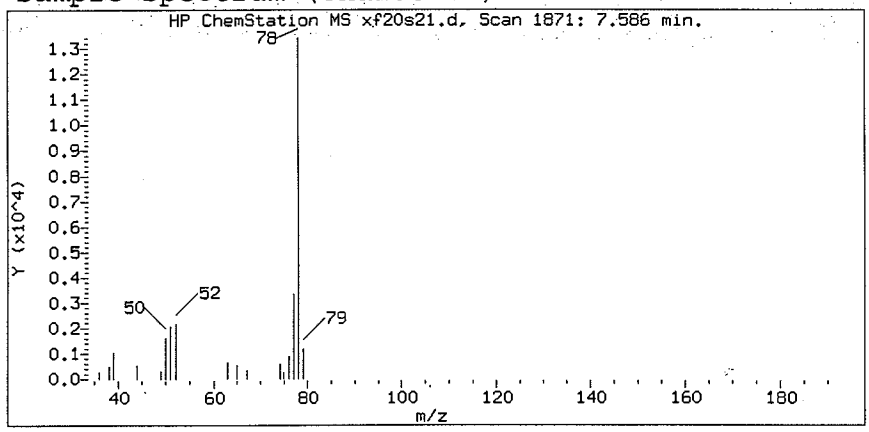
Reference Standard Spectrum for Benzene

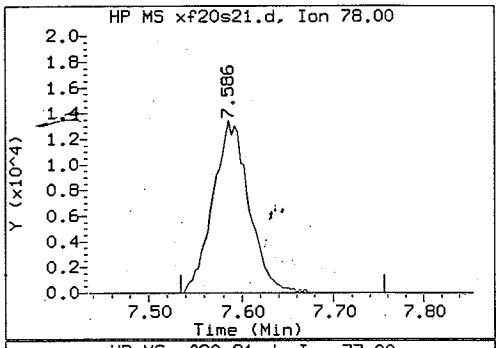


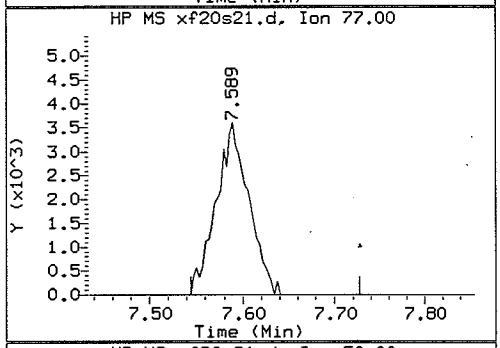

Sample Spectrum (Background Subtracted)

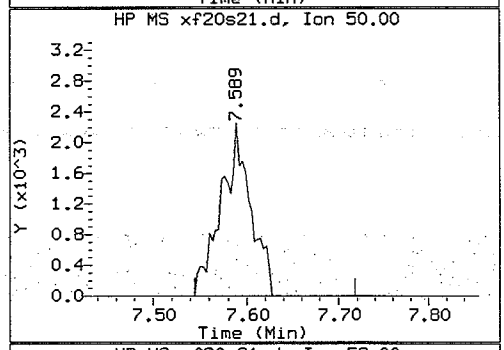


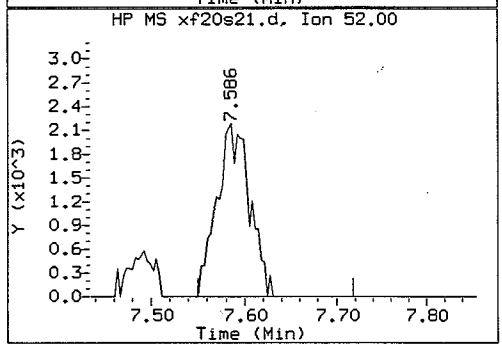

Sample Spectrum (Unaltered)



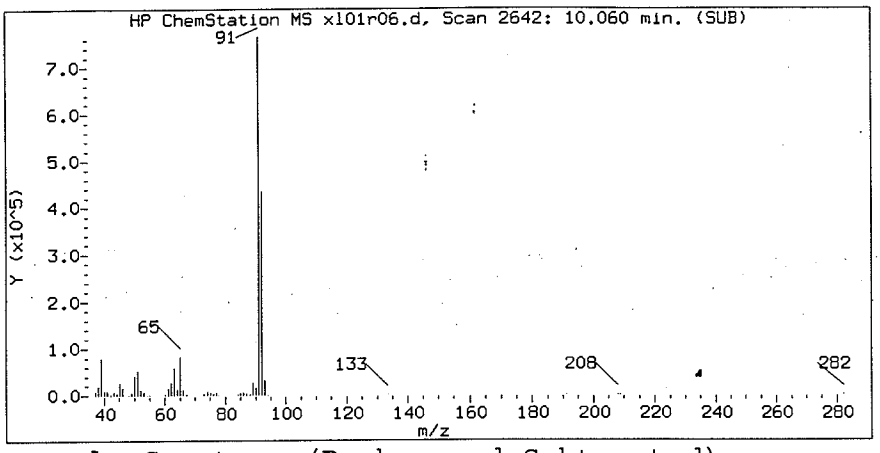

Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:05 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:51 acp01254

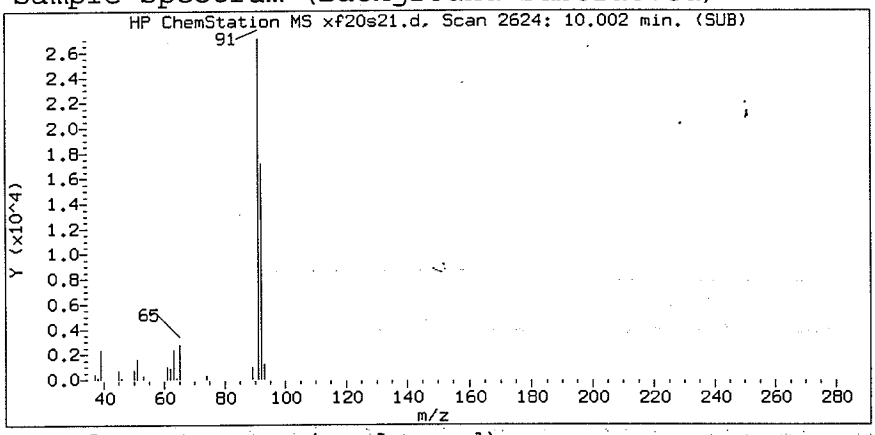
Sample Name: 7GP22 Lab Sample ID: 4219017

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1871 |
| Retention Time (minutes) | : 7.586 |
| Quant Ion | : 78.0 |
| Area (flag) | : 35928 |
| Concentration (ug/Kg) | : 1.6232 ✓ |

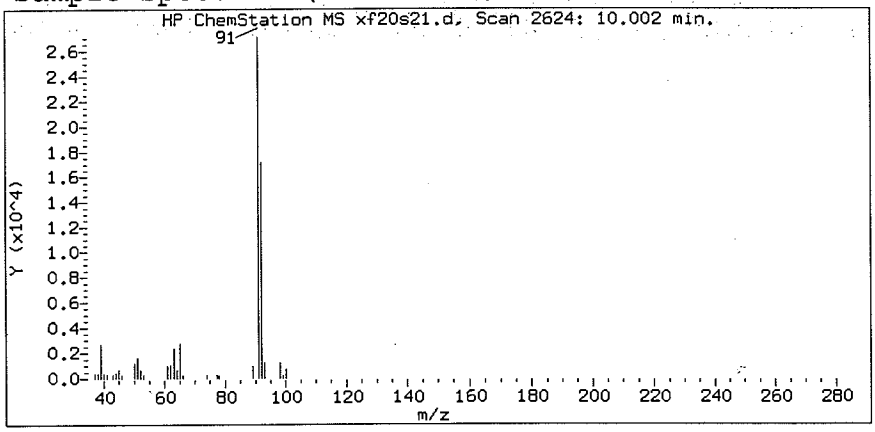
## Reference Standard Spectrum for Toluene

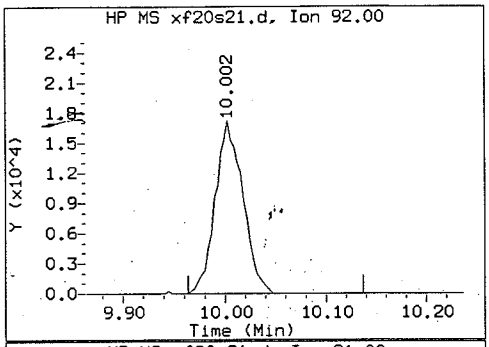


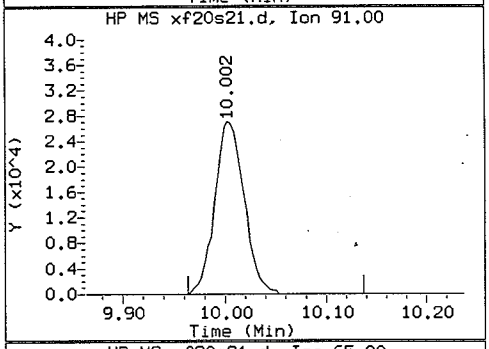

## Sample Spectrum (Background Subtracted)

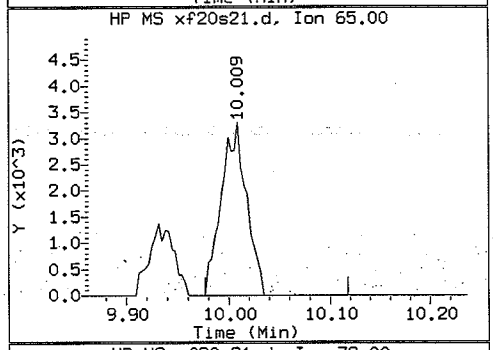


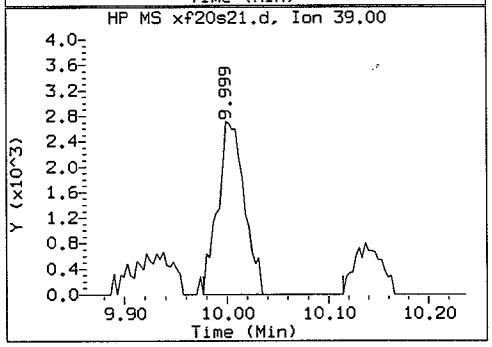

## Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb20a.b/xf20s21.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 21:05  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 20-FEB-2004 11:02
Date, time and analyst ID of latest file update: 22-Feb-2004 23:51 acp01254

Sample Name: 7GP22  Lab Sample ID: 4219017

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2624 |
| Retention Time (minutes) | : 10.002 |
| Quant Ion | : 92.0 |
| Area (flag) | : 32558 |
| Concentration (ug/Kg) | : 2.2953 |

7GP22

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219017

File: /chem/HP09193.i/04feb20a.b/xf20s21.d
Sample: 7GP22;4219017;2;0;;;
Injected At:20-FEB-2004 21:05
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.99
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1042990( -18) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.347( 0.000) | 3043 | 117 | 775846( -22) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 336749( -41) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 238979 | 53.234 | 106% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 55812 | 49.605 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 982026 | 52.648 | 105% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 311546 | 43.697 | 87% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.97 | 4.93 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.97 | 4.93 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.97 | 4.93 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 20) Acetone | (1) | 3.847(-0.001) | 58 | 3816 | 9.983 | 9.84 | | J | 6.90 | 19.72 |
| 24) Carbon Disulfide | (1) | 4.133( 0.000) | 76 | 49901 | 2.879 | 2.84 | | J | 0.99 | 4.93 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.97 | 4.93 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.94 | 9.86 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 35928 | 1.623 | 1.60 | | J | 0.49 | 4.93 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.99 | 4.93 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.96 | 9.86 |
| 88) Toluene | (2) | 10.002( 0.000) | 92 | 32558 | 2.295 | 2.26 | | J | 0.99 | 4.93 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.99 | 4.93 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

7GP22

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219017

File: /chem/HP09193.i/04feb20a.b/xf20s21.d
Sample: 7GP22;4219017;2;0;;;
Injected At:20-FEB-2004 21:05
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.99
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0700 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.96 | 9.86 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.99 | 4.93 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.99 | 4.93 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4656

Analyst: Temp 1254 Date: 2-22-04

Auditor: [signature] Date: 2/23/04



8122

Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d
Date : 23-FEB-2004 11:55
Client ID: 72222
Sample Info: 72222;4219018;2;0;;;

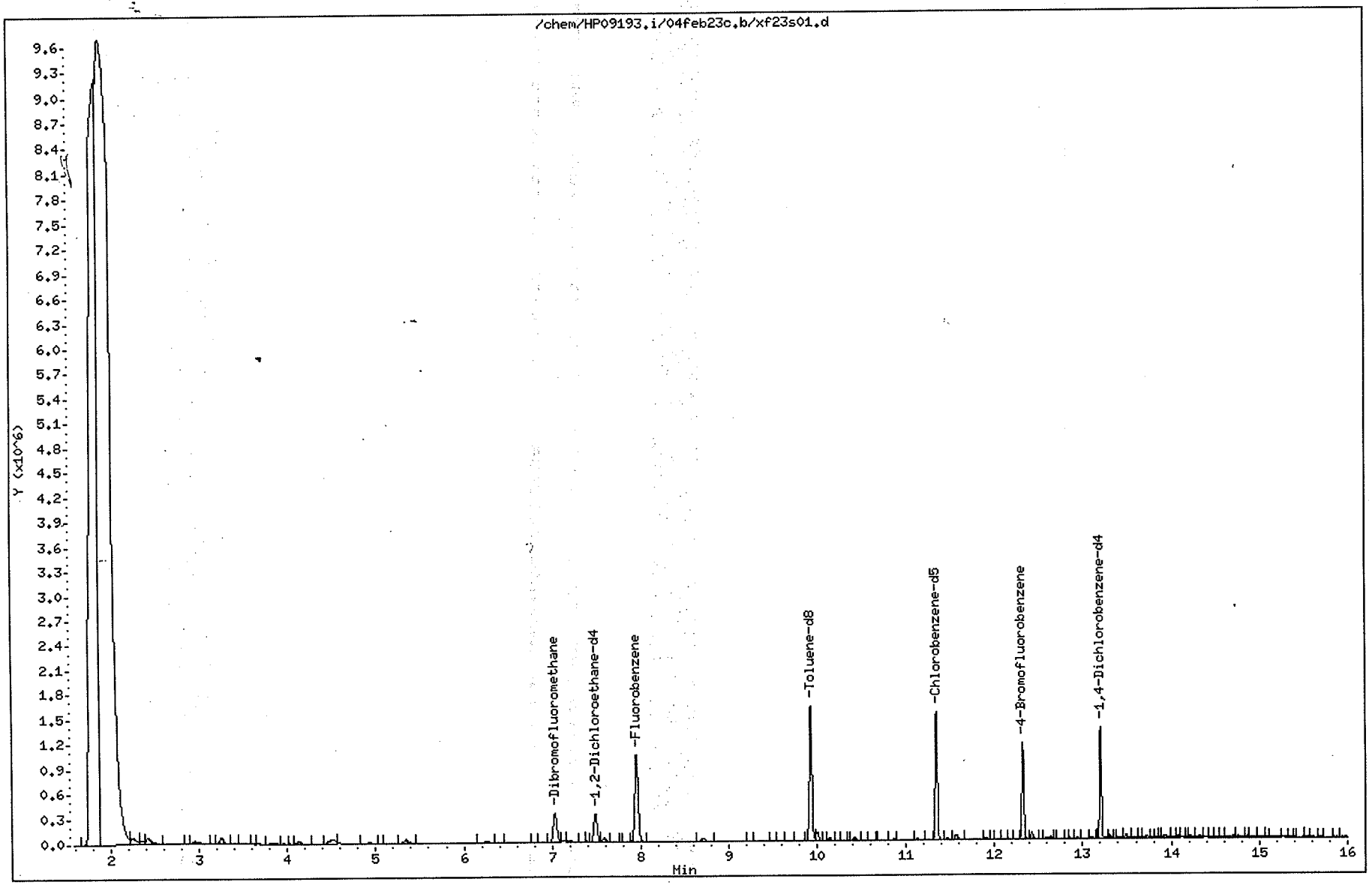
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518
2/23/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:55 Analyst ID: LCM01518

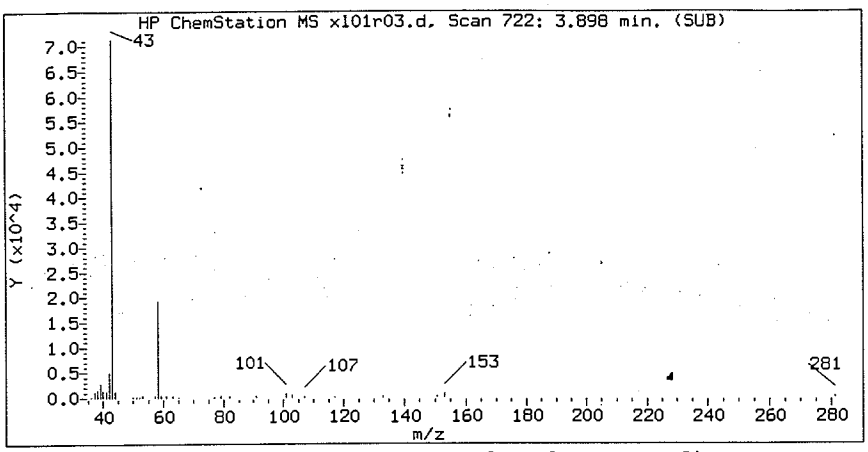
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

Sample Name: 72222 Lab Sample ID: 4219018

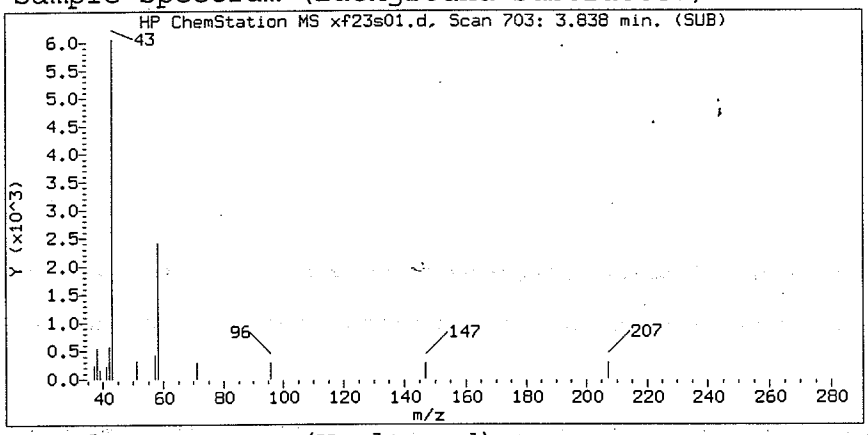
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.838 | 58 | 7002 | 14.493 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 66938 | 3.055 |
| 65) Benzene | (1) | 7.589 | 78 | 51142 | 1.828 |
| 69) *Fluorobenzene | (1) | 7.948 | 96 | 1318244 | 50.000 |
| 88) Toluene | (2) | 10.005 | 92 | 50029 | 3.019 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 906381 | 50.000 |
| 105) m+p-Xylene | (2) | 11.565 | 106 | 13738 | 1.091 |
| 92) Xylene (Total) | (2) | | 106 | 13738 | 1.091 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 354028 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.031 | 113 | 304964 | 53.748 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 72125 | 50.718 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1226914 | 56.304 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 356746 | 42.830 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

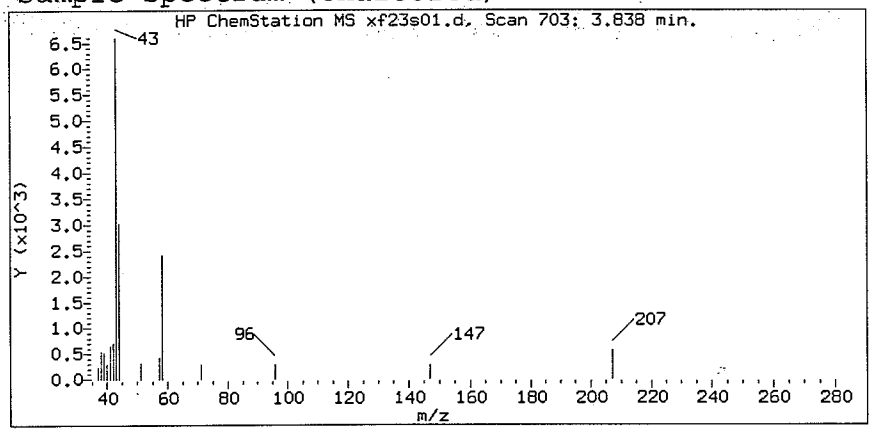
Reference Standard Spectrum for Acetone

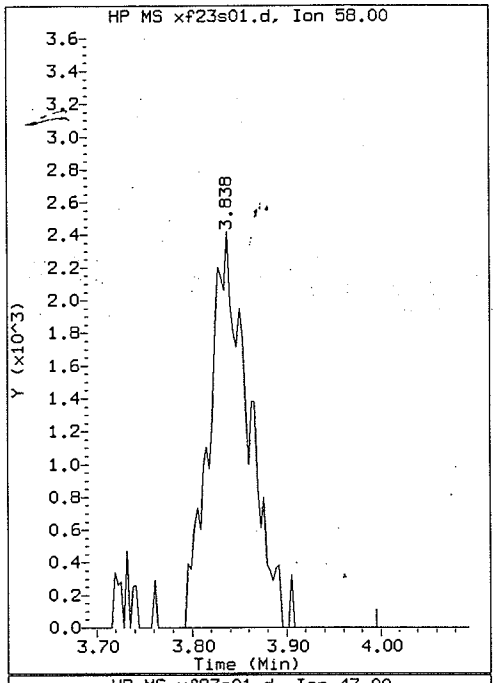


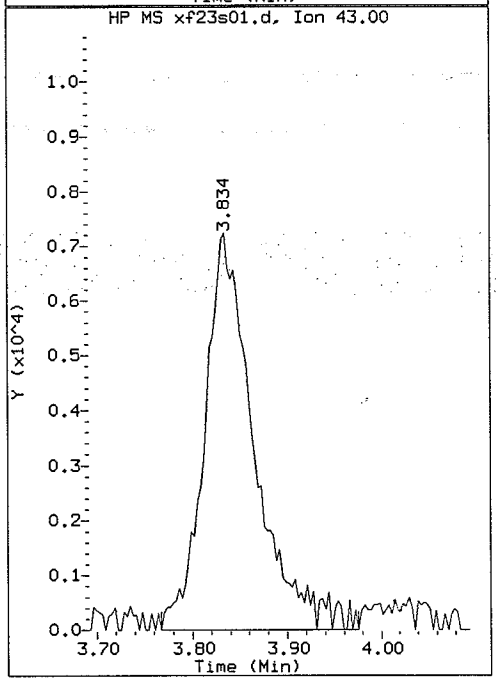

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



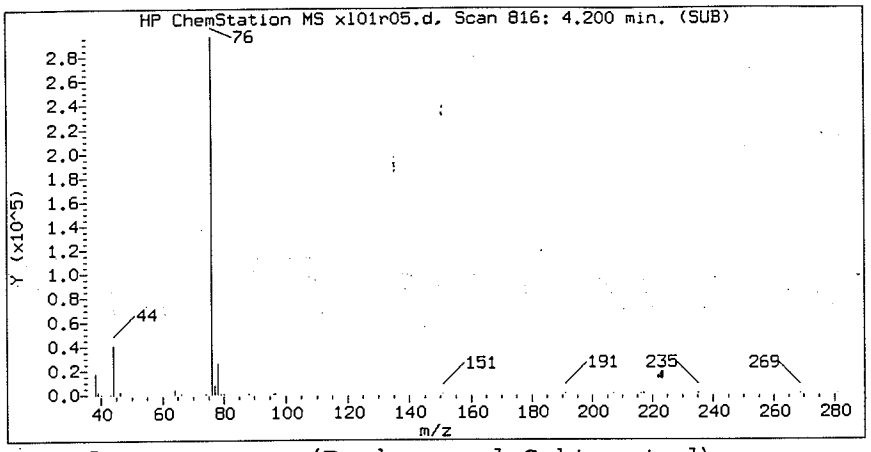

Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:55 Analyst ID: LCM01518

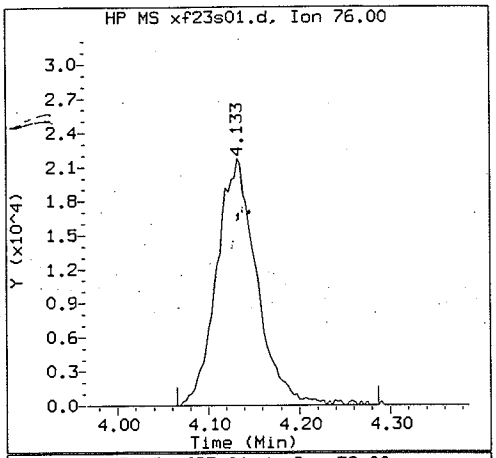
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

Sample Name: 72222 Lab Sample ID: 4219018

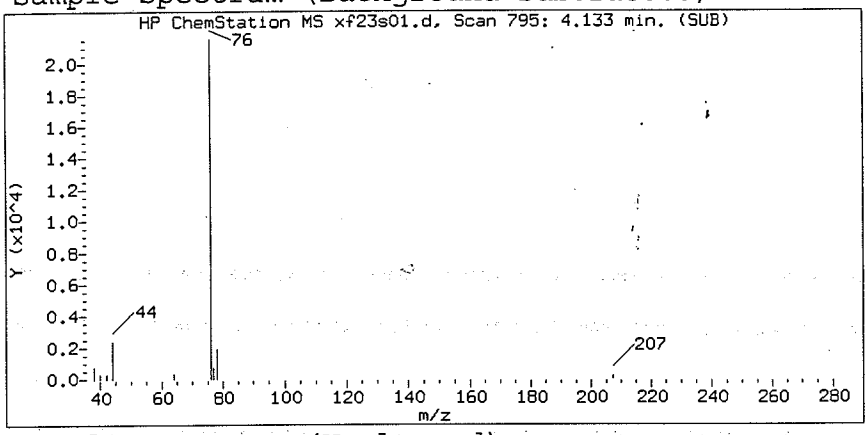
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 703 |
| Retention Time (minutes) | : 3.838 |
| Quant Ion | : 58.0 |
| Area (flag) | : 7002 |
| Concentration (ug/Kg) | : 14.4925 |

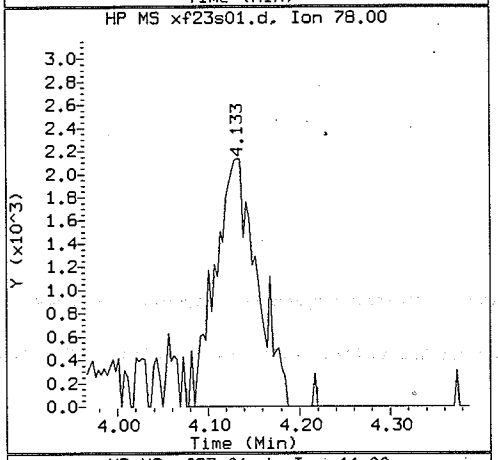
Reference Standard Spectrum for Carbon Disulfide



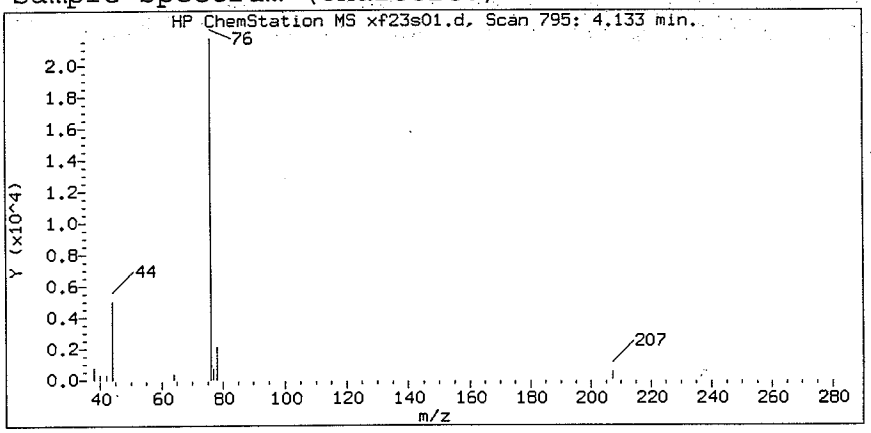



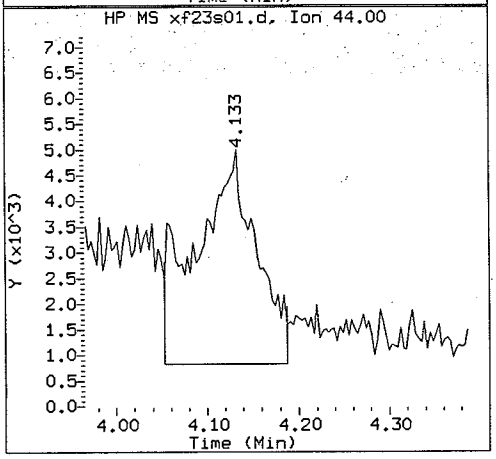

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:55 Analyst ID: LCM01518

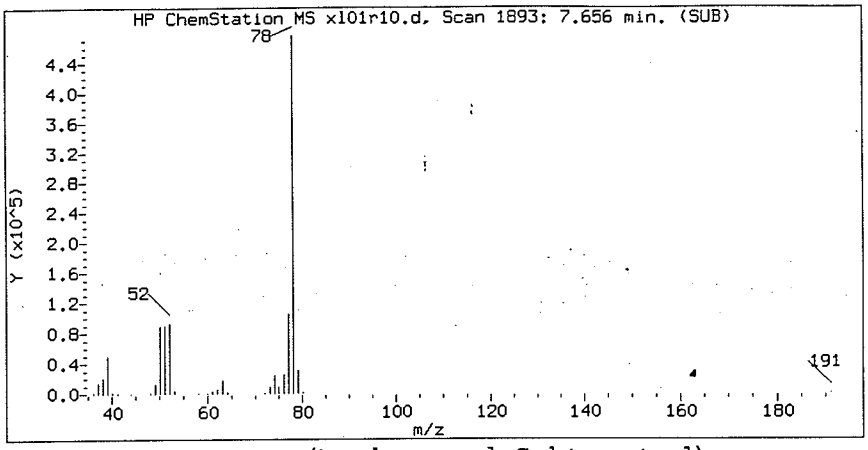
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

Sample Name: 72222 Lab Sample ID: 4219018

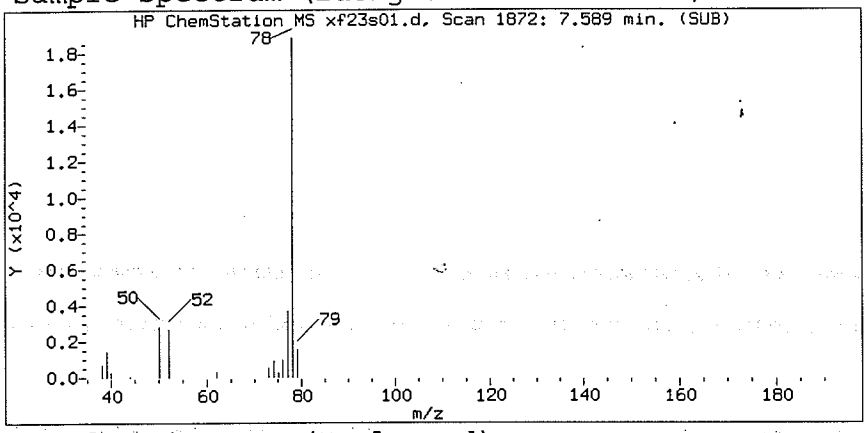
| | |
|---|---|
| Compound Number | : 24 |
| Compound Name | : Carbon Disulfide |
| Scan Number | : 795 |
| Retention Time (minutes) | : 4.133 |
| Quant Ion | : 76.0 |
| Area (flag) | : 66938 |
| Concentration (ug/Kg) | : 3.0552 |

0125

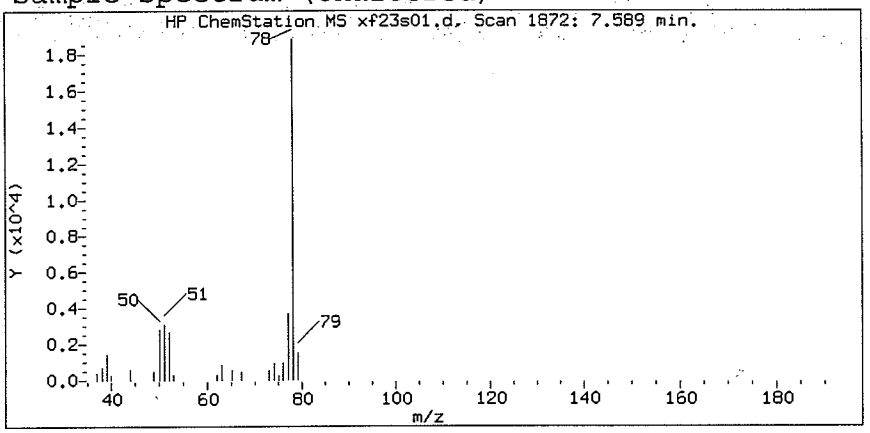
Reference Standard Spectrum for Benzene

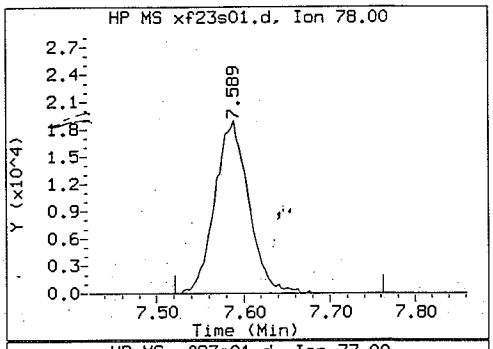


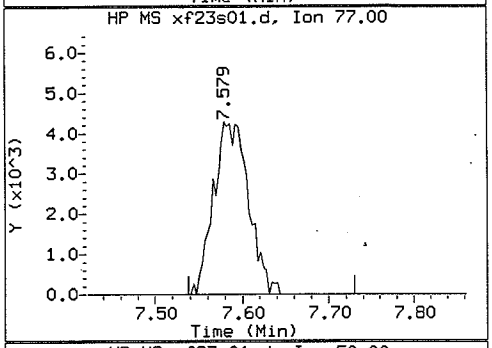

Sample Spectrum (Background Subtracted)

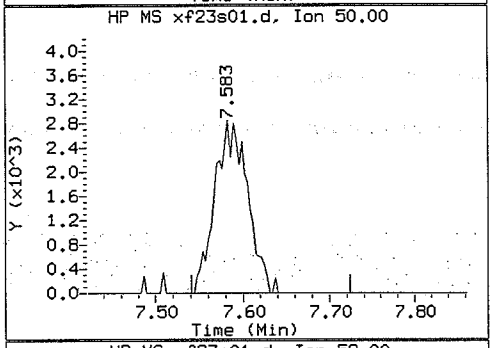


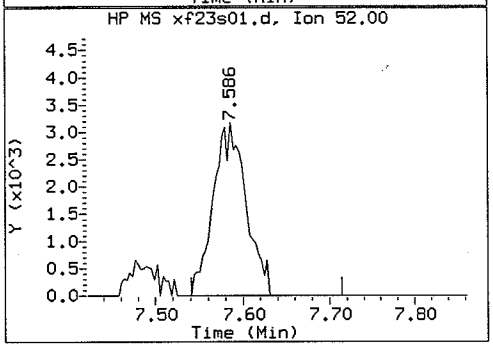

Sample Spectrum (Unaltered)



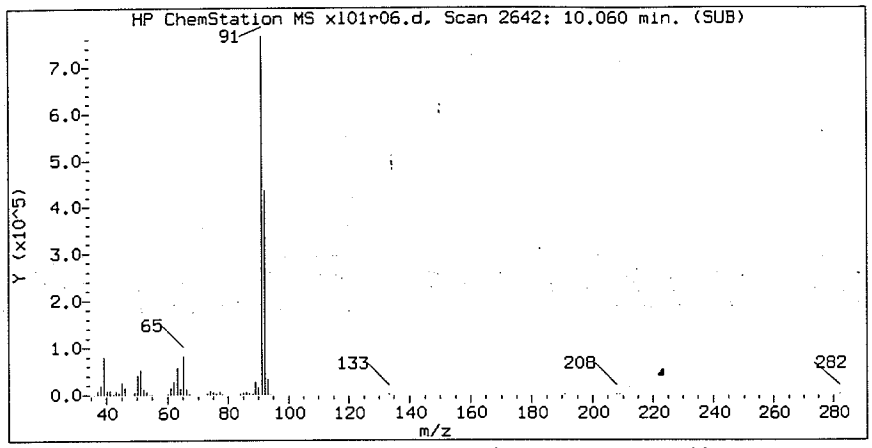

Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:55  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

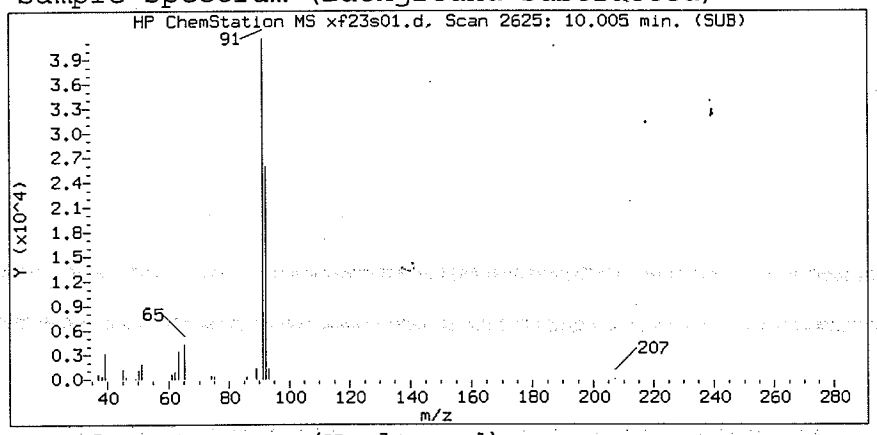
Sample Name: 72222  Lab Sample ID: 4219018

| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1872 |
| Retention Time (minutes) | : 7.589 |
| Quant Ion | : 78.0 |
| Area (flag) | : 51142 |
| Concentration (ug/Kg) | : 1.8281 |

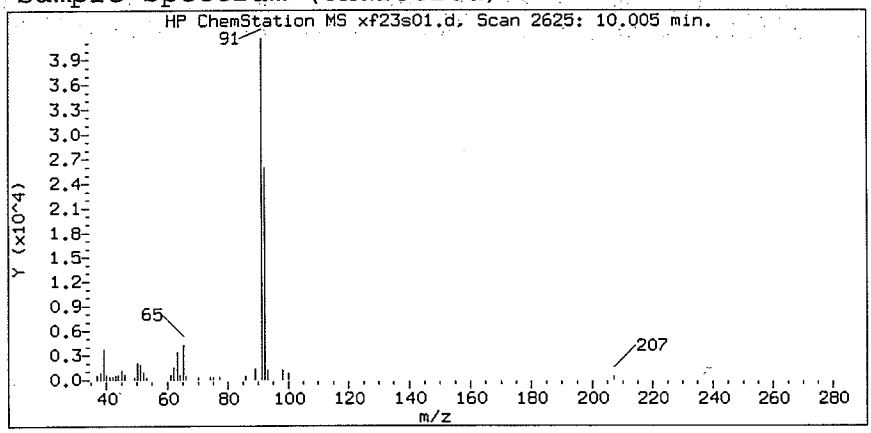
Reference Standard Spectrum for Toluene

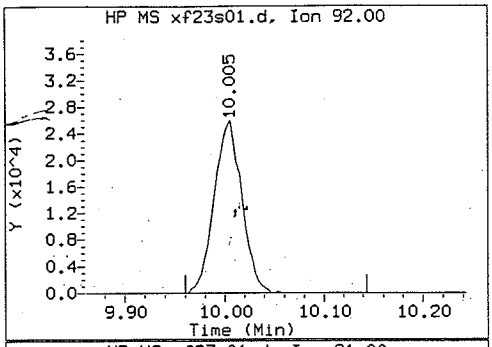


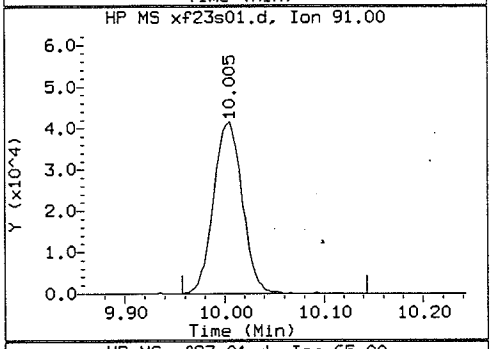

Sample Spectrum (Background Subtracted)

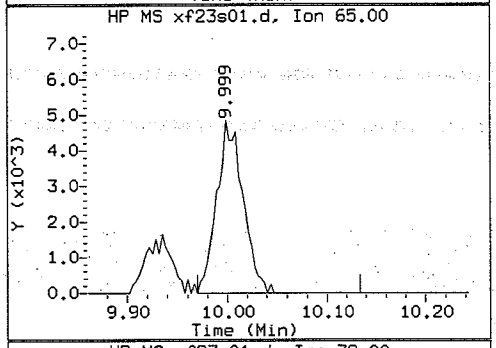


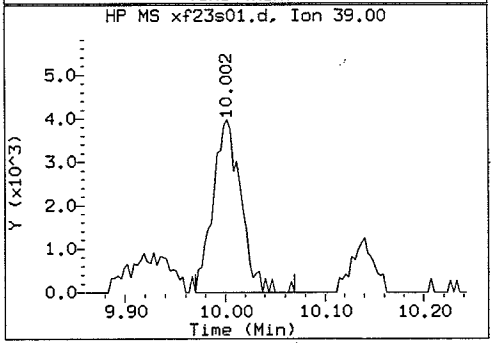

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d
Injection date and time: 23-FEB-2004 11:55

Instrument ID: HP09193.i
Analyst ID: LCM01518

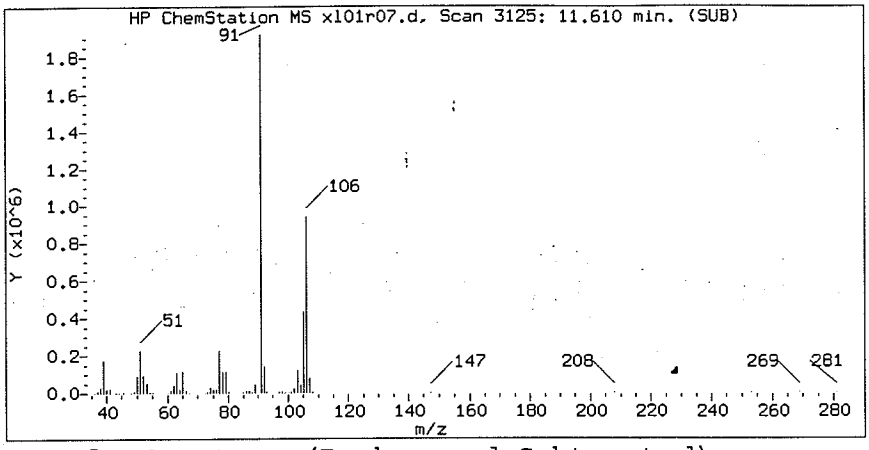
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

Sample Name: 72222

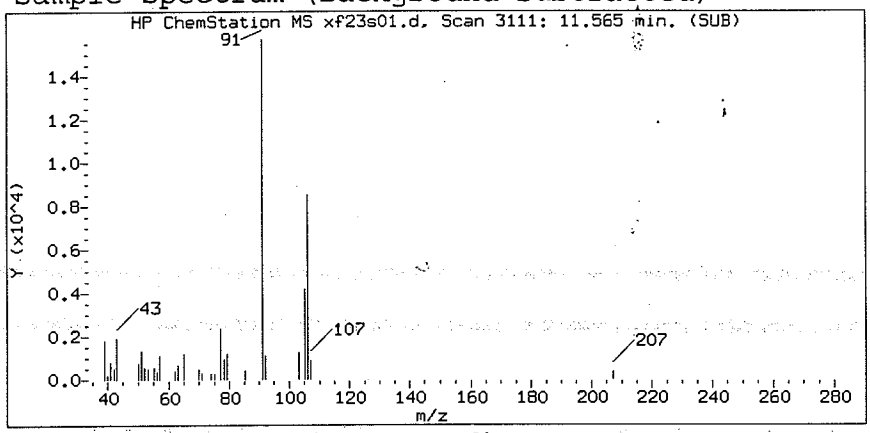
Lab Sample ID: 4219018

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2625 |
| Retention Time (minutes) | : 10.005 |
| Quant Ion | : 92.0 |
| Area (flag) | : 50029 |
| Concentration (ug/Kg) | : 3.0190 |

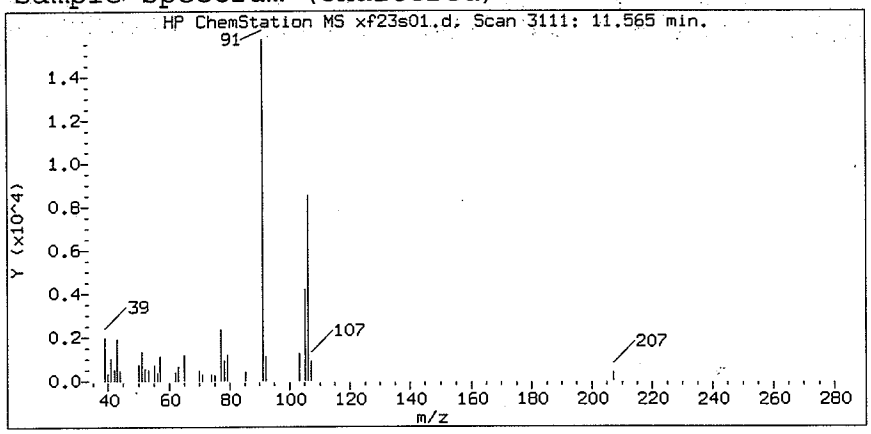
Reference Standard Spectrum for m+p-Xylene

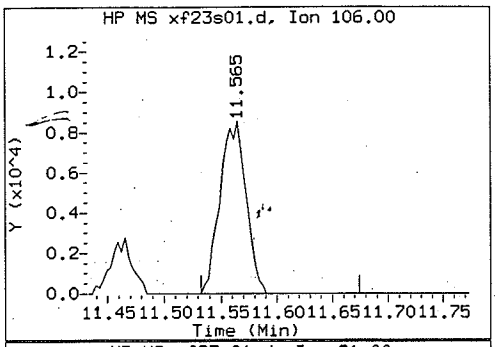


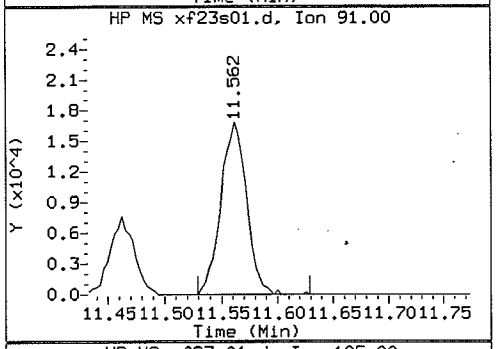

Sample Spectrum (Background Subtracted)

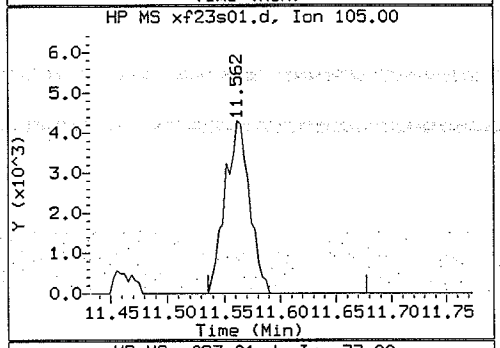


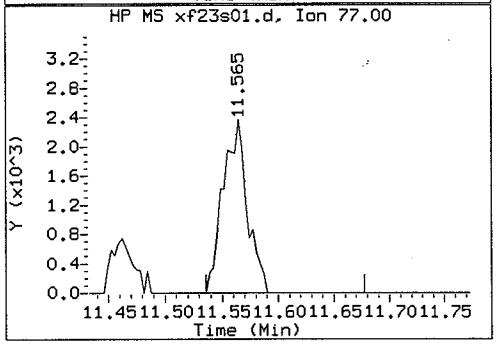

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s01.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:55 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 12:19 lcm01518

Sample Name: 72222 Lab Sample ID: 4219018

| | |
|---|---|
| Compound Number | : 105 |
| Compound Name | : m+p-Xylene |
| Scan Number | : 3111 |
| Retention Time (minutes) | : 11.565 |
| Quant Ion | : 106.0 |
| Area (flag) | : 13738 |
| Concentration (ug/Kg) | : 1.0908 |

72222

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219018

File: /chem/HP09193.i/04feb23c.b/xf23s01.d
Sample: 72222;4219018;2;0;;;
Injected At:23-FEB-2004 11:55
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.95
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.2900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.948( 0.006) | 1984 | 96 | 1318244( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 906381( -14) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 354028( -42) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.031( 0.000) | 113 | 304964 | 53.748 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489(-0.001) | 102 | 72125 | 50.718 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1226914 | 56.304 | 113% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 356746 | 42.830 | 86% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.89 | 4.73 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.89 | 4.73 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.89 | 4.73 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 20) Acetone | (1) | 3.838( 0.000) | 58 | 7002 | 14.493 | 13.70 | | J | 6.62 | 18.90 |
| 24) Carbon Disulfide | (1) | 4.133(-0.001) | 76 | 66938 | 3.055 | 2.89 | | J | 0.95 | 4.73 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.89 | 4.73 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.78 | 9.45 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 65) Benzene | (1) | 7.589(-0.001) | 78 | 51142 | 1.828 | 1.73 | | J | 0.47 | 4.73 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.95 | 4.73 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.84 | 9.45 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 50029 | 3.019 | 2.85 | | J | 0.95 | 4.73 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.95 | 4.73 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

72222

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219018

File: /chem/HP09193.i/04feb23c.b/xf23s01.d
Sample: 72222;4219018;2;0;;;
Injected At:23-FEB-2004 11:55
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.95
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.2900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.84 | 9.45 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 105) m+p-Xylene | (2) | 11.565 | ( 0.000) | 106 | 13738 | 1.091 | 1.03 | | J | 0.95 | 4.73 |
| 92) Xylene (Total) | (2) | | | 106 | 13738 | 1.091 | 1.03 | | J | 0.95 | 4.73 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.95 | 4.73 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.95 | 4.73 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NV4680

Analyst: LCM1128 Date: 2/23/04

Auditor: [signature] Date: 2/28/04



8131

Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d
Date : 23-FEB-2004 12:22
Client ID: 7GP23
Sample Info: 7GP23;4219019;2;0;;;

Column phase: DB-624

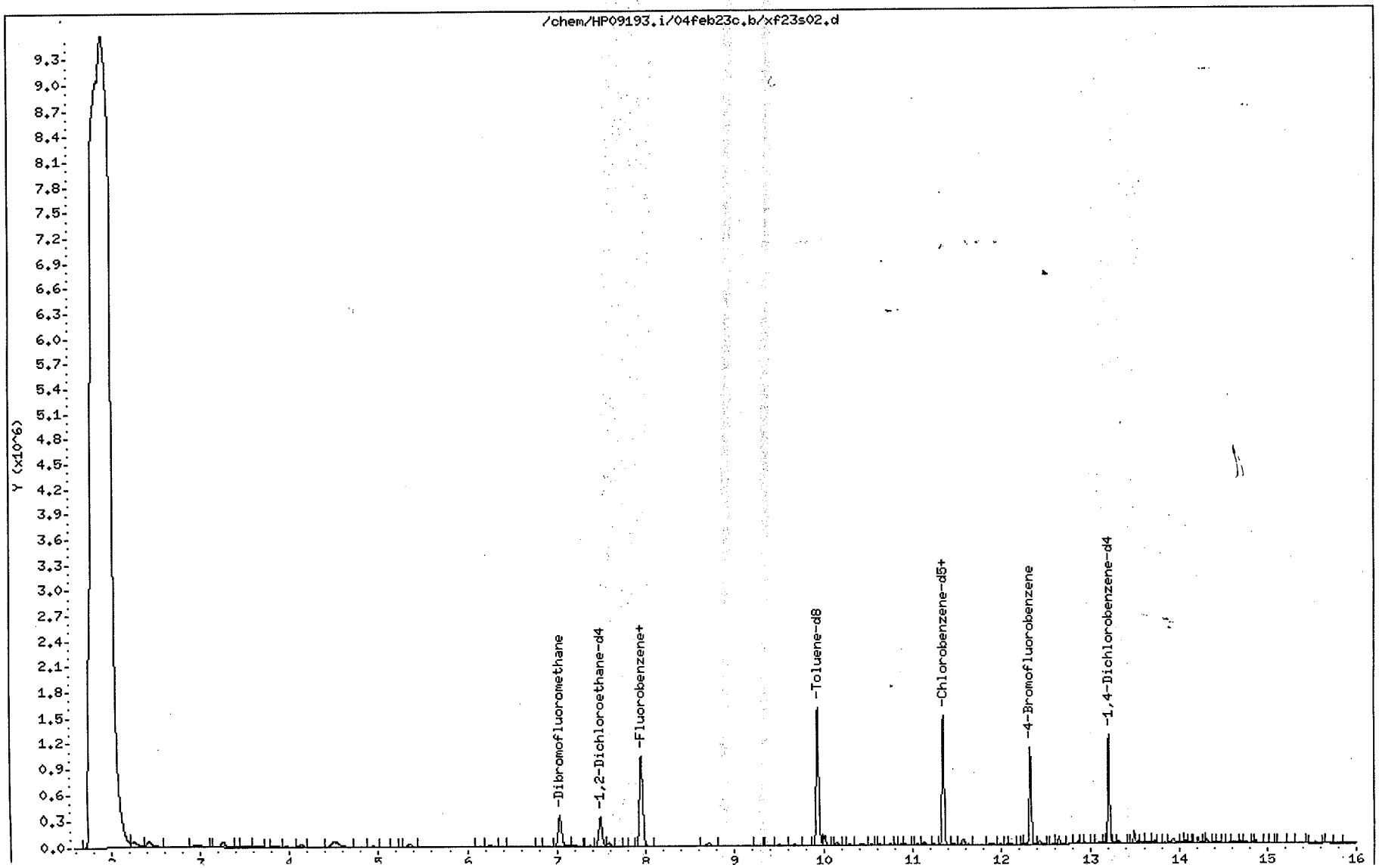
Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1518
2/23/04

8132





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:22 Analyst ID: LCM01518

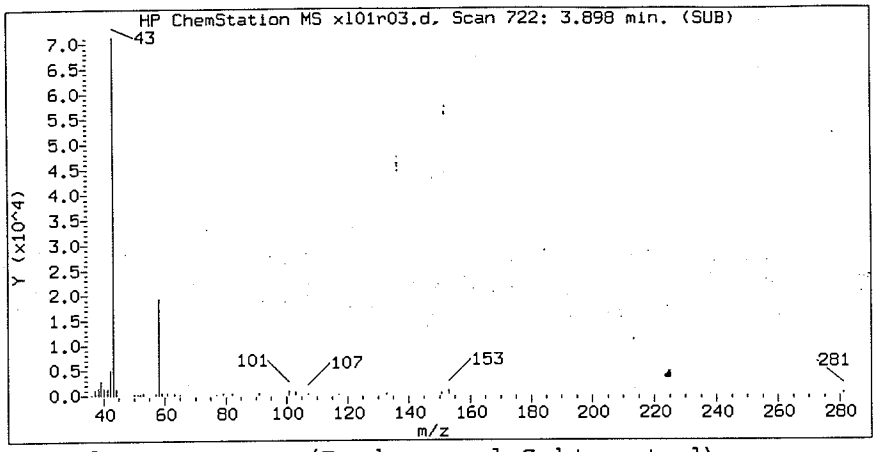
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

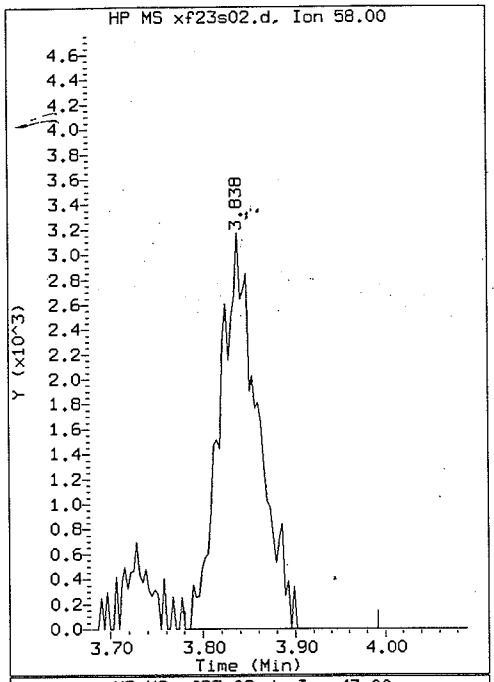
Sample Name: 7GP23 Lab Sample ID: 4219019

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.838 | 58 | 9191 | 19.209 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 73399 | 3.383 |
| 65) Benzene | (1) | 7.583 | 78 | 50485 | 1.822 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1305527 | 50.000 |
| 88) Toluene | (2) | 10.005 | 92 | 54258 | 3.350 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 885875 | 50.000 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 14281 | 1.160 |
| 92) Xylene (Total) | (2) | | 106 | 14281 | 1.160 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 336376 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 302186 | 53.777 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 73704 | 52.334 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1207297 | 56.686 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 346109 | 42.515 |

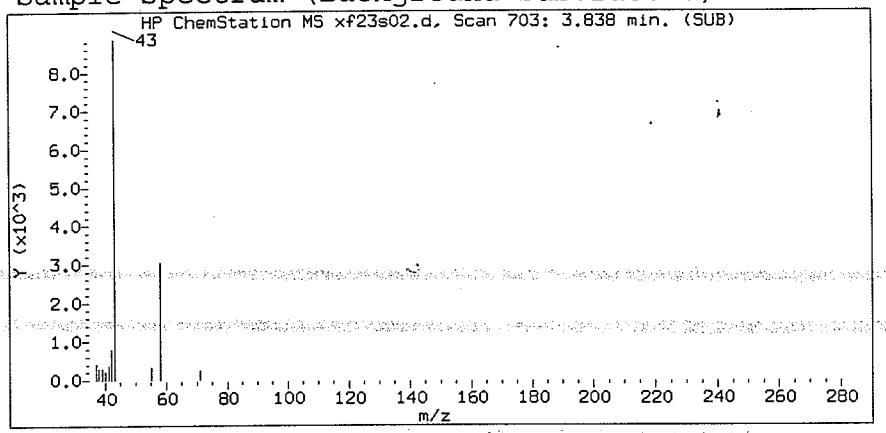
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

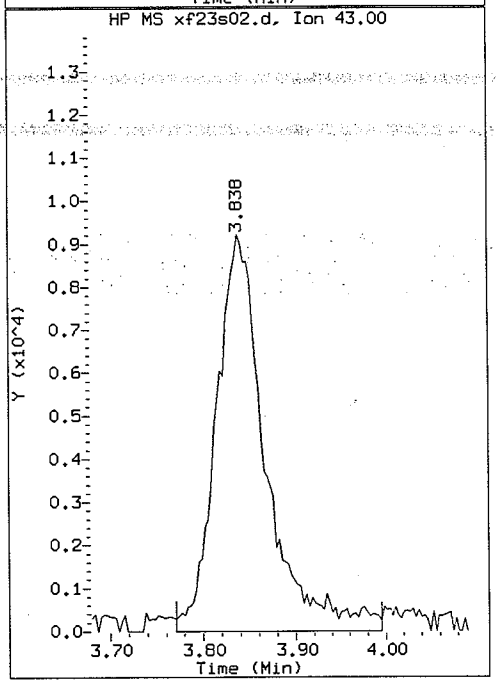
Reference Standard Spectrum for Acetone



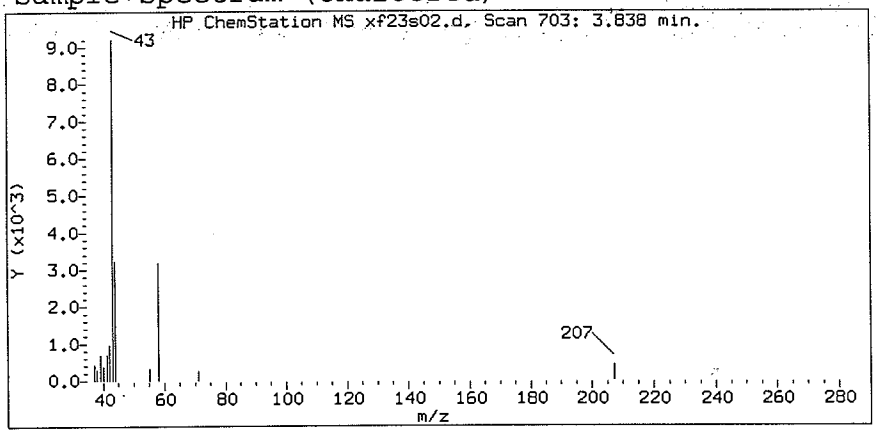




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)



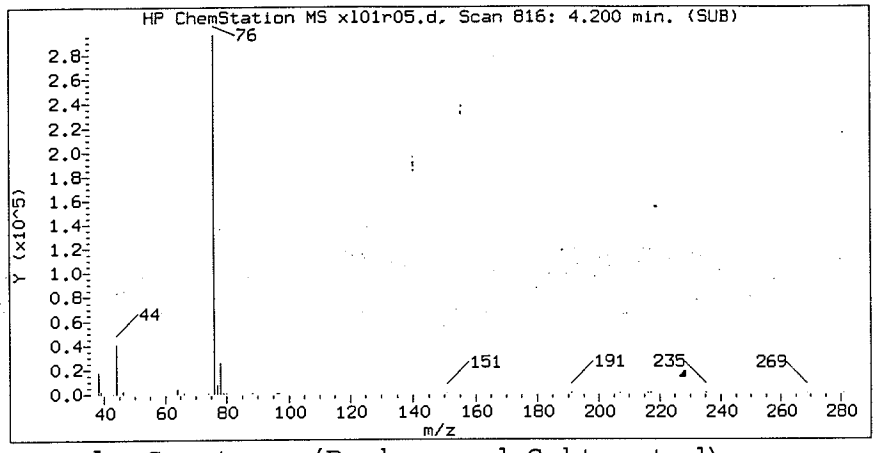

Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:22  Analyst ID: LCM01518

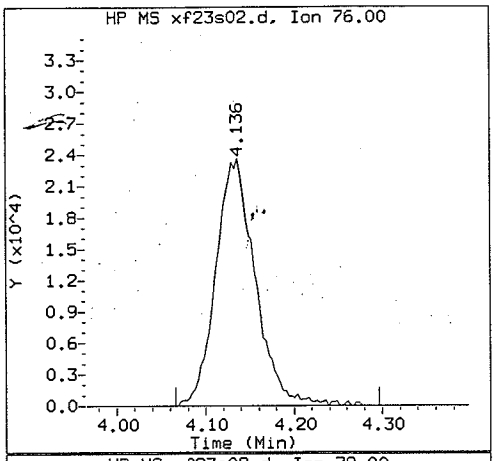
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

Sample Name: 7GP23  Lab Sample ID: 4219019

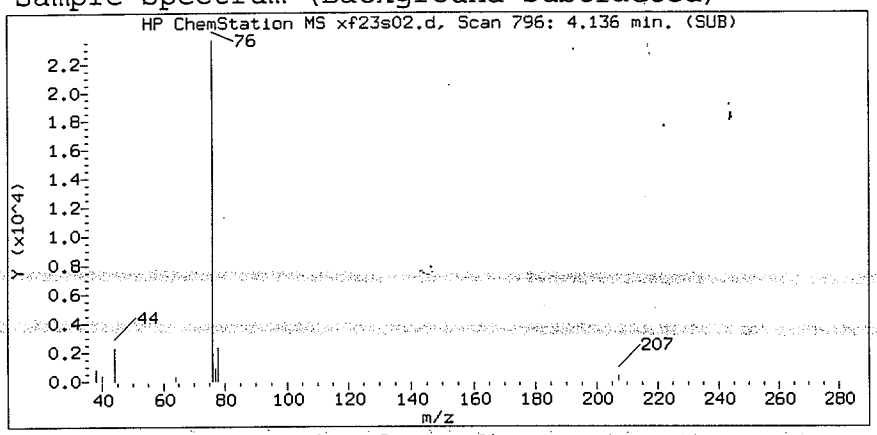
| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 703 |
| Retention Time (minutes) | : 3.838 |
| Quant Ion | : 58.0 |
| Area (flag) | : 9191 |
| Concentration (ug/Kg) | : 19.2086 ✓ |

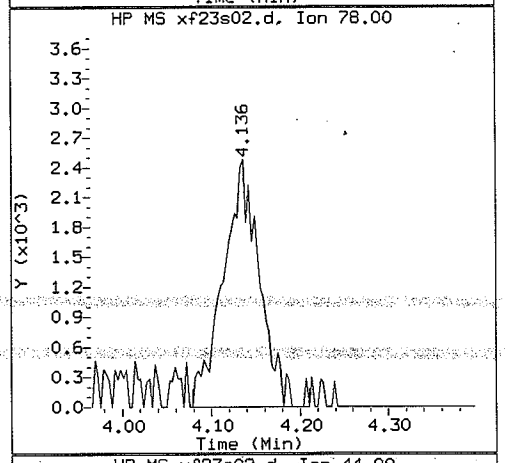
Reference Standard Spectrum for Carbon Disulfide



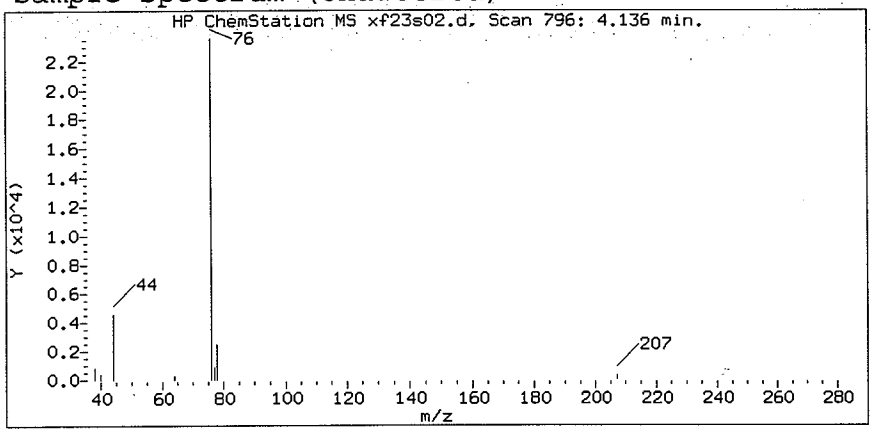



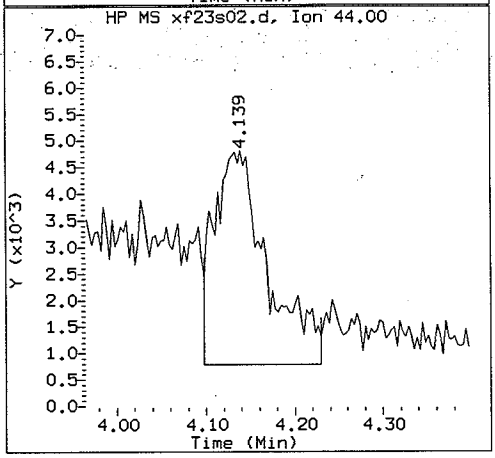

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:22 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

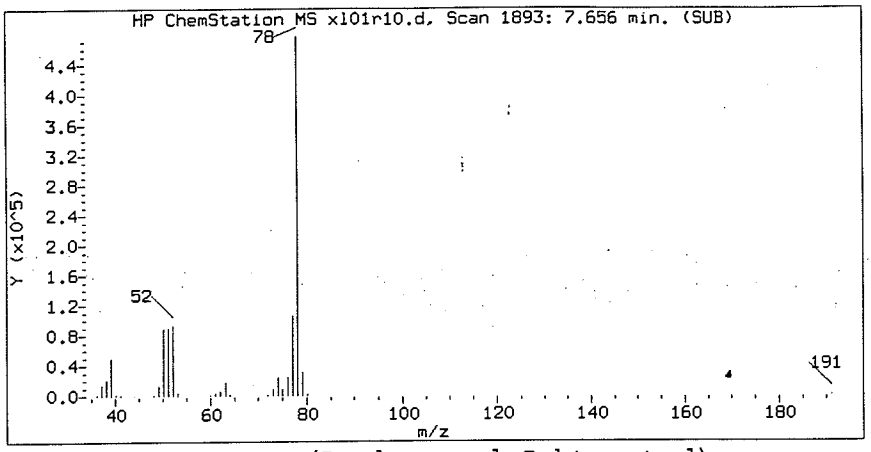
Sample Name: 7GP23 Lab Sample ID: 4219019

| | |
|---|---|
| Compound Number | : 24 |
| Compound Name | : Carbon Disulfide |
| Scan Number | : 796 |
| Retention Time (minutes) | : 4.136 |
| Quant Ion | : 76.0 |
| Area (flag) | : 73399 |
| Concentration (ug/Kg) | : 3.3827 |

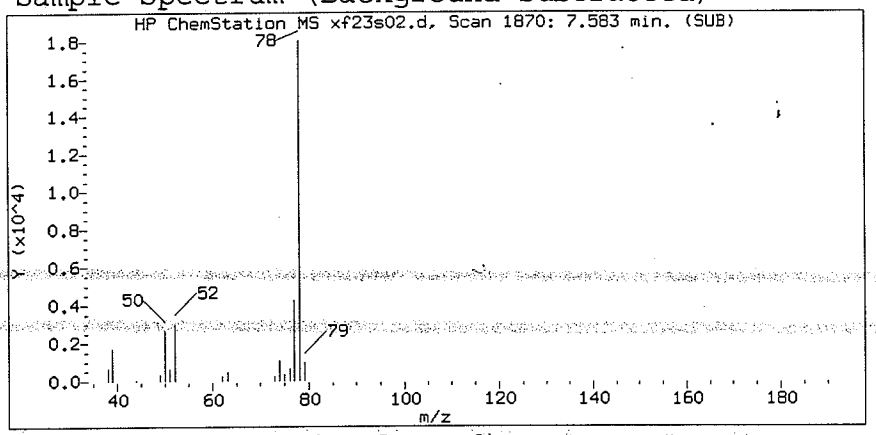
✓

8135

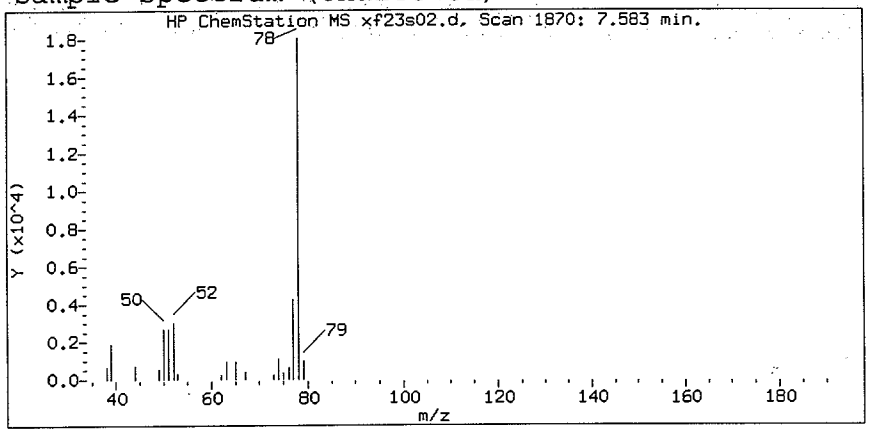
Reference Standard Spectrum for Benzene

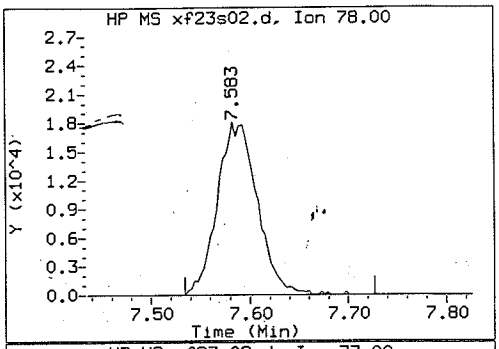


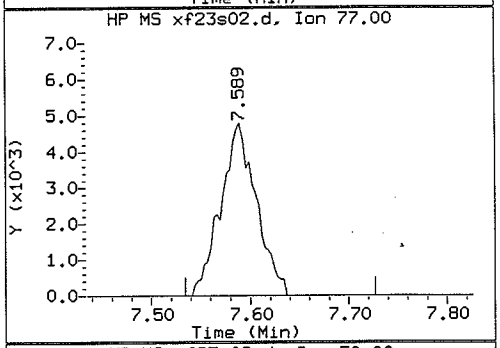

Sample Spectrum (Background Subtracted)

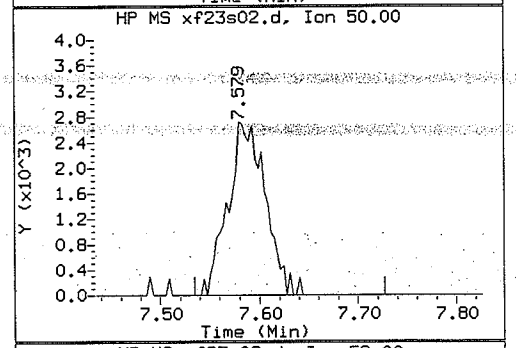


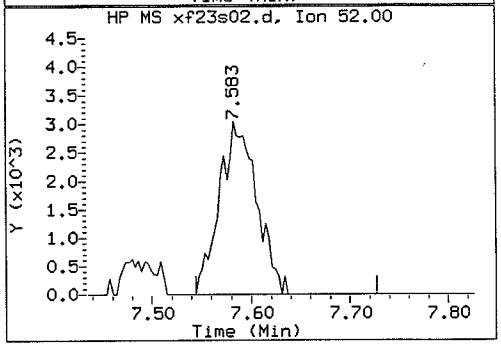

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:22  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

Sample Name: 7GP23  Lab Sample ID: 4219019

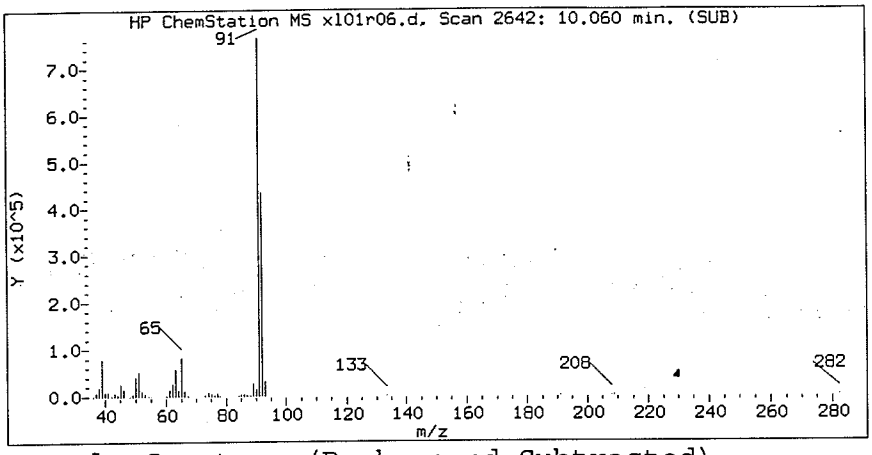
| | |
|---|---|
| Compound Number | : 65 |
| Compound Name | : Benzene |
| Scan Number | : 1870 |
| Retention Time (minutes) | : 7.583 |
| Quant Ion | : 78.0 |
| Area (flag) | : 50485 |
| Concentration (ug/Kg) | : 1.8222 |

✓

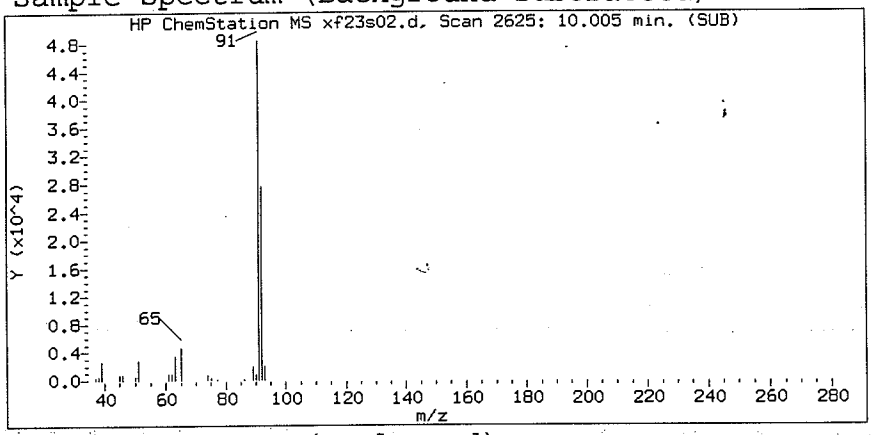
8136

Hit Data Report for data file /chem/HP09193.i/04feb23c.b/xf23s02.d, generated on 02/23/2004 at 13:27

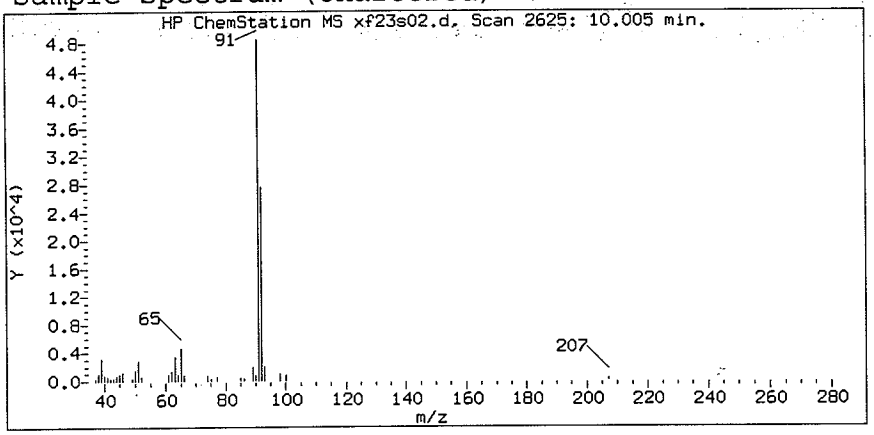
Reference Standard Spectrum for Toluene

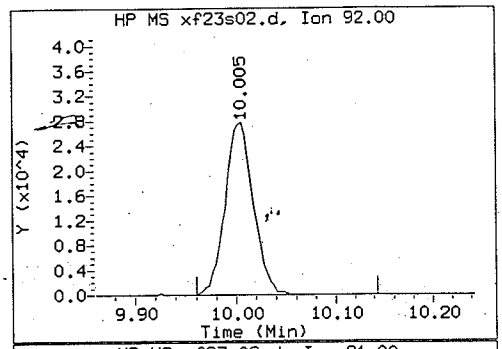


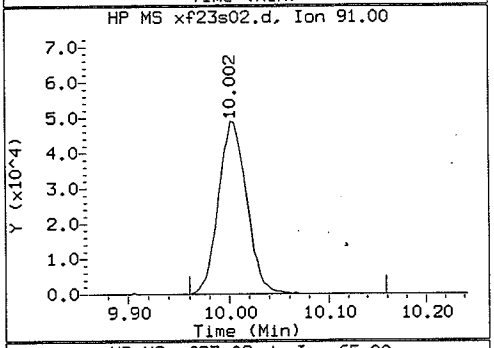

Sample Spectrum (Background Subtracted)

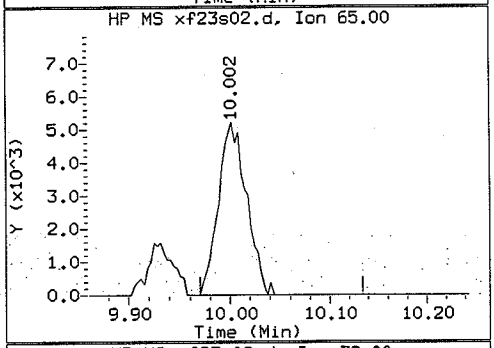


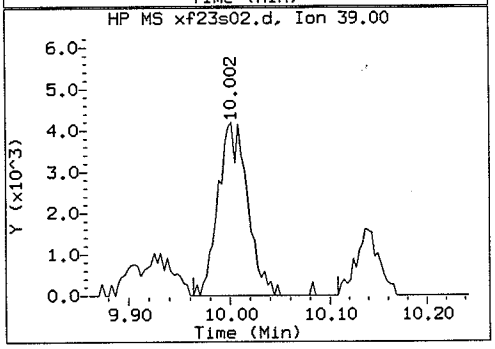

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d
Injection date and time: 23-FEB-2004 12:22

Instrument ID: HP09193.i
Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

Sample Name: 7GP23

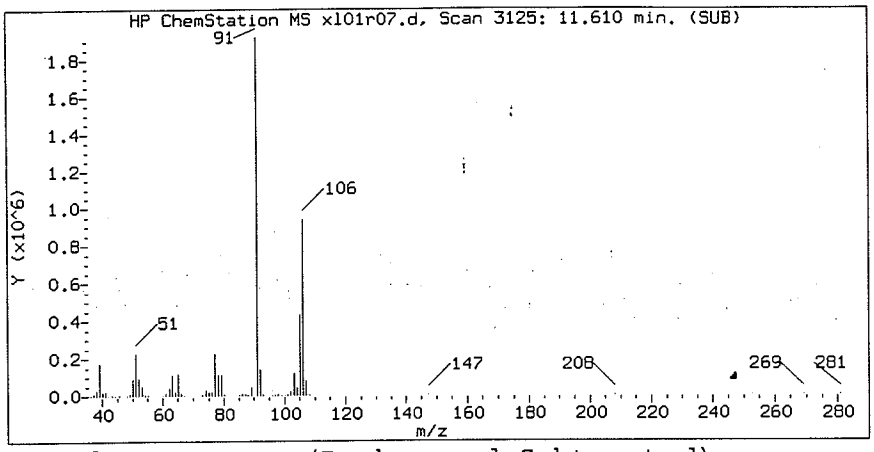
Lab Sample ID: 4219019

| | | |
|---|---|---|
| Compound Number | : | 88 |
| Compound Name | : | Toluene |
| Scan Number | : | 2625 |
| Retention Time (minutes) | : | 10.005 |
| Quant Ion | : | 92.0 |
| Area (flag) | : | 54258 |
| Concentration (ug/Kg) | : | 3.3500 |

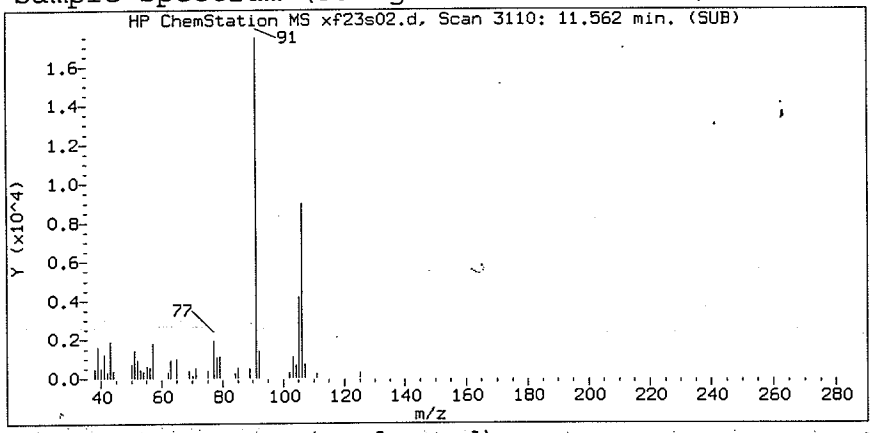
✓

8137

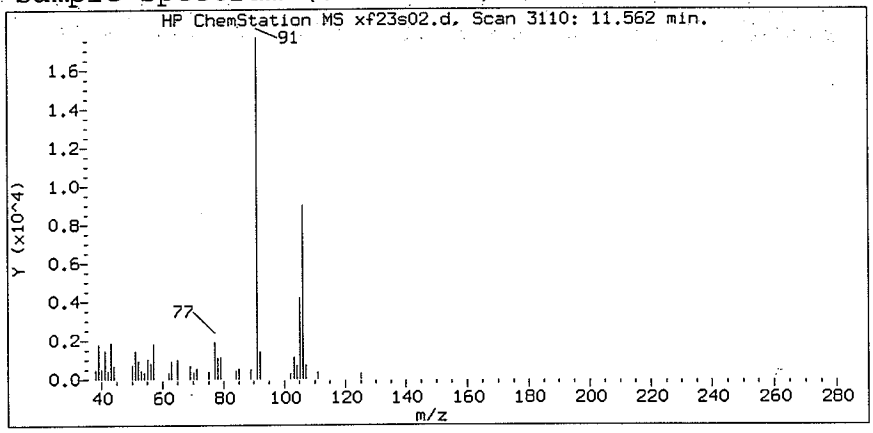
Reference Standard Spectrum for m+p-Xylene

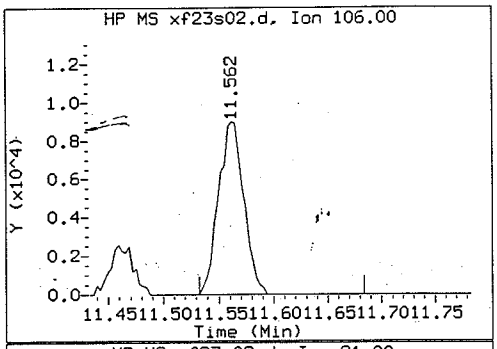


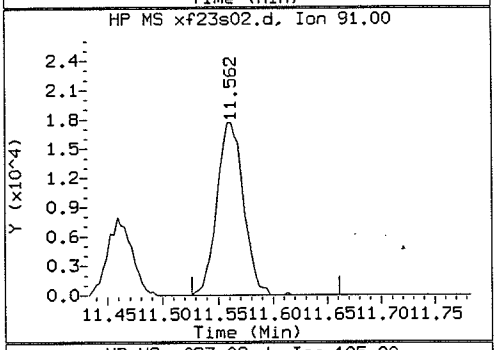

Sample Spectrum (Background Subtracted)

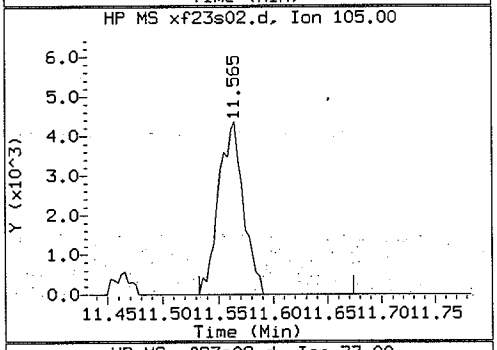


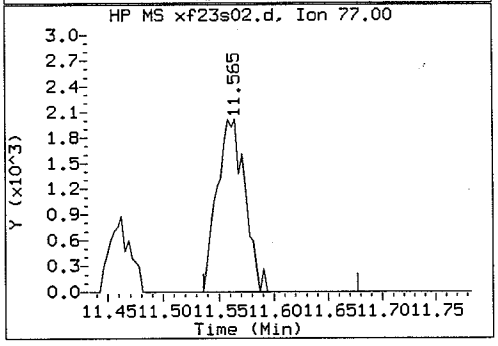

Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s02.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:22 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:27 lcm01518

Sample Name: 7GP23 Lab Sample ID: 4219019

| | |
|---|---|
| Compound Number | : 105 |
| Compound Name | : m+p-Xylene |
| Scan Number | : 3110 |
| Retention Time (minutes) | : 11.562 |
| Quant Ion | : 106.0 |
| Area (flag) | : 14281 |
| Concentration (ug/Kg) | : 1.1602 |

7GP23

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219019

File: /chem/HP09193.i/04feb23c.b/xf23s02.d
Sample: 7GP23;4219019;2;0;;;
Injected At:23-FEB-2004 12:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.89
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.6300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.003) | 1985 | 96 | 1305527( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 885875( -16) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 336376( -45) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 302186 | 53.777 | 108% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.490( 0.000) | 102 | 73704 | 52.334 | 105% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1207297 | 56.686 | 113% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 346109 | 42.515 | 85% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.78 | 4.44 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.78 | 4.44 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.78 | 4.44 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 20) Acetone | (1) | 3.838( 0.000) | 58 | 9191 | 19.209 | 17.06 | | J | 6.22 | 17.76 |
| 24) Carbon Disulfide | (1) | 4.136(-0.001) | 76 | 73399 | 3.383 | 3.00 | | J | 0.89 | 4.44 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.78 | 4.44 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.55 | 8.88 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 65) Benzene | (1) | 7.583( 0.000) | 78 | 50485 | 1.822 | 1.62 | | J | 0.44 | 4.44 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.89 | 4.44 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.66 | 8.88 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 54258 | 3.350 | 2.98 | | J | 0.89 | 4.44 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.89 | 4.44 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



9339

7GP23

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219019

File: /chem/HP09193.i/04feb23c.b/xf23s02.d
Sample: 7GP23;4219019;2;0;;;
Injected At:23-FEB-2004 12:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.89
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.6300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.66 | 8.88 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 14281 | 1.160 | 1.03 | | J | 0.89 | 4.44 |
| 92) Xylene (Total) | (2) | | | 106 | 14281 | 1.160 | 1.03 | | J | 0.89 | 4.44 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.89 | 4.44 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.89 | 4.44 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4679

Analyst: LCM/1518 Date: 2/23/04

Auditor: [signature] Date: 2/23/04



8148

Data File: /chem/HP09193.i/04feb23c.b/xf23s03.d
Date : 23-FEB-2004 12:49
Client ID: 7GP24
Sample Info: 7GP24;4219020;2;0;;;

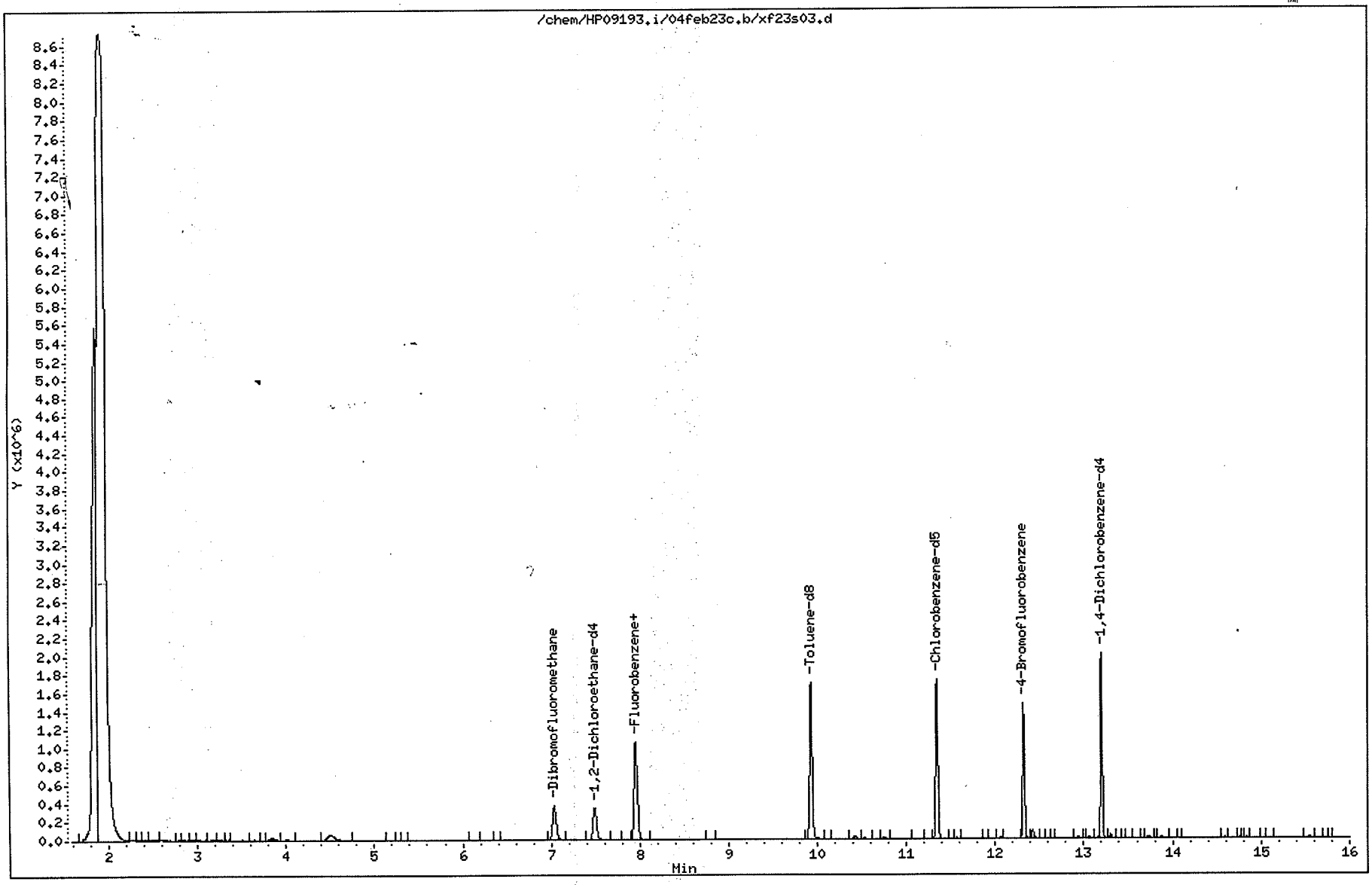
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1518 2/23/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23s03.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:49  Analyst ID: LCM01518

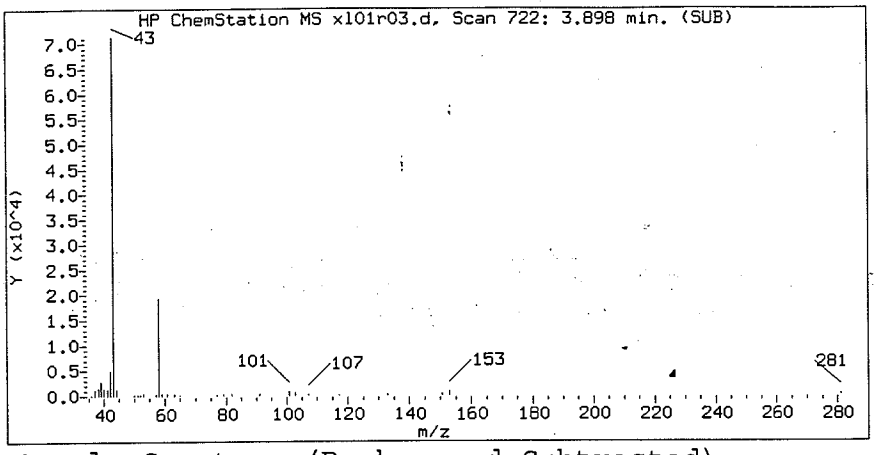
Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 13:31 lcm01518

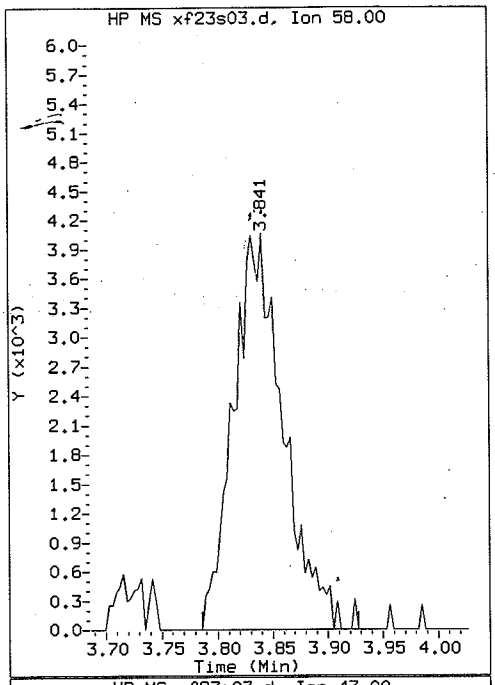
Sample Name: 7GP24  Lab Sample ID: 4219020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 20) Acetone | (1) | 3.841 | 58 | 12771 | 25.430 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1370259 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1016867 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 521201 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.034 | 113 | 316316 | 53.632 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 74979 | 50.724 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1302408 | 53.275 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 444132 | 47.528 |

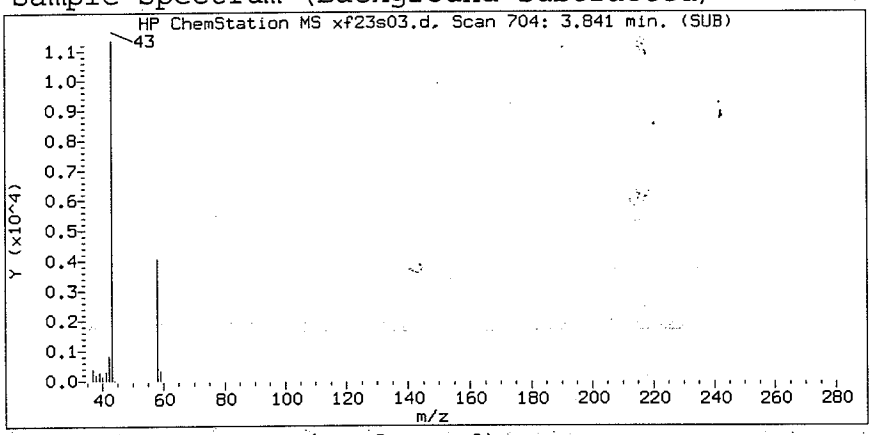
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

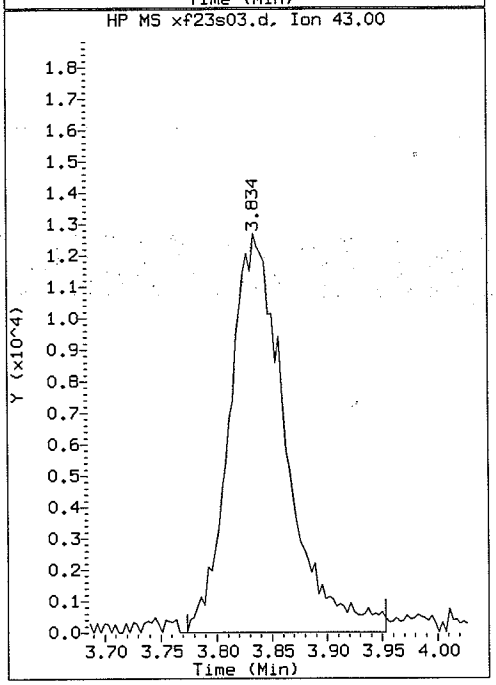
Reference Standard Spectrum for Acetone



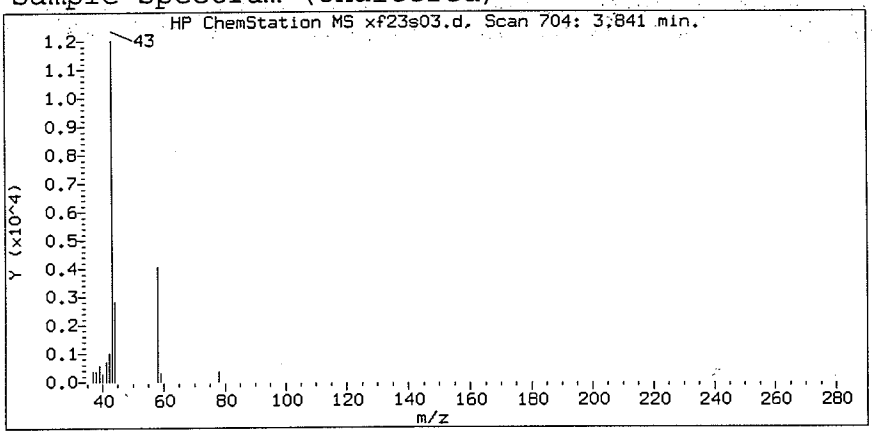




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09193.i/04feb23c.b/xf23s03.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 12:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 6292
Calibration date and time: 23-FEB-2004 12:03
Date, time and analyst ID of latest file update: 23-Feb-2004 13:31 lcm01518

Sample Name: 7GP24 Lab Sample ID: 4219020

| | |
|---|---|
| Compound Number | : 20 |
| Compound Name | : Acetone |
| Scan Number | : 704 |
| Retention Time (minutes) | : 3.841 |
| Quant Ion | : 58.0 |
| Area (flag) | : 12771 |
| Concentration (ug/Kg) | : 25.4296 |

✓

7GP24

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219020

File: /chem/HP09193.i/04feb23c.b/xf23s03.d
Sample: 7GP24;4219020;2;0;;;
Injected At:23-FEB-2004 12:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.83
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.003) | 1985 | 96 | 1370259( -1) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 1016867( -3) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 521201( -15) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 316316 | 53.632 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 74979 | 50.724 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1302408 | 53.275 | 107% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 444132 | 47.528 | 95% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 20) Acetone | (1) | 3.841( 0.000) | 58 | 12771 | 25.430 | 21.05 | | | 5.79 | 16.56 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 1.66 | 4.14 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 3.31 | 8.28 |
| 54) Chloroform | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.41 | 4.14 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 0.83 | 4.14 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 2.48 | 8.28 |
| 88) Toluene | (2) | | | | ND | ND | | | 0.83 | 4.14 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 0.83 | 4.14 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

7GP24

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

4219020

File: /chem/HP09193.i/04feb23c.b/xf23s03.d
Sample: 7GP24;4219020;2;0;;;
Injected At:23-FEB-2004 12:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf23b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:0.83
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 6.0400 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 2.48 | 8.28 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 108) Styrene | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 0.83 | 4.14 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 0.83 | 4.14 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NS478

Analyst: LCM1518 Date: 2/23/04

Auditor: [signature] Date: 2/23/04



8145

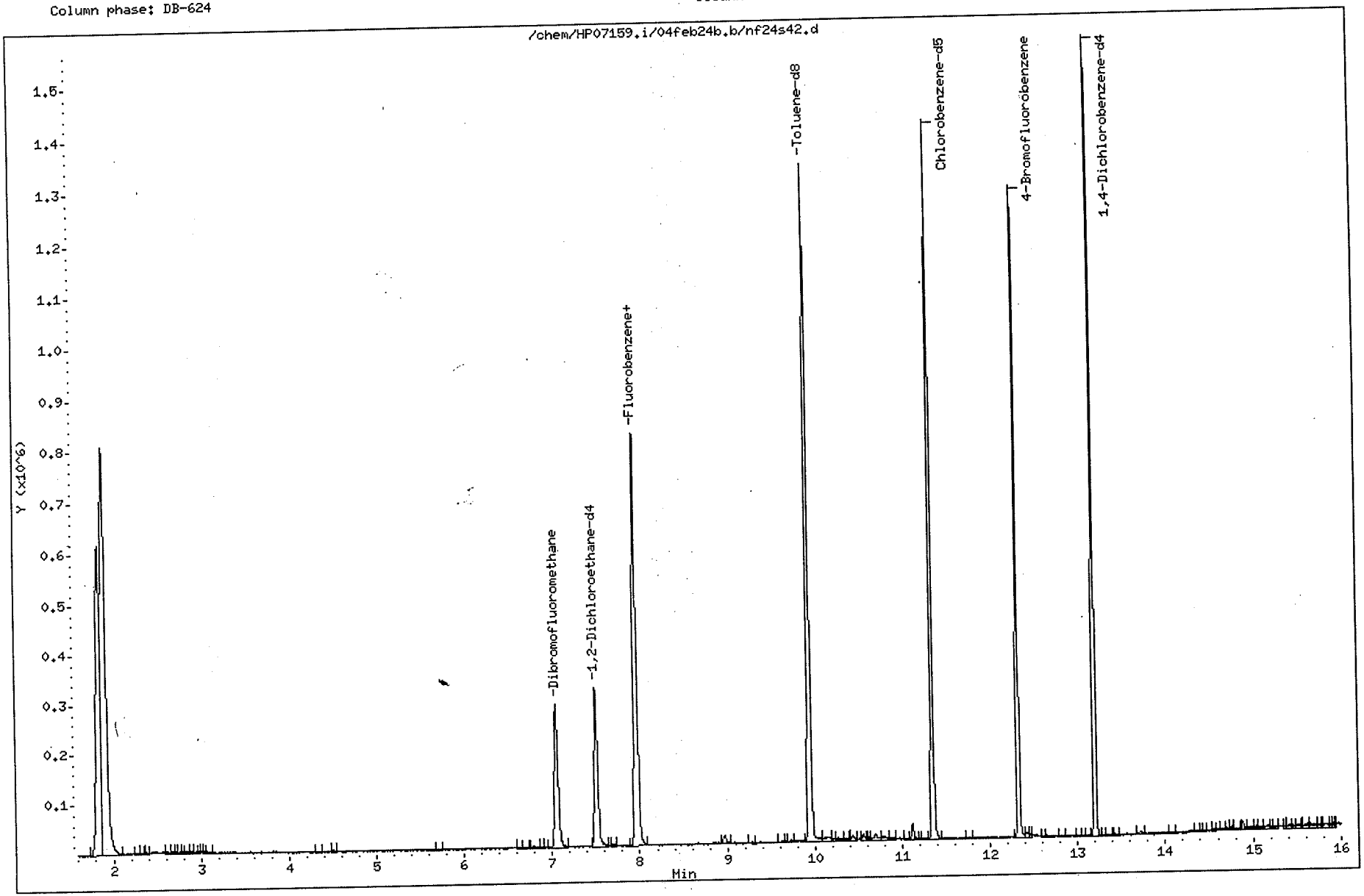
Vcmp
1254
2.25.04



Data File: /chem/HP07159.i/04feb24b.b/nf24s42.d
Date : 25-FEB-2004 02:06
Client ID: UN7ZH
Sample Info: UN7ZH;4219023;1;0;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s42.d  Instrument ID: HP07159.i
Injection date and time: 25-FEB-2004 02:06  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 25-Feb-2004 02:50 acp01254

Sample Name: UN7ZH  Lab Sample ID: 4219023

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) *Fluorobenzene | (1) | 7.969 | 96 | 1017391 | 50.000 |
| 94) *Chlorobenzene-d5 | (2) | 11.354 | 117 | 790516 | 50.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 396645 | 50.000 |
| 50) $Dibromofluoromethane | (1) | 7.054 | 113 | 243429 | 46.466 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.510 | 102 | 65998 | 47.711 |
| 80) $Toluene-d8 | (2) | 9.942 | 98 | 1022263 | 49.671 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 373523 | 49.855 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# UN7ZH

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219023

File: /chem/HP07159.i/04feb24b.b/nf24s42.d
Sample: UN7ZH;4219023;1;0;;;;
Injected At:25-FEB-2004 02:06
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s40.d
Sublist: 3636

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AD
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.969( 0.001) | 1988 | 96 | 1017391( -2) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.354(-0.005) | 3043 | 117 | 790516( -3) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.203(-0.002) | 3619 | 152 | 396645( -11) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.054( 0.000) | 113 | 243429 | 46.466 | 93% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.510( 0.000) | 102 | 65998 | 47.711 | 95% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.942( 0.000) | 98 | 1022263 | 49.671 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 373523 | 49.855 | 100% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: Temp 1254  Date: 2.25.04

Auditor:  Date: 2/25/04



3148

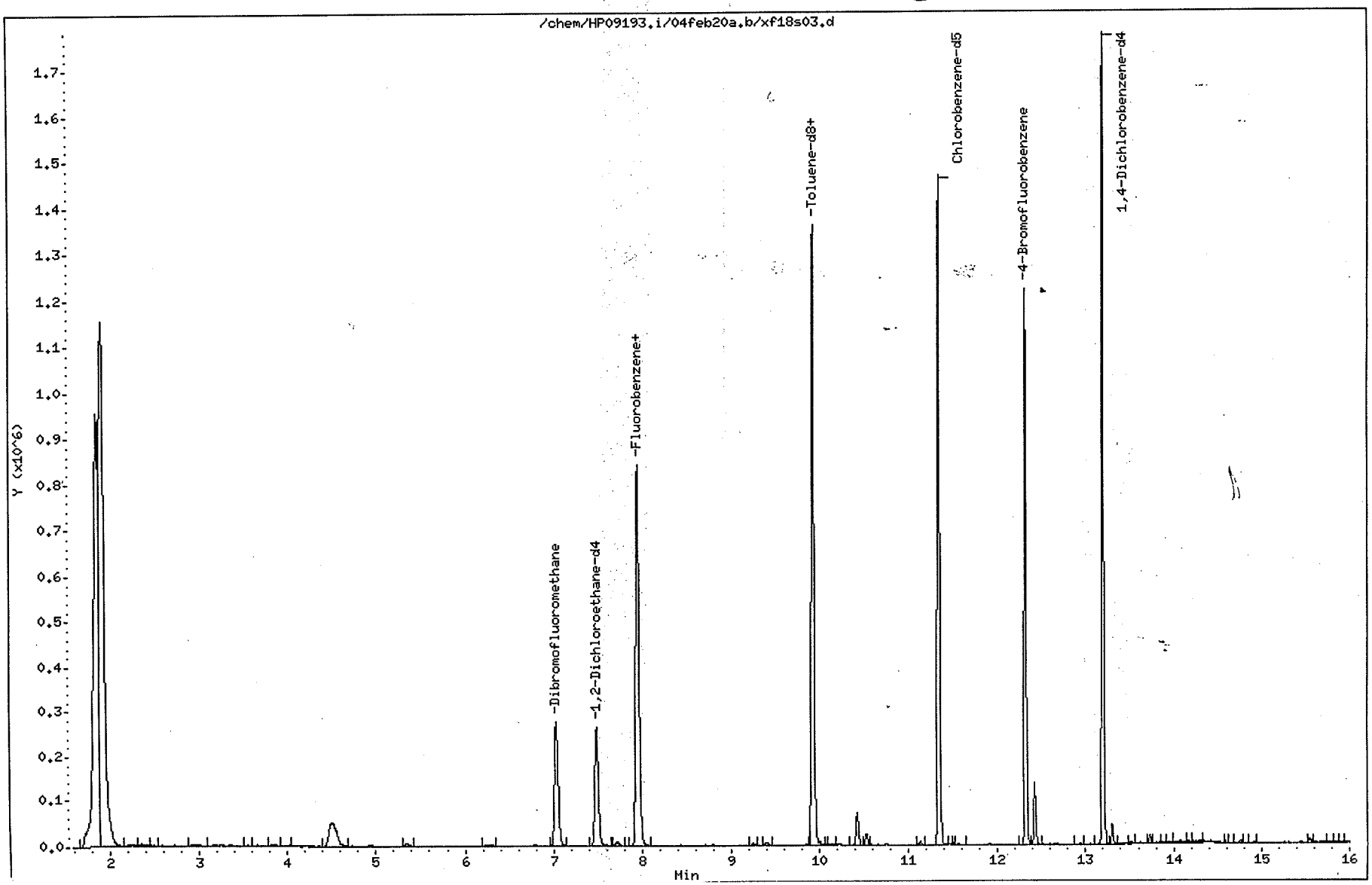
Data File: /chem/HP09193.i/04feb20a.b/xf18s03.d
Date : 20-FEB-2004 12:58
Client ID: 7GPTM
Sample Info: 7GPTM;4219025;2;0;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf18s03.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 12:58  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 16:19 msl01251

Sample Name: 7GPTM  Lab Sample ID: 4219025

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1095005 | 50.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 861307 | 50.000 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 461853 | 50.000 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 246616 | 52.325 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 58458 | 49.488 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1045579 | 50.494 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 376293 | 47.541 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

7GPTM

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4219025

File: /chem/HP09193.i/04feb20a.b/xf18s03.d
Sample: 7GPTM;4219025;2;0;;;
Injected At:20-FEB-2004 12:58
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1095005( -14) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 861307( -14) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 461853( -19) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 246616 | 52.325 | 105% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 58458 | 49.488 | 99% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1045579 | 50.494 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 376293 | 47.541 | 95% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | ND | ND | | | 4.00 | 10.00 |
| 54) Chloroform | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 66) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 73) Trichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8151

# 7GPTM

Lancaster Laboratories
Quantitation Report GC/MS Volatiles 4219025

File: /chem/HP09193.i/04feb20a.b/xf18s03.d
Sample: 7GPTM;4219025;2;0;;;
Injected At:20-FEB-2004 12:58
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NS482

Analyst: _____ Date: 2/20/04

Auditor: _____ Date: 2/23/04

# Standards Data

6A

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.3092 | 0.2669 | 0.3338 | 0.3487 | 0.3321 | 0.3238 | | 0.3191 | 9 | AVG | |
| Chloromethane | #0.3510 | 0.3029 | 0.3513 | 0.3406 | 0.3411 | 0.3137 | | 0.3334 | 6 | AVG | # |
| Vinyl Chloride | *0.3115 | 0.2731 | 0.3322 | 0.3346 | 0.3320 | 0.3033 | | 0.3144 | 8 | AVG | * |
| Bromomethane | 0.2164 | 0.2016 | 0.2286 | 0.2248 | 0.2228 | 0.1982 | | 0.2154 | 6 | AVG | |
| Chloroethane | 0.1892 | 0.1675 | 0.1921 | 0.1907 | 0.1912 | 0.1714 | | 0.1837 | 6 | AVG | |
| Trichlorofluoromethane | 0.3478 | 0.3044 | 0.3738 | 0.3861 | 0.3725 | 0.3649 | | 0.3582 | 8 | AVG | |
| Acrolein | 0.0317 | 0.0297 | 0.0284 | 0.0361 | 0.0330 | 0.0312 | | 0.0317 | 8 | AVG | |
| 1,1-Dichloroethene | *0.2378 | 0.1972 | 0.2369 | 0.2404 | 0.2349 | 0.2153 | | 0.2271 | 8 | AVG | * |
| Freon 113 | 0.2292 | 0.1878 | 0.2398 | 0.2507 | 0.2368 | 0.2187 | | 0.2272 | 10 | AVG | |
| Acetone | 0.0229 | 0.0204 | 0.0173 | 0.0176 | 0.0169 | 0.0150 | | 0.0183 | 15 | AVG | |
| Methyl Iodide | 0.4251 | 0.3920 | 0.4384 | 0.4452 | 0.4442 | 0.4058 | | 0.4251 | 5 | AVG | |
| 2-Propanol | 0.0145 | 0.0167 | 0.0140 | 0.0116 | 0.0126 | 0.0121 | | 0.0136 | 14 | AVG | |
| Carbon Disulfide | 0.8461 | 0.7124 | 0.8666 | 0.8908 | 0.8715 | 0.7988 | | 0.8310 | 8 | AVG | |
| Allyl Chloride | 0.3991 | 0.3535 | 0.4157 | 0.4047 | 0.4195 | 0.3995 | | 0.3986 | 6 | AVG | |
| Methyl Acetate | 0.1516 | 0.1428 | 0.1322 | 0.1240 | 0.1267 | 0.1285 | | 0.1343 | 8 | AVG | |
| Methylene Chloride | 0.3125 | 0.2739 | 0.2731 | 0.2721 | 0.2670 | 0.2454 | | 0.2740 | 8 | AVG | |
| t-Butyl Alcohol | 1.2793 | 1.4467 | 1.3521 | 1.3838 | 1.5117 | 1.3486 | | 1.3870 | 6 | AVG | |
| Acrylonitrile | 0.0745 | 0.0745 | 0.0713 | 0.0775 | 0.0764 | 0.0715 | | 0.0743 | 3 | AVG | |
| trans-1,2-Dichloroethene | 0.2696 | 0.2383 | 0.2761 | 0.2801 | 0.2786 | 0.2587 | | 0.2669 | 6 | AVG | |
| Methyl Tertiary Butyl Ether | 0.6689 | 0.6930 | 0.6855 | 0.6542 | 0.6628 | 0.6253 | | 0.6649 | 4 | AVG | |
| n-Hexane | 0.4047 | 0.3194 | 0.4024 | 0.4346 | 0.4029 | 0.3689 | | 0.3888 | 10 | AVG | |
| 1,1-Dichloroethane | #0.4422 | 0.4100 | 0.4655 | 0.4648 | 0.4567 | 0.4323 | | 0.4452 | 5 | AVG | # |
| 2-Chloro-1,3-Butadiene | 0.3194 | 0.2865 | 0.3610 | 0.3818 | 0.3776 | 0.3629 | | 0.3482 | 11 | AVG | |
| di-Isopropyl Ether | 0.8064 | 0.8066 | 0.8535 | 0.8423 | 0.8497 | 0.7807 | | 0.8232 | 4 | AVG | |
| Ethyl t-Butyl Ether | 0.7188 | 0.7350 | 0.7618 | 0.7522 | 0.7606 | 0.7106 | | 0.7398 | 3 | AVG | |
| cis-1,2-Dichloroethene | 0.3201 | 0.2833 | 0.3008 | 0.2939 | 0.2921 | 0.2704 | | 0.2934 | 6 | AVG | |
| 1,2-Dichloroethene (total) | 0.2949 | 0.2608 | 0.2885 | 0.2870 | 0.2854 | 0.2645 | | 0.2802 | 5 | AVG | |
| 2,2-Dichloropropane | 0.3435 | 0.3080 | 0.3613 | 0.3779 | 0.3750 | 0.3630 | | 0.3548 | 7 | AVG | |
| 2-Butanone | 0.0237 | 0.0258 | 0.0235 | 0.0298 | 0.0266 | 0.0251 | | 0.0257 | 9 | AVG | |
| Propionitrile | 0.0262 | 0.0286 | 0.0267 | 0.0246 | 0.0258 | 0.0252 | | 0.0262 | 5 | AVG | |
| Methacrylonitrile | 0.0835 | 0.0910 | 0.0885 | 0.0813 | 0.0847 | 0.0837 | | 0.0854 | 4 | AVG | |
| Bromochloromethane | 0.1315 | 0.1270 | 0.1285 | 0.1283 | 0.1265 | 0.1232 | | 0.1275 | 2 | AVG | |
| Tetrahydrofuran | 0.0254 | 0.0241 | 0.0224 | 0.0252 | 0.0239 | 0.0234 | | 0.0241 | 5 | AVG | |
| Chloroform | *0.4053 | 0.3871 | 0.4268 | 0.4321 | 0.4314 | 0.4113 | | 0.4157 | 4 | AVG | * |
| 1,1,1-Trichloroethane | 0.3591 | 0.3168 | 0.3773 | 0.3935 | 0.3889 | 0.3784 | | 0.3690 | 8 | AVG | |
| Cyclohexane | 0.4485 | 0.3837 | 0.4787 | 0.5051 | 0.4862 | 0.4475 | | 0.4583 | 9 | AVG | |
| 1,1-Dichloropropene | 0.3310 | 0.2837 | 0.3478 | 0.3566 | 0.3471 | 0.3319 | | 0.3330 | 8 | AVG | |
| Carbon Tetrachloride | 0.2993 | 0.2653 | 0.3202 | 0.3426 | 0.3348 | 0.3292 | | 0.3152 | 9 | AVG | |
| Benzene | 1.0703 | 0.9738 | 1.1017 | 1.1090 | 1.0995 | 1.0121 | | 1.0611 | 5 | AVG | |
| Isobutyl Alcohol | 0.0071 | 0.0085 | 0.0080 | 0.0067 | 0.0078 | 0.0076 | | 0.0076 | 8 | AVG | |
| 1,2-Dichloroethane | 0.2902 | 0.2885 | 0.2937 | 0.2905 | 0.2933 | 0.2848 | | 0.2902 | 1 | AVG | |
| t-Amyl Methyl Ether | 0.6393 | 0.6611 | 0.6850 | 0.6739 | 0.6952 | 0.6621 | | 0.6694 | 3 | AVG | |
| n-Heptane | 0.0718 | 0.0606 | 0.0770 | 0.0862 | 0.0808 | 0.0754 | | 0.0753 | 12 | AVG | |
| n-Butanol | 0.0058 | 0.0068 | 0.0068 | 0.0055 | 0.0067 | 0.0065 | | 0.0063 | 9 | AVG | |
| Trichloroethene | 0.2787 | 0.2393 | 0.2729 | 0.2786 | 0.2761 | 0.2648 | | 0.2684 | 6 | AVG | |
| Methylcyclohexane | 0.4363 | 0.3561 | 0.4597 | 0.4631 | 0.4580 | 0.4354 | | 0.4348 | 9 | AVG | |
| 1,2-Dichloropropane | *0.2551 | 0.2523 | 0.2688 | 0.2681 | 0.2719 | 0.2508 | | 0.2612 | 4 | AVG | * |
| Dibromomethane | 0.1334 | 0.1339 | 0.1370 | 0.1327 | 0.1366 | 0.1327 | | 0.1344 | 1 | AVG | |
| 1,4-Dioxane | 0.0021 | 0.0024 | 0.0024 | 0.0022 | 0.0023 | 0.0022 | | 0.0023 | 6 | AVG | |
| Methyl Methacrylate | 0.1453 | 0.1560 | 0.1579 | 0.1497 | 0.1630 | 0.1638 | | 0.1559 | 5 | AVG | |
| Bromodichloromethane | 0.2692 | 0.2736 | 0.2954 | 0.3041 | 0.3147 | 0.3075 | | 0.2941 | 6 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%



FORM VI VOA

6A
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Nitropropane | 0.0444 | 0.0446 | 0.0429 | 0.0593 | 0.0512 | 0.0524 | | 0.0491 | 13 | AVG | |
| cis-1,3-Dichloropropene | 0.3633 | 0.3672 | 0.4029 | 0.4129 | 0.4218 | 0.4025 | | 0.3951 | 6 | AVG | |
| 4-Methyl-2-Pentanone | 0.2089 | 0.2232 | 0.2207 | 0.3071 | 0.2436 | 0.2333 | | 0.2395 | 15 | AVG | |
| Toluene | *0.9153 | 0.8521 | 0.9426 | 0.9578 | 0.9527 | 0.8645 | | 0.9141 | 5 | AVG | * |
| trans-1,3-Dichloropropene | 0.3889 | 0.4156 | 0.4381 | 0.4341 | 0.4545 | 0.4361 | | 0.4279 | 5 | AVG | |
| Ethyl Methacrylate | 0.3596 | 0.3920 | 0.4178 | 0.4074 | 0.4415 | 0.4269 | | 0.4076 | 7 | AVG | |
| 1,1,2-Trichloroethane | 0.3059 | 0.3007 | 0.2887 | 0.2726 | 0.2812 | 0.2627 | | 0.2853 | 6 | AVG | |
| Tetrachloroethene | 0.4298 | 0.3726 | 0.4313 | 0.4493 | 0.4358 | 0.4059 | | 0.4208 | 7 | AVG | |
| 1,3-Dichloropropane | 0.4777 | 0.4945 | 0.4892 | 0.4665 | 0.4789 | 0.4420 | | 0.4748 | 4 | AVG | |
| 2-Hexanone | 0.2008 | 0.2198 | 0.2187 | 0.3019 | 0.2298 | 0.2208 | | 0.2320 | 15 | AVG | |
| Dibromochloromethane | 0.2638 | 0.2836 | 0.3047 | 0.3085 | 0.3295 | 0.3176 | | 0.3013 | 8 | AVG | |
| 1,2-Dibromoethane | 0.2805 | 0.2895 | 0.2872 | 0.2742 | 0.2867 | 0.2737 | | 0.2820 | 2 | AVG | |
| Chlorobenzene | #1.0455 | 0.9758 | 1.0503 | 1.0351 | 1.0406 | 0.9515 | | 1.0165 | 4 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.3159 | 0.3174 | 0.3467 | 0.3511 | 0.3610 | 0.3385 | | 0.3384 | 5 | AVG | |
| Ethylbenzene | *1.6823 | 1.5603 | 1.7632 | 1.8110 | 1.7819 | 1.5727 | | 1.6952 | 6 | AVG | * |
| m+p-Xylene | 0.6863 | 0.6279 | 0.7166 | 0.7376 | 0.7293 | 0.6708 | | 0.6948 | 6 | AVG | |
| Xylene (Total) | 0.6582 | 0.6205 | 0.6971 | 0.7166 | 0.7093 | 0.6418 | | 0.6739 | 6 | AVG | |
| o-Xylene | 0.6301 | 0.6131 | 0.6776 | 0.6956 | 0.6894 | 0.6129 | | 0.6531 | 6 | AVG | |
| Styrene | 0.9552 | 0.9838 | 1.1056 | 1.1646 | 1.1740 | 1.0410 | | 1.0707 | 9 | AVG | |
| Bromoform | #0.1814 | 0.1954 | 0.2055 | 0.2063 | 0.2291 | 0.2250 | | 0.2071 | 9 | AVG | # |
| Isopropylbenzene | 1.6609 | 1.5531 | 1.7718 | 1.8462 | 1.8175 | 1.5926 | | 1.7070 | 7 | AVG | |
| Cyclohexanone | 0.0090 | 0.0098 | 0.0091 | 0.0087 | 0.0091 | 0.0098 | | 0.0092 | 5 | AVG | |
| Bromobenzene | 0.8701 | 0.8145 | 0.8594 | 0.8226 | 0.8246 | 0.7347 | | 0.8210 | 6 | AVG | |
| 1,1,2,2-Tetrachloroethane | #0.7225 | 0.7151 | 0.7113 | 0.6272 | 0.6769 | 0.6220 | | 0.6792 | 7 | AVG | # |
| 1,2,3-Trichloropropane | 0.2567 | 0.2266 | 0.2076 | 0.1798 | 0.1908 | 0.1743 | | 0.2060 | 15 | AVG | |
| trans-1,4-Dichloro-2-Butene | 0.1833 | 0.2064 | 0.2009 | 0.1740 | 0.1878 | 0.1739 | | 0.1877 | 7 | AVG | |
| n-Propylbenzene | 3.6739 | 3.3921 | 3.8586 | 3.8683 | 3.7594 | 3.1561 | | 3.6181 | 8 | AVG | |
| 2-Chlorotoluene | 0.8054 | 0.7413 | 0.8179 | 0.8104 | 0.8087 | 0.7409 | | 0.7874 | 5 | AVG | |
| 1,3,5-Trimethylbenzene | 2.5699 | 2.4625 | 2.7583 | 2.8001 | 2.7530 | 2.4042 | | 2.6246 | 6 | AVG | |
| 4-Chlorotoluene | 0.8275 | 0.7853 | 0.8422 | 0.8308 | 0.8289 | 0.7525 | | 0.8112 | 4 | AVG | |
| tert-Butylbenzene | 0.6308 | 0.5928 | 0.6738 | 0.6809 | 0.6784 | 0.6152 | | 0.6453 | 6 | AVG | |
| Pentachloroethane | 0.4335 | 0.4665 | 0.5059 | 0.5093 | 0.5369 | 0.4997 | | 0.4920 | 7 | AVG | |
| 1,2,4-Trimethylbenzene | 2.5800 | 2.5363 | 2.7565 | 2.8027 | 2.7538 | 2.3797 | | 2.6348 | 6 | AVG | |
| sec-Butylbenzene | 3.3744 | 3.1242 | 3.5897 | 3.6967 | 3.6002 | 3.0132 | | 3.3997 | 8 | AVG | |
| 1,3-Dichlorobenzene | 1.6735 | 1.5674 | 1.6328 | 1.6071 | 1.5855 | 1.3860 | | 1.5754 | 6 | AVG | |
| p-Isopropyltoluene | 2.8732 | 2.7248 | 3.0700 | 3.1902 | 3.0981 | 2.6301 | | 2.9311 | 8 | AVG | |
| 1,4-Dichlorobenzene | 1.8022 | 1.6500 | 1.6613 | 1.6372 | 1.6291 | 1.4741 | | 1.6423 | 6 | AVG | |
| 1,2-Dichlorobenzene | 1.5709 | 1.5173 | 1.5050 | 1.4906 | 1.4866 | 1.3501 | | 1.4868 | 5 | AVG | |
| n-Butylbenzene | 2.5377 | 2.3846 | 2.6866 | 2.8467 | 2.7606 | 2.3684 | | 2.5974 | 8 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.1325 | 0.1267 | 0.1219 | 0.1087 | 0.1205 | 0.1213 | | 0.1219 | 6 | AVG | |
| 1,2,4-Trichlorobenzene | 1.2319 | 1.2461 | 1.1356 | 1.1752 | 1.1865 | 0.9974 | | 1.1621 | 8 | AVG | |
| Hexachlorobutadiene | 0.5872 | 0.5553 | 0.5918 | 0.6495 | 0.6475 | 0.5357 | | 0.5945 | 8 | AVG | |
| Naphthalene | 2.9365 | 2.9999 | 2.7067 | 2.4718 | 2.6413 | 2.2556 | | 2.6686 | 11 | AVG | |
| 1,2,3-Trichlorobenzene | 1.1613 | 1.2197 | 1.0746 | 1.0815 | 1.1034 | 0.9233 | | 1.0940 | 9 | AVG | |
| 2-Methylnaphthalene | 1.7693 | 1.9567 | 1.6787 | 1.4976 | 1.6582 | 1.5099 | | 1.6784 | 10 | AVG | |
| Dibromofluoromethane | 0.2249 | 0.2005 | 0.2136 | 0.2143 | 0.2195 | 0.2183 | | 0.2152 | 4 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0562 | 0.0559 | 0.0542 | 0.0517 | 0.0532 | 0.0524 | | 0.0539 | 3 | AVG | |
| Toluene-d8(mz100) | 0.8185 | 0.7345 | 0.8311 | 0.8230 | 0.8372 | 0.8052 | | 0.8083 | 5 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4401 | 0.4045 | 0.4166 | 0.4149 | 0.4253 | 0.4178 | | 0.4199 | 3 | AVG | |
| Dibromofluoromethane(mz111) | 0.2259 | 0.2032 | 0.2164 | 0.2189 | 0.2238 | 0.2230 | | 0.2185 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0343 | 0.0320 | 0.0336 | 0.0326 | 0.0335 | 0.0331 | | 0.0332 | 2 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

8155



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date(s): 02/16/04 02/16/04

Heated Purge: (Y/N) Y Calibration Times: 09:47 14:27

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = xf16i06.d RRF 10= xf16i05.d RRF 20= xf16i04.d
RRF 50= xf16i09.d RRF100= xf16i07.d RRF300= xf16i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Toluene-d8 | 1.2284 | 1.1035 | 1.2347 | 1.2217 | 1.2405 | 1.1836 | | 1.2021 | 4 | AVG |
| 4-Bromofluorobenzene | 0.4802 | 0.4440 | 0.4571 | 0.4570 | 0.4628 | 0.4557 | | 0.4595 | 3 | AVG |

Average %RSD 7

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

5156



FORM VI VOA

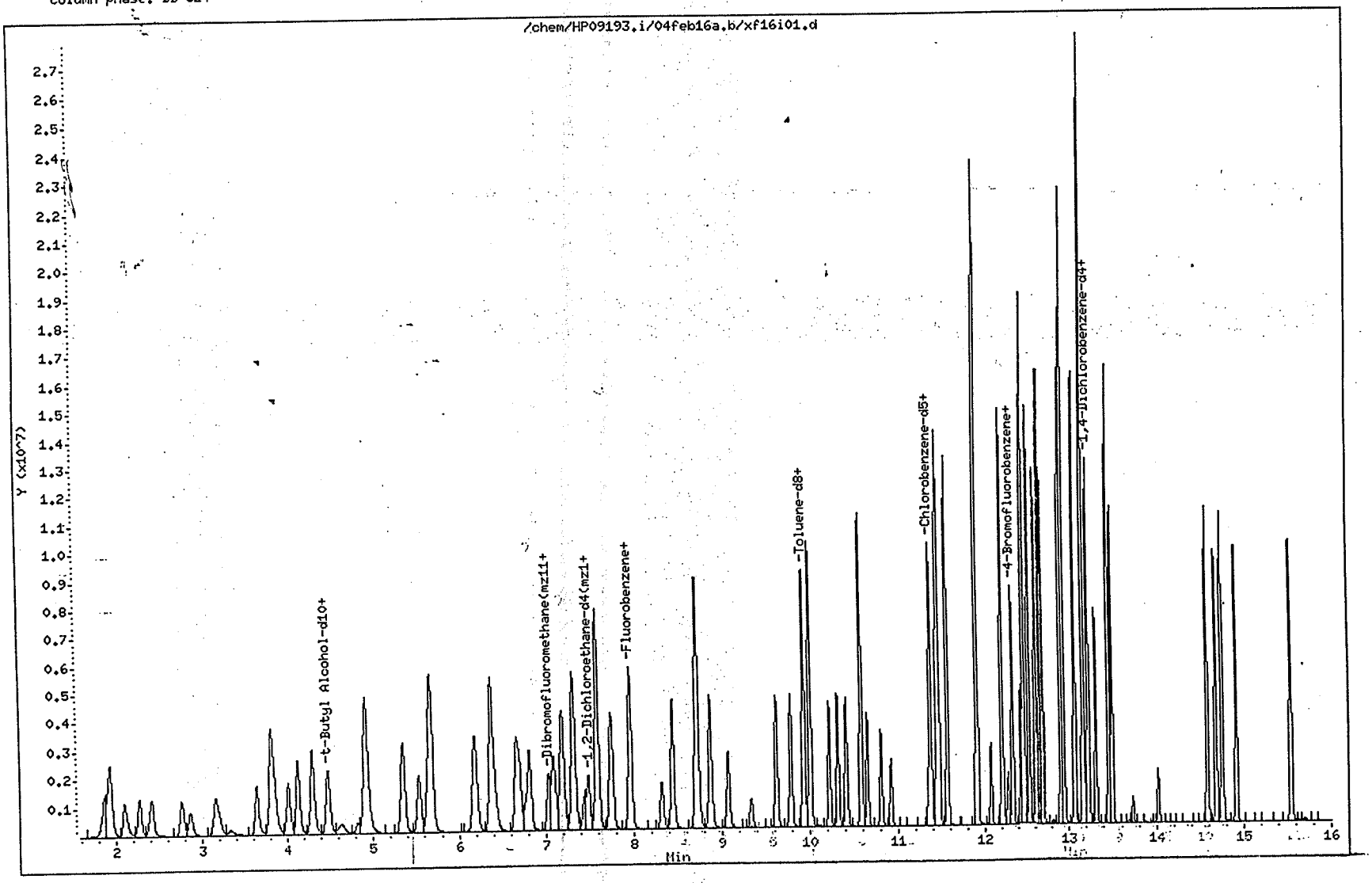
Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d
Date : 16-FEB-2004 09:47
Client ID: VSTD300
Sample Info: VSTD300;VSTD300;;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1/28
2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 2557283 | 300.000 |
| 4) Chloromethane | (1) | 2.272 | 50 | 2478104 | 300.000 |
| 5) Vinyl Chloride | (1) | 2.413 | 62 | 2395390 | 300.000 |
| 7) Bromomethane | (1) | 2.759 | 94 | 1565790 | 300.000 |
| 8) Chloroethane | (1) | 2.859 | 64 | 1354023M | 300.000 |
| 12) Trichlorofluoromethane | (1) | 3.157 | 101 | 2881920 | 300.000 |
| 13) Ethanol | (4) | 3.327 | 45 | 420949 | 7500.000 |
| 16) Acrolein | (1) | 3.635 | 56 | 2462545 | 3000.000 |
| 17) 1,1-Dichloroethene | (1) | 3.802 | 96 | 1700257 | 300.000 |
| 19) Freon 113 | (1) | 3.834 | 101 | 1727550 | 300.000 |
| 20) Acetone | (1) | 3.828 | 58 | 236495 | 600.000 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 3204890 | 300.000 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 478470 | 1500.000 |
| 24) Carbon Disulfide | (1) | 4.126 | 76 | 6309399 | 300.000 |
| 26) Allyl Chloride | (1) | 4.296 | 41 | 3155357 | 300.000 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 1015060 | 300.000 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 1938561 | 300.000 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 119476 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.630 | 59 | 966734 | 1500.000 |
| 32) Acrylonitrile | (1) | 4.819 | 53 | 564596 | 300.000 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 2043460 | 300.000 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 4938813 | 300.000 |
| 36) n-Hexane | (1) | 5.343 | 57 | 2913651 | 300.000 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 3414320 | 300.000 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 2866519 | 300.000 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 6166638 | 300.000 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 5612504 | 300.000 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 2135530 | 300.000 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 4178990 | 600.000 |
| 48) 2,2-Dichloropropane | (1) | 6.385 | 77 | 2867017 | 300.000 |
| 46) 2-Butanone | (1) | 6.366 | 72 | 395949M | 600.000 |
| 49) Propionitrile | (1) | 6.437 | 54 | 994592 | 1500.000 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 1652207 | 750.000 |
| 52) Bromochloromethane | (1) | 6.700 | 128 | 973375 | 300.000 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 369679 | 600.000 |
| 54) Chloroform | (1) | 6.815 | 83 | 3248794 | 300.000 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 2988788 | 300.000 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 3534556 | 300.000 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 2621539 | 300.000 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 2599911 | 300.000 |
| 65) Benzene | (1) | 7.586 | 78 | 7994630 | 300.000 |
| 61) Isobutyl Alcohol | (1) | 7.438 | 41 | 749722 | 3750.000 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 2249393 | 300.000 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 5230106 | 300.000 |
| 69) *Fluorobenzene | (1) | 7.948 | 96 | 1316447 | 50.000 |
| 71) n-Heptane | (1) | 7.961 | 100 | 595367 | 300.000 |
| 72) n-Butanol | (1) | 8.320 | 56 | 1286389 | 7500.000 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 2091883 | 300.000 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 3439231 | 300.000 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 1981150 | 300.000 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 1047995 | 300.000 |
| 78) 1,4-Dioxane | (1) | 8.888 | 88 | 220613 | 3750.000 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 1293688 | 300.000 |
| 81) Bromodichloromethane | (1) | 9.071 | 83 | 2428465 | 300.000 |
| 82) 2-Nitropropane | (1) | 9.334 | 41 | 827988 | 600.000 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 3179488 | 300.000 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 3685916 | 600.000 |
| 88) Toluene | (2) | 10.005 | 92 | 5224163 | 300.000 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 2635332 | 300.000 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 2579685 | 300.000 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 1587869 | 300.000 |
| 93) Tetrachloroethene | (2) | 10.579 | 166 | 2452819 | 300.000 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 2671335 | 300.000 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 2668756 | 600.000 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 1919605 | 300.000 |
| 99) 1,2-Dibromoethane | (2) | 10.916 | 107 | 1653812 | 300.000 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1007220 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 5750506 | 300.000 |

* Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 2045728 | 300.000 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 9504309 | 300.000 |
| 105) m+p-Xylene | (2) | 11.561 | 106 | 4053629 | 300.000 |
| 92) Xylene (Total) | (2) | | 106 | 7757422 | 600.000 |
| 107) o-Xylene | (2) | 11.902 | 106 | 3703793 | 300.000 |
| 108) Styrene | (2) | 11.908 | 104 | 6291040 | 300.000 |
| 109) Bromoform | (2) | 12.068 | 173 | 1359449 | 300.000 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 9624694 | 300.000 |
| 112) Cyclohexanone | (2) | 12.267 | 55 | 741356 | 3750.000 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 2543267 | 300.000 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 2153282 | 300.000 |
| 117) 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 603326 | 300.000 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.460 | 53 | 1505076 | 750.000 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 10925798 | 300.000 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 2564854 | 300.000 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 8322682 | 300.000 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 2604833 | 300.000 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 2129583 | 300.000 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 1729693 | 300.000 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 8237827 | 300.000 |
| 126) sec-Butylbenzene | (3) | 13.063 | 105 | 10430879 | 300.000 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 4798105 | 300.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 576962 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.159 | 119 | 9104861 | 300.000 |
| 130) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 5102934 | 300.000 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 4673631 | 300.000 |
| 134) n-Butylbenzene | (3) | 13.451 | 91 | 8199014 | 300.000 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 419850 | 300.000 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 3452753 | 300.000 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 1854316 | 300.000 |
| 140) Naphthalene | (3) | 14.758 | 128 | 7808394 | 300.000 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 3196339 | 300.000 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 5227035 | 300.000 |
| 155)$Dibromofluoromethane | (1) | 7.034 | 113 | 1724322 | 300.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

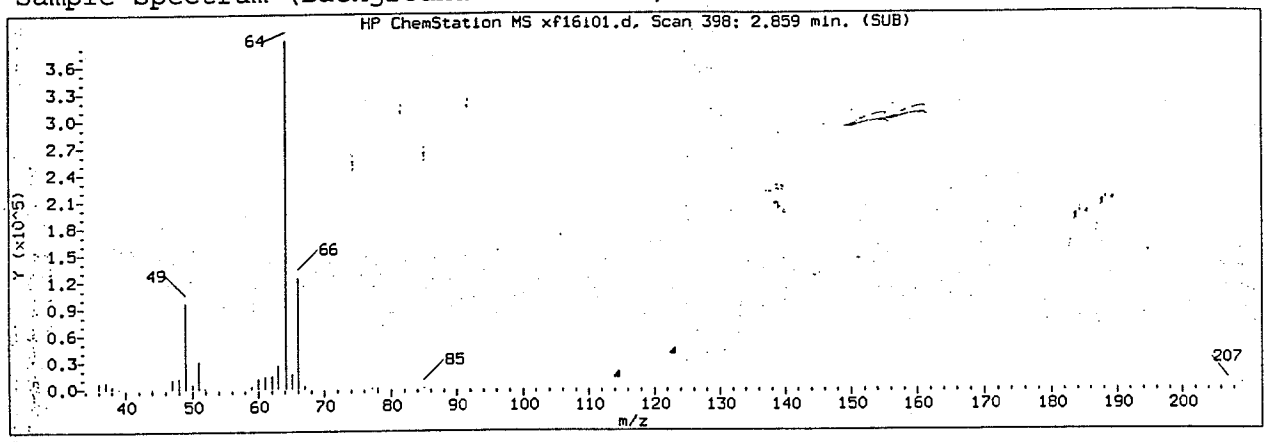
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

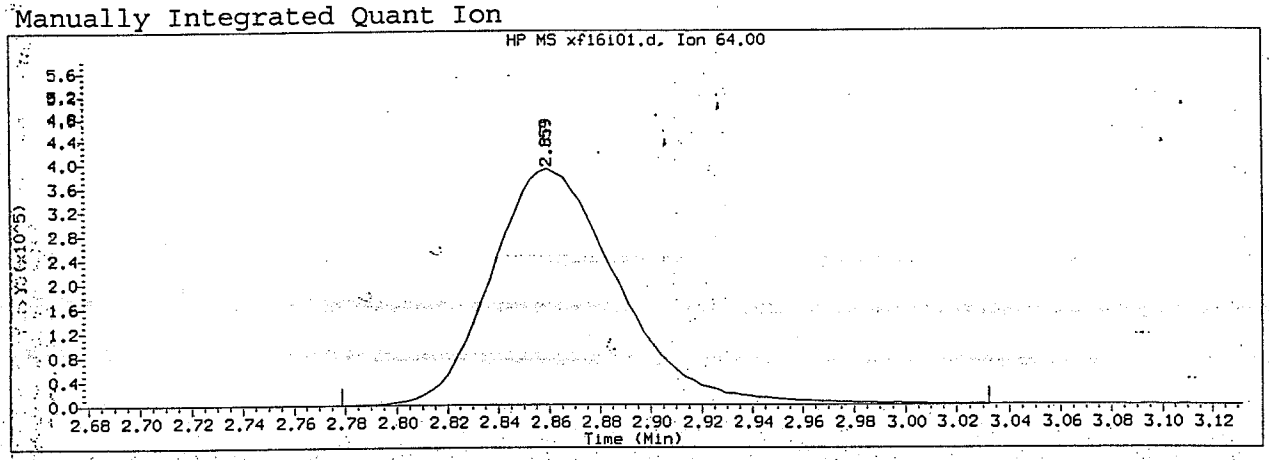
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.486 | 102 | 414215 | 300.000 |
| 87)$Toluene-d8(mz100) | (2) | 9.931 | 100 | 4866260 | 300.000 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 2524919 | 300.000 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.030 | 111 | 1761228 | 300.000 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.486 | 104 | 261464 | 300.000 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 7152914 | 300.000 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 2754150 | 300.000 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

| | | |
|---|---|---|
| Compound Number | : | 8 |
| Compound Name | : | Chloroethane |
| Scan Number | : | 398 |
| Retention Time (minutes) | : | 2.859 |
| Quant Ion | : | 64 |
| Area (flag) | : | 1354023 M |
| Concentration (ug/Kg) | : | 300.0000 |
| Integration start scan | : | 372 Integration stop scan: 451 |
| Y at integration start | : | 0 Y at integration end: 0 |

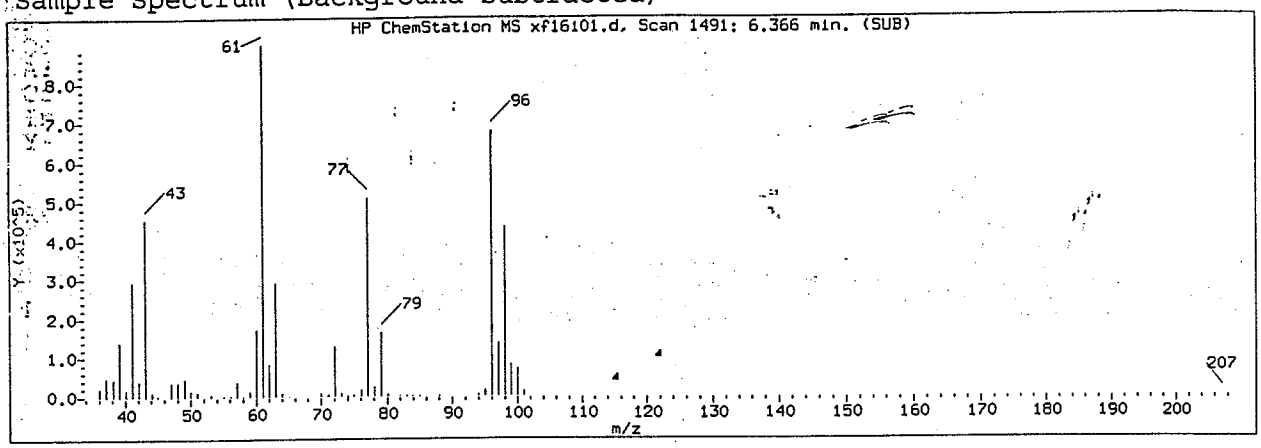
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

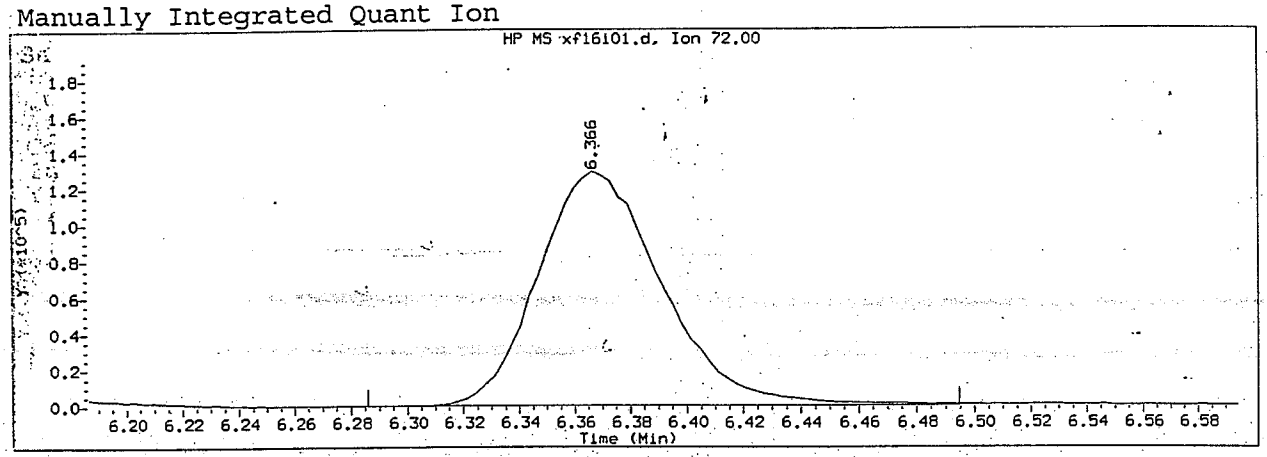
GC/MS audit/management approval: [illegible], 2/17/04

Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16i01.d, generated on 02/16/2004 at 15:05

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i01.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 09:47 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 16-Feb-2004 15:05 lcm01518

Sample Name: VSTD300 Lab Sample ID: VSTD300

| | |
|---|---|
| Compound Number | : 46 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1491 |
| Retention Time (minutes) | : 6.366 |
| Quant Ion | : 72 |
| Area (flag) | : 395949 M |
| Concentration (ug/Kg) | : 600.0000 |
| Integration start scan | : 1465 Integration stop scan: 1530 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: [signature] 2/17/04

Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16i01.d, generated on 02/16/2004 at 15:05

8163

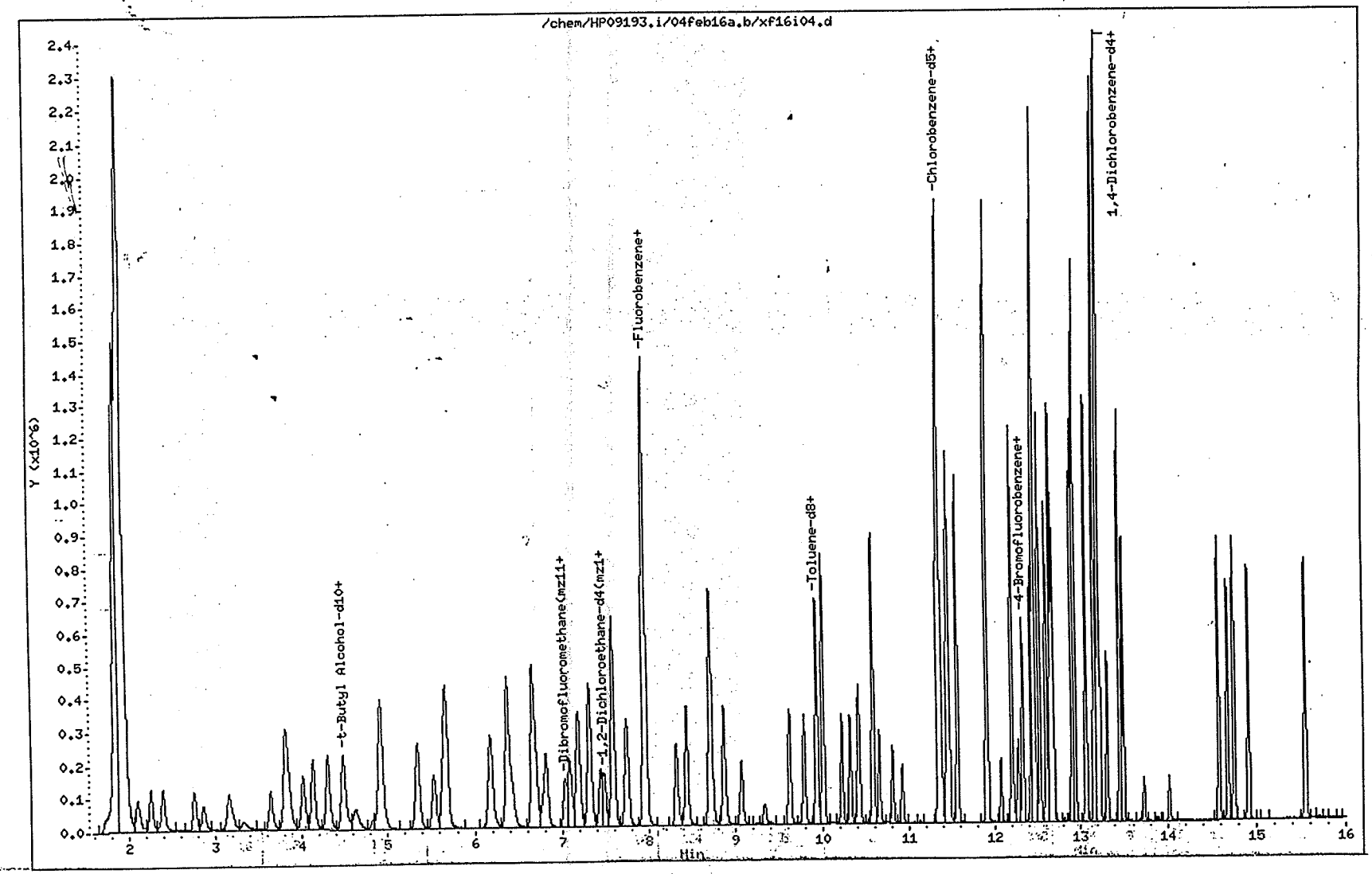
Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d
Date : 16-FEB-2004 11:45
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 196368 | 20.925 |
| 4) Chloromethane | (1) | 2.249 | 50 | 206648 | 21.071 |
| 5) Vinyl Chloride | (1) | 2.394 | 62 | 195421 | 21.131 |
| 7) Bromomethane | (1) | 2.760 | 94 | 134459 | 21.223 |
| 8) Chloroethane | (1) | 2.865 | 64 | 112990 | 20.915 |
| 12) Trichlorofluoromethane | (1) | 3.164 | 101 | 219887 | 20.869 |
| 13) Ethanol | (4) | 3.328 | 45 | 64018 | 893.431 |
| 16) Acrolein | (1) | 3.645 | 56 | 167073 | 179.289 |
| 17) 1,1-Dichloroethene | (1) | 3.802 | 96 | 139372 | 20.867 |
| 19) Freon 113 | (1) | 3.841 | 101 | 141074 | 21.114 |
| 20) Acetone | (1) | 3.828 | 58 | 20315 | 37.691 |
| 22) Methyl Iodide | (1) | 4.017 | 142 | 257909 | 20.627 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 82188 | 205.775 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 509748 | 20.856 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 244510 | 20.854 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 77781 | 19.690 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 160676 | 19.937 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 142545 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.627 | 59 | 154188 | 194.964 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 41915 | 19.186 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 162438 | 20.692 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.919 | 73 | 403221 | 20.618 |
| 36) n-Hexane | (1) | 5.343 | 57 | 236728 | 20.701 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 273815 | 20.910 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 212332 | 20.734 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 502061 | 20.736 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 448096 | 20.593 |
| 45) cis-1,2-Dichloroethene | (1) | 6.370 | 96 | 176933 | 20.502 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 339371 | 41.193 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 212507 | 20.366 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 27679MA | 35.507 |
| 49) Propionitrile | (1) | 6.437 | 54 | 157202 | 204.042 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 260279 | 103.570 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 75611 | 20.160 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 26366 | 37.251 |
| 54) Chloroform | (1) | 6.822 | 83 | 251033 | 20.534 |
| 57) 1,1,1-Trichloroethane | (1) | 7.088 | 97 | 221969 | 20.452 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 281584 | 20.891 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 204599 | 20.889 |
| 60) Carbon Tetrachloride | (1) | 7.323 | 117 | 188373 | 20.317 |
| 65) Benzene | (1) | 7.586 | 78 | 648070 | 20.766 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 118166 | 527.916 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 172775 | 20.244 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 402916 | 20.464 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1470593 | 50.000 |
| 71) n-Heptane | (1) | 7.961 | 100 | 45321 | 20.466 |
| 72) n-Butanol | (1) | 8.321 | 56 | 199079 | 1065.230 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 160540 | 20.336 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 270402 | 21.146 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 158110 | 20.584 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 80584 | 20.389 |
| 78) 1,4-Dioxane | (1) | 8.895 | 88 | 34808 | 520.245 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 92876 | 20.250 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 173776 | 20.091 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 50469 | 34.922 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 237023 | 20.396 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 259607 | 36.859 |
| 88) Toluene | (2) | 10.002 | 92 | 411128 | 20.621 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 191082 | 20.477 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 182250 | 20.504 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 125932 | 20.238 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 188140 | 20.502 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 213397 | 20.607 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 190813 | 37.717 |
| 97) Dibromochloromethane | (2) | 10.801 | 129 | 132921 | 20.229 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 125264 | 20.370 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1090453 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 458104 | 20.665 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 151210 | 20.487 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 769066 | 20.802 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 312573 | 20.629 |
| 92) Xylene (Total) | (2) | | 106 | 608135 | 41.379 |
| 107) o-Xylene | (2) | 11.899 | 106 | 295562 | 20.750 |
| 108) Styrene | (2) | 11.908 | 104 | 482227 | 20.651 |
| 109) Bromoform | (2) | 12.065 | 173 | 89642 | 19.844 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 772822 | 20.759 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 99147 | 491.825 |
| 116) Bromobenzene | (3) | 12.450 | 156 | 203059 | 20.935 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 168075 | 20.946 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 49045 | 20.155 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 237346 | 107.014 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 911762 | 21.330 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 193261 | 20.773 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 651760 | 21.018 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 198999 | 20.764 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 159225 | 20.884 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 119548 | 20.568 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 651348 | 20.924 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 848214 | 21.117 |
| 128) 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 385821 | 20.729 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 590732 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 725423 | 20.948 |
| 130) 1,4-Dichlorobenzene | (3) | 13.217 | 146 | 392561 | 20.232 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 355630 | 20.246 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 634813 | 20.686 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 28814 | 19.999 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 268331 | 19.543 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 139827 | 19.907 |
| 140) Naphthalene | (3) | 14.758 | 128 | 639583 | 20.286 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 253915 | 19.645 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 396668 | 20.004 |
| 155) $Dibromofluoromethane | (1) | 7.031 | 113 | 125672 | 19.854 |

* Compound is an internal standard.
$ Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45  Analyst ID: LCM01518

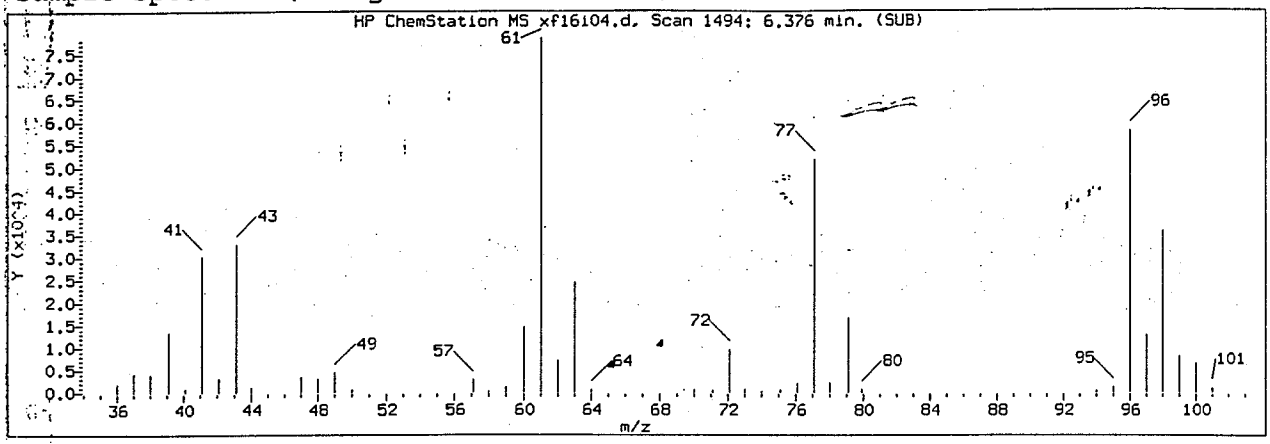
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

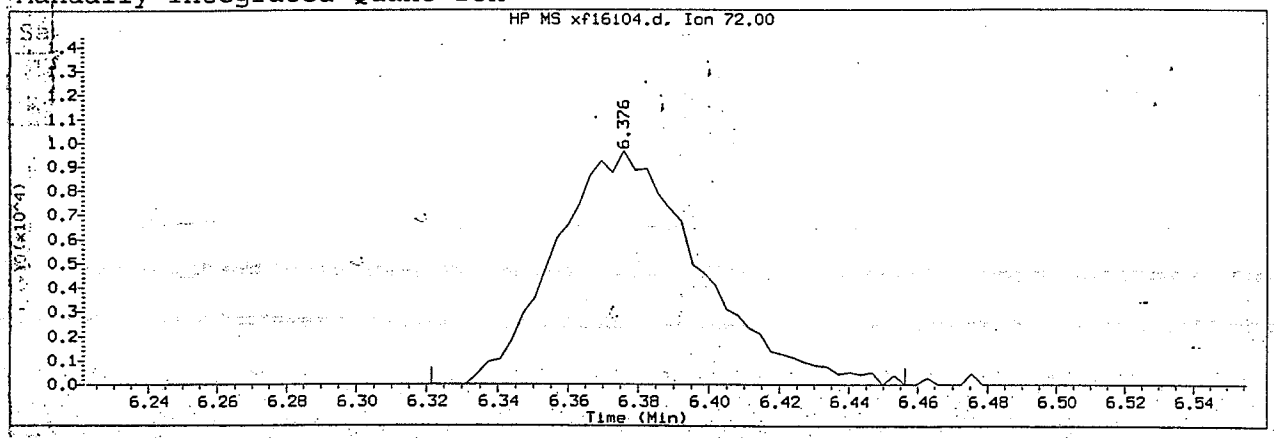
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 31891 | 20.103 |
| 87) $Toluene-d8(mz100) | (2) | 9.928 | 100 | 362521 | 20.566 |
| 114) $4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 181695 | 19.843 |
| 56) $Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 127322 | 19.808 |
| 63) $1,2-Dichloroethane-d4(mz104) | (1) | 7.489 | 104 | 19772 | 20.259 |
| 86) $Toluene-d8 | (2) | 9.928 | 98 | 538560 | 20.543 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 199371 | 19.896 |

$ Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16i04.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 11:45 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 15:05
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| | |
|---|---|
| Compound Number | : 46 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1494 |
| Retention Time (minutes) | : 6.376 |
| Quant Ion | : 72 |
| Area (flag) | : 27679AM |
| Concentration (ug/Kg) | : 35.5070 |
| Integration start scan | : 1476 Integration stop scan: 1518 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: LCM1518 2/17/04

GC/MS audit/management approval: *[illegible] 2/17/04

Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16i04.d, generated on 02/17/2004 at 09:18

8169

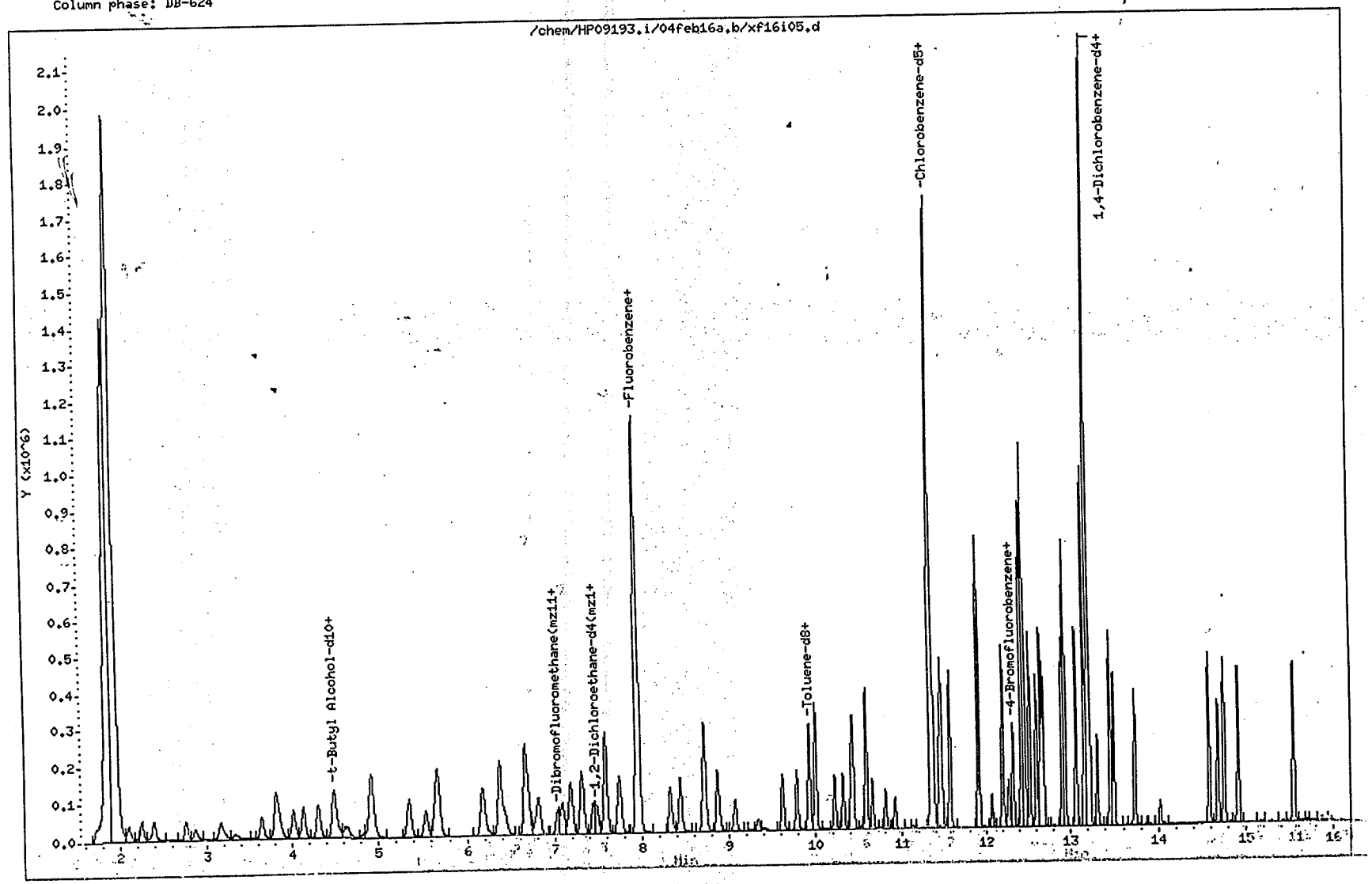
Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d
Date : 16-FEB-2004 12:12
Client ID: VSTD010
Sample Info: VSTD010;VSTD010;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518 2/16/04



Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d
Date : 16-FEB-2004 14:54
Client ID: VSTD001
Sample Info: VSTD001;1 PPB MDL;2;3;MDL/LOQ;;

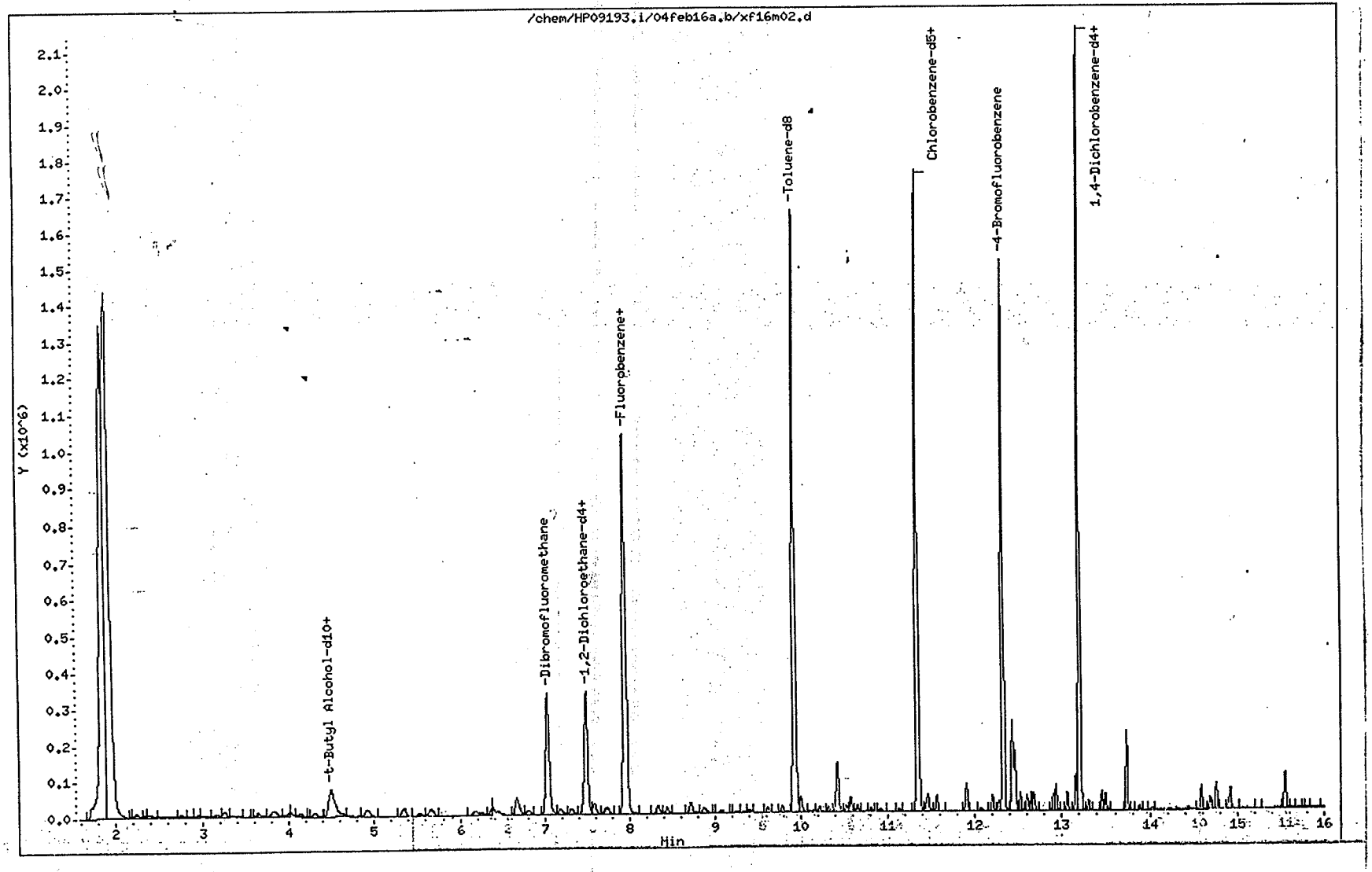
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1/5/04
2/16/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 73289 | 8.364 |
| 4) Chloromethane | (1) | 2.253 | 50 | 83190 | 9.084 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 75005 | 8.685 |
| 7) Bromomethane | (1) | 2.763 | 94 | 55360 | 9.358 |
| 8) Chloroethane | (1) | 2.865 | 64 | 46015 | 9.122 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 83597 | 8.497 |
| 13) Ethanol | (4) | 3.331 | 45 | 34124 | 474.500 |
| 16) Acrolein | (1) | 3.636 | 56 | 81704 | 93.895 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 54166 | 8.685 |
| 19) Freon 113 | (1) | 3.844 | 101 | 51577 | 8.267 |
| 20) Acetone | (1) | 3.838 | 58 | 11183 | 22.220 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 107656 | 9.221 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 45969 | 123.254 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 195649 | 8.572 |
| 26) Allyl Chloride | (1) | 4.303 | 41 | 97090 | 8.868 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 39226 | 10.634 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 75236 | 9.997 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 137431 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.637 | 59 | 79531 | 104.306 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 20472 | 10.035 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 65442 | 8.927 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 190321 | 10.422 |
| 36) n-Hexane | (1) | 5.346 | 57 | 87730 | 8.216 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 112593 | 9.208 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 78682 | 8.228 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 221522 | 9.798 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 201861 | 9.935 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 77802 | 9.654 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 143244 | 18.582 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 84591 | 8.682 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 14144 A | 19.692 |
| 49) Propionitrile | (1) | 6.437 | 54 | 78475 | 109.080 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 125012 | 53.272 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 34880 | 9.960 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.780 | 71 | 13213 | 19.991 |
| 54) Chloroform | (1) | 6.819 | 83 | 106302 | 9.312 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 86999 | 8.584 |
| 58) Cyclohexane | (1) | 7.185 | 56 | 105391 | 8.374 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 77927 | 8.520 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 72875 | 8.417 |
| 65) Benzene | (1) | 7.583 | 78 | 267441 | 9.177 |
| 61) Isobutyl Alcohol | (1) | 7.448 | 41 | 58115 | 278.043 |
| 66) 1,2-Dichloroethane | (1) | 7.586 | 62 | 79243 | 9.943 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 181578 | 9.876 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1373221 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 16636 | 8.045 |
| 72) n-Butanol | (1) | 8.324 | 56 | 93777 | 537.361 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 65723 | 8.915 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 97794 | 8.190 |
| 75) 1,2-Dichloropropane | (1) | 8.719 | 63 | 69306 | 9.662 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 36778 | 9.965 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 16670 | 266.819 |
| 76) Methyl Methacrylate | (1) | 8.863 | 69 | 42849 | 10.005 |
| 81) Bromodichloromethane | (1) | 9.072 | 83 | 75146 | 9.304 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 24505 | 18.158 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 100862 | 9.295 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 122625 | 18.645 |
| 88) Toluene | (2) | 10.002 | 92 | 173420 | 9.321 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 84587 | 9.713 |
| 90) Ethyl Methacrylate | (2) | 10.317 | 69 | 79790 | 9.619 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 61205 | 10.540 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 75828 | 8.854 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 100635 | 10.414 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 89470 | 18.951 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 57723 | 9.413 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 58919 | 10.267 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1017617 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 198602 | 9.600 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 64606 | 9.380 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 317567 | 9.204 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 127800 | 9.038 |
| 92) Xylene (Total) | (2) | | 106 | 252587 | 18.426 |
| 107) o-Xylene | (2) | 11.899 | 106 | 124787 | 9.388 |
| 108) Styrene | (2) | 11.908 | 104 | 200236 | 9.189 |
| 109) Bromoform | (2) | 12.065 | 173 | 39772 | 9.434 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 316082 | 9.098 |
| 112) Cyclohexanone | (2) | 12.268 | 55 | 49766 | 264.537 |
| 116) Bromobenzene | (3) | 12.450 | 156 | 91298 | 9.921 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 80157 | 10.529 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 25403 | 11.004 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 115650 | 54.963 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 380211 | 9.375 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 83085 | 9.414 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 276010 | 9.382 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 88022 | 9.681 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 66440 | 9.186 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 52291 | 9.483 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 284287 | 9.626 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 350180 | 9.190 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 175687 | 9.949 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 560433 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.156 | 119 | 305416 | 9.296 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 184946 | 10.047 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 170071 | 10.206 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 267280 | 9.181 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 14204 | 10.392 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 139675 | 10.723 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 62247 | 9.341 |
| 140) Naphthalene | (3) | 14.758 | 128 | 336243 | 11.241 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 136713 | 11.149 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 219319 | 11.658 |
| 155) $Dibromofluoromethane | (1) | 7.034 | 113 | 55067 | 9.317 |

* Compound is an internal standard.
$ Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i05.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:12 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:18 lcm01518

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62) $1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 15351 | 10.363 |
| 87) $Toluene-d8 (mz100) | (2) | 9.931 | 100 | 149482 | 9.087 |
| 114) $4-Bromofluorobenzene (mz174) | (2) | 12.322 | 174 | 82333 | 9.635 |
| 56) $Dibromofluoromethane (mz111) | (1) | 7.034 | 111 | 55812 | 9.299 |
| 63) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.486 | 104 | 8785 | 9.640 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 224596 | 9.180 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 90368 | 9.663 |

$ Compound is a surrogate standard.

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d
Date : 16-FEB-2004 12:39
Client ID: VSTD004
Sample Info: VSTD004;VSTD004;2;1;;;

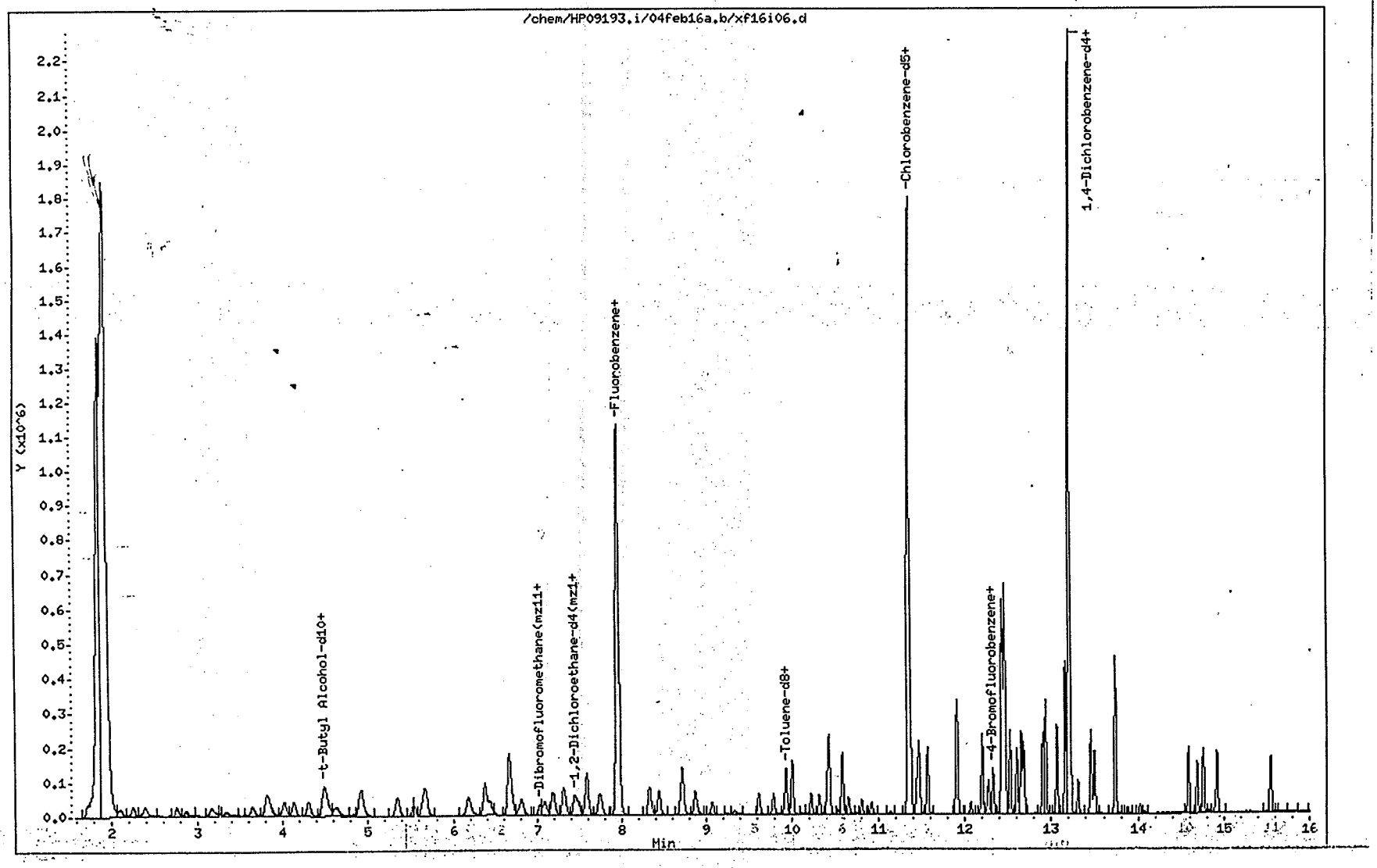
Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1/28
2/17/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.105 | 85 | 35323 | 3.876 |
| 4) Chloromethane | (1) | 2.246 | 50 | 40095 | 4.210 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 35583 | 3.962 |
| 7) Bromomethane | (1) | 2.756 | 94 | 24723 | 4.019 |
| 8) Chloroethane | (1) | 2.862 | 64 | 21609 | 4.119 |
| 12) Trichlorofluoromethane | (1) | 3.158 | 101 | 39727 | 3.883 |
| 13) Ethanol | (4) | 3.331 | 45 | 26745 | 342.118 |
| 16) Acrolein | (1) | 3.642 | 56 | 36207 | 40.014 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 27165 | 4.189 |
| 19) Freon 113 | (1) | 3.841 | 101 | 26181 | 4.035 |
| 20) Acetone | (1) | 3.835 | 58 | 5231 | 9.995 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 48566 | 4.000 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 33085 | 85.308 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 96653 | 4.072 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 45589 | 4.004 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 17324 | 4.516 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 35700 | 4.562 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 144809 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.630 | 59 | 59280 | 73.785 |
| 32) Acrylonitrile | (1) | 4.836 | 53 | 8505 | 4.009 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 30804 | 4.041 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 76410 | 4.024 |
| 36) n-Hexane | (1) | 5.340 | 57 | 46231 | 4.163 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 50514 | 3.973 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 36483 | 3.669 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 92124 | 3.918 |
| 42) Ethyl t-Butyl Ether | (1) | 6.177 | 59 | 82116 | 3.886 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 36566 | 4.363 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 67370 | 8.404 |
| 48) 2,2-Dichloropropane | (1) | 6.382 | 77 | 39238 | 3.873 |
| 46) 2-Butanone | (1) | 6.376 | 72 | 5423 A | 7.473 |
| 49) Propionitrile | (1) | 6.437 | 54 | 59969 | 80.160 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 95415 | 39.101 |
| 52) Bromochloromethane | (1) | 6.700 | 128 | 15026 | 4.126 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.784 | 71 | 5814 | 8.459 |
| 54) Chloroform | (1) | 6.816 | 83 | 46296 | 3.900 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 41023 | 3.893 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 51232 | 3.914 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 37811 | 3.976 |
| 60) Carbon Tetrachloride | (1) | 7.323 | 117 | 34190 | 3.798 |
| 65) Benzene | (1) | 7.586 | 78 | 122268 | 4.035 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 40760 | 187.533 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 33147 | 4.000 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 73028 | 3.820 |
| 69) *Fluorobenzene | (1) | 7.952 | 96 | 1427973 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 8199 | 3.813 |
| 72) n-Butanol | (1) | 8.330 | 56 | 66511 | 366.508 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 31838 | 4.153 |
| 74) Methylcyclohexane | (1) | 8.712 | 83 | 49847 | 4.014 |
| 75) 1,2-Dichloropropane | (1) | 8.715 | 63 | 29142 | 3.907 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 15236 | 3.970 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 11983 | 184.445 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 16601 | 3.728 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 30751 | 3.661 |
| 82) 2-Nitropropane | (1) | 9.341 | 41 | 10142 | 7.227 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 41504 | 3.678 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 47731 | 6.979 |
| 88) Toluene | (2) | 10.002 | 92 | 78499 | 4.005 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 33350 | 3.635 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 30845 | 3.530 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 26236 | 4.289 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 36862 | 4.086 |
| 94) 1,3-Dichloropropane | (2) | 10.577 | 76 | 40972 | 4.025 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 34449 | 6.926 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 22625 | 3.502 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 24058 | 3.979 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1072048 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 89669 | 4.114 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 27089 | 3.733 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 144282 | 3.970 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 58864 | 3.952 |
| 92) Xylene (Total) | (2) | | 106 | 112906 | 7.811 |
| 107) o-Xylene | (2) | 11.899 | 106 | 54042 | 3.859 |
| 108) Styrene | (2) | 11.908 | 104 | 81918 | 3.568 |
| 109) Bromoform | (2) | 12.065 | 173 | 15561 | 3.504 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 142445 | 3.892 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 38510 | 194.311 |
| 116) Bromobenzene | (3) | 12.451 | 156 | 41471 | 4.239 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 34436 | 4.255 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 12235 | 4.985 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 87377 | 39.064 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 175103 | 4.062 |
| 120) 2-Chlorotoluene | (3) | 12.595 | 126 | 38385 | 4.091 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 122483 | 3.917 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 39442 | 4.081 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 30064 | 3.910 |
| 124) Pentachloroethane | (3) | 12.922 | 167 | 20660 | 3.524 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 122966 | 3.917 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 160828 | 3.970 |
| 128) 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 79763 | 4.249 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 595765 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 136942 | 3.921 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 85896 | 4.389 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 74871 | 4.226 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 120951 | 3.908 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 6316 | 4.347 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.584 | 180 | 58713 | 4.240 |
| 139) Hexachlorobutadiene | (3) | 14.684 | 225 | 27989 | 3.951 |
| 140) Naphthalene | (3) | 14.758 | 128 | 139957 | 4.402 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 55350 | 4.246 |
| 143) 2-Methylnaphthalene | (3) | 15.547 | 142 | 84327 | 4.217 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 25697 | 4.181 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i06.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 12:39  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62)$1,2-Dichloroethane-d4 | (1) | 7.496 | 102 | 6417 | 4.166 |
| 87)$Toluene-d8(mz100) | (2) | 9.928 | 100 | 70197 | 4.051 |
| 114)$4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 37744 | 4.193 |
| 56)$Dibromofluoromethane(mz111) | (1) | 7.037 | 111 | 25806 | 4.135 |
| 63)$1,2-Dichloroethane-d4(mz104) | (1) | 7.490 | 104 | 3913 | 4.129 |
| 86)$Toluene-d8 | (2) | 9.928 | 98 | 105348 | 4.087 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 41187 | 4.181 |

Mel
Sal
Sal

$ Compound is a surrogate standard.

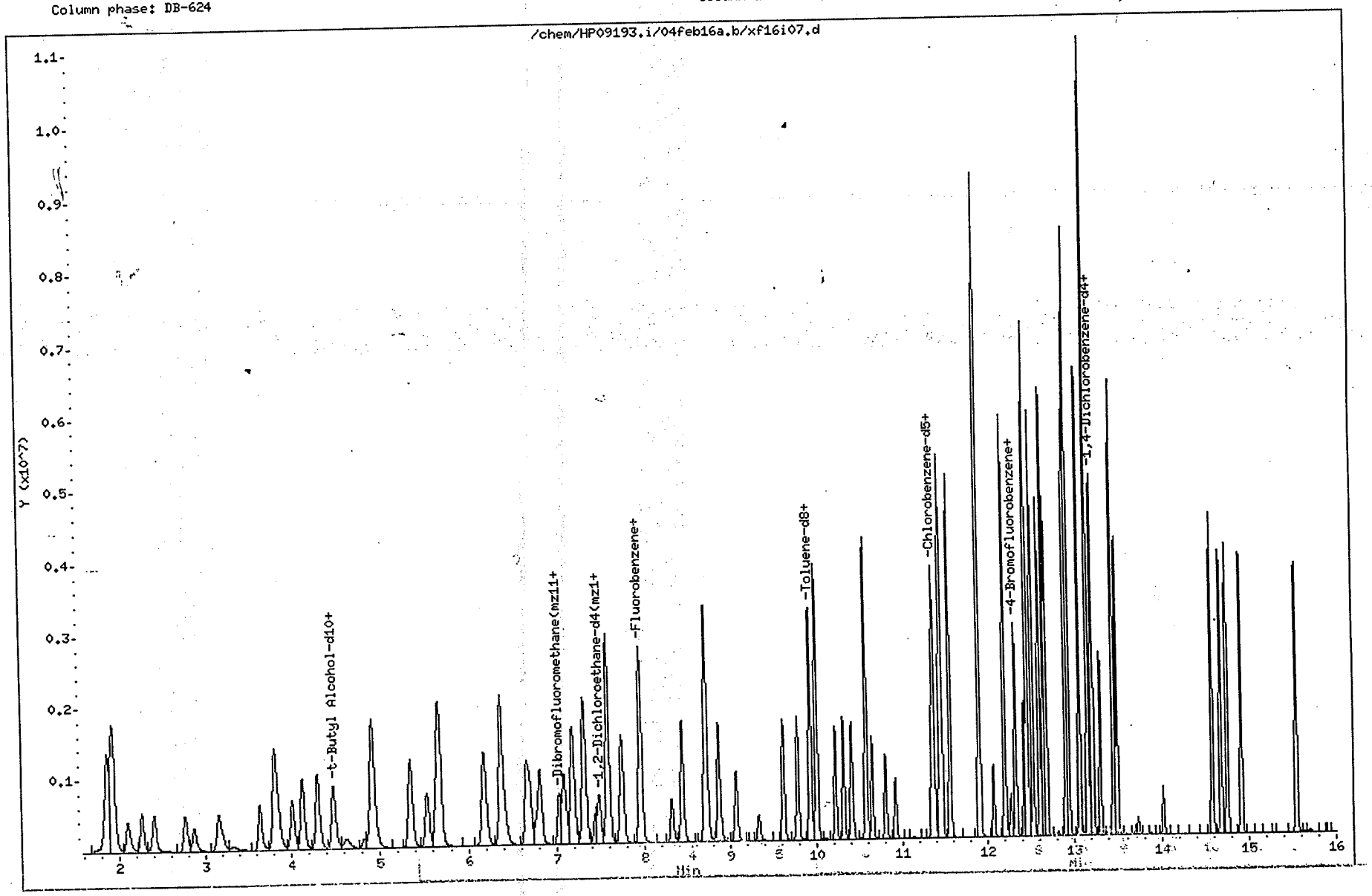
Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d
Date : 16-FEB-2004 13:06
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCH01518
Column diameter: 0.25

LCM 1/5/06
2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.099 | 85 | 903445 | 104.079 |
| 4) Chloromethane | (1) | 2.262 | 50 | 928009 | 102.297 |
| 5) Vinyl Chloride | (1) | 2.403 | 62 | 903162 | 105.578 |
| 7) Bromomethane | (1) | 2.766 | 94 | 606255 | 103.452 |
| 8) Chloroethane | (1) | 2.866 | 64 | 520204 | 104.100 |
| 12) Trichlorofluoromethane | (1) | 3.158 | 101 | 1013435 | 103.983 |
| 13) Ethanol | (4) | 3.331 | 45 | 142345 | 2533.483 |
| 16) Acrolein | (1) | 3.639 | 56 | 897715 | 1041.461 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 638985 | 103.427 |
| 19) Freon 113 | (1) | 3.838 | 101 | 644300 | 104.247 |
| 20) Acetone | (1) | 3.825 | 58 | 91819 | 184.169 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 1208401 | 104.483 |
| 23) 2-Propanol | (1) | 4.014 | 45 | 171166 | 463.296 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 2370965 | 104.871 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 1141318 | 105.232 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 344568 | 94.300 |
| 28) Methylene Chloride | (1) | 4.476 | 84 | 726336 | 97.431 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 115886 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.627 | 59 | 350365 | 544.936 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 207990 | 102.921 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 757952 | 104.378 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 1803263 | 99.683 |
| 36) n-Hexane | (1) | 5.343 | 57 | 1095994 | 103.610 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 1242482 | 102.576 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.677 | 53 | 1027239 | 108.444 |
| 39) di-Isopropyl Ether | (1) | 5.654 | 45 | 2311795 | 103.223 |
| 42) Ethyl t-Butyl Ether | (1) | 6.184 | 59 | 2069405 | 102.813 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 794713 | 99.551 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1552665 | 203.929 |
| 44) 2,2-Dichloropropane | (1) | 6.386 | 77 | 1020231 | 105.705 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 144534 A | 209.126 |
| 49) Propionitrile | (1) | 6.434 | 54 | 351250 | 492.872 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 575955 | 247.766 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 344097 | 99.187 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 129969 | 198.513 |
| 54) Chloroform | (1) | 6.819 | 83 | 1173774 | 103.798 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 1058141 | 105.399 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 1322739 | 106.092 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 944304 | 104.227 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 910887 | 106.207 |
| 65) Benzene | (1) | 7.586 | 78 | 2991277 | 103.621 |
| 66) Isobutyl Alcohol | (1) | 7.441 | 41 | 263954 | 1274.846 |
| 67) 1,2-Dichloroethane | (1) | 7.589 | 62 | 798016 | 101.085 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 1891358 | 103.849 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1360301 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 219858 | 107.336 |
| 72) n-Butanol | (1) | 8.321 | 56 | 456001 | 2637.795 |
| 73) Trichloroethene | (1) | 8.443 | 95 | 751090 | 102.855 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 1246048 | 105.343 |
| 75) 1,2-Dichloropropane | (1) | 8.719 | 63 | 739598 | 104.091 |
| 77) Dibromomethane | (1) | 8.866 | 93 | 371606 | 101.648 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 79873 | 1290.583 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 443398 | 104.512 |
| 81) Bromodichloromethane | (1) | 9.072 | 83 | 856101 | 107.004 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 278763 | 208.528 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 1147474 | 106.748 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 1325415 | 203.438 |
| 88) Toluene | (2) | 10.002 | 92 | 1942688 | 104.221 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 926802 | 106.230 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 900245 | 108.330 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 573398 | 98.561 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 888667 | 103.575 |
| 94) 1,3-Dichloropropane | (2) | 10.577 | 76 | 976563 | 100.866 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 936979 | 198.095 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 671765 | 109.346 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 584667 | 101.691 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1019520 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 2121871 | 102.376 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06  Ahalyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 102) | 1,1,1,2-Tetrachloroethane | (2) | 11.437 | 131 | 736034 | 106.661 |
| 103) | Ethylbenzene | (2) | 11.462 | 91 | 3633300 | 105.110 |
| 105) | m+p-Xylene | (2) | 11.562 | 106 | 1487008 | 104.967 |
| 92) | Xylene (Total) | (2) | | 106 | 2892765 | 210.523 |
| 107) | o-Xylene | (2) | 11.899 | 106 | 1405757 | 105.556 |
| 108) | Styrene | (2) | 11.905 | 104 | 2393852 | 109.649 |
| 109) | Bromoform | (2) | 12.065 | 173 | 467243 | 110.629 |
| 110) | Isopropylbenzene | (2) | 12.197 | 105 | 3705897 | 106.471 |
| 112) | Cyclohexanone | (2) | 12.268 | 55 | 231263 | 1227.011 |
| 116) | Bromobenzene | (3) | 12.451 | 156 | 947032 | 100.444 |
| 115) | 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 777367 | 99.664 |
| 117) | 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 219162 | 92.654 |
| 118) | trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 539238 | 250.124 |
| 119) | n-Propylbenzene | (3) | 12.518 | 91 | 4317420 | 103.906 |
| 120) | 2-Chlorotoluene | (3) | 12.598 | 126 | 928790 | 102.707 |
| 121) | 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 3161605 | 104.890 |
| 122) | 4-Chlorotoluene | (3) | 12.675 | 126 | 951877 | 102.177 |
| 123) | tert-Butylbenzene | (3) | 12.900 | 134 | 779133 | 105.133 |
| 124) | Pentachloroethane | (3) | 12.925 | 167 | 616610 | 109.138 |
| 125) | 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 3162602 | 104.517 |
| 126) | sec-Butylbenzene | (3) | 13.060 | 105 | 4134559 | 105.896 |
| 128) | 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 1820792 | 100.639 |
| 129) | *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 574215 | 50.000 |
| 127) | p-Isopropyltoluene | (3) | 13.156 | 119 | 3558002 | 105.700 |
| 130) | 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1870855 | 99.193 |
| 135) | 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1707273 | 99.991 |
| 134) | n-Butylbenzene | (3) | 13.452 | 91 | 3170372 | 106.282 |
| 137) | 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 138390 | 98.817 |
| 138) | 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 1362666 | 102.102 |
| 139) | Hexachlorobutadiene | (3) | 14.687 | 225 | 743640 | 108.919 |
| 140) | Naphthalene | (3) | 14.758 | 128 | 3033293 | 98.974 |
| 141) | 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 1267193 | 100.863 |
| 143) | 2-Methylnaphthalene | (3) | 15.550 | 142 | 1904302 | 98.795 |
| 155) | $Dibromofluoromethane | (1) | 7.034 | 113 | 597240 | 102.005 |

* Compound is an internal standard.
$ Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i07.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 13:06 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:19 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 52) $1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 144662 | 98.581 |
| 87) $Toluene-d8(mz100) | (2) | 9.932 | 100 | 1707173 | 103.587 |
| 114) $4-Bromofluorobenzene(mz174) | (2) | 12.322 | 174 | 867129 | 101.286 |
| 56) $Dibromofluoromethane(mz111) | (1) | 7.034 | 111 | 608826 | 102.397 |
| 63) $1,2-Dichloroethane-d4(mz104) | (1) | 7.490 | 104 | 91199 | 101.024 |
| 86) $Toluene-d8 | (2) | 9.932 | 98 | 2529477 | 103.198 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 943726 | 100.728 |

$ Compound is a surrogate standard.

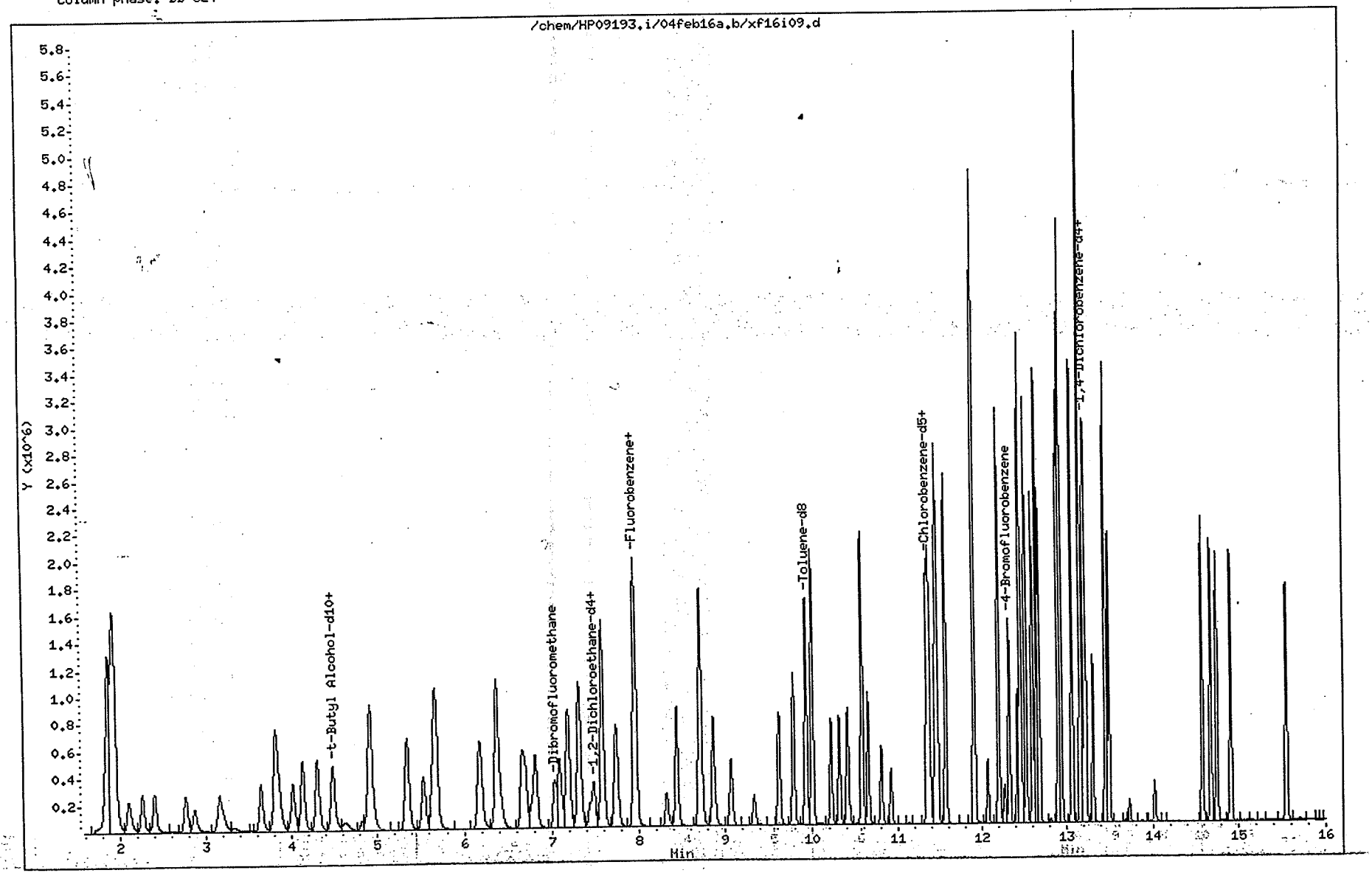
Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d
Date : 16-FEB-2004 14:27
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;2;1;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 493079 | | 54.637 |
| 4) Chloromethane | (1) | 2.259 | 50 | 481760 | | 51.080 |
| 5) Vinyl Chloride | (1) | 2.403 | 62 | 473139 | | 53.200 |
| 7) Bromomethane | (1) | 2.763 | 94 | 317893 | | 52.177 |
| 8) Chloroethane | (1) | 2.865 | 64 | 269633 | | 51.899 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 546045 | | 53.890 |
| 13) Ethanol | (4) | 3.334 | 45 | 73324 | | 1259.221 |
| 16) Acrolein | (1) | 3.642 | 56 | 510264 | | 569.393 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 340053 | | 52.942 |
| 19) Freon 113 | (1) | 3.838 | 101 | 354567 | | 55.181 |
| 20) Acetone | (1) | 3.825 | 58 | 49738 | | 95.959 |
| 22) Methyl Iodide | (1) | 4.014 | 142 | 629603 | | 52.362 |
| 23) 2-Propanol | (1) | 4.008 | 45 | 81958 | | 213.376 |
| 24) Carbon Disulfide | (1) | 4.127 | 76 | 1259765 | | 53.596 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 572314 | | 50.756 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 175339 | | 46.156 |
| 28) Methylene Chloride | (1) | 4.479 | 84 | 384800 | | 49.649 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.496 | 65 | 117535 | | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.624 | 59 | 162642 | | 249.414 |
| 32) Acrylonitrile | (1) | 4.823 | 53 | 109611 | | 52.171 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 396118 | | 52.469 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 925145 | | 49.191 |
| 36) n-Hexane | (1) | 5.343 | 57 | 614616 | | 55.887 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 657297 | | 52.195 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.676 | 53 | 539908 | | 54.824 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 1191194 | | 51.159 |
| 42) Ethyl t-Butyl Ether | (1) | 6.183 | 59 | 1063826 | | 50.838 |
| 45) cis-1,2-Dichloroethene | (1) | 6.373 | 96 | 415686 | | 50.086 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 811804 | | 102.555 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 534377 | | 53.255 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 84202 | A | 115.678 |
| 49) Propionitrile | (1) | 6.434 | 54 | 174087 | | 234.962 |
| 51) Methacrylonitrile | (1) | 6.662 | 67 | 287302 | | 118.879 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 181459 | | 50.311 |

A = User selected an alternate hit.
* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 71249 | 104.675 |
| 54) Chloroform | (1) | 6.819 | 83 | 611106 | 51.980 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 556549 | 53.322 |
| 58) Cyclohexane | (1) | 7.191 | 56 | 714285 | 55.105 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 504283 | 53.537 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 484557 | 54.343 |
| 65) Benzene | (1) | 7.586 | 78 | 1568355 | 52.258 |
| 61) Isobutyl Alcohol | (1) | 7.444 | 41 | 117945 | 547.926 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 410904 | 50.064 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 953023 | 50.332 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1414236 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 121849 | 57.218 |
| 72) n-Butanol | (1) | 8.324 | 56 | 193978 | 1079.297 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 394070 | 51.906 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 654957 | 53.260 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 379147 | 51.326 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 187683 | 49.380 |
| 78) 1,4-Dioxane | (1) | 8.898 | 88 | 38417 | 597.066 |
| 76) Methyl Methacrylate | (1) | 8.866 | 69 | 211665 | 47.988 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 430101 | 51.708 |
| 82) 2-Nitropropane | (1) | 9.335 | 41 | 167655 | 120.631 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 583869 | 52.245 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 868619 | 128.240 |
| 88) Toluene | (2) | 10.002 | 92 | 1018425 | 52.387 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 461563 | 50.726 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 433222 | 49.985 |
| 91) 1,1,2-Trichloroethane | (2) | 10.406 | 97 | 289837 | 47.769 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 477712 | 53.385 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 496062 | 49.127 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 641993 | 130.140 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 328034 | 51.197 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 291575 | 48.626 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1063302 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 1100579 | 50.914 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m  Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 102) | 1,1,1,2-Tetrachloroethane | (2) | 11.436 | 131 | 373348 | 51.875 |
| 103) | Ethylbenzene | (2) | 11.462 | 91 | 1925651 | 53.415 |
| 105) | m+p-Xylene | (2) | 11.562 | 106 | 784316 | 53.085 |
| 92) | Xylene (Total) | (2) | | 106 | 1524000 | 106.339 |
| 107) | o-Xylene | (2) | 11.898 | 106 | 739684 | 53.254 |
| 108) | Styrene | (2) | 11.908 | 104 | 1238313 | 54.385 |
| 109) | Bromoform | (2) | 12.065 | 173 | 219381 | 49.804 |
| 110) | Isopropylbenzene | (2) | 12.197 | 105 | 1963118 | 54.078 |
| 112) | Cyclohexanone | (2) | 12.268 | 55 | 115893 | 589.574 |
| 116) | Bromobenzene | (3) | 12.454 | 156 | 492363 | 50.099 |
| 115) | 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 375397 | 46.173 |
| 117) | 1,2,3-Trichloropropane | (3) | 12.460 | 110 | 107599 | 43.641 |
| 118) | trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 260421 | 115.888 |
| 119) | n-Propylbenzene | (3) | 12.518 | 91 | 2315317 | 53.458 |
| 120) | 2-Chlorotoluene | (3) | 12.598 | 126 | 485073 | 51.461 |
| 121) | 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 1675946 | 53.343 |
| 122) | 4-Chlorotoluene | (3) | 12.678 | 126 | 497255 | 51.208 |
| 123) | tert-Butylbenzene | (3) | 12.900 | 134 | 407512 | 52.754 |
| 124) | Pentachloroethane | (3) | 12.925 | 167 | 304810 | 51.759 |
| 125) | 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 1677484 | 53.185 |
| 126) | sec-Butylbenzene | (3) | 13.060 | 105 | 2212594 | 54.368 |
| 128) | 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 961889 | 51.006 |
| 129) | *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 598530 | 50.000 |
| 127) | p-Isopropyltoluene | (3) | 13.156 | 119 | 1909406 | 54.419 |
| 130) | 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 979892 | 49.843 |
| 135) | 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 892151 | 50.128 |
| 134) | n-Butylbenzene | (3) | 13.452 | 91 | 1703846 | 54.799 |
| 137) | 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 65063 | 44.571 |
| 138) | 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 703371 | 50.561 |
| 139) | Hexachlorobutadiene | (3) | 14.687 | 225 | 388736 | 54.624 |
| 140) | Naphthalene | (3) | 14.758 | 128 | 1479475 | 46.313 |
| 141) | 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 647289 | 49.429 |
| 143) | 2-Methylnaphthalene | (3) | 15.550 | 142 | 896381 | 44.615 |
| 55) | $Dibromofluoromethane | (1) | 7.031 | 113 | 303137 | 49.799 |

Compound is an internal standard.
Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16i09.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:27  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SIICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 62) $1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 73163 | 47.956 |
| 87) $Toluene-d8 (mz100) | (2) | 9.931 | 100 | 875060 | 50.910 |
| 114) $4-Bromofluorobenzene (mz174) | (2) | 12.322 | 174 | 441192 | 49.412 |
| 56) $Dibromofluoromethane (mz111) | (1) | 7.031 | 111 | 309646 | 50.093 |
| 63) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.489 | 104 | 46125 | 49.146 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1299084 | 50.818 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 485921 | 49.729 |

$ = Compound is a surrogate standard.

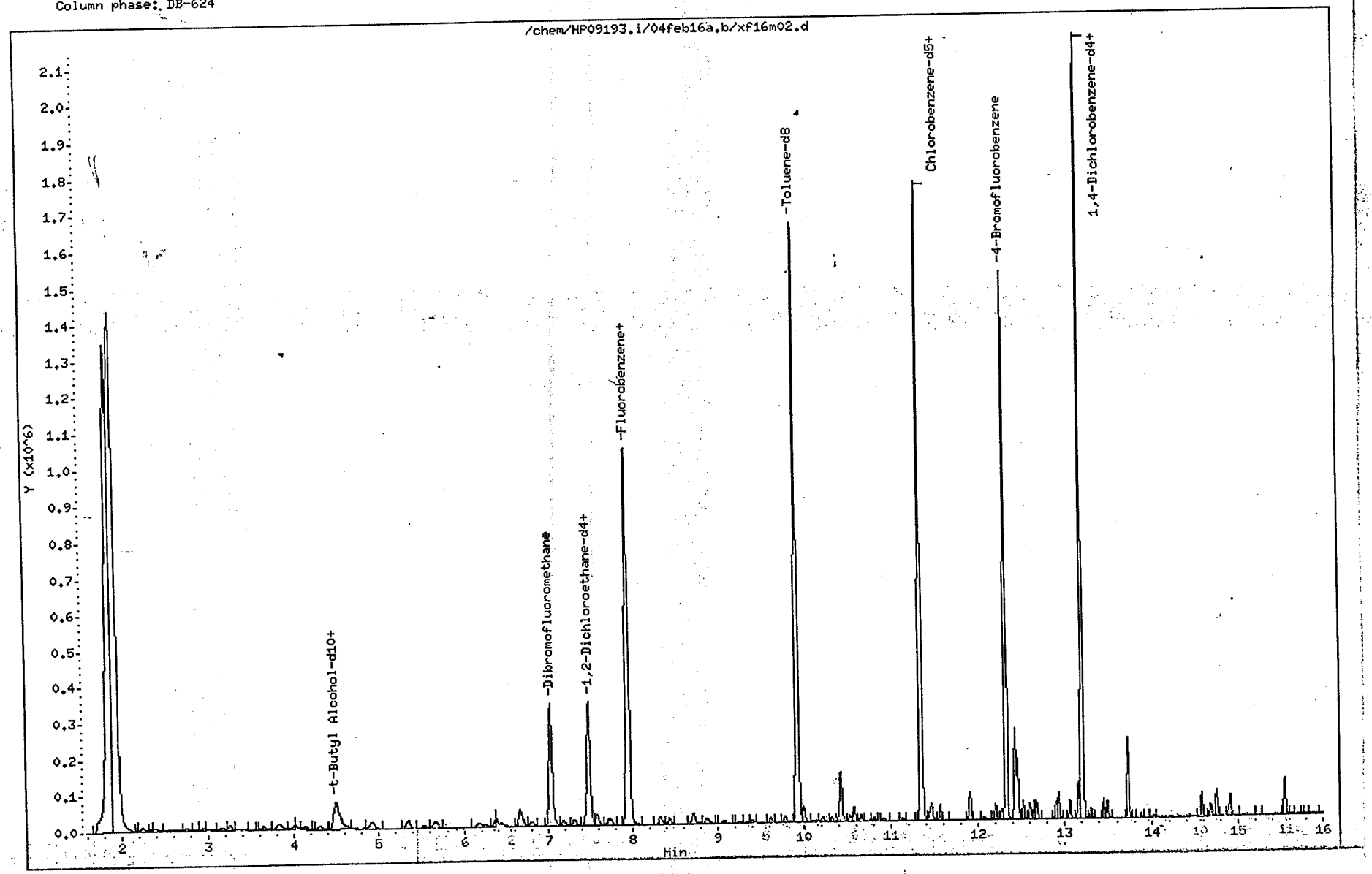
Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d
Date : 16-FEB-2004 14:54
Client ID: VSTD001
Sample Info: VSTD001;1 PPB MDL;2;3;MDL/LOQ;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1/5 of 2/16/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.095 | 85 | 7107 | 0.823 |
| 4) Chloromethane | (1) | 2.243 | 50 | 11073 | 1.227 |
| 5) Vinyl Chloride | (1) | 2.371 | 62 | 7764 | 0.912 |
| 7) Bromomethane | (1) | 2.747 | 94 | 5706 | 0.978 |
| 8) Chloroethane | (1) | 2.862 | 64 | 4924 | 0.990 |
| 12) Trichlorofluoromethane | (1) | 3.161 | 101 | 9787 | 1.009 |
| 13) Ethanol | (4) | 3.331 | 45 | 8192 | 71.579 |
| 16) Acrolein | (1) | 3.645 | 56 | 12178 | 14.198 |
| 17) 1,1-Dichloroethene | (1) | 3.806 | 96 | 5394 | 0.877 |
| 19) Freon 113 | (1) | 3.847 | 101 | 5195M | 0.845 |
| 20) Acetone | (1) | 3.831 | 58 | 3003 | 6.053 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 10340 | 0.898 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 12112 | 32.945 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 20555 | 0.914 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 10445 | 0.968 |
| 27) Methyl Acetate | (1) | 4.306 | 43 | 5658 | 1.556 |
| 28) Methylene Chloride | (1) | 4.479 | 84 | 18490 | 2.492 |
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 150389 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.640 | 59 | 19449 | 23.310 |
| 32) Acrylonitrile | (1) | 4.842 | 53 | 2235 | 1.111 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 6591 | 0.912 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.913 | 73 | 18512M | 1.028 |
| 36) n-Hexane | (1) | 5.346 | 57 | 18219 | 1.731 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 10643 | 0.883 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 7088 | 0.752 |
| 39) di-Isopropyl Ether | (1) | 5.651 | 45 | 19909 | 0.893 |
| 42) Ethyl t-Butyl Ether | (1) | 6.180 | 59 | 18680 | 0.933 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 11261 | 1.418 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 17852 | 2.330 |
| 48) 2,2-Dichloropropane | (1) | 6.379 | 77 | 7807 | 0.813 |
| 46) 2-Butanone | (1) | 6.392 | 72 | 1319 A | 1.893 |
| 49) Propionitrile | (1) | 6.450 | 54 | 16644 | 23.470 |
| 51) Methacrylonitrile | (1) | 6.668 | 67 | 24639 | 10.652 |
| 52) Bromochloromethane | (1) | 6.706 | 128 | 3355 | 0.972 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

8192

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 53) Tetrahydrofuran | (1) | 6.790 | 71 | 2239 | 3.437 |
| 54) Chloroform | (1) | 6.822 | 83 | 10820 | 0.962 |
| 57) 1,1,1-Trichloroethane | (1) | 7.088 | 97 | 7881 | 0.789 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 11424 | 0.921 |
| 59) 1,1-Dichloropropene | (1) | 7.310 | 75 | 7875 | 0.873 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 6743 | 0.790 |
| 65) Benzene | (1) | 7.586 | 78 | 28128 | 0.979 |
| 61) Isobutyl Alcohol | (1) | 7.444 | 41 | 11597 | 56.287 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 8580 | 1.092 |
| 68) t-Amyl Methyl Ether | (1) | 7.743 | 73 | 16762 | 0.925 |
| 69)*Fluorobenzene | (1) | 7.951 | 96 | 1353625 | 50.000 |
| 71) n-Heptane | (1) | 7.964 | 100 | 1737 | 0.852 |
| 72) n-Butanol | (1) | 8.333 | 56 | 17446 | 101.416 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 7190 | 0.989 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 9269 | 0.787 |
| 75) 1,2-Dichloropropane | (1) | 8.715 | 63 | 6703 | 0.948 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 3934 | 1.081 |
| 78) 1,4-Dioxane | (1) | 8.901 | 88 | 3144 | 51.051 |
| 76) Methyl Methacrylate | (1) | 8.876 | 69 | 4075 | 0.965 |
| 81) Bromodichloromethane | (1) | 9.071 | 83 | 7124 | 0.895 |
| 82) 2-Nitropropane | (1) | 9.341 | 41 | 2480M | 1.864 |
| 84) cis-1,3-Dichloropropene | (1) | 9.617 | 75 | 9774 | 0.914 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 13770 | 2.124 |
| 88) Toluene | (2) | 10.005 | 92 | 19423 | 1.042 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 9090 | 1.042 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 7438 | 0.895 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 8019 | 1.379 |
| 93) Tetrachloroethene | (2) | 10.576 | 166 | 8333 | 0.971 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 10804 | 1.116 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 12903M | 2.728 |
| 97) Dibromochloromethane | (2) | 10.807 | 129 | 5460 | 0.889 |
| 99) 1,2-Dibromoethane | (2) | 10.916 | 107 | 6659 | 1.158 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1019411 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 23016 | 1.111 |

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.433 | 131 | 5828 | 0.845 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 31834 | 0.921 |
| 105) m+p-Xylene | (2) | 11.558 | 106 | 13348 | 0.942 |
| 92) Xylene (Total) | (2) | | 106 | 25012 | 1.818 |
| 107) o-Xylene | (2) | 11.902 | 106 | 11664 | 0.876 |
| 108) Styrene | (2) | 11.905 | 104 | 18781 | 0.860 |
| 109) Bromoform | (2) | 12.068 | 173 | 3472 | 0.822 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 27515 | 0.791 |
| 112) Cyclohexanone | (2) | 12.271 | 55 | 11738M | 62.285 |
| 115) Bromobenzene | (3) | 12.450 | 156 | 11593 | 1.249 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 8561 | 1.115 |
| 117) 1,2,3-Trichloropropane | (3) | 12.454 | 110 | 3293 | 1.415 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 22421 | 10.567 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 37311 | 0.912 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 8883 | 0.998 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 25024 | 0.844 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 10091 | 1.101 |
| 123) tert-Butylbenzene | (3) | 12.903 | 134 | 5922 | 0.812 |
| 124) Pentachloroethane | (3) | 12.922 | 167 | 4186 | 0.753 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.935 | 105 | 26984 | 0.906 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 31900M | 0.830 |
| 128) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 21802 | 1.224 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 565116 | 50.000 |
| 130) p-Isopropyltoluene | (3) | 13.159 | 119 | 26969 | 0.814 |
| 131) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 26349 | 1.420 |
| 132) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 19998 | 1.190 |
| 133) n-Butylbenzene | (3) | 13.452 | 91 | 26255 | 0.894 |
| 134) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 1683 | 1.221 |
| 135) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 18903 | 1.439 |
| 136) Hexachlorobutadiene | (3) | 14.687 | 225 | 6457 | 0.961 |
| 137) Naphthalene | (3) | 14.758 | 128 | 53703 | 1.781 |
| 138) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 18441 | 1.491 |
| 139) 2-Methylnaphthalene | (3) | 15.550 | 142 | 53243 | 2.807 |
| 155) $Dibromofluoromethane | (1) | 7.034 | 113 | 301752 | 51.791 |

M = Compound was manually integrated.

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

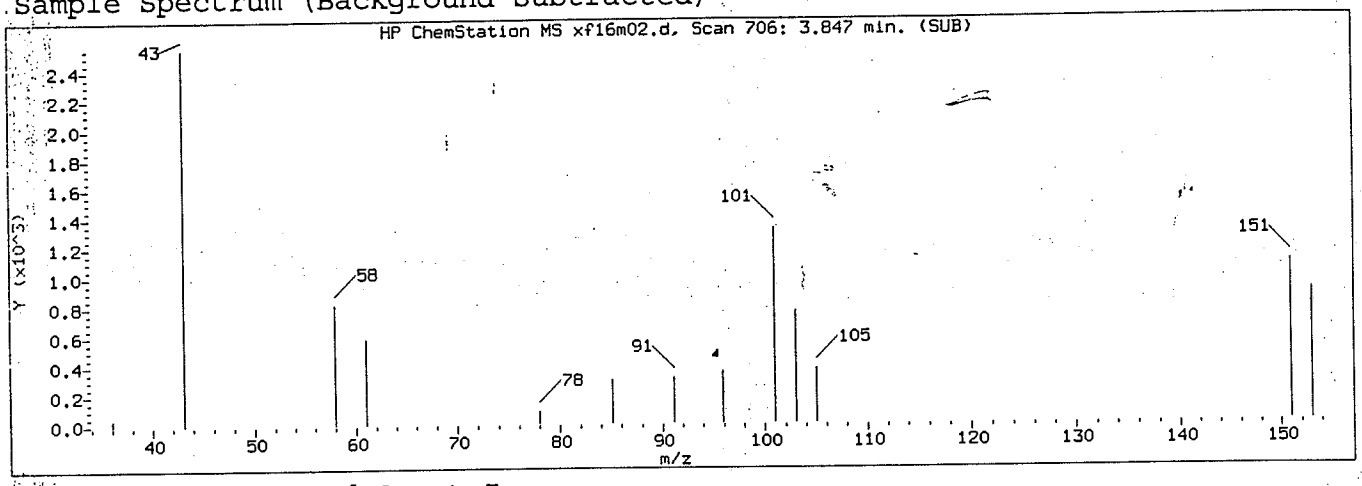
Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 17-Feb-2004 09:20 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

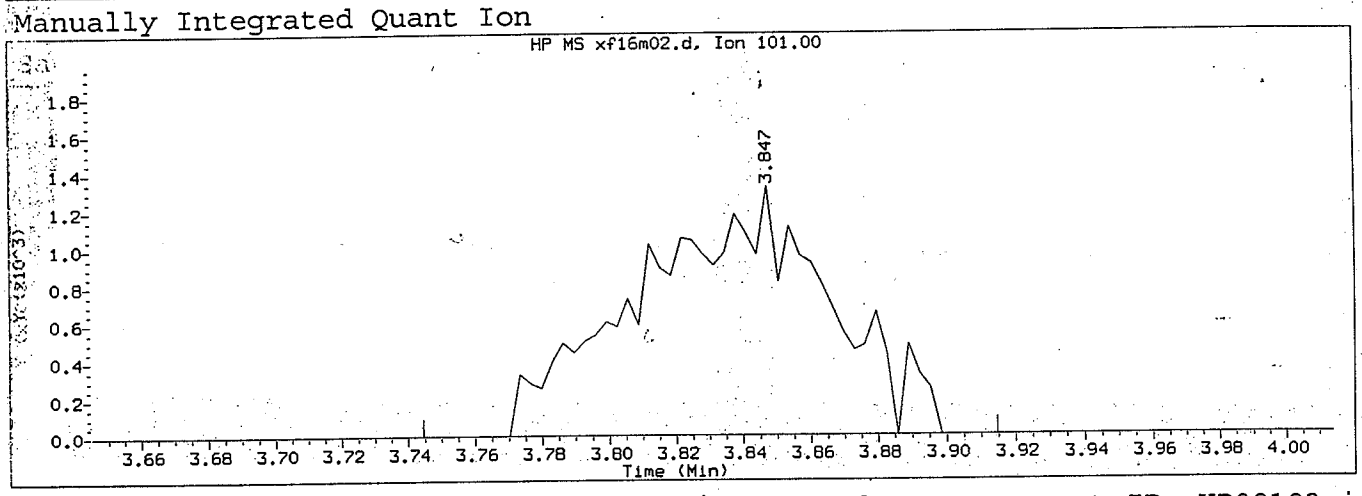
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 2)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 74931 | 51.314 |
| 6)$Toluene-d8 | (2) | 9.928 | 98 | 1270675 | 51.847 |
| 8)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 477007 | 50.919 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| | |
|---|---|
| Compound Number | : 19 |
| Compound Name | : Freon 113 |
| Scan Number | : 706 |
| Retention Time (minutes) | : 3.847 |
| Quant Ion | : 101 |
| Area (flag) | : 5195 M |
| Concentration (ug/Kg) | : 0.8447 |
| Integration start scan | : 673 Integration stop scan: 726 |
| Y at integration start | : 0 Y at integration end: 0 |

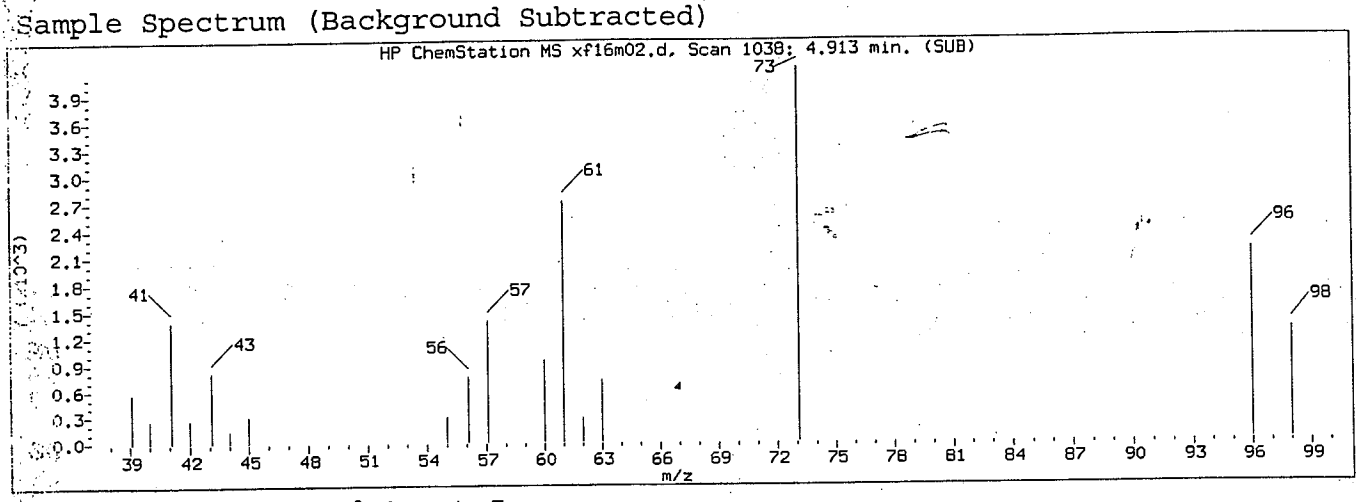
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

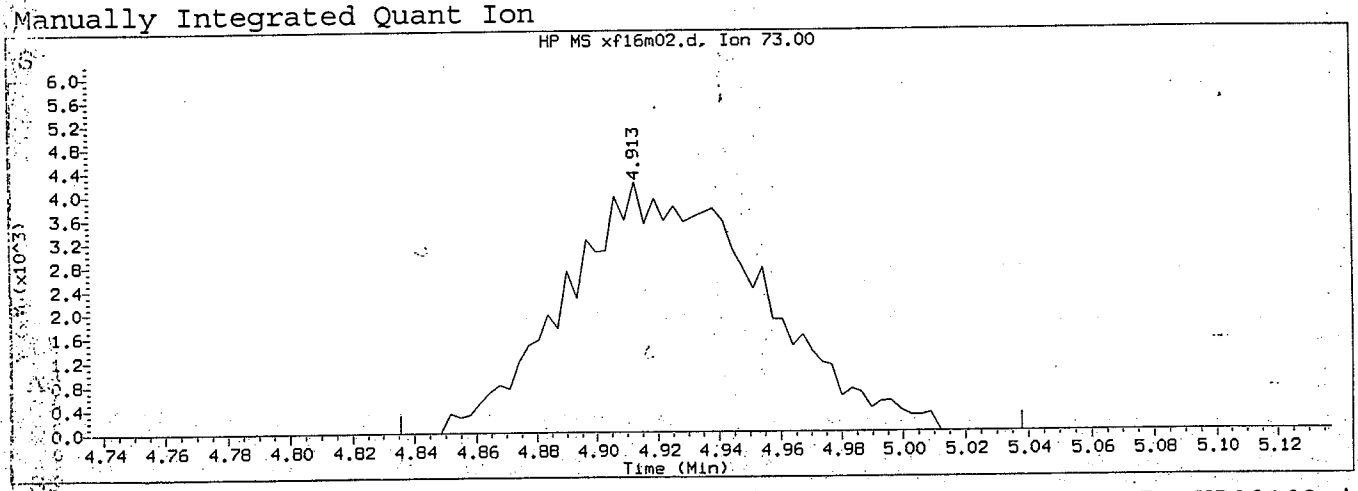
GC/MS audit/management approval: [illegible] 2/17/04

8196

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

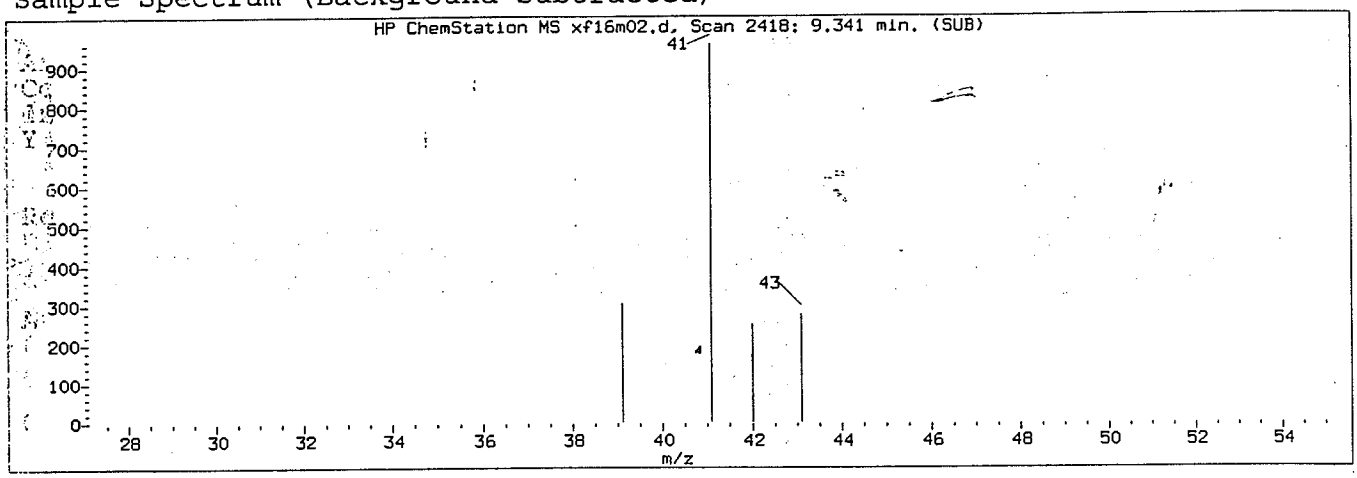
| | |
|---|---|
| Compound Number | : 35 |
| Compound Name | : Methyl Tertiary Butyl Ether |
| Scan Number | : 1038 |
| Retention Time (minutes) | : 4.913 |
| Quant Ion | : 73 |
| Area (flag) | : 18512 M |
| Concentration (ug/Kg) | : 1.0284 |
| Integration start scan | : 1013 Integration stop scan: 1076 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

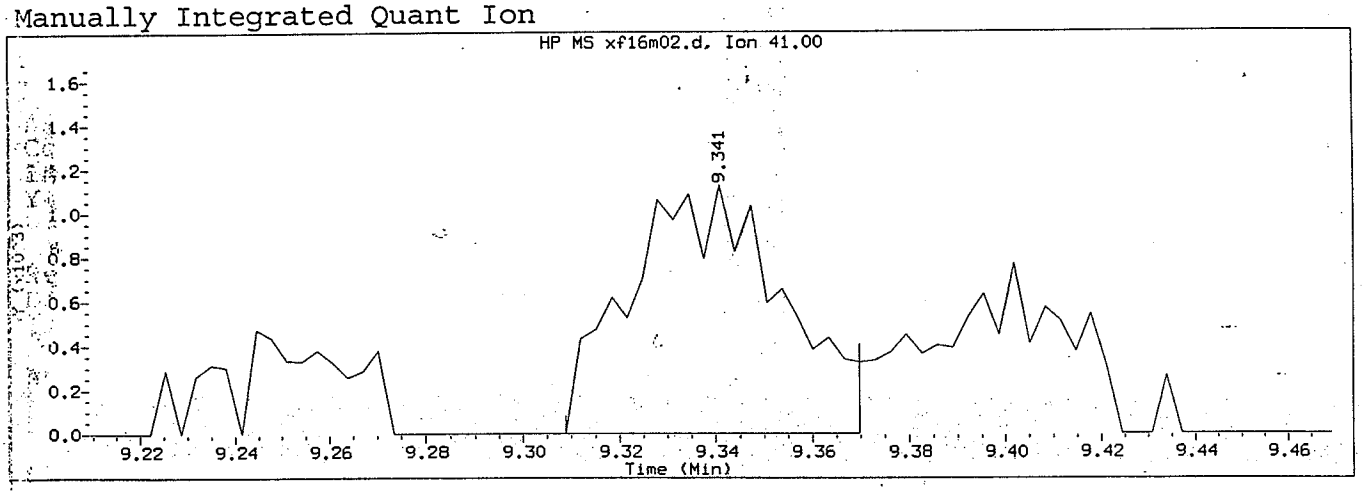
Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: [illegible] 2/17/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

| | |
|---|---|
| Compound Number | : 82 |
| Compound Name | : 2-Nitropropane |
| Scan Number | : 2418 |
| Retention Time (minutes) | : 9.341 |
| Quant Ion | : 41 |
| Area (flag) | : 2480 M |
| Concentration (ug/Kg) | : 1.8643 |
| Integration start scan | : 2407 Integration stop scan: 2426 |
| Y at integration start | : 0 Y at integration end: 0 |

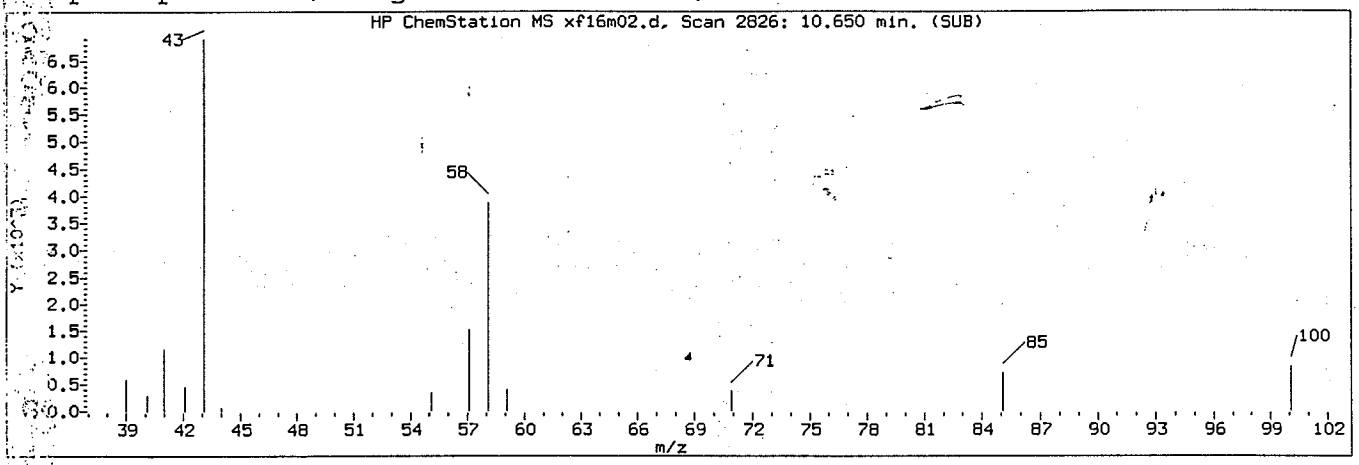
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

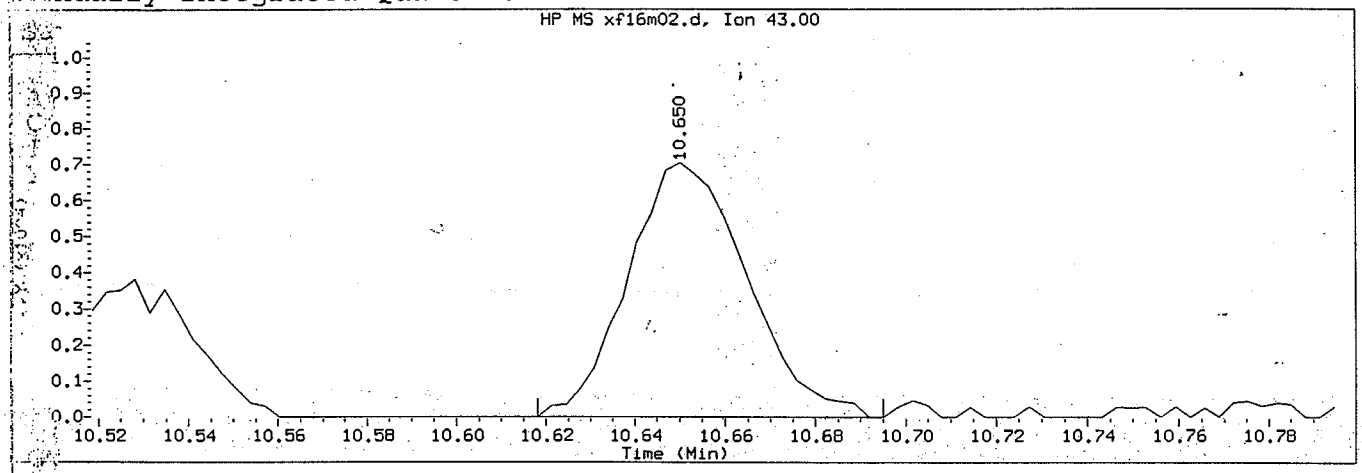
GC/MS audit/management approval: JM/321, 2/17/04

5198

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

Compound Number : 95
Compound Name : 2-Hexanone
Scan Number : 2826
Retention Time (minutes): 10.650
Quant Ion : 43
Area (flag) : 12903 M
Concentration (ug/Kg) : 2.7282
Integration start scan : 2815 Integration stop scan: 2839
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

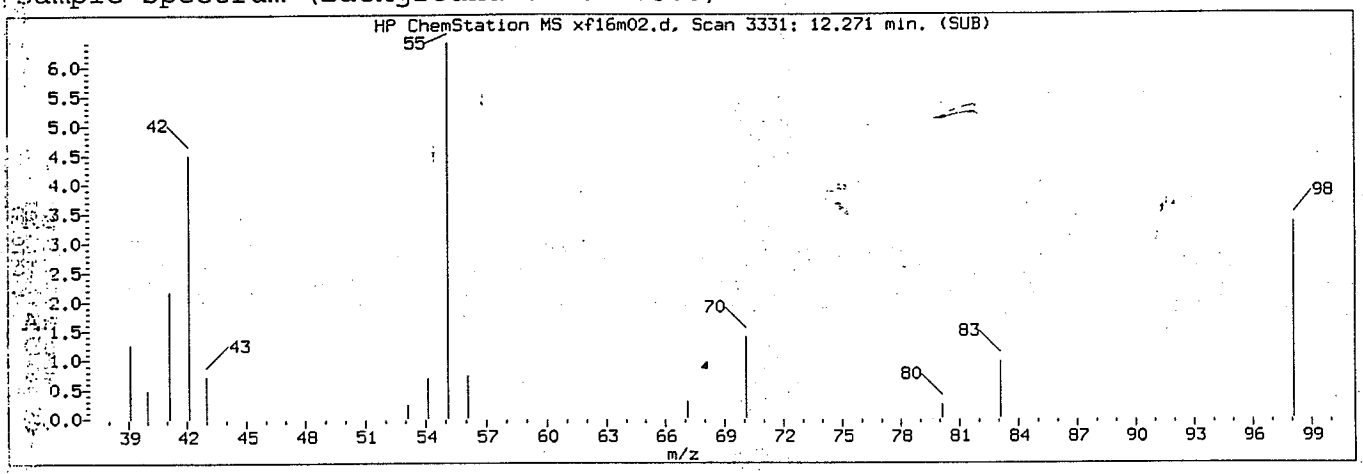
Analyst responsible for change: LCM/1518 2/16/04

GC/MS audit/management approval: [signature] 2/17/04

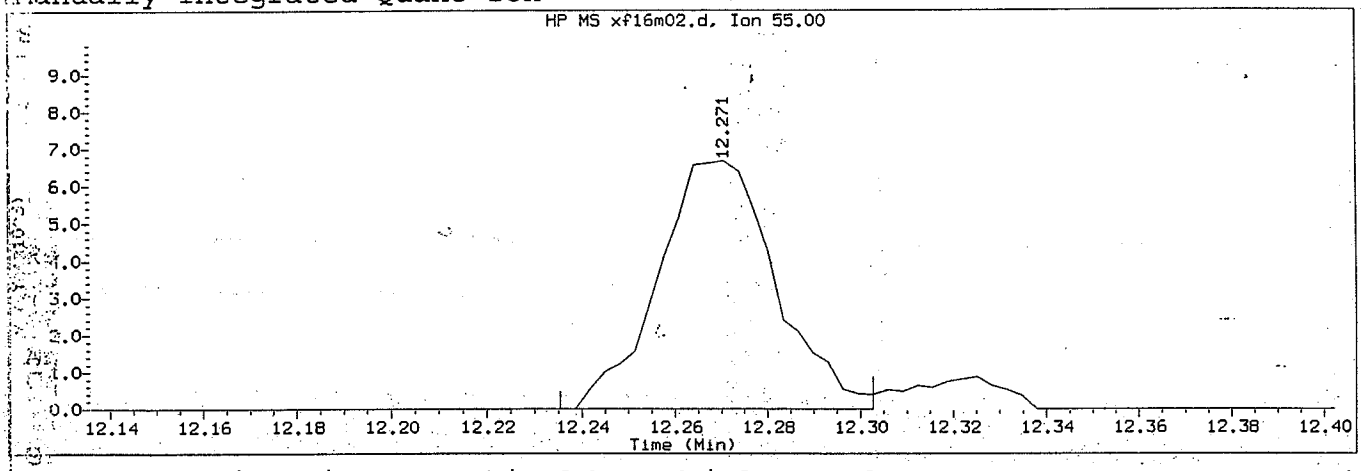


Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16m02.d, generated on 02/16/2004 at 15:45

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001 Lab Sample ID: 1 PPB MDL

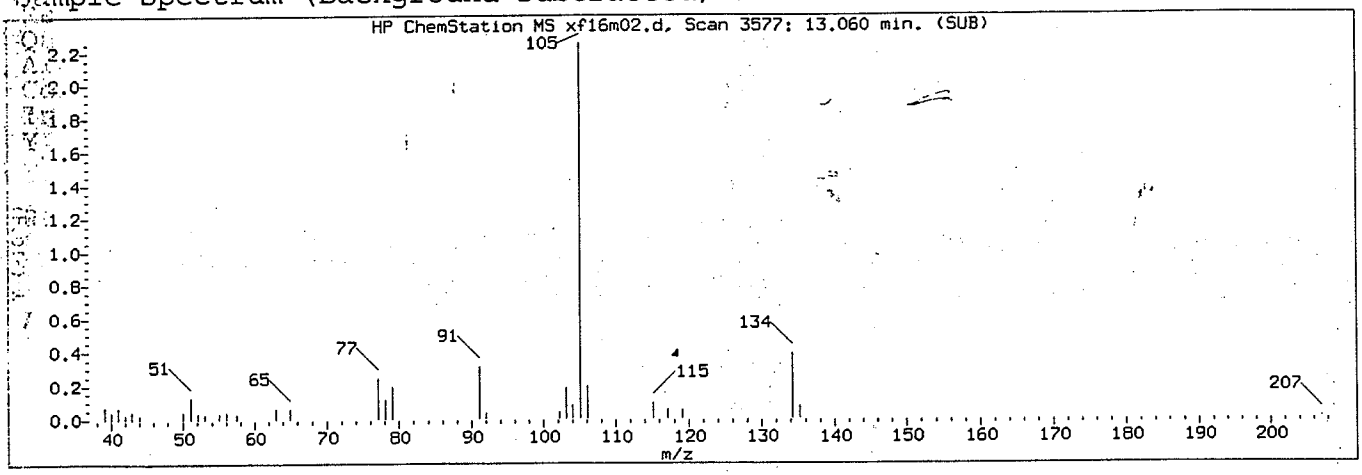
| | |
|---|---|
| Compound Number | : 112 |
| Compound Name | : Cyclohexanone |
| Scan Number | : 3331 |
| Retention Time (minutes) | : 12.271 |
| Quant Ion | : 55 |
| Area (flag) | : 11738 M |
| Concentration (ug/Kg) | : 62.2849 |
| Integration start scan | : 3319 Integration stop scan: 3340 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

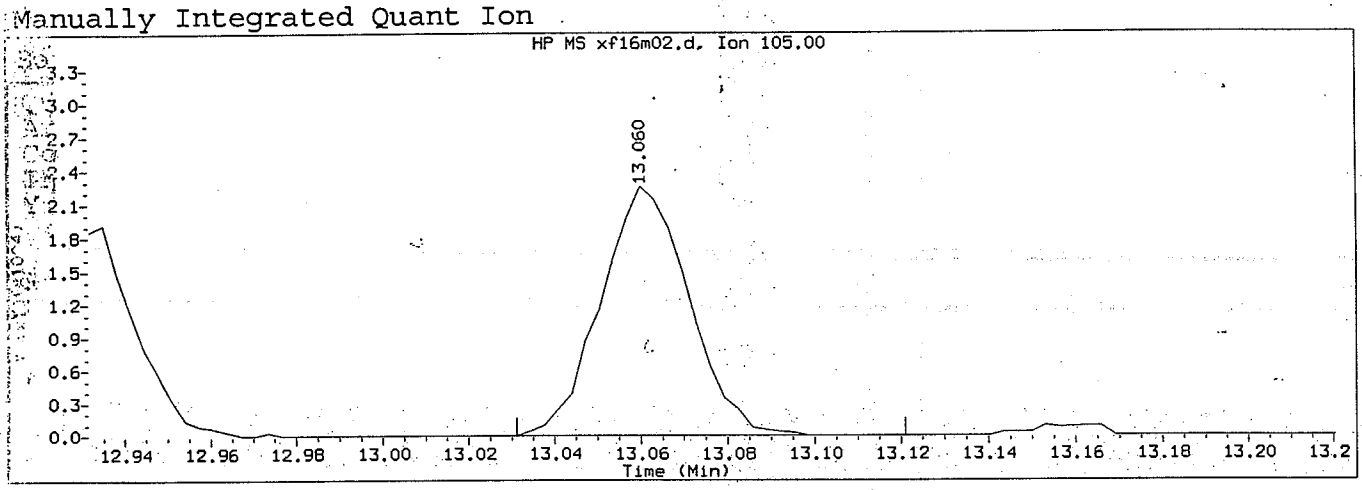
Analyst responsible for change: LCM1518 2/16/04

GC/MS audit/management approval: JM321, 2/19/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09193.i/04feb16a.b/xf16m02.d  Instrument ID: HP09193.i
Injection date and time: 16-FEB-2004 14:54  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb16a.b/X8260SL.m Sublist used: 8260SICAL
Calibration date and time: 16-FEB-2004 15:43
Date, time and analyst ID of latest file update: 16-Feb-2004 15:45 lcm01518

Sample Name: VSTD001  Lab Sample ID: 1 PPB MDL

| | | |
|---|---|---|
| Compound Number | : | 126 |
| Compound Name | : | sec-Butylbenzene |
| Scan Number | : | 3577 |
| Retention Time (minutes) | : | 13.060 |
| Quant Ion | : | 105 |
| Area (flag) | : | 31900 M |
| Concentration (ug/Kg) | : | 0.8302 |
| Integration start scan | : | 3567 Integration stop scan: 3595 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: LCM1518 2/16/04

SQ/MS audit/management approval: [signature] 2/17/04

8281

Manual Integration Report for data file /chem/HP09193.i/04feb16a.b/xf16m02.d, generated on 02/16/2004 at 15:45

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

/chem/HP09193.i/04feb16a.b/xf16i01.d VSTD300
/chem/HP09193.i/04feb16a.b/xf16i04.d VSTD020
/chem/HP09193.i/04feb16a.b/xf16i05.d VSTD010
/chem/HP09193.i/04feb16a.b/xf16i06.d VSTD004
/chem/HP09193.i/04feb16a.b/xf16i07.d VSTD100
/chem/HP09193.i/04feb16a.b/xf16i09.d VSTD050

Area Summary

File ID:

| Internal Standard Name | xf16i01.d | xf16i04.d | xf16i05.d | xf16i06.d | xf16i07.d | xf16i09.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 119476 | 142545 | 137431 | 144809 | 115886 | 117535 | 129614 | 10 | Yes |
| Fluorobenzene | 1316447 | 1470593 | 1373221 | 1427973 | 1360301 | 1414236 | 1393795 | 4 | Yes |
| Chlorobenzene-d5 | 1007220 | 1090453 | 1017617 | 1072048 | 1019520 | 1063302 | 1045027 | 3 | Yes |
| 1,4-Dichlorobenzene-d4 | 576962 | 590732 | 560433 | 595765 | 574215 | 598530 | 582773 | 3 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | xf16i01.d | xf16i04.d | xf16i05.d | xf16i06.d | xf16i07.d | xf16i09.d | Avg. RT |
|---|---|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.496 | 4.496 | 4.496 | 4.502 | 4.496 | 4.498 |
| Fluorobenzene | 7.948 | 7.952 | 7.952 | 7.952 | 7.952 | 7.952 | 7.951 |
| Chlorobenzene-d5 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 | 11.343 |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 | 13.201 |

* indicates the retention time is greater than 30 seconds from the average RT.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.3977 | 0.3410 | 0.4194 | 0.4236 | 0.4143 | 0.4276 | | 0.4039 | 8 | AVG | |
| Chloromethane | #0.4629 | 0.4313 | 0.4690 | 0.4523 | 0.4186 | 0.4524 | | 0.4478 | 4 | AVG | # |
| Vinyl Chloride | *0.4078 | 0.3702 | 0.4335 | 0.4192 | 0.4059 | 0.4112 | | 0.4080 | 5 | AVG | * |
| Bromomethane | 0.2479 | 0.2313 | 0.2601 | 0.2557 | 0.2407 | 0.2225 | | 0.2430 | 6 | AVG | |
| Chloroethane | 0.2216 | 0.2065 | 0.2344 | 0.2293 | 0.2192 | 0.2110 | | 0.2203 | 5 | AVG | |
| Trichlorofluoromethane | 0.4582 | 0.3875 | 0.4751 | 0.4721 | 0.4619 | 0.4718 | | 0.4544 | 7 | AVG | |
| Ethanol | 0.0022 | 0.0021 | 0.0021 | 0.0022 | 0.0025 | 0.0026 | | 0.0023 | 9 | AVG | |
| Acrolein | 0.0920 | 0.0936 | 0.0865 | 0.1202 | 0.1009 | 0.0962 | | 0.0982 | 12 | AVG | |
| 1,1-Dichloroethene | *0.2815 | 0.2735 | 0.2597 | 0.2552 | 0.2527 | 0.2613 | | 0.2640 | 4 | AVG | * |
| Freon 113 | 0.2629 | 0.2546 | 0.2604 | 0.2561 | 0.2117 | 0.2334 | | 0.2465 | 8 | AVG | |
| Acetone | 0.0596 | 0.0638 | 0.0659 | 0.0829 | 0.0734 | 0.0607 | | 0.0677 | 13 | AVG | |
| Methyl Iodide | 0.5039 | 0.5247 | 0.4998 | 0.4983 | 0.4964 | 0.5113 | | 0.5057 | 2 | AVG | |
| 2-Propanol | 0.0349 | 0.0362 | 0.0354 | 0.0366 | 0.0387 | 0.0405 | | 0.0371 | 6 | AVG | |
| Carbon Disulfide | 0.9148 | 0.9153 | 0.8871 | 0.8755 | 0.8719 | 0.8867 | | 0.8919 | 2 | AVG | |
| Allyl Chloride | 0.4385 | 0.5452 | 0.4980 | 0.4925 | 0.5027 | 0.5137 | | 0.4984 | 7 | AVG | |
| Methylene Chloride | 0.3205 | 0.3210 | 0.3031 | 0.2927 | 0.2977 | 0.3023 | | 0.3062 | 4 | AVG | |
| t-Butyl Alcohol | 0.0601 | 0.0654 | 0.0604 | 0.0625 | 0.0647 | 0.0648 | | 0.0630 | 4 | AVG | |
| Acrylonitrile | 0.1611 | 0.1786 | 0.1611 | 0.2204 | 0.1826 | 0.1788 | | 0.1804 | 12 | AVG | |
| trans-1,2-Dichloroethene | 0.3091 | 0.3095 | 0.2913 | 0.2905 | 0.2845 | 0.2892 | | 0.2957 | 4 | AVG | |
| Methyl Tertiary Butyl Ether | 0.9900 | 1.0286 | 0.9545 | 0.9440 | 0.9420 | 0.9368 | | 0.9660 | 4 | AVG | |
| n-Hexane | 0.3136 | 0.2989 | 0.3054 | 0.3004 | 0.2489 | 0.2186 | | 0.2810 | 14 | AVG | |
| 1,2-Dichloroethene (total) | 0.3196 | 0.3248 | 0.3068 | 0.3016 | 0.2971 | 0.2989 | | 0.3081 | 4 | AVG | |
| 1,1-Dichloroethane | #0.5384 | 0.5523 | 0.5291 | 0.5219 | 0.5221 | 0.5269 | | 0.5318 | 2 | AVG | # |
| di-Isopropyl Ether | 1.0642 | 1.0969 | 1.0564 | 1.0400 | 1.0390 | 1.0451 | | 1.0569 | 2 | AVG | |
| 2-Chloro-1,3-Butadiene | 0.4089 | 0.4118 | 0.4017 | 0.3997 | 0.3911 | 0.4040 | | 0.4029 | 2 | AVG | |
| Ethyl t-Butyl Ether | 0.9989 | 1.0197 | 0.9727 | 0.9818 | 0.9523 | 0.9377 | | 0.9772 | 3 | AVG | |
| cis-1,2-Dichloroethene | 0.3302 | 0.3401 | 0.3222 | 0.3127 | 0.3096 | 0.3087 | | 0.3206 | 4 | AVG | |
| 2-Butanone | 0.0626 | 0.0684 | 0.0672 | 0.0891 | 0.0794 | 0.0691 | | 0.0726 | 13 | AVG | |
| 2,2-Dichloropropane | 0.4635 | 0.4624 | 0.4460 | 0.4437 | 0.4296 | 0.4288 | | 0.4456 | 3 | AVG | |
| Propionitrile | 0.0667 | 0.0727 | 0.0673 | 0.0674 | 0.0684 | 0.0686 | | 0.0685 | 3 | AVG | |
| Methacrylonitrile | 0.1721 | 0.1905 | 0.1753 | 0.1757 | 0.1762 | 0.1753 | | 0.1775 | 4 | AVG | |
| Bromochloromethane | 0.1605 | 0.1782 | 0.1636 | 0.1595 | 0.1709 | 0.1701 | | 0.1671 | 4 | AVG | |
| Tetrahydrofuran | 0.0541 | 0.0567 | 0.0511 | 0.0709 | 0.0590 | 0.0563 | | 0.0580 | 12 | AVG | |
| Chloroform | *0.5005 | 0.5220 | 0.4964 | 0.4894 | 0.4875 | 0.4914 | | 0.4979 | 3 | AVG | * |
| 1,1,1-Trichloroethane | 0.4586 | 0.4670 | 0.4492 | 0.4421 | 0.4225 | 0.4368 | | 0.4460 | 4 | AVG | |
| Cyclohexane | 0.4757 | 0.4631 | 0.4682 | 0.4543 | 0.3576 | 0.3758 | | 0.4324 | 12 | AVG | |
| 1,1-Dichloropropene | 0.3948 | 0.4021 | 0.3906 | 0.3837 | 0.3600 | 0.3706 | | 0.3837 | 4 | AVG | |
| Carbon Tetrachloride | 0.4140 | 0.4133 | 0.3999 | 0.4021 | 0.3637 | 0.3845 | | 0.3963 | 5 | AVG | |
| Isobutyl Alcohol | 0.0194 | 0.0212 | 0.0200 | 0.0204 | 0.0211 | 0.0214 | | 0.0206 | 4 | AVG | |
| Benzene | 1.2478 | 1.2539 | 1.1907 | 1.1690 | 1.1576 | 1.1581 | | 1.1962 | 4 | AVG | |
| 1,2-Dichloroethane | 0.4139 | 0.4310 | 0.4205 | 0.4114 | 0.4116 | 0.4116 | | 0.4167 | 2 | AVG | |
| 1,2-Dichloroethane (mz 98) | 0.0369 | 0.0391 | 0.0401 | 0.0392 | 0.0383 | 0.0390 | | 0.0388 | 3 | AVG | |
| t-Amyl Methyl Ether | 0.9990 | 1.0219 | 0.9588 | 0.9595 | 0.9465 | 0.9204 | | 0.9677 | 4 | AVG | |
| n-Heptane | 0.0480 | 0.0475 | 0.0493 | 0.0480 | 0.0483 | 0.0334 | | 0.0457 | 13 | AVG | |
| n-Butanol | 0.0159 | 0.0171 | 0.0161 | 0.0171 | 0.0182 | 0.0185 | | 0.0171 | 6 | AVG | |
| Trichloroethene | 0.3059 | 0.3143 | 0.2983 | 0.2980 | 0.2876 | 0.2917 | | 0.2993 | 3 | AVG | |
| 1,2-Dichloropropane | *0.3274 | 0.3411 | 0.3323 | 0.3253 | 0.3197 | 0.3192 | | 0.3275 | 3 | AVG | * |
| Methyl Methacrylate | 0.2917 | 0.3097 | 0.3024 | 0.3037 | 0.3075 | 0.3072 | | 0.3037 | 2 | AVG | |
| Dibromomethane | 0.2027 | 0.2121 | 0.2018 | 0.2043 | 0.2065 | 0.2027 | | 0.2050 | 2 | AVG | |
| 1,4-Dioxane | 0.0046 | 0.0048 | 0.0045 | 0.0048 | 0.0051 | 0.0052 | | 0.0048 | 6 | AVG | |
| Bromodichloromethane | 0.3641 | 0.3947 | 0.3712 | 0.3735 | 0.3765 | 0.3787 | | 0.3765 | 3 | AVG | |
| 2-Nitropropane | 0.1211 | 0.1287 | 0.1196 | 0.1653 | 0.1425 | 0.1299 | | 0.1345 | 13 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chloroethyl Vinyl Ether | 0.2247 | 0.2393 | 0.2324 | 0.2413 | 0.2514 | 0.2525 | | 0.2403 | 4 | AVG | |
| cis-1,3-Dichloropropene | 0.5320 | 0.5625 | 0.5334 | 0.5350 | 0.5415 | 0.5364 | | 0.5401 | 2 | AVG | |
| 4-Methyl-2-Pentanone | 0.4753 | 0.5157 | 0.4761 | 0.6641 | 0.5867 | 0.5186 | | 0.5394 | 14 | AVG | |
| Toluene | *1.0055 | 1.0331 | 0.9822 | 0.9767 | 0.9168 | 0.9338 | | 0.9747 | 4 | AVG | * |
| trans-1,3-Dichloropropene | 0.6376 | 0.6567 | 0.6436 | 0.6422 | 0.6393 | 0.6442 | | 0.6439 | 1 | AVG | |
| Ethyl Methacrylate | 0.5961 | 0.6598 | 0.6345 | 0.6516 | 0.6570 | 0.6625 | | 0.6436 | 4 | AVG | |
| 1,1,2-Trichloroethane | 0.3837 | 0.3920 | 0.3688 | 0.3717 | 0.3659 | 0.3655 | | 0.3746 | 3 | AVG | |
| Tetrachloroethene | 0.4644 | 0.4732 | 0.4474 | 0.4445 | 0.3764 | 0.3885 | | 0.4324 | 9 | AVG | |
| 1,3-Dichloropropane | 0.6618 | 0.6903 | 0.6615 | 0.6601 | 0.6524 | 0.6543 | | 0.6634 | 2 | AVG | |
| 2-Hexanone | 0.4810 | 0.5089 | 0.4889 | 0.6740 | 0.6258 | 0.5168 | | 0.5492 | 15 | AVG | |
| Dibromochloromethane | 0.4275 | 0.4526 | 0.4429 | 0.4568 | 0.4504 | 0.4549 | | 0.4475 | 2 | AVG | |
| 1,2-Dibromoethane | 0.4169 | 0.4223 | 0.4123 | 0.4166 | 0.4137 | 0.4119 | | 0.4156 | 1 | AVG | |
| Chlorobenzene | #1.1329 | 1.1650 | 1.0930 | 1.1032 | 1.0374 | 1.0499 | | 1.0969 | 4 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.4072 | 0.4174 | 0.4065 | 0.4159 | 0.3879 | 0.3963 | | 0.4052 | 3 | AVG | |
| Ethylbenzene | *1.8020 | 1.8654 | 1.7762 | 1.7628 | 1.5493 | 1.5798 | | 1.7226 | 7 | AVG | * |
| m+p-Xylene | 0.7252 | 0.7471 | 0.7058 | 0.7001 | 0.6098 | 0.6209 | | 0.6848 | 8 | AVG | |
| Xylene (Total) | 0.7235 | 0.7391 | 0.7027 | 0.6957 | 0.6079 | 0.6190 | | 0.6813 | 8 | AVG | |
| o-Xylene | 0.7201 | 0.7233 | 0.6966 | 0.6870 | 0.6043 | 0.6153 | | 0.6744 | 8 | AVG | |
| Styrene | 1.1432 | 1.2150 | 1.1783 | 1.2018 | 1.1051 | 1.1316 | | 1.1625 | 4 | AVG | |
| Bromoform | #0.3796 | 0.3946 | 0.3933 | 0.4009 | 0.3999 | 0.4024 | | 0.3951 | 2 | AVG | # |
| Isopropylbenzene | 1.7324 | 1.7267 | 1.6391 | 1.6353 | 1.3601 | 1.3056 | | 1.5666 | 12 | AVG | |
| Cyclohexanone | 0.0211 | 0.0201 | 0.0204 | 0.0224 | 0.0241 | 0.0249 | | 0.0222 | 9 | AVG | |
| 1,1,2,2-Tetrachloroethane | #1.0954 | 1.1399 | 1.0797 | 1.0630 | 1.0451 | 1.0788 | | 1.0836 | 3 | AVG | # |
| trans-1,4-Dichloro-2-Butene | 0.3292 | 0.3629 | 0.3454 | 0.3512 | 0.3492 | 0.3703 | | 0.3514 | 4 | AVG | |
| Bromobenzene | 0.9434 | 0.9622 | 0.9214 | 0.9108 | 0.8334 | 0.8599 | | 0.9052 | 5 | AVG | |
| 1,2,3-Trichloropropane | 0.3394 | 0.3525 | 0.3290 | 0.3230 | 0.3139 | 0.3185 | | 0.3293 | 4 | AVG | |
| n-Propylbenzene | 3.4703 | 3.3980 | 3.2416 | 3.1746 | 2.6939 | 2.5925 | | 3.0952 | 12 | AVG | |
| 2-Chlorotoluene | 0.7968 | 0.8070 | 0.7525 | 0.7455 | 0.6456 | 0.6656 | | 0.7355 | 9 | AVG | |
| 1,3,5-Trimethylbenzene | 2.4696 | 2.4421 | 2.3551 | 2.3059 | 1.9677 | 1.9183 | | 2.2431 | 11 | AVG | |
| 4-Chlorotoluene | 0.8179 | 0.8359 | 0.7860 | 0.7777 | 0.6786 | 0.7035 | | 0.7666 | 8 | AVG | |
| tert-Butylbenzene | 0.5602 | 0.5616 | 0.5354 | 0.5222 | 0.4564 | 0.4181 | | 0.5090 | 12 | AVG | |
| Pentachloroethane | 0.5172 | 0.6019 | 0.5577 | 0.5614 | 0.5786 | 0.5803 | | 0.5662 | 5 | AVG | |
| 1,2,4-Trimethylbenzene | 2.5649 | 2.5669 | 2.4391 | 2.4111 | 2.0755 | 2.0258 | | 2.3472 | 10 | AVG | |
| sec-Butylbenzene | 2.7512 | 2.6958 | 2.5734 | 2.5428 | 2.2616 | 1.9086 | | 2.4556 | 13 | AVG | |
| p-Isopropyltoluene | 2.4699 | 2.4224 | 2.3431 | 2.2947 | 2.0546 | 1.7503 | | 2.2225 | 12 | AVG | |
| 1,3-Dichlorobenzene | 1.5868 | 1.5940 | 1.5264 | 1.5139 | 1.3266 | 1.3295 | | 1.4795 | 8 | AVG | |
| 1,4-Dichlorobenzene | 1.7266 | 1.6695 | 1.5923 | 1.5976 | 1.4046 | 1.4250 | | 1.5693 | 8 | AVG | |
| n-Butylbenzene | 1.9188 | 1.9159 | 1.8941 | 1.8435 | 1.7401 | 1.3909 | | 1.7839 | 11 | AVG | |
| 1,2-Dichlorobenzene | 1.6151 | 1.5765 | 1.5409 | 1.5145 | 1.3450 | 1.3626 | | 1.4924 | 8 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.2343 | 0.2296 | 0.2326 | 0.2406 | 0.2340 | 0.2499 | | 0.2368 | 3 | AVG | |
| 1,2,4-Trichlorobenzene | 0.9385 | 0.9673 | 0.9634 | 0.9934 | 0.9281 | 0.8051 | | 0.9326 | 7 | AVG | |
| Hexachlorobutadiene | 0.5301 | 0.4876 | 0.4638 | 0.4292 | 0.4611 | 0.3218 | | 0.4489 | 16 | 2NDDEG | |
| Naphthalene | 2.7701 | 2.9420 | 3.0340 | 3.1768 | 2.9686 | 2.8863 | | 2.9630 | 5 | AVG | |
| 1,2,3-Trichlorobenzene | 0.8583 | 0.9347 | 0.9299 | 0.9595 | 0.8947 | 0.7773 | | 0.8924 | 7 | AVG | |
| Dibromofluoromethane | 0.2426 | 0.2513 | 0.2523 | 0.2575 | 0.2661 | 0.2751 | | 0.2575 | 5 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0689 | 0.0658 | 0.0656 | 0.0680 | 0.0690 | 0.0706 | | 0.0680 | 3 | AVG | |
| Dibromofluoromethane(mz111) | 0.2497 | 0.2587 | 0.2563 | 0.2627 | 0.2700 | 0.2808 | | 0.2630 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0407 | 0.0438 | 0.0433 | 0.0431 | 0.0447 | 0.0448 | | 0.0434 | 3 | AVG | |
| Toluene-d8(mz100) | 0.8533 | 0.8506 | 0.8365 | 0.8629 | 0.8811 | 0.9002 | | 0.8641 | 3 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4525 | 0.4693 | 0.4539 | 0.4693 | 0.4762 | 0.4812 | | 0.4671 | 2 | AVG | |
| Toluene-d8 | 1.2811 | 1.2839 | 1.2579 | 1.3028 | 1.3261 | 1.3586 | | 1.3017 | 3 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date(s): 02/02/04 02/02/04

Heated Purge: (Y/N) Y Calibration Times: 11:54 14:00

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = nf02i15.d RRF 10= nf02i14.d RRF 20= nf02i13.d
RRF 50= nf02i12.d RRF100= nf02i11.d RRF300= nf02i10.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 0.4593 | 0.4668 | 0.4578 | 0.4753 | 0.4874 | 0.4966 | | 0.4739 | 3 | AVG |

Average %RSD 6

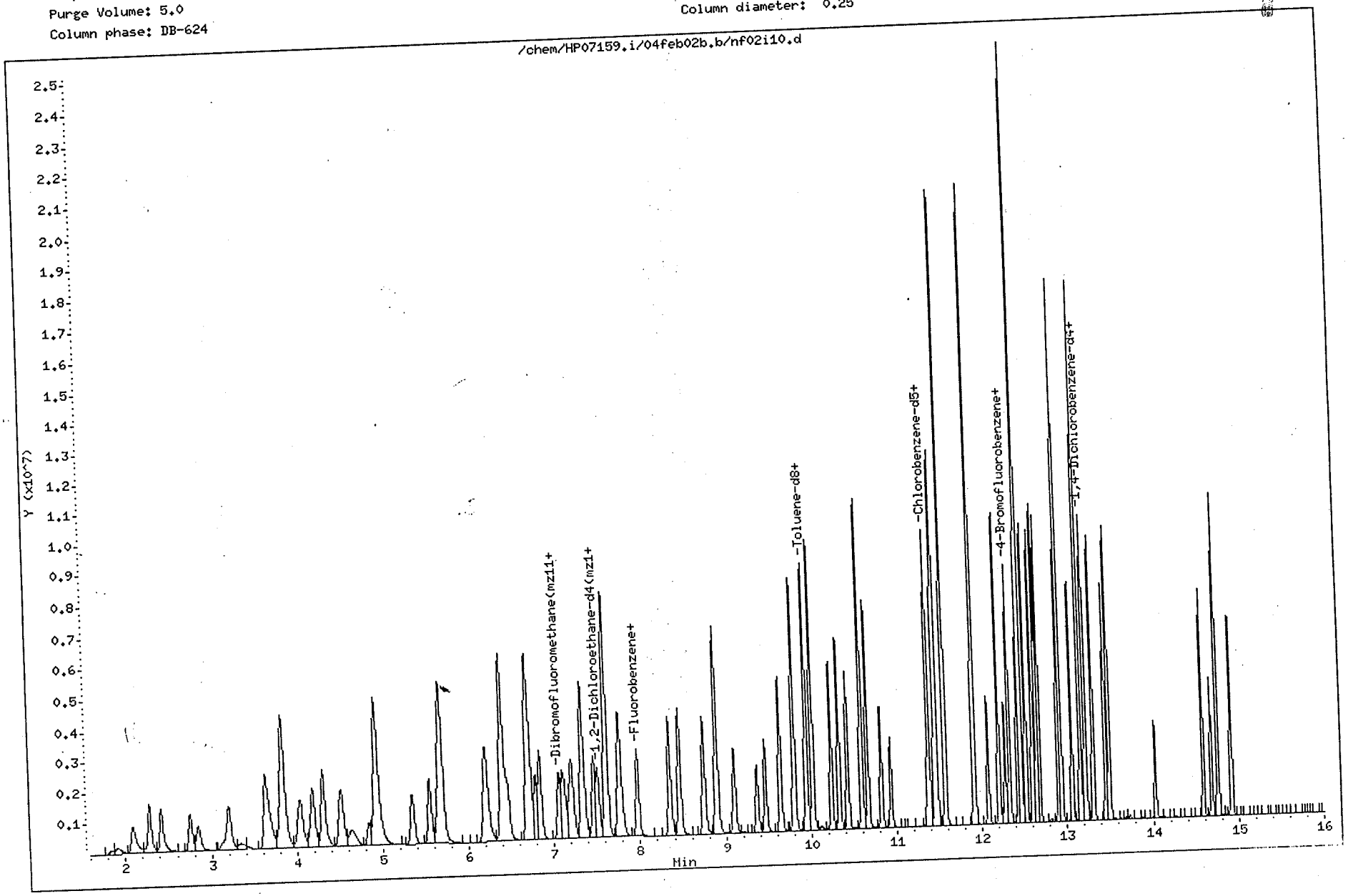
Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d
Date : 02-FEB-2004 11:54
Client ID: VSTD300
Sample Info: VSTD300;VSTD300;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.092 | 85 | 2646880 | 300.000 |
| 3) Chloromethane | (1) | 2.288 | 50 | 2800694 | 300.000 |
| 4) Vinyl Chloride | (1) | 2.423 | 62 | 2545394 | 300.000 |
| 5) Bromomethane | (1) | 2.760 | 94 | 1377647 | 300.000 |
| 6) Chloroethane | (1) | 2.853 | 64 | 1306373 | 300.000 |
| 7) Trichlorofluoromethane | (1) | 3.206 | 101 | 2920744 | 300.000 |
| 11) Ethanol | (1) | 3.353 | 46 | 401002 | 7500.000 |
| 13) Acrolein | (1) | 3.639 | 56 | 5952466 | 3000.000 |
| 16) 1,1-Dichloroethene | (1) | 3.838 | 96 | 1617259 | 300.000 |
| 17) Freon 113 | (1) | 3.835 | 101 | 1444986 | 300.000 |
| 18) Acetone | (1) | 3.841 | 58 | 752027 | 600.000 |
| 19) Methyl Iodide | (1) | 4.050 | 142 | 3165178 | 300.000 |
| 20) 2-Propanol | (1) | 4.017 | 45 | 1252883 | 1500.000 |
| 22) Carbon Disulfide | (1) | 4.187 | 76 | 5488756 | 300.000 |
| 23) Allyl Chloride | (1) | 4.309 | 41 | 3180172 | 300.000 |
| 24) Methylene Chloride | (1) | 4.518 | 84 | 1871635 | 300.000 |
| 25) t-Butyl Alcohol | (1) | 4.650 | 59 | 2005893 | 1500.000 |
| 27) Acrylonitrile | (1) | 4.839 | 53 | 1107137 | 300.000 |
| 28) trans-1,2-Dichloroethene | (1) | 4.929 | 96 | 1790461 | 300.000 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.935 | 73 | 5798918 | 300.000 |
| 32) n-Hexane | (1) | 5.346 | 57 | 1353422 | 300.000 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 3701139 | 600.000 |
| 35) 1,1-Dichloroethane | (1) | 5.551 | 63 | 3261637 | 300.000 |
| 36) di-Isopropyl Ether | (1) | 5.670 | 45 | 6469626 | 300.000 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.689 | 53 | 2500984 | 300.000 |
| 38) Ethyl t-Butyl Ether | (1) | 6.209 | 59 | 5804970 | 300.000 |
| 39) cis-1,2-Dichloroethene | (1) | 6.398 | 96 | 1910677 | 300.000 |
| 40) 2-Butanone | (1) | 6.395 | 72 | 855816 | 600.000 |
| 41) 2,2-Dichloropropane | (1) | 6.414 | 77 | 2654205 | 300.000 |
| 42) Propionitrile | (1) | 6.466 | 54 | 2122999 | 1500.000 |
| 45) Methacrylonitrile | (1) | 6.697 | 67 | 2713130 | 750.000 |
| 46) Bromochloromethane | (1) | 6.732 | 128 | 1052840 | 300.000 |
| 47) Tetrahydrofuran | (1) | 6.790 | 71 | 697610 | 600.000 |
| 48) Chloroform | (1) | 6.844 | 83 | 3041988 | 300.000 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.114 | 97 | 2704010 | 300.000 |
| 52) Cyclohexane | (1) | 7.207 | 56 | 2326086 | 300.000 |
| 54) 1,1-Dichloropropene | (1) | 7.332 | 75 | 2294357 | 300.000 |
| 56) Carbon Tetrachloride | (1) | 7.348 | 117 | 2380289 | 300.000 |
| 57) Isobutyl Alcohol | (1) | 7.470 | 41 | 1654574 | 3750.000 |
| 60) Benzene | (1) | 7.611 | 78 | 7168715 | 300.000 |
| 61) 1,2-Dichloroethane | (1) | 7.621 | 62 | 2548181 | 300.000 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.624 | 98 | 241531 | 300.000 |
| 64) t-Amyl Methyl Ether | (1) | 7.769 | 73 | 5697658 | 300.000 |
| 66) n-Heptane | (1) | 7.977 | 100 | 207028 | 300.000 |
| 65)*Fluorobenzene | (1) | 7.977 | 96 | 1031721 | 50.000 |
| 68) n-Butanol | (1) | 8.349 | 56 | 2865406 | 7500.000 |
| 69) Trichloroethene | (1) | 8.465 | 95 | 1805950 | 300.000 |
| 70) 1,2-Dichloropropane | (1) | 8.750 | 63 | 1976042 | 300.000 |
| 71) Methyl Methacrylate | (1) | 8.892 | 69 | 1901799 | 300.000 |
| 72) Dibromomethane | (1) | 8.898 | 93 | 1254574 | 300.000 |
| 73) 1,4-Dioxane | (1) | 8.914 | 88 | 402149 | 3750.000 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 2344404 | 300.000 |
| 76) 2-Nitropropane | (1) | 9.370 | 41 | 1608173 | 600.000 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.469 | 63 | 1563137 | 300.000 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 3320737 | 300.000 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.809 | 43 | 6420443 | 600.000 |
| 82) Toluene | (2) | 10.024 | 92 | 4489463 | 300.000 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 3097140 | 300.000 |
| 84) Ethyl Methacrylate | (2) | 10.332 | 69 | 3185249 | 300.000 |
| 85) 1,1,2-Trichloroethane | (2) | 10.432 | 97 | 1757096 | 300.000 |
| 87) Tetrachloroethene | (2) | 10.595 | 166 | 1867867 | 300.000 |
| 88) 1,3-Dichloropropane | (2) | 10.599 | 76 | 3145759 | 300.000 |
| 90) 2-Hexanone | (2) | 10.669 | 43 | 4968897 | 600.000 |
| 91) Dibromochloromethane | (2) | 10.823 | 129 | 2187280 | 300.000 |
| 92) 1,2-Dibromoethane | (2) | 10.936 | 107 | 1980348 | 300.000 |
| 94)*Chlorobenzene-d5 | (2) | 11.356 | 117 | 801301 | 50.000 |
| 95) Chlorobenzene | (2) | 11.385 | 112 | 5047691 | 300.000 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.452 | 131 | 1905106 | 300.000 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.475 | 91 | 7595443 | 300.000 |
| 98) m+p-Xylene | (2) | 11.574 | 106 | 5970283 | 600.000 |
| 93) Xylene (Total) | (2) | | 106 | 8928723 | 900.000 |
| 100) o-Xylene | (2) | 11.911 | 106 | 2958439 | 300.000 |
| 101) Styrene | (2) | 11.917 | 104 | 5440284 | 300.000 |
| 102) Bromoform | (2) | 12.081 | 173 | 1934876 | 300.000 |
| 105) Isopropylbenzene | (2) | 12.206 | 105 | 6277257 | 300.000 |
| 106) Cyclohexanone | (2) | 12.280 | 55 | 1495465 | 3750.000 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.431 | 83 | 2826197 | 300.000 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.469 | 53 | 2425185 | 750.000 |
| 112) Bromobenzene | (3) | 12.460 | 156 | 2252822 | 300.000 |
| 113) 1,2,3-Trichloropropane | (3) | 12.469 | 110 | 834342 | 300.000 |
| 114) n-Propylbenzene | (3) | 12.527 | 91 | 6791941 | 300.000 |
| 115) 2-Chlorotoluene | (3) | 12.607 | 126 | 1743809 | 300.000 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.652 | 105 | 5025707 | 300.000 |
| 117) 4-Chlorotoluene | (3) | 12.684 | 126 | 1843098 | 300.000 |
| 118) tert-Butylbenzene | (3) | 12.906 | 134 | 1095394 | 300.000 |
| 119) Pentachloroethane | (3) | 12.935 | 167 | 1520350 | 300.000 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.938 | 105 | 5307205 | 300.000 |
| 121) sec-Butylbenzene | (3) | 13.066 | 105 | 5000189 | 300.000 |
| 122) p-Isopropyltoluene | (3) | 13.162 | 119 | 4585408 | 300.000 |
| 123) 1,3-Dichlorobenzene | (3) | 13.162 | 146 | 3482988 | 300.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.207 | 152 | 436638 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.227 | 146 | 3733370 | 300.000 |
| 126) n-Butylbenzene | (3) | 13.454 | 91 | 3643849 | 300.000 |
| 127) 1,2-Dichlorobenzene | (3) | 13.496 | 146 | 3569740 | 300.000 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.029 | 75 | 654617 | 300.000 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 2109120 | 300.000 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 842942 | 300.000 |
| 134) Naphthalene | (3) | 14.760 | 128 | 7561564 | 300.000 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 2036389 | 300.000 |
| 50) $Dibromofluoromethane | (1) | 7.059 | 113 | 1702837 | 300.000 |
| 58) $1,2-Dichlorcethane-d4 | (1) | 7.518 | 102 | 436801 | 300.000 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.059 | 111 | 1738373 | 300.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i10.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 11:54  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.518 | 104 | 277450 | 300.000 |
| 81)$Toluene-d8(mz100) | (2) | 9.950 | 100 | 4327955 | 300.000 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.335 | 174 | 2313465 | 300.000 |
| 80)$Toluene-d8 | (2) | 9.950 | 98 | 6531824 | 300.000 |
| 107)$4-Bromofluorobenzene | (2) | 12.331 | 95 | 2387734 | 300.000 |

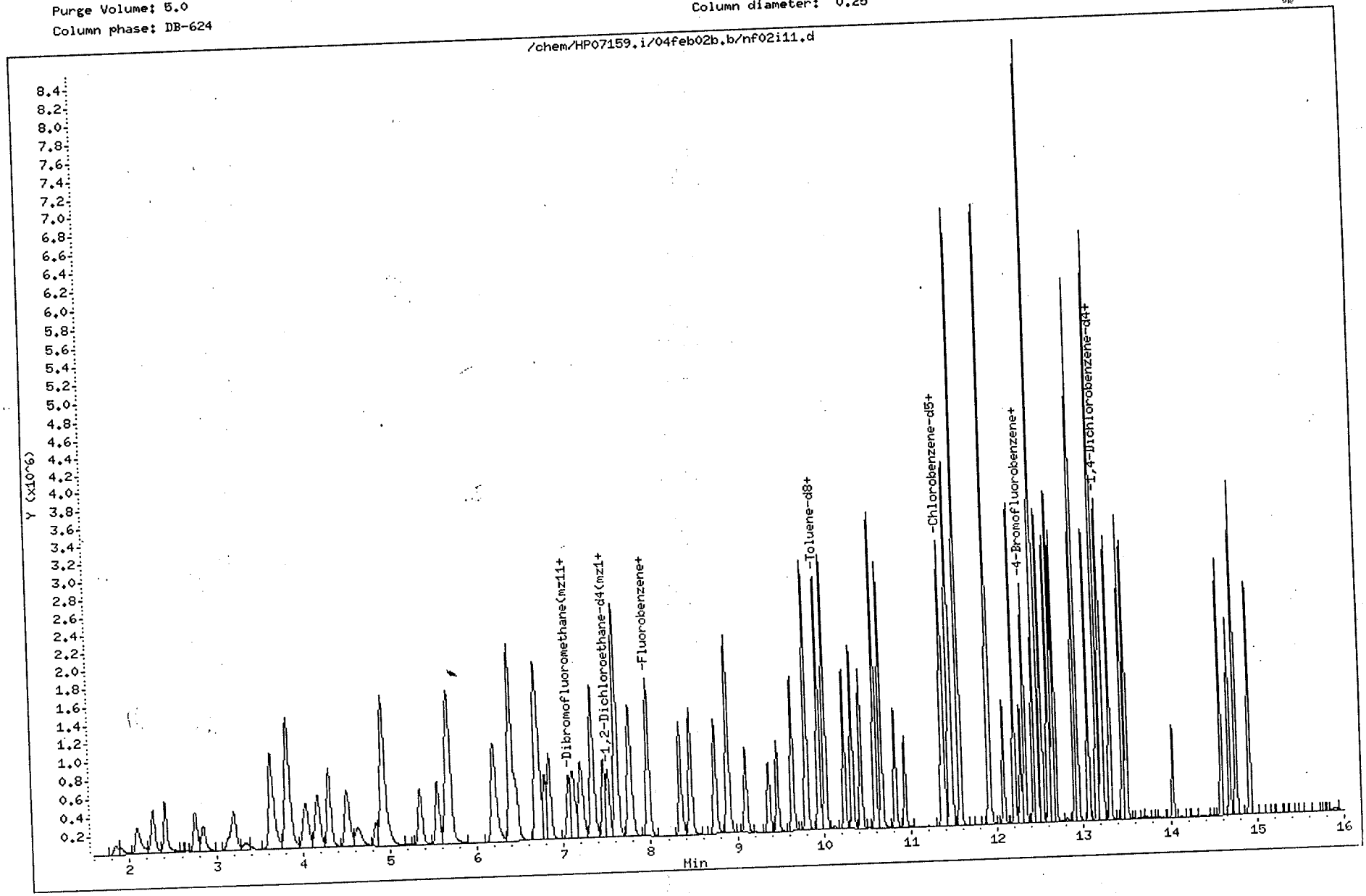
$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d
Date : 02-FEB-2004 12:19
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/4/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d
Injection date and time: 02-FEB-2004 12:19
Instrument ID: HP07159.i
Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m
Calibration date and time: 02-FEB-2004 11:54
Sublist used: 8260WI+CYC
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100
Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.089 | 85 | 833030 | 102.555 |
| 3) Chloromethane | (1) | 2.278 | 50 | 841822 | 93.496 |
| 4) Vinyl Chloride | (1) | 2.416 | 62 | 816279 | 99.498 |
| 5) Bromomethane | (1) | 2.763 | 94 | 484039 | 99.043 |
| 6) Chloroethane | (1) | 2.852 | 64 | 440789 | 99.480 |
| 7) Trichlorofluoromethane | (1) | 3.209 | 101 | 928903 | 101.649 |
| 11) Ethanol | (1) | 3.337 | 46 | 123196 | 2686.143 |
| 13) Acrolein | (1) | 3.639 | 56 | 2028340 | 1027.085 |
| 16) 1,1-Dichloroethene | (1) | 3.831 | 96 | 508162 | 95.728 |
| 17) Freon 113 | (1) | 3.838 | 101 | 425714 | 85.875 |
| 18) Acetone | (1) | 3.834 | 58 | 295143 | 216.722 |
| 19) Methyl Iodide | (1) | 4.046 | 142 | 998124 | 98.150 |
| 20) 2-Propanol | (1) | 4.008 | 45 | 389150 | 522.330 |
| 22) Carbon Disulfide | (1) | 4.174 | 76 | 1753260 | 97.758 |
| 23) Allyl Chloride | (1) | 4.312 | 41 | 1010812 | 100.852 |
| 24) Methylene Chloride | (1) | 4.511 | 84 | 598672 | 97.212 |
| 25) t-Butyl Alcohol | (1) | 4.637 | 59 | 650876 | 513.868 |
| 27) Acrylonitrile | (1) | 4.842 | 53 | 367103 | 101.170 |
| 28) trans-1,2-Dichloroethene | (1) | 4.925 | 96 | 572137 | 96.217 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 1894195 | 97.514 |
| 32) n-Hexane | (1) | 5.352 | 57 | 500551M | 88.594 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1194733 | 192.798 |
| 35) 1,1-Dichloroethane | (1) | 5.548 | 63 | 1049902 | 98.180 |
| 36) di-Isopropyl Ether | (1) | 5.663 | 45 | 2089374 | 98.303 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.692 | 53 | 786506 | 97.082 |
| 38) Ethyl t-Butyl Ether | (1) | 6.199 | 59 | 1914908 | 97.450 |
| 39) cis-1,2-Dichloroethene | (1) | 6.398 | 96 | 622596 | 96.580 |
| 40) 2-Butanone | (1) | 6.395 | 72 | 319356 | 218.644 |
| 41) 2,2-Dichloropropane | (1) | 6.405 | 77 | 863985 | 96.409 |
| 42) Propionitrile | (1) | 6.462 | 54 | 687231 | 498.971 |
| 45) Methacrylonitrile | (1) | 6.693 | 67 | 885675 | 248.090 |
| 46) Bromochloromethane | (1) | 6.729 | 128 | 343592 | 102.232 |
| 47) Tetrahydrofuran | (1) | 6.790 | 71 | 237251 | 203.343 |
| 48) Chloroform | (1) | 6.844 | 83 | 980363 | 97.920 |

M = Compound was manually integrated.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.114 | 97 | 849656 | 94.727 |
| 52) Cyclohexane | (1) | 7.207 | 56 | 719111 | 82.695 |
| 54) 1,1-Dichloropropene | (1) | 7.332 | 75 | 724029 | 93.847 |
| 56) Carbon Tetrachloride | (1) | 7.348 | 117 | 731409 | 91.785 |
| 57) Isobutyl Alcohol | (1) | 7.463 | 41 | 530850 | 1282.518 |
| 60) Benzene | (1) | 7.611 | 78 | 2327804 | 96.774 |
| 61) 1,2-Dichloroethane | (1) | 7.618 | 62 | 827674 | 98.779 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.624 | 98 | 77022 | 98.825 |
| 64) t-Amyl Methyl Ether | (1) | 7.768 | 73 | 1903419 | 97.815 |
| 66) n-Heptane | (1) | 7.977 | 100 | 97107 | 105.534 |
| 65)*Fluorobenzene | (1) | 7.977 | 96 | 1005461 | 50.000 |
| 68) n-Butanol | (1) | 8.346 | 56 | 912490 | 2644.994 |
| 69) Trichloroethene | (1) | 8.465 | 95 | 578340 | 96.086 |
| 70) 1,2-Dichloropropane | (1) | 8.747 | 63 | 642859 | 97.611 |
| 71) Methyl Methacrylate | (1) | 8.895 | 69 | 618365 | 101.247 |
| 72) Dibromomethane | (1) | 8.901 | 93 | 415325 | 100.746 |
| 73) 1,4-Dioxane | (1) | 8.914 | 88 | 128185 | 1318.262 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 757141 | 100.016 |
| 76) 2-Nitropropane | (1) | 9.370 | 41 | 572933 | 211.835 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.469 | 63 | 505500 | 104.629 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 1088918 | 100.253 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.806 | 43 | 2359451 | 217.523 |
| 82) Toluene | (2) | 10.024 | 92 | 1449967 | 94.062 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 1011006 | 99.274 |
| 84) Ethyl Methacrylate | (2) | 10.332 | 69 | 1039034 | 102.082 |
| 85) 1,1,2-Trichloroethane | (2) | 10.432 | 97 | 578653 | 97.675 |
| 87) Tetrachloroethene | (2) | 10.592 | 166 | 595245 | 87.046 |
| 88) 1,3-Dichloropropane | (2) | 10.598 | 76 | 1031771 | 98.342 |
| 90) 2-Hexanone | (2) | 10.666 | 43 | 1979419 | 227.879 |
| 91) Dibromochloromethane | (2) | 10.823 | 129 | 712339 | 100.644 |
| 92) 1,2-Dibromoethane | (2) | 10.935 | 107 | 654352 | 99.547 |
| 94)*Chlorobenzene-d5 | (2) | 11.356 | 117 | 790761 | 50.000 |
| 95) Chlorobenzene | (2) | 11.385 | 112 | 1640625 | 94.573 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.452 | 131 | 613469 | 95.733 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.474 | 91 | 2450203 | 89.939 |
| 98) m+p-Xylene | (2) | 11.574 | 106 | 1928701 | 178.085 |
| 93) Xylene (Total) | (2) | | 106 | 2884378 | 267.685 |
| 100) o-Xylene | (2) | 11.911 | 106 | 955677 | 89.600 |
| 101) Styrene | (2) | 11.917 | 104 | 1747724 | 95.062 |
| 102) Bromoform | (2) | 12.081 | 173 | 632511 | 101.217 |
| 105) Isopropylbenzene | (2) | 12.206 | 105 | 2150964 | 86.818 |
| 106) Cyclohexanone | (2) | 12.280 | 55 | 476705 | 1358.671 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.428 | 83 | 933833 | 96.444 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.469 | 53 | 780116 | 248.485 |
| 112) Bromobenzene | (3) | 12.460 | 156 | 744679 | 92.071 |
| 113) 1,2,3-Trichloropropane | (3) | 12.469 | 110 | 280439 | 95.293 |
| 114) n-Propylbenzene | (3) | 12.524 | 91 | 2407080 | 87.036 |
| 115) 2-Chlorotoluene | (3) | 12.604 | 126 | 576814 | 87.771 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.649 | 105 | 1758155 | 87.720 |
| 117) 4-Chlorotoluene | (3) | 12.684 | 126 | 606333 | 88.518 |
| 118) tert-Butylbenzene | (3) | 12.902 | 134 | 407821 | 89.672 |
| 119) Pentachloroethane | (3) | 12.931 | 167 | 517034 | 102.199 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.934 | 105 | 1854548 | 88.425 |
| 121) sec-Butylbenzene | (3) | 13.063 | 105 | 2020817 | 92.102 |
| 122) p-Isopropyltoluene | (3) | 13.159 | 119 | 1835850 | 92.446 |
| 123) 1,3-Dichlorobenzene | (3) | 13.162 | 146 | 1185388 | 89.666 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.207 | 152 | 446762 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.223 | 146 | 1255022 | 89.505 |
| 126) n-Butylbenzene | (3) | 13.451 | 91 | 1554859 | 97.548 |
| 127) 1,2-Dichlorobenzene | (3) | 13.496 | 146 | 1201788 | 90.122 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 209090 | 98.809 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.587 | 180 | 829283 | 99.515 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 411981 | 105.323 |
| 134) Naphthalene | (3) | 14.757 | 128 | 2652557 | 100.192 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.918 | 180 | 799425 | 100.258 |
| 50) $Dibromofluoromethane | (1) | 7.062 | 113 | 535176 | 103.367 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.518 | 102 | 138764 | 101.506 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.059 | 111 | 543003 | 102.655 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19  Analyst ID: SJR01577

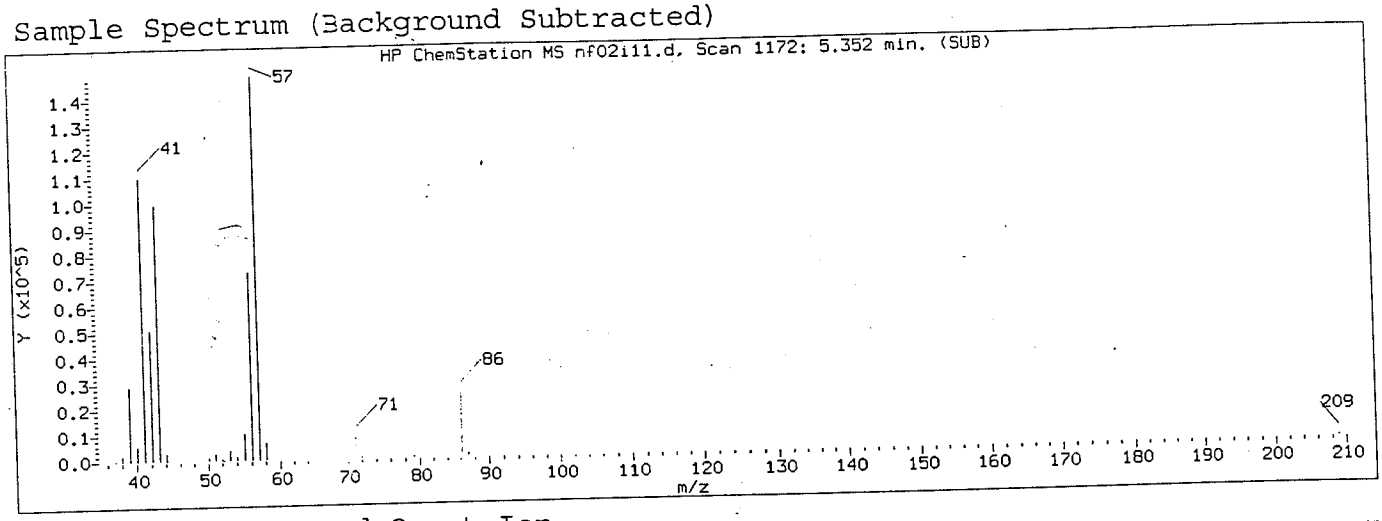
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100  Lab Sample ID: VSTD100

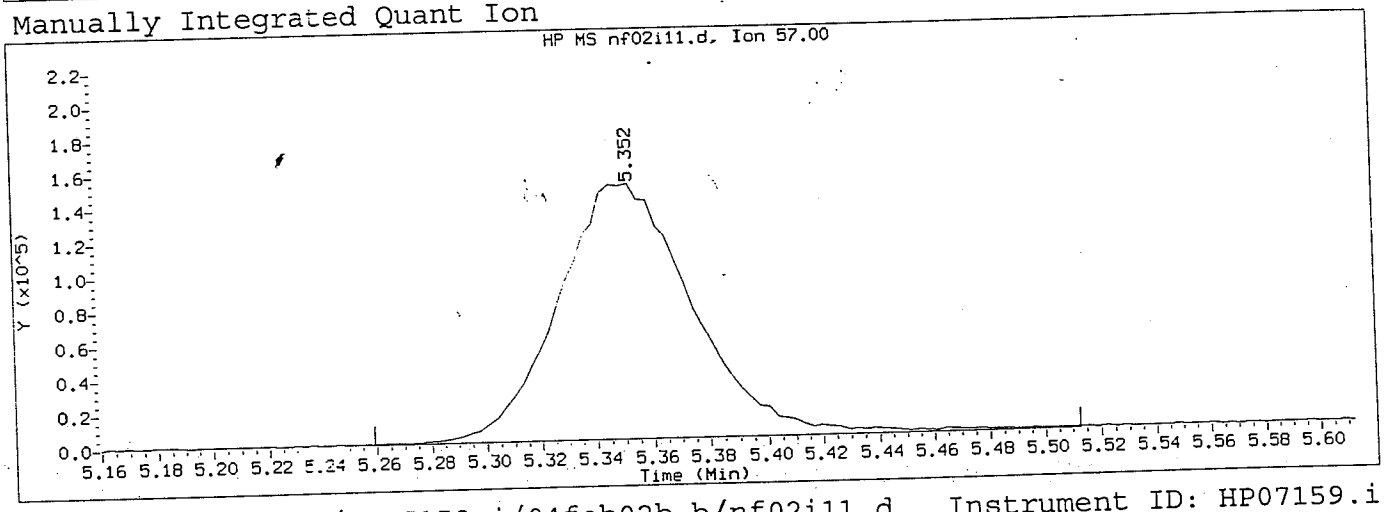
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.521 | 104 | 89846 | 102.932 |
| 81) $Toluene-d8 (mz100) | (2) | 9.950 | 100 | 1393458 | 101.966 |
| 108) $4-Bromofluorobenzene (mz174) | (2) | 12.334 | 174 | 753168 | 101.963 |
| 80) $Toluene-d8 | (2) | 9.950 | 98 | 2097284 | 101.874 |
| 107) $4-Bromofluorobenzene | (2) | 12.331 | 95 | 770879 | 102.860 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02i11.d Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:19 Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 14:33
Date, time and analyst ID of latest file update: 02-Feb-2004 15:10 sjr01577

Sample Name: VSTD100 Lab Sample ID: VSTD100

| | |
|---|---|
| Compound Number | : 32 |
| Compound Name | : n-Hexane |
| Scan Number | : 1172 |
| Retention Time (minutes) | : 5.352 |
| Quant Ion | : 57 |
| Area (flag) | : 500551 M |
| Concentration (ug/L) | : 88.5937 |
| Integration start scan | : 1142 Integration stop scan: 1221 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak ~~improper integration~~

Analyst responsible for change: SJR KSM 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

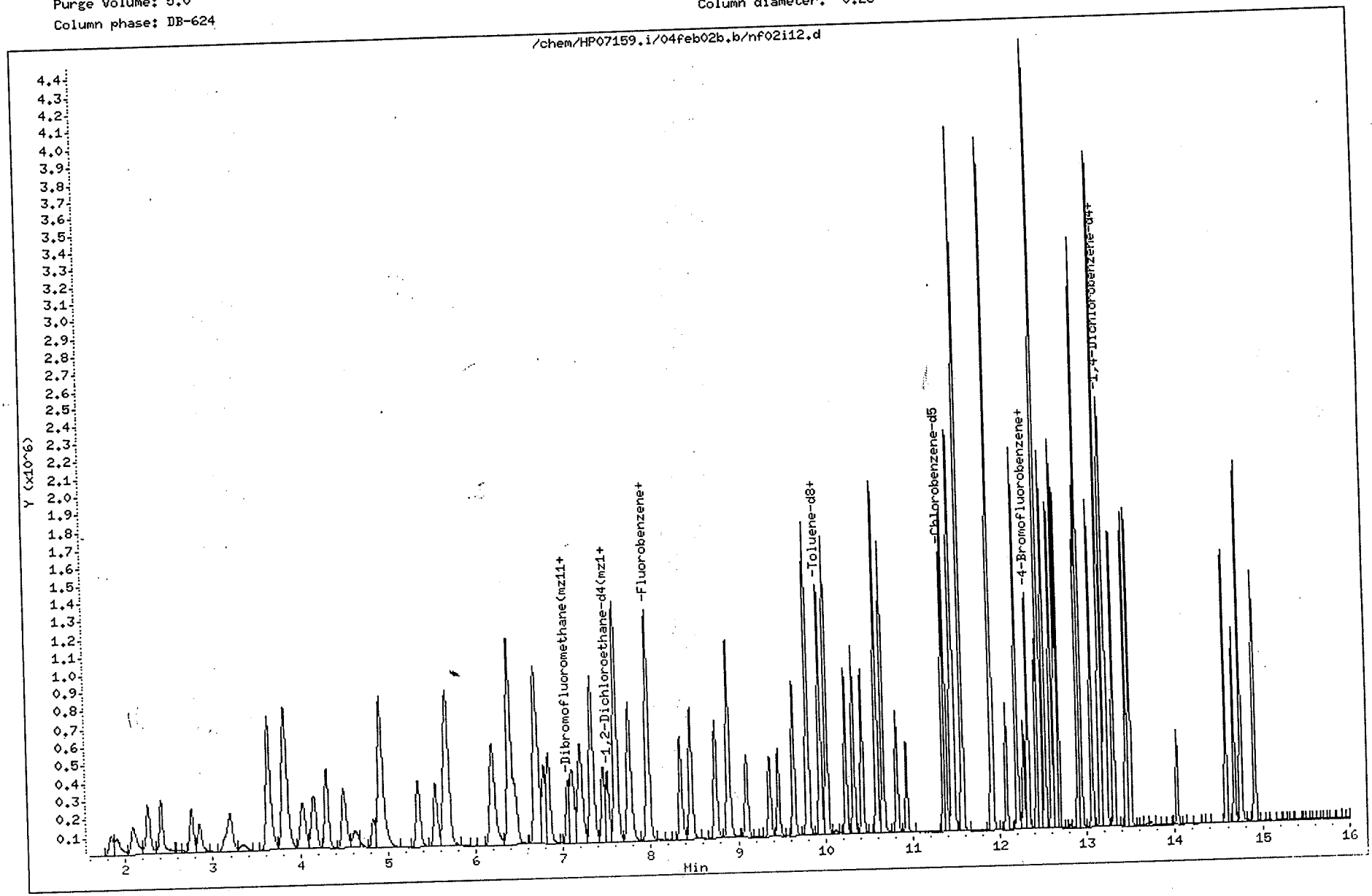
Manual Integration Report for data file /chem/HP07159.i/04feb02b.b/nf02i11.d, generated on 02/02/2004 at 15:10

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d
Date : 02-FEB-2004 12:44
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.094 | 85 | 440998 | 50.210 |
| 3) Chloromethane | (1) | 2.264 | 50 | 470889 | 51.266 |
| 4) Vinyl Chloride | (1) | 2.411 | 62 | 436408 | 50.858 |
| 5) Bromomethane | (1) | 2.758 | 94 | 266168 | 53.342 |
| 6) Chloroethane | (1) | 2.851 | 64 | 238704 | 52.147 |
| 7) Trichlorofluoromethane | (1) | 3.201 | 101 | 491521 | 50.372 |
| 11) Ethanol | (1) | 3.342 | 46 | 57350 | 1140.457 |
| 13) Acrolein | (1) | 3.640 | 56 | 1251169 | 568.292 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 265670 | 49.765 |
| 17) Freon 113 | (1) | 3.836 | 101 | 266662 | 54.786 |
| 18) Acetone | (1) | 3.830 | 58 | 172540 | 114.561 |
| 19) Methyl Iodide | (1) | 4.032 | 142 | 518753 | 49.630 |
| 20) 2-Propanol | (1) | 4.009 | 45 | 190769 | 237.288 |
| 22) Carbon Disulfide | (1) | 4.160 | 76 | 911469 | 49.855 |
| 23) Allyl Chloride | (1) | 4.308 | 41 | 512745 | 48.959 |
| 24) Methylene Chloride | (1) | 4.500 | 84 | 304778 | 49.183 |
| 25) t-Butyl Alcohol | (1) | 4.641 | 59 | 325365 | 244.094 |
| 27) Acrylonitrile | (1) | 4.834 | 53 | 229487 | 56.827 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 302487 | 50.424 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.927 | 73 | 982809 | 50.164 |
| 32) n-Hexane | (1) | 5.347 | 57 | 312712 | 69.659 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 628024 | 100.804 |
| 35) 1,1-Dichloroethane | (1) | 5.546 | 63 | 543363 | 49.834 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 1082786 | 49.934 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.687 | 53 | 416172 | 50.181 |
| 38) Ethyl t-Butyl Ether | (1) | 6.198 | 59 | 1022147 | 51.280 |
| 39) cis-1,2-Dichloroethene | (1) | 6.393 | 96 | 325536 | 50.381 |
| 40) 2-Butanone | (1) | 6.387 | 72 | 185551 | 112.494 |
| 41) 2,2-Dichloropropane | (1) | 6.406 | 77 | 461902 | 51.110 |
| 42) Propionitrile | (1) | 6.461 | 54 | 350707 | 247.308 |
| 45) Methacrylonitrile | (1) | 6.692 | 67 | 457419 | 124.998 |
| 46) Bromochloromethane | (1) | 6.727 | 128 | 166037 | 47.803 |
| 47) Tetrahydrofuran | (1) | 6.788 | 71 | 147711 | 114.247 |
| 48) Chloroform | (1) | 6.839 | 83 | 509491 | 49.993 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.112 | 97 | 460316 | 50.958 |
| 52) Cyclohexane | (1) | 7.205 | 56 | 472957 | 57.375 |
| 54) 1,1-Dichloropropene | (1) | 7.330 | 75 | 399495 | 51.648 |
| 56) Carbon Tetrachloride | (1) | 7.343 | 117 | 418663 | 52.434 |
| 57) Isobutyl Alcohol | (1) | 7.465 | 41 | 265222 | 607.682 |
| 60) Benzene | (1) | 7.610 | 78 | 1217062 | 50.320 |
| 61) 1,2-Dichloroethane | (1) | 7.619 | 62 | 428348 | 49.985 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.619 | 98 | 40815 | 50.466 |
| 64) t-Amyl Methyl Ether | (1) | 7.764 | 73 | 998929 | 50.919 |
| 66) n-Heptane | (1) | 7.972 | 100 | 50019 | 55.530 |
| 65)*Fluorobenzene | (1) | 7.975 | 96 | 1041133 | 50.000 |
| 68) n-Butanol | (1) | 8.344 | 56 | 445000 | 1192.513 |
| 69) Trichloroethene | (1) | 8.463 | 95 | 310260 | 50.950 |
| 70) 1,2-Dichloropropane | (1) | 8.745 | 63 | 338719 | 50.611 |
| 71) Methyl Methacrylate | (1) | 8.890 | 69 | 316241 | 49.606 |
| 72) Dibromomethane | (1) | 8.896 | 93 | 212660 | 49.944 |
| 73) 1,4-Dioxane | (1) | 8.906 | 88 | 62799 | 598.314 |
| 74) Bromodichloromethane | (1) | 9.098 | 83 | 388915 | 49.640 |
| 76) 2-Nitropropane | (1) | 9.368 | 41 | 344124 | 113.295 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.464 | 63 | 251203 | 48.569 |
| 78) cis-1,3-Dichloropropene | (1) | 9.641 | 75 | 557005 | 49.754 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.804 | 43 | 1382897 | 112.604 |
| 82) Toluene | (2) | 10.019 | 92 | 790914 | 51.817 |
| 83) trans-1,3-Dichloropropene | (2) | 10.241 | 75 | 520051 | 50.024 |
| 84) Ethyl Methacrylate | (2) | 10.331 | 69 | 527700 | 49.588 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 301006 | 50.546 |
| 87) Tetrachloroethene | (2) | 10.594 | 166 | 359955 | 55.131 |
| 88) 1,3-Dichloropropane | (2) | 10.597 | 76 | 534531 | 50.342 |
| 90) 2-Hexanone | (2) | 10.664 | 43 | 1091658 | 111.312 |
| 91) Dibromochloromethane | (2) | 10.822 | 129 | 369917 | 50.302 |
| 92) 1,2-Dibromoethane | (2) | 10.931 | 107 | 337393 | 50.307 |
| 94)*Chlorobenzene-d5 | (2) | 11.354 | 117 | 809807 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 893401 | 51.868 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.450 | 131 | 336804 | 51.986 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.473 | 91 | 1427530 | 54.053 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 1133888 | 108.781 |
| 93) Xylene (Total) | (2) | | 106 | 1690221 | 162.829 |
| 100) o-Xylene | (2) | 11.906 | 106 | 556333 | 54.048 |
| 101) Styrene | (2) | 11.916 | 104 | 973241 | 52.428 |
| 102) Bromoform | (2) | 12.076 | 173 | 324625 | 49.973 |
| 105) Isopropylbenzene | (2) | 12.201 | 105 | 1324297 | 57.033 |
| 106) Cyclohexanone | (2) | 12.278 | 55 | 226816 | 588.379 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 488074 | 50.033 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.464 | 53 | 403082 | 122.992 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 418172 | 52.461 |
| 113) 1,2,3-Trichloropropane | (3) | 12.468 | 110 | 148299 | 50.714 |
| 114) n-Propylbenzene | (3) | 12.522 | 91 | 1457599 | 56.280 |
| 115) 2-Chlorotoluene | (3) | 12.602 | 126 | 342310 | 54.374 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.651 | 105 | 1058747 | 55.861 |
| 117) 4-Chlorotoluene | (3) | 12.679 | 126 | 357060 | 54.010 |
| 118) tert-Butylbenzene | (3) | 12.901 | 134 | 239758 | 56.080 |
| 119) Pentachloroethane | (3) | 12.930 | 167 | 257766 | 48.949 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.936 | 105 | 1107045 | 55.535 |
| 121) sec-Butylbenzene | (3) | 13.061 | 105 | 1167504 | 56.818 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 1053623 | 56.432 |
| 123) 1,3-Dichlorobenzene | (3) | 13.161 | 146 | 695108 | 54.457 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.206 | 152 | 459146 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 733518 | 54.128 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 846438 | 55.588 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 695361 | 53.806 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.027 | 75 | 110454 | 49.811 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.585 | 180 | 456116 | 54.651 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 197044 | 53.114 |
| 134) Naphthalene | (3) | 14.756 | 128 | 1458635 | 52.761 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 440553 | 54.694 |
| 50) $Dibromofluoromethane | (1) | 7.054 | 113 | 268082 | 48.358 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.513 | 102 | 70781 | 49.133 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.058 | 111 | 273464 | 48.431 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i12.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 12:44  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.513 | 104 | 44880 | 48.761 |
| 81) $Toluene-d8 (mz100) | (2) | 9.949 | 100 | 698805 | 48.952 |
| 108) $4-Bromofluorobenzene (mz174) | (2) | 12.330 | 174 | 380041 | 49.340 |
| 80) $Toluene-d8 | (2) | 9.949 | 98 | 1055029 | 49.008 |
| 107) $4-Bromofluorobenzene | (2) | 12.330 | 95 | 384906 | 48.854 |

$ = Compound is a surrogate standard.

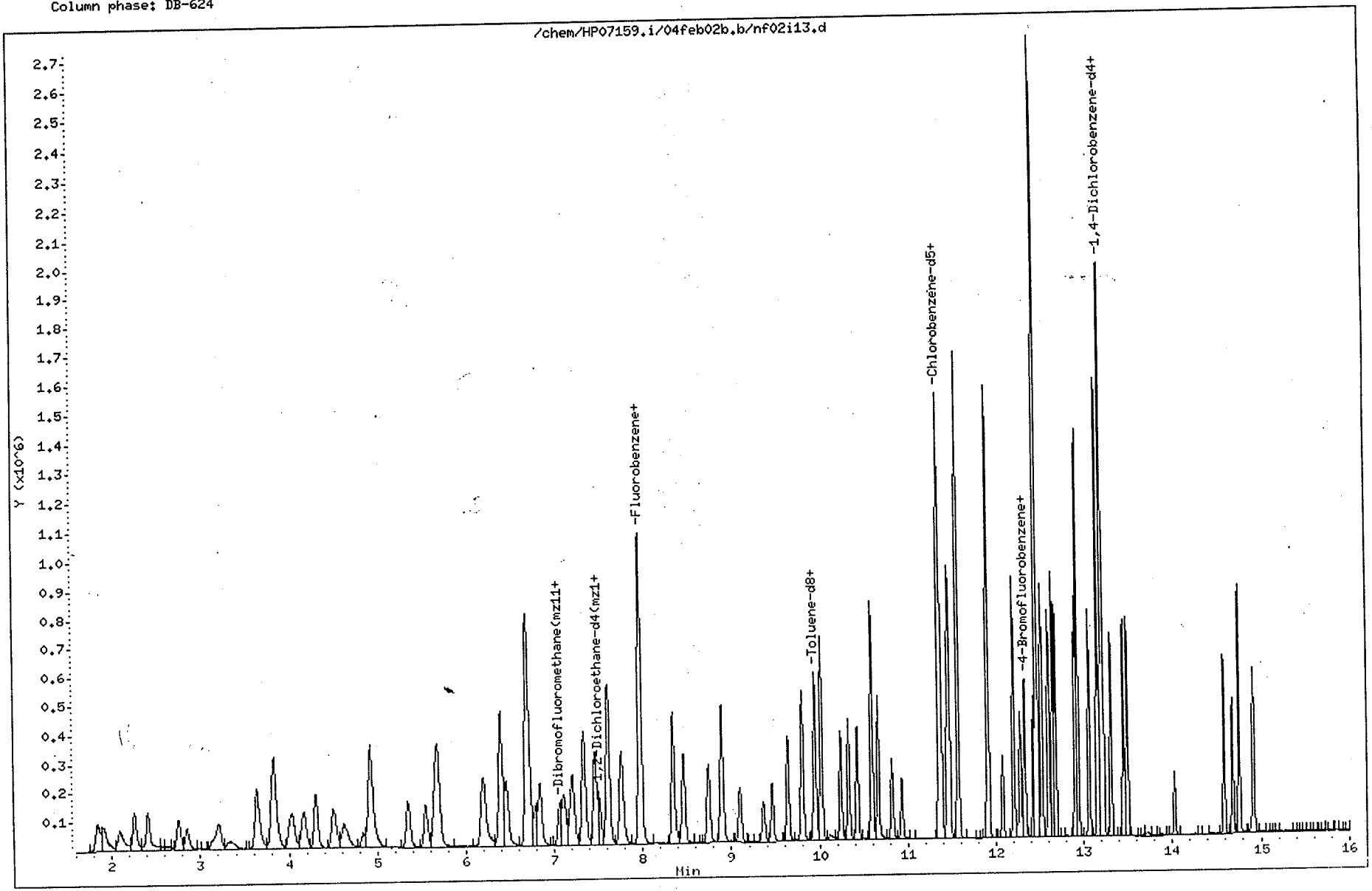
Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d
Date : 02-FEB-2004 13:09
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SSR 1577 2/2/04

8223



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 179761 | 19.916 |
| 3) Chloromethane | (1) | 2.258 | 50 | 200995 | 20.933 |
| 4) Vinyl Chloride | (1) | 2.409 | 62 | 185782 | 20.769 |
| 5) Bromomethane | (1) | 2.756 | 94 | 111456 | 21.252 |
| 6) Chloroethane | (1) | 2.852 | 64 | 100468 | 20.979 |
| 7) Trichlorofluoromethane | (1) | 3.211 | 101 | 203614 | 20.207 |
| 11) Ethanol | (1) | 3.349 | 46 | 45108 | 900.535 |
| 13) Acrolein | (1) | 3.638 | 56 | 370676 | 171.399 |
| 16) 1,1-Dichloroethene | (1) | 3.821 | 96 | 111298 | 20.193 |
| 17) Freon 113 | (1) | 3.834 | 101 | 111597 | 21.662 |
| 18) Acetone | (1) | 3.830 | 58 | 56510 | 37.284 |
| 19) Methyl Iodide | (1) | 4.036 | 142 | 214201 | 19.935 |
| 20) 2-Propanol | (1) | 4.007 | 45 | 151718 | 187.267 |
| 22) Carbon Disulfide | (1) | 4.167 | 76 | 380192 | 20.155 |
| 23) Allyl Chloride | (1) | 4.305 | 41 | 213420 | 19.851 |
| 24) Methylene Chloride | (1) | 4.508 | 84 | 129921 | 20.278 |
| 25) t-Butyl Alcohol | (1) | 4.626 | 59 | 258649 | 191.289 |
| 27) Acrylonitrile | (1) | 4.841 | 53 | 69058 | 17.351 |
| 28) trans-1,2-Dichloroethene | (1) | 4.921 | 96 | 124853 | 20.167 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.925 | 73 | 409085 | 20.216 |
| 32) n-Hexane | (1) | 5.348 | 57 | 130904 | 25.661 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 262938 | 40.736 |
| 35) 1,1-Dichloroethane | (1) | 5.547 | 63 | 226741 | 20.155 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 452764 | 20.216 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.695 | 53 | 172163 | 20.129 |
| 38) Ethyl t-Butyl Ether | (1) | 6.195 | 59 | 416862 | 20.240 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 138084 | 20.569 |
| 40) 2-Butanone | (1) | 6.385 | 72 | 57635 | 35.287 |
| 41) 2,2-Dichloropropane | (1) | 6.407 | 77 | 191133 | 20.410 |
| 42) Propionitrile | (1) | 6.458 | 54 | 288394 | 198.204 |
| 45) Methacrylonitrile | (1) | 6.690 | 67 | 375630 | 99.807 |
| 46) Bromochloromethane | (1) | 6.725 | 128 | 70136 | 19.715 |
| 47) Tetrahydrofuran | (1) | 6.789 | 71 | 43802 | 34.444 |
| 48) Chloroform | (1) | 6.840 | 83 | 212754 | 20.213 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.113 | 97 | 192518 | 20.527 |
| 52) Cyclohexane | (1) | 7.206 | 56 | 200642 | 22.619 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 167396 | 20.762 |
| 56) Carbon Tetrachloride | (1) | 7.341 | 117 | 171390 | 20.637 |
| 57) Isobutyl Alcohol | (1) | 7.460 | 41 | 214741 | 483.392 |
| 60) Benzene | (1) | 7.604 | 78 | 510322 | 20.375 |
| 61) 1,2-Dichloroethane | (1) | 7.614 | 62 | 180202 | 20.323 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.620 | 98 | 17172 | 20.470 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 410914 | 20.264 |
| 66) n-Heptane | (1) | 7.976 | 100 | 21120 | 22.018 |
| 65)*Fluorobenzene | (1) | 7.973 | 96 | 1071448 | 50.000 |
| 68) n-Butanol | (1) | 8.342 | 56 | 344958 | 921.708 |
| 69) Trichloroethene | (1) | 8.464 | 95 | 127843 | 20.299 |
| 70) 1,2-Dichloropropane | (1) | 8.743 | 63 | 142405 | 20.503 |
| 71) Methyl Methacrylate | (1) | 8.891 | 69 | 129582 | 19.813 |
| 72) Dibromomethane | (1) | 8.894 | 93 | 86482 | 19.801 |
| 73) 1,4-Dioxane | (1) | 8.907 | 88 | 48099 | 457.817 |
| 74) Bromodichloromethane | (1) | 9.103 | 83 | 159080 | 19.797 |
| 76) 2-Nitropropane | (1) | 9.366 | 41 | 102489 | 34.335 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.468 | 63 | 99615 | 19.021 |
| 78) cis-1,3-Dichloropropene | (1) | 9.642 | 75 | 228600 | 19.881 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 408075 | 33.923 |
| 82) Toluene | (2) | 10.020 | 92 | 329930 | 20.627 |
| 83) trans-1,3-Dichloropropene | (2) | 10.242 | 75 | 216198 | 20.041 |
| 84) Ethyl Methacrylate | (2) | 10.328 | 69 | 213115 | 19.480 |
| 85) 1,1,2-Trichloroethane | (2) | 10.428 | 97 | 123872 | 20.045 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 150267 | 21.602 |
| 88) 1,3-Dichloropropane | (2) | 10.595 | 76 | 222183 | 20.134 |
| 90) 2-Hexanone | (2) | 10.662 | 43 | 328457 | 33.931 |
| 91) Dibromochloromethane | (2) | 10.822 | 129 | 148760 | 19.629 |
| 92) 1,2-Dibromoethane | (2) | 10.935 | 107 | 138501 | 19.936 |
| 94)*Chlorobenzene-d5 | (2) | 11.355 | 117 | 839736 | 50.000 |
| 95) Chlorobenzene | (2) | 11.381 | 112 | 367134 | 20.413 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.451 | 131 | 136535 | 20.241 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.471 | 91 | 596629 | 21.310 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 474128 | 42.830 |
| 93) Xylene (Total) | (2) | | 106 | 708097 | 64.237 |
| 100) o-Xylene | (2) | 11.907 | 106 | 233968 | 21.406 |
| 101) Styrene | (2) | 11.917 | 104 | 395777 | 20.417 |
| 102) Bromoform | (2) | 12.077 | 173 | 132113 | 19.708 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 550578 | 22.075 |
| 106) Cyclohexanone | (2) | 12.276 | 55 | 171393 | 444.598 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.427 | 83 | 205195 | 20.245 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.462 | 53 | 328245 | 97.573 |
| 112) Bromobenzene | (3) | 12.459 | 156 | 175113 | 20.909 |
| 113) 1,2,3-Trichloropropane | (3) | 12.465 | 110 | 62517 | 20.491 |
| 114) n-Propylbenzene | (3) | 12.520 | 91 | 616061 | 22.160 |
| 115) 2-Chlorotoluene | (3) | 12.603 | 126 | 143004 | 21.429 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 447582 | 22.044 |
| 117) 4-Chlorotoluene | (3) | 12.680 | 126 | 149385 | 21.347 |
| 118) tert-Butylbenzene | (3) | 12.902 | 134 | 101743 | 22.167 |
| 119) Pentachloroethane | (3) | 12.931 | 167 | 105983 | 19.584 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.934 | 105 | 463552 | 21.799 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 489071 | 22.169 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 445297 | 22.202 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 290090 | 21.437 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 475119 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 302613 | 21.162 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 359966 | 22.061 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 292835 | 21.390 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 44199 | 19.441 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 183095 | 20.887 |
| 133) Hexachlorobutadiene | (3) | 14.683 | 225 | 88137 | 22.140 |
| 134) Naphthalene | (3) | 14.756 | 128 | 576599 | 20.116 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.917 | 180 | 176722 | 20.888 |
| 50) $Dibromofluoromethane | (1) | 7.062 | 113 | 108111 | 19.202 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.514 | 102 | 28133 | 19.222 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.052 | 111 | 109842 | 19.166 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i13.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:09  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.511 | 104 | 18567 | 19.700 |
| 81) $Toluene-d8 (mz100) | (2) | 9.946 | 100 | 280983 | 19.226 |
| 108) $4-Bromofluorobenzene (mz174) | (2) | 12.331 | 174 | 152464 | 19.309 |
| 80) $Toluene-d8 | (2) | 9.946 | 98 | 422506 | 19.184 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 153773 | 19.103 |

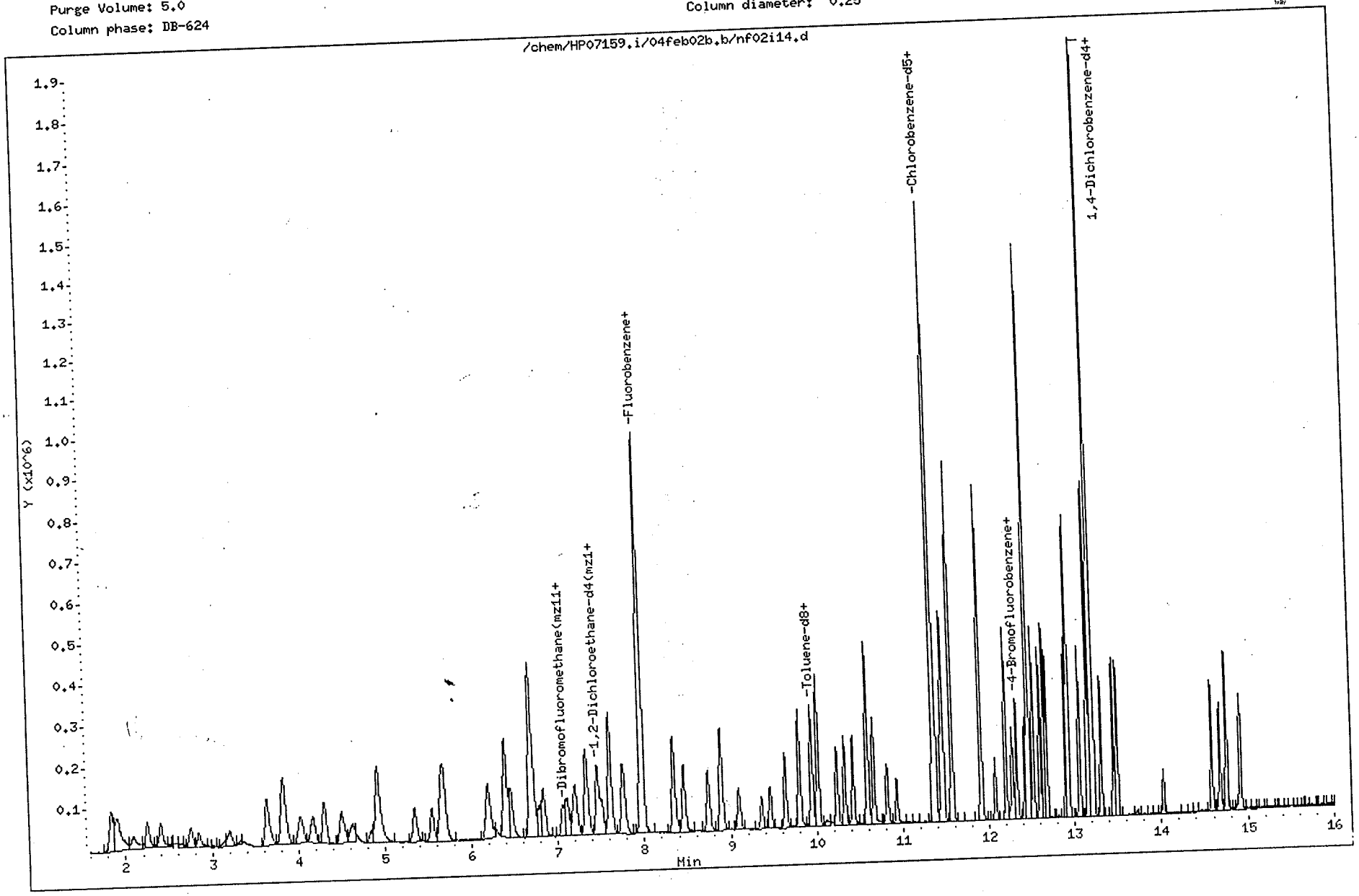
$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d
Date : 02-FEB-2004 13:35
Client ID: VSTD010
Sample Info: VSTD010;VSTD010;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.091 | 85 | 72952 | 8.417 |
| 3) Chloromethane | (1) | 2.258 | 50 | 92253 | 9.698 |
| 4) Vinyl Chloride | (1) | 2.408 | 62 | 79192 | 9.074 |
| 5) Bromomethane | (1) | 2.758 | 94 | 49484 | 9.557 |
| 6) Chloroethane | (1) | 2.851 | 64 | 44173 | 9.383 |
| 7) Trichlorofluoromethane | (1) | 3.201 | 101 | 82882 | 8.541 |
| 11) Ethanol | (1) | 3.326 | 46 | 22873 | 465.369 |
| 13) Acrolein | (1) | 3.644 | 56 | 200155 | 94.087 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 58506 | 10.501 |
| 17) Freon 113 | (1) | 3.840 | 101 | 54457 | 10.466 |
| 18) Acetone | (1) | 3.830 | 58 | 27300 | 18.404 |
| 19) Methyl Iodide | (1) | 4.039 | 142 | 112230 | 10.367 |
| 20) 2-Propanol | (1) | 4.010 | 45 | 77419 | 96.555 |
| 22) Carbon Disulfide | (1) | 4.170 | 76 | 195788 | 10.316 |
| 23) Allyl Chloride | (1) | 4.302 | 41 | 116613 | 10.681 |
| 24) Methylene Chloride | (1) | 4.510 | 84 | 68666 | 10.581 |
| 25) t-Butyl Alcohol | (1) | 4.629 | 59 | 139882 | 102.889 |
| 27) Acrylonitrile | (1) | 4.841 | 53 | 38194 | 9.688 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 66205 | 10.562 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.931 | 73 | 220022 | 10.701 |
| 32) n-Hexane | (1) | 5.351 | 57 | 63934 | 11.945 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 138956 | 21.236 |
| 35) 1,1-Dichloroethane | (1) | 5.543 | 63 | 118143 | 10.412 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 234642 | 10.393 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.694 | 53 | 88080 | 10.251 |
| 38) Ethyl t-Butyl Ether | (1) | 6.192 | 59 | 218124 | 10.482 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 72751 | 10.673 |
| 40) 2-Butanone | (1) | 6.397 | 72 | 29248 | 18.317 |
| 41) 2,2-Dichloropropane | (1) | 6.403 | 77 | 98912 | 10.460 |
| 42) Propionitrile | (1) | 6.458 | 54 | 155476 | 105.558 |
| 45) Methacrylonitrile | (1) | 6.686 | 67 | 203773 | 53.336 |
| 46) Bromochloromethane | (1) | 6.728 | 128 | 38115 | 10.578 |
| 47) Tetrahydrofuran | (1) | 6.792 | 71 | 24256 | 19.280 |
| 48) Chloroform | (1) | 6.840 | 83 | 111670 | 10.497 |

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Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.103 | 97 | 99895 | 10.529 |
| 52) Cyclohexane | (1) | 7.206 | 56 | 99061 | 10.928 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 86020 | 10.543 |
| 56) Carbon Tetrachloride | (1) | 7.340 | 117 | 88412 | 10.525 |
| 57) Isobutyl Alcohol | (1) | 7.462 | 41 | 113145 | 254.102 |
| 60) Benzene | (1) | 7.604 | 78 | 268228 | 10.574 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 92193 | 10.330 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.626 | 98 | 8362 | 9.989 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 218593 | 10.629 |
| 66) n-Heptane | (1) | 7.976 | 100 | 10166 | 10.488 |
| 65)*Fluorobenzene | (1) | 7.973 | 96 | 1069541 | 50.000 |
| 68) n-Butanol | (1) | 8.342 | 56 | 183396 | 492.692 |
| 69) Trichloroethene | (1) | 8.463 | 95 | 67236 | 10.548 |
| 70) 1,2-Dichloropropane | (1) | 8.739 | 63 | 72967 | 10.415 |
| 71) Methyl Methacrylate | (1) | 8.887 | 69 | 66255 | 10.118 |
| 72) Dibromomethane | (1) | 8.893 | 93 | 45365 | 10.322 |
| 73) 1,4-Dioxane | (1) | 8.909 | 88 | 25490 | 244.410 |
| 74) Bromodichloromethane | (1) | 9.099 | 83 | 84427 | 10.416 |
| 76) 2-Nitropropane | (1) | 9.362 | 41 | 55048 | 18.761 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.461 | 63 | 51181 | 9.831 |
| 78) cis-1,3-Dichloropropene | (1) | 9.638 | 75 | 120327 | 10.383 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.802 | 43 | 220607 | 18.676 |
| 82) Toluene | (2) | 10.020 | 92 | 173037 | 10.667 |
| 83) trans-1,3-Dichloropropene | (2) | 10.238 | 75 | 109997 | 10.179 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 110515 | 10.103 |
| 85) 1,1,2-Trichloroethane | (2) | 10.424 | 97 | 65664 | 10.517 |
| 87) Tetrachloroethene | (2) | 10.591 | 166 | 79251 | 11.108 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 115627 | 10.401 |
| 90) 2-Hexanone | (2) | 10.665 | 43 | 170463 | 18.081 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 75813 | 10.024 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 70733 | 10.167 |
| 94)*Chlorobenzene-d5 | (2) | 11.355 | 117 | 837455 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 195131 | 10.691 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.448 | 131 | 69911 | 10.312 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.470 | 91 | 312432 | 10.930 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 250260 | 22.080 |
| 93) Xylene (Total) | (2) | | 106 | 371400 | 32.951 |
| 100) o-Xylene | (2) | 11.907 | 106 | 121139 | 10.871 |
| 101) Styrene | (2) | 11.913 | 104 | 203504 | 10.417 |
| 102) Bromoform | (2) | 12.077 | 173 | 66097 | 9.909 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 289215 | 11.261 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 84358 | 224.926 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 107886 | 10.542 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.465 | 53 | 171729 | 50.997 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 91070 | 10.721 |
| 113) 1,2,3-Trichloropropane | (3) | 12.462 | 110 | 33358 | 10.767 |
| 114) n-Propylbenzene | (3) | 12.523 | 91 | 321602 | 11.251 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 76376 | 11.158 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 231127 | 11.111 |
| 117) 4-Chlorotoluene | (3) | 12.677 | 126 | 79114 | 11.052 |
| 118) tert-Butylbenzene | (3) | 12.898 | 134 | 53154 | 11.261 |
| 119) Pentachloroethane | (3) | 12.927 | 167 | 56968 | 10.450 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.933 | 105 | 242945 | 11.143 |
| 121) sec-Butylbenzene | (3) | 13.058 | 105 | 255141 | 11.249 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 229265 | 11.148 |
| 123) 1,3-Dichlorobenzene | (3) | 13.161 | 146 | 150861 | 10.932 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 473221 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 158011 | 10.857 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 181333 | 10.905 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 149210 | 10.740 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.028 | 75 | 21731 | 9.675 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 91549 | 10.385 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 46153 | 11.271 |
| 134) Naphthalene | (3) | 14.753 | 128 | 278441 | 9.802 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 88461 | 10.394 |
| 50) $Dibromofluoromethane | (1) | 7.055 | 113 | 53752 | 9.648 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.504 | 102 | 14074 | 9.705 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.058 | 111 | 55341 | 9.737 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i14.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 13:35  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:33 sjr01577

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.517 | 104 | 9378 | 9.975 |
| 81)$Toluene-d8(mz100) | (2) | 9.946 | 100 | 142469 | 9.819 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.327 | 174 | 78596 | 9.985 |
| 80)$Toluene-d8 | (2) | 9.946 | 98 | 215041 | 9.832 |
| 107)$4-Bromofluprobenzene | (2) | 12.327 | 95 | 78178 | 9.790 |

$ = Compound is a surrogate standard.

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d
Date : 02-FEB-2004 14:00
Client ID: VSTD004
Sample Info: VSTD004;VSTD004;1;1;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 1577 2/2/04

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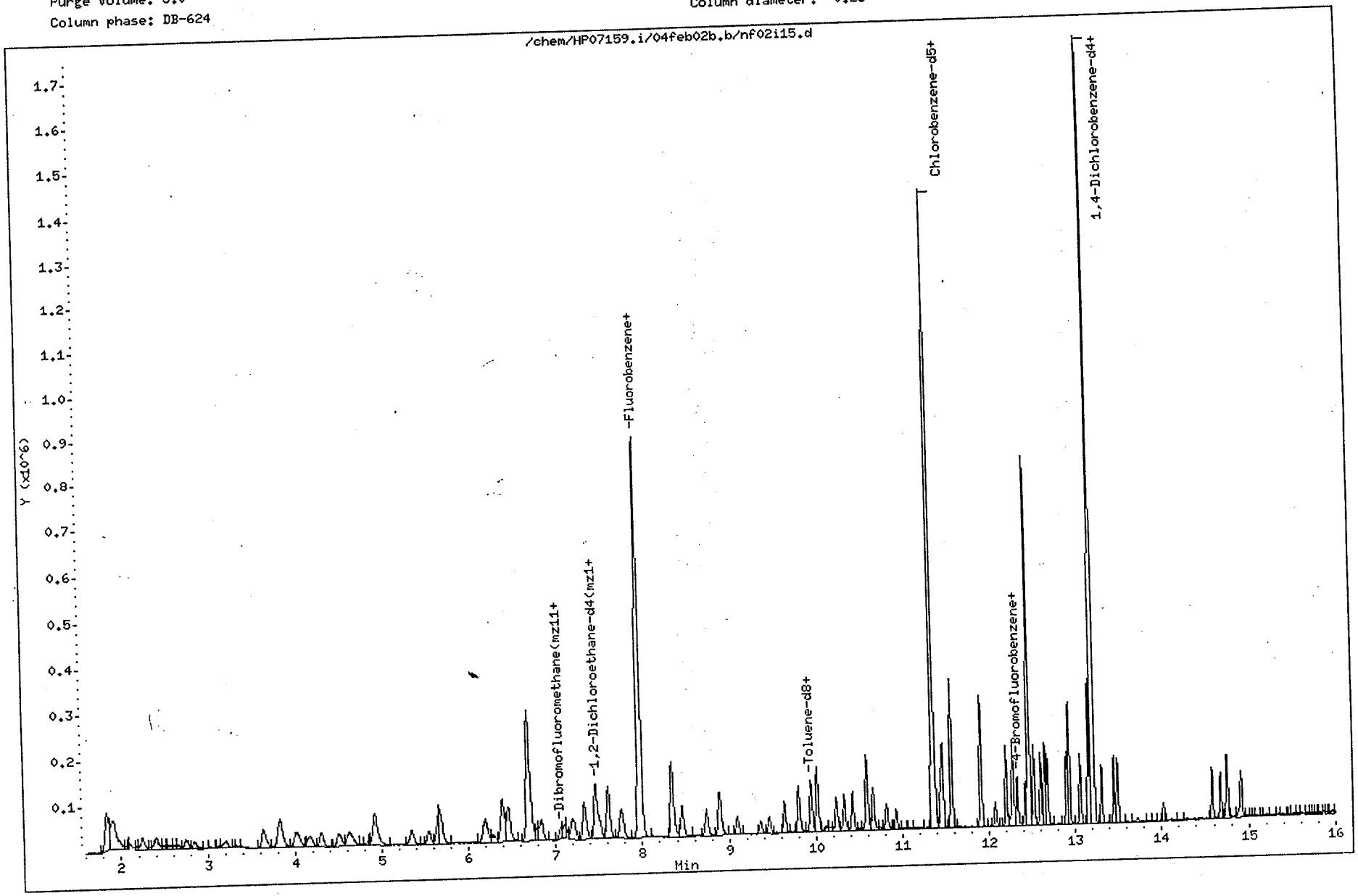


Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.097 | 85 | 32810 | 3.938 |
| 3) Chloromethane | (1) | 2.251 | 50 | 38187 | 4.135 |
| 4) Vinyl Chloride | (1) | 2.412 | 62 | 33645 | 3.999 |
| 5) Bromomethane | (1) | 2.752 | 94 | 20450 | 4.080 |
| 6) Chloroethane | (1) | 2.839 | 64 | 18284 | 4.023 |
| 7) Trichlorofluoromethane | (1) | 3.208 | 101 | 37800 | 4.033 |
| 11) Ethanol | (1) | 3.329 | 46 | 11321 | 240.679 |
| 13) Acrolein | (1) | 3.638 | 56 | 75880 | 37.464 |
| 16) 1,1-Dichloroethene | (1) | 3.820 | 96 | 23226 | 4.266 |
| 17) Freon 113 | (1) | 3.833 | 101 | 21689M | 4.266 |
| 18) Acetone | (1) | 3.830 | 58 | 9835 | 7.041 |
| 19) Methyl Iodide | (1) | 4.039 | 142 | 41567 | 3.985 |
| 20) 2-Propanol | (1) | 4.007 | 45 | 57537 | 75.300 |
| 22) Carbon Disulfide | (1) | 4.167 | 76 | 75468 | 4.103 |
| 23) Allyl Chloride | (1) | 4.305 | 41 | 36172 | 3.519 |
| 24) Methylene Chloride | (1) | 4.513 | 84 | 26444 | 4.187 |
| 25) t-Butyl Alcohol | (1) | 4.623 | 59 | 99218 | 76.377 |
| 27) Acrylonitrile | (1) | 4.844 | 53 | 13294 | 3.572 |
| 28) trans-1,2-Dichloroethene | (1) | 4.924 | 96 | 25499 | 4.181 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.918 | 73 | 81671 | 4.100 |
| 32) n-Hexane | (1) | 5.351 | 57 | 25867 | 4.461 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 52738 | 8.301 |
| 35) 1,1-Dichloroethane | (1) | 5.547 | 63 | 44417 | 4.050 |
| 36) di-Isopropyl Ether | (1) | 5.659 | 45 | 87794 | 4.027 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.691 | 53 | 33734 | 4.060 |
| 38) Ethyl t-Butyl Ether | (1) | 6.195 | 59 | 82404 | 4.089 |
| 39) cis-1,2-Dichloroethene | (1) | 6.394 | 96 | 27239 | 4.120 |
| 40) 2-Butanone | (1) | 6.397 | 72 | 10322 | 6.890 |
| 41) 2,2-Dichloropropane | (1) | 6.410 | 77 | 38233 | 4.160 |
| 42) Propionitrile | (1) | 6.468 | 54 | 109983 | 77.861 |
| 45) Methacrylonitrile | (1) | 6.686 | 67 | 142006 | 38.785 |
| 46) Bromochloromethane | (1) | 6.721 | 128 | 13244 | 3.842 |
| 47) Tetrahydrofuran | (1) | 6.798 | 71 | 8918 | 7.453 |
| 48) Chloroform | (1) | 6.837 | 83 | 41288 | 4.021 |

M = Compound was manually integrated.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.106 | 97 | 37832 | 4.113 |
| 52) Cyclohexane | (1) | 7.199 | 56 | 39244 | 4.400 |
| 54) 1,1-Dichloropropene | (1) | 7.328 | 75 | 32570 | 4.116 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 34157 | 4.179 |
| 57) Isobutyl Alcohol | (1) | 7.459 | 41 | 80098 | 188.684 |
| 60) Benzene | (1) | 7.607 | 78 | 102936 | 4.173 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 34149 | 3.974 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.620 | 98 | 3041 | 3.804 |
| 64) t-Amyl Methyl Ether | (1) | 7.758 | 73 | 82412 | 4.129 |
| 66) n-Heptane | (1) | 7.973 | 100 | 3957 | 4.193 |
| 65)*Fluorobenzene | (1) | 7.973 | 96 | 1031204 | 50.000 |
| 68) n-Butanol | (1) | 8.345 | 56 | 131387 | 371.338 |
| 69) Trichloroethene | (1) | 8.464 | 95 | 25238 | 4.088 |
| 70) 1,2-Dichloropropane | (1) | 8.743 | 63 | 27011 | 3.999 |
| 71) Methyl Methacrylate | (1) | 8.894 | 69 | 24067 | 3.842 |
| 72) Dibromomethane | (1) | 8.894 | 93 | 16723 | 3.955 |
| 73) 1,4-Dioxane | (1) | 8.916 | 88 | 19119 | 191.712 |
| 74) Bromodichloromethane | (1) | 9.096 | 83 | 30035 | 3.868 |
| 76) 2-Nitropropane | (1) | 9.365 | 41 | 19985 | 7.205 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.465 | 63 | 18534 | 3.740 |
| 78) cis-1,3-Dichloropropene | (1) | 9.641 | 75 | 43885 | 3.939 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 78419 | 7.049 |
| 82) Toluene | (2) | 10.017 | 92 | 64244 | 4.127 |
| 83) trans-1,3-Dichloropropene | (2) | 10.238 | 75 | 40736 | 3.961 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 38084 | 3.705 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 24514 | 4.097 |
| 87) Tetrachloroethene | (2) | 10.594 | 166 | 29671 | 4.296 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 42281 | 3.990 |
| 90) 2-Hexanone | (2) | 10.662 | 43 | 61469 | 7.007 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 27314 | 3.821 |
| 92) 1,2-Dibromoethane | (2) | 10.931 | 107 | 26634 | 4.012 |
| 94)*Chlorobenzene-d5 | (2) | 11.355 | 117 | 798644 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 72380 | 4.131 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.444 | 131 | 26016 | 4.020 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d
Injection date and time: 02-FEB-2004 14:00
Instrument ID: HP07159.i
Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m
Calibration date and time: 02-FEB-2004 11:54
Sublist used: 8260WI+CYC
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004
Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.470 | 91 | 115130 | 4.184 |
| 98) m+p-Xylene | (2) | 11.570 | 106 | 92666 | 8.472 |
| 93) Xylene (Total) | (2) | | 106 | 138672 | 12.743 |
| 100) o-Xylene | (2) | 11.907 | 106 | 46006 | 4.271 |
| 101) Styrene | (2) | 11.916 | 104 | 73040 | 3.934 |
| 102) Bromoform | (2) | 12.073 | 173 | 24252 | 3.843 |
| 105) Isopropylbenzene | (2) | 12.199 | 105 | 110688 | 4.424 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 67562 | 190.660 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.423 | 83 | 39029 | 4.043 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.465 | 53 | 117283 | 37.473 |
| 112) Bromobenzene | (3) | 12.458 | 156 | 33614 | 4.169 |
| 113) 1,2,3-Trichloropropane | (3) | 12.465 | 110 | 12094 | 4.122 |
| 114) n-Propylbenzene | (3) | 12.523 | 91 | 123650 | 4.485 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 28390 | 4.333 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.645 | 105 | 87994 | 4.404 |
| 117) 4-Chlorotoluene | (3) | 12.683 | 126 | 29143 | 4.268 |
| 118) tert-Butylbenzene | (3) | 12.905 | 134 | 19961 | 4.403 |
| 119) Pentachloroethane | (3) | 12.927 | 167 | 18429 | 3.654 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.933 | 105 | 91390 | 4.371 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 98028 | 4.482 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 88005 | 4.445 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 56538 | 4.290 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 445381 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 61519 | 4.401 |
| 126) n-Butylbenzene | (3) | 13.450 | 91 | 68366 | 4.302 |
| 127) 1,2-Dichlorobenzene | (3) | 13.495 | 146 | 57546 | 4.329 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.028 | 75 | 8350 | 3.958 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.583 | 180 | 33439 | 4.025 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 18887 | 4.723 |
| 134) Naphthalene | (3) | 14.756 | 128 | 98700 | 3.740 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.916 | 180 | 30580 | 3.847 |
| 50) $Dibromofluoromethane | (1) | 7.058 | 113 | 20010 | 3.768 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 5684 | 4.054 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.055 | 111 | 20603 | 3.798 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

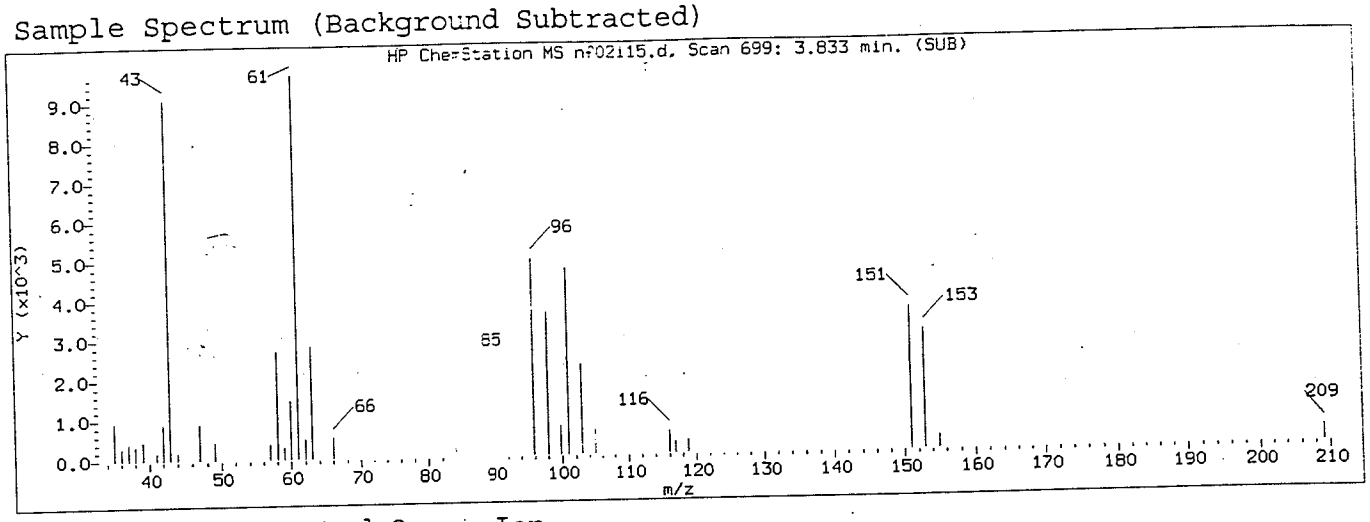
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

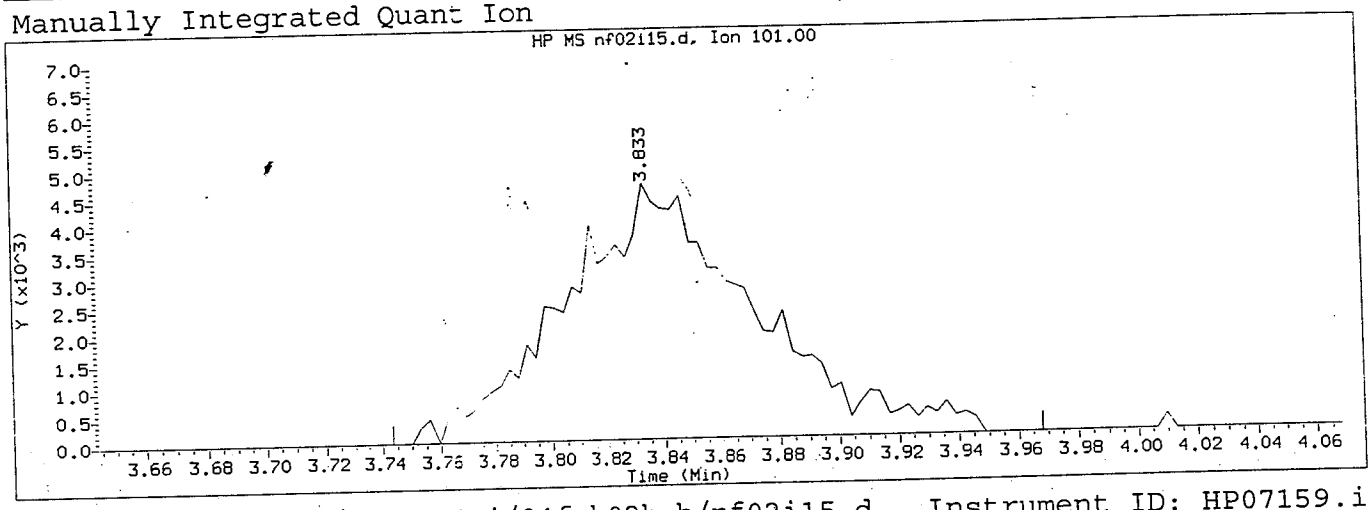
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59)$1,2-Dichloroethane-d4(mz104) | (1) | 7.517 | 104 | 3355 | 3.748 |
| 81)$Toluene-d8(mz100) | (2) | 9.946 | 100 | 54516 | 3.950 |
| 108)$4-Bromofluorobenzene(mz174) | (2) | 12.327 | 174 | 28911 | 3.875 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 81851 | 3.937 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 29347 | 3.877 |

$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02i15.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:00  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 14:33
Date, time and analyst ID of latest file update: 02-Feb-2004 14:41 sjr01577

Sample Name: VSTD004  Lab Sample ID: VSTD004

| | |
|---|---|
| Compound Number | : 17 |
| Compound Name | : Freon 113 |
| Scan Number | : 699 |
| Retention Time (minutes) | : 3.833 |
| Quant Ion | : 101 |
| Area (flag) | : 21689 M |
| Concentration (ug/L) | : 4.2660 |
| Integration start scan | : 670 Integration stop scan: 740 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: SJR 2/2/04

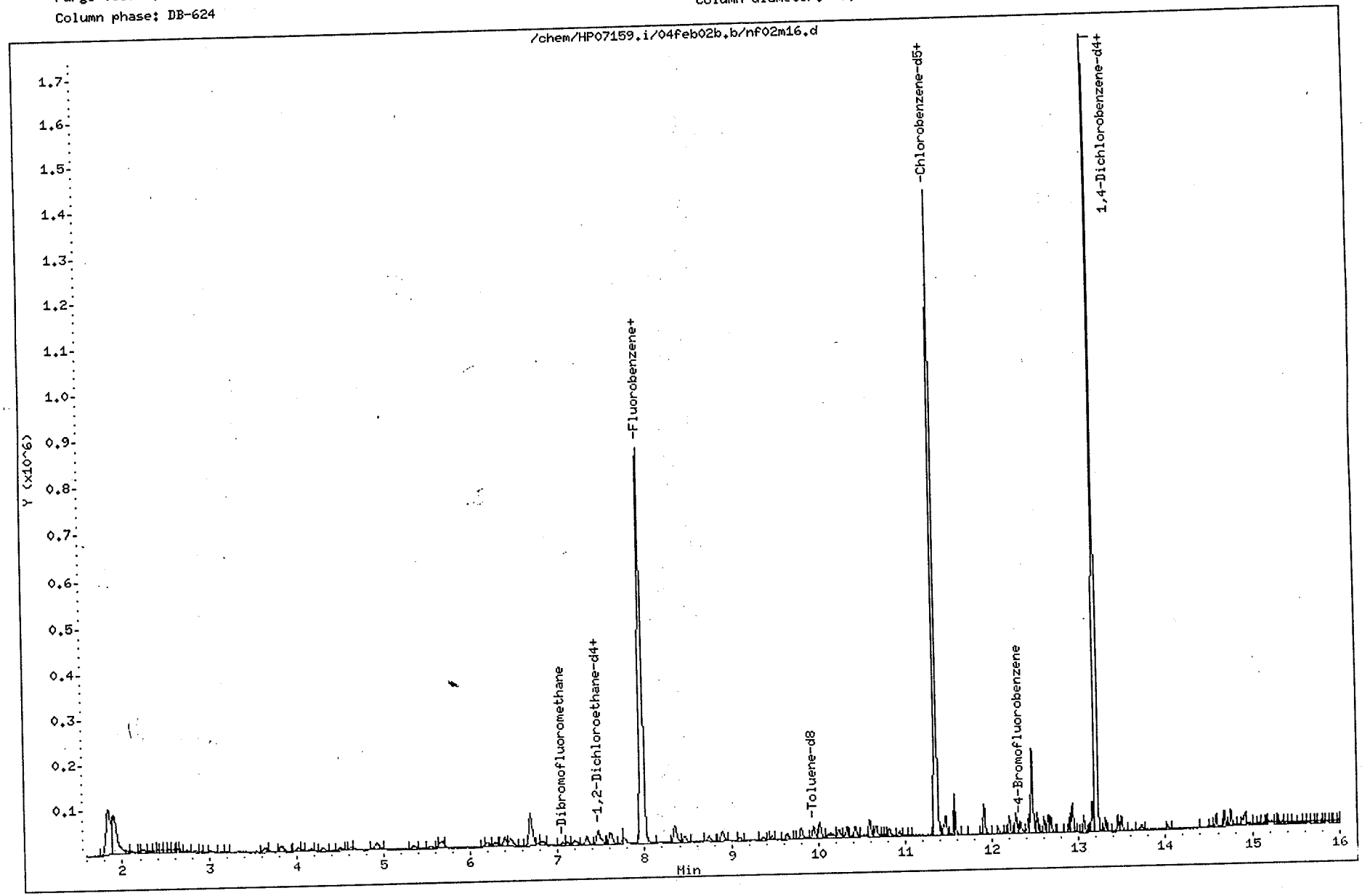
GC/MS audit/management approval: [signature] 2/3/04

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d
Date : 02-FEB-2004 14:25
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;MDL/LOQ;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SJR01577
Column diameter: 0.25

SJR 2/4/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.107 | 85 | 5528 | 0.655 |
| 3) Chloromethane | (1) | 2.251 | 50 | 7865 | 0.841 |
| 4) Vinyl Chloride | (1) | 2.399 | 62 | 6178 | 0.725 |
| 5) Bromomethane | (1) | 2.745 | 94 | 4630 | 0.912 |
| 6) Chloroethane | (1) | 2.842 | 64 | 3777 | 0.821 |
| 7) Trichlorofluoromethane | (1) | 3.207 | 101 | 7680 | 0.809 |
| 11) Ethanol | (1) | 3.358 | 46 | 3082 | 64.720 |
| 13) Acrolein | (1) | 3.637 | 56 | 17061 | 8.320 |
| 16) 1,1-Dichloroethene | (1) | 3.804 | 96 | 5085 | 0.923 |
| 17) Freon 113 | (1) | 3.827 | 101 | 3705 | 0.720 |
| 18) Acetone | (1) | 3.843 | 58 | 2738 | 1.936 |
| 19) Methyl Iodide | (1) | 4.038 | 142 | 8663M | 0.821 |
| 20) 2-Propanol | (1) | 4.000 | 45 | 14325 | 18.518 |
| 22) Carbon Disulfide | (1) | 4.176 | 76 | 16520 | 0.887 |
| 23) Allyl Chloride | (1) | 4.295 | 41 | 8324 | 0.800 |
| 24) Methylene Chloride | (1) | 4.484 | 84 | 6779 | 1.060 |
| 25) t-Butyl Alcohol | (1) | 4.642 | 59 | 25505 | 19.393 |
| 27) Acrylonitrile | (1) | 4.844 | 53 | 2999 | 0.796 |
| 28) trans-1,2-Dichloroethene | (1) | 4.921 | 96 | 5438 | 0.881 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.924 | 73 | 22525 | 1.117 |
| 32) n-Hexane | (1) | 5.357 | 57 | 4930 | 0.840 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 11599 | 1.801 |
| 35) 1,1-Dichloroethane | (1) | 5.540 | 63 | 9224 | 0.831 |
| 36) di-Isopropyl Ether | (1) | 5.652 | 45 | 19363 | 0.877 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.681 | 53 | 6650 | 0.791 |
| 38) Ethyl t-Butyl Ether | (1) | 6.201 | 59 | 18855 | 0.924 |
| 39) cis-1,2-Dichloroethene | (1) | 6.390 | 96 | 6161 | 0.920 |
| 40) 2-Butanone | (1) | 6.400 | 72 | 2236 | 1.474 |
| 41) 2,2-Dichloropropane | (1) | 6.390 | 77 | 8509 | 0.914 |
| 42) Propionitrile | (1) | 6.464 | 54 | 26398 | 18.459 |
| 45) Methacrylonitrile | (1) | 6.692 | 67 | 34116 | 9.204 |
| 46) Bromochloromethane | (1) | 6.727 | 128 | 2848 | 0.816 |
| 47) Tetrahydrofuran | (1) | 6.785 | 71 | 2527 | 2.086 |
| 48) Chloroform | (1) | 6.846 | 83 | 8750 | 0.842 |

M = Compound was manually integrated.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d
Injection date and time: 02-FEB-2004 14:25
Instrument ID: HP07159.i
Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m
Calibration date and time: 02-FEB-2004 11:54
Sublist used: 8260W+CYC
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001
Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.109 | 97 | 5685 | 0.610 |
| 52) Cyclohexane | (1) | 7.202 | 56 | 7875 | 0.872 |
| 54) 1,1-Dichloropropene | (1) | 7.324 | 75 | 7076 | 0.883 |
| 56) Carbon Tetrachloride | (1) | 7.347 | 117 | 6790 | 0.821 |
| 57) Isobutyl Alcohol | (1) | 7.462 | 41 | 19908 | 46.323 |
| 60) Benzene | (1) | 7.610 | 78 | 23237 | 0.930 |
| 61) 1,2-Dichloroethane | (1) | 7.616 | 62 | 8378 | 0.963 |
| 64) t-Amyl Methyl Ether | (1) | 7.761 | 73 | 20595 | 1.019 |
| 66) n-Heptane | (1) | 7.976 | 100 | 840 | 0.879 |
| 65)*Fluorobenzene | (1) | 7.972 | 96 | 1043973 | 50.000 |
| 68) n-Butanol | (1) | 8.351 | 56 | 31149 | 86.959 |
| 69) Trichloroethene | (1) | 8.460 | 95 | 5378 | 0.861 |
| 70) 1,2-Dichloropropane | (1) | 8.752 | 63 | 5946 | 0.870 |
| 71) Methyl Methacrylate | (1) | 8.887 | 69 | 5653 | 0.891 |
| 72) Dibromomethane | (1) | 8.893 | 93 | 3704 | 0.865 |
| 73) 1,4-Dioxane | (1) | 8.906 | 88 | 4600 | 45.562 |
| 74) Bromodichloromethane | (1) | 9.095 | 83 | 6908 | 0.879 |
| 76) 2-Nitropropane | (1) | 9.362 | 41 | 5121 | 1.824 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.468 | 63 | 3819 | 0.761 |
| 78) cis-1,3-Dichloropropene | (1) | 9.638 | 75 | 9934 | 0.881 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.805 | 43 | 18650 | 1.656 |
| 82) Toluene | (2) | 10.020 | 92 | 13847 | 0.870 |
| 83) trans-1,3-Dichloropropene | (2) | 10.244 | 75 | 9769 | 0.929 |
| 84) Ethyl Methacrylate | (2) | 10.328 | 69 | 9565 | 0.910 |
| 85) 1,1,2-Trichloroethane | (2) | 10.427 | 97 | 5580 | 0.912 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 6224 | 0.881 |
| 88) 1,3-Dichloropropane | (2) | 10.594 | 76 | 10476 | 0.967 |
| 90) 2-Hexanone | (2) | 10.661 | 43 | 15105 | 1.684 |
| 91) Dibromochloromethane | (2) | 10.819 | 129 | 6227 | 0.852 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 6296 | 0.928 |
| 94)*Chlorobenzene-d5 | (2) | 11.351 | 117 | 816580 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 15881 | 0.887 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.448 | 131 | 5719 | 0.864 |
| 97) Ethylbenzene | (2) | 11.470 | 91 | 25962 | 0.923 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

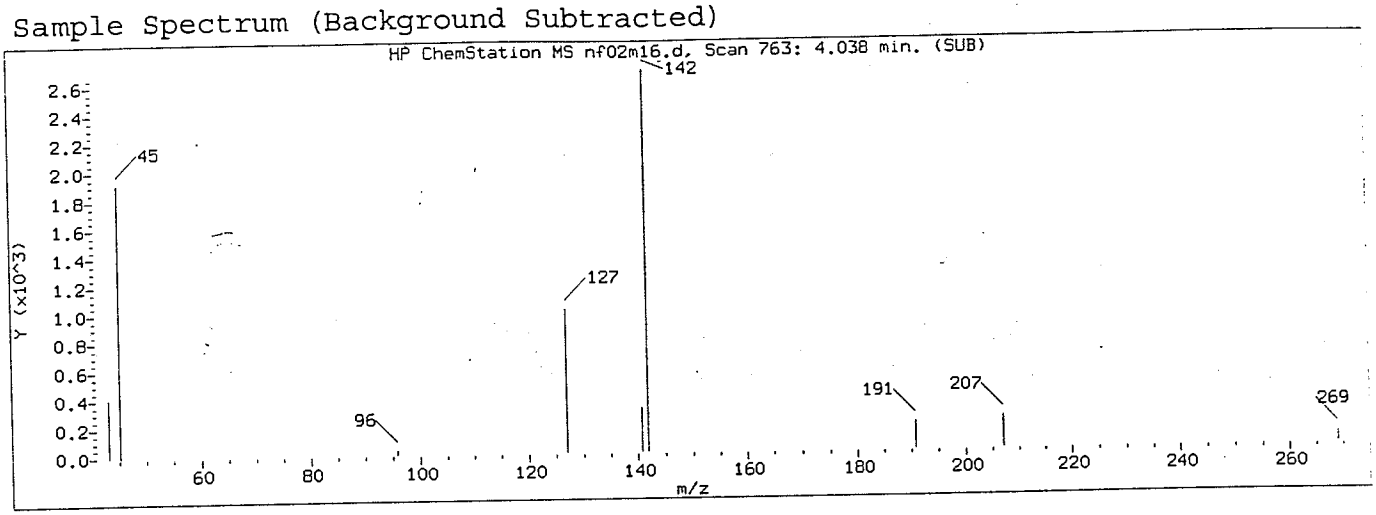
Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

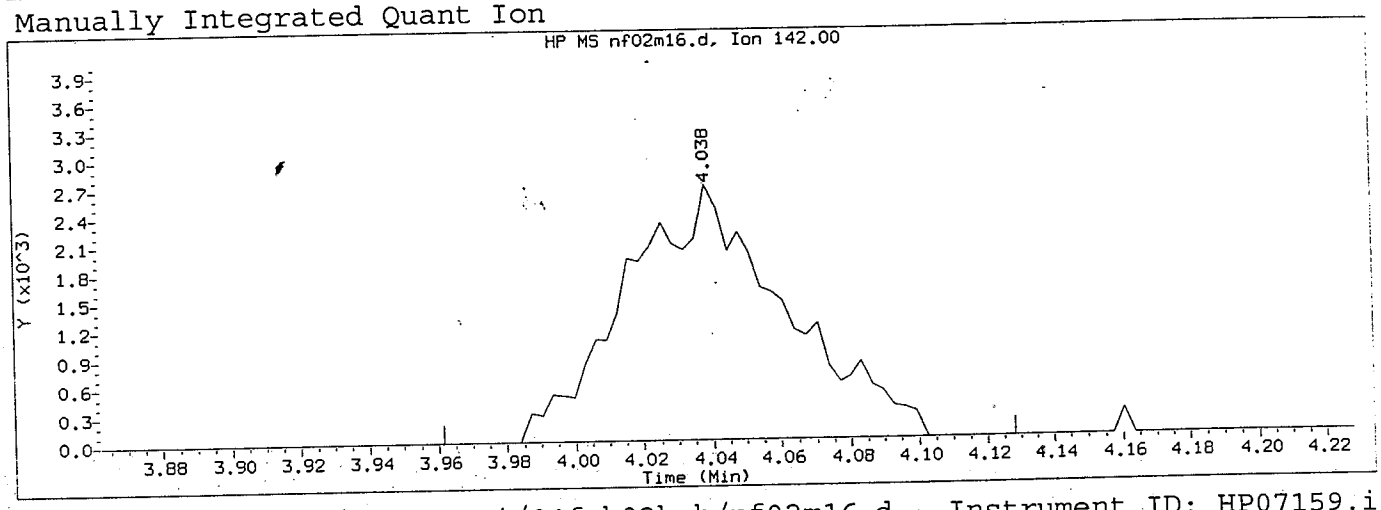
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 98) m+p-Xylene | (2) | 11.569 | 106 | 19199 | 1.717 |
| 93) Xylene (Total) | (2) | | 106 | 28480 | 2.559 |
| 100) o-Xylene | (2) | 11.906 | 106 | 9281 | 0.843 |
| 101) Styrene | (2) | 11.916 | 104 | 15670 | 0.825 |
| 102) Bromoform | (2) | 12.080 | 173 | 5275 | 0.817 |
| 105) Isopropylbenzene | (2) | 12.202 | 105 | 23142 | 0.905 |
| 106) Cyclohexanone | (2) | 12.279 | 55 | 17687 | 48.816 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 9733 | 1.005 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.468 | 53 | 27037 | 8.614 |
| 112) Bromobenzene | (3) | 12.455 | 156 | 7764 | 0.960 |
| 113) 1,2,3-Trichloropropane | (3) | 12.471 | 110 | 3006 | 1.022 |
| 114) n-Propylbenzene | (3) | 12.522 | 91 | 27065 | 0.979 |
| 115) 2-Chlorotoluene | (3) | 12.603 | 126 | 6156 | 0.937 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.648 | 105 | 19212 | 0.959 |
| 117) 4-Chlorotoluene | (3) | 12.680 | 126 | 6531 | 0.954 |
| 118) tert-Butylbenzene | (3) | 12.898 | 134 | 4424 | 0.973 |
| 119) Pentachloroethane | (3) | 12.930 | 167 | 3827 | 0.757 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.930 | 105 | 20257 | 0.966 |
| 121) sec-Butylbenzene | (3) | 13.058 | 105 | 22029 | 1.004 |
| 122) p-Isopropyltoluene | (3) | 13.158 | 119 | 19283 | 0.971 |
| 123) 1,3-Dichlorobenzene | (3) | 13.158 | 146 | 13144 | 0.994 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 446676 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.222 | 146 | 14010 | 0.999 |
| 126) n-Butylbenzene | (3) | 13.453 | 91 | 16035 | 1.006 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 12867 | 0.965 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.027 | 75 | 2240 | 1.059 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.589 | 180 | 8280 | 0.994 |
| 133) Hexachlorobutadiene | (3) | 14.682 | 225 | 6462 | 5.185 |
| 134) Naphthalene | (3) | 14.753 | 128 | 24052 | 0.909 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.913 | 180 | 7843 | 0.984 |
| 50) $Dibromofluoromethane | (1) | 7.061 | 113 | 4545 | 0.845 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.514 | 102 | 1264 | 0.891 |
| 80) $Toluene-d8 | (2) | 9.946 | 98 | 17943 | 0.844 |
| 107) $4-Bromofluorobenzene | (2) | 12.324 | 95 | 8003 | 1.034 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m16.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 14:25  Analyst ID: SJR01577

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: 8260W+CYC
Calibration date and time: 02-FEB-2004 14:58
Date, time and analyst ID of latest file update: 02-Feb-2004 15:06 sjr01577

Sample Name: VSTD001  Lab Sample ID: VSTD001

Compound Number : 19
Compound Name : Methyl Iodide
Scan Number : 763
Retention Time (minutes) : 4.038
Quant Ion : 142
Area (flag) : 8663 M
Concentration (ug/L) : 0.8205
Integration start scan : 738  Integration stop scan: 790
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: SJR 2/2/04

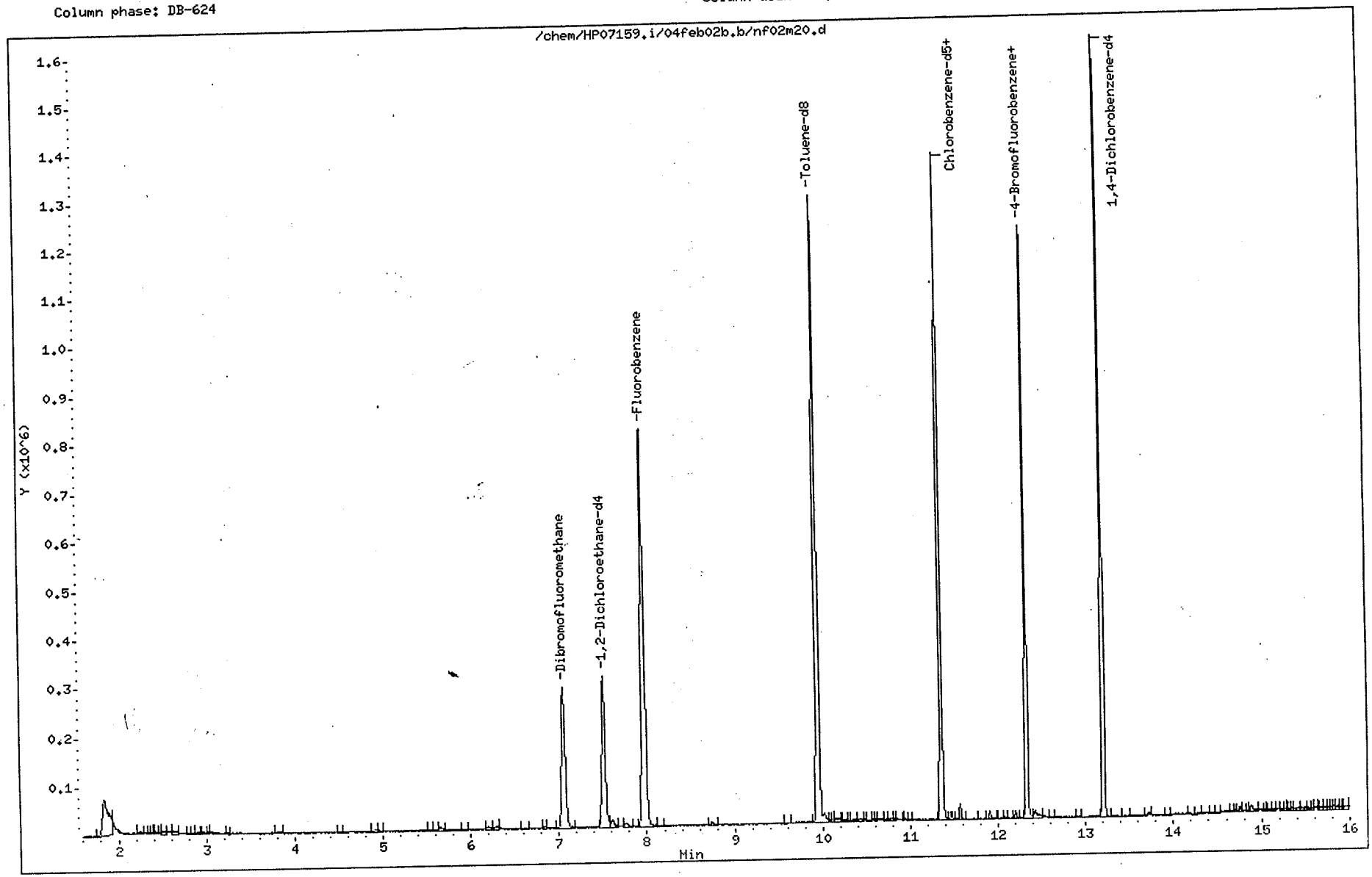
GC/MS audit/management approval: [illegible] 2/3/04

Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d
Date : 02-FEB-2004 17:29
Client ID: VSTD0.5
Sample Info: VSTD0.5;VSTD0.5;1;3;MDL/LOQ;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533 2/2/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

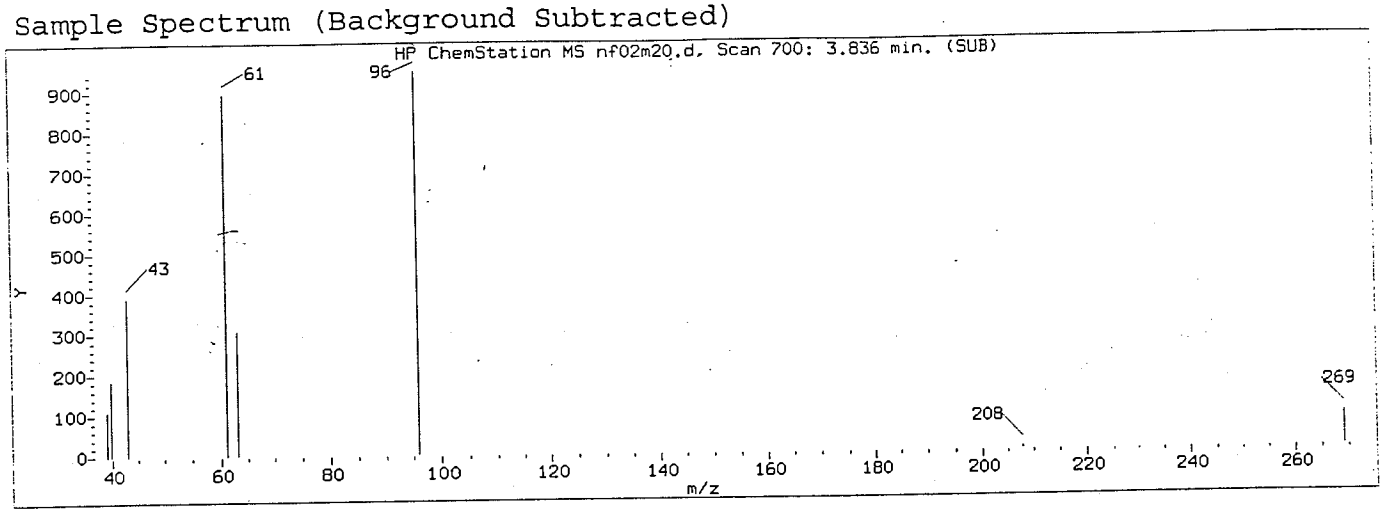
Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Chloromethane | (1) | 2.241 | 50 | 3464 | 0.384 |
| 4) Vinyl Chloride | (1) | 2.395 | 62 | 2782 | 0.339 |
| 11) Ethanol | (1) | 3.342 | 46 | 1332 | 29.005 |
| 16) 1,1-Dichloroethene | (1) | 3.836 | 96 | 2314M | 0.435 |
| 25) t-Butyl Alcohol | (1) | 4.635 | 59 | 2727 | 2.150 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.914 | 73 | 10283 | 0.529 |
| 35) 1,1-Dichloroethane | (1) | 5.550 | 63 | 4153 | 0.388 |
| 36) di-Isopropyl Ether | (1) | 5.662 | 45 | 9223 | 0.433 |
| 38) Ethyl t-Butyl Ether | (1) | 6.188 | 59 | 9176 | 0.466 |
| 48) Chloroform | (1) | 6.836 | 83 | 4154 | 0.414 |
| 60) Benzene | (1) | 7.610 | 78 | 11408 | 0.474 |
| 61) 1,2-Dichloroethane | (1) | 7.616 | 62 | 3424 | 0.408 |
| 64) t-Amyl Methyl Ether | (1) | 7.757 | 73 | 9197M | 0.472 |
| 65)*Fluorobenzene | (1) | 7.969 | 96 | 1006774 | 50.000 |
| 70) 1,2-Dichloropropane | (1) | 8.733 | 63 | 2684 | 0.407 |
| 82) Toluene | (2) | 10.019 | 92 | 6097 | 0.407 |
| 92) 1,2-Dibromoethane | (2) | 10.934 | 107 | 2797 | 0.438 |
| 94)*Chlorobenzene-d5 | (2) | 11.354 | 117 | 768695 | 50.000 |
| 95) Chlorobenzene | (2) | 11.383 | 112 | 6636 | 0.394 |
| 97) Ethylbenzene | (2) | 11.470 | 91 | 11872 | 0.448 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 8043 | 0.764 |
| 93) Xylene (Total) | (2) | | 106 | 12546 | 1.198 |
| 100) o-Xylene | (2) | 11.903 | 106 | 4503 | 0.434 |
| 102) Bromoform | (2) | 12.073 | 173 | 2340 | 0.385 |
| 105) Isopropylbenzene | (2) | 12.201 | 105 | 9007 | 0.374 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.426 | 83 | 3776M | 0.419 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 415882 | 50.000 |
| 134) Naphthalene | (3) | 14.756 | 128 | 7467 | 0.303 |
| 50)$Dibromofluoromethane | (1) | 7.058 | 113 | 238951 | 46.092 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.510 | 102 | 62757 | 45.847 |
| 80)$Toluene-d8 | (2) | 9.946 | 98 | 993829 | 49.660 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 357337 | 49.049 |

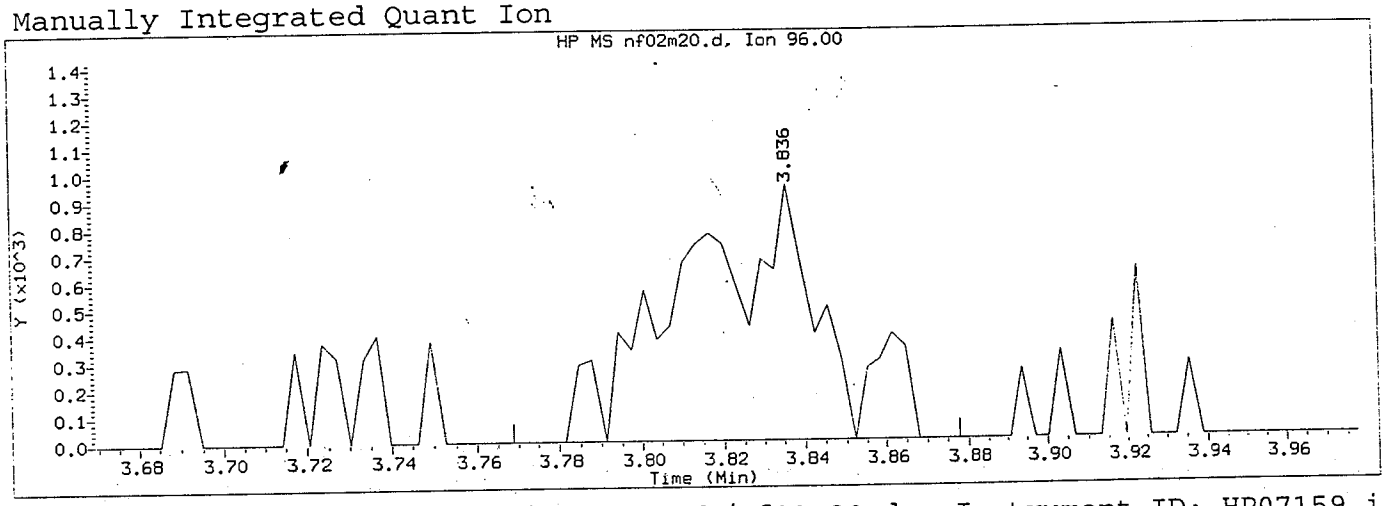
M = Compound was manually integrated.

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

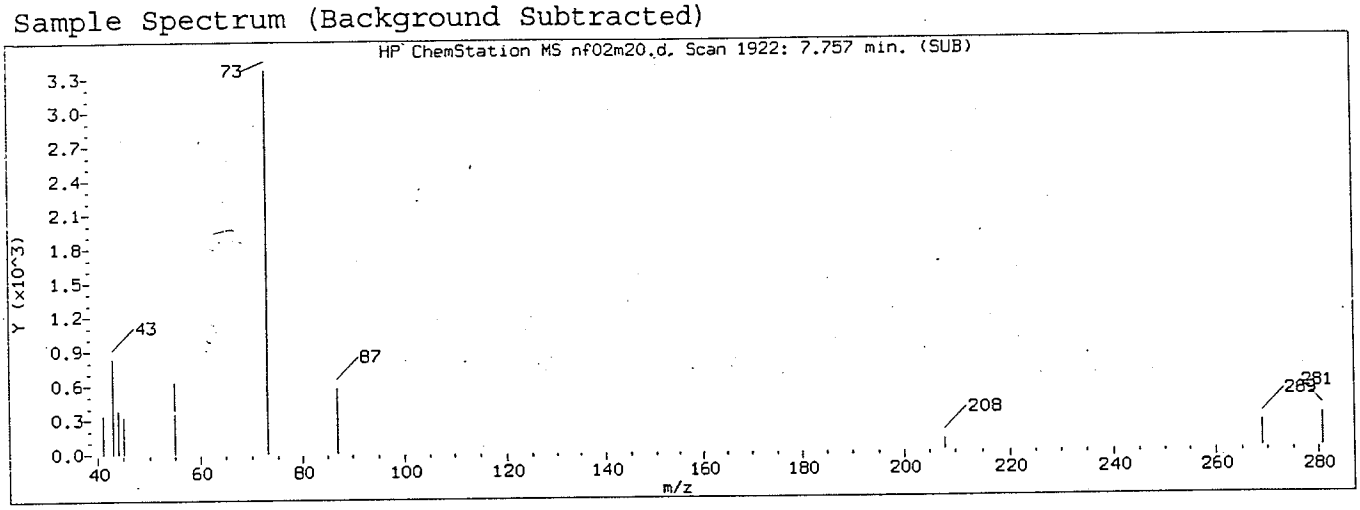
Compound Number : 16
Compound Name : 1,1-Dichloroethene
Scan Number : 700
Retention Time (minutes): 3.836
Quant Ion : 96
Area (flag) : 2314 M
Concentration (ug/L) : 0.4354
Integration start scan : 678  Integration stop scan: 712
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

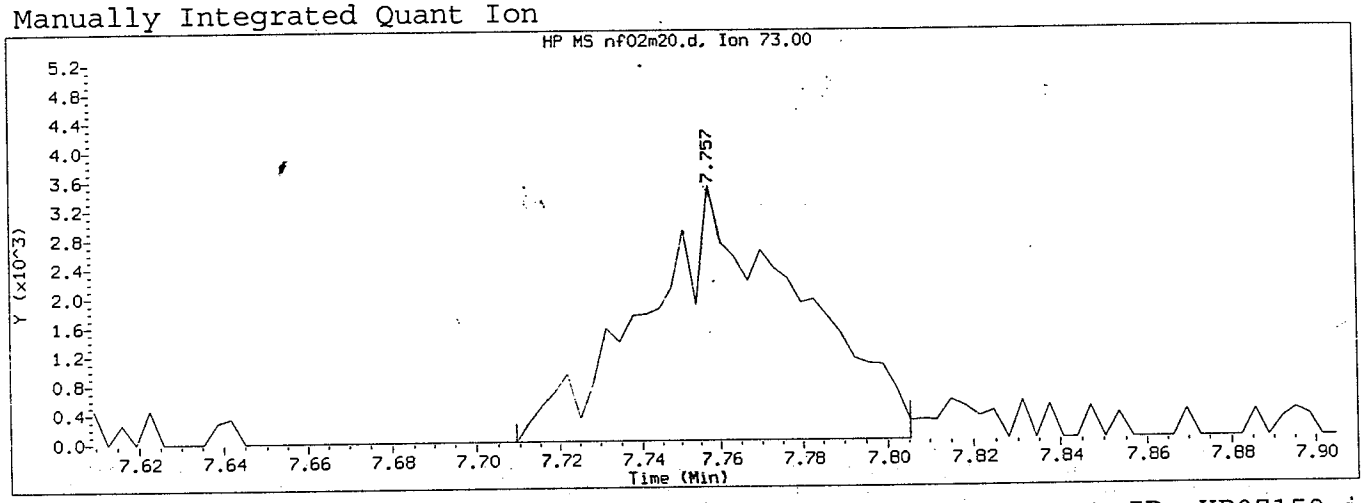
Analyst responsible for change: SME1533 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

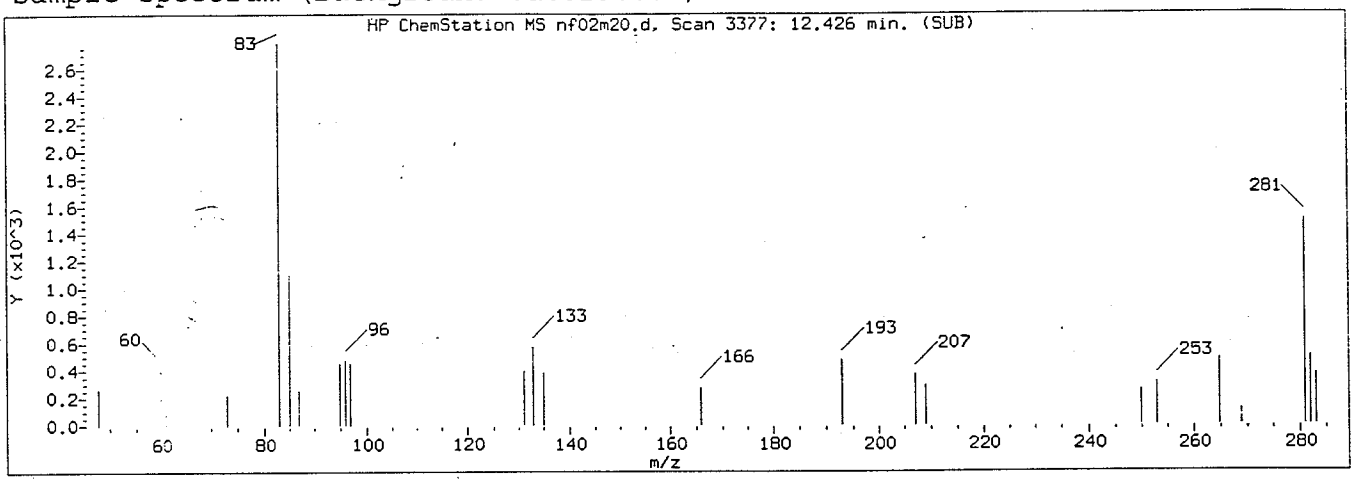
| | |
|---|---|
| Compound Number | : 64 |
| Compound Name | : t-Amyl Methyl Ether |
| Scan Number | : 1922 |
| Retention Time (minutes) | : 7.757 |
| Quant Ion | : 73 |
| Area (flag) | : 9197 M |
| Concentration (ug/L) | : 0.4720 |
| Integration start scan | : 1906 Integration stop scan: 1936 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak (improper integration)

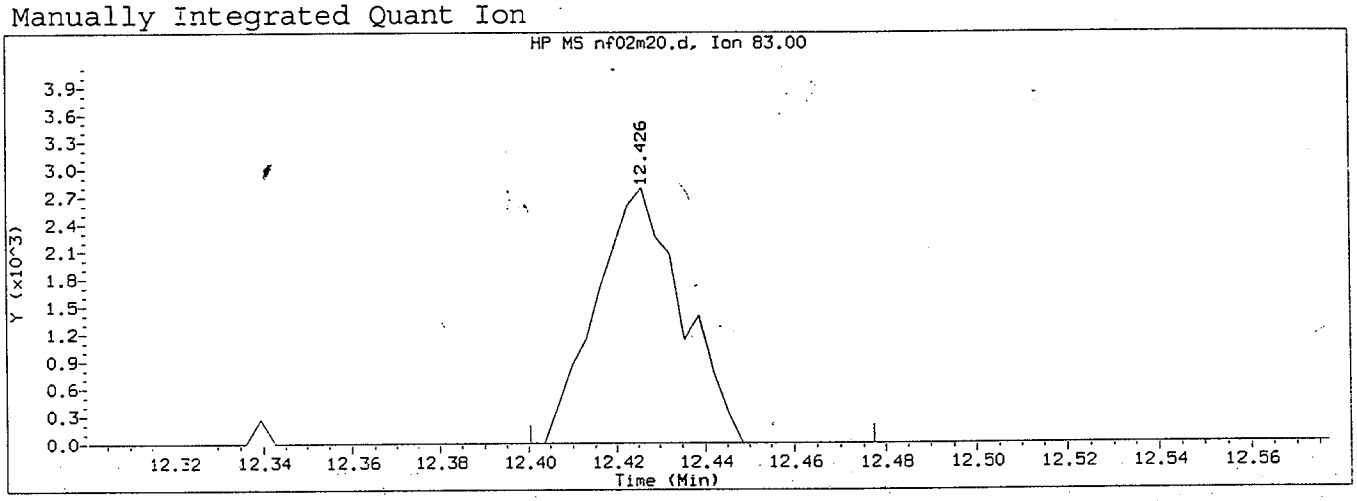
Analyst responsible for change: SME1533 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP07159.i/04feb02b.b/nf02m20.d  Instrument ID: HP07159.i
Injection date and time: 02-FEB-2004 17:29  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb02b.b/N826W.m  Sublist used: USTOXY
Calibration date and time: 02-FEB-2004 15:11
Date, time and analyst ID of latest file update: 02-Feb-2004 17:58 sme01533

Sample Name: VSTD0.5  Lab Sample ID: VSTD0.5

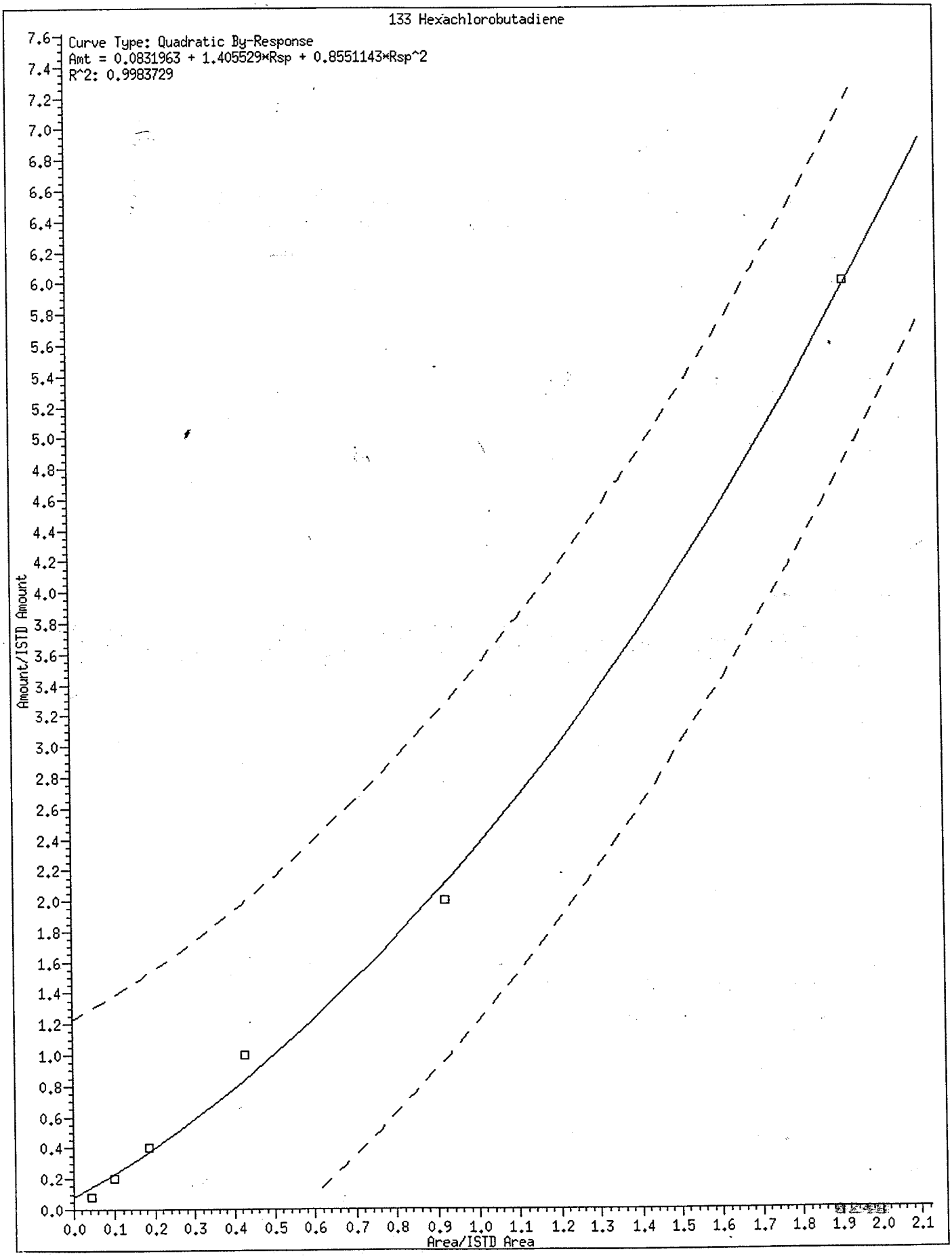
Compound Number : 110
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3377
Retention Time (minutes): 12.426
Quant Ion : 83
Area (flag) : 3776 M
Concentration (ug/L) : 0.4190
Integration start scan : 3368 Integration stop scan: 3392
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: SME1533 2/2/04

GC/MS audit/management approval: [signature] 2/3/04

SJR 15-1
2/2/04


133 Hexachlorobutadiene
Curve Type: Quadratic By-Response
Amt = 0.0831963 + 1.405529*Rsp + 0.8551143*Rsp^2
R^2: 0.9983729
Amount/ISTD Amount
Area/ISTD Area

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF100 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.3191 | 0.3452 | 108.19 | 100 | 8 | |
| # | Chloromethane | 0.3334 | 0.3541 | 106.20 | 100 | 6 | # |
| * | Vinyl Chloride | 0.3144 | 0.3413 | 108.54 | 100 | 9 | * |
| | Bromomethane | 0.2154 | 0.2335 | 108.38 | 100 | 8 | |
| | Chloroethane | 0.1837 | 0.1977 | 107.65 | 100 | 8 | |
| | Trichlorofluoromethane | 0.3582 | 0.3882 | 108.35 | 100 | 8 | |
| | Acrolein | 0.0317 | 0.0368 | 1162.54 | 1000 | 16 | |
| * | 1,1-Dichloroethene | 0.2271 | 0.2269 | 99.92 | 100 | 0 | * |
| | Freon 113 | 0.2272 | 0.2288 | 100.72 | 100 | 1 | |
| | Acetone | 0.0183 | 0.0190 | 207.05 | 200 | 4 | |
| | Methyl Iodide | 0.4251 | 0.4354 | 102.41 | 100 | 2 | |
| | 2-Propanol | 0.0136 | 0.0152 | 560.06 | 500 | 12 | |
| | Carbon Disulfide | 0.8310 | 0.8552 | 102.91 | 100 | 3 | |
| | Allyl Chloride | 0.3986 | 0.4290 | 107.61 | 100 | 8 | |
| | Methyl Acetate | 0.1343 | 0.1421 | 105.77 | 100 | 6 | |
| | Methylene Chloride | 0.2740 | 0.2579 | 94.13 | 100 | -6 | |
| | t-Butyl Alcohol | 1.3870 | 1.3715 | 494.42 | 500 | -1 | |
| | Acrylonitrile | 0.0743 | 0.0860 | 115.73 | 100 | 16 | |
| | trans-1,2-Dichloroethene | 0.2669 | 0.2704 | 101.30 | 100 | 1 | |
| | Methyl Tertiary Butyl Ether | 0.6649 | 0.6704 | 100.82 | 100 | 1 | |
| | n-Hexane | 0.3888 | 0.3701 | 95.19 | 100 | -5 | |
| # | 1,1-Dichloroethane | 0.4452 | 0.4464 | 100.27 | 100 | 0 | # |
| | 2-Chloro-1,3-Butadiene | 0.3482 | 0.3604 | 103.50 | 100 | 3 | |
| | di-Isopropyl Ether | 0.8232 | 0.8155 | 99.06 | 100 | -1 | |
| | Ethyl t-Butyl Ether | 0.7398 | 0.7470 | 100.97 | 100 | 1 | |
| | cis-1,2-Dichloroethene | 0.2934 | 0.2799 | 95.40 | 100 | -5 | |
| | 1,2-Dichloroethene (total) | 0.2802 | 0.2752 | 196.70 | 200 | -2 | |
| | 2,2-Dichloropropane | 0.3548 | 0.3690 | 104.01 | 100 | 4 | |
| | 2-Butanone | 0.0257 | 0.0357 | 277.41 | 200 | 39 | |
| | Propionitrile | 0.0262 | 0.0271 | 518.24 | 500 | 4 | |
| | Methacrylonitrile | 0.0854 | 0.0887 | 259.45 | 250 | 4 | |
| | Bromochloromethane | 0.1275 | 0.1418 | 111.19 | 100 | 11 | |
| | Tetrahydrofuran | 0.0241 | 0.0294 | 244.75 | 200 | 22 | |
| * | Chloroform | 0.4157 | 0.4226 | 101.68 | 100 | 2 | * |
| | 1,1,1-Trichloroethane | 0.3690 | 0.3817 | 103.45 | 100 | 3 | |
| | Cyclohexane | 0.4583 | 0.4491 | 97.99 | 100 | -2 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8249

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF100 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3330 | 0.3319 | 99.68 | 100 | 0 | |
| | Carbon Tetrachloride | 0.3152 | 0.3274 | 103.84 | 100 | 4 | |
| | Benzene | 1.0611 | 1.0511 | 99.06 | 100 | -1 | |
| | Isobutyl Alcohol | 0.0076 | 0.0087 | 1421.37 | 1250 | 14 | |
| | 1,2-Dichloroethane | 0.2902 | 0.2910 | 100.29 | 100 | 0 | |
| | t-Amyl Methyl Ether | 0.6694 | 0.7005 | 104.65 | 100 | 5 | |
| | n-Heptane | 0.0753 | 0.0762 | 101.20 | 100 | 1 | |
| | n-Butanol | 0.0063 | 0.0076 | 2973.08 | 2500 | 19 | |
| | Trichloroethene | 0.2684 | 0.2670 | 99.47 | 100 | -1 | |
| | Methylcyclohexane | 0.4348 | 0.4497 | 103.43 | 100 | 3 | |
| * | 1,2-Dichloropropane | 0.2612 | 0.2586 | 99.03 | 100 | -1 | * |
| | Dibromomethane | 0.1344 | 0.1369 | 101.89 | 100 | 2 | |
| | 1,4-Dioxane | 0.0023 | 0.0025 | 1356.18 | 1250 | 8 | |
| | Methyl Methacrylate | 0.1559 | 0.1708 | 109.51 | 100 | 10 | |
| | Bromodichloromethane | 0.2941 | 0.3100 | 105.40 | 100 | 5 | |
| | 2-Nitropropane | 0.0491 | 0.0768 | 312.61 | 200 | 56 | |
| | cis-1,3-Dichloropropene | 0.3951 | 0.4114 | 104.13 | 100 | 4 | |
| | 4-Methyl-2-Pentanone | 0.2395 | 0.3587 | 299.62 | 200 | 50 | |
| * | Toluene | 0.9141 | 0.8612 | 94.20 | 100 | -6 | * |
| | trans-1,3-Dichloropropene | 0.4279 | 0.4348 | 101.63 | 100 | 2 | |
| | Ethyl Methacrylate | 0.4076 | 0.4355 | 106.85 | 100 | 7 | |
| | 1,1,2-Trichloroethane | 0.2853 | 0.2718 | 95.27 | 100 | -5 | |
| | Tetrachloroethene | 0.4208 | 0.3992 | 94.87 | 100 | -5 | |
| | 1,3-Dichloropropane | 0.4748 | 0.4553 | 95.88 | 100 | -4 | |
| | 2-Hexanone | 0.2320 | 0.3363 | 289.93 | 200 | 45 | |
| | Dibromochloromethane | 0.3013 | 0.3198 | 106.14 | 100 | 6 | |
| | 1,2-Dibromoethane | 0.2820 | 0.2770 | 98.25 | 100 | -2 | |
| # | Chlorobenzene | 1.0165 | 0.9572 | 94.17 | 100 | -6 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3384 | 0.3389 | 100.13 | 100 | 0 | |
| * | Ethylbenzene | 1.6952 | 1.6224 | 95.70 | 100 | -4 | * |
| | m+p-Xylene | 0.6948 | 0.6594 | 94.92 | 100 | -5 | |
| | Xylene (Total) | 0.6739 | 0.6434 | 190.96 | 200 | -5 | |
| | o-Xylene | 0.6531 | 0.6273 | 96.04 | 100 | -4 | |
| | Styrene | 1.0707 | 1.0690 | 99.84 | 100 | 0 | |
| # | Bromoform | 0.2071 | 0.2301 | 111.07 | 100 | 11 | # |
| | Isopropylbenzene | 1.7070 | 1.6542 | 96.91 | 100 | -3 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8258

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/20/04 Time: 10:28

Lab File ID: xf20c01.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF100 | CONC. | CONC. | DRIFT | |
| Cyclohexanone | 0.0092 | 0.0095 | 1278.69 | 1250 | 2 | |
| Bromobenzene | 0.8210 | 0.7502 | 91.38 | 100 | -9 | |
| # 1,1,2,2-Tetrachloroethane | 0.6792 | 0.6583 | 96.93 | 100 | -3 | # |
| 1,2,3-Trichloropropane | 0.2060 | 0.1905 | 92.48 | 100 | -8 | |
| trans-1,4-Dichloro-2-Butene | 0.1877 | 0.1836 | 244.52 | 250 | -2 | |
| n-Propylbenzene | 3.6181 | 3.3454 | 92.46 | 100 | -8 | |
| 2-Chlorotoluene | 0.7874 | 0.7282 | 92.48 | 100 | -8 | |
| 1,3,5-Trimethylbenzene | 2.6246 | 2.4519 | 93.42 | 100 | -7 | |
| 4-Chlorotoluene | 0.8112 | 0.7419 | 91.45 | 100 | -9 | |
| tert-Butylbenzene | 0.6453 | 0.6061 | 93.93 | 100 | -6 | |
| Pentachloroethane | 0.4920 | 0.5117 | 104.02 | 100 | 4 | |
| 1,2,4-Trimethylbenzene | 2.6348 | 2.4620 | 93.44 | 100 | -7 | |
| sec-Butylbenzene | 3.3997 | 3.1677 | 93.17 | 100 | -7 | |
| 1,3-Dichlorobenzene | 1.5754 | 1.4278 | 90.63 | 100 | -9 | |
| p-Isopropyltoluene | 2.9311 | 2.7323 | 93.22 | 100 | -7 | |
| 1,4-Dichlorobenzene | 1.6423 | 1.4651 | 89.21 | 100 | -11 | |
| 1,2-Dichlorobenzene | 1.4868 | 1.3474 | 90.63 | 100 | -9 | |
| n-Butylbenzene | 2.5974 | 2.3923 | 92.10 | 100 | -8 | |
| 1,2-Dibromo-3-Chloropropane | 0.1219 | 0.1224 | 100.40 | 100 | 0 | |
| 1,2,4-Trichlorobenzene | 1.1621 | 1.0420 | 89.67 | 100 | -10 | |
| Hexachlorobutadiene | 0.5945 | 0.5474 | 92.08 | 100 | -8 | |
| Naphthalene | 2.6686 | 2.4863 | 93.17 | 100 | -7 | |
| 1,2,3-Trichlorobenzene | 1.0940 | 0.9808 | 89.66 | 100 | -10 | |
| 2-Methylnaphthalene | 1.6784 | 1.5642 | 93.20 | 100 | -7 | |
| Dibromofluoromethane | 0.2152 | 0.2234 | 51.89 | 50 | 4 | |
| 1,2-Dichloroethane-d4 | 0.0539 | 0.0528 | 48.96 | 50 | -2 | |
| Toluene-d8(mz100) | 0.8083 | 0.8247 | 51.02 | 50 | 2 | |
| 4-Bromofluorobenzene(mz174) | 0.4199 | 0.4278 | 50.95 | 50 | 2 | |
| Dibromofluoromethane(mz111) | 0.2185 | 0.2273 | 52.00 | 50 | 4 | |
| 1,2-Dichloroethane-d4(mz104) | 0.0332 | 0.0336 | 50.65 | 50 | 1 | |
| Toluene-d8 | 1.2021 | 1.2310 | 51.20 | 50 | 2 | |
| 4-Bromofluorobenzene | 0.4595 | 0.4639 | 50.49 | 50 | 1 | |

Average %Drift 7

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8251

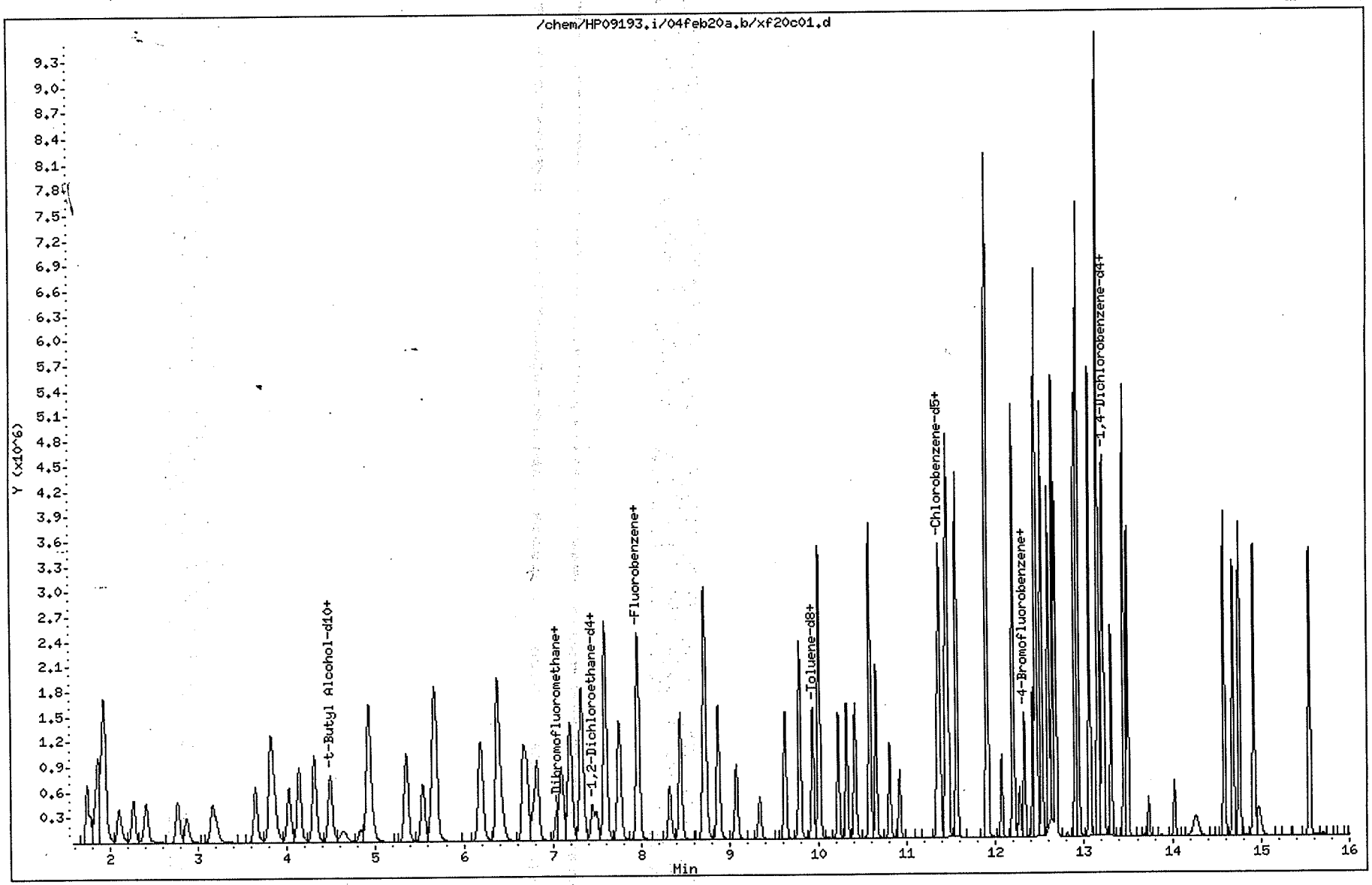
Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d
Date : 20-FEB-2004 10:28
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;2;2;;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM 1518 2/20/04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.102 | 85 | 874249 | 108.192 |
| 4) Chloromethane | (1) | 2.265 | 50 | 896831 | 106.200 |
| 5) Vinyl Chloride | (1) | 2.406 | 62 | 864295 | 108.536 |
| 7) Bromomethane | (1) | 2.766 | 94 | 591235 | 108.379 |
| 8) Chloroethane | (1) | 2.869 | 64 | 500777 | 107.652 |
| 12) Trichlorofluoromethane | (1) | 3.167 | 101 | 983022 | 108.350 |
| 16) Acrolein | (1) | 3.642 | 56 | 932826 | 1162.537 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 574663 | 99.921 |
| 19) Freon 113 | (1) | 3.844 | 101 | 579466 | 100.717 |
| 20) Acetone | (1) | 3.841 | 58 | 96091 | 207.046 |
| 22) Methyl Iodide | (1) | 4.021 | 142 | 1102603 | 102.413 |
| 23) 2-Propanol | (1) | 4.011 | 45 | 192614 | 560.055 |
| 24) Carbon Disulfide | (1) | 4.136 | 76 | 2165829 | 102.909 |
| 26) Allyl Chloride | (1) | 4.306 | 41 | 1086454 | 107.610 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 359775 | 105.771 |
| 28) Methylene Chloride | (1) | 4.486 | 84 | 653249 | 94.133 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.505 | 65 | 135522 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.643 | 59 | 371749 | 494.420 |
| 32) Acrylonitrile | (1) | 4.829 | 53 | 217708 | 115.728 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 684768 | 101.301 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.932 | 73 | 1697764 | 100.818 |
| 36) n-Hexane | (1) | 5.349 | 57 | 937305 | 95.187 |
| 37) 1,1-Dichloroethane | (1) | 5.538 | 63 | 1130561 | 100.265 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.686 | 53 | 912633 | 103.498 |
| 39) di-Isopropyl Ether | (1) | 5.660 | 45 | 2065330 | 99.064 |
| 42) Ethyl t-Butyl Ether | (1) | 6.187 | 59 | 1891913 | 100.973 |
| 45) cis-1,2-Dichloroethene | (1) | 6.379 | 96 | 708972 | 95.404 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1393740 | 196.705 |
| 48) 2,2-Dichloropropane | (1) | 6.389 | 77 | 934495 | 104.010 |
| 46) 2-Butanone | (1) | 6.379 | 72 | 180804 | 277.411 |
| 49) Propionitrile | (1) | 6.440 | 54 | 343804 | 518.240 |
| 51) Methacrylonitrile | (1) | 6.671 | 67 | 561432 | 259.449 |
| 52) Bromochloromethane | (1) | 6.710 | 128 | 359081 | 111.190 |
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 149168 | 244.752 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.825 | 83 | 1070334 | 101.677 |
| 57) 1,1,1-Trichloroethane | (1) | 7.098 | 97 | 966782 | 103.448 |
| 58) Cyclohexane | (1) | 7.194 | 56 | 1137306 | 97.992 |
| 59) 1,1-Dichloropropene | (1) | 7.316 | 75 | 840676 | 99.678 |
| 60) Carbon Tetrachloride | (1) | 7.332 | 117 | 829051 | 103.842 |
| 65) Benzene | (1) | 7.589 | 78 | 2662024 | 99.062 |
| 61) Isobutyl Alcohol | (1) | 7.441 | 41 | 273952 | 1421.366 |
| 66) 1,2-Dichloroethane | (1) | 7.595 | 62 | 737010 | 100.288 |
| 68) t-Amyl Methyl Ether | (1) | 7.749 | 73 | 1774197 | 104.649 |
| 69) *Fluorobenzene | (1) | 7.958 | 96 | 1266290 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 192960 | 101.198 |
| 72) n-Butanol | (1) | 8.324 | 56 | 478443 | 2973.085 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 676168 | 99.469 |
| 74) Methylcyclohexane | (1) | 8.718 | 83 | 1138833 | 103.427 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 655009 | 99.030 |
| 77) Dibromomethane | (1) | 8.872 | 93 | 346750 | 101.890 |
| 78) 1,4-Dioxane | (1) | 8.892 | 88 | 78132 | 1356.178 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 432501 | 109.511 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 784984 | 105.399 |
| 82) 2-Nitropropane | (1) | 9.338 | 41 | 389021 | 312.611 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 1042003 | 104.133 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 1817116 | 299.616 |
| 88) Toluene | (2) | 10.005 | 92 | 1723739 | 94.203 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 870364 | 101.625 |
| 90) Ethyl Methacrylate | (2) | 10.316 | 69 | 871651 | 106.849 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 544105 | 95.274 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 799050 | 94.871 |
| 94) 1,3-Dichloropropane | (2) | 10.580 | 76 | 911307 | 95.885 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 1346207 | 289.931 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 640083 | 106.136 |
| 99) 1,2-Dibromoethane | (2) | 10.917 | 107 | 554521 | 98.250 |
| 100) *Chlorobenzene-d5 | (2) | 11.347 | 117 | 1000818 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 1916041 | 94.172 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 678283 | 100.129 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 3247489 | 95.704 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 1319949 | 94.916 |
| 92) Xylene (Total) | (2) | | 106 | 2575530 | 190.957 |
| 107) o-Xylene | (2) | 11.902 | 106 | 1255581 | 96.041 |
| 108) Styrene | (2) | 11.908 | 104 | 2139656 | 99.837 |
| 109) Bromoform | (2) | 12.069 | 173 | 460508 | 111.072 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 3311167 | 96.908 |
| 112) Cyclohexanone | (2) | 12.267 | 55 | 236582 | 1278.688 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 855987 | 91.377 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 751188 | 96.933 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 217339 | 92.480 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 523762 | 244.523 |
| 119) n-Propylbenzene | (3) | 12.521 | 91 | 3817160 | 92.463 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 830899 | 92.478 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 2797643 | 93.417 |
| 122) 4-Chlorotoluene | (3) | 12.678 | 126 | 846487 | 91.454 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 691631 | 93.932 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 583891 | 104.017 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 2809167 | 93.439 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 3614395 | 93.175 |
| 128) 1,3-Dichlorobenzene | (3) | 13.160 | 146 | 1629179 | 90.633 |
| 129) *1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 570512 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.160 | 119 | 3117582 | 93.217 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 1671700 | 89.209 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 1537425 | 90.628 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 2729710 | 92.104 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.026 | 75 | 139701 | 100.401 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 1188984 | 89.667 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 624598 | 92.077 |
| 140) Naphthalene | (3) | 14.758 | 128 | 2836898 | 93.167 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 1119131 | 89.656 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 1784810 | 93.196 |
| 55) $Dibromofluoromethane | (1) | 7.037 | 113 | 282829 | 51.892 |
| 62) $1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 66886 | 48.964 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20c01.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 10:28  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 10:53 lcm01518

Sample Name: VSTD100  Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 87) $Toluene-d8(mz100) | (2) | 9.935 | 100 | 825386 | 51.018 |
| 114) $4-Bromofluorobenzene(mz174) | (2) | 12.325 | 174 | 428197 | 50.951 |
| 56) $Dibromofluoromethane(mz111) | (1) | 7.040 | 111 | 287790 | 51.996 |
| 63) $1,2-Dichloroethane-d4(mz104) | (1) | 7.493 | 104 | 42567 | 50.654 |
| 86) $Toluene-d8 | (2) | 9.931 | 98 | 1231985 | 51.202 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 464324 | 50.486 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09193.i/04feb16a.b/xf16i06.d
/chem/HP09193.i/04feb16a.b/xf16i05.d
/chem/HP09193.i/04feb16a.b/xf16i04.d
/chem/HP09193.i/04feb16a.b/xf16i09.d
/chem/HP09193.i/04feb16a.b/xf16i07.d
/chem/HP09193.i/04feb16a.b/xf16i01.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP09193.i/04feb20a.b/xf20c01.d

RT Summary

| Internal Standard Name | File ID: xf20c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.505 | 4.498 | Yes |
| Fluorobenzene | 7.958 | 7.951 | Yes |
| Chlorobenzene-d5 | 11.347 | 11.343 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: xf20c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 135522 | 129614 | 64807 | 259228 | Yes |
| Fluorobenzene | 1266290 | 1393795 | 696898 | 2787590 | Yes |
| Chlorobenzene-d5 | 1000818 | 1045027 | 522514 | 2090054 | Yes |
| 1,4-Dichlorobenzene-d4 | 570512 | 582773 | 291386 | 1165546 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/23/04 Time: 10:52

Lab File ID: xf23c06.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF20 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.3191 | 0.3498 | 21.93 | 20 | 10 | |
| # | Chloromethane | 0.3334 | 0.3599 | 21.59 | 20 | 8 | # |
| * | Vinyl Chloride | 0.3144 | 0.3285 | 20.89 | 20 | 4 | * |
| | Bromomethane | 0.2154 | 0.2397 | 22.26 | 20 | 11 | |
| | Chloroethane | 0.1837 | 0.2003 | 21.81 | 20 | 9 | |
| | Trichlorofluoromethane | 0.3582 | 0.3915 | 21.86 | 20 | 9 | |
| | Acrolein | 0.0317 | 0.0305 | 192.76 | 200 | -4 | |
| * | 1,1-Dichloroethene | 0.2271 | 0.2264 | 19.94 | 20 | 0 | * |
| | Freon 113 | 0.2272 | 0.2346 | 20.65 | 20 | 3 | |
| | Acetone | 0.0183 | 0.0181 | 39.53 | 40 | -1 | |
| | Methyl Iodide | 0.4251 | 0.4303 | 20.24 | 20 | 1 | |
| | 2-Propanol | 0.0136 | 0.0166 | 244.02 | 200 | 22 | |
| | Carbon Disulfide | 0.8310 | 0.8204 | 19.75 | 20 | -1 | |
| | Allyl Chloride | 0.3986 | 0.4437 | 22.26 | 20 | 11 | |
| | Methyl Acetate | 0.1343 | 0.1506 | 22.42 | 20 | 12 | |
| | Methylene Chloride | 0.2740 | 0.2789 | 20.36 | 20 | 2 | |
| | t-Butyl Alcohol | 1.3870 | 1.4585 | 210.31 | 200 | 5 | |
| | Acrylonitrile | 0.0743 | 0.0742 | 19.99 | 20 | 0 | |
| | trans-1,2-Dichloroethene | 0.2669 | 0.2680 | 20.08 | 20 | 0 | |
| | Methyl Tertiary Butyl Ether | 0.6649 | 0.6787 | 20.42 | 20 | 2 | |
| | n-Hexane | 0.3888 | 0.3737 | 19.22 | 20 | -4 | |
| # | 1,1-Dichloroethane | 0.4452 | 0.4420 | 19.86 | 20 | -1 | # |
| | 2-Chloro-1,3-Butadiene | 0.3482 | 0.3478 | 19.98 | 20 | 0 | |
| | di-Isopropyl Ether | 0.8232 | 0.7884 | 19.16 | 20 | -4 | |
| | Ethyl t-Butyl Ether | 0.7398 | 0.7249 | 19.60 | 20 | -2 | |
| | cis-1,2-Dichloroethene | 0.2934 | 0.2802 | 19.10 | 20 | -5 | |
| | 1,2-Dichloroethene (total) | 0.2802 | 0.2741 | 39.18 | 40 | -2 | |
| | 2,2-Dichloropropane | 0.3548 | 0.3780 | 21.31 | 20 | 7 | |
| | 2-Butanone | 0.0257 | 0.0260 | 40.36 | 40 | 1 | |
| | Propionitrile | 0.0262 | 0.0272 | 207.87 | 200 | 4 | |
| | Methacrylonitrile | 0.0854 | 0.0885 | 103.58 | 100 | 4 | |
| | Bromochloromethane | 0.1275 | 0.1516 | 23.78 | 20 | 19 | |
| | Tetrahydrofuran | 0.0241 | 0.0246 | 40.87 | 40 | 2 | |
| * | Chloroform | 0.4157 | 0.4357 | 20.97 | 20 | 5 | * |
| | 1,1,1-Trichloroethane | 0.3690 | 0.3915 | 21.22 | 20 | 6 | |
| | Cyclohexane | 0.4583 | 0.4349 | 18.98 | 20 | -5 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8258

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/23/04 Time: 10:52

Lab File ID: xf23c06.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF20 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3330 | 0.3290 | 19.76 | 20 | -1 | |
| | Carbon Tetrachloride | 0.3152 | 0.3420 | 21.70 | 20 | 8 | |
| | Benzene | 1.0611 | 1.0510 | 19.81 | 20 | -1 | |
| | Isobutyl Alcohol | 0.0076 | 0.0094 | 614.48 | 500 | 23 | |
| | 1,2-Dichloroethane | 0.2902 | 0.3161 | 21.79 | 20 | 9 | |
| | t-Amyl Methyl Ether | 0.6694 | 0.6804 | 20.33 | 20 | 2 | |
| | n-Heptane | 0.0753 | 0.0768 | 20.41 | 20 | 2 | |
| | n-Butanol | 0.0063 | 0.0077 | 1213.69 | 1000 | 21 | |
| | Trichloroethene | 0.2684 | 0.2699 | 20.11 | 20 | 1 | |
| | Methylcyclohexane | 0.4348 | 0.5001 | 23.00 | 20 | 15 | |
| * | 1,2-Dichloropropane | 0.2612 | 0.2571 | 19.69 | 20 | -2 | * |
| | Dibromomethane | 0.1344 | 0.1411 | 21.00 | 20 | 5 | |
| | 1,4-Dioxane | 0.0023 | 0.0026 | 563.02 | 500 | 13 | |
| | Methyl Methacrylate | 0.1559 | 0.1639 | 21.02 | 20 | 5 | |
| | Bromodichloromethane | 0.2941 | 0.3146 | 21.40 | 20 | 7 | |
| | 2-Nitropropane | 0.0491 | 0.0509 | 41.46 | 40 | 4 | |
| | cis-1,3-Dichloropropene | 0.3951 | 0.3979 | 20.14 | 20 | 1 | |
| | 4-Methyl-2-Pentanone | 0.2395 | 0.2361 | 39.43 | 40 | -1 | |
| * | Toluene | 0.9141 | 0.9643 | 21.10 | 20 | 5 | * |
| | trans-1,3-Dichloropropene | 0.4279 | 0.4654 | 21.75 | 20 | 9 | |
| | Ethyl Methacrylate | 0.4076 | 0.4354 | 21.37 | 20 | 7 | |
| | 1,1,2-Trichloroethane | 0.2853 | 0.3073 | 21.54 | 20 | 8 | |
| | Tetrachloroethene | 0.4208 | 0.4272 | 20.30 | 20 | 2 | |
| | 1,3-Dichloropropane | 0.4748 | 0.5046 | 21.26 | 20 | 6 | |
| | 2-Hexanone | 0.2320 | 0.2268 | 39.11 | 40 | -2 | |
| | Dibromochloromethane | 0.3013 | 0.3404 | 22.60 | 20 | 13 | |
| | 1,2-Dibromoethane | 0.2820 | 0.3035 | 21.53 | 20 | 8 | |
| # | Chlorobenzene | 1.0165 | 1.0395 | 20.45 | 20 | 2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3384 | 0.3624 | 21.41 | 20 | 7 | |
| * | Ethylbenzene | 1.6952 | 1.7361 | 20.48 | 20 | 2 | * |
| | m+p-Xylene | 0.6948 | 0.6973 | 20.07 | 20 | 0 | |
| | Xylene (Total) | 0.6739 | 0.6842 | 40.62 | 40 | 2 | |
| | o-Xylene | 0.6531 | 0.6711 | 20.55 | 20 | 3 | |
| | Styrene | 1.0707 | 1.0938 | 20.43 | 20 | 2 | |
| # | Bromoform | 0.2071 | 0.2458 | 23.73 | 20 | 19 | # |
| | Isopropylbenzene | 1.7070 | 1.7675 | 20.71 | 20 | 4 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

9259

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09193 Calibration Date: 02/23/04 Time: 10:52

Lab File ID: xf23c06.d Init. Calib. Date(s): 02/16/04 02/16/04

Matrix: (soil/water) SOIL Level: (low/med) LOW GC Column: DB-624 ID: .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF20 | CONC. | CONC. | DRIFT | |
| Cyclohexanone | 0.0092 | 0.0063 | 338.20 | 500 | -32 | |
| Bromobenzene | 0.8210 | 0.8461 | 20.61 | 20 | 3 | |
| # 1,1,2,2-Tetrachloroethane | 0.6792 | 0.7587 | 22.34 | 20 | 12 | # |
| 1,2,3-Trichloropropane | 0.2060 | 0.2296 | 22.29 | 20 | 11 | |
| trans-1,4-Dichloro-2-Butene | 0.1877 | 0.2155 | 114.78 | 100 | 15 | |
| n-Propylbenzene | 3.6181 | 3.5988 | 19.89 | 20 | -1 | |
| 2-Chlorotoluene | 0.7874 | 0.7658 | 19.45 | 20 | -3 | |
| 1,3,5-Trimethylbenzene | 2.6246 | 2.6210 | 19.97 | 20 | 0 | |
| 4-Chlorotoluene | 0.8112 | 0.8006 | 19.74 | 20 | -1 | |
| tert-Butylbenzene | 0.6453 | 0.6447 | 19.98 | 20 | 0 | |
| Pentachloroethane | 0.4920 | 0.5434 | 22.09 | 20 | 10 | |
| 1,2,4-Trimethylbenzene | 2.6348 | 2.6682 | 20.25 | 20 | 1 | |
| sec-Butylbenzene | 3.3997 | 3.3788 | 19.88 | 20 | -1 | |
| 1,3-Dichlorobenzene | 1.5754 | 1.5965 | 20.27 | 20 | 1 | |
| p-Isopropyltoluene | 2.9311 | 2.9557 | 20.17 | 20 | 1 | |
| 1,4-Dichlorobenzene | 1.6423 | 1.6610 | 20.23 | 20 | 1 | |
| 1,2-Dichlorobenzene | 1.4868 | 1.5172 | 20.41 | 20 | 2 | |
| n-Butylbenzene | 2.5974 | 2.5821 | 19.88 | 20 | -1 | |
| 1,2-Dibromo-3-Chloropropane | 0.1219 | 0.1389 | 22.78 | 20 | 14 | |
| 1,2,4-Trichlorobenzene | 1.1621 | 1.1545 | 19.87 | 20 | -1 | |
| Hexachlorobutadiene | 0.5945 | 0.6047 | 20.34 | 20 | 2 | |
| Naphthalene | 2.6686 | 2.7942 | 20.94 | 20 | 5 | |
| 1,2,3-Trichlorobenzene | 1.0940 | 1.1184 | 20.45 | 20 | 2 | |
| 2-Methylnaphthalene | 1.6784 | 1.7011 | 20.27 | 20 | 1 | |
| Dibromofluoromethane | 0.2152 | 0.2305 | 53.56 | 50 | 7 | |
| 1,2-Dichloroethane-d4 | 0.0539 | 0.0558 | 51.69 | 50 | 3 | |
| Toluene-d8(mz100) | 0.8083 | 0.8592 | 53.15 | 50 | 6 | |
| 4-Bromofluorobenzene(mz174) | 0.4199 | 0.4407 | 52.48 | 50 | 5 | |
| Dibromofluoromethane(mz111) | 0.2185 | 0.2348 | 53.71 | 50 | 7 | |
| 1,2-Dichloroethane-d4(mz104) | 0.0332 | 0.0344 | 51.90 | 50 | 4 | |
| Toluene-d8 | 1.2021 | 1.2793 | 53.21 | 50 | 6 | |
| 4-Bromofluorobenzene | 0.4595 | 0.4734 | 51.52 | 50 | 3 | |

Average %Drift 5

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8268

Data File: /chem/HP09193.i/04feb23c.b/xf23c06.d
Date : 23-FEB-2004 10:52
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;2;2;;;

Column phase: DB-624

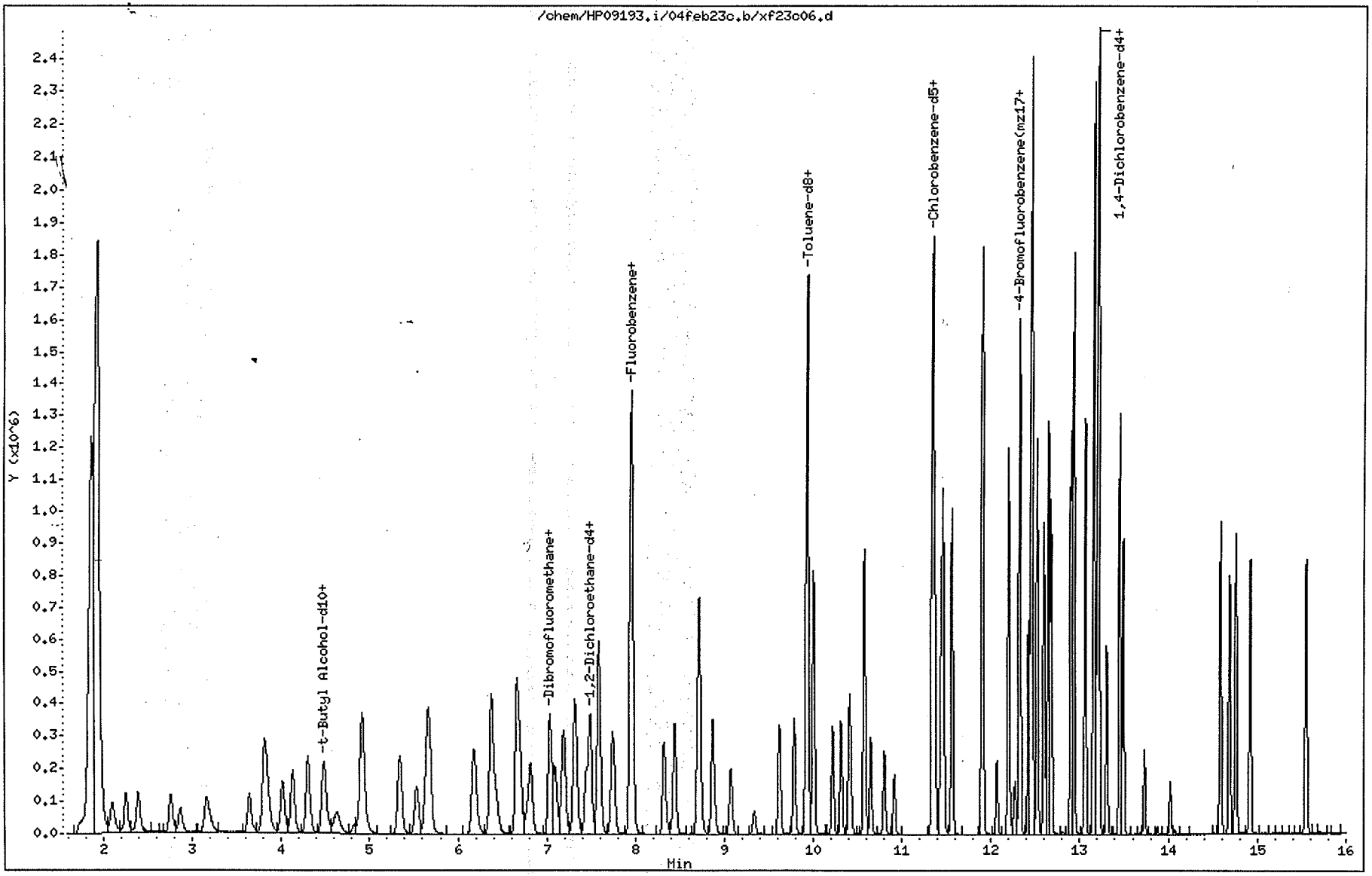
Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM/1518
2/23/04



B261



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23c06.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 10:52 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 11:16 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.099 | 85 | 194443 | 21.927 |
| 4) Chloromethane | (1) | 2.249 | 50 | 200064 | 21.587 |
| 5) Vinyl Chloride | (1) | 2.391 | 62 | 182577 | 20.892 |
| 7) Bromomethane | (1) | 2.763 | 94 | 133240 | 22.256 |
| 8) Chloroethane | (1) | 2.869 | 64 | 111351 | 21.812 |
| 12) Trichlorofluoromethane | (1) | 3.158 | 101 | 217649 | 21.860 |
| 16) Acrolein | (1) | 3.642 | 56 | 169740 | 192.757 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 125832 | 19.937 |
| 19) Freon 113 | (1) | 3.841 | 101 | 130407 | 20.654 |
| 20) Acetone | (1) | 3.841 | 58 | 20134 | 39.531 |
| 22) Methyl Iodide | (1) | 4.011 | 142 | 239189 | 20.244 |
| 23) 2-Propanol | (1) | 4.008 | 45 | 92101 | 244.021 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 456061 | 19.746 |
| 26) Allyl Chloride | (1) | 4.300 | 41 | 246628 | 22.259 |
| 27) Methyl Acetate | (1) | 4.313 | 43 | 83700 | 22.422 |
| 28) Methylene Chloride | (1) | 4.480 | 84 | 155058 | 20.360 |
| 29) *t-Butyl Alcohol-d10 | (4) | 4.492 | 65 | 146451 | 250.000 |
| 30) t-Butyl Alcohol | (4) | 4.627 | 59 | 170878 | 210.305 |
| 32) Acrylonitrile | (1) | 4.826 | 53 | 41266 | 19.988 |
| 34) trans-1,2-Dichloroethene | (1) | 4.916 | 96 | 148981 | 20.083 |
| 35) Methyl Tertiary Butyl Ether | (1) | 4.919 | 73 | 377283 | 20.415 |
| 36) n-Hexane | (1) | 5.343 | 57 | 207737 | 19.223 |
| 37) 1,1-Dichloroethane | (1) | 5.532 | 63 | 245697 | 19.855 |
| 40) 2-Chloro-1,3-Butadiene | (1) | 5.680 | 53 | 193306 | 19.976 |
| 39) di-Isopropyl Ether | (1) | 5.657 | 45 | 438264 | 19.155 |
| 42) Ethyl t-Butyl Ether | (1) | 6.184 | 59 | 402961 | 19.597 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 155766 | 19.100 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 304747 | 39.183 |
| 48) 2,2-Dichloropropane | (1) | 6.386 | 77 | 210109 | 21.309 |
| 46) 2-Butanone | (1) | 6.379 | 72 | 28867 | 40.359 |
| 49) Propionitrile | (1) | 6.440 | 54 | 151339 | 207.870 |
| 51) Methacrylonitrile | (1) | 6.665 | 67 | 245970 | 103.576 |
| 52) Bromochloromethane | (1) | 6.703 | 128 | 84280 | 23.780 |
| 53) Tetrahydrofuran | (1) | 6.777 | 71 | 27339 | 40.875 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23c06.d Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 10:52 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 11:16 lcm01518

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 54) Chloroform | (1) | 6.822 | 83 | 242214 | 20.966 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 217599 | 21.216 |
| 58) Cyclohexane | (1) | 7.188 | 56 | 241731 | 18.979 |
| 59) 1,1-Dichloropropene | (1) | 7.313 | 75 | 182889 | 19.760 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 190127 | 21.700 |
| 65) Benzene | (1) | 7.589 | 78 | 584200 | 19.810 |
| 61) Isobutyl Alcohol | (1) | 7.445 | 41 | 129973 | 614.476 |
| 66) 1,2-Dichloroethane | (1) | 7.589 | 62 | 175701 | 21.786 |
| 68) t-Amyl Methyl Ether | (1) | 7.746 | 73 | 378210 | 20.328 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1389673 | 50.000 |
| 71) n-Heptane | (1) | 7.968 | 100 | 42718 | 20.414 |
| 72) n-Butanol | (1) | 8.321 | 56 | 214343 | 1213.688 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 150023 | 20.110 |
| 74) Methylcyclohexane | (1) | 8.715 | 83 | 277980 | 23.004 |
| 75) 1,2-Dichloropropane | (1) | 8.719 | 63 | 142917 | 19.689 |
| 77) Dibromomethane | (1) | 8.869 | 93 | 78447 | 21.005 |
| 78) 1,4-Dioxane | (1) | 8.889 | 88 | 35597 | 563.017 |
| 76) Methyl Methacrylate | (1) | 8.869 | 69 | 91125 | 21.025 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 174886 | 21.397 |
| 82) 2-Nitropropane | (1) | 9.335 | 41 | 56620 | 41.459 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 221159 | 20.139 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 262465 | 39.434 |
| 88) Toluene | (2) | 10.005 | 92 | 405947 | 21.097 |
| 89) trans-1,3-Dichloropropene | (2) | 10.217 | 75 | 195913 | 21.753 |
| 90) Ethyl Methacrylate | (2) | 10.313 | 69 | 183283 | 21.365 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 129360 | 21.540 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 179836 | 20.304 |
| 94) 1,3-Dichloropropane | (2) | 10.576 | 76 | 212433 | 21.255 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 190953 | 39.108 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 143307 | 22.597 |
| 99) 1,2-Dibromoethane | (2) | 10.913 | 107 | 127773 | 21.528 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 1052442 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 437626 | 20.454 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | 11.440 | 131 | 152542 | 21.414 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23c06.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 10:52  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 11:16 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 103) Ethylbenzene | (2) | 11.462 | 91 | 730871 | 20.482 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 293545 | 20.073 |
| 92) Xylene (Total) | (2) | | 106 | 576052 | 40.622 |
| 107) o-Xylene | (2) | 11.899 | 106 | 282507 | 20.549 |
| 108) Styrene | (2) | 11.905 | 104 | 460452 | 20.431 |
| 109) Bromoform | (2) | 12.069 | 173 | 103461 | 23.730 |
| 110) Isopropylbenzene | (2) | 12.197 | 105 | 744084 | 20.709 |
| 112) Cyclohexanone | (2) | 12.264 | 55 | 65801 | 338.199 |
| 116) Bromobenzene | (3) | 12.454 | 156 | 208293 | 20.613 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.415 | 83 | 186754 | 22.340 |
| 117) 1,2,3-Trichloropropane | (3) | 12.457 | 110 | 56514 | 22.293 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | 12.457 | 53 | 265212 | 114.782 |
| 119) n-Propylbenzene | (3) | 12.518 | 91 | 885899 | 19.893 |
| 120) 2-Chlorotoluene | (3) | 12.598 | 126 | 188518 | 19.451 |
| 121) 1,3,5-Trimethylbenzene | (3) | 12.646 | 105 | 645209 | 19.973 |
| 122) 4-Chlorotoluene | (3) | 12.675 | 126 | 197084 | 19.739 |
| 123) tert-Butylbenzene | (3) | 12.900 | 134 | 158715 | 19.983 |
| 124) Pentachloroethane | (3) | 12.925 | 167 | 133766 | 22.091 |
| 125) 1,2,4-Trimethylbenzene | (3) | 12.932 | 105 | 656817 | 20.253 |
| 126) sec-Butylbenzene | (3) | 13.060 | 105 | 831733 | 19.877 |
| 128) 1,3-Dichlorobenzene | (3) | 13.156 | 146 | 392997 | 20.268 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 615414 | 50.000 |
| 127) p-Isopropyltoluene | (3) | 13.156 | 119 | 727601 | 20.168 |
| 130) 1,4-Dichlorobenzene | (3) | 13.221 | 146 | 408875 | 20.227 |
| 135) 1,2-Dichlorobenzene | (3) | 13.493 | 146 | 373471 | 20.409 |
| 134) n-Butylbenzene | (3) | 13.452 | 91 | 635627 | 19.882 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | 14.023 | 75 | 34184 | 22.775 |
| 138) 1,2,4-Trichlorobenzene | (3) | 14.588 | 180 | 284207 | 19.870 |
| 139) Hexachlorobutadiene | (3) | 14.687 | 225 | 148865 | 20.344 |
| 140) Naphthalene | (3) | 14.758 | 128 | 687848 | 20.941 |
| 141) 1,2,3-Trichlorobenzene | (3) | 14.921 | 180 | 275316 | 20.447 |
| 143) 2-Methylnaphthalene | (3) | 15.550 | 142 | 418757 | 20.271 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 320385 | 53.563 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.490 | 102 | 77488 | 51.689 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23c06.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 10:52  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 8260SI-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 11:16 lcm01518

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 87) $Toluene-d8 (mz100) | (2) | 9.931 | 100 | 904248 | 53.151 |
| 114) $4-Bromofluorobenzene (mz174) | (2) | 12.322 | 174 | 463774 | 52.477 |
| 56) $Dibromofluoromethane (mz111) | (1) | 7.031 | 111 | 326255 | 53.712 |
| 63) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.490 | 104 | 47867 | 51.903 |
| 86) $Toluene-d8 | (2) | 9.928 | 98 | 1346366 | 53.211 |
| 113) $4-Bromofluorobenzene | (2) | 12.322 | 95 | 498250 | 51.517 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09193.i/04feb16a.b/xf16i06.d
/chem/HP09193.i/04feb16a.b/xf16i05.d
/chem/HP09193.i/04feb16a.b/xf16i04.d
/chem/HP09193.i/04feb16a.b/xf16i09.d
/chem/HP09193.i/04feb16a.b/xf16i07.d
/chem/HP09193.i/04feb16a.b/xf16i01.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP09193.i/04feb23c.b/xf23c06.d

RT Summary

| Internal Standard Name | File ID: xf23c06.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl Alcohol-d10 | 4.492 | 4.498 | Yes |
| Fluorobenzene | 7.955 | 7.951 | Yes |
| Chlorobenzene-d5 | 11.343 | 11.343 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

| Internal Standard Name | File ID: xf23c06.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl Alcohol-d10 | 146451 | 129614 | 64807 | 259228 | Yes |
| Fluorobenzene | 1389673 | 1393795 | 696898 | 2787590 | Yes |
| Chlorobenzene-d5 | 1052442 | 1045027 | 522514 | 2090054 | Yes |
| 1,4-Dichlorobenzene-d4 | 615414 | 582773 | 291386 | 1165546 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF150 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.4039 | 0.3598 | 133.62 | 150 | -11 | |
| # | Chloromethane | 0.4478 | 0.4197 | 140.61 | 150 | -6 | # |
| * | Vinyl Chloride | 0.4080 | 0.3716 | 136.63 | 150 | -9 | * |
| | Bromomethane | 0.2430 | 0.2146 | 132.46 | 150 | -12 | |
| | Chloroethane | 0.2203 | 0.2062 | 140.38 | 150 | -6 | |
| | Trichlorofluoromethane | 0.4544 | 0.3945 | 130.21 | 150 | -13 | |
| | Ethanol | 0.0023 | 0.0022 | 3651.72 | 3750 | -3 | |
| | Acrolein | 0.0982 | 0.0766 | 1169.69 | 1500 | -22 | |
| * | 1,1-Dichloroethene | 0.2640 | 0.2289 | 130.08 | 150 | -13 | * |
| | Freon 113 | 0.2465 | 0.2203 | 134.06 | 150 | -11 | |
| | Acetone | 0.0677 | 0.0395 | 175.15 | 300 | -42 | |
| | Methyl Iodide | 0.5057 | 0.4489 | 133.14 | 150 | -11 | |
| | 2-Propanol | 0.0371 | 0.0329 | 665.54 | 750 | -11 | |
| | Carbon Disulfide | 0.8919 | 0.8192 | 137.78 | 150 | -8 | |
| | Allyl Chloride | 0.4984 | 0.4838 | 145.60 | 150 | -3 | |
| | Methylene Chloride | 0.3062 | 0.2739 | 134.14 | 150 | -11 | |
| | t-Butyl Alcohol | 0.0630 | 0.0541 | 644.20 | 750 | -14 | |
| | Acrylonitrile | 0.1804 | 0.1442 | 119.88 | 150 | -20 | |
| | trans-1,2-Dichloroethene | 0.2957 | 0.2647 | 134.29 | 150 | -10 | |
| | Methyl Tertiary Butyl Ether | 0.9660 | 0.9122 | 141.65 | 150 | -6 | |
| | n-Hexane | 0.2810 | 0.2831 | 151.15 | 150 | 1 | |
| | 1,2-Dichloroethene (total) | 0.3081 | 0.2762 | 268.89 | 300 | -10 | |
| # | 1,1-Dichloroethane | 0.5318 | 0.4961 | 139.95 | 150 | -7 | # |
| | di-Isopropyl Ether | 1.0569 | 1.0106 | 143.43 | 150 | -4 | |
| | 2-Chloro-1,3-Butadiene | 0.4029 | 0.3921 | 146.00 | 150 | -3 | |
| | Ethyl t-Butyl Ether | 0.9772 | 0.9244 | 141.90 | 150 | -5 | |
| | cis-1,2-Dichloroethene | 0.3206 | 0.2876 | 134.59 | 150 | -10 | |
| | 2-Butanone | 0.0726 | 0.0509 | 210.28 | 300 | -30 | |
| | 2,2-Dichloropropane | 0.4456 | 0.4133 | 139.11 | 150 | -7 | |
| | Propionitrile | 0.0685 | 0.0569 | 622.79 | 750 | -17 | |
| | Methacrylonitrile | 0.1775 | 0.1527 | 322.59 | 375 | -14 | |
| | Bromochloromethane | 0.1671 | 0.1545 | 138.65 | 150 | -8 | |
| | Tetrahydrofuran | 0.0580 | 0.0452 | 233.70 | 300 | -22 | |
| * | Chloroform | 0.4979 | 0.4575 | 137.82 | 150 | -8 | * |
| | 1,1,1-Trichloroethane | 0.4460 | 0.4017 | 135.10 | 150 | -10 | |
| | Cyclohexane | 0.4324 | 0.4173 | 144.74 | 150 | -4 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8267

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF150 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3837 | 0.3607 | 141.04 | 150 | -6 | |
| | Carbon Tetrachloride | 0.3963 | 0.3603 | 136.38 | 150 | -9 | |
| | Isobutyl Alcohol | 0.0206 | 0.0178 | 1621.09 | 1875 | -14 | |
| | Benzene | 1.1962 | 1.1205 | 140.50 | 150 | -6 | |
| | 1,2-Dichloroethane | 0.4167 | 0.3771 | 135.76 | 150 | -9 | |
| | 1,2-Dichloroethane (mz 98) | 0.0388 | 0.0360 | 139.18 | 150 | -7 | |
| | t-Amyl Methyl Ether | 0.9677 | 0.9065 | 140.51 | 150 | -6 | |
| | n-Heptane | 0.0457 | 0.0471 | 154.26 | 150 | 3 | |
| | n-Butanol | 0.0171 | 0.0157 | 3432.50 | 3750 | -8 | |
| | Trichloroethene | 0.2993 | 0.2754 | 138.02 | 150 | -8 | |
| * | 1,2-Dichloropropane | 0.3275 | 0.3121 | 142.95 | 150 | -5 | * |
| | Methyl Methacrylate | 0.3037 | 0.2695 | 133.10 | 150 | -11 | |
| | Dibromomethane | 0.2050 | 0.1878 | 137.38 | 150 | -8 | |
| | 1,4-Dioxane | 0.0048 | 0.0046 | 1786.91 | 1875 | -5 | |
| | Bromodichloromethane | 0.3765 | 0.3516 | 140.08 | 150 | -7 | |
| | 2-Nitropropane | 0.1345 | 0.1015 | 226.30 | 300 | -25 | |
| | 2-Chloroethyl Vinyl Ether | 0.2403 | 0.2026 | 126.48 | 150 | -16 | |
| | cis-1,3-Dichloropropene | 0.5401 | 0.5121 | 142.21 | 150 | -5 | |
| | 4-Methyl-2-Pentanone | 0.5394 | 0.4400 | 244.71 | 300 | -18 | |
| * | Toluene | 0.9747 | 0.9127 | 140.46 | 150 | -6 | * |
| | trans-1,3-Dichloropropene | 0.6439 | 0.6031 | 140.49 | 150 | -6 | |
| | Ethyl Methacrylate | 0.6436 | 0.6185 | 144.15 | 150 | -4 | |
| | 1,1,2-Trichloroethane | 0.3746 | 0.3425 | 137.16 | 150 | -9 | |
| | Tetrachloroethene | 0.4324 | 0.3841 | 133.25 | 150 | -11 | |
| | 1,3-Dichloropropane | 0.6634 | 0.6171 | 139.53 | 150 | -7 | |
| | 2-Hexanone | 0.5492 | 0.4196 | 229.18 | 300 | -24 | |
| | Dibromochloromethane | 0.4475 | 0.4163 | 139.54 | 150 | -7 | |
| | 1,2-Dibromoethane | 0.4156 | 0.3735 | 134.79 | 150 | -10 | |
| # | Chlorobenzene | 1.0969 | 1.0139 | 138.64 | 150 | -8 | # |
| | 1,1,1,2-Tetrachloroethane | 0.4052 | 0.3742 | 138.54 | 150 | -8 | |
| * | Ethylbenzene | 1.7226 | 1.6609 | 144.63 | 150 | -4 | * |
| | m+p-Xylene | 0.6848 | 0.6477 | 283.74 | 300 | -5 | |
| | Xylene (Total) | 0.6813 | 0.6411 | 423.39 | 450 | -6 | |
| | o-Xylene | 0.6744 | 0.6279 | 139.65 | 150 | -7 | |
| | Styrene | 1.1625 | 1.1264 | 145.35 | 150 | -3 | |
| # | Bromoform | 0.3951 | 0.3487 | 132.38 | 150 | -12 | # |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

9268



FORM VII VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07159 Calibration Date: 02/24/04 Time: 19:25

Lab File ID: nf24c03.d Init. Calib. Date(s): 02/02/04 02/02/04

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF150 | CONC. | CONC. | DRIFT | |
| Isopropylbenzene | 1.5666 | 1.4960 | 143.25 | 150 | -5 | |
| Cyclohexanone | 0.0222 | 0.0213 | 1802.82 | 1875 | -4 | |
| # 1,1,2,2-Tetrachloroethane | 1.0836 | 0.9811 | 135.81 | 150 | -9 | # |
| trans-1,4-Dichloro-2-Butene | 0.3514 | 0.3306 | 352.87 | 375 | -6 | |
| Bromobenzene | 0.9052 | 0.8338 | 138.17 | 150 | -8 | |
| 1,2,3-Trichloropropane | 0.3293 | 0.2828 | 128.78 | 150 | -14 | |
| n-Propylbenzene | 3.0952 | 3.1036 | 150.41 | 150 | 0 | |
| 2-Chlorotoluene | 0.7355 | 0.6947 | 141.67 | 150 | -6 | |
| 1,3,5-Trimethylbenzene | 2.2431 | 2.2172 | 148.27 | 150 | -1 | |
| 4-Chlorotoluene | 0.7666 | 0.7261 | 142.08 | 150 | -5 | |
| tert-Butylbenzene | 0.5090 | 0.4966 | 146.34 | 150 | -2 | |
| Pentachloroethane | 0.5662 | 0.5262 | 139.41 | 150 | -7 | |
| 1,2,4-Trimethylbenzene | 2.3472 | 2.3223 | 148.41 | 150 | -1 | |
| sec-Butylbenzene | 2.4556 | 2.4927 | 152.27 | 150 | 2 | |
| p-Isopropyltoluene | 2.2225 | 2.2448 | 151.50 | 150 | 1 | |
| 1,3-Dichlorobenzene | 1.4795 | 1.3815 | 140.06 | 150 | -7 | |
| 1,4-Dichlorobenzene | 1.5693 | 1.4548 | 139.06 | 150 | -7 | |
| n-Butylbenzene | 1.7839 | 1.8544 | 155.93 | 150 | 4 | |
| 1,2-Dichlorobenzene | 1.4924 | 1.3776 | 138.46 | 150 | -8 | |
| 1,2-Dibromo-3-Chloropropane | 0.2368 | 0.2024 | 128.23 | 150 | -15 | |
| 1,2,4-Trichlorobenzene | 0.9326 | 0.8828 | 141.99 | 150 | -5 | |
| Hexachlorobutadiene | 0.4489 | 0.4156 | 158.22 | 150 | 5 | |
| Naphthalene | 2.9630 | 2.6839 | 135.87 | 150 | -9 | |
| 1,2,3-Trichlorobenzene | 0.8924 | 0.8231 | 138.36 | 150 | -8 | |
| Dibromofluoromethane | 0.2575 | 0.2451 | 47.59 | 50 | -5 | |
| 1,2-Dichloroethane-d4 | 0.0680 | 0.0623 | 45.81 | 50 | -8 | |
| Dibromofluoromethane(mz111) | 0.2630 | 0.2490 | 47.32 | 50 | -5 | |
| 1,2-Dichloroethane-d4(mz104) | 0.0434 | 0.0397 | 45.72 | 50 | -9 | |
| Toluene-d8(mz100) | 0.8641 | 0.8580 | 49.65 | 50 | -1 | |
| 4-Bromofluorobenzene(mz174) | 0.4671 | 0.4578 | 49.01 | 50 | -2 | |
| Toluene-d8 | 1.3017 | 1.2906 | 49.57 | 50 | -1 | |
| 4-Bromofluorobenzene | 0.4739 | 0.4911 | 51.82 | 50 | 4 | |

Average %Drift 9

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

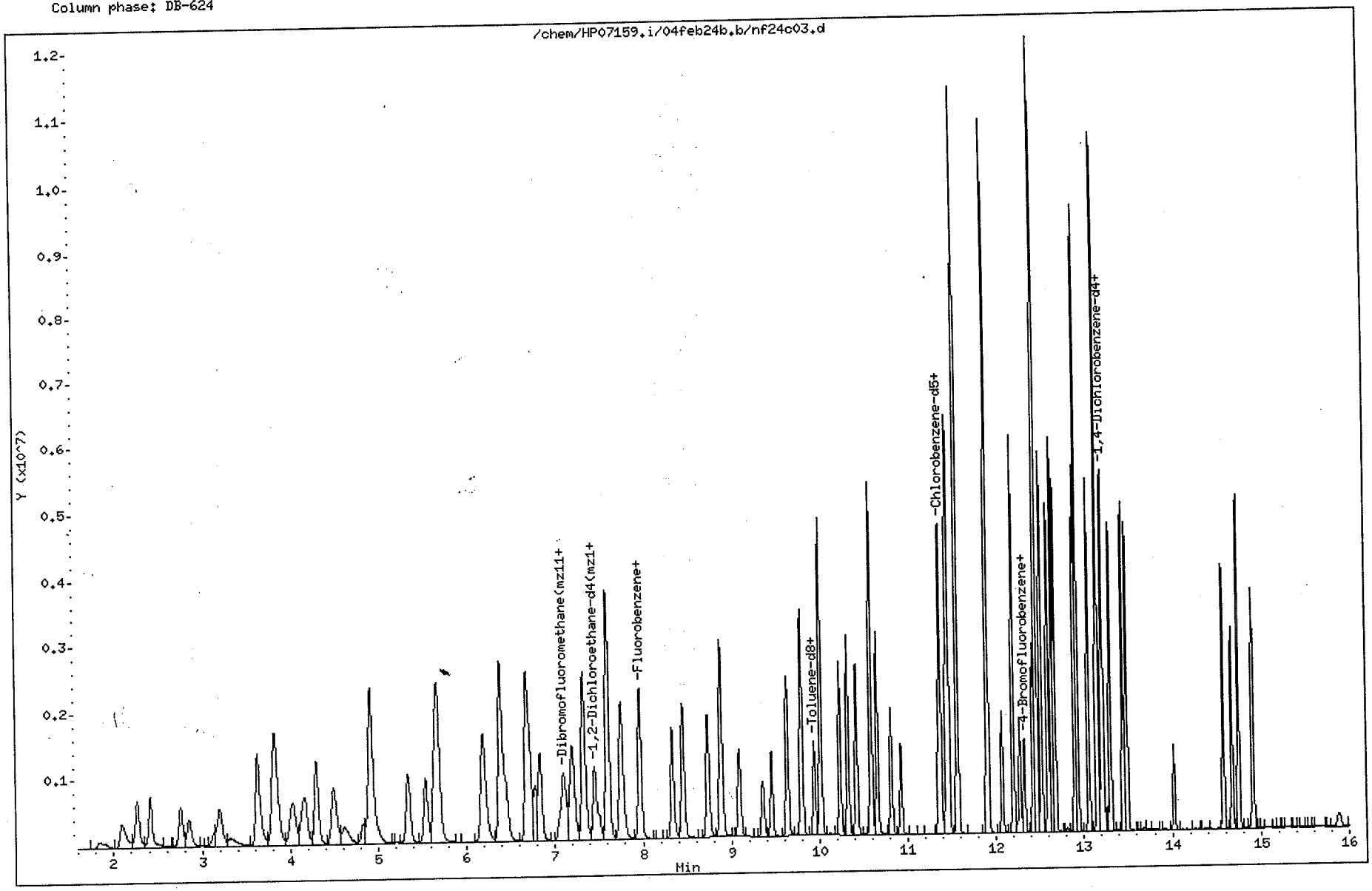
8269

SME1533
2/24/04

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d
Date : 24-FEB-2004 19:25
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;2;;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | 2.098 | 85 | 1119611 | 133.624 |
| 3) Chloromethane | (1) | 2.271 | 50 | 1305923 | 140.608 |
| 4) Vinyl Chloride | (1) | 2.419 | 62 | 1156224 | 136.629 |
| 5) Bromomethane | (1) | 2.762 | 94 | 667770 | 132.462 |
| 6) Chloroethane | (1) | 2.852 | 64 | 641626 | 140.381 |
| 7) Trichlorofluoromethane | (1) | 3.205 | 101 | 1227414 | 130.210 |
| 11) Ethanol | (1) | 3.333 | 46 | 172759 | 3651.718 |
| 13) Acrolein | (1) | 3.635 | 56 | 2382780 | 1169.693 |
| 16) 1,1-Dichloroethene | (1) | 3.818 | 96 | 712288 | 130.081 |
| 17) Freon 113 | (1) | 3.840 | 101 | 685521 | 134.058 |
| 18) Acetone | (1) | 3.827 | 58 | 246046 | 175.150 |
| 19) Methyl Iodide | (1) | 4.036 | 142 | 1396595 | 133.137 |
| 20) 2-Propanol | (1) | 3.997 | 45 | 511477 | 665.543 |
| 22) Carbon Disulfide | (1) | 4.168 | 76 | 2548978 | 137.782 |
| 23) Allyl Chloride | (1) | 4.299 | 41 | 1505257 | 145.596 |
| 24) Methylene Chloride | (1) | 4.495 | 84 | 852140 | 134.142 |
| 25) t-Butyl Alcohol | (1) | 4.623 | 59 | 841671 | 644.196 |
| 27) Acrylonitrile | (1) | 4.825 | 53 | 448700 | 119.879 |
| 28) trans-1,2-Dichloroethene | (1) | 4.915 | 96 | 823709 | 134.292 |
| 29) Methyl Tertiary Butyl Ether | (1) | 4.922 | 73 | 2838191 | 141.647 |
| 32) n-Hexane | (1) | 5.339 | 57 | 880909 | 151.150 |
| 33) 1,2-Dichloroethene (total) | (1) | | 96 | 1718701 | 268.885 |
| 35) 1,1-Dichloroethane | (1) | 5.541 | 63 | 1543699 | 139.946 |
| 36) di-Isopropyl Ether | (1) | 5.653 | 45 | 3144586 | 143.428 |
| 37) 2-Chloro-1,3-Butadiene | (1) | 5.682 | 53 | 1220096 | 145.999 |
| 38) Ethyl t-Butyl Ether | (1) | 6.192 | 59 | 2876164 | 141.896 |
| 39) cis-1,2-Dichloroethene | (1) | 6.385 | 96 | 894992 | 134.594 |
| 40) 2-Butanone | (1) | 6.382 | 72 | 316814 | 210.276 |
| 41) 2,2-Dichloropropane | (1) | 6.407 | 77 | 1285933 | 139.108 |
| 42) Propionitrile | (1) | 6.452 | 54 | 884796 | 622.785 |
| 45) Methacrylonitrile | (1) | 6.680 | 67 | 1187941 | 322.590 |
| 46) Bromochloromethane | (1) | 6.722 | 128 | 480663 | 138.646 |
| 47) Tetrahydrofuran | (1) | 6.776 | 71 | 281267 | 233.702 |
| 48) Chloroform | (1) | 6.834 | 83 | 1423368 | 137.824 |

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 51) 1,1,1-Trichloroethane | (1) | 7.104 | 97 | 1249999 | 135.102 |
| 52) Cyclohexane | (1) | 7.200 | 56 | 1298325 | 144.741 |
| 54) 1,1-Dichloropropene | (1) | 7.325 | 75 | 1122432 | 141.042 |
| 56) Carbon Tetrachloride | (1) | 7.341 | 117 | 1121008 | 136.378 |
| 57) Isobutyl Alcohol | (1) | 7.457 | 41 | 692139 | 1621.092 |
| 60) Benzene | (1) | 7.598 | 78 | 3486249 | 140.505 |
| 61) 1,2-Dichloroethane | (1) | 7.611 | 62 | 1173370 | 135.757 |
| 62) 1,2-Dichloroethane (mz 98) | (1) | 7.614 | 98 | 111891 | 139.178 |
| 64) t-Amyl Methyl Ether | (1) | 7.758 | 73 | 2820500 | 140.515 |
| 66) n-Heptane | (1) | 7.967 | 100 | 146419 | 154.263 |
| 65) *Fluorobenzene | (1) | 7.970 | 96 | 1037153 | 50.000 |
| 68) n-Butanol | (1) | 8.336 | 56 | 1221494 | 3432.496 |
| 69) Trichloroethene | (1) | 8.458 | 95 | 856911 | 138.018 |
| 70) 1,2-Dichloropropane | (1) | 8.737 | 63 | 971124 | 142.949 |
| 71) Methyl Methacrylate | (1) | 8.884 | 69 | 838525 | 133.099 |
| 72) Dibromomethane | (1) | 8.891 | 93 | 584181 | 137.375 |
| 73) 1,4-Dioxane | (1) | 8.904 | 88 | 179232 | 1786.914 |
| 74) Bromodichloromethane | (1) | 9.093 | 83 | 1093837 | 140.077 |
| 76) 2-Nitropropane | (1) | 9.356 | 41 | 631339 | 226.297 |
| 77) 2-Chloroethyl Vinyl Ether | (1) | 9.459 | 63 | 630341 | 126.482 |
| 78) cis-1,3-Dichloropropene | (1) | 9.635 | 75 | 1593337 | 142.211 |
| 79) 4-Methyl-2-Pentanone | (1) | 9.799 | 43 | 2737988 | 244.707 |
| 82) Toluene | (2) | 10.014 | 92 | 2230352 | 140.456 |
| 83) trans-1,3-Dichloropropene | (2) | 10.232 | 75 | 1473830 | 140.488 |
| 84) Ethyl Methacrylate | (2) | 10.325 | 69 | 1511368 | 144.145 |
| 85) 1,1,2-Trichloroethane | (2) | 10.425 | 97 | 837070 | 137.163 |
| 87) Tetrachloroethene | (2) | 10.588 | 166 | 938626 | 133.247 |
| 88) 1,3-Dichloropropane | (2) | 10.592 | 76 | 1508022 | 139.532 |
| 90) 2-Hexanone | (2) | 10.659 | 43 | 2050725 | 229.183 |
| 91) Dibromochloromethane | (2) | 10.816 | 129 | 1017362 | 139.537 |
| 92) 1,2-Dibromoethane | (2) | 10.928 | 107 | 912738 | 134.794 |
| 94) *Chlorobenzene-d5 | (2) | 11.349 | 117 | 814583 | 50.000 |
| 95) Chlorobenzene | (2) | 11.378 | 112 | 2477618 | 138.645 |
| 96) 1,1,1,2-Tetrachloroethane | (2) | 11.445 | 131 | 914503 | 138.536 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 97) Ethylbenzene | (2) | 11.468 | 91 | 4058863 | 144.631 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 3165556 | 283.741 |
| 93) Xylene (Total) | (2) | | 106 | 4699946 | 423.392 |
| 100) o-Xylene | (2) | 11.904 | 106 | 1534390 | 139.651 |
| 101) Styrene | (2) | 11.914 | 104 | 2752705 | 145.347 |
| 102) Bromoform | (2) | 12.074 | 173 | 852178 | 132.381 |
| 105) Isopropylbenzene | (2) | 12.199 | 105 | 3655887 | 143.245 |
| 106) Cyclohexanone | (2) | 12.273 | 55 | 651596 | 1802.823 |
| 110) 1,1,2,2-Tetrachloroethane | (3) | 12.424 | 83 | 1305709 | 135.808 |
| 111) trans-1,4-Dichloro-2-Butene | (3) | 12.462 | 53 | 1100018 | 352.869 |
| 112) Bromobenzene | (3) | 12.456 | 156 | 1109661 | 138.171 |
| 113) 1,2,3-Trichloropropane | (3) | 12.462 | 110 | 376325 | 128.784 |
| 114) n-Propylbenzene | (3) | 12.520 | 91 | 4130369 | 150.408 |
| 115) 2-Chlorotoluene | (3) | 12.600 | 126 | 924486 | 141.674 |
| 116) 1,3,5-Trimethylbenzene | (3) | 12.645 | 105 | 2950778 | 148.269 |
| 117) 4-Chlorotoluene | (3) | 12.677 | 126 | 966385 | 142.084 |
| 118) tert-Butylbenzene | (3) | 12.899 | 134 | 660860 | 146.343 |
| 119) Pentachloroethane | (3) | 12.924 | 167 | 700310 | 139.409 |
| 120) 1,2,4-Trimethylbenzene | (3) | 12.931 | 105 | 3090605 | 148.407 |
| 121) sec-Butylbenzene | (3) | 13.059 | 105 | 3317314 | 152.265 |
| 122) p-Isopropyltoluene | (3) | 13.155 | 119 | 2987396 | 151.501 |
| 123) 1,3-Dichlorobenzene | (3) | 13.159 | 146 | 1838572 | 140.063 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 443611 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.220 | 146 | 1936154 | 139.063 |
| 126) n-Butylbenzene | (3) | 13.447 | 91 | 2467916 | 155.930 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 1833402 | 138.463 |
| 131) 1,2-Dibromo-3-Chloropropane | (3) | 14.025 | 75 | 269427 | 128.226 |
| 132) 1,2,4-Trichlorobenzene | (3) | 14.580 | 180 | 1174884 | 141.989 |
| 133) Hexachlorobutadiene | (3) | 14.680 | 225 | 553038 | 158.222 |
| 134) Naphthalene | (3) | 14.753 | 128 | 3571774 | 135.870 |
| 135) 1,2,3-Trichlorobenzene | (3) | 14.914 | 180 | 1095427 | 138.356 |
| 50) $Dibromofluoromethane | (1) | 7.052 | 113 | 254170 | 47.592 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 64605 | 45.815 |
| 49) $Dibromofluoromethane(mz111) | (1) | 7.052 | 111 | 258217 | 47.324 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24c03.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 19:25  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 8260WI+CYC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 19:47 Automation

Sample Name: VSTD150  Lab Sample ID: VSTD150

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 59) $1,2-Dichloroethane-d4 (mz104) | (1) | 7.505 | 104 | 41164 | 45.719 |
| 81) $Toluene-d8 (mz100) | (2) | 9.943 | 100 | 698906 | 49.647 |
| 108) $4-Bromofluorobenzene (mz174) | (2) | 12.328 | 174 | 372918 | 49.009 |
| 80) $Toluene-d8 | (2) | 9.943 | 98 | 1051308 | 49.573 |
| 107) $4-Bromofluorobenzene | (2) | 12.324 | 95 | 400074 | 51.822 |

$ = Compound is a surrogate standard.

# Lancaster Laboratories
# Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP07159.i/04feb02b.b/nf02i15.d
/chem/HP07159.i/04feb02b.b/nf02i14.d
/chem/HP07159.i/04feb02b.b/nf02i13.d
/chem/HP07159.i/04feb02b.b/nf02i12.d
/chem/HP07159.i/04feb02b.b/nf02i11.d
/chem/HP07159.i/04feb02b.b/nf02i10.d

Average areas and retention times from above standards are used for compa

Current Continuing Calibration Standard:

/chem/HP07159.i/04feb24b.b/nf24c03.d

RT Summary

File ID:
nf24c03.d

| Internal Standard Name | nf24c03.d | ICAL RT | In Spec |
|---|---|---|---|
| Fluorobenzene | 7.970 | 7.975 | Yes |
| Chlorobenzene-d5 | 11.349 | 11.355 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.200 | 13.205 | Yes |

A "No" indicates the retention time is greater than 30 seconds from the average RT.

Area Summary

File ID:
nf24c03.d

| Internal Standard Name | nf24c03.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| Fluorobenzene | 1037153 | 1041751 | 520876 | 2083502 | Yes |
| Chlorobenzene-d5 | 814583 | 812951 | 406476 | 1625902 | Yes |
| 1,4-Dichlorobenzene-d4 | 443611 | 456044 | 228022 | 912088 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

# Raw QC Data

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

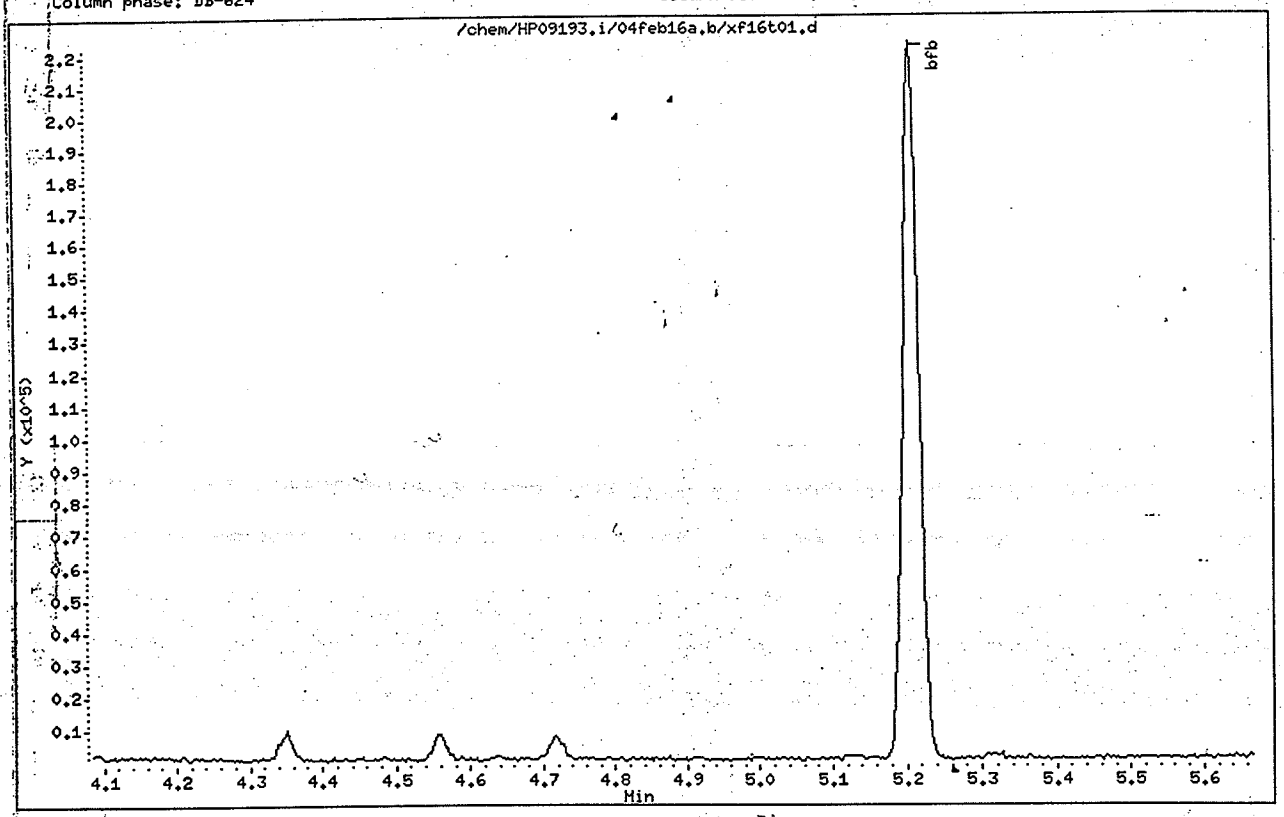
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Instrument: HP09193.i

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25




LCM1518
2/16/04

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

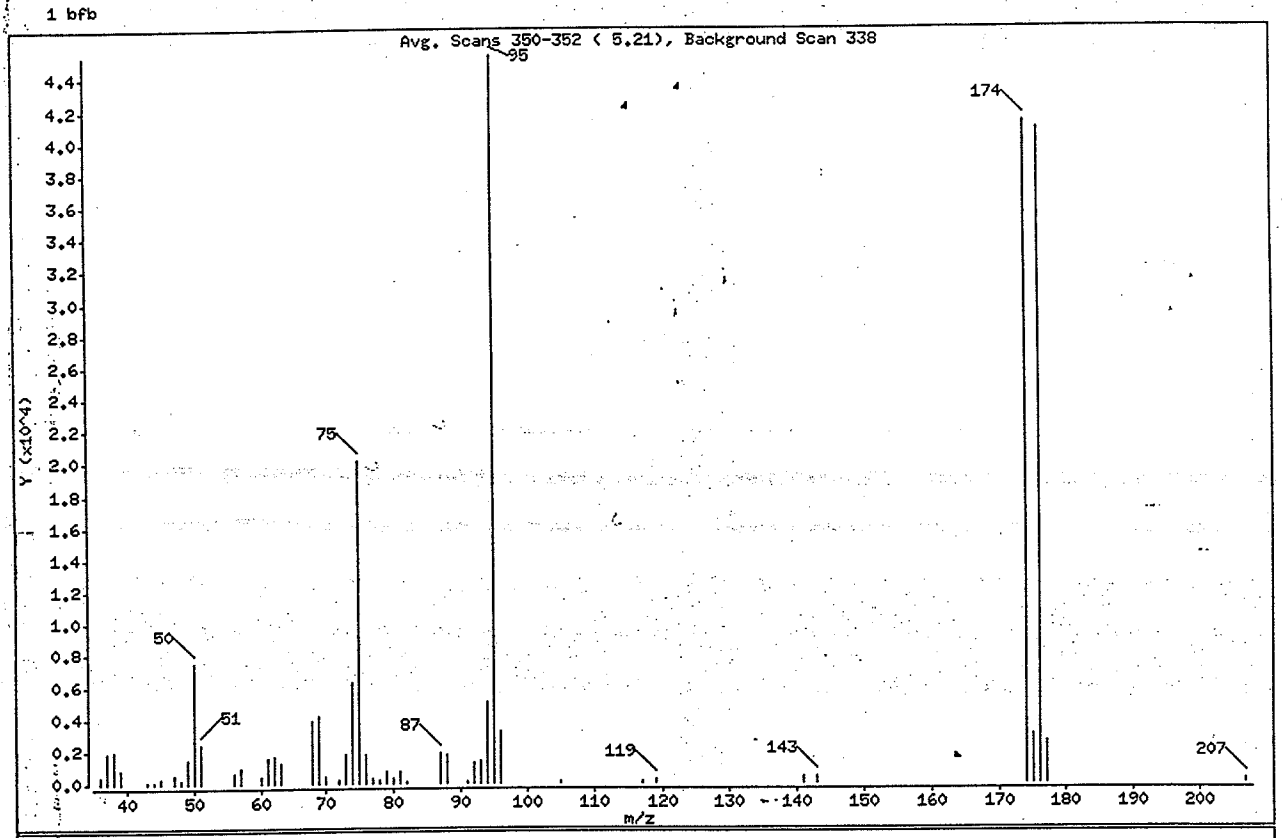
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 16.59 |
| 75 | 30.00 - 60.00% of mass 95 | 44.43 |
| 96 | 5.00 - 9.00% of mass 95 | 7.22 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 90.79 |
| 175 | 5.00 - 9.00% of mass 174 | 6.67 ( 7.35) |
| 176 | 95.00 - 101.00% of mass 174 | 89.94 ( 99.07) |
| 177 | 5.00 - 9.00% of mass 176 | 5.75 ( 6.40) |

Data File: /chem/HP09193.i/04feb16a.b/xf16t01.d

Date : 16-FEB-2004 09:21

Client ID: BFB 50 NG SEP09

Instrument: HP09193.I

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

Data File: xf16t01.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 338

Location of Maximum: 95.00

Number of points: 50

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 420 | 57.00 | 896 | 77.00 | 348 | 96.00 | 3277 |
| 37.00 | 1882 | 60.00 | 435 | 78.00 | 209 | 105.00 | 108 |
| 38.00 | 1950 | 61.00 | 1605 | 79.00 | 679 | 117.00 | 89 |
| 39.00 | 817 | 62.00 | 1641 | 80.00 | 358 | 119.00 | 193 |
| 43.00 | 107 | 63.00 | 1245 | 81.00 | 770 | 141.00 | 367 |
| 44.00 | 151 | 68.00 | 3842 | 82.00 | 88 | 143.00 | 384 |
| 45.00 | 325 | 69.00 | 4125 | 87.00 | 1888 | 174.00 | 41224 |
| 47.00 | 538 | 70.00 | 395 | 88.00 | 1746 | 175.00 | 3030 |
| 48.00 | 189 | 72.00 | 205 | 91.00 | 104 | 176.00 | 40840 |
| 49.00 | 1464 | 73.00 | 1755 | 92.00 | 1226 | 177.00 | 2612 |
| 50.00 | 7531 | 74.00 | 6230 | 93.00 | 1407 | 207.00 | 160 |
| 51.00 | 2391 | 75.00 | 20168 | 94.00 | 5006 | | |
| 56.00 | 583 | 76.00 | 1771 | 95.00 | 45408 | | |

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

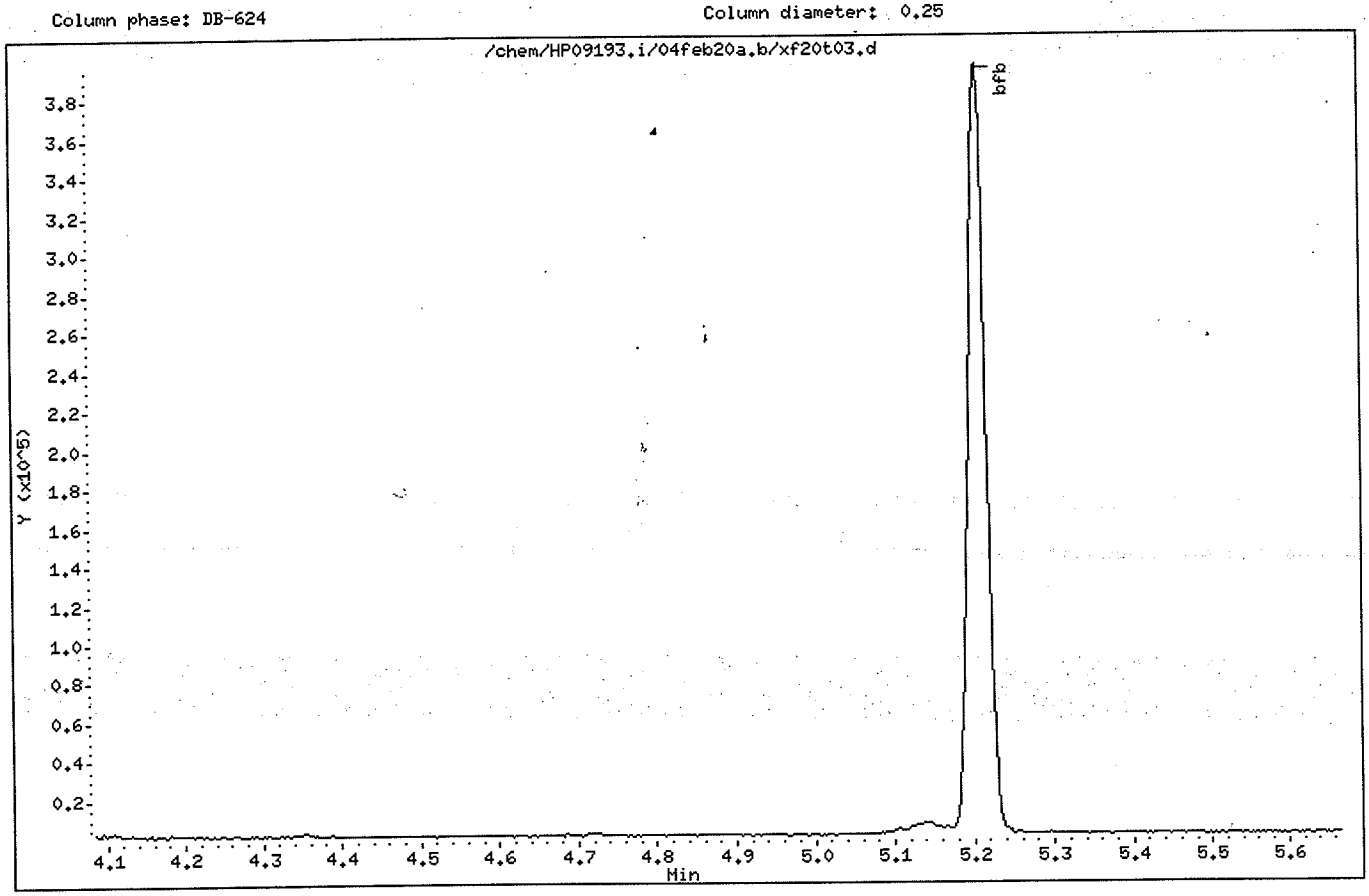
Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25




LCM1528
2/20/04

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

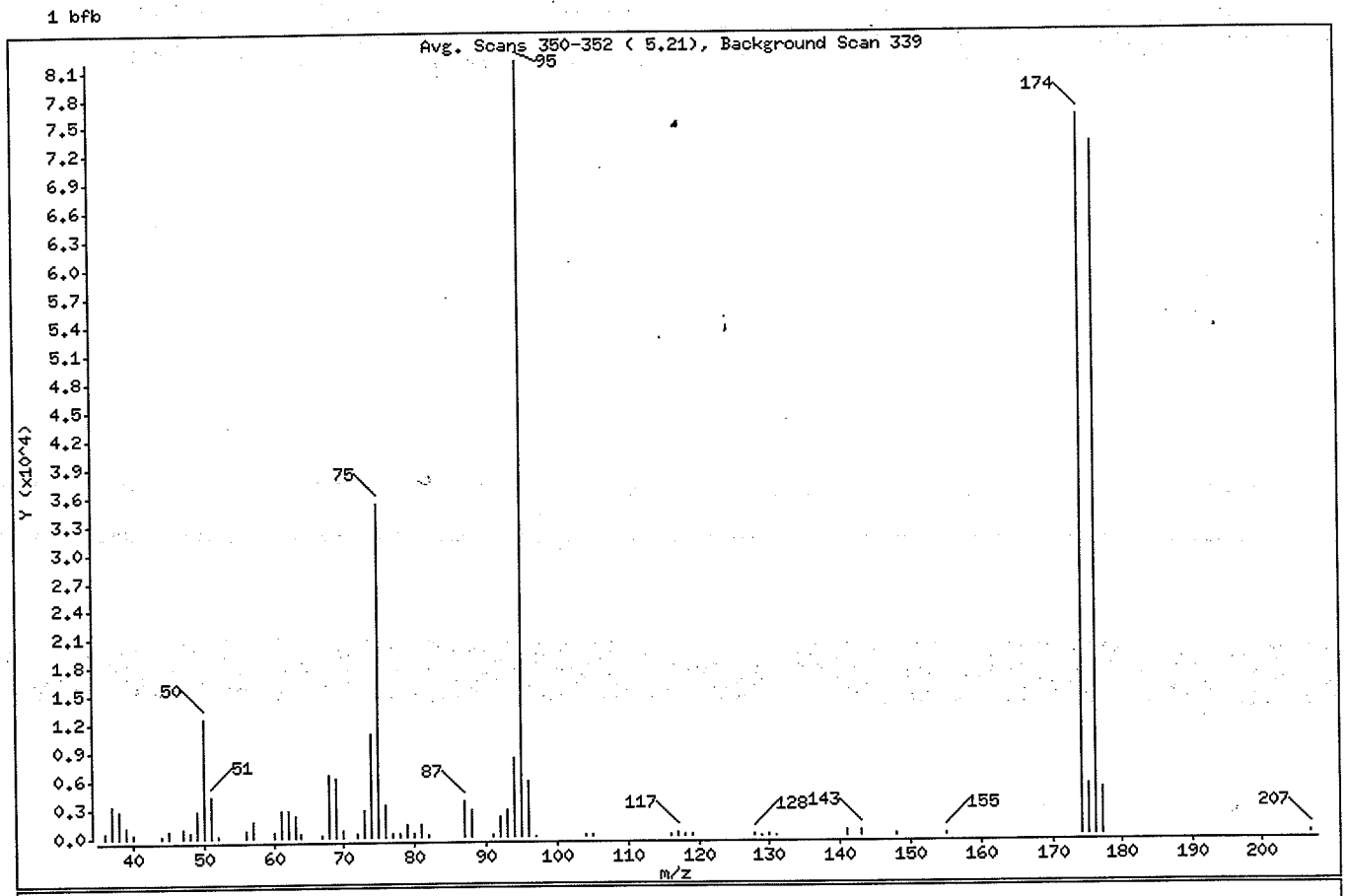
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.30 |
| 75 | 30.00 - 60.00% of mass 95 | 43.03 |
| 96 | 5.00 - 9.00% of mass 95 | 7.22 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 92.68 |
| 175 | 5.00 - 9.00% of mass 174 | 6.55 ( 7.06) |
| 176 | 95.00 - 101.00% of mass 174 | 89.23 ( 96.28) |
| 177 | 5.00 - 9.00% of mass 176 | 5.91 ( 6.62) |

Data File: /chem/HP09193.i/04feb20a.b/xf20t03.d

Date : 20-FEB-2004 10:03

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

Data File: xf20t03.d

Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 339

Location of Maximum: 95.00

Number of points: 63

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 597 | 61.00 | 2823 | 80.00 | 378 | 118.00 | 172 |
| 37.00 | 3306 | 62.00 | 2911 | 81.00 | 1301 | 119.00 | 199 |
| 38.00 | 2732 | 63.00 | 2274 | 82.00 | 243 | 128.00 | 101 |
| 39.00 | 1201 | 64.00 | 401 | 87.00 | 3711 | 129.00 | 83 |
| 40.00 | 296 | 67.00 | 123 | 88.00 | 2873 | 130.00 | 98 |
| 44.00 | 266 | 68.00 | 6663 | 91.00 | 228 | 131.00 | 71 |
| 45.00 | 722 | 69.00 | 6254 | 92.00 | 2157 | 141.00 | 577 |
| 47.00 | 955 | 70.00 | 717 | 93.00 | 2860 | 143.00 | 617 |
| 48.00 | 478 | 72.00 | 311 | 94.00 | 8328 | 148.00 | 101 |
| 49.00 | 2733 | 73.00 | 2914 | 95.00 | 81864 | 155.00 | 105 |
| 50.00 | 12525 | 74.00 | 10988 | 96.00 | 5910 | 174.00 | 75872 |
| 51.00 | 4251 | 75.00 | 35224 | 97.00 | 88 | 175.00 | 5359 |
| 52.00 | 96 | 76.00 | 3366 | 104.00 | 221 | 176.00 | 73048 |
| 56.00 | 764 | 77.00 | 432 | 105.00 | 183 | 177.00 | 4838 |
| 57.00 | 1743 | 78.00 | 371 | 116.00 | 109 | 207.00 | 109 |
| 60.00 | 605 | 79.00 | 1331 | 117.00 | 446 | | |

Data File: /chem/HP09193.i/04feb23c.b/xf23t03.d

Date : 23-FEB-2004 09:57

Client ID: BFB 50 NG SEP09

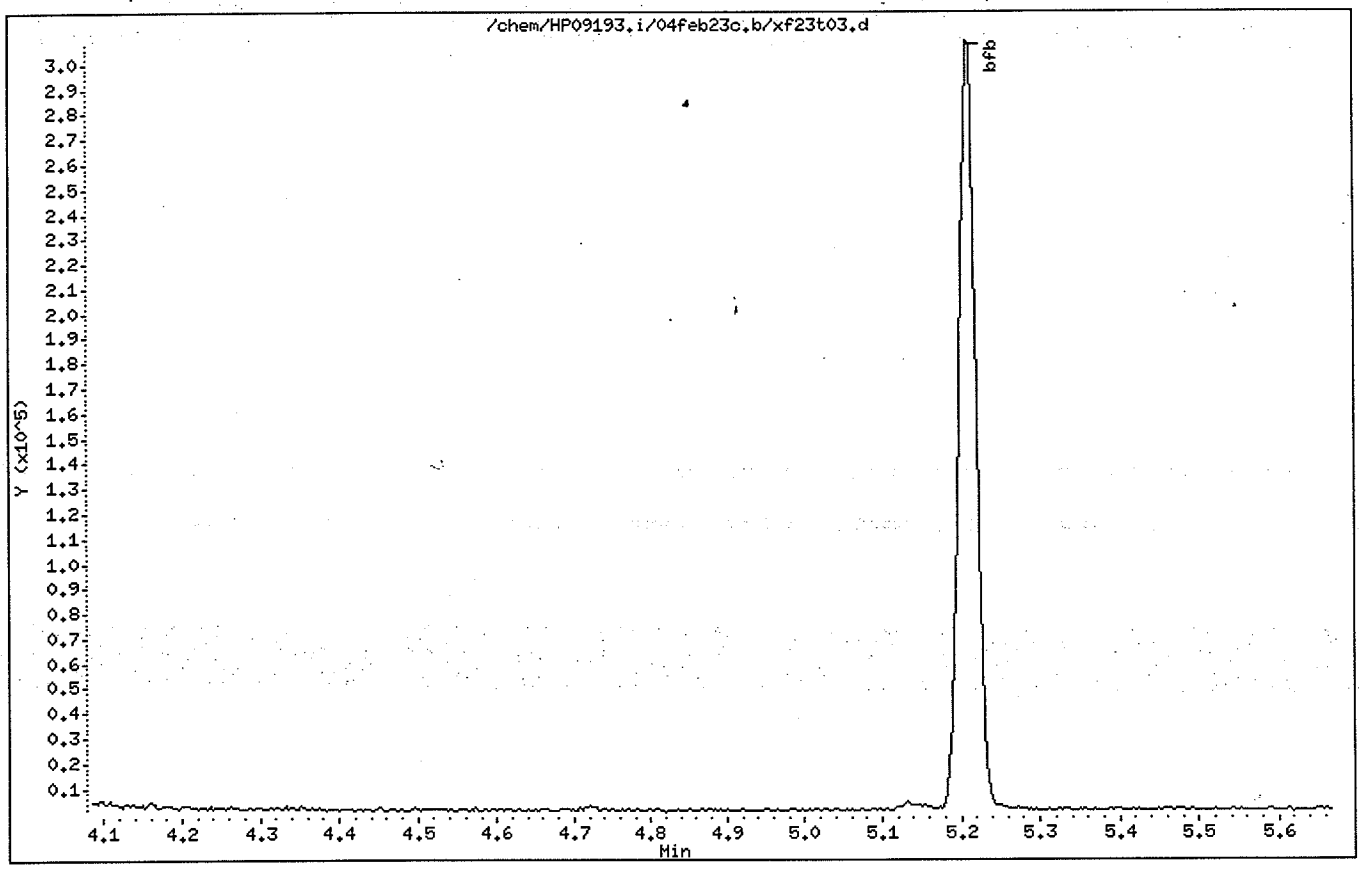
Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25




LCM1518
2/23/04

Data File: /chem/HP09193.i/04feb23c.b/xf23t03.d

Date : 23-FEB-2004 09:57

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

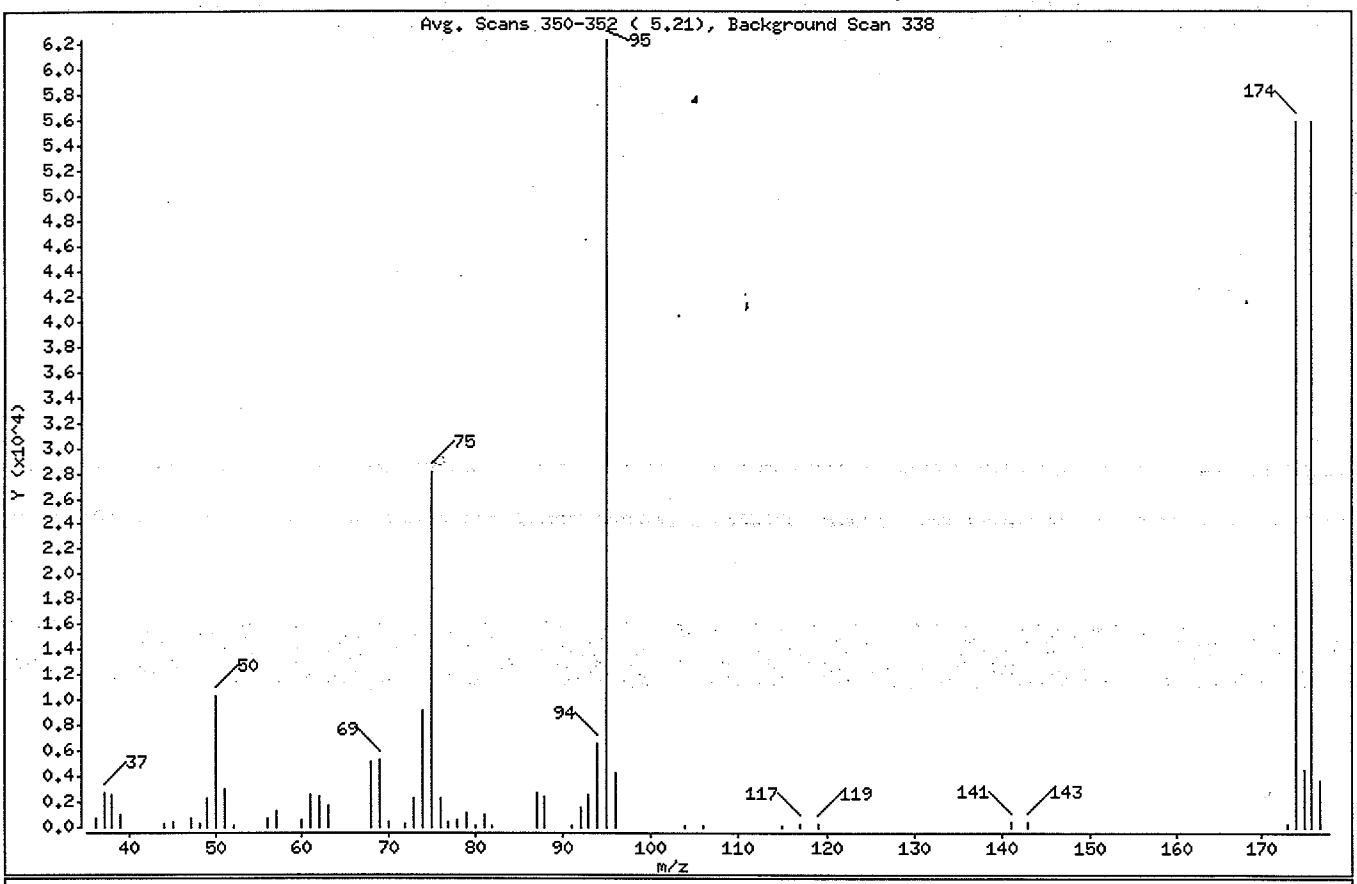
Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCH01518

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 16.45 |
| 75 | 30.00 - 60.00% of mass 95 | 45.14 |
| 96 | 5.00 - 9.00% of mass 95 | 6.79 |
| 173 | Less than 2.00% of mass 174 | 0.46 ( 0.52) |
| 174 | 50.00 - 100.00% of mass 95 | 89.72 |
| 175 | 5.00 - 9.00% of mass 174 | 7.36 ( 8.21) |
| 176 | 95.00 - 101.00% of mass 174 | 89.63 ( 99.90) |
| 177 | 5.00 - 9.00% of mass 176 | 6.06 ( 6.76) |

Data File: /chem/HP09193.i/04feb23c.b/xf23t03.d

Date : 23-FEB-2004 09:57

Client ID: BFB 50 NG SEP09

Instrument: HP09193.i

Sample Info: BFB 50 NG SEP09;BFB 50NG SEP09

Operator: LCM01518

Column phase: DB-624

Column diameter: 0.25

Data File: xf23t03.d
Spectrum: Avg. Scans 350-352 ( 5.21), Background Scan 338
Location of Maximum: 95.00
Number of points: 52

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 648 | 60.00 | 536 | 79.00 | 1179 | 115.00 | 92 |
| 37.00 | 2723 | 61.00 | 2558 | 80.00 | 117 | 117.00 | 254 |
| 38.00 | 2541 | 62.00 | 2411 | 81.00 | 1067 | 119.00 | 220 |
| 39.00 | 933 | 63.00 | 1759 | 82.00 | 89 | 141.00 | 489 |
| 44.00 | 244 | 68.00 | 5112 | 87.00 | 2681 | 143.00 | 500 |
| 45.00 | 489 | 69.00 | 5355 | 88.00 | 2454 | 173.00 | 289 |
| 47.00 | 694 | 70.00 | 385 | 91.00 | 126 | 174.00 | 55912 |
| 48.00 | 295 | 72.00 | 275 | 92.00 | 1598 | 175.00 | 4589 |
| 49.00 | 2325 | 73.00 | 2352 | 93.00 | 2583 | 176.00 | 55856 |
| 50.00 | 10253 | 74.00 | 9129 | 94.00 | 6562 | 177.00 | 3777 |
| 51.00 | 3050 | 75.00 | 28128 | 95.00 | 62320 | | |
| 52.00 | 89 | 76.00 | 2312 | 96.00 | 4231 | | |
| 56.00 | 749 | 77.00 | 365 | 104.00 | 162 | | |
| 57.00 | 1299 | 78.00 | 516 | 106.00 | 96 | | |

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

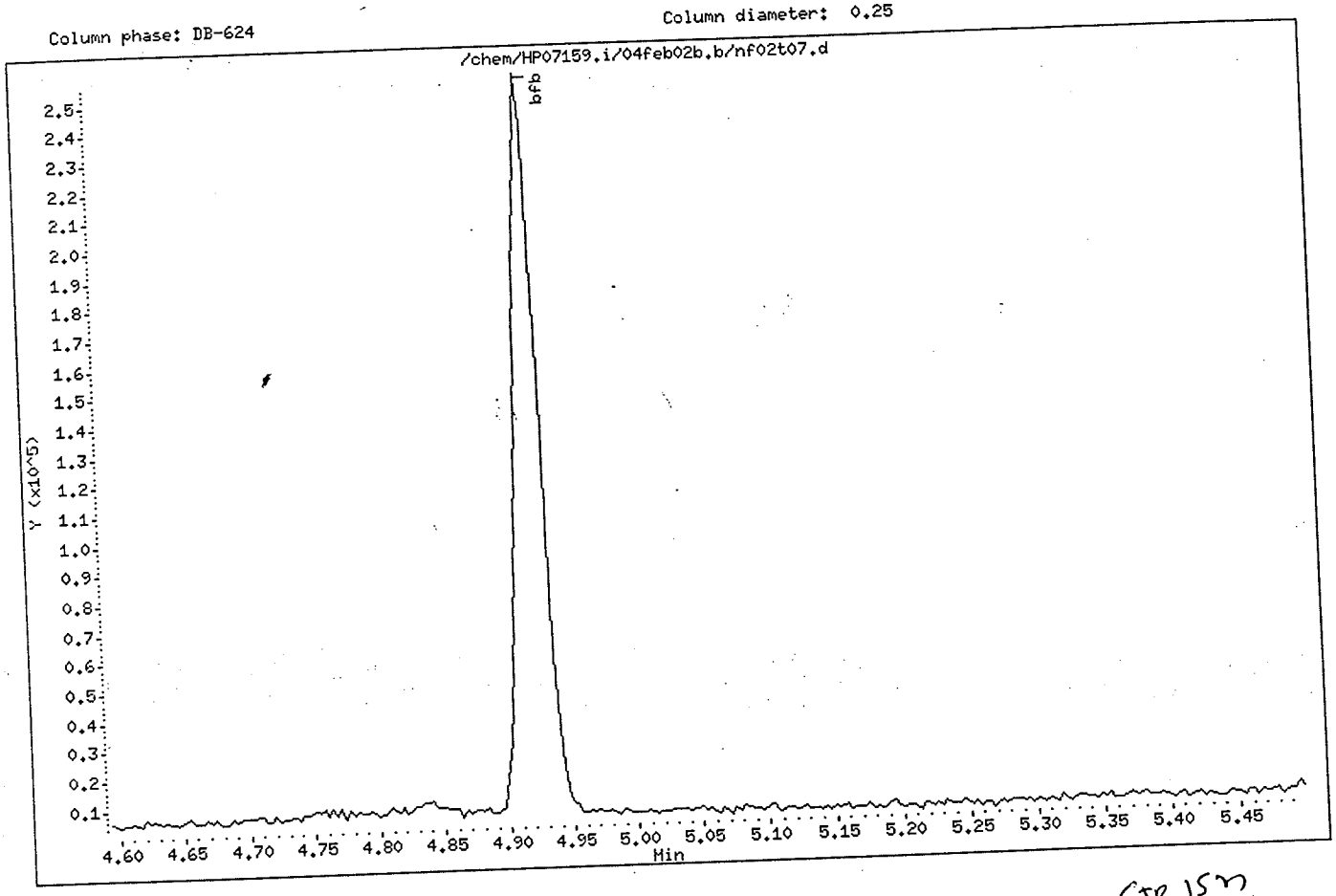
Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column phase: DB-624

Column diameter: 0.25




SJR 1SM
2/2/04

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

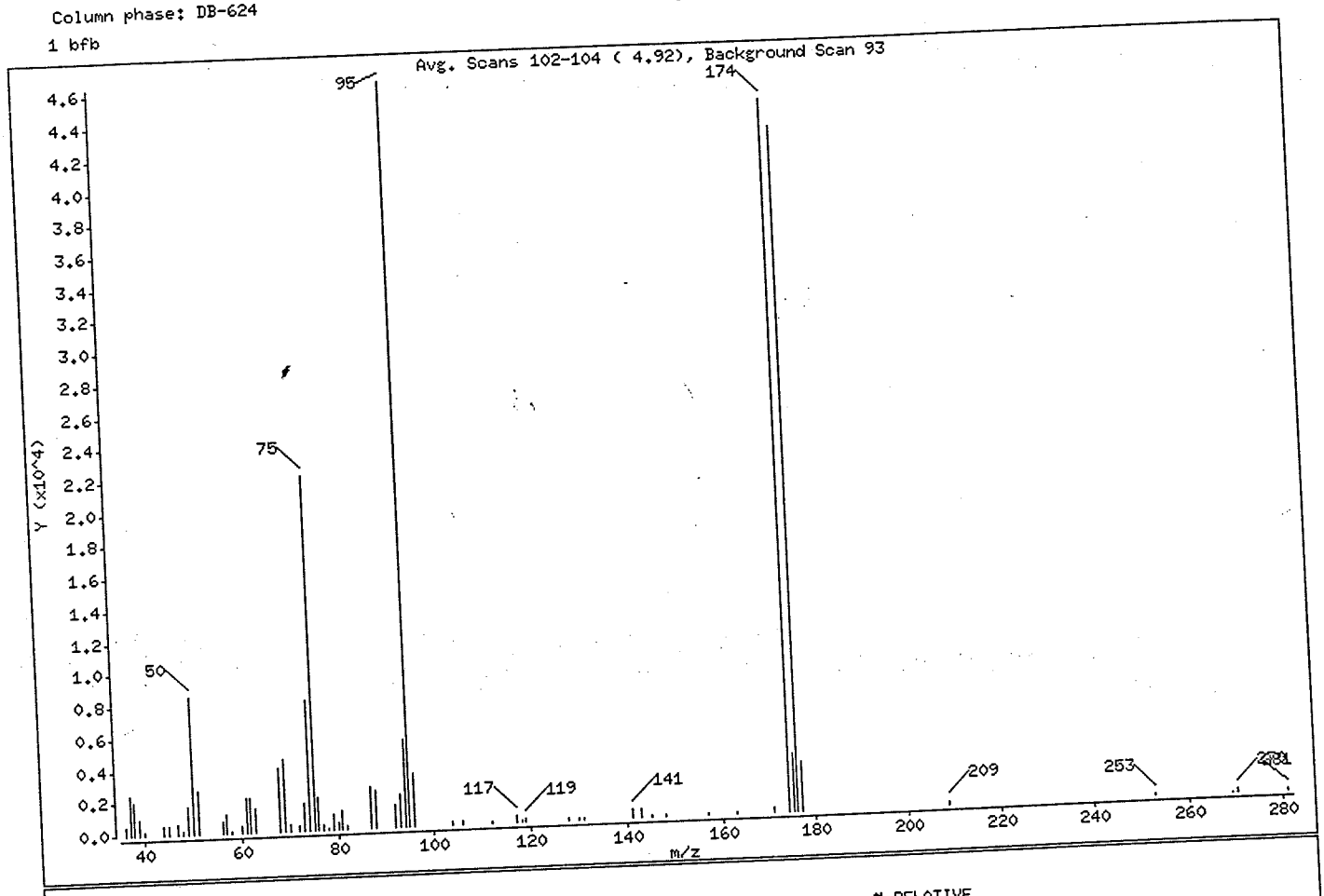
Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column diameter: 0.25

Column phase: DB-624

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.39 |
| 75 | 30.00 - 60.00% of mass 95 | 47.64 |
| 96 | 5.00 - 9.00% of mass 95 | 7.01 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 95.78 |
| 175 | 5.00 - 9.00% of mass 174 | 7.80 ( 8.15) |
| 176 | 95.00 - 101.00% of mass 174 | 92.21 ( 96.27) |
| 177 | 5.00 - 9.00% of mass 176 | 6.67 ( 7.24) |

Data File: /chem/HP07159.i/04feb02b.b/nf02t07.d

Date : 02-FEB-2004 11:30

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SJR01577

Column phase: DB-624

Column diameter: 0.25

Data File: nf02t07.d

Spectrum: Avg. Scans 102-104 ( 4.92), Background Scan 93

Location of Maximum: 95.00

Number of points: 65

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 482 | 62.00 | 2104 | 88.00 | 2358 | 145.00 | 84 |
| 37.00 | 2459 | 63.00 | 1500 | 92.00 | 1383 | 148.00 | 97 |
| 38.00 | 2006 | 68.00 | 4003 | 93.00 | 1982 | 157.00 | 84 |
| 39.00 | 945 | 69.00 | 4434 | 94.00 | 5449 | 163.00 | 85 |
| 40.00 | 187 | 70.00 | 424 | 95.00 | 46464 | 171.00 | 282 |
| 44.00 | 532 | 72.00 | 349 | 96.00 | 3259 | 174.00 | 44504 |
| 45.00 | 508 | 73.00 | 1721 | 104.00 | 200 | 175.00 | 3626 |
| 47.00 | 675 | 74.00 | 8142 | 106.00 | 174 | 176.00 | 42848 |
| 48.00 | 210 | 75.00 | 22136 | 112.00 | 83 | 177.00 | 3101 |
| 49.00 | 1703 | 76.00 | 1986 | 117.00 | 391 | 209.00 | 189 |
| 50.00 | 8547 | 77.00 | 343 | 118.00 | 127 | 253.00 | 89 |
| 51.00 | 2699 | 78.00 | 117 | 119.00 | 180 | 269.00 | 19 |
| 56.00 | 730 | 79.00 | 967 | 128.00 | 88 | 270.00 | 182 |
| 57.00 | 1208 | 80.00 | 402 | 130.00 | 112 | 281.00 | 128 |
| 58.00 | 84 | 81.00 | 1189 | 131.00 | 116 | | |
| 60.00 | 438 | 82.00 | 236 | 141.00 | 541 | | |
| 61.00 | 2152 | 87.00 | 2610 | 143.00 | 490 | | |

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

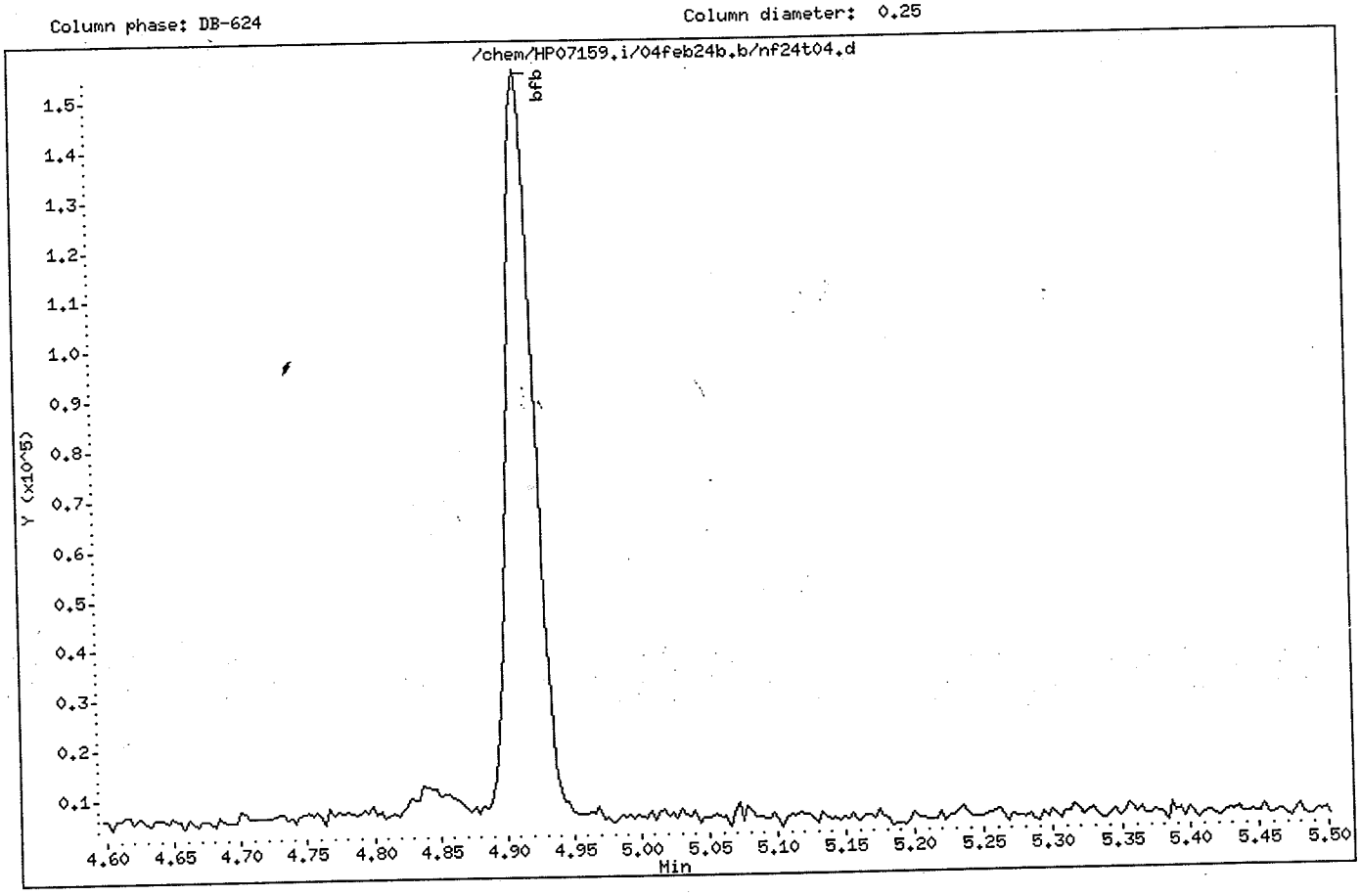
Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25




SME1533
2/24/04

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

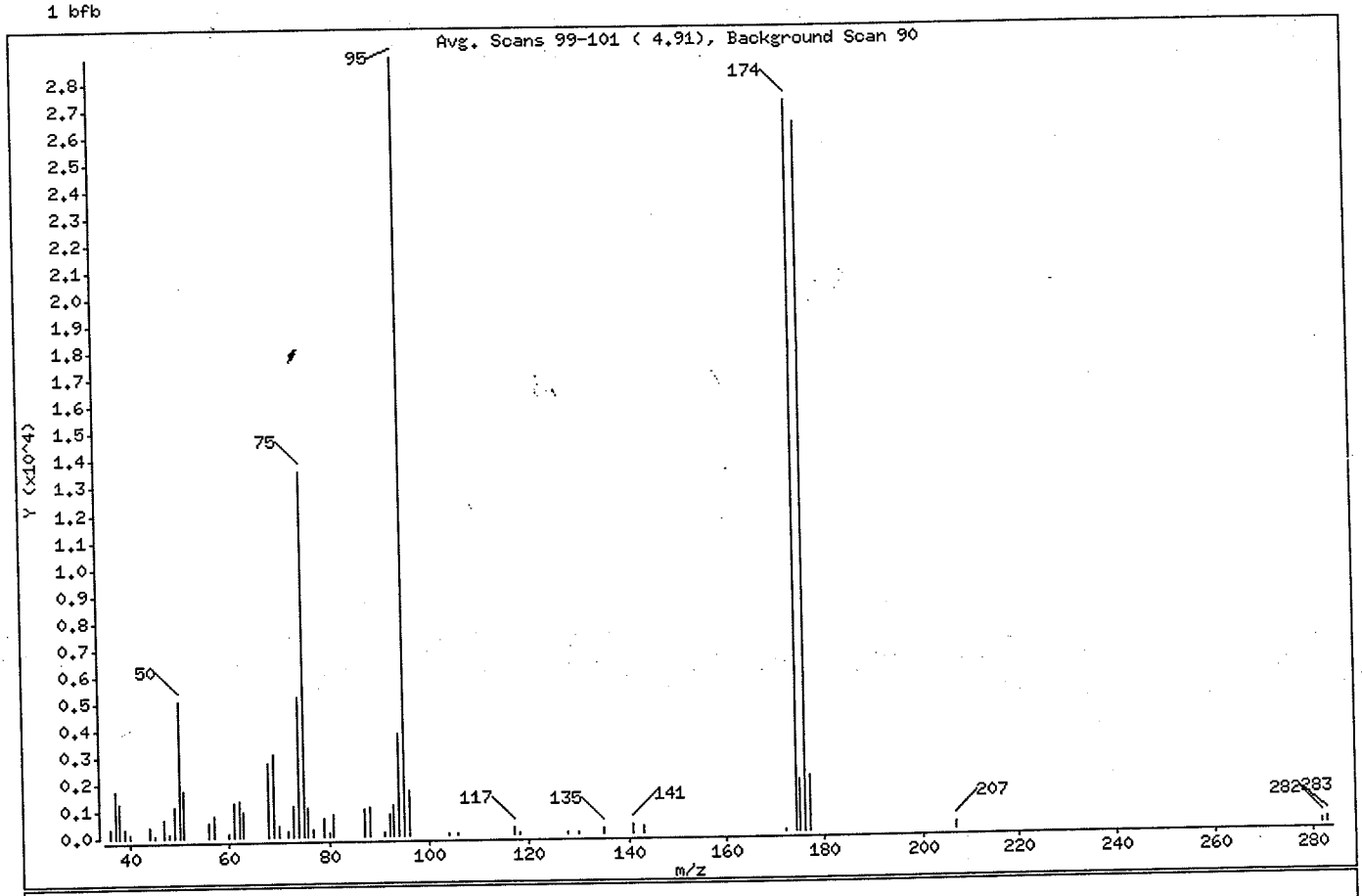
Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.53 |
| 75 | 30.00 - 60.00% of mass 95 | 47.00 |
| 96 | 5.00 - 9.00% of mass 95 | 5.80 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 93.96 |
| 175 | 5.00 - 9.00% of mass 174 | 6.61 ( 7.04) |
| 176 | 95.00 - 101.00% of mass 174 | 91.18 ( 97.04) |
| 177 | 5.00 - 9.00% of mass 176 | 7.16 ( 7.85) |

Data File: /chem/HP07159.i/04feb24b.b/nf24t04.d

Date : 24-FEB-2004 18:58

Client ID: 50 NG BFB SEP09

Instrument: HP07159.i

Sample Info: 50 NG BFB SEP09;BFB 50NG SEP09;1;2;;

Operator: SME01533

Column phase: DB-624

Column diameter: 0.25

Data File: nf24t04.d

Spectrum: Avg. Scans 99-101 ( 4.91), Background Scan 90

Location of Maximum: 95.00

Number of points: 55

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 343 | 60.00 | 116 | 80.00 | 112 | 128.00 | 93 |
| 37.00 | 1738 | 61.00 | 1259 | 81.00 | 802 | 130.00 | 89 |
| 38.00 | 1242 | 62.00 | 1359 | 87.00 | 1012 | 135.00 | 225 |
| 39.00 | 325 | 63.00 | 942 | 88.00 | 1065 | 141.00 | 309 |
| 40.00 | 117 | 68.00 | 2739 | 91.00 | 152 | 143.00 | 299 |
| 44.00 | 398 | 69.00 | 3067 | 92.00 | 791 | 172.00 | 92 |
| 45.00 | 89 | 70.00 | 366 | 93.00 | 1134 | 174.00 | 27168 |
| 47.00 | 635 | 72.00 | 214 | 94.00 | 3765 | 175.00 | 1912 |
| 48.00 | 122 | 73.00 | 1149 | 95.00 | 28920 | 176.00 | 26368 |
| 49.00 | 1158 | 74.00 | 5155 | 96.00 | 1677 | 177.00 | 2070 |
| 50.00 | 5070 | 75.00 | 13593 | 104.00 | 95 | 207.00 | 273 |
| 51.00 | 1748 | 76.00 | 1096 | 106.00 | 86 | 282.00 | 112 |
| 56.00 | 560 | 77.00 | 243 | 117.00 | 239 | 283.00 | 173 |
| 57.00 | 826 | 79.00 | 671 | 118.00 | 90 | | |

Data File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Date : 20-FEB-2004 11:22
Client ID: VBLKX06
Sample Info: VBLKX06;VBLKX06;2;3;;;

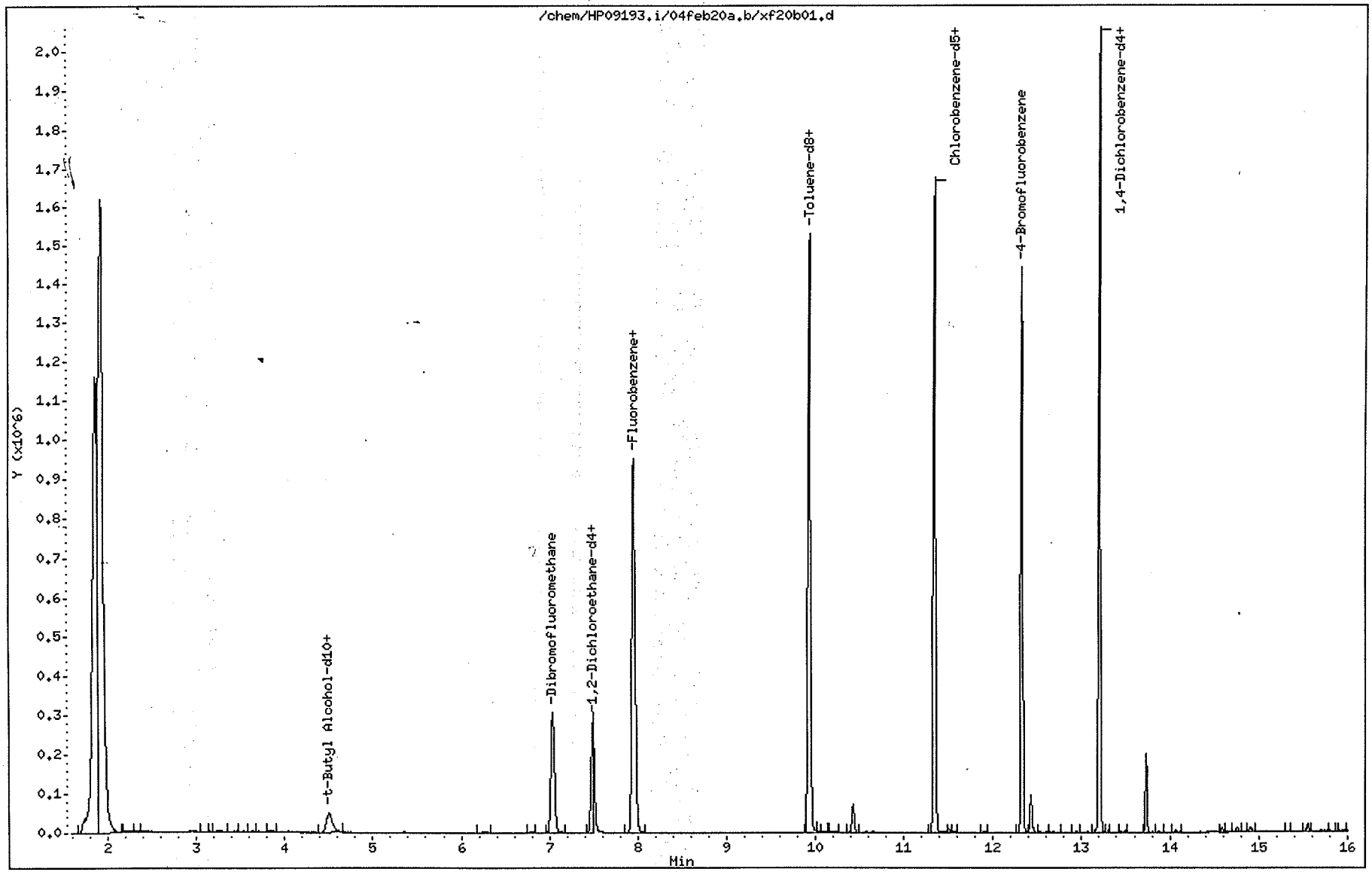
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM1518 2/20/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20b01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:22 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 11:47 lcm01518

Sample Name: VBLKX06 Lab Sample ID: VBLKX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 29)*t-Butyl Alcohol-d10 | (4) | 4.502 | 65 | 135106 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1244404 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.344 | 117 | 985904 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 550687 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 274417 | 51.234 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 65744 | 48.974 |
| 86)$Toluene-d8 | (2) | 9.932 | 98 | 1191893 | 50.285 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 442528 | 48.844 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# VBLKX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.502( 0.003) | 910 | 65 | 135106( 0) | 250.00 | |
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1244404( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.344( 0.003) | 3042 | 117 | 985904( -1) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 550687( -3) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 274417 | 51.234 | 102% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493(-0.001) | 102 | 65744 | 48.974 | 98% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.932( 0.000) | 98 | 1191893 | 50.285 | 101% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 442528 | 48.844 | 98% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 16) Acrolein | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 19) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 20) Acetone | (1) | | | | ND | ND | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | | | | ND | ND | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | | | | ND | ND | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 26) Allyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 27) Methyl Acetate | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | | | | ND | ND | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | | | | ND | ND | | | 4.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 36) n-Hexane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 39) di-Isopropyl Ether | (1) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 4.00 | 10.00 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 74) Methylcyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 135) 1,2-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 134) n-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 143) 2-Methylnaphthalene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

VBLKX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX06

File: /chem/HP09193.i/04feb20a.b/xf20b01.d
Sample: VBLKX06;VBLKX06;2;3;;;
Injected At:20-FEB-2004 11:22
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: LCM1518 Date: 2/20/04

Auditor: [signature] Date: 2/23/04



5296

Data File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Date : 23-FEB-2004 11:19
Client ID: VBLKX07
Sample Info: VBLKX07;VBLKX07;2;3;;;

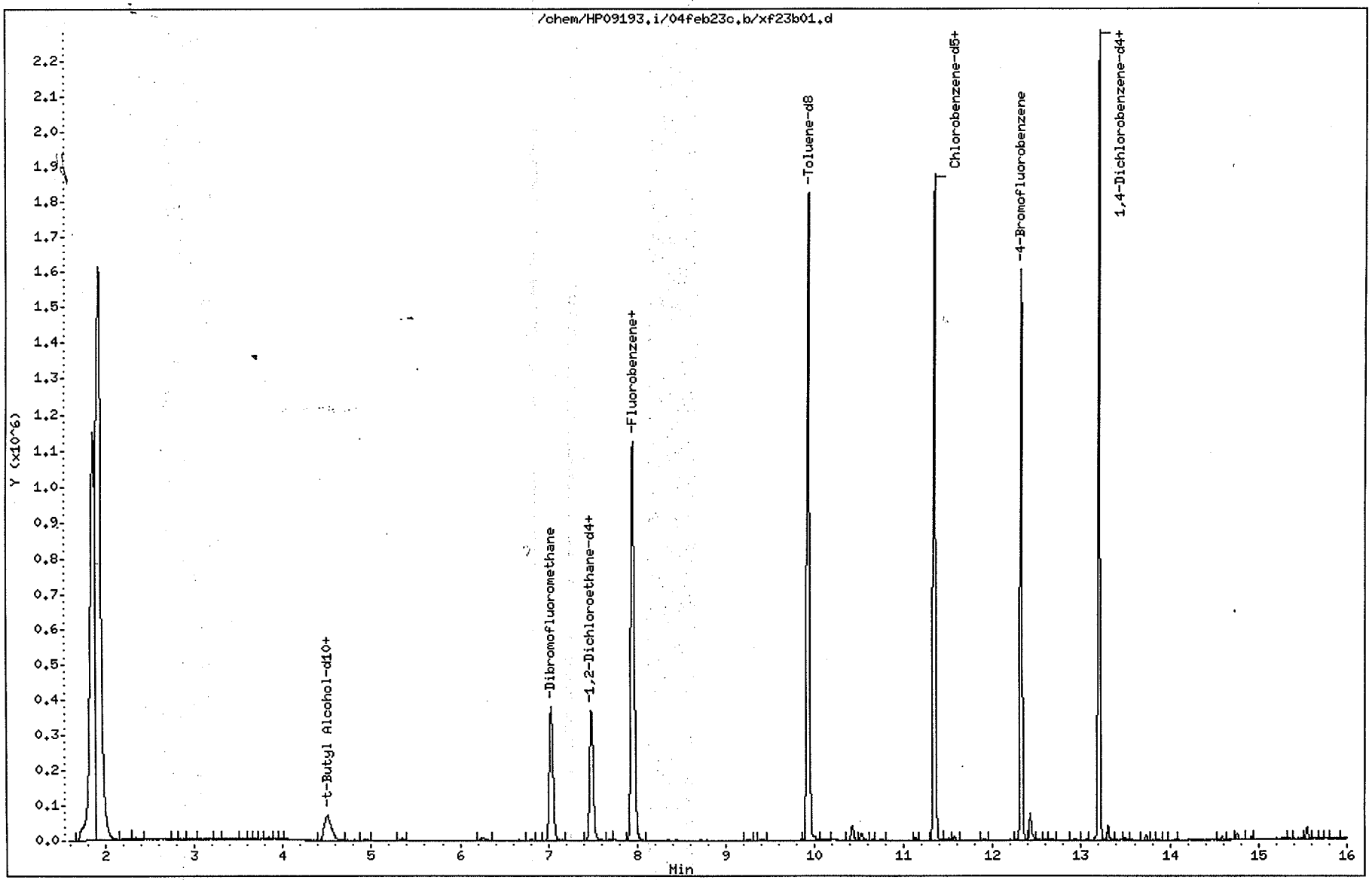
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM1518
2/23/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb23c.b/xf23b01.d  Instrument ID: HP09193.i
Injection date and time: 23-FEB-2004 11:19  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb23c.b/X8260SL.m Sublist used: 8260S-E
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 23-Feb-2004 11:45 lcm01518

Sample Name: VBLKX07  Lab Sample ID: VBLKX07

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 29)*t-Butyl Alcohol-d10 | (4) | 4.512 | 65 | 172002 | 250.000 |
| 69)*Fluorobenzene | (1) | 7.955 | 96 | 1457279 | 50.000 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 1108501 | 50.000 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 593965 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 340558 | 54.294 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 81908 | 52.103 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1400508 | 52.552 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 496915 | 48.781 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# VBLKX07

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX07

File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Sample: VBLKX07;VBLKX07;2;3;;;
Injected At:23-FEB-2004 11:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl Alcohol-d10 | 4.512(-0.019) | 913 | 65 | 172002( 17) | 250.00 | |
| 69) Fluorobenzene | 7.955( 0.000) | 1986 | 96 | 1457279( 5) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.000) | 3042 | 117 | 1108501( 5) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 593965( -3) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037( | 0.000) | 113 | 340558 | 54.294 | 109% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( | 0.000) | 102 | 81908 | 52.103 | 104% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( | 0.000) | 98 | 1400508 | 52.552 | 105% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325( | 0.000) | 95 | 496915 | 48.781 | 98% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) Dichlorodifluoromethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 4) Chloromethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 12) Trichlorofluoromethane | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 16) Acrolein | (1) | | | | | ND | ND | | | 20.00 | 100.00 |
| 17) 1,1-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 19) Freon 113 | (1) | | | | | ND | ND | | | 2.00 | 10.00 |
| 20) Acetone | (1) | | | | | ND | ND | | | 7.00 | 20.00 |
| 22) Methyl Iodide | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 23) 2-Propanol | (1) | | | | | ND | ND | | | 60.00 | 100.00 |
| 24) Carbon Disulfide | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 26) Allyl Chloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 27) Methyl Acetate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | | | | | ND | ND | | | 2.00 | 5.00 |
| 30) t-Butyl Alcohol | (4) | | | | | ND | ND | | | 20.00 | 100.00 |
| 32) Acrylonitrile | (1) | | | | | ND | ND | | | 4.00 | 50.00 |
| 34) trans-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 35) Methyl Tertiary Butyl Ether | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 36) n-Hexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 40) 2-Chloro-1,3-Butadiene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 39) di-Isopropyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX07

File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Sample: VBLKX07;VBLKX07;2;3;;;
Injected At:23-FEB-2004 11:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42) Ethyl t-Butyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 33) 1,2-Dichloroethene (total) | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 48) 2,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | | | | | ND | ND | | | 4.00 | 10.00 |
| 49) Propionitrile | (1) | | | | | ND | ND | | | 30.00 | 100.00 |
| 51) Methacrylonitrile | (1) | | | | | ND | ND | | | 5.00 | 50.00 |
| 52) Bromochloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 53) Tetrahydrofuran | (1) | | | | | ND | ND | | | 4.00 | 5.00 |
| 54) Chloroform | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 58) Cyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 59) 1,1-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 65) Benzene | (1) | | | | | ND | ND | | | 0.50 | 5.00 |
| 61) Isobutyl Alcohol | (1) | | | | | ND | ND | | | 100.00 | 250.00 |
| 66) 1,2-Dichloroethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 68) t-Amyl Methyl Ether | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 71) n-Heptane | (1) | | | | | ND | ND | | | 3.00 | 5.00 |
| 72) n-Butanol | (1) | | | | | ND | ND | | | 110.00 | 250.00 |
| 73) Trichloroethene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 74) Methylcyclohexane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 77) Dibromomethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

# VBLKX07

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX07

File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Sample: VBLKX07;VBLKX07;2;3;;;
Injected At:23-FEB-2004 11:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78) 1,4-Dioxane | (1) | | | | | ND | ND | | | 70.00 | 250.00 |
| 76) Methyl Methacrylate | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 82) 2-Nitropropane | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 84) cis-1,3-Dichloropropene | (1) | | | | | ND | ND | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | | | | | ND | ND | | | 3.00 | 10.00 |
| 88) Toluene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 90) Ethyl Methacrylate | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 91) 1,1,2-Trichloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 94) 1,3-Dichloropropane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | | | | | ND | ND | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 99) 1,2-Dibromoethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 102) 1,1,1,2-Tetrachloroethane | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 108) Styrene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | | | | | ND | ND | | | 1.00 | 5.00 |
| 110) Isopropylbenzene | (2) | | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Sample: VBLKX07;VBLKX07;2;3;;;
Injected At:23-FEB-2004 11:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112) Cyclohexanone | (2) | | | | | ND | ND | | | 25.00 | 250.00 |
| 116) Bromobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 117) 1,2,3-Trichloropropane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 118) trans-1,4-Dichloro-2-Butene | (3) | | | | | ND | ND | | | 10.00 | 50.00 |
| 119) n-Propylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 120) 2-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 121) 1,3,5-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 122) 4-Chlorotoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 123) tert-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 124) Pentachloroethane | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 125) 1,2,4-Trimethylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 126) sec-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 128) 1,3-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 127) p-Isopropyltoluene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 130) 1,4-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 135) 1,2-Dichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 134) n-Butylbenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 137) 1,2-Dibromo-3-Chloropropane | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 138) 1,2,4-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 139) Hexachlorobutadiene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |
| 140) Naphthalene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 141) 1,2,3-Trichlorobenzene | (3) | | | | | ND | ND | | | 1.00 | 5.00 |
| 143) 2-Methylnaphthalene | (3) | | | | | ND | ND | | | 2.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKX07

File: /chem/HP09193.i/04feb23c.b/xf23b01.d
Sample: VBLKX07;VBLKX07;2;3;;;
Injected At:23-FEB-2004 11:19
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference:
Sublist: 8260S-E

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BB
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf23c06.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: NS345

Analyst: LCM1528 Date: 2/23/04

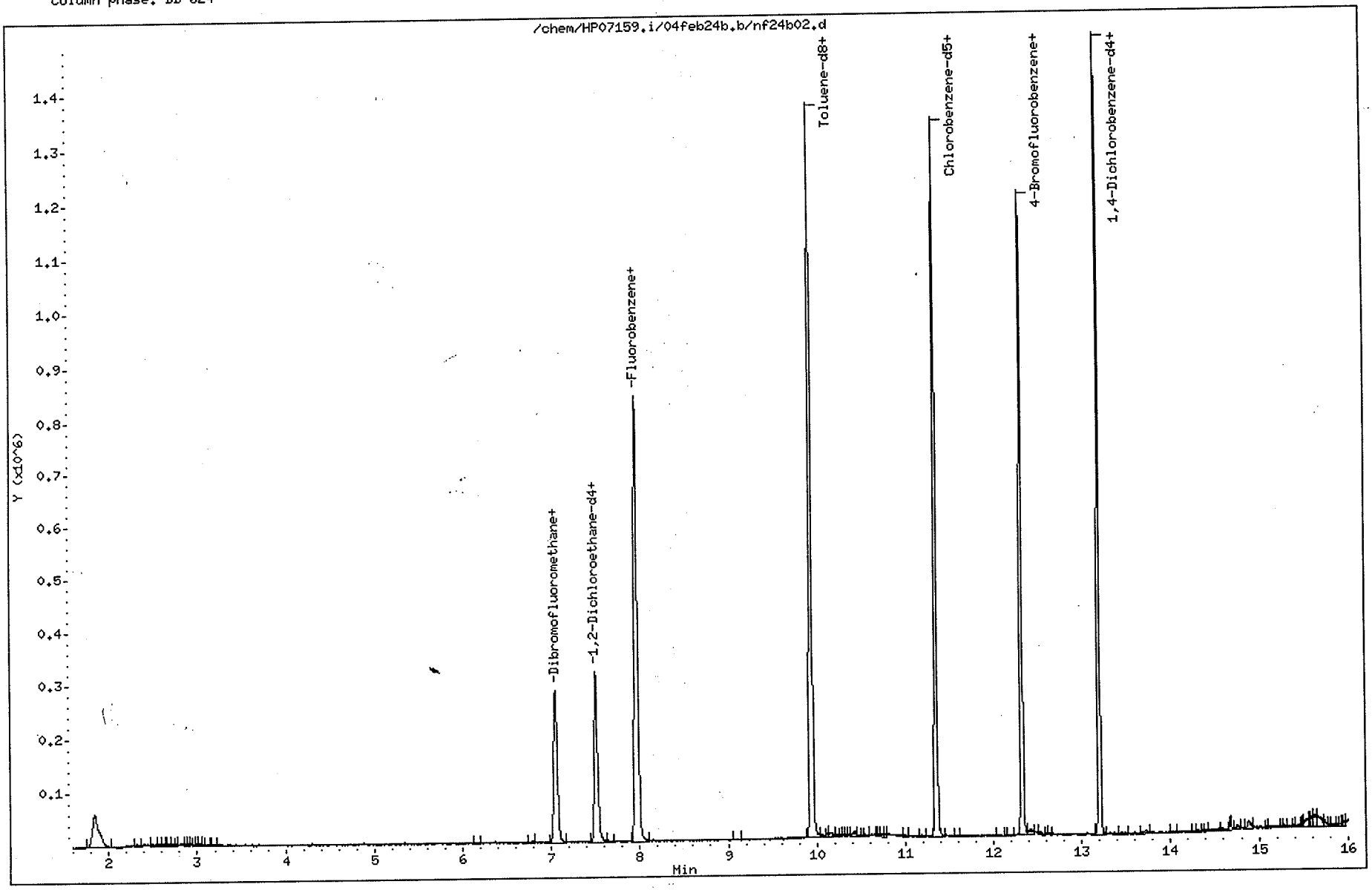
Auditor: [signature] Date: 2/28/04

Data File: /chem/HP07159.i/04feb24b.b/nf24b02.d
Date : 24-FEB-2004 20:31
Client ID: VBLKN36
Sample Info: VBLKN36;VBLKN36;1;3;;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533 2/24/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24b02.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 20:31  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 20:54 sme01533

Sample Name: VBLKN36  Lab Sample ID: VBLKN36

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65) *Fluorobenzene | (1) | 7.966 | 96 | 1002998 | 50.000 |
| 94) *Chlorobenzene-d5 | (2) | 11.351 | 117 | 773708 | 50.000 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.203 | 152 | 388007 | 50.000 |
| 50) $Dibromofluoromethane | (1) | 7.052 | 113 | 240702 | 46.605 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.507 | 102 | 63318 | 46.431 |
| 80) $Toluene-d8 | (2) | 9.943 | 98 | 1006224 | 49.954 |
| 107) $4-Bromofluorobenzene | (2) | 12.327 | 95 | 363573 | 49.581 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

VBLKN36

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

VBLKN36

File: /chem/HP07159.i/04feb24b.b/nf24b02.d
Sample: VBLKN36;VBLKN36;1;3;;;;
Injected At:24-FEB-2004 20:31
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference:
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AA
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:1.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 5.0000 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.966( 0.004) | 1986 | 96 | 1002998( -3) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.351(-0.003) | 3041 | 117 | 773708( -5) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.203(-0.003) | 3618 | 152 | 388007( -13) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.052( 0.000) | 113 | 240702 | 46.605 | 93% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.507( 0.000) | 102 | 63318 | 46.431 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1006224 | 49.954 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 363573 | 49.581 | 99% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 0.80 | 5.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 2.00 | 10.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 2.00 | 5.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 3.00 | 10.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 0.80 | 5.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 100.00 | 250.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 0.50 | 5.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 1.00 | 5.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 0.70 | 5.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 0.80 | 5.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 55.00 | 250.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: SME1533 Date: 2/24/04

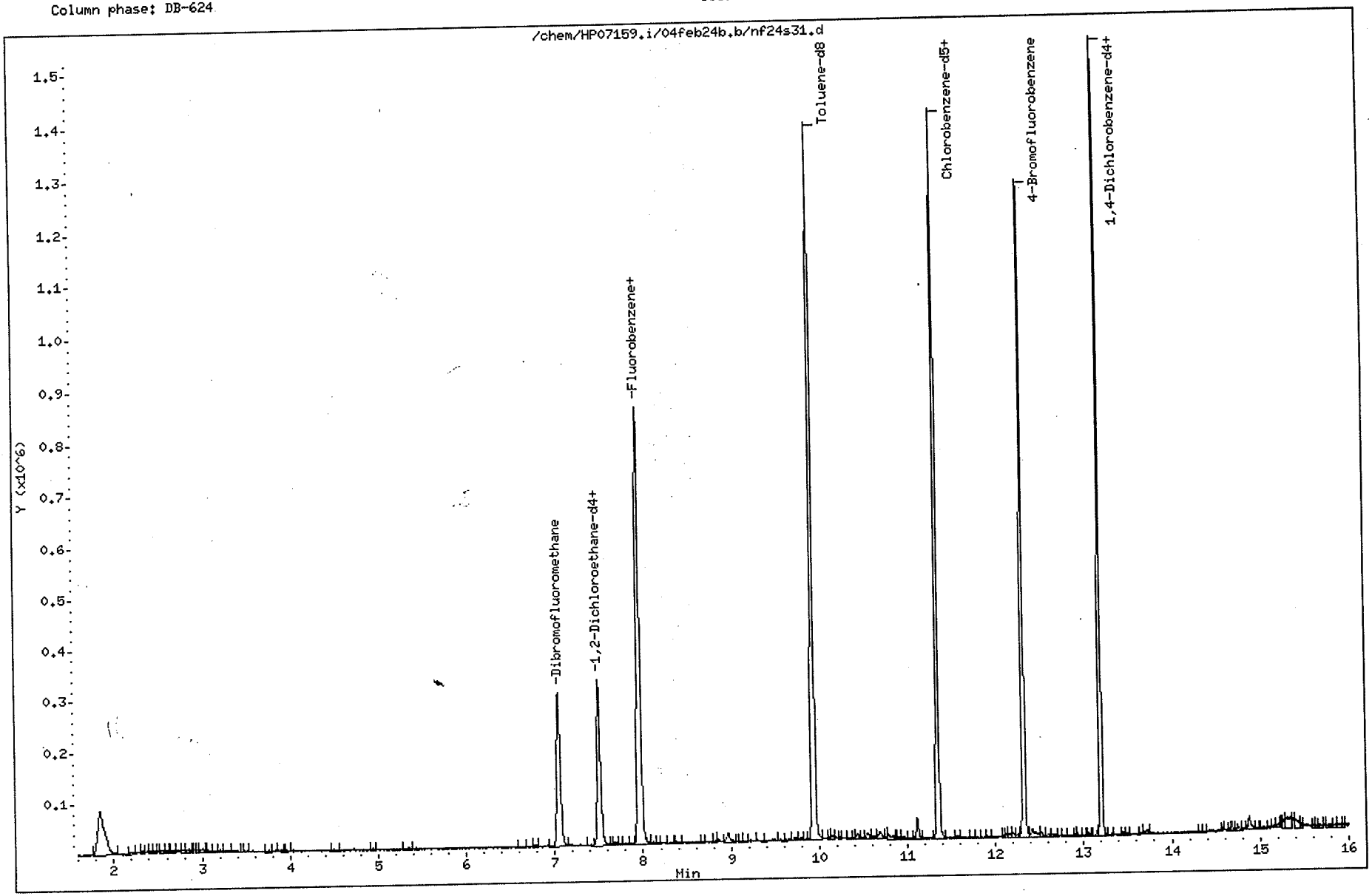
Auditor: Date: 2/25/04

Data File: /chem/HP07159.i/04feb24b.b/nf24s31.d
Date : 24-FEB-2004 21:34
Client ID: EXBLKB
Sample Info: EXBLKB;4219274;1;3;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SHE01533
Column diameter: 0.25

SHE1533 2/24/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s31.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 21:34  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 21:59 sme01533

Sample Name: EXBLKB  Lab Sample ID: 4219274

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65)*Fluorobenzene | (1) | 7.967 | 96 | 1051668 | 50.000 |
| 94)*Chlorobenzene-d5 | (2) | 11.349 | 117 | 815941 | 50.000 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 397895 | 50.000 |
| 50)$Dibromofluoromethane | (1) | 7.050 | 113 | 254216 | 46.943 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.508 | 102 | 67312 | 47.075 |
| 80)$Toluene-d8 | (2) | 9.941 | 98 | 1057664 | 49.790 |
| 107)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 386589 | 49.991 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# EXBLKB

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219274

File: /chem/HP07159.i/04feb24b.b/nf24s31.d
Sample: EXBLKB;4219274;1;3;;;;
Injected At:24-FEB-2004 21:34
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.967( 0.003) | 1987 | 96 | 1051668( 1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.349(-0.001) | 3041 | 117 | 815941( 0) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.201(-0.001) | 3618 | 152 | 397895( -10) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.050( 0.000) | 113 | 254216 | 46.943 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.508( 0.000) | 102 | 67312 | 47.075 | 94% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.941( 0.000) | 98 | 1057664 | 49.790 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 386589 | 49.991 | 100% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: _____

Analyst: SME1533 _____ Date: 2/24/04

Auditor: _____ Date: 2/25/04

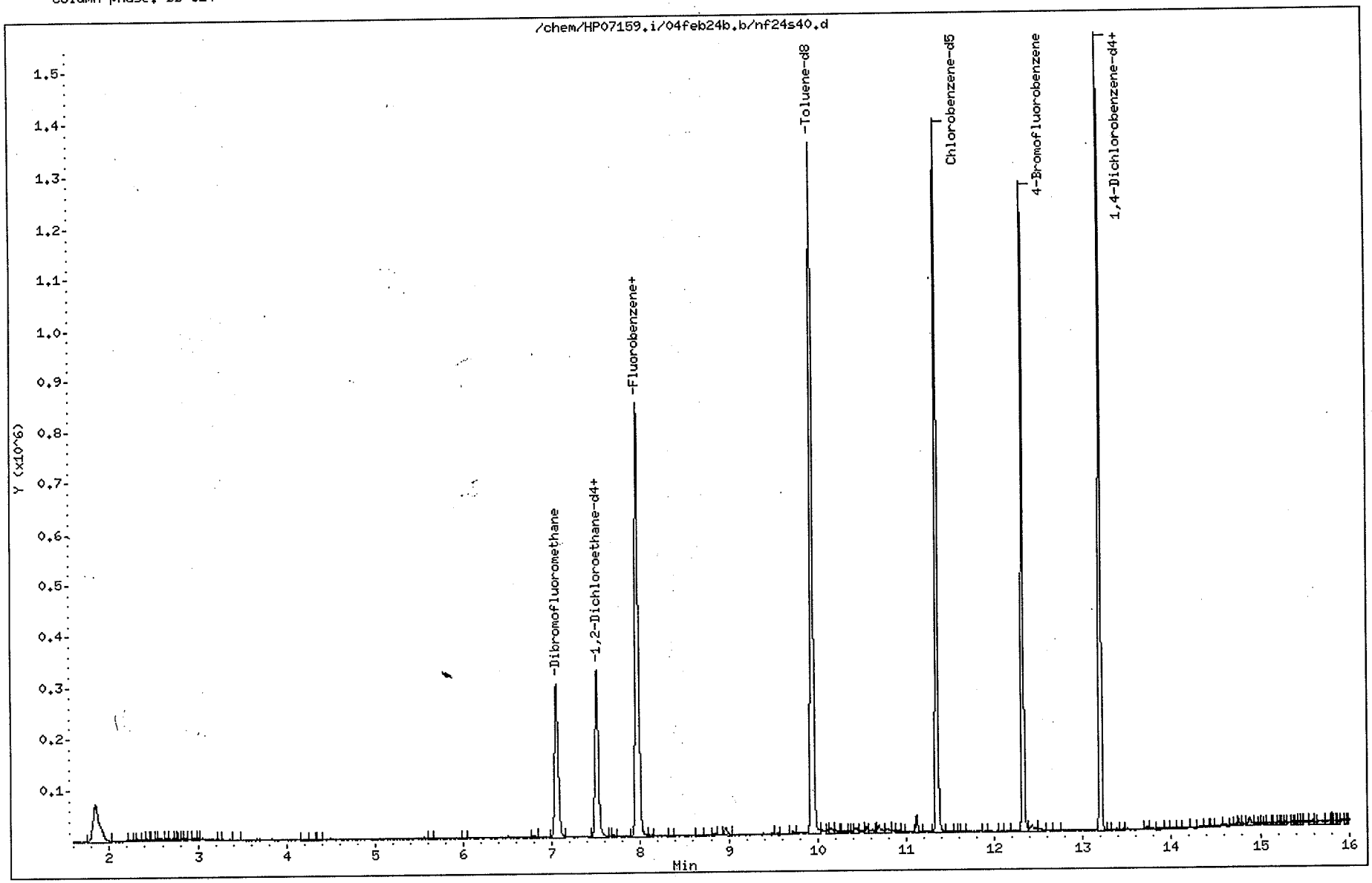
Data File: /chem/HP07159.i/04feb24b.b/nf24s40.d
Date : 25-FEB-2004 01:17
Client ID: EXBLKD
Sample Info: EXBLKD;4221333;1;3;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

VOAMP
1254
2.25.04





Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s40.d  Instrument ID: HP07159.i
Injection date and time: 25-FEB-2004 01:17  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 25-Feb-2004 01:46 acp01254

Sample Name: EXBLKD  Lab Sample ID: 4221333

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 65)*Fluorobenzene | (1) | 7.967 | 96 | 1034638 | 50.000 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 799941 | 50.000 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.204 | 152 | 404590 | 50.000 |
| 50)$Dibromofluoromethane | (1) | 7.053 | 113 | 251352 | 47.178 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 65474 | 46.544 |
| 80)$Toluene-d8 | (2) | 9.940 | 98 | 1037501 | 49.817 |
| 107)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 376319 | 49.637 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# EXBLKD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4221333

File: /chem/HP07159.i/04feb24b.b/nf24s40.d
Sample: EXBLKD;4221333;1;3;;;;
Injected At:25-FEB-2004 01:17
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AD
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.967( 0.003) | 1987 | 96 | 1034638( 0) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.004) | 3042 | 117 | 799941( -2) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.204(-0.004) | 3619 | 152 | 404590( -9) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.053( 0.000) | 113 | 251352 | 47.178 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 65474 | 46.544 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.940( 0.001) | 98 | 1037501 | 49.817 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.325( 0.000) | 95 | 376319 | 49.637 | 99% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | | | | ND | ND | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | | | | ND | ND | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: _____

Analyst: ACMP 1254  Date: 2.25.04

Auditor: [signature]  Date: 2/25/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s18.d
Date : 20-FEB-2004 19:43
Client ID: 7GP20MS
Sample Info: 7GP20MS;4219014;2;3;MS;;

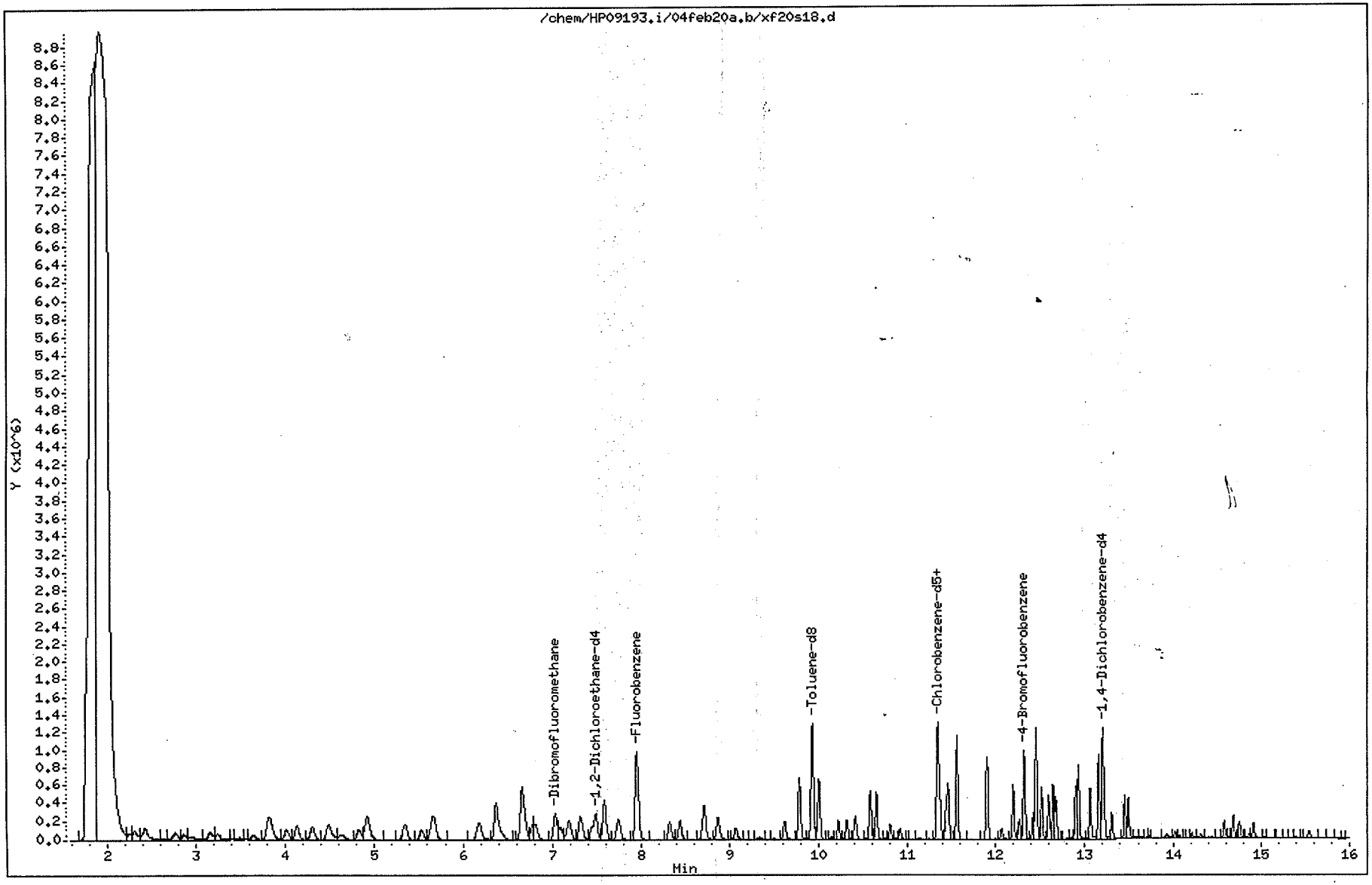
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25



4 comp
125 ul
2.22.04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s18.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:43 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 20:06 Automation

Sample Name: 7GP20MS Lab Sample ID: 4219014

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.304 | 50 | 129663 | 18.454 |
| 5) Vinyl Chloride | (1) | 2.432 | 62 | 118831 | 17.935 |
| 7) Bromomethane | (1) | 2.776 | 94 | 77208 | 17.010 |
| 8) Chloroethane | (1) | 2.865 | 64 | 64551 | 16.678 |
| 17) 1,1-Dichloroethene | (1) | 3.812 | 96 | 77762 | 16.251 |
| 20) Acetone | (1) | 3.831 | 58 | 63081 | 163.361 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 337995 | 19.302 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 102353 | 17.727 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913 | 96 | 89376 | 15.891 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 160942 | 17.155 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 100176 | 16.202 |
| 46) 2-Butanone | (1) | 6.373 | 72 | 87091 | 160.603 |
| 54) Chloroform | (1) | 6.822 | 83 | 160826 | 18.362 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 134230 | 17.263 |
| 60) Carbon Tetrachloride | (1) | 7.323 | 117 | 112071 | 16.871 |
| 65) Benzene | (1) | 7.589 | 78 | 427619 | 19.126 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 124744 | 20.401 |
| 69) *Fluorobenzene | (1) | 7.955 | 96 | 1053590 | 50.000 |
| 73) Trichloroethene | (1) | 8.439 | 95 | 90025 | 15.917 |
| 75) 1,2-Dichloropropane | (1) | 8.722 | 63 | 94122 | 17.103 |
| 81) Bromodichloromethane | (1) | 9.078 | 83 | 109192 | 17.621 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 132158 | 15.874 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 505966 | 100.269 |
| 88) Toluene | (2) | 10.005 | 92 | 335347 | 23.801 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 118951 | 18.037 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 85185 | 19.371 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 107081 | 16.511 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 340701 | 95.293 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 87082 | 18.752 |
| 100) *Chlorobenzene-d5 | (2) | 11.343 | 117 | 770638 | 50.000 |
| 101) Chlorobenzene | (2) | 11.372 | 112 | 245582 | 15.675 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 418045 | 16.000 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 339926 | 31.745 |
| 92) Xylene (Total) | (2) | | 106 | 497187 | 47.367 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s18.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 19:43  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 20:06 Automation

Sample Name: 7GP20MS  Lab Sample ID: 4219014

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.899 | 106 | 157261 | 15.622 |
| 108) Styrene | (2) | 11.908 | 104 | 222696 | 13.495 |
| 109) Bromoform | (2) | 12.069 | 173 | 55854 | 17.496 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.422 | 83 | 102878 | 24.744 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.205 | 152 | 306089 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 242684 | 53.515 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.493 | 102 | 56858 | 50.026 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1008541 | 54.435 |
| 113)$4-Bromofluorobenzene | (2) | 12.325 | 95 | 313876 | 44.321 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# 7GP20MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219014

File: /chem/HP09193.i/04feb20a.b/xf20s18.d
Sample: 7GP20MS;4219014;2;3;MS;;
Injected At:20-FEB-2004 19:43
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.96
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.2300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.955( 0.003) | 1986 | 96 | 1053590( -17) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 770638( -23) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.205(-0.003) | 3622 | 152 | 306089( -46) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 242684 | 53.515 | 107% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.493( 0.000) | 102 | 56858 | 50.026 | 100% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1008541 | 54.435 | 109% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.325(-0.001) | 95 | 313876 | 44.321 | 89% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.304(-0.005) | 50 | 129663 | 18.454 | 17.64 | | | 1.91 | 4.78 |
| 5) Vinyl Chloride | (1) | 2.432(-0.003) | 62 | 118831 | 17.935 | 17.15 | | | 0.96 | 4.78 |
| 7) Bromomethane | (1) | 2.776(-0.001) | 94 | 77208 | 17.010 | 16.26 | | | 1.91 | 4.78 |
| 8) Chloroethane | (1) | 2.865( 0.000) | 64 | 64551 | 16.678 | 15.94 | | | 1.91 | 4.78 |
| 17) 1,1-Dichloroethene | (1) | 3.812( 0.000) | 96 | 77762 | 16.251 | 15.54 | | | 0.96 | 4.78 |
| 20) Acetone | (1) | 3.831( 0.001) | 58 | 63081 | 163.361 | 156.18 | | | 6.69 | 19.12 |
| 24) Carbon Disulfide | (1) | 4.133( 0.000) | 76 | 337995 | 19.302 | 18.45 | | | 0.96 | 4.78 |
| 28) Methylene Chloride | (1) | 4.483( 0.000) | 84 | 102353 | 17.727 | 16.95 | | | 1.91 | 4.78 |
| 34) trans-1,2-Dichloroethene | (1) | 4.913( 0.001) | 96 | 89376 | 15.891 | 15.19 | | | 0.96 | 4.78 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 160942 | 17.155 | 16.40 | | | 0.96 | 4.78 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 100176 | 16.202 | 15.49 | | | 0.96 | 4.78 |
| 46) 2-Butanone | (1) | 6.373( 0.000) | 72 | 87091 | 160.603 | 153.54 | | | 3.82 | 9.56 |
| 54) Chloroform | (1) | 6.822( 0.000) | 83 | 160826 | 18.362 | 17.55 | | | 0.96 | 4.78 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092( 0.000) | 97 | 134230 | 17.263 | 16.50 | | | 0.96 | 4.78 |
| 60) Carbon Tetrachloride | (1) | 7.323( 0.001) | 117 | 112071 | 16.871 | 16.13 | | | 0.96 | 4.78 |
| 65) Benzene | (1) | 7.589( 0.000) | 78 | 427619 | 19.126 | 18.28 | | | 0.48 | 4.78 |
| 66) 1,2-Dichloroethane | (1) | 7.592( 0.000) | 62 | 124744 | 20.401 | 19.50 | | | 0.96 | 4.78 |
| 73) Trichloroethene | (1) | 8.439( 0.000) | 95 | 90025 | 15.917 | 15.22 | | | 0.96 | 4.78 |
| 75) 1,2-Dichloropropane | (1) | 8.722( 0.000) | 63 | 94122 | 17.103 | 16.35 | | | 0.96 | 4.78 |
| 81) Bromodichloromethane | (1) | 9.078(-0.001) | 83 | 109192 | 17.621 | 16.85 | | | 0.96 | 4.78 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620( 0.000) | 75 | 132158 | 15.874 | 15.18 | | | 0.96 | 4.78 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784( 0.000) | 43 | 505966 | 100.269 | 95.86 | | | 2.87 | 9.56 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 335347 | 23.801 | 22.75 | | | 0.96 | 4.78 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 118951 | 18.037 | 17.24 | | | 0.96 | 4.78 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

# 7GP20MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219014

File: /chem/HP09193.i/04feb20a.b/xf20s18.d
Sample: 7GP20MS;4219014;2;3;MS;;
Injected At:20-FEB-2004 19:43
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.96
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.2300 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | ( 0.000) | 97 | 85185 | 19.371 | 18.52 | | | 0.96 | 4.78 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 107081 | 16.511 | 15.79 | | | 0.96 | 4.78 |
| 95) 2-Hexanone | (2) | 10.650 | ( 0.000) | 43 | 340701 | 95.293 | 91.10 | | | 2.87 | 9.56 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 87082 | 18.752 | 17.93 | | | 0.96 | 4.78 |
| 101) Chlorobenzene | (2) | 11.372 | (-0.001) | 112 | 245582 | 15.675 | 14.99 | | | 0.96 | 4.78 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 418045 | 16.000 | 15.30 | | | 0.96 | 4.78 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 339926 | 31.745 | 30.35 | | | 0.96 | 4.78 |
| 92) Xylene (Total) | (2) | | | 106 | 497187 | 47.367 | 45.28 | | | 0.96 | 4.78 |
| 107) o-Xylene | (2) | 11.899 | ( 0.000) | 106 | 157261 | 15.622 | 14.94 | | | 0.96 | 4.78 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 222696 | 13.495 | 12.90 | | | 0.96 | 4.78 |
| 109) Bromoform | (2) | 12.069 | ( 0.000) | 173 | 55854 | 17.496 | 16.73 | | | 0.96 | 4.78 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.422 | ( 0.000) | 83 | 102878 | 24.744 | 23.66 | | | 0.96 | 4.78 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4692

Analyst: Acm° 1254 Date: 2.22.04

Auditor: [signature] Date: 2/23/04

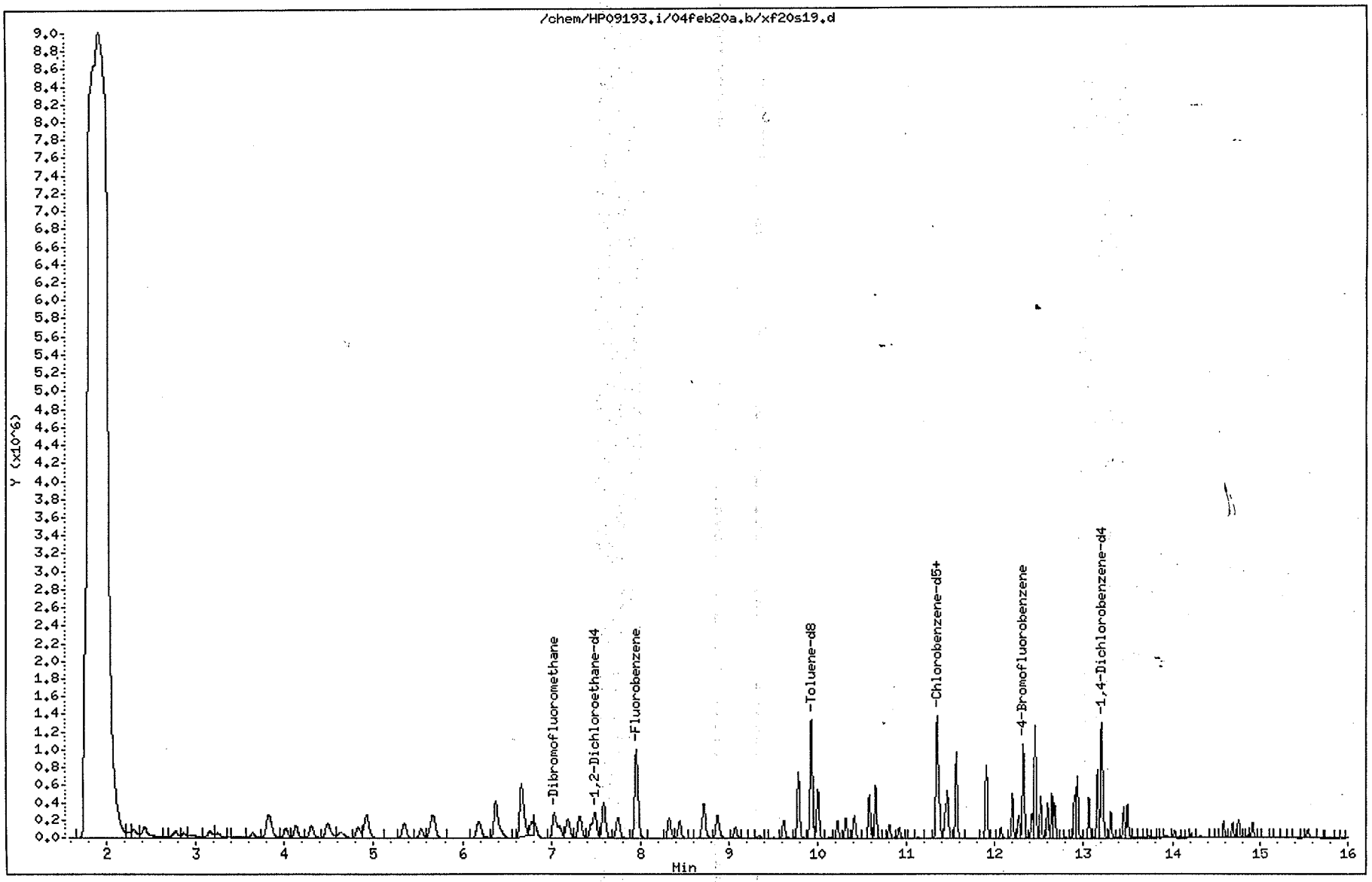
Data File: /chem/HP09193.i/04feb20a.b/xf20s19.d
Date : 20-FEB-2004 20:10
Client ID: 7GP20MSD
Sample Info: 7GP20MSD;4219015;2;3;MSD;;

Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

temp
125
2.22.04



Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s19.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 20:10 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 20:32 Automation

Sample Name: 7GP20MSD Lab Sample ID: 4219015

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.307 | 50 | 135391 | 18.529 |
| 5) Vinyl Chloride | (1) | 2.429 | 62 | 120975 | 17.557 |
| 7) Bromomethane | (1) | 2.779 | 94 | 76535 | 16.214 |
| 8) Chloroethane | (1) | 2.865 | 64 | 62634 | 15.561 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 77446 | 15.563 |
| 20) Acetone | (1) | 3.828 | 58 | 70909 | 176.580 |
| 24) Carbon Disulfide | (1) | 4.133 | 76 | 321116 | 17.634 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 101543 | 16.911 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 87283 | 14.923 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 157807 | 16.175 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 97331 | 15.137 |
| 46) 2-Butanone | (1) | 6.373 | 72 | 97947 | 173.686 |
| 54) Chloroform | (1) | 6.819 | 83 | 155463 | 17.068 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095 | 97 | 130323 | 16.117 |
| 60) Carbon Tetrachloride | (1) | 7.329 | 117 | 108492 | 15.705 |
| 65) Benzene | (1) | 7.586 | 78 | 400273 | 17.215 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 122886 | 19.326 |
| 69)*Fluorobenzene | (1) | 7.951 | 96 | 1095668 | 50.000 |
| 73) Trichloroethene | (1) | 8.442 | 95 | 83577 | 14.209 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 90252 | 15.770 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 103589 | 16.075 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 126945 | 14.662 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784 | 43 | 558103 | 106.353 |
| 88) Toluene | (2) | 10.005 | 92 | 274591 | 18.723 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 113182 | 16.488 |
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | 97 | 84398 | 18.438 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 96462 | 14.289 |
| 95) 2-Hexanone | (2) | 10.647 | 43 | 395735 | 106.336 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 84239 | 17.428 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 802161 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 216326 | 13.265 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 355395 | 13.067 |
| 105) m+p-Xylene | (2) | 11.561 | 106 | 289531 | 25.976 |
| 92) Xylene (Total) | (2) | | 106 | 423763 | 38.786 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s19.d  Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 20:10  Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 20:32 Automation

Sample Name: 7GP20MSD  Lab Sample ID: 4219015

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.902 | 106 | 134231 | 12.810 |
| 108) Styrene | (2) | 11.908 | 104 | 193676 | 11.275 |
| 109) Bromoform | (2) | 12.068 | 173 | 55535 | 16.712 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 105789 | 23.385 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 333037 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.037 | 113 | 250876 | 53.197 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.486 | 102 | 59722 | 50.528 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1041658 | 54.013 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 333336 | 45.219 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# 7GP20MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219015

File: /chem/HP09193.i/04feb20a.b/xf20s19.d
Sample: 7GP20MSD;4219015;2;3;MSD;;
Injected At:20-FEB-2004 20:10
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.93
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.3900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.951( 0.006) | 1985 | 96 | 1095668( -13) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 802161( -20) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 333037( -42) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.037(-0.001) | 113 | 250876 | 53.197 | 106% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.486( 0.000) | 102 | 59722 | 50.528 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1041658 | 54.013 | 108% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 333336 | 45.219 | 90% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.307(-0.005) | 50 | 135391 | 18.529 | 17.19 | | | 1.86 | 4.64 |
| 5) Vinyl Chloride | (1) | 2.429(-0.003) | 62 | 120975 | 17.557 | 16.29 | | | 0.93 | 4.64 |
| 7) Bromomethane | (1) | 2.779(-0.002) | 94 | 76535 | 16.214 | 15.04 | | | 1.86 | 4.64 |
| 8) Chloroethane | (1) | 2.865( 0.000) | 64 | 62634 | 15.561 | 14.44 | | | 1.86 | 4.64 |
| 17) 1,1-Dichloroethene | (1) | 3.809( 0.000) | 96 | 77446 | 15.563 | 14.44 | | | 0.93 | 4.64 |
| 20) Acetone | (1) | 3.828( 0.001) | 58 | 70909 | 176.580 | 163.80 | | | 6.49 | 18.55 |
| 24) Carbon Disulfide | (1) | 4.133( 0.000) | 76 | 321116 | 17.634 | 16.36 | | | 0.93 | 4.64 |
| 28) Methylene Chloride | (1) | 4.483( 0.000) | 84 | 101543 | 16.911 | 15.69 | | | 1.86 | 4.64 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919(-0.001) | 96 | 87283 | 14.923 | 13.84 | | | 0.93 | 4.64 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 157807 | 16.175 | 15.00 | | | 0.93 | 4.64 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 97331 | 15.137 | 14.04 | | | 0.93 | 4.64 |
| 46) 2-Butanone | (1) | 6.373( 0.000) | 72 | 97947 | 173.686 | 161.12 | | | 3.71 | 9.28 |
| 54) Chloroform | (1) | 6.819( 0.000) | 83 | 155463 | 17.068 | 15.83 | | | 0.93 | 4.64 |
| 57) 1,1,1-Trichloroethane | (1) | 7.095( 0.000) | 97 | 130323 | 16.117 | 14.95 | | | 0.93 | 4.64 |
| 60) Carbon Tetrachloride | (1) | 7.329( 0.000) | 117 | 108492 | 15.705 | 14.57 | | | 0.93 | 4.64 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 400273 | 17.215 | 15.97 | | | 0.46 | 4.64 |
| 66) 1,2-Dichloroethane | (1) | 7.592( 0.000) | 62 | 122886 | 19.326 | 17.93 | | | 0.93 | 4.64 |
| 73) Trichloroethene | (1) | 8.442( 0.000) | 95 | 83577 | 14.209 | 13.18 | | | 0.93 | 4.64 |
| 75) 1,2-Dichloropropane | (1) | 8.718( 0.000) | 63 | 90252 | 15.770 | 14.63 | | | 0.93 | 4.64 |
| 81) Bromodichloromethane | (1) | 9.075(-0.001) | 83 | 103589 | 16.075 | 14.91 | | | 0.93 | 4.64 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620(-0.001) | 75 | 126945 | 14.662 | 13.60 | | | 0.93 | 4.64 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.784(-0.001) | 43 | 558103 | 106.353 | 98.66 | | | 2.78 | 9.28 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 274591 | 18.723 | 17.37 | | | 0.93 | 4.64 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 113182 | 16.488 | 15.30 | | | 0.93 | 4.64 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE



9323

# 7GP20MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4219015

File: /chem/HP09193.i/04feb20a.b/xf20s19.d
Sample: 7GP20MSD;4219015;2;3;MSD;;
Injected At:20-FEB-2004 20:10
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511BA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:0.93
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.3900 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.409 | ( 0.000) | 97 | 84398 | 18.438 | 17.10 | | | 0.93 | 4.64 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 96462 | 14.289 | 13.26 | | | 0.93 | 4.64 |
| 95) 2-Hexanone | (2) | 10.647 | ( 0.000) | 43 | 395735 | 106.336 | 98.64 | | | 2.78 | 9.28 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 84239 | 17.428 | 16.17 | | | 0.93 | 4.64 |
| 101) Chlorobenzene | (2) | 11.369 | ( 0.000) | 112 | 216326 | 13.265 | 12.31 | | | 0.93 | 4.64 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 355395 | 13.067 | 12.12 | | | 0.93 | 4.64 |
| 105) m+p-Xylene | (2) | 11.561 | ( 0.000) | 106 | 289531 | 25.976 | 24.10 | | | 0.93 | 4.64 |
| 92) Xylene (Total) | (2) | | | 106 | 423763 | 38.786 | 35.98 | | | 0.93 | 4.64 |
| 107) o-Xylene | (2) | 11.902 | ( 0.000) | 106 | 134231 | 12.810 | 11.88 | | | 0.93 | 4.64 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 193676 | 11.275 | 10.46 | | | 0.93 | 4.64 |
| 109) Bromoform | (2) | 12.068 | ( 0.000) | 173 | 55535 | 16.712 | 15.50 | | | 0.93 | 4.64 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 105789 | 23.385 | 21.69 | | | 0.93 | 4.64 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: N4693

Analyst: Acmp 1254 Date: 2.22.04

Auditor: [signature] Date: 2/23/04



8324

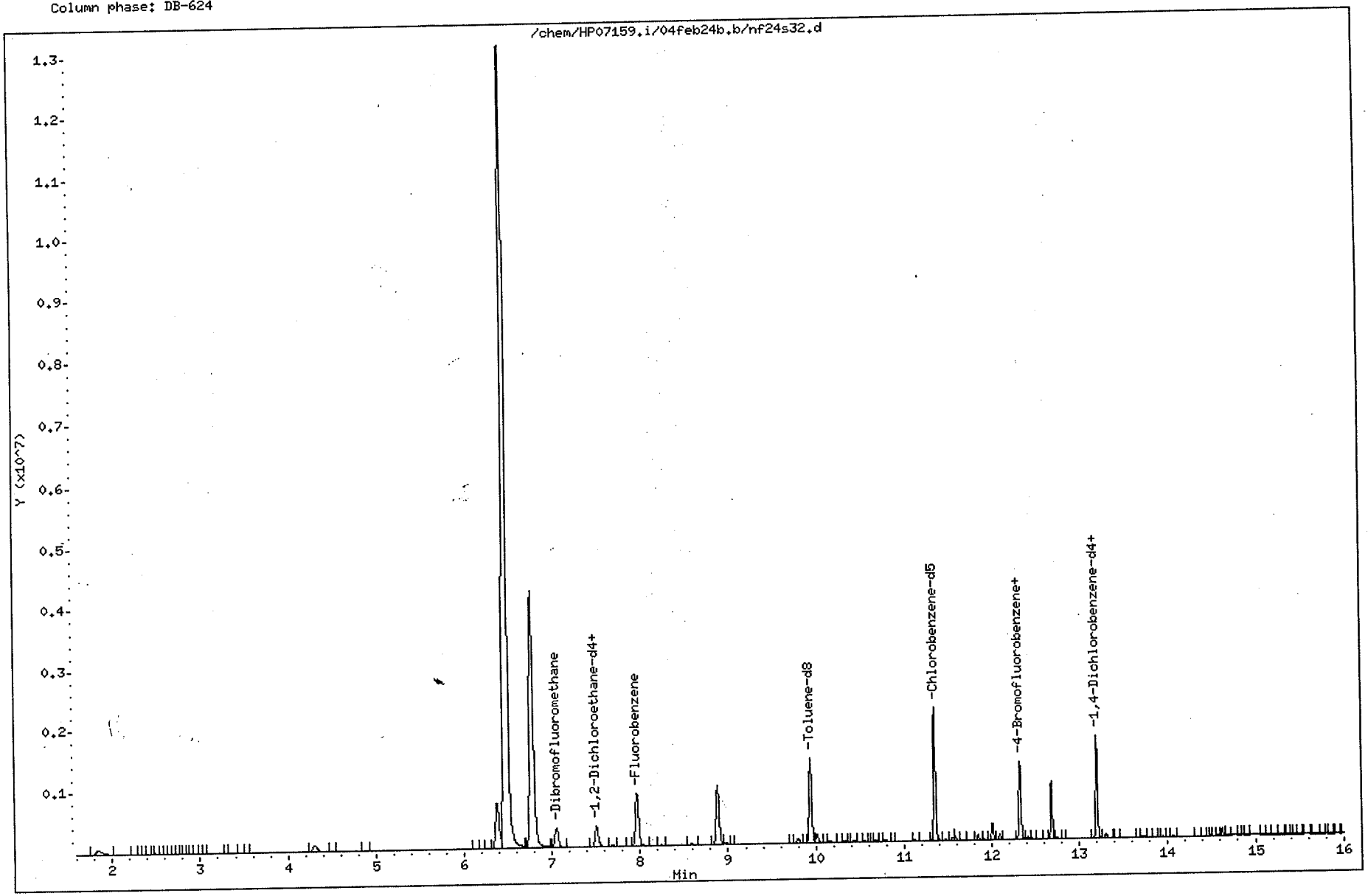
Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Date : 24-FEB-2004 21:58
Client ID: MM500
Sample Info: MM500;4218086;1;0;;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

Sue 1533 2/24/04





Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 21:58  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

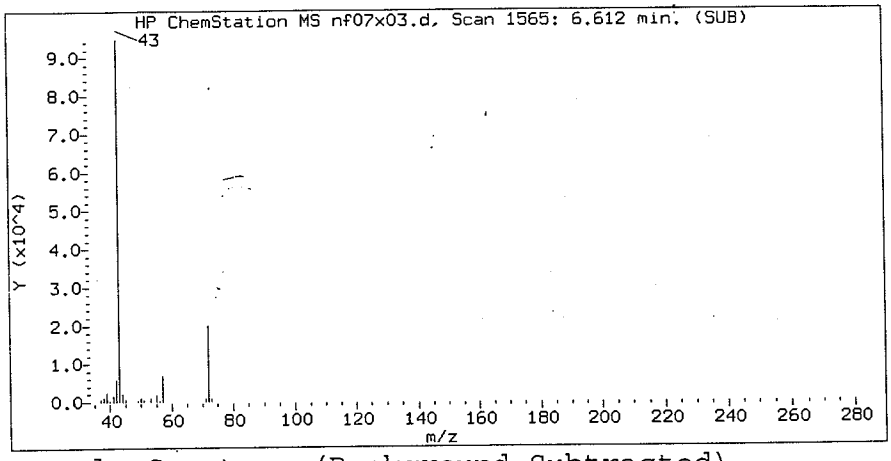
Sample Name: MM500  Lab Sample ID: 4218086

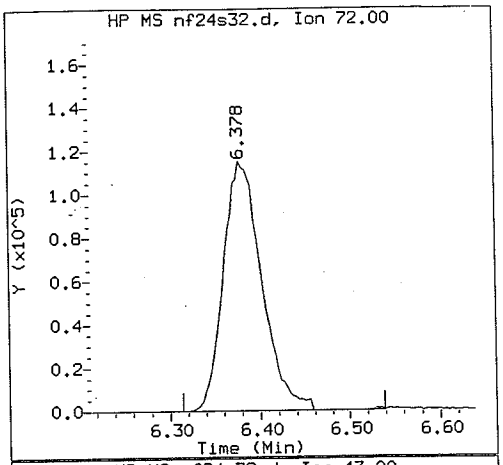
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 40) 2-Butanone | (1) | 6.378 | 72 | 339263 | 223.294 |
| 65)*Fluorobenzene | (1) | 7.970 | 96 | 1045894 | 50.000 |
| 82) Toluene | (2) | 10.017 | 92 | 54997 | 3.439 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 820309 | 50.000 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 425007 | 50.000 |
| 50)$Dibromofluoromethane | (1) | 7.052 | 113 | 254805 | 47.312 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 66023 | 46.429 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1056599 | 49.475 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 387218 | 49.806 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

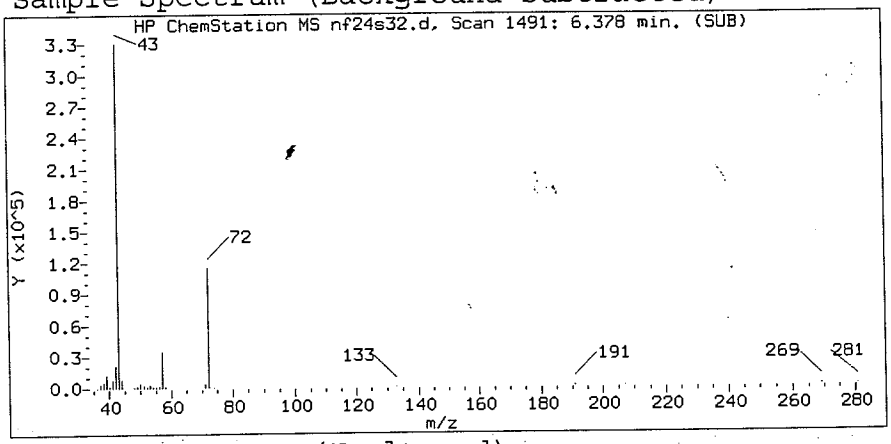
8326

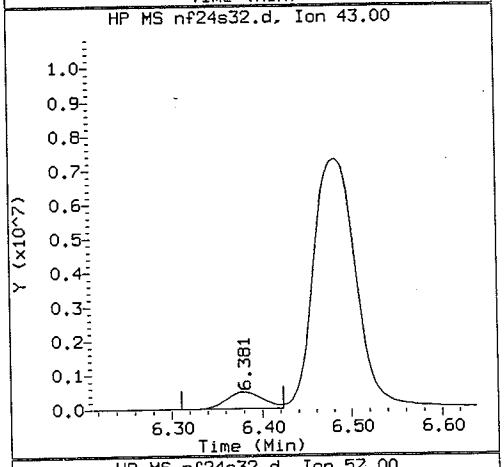
Reference Standard Spectrum for 2-Butanone



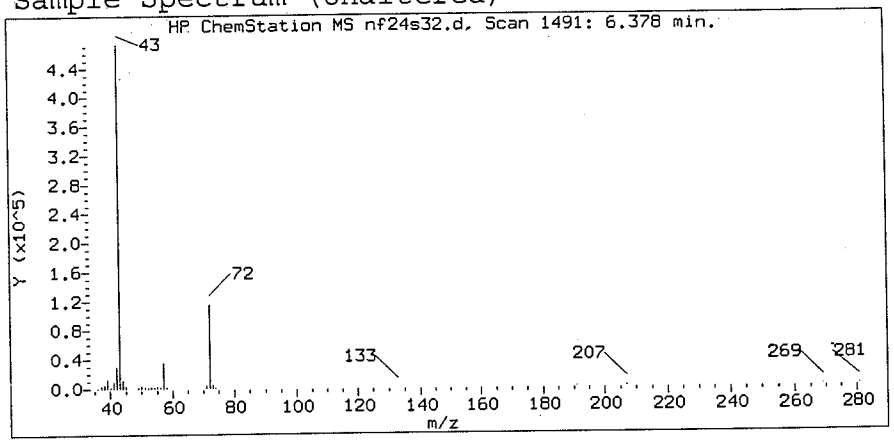



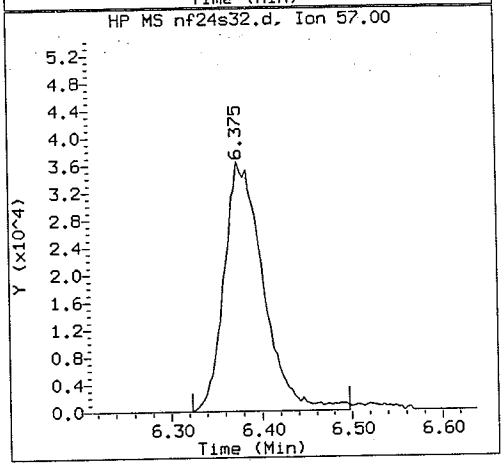

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Injection date and time: 24-FEB-2004 21:58

Instrument ID: HP07159.i
Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m
Calibration date and time: 24-FEB-2004 19:47

Sublist used: 3636QC

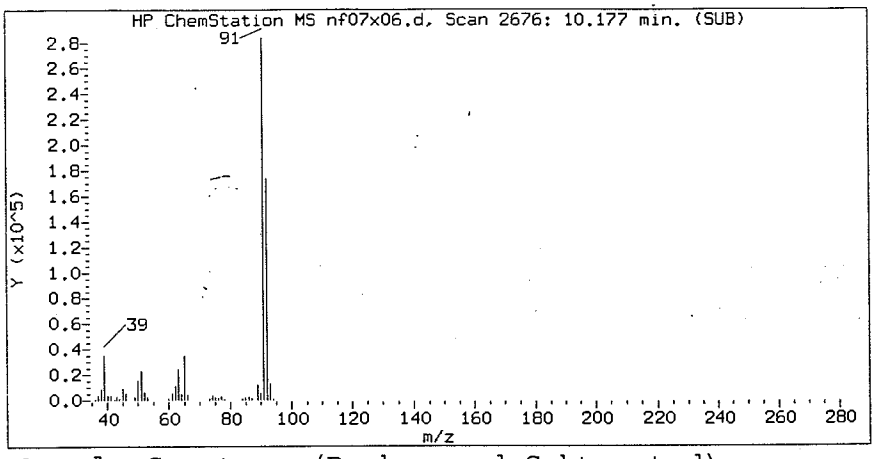
Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

Sample Name: MM500

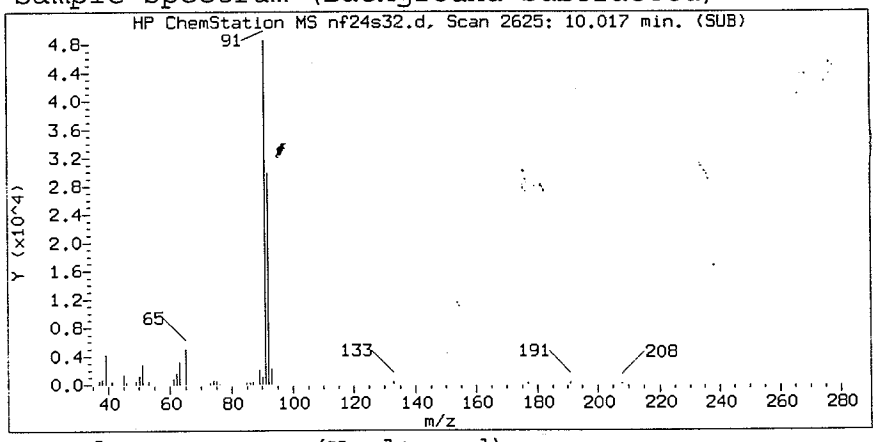
Lab Sample ID: 4218086

| | |
|---|---|
| Compound Number | : 40 |
| Compound Name | : 2-Butanone |
| Scan Number | : 1491 |
| Retention Time (minutes) | : 6.378 |
| Quant Ion | : 72.0 |
| Area (flag) | : 339263 |
| Concentration (ug/L) | : 223.2938 |

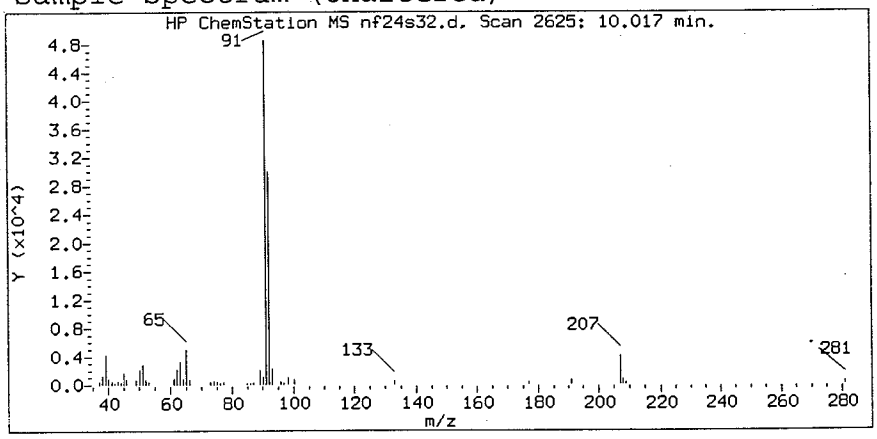
Reference Standard Spectrum for Toluene

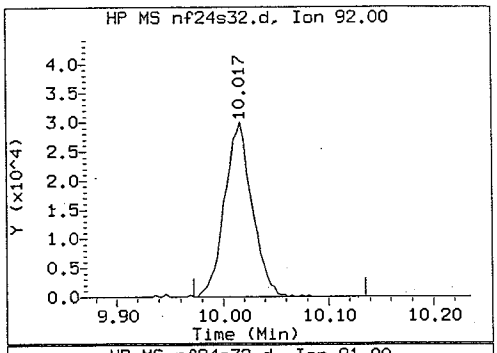


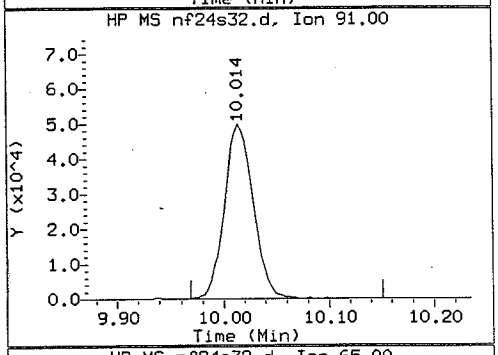

Sample Spectrum (Background Subtracted)

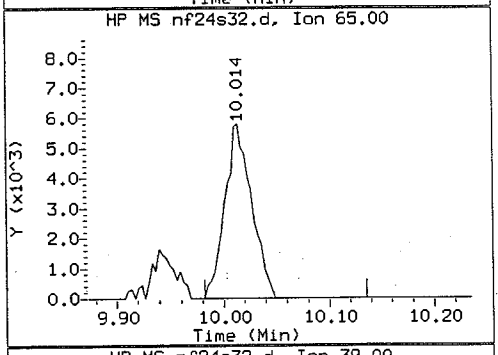


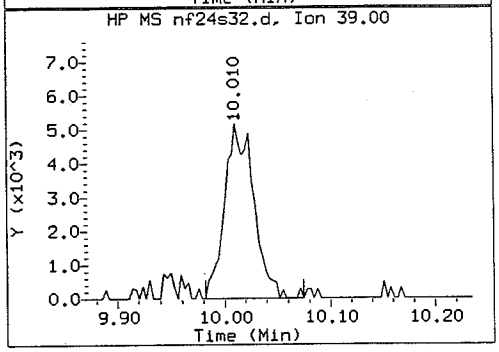

Sample Spectrum (Unaltered)




Data File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Injection date and time: 24-FEB-2004 21:58

Instrument ID: HP07159.i
Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m
Calibration date and time: 24-FEB-2004 19:47

Sublist used: 3636QC

Date, time and analyst ID of latest file update: 24-Feb-2004 22:20 Automation

Sample Name: MM500

Lab Sample ID: 4218086

| | |
|---|---|
| Compound Number | : 82 |
| Compound Name | : Toluene |
| Scan Number | : 2625 |
| Retention Time (minutes) | : 10.017 |
| Quant Ion | : 92.0 |
| Area (flag) | : 54997 |
| Concentration (ug/L) | : 3.4393 |

# MM500

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218086

File: /chem/HP07159.i/04feb24b.b/nf24s32.d
Sample: MM500;4218086;1;0;;;;
Injected At:24-FEB-2004 21:58
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1987 | 96 | 1045894( 1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3041 | 117 | 820309( 1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3617 | 152 | 425007( -4) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.052( 0.000) | 113 | 254805 | 47.312 | 95% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 66023 | 46.429 | 93% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1056599 | 49.475 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 387218 | 49.806 | 100% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | | | | ND | ND | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | | | | ND | ND | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.378( 0.000) | 72 | 339263 | 223.294 | 4465.88 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | | | | ND | ND | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | | | | ND | ND | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | | | | ND | ND | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | | | | ND | ND | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.017( 0.000) | 92 | 54997 | 3.439 | 68.79 | | J | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | | | | ND | ND | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | | | | ND | ND | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | | | | ND | ND | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: Batch

Analyst: SME1533  Date: 2/24/04

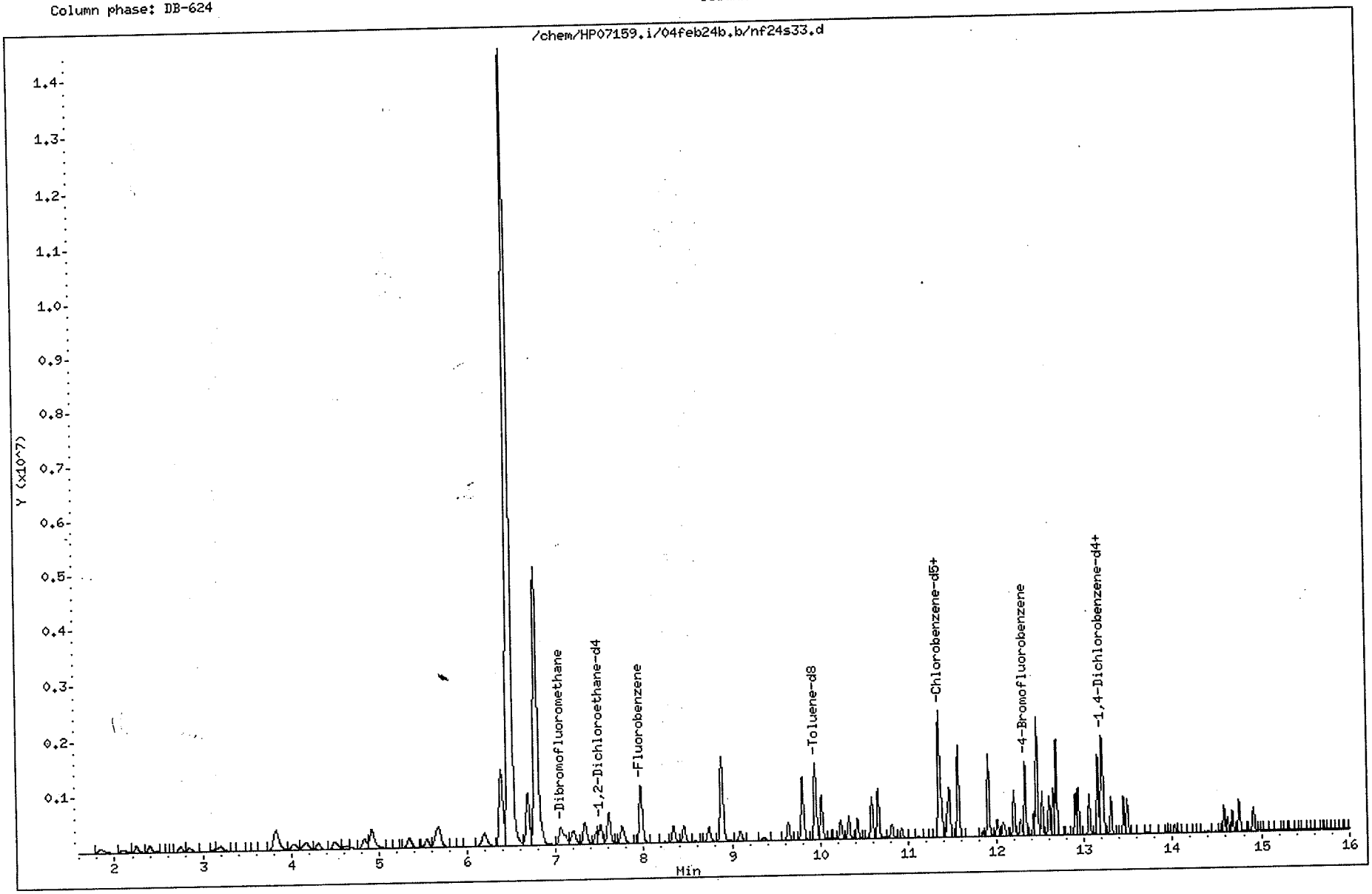
Auditor:  Date: 2/25/04

Data File: /chem/HP07159.i/04feb24b.b/nf24s33.d
Date : 24-FEB-2004 22:23
Client ID: MM500MS
Sample Info: MM500MS;4218087;1;3;MS;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME1533
2/24/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s33.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 22:23  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 22:45 Automation

Sample Name: MM500MS  Lab Sample ID: 4218087

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.402 | 62 | 179490 | 21.501 |
| 16) 1,1-Dichloroethene | (1) | 3.817 | 96 | 114499 | 21.197 |
| 17) Freon 113 | (1) | 3.846 | 101 | 113932 | 22.586 |
| 22) Carbon Disulfide | (1) | 4.170 | 76 | 417933 | 22.900 |
| 24) Methylene Chloride | (1) | 4.501 | 84 | 122561 | 19.558 |
| 40) 2-Butanone | (1) | 6.384 | 72 | 516688 | 347.635 |
| 48) Chloroform | (1) | 6.840 | 83 | 200965 | 19.726 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 167182 | 20.617 |
| 57) Isobutyl Alcohol | (1) | 7.456 | 41 | 138249 | 328.237 |
| 60) Benzene | (1) | 7.601 | 78 | 498654 | 20.372 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 160102 | 18.777 |
| 65) *Fluorobenzene | (1) | 7.970 | 96 | 1023135 | 50.000 |
| 69) Trichloroethene | (1) | 8.457 | 95 | 122006 | 19.920 |
| 82) Toluene | (2) | 10.017 | 92 | 373834 | 23.771 |
| 87) Tetrachloroethene | (2) | 10.585 | 166 | 135373 | 19.404 |
| 94) *Chlorobenzene-d5 | (2) | 11.352 | 117 | 806738 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 345078 | 19.498 |
| 97) Ethylbenzene | (2) | 11.467 | 91 | 573518 | 20.635 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 445289 | 40.301 |
| 100) o-Xylene | (2) | 11.904 | 106 | 213893 | 19.657 |
| 106) Cyclohexanone | (2) | 12.273 | 55 | 119311 | 333.318 |
| 124) *1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 436008 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 265059 | 19.370 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 247110 | 18.988 |
| 50) $Dibromofluoromethane | (1) | 7.058 | 113 | 251614 | 47.759 |
| 58) $1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 65728 | 47.250 |
| 80) $Toluene-d8 | (2) | 9.943 | 98 | 1037081 | 49.378 |
| 107) $4-Bromofluorobenzene | (2) | 12.324 | 95 | 389699 | 50.968 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# MM500MS

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218087

File: /chem/HP07159.i/04feb24b.b/nf24s33.d
Sample: MM500MS;4218087;1;3;MS;;;
Injected At:24-FEB-2004 22:23
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1988 | 96 | 1023135( -1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3042 | 117 | 806738( -1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3618 | 152 | 436008( -2) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.058(-0.001) | 113 | 251614 | 47.759 | 96% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 65728 | 47.250 | 95% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1037081 | 49.378 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.324( 0.000) | 95 | 389699 | 50.968 | 102% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.402( 0.002) | 62 | 179490 | 21.501 | 430.01 | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | 3.817( 0.000) | 96 | 114499 | 21.197 | 423.94 | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | 3.846(-0.001) | 101 | 113932 | 22.586 | 451.71 | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | 4.170( 0.000) | 76 | 417933 | 22.900 | 458.01 | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | 4.501(-0.001) | 84 | 122561 | 19.558 | 391.15 | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.384( 0.000) | 72 | 516688 | 347.635 | 6952.69 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | 6.840(-0.001) | 83 | 200965 | 19.726 | 394.52 | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | 7.337( 0.000) | 117 | 167182 | 20.617 | 412.35 | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | 7.456( 0.000) | 41 | 138249 | 328.237 | 6564.74 | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | 7.601( 0.000) | 78 | 498654 | 20.372 | 407.45 | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | 7.613( 0.000) | 62 | 160102 | 18.777 | 375.55 | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | 8.457( 0.000) | 95 | 122006 | 19.920 | 398.40 | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.017( 0.000) | 92 | 373834 | 23.771 | 475.42 | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | 10.585( 0.001) | 166 | 135373 | 19.404 | 388.09 | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | 11.377( 0.000) | 112 | 345078 | 19.498 | 389.96 | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | 11.467( 0.000) | 91 | 573518 | 20.635 | 412.70 | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | 11.567( 0.000) | 106 | 445289 | 40.301 | 806.02 | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | 11.904( 0.000) | 106 | 213893 | 19.657 | 393.13 | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | 12.273( 0.000) | 55 | 119311 | 333.318 | 6666.36 | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219( 0.000) | 146 | 265059 | 19.370 | 387.39 | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492( 0.000) | 146 | 247110 | 18.988 | 379.76 | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: Batch

Analyst: SME1533  Date: 2/24/04

Auditor:  Date: 2/25/04

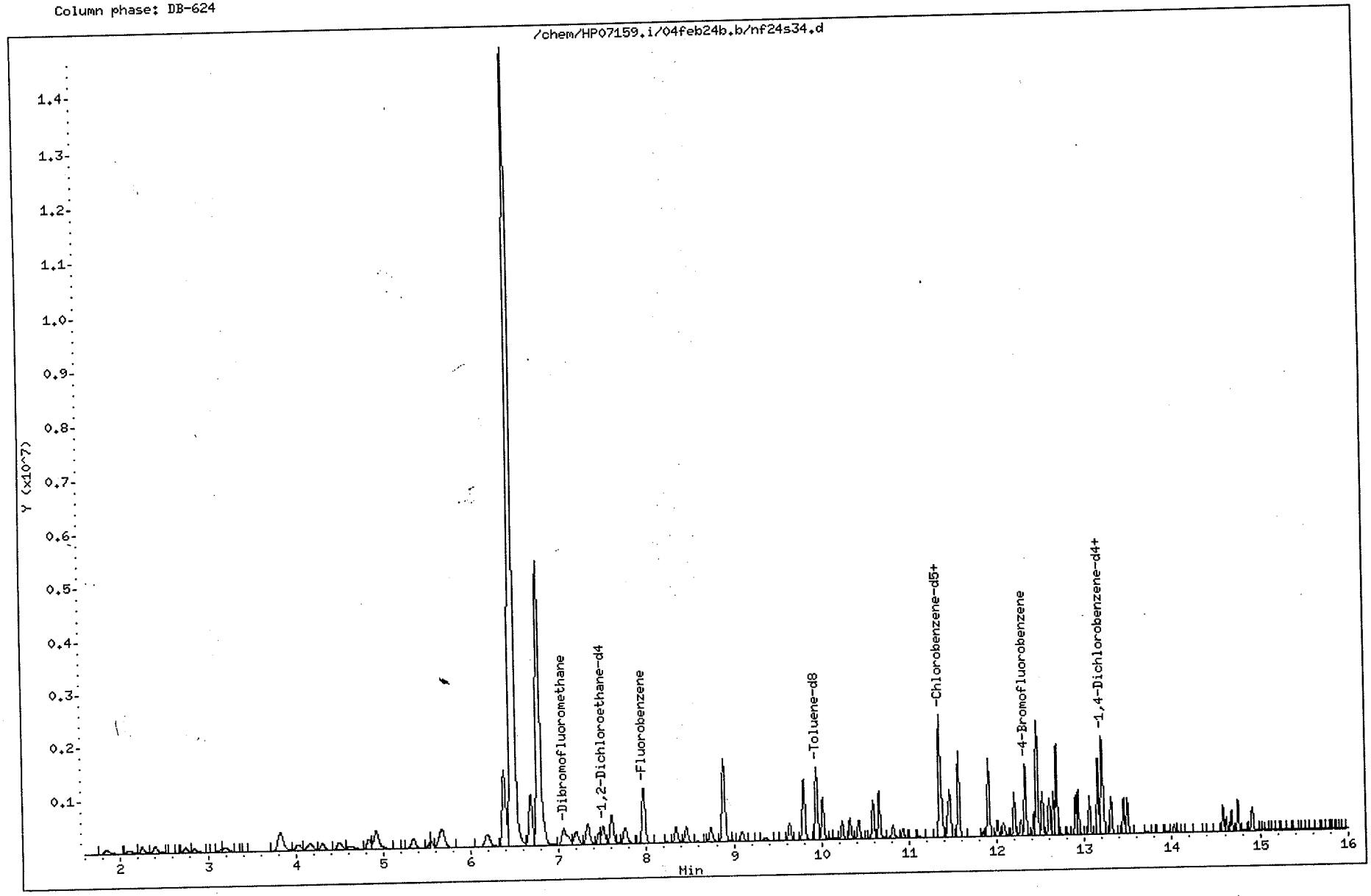
Data File: /chem/HP07159.i/04feb24b.b/nf24s34.d
Date : 24-FEB-2004 22:48
Client ID: MM500MSD
Sample Info: MM500MSD;4218088;1;3;MSD;;;
Purge Volume: 0.2
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

acmp
1254
2.2504





Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s34.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 22:48  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 23:10 Automation

Sample Name: MM500MSD  Lab Sample ID: 4218088

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.401 | 62 | 181502 | 21.596 |
| 16) 1,1-Dichloroethene | (1) | 3.813 | 96 | 113582 | 20.887 |
| 17) Freon 113 | (1) | 3.839 | 101 | 114437 | 22.534 |
| 22) Carbon Disulfide | (1) | 4.166 | 76 | 420758 | 22.901 |
| 24) Methylene Chloride | (1) | 4.500 | 84 | 122138 | 19.360 |
| 40) 2-Butanone | (1) | 6.380 | 72 | 539449 | 360.521 |
| 48) Chloroform | (1) | 6.836 | 83 | 201534 | 19.650 |
| 56) Carbon Tetrachloride | (1) | 7.343 | 117 | 165924 | 20.326 |
| 57) Isobutyl Alcohol | (1) | 7.458 | 41 | 143463 | 338.338 |
| 60) Benzene | (1) | 7.603 | 78 | 500963 | 20.330 |
| 61) 1,2-Dichloroethane | (1) | 7.613 | 62 | 160440 | 18.691 |
| 65)*Fluorobenzene | (1) | 7.969 | 96 | 1030024 | 50.000 |
| 69) Trichloroethene | (1) | 8.456 | 95 | 121214 | 19.659 |
| 82) Toluene | (2) | 10.016 | 92 | 371052 | 23.711 |
| 87) Tetrachloroethene | (2) | 10.584 | 166 | 133777 | 19.270 |
| 94)*Chlorobenzene-d5 | (2) | 11.351 | 117 | 802774 | 50.000 |
| 95) Chlorobenzene | (2) | 11.380 | 112 | 344962 | 19.588 |
| 97) Ethylbenzene | (2) | 11.466 | 91 | 575350 | 20.803 |
| 98) m+p-Xylene | (2) | 11.569 | 106 | 450152 | 40.942 |
| 100) o-Xylene | (2) | 11.903 | 106 | 218030 | 20.136 |
| 106) Cyclohexanone | (2) | 12.275 | 55 | 118941 | 333.926 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.202 | 152 | 433415 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.218 | 146 | 267401 | 19.658 |
| 127) 1,2-Dichlorobenzene | (3) | 13.491 | 146 | 248957 | 19.244 |
| 50)$Dibromofluoromethane | (1) | 7.054 | 113 | 252034 | 47.518 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.507 | 102 | 63189 | 45.121 |
| 80)$Toluene-d8 | (2) | 9.942 | 98 | 1036338 | 49.586 |
| 107)$4-Bromofluorobenzene | (2) | 12.326 | 95 | 389061 | 51.136 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# MM500MSD

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

# 4218088

File: /chem/HP07159.i/04feb24b.b/nf24s34.d
Sample: MM500MSD;4218088;1;3;MSD;;;
Injected At:24-FEB-2004 22:48
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W.m
Blank Reference: nf24s31.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AB
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:20.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 0.2500 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.969( 0.001) | 1987 | 96 | 1030024( -1) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.351(-0.002) | 3041 | 117 | 802774( -1) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.202(-0.002) | 3618 | 152 | 433415( -2) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.054( 0.000) | 113 | 252034 | 47.518 | 95% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.507( 0.000) | 102 | 63189 | 45.121 | 90% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.942( 0.000) | 98 | 1036338 | 49.586 | 99% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.326( 0.000) | 95 | 389061 | 51.136 | 102% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.401( 0.002) | 62 | 181502 | 21.596 | 431.93 | | | 20.00 | 100.00 |
| 16) 1,1-Dichloroethene | (1) | 3.813( 0.000) | 96 | 113582 | 20.887 | 417.73 | | | 16.00 | 100.00 |
| 17) Freon 113 | (1) | 3.839( 0.000) | 101 | 114437 | 22.534 | 450.68 | | | 40.00 | 200.00 |
| 22) Carbon Disulfide | (1) | 4.166( 0.000) | 76 | 420758 | 22.901 | 458.02 | | | 20.00 | 100.00 |
| 24) Methylene Chloride | (1) | 4.500(-0.001) | 84 | 122138 | 19.360 | 387.20 | | | 40.00 | 100.00 |
| 40) 2-Butanone | (1) | 6.380( 0.000) | 72 | 539449 | 360.521 | 7210.42 | | | 60.00 | 200.00 |
| 48) Chloroform | (1) | 6.836( 0.000) | 83 | 201534 | 19.650 | 392.99 | | | 16.00 | 100.00 |
| 56) Carbon Tetrachloride | (1) | 7.343( 0.000) | 117 | 165924 | 20.326 | 406.51 | | | 20.00 | 100.00 |
| 57) Isobutyl Alcohol | (1) | 7.458( 0.000) | 41 | 143463 | 338.338 | 6766.75 | | | 2000.00 | 5000.00 |
| 60) Benzene | (1) | 7.603(-0.001) | 78 | 500963 | 20.330 | 406.60 | | | 10.00 | 100.00 |
| 61) 1,2-Dichloroethane | (1) | 7.613( 0.000) | 62 | 160440 | 18.691 | 373.83 | | | 20.00 | 100.00 |
| 69) Trichloroethene | (1) | 8.456( 0.000) | 95 | 121214 | 19.659 | 393.17 | | | 20.00 | 100.00 |
| 82) Toluene | (2) | 10.016( 0.000) | 92 | 371052 | 23.711 | 474.21 | | | 14.00 | 100.00 |
| 87) Tetrachloroethene | (2) | 10.584( 0.001) | 166 | 133777 | 19.270 | 385.41 | | | 16.00 | 100.00 |
| 95) Chlorobenzene | (2) | 11.380( 0.000) | 112 | 344962 | 19.588 | 391.75 | | | 16.00 | 100.00 |
| 97) Ethylbenzene | (2) | 11.466( 0.000) | 91 | 575350 | 20.803 | 416.06 | | | 16.00 | 100.00 |
| 98) m+p-Xylene | (2) | 11.569( 0.000) | 106 | 450152 | 40.942 | 818.85 | | | 16.00 | 100.00 |
| 100) o-Xylene | (2) | 11.903( 0.000) | 106 | 218030 | 20.136 | 402.71 | | | 16.00 | 100.00 |
| 106) Cyclohexanone | (2) | 12.275( 0.000) | 55 | 118941 | 333.926 | 6678.52 | | | 1100.00 | 5000.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.218( 0.000) | 146 | 267401 | 19.658 | 393.15 | | | 20.00 | 100.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.491( 0.000) | 146 | 248957 | 19.244 | 384.88 | | | 20.00 | 100.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: ~~Client~~ batch
(2) Acmp 1254
2.25.04

Analyst: Acmp 1254  Date: 2.25.04

Auditor: [signature]  Date: 2/25/04

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Date : 20-FEB-2004 11:49
Client ID: LCSX06
Sample Info: LCSX06;LCSX06;2;3;LCS;;

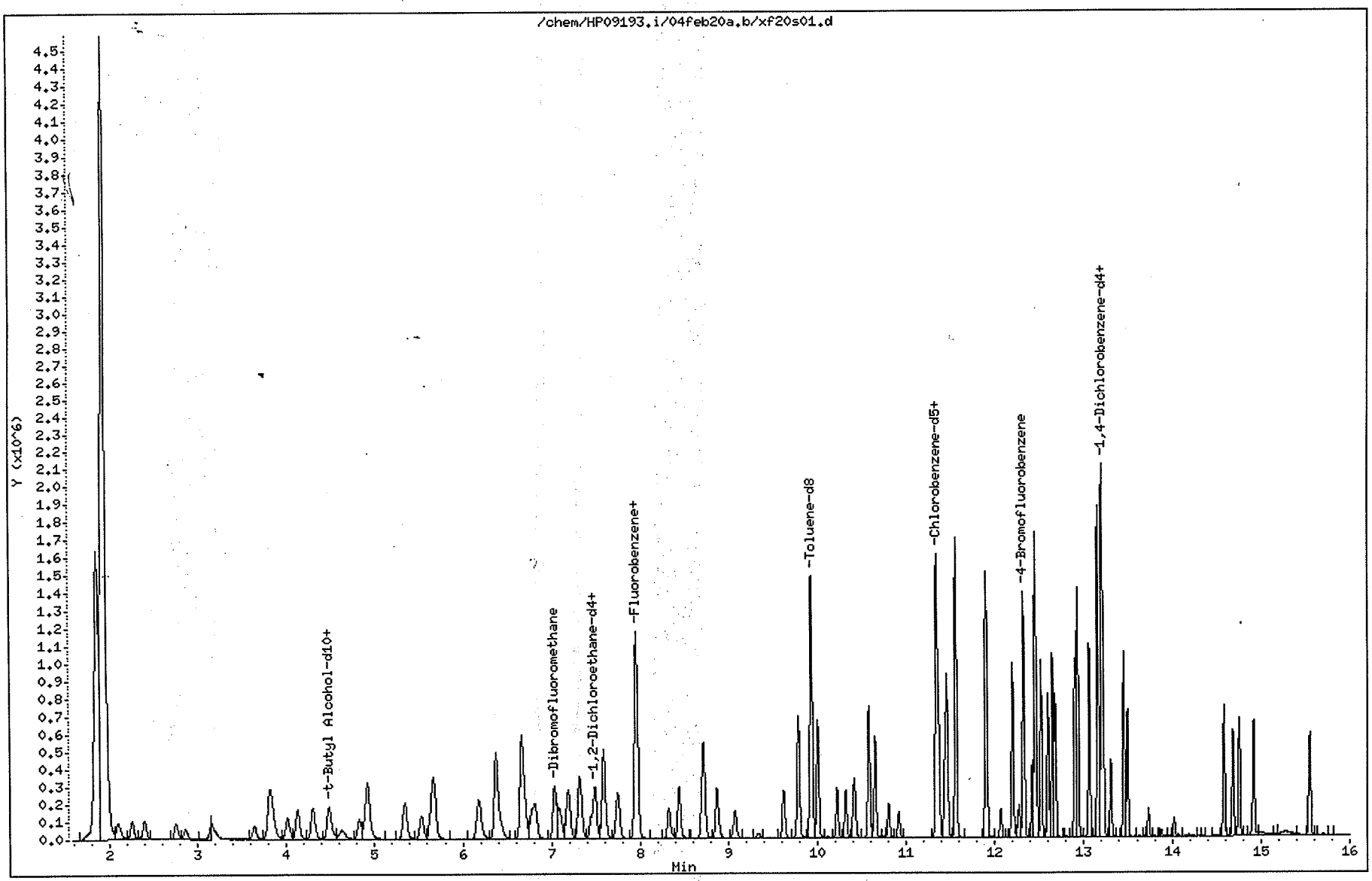
Column phase: DB-624

Instrument: HP09193.i

Operator: LCM01518
Column diameter: 0.25

LCM1518 2/20/04





Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 12:20 lcm01518

Sample Name: LCSX06 Lab Sample ID: LCSX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.256 | 50 | 169726 | 21.443 |
| 5) Vinyl Chloride | (1) | 2.394 | 62 | 161773 | 21.674 |
| 7) Bromomethane | (1) | 2.753 | 94 | 101871 | 19.923 |
| 8) Chloroethane | (1) | 2.859 | 64 | 87381 | 20.041 |
| 17) 1,1-Dichloroethene | (1) | 3.809 | 96 | 106751 | 19.804 |
| 20) Acetone | (1) | 3.834 | 58 | 59480 | 136.737 |
| 24) Carbon Disulfide | (1) | 4.130 | 76 | 390429 | 19.793 |
| 28) Methylene Chloride | (1) | 4.483 | 84 | 125141 | 19.239 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919 | 96 | 125981 | 19.884 |
| 37) 1,1-Dichloroethane | (1) | 5.535 | 63 | 214967 | 20.340 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376 | 96 | 133630 | 19.185 |
| 46) 2-Butanone | (1) | 6.370 | 72 | 85262 | 139.573 |
| 54) Chloroform | (1) | 6.819 | 83 | 201291 | 20.401 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092 | 97 | 178837 | 20.417 |
| 60) Carbon Tetrachloride | (1) | 7.326 | 117 | 153632 | 20.531 |
| 65) Benzene | (1) | 7.586 | 78 | 509388 | 20.224 |
| 66) 1,2-Dichloroethane | (1) | 7.592 | 62 | 142058 | 20.624 |
| 69)*Fluorobenzene | (1) | 7.952 | 96 | 1186869 | 50.000 |
| 73) Trichloroethene | (1) | 8.446 | 95 | 127729 | 20.047 |
| 75) 1,2-Dichloropropane | (1) | 8.718 | 63 | 122982 | 19.838 |
| 81) Bromodichloromethane | (1) | 9.075 | 83 | 135685 | 19.437 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620 | 75 | 182405 | 19.449 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787 | 43 | 525671 | 92.476 |
| 88) Toluene | (2) | 10.005 | 92 | 329596 | 19.330 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220 | 75 | 158329 | 19.839 |
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | 97 | 102072 | 19.180 |
| 93) Tetrachloroethene | (2) | 10.580 | 166 | 162410 | 20.693 |
| 95) 2-Hexanone | (2) | 10.650 | 43 | 372853 | 86.175 |
| 97) Dibromochloromethane | (2) | 10.804 | 129 | 109123 | 19.418 |
| 100)*Chlorobenzene-d5 | (2) | 11.343 | 117 | 932602 | 50.000 |
| 101) Chlorobenzene | (2) | 11.369 | 112 | 364062 | 19.202 |
| 103) Ethylbenzene | (2) | 11.462 | 91 | 614749 | 19.442 |
| 105) m+p-Xylene | (2) | 11.562 | 106 | 504878 | 38.961 |
| 92) Xylene (Total) | (2) | | 106 | 741557 | 58.389 |

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem/HP09193.i/04feb20a.b/xf20s01.d Instrument ID: HP09193.i
Injection date and time: 20-FEB-2004 11:49 Analyst ID: LCM01518

Method used: /chem/HP09193.i/04feb20a.b/X8260SL.m Sublist used: 6292
Calibration date and time: 16-FEB-2004 09:47
Date, time and analyst ID of latest file update: 20-Feb-2004 12:20 lcm01518

Sample Name: LCSX06 Lab Sample ID: LCSX06

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 107) o-Xylene | (2) | 11.898 | 106 | 236679 | 19.428 |
| 108) Styrene | (2) | 11.908 | 104 | 376755 | 18.865 |
| 109) Bromoform | (2) | 12.069 | 173 | 73562 | 19.041 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | 83 | 131201 | 18.362 |
| 129)*1,4-Dichlorobenzene-d4 | (3) | 13.201 | 152 | 526036 | 50.000 |
| 55)$Dibromofluoromethane | (1) | 7.034 | 113 | 262086 | 51.304 |
| 62)$1,2-Dichloroethane-d4 | (1) | 7.489 | 102 | 64369 | 50.275 |
| 86)$Toluene-d8 | (2) | 9.931 | 98 | 1150658 | 51.320 |
| 113)$4-Bromofluorobenzene | (2) | 12.322 | 95 | 429277 | 50.089 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

# LCSX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX06

File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Sample: LCSX06;LCSX06;2;3;LCS;;
Injected At:20-FEB-2004 11:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 69) Fluorobenzene | 7.952( 0.006) | 1985 | 96 | 1186869( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.343( 0.003) | 3042 | 117 | 932602( -7) | 50.00 | |
| 129) 1,4-Dichlorobenzene-d4 | 13.201( 0.000) | 3621 | 152 | 526036( -8) | 50.00 | |

# = RETENTION TIME OUT OF RANGE  * = INTERNAL STANDARD OUT OF RANGE  NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 55) Dibromofluoromethane | (1) | 7.034( 0.000) | 113 | 262086 | 51.304 | 103% | | 70 - 129 |
| 62) 1,2-Dichloroethane-d4 | (1) | 7.489( 0.000) | 102 | 64369 | 50.275 | 101% | | 70 - 121 |
| 86) Toluene-d8 | (2) | 9.931( 0.000) | 98 | 1150658 | 51.320 | 103% | | 70 - 130 |
| 113) 4-Bromofluorobenzene | (2) | 12.322( 0.000) | 95 | 429277 | 50.089 | 100% | | 70 - 128 |

# = RELATIVE RETENTION TIME OUT OF RANGE  * = PERCENT REC.OUT OF RANGE  D = DILUTED OUT  NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Chloromethane | (1) | 2.256( 0.001) | 50 | 169726 | 21.443 | 21.44 | | | 2.00 | 5.00 |
| 5) Vinyl Chloride | (1) | 2.394( 0.001) | 62 | 161773 | 21.674 | 21.67 | | | 1.00 | 5.00 |
| 7) Bromomethane | (1) | 2.753( 0.001) | 94 | 101871 | 19.923 | 19.92 | | | 2.00 | 5.00 |
| 8) Chloroethane | (1) | 2.859( 0.001) | 64 | 87381 | 20.041 | 20.04 | | | 2.00 | 5.00 |
| 17) 1,1-Dichloroethene | (1) | 3.809( 0.000) | 96 | 106751 | 19.804 | 19.80 | | | 1.00 | 5.00 |
| 20) Acetone | (1) | 3.834( 0.000) | 58 | 59480 | 136.737 | 136.74 | | | 7.00 | 20.00 |
| 24) Carbon Disulfide | (1) | 4.130( 0.000) | 76 | 390429 | 19.793 | 19.79 | | | 1.00 | 5.00 |
| 28) Methylene Chloride | (1) | 4.483( 0.000) | 84 | 125141 | 19.239 | 19.24 | | | 2.00 | 5.00 |
| 34) trans-1,2-Dichloroethene | (1) | 4.919(-0.001) | 96 | 125981 | 19.884 | 19.88 | | | 1.00 | 5.00 |
| 37) 1,1-Dichloroethane | (1) | 5.535( 0.000) | 63 | 214967 | 20.340 | 20.34 | | | 1.00 | 5.00 |
| 45) cis-1,2-Dichloroethene | (1) | 6.376( 0.000) | 96 | 133630 | 19.185 | 19.19 | | | 1.00 | 5.00 |
| 46) 2-Butanone | (1) | 6.370( 0.001) | 72 | 85262 | 139.573 | 139.57 | | | 4.00 | 10.00 |
| 54) Chloroform | (1) | 6.819( 0.000) | 83 | 201291 | 20.401 | 20.40 | | | 1.00 | 5.00 |
| 57) 1,1,1-Trichloroethane | (1) | 7.092( 0.000) | 97 | 178837 | 20.417 | 20.42 | | | 1.00 | 5.00 |
| 60) Carbon Tetrachloride | (1) | 7.326( 0.000) | 117 | 153632 | 20.531 | 20.53 | | | 1.00 | 5.00 |
| 65) Benzene | (1) | 7.586( 0.000) | 78 | 509388 | 20.224 | 20.22 | | | 0.50 | 5.00 |
| 66) 1,2-Dichloroethane | (1) | 7.592( 0.000) | 62 | 142058 | 20.624 | 20.62 | | | 1.00 | 5.00 |
| 73) Trichloroethene | (1) | 8.446(-0.001) | 95 | 127729 | 20.047 | 20.05 | | | 1.00 | 5.00 |
| 75) 1,2-Dichloropropane | (1) | 8.718( 0.000) | 63 | 122982 | 19.838 | 19.84 | | | 1.00 | 5.00 |
| 81) Bromodichloromethane | (1) | 9.075(-0.001) | 83 | 135685 | 19.437 | 19.44 | | | 1.00 | 5.00 |
| 84) cis-1,3-Dichloropropene | (1) | 9.620(-0.001) | 75 | 182405 | 19.449 | 19.45 | | | 1.00 | 5.00 |
| 85) 4-Methyl-2-Pentanone | (1) | 9.787(-0.001) | 43 | 525671 | 92.476 | 92.48 | | | 3.00 | 10.00 |
| 88) Toluene | (2) | 10.005( 0.000) | 92 | 329596 | 19.330 | 19.33 | | | 1.00 | 5.00 |
| 89) trans-1,3-Dichloropropene | (2) | 10.220( 0.000) | 75 | 158329 | 19.839 | 19.84 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

LCSX06

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSX06

File: /chem/HP09193.i/04feb20a.b/xf20s01.d
Sample: LCSX06;LCSX06;2;3;LCS;;
Injected At:20-FEB-2004 11:49
Calibration Time: 16-FEB-2004 09:47
Target Method: X8260SL.m
Blank Reference: xf20b01.d
Sublist: 6292

Sample Concentration Formula: On-Column Amount * (Vt/Ws)
Batch:X040511AA
Analyst:LCM01518
Instrument ID:HP09193.i
Standard Reference: xf20c01.d
Prep Factor:1.00
Units: ug/Kg

Matrix: SOIL
Level: Low
Sample Wt./Vol.: 5.0000 g (Ws)
Volume Purged: 5.0 ml (Vt)

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 91) 1,1,2-Trichloroethane | (2) | 10.410 | ( 0.000) | 97 | 102072 | 19.180 | 19.18 | | | 1.00 | 5.00 |
| 93) Tetrachloroethene | (2) | 10.580 | ( 0.000) | 166 | 162410 | 20.693 | 20.69 | | | 1.00 | 5.00 |
| 95) 2-Hexanone | (2) | 10.650 | ( 0.000) | 43 | 372853 | 86.175 | 86.17 | | | 3.00 | 10.00 |
| 97) Dibromochloromethane | (2) | 10.804 | ( 0.000) | 129 | 109123 | 19.418 | 19.42 | | | 1.00 | 5.00 |
| 101) Chlorobenzene | (2) | 11.369 | ( 0.000) | 112 | 364062 | 19.202 | 19.20 | | | 1.00 | 5.00 |
| 103) Ethylbenzene | (2) | 11.462 | ( 0.000) | 91 | 614749 | 19.442 | 19.44 | | | 1.00 | 5.00 |
| 105) m+p-Xylene | (2) | 11.562 | ( 0.000) | 106 | 504878 | 38.961 | 38.96 | | | 1.00 | 5.00 |
| 92) Xylene (Total) | (2) | | | 106 | 741557 | 58.389 | 58.39 | | | 1.00 | 5.00 |
| 107) o-Xylene | (2) | 11.898 | ( 0.000) | 106 | 236679 | 19.428 | 19.43 | | | 1.00 | 5.00 |
| 108) Styrene | (2) | 11.908 | ( 0.000) | 104 | 376755 | 18.865 | 18.87 | | | 1.00 | 5.00 |
| 109) Bromoform | (2) | 12.069 | ( 0.000) | 173 | 73562 | 19.041 | 19.04 | | | 1.00 | 5.00 |
| 115) 1,1,2,2-Tetrachloroethane | (3) | 12.418 | ( 0.000) | 83 | 131201 | 18.362 | 18.36 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE  # = RELATIVE RETENTION TIME OUT OF RANGE

Comments:

Analyst: LCM/1518 Date: 2/20/04

Auditor: [signature] Date: 2/23/04



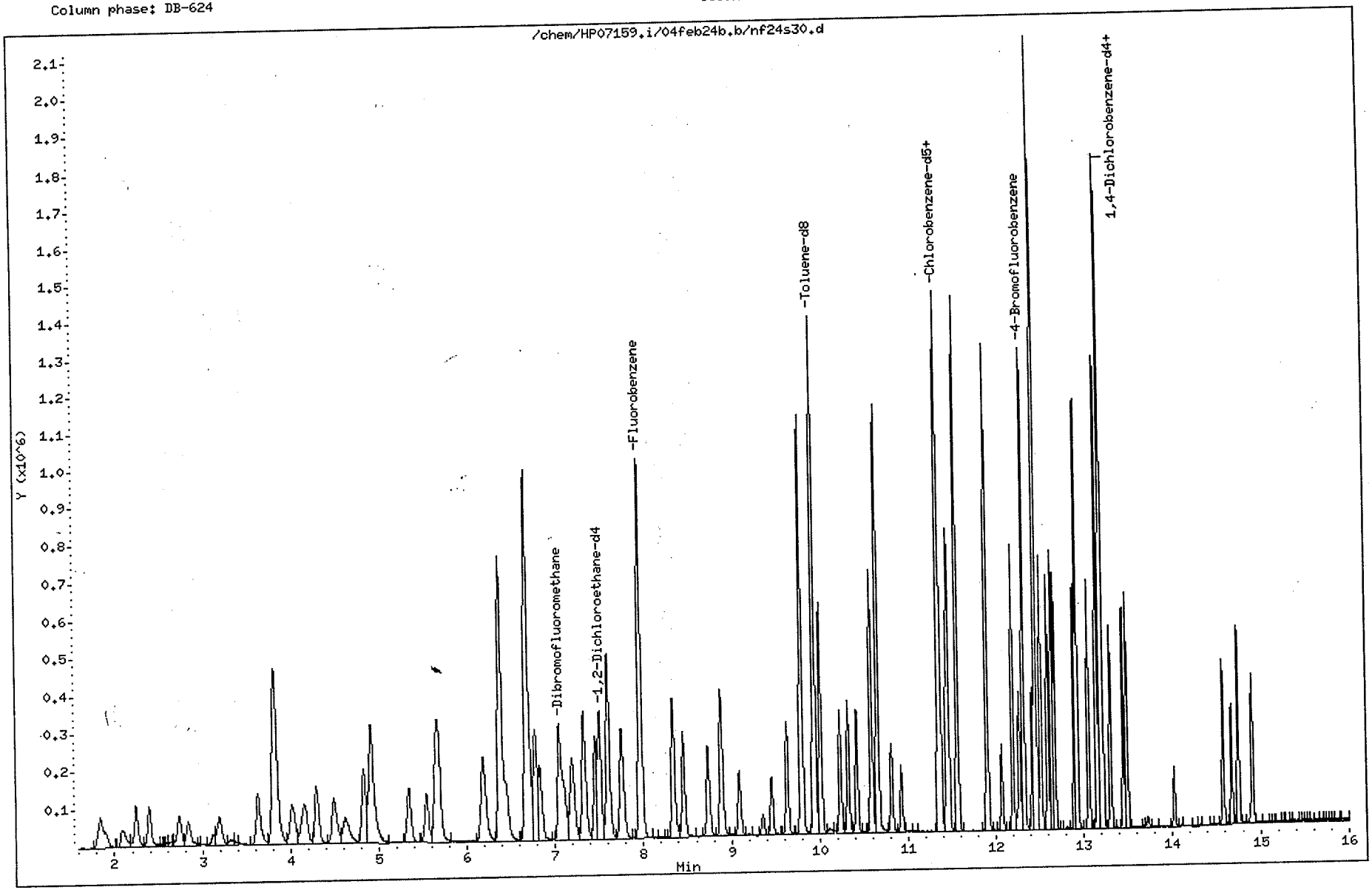
8348

Data File: /chem/HP07159.i/04feb24b.b/nf24s30.d
Date : 24-FEB-2004 20:55
Client ID: LCSN36
Sample Info: LCSN36;LCSN36;1;3;LCS;;;
Purge Volume: 5.0
Column phase: DB-624

Instrument: HP07159.i

Operator: SME01533
Column diameter: 0.25

SME 2/24/04



Quant Report

Target Revision 3.5

Data File: /chem/HP07159.i/04feb24b.b/nf24s30.d  Instrument ID: HP07159.i
Injection date and time: 24-FEB-2004 20:55  Analyst ID: SME01533

Method used: /chem/HP07159.i/04feb24b.b/N826W.m  Sublist used: 3636QC
Calibration date and time: 02-FEB-2004 11:54
Date, time and analyst ID of latest file update: 24-Feb-2004 21:18 Automation

Sample Name: LCSN36  Lab Sample ID: LCSN36

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.399 | 62 | 154134 | 18.593 |
| 16) 1,1-Dichloroethene | (1) | 3.811 | 96 | 100972 | 18.824 |
| 17) Freon 113 | (1) | 3.837 | 101 | 94570 | 18.879 |
| 22) Carbon Disulfide | (1) | 4.164 | 76 | 360749 | 19.906 |
| 24) Methylene Chloride | (1) | 4.498 | 84 | 113694 | 18.270 |
| 40) 2-Butanone | (1) | 6.384 | 72 | 218011 | 147.709 |
| 48) Chloroform | (1) | 6.837 | 83 | 182483 | 18.038 |
| 56) Carbon Tetrachloride | (1) | 7.337 | 117 | 142566 | 17.705 |
| 57) Isobutyl Alcohol | (1) | 7.456 | 41 | 170584 | 407.846 |
| 60) Benzene | (1) | 7.597 | 78 | 451623 | 18.580 |
| 61) 1,2-Dichloroethane | (1) | 7.610 | 62 | 150259 | 17.747 |
| 65)*Fluorobenzene | (1) | 7.970 | 96 | 1016012 | 50.000 |
| 69) Trichloroethene | (1) | 8.457 | 95 | 108017 | 17.760 |
| 82) Toluene | (2) | 10.014 | 92 | 282632 | 18.399 |
| 87) Tetrachloroethene | (2) | 10.585 | 166 | 126510 | 18.565 |
| 94)*Chlorobenzene-d5 | (2) | 11.352 | 117 | 788005 | 50.000 |
| 95) Chlorobenzene | (2) | 11.377 | 112 | 317221 | 18.350 |
| 97) Ethylbenzene | (2) | 11.467 | 91 | 503934 | 18.563 |
| 98) m+p-Xylene | (2) | 11.567 | 106 | 398609 | 36.934 |
| 100) o-Xylene | (2) | 11.907 | 106 | 195791 | 18.421 |
| 106) Cyclohexanone | (2) | 12.276 | 55 | 147646 | 422.283 |
| 124)*1,4-Dichlorobenzene-d4 | (3) | 13.200 | 152 | 425281 | 50.000 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219 | 146 | 244719 | 18.334 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492 | 146 | 233100 | 18.363 |
| 50)$Dibromofluoromethane | (1) | 7.055 | 113 | 246843 | 47.181 |
| 58)$1,2-Dichloroethane-d4 | (1) | 7.511 | 102 | 63362 | 45.868 |
| 80)$Toluene-d8 | (2) | 9.943 | 98 | 1024397 | 49.933 |
| 107)$4-Bromofluorobenzene | (2) | 12.327 | 95 | 385063 | 51.559 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

LCSN36

Lancaster Laboratories
Quantitation Report GC/MS Volatiles

LCSN36

File: /chem/HP07159.i/04feb24b.b/nf24s30.d
Sample: LCSN36;LCSN36;1;3;LCS;;;
Injected At:24-FEB-2004 20:55
Calibration Time: 02-FEB-2004 11:54
Target Method: N826W-m
Blank Reference: nf24b02.d
Sublist: 3636QC

Sample Concentration Formula: On-Column Amount * (Vt/Vo)
Batch:N040552AA
Analyst:SME01533
Instrument ID:HP07159.i
Standard Reference: nf24c03.d
Prep Factor:1.00
Units: ug/L

Matrix: WATER
Level: Low
Sample Wt./Vol.: 5.0000 ml (Vo)
Volume Purged: 5.0 ml (Vt)

| Internal Standards | RT(+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ext) | QC Flag |
|---|---|---|---|---|---|---|
| 65) Fluorobenzene | 7.970( 0.000) | 1988 | 96 | 1016012( -2) | 50.00 | |
| 94) Chlorobenzene-d5 | 11.352(-0.003) | 3042 | 117 | 788005( -3) | 50.00 | |
| 124) 1,4-Dichlorobenzene-d4 | 13.200( 0.000) | 3618 | 152 | 425281( -4) | 50.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 50) Dibromofluoromethane | (1) | 7.055( 0.000) | 113 | 246843 | 47.181 | 94% | | 81 - 120 |
| 58) 1,2-Dichloroethane-d4 | (1) | 7.511( 0.000) | 102 | 63362 | 45.868 | 92% | | 82 - 112 |
| 80) Toluene-d8 | (2) | 9.943( 0.000) | 98 | 1024397 | 49.933 | 100% | | 85 - 112 |
| 107) 4-Bromofluorobenzene | (2) | 12.327( 0.000) | 95 | 385063 | 51.559 | 103% | | 83 - 113 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 4) Vinyl Chloride | (1) | 2.399( 0.002) | 62 | 154134 | 18.593 | 18.59 | | | 1.00 | 5.00 |
| 16) 1,1-Dichloroethene | (1) | 3.811( 0.001) | 96 | 100972 | 18.824 | 18.82 | | | 0.80 | 5.00 |
| 17) Freon 113 | (1) | 3.837( 0.000) | 101 | 94570 | 18.879 | 18.88 | | | 2.00 | 10.00 |
| 22) Carbon Disulfide | (1) | 4.164( 0.000) | 76 | 360749 | 19.906 | 19.91 | | | 1.00 | 5.00 |
| 24) Methylene Chloride | (1) | 4.498( 0.000) | 84 | 113694 | 18.270 | 18.27 | | | 2.00 | 5.00 |
| 40) 2-Butanone | (1) | 6.384( 0.000) | 72 | 218011 | 147.709 | 147.71 | | | 3.00 | 10.00 |
| 48) Chloroform | (1) | 6.837( 0.000) | 83 | 182483 | 18.038 | 18.04 | | | 0.80 | 5.00 |
| 56) Carbon Tetrachloride | (1) | 7.337( 0.000) | 117 | 142566 | 17.705 | 17.70 | | | 1.00 | 5.00 |
| 57) Isobutyl Alcohol | (1) | 7.456( 0.000) | 41 | 170584 | 407.846 | 407.85 | | | 100.00 | 250.00 |
| 60) Benzene | (1) | 7.597( 0.000) | 78 | 451623 | 18.580 | 18.58 | | | 0.50 | 5.00 |
| 61) 1,2-Dichloroethane | (1) | 7.610( 0.000) | 62 | 150259 | 17.747 | 17.75 | | | 1.00 | 5.00 |
| 69) Trichloroethene | (1) | 8.457( 0.000) | 95 | 108017 | 17.760 | 17.76 | | | 1.00 | 5.00 |
| 82) Toluene | (2) | 10.014( 0.000) | 92 | 282632 | 18.399 | 18.40 | | | 0.70 | 5.00 |
| 87) Tetrachloroethene | (2) | 10.585( 0.001) | 166 | 126510 | 18.565 | 18.57 | | | 0.80 | 5.00 |
| 95) Chlorobenzene | (2) | 11.377( 0.000) | 112 | 317221 | 18.350 | 18.35 | | | 0.80 | 5.00 |
| 97) Ethylbenzene | (2) | 11.467( 0.000) | 91 | 503934 | 18.563 | 18.56 | | | 0.80 | 5.00 |
| 98) m+p-Xylene | (2) | 11.567( 0.000) | 106 | 398609 | 36.934 | 36.93 | | | 0.80 | 5.00 |
| 100) o-Xylene | (2) | 11.907( 0.000) | 106 | 195791 | 18.421 | 18.42 | | | 0.80 | 5.00 |
| 106) Cyclohexanone | (2) | 12.276( 0.000) | 55 | 147646 | 422.283 | 422.28 | | | 55.00 | 250.00 |
| 125) 1,4-Dichlorobenzene | (3) | 13.219( 0.000) | 146 | 244719 | 18.334 | 18.33 | | | 1.00 | 5.00 |
| 127) 1,2-Dichlorobenzene | (3) | 13.492( 0.000) | 146 | 233100 | 18.363 | 18.36 | | | 1.00 | 5.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Comments: _____

Analyst: SME1533 Date: 2/24/04

Auditor: _____ Date: 2/25/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03360101

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004689 here | | | | | | | | | | | |
| Lab Number 4219011 | SY035 | 12/31/03 | 2/18/04 | 1005 | 32.77 | 38.41 | 5.64 | 2/19/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004690 re | | | | | | | | | | | |
| Lab Number 4219010 | SY035 | 12/31/03 | 2/18/04 | 0940 | 32.58 | 38.18 | 5.60 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004691 ere | | | | | | | | | | | |
| Lab Number 4219011 | SY035 | 12/31/03 | 2/18/04 | 1005 | 32.87 | 39.26 | 6.39 | 2/19/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004692 re | | | | | | | | | | | |
| Lab Number 4219014 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.75 | 37.98 | 5.23 | 2/19/04 | SY035 | Y | — |
| Bottle Code 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 033600 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004693 | | | | | | | | | | | |
| Lab Number: 4219015 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.88 | 38.27 | 5.39 | 2/19/04 | SY035 | Y | — |
| Bottle Code: 93A | Comments | | | | | | | | | | |
| Vial ID | | | | | | | | | | | |
| -004694 | | | | | | | | | | | |
| Lab Number: 4219010 | SY035 | 12/31/03 | 2/18/04 | 0940 | 32.66 | 37.43 | 4.77 | 2/20/04 | SY035 | Y | — |
| Bottle Code: 93B | Comments | | | | | | | | | | |
| Vial ID | | | | | | | | | | | |
| -004695 | | | | | | | | | | | |
| Lab Number: 4219012 | SY035 | 12/31/03 | 2/18/04 | 1020 | 32.72 | 37.80 | 5.14 | 2/19/04 | SY035 | Y | — |
| Bottle Code: 93A | Comments | | | | | | | | | | |
| Vial ID | | | | | | | | | | | |
| -004696 | | | | | | | | | | | |
| Lab Number: 4219012 | SY035 | 12/31/03 | 2/18/04 | 1020 | 32.77 | 37.51 | 4.74 | 2/19/04 | SY035 | Y | — |
| Bottle Code: 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004697 here | | | | | | | | | | | |
| Lab Number 4219013 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.71 | 38.68 | 5.97 | 2/19/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004698 here | | | | | | | | | | | |
| Lab Number 4219014 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.64 | 38.00 | 5.36 | 2/19/04 | SY035 | Y | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004699 here | | | | | | | | | | | |
| Lab Number | SY035 | 12/31/03 | | | 32.88 | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

| Vial | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004700 here | | | | | | | | | | | |
| Lab Number 4218997 | SY035 | 12/31/03 | 2/17/04 | 1245 | 32.78 | 38.94 | 6.16 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03360 01

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004685 | | | | | | | | | | | |
| Lab Number: 4219018 | SY035 | 12/31/03 | 2/18/04 | 1120 | 32.93 | 38.48 | 5.55 | 2/20/04 | SY035 | N | — |
| Bottle Code: 93B | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004686 | | | | | | | | | | | |
| Lab Number: 4219017 | SY035 | 12/31/03 | 2/18/04 | 1120 | 32.80 | 37.87 | 5.07 | 2/19/04 | SY035 | Y | — |
| Bottle Code: 93B | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004687 here | | | | | | | | | | | |
| Lab Number: 4219016 | SY035 | 12/31/03 | 2/18/04 | 1100 | 32.78 | 38.91 | 6.13 | 2/19/04 | SY035 | N | — |
| Bottle Code: 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004688 re | | | | | | | | | | | |
| Lab Number: 4219015 | SY035 | 12/31/03 | 2/18/04 | 1045 | 33.00 | 38.39 | 5.39 | 2/19/04 | SY035 | Y | — |
| Bottle Code: 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____



043626 15

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 03 360001

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004681 re | | | | | | | | | | | |
| Lab Number 4219017 | SY035 | 12/31/03 | 2/18/04 | 1120 | 32.91 | 38.45 | 5.54 | 2/19/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004682 re | | | | | | | | | | | |
| Lab Number 4219016 | SY035 | 12/31/03 | 2/18/04 | 1100 | 32.95 | 39.04 | 6.09 | 2/19/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004683 | | | | | | | | | | | |
| Lab Number 4219013 | SY035 | 12/31/03 | 2/18/04 | 1045 | 32.56 | 38.13 | 5.57 | 2/19/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |
| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| -004684 | | | | | | | | | | | |
| Lab Number 4219019 | SY035 | 12/31/03 | 2/18/04 | 1140 | 32.96 | 38.79 | 5.83 | 2/20/04 | SY035 | N | — |
| Bottle Code 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 033601 Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -004677 | | | | | | | | | | | |
| Lab Number 4215602 | SY035 | 12/31/03 | — | — | 33.13 ~~32.84~~ | 33.13 | — | 2/13/04 | SY035 | — | — |
| Bottle Code 93A | Comments 15+3 3 2-4-04 | | | | | | | | Trip Blank | | |
| Vial ID -004678 | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4219020 | SY035 | 12/31/03 | 2/18/04 | 1200 | 32.80 | 38.98 | 6.18 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID -004679 | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4219019 | SY035 | 12/31/03 | 2/18/04 | 1140 | 32.58 | 38.21 | 5.63 | 2/20/04 | SY035 | N | — |
| Bottle Code 93A | Comments | | | | | | | | | | |
| Vial ID -004680 | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
| Lab Number 4219018 | SY035 | 12/31/03 | 2/18/04 | 1120 | 32.70 | 37.99 | 5.29 | 2/20/04 | SY035 | Y | — |
| Bottle Code 93A | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Vial Preparation/Field Preserved

Sodium Bisulfate Dilution Lot #: 04C3301

Balance ID: 5311

| Vial ID | Vial Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -005475 | SS BSD | 21204 | | | 32.95 | | | | | | |
| Lab Number | | | | | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -005476 | SS BSD | 21204 | | | 32.97 | | | | | | |
| Lab Number | | | | | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -005477 | SS BSD | 21204 | | | 33.01 | | | | | | |
| Lab Number | | | | | | | | | | | |
| Bottle Code | Comments | | | | | | | | | | |

| Vial ID | Prepared by Emp. #/Init. | Date Prepared | Date collected | Time collected | Mass of vial and solution (g) | Mass of vial and solution and soil (g) | Net wt of soil (g) | Date soil reweighed | Sample Reweighed by Emp. #/Init. | Meets Requirements (5 ± .5 g) | Problem Form 2138 Y or N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -005478 | SS BSD | 21204 | 2/18/04 | 1200 | 32.99 | 39.03 | 6.04 | 2/20/04 | SY/035 | N | — |
| Lab Number 4219020 | | | | | | | | | | | |
| Bottle Code 93B | Comments | | | | | | | | | | |

Reviewed by: _____ Date: _____

3622.01

043626 36

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

Extraction Started (date/time) 2-19-04 (13.00) by: MAS1457

Extraction Ended (date/time) 2.20.04 (0900) by: [illegible]

Leachate Batch #: 04050 - 1457 - 0946 - _____

Analytical Batch #: _____

Extraction Fluid Lot #: 123082904 B

| | Sample # | Matrix | Acquired | | | | Bottles | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | SPK | BK | MS | MSD | Dept. 21 | Dept. 25 | Dept. 32 | Other |
| EXBLK | 4219214 | EXT FLUID #1 | | SUE | | | 3 | | | |
| 1 | 4218086 | SOLID | | SUE | | | 3 | | | |
| 2 | 4218087 | SOLID | SUE | SUE | ACMP | | 3 | | | |
| 3 | 4218088 | SOLID | SUE | | | ACMP | 3 | | | |
| 4 | 4218089 | SOLID | | ACMP | | | 3 | | | |
| 5 | 4218609 | SOIL | SUE | ACMP | ACMP | | 3 | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

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Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

Extraction Started (date/time) 2-23-04 (13:30) by: MOS (3) MOS 1457 2-23-04 1457

Extraction Ended (date/time) 2-24-04 (7:30) by: MOS 1457

Leachate Batch #: 04054 - 1457 - 02573 0946 -

Analytical Batch #:

Extraction Fluid Lot #: 1457022304A

| | Sample # | Matrix | Acquired SPK | Acquired BK | Acquired MS | Acquired MSD | Bottles Dept. 21 | Bottles Dept. 25 | Bottles Dept. 32 | Bottles Other |
|---|---|---|---|---|---|---|---|---|---|---|
| EXBLK | TCLP 02573 4221333 | EXT FLUID #1 | | Acmp | | | 1 | | | |
| 1 | 4219007 | SOIL | | Acmp | | | 3 | | | |
| 2 | 4219023 | SOIL | | Acmp | | | 3 | | | |
| 3 | 4219914 | SLUDGE | SUB | Acmp | Acmp | | 3 | | | |
| 4 | 4220721 | SOIL | | Acmp | | | 3 | | | |
| 5 | 4220724 | SOIL | | Acmp | | | 3 | | | |
| 6 | 4220302 | SOLID | | Acmp | | | 1 | | | |
| 7 | 4219670 | SOIL | | Acmp | | | 3 | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

8352

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst: LCM ** Shift #2 Analyst: _____ Shift #3 Analyst: _____ *

Comment Code:
R = Reinjection necessary
S = Surrogate problem
NU = Not used
MR = Meets requirements
Cz = Confirms z, (z = S, I or X)
X = Sample sent to be reextracted
I = Internal Standard problem
F = Further dilution required
IUO = Internal use only
T = Injected outside valid tune period

Other problems or comments are as follows:

8260B LOW LEVEL ENCORE SOILS

Data Directory Path is - D:\DATA\04FEB16A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XF16T01.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 16 Feb 04 | 09:21 | | | MR |
| XF16I01.D | VSTD300 | VSTD300 | 16 Feb 04 | 09:47 | | | MR |
| XF16I02.D | VSTD100 | VSTD100 | 16 Feb 04 | 10:13 | | | NU |
| XF16I03.D | VSTD050 | VSTD050 | 16 Feb 04 | 11:19 | | | NU |
| XF16I04.D | VSTD020 | VSTD020 | 16 Feb 04 | 11:45 | | | MR |
| XF16I05.D | VSTD010 | VSTD010 | 16 Feb 04 | 12:12 | | | MR |
| XF16I06.D | VSTD004 | VSTD004 | 16 Feb 04 | 12:39 | | | MR |
| XF16I07.D | VSTD100 | VSTD100 | 16 Feb 04 | 13:06 | | | MR |
| XF16I08.D | BLANK | BLANK | 16 Feb 04 | 13:33 | | | NU |
| XF16M01.D | VSTD001 | 1 PPB MDL | 16 Feb 04 | 14:00 | | | NU |
| XF16I09.D | VSTD050 | VSTD050 | 16 Feb 04 | 14:27 | | | MR |
| XF16M02.D | VSTD001 | 1 PPB MDL | 16 Feb 04 | 14:54 | | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst:___LCM____** Shift #2 Analyst:____MSL____** Shift #3 Analyst:____ACMP___*

Comment Code: R = Reinjection necessary X = Sample sent to be reextracted
S = Surrogate problem I = Internal Standard problem
NU = Not used F = Further dilution required
MR = Meets requirements IUO = Internal use only
Cz = Confirms z, (z = S, I or X) T = Injected outside valid tune period

Other problems or comments are as follows:

*_____*
*_____8260B LOW SOIL ENCORE_____*
*_____*
*_____*

Data Directory Path is - D:\DATA\04FEB20A\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XF20T01.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 09:38 | | | NU |
| XF20T02.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 09:51 | | | NU |
| XF20T03.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 20 Feb 04 | 10:03 | | | MR |
| XF20C01.D | VSTD100 | VSTD100 | 20 Feb 04 | 10:28 | | | MR |
| XF20X01.D | BLANK | BLANK | 20 Feb 04 | 10:55 | X040511AA | | NU |
| XF20B01.D | VBLKX06 | VBLKX06 | 20 Feb 04 | 11:22 | X040511AA | | MR |
| XF20S01.D | LCSX06 | LCSX06 | 20 Feb 04 | 11:49 | X040511AA | | MR |
| XF18S02.D | 5GPTM | 4219009 | 20 Feb 04 | 12:31 | X040511AA | | MR |
| XF18S03.D | 7GPTM | 4219025 | 20 Feb 04 | 12:58 | X040511BA | | MR |
| XF18S04.D | 5GP17 | 4218994 | 20 Feb 04 | 13:25 | X040511AA | | MR |
| XF18S05.D | 5GP18 | 4218995 | 20 Feb 04 | 13:52 | X040511AA | | MR |
| XF18S06.D | 5GP20 | 4218997 | 20 Feb 04 | 14:19 | X040511AA | | MR |
| XF18S07.D | 5GP20MS | 4218998 | 20 Feb 04 | 14:46 | X040511AA | | MR |
| XF18S08.D | 5GP20MSD | 4218999 | 20 Feb 04 | 15:13 | X040511AA | | MR |
| XF18S09.D | 5GP21 | 4219000 | 20 Feb 04 | 15:40 | X040511AA | | MR |
| XF18S10.D | 5GP22 | 4219001 | 20 Feb 04 | 16:07 | X040511AA | | MR |
| XF20S11.D | 52222 | 4219002 | 20 Feb 04 | 16:34 | X040511AA | | MR |
| XF20S12.D | 5GP23 | 4219003 | 20 Feb 04 | 17:01 | X040511AA | | MR |
| XF20S13.D | 5GP24 | 4219004 | 20 Feb 04 | 17:28 | X040511AA | | MR |
| XF20S14.D | 7GP17 | 4219010 | 20 Feb 04 | 17:55 | X040511BA | | MR |
| XF20S15.D | 7GP18 | 4219011 | 20 Feb 04 | 18:22 | X040511BA | | MR |
| XF20S16.D | 7GP19 | 4219012 | 20 Feb 04 | 18:49 | X040511BA | | MR |
| XF20S17.D | 7GP20 | 4219013 | 20 Feb 04 | 19:16 | X040511BA | | MR |
| XF20S18.D | 7GP20MS | 4219014 | 20 Feb 04 | 19:43 | X040511BA | | MR |
| XF20S19.D | 7GP20MSD | 4219015 | 20 Feb 04 | 20:10 | X040511BA | | MR |
| XF20S20.D | 7GP21 | 4219016 | 20 Feb 04 | 20:38 | X040511BA | | MR |
| XF20S21.D | 7GP22 | 4219017 | 20 Feb 04 | 21:05 | X040511BA | | MR |
| XF20S22.D | 5GP19 | 4218996 | 20 Feb 04 | 21:31 | X040511AA | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP09193 **HP #19**

** Shift #1 Analyst: LCM ** Shift #2 Analyst: _____ ** Shift #3 Analyst: _____ *

Comment Code:

| | | | |
|---|---|---|---|
| R = | Reinjection necessary | X = | Sample sent to be reextracted |
| S = | Surrogate problem | I = | Internal Standard problem |
| NU = | Not used | F = | Further dilution required |
| MR = | Meets requirements | IUO = | Internal use only |
| Cz = | Confirms z, (z = S, I or X) | T = | Injected outside valid tune period |

Other problems or comments are as follows:

8260B LOW LEVEL ENCORE SOILS

Data Directory Path is - D:\DATA\04FEB23C\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| XF23T03.D | BFB 50 NG SEP09 | BFB 50NG SEP09 | 23 Feb 04 | 09:57 | | | MR |
| XF23C05.D | VSTD020 | VSTD020 | 23 Feb 04 | 10:25 | | | IUO |
| XF23C06.D | VSTD020 | VSTD020 | 23 Feb 04 | 10:52 | | | MR |
| XF23B01.D | VBLKX07 | VBLKX07 | 23 Feb 04 | 11:19 | X040511BB | | MR |
| XF23S01.D | 72222 | 4219018 | 23 Feb 04 | 11:55 | X040511BB | | MR |
| XF23S02.D | 7GP23 | 4219019 | 23 Feb 04 | 12:22 | X040511BB | | MR |
| XF23S03.D | 7GP24 | 4219020 | 23 Feb 04 | 12:49 | X040511BB | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP07159 **HP #11**

** Shift #1 Analyst:___SJR_____** Shift #2 Analyst:____SME____** Shift #3 Analyst:_____*

Comment Code:

| | | | |
|---|---|---|---|
| R = | Reinjection necessary | X = | Sample sent to be reextracted |
| S = | Surrogate problem | I = | Internal Standard problem |
| NU = | Not used | F = | Further dilution required |
| MR = | Meets requirements | IUO = | Internal use only |
| Cz = | Confirms z, (z = S, I or X) | T = | Injected outside valid tune period |

Other problems or comments are as follows:

*_____8260B WATERS_____*
*_____*
*_____*
*_____*

Data Directory Path is - C:\HPCHEM\1\DATA\04FEB02B\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| NF02T04.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 10:47 | | | NU |
| NF02T05.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:06 | | | NU |
| NF02T06.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:19 | | | NU |
| NF02T07.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 2 Feb 2004 | 11:30 | | | MR |
| NF02I10.D | VSTD300 | VSTD300 | 2 Feb 2004 | 11:54 | | | MR |
| NF02I11.D | VSTD100 | VSTD100 | 2 Feb 2004 | 12:19 | | | MR |
| NF02I12.D | VSTD050 | VSTD050 | 2 Feb 2004 | 12:44 | | | MR |
| NF02I13.D | VSTD020 | VSTD020 | 2 Feb 2004 | 13:09 | | | MR |
| NF02I14.D | VSTD010 | VSTD010 | 2 Feb 2004 | 13:35 | | | MR |
| NF02I15.D | VSTD004 | VSTD004 | 2 Feb 2004 | 14:00 | | | MR |
| NF02M16.D | VSTD001 | VSTD001 | 2 Feb 2004 | 14:25 | | | NU |
| NF02M17.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 14:50 | | | NU |
| NF02M18.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 15:44 | | | NU |
| NF02B01.D | VBLKN03 | VBLKN03 | 2 Feb 2004 | 16:09 | N040331AA | | NU |
| NF02M19.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 16:39 | | | NU |
| NF02B02.D | VBLKN03 | VBLKN03 | 2 Feb 2004 | 17:04 | N040331AA | | NU |
| NF02M20.D | VSTD0.5 | VSTD0.5 | 2 Feb 2004 | 17:29 | | | MR |

Lancaster Laboratories
Runlog for Hewelet Packard GC/MS System HP07159 **HP #11**

** Shift #1 Analyst:_____** Shift #2 Analyst:__SME_____** Shift #3 Analyst:__ACMP_____*

Comment Code: R = Reinjection necessary X = Sample sent to be reextracted
S = Surrogate problem I = Internal Standard problem
NU = Not used F = Further dilution required
MR = Meets requirements IUO = Internal use only
Cz = Confirms z, (z = S, I or X) T = Injected outside valid tune period

Other problems or comments are as follows:

*_____8260B WATERS_____*
*_____*
*_____*
*_____*

Data Directory Path is - C:\HPCHEM\1\DATA\04FEB24B\

| FILE | SAMPLE | LLI# | DATE | TIME | BATCH | D.F. | NOTES |
|---|---|---|---|---|---|---|---|
| NF24T02.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 17:20 | | | NU |
| NF24T03.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 17:33 | | | NU |
| NF24C02.D | VSTD150 | VSTD150 | 24 Feb 2004 | 17:56 | | | NU/MISS PREP |
| NF24T04.D | 50 NG BFB SEP09 | BFB 50NG SEP09 | 24 Feb 2004 | 18:58 | | | MR |
| NF24C03.D | VSTD150 | VSTD150 | 24 Feb 2004 | 19:25 | | | MR |
| NF24X11.D | CLNBLK | CLNBLK | 24 Feb 2004 | 20:06 | | | NU |
| NF24B02.D | VBLKN36 | VBLKN36 | 24 Feb 2004 | 20:31 | N040552AA | | MR |
| NF24S30.D | LCSN36 | LCSN36 | 24 Feb 2004 | 20:55 | N040552AA | | MR |
| NF24S31.D | EXBLKB | 4219274 | 24 Feb 2004 | 21:34 | N040552AB | 20 | MR |
| NF24S32.D | MM500 | 4218086 | 24 Feb 2004 | 21:58 | N040552AB | 20 | MR |
| NF24S33.D | MM500MS | 4218087 | 24 Feb 2004 | 22:23 | N040552AB | 20 | MR |
| NF24S34.D | MM500MSD | 4218088 | 24 Feb 2004 | 22:48 | N040552AB | 20 | MR |
| NF24S35.D | MM800D | 4218089 | 24 Feb 2004 | 23:12 | N040552AB | 20 | F |
| NF24S36.D | S105Z | 4218609 | 24 Feb 2004 | 23:38 | N040552AB | 20 | MR |
| NF24S37.D | S105ZMS | 4218609 | 25 Feb 2004 | 00:02 | N040552AB | 20 | MR |
| NF24S38.D | EXBLKC | 4217864 | 25 Feb 2004 | 00:28 | N040552AC | 20 | MR |
| NF24S39.D | I1V0A | 4217216 | 25 Feb 2004 | 00:52 | N040552AC | 20 | MR |
| NF24S40.D | EXBLKD | 4221333 | 25 Feb 2004 | 1:17 | N040552AD | 20 | MR |
| NF24S41.D | UN5ZH | 4219007 | 25 Feb 2004 | 1:42 | N040552AD | 20 | MR |
| NF24S42.D | UN7ZH | 4219023 | 25 Feb 2004 | 2:06 | N040552AD | 20 | MR |
| NF24S43.D | ZH5SL | 4219914 | 25 Feb 2004 | 2:31 | N040552AD | 20 | MR |
| NF24S44.D | ZH5SLMS | 4219914 | 25 Feb 2004 | 2:55 | N040552AD | 20 | MR |
| NF24S45.D | ZHSP1 | 4220721 | 25 Feb 2004 | 3:21 | N040552AD | 20 | MR |
| NF24S46.D | ZHSP2 | 4220724 | 25 Feb 2004 | 3:46 | N040552AD | 20 | MR |
| NF24S47.D | ZH439 | 4220302 | 25 Feb 2004 | 4:10 | N040552AD | 20 | MR |
| NF24S48.D | ZH407 | 4219670 | 25 Feb 2004 | 4:35 | N040552AD | 20 | MR |

# Semivolatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance
# Summary

## CASE NARRATIVE

**Client: Draper Aden Associates, Inc.**
**SDG #: RAV02**

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

**SAMPLE NUMBER(S) :**

| LL #'s | Sample Code | Matrix Water | Comments |
|---|---|---|---|
| 4219022 | UN7NV | X | Unspiked |
| 4219022 | UN7NVMS | X | Matrix Spike |
| 4219022 | UN7NVMSD | X | Matrix Spike Dup |

**LABORATORY SUBMITTED QC:**

| | | | |
|---|---|---|---|
| SBLKWC055 | SBLKWC055M | X | Method Blank |
| 055WCLCS | 055WCLCSM | X | Lab Control Sample |

**SAMPLE PREPARATION:**

All samples were leached by SW-846 Method 1311 and extracted according to SW-846 Method 3510C.

Due to insufficient sample, only 330 mls were used in the extractions of UN7NV, UN7NVMS and UN7NVMSD.

No other problems were encountered during the extraction of these samples.

**ANALYSIS:**

The method used for analysis was SW-846 8270C.

All samples were analyzed for the semivolatile TCLP (toxicity characteristic leaching procedure) compounds.

**Case Narrative (continued)**
**SDG#: RAV02**

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

## QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC was within specifications.

## DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Christine M. Ratcliff for CJN Date: 3-3-04
Charles J. Neslund
Group Leader, GC/MS Semivolatiles

6561

# QC Summary

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb33z.d DFTPP Injection Date: 02/13/04

Instrument ID: HP06755 DFTPP Injection Time: 05:30

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 41.1 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 55.5 |
| 70 | Less than 2.0% of mass 69 | 0.12 ( 0.22)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.5 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.09 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 2.37 |
| 441 | Present, and less than mass 443 | 7.76 |
| 442 | Greater than 40.0 % of mass 198 | 53.2 |
| 443 | 17.0 - 23.0% of mass 442 | 10.5 ( 19.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0404 | mb33a.d | 02/13/04 | 06:59 |
| 02 | SSTD120 | STD0404 | mb332.d | 02/13/04 | 08:00 |
| 03 | SSTD080 | STD0404 | mb333.d | 02/13/04 | 09:01 |
| 04 | SSTD005 | STD0404 | mb334.d | 02/13/04 | 10:02 |
| 05 | SSTD015 | STD0404 | mb335.d | 02/13/04 | 11:03 |
| 06 | SSTD030 | STD0404 | mb336.d | 02/13/04 | 12:04 |
| 07 | SSTD001 | 8270MDL0404 | mb337.d | 02/13/04 | 13:05 |
| 08 | SSTD050 | ICV0224 | mb338.d | 02/13/04 | 14:06 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb610.d DFTPP Injection Date: 02/24/04

Instrument ID: HP06755 DFTPP Injection Time: 20:24

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 43.5 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 56.8 |
| 70 | Less than 2.0% of mass 69 | 0.14 ( 0.24)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.97 |
| 275 | 10.0 - 30.0% of mass 198 | 19.6 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, and less than mass 443 | 8.06 |
| 442 | Greater than 40.0 % of mass 198 | 55.4 |
| 443 | 17.0 - 23.0% of mass 442 | 10.5 ( 19.0)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0404 | mb611.d | 02/24/04 | 20:48 |
| 02 | SBLKWC055M | SBLKWC055 | mb612.d | 02/24/04 | 22:13 |
| 03 | 055WCLCSM | 055WCLCS | mb613.d | 02/24/04 | 23:12 |
| 04 | UN7NV | 4219022 | mb614.d | 02/25/04 | 00:10 |
| 05 | UN7NVMS | 4219022 | mb615.d | 02/25/04 | 01:08 |
| 06 | UN7NVMSD | 4219022 | mb616.d | 02/25/04 | 02:07 |
| 07 | UN5NV | 4219006 | mb617.d | 02/25/04 | 03:05 |
| 08 | TC407 | 4219669 | mb618.d | 02/25/04 | 04:03 |
| 09 | NV5SL | 4219913 | mb619.d | 02/25/04 | 05:01 |



FORM V SV

2C

# WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02

| | LL #'s | EPA SAMPLE NO. | S1 (PHL)# | S2 (2FP)# | S3 (TBP)# | S4 (TPH)# | S5 (NBZ)# | S6 (FBP)# | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 4219022 | UN7NV | 33 | 50 | 87 | 70 | 79 | 73 | 0 |
| 02 | 4219022 | UN7NVMS | 38 | 59 | 97 | 78 | 87 | 89 | 0 |
| 03 | 4219022 | UN7NVMSD | 36 | 56 | 92 | 68 | 83 | 85 | 0 |
| 04 | SBLKWC055 | SBLKWC055M | 51 | 69 | 89 | 80 | 84 | 77 | 0 |
| 05 | 055WCLCS | 055WCLCSM | 54 | 74 | 97 | 85 | 87 | 91 | 0 |

| | QC LIMITS |
|---|---|
| S1 (PHL) = Phenol-d6 | (10-80) |
| S2 (2FP) = 2-Fluorophenol | (23-94) |
| S3 (TBP) = 2,4,6-Tribromophenol | (45-142) |
| S4 (TPH) = Terphenyl-d14 | (53-124) |
| S5 (NBZ) = Nitrobenzene-d5 | (54-124) |
| S6 (FBP) = 2-Fluorobiphenyl | (64-112) |

# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out



FORM II SV-1

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLKWC055M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: mb612.d Lab Sample ID: SBLKWC055

Date Extracted: 02/24/04 Extraction: Sepf

Date Analyzed: 02/24/04 Time Analyzed: 22:13

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP06755

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 055WCLCSM | 055WCLCS | mb613.d | 02/24/04 |
| 02 | UN7NV | 4219022 | mb614.d | 02/25/04 |
| 03 | UN7NVMS | 4219022 | mb615.d | 02/25/04 |
| 04 | UN7NVMSD | 4219022 | mb616.d | 02/25/04 |
| 05 | UN5NV | 4219006 | mb617.d | 02/25/04 |
| 06 | TC407 | 4219669 | mb618.d | 02/25/04 |
| 07 | NV5SL | 4219913 | mb619.d | 02/25/04 |
| 08 | NV5SLDL | 4219913DL | mb634.d | 02/25/04 |
| 09 | NV5SLRE | 4219913RE | mb635.d | 02/25/04 |
| 10 | NV439 | 4220301 | mb636.d | 02/25/04 |
| 11 | BLA20 | 4221331 | mb637.d | 02/25/04 |
| 12 | BLA44 | 4221332 | mb638.d | 02/25/04 |

COMMENTS:

_____

_____

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWC055M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWC055

Sample wt/vol: 500 (g/mL)ML Lab File ID: mb612.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 02/24/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/24/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (mg/L or mg/Kg) MDL | MG/L | Q |
|---|---|---|---|---|
| 110-86-1 | Pyridine | | 0.004 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.002 | U |
| 95-48-7 | 2-Methylphenol | | 0.002 | U |
| 106-44-5 | 4-Methylphenol | | 0.004 | U |
| 67-72-1 | Hexachloroethane | | 0.002 | U |
| 98-95-3 | Nitrobenzene | | 0.002 | U |
| 87-68-3 | Hexachlorobutadiene | | 0.002 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | 0.002 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | | 0.002 | U |
| 121-14-2 | 2,4-Dinitrotoluene | | 0.002 | U |
| 118-74-1 | Hexachlorobenzene | | 0.002 | U |
| 87-86-5 | Pentachlorophenol | | 0.006 | U |

WATER GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:mb614.d
UN7NV 4219022
AMT USED:330.0 ml
FINAL VOL:1 ml

MATRIX SPIKE:mb615.d
UN7NVMS 4219022
AMT USED: 330.0 ml
FINAL VOL: 1 ml

SPIKE DUPLICATE:mb616.d
UN7NVMSD 4219022
AMT USED: 330.0 ml
FINAL VOL: 1 ml

INSTRUMENT: HP06755  DILUTION FACTOR: 1  BATCH: 04055WAC026

%MOISTURE:  EXTRACT SPIKE LEVEL: 303.03

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pyridine | 303.03 | 303.03 | ND | 166.37 | 150.69 | 55 | 50 | 31- 88 | YES | 10 | 30 | YES |
| 1,4-Dichlorobenzene | 303.03 | 303.03 | ND | 200.30 | 190.26 | 66 | 63 | 42-105 | YES | 5 | 30 | YES |
| 2-Methylphenol | 303.03 | 303.03 | ND | 227.39 | 220.75 | 75 | 73 | 34-119 | YES | 3 | 30 | YES |
| 4-Methylphenol | 303.03 | 303.03 | ND | 215.81 | 207.30 | 71 | 68 | 30-114 | YES | 4 | 30 | YES |
| Hexachloroethane | 303.03 | 303.03 | ND | 158.80 | 144.22 | 52 | 48 | 20-116 | YES | 10 | 30 | YES |
| Nitrobenzene | 303.03 | 303.03 | ND | 255.98 | 245.85 | 84 | 81 | 43-133 | YES | 4 | 30 | YES |
| Hexachlorobutadiene | 303.03 | 303.03 | ND | 187.41 | 171.06 | 62 | 56 | 31-122 | YES | 9 | 30 | YES |
| 2,4,6-Trichlorophenol | 303.03 | 303.03 | ND | 274.29 | 265.21 | 91 | 88 | 31-140 | YES | 3 | 30 | YES |
| 2,4,5-Trichlorophenol | 303.03 | 303.03 | ND | 272.41 | 262.53 | 90 | 87 | 38-138 | YES | 4 | 30 | YES |
| 2,4-Dinitrotoluene | 303.03 | 303.03 | ND | 299.42 | 292.61 | 99 | 97 | 43-145 | YES | 2 | 30 | YES |
| Hexachlorobenzene | 303.03 | 303.03 | ND | 265.02 | 261.05 | 87 | 86 | 65-114 | YES | 2 | 30 | YES |
| Pentachlorophenol | 303.03 | 303.03 | ND | 216.38 | 197.23 | 71 | 65 | 20-130 | YES | 9 | 30 | YES |

✓ ✓

COMMENTS: 0368

Lancaster Laboratories, Inc.
WATER Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06755

Method: SW-846 8270C  File ID: mb613.d

LCS SAMPLE NO: 055WCLCS  BATCH: 04055WAC026  Sample Code: 055WCLCSM

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Pyridine | 200.00 | 89.07 | 45 | 31 - 88 | YES |
| 1,4-Dichlorobenzene | 200.00 | 138.15 | 69 | 41 - 102 | YES |
| 2-Methylphenol | 200.00 | 159.64 | 80 | 56 - 105 | YES |
| 4-Methylphenol | 200.00 | 160.01 | 80 | 52 - 97 | YES |
| Hexachloroethane | 200.00 | 112.07 | 56 | 22 - 102 | YES |
| Nitrobenzene | 200.00 | 162.84 | 81 | 63 - 112 | YES |
| Hexachlorobutadiene | 200.00 | 127.82 | 64 | 20 - 111 | YES |
| 2,4,6-Trichlorophenol | 200.00 | 182.23 | 91 | 71 - 109 | YES |
| 2,4,5-Trichlorophenol | 200.00 | 180.76 | 90 | 70 - 115 | YES |
| 2,4-Dinitrotoluene | 200.00 | 198.70 | 99 | 75 - 122 | YES |
| Hexachlorobenzene | 200.00 | 175.33 | 88 | 71 - 110 | YES |
| Pentachlorophenol | 200.00 | 143.80 | 72 | 50 - 112 | YES |

✓

NC = Could not calculate

Comments: _____

5369

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): mb611.d Date Analyzed: 02/24/04

Instrument ID: HP06755 Time Analyzed: 20:48

| | IS1(DCB) AREA # | IS1(DCB) RT # | IS2(NPT) AREA # | IS2(NPT) RT # | IS3(ANT) AREA # | IS3(ANT) RT # |
|---|---|---|---|---|---|---|
| | 12 HOUR STD | 259852 | 13.034 | 914033 | 16.807 | 408312 | 22.227 |
| | UPPER LIMIT | 519704 | 13.534 | 1828066 | 17.307 | 816624 | 22.727 |
| | LOWER LIMIT | 129926 | 12.534 | 457017 | 16.307 | 204156 | 21.727 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWC055M | 194795 | 13.020 | 705596 | 16.793 | 335924 | 22.212 |
| 02 | 055WCLCSM | 170951 | 13.023 | 600519 | 16.796 | 272869 | 22.216 |
| 03 | UN7NV | 196059 | 13.020 | 698411 | 16.794 | 332773 | 22.213 |
| 04 | UN7NVMS | 176916 | 13.023 | 616576 | 16.796 | 287941 | 22.215 |
| 05 | UN7NVMSD | 178322 | 13.019 | 633954 | 16.793 | 291698 | 22.223 |
| 06 | UN5NV | 190383 | 13.020 | 683034 | 16.793 | 324263 | 22.213 |
| 07 | TC407 | 176626 | 13.020 | 631681 | 16.793 | 286608 | 22.223 |
| 08 | NV5SL | 148064 | 13.034 | 295855* | 16.797 | 281085 | 22.227 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): mb611.d Date Analyzed: 02/24/04

Instrument ID: HP06755 Time Analyzed: 20:48

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 592211 | 26.737 | 469554 | 33.247 | 458698 | 39.682 |
| | UPPER LIMIT | 1184422 | 27.237 | 939108 | 33.747 | 917396 | 40.182 |
| | LOWER LIMIT | 296106 | 26.237 | 234777 | 32.747 | 229349 | 39.182 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWC055M | 517276 | 26.723 | 417272 | 33.233 | 381897 | 39.657 |
| 02 | 055WCLCSM | 440856 | 26.726 | 341712 | 33.247 | 342528 | 39.671 |
| 03 | UN7NV | 511805 | 26.724 | 422772 | 33.233 | 407255 | 39.657 |
| 04 | UN7NVMS | 464316 | 26.726 | 355558 | 33.246 | 360009 | 39.670 |
| 05 | UN7NVMSD | 464140 | 26.733 | 356871 | 33.243 | 357292 | 39.667 |
| 06 | UN5NV | 507054 | 26.723 | 417167 | 33.233 | 401556 | 39.657 |
| 07 | TC407 | 446602 | 26.734 | 403321 | 33.233 | 405036 | 39.646 |
| 08 | NV5SL | 460753 | 26.727 | 389326 | 33.236 | 399834 | 39.650 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

# Sample Data

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 0.429 | 0.443 | 0.486 | 0.465 | 0.403 | 0.491 | 0.523 | 0.463 | 0.041 | 3.143 | 0.129 | 1.00 | 46 | 0.129 |
| N-Nitrosodimethylamine | 0.394 | 0.409 | 0.494 | 0.454 | 0.471 | 0.481 | 0.416 | 0.446 | 0.039 | 3.143 | 0.123 | 1.00 | 45 | 0.123 |
| Pyridine | 0.474 | 0.464 | 0.515 | 0.527 | 0.541 | 0.455 | 0.545 | 0.503 | 0.038 | 3.143 | 0.119 | 1.00 | 50 | 0.119 |
| 2-Picoline | 0.822 | 0.843 | 0.833 | 0.827 | 0.813 | 0.819 | 0.819 | 0.825 | 0.010 | 3.143 | 0.032 | 1.00 | 83 | 0.032 |
| N-Nitrosomethylethylamine | 0.425 | 0.413 | 0.496 | 0.488 | 0.304 | 0.542 | 0.377 | 0.435 | 0.081 | 3.143 | 0.254 | 1.00 | 44 | 0.254 |
| Methyl methanesulfonate | 0.745 | 0.749 | 0.625 | 0.533 | 0.635 | 0.518 | 0.602 | 0.630 | 0.091 | 3.143 | 0.287 | 1.00 | 63 | 0.287 |
| N-Nitrosodiethylamine | 0.792 | 0.685 | 0.799 | 0.837 | 0.906 | 0.793 | 0.738 | 0.793 | 0.070 | 3.143 | 0.220 | 1.00 | 79 | 0.220 |
| Ethyl methanesulfonate | 0.905 | 0.818 | 0.759 | 0.815 | 0.930 | 0.824 | 0.835 | 0.841 | 0.058 | 3.143 | 0.183 | 1.00 | 84 | 0.183 |
| Aniline | 0.636 | 0.638 | 0.532 | 0.693 | 0.619 | 0.494 | 0.459 | 0.582 | 0.087 | 3.143 | 0.273 | 1.00 | 58 | 0.273 |
| Phenol | 0.454 | 0.479 | 0.559 | 0.571 | 0.464 | 0.513 | 0.488 | 0.504 | 0.046 | 3.143 | 0.144 | 1.00 | 50 | 0.144 |
| bis(2-Chloroethyl)ether | 0.960 | 0.947 | 1.088 | 1.029 | 1.056 | 1.009 | 1.031 | 1.017 | 0.050 | 3.143 | 0.158 | 1.00 | 102 | 0.158 |
| 2-Chlorophenol | 0.949 | 0.933 | 0.939 | 0.974 | 0.965 | 1.021 | 0.957 | 0.963 | 0.029 | 3.143 | 0.092 | 1.00 | 96 | 0.092 |
| 1,3-Dichlorobenzene | 0.866 | 0.833 | 0.817 | 0.832 | 0.906 | 0.844 | 0.888 | 0.855 | 0.033 | 3.143 | 0.103 | 1.00 | 86 | 0.103 |
| 1,4-Dichlorobenzene | 0.868 | 0.860 | 0.813 | 0.833 | 0.893 | 0.826 | 0.878 | 0.853 | 0.030 | 3.143 | 0.093 | 1.00 | 85 | 0.093 |
| Benzyl alcohol | 0.913 | 0.985 | 0.997 | 0.941 | 0.906 | 1.000 | 0.939 | 0.954 | 0.039 | 3.143 | 0.124 | 1.00 | 95 | 0.124 |
| 1,2-Dichlorobenzene | 0.955 | 0.838 | 0.875 | 0.810 | 0.982 | 0.808 | 0.828 | 0.871 | 0.071 | 3.143 | 0.222 | 1.00 | 87 | 0.222 |
| 2-Methylphenol | 0.837 | 0.848 | 0.836 | 0.930 | 0.915 | 0.759 | 0.741 | 0.838 | 0.071 | 3.143 | 0.223 | 1.00 | 84 | 0.223 |
| 2,2'-oxybis(1-Chloropropane) | 1.170 | 1.212 | 1.199 | 1.243 | 1.260 | 1.183 | 1.169 | 1.205 | 0.035 | 3.143 | 0.112 | 1.00 | 121 | 0.112 |
| bis(2-Chloroisopropyl)ether | 1.170 | 1.212 | 1.199 | 1.243 | 1.260 | 1.183 | 1.169 | 1.205 | 0.035 | 3.143 | 0.112 | 1.00 | 121 | 0.112 |
| N-Nitrosopyrrolidine | 0.854 | 0.720 | 0.827 | 0.890 | 0.847 | 0.627 | 0.750 | 0.788 | 0.093 | 3.143 | 0.292 | 1.00 | 79 | 0.292 |
| Acetophenone | 1.114 | 1.063 | 1.071 | 1.112 | 1.063 | 1.069 | 1.123 | 1.088 | 0.027 | 3.143 | 0.085 | 1.00 | 109 | 0.085 |
| N-Nitroso-di-n-propylamine | 0.822 | 0.908 | 1.010 | 1.072 | 0.982 | 0.941 | 0.992 | 0.961 | 0.080 | 3.143 | 0.252 | 1.00 | 96 | 0.252 |
| N-Nitrosomorpholine | 0.848 | 0.778 | 0.768 | 0.938 | 0.836 | 0.848 | 0.886 | 0.843 | 0.059 | 3.143 | 0.185 | 1.00 | 84 | 0.185 |
| 4-Methylphenol | 0.761 | 0.832 | 0.852 | 0.908 | 0.924 | 0.831 | 0.736 | 0.835 | 0.069 | 3.143 | 0.218 | 1.00 | 83 | 0.218 |
| o-Toluidine | 0.741 | 0.689 | 0.603 | 0.792 | 0.819 | 0.544 | 0.471 | 0.666 | 0.131 | 3.143 | 0.410 | 1.00 | 67 | 0.410 |
| Hexachloroethane | 0.693 | 0.621 | 0.612 | 0.703 | 0.741 | 0.776 | 0.634 | 0.683 | 0.063 | 3.143 | 0.198 | 1.00 | 68 | 0.198 |
| Nitrobenzene | 0.919 | 0.964 | 1.019 | 0.973 | 1.013 | 1.167 | 1.239 | 1.042 | 0.117 | 3.143 | 0.367 | 1.00 | 104 | 0.367 |

Analyst name and ID (printed): Joseph M. Gamblee 346 Approved by: Chris Ratcliff/412

Signature: 12/05/03 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosopiperidine | 0.772 | 0.858 | 0.779 | 0.989 | 0.869 | 0.675 | 0.729 | 0.810 | 0.104 | 3.143 | 0.327 | 1.00 | 81 | 0.327 |
| Isophorone | 0.926 | 0.919 | 0.876 | 0.962 | 0.920 | 0.944 | 0.920 | 0.924 | 0.026 | 3.143 | 0.083 | 1.00 | 92 | 0.083 |
| 2-Nitrophenol | 0.747 | 0.728 | 0.770 | 0.743 | 0.759 | 0.678 | 0.687 | 0.730 | 0.035 | 3.143 | 0.111 | 1.00 | 73 | 0.111 |
| 2,4-Dimethylphenol | 0.438 | 0.842 | 0.906 | 0.814 | 0.855 | 0.702 | 0.474 | 0.719 | 0.190 | 3.143 | 0.598 | 1.00 | 72 | 0.598 |
| O,O,O-triethylphosphorothioat | 0.933 | 0.745 | 0.857 | 0.847 | 0.859 | 0.919 | 0.851 | 0.859 | 0.061 | 3.143 | 0.192 | 1.00 | 86 | 0.192 |
| bis(2-Chloroethoxy)methane | 1.095 | 1.038 | 1.059 | 1.118 | 1.056 | 1.018 | 1.004 | 1.055 | 0.041 | 3.143 | 0.127 | 1.00 | 108 | 0.127 |
| Benzoic acid # | 6.870 | 6.667 | 6.250 | 6.390 | 11.182 | 6.364 | 6.109 | 7.119 | 1.810 | 3.143 | 5.688 | 25.00 | 28 | 5.688 |
| 2,4-Dichlorophenol | 0.813 | 0.795 | 0.956 | 0.876 | 0.739 | 0.871 | 0.762 | 0.830 | 0.075 | 3.143 | 0.237 | 1.00 | 83 | 0.237 |
| 1,2,4-Trichlorobenzene | 0.840 | 0.861 | 0.828 | 0.837 | 0.780 | 0.853 | 0.837 | 0.834 | 0.026 | 3.143 | 0.082 | 1.00 | 83 | 0.082 |
| Naphthalene | 1.014 | 0.989 | 1.015 | 1.087 | 1.019 | 1.085 | 1.032 | 1.034 | 0.037 | 3.143 | 0.118 | 1.00 | 103 | 0.118 |
| 4-Chloroaniline | 0.784 | 0.800 | 0.686 | 0.855 | 0.839 | 0.641 | 0.567 | 0.739 | 0.109 | 3.143 | 0.342 | 1.00 | 74 | 0.342 |
| 2,6-Dichlorophenol | 0.945 | 0.992 | 0.911 | 0.783 | 0.957 | 0.878 | 0.778 | 0.892 | 0.084 | 3.143 | 0.264 | 1.00 | 89 | 0.264 |
| Hexachloropropene | 0.549 | 0.396 | 0.199 | 0.383 | 0.252 | 0.346 | 0.326 | 0.350 | 0.112 | 3.143 | 0.353 | 1.00 | 35 | 0.353 |
| Hexachlorobutadiene ✓ | 0.698 | 0.773 | 0.718 | 0.690 | 0.658 | 0.699 | 0.649 | 0.698 | 0.041 | 3.143 | 0.129 | 1.00 | 70 | 0.129 |
| Caprolactam * | 1.279 | 1.179 | 1.187 | 1.044 | 1.319 | 1.138 | 1.307 | 1.208 | 0.100 | 3.143 | 0.315 | 5.00 | 24 | 0.315 |
| N-Nitrosodi-n-butylamine | 0.592 | 0.534 | 0.611 | 0.596 | 0.620 | 0.589 | 0.638 | 0.597 | 0.033 | 3.143 | 0.103 | 1.00 | 60 | 0.103 |
| 4-Chloro-3-methylphenol | 0.850 | 0.758 | 0.809 | 0.725 | 0.843 | 0.821 | 0.811 | 0.802 | 0.045 | 3.143 | 0.143 | 1.00 | 80 | 0.143 |
| Safrole | 0.894 | 0.817 | 0.932 | 0.970 | 0.914 | 0.851 | 0.852 | 0.890 | 0.053 | 3.143 | 0.168 | 1.00 | 89 | 0.168 |
| 2-Methylnaphthalene | 0.912 | 0.924 | 0.999 | 0.971 | 1.002 | 0.985 | 0.960 | 0.965 | 0.035 | 3.143 | 0.111 | 1.00 | 96 | 0.111 |
| 1-Methylnaphthalene | 0.995 | 0.914 | 1.002 | 0.961 | 0.918 | 0.924 | 0.968 | 0.955 | 0.037 | 3.143 | 0.115 | 1.00 | 95 | 0.115 |
| Hexachlorocyclopentadiene | 2.541 | 2.153 | 2.148 | 2.118 | 2.367 | 2.196 | 2.441 | 2.281 | 0.168 | 3.143 | 0.527 | 2.00 | 114 | 0.527 |
| 1,2,4,5-Tetrachlorobenzene | 0.831 | 0.898 | 0.939 | 0.938 | 0.965 | 0.845 | 0.815 | 0.890 | 0.060 | 3.143 | 0.188 | 1.00 | 89 | 0.188 |
| 2,4,6-Trichlorophenol ✓ | 0.763 | 0.609 | 0.694 | 0.594 | 0.729 | 0.646 | 0.603 | 0.663 | 0.067 | 3.143 | 0.210 | 1.00 | 66 | 0.210 |
| 2,4,5-Trichlorophenol ✓ | 0.589 | 0.680 | 0.733 | 0.527 | 0.631 | 0.804 | 0.555 | 0.646 | 0.100 | 3.143 | 0.313 | 1.00 | 65 | 0.313 |
| Isosafrole | 0.806 | 0.691 | 0.824 | 0.743 | 0.851 | 0.736 | 0.704 | 0.765 | 0.062 | 3.143 | 0.195 | 1.00 | 77 | 0.195 |
| Biphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |
| Diphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |

Analyst name and ID (printed): JOSEPH M. GAMBLE 346 Approved by: Chris Ratcliff/412

Signature: 12/23/05 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 1.147 | 1.079 | 1.084 | 1.108 | 1.163 | 1.094 | 1.120 | 1.114 | 0.032 | 3.143 | 0.100 | 1.00 | 111 | 0.100 |
| 2-Chloronaphthalene | 0.882 | 0.940 | 0.939 | 0.962 | 0.994 | 0.953 | 0.903 | 0.939 | 0.037 | 3.143 | 0.117 | 1.00 | 94 | 0.117 |
| Diphenyl ether | 1.045 | 1.019 | 1.105 | 1.029 | 1.037 | 0.977 | 1.045 | 1.037 | 0.038 | 3.143 | 0.120 | 1.00 | 104 | 0.120 |
| 2-Nitroaniline | 0.630 | 0.621 | 0.546 | 0.689 | 0.603 | 0.610 | 0.630 | 0.618 | 0.042 | 3.143 | 0.133 | 1.00 | 62 | 0.133 |
| 1,4-Naphthoquinone | 3.667 | 3.491 | 3.402 | 3.977 | 3.790 | 4.077 | 3.675 | 3.726 | 0.244 | 3.143 | 0.766 | 10.00 | 37 | 0.766 |
| 1,4-Dinitrobenzene | 0.420 | 0.336 | 0.318 | 0.135 | 0.323 | 0.167 | 0.439 | 0.305 | 0.116 | 3.143 | 0.364 | 1.00 | 31 | 0.364 |
| Dimethylphthalate | 0.984 | 0.894 | 0.910 | 0.957 | 0.897 | 0.916 | 0.881 | 0.920 | 0.037 | 3.143 | 0.117 | 1.00 | 92 | 0.117 |
| 1,3-Dinitrobenzene | 0.508 | 0.570 | 0.501 | 0.441 | 0.425 | 0.545 | 0.590 | 0.511 | 0.062 | 3.143 | 0.196 | 1.00 | 51 | 0.196 |
| 2,6-Dinitrotoluene | 0.789 | 0.747 | 0.677 | 0.702 | 0.779 | 0.633 | 0.705 | 0.719 | 0.056 | 3.143 | 0.177 | 1.00 | 72 | 0.177 |
| Acenaphthylene | 0.835 | 0.809 | 0.933 | 0.794 | 0.858 | 0.878 | 0.831 | 0.848 | 0.047 | 3.143 | 0.147 | 1.00 | 85 | 0.147 |
| 3-Nitroaniline | 0.627 | 0.562 | 0.636 | 0.661 | 0.660 | 0.638 | 0.514 | 0.614 | 0.055 | 3.143 | 0.173 | 1.00 | 61 | 0.173 |
| Acenaphthene | 1.068 | 1.068 | 1.050 | 1.126 | 1.058 | 1.074 | 0.976 | 1.060 | 0.044 | 3.143 | 0.140 | 1.00 | 106 | 0.140 |
| 2,4-Dinitrophenol * | 11.148 | 11.393 | 11.155 | 10.973 | 11.408 | 11.071 | 11.058 | 11.172 | 0.167 | 3.143 | 0.526 | 20.00 | 56 | 0.526 |
| Pentachlorobenzene | 0.891 | 0.777 | 0.708 | 0.650 | 0.797 | 0.859 | 0.822 | 0.786 | 0.084 | 3.143 | 0.264 | 1.00 | 79 | 0.264 |
| 4-Nitrophenol * | 5.565 | 5.428 | 5.642 | 5.115 | 5.218 | 5.568 | 5.223 | 5.394 | 0.208 | 3.143 | 0.655 | 20.00 | 27 | 0.655 |
| Dibenzofuran | 1.068 | 0.966 | 1.024 | 1.075 | 1.080 | 1.048 | 0.989 | 1.036 | 0.044 | 3.143 | 0.140 | 1.00 | 104 | 0.140 |
| 2,4-Dinitrotoluene ✓ | 0.611 | 0.662 | 0.623 | 0.591 | 0.590 | 0.649 | 0.655 | 0.626 | 0.030 | 3.143 | 0.094 | 1.00 | 63 | 0.094 |
| 1-Naphthylamine | 0.566 | 0.571 | 0.462 | 0.679 | 0.568 | 0.420 | 0.153 | 0.488 | 0.170 | 3.143 | 0.534 | 1.00 | 49 | 0.534 |
| 2,3,4,6-Tetrachlorophenol | 0.397 | 0.281 | 0.320 | 0.247 | 0.281 | 0.302 | 0.119 | 0.278 | 0.084 | 3.143 | 0.265 | 1.00 | 28 | 0.265 |
| 2-Naphthylamine | 0.717 | 0.579 | 0.547 | 0.766 | 0.670 | 0.486 | 0.391 | 0.594 | 0.133 | 3.143 | 0.417 | 1.00 | 59 | 0.417 |
| Diethylphthalate | 1.003 | 0.917 | 0.971 | 0.954 | 1.014 | 0.951 | 0.994 | 0.972 | 0.034 | 3.143 | 0.107 | 1.00 | 97 | 0.107 |
| Thionazin | 0.728 | 0.933 | 1.022 | 0.735 | 0.747 | 0.774 | 0.763 | 0.815 | 0.115 | 3.143 | 0.362 | 1.00 | 81 | 0.362 |
| Fluorene | 1.052 | 0.997 | 1.078 | 1.148 | 1.148 | 1.077 | 1.085 | 1.084 | 0.053 | 3.143 | 0.167 | 1.00 | 108 | 0.167 |
| 4-Chlorophenyl-phenylether | 1.092 | 0.948 | 0.981 | 1.148 | 1.082 | 1.029 | 0.983 | 1.038 | 0.072 | 3.143 | 0.227 | 1.00 | 104 | 0.227 |
| 5-Nitro-o-toluidine | 0.836 | 0.787 | 0.682 | 0.802 | 0.912 | 0.771 | 0.608 | 0.771 | 0.100 | 3.143 | 0.314 | 1.00 | 77 | 0.314 |
| 4-Nitroaniline | 0.832 | 0.765 | 0.969 | 0.852 | 0.898 | 0.879 | 0.731 | 0.847 | 0.081 | 3.143 | 0.253 | 1.00 | 85 | 0.253 |
| 4,6-Dinitro-2-methylphenol * | 7.044 | 7.076 | 6.835 | 6.609 | 6.511 | 7.261 | 7.074 | 6.916 | 0.274 | 3.143 | 0.862 | 20.00 | 35 | 0.862 |

Analyst name and ID (printed): Joseph M. Gamble 346 Approved by: Chris Ratcliff/412

Signature: 12.23.03 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Nitronaphthalene | 0.842 | 0.747 | 0.730 | 0.540 | 0.824 | 0.552 | 0.846 | 0.726 | 0.131 | 3.143 | 0.411 | 1.00 | 73 | 0.411 |
| N-Nitrosodiphenylamine | 0.956 | 0.954 | 0.979 | 0.943 | 0.884 | 0.855 | 0.864 | 0.919 | 0.050 | 3.143 | 0.158 | 1.00 | 92 | 0.158 |
| 1,2-Diphenylhydrazine | 0.985 | 0.922 | 0.882 | 0.914 | 0.986 | 0.943 | 0.876 | 0.930 | 0.044 | 3.143 | 0.140 | 1.00 | 93 | 0.140 |
| Tetraethyldithiopyrophosphate | 0.892 | 0.864 | 0.860 | 0.806 | 0.862 | 0.943 | 0.793 | 0.860 | 0.051 | 3.143 | 0.159 | 1.00 | 86 | 0.159 |
| 1,3,5-Trinitrobenzene * | 4.604 | 4.572 | 4.655 | 4.418 | 4.312 | 4.326 | 4.269 | 4.451 | 0.157 | 3.143 | 0.495 | 5.00 | 89 | 0.495 |
| Phenacetin | 0.744 | 0.730 | 0.895 | 0.800 | 0.874 | 0.793 | 0.794 | 0.804 | 0.061 | 3.143 | 0.192 | 1.00 | 80 | 0.192 |
| 4-Bromophenyl-phenylether | 0.852 | 0.941 | 0.797 | 0.976 | 0.765 | 0.801 | 0.803 | 0.848 | 0.080 | 3.143 | 0.253 | 1.00 | 85 | 0.253 |
| Hexachlorobenzene ✓ | 0.758 | 0.801 | 0.744 | 0.883 | 0.753 | 0.772 | 0.732 | 0.778 | 0.051 | 3.143 | 0.162 | 1.00 | 78 | 0.162 |
| Dimethoate | 0.860 | 0.740 | 0.808 | 0.808 | 0.859 | 0.759 | 0.792 | 0.804 | 0.046 | 3.143 | 0.143 | 1.00 | 80 | 0.143 |
| Diallate TRANS/CIS | 0.767 | 0.876 | 0.886 | 0.942 | 0.949 | 0.932 | 0.849 | 0.886 | 0.064 | 3.143 | 0.202 | 1.00 | 89 | 0.202 |
| Pentachlorophenol * ✓ | 11.373 | 11.729 | 11.722 | 9.672 | 11.494 | 10.118 | 11.721 | 11.118 | 0.856 | 3.143 | 2.691 | 50.00 | 22 | 2.691 |
| Pentachloronitrobenzene | 0.487 | 0.244 | 0.236 | 0.244 | 0.488 | 0.000 | 0.000 | 0.243 | 0.199 | 3.143 | 0.626 | 1.00 | 24 | 0.626 |
| 4-Aminobiphenyl * | 4.121 | 4.249 | 4.284 | 4.033 | 4.576 | 5.140 | 4.250 | 4.379 | 0.376 | 3.143 | 1.181 | 5.00 | 88 | 1.181 |
| Pronamide | 0.863 | 0.873 | 0.829 | 0.750 | 0.828 | 0.732 | 0.831 | 0.815 | 0.054 | 3.143 | 0.169 | 1.00 | 82 | 0.169 |
| Phenanthrene | 1.097 | 1.068 | 1.134 | 1.099 | 1.075 | 1.057 | 1.039 | 1.081 | 0.031 | 3.143 | 0.099 | 1.00 | 108 | 0.099 |
| Anthracene | 1.045 | 1.028 | 1.020 | 1.054 | 1.025 | 1.004 | 0.974 | 1.021 | 0.027 | 3.143 | 0.083 | 1.00 | 102 | 0.083 |
| Carbazole | 1.064 | 0.986 | 1.003 | 1.046 | 1.063 | 1.052 | 1.068 | 1.040 | 0.033 | 3.143 | 0.102 | 1.00 | 104 | 0.102 |
| Di-n-butylphthalate | 1.023 | 1.022 | 1.035 | 0.970 | 1.004 | 1.024 | 1.021 | 1.014 | 0.021 | 3.143 | 0.068 | 1.00 | 101 | 0.068 |
| 4-Nitroquinoline-1-oxide | 6.851 | 7.052 | 7.103 | 6.823 | 7.066 | 7.153 | 6.943 | 6.999 | 0.128 | 3.143 | 0.401 | 10.00 | 70 | 0.401 |
| Methapyrilene # | 0.733 | 0.871 | 0.852 | 0.720 | 0.709 | 0.687 | 0.668 | 0.749 | 0.080 | 3.143 | 0.252 | 5.00 | 15 | 0.252 |
| Isodrin | 0.983 | 0.580 | 0.555 | 0.582 | 0.637 | 0.345 | 0.759 | 0.634 | 0.197 | 3.143 | 0.619 | 1.00 | 63 | 0.619 |
| Fluoranthene | 0.999 | 0.990 | 1.032 | 0.998 | 1.000 | 0.998 | 1.017 | 1.005 | 0.014 | 3.143 | 0.045 | 1.00 | 100 | 0.045 |
| Benzidine | 3.468 | 5.700 | 4.465 | 6.211 | 5.213 | 2.544 | 0.837 | 4.063 | 1.908 | 3.143 | 5.997 | 10.00 | 41 | 5.997 |
| Pyrene | 1.108 | 1.015 | 1.057 | 1.090 | 1.045 | 1.124 | 1.055 | 1.071 | 0.038 | 3.143 | 0.120 | 1.00 | 107 | 0.120 |
| p-Dimethylaminoazobenzene | 0.635 | 0.667 | 0.607 | 0.579 | 0.677 | 0.642 | 0.590 | 0.628 | 0.038 | 3.143 | 0.118 | 1.00 | 63 | 0.118 |
| Chlorobenzilate | 0.865 | 0.857 | 1.095 | 0.883 | 0.914 | 0.996 | 0.881 | 0.927 | 0.088 | 3.143 | 0.275 | 1.00 | 93 | 0.275 |
| 3,3'-Dimethylbenzidine @ | 2.660 | 2.269 | 3.178 | 8.631 | 2.097 | 6.820 | 5.666 | 4.474 | 2.572 | 3.143 | 8.083 | 25.00 | 18 | 8.083 |
| Butylbenzylphthalate | 1.049 | 0.962 | 1.055 | 0.998 | 1.029 | 1.010 | 0.969 | 1.010 | 0.037 | 3.143 | 0.115 | 1.00 | 101 | 0.115 |

12.23.05

Analyst name and ID (printed): JOSEPH M. Gambale 346 Approved by: Chris Ratcliff/412

Signature: [signature] 12.23.05 Title: Sr. Chemist

# GC/MS Semivolatile Water MDL Study 2003

**Extraction Method:**
**SW-846 3510C**

**Analytical Method:**
**SW-846 8270C**

**Instrument type: HP5890/5972**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Instrument ID** | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i | HP06756.i |
| **Datafile** | ng263.d | ng264.d | ng265.d | ng266.d | ng267.d | ng268.d | ng269.d |
| **Injection Date** | 7/9/03 8:35 | 7/9/03 9:33 | 7/9/03 10:32 | 7/9/03 11:30 | 7/9/03 12:29 | 7/9/03 13:27 | 7/9/03 14:26 |
| **Lab Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Client Sample ID** | MDLlowA | MDLlowB | MDLlowC | MDLlowD | MDLlowE | MDLlowF | MDLlowG |
| **Extraction Batch** | | | | | | | |

| Compound Name | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Concentration (ug/l) | Mean Concentration (ug/l) | Standard Deviation | Student T value used | Sample MDL (ug/l) | Sample Spike Level (ug/l) | Average %Rec. | Nominal MDL (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Acetylaminofluorene | 0.565 | 0.621 | 0.570 | 0.528 | 0.583 | 0.593 | 0.519 | 0.568 | 0.036 | 3.143 | 0.112 | 1.00 | 57 | 0.112 |
| 3,3'-Dichlorobenzidine | 0.608 | 0.510 | 0.399 | 0.548 | 0.602 | 0.478 | 0.531 | 0.525 | 0.073 | 3.143 | 0.228 | 1.00 | 53 | 0.228 |
| 4,4'-Methylenebis(2-Chloroani | 0.498 | 0.333 | 0.247 | 0.420 | 0.508 | 0.170 | 0.384 | 0.366 | 0.125 | 3.143 | 0.394 | 1.00 | 37 | 0.394 |
| Benzo(a)anthracene | 1.147 | 1.119 | 0.993 | 1.088 | 1.079 | 1.141 | 1.068 | 1.091 | 0.053 | 3.143 | 0.166 | 1.00 | 109 | 0.166 |
| Chrysene | 1.002 | 1.025 | 0.965 | 0.999 | 1.005 | 1.104 | 1.028 | 1.018 | 0.043 | 3.143 | 0.135 | 1.00 | 102 | 0.135 |
| bis(2-Ethylhexyl)phthalate * | 5.748 | 5.948 | 5.790 | 5.664 | 5.784 | 5.786 | 5.777 | 5.785 | 0.084 | 3.143 | 0.265 | 5.00 | 116 | 0.265 |
| Di-n-octylphthalate | 0.663 | 0.674 | 0.681 | 0.617 | 0.678 | 0.656 | 0.612 | 0.654 | 0.029 | 3.143 | 0.090 | 1.00 | 65 | 0.090 |
| 7,12-Dimethylbenz[a]anthracei | 0.517 | 0.422 | 0.422 | 0.491 | 0.444 | 0.525 | 0.563 | 0.483 | 0.055 | 3.143 | 0.174 | 1.00 | 48 | 0.174 |
| Benzo(b)fluoranthene | 1.010 | 0.908 | 0.992 | 0.894 | 0.959 | 0.993 | 0.902 | 0.951 | 0.049 | 3.143 | 0.154 | 1.00 | 95 | 0.154 |
| Benzo(k)fluoranthene | 0.993 | 0.927 | 0.931 | 1.015 | 0.998 | 0.952 | 0.916 | 0.962 | 0.040 | 3.143 | 0.125 | 1.00 | 96 | 0.125 |
| Benzo(a)pyrene | 0.858 | 0.866 | 0.815 | 0.772 | 0.877 | 0.824 | 0.836 | 0.835 | 0.036 | 3.143 | 0.113 | 1.00 | 84 | 0.113 |
| 3-Methylcholanthrene | 0.584 | 0.715 | 0.539 | 0.623 | 0.526 | 0.551 | 0.587 | 0.589 | 0.065 | 3.143 | 0.203 | 1.00 | 59 | 0.203 |
| Indeno(1,2,3-cd)pyrene | 0.677 | 0.690 | 0.680 | 0.659 | 0.705 | 0.636 | 0.608 | 0.665 | 0.033 | 3.143 | 0.105 | 1.00 | 67 | 0.105 |
| Dibenz(a,h)anthracene | 0.737 | 0.724 | 0.771 | 0.698 | 0.770 | 0.697 | 0.664 | 0.723 | 0.040 | 3.143 | 0.125 | 1.00 | 72 | 0.125 |
| Benzo(g,h,i)perylene | 0.714 | 0.783 | 0.635 | 0.721 | 0.680 | 0.746 | 0.765 | 0.721 | 0.051 | 3.143 | 0.160 | 1.00 | 72 | 0.160 |
| 1,4-Phenylenediamine & | 17.774 | 22.584 | 45.148 | 46.714 | 21.542 | 24.776 | 24.708 | 29.035 | 11.787 | 3.143 | 37.047 | 1000.00 | 3 | 37.047 |
| Benzaldehyde $ | 0.311 | 0.364 | 0.316 | 0.382 | 0.340 | 0.257 | 0.276 | 0.321 | 0.0450 | 3.143 | 0.1416 | 1.00 | 32 | 0.1416 |
| Atrazine $ | 0.962 | 0.861 | 0.905 | 0.908 | 0.858 | 0.872 | 0.986 | 0.907 | 0.0500 | 3.143 | 0.1572 | 1.00 | 91 | 0.1572 |

# = Taken from files cg629.d, cg630.d, cg631.d, cg632.d, cg642.d, cg643.d, cg644.d
* = Taken from files ng251.d, ng252.d, ng253.d, ng254.d, ng255.d, ng256.d, ng257.d
& = Taken from files ng304.d, ng305.d, ng306.d, ng307.d, ng308.d, ng309.d, ng310.d
@ = Taken from files nl452.d, nl453.d, nl454.d, nl455.d, nl456.d, nl457.d, nl458.d
$ = Taken from files lh326.d, lh327.d, lh328.d, lh329.d, lh332.d, lh333.d, lh334.d

Analyst name and ID (printed): JOSEPH M. GAMBLE 346 Approved by: Chris Ratchford/412

Signature: Joe Gamble 12/26/03 Title: Sr. Chemist

UN7NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219022

Data file: /chem/HP06755.i/04feb24a.b/mb614.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 00:10 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.020( 0.014) | 830 | 152.0 | 196059( -25) | 40.00 | |
| 52) Naphthalene-d8 | 16.794( 0.014) | 1183 | 136.0 | 698411( -24) | 40.00 | |
| 96) Acenaphthene-d10 | 22.213( 0.014) | 1690 | 164.0 | 332773( -19) | 40.00 | |
| 133) Phenanthrene-d10 | 26.724( 0.014) | 2112 | 188.0 | 511805( -14) | 40.00 | |
| 165) Chrysene-d12 | 33.233( 0.014) | 2721 | 240.0 | 422772( -10) | 40.00 | |
| 173) Perylene-d12 | 39.657( 0.024) | 3322 | 264.0 | 407255( -11) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.375( 0.004) | 112 | 827986 | 100.986 | 50% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.834( 0.001) | 99 | 662951 | 65.862 | 33% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.613( 0.000) | 82 | 542404 | 79.422 | 79% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.075( 0.000) | 172 | 816630 | 73.394 | 73% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.661( 0.000) | 330 | 261948 | 173.386 | 87% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.497(-0.001) | 244 | 645061 | 70.281 | 70% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | | | | ND | ND | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

UN7NV

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219022

Data file: /chem/HP06755.i/04feb24a.b/mb614.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 00:10 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

# THIS SPACE WAS LEFT BLANK INTENTIONALLY

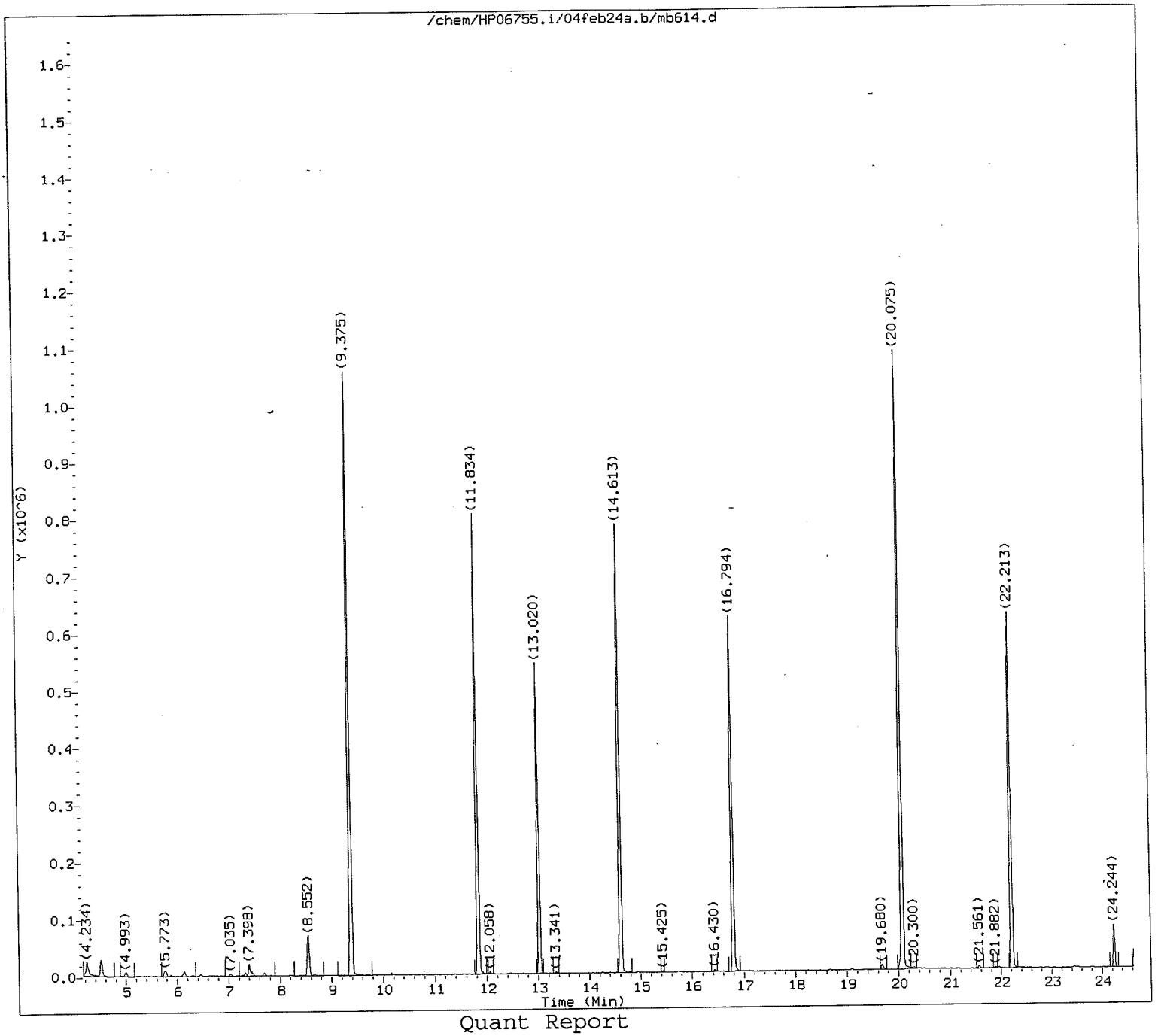
Total number of targets = 12

Comments: 241

Analyst: for Michelle Garosick Date: 2/25/04
Auditor: Date: 2/25/04



8379




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb614.d
Injection date and time: 25-FEB-2004 00:10

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

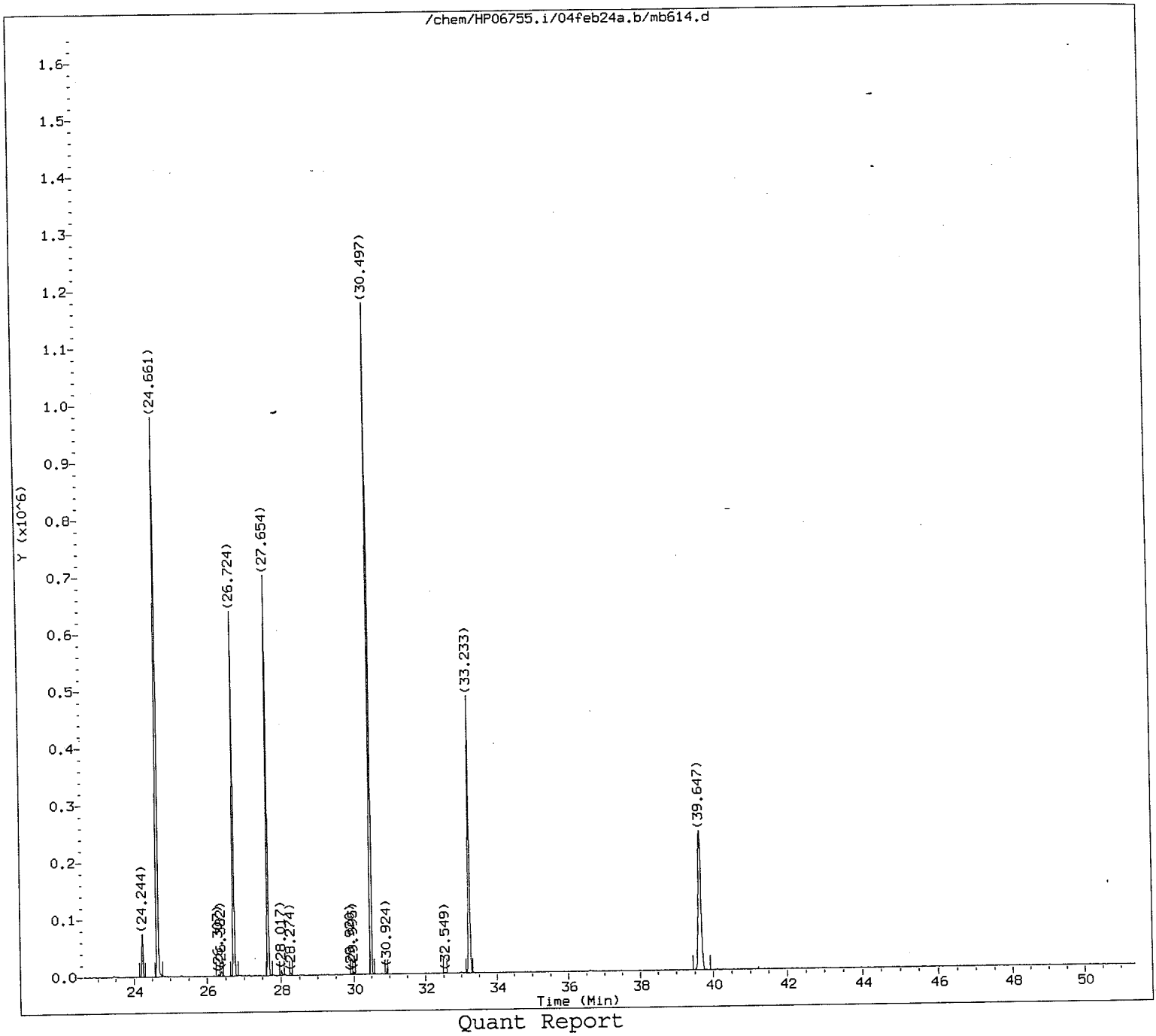
Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV

Lab Sample ID: 4219022

JMG 546
2/25/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb614.d
Injection date and time: 25-FEB-2004 00:10

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV

Lab Sample ID: 4219022

JM6/546
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb614.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 00:10  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NV  Lab Sample ID: 4219022

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.020 | 152 | 196059 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 16.794 | 136 | 698411 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 22.213 | 164 | 332773 | 40.000 |
| 133) | Phenanthrene-d10 | (4) | 26.724 | 188 | 511805 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.233 | 240 | 422772 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.657 | 264 | 407255 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.375 | 112 | 827986 | 100.986 |
| 15) | Phenol-d6 | (1) | 11.834 | 99 | 662951 | 65.862 |
| 38) | Nitrobenzene-d5 | (2) | 14.613 | 82 | 542404 | 79.422 |
| 77) | 2-Fluorobiphenyl | (3) | 20.075 | 172 | 816630 | 73.394 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.661 | 330 | 261948 | 173.386 |
| 154) | Terphenyl-d14 | (5) | 30.497 | 244 | 645061 | 70.281 |

M = Compound was manually integrated.  A = User selected an alternate hit

# Standards Data

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.692 | 0.667 | 0.751 | 0.757 | 0.712 | 0.734 | | 0.719 | 5 | AVG | |
| | N-Nitrosodimethylamine | 1.075 | 1.086 | 1.151 | 1.231 | 1.139 | 1.170 | | 1.142 | 5 | AVG | |
| | Pyridine | 1.884 | 1.802 | 1.886 | 1.947 | 1.805 | 1.794 | | 1.853 | 3 | AVG | |
| | N,N-dimethyl formamide | 1.061 | 1.006 | 1.072 | 1.173 | 1.121 | 1.157 | | 1.098 | 6 | AVG | |
| | 2-Picoline | 1.862 | 1.821 | 1.794 | 1.892 | 1.760 | 1.754 | | 1.814 | 3 | AVG | |
| | N-Nitrosomethylethylamine | 0.794 | 0.852 | 0.839 | 0.900 | 0.849 | 0.856 | | 0.849 | 4 | AVG | |
| | Methyl methanesulfonate | 0.739 | 0.742 | 0.739 | 0.789 | 0.745 | 0.754 | | 0.751 | 3 | AVG | |
| | N,N-dimethyl acetamide | 0.960 | 0.912 | 0.949 | 1.029 | 0.974 | 1.003 | | 0.971 | 4 | AVG | |
| | N-Nitrosodiethylamine | 0.853 | 0.821 | 0.812 | 0.852 | 0.807 | 0.809 | | 0.826 | 3 | AVG | |
| | Ethyl methanesulfonate | 0.946 | 0.891 | 0.895 | 0.930 | 0.891 | 0.891 | | 0.907 | 3 | AVG | |
| | Aniline | 2.500 | 2.441 | 2.412 | 2.489 | 2.272 | 2.223 | | 2.389 | 5 | AVG | |
| * | Phenol | 2.127 | 2.028 | 1.990 | 2.098 | 1.928 | 1.851 | | 2.004 | 5 | AVG | * |
| | Pentachloroethane | 0.527 | 0.537 | 0.521 | 0.526 | 0.494 | 0.505 | | 0.518 | 3 | AVG | |
| | bis(2-Chloroethyl)ether | 1.743 | 1.691 | 1.628 | 1.683 | 1.551 | 1.510 | | 1.634 | 5 | AVG | |
| | 2-Chlorophenol | 1.624 | 1.562 | 1.536 | 1.606 | 1.505 | 1.505 | | 1.556 | 3 | AVG | |
| | 1,3-Dichlorobenzene | 1.688 | 1.629 | 1.602 | 1.651 | 1.541 | 1.543 | | 1.609 | 4 | AVG | |
| * | 1,4-Dichlorobenzene | 1.680 | 1.634 | 1.609 | 1.658 | 1.563 | 1.540 | | 1.614 | 3 | AVG | * |
| | Benzyl alcohol | 1.020 | 0.968 | 1.001 | 1.074 | 1.049 | 1.012 | | 1.021 | 4 | AVG | |
| | 1,2-Dichlorobenzene | 1.581 | 1.562 | 1.547 | 1.565 | 1.482 | 1.455 | | 1.532 | 3 | AVG | |
| | 2-Methylphenol | 1.506 | 1.490 | 1.435 | 1.474 | 1.387 | 1.374 | | 1.444 | 4 | AVG | |
| | 2,2'-oxybis(1-Chloropropane) | 2.433 | 2.397 | 2.218 | 2.318 | 2.124 | 2.127 | | 2.270 | 6 | AVG | |
| | bis(2-Chloroisopropyl)ether | 2.433 | 2.397 | 2.218 | 2.318 | 2.124 | 2.127 | | 2.270 | 6 | AVG | |
| | N-Nitrosopyrrolidine | 0.847 | 0.837 | 0.812 | 0.842 | 0.781 | 0.751 | | 0.812 | 5 | AVG | |
| | Acetophenone | 2.158 | 2.059 | 1.947 | 1.993 | 1.834 | 1.720 | | 1.952 | 8 | AVG | |
| # | N-Nitroso-di-n-propylamine | 1.078 | 1.050 | 0.957 | 0.996 | 0.858 | 0.779 | | 0.953 | 12 | AVG | # |
| | N-Nitrosomorpholine | 0.893 | 0.837 | 0.773 | 0.810 | 0.749 | 0.727 | | 0.798 | 8 | AVG | |
| | 4-Methylphenol | 1.558 | 1.521 | 1.474 | 1.516 | 1.415 | 1.376 | | 1.477 | 5 | AVG | |
| | o-Toluidine | 2.466 | 2.363 | 2.251 | 2.316 | 2.098 | 2.046 | | 2.257 | 7 | AVG | |
| | Hexachloroethane | 0.703 | 0.668 | 0.677 | 0.688 | 0.657 | 0.646 | | 0.673 | 3 | AVG | |
| | Nitrobenzene | 0.416 | 0.393 | 0.385 | 0.402 | 0.364 | 0.361 | | 0.387 | 6 | AVG | |
| | N-Nitrosopiperidine | 0.221 | 0.209 | 0.211 | 0.217 | 0.203 | 0.203 | | 0.211 | 3 | AVG | |
| | Isophorone | 0.797 | 0.792 | 0.758 | 0.790 | 0.725 | 0.704 | | 0.761 | 5 | AVG | |
| * | 2-Nitrophenol | 0.199 | 0.207 | 0.211 | 0.222 | 0.209 | 0.210 | | 0.210 | 4 | AVG | * |
| | 2,4-Dimethylphenol | 0.420 | 0.413 | 0.394 | 0.401 | 0.369 | 0.356 | | 0.392 | 6 | AVG | |
| | O,O,O-triethylphosphorothioate | 0.142 | 0.142 | 0.140 | 0.143 | 0.138 | 0.136 | | 0.140 | 2 | AVG | |
| | bis(2-Chloroethoxy)methane | 0.501 | 0.491 | 0.463 | 0.489 | 0.435 | 0.429 | | 0.468 | 7 | AVG | |
| | Benzoic acid | 0.248 | 0.278 | 0.296 | 0.315 | 0.323 | 0.314 | | 0.296 | 10 | AVG | |
| * | 2,4-Dichlorophenol | 0.299 | 0.300 | 0.298 | 0.310 | 0.293 | 0.295 | | 0.299 | 2 | AVG | * |
| | 1,2,4-Trichlorobenzene | 0.321 | 0.303 | 0.307 | 0.316 | 0.296 | 0.291 | | 0.306 | 4 | AVG | |
| | Naphthalene | 1.128 | 1.075 | 1.061 | 1.077 | 0.999 | 0.979 | | 1.053 | 5 | AVG | |
| | (2-Bromoethyl)benzene | 0.061 | 0.061 | 0.061 | 0.062 | 0.059 | 0.059 | | 0.060 | 2 | AVG | |
| | 4-Chloroaniline | 0.507 | 0.484 | 0.475 | 0.488 | 0.458 | 0.447 | | 0.477 | 5 | AVG | |
| | 2,6-Dichlorophenol | 0.291 | 0.279 | 0.281 | 0.285 | 0.265 | 0.267 | | 0.278 | 4 | AVG | |
| | Hexachloropropene | 0.143 | 0.148 | 0.154 | 0.157 | 0.156 | 0.156 | | 0.152 | 4 | AVG | |
| * | Hexachlorobutadiene | 0.143 | 0.140 | 0.142 | 0.143 | 0.137 | 0.137 | | 0.140 | 2 | AVG | * |
| | Caprolactam | 0.135 | 0.135 | 0.135 | 0.139 | 0.131 | 0.131 | | 0.134 | 2 | AVG | |
| | N-Nitrosodi-n-butylamine | 0.326 | 0.320 | 0.313 | 0.323 | 0.235 | 0.224 | | 0.290 | 16 | 2NDDEG | |
| * | 4-Chloro-3-methylphenol | 0.325 | 0.333 | 0.329 | 0.342 | 0.316 | 0.306 | | 0.325 | 4 | AVG | * |
| | Safrole | 0.248 | 0.248 | 0.249 | 0.260 | 0.243 | 0.238 | | 0.248 | 3 | AVG | |
| | 2-Methylnaphthalene | 0.673 | 0.669 | 0.651 | 0.673 | 0.619 | 0.600 | | 0.647 | 5 | AVG | |
| | 1-Methylnaphthalene | 0.632 | 0.620 | 0.615 | 0.620 | 0.581 | 0.562 | | 0.605 | 5 | AVG | |
| # | Hexachlorocyclopentadiene | 0.214 | 0.261 | 0.279 | 0.304 | 0.295 | 0.302 | | 0.276 | 12 | AVG | # |



FORM VI SV-1

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1,2,4,5-Tetrachlorobenzene | 0.598 | 0.572 | 0.569 | 0.581 | 0.549 | 0.541 | | 0.568 | 4 | AVG | |
| | cis-Isosafrole | 0.514 | 0.510 | 0.512 | 0.510 | 0.503 | 0.530 | | 0.513 | 2 | AVG | |
| * | 2,4,6-Trichlorophenol | 0.388 | 0.394 | 0.411 | 0.426 | 0.413 | 0.413 | | 0.407 | 3 | AVG | * |
| | 2,4,5-Trichlorophenol | 0.423 | 0.436 | 0.453 | 0.465 | 0.457 | 0.454 | | 0.448 | 3 | AVG | |
| | trans-Isosafrole | 0.668 | 0.667 | 0.664 | 0.670 | 0.646 | 0.639 | | 0.659 | 2 | AVG | |
| | Isosafrole | 0.595 | 0.594 | 0.591 | 0.597 | 0.575 | 0.568 | | 0.587 | 2 | AVG | |
| | Biphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | Diphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | 1,1'-Biphenyl | 1.759 | 1.627 | 1.592 | 1.638 | 1.517 | 1.455 | | 1.598 | 7 | AVG | |
| | 2-Chloronaphthalene | 1.331 | 1.296 | 1.276 | 1.291 | 1.211 | 1.186 | | 1.265 | 4 | AVG | |
| | Diphenyl ether | 0.865 | 0.827 | 0.816 | 0.831 | 0.787 | 0.781 | | 0.818 | 4 | AVG | |
| | 2-Nitroaniline | 0.532 | 0.530 | 0.549 | 0.577 | 0.548 | 0.541 | | 0.546 | 3 | AVG | |
| | 1,4-Naphthoquinone | 0.434 | 0.448 | 0.435 | 0.416 | 0.372 | 0.354 | | 0.410 | 9 | AVG | |
| | 1,4-Dinitrobenzene | 0.215 | 0.238 | 0.261 | 0.280 | 0.270 | 0.279 | | 0.257 | 10 | AVG | |
| | Dimethylphthalate | 1.541 | 1.514 | 1.486 | 1.522 | 1.435 | 1.422 | | 1.487 | 3 | AVG | |
| | 1,3-Dinitrobenzene | 0.269 | 0.285 | 0.294 | 0.306 | 0.298 | 0.303 | | 0.292 | 5 | AVG | |
| | 2,6-Dinitrotoluene | 0.382 | 0.377 | 0.392 | 0.403 | 0.384 | 0.380 | | 0.386 | 3 | AVG | |
| | Acenaphthylene | 2.050 | 1.963 | 2.001 | 1.999 | 1.909 | 1.856 | | 1.963 | 4 | AVG | |
| | 3-Nitroaniline | 0.457 | 0.456 | 0.476 | 0.499 | 0.478 | 0.480 | | 0.475 | 3 | AVG | |
| * | Acenaphthene | 1.234 | 1.199 | 1.197 | 1.204 | 1.127 | 1.078 | | 1.173 | 5 | AVG | * |
| # | 2,4-Dinitrophenol | 0.154 | 0.179 | 0.208 | 0.228 | 0.232 | 0.235 | | 0.206 | 16 | 1STDEG | # |
| | Pentachlorobenzene | 0.462 | 0.460 | 0.457 | 0.466 | 0.452 | 0.445 | | 0.457 | 2 | AVG | |
| # | 4-Nitrophenol | 0.185 | 0.195 | 0.203 | 0.215 | 0.211 | 0.213 | | 0.204 | 6 | AVG | # |
| | Dibenzofuran | 1.799 | 1.748 | 1.718 | 1.742 | 1.628 | 1.597 | | 1.706 | 5 | AVG | |
| | 2,4-Dinitrotoluene | 0.442 | 0.467 | 0.478 | 0.493 | 0.478 | 0.475 | | 0.472 | 4 | AVG | |
| | 1-Naphthylamine | 1.083 | 1.092 | 1.203 | 1.267 | 1.190 | 1.170 | | 1.168 | 6 | AVG | |
| | 2,3,4,6-Tetrachlorophenol | 0.295 | 0.303 | 0.309 | 0.320 | 0.302 | 0.309 | | 0.306 | 3 | AVG | |
| | 2-Naphthylamine | 1.129 | 0.953 | 1.265 | 1.343 | 1.288 | 1.289 | | 1.211 | 12 | AVG | |
| | Diethylphthalate | 1.660 | 1.557 | 1.516 | 1.561 | 1.460 | 1.428 | | 1.530 | 5 | AVG | |
| | Thionazin | 0.282 | 0.276 | 0.284 | 0.289 | 0.273 | 0.267 | | 0.278 | 3 | AVG | |
| | Fluorene | 1.453 | 1.371 | 1.318 | 1.326 | 1.200 | 1.092 | | 1.293 | 10 | AVG | |
| | 4-Chlorophenyl-phenylether | 0.591 | 0.595 | 0.586 | 0.590 | 0.568 | 0.558 | | 0.581 | 3 | AVG | |
| | 5-Nitro-o-toluidine | 0.475 | 0.494 | 0.491 | 0.498 | 0.449 | 0.406 | | 0.469 | 8 | AVG | |
| | 4-Nitroaniline | 0.471 | 0.477 | 0.480 | 0.479 | 0.442 | 0.432 | | 0.463 | 5 | AVG | |
| | 4,6-Dinitro-2-methylphenol | 0.129 | 0.150 | 0.174 | 0.177 | 0.183 | 0.190 | | 0.167 | 14 | AVG | |
| | 1-Nitronaphthalene | 0.190 | 0.186 | 0.189 | 0.193 | 0.191 | 0.192 | | 0.190 | 1 | AVG | |
| * | N-Nitrosodiphenylamine (1) | 0.680 | 0.638 | 0.645 | 0.653 | 0.624 | 0.604 | | 0.641 | 4 | AVG | * |
| | 1,2-Diphenylhydrazine | 1.183 | 1.147 | 1.082 | 1.092 | 1.018 | 0.981 | | 1.084 | 7 | AVG | |
| | Tetraethyldithiopyrophosphate | 0.207 | 0.212 | 0.199 | 0.204 | 0.182 | 0.165 | | 0.195 | 9 | AVG | |
| | 1,3,5-Trinitrobenzene | 0.077 | 0.093 | 0.114 | 0.120 | 0.122 | 0.128 | | 0.109 | 18 | 1STDEG | |
| | Diallate (peak 1) | 0.528 | 0.527 | 0.512 | 0.510 | 0.475 | 0.458 | | 0.502 | 6 | AVG | |
| | Phorate | 0.671 | 0.655 | 0.606 | 0.587 | 0.495 | 0.441 | | 0.576 | 16 | 2NDDEG | |
| | Phenacetin | 0.584 | 0.585 | 0.575 | 0.574 | 0.519 | 0.487 | | 0.554 | 7 | AVG | |
| | 4-Bromophenyl-phenylether | 0.218 | 0.210 | 0.222 | 0.224 | 0.213 | 0.213 | | 0.217 | 2 | AVG | |
| | Diallate (peak 2) | 0.508 | 0.499 | 0.482 | 0.478 | 0.451 | 0.442 | | 0.477 | 5 | AVG | |
| | Hexachlorobenzene | 0.238 | 0.239 | 0.242 | 0.242 | 0.237 | 0.237 | | 0.239 | 1 | AVG | |
| | Dimethoate | 0.472 | 0.456 | 0.391 | 0.367 | 0.329 | 0.331 | | 0.391 | 16 | 2NDDEG | |
| | Diallate TRANS/CIS | 0.523 | 0.520 | 0.505 | 0.502 | 0.469 | 0.454 | | 0.495 | 6 | AVG | |
| * | Pentachlorophenol | 0.146 | 0.156 | 0.172 | 0.178 | 0.177 | 0.175 | | 0.167 | 8 | AVG | * |
| | Pentachloronitrobenzene | 0.090 | 0.087 | 0.089 | 0.089 | 0.087 | 0.090 | | 0.088 | 1 | AVG | |
| | 4-Aminobiphenyl | 0.676 | 0.680 | 0.677 | 0.684 | 0.559 | 0.514 | | 0.632 | 12 | AVG | |
| | Pronamide | 0.397 | 0.405 | 0.408 | 0.408 | 0.398 | 0.381 | | 0.400 | 3 | AVG | |

(1) Cannot be separated from Diphenylamine

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date(s): 02/13/04 02/13/04

Calibration Times: 06:59 12:04

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

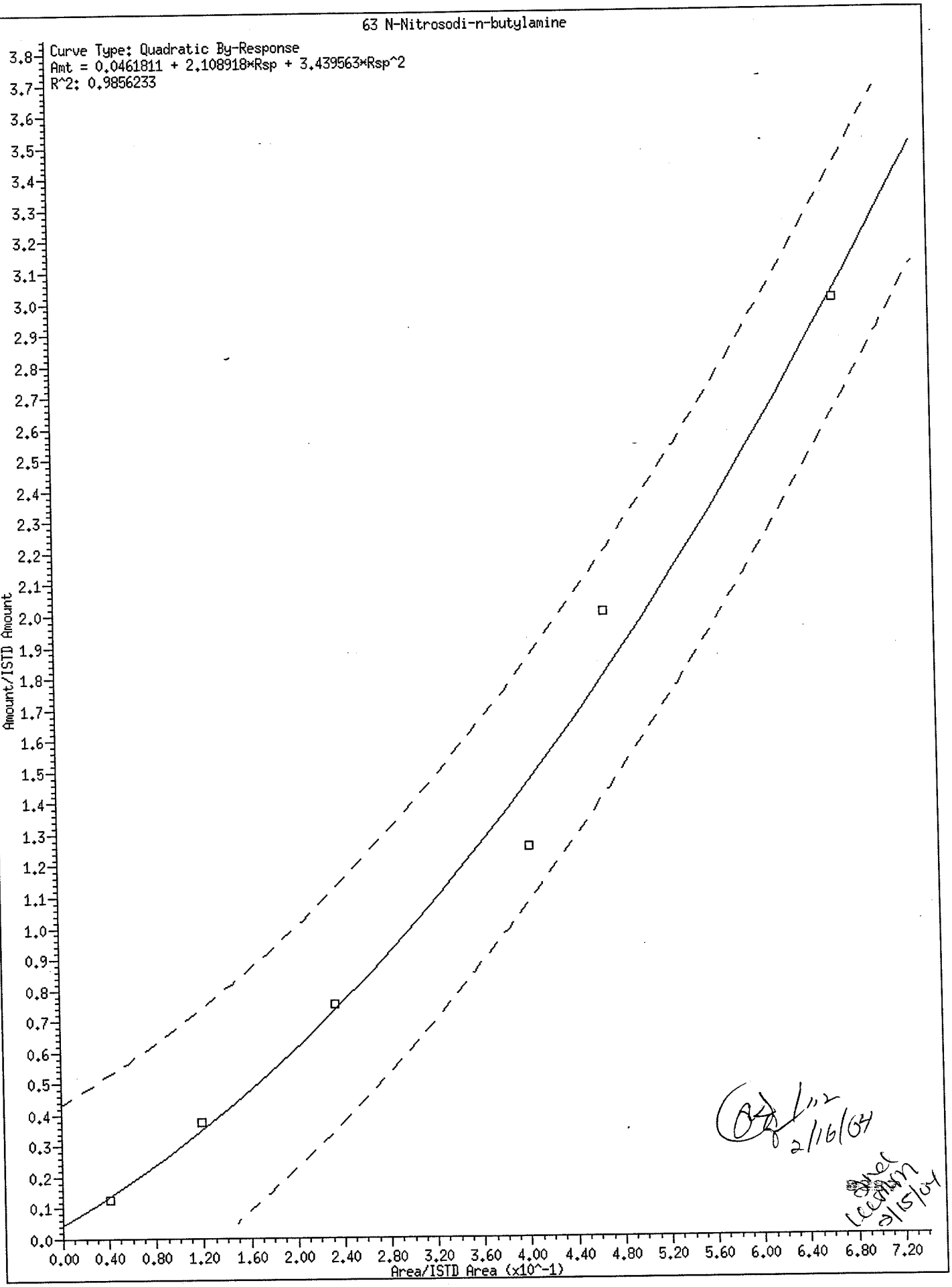
LAB FILE ID: RRF5 = mb334.d RRF15 = mb335.d RRF30 = mb336.d
RRF50 = mb33a.d RRF80 = mb333.d RRF120 = mb332.d

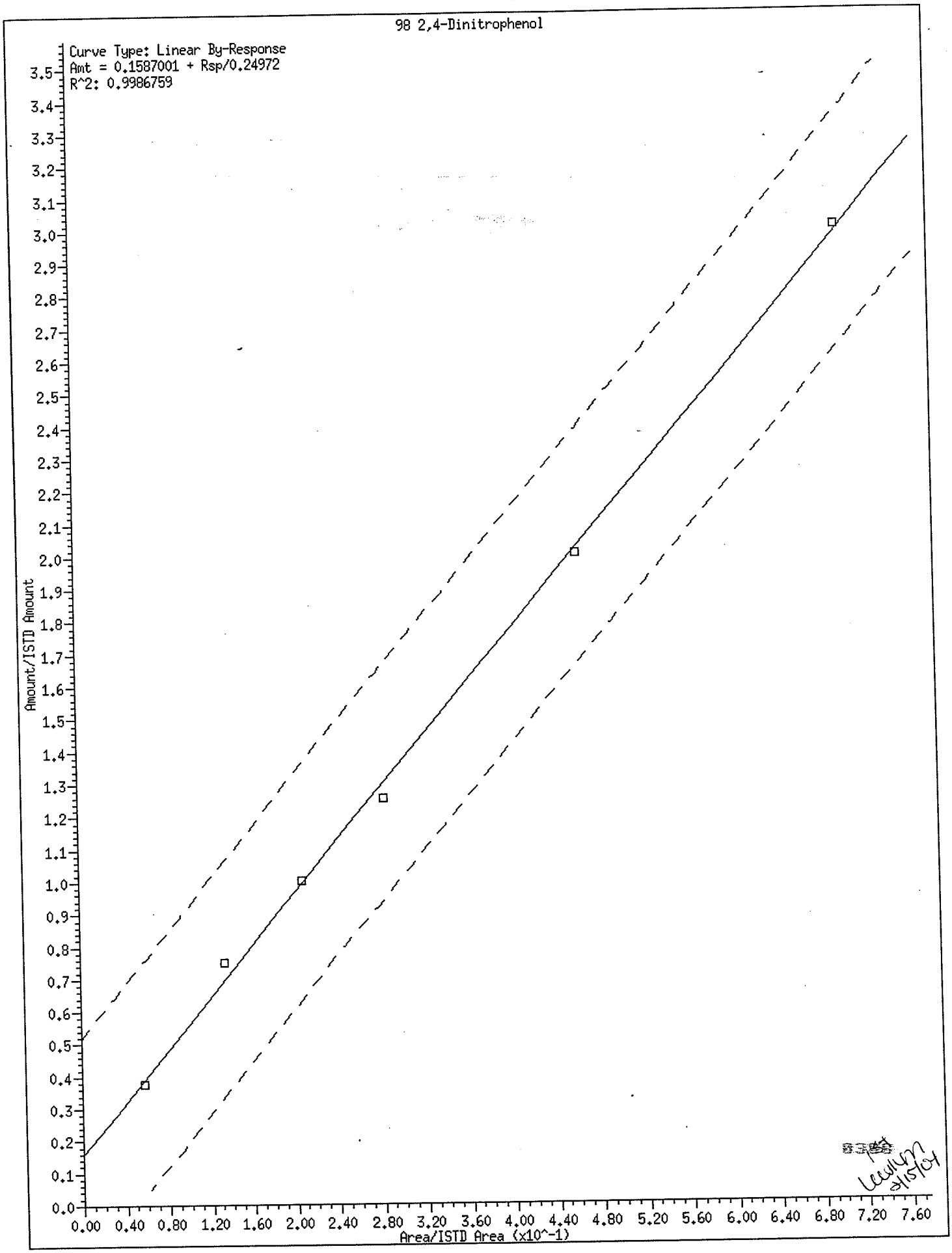
| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dinoseb | 0.140 | 0.194 | 0.234 | 0.249 | 0.256 | 0.263 | | 0.223 | 21 | 1STDEG | |
| | Phenanthrene | 1.236 | 1.186 | 1.190 | 1.193 | 1.116 | 1.067 | | 1.165 | 5 | AVG | |
| | Anthracene | 1.261 | 1.219 | 1.204 | 1.239 | 1.164 | 1.086 | | 1.195 | 5 | AVG | |
| | Carbazole | 1.205 | 1.170 | 1.184 | 1.211 | 1.140 | 1.110 | | 1.170 | 3 | AVG | |
| | Methyl parathion | 0.382 | 0.420 | 0.415 | 0.406 | 0.377 | 0.364 | | 0.394 | 6 | AVG | |
| | Di-n-butylphthalate | 1.791 | 1.787 | 1.786 | 1.800 | 1.718 | 1.617 | | 1.750 | 4 | AVG | |
| | Parathion | 0.205 | 0.228 | 0.234 | 0.246 | 0.236 | 0.230 | | 0.230 | 6 | AVG | |
| | 4-Nitroquinoline-1-oxide | 0.060 | 0.097 | 0.134 | 0.155 | 0.150 | 0.153 | | 0.125 | 31 | 1STDEG | |
| | Methapyrilene | 0.556 | 0.530 | 0.427 | 0.373 | 0.379 | 0.441 | | 0.451 | 17 | 1STDEG | |
| | Isodrin | 0.138 | 0.133 | 0.137 | 0.139 | 0.137 | 0.136 | | 0.137 | 2 | AVG | |
| * | Fluoranthene | 1.226 | 1.187 | 1.207 | 1.206 | 1.139 | 1.082 | | 1.175 | 5 | AVG | * |
| | Benzidine | 0.594 | 0.718 | 0.890 | 0.824 | 0.707 | 0.656 | | 0.732 | 15 | AVG | + |
| | Pyrene | 1.541 | 1.543 | 1.508 | 1.508 | 1.425 | 1.372 | | 1.483 | 5 | AVG | |
| | p-Dimethylaminoazobenzene | 0.284 | 0.305 | 0.307 | 0.316 | 0.306 | 0.305 | | 0.304 | 4 | AVG | |
| | Chlorobenzilate | 0.578 | 0.595 | 0.593 | 0.608 | 0.572 | 0.565 | | 0.585 | 3 | AVG | |
| | 3,3'-Dimethylbenzidine | 0.504 | 0.631 | 0.817 | 0.741 | 0.708 | 0.736 | | 0.690 | 16 | 1STDEG | |
| | Butylbenzylphthalate | 1.036 | 1.013 | 1.001 | 1.035 | 0.980 | 0.968 | | 1.006 | 3 | AVG | |
| | 2-Acetylaminofluorene | 0.584 | 0.658 | 0.712 | 0.737 | 0.718 | 0.734 | | 0.691 | 9 | AVG | |
| | 3,3'-Dichlorobenzidine | 0.464 | 0.493 | 0.545 | 0.549 | 0.518 | 0.503 | | 0.512 | 6 | AVG | |
| | 4,4'-Methylenebis(2-Chloroanil | 0.211 | 0.228 | 0.262 | 0.261 | 0.252 | 0.244 | | 0.243 | 8 | AVG | |
| | Benzo(a)anthracene | 1.319 | 1.263 | 1.287 | 1.300 | 1.252 | 1.244 | | 1.278 | 2 | AVG | |
| | Chrysene | 1.195 | 1.176 | 1.179 | 1.195 | 1.140 | 1.134 | | 1.170 | 2 | AVG | |
| | bis(2-Ethylhexyl)phthalate | 1.275 | 1.393 | 1.396 | 1.438 | 1.400 | 1.383 | | 1.381 | 4 | AVG | |
| * | Di-n-octylphthalate | 2.406 | 2.565 | 2.530 | 2.683 | 2.598 | 2.558 | | 2.557 | 4 | AVG | * |
| | 7,12-Dimethylbenz[a]anthracene | 0.593 | 0.626 | 0.647 | 0.665 | 0.656 | 0.649 | | 0.639 | 4 | AVG | |
| | Benzo(b)fluoranthene | 1.426 | 1.410 | 1.397 | 1.440 | 1.399 | 1.390 | | 1.410 | 1 | AVG | |
| | Benzo(k)fluoranthene | 1.326 | 1.321 | 1.328 | 1.335 | 1.305 | 1.271 | | 1.314 | 2 | AVG | |
| * | Benzo(a)pyrene | 1.224 | 1.210 | 1.260 | 1.297 | 1.268 | 1.282 | | 1.257 | 3 | AVG | * |
| | 3-Methylcholanthrene | 0.676 | 0.670 | 0.690 | 0.706 | 0.707 | 0.722 | | 0.695 | 3 | AVG | |
| | Indeno(1,2,3-cd)pyrene | 1.132 | 1.132 | 1.182 | 1.222 | 1.234 | 1.260 | | 1.194 | 5 | AVG | |
| | Dibenz(a,h)anthracene | 1.005 | 1.045 | 1.087 | 1.119 | 1.105 | 1.125 | | 1.081 | 4 | AVG | |
| | Benzo(g,h,i)perylene | 1.136 | 1.163 | 1.208 | 1.255 | 1.257 | 1.258 | | 1.213 | 4 | AVG | |
| | 2-Fluorophenol | 1.698 | 1.655 | 1.671 | 1.757 | 1.616 | 1.639 | | 1.673 | 3 | AVG | |
| | Phenol-d5 | 2.121 | 2.046 | 2.054 | 2.132 | 1.988 | 1.981 | | 2.054 | 3 | AVG | |
| | Phenol-d6 | 2.121 | 2.046 | 2.054 | 2.132 | 1.988 | 1.981 | | 2.054 | 3 | AVG | |
| | Nitrobenzene-d5 | 0.402 | 0.396 | 0.397 | 0.404 | 0.376 | 0.373 | | 0.391 | 3 | AVG | |
| | 2-Fluorobiphenyl | 1.411 | 1.351 | 1.352 | 1.359 | 1.294 | 1.257 | | 1.337 | 4 | AVG | |
| | 2,4,6-Tribromophenol | 0.171 | 0.177 | 0.188 | 0.192 | 0.185 | 0.177 | | 0.182 | 4 | AVG | |
| | Terphenyl-d14 | 0.896 | 0.900 | 0.887 | 0.895 | 0.845 | 0.788 | | 0.868 | 5 | AVG | |

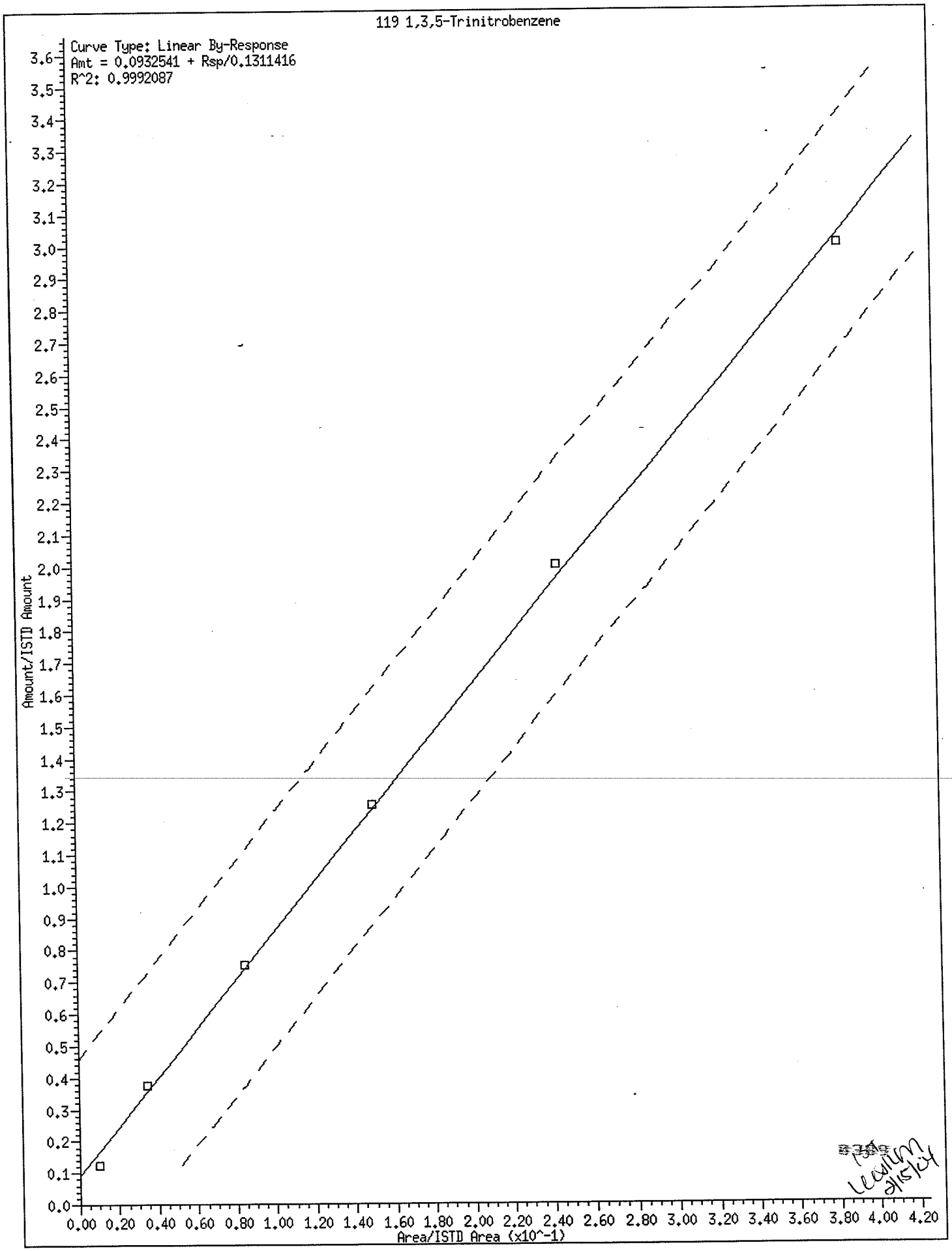
Average %RSD 6

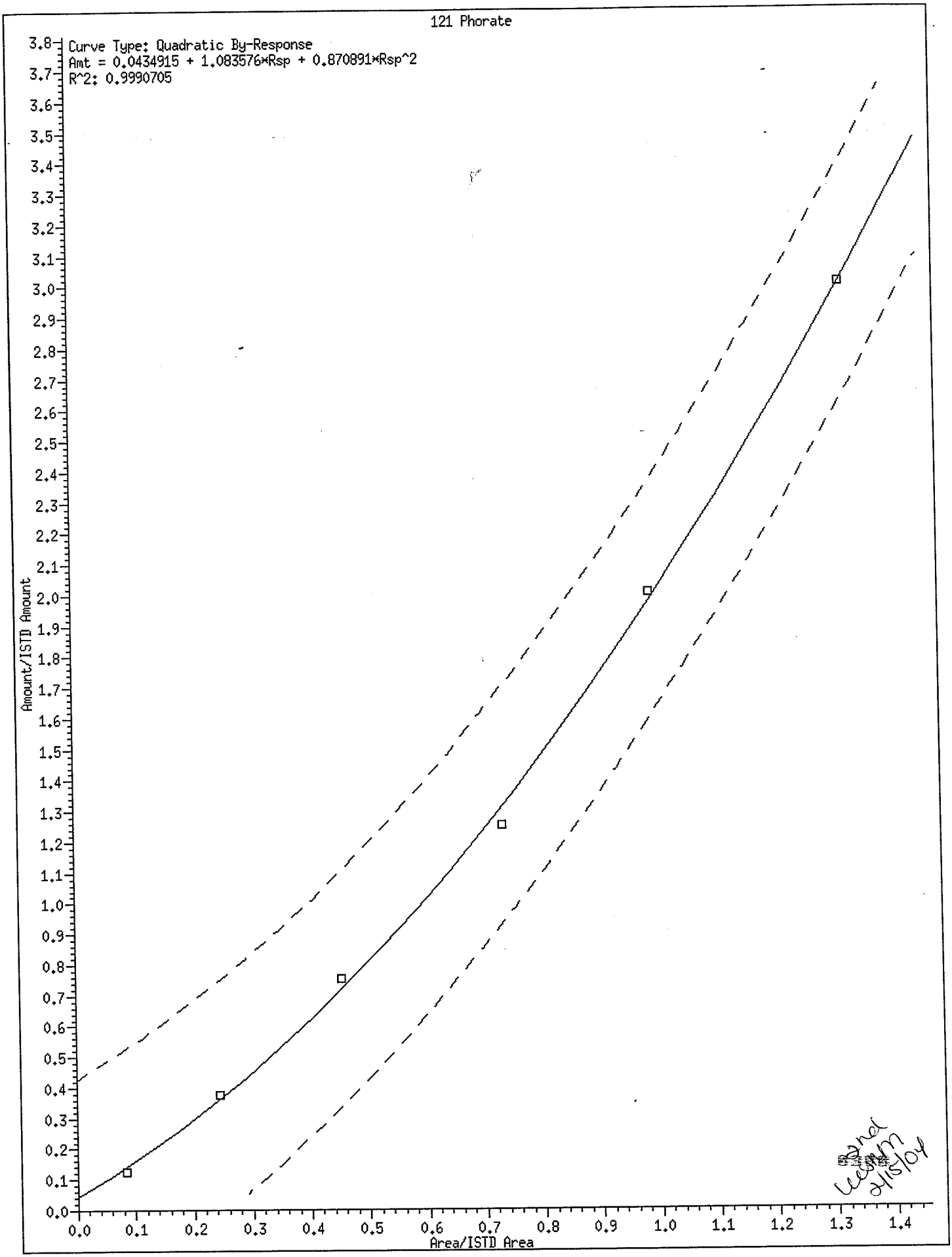
+ %RSD is less than or equal to 15%; however, value rounds to 15.

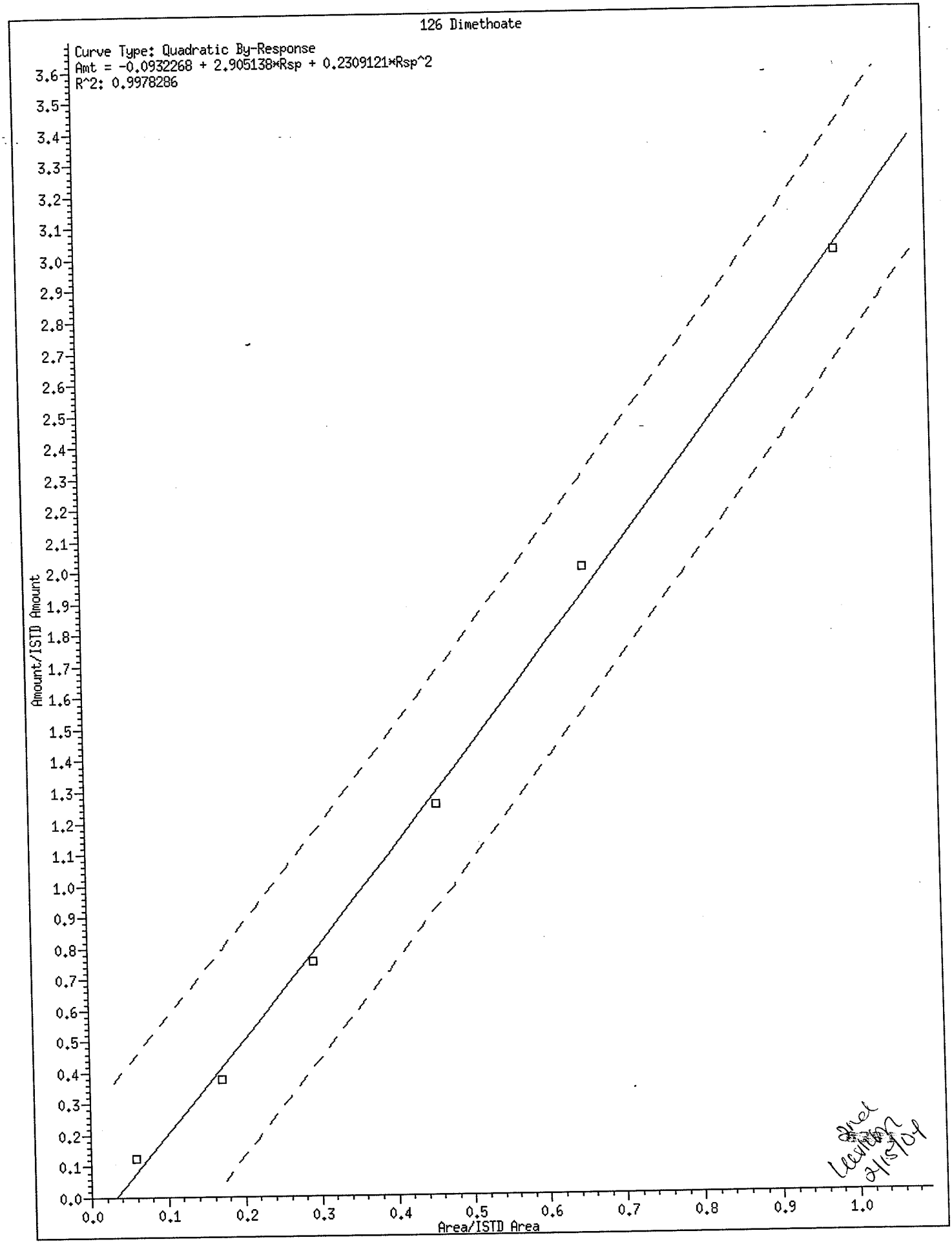
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5 ,15, 30 standards.

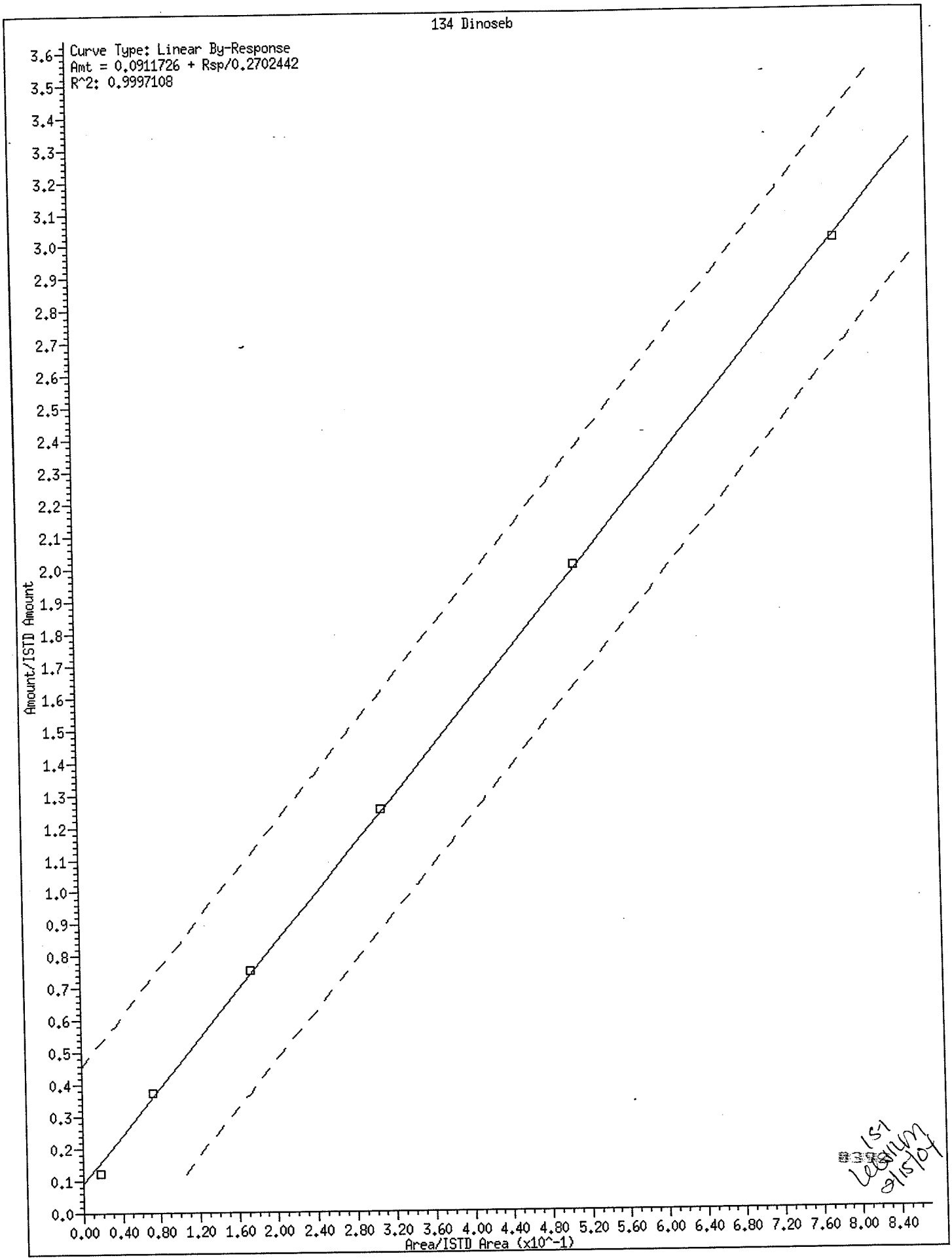

63 N-Nitrosodi-n-butylamine
Curve Type: Quadratic By-Response
Amt = 0.0461811 + 2.108918*Rsp + 3.439563*Rsp^2
R^2: 0.9856233
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
2/16/04
2/15/04

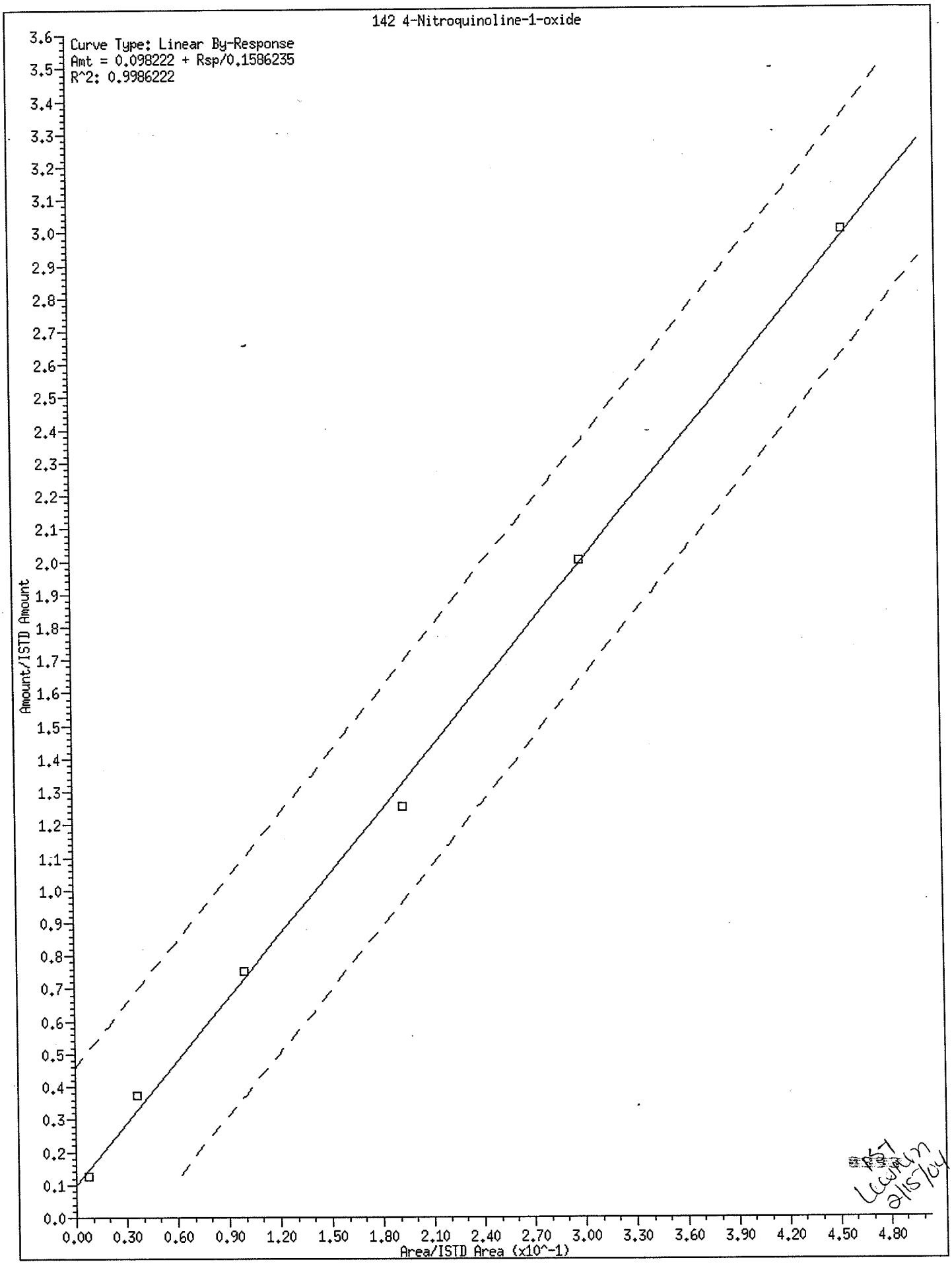

98 2,4-Dinitrophenol
Curve Type: Linear By-Response
Amt = 0.1587001 + Rsp/0.24972
R^2: 0.9986759
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
0.00
0.40
0.80
1.20
1.60
2.00
2.40
2.80
3.20
3.60
4.00
4.40
4.80
5.20
5.60
6.00
6.40
6.80
7.20
7.60

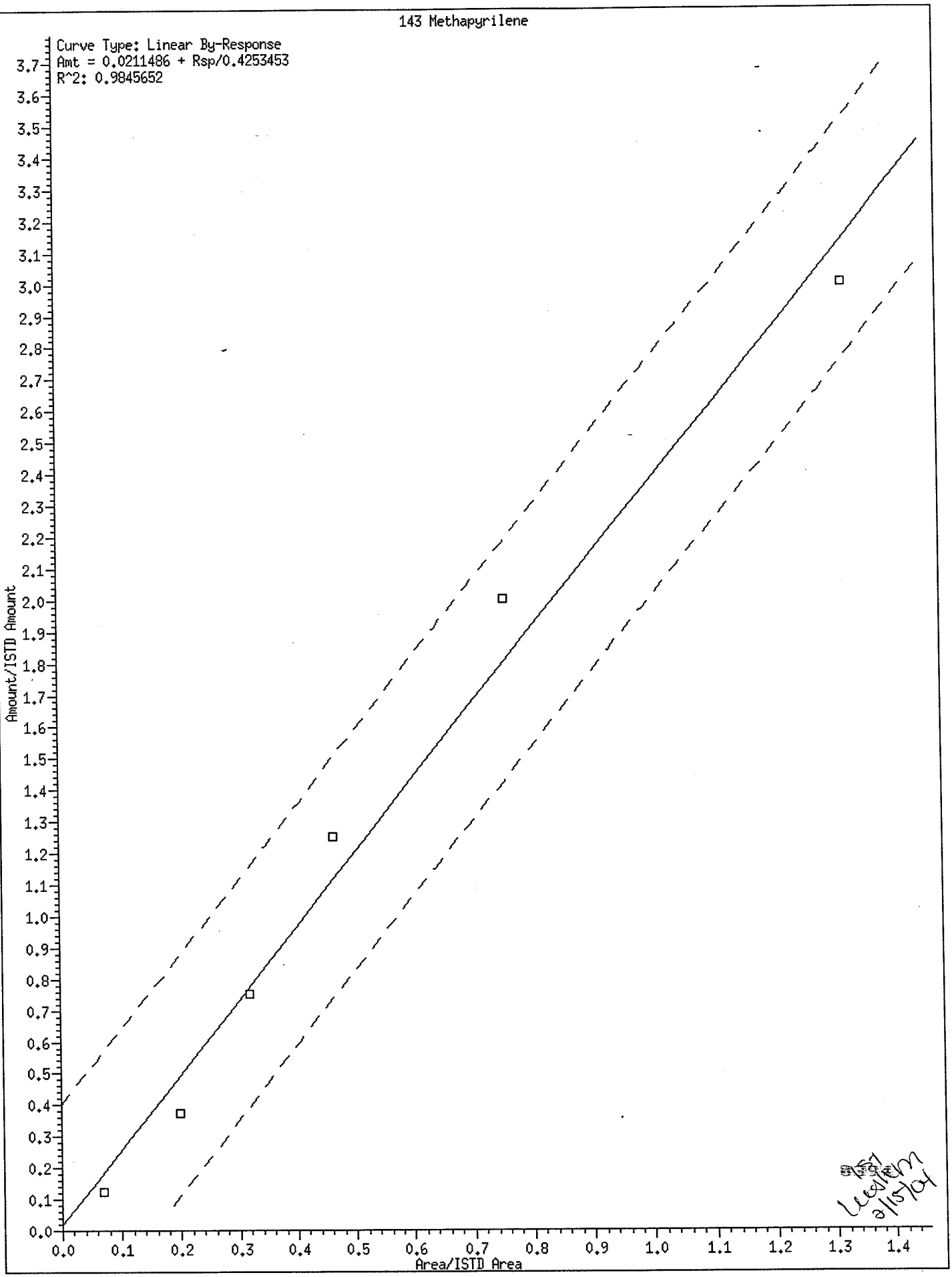

119 1,3,5-Trinitrobenzene
Curve Type: Linear By-Response
Amt = 0.0932541 + Rsp/0.1311416
R^2: 0.9992087
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6
0.00 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.20 2.40 2.60 2.80 3.00 3.20 3.40 3.60 3.80 4.00 4.20

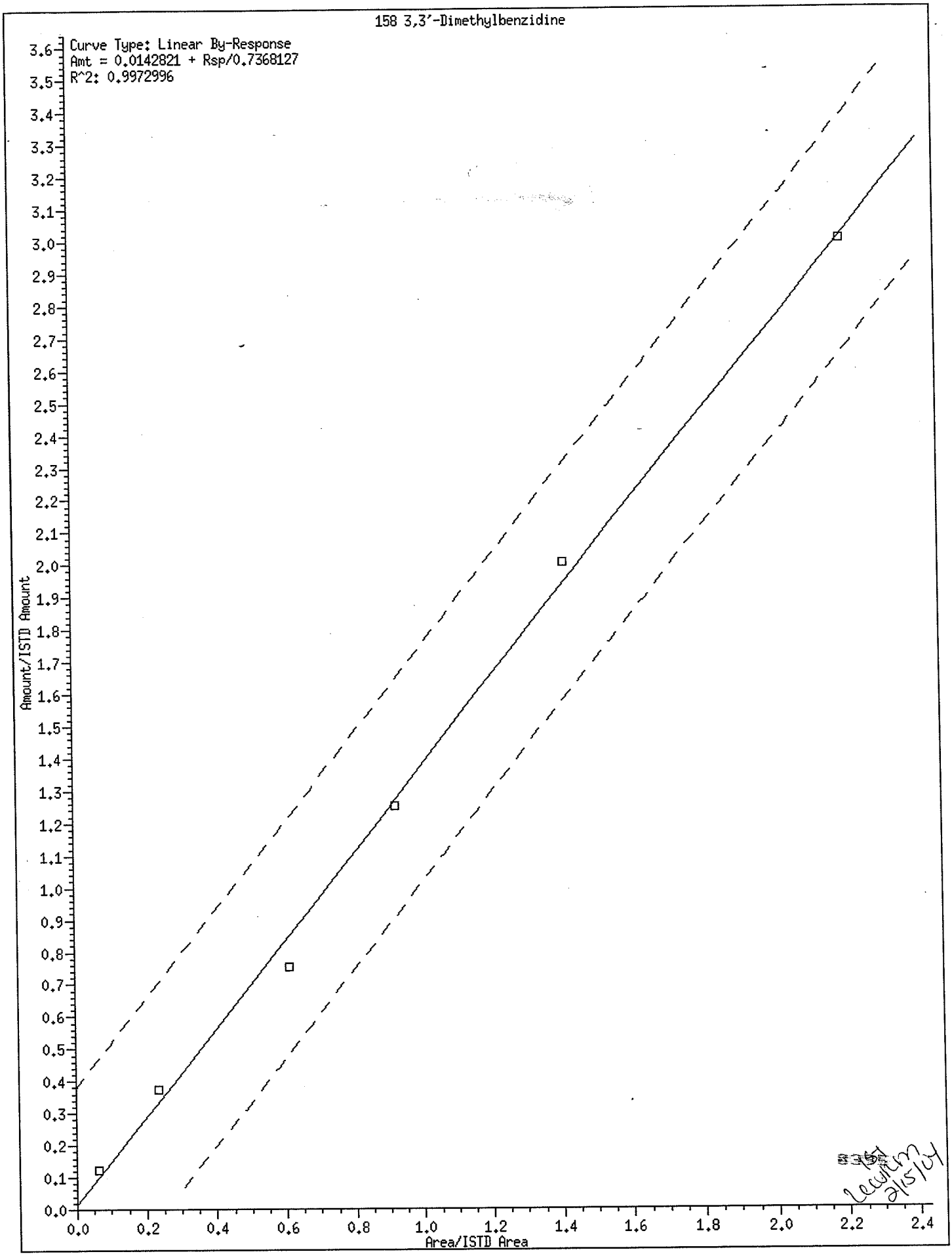

121 Phorate
Curve Type: Quadratic By-Response
Amt = 0.0434915 + 1.083576*Rsp + 0.870891*Rsp^2
R^2: 0.9990705
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

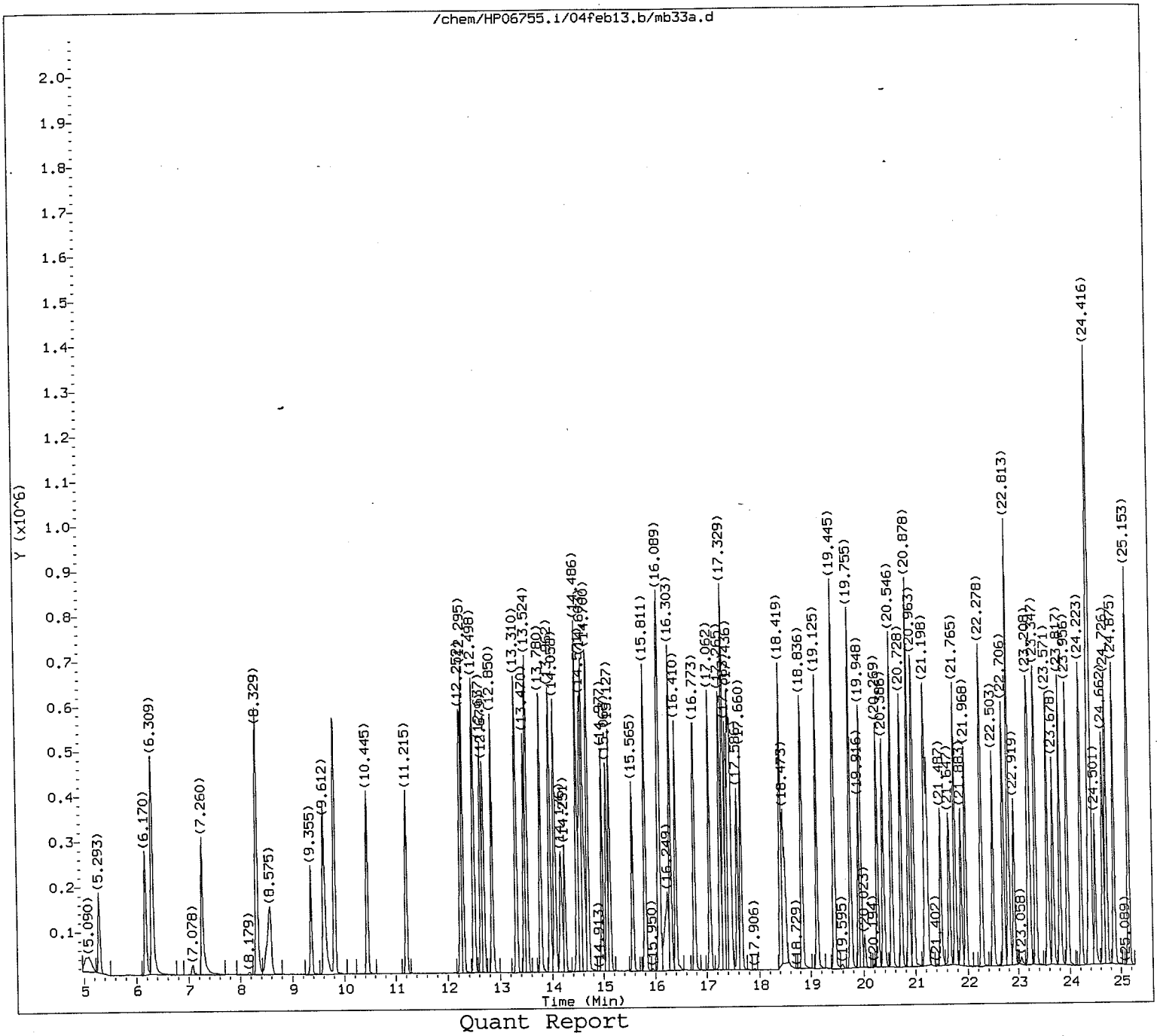

126 Dimethoate
Curve Type: Quadratic By-Response
Amt = -0.0932268 + 2.905138*Rsp + 0.2309121*Rsp^2
R^2: 0.9978286
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6


134 Dinoseb
Curve Type: Linear By-Response
Amt = 0.0911726 + Rsp/0.2702442
R^2: 0.9997108
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6
0.00 0.40 0.80 1.20 1.60 2.00 2.40 2.80 3.20 3.60 4.00 4.40 4.80 5.20 5.60 6.00 6.40 6.80 7.20 7.60 8.00 8.40


142 4-Nitroquinoline-1-oxide
Curve Type: Linear By-Response
Amt = 0.098222 + Rsp/0.1586235
R^2: 0.9986222
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
0.00
0.30
0.60
0.90
1.20
1.50
1.80
2.10
2.40
2.70
3.00
3.30
3.60
3.90
4.20
4.50
4.80


143 Methapyrilene
Curve Type: Linear By-Response
Amt = 0.0211486 + Rsp/0.4253453
R^2: 0.9845652
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7


158 3,3'-Dimethylbenzidine
Curve Type: Linear By-Response
Amt = 0.0142821 + Rsp/0.7368127
R^2: 0.9972996
Amount/ISTD Amount
Area/ISTD Area
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
3.6
3.5
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.3
2.1
1.9
1.7
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

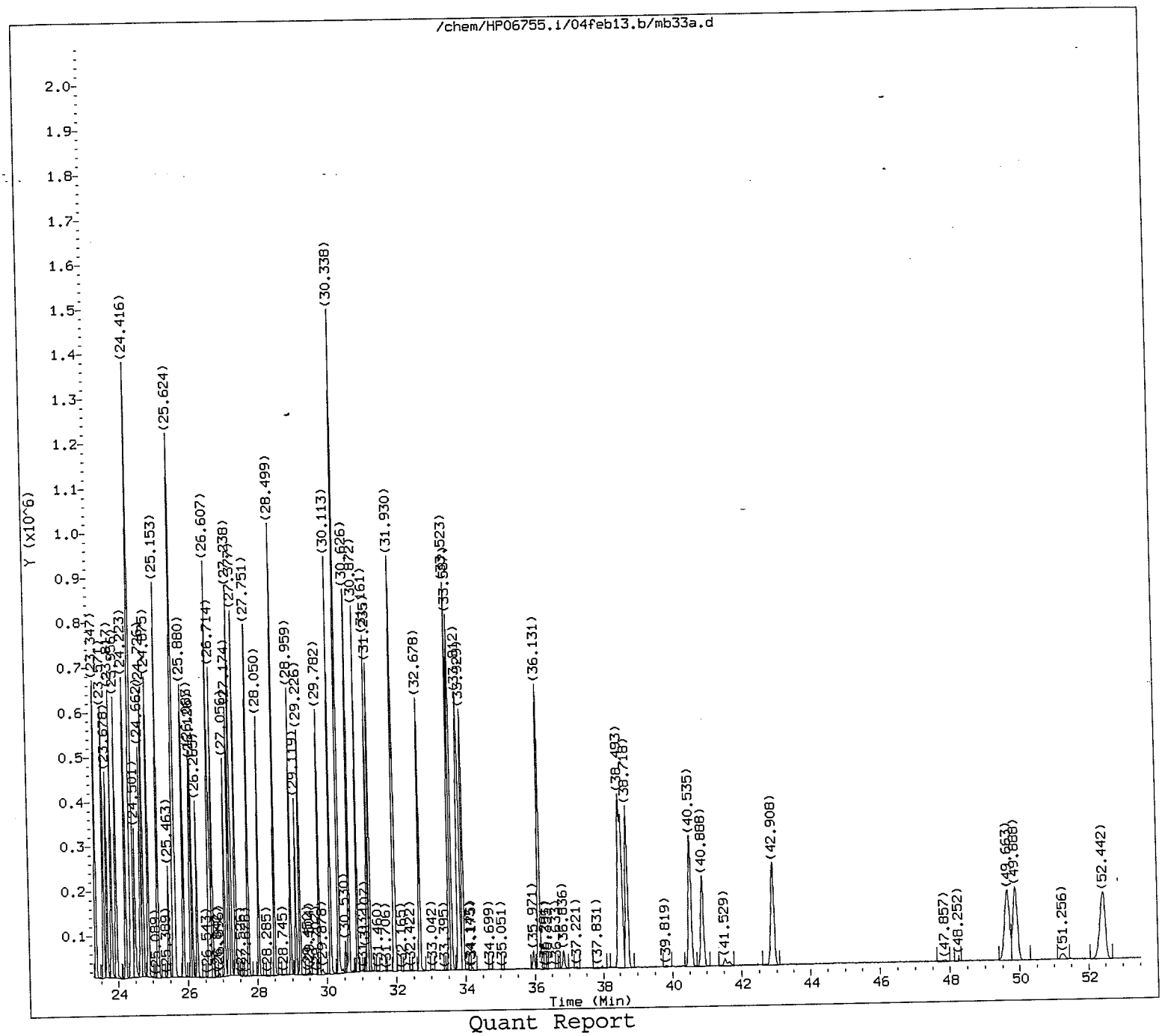
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050

Lab Sample ID: STD0404

8396

JMG 546
2/13/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050

Lab Sample ID: STD0404

JMG 346
2/13/04

B397

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 06:59  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 08:32
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.293 | 88 | 179796 | 50.000 |
| 2) | N-Nitrosodimethylamine | (1) | 6.170 | 74 | 292442 | 50.000 |
| 3) | Pyridine | (1) | 6.309 | 79 | 462446 | 50.000 |
| 4) | N,N-dimethyl formamide | (1) | 7.260 | 73 | 278677 | 50.000 |
| 5) | 2-Picoline | (1) | 8.318 | 93 | 449483 | 50.000 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.575 | 88 | 213910 | 50.000 |
| 7) | Methyl methanesulfonate | (1) | 9.355 | 80 | 187362 | 50.000 |
| 8) | N,N-dimethyl acetamide | (1) | 9.601 | 87 | 244448 | 50.000 |
| 10) | N-Nitrosodiethylamine | (1) | 10.445 | 102 | 202468 | 50.000 |
| 11) | Ethyl methanesulfonate | (1) | 11.215 | 109 | 220915 | 50.000 |
| 13) | Aniline | (1) | 12.498 | 93 | 591187 | 50.000 |
| 16) | Phenol | (1) | 12.295 | 94 | 498453 | 50.000 |
| 17) | Pentachloroethane | (1) | 12.690 | 167 | 124989 | 50.000 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.637 | 93 | 399859 | 50.000 |
| 19) | 2-Chlorophenol | (1) | 12.850 | 128 | 381588 | 50.000 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.310 | 146 | 392208 | 50.000 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.470 | 152 | 190040 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.524 | 146 | 393946 | 50.000 |
| 24) | Benzyl alcohol | (1) | 13.791 | 108 | 255089 | 50.000 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.962 | 146 | 371711 | 50.000 |
| 26) | 2-Methylphenol | (1) | 14.058 | 108 | 350249 | 50.000 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.176 | 45 | 550749 | 50.000 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.176 | 45 | 550749 | 50.000 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.529 | 100 | 200119 | 50.000 |
| 30) | Acetophenone | (1) | 14.603 | 105 | 473522 | 50.000 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.571 | 70 | 236481 | 50.000 |
| 32) | N-Nitrosomorpholine | (1) | 14.635 | 56 | 192357 | 50.000 |
| 33) | 4-Methylphenol | (1) | 14.486 | 108 | 360227 | 50.000 |
| 34) | o-Toluidine | (1) | 14.710 | 106 | 550158 | 50.000 |
| 37) | Hexachloroethane | (1) | 14.977 | 117 | 163384 | 50.000 |
| 39) | Nitrobenzene | (2) | 15.127 | 77 | 345520 | 50.000 |
| 40) | N-Nitrosopiperidine | (2) | 15.565 | 114 | 186475 | 50.000 |
| 41) | Isophorone | (2) | 15.811 | 82 | 678691 | 50.000 |
| 42) | 2-Nitrophenol | (2) | 16.068 | 139 | 191019 | 50.000 |
| 44) | 2,4-Dimethylphenol | (2) | 16.089 | 107 | 344126 | 50.000 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.303 | 198 | 122437 | 50.000 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.410 | 93 | 420045 | 50.000 |
| 47) | Benzoic acid | (2) | 16.249 | 105 | 271025 | 50.000 |
| 49) | 2,4-Dichlorophenol | (2) | 16.773 | 162 | 266054 | 50.000 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.062 | 180 | 271672 | 50.000 |
| 52) | Naphthalene-d8 | (2) | 17.265 | 136 | 687352 | 40.000 |
| 53) | Naphthalene | (2) | 17.329 | 128 | 925585 | 50.000 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.383 | 184 | 53146 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 06:59  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 08:32
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.425 | 127 | 419511 | 50.000 |
| 56) | 2,6-Dichlorophenol | (2) | 17.468 | 162 | 244940 | 50.000 |
| 57) | Hexachloropropene | (2) | 17.586 | 213 | 135216 | 50.000 |
| 59) | Hexachlorobutadiene | (2) | 17.660 | 225 | 122897 | 50.000 |
| 62) | Caprolactam | (2) | 18.473 | 113 | 119655 | 50.000 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.419 | 84 | 277385 | 50.000 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.836 | 107 | 293927 | 50.000 |
| 68) | Safrole | (2) | 19.125 | 162 | 223591 | 50.000 |
| 69) | 2-Methylnaphthalene | (2) | 19.445 | 142 | 577891 | 50.000 |
| 70) | 1-Methylnaphthalene | (2) | 19.755 | 142 | 533119 | 50.000 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.916 | 237 | 117970 | 50.000 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.948 | 216 | 225528 | 50.000 |
| 73) | cis-Isosafrole | (3) | 20.023 | 162 | 21808 | 5.500 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.269 | 196 | 165337 | 50.000 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.386 | 196 | 180562 | 50.000 |
| 78) | trans-Isosafrole | (3) | 20.728 | 162 | 231709 | 44.500 |
| 79) | Isosafrole | (3) | 20.728 | 162 | 231709 | 50.000 |
| 80) | Biphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 81) | Diphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 82) | 1,1'-Biphenyl | (3) | 20.878 | 154 | 636044 | 50.000 |
| 83) | 2-Chloronaphthalene | (3) | 20.963 | 162 | 501444 | 50.000 |
| 86) | Diphenyl ether | (3) | 21.198 | 170 | 322765 | 50.000 |
| 87) | 2-Nitroaniline | (3) | 21.241 | 138 | 224268 | 50.000 |
| 88) | 1,4-Naphthoquinone | (3) | 21.487 | 158 | 161748 | 50.000 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.647 | 168 | 108919 | 50.000 |
| 90) | Dimethylphthalate | (3) | 21.765 | 163 | 591126 | 50.000 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.883 | 168 | 118714 | 50.000 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.968 | 165 | 156567 | 50.000 |
| 93) | Acenaphthylene | (3) | 22.278 | 152 | 776389 | 50.000 |
| 95) | 3-Nitroaniline | (3) | 22.503 | 138 | 193866 | 50.000 |
| 96) | Acenaphthene-d10 | (3) | 22.706 | 164 | 310702 | 40.000 |
| 97) | Acenaphthene | (3) | 22.813 | 153 | 467753 | 50.000 |
| 98) | 2,4-Dinitrophenol | (3) | 22.823 | 184 | 88436 | 50.000 |
| 99) | Pentachlorobenzene | (3) | 23.208 | 250 | 180931 | 50.000 |
| 101) | 4-Nitrophenol | (3) | 22.919 | 109 | 83457 | 50.000 |
| 102) | Dibenzofuran | (3) | 23.347 | 168 | 676730 | 50.000 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.229 | 165 | 191565 | 50.000 |
| 104) | 1-Naphthylamine | (3) | 23.571 | 143 | 491928 | 50.000 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.678 | 232 | 124141 | 50.000 |
| 106) | 2-Naphthylamine | (3) | 23.817 | 143 | 521733 | 50.000 |
| 107) | Diethylphthalate | (3) | 23.956 | 149 | 606422 | 50.000 |
| 108) | Thionazin | (3) | 24.223 | 107 | 112175 | 50.000 |
| 109) | Fluorene | (3) | 24.416 | 166 | 514801 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 06:59  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 08:32
Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.384 | 204 | 229194 | 50.000 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.405 | 152 | 193343 | 50.000 |
| 112) | 4-Nitroaniline | (3) | 24.427 | 138 | 185894 | 50.000 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.501 | 198 | 101636 | 50.000 |
| 114) | 1-Nitronaphthalene | (4) | 24.662 | 173 | 110718 | 50.000 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.726 | 169 | 375182 | 50.000 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.875 | 77 | 627369 | 50.000 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.153 | 97 | 117077 | 50.000 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.463 | 213 | 69224 | 50.000 |
| 120) | Diallate (peak 1) | (4) | 25.592 | 86 | 220009 | 37.500 |
| 121) | Phorate | (4) | 25.634 | 75 | 337087 | 50.000 |
| 122) | Phenacetin | (4) | 25.624 | 108 | 330105 | 50.000 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.880 | 248 | 128599 | 50.000 |
| 124) | Diallate (peak 2) | (4) | 25.870 | 86 | 68739 | 12.500 |
| 125) | Hexachlorobenzene | (4) | 26.083 | 284 | 138914 | 50.000 |
| 126) | Dimethoate | (4) | 26.126 | 87 | 210965 | 50.000 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 288748 | 50.000 |
| 129) | Pentachlorophenol | (4) | 26.607 | 266 | 102395 | 50.000 |
| 130) | Pentachloronitrobenzene | (4) | 26.650 | 237 | 50896 | 50.000 |
| 131) | 4-Aminobiphenyl | (4) | 26.607 | 169 | 393029 | 50.000 |
| 132) | Pronamide | (4) | 26.714 | 173 | 234599 | 50.000 |
| 133) | Phenanthrene-d10 | (4) | 27.174 | 188 | 459737 | 40.000 |
| 134) | Dinoseb | (4) | 27.056 | 211 | 143028 | 50.000 |
| 135) | Phenanthrene | (4) | 27.238 | 178 | 685560 | 50.000 |
| 136) | Anthracene | (4) | 27.377 | 178 | 712176 | 50.000 |
| 138) | Carbazole | (4) | 27.751 | 167 | 695654 | 50.000 |
| 139) | Methyl parathion | (4) | 28.050 | 109 | 233201 | 50.000 |
| 140) | Di-n-butylphthalate | (4) | 28.499 | 149 | 1034445 | 50.000 |
| 141) | Parathion | (4) | 28.959 | 109 | 141285 | 50.000 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.119 | 190 | 89100 | 50.000 |
| 143) | Methapyrilene | (4) | 29.226 | 97 | 214184 | 50.000 |
| 144) | Isodrin | (4) | 29.782 | 193 | 80012 | 50.000 |
| 145) | Fluoranthene | (4) | 30.113 | 202 | 693290 | 50.000 |
| 150) | Benzidine | (5) | 30.338 | 184 | 1115969 | 150.000 |
| 152) | Pyrene | (5) | 30.626 | 202 | 680425 | 50.000 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.171 | 225 | 142679 | 50.000 |
| 157) | Chlorobenzilate | (5) | 31.235 | 139 | 274318 | 50.000 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.973 | 212 | 334307 | 50.000 |
| 159) | Butylbenzylphthalate | (5) | 31.930 | 149 | 467165 | 50.000 |
| 160) | 2-Acetylaminofluorene | (5) | 32.678 | 181 | 332689 | 50.000 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.598 | 252 | 247845 | 50.000 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.587 | 231 | 117892 | 50.000 |
| 164) | Benzo(a)anthracene | (5) | 33.801 | 228 | 586748 | 50.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb33a.d
Injection date and time: 13-FEB-2004 06:59

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 08:32

Sublist used: all1

Date, time and analyst ID of latest file update: 13-Feb-2004 08:32 jmg00346

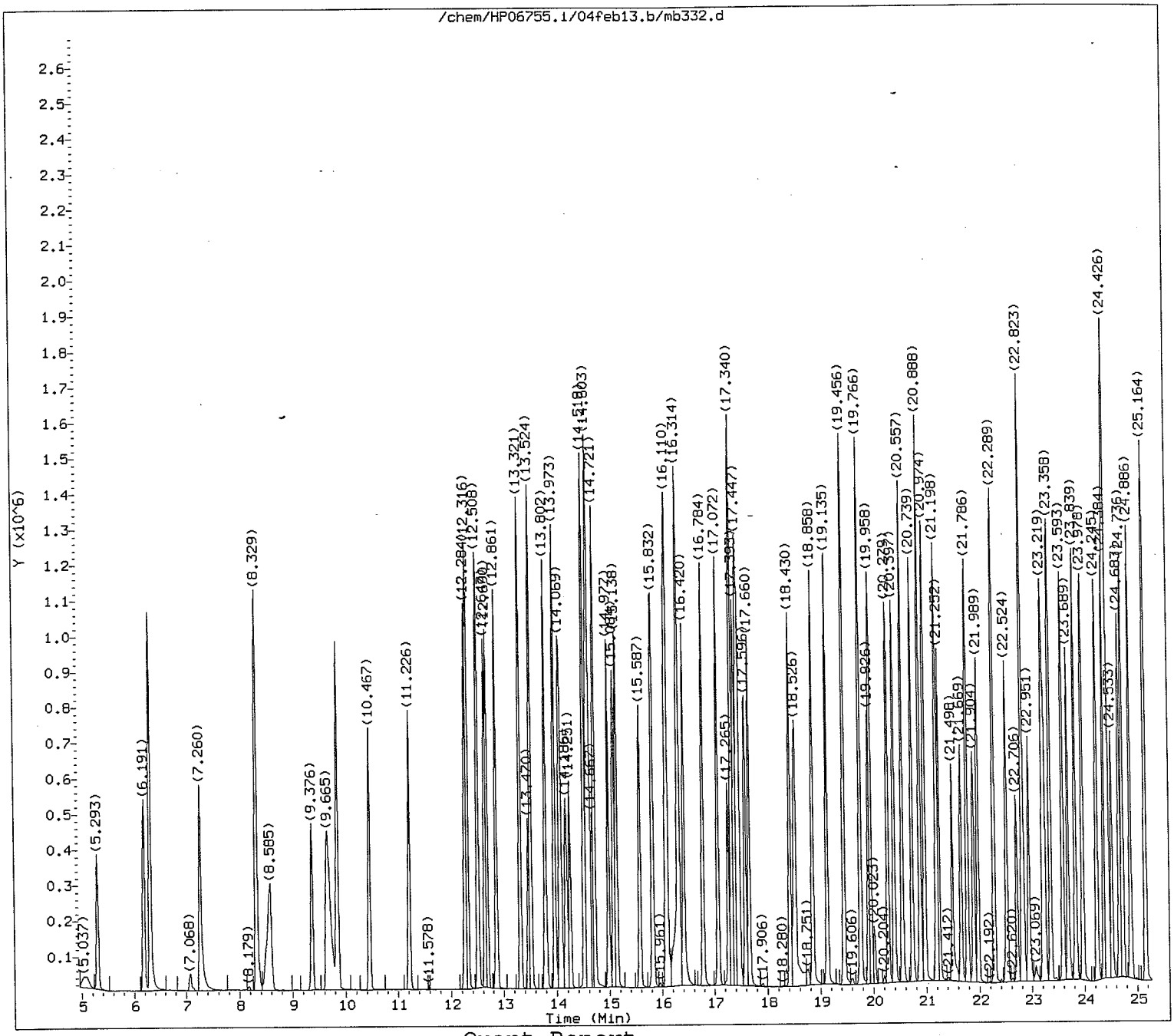
Sample Name: SSTD050

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.844 | 240 | 360948 | 40.000 |
| 166) | Chrysene | (5) | 33.929 | 228 | 539099 | 50.000 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.534 | 149 | 648729 | 50.000 |
| 168) | Di-n-octylphthalate | (6) | 36.131 | 149 | 1111107 | 50.000 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.483 | 256 | 275321 | 50.000 |
| 170) | Benzo(b)fluoranthene | (6) | 38.557 | 252 | 596407 | 50.000 |
| 171) | Benzo(k)fluoranthene | (6) | 38.718 | 252 | 552961 | 50.000 |
| 172) | Benzo(a)pyrene | (6) | 40.535 | 252 | 537088 | 50.000 |
| 173) | Perylene-d12 | (6) | 40.877 | 264 | 331311 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.919 | 268 | 292570 | 50.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.663 | 276 | 506012 | 50.000 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.888 | 278 | 463595 | 50.000 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.442 | 276 | 519825 | 50.000 |
| 9) | 2-Fluorophenol | (1) | 9.825 | 112 | 417431 | 50.000 |
| 14) | Phenol-d5 | (1) | 12.252 | 99 | 506530 | 50.000 |
| 15) | Phenol-d6 | (1) | 12.252 | 99 | 506530 | 50.000 |
| 38) | Nitrobenzene-d5 | (2) | 15.063 | 82 | 347137 | 50.000 |
| 77) | 2-Fluorobiphenyl | (3) | 20.546 | 172 | 527928 | 50.000 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.153 | 330 | 74417 | 50.000 |
| 154) | Terphenyl-d14 | (5) | 30.872 | 244 | 403745 | 50.000 |

M = Compound was manually integrated.

A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42

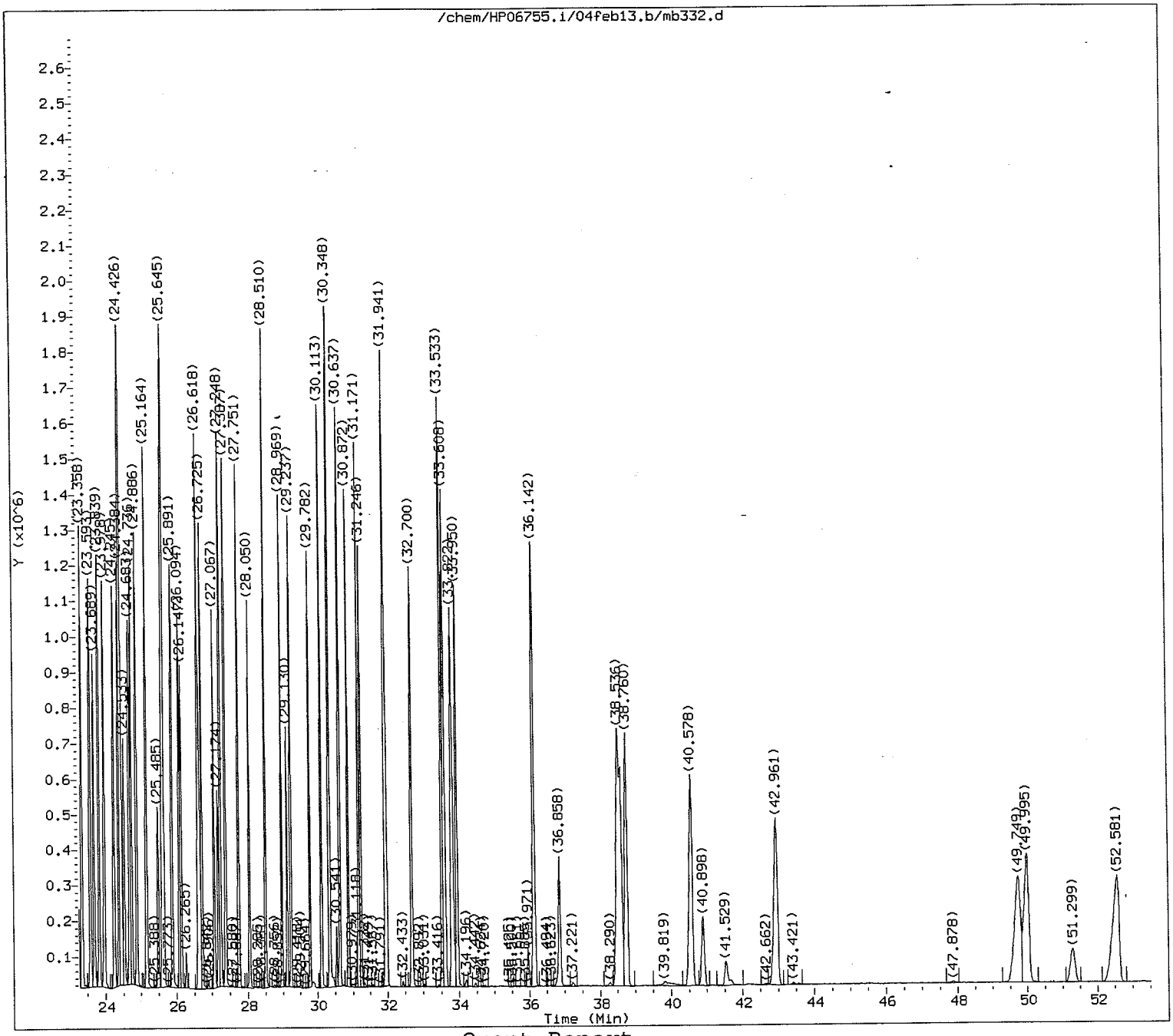
Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120

Lab Sample ID: STD0404

01/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120

Lab Sample ID: STD0404

0115/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 08:00  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:42
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.293 | 88 | 391457 | 118.158 |
| 2) | N-Nitrosodimethylamine | (1) | 6.191 | 74 | 623971 | 116.946 |
| 3) | Pyridine | (1) | 6.309 | 79 | 956716 | 115.096 |
| 4) | N,N-dimethyl formamide | (1) | 7.271 | 73 | 617043 | 119.168 |
| 5) | 2-Picoline | (1) | 8.329 | 93 | 935241 | 115.439 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.585 | 88 | 456275 | 116.928 |
| 7) | Methyl methanesulfonate | (1) | 9.376 | 80 | 402116 | 117.297 |
| 8) | N,N-dimethyl acetamide | (1) | 9.665 | 87 | 534659 | 118.433 |
| 10) | N-Nitrosodiethylamine | (1) | 10.467 | 102 | 431723 | 116.908 |
| 11) | Ethyl methanesulfonate | (1) | 11.226 | 109 | 475030 | 117.411 |
| 13) | Aniline | (1) | 12.508 | 93 | 1185804 | 113.245 |
| 16) | Phenol | (1) | 12.316 | 94 | 987277 | 112.491 |
| 17) | Pentachloroethane | (1) | 12.690 | 167 | 269532 | 117.583 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.647 | 93 | 805526 | 113.504 |
| 19) | 2-Chlorophenol | (1) | 12.861 | 128 | 802479 | 116.078 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.321 | 146 | 823171 | 115.959 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.470 | 152 | 177775 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.524 | 146 | 821476 | 115.570 |
| 24) | Benzyl alcohol | (1) | 13.802 | 108 | 539548 | 116.423 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.973 | 146 | 775946 | 115.635 |
| 26) | 2-Methylphenol | (1) | 14.069 | 108 | 732930 | 115.781 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.186 | 45 | 1134570 | 114.842 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.186 | 45 | 1134570 | 114.842 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.571 | 100 | 400475 | 113.107 |
| 30) | Acetophenone | (1) | 14.614 | 105 | 917334 | 111.167 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.593 | 70 | 415263 | 105.331 |
| 32) | N-Nitrosomorpholine | (1) | 14.667 | 56 | 387774 | 113.545 |
| 33) | 4-Methylphenol | (1) | 14.518 | 108 | 733917 | 114.179 |
| 34) | o-Toluidine | (1) | 14.721 | 106 | 1091225 | 112.575 |
| 37) | Hexachloroethane | (1) | 14.977 | 117 | 344508 | 116.237 |
| 39) | Nitrobenzene | (2) | 15.138 | 77 | 704226 | 113.549 |
| 40) | N-Nitrosopiperidine | (2) | 15.587 | 114 | 395106 | 115.873 |
| 41) | Isophorone | (2) | 15.832 | 82 | 1373376 | 113.119 |
| 42) | 2-Nitrophenol | (2) | 16.078 | 139 | 408750 | 116.464 |
| 44) | 2,4-Dimethylphenol | (2) | 16.110 | 107 | 695097 | 113.010 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.324 | 198 | 266177 | 117.414 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.420 | 93 | 836493 | 112.162 |
| 47) | Benzoic acid | (2) | 16.346 | 105 | 612781 | 119.767 |
| 49) | 2,4-Dichlorophenol | (2) | 16.784 | 162 | 575473 | 117.110 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.072 | 180 | 567891 | 115.062 |
| 52) | Naphthalene-d8 | (2) | 17.265 | 136 | 650051 | 40.000 |
| 53) | Naphthalene | (2) | 17.340 | 128 | 1908996 | 114.258 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.393 | 184 | 115022 | 117.145 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d
Injection date and time: 13-FEB-2004 08:00
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:42
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.447 | 127 | 872194 | 114.738 |
| 56) | 2,6-Dichlorophenol | (2) | 17.479 | 162 | 520459 | 116.043 |
| 57) | Hexachloropropene | (2) | 17.596 | 213 | 303425 | 119.315 |
| 59) | Hexachlorobutadiene | (2) | 17.671 | 225 | 266825 | 117.335 |
| 62) | Caprolactam | (2) | 18.526 | 113 | 254578 | 116.121 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.430 | 84 | 437772 | 98.434 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.858 | 107 | 597170 | 113.359 |
| 68) | Safrole | (2) | 19.135 | 162 | 464914 | 114.745 |
| 69) | 2-Methylnaphthalene | (2) | 19.456 | 142 | 1170084 | 113.154 |
| 70) | 1-Methylnaphthalene | (2) | 19.766 | 142 | 1095808 | 114.055 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.916 | 237 | 263669 | 119.736 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.958 | 216 | 471891 | 115.780 |
| 73) | cis-Isosafrole | (3) | 20.023 | 162 | 50822 | 13.447 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.279 | 196 | 359789 | 118.133 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.397 | 196 | 396235 | 118.637 |
| 78) | trans-Isosafrole | (3) | 20.739 | 162 | 495613 | 104.219 |
| 79) | Isosafrole | (3) | 20.739 | 162 | 495613 | 117.100 |
| 80) | Biphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 81) | Diphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 82) | 1,1'-Biphenyl | (3) | 20.888 | 154 | 1268447 | 112.906 |
| 83) | 2-Chloronaphthalene | (3) | 20.985 | 162 | 1034243 | 114.920 |
| 86) | Diphenyl ether | (3) | 21.198 | 170 | 680748 | 116.258 |
| 87) | 2-Nitroaniline | (3) | 21.252 | 138 | 472091 | 116.142 |
| 88) | 1,4-Naphthoquinone | (3) | 21.498 | 158 | 308741 | 110.290 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.669 | 168 | 243372 | 119.720 |
| 90) | Dimethylphthalate | (3) | 21.786 | 163 | 1239731 | 115.919 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.904 | 168 | 264526 | 119.554 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.989 | 165 | 331404 | 116.473 |
| 93) | Acenaphthylene | (3) | 22.289 | 152 | 1618506 | 115.559 |
| 95) | 3-Nitroaniline | (3) | 22.524 | 138 | 418623 | 117.669 |
| 96) | Acenaphthene-d10 | (3) | 22.706 | 164 | 290622 | 40.000 |
| 97) | Acenaphthene | (3) | 22.823 | 153 | 939598 | 113.338 |
| 98) | 2,4-Dinitrophenol | (3) | 22.844 | 184 | 204767 | 121.856 |
| 99) | Pentachlorobenzene | (3) | 23.219 | 250 | 387559 | 117.186 |
| 101) | 4-Nitrophenol | (3) | 22.951 | 109 | 185769 | 119.491 |
| 102) | Dibenzofuran | (3) | 23.358 | 168 | 1392748 | 114.790 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.251 | 165 | 414356 | 117.771 |
| 104) | 1-Naphthylamine | (3) | 23.593 | 143 | 1019768 | 115.223 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.689 | 232 | 269712 | 118.037 |
| 106) | 2-Naphthylamine | (3) | 23.839 | 143 | 1124175 | 117.540 |
| 107) | Diethylphthalate | (3) | 23.978 | 149 | 1244980 | 114.642 |
| 108) | Thionazin | (3) | 24.245 | 107 | 233204 | 115.394 |
| 109) | Fluorene | (3) | 24.426 | 166 | 951655 | 108.382 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb332.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 08:00  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:42
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 110) 4-Chlorophenyl-phenylether | (3) | 24.384 | 204 | 486167 | 116.600 |
| 111) 5-Nitro-o-toluidine | (3) | 24.426 | 152 | 354050 | 107.821 |
| 112) 4-Nitroaniline | (3) | 24.459 | 138 | 376522 | 113.834 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 24.533 | 198 | 241571 | 124.389 |
| 114) 1-Nitronaphthalene | (4) | 24.683 | 173 | 244027 | 119.863 |
| 115) N-Nitrosodiphenylamine | (4) | 24.747 | 169 | 766160 | 115.286 |
| 116) 1,2-Diphenylhydrazine | (4) | 24.886 | 77 | 1244788 | 113.562 |
| 118) Tetraethyldithiopyrophosphate | (4) | 25.164 | 97 | 209993 | 107.545 |
| 119) 1,3,5-Trinitrobenzene | (4) | 25.495 | 213 | 163021 | 123.836 |
| 120) Diallate (peak 1) | (4) | 25.602 | 86 | 436176 | 85.135 |
| 121) Phorate | (4) | 25.645 | 75 | 560021 | 103.018 |
| 122) Phenacetin | (4) | 25.656 | 108 | 617899 | 110.083 |
| 123) 4-Bromophenyl-phenylether | (4) | 25.891 | 248 | 270064 | 116.963 |
| 124) Diallate (peak 2) | (4) | 25.869 | 86 | 140283 | 28.812 |
| 125) Hexachlorobenzene | (4) | 26.094 | 284 | 301209 | 118.882 |
| 126) Dimethoate | (4) | 26.147 | 87 | 420783 | 113.876 |
| 127) Diallate TRANS/CIS | (4) | 21.799 | 86 | 576459 | 113.948 |
| 129) Pentachlorophenol | (4) | 26.618 | 266 | 222614 | 119.041 |
| 130) Pentachloronitrobenzene | (4) | 26.660 | 237 | 113910 | 120.782 |
| 131) 4-Aminobiphenyl | (4) | 26.618 | 169 | 652143 | 102.944 |
| 132) Pronamide | (4) | 26.725 | 173 | 483728 | 115.865 |
| 133) Phenanthrene-d10 | (4) | 27.174 | 188 | 423168 | 40.000 |
| 134) Dinoseb | (4) | 27.067 | 211 | 334318 | 123.387 |
| 135) Phenanthrene | (4) | 27.248 | 178 | 1354485 | 113.308 |
| 136) Anthracene | (4) | 27.387 | 178 | 1378889 | 112.099 |
| 138) Carbazole | (4) | 27.761 | 167 | 1409414 | 114.813 |
| 139) Methyl parathion | (4) | 28.050 | 109 | 462337 | 113.515 |
| 140) Di-n-butylphthalate | (4) | 28.510 | 149 | 2053218 | 113.584 |
| 141) Parathion | (4) | 28.969 | 109 | 292023 | 116.010 |
| 142) 4-Nitroquinoline-1-oxide | (4) | 29.130 | 190 | 193729 | 119.047 |
| 143) Methapyrilene | (4) | 29.237 | 97 | 560231 | 130.112 |
| 144) Isodrin | (4) | 29.782 | 193 | 172331 | 118.480 |
| 145) Fluoranthene | (4) | 30.113 | 202 | 1374001 | 113.493 |
| 150) Benzidine | (5) | 30.359 | 184 | 1942208 | 318.927 |
| 152) Pyrene | (5) | 30.637 | 202 | 1355233 | 114.348 |
| 156) p-Dimethylaminoazobenzene | (5) | 31.171 | 225 | 301137 | 117.821 |
| 157) Chlorobenzilate | (5) | 31.235 | 139 | 558359 | 115.648 |
| 158) 3,3'-Dimethylbenzidine | (5) | 31.984 | 212 | 726426 | 119.568 |
| 159) Butylbenzylphthalate | (5) | 31.941 | 149 | 955946 | 115.966 |
| 160) 2-Acetylaminofluorene | (5) | 32.700 | 181 | 724552 | 119.704 |
| 162) 3,3'-Dichlorobenzidine | (5) | 33.619 | 252 | 496925 | 114.745 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 33.598 | 231 | 240715 | 115.835 |
| 164) Benzo(a)anthracene | (5) | 33.811 | 228 | 1228885 | 117.360 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

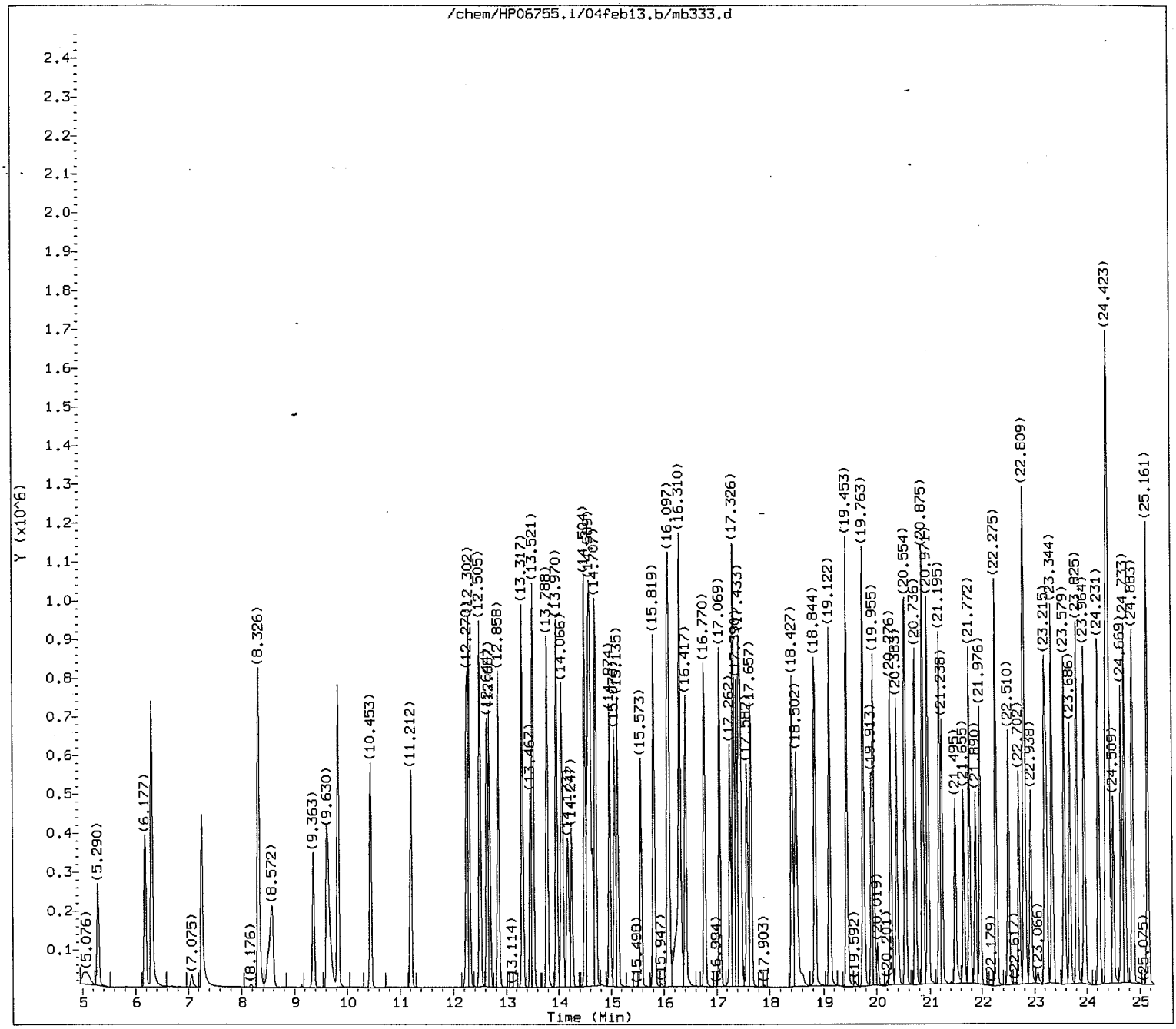
Data File: /chem/HP06755.i/04feb13.b/mb332.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 08:00  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:42
Date, time and analyst ID of latest file update: 15-Feb-2004 16:42 ids01472

Sample Name: SSTD120  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.854 | 240 | 329161 | 40.000 |
| 166) | Chrysene | (5) | 33.950 | 228 | 1119807 | 116.865 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.533 | 149 | 1365395 | 117.654 |
| 168) | Di-n-octylphthalate | (6) | 36.142 | 149 | 2406318 | 117.146 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.515 | 256 | 610681 | 118.579 |
| 170) | Benzo(b)fluoranthene | (6) | 38.611 | 252 | 1307045 | 117.857 |
| 171) | Benzo(k)fluoranthene | (6) | 38.760 | 252 | 1195480 | 117.042 |
| 172) | Benzo(a)pyrene | (6) | 40.578 | 252 | 1206145 | 119.322 |
| 173) | Perylene-d12 | (6) | 40.898 | 264 | 313534 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.972 | 268 | 678897 | 121.287 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.749 | 276 | 1184938 | 121.834 |
| 176) | Dibenz(a,h)anthracene | (6) | 50.005 | 278 | 1057942 | 120.285 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.581 | 276 | 1183695 | 120.155 |
| 9) | 2-Fluorophenol | (1) | 9.857 | 112 | 873998 | 115.814 |
| 14) | Phenol-d5 | (1) | 12.273 | 99 | 1056661 | 115.594 |
| 15) | Phenol-d6 | (1) | 12.273 | 99 | 1056661 | 115.594 |
| 38) | Nitrobenzene-d5 | (2) | 15.084 | 82 | 727117 | 115.184 |
| 77) | 2-Fluorobiphenyl | (3) | 20.557 | 172 | 1096264 | 115.325 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.164 | 330 | 154380 | 115.267 |
| 154) | Terphenyl-d14 | (5) | 30.872 | 244 | 778096 | 112.377 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

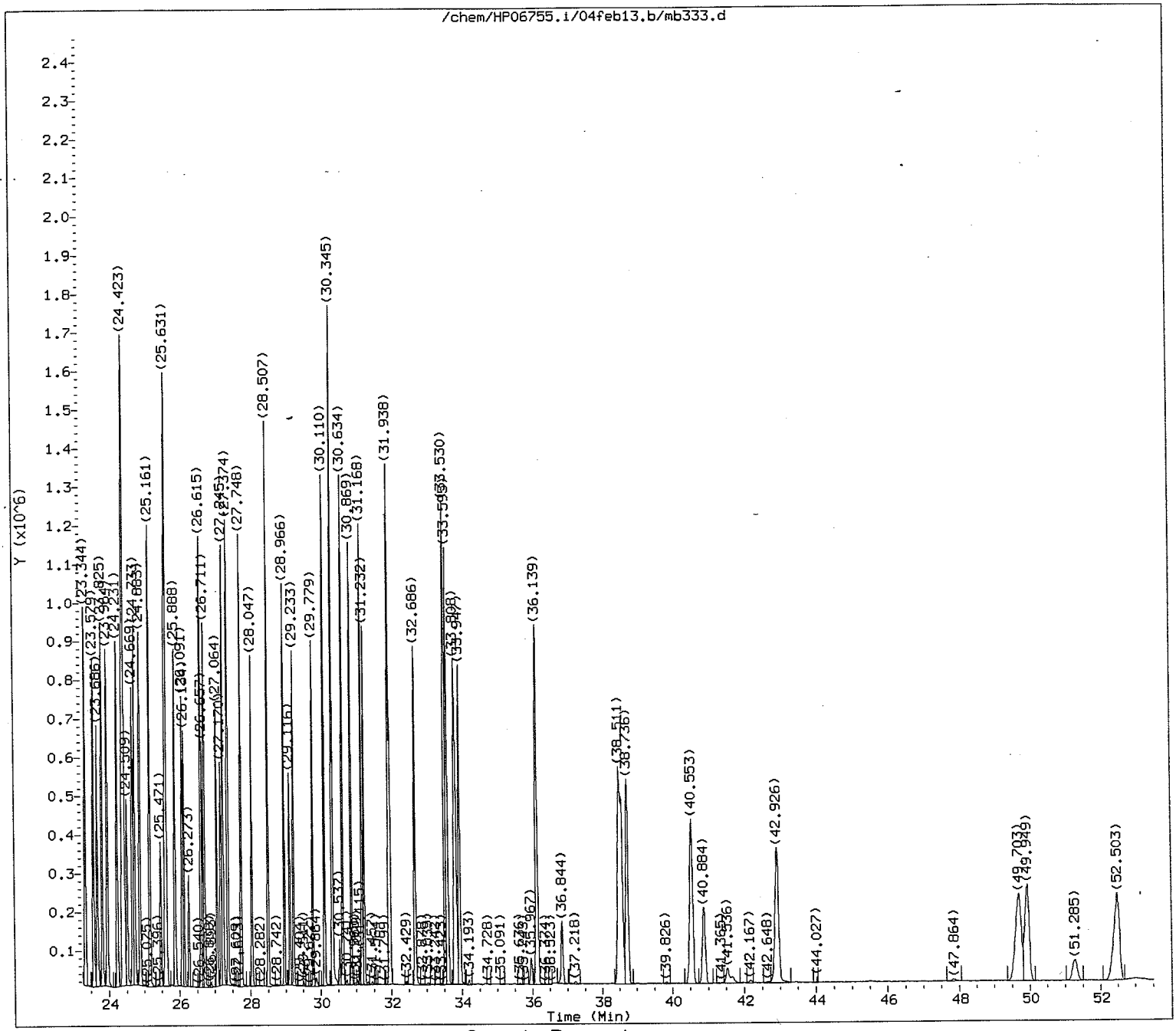
Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080 Lab Sample ID: STD0404

9/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d
Injection date and time: 13-FEB-2004 09:01

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080

Lab Sample ID: STD0404

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 5.290 | 88 | 265146 | 77.579 |
| 2) N-Nitrosodimethylamine | (1) | 6.177 | 74 | 424187 | 77.231 |
| 3) Pyridine | (1) | 6.306 | 79 | 672117 | 78.119 |
| 4) N,N-dimethyl formamide | (1) | 7.257 | 73 | 417239 | 77.938 |
| 5) 2-Picoline | (1) | 8.326 | 93 | 655184 | 78.128 |
| 6) N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 316181 | 78.229 |
| 7) Methyl methanesulfonate | (1) | 9.363 | 80 | 277228 | 78.125 |
| 8) N,N-dimethyl acetamide | (1) | 9.619 | 87 | 362512 | 77.755 |
| 10) N-Nitrosodiethylamine | (1) | 10.453 | 102 | 300329 | 78.424 |
| 11) Ethyl methanesulfonate | (1) | 11.212 | 109 | 331690 | 78.849 |
| 13) Aniline | (1) | 12.505 | 93 | 845968 | 78.075 |
| 16) Phenol | (1) | 12.302 | 94 | 718003 | 78.737 |
| 17) Pentachloroethane | (1) | 12.687 | 167 | 183900 | 77.706 |
| 18) bis(2-Chloroethyl)ether | (1) | 12.644 | 93 | 577382 | 78.444 |
| 19) 2-Chlorophenol | (1) | 12.858 | 128 | 560495 | 78.261 |
| 20) 1,3-Dichlorobenzene | (1) | 13.317 | 146 | 573745 | 78.096 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 186171 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 581984 | 78.780 |
| 24) Benzyl alcohol | (1) | 13.788 | 108 | 390694 | 80.334 |
| 25) 1,2-Dichlorobenzene | (1) | 13.970 | 146 | 551677 | 78.997 |
| 26) 2-Methylphenol | (1) | 14.066 | 108 | 516467 | 78.592 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 790937 | 77.597 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 790937 | 77.597 |
| 29) N-Nitrosopyrrolidine | (1) | 14.547 | 100 | 290634 | 78.914 |
| 30) Acetophenone | (1) | 14.611 | 105 | 682898 | 79.347 |
| 31) N-Nitroso-di-n-propylamine | (1) | 14.579 | 70 | 319338 | 78.212 |
| 32) N-Nitrosomorpholine | (1) | 14.654 | 56 | 278929 | 78.649 |
| 33) 4-Methylphenol | (1) | 14.504 | 108 | 526740 | 78.826 |
| 34) o-Toluidine | (1) | 14.707 | 106 | 781120 | 77.940 |
| 37) Hexachloroethane | (1) | 14.974 | 117 | 244596 | 79.199 |
| 39) Nitrobenzene | (2) | 15.135 | 77 | 495735 | 77.519 |
| 40) N-Nitrosopiperidine | (2) | 15.573 | 114 | 277013 | 78.373 |
| 41) Isophorone | (2) | 15.819 | 82 | 986970 | 78.407 |
| 42) 2-Nitrophenol | (2) | 16.075 | 139 | 284609 | 78.277 |
| 44) 2,4-Dimethylphenol | (2) | 16.097 | 107 | 501833 | 78.599 |
| 45) O,O,O-triethylphosphorothioate | (2) | 16.310 | 198 | 188142 | 79.503 |
| 46) bis(2-Chloroethoxy)methane | (2) | 16.417 | 93 | 591712 | 77.129 |
| 47) Benzoic acid | (2) | 16.289 | 105 | 439695 | 81.368 |
| 49) 2,4-Dichlorophenol | (2) | 16.770 | 162 | 398957 | 78.339 |
| 50) 1,2,4-Trichlorobenzene | (2) | 17.069 | 180 | 403294 | 78.680 |
| 52) Naphthalene-d8 | (2) | 17.262 | 136 | 680684 | 40.000 |
| 53) Naphthalene | (2) | 17.337 | 128 | 1360047 | 78.478 |
| 54) (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 80459 | 78.829 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 55) 4-Chloroaniline | (2) | 17.433 | 127 | 623445 | 78.875 |
| 56) 2,6-Dichlorophenol | (2) | 17.465 | 162 | 361168 | 77.908 |
| 57) Hexachloropropene | (2) | 17.593 | 213 | 211752 | 79.679 |
| 59) Hexachlorobutadiene | (2) | 17.657 | 225 | 186635 | 78.911 |
| 62) Caprolactam | (2) | 18.502 | 113 | 178778 | 78.571 |
| 63) N-Nitrosodi-n-butylamine | (2) | 18.427 | 84 | 320302 | 72.153 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.844 | 107 | 429645 | 78.579 |
| 68) Safrole | (2) | 19.122 | 162 | 330997 | 78.667 |
| 69) 2-Methylnaphthalene | (2) | 19.453 | 142 | 842162 | 78.504 |
| 70) 1-Methylnaphthalene | (2) | 19.763 | 142 | 790368 | 79.035 |
| 71) Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 179313 | 78.553 |
| 72) 1,2,4,5-Tetrachlorobenzene | (3) | 19.955 | 216 | 333920 | 78.877 |
| 73) cis-Isosafrole | (3) | 20.019 | 162 | 33612 | 8.599 |
| 74) 2,4,6-Trichlorophenol | (3) | 20.276 | 196 | 250803 | 79.148 |
| 76) 2,4,5-Trichlorophenol | (3) | 20.394 | 196 | 277727 | 79.665 |
| 78) trans-Isosafrole | (3) | 20.736 | 162 | 349473 | 70.569 |
| 79) Isosafrole | (3) | 20.736 | 162 | 349473 | 79.291 |
| 80) Biphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 81) Diphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 82) 1,1'-Biphenyl | (3) | 20.885 | 154 | 922248 | 78.981 |
| 83) 2-Chloronaphthalene | (3) | 20.971 | 162 | 736289 | 78.802 |
| 86) Diphenyl ether | (3) | 21.195 | 170 | 478597 | 78.751 |
| 87) 2-Nitroaniline | (3) | 21.238 | 138 | 333193 | 78.904 |
| 88) 1,4-Naphthoquinone | (3) | 21.495 | 158 | 226078 | 78.118 |
| 89) 1,4-Dinitrobenzene | (3) | 21.655 | 168 | 163866 | 78.019 |
| 90) Dimethylphthalate | (3) | 21.772 | 163 | 872344 | 78.643 |
| 91) 1,3-Dinitrobenzene | (3) | 21.890 | 168 | 181342 | 78.896 |
| 92) 2,6-Dinitrotoluene | (3) | 21.976 | 165 | 233617 | 78.991 |
| 93) Acenaphthylene | (3) | 22.275 | 152 | 1160407 | 79.471 |
| 95) 3-Nitroaniline | (3) | 22.510 | 138 | 290881 | 78.769 |
| 96) Acenaphthene-d10 | (3) | 22.702 | 164 | 303985 | 40.000 |
| 97) Acenaphthene | (3) | 22.809 | 153 | 685198 | 79.343 |
| 98) 2,4-Dinitrophenol | (3) | 22.831 | 184 | 141090 | 80.181 |
| 99) Pentachlorobenzene | (3) | 23.205 | 250 | 274878 | 79.640 |
| 101) 4-Nitrophenol | (3) | 22.938 | 109 | 128163 | 79.205 |
| 102) Dibenzofuran | (3) | 23.344 | 168 | 989932 | 78.657 |
| 103) 2,4-Dinitrotoluene | (3) | 23.237 | 165 | 290604 | 79.308 |
| 104) 1-Naphthylamine | (3) | 23.579 | 143 | 723746 | 78.778 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 23.686 | 232 | 183840 | 77.919 |
| 106) 2-Naphthylamine | (3) | 23.825 | 143 | 782928 | 78.833 |
| 107) Diethylphthalate | (3) | 23.964 | 149 | 887723 | 78.758 |
| 108) Thionazin | (3) | 24.231 | 107 | 165877 | 78.974 |
| 109) Fluorene | (3) | 24.423 | 166 | 729286 | 79.603 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 110) 4-Chlorophenyl-phenylether | (3) | 24.381 | 204 | 345426 | 79.467 |
| 111) 5-Nitro-o-toluidine | (3) | 24.423 | 152 | 272750 | 79.606 |
| 112) 4-Nitroaniline | (3) | 24.445 | 138 | 268486 | 78.386 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 24.520 | 198 | 163132 | 79.756 |
| 114) 1-Nitronaphthalene | (4) | 24.669 | 173 | 170334 | 79.544 |
| 115) N-Nitrosodiphenylamine | (4) | 24.733 | 169 | 557383 | 79.674 |
| 116) 1,2-Diphenylhydrazine | (4) | 24.883 | 77 | 908765 | 79.060 |
| 118) Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 162410 | 79.232 |
| 119) 1,3,5-Trinitrobenzene | (4) | 25.471 | 213 | 109263 | 79.119 |
| 120) Diallate (peak 1) | (4) | 25.599 | 86 | 317792 | 59.198 |
| 121) Phorate | (4) | 25.631 | 75 | 442265 | 78.062 |
| 122) Phenacetin | (4) | 25.631 | 108 | 463509 | 78.849 |
| 123) 4-Bromophenyl-phenylether | (4) | 25.888 | 248 | 190349 | 78.760 |
| 124) Diallate (peak 2) | (4) | 25.866 | 86 | 100700 | 19.737 |
| 125) Hexachlorobenzene | (4) | 26.091 | 284 | 211499 | 79.423 |
| 126) Dimethoate | (4) | 26.134 | 87 | 293800 | 76.859 |
| 127) Diallate TRANS/CIS | (4) | 21.799 | 86 | 418492 | 78.935 |
| 129) Pentachlorophenol | (4) | 26.615 | 266 | 157936 | 80.044 |
| 130) Pentachloronitrobenzene | (4) | 26.657 | 237 | 77375 | 78.506 |
| 131) 4-Aminobiphenyl | (4) | 26.615 | 169 | 498819 | 76.351 |
| 132) Pronamide | (4) | 26.711 | 173 | 355448 | 80.475 |
| 133) Phenanthrene-d10 | (4) | 27.170 | 188 | 446364 | 40.000 |
| 134) Dinoseb | (4) | 27.064 | 211 | 228644 | 80.000 |
| 135) Phenanthrene | (4) | 27.245 | 178 | 996068 | 79.327 |
| 136) Anthracene | (4) | 27.374 | 178 | 1038830 | 80.043 |
| 138) Carbazole | (4) | 27.748 | 167 | 1017266 | 79.035 |
| 139) Methyl parathion | (4) | 28.047 | 109 | 336216 | 78.831 |
| 140) Di-n-butylphthalate | (4) | 28.507 | 149 | 1533790 | 80.293 |
| 141) Parathion | (4) | 28.966 | 109 | 210274 | 79.460 |
| 142) 4-Nitroquinoline-1-oxide | (4) | 29.127 | 190 | 133929 | 78.671 |
| 143) Methapyrilene | (4) | 29.233 | 97 | 338415 | 76.255 |
| 144) Isodrin | (4) | 29.779 | 193 | 122326 | 79.820 |
| 145) Fluoranthene | (4) | 30.110 | 202 | 1017078 | 79.763 |
| 150) Benzidine | (5) | 30.345 | 184 | 1493504 | 232.857 |
| 152) Pyrene | (5) | 30.634 | 202 | 1002505 | 79.422 |
| 156) p-Dimethylaminoazobenzene | (5) | 31.168 | 225 | 215124 | 79.159 |
| 157) Chlorobenzilate | (5) | 31.232 | 139 | 402284 | 78.623 |
| 158) 3,3'-Dimethylbenzidine | (5) | 31.970 | 212 | 498507 | 77.814 |
| 159) Butylbenzylphthalate | (5) | 31.938 | 149 | 689569 | 78.832 |
| 160) 2-Acetylaminofluorene | (5) | 32.686 | 181 | 505543 | 78.750 |
| 162) 3,3'-Dichlorobenzidine | (5) | 33.605 | 252 | 364387 | 79.141 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 33.595 | 231 | 177611 | 79.974 |
| 164) Benzo(a)anthracene | (5) | 33.808 | 228 | 880692 | 79.120 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

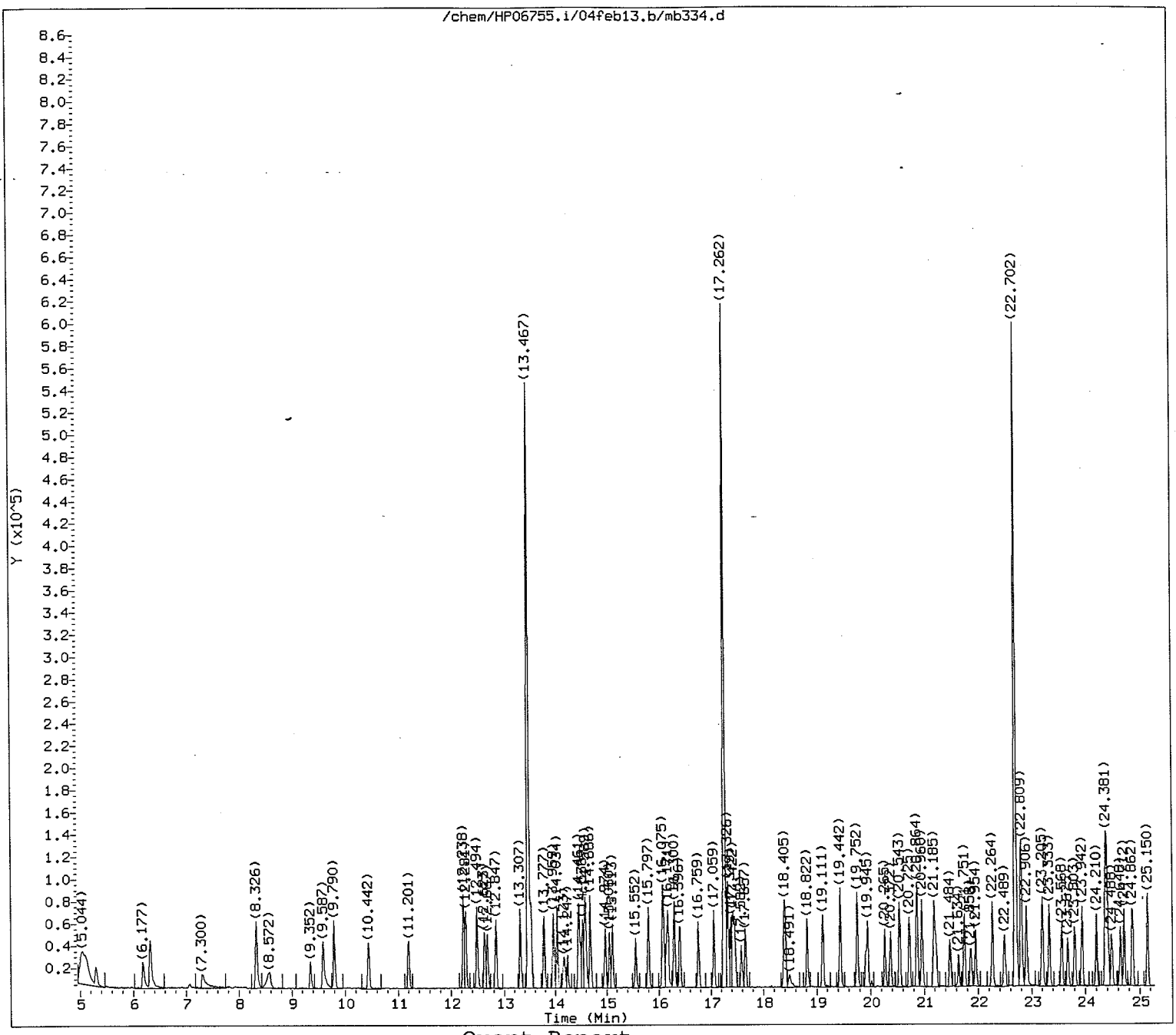
Data File: /chem/HP06755.i/04feb13.b/mb333.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 09:01  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD080  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 165) Chrysene-d12 | (5) | 33.851 | 240 | 351832 | 40.000 |
| 166) Chrysene | (5) | 33.947 | 228 | 801826 | 78.850 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 33.530 | 149 | 985067 | 79.607 |
| 168) Di-n-octylphthalate | (6) | 36.139 | 149 | 1694436 | 79.539 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 38.511 | 256 | 428129 | 79.953 |
| 170) Benzo(b)fluoranthene | (6) | 38.586 | 252 | 912303 | 79.393 |
| 171) Benzo(k)fluoranthene | (6) | 38.736 | 252 | 851101 | 80.077 |
| 172) Benzo(a)pyrene | (6) | 40.553 | 252 | 826892 | 79.096 |
| 173) Perylene-d12 | (6) | 40.884 | 264 | 326099 | 40.000 |
| 174) 3-Methylcholanthrene | (6) | 42.937 | 268 | 461167 | 79.474 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 49.703 | 276 | 805130 | 79.728 |
| 176) Dibenz(a,h)anthracene | (6) | 49.949 | 278 | 720751 | 79.189 |
| 177) Benzo(g,h,i)perylene | (6) | 52.514 | 276 | 819488 | 79.987 |
| 9) 2-Fluorophenol | (1) | 9.833 | 112 | 601878 | 77.397 |
| 14) Phenol-d5 | (1) | 12.270 | 99 | 740240 | 78.198 |
| 15) Phenol-d6 | (1) | 12.270 | 99 | 740240 | 78.198 |
| 38) Nitrobenzene-d5 | (2) | 15.070 | 82 | 511621 | 78.247 |
| 77) 2-Fluorobiphenyl | (3) | 20.554 | 172 | 786476 | 79.397 |
| 117) 2,4,6-Tribromophenol | (3) | 25.161 | 330 | 112711 | 80.303 |
| 154) Terphenyl-d14 | (5) | 30.869 | 244 | 594631 | 80.231 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

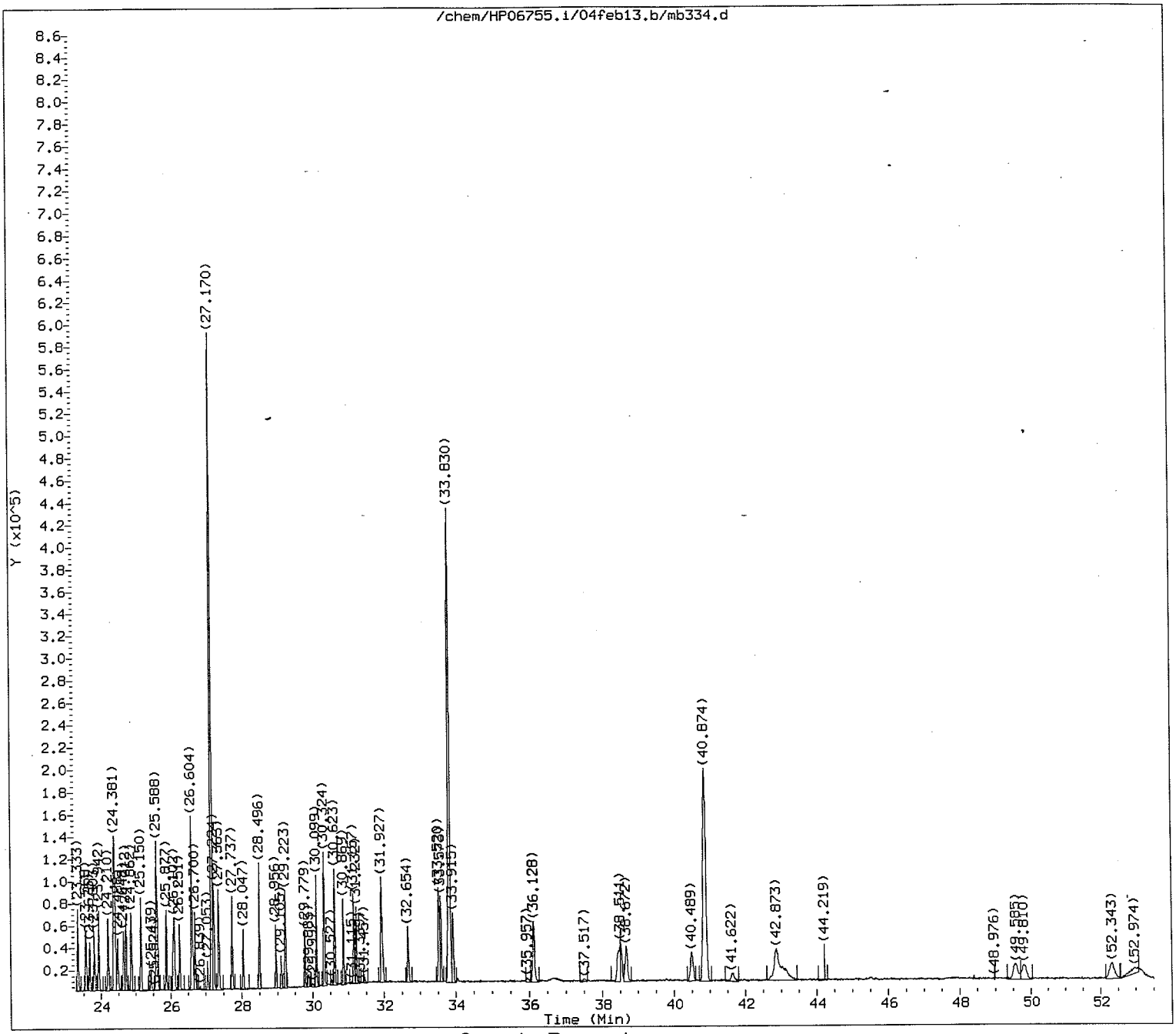
Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005 Lab Sample ID: STD0404

5415

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005

Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 5.301 | 88 | 16578M | 4.782 |
| 2) N-Nitrosodimethylamine | (1) | 6.177 | 74 | 25737 | 4.658 |
| 3) Pyridine | (1) | 6.316 | 79 | 45113 | 5.071 |
| 4) N,N-dimethyl formamide | (1) | 7.310 | 73 | 25398M | 4.702 |
| 5) 2-Picoline | (1) | 8.326 | 93 | 44578 | 5.123 |
| 6) N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 19018 | 4.673 |
| 7) Methyl methanesulfonate | (1) | 9.352 | 80 | 17702 | 4.885 |
| 8) N,N-dimethyl acetamide | (1) | 9.587 | 87 | 22983M | 4.841 |
| 10) N-Nitrosodiethylamine | (1) | 10.442 | 102 | 20425 | 5.136 |
| 11) Ethyl methanesulfonate | (1) | 11.201 | 109 | 22663 | 5.175 |
| 13) Aniline | (1) | 12.494 | 93 | 59855 | 5.271 |
| 16) Phenol | (1) | 12.281 | 94 | 50930 | 5.314 |
| 17) Pentachloroethane | (1) | 12.687 | 167 | 12611 | 5.133 |
| 18) bis(2-Chloroethyl)ether | (1) | 12.623 | 93 | 41750 | 5.375 |
| 19) 2-Chlorophenol | (1) | 12.847 | 128 | 38897 | 5.206 |
| 20) 1,3-Dichlorobenzene | (1) | 13.307 | 146 | 40431 | 5.257 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 191572 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 40237 | 5.217 |
| 24) Benzyl alcohol | (1) | 13.777 | 108 | 24426 | 4.910 |
| 25) 1,2-Dichlorobenzene | (1) | 13.959 | 146 | 37848 | 5.198 |
| 26) 2-Methylphenol | (1) | 14.034 | 108 | 36074 | 5.247 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 58273 | 5.406 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 58273 | 5.406 |
| 29) N-Nitrosopyrrolidine | (1) | 14.493 | 100 | 20282 | 5.259 |
| 30) Acetophenone | (1) | 14.589 | 105 | 51671 | 5.601 |
| 31) N-Nitroso-di-n-propylamine | (1) | 14.536 | 70 | 25807 | 5.810 |
| 32) N-Nitrosomorpholine | (1) | 14.611 | 56 | 21392 | 5.620 |
| 33) 4-Methylphenol | (1) | 14.461 | 108 | 37313 | 5.313 |
| 34) o-Toluidine | (1) | 14.686 | 106 | 59047 | 5.525 |
| 37) Hexachloroethane | (1) | 14.974 | 117 | 16843 | 5.222 |
| 39) Nitrobenzene | (2) | 15.113 | 77 | 36567 | 5.390 |
| 40) N-Nitrosopiperidine | (2) | 15.552 | 114 | 19417 | 5.233 |
| 41) Isophorone | (2) | 15.797 | 82 | 70093 | 5.286 |
| 42) 2-Nitrophenol | (2) | 16.065 | 139 | 17489 | 4.736 |
| 44) 2,4-Dimethylphenol | (2) | 16.086 | 107 | 36898 | 5.432 |
| 45) O,O,O-triethylphosphorothioate | (2) | 16.300 | 198 | 12479 | 5.077 |
| 46) bis(2-Chloroethoxy)methane | (2) | 16.407 | 93 | 44062 | 5.407 |
| 47) Benzoic acid | (2) | 16.171 | 105 | 65410 | 12.392 |
| 49) 2,4-Dichlorophenol | (2) | 16.759 | 162 | 26252 | 4.991 |
| 50) 1,2,4-Trichlorobenzene | (2) | 17.059 | 180 | 28237 | 5.244 |
| 52) Naphthalene-d8 | (2) | 17.262 | 136 | 703403 | 40.000 |
| 53) Naphthalene | (2) | 17.326 | 128 | 99217 | 5.394 |
| 54) (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 5366 | 5.065 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.422 | 127 | 44580 | 5.336 |
| 56) | 2,6-Dichlorophenol | (2) | 17.454 | 162 | 25560 | 5.247 |
| 57) | Hexachloropropene | (2) | 17.582 | 213 | 12615 | 4.689 |
| 59) | Hexachlorobutadiene | (2) | 17.657 | 225 | 12611 | 5.119 |
| 62) | Caprolactam | (2) | 18.384 | 113 | 11876 | 5.038 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.405 | 84 | 28625 | 5.876 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.822 | 107 | 28613 | 5.048 |
| 68) | Safrole | (2) | 19.122 | 162 | 21765 | 5.004 |
| 69) | 2-Methylnaphthalene | (2) | 19.442 | 142 | 59158 | 5.248 |
| 70) | 1-Methylnaphthalene | (2) | 19.752 | 142 | 55611 | 5.281 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 8372 | 3.838 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.945 | 216 | 23410 | 5.272 |
| 73) | cis-Isosafrole | (3) | 20.020 | 162 | 2211 | 0.549 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.265 | 196 | 15181 | 4.735 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.372 | 196 | 16569 | 4.706 |
| 78) | trans-Isosafrole | (3) | 20.725 | 162 | 23265 | 4.534 |
| 79) | Isosafrole | (3) | 20.725 | 162 | 23265 | 5.094 |
| 80) | Biphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 81) | Diphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 82) | 1,1'-Biphenyl | (3) | 20.864 | 154 | 68846 | 5.525 |
| 83) | 2-Chloronaphthalene | (3) | 20.960 | 162 | 52093 | 5.304 |
| 86) | Diphenyl ether | (3) | 21.185 | 170 | 33855 | 5.301 |
| 87) | 2-Nitroaniline | (3) | 21.217 | 138 | 20807 | 4.837 |
| 88) | 1,4-Naphthoquinone | (3) | 21.484 | 158 | 16966 | 5.502 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.644 | 168 | 8408 | 4.116 |
| 90) | Dimethylphthalate | (3) | 21.751 | 163 | 60307 | 5.207 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.869 | 168 | 10513 | 4.569 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.954 | 165 | 14960 | 4.934 |
| 93) | Acenaphthylene | (3) | 22.264 | 152 | 80230 | 5.248 |
| 95) | 3-Nitroaniline | (3) | 22.489 | 138 | 17881 | 4.773 |
| 96) | Acenaphthene-d10 | (3) | 22.702 | 164 | 313036 | 40.000 |
| 97) | Acenaphthene | (3) | 22.799 | 153 | 48304 | 5.317 |
| 98) | 2,4-Dinitrophenol | (3) | 22.809 | 184 | 18031 | 10.865 |
| 99) | Pentachlorobenzene | (3) | 23.205 | 250 | 18064 | 5.061 |
| 101) | 4-Nitrophenol | (3) | 22.906 | 109 | 14448 | 8.969 |
| 102) | Dibenzofuran | (3) | 23.333 | 168 | 70405 | 5.317 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.216 | 165 | 17289 | 4.680 |
| 104) | 1-Naphthylamine | (3) | 23.568 | 143 | 42389 | 4.600 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.675 | 232 | 11554 | 4.814 |
| 106) | 2-Naphthylamine | (3) | 23.803 | 143 | 44169 | 4.471 |
| 107) | Diethylphthalate | (3) | 23.942 | 149 | 64953 | 5.434 |
| 108) | Thionazin | (3) | 24.199 | 107 | 11039 | 5.077 |
| 109) | Fluorene | (3) | 24.413 | 166 | 56872 | 5.733 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d
Injection date and time: 13-FEB-2004 10:02

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sublist used: all1

Sample Name: SSTD005

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.370 | 204 | 23131 | 5.125 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.391 | 152 | 18602 | 5.201 |
| 112) | 4-Nitroaniline | (3) | 24.391 | 138 | 18434 | 5.168 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.488 | 198 | 14918 | 7.582 |
| 114) | 1-Nitronaphthalene | (4) | 24.648 | 173 | 11013 | 4.961 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.712 | 169 | 39412 | 5.308 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.862 | 77 | 68607 | 5.537 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 12004 | 5.461 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.439 | 213 | 4447 | 3.424 |
| 120) | Diallate (peak 1) | (4) | 25.588 | 86 | 22977 | 4.019 |
| 121) | Phorate | (4) | 25.621 | 75 | 38921 | 6.117 |
| 122) | Phenacetin | (4) | 25.588 | 108 | 33888 | 5.399 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.877 | 248 | 12652 | 5.027 |
| 124) | Diallate (peak 2) | (4) | 25.866 | 86 | 7367 | 1.352 |
| 125) | Hexachlorobenzene | (4) | 26.080 | 284 | 13806 | 4.991 |
| 126) | Dimethoate | (4) | 26.112 | 87 | 27389 | 6.297 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 30344 | 5.371 |
| 129) | Pentachlorophenol | (4) | 26.604 | 266 | 25330 | 12.921 |
| 130) | Pentachloronitrobenzene | (4) | 26.647 | 237 | 5191 | 5.050 |
| 131) | 4-Aminobiphenyl | (4) | 26.604 | 169 | 39199 | 5.558 |
| 132) | Pronamide | (4) | 26.700 | 173 | 23034 | 5.013 |
| 133) | Phenanthrene-d10 | (4) | 27.170 | 188 | 463970 | 40.000 |
| 134) | Dinoseb | (4) | 27.053 | 211 | 8111 | 3.080 |
| 135) | Phenanthrene | (4) | 27.224 | 178 | 71663 | 5.359 |
| 136) | Anthracene | (4) | 27.363 | 178 | 73133 | 5.309 |
| 138) | Carbazole | (4) | 27.737 | 167 | 69875 | 5.165 |
| 139) | Methyl parathion | (4) | 28.047 | 109 | 22173 | 5.001 |
| 140) | Di-n-butylphthalate | (4) | 28.496 | 149 | 103852 | 5.171 |
| 141) | Parathion | (4) | 28.956 | 109 | 11876 | 4.470 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.105 | 190 | 3452 | 2.302 |
| 143) | Methapyrilene | (4) | 29.223 | 97 | 32265 | 6.360 |
| 144) | Isodrin | (4) | 29.779 | 193 | 8026 | 5.029 |
| 145) | Fluoranthene | (4) | 30.099 | 202 | 71122 | 5.270 |
| 150) | Benzidine | (5) | 30.324 | 184 | 81849 | 12.811 |
| 152) | Pyrene | (5) | 30.623 | 202 | 70795 | 5.272 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.157 | 225 | 13029 | 4.686 |
| 157) | Chlorobenzilate | (5) | 31.232 | 139 | 26571 | 4.978 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.959 | 212 | 23174 | 3.751 |
| 159) | Butylbenzylphthalate | (5) | 31.927 | 149 | 47613 | 5.156 |
| 160) | 2-Acetylaminofluorene | (5) | 32.665 | 181 | 26852 | 4.214 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.584 | 252 | 21328 | 4.563 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.573 | 231 | 9703 | 4.361 |
| 164) | Benzo(a)anthracene | (5) | 33.787 | 228 | 60615 | 5.158 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

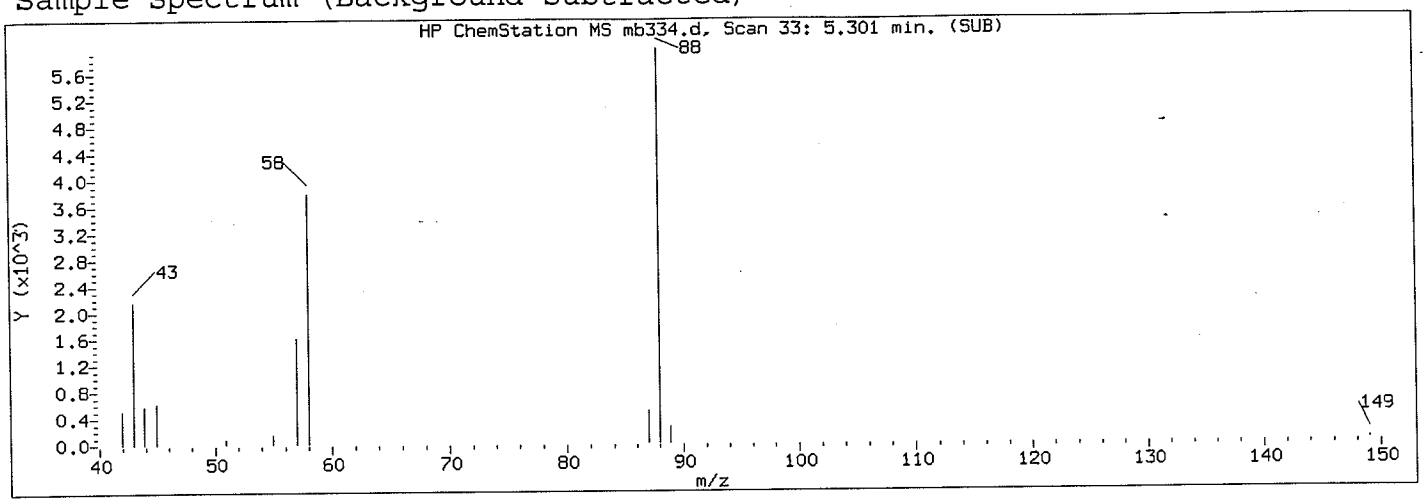
Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

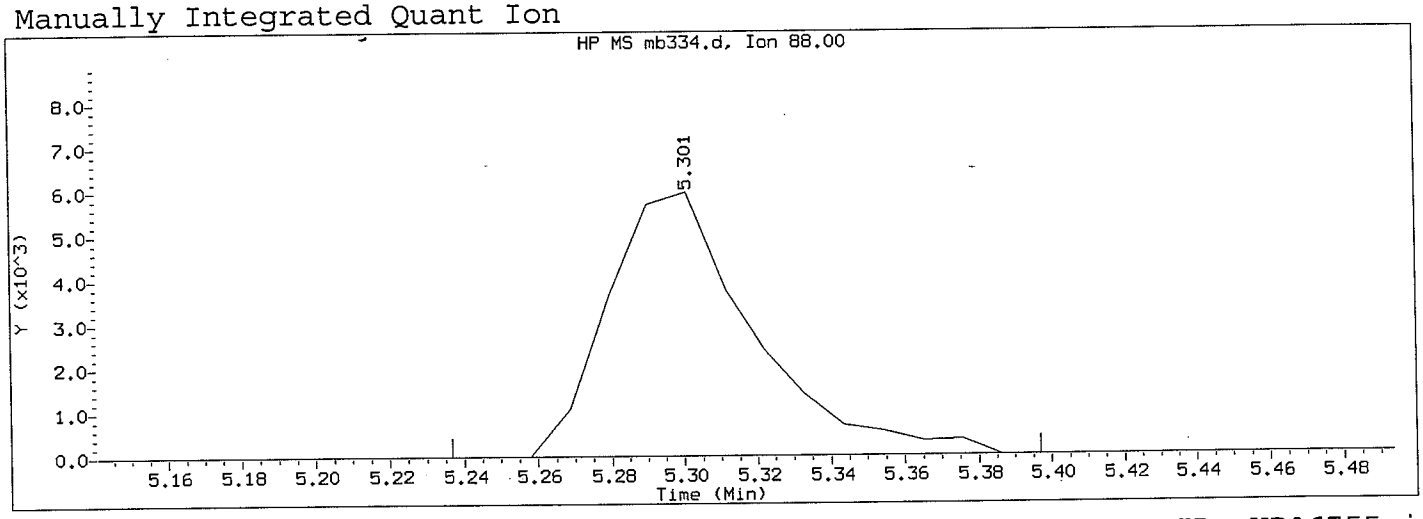
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 165) Chrysene-d12 | (5) | 33.830 | 240 | 367524 | 40.000 |
| 166) Chrysene | (5) | 33.915 | 228 | 54920 | 5.127 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 33.520 | 149 | 58581 | 4.641 |
| 168) Di-n-octylphthalate | (6) | 36.128 | 149 | 95423 | 4.697 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 38.447 | 256 | 23505 | 4.625 |
| 170) Benzo(b)fluoranthene | (6) | 38.522 | 252 | 56527 | 5.042 |
| 171) Benzo(k)fluoranthene | (6) | 38.661 | 252 | 52589 | 5.064 |
| 172) Benzo(a)pyrene | (6) | 40.510 | 252 | 48555 | 4.829 |
| 173) Perylene-d12 | (6) | 40.874 | 264 | 317229 | 40.000 |
| 174) 3-Methylcholanthrene | (6) | 42.873 | 268 | 26810 | 4.810 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 49.564 | 276 | 44894M | 4.670 |
| 176) Dibenz(a,h)anthracene | (6) | 49.810 | 278 | 39855 | 4.616 |
| 177) Benzo(g,h,i)perylene | (6) | 52.311 | 276 | 45058 | 4.632 |
| 9) 2-Fluorophenol | (1) | 9.790 | 112 | 40662 | 5.061 |
| 14) Phenol-d5 | (1) | 12.238 | 99 | 50785 | 5.159 |
| 15) Phenol-d6 | (1) | 12.238 | 99 | 50785 | 5.159 |
| 38) Nitrobenzene-d5 | (2) | 15.060 | 82 | 35355 | 5.172 |
| 77) 2-Fluorobiphenyl | (3) | 20.543 | 172 | 55225 | 5.304 |
| 117) 2,4,6-Tribromophenol | (3) | 25.150 | 330 | 6683 | 4.712 |
| 154) Terphenyl-d14 | (5) | 30.869 | 244 | 41149 | 5.233 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

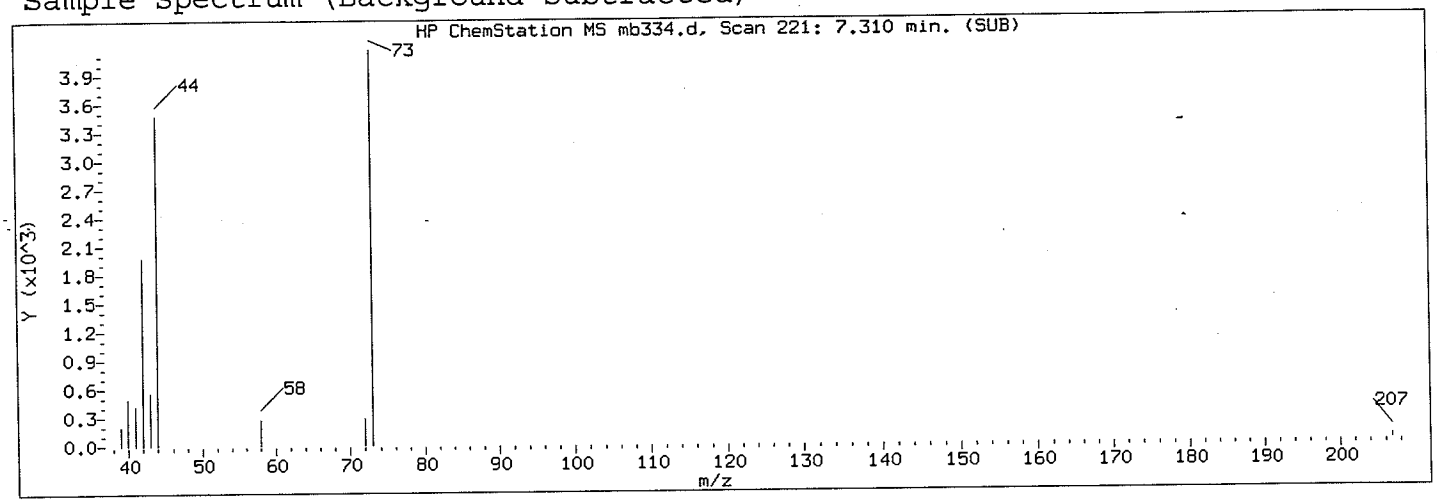
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 33
Retention Time (minutes): 5.301
Quant Ion : 88
Area (flag) : 16578 M
Concentration (ng/ul) : 4.7822
Integration start scan : 26  Integration stop scan: 41
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

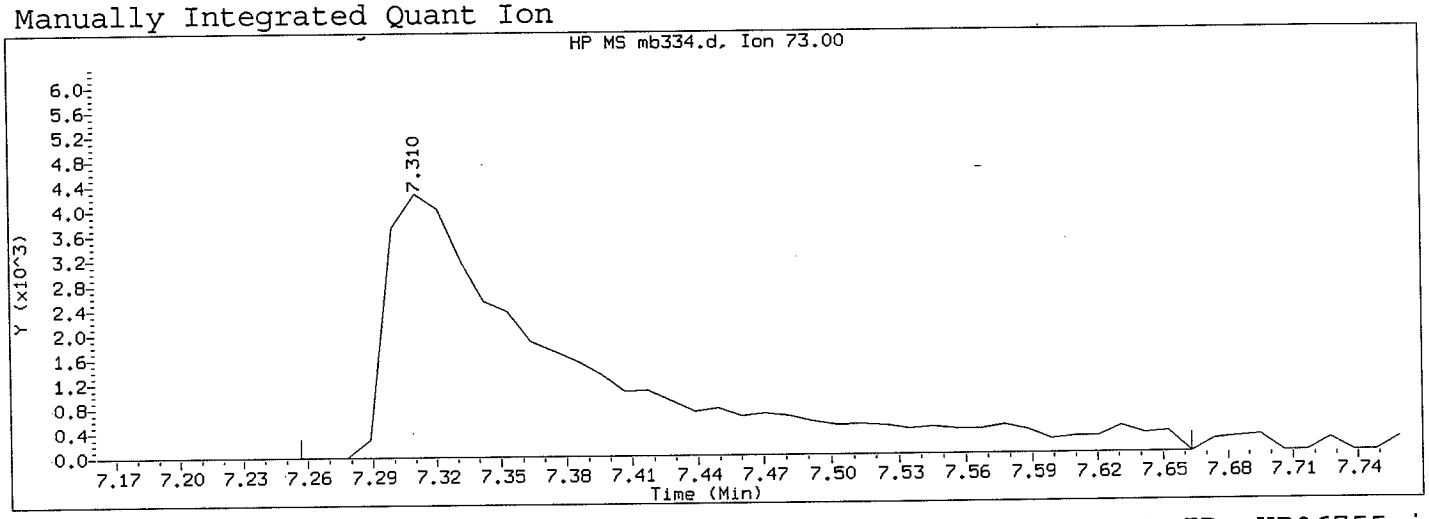
Analyst responsible for change: Jean Spotts 2/15/04

GC/MS audit/management approval: MM/JOS 2/21/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

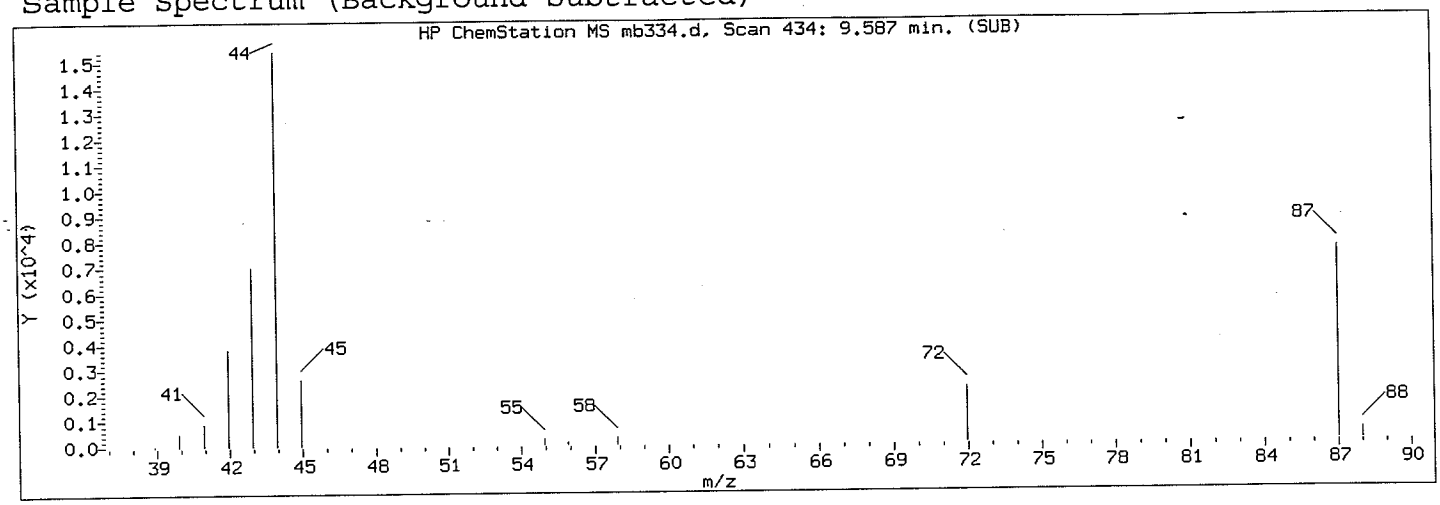
Compound Number : 4
Compound Name : N,N-dimethyl formamide
Scan Number : 221
Retention Time (minutes): 7.310
Quant Ion : 73
Area (flag) : 25398 M
Concentration (ng/ul) : 4.7020
Integration start scan : 215  Integration stop scan: 253
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

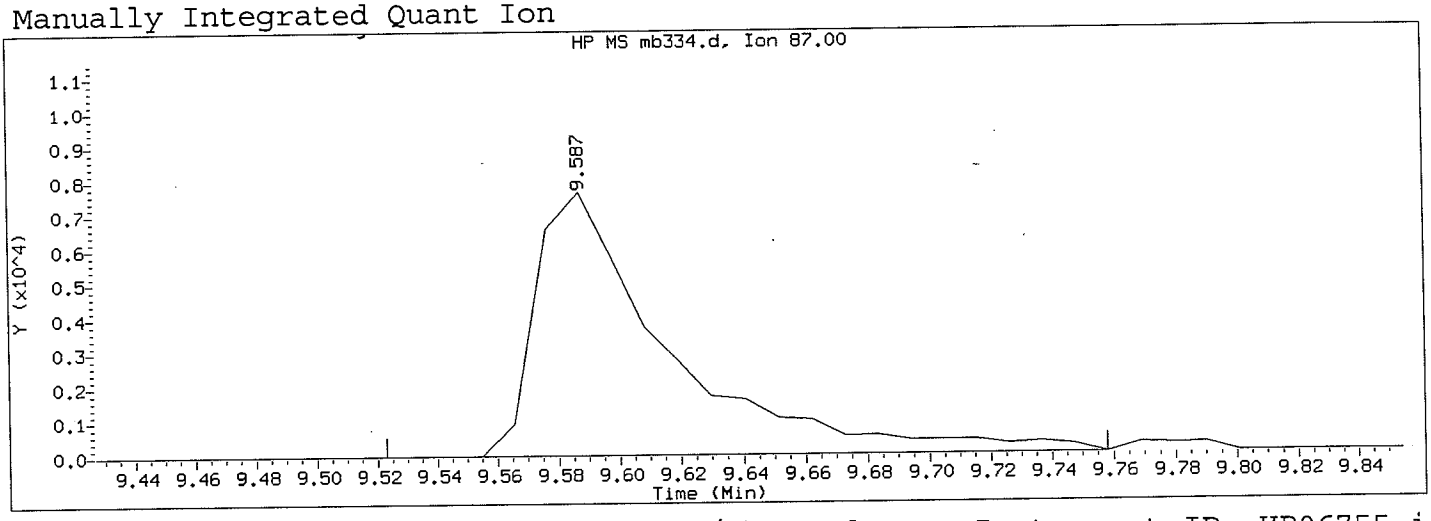
Analyst responsible for change: Jean Spotts 2/15/04

GC/MS audit/management approval: MJS 2/21/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

Compound Number : 8
Compound Name : N,N-dimethyl acetamide
Scan Number : 434
Retention Time (minutes) : 9.587
Quant Ion : 87
Area (flag) : 22983 M
Concentration (ng/ul) : 4.8413
Integration start scan : 427  Integration stop scan: 449
Y at integration start : 0  Y at integration end: 0

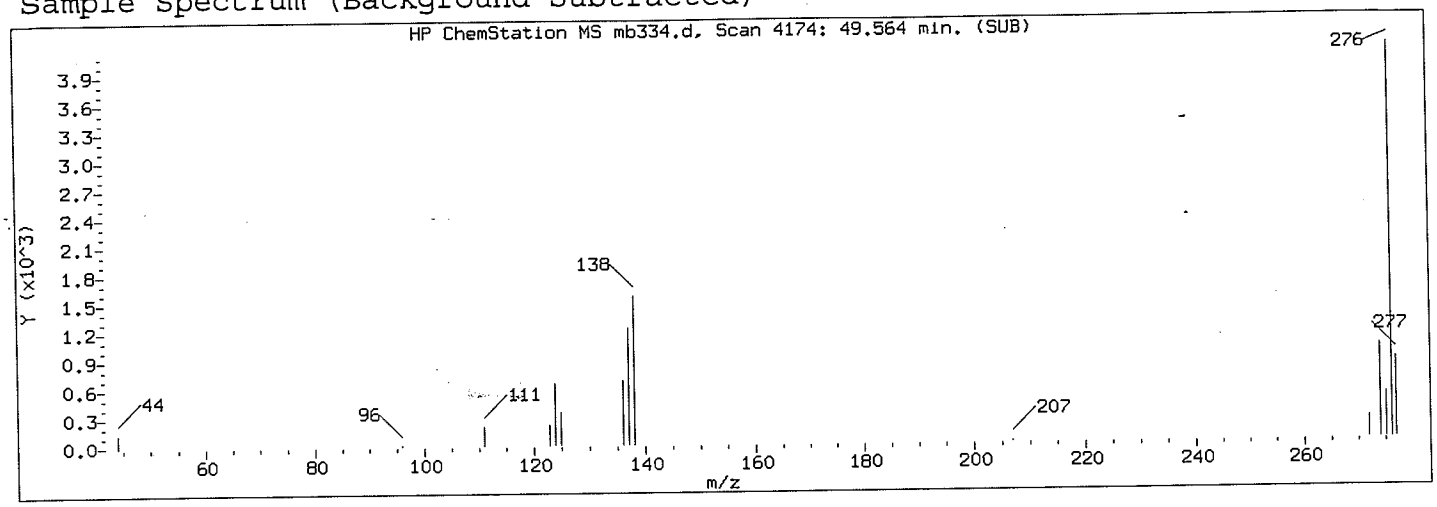
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jen Spotts 2/15/04

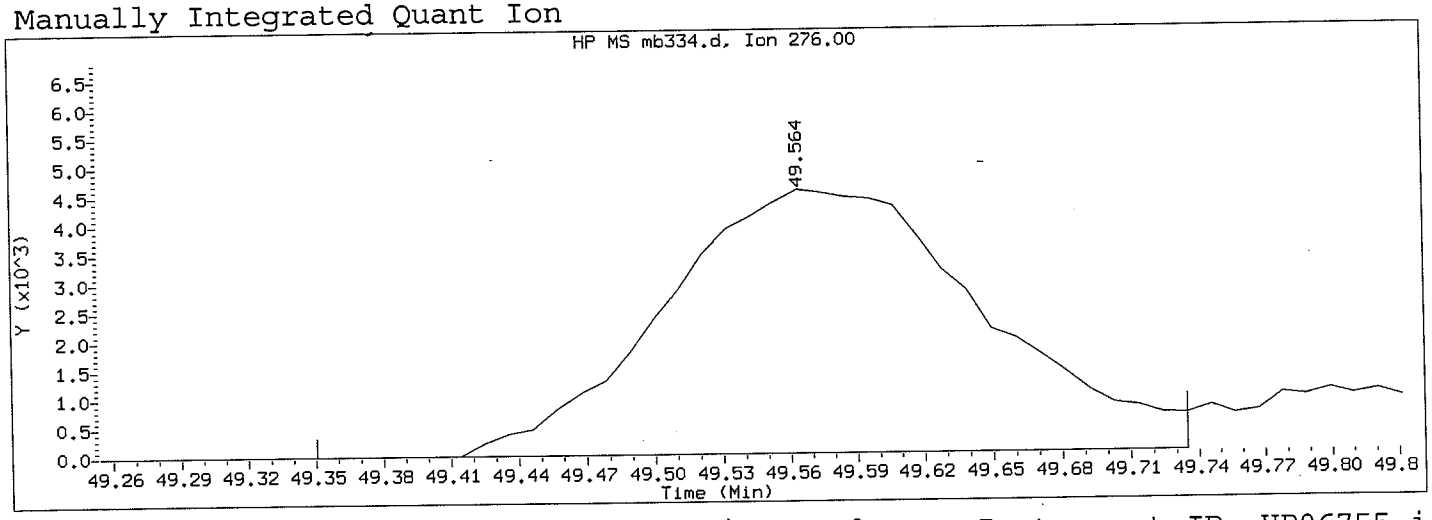
GC/MS audit/management approval: M 1705 2/21/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb334.d, generated on 02/15/2004 at 16:43

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb334.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 10:02  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD005  Lab Sample ID: STD0404

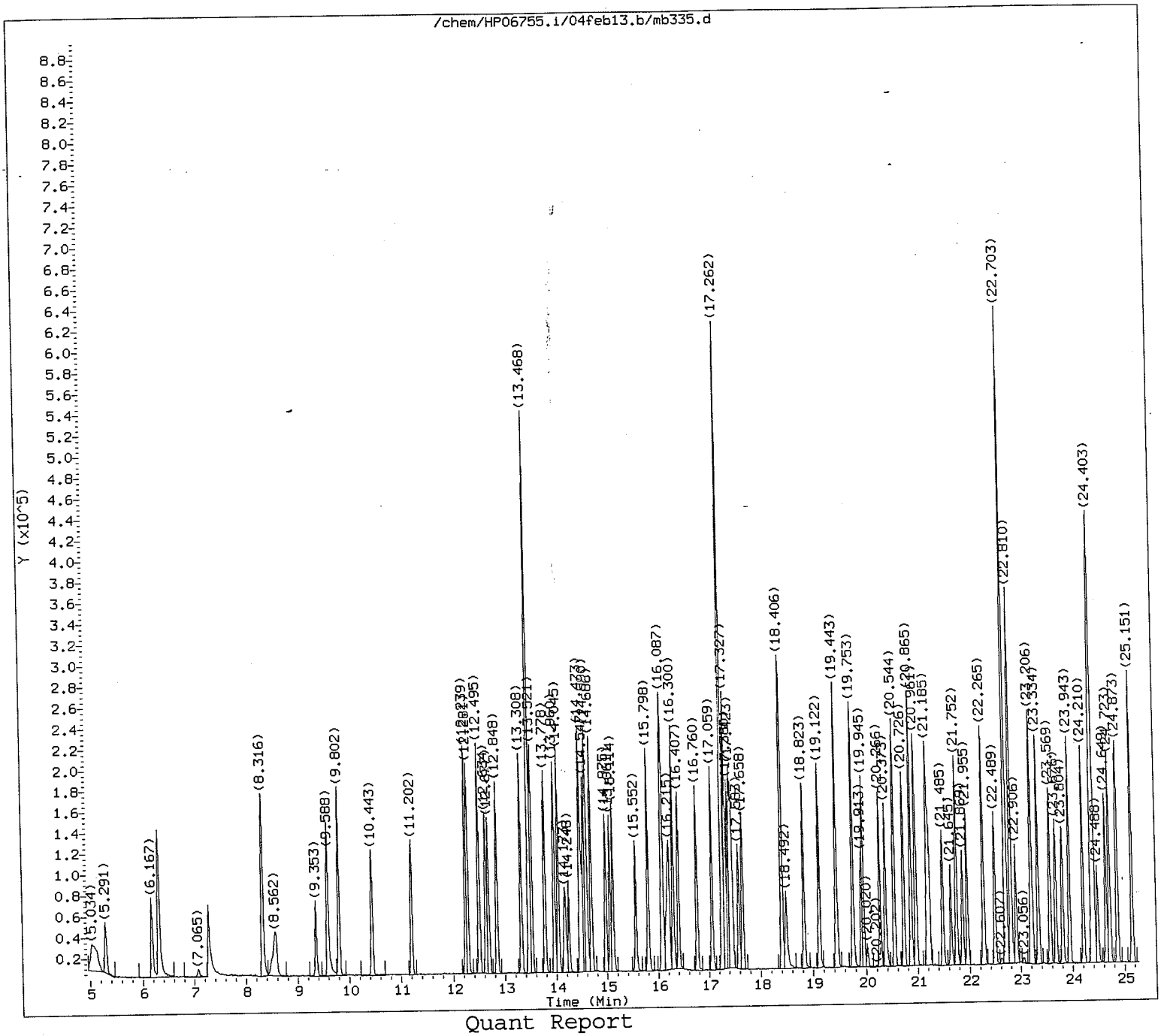
Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 4174
Retention Time (minutes): 49.564
Quant Ion : 276
Area (flag) : 44894 M
Concentration (ng/ul) : 4.6704
Integration start scan : 4153  Integration stop scan: 4189
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak  improper integration

Analyst responsible for change: Jen Spitas 2/15/04

GC/MS audit/management approval: [illegible] 2/17/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb334.d, generated on 02/15/2004 at 16:43




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

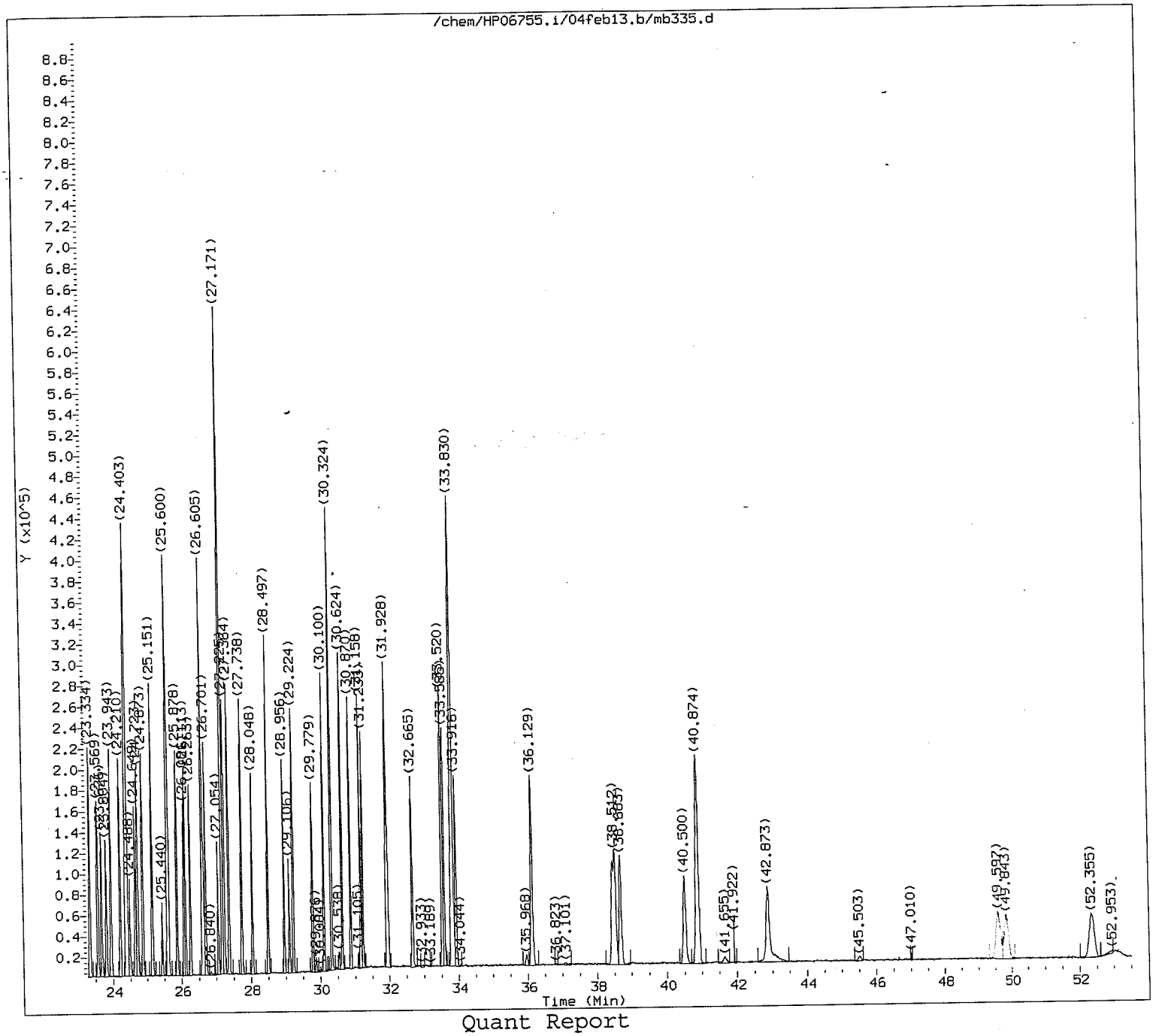
Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404

2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404



2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sublist used: all1

Sample Name: SSTD015

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.291 | 88 | 48708 | 14.051 |
| 2) | N-Nitrosodimethylamine | (1) | 6.167 | 74 | 79261 | 14.289 |
| 3) | Pyridine | (1) | 6.306 | 79 | 131525 | 14.643 |
| 4) | N,N-dimethyl formamide | (1) | 7.268 | 73 | 73404 | 13.674 |
| 5) | 2-Picoline | (1) | 8.326 | 93 | 132905 | 15.030 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.572 | 88 | 62204 | 15.037 |
| 7) | Methyl methanesulfonate | (1) | 9.353 | 80 | 54167 | 14.772 |
| 8) | N,N-dimethyl acetamide | (1) | 9.577 | 87 | 66528 | 14.021 |
| 10) | N-Nitrosodiethylamine | (1) | 10.443 | 102 | 59905 | 14.864 |
| 11) | Ethyl methanesulfonate | (1) | 11.202 | 109 | 64985 | 14.684 |
| 13) | Aniline | (1) | 12.495 | 93 | 178121 | 15.352 |
| 16) | Phenol | (1) | 12.281 | 94 | 147955 | 15.158 |
| 17) | Pentachloroethane | (1) | 12.688 | 167 | 39210 | 15.563 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.634 | 93 | 123362 | 15.503 |
| 19) | 2-Chlorophenol | (1) | 12.848 | 128 | 113958 | 15.012 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.308 | 146 | 118861 | 15.171 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.468 | 152 | 194592 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.521 | 146 | 119230 | 15.174 |
| 24) | Benzyl alcohol | (1) | 13.778 | 108 | 70663 | 14.176 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.960 | 146 | 114008 | 15.329 |
| 26) | 2-Methylphenol | (1) | 14.045 | 108 | 108741 | 15.453 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.173 | 45 | 174941 | 15.771 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.173 | 45 | 174941 | 15.771 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.505 | 100 | 61101 | 15.475 |
| 30) | Acetophenone | (1) | 14.590 | 105 | 150226 | 15.813 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.547 | 70 | 76657 | 16.552 |
| 32) | N-Nitrosomorpholine | (1) | 14.622 | 56 | 61058 | 15.626 |
| 33) | 4-Methylphenol | (1) | 14.473 | 108 | 111017 | 15.447 |
| 34) | o-Toluidine | (1) | 14.697 | 106 | 172427 | 15.699 |
| 37) | Hexachloroethane | (1) | 14.975 | 117 | 48762 | 14.906 |
| 39) | Nitrobenzene | (2) | 15.114 | 77 | 104188 | 15.218 |
| 40) | N-Nitrosopiperidine | (2) | 15.563 | 114 | 55474 | 14.896 |
| 41) | Isophorone | (2) | 15.798 | 82 | 210106 | 15.601 |
| 42) | 2-Nitrophenol | (2) | 16.065 | 139 | 55007 | 14.853 |
| 44) | 2,4-Dimethylphenol | (2) | 16.087 | 107 | 109564 | 15.821 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.300 | 198 | 37694 | 15.201 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.407 | 93 | 130323 | 15.716 |
| 47) | Benzoic acid | (2) | 16.215 | 105 | 147562 | 28.218 |
| 49) | 2,4-Dichlorophenol | (2) | 16.760 | 162 | 79524 | 15.030 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.059 | 180 | 80475 | 14.892 |
| 52) | Naphthalene-d8 | (2) | 17.262 | 136 | 707233 | 40.000 |
| 53) | Naphthalene | (2) | 17.327 | 128 | 285010 | 15.328 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.380 | 184 | 16209 | 15.174 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.423 | 127 | 128482 | 15.235 |
| 56) | 2,6-Dichlorophenol | (2) | 17.455 | 162 | 74029 | 15.093 |
| 57) | Hexachloropropene | (2) | 17.583 | 213 | 39316 | 14.625 |
| 59) | Hexachlorobutadiene | (2) | 17.658 | 225 | 37199 | 15.014 |
| 62) | Caprolactam | (2) | 18.406 | 113 | 35729 | 15.060 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.406 | 84 | 84857 | 16.803 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.823 | 107 | 88225 | 15.382 |
| 68) | Safrole | (2) | 19.122 | 162 | 65782 | 15.034 |
| 69) | 2-Methylnaphthalene | (2) | 19.443 | 142 | 177447 | 15.521 |
| 70) | 1-Methylnaphthalene | (2) | 19.753 | 142 | 164446 | 15.422 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.913 | 237 | 31636 | 14.242 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.945 | 216 | 69273 | 15.105 |
| 73) | cis-Isosafrole | (3) | 20.020 | 162 | 6790 | 1.639 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.266 | 196 | 47739 | 14.549 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.373 | 196 | 52807 | 14.635 |
| 78) | trans-Isosafrole | (3) | 20.726 | 162 | 71877 | 13.537 |
| 79) | Isosafrole | (3) | 20.726 | 162 | 71877 | 15.210 |
| 80) | Biphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 81) | Diphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 82) | 1,1'-Biphenyl | (3) | 20.875 | 154 | 196952 | 15.262 |
| 83) | 2-Chloronaphthalene | (3) | 20.961 | 162 | 156895 | 15.393 |
| 86) | Diphenyl ether | (3) | 21.185 | 170 | 100091 | 15.160 |
| 87) | 2-Nitroaniline | (3) | 21.228 | 138 | 64121 | 14.562 |
| 88) | 1,4-Naphthoquinone | (3) | 21.485 | 158 | 54165 | 16.586 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.645 | 168 | 28748 | 13.901 |
| 90) | Dimethylphthalate | (3) | 21.752 | 163 | 183239 | 15.274 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.869 | 168 | 34436 | 14.610 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.955 | 165 | 45592 | 14.664 |
| 93) | Acenaphthylene | (3) | 22.265 | 152 | 237568 | 15.056 |
| 95) | 3-Nitroaniline | (3) | 22.489 | 138 | 55194 | 14.426 |
| 96) | Acenaphthene-d10 | (3) | 22.703 | 164 | 322764 | 40.000 |
| 97) | Acenaphthene | (3) | 22.799 | 153 | 145174 | 15.396 |
| 98) | 2,4-Dinitrophenol | (3) | 22.821 | 184 | 43438 | 26.191 |
| 99) | Pentachlorobenzene | (3) | 23.206 | 250 | 55697 | 15.108 |
| 101) | 4-Nitrophenol | (3) | 22.906 | 109 | 23564 | 14.342 |
| 102) | Dibenzofuran | (3) | 23.334 | 168 | 211527 | 15.393 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.216 | 165 | 56505 | 14.867 |
| 104) | 1-Naphthylamine | (3) | 23.569 | 143 | 132223 | 14.120 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.676 | 232 | 36686 | 14.860 |
| 106) | 2-Naphthylamine | (3) | 23.815 | 143 | 115337 | 11.907 |
| 107) | Diethylphthalate | (3) | 23.943 | 149 | 188417 | 15.230 |
| 108) | Thionazin | (3) | 24.210 | 107 | 33362 | 14.906 |
| 109) | Fluorene | (3) | 24.413 | 166 | 165881 | 15.960 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb335.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 11:03  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.371 | 204 | 71977 | 15.370 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.392 | 152 | 59799 | 15.958 |
| 112) | 4-Nitroaniline | (3) | 24.403 | 138 | 57692 | 15.544 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.488 | 198 | 27089 | 13.588 |
| 114) | 1-Nitronaphthalene | (4) | 24.649 | 173 | 33576 | 14.665 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.723 | 169 | 115128 | 14.962 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.873 | 77 | 207012 | 15.874 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.151 | 97 | 38205 | 16.375 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.440 | 213 | 16720 | 12.855 |
| 120) | Diallate (peak 1) | (4) | 25.589 | 86 | 71285 | 11.860 |
| 121) | Phorate | (4) | 25.621 | 75 | 118208 | 17.244 |
| 122) | Phenacetin | (4) | 25.600 | 108 | 105571 | 15.958 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.878 | 248 | 37922 | 14.621 |
| 124) | Diallate (peak 2) | (4) | 25.867 | 86 | 22498 | 3.932 |
| 125) | Hexachlorobenzene | (4) | 26.081 | 284 | 43211 | 15.050 |
| 126) | Dimethoate | (4) | 26.113 | 87 | 82265 | 17.483 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 93783 | 15.792 |
| 129) | Pentachlorophenol | (4) | 26.605 | 266 | 56391 | 28.162 |
| 130) | Pentachloronitrobenzene | (4) | 26.647 | 237 | 15685 | 14.770 |
| 131) | 4-Aminobiphenyl | (4) | 26.605 | 169 | 122677 | 16.384 |
| 132) | Pronamide | (4) | 26.701 | 173 | 73035 | 15.260 |
| 133) | Phenanthrene-d10 | (4) | 27.171 | 188 | 481177 | 40.000 |
| 134) | Dinoseb | (4) | 27.054 | 211 | 35078 | 13.223 |
| 135) | Phenanthrene | (4) | 27.235 | 178 | 214024 | 15.345 |
| 136) | Anthracene | (4) | 27.364 | 178 | 220009 | 15.319 |
| 138) | Carbazole | (4) | 27.738 | 167 | 211051 | 15.035 |
| 139) | Methyl parathion | (4) | 28.048 | 109 | 75737 | 16.155 |
| 140) | Di-n-butylphthalate | (4) | 28.497 | 149 | 322466 | 15.383 |
| 141) | Parathion | (4) | 28.956 | 109 | 41058 | 14.921 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.106 | 190 | 17574 | 11.885 |
| 143) | Methapyrilene | (4) | 29.224 | 97 | 95553 | 17.427 |
| 144) | Isodrin | (4) | 29.779 | 193 | 24050 | 14.621 |
| 145) | Fluoranthene | (4) | 30.111 | 202 | 214183 | 15.240 |
| 150) | Benzidine | (5) | 30.324 | 184 | 301541 | 46.151 |
| 152) | Pyrene | (5) | 30.624 | 202 | 216014 | 15.657 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.158 | 225 | 42727 | 15.098 |
| 157) | Chlorobenzilate | (5) | 31.233 | 139 | 83352 | 15.294 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.971 | 212 | 88433 | 14.261 |
| 159) | Butylbenzylphthalate | (5) | 31.928 | 149 | 141913 | 15.100 |
| 160) | 2-Acetylaminofluorene | (5) | 32.665 | 181 | 92123 | 14.376 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.585 | 252 | 69034 | 14.627 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.574 | 231 | 31972 | 14.305 |
| 164) | Benzo(a)anthracene | (5) | 33.788 | 228 | 176920 | 14.853 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

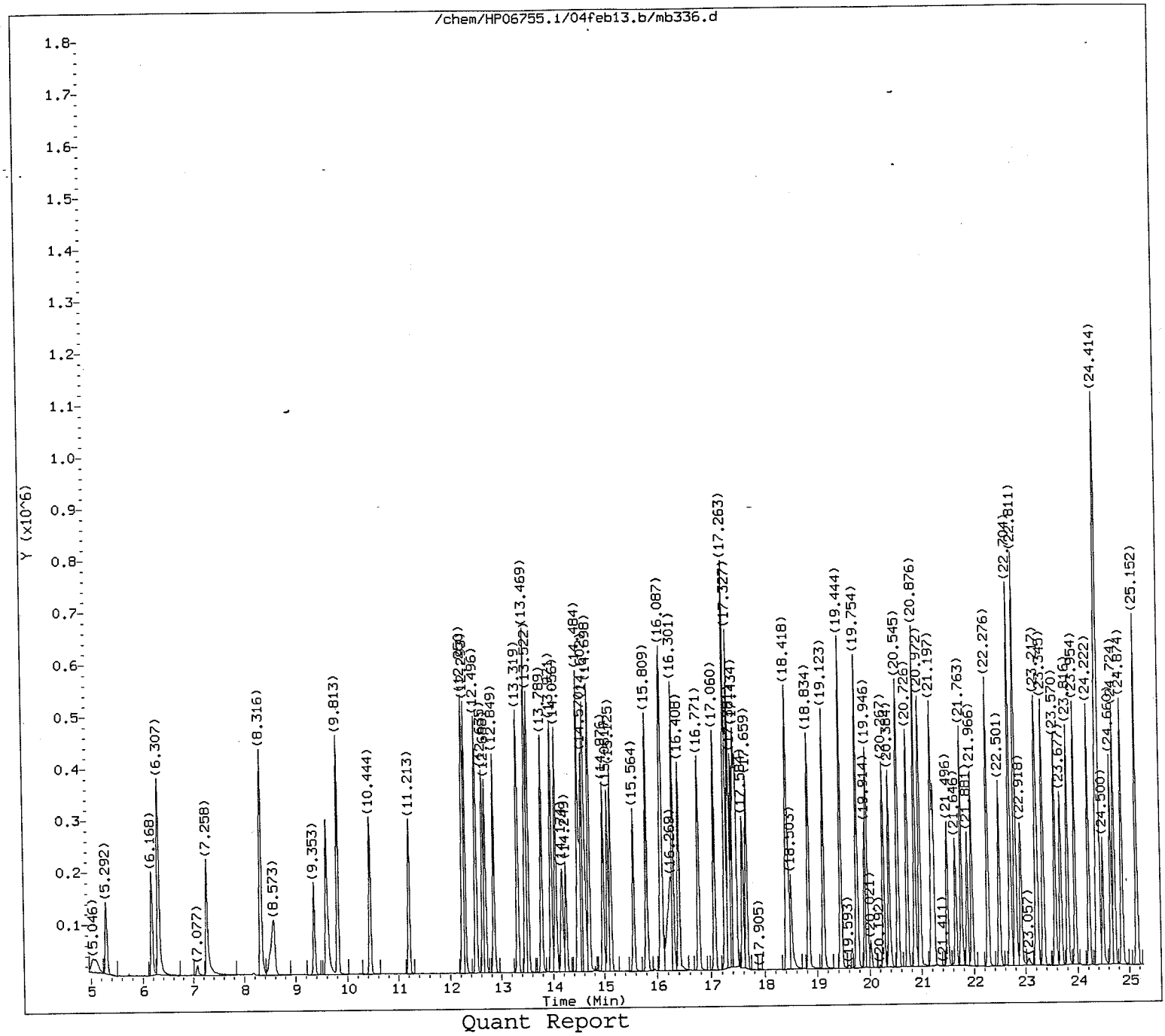
Data File: /chem/HP06755.i/04feb13.b/mb335.d
Injection date and time: 13-FEB-2004 11:03
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD015
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 165) | Chrysene-d12 | (5) | 33.830 | 240 | 373444 | 40.000 |
| 166) | Chrysene | (5) | 33.916 | 228 | 164636 | 15.099 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.520 | 149 | 195063 | 15.165 |
| 168) | Di-n-octylphthalate | (6) | 36.129 | 149 | 316157 | 15.014 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.448 | 256 | 77180 | 14.722 |
| 170) | Benzo(b)fluoranthene | (6) | 38.534 | 252 | 173808 | 14.969 |
| 171) | Benzo(k)fluoranthene | (6) | 38.683 | 252 | 162842 | 15.106 |
| 172) | Benzo(a)pyrene | (6) | 40.500 | 252 | 149188 | 14.448 |
| 173) | Perylene-d12 | (6) | 40.874 | 264 | 328751 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.884 | 268 | 82561 | 14.428 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.607 | 276 | 139565 | 14.198 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.843 | 278 | 128795 | 14.512 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.355 | 276 | 143397 | 14.373 |
| 9) | 2-Fluorophenol | (1) | 9.802 | 112 | 120741 | 14.835 |
| 14) | Phenol-d5 | (1) | 12.239 | 99 | 149269 | 14.941 |
| 15) | Phenol-d6 | (1) | 12.239 | 99 | 149269 | 14.941 |
| 38) | Nitrobenzene-d5 | (2) | 15.061 | 82 | 104897 | 15.210 |
| 77) | 2-Fluorobiphenyl | (3) | 20.544 | 172 | 163563 | 15.188 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.151 | 330 | 21414 | 14.714 |
| 154) | Terphenyl-d14 | (5) | 30.870 | 244 | 126005 | 15.609 |

M = Compound was manually integrated.
A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

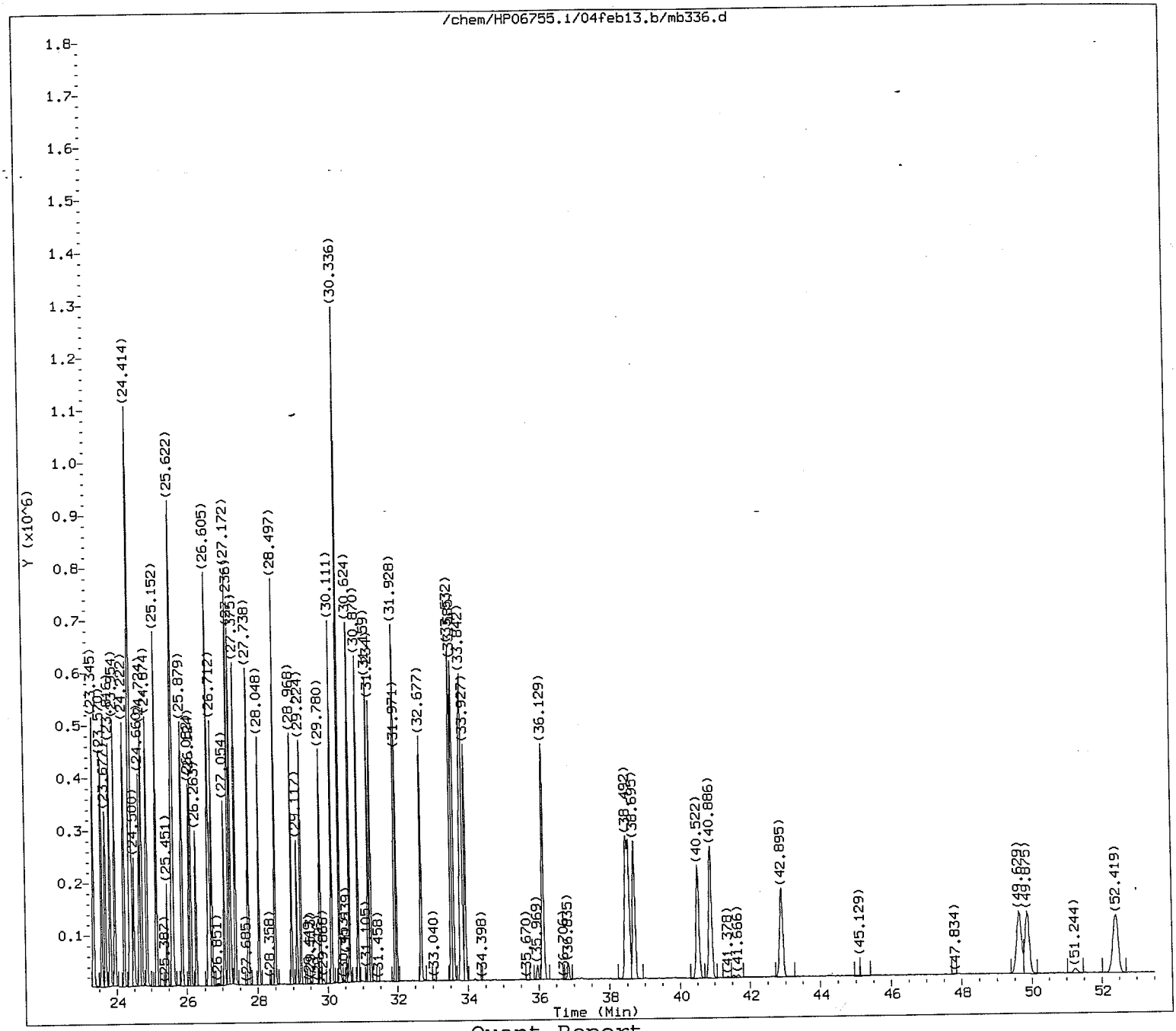
Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030

Lab Sample ID: STD0404

2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030

Lab Sample ID: STD0404

2/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sublist used: all1

Sample Name: SSTD030

Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.292 | 88 | 138419 | 31.332 |
| 2) | N-Nitrosodimethylamine | (1) | 6.168 | 74 | 212178 | 30.234 |
| 3) | Pyridine | (1) | 6.307 | 79 | 347738 | 30.538 |
| 4) | N,N-dimethyl formamide | (1) | 7.258 | 73 | 197682 | 29.291 |
| 5) | 2-Picoline | (1) | 8.327 | 93 | 330792 | 29.679 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.573 | 88 | 154752 | 29.678 |
| 7) | Methyl methanesulfonate | (1) | 9.353 | 80 | 136161 | 29.495 |
| 8) | N,N-dimethyl acetamide | (1) | 9.599 | 87 | 174897 | 29.315 |
| 10) | N-Nitrosodiethylamine | (1) | 10.444 | 102 | 149734 | 29.509 |
| 11) | Ethyl methanesulfonate | (1) | 11.213 | 109 | 164972 | 29.592 |
| 13) | Aniline | (1) | 12.496 | 93 | 444686 | 30.285 |
| 16) | Phenol | (1) | 12.293 | 94 | 366885 | 29.797 |
| 17) | Pentachloroethane | (1) | 12.688 | 167 | 96070 | 30.157 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.635 | 93 | 300144 | 29.884 |
| 19) | 2-Chlorophenol | (1) | 12.849 | 128 | 283166 | 29.607 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.319 | 146 | 295393 | 29.873 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.469 | 152 | 245801 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.522 | 146 | 296621 | 29.904 |
| 24) | Benzyl alcohol | (1) | 13.789 | 108 | 184545 | 29.422 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.971 | 146 | 285177 | 30.295 |
| 26) | 2-Methylphenol | (1) | 14.056 | 108 | 264464 | 29.794 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.174 | 45 | 408865 | 29.314 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.174 | 45 | 408865 | 29.314 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.527 | 100 | 149736 | 30.018 |
| 30) | Acetophenone | (1) | 14.602 | 105 | 358938 | 29.926 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.559 | 70 | 176359 | 30.122 |
| 32) | N-Nitrosomorpholine | (1) | 14.634 | 56 | 142494 | 29.052 |
| 33) | 4-Methylphenol | (1) | 14.484 | 108 | 271766 | 29.946 |
| 34) | o-Toluidine | (1) | 14.698 | 106 | 414911 | 29.922 |
| 37) | Hexachloroethane | (1) | 14.976 | 117 | 124730 | 30.154 |
| 39) | Nitrobenzene | (2) | 15.125 | 77 | 254492 | 29.828 |
| 40) | N-Nitrosopiperidine | (2) | 15.564 | 114 | 139570 | 30.033 |
| 41) | Isophorone | (2) | 15.809 | 82 | 501892 | 29.892 |
| 42) | 2-Nitrophenol | (2) | 16.066 | 139 | 139456 | 30.152 |
| 44) | 2,4-Dimethylphenol | (2) | 16.098 | 107 | 260732 | 30.148 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.301 | 198 | 92743 | 29.981 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.408 | 93 | 306504 | 29.688 |
| 47) | Benzoic acid | (2) | 16.258 | 105 | 261365 | 40.050 |
| 49) | 2,4-Dichlorophenol | (2) | 16.771 | 162 | 197273 | 29.904 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.060 | 180 | 203074 | 30.100 |
| 52) | Naphthalene-d8 | (2) | 17.263 | 136 | 882361 | 40.000 |
| 53) | Naphthalene | (2) | 17.327 | 128 | 701981 | 30.216 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.391 | 184 | 40128 | 30.091 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d
Injection date and time: 13-FEB-2004 12:04
Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 15-FEB-2004 16:43
Sublist used: all1
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030
Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.424 | 127 | 314277 | 29.891 |
| 56) | 2,6-Dichlorophenol | (2) | 17.466 | 162 | 186022 | 30.331 |
| 57) | Hexachloropropene | (2) | 17.584 | 213 | 102103 | 30.368 |
| 59) | Hexachlorobutadiene | (2) | 17.659 | 225 | 94129 | 30.375 |
| 62) | Caprolactam | (2) | 18.450 | 113 | 89242 | 30.125 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.418 | 84 | 206864 | 32.324 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.834 | 107 | 217631 | 30.343 |
| 68) | Safrole | (2) | 19.123 | 162 | 164696 | 30.142 |
| 69) | 2-Methylnaphthalene | (2) | 19.444 | 142 | 430614 | 30.158 |
| 70) | 1-Methylnaphthalene | (2) | 19.754 | 142 | 406980 | 30.491 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.914 | 237 | 83304 | 30.342 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.957 | 216 | 169843 | 30.027 |
| 73) | cis-Isosafrole | (3) | 20.021 | 162 | 16805 | 3.292 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.267 | 196 | 122720 | 30.273 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.384 | 196 | 135227 | 30.325 |
| 78) | trans-Isosafrole | (3) | 20.726 | 162 | 176425 | 26.903 |
| 79) | Isosafrole | (3) | 20.726 | 162 | 176425 | 30.228 |
| 80) | Biphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 81) | Diphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 82) | 1,1'-Biphenyl | (3) | 20.876 | 154 | 475228 | 29.887 |
| 83) | 2-Chloronaphthalene | (3) | 20.972 | 162 | 381046 | 30.263 |
| 86) | Diphenyl ether | (3) | 21.197 | 170 | 243599 | 29.933 |
| 87) | 2-Nitroaniline | (3) | 21.239 | 138 | 163917 | 30.157 |
| 88) | 1,4-Naphthoquinone | (3) | 21.496 | 158 | 129977 | 31.873 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.646 | 168 | 77802 | 30.421 |
| 90) | Dimethylphthalate | (3) | 21.763 | 163 | 443583 | 29.986 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.881 | 168 | 87764 | 30.163 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.966 | 165 | 117049 | 30.441 |
| 93) | Acenaphthylene | (3) | 22.276 | 152 | 597306 | 30.579 |
| 95) | 3-Nitroaniline | (3) | 22.501 | 138 | 142162 | 30.110 |
| 96) | Acenaphthene-d10 | (3) | 22.704 | 164 | 398015 | 40.000 |
| 97) | Acenaphthene | (3) | 22.811 | 153 | 357408 | 30.612 |
| 98) | 2,4-Dinitrophenol | (3) | 22.821 | 184 | 82823 | 40.413 |
| 99) | Pentachlorobenzene | (3) | 23.206 | 250 | 136376 | 29.999 |
| 101) | 4-Nitrophenol | (3) | 22.918 | 109 | 60746 | 29.986 |
| 102) | Dibenzofuran | (3) | 23.345 | 168 | 512869 | 30.221 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.228 | 165 | 142732 | 30.377 |
| 104) | 1-Naphthylamine | (3) | 23.570 | 143 | 359002 | 30.903 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.687 | 232 | 92097 | 30.210 |
| 106) | 2-Naphthylamine | (3) | 23.816 | 143 | 377570 | 31.329 |
| 107) | Diethylphthalate | (3) | 23.954 | 149 | 452671 | 29.726 |
| 108) | Thionazin | (3) | 24.222 | 107 | 84729 | 30.580 |
| 109) | Fluorene | (3) | 24.414 | 166 | 393456 | 30.579 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb336.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 12:04  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.382 | 204 | 175066 | 30.263 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.403 | 152 | 146593 | 31.423 |
| 112) | 4-Nitroaniline | (3) | 24.414 | 138 | 143199 | 31.065 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.500 | 198 | 76009 | 31.179 |
| 114) | 1-Nitronaphthalene | (4) | 24.660 | 173 | 82816 | 29.844 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.724 | 169 | 282367 | 30.205 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.874 | 77 | 473647 | 29.947 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.152 | 97 | 87023 | 30.616 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.451 | 213 | 49771 | 31.273 |
| 120) | Diallate (peak 1) | (4) | 25.590 | 86 | 168214 | 22.971 |
| 121) | Phorate | (4) | 25.633 | 75 | 265431 | 31.579 |
| 122) | Phenacetin | (4) | 25.611 | 108 | 251873 | 31.142 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.879 | 248 | 96983 | 30.680 |
| 124) | Diallate (peak 2) | (4) | 25.868 | 86 | 52764 | 7.583 |
| 125) | Hexachlorobenzene | (4) | 26.082 | 284 | 106046 | 30.367 |
| 126) | Dimethoate | (4) | 26.124 | 87 | 171349 | 30.012 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 220978 | 30.555 |
| 129) | Pentachlorophenol | (4) | 26.616 | 266 | 100228 | 41.041 |
| 130) | Pentachloronitrobenzene | (4) | 26.648 | 237 | 38801 | 30.096 |
| 131) | 4-Aminobiphenyl | (4) | 26.605 | 169 | 296292 | 32.149 |
| 132) | Pronamide | (4) | 26.712 | 173 | 178798 | 30.656 |
| 133) | Phenanthrene-d10 | (4) | 27.172 | 188 | 583787 | 40.000 |
| 134) | Dinoseb | (4) | 27.054 | 211 | 102300 | 31.473 |
| 135) | Phenanthrene | (4) | 27.236 | 178 | 521188 | 30.663 |
| 136) | Anthracene | (4) | 27.375 | 178 | 526947 | 30.202 |
| 138) | Carbazole | (4) | 27.738 | 167 | 518365 | 30.363 |
| 139) | Methyl parathion | (4) | 28.048 | 109 | 181556 | 31.582 |
| 140) | Di-n-butylphthalate | (4) | 28.497 | 149 | 782092 | 30.623 |
| 141) | Parathion | (4) | 28.968 | 109 | 102400 | 30.558 |
| 142) | 4-Nitroquinoline-1-oxide | (4) | 29.117 | 190 | 58714 | 32.240 |
| 143) | Methapyrilene | (4) | 29.235 | 97 | 186843 | 28.389 |
| 144) | Isodrin | (4) | 29.780 | 193 | 60138 | 30.113 |
| 145) | Fluoranthene | (4) | 30.111 | 202 | 528406 | 30.821 |
| 150) | Benzidine | (5) | 30.336 | 184 | 920391 | 109.493 |
| 152) | Pyrene | (5) | 30.635 | 202 | 519830 | 30.509 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.170 | 225 | 105789 | 30.309 |
| 157) | Chlorobenzilate | (5) | 31.234 | 139 | 204269 | 30.376 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.971 | 212 | 281812 | 35.556 |
| 159) | Butylbenzylphthalate | (5) | 31.928 | 149 | 345072 | 29.860 |
| 160) | 2-Acetylaminofluorene | (5) | 32.677 | 181 | 245605 | 30.944 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.596 | 252 | 187861 | 31.925 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.585 | 231 | 90234 | 32.299 |
| 164) | Benzo(a)anthracene | (5) | 33.799 | 228 | 443537 | 30.211 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

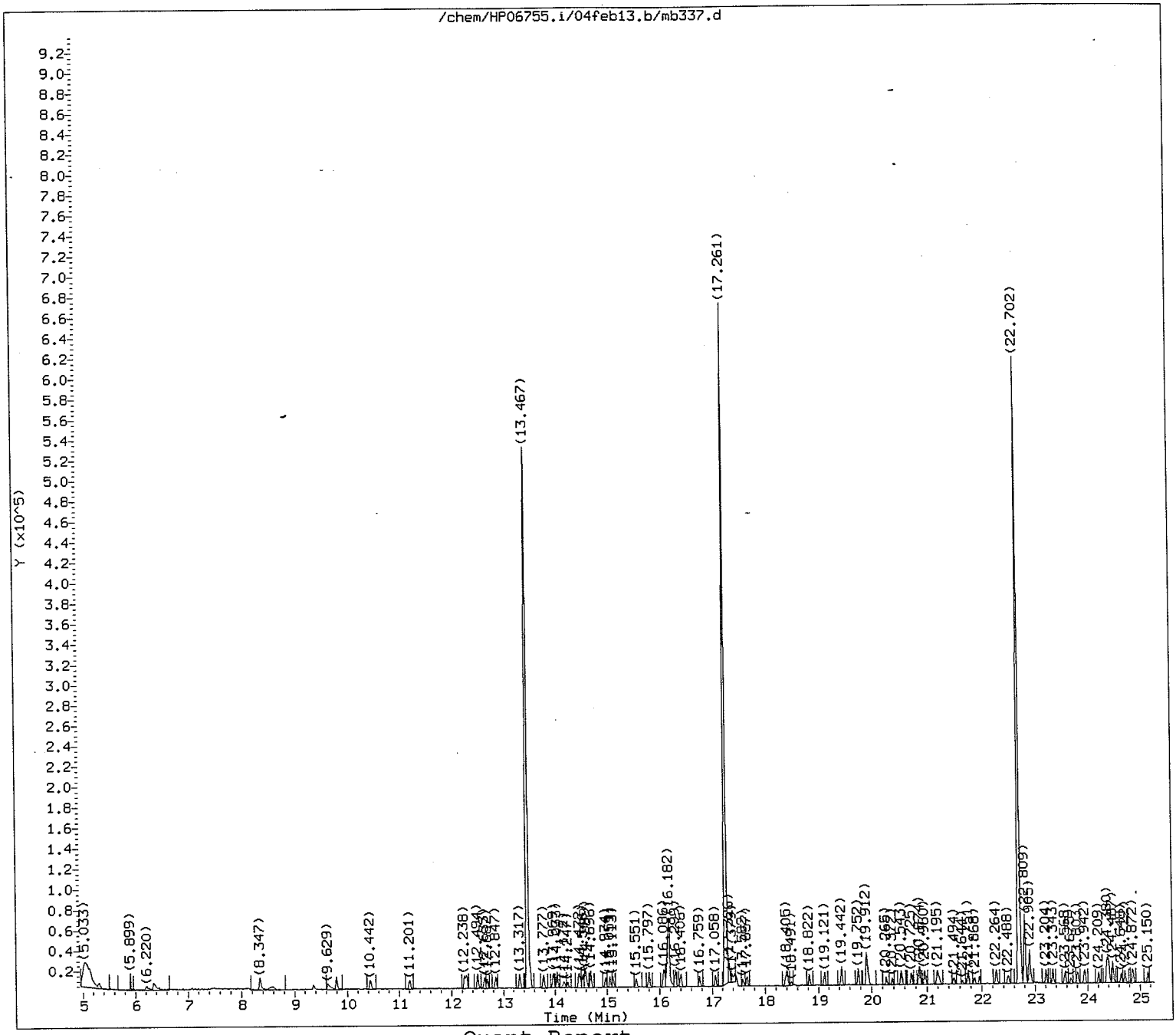
Data File: /chem/HP06755.i/04feb13.b/mb336.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 12:04  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 15-FEB-2004 16:43
Date, time and analyst ID of latest file update: 15-Feb-2004 16:43 ids01472

Sample Name: SSTD030  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 165) Chrysene-d12 | (5) | 33.842 | 240 | 459640 | 40.000 |
| 166) Chrysene | (5) | 33.927 | 228 | 406278 | 30.228 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 33.532 | 149 | 481338 | 30.336 |
| 168) Di-n-octylphthalate | (6) | 36.129 | 149 | 805253 | 29.691 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 38.481 | 256 | 205974 | 30.367 |
| 170) Benzo(b)fluoranthene | (6) | 38.545 | 252 | 444658 | 29.726 |
| 171) Benzo(k)fluoranthene | (6) | 38.705 | 252 | 422615 | 30.312 |
| 172) Benzo(a)pyrene | (6) | 40.522 | 252 | 400820 | 30.064 |
| 173) Perylene-d12 | (6) | 40.897 | 264 | 424302 | 40.000 |
| 174) 3-Methylcholanthrene | (6) | 42.906 | 268 | 219536 | 29.772 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 49.640 | 276 | 376000 | 29.696 |
| 176) Dibenz(a,h)anthracene | (6) | 49.875 | 278 | 346069 | 30.178 |
| 177) Benzo(g,h,i)perylene | (6) | 52.419 | 276 | 384423 | 29.878 |
| 9) 2-Fluorophenol | (1) | 9.813 | 112 | 308142 | 29.977 |
| 14) Phenol-d5 | (1) | 12.250 | 99 | 378621 | 30.003 |
| 15) Phenol-d6 | (1) | 12.250 | 99 | 378621 | 30.003 |
| 38) Nitrobenzene-d5 | (2) | 15.061 | 82 | 262395 | 30.412 |
| 77) 2-Fluorobiphenyl | (3) | 20.545 | 172 | 403498 | 30.320 |
| 117) 2,4,6-Tribromophenol | (3) | 25.152 | 330 | 56063 | 31.026 |
| 154) Terphenyl-d14 | (5) | 30.870 | 244 | 305790 | 30.644 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d
Injection date and time: 13-FEB-2004 13:05

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 13:06

Sublist used: all1

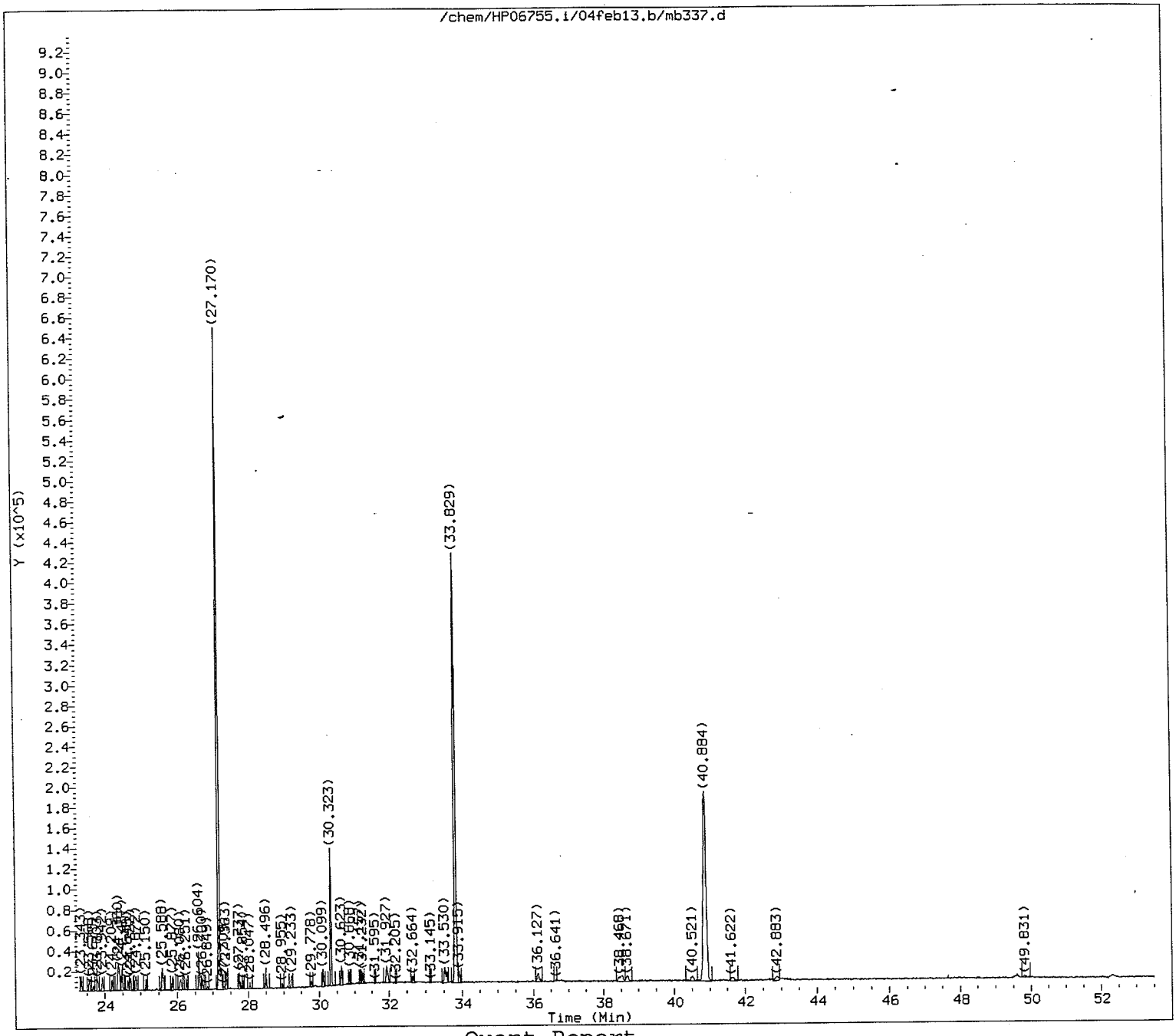
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001

Lab Sample ID: 8270MDL0404

8436

WS1427
2/15/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d
Injection date and time: 13-FEB-2004 13:05

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 13:06

Sublist used: all1

Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001

Lab Sample ID: 8270MDL0404

9437

UG4477
9/15/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 5.300 | 88 | 3210M | 0.910 |
| 2) | N-Nitrosodimethylamine | (1) | 6.209 | 74 | 4472 | 0.798 |
| 3) | Pyridine | (1) | 6.348 | 79 | 7828 | 0.861 |
| 4) | N,N-dimethyl formamide | (1) | 7.470 | 73 | 2753M | 0.511 |
| 5) | 2-Picoline | (1) | 8.336 | 93 | 8912 | 1.002 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.593 | 88 | 3806 | 0.914 |
| 7) | Methyl methanesulfonate | (1) | 9.362 | 80 | 3869 | 1.050 |
| 8) | N,N-dimethyl acetamide | (1) | 9.640 | 87 | 3803M | 0.799 |
| 10) | N-Nitrosodiethylamine | (1) | 10.442 | 102 | 3938 | 0.972 |
| 11) | Ethyl methanesulfonate | (1) | 11.201 | 109 | 4463 | 1.003 |
| 13) | Aniline | (1) | 12.494 | 93 | 12047 | 1.028 |
| 16) | Phenol | (1) | 12.280 | 94 | 10504 | 1.069 |
| 17) | Pentachloroethane | (1) | 12.676 | 167 | 2251M | 0.885 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.633 | 93 | 8719 | 1.088 |
| 19) | 2-Chlorophenol | (1) | 12.847 | 128 | 7769 | 1.018 |
| 20) | 1,3-Dichlorobenzene | (1) | 13.317 | 146 | 8529 | 1.081 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.467 | 152 | 196209 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.520 | 146 | 8148 | 1.029 |
| 24) | Benzyl alcohol | (1) | 13.777 | 108 | 4731 | 0.945 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.969 | 146 | 7789 | 1.037 |
| 26) | 2-Methylphenol | (1) | 14.044 | 108 | 7465 | 1.054 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 14.172 | 45 | 12234 | 1.099 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 14.172 | 45 | 12234 | 1.099 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.504 | 100 | 3887 | 0.976 |
| 30) | Acetophenone | (1) | 14.589 | 105 | 10902 | 1.139 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.546 | 70 | 5260 | 1.125 |
| 32) | N-Nitrosomorpholine | (1) | 14.621 | 56 | 4686 | 1.197 |
| 33) | 4-Methylphenol | (1) | 14.472 | 108 | 7081 | 0.977 |
| 34) | o-Toluidine | (1) | 14.685 | 106 | 12543 | 1.133 |
| 37) | Hexachloroethane | (1) | 14.974 | 117 | 3297 | 0.999 |
| 39) | Nitrobenzene | (2) | 15.113 | 77 | 7448 | 1.068 |
| 40) | N-Nitrosopiperidine | (2) | 15.562 | 114 | 3653 | 0.961 |
| 41) | Isophorone | (2) | 15.797 | 82 | 14834 | 1.081 |
| 42) | 2-Nitrophenol | (2) | 16.064 | 139 | 3271 | 0.865 |
| 44) | 2,4-Dimethylphenol | (2) | 16.086 | 107 | 7097 | 1.004 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 16.299 | 198 | 2547M | 1.007 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 16.406 | 93 | 9566 | 1.133 |
| 47) | Benzoic acid | (2) | 16.182 | 105 | 60083 | 11.261 |
| 49) | 2,4-Dichlorophenol | (2) | 16.759 | 162 | 5008 | 0.929 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 17.058 | 180 | 5761 | 1.044 |
| 52) | Naphthalene-d8 | (2) | 17.261 | 136 | 721419 | 40.000 |
| 53) | Naphthalene | (2) | 17.326 | 128 | 20501 | 1.079 |
| 54) | (2-Bromoethyl)benzene | (2) | 17.390 | 184 | 1088M | 0.998 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 17.422 | 127 | 8554 | 0.995 |
| 56) | 2,6-Dichlorophenol | (2) | 17.464 | 162 | 5278 | 1.053 |
| 57) | Hexachloropropene | (2) | 17.582 | 213 | 2370M | 0.862 |
| 59) | Hexachlorobutadiene | (2) | 17.657 | 225 | 2482 | 0.980 |
| 62) | Caprolactam | (2) | 18.384 | 113 | 2018M | 0.834 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 18.405 | 84 | 5874 | 2.543 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.822 | 107 | 5521 | 0.941 |
| 68) | Safrole | (2) | 19.121 | 162 | 4318 | 0.967 |
| 69) | 2-Methylnaphthalene | (2) | 19.442 | 142 | 12007 | 1.028 |
| 70) | 1-Methylnaphthalene | (2) | 19.752 | 142 | 11284 | 1.034 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.912 | 237 | 9498 | 4.277 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.944 | 216 | 4845 | 1.059 |
| 73) | cis-Isosafrole | (3) | 20.019 | 162 | 130M | 0.032 |
| 74) | 2,4,6-Trichlorophenol | (3) | 20.265 | 196 | 2837 | 0.865 |
| 76) | 2,4,5-Trichlorophenol | (3) | 20.372 | 196 | 2993 | 0.830 |
| 78) | trans-Isosafrole | (3) | 20.725 | 162 | 4748 | 0.895 |
| 79) | Isosafrole | (3) | 20.725 | 162 | 4748 | 1.006 |
| 80) | Biphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 81) | Diphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 82) | 1,1'-Biphenyl | (3) | 20.874 | 154 | 13545 | 1.053 |
| 83) | 2-Chloronaphthalene | (3) | 20.960 | 162 | 10823 | 1.063 |
| 86) | Diphenyl ether | (3) | 21.195 | 170 | 7164 | 1.088 |
| 87) | 2-Nitroaniline | (3) | 21.227 | 138 | 3476 | 0.791 |
| 88) | 1,4-Naphthoquinone | (3) | 21.484 | 158 | 2537M | 0.769 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.644 | 168 | 1124M | 0.544 |
| 90) | Dimethylphthalate | (3) | 21.751 | 163 | 12980 | 1.085 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.868 | 168 | 1549M | 0.658 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.954 | 165 | 2414 | 0.776 |
| 93) | Acenaphthylene | (3) | 22.275 | 152 | 16408 | 1.039 |
| 95) | 3-Nitroaniline | (3) | 22.488 | 138 | 3013 | 0.789 |
| 96) | Acenaphthene-d10 | (3) | 22.702 | 164 | 321916 | 40.000 |
| 97) | Acenaphthene | (3) | 22.809 | 153 | 10034 | 1.063 |
| 98) | 2,4-Dinitrophenol | (3) | 22.820 | 184 | 15757 | 14.188 |
| 99) | Pentachlorobenzene | (3) | 23.204 | 250 | 3725 | 1.013 |
| 101) | 4-Nitrophenol | (3) | 22.905 | 109 | 6607 | 4.032 |
| 102) | Dibenzofuran | (3) | 23.333 | 168 | 14695 | 1.071 |
| 103) | 2,4-Dinitrotoluene | (3) | 23.215 | 165 | 3301 | 0.869 |
| 104) | 1-Naphthylamine | (3) | 23.568 | 143 | 10172 | 1.083 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.675 | 232 | 1806M | 0.733 |
| 106) | 2-Naphthylamine | (3) | 23.814 | 143 | 10514 | 1.079 |
| 107) | Diethylphthalate | (3) | 23.942 | 149 | 13161 | 1.069 |
| 108) | Thionazin | (3) | 24.209 | 107 | 2127M | 0.949 |
| 109) | Fluorene | (3) | 24.412 | 166 | 11916 | 1.145 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 110) | 4-Chlorophenyl-phenylether | (3) | 24.370 | 204 | 4686 | 1.002 |
| 111) | 5-Nitro-o-toluidine | (3) | 24.380 | 152 | 3333 | 0.883 |
| 112) | 4-Nitroaniline | (3) | 24.391 | 138 | 3630 | 0.974 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.487 | 198 | 6067 | 3.053 |
| 114) | 1-Nitronaphthalene | (4) | 24.648 | 173 | 1798 | 0.795 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.722 | 169 | 7575 | 0.994 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.872 | 77 | 14000 | 1.086 |
| 118) | Tetraethyldithiopyrophosphate | (4) | 25.150 | 97 | 2313M | 0.998 |
| 119) | 1,3,5-Trinitrobenzene | (4) | 25.438 | 213 | 348M | 3.953 |
| 120) | Diallate (peak 1) | (4) | 25.588 | 86 | 4713 | 0.790 |
| 121) | Phorate | (4) | 25.620 | 75 | 7778 | 2.457 |
| 122) | Phenacetin | (4) | 25.599 | 108 | 6203 | 0.941 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.877 | 248 | 2753 | 1.068 |
| 124) | Diallate (peak 2) | (4) | 25.866 | 86 | 1196M | 0.211 |
| 125) | Hexachlorobenzene | (4) | 26.080 | 284 | 2808 | 0.986 |
| 126) | Dimethoate | (4) | 26.112 | 87 | 4901 | 0.000 |
| 127) | Diallate TRANS/CIS | (4) | 21.799 | 86 | 5909 | 1.001 |
| 129) | Pentachlorophenol | (4) | 26.604 | 266 | 7242 | 3.638 |
| 130) | Pentachloronitrobenzene | (4) | 26.636 | 237 | 721M | 0.687 |
| 131) | 4-Aminobiphenyl | (4) | 26.604 | 169 | 9134 | 1.216 |
| 132) | Pronamide | (4) | 26.700 | 173 | 4002 | 0.842 |
| 133) | Phenanthrene-d10 | (4) | 27.170 | 188 | 475858 | 40.000 |
| 134) | Dinoseb | (4) | 27.053 | 211 | 832M | 3.906 |
| 135) | Phenanthrene | (4) | 27.234 | 178 | 14684 | 1.060 |
| 136) | Anthracene | (4) | 27.363 | 178 | 14886 | 1.047 |
| 138) | Carbazole | (4) | 27.737 | 167 | 13595 | 0.977 |
| 139) | Methyl parathion | (4) | 28.047 | 109 | 2967 | 0.633 |
| 140) | Di-n-butylphthalate | (4) | 28.496 | 149 | 20856 | 1.002 |
| 141) | Parathion | (4) | 28.955 | 109 | 1493M | 0.547 |
| 143) | Methapyrilene | (4) | 29.233 | 97 | 5410 | 1.915 |
| 144) | Isodrin | (4) | 29.778 | 193 | 1603M | 0.985 |
| 145) | Fluoranthene | (4) | 30.110 | 202 | 13975 | 1.000 |
| 150) | Benzidine | (5) | 30.323 | 184 | 84315 | 12.481 |
| 152) | Pyrene | (5) | 30.623 | 202 | 14278 | 1.043 |
| 156) | p-Dimethylaminoazobenzene | (5) | 31.168 | 225 | 2209 | 0.788 |
| 157) | Chlorobenzilate | (5) | 31.232 | 139 | 4733 | 0.876 |
| 158) | 3,3'-Dimethylbenzidine | (5) | 31.969 | 212 | 6248 | 1.490 |
| 159) | Butylbenzylphthalate | (5) | 31.927 | 149 | 9953 | 1.072 |
| 160) | 2-Acetylaminofluorene | (5) | 32.664 | 181 | 3941 | 0.618 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.584 | 252 | 3867 | 0.818 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.584 | 231 | 1661M | 0.740 |
| 164) | Benzo(a)anthracene | (5) | 33.797 | 228 | 12751 | 1.081 |
| 165) | Chrysene-d12 | (5) | 33.829 | 240 | 369387 | 40.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb13.b/mb337.d
Injection date and time: 13-FEB-2004 13:05

Instrument ID: HP06755.i
Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sublist used: all1

Sample Name: SSTD001

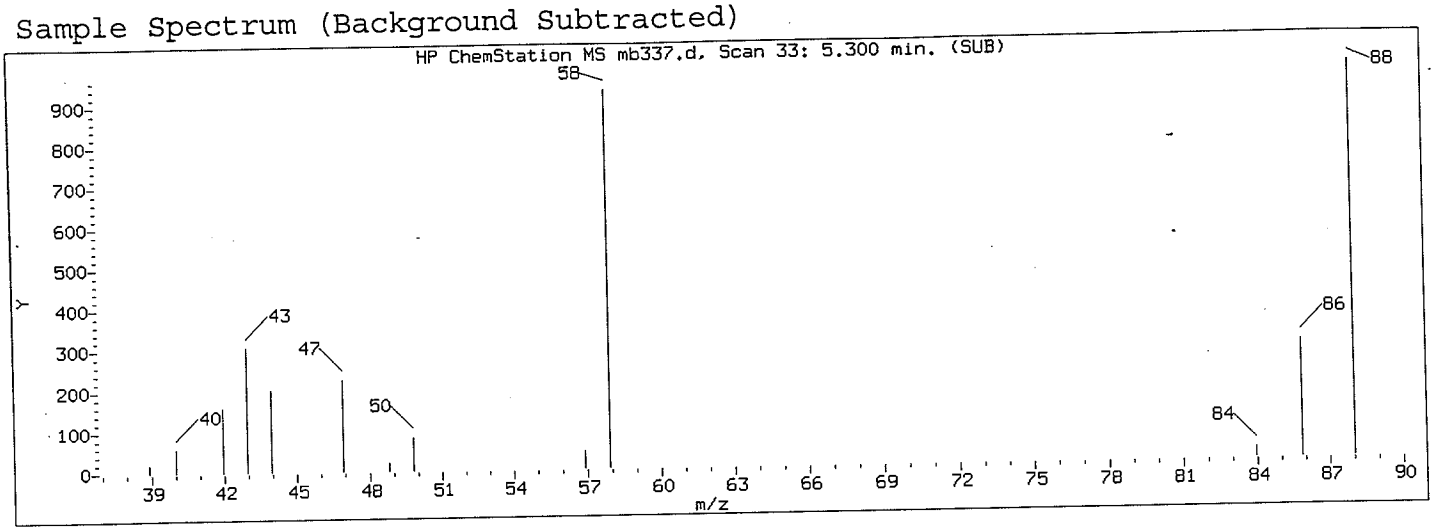
Lab Sample ID: 8270MDL0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 166) | Chrysene | (5) | 33.926 | 228 | 10335 | 0.957 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.530 | 149 | 13045 | 1.023 |
| 168) | Di-n-octylphthalate | (6) | 36.138 | 149 | 19065 | 0.967 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 38.447 | 256 | 4169 | 0.845 |
| 170) | Benzo(b)fluoranthene | (6) | 38.522 | 252 | 11040 | 1.015 |
| 171) | Benzo(k)fluoranthene | (6) | 38.682 | 252 | 10105 | 0.997 |
| 172) | Benzo(a)pyrene | (6) | 40.521 | 252 | 9078 | 0.937 |
| 173) | Perylene-d12 | (6) | 40.873 | 264 | 308471 | 40.000 |
| 174) | 3-Methylcholanthrene | (6) | 42.862 | 268 | 4244 | 0.792 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 49.585 | 276 | 7623M | 0.828 |
| 176) | Dibenz(a,h)anthracene | (6) | 49.831 | 278 | 7364 | 0.883 |
| 177) | Benzo(g,h,i)perylene | (6) | 52.332 | 276 | 8016 | 0.857 |
| 9) | 2-Fluorophenol | (1) | 9.790 | 112 | 8703 | 1.061 |
| 14) | Phenol-d5 | (1) | 12.238 | 99 | 10013 | 0.994 |
| 15) | Phenol-d6 | (1) | 12.238 | 99 | 10013 | 0.994 |
| 38) | Nitrobenzene-d5 | (2) | 15.059 | 82 | 7323 | 1.038 |
| 77) | 2-Fluorobiphenyl | (3) | 20.543 | 172 | 11182 | 1.039 |
| 117) | 2,4,6-Tribromophenol | (3) | 25.150 | 330 | 941 | 0.644 |
| 154) | Terphenyl-d14 | (5) | 30.868 | 244 | 8076 | 1.007 |

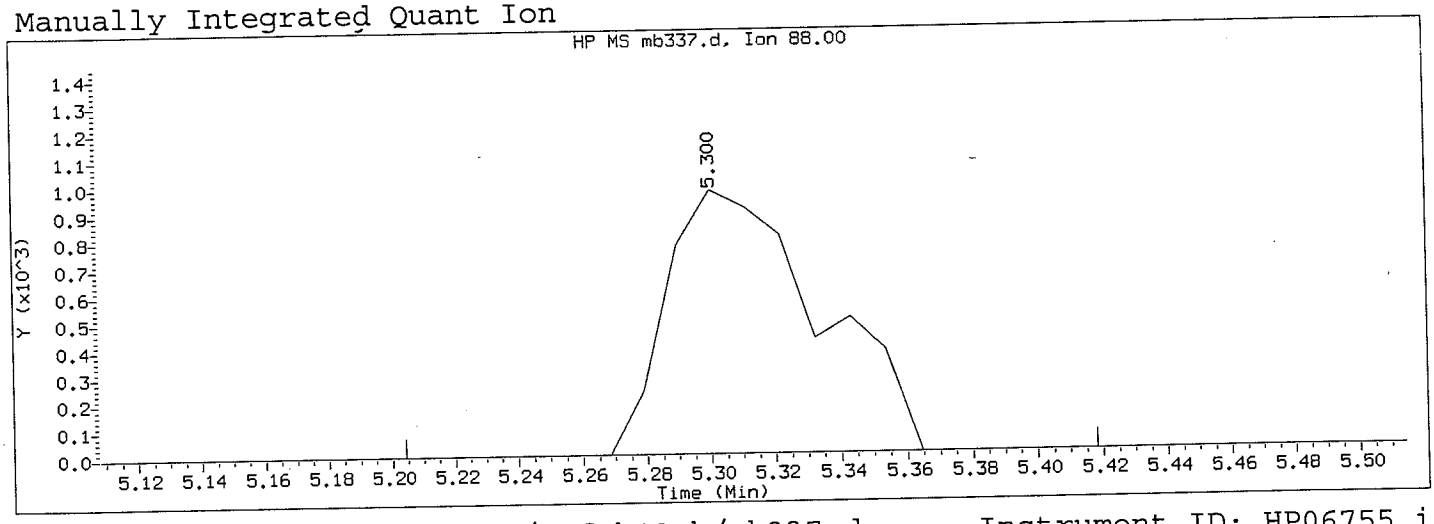
M = Compound was manually integrated.

A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 33
Retention Time (minutes): 5.300
Quant Ion : 88
Area (flag) : 3210 M
Concentration (ng/ul) : 0.9104
Integration start scan : 23 Integration stop scan: 43
Y at integration start : 0 Y at integration end: 0

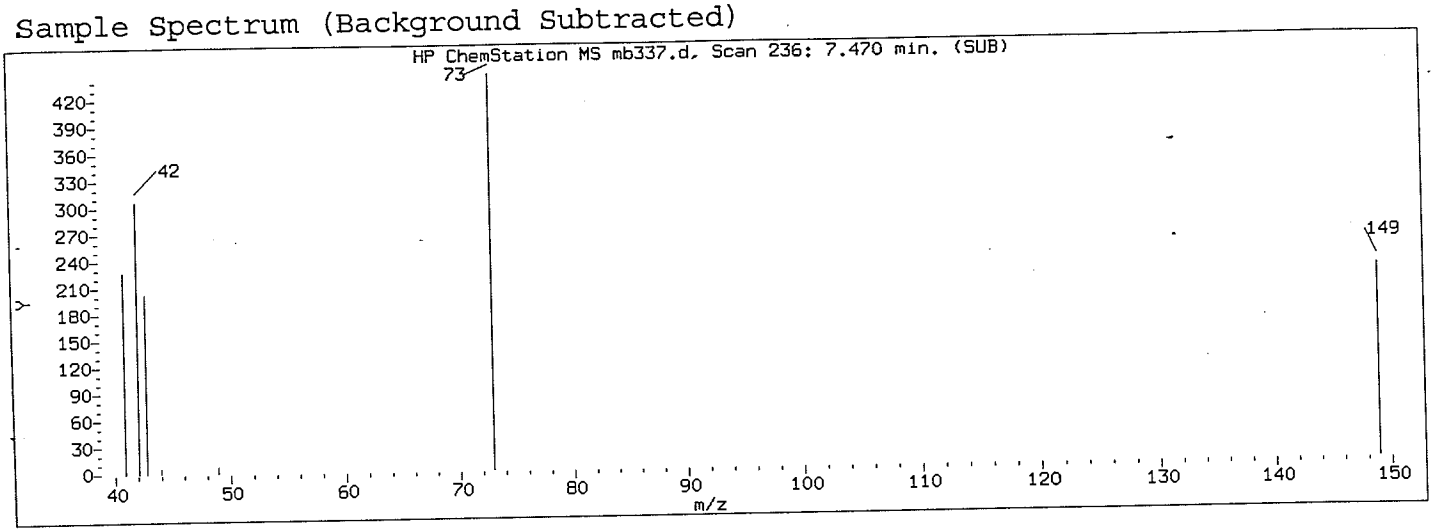
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

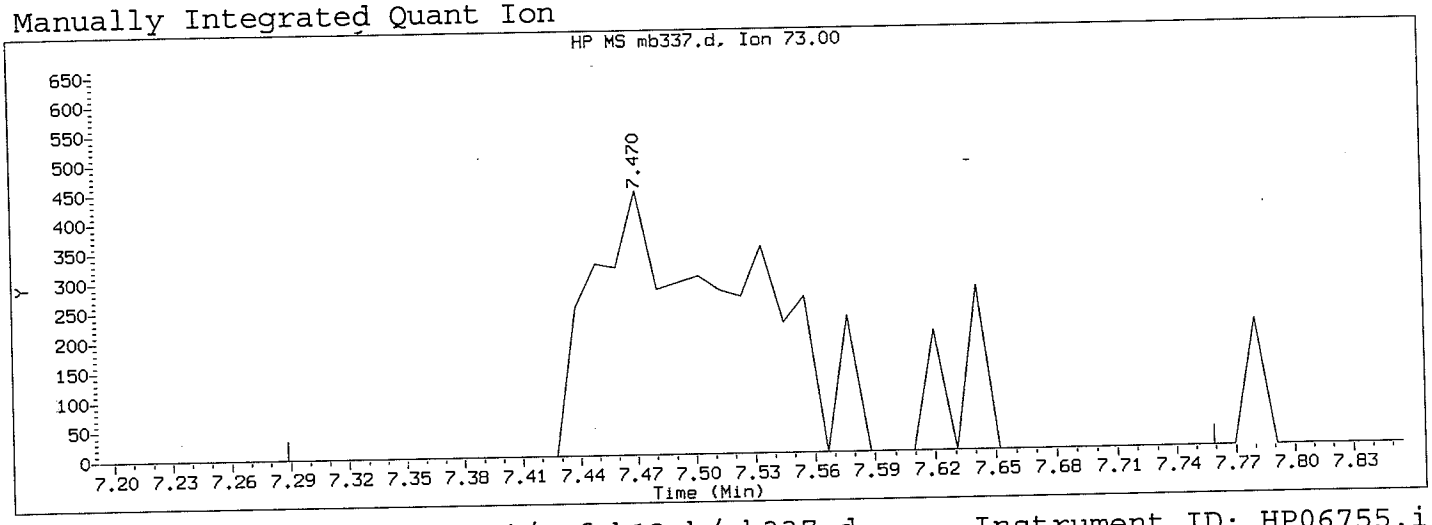
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 4
Compound Name : N,N-dimethyl formamide
Scan Number : 236
Retention Time (minutes): 7.470
Quant Ion : 73
Area (flag) : 2753 M
Concentration (ng/ul) : 0.5112
Integration start scan : 218 Integration stop scan: 262
Y at integration start : 0 Y at integration end: 0

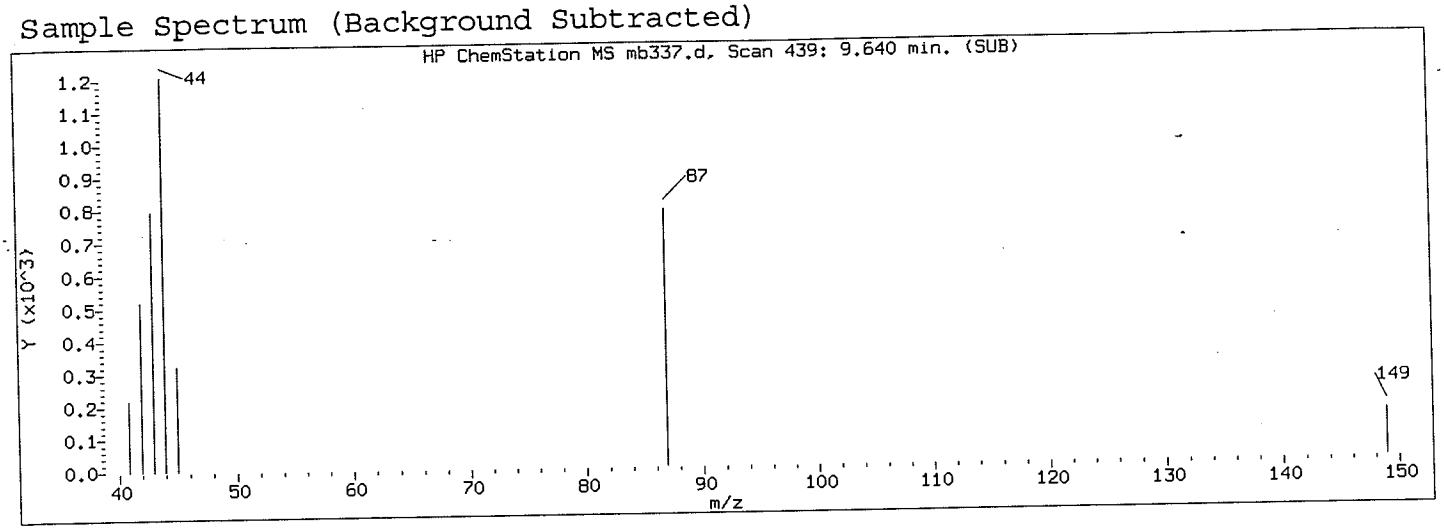
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jan Spitz 2/15/04

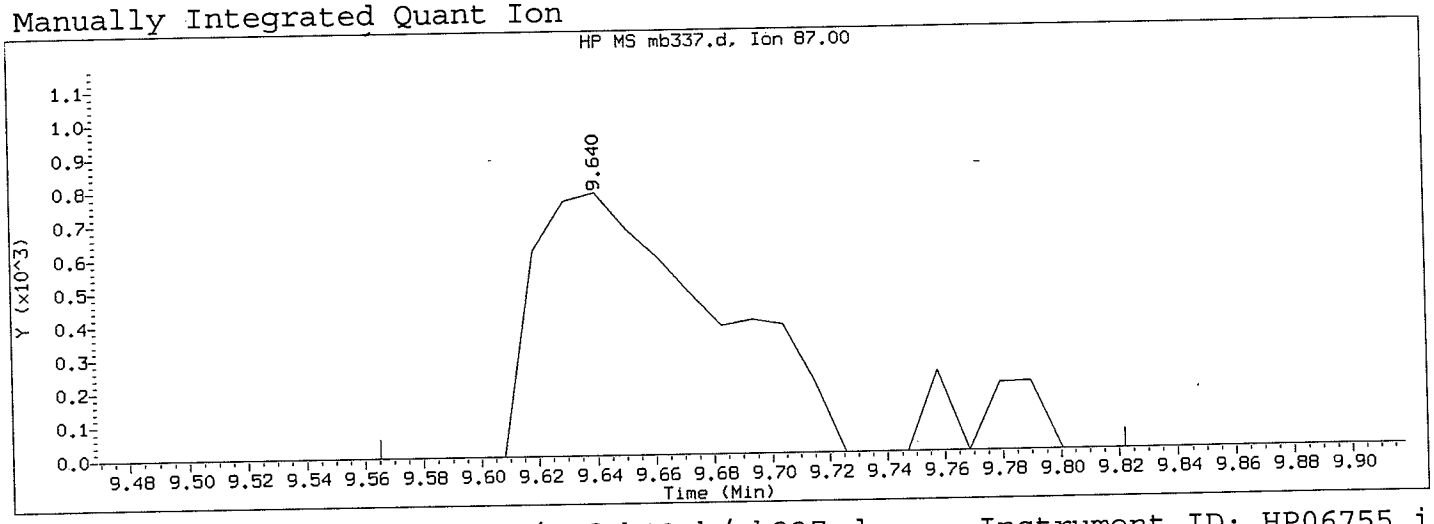
GC/MS audit/management approval: mj/ps 2/22/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 8
Compound Name : N,N-dimethyl acetamide
Scan Number : 439
Retention Time (minutes): 9.640
Quant Ion : 87
Area (flag) : 3803 M
Concentration (ng/ul) : 0.7986
Integration start scan : 431 Integration stop scan: 455
Y at integration start : 0 Y at integration end: 0

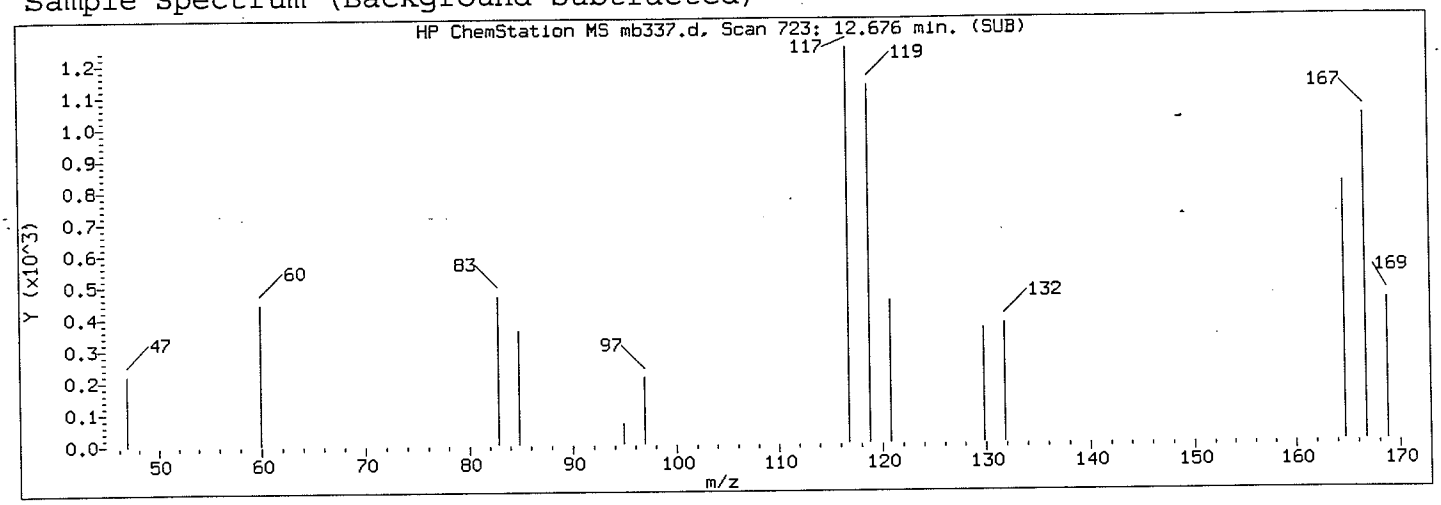
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Jen Spotts 2/15/04

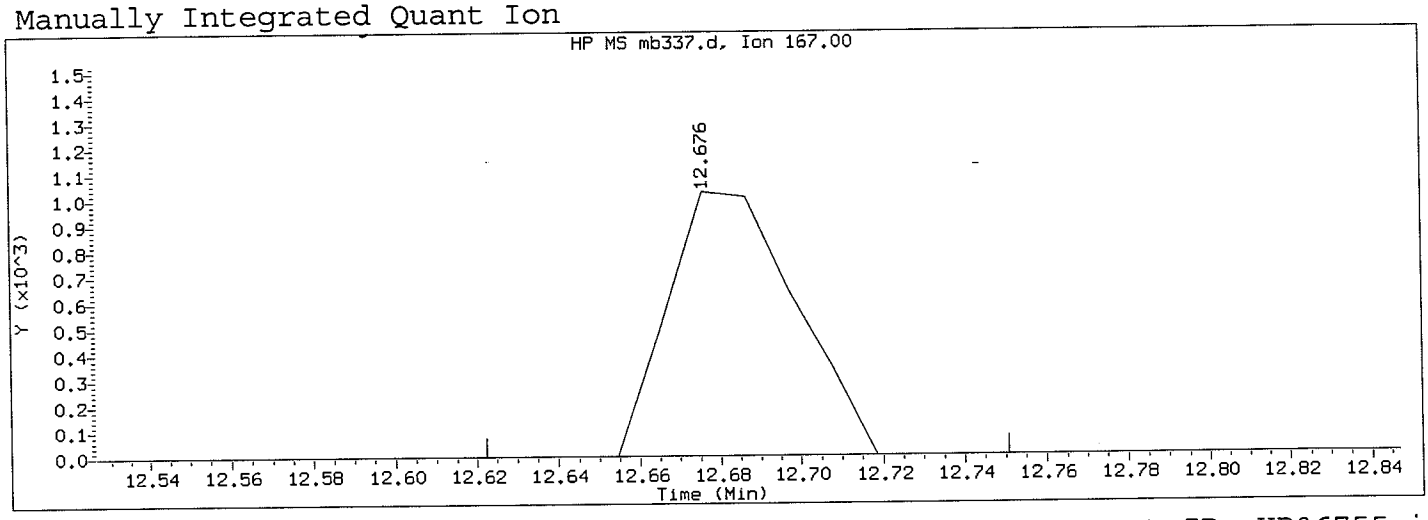
GC/MS audit/management approval: mm/05 2/23/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

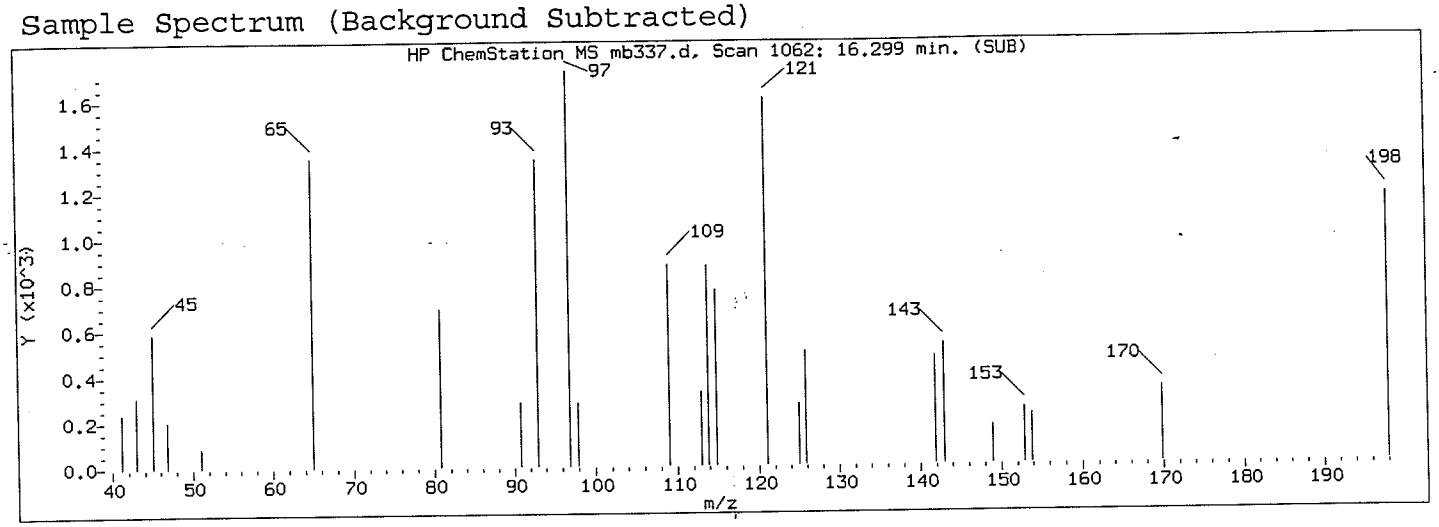
Compound Number : 17
Compound Name : Pentachloroethane
Scan Number : 723
Retention Time (minutes): 12.676
Quant Ion : 167
Area (flag) : 2251 M
Concentration (ng/ul) : 0.8855
Integration start scan : 717 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

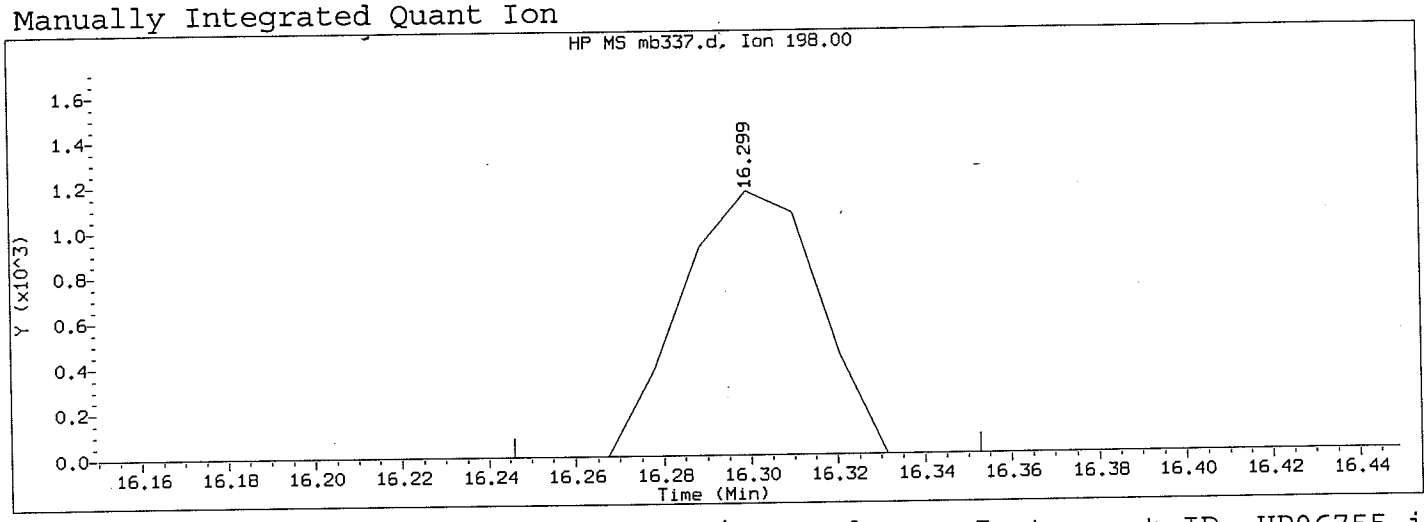
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 45
Compound Name : O,O,O-triethylphosphorothioate
Scan Number : 1062
Retention Time (minutes): 16.299
Quant Ion : 198
Area (flag) : 2547 M
Concentration (ng/ul) : 1.0072
Integration start scan : 1056  Integration stop scan: 1066
Y at integration start : 0  Y at integration end: 0

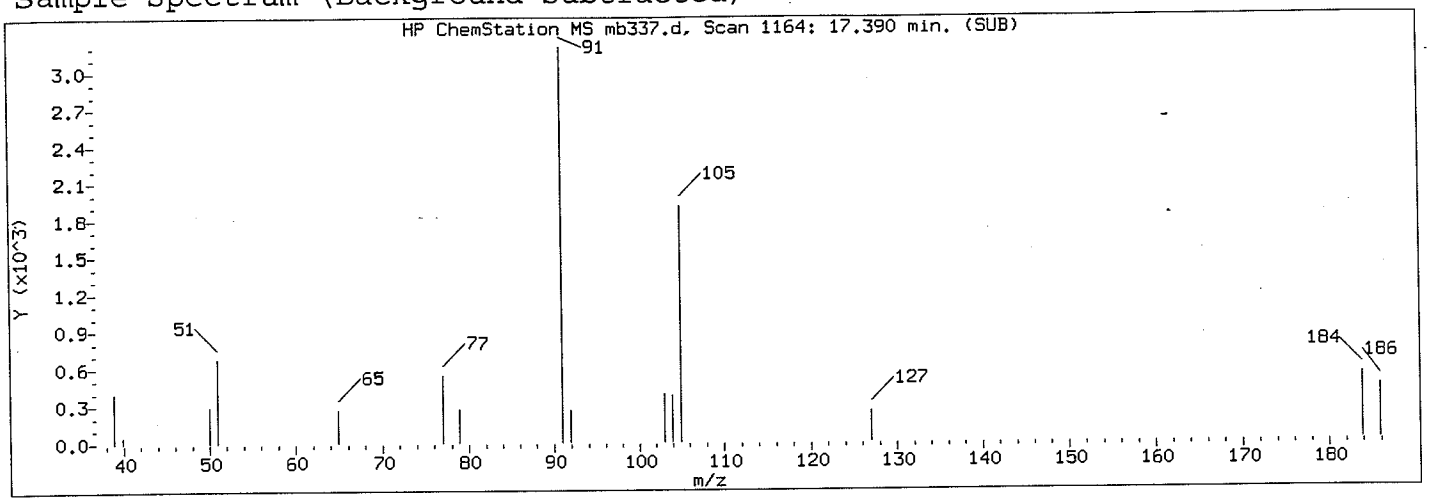
Reason for manual integration (circle one): missed peak  improper integration

Analyst responsible for change: _____ 2/15/04

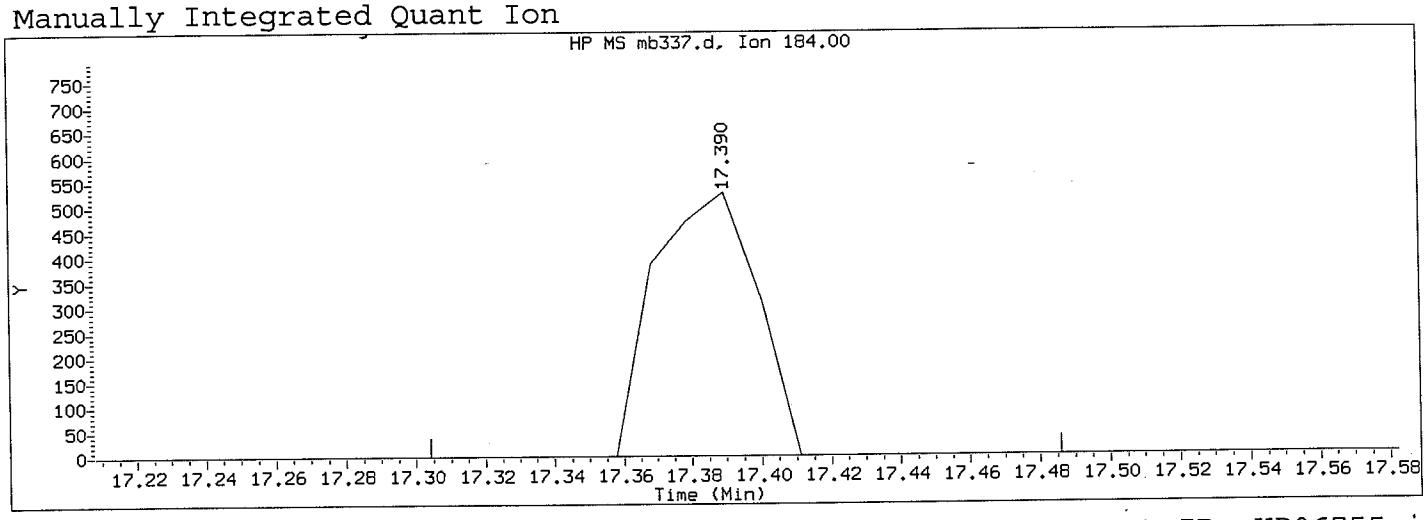
GC/MS audit/management approval: _____ 2/27/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

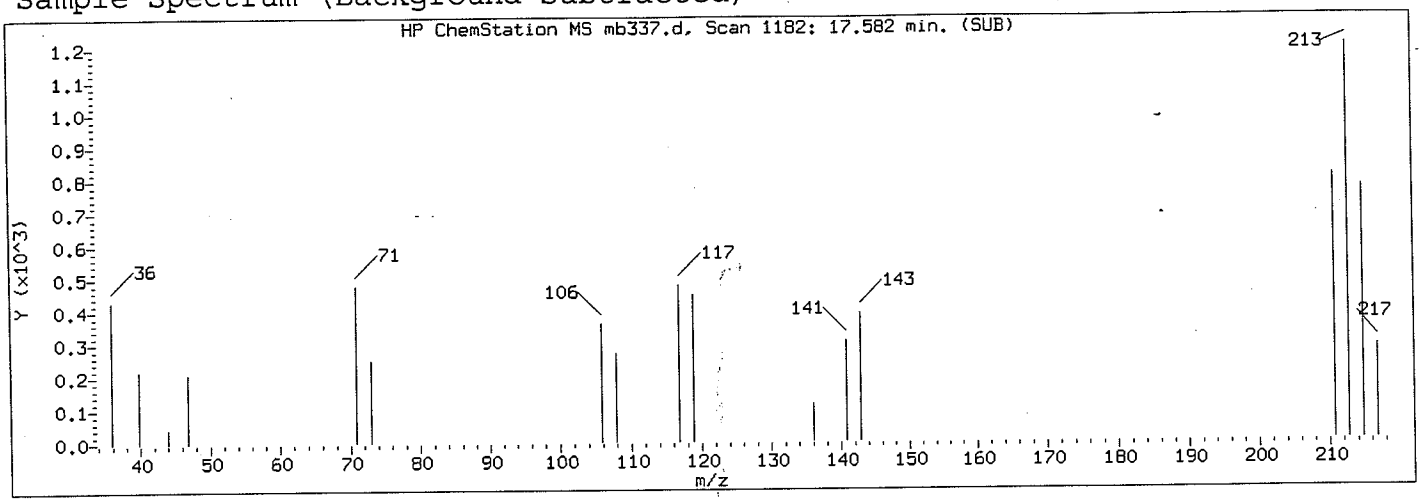
Compound Number : 54
Compound Name : (2-Bromoethyl)benzene
Scan Number : 1164
Retention Time (minutes): 17.390
Quant Ion : 184
Area (flag) : 1088 M
Concentration (ng/ul) : 0.9982
Integration start scan : 1155 Integration stop scan: 1172
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

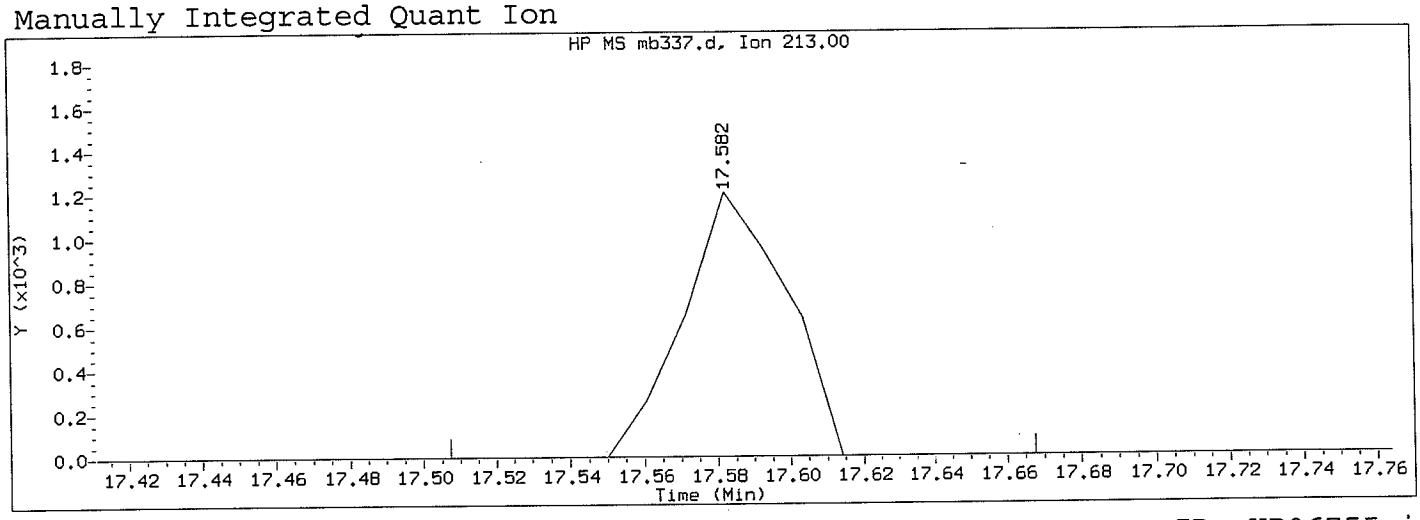
Analyst responsible for change: James Jones 2/15/04

GC/MS audit/management approval: MJ 2/22/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 57
Compound Name : Hexachloropropene
Scan Number : 1182
Retention Time (minutes): 17.582
Quant Ion : 213
Area (flag) : 2370 M
Concentration (ng/ul) : 0.8623
Integration start scan : 1174 Integration stop scan: 1189
Y at integration start : 0 Y at integration end: 0

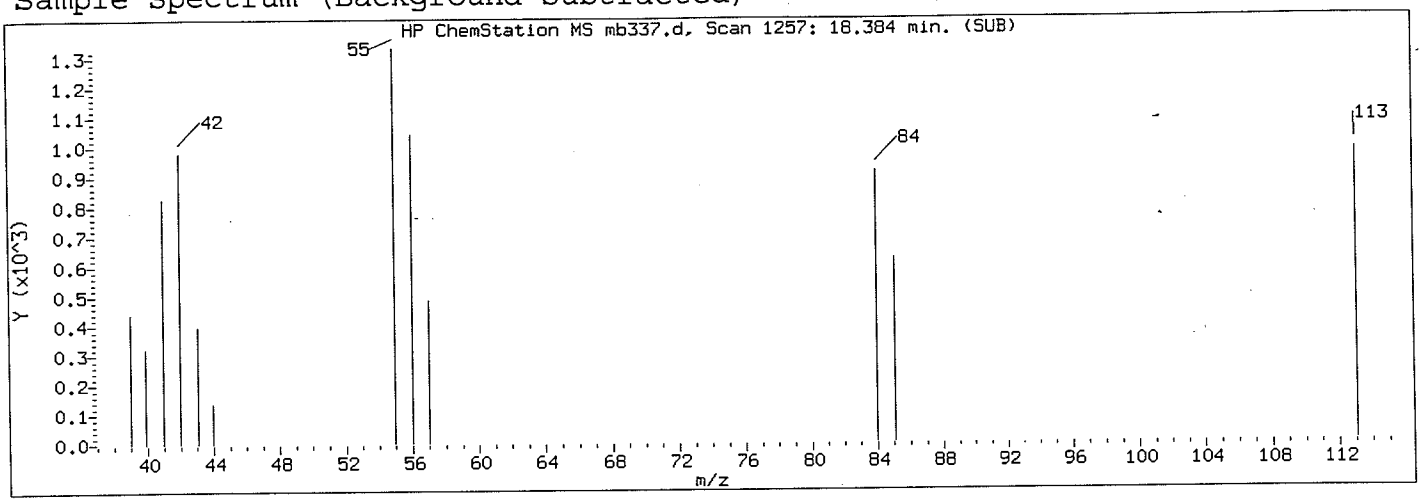
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

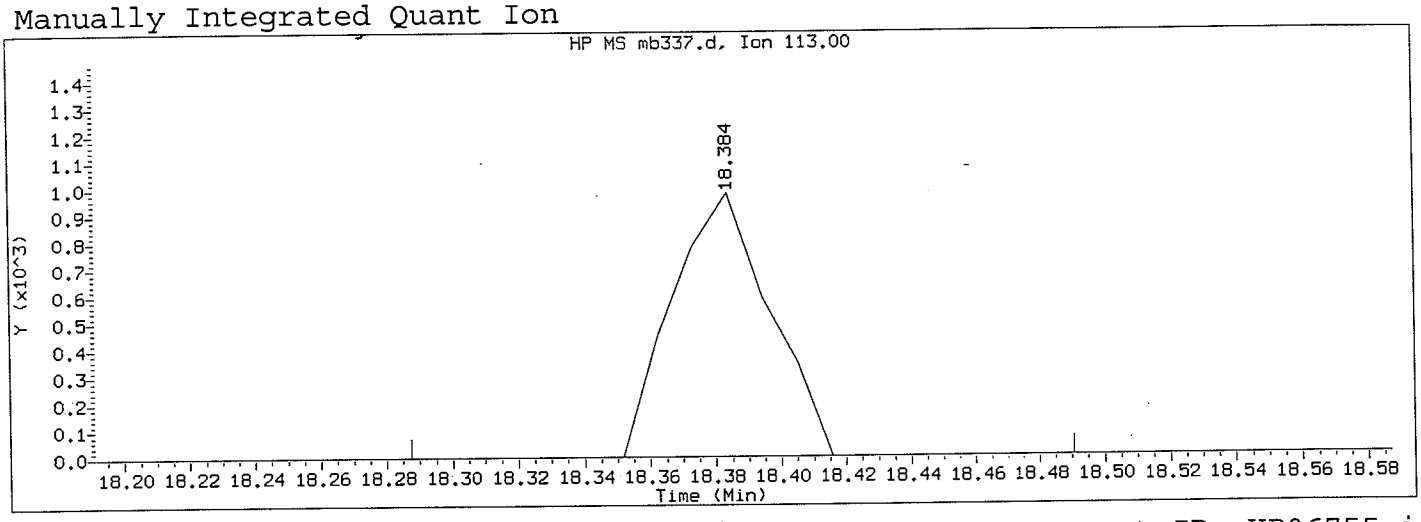
GC/MS audit/management approval: _____ 2/22/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 62
Compound Name : Caprolactam
Scan Number : 1257
Retention Time (minutes): 18.384
Quant Ion : 113
Area (flag) : 2018 M
Concentration (ng/ul) : 0.8336
Integration start scan : 1247  Integration stop scan: 1266
Y at integration start : 0  Y at integration end: 0

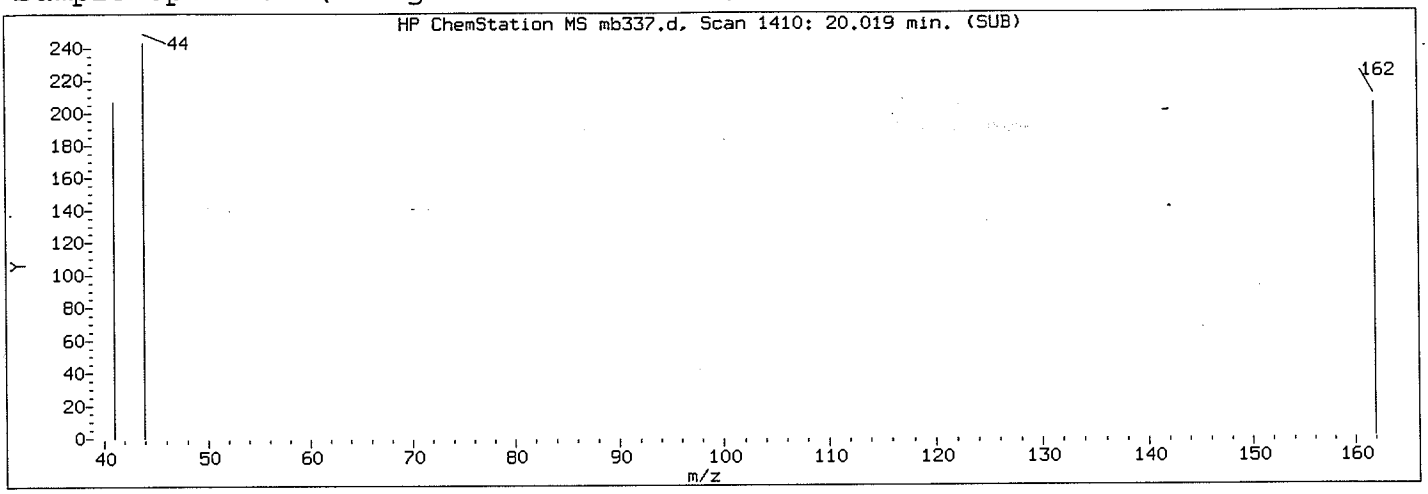
Reason for manual integration (circle one): missed peak  improper integration

Analyst responsible for change: [signature] 2/15/04

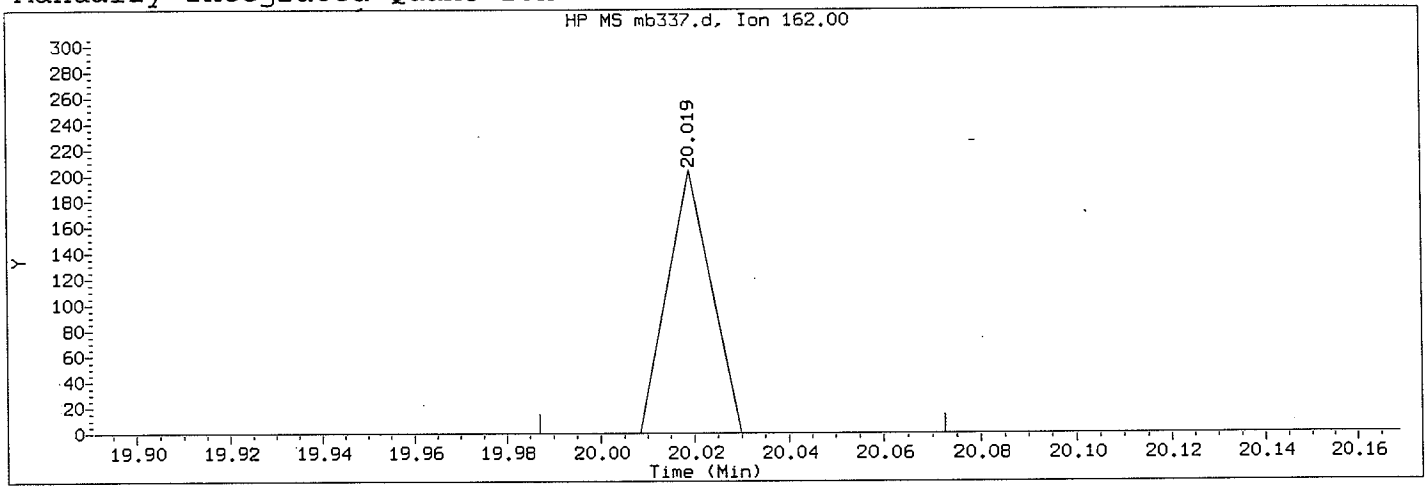
GC/MS audit/management approval: [signature] 2/25/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 73
Compound Name : cis-Isosafrole
Scan Number : 1410
Retention Time (minutes): 20.019
Quant Ion : 162
Area (flag) : 130 M
Concentration (ng/ul) : 0.0317
Integration start scan : 1406 Integration stop scan: 1414
Y at integration start : 0 Y at integration end: 0

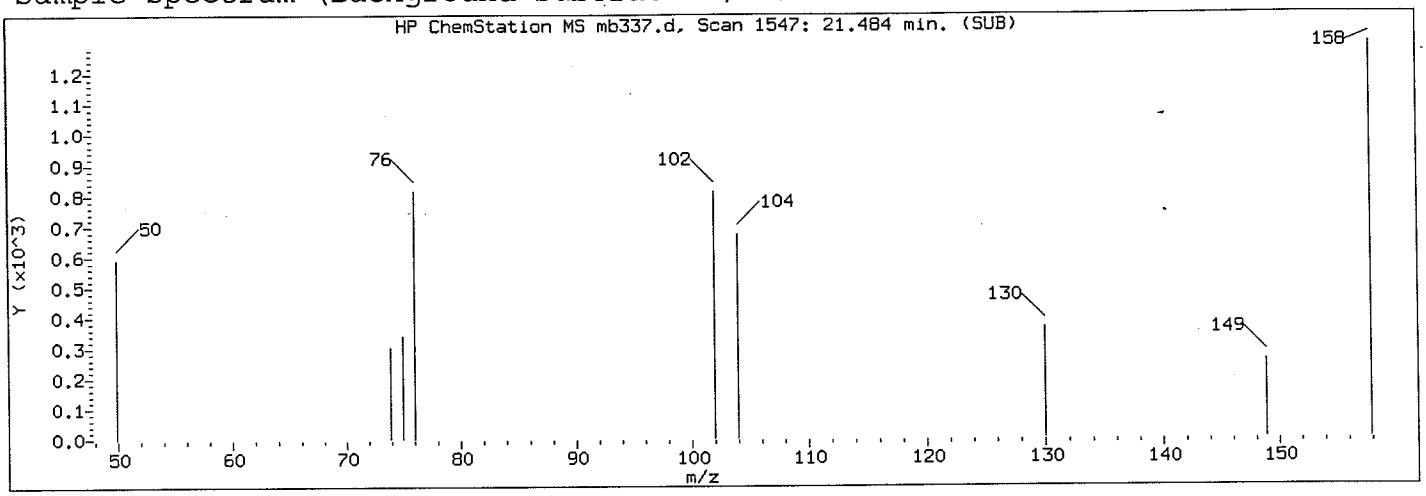
Reason for manual integration (circle one): (missed peak) improper integration

Analyst responsible for change: Jan Jones 2/15/04

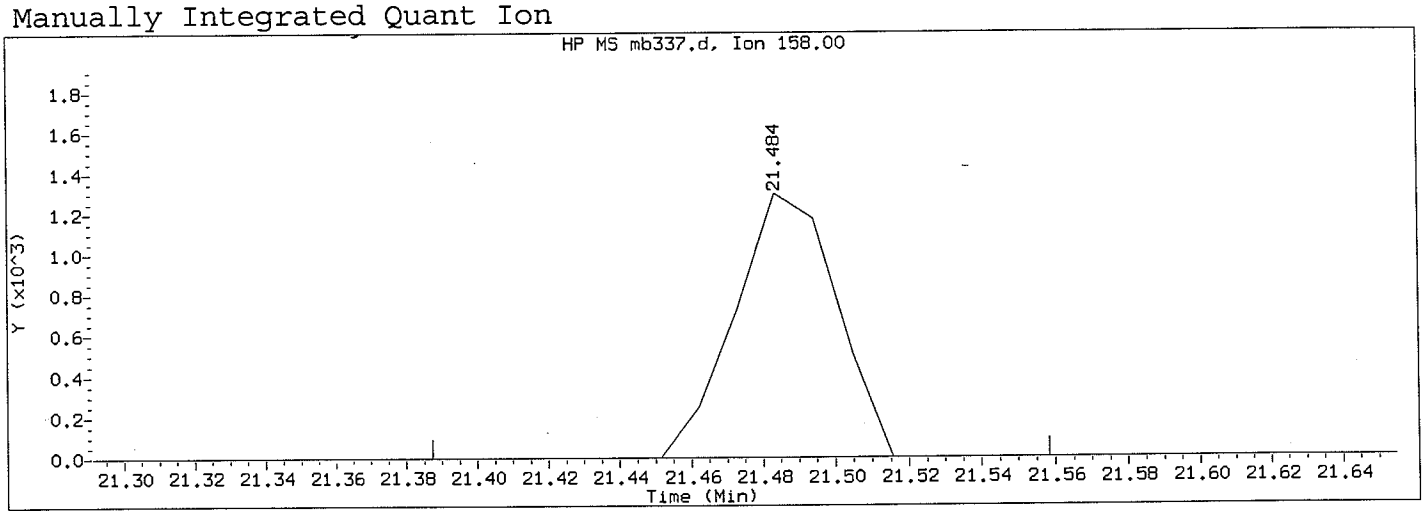
GC/MS audit/management approval: mw/jos 2/22/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 88
Compound Name : 1,4-Naphthoquinone
Scan Number : 1547
Retention Time (minutes): 21.484
Quant Ion : 158
Area (flag) : 2537 M
Concentration (ng/ul) : 0.7694
Integration start scan : 1537 Integration stop scan: 1553
Y at integration start : 0 Y at integration end: 0

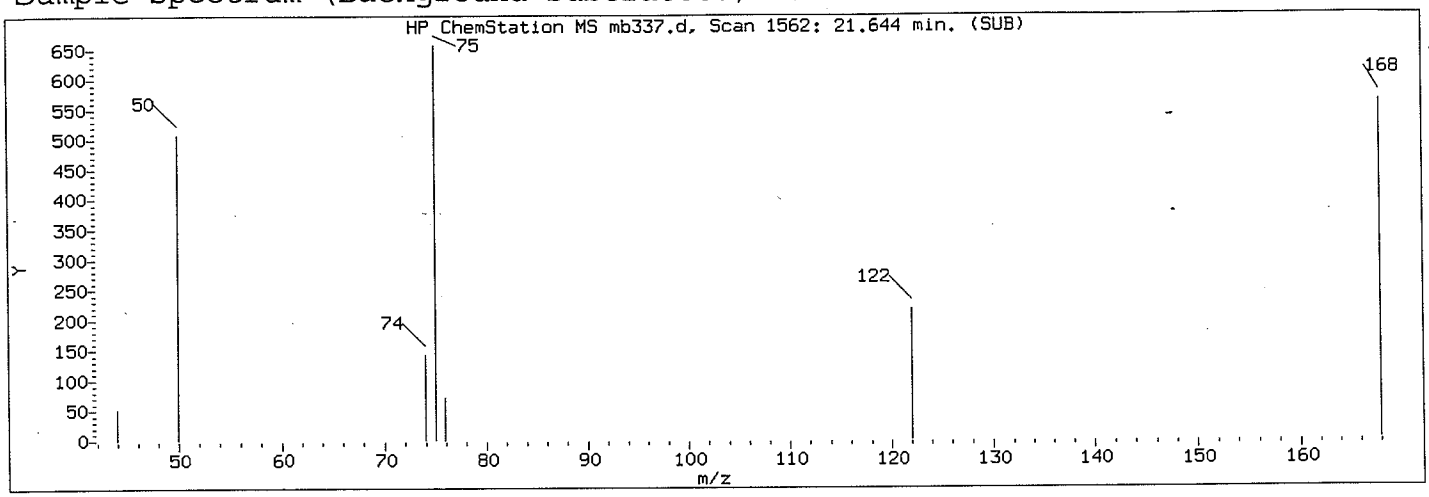
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

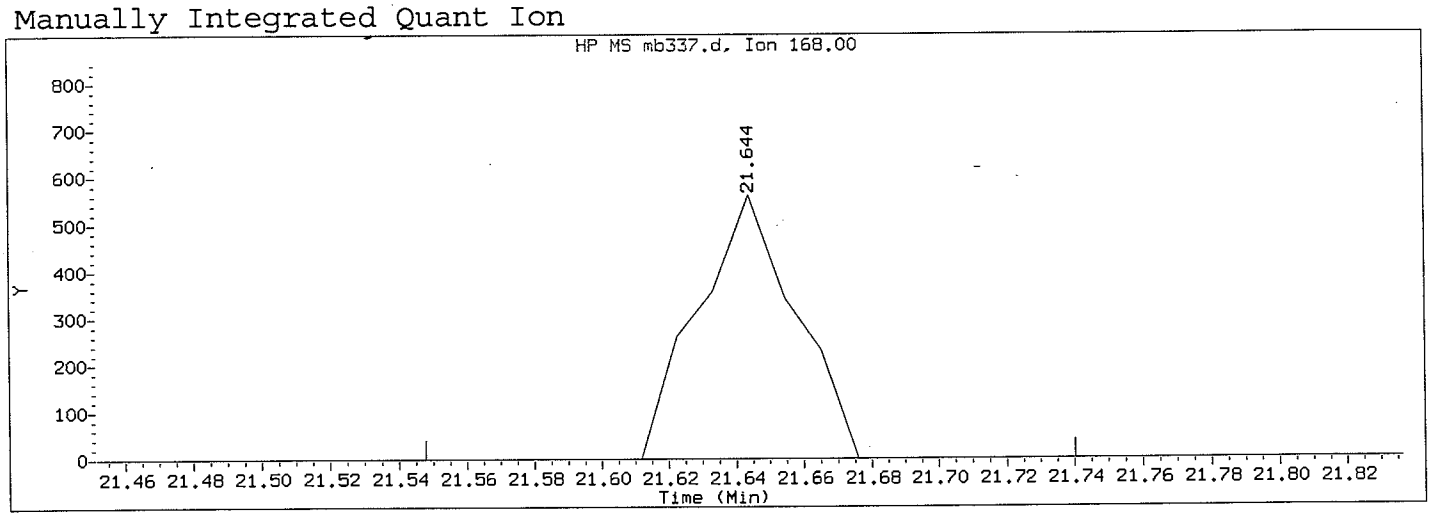
GC/MS audit/management approval: _____

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 89
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1562
Retention Time (minutes): 21.644
Quant Ion : 168
Area (flag) : 1124 M
Concentration (ng/ul) : 0.5435
Integration start scan : 1552 Integration stop scan: 1570
Y at integration start : 0 Y at integration end: 0

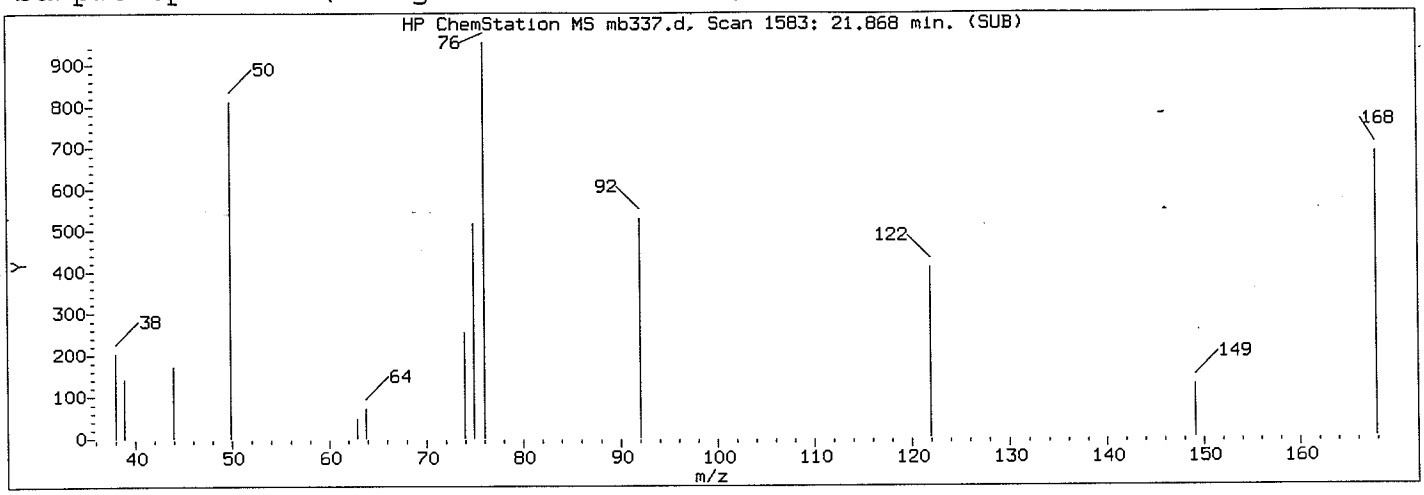
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: [signature] 2/15/04

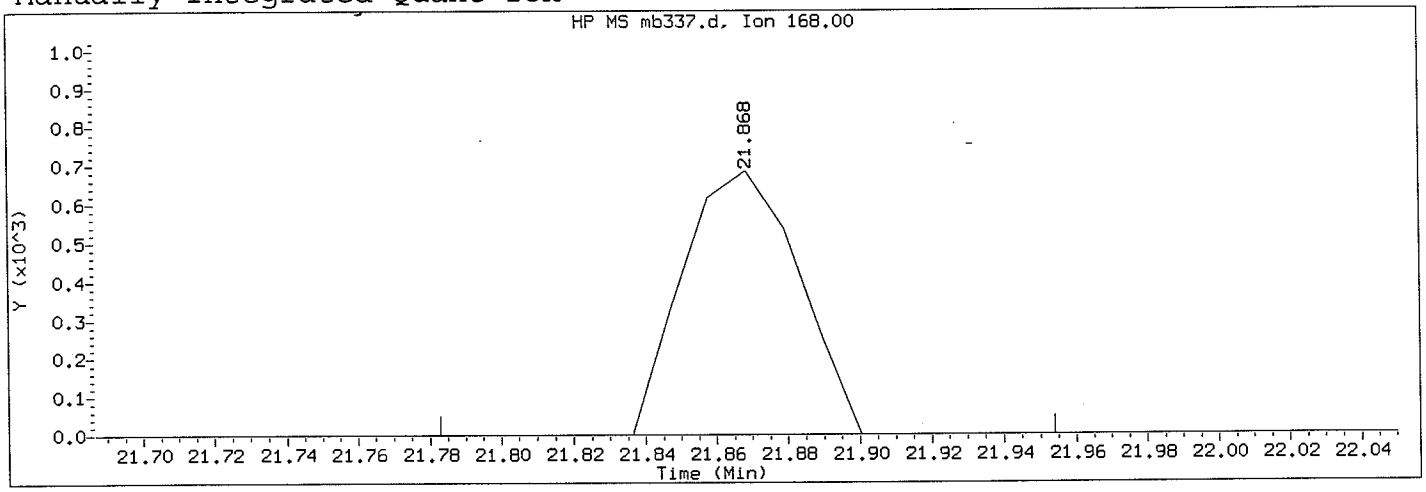
GC/MS audit/management approval: [signature] 2/15/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 91
Compound Name : 1,3-Dinitrobenzene
Scan Number : 1583
Retention Time (minutes): 21.868
Quant Ion : 168
Area (flag) : 1549 M
Concentration (ng/ul) : 0.6584
Integration start scan : 1574 Integration stop scan: 1590
Y at integration start : 0 Y at integration end: 0

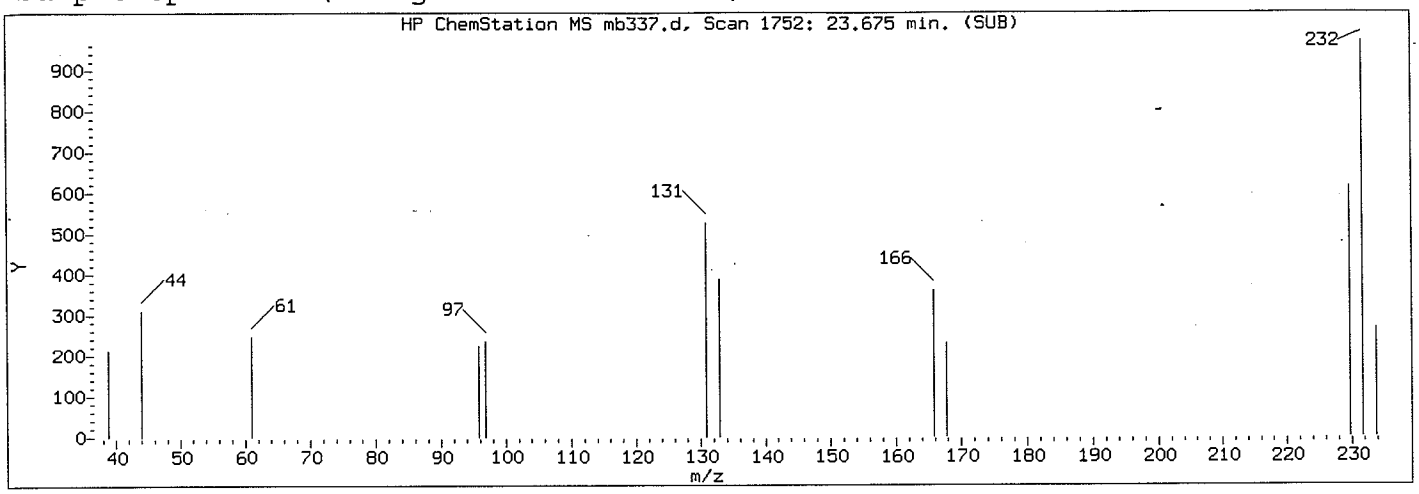
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

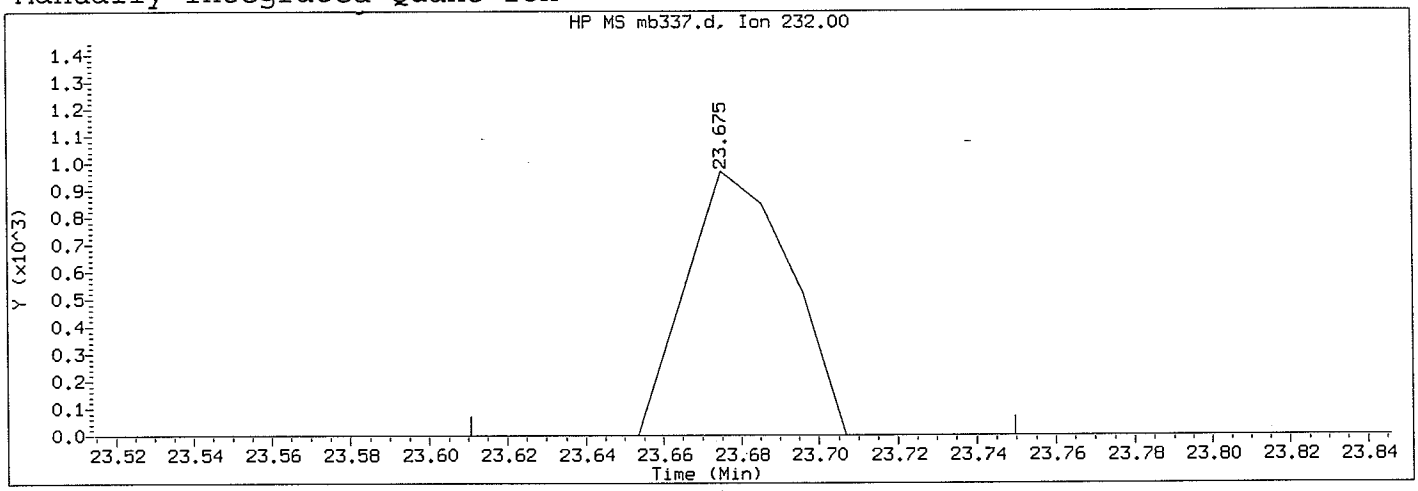
GC/MS audit/management approval: _____ 2/16/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 105
Compound Name : 2,3,4,6-Tetrachlorophenol
Scan Number : 1752
Retention Time (minutes): 23.675
Quant Ion : 232
Area (flag) : 1806 M
Concentration (ng/ul) : 0.7327
Integration start scan : 1745 Integration stop scan: 1758
Y at integration start : 0 Y at integration end: 0

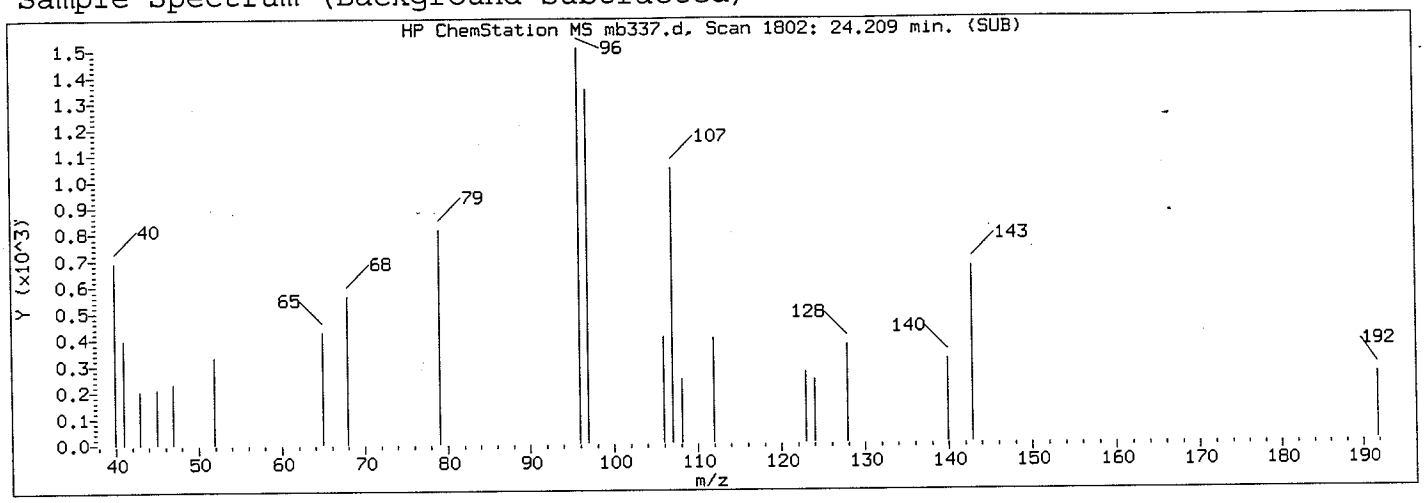
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

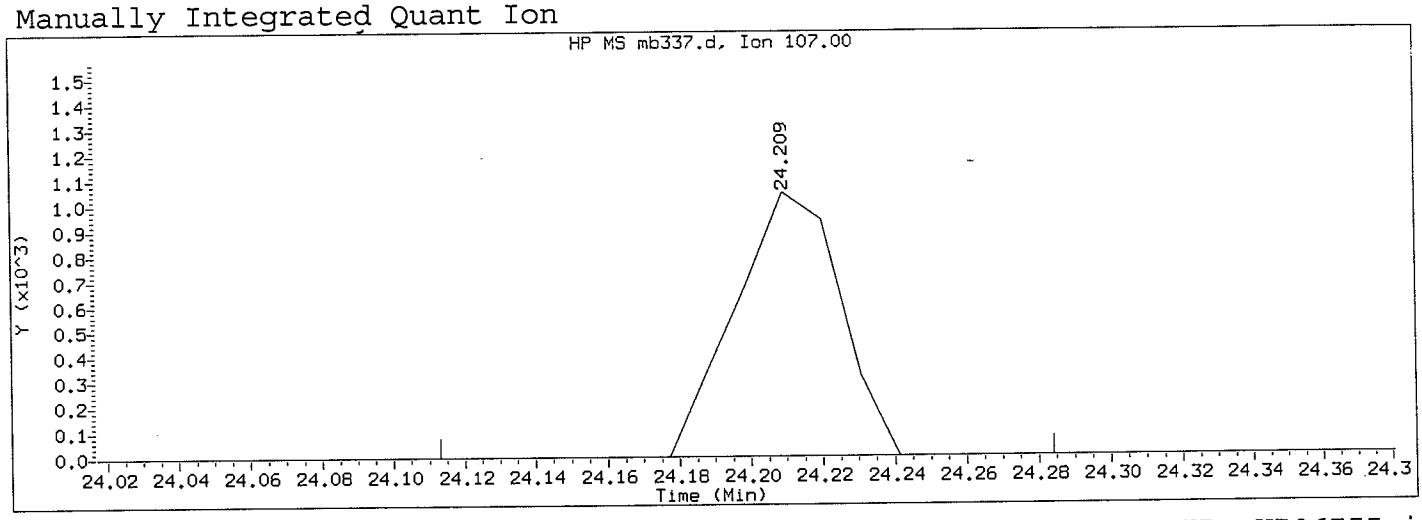
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

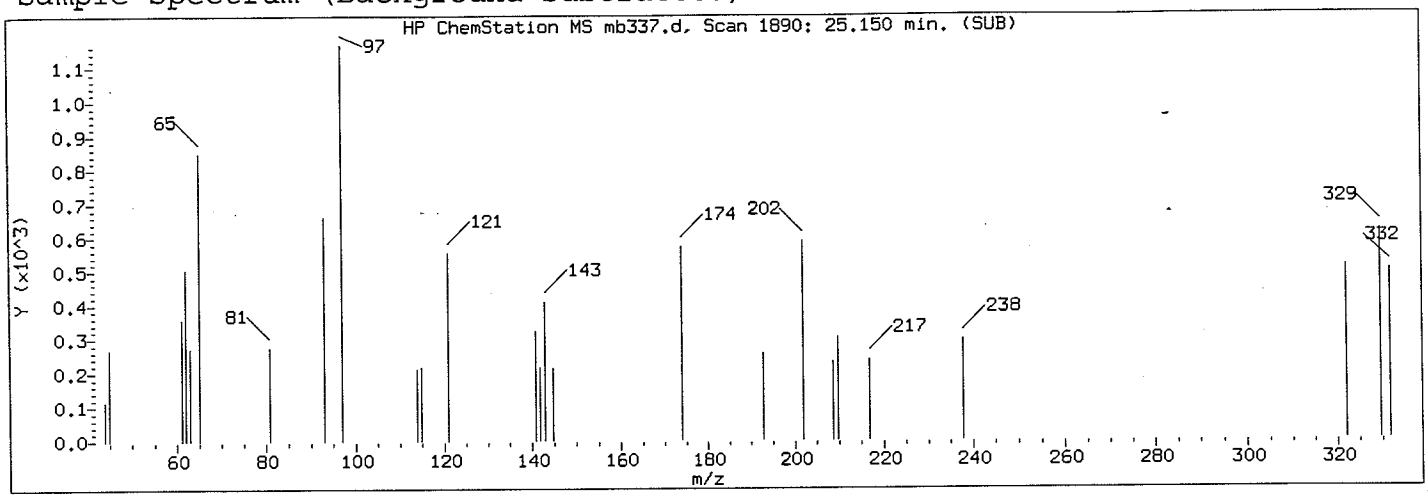
Compound Number : 108
Compound Name : Thionazin
Scan Number : 1802
Retention Time (minutes): 24.209
Quant Ion : 107
Area (flag) : 2127 M
Concentration (ng/ul) : 0.9493
Integration start scan : 1792 Integration stop scan: 1808
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

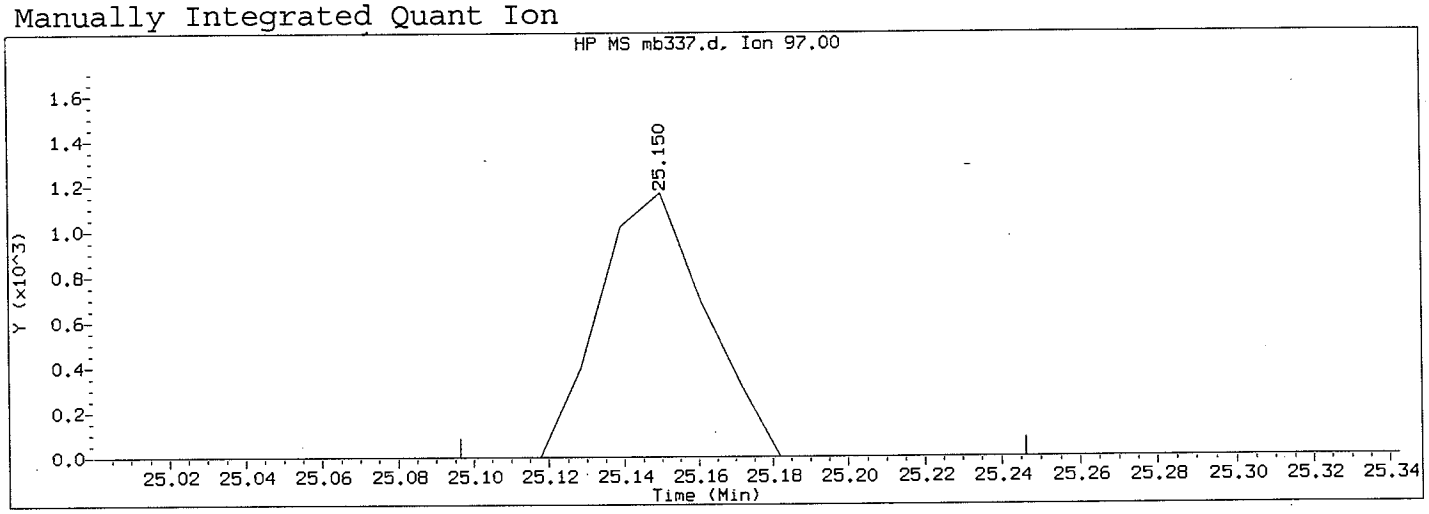
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

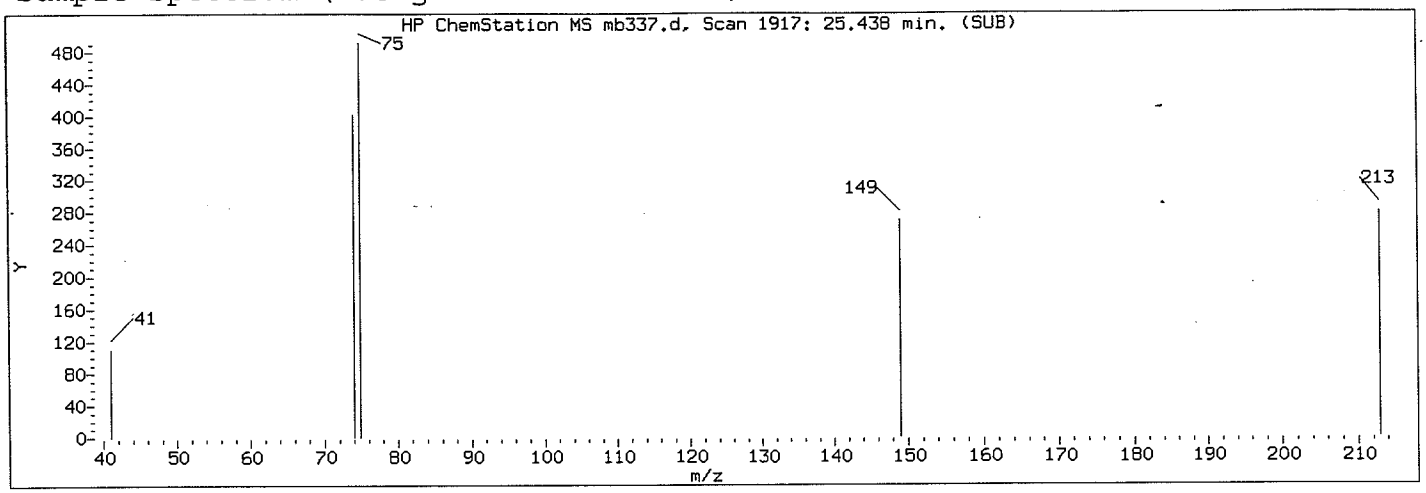
Compound Number : 118
Compound Name : Tetraethyldithiopyrophosphate
Scan Number : 1890
Retention Time (minutes): 25.150
Quant Ion : 97
Area (flag) : 2313 M
Concentration (ng/ul) : 0.9984
Integration start scan : 1884 Integration stop scan: 1898
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): ~~missed peak~~ improper integration

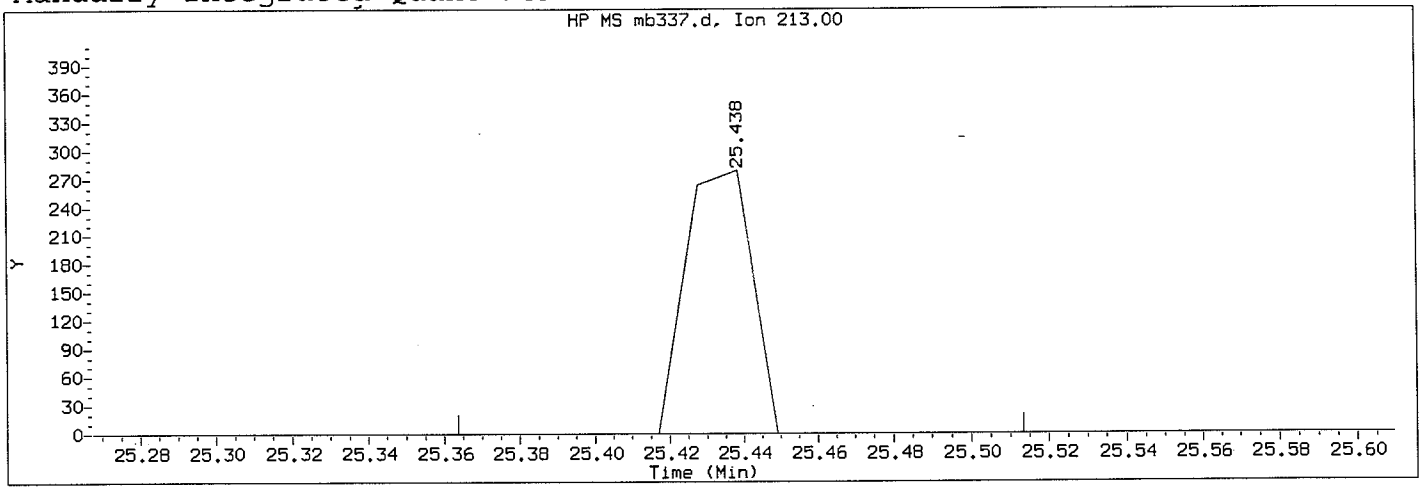
Analyst responsible for change: 2/15/04

GC/MS audit/management approval: 2/16/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

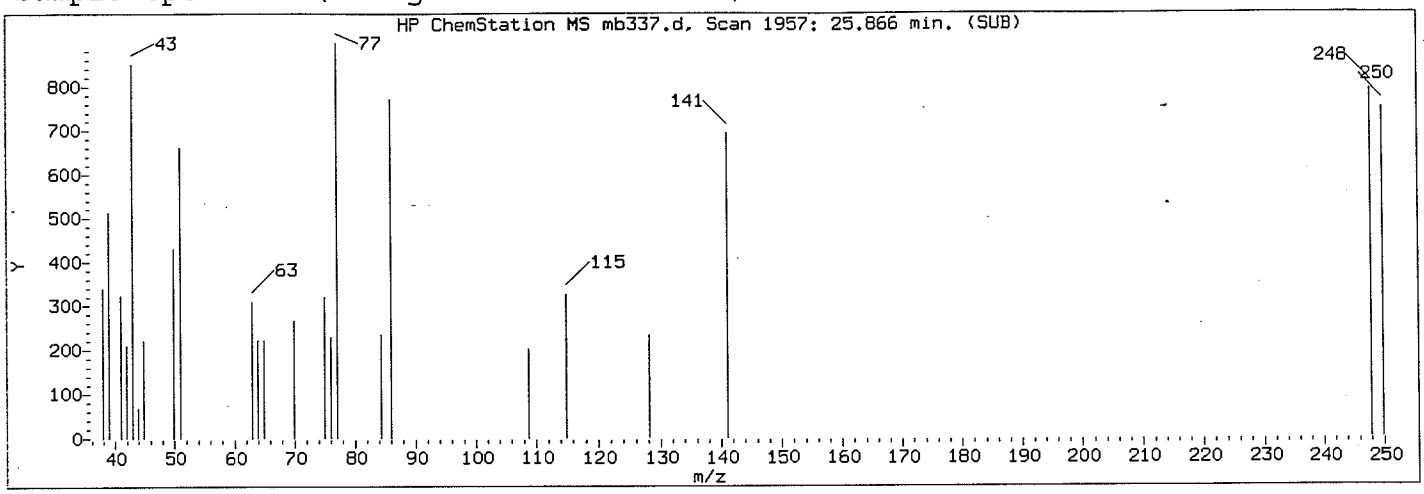
Compound Number : 119
Compound Name : 1,3,5-Trinitrobenzene
Scan Number : 1917
Retention Time (minutes): 25.438
Quant Ion : 213
Area (flag) : 348 M
Concentration (ng/ul) : 3.9534
Integration start scan : 1909 Integration stop scan: 1923
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

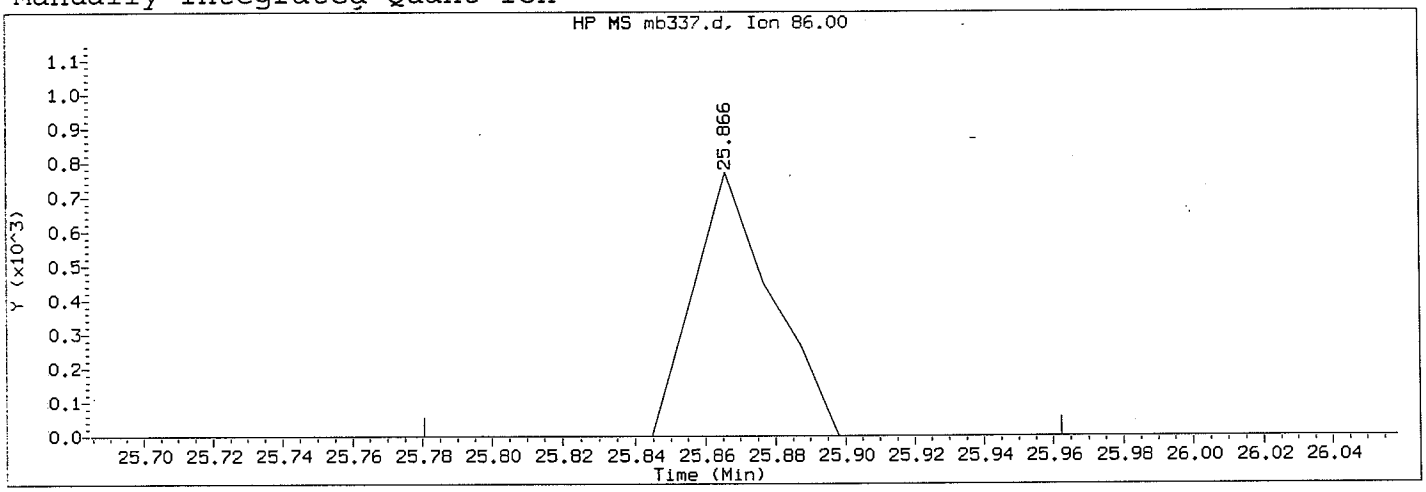
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/20/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

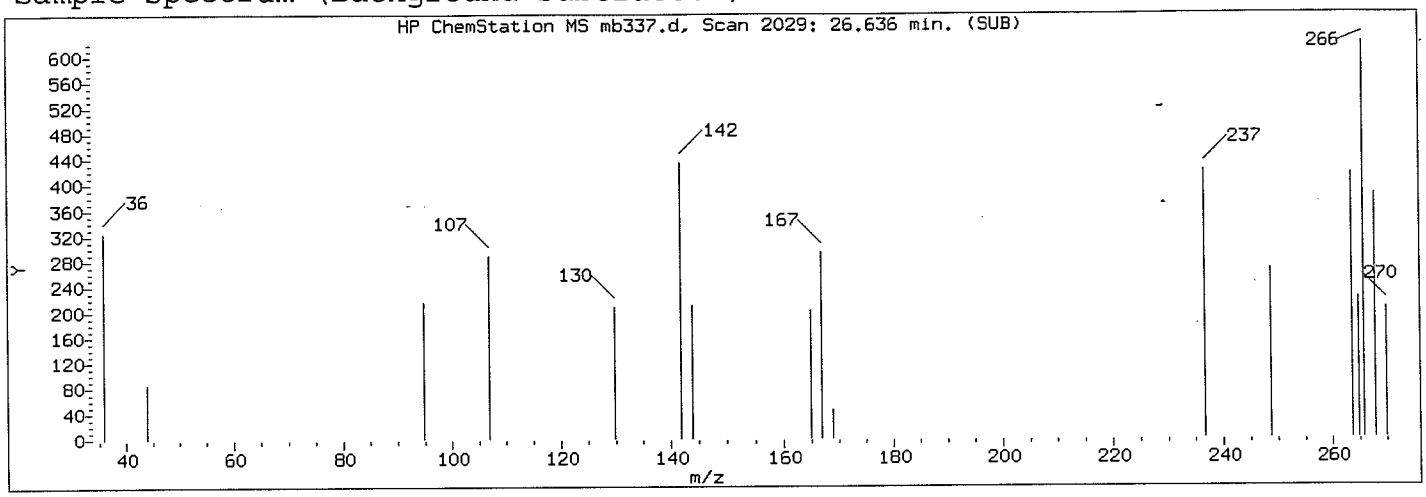
Compound Number : 124
Compound Name : Diallate (peak 2)
Scan Number : 1957
Retention Time (minutes): 25.866
Quant Ion : 86
Area (flag) : 1196 M
Concentration (ng/ul) : 0.2110
Integration start scan : 1948 Integration stop scan: 1965
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

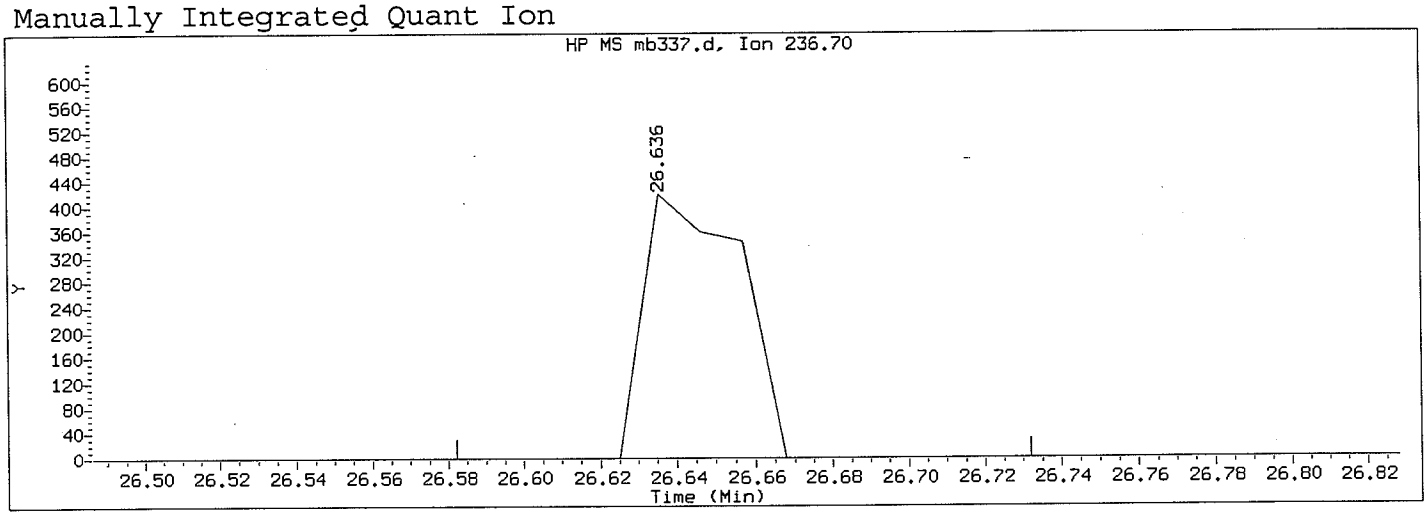
Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/18/04

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d  Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05  Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m  Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001  Lab Sample ID: 8270MDL0404

Compound Number : 130
Compound Name : Pentachloronitrobenzene
Scan Number : 2029
Retention Time (minutes): 26.636
Quant Ion : 237
Area (flag) : 721 M
Concentration (ng/ul) : 0.6866
Integration start scan : 2023 Integration stop scan: 2037
Y at integration start : 0 Y at integration end: 0

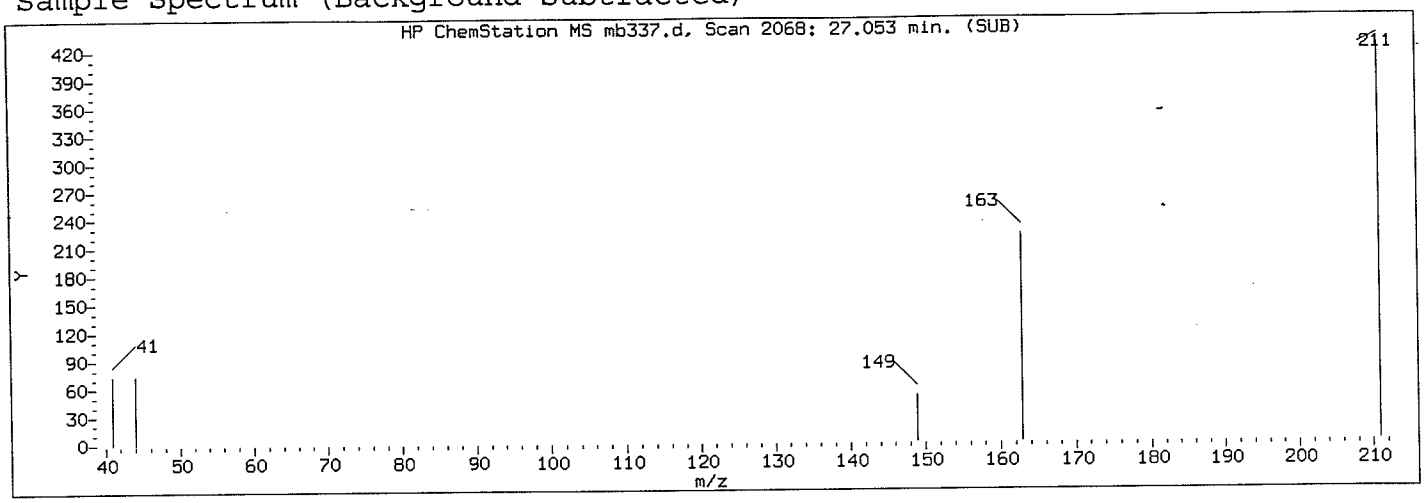
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: [signature] 2/15/04

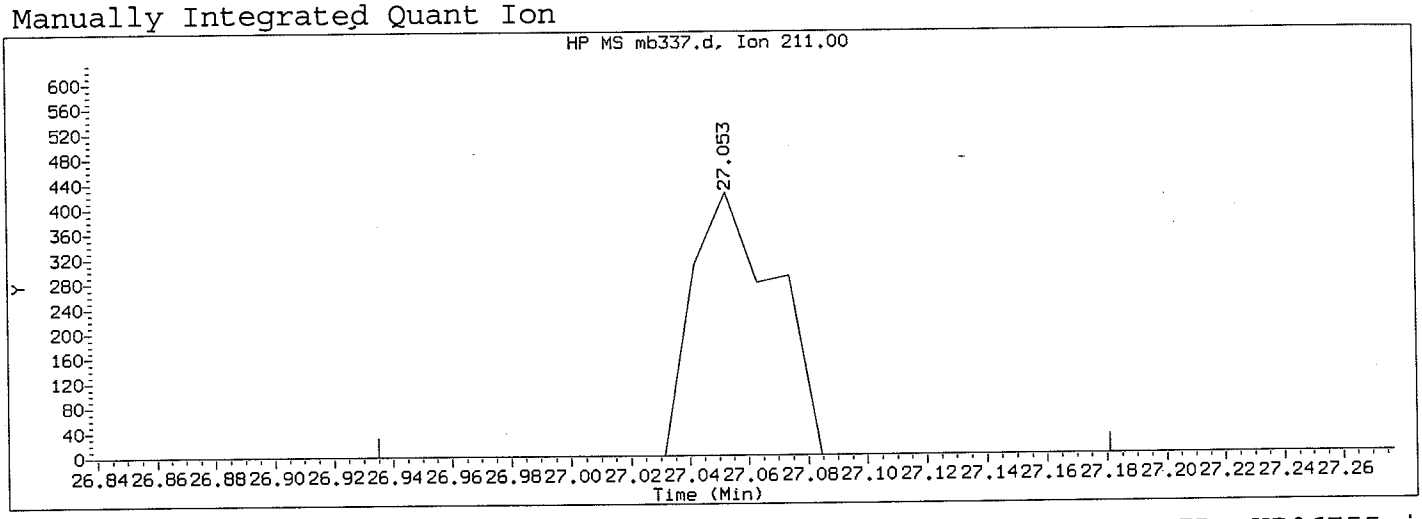
GC/MS audit/management approval: [signature] 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 134
Compound Name : Dinoseb
Scan Number : 2068
Retention Time (minutes): 27.053
Quant Ion : 211
Area (flag) : 832 M
Concentration (ng/ul) : 3.9058
Integration start scan : 2056 Integration stop scan: 2079
Y at integration start : 0 Y at integration end: 0

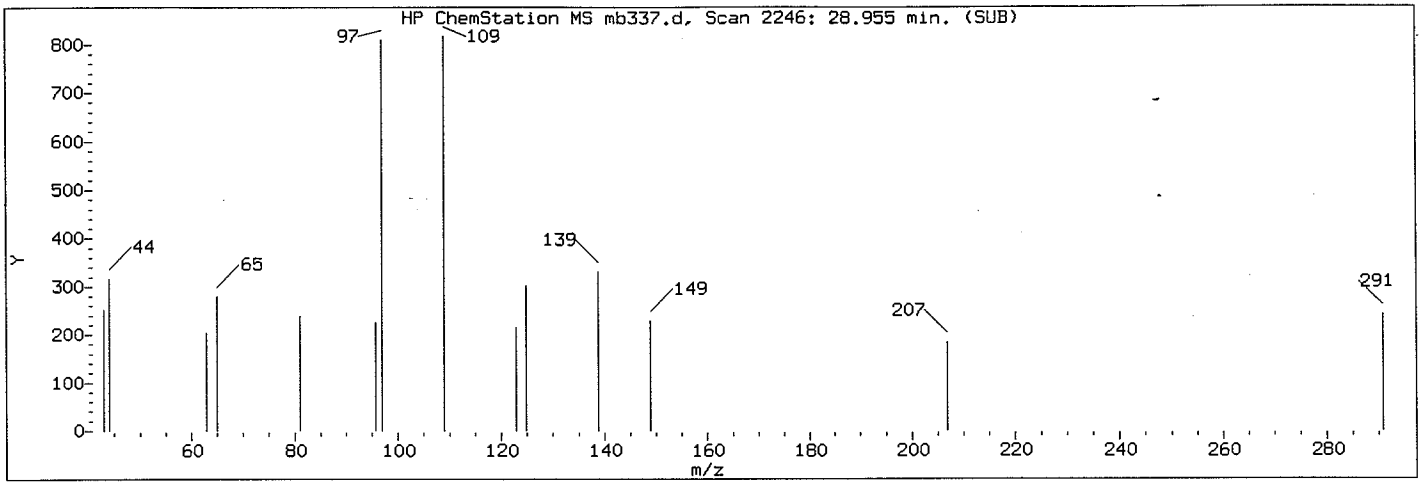
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: 2/15/04

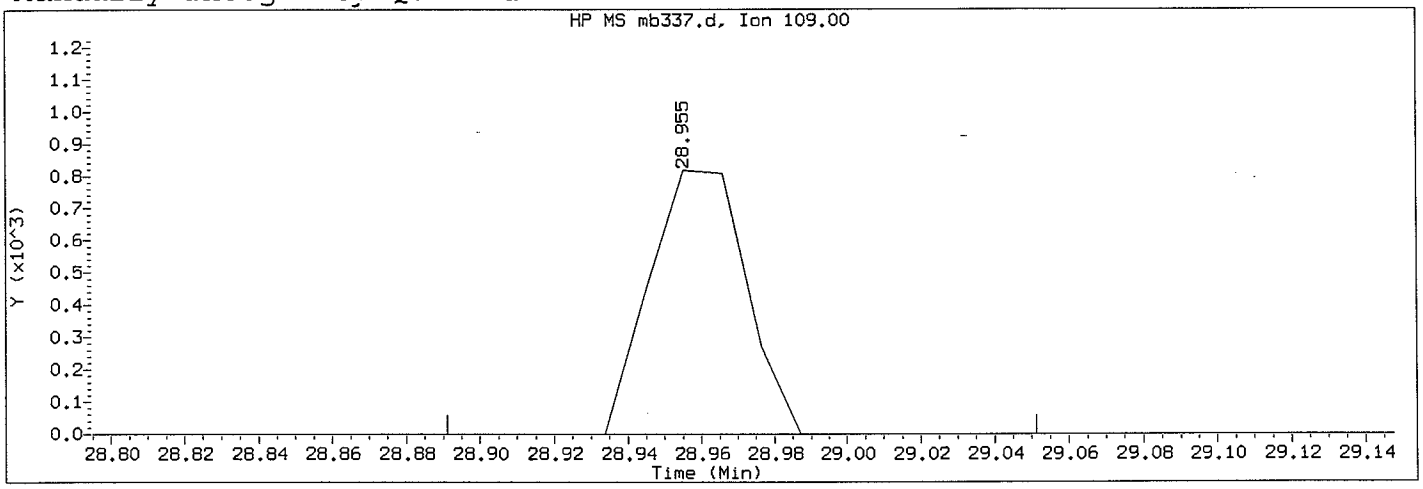
GC/MS audit/management approval: 2/15/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:02

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 141
Compound Name : Parathion
Scan Number : 2246
Retention Time (minutes): 28.955
Quant Ion : 109
Area (flag) : 1493 M
Concentration (ng/ul) : 0.5466
Integration start scan : 2239 Integration stop scan: 2254
Y at integration start : 0 Y at integration end: 0

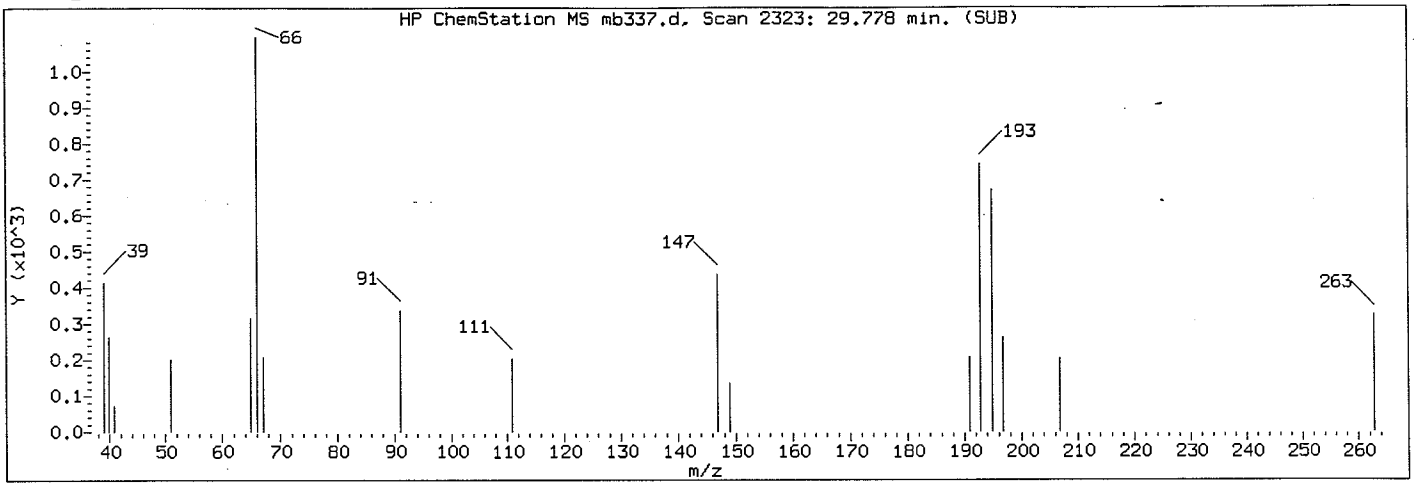
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: 2/15/04

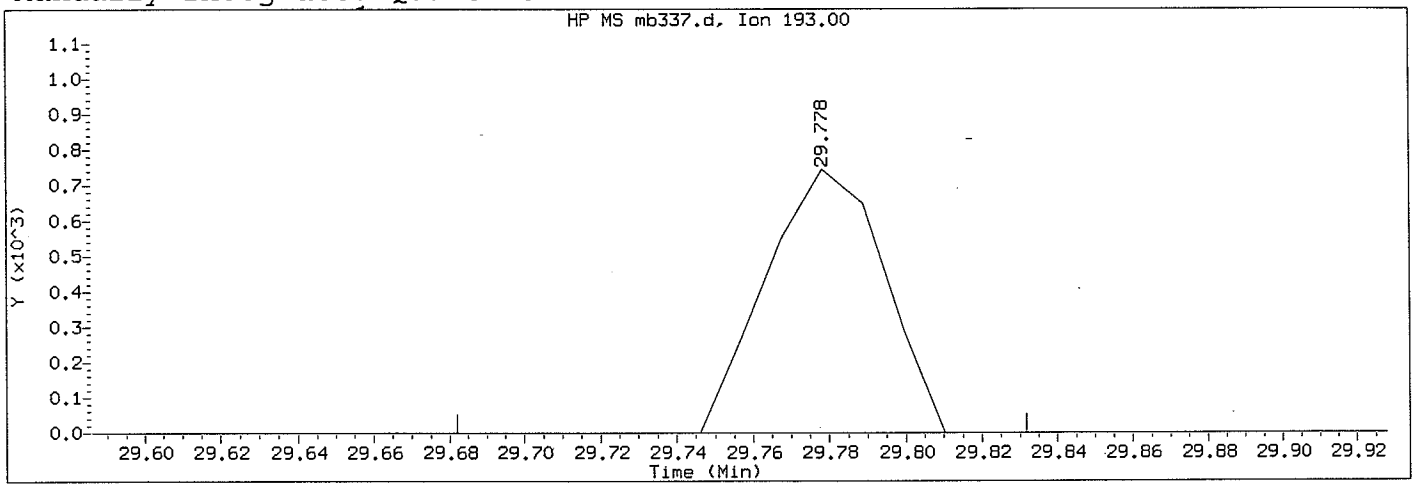
GC/MS audit/management approval: 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:03

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 144
Compound Name : Isodrin
Scan Number : 2323
Retention Time (minutes): 29.778
Quant Ion : 193
Area (flag) : 1603 M
Concentration (ng/ul) : 0.9849
Integration start scan : 2313 Integration stop scan: 2327
Y at integration start : 0 Y at integration end: 0

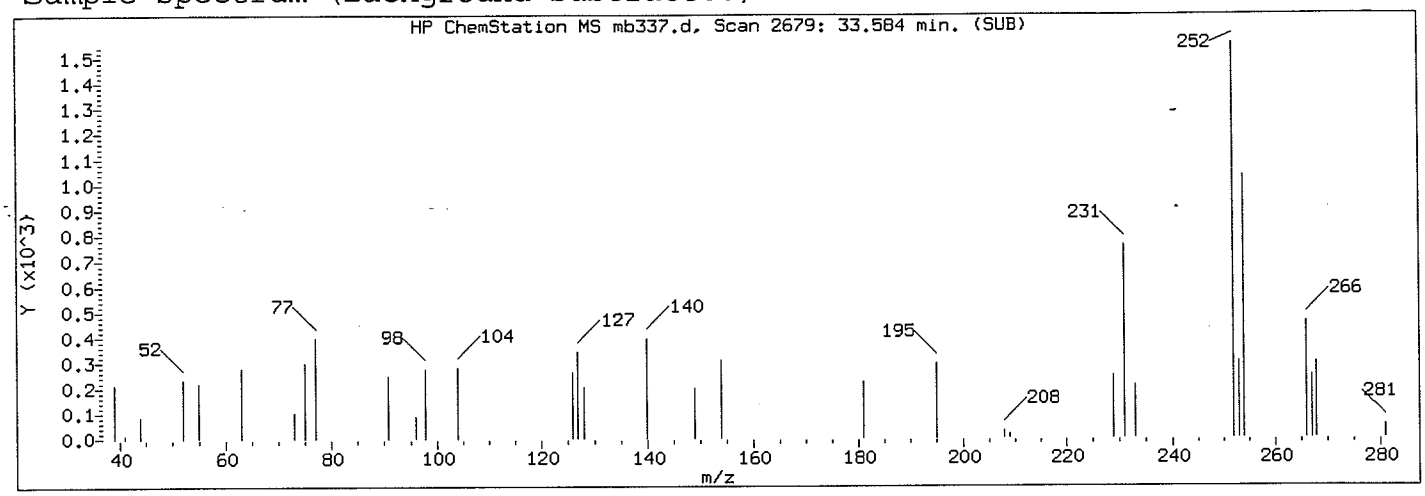
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

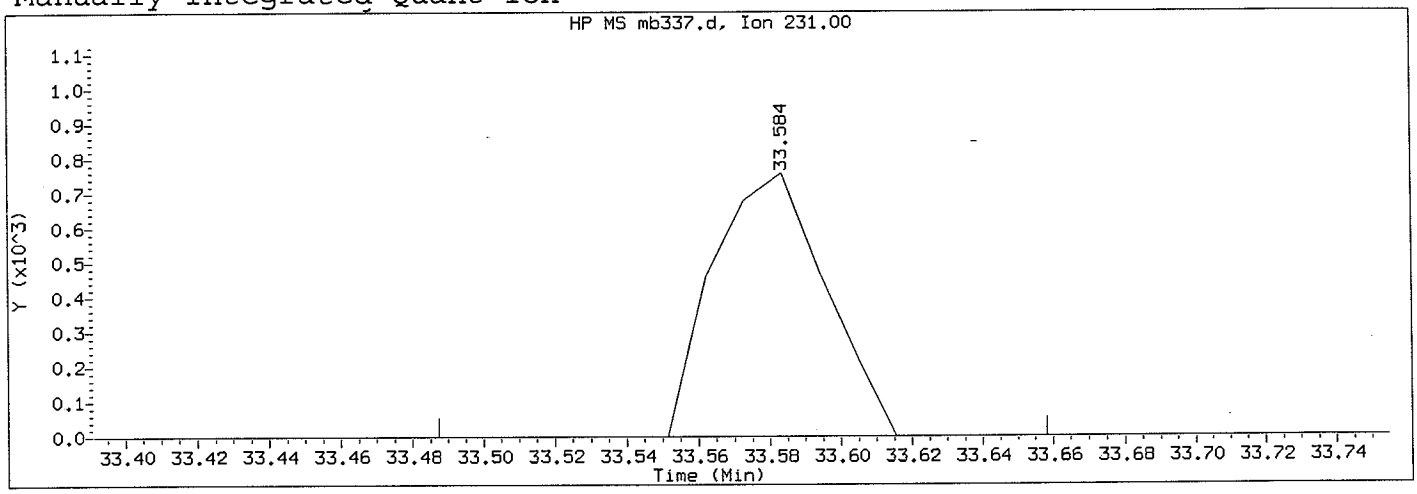
GC/MS audit/management approval: _____ 2/20/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:03

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 163
Compound Name : 4,4'-Methylenebis(2-Chloroanil
Scan Number : 2679
Retention Time (minutes): 33.584
Quant Ion : 231
Area (flag) : 1661 M
Concentration (ng/ul) : 0.7398
Integration start scan : 2669 Integration stop scan: 2685
Y at integration start : 0 Y at integration end: 0

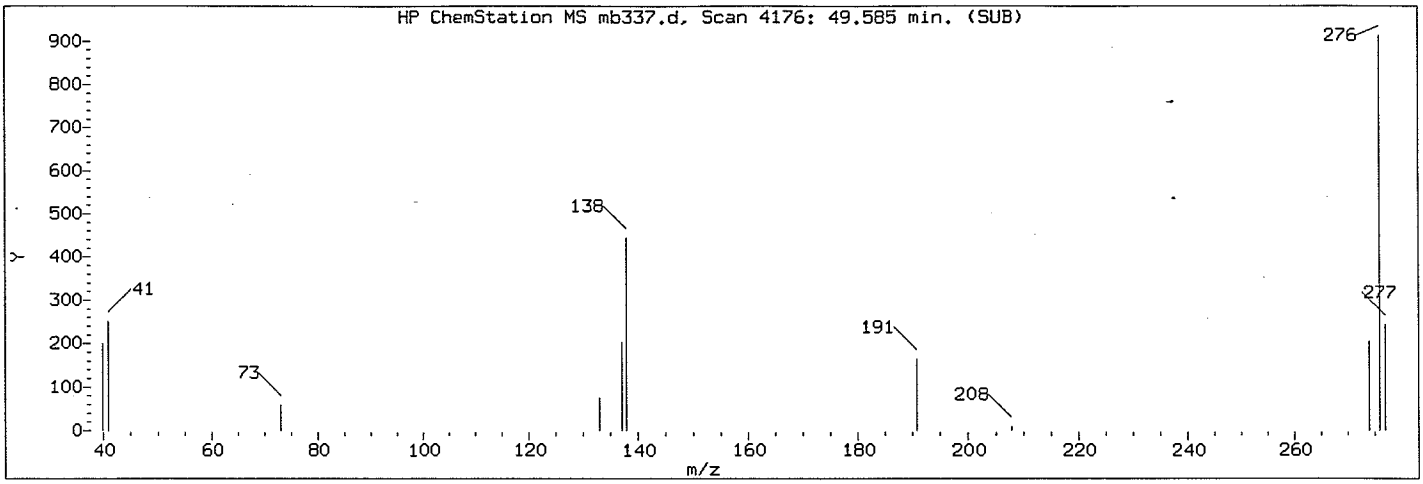
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: 2/15/04

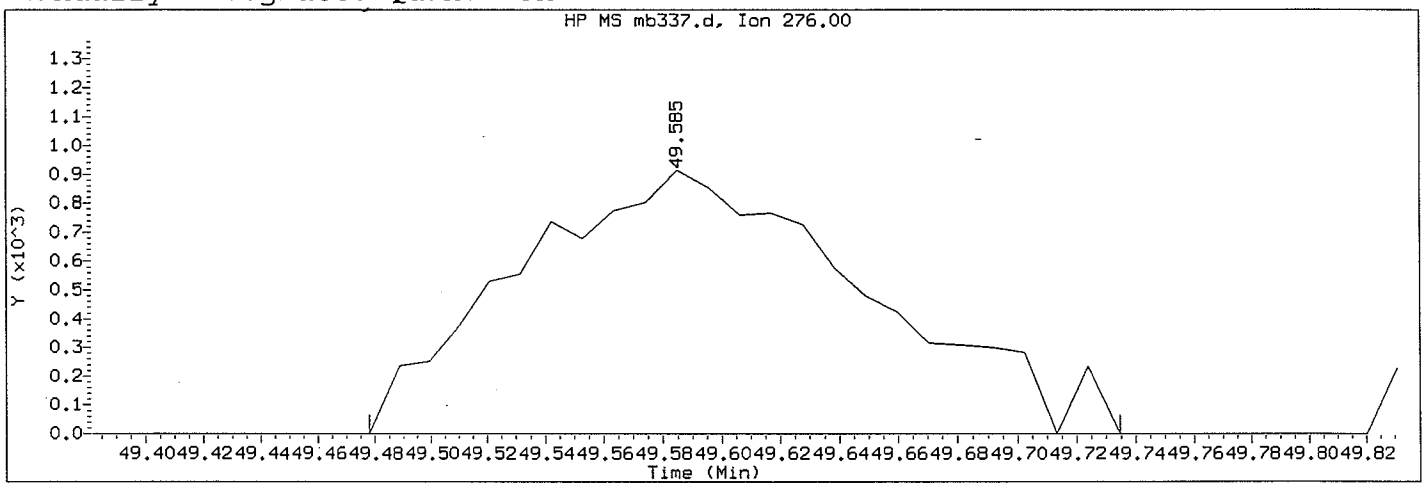
GC/MS audit/management approval: 2/18/04

Manual Integration Report for data file /chem/HP06755.i/04feb13.b/mb337.d, generated on 02/15/2004 at 17:03

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb13.b/mb337.d Instrument ID: HP06755.i
Injection date and time: 13-FEB-2004 13:05 Analyst ID: jmg00346

Method used: /chem/HP06755.i/04feb13.b/m8270.m Sublist used: all1
Calibration date and time: 13-FEB-2004 13:06
Date, time and analyst ID of latest file update: 15-Feb-2004 17:00 ids01472

Sample Name: SSTD001 Lab Sample ID: 8270MDL0404

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 4176
Retention Time (minutes): 49.585
Quant Ion : 276
Area (flag) : 7623 M
Concentration (ng/ul) : 0.8282
Integration start scan : 4165 Integration stop scan: 4189
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: _____ 2/15/04

GC/MS audit/management approval: _____ 2/16/04

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.719 | 0.735 | 51.120 | 50.0 | 2 |
| | N-Nitrosodimethylamine | 1.142 | 1.152 | 50.450 | 50.0 | 1 |
| | Pyridine | 1.853 | 1.760 | 47.490 | 50.0 | -5 |
| | N,N-dimethyl formamide | 1.098 | 1.157 | 52.670 | 50.0 | 5 |
| | 2-Picoline | 1.814 | 1.788 | 49.280 | 50.0 | -1 |
| | N-Nitrosomethylethylamine | 0.849 | 0.850 | 50.070 | 50.0 | 0 |
| | Methyl methanesulfonate | 0.751 | 0.768 | 51.120 | 50.0 | 2 |
| | N,N-dimethyl acetamide | 0.971 | 0.987 | 50.830 | 50.0 | 2 |
| | N-Nitrosodiethylamine | 0.826 | 0.797 | 48.240 | 50.0 | -4 |
| | Ethyl methanesulfonate | 0.907 | 0.921 | 50.740 | 50.0 | 1 |
| | Aniline | 2.389 | 2.337 | 48.900 | 50.0 | -2 |
| * | Phenol | 2.004 | 1.921 | 47.940 | 50.0 | -4* |
| | Pentachloroethane | 0.518 | 0.516 | 49.790 | 50.0 | 0 |
| | bis(2-Chloroethyl)ether | 1.634 | 1.494 | 45.700 | 50.0 | -9 |
| | 2-Chlorophenol | 1.556 | 1.561 | 50.150 | 50.0 | 0 |
| | 1,3-Dichlorobenzene | 1.609 | 1.625 | 50.500 | 50.0 | 1 |
| * | 1,4-Dichlorobenzene | 1.614 | 1.599 | 49.530 | 50.0 | -1* |
| | Benzyl alcohol | 1.021 | 0.999 | 48.950 | 50.0 | -2 |
| | 1,2-Dichlorobenzene | 1.532 | 1.528 | 49.870 | 50.0 | 0 |
| | 2-Methylphenol | 1.444 | 1.409 | 48.770 | 50.0 | -2 |
| | 2,2'-oxybis(1-Chloropropane) | 2.270 | 2.029 | 44.690 | 50.0 | -11 |
| | bis(2-Chloroisopropyl)ether | 2.270 | 2.029 | 44.690 | 50.0 | -11 |
| | N-Nitrosopyrrolidine | 0.812 | 0.765 | 47.120 | 50.0 | -6 |
| | Acetophenone | 1.952 | 1.826 | 46.770 | 50.0 | -6 |
| # | N-Nitroso-di-n-propylamine | 0.953 | 0.836 | 43.850 | 50.0 | -12# |
| | N-Nitrosomorpholine | 0.798 | 0.739 | 46.270 | 50.0 | -7 |
| | 4-Methylphenol | 1.477 | 1.416 | 47.940 | 50.0 | -4 |
| | o-Toluidine | 2.257 | 2.115 | 46.870 | 50.0 | -6 |
| | Hexachloroethane | 0.673 | 0.672 | 49.910 | 50.0 | 0 |
| | Nitrobenzene | 0.387 | 0.379 | 49.030 | 50.0 | -2 |
| | N-Nitrosopiperidine | 0.211 | 0.214 | 50.680 | 50.0 | 1 |
| | Isophorone | 0.761 | 0.750 | 49.270 | 50.0 | -1 |
| * | 2-Nitrophenol | 0.210 | 0.217 | 51.770 | 50.0 | 4* |
| | 2,4-Dimethylphenol | 0.392 | 0.393 | 50.160 | 50.0 | 0 |
| | O,O,O-triethylphosphorothioate | 0.140 | 0.140 | 49.780 | 50.0 | 0 |
| | bis(2-Chloroethoxy)methane | 0.468 | 0.452 | 48.330 | 50.0 | -3 |

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FORM VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Benzoic acid | 0.296 | 0.242 | 40.890 | 50.0 | -18 |
| * 2,4-Dichlorophenol | 0.299 | 0.307 | 51.370 | 50.0 | 3* |
| 1,2,4-Trichlorobenzene | 0.306 | 0.320 | 52.230 | 50.0 | 4 |
| Naphthalene | 1.053 | 1.062 | 50.400 | 50.0 | 1 |
| (2-Bromoethyl)benzene | 0.060 | 0.062 | 51.660 | 50.0 | 3 |
| 4-Chloroaniline | 0.477 | 0.470 | 49.340 | 50.0 | -1 |
| 2,6-Dichlorophenol | 0.278 | 0.280 | 50.310 | 50.0 | 1 |
| Hexachloropropene | 0.152 | 0.163 | 53.430 | 50.0 | 7 |
| * Hexachlorobutadiene | 0.140 | 0.146 | 51.940 | 50.0 | 4* |
| Caprolactam | 0.134 | 0.139 | 51.790 | 50.0 | 4 |
| N-Nitrosodi-n-butylamine | 0.290 | 0.306 | 54.260 | 50.0 | 9 |
| * 4-Chloro-3-methylphenol | 0.325 | 0.337 | 51.790 | 50.0 | 4* |
| Safrole | 0.248 | 0.252 | 50.920 | 50.0 | 2 |
| 2-Methylnaphthalene | 0.647 | 0.646 | 49.880 | 50.0 | 0 |
| 1-Methylnaphthalene | 0.605 | 0.610 | 50.420 | 50.0 | 1 |
| # Hexachlorocyclopentadiene | 0.276 | 0.284 | 51.440 | 50.0 | 3# |
| 1,2,4,5-Tetrachlorobenzene | 0.568 | 0.590 | 51.920 | 50.0 | 4 |
| cis-Isosafrole | 0.513 | 0.465 | 4.990 | 5.5 | -9 |
| * 2,4,6-Trichlorophenol | 0.407 | 0.427 | 52.420 | 50.0 | 5* |
| 2,4,5-Trichlorophenol | 0.448 | 0.461 | 51.400 | 50.0 | 3 |
| trans-Isosafrole | 0.659 | 0.676 | 45.620 | 44.5 | 3 |
| Isosafrole | 0.587 | 0.601 | 51.260 | 50.0 | 3 |
| Biphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| Diphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| 1,1'-Biphenyl | 1.598 | 1.592 | 49.820 | 50.0 | 0 |
| 2-Chloronaphthalene | 1.265 | 1.264 | 49.930 | 50.0 | 0 |
| Diphenyl ether | 0.818 | 0.816 | 49.890 | 50.0 | 0 |
| 2-Nitroaniline | 0.546 | 0.568 | 51.980 | 50.0 | 4 |
| 1,4-Naphthoquinone | 0.410 | 0.462 | 56.400 | 50.0 | 13 |
| 1,4-Dinitrobenzene | 0.257 | 0.288 | 56.060 | 50.0 | 12 |
| Dimethylphthalate | 1.487 | 1.536 | 51.650 | 50.0 | 3 |
| 1,3-Dinitrobenzene | 0.292 | 0.314 | 53.660 | 50.0 | 7 |
| 2,6-Dinitrotoluene | 0.386 | 0.406 | 52.500 | 50.0 | 5 |
| Acenaphthylene | 1.963 | 1.988 | 50.630 | 50.0 | 1 |
| 3-Nitroaniline | 0.475 | 0.500 | 52.710 | 50.0 | 5 |
| * Acenaphthene | 1.173 | 1.186 | 50.530 | 50.0 | 1* |

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FORM VII SV-1

7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| # | 2,4-Dinitrophenol | 0.206 | 0.203 | 47.090 | 50.0 | -6# |
| | Pentachlorobenzene | 0.457 | 0.474 | 51.870 | 50.0 | 4 |
| # | 4-Nitrophenol | 0.204 | 0.214 | 52.660 | 50.0 | 5# |
| | Dibenzofuran | 1.706 | 1.702 | 49.900 | 50.0 | 0 |
| | 2,4-Dinitrotoluene | 0.472 | 0.499 | 52.790 | 50.0 | 6 |
| | 1-Naphthylamine | 1.168 | 1.093 | 46.800 | 50.0 | -6 |
| | 2,3,4,6-Tetrachlorophenol | 0.306 | 0.307 | 50.120 | 50.0 | 0 |
| | 2-Naphthylamine | 1.211 | 1.309 | 54.020 | 50.0 | 8 |
| | Diethylphthalate | 1.530 | 1.538 | 50.250 | 50.0 | 1 |
| | Thionazin | 0.278 | 0.272 | 48.770 | 50.0 | -2 |
| | Fluorene | 1.293 | 1.234 | 47.710 | 50.0 | -5 |
| | 4-Chlorophenyl-phenylether | 0.581 | 0.575 | 49.420 | 50.0 | -1 |
| | 5-Nitro-o-toluidine | 0.469 | 0.450 | 48.000 | 50.0 | -4 |
| | 4-Nitroaniline | 0.463 | 0.468 | 50.480 | 50.0 | 1 |
| | 4,6-Dinitro-2-methylphenol | 0.167 | 0.188 | 56.420 | 50.0 | 13 |
| | 1-Nitronaphthalene | 0.190 | 0.198 | 52.140 | 50.0 | 4 |
| * | N-Nitrosodiphenylamine (1) | 0.641 | 0.640 | 49.980 | 50.0 | 0* |
| | 1,2-Diphenylhydrazine | 1.084 | 1.038 | 47.890 | 50.0 | -4 |
| | Tetraethyldithiopyrophosphate | 0.195 | 0.201 | 51.610 | 50.0 | 3 |
| | 1,3,5-Trinitrobenzene | 0.109 | 0.128 | 52.700 | 50.0 | 5 |
| | Diallate (peak 1) | 0.502 | 0.493 | 36.830 | 37.5 | -2 |
| | Phorate | 0.576 | 0.495 | 41.890 | 50.0 | -16 |
| | Phenacetin | 0.554 | 0.556 | 50.170 | 50.0 | 0 |
| | 4-Bromophenyl-phenylether | 0.217 | 0.229 | 52.900 | 50.0 | 6 |
| | Diallate (peak 2) | 0.477 | 0.456 | 11.970 | 12.5 | -4 |
| | Hexachlorobenzene | 0.239 | 0.257 | 53.700 | 50.0 | 7 |
| | Dimethoate | 0.391 | 0.368 | 51.640 | 50.0 | 3 |
| | Diallate TRANS/CIS | 0.495 | 0.484 | 48.800 | 50.0 | -2 |
| * | Pentachlorophenol | 0.167 | 0.162 | 48.490 | 50.0 | -3* |
| | Pentachloronitrobenzene | 0.088 | 0.095 | 54.050 | 50.0 | 8 |
| | 4-Aminobiphenyl | 0.632 | 0.655 | 51.830 | 50.0 | 4 |
| | Pronamide | 0.400 | 0.415 | 51.910 | 50.0 | 4 |
| | Dinoseb | 0.223 | 0.248 | 49.540 | 50.0 | -1 |
| | Phenanthrene | 1.165 | 1.171 | 50.260 | 50.0 | 1 |
| | Anthracene | 1.195 | 1.210 | 50.600 | 50.0 | 1 |
| | Carbazole | 1.170 | 1.192 | 50.930 | 50.0 | 2 |

(1) Cannot be Separated from Diphenylamine

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7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06755 Calibration Date: 02/24/04 Time: 20:48

Lab File ID: mb611.d Init. Calib. Date(s): 02/13/04 02/13/04

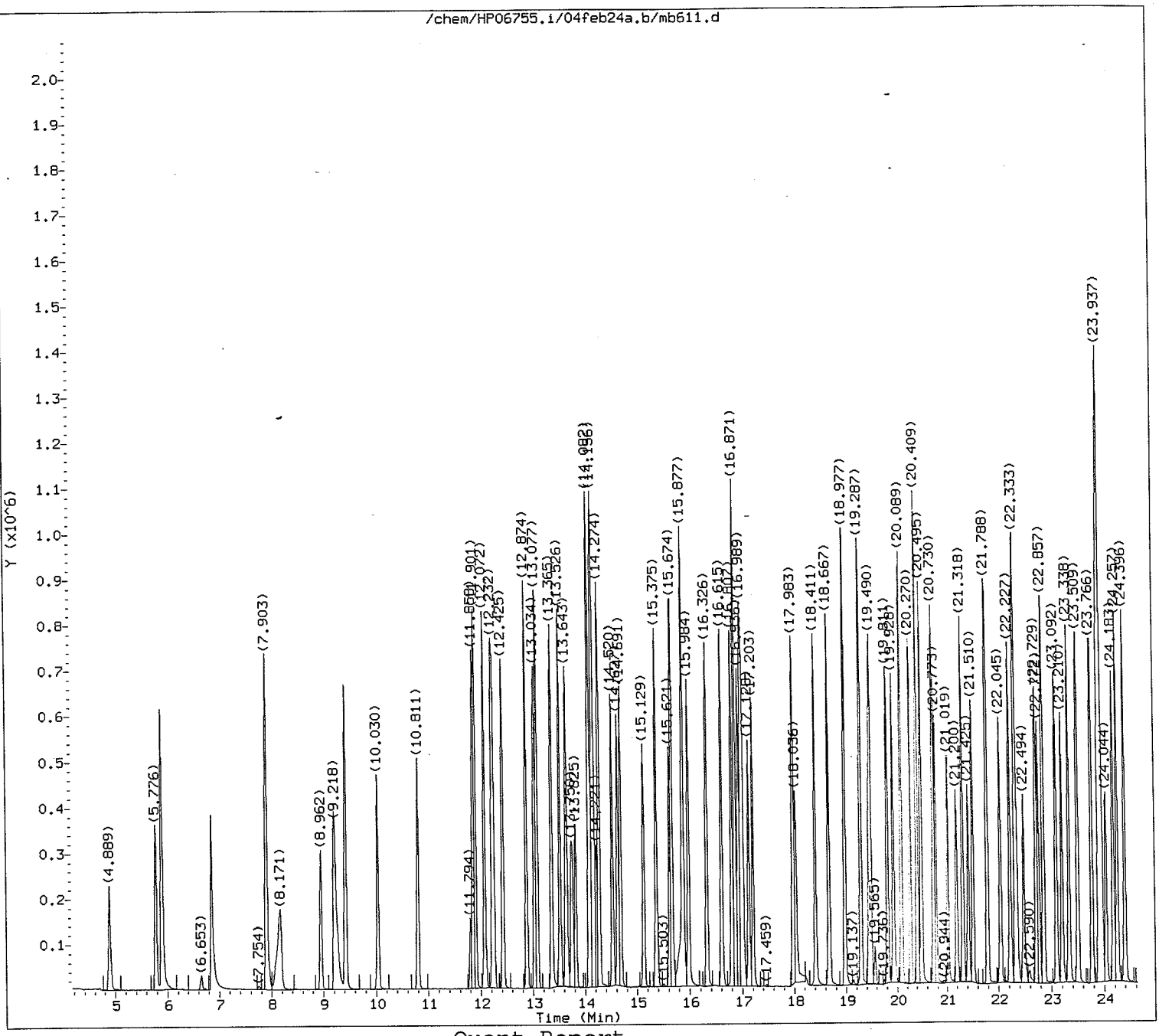
Init. Calib. Times(s): 06:59 12:04

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | | | ACTUAL | TRUE | % |
|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT |
| Methyl parathion | 0.394 | 0.424 | 53.790 | 50.0 | 8 |
| Di-n-butylphthalate | 1.750 | 1.772 | 50.620 | 50.0 | 1 |
| Parathion | 0.230 | 0.246 | 53.540 | 50.0 | 7 |
| 4-Nitroquinoline-1-oxide | 0.125 | 0.077 | 28.290 | 50.0 | -43 |
| Methapyrilene | 0.451 | 0.433 | 51.710 | 50.0 | 3 |
| Isodrin | 0.137 | 0.134 | 48.780 | 50.0 | -2 |
| * Fluoranthene | 1.175 | 1.216 | 51.740 | 50.0 | 3* |
| Benzidine | 0.732 | 0.732 | 150.180 | 150.0 | 0 |
| Pyrene | 1.483 | 1.482 | 49.980 | 50.0 | 0 |
| p-Dimethylaminoazobenzene | 0.304 | 0.305 | 50.250 | 50.0 | 0 |
| Chlorobenzilate | 0.585 | 0.592 | 50.540 | 50.0 | 1 |
| 3,3'-Dimethylbenzidine | 0.690 | 0.776 | 53.200 | 50.0 | 6 |
| Butylbenzylphthalate | 1.006 | 1.010 | 50.230 | 50.0 | 0 |
| 2-Acetylaminofluorene | 0.691 | 0.749 | 54.190 | 50.0 | 8 |
| 3,3'-Dichlorobenzidine | 0.512 | 0.544 | 53.120 | 50.0 | 6 |
| 4,4'-Methylenebis(2-Chloroanil | 0.243 | 0.255 | 52.450 | 50.0 | 5 |
| Benzo(a)anthracene | 1.278 | 1.294 | 50.650 | 50.0 | 1 |
| Chrysene | 1.170 | 1.168 | 49.940 | 50.0 | 0 |
| bis(2-Ethylhexyl)phthalate | 1.381 | 1.408 | 50.980 | 50.0 | 2 |
| * Di-n-octylphthalate | 2.557 | 2.523 | 49.340 | 50.0 | -1* |
| 7,12-Dimethylbenz[a]anthracene | 0.639 | 0.653 | 51.030 | 50.0 | 2 |
| Benzo(b)fluoranthene | 1.410 | 1.397 | 49.520 | 50.0 | -1 |
| Benzo(k)fluoranthene | 1.314 | 1.298 | 49.380 | 50.0 | -1 |
| * Benzo(a)pyrene | 1.257 | 1.289 | 51.280 | 50.0 | 3* |
| 3-Methylcholanthrene | 0.695 | 0.690 | 49.600 | 50.0 | -1 |
| Indeno(1,2,3-cd)pyrene | 1.194 | 1.276 | 53.460 | 50.0 | 7 |
| Dibenz(a,h)anthracene | 1.081 | 1.130 | 52.270 | 50.0 | 5 |
| Benzo(g,h,i)perylene | 1.213 | 1.283 | 52.900 | 50.0 | 6 |
| 2-Fluorophenol | 1.673 | 1.676 | 50.100 | 50.0 | 0 |
| Phenol-d5 | 2.054 | 2.032 | 49.480 | 50.0 | -1 |
| Phenol-d6 | 2.054 | 2.032 | 49.480 | 50.0 | -1 |
| Nitrobenzene-d5 | 0.391 | 0.386 | 49.390 | 50.0 | -1 |
| 2-Fluorobiphenyl | 1.337 | 1.366 | 51.060 | 50.0 | 2 |
| 2,4,6-Tribromophenol | 0.182 | 0.194 | 53.440 | 50.0 | 7 |
| Terphenyl-d14 | 0.868 | 0.860 | 49.520 | 50.0 | -1 |

8468

FORM VII SV-1




Quant Report

Target Revision 3.5

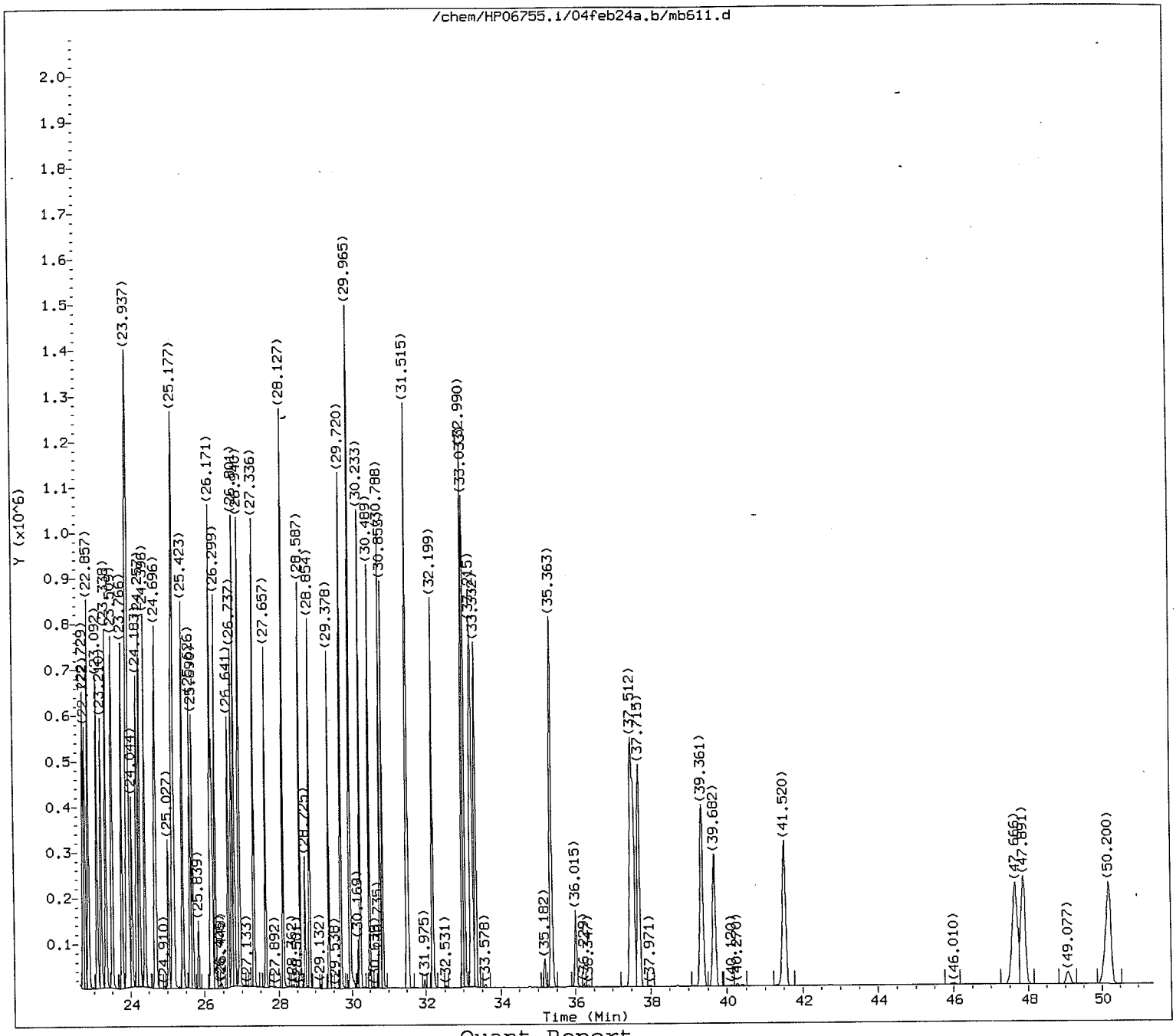
Data File: /chem/HP06755.i/04feb24a.b/mb611.d
Injection date and time: 24-FEB-2004 20:48
Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10
Sublist used: all1

Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050
Lab Sample ID: STD0404

Wesley 2/24/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050 Lab Sample ID: STD0404

8478

Leeann 2/24/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | | Conc. (on column) |
|---|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.889 | 88 | 238774 | | 51.125 |
| 2) | N-Nitrosodimethylamine | (1) | 5.776 | 74 | 374307 | | 50.453 |
| 3) | Pyridine | (1) | 5.883 | 79 | 571706 | | 47.492 |
| 4) | N,N-dimethyl formamide | (1) | 6.856 | 73 | 375811 | | 52.674 |
| 5) | 2-Picoline | (1) | 7.903 | 93 | 580656 | | 49.280 |
| 6) | N-Nitrosomethylethylamine | (1) | 8.171 | 88 | 276014 | | 50.072 |
| 7) | Methyl methanesulfonate | (1) | 8.962 | 80 | 249493 | | 51.123 |
| 8) | N,N-dimethyl acetamide | (1) | 9.207 | 87 | 320596 | | 50.830 |
| 10) | N-Nitrosodiethylamine | (1) | 10.030 | 102 | 258785 | | 48.242 |
| 11) | Ethyl methanesulfonate | (1) | 10.811 | 109 | 299022 | | 50.737 |
| 13) | Aniline | (1) | 12.072 | 93 | 759002 | | 48.896 |
| 16) | Phenol | (1) | 11.901 | 94 | 624003 | | 47.938 |
| 17) | Pentachloroethane | (1) | 12.243 | 167 | 167669 | | 49.786 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.222 | 93 | 485208 | | 45.698 |
| 19) | 2-Chlorophenol | (1) | 12.425 | 128 | 507042 | | 50.149 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.874 | 146 | 527881 | | 50.497 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.034 | 152 | 259852 | | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.087 | 146 | 519405 | | 49.533 |
| 24) | Benzyl alcohol | (1) | 13.365 | 108 | 324550 | | 48.946 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.526 | 146 | 496299 | | 49.872 |
| 26) | 2-Methylphenol | (1) | 13.643 | 108 | 457635 | | 48.768 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.750 | 45 | 658904 | | 44.686 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.750 | 45 | 658904 | | 44.686 |
| 29) | N-Nitrosopyrrolidine | (1) | 14.103 | 100 | 248453 | | 47.115 |
| 30) | Acetophenone | (1) | 14.167 | 105 | 592994 | | 46.767 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.146 | 70 | 271438 | | 43.855 |
| 32) | N-Nitrosomorpholine | (1) | 14.221 | 56 | 239939 | A | 46.275 |
| 33) | 4-Methylphenol | (1) | 14.082 | 108 | 459962 | | 47.943 |
| 34) | o-Toluidine | (1) | 14.274 | 106 | 687027 | | 46.867 |
| 37) | Hexachloroethane | (1) | 14.520 | 117 | 218257 | | 49.911 |
| 39) | Nitrobenzene | (2) | 14.691 | 77 | 433365 | | 49.033 |
| 40) | N-Nitrosopiperidine | (2) | 15.129 | 114 | 243972 | | 50.680 |
| 41) | Isophorone | (2) | 15.375 | 82 | 856877 | | 49.265 |
| 42) | 2-Nitrophenol | (2) | 15.621 | 139 | 248030 | | 51.768 |
| 44) | 2,4-Dimethylphenol | (2) | 15.674 | 107 | 449404 | | 50.163 |
| 45) | O,O,O-triethylphosphorothioate | (2) | 15.877 | 198 | 159511 | | 49.778 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.984 | 93 | 516915 | | 48.334 |
| 47) | Benzoic acid | (2) | 15.877 | 105 | 276409 | | 40.888 |
| 49) | 2,4-Dichlorophenol | (2) | 16.326 | 162 | 351060 | | 51.372 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.615 | 180 | 365063 | | 52.235 |
| 52) | Naphthalene-d8 | (2) | 16.807 | 136 | 914033 | | 40.000 |
| 53) | Naphthalene | (2) | 16.871 | 128 | 1212918 | | 50.400 |
| 54) | (2-Bromoethyl)benzene | (2) | 16.936 | 184 | 71368 | | 51.663 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 55) | 4-Chloroaniline | (2) | 16.989 | 127 | 537409 | 49.342 |
| 56) | 2,6-Dichlorophenol | (2) | 17.021 | 162 | 319611 | 50.307 |
| 57) | Hexachloropropene | (2) | 17.128 | 213 | 186082 | 53.427 |
| 59) | Hexachlorobutadiene | (2) | 17.213 | 225 | 166738 | 51.942 |
| 62) | Caprolactam | (2) | 18.036 | 113 | 158927 | 51.789 |
| 63) | N-Nitrosodi-n-butylamine | (2) | 17.983 | 84 | 349711 | 54.262 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.411 | 107 | 384817 | 51.794 |
| 68) | Safrole | (2) | 18.667 | 162 | 288214 | 50.919 |
| 69) | 2-Methylnaphthalene | (2) | 18.977 | 142 | 737846 | 49.884 |
| 70) | 1-Methylnaphthalene | (2) | 19.287 | 142 | 697190 | 50.424 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.447 | 237 | 144887 | 51.442 |
| 72) | 1,2,4,5-Tetrachlorobenzene | (3) | 19.490 | 216 | 301274 | 51.920 |
| 73) | cis-Isosafrole | (3) | 19.565 | 162 | 26116 | 4.987 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.811 | 196 | 217989 | 52.418 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.928 | 196 | 235146 | 51.402 |
| 78) | trans-Isosafrole | (3) | 20.270 | 162 | 306917 | 45.622 |
| 79) | Isosafrole | (3) | 20.270 | 162 | 306917 | 51.261 |
| 80) | Biphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 81) | Diphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 82) | 1,1'-Biphenyl | (3) | 20.409 | 154 | 812600 | 49.815 |
| 83) | 2-Chloronaphthalene | (3) | 20.495 | 162 | 645002 | 49.934 |
| 86) | Diphenyl ether | (3) | 20.730 | 170 | 416554 | 49.894 |
| 87) | 2-Nitroaniline | (3) | 20.784 | 138 | 289865 | 51.983 |
| 88) | 1,4-Naphthoquinone | (3) | 21.029 | 158 | 235956 | 56.403 |
| 89) | 1,4-Dinitrobenzene | (3) | 21.200 | 168 | 147093 | 56.064 |
| 90) | Dimethylphthalate | (3) | 21.318 | 163 | 783798 | 51.649 |
| 91) | 1,3-Dinitrobenzene | (3) | 21.425 | 168 | 160180 | 53.662 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.521 | 165 | 207090 | 52.499 |
| 93) | Acenaphthylene | (3) | 21.788 | 152 | 1014461 | 50.626 |
| 95) | 3-Nitroaniline | (3) | 22.045 | 138 | 255321 | 52.713 |
| 96) | Acenaphthene-d10 | (3) | 22.227 | 164 | 408312 | 40.000 |
| 97) | Acenaphthene | (3) | 22.333 | 153 | 605209 | 50.528 |
| 98) | 2,4-Dinitrophenol | (3) | 22.366 | 184 | 103848 | 47.087 |
| 99) | Pentachlorobenzene | (3) | 22.729 | 250 | 241917 | 51.874 |
| 101) | 4-Nitrophenol | (3) | 22.494 | 109 | 109441 | 52.660 |
| 102) | Dibenzofuran | (3) | 22.857 | 168 | 868766 | 49.901 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.772 | 165 | 254479 | 52.793 |
| 104) | 1-Naphthylamine | (3) | 23.092 | 143 | 557799 | 46.804 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.210 | 232 | 156752 | 50.121 |
| 106) | 2-Naphthylamine | (3) | 23.338 | 143 | 667884 | 54.021 |
| 107) | Diethylphthalate | (3) | 23.509 | 149 | 785070 | 50.253 |
| 108) | Thionazin | (3) | 23.766 | 107 | 138626 | 48.770 |
| 109) | Fluorene | (3) | 23.937 | 166 | 629696 | 47.705 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 110) 4-Chlorophenyl-phenylether | (3) | 23.905 | 204 | 293290 | 49.422 |
| 111) 5-Nitro-o-toluidine | (3) | 23.948 | 152 | 229740 | 48.004 |
| 112) 4-Nitroaniline | (3) | 23.969 | 138 | 238728 | 50.483 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 24.044 | 198 | 139517 | 56.416 |
| 114) 1-Nitronaphthalene | (4) | 24.183 | 173 | 146775 | 52.141 |
| 115) N-Nitrosodiphenylamine | (4) | 24.257 | 169 | 473980 | 49.980 |
| 116) 1,2-Diphenylhydrazine | (4) | 24.396 | 77 | 768354 | 47.889 |
| 118) Tetraethyldithiopyrophosphate | (4) | 24.696 | 97 | 148809 | 51.609 |
| 119) 1,3,5-Trinitrobenzene | (4) | 25.027 | 213 | 95070 | 52.695 |
| 120) Diallate (peak 1) | (4) | 25.134 | 86 | 273608 | 36.833 |
| 121) Phorate | (4) | 25.177 | 75 | 366364 | 41.885 |
| 122) Phenacetin | (4) | 25.187 | 108 | 411602 | 50.167 |
| 123) 4-Bromophenyl-phenylether | (4) | 25.423 | 248 | 169619 | 52.895 |
| 124) Diallate (peak 2) | (4) | 25.423 | 86 | 84476 | 11.968 |
| 125) Hexachlorobenzene | (4) | 25.626 | 284 | 190249 | 53.705 |
| 126) Dimethoate | (4) | 25.690 | 87 | 272236 | 51.642 |
| 127) Diallate TRANS/CIS | (4) | 21.799 | 86 | 358084 | 48.801 |
| 129) Pentachlorophenol | (4) | 26.171 | 266 | 120119 | 48.487 |
| 130) Pentachloronitrobenzene | (4) | 26.214 | 237 | 70689 | 54.050 |
| 131) 4-Aminobiphenyl | (4) | 26.171 | 169 | 484559 | 51.829 |
| 132) Pronamide | (4) | 26.299 | 173 | 307139 | 51.913 |
| 133) Phenanthrene-d10 | (4) | 26.737 | 188 | 592211 | 40.000 |
| 134) Dinoseb | (4) | 26.652 | 211 | 183605 | 49.536 |
| 135) Phenanthrene | (4) | 26.801 | 178 | 866538 | 50.255 |
| 136) Anthracene | (4) | 26.940 | 178 | 895658 | 50.604 |
| 138) Carbazole | (4) | 27.336 | 167 | 882095 | 50.933 |
| 139) Methyl parathion | (4) | 27.657 | 109 | 313679 | 53.790 |
| 140) Di-n-butylphthalate | (4) | 28.127 | 149 | 1311420 | 50.618 |
| 141) Parathion | (4) | 28.587 | 109 | 181989 | 53.537 |
| 142) 4-Nitroquinoline-1-oxide | (4) | 28.725 | 190 | 57203 | 28.286 |
| 143) Methapyrilene | (4) | 28.854 | 97 | 320338 | 51.715 |
| 144) Isodrin | (4) | 29.378 | 193 | 98829 | 48.782 |
| 145) Fluoranthene | (4) | 29.720 | 202 | 899932 | 51.745 |
| 150) Benzidine | (5) | 29.965 | 184 | 1289661 | 150.183 |
| 152) Pyrene | (5) | 30.243 | 202 | 869875 | 49.975 |
| 156) p-Dimethylaminoazobenzene | (5) | 30.788 | 225 | 179174 | 50.250 |
| 157) Chlorobenzilate | (5) | 30.853 | 139 | 347188 | 50.539 |
| 158) 3,3'-Dimethylbenzidine | (5) | 31.537 | 212 | 455200 | 53.200 |
| 159) Butylbenzylphthalate | (5) | 31.515 | 149 | 593009 | 50.230 |
| 160) 2-Acetylaminofluorene | (5) | 32.199 | 181 | 439408 | 54.193 |
| 162) 3,3'-Dichlorobenzidine | (5) | 33.044 | 252 | 319295 | 53.115 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 33.033 | 231 | 149691 | 52.450 |
| 164) Benzo(a)anthracene | (5) | 33.215 | 228 | 759644 | 50.649 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

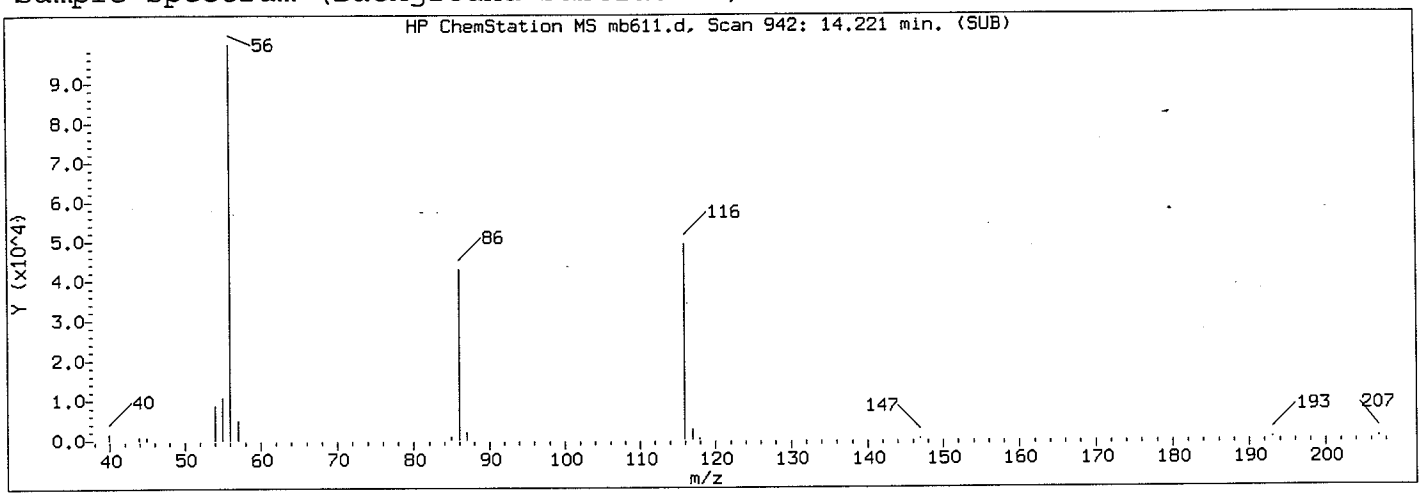
Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

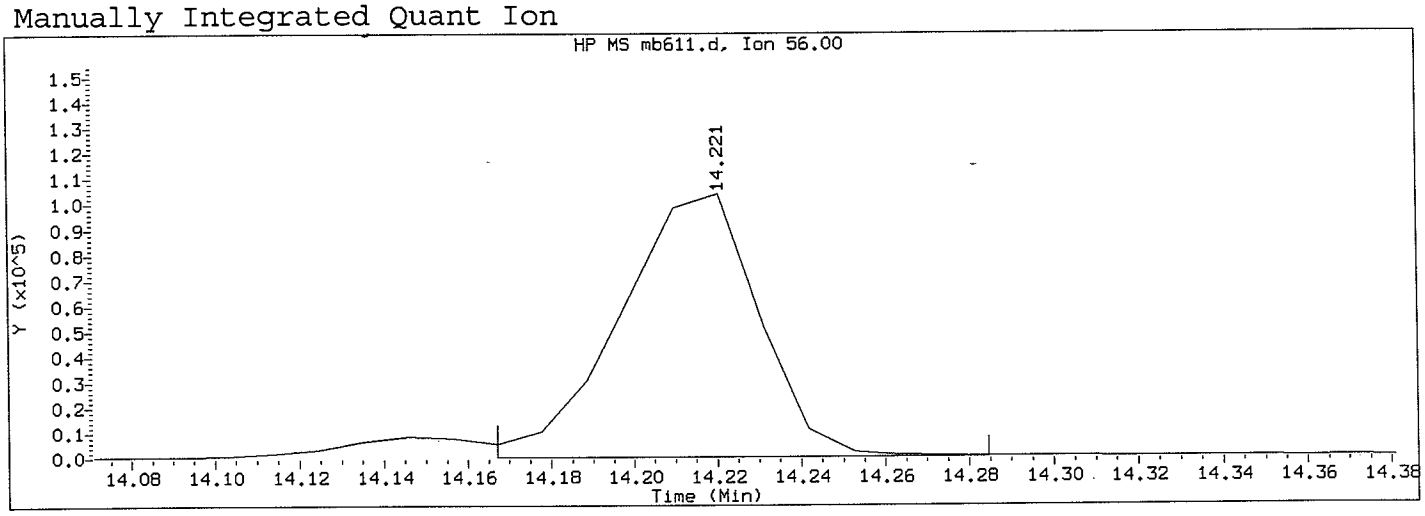
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 165) Chrysene-d12 | (5) | 33.247 | 240 | 469554 | 40.000 |
| 166) Chrysene | (5) | 33.332 | 228 | 685682 | 49.939 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.990 | 149 | 826372 | 50.982 |
| 168) Di-n-octylphthalate | (6) | 35.363 | 149 | 1446773 | 49.345 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 37.501 | 256 | 374193 | 51.032 |
| 170) Benzo(b)fluoranthene | (6) | 37.576 | 252 | 800822 | 49.521 |
| 171) Benzo(k)fluoranthene | (6) | 37.715 | 252 | 744305 | 49.381 |
| 172) Benzo(a)pyrene | (6) | 39.372 | 252 | 739081 | 51.279 |
| 173) Perylene-d12 | (6) | 39.682 | 264 | 458698 | 40.000 |
| 174) 3-Methylcholanthrene | (6) | 41.531 | 268 | 395423 | 49.603 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 47.666 | 276 | 731827M | 53.465 |
| 176) Dibenz(a,h)anthracene | (6) | 47.891 | 278 | 647980 | 52.267 |
| 177) Benzo(g,h,i)perylene | (6) | 50.200 | 276 | 735756 | 52.897 |
| 9) 2-Fluorophenol | (1) | 9.432 | 112 | 544481 | 50.105 |
| 14) Phenol-d5 | (1) | 11.858 | 99 | 660164 | 49.484 |
| 15) Phenol-d6 | (1) | 11.858 | 99 | 660164 | 49.484 |
| 38) Nitrobenzene-d5 | (2) | 14.627 | 82 | 441428 | 49.389 |
| 77) 2-Fluorobiphenyl | (3) | 20.089 | 172 | 697095 | 51.060 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 99072 | 53.445 |
| 154) Terphenyl-d14 | (5) | 30.489 | 244 | 504827 | 49.522 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb24a.b/mb611.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050  Lab Sample ID: STD0404

Compound Number : 32
Compound Name : N-Nitrosomorpholine
Scan Number : 942
Retention Time (minutes): 14.221
Quant Ion : 56
Area (flag) : 239939A
Concentration (ng/ul) : 46.2747
Integration start scan : 936  Integration stop scan: 947
Y at integration start : 298  Y at integration end: 298

Reason for manual integration (circle one): missed peak  improper integration

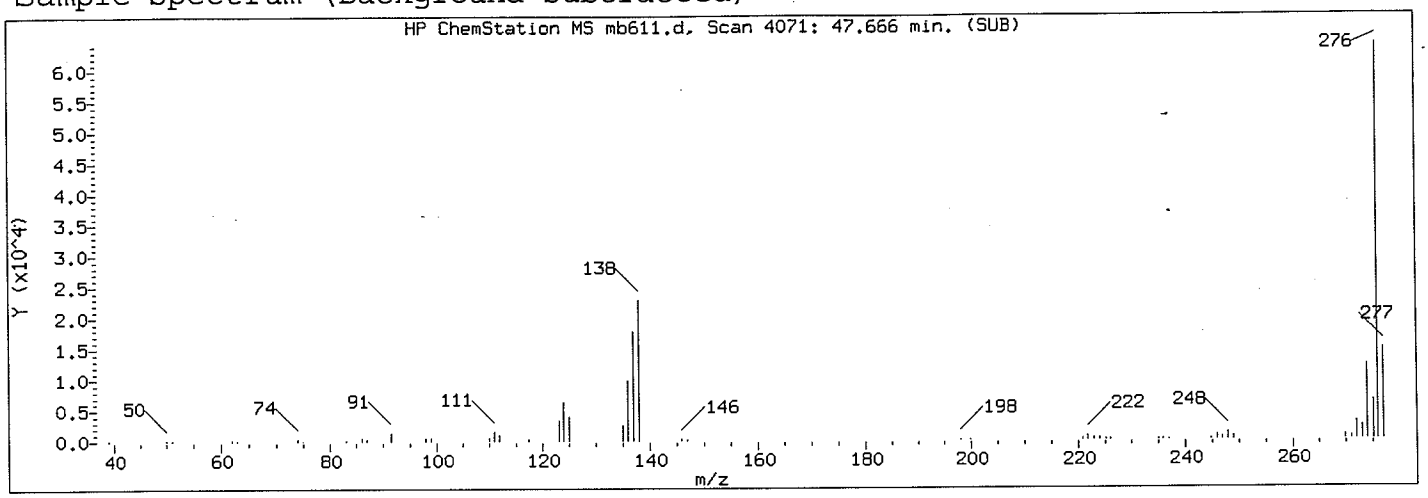
Analyst responsible for change: Jen Spotts 2/24/04

GC/MS audit/management approval: mg1758 2/25/04

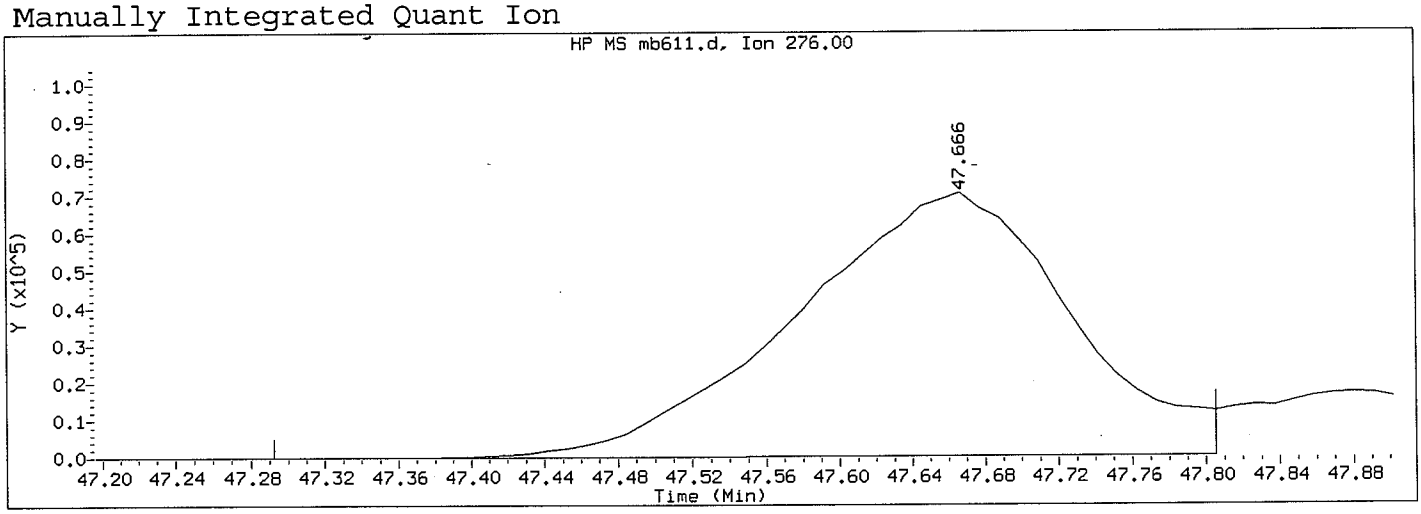
8475

Manual Integration Report for data file /chem/HP06755.i/04feb24a.b/mb611.d, generated on 02/24/2004 at 22:10

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06755.i/04feb24a.b/mb611.d Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 20:48 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: all1
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 24-Feb-2004 22:10 ids01472

Sample Name: SSTD050 Lab Sample ID: STD0404

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 4071
Retention Time (minutes): 47.666
Quant Ion : 276
Area (flag) : 731827 M
Concentration (ng/ul) : 53.4645
Integration start scan : 4035 Integration stop scan: 4083
Y at integration start : 0 Y at integration end: 145

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: Dan Spitz 2/24/04

GC/MS audit/management approval: mg758 2/25/04

Manual Integration Report for data file /chem/HP06755.i/04feb24a.b/mb611.d, generated on 02/24/2004 at 22:10

# Raw QC Data

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

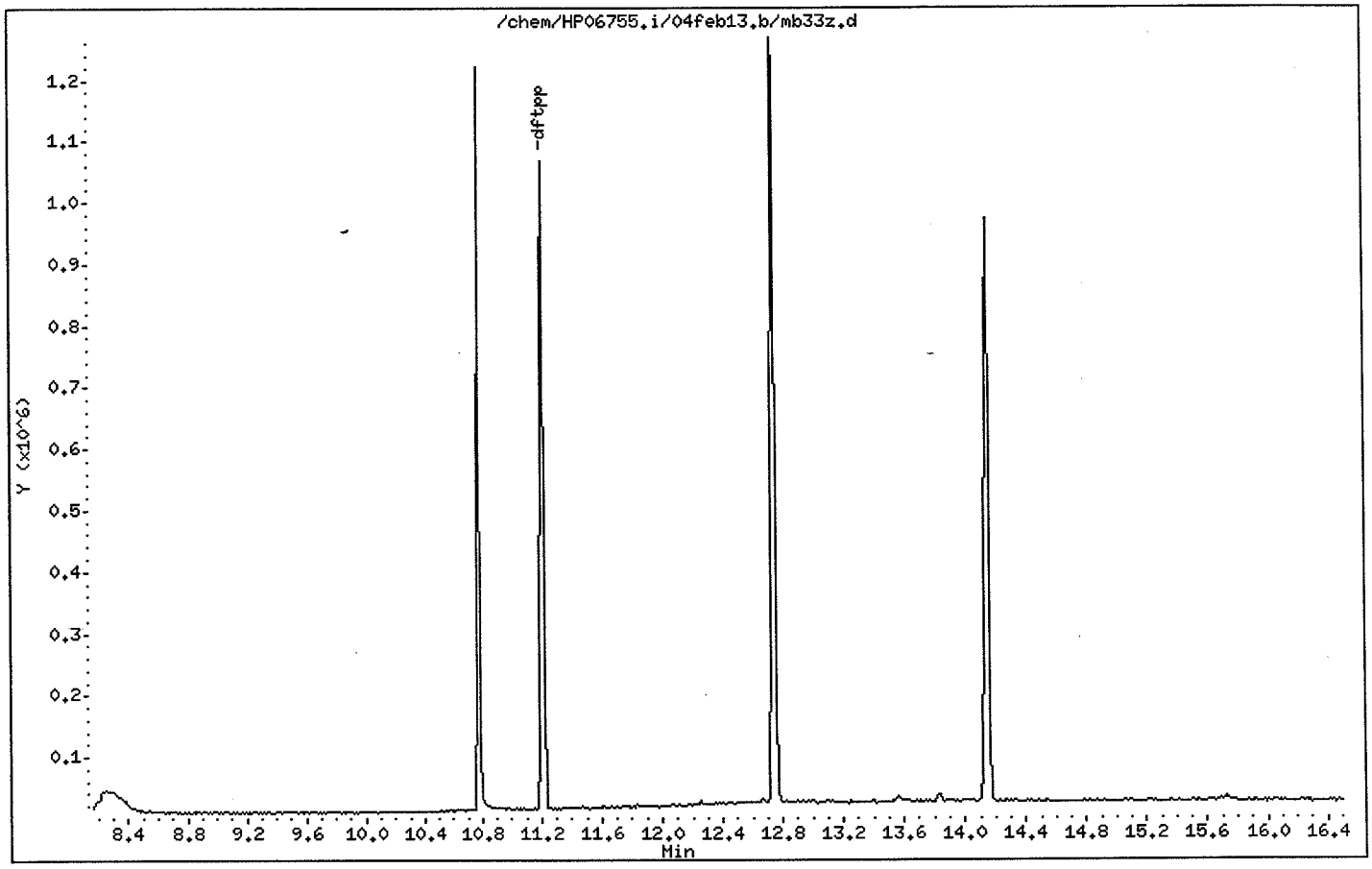
Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25




8478

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

Instrument: HP06755.i

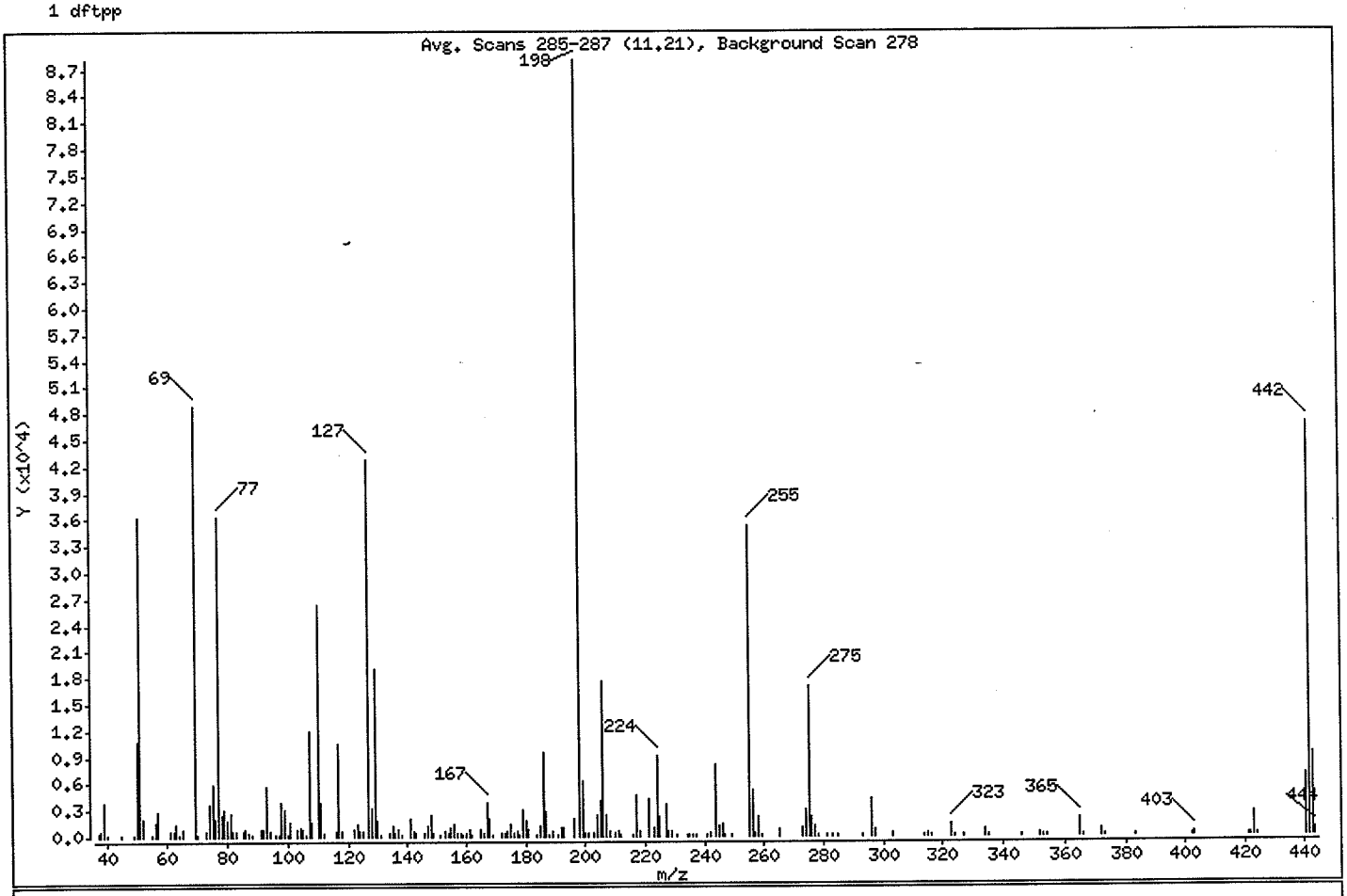
Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 41.10 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 55.52 |
| 70 | Less than 2.00% of mass 69 | 0.12 ( 0.22) |
| 127 | 40.00 - 60.00% of mass 198 | 48.49 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 7.09 |
| 275 | 10.00 - 30.00% of mass 198 | 19.22 |
| 365 | Greater than 1.00% of mass 198 | 2.37 |
| 441 | Present, but less than mass 443 | 7.76 |
| 442 | 40.00 - 99.99% of mass 198 | 53.19 |
| 443 | 17.00 - 23.00% of mass 442 | 10.51 ( 19.75) |

8479

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25

Data File: mb33z.d

Spectrum: Avg. Scans 285-287 (11.21), Background Scan 278

Location of Maximum: 198.00

Number of points: 194

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 312 | 108.00 | 1717 | 177.00 | 701 | 249.00 | 161 |
| 38.00 | 610 | 110.00 | 26336 | 178.00 | 136 | 255.00 | 35248 |
| 39.00 | 3923 | 111.00 | 3751 | 179.00 | 3006 | 256.00 | 5316 |
| 40.00 | 298 | 112.00 | 403 | 180.00 | 1916 | 257.00 | 381 |
| 45.00 | 105 | 116.00 | 691 | 181.00 | 735 | 258.00 | 2231 |
| 49.00 | 204 | 117.00 | 10498 | 184.00 | 137 | 259.00 | 242 |
| 50.00 | 10685 | 118.00 | 613 | 185.00 | 1220 | 265.00 | 862 |
| 51.00 | 36224 | 122.00 | 835 | 186.00 | 9600 | 273.00 | 1111 |
| 52.00 | 2062 | 123.00 | 1406 | 187.00 | 2739 | 274.00 | 3092 |
| 55.00 | 162 | 124.00 | 564 | 188.00 | 119 | 275.00 | 16944 |
| 56.00 | 1520 | 125.00 | 516 | 189.00 | 687 | 276.00 | 2216 |
| 57.00 | 2810 | 127.00 | 42744 | 191.00 | 302 | 277.00 | 1218 |
| 61.00 | 534 | 128.00 | 3291 | 192.00 | 997 | 278.00 | 159 |
| 62.00 | 522 | 129.00 | 19000 | 193.00 | 1088 | 281.00 | 228 |
| 63.00 | 1372 | 130.00 | 1817 | 196.00 | 2036 | 283.00 | 102 |
| 64.00 | 145 | 131.00 | 294 | 198.00 | 88152 | 285.00 | 145 |
| 65.00 | 722 | 134.00 | 482 | 199.00 | 6253 | 293.00 | 239 |
| 69.00 | 48936 | 135.00 | 1233 | 200.00 | 350 | 296.00 | 4216 |
| 70.00 | 110 | 136.00 | 495 | 201.00 | 381 | 297.00 | 733 |
| 73.00 | 697 | 137.00 | 829 | 203.00 | 432 | 303.00 | 426 |
| 74.00 | 3647 | 138.00 | 249 | 204.00 | 2341 | 314.00 | 102 |
| 75.00 | 5962 | 141.00 | 2117 | 205.00 | 4131 | 315.00 | 439 |
| 76.00 | 2109 | 142.00 | 654 | 206.00 | 17592 | 316.00 | 144 |
| 77.00 | 36336 | 143.00 | 494 | 207.00 | 2399 | 323.00 | 1493 |
| 78.00 | 2458 | 146.00 | 426 | 208.00 | 530 | 324.00 | 169 |
| 79.00 | 2970 | 147.00 | 1130 | 210.00 | 353 | 327.00 | 204 |
| 80.00 | 1764 | 148.00 | 2450 | 211.00 | 603 | 334.00 | 762 |
| 81.00 | 2707 | 149.00 | 327 | 212.00 | 117 | 335.00 | 126 |
| 82.00 | 555 | 151.00 | 157 | 216.00 | 243 | 346.00 | 198 |
| 83.00 | 638 | 153.00 | 675 | 217.00 | 4656 | 352.00 | 388 |
| 85.00 | 550 | 154.00 | 361 | 218.00 | 646 | 353.00 | 164 |
| 86.00 | 812 | 155.00 | 991 | 221.00 | 4341 | 354.00 | 246 |
| 87.00 | 346 | 156.00 | 1404 | 223.00 | 969 | 365.00 | 2091 |
| 88.00 | 119 | 157.00 | 328 | 224.00 | 9196 | 366.00 | 113 |
| 91.00 | 798 | 158.00 | 396 | 225.00 | 2185 | 372.00 | 839 |

Data File: /chem/HP06755.i/04feb13.b/mb33z.d

Date : 13-FEB-2004 05:30

Client ID: 8270DFTPP0274

Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: jmg00346

Column phase: DB-5

Column diameter: 0.25

Data File: mb33z.d

Spectrum: Avg. Scans 285-287 (11.21), Background Scan 278

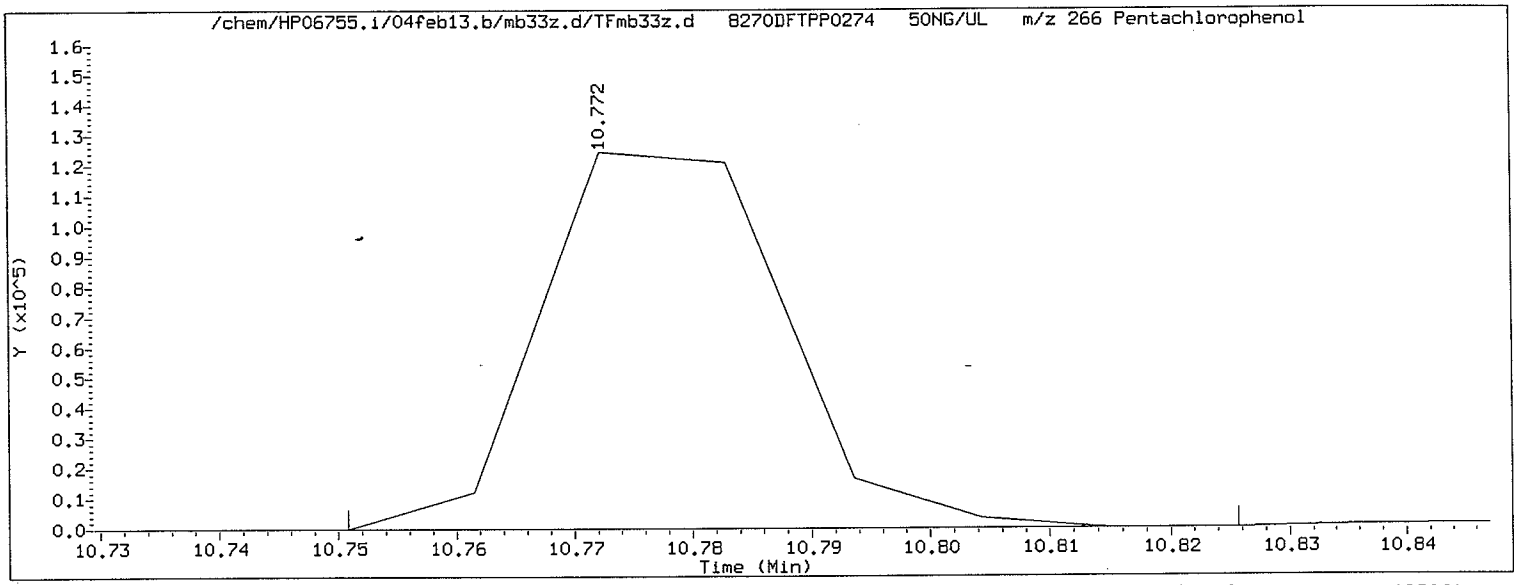
Location of Maximum: 198.00

Number of points: 194

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 92.00 | 725 | 159.00 | 255 | 227.00 | 3704 | 373.00 | 126 |
| 93.00 | 5620 | 160.00 | 489 | 228.00 | 528 | 383.00 | 133 |
| 94.00 | 534 | 161.00 | 788 | 229.00 | 701 | 402.00 | 237 |
| 96.00 | 104 | 162.00 | 157 | 231.00 | 300 | 403.00 | 389 |
| 97.00 | 121 | 165.00 | 745 | 234.00 | 143 | 421.00 | 271 |
| 98.00 | 3869 | 166.00 | 478 | 235.00 | 260 | 422.00 | 273 |
| 99.00 | 2960 | 167.00 | 3912 | 236.00 | 203 | 423.00 | 2621 |
| 100.00 | 267 | 168.00 | 1967 | 237.00 | 264 | 424.00 | 267 |
| 101.00 | 1549 | 169.00 | 275 | 241.00 | 113 | 441.00 | 6841 |
| 103.00 | 711 | 172.00 | 355 | 242.00 | 491 | 442.00 | 46888 |
| 104.00 | 971 | 173.00 | 432 | 244.00 | 8035 | 443.00 | 9262 |
| 105.00 | 882 | 174.00 | 622 | 245.00 | 1172 | 444.00 | 852 |
| 106.00 | 219 | 175.00 | 1449 | 246.00 | 1392 | | |
| 107.00 | 11921 | 176.00 | 418 | 247.00 | 134 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

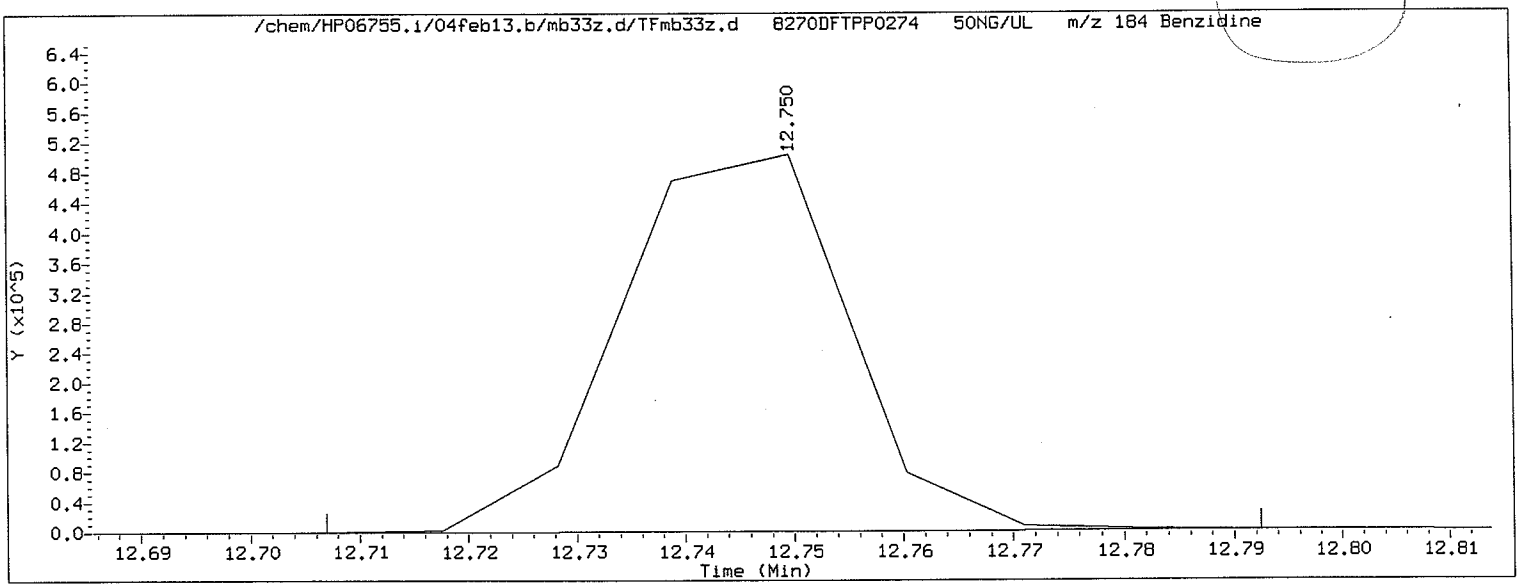
Instrument ID: HP06755.i  Injection Date: 13-FEB-2004 05:30  Operator: jmg00346




Pentachlorophenol EICP peak height = 124448  EICP peak height at 10% = 12445  Pentachlorophenol EICP area = 177861

Pentachlorophenol EICP peak apex (min.) = 10.772
RT at 10% of front half of EICP (min.) = 10.762  'Front' peak width (min.) = 0.0106666667
RT at 10% of back half of EICP (min.) = 10.797  'Tailing' peak width (min.) = 0.0246166667

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0246166667}{0.0106666667} = 2.308$




Benzidine EICP peak height = 502700  EICP peak height at 10% = 50270  Benzidine EICP area = 736206

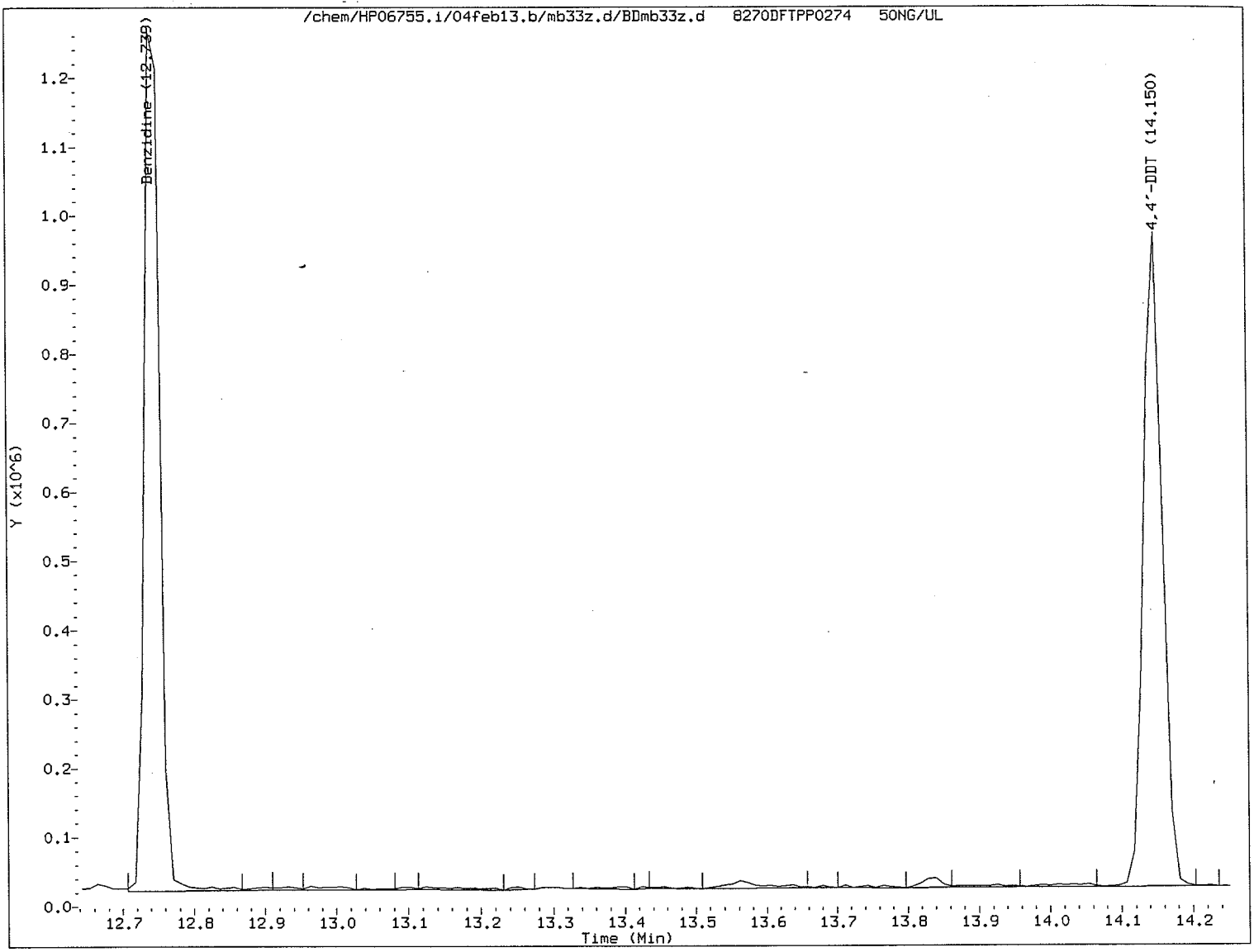
Benzidine EICP peak apex (min.) = 12.750
RT at 10% of front half of EICP (min.) = 12.724  'Front' peak width (min.) = 0.0260333333
RT at 10% of back half of EICP (min.) = 12.765  'Tailing' peak width (min.) = 0.0148500000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0148500000}{0.0260333333} = 0.570$


printed on 02/13/2004 at 05:55

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06755.i  Injection Date: 13-FEB-2004 05:30  Operator: jmg00346




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 1726211} \times 100 = 0.0$$

8483


printed on 02/13/2004 at 06:02

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274

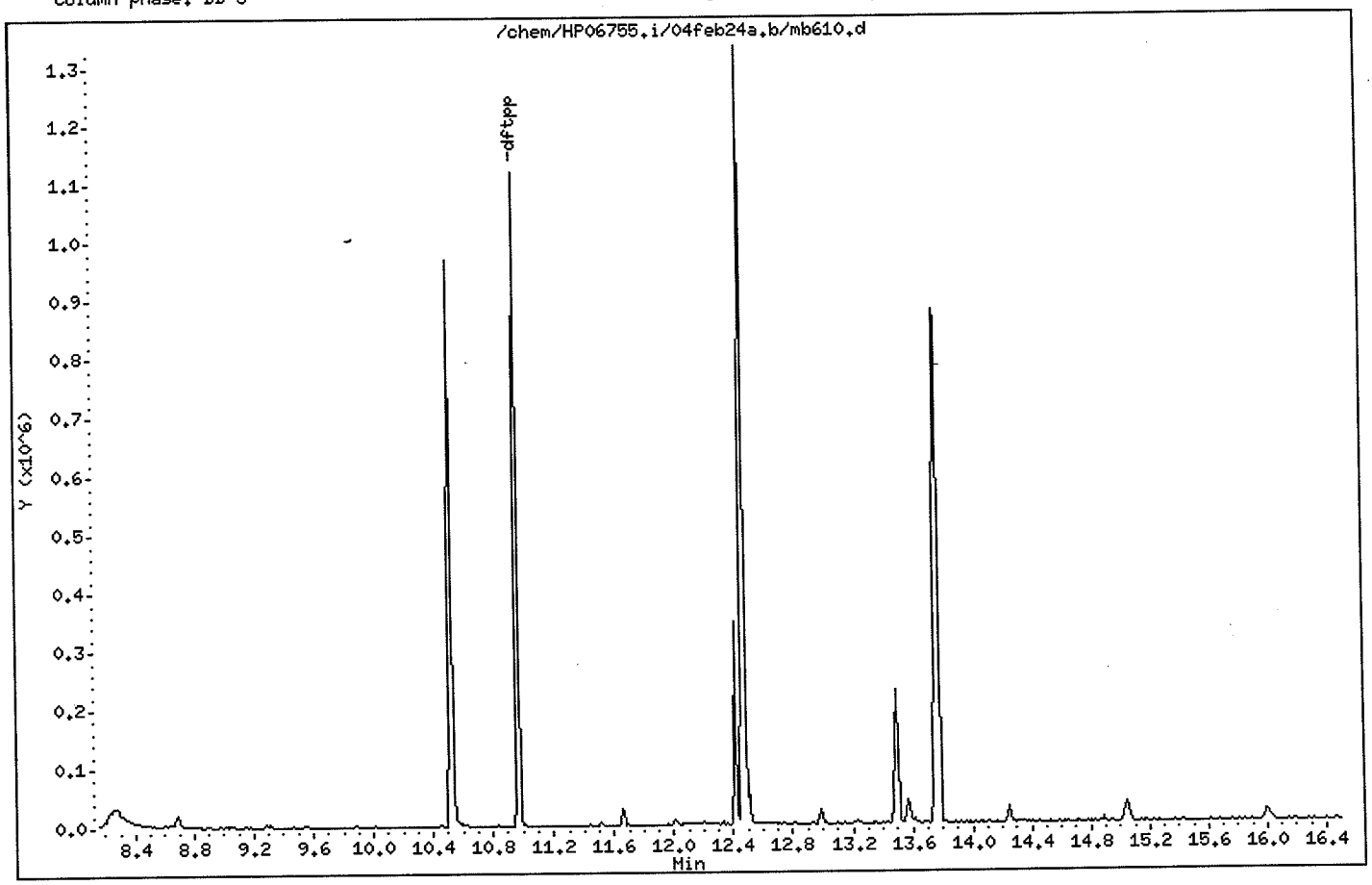
Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274

Instrument: HP06755.i

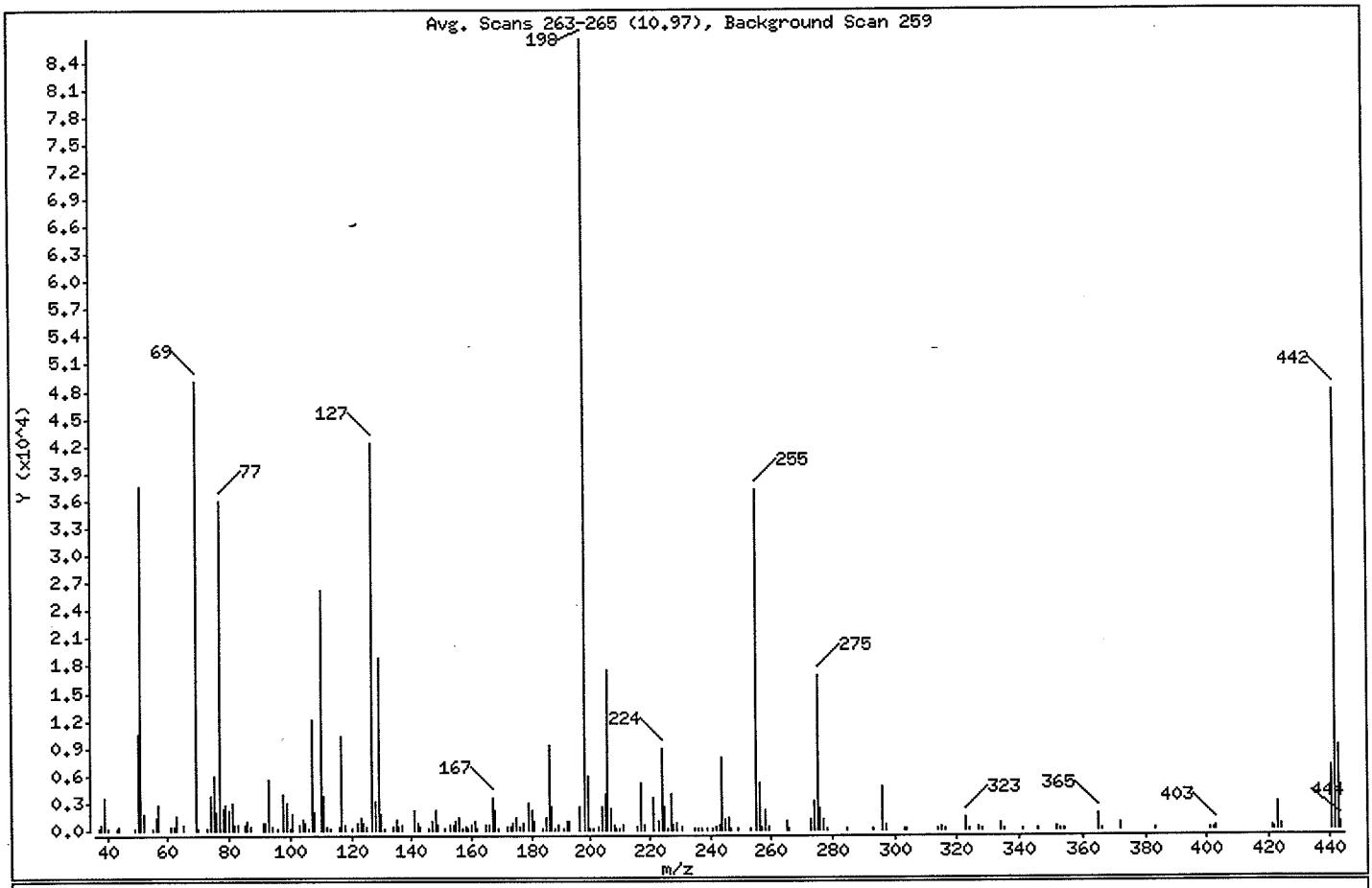
Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 43.46 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 56.85 |
| 70 | Less than 2.00% of mass 69 | 0.14 ( 0.24) |
| 127 | 40.00 - 60.00% of mass 198 | 49.08 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.97 |
| 275 | 10.00 - 30.00% of mass 198 | 19.63 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, but less than mass 443 | 8.06 |
| 442 | 40.00 - 99.99% of mass 198 | 55.39 |
| 443 | 17.00 - 23.00% of mass 442 | 10.54 ( 19.04) |

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274 Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

Column phase: DB-5 Column diameter: 0.25

Data File: mb610.d

Spectrum: Avg. Scans 263-265 (10.97), Background Scan 259

Location of Maximum: 198.00

Number of points: 197

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 261 | 112.00 | 468 | 181.00 | 982 | 256.00 | 5111 |
| 38.00 | 634 | 113.00 | 122 | 184.00 | 219 | 257.00 | 352 |
| 39.00 | 3650 | 116.00 | 357 | 185.00 | 1385 | 258.00 | 2198 |
| 40.00 | 103 | 117.00 | 10280 | 186.00 | 9323 | 259.00 | 314 |
| 43.00 | 112 | 118.00 | 636 | 187.00 | 2604 | 265.00 | 1004 |
| 44.00 | 321 | 120.00 | 139 | 188.00 | 185 | 266.00 | 119 |
| 49.00 | 218 | 122.00 | 843 | 189.00 | 616 | 273.00 | 1166 |
| 50.00 | 10606 | 123.00 | 1394 | 191.00 | 137 | 274.00 | 3217 |
| 51.00 | 37584 | 124.00 | 697 | 192.00 | 925 | 275.00 | 16968 |
| 52.00 | 1808 | 125.00 | 408 | 193.00 | 981 | 276.00 | 2479 |
| 55.00 | 237 | 127.00 | 42448 | 196.00 | 2499 | 277.00 | 1186 |
| 56.00 | 1359 | 128.00 | 3217 | 198.00 | 86488 | 278.00 | 102 |
| 57.00 | 2716 | 129.00 | 18880 | 199.00 | 6030 | 285.00 | 119 |
| 61.00 | 451 | 130.00 | 1739 | 200.00 | 275 | 293.00 | 256 |
| 62.00 | 401 | 131.00 | 266 | 201.00 | 205 | 296.00 | 4728 |
| 63.00 | 1551 | 134.00 | 402 | 203.00 | 360 | 297.00 | 673 |
| 65.00 | 625 | 135.00 | 1220 | 204.00 | 2550 | 303.00 | 291 |
| 69.00 | 49168 | 136.00 | 470 | 205.00 | 3947 | 304.00 | 110 |
| 70.00 | 118 | 137.00 | 596 | 206.00 | 17440 | 314.00 | 126 |
| 73.00 | 166 | 141.00 | 2249 | 207.00 | 2319 | 315.00 | 485 |
| 74.00 | 3718 | 142.00 | 729 | 208.00 | 610 | 316.00 | 171 |
| 75.00 | 5936 | 143.00 | 414 | 209.00 | 100 | 323.00 | 1491 |
| 76.00 | 1903 | 146.00 | 244 | 210.00 | 290 | 324.00 | 179 |
| 77.00 | 36000 | 147.00 | 918 | 211.00 | 599 | 327.00 | 301 |
| 78.00 | 2412 | 148.00 | 2217 | 216.00 | 348 | 328.00 | 100 |
| 79.00 | 2845 | 149.00 | 511 | 217.00 | 5087 | 334.00 | 831 |
| 80.00 | 2109 | 151.00 | 298 | 218.00 | 618 | 335.00 | 153 |
| 81.00 | 2907 | 153.00 | 631 | 221.00 | 3664 | 341.00 | 142 |
| 82.00 | 615 | 154.00 | 532 | 223.00 | 1093 | 346.00 | 168 |
| 83.00 | 674 | 155.00 | 1046 | 224.00 | 9036 | 352.00 | 423 |
| 85.00 | 580 | 156.00 | 1422 | 225.00 | 2558 | 353.00 | 131 |
| 86.00 | 1075 | 157.00 | 169 | 226.00 | 130 | 354.00 | 265 |
| 87.00 | 379 | 158.00 | 317 | 227.00 | 4011 | 365.00 | 1879 |
| 91.00 | 720 | 159.00 | 167 | 228.00 | 546 | 366.00 | 112 |
| 92.00 | 772 | 160.00 | 583 | 229.00 | 789 | 372.00 | 723 |

Data File: /chem/HP06755.i/04feb24a.b/mb610.d

Date : 24-FEB-2004 20:24

Client ID: 8270DFTPP0274 Instrument: HP06755.i

Sample Info: 8270DFTPP0274;50NG/UL;;;;;

Operator: ids01472

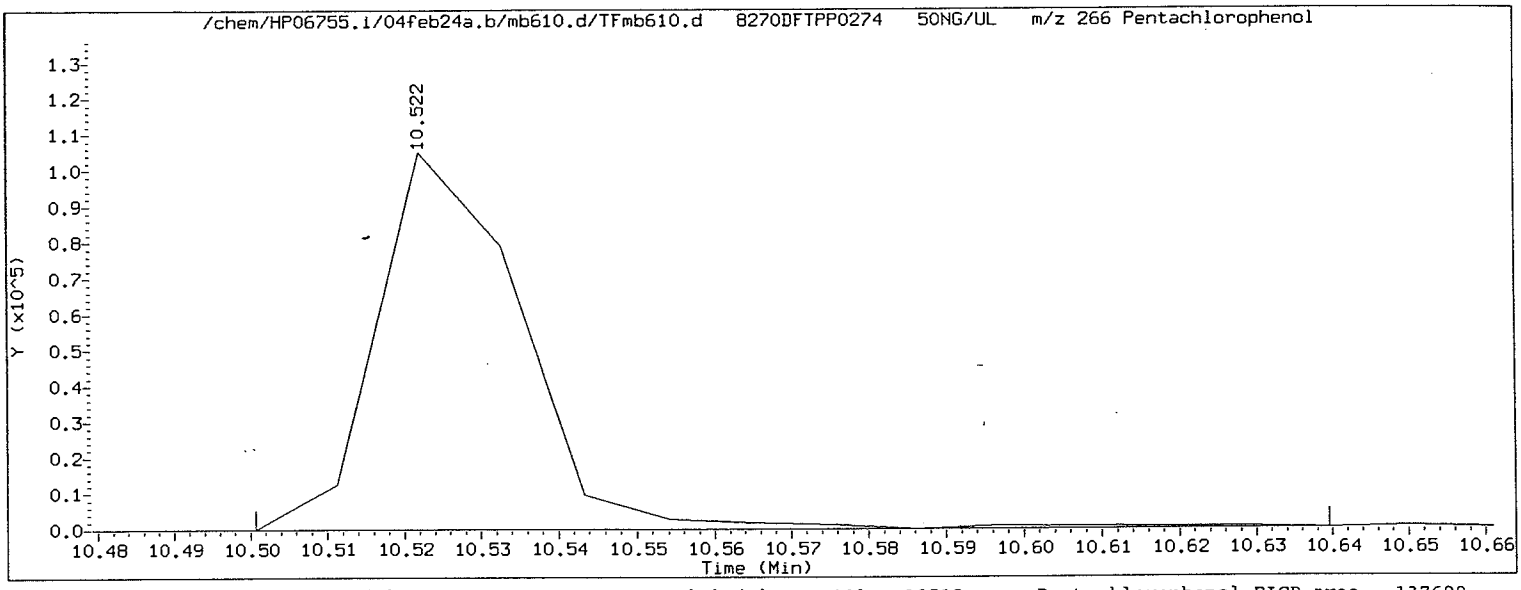
Column phase: DB-5 Column diameter: 0.25

Data File: mb610.d
Spectrum: Avg. Scans 263-265 (10.97), Background Scan 259
Location of Maximum: 198.00
Number of points: 197

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 93.00 | 5483 | 161.00 | 934 | 231.00 | 311 | 383.00 | 146 |
| 94.00 | 351 | 162.00 | 107 | 235.00 | 160 | 401.00 | 161 |
| 96.00 | 161 | 165.00 | 683 | 236.00 | 112 | 402.00 | 119 |
| 98.00 | 4007 | 166.00 | 507 | 237.00 | 164 | 403.00 | 406 |
| 99.00 | 3070 | 167.00 | 3598 | 239.00 | 106 | 421.00 | 412 |
| 100.00 | 163 | 168.00 | 2090 | 241.00 | 144 | 422.00 | 186 |
| 101.00 | 1739 | 169.00 | 281 | 242.00 | 422 | 423.00 | 2918 |
| 103.00 | 533 | 172.00 | 386 | 243.00 | 595 | 424.00 | 511 |
| 104.00 | 1182 | 173.00 | 386 | 244.00 | 7933 | 441.00 | 6970 |
| 105.00 | 884 | 174.00 | 852 | 245.00 | 1131 | 442.00 | 47904 |
| 106.00 | 139 | 175.00 | 1294 | 246.00 | 1330 | 443.00 | 9120 |
| 107.00 | 12188 | 176.00 | 349 | 247.00 | 145 | 444.00 | 893 |
| 108.00 | 1944 | 177.00 | 813 | 249.00 | 266 | | |
| 110.00 | 26160 | 179.00 | 2991 | 253.00 | 112 | | |
| 111.00 | 3859 | 180.00 | 2167 | 255.00 | 37104 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

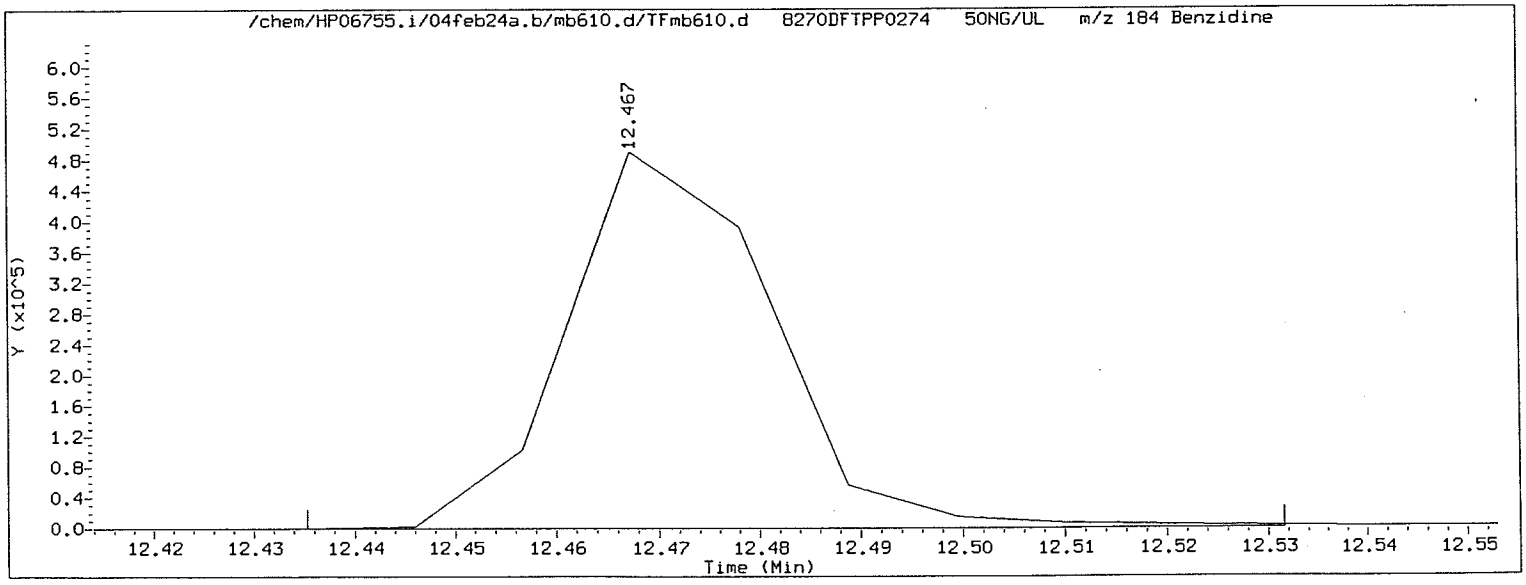
Instrument ID: HP06755.i  Injection Date: 24-FEB-2004 20:24  Operator: ids01472




Pentachlorophenol EICP peak height = 105120  EICP peak height at 10% = 10512  Pentachlorophenol EICP area = 137699

Pentachlorophenol EICP peak apex (min.) = 10.522
RT at 10% of front half of EICP (min.) = 10.510  'Front' peak width (min.) = 0.0124166667
RT at 10% of back half of EICP (min.) = 10.543  'Tailing' peak width (min.) = 0.0212166667

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0212166667}{0.0124166667} = 1.709$




Benzidine EICP peak height = 489728  EICP peak height at 10% = 48973  Benzidine EICP area = 684658

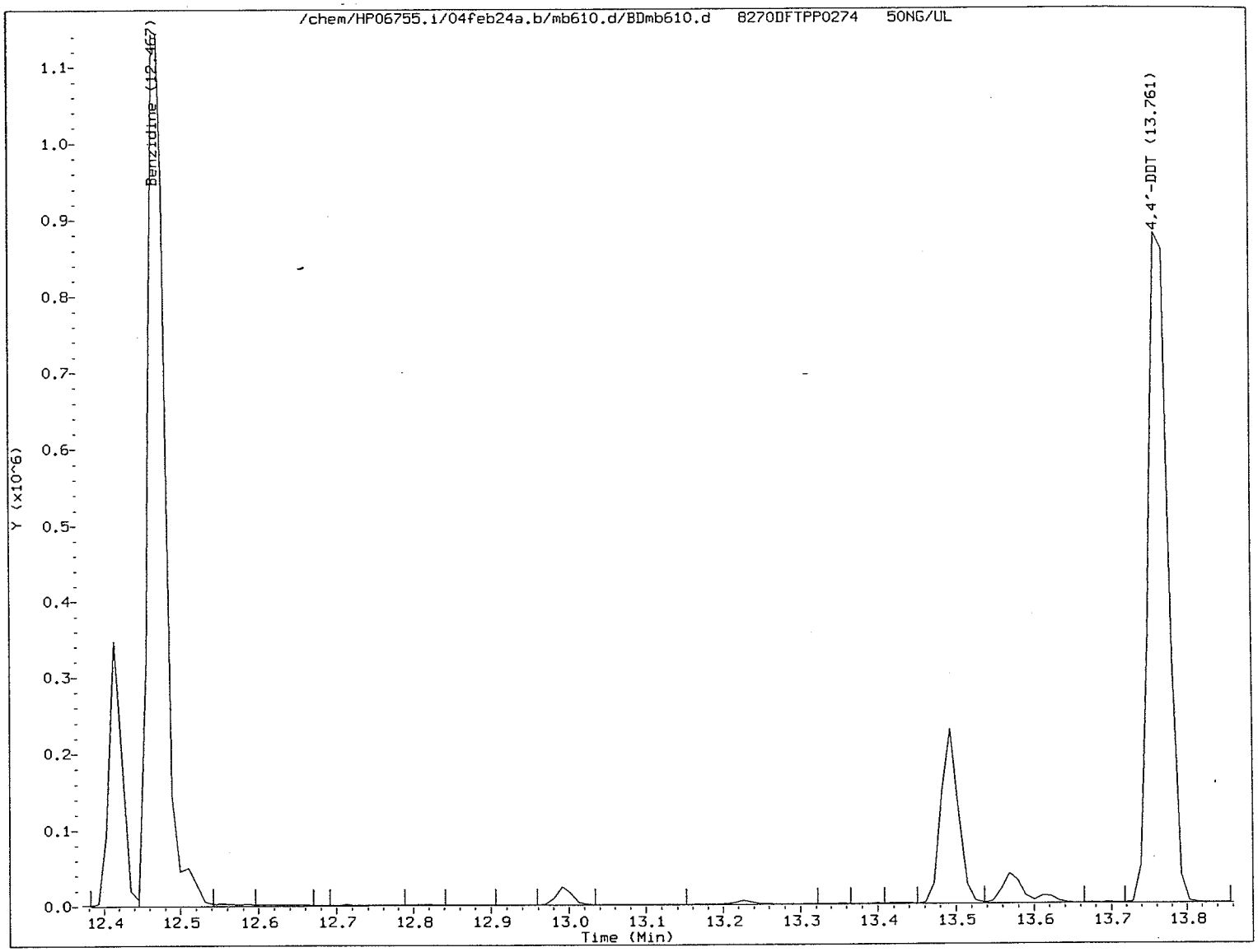
Benzidine EICP peak apex (min.) = 12.467
RT at 10% of front half of EICP (min.) = 12.451  'Front' peak width (min.) = 0.0162500000
RT at 10% of back half of EICP (min.) = 12.490  'Tailing' peak width (min.) = 0.0230500000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0230500000}{0.0162500000} = 1.418$


printed on 02/24/2004 at 20:50

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06755.i Injection Date: 24-FEB-2004 20:24 Operator: ids01472




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 1612528} \times 100 = 0.0$$

8489


printed on 02/24/2004 at 21:09

# SBLKWC055M

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# SBLKWC055

Data file: /chem/HP06755.i/04feb24a.b/mb612.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 22:13 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.020( 0.014) | 830 | 152.0 | 194795( -25) | 40.00 | |
| 52) Naphthalene-d8 | 16.793( 0.014) | 1183 | 136.0 | 705596( -23) | 40.00 | |
| 96) Acenaphthene-d10 | 22.212( 0.014) | 1690 | 164.0 | 335924( -18) | 40.00 | |
| 133) Phenanthrene-d10 | 26.723( 0.014) | 2112 | 188.0 | 517276( -13) | 40.00 | |
| 165) Chrysene-d12 | 33.233( 0.014) | 2721 | 240.0 | 417272( -11) | 40.00 | |
| 173) Perylene-d12 | 39.657( 0.025) | 3322 | 264.0 | 381897( -17) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.385( 0.003) | 112 | 1117279 | 137.154 | 69% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.844( 0.000) | 99 | 1016486 | 101.639 | 51% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.612( 0.000) | 82 | 582798 | 84.468 | 84% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.085( 0.000) | 172 | 859824 | 76.551 | 77% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.660( 0.000) | 330 | 272301 | 178.549 | 89% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.496(-0.001) | 244 | 725903 | 80.131 | 80% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | | | | ND | ND | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8495

# SBLKWC055M

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# SBLKWC055

Data file: /chem/HP06755.i/04feb24a.b/mb612.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 22:13 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

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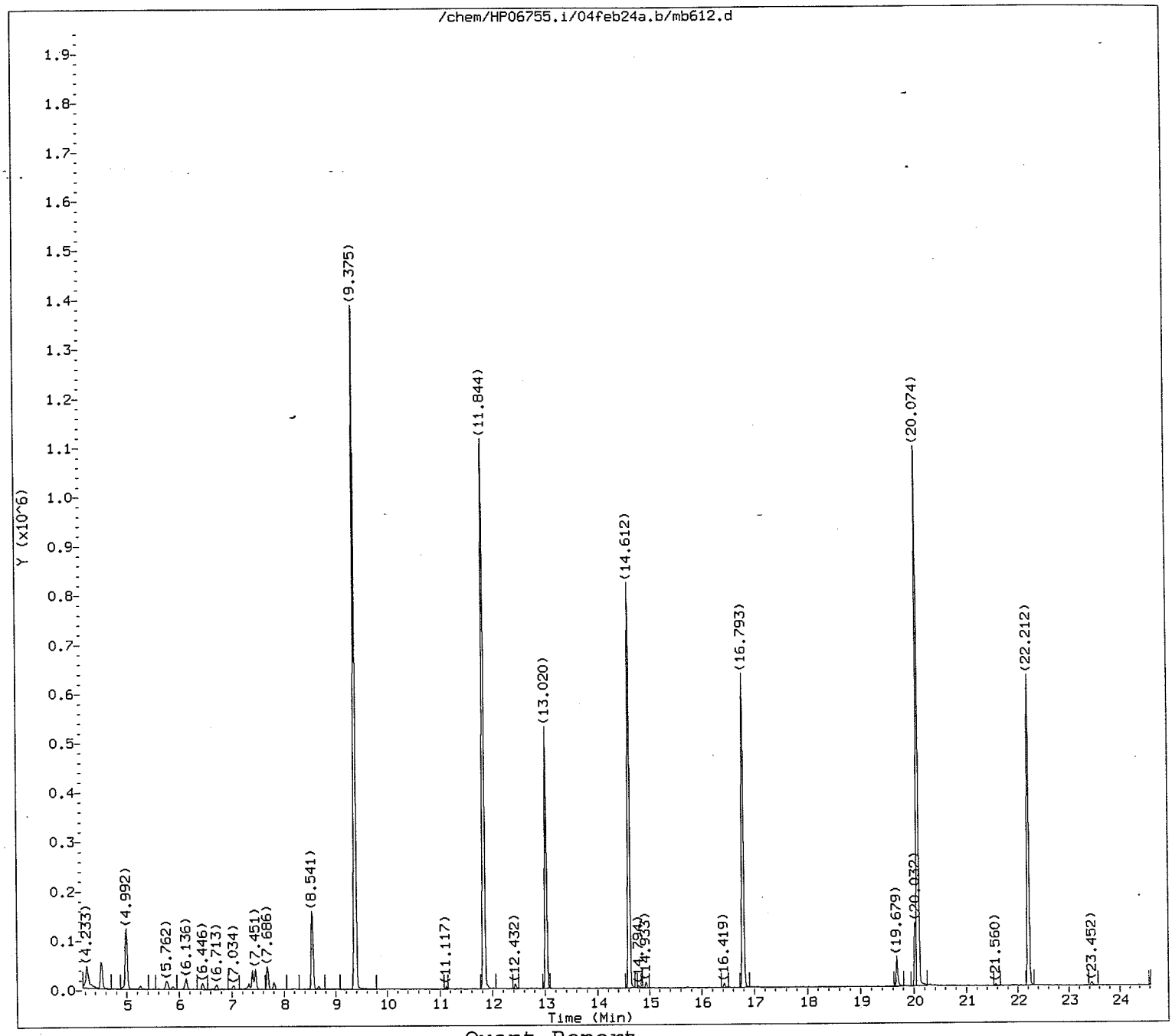
Total number of targets = 12

Comments:

Analyst: Joe Michael Jarosick Date: 2/25/04
Auditor: Date: 2/25/04



8491




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d
Injection date and time: 24-FEB-2004 22:13

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

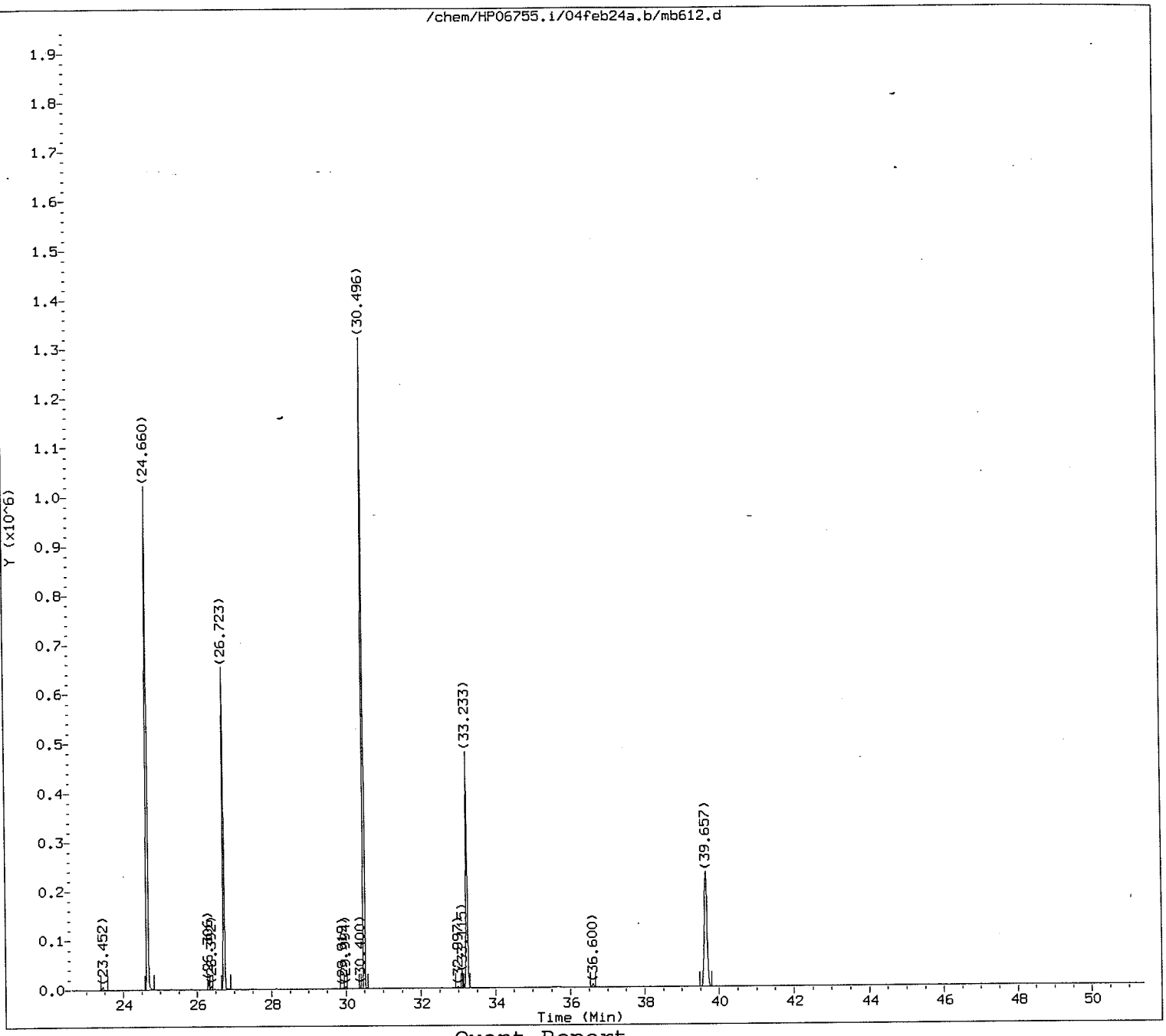
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M

Lab Sample ID: SBLKWC055

JMG 346
2/25/04

8492




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d
Injection date and time: 24-FEB-2004 22:13

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M

Lab Sample ID: SBLKWC055

JMG/SAC
2/25/04

8493

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb612.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 22:13  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:55 jmg00346

Sample Name: SBLKWC055M  Lab Sample ID: SBLKWC055

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.020 | 152 | 194795 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 16.793 | 136 | 705596 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 22.212 | 164 | 335924 | 40.000 |
| 133) | Phenanthrene-d10 | (4) | 26.723 | 188 | 517276 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.233 | 240 | 417272 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.657 | 264 | 381897 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.385 | 112 | 1117279 | 137.154 |
| 15) | Phenol-d6 | (1) | 11.844 | 99 | 1016486 | 101.639 |
| 38) | Nitrobenzene-d5 | (2) | 14.612 | 82 | 582798 | 84.468 |
| 77) | 2-Fluorobiphenyl | (3) | 20.085 | 172 | 859824 | 76.551 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.660 | 330 | 272301 | 178.549 |
| 154) | Terphenyl-d14 | (5) | 30.496 | 244 | 725903 | 80.131 |

M = Compound was manually integrated.  A = User selected an alternate hit

UN7NVMS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4219022

Data file: /chem/HP06755.i/04feb24a.b/mb615.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 01:08 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Methed Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.023 | ( 0.011) | 830 | 152.0 | 176916 | ( -32) | 40.00 | |
| 52) Naphthalene-d8 | 16.796 | ( 0.011) | 1183 | 136.0 | 616576 | ( -33) | 40.00 | |
| 96) Acenaphthene-d10 | 22.215 | ( 0.011) | 1690 | 164.0 | 287941 | ( -29) | 40.00 | |
| 133) Phenanthrene-d10 | 26.726 | ( 0.011) | 2112 | 188.0 | 464316 | ( -22) | 40.00 | |
| 165) Chrysene-d12 | 33.246 | ( 0.001) | 2722 | 240.0 | 355558 | ( -24) | 40.00 | |
| 173) Perylene-d12 | 39.670 | ( 0.011) | 3323 | 264.0 | 360009 | ( -22) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.389 | ( 0.003) | 112 | 877181 | 118.562 | 59% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.847 | ( 0.000) | 99 | 690717 | 76.045 | 38% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.626 | (-0.001) | 82 | 524978 | 87.073 | 87% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.088 | ( 0.000) | 172 | 854448 | 88.749 | 89% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | (-0.001) | 330 | 253779 | 194.133 | 97% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.499 | ( 0.000) | 244 | 603186 | 78.142 | 78% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.893 | (-0.001) | 79 | 449981 | 54.903 | 166.37 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076 | ( 0.000) | 146 | 471896 | 66.099 | 200.30 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.632 | ( 0.000) | 108 | 479419 | 75.040 | 227.39 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.081 | (-0.001) | 108 | 465173 | 71.216 | 215.81 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.519 | (-0.001) | 117 | 156016 | 52.403 | 158.80 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.680 | ( 0.000) | 77 | 503626 | 84.472 | 255.98 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.202 | ( 0.000) | 225 | 133918 | 61.844 | 187.41 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.810 | ( 0.000) | 196 | 265451 | 90.515 | 274.29 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917 | ( 0.000) | 196 | 290005 | 89.895 | 272.41 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771 | ( 0.000) | 165 | 335873 | 98.807 | 299.42 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.625 | ( 0.000) | 284 | 242907 | 87.457 | 265.02 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.170 | ( 0.000) | 266 | 138694 | 71.405 | 216.38 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8495

UN7NVMS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb615.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 01:08 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

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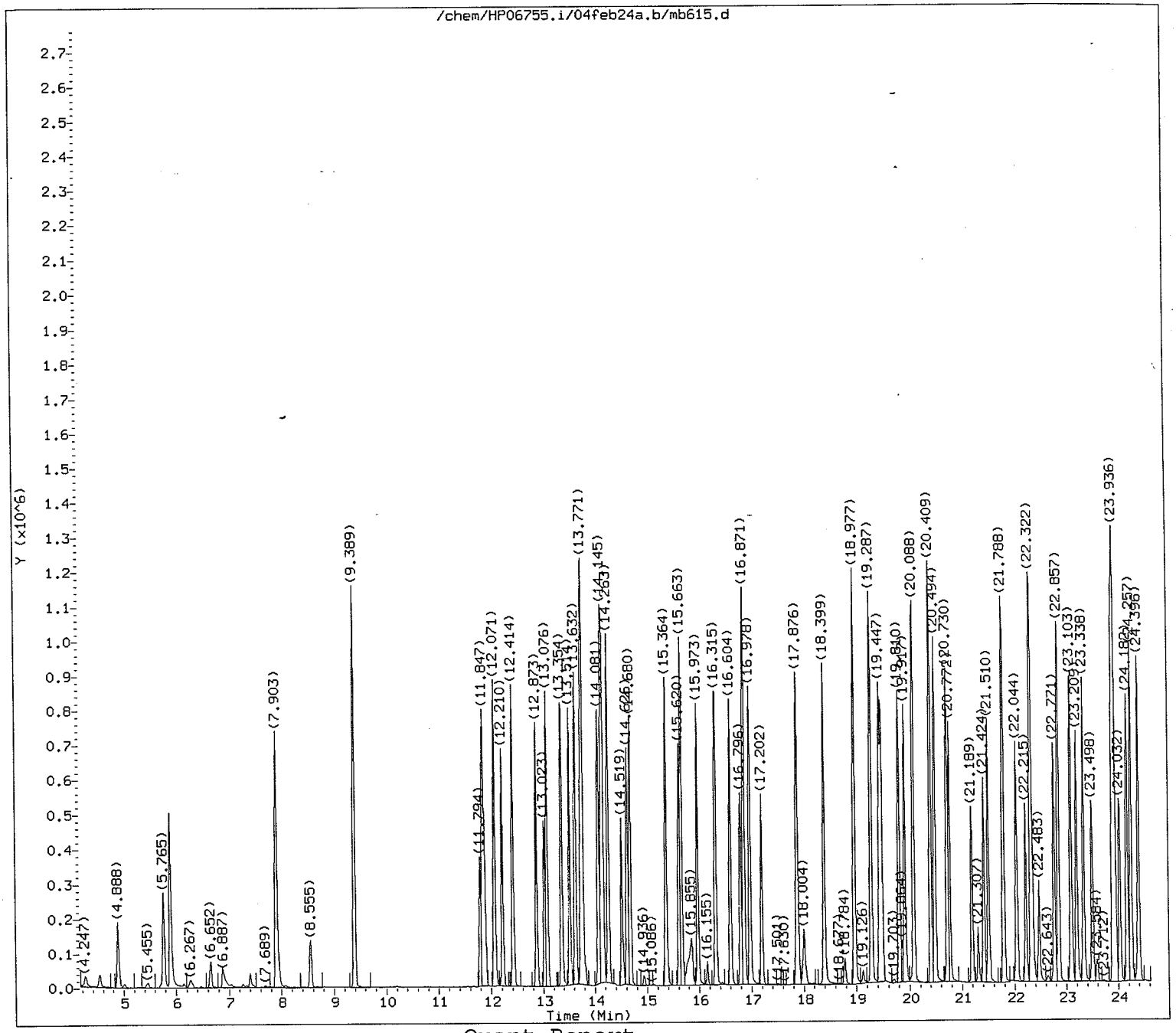
Total number of targets = 12

Comments: 241

Analyst: Joe Mjanek Jarosick Date: 2/25/04
Auditor: Date: 2/25/04



8496




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d
Injection date and time: 25-FEB-2004 01:08

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

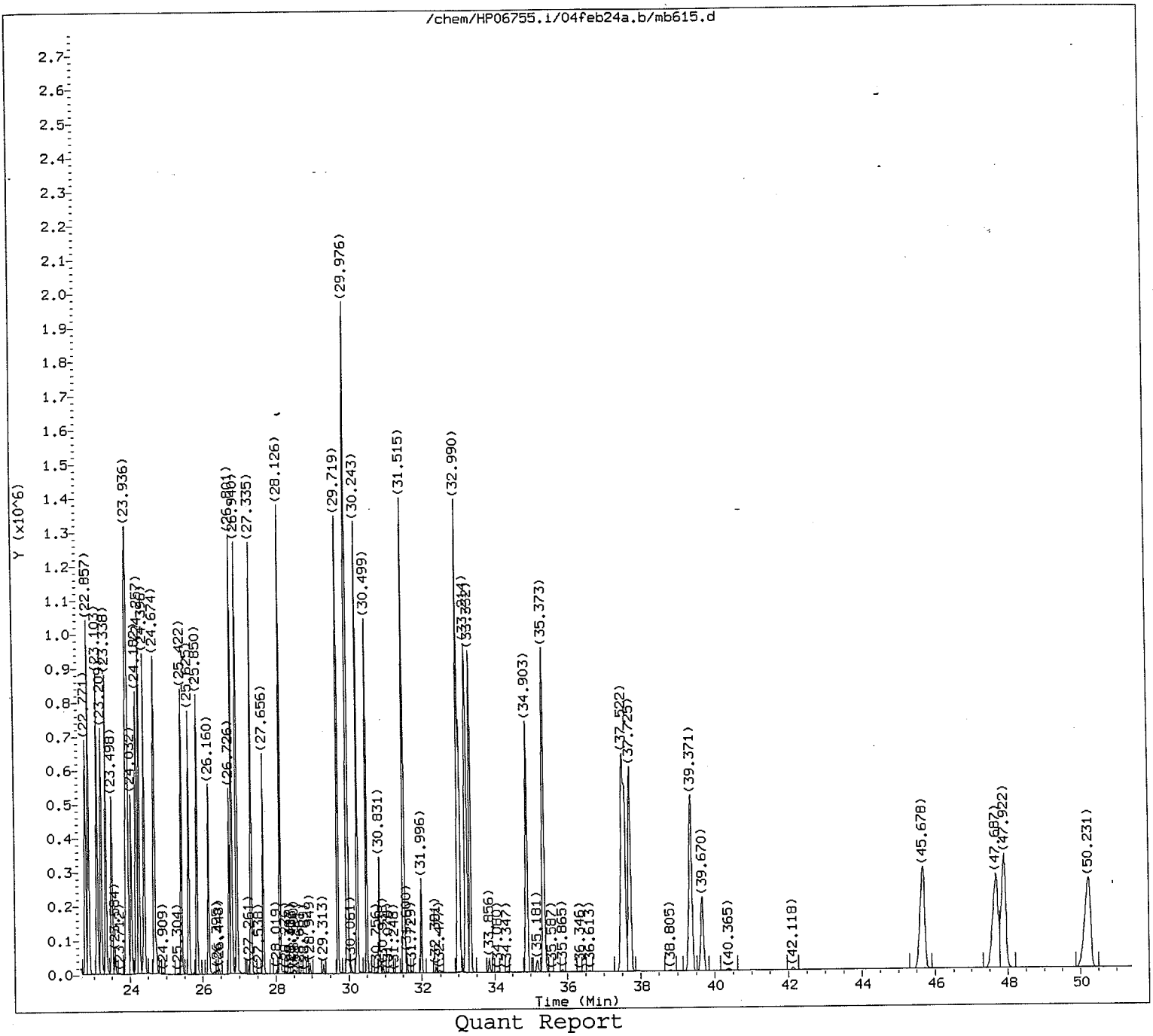
Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS

Lab Sample ID: 4219022

JMG 2/25/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d
Injection date and time: 25-FEB-2004 01:08

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS

Lab Sample ID: 4219022

JMG 346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb615.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 01:08  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMS  Lab Sample ID: 4219022

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.893 | 79 | 449981 | 54.903 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 13.023 | 152 | 176916 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076 | 146 | 471896 | 66.099 |
| 26) 2-Methylphenol | (1) | 13.632 | 108 | 479419 | 75.040 |
| 33) 4-Methylphenol | (1) | 14.081 | 108 | 465173 | 71.216 |
| 37) Hexachloroethane | (1) | 14.519 | 117 | 156016 | 52.403 |
| 39) Nitrobenzene | (2) | 14.680 | 77 | 503626 | 84.472 |
| 52) Naphthalene-d8 | (2) | 16.796 | 136 | 616576 | 40.000 |
| 59) Hexachlorobutadiene | (2) | 17.202 | 225 | 133918 | 61.844 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.810 | 196 | 265451 | 90.515 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917 | 196 | 290005 | 89.895 |
| 96) Acenaphthene-d10 | (3) | 22.215 | 164 | 287941 | 40.000 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771 | 165 | 335873 | 98.807 |
| 125) Hexachlorobenzene | (4) | 25.625 | 284 | 242907 | 87.457 |
| 129) Pentachlorophenol | (4) | 26.170 | 266 | 138694 | 71.405 |
| 133) Phenanthrene-d10 | (4) | 26.726 | 188 | 464316 | 40.000 |
| 165) Chrysene-d12 | (5) | 33.246 | 240 | 355558 | 40.000 |
| 173) Perylene-d12 | (6) | 39.670 | 264 | 360009 | 40.000 |
| 9) 2-Fluorophenol | (1) | 9.389 | 112 | 877181 | 118.562 |
| 15) Phenol-d6 | (1) | 11.847 | 99 | 690717 | 76.045 |
| 38) Nitrobenzene-d5 | (2) | 14.626 | 82 | 524978 | 87.073 |
| 77) 2-Fluorobiphenyl | (3) | 20.088 | 172 | 854448 | 88.749 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 253779 | 194.133 |
| 154) Terphenyl-d14 | (5) | 30.499 | 244 | 603186 | 78.142 |

M = Compound was manually integrated.  A = User selected an alternate hit

UN7NVMSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb616.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 02:07 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.019( 0.015) | 830 | 152.0 | 178322( -31) | 40.00 | |
| 52) Naphthalene-d8 | 16.793( 0.015) | 1183 | 136.0 | 633954( -31) | 40.00 | |
| 96) Acenaphthene-d10 | 22.223( 0.004) | 1691 | 164.0 | 291698( -29) | 40.00 | |
| 133) Phenanthrene-d10 | 26.733( 0.004) | 2113 | 188.0 | 464140( -22) | 40.00 | |
| 165) Chrysene-d12 | 33.243( 0.004) | 2722 | 240.0 | 356871( -24) | 40.00 | |
| 173) Perylene-d12 | 39.667( 0.015) | 3323 | 264.0 | 357292( -22) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.396( 0.002) | 112 | 835082 | 111.982 | 56% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.844( 0.000) | 99 | 656962 | 71.758 | 36% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.623(-0.001) | 82 | 514634 | 83.018 | 83% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.085( 0.000) | 172 | 824846 | 84.571 | 85% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.670( 0.000) | 330 | 242959 | 183.463 | 92% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.496( 0.000) | 244 | 523987 | 67.632 | 68% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.890(-0.001) | 79 | 410802 | 49.728 | 150.69 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.073( 0.000) | 146 | 451813 | 62.787 | 190.26 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.629( 0.000) | 108 | 469115 | 72.848 | 220.75 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.078(-0.001) | 108 | 450392 | 68.410 | 207.30 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.516(-0.001) | 117 | 142823 | 47.593 | 144.22 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.676( 0.000) | 77 | 497335 | 81.130 | 245.85 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.199( 0.000) | 225 | 125681 | 56.449 | 171.06 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.807( 0.000) | 196 | 260013 | 87.519 | 265.21 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.924( 0.000) | 196 | 283131 | 86.634 | 262.53 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.778( 0.000) | 165 | 332526 | 96.562 | 292.61 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.622( 0.000) | 284 | 239174 | 86.146 | 261.05 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.167( 0.000) | 266 | 126369 | 65.085 | 197.23 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8588

UN7NVMSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4219022

Data file: /chem/HP06755.i/04feb24a.b/mb616.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 25-FEB-2004 02:07 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 330.0 ml Final Extract Volume (Vt): 1000 ul

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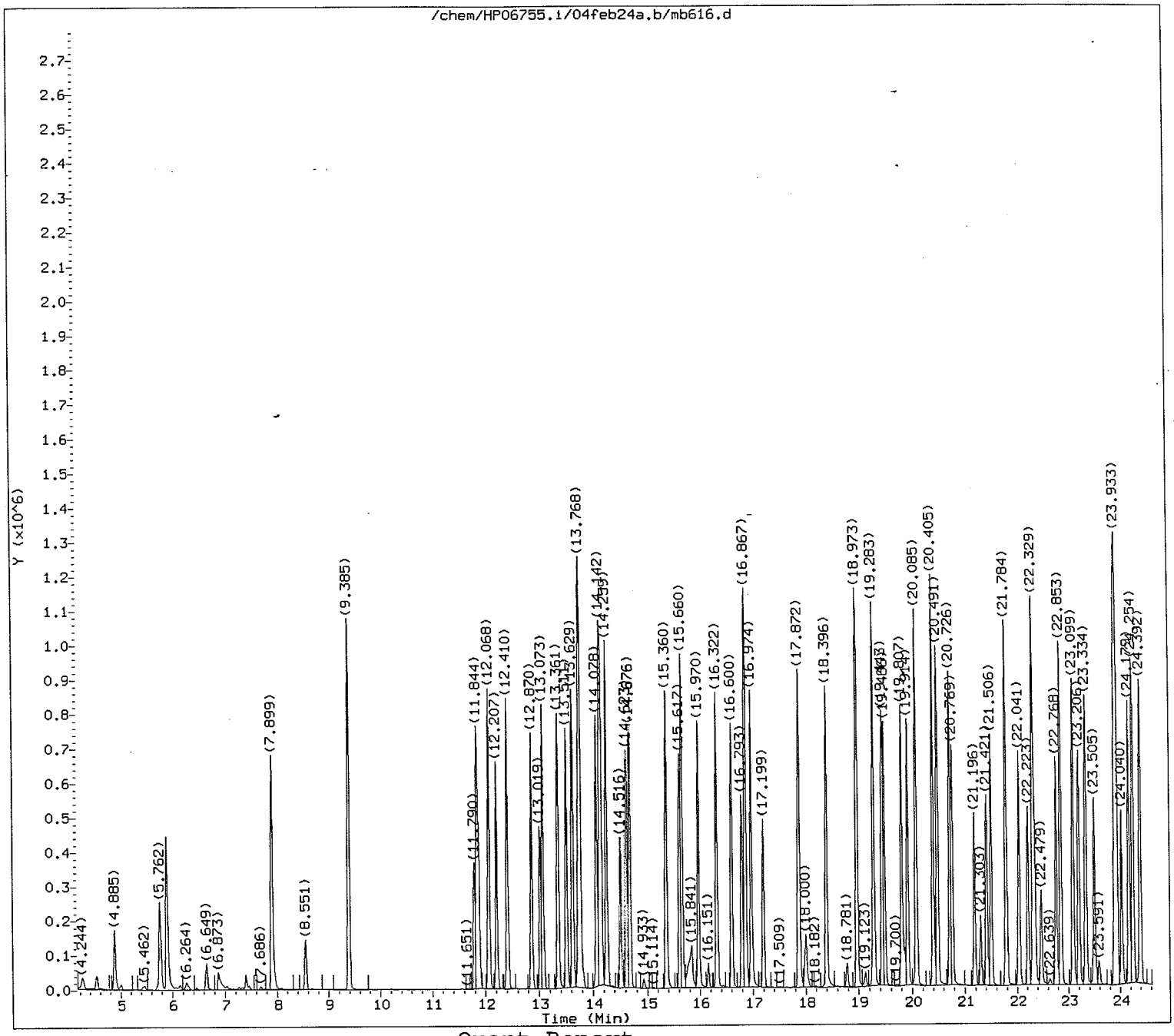
Total number of targets = 12

Comments: (241)

Analyst: Joe Michelle Garosick Date: 2/25/04
Auditor: Date: 2/25/04



8581




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb616.d
Injection date and time: 25-FEB-2004 02:07

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

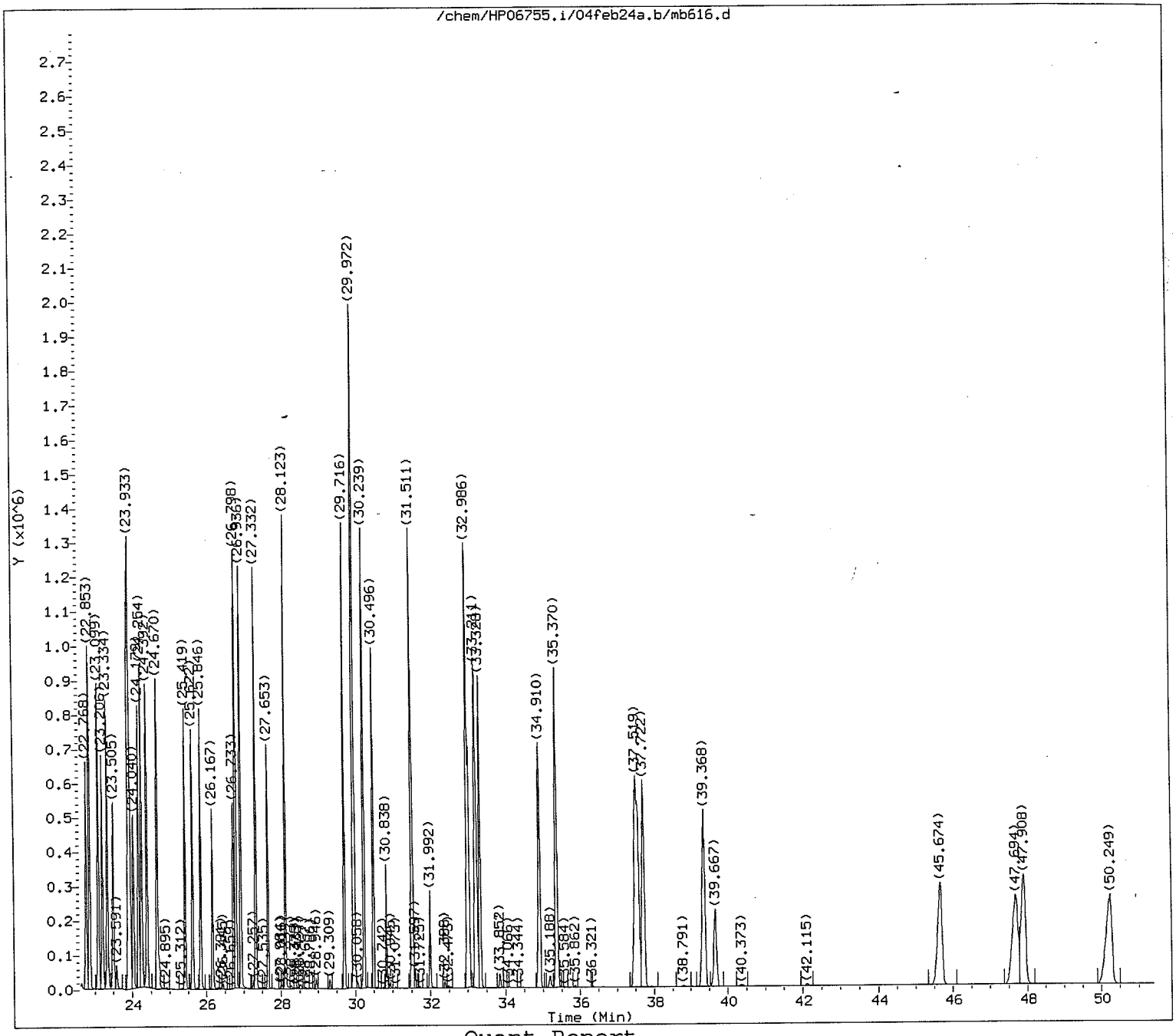
Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMSD

Lab Sample ID: 4219022

JMG 346
2/25/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb616.d Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 02:07 Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMSD Lab Sample ID: 4219022

JMG/346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb616.d  Instrument ID: HP06755.i
Injection date and time: 25-FEB-2004 02:07  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: UN7NVMSD  Lab Sample ID: 4219022

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 3) | Pyridine | (1) | 5.890 | 79 | 410802 | 49.728 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.019 | 152 | 178322 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.073 | 146 | 451813 | 62.787 |
| 26) | 2-Methylphenol | (1) | 13.629 | 108 | 469115 | 72.848 |
| 33) | 4-Methylphenol | (1) | 14.078 | 108 | 450392 | 68.410 |
| 37) | Hexachloroethane | (1) | 14.516 | 117 | 142823 | 47.593 |
| 39) | Nitrobenzene | (2) | 14.676 | 77 | 497335 | 81.130 |
| 52) | Naphthalene-d8 | (2) | 16.793 | 136 | 633954 | 40.000 |
| 59) | Hexachlorobutadiene | (2) | 17.199 | 225 | 125681 | 56.449 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.807 | 196 | 260013 | 87.519 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.924 | 196 | 283131 | 86.634 |
| 96) | Acenaphthene-d10 | (3) | 22.223 | 164 | 291698 | 40.000 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.778 | 165 | 332526 | 96.562 |
| 125) | Hexachlorobenzene | (4) | 25.622 | 284 | 239174 | 86.146 |
| 129) | Pentachlorophenol | (4) | 26.167 | 266 | 126369 | 65.085 |
| 133) | Phenanthrene-d10 | (4) | 26.733 | 188 | 464140 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.243 | 240 | 356871 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.667 | 264 | 357292 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.396 | 112 | 835082 | 111.982 |
| 15) | Phenol-d6 | (1) | 11.844 | 99 | 656962 | 71.758 |
| 38) | Nitrobenzene-d5 | (2) | 14.623 | 82 | 514634 | 83.018 |
| 77) | 2-Fluorobiphenyl | (3) | 20.085 | 172 | 824846 | 84.571 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.670 | 330 | 242959 | 183.463 |
| 154) | Terphenyl-d14 | (5) | 30.496 | 244 | 523987 | 67.632 |

M = Compound was manually integrated.  A = User selected an alternate hit

# 055WCLCSM

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 055WCLCS

Data file: /chem/HP06755.i/04feb24a.b/mb613.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 23:12 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 13.023( 0.011) | 830 | 152.0 | 170951( -34) | 40.00 | |
| 52) Naphthalene-d8 | 16.796( 0.011) | 1183 | 136.0 | 600519( -34) | 40.00 | |
| 96) Acenaphthene-d10 | 22.216( 0.011) | 1690 | 164.0 | 272869( -33) | 40.00 | |
| 133) Phenanthrene-d10 | 26.726( 0.011) | 2112 | 188.0 | 440856( -26) | 40.00 | |
| 165) Chrysene-d12 | 33.247( 0.000) | 2722 | 240.0 | 341712( -27) | 40.00 | |
| 173) Perylene-d12 | 39.671( 0.011) | 3323 | 264.0 | 342528(--25) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 9.399( 0.002) | 112 | 1052158 | 147.175 | 74% | | 23 - 94 |
| 15) Phenol-d6 | (1) | 11.858(-0.001) | 99 | 949636 | 108.199 | 54% | | 10 - 80 |
| 38) Nitrobenzene-d5 | (2) | 14.626(-0.001) | 82 | 509192 | 86.713 | 87% | | 54 - 124 |
| 77) 2-Fluorobiphenyl | (3) | 20.088( 0.000) | 172 | 826820 | 90.623 | 91% | | 64 - 112 |
| 117) 2,4,6-Tribromophenol | (3) | 24.674(-0.001) | 330 | 240343 | 194.011 | 97% | | 45 - 142 |
| 154) Terphenyl-d14 | (5) | 30.500( 0.000) | 244 | 628887 | 84.772 | 85% | | 53 - 124 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 3) Pyridine | (1) | 5.904(-0.002) | 79 | 352703 | 44.536 | 89.07 | | | 2.00 |
| 22) 1,4-Dichlorobenzene | (1) | 13.076( 0.000) | 146 | 476515 | 69.075 | 138.15 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.632( 0.000) | 108 | 492770 | 79.821 | 159.64 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 14.081(-0.001) | 108 | 504969 | 80.006 | 160.01 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.520(-0.001) | 117 | 161209 | 56.037 | 112.07 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.680( 0.000) | 77 | 472775 | 81.418 | 162.84 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 17.202( 0.000) | 225 | 134787 | 63.910 | 127.82 | | | 1.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.811( 0.000) | 196 | 253225 | 91.115 | 182.23 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.917( 0.000) | 196 | 276304 | 90.379 | 180.76 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.771( 0.000) | 165 | 320040 | 99.350 | 198.70 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.625( 0.000) | 284 | 231187 | 87.667 | 175.33 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 26.171( 0.000) | 266 | 132594 | 71.898 | 143.80 | | | 3.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE



8585

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06755.i/04feb24a.b/mb613.d Blank Data file reference:**/chem/HP06755.i/04feb24a.b/mb612.d**
Injection date and time: 24-FEB-2004 23:12 Instrument ID: HP06755.i Batch: 04055WAC
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Method used: /chem/HP06755.i/04feb24a.b/m8270.m Sublist used: **WTCLP04**
Calibration date and time (Last Method Edit): 24-FEB-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06755.i/04feb24a.b/mb611.d

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo * Vi) Matrix: WATER GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Volume (Vo): 500.0 ml Final Extract Volume (Vt): 1000 ul

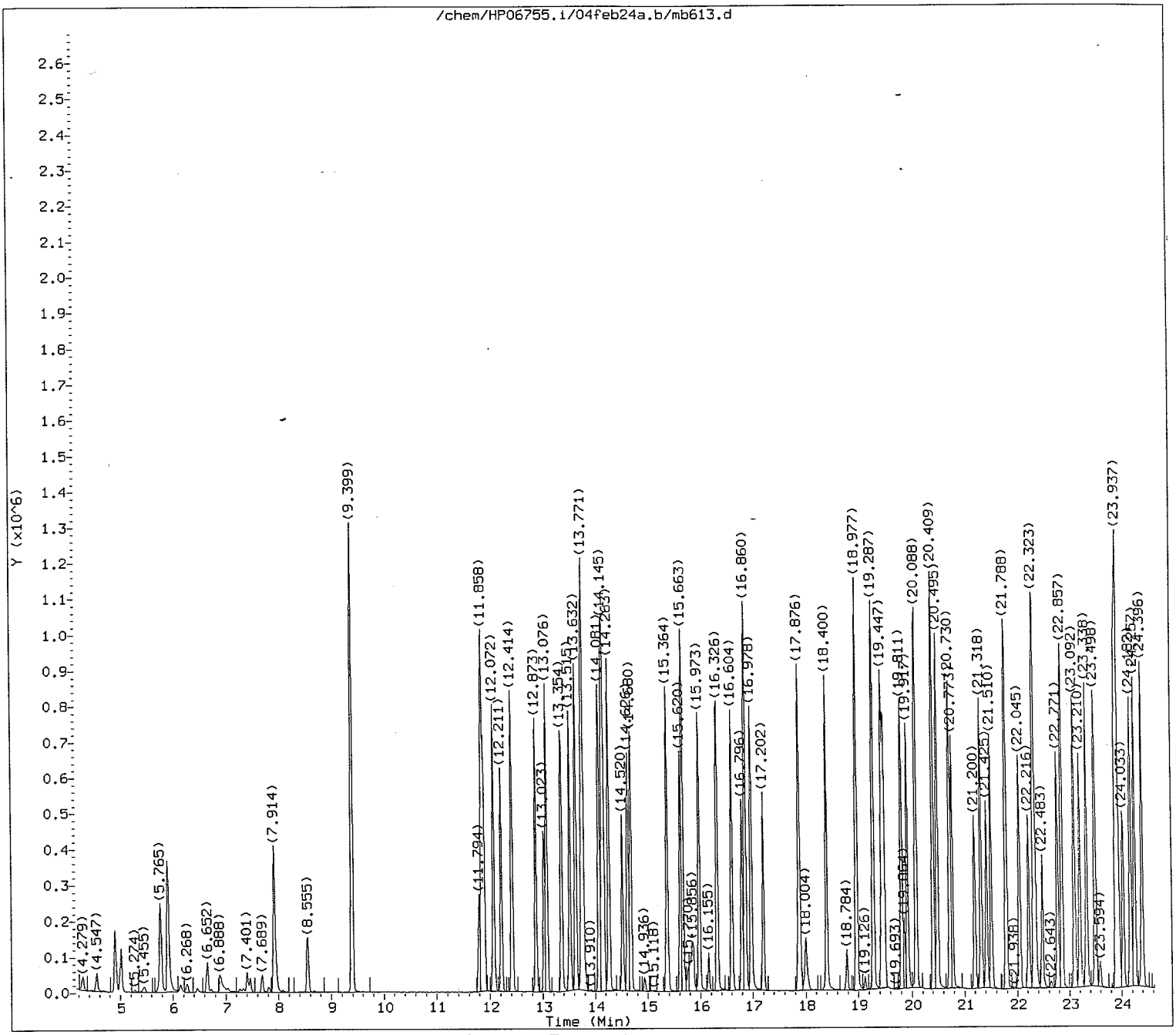
---

# THIS SPACE WAS LEFT BLANK INTENTIONALLY

Total number of targets = 12

Comments:_____

Analyst: for Michele Jarosick Date: 2/25/04
Auditor:_____ Date: 2/25/04




Quant Report

Target Revision 3.5

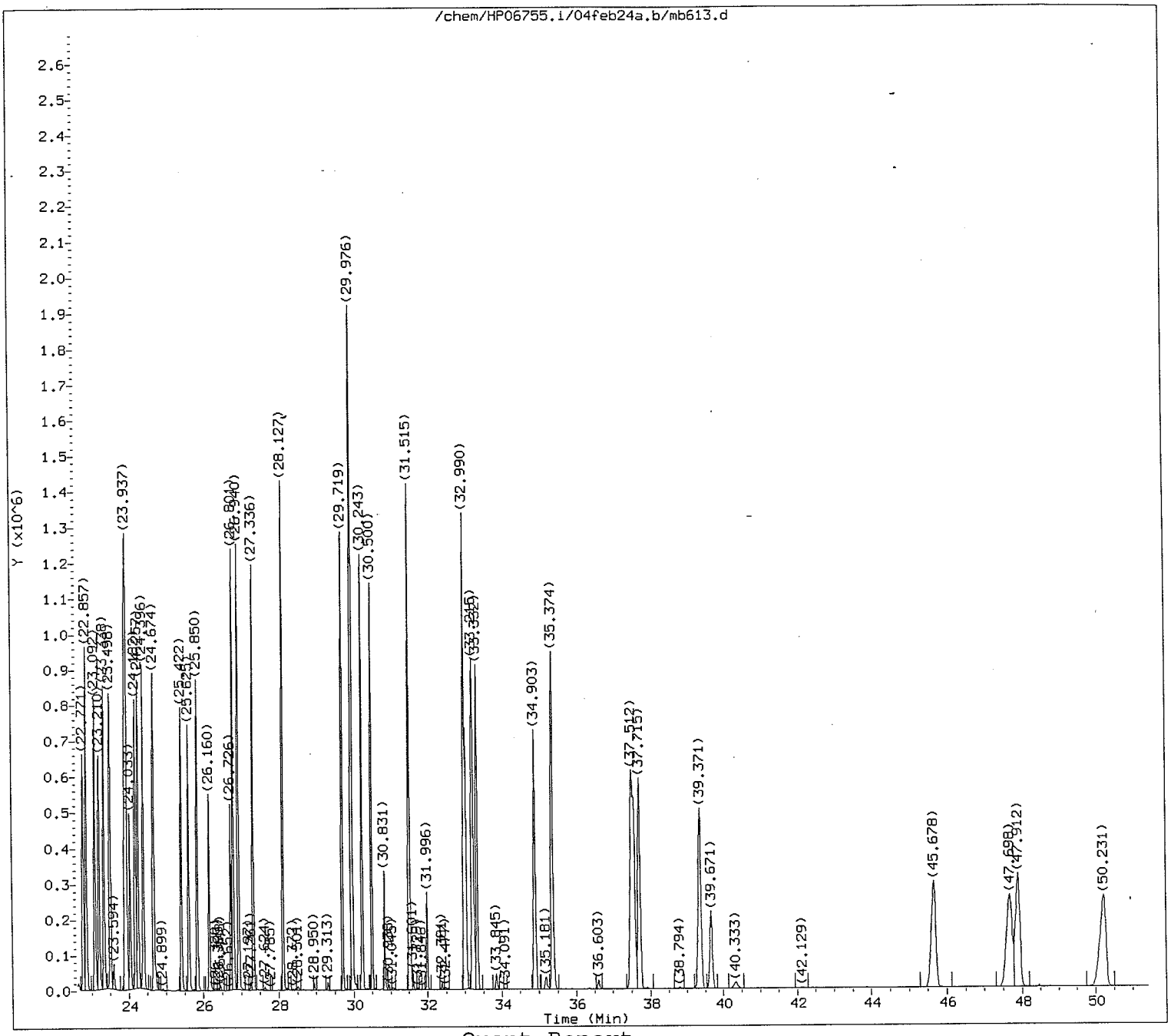
Data File: /chem/HP06755.i/04feb24a.b/mb613.d
Injection date and time: 24-FEB-2004 23:12
Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10
Sublist used: WTCLP04
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM
Lab Sample ID: 055WCLCS

JMG 3/4/6
2/25/04

8587




Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb613.d
Injection date and time: 24-FEB-2004 23:12

Instrument ID: HP06755.i
Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m
Calibration date and time: 24-FEB-2004 22:10

Sublist used: WTCLP04

Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM

Lab Sample ID: 055WCLCS

JMG 346
2/25/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06755.i/04feb24a.b/mb613.d  Instrument ID: HP06755.i
Injection date and time: 24-FEB-2004 23:12  Analyst ID: ids01472

Method used: /chem/HP06755.i/04feb24a.b/m8270.m  Sublist used: WTCLP04
Calibration date and time: 24-FEB-2004 22:10
Date, time and analyst ID of latest file update: 25-Feb-2004 04:56 jmg00346

Sample Name: 055WCLCSM  Lab Sample ID: 055WCLCS

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 3) | Pyridine | (1) | 5.904 | 79 | 352703 | 44.536 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 13.023 | 152 | 170951 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.076 | 146 | 476515 | 69.075 |
| 26) | 2-Methylphenol | (1) | 13.632 | 108 | 492770 | 79.821 |
| 33) | 4-Methylphenol | (1) | 14.081 | 108 | 504969 | 80.006 |
| 37) | Hexachloroethane | (1) | 14.520 | 117 | 161209 | 56.037 |
| 39) | Nitrobenzene | (2) | 14.680 | 77 | 472775 | 81.418 |
| 52) | Naphthalene-d8 | (2) | 16.796 | 136 | 600519 | 40.000 |
| 59) | Hexachlorobutadiene | (2) | 17.202 | 225 | 134787 | 63.910 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.811 | 196 | 253225 | 91.115 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.917 | 196 | 276304 | 90.379 |
| 96) | Acenaphthene-d10 | (3) | 22.216 | 164 | 272869 | 40.000 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.771 | 165 | 320040 | 99.350 |
| 125) | Hexachlorobenzene | (4) | 25.625 | 284 | 231187 | 87.667 |
| 129) | Pentachlorophenol | (4) | 26.171 | 266 | 132594 | 71.898 |
| 133) | Phenanthrene-d10 | (4) | 26.726 | 188 | 440856 | 40.000 |
| 165) | Chrysene-d12 | (5) | 33.247 | 240 | 341712 | 40.000 |
| 173) | Perylene-d12 | (6) | 39.671 | 264 | 342528 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 9.399 | 112 | 1052158 | 147.175 |
| 15) | Phenol-d6 | (1) | 11.858 | 99 | 949636 | 108.199 |
| 38) | Nitrobenzene-d5 | (2) | 14.626 | 82 | 509192 | 86.713 |
| 77) | 2-Fluorobiphenyl | (3) | 20.088 | 172 | 826820 | 90.623 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.674 | 330 | 240343 | 194.011 |
| 154) | Terphenyl-d14 | (5) | 30.500 | 244 | 628887 | 84.772 |

M = Compound was manually integrated.  A = User selected an alternate hit

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06755 **HP #13**

*** Shift #1 Analyst: JMC *** Shift #2 Analyst: IDS *

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

Other problems or comments are as follows:

*

*

*

*

Data Directory Path is - D:\DATA\04FEB13\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | MB340.D | 8270DFTPP0274 | 50NG/UL | 13 Feb 2004 | 04:53 | | | NU |
| 1 | MB33Z.D | 8270DFTPP0274 | 50NG/UL | 13 Feb 2004 | 05:30 | | | MR |
| 2 | MB331.D | SSTD050 | STD0404 | 13 Feb 2004 | 05:53 | | | NU |
| 2 | MB33A.D | SSTD050 | STD0404 | 13 Feb 2004 | 06:59 | | | MR |
| 3 | MB332.D | SSTD120 | STD0404 | 13 Feb 2004 | 08:00 | | | MR |
| 4 | MB333.D | SSTD080 | STD0404 | 13 Feb 2004 | 09:01 | | | MR |
| 5 | MB334.D | SSTD005 | STD0404 | 13 Feb 2004 | 10:02 | | | MR |
| 6 | MB335.D | SSTD015 | STD0404 | 13 Feb 2004 | 11:03 | | | MR |
| 7 | MB336.D | SSTD030 | STD0404 | 13 Feb 2004 | 12:04 | | | MR |
| 8 | MB337.D | SSTD001 | 8270MDL0404 | 13 Feb 2004 | 13:05 | | | MR |
| 9 | MB338.D | SSTD050 | ICV0224 | 13 Feb 2004 | 14:06 | | | MR |

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06755 **HP #13**

*** Shift #1 Analyst: SMG *** Shift #2 Analyst: IOS *

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

Other problems or comments are as follows:

*

*

*

*

Data Directory Path is - D:\DATA\04FEB24A\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | MB610.D | 8270DFTPP0274 | 50NG/UL | 24 Feb 2004 | 20:24 | | | MM2 |
| 2 | MB611.D | SSTD050 | STD0404 | 24 Feb 2004 | 20:48 | | | |
| 11 | MB612.D | SBLKWC055M | SBLKWC055 | 24 Feb 2004 | 22:13 | 04055WAC | | |
| 12 | MB613.D | 055WCLCSM | 055WCLCS | 24 Feb 2004 | 23:12 | 04055WAC | | |
| 13 | MB614.D | UN7NV | 4219022 | 25 Feb 2004 | 00:10 | 04055WAC | | |
| 14 | MB615.D | UN7NVMS | 4219022 | 25 Feb 2004 | 01:08 | 04055WAC | | |
| 15 | MB616.D | UN7NVMSD | 4219022 | 25 Feb 2004 | 02:07 | 04055WAC | | |
| 16 | MB617.D | UN5NV | 4219006 | 25 Feb 2004 | 03:05 | 04055WAC | | |
| 17 | MB618.D | TC407 | 4219669 | 25 Feb 2004 | 04:03 | 04055WAC | | |
| 18 | MB619.D | NV5SL | 4219913 | 25 Feb 2004 | 05:01 | 04055WAC | | IRF-20 |

# Extraction/Distillation/Digestion Logs

2/24/04 19:30

# Organic Extraction Batchlog

Reviewed: JM6/3/6 2/25/04

Prep Analysis # 04731 TCLP Leachate Water Extraction

Prep Group # 625 TCLP GC/MS Dept: 26

Start Date: 2/24/04

Start Time: 15:30

Tech 1: AGN1489

Tech 2:

BATCH NO. 04055WAC026

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANK6 | PBLKXE | 500 | SS0404726A | 1.0 | | | 1 | 11 | 2 | Z | |
| LCS6 | LCSVO | 500 | SS0404726A | | MS0404826A | 1.0 | | | | | |
| 4219022MS | UN7NVMS | 330 | SS0404726A | | MS0404826A | | | | | 45B | clear |
| 4219022MSD | UN7NVMSD | 330 | SS0404726A | | MS0404826A | | | | | | |

AGN1489

| | Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4219006 | UN5NV | 500 | SS0404726A | 1.0 | 1 | 11 | 2 | 45A | clear | 949 | 3/2/04 | P |
| 2 | 4219022 bkg | UN7NV AGN1489 | 330 | SS0404726A | | | | | 45A/B | | 949 | 3/2/04 | P |
| 3 | 4219669 | TC407 | 500 | SS0404726A | | | | | 45A | | 949 | 3/4/04 | P |
| 4 | 4219913 | NV5SL | 500 | SS0404726A | | | | | | cloudy | 949 base cent 1x | 3/4/04 | N |
| 5 | 4220301 | NV439 | 500 | SS0404726A | | | | | | clear | 949 | 2/27/04 | S |
| 6 | 4221331 | BLA20 | 500 | SS0404726A | | | | | | | 949 | 3/3/04 | P |
| 7 | 4221332 | BLA44 | 500 | SS0404726A | | | | | | | 949 | 3/3/04 | P |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

AGN1489

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS0404726A BNA SURROGATE STANDARD

MS0404826A LCS SPIKE MIX

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| $MeCl_2$ | A02E58 | $Na_2SO_4$ | 026838 |
| NaOH | 3092-26 | | |
| $H_2SO_4$ | 335037 | Work Station: | $H_2O$ Bench 1 |
| Internal Standar | 4300730 | Balance # | |
| S-bath ID 9 | 85 °C | S-bath ID | °C |
| N-Evap | °C | | |

Documented temps are NIST corrected. 04055WAC026

8513

$MeCl_2$ Lot → A02E58

# Pesticides Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV02**

## LANCASTER LABORATORIES

## TCLP Pesticides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **SOLID** | **COMMENTS** |
| BLANKA | PBLKXG | | X | Method Blank |
| LCSA | LCSVQ | | X | Laboratory Control Spike |
| 4219022 | UN7NV | | X | Background |
| 4219022MS | UN7NVMS | | X | Matrix Spike |
| 4219022MSD | UN7NVMSD | | X | Matrix Spike Dup |
| | | | | |

### A. Sample Preparation:

Florisil cleanup was used to minimize interferences. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1C13051, 1C13051B, 2C13051, 2C13051B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

An SW-846 method update was performed using the initial calibration files from 1C13051 and the calibration name was changed to 2C13051.

### C. Quality Control:

All reported surrogates are within the QC limits.

The matrix spike data are within the QC limits.

The LCS data are within the QC limits.

### D. Data Interpretation:

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.

8516

Lancaster Laboratories

No further interpretation is needed.

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

**Jenifer E. Hess, Group Leader** — **Date** 3/3/07

9517

# QC Summary

# 2
# SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: RAV02

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

| SAMPLE | SAMPLE CODE NO. | TCX 1 % REC # | TCX 2 % REC # | DCB 1 % REC # | DCB 2 % REC # | TOT OUT |
|---|---|---|---|---|---|---|
| 4219022 | UN7NV | 78 | 80 | 90 | 84 | 0 |
| 4219022 MS | UN7NVMS | 74 | 74 | 96 | 88 | 0 |
| 4219022 MSD | UN7NVMSD | 71 | 73 | 94 | 86 | 0 |
| BLANKA | PBLKXG | 71 | 69 | 94 | 85 | 0 |
| LCSA | LCSVQ | 71 | 70 | 94 | 87 | 0 |

| | | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|---|
| TCX | = Tetrachloro-m-xylene | (45 - 125) | 1.44 | ug/Kg |
| DCB | = Decachlorobiphenyl | (47 - 155) | 1.46 | ug/Kg |

8519

# Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

# Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: UN7NV

| Compound | Spike Added (ug/l) | Sample Concen (ug/l) | MS Concen (ug/l) | MSD Concen (ug/l) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.52 | 0 | 0.52 | 0.49 | 100 | 94 | (67 - 151) | 6 | 30 |
| Heptachlor | 0.51 | 0 | 0.50 | 0.49 | 98 | 96 | (37 - 145) | 2 | 30 |
| Heptachlor epoxide | 0.76 | 0 | 0.79 | 0.77 | 104 | 101 | (62 - 150) | 3 | 30 |
| Endrin | 0.25 | 0 | 0.25 | 0.24 | 100 | 96 | (61 - 145) | 4 | 30 |
| Methoxychlor | 2.0 | 0 | 2.0 | 1.9 | 100 | 95 | (47 - 170) | 5 | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

8526

Comments: Results calculated on as-received basis.

Sample No.: 4219022 Batch: 040550003A

# Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSVQ

| Compound | Spike Added (mg/l) | LCS Concen (mg/l) | LCSD Concen (mg/l) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.52 | 0.47 | | 90 | | (65 - 144) | | 30 |
| Heptachlor | 0.51 | 0.44 | | 86 | | (45 - 130) | | 30 |
| Heptachlor epoxide | 0.76 | 0.74 | | 97 | | (73 - 141) | | 30 |
| Endrin | 0.25 | 0.23 | | 92 | | (62 - 135) | | 30 |
| Methoxychlor | 2.0 | 1.9 | | 95 | | (49 - 155) | | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 5 outside limits

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 040550003A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKXG

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV02

Lab Sample ID BLANKA

Lab File ID: 2C13051.18R 2C13051B.18R

Matrix: (soil/water) LEACHATE

Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N

Date Extracted: 2/25/04

Date Analyzed (1): 2/25/04

Date Analyzed (2): 2/25/04

Time Analyzed (1): 16:35:19

Time Analyzed (2): 16:35:19

Instrument ID (1): H6722A

Instrument ID (2): H6722B

GC Column: RTX-CLP ID: 0.32 (mm)

GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | UN7NV | 4219022 | 2/25/04 | 2/25/04 |
| 02 | UN7NVMS | 4219022 | 2/25/04 | 2/25/04 |
| 03 | UN7NVMSD | 4219022 | 2/25/04 | 2/25/04 |
| 04 | PBLKXG | BLANKA | 2/25/04 | 2/25/04 |
| 05 | LCSVQ | LCSA | 2/25/04 | 2/25/04 |

6522

COMMENTS: _____

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKXG

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** LEACHATE **Lab Sample ID:** BLANKA

**Sample wt/vol:** 200 **(g/ml)** ml **Lab File ID:** 2C13051.18R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SEPF **Date Extracted:** 2/25/04

**Concentrated Extract Volume:** 10000 **(uL)** **Date Analyzed:** 2/25/04

**Injection Volume:** 2 **(uL)** **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/l | Q |
|---|---|---|---|
| 58-89-9 | gamma-BHC (Lindane) | 0.010 | U |
| 76-44-8 | Heptachlor | 0.010 | U |
| 1024-57-3 | Heptachlor epoxide | 0.010 | U |
| 72-20-8 | Endrin | 0.020 | U |
| 72-43-5 | Methoxychlor | 0.10 | U |
| 57-74-9 | Chlordane (Technical) | 0.35 | U |
| 8001-35-2 | Toxaphene | 1.5 | U |

8523

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 00950 Name: TCLP Pesticides

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| gamma-BHC (Lindane) | ug/l | 0.05 | 0.01 |
| Heptachlor | ug/l | 0.05 | 0.01 |
| Heptachlor epoxide | ug/l | 0.05 | 0.01 |
| Methoxychlor | ug/l | 0.5 | 0.1 |
| Endrin | ug/l | 0.1 | 0.02 |
| Chlordane (Technical) | ug/l | 2.5 | 0.35 |
| Toxaphene | ug/l | 5 | 1.5 |

6525

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 78.2% Conc.: 1.1279
%SSR(DCB) : 90.4% Conc.: 1.320316

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 85660 | 1.127900 |
| **HCB** | 4.71 | 4.76 | 4.77 | 3718 | 0.028240 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 3233 | 0.034938 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 5765 | 0.055799 |
| **Hept. epoxide** | 7.35 | 7.40 | 7.41 | 1354 | 0.015314 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1150 | 0.013486 |
| **4,4'-DDE** | 7.78 | 7.80 | 7.84 | 300 | 0.004389 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 62 | 0.000804 |
| **Dieldrin** | 8.20 | 8.22 | 8.26 | 633 | 0.008687 |
| **o,p-DDT** | 8.35 | 8.38 | 8.41 | 251 | 0.004605 |
| **4,4'-DDD** | 8.57 | 8.61 | 8.63 | 1651 | 0.031045 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 974 | 0.014087 |
| **DCB** | 11.59 | 11.60 | 11.65 | 98650 | 1.320316 |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 80.3% Conc.: 1.158805
%SSR(DCB) : 83.9% Conc.: 1.225335

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 58946 | 1.158805 |
| **HCB** | 4.87 | 4.91 | 4.93 | 14119 | 0.182352 |
| **Telodrin** | 6.87 | 6.89 | 6.93 | 1051 | 0.020418 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 11601 | 0.221868 |
| **o,p-DDT** | 8.74 | 8.78 | 8.80 | 133 | 0.004360 |
| **4,4'-DDD** | 8.83 | 8.84 | 8.89 | 645 | 0.025885 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 1939 | 0.045913 |
| **Endrin aldehyde** | 9.40 | 9.43 | 9.46 | 788 | 0.023922 |
| **DCB** | 12.20 | 12.20 | 12.26 | 61533 | 1.225335 |

## Summary Report

| Compound Name | | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | | B | 1.158805 | | | | 2.70 | |
| HCB | | B | 0.182352 | | | | ** 146.36 | |
| alpha-BHC | | | | | | | | |
| gamma-BHC | ✓ | | | <0.05 | <0.01 | | | |
| beta-BHC | | | | | | | | |
| delta-BHC | | | | | | | | |
| Heptachlor | ✓ | | | <0.05 | <0.01 | | | |
| Aldrin | | | | | | | | |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | | | | | |
| Hept. epoxide | ✓ | | | <0.05 | <0.01 | | | |
| g. Chlordane | ✓ | | | | | | | |
| a. Chlordane | ✓ | | | | | | | |
| 4,4'-DDE | | | | | | | | |
| Endosulfan I | | | | | | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | | | | | |
| o,p-DDT | | A | 0.004605 | | | | 5.47 | |
| Endrin | | | | <0.1 | <0.02 | | | |
| Kepone | | | | | | | | |
| 4,4'-DDD | | A | 0.031045 | | | | 18.13 | |
| Endosulfan II | | B | 0.045913 | | | | ** 106.09 | |
| 4,4'-DDT | | | | | | | | |
| Endrin aldehyde | | | | | | | | |
| Methoxychlor | ✓ | | | <0.5 | <0.1 | | | |
| Mirex | | | | | | | | 85.26 |
| Endo. sulfate | | | | | | | | |
| Endrin ketone | | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:11:26

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4219022** F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

Analysis Report (A)

| | |
|---|---|
| Injected on | : FEB 25, 2004 17:36:37 |
| Instrument | : CP13--H6722A |
| Result file | : 2C13051.21R |
| Calibration file | : 2C13051.CAL |
| Method file | : PESTD.MET |

Analysis Report (B)

| | |
|---|---|
| Injected on | : FEB 25, 2004 17:36:37 |
| Instrument | : CP13--H6722B |
| Result file | : 2C13051B.21R |
| Calibration file | : 2C13051B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| DCB | A | 1.320316 | | | | 7.46 | |

Units: ug/l

Reviewed by: Andrea Carey Date: 2-26-04
Verified by: [illegible] 2.26.2004 Date: 2/26/04

8527

Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:11:26

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4219022** F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 0120 SDG: RAV02 State: VA
**Analyses:** 00950

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:36:37 |
| **Instrument** | H6722A |
| **Result file** | 2C13051.21R |
| **Calibration file** | 2C13051 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 78.2% | Conc: | 1.1279 |
| %SSR(DCB) | 90.4% | Conc: | 1.320316 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 17:36:37 |
| **Instrument** | H6722B |
| **Result file** | 2C13051B.21R |
| **Calibration file** | 2C13051B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 80.3% | Conc: | 1.158805 |
| %SSR(DCB) | 83.9% | Conc: | 1.225335 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Chlordane (Technical) | | | <2.5 | <0.35 | | | 2 | 20 | |
| Toxaphene | | | <5 | <1.5 | | | 4 | 30 | |

Units: ug/l

%Difference = High - Low divided by the Average times 100

Reviewed By: Andrea Carey Date: 2-26-04

Verified By: [illegible] Date: 2/26/04

8528

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 78.2% Conc.: 1.1279
%SSR(DCB) : 90.4% Conc.: 1.320316

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 55.35 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 1.203337 | | | 3 |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 4.017262 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 2.427066 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **2.549222** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 112.14 | |
| 4.39 | 4.39 | 4.45 | 240.892334 | 0.233944 | | | 1 |
| 4.61 | 4.61 | 4.67 | 1110.178467 | 2.025503 | | | 2 |
| Height Summation | | | **1351.070801** | | | | |
| Amount Avg CF: | | | **1.129724** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 54.87 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 2.554396 | | | 3 |
| 6.09 | 6.12 | 6.15 | 5765.221191 | 8.660389 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 5.482192 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **5.565659** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 56.34 | |
| 5.47 | 5.50 | 5.53 | 969.648743 | 1.403254 | | | 3 |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 4.697101 | | | 5 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 2.726093 | | | 6 |
| Height Summation | | | **11964.333313** | | | | |
| Amount Avg CF: | | | **2.942149** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 165.05 | |
| E 6.29 | 6.32 | 6.35 | 139048.9375 | 57.746974 | | | 3 |
| 6.56 | 6.59 | 6.62 | 5229.463379 | 1.818438 | | | 4 |
| 7.16 | 7.16 | 7.22 | 188.814346 | 0.066174 | | | 5 |
| Height Summation | | | **144467.215225** | | | | |
| Amount Avg CF: | | | **19.877195** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 8.90 | 8.91 | 8.96 | 731.756042 | 0.221347 | | | 6 |
| Height Summation | | | **731.756042** | | | | |
| Amount Avg CF: | | | **0.221347** | Linear: | | | |
| **Aroclor-1260** | | | | | 3 | 71.42 | |
| 8.17 | 8.22 | 8.23 | 633.057617 | 0.177091 | | | 2 |
| 8.89 | 8.91 | 8.95 | 731.756042 | 0.164653 | | | 3 |
| 9.75 | 9.76 | 9.81 | 130.066589 | 0.021484 | | | 5 |
| Height Summation | | | **1494.880248** | | | | |
| Amount Avg CF: | | | **0.121076** | Linear: | | | |
| **Chlordane** | | | | | 4 | 98.94 | |
| 6.10 | 6.12 | 6.16 | 5765.221191 | 1.345017 | | | 2 |
| 6.71 | 6.74 | 6.77 | 2636.333496 | 0.604794 | | | 3 |
| 7.69 | 7.72 | 7.75 | 1149.593872 | 0.109065 | | | 5 |
| 8.70 | 8.73 | 8.76 | 626.837952 | 0.209314 | | | 6 |
| Height Summation | | | **10177.986511** | | | | |
| Amount Avg CF: | | | **0.567048** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 58.90 | |
| 8.56 | 8.61 | 8.62 | 1650.552124 | 1.365492 | | | 1 |
| 9.22 | 9.25 | 9.28 | 3855.930664 | 3.314934 | | | 3 |
| Height Summation | | | **5506.482788** | | | | |
| Amount Avg CF: | | | **2.340213** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 80.3% Conc.: 1.158805
%SSR(DCB) : 83.9% Conc.: 1.225335

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 130.90 | |
| 4.88 | 4.91 | 4.94 | 14119.24804 | 13.427516 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 1.023124 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 1.744138 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 0.885881 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **5.352512** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.87 | 4.91 | 4.93 | 14119.24804 | 9.790755 | | | 3 |
| Height Summation | | | **14119.248047** | | | | |
| Amount Avg CF: | | | **9.790755** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 88.42 | |
| E 4.87 | 4.91 | 4.93 | 14119.24804 | 12.507085 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 2.381655 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 4.060049 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 2.142475 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **6.236536** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 128.23 | |
| E 4.87 | 4.91 | 4.93 | 14119.24804 | 14.741332 | | | 1 |
| + 6.06 | 6.06 | 6.12 | 2892.281738 | 1.217495 | | | 3 |
| 6.06 | 6.11 | 6.12 | 4930.523438 | 2.075486 | | | 3 |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 1.035259 | | | 6 |
| Height Summation | | | **20100.869507** | | | | |
| Amount Avg CF: | | | **5.950692** | Linear: | | | |
| **Aroclor-1248** | | | | | 1 | | |
| 6.86 | 6.89 | 6.92 | 1051.098022 | 0.665926 | | | 3 |
| Height Summation | | | **1051.098022** | | | | |
| Amount Avg CF: | | | **0.665926** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 8.99 | 9.00 | 9.05 | 1938.893677 | 1.800072 | | | 5 |
| Height Summation | | | **1938.893677** | | | | |
| Amount Avg CF: | | | **1.800072** | Linear: | | | |
| **Aroclor-1260** | | | | | 2 | 128.57 | |
| 8.77 | 8.78 | 8.83 | 132.55397 | 0.05 | | | 2 |
| 8.98 | 9.00 | 9.04 | 1938.893677 | 1.050251 | | | 3 |
| Height Summation | | | **2071.447647** | | | | |
| Amount Avg CF: | | | **0.550126** | Linear: | | | |
| **Chlordane** | | | | | 2 | 93.60 | |
| 6.85 | 6.89 | 6.91 | 1051.098022 | 0.395526 | | | 3 |
| 7.67 | 7.68 | 7.73 | 11601.18164 | 1.944051 | | | 4 |
| Height Summation | | | **12652.279663** | | | | |
| Amount Avg CF: | | | **1.169789** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.40 | 9.43 | 9.46 | 788.206604 | 1.107032 | | | 3 |
| Height Summation | | | **788.206604** | | | | |
| Amount Avg CF: | | | **1.107032** | Linear: | | | |

8529

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:11:36

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4219022 F** UN7NV Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722A
Result file : 2C13051.21R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 17:36:37
Instrument : CP13--H6722B
Result file : 2C13051B.21R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 0 | 0 | | ** 70.95 | 4 | 40 | |
| Aroclor-1221 | | | 0 | 0 | | ** 158.62 | 3 | 5 | |
| Aroclor-1232 | | | 0 | 0 | | 11.37 | 4 | 10 | |
| Aroclor-1242 | | | 0 | 0 | | ** 67.66 | 4 | 30 | |
| Aroclor-1248 | | | 0 | 0 | E | ** 187.03 | 4 | 30 | |
| Aroclor-1254 | | | 0 | 0 | | ** 156.20 | 4 | 40 | |
| Aroclor-1260 | | | 0 | 0 | | ** 127.85 | 4 | 40 | |
| Chlordane | | | 2.5 | 0.35 | | ** 69.41 | 2 | 20 | |
| Toxaphene | | | 5 | 1.5 | | ** 71.55 | 4 | 30 | |

Units: ug/l

8538

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:11:36

Sample Name: **4219022F ABUN7NV T 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 05:50:37pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.21R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.849 | | 0.0000 | 0.000 | 20162.1 | 1.519 | BB | 0.049 | 6894.01 | 1.472 |
| 2 | 3.917 | | 0.0000 | 0.000 | 2536.4 | 0.191 | BB | 0.027 | 1559.51 | 0.333 |
| 3 | 3.999 | | 0.0000 | 0.000 | 626.3 | 0.047 | BB | 0.027 | 384.07 | 0.082 |
| 4 | 4.040 | | 0.0000 | 0.000 | 3849.4 | 0.290 | BB | 0.033 | 1930.47 | 0.412 |
| 5 | 4.161 | TCX | 225.5800 | 42.408 | 184820.1 | 13.929 | BB | 0.036 | 85660.02 | 18.286 |
| 6 | 4.393 | | 0.0000 | 0.000 | 855.8 | 0.064 | BB | 0.059 | 240.89 | 0.051 |
| 7 | 4.489 | | 0.0000 | 0.000 | 1296.6 | 0.098 | BB | 0.029 | 757.78 | 0.162 |
| 8 | 4.546 | | 0.0000 | 0.000 | 1564.7 | 0.118 | BB | 0.032 | 809.52 | 0.173 |
| 9 | 4.573 | | 0.0000 | 0.000 | 131.4 | 0.010 | BB | 0.015 | 149.71 | 0.032 |
| 10 | 4.608 | | 0.0000 | 0.000 | 3194.2 | 0.241 | BB | 0.048 | 1110.18 | 0.237 |
| 11 | 4.756 | HCB | 5.6480 | 1.062 | 6297.2 | 0.475 | BB | 0.028 | 3718.08 | 0.794 |
| 12 | 4.783 | | 0.0000 | 0.000 | 3304.1 | 0.249 | BB | 0.023 | 2430.31 | 0.519 |
| 13 | 4.901 | | 0.0000 | 0.000 | 702.7 | 0.053 | BB | 0.026 | 451.66 | 0.096 |
| 14 | 4.960 | | 0.0000 | 0.000 | 98.2 | 0.007 | BB | 0.024 | 68.50 | 0.015 |
| 15 | 5.013 | alpha-BHC | 6.9877 | 1.314 | 8311.5 | 0.626 | BB | 0.043 | 3233.28 | 0.690 |
| 16 | 5.102 | | 0.0000 | 0.000 | 429.5 | 0.032 | BB | 0.029 | 245.75 | 0.052 |
| 17 | 5.254 | | 0.0000 | 0.000 | 15099.4 | 1.138 | BB | 0.087 | 2906.40 | 0.620 |
| 18 | 5.504 | | 0.0000 | 0.000 | 3247.6 | 0.245 | BB | 0.056 | 969.65 | 0.207 |
| 19 | 5.621 | | 0.0000 | 0.000 | 48811.2 | 3.679 | BB | 0.039 | 20620.00 | 4.402 |
| 20 | 5.781 | | 0.0000 | 0.000 | 6218.8 | 0.469 | BB | 0.046 | 2240.05 | 0.478 |
| 21 | 5.946 | | 0.0000 | 0.000 | 3697.7 | 0.279 | BB | 0.087 | 707.73 | 0.151 |
| 22 | 6.121 | Heptachlor | 11.1598 | 2.098 | 31243.6 | 2.355 | BV | 0.090 | 5765.22 | 1.231 |
| 23 | 6.196 | | 0.0000 | 0.000 | 19375.8 | 1.460 | VB | 0.048 | 6770.27 | 1.445 |
| 24 | 6.324 | | 0.0000 | 0.000 | 327776.8 | 24.702 | BV | 0.039 | 139048.90 | 29.683 |
| 25 | 6.478 | | 0.0000 | 0.000 | 29108.8 | 2.194 | VV | 0.083 | 5820.54 | 1.243 |
| 26 | 6.590 | | 0.0000 | 0.000 | 30179.2 | 2.274 | VV | 0.096 | 5229.46 | 1.116 |
| 27 | 6.686 | | 0.0000 | 0.000 | 6260.7 | 0.472 | VV | 0.036 | 2859.12 | 0.610 |
| 28 | 6.735 | | 0.0000 | 0.000 | 14964.8 | 1.128 | VV | 0.095 | 2636.33 | 0.563 |
| 29 | 6.915 | | 0.0000 | 0.000 | 21086.4 | 1.589 | VB | 0.051 | 6836.23 | 1.459 |
| 30 | 7.043 | | 0.0000 | 0.000 | 26962.2 | 2.032 | BB | 0.046 | 9803.52 | 2.093 |
| 31 | 7.164 | | 0.0000 | 0.000 | 461.4 | 0.035 | BB | 0.041 | 188.81 | 0.040 |
| 32 | 7.253 | | 0.0000 | 0.000 | 1286.5 | 0.097 | BB | 0.029 | 745.33 | 0.159 |
| 33 | 7.316 | | 0.0000 | 0.000 | 1818.0 | 0.137 | BV | 0.051 | 592.82 | 0.127 |
| 34 | 7.397 | Hept. epoxide | 3.0628 | 0.576 | 5843.5 | 0.440 | VV | 0.072 | 1353.86 | 0.289 |
| 35 | 7.500 | | 0.0000 | 0.000 | 19201.2 | 1.447 | VV | 0.051 | 6224.96 | 1.329 |
| 36 | 7.715 | a. Chlordane | 2.6972 | 0.507 | 3482.7 | 0.262 | VV | 0.050 | 1149.59 | 0.245 |
| 37 | 7.799 | 4,4'-DDE | 0.8778 | 0.165 | 717.0 | 0.054 | VV | 0.040 | 299.62 | 0.064 |
| 38 | 7.837 | | 0.0000 | 0.000 | 783.5 | 0.059 | VB | 0.038 | 345.86 | 0.074 |
| 39 | 7.904 | Endosulfan I | 0.1608 | 0.030 | 85.9 | 0.006 | BB | 0.023 | 61.60 | 0.013 |
| 40 | 8.000 | | 0.0000 | 0.000 | 585.2 | 0.044 | BB | 0.055 | 177.67 | 0.038 |
| 41 | 8.081 | | 0.0000 | 0.000 | 1817.7 | 0.137 | BV | 0.036 | 837.54 | 0.179 |
| 42 | 8.161 | | 0.0000 | 0.000 | 2201.9 | 0.166 | VV | 0.045 | 807.67 | 0.172 |
| 43 | 8.225 | Dieldrin | 1.7375 | 0.327 | 2106.5 | 0.159 | VB | 0.055 | 633.06 | 0.135 |
| 44 | 8.383 | o,p-DDT | 0.9211 | 0.173 | 575.1 | 0.043 | BB | 0.038 | 250.79 | 0.054 |
| 45 | 8.614 | 4,4'-DDD | 6.2089 | 1.167 | 6760.2 | 0.509 | BV | 0.068 | 1650.55 | 0.352 |
| 46 | 8.726 | | 0.0000 | 0.000 | 2454.6 | 0.185 | VV | 0.065 | 626.84 | 0.134 |
| 47 | 8.854 | Endosulfan II | 2.8175 | 0.530 | 2884.9 | 0.217 | VV | 0.049 | 974.28 | 0.208 |
| 48 | 8.908 | | 0.0000 | 0.000 | 2323.3 | 0.175 | VV | 0.053 | 731.76 | 0.156 |
| 49 | 9.001 | | 0.0000 | 0.000 | 1056.3 | 0.080 | VB | 0.055 | 318.73 | 0.068 |
| 50 | 9.149 | | 0.0000 | 0.000 | 40090.6 | 3.021 | BV | 0.092 | 7273.99 | 1.553 |
| 51 | 9.254 | | 0.0000 | 0.000 | 20984.4 | 1.581 | VB | 0.091 | 3855.93 | 0.823 |
| 52 | 9.453 | | 0.0000 | 0.000 | 681.6 | 0.051 | BB | 0.034 | 333.13 | 0.071 |
| 53 | 9.539 | | 0.0000 | 0.000 | 720.9 | 0.054 | BB | 0.039 | 304.75 | 0.065 |
| 54 | 9.639 | | 0.0000 | 0.000 | 842.2 | 0.063 | BB | 0.051 | 277.16 | 0.059 |
| 55 | 9.762 | | 0.0000 | 0.000 | 432.0 | 0.033 | BB | 0.055 | 130.07 | 0.028 |
| 56 | 10.070 | | 0.0000 | 0.000 | 9206.3 | 0.694 | BV | 0.038 | 4072.92 | 0.869 |
| 57 | 10.140 | | 0.0000 | 0.000 | 11493.2 | 0.866 | VB | 0.061 | 3163.10 | 0.675 |
| 58 | 10.516 | | 0.0000 | 0.000 | 14845.4 | 1.119 | BV | 0.160 | 1549.09 | 0.331 |
| 59 | 10.728 | | 0.0000 | 0.000 | 24756.9 | 1.866 | VV | 0.151 | 2736.22 | 0.584 |
| 60 | 10.843 | | 0.0000 | 0.000 | 19340.1 | 1.458 | VB | 0.100 | 3229.51 | 0.689 |
| 61 | 11.128 | | 0.0000 | 0.000 | 9007.9 | 0.679 | BB | 0.198 | 759.14 | 0.162 |
| 62 | 11.218 | | 0.0000 | 0.000 | 3710.8 | 0.280 | BB | 0.059 | 1047.16 | 0.224 |
| 63 | 11.315 | | 0.0000 | 0.000 | 476.0 | 0.036 | BB | 0.032 | 247.05 | 0.053 |
| 64 | 11.483 | | 0.0000 | 0.000 | 178.5 | 0.013 | BB | 0.032 | 92.39 | 0.020 |

8531

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.597 | DCB | 264.0633 | 49.643 | 281458.8 | 21.212 | BB | 0.048 | 98649.77 | 21.059 |
| 66 | 12.117 | | 0.0000 | 0.000 | 3546.9 | 0.267 | BB | 0.149 | 397.92 | 0.085 |
| 67 | 12.316 | | 0.0000 | 0.000 | 1818.4 | 0.137 | BB | 0.097 | 313.33 | 0.067 |
| 68 | 13.412 | | 0.0000 | 0.000 | 4662.6 | 0.351 | BB | 0.431 | 180.40 | 0.039 |

Total Area = 1326913.0, Total Amount = 531.922, Total Height = 468441.5, Sample Units = PPB

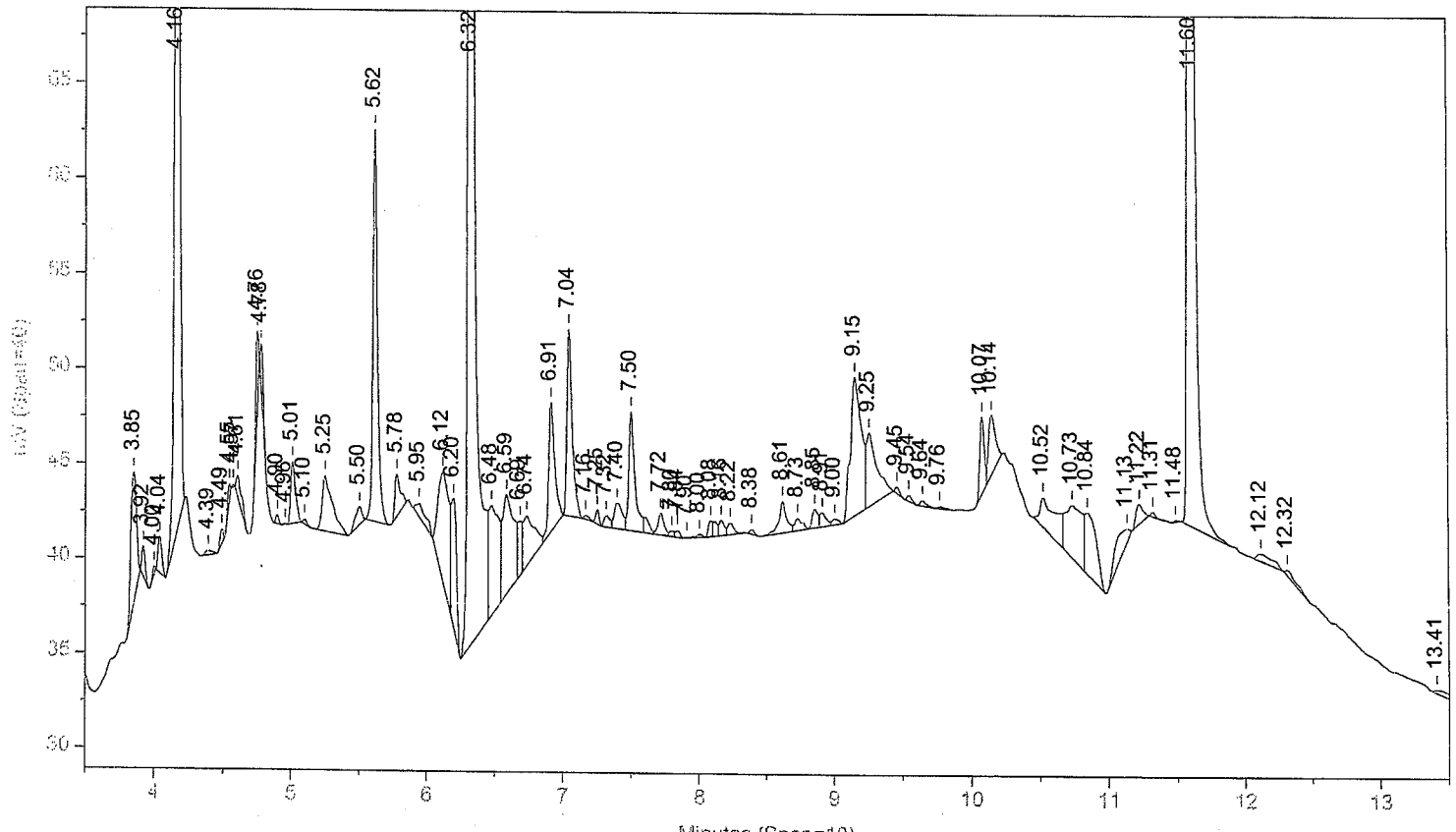
Sample Name: **4219022F ABUN7NV T 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 05:50:37pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.21R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 24754.2 | 4.254 | BB | 0.059 | 7006.50 | 3.544 |
| 2 | 3.365 | | 0.0000 | 0.000 | 10045.5 | 1.726 | BB | 0.067 | 2489.31 | 1.259 |
| 3 | 3.622 | | 0.0000 | 0.000 | 4125.6 | 0.709 | BB | 0.037 | 1844.10 | 0.933 |
| 4 | 3.776 | | 0.0000 | 0.000 | 1183.9 | 0.203 | BB | 0.040 | 497.06 | 0.251 |
| 5 | 3.813 | | 0.0000 | 0.000 | 1219.7 | 0.210 | BB | 0.026 | 793.34 | 0.401 |
| 6 | 3.870 | | 0.0000 | 0.000 | 227.2 | 0.039 | BB | 0.020 | 184.68 | 0.093 |
| 7 | 3.914 | | 0.0000 | 0.000 | 4599.8 | 0.790 | BB | 0.036 | 2113.79 | 1.069 |
| 8 | 4.140 | | 0.0000 | 0.000 | 1570.7 | 0.270 | BB | 0.267 | 97.88 | 0.050 |
| 9 | 4.196 TCX | | 231.7609 | 39.837 | 128182.7 | 22.026 | BB | 0.036 | 58946.30 | 29.813 |
| 10 | 4.352 | | 0.0000 | 0.000 | 4606.4 | 0.792 | BB | 0.031 | 2447.95 | 1.238 |
| 11 | 4.399 | | 0.0000 | 0.000 | 1930.0 | 0.332 | BB | 0.029 | 1110.27 | 0.562 |
| 12 | 4.554 | | 0.0000 | 0.000 | 5729.5 | 0.985 | BB | 0.118 | 809.00 | 0.409 |
| 13 | 4.741 | | 0.0000 | 0.000 | 2030.1 | 0.349 | BB | 0.043 | 782.06 | 0.396 |
| 14 | 4.909 HCB | | 36.4704 | 6.269 | 35048.4 | 6.023 | BB | 0.041 | 14119.25 | 7.141 |
| 15 | 5.580 | | 0.0000 | 0.000 | 1371.5 | 0.236 | BB | 0.165 | 138.37 | 0.070 |
| 16 | 5.793 | | 0.0000 | 0.000 | 455.5 | 0.078 | BB | 0.033 | 227.33 | 0.115 |
| 17 | 5.898 | | 0.0000 | 0.000 | 14062.4 | 2.416 | BV | 0.091 | 2567.89 | 1.299 |
| 18 | 6.065 | | 0.0000 | 0.000 | 7203.5 | 1.238 | VV | 0.042 | 2892.28 | 1.463 |
| 19 | 6.111 | | 0.0000 | 0.000 | 43016.5 | 7.392 | VB | 0.145 | 4930.52 | 2.494 |
| 20 | 6.338 | | 0.0000 | 0.000 | 4832.3 | 0.830 | BB | 0.029 | 2771.70 | 1.402 |
| 21 | 6.501 | | 0.0000 | 0.000 | 581.7 | 0.100 | BB | 0.030 | 318.11 | 0.161 |
| 22 | 6.746 | | 0.0000 | 0.000 | 11843.0 | 2.035 | BB | 0.044 | 4462.19 | 2.257 |
| 23 | 6.893 Telodrin | | 4.0837 | 0.702 | 2520.7 | 0.433 | BB | 0.040 | 1051.10 | 0.532 |
| 24 | 7.081 | | 0.0000 | 0.000 | 18887.7 | 3.246 | BV | 0.083 | 3788.50 | 1.916 |
| 25 | 7.307 | | 0.0000 | 0.000 | 8455.6 | 1.453 | VV | 0.152 | 926.90 | 0.469 |
| 26 | 7.682 g. Chlordane | | 44.3736 | 7.627 | 41659.8 | 7.159 | VB | 0.060 | 11601.18 | 5.867 |
| 27 | 8.784 o,p-DDT | | 0.8719 | 0.150 | 594.5 | 0.102 | BB | 0.075 | 132.55 | 0.067 |
| 28 | 8.844 4,4'-DDD | | 5.1771 | 0.890 | 1510.3 | 0.260 | BB | 0.039 | 645.00 | 0.326 |
| 29 | 8.997 Endosulfan II | | 9.1826 | 1.578 | 17432.3 | 2.995 | BB | 0.150 | 1938.89 | 0.981 |
| 30 | 9.432 Endrin aldehyde | | 4.7845 | 0.822 | 3568.7 | 0.613 | BB | 0.075 | 788.21 | 0.399 |
| 31 | 9.717 | | 0.0000 | 0.000 | 7816.4 | 1.343 | BB | 0.054 | 2412.34 | 1.220 |
| 32 | 10.034 | | 0.0000 | 0.000 | 4735.8 | 0.814 | BB | 0.058 | 1352.95 | 0.684 |
| 33 | 12.205 DCB | | 245.0670 | 42.124 | 166150.3 | 28.551 | BB | 0.045 | 61532.83 | 31.121 |

Total Area = 581952.0, Total Amount = 581.772, Total Height = 197720.4, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.21R

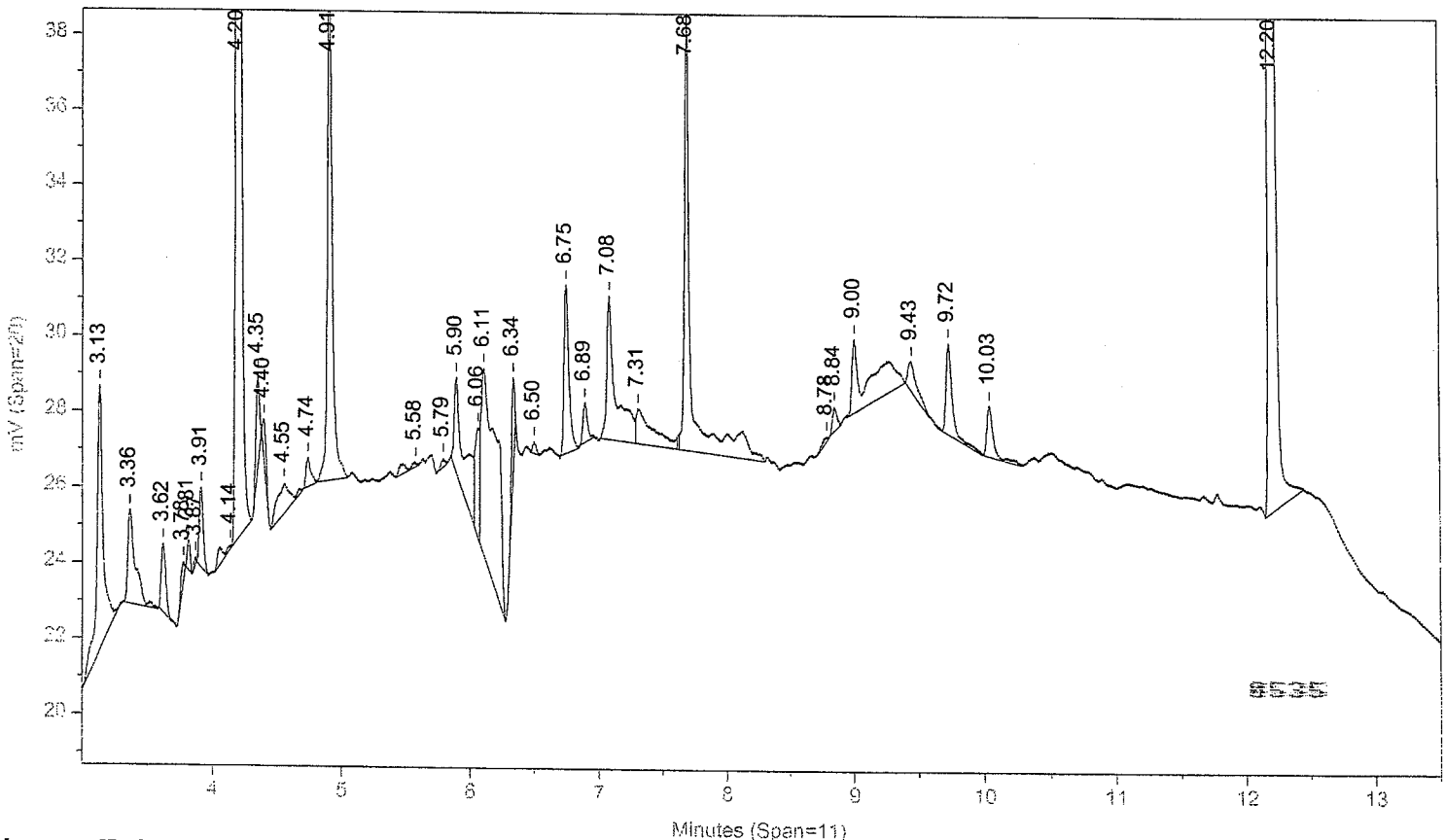
C:\CPWIN\DATA1\2C13051.21R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:36:37 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.21R

C:\CPWIN\DATA1\2C13051B.21R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:36:37 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

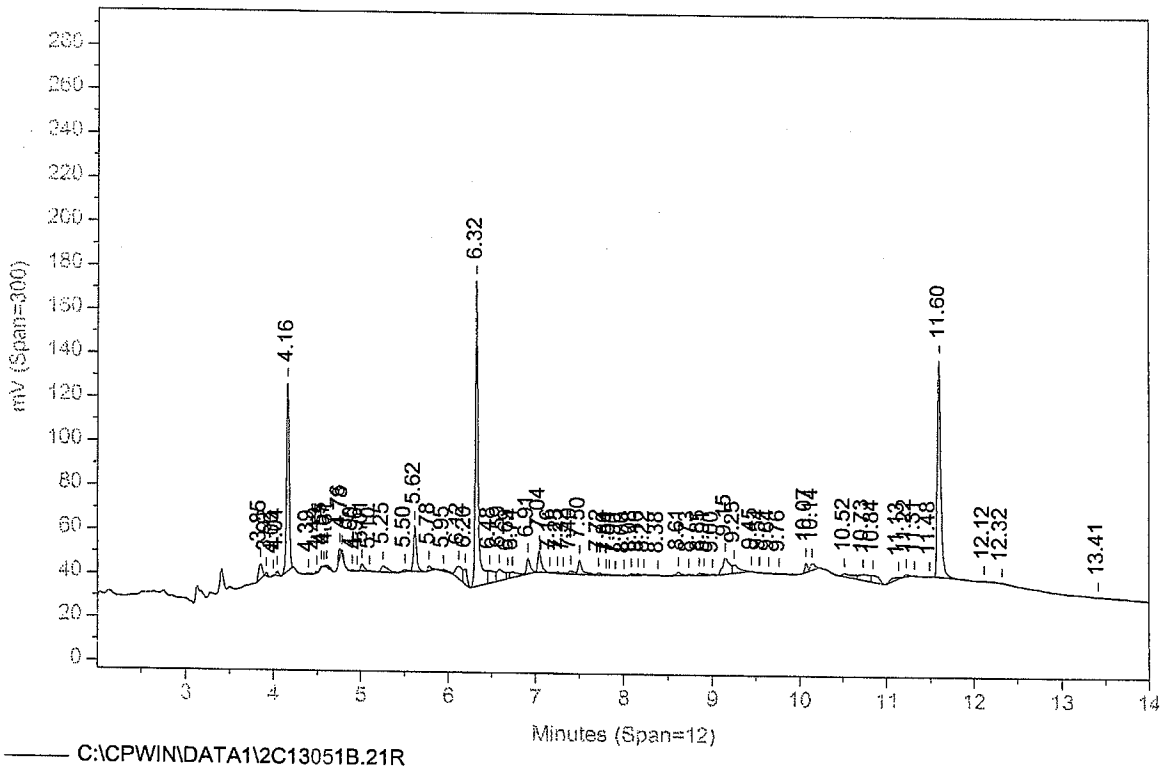
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 85660 | 1.1279 | TCX | 4.196 | 58946 | 1.1588 | TCX |
| 4.756 | 3718 | .02824 | HCB | 4.909 | 14119 | .18235 | HCB |
| 5.013 | 3233 | .03494 | alpha-BHC | . | 0 | . | alpha-BHC |
| 6.121 | 5765 | .0558 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | Telodrin | 6.893 | 1051 | .02042 | Telodrin |
| 7.397 | 1354 | .01531 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| . | 0 | . | g. Chlordane | 7.682 | 11601 | .22187 | g. Chlordane |
| 7.715 | 1150 | .01349 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.799 | 300 | .00439 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.904 | 62 | .0008 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.225 | 633 | .00869 | Dieldrin | . | 0 | . | Dieldrin |
| 8.383 | 251 | .00461 | o,p-DDT | 8.784 | 133 | .00436 | o,p-DDT |
| 8.614 | 1651 | .03104 | 4,4'-DDD | 8.844 | 645 | .02589 | 4,4'-DDD |
| 8.854 | 974 | .01409 | Endosulfan II | 8.997 | 1939 | .04591 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.432 | 788 | .02392 | Endrin aldehyde |
| 11.597 | 98650 | 1.32032 | DCB | 12.205 | 61533 | 1.22534 | DCB |

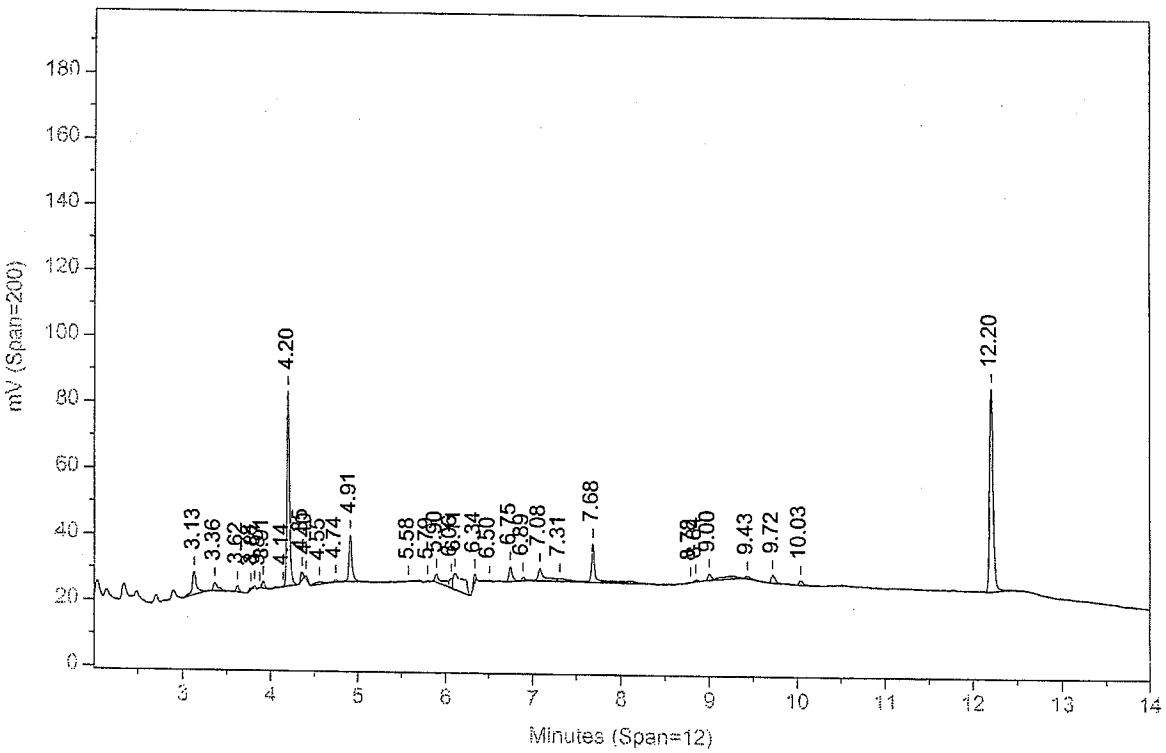
Files:
Area File: C:\CPWIN\DATA1\2C13051.21A
Area File: C:\CPWIN\DATA1\2C13051B.21A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 5:50:42 PM
File Reported On: 2/25/2004 at 5:50:50 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.21R




C:\CPWIN\DATA1\2C13051B.21R



# Standards Data

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.18 | 4.17 | 4.17 | 4.17 | 4.17 | 4.17 | 4.14 | 4.20 |
| Hcb | 4.75 | 4.74 | 4.74 | 4.74 | 4.74 | 4.74 | 4.71 | 4.77 |
| alpha-BHC | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 4.97 | 5.03 |
| gamma-BHC (Lindane) | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 | 5.46 | 5.43 | 5.49 |
| beta-BHC | 5.59 | 5.59 | 5.58 | 5.59 | 5.58 | 5.58 | 5.55 | 5.61 |
| delta-BHC | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 | 5.84 | 5.81 | 5.87 |
| Heptachlor | 6.13 | 6.14 | 6.13 | 6.14 | 6.13 | 6.13 | 6.10 | 6.16 |
| Aldrin | 6.55 | 6.56 | 6.55 | 6.56 | 6.55 | 6.55 | 6.52 | 6.58 |
| Telodrin | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.82 | 6.88 |
| o,p-DDE | 7.36 | 7.36 | 7.36 | 7.36 | 7.36 | 7.36 | 7.33 | 7.39 |
| Heptachlor epoxide | 7.38 | 7.39 | 7.38 | 7.39 | 7.38 | 7.38 | 7.35 | 7.41 |
| gamma-Chlordane | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.52 | 7.58 |
| alpha-Chlordane | 7.73 | 7.73 | 7.73 | 7.73 | 7.72 | 7.73 | 7.70 | 7.76 |
| 4,4'-DDE | 7.81 | 7.82 | 7.81 | 7.82 | 7.81 | 7.81 | 7.78 | 7.84 |
| Endosulfan I | 7.91 | 7.91 | 7.91 | 7.91 | 7.91 | 7.91 | 7.88 | 7.94 |
| o,p-DDD | 8.05 | 8.04 | 8.04 | 8.04 | 8.04 | 8.04 | 8.01 | 8.07 |
| Dieldrin | 8.23 | 8.23 | 8.23 | 8.23 | 8.23 | 8.23 | 8.20 | 8.26 |
| o,p-DDT | 8.38 | 8.38 | 8.38 | 8.37 | 8.38 | 8.38 | 8.35 | 8.41 |
| Endrin | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.54 | 8.51 | 8.57 |
| Kepone | 8.60 | 8.59 | 8.59 | 8.59 | 8.59 | 8.59 | 8.56 | 8.62 |
| 4,4'-DDD | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.57 | 8.63 |
| Endosulfan II | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.80 | 8.86 |
| 4,4'-DDT | 8.96 | 8.96 | 8.96 | 8.96 | 8.96 | 8.96 | 8.93 | 8.99 |
| Endrin aldehyde | 9.38 | 9.38 | 9.38 | 9.38 | 9.37 | 9.38 | 9.35 | 9.41 |
| Methoxychlor | 9.57 | 9.57 | 9.57 | 9.57 | 9.57 | 9.57 | 9.54 | 9.60 |
| Mirex | 9.81 | 9.81 | 9.81 | 9.80 | 9.81 | 9.81 | 9.78 | 9.84 |
| Endosulfan sulfate | 9.94 | 9.94 | 9.94 | 9.94 | 9.94 | 9.94 | 9.91 | 9.97 |
| Endrin ketone | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.31 | 10.28 | 10.34 |
| Decachlorobiphenyl | 11.62 | 11.62 | 11.62 | 11.62 | 11.62 | 11.62 | 11.59 | 11.65 |

8539

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:
Lab Code:  Case No.:  SAS No.:  SDG No.:
Instrument: H6722B  Calibration File: 2C13051B
GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Update File:
Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.18 | 4.24 |
| Hcb | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.87 | 4.93 |
| alpha-BHC | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.07 | 5.13 |
| gamma-BHC (Lindane) | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| beta-BHC | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.71 | 5.77 |
| delta-BHC | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.12 | 6.18 |
| Heptachlor | 6.23 | 6.23 | 6.23 | 6.23 | 6.23 | 6.23 | 6.20 | 6.26 |
| Aldrin | 6.68 | 6.68 | 6.68 | 6.68 | 6.68 | 6.68 | 6.65 | 6.71 |
| Telodrin | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |
| Heptachlor epoxide | 7.45 | 7.45 | 7.45 | 7.45 | 7.45 | 7.45 | 7.42 | 7.48 |
| gamma-Chlordane | 7.76 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.67 | 7.73 |
| o,p-DDE | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.70 | 7.67 | 7.73 |
| alpha-Chlordane | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.86 | 7.92 |
| Endosulfan I | 7.97 | 7.97 | 7.97 | 7.97 | 7.97 | 7.97 | 7.94 | 8.00 |
| 4,4'-DDE | 8.11 | 8.11 | 8.11 | 8.11 | 8.10 | 8.11 | 8.08 | 8.14 |
| Dieldrin | 8.33 | 8.33 | 8.33 | 8.33 | 8.33 | 8.33 | 8.30 | 8.36 |
| o,p-DDD | 8.37 | 8.37 | 8.37 | 8.37 | 8.37 | 8.37 | 8.34 | 8.40 |
| Endrin | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.70 | 8.76 |
| o,p-DDT | 8.77 | 8.77 | 8.77 | 8.76 | 8.76 | 8.77 | 8.74 | 8.80 |
| 4,4'-DDD | 8.86 | 8.86 | 8.86 | 8.86 | 8.86 | 8.86 | 8.83 | 8.89 |
| Kepone | 8.88 | 8.88 | 8.88 | 8.87 | 8.87 | 8.88 | 8.85 | 8.91 |
| Endosulfan II | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 9.00 | 8.97 | 9.03 |
| 4,4'-DDT | 9.26 | 9.26 | 9.26 | 9.26 | 9.26 | 9.26 | 9.23 | 9.29 |
| Endrin aldehyde | 9.44 | 9.43 | 9.43 | 9.43 | 9.43 | 9.43 | 9.40 | 9.46 |
| Endosulfan sulfate | 9.79 | 9.79 | 9.79 | 9.79 | 9.78 | 9.79 | 9.76 | 9.82 |
| Methoxychlor | 10.13 | 10.13 | 10.13 | 10.13 | 10.13 | 10.13 | 10.10 | 10.16 |
| Mirex | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.41 | 10.47 |
| Endrin ketone | 10.49 | 10.49 | 10.49 | 10.49 | 10.48 | 10.46 | 10.43 | 10.49 |
| Decachlorobiphenyl | 12.23 | 12.23 | 12.23 | 12.23 | 12.23 | 12.23 | 12.20 | 12.26 |

ayc IIS.
2-24-04

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# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 4.12E+03 | 3.86E+03 | 3.75E+03 | 3.67E+03 | 3.59E+03 | 3.80E+03 | 5.5 |
| Hcb | 7.25E+03 | 6.88E+03 | 6.62E+03 | 6.27E+03 | 5.89E+03 | 6.58E+03 | 8.0 |
| alpha-BHC | 4.25E+03 | 4.34E+03 | 4.64E+03 | 4.88E+03 | 5.01E+03 | 4.63E+03 | 7.1 |
| gamma-BHC (Lindane) | 4.38E+03 | 4.38E+03 | 4.57E+03 | 4.72E+03 | 4.79E+03 | 4.57E+03 | 4.1 |
| beta-BHC | 3.13E+03 | 2.73E+03 | 2.64E+03 | 2.59E+03 | 2.55E+03 | 2.73E+03 | 8.6 |
| delta-BHC | 4.13E+03 | 4.03E+03 | 4.22E+03 | 4.38E+03 | 4.52E+03 | 4.26E+03 | 4.6 |
| Heptachlor | 5.61E+03 | 5.15E+03 | 5.06E+03 | 5.02E+03 | 4.99E+03 | 5.17E+03 | 5.0 |
| Aldrin | 4.12E+03 | 3.87E+03 | 3.92E+03 | 3.98E+03 | 4.05E+03 | 3.99E+03 | 2.6 |
| Telodrin | 4.71E+03 | 4.58E+03 | 4.46E+03 | 4.28E+03 | 4.11E+03 | 4.43E+03 | 5.4 |
| o,p-DDE | 2.96E+03 | 2.75E+03 | 2.69E+03 | 2.65E+03 | 2.64E+03 | 2.74E+03 | 4.9 |
| Heptachlor epoxide | 5.10E+03 | 4.41E+03 | 4.25E+03 | 4.18E+03 | 4.15E+03 | 4.42E+03 | 8.9 |
| gamma-Chlordane | 4.77E+03 | 4.25E+03 | 4.10E+03 | 4.05E+03 | 4.02E+03 | 4.24E+03 | 7.3 |
| alpha-Chlordane | 4.90E+03 | 4.27E+03 | 4.11E+03 | 4.05E+03 | 3.99E+03 | 4.26E+03 | 8.7 |
| 4,4'-DDE | 3.38E+03 | 3.31E+03 | 3.39E+03 | 3.47E+03 | 3.50E+03 | 3.41E+03 | 2.2 |
| Endosulfan I | 4.07E+03 | 3.86E+03 | 3.77E+03 | 3.74E+03 | 3.71E+03 | 3.83E+03 | 3.8 |
| o,p-DDD | 2.23E+03 | 2.21E+03 | 2.19E+03 | 2.18E+03 | 2.19E+03 | 2.20E+03 | 1.0 |
| Dieldrin | 3.65E+03 | 3.57E+03 | 3.63E+03 | 3.67E+03 | 3.70E+03 | 3.64E+03 | 1.3 |
| o,p-DDT | 2.80E+03 | 2.75E+03 | 2.71E+03 | 2.68E+03 | 2.68E+03 | 2.72E+03 | 1.8 |
| Endrin | 3.57E+03 | 3.33E+03 | 3.34E+03 | 3.38E+03 | 3.38E+03 | 3.40E+03 | 2.9 |
| Kepone | 1.83E+02 | 4.10E+02 | 3.54E+02 | 3.09E+02 | 8.72E+02 | 4.26E+02 | 61.9 |
| 4,4'-DDD | 2.81E+03 | 2.54E+03 | 2.60E+03 | 2.67E+03 | 2.68E+03 | 2.66E+03 | 3.8 |
| Endosulfan II | 3.75E+03 | 3.48E+03 | 3.40E+03 | 3.35E+03 | 3.31E+03 | 3.46E+03 | 5.0 |
| 4,4'-DDT | 3.17E+03 | 2.88E+03 | 2.89E+03 | 2.94E+03 | 2.92E+03 | 2.96E+03 | 4.1 |
| Endrin aldehyde | 2.78E+03 | 2.49E+03 | 2.42E+03 | 2.40E+03 | 2.34E+03 | 2.49E+03 | 6.9 |
| Methoxychlor | 2.11E+03 | 1.75E+03 | 1.66E+03 | 1.62E+03 | 1.57E+03 | 1.74E+03 | 12.4 |
| Mirex | 3.80E+03 | 3.42E+03 | 3.12E+03 | 2.81E+03 | 2.56E+03 | 3.14E+03 | 15.6 |
| Endosulfan sulfate | 3.56E+03 | 3.07E+03 | 2.96E+03 | 2.92E+03 | 2.89E+03 | 3.08E+03 | 9.0 |
| Endrin ketone | 3.81E+03 | 3.59E+03 | 3.53E+03 | 3.49E+03 | 3.46E+03 | 3.58E+03 | 3.9 |
| Decachlorobiphenyl | 4.84E+03 | 3.91E+03 | 3.50E+03 | 3.28E+03 | 3.16E+03 | 3.74E+03 | 18.1 |

Average % RSD: 8.1

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Calibration File Name: **C:\CPWIN\DATA1\2C13051.CAL** Version = 2
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

## 1 TCX

Retention time = 4.173 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 15862.4 | 4120.112 | Manual | 2/23/2004 10:21: |
| 2 | 19.240 | 74307.4 | 3862.131 | Manual | 2/23/2004 10:21: |
| 3 | 38.480 | 144260.9 | 3748.984 | Manual | 2/23/2004 10:21: |
| 4 | 57.720 | 211609.3 | 3666.135 | Manual | 2/23/2004 10:21: |
| 5 | 76.960 | 276229.3 | 3589.258 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3797.324 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9926, Average error = 4.08%
Average CF = 3797.3240 with RSD = 5.45%

## 2 HCB

Retention time = 4.743 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7251.9 | 7251.88 | Manual | 2/23/2004 10:21: |
| 2 | 2.500 | 17209.4 | 6883.772 | Manual | 2/23/2004 10:21: |
| 3 | 5.000 | 33107.6 | 6621.524 | Manual | 2/23/2004 10:21: |
| 4 | 10.000 | 62671.9 | 6267.188 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 117815.5 | 5890.775 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 6583.028 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9744, Average error = 6.13%
Average CF = 6583.0280 with RSD = 8.03%

## 3 alpha-BHC

Retention time = 4.996 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

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| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4252.1 | 4252.111 | Manual | 2/23/2004 10:21: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 21714.9 | 4342.978 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 46439.0 | 4643.898 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 74216.7 | 4882.677 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 100278.1 | 5013.905 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4627.114 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9872, Average error = 5.70%
Average CF = 4627.1140 with RSD = 7.14%

**4 gamma-BHC**
Retention time = 5.456 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4379.8 | 4379.767 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21906.8 | 4381.352 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 45660.8 | 4566.075 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 71807.8 | 4724.2 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 95761.7 | 4788.084 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4567.896 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9952, Average error = 3.30%
Average CF = 4567.8960 with RSD = 4.14%

**5 beta-BHC**
Retention time = 5.584 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3126.1 | 3126.14 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13639.3 | 2727.868 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 26400.2 | 2640.015 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 39306.6 | 2585.961 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 50960.0 | 2548 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2725.597 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9878, Average error = 5.91%
Average CF = 2725.5970 with RSD = 8.58%

**6 delta-BHC**
Retention time = 5.838 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4127.1 | 4127.145 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 20162.1 | 4032.418 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 42249.9 | 4224.988 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 66562.9 | 4379.138 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 90346.6 | 4517.331 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4256.204 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9933, Average error = 3.61%
Average CF = 4256.2040 with RSD = 4.57%

**7 Heptachlor**
Retention time = 6.134 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5611.5 | 5611.521 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 25760.9 | 5152.174 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 50585.3 | 5058.526 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 76298.0 | 5019.608 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 99769.2 | 4988.46 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 5166.058 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9967, Average error = 3.45%
Average CF = 5166.0580 with RSD = 4.97%

**8 Aldrin**
Retention time = 6.554 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4123.9 | 4123.933 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 19336.1 | 3867.228 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 39168.4 | 3916.845 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 60499.6 | 3980.237 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 80938.7 | 4046.934 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3987.035 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.97%
Average CF = 3987.0350 with RSD = 2.56%

**9 Telodrin**
Retention time = 6.851 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4706.3 | 4706.29 | Manual | 2/23/2004 10:21: |
| 2 | 2.500 | 11456.3 | 4582.524 | Manual | 2/23/2004 10:21: |
| 3 | 5.000 | 22319.4 | 4463.872 | Manual | 2/23/2004 10:21: |
| 4 | 10.000 | 42774.6 | 4277.461 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 82202.9 | 4110.143 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4428.058 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9890, Average error = 4.23%
Average CF = 4428.0580 with RSD = 5.37%

**10 o,p-DDE**
Retention time = 7.358 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5926.5 | 2963.255 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13760.2 | 2752.046 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 26896.7 | 2689.668 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 52982.1 | 2649.107 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 105401.7 | 2635.042 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2737.824 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 3.50%
Average CF = 2737.8240 with RSD = 4.89%

**11 Hept. epoxide**
Retention time = 7.384 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5100.9 | 5100.883 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 22063.7 | 4412.742 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 42501.0 | 4250.096 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 63598.7 | 4184.126 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 83080.5 | 4154.022 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4420.374 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9886, Average error = 6.16%
Average CF = 4420.3740 with RSD = 8.90%

**12 g. Chlordane**
Retention time = 7.548 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4766.0 | 4765.989 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21229.7 | 4245.938 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 40954.5 | 4095.452 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 61551.4 | 4049.433 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 80374.9 | 4018.746 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4235.111 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9921, Average error = 5.12%
Average CF = 4235.1110 with RSD = 7.30%

**13 a. Chlordane**
Retention time = 7.725 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4897.1 | 4897.133 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 21335.0 | 4266.994 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 41081.6 | 4108.158 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 61505.5 | 4046.413 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 79838.3 | 3991.916 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 4262.123 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9882, Average error = 6.01%
Average CF = 4262.1230 with RSD = 8.67%

**14 4,4'-DDE**
Retention time = 7.814 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6765.6 | 3382.789 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 33125.1 | 3312.514 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 67870.3 | 3393.514 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 105595.0 | 3473.52 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 140146.3 | 3503.657 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3413.199 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 1.77%
Average CF = 3413.1990 with RSD = 2.23%

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**15 Endosulfan I**
Retention time = 7.913 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4071.4 | 4071.436 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 19306.7 | 3861.338 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 37748.4 | 3774.838 | Manual | 2/23/2004 10:21: |
| 4 | 15.200 | 56834.2 | 3739.09 | Manual | 2/23/2004 10:21: |
| 5 | 20.000 | 74188.0 | 3709.398 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3831.22 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9974, Average error = 2.82%
Average CF = 3831.2200 with RSD = 3.81%

**16 o,p-DDD**
Retention time = 8.044 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4461.2 | 2230.62 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 11063.1 | 2212.616 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 21912.0 | 2191.199 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 43548.4 | 2177.418 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 87658.7 | 2191.468 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2200.664 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.76%
Average CF = 2200.6640 with RSD = 0.95%

**17 Dieldrin**
Retention time = 8.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7304.3 | 3652.168 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 35698.0 | 3569.796 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 72586.3 | 3629.315 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 111557.1 | 3669.642 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 147881.0 | 3697.025 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3643.589 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 0.97%
Average CF = 3643.5890 with RSD = 1.32%

8547

**18 o,p-DDT**
Retention time = 8.376 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5594.1 | 2797.03 | Manual | 2/23/2004 10:21: |
| 2 | 5.000 | 13731.7 | 2746.33 | Manual | 2/23/2004 10:21: |
| 3 | 10.000 | 27123.4 | 2712.337 | Manual | 2/23/2004 10:21: |
| 4 | 20.000 | 53619.6 | 2680.98 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 107083.9 | 2677.097 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2722.755 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.44%
Average CF = 2722.7550 with RSD = 1.84%

**19 Endrin**
Retention time = 8.536 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7138.1 | 3569.033 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 33293.7 | 3329.372 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 66870.8 | 3343.54 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 102604.9 | 3375.161 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 135181.2 | 3379.53 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3399.327 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 2.00%
Average CF = 3399.3270 with RSD = 2.86%

**20 Kepone**
Retention time = 8.593 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 1829.8 | 182.978 | Manual | 2/23/2004 10:21: |
| 2 | 25.000 | 10255.8 | 410.23 | Manual | 2/23/2004 10:21: |
| 3 | 50.000 | 17697.9 | 353.9584 | Manual | 2/23/2004 10:21: |
| 4 | 100.000 | 30918.1 | 309.1811 | Manual | 2/23/2004 10:21: |
| 5 | 200.000 | 174489.8 | 872.449 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 425.759 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.6081, Average error = 41.97%
Average CF = 425.7593 with RSD = 61.86%

**21 4,4'-DDD**
Retention time = 8.598 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5614.0 | 2807.002 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 25384.3 | 2538.431 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 51992.3 | 2599.615 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 81157.5 | 2669.654 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 107081.3 | 2677.032 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2658.347 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 2.69%
Average CF = 2658.3470 with RSD = 3.78%

**22 Endosulfan II**
Retention time = 8.831 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7495.3 | 3747.644 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 34768.5 | 3476.854 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 68050.8 | 3402.542 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 101844.9 | 3350.161 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 132518.0 | 3312.95 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3458.03 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9954, Average error = 3.57%
Average CF = 3458.0300 with RSD = 5.01%

**23 4,4'-DDT**
Retention time = 8.960 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6348.6 | 3174.315 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 28817.8 | 2881.783 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 57842.0 | 2892.101 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 89368.0 | 2939.737 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 116963.8 | 2924.095 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2962.406 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 2.86%
Average CF = 2962.4060 with RSD = 4.08%

6549

**24 Endrin aldehyde**

Retention time = 9.376 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5554.0 | 2776.99 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 24864.5 | 2486.452 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 48429.8 | 2421.489 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 73088.4 | 2404.223 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 93538.2 | 2338.455 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 2485.522 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9915, Average error = 4.71%
Average CF = 2485.5220 with RSD = 6.89%

**25 Methoxychlor**
Retention time = 9.570 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 21052.2 | 2105.221 | Manual | 2/23/2004 10:21: |
| 2 | 50.000 | 87671.6 | 1753.432 | Manual | 2/23/2004 10:21: |
| 3 | 100.000 | 166094.3 | 1660.943 | Manual | 2/23/2004 10:21: |
| 4 | 152.000 | 245691.8 | 1616.393 | Manual | 2/23/2004 10:21: |
| 5 | 200.000 | 313414.0 | 1567.07 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 1740.612 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9703, Average error = 8.67%
Average CF = 1740.6120 with RSD = 12.36%

**26 Mirex**
Retention time = 9.806 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 18990.3 | 3798.064 | Manual | 2/23/2004 10:21: |
| 2 | 12.500 | 42721.3 | 3417.703 | Manual | 2/23/2004 10:21: |
| 3 | 25.000 | 78050.6 | 3122.023 | Manual | 2/23/2004 10:21: |
| 4 | 50.000 | 140413.7 | 2808.274 | Manual | 2/23/2004 10:21: |
| 5 | 100.000 | 255559.8 | 2555.598 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3140.333 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8964, Average error = 11.91%
Average CF = 3140.3330 with RSD = 15.62%

**27 Endo. sulfate**
Retention time = 9.942 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7113.0 | 3556.483 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 30663.6 | 3066.362 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 59121.5 | 2956.077 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 88798.9 | 2921.017 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 115400.8 | 2885.02 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3076.992 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9883, Average error = 6.23%
Average CF = 3076.9920 with RSD = 8.99%

**28 Endrin ketone**
Retention time = 10.309 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7613.3 | 3806.627 | Manual | 2/23/2004 10:21: |
| 2 | 10.000 | 35879.5 | 3587.953 | Manual | 2/23/2004 10:21: |
| 3 | 20.000 | 70623.6 | 3531.178 | Manual | 2/23/2004 10:21: |
| 4 | 30.400 | 106202.0 | 3493.487 | Manual | 2/23/2004 10:21: |
| 5 | 40.000 | 138269.4 | 3456.735 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3575.196 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9973, Average error = 2.73%
Average CF = 3575.1960 with RSD = 3.86%

**29 DCB**
Retention time = 11.618 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 18859.6 | 4835.79 | Manual | 2/23/2004 10:21: |
| 2 | 19.480 | 76124.6 | 3907.836 | Manual | 2/23/2004 10:21: |
| 3 | 38.960 | 136235.6 | 3496.807 | Manual | 2/23/2004 10:21: |
| 4 | 58.440 | 191737.3 | 3280.926 | Manual | 2/23/2004 10:21: |
| 5 | 77.920 | 246058.1 | 3157.83 | Manual | 2/23/2004 10:21: |

Calibration formula: Y = 3735.838 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9123, Average error = 13.62%
Average CF = 3735.8380 with RSD = 18.14%

# 6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13051B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 2.55E+03 | 2.53E+03 | 2.57E+03 | 2.56E+03 | 2.51E+03 | 2.54E+03 | .9 |
| Hcb | 4.02E+03 | 3.89E+03 | 3.90E+03 | 3.82E+03 | 3.74E+03 | 3.87E+03 | 2.7 |
| alpha-BHC | 2.05E+03 | 2.17E+03 | 2.46E+03 | 2.74E+03 | 2.93E+03 | 2.47E+03 | 15.1 |
| gamma-BHC (Lindane) | 2.20E+03 | 2.28E+03 | 2.53E+03 | 2.76E+03 | 2.89E+03 | 2.53E+03 | 11.7 |
| beta-BHC | 1.80E+03 | 1.55E+03 | 1.55E+03 | 1.57E+03 | 1.57E+03 | 1.61E+03 | 6.7 |
| delta-BHC | 2.13E+03 | 1.95E+03 | 2.12E+03 | 2.30E+03 | 2.45E+03 | 2.19E+03 | 8.6 |
| Heptachlor | 3.00E+03 | 2.75E+03 | 2.78E+03 | 2.85E+03 | 2.89E+03 | 2.85E+03 | 3.5 |
| Aldrin | 2.21E+03 | 2.14E+03 | 2.27E+03 | 2.43E+03 | 2.52E+03 | 2.31E+03 | 6.8 |
| Telodrin | 2.54E+03 | 2.55E+03 | 2.56E+03 | 2.58E+03 | 2.63E+03 | 2.57E+03 | 1.4 |
| Heptachlor epoxide | 2.71E+03 | 2.47E+03 | 2.53E+03 | 2.57E+03 | 2.61E+03 | 2.58E+03 | 3.5 |
| gamma-Chlordane | 2.89E+03 | 2.50E+03 | 2.52E+03 | 2.56E+03 | 2.60E+03 | 2.61E+03 | 6.1 |
| o,p-DDE | 1.41E+03 | 1.43E+03 | 1.50E+03 | 1.55E+03 | 1.66E+03 | 1.51E+03 | 6.9 |
| alpha-Chlordane | 3.18E+03 | 2.58E+03 | 2.56E+03 | 2.59E+03 | 2.61E+03 | 2.71E+03 | 9.9 |
| Endosulfan I | 2.94E+03 | 2.31E+03 | 2.31E+03 | 2.35E+03 | 2.37E+03 | 2.46E+03 | 11.0 |
| 4,4'-DDE | 1.95E+03 | 1.74E+03 | 1.89E+03 | 2.02E+03 | 2.10E+03 | 1.94E+03 | 7.0 |
| Dieldrin | 2.25E+03 | 2.17E+03 | 2.32E+03 | 2.45E+03 | 2.51E+03 | 2.34E+03 | 6.1 |
| o,p-DDD | 1.13E+03 | 1.13E+03 | 1.14E+03 | 1.19E+03 | 1.30E+03 | 1.18E+03 | 6.1 |
| Endrin | 1.91E+03 | 1.90E+03 | 2.02E+03 | 2.13E+03 | 2.18E+03 | 2.03E+03 | 6.2 |
| o,p-DDT | 1.44E+03 | 1.46E+03 | 1.49E+03 | 1.55E+03 | 1.65E+03 | 1.52E+03 | 5.5 |
| 4,4'-DDD | 1.11E+03 | 1.14E+03 | 1.23E+03 | 1.35E+03 | 1.40E+03 | 1.25E+03 | 10.4 |
| Kepone | 8.32E+01 | 2.72E+02 | 2.35E+02 | 2.13E+02 | 6.57E+02 | 2.92E+02 | 74.1 |
| Endosulfan II | 2.10E+03 | 2.03E+03 | 2.09E+03 | 2.16E+03 | 2.17E+03 | 2.11E+03 | 2.7 |
| 4,4'-DDT | 1.53E+03 | 1.52E+03 | 1.62E+03 | 1.70E+03 | 1.75E+03 | 1.62E+03 | 6.4 |
| Endrin aldehyde | 1.79E+03 | 1.60E+03 | 1.61E+03 | 1.62E+03 | 1.61E+03 | 1.65E+03 | 5.0 |
| Endosulfan sulfate | 1.94E+03 | 1.80E+03 | 1.83E+03 | 1.88E+03 | 1.89E+03 | 1.87E+03 | 2.9 |
| Methoxychlor | 1.10E+03 | 9.95E+02 | 9.72E+02 | 9.64E+02 | 9.40E+02 | 9.95E+02 | 6.4 |
| Mirex | 2.39E+03 | 2.18E+03 | 2.05E+03 | 1.94E+03 | 1.80E+03 | 2.07E+03 | 10.9 |
| Endrin ketone | 2.63E+03 | 2.34E+03 | 2.38E+03 | 2.40E+03 | 2.40E+03 | 2.43E+03 | 4.6 |
| Decachlorobiphenyl | 3.10E+03 | 2.63E+03 | 2.39E+03 | 2.26E+03 | 2.17E+03 | 2.51E+03 | 14.8 |

Average % RSD: 9.1

8552



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\2C13051B.CAL** Version = 1
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

## 1 TCX

Retention time = 4.208 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 9805.7 | 2546.927 | Manual | 2/23/2004 10:29: |
| 2 | 19.240 | 48686.1 | 2530.462 | Manual | 2/23/2004 10:29: |
| 3 | 38.480 | 98756.4 | 2566.434 | Manual | 2/23/2004 10:29: |
| 4 | 57.720 | 147777.4 | 2560.246 | Manual | 2/23/2004 10:32: |
| 5 | 76.960 | 193398.9 | 2512.979 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2543.41 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.68%
Average CF = 2543.4100 with RSD = 0.86%

## 2 HCB

Retention time = 4.897 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4019.3 | 4019.26 | Manual | 2/23/2004 10:29: |
| 2 | 2.500 | 9713.0 | 3885.192 | Manual | 2/23/2004 10:29: |
| 3 | 5.000 | 19489.3 | 3897.858 | Manual | 2/23/2004 10:29: |
| 4 | 10.000 | 38167.1 | 3816.715 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 74761.9 | 3738.094 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 3871.424 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9977, Average error = 1.94%
Average CF = 3871.4240 with RSD = 2.69%

## 3 alpha-BHC

Retention time = 5.100 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9553

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2049.4 | 2049.444 | Manual | 2/23/2004 10:29: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 10851.1 | 2170.228 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 24566.1 | 2456.614 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 41648.7 | 2740.048 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 58699.2 | 2934.961 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2470.259 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9499, Average error = 11.89%
Average CF = 2470.2590 with RSD = 15.09%

**4 gamma-BHC**
Retention time = 5.613 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2198.7 | 2198.67 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 11402.3 | 2280.452 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25345.8 | 2534.578 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 41940.4 | 2759.236 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 57719.3 | 2885.964 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2531.78 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9685, Average error = 9.23%
Average CF = 2531.7800 with RSD = 11.71%

**5 beta-BHC**
Retention time = 5.737 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1799.1 | 1799.056 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7742.6 | 1548.518 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 15527.0 | 1552.705 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 23807.2 | 1566.261 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 31453.0 | 1572.65 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1607.838 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9977, Average error = 4.76%
Average CF = 1607.8380 with RSD = 6.68%

**6 delta-BHC**
Retention time = 6.149 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2129.2 | 2129.226 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 9759.4 | 1951.888 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 21181.0 | 2118.096 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 34991.4 | 2302.064 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 48903.4 | 2445.171 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2189.289 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9783, Average error = 6.74%
Average CF = 2189.2890 with RSD = 8.64%

**7 Heptachlor**
Retention time = 6.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2995.9 | 2995.935 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 13735.4 | 2747.078 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 27801.0 | 2780.101 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 43253.6 | 2845.628 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 57890.0 | 2894.501 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2852.649 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 2.60%
Average CF = 2852.6490 with RSD = 3.45%

**8 Aldrin**
Retention time = 6.676 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2210.0 | 2209.965 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 10709.5 | 2141.904 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 22712.2 | 2271.221 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 36882.2 | 2426.463 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 50452.1 | 2522.604 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2314.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9860, Average error = 5.53%
Average CF = 2314.4310 with RSD = 6.78%

**9 Telodrin**
Retention time = 6.897 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9555

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2544.1 | 2544.09 | Manual | 2/23/2004 10:29: |
| 2 | 2.500 | 6370.6 | 2548.256 | Manual | 2/23/2004 10:29: |
| 3 | 5.000 | 12809.3 | 2561.854 | Manual | 2/23/2004 10:29: |
| 4 | 10.000 | 25827.0 | 2582.702 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52652.9 | 2632.647 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2573.91 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9991, Average error = 1.05%
Average CF = 2573.9100 with RSD = 1.40%

**10 Hept. epoxide**
Retention time = 7.447 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2713.2 | 2713.151 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12351.0 | 2470.19 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25284.5 | 2528.449 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 39117.4 | 2573.513 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52203.0 | 2610.149 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2579.09 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 2.56%
Average CF = 2579.0900 with RSD = 3.54%

**11 g. Chlordane**
Retention time = 7.698 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2891.1 | 2891.102 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12493.6 | 2498.716 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25207.7 | 2520.768 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 38952.3 | 2562.651 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 51978.7 | 2598.937 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2614.435 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9987, Average error = 4.23%
Average CF = 2614.4350 with RSD = 6.10%

**12 o,p-DDE**
Retention time = 7.699 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

8556

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2812.0 | 1405.99 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7146.1 | 1429.218 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 15036.3 | 1503.633 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 31042.7 | 1552.137 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 66586.4 | 1664.661 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1511.128 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9856, Average error = 5.15%
Average CF = 1511.1280 with RSD = 6.87%

**13 a. Chlordane**
Retention time = 7.889 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3183.7 | 3183.683 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 12922.7 | 2584.53 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 25579.5 | 2557.953 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 39327.4 | 2587.327 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 52232.1 | 2611.604 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2705.02 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9939, Average error = 7.08%
Average CF = 2705.0200 with RSD = 9.92%

**14 Endosulfan I**
Retention time = 7.968 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2936.6 | 2936.585 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 11575.0 | 2314.996 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 23106.7 | 2310.673 | Manual | 2/23/2004 10:29: |
| 4 | 15.200 | 35695.4 | 2348.379 | Manual | 2/23/2004 10:32: |
| 5 | 20.000 | 47485.8 | 2374.288 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2456.984 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9935, Average error = 7.81%
Average CF = 2456.9840 with RSD = 10.96%

8557

**15 4,4'-DDE**
Retention time = 8.105 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3893.6 | 1946.78 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 17413.9 | 1741.393 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 37702.1 | 1885.103 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 61371.1 | 2018.786 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 83809.0 | 2095.224 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1937.457 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9879, Average error = 5.13%
Average CF = 1937.4570 with RSD = 6.96%

**16 Dieldrin**
Retention time = 8.327 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4499.3 | 2249.663 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 21652.7 | 2165.272 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 46343.0 | 2317.149 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 74376.4 | 2446.592 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 100522.7 | 2513.068 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2338.349 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9896, Average error = 4.84%
Average CF = 2338.3490 with RSD = 6.07%

**17 o,p-DDD**
Retention time = 8.370 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2263.2 | 1131.58 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 5626.2 | 1125.24 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 11411.7 | 1141.172 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 23766.3 | 1188.317 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 51898.4 | 1297.461 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1176.754 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9855, Average error = 4.50%
Average CF = 1176.7540 with RSD = 6.11%

**18 Endrin**
Retention time = 8.726 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3827.0 | 1913.483 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 18964.5 | 1896.452 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 40396.1 | 2019.807 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 64686.0 | 2127.83 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 87061.0 | 2176.524 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2026.819 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9896, Average error = 4.95%
Average CF = 2026.8190 with RSD = 6.17%

**19 o,p-DDT**
Retention time = 8.765 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2886.4 | 1443.19 | Manual | 2/23/2004 10:29: |
| 2 | 5.000 | 7314.3 | 1462.852 | Manual | 2/23/2004 10:29: |
| 3 | 10.000 | 14939.9 | 1493.994 | Manual | 2/23/2004 10:29: |
| 4 | 20.000 | 30979.0 | 1548.95 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 66083.0 | 1652.076 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1520.212 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9892, Average error = 4.23%
Average CF = 1520.2120 with RSD = 5.52%

**20 4,4'-DDD**
Retention time = 8.856 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2219.2 | 1109.599 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 11353.7 | 1135.369 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 24596.1 | 1229.804 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 41118.8 | 1352.592 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 56080.4 | 1402.009 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1245.875 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9733, Average error = 8.44%
Average CF = 1245.8750 with RSD = 10.37%

8559

**21 Kepone**
Retention time = 8.876 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 832.4 | 83.239 | Manual | 2/23/2004 10:29: |
| 2 | 25.000 | 6791.1 | 271.6432 | Manual | 2/23/2004 10:29: |
| 3 | 50.000 | 11725.3 | 234.506 | Manual | 2/23/2004 10:29: |
| 4 | 100.000 | 21254.3 | 212.5426 | Manual | 2/23/2004 10:32: |
| 5 | 200.000 | 131417.3 | 657.0865 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 291.803 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.5485, Average error = 50.07%
Average CF = 291.8035 with RSD = 74.08%

**22 Endosulfan II**
Retention time = 9.001 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4203.3 | 2101.674 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 20291.0 | 2029.098 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 41875.8 | 2093.79 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 65615.1 | 2158.393 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 86979.3 | 2174.481 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2111.487 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9979, Average error = 2.08%
Average CF = 2111.4870 with RSD = 2.74%

**23 4,4'-DDT**
Retention time = 9.256 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3057.3 | 1528.64 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 15167.7 | 1516.774 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 32343.7 | 1617.183 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 51754.2 | 1702.442 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 70001.2 | 1750.029 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1623.014 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9888, Average error = 5.09%
Average CF = 1623.0140 with RSD = 6.36%

**24 Endrin aldehyde**

Retention time = 9.433 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3588.8 | 1794.41 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 16046.8 | 1604.682 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 32120.9 | 1606.047 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 49368.5 | 1623.963 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 64322.1 | 1608.052 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1647.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 3.57%
Average CF = 1647.4310 with RSD = 5.01%

**25 Endo. sulfate**
Retention time = 9.785 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3883.3 | 1941.649 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 17987.8 | 1798.775 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 36613.0 | 1830.649 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 57040.2 | 1876.322 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 75535.4 | 1888.384 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 1867.156 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 2.25%
Average CF = 1867.1560 with RSD = 2.94%

**26 Methoxychlor**
Retention time = 10.128 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 11031.3 | 1103.132 | Manual | 2/23/2004 10:29: |
| 2 | 50.000 | 49738.4 | 994.7674 | Manual | 2/23/2004 10:29: |
| 3 | 100.000 | 97174.3 | 971.743 | Manual | 2/23/2004 10:29: |
| 4 | 152.000 | 146587.7 | 964.3928 | Manual | 2/23/2004 10:32: |
| 5 | 200.000 | 188035.9 | 940.1795 | Manual | 2/23/2004 10:29: |

8561

Calibration formula: Y = 994.843 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9928, Average error = 4.35%
Average CF = 994.8430 with RSD = 6.39%

**27 Mirex**
Retention time = 10.441 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 11943.6 | 2388.716 | Manual | 2/23/2004 10:29: |
| 2 | 12.500 | 27279.5 | 2182.363 | Manual | 2/23/2004 10:29: |
| 3 | 25.000 | 51290.3 | 2051.614 | Manual | 2/23/2004 10:29: |
| 4 | 50.000 | 96859.9 | 1937.198 | Manual | 2/23/2004 10:32: |
| 5 | 100.000 | 180391.6 | 1803.916 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2072.761 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9579, Average error = 8.21%
Average CF = 2072.7610 with RSD = 10.87%

**28 Endrin ketone**
Retention time = 10.458 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5251.2 | 2625.604 | Manual | 2/23/2004 10:29: |
| 2 | 10.000 | 23427.9 | 2342.795 | Manual | 2/23/2004 10:29: |
| 3 | 20.000 | 47529.2 | 2376.458 | Manual | 2/23/2004 10:29: |
| 4 | 30.400 | 72856.8 | 2396.605 | Manual | 2/23/2004 10:32: |
| 5 | 40.000 | 96014.8 | 2400.371 | Manual | 2/23/2004 10:29: |

Calibration formula: Y = 2428.366 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 3.25%
Average CF = 2428.3670 with RSD = 4.64%

**29 DCB**
Retention time = 12.229 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 12085.0 | 3098.708 | Manual | 2/23/2004 10:29: |
| 2 | 19.480 | 51308.1 | 2633.884 | Manual | 2/23/2004 10:29: |
| 3 | 38.960 | 93083.5 | 2389.207 | Manual | 2/23/2004 10:29: |
| 4 | 58.440 | 132191.1 | 2261.997 | Manual | 2/23/2004 10:32: |
| 5 | 77.920 | 169124.7 | 2170.492 | Manual | 2/23/2004 10:29: |

8562

Calibration formula: Y = 2510.857 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9392, Average error = 11.32%
Average CF = 2510.8570 with RSD = 14.81%

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13051

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.70 | 4.67 | 4.73 | 80 | 1 | 50 | 4388 | 10.6 |
| | | | | | | 2 | 100 | 8671 | |
| | | | | | | 3 | 200 | 16439 | |
| | | | | | | 4 | 500 | 37142 | |
| | | | | | | 5 | 1000 | 67958 | |
| | 2 | 5.21 | 5.18 | 5.24 | 140 | 1 | 50 | 8125 | 14.2 |
| | | | | | | 2 | 100 | 15306 | |
| | | | | | | 3 | 200 | 28550 | |
| | | | | | | 4 | 500 | 63099 | |
| | | | | | | 5 | 1000 | 113509 | |
| | 3 | 5.50 | 5.47 | 5.53 | 40 | 1 | 50 | 2339 | 14.5 |
| | | | | | | 2 | 100 | 4438 | |
| | | | | | | 3 | 200 | 8327 | |
| | | | | | | 4 | 500 | 17996 | |
| | | | | | | 5 | 1000 | 32663 | |
| | 4 | 6.04 | 6.01 | 6.07 | 114 | 1 | 50 | 6589 | 11.7 |
| | | | | | | 2 | 100 | 12173 | |
| | | | | | | 3 | 200 | 23111 | |
| | | | | | | 4 | 500 | 52545 | |
| | | | | | | 5 | 1000 | 97944 | |
| | 5 | 6.13 | 6.10 | 6.16 | 72 | 1 | 50 | 3995 | 7.7 |
| | | | | | | 2 | 100 | 7324 | |
| | | | | | | 3 | 200 | 14403 | |
| | | | | | | 4 | 500 | 34167 | |
| | | | | | | 5 | 1000 | 65289 | |
| | 6 | 6.59 | 6.56 | 6.62 | 108 | 1 | 50 | 6320 | 12.6 |
| | | | | | | 2 | 100 | 11381 | |
| | | | | | | 3 | 200 | 21670 | |
| | | | | | | 4 | 500 | 49534 | |
| | | | | | | 5 | 1000 | 91033 | |
| Aroclor-1221 | 1 | 4.42 | 4.39 | 4.45 | 51 | 1 | 200 | 10297 | |
| | 2 | 4.64 | 4.61 | 4.67 | 27 | 1 | 200 | 5481 | |
| | 3 | 4.70 | 4.67 | 4.73 | 117 | 1 | 200 | 23341 | |
| Aroclor-1232 | 1 | 4.70 | 4.67 | 4.73 | 91 | 1 | 200 | 18167 | |
| | 2 | 5.21 | 5.18 | 5.24 | 64 | 1 | 200 | 12876 | |
| | 3 | 5.50 | 5.47 | 5.53 | 19 | 1 | 200 | 3796 | |
| | 4 | 6.04 | 6.01 | 6.07 | 54 | 1 | 200 | 10845 | |
| | 5 | 6.12 | 6.09 | 6.15 | 33 | 1 | 200 | 6657 | |
| | 6 | 6.59 | 6.56 | 6.62 | 48 | 1 | 200 | 9539 | |

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13051

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.70 | 4.67 | 4.73 | 75 | 1 | 200 | 15089 | |
| | 2 | 5.21 | 5.18 | 5.24 | 125 | 1 | 200 | 25020 | |
| | 3 | 5.50 | 5.47 | 5.53 | 35 | 1 | 200 | 6910 | |
| | 4 | 6.04 | 6.01 | 6.07 | 100 | 1 | 200 | 20052 | |
| | 5 | 6.13 | 6.10 | 6.16 | 61 | 1 | 200 | 12274 | |
| | 6 | 6.59 | 6.56 | 6.62 | 96 | 1 | 200 | 19183 | |
| Aroclor-1248 | 1 | 5.20 | 5.17 | 5.23 | 61 | 1 | 200 | 12107 | |
| | 2 | 5.85 | 5.82 | 5.88 | 39 | 1 | 200 | 7893 | |
| | 3 | 6.32 | 6.29 | 6.35 | 120 | 1 | 200 | 24079 | |
| | 4 | 6.59 | 6.56 | 6.62 | 144 | 1 | 200 | 28758 | |
| | 5 | 7.19 | 7.16 | 7.22 | 143 | 1 | 200 | 28533 | |
| | 6 | 7.97 | 7.94 | 8.00 | 75 | 1 | 200 | 15009 | |
| Aroclor-1254 | 1 | 6.29 | 6.26 | 6.32 | 90 | 1 | 250 | 22592 | |
| | 2 | 7.44 | 7.41 | 7.47 | 191 | 1 | 250 | 47747 | |
| | 3 | 7.97 | 7.94 | 8.00 | 212 | 1 | 250 | 52909 | |
| | 4 | 8.33 | 8.30 | 8.36 | 143 | 1 | 250 | 35695 | |
| | 5 | 8.57 | 8.54 | 8.60 | 109 | 1 | 250 | 27358 | |
| | 6 | 8.93 | 8.90 | 8.96 | 165 | 1 | 250 | 41324 | |

8554

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13051

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 7.44 | 7.41 | 7.47 | 81 | 1 | 50 | 4516 | 11.1 |
| | | | | | | 2 | 100 | 8861 | |
| | | | | | | 3 | 200 | 16714 | |
| | | | | | | 4 | 500 | 37649 | |
| | | | | | | 5 | 1000 | 68941 | |
| | 2 | 8.20 | 8.17 | 8.23 | 179 | 1 | 50 | 10936 | 15.9 |
| | | | | | | 2 | 100 | 19207 | |
| | | | | | | 3 | 200 | 35490 | |
| | | | | | | 4 | 500 | 79600 | |
| | | | | | | 5 | 1000 | 146251 | |
| | 3 | 8.92 | 8.89 | 8.95 | 222 | 1 | 50 | 13588 | 14.5 |
| | | | | | | 2 | 100 | 23312 | |
| | | | | | | 3 | 200 | 43309 | |
| | | | | | | 4 | 500 | 100285 | |
| | | | | | | 5 | 1000 | 189064 | |
| | 4 | 9.39 | 9.36 | 9.42 | 132 | 1 | 50 | 7858 | 12.8 |
| | | | | | | 2 | 100 | 13900 | |
| | | | | | | 3 | 200 | 26272 | |
| | | | | | | 4 | 500 | 60604 | |
| | | | | | | 5 | 1000 | 113419 | |
| | 5 | 9.78 | 9.75 | 9.81 | 303 | 1 | 50 | 17925 | 12.3 |
| | | | | | | 2 | 100 | 31658 | |
| | | | | | | 3 | 200 | 59518 | |
| | | | | | | 4 | 500 | 138614 | |
| | | | | | | 5 | 1000 | 263660 | |
| | 6 | 10.94 | 10.91 | 10.97 | 92 | 1 | 50 | 5336 | 10.2 |
| | | | | | | 2 | 100 | 9440 | |
| | | | | | | 3 | 200 | 18134 | |
| | | | | | | 4 | 500 | 43185 | |
| | | | | | | 5 | 1000 | 82001 | |
| Chlordane (Technical) | 1 | 6.02 | 5.99 | 6.05 | 161 | 1 | 200.8 | 32342 | |
| | 2 | 6.13 | 6.10 | 6.16 | 214 | 1 | 200.8 | 43035 | |
| | 3 | 6.74 | 6.71 | 6.77 | 218 | 1 | 200.8 | 43765 | |
| | 4 | 7.55 | 7.52 | 7.58 | 427 | 1 | 200.8 | 85730 | |
| | 5 | 7.72 | 7.69 | 7.75 | 527 | 1 | 200.8 | 105826 | |
| | 6 | 8.73 | 8.70 | 8.76 | 150 | 1 | 200.8 | 30067 | |

8565

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13051

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.59 | 8.56 | 8.62 | 60 | 1 | 500 | 30219 | |
| | 2 | 8.97 | 8.94 | 9.00 | 55 | 1 | 500 | 27702 | |
| | 3 | 9.25 | 9.22 | 9.28 | 58 | 1 | 500 | 29080 | |
| | 4 | 9.34 | 9.31 | 9.37 | 65 | 1 | 500 | 32540 | |
| | 5 | 9.81 | 9.78 | 9.84 | 53 | 1 | 500 | 26743 | |
| | 6 | 10.27 | 10.24 | 10.30 | 61 | 1 | 500 | 30276 | |

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.91 | 4.88 | 4.94 | 53 | 1 | 50 | 2990 | 9.5 |
| | | | | | | 2 | 100 | 5430 | |
| | | | | | | 3 | 200 | 10526 | |
| | | | | | | 4 | 500 | 24708 | |
| | | | | | | 5 | 1000 | 46733 | |
| | 2 | 5.47 | 5.44 | 5.50 | 89 | 1 | 50 | 5098 | 11.8 |
| | | | | | | 2 | 100 | 9444 | |
| | | | | | | 3 | 200 | 17958 | |
| | | | | | | 4 | 500 | 40935 | |
| | | | | | | 5 | 1000 | 75311 | |
| | 3 | 6.09 | 6.06 | 6.12 | 141 | 1 | 50 | 7762 | 6.2 |
| | | | | | | 2 | 100 | 14286 | |
| | | | | | | 3 | 200 | 27966 | |
| | | | | | | 4 | 500 | 68349 | |
| | | | | | | 5 | 1000 | 132100 | |
| | 4 | 6.27 | 6.24 | 6.30 | 78 | 1 | 50 | 4331 | 7.5 |
| | | | | | | 2 | 100 | 7972 | |
| | | | | | | 3 | 200 | 15381 | |
| | | | | | | 4 | 500 | 37219 | |
| | | | | | | 5 | 1000 | 71407 | |
| | 5 | 6.53 | 6.50 | 6.56 | 45 | 1 | 50 | 2606 | 9.6 |
| | | | | | | 2 | 100 | 4636 | |
| | | | | | | 3 | 200 | 8991 | |
| | | | | | | 4 | 500 | 21285 | |
| | | | | | | 5 | 1000 | 40703 | |
| | 6 | 6.89 | 6.86 | 6.92 | 59 | 1 | 50 | 3361 | 7.9 |
| | | | | | | 2 | 100 | 5928 | |
| | | | | | | 3 | 200 | 11653 | |
| | | | | | | 4 | 500 | 28311 | |
| | | | | | | 5 | 1000 | 55238 | |
| Aroclor-1221 | 1 | 4.62 | 4.59 | 4.65 | 31 | 1 | 200 | 6269 | |
| | 2 | 4.82 | 4.79 | 4.85 | 22 | 1 | 200 | 4386 | |
| | 3 | 4.90 | 4.87 | 4.93 | 72 | 1 | 200 | 14421 | |
| Aroclor-1232 | 1 | 4.90 | 4.87 | 4.93 | 56 | 1 | 200 | 11289 | |
| | 2 | 5.47 | 5.44 | 5.50 | 39 | 1 | 200 | 7837 | |
| | 3 | 6.09 | 6.06 | 6.12 | 61 | 1 | 200 | 12144 | |
| | 4 | 6.27 | 6.24 | 6.30 | 34 | 1 | 200 | 6874 | |
| | 5 | 6.53 | 6.50 | 6.56 | 18 | 1 | 200 | 3574 | |
| | 6 | 6.89 | 6.86 | 6.92 | 25 | 1 | 200 | 4906 | |

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# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13051B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 2/20/04 2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.90 | 4.87 | 4.93 | 48 | 1 | 200 | 9578 | |
| | 2 | 5.47 | 5.44 | 5.50 | 78 | 1 | 200 | 15622 | |
| | 3 | 6.09 | 6.06 | 6.12 | 119 | 1 | 200 | 23756 | |
| | 4 | 6.27 | 6.24 | 6.30 | 66 | 1 | 200 | 13166 | |
| | 5 | 6.53 | 6.50 | 6.56 | 38 | 1 | 200 | 7534 | |
| | 6 | 6.89 | 6.86 | 6.92 | 51 | 1 | 200 | 10153 | |
| Aroclor-1248 | 1 | 5.47 | 5.44 | 5.50 | 38 | 1 | 200 | 7652 | |
| | 2 | 6.53 | 6.50 | 6.56 | 64 | 1 | 200 | 12776 | |
| | 3 | 6.89 | 6.86 | 6.92 | 79 | 1 | 200 | 15784 | |
| | 4 | 7.45 | 7.42 | 7.48 | 70 | 1 | 200 | 14082 | |
| | 5 | 7.76 | 7.73 | 7.79 | 70 | 1 | 200 | 13985 | |
| | 6 | 8.29 | 8.26 | 8.32 | 42 | 1 | 200 | 8349 | |
| Aroclor-1254 | 1 | 6.53 | 6.50 | 6.56 | 53 | 1 | 250 | 13176 | |
| | 2 | 7.44 | 7.41 | 7.47 | 84 | 1 | 250 | 20947 | |
| | 3 | 8.29 | 8.26 | 8.32 | 127 | 1 | 250 | 31627 | |
| | 4 | 8.58 | 8.55 | 8.61 | 75 | 1 | 250 | 18685 | |
| | 5 | 9.02 | 8.99 | 9.05 | 54 | 1 | 250 | 13464 | |
| | 6 | 9.27 | 9.24 | 9.30 | 96 | 1 | 250 | 24088 | |

9568

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.54 | 8.51 | 8.57 | 116 | 1 | 50 | 6187 | 6.7 |
| | | | | | | 2 | 100 | 12355 | |
| | | | | | | 3 | 200 | 23553 | |
| | | | | | | 4 | 500 | 55688 | |
| | | | | | | 5 | 1000 | 105828 | |
| | 2 | 8.80 | 8.77 | 8.83 | 133 | 1 | 50 | 8273 | 14.5 |
| | | | | | | 2 | 100 | 13268 | |
| | | | | | | 3 | 200 | 25218 | |
| | | | | | | 4 | 500 | 60535 | |
| | | | | | | 5 | 1000 | 117467 | |
| | 3 | 9.01 | 8.98 | 9.04 | 92 | 1 | 50 | 5467 | 10.4 |
| | | | | | | 2 | 100 | 8984 | |
| | | | | | | 3 | 200 | 17601 | |
| | | | | | | 4 | 500 | 43661 | |
| | | | | | | 5 | 1000 | 87024 | |
| | 4 | 9.26 | 9.23 | 9.29 | 127 | 1 | 50 | 7714 | 12.3 |
| | | | | | | 2 | 100 | 12655 | |
| | | | | | | 3 | 200 | 24194 | |
| | | | | | | 4 | 500 | 59172 | |
| | | | | | | 5 | 1000 | 116014 | |
| | 5 | 9.76 | 9.73 | 9.79 | 99 | 1 | 50 | 5772 | 10.2 |
| | | | | | | 2 | 100 | 9924 | |
| | | | | | | 3 | 200 | 19183 | |
| | | | | | | 4 | 500 | 46269 | |
| | | | | | | 5 | 1000 | 89749 | |
| | 6 | 10.07 | 10.04 | 10.10 | 197 | 1 | 50 | 12054 | 12.9 |
| | | | | | | 2 | 100 | 19625 | |
| | | | | | | 3 | 200 | 37244 | |
| | | | | | | 4 | 500 | 90927 | |
| | | | | | | 5 | 1000 | 180030 | |
| Chlordane (Technical) | 1 | 6.02 | 5.99 | 6.05 | 91 | 1 | 200.8 | 18357 | |
| | 2 | 6.23 | 6.20 | 6.26 | 120 | 1 | 200.8 | 24067 | |
| | 3 | 6.88 | 6.85 | 6.91 | 133 | 1 | 200.8 | 26681 | |
| | 4 | 7.70 | 7.67 | 7.73 | 298 | 1 | 200.8 | 59914 | |
| | 5 | 7.82 | 7.79 | 7.85 | 232 | 1 | 200.8 | 46626 | |
| | 6 | 7.89 | 7.86 | 7.92 | 259 | 1 | 200.8 | 51910 | |

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# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13051B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/20/04  2/20/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.30 | 8.27 | 8.33 | 22 | 1 | 500 | 11125 | |
| | 2 | 9.10 | 9.07 | 9.13 | 54 | 1 | 500 | 27079 | |
| | 3 | 9.43 | 9.40 | 9.46 | 36 | 1 | 500 | 17800 | |
| | 4 | 10.10 | 10.07 | 10.13 | 47 | 1 | 500 | 23400 | |
| | 5 | 10.61 | 10.58 | 10.64 | 25 | 1 | 500 | 12700 | |
| | 6 | 10.84 | 10.81 | 10.87 | 15 | 1 | 500 | 7541 | |

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# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/20/04

Lab File ID: 1C13051.16R  Time Analyzed: 12:51

Lab Standard ID: ICMAXAA  Initial Calibration: 1C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.17 | 4.14 | 4.20 | 38.08 | 38.48 | -1.0 |
| alpha-BHC | 5.00 | 4.97 | 5.03 | 9.57 | 10.00 | -4.3 |
| gamma-BHC (Lindane) | 5.46 | 5.43 | 5.49 | 10.10 | 10.00 | 1.0 |
| beta-BHC | 5.58 | 5.55 | 5.61 | 9.85 | 10.00 | -1.5 |
| delta-BHC | 5.84 | 5.81 | 5.87 | 10.01 | 10.00 | 0.1 |
| Heptachlor | 6.13 | 6.10 | 6.16 | 9.79 | 10.00 | -2.1 |
| Aldrin | 6.55 | 6.52 | 6.58 | 10.10 | 10.00 | 1.0 |
| Heptachlor epoxide | 7.38 | 7.35 | 7.41 | 9.67 | 10.00 | -3.3 |
| gamma-Chlordane | 7.55 | 7.52 | 7.58 | 9.99 | 10.00 | -0.1 |
| alpha-Chlordane | 7.72 | 7.70 | 7.76 | 9.97 | 10.00 | -0.3 |
| 4,4'-DDE | 7.81 | 7.78 | 7.84 | 20.48 | 20.00 | 2.4 |
| Endosulfan I | 7.91 | 7.88 | 7.94 | 10.10 | 10.00 | 1.0 |
| Dieldrin | 8.23 | 8.20 | 8.26 | 19.85 | 20.00 | -0.7 |
| Endrin | 8.54 | 8.51 | 8.57 | 19.69 | 20.00 | -1.5 |
| 4,4'-DDD | 8.60 | 8.57 | 8.63 | 19.57 | 20.00 | -2.1 |
| Endosulfan II | 8.83 | 8.80 | 8.86 | 19.69 | 20.00 | -1.5 |
| 4,4'-DDT | 8.96 | 8.93 | 8.99 | 19.70 | 20.00 | -1.5 |
| Endrin aldehyde | 9.37 | 9.35 | 9.41 | 22.08 | 20.00 | 10.4 |
| Methoxychlor | 9.57 | 9.54 | 9.60 | 95.02 | 100.00 | -5.0 |
| Endosulfan sulfate | 9.94 | 9.91 | 9.97 | 19.74 | 20.00 | -1.3 |
| Endrin ketone | 10.31 | 10.28 | 10.34 | 20.16 | 20.00 | 0.8 |
| Decachlorobiphenyl | 11.62 | 11.59 | 11.65 | 36.40 | 38.96 | -6.6 |
| | | | | | Average of %D: | 2.3 |

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FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/20/04

Lab File ID: 1C13051B.16R  Time Analyzed: 12:51

Lab Standard ID: ICMAXAA  Initial Calibration: 1C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.21 | 4.18 | 4.24 | 38.74 | 38.48 | 0.7 |
| alpha-BHC | 5.10 | 5.07 | 5.13 | 9.36 | 10.00 | -6.4 |
| gamma-BHC (Lindane) | 5.61 | 5.58 | 5.64 | 10.06 | 10.00 | 0.6 |
| beta-BHC | 5.74 | 5.71 | 5.77 | 9.83 | 10.00 | -1.7 |
| delta-BHC | 6.15 | 6.12 | 6.18 | 9.63 | 10.00 | -3.7 |
| Heptachlor | 6.23 | 6.20 | 6.26 | 9.81 | 10.00 | -1.9 |
| Aldrin | 6.68 | 6.65 | 6.71 | 10.20 | 10.00 | 2.0 |
| Heptachlor epoxide | 7.45 | 7.42 | 7.48 | 9.79 | 10.00 | -2.1 |
| gamma-Chlordane | 7.70 | 7.67 | 7.73 | 9.95 | 10.00 | -0.5 |
| alpha-Chlordane | 7.89 | 7.86 | 7.92 | 9.72 | 10.00 | -2.8 |
| Endosulfan I | 7.97 | 7.94 | 8.00 | 9.59 | 10.00 | -4.1 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 19.65 | 20.00 | -1.8 |
| Dieldrin | 8.33 | 8.30 | 8.36 | 19.66 | 20.00 | -1.7 |
| Endrin | 8.73 | 8.70 | 8.76 | 19.88 | 20.00 | -0.6 |
| 4,4'-DDD | 8.86 | 8.83 | 8.89 | 19.41 | 20.00 | -3.0 |
| Endosulfan II | 9.00 | 8.97 | 9.03 | 19.85 | 20.00 | -0.8 |
| 4,4'-DDT | 9.26 | 9.23 | 9.29 | 19.77 | 20.00 | -1.1 |
| Endrin aldehyde | 9.43 | 9.40 | 9.46 | 21.85 | 20.00 | 9.2 |
| Endosulfan sulfate | 9.78 | 9.76 | 9.82 | 19.77 | 20.00 | -1.1 |
| Methoxychlor | 10.13 | 10.10 | 10.16 | 96.36 | 100.00 | -3.6 |
| Endrin ketone | 10.48 | 10.43 | 10.49 | 19.53 | 20.00 | -2.4 |
| Decachlorobiphenyl | 12.23 | 12.20 | 12.26 | 36.79 | 38.96 | -5.6 |
| | | | | | Average of %D: | 2.6 |

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# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A

Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)

Date Analyzed: 02/25/04

Lab File ID: 2C13051.04R

Time Analyzed: 11:48

Lab Standard ID: PEMIR

Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.17 | 4.14 | 4.20 | 19.93 | 20.10 | -0.9 |
| alpha-BHC | 4.99 | 4.97 | 5.03 | 10.23 | 10.00 | 2.3 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 9.99 | 10.00 | -0.1 |
| beta-BHC | 5.58 | 5.55 | 5.61 | 9.88 | 10.00 | -1.2 |
| 4,4'-DDE | 7.81 | 7.78 | 7.84 | 0.60 | | |
| Endrin | 8.53 | 8.51 | 8.57 | 48.44 | 50.10 | -3.3 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 94.77 | 100.20 | -5.4 |
| Endrin aldehyde | 9.37 | 9.35 | 9.41 | 0.89 | | |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 207.21 | 250.50 | -17.3 |
| Endrin ketone | 10.30 | 10.28 | 10.34 | 0.80 | | |
| Decachlorobiphenyl | 11.61 | 11.59 | 11.65 | 20.10 | 20.00 | 0.5 |

4'4-DDT % breakdown:0.7  Endrin % breakdown: 3  Combined % breakdown:3.7

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# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B

Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)

Date Analyzed: 02/25/04

Lab File ID: 2C13051B.04R

Time Analyzed: 11:48

Lab Standard ID: PEMIR

Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 19.59 | 20.10 | -2.5 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 9.40 | 10.00 | -6.0 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 10.03 | 10.00 | 0.3 |
| beta-BHC | 5.73 | 5.71 | 5.77 | 9.78 | 10.00 | -2.2 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 0.86 | | |
| Endrin | 8.71 | 8.70 | 8.76 | 53.62 | 50.10 | 7.0 |
| 4,4'-DDD | 8.86 | 8.83 | 8.89 | 0.58 | | |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 110.24 | 100.20 | 10.0 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 1.09 | | |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 219.57 | 250.50 | -12.3 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 0.97 | | |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 20.61 | 20.00 | 3.0 |

4'4-DDT % breakdown: 1.3  Endrin % breakdown: 3.7  Combined % breakdown: 5

8574

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051.05R  Time Analyzed: 12:09

Lab Standard ID: MIXA3LS  Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 38.19 | 38.48 | -0.8 |
| alpha-BHC | 4.99 | 4.97 | 5.03 | 10.09 | 10.00 | 0.9 |
| gamma-BHC (Lindane) | 5.45 | 5.43 | 5.49 | 10.08 | 10.00 | 0.8 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.82 | 10.00 | -1.8 |
| delta-BHC | 5.83 | 5.81 | 5.87 | 9.88 | 10.00 | -1.2 |
| Heptachlor | 6.12 | 6.10 | 6.16 | 9.95 | 10.00 | -0.5 |
| Aldrin | 6.54 | 6.52 | 6.58 | 10.00 | 10.00 | 0 |
| Heptachlor epoxide | 7.37 | 7.35 | 7.41 | 9.81 | 10.00 | -1.9 |
| gamma-Chlordane | 7.54 | 7.52 | 7.58 | 9.91 | 10.00 | -0.9 |
| alpha-Chlordane | 7.71 | 7.70 | 7.76 | 9.77 | 10.00 | -2.3 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 19.01 | 20.00 | -4.9 |
| Endosulfan I | 7.90 | 7.88 | 7.94 | 10.08 | 10.00 | 0.8 |
| Dieldrin | 8.22 | 8.20 | 8.26 | 19.99 | 20.00 | -0.1 |
| Endrin | 8.52 | 8.51 | 8.57 | 19.33 | 20.00 | -3.4 |
| Endosulfan II | 8.82 | 8.80 | 8.86 | 19.45 | 20.00 | -2.7 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 18.35 | 20.00 | -8.3 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 19.22 | 20.00 | -3.9 |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 87.22 | 100.00 | -12.8 |
| Endosulfan sulfate | 9.93 | 9.91 | 9.97 | 18.71 | 20.00 | -6.5 |
| Endrin ketone | 10.30 | 10.28 | 10.34 | 19.75 | 20.00 | -1.3 |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 36.35 | 38.96 | -6.7 |

4-4-DDD  8.59  17.66  Average of %D: ~~3.0~~ (3)  -11.7  3.4

Bayer US, 2.26.04

8575



FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H6722B
Init. Calib Date(s): 02/20/04 02/20/04
GC Column (2) : RTXCLPII ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2C13051B.05R
Time Analyzed: 12:09
Lab Standard ID: MIXA3LS
Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 38.92 | 38.48 | 1.1 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 9.07 | 10.00 | -9.3 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 10.11 | 10.00 | 1.1 |
| beta-BHC | 5.73 | 5.71 | 5.77 | 9.69 | 10.00 | -3.1 |
| delta-BHC | 6.14 | 6.12 | 6.18 | 9.39 | 10.00 | -6.1 |
| Heptachlor | 6.22 | 6.20 | 6.26 | 10.48 | 10.00 | 4.8 |
| Aldrin | 6.66 | 6.65 | 6.71 | 10.27 | 10.00 | 2.7 |
| Heptachlor epoxide | 7.44 | 7.42 | 7.48 | 10.26 | 10.00 | 2.6 |
| gamma-Chlordane | 7.69 | 7.67 | 7.73 | 10.06 | 10.00 | 0.6 |
| alpha-Chlordane | 7.88 | 7.86 | 7.92 | 9.86 | 10.00 | -1.4 |
| Endosulfan I | 7.96 | 7.94 | 8.00 | 9.72 | 10.00 | -2.8 |
| 4,4'-DDE | 8.09 | 8.08 | 8.14 | 16.06 | 20.00 | -19.7 |
| Dieldrin | 8.31 | 8.30 | 8.36 | 20.11 | 20.00 | 0.6 |
| Endrin | 8.71 | 8.70 | 8.76 | 19.59 | 20.00 | -2.1 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 14.98 | 20.00 | -25.1 |
| Endosulfan II | 8.99 | 8.97 | 9.03 | 19.54 | 20.00 | -2.3 |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 17.82 | 20.00 | -10.9 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 18.78 | 20.00 | -6.1 |
| Endosulfan sulfate | 9.77 | 9.76 | 9.82 | 18.80 | 20.00 | -6.0 |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 85.33 | 100.00 | -14.7 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 19.25 | 20.00 | -3.7 |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 37.27 | 38.96 | -4.3 |
| | | | | | Average of %D: | 6.0 |

8576

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H6722A
Init. Calib Date(s): 02/20/04 02/20/04
GC Column (1) : RTX-CLP ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2C13051.27R
Time Analyzed: 19:38
Lab Standard ID: PEMIS
Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 19.62 | 20.10 | -2.4 |
| alpha-BHC | 4.98 | 4.97 | 5.03 | 10.07 | 10.00 | 0.7 |
| gamma-BHC (Lindane) | 5.44 | 5.43 | 5.49 | 9.80 | 10.00 | -2.0 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.61 | 10.00 | -3.9 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 0.59 | | |
| Endrin | 8.52 | 8.51 | 8.57 | 46.70 | 50.10 | -6.8 |
| 4,4'-DDT | 8.94 | 8.93 | 8.99 | 89.33 | 100.20 | -10.8 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 1.49 | | |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 188.15 | 250.50 | -24.9 |
| Endrin ketone | 10.29 | 10.28 | 10.34 | 1.34 | | |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 19.90 | 20.00 | -0.5 |

4'4-DDT % breakdown: 0.8 Endrin % breakdown: 5.1 Combined % breakdown: 5.9

3577

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051B.27R  Time Analyzed: 19:38

Lab Standard ID: PEMIS  Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.20 | 4.18 | 4.24 | 18.95 | 20.10 | -5.7 |
| alpha-BHC | 5.08 | 5.07 | 5.13 | 7.86 | 10.00 | -21.4 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 9.75 | 10.00 | -2.5 |
| beta-BHC | 5.72 | 5.71 | 5.77 | 9.25 | 10.00 | -7.5 |
| 4,4'-DDE | 8.10 | 8.08 | 8.14 | 0.70 | | |
| Endrin | 8.71 | 8.70 | 8.76 | 50.01 | 50.10 | -0.2 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 0.63 | | |
| 4,4'-DDT | 9.24 | 9.23 | 9.29 | 94.86 | 100.20 | -5.3 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 1.59 | | |
| Methoxychlor | 10.11 | 10.10 | 10.16 | 192.62 | 250.50 | -23.1 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 1.46 | | |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 17.48 | 20.00 | -12.6 |

4'4-DDT % breakdown: 1.4  Endrin % breakdown: 5.7  Combined % breakdown: 7.1

9578



FORM VII-1

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A

Init. Calib Date(s): 02/20/04  02/20/04

GC Column (1) : RTX-CLP  ID: .32 (mm)

Date Analyzed: 02/25/04

Lab File ID: 2C13051.28R

Time Analyzed: 19:58

Lab Standard ID: MIXA3LN

Initial Calibration: 2C13051

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.16 | 4.14 | 4.20 | 38.28 | 38.48 | -0.5 |
| alpha-BHC | 4.98 | 4.97 | 5.03 | 10.12 | 10.00 | 1.2 |
| gamma-BHC (Lindane) | 5.44 | 5.43 | 5.49 | 10.06 | 10.00 | 0.6 |
| beta-BHC | 5.57 | 5.55 | 5.61 | 9.70 | 10.00 | -3.0 |
| delta-BHC | 5.82 | 5.81 | 5.87 | 9.67 | 10.00 | -3.3 |
| Heptachlor | 6.12 | 6.10 | 6.16 | 9.92 | 10.00 | -0.8 |
| Aldrin | 6.54 | 6.52 | 6.58 | 10.02 | 10.00 | 0.2 |
| gamma-Chlordane | 7.53 | 7.52 | 7.58 | 9.85 | 10.00 | -1.5 |
| alpha-Chlordane | 7.71 | 7.70 | 7.76 | 9.73 | 10.00 | -2.7 |
| 4,4'-DDE | 7.80 | 7.78 | 7.84 | 18.03 | 20.00 | -9.8 |
| Endosulfan I | 7.90 | 7.88 | 7.94 | 10.15 | 10.00 | 1.5 |
| Dieldrin | 8.21 | 8.20 | 8.26 | 19.87 | 20.00 | -0.6 |
| Endrin | 8.52 | 8.51 | 8.57 | 18.88 | 20.00 | -5.6 |
| Endosulfan II | 8.82 | 8.80 | 8.86 | 19.14 | 20.00 | -4.3 |
| 4,4'-DDT | 8.95 | 8.93 | 8.99 | 17.05 | 20.00 | -14.8 |
| Endrin aldehyde | 9.36 | 9.35 | 9.41 | 18.94 | 20.00 | -5.3 |
| Methoxychlor | 9.56 | 9.54 | 9.60 | 76.28 | 100.00 | -23.7 |
| Endosulfan sulfate | 9.92 | 9.91 | 9.97 | 18.15 | 20.00 | -9.2 |
| Endrin ketone | 10.29 | 10.28 | 10.34 | 19.29 | 20.00 | -3.5 |
| Decachlorobiphenyl | 11.60 | 11.59 | 11.65 | 35.31 | 38.96 | -9.4 |

Average of %D: ~~5.1~~ ③

Chept epox 7.37 9.80 10.0 -2.0

4,4-DDD 8.58 16.10 20.0 -19.5

→ 5.6

③ Ayers 2-26-04

9579



FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 02/20/04  02/20/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2C13051B.28R  Time Analyzed: 19:58

Lab Standard ID: MIXA3LN  Initial Calibration: 2C13051B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.19 | 4.18 | 4.24 | 38.71 | 38.48 | 0.6 |
| alpha-BHC | 5.09 | 5.07 | 5.13 | 8.08 | 10.00 | -19.2 |
| gamma-BHC (Lindane) | 5.60 | 5.58 | 5.64 | 9.97 | 10.00 | -0.3 |
| beta-BHC | 5.72 | 5.71 | 5.77 | 9.37 | 10.00 | -6.3 |
| delta-BHC | 6.13 | 6.12 | 6.18 | 8.85 | 10.00 | -11.5 |
| Heptachlor | 6.21 | 6.20 | 6.26 | 10.67 | 10.00 | 6.7 |
| Aldrin | 6.66 | 6.65 | 6.71 | 10.37 | 10.00 | 3.7 |
| Heptachlor epoxide | 7.43 | 7.42 | 7.48 | 10.16 | 10.00 | 1.6 |
| gamma-Chlordane | 7.68 | 7.67 | 7.73 | 9.90 | 10.00 | -1.0 |
| alpha-Chlordane | 7.87 | 7.86 | 7.92 | 9.76 | 10.00 | -2.4 |
| Endosulfan I | 7.95 | 7.94 | 8.00 | 9.55 | 10.00 | -4.5 |
| 4,4'-DDE | 8.09 | 8.08 | 8.14 | 12.95 | 20.00 | -35.2 |
| Dieldrin | 8.31 | 8.30 | 8.36 | 19.83 | 20.00 | -0.8 |
| Endrin | 8.71 | 8.70 | 8.76 | 18.60 | 20.00 | -7.0 |
| 4,4'-DDD | 8.85 | 8.83 | 8.89 | 10.54 | 20.00 | -47.3 |
| Endosulfan II | 8.99 | 8.97 | 9.03 | 18.02 | 20.00 | -9.9 |
| 4,4'-DDT | 9.25 | 9.23 | 9.29 | 14.68 | 20.00 | -26.6 |
| Endrin aldehyde | 9.42 | 9.40 | 9.46 | 17.56 | 20.00 | -12.2 |
| Endosulfan sulfate | 9.77 | 9.76 | 9.82 | 17.43 | 20.00 | -12.9 |
| Methoxychlor | 10.12 | 10.10 | 10.16 | 68.76 | 100.00 | -31.2 |
| Endrin ketone | 10.47 | 10.43 | 10.49 | 18.13 | 20.00 | -9.3 |
| Decachlorobiphenyl | 12.21 | 12.20 | 12.26 | 35.22 | 38.96 | -9.6 |
| | | | | | Average of %D: | 11.8 |

3533

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 02/20/2004 | 10:28:31 | 1C13051 | 4.17 | 11.62 |
| 002 | PEMAA | EVALX03C | 02/20/2004 | 10:48:56 | 1C13051 | 4.17 | 11.62 |
| 003 | MIXA1AA | MIXA103D | 02/20/2004 | 11:09:20 | 1C13051 | 4.18 | 11.62 |
| 004 | MIXA2AA | MIXA203E | 02/20/2004 | 11:29:46 | 1C13051 | 4.17 | 11.62 |
| 005 | MIXA3AA | MIXA303D | 02/20/2004 | 11:50:07 | 1C13051 | 4.17 | 11.62 |
| 006 | MIXA4AA | MIXA403E | 02/20/2004 | 12:10:44 | 1C13051 | 4.17 | 11.62 |
| 007 | MIXA5AA | MIXA503D | 02/20/2004 | 12:31:07 | 1C13051 | 4.17 | 11.62 |
| 008 | ICMAXAA | ICMAX03F | 02/20/2004 | 12:51:32 | 1C13051 | 4.17 | 11.62 |
| 009 | MIXE1AA | MIXE103C | 02/20/2004 | 13:11:54 | 1C13051 | 4.18 | 11.62 |
| 010 | MIXE2AA | MIXE203C | 02/20/2004 | 13:32:18 | 1C13051 | 4.17 | 11.62 |
| 011 | MIXE3AA | MIXE303D | 02/20/2004 | 13:52:38 | 1C13051 | 4.17 | 11.62 |
| 012 | MIXE4AA | MIXE403C | 02/20/2004 | 14:13:02 | 1C13051 | 4.17 | 11.61 |
| 013 | MIXE5AA | MIXE503C | 02/20/2004 | 14:33:25 | 1C13051 | 4.17 | 11.62 |
| 014 | TOXWXAA | TOXWX03B | 02/20/2004 | 14:54:03 | 1C13051 | 4.17 | 11.62 |
| 015 | CHLDXAA | CHLDX03B | 02/20/2004 | 15:14:24 | 1C13051 | 4.17 | 11.62 |
| 016 | AR161AA | AR1610424A | 02/20/2004 | 15:35:00 | 2C13051 | 4.17 | 11.62 |
| 017 | AR162AA | AR1620424A | 02/20/2004 | 15:55:21 | 1C13051 | 4.17 | 11.62 |
| 018 | AR163AA | AR1630424A | 02/20/2004 | 16:15:46 | 1C13051 | 4.17 | 11.62 |
| 019 | AR164AA | AR1640424A | 02/20/2004 | 16:36:24 | 1C13051 | 4.17 | 11.62 |
| 020 | AR165AA | AR1650424A | 02/20/2004 | 16:56:57 | 1C13051 | 4.17 | 11.62 |
| 021 | AR210AA | AR210424A | 02/20/2004 | 17:17:18 | 1C13051 | 4.17 | 11.62 |
| 022 | AR32XAA | AR32X03C | 02/20/2004 | 17:37:40 | 1C13051 | 4.17 | 11.62 |
| 023 | AR420AA | AR420424A | 02/20/2004 | 17:58:02 | 1C13051 | 4.17 | 11.62 |
| 024 | AR483AA | AR4830424A | 02/20/2004 | 18:18:26 | 1C13051 | 4.17 | 11.62 |
| 025 | AR543AA | AR5430424A | 02/20/2004 | 18:38:46 | 1C13051 | 4.17 | 11.62 |
| 026 | MDLAXAA | MDLAX03D | 02/20/2004 | 18:59:07 | 1C13051 | 4.17 | |
| 027 | MDLEXAA | MDLEX03C | 02/20/2004 | 19:19:29 | 1C13051 | 4.17 | |
| 028 | MD16XAA | MD16X0424A | 02/20/2004 | 19:39:53 | 1C13051 | 4.17 | |
| 029 | MDTXXAA | MDTXX03B | 02/20/2004 | 20:00:15 | 1C13051 | 4.17 | |
| 030 | MDCHXAA | MDCHX03B | 02/20/2004 | 20:20:36 | 1C13051 | 4.17 | |
| 031 | IC16XAA | IC16X03B | 02/20/2004 | 20:40:56 | 1C13051 | 4.17 | 11.62 |

ICAL Dates

1C13051 02/20/2004 - 02/20/2004

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl
TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

| | |
|---|---|
| 4.17 | (4.14 - 4.20 Minutes) |
| 11.62 | (11.59 - 11.65 Minutes) |
| 4.17 | (4.14 - 4.20 Minutes) |
| 11.62 | (11.59 - 11.65 Minutes) |

9581

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 032 | PBLKSD | BLANKA | 02/20/2004 | 21:01:19 | 1C13051 | 4.17 | 11.61 |
| 033 | LCSQE | LCSA | 02/20/2004 | 21:21:42 | 1C13051 | 4.17 | 11.61 |
| 034 | LCSDIO | LCSDA | 02/20/2004 | 21:42:05 | 1C13051 | 4.17 | 11.61 |
| 035 | 69--1 | 4217521 | 02/20/2004 | 22:02:26 | 1C13051 | 4.17 | 11.61 |
| 036 | PEMIH | EVALX03C | 02/20/2004 | 22:22:49 | 1C13051 | 4.17 | 11.61 |
| 037 | MIXA3LD | MIXA303D | 02/20/2004 | 22:43:09 | 1C13051 | 4.17 | 11.61 |
| 038 | MIXE3NR | MIXE303D | 02/20/2004 | 23:03:34 | 1C13051 | 4.17 | 11.62 |
| 039 | AR163UL | AR1630424A | 02/20/2004 | 23:23:56 | 1C13051 | 4.17 | 11.62 |
| 040 | PBLKSP | BLANKA | 02/20/2004 | 23:44:19 | 2C13051 | 4.17 | 11.61 |
| 041 | LCSQS | LCSA | 02/21/2004 | 00:04:38 | 2C13051 | 4.17 | 11.61 |
| 042 | I1-NV | 4217215 | 02/21/2004 | 00:25:02 | 2C13051 | 4.17 | 11.61 |
| 043 | I1-NVMS | 4217215 | 02/21/2004 | 00:45:26 | 2C13051 | 4.17 | 11.61 |
| 044 | I1-NVMSD | 4217215 | 02/21/2004 | 01:05:51 | 2C13051 | 4.17 | 11.61 |
| 045 | BLA-2 | 4217866 | 02/21/2004 | 01:26:12 | 2C13051 | 4.17 | 11.61 |
| 046 | PBLKO9 | BLANKA | 02/21/2004 | 01:46:34 | 2C13051 | 4.17 | 11.61 |
| 047 | CF314 | 4213699 | 02/21/2004 | 02:07:09 | 2C13051 | 4.17 | 11.61 |
| 048 | C14L4 | 4213700 | 02/21/2004 | 02:27:35 | 2C13051 | 4.17 | 11.61 |
| 049 | AA | CONTROL | 02/21/2004 | 02:47:58 | 2C13051 | | |
| 050 | AA | SYRINGE | 02/21/2004 | 03:08:22 | 2C13051 | 4.16 | 11.60 |
| 051 | AA | SYRINGE FILTE | 02/21/2004 | 03:28:42 | 2C13051 | | 11.59 |
| 052 | PEMII | EVALX03C | 02/21/2004 | 03:49:07 | 2C13051 | 4.17 | 11.61 |
| 053 | MIXA3LE | MIXA303D | 02/21/2004 | 04:09:31 | 2C13051 | 4.17 | 11.61 |
| 054 | AR163UM | AR1630424A | 02/21/2004 | 04:29:57 | 2C13051 | 4.17 | 11.61 |
| 055 | PBLKSO | BLANKA | 02/21/2004 | 04:50:20 | 2C13051 | 4.17 | 11.61 |
| 056 | LCSQR | LCSA | 02/21/2004 | 05:10:43 | 2C13051 | 4.17 | 11.61 |
| 057 | LCSDIT | LCSDA | 02/21/2004 | 05:31:06 | 2C13051 | 4.17 | 11.61 |
| 058 | FITTE | 4218136 | 02/21/2004 | 05:51:47 | 2C13051 | 4.17 | 11.61 |
| 059 | WENC- | 4218137 | 02/21/2004 | 06:12:12 | 2C13051 | 4.17 | 11.61 |
| 060 | PEMIJ | EVALX03C | 02/21/2004 | 06:32:37 | 2C13051 | 4.17 | 11.61 |
| 061 | MIXA3LF | MIXA303D | 02/21/2004 | 06:52:59 | 2C13051 | 4.17 | 11.61 |
| 062 | AR163UN | AR1630424A | 02/21/2004 | 07:13:37 | 2C13051 | 4.17 | 11.61 |

| | ICAL Dates |
|---|---|
| 1C13051 | 02/20/2004 - 02/20/2004 |
| 2C13051 | 02/20/2004 - 02/20/2004 |

| | ICAL RT | QC Limits |
|---|---|---|
| TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |
| TCX = Tetrachloro-m-xylene | 4.17 | (4.14 - 4.20 Minutes) |
| DCB = Decachlorobiphenyl | 11.62 | (11.59 - 11.65 Minutes) |

8582

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 02/20/2004 | 10:28:31 | 1C13051B | 4.21 | 12.23 |
| 002 | PEMAA | EVALX03C | 02/20/2004 | 10:48:56 | 1C13051B | 4.21 | 12.23 |
| 003 | MIXA1AA | MIXA103D | 02/20/2004 | 11:09:20 | 1C13051B | 4.21 | 12.23 |
| 004 | MIXA2AA | MIXA203E | 02/20/2004 | 11:29:46 | 1C13051B | 4.21 | 12.23 |
| 005 | MIXA3AA | MIXA303D | 02/20/2004 | 11:50:07 | 1C13051B | 4.21 | 12.23 |
| 006 | MIXA4AA | MIXA403E | 02/20/2004 | 12:10:44 | 1C13051B | 4.21 | 12.23 |
| 007 | MIXA5AA | MIXA503D | 02/20/2004 | 12:31:07 | 1C13051B | 4.21 | 12.23 |
| 008 | ICMAXAA | ICMAX03F | 02/20/2004 | 12:51:32 | 1C13051B | 4.21 | 12.23 |
| 009 | MIXE1AA | MIXE103C | 02/20/2004 | 13:11:54 | 1C13051B | 4.21 | 12.23 |
| 010 | MIXE2AA | MIXE203C | 02/20/2004 | 13:32:18 | 1C13051B | 4.21 | 12.23 |
| 011 | MIXE3AA | MIXE303D | 02/20/2004 | 13:52:38 | 1C13051B | 4.21 | 12.23 |
| 012 | MIXE4AA | MIXE403C | 02/20/2004 | 14:13:02 | 1C13051B | 4.21 | 12.23 |
| 013 | MIXE5AA | MIXE503C | 02/20/2004 | 14:33:25 | 1C13051B | 4.21 | 12.23 |
| 014 | TOXWXAA | TOXWX03B | 02/20/2004 | 14:54:03 | 1C13051B | 4.21 | 12.23 |
| 015 | CHLDXAA | CHLDX03B | 02/20/2004 | 15:14:24 | 1C13051B | 4.21 | 12.23 |
| 016 | AR161AA | AR1610424A | 02/20/2004 | 15:35:00 | 2C13051B | 4.21 | 12.23 |
| 017 | AR162AA | AR1620424A | 02/20/2004 | 15:55:21 | 1C13051B | 4.21 | 12.23 |
| 018 | AR163AA | AR1630424A | 02/20/2004 | 16:15:46 | 1C13051B | 4.21 | 12.23 |
| 019 | AR164AA | AR1640424A | 02/20/2004 | 16:36:24 | 1C13051B | 4.21 | 12.23 |
| 020 | AR165AA | AR1650424A | 02/20/2004 | 16:56:57 | 1C13051B | 4.21 | 12.23 |
| 021 | AR210AA | AR210424A | 02/20/2004 | 17:17:18 | 1C13051B | 4.21 | 12.23 |
| 022 | AR32XAA | AR32X03C | 02/20/2004 | 17:37:40 | 1C13051B | 4.21 | 12.23 |
| 023 | AR420AA | AR420424A | 02/20/2004 | 17:58:02 | 1C13051B | 4.21 | 12.23 |
| 024 | AR483AA | AR4830424A | 02/20/2004 | 18:18:26 | 1C13051B | 4.21 | 12.23 |
| 025 | AR543AA | AR5430424A | 02/20/2004 | 18:38:46 | 1C13051B | 4.21 | 12.23 |
| 026 | MDLAXAA | MDLAX03D | 02/20/2004 | 18:59:07 | 1C13051B | 4.21 | |
| 027 | MDLEXAA | MDLEX03C | 02/20/2004 | 19:19:29 | 1C13051B | 4.21 | |
| 028 | MD16XAA | MD16X0424A | 02/20/2004 | 19:39:53 | 1C13051B | | |
| 029 | MDTXXAA | MDTXX03B | 02/20/2004 | 20:00:15 | 1C13051B | 4.20 | |
| 030 | MDCHXAA | MDCHX03B | 02/20/2004 | 20:20:36 | 1C13051B | 4.21 | |
| 031 | IC16XAA | IC16X03B | 02/20/2004 | 20:40:56 | 1C13051B | 4.21 | 12.23 |

ICAL Dates

1C13051B 02/20/2004 - 02/20/2004

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl
TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

| ICAL RT | QC Limits |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

9583

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 032 | PBLKSD | BLANKA | 02/20/2004 | 21:01:19 | 1C13051B | 4.21 | 12.22 |
| 033 | LCSQE | LCSA | 02/20/2004 | 21:21:42 | 1C13051B | 4.21 | 12.22 |
| 034 | LCSDIO | LCSDA | 02/20/2004 | 21:42:05 | 1C13051B | 4.21 | 12.22 |
| 035 | 69--1 | 4217521 | 02/20/2004 | 22:02:26 | 1C13051B | 4.21 | 12.22 |
| 036 | PEMIH | EVALX03C | 02/20/2004 | 22:22:49 | 1C13051B | 4.21 | 12.22 |
| 037 | MIXA3LD | MIXA303D | 02/20/2004 | 22:43:09 | 1C13051B | 4.21 | 12.22 |
| 038 | MIXE3NR | MIXE303D | 02/20/2004 | 23:03:34 | 1C13051B | 4.21 | 12.23 |
| 039 | AR163UL | AR1630424A | 02/20/2004 | 23:23:56 | 1C13051B | 4.21 | 12.23 |
| 040 | PBLKSP | BLANKA | 02/20/2004 | 23:44:19 | 2C13051B | 4.20 | 12.22 |
| 041 | LCSQS | LCSA | 02/21/2004 | 00:04:38 | 2C13051B | 4.20 | 12.22 |
| 042 | I1-NV | 4217215 | 02/21/2004 | 00:25:02 | 2C13051B | 4.20 | 12.22 |
| 043 | I1-NVMS | 4217215 | 02/21/2004 | 00:45:26 | 2C13051B | 4.21 | 12.22 |
| 044 | I1-NVMSD | 4217215 | 02/21/2004 | 01:05:51 | 2C13051B | 4.20 | 12.22 |
| 045 | BLA-2 | 4217866 | 02/21/2004 | 01:26:12 | 2C13051B | 4.21 | 12.22 |
| 046 | PBLKO9 | BLANKA | 02/21/2004 | 01:46:34 | 2C13051B | 4.20 | 12.22 |
| 047 | CF314 | 4213699 | 02/21/2004 | 02:07:09 | 2C13051B | 4.20 | 12.22 |
| 048 | C14L4 | 4213700 | 02/21/2004 | 02:27:35 | 2C13051B | 4.20 | 12.22 |
| 049 | AA | CONTROL | 02/21/2004 | 02:47:58 | 2C13051B | | |
| 050 | AA | SYRINGE | 02/21/2004 | 03:08:22 | 2C13051B | | |
| 051 | AA | SYRINGE FILTE | 02/21/2004 | 03:28:42 | 2C13051B | | |
| 052 | PEMII | EVALX03C | 02/21/2004 | 03:49:07 | 2C13051B | 4.20 | 12.22 |
| 053 | MIXA3LE | MIXA303D | 02/21/2004 | 04:09:31 | 2C13051B | 4.20 | 12.22 |
| 054 | AR163UM | AR1630424A | 02/21/2004 | 04:29:57 | 2C13051B | 4.20 | 12.22 |
| 055 | PBLKSO | BLANKA | 02/21/2004 | 04:50:20 | 2C13051B | 4.20 | 12.22 |
| 056 | LCSQR | LCSA | 02/21/2004 | 05:10:43 | 2C13051B | 4.20 | 12.22 |
| 057 | LCSDIT | LCSDA | 02/21/2004 | 05:31:06 | 2C13051B | 4.20 | 12.22 |
| 058 | FITTE | 4218136 | 02/21/2004 | 05:51:47 | 2C13051B | 4.20 | 12.22 |
| 059 | WENC- | 4218137 | 02/21/2004 | 06:12:12 | 2C13051B | 4.20 | 12.22 |
| 060 | PEMIJ | EVALX03C | 02/21/2004 | 06:32:37 | 2C13051B | 4.20 | 12.22 |
| 061 | MIXA3LF | MIXA303D | 02/21/2004 | 06:52:59 | 2C13051B | 4.20 | 12.22 |
| 062 | AR163UN | AR1630424A | 02/21/2004 | 07:13:37 | 2C13051B | 4.20 | 12.22 |

ICAL Dates

1C13051B 02/20/2004 - 02/20/2004

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl
TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

| ICAL RT | QC Limits |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMIR | EVALX03C | 02/25/2004 | 11:48:45 | 2C13051 | 4.17 | 11.61 |
| 002 | MIXA3LS | MIXA303D | 02/25/2004 | 12:09:08 | 2C13051 | 4.16 | 11.60 |
| 003 | AR163VI | AR1630424A | 02/25/2004 | 12:29:34 | 2C13051 | 4.17 | 11.61 |
| 004 | PBLKXO | BLANKA | 02/25/2004 | 12:49:56 | 2C13051 | 4.17 | 11.60 |
| 005 | LCSW0 | LCSA | 02/25/2004 | 13:10:18 | 2C13051 | 4.17 | 11.60 |
| 006 | LCSDKO | LCSDA | 02/25/2004 | 13:30:55 | 2C13051 | 4.17 | 11.60 |
| 007 | SUMP1 | 4217721 | 02/25/2004 | 13:51:35 | 2C13051 | 4.16 | 11.60 |
| 008 | SP274 | 4217722 | 02/25/2004 | 14:12:13 | 2C13051 | 4.18 | 11.60 |
| 009 | SP276 | 4217723 | 02/25/2004 | 14:32:36 | 2C13051 | 4.16 | 11.60 |
| 010 | SMP5A | 4217724 | 02/25/2004 | 14:52:57 | 2C13051 | 4.16 | 11.60 |
| 011 | PBLKXF | BLANKA | 02/25/2004 | 15:13:18 | 2C13051 | 4.16 | 11.60 |
| 012 | LCSVP | LCSA | 02/25/2004 | 15:33:41 | 2C13051 | 4.16 | 11.60 |
| 013 | LCSDKJ | LCSDA | 02/25/2004 | 15:54:06 | 2C13051 | 4.16 | 11.60 |
| 014 | MFTFB | 4221475 | 02/25/2004 | 16:14:27 | 2C13051 | 4.16 | 11.60 |
| 015 | PBLKXG | BLANKA | 02/25/2004 | 16:35:19 | 2C13051 | 4.16 | 11.60 |
| 016 | LCSVQ | LCSA | 02/25/2004 | 16:55:54 | 2C13051 | 4.16 | 11.60 |
| 017 | UN5NV | 4219006 | 02/25/2004 | 17:16:16 | 2C13051 | 4.16 | 11.60 |
| 018 | UN7NV | 4219022 | 02/25/2004 | 17:36:37 | 2C13051 | 4.16 | 11.60 |
| 019 | UN7NVMS | 4219022 | 02/25/2004 | 17:56:58 | 2C13051 | 4.16 | 11.60 |
| 020 | UN7NVMSD | 4219022 | 02/25/2004 | 18:17:17 | 2C13051 | 4.16 | 11.60 |
| 021 | TC407 | 4219669 | 02/25/2004 | 18:37:37 | 2C13051 | 4.16 | 11.60 |
| 022 | BLA20 | 4221331 | 02/25/2004 | 18:57:57 | 2C13051 | 4.16 | 11.60 |
| 023 | BLA44 | 4221332 | 02/25/2004 | 19:18:19 | 2C13051 | 4.16 | 11.60 |
| 024 | PEMIS | EVALX03C | 02/25/2004 | 19:38:39 | 2C13051 | 4.16 | 11.60 |
| 025 | MIXA3LN | MIXA303D | 02/25/2004 | 19:58:59 | 2C13051 | 4.16 | 11.60 |
| 026 | AR163VJ | AR1630424A | 02/25/2004 | 20:19:17 | 2C13051 | 4.16 | 11.60 |
| 027 | PBLKRC | BLANKA | 02/25/2004 | 20:39:38 | 2C13051 | 4.16 | 11.60 |
| 028 | LCSOX | LCSA | 02/25/2004 | 20:59:59 | 2C13051 | 4.16 | 11.60 |
| 029 | B1116 | 4217561 | 02/25/2004 | 21:20:19 | 2C13051 | 4.17 | 11.60 |
| 030 | B1116 | 4217561 | 02/25/2004 | 21:40:37 | 2C13051 | 4.17 | 11.60 |
| 031 | B1116MS | 4217561 | 02/25/2004 | 22:00:57 | 2C13051 | 4.17 | 11.60 |
| 032 | B1116MS | 4217561 | 02/25/2004 | 22:21:15 | 2C13051 | 4.17 | 11.60 |
| 033 | B1116MSD | 4217561 | 02/25/2004 | 22:41:37 | 2C13051 | 4.17 | 11.60 |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)

11.62 (11.59 - 11.65 Minutes)

8585

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | B1116MSD | 4217561 | 02/25/2004 | 23:02:12 | 2C13051 | 4.17 | 11.60 |
| 035 | B1216 | 4217562 | 02/25/2004 | 23:22:48 | 2C13051 | 4.16 | 11.60 |
| 036 | B1216 | 4217562 | 02/25/2004 | 23:43:22 | 2C13051 | 4.17 | 11.60 |
| 037 | B1316 | 4217563 | 02/26/2004 | 00:03:56 | 2C13051 | 4.17 | 11.60 |
| 038 | B1316 | 4217563 | 02/26/2004 | 00:24:16 | 2C13051 | 4.16 | 11.60 |
| 039 | B1416 | 4217564 | 02/26/2004 | 00:44:37 | 2C13051 | 4.16 | 11.60 |
| 040 | B1416 | 4217564 | 02/26/2004 | 01:05:10 | 2C13051 | 4.16 | 11.60 |
| 041 | B1516 | 4217565 | 02/26/2004 | 01:25:29 | 2C13051 | 4.16 | 11.59 |
| 042 | B1516 | 4217565 | 02/26/2004 | 01:45:46 | 2C13051 | 4.16 | 11.60 |
| 043 | AA | CONTROL | 02/26/2004 | 02:06:26 | 2C13051 | | 11.59 |
| 044 | AA | EXP1 | 02/26/2004 | 02:27:00 | 2C13051 | 4.19 | |
| 045 | AA | EXP2 | 02/26/2004 | 02:47:20 | 2C13051 | 4.19 | 11.60 |
| 046 | AA | EXP3 | 02/26/2004 | 03:07:51 | 2C13051 | | |
| 047 | PEMIT | EVALX03C | 02/26/2004 | 03:28:27 | 2C13051 | 4.16 | 11.60 |
| 048 | MIXA4NZ | MIXA403E | 02/26/2004 | 03:48:48 | 2C13051 | 4.16 | 11.59 |
| 049 | AR164XG | AR1640424A | 02/26/2004 | 04:09:09 | 2C13051 | 4.16 | 11.60 |
| 050 | PBLKVJ | BLANKA | 02/26/2004 | 04:29:44 | 2C13051 | 4.16 | 11.59 |
| 051 | LCSTI | LCSA | 02/26/2004 | 04:50:22 | 2C13051 | 4.16 | 11.59 |
| 052 | OM-3- | 4220751 | 02/26/2004 | 05:10:55 | 2C13051 | 4.16 | 11.59 |
| 053 | OM-3- | 4220751 | 02/26/2004 | 05:31:18 | 2C13051 | 4.16 | 11.59 |
| 054 | OM-3-MS | 4220751 | 02/26/2004 | 05:51:55 | 2C13051 | 4.16 | 11.59 |
| 055 | OM-3-MS | 4220751 | 02/26/2004 | 06:12:31 | 2C13051 | 4.16 | 11.59 |
| 056 | OM-3-MSD | 4220751 | 02/26/2004 | 06:33:06 | 2C13051 | 4.16 | 11.59 |
| 057 | OM-3-MSD | 4220751 | 02/26/2004 | 06:53:27 | 2C13051 | 4.16 | 11.59 |
| 058 | OM-1- | 4220750 | 02/26/2004 | 07:14:06 | 2C13051 | 4.16 | 11.59 |
| 059 | OM-1- | 4220750 | 02/26/2004 | 07:34:47 | 2C13051 | 4.16 | 11.59 |
| 060 | OM-4- | 4220752 | 02/26/2004 | 07:55:26 | 2C13051 | 4.16 | 11.59 |
| 061 | OM-6- | 4220753 | 02/26/2004 | 08:16:06 | 2C13051 | 4.16 | |
| 062 | OM-6- | 4220753 | 02/26/2004 | 08:36:44 | 2C13051 | 4.16 | 11.59 |
| 063 | CON-- | 4220754 | 02/26/2004 | 08:57:24 | 2C13051 | 4.16 | |
| 064 | OM1C- | 4220755 | 02/26/2004 | 09:17:46 | 2C13051 | 4.16 | |
| 065 | OM3C- | 4220756 | 02/26/2004 | 09:38:08 | 2C13051 | 4.16 | 11.59 |
| 066 | OM4C- | 4220757 | 02/26/2004 | 09:58:27 | 2C13051 | 4.16 | |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)
11.62 (11.59 - 11.65 Minutes)

8586

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 067 | OM4C- | 4220757 | 02/26/2004 | 10:18:50 | 2C13051 | 4.16 | |
| 068 | OM6C- | 4220758 | 02/26/2004 | 10:39:14 | 2C13051 | 4.16 | 11.59 |
| 069 | CONCT | 4220759 | 02/26/2004 | 10:59:55 | 2C13051 | 4.16 | |
| 070 | PEMIW | EVALX03C | 02/26/2004 | 11:20:28 | 2C13051 | 4.16 | 11.59 |
| 071 | MIXA3LQ | MIXA303D | 02/26/2004 | 11:40:50 | 2C13051 | 4.15 | 11.59 |
| 072 | MIXE3NY | MIXE303D | 02/26/2004 | 12:01:26 | 2C13051 | 4.16 | 11.59 |
| 073 | AR163VP | AR1630424A | 02/26/2004 | 12:21:54 | 2C13051 | 4.15 | 11.59 |
| 074 | PBLKOR | BLANKA | 02/26/2004 | 12:42:18 | 2C13051 | 4.16 | 11.59 * |
| 075 | B4132 | 4216244 | 02/26/2004 | 13:02:44 | 2C13051 | 4.15 | 11.59 * |
| 076 | MIXE3NZ | MIXE303D | 02/26/2004 | 13:23:09 | 2C13051 | 4.16 | 11.59 |

ICAL Dates

2C13051 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.17 (4.14 - 4.20 Minutes)
11.62 (11.59 - 11.65 Minutes)

8587

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PEMIR | EVALX03C | 02/25/2004 | 11:48:45 | 2C13051B | 4.20 | 12.21 |
| 002 | MIXA3LS | MIXA303D | 02/25/2004 | 12:09:08 | 2C13051B | 4.20 | 12.21 |
| 003 | AR163VI | AR1630424A | 02/25/2004 | 12:29:34 | 2C13051B | 4.20 | 12.22 |
| 004 | PBLKXO | BLANKA | 02/25/2004 | 12:49:56 | 2C13051B | 4.20 | 12.21 |
| 005 | LCSW0 | LCSA | 02/25/2004 | 13:10:18 | 2C13051B | 4.20 | 12.21 |
| 006 | LCSDKO | LCSDA | 02/25/2004 | 13:30:55 | 2C13051B | 4.20 | 12.21 |
| 007 | SUMP1 | 4217721 | 02/25/2004 | 13:51:35 | 2C13051B | 4.20 | 12.22 |
| 008 | SP274 | 4217722 | 02/25/2004 | 14:12:13 | 2C13051B | 4.20 | 12.22 |
| 009 | SP276 | 4217723 | 02/25/2004 | 14:32:36 | 2C13051B | 4.20 | 12.21 |
| 010 | SMP5A | 4217724 | 02/25/2004 | 14:52:57 | 2C13051B | 4.20 | 12.22 |
| 011 | PBLKXF | BLANKA | 02/25/2004 | 15:13:18 | 2C13051B | 4.20 | 12.21 |
| 012 | LCSVP | LCSA | 02/25/2004 | 15:33:41 | 2C13051B | 4.20 | 12.21 |
| 013 | LCSDKJ | LCSDA | 02/25/2004 | 15:54:06 | 2C13051B | 4.20 | 12.21 |
| 014 | MFTFB | 4221475 | 02/25/2004 | 16:14:27 | 2C13051B | 4.20 | 12.21 |
| 015 | PBLKXG | BLANKA | 02/25/2004 | 16:35:19 | 2C13051B | 4.20 | 12.21 |
| 016 | LCSVQ | LCSA | 02/25/2004 | 16:55:54 | 2C13051B | 4.20 | 12.21 |
| 017 | UN5NV | 4219006 | 02/25/2004 | 17:16:16 | 2C13051B | 4.20 | 12.21 |
| 018 | UN7NV | 4219022 | 02/25/2004 | 17:36:37 | 2C13051B | 4.20 | 12.20 |
| 019 | UN7NVMS | 4219022 | 02/25/2004 | 17:56:58 | 2C13051B | 4.20 | 12.21 |
| 020 | UN7NVMSD | 4219022 | 02/25/2004 | 18:17:17 | 2C13051B | 4.20 | 12.21 |
| 021 | TC407 | 4219669 | 02/25/2004 | 18:37:37 | 2C13051B | 4.19 | 12.20 |
| 022 | BLA20 | 4221331 | 02/25/2004 | 18:57:57 | 2C13051B | 4.20 | 12.21 |
| 023 | BLA44 | 4221332 | 02/25/2004 | 19:18:19 | 2C13051B | 4.19 | 12.21 |
| 024 | PEMIS | EVALX03C | 02/25/2004 | 19:38:39 | 2C13051B | 4.20 | 12.21 |
| 025 | MIXA3LN | MIXA303D | 02/25/2004 | 19:58:59 | 2C13051B | 4.19 | 12.21 |
| 026 | AR163VJ | AR1630424A | 02/25/2004 | 20:19:17 | 2C13051B | 4.20 | 12.21 |
| 027 | PBLKRC | BLANKA | 02/25/2004 | 20:39:38 | 2C13051B | 4.19 | 12.20 |
| 028 | LCSOX | LCSA | 02/25/2004 | 20:59:59 | 2C13051B | 4.19 | 12.20 |
| 029 | B1116 | 4217561 | 02/25/2004 | 21:20:19 | 2C13051B | 4.20 | 12.21 |
| 030 | B1116 | 4217561 | 02/25/2004 | 21:40:37 | 2C13051B | 4.20 | 12.21 |
| 031 | B1116MS | 4217561 | 02/25/2004 | 22:00:57 | 2C13051B | 4.20 | 12.21 |
| 032 | B1116MS | 4217561 | 02/25/2004 | 22:21:15 | 2C13051B | | 12.22 |
| 033 | B1116MSD | 4217561 | 02/25/2004 | 22:41:37 | 2C13051B | 4.20 | 12.21 |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.21 (4.18 - 4.24 Minutes)

12.23 (12.20 - 12.26 Minutes)

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 034 | B1116MSD | 4217561 | 02/25/2004 | 23:02:12 | 2C13051B | 4.20 | 12.21 |
| 035 | B1216 | 4217562 | 02/25/2004 | 23:22:48 | 2C13051B | 4.19 | 12.20 |
| 036 | B1216 | 4217562 | 02/25/2004 | 23:43:22 | 2C13051B | 4.20 | 12.21 |
| 037 | B1316 | 4217563 | 02/26/2004 | 00:03:56 | 2C13051B | 4.20 | 12.21 |
| 038 | B1316 | 4217563 | 02/26/2004 | 00:24:16 | 2C13051B | 4.20 | 12.20 |
| 039 | B1416 | 4217564 | 02/26/2004 | 00:44:37 | 2C13051B | 4.20 | 12.20 |
| 040 | B1416 | 4217564 | 02/26/2004 | 01:05:10 | 2C13051B | 4.20 | 12.21 |
| 041 | B1516 | 4217565 | 02/26/2004 | 01:25:29 | 2C13051B | 4.19 | 12.20 |
| 042 | B1516 | 4217565 | 02/26/2004 | 01:45:46 | 2C13051B | 4.20 | 12.20 |
| 043 | AA | CONTROL | 02/26/2004 | 02:06:26 | 2C13051B | | |
| 044 | AA | EXP1 | 02/26/2004 | 02:27:00 | 2C13051B | | |
| 045 | AA | EXP2 | 02/26/2004 | 02:47:20 | 2C13051B | 4.18 | |
| 046 | AA | EXP3 | 02/26/2004 | 03:07:51 | 2C13051B | | |
| 047 | PEMIT | EVALX03C | 02/26/2004 | 03:28:27 | 2C13051B | 4.19 | 12.20 |
| 048 | MIXA4NZ | MIXA403E | 02/26/2004 | 03:48:48 | 2C13051B | 4.19 | 12.20 |
| 049 | AR164XG | AR1640424A | 02/26/2004 | 04:09:09 | 2C13051B | 4.19 | 12.20 |
| 050 | PBLKVJ | BLANKA | 02/26/2004 | 04:29:44 | 2C13051B | 4.19 | |
| 051 | LCSTI | LCSA | 02/26/2004 | 04:50:22 | 2C13051B | 4.19 | |
| 052 | OM-3- | 4220751 | 02/26/2004 | 05:10:55 | 2C13051B | 4.19 | |
| 053 | OM-3- | 4220751 | 02/26/2004 | 05:31:18 | 2C13051B | 4.19 | |
| 054 | OM-3-MS | 4220751 | 02/26/2004 | 05:51:55 | 2C13051B | 4.19 | |
| 055 | OM-3-MS | 4220751 | 02/26/2004 | 06:12:31 | 2C13051B | 4.19 | 12.20 |
| 056 | OM-3-MSD | 4220751 | 02/26/2004 | 06:33:06 | 2C13051B | 4.19 | |
| 057 | OM-3-MSD | 4220751 | 02/26/2004 | 06:53:27 | 2C13051B | 4.19 | |
| 058 | OM-1- | 4220750 | 02/26/2004 | 07:14:06 | 2C13051B | 4.19 | |
| 059 | OM-1- | 4220750 | 02/26/2004 | 07:34:47 | 2C13051B | 4.19 | 12.21 |
| 060 | OM-4- | 4220752 | 02/26/2004 | 07:55:26 | 2C13051B | 4.19 | |
| 061 | OM-6- | 4220753 | 02/26/2004 | 08:16:06 | 2C13051B | 4.19 | |
| 062 | OM-6- | 4220753 | 02/26/2004 | 08:36:44 | 2C13051B | 4.19 | |
| 063 | CON-- | 4220754 | 02/26/2004 | 08:57:24 | 2C13051B | 4.19 | |
| 064 | OM1C- | 4220755 | 02/26/2004 | 09:17:46 | 2C13051B | 4.19 | |
| 065 | OM3C- | 4220756 | 02/26/2004 | 09:38:08 | 2C13051B | 4.19 | |
| 066 | OM4C- | 4220757 | 02/26/2004 | 09:58:27 | 2C13051B | 4.19 | |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

ICAL RT QC Limits

4.21 (4.18 - 4.24 Minutes)
12.23 (12.20 - 12.26 Minutes)

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2C13051B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 067 | OM4C- | 4220757 | 02/26/2004 | 10:18:50 | 2C13051B | 4.19 | |
| 068 | OM6C- | 4220758 | 02/26/2004 | 10:39:14 | 2C13051B | 4.19 | |
| 069 | CONCT | 4220759 | 02/26/2004 | 10:59:55 | 2C13051B | 4.19 | |
| 070 | PEMIW | EVALX03C | 02/26/2004 | 11:20:28 | 2C13051B | 4.19 | |
| 071 | MIXA3LQ | MIXA303D | 02/26/2004 | 11:40:50 | 2C13051B | 4.19 | |
| 072 | MIXE3NY | MIXE303D | 02/26/2004 | 12:01:26 | 2C13051B | 4.19 | 12.20 |
| 073 | AR163VP | AR1630424A | 02/26/2004 | 12:21:54 | 2C13051B | 4.19 | |
| 074 | PBLKOR | BLANKA | 02/26/2004 | 12:42:18 | 2C13051B | 4.19 | 12.19 * |
| 075 | B4132 | 4216244 | 02/26/2004 | 13:02:44 | 2C13051B | 4.19 | 12.19 * |
| 076 | MIXE3NZ | MIXE303D | 02/26/2004 | 13:23:09 | 2C13051B | 4.19 | 12.20 |

ICAL Dates

2C13051B 02/20/2004 - 02/20/2004

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

| ICAL RT | QC Limits |
|---|---|
| 4.21 | (4.18 - 4.24 Minutes) |
| 12.23 | (12.20 - 12.26 Minutes) |

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# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\1C13051.seq
Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
Method Directory: \\Cp13\c-drive\CPWIN\DATA1
Number of Entries: 70

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | MISC | AA | 1C13051.01R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 2 CONDITIONER | MISC | AA | 1C13051.02R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 3 CONDITIONER | MISC | AA | 1C13051.03R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 4 CONDITIONER | MISC | AA | 1C13051.04R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 5 CONDITIONER | MISC | AA | 1C13051.05R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 6 CONDITIONER | MISC | AA | 1C13051.06R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 7 CONDITIONER | MISC | AA | 1C13051.07R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 8 CONDITIONER | MISC | AA | 1C13051.08R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 9 IBLKX03B | PIBLK | AA | 1C13051.09R | 608D.MET | 1000 | 10 | 1 | 045099999 | |
| 10 EVALX03C | IPEM | AA | 1C13051.10R | E608D.MET | 1 | 1 | 1 | 045099999 | |
| 11 MIXA103D | ICAL | AA | 1C13051.11R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 12 MIXA203E | ICAL | AA | 1C13051.12R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 13 MIXA303D | ICAL | AA | 1C13051.13R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 14 MIXA403E | ICAL | AA | 1C13051.14R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 15 MIXA503D | ICAL | AA | 1C13051.15R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 16 ICMAX03F | CCAL | AA | 1C13051.16R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 17 MIXE103C | ICAL | AA | 1C13051.17R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 18 MIXE203C | ICAL | AA | 1C13051.18R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 19 MIXE303D | ICAL | AA | 1C13051.19R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 20 MIXE403C | ICAL | AA | 1C13051.20R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 21 MIXE503C | ICAL | AA | 1C13051.21R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 22 TOXWX03B | ICAL | AA | 1C13051.22R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 23 CHLDX03B | ICAL | AA | 1C13051.23R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 24 AR1610424A | ICAL | AA | 1C13051.24R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 25 AR1620424A | ICAL | AA | 1C13051.25R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 26 AR1630424A | ICAL | AA | 1C13051.26R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 27 AR1640424A | ICAL | AA | 1C13051.27R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 28 AR1650424A | ICAL | AA | 1C13051.28R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 29 AR210424A | ICAL | AA | 1C13051.29R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 30 AR32X03C | ICAL | AA | 1C13051.30R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 31 AR420424A | ICAL | AA | 1C13051.31R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 32 AR4830424A | ICAL | AA | 1C13051.32R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 33 AR5430424A | ICAL | AA | 1C13051.33R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 34 MDLAX03D | ICAL | AA | 1C13051.34R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 35 MDLEX03C | ICAL | AA | 1C13051.35R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 36 MD16X0424A | ICAL | AA | 1C13051.36R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 37 MDTXX03B | ICAL | AA | 1C13051.37R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 38 MDCHX03B | ICAL | AA | 1C13051.38R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 39 IC16X03B | CCAL | AA | 1C13051.39R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 40 BLANKA 2/19/04F | BLK | AB | 1C13051.40R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 41 LCSA 2/19/04F | LCS | AB | 1C13051.41R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 42 LCSDA 2/19/04F | LCSD | AB | 1C13051.42R | 608D.MET | 1000 | 10 | 1 | 040500010A | 00177 |
| 43 4217521F | T | AB | 1C13051.43R | 608D.MET | 1006 | 10 | 1 | 040500010A | 00177 |
| 44 EVALX03C | PEM | IH | 1C13051.44R | E608D.MET | 1 | 1 | 1 | 045099999 | |
| 45 MIXA303D | CCAL | LD | 1C13051.45R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 46 MIXE303D | CCAL | NR | 1C13051.46R | 608D.MET | 1 | 1 | 1 | 045099999 | |
| 47 AR1630424A | CCAL | UL | 1C13051.47R | 608D.MET | 1 | 1 | 1 | 045099999 | 8591 |
| 48 BLANKA 2/20/04F | BLK | AB | 1C13051.48R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 49 LCSA 2/20/04F | LCS | AB | 1C13051.49R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 50 4217215F | T | AB | 1C13051.50R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

equence File: \\Cp13\c-drive\CPWIN\DATA1\1C13051.seq
hromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
lethod Directory: \\Cp13\c-drive\CPWIN\DATA1
umber of Entries: 70

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 4217215MSF | MS | AB | 1C13051.51R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 2 4217215MSDF | MSD | AB | 1C13051.52R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 3 4217866F | T | AB | 1C13051.53R | PESTD.MET | 200 | 10 | 1 | 040500018A | 00950 |
| 4 BLANKA 2/16/04 RI C | BLK | AD | 1C13051.54R | PESTD.MET | 30 | 10 | 1 | 040470009A | 08899 |
| 5 4213699CFG | T | AD | 1C13051.55R | PESTD.MET | 30 | 10 | 1 | 040470009A | 01224 |
| 6 4213700CFG | T | AD | 1C13051.56R | PESTD.MET | 30 | 10 | 1 | 040470009A | 01224 |
| 7 CONTROL | MISC | AA | 1C13051.57R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 8 SYRINGE | MISC | AA | 1C13051.58R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 9 SYRINGE FILTER | MISC | AA | 1C13051.59R | PESTD.MET | 1 | 1 | 1 | 040470009A | |
| 0 EVALX03C | PEM | II | 1C13051.60R | EVALD.MET | 1 | 1 | 1 | 045099999 | |
| 1 MIXA303D | CCAL | LE | 1C13051.61R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 2 AR1630424A | CCAL | UM | 1C13051.62R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 3 BLANKA 2/20/04F | BLK | AB | 1C13051.63R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 4 LCSA 2/20/04F | LCS | AB | 1C13051.64R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 5 LCSDA 2/20/04F | LCSD | AB | 1C13051.65R | PESTD.MET | 1000 | 10 | 1 | 040500017A | 06010 |
| 6 4218136F | T | AB | 1C13051.66R | PESTD.MET | 1040 | 10 | 1 | 040500017A | 00937 |
| 7 4218137F | T | AB | 1C13051.67R | PESTD.MET | 1030 | 10 | 1 | 040500017A | 00937 |
| 8 EVALX03C | PEM | IJ | 1C13051.68R | EVALD.MET | 1 | 1 | 1 | 045099999 | |
| 9 MIXA303D | CCAL | LF | 1C13051.69R | PESTD.MET | 1 | 1 | 1 | 045099999 | |
| 0 AR1630424A | CCAL | UN | 1C13051.70R | PESTD.MET | 1 | 1 | 1 | 045099999 | |

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t-up by: Andrea Covey Date: 2-25-04

23/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\2C13051.seq

Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1

Method Directory: \\Cp13\c-drive\CPWIN\DATA1

Number of Entries: 79

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 2C13051.01R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 2 | CONDITIONER | MISC | AA | 2C13051.02R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 3 | CONDITIONER | MISC | AA | 2C13051.03R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 4 | EVALX03C | PEM | IR | 2C13051.04R | EVALD.MET | 1 | 1 | 1 | 045599999 | |
| 5 | MIXA303D | CCAL | LS | 2C13051.05R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 6 | AR1630424A | CCAL | VI | 2C13051.06R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 7 | BLANKA 2/25/04F | BLK | AB | 2C13051.07R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 8 | LCSA 2/25/04F | LCS | AB | 2C13051.08R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 9 | LCSDA 2/25/04F | LCSD | AB | 2C13051.09R | PESTD.MET | 1000 | 10 | 1 | 040550010A | 06020 |
| 10 | 4217721RF DF50 | T | AC | 2C13051.10R | PESTD.MET | 100 | 500 | 1 | 040550010A | 01322 |
| 11 | 4217722RF DF50 | T | AC | 2C13051.11R | PESTD.MET | 100 | 500 | 1 | 040550010A | 01322 |
| 12 | 4217723RF DF100 | T | AC | 2C13051.12R | PESTD.MET | 100 | 1000 | 1 | 040550010A | 01322 |
| 13 | 4217724RF DF50 | T | AC | 2C13051.13R | PESTD.MET | 200 | 500 | 1 | 040550010A | 01322 |
| 14 | BLANKA 2/25/04F | BLK | AB | 2C13051.14R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 15 | LCSA 2/25/04F | LCS | AB | 2C13051.15R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 16 | LCSDA 2/25/04F | LCSD | AB | 2C13051.16R | PESTD.MET | 1000 | 10 | 1 | 040550002A | 06010 |
| 17 | 4221475F | T | AB | 2C13051.17R | PESTD.MET | 1052 | 10 | 1 | 040550002A | 00937 |
| 18 | BLANKA 2/25/04F | BLK | AB | 2C13051.18R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 19 | LCSA 2/25/04F | LCS | AB | 2C13051.19R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 20 | 4219006F | T | AB | 2C13051.20R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 21 | 4219022F | T | AB | 2C13051.21R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 22 | 4219022MSF | MS | AB | 2C13051.22R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 23 | 4219022MSDF | MSD | AB | 2C13051.23R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 24 | 4219669F | T | AB | 2C13051.24R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 25 | 4221331F | T | AB | 2C13051.25R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 26 | 4221332F | T | AB | 2C13051.26R | PESTD.MET | 200 | 10 | 1 | 040550003A | 00950 |
| 27 | EVALX03C | PEM | IS | 2C13051.27R | EVALD.MET | 1 | 1 | 1 | 045599999 | |
| 28 | MIXA303D | CCAL | LN | 2C13051.28R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 29 | AR1630424A | CCAL | VJ | 2C13051.29R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 30 | BLANKA 2/18/04FG | BLK | AC | 2C13051.30R | PESTD.MET | 30 | 10 | 1 | 040490011A | 08899 |
| 31 | LCSA 2/18/04FG | LCS | AC | 2C13051.31R | PESTD.MET | 30 | 10 | 1 | 040490011A | 08899 |
| 32 | 4217561FG DF10 | T | AD | 2C13051.32R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 33 | 4217561FG DF50 | T | AE | 2C13051.33R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 34 | 4217561MSFG DF10 | MS | AD | 2C13051.34R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 35 | 4217561MSFG DF50 | MS | AE | 2C13051.35R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 36 | 4217561MSDFG DF10 | MSD | AD | 2C13051.36R | PESTD.MET | 30 | 100 | 1 | 040490011A | 08899 |
| 37 | 4217561MSDFG DF50 | MSD | AE | 2C13051.37R | PESTD.MET | 30 | 500 | 1 | 040490011A | 08899 |
| 38 | 4217562FG | T | AC | 2C13051.38R | PESTD.MET | 30 | 10 | 1 | 040490011A | 01224 |
| 39 | 4217562FG DF5 | T | AD | 2C13051.39R | PESTD.MET | 30 | 50 | 1 | 040490011A | 01224 |
| 40 | 4217563FG DF20 | T | AD | 2C13051.40R | PESTD.MET | 30 | 200 | 1 | 040490011A | 01224 |
| 41 | 4217563FG DF100 | T | AE | 2C13051.41R | PESTD.MET | 30 | 1000 | 1 | 040490011A | 01224 |
| 42 | 4217564FG DF5 | T | AD | 2C13051.42R | PESTD.MET | 30 | 50 | 1 | 040490011A | 01224 |
| 43 | 4217564FG DF20 | T | AE | 2C13051.43R | PESTD.MET | 30 | 200 | 1 | 040490011A | 01224 |
| 44 | 4217565FG | T | AC | 2C13051.44R | PESTD.MET | 30 | 10 | 1 | 040490011A | 01224 |
| 45 | 4217565FG DF10 | T | AD | 2C13051.45R | PESTD.MET | 30 | 100 | 1 | 040490011A | 01224 |
| 46 | CONTROL | MISC | AA | 2C13051.46R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 47 | EXP1 | MISC | AA | 2C13051.47R | PESTD.MET | 1 | 10 | 1 | 040490011A | 8593 |
| 48 | EXP2 | MISC | AA | 2C13051.48R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 49 | EXP3 | MISC | AA | 2C13051.49R | PESTD.MET | 1 | 10 | 1 | 040490011A | |
| 50 | EVALX03C | PEM | IT | 2C13051.50R | EVALD.MET | 1 | 1 | 1 | 045599999 | |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Cp13\c-drive\CPWIN\DATA1\2C13051.seq
Chromatography Directory: \\Cp13\c-drive\CPWIN\DATA1
Method Directory: \\Cp13\c-drive\CPWIN\DATA1
Number of Entries: 79

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 51 MIXA403E | CCAL | NZ | 2C13051.51R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 52 AR1640424A | CCAL | XG | 2C13051.52R | PESTD.MET | 1 | 1 | 1 | 045599999 | |
| 53 BLANKA 2/23/04FG | BLK | AB | 2C13051.53R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 54 LCSA 2/23/04FG | LCS | AB | 2C13051.54R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 55 4220751FG | T | AB | 2C13051.55R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 56 4220751FG DF5 | T | AC | 2C13051.56R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 57 4220751MSFG | MS | AB | 2C13051.57R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 58 4220751MSFG DF5 | MS | AC | 2C13051.58R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 59 4220751MSDFG | MSD | AB | 2C13051.59R | PESTD.MET | 30 | 10 | 1 | 040520007A | 08899 |
| 60 4220751MSDFG DF5 | MSD | AC | 2C13051.60R | PESTD.MET | 30 | 50 | 1 | 040520007A | 08899 |
| 61 4220750FG DF10 | T | AC | 2C13051.61R | PESTD.MET | 30 | 100 | 1 | 040520007A | 01224 |
| 62 4220750FG DF50 | T | AD | 2C13051.62R | PESTD.MET | 30 | 500 | 1 | 040520007A | 01224 |
| 63 4220752FG DF10 | T | AC | 2C13051.63R | PESTD.MET | 30 | 100 | 1 | 040520007A | 01224 |
| 64 4220753FG | T | AB | 2C13051.64R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 65 4220753FG DF5 | T | AC | 2C13051.65R | PESTD.MET | 30 | 50 | 1 | 040520007A | 01224 |
| 66 4220754FG | T | AB | 2C13051.66R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 67 4220755FG | T | AB | 2C13051.67R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 68 4220756FG | T | AB | 2C13051.68R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 69 4220757FG | T | AB | 2C13051.69R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 70 4220757FG DF5 | T | AC | 2C13051.70R | PESTD.MET | 30 | 50 | 1 | 040520007A | 01224 |
| 71 4220758FG | T | AB | 2C13051.71R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 72 4220759FG | T | AB | 2C13051.72R | PESTD.MET | 30 | 10 | 1 | 040520007A | 01224 |
| 73 EVALX03C | PEM | IW | 2C13051.73R | EVALD.MET | 1 | 1 | 1 | 045699999 | |
| 74 MIXA303D | CCAL | LQ | 2C13051.74R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 75 MIXE303D | CCAL | NY | 2C13051.75R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 76 AR1630424A | CCAL | VP | 2C13051.76R | PESTD.MET | 1 | 1 | 1 | 045699999 | |
| 77 BLANKA 2/17/04 RI C | BLK | AC | 2C13051.77R | PESTD.MET | 30 | 10 | 1 | 040470022A | 08899 |
| 78 4216244 RI CF | T | AC | 2C13051.78R | PESTD.MET | 30 | 10 | 1 | 040470022A | 01224 |
| 79 MIXE303D | CCAL | NZ | 2C13051.79R | PESTD.MET | 1 | 1 | 1 | 045699999 | |

6594

Set-up by: Andrea Covey Date: 2-26-04

2/26/04

Sample Name: **EVALX03C AAPEMAA IPEM 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:02:56am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.10R**
Method File: C:\CPWIN\DATA1\E608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.848 | | 0.0000 | 0.000 | 770.3 | 0.029 | BB | 0.040 | 322.03 | 0.028 |
| 2 | 4.174 | TCX | 19.1886 | 1.692 | 177536.1 | 6.722 | BB | 0.041 | 72865.26 | 6.444 |
| 3 | 4.626 | | 0.0000 | 0.000 | 526.6 | 0.020 | BB | 0.111 | 79.22 | 0.007 |
| 4 | 4.747 | HCB | 3.0560 | 0.270 | 1823.5 | 0.069 | BB | 0.036 | 848.43 | 0.075 |
| 5 | 4.809 | | 0.0000 | 0.000 | 74.2 | 0.003 | BB | 0.022 | 55.02 | 0.005 |
| 6 | 4.997 | alpha-BHC | 9.9991 | 0.882 | 95858.0 | 3.630 | BB | 0.035 | 46266.95 | 4.091 |
| 7 | 5.457 | gamma-BHC | 9.6915 | 0.855 | 91138.8 | 3.451 | BB | 0.034 | 44269.85 | 3.915 |
| 8 | 5.585 | beta-BHC | 9.5526 | 0.842 | 57738.2 | 2.186 | BB | 0.037 | 26036.43 | 2.302 |
| 9 | 5.689 | | 0.0000 | 0.000 | 272.9 | 0.010 | BB | 0.024 | 192.32 | 0.017 |
| 10 | 5.838 | delta-BHC | 0.0633 | 0.006 | 639.1 | 0.024 | BB | 0.040 | 269.47 | 0.024 |
| 11 | 5.936 | | 0.0000 | 0.000 | 1146.2 | 0.043 | BB | 0.043 | 447.65 | 0.040 |
| 12 | 6.119 | Heptachlor | 0.0170 | 0.001 | 260.5 | 0.010 | BV | 0.050 | 87.67 | 0.008 |
| 13 | 6.224 | | 0.0000 | 0.000 | 925.9 | 0.035 | VV | 0.122 | 126.34 | 0.011 |
| 14 | 6.340 | | 0.0000 | 0.000 | 4067.3 | 0.154 | VB | 0.153 | 444.05 | 0.039 |
| 15 | 6.759 | | 0.0000 | 0.000 | 392.0 | 0.015 | BB | 0.057 | 115.55 | 0.010 |
| 16 | 6.931 | | 0.0000 | 0.000 | 446.9 | 0.017 | BB | 0.046 | 162.43 | 0.014 |
| 17 | 7.068 | | 0.0000 | 0.000 | 1703.6 | 0.065 | BV | 0.067 | 423.67 | 0.037 |
| 18 | 7.358 | o,p-DDE | 0.0000 | 0.000 | 8824.2 | 0.334 | VV | 0.262 | 561.21 | 0.050 |
| 19 | 7.515 | | 0.0000 | 0.000 | 2088.2 | 0.079 | VV | 0.061 | 569.17 | 0.050 |
| 20 | 7.565 | g. Chlordane | 0.1206 | 0.011 | 2312.7 | 0.088 | VV | 0.075 | 510.76 | 0.045 |
| 21 | 7.727 | a. Chlordane | 0.1366 | 0.012 | 3467.3 | 0.131 | VV | 0.099 | 582.10 | 0.051 |
| 22 | 7.814 | 4,4'-DDE | 0.7581 | 0.067 | 6504.9 | 0.246 | VV | 0.042 | 2587.71 | 0.229 |
| 23 | 7.911 | Endosulfan I | 0.0423 | 0.004 | 448.0 | 0.017 | VB | 0.046 | 162.01 | 0.014 |
| 24 | 8.189 | | 0.0000 | 0.000 | 1173.4 | 0.044 | BB | 0.097 | 202.20 | 0.018 |
| 25 | 8.376 | o,p-DDT | 691.7918 | 61.009 | 5402.2 | 0.205 | BB | 0.044 | 2068.77 | 0.183 |
| 26 | 8.537 | Endrin | 48.9487 | 4.317 | 369829.7 | 14.004 | BV | 0.037 | 166392.80 | 14.714 |
| 27 | 8.673 | | 0.0000 | 0.000 | 2931.1 | 0.111 | VV | 0.038 | 1285.22 | 0.114 |
| 28 | 8.709 | | 0.0000 | 0.000 | 4256.9 | 0.161 | VB | 0.060 | 1185.19 | 0.105 |
| 29 | 8.838 | Endosulfan II | 0.1265 | 0.011 | 1265.3 | 0.048 | BV | 0.048 | 437.31 | 0.039 |
| 30 | 8.960 | 4,4'-DDT | 98.5241 | 8.689 | 638732.4 | 24.186 | VV | 0.036 | 291868.30 | 25.811 |
| 31 | 9.171 | | 0.0000 | 0.000 | 1165.7 | 0.044 | VV | 0.079 | 245.68 | 0.022 |
| 32 | 9.273 | | 0.0000 | 0.000 | 169.2 | 0.006 | VB | 0.033 | 85.30 | 0.008 |
| 33 | 9.378 | Endrin aldehyde | 0.5375 | 0.047 | 3226.1 | 0.122 | BV | 0.040 | 1335.96 | 0.118 |
| 34 | 9.570 | Methoxychlor | 220.6844 | 19.462 | 906426.8 | 34.322 | VB | 0.039 | 384125.90 | 33.969 |
| 35 | 9.879 | | 0.0000 | 0.000 | 1146.2 | 0.043 | BB | 0.052 | 367.53 | 0.033 |
| 36 | 9.946 | Endo. sulfate | 0.2231 | 0.020 | 2033.1 | 0.077 | BV | 0.049 | 686.33 | 0.061 |
| 37 | 10.111 | | 0.0000 | 0.000 | 4749.6 | 0.180 | VV | 0.074 | 1072.95 | 0.095 |
| 38 | 10.181 | | 0.0000 | 0.000 | 7416.8 | 0.281 | VB | 0.051 | 2440.63 | 0.216 |
| 39 | 10.310 | Endrin ketone | 0.5514 | 0.049 | 4519.6 | 0.171 | BB | 0.038 | 1971.39 | 0.174 |
| 40 | 10.708 | | 0.0000 | 0.000 | 8249.4 | 0.312 | BV | 0.080 | 1717.04 | 0.152 |
| 41 | 10.910 | | 0.0000 | 0.000 | 1334.1 | 0.051 | VB | 0.098 | 226.81 | 0.020 |
| 42 | 11.159 | | 0.0000 | 0.000 | 231.1 | 0.009 | BB | 0.057 | 67.44 | 0.006 |
| 43 | 11.339 | | 0.0000 | 0.000 | 650.3 | 0.025 | BB | 0.038 | 286.29 | 0.025 |
| 44 | 11.485 | | 0.0000 | 0.000 | 508.6 | 0.019 | BB | 0.101 | 83.75 | 0.007 |
| 45 | 11.619 | DCB | 19.9004 | 1.755 | 213118.6 | 8.070 | BB | 0.048 | 74344.84 | 6.574 |
| 46 | 13.489 | | 0.0000 | 0.000 | 3452.4 | 0.131 | BB | 0.176 | 326.92 | 0.029 |

Total Area = 2640954.0, Total Amount = 1133.913, Total Height = 1130810.0, Sample Units = PPB

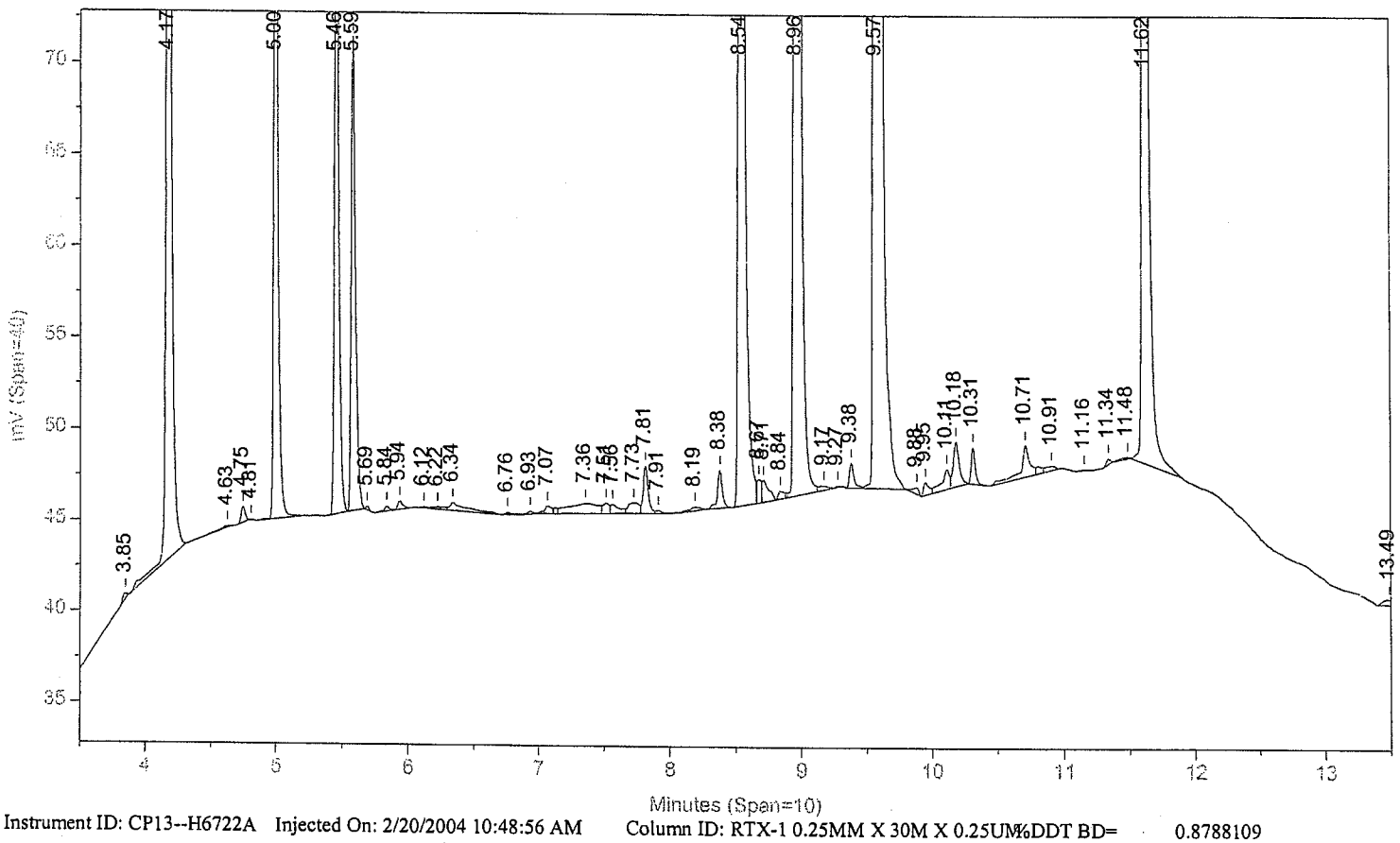
Sample Name: **EVALX03C AAPEMAA IPEM 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:02:56am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.10R**
Method File: C:\CPWIN\DATA1\E608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1914.7 | 0.127 | BB | 0.045 | 714.73 | 0.102 |
| 2 | 3.211 | | 0.0000 | 0.000 | 896.2 | 0.060 | BB | 0.295 | 50.70 | 0.007 |
| 3 | 3.360 | | 0.0000 | 0.000 | 3415.3 | 0.227 | BB | 0.205 | 277.41 | 0.040 |
| 4 | 3.776 | | 0.0000 | 0.000 | 1379.9 | 0.092 | BB | 0.045 | 507.55 | 0.073 |
| 5 | 4.210 | TCX | 18.7340 | 3.960 | 104202.7 | 6.929 | BB | 0.036 | 47648.13 | 6.808 |
| 6 | 4.748 | | 0.0000 | 0.000 | 3012.0 | 0.200 | BB | 0.085 | 593.55 | 0.085 |
| 7 | 5.100 | alpha-BHC | 9.8753 | 2.087 | 44857.6 | 2.983 | BB | 0.031 | 24394.46 | 3.485 |
| 8 | 5.556 | | 0.0000 | 0.000 | 238.0 | 0.016 | BB | 0.022 | 178.65 | 0.026 |
| 9 | 5.614 | gamma-BHC | 9.6480 | 2.039 | 46020.9 | 3.060 | BV | 0.031 | 24426.51 | 3.490 |
| 10 | 5.738 | beta-BHC | 9.5794 | 2.025 | 37370.8 | 2.485 | VB | 0.040 | 15402.06 | 2.201 |
| 11 | 8.020 | | 0.0000 | 0.000 | 30689.0 | 2.041 | BV | 0.573 | 892.88 | 0.128 |
| 12 | 8.109 | 4,4'-DDE | 0.9239 | 0.195 | 11927.0 | 0.793 | VB | 0.111 | 1789.97 | 0.256 |
| 13 | 8.727 | Endrin | 53.9566 | 11.404 | 210079.9 | 13.970 | BB | 0.032 | 109360.20 | 15.625 |
| 14 | 8.862 | 4,4'-DDD | 0.5674 | 0.120 | 1706.2 | 0.113 | BB | 0.040 | 706.95 | 0.101 |
| 15 | 9.153 | | 0.0000 | 0.000 | 1640.3 | 0.109 | BB | 0.343 | 79.63 | 0.011 |
| 16 | 9.200 | | 0.0000 | 0.000 | 207.9 | 0.014 | BB | 0.025 | 138.05 | 0.020 |
| 17 | 9.255 | 4,4'-DDT | 113.6605 | 24.023 | 368286.1 | 24.490 | BB | 0.033 | 184472.50 | 26.357 |
| 18 | 9.433 | Endrin aldehyde | 0.7196 | 0.152 | 2793.3 | 0.186 | BB | 0.039 | 1185.55 | 0.169 |
| 19 | 10.126 | Methoxychlor | 234.8342 | 49.635 | 493214.5 | 32.797 | BB | 0.035 | 233623.10 | 33.379 |
| 20 | 10.287 | | 0.0000 | 0.000 | 1958.1 | 0.130 | BB | 0.031 | 1043.49 | 0.149 |
| 21 | 10.485 | Endrin ketone | 0.6634 | 0.140 | 3464.1 | 0.230 | BB | 0.036 | 1611.08 | 0.230 |
| 22 | 10.553 | | 0.0000 | 0.000 | 1292.4 | 0.086 | BB | 0.031 | 690.62 | 0.099 |
| 23 | 12.231 | DCB | 19.9609 | 4.219 | 133270.0 | 8.862 | BB | 0.044 | 50119.06 | 7.161 |

Total Area = 1503837.0, Total Amount = 473.123, Total Height = 699906.9, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.10R

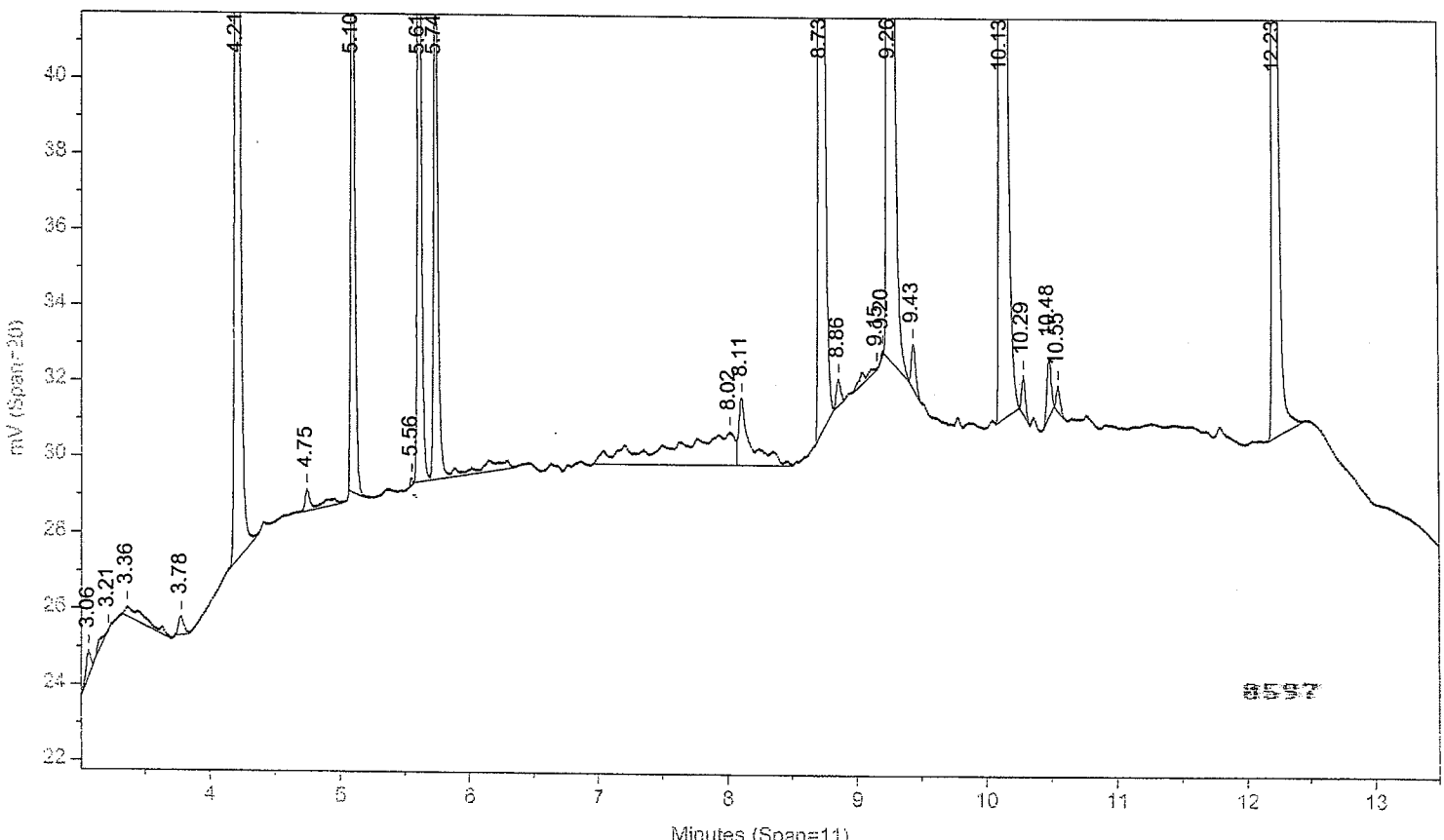



Instrument ID: CP13--H6722A Injected On: 2/20/2004 10:48:56 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.8788109

%ENDRIN BD= 1.948937

File: C:\CPWIN\DATA1\1C13051B.10R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 10:48:56 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.335473

%ENDRIN BD= 2.4935

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 72865 | 19.189 | TCX | 4.21 | 47648 | 18.734 | TCX |
| 4.747 | 848 | 3.056 | HCB | . | 0 | . | HCB |
| 4.997 | 46267 | 9.999 | alpha-BHC | 5.1 | 24394 | 9.875 | alpha-BHC |
| 5.457 | 44270 | 9.692 | gamma-BHC | 5.614 | 24427 | 9.648 | gamma-BHC |
| 5.585 | 26036 | 9.553 | beta-BHC | 5.738 | 15402 | 9.579 | beta-BHC |
| 5.838 | 269 | .063 | delta-BHC | . | 0 | . | delta-BHC |
| 6.119 | 88 | .017 | Heptachlor | . | 0 | . | Heptachlor |
| 7.358 | 561 | . | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.565 | 511 | .121 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.727 | 582 | .137 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.814 | 2588 | .758 | 4,4'-DDE | 8.109 | 1790 | .924 | 4,4'-DDE |
| 7.911 | 162 | .042 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.376 | 2069 | 691.792 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.537 | 166393 | 48.949 | Endrin | 8.727 | 109360 | 53.957 | Endrin |
| 8.838 | 437 | .126 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.862 | 707 | .567 | 4,4'-DDD |
| 8.96 | 291868 | 98.524 | 4,4'-DDT | 9.255 | 184473 | 113.66 | 4,4'-DDT |
| 9.378 | 1336 | .537 | Endrin aldehyde | 9.433 | 1186 | .72 | Endrin aldehyde |
| 9.57 | 384126 | 220.684 | Methoxychlor | 10.126 | 233623 | 234.834 | Methoxychlor |
| 9.946 | 686 | .223 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.31 | 1971 | .551 | Endrin ketone | 10.485 | 1611 | .663 | Endrin ketone |
| 11.619 | 74345 | 19.9 | DCB | 12.231 | 50119 | 19.961 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.10A
Area File: C:\CPWIN\DATA1\1C13051B.10A
Method A: C:\CPWIN\DATA1\E608D.MET
Method B: C:\CPWIN\DATA1\E608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/23/2004 9:47:00 AM
File Reported On: 2/23/2004 at 9:47:10 AM

Sample Name: **MIXA103D AAMIXA1AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:23:20am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.11R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 1038.6 | 0.222 | BB | 0.036 | 479.16 | 0.283 |
| 2 | 4.176 | TCX | 4.1773 | 8.043 | 41715.5 | 8.904 | BB | 0.044 | 15862.43 | 9.357 |
| 3 | 4.747 | HCB | 0.8287 | 1.596 | 3280.5 | 0.700 | BB | 0.238 | 230.08 | 0.136 |
| 4 | 4.996 | alpha-BHC | 0.9190 | 1.769 | 9148.1 | 1.953 | BB | 0.036 | 4252.11 | 2.508 |
| 5 | 5.107 | | 0.0000 | 0.000 | 407.1 | 0.087 | BB | 0.045 | 152.28 | 0.090 |
| 6 | 5.456 | gamma-BHC | 0.9588 | 1.846 | 9275.1 | 1.980 | BB | 0.035 | 4379.77 | 2.584 |
| 7 | 5.585 | beta-BHC | 1.1470 | 2.208 | 6905.5 | 1.474 | BB | 0.037 | 3126.14 | 1.844 |
| 8 | 5.687 | | 0.0000 | 0.000 | 79.9 | 0.017 | BB | 0.026 | 50.83 | 0.030 |
| 9 | 5.838 | delta-BHC | 0.9697 | 1.867 | 8585.0 | 1.832 | BB | 0.035 | 4127.14 | 2.435 |
| 10 | 5.973 | | 0.0000 | 0.000 | 381.8 | 0.082 | BV | 0.056 | 112.89 | 0.067 |
| 11 | 6.134 | Heptachlor | 1.0862 | 2.091 | 15382.7 | 3.283 | VV | 0.046 | 5611.52 | 3.310 |
| 12 | 6.368 | | 0.0000 | 0.000 | 4179.5 | 0.892 | VV | 0.150 | 463.56 | 0.273 |
| 13 | 6.554 | Aldrin | 1.0343 | 1.991 | 10204.5 | 2.178 | VB | 0.041 | 4123.93 | 2.433 |
| 14 | 6.766 | | 0.0000 | 0.000 | 419.4 | 0.090 | BB | 0.049 | 141.88 | 0.084 |
| 15 | 6.931 | | 0.0000 | 0.000 | 758.3 | 0.162 | BV | 0.058 | 217.69 | 0.128 |
| 16 | 7.384 | Hept. epoxide | 1.1539 | 2.222 | 20314.8 | 4.336 | VV | 0.066 | 5100.88 | 3.009 |
| 17 | 7.549 | g. Chlordane | 1.1254 | 2.167 | 13751.8 | 2.935 | VB | 0.048 | 4765.99 | 2.811 |
| 18 | 7.725 | a. Chlordane | 1.1490 | 2.212 | 12410.6 | 2.649 | BV | 0.042 | 4897.13 | 2.889 |
| 19 | 7.814 | 4,4'-DDE | 1.9822 | 3.816 | 15634.9 | 3.337 | VV | 0.039 | 6765.58 | 3.991 |
| 20 | 7.913 | Endosulfan I | 1.0627 | 2.046 | 9283.3 | 1.982 | VB | 0.038 | 4071.44 | 2.402 |
| 21 | 8.229 | Dieldrin | 2.0047 | 3.860 | 16279.7 | 3.475 | BB | 0.037 | 7304.34 | 4.309 |
| 22 | 8.327 | | 0.0000 | 0.000 | 310.7 | 0.066 | BB | 0.050 | 102.70 | 0.061 |
| 23 | 8.536 | Endrin | 2.0998 | 4.043 | 15846.9 | 3.383 | BV | 0.037 | 7138.07 | 4.211 |
| 24 | 8.597 | 4,4'-DDD | 2.1118 | 4.066 | 19181.3 | 4.094 | VB | 0.057 | 5614.00 | 3.312 |
| 25 | 8.832 | Endosulfan II | 2.1675 | 4.173 | 18240.3 | 3.893 | BV | 0.041 | 7495.29 | 4.421 |
| 26 | 8.959 | 4,4'-DDT | 2.1431 | 4.126 | 16543.3 | 3.531 | VV | 0.043 | 6348.63 | 3.745 |
| 27 | 9.181 | | 0.0000 | 0.000 | 820.1 | 0.175 | VV | 0.097 | 141.18 | 0.083 |
| 28 | 9.232 | | 0.0000 | 0.000 | 691.4 | 0.148 | VB | 0.043 | 266.65 | 0.157 |
| 29 | 9.377 | Endrin aldehyde | 2.2345 | 4.302 | 13750.2 | 2.935 | BB | 0.041 | 5553.98 | 3.276 |
| 30 | 9.573 | Methoxychlor | 12.0947 | 23.286 | 54637.4 | 11.662 | BB | 0.043 | 21052.21 | 12.419 |
| 31 | 9.874 | | 0.0000 | 0.000 | 900.4 | 0.192 | BB | 0.061 | 244.72 | 0.144 |
| 32 | 9.942 | Endo. sulfate | 2.3117 | 4.451 | 17114.8 | 3.653 | BV | 0.040 | 7112.97 | 4.196 |
| 33 | 10.182 | | 0.0000 | 0.000 | 14020.8 | 2.993 | VB | 0.057 | 4132.23 | 2.438 |
| 34 | 10.310 | Endrin ketone | 2.1295 | 4.100 | 17548.4 | 3.746 | BB | 0.038 | 7613.26 | 4.491 |
| 35 | 10.710 | | 0.0000 | 0.000 | 3009.5 | 0.642 | BV | 0.071 | 710.67 | 0.419 |
| 36 | 10.814 | | 0.0000 | 0.000 | 563.5 | 0.120 | VB | 0.070 | 133.81 | 0.079 |
| 37 | 10.918 | | 0.0000 | 0.000 | 1019.7 | 0.218 | BB | 0.114 | 149.10 | 0.088 |
| 38 | 11.482 | | 0.0000 | 0.000 | 1085.9 | 0.232 | BB | 0.237 | 76.39 | 0.045 |
| 39 | 11.621 | DCB | 5.0483 | 9.720 | 58842.6 | 12.560 | BB | 0.052 | 18859.58 | 11.125 |
| 40 | 13.476 | | 0.0000 | 0.000 | 14928.6 | 3.187 | BB | 0.461 | 539.39 | 0.318 |

Total Area = 468492.6, Total Amount = 51.94, Total Height = 169521.6, Sample Units = PPB

Sample Name: **MIXA103D AAMIXA1AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:23:20am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.11R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

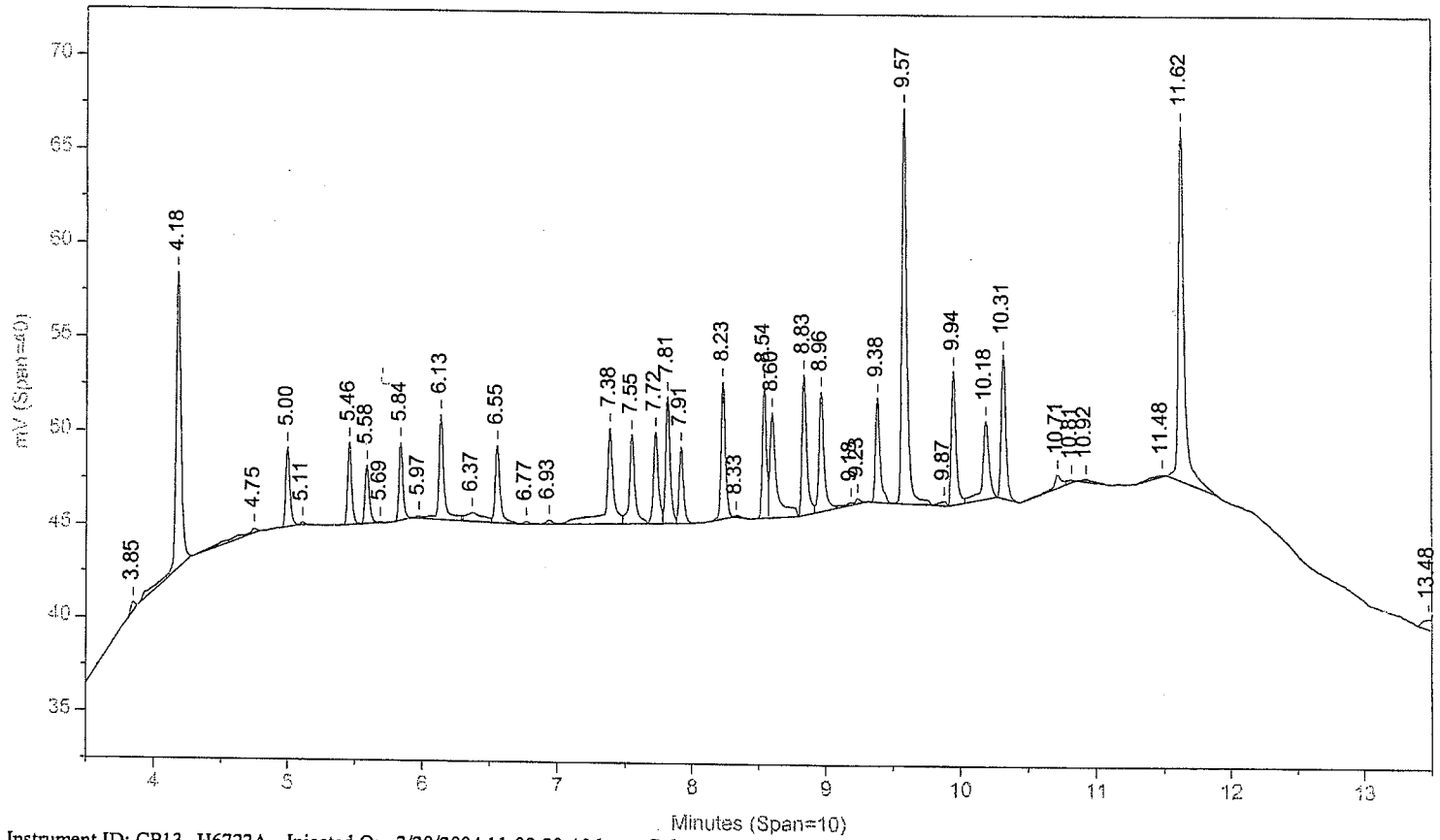
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1775.5 | 0.575 | BB | 0.044 | 669.40 | 0.707 |
| 2 | 3.380 | | 0.0000 | 0.000 | 24746.2 | 8.014 | BB | 0.373 | 1105.83 | 1.167 |
| 3 | 3.772 | | 0.0000 | 0.000 | 1380.8 | 0.447 | BB | 0.046 | 503.48 | 0.531 |
| 4 | 4.211 | TCX | 3.8553 | 7.352 | 49785.0 | 16.122 | BB | 0.085 | 9805.67 | 10.351 |
| 5 | 5.099 | alpha-BHC | 0.8296 | 1.582 | 4146.4 | 1.343 | BB | 0.034 | 2049.44 | 2.163 |
| 6 | 5.611 | gamma-BHC | 0.8684 | 1.656 | 4537.9 | 1.470 | BV | 0.034 | 2198.67 | 2.321 |
| 7 | 5.737 | beta-BHC | 1.1189 | 2.134 | 5745.7 | 1.861 | VV | 0.053 | 1799.06 | 1.899 |
| 8 | 6.149 | delta-BHC | 0.9726 | 1.855 | 4946.2 | 1.602 | VV | 0.039 | 2129.23 | 2.248 |
| 9 | 6.230 | Heptachlor | 1.0502 | 2.003 | 6942.5 | 2.248 | VB | 0.039 | 2995.94 | 3.163 |
| 10 | 6.676 | Aldrin | 0.9549 | 1.821 | 4566.9 | 1.479 | BB | 0.034 | 2209.96 | 2.333 |
| 11 | 7.448 | Hept. epoxide | 1.0520 | 2.006 | 8678.5 | 2.810 | BV | 0.053 | 2713.15 | 2.864 |
| 12 | 7.699 | g. Chlordane | 5.5621 | 10.607 | 11244.8 | 3.641 | VV | 0.065 | 2891.10 | 3.052 |
| 13 | 7.889 | a. Chlordane | 1.1770 | 2.245 | 8465.4 | 2.741 | VV | 0.044 | 3183.68 | 3.361 |
| 14 | 7.968 | Endosulfan I | 1.1952 | 2.279 | 11051.7 | 3.579 | VV | 0.063 | 2936.58 | 3.100 |
| 15 | 8.105 | 4,4'-DDE | 2.0096 | 3.833 | 15373.6 | 4.978 | VV | 0.066 | 3893.56 | 4.110 |
| 16 | 8.327 | Dieldrin | 1.9241 | 3.670 | 13472.5 | 4.363 | VB | 0.050 | 4499.32 | 4.750 |
| 17 | 8.726 | Endrin | 1.8882 | 3.601 | 8195.5 | 2.654 | BB | 0.036 | 3826.97 | 4.040 |
| 18 | 8.855 | 4,4'-DDD | 1.7812 | 3.397 | 6118.7 | 1.981 | BB | 0.046 | 2219.20 | 2.343 |
| 19 | 9.002 | Endosulfan II | 1.9907 | 3.796 | 11147.7 | 3.610 | BB | 0.044 | 4203.35 | 4.437 |
| 20 | 9.257 | 4,4'-DDT | 1.8837 | 3.592 | 7245.6 | 2.346 | BB | 0.039 | 3057.28 | 3.227 |
| 21 | 9.436 | Endrin aldehyde | 2.1784 | 4.154 | 8518.0 | 2.758 | BB | 0.040 | 3588.82 | 3.788 |
| 22 | 9.785 | Endo. sulfate | 2.0798 | 3.966 | 9614.0 | 3.113 | BB | 0.041 | 3883.30 | 4.099 |
| 23 | 10.131 | Methoxychlor | 11.0885 | 21.147 | 27380.2 | 8.867 | BB | 0.041 | 11031.32 | 11.645 |
| 24 | 10.486 | Endrin ketone | 2.1624 | 4.124 | 20318.2 | 6.580 | BB | 0.064 | 5251.21 | 5.543 |
| 25 | 12.233 | DCB | 4.8131 | 9.179 | 33408.1 | 10.818 | BB | 0.046 | 12084.96 | 12.757 |

Total Area = 308805.3, Total Amount = 52.436, Total Height = 94730.46, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.11R

C:\CPWIN\DATA1\1C13051.11R

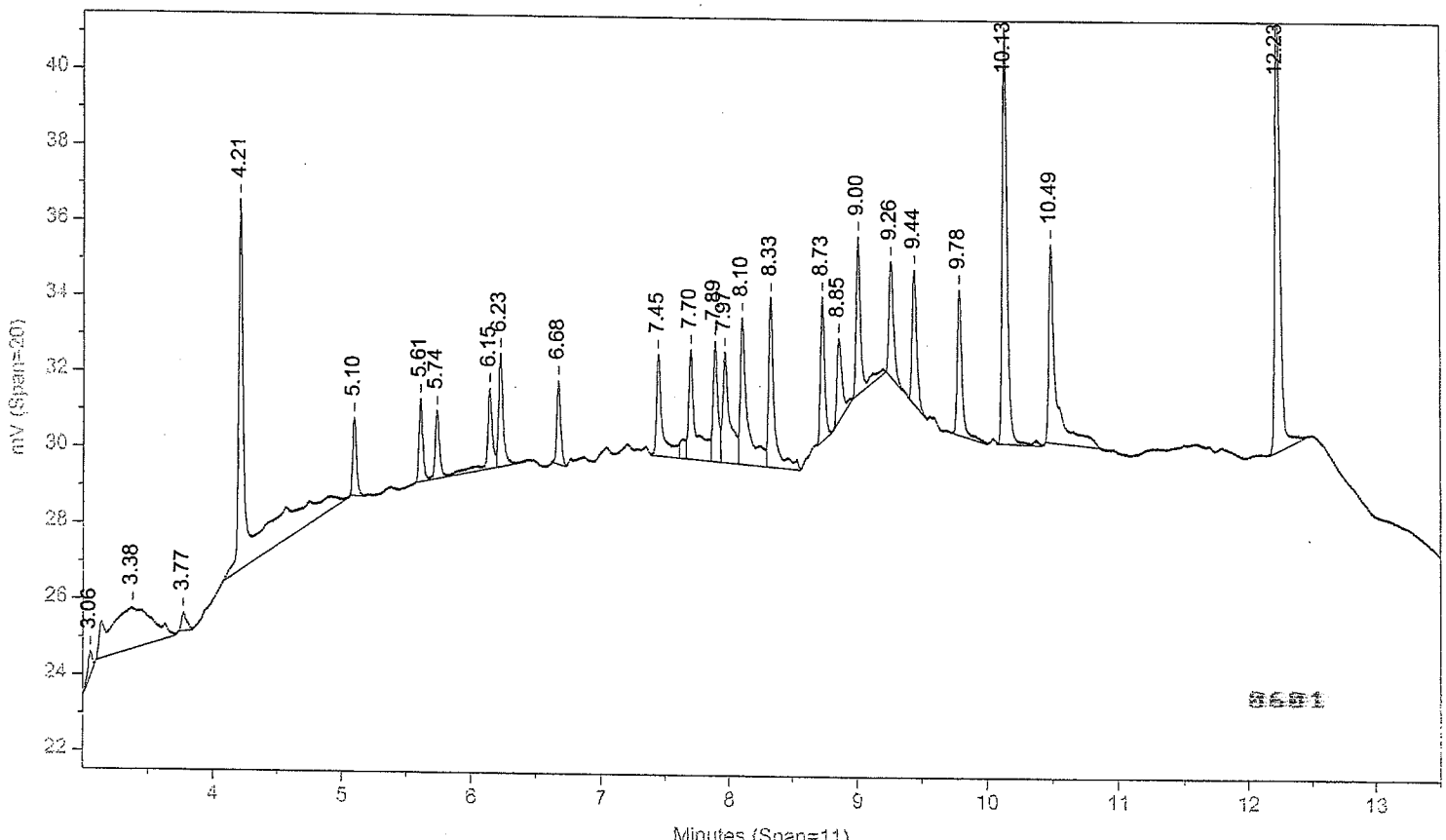



Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:09:20 AM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.11R

C:\CPWIN\DATA1\1C13051B.11R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:09:20 AM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

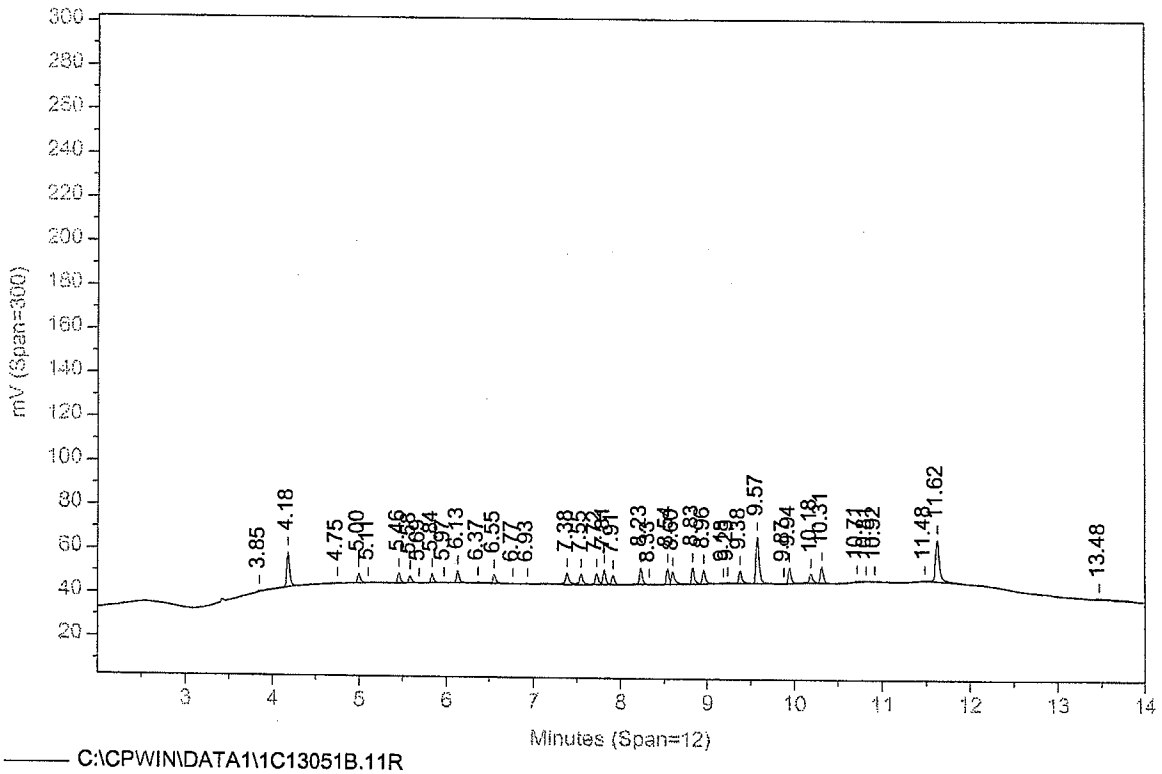
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.176 | 15862 | 4.17726 | TCX | 4.211 | 9806 | 3.85532 | TCX |
| 4.747 | 230 | .82874 | HCB | . | 0 | . | HCB |
| 4.996 | 4252 | .91896 | alpha-BHC | 5.099 | 2049 | .82965 | alpha-BHC |
| 5.456 | 4380 | .95881 | gamma-BHC | 5.611 | 2199 | .86843 | gamma-BHC |
| 5.585 | 3126 | 1.14696 | beta-BHC | 5.737 | 1799 | 1.11893 | beta-BHC |
| 5.838 | 4127 | .96968 | delta-BHC | 6.149 | 2129 | .97257 | delta-BHC |
| 6.134 | 5612 | 1.08623 | Heptachlor | 6.23 | 2996 | 1.05023 | Heptachlor |
| 6.554 | 4124 | 1.03434 | Aldrin | 6.676 | 2210 | .95486 | Aldrin |
| 7.384 | 5101 | 1.15395 | Hept. epoxide | 7.448 | 2713 | 1.05198 | Hept. epoxide |
| 7.549 | 4766 | 1.12535 | g. Chlordane | 7.699 | 2891 | 5.56208 | g. Chlordane |
| 7.725 | 4897 | 1.14899 | a. Chlordane | 7.889 | 3184 | 1.17695 | a. Chlordane |
| 7.814 | 6766 | 1.98218 | 4,4'-DDE | 8.105 | 3894 | 2.00962 | 4,4'-DDE |
| 7.913 | 4071 | 1.0627 | Endosulfan I | 7.968 | 2937 | 1.1952 | Endosulfan I |
| 8.229 | 7304 | 2.00471 | Dieldrin | 8.327 | 4499 | 1.92415 | Dieldrin |
| 8.536 | 7138 | 2.09985 | Endrin | 8.726 | 3827 | 1.88816 | Endrin |
| 8.597 | 5614 | 2.11184 | 4,4'-DDD | 8.855 | 2219 | 1.78124 | 4,4'-DDD |
| 8.832 | 7495 | 2.1675 | Endosulfan II | 9.002 | 4203 | 1.9907 | Endosulfan II |
| 8.959 | 6349 | 2.14307 | 4,4'-DDT | 9.257 | 3057 | 1.88371 | 4,4'-DDT |
| 9.377 | 5554 | 2.23453 | Endrin aldehyde | 9.436 | 3589 | 2.17843 | Endrin aldehyde |
| 9.573 | 21052 | 12.09472 | Methoxychlor | 10.131 | 11031 | 11.08851 | Methoxychlor |
| 9.942 | 7113 | 2.31166 | Endo. sulfate | 9.785 | 3883 | 2.07979 | Endo. sulfate |
| 10.31 | 7613 | 2.12947 | Endrin ketone | 10.486 | 5251 | 2.16244 | Endrin ketone |
| 11.621 | 18860 | 5.04829 | DCB | 12.233 | 12085 | 4.81308 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.11A
Area File: C:\CPWIN\DATA1\1C13051B.11A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:12 AM
File Reported On: 2/23/2004 at 10:02:24 AM

8682

10X REPLOTS

C:\CPWIN\DATA1\1C13051.11R

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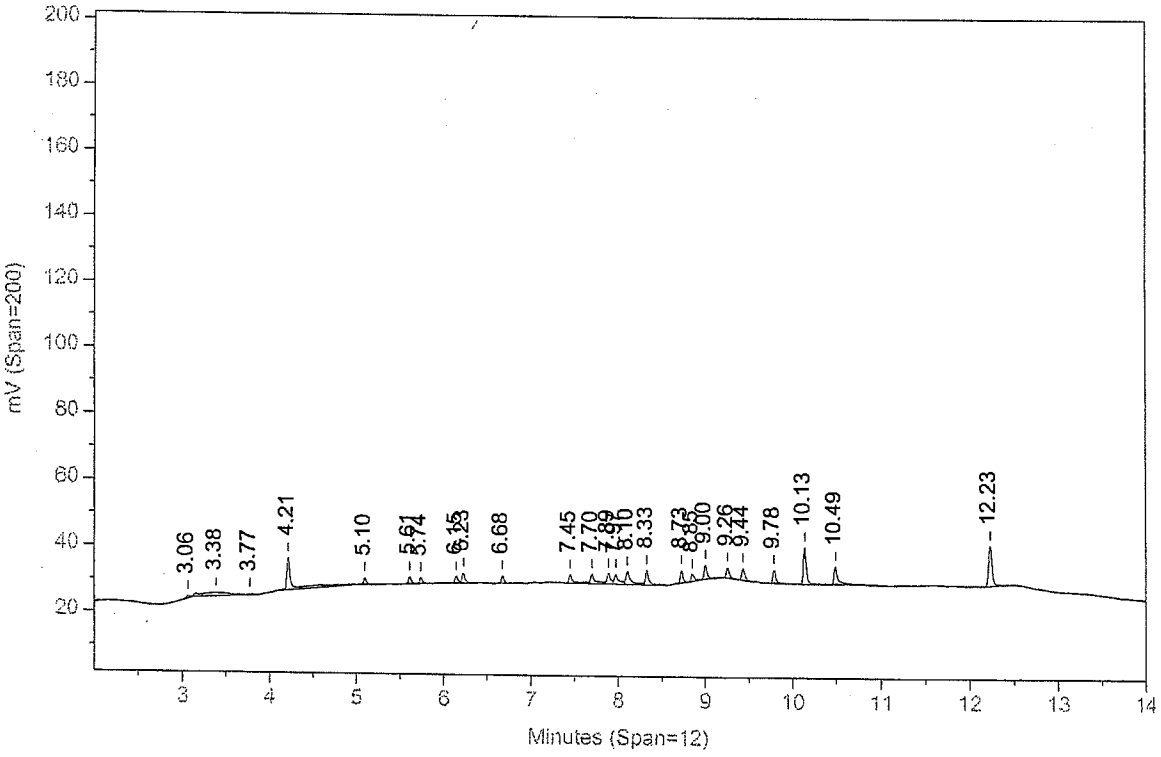


Sample Name: **MIXA203E AAMIXA2AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 11:43:46am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.12R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 2400.7 | 0.133 | BB | 0.036 | 1105.07 | 0.149 |
| 2 | 4.174 | TCX | 19.5684 | 8.177 | 180427.7 | 9.983 | BB | 0.040 | 74307.41 | 10.034 |
| 3 | 4.625 | | 0.0000 | 0.000 | 1503.8 | 0.083 | BB | 0.113 | 220.88 | 0.030 |
| 4 | 4.746 | HCB | 3.2353 | 1.352 | 1917.6 | 0.106 | BB | 0.036 | 898.19 | 0.121 |
| 5 | 4.810 | | 0.0000 | 0.000 | 78.2 | 0.004 | BB | 0.022 | 58.47 | 0.008 |
| 6 | 4.997 | alpha-BHC | 4.6930 | 1.961 | 46236.2 | 2.558 | BB | 0.035 | 21714.89 | 2.932 |
| 7 | 5.456 | gamma-BHC | 4.7958 | 2.004 | 45835.8 | 2.536 | BB | 0.035 | 21906.76 | 2.958 |
| 8 | 5.585 | beta-BHC | 5.0042 | 2.091 | 30152.7 | 1.668 | BB | 0.037 | 13639.34 | 1.842 |
| 9 | 5.688 | | 0.0000 | 0.000 | 301.8 | 0.017 | BB | 0.028 | 182.66 | 0.025 |
| 10 | 5.838 | delta-BHC | 4.7371 | 1.979 | 43115.7 | 2.386 | BB | 0.036 | 20162.09 | 2.722 |
| 11 | 6.046 | | 0.0000 | 0.000 | 339.4 | 0.019 | BV | 0.045 | 126.40 | 0.017 |
| 12 | 6.135 | Heptachlor | 4.9866 | 2.084 | 58253.5 | 3.223 | VV | 0.038 | 25760.87 | 3.478 |
| 13 | 6.370 | | 0.0000 | 0.000 | 3613.1 | 0.200 | VV | 0.129 | 467.68 | 0.063 |
| 14 | 6.555 | Aldrin | 4.8498 | 2.027 | 42941.3 | 2.376 | VB | 0.037 | 19336.14 | 2.611 |
| 15 | 6.764 | | 0.0000 | 0.000 | 409.9 | 0.023 | BB | 0.046 | 147.58 | 0.020 |
| 16 | 6.932 | | 0.0000 | 0.000 | 859.7 | 0.048 | BV | 0.053 | 268.87 | 0.036 |
| 17 | 7.017 | | 0.0000 | 0.000 | 343.6 | 0.019 | VV | 0.043 | 132.54 | 0.018 |
| 18 | 7.385 | Hept. epoxide | 4.9914 | 2.086 | 57956.7 | 3.207 | VV | 0.044 | 22063.71 | 2.979 |
| 19 | 7.549 | g. Chlordane | 5.0128 | 2.095 | 50997.7 | 2.822 | VV | 0.040 | 21229.69 | 2.867 |
| 20 | 7.725 | a. Chlordane | 5.0057 | 2.092 | 49431.3 | 2.735 | VV | 0.039 | 21334.97 | 2.881 |
| 21 | 7.815 | 4,4'-DDE | 9.7050 | 4.055 | 73315.0 | 4.056 | VV | 0.037 | 33125.14 | 4.473 |
| 22 | 7.914 | Endosulfan I | 5.0393 | 2.106 | 44326.8 | 2.453 | VV | 0.038 | 19306.69 | 2.607 |
| 23 | 8.050 | o,p-DDD | 8.0140 | 3.349 | 152.7 | 0.008 | VB | 0.032 | 80.03 | 0.011 |
| 24 | 8.229 | Dieldrin | 9.7975 | 4.094 | 79005.1 | 4.371 | BB | 0.037 | 35697.96 | 4.820 |
| 25 | 8.537 | Endrin | 9.7942 | 4.093 | 71215.8 | 3.940 | BV | 0.036 | 33293.72 | 4.496 |
| 26 | 8.598 | 4,4'-DDD | 9.5489 | 3.990 | 67343.0 | 3.726 | VV | 0.044 | 25384.31 | 3.428 |
| 27 | 8.832 | Endosulfan II | 10.0544 | 4.201 | 82480.9 | 4.564 | VV | 0.040 | 34768.54 | 4.695 |
| 28 | 8.960 | 4,4'-DDT | 9.7278 | 4.065 | 67797.7 | 3.751 | VV | 0.039 | 28817.83 | 3.891 |
| 29 | 9.176 | | 0.0000 | 0.000 | 568.4 | 0.031 | VV | 0.054 | 175.86 | 0.024 |
| 30 | 9.234 | | 0.0000 | 0.000 | 3771.2 | 0.209 | VB | 0.047 | 1342.46 | 0.181 |
| 31 | 9.376 | Endrin aldehyde | 10.0037 | 4.180 | 62313.0 | 3.448 | BV | 0.042 | 24864.52 | 3.357 |
| 32 | 9.572 | Methoxychlor | 50.3683 | 21.047 | 219160.3 | 12.126 | VB | 0.042 | 87671.58 | 11.838 |
| 33 | 9.876 | | 0.0000 | 0.000 | 590.9 | 0.033 | BB | 0.060 | 165.00 | 0.022 |
| 34 | 9.942 | Endo. sulfate | 9.9655 | 4.164 | 72840.2 | 4.030 | BV | 0.040 | 30663.62 | 4.140 |
| 35 | 10.117 | | 0.0000 | 0.000 | 1784.7 | 0.099 | VV | 0.041 | 730.40 | 0.099 |
| 36 | 10.181 | | 0.0000 | 0.000 | 15028.5 | 0.832 | VB | 0.048 | 5248.24 | 0.709 |
| 37 | 10.310 | Endrin ketone | 10.0357 | 4.194 | 83492.4 | 4.620 | BB | 0.039 | 35879.53 | 4.845 |
| 38 | 10.708 | | 0.0000 | 0.000 | 3393.6 | 0.188 | BB | 0.044 | 1286.94 | 0.174 |
| 39 | 11.156 | | 0.0000 | 0.000 | 159.8 | 0.009 | BB | 0.049 | 53.82 | 0.007 |
| 40 | 11.341 | | 0.0000 | 0.000 | 433.6 | 0.024 | BB | 0.037 | 194.57 | 0.026 |
| 41 | 11.619 | DCB | 20.3769 | 8.515 | 224722.6 | 12.434 | BB | 0.049 | 76124.64 | 10.279 |
| 42 | 13.499 | | 0.0000 | 0.000 | 16342.6 | 0.904 | BB | 0.417 | 653.54 | 0.088 |

Total Area = 1807355.0, Total Amount = 239.311, Total Height = 740593.1, Sample Units = PPB

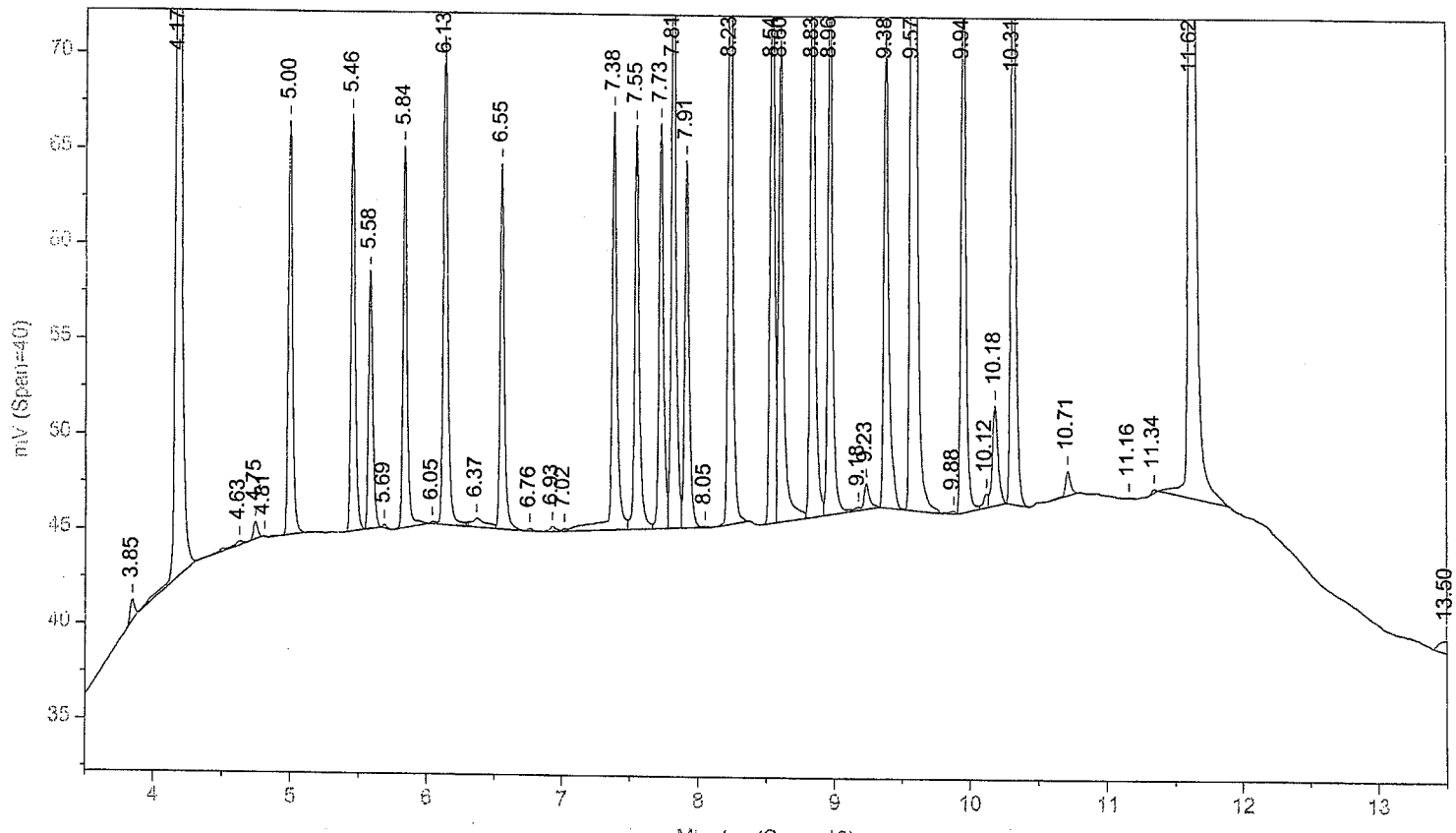
3654

Sample Name: **MIXA203E AAMIXA2AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 11:43:46am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.12R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.061 | | 0.0000 | 0.000 | 1653.0 | 0.162 | BB | 0.041 | 667.34 | 0.155 |
| 2 | 3.373 | | 0.0000 | 0.000 | 25102.6 | 2.454 | BB | 0.350 | 1194.19 | 0.278 |
| 3 | 3.777 | | 0.0000 | 0.000 | 1124.8 | 0.110 | BB | 0.041 | 458.61 | 0.107 |
| 4 | 3.940 | | 0.0000 | 0.000 | 838.9 | 0.082 | BB | 0.036 | 392.39 | 0.091 |
| 5 | 4.210 | TCX | 19.1421 | 8.413 | 109183.6 | 10.674 | BB | 0.037 | 48686.09 | 11.317 |
| 6 | 4.747 | | 0.0000 | 0.000 | 2900.7 | 0.284 | BB | 0.085 | 571.94 | 0.133 |
| 7 | 5.100 | alpha-BHC | 4.3927 | 1.931 | 20766.7 | 2.030 | BB | 0.032 | 10851.14 | 2.522 |
| 8 | 5.613 | gamma-BHC | 4.5037 | 1.979 | 22232.1 | 2.173 | BB | 0.032 | 11402.26 | 2.650 |
| 9 | 5.737 | beta-BHC | 4.8155 | 2.116 | 16612.7 | 1.624 | BB | 0.036 | 7742.59 | 1.800 |
| 10 | 6.149 | delta-BHC | 4.4578 | 1.959 | 19747.5 | 1.930 | BV | 0.034 | 9759.44 | 2.269 |
| 11 | 6.230 | Heptachlor | 4.8150 | 2.116 | 29185.5 | 2.853 | VB | 0.035 | 13735.39 | 3.193 |
| 12 | 6.676 | Aldrin | 4.6273 | 2.034 | 21479.1 | 2.100 | BB | 0.033 | 10709.52 | 2.489 |
| 13 | 7.448 | Hept. epoxide | 4.7889 | 2.105 | 28606.6 | 2.797 | BV | 0.039 | 12350.95 | 2.871 |
| 14 | 7.699 | g. Chlordane | 11.3784 | 5.001 | 30059.9 | 2.939 | VV | 0.040 | 12493.58 | 2.904 |
| 15 | 7.890 | a. Chlordane | 4.7773 | 2.100 | 27698.9 | 2.708 | VV | 0.036 | 12922.65 | 3.004 |
| 16 | 7.969 | Endosulfan I | 4.7111 | 2.070 | 28258.2 | 2.762 | VV | 0.041 | 11574.98 | 2.691 |
| 17 | 8.105 | 4,4'-DDE | 8.9880 | 3.950 | 45703.5 | 4.468 | VV | 0.044 | 17413.93 | 4.048 |
| 18 | 8.328 | Dieldrin | 9.2598 | 4.070 | 45904.8 | 4.488 | VB | 0.035 | 21652.72 | 5.033 |
| 19 | 8.727 | Endrin | 9.3568 | 4.112 | 38977.9 | 3.810 | BB | 0.034 | 18964.52 | 4.408 |
| 20 | 8.857 | 4,4'-DDD | 9.1130 | 4.005 | 29361.8 | 2.870 | BB | 0.043 | 11353.69 | 2.639 |
| 21 | 9.002 | Endosulfan II | 9.6098 | 4.223 | 45271.1 | 4.426 | BB | 0.037 | 20290.98 | 4.717 |
| 22 | 9.258 | 4,4'-DDT | 9.3454 | 4.107 | 35302.8 | 3.451 | BB | 0.039 | 15167.74 | 3.526 |
| 23 | 9.434 | Endrin aldehyde | 9.7405 | 4.281 | 36739.2 | 3.592 | BB | 0.038 | 16046.82 | 3.730 |
| 24 | 9.561 | | 0.0000 | 0.000 | 2936.8 | 0.287 | BB | 0.065 | 755.81 | 0.176 |
| 25 | 9.786 | Endo. sulfate | 9.6338 | 4.234 | 40896.4 | 3.998 | BB | 0.038 | 17987.75 | 4.181 |
| 26 | 10.044 | | 0.0000 | 0.000 | 570.0 | 0.056 | BB | 0.034 | 277.56 | 0.065 |
| 27 | 10.129 | Methoxychlor | 49.9962 | 21.973 | 116302.4 | 11.370 | BB | 0.039 | 49738.37 | 11.562 |
| 28 | 10.366 | | 0.0000 | 0.000 | 579.9 | 0.057 | BB | 0.032 | 306.09 | 0.071 |
| 29 | 10.486 | Endrin ketone | 9.6476 | 4.240 | 61768.0 | 6.038 | BB | 0.044 | 23427.95 | 5.446 |
| 30 | 12.231 | DCB | 20.4345 | 8.981 | 137165.1 | 13.409 | BB | 0.045 | 51308.05 | 11.926 |

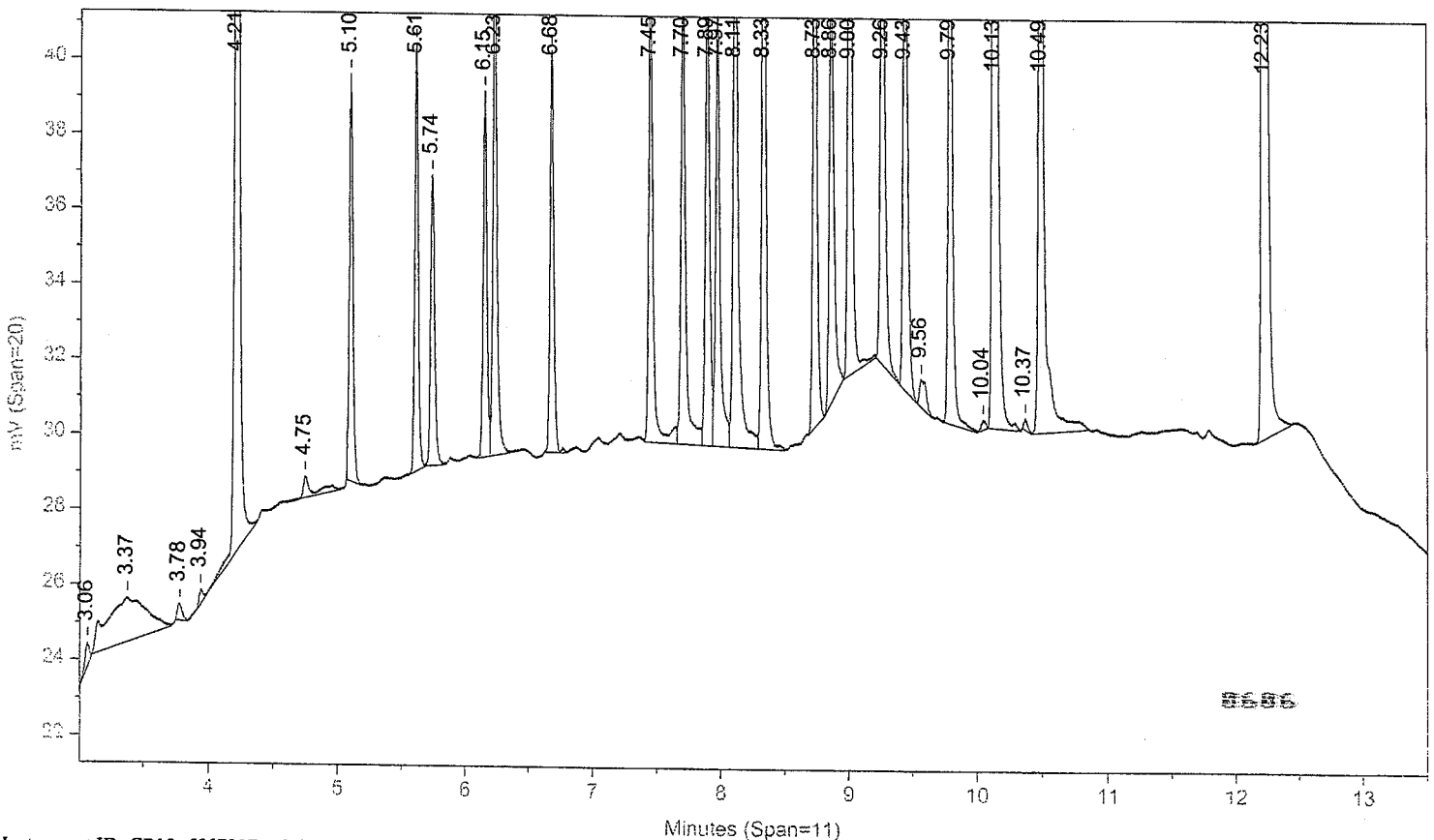
Total Area = 1022930.0, Total Amount = 227.535, Total Height = 430205.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.12R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:29:46 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.12R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:29:46 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01
Calibration Type: External

Area Reject: 0
Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02
Calibration Type: External

Area Reject: 0
Quantiation: Height

Sample Weight: 1
Analyst: 120

Dilution Factor: 1

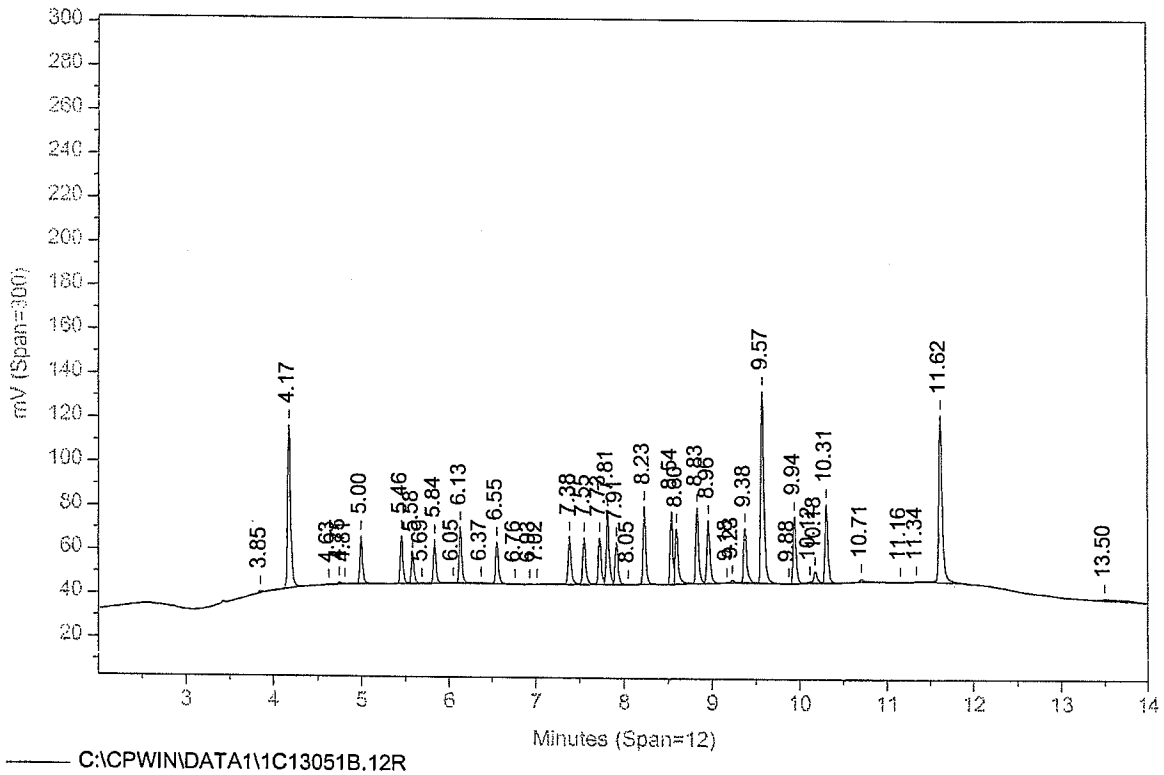
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 74307 | 19.56836 | TCX | 4.21 | 48686 | 19.14205 | TCX |
| 4.746 | 898 | 3.23528 | HCB | . | 0 | . | HCB |
| 4.997 | 21715 | 4.69297 | alpha-BHC | 5.1 | 10851 | 4.39271 | alpha-BHC |
| 5.456 | 21907 | 4.79581 | gamma-BHC | 5.613 | 11402 | 4.50365 | gamma-BHC |
| 5.585 | 13639 | 5.00417 | beta-BHC | 5.737 | 7743 | 4.81553 | beta-BHC |
| 5.838 | 20162 | 4.73711 | delta-BHC | 6.149 | 9759 | 4.45781 | delta-BHC |
| 6.135 | 25761 | 4.98656 | Heptachlor | 6.23 | 13735 | 4.81496 | Heptachlor |
| 6.555 | 19336 | 4.84975 | Aldrin | 6.676 | 10710 | 4.62728 | Aldrin |
| 7.385 | 22064 | 4.99137 | Hept. epoxide | 7.448 | 12351 | 4.78888 | Hept. epoxide |
| 7.549 | 21230 | 5.01278 | g. Chlordane | 7.699 | 12494 | 11.37841 | g. Chlordane |
| 7.725 | 21335 | 5.00571 | a. Chlordane | 7.89 | 12923 | 4.77729 | a. Chlordane |
| 7.815 | 33125 | 9.70501 | 4,4'-DDE | 8.105 | 17414 | 8.98803 | 4,4'-DDE |
| 7.914 | 19307 | 5.03931 | Endosulfan I | 7.969 | 11575 | 4.71105 | Endosulfan I |
| 8.05 | 80 | 8.01404 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.229 | 35698 | 9.79747 | Dieldrin | 8.328 | 21653 | 9.25984 | Dieldrin |
| 8.537 | 33294 | 9.79421 | Endrin | 8.727 | 18965 | 9.35679 | Endrin |
| 8.598 | 25384 | 9.54891 | 4,4'-DDD | 8.857 | 11354 | 9.11303 | 4,4'-DDD |
| 8.832 | 34769 | 10.05444 | Endosulfan II | 9.002 | 20291 | 9.60981 | Endosulfan II |
| 8.96 | 28818 | 9.72785 | 4,4'-DDT | 9.258 | 15168 | 9.34541 | 4,4'-DDT |
| 9.376 | 24865 | 10.00374 | Endrin aldehyde | 9.434 | 16047 | 9.74051 | Endrin aldehyde |
| 9.572 | 87672 | 50.36826 | Methoxychlor | 10.129 | 49738 | 49.9962 | Methoxychlor |
| 9.942 | 30664 | 9.96545 | Endo. sulfate | 9.786 | 17988 | 9.63377 | Endo. sulfate |
| 10.31 | 35880 | 10.03568 | Endrin ketone | 10.486 | 23428 | 9.64762 | Endrin ketone |
| 11.619 | 76125 | 20.37686 | DCB | 12.231 | 51308 | 20.43447 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.12A
Area File: C:\CPWIN\DATA1\1C13051B.12A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:36 AM
File Reported On: 2/23/2004 at 10:02:47 AM

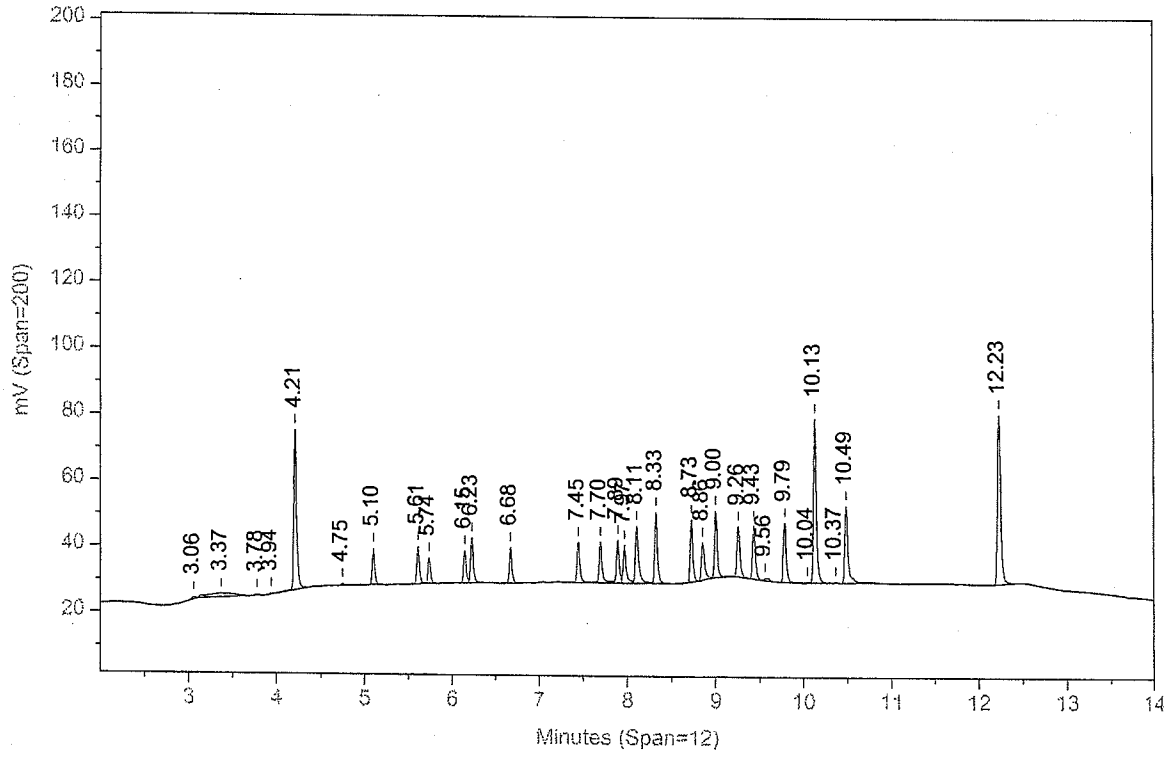
8687

10X REPLOTS

C:\CPWIN\DATA1\1C13051.12R




C:\CPWIN\DATA1\1C13051B.12R



Sample Name: **MIXA303D AAMIXA3AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:04:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.13R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 4162.8 | 0.122 | BB | 0.037 | 1888.78 | 0.131 |
| 2 | 4.173 | TCX | 37.9902 | 7.291 | 344462.0 | 10.101 | BB | 0.040 | 144260.90 | 9.998 |
| 3 | 4.506 | | 0.0000 | 0.000 | 198.7 | 0.006 | BB | 0.037 | 90.71 | 0.006 |
| 4 | 4.621 | | 0.0000 | 0.000 | 714.3 | 0.021 | BB | 0.057 | 210.03 | 0.015 |
| 5 | 4.746 | HCB | 6.4126 | 1.231 | 3763.8 | 0.110 | BB | 0.035 | 1780.28 | 0.123 |
| 6 | 4.806 | | 0.0000 | 0.000 | 132.2 | 0.004 | BB | 0.021 | 103.61 | 0.007 |
| 7 | 4.872 | | 0.0000 | 0.000 | 186.1 | 0.005 | BB | 0.032 | 96.52 | 0.007 |
| 8 | 4.996 | alpha-BHC | 10.0363 | 1.926 | 95779.7 | 2.809 | BB | 0.034 | 46438.98 | 3.219 |
| 9 | 5.160 | | 0.0000 | 0.000 | 165.7 | 0.005 | BB | 0.040 | 69.03 | 0.005 |
| 10 | 5.456 | gamma-BHC | 9.9960 | 1.918 | 94227.0 | 2.763 | BB | 0.034 | 45660.75 | 3.165 |
| 11 | 5.584 | beta-BHC | 9.6860 | 1.859 | 58238.8 | 1.708 | BB | 0.037 | 26400.15 | 1.830 |
| 12 | 5.689 | | 0.0000 | 0.000 | 607.3 | 0.018 | BB | 0.028 | 364.86 | 0.025 |
| 13 | 5.838 | delta-BHC | 9.9267 | 1.905 | 88060.4 | 2.582 | BB | 0.035 | 42249.88 | 2.928 |
| 14 | 6.046 | | 0.0000 | 0.000 | 503.7 | 0.015 | BV | 0.041 | 205.84 | 0.014 |
| 15 | 6.134 | Heptachlor | 9.7918 | 1.879 | 111794.8 | 3.278 | VV | 0.037 | 50585.26 | 3.506 |
| 16 | 6.370 | | 0.0000 | 0.000 | 3831.0 | 0.112 | VV | 0.113 | 562.68 | 0.039 |
| 17 | 6.554 | Aldrin | 9.8240 | 1.885 | 84834.3 | 2.488 | VB | 0.036 | 39168.45 | 2.715 |
| 18 | 6.761 | | 0.0000 | 0.000 | 554.0 | 0.016 | BB | 0.055 | 167.97 | 0.012 |
| 19 | 6.933 | | 0.0000 | 0.000 | 8247.0 | 0.242 | BB | 0.044 | 3123.28 | 0.216 |
| 20 | 7.140 | | 0.0000 | 0.000 | 650.8 | 0.019 | BV | 0.058 | 185.96 | 0.013 |
| 21 | 7.384 | Hept. epoxide | 9.6148 | 1.845 | 99266.7 | 2.911 | VV | 0.039 | 42500.96 | 2.946 |
| 22 | 7.548 | g. Chlordane | 9.6702 | 1.856 | 94348.1 | 2.767 | VV | 0.038 | 40954.52 | 2.838 |
| 23 | 7.725 | a. Chlordane | 9.6388 | 1.850 | 91765.7 | 2.691 | VV | 0.037 | 41081.58 | 2.847 |
| 24 | 7.814 | 4,4'-DDE | 19.8847 | 3.816 | 146627.3 | 4.300 | VV | 0.036 | 67870.28 | 4.704 |
| 25 | 7.913 | Endosulfan I | 9.8528 | 1.891 | 85877.5 | 2.518 | VV | 0.038 | 37748.38 | 2.616 |
| 26 | 8.052 | o,p-DDD | 14.7292 | 2.827 | 297.9 | 0.009 | VB | 0.034 | 147.09 | 0.010 |
| 27 | 8.229 | Dieldrin | 19.9216 | 3.823 | 156978.1 | 4.603 | BB | 0.036 | 72586.30 | 5.031 |
| 28 | 8.536 | Endrin | 19.6718 | 3.775 | 141179.9 | 4.140 | BV | 0.035 | 66870.80 | 4.635 |
| 29 | 8.598 | 4,4'-DDD | 19.5581 | 3.754 | 132170.6 | 3.876 | VV | 0.042 | 51992.29 | 3.603 |
| 30 | 8.831 | Endosulfan II | 19.6791 | 3.777 | 158589.6 | 4.650 | VV | 0.039 | 68050.84 | 4.716 |
| 31 | 8.960 | 4,4'-DDT | 19.5253 | 3.747 | 133046.5 | 3.901 | VV | 0.038 | 57842.01 | 4.009 |
| 32 | 9.173 | | 0.0000 | 0.000 | 528.8 | 0.016 | VV | 0.053 | 166.04 | 0.012 |
| 33 | 9.233 | | 0.0000 | 0.000 | 6755.3 | 0.198 | VB | 0.042 | 2691.11 | 0.187 |
| 34 | 9.376 | Endrin aldehyde | 19.4847 | 3.739 | 121611.8 | 3.566 | BV | 0.042 | 48429.77 | 3.357 |
| 35 | 9.570 | Methoxychlor | 95.4230 | 18.313 | 409321.7 | 12.003 | VB | 0.041 | 166094.30 | 11.511 |
| 36 | 9.807 | Mirex | 55.3018 | 10.613 | 489.3 | 0.014 | BB | 0.082 | 99.09 | 0.007 |
| 37 | 9.942 | Endo. sulfate | 19.2141 | 3.688 | 139515.4 | 4.091 | BV | 0.039 | 59121.53 | 4.098 |
| 38 | 10.114 | | 0.0000 | 0.000 | 3503.9 | 0.103 | VV | 0.043 | 1372.39 | 0.095 |
| 39 | 10.181 | | 0.0000 | 0.000 | 13211.0 | 0.387 | VB | 0.045 | 4876.38 | 0.338 |
| 40 | 10.309 | Endrin ketone | 19.7538 | 3.791 | 164518.2 | 4.824 | BB | 0.039 | 70623.56 | 4.895 |
| 41 | 10.488 | | 0.0000 | 0.000 | 389.5 | 0.011 | BB | 0.037 | 174.00 | 0.012 |
| 42 | 10.710 | | 0.0000 | 0.000 | 1287.3 | 0.038 | BB | 0.065 | 331.72 | 0.023 |
| 43 | 11.338 | | 0.0000 | 0.000 | 1129.3 | 0.033 | BB | 0.038 | 494.32 | 0.034 |
| 44 | 11.492 | | 0.0000 | 0.000 | 264.6 | 0.008 | BB | 0.085 | 51.78 | 0.004 |
| 45 | 11.618 | DCB | 36.4672 | 6.999 | 386487.2 | 11.333 | BB | 0.047 | 136235.60 | 9.442 |
| 46 | 13.536 | | 0.0000 | 0.000 | 19887.0 | 0.583 | BB | 0.396 | 836.67 | 0.058 |

Total Area = 3410163.0, Total Amount = 521.055, Total Height = 1442857.0, Sample Units = PPB

Sample Name: **MIXA303D AAMIXA3AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:04:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.13R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

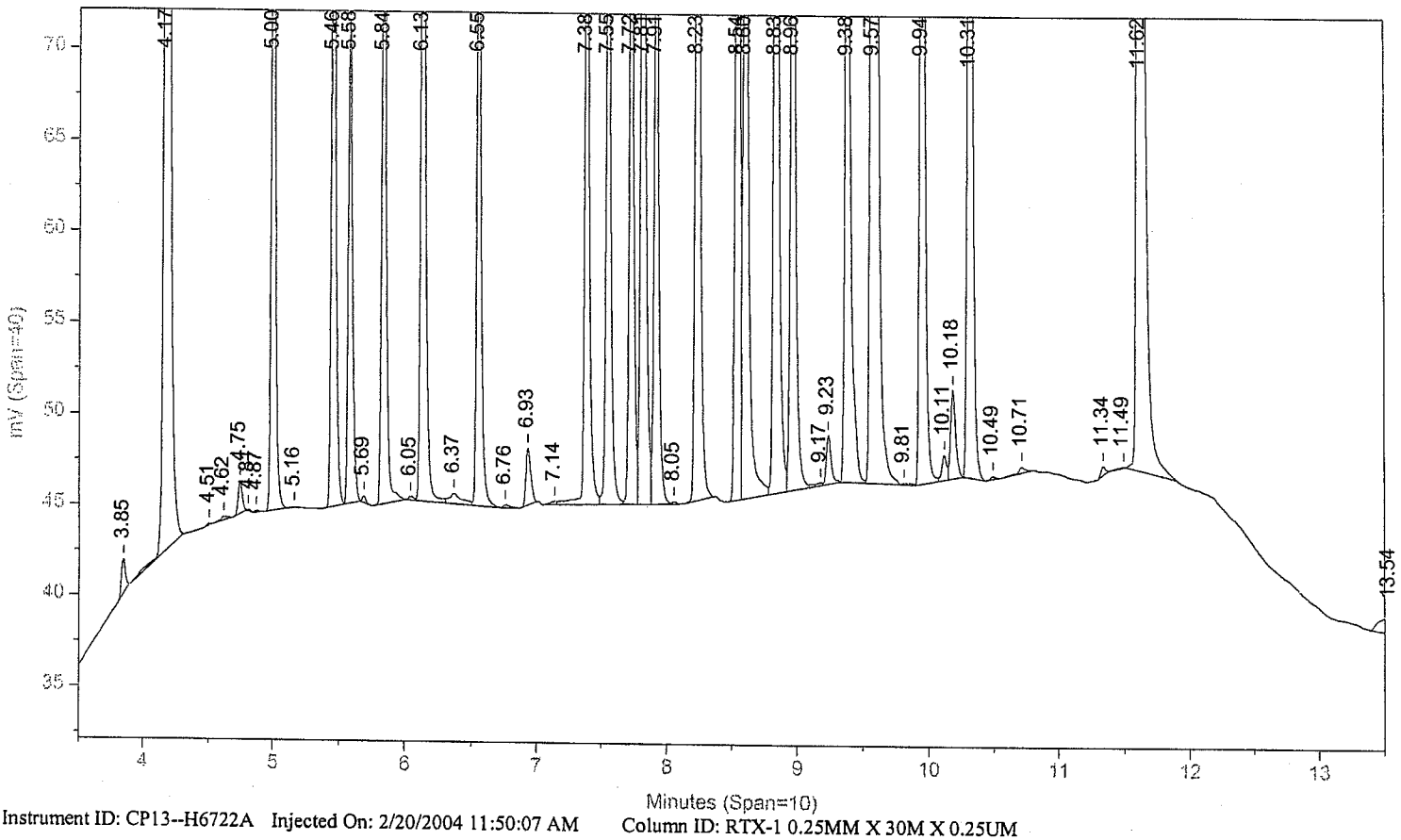
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 2028.6 | 0.105 | BB | 0.045 | 754.28 | 0.086 |
| 2 | 3.232 | | 0.0000 | 0.000 | 1634.0 | 0.085 | BB | 0.518 | 52.57 | 0.006 |
| 3 | 3.772 | | 0.0000 | 0.000 | 1549.1 | 0.080 | BB | 0.046 | 560.34 | 0.064 |
| 4 | 3.942 | | 0.0000 | 0.000 | 1611.7 | 0.083 | BB | 0.039 | 689.23 | 0.079 |
| 5 | 4.208 | TCX | 38.8283 | 8.548 | 211031.3 | 10.929 | BB | 0.036 | 98756.38 | 11.311 |
| 6 | 4.749 | | 0.0000 | 0.000 | 4319.4 | 0.224 | BB | 0.064 | 1123.90 | 0.129 |
| 7 | 5.100 | alpha-BHC | 9.9448 | 2.189 | 45018.2 | 2.331 | BB | 0.031 | 24566.14 | 2.814 |
| 8 | 5.613 | gamma-BHC | 10.0111 | 2.204 | 47529.2 | 2.462 | BB | 0.031 | 25345.78 | 2.903 |
| 9 | 5.737 | beta-BHC | 9.6571 | 2.126 | 32858.0 | 1.702 | BV | 0.035 | 15527.05 | 1.778 |
| 10 | 5.887 | | 0.0000 | 0.000 | 669.4 | 0.035 | VB | 0.040 | 281.33 | 0.032 |
| 11 | 6.149 | delta-BHC | 9.6748 | 2.130 | 41079.2 | 2.127 | BV | 0.032 | 21180.96 | 2.426 |
| 12 | 6.229 | Heptachlor | 9.7457 | 2.145 | 56709.4 | 2.937 | VB | 0.034 | 27801.01 | 3.184 |
| 13 | 6.676 | Aldrin | 9.8133 | 2.160 | 43095.5 | 2.232 | BB | 0.032 | 22712.21 | 2.601 |
| 14 | 6.766 | | 0.0000 | 0.000 | 5453.3 | 0.282 | BB | 0.052 | 1737.39 | 0.199 |
| 15 | 7.447 | Hept. epoxide | 9.8036 | 2.158 | 53746.7 | 2.783 | BV | 0.035 | 25284.49 | 2.896 |
| 16 | 7.698 | g. Chlordane | 15.7770 | 3.473 | 55274.4 | 2.863 | VV | 0.037 | 25207.68 | 2.887 |
| 17 | 7.889 | a. Chlordane | 9.4563 | 2.082 | 52791.9 | 2.734 | VV | 0.034 | 25579.53 | 2.930 |
| 18 | 7.968 | Endosulfan I | 9.4045 | 2.070 | 51657.7 | 2.675 | VV | 0.037 | 23106.73 | 2.647 |
| 19 | 8.105 | 4,4'-DDE | 19.4596 | 4.284 | 88691.7 | 4.593 | VV | 0.039 | 37702.05 | 4.318 |
| 20 | 8.327 | Dieldrin | 19.8187 | 4.363 | 92552.5 | 4.793 | VB | 0.033 | 46342.98 | 5.308 |
| 21 | 8.624 | | 0.0000 | 0.000 | 932.8 | 0.048 | BB | 0.044 | 355.24 | 0.041 |
| 22 | 8.726 | Endrin | 19.9308 | 4.388 | 79652.8 | 4.125 | BB | 0.033 | 40396.14 | 4.627 |
| 23 | 8.856 | 4,4'-DDD | 19.7420 | 4.346 | 60364.6 | 3.126 | BB | 0.041 | 24596.09 | 2.817 |
| 24 | 9.001 | Endosulfan II | 19.8324 | 4.366 | 88669.6 | 4.592 | BB | 0.035 | 41875.80 | 4.796 |
| 25 | 9.256 | 4,4'-DDT | 19.9282 | 4.387 | 71195.4 | 3.687 | BB | 0.037 | 32343.67 | 3.705 |
| 26 | 9.433 | Endrin aldehyde | 19.4976 | 4.292 | 71256.2 | 3.690 | BB | 0.037 | 32120.94 | 3.679 |
| 27 | 9.561 | | 0.0000 | 0.000 | 6022.3 | 0.312 | BB | 0.064 | 1575.04 | 0.180 |
| 28 | 9.785 | Endo. sulfate | 19.6090 | 4.317 | 80264.1 | 4.157 | BB | 0.037 | 36612.98 | 4.193 |
| 29 | 10.128 | Methoxychlor | 97.6780 | 21.503 | 222645.9 | 11.531 | BB | 0.038 | 97174.30 | 11.130 |
| 30 | 10.365 | | 0.0000 | 0.000 | 1436.4 | 0.074 | BB | 0.036 | 671.06 | 0.077 |
| 31 | 10.485 | Endrin ketone | 19.5725 | 4.309 | 108924.4 | 5.641 | BB | 0.038 | 47529.16 | 5.444 |
| 32 | 11.795 | | 0.0000 | 0.000 | 1905.0 | 0.099 | BB | 0.072 | 443.52 | 0.051 |
| 33 | 12.229 | DCB | 37.0724 | 8.161 | 248332.9 | 12.861 | BB | 0.044 | 93083.51 | 10.661 |

Total Area = 1930903.0, Total Amount = 454.258, Total Height = 873089.5, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.13R

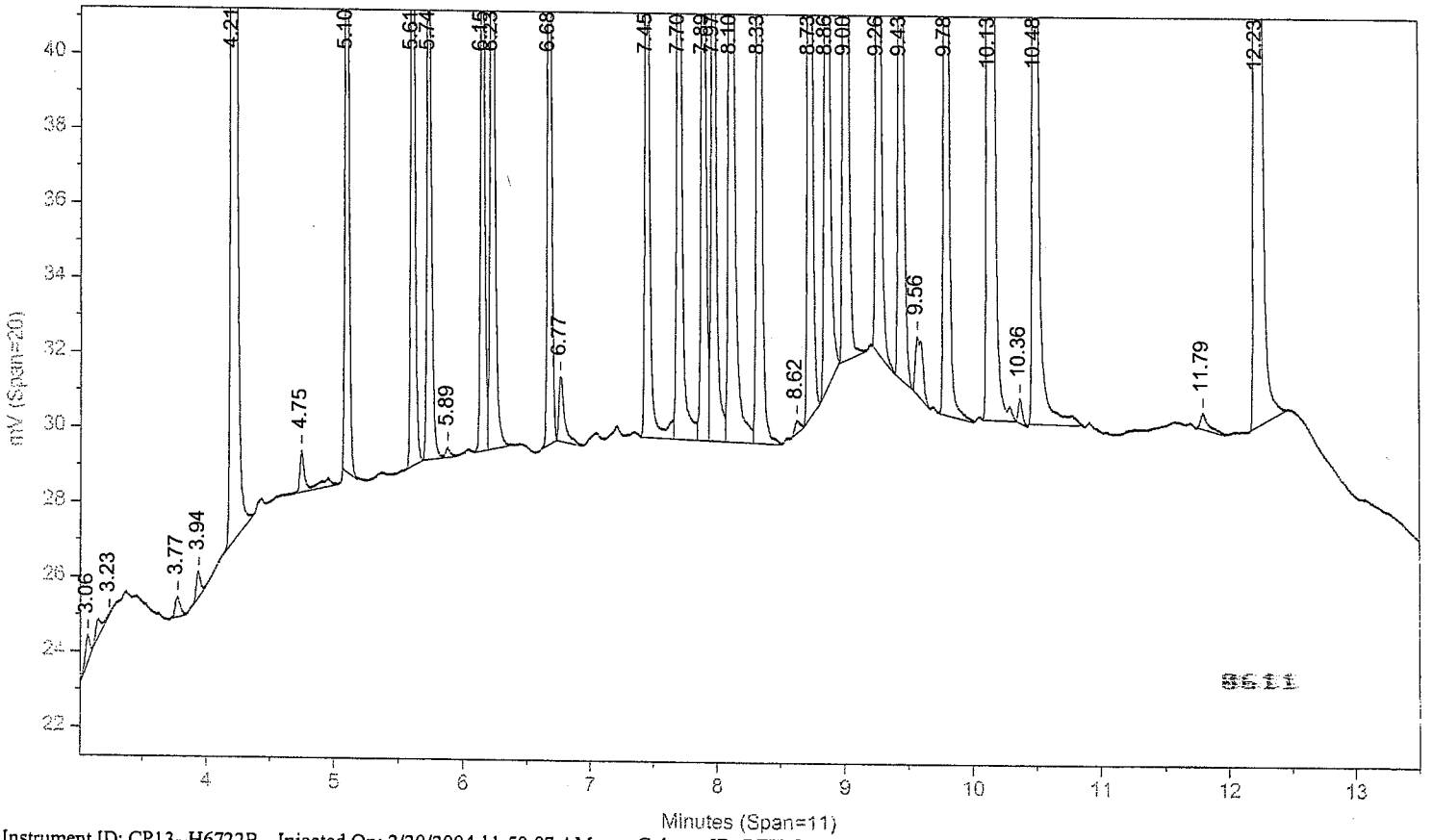
C:\CPWIN\DATA1\1C13051.13R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 11:50:07 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.13R

C:\CPWIN\DATA1\1C13051B.13R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 11:50:07 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

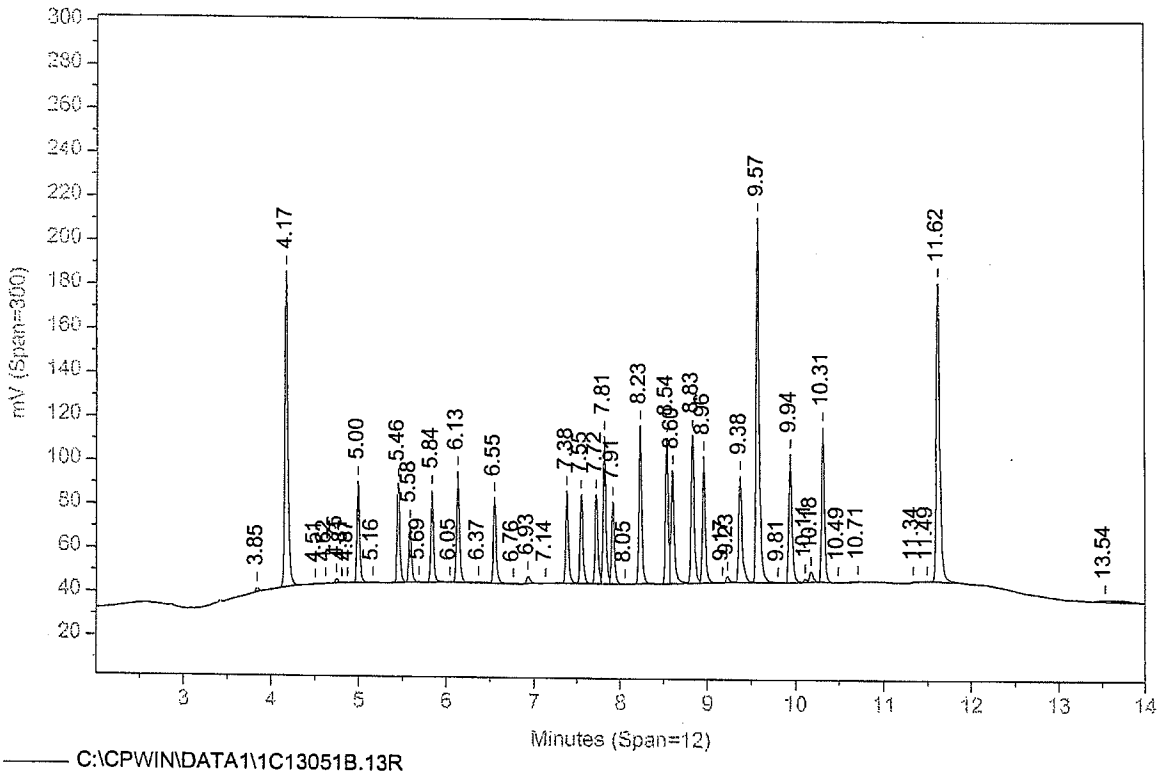
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 144261 | 37.99015 | TCX | 4.208 | 98756 | 38.82834 | TCX |
| 4.746 | 1780 | 6.41256 | HCB | . | 0 | . | HCB |
| 4.996 | 46439 | 10.03627 | alpha-BHC | 5.1 | 24566 | 9.94476 | alpha-BHC |
| 5.456 | 45661 | 9.99601 | gamma-BHC | 5.613 | 25346 | 10.01105 | gamma-BHC |
| 5.584 | 26400 | 9.68601 | beta-BHC | 5.737 | 15527 | 9.6571 | beta-BHC |
| 5.838 | 42250 | 9.92666 | delta-BHC | 6.149 | 21181 | 9.67481 | delta-BHC |
| 6.134 | 50585 | 9.79185 | Heptachlor | 6.229 | 27801 | 9.74568 | Heptachlor |
| 6.554 | 39168 | 9.82395 | Aldrin | 6.676 | 22712 | 9.8133 | Aldrin |
| 7.384 | 42501 | 9.61479 | Hept. epoxide | 7.447 | 25284 | 9.80365 | Hept. epoxide |
| 7.548 | 40955 | 9.67023 | g. Chlordane | 7.698 | 25208 | 15.77697 | g. Chlordane |
| 7.725 | 41082 | 9.63876 | a. Chlordane | 7.889 | 25580 | 9.45632 | a. Chlordane |
| 7.814 | 67870 | 19.88465 | 4,4'-DDE | 8.105 | 37702 | 19.45955 | 4,4'-DDE |
| 7.913 | 37748 | 9.85284 | Endosulfan I | 7.968 | 23107 | 9.40451 | Endosulfan I |
| 8.052 | 147 | 14.72921 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.229 | 72586 | 19.92165 | Dieldrin | 8.327 | 46343 | 19.81868 | Dieldrin |
| 8.536 | 66871 | 19.67178 | Endrin | 8.726 | 40396 | 19.93081 | Endrin |
| 8.598 | 51992 | 19.55813 | 4,4'-DDD | 8.856 | 24596 | 19.74202 | 4,4'-DDD |
| 8.831 | 68051 | 19.67908 | Endosulfan II | 9.001 | 41876 | 19.83237 | Endosulfan II |
| 8.96 | 57842 | 19.52535 | 4,4'-DDT | 9.256 | 32344 | 19.92816 | 4,4'-DDT |
| 9.376 | 48430 | 19.48475 | Endrin aldehyde | 9.433 | 32121 | 19.4976 | Endrin aldehyde |
| 9.57 | 166094 | 95.42296 | Methoxychlor | 10.128 | 97174 | 97.67803 | Methoxychlor |
| 9.942 | 59122 | 19.21407 | Endo. sulfate | 9.785 | 36613 | 19.60896 | Endo. sulfate |
| 9.807 | 99 | 55.30183 | Mirex | . | 0 | . | Mirex |
| 10.309 | 70624 | 19.75376 | Endrin ketone | 10.485 | 47529 | 19.57248 | Endrin ketone |
| 11.618 | 136236 | 36.46721 | DCB | 12.229 | 93084 | 37.0724 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.13A
Area File: C:\CPWIN\DATA1\1C13051B.13A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:02:58 AM
File Reported On: 2/23/2004 at 10:03:09 AM

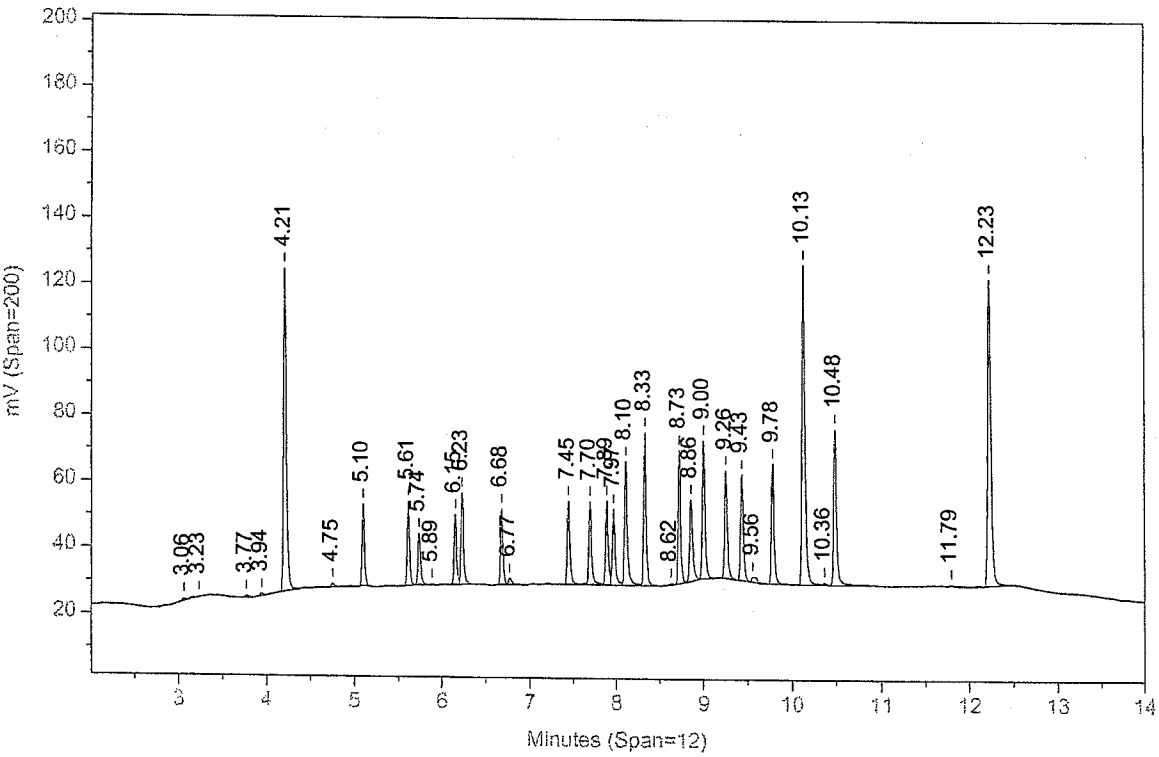
8612

10X REPLOTS

C:\CPWIN\DATA1\1C13051.13R




C:\CPWIN\DATA1\1C13051B.13R



Sample Name: **MIXA403E AAMIXA4AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:24:44pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.14R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 5846.8 | 0.117 | BB | 0.036 | 2683.39 | 0.124 |
| 2 | 4.174 | TCX | 55.7259 | 6.687 | 501249.6 | 9.997 | BB | 0.039 | 211609.30 | 9.785 |
| 3 | 4.747 | HCB | 9.5993 | 1.152 | 5508.3 | 0.110 | BB | 0.034 | 2665.00 | 0.123 |
| 4 | 4.809 | | 0.0000 | 0.000 | 218.6 | 0.004 | BB | 0.021 | 173.13 | 0.008 |
| 5 | 4.998 | alpha-BHC | 16.0395 | 1.925 | 152480.1 | 3.041 | BB | 0.034 | 74216.69 | 3.432 |
| 6 | 5.457 | gamma-BHC | 15.7201 | 1.886 | 146166.3 | 2.915 | BB | 0.034 | 71807.84 | 3.320 |
| 7 | 5.585 | beta-BHC | 14.4213 | 1.731 | 86441.9 | 1.724 | BB | 0.037 | 39306.61 | 1.817 |
| 8 | 5.690 | | 0.0000 | 0.000 | 872.3 | 0.017 | BB | 0.028 | 521.01 | 0.024 |
| 9 | 5.839 | delta-BHC | 15.6390 | 1.877 | 132549.8 | 2.644 | BB | 0.033 | 66562.89 | 3.078 |
| 10 | 6.048 | | 0.0000 | 0.000 | 505.2 | 0.010 | BV | 0.034 | 245.19 | 0.011 |
| 11 | 6.135 | Heptachlor | 14.7691 | 1.772 | 165102.9 | 3.293 | VV | 0.036 | 76298.05 | 3.528 |
| 12 | 6.373 | | 0.0000 | 0.000 | 3074.9 | 0.061 | VV | 0.133 | 385.46 | 0.018 |
| 13 | 6.556 | Aldrin | 15.1741 | 1.821 | 128594.6 | 2.565 | VB | 0.035 | 60499.60 | 2.797 |
| 14 | 6.767 | | 0.0000 | 0.000 | 485.0 | 0.010 | BB | 0.054 | 149.31 | 0.007 |
| 15 | 6.931 | | 0.0000 | 0.000 | 629.6 | 0.013 | BB | 0.046 | 230.62 | 0.011 |
| 16 | 7.018 | | 0.0000 | 0.000 | 392.2 | 0.008 | BB | 0.029 | 228.89 | 0.011 |
| 17 | 7.138 | | 0.0000 | 0.000 | 754.8 | 0.015 | BV | 0.069 | 181.04 | 0.008 |
| 18 | 7.385 | Hept. epoxide | 14.3876 | 1.727 | 144711.7 | 2.886 | VV | 0.038 | 63598.71 | 2.941 |
| 19 | 7.550 | g. Chlordane | 14.5336 | 1.744 | 139300.5 | 2.778 | VV | 0.038 | 61551.38 | 2.846 |
| 20 | 7.726 | a. Chlordane | 14.4307 | 1.732 | 136402.8 | 2.721 | VV | 0.037 | 61505.48 | 2.844 |
| 21 | 7.815 | 4,4'-DDE | 30.9373 | 3.712 | 225035.4 | 4.488 | VV | 0.036 | 105595.00 | 4.883 |
| 22 | 7.914 | Endosulfan I | 14.8345 | 1.780 | 129135.3 | 2.576 | VV | 0.038 | 56834.17 | 2.628 |
| 23 | 8.054 | o,p-DDD | 25.3476 | 3.042 | 531.8 | 0.011 | VB | 0.035 | 253.12 | 0.012 |
| 24 | 8.230 | Dieldrin | 30.6174 | 3.674 | 239067.3 | 4.768 | BB | 0.036 | 111557.10 | 5.158 |
| 25 | 8.373 | o,p-DDT | 59.4031 | 7.128 | 297.4 | 0.006 | BB | 0.028 | 177.64 | 0.008 |
| 26 | 8.537 | Endrin | 30.1839 | 3.622 | 212332.7 | 4.235 | BV | 0.034 | 102604.90 | 4.744 |
| 27 | 8.599 | 4,4'-DDD | 30.5293 | 3.664 | 200701.0 | 4.003 | VV | 0.041 | 81157.48 | 3.753 |
| 28 | 8.833 | Endosulfan II | 29.4517 | 3.534 | 233382.2 | 4.655 | VV | 0.038 | 101844.90 | 4.709 |
| 29 | 8.961 | 4,4'-DDT | 30.1674 | 3.620 | 201283.2 | 4.015 | VV | 0.038 | 89367.99 | 4.132 |
| 30 | 9.161 | | 0.0000 | 0.000 | 1005.8 | 0.020 | VV | 0.099 | 169.38 | 0.008 |
| 31 | 9.235 | | 0.0000 | 0.000 | 10099.8 | 0.201 | VB | 0.041 | 4096.87 | 0.189 |
| 32 | 9.377 | Endrin aldehyde | 29.4057 | 3.529 | 181346.9 | 3.617 | BV | 0.041 | 73088.39 | 3.380 |
| 33 | 9.571 | Methoxychlor | 141.1526 | 16.938 | 593960.9 | 11.846 | VB | 0.040 | 245691.80 | 11.360 |
| 34 | 9.808 | Mirex | 70.9763 | 8.517 | 254.4 | 0.005 | BB | 0.033 | 127.18 | 0.006 |
| 35 | 9.943 | Endo. sulfate | 28.8590 | 3.463 | 207043.8 | 4.129 | BV | 0.039 | 88798.92 | 4.106 |
| 36 | 10.116 | | 0.0000 | 0.000 | 5466.1 | 0.109 | VV | 0.043 | 2105.24 | 0.097 |
| 37 | 10.182 | | 0.0000 | 0.000 | 12196.3 | 0.243 | VB | 0.046 | 4440.59 | 0.205 |
| 38 | 10.311 | Endrin ketone | 29.7052 | 3.565 | 247078.7 | 4.928 | BB | 0.039 | 106202.00 | 4.911 |
| 39 | 10.488 | | 0.0000 | 0.000 | 388.4 | 0.008 | BB | 0.033 | 194.69 | 0.009 |
| 40 | 10.710 | | 0.0000 | 0.000 | 2384.0 | 0.048 | BB | 0.058 | 689.95 | 0.032 |
| 41 | 10.932 | | 0.0000 | 0.000 | 804.6 | 0.016 | BB | 0.105 | 127.23 | 0.006 |
| 42 | 11.163 | | 0.0000 | 0.000 | 216.1 | 0.004 | BB | 0.051 | 70.43 | 0.003 |
| 43 | 11.339 | | 0.0000 | 0.000 | 1912.6 | 0.038 | BB | 0.043 | 735.05 | 0.034 |
| 44 | 11.620 | DCB | 51.3238 | 6.159 | 540690.8 | 10.784 | BB | 0.047 | 191737.30 | 8.866 |
| 45 | 13.489 | | 0.0000 | 0.000 | 15960.1 | 0.318 | BB | 0.444 | 599.51 | 0.028 |

Total Area = 5013863.0, Total Amount = 833.335, Total Height = 2162687.0, Sample Units = PPB

Sample Name: **MIXA403E AAMIXA4AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:24:44pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.14R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

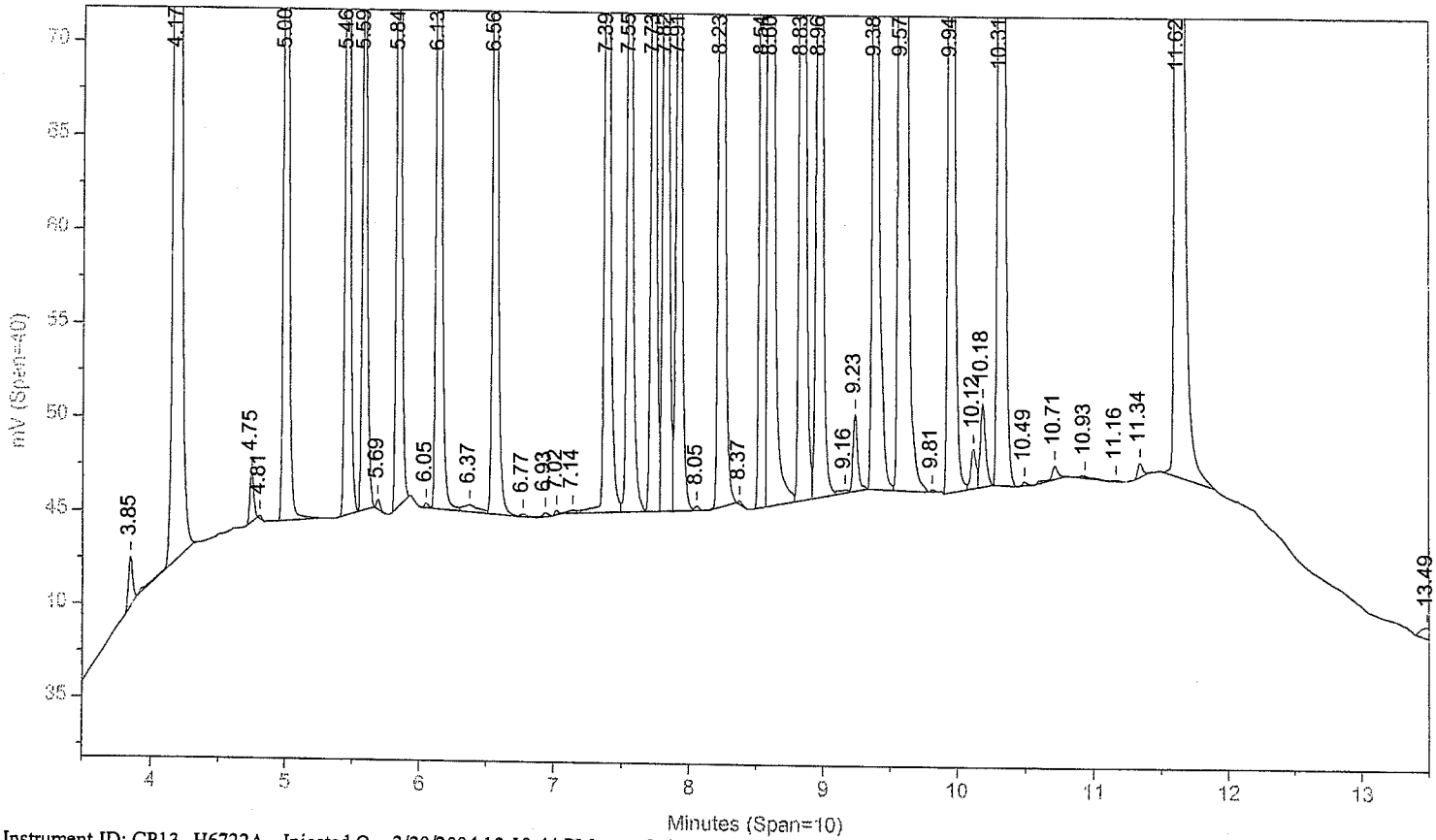
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.063 | | 0.0000 | 0.000 | 1858.6 | 0.064 | BB | 0.046 | 679.08 | 0.050 |
| 2 | 3.365 | | 0.0000 | 0.000 | 23722.7 | 0.814 | BB | 0.346 | 1143.56 | 0.085 |
| 3 | 3.771 | | 0.0000 | 0.000 | 1339.9 | 0.046 | BB | 0.043 | 520.38 | 0.039 |
| 4 | 3.937 | | 0.0000 | 0.000 | 2398.6 | 0.082 | BB | 0.037 | 1073.63 | 0.079 |
| 5 | 4.208 | TCX | 58.1021 | 8.323 | 312013.6 | 10.707 | BB | 0.035 | 147777.40 | 10.942 |
| 6 | 4.687 | | 0.0000 | 0.000 | 2014.0 | 0.069 | BB | 0.508 | 66.13 | 0.005 |
| 7 | 4.748 | | 0.0000 | 0.000 | 5487.1 | 0.188 | BB | 0.057 | 1604.86 | 0.119 |
| 8 | 5.100 | alpha-BHC | 16.8601 | 2.415 | 74000.4 | 2.539 | BB | 0.030 | 41648.73 | 3.084 |
| 9 | 5.613 | gamma-BHC | 16.5656 | 2.373 | 76224.2 | 2.616 | BB | 0.030 | 41940.39 | 3.106 |
| 10 | 5.737 | beta-BHC | 14.8069 | 2.121 | 49795.5 | 1.709 | BV | 0.035 | 23807.17 | 1.763 |
| 11 | 5.881 | | 0.0000 | 0.000 | 807.2 | 0.028 | VB | 0.037 | 368.39 | 0.027 |
| 12 | 6.149 | delta-BHC | 15.9830 | 2.290 | 65210.8 | 2.238 | BV | 0.031 | 34991.38 | 2.591 |
| 13 | 6.229 | Heptachlor | 15.1626 | 2.172 | 85243.1 | 2.925 | VB | 0.033 | 43253.55 | 3.203 |
| 14 | 6.676 | Aldrin | 15.9358 | 2.283 | 70367.6 | 2.415 | BB | 0.032 | 36882.23 | 2.731 |
| 15 | 7.212 | | 0.0000 | 0.000 | 662.2 | 0.023 | BB | 0.035 | 312.77 | 0.023 |
| 16 | 7.448 | Hept. epoxide | 15.1671 | 2.173 | 80865.8 | 2.775 | BV | 0.034 | 39117.39 | 2.897 |
| 17 | 7.698 | g. Chlordane | 18.5319 | 2.655 | 82341.9 | 2.826 | VV | 0.035 | 38952.29 | 2.884 |
| 18 | 7.890 | a. Chlordane | 14.5387 | 2.083 | 80434.6 | 2.760 | VV | 0.034 | 39327.37 | 2.912 |
| 19 | 7.969 | Endosulfan I | 14.5281 | 2.081 | 76362.1 | 2.620 | VV | 0.036 | 35695.36 | 2.643 |
| 20 | 8.105 | 4,4'-DDE | 31.6761 | 4.538 | 137506.7 | 4.719 | VV | 0.037 | 61371.09 | 4.544 |
| 21 | 8.327 | Dieldrin | 31.8072 | 4.557 | 144625.4 | 4.963 | VB | 0.032 | 74376.41 | 5.507 |
| 22 | 8.726 | Endrin | 31.9150 | 4.572 | 124000.0 | 4.255 | BB | 0.032 | 64686.03 | 4.790 |
| 23 | 8.856 | 4,4'-DDD | 33.0040 | 4.728 | 95891.2 | 3.291 | BB | 0.039 | 41118.79 | 3.045 |
| 24 | 9.001 | Endosulfan II | 31.0753 | 4.452 | 134788.3 | 4.625 | BB | 0.034 | 65615.13 | 4.859 |
| 25 | 9.257 | 4,4'-DDT | 31.8877 | 4.568 | 110418.8 | 3.789 | BB | 0.036 | 51754.23 | 3.832 |
| 26 | 9.433 | Endrin aldehyde | 29.9669 | 4.293 | 106940.0 | 3.670 | BB | 0.036 | 49368.46 | 3.656 |
| 27 | 9.562 | | 0.0000 | 0.000 | 9038.3 | 0.310 | BB | 0.062 | 2432.51 | 0.180 |
| 28 | 9.785 | Endo. sulfate | 30.5492 | 4.376 | 121169.4 | 4.158 | BB | 0.035 | 57040.20 | 4.224 |
| 29 | 10.128 | Methoxychlor | 147.3476 | 21.108 | 324161.2 | 11.124 | BB | 0.037 | 146587.70 | 10.854 |
| 30 | 10.289 | | 0.0000 | 0.000 | 492.7 | 0.017 | BB | 0.024 | 347.51 | 0.026 |
| 31 | 10.369 | | 0.0000 | 0.000 | 1940.7 | 0.067 | BB | 0.034 | 955.38 | 0.071 |
| 32 | 10.485 | Endrin ketone | 30.0024 | 4.298 | 161043.3 | 5.526 | BB | 0.037 | 72856.79 | 5.395 |
| 33 | 11.795 | | 0.0000 | 0.000 | 2516.9 | 0.086 | BB | 0.066 | 639.70 | 0.047 |
| 34 | 12.230 | DCB | 52.6478 | 7.542 | 348500.2 | 11.959 | BB | 0.044 | 132191.10 | 9.788 |

Total Area = 2914183.0, Total Amount = 698.061, Total Height = 1350503.0, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.14R

C:\CPWIN\DATA1\1C13051.14R

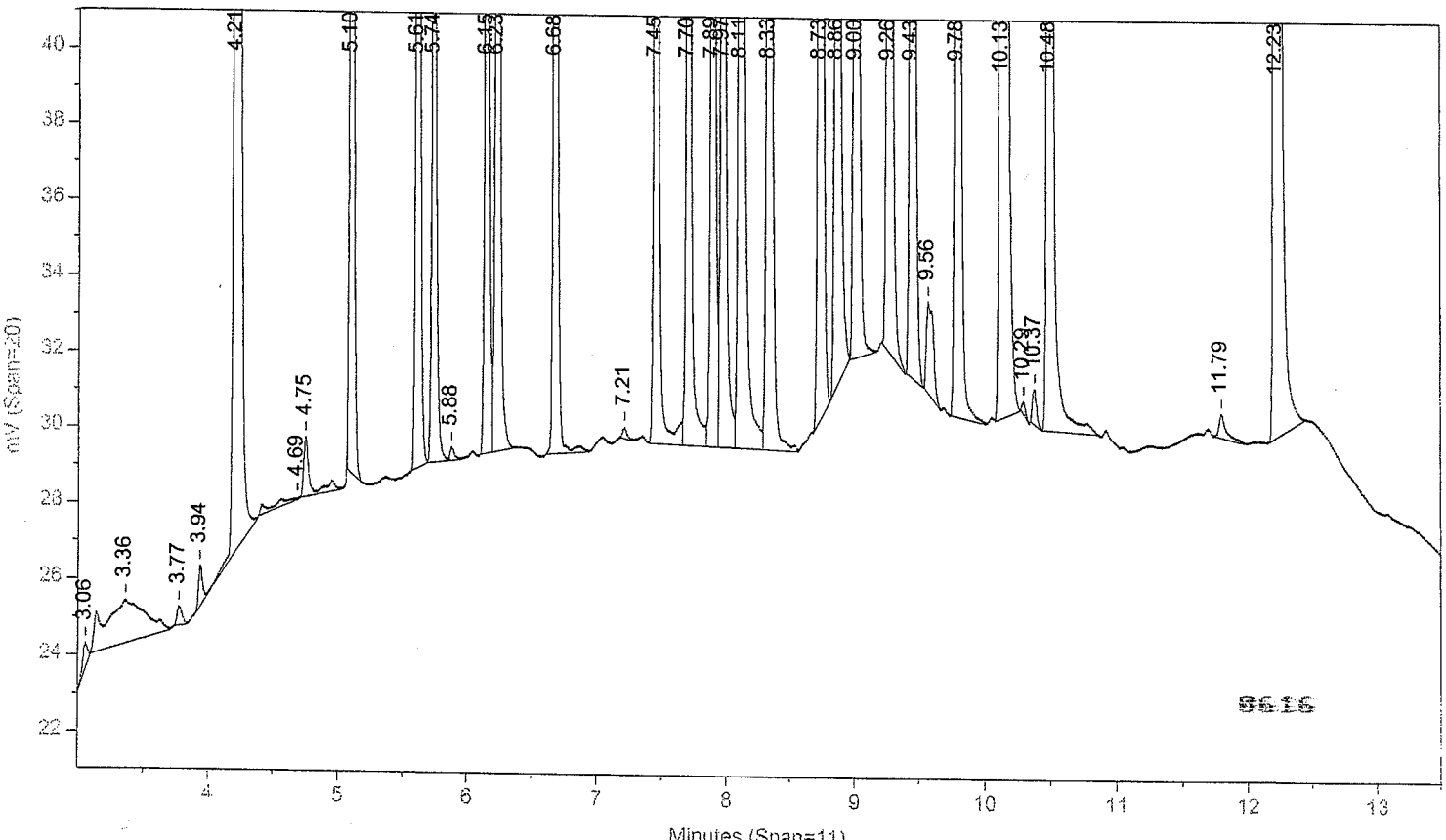



Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:10:44 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.14R

C:\CPWIN\DATA1\1C13051B.14R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:10:44 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

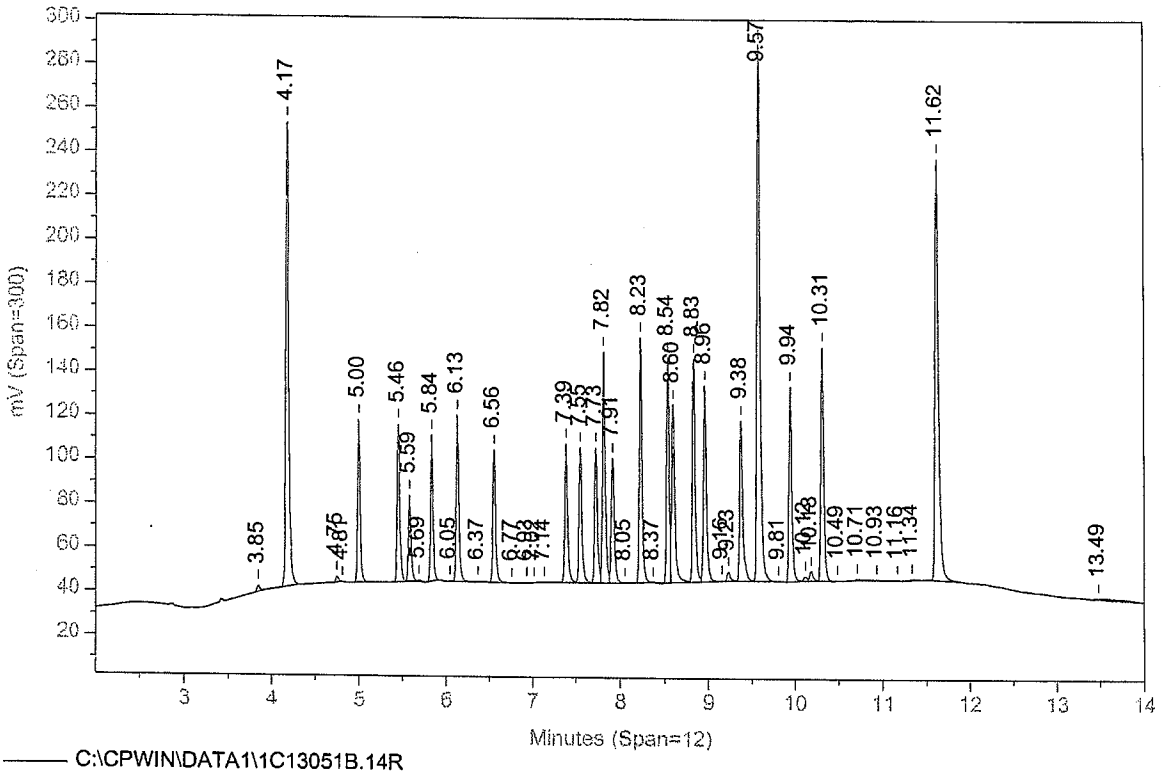
Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 211609 | 55.72591 | TCX | 4.208 | 147777 | 58.10209 | TCX |
| 4.747 | 2665 | 9.59931 | HCB | . | 0 | . | HCB |
| 4.998 | 74217 | 16.03952 | alpha-BHC | 5.1 | 41649 | 16.86007 | alpha-BHC |
| 5.457 | 71808 | 15.72011 | gamma-BHC | 5.613 | 41940 | 16.56557 | gamma-BHC |
| 5.585 | 39307 | 14.42128 | beta-BHC | 5.737 | 23807 | 14.80695 | beta-BHC |
| 5.839 | 66563 | 15.63903 | delta-BHC | 6.149 | 34991 | 15.98299 | delta-BHC |
| 6.135 | 76298 | 14.7691 | Heptachlor | 6.229 | 43254 | 15.16259 | Heptachlor |
| 6.556 | 60500 | 15.17408 | Aldrin | 6.676 | 36882 | 15.93576 | Aldrin |
| 7.385 | 63599 | 14.38763 | Hept. epoxide | 7.448 | 39117 | 15.16713 | Hept. epoxide |
| 7.55 | 61551 | 14.53359 | g. Chlordane | 7.698 | 38952 | 18.5319 | g. Chlordane |
| 7.726 | 61505 | 14.43071 | a. Chlordane | 7.89 | 39327 | 14.53866 | a. Chlordane |
| 7.815 | 105595 | 30.93725 | 4,4'-DDE | 8.105 | 61371 | 31.67611 | 4,4'-DDE |
| 7.914 | 56834 | 14.83448 | Endosulfan I | 7.969 | 35695 | 14.52812 | Endosulfan I |
| 8.054 | 253 | 25.34764 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.23 | 111557 | 30.61736 | Dieldrin | 8.327 | 74376 | 31.80724 | Dieldrin |
| 8.373 | 178 | 59.40315 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.537 | 102605 | 30.18389 | Endrin | 8.726 | 64686 | 31.91504 | Endrin |
| 8.599 | 81157 | 30.5293 | 4,4'-DDD | 8.856 | 41119 | 33.00395 | 4,4'-DDD |
| 8.833 | 101845 | 29.45172 | Endosulfan II | 9.001 | 65615 | 31.07532 | Endosulfan II |
| 8.961 | 89368 | 30.16737 | 4,4'-DDT | 9.257 | 51754 | 31.88774 | 4,4'-DDT |
| 9.377 | 73088 | 29.40565 | Endrin aldehyde | 9.433 | 49368 | 29.96695 | Endrin aldehyde |
| 9.571 | 245692 | 141.1526 | Methoxychlor | 10.128 | 146588 | 147.3476 | Methoxychlor |
| 9.943 | 88799 | 28.85901 | Endo. sulfate | 9.785 | 57040 | 30.54925 | Endo. sulfate |
| 9.808 | 127 | 70.97627 | Mirex | . | 0 | . | Mirex |
| 10.311 | 106202 | 29.70523 | Endrin ketone | 10.485 | 72857 | 30.00239 | Endrin ketone |
| 11.62 | 191737 | 51.32378 | DCB | 12.23 | 132191 | 52.64779 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.14A
Area File: C:\CPWIN\DATA1\1C13051B.14A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:03:22 AM
File Reported On: 2/23/2004 at 10:03:32 AM

C:\CPWIN\DATA1\1C13051.14R

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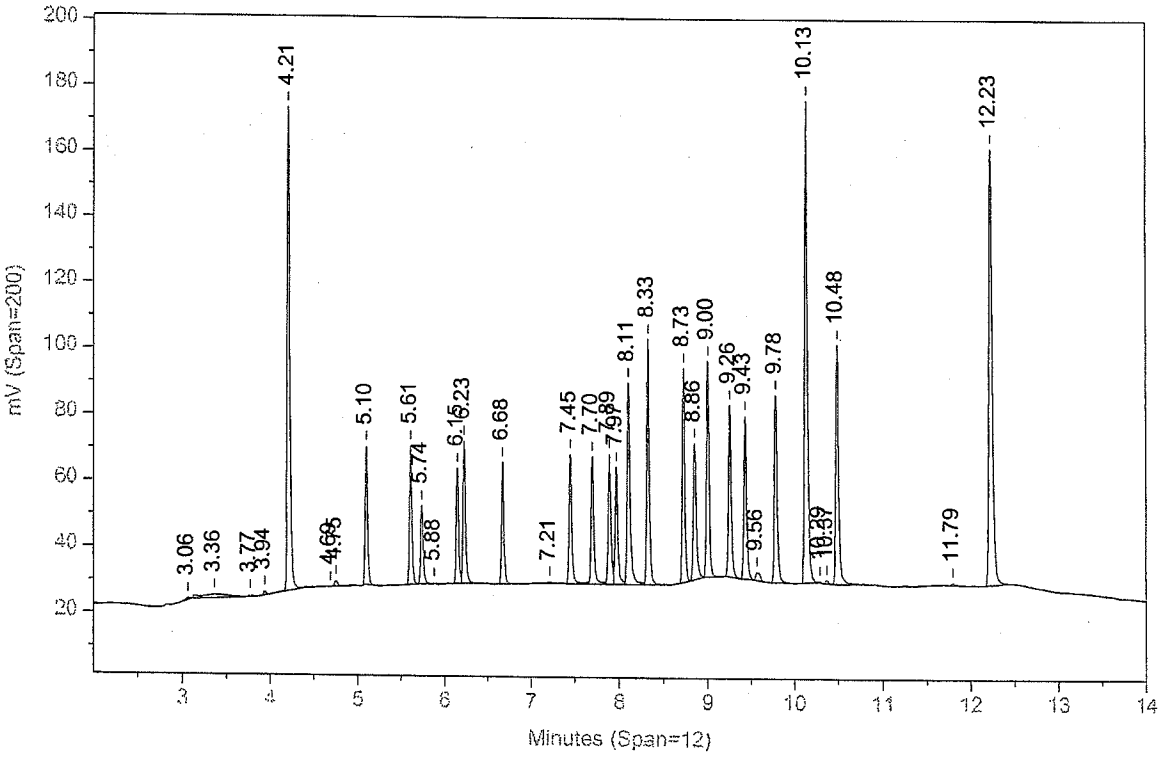


Sample Name: **MIXA503D AAMIXA5AA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 12:45:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.15R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 7336.2 | 0.112 | BB | 0.037 | 3328.09 | 0.118 |
| 2 | 3.932 | | 0.0000 | 0.000 | 823.3 | 0.013 | BB | 0.033 | 417.35 | 0.015 |
| 3 | 4.173 | TCX | 72.7431 | 6.454 | 655334.8 | 10.041 | BB | 0.040 | 276229.30 | 9.783 |
| 4 | 4.626 | | 0.0000 | 0.000 | 1171.5 | 0.018 | BB | 0.141 | 138.77 | 0.005 |
| 5 | 4.746 | HCB | 12.6942 | 1.126 | 7311.9 | 0.112 | BB | 0.035 | 3524.20 | 0.125 |
| 6 | 4.806 | | 0.0000 | 0.000 | 290.6 | 0.004 | BB | 0.023 | 209.86 | 0.007 |
| 7 | 4.996 | alpha-BHC | 21.6718 | 1.923 | 205663.7 | 3.151 | BB | 0.034 | 100278.10 | 3.551 |
| 8 | 5.456 | gamma-BHC | 20.9641 | 1.860 | 195085.2 | 2.989 | BB | 0.034 | 95761.69 | 3.391 |
| 9 | 5.584 | beta-BHC | 18.6968 | 1.659 | 111928.0 | 1.715 | BB | 0.037 | 50960.01 | 1.805 |
| 10 | 5.689 | | 0.0000 | 0.000 | 1154.6 | 0.018 | BB | 0.027 | 705.28 | 0.025 |
| 11 | 5.838 | delta-BHC | 21.2270 | 1.883 | 184838.0 | 2.832 | BB | 0.034 | 90346.62 | 3.200 |
| 12 | 6.046 | | 0.0000 | 0.000 | 721.2 | 0.011 | BV | 0.037 | 329.26 | 0.012 |
| 13 | 6.133 | Heptachlor | 19.3124 | 1.714 | 215409.7 | 3.301 | VV | 0.036 | 99769.20 | 3.533 |
| 14 | 6.337 | | 0.0000 | 0.000 | 3354.3 | 0.051 | VV | 0.121 | 463.12 | 0.016 |
| 15 | 6.554 | Aldrin | 20.3005 | 1.801 | 170259.4 | 2.609 | VB | 0.035 | 80938.68 | 2.866 |
| 16 | 6.766 | | 0.0000 | 0.000 | 380.2 | 0.006 | BB | 0.050 | 125.52 | 0.004 |
| 17 | 6.931 | | 0.0000 | 0.000 | 359.3 | 0.006 | BB | 0.052 | 115.22 | 0.004 |
| 18 | 7.015 | | 0.0000 | 0.000 | 630.6 | 0.010 | BB | 0.031 | 341.60 | 0.012 |
| 19 | 7.134 | | 0.0000 | 0.000 | 1024.7 | 0.016 | BV | 0.088 | 193.01 | 0.007 |
| 20 | 7.383 | Hept. epoxide | 18.7949 | 1.668 | 186464.3 | 2.857 | VV | 0.037 | 83080.45 | 2.942 |
| 21 | 7.548 | g. Chlordane | 18.9782 | 1.684 | 180405.9 | 2.764 | VV | 0.037 | 80374.92 | 2.847 |
| 22 | 7.724 | a. Chlordane | 18.7321 | 1.662 | 175724.4 | 2.693 | VV | 0.037 | 79838.31 | 2.828 |
| 23 | 7.814 | 4,4'-DDE | 41.0601 | 3.643 | 299679.5 | 4.592 | VV | 0.036 | 140146.30 | 4.963 |
| 24 | 7.912 | Endosulfan 1 | 19.3641 | 1.718 | 168052.0 | 2.575 | VV | 0.038 | 74187.95 | 2.627 |
| 25 | 8.050 | o,p-DDD | 26.2756 | 2.331 | 561.6 | 0.009 | VB | 0.036 | 262.39 | 0.009 |
| 26 | 8.228 | Dieldrin | 40.5866 | 3.601 | 314561.2 | 4.820 | BB | 0.035 | 147881.00 | 5.237 |
| 27 | 8.370 | o,p-DDT | 81.1937 | 7.204 | 423.5 | 0.006 | BB | 0.029 | 242.81 | 0.009 |
| 28 | 8.535 | Endrin | 39.7670 | 3.528 | 282151.4 | 4.323 | BV | 0.035 | 135181.20 | 4.788 |
| 29 | 8.597 | 4,4'-DDD | 40.2812 | 3.574 | 261674.4 | 4.009 | VV | 0.041 | 107081.30 | 3.792 |
| 30 | 8.830 | Endosulfan II | 38.3218 | 3.400 | 302738.0 | 4.639 | VV | 0.038 | 132518.00 | 4.693 |
| 31 | 8.959 | 4,4'-DDT | 39.4827 | 3.503 | 264300.1 | 4.050 | VV | 0.038 | 116963.80 | 4.142 |
| 32 | 9.111 | | 0.0000 | 0.000 | 580.2 | 0.009 | VV | 0.043 | 224.77 | 0.008 |
| 33 | 9.158 | | 0.0000 | 0.000 | 522.5 | 0.008 | VV | 0.045 | 191.43 | 0.007 |
| 34 | 9.232 | | 0.0000 | 0.000 | 12923.3 | 0.198 | VB | 0.040 | 5318.64 | 0.188 |
| 35 | 9.374 | Endrin aldehyde | 37.6332 | 3.339 | 233757.5 | 3.582 | BV | 0.042 | 93538.18 | 3.313 |
| 36 | 9.569 | Methoxychlor | 180.0597 | 15.977 | 760690.1 | 11.656 | VV | 0.040 | 313414.00 | 11.100 |
| 37 | 9.803 | Mirex | 136.8401 | 12.142 | 713.0 | 0.011 | VB | 0.048 | 245.19 | 0.009 |
| 38 | 9.940 | Endo. sulfate | 37.5044 | 3.328 | 268615.1 | 4.116 | BV | 0.039 | 115400.80 | 4.087 |
| 39 | 10.113 | | 0.0000 | 0.000 | 6837.0 | 0.105 | VV | 0.042 | 2720.07 | 0.096 |
| 40 | 10.180 | | 0.0000 | 0.000 | 10913.6 | 0.167 | VB | 0.046 | 3997.39 | 0.142 |
| 41 | 10.308 | Endrin ketone | 38.6746 | 3.432 | 321755.7 | 4.930 | BB | 0.039 | 138269.40 | 4.897 |
| 42 | 10.483 | | 0.0000 | 0.000 | 501.6 | 0.008 | BB | 0.032 | 262.20 | 0.009 |
| 43 | 10.712 | | 0.0000 | 0.000 | 892.0 | 0.014 | BB | 0.070 | 213.55 | 0.008 |
| 44 | 11.336 | | 0.0000 | 0.000 | 2829.3 | 0.043 | BB | 0.046 | 1033.68 | 0.037 |
| 45 | 11.479 | | 0.0000 | 0.000 | 173.1 | 0.003 | BB | 0.066 | 43.99 | 0.002 |
| 46 | 11.616 | DCB | 65.8642 | 5.844 | 686504.0 | 10.519 | BB | 0.047 | 246058.10 | 8.714 |
| 47 | 13.521 | | 0.0000 | 0.000 | 18405.3 | 0.282 | BB | 0.405 | 756.90 | 0.027 |

Total Area = 6526427.0, Total Amount = 1127.024, Total Height = 2823622.0, Sample Units = PPB

Sample Name: **MIXA503D AAMIXA5AA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 12:45:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.15R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

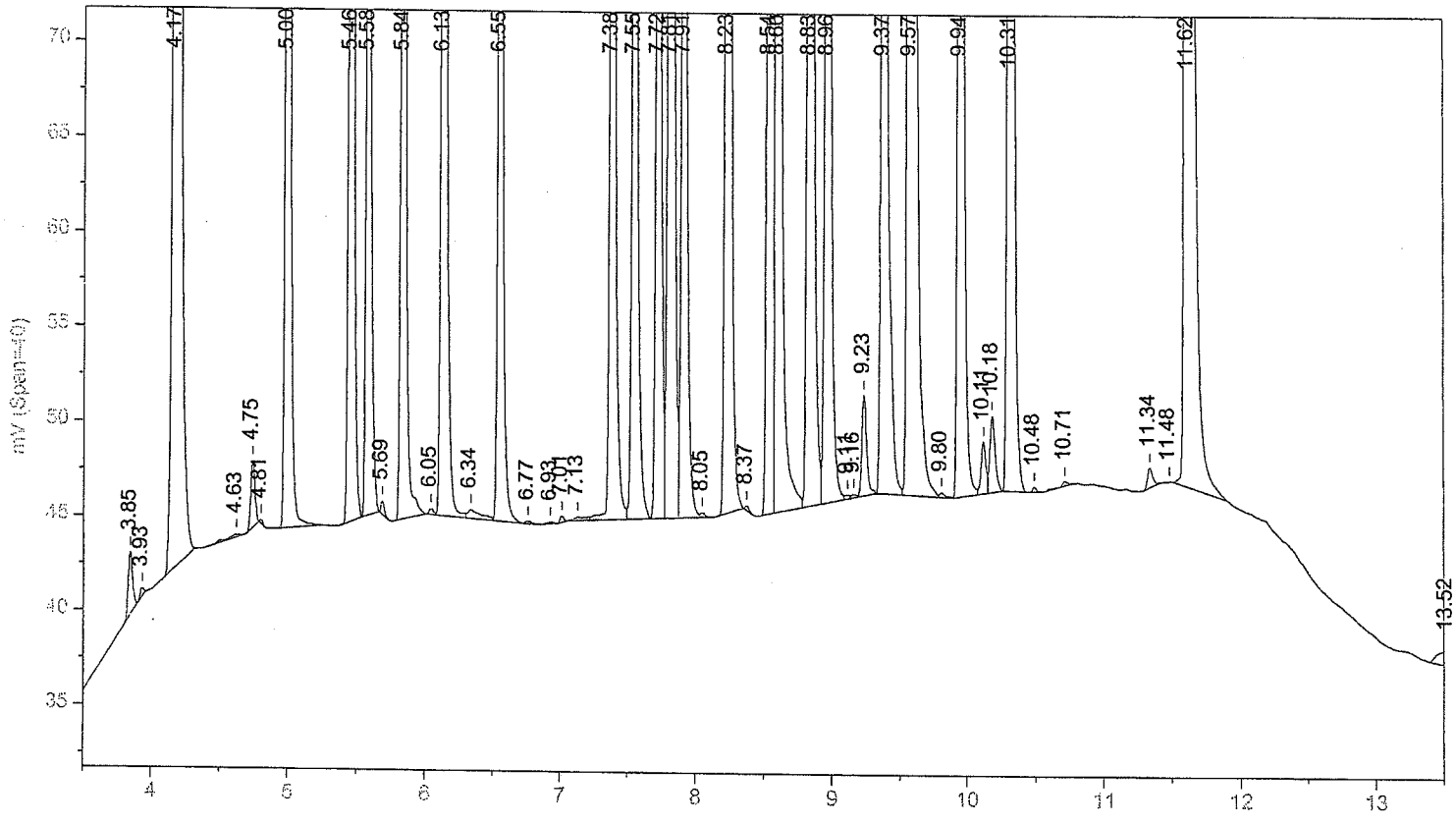
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 2174.3 | 0.057 | BB | 0.043 | 847.52 | 0.047 |
| 2 | 3.141 | | 0.0000 | 0.000 | 1883.1 | 0.050 | BB | 0.046 | 678.03 | 0.038 |
| 3 | 3.361 | | 0.0000 | 0.000 | 3384.7 | 0.089 | BB | 0.135 | 419.01 | 0.023 |
| 4 | 3.629 | | 0.0000 | 0.000 | 702.8 | 0.019 | BB | 0.034 | 342.21 | 0.019 |
| 5 | 3.769 | | 0.0000 | 0.000 | 1480.9 | 0.039 | BB | 0.045 | 547.89 | 0.031 |
| 6 | 3.940 | | 0.0000 | 0.000 | 2997.5 | 0.079 | BB | 0.037 | 1339.50 | 0.075 |
| 7 | 4.207 | TCX | 76.0392 | 8.271 | 409890.3 | 10.801 | BB | 0.035 | 193398.90 | 10.785 |
| 8 | 4.560 | | 0.0000 | 0.000 | 2276.6 | 0.060 | BB | 0.147 | 258.98 | 0.014 |
| 9 | 4.748 | | 0.0000 | 0.000 | 4845.3 | 0.128 | BB | 0.038 | 2104.92 | 0.117 |
| 10 | 5.099 | alpha-BHC | 23.7624 | 2.585 | 102625.2 | 2.704 | BB | 0.029 | 58699.23 | 3.273 |
| 11 | 5.613 | gamma-BHC | 22.7979 | 2.480 | 104398.5 | 2.751 | BB | 0.030 | 57719.29 | 3.219 |
| 12 | 5.737 | beta-BHC | 19.5623 | 2.128 | 64689.6 | 1.705 | BB | 0.034 | 31452.99 | 1.754 |
| 13 | 5.886 | | 0.0000 | 0.000 | 807.3 | 0.021 | BB | 0.034 | 397.37 | 0.022 |
| 14 | 6.149 | delta-BHC | 22.3376 | 2.430 | 89848.1 | 2.368 | BV | 0.031 | 48903.42 | 2.727 |
| 15 | 6.228 | Heptachlor | 20.2934 | 2.208 | 112188.8 | 2.956 | VB | 0.032 | 57890.02 | 3.228 |
| 16 | 6.675 | Aldrin | 21.7989 | 2.371 | 94367.5 | 2.487 | BB | 0.031 | 50452.07 | 2.814 |
| 17 | 7.215 | | 0.0000 | 0.000 | 1702.5 | 0.045 | BB | 0.074 | 382.35 | 0.021 |
| 18 | 7.447 | Hept. epoxide | 20.2409 | 2.202 | 105345.7 | 2.776 | BV | 0.034 | 52202.98 | 2.911 |
| 19 | 7.697 | g. Chlordane | 19.8814 | 2.163 | 106899.2 | 2.817 | VV | 0.034 | 51978.74 | 2.899 |
| 20 | 7.888 | a. Chlordane | 19.3093 | 2.100 | 103211.9 | 2.720 | VV | 0.033 | 52232.08 | 2.913 |
| 21 | 7.967 | Endosulfan I | 19.3268 | 2.102 | 99227.8 | 2.615 | VV | 0.035 | 47485.75 | 2.648 |
| 22 | 8.104 | 4,4'-DDE | 43.2572 | 4.705 | 183174.4 | 4.827 | VV | 0.036 | 83808.98 | 4.674 |
| 23 | 8.325 | Dieldrin | 42.9888 | 4.676 | 191778.2 | 5.054 | VB | 0.032 | 100522.70 | 5.606 |
| 24 | 8.725 | Endrin | 42.9545 | 4.673 | 165545.6 | 4.362 | BB | 0.032 | 87060.96 | 4.855 |
| 25 | 8.855 | 4,4'-DDD | 45.0128 | 4.896 | 129167.6 | 3.404 | BB | 0.038 | 56080.36 | 3.127 |
| 26 | 8.999 | Endosulfan II | 41.1934 | 4.481 | 177030.0 | 4.665 | BB | 0.034 | 86979.25 | 4.850 |
| 27 | 9.255 | 4,4'-DDT | 43.1304 | 4.692 | 148663.7 | 3.917 | BB | 0.035 | 70001.16 | 3.904 |
| 28 | 9.431 | Endrin aldehyde | 39.0439 | 4.247 | 138159.9 | 3.641 | BB | 0.036 | 64322.07 | 3.587 |
| 29 | 9.560 | | 0.0000 | 0.000 | 12081.7 | 0.318 | BB | 0.063 | 3179.25 | 0.177 |
| 30 | 9.783 | Endo. sulfate | 40.4548 | 4.401 | 159612.7 | 4.206 | BB | 0.035 | 75535.36 | 4.212 |
| 31 | 10.125 | Methoxychlor | 189.0107 | 20.560 | 416870.6 | 10.985 | BB | 0.037 | 188035.90 | 10.486 |
| 32 | 10.288 | | 0.0000 | 0.000 | 850.4 | 0.022 | BB | 0.028 | 503.59 | 0.028 |
| 33 | 10.363 | | 0.0000 | 0.000 | 2767.9 | 0.073 | BB | 0.036 | 1266.48 | 0.071 |
| 34 | 10.483 | Endrin ketone | 39.5389 | 4.301 | 206585.7 | 5.444 | BB | 0.036 | 96014.82 | 5.354 |
| 35 | 10.916 | | 0.0000 | 0.000 | 703.1 | 0.019 | BB | 0.041 | 282.84 | 0.016 |
| 36 | 11.796 | | 0.0000 | 0.000 | 2552.6 | 0.067 | BB | 0.057 | 751.94 | 0.042 |
| 37 | 12.227 | DCB | 67.3574 | 7.327 | 444388.3 | 11.710 | BB | 0.044 | 169124.70 | 9.431 |

Total Area = 3794880.0, Total Amount = 919.293, Total Height = 1793204.0, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.15R

C:\CPWIN\DATA1\1C13051.15R

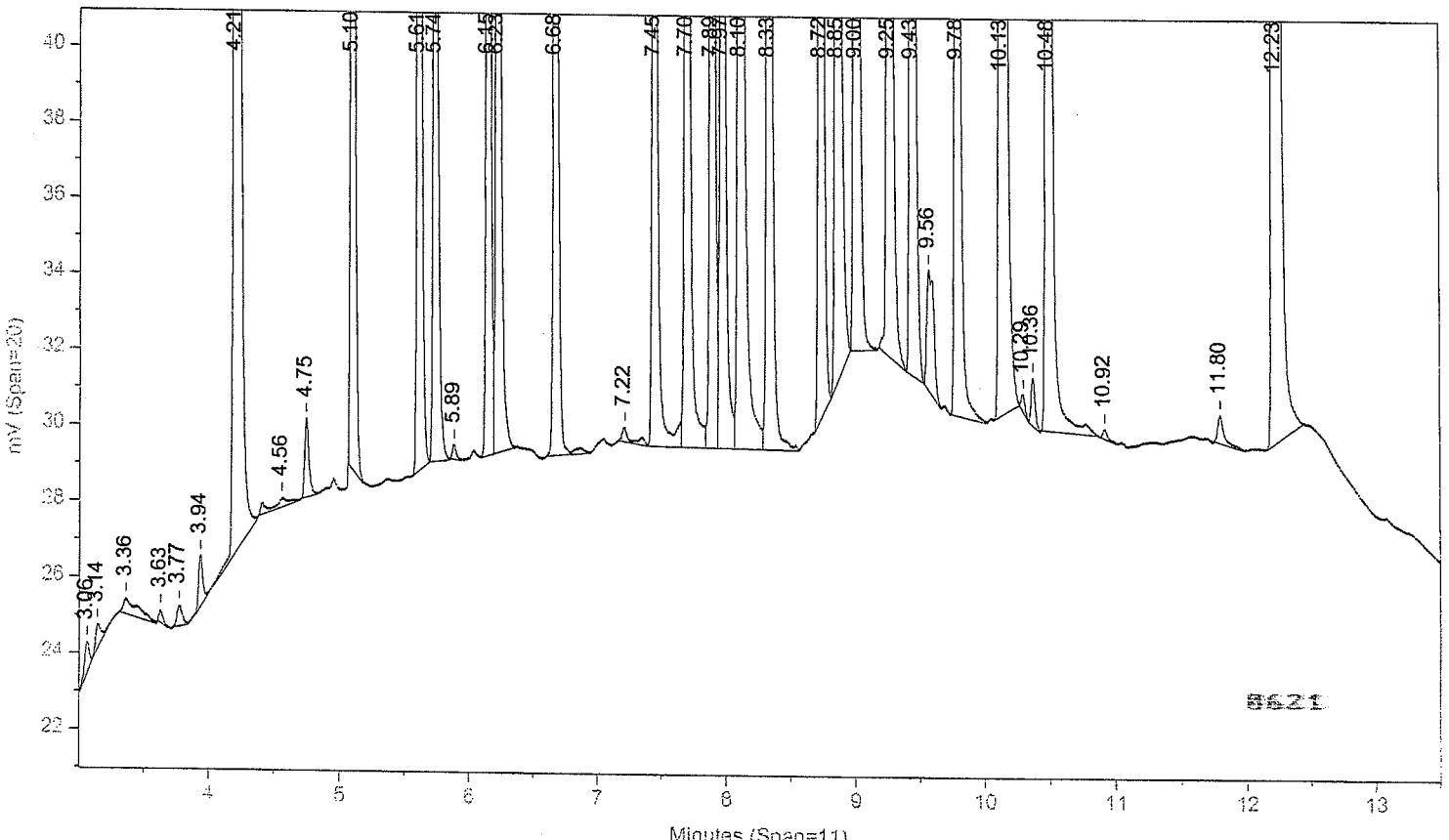



Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:31:07 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.15R

C:\CPWIN\DATA1\1C13051B.15R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:31:07 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

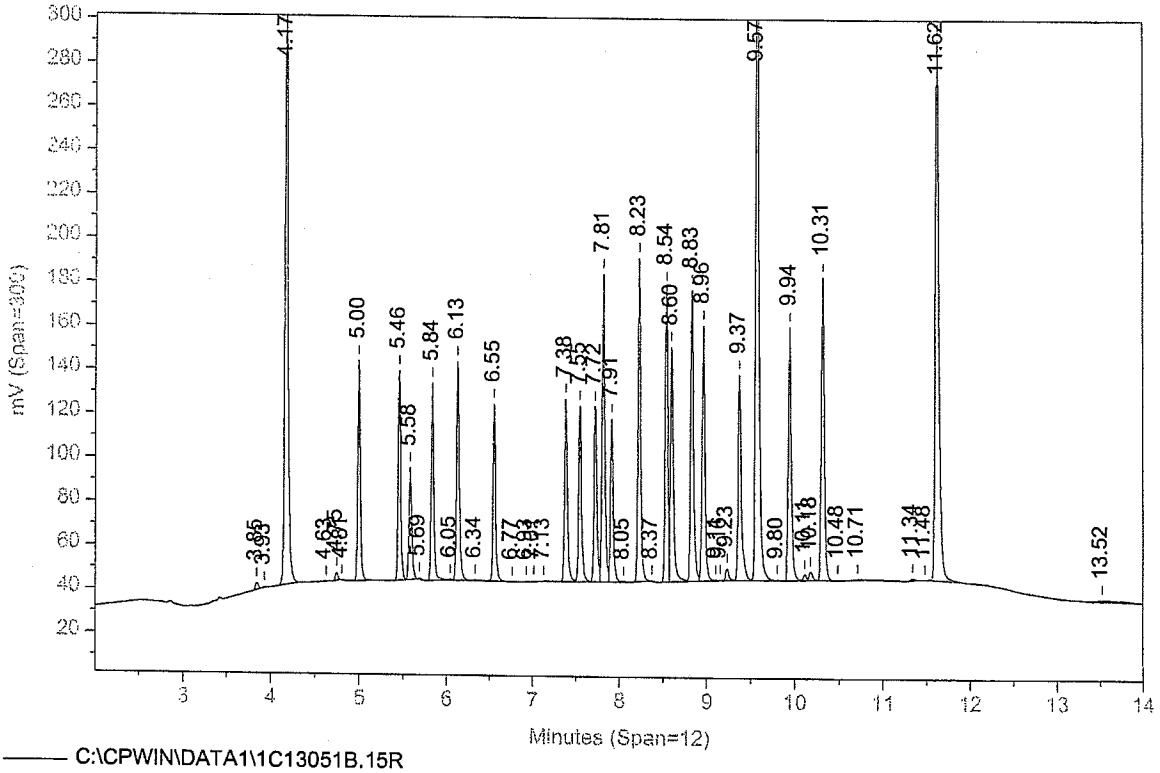
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 276229 | 72.74315 | TCX | 4.207 | 193399 | 76.03922 | TCX |
| 4.746 | 3524 | 12.69417 | HCB | . | 0 | . | HCB |
| 4.996 | 100278 | 21.67184 | alpha-BHC | 5.099 | 58699 | 23.76237 | alpha-BHC |
| 5.456 | 95762 | 20.96407 | gamma-BHC | 5.613 | 57719 | 22.79791 | gamma-BHC |
| 5.584 | 50960 | 18.69683 | beta-BHC | 5.737 | 31453 | 19.56229 | beta-BHC |
| 5.838 | 90347 | 21.22704 | delta-BHC | 6.149 | 48903 | 22.33758 | delta-BHC |
| 6.133 | 99769 | 19.31244 | Heptachlor | 6.228 | 57890 | 20.29343 | Heptachlor |
| 6.554 | 80939 | 20.30047 | Aldrin | 6.675 | 50452 | 21.79891 | Aldrin |
| 7.383 | 83080 | 18.79489 | Hept. epoxide | 7.447 | 52203 | 20.24085 | Hept. epoxide |
| 7.548 | 80375 | 18.97823 | g. Chlordane | 7.697 | 51979 | 19.88144 | g. Chlordane |
| 7.724 | 79838 | 18.73205 | a. Chlordane | 7.888 | 52232 | 19.30932 | a. Chlordane |
| 7.814 | 140146 | 41.06011 | 4,4'-DDE | 8.104 | 83809 | 43.25721 | 4,4'-DDE |
| 7.912 | 74188 | 19.36405 | Endosulfan I | 7.967 | 47486 | 19.32684 | Endosulfan I |
| 8.05 | 262 | 26.27556 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.228 | 147881 | 40.58663 | Dieldrin | 8.325 | 100523 | 42.98877 | Dieldrin |
| 8.37 | 243 | 81.1937 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.535 | 135181 | 39.76704 | Endrin | 8.725 | 87061 | 42.95448 | Endrin |
| 8.597 | 107081 | 40.28115 | 4,4'-DDD | 8.855 | 56080 | 45.01284 | 4,4'-DDD |
| 8.83 | 132518 | 38.32182 | Endosulfan II | 8.999 | 86979 | 41.19336 | Endosulfan II |
| 8.959 | 116964 | 39.4827 | 4,4'-DDT | 9.255 | 70001 | 43.13036 | 4,4'-DDT |
| 9.374 | 93538 | 37.63322 | Endrin aldehyde | 9.431 | 64322 | 39.04388 | Endrin aldehyde |
| 9.569 | 313414 | 180.0597 | Methoxychlor | 10.125 | 188036 | 189.0107 | Methoxychlor |
| 9.94 | 115401 | 37.50443 | Endo. sulfate | 9.783 | 75535 | 40.45477 | Endo. sulfate |
| 9.803 | 245 | 136.8402 | Mirex | . | 0 | . | Mirex |
| 10.308 | 138269 | 38.67463 | Endrin ketone | 10.483 | 96015 | 39.53886 | Endrin ketone |
| 11.616 | 246058 | 65.86424 | DCB | 12.227 | 169125 | 67.35736 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.15A
Area File: C:\CPWIN\DATA1\1C13051B.15A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:03:44 AM
File Reported On: 2/23/2004 at 10:03:55 AM

8622

10X REPLOTS

C:\CPWIN\DATA1\1C13051.15R

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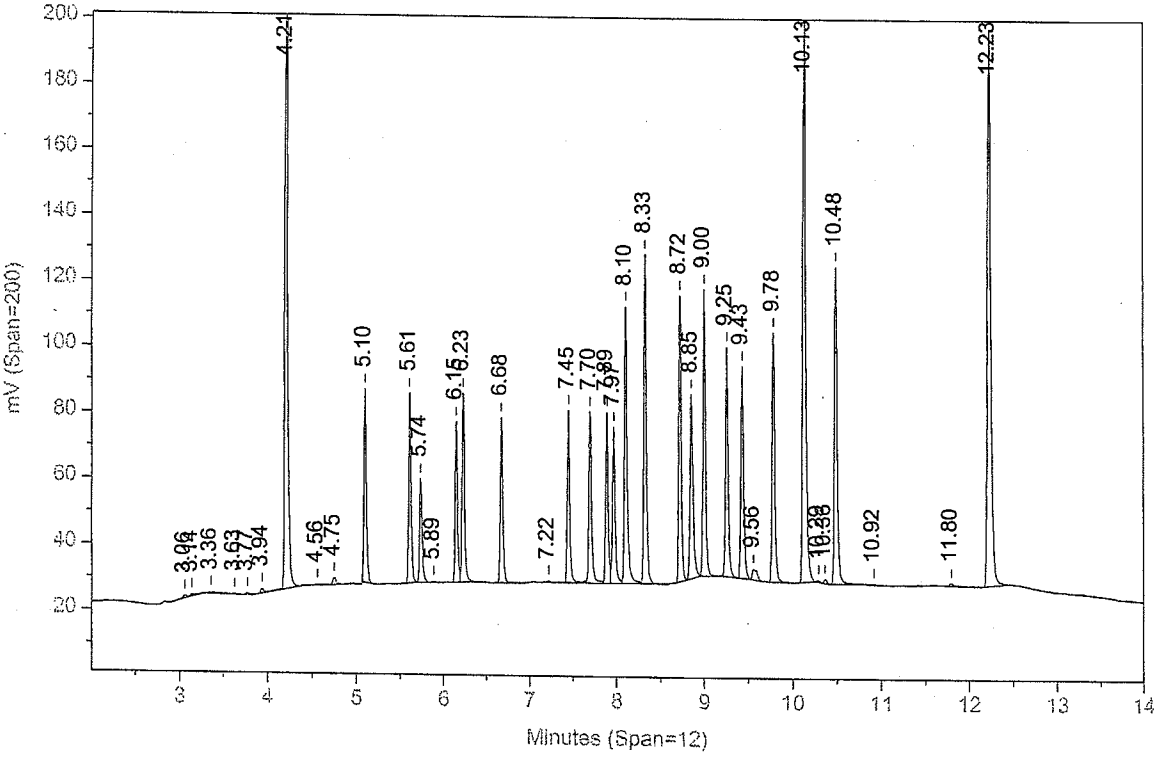


Sample Name: **ICMAX03F AAICMAXAA CCAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 01:05:32pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.16R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.847 | | 0.0000 | 0.000 | 4379.4 | 0.127 | BB | 0.037 | 1988.78 | 0.137 |
| 2 | 4.174 | TCX | 38.0778 | 7.694 | 344277.7 | 10.009 | BB | 0.040 | 144593.70 | 9.935 |
| 3 | 4.746 | HCB | 6.4459 | 1.302 | 3745.8 | 0.109 | BB | 0.035 | 1789.52 | 0.123 |
| 4 | 4.808 | | 0.0000 | 0.000 | 160.3 | 0.005 | BB | 0.024 | 113.43 | 0.008 |
| 5 | 4.997 | alpha-BHC | 9.5722 | 1.934 | 90279.6 | 2.625 | BB | 0.034 | 44291.77 | 3.043 |
| 6 | 5.103 | | 0.0000 | 0.000 | 448.8 | 0.013 | BB | 0.032 | 236.72 | 0.016 |
| 7 | 5.456 | gamma-BHC | 10.0964 | 2.040 | 94842.7 | 2.757 | BB | 0.034 | 46119.09 | 3.169 |
| 8 | 5.584 | beta-BHC | 9.8492 | 1.990 | 59054.8 | 1.717 | BB | 0.037 | 26844.86 | 1.845 |
| 9 | 5.689 | | 0.0000 | 0.000 | 598.0 | 0.017 | BB | 0.028 | 358.59 | 0.025 |
| 10 | 5.838 | delta-BHC | 10.0084 | 2.022 | 88987.2 | 2.587 | BB | 0.035 | 42597.90 | 2.927 |
| 11 | 6.047 | | 0.0000 | 0.000 | 419.5 | 0.012 | BV | 0.036 | 192.09 | 0.013 |
| 12 | 6.134 | Heptachlor | 9.7922 | 1.979 | 111175.7 | 3.232 | VV | 0.037 | 50587.14 | 3.476 |
| 13 | 6.339 | | 0.0000 | 0.000 | 3054.2 | 0.089 | VV | 0.144 | 354.25 | 0.024 |
| 14 | 6.555 | Aldrin | 10.0958 | 2.040 | 86870.1 | 2.525 | VB | 0.036 | 40252.13 | 2.766 |
| 15 | 6.763 | | 0.0000 | 0.000 | 284.3 | 0.008 | BB | 0.042 | 111.87 | 0.008 |
| 16 | 6.928 | | 0.0000 | 0.000 | 274.8 | 0.008 | BV | 0.053 | 86.57 | 0.006 |
| 17 | 7.016 | | 0.0000 | 0.000 | 628.4 | 0.018 | VV | 0.038 | 275.30 | 0.019 |
| 18 | 7.384 | Hept. epoxide | 9.6655 | 1.953 | 103453.3 | 3.008 | VV | 0.040 | 42725.25 | 2.936 |
| 19 | 7.549 | g. Chlordane | 9.9923 | 2.019 | 97891.9 | 2.846 | VV | 0.039 | 42318.38 | 2.908 |
| 20 | 7.725 | a. Chlordane | 9.9698 | 2.015 | 94858.8 | 2.758 | VV | 0.037 | 42492.72 | 2.920 |
| 21 | 7.814 | 4,4'-DDE | 20.4828 | 4.139 | 151520.4 | 4.405 | VV | 0.036 | 69912.02 | 4.804 |
| 22 | 7.913 | Endosulfan I | 10.1023 | 2.041 | 87998.4 | 2.558 | VB | 0.038 | 38704.23 | 2.659 |
| 23 | 8.228 | Dieldrin | 19.8527 | 4.012 | 156954.1 | 4.563 | BB | 0.036 | 72335.04 | 4.970 |
| 24 | 8.536 | Endrin | 19.6905 | 3.979 | 141162.6 | 4.104 | BV | 0.035 | 66934.36 | 4.599 |
| 25 | 8.598 | 4,4'-DDD | 19.5745 | 3.955 | 131577.5 | 3.825 | VV | 0.042 | 52035.77 | 3.575 |
| 26 | 8.831 | Endosulfan II | 19.6935 | 3.979 | 158514.4 | 4.608 | VV | 0.039 | 68100.87 | 4.679 |
| 27 | 8.959 | 4,4'-DDT | 19.6961 | 3.980 | 134616.2 | 3.914 | VV | 0.038 | 58347.99 | 4.009 |
| 28 | 9.231 | | 0.0000 | 0.000 | 9581.3 | 0.279 | VB | 0.046 | 3448.49 | 0.237 |
| 29 | 9.375 | Endrin aldehyde | 22.0763 | 4.461 | 134062.7 | 3.897 | BV | 0.041 | 54871.24 | 3.770 |
| 30 | 9.570 | Methoxychlor | 95.0230 | 19.201 | 412020.7 | 11.978 | VB | 0.042 | 165398.20 | 11.365 |
| 31 | 9.809 | Mirex | 38.8218 | 7.845 | 140.9 | 0.004 | BB | 0.034 | 69.56 | 0.005 |
| 32 | 9.941 | Endo. sulfate | 19.7370 | 3.988 | 142696.5 | 4.148 | BV | 0.039 | 60730.63 | 4.173 |
| 33 | 10.113 | | 0.0000 | 0.000 | 4142.9 | 0.120 | VV | 0.044 | 1578.68 | 0.108 |
| 34 | 10.180 | | 0.0000 | 0.000 | 10089.4 | 0.293 | VB | 0.047 | 3592.86 | 0.247 |
| 35 | 10.308 | Endrin ketone | 20.1641 | 4.075 | 168870.4 | 4.909 | BB | 0.039 | 72090.59 | 4.953 |
| 36 | 10.485 | | 0.0000 | 0.000 | 426.7 | 0.012 | BB | 0.040 | 177.18 | 0.012 |
| 37 | 10.707 | | 0.0000 | 0.000 | 4471.7 | 0.130 | BB | 0.043 | 1743.42 | 0.120 |
| 38 | 11.145 | | 0.0000 | 0.000 | 169.3 | 0.005 | BB | 0.053 | 53.26 | 0.004 |
| 39 | 11.336 | | 0.0000 | 0.000 | 1215.1 | 0.035 | BB | 0.041 | 488.57 | 0.034 |
| 40 | 11.616 | DCB | 36.4039 | 7.356 | 391392.3 | 11.379 | BB | 0.048 | 135998.90 | 9.345 |
| 41 | 13.459 | | 0.0000 | 0.000 | 12432.7 | 0.361 | BB | 0.482 | 430.34 | 0.030 |

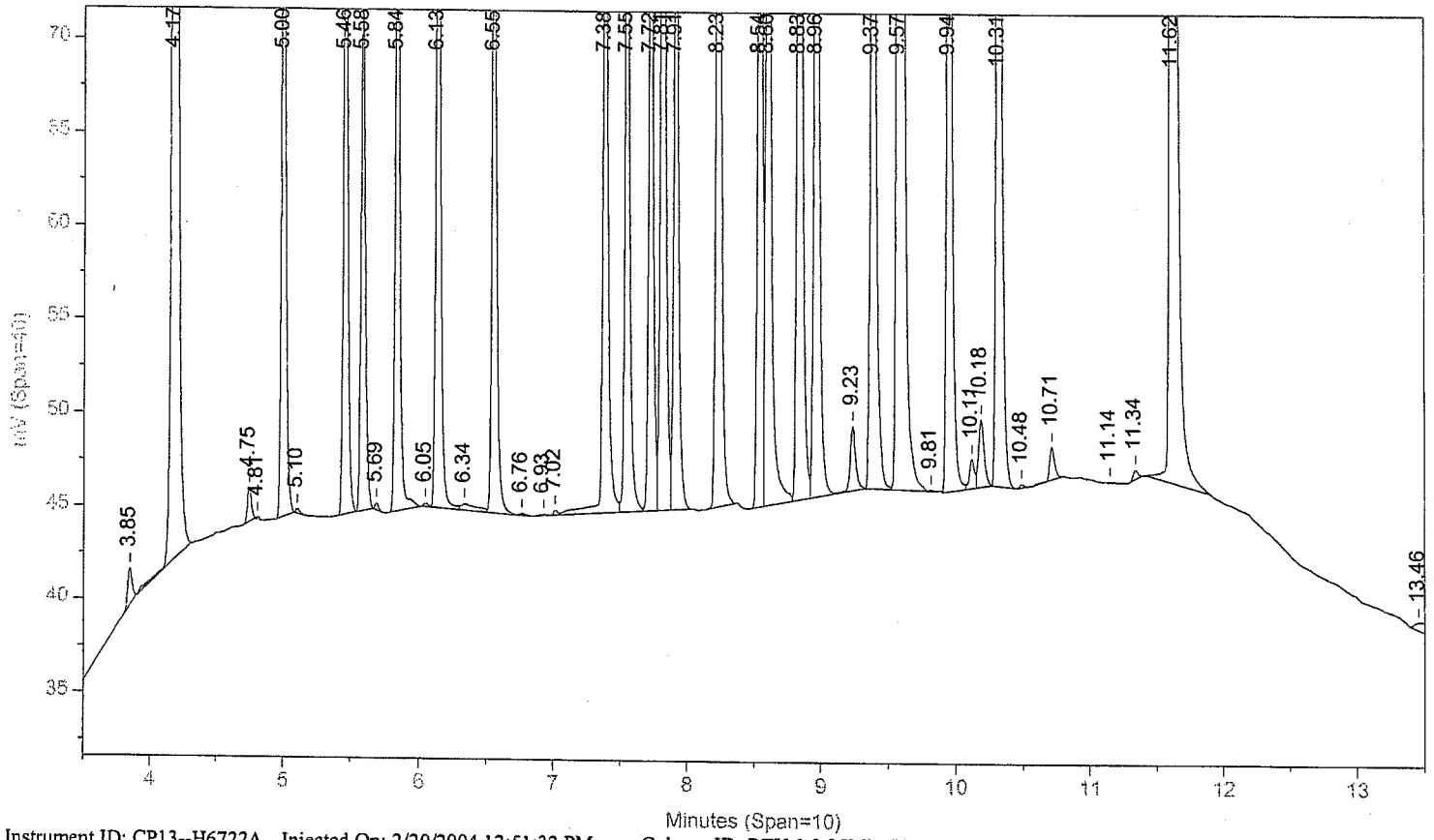
Total Area = 3439741.0, Total Amount = 494.884, Total Height = 1455372.0, Sample Units = PPB

Sample Name: **ICMAX03F AAICMAXAA CCAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 01:05:32pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.16R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.058 | | 0.0000 | 0.000 | 1737.8 | 0.089 | BB | 0.041 | 704.14 | 0.081 |
| 2 | 3.324 | | 0.0000 | 0.000 | 3473.3 | 0.178 | BB | 0.732 | 79.09 | 0.009 |
| 3 | 3.777 | | 0.0000 | 0.000 | 1510.0 | 0.077 | BB | 0.047 | 538.64 | 0.062 |
| 4 | 3.940 | | 0.0000 | 0.000 | 1607.2 | 0.082 | BB | 0.035 | 761.65 | 0.087 |
| 5 | 4.209 | TCX | 38.7419 | 8.625 | 210371.8 | 10.769 | BB | 0.036 | 98536.50 | 11.270 |
| 6 | 4.567 | | 0.0000 | 0.000 | 1135.2 | 0.058 | BB | 0.052 | 362.14 | 0.041 |
| 7 | 4.752 | | 0.0000 | 0.000 | 4091.5 | 0.209 | BB | 0.063 | 1085.17 | 0.124 |
| 8 | 5.100 | alpha-BHC | 9.3555 | 2.083 | 42574.3 | 2.179 | BB | 0.031 | 23110.58 | 2.643 |
| 9 | 5.613 | gamma-BHC | 10.0563 | 2.239 | 48408.9 | 2.478 | BV | 0.032 | 25460.27 | 2.912 |
| 10 | 5.737 | beta-BHC | 9.8310 | 2.189 | 36432.7 | 1.865 | VV | 0.038 | 15806.60 | 1.808 |
| 11 | 6.149 | delta-BHC | 9.6285 | 2.144 | 40881.5 | 2.093 | VV | 0.032 | 21079.66 | 2.411 |
| 12 | 6.229 | Heptachlor | 9.8068 | 2.183 | 57133.5 | 2.925 | VB | 0.034 | 27975.29 | 3.200 |
| 13 | 6.676 | Aldrin | 10.2043 | 2.272 | 46901.1 | 2.401 | BB | 0.033 | 23617.12 | 2.701 |
| 14 | 7.210 | | 0.0000 | 0.000 | 608.0 | 0.031 | BB | 0.034 | 294.47 | 0.034 |
| 15 | 7.447 | Hept. epoxide | 9.7923 | 2.180 | 53345.5 | 2.731 | BV | 0.035 | 25255.26 | 2.889 |
| 16 | 7.698 | g. Chlordane | 9.9486 | 2.215 | 57589.8 | 2.948 | VV | 0.037 | 26009.95 | 2.975 |
| 17 | 7.889 | a. Chlordane | 9.7240 | 2.165 | 54528.8 | 2.791 | VV | 0.035 | 26303.62 | 3.008 |
| 18 | 7.968 | Endosulfan I | 9.5871 | 2.134 | 53019.2 | 2.714 | VV | 0.038 | 23555.33 | 2.694 |
| 19 | 8.104 | 4,4'-DDE | 19.6500 | 4.374 | 91340.0 | 4.676 | VV | 0.040 | 38070.98 | 4.354 |
| 20 | 8.326 | Dieldrin | 19.6649 | 4.378 | 92746.5 | 4.748 | VB | 0.034 | 45983.47 | 5.259 |
| 21 | 8.725 | Endrin | 19.8790 | 4.425 | 79907.5 | 4.091 | BB | 0.033 | 40291.19 | 4.608 |
| 22 | 8.856 | 4,4'-DDD | 19.4085 | 4.321 | 60574.2 | 3.101 | BB | 0.042 | 24180.60 | 2.766 |
| 23 | 9.000 | Endosulfan II | 19.8480 | 4.419 | 89390.6 | 4.576 | BB | 0.036 | 41908.89 | 4.793 |
| 24 | 9.256 | 4,4'-DDT | 19.7744 | 4.402 | 72480.2 | 3.710 | BB | 0.038 | 32094.13 | 3.671 |
| 25 | 9.432 | Endrin aldehyde | 21.8471 | 4.864 | 80769.1 | 4.135 | BB | 0.037 | 35991.52 | 4.116 |
| 26 | 9.562 | | 0.0000 | 0.000 | 4334.5 | 0.222 | BB | 0.046 | 1578.47 | 0.181 |
| 27 | 9.784 | Endo. sulfate | 19.7702 | 4.401 | 81788.8 | 4.187 | BB | 0.037 | 36914.07 | 4.222 |
| 28 | 10.127 | Methoxychlor | 96.3617 | 21.452 | 223683.9 | 11.451 | BB | 0.039 | 95864.81 | 10.964 |
| 29 | 10.367 | | 0.0000 | 0.000 | 1494.6 | 0.077 | BB | 0.035 | 719.78 | 0.082 |
| 30 | 10.484 | Endrin ketone | 19.5281 | 4.347 | 111128.0 | 5.689 | BB | 0.039 | 47421.37 | 5.424 |
| 31 | 11.797 | | 0.0000 | 0.000 | 1610.4 | 0.082 | BB | 0.066 | 407.62 | 0.047 |
| 32 | 12.227 | DCB | 36.7872 | 8.190 | 246876.3 | 12.638 | BB | 0.045 | 92367.32 | 10.564 |

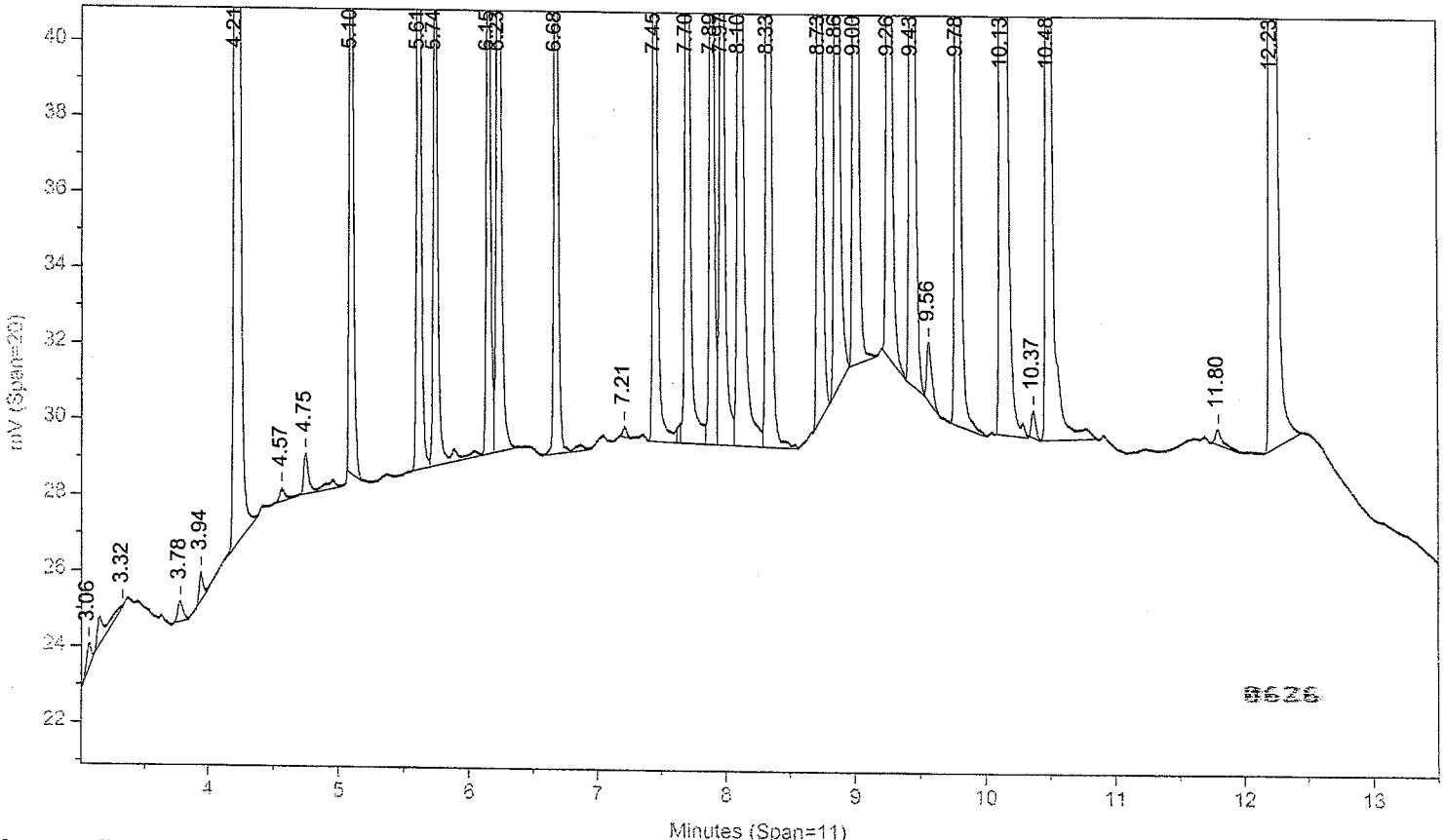
Total Area = 1953475.0, Total Amount = 449.195, Total Height = 874329.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.16R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 12:51:32 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.16R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 12:51:32 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

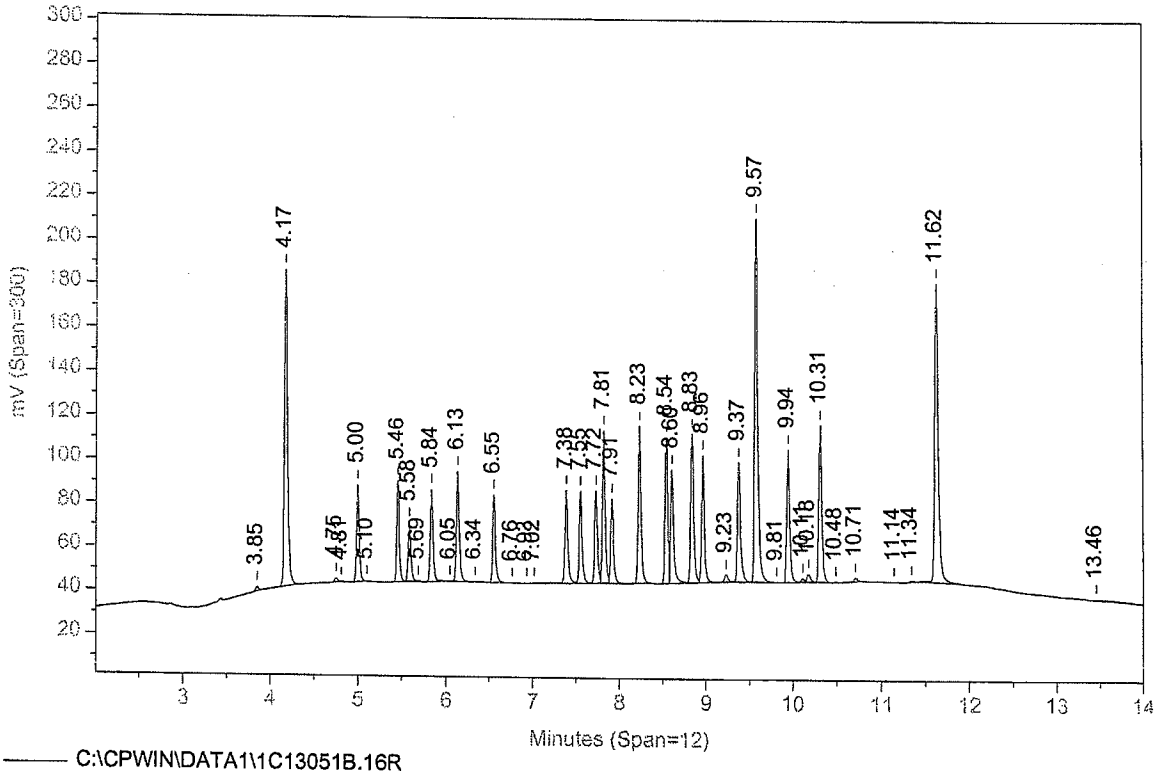
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 144594 | 38.07778 | TCX | 4.209 | 98537 | 38.74189 | TCX |
| 4.746 | 1790 | 6.44585 | HCB | . | 0 | . | HCB |
| 4.997 | 44292 | 9.57222 | alpha-BHC | 5.1 | 23111 | 9.35553 | alpha-BHC |
| 5.456 | 46119 | 10.09635 | gamma-BHC | 5.613 | 25460 | 10.05627 | gamma-BHC |
| 5.584 | 26845 | 9.84917 | beta-BHC | 5.737 | 15807 | 9.83097 | beta-BHC |
| 5.838 | 42598 | 10.00843 | delta-BHC | 6.149 | 21080 | 9.62854 | delta-BHC |
| 6.134 | 50587 | 9.79221 | Heptachlor | 6.229 | 27975 | 9.80678 | Heptachlor |
| 6.555 | 40252 | 10.09575 | Aldrin | 6.676 | 23617 | 10.20429 | Aldrin |
| 7.384 | 42725 | 9.66553 | Hept. epoxide | 7.447 | 25255 | 9.79232 | Hept. epoxide |
| 7.549 | 42318 | 9.99227 | g. Chlordane | 7.698 | 26010 | 9.94859 | g. Chlordane |
| 7.725 | 42493 | 9.96985 | a. Chlordane | 7.889 | 26304 | 9.72401 | a. Chlordane |
| 7.814 | 69912 | 20.48284 | 4,4'-DDE | 8.104 | 38071 | 19.64997 | 4,4'-DDE |
| 7.913 | 38704 | 10.10233 | Endosulfan I | 7.968 | 23555 | 9.58709 | Endosulfan I |
| 8.228 | 72335 | 19.85269 | Dieldrin | 8.326 | 45983 | 19.66493 | Dieldrin |
| 8.536 | 66934 | 19.69047 | Endrin | 8.725 | 40291 | 19.87902 | Endrin |
| 8.598 | 52036 | 19.57449 | 4,4'-DDD | 8.856 | 24181 | 19.40854 | 4,4'-DDD |
| 8.831 | 68101 | 19.69354 | Endosulfan II | 9. | 41909 | 19.84805 | Endosulfan II |
| 8.959 | 58348 | 19.69615 | 4,4'-DDT | 9.256 | 32094 | 19.77441 | 4,4'-DDT |
| 9.375 | 54871 | 22.07635 | Endrin aldehyde | 9.432 | 35992 | 21.84706 | Endrin aldehyde |
| 9.57 | 165398 | 95.023 | Methoxychlor | 10.127 | 95865 | 96.36175 | Methoxychlor |
| 9.941 | 60731 | 19.73701 | Endo. sulfate | 9.784 | 36914 | 19.77022 | Endo. sulfate |
| 9.809 | 70 | 38.82181 | Mirex | . | 0 | . | Mirex |
| 10.308 | 72091 | 20.16409 | Endrin ketone | 10.484 | 47421 | 19.5281 | Endrin ketone |
| 11.616 | 135999 | 36.40386 | DCB | 12.227 | 92367 | 36.78716 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.16A
Area File: C:\CPWIN\DATA1\1C13051B.16A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 10:04:08 AM
File Reported On: 2/23/2004 at 10:04:17 AM

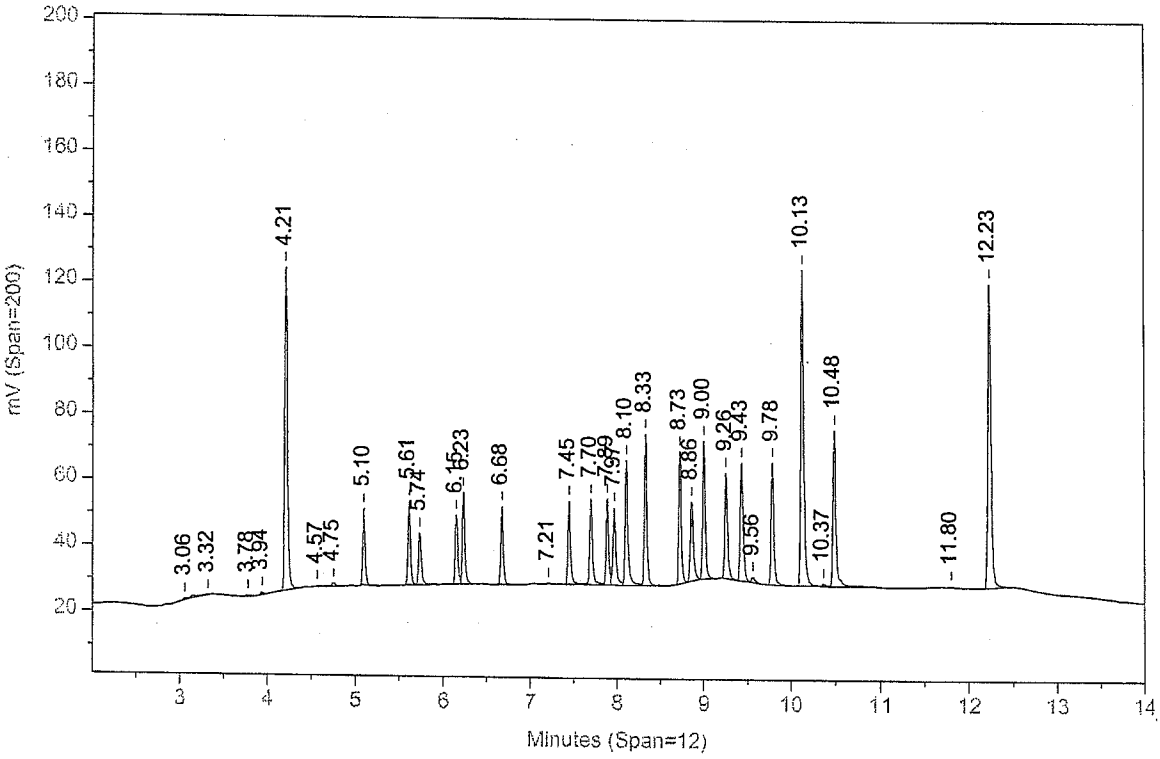
8627

10X REPLOTS

C:\CPWIN\DATA1\1C13051.16R




C:\CPWIN\DATA1\1C13051B.16R



Sample Name: **TOXWX03B AATOXWXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 03:08:03pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.22R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.851 | | 0.0000 | 0.000 | 728.2 | 0.035 | BB | 0.043 | 284.50 | 0.038 |
| 2 | 4.174 | TCX | 19.5888 | 13.318 | 179711.0 | 8.570 | BB | 0.040 | 74385.17 | 9.833 |
| 3 | 4.394 | | 0.0000 | 0.000 | 214.9 | 0.010 | BB | 0.040 | 88.81 | 0.012 |
| 4 | 4.746 | HCB | 0.1506 | 0.102 | 2103.9 | 0.100 | BB | 0.035 | 991.32 | 0.131 |
| 5 | 4.819 | | 0.0000 | 0.000 | 133.2 | 0.006 | BB | 0.031 | 71.89 | 0.010 |
| 6 | 4.877 | | 0.0000 | 0.000 | 62.3 | 0.003 | BB | 0.029 | 35.96 | 0.005 |
| 7 | 4.994 | alpha-BHC | 0.3177 | 0.216 | 3630.7 | 0.173 | BB | 0.041 | 1470.08 | 0.194 |
| 8 | 5.111 | | 0.0000 | 0.000 | 155.7 | 0.007 | BB | 0.036 | 71.64 | 0.009 |
| 9 | 5.429 | gamma-BHC | 0.2002 | 0.136 | 2416.4 | 0.115 | BB | 0.044 | 914.50 | 0.121 |
| 10 | 5.584 | beta-BHC | 0.0447 | 0.030 | 212.7 | 0.010 | BB | 0.029 | 121.76 | 0.016 |
| 11 | 5.689 | | 0.0000 | 0.000 | 439.3 | 0.021 | BB | 0.033 | 222.43 | 0.029 |
| 12 | 5.836 | delta-BHC | 0.0654 | 0.044 | 680.3 | 0.032 | BB | 0.041 | 278.21 | 0.037 |
| 13 | 5.953 | | 0.0000 | 0.000 | 498.1 | 0.024 | BB | 0.028 | 292.62 | 0.039 |
| 14 | 6.002 | | 0.0000 | 0.000 | 424.9 | 0.020 | BB | 0.026 | 268.32 | 0.035 |
| 15 | 6.124 | Heptachlor | 0.0458 | 0.031 | 655.6 | 0.031 | BV | 0.046 | 236.57 | 0.031 |
| 16 | 6.194 | | 0.0000 | 0.000 | 1254.5 | 0.060 | VV | 0.066 | 318.86 | 0.042 |
| 17 | 6.334 | | 0.0000 | 0.000 | 2089.7 | 0.100 | VV | 0.081 | 432.64 | 0.057 |
| 18 | 6.466 | | 0.0000 | 0.000 | 592.3 | 0.028 | VV | 0.040 | 244.09 | 0.032 |
| 19 | 6.530 | Aldrin | 0.0994 | 0.068 | 1508.7 | 0.072 | VV | 0.063 | 396.13 | 0.052 |
| 20 | 6.623 | | 0.0000 | 0.000 | 1271.2 | 0.061 | VB | 0.047 | 449.31 | 0.059 |
| 21 | 6.715 | | 0.0000 | 0.000 | 635.2 | 0.030 | BV | 0.032 | 333.25 | 0.044 |
| 22 | 6.746 | | 0.0000 | 0.000 | 690.5 | 0.033 | VV | 0.032 | 356.99 | 0.047 |
| 23 | 6.802 | | 0.0000 | 0.000 | 6888.3 | 0.329 | VB | 0.053 | 2151.71 | 0.284 |
| 24 | 6.967 | | 0.0000 | 0.000 | 478.8 | 0.023 | BV | 0.029 | 275.28 | 0.036 |
| 25 | 7.003 | | 0.0000 | 0.000 | 447.5 | 0.021 | VB | 0.034 | 217.40 | 0.029 |
| 26 | 7.044 | | 0.0000 | 0.000 | 328.5 | 0.016 | BB | 0.024 | 229.56 | 0.030 |
| 27 | 7.143 | | 0.0000 | 0.000 | 1730.2 | 0.083 | BB | 0.032 | 900.58 | 0.119 |
| 28 | 7.199 | | 0.0000 | 0.000 | 875.5 | 0.042 | BB | 0.026 | 571.40 | 0.076 |
| 29 | 7.253 | | 0.0000 | 0.000 | 6568.0 | 0.313 | BV | 0.039 | 2833.88 | 0.375 |
| 30 | 7.308 | | 0.0000 | 0.000 | 4371.8 | 0.208 | VB | 0.040 | 1811.04 | 0.239 |
| 31 | 7.392 | Hept. epoxide | 0.2331 | 0.158 | 1985.2 | 0.095 | BV | 0.032 | 1030.21 | 0.136 |
| 32 | 7.436 | | 0.0000 | 0.000 | 1686.7 | 0.080 | VV | 0.032 | 878.65 | 0.116 |
| 33 | 7.522 | g. Chlordane | 0.4528 | 0.308 | 7184.7 | 0.343 | VV | 0.062 | 1917.72 | 0.254 |
| 34 | 7.581 | | 0.0000 | 0.000 | 4541.4 | 0.217 | VB | 0.047 | 1593.97 | 0.211 |
| 35 | 7.714 | a. Chlordane | 1.4761 | 1.004 | 26292.9 | 1.254 | BB | 0.070 | 6291.41 | 0.832 |
| 36 | 7.833 | 4,4'-DDE | 0.2570 | 0.175 | 1311.1 | 0.063 | BV | 0.025 | 877.32 | 0.116 |
| 37 | 7.915 | Endosulfan I | 1.2687 | 0.863 | 17273.5 | 0.824 | VV | 0.059 | 4860.65 | 0.643 |
| 38 | 7.996 | | 0.0000 | 0.000 | 7209.1 | 0.344 | VV | 0.056 | 2142.97 | 0.283 |
| 39 | 8.085 | | 0.0000 | 0.000 | 7756.2 | 0.370 | VV | 0.042 | 3072.49 | 0.406 |
| 40 | 8.180 | | 0.0000 | 0.000 | 36987.2 | 1.764 | VV | 0.054 | 11445.81 | 1.513 |
| 41 | 8.226 | Dieldrin | 2.7054 | 1.839 | 23569.3 | 1.124 | VB | 0.040 | 9857.53 | 1.303 |
| 42 | 8.346 | o,p-DDT | 5.6524 | 3.843 | 47399.7 | 2.260 | BV | 0.051 | 15390.18 | 2.034 |
| 43 | 8.433 | | 0.0000 | 0.000 | 81165.3 | 3.871 | VV | 0.071 | 19016.79 | 2.514 |
| 44 | 8.588 | Kepone | 58.1501 | 39.535 | 110040.6 | 5.248 | VV | 0.061 | 30219.16 | 3.995 |
| 45 | 8.642 | | 0.0000 | 0.000 | 44871.4 | 2.140 | VV | 0.039 | 19420.42 | 2.567 |
| 46 | 8.693 | | 0.0000 | 0.000 | 36777.0 | 1.754 | VV | 0.050 | 12250.39 | 1.619 |
| 47 | 8.809 | | 0.0000 | 0.000 | 69867.0 | 3.332 | VV | 0.066 | 17517.59 | 2.316 |
| 48 | 8.850 | Endosulfan II | 4.8485 | 3.296 | 38832.9 | 1.852 | VV | 0.039 | 16766.34 | 2.216 |
| 49 | 8.926 | | 0.0000 | 0.000 | 77849.0 | 3.713 | VV | 0.061 | 21342.67 | 2.821 |
| 50 | 8.970 | 4,4'-DDT | 9.3513 | 6.358 | 70746.4 | 3.374 | VV | 0.043 | 27702.25 | 3.662 |
| 51 | 9.043 | | 0.0000 | 0.000 | 2932.4 | 0.140 | VB | 0.028 | 1772.79 | 0.234 |
| 52 | 9.113 | | 0.0000 | 0.000 | 4070.9 | 0.194 | BV | 0.031 | 2206.73 | 0.292 |
| 53 | 9.172 | | 0.0000 | 0.000 | 40755.9 | 1.944 | VV | 0.047 | 14399.78 | 1.904 |
| 54 | 9.249 | | 0.0000 | 0.000 | 82570.3 | 3.938 | VV | 0.047 | 29080.18 | 3.844 |
| 55 | 9.337 | | 0.0000 | 0.000 | 109528.8 | 5.223 | VB | 0.056 | 32539.64 | 4.302 |
| 56 | 9.408 | | 0.0000 | 0.000 | 15706.1 | 0.749 | BB | 0.034 | 7786.15 | 1.029 |
| 57 | 9.495 | | 0.0000 | 0.000 | 35098.3 | 1.674 | BV | 0.032 | 18130.69 | 2.397 |
| 58 | 9.545 | Methoxychlor | 8.7882 | 5.975 | 56437.6 | 2.692 | VV | 0.042 | 22647.32 | 2.994 |
| 59 | 9.624 | | 0.0000 | 0.000 | 5868.9 | 0.280 | VB | 0.024 | 4093.02 | 0.541 |
| 60 | 9.683 | | 0.0000 | 0.000 | 65538.8 | 3.126 | BB | 0.049 | 22295.79 | 2.947 |
| 61 | 9.805 | Mirex | 5.8814 | 3.999 | 71191.2 | 3.395 | BB | 0.044 | 26742.96 | 3.535 |
| 62 | 9.865 | | 0.0000 | 0.000 | 39801.2 | 1.898 | BV | 0.053 | 12611.74 | 1.667 |
| 63 | 9.924 | Endo. sulfate | 7.4452 | 5.062 | 52324.0 | 2.495 | VB | 0.038 | 22908.70 | 3.028 |
| 64 | 10.020 | | 0.0000 | 0.000 | 28431.1 | 1.356 | BB | 0.032 | 14693.34 | 1.942 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.100 | | 0.0000 | 0.000 | 36687.4 | 1.750 | BV | 0.045 | 13642.50 | 1.803 |
| 66 | 10.170 | | 0.0000 | 0.000 | 20992.6 | 1.001 | VB | 0.040 | 8830.14 | 1.167 |
| 67 | 10.271 | | 0.0000 | 0.000 | 82523.0 | 3.936 | BV | 0.045 | 30275.69 | 4.002 |
| 68 | 10.356 | | 0.0000 | 0.000 | 7783.2 | 0.371 | VV | 0.027 | 4737.10 | 0.626 |
| 69 | 10.394 | | 0.0000 | 0.000 | 31831.0 | 1.518 | VV | 0.036 | 14648.17 | 1.936 |
| 70 | 10.460 | | 0.0000 | 0.000 | 53051.6 | 2.530 | VV | 0.043 | 20392.15 | 2.696 |
| 71 | 10.538 | | 0.0000 | 0.000 | 14457.4 | 0.689 | VV | 0.032 | 7554.85 | 0.999 |
| 72 | 10.574 | | 0.0000 | 0.000 | 22865.8 | 1.090 | VV | 0.038 | 10071.51 | 1.331 |
| 73 | 10.619 | | 0.0000 | 0.000 | 7373.9 | 0.352 | VB | 0.029 | 4274.64 | 0.565 |
| 74 | 10.697 | | 0.0000 | 0.000 | 4283.5 | 0.204 | BV | 0.037 | 1952.73 | 0.258 |
| 75 | 10.778 | | 0.0000 | 0.000 | 11936.8 | 0.569 | VB | 0.056 | 3523.79 | 0.466 |
| 76 | 10.938 | | 0.0000 | 0.000 | 7835.0 | 0.374 | BB | 0.040 | 3300.01 | 0.436 |
| 77 | 11.017 | | 0.0000 | 0.000 | 11818.5 | 0.564 | BB | 0.041 | 4805.54 | 0.635 |
| 78 | 11.142 | | 0.0000 | 0.000 | 5766.2 | 0.275 | BB | 0.051 | 1894.77 | 0.250 |
| 79 | 11.294 | | 0.0000 | 0.000 | 2454.6 | 0.117 | BB | 0.037 | 1115.99 | 0.148 |
| 80 | 11.386 | | 0.0000 | 0.000 | 8916.9 | 0.425 | BB | 0.049 | 3006.34 | 0.397 |
| 81 | 11.548 | | 0.0000 | 0.000 | 663.1 | 0.032 | BB | 0.089 | 123.56 | 0.016 |
| 82 | 11.618 | DCB | 20.0627 | 13.640 | 205525.8 | 9.802 | BB | 0.046 | 73947.92 | 9.775 |
| 83 | 11.752 | | 0.0000 | 0.000 | 661.1 | 0.032 | BB | 0.025 | 438.84 | 0.058 |
| 84 | 12.078 | | 0.0000 | 0.000 | 322.8 | 0.015 | BB | 0.039 | 138.07 | 0.018 |
| 85 | 12.165 | | 0.0000 | 0.000 | 2037.0 | 0.097 | BB | 0.158 | 214.25 | 0.028 |
| 86 | 12.379 | | 0.0000 | 0.000 | 1913.6 | 0.091 | BB | 0.067 | 479.35 | 0.063 |
| 87 | 13.449 | | 0.0000 | 0.000 | 9770.1 | 0.466 | BB | 0.487 | 334.54 | 0.044 |

Total Area = 2096871.0, Total Amount = 147.086, Total Height = 756461.8, Sample Units = PPB

Sample Name: **TOXWX03B AATOXWXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 03:08:03pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.22R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.067 | | 0.0000 | 0.000 | 1539.1 | 0.155 | BB | 0.049 | 518.25 | 0.129 |
| 2 | 3.414 | | 0.0000 | 0.000 | 22095.1 | 2.228 | BB | 0.382 | 965.18 | 0.240 |
| 3 | 3.774 | | 0.0000 | 0.000 | 1512.9 | 0.153 | BB | 0.043 | 586.75 | 0.146 |
| 4 | 4.208 | TCX | 19.0687 | 14.196 | 114317.8 | 11.530 | BB | 0.039 | 48499.44 | 12.039 |
| 5 | 4.746 | | 0.0000 | 0.000 | 2944.1 | 0.297 | BB | 0.084 | 585.38 | 0.145 |
| 6 | 5.094 | alpha-BHC | 1.2756 | 0.950 | 1385.3 | 0.140 | BB | 0.034 | 687.61 | 0.171 |
| 7 | 5.599 | gamma-BHC | 0.9689 | 0.721 | 926.3 | 0.093 | BB | 0.036 | 427.29 | 0.106 |
| 8 | 6.523 | | 0.0000 | 0.000 | 666.9 | 0.067 | BB | 0.030 | 374.08 | 0.093 |
| 9 | 6.804 | | 0.0000 | 0.000 | 2145.4 | 0.216 | BB | 0.046 | 779.19 | 0.193 |
| 10 | 6.987 | | 0.0000 | 0.000 | 1023.1 | 0.103 | BB | 0.041 | 418.55 | 0.104 |
| 11 | 7.170 | | 0.0000 | 0.000 | 463.0 | 0.047 | BB | 0.025 | 314.30 | 0.078 |
| 12 | 7.237 | | 0.0000 | 0.000 | 4131.9 | 0.417 | BB | 0.037 | 1867.62 | 0.464 |
| 13 | 7.344 | | 0.0000 | 0.000 | 1369.2 | 0.138 | BB | 0.035 | 655.17 | 0.163 |
| 14 | 7.436 | Hept. epoxide | 0.5566 | 0.414 | 5587.5 | 0.564 | BB | 0.065 | 1435.43 | 0.356 |
| 15 | 7.565 | | 0.0000 | 0.000 | 4056.3 | 0.409 | BV | 0.051 | 1313.49 | 0.326 |
| 16 | 7.679 | g. Chlordane | 0.3866 | 0.288 | 3235.6 | 0.326 | VV | 0.053 | 1010.75 | 0.251 |
| 17 | 7.784 | | 0.0000 | 0.000 | 16622.6 | 1.677 | VV | 0.053 | 5203.03 | 1.292 |
| 18 | 7.954 | Endosulfan I | 0.3767 | 0.280 | 3455.7 | 0.349 | VV | 0.059 | 972.25 | 0.241 |
| 19 | 8.001 | | 0.0000 | 0.000 | 5017.6 | 0.506 | VV | 0.037 | 2275.56 | 0.565 |
| 20 | 8.037 | | 0.0000 | 0.000 | 5310.7 | 0.536 | VV | 0.041 | 2135.71 | 0.530 |
| 21 | 8.140 | | 0.0000 | 0.000 | 8998.4 | 0.908 | VB | 0.072 | 2092.39 | 0.519 |
| 22 | 8.233 | | 0.0000 | 0.000 | 2185.1 | 0.220 | BV | 0.032 | 1144.53 | 0.284 |
| 23 | 8.299 | Dieldrin | 4.7578 | 3.542 | 33288.3 | 3.357 | VB | 0.050 | 11125.48 | 2.762 |
| 24 | 8.443 | | 0.0000 | 0.000 | 12581.7 | 1.269 | BV | 0.036 | 5832.40 | 1.448 |
| 25 | 8.525 | | 0.0000 | 0.000 | 14366.5 | 1.449 | VV | 0.049 | 4927.53 | 1.223 |
| 26 | 8.598 | | 0.0000 | 0.000 | 19696.0 | 1.986 | VV | 0.042 | 7795.45 | 1.935 |
| 27 | 8.637 | | 0.0000 | 0.000 | 34391.3 | 3.469 | VV | 0.061 | 9437.52 | 2.343 |
| 28 | 8.719 | Endrin | 1.9723 | 1.468 | 9003.4 | 0.908 | VV | 0.038 | 3997.47 | 0.992 |
| 29 | 8.772 | o,p-DDT | 1.0815 | 0.805 | 2788.5 | 0.281 | VB | 0.028 | 1644.11 | 0.408 |
| 30 | 8.843 | 4,4'-DDD | 2.6388 | 1.965 | 3655.7 | 0.369 | BB | 0.039 | 1571.46 | 0.390 |
| 31 | 8.875 | Kepone | 37.9735 | 28.270 | 13001.8 | 1.311 | BB | 0.027 | 8042.66 | 1.996 |
| 32 | 8.926 | | 0.0000 | 0.000 | 3619.1 | 0.365 | BB | 0.020 | 2977.74 | 0.739 |
| 33 | 8.978 | Endosulfan II | 3.8335 | 2.854 | 14231.5 | 1.435 | BB | 0.029 | 8094.46 | 2.009 |
| 34 | 9.101 | | 0.0000 | 0.000 | 71550.7 | 7.216 | BB | 0.044 | 27078.90 | 6.722 |
| 35 | 9.203 | | 0.0000 | 0.000 | 14480.0 | 1.460 | BB | 0.033 | 7207.55 | 1.789 |
| 36 | 9.343 | | 0.0000 | 0.000 | 24548.6 | 2.476 | BB | 0.037 | 10978.82 | 2.725 |
| 37 | 9.434 | Endrin aldehyde | 10.8047 | 8.044 | 43811.6 | 4.419 | BB | 0.041 | 17800.03 | 4.419 |
| 38 | 9.545 | | 0.0000 | 0.000 | 43142.0 | 4.351 | BB | 0.053 | 13687.84 | 3.398 |
| 39 | 9.614 | | 0.0000 | 0.000 | 7234.5 | 0.730 | BB | 0.035 | 3399.34 | 0.844 |
| 40 | 9.712 | | 0.0000 | 0.000 | 17911.6 | 1.807 | BB | 0.041 | 7264.87 | 1.803 |
| 41 | 9.773 | Endo. sulfate | 4.3214 | 3.217 | 12649.4 | 1.276 | BB | 0.026 | 8068.75 | 2.003 |
| 42 | 9.853 | | 0.0000 | 0.000 | 6030.6 | 0.608 | BB | 0.030 | 3327.88 | 0.826 |
| 43 | 9.897 | | 0.0000 | 0.000 | 1513.7 | 0.153 | BB | 0.020 | 1269.92 | 0.315 |
| 44 | 9.931 | | 0.0000 | 0.000 | 8141.1 | 0.821 | BB | 0.034 | 3955.84 | 0.982 |
| 45 | 10.034 | | 0.0000 | 0.000 | 3470.1 | 0.350 | BB | 0.024 | 2372.67 | 0.589 |
| 46 | 10.099 | Methoxychlor | 23.5211 | 17.511 | 52671.7 | 5.312 | BB | 0.038 | 23399.80 | 5.809 |
| 47 | 10.168 | | 0.0000 | 0.000 | 30763.0 | 3.103 | BB | 0.039 | 13175.66 | 3.271 |
| 48 | 10.232 | | 0.0000 | 0.000 | 14295.7 | 1.442 | BB | 0.027 | 8956.02 | 2.223 |
| 49 | 10.347 | | 0.0000 | 0.000 | 10153.8 | 1.024 | BB | 0.029 | 5851.75 | 1.453 |
| 50 | 10.413 | Mirex | 0.8012 | 0.596 | 15295.0 | 1.543 | BB | 0.036 | 7005.07 | 1.739 |
| 51 | 10.544 | | 0.0000 | 0.000 | 15105.2 | 1.523 | BB | 0.041 | 6115.09 | 1.518 |
| 52 | 10.605 | | 0.0000 | 0.000 | 27914.1 | 2.815 | BB | 0.037 | 12699.51 | 3.152 |
| 53 | 10.695 | | 0.0000 | 0.000 | 6527.0 | 0.658 | BB | 0.042 | 2605.32 | 0.647 |
| 54 | 10.766 | | 0.0000 | 0.000 | 7990.9 | 0.806 | BB | 0.028 | 4779.32 | 1.186 |
| 55 | 10.835 | | 0.0000 | 0.000 | 14029.7 | 1.415 | BB | 0.031 | 7541.01 | 1.872 |
| 56 | 10.911 | | 0.0000 | 0.000 | 5405.8 | 0.545 | BB | 0.029 | 3091.91 | 0.768 |
| 57 | 10.984 | | 0.0000 | 0.000 | 12683.0 | 1.279 | BB | 0.067 | 3145.80 | 0.781 |
| 58 | 11.121 | | 0.0000 | 0.000 | 4220.0 | 0.426 | BB | 0.066 | 1059.75 | 0.263 |
| 59 | 11.225 | | 0.0000 | 0.000 | 4720.7 | 0.476 | BB | 0.036 | 2212.38 | 0.549 |
| 60 | 11.308 | | 0.0000 | 0.000 | 1094.3 | 0.110 | BB | 0.042 | 436.81 | 0.108 |
| 61 | 11.459 | | 0.0000 | 0.000 | 2002.2 | 0.202 | BB | 0.031 | 1068.71 | 0.265 |
| 62 | 11.505 | | 0.0000 | 0.000 | 2635.4 | 0.266 | BB | 0.029 | 1537.35 | 0.382 |
| 63 | 11.607 | | 0.0000 | 0.000 | 1497.7 | 0.151 | BB | 0.037 | 666.56 | 0.165 |
| 64 | 11.688 | | 0.0000 | 0.000 | 1751.8 | 0.177 | BB | 0.039 | 757.03 | 0.188 |

8631

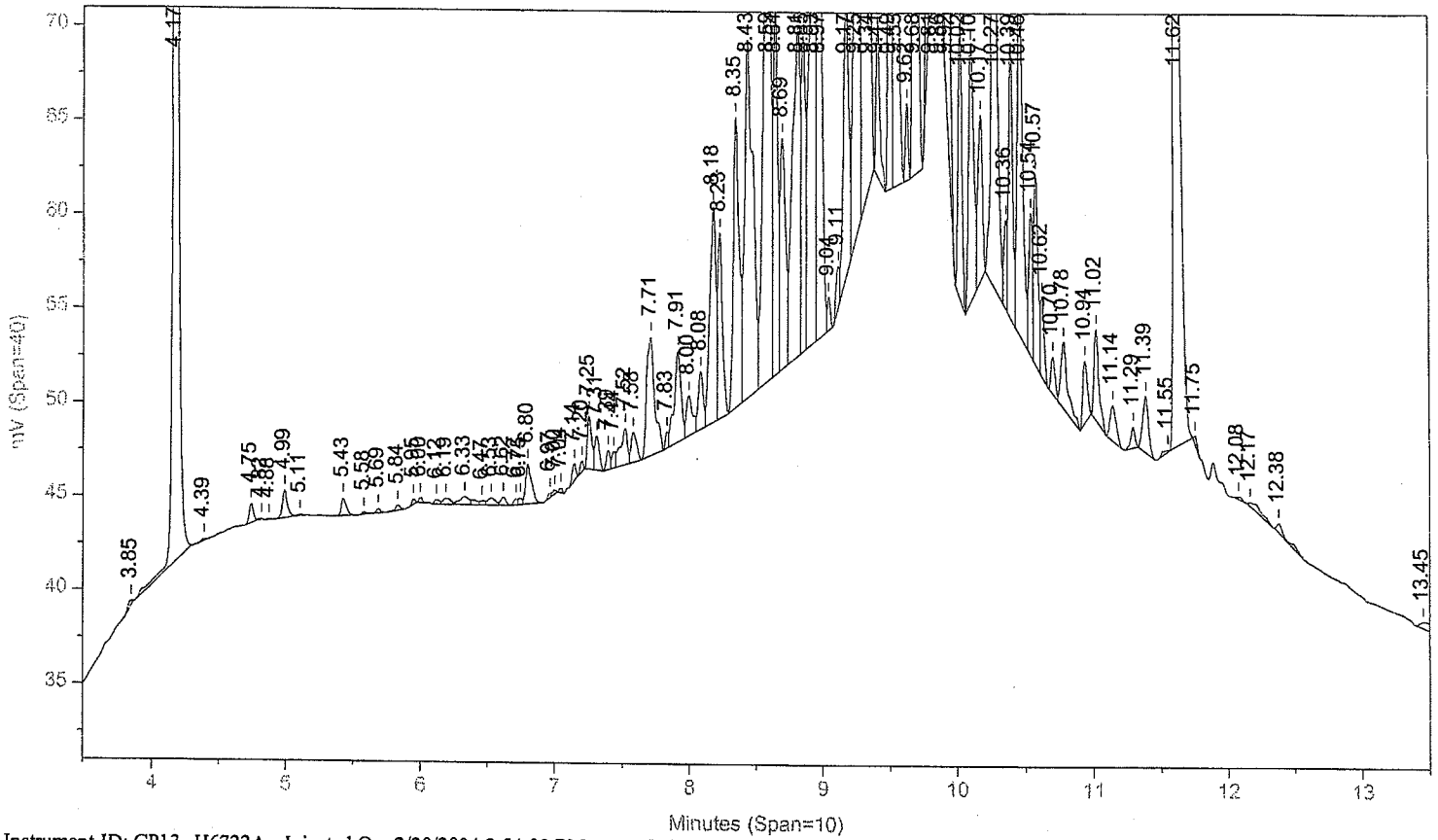
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.976 | | 0.0000 | 0.000 | 2250.5 | 0.227 | BB | 0.053 | 706.55 | 0.175 |
| 66 | 12.229 | DCB | 19.9848 | 14.878 | 134393.0 | 13.555 | BB | 0.045 | 49916.63 | 12.391 |

Total Area = 991498.0, Total Amount = 134.324, Total Height = 402848.7, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1C13051.22R

C:\CPWIN\DATA1\1C13051.22R

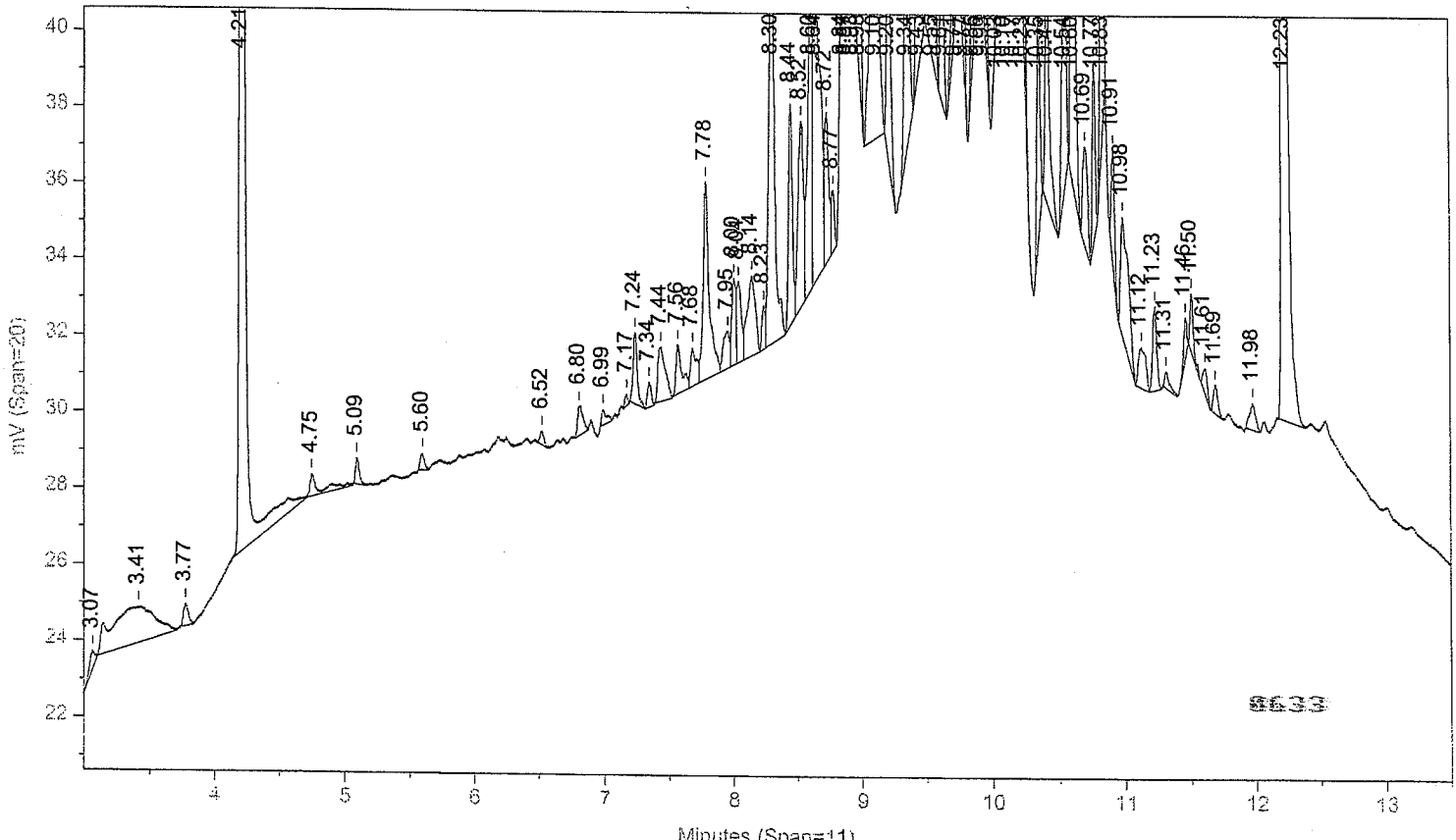



Instrument ID: CP13--H6722A Injected On: 2/20/2004 2:54:03 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.22R

C:\CPWIN\DATA1\1C13051B.22R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 2:54:03 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

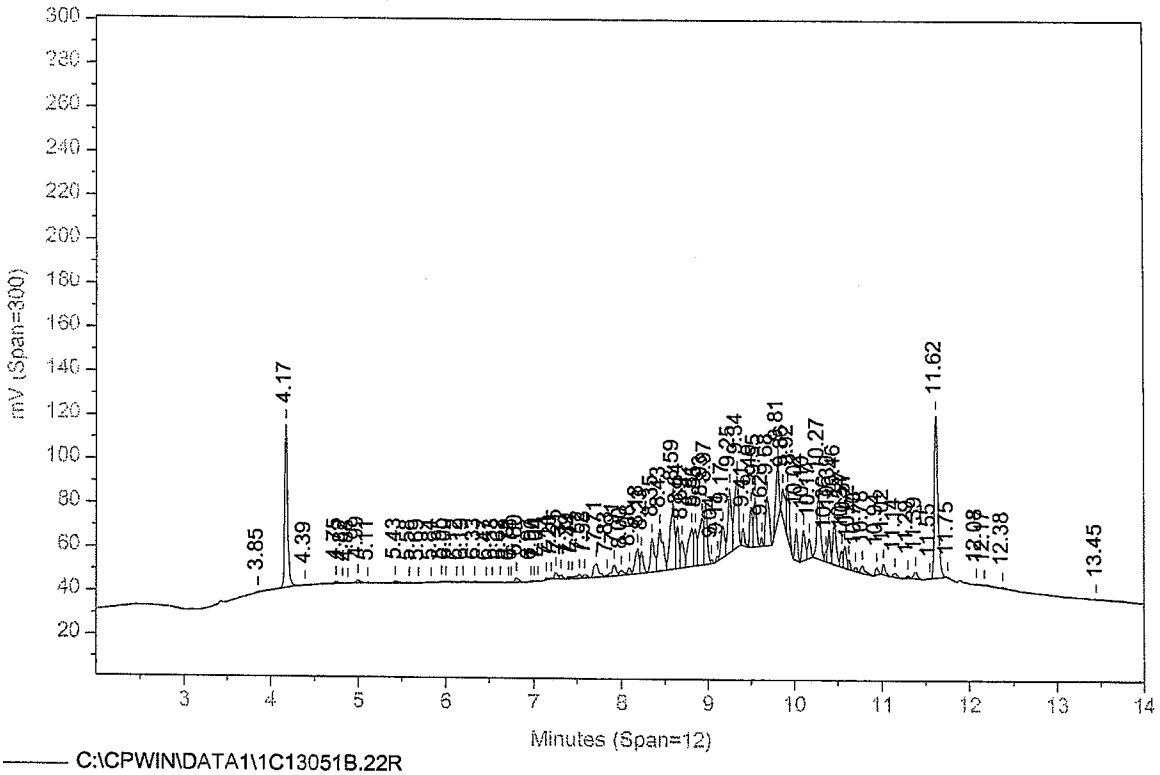
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.174 | 74385 | 19.58884 | TCX | 4.208 | 48499 | 19.06867 | TCX |
| 4.746 | 991 | .15059 | HCB | . | 0 | . | HCB |
| 4.994 | 1470 | .31771 | alpha-BHC | 5.094 | 688 | 1.27557 | alpha-BHC |
| 5.429 | 915 | .2002 | gamma-BHC | 5.599 | 427 | .96889 | gamma-BHC |
| 5.584 | 122 | .04467 | beta-BHC | . | 0 | . | beta-BHC |
| 5.836 | 278 | .06537 | delta-BHC | . | 0 | . | delta-BHC |
| 6.124 | 237 | .04579 | Heptachlor | . | 0 | . | Heptachlor |
| 6.53 | 396 | .09935 | Aldrin | . | 0 | . | Aldrin |
| 7.392 | 1030 | .23306 | Hept. epoxide | 7.436 | 1435 | .55657 | Hept. epoxide |
| 7.522 | 1918 | .45281 | g. Chlordane | 7.679 | 1011 | .3866 | g. Chlordane |
| 7.714 | 6291 | 1.47612 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.833 | 877 | .25704 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.915 | 4861 | 1.26869 | Endosulfan I | 7.954 | 972 | .37671 | Endosulfan I |
| 8.226 | 9858 | 2.70545 | Dieldrin | 8.299 | 11125 | 4.75784 | Dieldrin |
| 8.346 | 15390 | 5.65243 | o,p-DDT | 8.772 | 1644 | 1.0815 | o,p-DDT |
| 8.588 | 30219 | 58.15011 | Kepone | 8.875 | 8043 | 37.97349 | Kepone |
| . | 0 | . | Endrin | 8.719 | 3997 | 1.97229 | Endrin |
| . | 0 | . | 4,4'-DDD | 8.843 | 1571 | 2.63884 | 4,4'-DDD |
| 8.85 | 16766 | 4.84852 | Endosulfan II | 8.978 | 8094 | 3.83353 | Endosulfan II |
| 8.97 | 27702 | 9.35127 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.434 | 17800 | 10.80472 | Endrin aldehyde |
| 9.545 | 22647 | 8.78822 | Methoxychlor | 10.099 | 23400 | 23.5211 | Methoxychlor |
| 9.924 | 22909 | 7.44516 | Endo. sulfate | 9.773 | 8069 | 4.32141 | Endo. sulfate |
| 9.805 | 26743 | 5.88144 | Mirex | 10.413 | 7005 | .80123 | Mirex |
| 11.618 | 73948 | 20.06271 | DCB | 12.229 | 49917 | 19.98483 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.22A
Area File: C:\CPWIN\DATA1\1C13051B.22A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 11:18:12 AM
File Reported On: 2/23/2004 at 11:18:20 AM

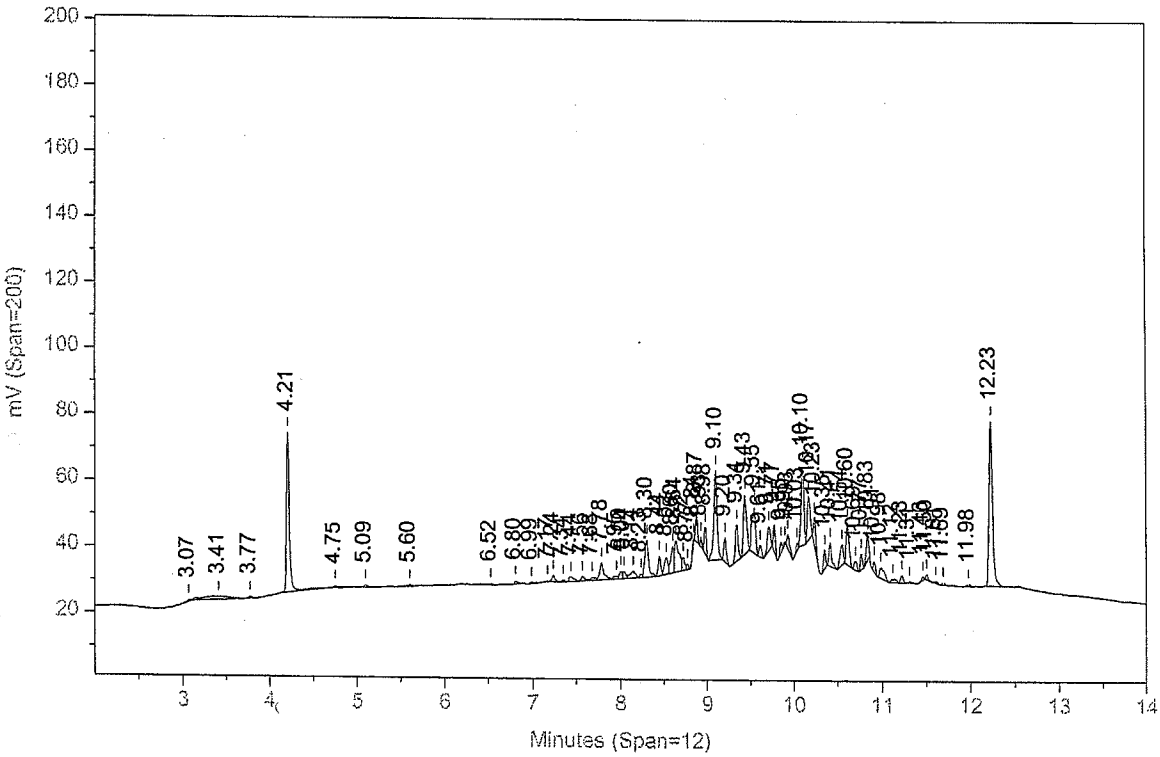
9634

10X REPLOTS

C:\CPWIN\DATA1\1C13051.22R




C:\CPWIN\DATA1\1C13051B.22R




9635

Sample Name: **CHLDX03B AACHLDXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 03:28:24pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.23R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.850 | | 0.0000 | 0.000 | 1377.0 | 0.074 | BB | 0.043 | 536.90 | 0.079 |
| 2 | 4.088 | | 0.0000 | 0.000 | 24509.3 | 1.312 | BB | 0.035 | 11838.96 | 1.750 |
| 3 | 4.173 | TCX | 19.2131 | 12.759 | 166159.6 | 8.896 | BB | 0.038 | 72958.21 | 10.786 |
| 4 | 4.636 | | 0.0000 | 0.000 | 1510.8 | 0.081 | BB | 0.187 | 134.47 | 0.020 |
| 5 | 4.744 | HCB | 0.1391 | 0.092 | 1933.5 | 0.104 | BB | 0.035 | 915.90 | 0.135 |
| 6 | 4.808 | | 0.0000 | 0.000 | 92.0 | 0.005 | BB | 0.024 | 63.82 | 0.009 |
| 7 | 4.865 | | 0.0000 | 0.000 | 215.8 | 0.012 | BB | 0.035 | 104.17 | 0.015 |
| 8 | 4.969 | alpha-BHC | 0.0447 | 0.030 | 529.4 | 0.028 | BB | 0.043 | 206.68 | 0.031 |
| 9 | 5.072 | | 0.0000 | 0.000 | 7651.4 | 0.410 | BB | 0.040 | 3196.30 | 0.473 |
| 10 | 5.219 | | 0.0000 | 0.000 | 5127.1 | 0.274 | BB | 0.038 | 2263.17 | 0.335 |
| 11 | 5.347 | | 0.0000 | 0.000 | 795.7 | 0.043 | BB | 0.027 | 489.87 | 0.072 |
| 12 | 5.399 | | 0.0000 | 0.000 | 1835.8 | 0.098 | BB | 0.033 | 938.18 | 0.139 |
| 13 | 5.534 | | 0.0000 | 0.000 | 1117.7 | 0.060 | BB | 0.033 | 561.60 | 0.083 |
| 14 | 5.596 | beta-BHC | 0.1408 | 0.093 | 713.6 | 0.038 | BB | 0.031 | 383.70 | 0.057 |
| 15 | 5.659 | | 0.0000 | 0.000 | 2034.8 | 0.109 | BB | 0.045 | 756.48 | 0.112 |
| 16 | 5.764 | | 0.0000 | 0.000 | 3255.7 | 0.174 | BB | 0.033 | 1652.47 | 0.244 |
| 17 | 5.841 | delta-BHC | 0.1424 | 0.095 | 1127.1 | 0.060 | BB | 0.031 | 606.09 | 0.090 |
| 18 | 5.904 | | 0.0000 | 0.000 | 5249.1 | 0.281 | BB | 0.033 | 2629.95 | 0.389 |
| 19 | 6.018 | | 0.0000 | 0.000 | 67496.7 | 3.614 | BB | 0.035 | 32341.53 | 4.781 |
| 20 | 6.132 | Heptachlor | 8.3304 | 5.532 | 93522.6 | 5.007 | BB | 0.036 | 43035.41 | 6.362 |
| 21 | 6.292 | | 0.0000 | 0.000 | 31304.1 | 1.676 | BV | 0.065 | 8051.70 | 1.190 |
| 22 | 6.434 | | 0.0000 | 0.000 | 3827.8 | 0.205 | VV | 0.038 | 1669.00 | 0.247 |
| 23 | 6.504 | | 0.0000 | 0.000 | 333.9 | 0.018 | VB | 0.036 | 153.48 | 0.023 |
| 24 | 6.574 | Aldrin | 0.1601 | 0.106 | 1422.0 | 0.076 | BV | 0.037 | 638.36 | 0.094 |
| 25 | 6.667 | | 0.0000 | 0.000 | 5915.1 | 0.317 | VV | 0.036 | 2719.58 | 0.402 |
| 26 | 6.737 | | 0.0000 | 0.000 | 103069.4 | 5.518 | VV | 0.039 | 43765.48 | 6.470 |
| 27 | 6.894 | | 0.0000 | 0.000 | 6082.1 | 0.326 | VV | 0.041 | 2473.20 | 0.366 |
| 28 | 6.979 | | 0.0000 | 0.000 | 19373.3 | 1.037 | VB | 0.085 | 3789.14 | 0.560 |
| 29 | 7.084 | | 0.0000 | 0.000 | 8700.1 | 0.466 | BB | 0.035 | 4095.34 | 0.605 |
| 30 | 7.154 | | 0.0000 | 0.000 | 19896.2 | 1.065 | BB | 0.061 | 5404.62 | 0.799 |
| 31 | 7.293 | | 0.0000 | 0.000 | 38953.8 | 2.085 | BV | 0.037 | 17654.64 | 2.610 |
| 32 | 7.385 | Hept. epoxide | 1.9930 | 1.324 | 27108.3 | 1.451 | VV | 0.051 | 8809.80 | 1.302 |
| 33 | 7.438 | | 0.0000 | 0.000 | 44344.0 | 2.374 | VV | 0.044 | 16662.84 | 2.463 |
| 34 | 7.547 | g. Chlordane | 20.2427 | 13.443 | 229485.3 | 12.286 | VV | 0.045 | 85730.29 | 12.674 |
| 35 | 7.716 | a. Chlordane | 24.8294 | 16.489 | 375642.9 | 20.111 | VV | 0.059 | 105826.10 | 15.645 |
| 36 | 7.832 | 4,4'-DDE | 0.6324 | 0.420 | 7021.8 | 0.376 | VB | 0.054 | 2158.51 | 0.319 |
| 37 | 7.934 | Endosulfan I | 0.3524 | 0.234 | 2427.1 | 0.130 | BV | 0.030 | 1350.14 | 0.200 |
| 38 | 8.001 | | 0.0000 | 0.000 | 21731.0 | 1.163 | VV | 0.058 | 6248.59 | 0.924 |
| 39 | 8.128 | | 0.0000 | 0.000 | 27967.1 | 1.497 | VB | 0.044 | 10623.68 | 1.571 |
| 40 | 8.246 | Dieldrin | 0.5350 | 0.355 | 3721.0 | 0.199 | BB | 0.032 | 1949.46 | 0.288 |
| 41 | 8.328 | | 0.0000 | 0.000 | 14603.2 | 0.782 | BB | 0.039 | 6263.10 | 0.926 |
| 42 | 8.453 | | 0.0000 | 0.000 | 4587.0 | 0.246 | BV | 0.056 | 1375.00 | 0.203 |
| 43 | 8.587 | Kepone | 62.5963 | 41.569 | 118131.5 | 6.324 | VV | 0.058 | 34186.36 | 5.054 |
| 44 | 8.669 | | 0.0000 | 0.000 | 6872.3 | 0.368 | VV | 0.033 | 3420.14 | 0.506 |
| 45 | 8.733 | | 0.0000 | 0.000 | 70571.3 | 3.778 | VV | 0.039 | 30066.63 | 4.445 |
| 46 | 8.815 | Endosulfan II | 0.2136 | 0.142 | 1108.3 | 0.059 | VB | 0.025 | 738.56 | 0.109 |
| 47 | 9.050 | | 0.0000 | 0.000 | 17525.2 | 0.938 | BV | 0.057 | 5130.82 | 0.759 |
| 48 | 9.180 | | 0.0000 | 0.000 | 696.8 | 0.037 | VV | 0.033 | 353.23 | 0.052 |
| 49 | 9.242 | | 0.0000 | 0.000 | 1290.3 | 0.069 | VV | 0.033 | 643.89 | 0.095 |
| 50 | 9.285 | | 0.0000 | 0.000 | 3506.6 | 0.188 | VB | 0.047 | 1246.53 | 0.184 |
| 51 | 9.394 | Endrin aldehyde | 0.1787 | 0.119 | 1022.2 | 0.055 | BV | 0.038 | 444.12 | 0.066 |
| 52 | 9.474 | | 0.0000 | 0.000 | 929.7 | 0.050 | VV | 0.037 | 420.80 | 0.062 |
| 53 | 9.518 | | 0.0000 | 0.000 | 535.1 | 0.029 | VV | 0.032 | 278.13 | 0.041 |
| 54 | 9.578 | Methoxychlor | -5.6752 | -3.769 | 867.0 | 0.046 | VV | 0.038 | 377.40 | 0.056 |
| 55 | 9.632 | | 0.0000 | 0.000 | 940.0 | 0.050 | VB | 0.039 | 402.57 | 0.060 |
| 56 | 9.743 | | 0.0000 | 0.000 | 545.3 | 0.029 | BB | 0.041 | 219.52 | 0.032 |
| 57 | 9.804 | Mirex | -4.8921 | -3.249 | 271.4 | 0.015 | BB | 0.024 | 186.26 | 0.028 |
| 58 | 9.883 | | 0.0000 | 0.000 | 1311.7 | 0.070 | BV | 0.033 | 656.95 | 0.097 |
| 59 | 9.928 | Endo. sulfate | 1.0570 | 0.702 | 8143.9 | 0.436 | VV | 0.042 | 3252.53 | 0.481 |
| 60 | 9.996 | | 0.0000 | 0.000 | 4147.2 | 0.222 | VV | 0.047 | 1466.52 | 0.217 |
| 61 | 10.089 | | 0.0000 | 0.000 | 2706.6 | 0.145 | VV | 0.048 | 941.55 | 0.139 |
| 62 | 10.180 | | 0.0000 | 0.000 | 11362.3 | 0.608 | VB | 0.068 | 2795.39 | 0.413 |
| 63 | 10.623 | | 0.0000 | 0.000 | 1413.1 | 0.076 | BV | 0.133 | 177.33 | 0.026 |
| 64 | 10.707 | | 0.0000 | 0.000 | 963.6 | 0.052 | VB | 0.060 | 269.34 | 0.040 |

9636

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.176 | | 0.0000 | 0.000 | 199.4 | 0.011 | BB | 0.046 | 72.94 | 0.011 |
| 66 | 11.338 | | 0.0000 | 0.000 | 477.2 | 0.026 | BB | 0.035 | 224.64 | 0.033 |
| 67 | 11.476 | | 0.0000 | 0.000 | 364.4 | 0.020 | BB | 0.095 | 64.12 | 0.009 |
| 68 | 11.616 DCB | | 20.3515 | 13.515 | 218427.9 | 11.694 | BB | 0.049 | 74826.23 | 11.062 |
| 69 | 11.922 | | 0.0000 | 0.000 | 423.5 | 0.023 | BB | 0.035 | 202.82 | 0.030 |
| 70 | 13.448 | | 0.0000 | 0.000 | 9341.0 | 0.500 | BB | 0.494 | 315.42 | 0.047 |

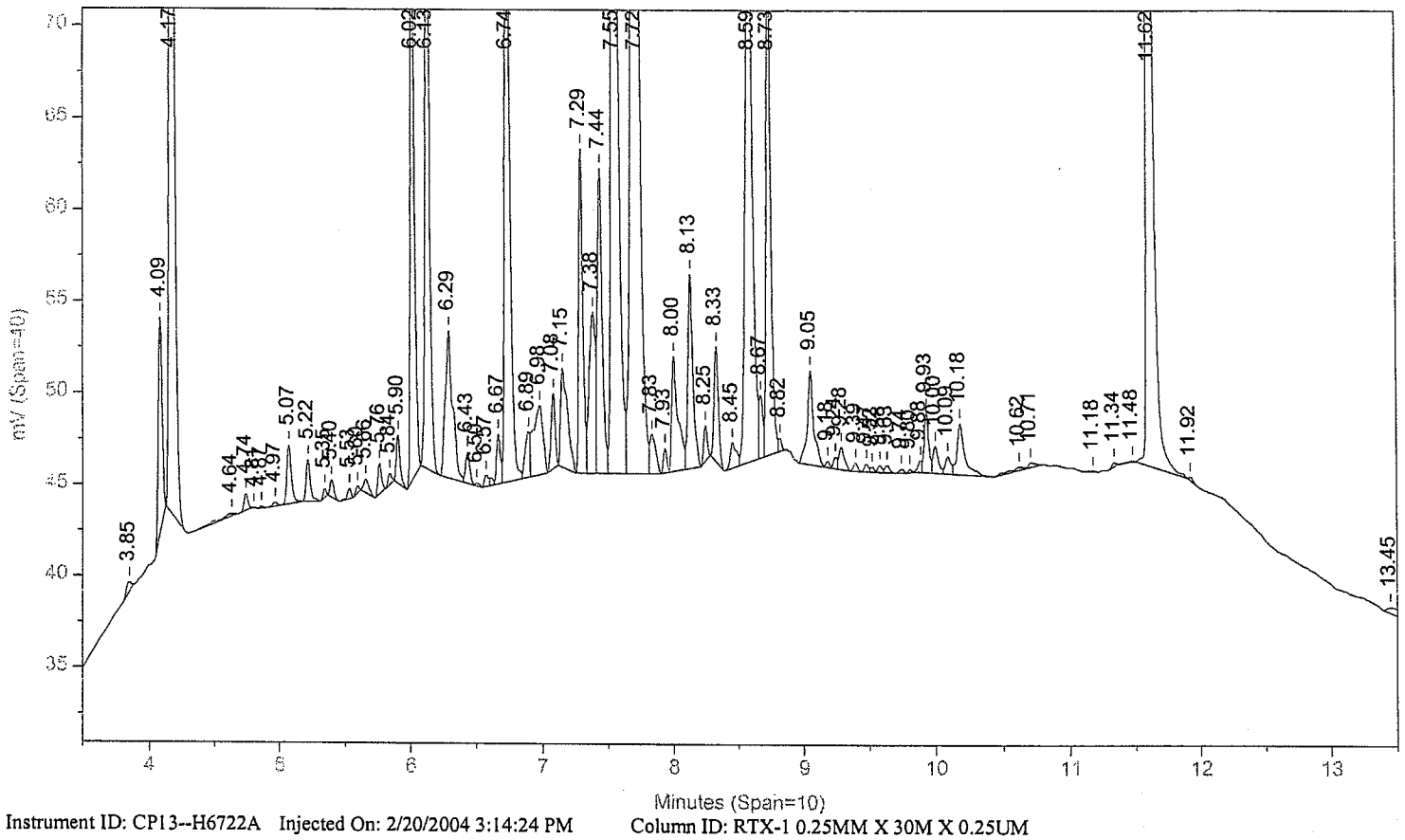
Total Area = 1867866.0, Total Amount = 150.585, Total Height = 676406.5, Sample Units = PPB

Sample Name: **CHLDX03B AACHLDXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 03:28:24pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.23R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1601.9 | 0.157 | BB | 0.044 | 610.62 | 0.139 |
| 2 | 3.440 | | 0.0000 | 0.000 | 22053.6 | 2.167 | BB | 0.384 | 956.28 | 0.218 |
| 3 | 3.775 | | 0.0000 | 0.000 | 1506.8 | 0.148 | BB | 0.043 | 577.48 | 0.131 |
| 4 | 4.208 | TCX | 17.5385 | 11.492 | 83458.1 | 8.200 | BB | 0.031 | 44607.46 | 10.151 |
| 5 | 4.261 | | 0.0000 | 0.000 | 2694.2 | 0.265 | BB | 0.021 | 2148.72 | 0.489 |
| 6 | 4.745 | | 0.0000 | 0.000 | 3067.1 | 0.301 | BB | 0.081 | 631.70 | 0.144 |
| 7 | 5.021 | | 0.0000 | 0.000 | 3360.1 | 0.330 | BB | 0.033 | 1721.85 | 0.392 |
| 8 | 5.146 | | 0.0000 | 0.000 | 3351.0 | 0.329 | BB | 0.039 | 1439.02 | 0.327 |
| 9 | 5.495 | | 0.0000 | 0.000 | 330.9 | 0.033 | BB | 0.125 | 44.10 | 0.010 |
| 10 | 5.665 | | 0.0000 | 0.000 | 397.4 | 0.039 | BB | 0.027 | 247.22 | 0.056 |
| 11 | 5.722 | beta-BHC | 0.2453 | 0.161 | 671.2 | 0.066 | BB | 0.028 | 394.43 | 0.090 |
| 12 | 5.776 | | 0.0000 | 0.000 | 1668.0 | 0.164 | BB | 0.032 | 872.15 | 0.198 |
| 13 | 5.874 | | 0.0000 | 0.000 | 2172.4 | 0.213 | BB | 0.044 | 830.54 | 0.189 |
| 14 | 5.978 | | 0.0000 | 0.000 | 2218.6 | 0.218 | BV | 0.026 | 1436.42 | 0.327 |
| 15 | 6.023 | | 0.0000 | 0.000 | 36888.4 | 3.625 | VB | 0.033 | 18356.81 | 4.177 |
| 16 | 6.227 | Heptachlor | 8.4369 | 5.528 | 51564.6 | 5.067 | BB | 0.036 | 24067.39 | 5.477 |
| 17 | 6.377 | | 0.0000 | 0.000 | 3930.4 | 0.386 | BB | 0.025 | 2671.04 | 0.608 |
| 18 | 6.446 | | 0.0000 | 0.000 | 4564.8 | 0.449 | BB | 0.035 | 2149.54 | 0.489 |
| 19 | 6.611 | | 0.0000 | 0.000 | 2935.3 | 0.288 | BB | 0.052 | 937.91 | 0.213 |
| 20 | 6.755 | | 0.0000 | 0.000 | 6449.3 | 0.634 | BB | 0.035 | 3074.40 | 0.700 |
| 21 | 6.879 | Telodrin | 10.3658 | 6.792 | 56041.4 | 5.507 | BB | 0.035 | 26680.71 | 6.072 |
| 22 | 6.955 | | 0.0000 | 0.000 | 314.7 | 0.031 | BB | 0.015 | 349.38 | 0.080 |
| 23 | 7.050 | | 0.0000 | 0.000 | 2301.8 | 0.226 | BB | 0.031 | 1251.63 | 0.285 |
| 24 | 7.093 | | 0.0000 | 0.000 | 459.8 | 0.045 | BB | 0.017 | 438.25 | 0.100 |
| 25 | 7.142 | | 0.0000 | 0.000 | 8456.1 | 0.831 | BB | 0.032 | 4376.84 | 0.996 |
| 26 | 7.235 | | 0.0000 | 0.000 | 5853.6 | 0.575 | BB | 0.037 | 2649.66 | 0.603 |
| 27 | 7.398 | | 0.0000 | 0.000 | 20863.5 | 2.050 | BB | 0.035 | 9900.09 | 2.253 |
| 28 | 7.486 | | 0.0000 | 0.000 | 1033.3 | 0.102 | BV | 0.030 | 580.89 | 0.132 |
| 29 | 7.551 | | 0.0000 | 0.000 | 35496.8 | 3.488 | VV | 0.055 | 10692.42 | 2.433 |
| 30 | 7.695 | g. Chlordane | 22.9166 | 15.016 | 129020.7 | 12.677 | VV | 0.036 | 59914.08 | 13.634 |
| 31 | 7.816 | | 0.0000 | 0.000 | 108869.8 | 10.697 | VV | 0.039 | 46626.27 | 10.611 |
| 32 | 7.887 | a. Chlordane | 19.1902 | 12.574 | 111722.6 | 10.978 | VV | 0.036 | 51909.96 | 11.813 |
| 33 | 8.083 | 4,4'-DDE | 1.0560 | 0.692 | 9896.2 | 0.972 | VV | 0.081 | 2045.93 | 0.466 |
| 34 | 8.204 | | 0.0000 | 0.000 | 10996.8 | 1.081 | VV | 0.052 | 3534.68 | 0.804 |
| 35 | 8.330 | Dieldrin | 2.6819 | 1.757 | 18031.1 | 1.772 | VB | 0.048 | 6271.30 | 1.427 |
| 36 | 8.453 | | 0.0000 | 0.000 | 1836.6 | 0.180 | BV | 0.029 | 1049.03 | 0.239 |
| 37 | 8.520 | | 0.0000 | 0.000 | 4903.0 | 0.482 | VV | 0.059 | 1395.08 | 0.317 |
| 38 | 8.568 | | 0.0000 | 0.000 | 3543.3 | 0.348 | VV | 0.044 | 1347.22 | 0.307 |
| 39 | 8.682 | | 0.0000 | 0.000 | 7124.1 | 0.700 | VB | 0.062 | 1917.56 | 0.436 |
| 40 | 8.823 | | 0.0000 | 0.000 | 10374.4 | 1.019 | BB | 0.027 | 6417.34 | 1.460 |
| 41 | 8.874 | Kepone | 49.7343 | 32.589 | 33264.6 | 3.269 | BB | 0.035 | 15986.79 | 3.638 |
| 42 | 8.968 | | 0.0000 | 0.000 | 732.7 | 0.072 | BB | 0.024 | 509.78 | 0.116 |
| 43 | 9.058 | | 0.0000 | 0.000 | 39987.2 | 3.929 | BB | 0.037 | 18034.88 | 4.104 |
| 44 | 9.176 | | 0.0000 | 0.000 | 5065.8 | 0.498 | BB | 0.134 | 631.34 | 0.144 |
| 45 | 9.466 | | 0.0000 | 0.000 | 7987.6 | 0.785 | BB | 0.044 | 3014.43 | 0.686 |
| 46 | 9.626 | | 0.0000 | 0.000 | 854.1 | 0.084 | BB | 0.029 | 491.46 | 0.112 |
| 47 | 9.890 | | 0.0000 | 0.000 | 1545.0 | 0.152 | BB | 0.062 | 414.75 | 0.094 |
| 48 | 10.051 | | 0.0000 | 0.000 | 676.8 | 0.067 | BB | 0.034 | 333.71 | 0.076 |
| 49 | 10.406 | | 0.0000 | 0.000 | 1398.8 | 0.137 | BB | 0.034 | 685.61 | 0.156 |
| 50 | 10.488 | Endrin ketone | 0.3344 | 0.219 | 2062.7 | 0.203 | BB | 0.042 | 812.10 | 0.185 |
| 51 | 10.583 | | 0.0000 | 0.000 | 3421.7 | 0.336 | BB | 0.047 | 1206.56 | 0.275 |
| 52 | 12.226 | DCB | 20.1127 | 13.179 | 138710.3 | 13.629 | BB | 0.046 | 50186.23 | 11.421 |

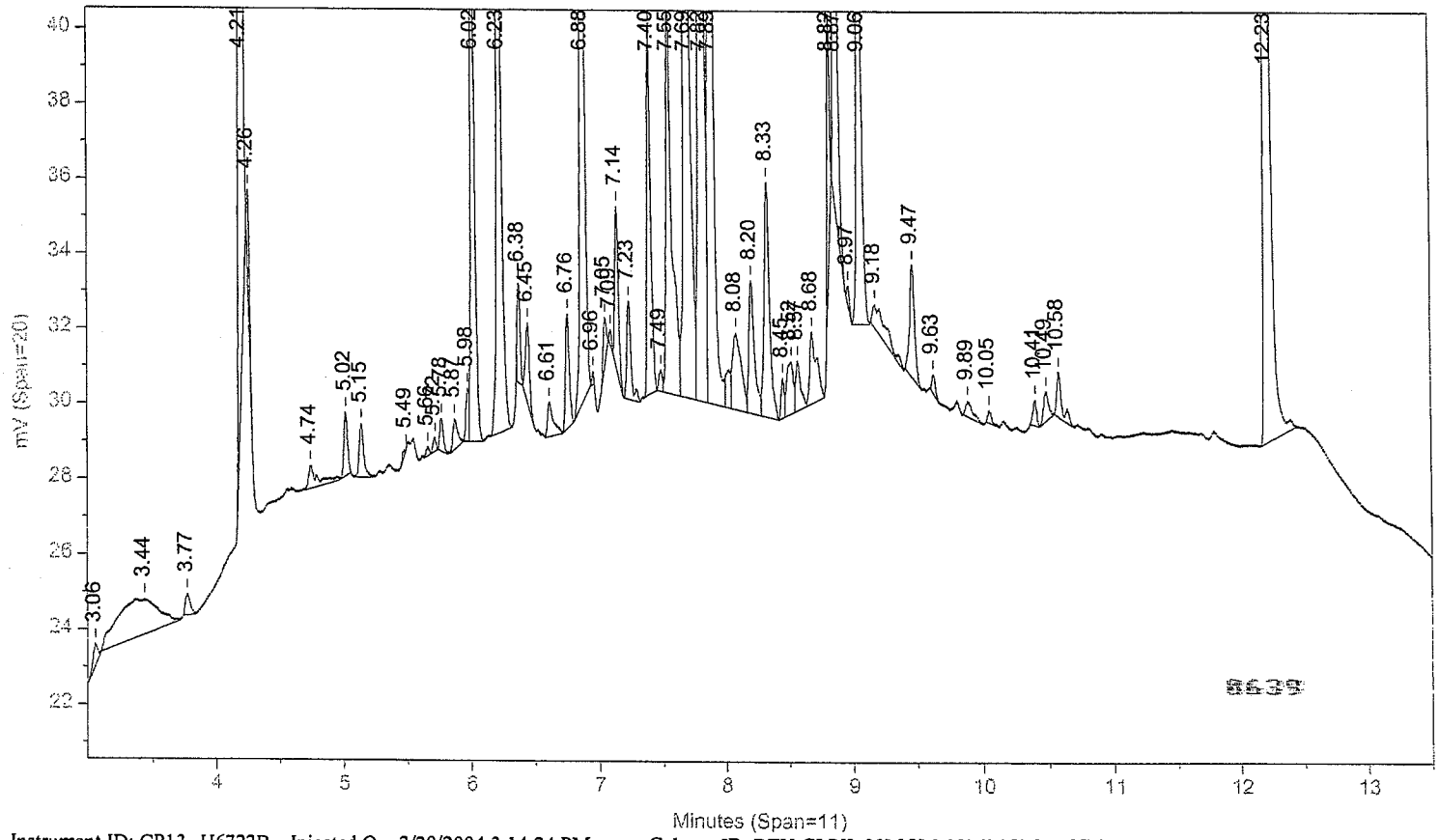
Total Area = 1017731.0, Total Amount = 152.613, Total Height = 439431.1, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.23R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 3:14:24 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.23R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 3:14:24 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

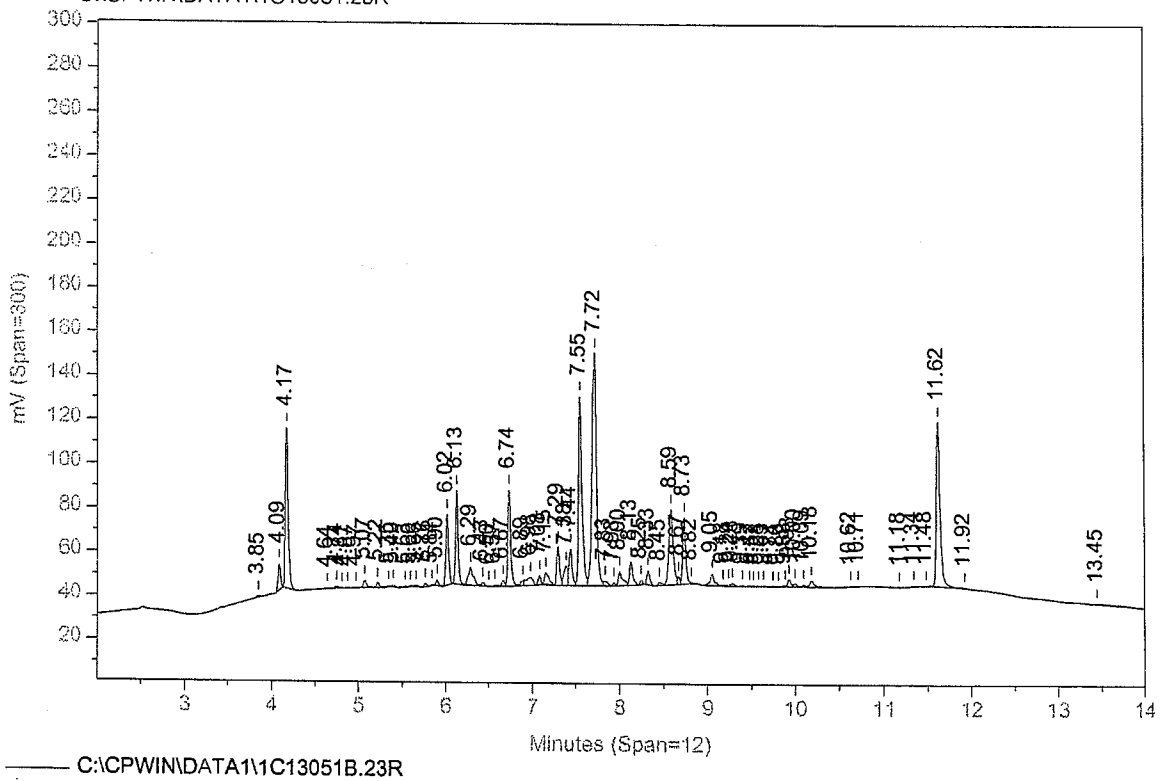
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.173 | 72958 | 19.21306 | TCX | 4.208 | 44607 | 17.53845 | TCX |
| 4.744 | 916 | .13913 | HCB | . | 0 | . | HCB |
| 4.969 | 207 | .04467 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.596 | 384 | .14078 | beta-BHC | 5.722 | 394 | .24531 | beta-BHC |
| 5.841 | 606 | .1424 | delta-BHC | . | 0 | . | delta-BHC |
| 6.132 | 43035 | 8.33042 | Heptachlor | 6.227 | 24067 | 8.43686 | Heptachlor |
| 6.574 | 638 | .16011 | Aldrin | . | 0 | . | Aldrin |
| . | 0 | . | Telodrin | 6.879 | 26681 | 10.36583 | Telodrin |
| 7.385 | 8810 | 1.993 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.547 | 85730 | 20.24275 | g. Chlordane | 7.695 | 59914 | 22.91665 | g. Chlordane |
| 7.716 | 105826 | 24.82943 | a. Chlordane | 7.887 | 51910 | 19.19024 | a. Chlordane |
| 7.832 | 2159 | .6324 | 4,4'-DDE | 8.083 | 2046 | 1.05599 | 4,4'-DDE |
| 7.934 | 1350 | .3524 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.246 | 1949 | .53504 | Dieldrin | 8.33 | 6271 | 2.68193 | Dieldrin |
| 8.587 | 34186 | 62.59631 | Kepone | 8.874 | 15987 | 49.7343 | Kepone |
| 8.815 | 739 | .21358 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.394 | 444 | .17868 | Endrin aldehyde | . | 0 | . | Endrin aldehyde |
| 9.578 | 377 | -5.67524 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.804 | 186 | -4.89214 | Mirex | . | 0 | . | Mirex |
| 9.928 | 3253 | 1.05705 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 10.488 | 812 | .33442 | Endrin ketone |
| 11.616 | 74826 | 20.35145 | DCB | 12.226 | 50186 | 20.11273 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13051.23A
Area File: C:\CPWIN\DATA1\1C13051B.23A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 11:18:34 AM
File Reported On: 2/23/2004 at 11:18:42 AM

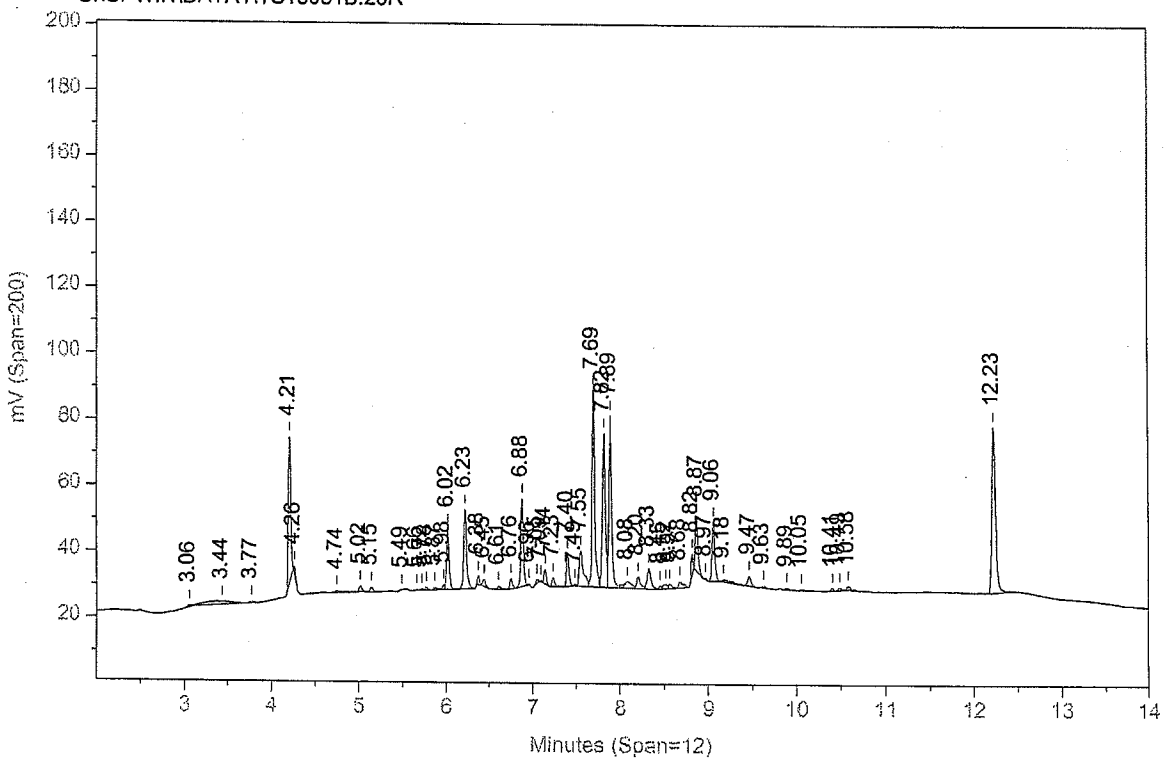


10X REPLOTS

C:\CPWIN\DATA1\1C13051.23R




C:\CPWIN\DATA1\1C13051B.23R



Sample Name: **MDLAX03D AAMDLAXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 07:13:07pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.34R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.849 | | 0.0000 | 0.000 | 725.7 | 0.426 | BB | 0.051 | 235.70 | 0.616 |
| 2 | 4.171 | TCX | 0.9383 | 85.468 | 11164.5 | 6.546 | BB | 0.052 | 3562.95 | 9.312 |
| 3 | 4.992 | alpha-BHC | 0.2080 | 18.950 | 14080.1 | 8.255 | BB | 0.244 | 962.63 | 2.516 |
| 4 | 5.103 | | 0.0000 | 0.000 | 200.2 | 0.117 | BB | 0.037 | 90.81 | 0.237 |
| 5 | 5.451 | gamma-BHC | 0.1953 | 17.787 | 1927.3 | 1.130 | BB | 0.036 | 891.97 | 2.331 |
| 6 | 5.581 | beta-BHC | 0.2158 | 19.660 | 1365.2 | 0.800 | BB | 0.039 | 588.27 | 1.537 |
| 7 | 5.689 | | 0.0000 | 0.000 | 56.8 | 0.033 | BB | 0.029 | 33.10 | 0.087 |
| 8 | 5.834 | delta-BHC | 0.1812 | 16.507 | 1622.2 | 0.951 | BB | 0.035 | 771.31 | 2.016 |
| 9 | 5.967 | | 0.0000 | 0.000 | 648.6 | 0.380 | BV | 0.071 | 151.30 | 0.395 |
| 10 | 6.130 | Heptachlor | 0.2761 | 25.152 | 7502.3 | 4.399 | VV | 0.088 | 1426.45 | 3.728 |
| 11 | 6.368 | | 0.0000 | 0.000 | 5552.0 | 3.255 | VV | 0.124 | 746.81 | 1.952 |
| 12 | 6.551 | Aldrin | 0.2568 | 23.393 | 3533.0 | 2.071 | VB | 0.058 | 1023.93 | 2.676 |
| 13 | 6.930 | | 0.0000 | 0.000 | 1203.6 | 0.706 | BV | 0.056 | 358.40 | 0.937 |
| 14 | 7.381 | Hept. epoxide | 0.3482 | 31.720 | 13664.2 | 8.011 | VV | 0.148 | 1539.32 | 4.023 |
| 15 | 7.545 | g. Chlordane | 0.3235 | 29.465 | 6046.1 | 3.545 | VV | 0.074 | 1369.95 | 3.580 |
| 16 | 7.722 | a. Chlordane | 0.3013 | 27.442 | 4146.9 | 2.431 | VV | 0.054 | 1284.01 | 3.356 |
| 17 | 7.810 | 4,4'-DDE | 0.4332 | 39.462 | 3683.7 | 2.160 | VV | 0.042 | 1478.66 | 3.864 |
| 18 | 7.909 | Endosulfan I | 0.2252 | 20.513 | 1952.7 | 1.145 | VB | 0.038 | 862.77 | 2.255 |
| 19 | 8.224 | Dieldrin | 0.4372 | 39.824 | 3983.0 | 2.335 | BB | 0.042 | 1592.98 | 4.163 |
| 20 | 8.321 | | 0.0000 | 0.000 | 415.6 | 0.244 | BB | 0.066 | 104.93 | 0.274 |
| 21 | 8.533 | Endrin | 0.4077 | 37.133 | 3094.4 | 1.814 | BV | 0.037 | 1385.76 | 3.622 |
| 22 | 8.595 | 4,4'-DDD | 0.4115 | 37.483 | 3238.6 | 1.899 | VB | 0.049 | 1093.90 | 2.859 |
| 23 | 8.830 | Endosulfan II | 0.4054 | 36.932 | 3755.5 | 2.202 | BV | 0.045 | 1402.05 | 3.664 |
| 24 | 8.956 | 4,4'-DDT | 0.4510 | 41.082 | 5369.8 | 3.148 | VV | 0.067 | 1336.06 | 3.492 |
| 25 | 9.374 | Endrin aldehyde | 0.4242 | 38.637 | 5271.0 | 3.090 | VB | 0.083 | 1054.27 | 2.755 |
| 26 | 9.571 | Methoxychlor | -3.5101 | -319.736 | 10972.6 | 6.433 | BV | 0.049 | 3711.10 | 9.699 |
| 27 | 9.875 | | 0.0000 | 0.000 | 693.7 | 0.407 | VB | 0.064 | 180.75 | 0.472 |
| 28 | 9.940 | Endo. sulfate | 0.3522 | 32.081 | 2722.2 | 1.596 | BV | 0.042 | 1083.68 | 2.832 |
| 29 | 10.177 | | 0.0000 | 0.000 | 4021.8 | 2.358 | VB | 0.106 | 633.66 | 1.656 |
| 30 | 10.307 | Endrin ketone | 0.3787 | 34.495 | 3207.1 | 1.880 | BB | 0.039 | 1353.89 | 3.538 |
| 31 | 10.709 | | 0.0000 | 0.000 | 1698.9 | 0.996 | BB | 0.055 | 517.44 | 1.352 |
| 32 | 11.618 | DCB | -2.5629 | -233.450 | 35006.1 | 20.524 | BB | 0.114 | 5124.60 | 13.393 |
| 33 | 13.462 | | 0.0000 | 0.000 | 8033.9 | 4.710 | BB | 0.431 | 310.56 | 0.812 |

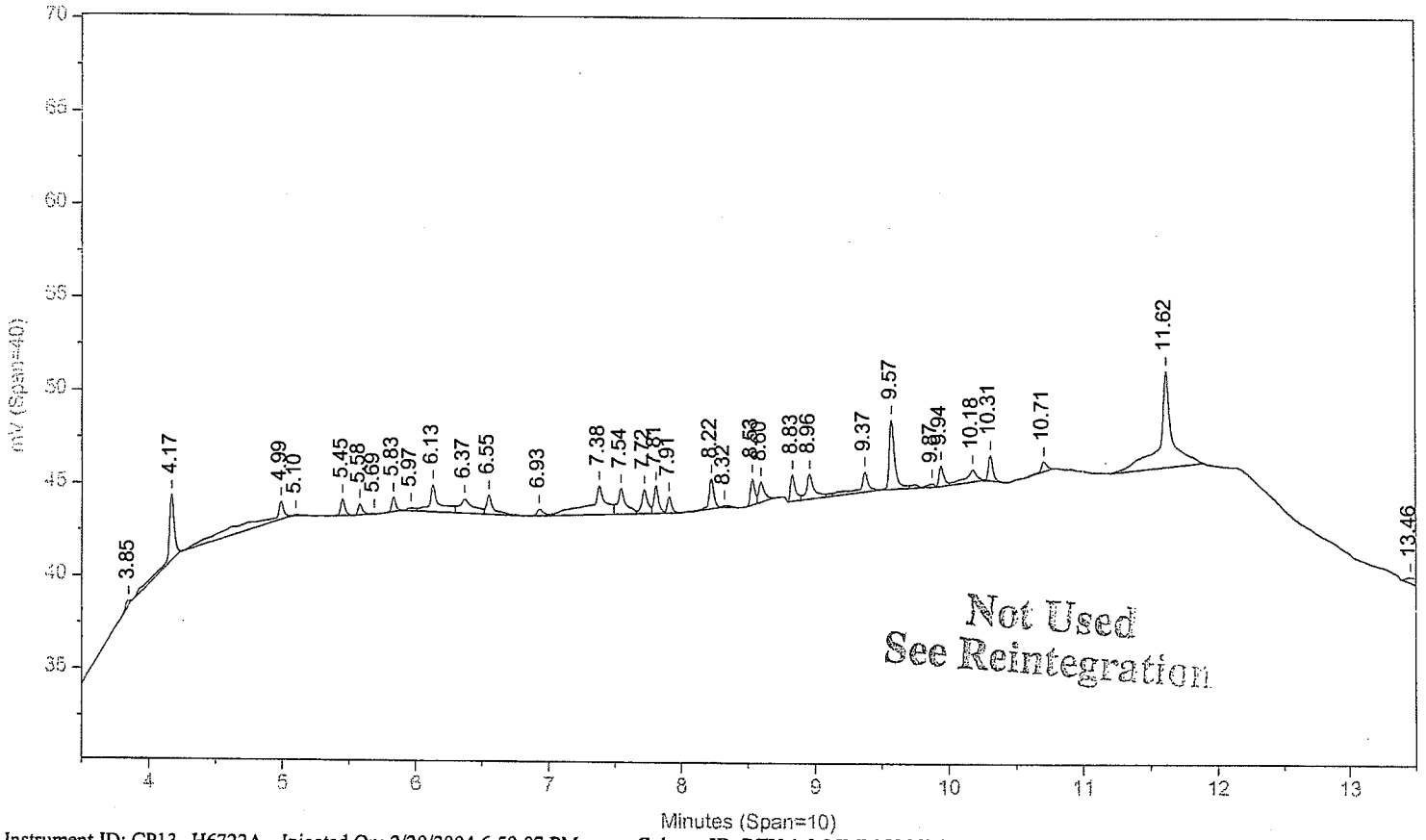
Total Area = 170559.4, Total Amount = 1.098, Total Height = 38263.98, Sample Units = PPB

Sample Name: **MDLAX03D AAMDLAXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 07:13:07pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.34R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.065 | | 0.0000 | 0.000 | 1226.2 | 1.713 | BB | 0.052 | 395.71 | 1.975 |
| 2 | 3.240 | | 0.0000 | 0.000 | 2128.6 | 2.973 | BB | 0.640 | 55.40 | 0.276 |
| 3 | 3.773 | | 0.0000 | 0.000 | 1330.8 | 1.859 | BB | 0.046 | 480.44 | 2.397 |
| 4 | 4.207 | TCX | 0.8284 | 8.983 | 7435.2 | 10.385 | BB | 0.059 | 2107.08 | 10.515 |
| 5 | 5.094 | alpha-BHC | 1.1864 | 12.864 | 778.4 | 1.087 | BB | 0.031 | 420.42 | 2.098 |
| 6 | 5.604 | gamma-BHC | 0.9630 | 10.441 | 783.2 | 1.094 | BB | 0.032 | 409.88 | 2.045 |
| 7 | 5.730 | beta-BHC | 0.1980 | 2.147 | 625.0 | 0.873 | BB | 0.033 | 318.41 | 1.589 |
| 8 | 6.144 | delta-BHC | 0.2755 | 2.987 | 1966.4 | 2.747 | BV | 0.054 | 603.20 | 3.010 |
| 9 | 6.226 | Heptachlor | 0.2751 | 2.983 | 2227.2 | 3.111 | VB | 0.047 | 784.70 | 3.916 |
| 10 | 6.675 | Aldrin | 0.2248 | 2.438 | 1124.4 | 1.571 | BB | 0.036 | 520.32 | 2.596 |
| 11 | 7.443 | Hept. epoxide | 0.2345 | 2.543 | 3771.1 | 5.267 | BV | 0.104 | 604.87 | 3.018 |
| 12 | 7.696 | g. Chlordane | 0.2892 | 3.136 | 4651.3 | 6.497 | VV | 0.103 | 756.12 | 3.773 |
| 13 | 7.884 | a. Chlordane | 0.3812 | 4.133 | 3403.6 | 4.754 | VV | 0.055 | 1031.07 | 5.145 |
| 14 | 7.964 | Endosulfan I | 0.3466 | 3.759 | 4907.0 | 6.854 | VV | 0.091 | 901.55 | 4.499 |
| 15 | 8.104 | 4,4'-DDE | 0.5015 | 5.438 | 4780.9 | 6.678 | VB | 0.082 | 971.73 | 4.849 |
| 16 | 8.324 | Dieldrin | 0.3806 | 4.127 | 2261.2 | 3.158 | BB | 0.042 | 890.00 | 4.441 |
| 17 | 8.721 | Endrin | 0.3721 | 4.035 | 1889.1 | 2.639 | BB | 0.042 | 754.25 | 3.764 |
| 18 | 8.858 | 4,4'-DDD | 1.7527 | 19.004 | 700.1 | 0.978 | BB | 0.038 | 304.81 | 1.521 |
| 19 | 8.998 | Endosulfan II | 0.3714 | 4.027 | 2120.3 | 2.961 | BB | 0.045 | 784.16 | 3.913 |
| 20 | 9.254 | 4,4'-DDT | 0.3491 | 3.786 | 1892.9 | 2.644 | BB | 0.056 | 566.67 | 2.828 |
| 21 | 9.436 | Endrin aldehyde | 0.3727 | 4.041 | 1465.7 | 2.047 | BB | 0.040 | 614.00 | 3.064 |
| 22 | 9.786 | Endo. sulfate | 0.2971 | 3.221 | 1307.2 | 1.826 | BB | 0.039 | 554.67 | 2.768 |
| 23 | 10.133 | Methoxychlor | 1.7025 | 18.460 | 4779.9 | 6.676 | BB | 0.047 | 1693.69 | 8.452 |
| 24 | 10.483 | Endrin ketone | 0.3433 | 3.722 | 5059.5 | 7.067 | BB | 0.101 | 833.61 | 4.160 |
| 25 | 12.232 | DCB | -2.4233 | -26.275 | 8980.8 | 12.544 | BB | 0.056 | 2682.69 | 13.387 |

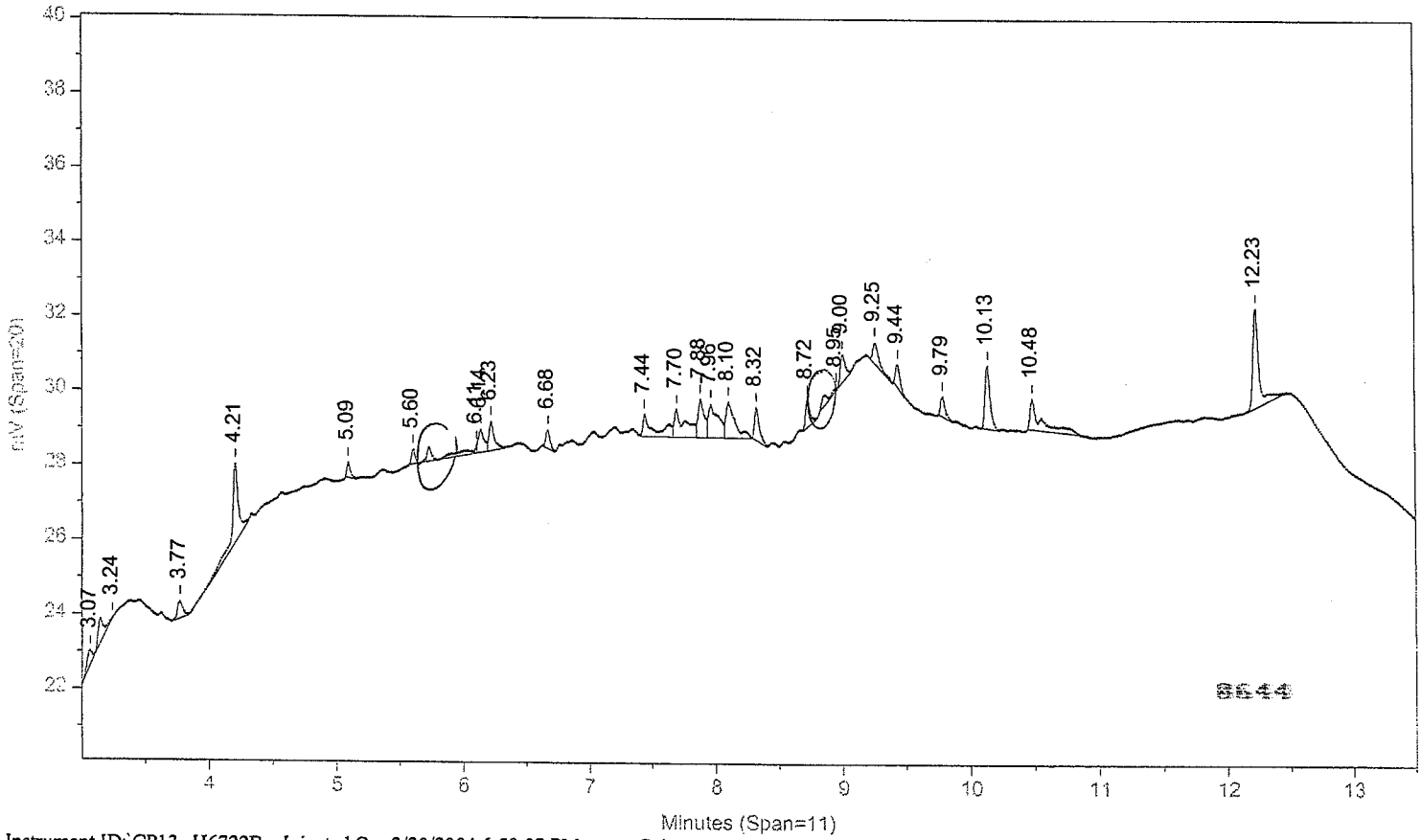
Total Area = 71596.2, Total Amount = 9.223, Total Height = 20039.47, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.34R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

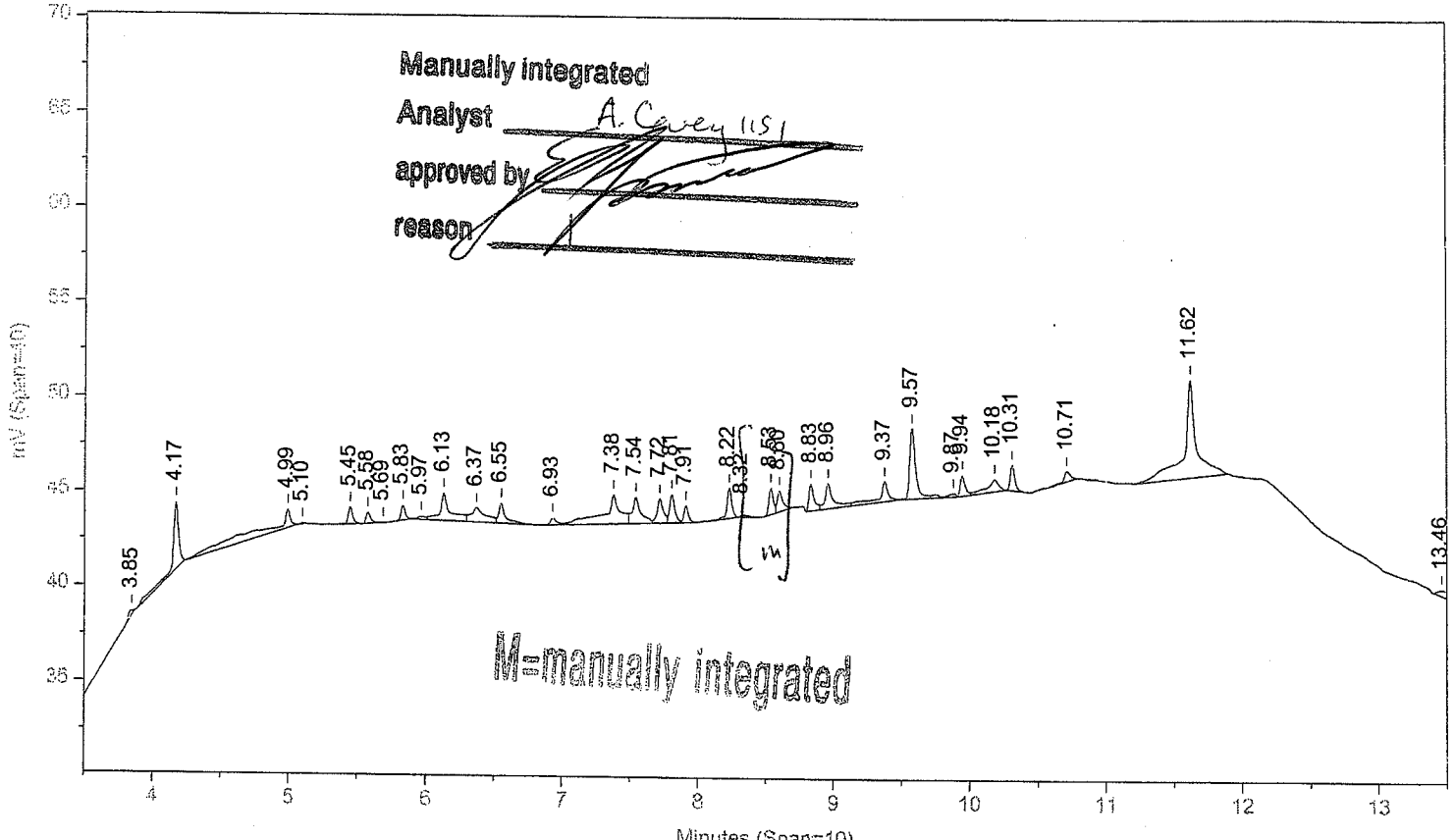
File: C:\CPWIN\DATA1\1C13051B.34R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13051.34R

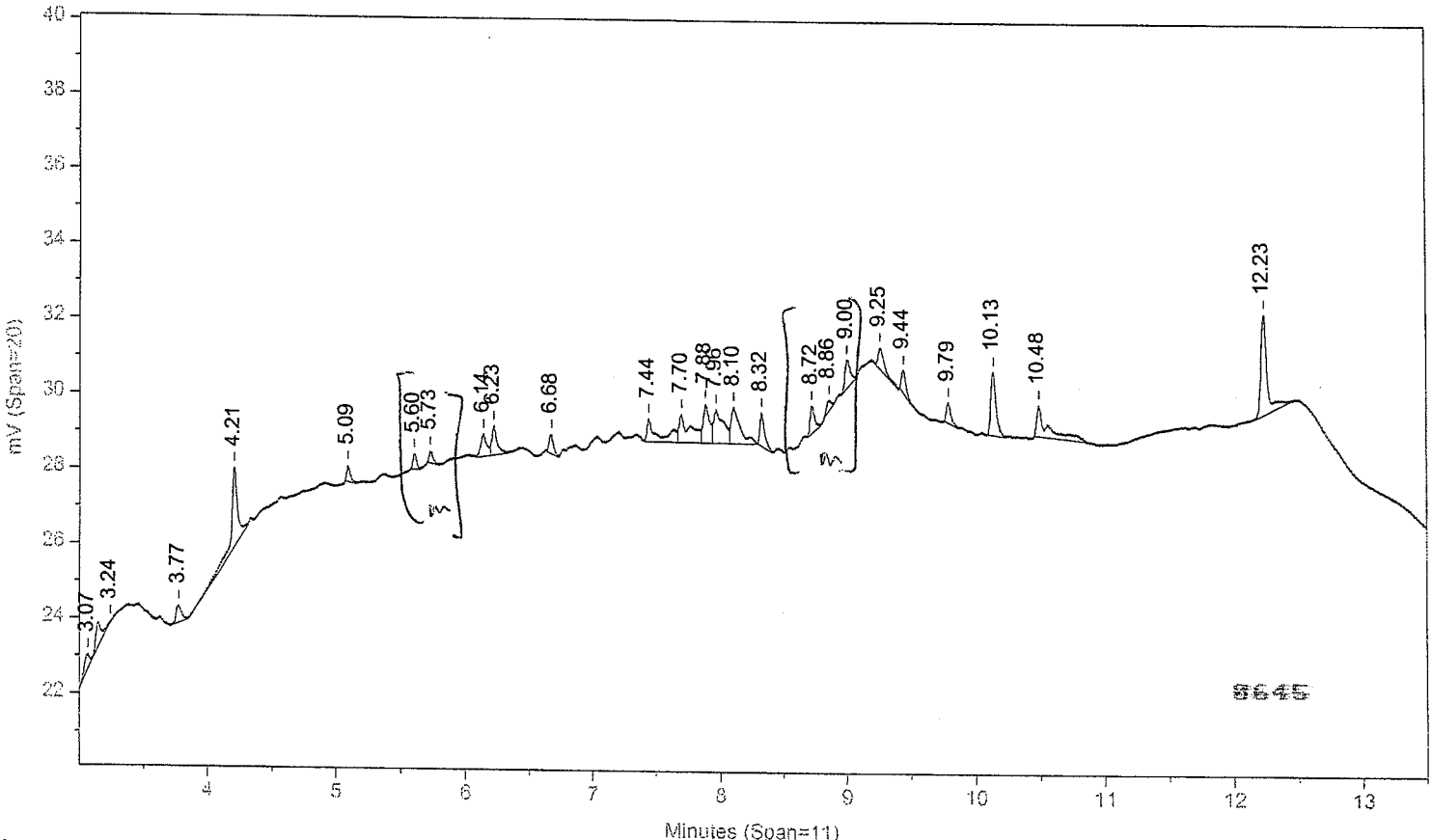
C:\CPWIN\DATA1\1C13051.34R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.34R

C:\CPWIN\DATA1\1C13051B.34R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 6:59:07 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

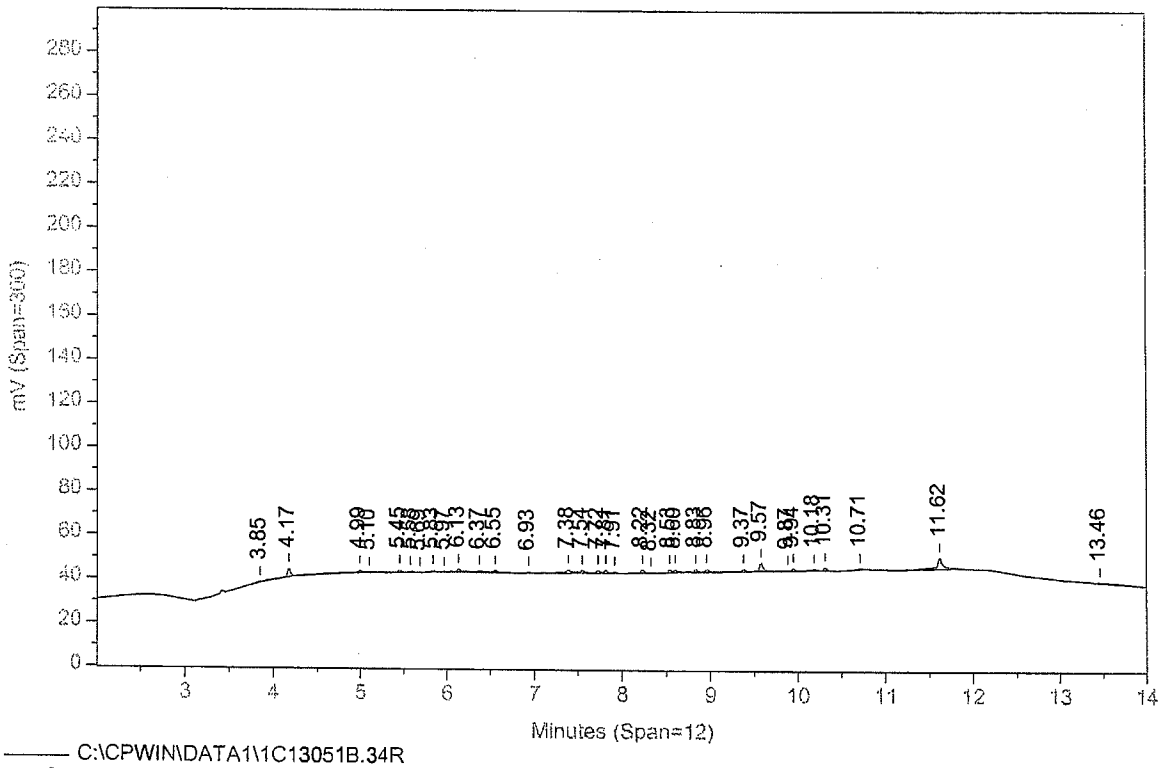
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.171 | 3563 | .93828 | TCX | 4.207 | 2107 | .82845 | TCX |
| 4.992 | 963 | .20804 | alpha-BHC | 5.094 | 420 | 1.18645 | alpha-BHC |
| 5.451 | 892 | .19527 | gamma-BHC | 5.604 | 410 | .96298 | gamma-BHC |
| 5.581 | 588 | .21583 | beta-BHC | 5.73 | 318 | .19804 | beta-BHC |
| 5.834 | 771 | .18122 | delta-BHC | 6.144 | 603 | .27552 | delta-BHC |
| 6.13 | 1426 | .27612 | Heptachlor | 6.226 | 785 | .27508 | Heptachlor |
| 6.551 | 1024 | .25682 | Aldrin | 6.675 | 520 | .22482 | Aldrin |
| 7.381 | 1539 | .34823 | Hept. epoxide | 7.443 | 605 | .23453 | Hept. epoxide |
| 7.545 | 1370 | .32347 | g. Chlordane | 7.696 | 756 | .28921 | g. Chlordane |
| 7.722 | 1284 | .30126 | a. Chlordane | 7.884 | 1031 | .38117 | a. Chlordane |
| 7.81 | 1479 | .43322 | 4,4'-DDE | 8.104 | 972 | .50155 | 4,4'-DDE |
| 7.909 | 863 | .22519 | Endosulfan I | 7.964 | 902 | .34664 | Endosulfan I |
| 8.224 | 1593 | .4372 | Dieldrin | 8.324 | 890 | .38061 | Dieldrin |
| 8.533 | 1386 | .40766 | Endrin | 8.721 | 754 | .37213 | Endrin |
| 8.595 | 1094 | .4115 | 4,4'-DDD | 8.858 | 305 | 1.7527 | 4,4'-DDD |
| 8.83 | 1402 | .40545 | Endosulfan II | 8.998 | 784 | .37138 | Endosulfan II |
| 8.956 | 1336 | .45101 | 4,4'-DDT | 9.254 | 567 | .34915 | 4,4'-DDT |
| 9.374 | 1054 | .42417 | Endrin aldehyde | 9.436 | 614 | .3727 | Endrin aldehyde |
| 9.571 | 3711 | -3.51012 | Methoxychlor | 10.133 | 1694 | 1.70247 | Methoxychlor |
| 9.94 | 1084 | .35219 | Endo. sulfate | 9.786 | 555 | .29707 | Endo. sulfate |
| 10.307 | 1354 | .37869 | Endrin ketone | 10.483 | 834 | .34328 | Endrin ketone |
| 11.618 | 5125 | -2.56286 | DCB | 12.232 | 2683 | -2.42327 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 4:15:06 PM
File Reported On: 2/23/2004 at 4:15:08 PM

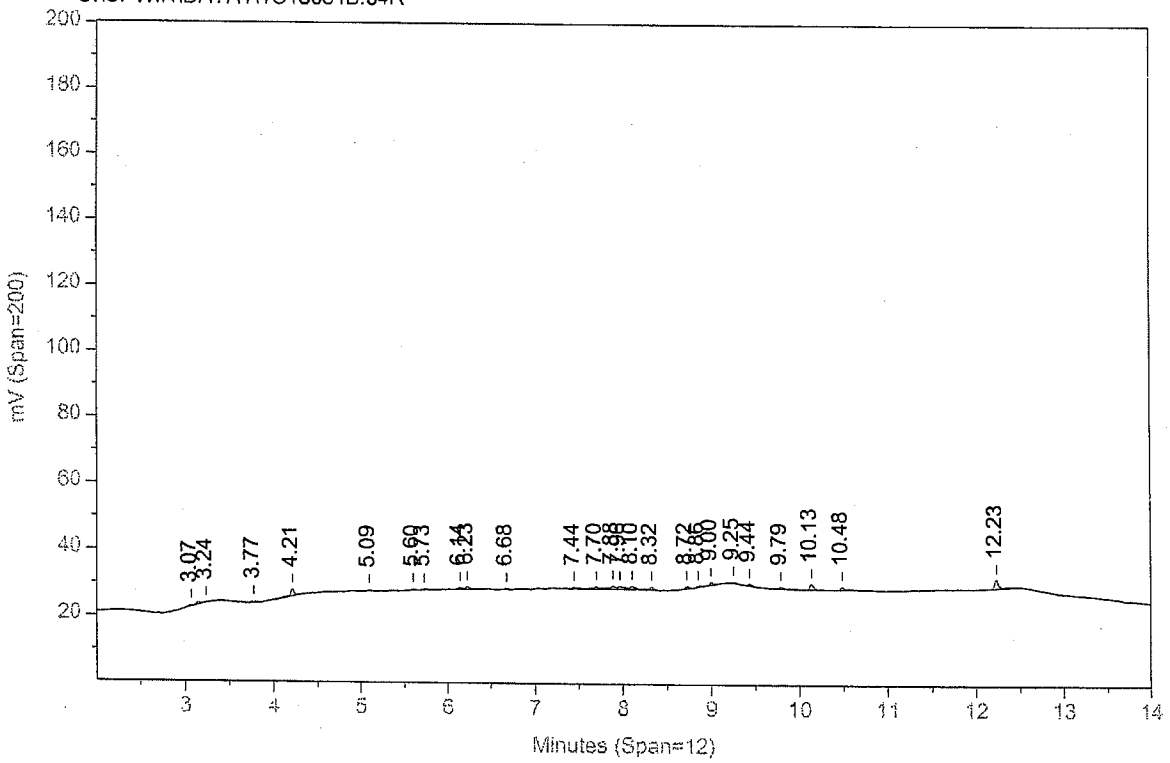
8646

10X REPLOTS

C:\CPWIN\DATA1\1C13051.34R




C:\CPWIN\DATA1\1C13051B.34R



Sample Name: **MDTXX03B AAMDTXXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 08:14:15pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.37R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.170 | TCX | 0.9208 | -9.320 | 33093.7 | 16.237 | BB | 0.158 | 3496.40 | 9.442 |
| 2 | 5.101 | | 0.0000 | 0.000 | 31318.5 | 15.366 | BB | 0.802 | 650.51 | 1.757 |
| 3 | 5.429 | gamma-BHC | 0.0076 | -0.077 | 72.2 | 0.035 | BB | 0.035 | 34.62 | 0.093 |
| 4 | 5.620 | | 0.0000 | 0.000 | 56.6 | 0.028 | BB | 0.032 | 29.38 | 0.079 |
| 5 | 6.109 | Heptachlor | 0.0908 | -0.919 | 6929.1 | 3.400 | BV | 0.246 | 469.22 | 1.267 |
| 6 | 6.214 | | 0.0000 | 0.000 | 3751.0 | 1.840 | VV | 0.125 | 501.25 | 1.354 |
| 7 | 6.334 | | 0.0000 | 0.000 | 9262.0 | 4.544 | VV | 0.177 | 873.63 | 2.359 |
| 8 | 6.799 | | 0.0000 | 0.000 | 319.3 | 0.157 | VB | 0.052 | 103.01 | 0.278 |
| 9 | 6.928 | | 0.0000 | 0.000 | 334.1 | 0.164 | BB | 0.045 | 124.80 | 0.337 |
| 10 | 7.255 | | 0.0000 | 0.000 | 2713.3 | 1.331 | BV | 0.140 | 321.94 | 0.869 |
| 11 | 7.306 | | 0.0000 | 0.000 | 1251.6 | 0.614 | VV | 0.067 | 311.26 | 0.841 |
| 12 | 7.387 | Hept. epoxide | 0.0659 | -0.667 | 888.1 | 0.436 | VV | 0.051 | 291.16 | 0.786 |
| 13 | 7.512 | | 0.0000 | 0.000 | 777.8 | 0.382 | VB | 0.065 | 199.75 | 0.539 |
| 14 | 7.714 | a. Chlordane | 0.1304 | -1.320 | 3422.2 | 1.679 | BV | 0.103 | 555.82 | 1.501 |
| 15 | 7.912 | Endosulfan I | 0.0520 | -0.526 | 528.7 | 0.259 | VB | 0.044 | 199.19 | 0.538 |
| 16 | 8.089 | | 0.0000 | 0.000 | 630.6 | 0.309 | BV | 0.082 | 127.57 | 0.345 |
| 17 | 8.176 | | 0.0000 | 0.000 | 2013.9 | 0.988 | VV | 0.053 | 632.21 | 1.707 |
| 18 | 8.221 | Dieldrin | 0.1445 | -1.462 | 1345.5 | 0.660 | VB | 0.043 | 526.33 | 1.421 |
| 19 | 8.341 | | 0.0000 | 0.000 | 2433.2 | 1.194 | BV | 0.052 | 775.45 | 2.094 |
| 20 | 8.429 | | 0.0000 | 0.000 | 3261.4 | 1.600 | VV | 0.067 | 809.16 | 2.185 |
| 21 | 8.562 | Endrin | 0.2685 | -2.718 | 3635.1 | 1.783 | VV | 0.066 | 912.73 | 2.465 |
| 22 | 8.640 | | 0.0000 | 0.000 | 2410.8 | 1.183 | VV | 0.042 | 945.47 | 2.553 |
| 23 | 8.689 | | 0.0000 | 0.000 | 2120.3 | 1.040 | VV | 0.051 | 688.12 | 1.858 |
| 24 | 8.770 | | 0.0000 | 0.000 | 1821.0 | 0.893 | VB | 0.046 | 658.59 | 1.779 |
| 25 | 8.854 | Endosulfan II | 0.1572 | -1.591 | 1128.2 | 0.554 | BV | 0.035 | 543.46 | 1.468 |
| 26 | 8.923 | | 0.0000 | 0.000 | 3302.0 | 1.620 | VV | 0.057 | 958.18 | 2.588 |
| 27 | 8.967 | 4,4'-DDT | 0.4027 | -4.077 | 3168.4 | 1.554 | VB | 0.044 | 1193.09 | 3.222 |
| 28 | 9.169 | | 0.0000 | 0.000 | 2264.5 | 1.111 | BV | 0.054 | 703.42 | 1.900 |
| 29 | 9.247 | | 0.0000 | 0.000 | 4043.6 | 1.984 | VV | 0.051 | 1327.48 | 3.585 |
| 30 | 9.332 | | 0.0000 | 0.000 | 5207.6 | 2.555 | VB | 0.058 | 1485.43 | 4.012 |
| 31 | 9.404 | Endrin aldehyde | 0.1315 | -1.331 | 711.6 | 0.349 | BB | 0.036 | 326.90 | 0.883 |
| 32 | 9.491 | | 0.0000 | 0.000 | 1520.6 | 0.746 | BV | 0.033 | 758.13 | 2.047 |
| 33 | 9.542 | Methoxychlor | -5.2819 | 53.463 | 2461.6 | 1.208 | VV | 0.042 | 982.99 | 2.655 |
| 34 | 9.621 | | 0.0000 | 0.000 | 206.7 | 0.101 | VB | 0.024 | 143.12 | 0.387 |
| 35 | 9.681 | | 0.0000 | 0.000 | 2668.8 | 1.309 | BB | 0.049 | 906.58 | 2.448 |
| 36 | 9.803 | Mirex | -4.5416 | 45.969 | 2725.2 | 1.337 | BB | 0.043 | 1050.42 | 2.837 |
| 37 | 9.861 | | 0.0000 | 0.000 | 1740.7 | 0.854 | BV | 0.060 | 480.19 | 1.297 |
| 38 | 9.920 | Endo. sulfate | 0.2175 | -2.201 | 1292.0 | 0.634 | VB | 0.032 | 669.13 | 1.807 |
| 39 | 10.018 | | 0.0000 | 0.000 | 1195.3 | 0.586 | BV | 0.033 | 600.06 | 1.621 |
| 40 | 10.098 | | 0.0000 | 0.000 | 1463.8 | 0.718 | VV | 0.044 | 552.95 | 1.493 |
| 41 | 10.175 | | 0.0000 | 0.000 | 3149.4 | 1.545 | VB | 0.047 | 1118.58 | 3.021 |
| 42 | 10.267 | | 0.0000 | 0.000 | 2461.7 | 1.208 | BB | 0.038 | 1078.20 | 2.912 |
| 43 | 10.350 | | 0.0000 | 0.000 | 120.3 | 0.059 | BV | 0.022 | 90.84 | 0.245 |
| 44 | 10.390 | | 0.0000 | 0.000 | 818.0 | 0.401 | VB | 0.030 | 453.64 | 1.225 |
| 45 | 10.458 | | 0.0000 | 0.000 | 1363.5 | 0.669 | BB | 0.036 | 622.82 | 1.682 |
| 46 | 10.537 | | 0.0000 | 0.000 | 308.5 | 0.151 | BV | 0.027 | 191.24 | 0.516 |
| 47 | 10.572 | | 0.0000 | 0.000 | 402.5 | 0.197 | VB | 0.030 | 223.59 | 0.604 |
| 48 | 10.705 | | 0.0000 | 0.000 | 2063.2 | 1.012 | BB | 0.039 | 883.04 | 2.385 |
| 49 | 10.932 | | 0.0000 | 0.000 | 283.7 | 0.139 | BB | 0.035 | 136.04 | 0.367 |
| 50 | 11.013 | | 0.0000 | 0.000 | 367.6 | 0.180 | BB | 0.037 | 165.54 | 0.447 |
| 51 | 11.616 | DCB | -2.6454 | 26.776 | 35349.9 | 17.344 | BB | 0.121 | 4873.67 | 13.162 |
| 52 | 13.450 | | 0.0000 | 0.000 | 7642.9 | 3.750 | BB | 0.467 | 272.83 | 0.737 |

Total Area = 203821.8, Total Amount = -9.88, Total Height = 37029.12, Sample Units = PPB

Sample Name: **MDTXX03B AAMDTXXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 08:14:15pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.37R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.057 | | 0.0000 | 0.000 | 1226.0 | 1.520 | BB | 0.042 | 487.37 | 3.400 |
| 2 | 3.373 | | 0.0000 | 0.000 | 24288.2 | 30.120 | BB | 0.367 | 1102.93 | 7.693 |
| 3 | 3.770 | | 0.0000 | 0.000 | 1204.4 | 1.494 | BB | 0.044 | 460.64 | 3.213 |
| 4 | 4.205 | TCX | 0.8533 | -38.762 | 11295.8 | 14.008 | BB | 0.087 | 2170.39 | 15.139 |
| 5 | 8.013 | | 0.0000 | 0.000 | 13325.7 | 16.525 | BB | 0.367 | 605.77 | 4.225 |
| 6 | 8.446 | | 0.0000 | 0.000 | 1428.4 | 1.771 | BB | 0.073 | 326.55 | 2.278 |
| 7 | 8.774 | o,p-DDT | 0.0948 | -4.307 | 3014.3 | 3.738 | BB | 0.349 | 144.15 | 1.005 |
| 8 | 8.843 | 4,4'-DDD | 1.8114 | -82.278 | 1032.1 | 1.280 | BB | 0.044 | 388.65 | 2.711 |
| 9 | 8.951 | | 0.0000 | 0.000 | 453.9 | 0.563 | BB | 0.148 | 51.07 | 0.356 |
| 10 | 8.973 | Endosulfan II | 0.1249 | -5.675 | 403.2 | 0.500 | BB | 0.025 | 263.79 | 1.840 |
| 11 | 9.101 | | 0.0000 | 0.000 | 2883.2 | 3.575 | BB | 0.046 | 1048.89 | 7.316 |
| 12 | 9.196 | | 0.0000 | 0.000 | 581.4 | 0.721 | BB | 0.031 | 309.02 | 2.156 |
| 13 | 9.337 | | 0.0000 | 0.000 | 773.4 | 0.959 | BB | 0.036 | 362.74 | 2.530 |
| 14 | 9.430 | Endrin aldehyde | 0.4575 | -20.781 | 1976.7 | 2.451 | BB | 0.044 | 753.69 | 5.257 |
| 15 | 9.535 | | 0.0000 | 0.000 | 1343.1 | 1.666 | BB | 0.050 | 449.79 | 3.137 |
| 16 | 9.710 | | 0.0000 | 0.000 | 1173.7 | 1.456 | BB | 0.073 | 268.77 | 1.875 |
| 17 | 10.096 | | 0.0000 | 0.000 | 1999.1 | 2.479 | BB | 0.038 | 872.77 | 6.088 |
| 18 | 10.166 | | 0.0000 | 0.000 | 1043.4 | 1.294 | BB | 0.039 | 451.22 | 3.147 |
| 19 | 10.412 | Mirex | -3.0218 | 137.261 | 1025.8 | 1.272 | BB | 0.067 | 256.45 | 1.789 |
| 20 | 10.552 | | 0.0000 | 0.000 | 757.3 | 0.939 | BB | 0.030 | 425.36 | 2.967 |
| 21 | 10.600 | | 0.0000 | 0.000 | 745.7 | 0.925 | BB | 0.033 | 377.79 | 2.635 |
| 22 | 10.833 | | 0.0000 | 0.000 | 453.5 | 0.562 | BB | 0.027 | 283.30 | 1.976 |
| 23 | 12.229 | DCB | -2.5216 | 114.542 | 8210.4 | 10.182 | BB | 0.055 | 2475.33 | 17.266 |

Total Area = 80638.8, Total Amount = -2.202, Total Height = 14336.44, Sample Units = PPB

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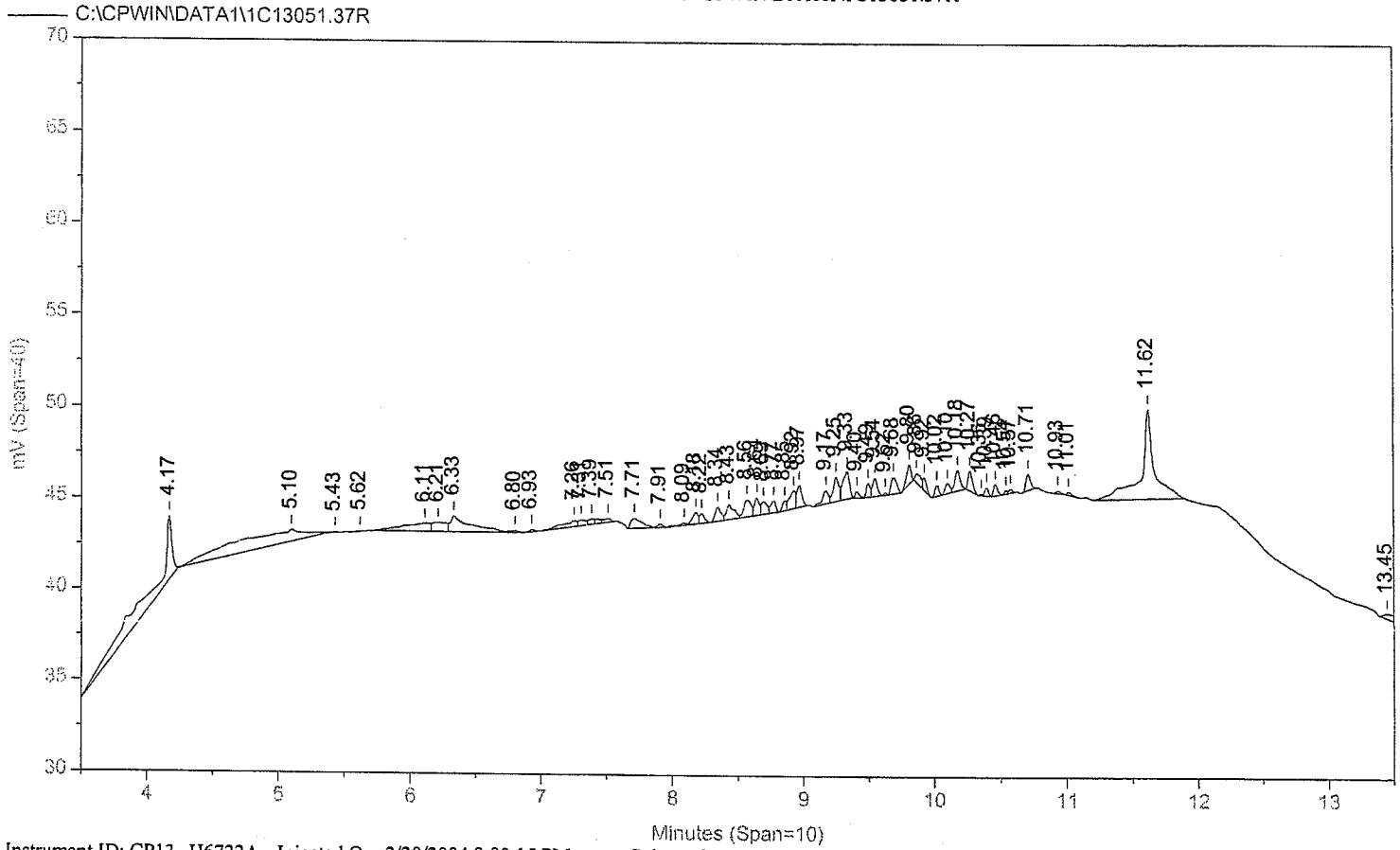
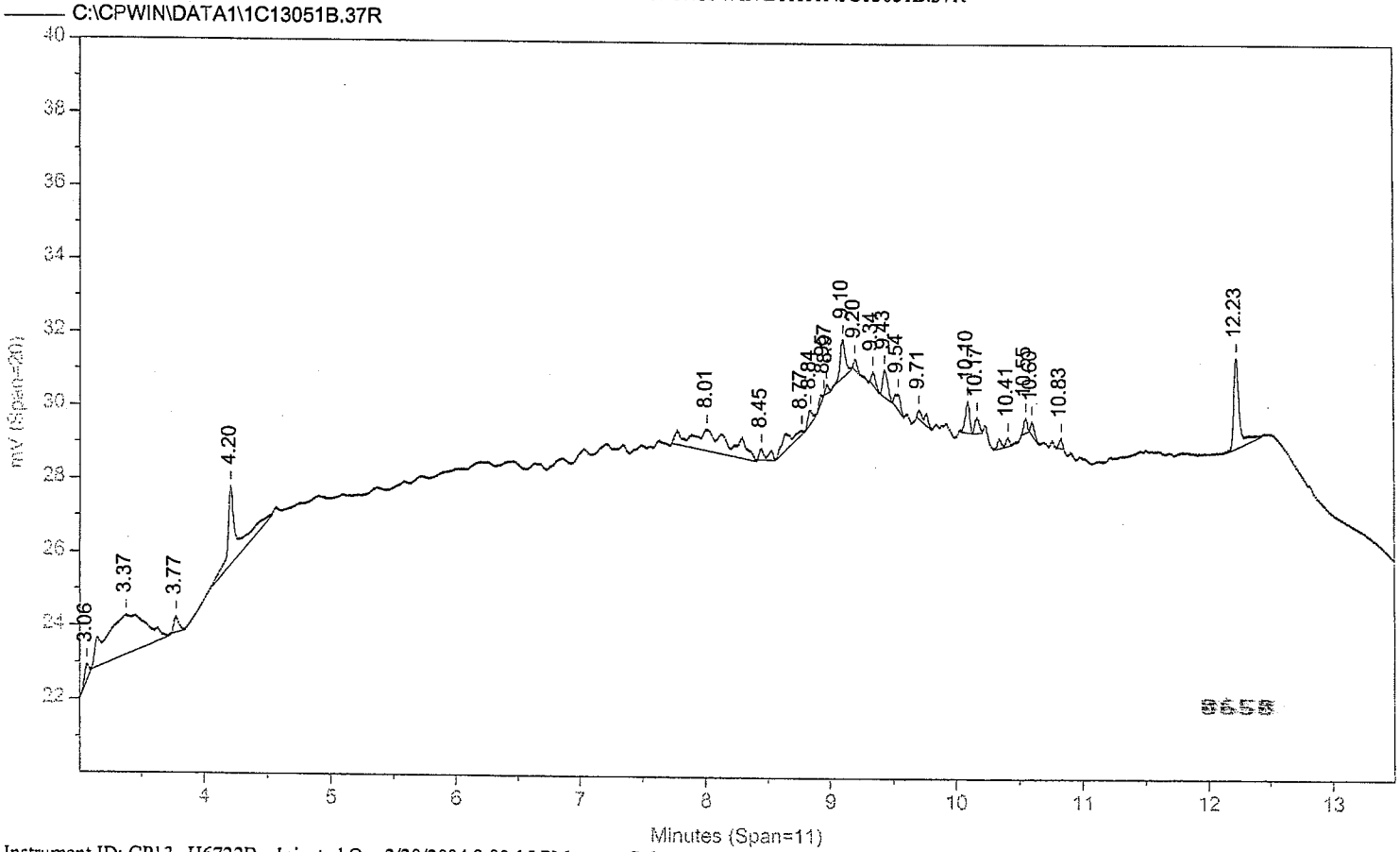
File: C:\CPWIN\DATA1\1C13051.37R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 8:00:15 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.37R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 8:00:15 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

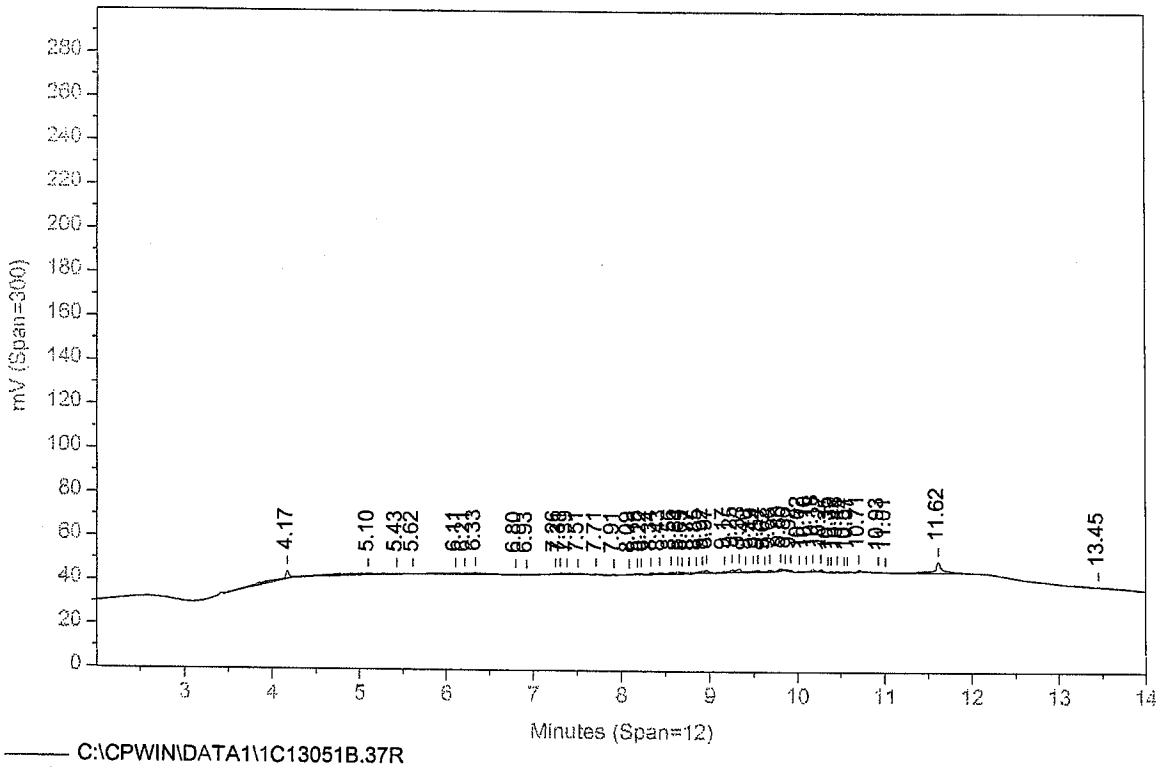
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.17 | 3496 | .92075 | TCX | 4.205 | 2170 | .85334 | TCX |
| 5.429 | 35 | .00758 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.109 | 469 | .09083 | Heptachlor | . | 0 | . | Heptachlor |
| 7.387 | 291 | .06587 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.714 | 556 | .13041 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.912 | 199 | .05199 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.221 | 526 | .14445 | Dieldrin | . | 0 | . | Dieldrin |
| 8.562 | 913 | .2685 | Endrin | . | 0 | . | Endrin |
| . | 0 | . | o,p-DDT | 8.774 | 144 | .09482 | o,p-DDT |
| . | 0 | . | 4,4'-DDD | 8.843 | 389 | 1.81136 | 4,4'-DDD |
| 8.854 | 543 | .15716 | Endosulfan II | 8.973 | 264 | .12493 | Endosulfan II |
| 8.967 | 1193 | .40275 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| 9.404 | 327 | .13152 | Endrin aldehyde | 9.43 | 754 | .45749 | Endrin aldehyde |
| 9.542 | 983 | -5.28193 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.803 | 1050 | -4.54157 | Mirex | 10.412 | 256 | -3.0218 | Mirex |
| 9.92 | 669 | .21746 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 11.616 | 4874 | -2.64536 | DCB | 12.229 | 2475 | -2.52165 | DCB |

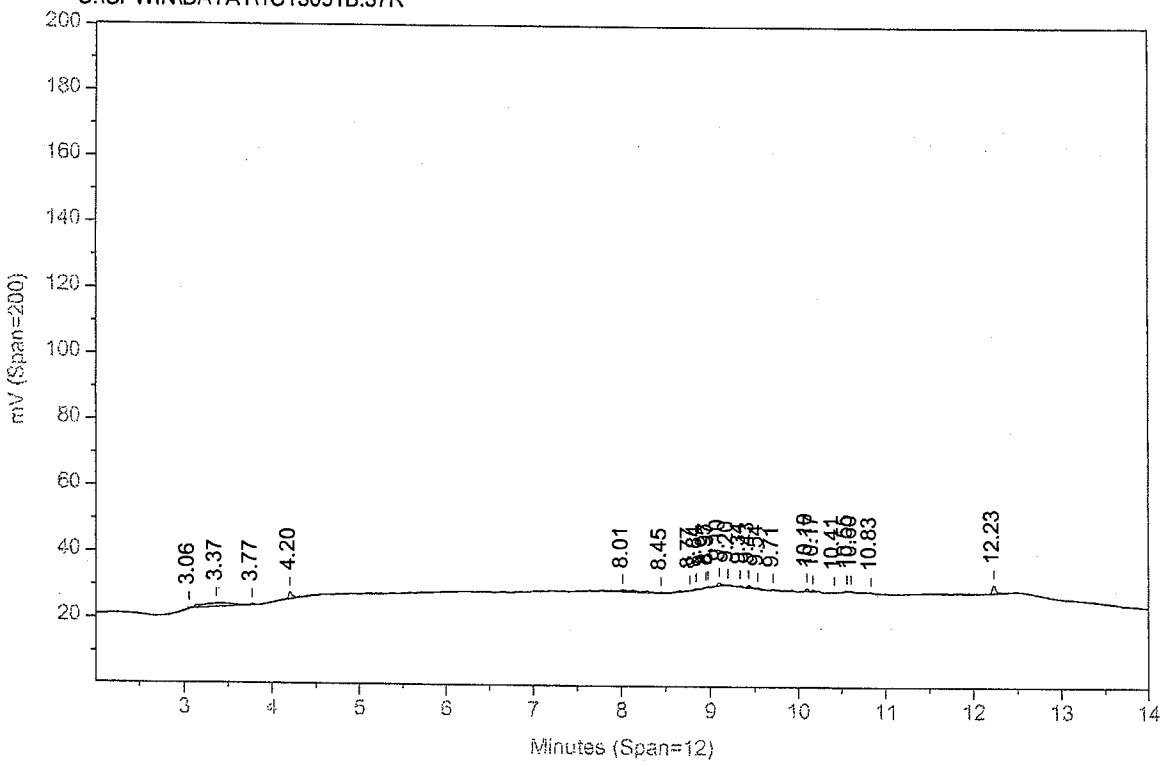
Files:
Area File: C:\CPWIN\DATA1\1C13051.37A
Area File: C:\CPWIN\DATA1\1C13051B.37A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 1:13:34 PM
File Reported On: 2/23/2004 at 1:13:42 PM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.37R




C:\CPWIN\DATA1\1C13051B.37R



Sample Name: **MDCHX03B AAMDCHXAA ICAL 045099999**
Acquired from CP13--H6722A via port 3 on 2/20/04 08:34:36pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13051.38R**
Method File: C:\CPWIN\DATA1\608D.MET
Calibration File: C:\CPWIN\DATA1\1C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.090 | | 0.0000 | 0.000 | 12683.6 | 7.174 | BB | 0.774 | 272.99 | 0.972 |
| 2 | 4.171 | TCX | 0.5246 | 2.167 | 4587.7 | 2.595 | BB | 0.038 | 1992.18 | 7.090 |
| 3 | 5.098 | | 0.0000 | 0.000 | 20266.3 | 11.464 | BB | 0.999 | 338.17 | 1.203 |
| 4 | 5.397 | | 0.0000 | 0.000 | 156.8 | 0.089 | BB | 0.069 | 37.76 | 0.134 |
| 5 | 5.680 | | 0.0000 | 0.000 | 247.3 | 0.140 | BB | 0.107 | 38.37 | 0.137 |
| 6 | 5.901 | | 0.0000 | 0.000 | 325.5 | 0.184 | BB | 0.080 | 68.16 | 0.243 |
| 7 | 6.016 | | 0.0000 | 0.000 | 1887.4 | 1.068 | BB | 0.036 | 880.38 | 3.133 |
| 8 | 6.130 | Heptachlor | 0.2358 | 0.974 | 2789.7 | 1.578 | BB | 0.038 | 1218.33 | 4.336 |
| 9 | 6.292 | | 0.0000 | 0.000 | 295.9 | 0.167 | BB | 0.044 | 112.77 | 0.401 |
| 10 | 6.662 | | 0.0000 | 0.000 | 127.9 | 0.072 | BB | 0.027 | 79.25 | 0.282 |
| 11 | 6.736 | | 0.0000 | 0.000 | 2979.9 | 1.686 | BB | 0.037 | 1327.62 | 4.725 |
| 12 | 6.930 | | 0.0000 | 0.000 | 763.1 | 0.432 | BB | 0.084 | 152.21 | 0.542 |
| 13 | 7.090 | | 0.0000 | 0.000 | 218.5 | 0.124 | BB | 0.041 | 89.33 | 0.318 |
| 14 | 7.159 | | 0.0000 | 0.000 | 409.6 | 0.232 | BB | 0.056 | 121.93 | 0.434 |
| 15 | 7.291 | | 0.0000 | 0.000 | 1491.8 | 0.844 | BV | 0.043 | 581.97 | 2.071 |
| 16 | 7.385 | Hept. epoxide | 0.1093 | 0.451 | 1774.0 | 1.003 | VV | 0.061 | 483.16 | 1.719 |
| 17 | 7.436 | | 0.0000 | 0.000 | 2518.6 | 1.425 | VV | 0.059 | 716.00 | 2.548 |
| 18 | 7.544 | g. Chlordane | 0.6379 | 2.635 | 8756.7 | 4.953 | VV | 0.054 | 2701.57 | 9.614 |
| 19 | 7.714 | a. Chlordane | 0.7656 | 3.162 | 12156.5 | 6.876 | VB | 0.062 | 3262.94 | 11.612 |
| 20 | 8.001 | | 0.0000 | 0.000 | 501.4 | 0.284 | BB | 0.051 | 164.35 | 0.585 |
| 21 | 8.127 | | 0.0000 | 0.000 | 400.4 | 0.227 | BB | 0.033 | 202.83 | 0.722 |
| 22 | 8.326 | | 0.0000 | 0.000 | 846.2 | 0.479 | BB | 0.050 | 283.26 | 1.008 |
| 23 | 8.567 | Kepone | 25.0508 | 103.462 | 3531.8 | 1.998 | BV | 0.086 | 685.76 | 2.440 |
| 24 | 8.732 | | 0.0000 | 0.000 | 7013.4 | 3.967 | VB | 0.082 | 1433.02 | 5.100 |
| 25 | 9.050 | | 0.0000 | 0.000 | 10749.7 | 6.081 | BV | 0.262 | 683.08 | 2.431 |
| 26 | 9.181 | | 0.0000 | 0.000 | 3587.1 | 2.029 | VV | 0.108 | 555.12 | 1.976 |
| 27 | 9.320 | | 0.0000 | 0.000 | 3593.4 | 2.033 | VV | 0.126 | 476.92 | 1.697 |
| 28 | 9.743 | | 0.0000 | 0.000 | 5165.1 | 2.922 | VB | 0.454 | 189.54 | 0.675 |
| 29 | 9.873 | | 0.0000 | 0.000 | 923.2 | 0.522 | BB | 0.065 | 237.94 | 0.847 |
| 30 | 10.080 | | 0.0000 | 0.000 | 3375.7 | 1.909 | BV | 0.115 | 490.26 | 1.745 |
| 31 | 10.179 | | 0.0000 | 0.000 | 6187.7 | 3.500 | VB | 0.097 | 1066.13 | 3.794 |
| 32 | 10.707 | | 0.0000 | 0.000 | 19533.7 | 11.049 | BB | 0.095 | 3413.18 | 12.147 |
| 33 | 11.617 | DCB | -3.1115 | -12.851 | 29653.8 | 16.774 | BB | 0.143 | 3455.58 | 12.298 |
| 34 | 13.453 | | 0.0000 | 0.000 | 7289.3 | 4.123 | BB | 0.422 | 287.56 | 1.023 |

Total Area = 176788.8, Total Amount = 24.212, Total Height = 28099.64, Sample Units = PPB

Sample Name: **MDCHX03B AAMDCHXAA ICAL 045099999**
Acquired from CP13--H6722B via port 4 on 2/20/04 08:34:36pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13051B.38R**
Method File: C:\CPWIN\DATA1\608DB.MET
Calibration File: C:\CPWIN\DATA1\1C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.061 | | 0.0000 | 0.000 | 1239.4 | 1.151 | BB | 0.043 | 477.96 | 2.920 |
| 2 | 3.444 | | 0.0000 | 0.000 | 24144.6 | 22.426 | BB | 0.409 | 982.89 | 6.004 |
| 3 | 3.770 | | 0.0000 | 0.000 | 1173.3 | 1.090 | BB | 0.043 | 454.89 | 2.779 |
| 4 | 4.155 | | 0.0000 | 0.000 | 737.6 | 0.685 | BB | 0.162 | 75.76 | 0.463 |
| 5 | 4.209 | TCX | 0.4732 | 36.715 | 5927.6 | 5.506 | BB | 0.082 | 1203.49 | 7.352 |
| 6 | 4.855 | | 0.0000 | 0.000 | 1440.8 | 1.338 | BB | 0.049 | 493.37 | 3.014 |
| 7 | 5.042 | | 0.0000 | 0.000 | 335.5 | 0.312 | BB | 0.021 | 270.81 | 1.654 |
| 8 | 5.986 | | 0.0000 | 0.000 | 4675.1 | 4.342 | BV | 0.355 | 219.19 | 1.339 |
| 9 | 6.020 | | 0.0000 | 0.000 | 3020.7 | 2.806 | VV | 0.074 | 677.15 | 4.137 |
| 10 | 6.227 | Heptachlor | 0.2819 | 21.873 | 2421.9 | 2.250 | VB | 0.050 | 804.16 | 4.912 |
| 11 | 6.877 | Telodrin | 0.3253 | 25.243 | 1792.3 | 1.665 | BB | 0.036 | 837.38 | 5.115 |
| 12 | 7.396 | | 0.0000 | 0.000 | 778.7 | 0.723 | BV | 0.066 | 197.38 | 1.206 |
| 13 | 7.694 | g. Chlordane | 0.6509 | 50.508 | 5843.7 | 5.428 | VV | 0.057 | 1701.86 | 10.396 |
| 14 | 7.813 | | 0.0000 | 0.000 | 4658.4 | 4.327 | VV | 0.049 | 1590.05 | 9.713 |
| 15 | 7.884 | a. Chlordane | 0.6846 | 53.118 | 18136.3 | 16.845 | VB | 0.163 | 1851.82 | 11.312 |
| 16 | 8.827 | 4,4'-DDD | 1.7843 | 138.445 | 965.9 | 0.897 | BB | 0.046 | 349.93 | 2.138 |
| 17 | 8.989 | Endosulfan II | 0.0203 | 1.577 | 621.4 | 0.577 | BB | 0.241 | 42.92 | 0.262 |
| 18 | 9.184 | | 0.0000 | 0.000 | 17841.7 | 16.572 | BB | 0.320 | 929.26 | 5.677 |
| 19 | 10.556 | | 0.0000 | 0.000 | 6261.0 | 5.815 | BB | 0.065 | 1598.79 | 9.767 |
| 20 | 12.227 | DCB | -2.9317 | -227.479 | 5647.3 | 5.245 | BB | 0.058 | 1610.89 | 9.841 |

Total Area = 107663.1, Total Amount = 1.289, Total Height = 16369.96, Sample Units = PPB

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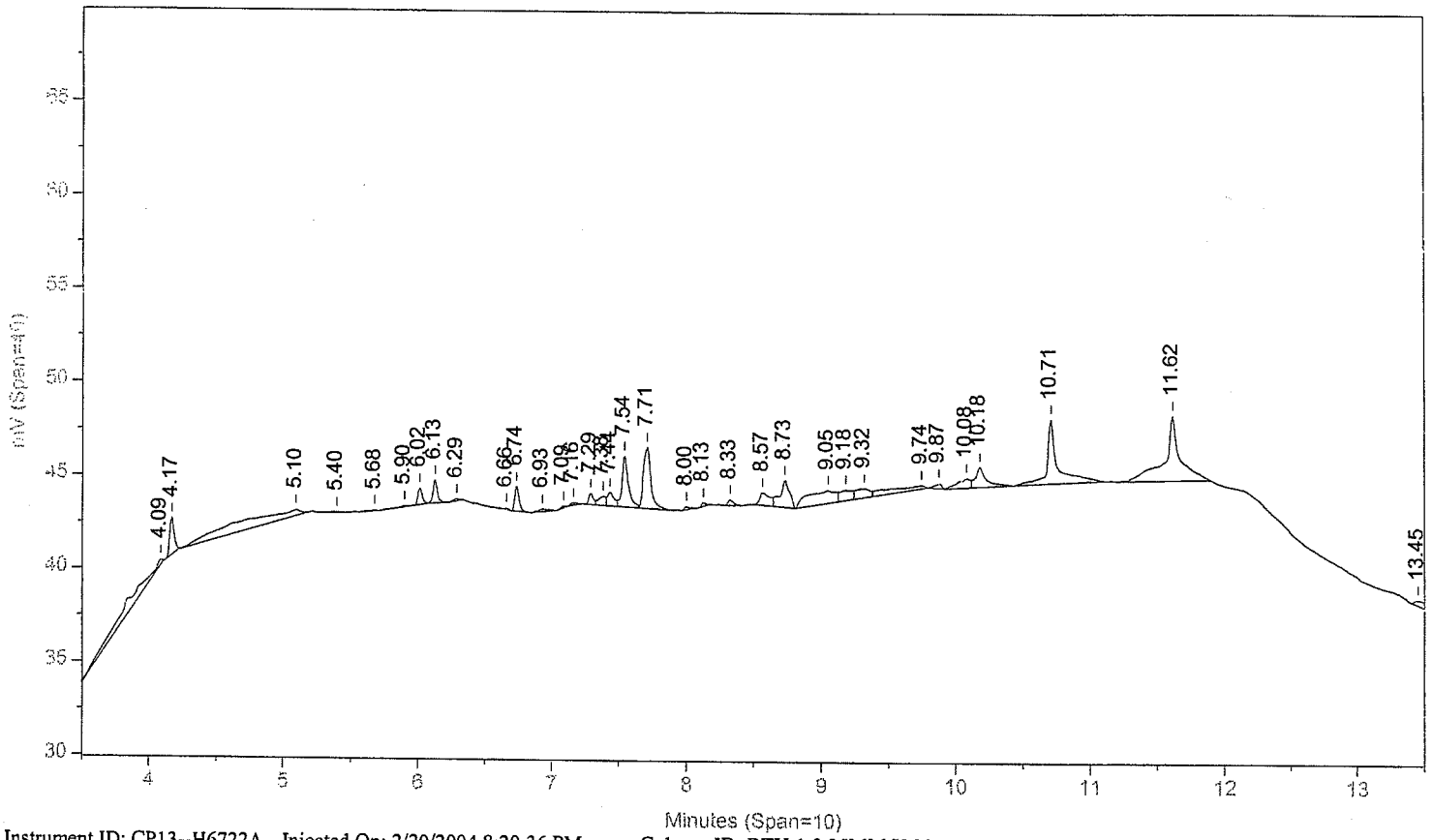
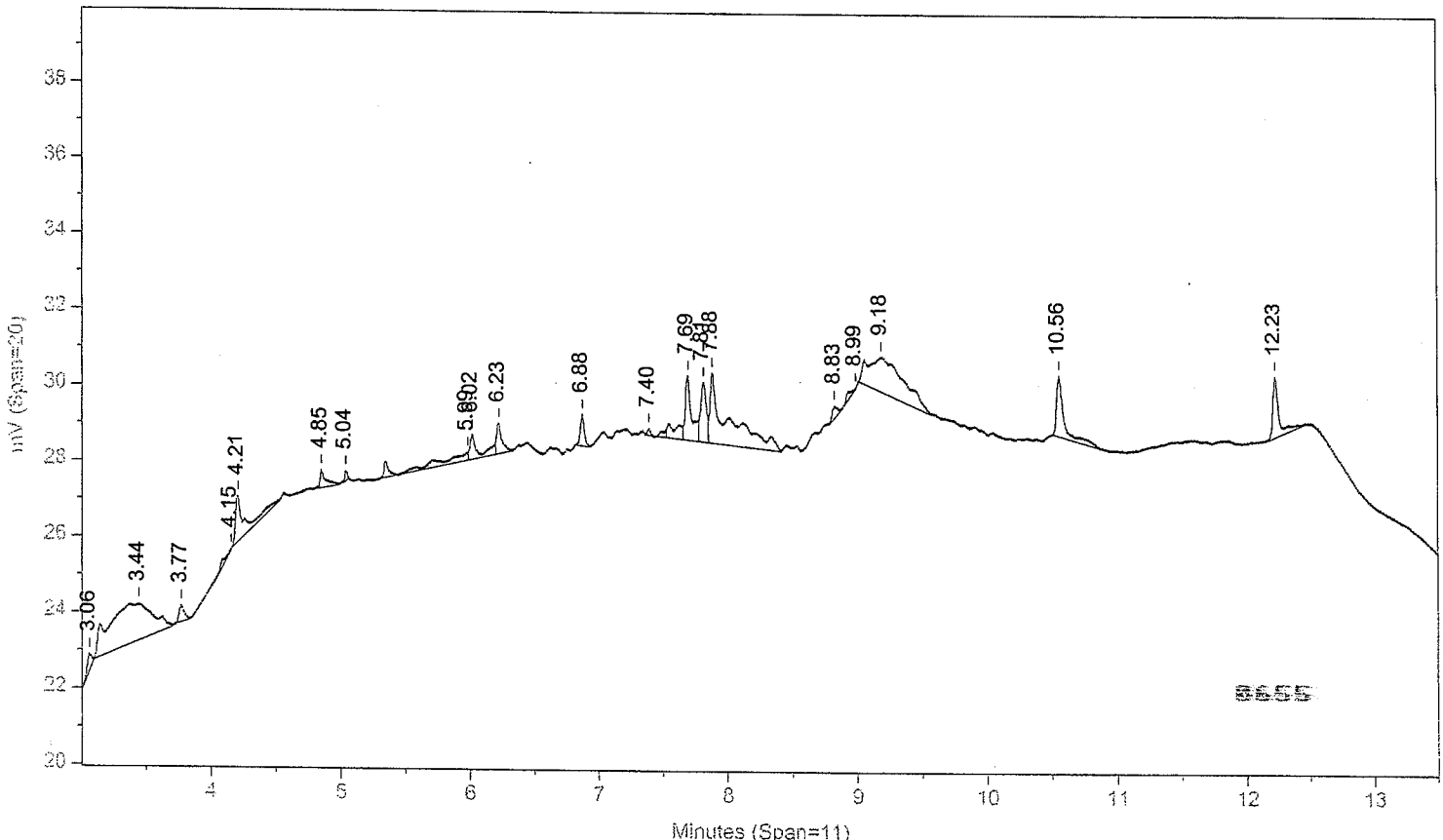
File: C:\CPWIN\DATA1\1C13051.38R




Instrument ID: CP13--H6722A Injected On: 2/20/2004 8:20:36 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13051B.38R




Instrument ID: CP13--H6722B Injected On: 2/20/2004 8:20:36 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

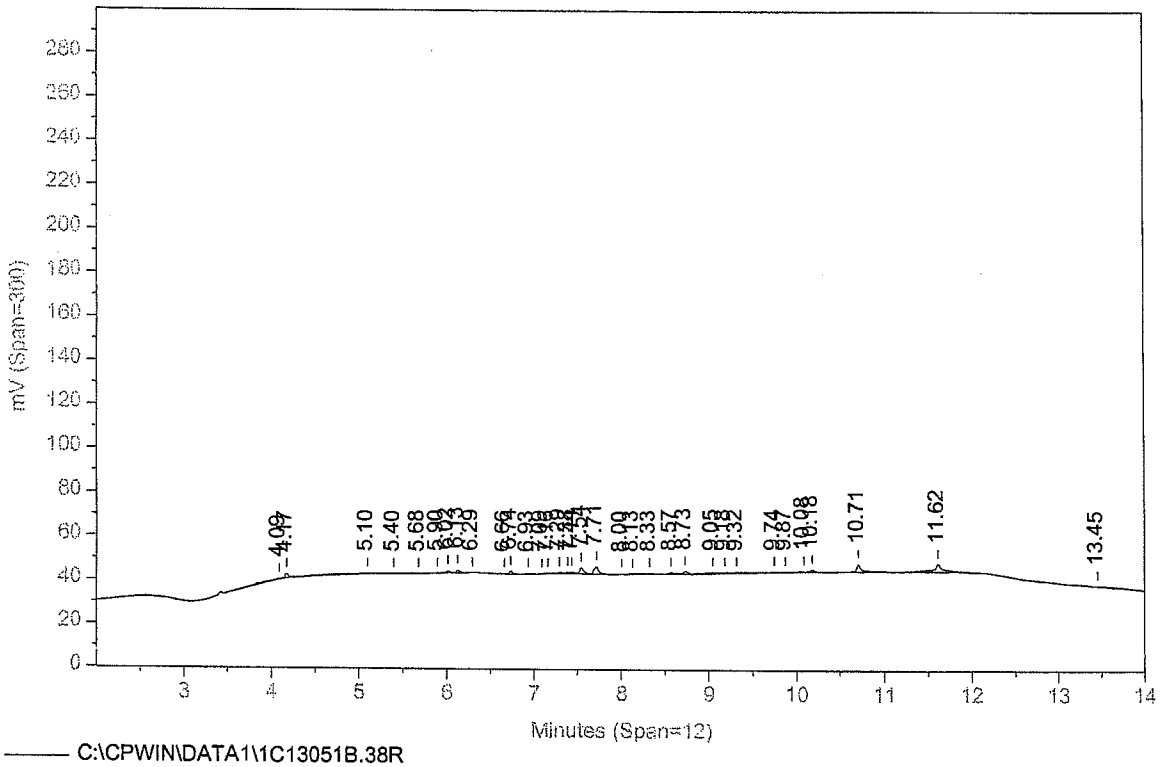
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.171 | 1992 | .52463 | TCX | 4.209 | 1203 | .47318 | TCX |
| 6.13 | 1218 | .23583 | Heptachlor | 6.227 | 804 | .2819 | Heptachlor |
| . | 0 | . | Telodrin | 6.877 | 837 | .32534 | Telodrin |
| 7.385 | 483 | .1093 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.544 | 2702 | .6379 | g. Chlordane | 7.694 | 1702 | .65095 | g. Chlordane |
| 7.714 | 3263 | .76557 | a. Chlordane | 7.884 | 1852 | .68459 | a. Chlordane |
| 8.567 | 686 | 25.05076 | Kepone | . | 0 | . | Kepone |
| . | 0 | . | 4,4'-DDD | 8.827 | 350 | 1.78427 | 4,4'-DDD |
| . | 0 | . | Endosulfan II | 8.989 | 43 | .02033 | Endosulfan II |
| 11.617 | 3456 | -3.11155 | DCB | 12.227 | 1611 | -2.93175 | DCB |

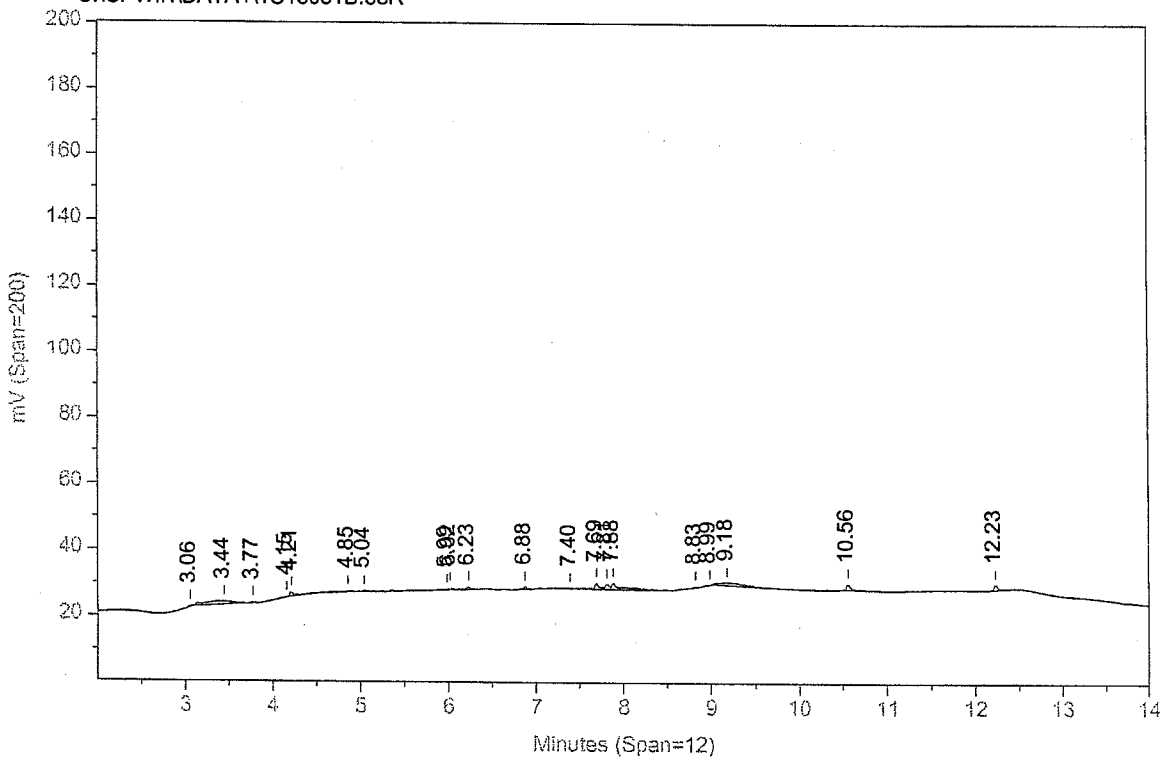
Files:
Area File: C:\CPWIN\DATA1\1C13051.38A
Area File: C:\CPWIN\DATA1\1C13051B.38A
Method A: C:\CPWIN\DATA1\608D.MET
Method B: C:\CPWIN\DATA1\608DB.MET
Calibration File A: C:\CPWIN\DATA1\1C13051.CAL
Calibration File B: C:\CPWIN\DATA1\1C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/23/2004 1:13:54 PM
File Reported On: 2/23/2004 at 1:14:02 PM

10X REPLOTS

C:\CPWIN\DATA1\1C13051.38R




C:\CPWIN\DATA1\1C13051B.38R



Sample Name: **EVALX03C IRPEMIR PEM 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 12:02:45pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.04R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.167 | TCX | 19.9274 | 4.697 | 212086.8 | 7.913 | BB | 0.047 | 75670.73 | 6.903 |
| 2 | 4.739 | HCB | 0.1404 | 0.033 | 1939.1 | 0.072 | BB | 0.035 | 924.48 | 0.084 |
| 3 | 4.989 | alpha-BHC | 10.2299 | 2.411 | 98369.0 | 3.670 | BB | 0.035 | 47335.12 | 4.318 |
| 4 | 5.448 | gamma-BHC | 9.9920 | 2.355 | 94100.4 | 3.511 | BB | 0.034 | 45642.34 | 4.164 |
| 5 | 5.576 | beta-BHC | 9.8756 | 2.328 | 60417.4 | 2.254 | BB | 0.037 | 26916.96 | 2.456 |
| 6 | 5.680 | | 0.0000 | 0.000 | 330.5 | 0.012 | BB | 0.026 | 210.88 | 0.019 |
| 7 | 5.826 | delta-BHC | 0.0106 | 0.003 | 202.4 | 0.008 | BB | 0.075 | 45.20 | 0.004 |
| 8 | 5.926 | | 0.0000 | 0.000 | 1072.6 | 0.040 | BB | 0.040 | 443.39 | 0.040 |
| 9 | 6.108 | Heptachlor | 0.0198 | 0.005 | 302.8 | 0.011 | BV | 0.049 | 102.30 | 0.009 |
| 10 | 6.209 | | 0.0000 | 0.000 | 331.0 | 0.012 | VV | 0.074 | 74.92 | 0.007 |
| 11 | 6.252 | | 0.0000 | 0.000 | 723.2 | 0.027 | VB | 0.029 | 422.03 | 0.038 |
| 12 | 6.743 | | 0.0000 | 0.000 | 212.8 | 0.008 | BB | 0.044 | 80.51 | 0.007 |
| 13 | 6.924 | | 0.0000 | 0.000 | 634.6 | 0.024 | BB | 0.041 | 260.79 | 0.024 |
| 14 | 7.006 | | 0.0000 | 0.000 | 88.8 | 0.003 | BB | 0.024 | 62.73 | 0.006 |
| 15 | 7.059 | | 0.0000 | 0.000 | 1175.1 | 0.044 | BV | 0.066 | 297.19 | 0.027 |
| 16 | 7.366 | o,p-DDE | 0.1939 | 0.046 | 7937.4 | 0.296 | VV | 0.249 | 530.83 | 0.048 |
| 17 | 7.504 | | 0.0000 | 0.000 | 2090.2 | 0.078 | VV | 0.055 | 631.70 | 0.058 |
| 18 | 7.556 | g. Chlordane | 0.1511 | 0.036 | 3140.4 | 0.117 | VV | 0.082 | 639.85 | 0.058 |
| 19 | 7.805 | 4,4'-DDE | 0.6045 | 0.142 | 4846.9 | 0.181 | VB | 0.039 | 2063.12 | 0.188 |
| 20 | 8.239 | Dieldrin | 0.0236 | 0.006 | 1205.9 | 0.045 | BB | 0.233 | 86.16 | 0.008 |
| 21 | 8.367 | o,p-DDT | 0.7630 | 0.180 | 4967.0 | 0.185 | BB | 0.040 | 2077.34 | 0.190 |
| 22 | 8.526 | Endrin | 48.4360 | 11.417 | 365079.0 | 13.621 | BV | 0.037 | 164649.80 | 15.020 |
| 23 | 8.670 | | 0.0000 | 0.000 | 247.9 | 0.009 | VB | 0.027 | 151.79 | 0.014 |
| 24 | 8.829 | Endosulfan II | 0.0864 | 0.020 | 1087.7 | 0.041 | BV | 0.061 | 298.73 | 0.027 |
| 25 | 8.950 | 4,4'-DDT | 94.7719 | 22.340 | 645913.5 | 24.098 | VV | 0.038 | 280752.90 | 25.612 |
| 26 | 9.217 | | 0.0000 | 0.000 | 585.6 | 0.022 | VV | 0.040 | 242.63 | 0.022 |
| 27 | 9.262 | | 0.0000 | 0.000 | 758.5 | 0.028 | VB | 0.051 | 248.82 | 0.023 |
| 28 | 9.368 | Endrin aldehyde | 0.8907 | 0.210 | 5869.4 | 0.219 | BV | 0.044 | 2213.84 | 0.202 |
| 29 | 9.561 | Methoxychlor | 207.2063 | 48.843 | 914316.3 | 34.112 | VB | 0.042 | 360665.70 | 32.902 |
| 30 | 10.101 | | 0.0000 | 0.000 | 2346.8 | 0.088 | BV | 0.042 | 940.39 | 0.086 |
| 31 | 10.169 | | 0.0000 | 0.000 | 4917.1 | 0.183 | VB | 0.051 | 1601.58 | 0.146 |
| 32 | 10.298 | Endrin ketone | 0.8047 | 0.190 | 6963.1 | 0.260 | BB | 0.040 | 2876.93 | 0.262 |
| 33 | 10.476 | | 0.0000 | 0.000 | 295.4 | 0.011 | BB | 0.043 | 115.16 | 0.011 |
| 34 | 10.701 | | 0.0000 | 0.000 | 16769.0 | 0.626 | BB | 0.188 | 1487.98 | 0.136 |
| 35 | 11.326 | | 0.0000 | 0.000 | 777.1 | 0.029 | BB | 0.041 | 317.13 | 0.029 |
| 36 | 11.606 | DCB | 20.1020 | 4.738 | 218256.2 | 8.143 | BB | 0.048 | 75097.63 | 6.851 |

Total Area = 2680357.0, Total Amount = 424.23, Total Height = 1096180.0, Sample Units = PPB

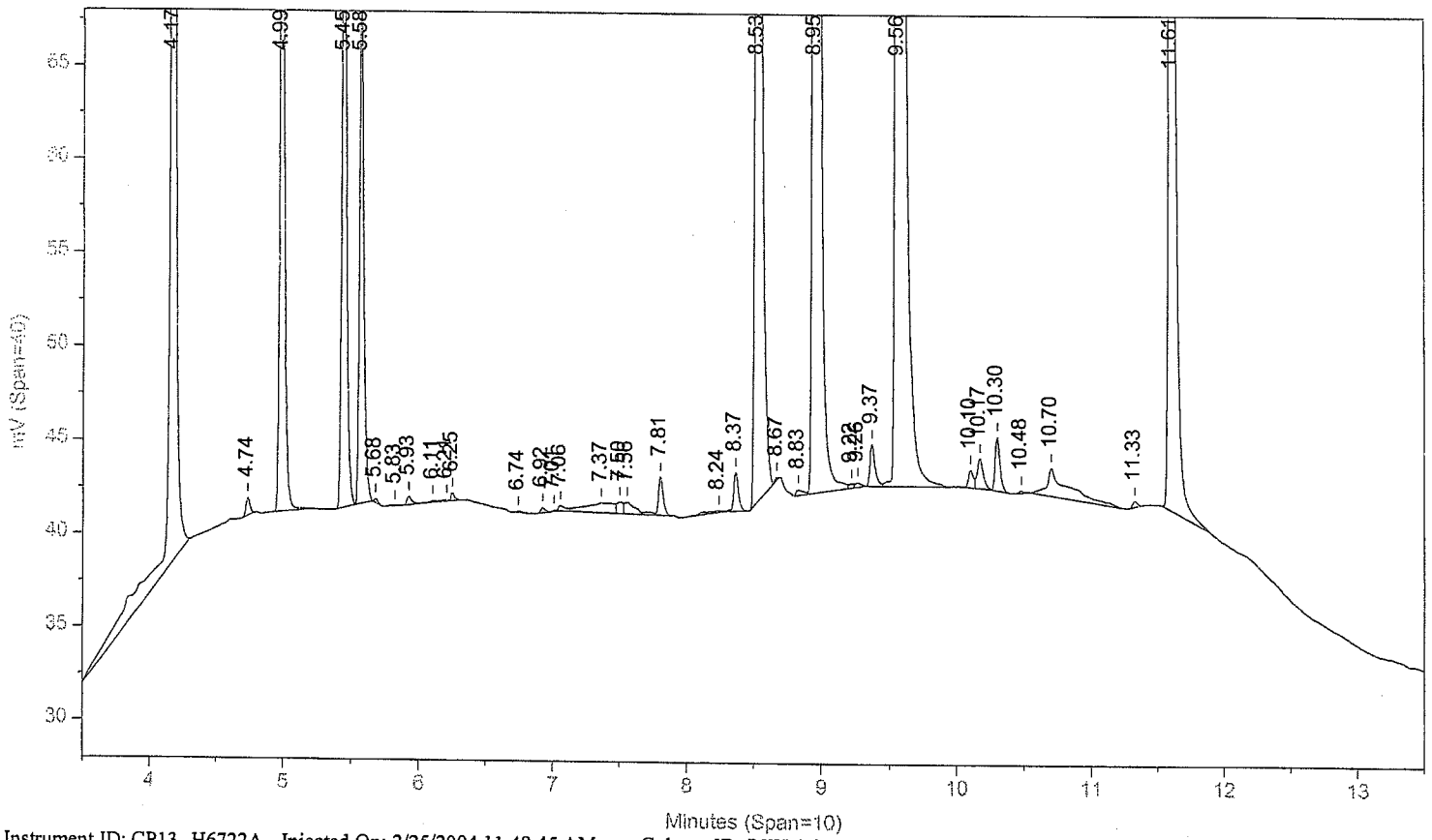
Sample Name: **EVALX03C IRPEMIR PEM 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 12:02:45pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.04R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.060 | | 0.0000 | 0.000 | 1324.5 | 0.083 | BB | 0.049 | 446.10 | 0.065 |
| 2 | 3.356 | | 0.0000 | 0.000 | 20450.7 | 1.280 | BB | 0.345 | 987.92 | 0.145 |
| 3 | 4.200 | TCX | 19.5935 | 4.293 | 130741.5 | 8.181 | BB | 0.044 | 49834.38 | 7.293 |
| 4 | 4.741 | | 0.0000 | 0.000 | 2508.0 | 0.157 | BB | 0.074 | 566.08 | 0.083 |
| 5 | 5.091 | alpha-BHC | 9.4029 | 2.060 | 38721.7 | 2.423 | BB | 0.028 | 23227.67 | 3.399 |
| 6 | 5.604 | gamma-BHC | 10.0253 | 2.197 | 48672.5 | 3.046 | BV | 0.032 | 25381.82 | 3.714 |
| 7 | 5.728 | beta-BHC | 9.7846 | 2.144 | 40793.2 | 2.553 | VB | 0.043 | 15732.04 | 2.302 |
| 8 | 7.200 | | 0.0000 | 0.000 | 12538.8 | 0.785 | BV | 0.349 | 597.96 | 0.088 |
| 9 | 7.926 | | 0.0000 | 0.000 | 20100.1 | 1.258 | VV | 0.386 | 867.81 | 0.127 |
| 10 | 8.097 | 4,4'-DDE | 0.8632 | 0.189 | 13767.0 | 0.862 | VB | 0.137 | 1672.43 | 0.245 |
| 11 | 8.715 | Endrin | 53.6175 | 11.749 | 213896.5 | 13.385 | BB | 0.033 | 108673.10 | 15.904 |
| 12 | 8.856 | 4,4'-DDD | 0.5849 | 0.128 | 2314.8 | 0.145 | BB | 0.053 | 728.66 | 0.107 |
| 13 | 9.037 | | 0.0000 | 0.000 | 492.4 | 0.031 | BB | 0.032 | 253.21 | 0.037 |
| 14 | 9.246 | 4,4'-DDT | 110.2441 | 24.157 | 393467.2 | 24.622 | BB | 0.037 | 178927.80 | 26.185 |
| 15 | 9.425 | Endrin aldehyde | 1.0902 | 0.239 | 4361.3 | 0.273 | BB | 0.040 | 1795.95 | 0.263 |
| 16 | 10.117 | Methoxychlor | 219.5696 | 48.114 | 503551.4 | 31.511 | BB | 0.038 | 218437.30 | 31.967 |
| 17 | 10.277 | | 0.0000 | 0.000 | 1340.4 | 0.084 | BB | 0.028 | 791.92 | 0.116 |
| 18 | 10.473 | Endrin ketone | 0.9722 | 0.213 | 5487.8 | 0.343 | BB | 0.039 | 2360.86 | 0.345 |
| 19 | 11.789 | | 0.0000 | 0.000 | 1700.4 | 0.106 | BB | 0.097 | 292.82 | 0.043 |
| 20 | 12.214 | DCB | 20.6089 | 4.516 | 141795.8 | 8.873 | BB | 0.046 | 51746.00 | 7.573 |

Total Area = 1598026.0, Total Amount = 456.357, Total Height = 683321.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.04R

C:\CPWIN\DATA1\2C13051.04R

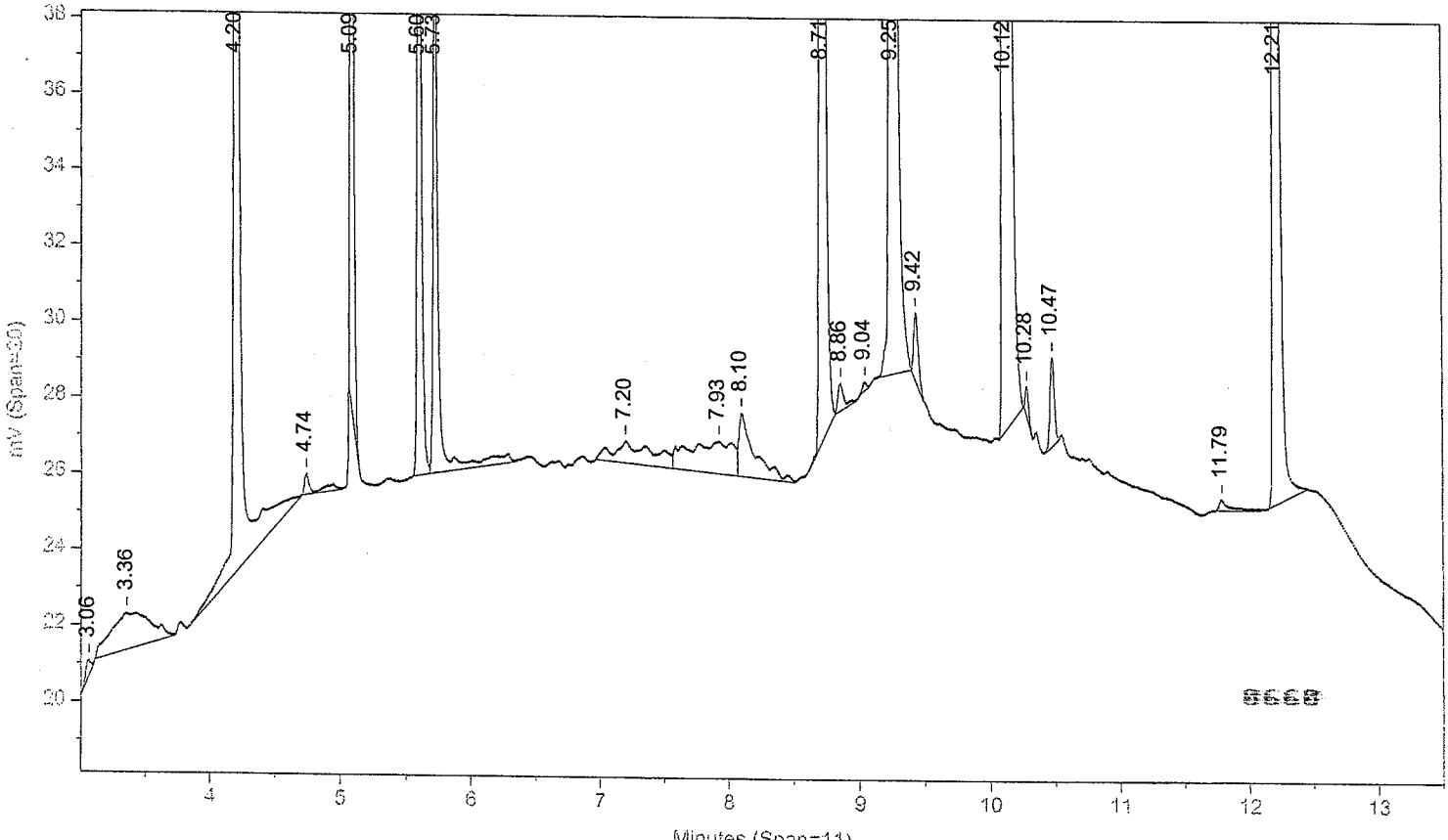



Instrument ID: CP13--H6722A Injected On: 2/25/2004 11:48:45 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.7294912

%ENDRIN BD= 2.999145

File: C:\CPWIN\DATA1\2C13051B.04R

C:\CPWIN\DATA1\2C13051B.04R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 11:48:45 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.324163

%ENDRIN BD= 3.684137

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.167 | 75671 | 19.927 | TCX | 4.2 | 49834 | 19.594 | TCX |
| 4.739 | 924 | .14 | HCB | . | 0 | . | HCB |
| 4.989 | 47335 | 10.23 | alpha-BHC | 5.091 | 23228 | 9.403 | alpha-BHC |
| 5.448 | 45642 | 9.992 | gamma-BHC | 5.604 | 25382 | 10.025 | gamma-BHC |
| 5.576 | 26917 | 9.876 | beta-BHC | 5.728 | 15732 | 9.785 | beta-BHC |
| 5.826 | 45 | .011 | delta-BHC | . | 0 | . | delta-BHC |
| 6.108 | 102 | .02 | Heptachlor | . | 0 | . | Heptachlor |
| 7.366 | 531 | .194 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.556 | 640 | .151 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.805 | 2063 | .604 | 4,4'-DDE | 8.097 | 1672 | .863 | 4,4'-DDE |
| 8.239 | 86 | .024 | Dieldrin | . | 0 | . | Dieldrin |
| 8.367 | 2077 | .763 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.526 | 164650 | 48.436 | Endrin | 8.715 | 108673 | 53.618 | Endrin |
| 8.829 | 299 | .086 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.856 | 729 | .585 | 4,4'-DDD |
| 8.95 | 280753 | 94.772 | 4,4'-DDT | 9.246 | 178928 | 110.244 | 4,4'-DDT |
| 9.368 | 2214 | .891 | Endrin aldehyde | 9.425 | 1796 | 1.09 | Endrin aldehyde |
| 9.561 | 360666 | 207.206 | Methoxychlor | 10.117 | 218437 | 219.57 | Methoxychlor |
| 10.298 | 2877 | .805 | Endrin ketone | 10.473 | 2361 | .972 | Endrin ketone |
| 11.606 | 75098 | 20.102 | DCB | 12.214 | 51746 | 20.609 | DCB |

Files:
Area File: C:\CPWIN\DATA1\2C13051.04A
Area File: C:\CPWIN\DATA1\2C13051B.04A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/25/2004 12:02:50 PM
File Reported On: 2/25/2004 at 12:02:57 PM

Sample Name: **MIXA303D LSMIXA3LS CCAL 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 12:23:08pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.05R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.839 | | 0.0000 | 0.000 | 3275.2 | 0.095 | BB | 0.039 | 1408.02 | 0.099 |
| 2 | 4.165 | TCX | 38.1898 | 7.265 | 352477.8 | 10.215 | BB | 0.041 | 145019.10 | 10.238 |
| 3 | 4.650 | | 0.0000 | 0.000 | 1065.9 | 0.031 | BB | 0.160 | 111.26 | 0.008 |
| 4 | 4.737 | HCB | 0.2831 | 0.054 | 3928.7 | 0.114 | BB | 0.035 | 1863.87 | 0.132 |
| 5 | 4.798 | | 0.0000 | 0.000 | 154.8 | 0.004 | BB | 0.023 | 110.75 | 0.008 |
| 6 | 4.867 | | 0.0000 | 0.000 | 79.6 | 0.002 | BB | 0.030 | 44.00 | 0.003 |
| 7 | 4.987 | alpha-BHC | 10.0907 | 1.920 | 97144.0 | 2.815 | BB | 0.035 | 46691.00 | 3.296 |
| 8 | 5.151 | | 0.0000 | 0.000 | 225.5 | 0.007 | BB | 0.049 | 76.54 | 0.005 |
| 9 | 5.447 | gamma-BHC | 10.0806 | 1.918 | 95725.8 | 2.774 | BB | 0.035 | 46047.11 | 3.251 |
| 10 | 5.575 | beta-BHC | 9.8152 | 1.867 | 59926.3 | 1.737 | BB | 0.037 | 26752.28 | 1.889 |
| 11 | 5.680 | | 0.0000 | 0.000 | 656.9 | 0.019 | BB | 0.028 | 390.40 | 0.028 |
| 12 | 5.828 | delta-BHC | 9.8848 | 1.881 | 88572.0 | 2.567 | BB | 0.035 | 42071.91 | 2.970 |
| 13 | 6.035 | | 0.0000 | 0.000 | 435.6 | 0.013 | BV | 0.044 | 165.13 | 0.012 |
| 14 | 6.124 | Heptachlor | 9.9489 | 1.893 | 116146.2 | 3.366 | VV | 0.038 | 51396.70 | 3.629 |
| 15 | 6.360 | | 0.0000 | 0.000 | 5465.2 | 0.158 | VV | 0.110 | 826.33 | 0.058 |
| 16 | 6.544 | Aldrin | 10.0010 | 1.903 | 87869.6 | 2.546 | VB | 0.037 | 39874.31 | 2.815 |
| 17 | 6.924 | | 0.0000 | 0.000 | 13066.1 | 0.379 | BB | 0.051 | 4237.75 | 0.299 |
| 18 | 7.129 | | 0.0000 | 0.000 | 301.3 | 0.009 | BV | 0.063 | 80.14 | 0.006 |
| 19 | 7.374 | Hept. epoxide | 9.8100 | 1.866 | 101777.1 | 2.949 | VV | 0.039 | 43364.05 | 3.062 |
| 20 | 7.538 | g. Chlordane | 9.9121 | 1.886 | 98533.2 | 2.855 | VV | 0.039 | 41978.88 | 2.964 |
| 21 | 7.714 | a. Chlordane | 9.7678 | 1.858 | 93159.1 | 2.700 | VV | 0.037 | 41631.64 | 2.939 |
| 22 | 7.805 | 4,4'-DDE | 19.0145 | 3.617 | 145321.6 | 4.211 | VV | 0.037 | 64900.18 | 4.582 |
| 23 | 7.903 | Endosulfan I | 10.0812 | 1.918 | 90298.0 | 2.617 | VV | 0.039 | 38623.22 | 2.727 |
| 24 | 8.043 | o,p-DDD | 0.0620 | 0.012 | 284.4 | 0.008 | VB | 0.035 | 136.41 | 0.010 |
| 25 | 8.218 | Dieldrin | 19.9898 | 3.803 | 160529.6 | 4.652 | BB | 0.037 | 72834.49 | 5.142 |
| 26 | 8.362 | o,p-DDT | 0.0455 | 0.009 | 191.6 | 0.006 | BB | 0.026 | 123.95 | 0.009 |
| 27 | 8.525 | Endrin | 19.3297 | 3.677 | 140085.7 | 4.060 | BV | 0.036 | 65707.98 | 4.639 |
| 28 | 8.588 | Kepone | 110.2383 | 20.972 | 130077.5 | 3.770 | VV | 0.046 | 46935.00 | 3.314 |
| 29 | 8.820 | Endosulfan II | 19.4541 | 3.701 | 162236.5 | 4.702 | VV | 0.040 | 67272.96 | 4.750 |
| 30 | 8.949 | 4,4'-DDT | 18.3500 | 3.491 | 132672.7 | 3.845 | VV | 0.041 | 54360.05 | 3.838 |
| 31 | 9.154 | | 0.0000 | 0.000 | 369.0 | 0.011 | VV | 0.053 | 115.50 | 0.008 |
| 32 | 9.222 | | 0.0000 | 0.000 | 4402.9 | 0.128 | VB | 0.042 | 1740.25 | 0.123 |
| 33 | 9.364 | Endrin aldehyde | 19.2175 | 3.656 | 123816.8 | 3.588 | BV | 0.043 | 47765.47 | 3.372 |
| 34 | 9.561 | Methoxychlor | 87.2164 | 16.592 | 406054.9 | 11.767 | VV | 0.045 | 151809.90 | 10.718 |
| 35 | 9.799 | Mirex | 0.0579 | 0.011 | 662.0 | 0.019 | VB | 0.061 | 181.90 | 0.013 |
| 36 | 9.929 | Endo. sulfate | 18.7099 | 3.559 | 140721.5 | 4.078 | BV | 0.041 | 57570.17 | 4.064 |
| 37 | 10.102 | | 0.0000 | 0.000 | 4304.6 | 0.125 | VV | 0.050 | 1449.08 | 0.102 |
| 38 | 10.163 | | 0.0000 | 0.000 | 2511.2 | 0.073 | VB | 0.048 | 865.76 | 0.061 |
| 39 | 10.297 | Endrin ketone | 19.7473 | 3.757 | 168994.7 | 4.897 | BB | 0.040 | 70600.55 | 4.984 |
| 40 | 10.699 | | 0.0000 | 0.000 | 19187.9 | 0.556 | BB | 0.107 | 2993.86 | 0.211 |
| 41 | 11.324 | | 0.0000 | 0.000 | 1264.7 | 0.037 | BB | 0.042 | 503.56 | 0.036 |
| 42 | 11.603 | DCB | 36.3463 | 6.915 | 396757.3 | 11.498 | BB | 0.049 | 135783.80 | 9.586 |

Total Area = 3450731.0, Total Amount = 525.645, Total Height = 1416415.0, Sample Units = PPB

Sample Name: **MIXA303D LSMIXA3LS CCAL 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 12:23:08pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.05R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

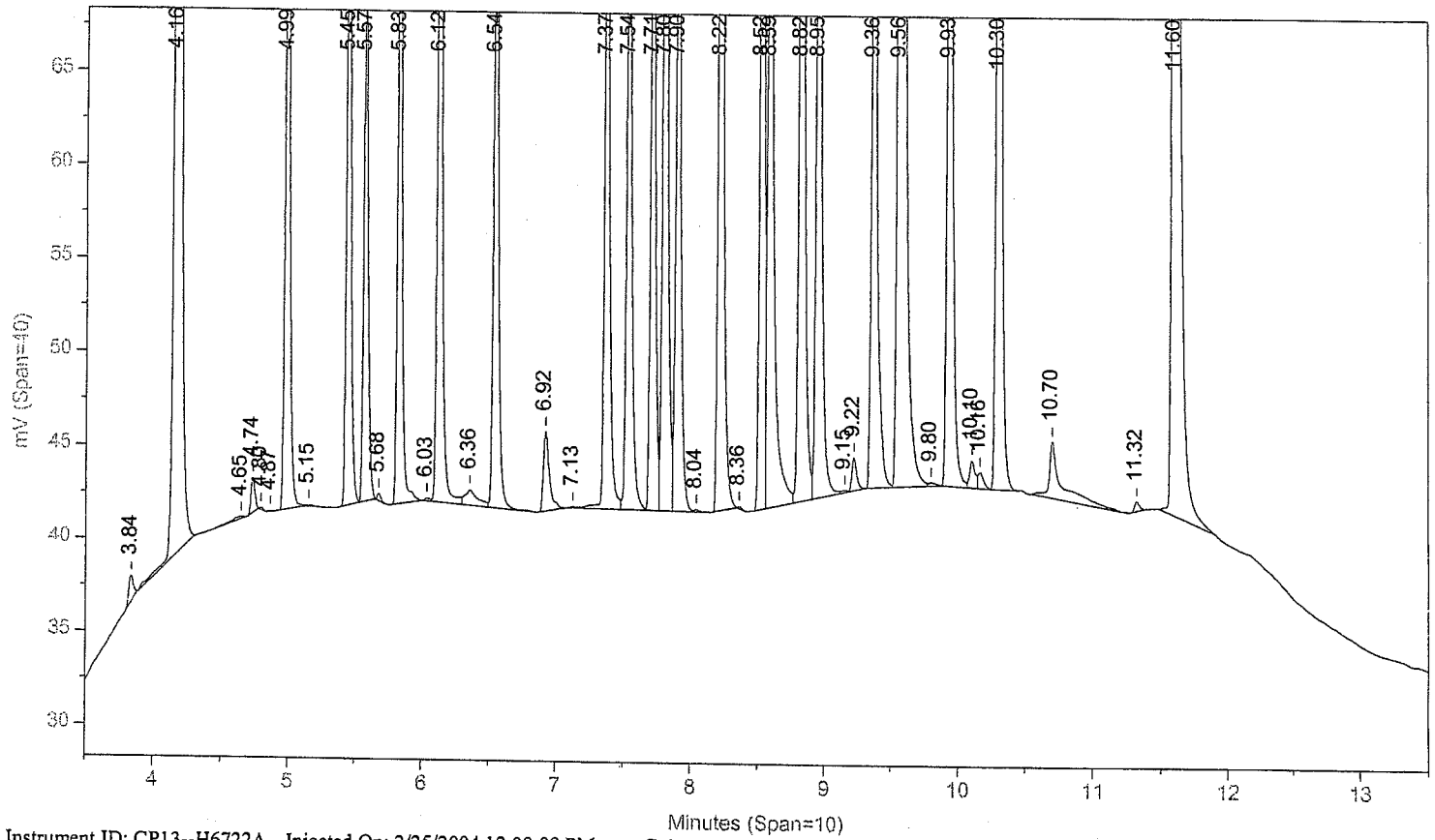
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.052 | | 0.0000 | 0.000 | 1623.0 | 0.081 | BB | 0.044 | 610.21 | 0.072 |
| 2 | 3.370 | | 0.0000 | 0.000 | 21865.4 | 1.097 | BB | 0.364 | 1000.00 | 0.118 |
| 3 | 3.768 | | 0.0000 | 0.000 | 837.6 | 0.042 | BB | 0.045 | 312.91 | 0.037 |
| 4 | 3.928 | | 0.0000 | 0.000 | 1167.7 | 0.059 | BB | 0.036 | 534.69 | 0.063 |
| 5 | 4.199 | TCX | 38.9192 | 9.150 | 224740.9 | 11.280 | BB | 0.038 | 98987.56 | 11.716 |
| 6 | 4.742 | | 0.0000 | 0.000 | 4473.7 | 0.225 | BB | 0.067 | 1110.41 | 0.131 |
| 7 | 5.090 | alpha-BHC | 9.0716 | 2.133 | 37029.8 | 1.859 | BB | 0.028 | 22409.12 | 2.652 |
| 8 | 5.603 | gamma-BHC | 10.1096 | 2.377 | 49583.1 | 2.489 | BV | 0.032 | 25595.22 | 3.029 |
| 9 | 5.727 | beta-BHC | 9.6880 | 2.278 | 37684.6 | 1.891 | VV | 0.040 | 15576.70 | 1.844 |
| 10 | 6.139 | delta-BHC | 9.3933 | 2.208 | 41015.5 | 2.059 | VV | 0.033 | 20564.58 | 2.434 |
| 11 | 6.219 | Heptachlor | 10.4784 | 2.463 | 62353.3 | 3.129 | VB | 0.035 | 29891.33 | 3.538 |
| 12 | 6.665 | Aldrin | 10.2669 | 2.414 | 45870.5 | 2.302 | BB | 0.032 | 23762.13 | 2.812 |
| 13 | 6.760 | | 0.0000 | 0.000 | 4093.9 | 0.205 | BB | 0.058 | 1181.73 | 0.140 |
| 14 | 7.203 | | 0.0000 | 0.000 | 661.1 | 0.033 | BB | 0.038 | 291.11 | 0.034 |
| 15 | 7.437 | Hept. epoxide | 10.2571 | 2.411 | 55411.9 | 2.781 | BV | 0.035 | 26453.87 | 3.131 |
| 16 | 7.687 | g. Chlordane | 10.0618 | 2.365 | 58429.9 | 2.933 | VV | 0.037 | 26306.02 | 3.114 |
| 17 | 7.878 | a. Chlordane | 9.8588 | 2.318 | 56323.3 | 2.827 | VV | 0.035 | 26668.22 | 3.156 |
| 18 | 7.957 | Endosulfan I | 9.7228 | 2.286 | 54653.8 | 2.743 | VV | 0.038 | 23888.82 | 2.827 |
| 19 | 8.095 | 4,4'-DDE | 16.0594 | 3.775 | 87995.9 | 4.416 | VV | 0.047 | 31114.35 | 3.683 |
| 20 | 8.315 | Dieldrin | 20.1128 | 4.728 | 96225.2 | 4.830 | VB | 0.034 | 47030.84 | 5.566 |
| 21 | 8.714 | Endrin | 19.5900 | 4.605 | 80005.4 | 4.015 | BB | 0.034 | 39705.36 | 4.699 |
| 22 | 8.847 | 4,4'-DDD | 14.9786 | 3.521 | 54791.6 | 2.750 | BB | 0.049 | 18661.51 | 2.209 |
| 23 | 8.989 | Endosulfan II | 19.5410 | 4.594 | 90555.8 | 4.545 | BB | 0.037 | 41260.67 | 4.884 |
| 24 | 9.247 | 4,4'-DDT | 17.8172 | 4.189 | 71655.9 | 3.596 | BB | 0.041 | 28917.52 | 3.423 |
| 25 | 9.421 | Endrin aldehyde | 18.7768 | 4.414 | 73105.4 | 3.669 | BB | 0.039 | 30933.56 | 3.661 |
| 26 | 9.554 | | 0.0000 | 0.000 | 412.2 | 0.021 | BB | 0.034 | 202.74 | 0.024 |
| 27 | 9.577 | | 0.0000 | 0.000 | 952.4 | 0.048 | BB | 0.028 | 576.24 | 0.068 |
| 28 | 9.773 | Endo. sulfate | 18.8036 | 4.421 | 82219.7 | 4.127 | BB | 0.039 | 35109.23 | 4.155 |
| 29 | 10.119 | Methoxychlor | 85.3332 | 20.061 | 220514.3 | 11.068 | BB | 0.043 | 84893.11 | 10.048 |
| 30 | 10.350 | | 0.0000 | 0.000 | 1205.7 | 0.061 | BB | 0.035 | 578.29 | 0.068 |
| 31 | 10.472 | Endrin ketone | 19.2541 | 4.526 | 115842.0 | 5.814 | BB | 0.041 | 46756.07 | 5.534 |
| 32 | 11.777 | | 0.0000 | 0.000 | 1736.6 | 0.087 | BB | 0.068 | 423.07 | 0.050 |
| 33 | 12.212 | DCB | 37.2732 | 8.763 | 257401.4 | 12.919 | BB | 0.046 | 93587.80 | 11.077 |

Total Area = 1992439.0, Total Amount = 425.368, Total Height = 844895.1, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.05R

C:\CPWIN\DATA1\2C13051.05R

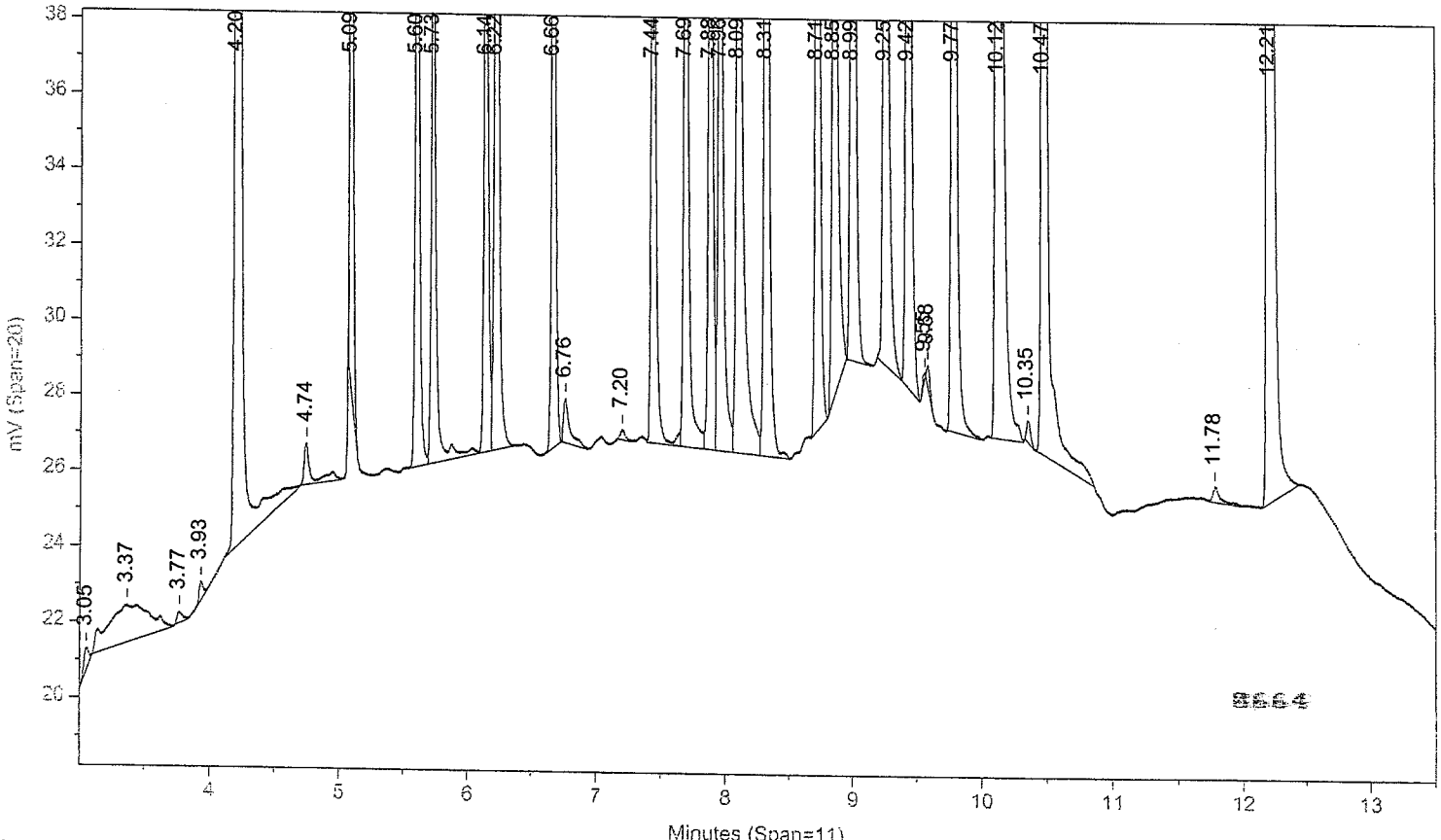



Instrument ID: CP13--H6722A Injected On: 2/25/2004 12:09:08 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.05R

C:\CPWIN\DATA1\2C13051B.05R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 12:09:08 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

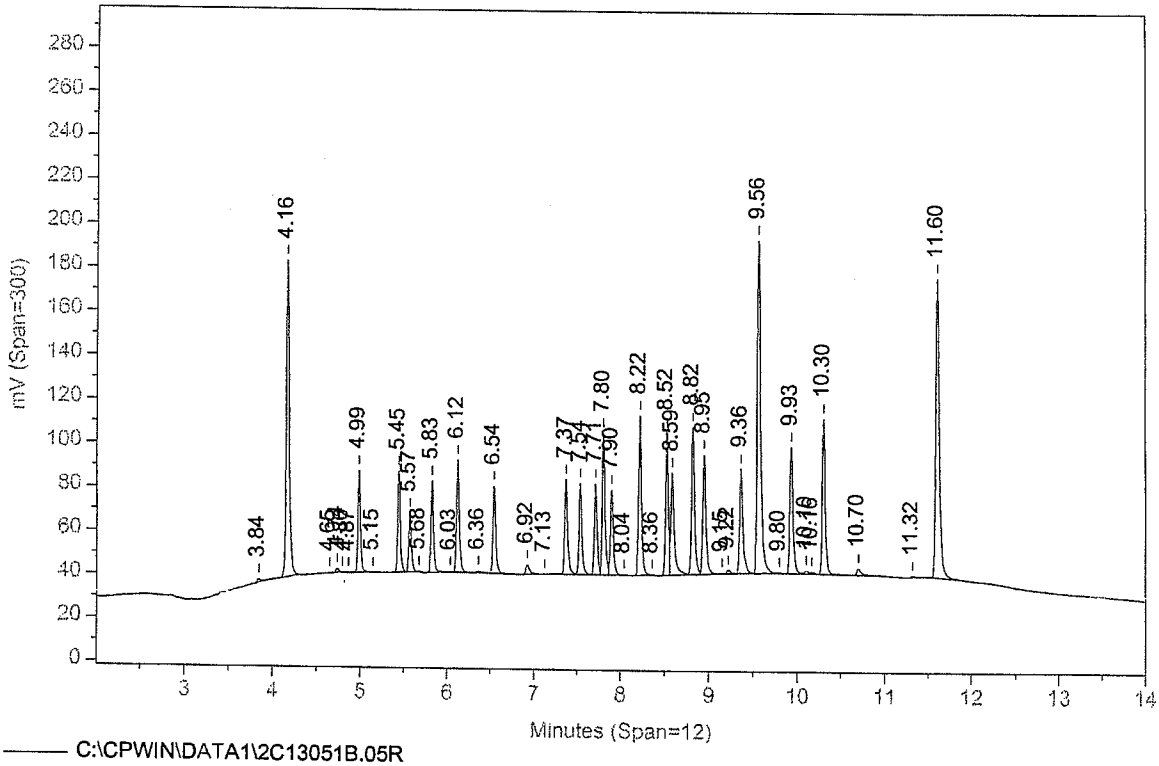
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.165 | 145019 | 38.18981 | TCX | 4.199 | 98988 | 38.91924 | TCX |
| 4.737 | 1864 | .28313 | HCB | . | 0 | . | HCB |
| 4.987 | 46691 | 10.09074 | alpha-BHC | 5.09 | 22409 | 9.07157 | alpha-BHC |
| 5.447 | 46047 | 10.0806 | gamma-BHC | 5.603 | 25595 | 10.10958 | gamma-BHC |
| 5.575 | 26752 | 9.8152 | beta-BHC | 5.727 | 15577 | 9.68798 | beta-BHC |
| 5.828 | 42072 | 9.88484 | delta-BHC | 6.139 | 20565 | 9.39327 | delta-BHC |
| 6.124 | 51397 | 9.94892 | Heptachlor | 6.219 | 29891 | 10.47845 | Heptachlor |
| 6.544 | 39874 | 10.00099 | Aldrin | 6.665 | 23762 | 10.26694 | Aldrin |
| 7.374 | 43364 | 9.81004 | Hept. epoxide | 7.437 | 26454 | 10.25705 | Hept. epoxide |
| 7.538 | 41979 | 9.91211 | g. Chlordane | 7.687 | 26306 | 10.06184 | g. Chlordane |
| 7.714 | 41632 | 9.76782 | a. Chlordane | 7.878 | 26668 | 9.85879 | a. Chlordane |
| 7.805 | 64900 | 19.01447 | 4,4'-DDE | 8.095 | 31114 | 16.05937 | 4,4'-DDE |
| 7.903 | 38623 | 10.08118 | Endosulfan I | 7.957 | 23889 | 9.72282 | Endosulfan I |
| 8.043 | 136 | .06198 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.218 | 72834 | 19.98977 | Dieldrin | 8.315 | 47031 | 20.11284 | Dieldrin |
| 8.362 | 124 | .04552 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.525 | 65708 | 19.3297 | Endrin | 8.714 | 39705 | 19.58999 | Endrin |
| 8.588 | 46935 | 110.2383 | Kepone /DDD | . | 0 | . | Kepone |
| 8.82 | 67273 | 19.45413 | Endosulfan II | 8.989 | 41261 | 19.54105 | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.847 | 18662 | 14.97864 | 4,4'-DDD |
| 8.949 | 54360 | 18.34997 | 4,4'-DDT | 9.247 | 28918 | 17.81717 | 4,4'-DDT |
| 9.364 | 47765 | 19.21748 | Endrin aldehyde | 9.421 | 30934 | 18.77685 | Endrin aldehyde |
| 9.561 | 151810 | 87.2164 | Methoxychlor | 10.119 | 84893 | 85.33318 | Methoxychlor |
| 9.929 | 57570 | 18.70989 | Endo. sulfate | 9.773 | 35109 | 18.80359 | Endo. sulfate |
| 9.799 | 182 | .05793 | Mirex | . | 0 | . | Mirex |
| 10.297 | 70601 | 19.74732 | Endrin ketone | 10.472 | 46756 | 19.25413 | Endrin ketone |
| 11.603 | 135784 | 36.34628 | DCB | 12.212 | 93588 | 37.27325 | DCB |

eycusi 2-26-04

Files:
Area File: C:\CPWIN\DATA1\2C13051.05A
Area File: C:\CPWIN\DATA1\2C13051B.05A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 12:44:08 PM
File Reported On: 2/26/2004 at 12:44:18 PM

Files:
10X REPLOTS

C:\CPWIN\DATA1\2C13051.05R

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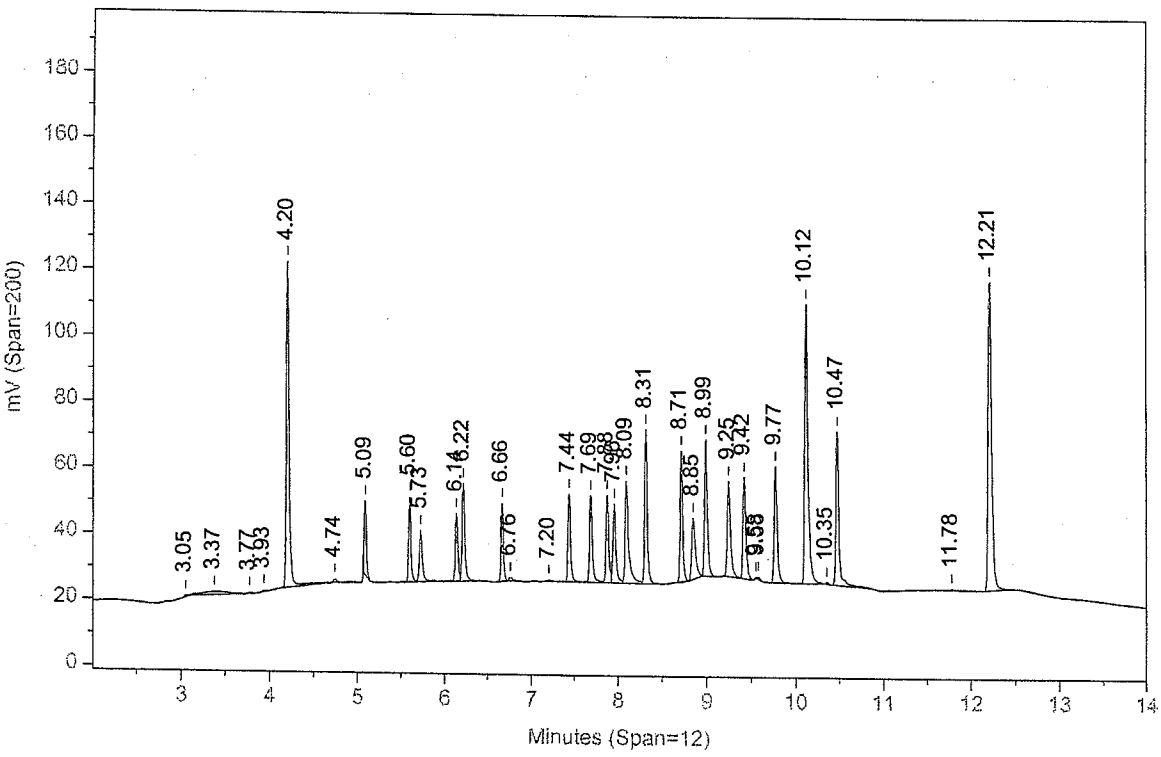

Sample Name: **EVALX03C ISPEMIS PEM 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 07:52:39pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.27R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.161 | TCX | 19.6221 | 4.929 | 209683.2 | 7.486 | BB | 0.047 | 74511.41 | 7.133 |
| 2 | 4.732 | HCB | 0.1386 | 0.035 | 1989.2 | 0.071 | BB | 0.036 | 912.44 | 0.087 |
| 3 | 4.982 | alpha-BHC | 10.0701 | 2.530 | 99164.4 | 3.541 | BB | 0.035 | 46595.46 | 4.461 |
| 4 | 5.441 | gamma-BHC | 9.7968 | 2.461 | 93090.4 | 3.324 | BB | 0.035 | 44750.62 | 4.284 |
| 5 | 5.570 | beta-BHC | 9.6125 | 2.415 | 59305.5 | 2.117 | BB | 0.038 | 26199.91 | 2.508 |
| 6 | 5.673 | | 0.0000 | 0.000 | 269.5 | 0.010 | BB | 0.024 | 189.23 | 0.018 |
| 7 | 5.920 | | 0.0000 | 0.000 | 1055.8 | 0.038 | BB | 0.042 | 418.69 | 0.040 |
| 8 | 6.104 | Heptachlor | 0.0331 | 0.008 | 536.6 | 0.019 | BV | 0.052 | 170.97 | 0.016 |
| 9 | 6.323 | | 0.0000 | 0.000 | 8429.4 | 0.301 | VB | 0.285 | 493.55 | 0.047 |
| 10 | 7.001 | | 0.0000 | 0.000 | 119.8 | 0.004 | BB | 0.028 | 70.87 | 0.007 |
| 11 | 7.050 | | 0.0000 | 0.000 | 1025.7 | 0.037 | BV | 0.066 | 260.62 | 0.025 |
| 12 | 7.363 | o,p-DDE | 0.2042 | 0.051 | 5557.6 | 0.198 | VV | 0.166 | 559.07 | 0.054 |
| 13 | 7.500 | | 0.0000 | 0.000 | 2268.7 | 0.081 | VV | 0.056 | 669.73 | 0.064 |
| 14 | 7.549 | g. Chlordane | 0.1638 | 0.041 | 3856.4 | 0.138 | VV | 0.093 | 693.91 | 0.066 |
| 15 | 7.799 | 4,4'-DDE | 0.5872 | 0.148 | 5442.5 | 0.194 | VB | 0.045 | 2004.13 | 0.192 |
| 16 | 8.108 | | 0.0000 | 0.000 | 612.1 | 0.022 | BV | 0.065 | 156.32 | 0.015 |
| 17 | 8.227 | Dieldrin | 0.0273 | 0.007 | 360.1 | 0.013 | VB | 0.060 | 99.55 | 0.010 |
| 18 | 8.360 | o,p-DDT | 0.7260 | 0.182 | 4797.8 | 0.171 | BB | 0.040 | 1976.65 | 0.189 |
| 19 | 8.519 | Endrin | 46.6975 | 11.731 | 363456.2 | 12.977 | BV | 0.038 | 158740.20 | 15.197 |
| 20 | 8.690 | | 0.0000 | 0.000 | 10705.1 | 0.382 | VV | 0.105 | 1703.04 | 0.163 |
| 21 | 8.830 | Endosulfan II | 0.1803 | 0.045 | 3028.3 | 0.108 | VV | 0.081 | 623.59 | 0.060 |
| 22 | 8.944 | 4,4'-DDT | 89.3311 | 22.441 | 645425.1 | 23.044 | VV | 0.041 | 264634.80 | 25.335 |
| 23 | 9.216 | | 0.0000 | 0.000 | 1873.7 | 0.067 | VB | 0.072 | 433.20 | 0.041 |
| 24 | 9.362 | Endrin aldehyde | 1.4856 | 0.373 | 10576.2 | 0.378 | BV | 0.048 | 3692.44 | 0.354 |
| 25 | 9.555 | Methoxychlor | 188.1512 | 47.266 | 920228.2 | 32.856 | VB | 0.047 | 327498.30 | 31.354 |
| 26 | 10.096 | | 0.0000 | 0.000 | 1802.4 | 0.064 | BB | 0.036 | 835.58 | 0.080 |
| 27 | 10.293 | Endrin ketone | 1.3367 | 0.336 | 16405.0 | 0.586 | BV | 0.057 | 4779.11 | 0.458 |
| 28 | 10.469 | | 0.0000 | 0.000 | 10833.3 | 0.387 | VV | 0.133 | 1358.06 | 0.130 |
| 29 | 10.724 | | 0.0000 | 0.000 | 68004.3 | 2.428 | VB | 0.349 | 3246.93 | 0.311 |
| 30 | 11.132 | | 0.0000 | 0.000 | 19136.0 | 0.683 | BB | 0.202 | 1580.51 | 0.151 |
| 31 | 11.320 | | 0.0000 | 0.000 | 781.4 | 0.028 | BB | 0.041 | 315.26 | 0.030 |
| 32 | 11.599 | DCB | 19.9045 | 5.000 | 231012.2 | 8.248 | BB | 0.052 | 74359.99 | 7.119 |

Total Area = 2800832.0, Total Amount = 398.069, Total Height = 1044534.0, Sample Units = PPB

Sample Name: **EVALX03C ISPEMIS PEM 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 07:52:39pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.27R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.056 | | 0.0000 | 0.000 | 1405.7 | 0.090 | BB | 0.049 | 480.97 | 0.079 |
| 2 | 3.315 | | 0.0000 | 0.000 | 1892.3 | 0.121 | BB | 0.428 | 73.63 | 0.012 |
| 3 | 3.760 | | 0.0000 | 0.000 | 866.9 | 0.056 | BB | 0.048 | 300.97 | 0.049 |
| 4 | 4.195 | TCX | 18.9475 | 4.674 | 125536.7 | 8.053 | BB | 0.043 | 48191.21 | 7.911 |
| 5 | 4.732 | | 0.0000 | 0.000 | 2939.3 | 0.189 | BB | 0.087 | 561.52 | 0.092 |
| 6 | 5.085 | alpha-BHC | 7.8600 | 1.939 | 28449.7 | 1.825 | BB | 0.024 | 19416.25 | 3.187 |
| 7 | 5.598 | gamma-BHC | 9.7485 | 2.405 | 48588.3 | 3.117 | BV | 0.033 | 24681.04 | 4.051 |
| 8 | 5.723 | beta-BHC | 9.2506 | 2.282 | 41619.6 | 2.670 | VB | 0.047 | 14873.54 | 2.441 |
| 9 | 7.635 | | 0.0000 | 0.000 | 1807.6 | 0.116 | BV | 0.103 | 291.68 | 0.048 |
| 10 | 7.914 | a. Chlordane | 0.2375 | 0.059 | 7075.6 | 0.454 | VV | 0.184 | 642.45 | 0.105 |
| 11 | 8.101 | 4,4'-DDE | 0.6997 | 0.173 | 11059.4 | 0.709 | VB | 0.136 | 1355.56 | 0.223 |
| 12 | 8.709 | Endrin | 50.0113 | 12.336 | 206868.0 | 13.270 | BB | 0.034 | 101363.80 | 16.639 |
| 13 | 8.848 | 4,4'-DDD | 0.6286 | 0.155 | 2365.6 | 0.152 | BB | 0.050 | 783.20 | 0.129 |
| 14 | 8.951 | | 0.0000 | 0.000 | 302.4 | 0.019 | BB | 0.020 | 253.45 | 0.042 |
| 15 | 9.243 | 4,4'-DDT | 94.8643 | 23.401 | 390521.1 | 25.050 | BB | 0.042 | 153966.00 | 25.273 |
| 16 | 9.421 | Endrin aldehyde | 1.5875 | 0.392 | 6738.2 | 0.432 | BB | 0.043 | 2615.25 | 0.429 |
| 17 | 10.115 | Methoxychlor | 192.6156 | 47.513 | 535742.3 | 34.365 | BB | 0.047 | 191622.30 | 31.455 |
| 18 | 10.470 | Endrin ketone | 1.4624 | 0.361 | 9491.7 | 0.609 | BB | 0.045 | 3551.12 | 0.583 |
| 19 | 11.780 | | 0.0000 | 0.000 | 6303.1 | 0.404 | BB | 0.367 | 286.24 | 0.047 |
| 20 | 12.210 | DCB | 17.4805 | 4.312 | 129383.5 | 8.299 | BB | 0.049 | 43891.04 | 7.205 |

Total Area = 1558957.0, Total Amount = 405.394, Total Height = 609201.2, Sample Units = PPB

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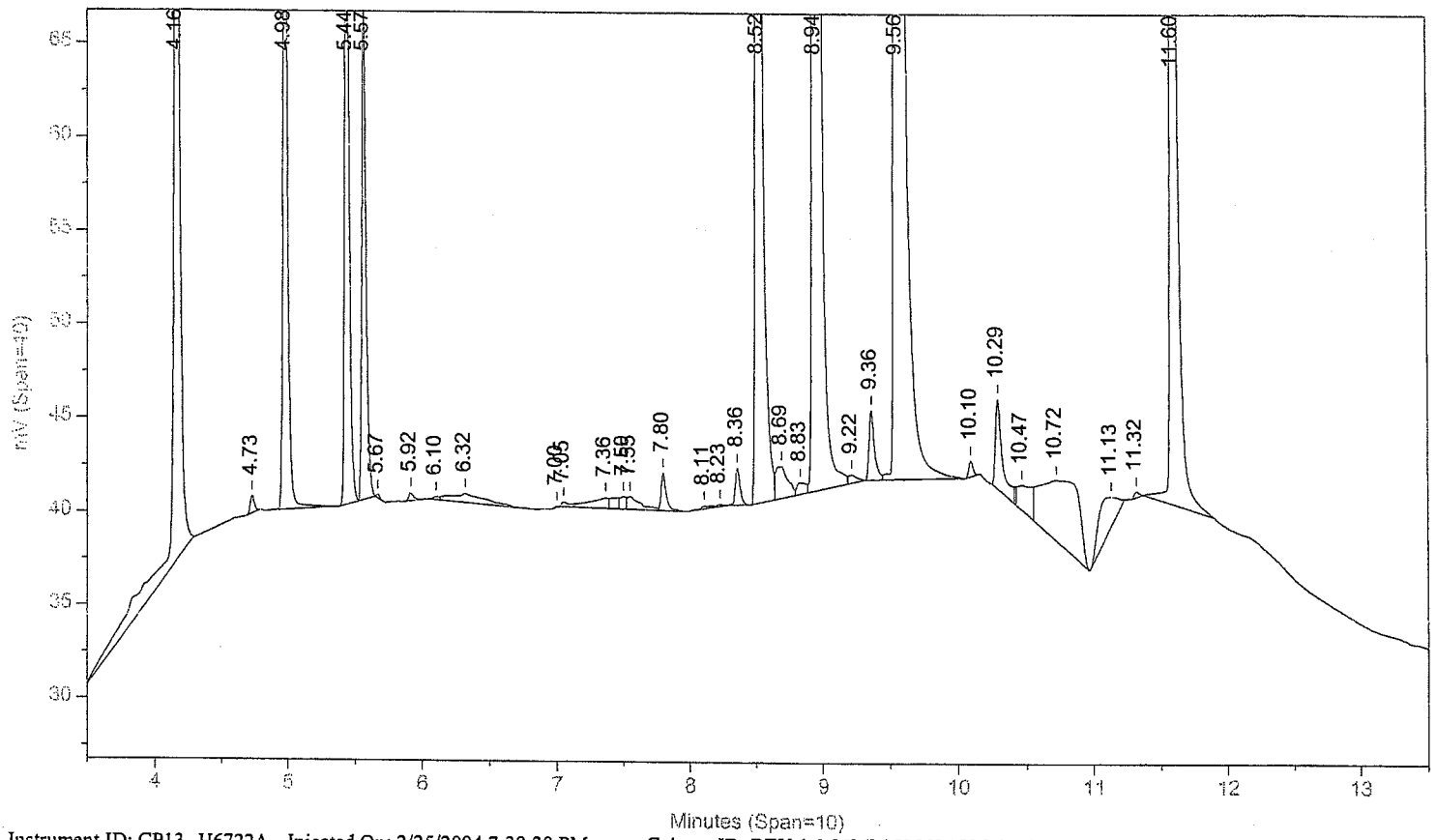
File: C:\CPWIN\DATA1\2C13051.27R

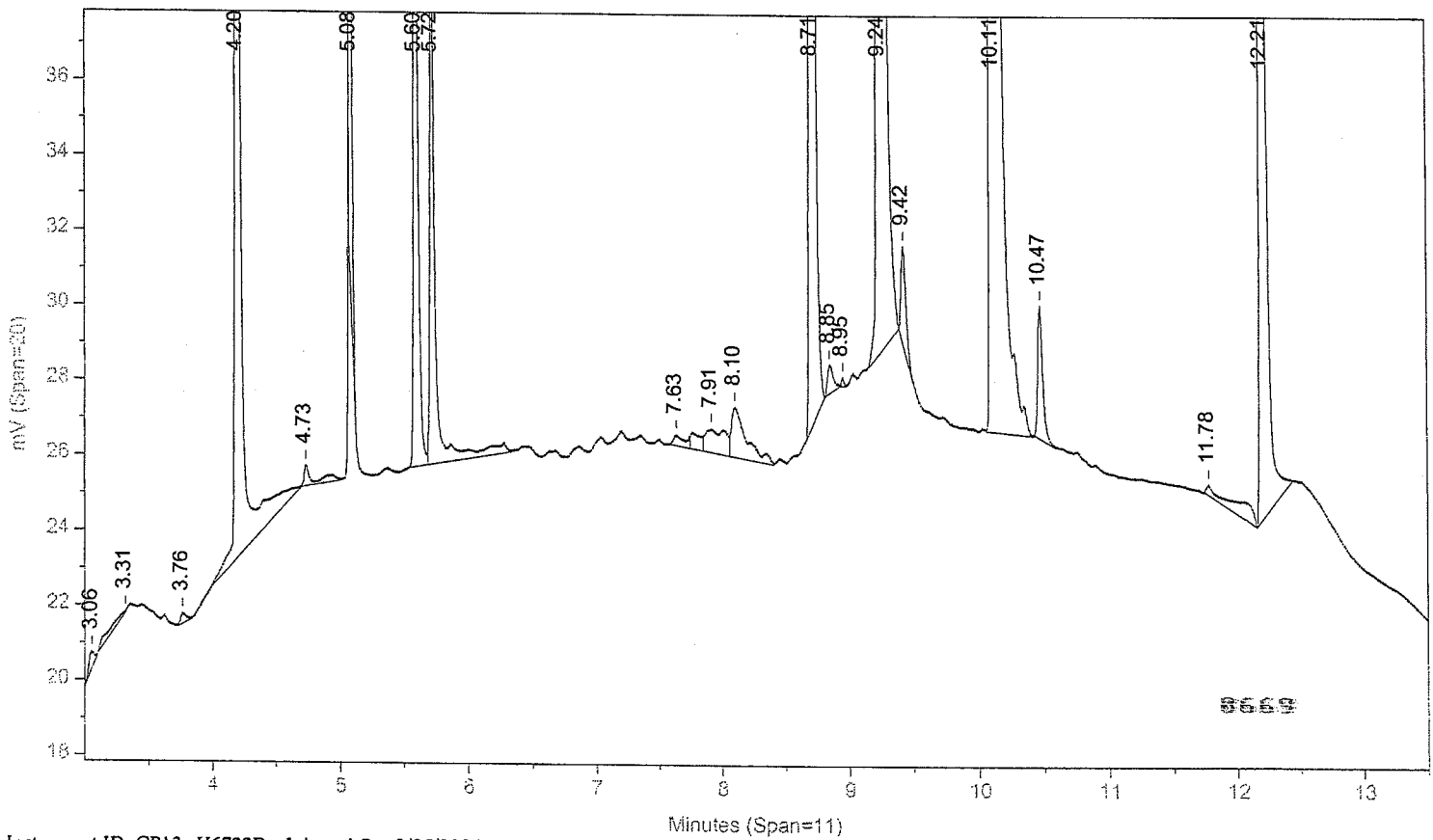



Instrument ID: CP13--H6722A Injected On: 2/25/2004 7:38:39 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.7516283

%ENDRIN BD= 5.06636

File: C:\CPWIN\DATA1\2C13051B.27R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 7:38:39 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 1.370081

%ENDRIN BD= 5.734553

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 74511 | 19.622 | TCX | 4.195 | 48191 | 18.947 | TCX |
| 4.732 | 912 | .139 | HCB | . | 0 | . | HCB |
| 4.982 | 46595 | 10.07 | alpha-BHC | 5.085 | 19416 | 7.86 | alpha-BHC |
| 5.441 | 44751 | 9.797 | gamma-BHC | 5.598 | 24681 | 9.748 | gamma-BHC |
| 5.57 | 26200 | 9.613 | beta-BHC | 5.723 | 14874 | 9.251 | beta-BHC |
| 6.104 | 171 | .033 | Heptachlor | . | 0 | . | Heptachlor |
| 7.363 | 559 | .204 | o,p-DDE | . | 0 | . | o,p-DDE |
| 7.549 | 694 | .164 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.799 | 2004 | .587 | 4,4'-DDE | 8.101 | 1356 | .7 | 4,4'-DDE |
| . | 0 | . | a. Chlordane | 7.914 | 642 | .238 | a. Chlordane |
| 8.227 | 100 | .027 | Dieldrin | . | 0 | . | Dieldrin |
| 8.36 | 1977 | .726 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 158740 | 46.698 | Endrin | 8.709 | 101364 | 50.011 | Endrin |
| 8.83 | 624 | .18 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.848 | 783 | .629 | 4,4'-DDD |
| 8.944 | 264635 | 89.331 | 4,4'-DDT | 9.243 | 153966 | 94.864 | 4,4'-DDT |
| 9.362 | 3692 | 1.486 | Endrin aldehyde | 9.421 | 2615 | 1.587 | Endrin aldehyde |
| 9.555 | 327498 | 188.151 | Methoxychlor | 10.115 | 191622 | 192.616 | Methoxychlor |
| 10.293 | 4779 | 1.337 | Endrin ketone | 10.47 | 3551 | 1.462 | Endrin ketone |
| 11.599 | 74360 | 19.905 | DCB | 12.21 | 43891 | 17.48 | DCB |

Files:
Area File: C:\CPWIN\DATA1\2C13051.27A
Area File: C:\CPWIN\DATA1\2C13051B.27A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 2/25/2004 7:52:44 PM
File Reported On: 2/25/2004 at 7:52:51 PM

Sample Name: **MIXA303D LNMIXA3LN CCAL 045599999**
Acquired from CP13--H6722A via port 3 on 2/25/04 08:12:59pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.28R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.835 | | 0.0000 | 0.000 | 3324.3 | 0.096 | BB | 0.039 | 1438.41 | 0.105 |
| 2 | 4.160 | TCX | 38.2809 | 7.579 | 352201.8 | 10.193 | BB | 0.040 | 145365.10 | 10.620 |
| 3 | 4.614 | | 0.0000 | 0.000 | 1204.8 | 0.035 | BB | 0.083 | 241.59 | 0.018 |
| 4 | 4.733 | HCB | 0.2829 | 0.056 | 3928.0 | 0.114 | BB | 0.035 | 1862.27 | 0.136 |
| 5 | 4.983 | alpha-BHC | 10.1179 | 2.003 | 98387.5 | 2.847 | BB | 0.035 | 46816.62 | 3.420 |
| 6 | 5.442 | gamma-BHC | 10.0560 | 1.991 | 95423.4 | 2.762 | BB | 0.035 | 45934.56 | 3.356 |
| 7 | 5.570 | beta-BHC | 9.6992 | 1.920 | 59615.4 | 1.725 | BB | 0.038 | 26436.13 | 1.931 |
| 8 | 5.674 | | 0.0000 | 0.000 | 606.3 | 0.018 | BB | 0.028 | 364.18 | 0.027 |
| 9 | 5.823 | delta-BHC | 9.6671 | 1.914 | 87331.7 | 2.527 | BB | 0.035 | 41145.19 | 3.006 |
| 10 | 6.034 | | 0.0000 | 0.000 | 423.5 | 0.012 | BV | 0.044 | 160.97 | 0.012 |
| 11 | 6.119 | Heptachlor | 9.9203 | 1.964 | 114923.8 | 3.326 | VV | 0.037 | 51249.01 | 3.744 |
| 12 | 6.358 | | 0.0000 | 0.000 | 4668.7 | 0.135 | VV | 0.109 | 716.33 | 0.052 |
| 13 | 6.539 | Aldrin | 10.0203 | 1.984 | 88685.7 | 2.567 | VB | 0.037 | 39951.26 | 2.919 |
| 14 | 6.920 | | 0.0000 | 0.000 | 10447.5 | 0.302 | BB | 0.053 | 3260.86 | 0.238 |
| 15 | 7.124 | | 0.0000 | 0.000 | 287.8 | 0.008 | BV | 0.062 | 77.27 | 0.006 |
| 16 | 7.368 | o,p-DDE | 15.8288 | 3.134 | 101768.2 | 2.945 | VV | 0.039 | 43336.34 | 3.166 |
| 17 | 7.533 | g. Chlordane | 9.8533 | 1.951 | 98539.0 | 2.852 | VB | 0.039 | 41729.80 | 3.049 |
| 18 | 7.709 | a. Chlordane | 9.7293 | 1.926 | 93295.1 | 2.700 | BV | 0.037 | 41467.58 | 3.029 |
| 19 | 7.799 | 4,4'-DDE | 18.0347 | 3.571 | 140674.7 | 4.071 | VV | 0.038 | 61555.94 | 4.497 |
| 20 | 7.897 | Endosulfan I | 10.1539 | 2.010 | 93110.3 | 2.695 | VB | 0.040 | 38902.02 | 2.842 |
| 21 | 8.212 | Dieldrin | 19.8704 | 3.934 | 161418.1 | 4.672 | BB | 0.037 | 72399.57 | 5.289 |
| 22 | 8.520 | Endrin | 18.8767 | 3.737 | 138927.8 | 4.021 | BV | 0.036 | 64167.93 | 4.688 |
| 23 | 8.583 | Kepone | 100.5111 | 19.901 | 129639.2 | 3.752 | VV | 0.050 | 42793.55 | 3.126 |
| 24 | 8.815 | Endosulfan II | 19.1359 | 3.789 | 164362.9 | 4.757 | VV | 0.041 | 66172.61 | 4.834 |
| 25 | 8.945 | 4,4'-DDT | 17.0494 | 3.376 | 135373.2 | 3.918 | VV | 0.045 | 50507.16 | 3.690 |
| 26 | 9.218 | | 0.0000 | 0.000 | 5143.9 | 0.149 | VB | 0.047 | 1814.62 | 0.133 |
| 27 | 9.360 | Endrin aldehyde | 18.9427 | 3.751 | 127224.4 | 3.682 | BV | 0.045 | 47082.57 | 3.440 |
| 28 | 9.558 | Methoxychlor | 76.2809 | 15.103 | 408162.5 | 11.812 | VB | 0.051 | 132775.40 | 9.700 |
| 29 | 9.925 | Endo. sulfate | 18.1549 | 3.595 | 141359.5 | 4.091 | BV | 0.042 | 55862.60 | 4.081 |
| 30 | 10.097 | | 0.0000 | 0.000 | 5880.6 | 0.170 | VB | 0.070 | 1394.55 | 0.102 |
| 31 | 10.292 | Endrin ketone | 19.2923 | 3.820 | 171946.8 | 4.976 | BB | 0.042 | 68973.90 | 5.039 |
| 32 | 10.584 | | 0.0000 | 0.000 | 146.1 | 0.004 | BB | 0.045 | 53.82 | 0.004 |
| 33 | 10.699 | | 0.0000 | 0.000 | 8533.8 | 0.247 | BB | 0.315 | 452.01 | 0.033 |
| 34 | 11.321 | | 0.0000 | 0.000 | 1253.3 | 0.036 | BB | 0.046 | 450.34 | 0.033 |
| 35 | 11.600 | DCB | 35.3061 | 6.990 | 407156.0 | 11.783 | BB | 0.051 | 131897.90 | 9.636 |

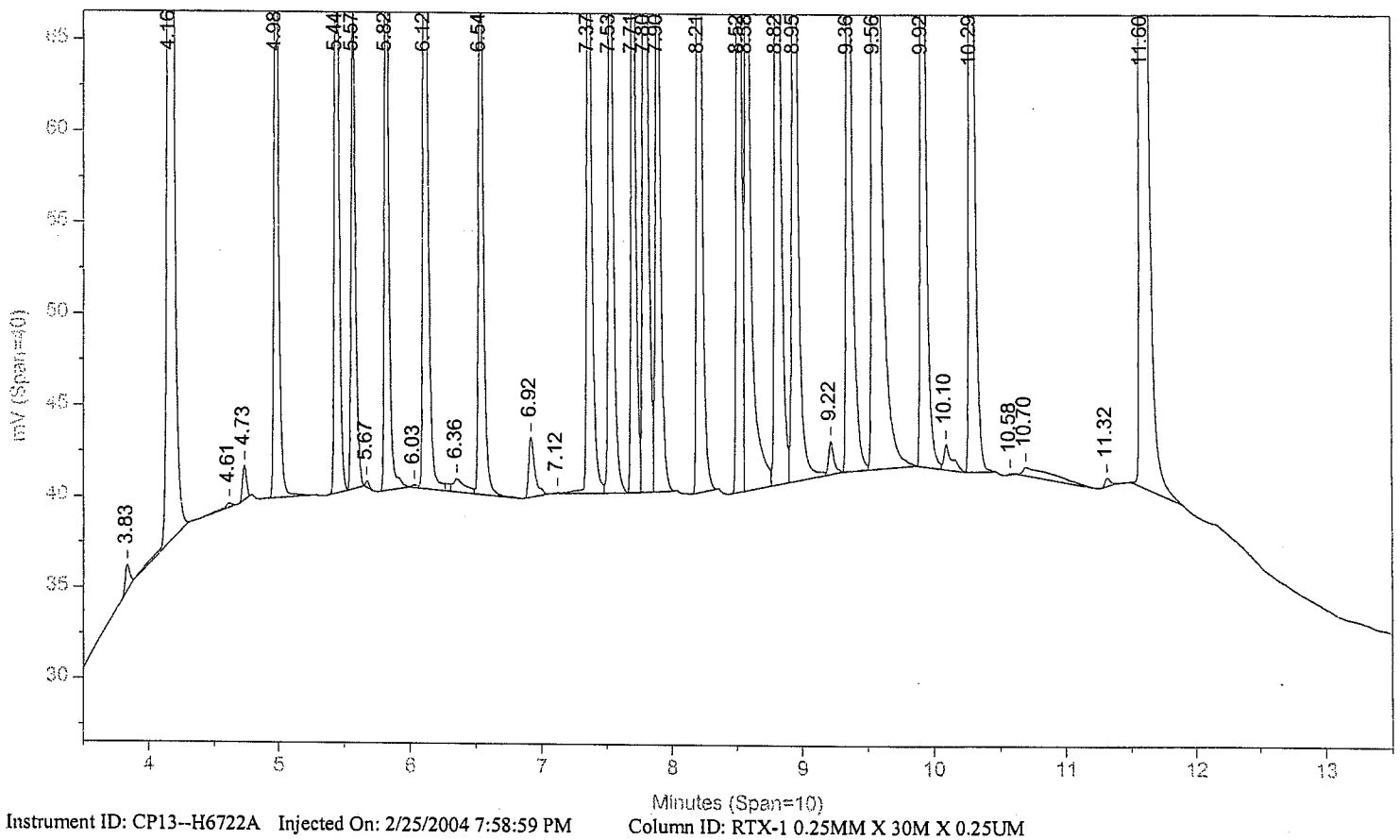
Total Area = 3455376.0, Total Amount = 505.065, Total Height = 1368810.0, Sample Units = PPB

Sample Name: **MIXA303D LNMIXA3LN CCAL 045599999**
Acquired from CP13--H6722B via port 4 on 2/25/04 08:12:59pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.28R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.050 | | 0.0000 | 0.000 | 1506.1 | 0.077 | BB | 0.042 | 591.28 | 0.075 |
| 2 | 3.225 | | 0.0000 | 0.000 | 1704.4 | 0.087 | BB | 0.360 | 78.91 | 0.010 |
| 3 | 3.389 | | 0.0000 | 0.000 | 3661.1 | 0.187 | BB | 0.203 | 300.60 | 0.038 |
| 4 | 3.764 | | 0.0000 | 0.000 | 880.9 | 0.045 | BB | 0.046 | 316.12 | 0.040 |
| 5 | 3.927 | | 0.0000 | 0.000 | 1138.1 | 0.058 | BB | 0.035 | 536.19 | 0.068 |
| 6 | 4.195 | TCX | 38.7116 | 10.001 | 216488.1 | 11.040 | BB | 0.037 | 98459.57 | 12.514 |
| 7 | 4.736 | | 0.0000 | 0.000 | 4680.7 | 0.239 | BB | 0.069 | 1126.90 | 0.143 |
| 8 | 5.085 | alpha-BHC | 8.0761 | 2.086 | 29340.3 | 1.496 | BB | 0.025 | 19950.15 | 2.536 |
| 9 | 5.598 | gamma-BHC | 9.9683 | 2.575 | 49681.4 | 2.533 | BV | 0.033 | 25237.52 | 3.208 |
| 10 | 5.723 | beta-BHC | 9.3705 | 2.421 | 37722.0 | 1.924 | VB | 0.042 | 15066.24 | 1.915 |
| 11 | 6.134 | delta-BHC | 8.8485 | 2.286 | 39172.0 | 1.998 | BV | 0.034 | 19371.85 | 2.462 |
| 12 | 6.214 | Heptachlor | 10.6658 | 2.755 | 63843.1 | 3.256 | VB | 0.035 | 30425.82 | 3.867 |
| 13 | 6.660 | Aldrin | 10.3680 | 2.678 | 46870.6 | 2.390 | BB | 0.033 | 23996.02 | 3.050 |
| 14 | 6.754 | | 0.0000 | 0.000 | 3418.2 | 0.174 | BB | 0.061 | 935.50 | 0.119 |
| 15 | 7.200 | | 0.0000 | 0.000 | 936.5 | 0.048 | BV | 0.058 | 269.38 | 0.034 |
| 16 | 7.432 | Hept. epoxide | 10.1642 | 2.626 | 56268.5 | 2.869 | VV | 0.036 | 26214.43 | 3.332 |
| 17 | 7.682 | g. Chlordane | 9.8957 | 2.556 | 59634.6 | 3.041 | VV | 0.038 | 25871.76 | 3.288 |
| 18 | 7.873 | a. Chlordane | 9.7583 | 2.521 | 57272.8 | 2.921 | VV | 0.036 | 26396.39 | 3.355 |
| 19 | 7.952 | Endosulfan I | 9.5534 | 2.468 | 55539.7 | 2.832 | VV | 0.039 | 23472.49 | 2.983 |
| 20 | 8.090 | 4,4'-DDE | 12.9520 | 3.346 | 86778.0 | 4.425 | VV | 0.058 | 25094.04 | 3.189 |
| 21 | 8.310 | Dieldrin | 19.8325 | 5.123 | 99230.8 | 5.060 | VB | 0.036 | 46375.30 | 5.894 |
| 22 | 8.650 | | 0.0000 | 0.000 | 287.7 | 0.015 | BB | 0.052 | 91.47 | 0.012 |
| 23 | 8.709 | Endrin | 18.6016 | 4.805 | 78530.7 | 4.005 | BB | 0.035 | 37701.99 | 4.792 |
| 24 | 8.846 | 4,4'-DDD | 10.5376 | 2.722 | 45906.9 | 2.341 | BB | 0.058 | 13128.50 | 1.669 |
| 25 | 8.986 | Endosulfan II | 18.0191 | 4.655 | 89317.7 | 4.555 | BB | 0.039 | 38047.16 | 4.836 |
| 26 | 9.246 | 4,4'-DDT | 14.6764 | 3.791 | 69855.1 | 3.562 | BB | 0.049 | 23820.04 | 3.028 |
| 27 | 9.419 | Endrin aldehyde | 17.5553 | 4.535 | 73919.8 | 3.769 | BB | 0.043 | 28921.20 | 3.676 |
| 28 | 9.550 | | 0.0000 | 0.000 | 310.5 | 0.016 | BB | 0.031 | 165.66 | 0.021 |
| 29 | 9.573 | | 0.0000 | 0.000 | 922.5 | 0.047 | BB | 0.028 | 558.69 | 0.071 |
| 30 | 9.770 | Endo. sulfate | 17.4293 | 4.503 | 83873.2 | 4.277 | BB | 0.043 | 32543.23 | 4.136 |
| 31 | 10.119 | Methoxychlor | 68.7618 | 17.763 | 221107.6 | 11.275 | BB | 0.054 | 68407.23 | 8.695 |
| 32 | 10.344 | | 0.0000 | 0.000 | 1135.6 | 0.058 | BB | 0.037 | 514.81 | 0.065 |
| 33 | 10.469 | Endrin ketone | 18.1346 | 4.685 | 109827.7 | 5.601 | BB | 0.042 | 44037.41 | 5.597 |
| 34 | 11.780 | | 0.0000 | 0.000 | 998.3 | 0.051 | BB | 0.051 | 328.42 | 0.042 |
| 35 | 12.210 | DCB | 35.2160 | 9.097 | 269242.4 | 13.730 | BB | 0.051 | 88422.36 | 11.239 |

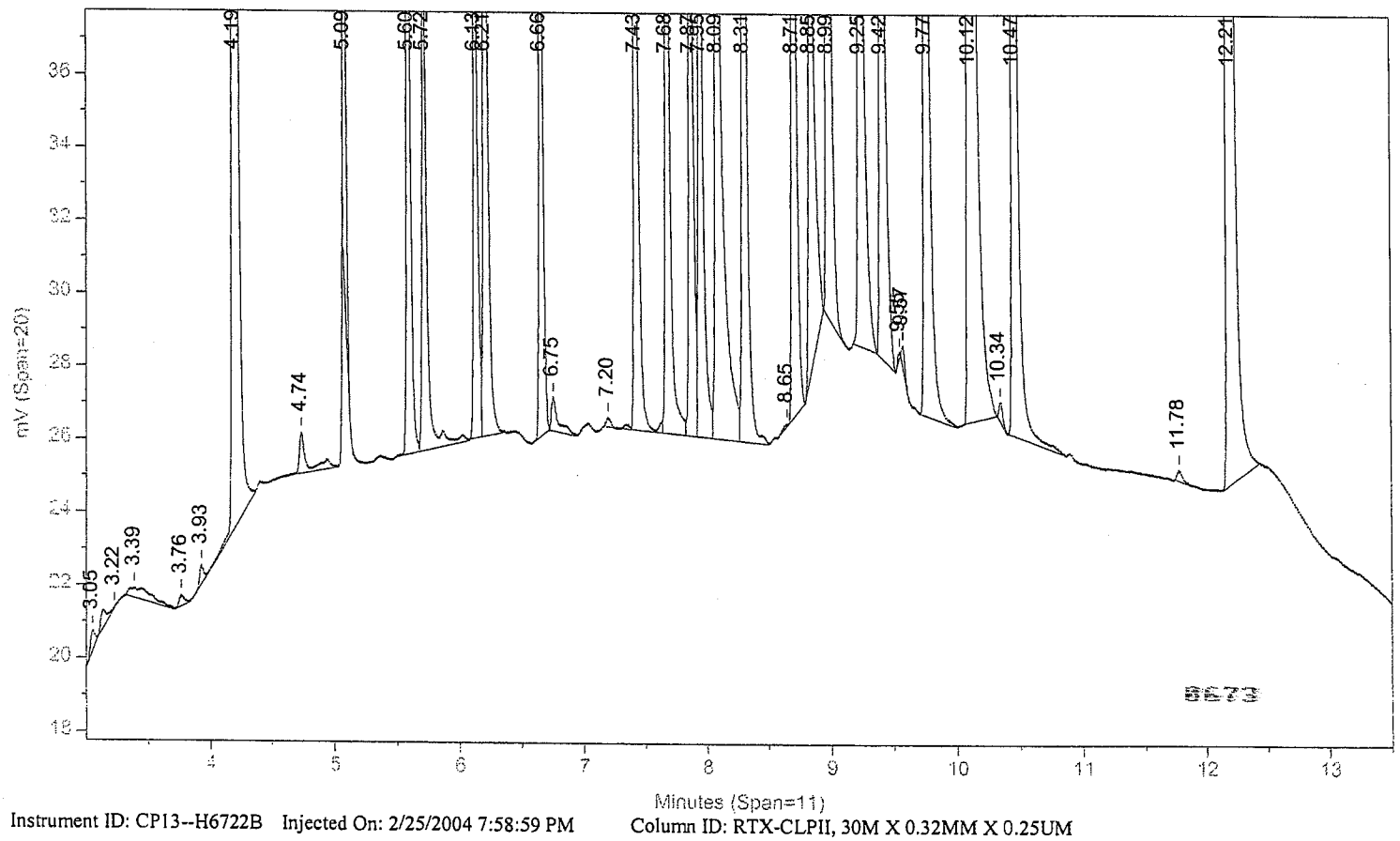
Total Area = 1961004.0, Total Amount = 387.097, Total Height = 786774.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.28R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 7:58:59 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.28R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 7:58:59 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.16 | 145365 | 38.28093 | TCX | 4.195 | 98460 | 38.71164 | TCX |
| 4.733 | 1862 | .28289 | HCB | . | 0 | . | HCB |
| 4.983 | 46817 | 10.11789 | alpha-BHC | 5.085 | 19950 | 8.07614 | alpha-BHC |
| 5.442 | 45935 | 10.05596 | gamma-BHC | 5.598 | 25238 | 9.96829 | gamma-BHC |
| 5.57 | 26436 | 9.69921 | beta-BHC | 5.723 | 15066 | 9.37049 | beta-BHC |
| 5.823 | 41145 | 9.66711 | delta-BHC | 6.134 | 19372 | 8.84847 | delta-BHC |
| 6.119 | 51249 | 9.92033 | Heptachlor | 6.214 | 30426 | 10.66581 | Heptachlor |
| 6.539 | 39951 | 10.02029 | Aldrin | 6.66 | 23996 | 10.368 | Aldrin |
| 7.368 | 43336 | 15.82875 | o,p-DDE / hept epox | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.432 | 26214 | 10.16422 | Hept. epoxide |
| 7.533 | 41730 | 9.85329 | g. Chlordane | 7.682 | 25872 | 9.89574 | g. Chlordane |
| 7.709 | 41468 | 9.72933 | a. Chlordane | 7.873 | 26396 | 9.7583 | a. Chlordane |
| 7.799 | 61556 | 18.03468 | 4,4'-DDE | 8.09 | 25094 | 12.95205 | 4,4'-DDE |
| 7.897 | 38902 | 10.15395 | Endosulfan I | 7.952 | 23472 | 9.55338 | Endosulfan I |
| 8.212 | 72400 | 19.8704 | Dieldrin | 8.31 | 46375 | 19.8325 | Dieldrin |
| 8.52 | 64168 | 18.87666 | Endrin | 8.709 | 37702 | 18.60155 | Endrin |
| 8.583 | 42794 | 100.5112 | Kepone / DDD | . | 0 | . | Kepone |
| 8.815 | 66173 | 19.13593 | Endosulfan II | 8.986 | 38047 | 18.01913 | Endosulfan II |
| . | 0 | . | 4,4'-DDD | 8.846 | 13129 | 10.53758 | 4,4'-DDD |
| 8.945 | 50507 | 17.04937 | 4,4'-DDT | 9.246 | 23820 | 14.67642 | 4,4'-DDT |
| 9.36 | 47083 | 18.94273 | Endrin aldehyde | 9.419 | 28921 | 17.55534 | Endrin aldehyde |
| 9.558 | 132775 | 76.28088 | Methoxychlor | 10.119 | 68407 | 68.76183 | Methoxychlor |
| 9.925 | 55863 | 18.15494 | Endo. sulfate | 9.77 | 32543 | 17.42931 | Endo. sulfate |
| 10.292 | 68974 | 19.29234 | Endrin ketone | 10.469 | 44037 | 18.13458 | Endrin ketone |
| 11.6 | 131898 | 35.30612 | DCB | 12.21 | 88422 | 35.216 | DCB |

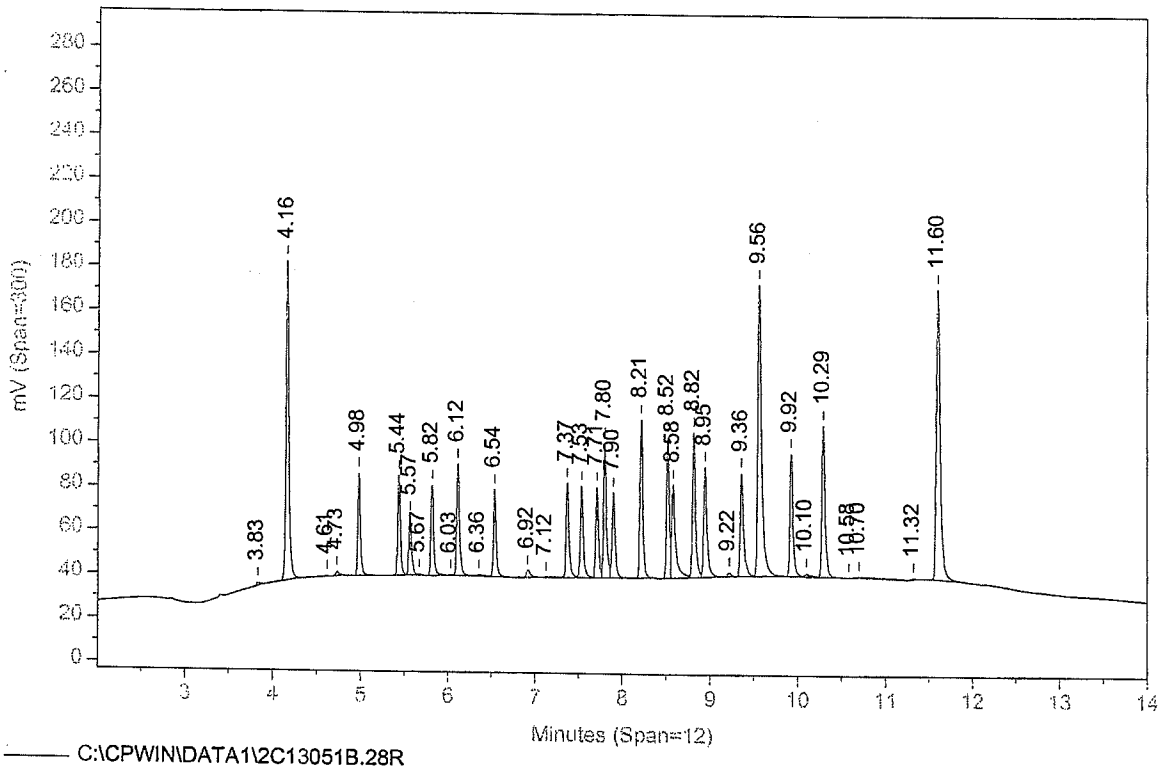
agc 11 S1 2.26-04

Files:
Area File: C:\CPWIN\DATA1\2C13051.28A
Area File: C:\CPWIN\DATA1\2C13051B.28A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 8:13:04 PM
File Reported On: 2/25/2004 at 8:13:12 PM

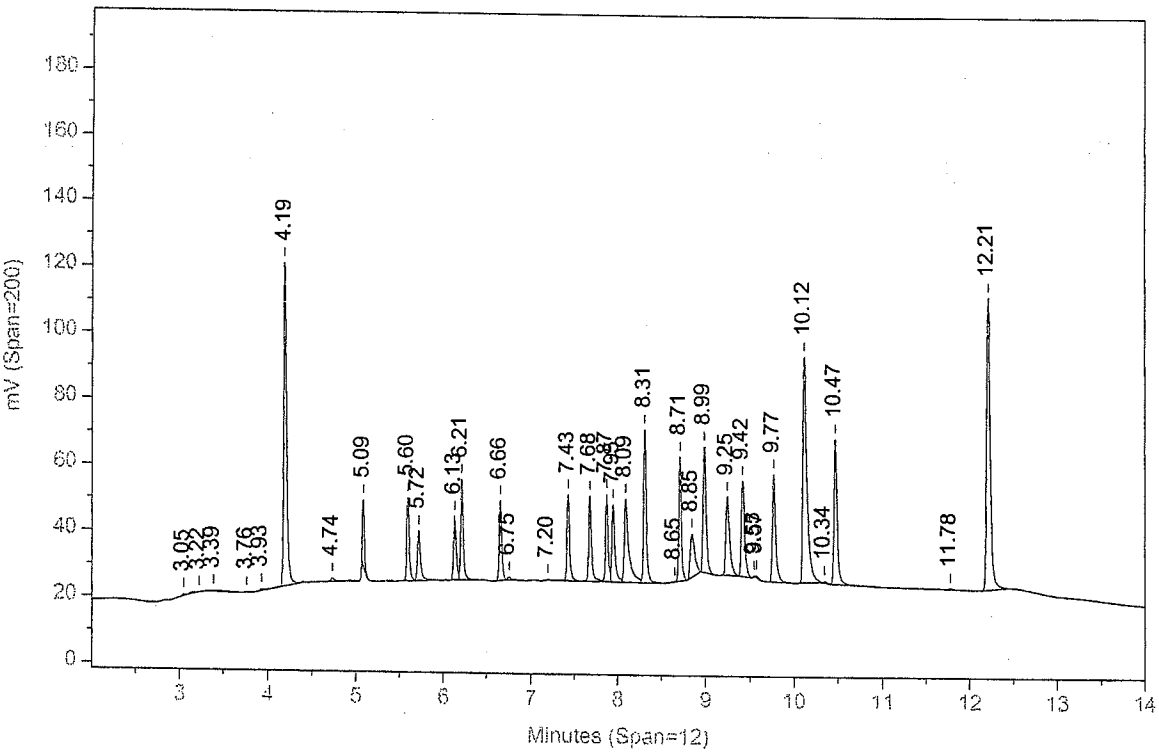
8674

10X REPLOTS

C:\CPWIN\DATA1\2C13051.28R




C:\CPWIN\DATA1\2C13051B.28R



# Raw QC Data

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 70.7% Conc.: 1.019935
%SSR(DCB) : 94% Conc.: 1.373149

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.14 | 4.16 | 4.20 | 77460 | 1.019935 |
| HCB | 4.71 | 4.75 | 4.77 | 1864 | 0.014155 |
| alpha-BHC | 4.97 | 5.02 | 5.03 | 1942 | 0.020986 |
| delta-BHC | 5.81 | 5.81 | 5.87 | 11296 | 0.132698 |
| Heptachlor | 6.10 | 6.12 | 6.16 | 1362 | 0.013184 |
| Hept. epoxide | 7.35 | 7.40 | 7.41 | 1472 | 0.016655 |
| g. Chlordane | 7.52 | 7.57 | 7.58 | 2253 | 0.026600 |
| a. Chlordane | 7.70 | 7.72 | 7.76 | 942 | 0.011047 |
| 4,4'-DDE | 7.78 | 7.81 | 7.84 | 384 | 0.005625 |
| Endosulfan I | 7.88 | 7.90 | 7.94 | 130 | 0.001692 |
| o,p-DDT | 8.35 | 8.39 | 8.41 | 122 | 0.002232 |
| 4,4'-DDD | 8.57 | 8.60 | 8.63 | 492 | 0.009248 |
| Endosulfan II | 8.80 | 8.85 | 8.86 | 1189 | 0.017195 |
| Methoxychlor | 9.54 | 9.55 | 9.60 | 1301 | 0.037381 |
| Mirex | 9.78 | 9.81 | 9.84 | 106 | 0.001680 |
| Endo. sulfate | 9.91 | 9.92 | 9.97 | 102 | 0.001653 |
| DCB | 11.59 | 11.60 | 11.65 | 102597 | 1.373149 |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 68.8% Conc.: 0.993488
%SSR(DCB) : 85.4% Conc.: 1.248342

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.18 | 4.20 | 4.24 | 50537 | 0.993488 |
| HCB | 4.87 | 4.91 | 4.93 | 12619 | 0.162974 |
| g. Chlordane | 7.67 | 7.68 | 7.73 | 1669 | 0.031922 |
| Endrin aldehyde | 9.40 | 9.42 | 9.46 | 761 | 0.023089 |
| DCB | 12.20 | 12.21 | 12.26 | 62688 | 1.248342 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 1.019935 | | | | 2.63 | |
| HCB | B | 0.162974 | | | | ** 168.03 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | | | <0.05 | <0.01 | | | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | | | <0.05 | <0.01 | | | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | | | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.031922 | | | | 18.19 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | | | | | | | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <0.1 | <0.02 | | | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | | | | | |
| Endosulfan II | | | | | | | 8677 |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:08:59

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <0.5 | <0.1 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | | | | | | | |
| DCB | A | 1.373149 | | | | 9.52 | |

Units: ug/l

Reviewed by: Andrea Covey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

5678

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:08:59

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: BLANKA** 2/25/04F PBLKXG BLK Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 0120 SDG: State:
**Analyses:** 00950

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 16:35:19 |
| **Instrument** | H6722A |
| **Result file** | 2C13051.18R |
| **Calibration file** | 2C13051 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 70.7% | Conc: | 1.019935 |
| %SSR(DCB) | 94.0% | Conc: | 1.373149 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Feb 25, 2004 16:35:19 |
| **Instrument** | H6722B |
| **Result file** | 2C13051B.18R |
| **Calibration file** | 2C13051B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 68.8% | Conc: | 0.993488 |
| %SSR(DCB) | 85.4% | Conc: | 1.248342 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Chlordane (Technical) | | | <2.5 | <0.35 | | | 2 | 20 | |
| Toxaphene | | | <5 | <1.5 | | | 4 | 30 | |

Units: ug/l

%Difference = High - Low divided by the Average times 100

Reviewed By: Andrea Carey Date: 2-26-04

Verified By: [signature] Date: 2/26/04

8679

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 70.7% Conc.: 1.019935
%SSR(DCB) : 94% Conc.: 1.373149

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 28.81 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 0.880212 | | | 3 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 0.949164 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.527267 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **0.785548** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.61 | 4.61 | 4.67 | 1256.110352 | 2.291754 | | | 2 |
| Height Summation | | | **1256.110352** | | | | |
| Amount Avg CF: | | | **2.291754** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 26.52 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 1.86848 | | | 3 |
| 6.09 | 6.12 | 6.15 | 1362.157349 | 2.046203 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 1.190977 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **1.701887** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 30.56 | |
| 5.47 | 5.50 | 5.53 | 709.275085 | 1.026447 | | | 3 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 1.109791 | | | 5 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.592229 | | | 6 |
| Height Summation | | | **3207.505310** | | | | |
| Amount Avg CF: | | | **0.909489** | Linear: | | | |
| **Aroclor-1248** | | | | | 3 | 155.86 | |
| 6.29 | 6.33 | 6.35 | 16355.58593 | 6.792469 | | | 3 |
| 6.56 | 6.59 | 6.62 | 1136.072876 | 0.395046 | | | 4 |
| 7.16 | 7.17 | 7.22 | 270.217102 | 0.094703 | | | 5 |
| Height Summation | | | **17761.875916** | | | | |
| Amount Avg CF: | | | **2.427406** | Linear: | | | |
| **Aroclor-1254** | | | | | 2 | 29.52 | |
| 6.26 | 6.27 | 6.32 | 620.272644 | 0.343193 | | | 1 |
| 8.54 | 8.60 | 8.60 | 491.692535 | 0.224657 | | | 5 |
| Height Summation | | | **1111.965179** | | | | |
| Amount Avg CF: | | | **0.283925** | Linear: | | | |
| **Aroclor-1260** | | | | | 1 | | |
| 8.17 | 8.18 | 8.23 | 311.961487 | 0.087268 | | | 2 |
| Height Summation | | | **311.961487** | | | | |
| Amount Avg CF: | | | **0.087268** | Linear: | | | |
| **Chlordane** | | | | | 6 | 45.58 | |
| 5.99 | 5.99 | 6.05 | 388.17038 | 0.120501 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1362.157349 | 0.317789 | | | 2 |
| 6.71 | 6.74 | 6.77 | 660.929138 | 0.151622 | | | 3 |
| 7.52 | 7.57 | 7.58 | 2253.067139 | 0.263861 | | | 4 |
| 7.69 | 7.72 | 7.75 | 941.689392 | 0.089341 | | | 5 |
| 8.70 | 8.73 | 8.76 | 658.78241 | 0.219981 | | | 6 |
| Height Summation | | | **6264.795808** | | | | |
| Amount Avg CF: | | | **0.193849** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 68.8% Conc.: 0.993488
%SSR(DCB) : 85.4% Conc.: 1.248342

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 2 | 126.31 | |
| 4.88 | 4.91 | 4.94 | 12618.79882 | 12.000577 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.186474 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 0.67743 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.339004** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 4.87 | 4.91 | 4.93 | 12618.79882 | 8.750294 | | | 3 |
| Height Summation | | | **12618.798828** | | | | |
| Amount Avg CF: | | | **8.750294** | Linear: | | | |
| **Aroclor-1232** | | | | | 2 | 106.45 | |
| E 4.87 | 4.91 | 4.93 | 12618.79882 | 11.17796 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.434079 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 1.576938 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.377449** | Linear: | | | |
| **Aroclor-1242** | | | | | 2 | 125.11 | |
| E 4.87 | 4.91 | 4.93 | 12618.79882 | 13.174774 | | | 1 |
| + 6.06 | 6.07 | 6.12 | 527.145142 | 0.2219 | | | 3 |
| 6.06 | 6.11 | 6.12 | 1915.033813 | 0.806126 | | | 3 |
| Height Summation | | | **14533.832641** | | | | |
| Amount Avg CF: | | | **6.99045** | Linear: | | | |
| **Chlordane** | | | | | 1 | | |
| 7.67 | 7.68 | 7.73 | 1669.145996 | 0.279705 | | | 4 |
| Height Summation | | | **1669.145996** | | | | |
| Amount Avg CF: | | | **0.279705** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.40 | 9.42 | 9.46 | 760.750305 | 1.06847 | | | 3 |
| Height Summation | | | **760.750305** | | | | |
| Amount Avg CF: | | | **1.06847** | Linear: | | | |

8888

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:09:08

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: BLANKA** 2/25/04F PBLKXG Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722A
Result file : 2C13051.18R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | **4** | **64.37** | |
| 8.56 | 8.60 | 8.62 | 491.692535 | 0.406774 | | | 1 |
| 8.94 | 8.99 | 9.00 | 629.357544 | 0.567966 | | | 2 |
| 9.22 | 9.26 | 9.28 | 966.760986 | 0.831122 | | | 3 |
| 9.78 | 9.81 | 9.84 | 105.51207 | 0.098635 | | | 5 |
| Height Summation | | | **2193.323135** | | | | |
| Amount Avg CF: | | | **0.476124** | Linear: | | | |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:35:19
Instrument : CP13--H6722B
Result file : 2C13051B.18R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 0 | 0 | | ** 155.90 | 4 | 40 | |
| Aroclor-1221 | | | 0 | 0 | | ** 116.98 | 3 | 5 | |
| Aroclor-1232 | | | 0 | 0 | | ** 115.74 | 4 | 10 | |
| Aroclor-1242 | | | 0 | 0 | | ** 153.95 | 4 | 30 | |
| Aroclor-1248 | | | 0 | 0 | | | 4 | 30 | |
| Aroclor-1254 | | | 0 | 0 | | | 4 | 40 | |
| Aroclor-1260 | | | 0 | 0 | | | 4 | 40 | |
| Chlordane | | | 2.5 | 0.35 | | 36.26 | 2 | 20 | |
| Toxaphene | | | 5 | 1.5 | | ** 76.70 | 4 | 30 | |

Units: ug/l

8681

Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 2/26/04 09:09:08

Sample Name: **BLANKA 2/25/04F ABPBLKXG BLK 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 04:49:19pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.18R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.851 | | 0.0000 | 0.000 | 14920.1 | 1.644 | BB | 0.048 | 5135.85 | 1.739 |
| 2 | 3.919 | | 0.0000 | 0.000 | 2054.0 | 0.226 | BB | 0.027 | 1264.22 | 0.428 |
| 3 | 4.001 | | 0.0000 | 0.000 | 1858.6 | 0.205 | BB | 0.035 | 877.46 | 0.297 |
| 4 | 4.163 | TCX | 203.9870 | 37.704 | 198453.0 | 21.867 | BB | 0.043 | 77460.46 | 26.222 |
| 5 | 4.386 | | 0.0000 | 0.000 | 804.9 | 0.089 | BB | 0.065 | 207.40 | 0.070 |
| 6 | 4.492 | | 0.0000 | 0.000 | 356.0 | 0.039 | BB | 0.035 | 171.88 | 0.058 |
| 7 | 4.547 | | 0.0000 | 0.000 | 3069.5 | 0.338 | BB | 0.037 | 1394.96 | 0.472 |
| 8 | 4.611 | | 0.0000 | 0.000 | 3478.0 | 0.383 | BB | 0.046 | 1256.11 | 0.425 |
| 9 | 4.750 | HCB | 2.8311 | 0.523 | 4989.4 | 0.550 | BB | 0.045 | 1863.71 | 0.631 |
| 10 | 4.842 | | 0.0000 | 0.000 | 844.2 | 0.093 | BB | 0.036 | 388.96 | 0.132 |
| 11 | 4.902 | | 0.0000 | 0.000 | 287.3 | 0.032 | BB | 0.025 | 192.62 | 0.065 |
| 12 | 5.015 | alpha-BHC | 4.1971 | 0.776 | 5006.0 | 0.552 | BB | 0.043 | 1942.06 | 0.657 |
| 13 | 5.101 | | 0.0000 | 0.000 | 295.6 | 0.033 | BB | 0.033 | 151.36 | 0.051 |
| 14 | 5.256 | | 0.0000 | 0.000 | 9180.6 | 1.012 | BB | 0.078 | 1966.10 | 0.666 |
| 15 | 5.503 | | 0.0000 | 0.000 | 2109.8 | 0.232 | BB | 0.050 | 709.28 | 0.240 |
| 16 | 5.622 | | 0.0000 | 0.000 | 44687.0 | 4.924 | BB | 0.040 | 18730.19 | 6.341 |
| 17 | 5.742 | | 0.0000 | 0.000 | 285.8 | 0.031 | BB | 0.028 | 168.81 | 0.057 |
| 18 | 5.814 | delta-BHC | 26.5395 | 4.905 | 27649.5 | 3.047 | BB | 0.041 | 11295.76 | 3.824 |
| 19 | 5.924 | | 0.0000 | 0.000 | 115.6 | 0.013 | BB | 0.027 | 72.66 | 0.025 |
| 20 | 5.993 | | 0.0000 | 0.000 | 1425.6 | 0.157 | BB | 0.061 | 388.17 | 0.131 |
| 21 | 6.121 | Heptachlor | 2.6367 | 0.487 | 5293.9 | 0.583 | BB | 0.065 | 1362.16 | 0.461 |
| 22 | 6.195 | | 0.0000 | 0.000 | 373.1 | 0.041 | BB | 0.027 | 230.04 | 0.078 |
| 23 | 6.266 | | 0.0000 | 0.000 | 1052.8 | 0.116 | BV | 0.028 | 620.27 | 0.210 |
| 24 | 6.325 | | 0.0000 | 0.000 | 41101.0 | 4.529 | VB | 0.042 | 16355.59 | 5.537 |
| 25 | 6.446 | | 0.0000 | 0.000 | 86.9 | 0.010 | BB | 0.025 | 58.65 | 0.020 |
| 26 | 6.592 | | 0.0000 | 0.000 | 3652.2 | 0.402 | BV | 0.054 | 1136.07 | 0.385 |
| 27 | 6.686 | | 0.0000 | 0.000 | 934.2 | 0.103 | VV | 0.042 | 371.87 | 0.126 |
| 28 | 6.740 | | 0.0000 | 0.000 | 2663.4 | 0.293 | VB | 0.067 | 660.93 | 0.224 |
| 29 | 6.921 | | 0.0000 | 0.000 | 7439.9 | 0.820 | BV | 0.052 | 2399.32 | 0.812 |
| 30 | 7.025 | | 0.0000 | 0.000 | 296.6 | 0.033 | VB | 0.027 | 182.55 | 0.062 |
| 31 | 7.079 | | 0.0000 | 0.000 | 1113.6 | 0.123 | BB | 0.043 | 433.14 | 0.147 |
| 32 | 7.166 | | 0.0000 | 0.000 | 658.3 | 0.073 | BB | 0.041 | 270.22 | 0.091 |
| 33 | 7.257 | | 0.0000 | 0.000 | 334.8 | 0.037 | BB | 0.024 | 235.43 | 0.080 |
| 34 | 7.318 | | 0.0000 | 0.000 | 1301.3 | 0.143 | BV | 0.047 | 456.83 | 0.155 |
| 35 | 7.395 | Hept. epoxide | 3.3310 | 0.616 | 6035.5 | 0.665 | VV | 0.068 | 1472.43 | 0.498 |
| 36 | 7.501 | | 0.0000 | 0.000 | 15525.0 | 1.711 | VV | 0.047 | 5523.52 | 1.870 |
| 37 | 7.565 | g. Chlordane | 5.3200 | 0.983 | 7034.3 | 0.775 | VV | 0.052 | 2253.07 | 0.763 |
| 38 | 7.718 | a. Chlordane | 2.2094 | 0.408 | 2907.2 | 0.320 | VV | 0.051 | 941.69 | 0.319 |
| 39 | 7.813 | 4,4'-DDE | 1.1250 | 0.208 | 1472.8 | 0.162 | VB | 0.064 | 384.00 | 0.130 |
| 40 | 7.903 | Endosulfan I | 0.3384 | 0.063 | 226.7 | 0.025 | BV | 0.029 | 129.66 | 0.044 |
| 41 | 8.008 | | 0.0000 | 0.000 | 1090.1 | 0.120 | VB | 0.037 | 492.55 | 0.167 |
| 42 | 8.104 | | 0.0000 | 0.000 | 3849.9 | 0.424 | BV | 0.055 | 1160.69 | 0.393 |
| 43 | 8.182 | | 0.0000 | 0.000 | 653.7 | 0.072 | VB | 0.035 | 311.96 | 0.106 |
| 44 | 8.387 | o,p-DDT | 0.4463 | 0.082 | 230.0 | 0.025 | BB | 0.032 | 121.52 | 0.041 |
| 45 | 8.485 | | 0.0000 | 0.000 | 1328.7 | 0.146 | BV | 0.059 | 374.49 | 0.127 |
| 46 | 8.596 | 4,4'-DDD | 1.8496 | 0.342 | 1595.9 | 0.176 | VV | 0.054 | 491.69 | 0.166 |
| 47 | 8.656 | | 0.0000 | 0.000 | 1074.2 | 0.118 | VV | 0.054 | 333.78 | 0.113 |
| 48 | 8.726 | | 0.0000 | 0.000 | 2391.5 | 0.264 | VV | 0.061 | 658.78 | 0.223 |
| 49 | 8.851 | Endosulfan II | 3.4391 | 0.636 | 5504.9 | 0.607 | VV | 0.077 | 1189.24 | 0.403 |
| 50 | 8.994 | | 0.0000 | 0.000 | 2449.7 | 0.270 | VV | 0.065 | 629.36 | 0.213 |
| 51 | 9.184 | | 0.0000 | 0.000 | 1320.3 | 0.145 | VV | 0.070 | 313.48 | 0.106 |
| 52 | 9.259 | | 0.0000 | 0.000 | 3821.6 | 0.421 | VB | 0.066 | 966.76 | 0.327 |
| 53 | 9.455 | | 0.0000 | 0.000 | 1454.0 | 0.160 | BV | 0.041 | 593.15 | 0.201 |
| 54 | 9.547 | Methoxychlor | 7.4762 | 1.382 | 3544.7 | 0.391 | VV | 0.045 | 1301.31 | 0.441 |
| 55 | 9.637 | | 0.0000 | 0.000 | 1240.4 | 0.137 | VB | 0.055 | 378.85 | 0.128 |
| 56 | 9.807 | Mirex | 0.3360 | 0.062 | 452.4 | 0.050 | BB | 0.071 | 105.51 | 0.036 |
| 57 | 9.922 | Endo. sulfate | 0.3305 | 0.061 | 327.8 | 0.036 | BV | 0.054 | 101.71 | 0.034 |
| 58 | 10.031 | | 0.0000 | 0.000 | 729.6 | 0.080 | VV | 0.046 | 261.62 | 0.089 |
| 59 | 10.075 | | 0.0000 | 0.000 | 655.6 | 0.072 | VV | 0.036 | 301.45 | 0.102 |
| 60 | 10.137 | | 0.0000 | 0.000 | 17353.8 | 1.912 | VB | 0.068 | 4248.57 | 1.438 |
| 61 | 10.370 | | 0.0000 | 0.000 | 2947.0 | 0.325 | BV | 0.092 | 531.14 | 0.180 |
| 62 | 10.467 | | 0.0000 | 0.000 | 9085.1 | 1.001 | VV | 0.126 | 1199.67 | 0.406 |
| 63 | 10.691 | | 0.0000 | 0.000 | 22876.4 | 2.521 | VV | 0.105 | 3639.41 | 1.232 |
| 64 | 10.722 | | 0.0000 | 0.000 | 25069.0 | 2.762 | VV | 0.106 | 3943.35 | 1.335 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.839 | | 0.0000 | 0.000 | 28534.6 | 3.144 | VB | 0.105 | 4510.19 | 1.527 |
| 66 | 11.133 | | 0.0000 | 0.000 | 22202.9 | 2.447 | BB | 0.185 | 1995.31 | 0.675 |
| 67 | 11.321 | | 0.0000 | 0.000 | 496.7 | 0.055 | BB | 0.033 | 248.70 | 0.084 |
| 68 | 11.478 | | 0.0000 | 0.000 | 641.5 | 0.071 | BB | 0.038 | 283.23 | 0.096 |
| 69 | 11.598 | DCB | 274.6299 | 50.761 | 294824.8 | 32.487 | BB | 0.048 | 102597.30 | 34.732 |
| 70 | 12.098 | | 0.0000 | 0.000 | 18608.9 | 2.051 | BB | 0.616 | 503.08 | 0.170 |
| 71 | 13.104 | | 0.0000 | 0.000 | 3134.4 | 0.345 | BB | 0.335 | 156.01 | 0.053 |
| 72 | 13.434 | | 0.0000 | 0.000 | 6661.6 | 0.734 | BB | 0.326 | 340.55 | 0.115 |

Total Area = 907526.1, Total Amount = 541.023, Total Height = 295399.8, Sample Units = PPB

Sample Name: **BLANKA 2/25/04F ABPBLKXG BLK 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 04:49:19pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.18R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

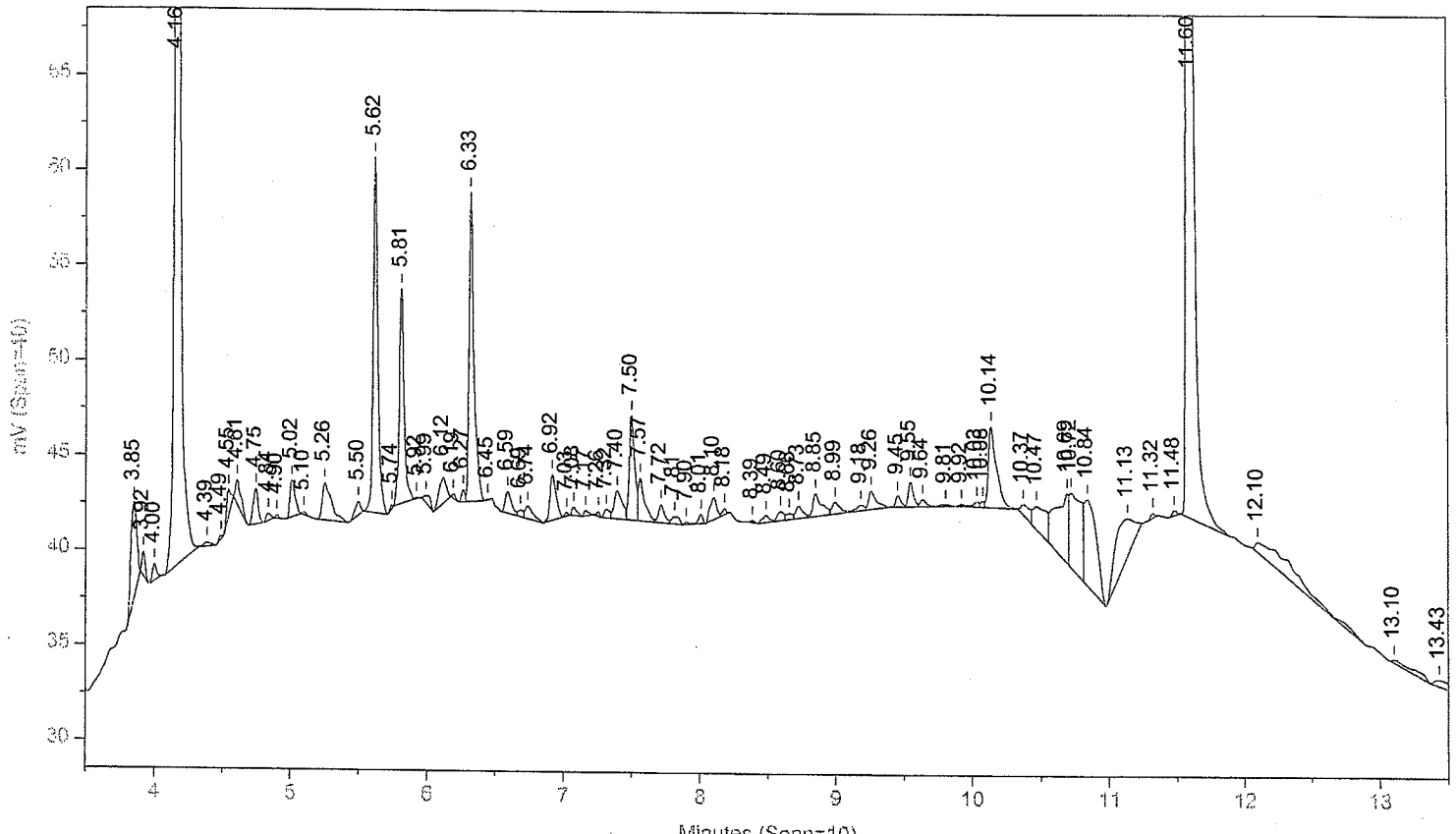
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 19545.9 | 4.662 | BB | 0.052 | 6260.74 | 3.995 |
| 2 | 3.263 | | 0.0000 | 0.000 | 374.1 | 0.089 | BB | 0.028 | 219.98 | 0.140 |
| 3 | 3.367 | | 0.0000 | 0.000 | 5200.6 | 1.240 | BB | 0.061 | 1425.40 | 0.910 |
| 4 | 3.622 | | 0.0000 | 0.000 | 3516.0 | 0.839 | BB | 0.041 | 1420.76 | 0.907 |
| 5 | 3.778 | | 0.0000 | 0.000 | 3272.4 | 0.781 | BB | 0.052 | 1053.05 | 0.672 |
| 6 | 3.873 | | 0.0000 | 0.000 | 336.9 | 0.080 | BB | 0.035 | 159.25 | 0.102 |
| 7 | 3.908 | | 0.0000 | 0.000 | 1334.1 | 0.318 | BB | 0.032 | 703.26 | 0.449 |
| 8 | 4.049 | | 0.0000 | 0.000 | 1049.5 | 0.250 | BB | 0.041 | 423.73 | 0.270 |
| 9 | 4.131 | | 0.0000 | 0.000 | 246.1 | 0.059 | BB | 0.028 | 148.52 | 0.095 |
| 10 | 4.196 TCX | | 198.6977 | 40.389 | 111598.9 | 26.618 | BB | 0.037 | 50536.96 | 32.251 |
| 11 | 4.401 | | 0.0000 | 0.000 | 3883.0 | 0.926 | BB | 0.055 | 1181.19 | 0.754 |
| 12 | 4.741 | | 0.0000 | 0.000 | 2056.6 | 0.491 | BB | 0.043 | 794.37 | 0.507 |
| 13 | 4.909 HCB | | 32.5947 | 6.625 | 29809.5 | 7.110 | BB | 0.039 | 12618.80 | 8.053 |
| 14 | 5.703 | | 0.0000 | 0.000 | 1544.7 | 0.368 | BB | 0.060 | 429.56 | 0.274 |
| 15 | 5.786 | | 0.0000 | 0.000 | 5604.9 | 1.337 | BB | 0.037 | 2515.20 | 1.605 |
| 16 | 5.891 | | 0.0000 | 0.000 | 1317.0 | 0.314 | BB | 0.036 | 617.70 | 0.394 |
| 17 | 6.068 | | 0.0000 | 0.000 | 759.7 | 0.181 | BV | 0.024 | 527.15 | 0.336 |
| 18 | 6.113 | | 0.0000 | 0.000 | 8765.5 | 2.091 | VB | 0.076 | 1915.03 | 1.222 |
| 19 | 6.746 | | 0.0000 | 0.000 | 12009.7 | 2.864 | BB | 0.052 | 3829.69 | 2.444 |
| 20 | 7.042 | | 0.0000 | 0.000 | 1034.5 | 0.247 | BB | 0.055 | 314.92 | 0.201 |
| 21 | 7.206 | | 0.0000 | 0.000 | 2685.6 | 0.641 | BV | 0.109 | 410.92 | 0.262 |
| 22 | 7.333 | | 0.0000 | 0.000 | 4739.8 | 1.131 | VB | 0.078 | 1010.67 | 0.645 |
| 23 | 7.683 g. Chlordane | | 6.3843 | 1.298 | 10162.5 | 2.424 | BB | 0.101 | 1669.15 | 1.065 |
| 24 | 8.471 | | 0.0000 | 0.000 | 1820.3 | 0.434 | BB | 0.081 | 376.83 | 0.240 |
| 25 | 9.047 | | 0.0000 | 0.000 | 338.6 | 0.081 | BB | 0.078 | 72.30 | 0.046 |
| 26 | 9.164 | | 0.0000 | 0.000 | 5807.8 | 1.385 | BB | 0.152 | 636.15 | 0.406 |
| 27 | 9.421 Endrin aldehyde | | 4.6178 | 0.939 | 4340.9 | 1.035 | BB | 0.095 | 760.75 | 0.485 |
| 28 | 10.034 | | 0.0000 | 0.000 | 6369.3 | 1.519 | BB | 0.067 | 1595.47 | 1.018 |
| 29 | 11.668 | | 0.0000 | 0.000 | 1020.3 | 0.243 | BB | 0.045 | 381.35 | 0.243 |
| 30 | 12.206 DCB | | 249.6683 | 50.749 | 168715.4 | 40.241 | BB | 0.045 | 62688.16 | 40.006 |

Total Area = 419259.9, Total Amount = 491.963, Total Height = 156697.0, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.18R

C:\CPWIN\DATA1\2C13051.18R

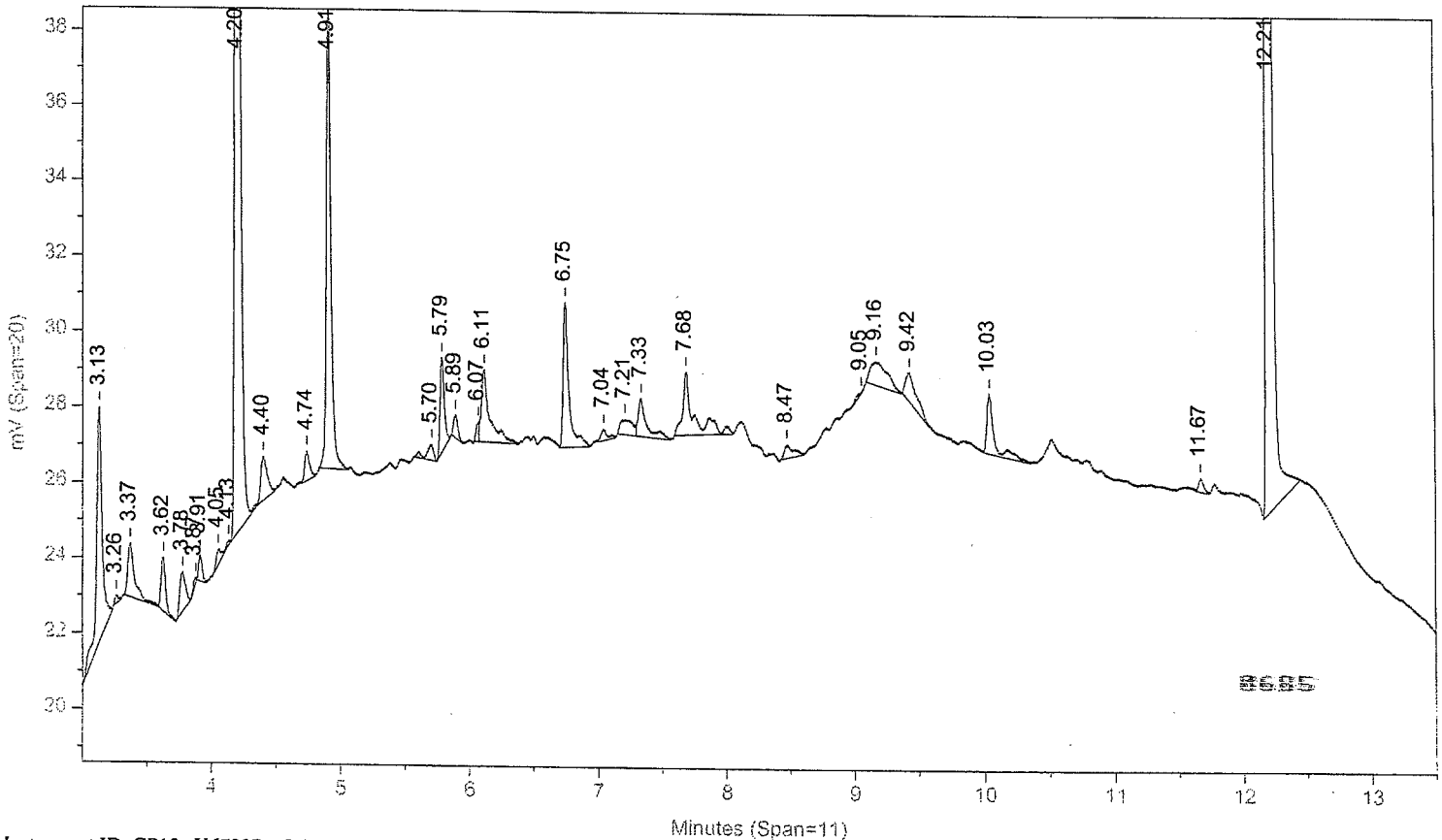



Instrument ID: CP13--H6722A Injected On: 2/25/2004 4:35:19 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.18R

C:\CPWIN\DATA1\2C13051B.18R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 4:35:19 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

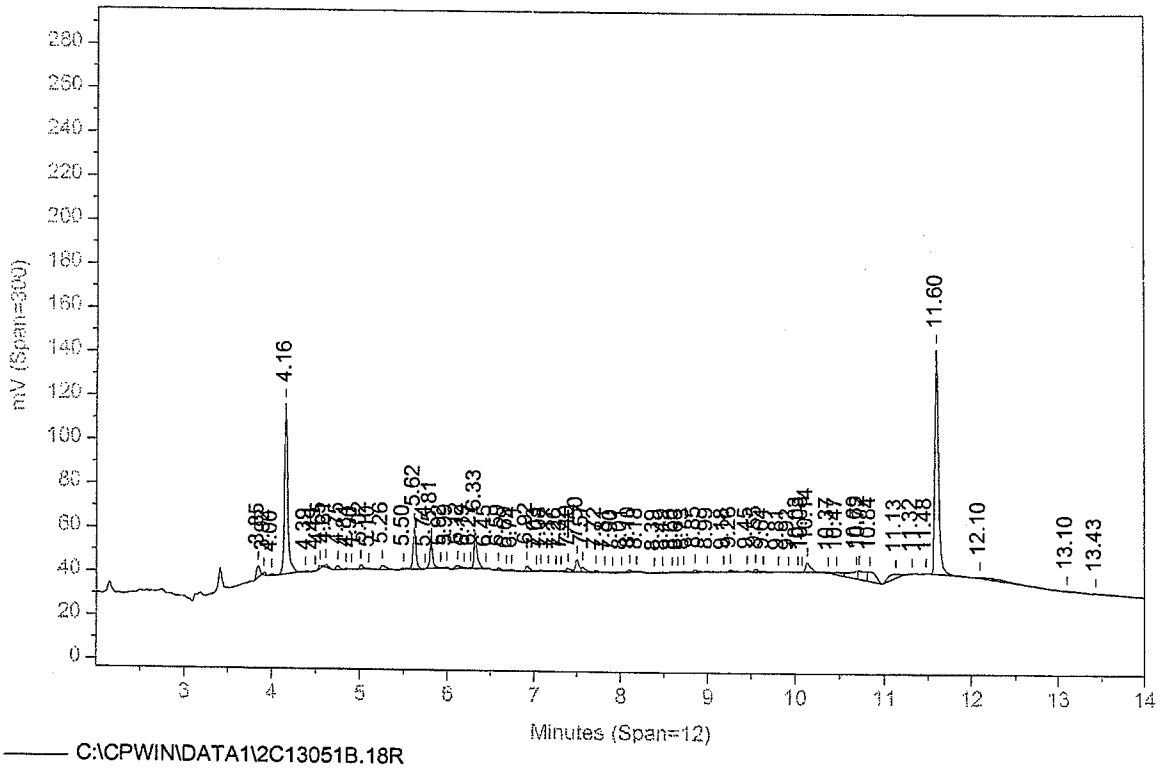
Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.163 | 77460 | 1.01993 | TCX | 4.196 | 50537 | .99349 | TCX |
| 4.75 | 1864 | .01416 | HCB | 4.909 | 12619 | .16297 | HCB |
| 5.015 | 1942 | .02099 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.814 | 11296 | .1327 | delta-BHC | . | 0 | . | delta-BHC |
| 6.121 | 1362 | .01318 | Heptachlor | . | 0 | . | Heptachlor |
| 7.395 | 1472 | .01666 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.565 | 2253 | .0266 | g. Chlordane | 7.683 | 1669 | .03192 | g. Chlordane |
| 7.718 | 942 | .01105 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.813 | 384 | .00563 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 7.903 | 130 | .00169 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.387 | 122 | .00223 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.596 | 492 | .00925 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 8.851 | 1189 | .0172 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.421 | 761 | .02309 | Endrin aldehyde |
| 9.547 | 1301 | .03738 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.807 | 106 | .00168 | Mirex | . | 0 | . | Mirex |
| 9.922 | 102 | .00165 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 11.598 | 102597 | 1.37315 | DCB | 12.206 | 62688 | 1.24834 | DCB |

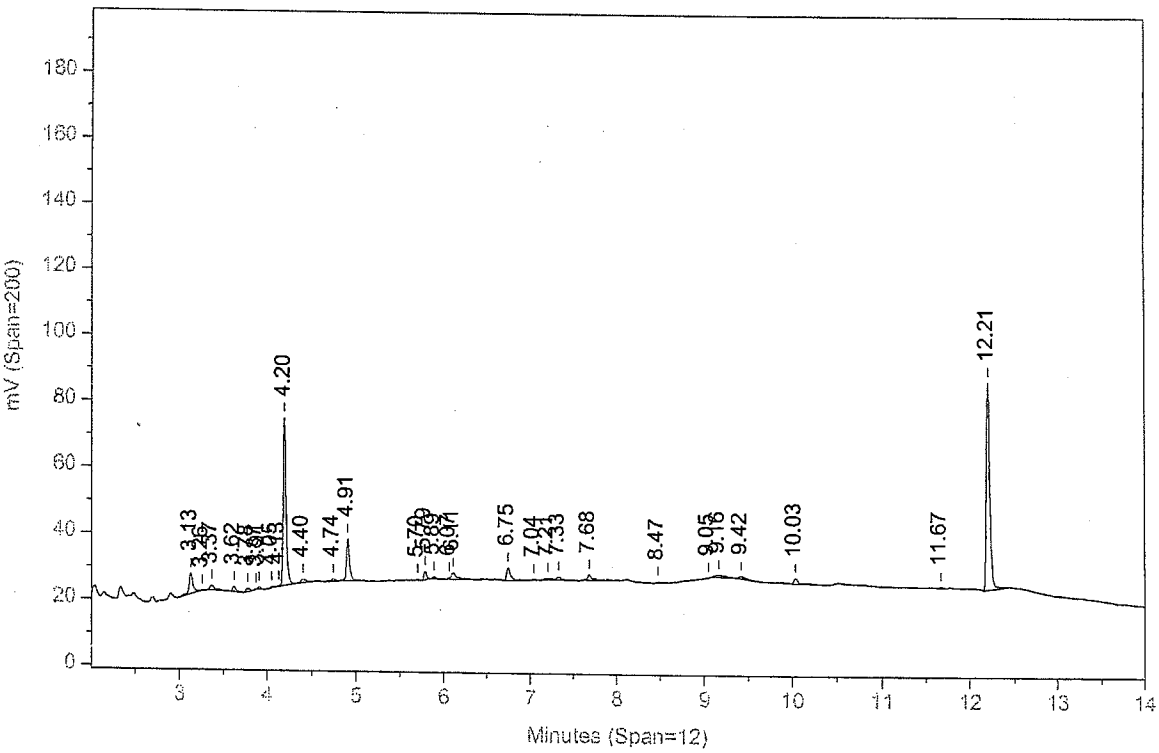
Files:
Area File: C:\CPWIN\DATA1\2C13051.18A
Area File: C:\CPWIN\DATA1\2C13051B.18A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 4:49:24 PM
File Reported On: 2/25/2004 at 4:49:32 PM

10X REPLOTS

C:\CPWIN\DATA1\2C13051.18R




C:\CPWIN\DATA1\2C13051B.18R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** LCSA 2/25/04F LCSVQ Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722A
Result file : 2C13051.19R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 71.5% Conc.: 1.031506
%SSR(DCB) : 93.9% Conc.: 1.372405

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 78339 | 1.031506 |
| **HCB** | 4.71 | 4.75 | 4.77 | 2079 | 0.015787 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 3753 | 0.040559 |
| **gamma-BHC** | 5.43 | 5.44 | 5.49 | 42558 | 0.465837 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 20323 | 0.238744 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 44593 | 0.431599 |
| **o,p-DDE** | 7.33 | 7.37 | 7.39 | 59901 | 1.093951 |
| **g. Chlordane** | 7.52 | 7.57 | 7.58 | 2647 | 0.031250 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1338 | 0.015702 |
| **4,4'-DDE** | 7.78 | 7.83 | 7.84 | 560 | 0.008207 |
| **Endosulfan I** | 7.88 | 7.90 | 7.94 | 210 | 0.002736 |
| **Dieldrin** | 8.20 | 8.21 | 8.26 | 1405 | 0.019283 |
| **o,p-DDT** | 8.35 | 8.39 | 8.41 | 292 | 0.005369 |
| **Endrin** | 8.51 | 8.52 | 8.57 | 15748 | 0.231627 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 2460 | 0.035571 |
| **4,4'-DDT** | 8.93 | 8.99 | 8.99 | 1127 | 0.019025 |
| **Methoxychlor** | 9.54 | 9.56 | 9.60 | 67079 | 1.926867 |
| **Endo. sulfate** | 9.91 | 9.92 | 9.97 | 143 | 0.002328 |
| **Endrin ketone** | 10.28 | 10.29 | 10.34 | 271 | 0.003792 |
| **DCB** | 11.59 | 11.60 | 11.65 | 102542 | 1.372405 |

## Analysis Report (B)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722B
Result file : 2C13051B.19R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 69.6% Conc.: 1.004252
%SSR(DCB) : 87.1% Conc.: 1.272433

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 51085 | 1.004252 |
| **HCB** | 4.87 | 4.91 | 4.93 | 14280 | 0.184432 |
| **alpha-BHC** | 5.07 | 5.08 | 5.13 | 207 | 0.004186 |
| **gamma-BHC** | 5.58 | 5.60 | 5.64 | 24037 | 0.474699 |
| **Heptachlor** | 6.20 | 6.22 | 6.26 | 25266 | 0.442854 |
| **Hept. epoxide** | 7.42 | 7.43 | 7.48 | 38064 | 0.737935 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 2682 | 0.051290 |
| **a. Chlordane** | 7.86 | 7.86 | 7.92 | 888 | 0.016420 |
| **4,4'-DDE** | 8.08 | 8.10 | 8.14 | 1211 | 0.031263 |
| **Endrin** | 8.70 | 8.71 | 8.76 | 9265 | 0.228564 |
| **Endrin aldehyde** | 9.40 | 9.41 | 9.46 | 987 | 0.029955 |
| **Methoxychlor** | 10.10 | 10.11 | 10.16 | 37814 | 1.900501 |
| **Endrin ketone** | 10.43 | 10.47 | 10.49 | 340 | 0.007011 |
| **DCB** | 12.20 | 12.21 | 12.26 | 63898 | 1.272433 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 1.031506 | | | | 2.68 | |
| HCB | B | 0.184432 | | | | ** 168.46 | |
| alpha-BHC | A | 0.040559 | | | | ** 162.58 | |
| gamma-BHC | B | 0.474699 | 0.05 | 0.01 | | 1.88 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.442854 | 0.05 | 0.01 | | 2.57 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | B | 0.737935 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.051290 | | | | ** 48.56 | |
| a. Chlordane | B | 0.016420 | | | | 4.47 | |
| 4,4'-DDE | B | 0.031263 | | | | ** 116.83 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.231627 | 0.1 | 0.02 | | 1.33 | |
| Kepone | | | | | | | |
| 4,4'-DDD | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:09:47

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 2/25/04F LCSVQ Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722A
Result file : 2C13051.19R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 16:55:54
Instrument : CP13--H6722B
Result file : 2C13051B.19R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endosulfan II | | | | | | | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | A | 1.926867 | 0.5 | 0.1 | | 1.38 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.007011 | | | | ** 59.59 | |
| DCB | A | 1.372405 | | | | 7.56 | |

Units: ug/l

Reviewed by: Andrea J Carey Date: 2.26.04
Verified by: [illegible] Date: 2/26/04

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 09:09:47

Sample Name: **LCSA 2/25/04F ABLCSVQ LCS 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 05:09:54pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.19R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.850 | | 0.0000 | 0.000 | 21752.0 | 1.416 | BB | 0.050 | 7204.67 | 1.302 |
| 2 | 3.916 | | 0.0000 | 0.000 | 415.6 | 0.027 | BB | 0.020 | 354.83 | 0.064 |
| 3 | 4.001 | | 0.0000 | 0.000 | 2743.9 | 0.179 | BB | 0.037 | 1236.48 | 0.223 |
| 4 | 4.163 | TCX | 206.3011 | 14.752 | 208055.4 | 13.544 | BB | 0.044 | 78339.22 | 14.158 |
| 5 | 4.388 | | 0.0000 | 0.000 | 1090.1 | 0.071 | BB | 0.057 | 316.59 | 0.057 |
| 6 | 4.490 | | 0.0000 | 0.000 | 620.2 | 0.040 | BB | 0.029 | 352.43 | 0.064 |
| 7 | 4.547 | | 0.0000 | 0.000 | 2037.6 | 0.133 | BB | 0.030 | 1142.78 | 0.207 |
| 8 | 4.609 | | 0.0000 | 0.000 | 2386.4 | 0.155 | BB | 0.043 | 927.02 | 0.168 |
| 9 | 4.751 | HCB | 3.1574 | 0.226 | 5829.9 | 0.380 | BB | 0.047 | 2078.55 | 0.376 |
| 10 | 4.841 | | 0.0000 | 0.000 | 948.5 | 0.062 | BB | 0.036 | 442.78 | 0.080 |
| 11 | 4.903 | | 0.0000 | 0.000 | 748.4 | 0.049 | BB | 0.033 | 382.07 | 0.069 |
| 12 | 5.015 | alpha-BHC | 8.1117 | 0.580 | 12548.2 | 0.817 | BB | 0.056 | 3753.39 | 0.678 |
| 13 | 5.256 | | 0.0000 | 0.000 | 10477.3 | 0.682 | BB | 0.063 | 2753.30 | 0.498 |
| 14 | 5.444 | gamma-BHC | 93.1674 | 6.662 | 90202.1 | 5.872 | BB | 0.035 | 42557.92 | 7.691 |
| 15 | 5.622 | | 0.0000 | 0.000 | 49455.6 | 3.220 | BB | 0.039 | 20918.13 | 3.780 |
| 16 | 5.741 | | 0.0000 | 0.000 | 227.5 | 0.015 | BB | 0.022 | 168.76 | 0.031 |
| 17 | 5.814 | delta-BHC | 47.7488 | 3.414 | 50626.0 | 3.296 | BB | 0.042 | 20322.85 | 3.673 |
| 18 | 5.985 | | 0.0000 | 0.000 | 5456.9 | 0.355 | BB | 0.068 | 1328.50 | 0.240 |
| 19 | 6.121 | Heptachlor | 86.3199 | 6.173 | 103361.5 | 6.729 | BV | 0.039 | 44593.36 | 8.059 |
| 20 | 6.266 | | 0.0000 | 0.000 | 1760.8 | 0.115 | VV | 0.032 | 909.46 | 0.164 |
| 21 | 6.326 | | 0.0000 | 0.000 | 48041.9 | 3.127 | VB | 0.040 | 19807.98 | 3.580 |
| 22 | 6.444 | | 0.0000 | 0.000 | 297.0 | 0.019 | BB | 0.025 | 194.94 | 0.035 |
| 23 | 6.588 | | 0.0000 | 0.000 | 7033.8 | 0.458 | BV | 0.050 | 2344.17 | 0.424 |
| 24 | 6.677 | | 0.0000 | 0.000 | 3043.6 | 0.198 | VV | 0.053 | 963.46 | 0.174 |
| 25 | 6.738 | | 0.0000 | 0.000 | 3150.3 | 0.205 | VB | 0.067 | 780.72 | 0.141 |
| 26 | 6.921 | | 0.0000 | 0.000 | 7967.6 | 0.519 | BB | 0.052 | 2535.31 | 0.458 |
| 27 | 7.023 | | 0.0000 | 0.000 | 919.0 | 0.060 | BB | 0.029 | 524.90 | 0.095 |
| 28 | 7.077 | | 0.0000 | 0.000 | 1352.9 | 0.088 | BB | 0.043 | 521.20 | 0.094 |
| 29 | 7.165 | | 0.0000 | 0.000 | 1026.0 | 0.067 | BB | 0.036 | 473.50 | 0.086 |
| 30 | 7.255 | | 0.0000 | 0.000 | 889.7 | 0.058 | BB | 0.028 | 531.14 | 0.096 |
| 31 | 7.310 | | 0.0000 | 0.000 | 1187.9 | 0.077 | BV | 0.031 | 632.58 | 0.114 |
| 32 | 7.370 | o,p-DDE | 218.7902 | 15.645 | 139270.2 | 9.066 | VV | 0.039 | 59900.90 | 10.826 |
| 33 | 7.501 | | 0.0000 | 0.000 | 19213.8 | 1.251 | VV | 0.047 | 6797.99 | 1.229 |
| 34 | 7.566 | g. Chlordane | 6.2500 | 0.447 | 8920.4 | 0.581 | VV | 0.056 | 2646.96 | 0.478 |
| 35 | 7.716 | a. Chlordane | 3.1403 | 0.225 | 3815.1 | 0.248 | VV | 0.048 | 1338.45 | 0.242 |
| 36 | 7.834 | 4,4'-DDE | 1.6415 | 0.117 | 2000.4 | 0.130 | VB | 0.060 | 560.26 | 0.101 |
| 37 | 7.904 | Endosulfan I | 0.5471 | 0.039 | 395.2 | 0.026 | BV | 0.031 | 209.61 | 0.038 |
| 38 | 8.007 | | 0.0000 | 0.000 | 2403.4 | 0.156 | VV | 0.055 | 730.63 | 0.132 |
| 39 | 8.102 | | 0.0000 | 0.000 | 10195.8 | 0.664 | VV | 0.064 | 2657.74 | 0.480 |
| 40 | 8.214 | Dieldrin | 3.8565 | 0.276 | 7426.2 | 0.483 | VB | 0.088 | 1405.17 | 0.254 |
| 41 | 8.385 | o,p-DDT | 1.0738 | 0.077 | 570.8 | 0.037 | BB | 0.033 | 292.36 | 0.053 |
| 42 | 8.520 | Endrin | 46.3254 | 3.313 | 40311.0 | 2.624 | BV | 0.043 | 15747.50 | 2.846 |
| 43 | 8.722 | | 0.0000 | 0.000 | 4446.1 | 0.289 | VB | 0.055 | 1339.45 | 0.242 |
| 44 | 8.847 | Endosulfan II | 7.1142 | 0.509 | 9199.1 | 0.599 | BV | 0.062 | 2460.10 | 0.445 |
| 45 | 8.990 | 4,4'-DDT | 3.8049 | 0.272 | 3326.3 | 0.217 | VB | 0.049 | 1127.17 | 0.204 |
| 46 | 9.181 | | 0.0000 | 0.000 | 981.7 | 0.064 | BB | 0.055 | 298.30 | 0.054 |
| 47 | 9.258 | | 0.0000 | 0.000 | 1438.2 | 0.094 | BB | 0.038 | 638.71 | 0.115 |
| 48 | 9.337 | | 0.0000 | 0.000 | 637.0 | 0.041 | BB | 0.053 | 199.71 | 0.036 |
| 49 | 9.452 | | 0.0000 | 0.000 | 3771.9 | 0.246 | BV | 0.043 | 1452.65 | 0.263 |
| 50 | 9.557 | Methoxychlor | 385.3734 | 27.558 | 177879.8 | 11.580 | VV | 0.044 | 67078.54 | 12.123 |
| 51 | 9.766 | | 0.0000 | 0.000 | 989.7 | 0.064 | VB | 0.059 | 281.72 | 0.051 |
| 52 | 9.920 | Endo. sulfate | 0.4656 | 0.033 | 311.8 | 0.020 | BB | 0.036 | 143.27 | 0.026 |
| 53 | 10.026 | | 0.0000 | 0.000 | 1089.7 | 0.071 | BV | 0.042 | 433.61 | 0.078 |
| 54 | 10.070 | | 0.0000 | 0.000 | 918.8 | 0.060 | VV | 0.038 | 404.01 | 0.073 |
| 55 | 10.137 | | 0.0000 | 0.000 | 26395.0 | 1.718 | VB | 0.072 | 6086.94 | 1.100 |
| 56 | 10.288 | Endrin ketone | 0.7584 | 0.054 | 770.0 | 0.050 | BV | 0.047 | 271.15 | 0.049 |
| 57 | 10.363 | | 0.0000 | 0.000 | 3505.8 | 0.228 | VV | 0.067 | 873.09 | 0.158 |
| 58 | 10.469 | | 0.0000 | 0.000 | 9200.3 | 0.599 | VV | 0.126 | 1215.26 | 0.220 |
| 59 | 10.625 | | 0.0000 | 0.000 | 11270.8 | 0.734 | VV | 0.085 | 2204.09 | 0.398 |
| 60 | 10.719 | | 0.0000 | 0.000 | 31125.2 | 2.026 | VV | 0.130 | 3976.42 | 0.719 |
| 61 | 10.833 | | 0.0000 | 0.000 | 26121.1 | 1.700 | VB | 0.107 | 4079.20 | 0.737 |
| 62 | 11.124 | | 0.0000 | 0.000 | 18129.6 | 1.180 | BB | 0.168 | 1798.61 | 0.325 |
| 63 | 11.269 | | 0.0000 | 0.000 | 168.5 | 0.011 | BB | 0.029 | 95.78 | 0.017 |
| 64 | 11.322 | | 0.0000 | 0.000 | 1443.5 | 0.094 | BB | 0.076 | 317.10 | 0.057 |

8698

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.475 | | 0.0000 | 0.000 | 1823.3 | 0.119 | BB | 0.043 | 705.93 | 0.128 |
| 66 | 11.598 DCB | | 274.4810 | 19.628 | 291714.2 | 18.990 | BB | 0.047 | 102541.60 | 18.532 |
| 67 | 12.087 | | 0.0000 | 0.000 | 15636.5 | 1.018 | BB | 0.379 | 688.27 | 0.124 |
| 68 | 13.103 | | 0.0000 | 0.000 | 4373.9 | 0.285 | BB | 0.193 | 377.20 | 0.068 |
| 69 | 13.433 | | 0.0000 | 0.000 | 8715.1 | 0.567 | BB | 0.355 | 408.96 | 0.074 |
| 70 | 13.924 | | 0.0000 | 0.000 | 564.6 | 0.037 | BB | 0.063 | 149.16 | 0.027 |

Total Area = 1536124.0, Total Amount = 1398.429, Total Height = 553326.6, Sample Units = PPB

Sample Name: **LCSA 2/25/04F ABLCSVQ LCS 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 05:09:54pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.19R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

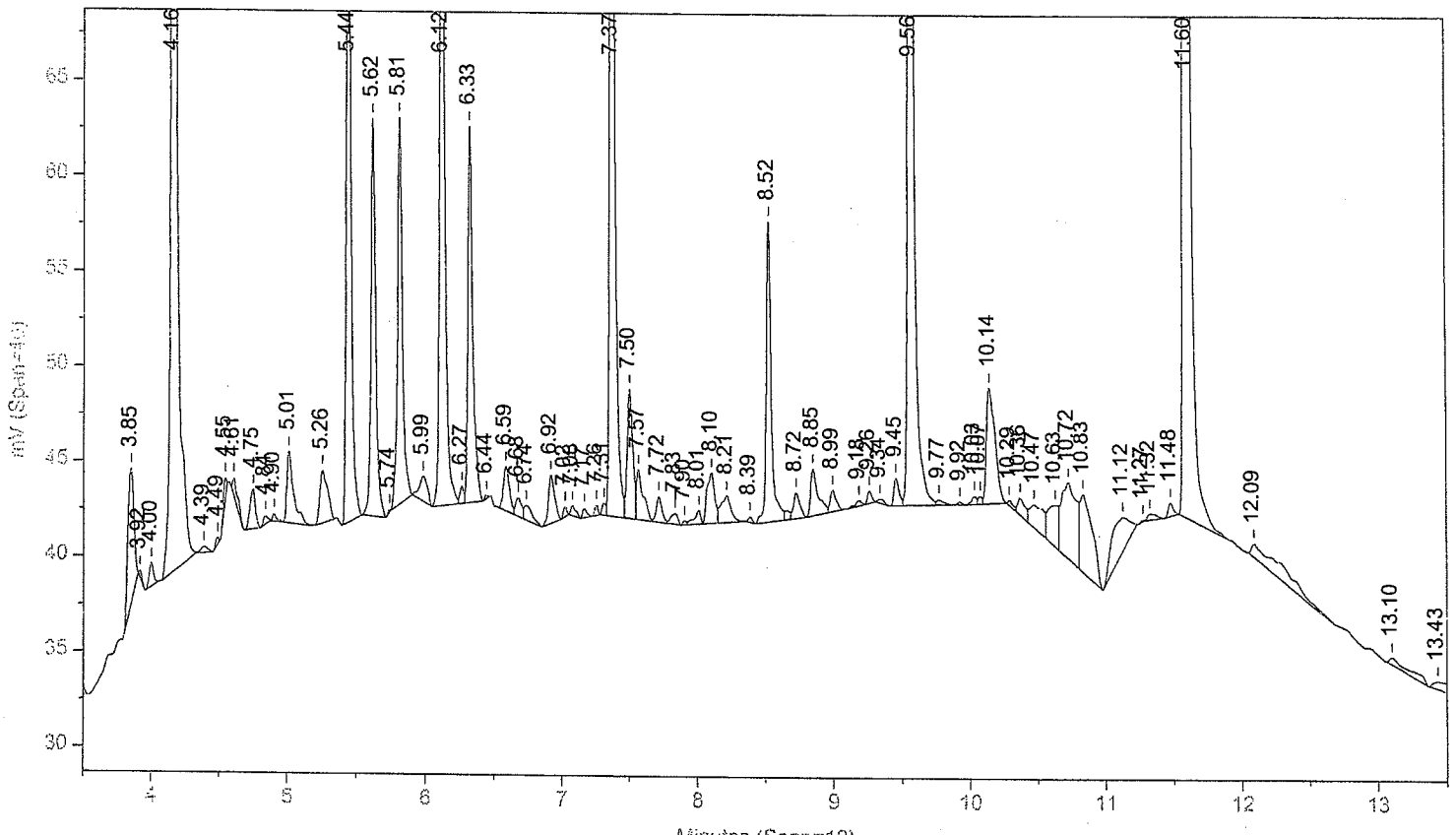
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.133 | | 0.0000 | 0.000 | 16803.9 | 2.147 | BB | 0.056 | 4986.81 | 1.624 |
| 2 | 3.364 | | 0.0000 | 0.000 | 10561.2 | 1.350 | BB | 0.060 | 2940.90 | 0.958 |
| 3 | 3.620 | | 0.0000 | 0.000 | 1957.3 | 0.250 | BB | 0.039 | 845.85 | 0.275 |
| 4 | 3.773 | | 0.0000 | 0.000 | 4025.8 | 0.514 | BB | 0.050 | 1332.49 | 0.434 |
| 5 | 3.868 | | 0.0000 | 0.000 | 1282.3 | 0.164 | BB | 0.030 | 715.31 | 0.233 |
| 6 | 3.911 | | 0.0000 | 0.000 | 728.2 | 0.093 | BB | 0.024 | 496.89 | 0.162 |
| 7 | 4.053 | | 0.0000 | 0.000 | 1224.4 | 0.156 | BB | 0.042 | 483.94 | 0.158 |
| 8 | 4.197 | TCX | 200.8505 | 15.726 | 111493.0 | 14.248 | BB | 0.036 | 51084.50 | 16.632 |
| 9 | 4.346 | | 0.0000 | 0.000 | 237.2 | 0.030 | BB | 0.033 | 118.98 | 0.039 |
| 10 | 4.403 | | 0.0000 | 0.000 | 6448.4 | 0.824 | BB | 0.055 | 1953.77 | 0.636 |
| 11 | 4.557 | | 0.0000 | 0.000 | 641.2 | 0.082 | BB | 0.034 | 315.66 | 0.103 |
| 12 | 4.743 | | 0.0000 | 0.000 | 2015.6 | 0.258 | BB | 0.042 | 791.47 | 0.258 |
| 13 | 4.910 | HCB | 36.8864 | 2.888 | 35442.8 | 4.529 | BB | 0.041 | 14280.29 | 4.649 |
| 14 | 5.083 | alpha-BHC | 0.8372 | 0.066 | 265.6 | 0.034 | BB | 0.021 | 206.81 | 0.067 |
| 15 | 5.480 | | 0.0000 | 0.000 | 1596.4 | 0.204 | BB | 0.053 | 498.87 | 0.162 |
| 16 | 5.599 | gamma-BHC | 94.9399 | 7.434 | 48722.0 | 6.226 | BB | 0.034 | 24036.70 | 7.826 |
| 17 | 5.787 | | 0.0000 | 0.000 | 9829.3 | 1.256 | BB | 0.037 | 4373.71 | 1.424 |
| 18 | 5.889 | | 0.0000 | 0.000 | 1382.4 | 0.177 | BB | 0.034 | 686.71 | 0.224 |
| 19 | 6.065 | | 0.0000 | 0.000 | 2833.6 | 0.362 | BV | 0.037 | 1268.78 | 0.413 |
| 20 | 6.111 | | 0.0000 | 0.000 | 7984.9 | 1.020 | VV | 0.055 | 2410.03 | 0.785 |
| 21 | 6.215 | Heptachlor | 88.5708 | 6.935 | 52665.7 | 6.730 | VB | 0.035 | 25266.15 | 8.226 |
| 22 | 6.450 | | 0.0000 | 0.000 | 351.4 | 0.045 | BB | 0.032 | 182.29 | 0.059 |
| 23 | 6.578 | | 0.0000 | 0.000 | 3514.7 | 0.449 | BB | 0.083 | 705.40 | 0.230 |
| 24 | 6.745 | | 0.0000 | 0.000 | 14783.2 | 1.889 | BB | 0.054 | 4561.62 | 1.485 |
| 25 | 7.034 | | 0.0000 | 0.000 | 1679.3 | 0.215 | BB | 0.057 | 492.39 | 0.160 |
| 26 | 7.220 | | 0.0000 | 0.000 | 3252.9 | 0.416 | BB | 0.090 | 601.87 | 0.196 |
| 27 | 7.327 | | 0.0000 | 0.000 | 2253.7 | 0.288 | BB | 0.039 | 951.32 | 0.310 |
| 28 | 7.432 | Hept. epoxide | 147.5871 | 11.556 | 76291.2 | 9.750 | BV | 0.033 | 38064.05 | 12.393 |
| 29 | 7.680 | g. Chlordane | 10.2581 | 0.803 | 14525.4 | 1.856 | VV | 0.090 | 2681.90 | 0.873 |
| 30 | 7.863 | a. Chlordane | 3.2839 | 0.257 | 7392.7 | 0.945 | VV | 0.139 | 888.31 | 0.289 |
| 31 | 8.097 | 4,4'-DDE | 6.2527 | 0.490 | 9000.2 | 1.150 | VB | 0.124 | 1211.43 | 0.394 |
| 32 | 8.473 | | 0.0000 | 0.000 | 2704.0 | 0.346 | BV | 0.063 | 716.67 | 0.233 |
| 33 | 8.554 | | 0.0000 | 0.000 | 833.7 | 0.107 | VB | 0.034 | 407.46 | 0.133 |
| 34 | 8.710 | Endrin | 45.7128 | 3.579 | 24500.9 | 3.131 | BB | 0.044 | 9265.16 | 3.017 |
| 35 | 9.129 | | 0.0000 | 0.000 | 14916.4 | 1.906 | BB | 0.167 | 1485.14 | 0.484 |
| 36 | 9.410 | Endrin aldehyde | 5.9911 | 0.469 | 6663.6 | 0.852 | BB | 0.113 | 986.99 | 0.321 |
| 37 | 10.032 | | 0.0000 | 0.000 | 4496.6 | 0.575 | BB | 0.037 | 2007.21 | 0.654 |
| 38 | 10.114 | Methoxychlor | 380.1003 | 29.761 | 93786.5 | 11.985 | BB | 0.041 | 37814.01 | 12.312 |
| 39 | 10.474 | Endrin ketone | 1.4021 | 0.110 | 661.9 | 0.085 | BB | 0.032 | 340.49 | 0.111 |
| 40 | 10.777 | | 0.0000 | 0.000 | 1429.0 | 0.183 | BB | 0.059 | 405.27 | 0.132 |
| 41 | 11.667 | | 0.0000 | 0.000 | 9009.0 | 1.151 | BB | 0.393 | 381.91 | 0.124 |
| 42 | 12.206 | DCB | 254.4865 | 19.926 | 172317.5 | 22.021 | BB | 0.045 | 63897.93 | 20.804 |

Total Area = 782505.1, Total Amount = 1277.159, Total Height = 307143.4, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.19R

C:\CPWIN\DATA1\2C13051.19R

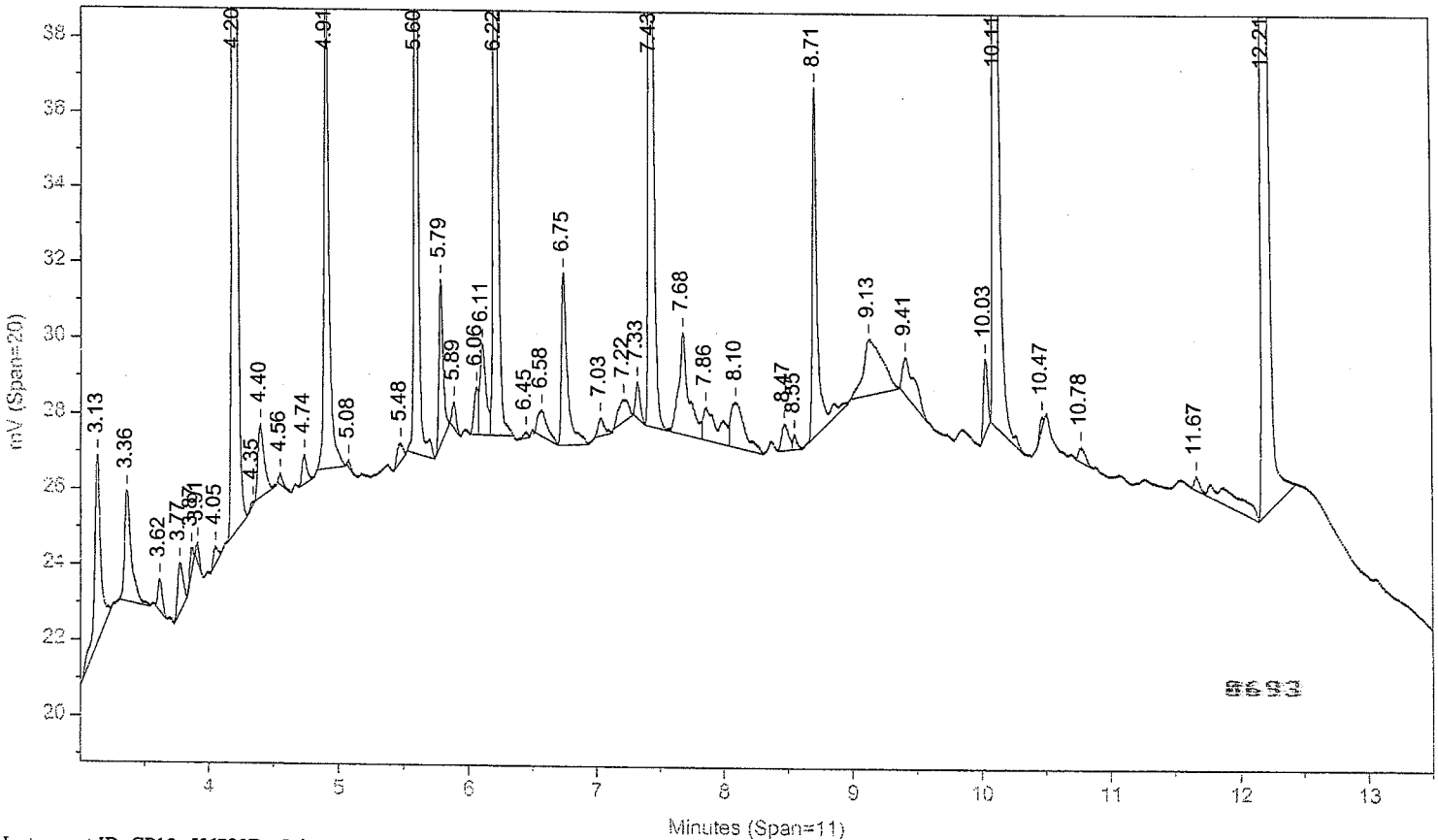



Instrument ID: CP13--H6722A Injected On: 2/25/2004 4:55:54 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.19R

C:\CPWIN\DATA1\2C13051B.19R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 4:55:54 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 200 Dilution Factor: 10
Analyst: 120

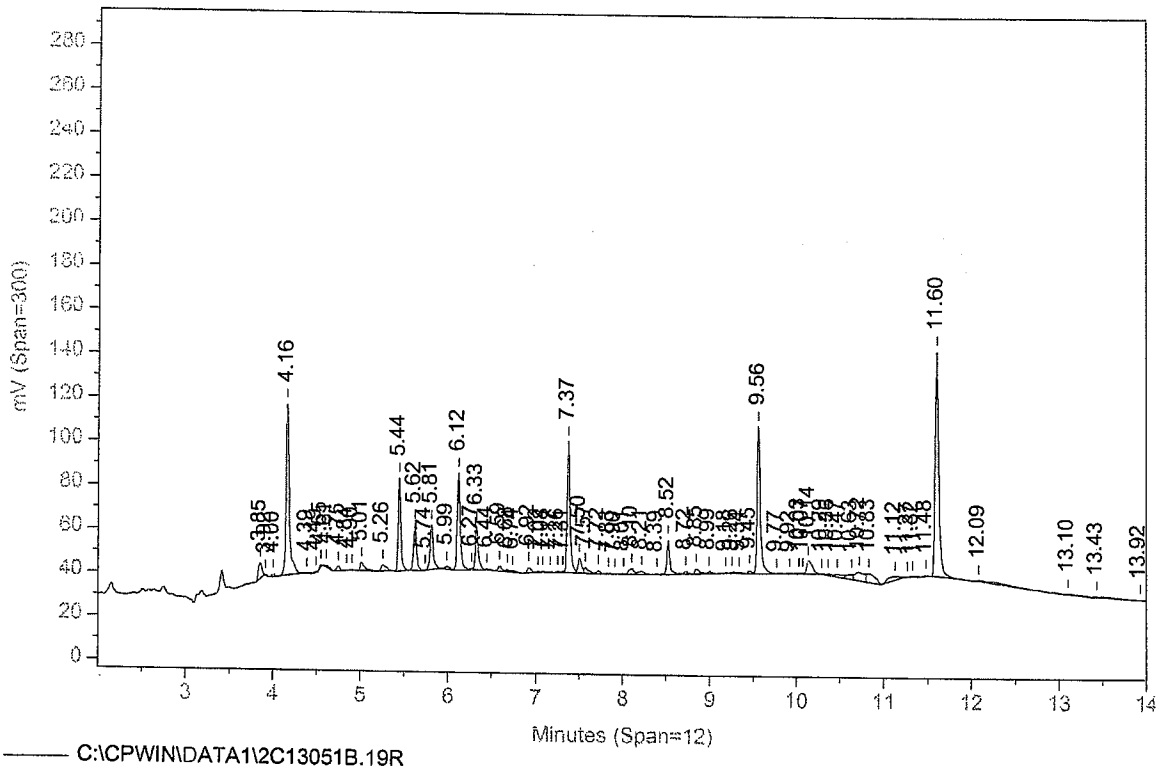
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.163 | 78339 | 1.03151 | TCX | 4.197 | 51085 | 1.00425 | TCX |
| 4.751 | 2079 | .01579 | HCB | 4.91 | 14280 | .18443 | HCB |
| 5.015 | 3753 | .04056 | alpha-BHC | 5.083 | 207 | .00419 | alpha-BHC |
| 5.444 | 42558 | .46584 | gamma-BHC | 5.599 | 24037 | .4747 | gamma-BHC |
| 5.814 | 20323 | .23874 | delta-BHC | . | 0 | . | delta-BHC |
| 6.121 | 44593 | .4316 | Heptachlor | 6.215 | 25266 | .44285 | Heptachlor |
| 7.37 | 59901 | 1.09395 | o,p-DDE /hept epoy. | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide aye 1151 2.26.04 | 7.432 | 38064 | .73794 | Hept. epoxide |
| 7.566 | 2647 | .03125 | g. Chlordane | 7.68 | 2682 | .05129 | g. Chlordane |
| 7.716 | 1338 | .0157 | a. Chlordane | 7.863 | 888 | .01642 | a. Chlordane |
| 7.834 | 560 | .00821 | 4,4'-DDE | 8.097 | 1211 | .03126 | 4,4'-DDE |
| 7.904 | 210 | .00274 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.214 | 1405 | .01928 | Dieldrin | . | 0 | . | Dieldrin |
| 8.385 | 292 | .00537 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.52 | 15748 | .23163 | Endrin | 8.71 | 9265 | .22856 | Endrin |
| 8.847 | 2460 | .03557 | Endosulfan II | . | 0 | . | Endosulfan II |
| 8.99 | 1127 | .01902 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.41 | 987 | .02996 | Endrin aldehyde |
| 9.557 | 67079 | 1.92687 | Methoxychlor | 10.114 | 37814 | 1.9005 | Methoxychlor |
| 9.92 | 143 | .00233 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.288 | 271 | .00379 | Endrin ketone | 10.474 | 340 | .00701 | Endrin ketone |
| 11.598 | 102542 | 1.3724 | DCB | 12.206 | 63898 | 1.27243 | DCB |

Files:
Area File: C:\CPWIN\DATA1\2C13051.19A
Area File: C:\CPWIN\DATA1\2C13051B.19A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/25/2004 5:09:58 PM
File Reported On: 2/25/2004 at 5:10:07 PM

8694

10X REPLOTS

C:\CPWIN\DATA1\2C13051.19R

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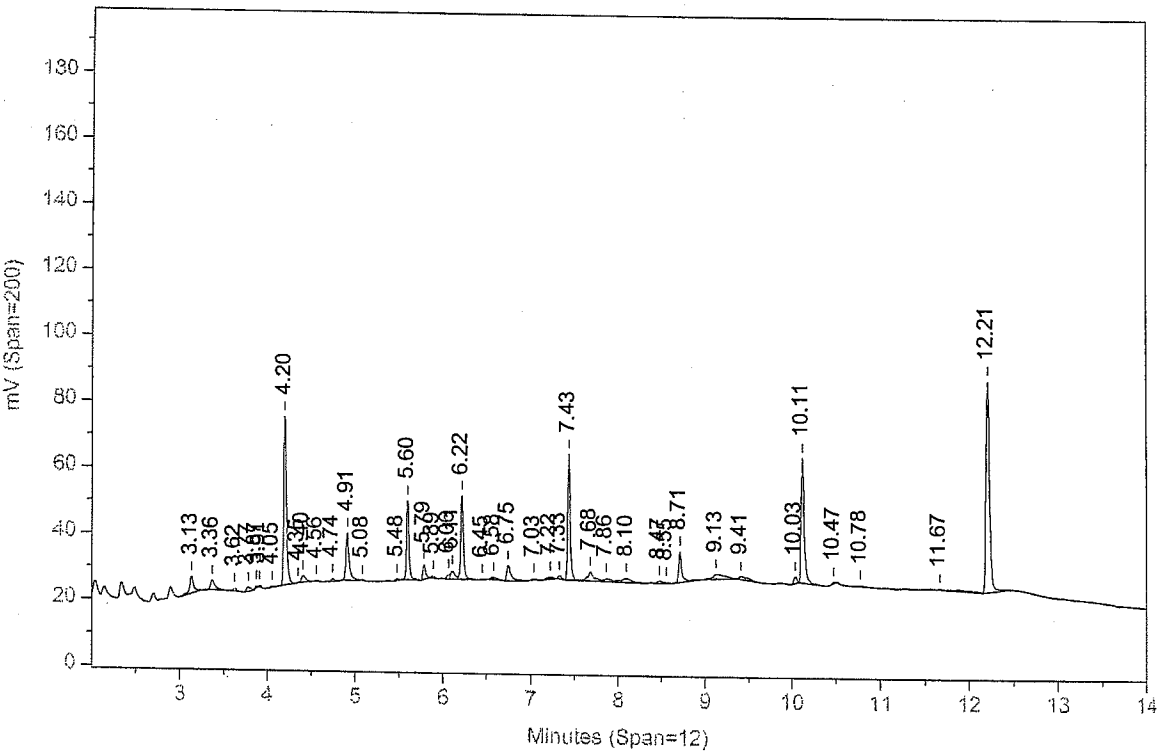



86.95

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSF UN7NVMS **Sample ID:** AB **Batchnumber:** 040550003A
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722A
Result file : 2C13051.22R
Calibration file : 2C13051.CAL
Method file : PESTD.MET
%SSR(TCX) : 74.2% Conc.: 1.070783
%SSR(DCB) : 96% Conc.: 1.402888

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.14 | 4.16 | 4.20 | 81322 | 1.070783 |
| **HCB** | 4.71 | 4.76 | 4.77 | 3599 | 0.027339 |
| **alpha-BHC** | 4.97 | 5.01 | 5.03 | 2526 | 0.027300 |
| **gamma-BHC** | 5.43 | 5.44 | 5.49 | 45263 | 0.495449 |
| **delta-BHC** | 5.81 | 5.81 | 5.87 | 40122 | 0.471333 |
| **Heptachlor** | 6.10 | 6.12 | 6.16 | 50429 | 0.488077 |
| **o,p-DDE** / hept epox | 7.33 | 7.37 | 7.39 | 62532 | 1.141998 / 0.7078 |
| **g. Chlordane** | 7.52 | 7.56 | 7.58 | 1067 | 0.012598 |
| **a. Chlordane** | 7.70 | 7.72 | 7.76 | 1827 | 0.021427 |
| **4,4'-DDE** | 7.78 | 7.83 | 7.84 | 736 | 0.010786 |
| **Endosulfan I** | 7.88 | 7.91 | 7.94 | 352 | 0.004593 |
| **o,p-DDT** | 8.35 | 8.40 | 8.41 | 176 | 0.003234 |
| **Endrin** | 8.51 | 8.52 | 8.57 | 16852 | 0.247879 |
| **4,4'-DDD** | 8.57 | 8.61 | 8.63 | 1699 | 0.031963 |
| **Endosulfan II** | 8.80 | 8.85 | 8.86 | 1318 | 0.019053 |
| **4,4'-DDT** | 8.93 | 8.99 | 8.99 | 1035 | 0.017465 |
| **Methoxychlor** | 9.54 | 9.56 | 9.60 | 71161 | 2.044143 |
| **Endrin ketone** | 10.28 | 10.29 | 10.34 | 227 | 0.003181 |
| **DCB** | 11.59 | 11.60 | 11.65 | 104819 | 1.402888 |

## Analysis Report (B)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722B
Result file : 2C13051B.22R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 74.3% Conc.: 1.071934
%SSR(DCB) : 88% Conc.: 1.286274

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.18 | 4.20 | 4.24 | 54527 | 1.071934 |
| **HCB** | 4.87 | 4.91 | 4.93 | 15981 | 0.206392 |
| **gamma-BHC** | 5.58 | 5.60 | 5.64 | 26244 | 0.518298 |
| **Heptachlor** | 6.20 | 6.21 | 6.26 | 28746 | 0.503855 |
| **Telodrin** | 6.87 | 6.89 | 6.93 | 1184 | 0.022997 |
| **Hept. epoxide** | 7.42 | 7.43 | 7.48 | 40736 | 0.789740 |
| **g. Chlordane** | 7.67 | 7.68 | 7.73 | 13687 | 0.261758 |
| **4,4'-DDE** | 8.08 | 8.08 | 8.14 | 835 | 0.021562 |
| **Endrin** | 8.70 | 8.71 | 8.76 | 9874 | 0.243588 |
| **4,4'-DDD** | 8.83 | 8.85 | 8.89 | 1006 | 0.040362 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 2077 | 0.049189 |
| **4,4'-DDT** | 9.23 | 9.25 | 9.29 | 371 | 0.011433 |
| **Endrin aldehyde** | 9.40 | 9.41 | 9.46 | 1916 | 0.058158 |
| **Methoxychlor** | 10.10 | 10.11 | 10.16 | 40564 | 2.038736 |
| **Endrin ketone** | 10.43 | 10.47 | 10.49 | 155 | 0.003182 |
| **DCB** | 12.20 | 12.21 | 12.26 | 64593 | 1.286274 |

(3 agree 1151, 2-26-04

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 1.071934 | | | | 0.11 | |
| HCB | B | 0.206392 | | | | ** 153.21 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | B | 0.518298 | 0.05 | 0.01 | | 4.51 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.503855 | 0.05 | 0.01 | | 3.18 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | B | 0.789740 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.261758 | | | | ** 181.63 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | B | 0.021562 | | | | ** 66.63 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.247879 | 0.1 | 0.02 | | 1.75 | |
| Kepone | | | | | | | 8696 |
| 4,4'-DDD | B | 0.040362 | | | | 23.23 | |
| Endosulfan II | B | 0.049189 | | | | ** 88.32 | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:29:38

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSF UN7NVMS Sample ID: AB **Batchnumber: 040550003A**
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

## Analysis Report (A)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722A
Result file : 2C13051.22R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 17:56:58
Instrument : CP13--H6722B
Result file : 2C13051B.22R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDT | A | 0.017465 | | | | ** 41.75 | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | A | 2.044143 | 0.5 | 0.1 | | 0.26 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.003182 | | | | 0.03 | |
| PCB | A | 1.402888 | | | | 8.67 | |

Units: ug/l

Reviewed by: Gerhard Carey Date: 2-26-04
Verified by: [illegible] Date: 2/26/04

5693

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 13:29:38

Sample Name: **4219022MSF ABUN7NVMS MS 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 06:10:58pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.22R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.504 | | 0.0000 | 0.000 | 132.3 | 0.007 | BB | 0.017 | 130.61 | 0.017 |
| 2 | 3.849 | | 0.0000 | 0.000 | 9741.7 | 0.512 | BB | 0.046 | 3507.11 | 0.463 |
| 3 | 3.922 | | 0.0000 | 0.000 | 12323.7 | 0.648 | BB | 0.037 | 5590.32 | 0.738 |
| 4 | 3.996 | | 0.0000 | 0.000 | 109.3 | 0.006 | BB | 0.017 | 109.78 | 0.014 |
| 5 | 4.041 | | 0.0000 | 0.000 | 5635.2 | 0.296 | BB | 0.035 | 2649.66 | 0.350 |
| 6 | 4.162 | TCX | 214.1566 | 14.199 | 193985.2 | 10.202 | BB | 0.040 | 81322.22 | 10.730 |
| 7 | 4.417 | | 0.0000 | 0.000 | 1047.5 | 0.055 | BB | 0.058 | 302.39 | 0.040 |
| 8 | 4.491 | | 0.0000 | 0.000 | 1734.1 | 0.091 | BB | 0.029 | 980.32 | 0.129 |
| 9 | 4.546 | | 0.0000 | 0.000 | 652.4 | 0.034 | BB | 0.029 | 372.73 | 0.049 |
| 10 | 4.610 | | 0.0000 | 0.000 | 7328.7 | 0.385 | BB | 0.049 | 2477.47 | 0.327 |
| 11 | 4.757 | HCB | 5.4678 | 0.363 | 5910.3 | 0.311 | BB | 0.027 | 3599.49 | 0.475 |
| 12 | 4.783 | | 0.0000 | 0.000 | 3545.1 | 0.186 | BB | 0.023 | 2526.53 | 0.333 |
| 13 | 4.900 | | 0.0000 | 0.000 | 332.1 | 0.017 | BB | 0.022 | 250.89 | 0.033 |
| 14 | 5.014 | alpha-BHC | 5.4600 | 0.362 | 7236.7 | 0.381 | BB | 0.048 | 2526.38 | 0.333 |
| 15 | 5.105 | | 0.0000 | 0.000 | 718.3 | 0.038 | BB | 0.035 | 345.70 | 0.046 |
| 16 | 5.255 | | 0.0000 | 0.000 | 2837.0 | 0.149 | BB | 0.050 | 951.03 | 0.125 |
| 17 | 5.321 | | 0.0000 | 0.000 | 422.2 | 0.022 | BB | 0.030 | 231.60 | 0.031 |
| 18 | 5.443 | gamma-BHC | 99.0897 | 6.570 | 95769.3 | 5.037 | BB | 0.035 | 45263.16 | 5.972 |
| 19 | 5.621 | | 0.0000 | 0.000 | 53228.5 | 2.800 | BB | 0.039 | 22720.41 | 2.998 |
| 20 | 5.738 | | 0.0000 | 0.000 | 326.5 | 0.017 | BB | 0.022 | 252.30 | 0.033 |
| 21 | 5.813 | delta-BHC | 94.2667 | 6.250 | 92599.1 | 4.870 | BB | 0.038 | 40121.82 | 5.294 |
| 22 | 5.972 | | 0.0000 | 0.000 | 18168.3 | 0.956 | BB | 0.064 | 4709.97 | 0.621 |
| 23 | 6.120 | Heptachlor | 97.6153 | 6.472 | 143426.6 | 7.543 | BB | 0.047 | 50428.64 | 6.654 |
| 24 | 6.325 | | 0.0000 | 0.000 | 328690.7 | 17.287 | BB | 0.035 | 158714.00 | 20.941 |
| 25 | 6.478 | | 0.0000 | 0.000 | 470.3 | 0.025 | BB | 0.029 | 266.41 | 0.035 |
| 26 | 6.590 | | 0.0000 | 0.000 | 3289.8 | 0.173 | BV | 0.051 | 1073.51 | 0.142 |
| 27 | 6.685 | | 0.0000 | 0.000 | 521.8 | 0.027 | VV | 0.031 | 281.44 | 0.037 |
| 28 | 6.739 | | 0.0000 | 0.000 | 4412.2 | 0.232 | VB | 0.071 | 1031.46 | 0.136 |
| 29 | 6.916 | | 0.0000 | 0.000 | 24174.8 | 1.271 | BB | 0.050 | 7996.11 | 1.055 |
| 30 | 7.044 | | 0.0000 | 0.000 | 27586.2 | 1.451 | BB | 0.046 | 9909.59 | 1.307 |
| 31 | 7.161 | | 0.0000 | 0.000 | 648.3 | 0.034 | BB | 0.037 | 292.07 | 0.039 |
| 32 | 7.254 | | 0.0000 | 0.000 | 1536.2 | 0.081 | BV | 0.032 | 796.13 | 0.105 |
| 33 | 7.369 | o,p-DDE | 228.3997 | 15.143 | 140544.3 | 7.392 | VV | 0.037 | 62531.80 | 8.250 |
| 34 | 7.500 | | 0.0000 | 0.000 | 14665.9 | 0.771 | VV | 0.039 | 6224.45 | 0.821 |
| 35 | 7.564 | g. Chlordane | 2.5197 | 0.167 | 1806.3 | 0.095 | VB | 0.028 | 1067.11 | 0.141 |
| 36 | 7.718 | a. Chlordane | 4.2855 | 0.284 | 4700.3 | 0.247 | BV | 0.043 | 1826.52 | 0.241 |
| 37 | 7.827 | 4,4'-DDE | 2.1572 | 0.143 | 2574.8 | 0.135 | VB | 0.058 | 736.31 | 0.097 |
| 38 | 7.906 | Endosulfan I | 0.9186 | 0.061 | 725.6 | 0.038 | BV | 0.034 | 351.94 | 0.046 |
| 39 | 8.006 | | 0.0000 | 0.000 | 3256.9 | 0.171 | VV | 0.040 | 1362.51 | 0.180 |
| 40 | 8.103 | | 0.0000 | 0.000 | 6680.1 | 0.351 | VV | 0.049 | 2273.65 | 0.300 |
| 41 | 8.182 | | 0.0000 | 0.000 | 7283.9 | 0.383 | VB | 0.069 | 1766.40 | 0.233 |
| 42 | 8.396 | o,p-DDT | 0.6468 | 0.043 | 340.1 | 0.018 | BB | 0.032 | 176.12 | 0.023 |
| 43 | 8.519 | Endrin | 49.5758 | 3.287 | 43296.5 | 2.277 | BV | 0.043 | 16852.44 | 2.224 |
| 44 | 8.613 | 4,4'-DDD | 6.3926 | 0.424 | 5654.8 | 0.297 | VV | 0.055 | 1699.37 | 0.224 |
| 45 | 8.725 | | 0.0000 | 0.000 | 1941.5 | 0.102 | VV | 0.050 | 646.63 | 0.085 |
| 46 | 8.778 | | 0.0000 | 0.000 | 1074.2 | 0.056 | VV | 0.045 | 394.29 | 0.052 |
| 47 | 8.848 | Endosulfan II | 3.8106 | 0.253 | 3709.8 | 0.195 | VV | 0.047 | 1317.71 | 0.174 |
| 48 | 8.911 | | 0.0000 | 0.000 | 3227.7 | 0.170 | VV | 0.056 | 956.82 | 0.126 |
| 49 | 8.987 | 4,4'-DDT | 3.4931 | 0.232 | 3058.5 | 0.161 | VB | 0.049 | 1034.80 | 0.137 |
| 50 | 9.149 | | 0.0000 | 0.000 | 41927.5 | 2.205 | BV | 0.088 | 7928.26 | 1.046 |
| 51 | 9.253 | | 0.0000 | 0.000 | 13217.6 | 0.695 | VB | 0.062 | 3540.50 | 0.467 |
| 52 | 9.451 | | 0.0000 | 0.000 | 1059.6 | 0.056 | BB | 0.035 | 500.28 | 0.066 |
| 53 | 9.556 | Methoxychlor | 408.8286 | 27.105 | 183397.0 | 9.646 | BB | 0.043 | 71161.19 | 9.389 |
| 54 | 9.765 | | 0.0000 | 0.000 | 123.9 | 0.007 | BB | 0.023 | 90.96 | 0.012 |
| 55 | 10.070 | | 0.0000 | 0.000 | 13319.0 | 0.700 | BV | 0.041 | 5400.06 | 0.712 |
| 56 | 10.136 | | 0.0000 | 0.000 | 20530.4 | 1.080 | VB | 0.068 | 5039.27 | 0.665 |
| 57 | 10.289 | Endrin ketone | 0.6362 | 0.042 | 396.4 | 0.021 | BV | 0.029 | 227.45 | 0.030 |
| 58 | 10.362 | | 0.0000 | 0.000 | 606.5 | 0.032 | VB | 0.038 | 268.90 | 0.035 |
| 59 | 10.515 | | 0.0000 | 0.000 | 4477.7 | 0.236 | BV | 0.063 | 1193.55 | 0.157 |
| 60 | 10.688 | | 0.0000 | 0.000 | 6114.1 | 0.322 | VB | 0.057 | 1784.19 | 0.235 |
| 61 | 11.132 | | 0.0000 | 0.000 | 531.7 | 0.028 | BB | 0.045 | 195.17 | 0.026 |
| 62 | 11.216 | | 0.0000 | 0.000 | 5096.7 | 0.268 | BB | 0.061 | 1403.39 | 0.185 |
| 63 | 11.314 | | 0.0000 | 0.000 | 623.6 | 0.033 | BB | 0.042 | 245.05 | 0.032 |
| 64 | 11.477 | | 0.0000 | 0.000 | 1062.7 | 0.056 | BB | 0.039 | 457.32 | 0.060 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.597 DCB | | 280.5777 | 18.602 | 298842.6 | 15.717 | BB | 0.048 | 104819.30 | 13.830 |
| 66 | 12.091 | | 0.0000 | 0.000 | 14596.2 | 0.768 | BB | 0.475 | 512.03 | 0.068 |
| 67 | 13.105 | | 0.0000 | 0.000 | 2350.8 | 0.124 | BB | 0.196 | 200.04 | 0.026 |

Total Area = 1901355.0, Total Amount = 1508.298, Total Height = 757916.8, Sample Units = PPB

Sample Name: **4219022MSF ABUN7NVMS MS 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 06:10:58pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.22R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

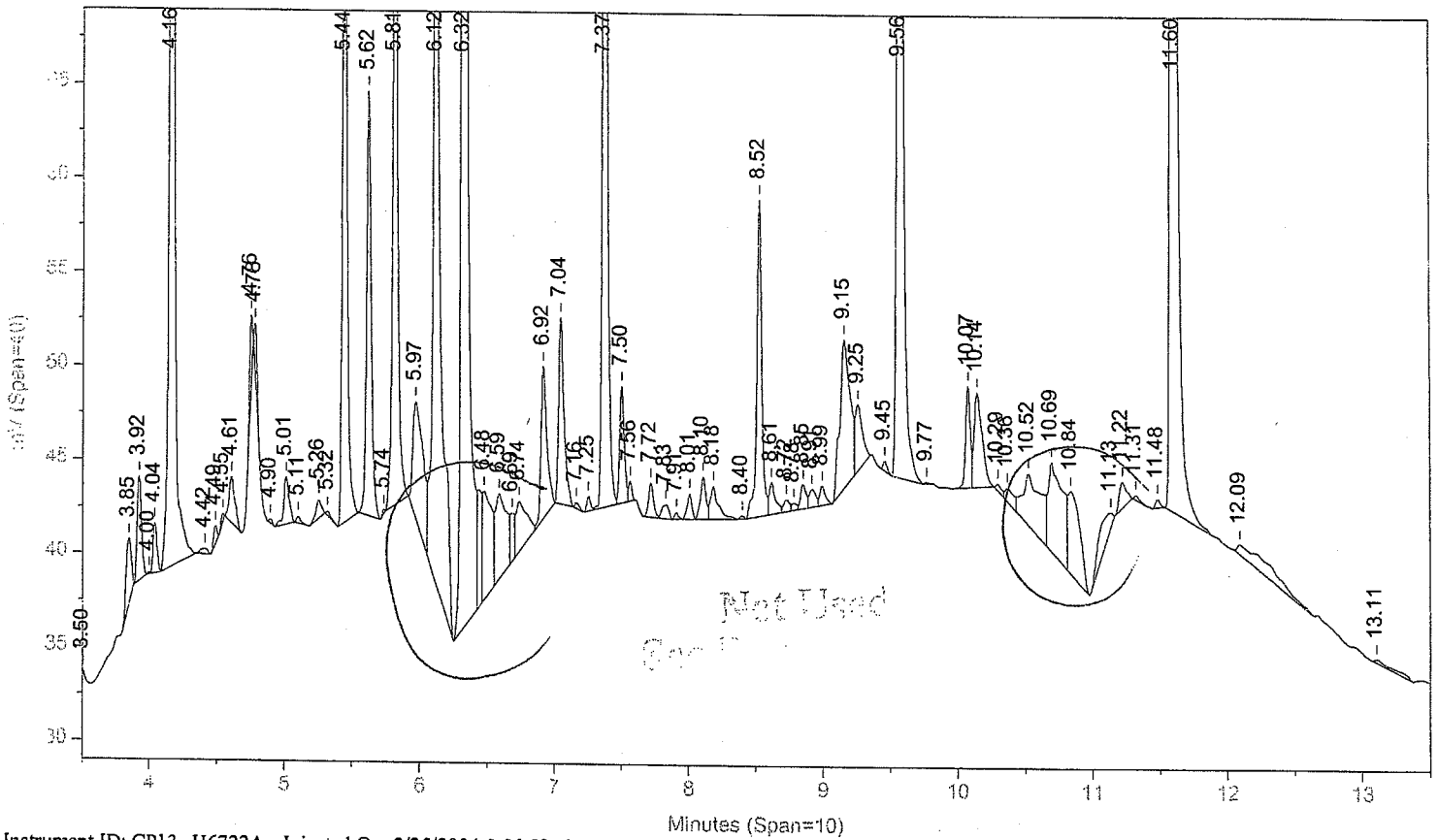
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.134 | | 0.0000 | 0.000 | 26940.8 | 3.042 | BB | 0.052 | 8645.52 | 2.375 |
| 2 | 3.365 | | 0.0000 | 0.000 | 12131.2 | 1.370 | BB | 0.094 | 2156.64 | 0.592 |
| 3 | 3.622 | | 0.0000 | 0.000 | 10676.2 | 1.205 | BB | 0.041 | 4308.18 | 1.184 |
| 4 | 3.819 | | 0.0000 | 0.000 | 5215.3 | 0.589 | BB | 0.059 | 1461.18 | 0.401 |
| 5 | 3.914 | | 0.0000 | 0.000 | 4641.7 | 0.524 | BB | 0.035 | 2209.79 | 0.607 |
| 6 | 4.057 | | 0.0000 | 0.000 | 1024.5 | 0.116 | BB | 0.042 | 408.74 | 0.112 |
| 7 | 4.128 | | 0.0000 | 0.000 | 269.7 | 0.030 | BB | 0.021 | 211.18 | 0.058 |
| 8 | 4.197 TCX | | 214.3869 | 15.040 | 118759.6 | 13.408 | BB | 0.036 | 54527.37 | 14.980 |
| 9 | 4.352 | | 0.0000 | 0.000 | 6086.1 | 0.687 | BB | 0.033 | 3112.57 | 0.855 |
| 10 | 4.398 | | 0.0000 | 0.000 | 1574.4 | 0.178 | BB | 0.032 | 810.89 | 0.223 |
| 11 | 4.564 | | 0.0000 | 0.000 | 4809.2 | 0.543 | BB | 0.112 | 715.68 | 0.197 |
| 12 | 4.741 | | 0.0000 | 0.000 | 2478.5 | 0.280 | BB | 0.048 | 852.38 | 0.234 |
| 13 | 4.910 HCB | | 41.2785 | 2.896 | 38818.6 | 4.383 | BB | 0.040 | 15980.65 | 4.390 |
| 14 | 5.600 gamma-BHC | | 103.6595 | 7.272 | 55155.9 | 6.227 | BB | 0.035 | 26244.31 | 7.210 |
| 15 | 5.788 | | 0.0000 | 0.000 | 20499.8 | 2.314 | BB | 0.037 | 9143.40 | 2.512 |
| 16 | 5.898 | | 0.0000 | 0.000 | 3927.9 | 0.443 | BB | 0.034 | 1926.42 | 0.529 |
| 17 | 6.070 | | 0.0000 | 0.000 | 1109.5 | 0.125 | BV | 0.029 | 648.45 | 0.178 |
| 18 | 6.111 | | 0.0000 | 0.000 | 6266.9 | 0.708 | VB | 0.042 | 2489.59 | 0.684 |
| 19 | 6.215 Heptachlor | | 100.7710 | 7.069 | 60812.0 | 6.866 | BB | 0.035 | 28746.42 | 7.897 |
| 20 | 6.342 | | 0.0000 | 0.000 | 4147.6 | 0.468 | BB | 0.032 | 2152.34 | 0.591 |
| 21 | 6.439 | | 0.0000 | 0.000 | 523.3 | 0.059 | BB | 0.033 | 267.03 | 0.073 |
| 22 | 6.500 | | 0.0000 | 0.000 | 696.6 | 0.079 | BB | 0.031 | 379.34 | 0.104 |
| 23 | 6.747 | | 0.0000 | 0.000 | 14952.6 | 1.688 | BB | 0.044 | 5602.51 | 1.539 |
| 24 | 6.892 Telodrin | | 4.5995 | 0.323 | 2849.7 | 0.322 | BB | 0.040 | 1183.86 | 0.325 |
| 25 | 7.081 | | 0.0000 | 0.000 | 14744.2 | 1.665 | BB | 0.063 | 3893.68 | 1.070 |
| 26 | 7.330 | | 0.0000 | 0.000 | 1919.4 | 0.217 | BV | 0.044 | 723.11 | 0.199 |
| 27 | 7.432 Hept. epoxide | | 157.9481 | 11.080 | 80849.3 | 9.128 | VB | 0.033 | 40736.24 | 11.191 |
| 28 | 7.627 | | 0.0000 | 0.000 | 1553.4 | 0.175 | BV | 0.039 | 661.95 | 0.182 |
| 29 | 7.683 g. Chlordane | | 52.3516 | 3.673 | 33852.9 | 3.822 | VV | 0.041 | 13686.98 | 3.760 |
| 30 | 7.856 | | 0.0000 | 0.000 | 7436.8 | 0.840 | VV | 0.088 | 1409.24 | 0.387 |
| 31 | 8.080 4,4'-DDE | | 4.3123 | 0.303 | 8223.0 | 0.928 | VB | 0.164 | 835.49 | 0.230 |
| 32 | 8.473 | | 0.0000 | 0.000 | 4522.5 | 0.511 | BB | 0.064 | 1176.17 | 0.323 |
| 33 | 8.709 Endrin | | 48.7176 | 3.418 | 21963.7 | 2.480 | BB | 0.037 | 9874.18 | 2.713 |
| 34 | 8.853 4,4'-DDD | | 8.0725 | 0.566 | 2968.3 | 0.335 | BB | 0.049 | 1005.73 | 0.276 |
| 35 | 8.997 Endosulfan II | | 9.8377 | 0.690 | 4873.2 | 0.550 | BB | 0.039 | 2077.22 | 0.571 |
| 36 | 9.128 | | 0.0000 | 0.000 | 1524.0 | 0.172 | BB | 0.063 | 402.59 | 0.111 |
| 37 | 9.247 4,4'-DDT | | 2.2866 | 0.160 | 1835.0 | 0.207 | BB | 0.082 | 371.11 | 0.102 |
| 38 | 9.413 Endrin aldehyde | | 11.6316 | 0.816 | 10146.4 | 1.146 | BB | 0.088 | 1916.22 | 0.526 |
| 39 | 9.719 | | 0.0000 | 0.000 | 7582.2 | 0.856 | BB | 0.045 | 2779.51 | 0.764 |
| 40 | 10.033 | | 0.0000 | 0.000 | 3662.9 | 0.414 | BB | 0.038 | 1619.30 | 0.445 |
| 41 | 10.114 Methoxychlor | | 407.7472 | 28.604 | 97991.9 | 11.063 | BB | 0.040 | 40564.45 | 11.144 |
| 42 | 10.473 Endrin ketone | | 0.6363 | 0.045 | 295.5 | 0.033 | BB | 0.032 | 154.52 | 0.042 |
| 43 | 10.510 | | 0.0000 | 0.000 | 1769.5 | 0.200 | BB | 0.035 | 832.57 | 0.229 |
| 44 | 11.669 | | 0.0000 | 0.000 | 1302.4 | 0.147 | BB | 0.043 | 500.96 | 0.138 |
| 45 | 12.206 DCB | | 257.2548 | 18.047 | 172368.7 | 19.460 | BB | 0.044 | 64593.00 | 17.745 |

Total Area = 885752.4, Total Amount = 1425.492, Total Height = 363998.7, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.22R

C:\CPWIN\DATA1\2C13051.22R

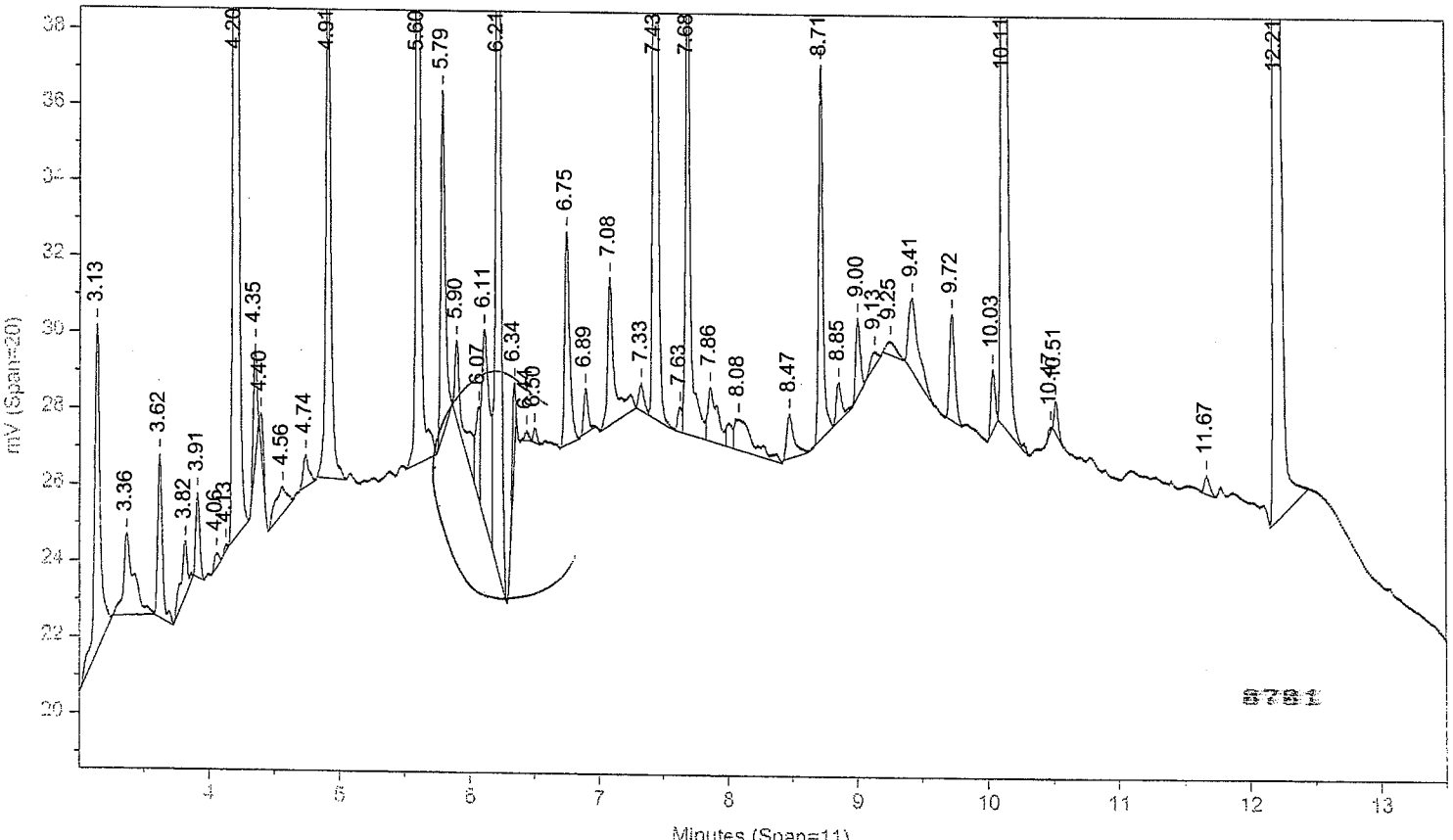



Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.22R

C:\CPWIN\DATA1\2C13051B.22R

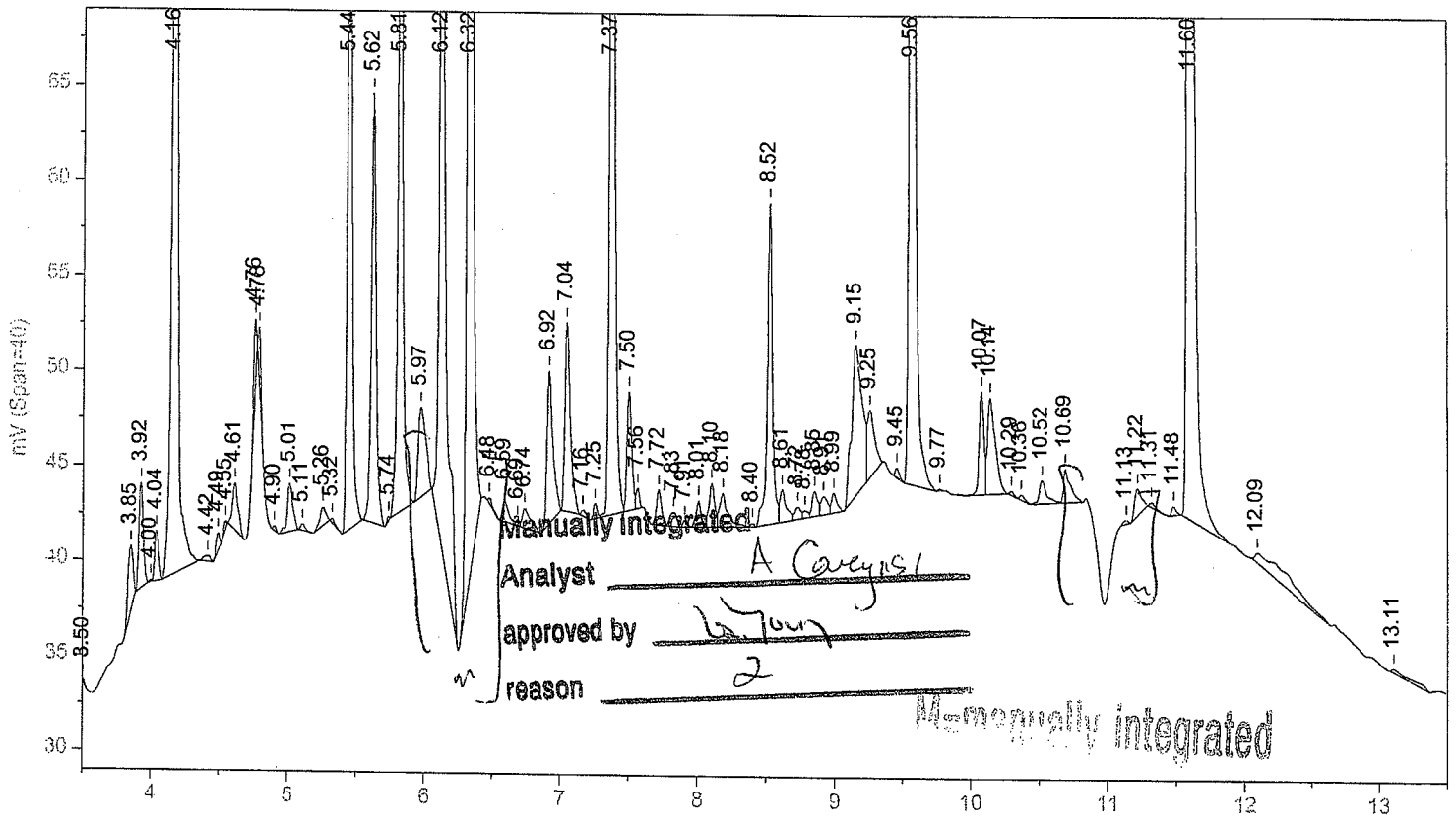



Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:56:58 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\2C13051.22R

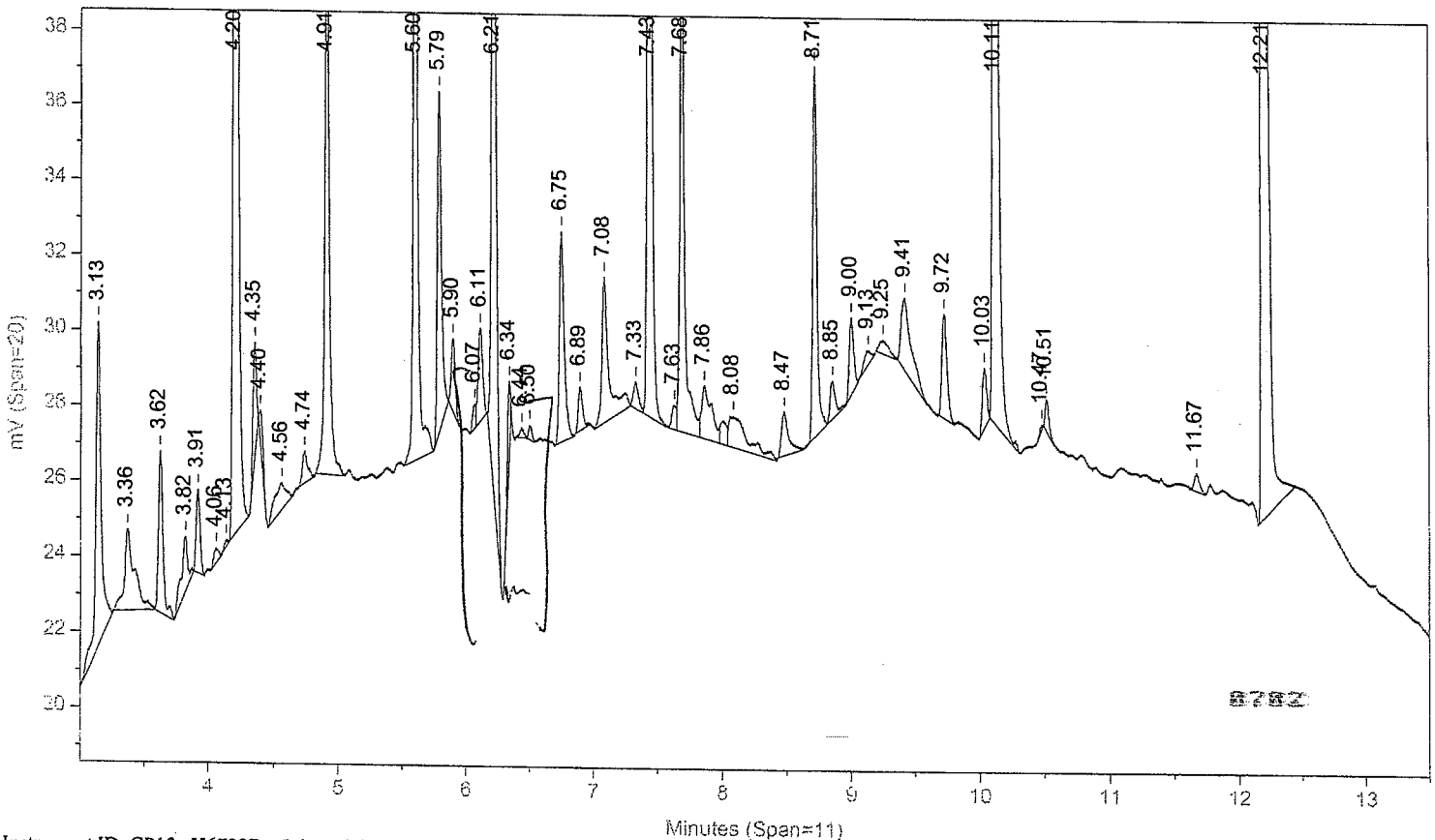
C:\CPWIN\DATA1\2C13051.22R




Instrument ID: CP13--H6722A Injected On: 2/25/2004 5:56:58 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.22R

C:\CPWIN\DATA1\2C13051B.22R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 5:56:58 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 200 Dilution Factor: 10
Analyst: 120

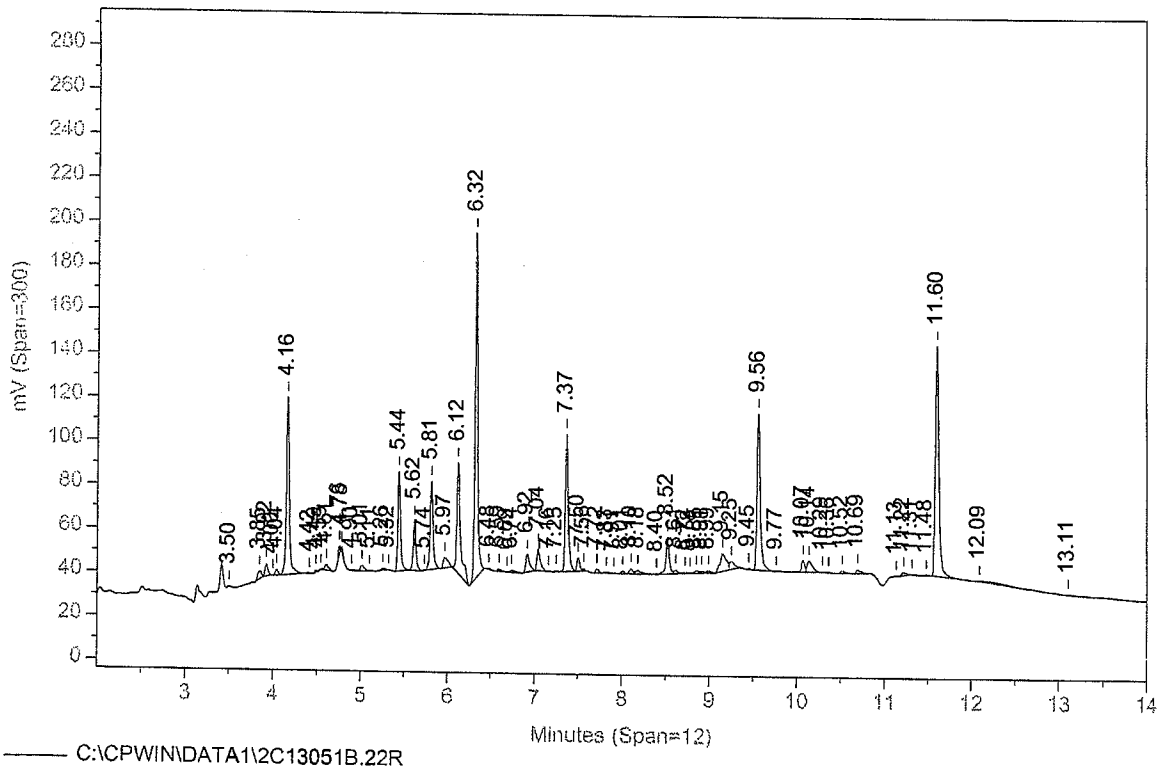
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.162 | 81322 | 1.07078 | TCX | 4.197 | 54527 | 1.07193 | TCX |
| 4.757 | 3599 | .02734 | HCB | 4.91 | 15981 | .20639 | HCB |
| 5.014 | 2526 | .0273 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.443 | 45263 | .49545 | gamma-BHC | 5.6 | 26244 | .5183 | gamma-BHC |
| 5.813 | 40122 | .47133 | delta-BHC | . | 0 | . | delta-BHC |
| 6.12 | 50429 | .48808 | Heptachlor | 6.215 | 28746 | .50385 | Heptachlor |
| . | 0 | . | Telodrin | 6.892 | 1184 | .023 | Telodrin |
| 7.369 | 62532 | 1.142 | o,p-DDE /hept epox | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.432 | 40736 | .78974 | Hept. epoxide |
| 7.564 | 1067 | .0126 | g. Chlordane agc 1151 2.26.09 | 7.683 | 13687 | .26176 | g. Chlordane |
| 7.718 | 1827 | .02143 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.827 | 736 | .01079 | 4,4'-DDE | 8.08 | 835 | .02156 | 4,4'-DDE |
| 7.906 | 352 | .00459 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.396 | 176 | .00323 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 16852 | .24788 | Endrin | 8.709 | 9874 | .24359 | Endrin |
| 8.613 | 1699 | .03196 | 4,4'-DDD | 8.853 | 1006 | .04036 | 4,4'-DDD |
| 8.848 | 1318 | .01905 | Endosulfan II | 8.997 | 2077 | .04919 | Endosulfan II |
| 8.987 | 1035 | .01747 | 4,4'-DDT | 9.247 | 371 | .01143 | 4,4'-DDT |
| . | 0 | . | Endrin aldehyde | 9.413 | 1916 | .05816 | Endrin aldehyde |
| 9.556 | 71161 | 2.04414 | Methoxychlor | 10.114 | 40564 | 2.03874 | Methoxychlor |
| 10.289 | 227 | .00318 | Endrin ketone | 10.473 | 155 | .00318 | Endrin ketone |
| 11.597 | 104819 | 1.40289 | DCB | 12.206 | 64593 | 1.28627 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 1:26:28 PM
File Reported On: 2/26/2004 at 1:26:30 PM

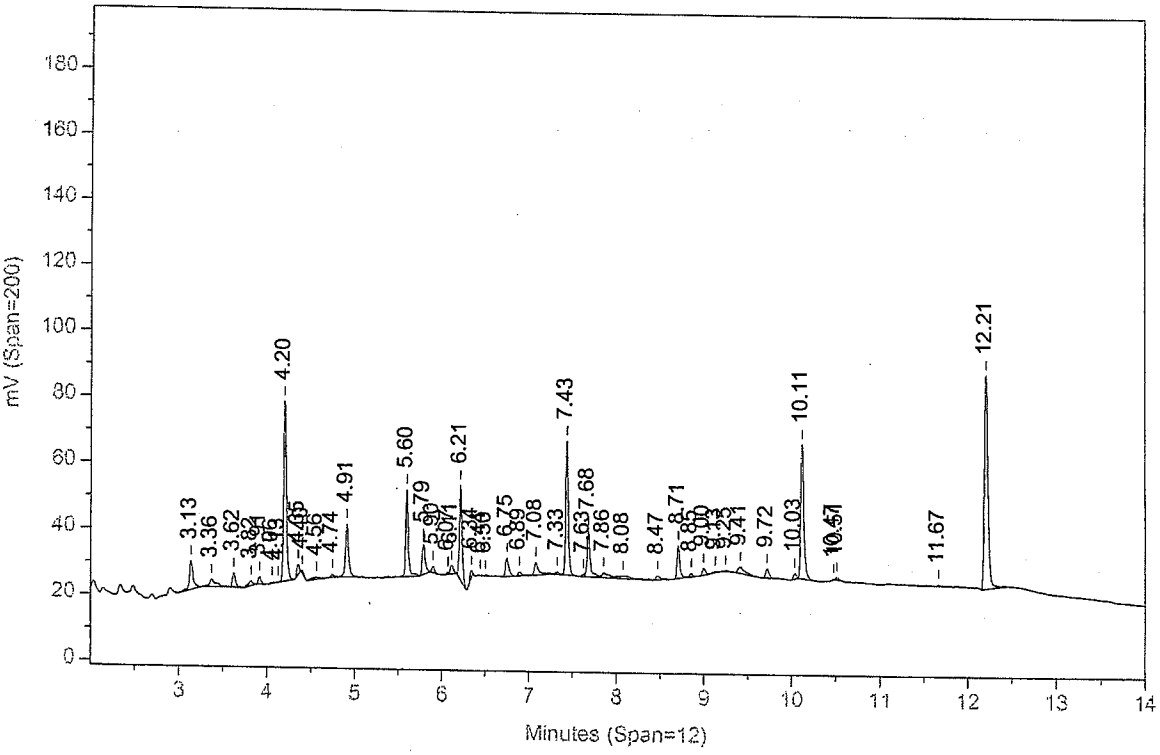
8783

10X REPLOTS

C:\CPWIN\DATA1\2C13051.22R




C:\CPWIN\DATA1\2C13051B.22R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSDF UN7NVMSD **Sample ID:** AB **Batchnumber:** 040550003A
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

NJ 3/8/04

## Analysis Report (A)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722A
Result file : 2C13051.23R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

%SSR(TCX) : 71.3% Conc.: 1.029314
%SSR(DCB) : 93.9% Conc.: 1.37192

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.14 | 4.16 | 4.20 | 78173 | 1.029314 |
| HCB | 4.71 | 4.76 | 4.77 | 3518 | 0.026718 |
| alpha-BHC | 4.97 | 5.01 | 5.03 | 2775 | 0.029991 |
| gamma-BHC | 5.43 | 5.44 | 5.49 | 43394 | 0.474990 |
| delta-BHC | 5.81 | 5.81 | 5.87 | 12386 | 0.145501 |
| Heptachlor (3) | 6.10 | 6.12 | 6.16 | 49668 | 0.480712 (3) |
| o,p-DDE/hept epox | 7.33 | 7.37 | 7.39 | 60921 | 1.112581/0.689/ |
| g. Chlordane | 7.52 | 7.56 | 7.58 | 1987 | 0.023464 |
| a. Chlordane | 7.70 | 7.71 | 7.76 | 1139 | 0.013365 |
| 4,4'-DDE | 7.78 | 7.84 | 7.84 | 355 | 0.005205 |
| Endosulfan I | 7.88 | 7.90 | 7.94 | 119 | 0.001550 |
| Dieldrin | 8.20 | 8.22 | 8.26 | 640 | 0.008788 |
| o,p-DDT | 8.35 | 8.39 | 8.41 | 212 | 0.003892 |
| Endrin | 8.51 | 8.52 | 8.57 | 16281 | 0.239469 |
| 4,4'-DDD | 8.57 | 8.61 | 8.63 | 1825 | 0.034322 |
| Endosulfan II | 8.80 | 8.85 | 8.86 | 1256 | 0.018163 |
| Methoxychlor | 9.54 | 9.56 | 9.60 | 66969 | 1.923721 |
| Mirex | 9.78 | 9.80 | 9.84 | 134 | 0.002139 |
| Endo. sulfate | 9.91 | 9.92 | 9.97 | 141 | 0.002285 |
| Endrin ketone | 10.28 | 10.29 | 10.34 | 205 | 0.002866 |
| DCB | 11.59 | 11.60 | 11.65 | 102505 | 1.371920 |

(3 agrees: 2.2604)

## Analysis Report (B)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722B
Result file : 2C13051B.23R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 72.8% Conc.: 1.050653
%SSR(DCB) : 86% Conc.: 1.25589

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.18 | 4.20 | 4.24 | 53445 | 1.050653 |
| HCB | 4.87 | 4.91 | 4.93 | 15356 | 0.198322 |
| gamma-BHC | 5.58 | 5.60 | 5.64 | 24957 | 0.492883 |
| Heptachlor | 6.20 | 6.21 | 6.26 | 27948 | 0.489859 |
| Telodrin | 6.87 | 6.90 | 6.93 | 1120 | 0.021755 |
| Hept. epoxide | 7.42 | 7.43 | 7.48 | 39484 | 0.765471 |
| g. Chlordane | 7.67 | 7.68 | 7.73 | 13454 | 0.257306 |
| 4,4'-DDE | 8.08 | 8.11 | 8.14 | 971 | 0.025049 |
| Endrin | 8.70 | 8.71 | 8.76 | 9444 | 0.232988 |
| 4,4'-DDD | 8.83 | 8.84 | 8.89 | 772 | 0.031002 |
| Endosulfan II | 8.97 | 9.00 | 9.03 | 1964 | 0.046498 |
| Endrin aldehyde | 9.40 | 9.42 | 9.46 | 1068 | 0.032404 |
| Methoxychlor | 10.10 | 10.11 | 10.16 | 38372 | 1.928540 |
| Endrin ketone | 10.43 | 10.48 | 10.49 | 651 | 0.013412 |
| DCB | 12.20 | 12.21 | 12.26 | 63067 | 1.255890 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 1.050653 | | | | 2.05 | |
| HCB | B | 0.198322 | | | | ** 152.51 | |
| alpha-BHC | | | | | | | |
| gamma-BHC | B | 0.492883 | 0.05 | 0.01 | | 3.70 | |
| beta-BHC | | | | | | | |
| delta-BHC | | | | | | | |
| Heptachlor | B | 0.489859 | 0.05 | 0.01 | | 1.88 | |
| Aldrin | | | | | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | A | 0.765471 | <0.05 | <0.01 | | | |
| g. Chlordane | B | 0.257306 | | | | ** 166.57 | |
| a. Chlordane | | | | | | | |
| 4,4'-DDE | B | 0.025049 | | | | ** 131.18 | |
| Endosulfan I | | | | | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | | | | | |
| o,p-DDT | | | | | | | |
| Endrin | A | 0.239469 | 0.1 | 0.02 | | 2.74 | |
| Kepone | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 13:30:33

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSDF UN7NVMS **Sample ID:** AB **Batchnumber:** 040550003A
Sample Amount: 200 ml Total Volume: 10 ml Analyst: 120 SDG: RAV02 State: VA
Analyses: 00950

ND 3/8/04

## Analysis Report (A)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722A
Result file : 2C13051.23R
Calibration file : 2C13051.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : FEB 25, 2004 18:17:17
Instrument : CP13--H6722B
Result file : 2C13051B.23R
Calibration file : 2C13051B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | A | 0.034322 | | | | 10.16 | |
| Endosulfan II | B | 0.046498 | | | | ** 87.64 | |
| 4,4'-DDT | | | | | | | |
| Endrin aldehyde | | | | | | | |
| Methoxychlor | B | 1.928540 | 0.5 | 0.1 | | 0.25 | |
| Mirex | | | | | | | |
| Endo. sulfate | | | | | | | |
| Endrin ketone | B | 0.013412 | | | | ** 129.57 | |
| DCB | A | 1.371920 | | | | 8.83 | |

Units: ug/l

Reviewed by: Andrea Carey Date: 2-26-04
Verified by: Date: 2/26/04

5786

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 2/26/04 13:30:33

Sample Name: **4219022MSDF ABUN7NVMSD MSD 040550003A 00950**
Acquired from CP13--H6722A via port 3 on 2/25/04 06:31:17pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\2C13051.23R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13051.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.846 | | 0.0000 | 0.000 | 13514.1 | 0.758 | BB | 0.045 | 5000.79 | 0.711 |
| 2 | 3.919 | | 0.0000 | 0.000 | 15758.2 | 0.884 | BB | 0.035 | 7562.88 | 1.075 |
| 3 | 3.993 | | 0.0000 | 0.000 | 149.7 | 0.008 | BB | 0.017 | 150.07 | 0.021 |
| 4 | 4.040 | | 0.0000 | 0.000 | 5088.2 | 0.286 | BB | 0.035 | 2418.01 | 0.344 |
| 5 | 4.161 | TCX | 205.8628 | 14.808 | 169571.8 | 9.516 | BB | 0.036 | 78172.77 | 11.114 |
| 6 | 4.421 | | 0.0000 | 0.000 | 853.7 | 0.048 | BB | 0.071 | 201.55 | 0.029 |
| 7 | 4.489 | | 0.0000 | 0.000 | 3052.3 | 0.171 | BB | 0.030 | 1674.88 | 0.238 |
| 8 | 4.544 | | 0.0000 | 0.000 | 616.2 | 0.035 | BB | 0.024 | 424.61 | 0.060 |
| 9 | 4.608 | | 0.0000 | 0.000 | 6617.2 | 0.371 | BB | 0.049 | 2245.28 | 0.319 |
| 10 | 4.755 | HCB | 5.3437 | 0.384 | 6251.8 | 0.351 | BB | 0.030 | 3517.75 | 0.500 |
| 11 | 4.782 | | 0.0000 | 0.000 | 3407.1 | 0.191 | BB | 0.022 | 2629.30 | 0.374 |
| 12 | 4.899 | | 0.0000 | 0.000 | 432.2 | 0.024 | BB | 0.023 | 308.85 | 0.044 |
| 13 | 5.013 | alpha-BHC | 5.9982 | 0.431 | 7535.3 | 0.423 | BB | 0.045 | 2775.44 | 0.395 |
| 14 | 5.100 | | 0.0000 | 0.000 | 583.7 | 0.033 | BB | 0.033 | 296.20 | 0.042 |
| 15 | 5.253 | | 0.0000 | 0.000 | 7747.6 | 0.435 | BB | 0.090 | 1430.54 | 0.203 |
| 16 | 5.442 | gamma-BHC | 94.9980 | 6.833 | 91705.0 | 5.146 | BB | 0.035 | 43394.09 | 6.170 |
| 17 | 5.620 | | 0.0000 | 0.000 | 52210.2 | 2.930 | BB | 0.039 | 22096.39 | 3.142 |
| 18 | 5.811 | delta-BHC | 29.1003 | 2.093 | 34003.9 | 1.908 | BB | 0.046 | 12385.66 | 1.761 |
| 19 | 5.947 | | 0.0000 | 0.000 | 2147.7 | 0.121 | BB | 0.077 | 465.06 | 0.066 |
| 20 | 6.119 | Heptachlor | 96.1424 | 6.916 | 146143.6 | 8.201 | BB | 0.049 | 49667.73 | 7.062 |
| 21 | 6.324 | | 0.0000 | 0.000 | 314561.1 | 17.653 | BB | 0.034 | 152002.60 | 21.611 |
| 22 | 6.477 | | 0.0000 | 0.000 | 517.6 | 0.029 | BB | 0.031 | 279.38 | 0.040 |
| 23 | 6.589 | | 0.0000 | 0.000 | 3886.9 | 0.218 | BV | 0.059 | 1104.69 | 0.157 |
| 24 | 6.740 | | 0.0000 | 0.000 | 4011.8 | 0.225 | VB | 0.085 | 784.13 | 0.111 |
| 25 | 6.914 | | 0.0000 | 0.000 | 20372.9 | 1.143 | BB | 0.049 | 6863.44 | 0.976 |
| 26 | 7.043 | | 0.0000 | 0.000 | 27794.8 | 1.560 | BB | 0.046 | 10004.37 | 1.422 |
| 27 | 7.163 | | 0.0000 | 0.000 | 782.6 | 0.044 | BB | 0.038 | 339.82 | 0.048 |
| 28 | 7.252 | | 0.0000 | 0.000 | 1455.4 | 0.082 | BB | 0.030 | 809.87 | 0.115 |
| 29 | 7.368 | o,p-DDE | 222.5162 | 16.006 | 139899.0 | 7.851 | BV | 0.038 | 60921.01 | 8.662 |
| 30 | 7.500 | | 0.0000 | 0.000 | 16915.4 | 0.949 | VV | 0.043 | 6577.66 | 0.935 |
| 31 | 7.564 | g. Chlordane | 4.6928 | 0.338 | 6385.0 | 0.358 | VV | 0.054 | 1987.45 | 0.283 |
| 32 | 7.715 | a. Chlordane | 2.6731 | 0.192 | 2948.0 | 0.165 | VV | 0.043 | 1139.29 | 0.162 |
| 33 | 7.842 | 4,4'-DDE | 1.0410 | 0.075 | 1308.6 | 0.073 | VB | 0.061 | 355.33 | 0.051 |
| 34 | 7.901 | Endosulfan I | 0.3099 | 0.022 | 158.2 | 0.009 | BB | 0.022 | 118.74 | 0.017 |
| 35 | 8.006 | | 0.0000 | 0.000 | 1338.1 | 0.075 | BV | 0.045 | 495.05 | 0.070 |
| 36 | 8.102 | | 0.0000 | 0.000 | 4806.5 | 0.270 | VV | 0.064 | 1252.83 | 0.178 |
| 37 | 8.178 | | 0.0000 | 0.000 | 2100.9 | 0.118 | VV | 0.048 | 731.89 | 0.104 |
| 38 | 8.220 | Dieldrin | 1.7577 | 0.126 | 2002.1 | 0.112 | VB | 0.052 | 640.42 | 0.091 |
| 39 | 8.387 | o,p-DDT | 0.7783 | 0.056 | 432.9 | 0.024 | BB | 0.034 | 211.92 | 0.030 |
| 40 | 8.519 | Endrin | 47.8939 | 3.445 | 38681.1 | 2.171 | BV | 0.040 | 16280.69 | 2.315 |
| 41 | 8.612 | 4,4'-DDD | 6.8643 | 0.494 | 6245.0 | 0.350 | VV | 0.057 | 1824.78 | 0.259 |
| 42 | 8.722 | | 0.0000 | 0.000 | 2176.9 | 0.122 | VV | 0.050 | 725.06 | 0.103 |
| 43 | 8.849 | Endosulfan II | 3.6326 | 0.261 | 3617.8 | 0.203 | VV | 0.048 | 1256.17 | 0.179 |
| 44 | 8.910 | | 0.0000 | 0.000 | 2438.1 | 0.137 | VV | 0.053 | 761.10 | 0.108 |
| 45 | 8.991 | | 0.0000 | 0.000 | 1663.2 | 0.093 | VB | 0.054 | 510.83 | 0.073 |
| 46 | 9.148 | | 0.0000 | 0.000 | 43821.1 | 2.459 | BV | 0.092 | 7972.43 | 1.133 |
| 47 | 9.253 | | 0.0000 | 0.000 | 22672.9 | 1.272 | VB | 0.091 | 4136.93 | 0.588 |
| 48 | 9.452 | | 0.0000 | 0.000 | 1504.1 | 0.084 | BB | 0.036 | 693.06 | 0.099 |
| 49 | 9.555 | Methoxychlor | 384.7443 | 27.676 | 174771.5 | 9.808 | BB | 0.043 | 66969.04 | 9.521 |
| 50 | 9.797 | Mirex | 0.4278 | 0.031 | 477.8 | 0.027 | BB | 0.059 | 134.35 | 0.019 |
| 51 | 9.916 | Endo. sulfate | 0.4571 | 0.033 | 272.4 | 0.015 | BB | 0.032 | 140.65 | 0.020 |
| 52 | 10.069 | | 0.0000 | 0.000 | 13632.9 | 0.765 | BV | 0.042 | 5386.27 | 0.766 |
| 53 | 10.134 | | 0.0000 | 0.000 | 17276.8 | 0.970 | VB | 0.069 | 4189.49 | 0.596 |
| 54 | 10.288 | Endrin ketone | 0.5732 | 0.041 | 347.8 | 0.020 | BB | 0.028 | 204.91 | 0.029 |
| 55 | 10.364 | | 0.0000 | 0.000 | 517.3 | 0.029 | BB | 0.038 | 226.70 | 0.032 |
| 56 | 10.515 | | 0.0000 | 0.000 | 3717.9 | 0.209 | BV | 0.055 | 1124.45 | 0.160 |
| 57 | 10.721 | | 0.0000 | 0.000 | 4167.2 | 0.234 | VB | 0.065 | 1063.32 | 0.151 |
| 58 | 11.125 | | 0.0000 | 0.000 | 117.2 | 0.007 | BB | 0.033 | 58.68 | 0.008 |
| 59 | 11.216 | | 0.0000 | 0.000 | 4696.2 | 0.264 | BB | 0.063 | 1248.50 | 0.178 |
| 60 | 11.313 | | 0.0000 | 0.000 | 476.9 | 0.027 | BB | 0.039 | 206.14 | 0.029 |
| 61 | 11.474 | | 0.0000 | 0.000 | 1506.9 | 0.085 | BB | 0.041 | 611.27 | 0.087 |
| 62 | 11.596 | DCB | 274.3840 | 19.737 | 294059.0 | 16.502 | BB | 0.048 | 102505.40 | 14.574 |
| 63 | 12.085 | | 0.0000 | 0.000 | 13286.3 | 0.746 | BB | 0.292 | 757.69 | 0.108 |
| 64 | 13.098 | | 0.0000 | 0.000 | 3573.7 | 0.201 | BB | 0.151 | 393.22 | 0.056 |

8787

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 13.438 | | 0.0000 | 0.000 | 6366.1 | 0.357 | BB | 0.357 | 297.56 | 0.042 |
| 66 | 13.929 | | 0.0000 | 0.000 | 796.8 | 0.045 | BB | 0.057 | 233.15 | 0.033 |

Total Area = 1781948.0, Total Amount = 1390.191, Total Height = 703349.6, Sample Units = PPB

Sample Name: **4219022MSDF ABUN7NVMSD MSD 040550003A 00950**
Acquired from CP13--H6722B via port 4 on 2/25/04 06:31:17pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\2C13051B.23R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13051B.CAL

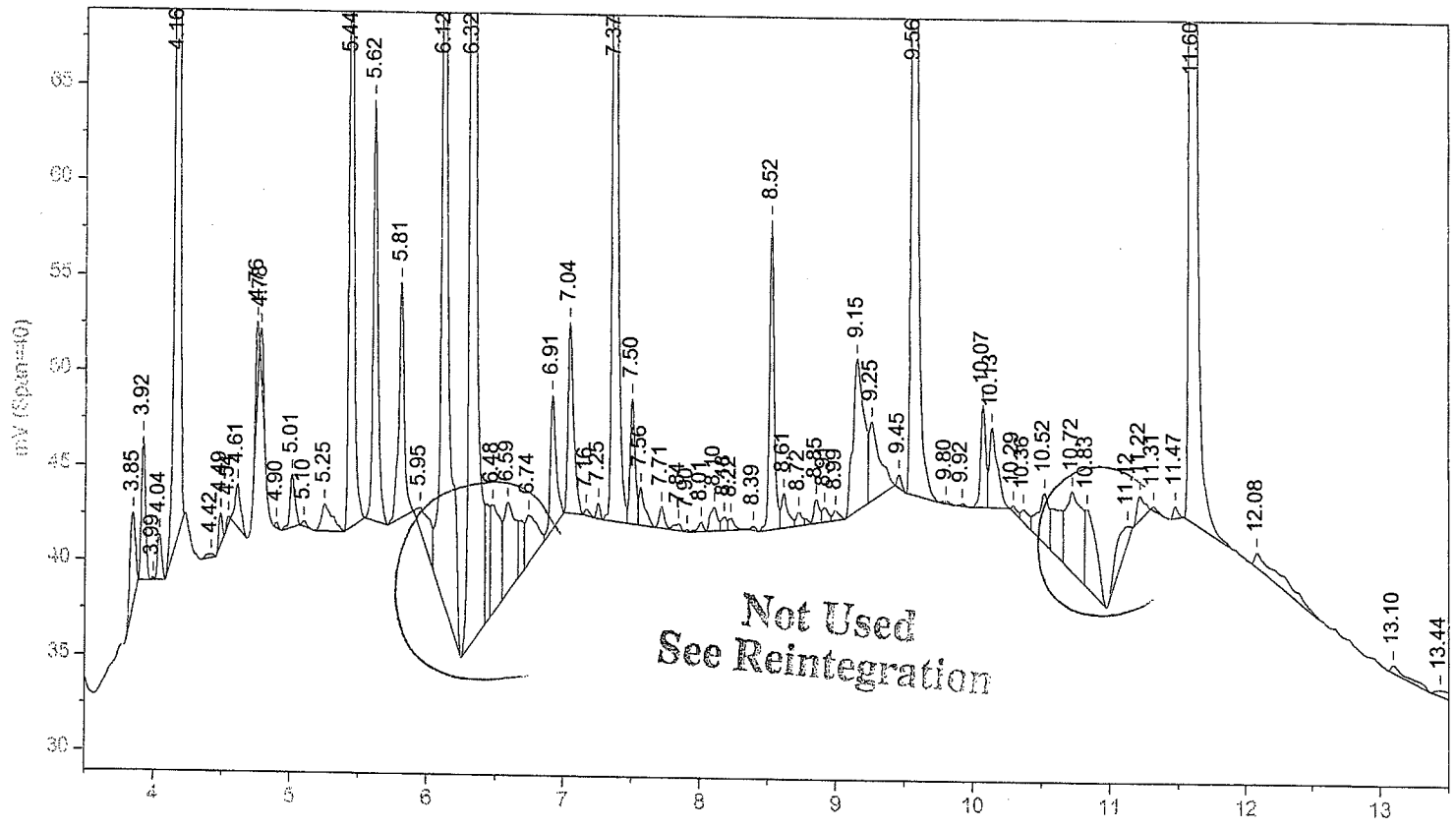
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.132 | | 0.0000 | 0.000 | 30854.6 | 3.609 | BB | 0.050 | 10193.61 | 2.948 |
| 2 | 3.367 | | 0.0000 | 0.000 | 8386.2 | 0.981 | BB | 0.069 | 2039.48 | 0.590 |
| 3 | 3.621 | | 0.0000 | 0.000 | 14408.1 | 1.685 | BB | 0.040 | 5978.91 | 1.729 |
| 4 | 3.783 | | 0.0000 | 0.000 | 1205.1 | 0.141 | BB | 0.069 | 291.07 | 0.084 |
| 5 | 3.815 | | 0.0000 | 0.000 | 1379.5 | 0.161 | BB | 0.026 | 871.01 | 0.252 |
| 6 | 3.867 | | 0.0000 | 0.000 | 219.6 | 0.026 | BB | 0.018 | 201.57 | 0.058 |
| 7 | 3.914 | | 0.0000 | 0.000 | 4558.7 | 0.533 | BB | 0.035 | 2195.20 | 0.635 |
| 8 | 4.057 | | 0.0000 | 0.000 | 1298.7 | 0.152 | BB | 0.045 | 477.95 | 0.138 |
| 9 | 4.129 | | 0.0000 | 0.000 | 543.3 | 0.064 | BB | 0.021 | 438.42 | 0.127 |
| 10 | 4.196 | TCX | 210.1306 | 15.356 | 116234.0 | 13.597 | BB | 0.036 | 53444.81 | 15.457 |
| 11 | 4.353 | | 0.0000 | 0.000 | 5072.9 | 0.593 | BB | 0.032 | 2612.85 | 0.756 |
| 12 | 4.393 | | 0.0000 | 0.000 | 1515.5 | 0.177 | BB | 0.037 | 679.52 | 0.197 |
| 13 | 4.557 | | 0.0000 | 0.000 | 5671.3 | 0.663 | BB | 0.108 | 875.04 | 0.253 |
| 14 | 4.737 | | 0.0000 | 0.000 | 2334.0 | 0.273 | BB | 0.053 | 736.64 | 0.213 |
| 15 | 4.909 | HCB | 39.6644 | 2.899 | 37016.5 | 4.330 | BB | 0.040 | 15355.77 | 4.441 |
| 16 | 5.377 | | 0.0000 | 0.000 | 456.5 | 0.053 | BB | 0.039 | 197.47 | 0.057 |
| 17 | 5.471 | | 0.0000 | 0.000 | 853.5 | 0.100 | BB | 0.048 | 299.28 | 0.087 |
| 18 | 5.599 | gamma-BHC | 98.5766 | 7.204 | 50200.6 | 5.872 | BB | 0.034 | 24957.42 | 7.218 |
| 19 | 5.786 | | 0.0000 | 0.000 | 6156.7 | 0.720 | BB | 0.038 | 2699.50 | 0.781 |
| 20 | 5.899 | | 0.0000 | 0.000 | 4355.2 | 0.509 | BB | 0.035 | 2073.11 | 0.600 |
| 21 | 6.066 | | 0.0000 | 0.000 | 1573.4 | 0.184 | BV | 0.031 | 842.60 | 0.244 |
| 22 | 6.112 | | 0.0000 | 0.000 | 5053.6 | 0.591 | VB | 0.042 | 2018.30 | 0.584 |
| 23 | 6.214 | Heptachlor | 97.9719 | 7.160 | 59475.9 | 6.957 | BB | 0.035 | 27947.93 | 8.083 |
| 24 | 6.340 | | 0.0000 | 0.000 | 4072.8 | 0.476 | BB | 0.034 | 2004.48 | 0.580 |
| 25 | 6.446 | | 0.0000 | 0.000 | 554.0 | 0.065 | BB | 0.040 | 231.48 | 0.067 |
| 26 | 6.505 | | 0.0000 | 0.000 | 2037.1 | 0.238 | BB | 0.087 | 390.64 | 0.113 |
| 27 | 6.745 | | 0.0000 | 0.000 | 12843.7 | 1.502 | BB | 0.044 | 4918.18 | 1.422 |
| 28 | 6.896 | Telodrin | 4.3509 | 0.318 | 2836.8 | 0.332 | BB | 0.042 | 1119.89 | 0.324 |
| 29 | 7.080 | | 0.0000 | 0.000 | 15165.3 | 1.774 | BB | 0.066 | 3825.13 | 1.106 |
| 30 | 7.327 | | 0.0000 | 0.000 | 2012.2 | 0.235 | BV | 0.045 | 743.79 | 0.215 |
| 31 | 7.431 | Hept. epoxide | 153.0943 | 11.188 | 78625.1 | 9.197 | VB | 0.033 | 39484.39 | 11.419 |
| 32 | 7.682 | g. Chlordane | 51.4611 | 3.761 | 40165.6 | 4.698 | BV | 0.050 | 13454.18 | 3.891 |
| 33 | 8.107 | 4,4'-DDE | 5.0098 | 0.366 | 8698.9 | 1.018 | VB | 0.149 | 970.63 | 0.281 |
| 34 | 8.476 | | 0.0000 | 0.000 | 2466.0 | 0.288 | BB | 0.059 | 699.58 | 0.202 |
| 35 | 8.709 | Endrin | 46.5975 | 3.405 | 20677.1 | 2.419 | BB | 0.036 | 9444.47 | 2.731 |
| 36 | 8.844 | 4,4'-DDD | 6.2005 | 0.453 | 2195.2 | 0.257 | BB | 0.047 | 772.50 | 0.223 |
| 37 | 8.997 | Endosulfan II | 9.2995 | 0.680 | 4735.6 | 0.554 | BB | 0.040 | 1963.59 | 0.568 |
| 38 | 9.175 | | 0.0000 | 0.000 | 1300.8 | 0.152 | BB | 0.301 | 72.02 | 0.021 |
| 39 | 9.423 | Endrin aldehyde | 6.4808 | 0.474 | 6489.0 | 0.759 | BB | 0.101 | 1067.67 | 0.309 |
| 40 | 9.719 | | 0.0000 | 0.000 | 8910.8 | 1.042 | BB | 0.054 | 2745.60 | 0.794 |
| 41 | 10.036 | | 0.0000 | 0.000 | 2867.8 | 0.335 | BB | 0.039 | 1213.83 | 0.351 |
| 42 | 10.114 | Methoxychlor | 385.7080 | 28.187 | 95481.9 | 11.169 | BB | 0.041 | 38371.89 | 11.097 |
| 43 | 10.476 | Endrin ketone | 2.6825 | 0.196 | 3264.3 | 0.382 | BB | 0.084 | 651.40 | 0.188 |
| 44 | 11.103 | | 0.0000 | 0.000 | 2964.3 | 0.347 | BB | 0.193 | 255.48 | 0.074 |
| 45 | 11.670 | | 0.0000 | 0.000 | 1318.4 | 0.154 | BB | 0.041 | 541.83 | 0.157 |
| 46 | 11.883 | | 0.0000 | 0.000 | 5635.7 | 0.659 | BB | 0.280 | 335.78 | 0.097 |
| 47 | 12.205 | DCB | 251.1780 | 18.356 | 170719.3 | 19.970 | BB | 0.045 | 63067.21 | 18.239 |

Total Area = 854861.1, Total Amount = 1368.406, Total Height = 345773.1, Sample Units = PPB

LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2C13051.23R

C:\CPWIN\DATA1\2C13051.23R

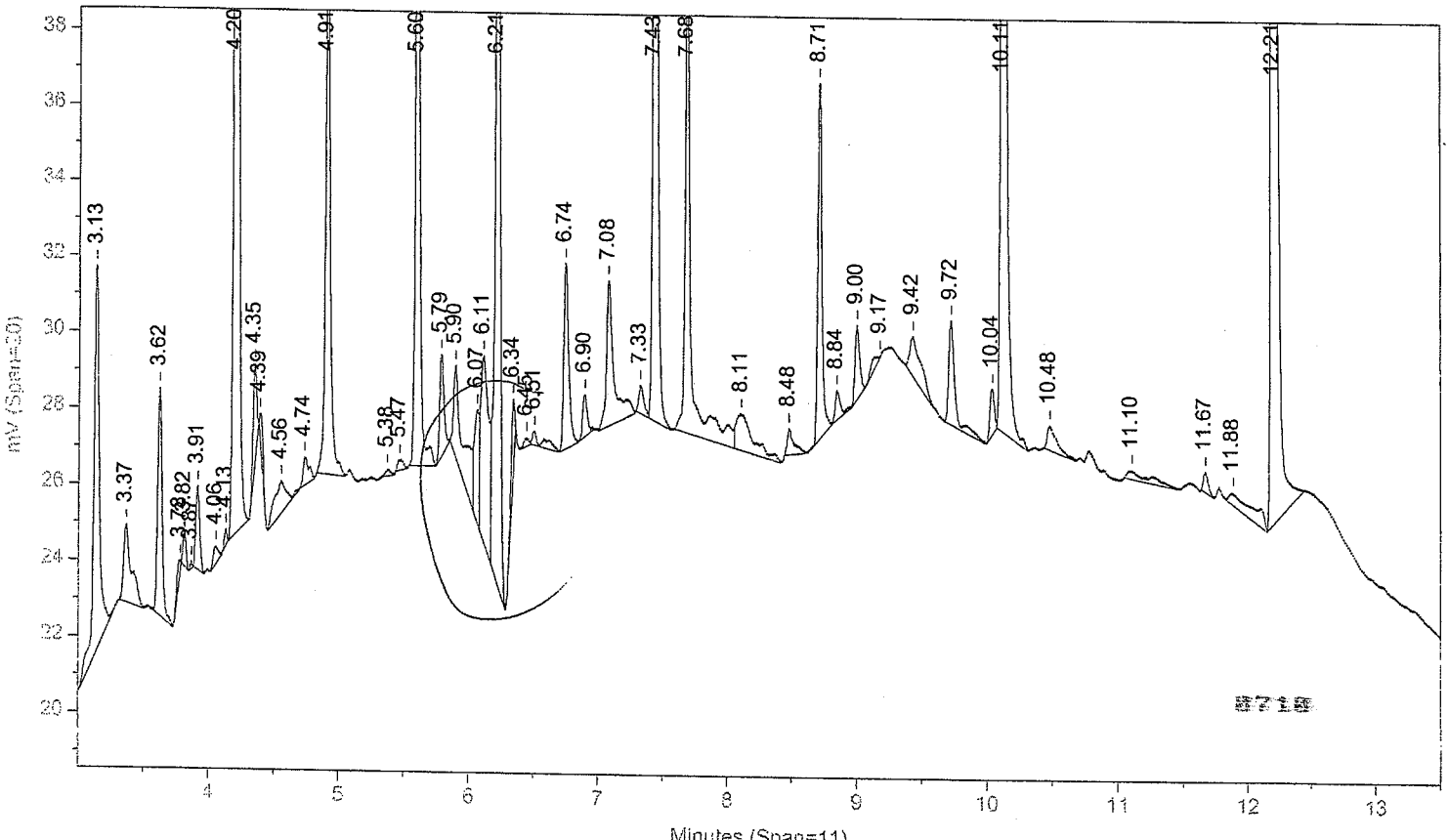



Instrument ID: CP13--H6722A Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\2C13051B.23R

C:\CPWIN\DATA1\2C13051B.23R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES

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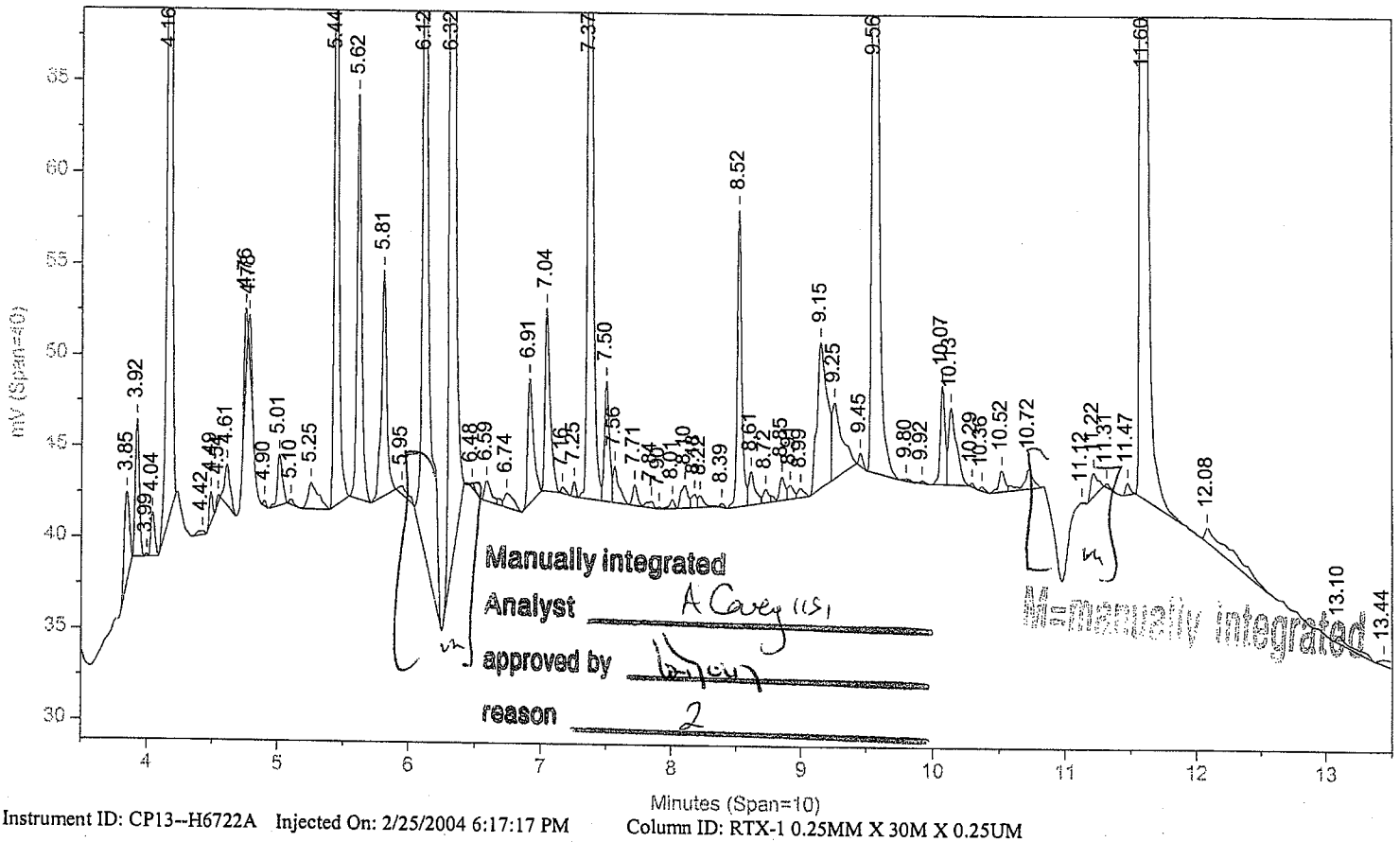


Instrument ID: CP13--H6722A Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM

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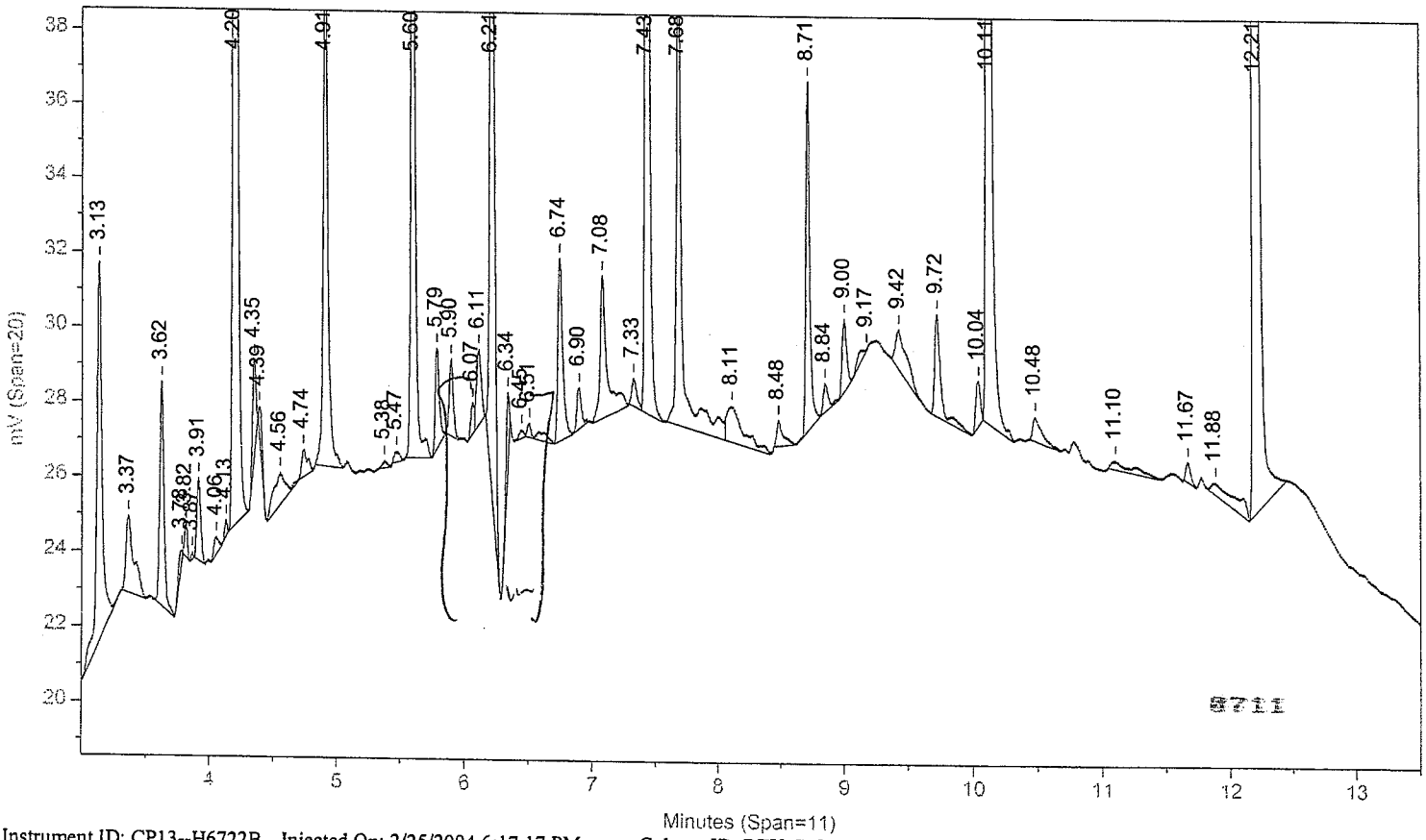
C:\CPWIN\DATA1\2C13051B.23R




Instrument ID: CP13--H6722B Injected On: 2/25/2004 6:17:17 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 200 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.161 | 78173 | 1.02931 | TCX | 4.196 | 53445 | 1.05065 | TCX |
| 4.755 | 3518 | .02672 | HCB | 4.909 | 15356 | .19832 | HCB |
| 5.013 | 2775 | .02999 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.442 | 43394 | .47499 | gamma-BHC | 5.599 | 24957 | .49288 | gamma-BHC |
| 5.811 | 12386 | .1455 | delta-BHC | . | 0 | . | delta-BHC |
| 6.119 | 49668 | .48071 | Heptachlor | 6.214 | 27948 | .48986 | Heptachlor |
| . | 0 | . | Telodrin | 6.896 | 1120 | .02175 | Telodrin |
| 7.368 | 60921 | 1.11258 | o,p-DDE / hept epox. | . | 0 | . | o,p-DDE |
| . | 0 | . | Hept. epoxide | 7.431 | 39484 | .76547 | Hept. epoxide |
| 7.564 | 1987 | .02346 | g. Chlordane | 7.682 | 13454 | .25731 | g. Chlordane |
| 7.715 | 1139 | .01337 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.842 | 355 | .00521 | 4,4'-DDE | 8.107 | 971 | .02505 | 4,4'-DDE |
| 7.901 | 119 | .00155 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.22 | 640 | .00879 | Dieldrin | . | 0 | . | Dieldrin |
| 8.387 | 212 | .00389 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.519 | 16281 | .23947 | Endrin | 8.709 | 9444 | .23299 | Endrin |
| 8.612 | 1825 | .03432 | 4,4'-DDD | 8.844 | 772 | .031 | 4,4'-DDD |
| 8.849 | 1256 | .01816 | Endosulfan II | 8.997 | 1964 | .0465 | Endosulfan II |
| . | 0 | . | Endrin aldehyde | 9.423 | 1068 | .0324 | Endrin aldehyde |
| 9.555 | 66969 | 1.92372 | Methoxychlor | 10.114 | 38372 | 1.92854 | Methoxychlor |
| 9.797 | 134 | .00214 | Mirex | . | 0 | . | Mirex |
| 9.916 | 141 | .00229 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| 10.288 | 205 | .00287 | Endrin ketone | 10.476 | 651 | .01341 | Endrin ketone |
| 11.596 | 102505 | 1.37192 | DCB | 12.205 | 63067 | 1.25589 | DCB |

agrees 2.26-04

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13051.CAL
Calibration File B: C:\CPWIN\DATA1\2C13051B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 2/26/2004 1:28:18 PM
File Reported On: 2/26/2004 at 1:28:20 PM

8712

10X REPLOTS

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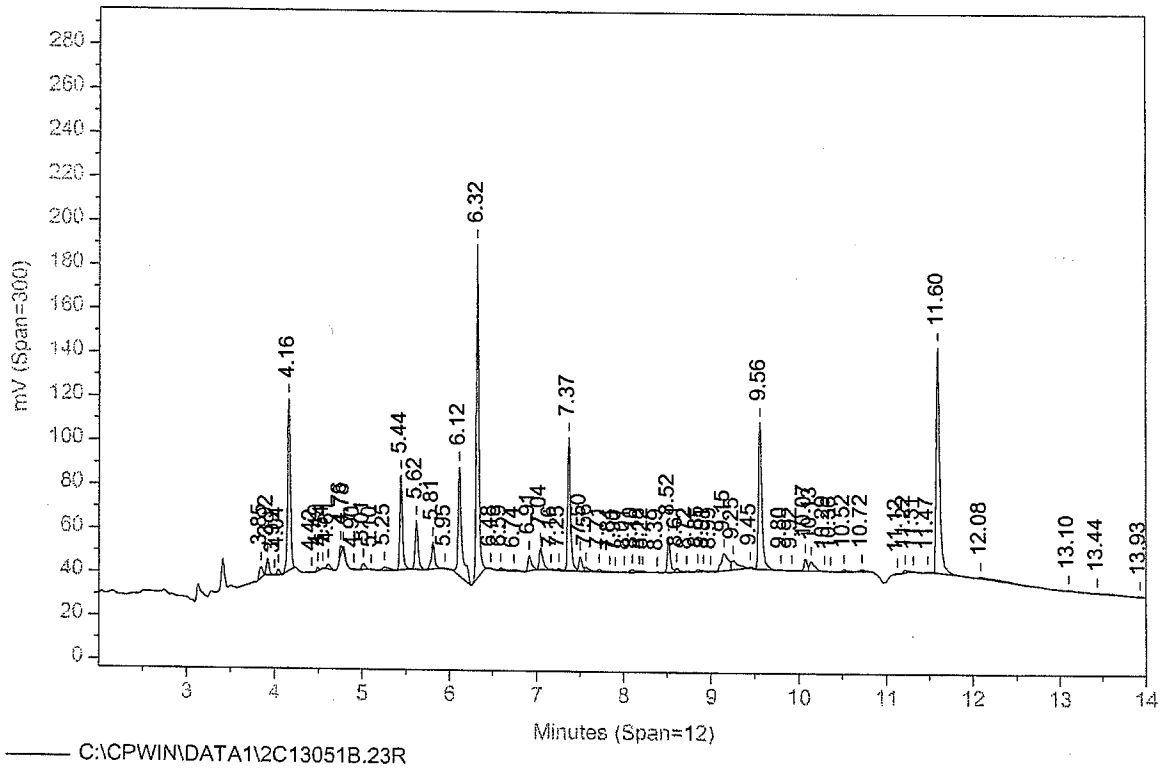


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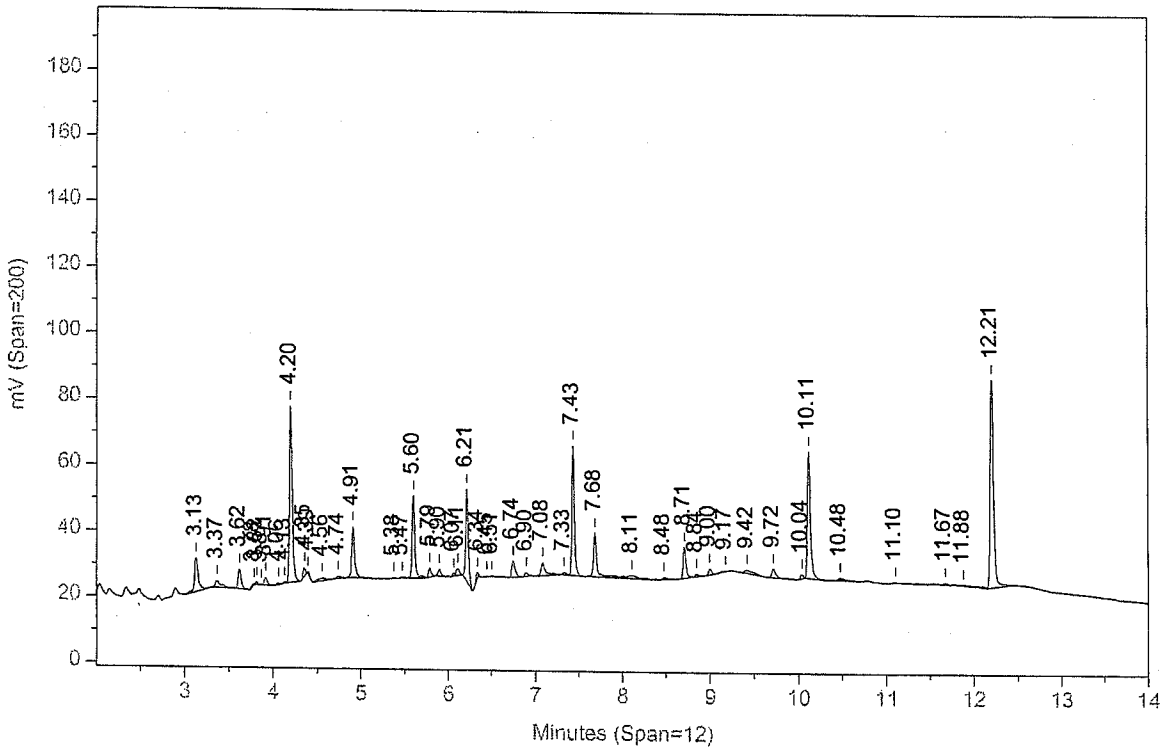


# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: RJ

Prep Analysis # 00817 Water Sample Pest. Extraction

Prep Group # 6 Pesticide Leachates Dept: 24

Start Date: 2-25-04

Start Time: 2:00

Tech 1: D H 1425

Tech 2: DW482

BATCH NO. 040550003A

| QC | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKXG | 200 1000 | SS0402924A | 1.0 | — | — | 10.0 | 6 | Z | | DF 1kO text fluid |
| LCSA | LCSVQ | ↓ | SS0402924A | ↓ | MS03245F | 1.0 | ↓ | 6 | Z | | ↓ 123022304A |
| 4219022MS | UN7NVMS | 200 | SS0402924A | ↓ | MS03245F | ↓ | ↓ | 7 | 2 | 30A | clear |
| 4219022MSD | UN7NVMSD | ↓ | SS0402924A | ↓ | MS03245F | ↓ | ↓ | 7 | 2 | ↓ | ↓ |

| | Sample # | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4219006 | UN5NV | 200 | SS0402924A | 1.0 | 100 | 6 | → | 30A | clear | 950 | 3/2/04 | P |
| 2 | 4219022 bkg | UN7NV | ↓ | SS0402924A | ↓ | ↓ | 2 | | ↓ | ↓ | 950 | 3/2/04 | P |
| 3 | 4219669 | TC407 | | SS0402924A | | | 5 | | | | 950 | 3/4/04 | P |
| 4 | 4221331 | BLA20 | | SS0402924A | | | 5 | | | | 950 | 3/3/04 | P |
| 5 | 4221332 | BLA44 | ↓ | SS0402924A | ↓ | ↓ | 5 | ↓ | ↓ | ↓ | 950 | 3/3/04 | P |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

D H 1425
2-25-04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS0402924A SW846 SURROGATE STANDARD

MS03245F TCLP PEST SPIKE

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| MeCl2 | A02058 | Z | |
| MeOH | 026838 | | |
| Hexane | 451611 | Work Station: | Hc Bench 2 |
| Internal Standar | | Balance # | — |

| S-bath ID | Y | 4.7 °C | S-bath ID | — | — °C | N-Evap | — °C |
|---|---|---|---|---|---|---|---|

8715

DW482

Documented temps are NIST corrected

040550003A

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 00817 Water Sample Pest. Extraction

**Prep Group #** 6 Pesticide Leachates

**Verified:** RS

**Start Date:** 2-25-04

**Start Time:** 500

**Tech 1:** D.H 1429

**Tech 2:** DH/482

**BATCH NO.** 040550003A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2.0 | 2.0 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4219022MS | | | | | | 950 |
| 4 | 4219022MSD | | | | | | 950 |
| 5 | 4219006 | | | | | | 950 |
| 6 | 4219022 | | | | | | 950 |
| 7 | 4219669 | | | | | | 950 |
| 8 | 4221331 | | | | | | 950 |
| 9 | 4221332 | | | | | | 950 |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

D.H 1429
2-25-04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 10% Acetone/Hexane | LC2302254A | | |
| Florisil | 2030X0-AR | | |

| S-Evap/bath | °C | S-Evap/bath | °C | N-Evap 5 | 38 °C |
|---|---|---|---|---|---|

The documented temperatures are NIST corrected.

8716

# Herbicides Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV02**

## LANCASTER LABORATORIES

## TCLP Herbicides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **SOLID** | **COMMENTS** |
| BLANKA | PBLKXH | | X | Method Blank |
| LCSA | LCSVR | | X | Laboratory Control Spike |
| 4219022 | UN7NV | | X | Background |
| 4219022MS | UN7NVMS | | X | Matrix Spike |
| 4219022MSD | UN7NVMSD | | X | Matrix Spike Dup |
| | | | | |

### A. Sample Preparation:

Florisil cleanup was used to minimize interferences. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1H14048, 1H14048B, 2H14048, 2H14048B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

### C. Quality Control:

The surrogate for sample UN7NV is outside the QC limits high. Since there is no analyte if interest detected in this sample and it was out of specification high, this surrogate is reported. All other reported surrogates are within the QC limits.

The matrix spike data are within the QC limits.

The LCS data are within the QC limits.

### D. Data Interpretation:

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.

No further interpretation is needed.

Lancaster Laboratories

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

**Jenifer E. Hess, Group Leader** **Date** 3/4/07

8725

# QC Summary

# 2
# SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: RAV02

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

| SAMPLE | SAMPLE CODE NO. | DCAA 1 % REC # | DCAA 2 % REC # | TOT OUT |
|---|---|---|---|---|
| 4219022 | UN7NV | 171 * | 165 * | 2 |
| 4219022 MS | UN7NVMS | 125 | 116 | 0 |
| 4219022 MSD | UN7NVMSD | 128 | 125 | 0 |
| BLANKA | PBLKXH | 110 | 105 | 0 |
| LCSA | LCSVR | 87 | 90 | 0 |

OK all ND

✓ ✓

| | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|
| DCAA = Dichlorophenylacetic acid | (40 - 154) | 40 | ug/Kg 8722 |

# Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

# Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: UN7NV

| Compound | Spike Added (ug/l) | Sample Concen (ug/l) | MS Concen (ug/l) | MSD Concen (ug/l) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| 2,4-D | 10 | 0 | 12 | 13 | 120 | 130 | (38 - 176) | 8 | 30 |
| 2,4,5-TP | 10 | 0 | 12 | 13 | 120 | 130 | (50 - 134) | 8 | 30 |

✓ ✓

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

Comments: Results calculated on as-received basis.

8723

Sample No.: 4219022 Batch: 040550004A

# Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSVR

| Compound | Spike Added (ug/l) | LCS Concen (ug/l) | LCSD Concen (ug/l) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| 2,4-D | 10 | 8.4 | | 84 | | (53 - 145) | | 30 |
| 2,4,5-TP | 10 | 8.7 | | 87 | | (55 - 128) | | 30 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 2 outside limits

8724

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 040550004A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKXH

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV02

Lab Sample ID BLANKA Lab File ID: 2H14048.05R 2H14048B.05R

Matrix: (soil/water) LEACHATE Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N Date Extracted: 2/24/04

Date Analyzed (1): 2/25/04 Date Analyzed (2): 2/25/04

Time Analyzed (1): 11:15:44 Time Analyzed (2): 11:15:44

Instrument ID (1): H8456A Instrument ID (2): H8456B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | UN7NV | 4219022 | 2/25/04 | 2/25/04 |
| 02 | UN7NVMS | 4219022 | 2/25/04 | 2/25/04 |
| 03 | UN7NVMSD | 4219022 | 2/25/04 | 2/25/04 |
| 04 | PBLKXH | BLANKA | 2/25/04 | 2/25/04 |
| 05 | LCSVR | LCSA | 2/25/04 | 2/25/04 |

8725

COMMENTS: _____

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKXH

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** LEACHATE **Lab Sample ID:** BLANKA

**Sample wt/vol:** 50 (g/ml) ml **Lab File ID:** 2H14048.05R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SEPF **Date Extracted:** 2/24/04

**Concentrated Extract Volume:** 10000 (uL) **Date Analyzed:** 2/25/04

**Injection Volume:** 2 (uL) **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/l | Q |
|---|---|---|---|
| 94-75-7 | 2,4-D | 2.0 | U |
| 93-72-1 | 2,4,5-TP | 0.20 | U |

8725

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 00952 Name: TCLP Herbicides

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| 2,4-D | ug/l | 10 | 2 |
| 2,4,5-TP | ug/l | 1 | 0.2 |

8728

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 F UN7NV Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 13:55:02
Instrument : CP14--H8456A
Result file : 2H14048.11R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : *171% Conc.: 68.386162

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.20 | 4.28 | 72 | 0.490623 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 2559 E | 0.673714 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 10636 | 68.386162 |
| **DICAMBA** | 9.92 | 10.08 | 10.10 | 220 | 0.352793 |
| **MCPP** | 10.10 | 10.18 | 10.29 | 85 | 145.452881 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1282 | 1319.405518 |
| **2,4-DP** | 10.78 | 10.79 | 10.97 | 249 | 1.504254 |
| **PCP** | 11.53 | 11.63 | 11.73 | 770 | 0.417679 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 23058 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.19 | 12.35 | 66 | 0.107558 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 633 | 1.349022 |
| **2,4-DB** | 13.19 | 13.31 | 13.40 | 116 | 2.026573 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 610 | 1.643170 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 131 E | 0.020702 |

## Analysis Report (B)

Injected on : FEB 25, 2004 13:55:02
Instrument : CP14--H8456B
Result file : 2H14048B.11R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : *165.3% Conc.: 66.101746

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.81 | 3.89 | 1094 | 6.972112 |
| **3,5-DCBA** | 8.79 | 8.89 | 9.00 | 777 E | 0.177848 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 11667 | 66.101746 |
| **DICAMBA** | 9.56 | 9.59 | 9.75 | 397 | 0.557206 |
| **MCPP** | 9.65 | 9.76 | 9.83 | 171 | 214.189728 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 247 | 1.227029 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 28996 | 2.004000 |
| **PCP** | 11.36 | 11.46 | 11.56 | 503 | 0.244555 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 636 | 8.873380 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 6.972112 | | | | ** 173.70 | |
| 3,5-DCBA | A | 0.673714 | | | E | ** 116.46 | |
| DCAA | A | 68.386162 | | | | 3.40 | |
| DICAMBA | B | 0.557206 | | | | ** 44.93 | |
| MCPP | B | 214.189728 | | | | 38.23 | |
| MCPA | | | | | | | |
| 2,4-DP | A | 1.504254 | | | | 20.30 | |
| 2,4-D | | | <10 | <2 | | | |
| PCP | A | 0.417679 | | | | ** 52.28 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | | | <1 | <0.2 | | | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 8.873380 | | | | ** 125.63 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | | | | | E | | |

Units: ug/l

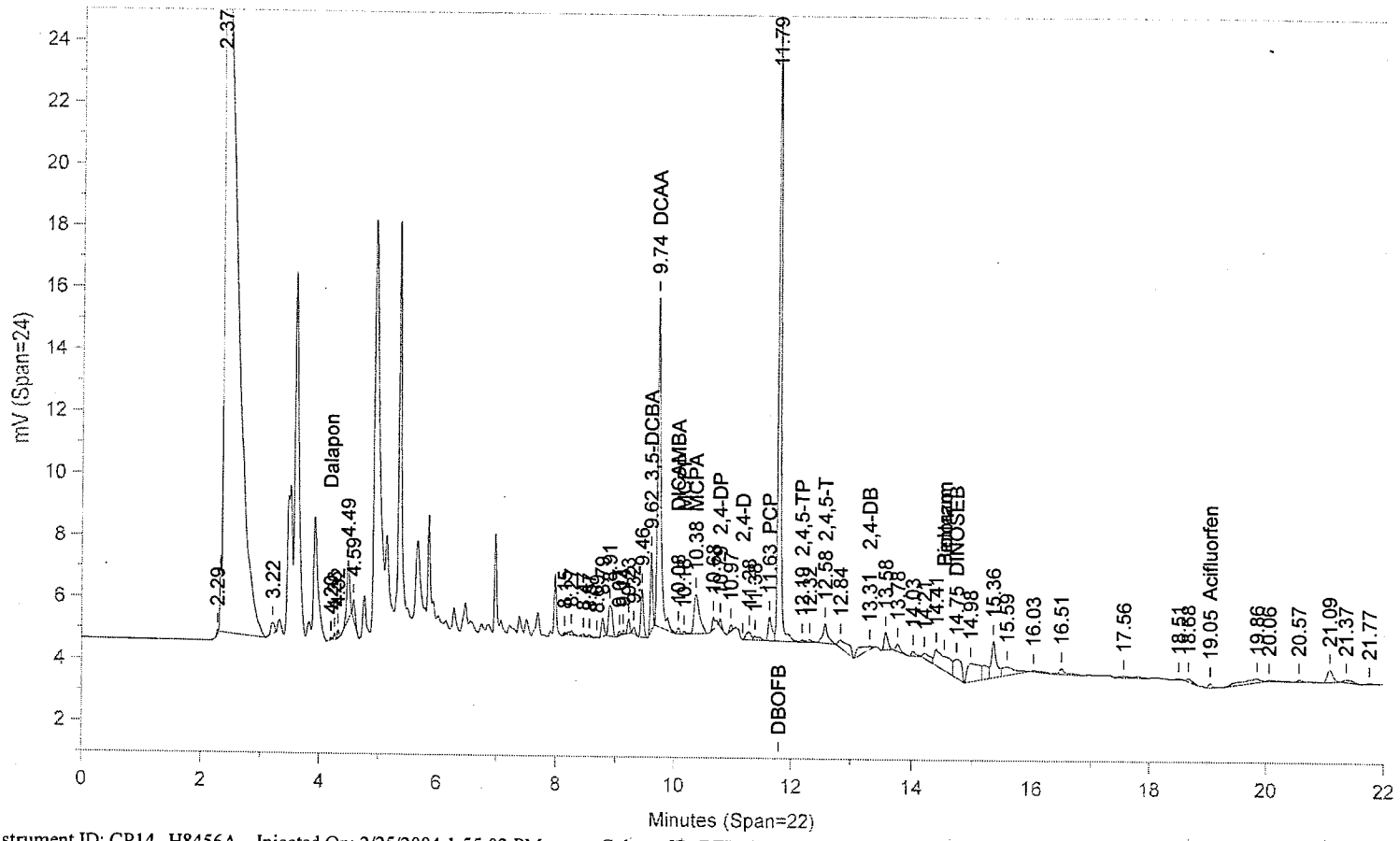
Reviewed by: [signature] Date: 2/26/04
Verified by: [signature] Date: 2/27/04

8723

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:52:36

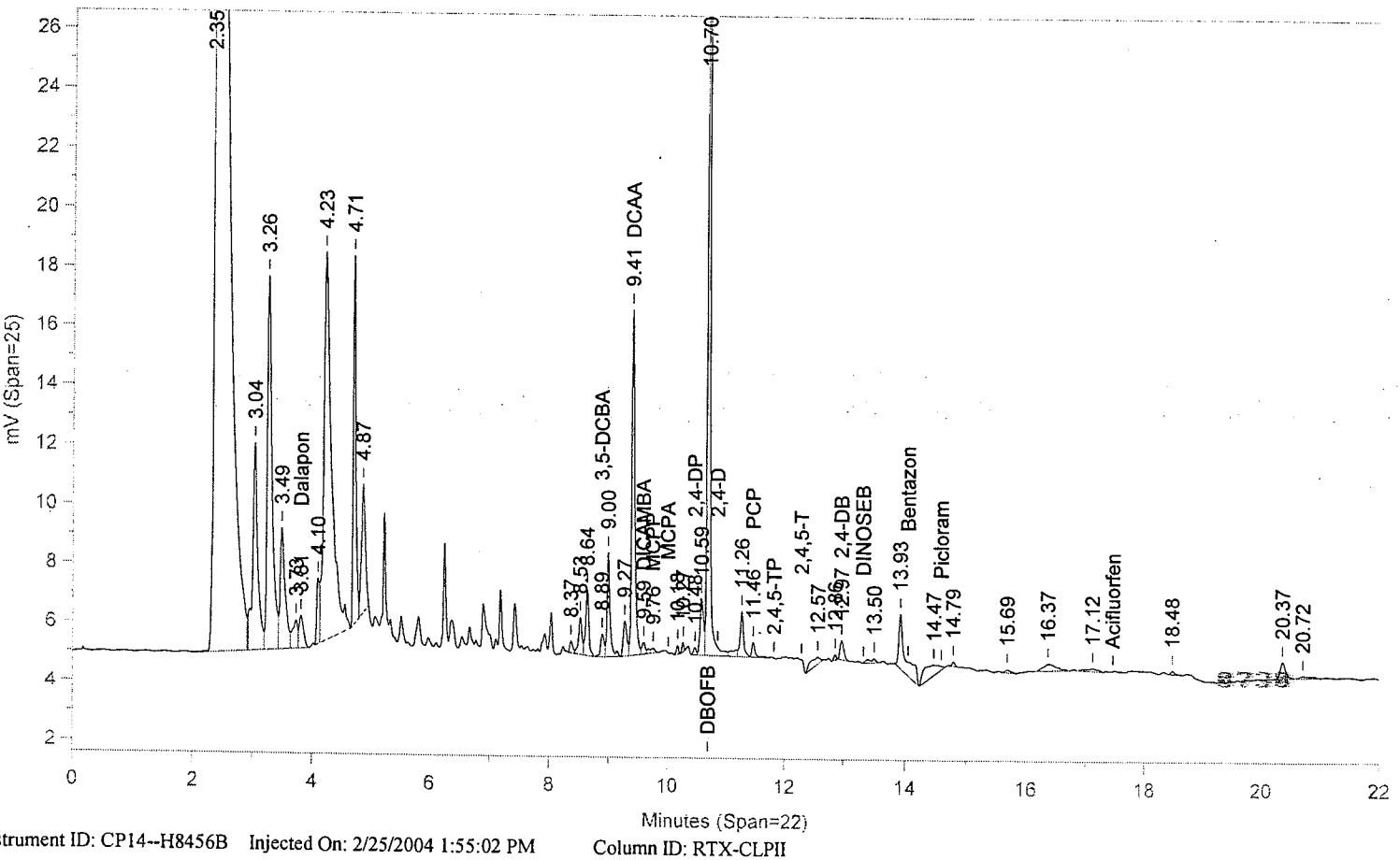
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 1:55:02 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.11R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 1:55:02 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.205 | 72 | .491 | Dalapon | 3.814 | 1094 | 6.972 | Dalapon |
| 9.615 | 2559 | .674 | 3,5-DCBA | 8.893 | 777 | .178 | 3,5-DCBA |
| 9.737 | 10636 | 68.386 | DCAA | 9.409 | 11667 | 66.102 | DCAA |
| 10.083 | 220 | .353 | DICAMBA | 9.594 | 397 | .557 | DICAMBA |
| 10.18 | 85 | 145.453 | MCPP | 9.757 | 171 | 214.19 | MCPP |
| 10.382 | 1282 | 1319.406 | MCPA | . | 0 | . | MCPA |
| 10.787 | 249 | 1.504 | 2,4-DP | 10.476 | 247 | 1.227 | 2,4-DP |
| 11.79 | 23058 | 2.004 | DBOFB | 10.7 | 28996 | 2.004 | DBOFB |
| 11.63 | 770 | .418 | PCP | 11.457 | 503 | .245 | PCP |
| 12.19 | 66 | .108 | 2,4,5-TP | . | 0 | . | 2,4,5-TP |
| 12.582 | 633 | 1.349 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.314 | 116 | 2.027 | 2,4-DB | 12.967 | 636 | 8.873 | 2,4-DB |
| 14.747 | 610 | 1.643 | DINOSEB | . | 0 | . | DINOSEB |
| 19.052 | 131 | .021 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.11A
Area File: C:\CPWIN\DATA1\2H14048B.11A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 2:17:06 PM
File Reported On: 2/25/2004 at 2:17:07 PM

# Standards Data

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456A  Calibration File: 1H14048

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Dalapon | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.21 | 4.14 | 4.28 |
| 3,5-DCBA | 9.56 | | | | | 9.56 | 9.44 | 9.67 |
| Dichlorophenylacetic acid | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.64 | 9.84 |
| Dicamba | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 9.92 | 10.10 |
| Mcpp | 10.19 | 10.20 | 10.19 | 10.20 | 10.20 | 10.19 | 10.10 | 10.29 |
| Mcpa | 10.39 | 10.39 | 10.38 | 10.38 | 10.39 | 10.38 | 10.29 | 10.48 |
| 2,4-DP | 10.88 | 10.88 | 10.88 | 10.88 | 10.87 | 10.88 | 10.78 | 10.97 |
| 2,4-D | 11.17 | 11.17 | 11.17 | 11.16 | 11.16 | 11.17 | 11.07 | 11.26 |
| PCP | 11.62 | 11.63 | 11.63 | 11.63 | 11.62 | 11.63 | 11.53 | 11.73 |
| 2,4,5-TP | 12.25 | 12.25 | 12.25 | 12.25 | 12.25 | 12.25 | 12.15 | 12.35 |
| 2,4,5-T | 12.62 | 12.62 | 12.61 | 12.61 | 12.60 | 12.61 | 12.51 | 12.72 |
| 2,4-DB | 13.30 | 13.30 | 13.30 | 13.29 | 13.29 | 13.30 | 13.19 | 13.40 |
| Bentazon | 14.51 | | | | | 14.55 | 14.44 | 14.67 |
| Picloram | 14.55 | | | | | 14.55 | 14.44 | 14.67 |
| Dinoseb | 14.77 | 14.77 | 14.76 | 14.76 | 14.76 | 14.76 | 14.65 | 14.88 |
| Acifluorfen | 19.06 | | | | | 19.06 | 18.95 | 19.18 |

2/18/04 MD 12

8233



FORM VI-1

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456B  Calibration File: 1H14048B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Dalapon | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 | 3.79 | 3.69 | 3.89 |
| 3,5-DCBA | 8.89 | | | | | 8.89 | 8.79 | 9.00 |
| Dichlorophenylacetic acid | 9.41 | 9.42 | 9.41 | 9.41 | 9.41 | 9.41 | 9.32 | 9.51 |
| Dicamba | 9.65 | 9.66 | 9.65 | 9.65 | 9.65 | 9.65 | 9.56 | 9.75 |
| Mcpp | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.65 | 9.83 |
| Mcpa | 10.02 | 10.02 | 10.02 | 10.02 | 10.02 | 10.02 | 9.93 | 10.11 |
| 2,4-DP | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.44 | 10.35 | 10.54 |
| 2,4-D | 10.86 | 10.86 | 10.86 | 10.82 | 10.82 | 10.86 | 10.77 | 10.96 |
| PCP | 11.46 | 11.46 | 11.46 | 11.46 | 11.46 | 11.46 | 11.36 | 11.56 |
| 2,4,5-TP | 11.82 | 11.82 | 11.82 | 11.82 | 11.82 | 11.82 | 11.72 | 11.92 |
| 2,4,5-T | 12.30 | 12.31 | 12.30 | 12.30 | 12.29 | 12.30 | 12.20 | 12.40 |
| 2,4-DB | 12.93 | 12.93 | 12.92 | 12.92 | 12.91 | 12.92 | 12.82 | 13.03 |
| Dinoseb | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.33 | 13.22 | 13.44 |
| Bentazon | 14.06 | | | | | 14.06 | 13.95 | 14.16 |
| Picloram | 14.60 | | | | | 14.60 | 14.49 | 14.71 |
| Acifluorfen | 17.47 | | | | | 17.47 | 17.36 | 17.58 |

2/16/04 MDL

8734



FORM VI-1

# 6E
# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456A  Calibration File: 1H14048

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Dalapon | 1.51E-01 | 1.36E-01 | 1.26E-01 | 1.19E-01 | 1.01E-01 | 1.27E-01 | 14.6 |
| 3,5-DCBA | 3.30E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.60E-01 | ##### |
| Dichlorophenylacetic acid | 1.59E-01 | 1.49E-01 | 1.34E-01 | 1.27E-01 | 1.08E-01 | 1.35E-01 | 14.6 |
| Dicamba | 6.01E-01 | 5.78E-01 | 5.38E-01 | 5.01E-01 | 4.94E-01 | 5.42E-01 | 8.6 |
| Mcpp | 5.57E-04 | 5.59E-04 | 5.18E-04 | 4.90E-04 | 4.05E-04 | 5.06E-04 | 12.5 |
| Mcpa | 1.15E-03 | 9.70E-04 | 8.15E-04 | 7.12E-04 | 5.71E-04 | 8.44E-04 | 26.8 |
| 2,4-DP | 1.70E-01 | 1.60E-01 | 1.47E-01 | 1.24E-01 | 1.20E-01 | 1.44E-01 | 15.1 |
| 2,4-D | 1.35E-01 | 1.35E-01 | 1.31E-01 | 1.28E-01 | 1.17E-01 | 1.29E-01 | 5.8 |
| PCP | 1.58E+00 | 1.61E+00 | 1.60E+00 | 1.64E+00 | 1.58E+00 | 1.60E+00 | 1.5 |
| 2,4,5-TP | 5.35E-01 | 5.14E-01 | 5.09E-01 | 5.35E-01 | 5.89E-01 | 5.36E-01 | 5.9 |
| 2,4,5-T | 3.83E-01 | 3.84E-01 | 3.90E-01 | 4.15E-01 | 4.66E-01 | 4.08E-01 | 8.6 |
| 2,4-DB | 4.91E-02 | 4.81E-02 | 4.78E-02 | 5.20E-02 | 5.08E-02 | 4.96E-02 | 3.6 |
| Bentazon | 3.11E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.22E-01 | ##### |
| Picloram | 3.11E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.22E-01 | ##### |
| Dinoseb | 3.60E-01 | 3.19E-01 | 3.08E-01 | 3.26E-01 | 2.99E-01 | 3.22E-01 | 7.3 |
| Acifluorfen | 5.52E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.10E+00 | ##### |

Average % RSD: ~~7.8~~ 10.4

2/18/04 MD #4 (3)

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FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1H14048.CAL** Version = 8
Internal standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 0
Amount units = PPB
17 components with 5 levels each

**1 Dalapon**
Retention time = 4.207 min., Search window = 0.069 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 113.950 | 7194.5 | 63.13719 | 1.1372 | 0.1718 | Manual | 2/18/2004 10:22: |
| 2 | 227.900 | 13231.1 | 58.05674 | 2.2745 | 0.3085 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 455.800 | 25015.5 | 54.88254 | 4.5489 | 0.5746 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 912.440 | 47640.1 | 52.21171 | 9.1062 | 1.0877 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 2279.000 | 107148.1 | 47.0154 | 22.7445 | 2.3051 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.127 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8865, Average error = 10.47%
Average CF = 0.1268 with RSD = 14.60%

**2 3,5-DCBA**
Retention time = 9.557 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 93.200 | 128577.0 | 1379.582 | 0.9301 | 3.0705 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | 114.9404 | | | | 1H14048.07A | 2/18/2004 10:11: |
| 3 | -1.000 | 106.2329 | | | | 1H14048.08A | 2/18/2004 10:17: |
| 4 | -1.000 | 101.5561 | | | | 1H14048.09A | 2/18/2004 10:11: |
| 5 | -1.000 | 108.4865 | | | | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 3.301 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.3011 with RSD = 0.00%

**3 DCAA**
Retention time = 9.741 min., Search window = 0.100 min.

Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 46.940 | 3110.2 | 66.2601 | 0.4685 | 0.0743 | Manual | 2/18/2004 10:22: |
| 2 | 93.880 | 5985.8 | 63.75969 | 0.9369 | 0.1395 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 187.760 | 10937.8 | 58.2541 | 1.8739 | 0.2513 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 375.520 | 20771.2 | 55.3132 | 3.7477 | 0.4743 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 938.800 | 46932.1 | 49.99161 | 9.3693 | 1.0096 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.135 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8825, Average error = 10.99%
Average CF = 0.1352 with RSD = 14.62%

**4 DICAMBA**
Retention time = 10.009 min., Search window = 0.093 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.700 | 1180.3 | 251.1232 | 0.0469 | 0.0282 | Manual | 2/18/2004 10:22: |
| 2 | 9.400 | 2324.9 | 247.3319 | 0.0938 | 0.0542 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18.800 | 4394.6 | 233.7559 | 0.1876 | 0.1009 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37.600 | 8232.6 | 218.9513 | 0.3752 | 0.1880 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94.000 | 21537.9 | 229.1266 | 0.9381 | 0.4633 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.542 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9814, Average error = 6.94%
Average CF = 0.5423 with RSD = 8.63%

**5 MCPP**
Retention time = 10.194 min., Search window = 0.091 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4706.500 | 1094.7 | 0.2325858 | 46.9711 | 0.0261 | Manual | 2/18/2004 10:22: |
| 2 | 9413.000 | 2253.0 | 0.2393526 | 93.9421 | 0.0525 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18826.000 | 4238.7 | 0.2251504 | 187.8842 | 0.0974 | 1H14048.08A | 2/18/2004 10:17: |

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| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 37666.800 | 8062.8 | 0.2140549 | 375.9162 | 0.1841 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94130.000 | 17683.2 | 0.1878595 | 939.4212 | 0.3804 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8896, Average error = 9.23%
Average CF = 0.0005 with RSD = 12.51%

**6 MCPA**
Retention time = 10.384 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4686.000 | 2258.2 | 0.4818967 | 46.7665 | 0.0539 | Manual | 2/18/2004 10:22: |
| 2 | 9372.000 | 3890.1 | 0.4150764 | 93.5329 | 0.0907 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18744.000 | 6639.9 | 0.3542432 | 187.0659 | 0.1525 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37535.200 | 11682.4 | 0.3112375 | 374.6028 | 0.2667 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 93720.000 | 24836.5 | 0.265007 | 935.3293 | 0.5343 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.5459, Average error = 20.57%
Average CF = 0.0008 with RSD = 26.74%

**7 2,4-DP**
Retention time = 10.876 min., Search window = 0.094 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.300 | 3359.6 | 71.02835 | 0.4721 | 0.0802 | Manual | 2/18/2004 10:22: |
| 2 | 94.590 | 6466.5 | 68.3631 | 0.9440 | 0.1508 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 189.180 | 12047.4 | 63.682 | 1.8880 | 0.2767 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 379.110 | 20611.0 | 54.36676 | 3.7835 | 0.4706 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 945.900 | 52641.0 | 55.65176 | 9.4401 | 1.1325 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.144 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9194, Average error = 12.18%
Average CF = 0.1441 with RSD = 15.08%

**8 2,4-D**

Retention time = 11.166 min., Search window = 0.095 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.100 | 2665.1 | 56.5837 | 0.4701 | 0.0636 | Manual | 2/18/2004 10:22: |
| 2 | 94.190 | 5443.7 | 57.79478 | 0.9400 | 0.1269 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 188.380 | 10705.9 | 56.8313 | 1.8800 | 0.2459 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 376.750 | 21152.6 | 56.14495 | 3.7600 | 0.4830 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 941.900 | 51074.6 | 54.22505 | 9.4002 | 1.0988 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.129 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9806, Average error = 4.11%
Average CF = 0.1293 with RSD = 5.82%

**9 PCP**
Retention time = 11.626 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 5.010 | 3317.1 | 662.092 | 0.0500 | 0.0792 | Manual | 2/18/2004 10:22: |
| 2 | 10.030 | 6914.7 | 689.4033 | 0.1001 | 0.1612 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 20.060 | 13967.9 | 696.3046 | 0.2002 | 0.3209 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 40.110 | 28675.4 | 714.9199 | 0.4003 | 0.6547 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 100.280 | 73309.6 | 731.0491 | 1.0008 | 1.5771 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 1.602 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9994, Average error = 1.08%
Average CF = 1.6018 with RSD = 1.46%

**10 DBOFB * Internal Standard * * Retention Time Reference ***
Retention time = 11.794 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 100.200 | 41875.6 | 417.9199 | Manual | 2/18/2004 10:22: |
| 2 | 100.200 | 42894.4 | 428.088 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 100.200 | 43532.8 | 434.4595 | 1H14048.08A | 2/18/2004 10:17: |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 4 | 100.200 | 43797.3 | 437.0988 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 100.200 | 46483.8 | 463.91 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 1.0 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.0000, Average error = 0.00%
Average CF = 436.2952 with RSD = 3.92%

**11 2,4,5-TP**
Retention time = 12.250 min., Search window = 0.099 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.760 | 1065.1 | 223.755 | 0.0475 | 0.0254 | Manual | 2/18/2004 10:22: |
| 2 | 9.510 | 2093.6 | 220.1463 | 0.0949 | 0.0488 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 19.020 | 4203.4 | 221.0015 | 0.1898 | 0.0966 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 38.040 | 8889.2 | 233.6807 | 0.3796 | 0.2030 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 95.100 | 25983.1 | 273.2186 | 0.9491 | 0.5590 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.536 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9869, Average error = 3.92%
Average CF = 0.5364 with RSD = 5.91%

**12 2,4,5-T**
Retention time = 12.613 min., Search window = 0.103 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.740 | 758.9 | 160.1149 | 0.0473 | 0.0181 | Manual | 2/18/2004 10:22: |
| 2 | 9.480 | 1560.3 | 164.592 | 0.0946 | 0.0364 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 18.960 | 3209.3 | 169.269 | 0.1892 | 0.0737 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 37.920 | 6878.5 | 181.3945 | 0.3784 | 0.1571 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 94.800 | 20492.1 | 216.1617 | 0.9461 | 0.4408 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.408 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9746, Average error = 6.45%
Average CF = 0.4076 with RSD = 8.60%

**13 2,4-DB**

Retention time = 13.295 min., Search window = 0.105 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.450 | 974.3 | 20.53303 | 0.4736 | 0.0233 | Manual | 2/18/2004 10:22: |
| 2 | 94.890 | 1954.4 | 20.59662 | 0.9470 | 0.0456 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 189.780 | 3944.3 | 20.78334 | 1.8940 | 0.0906 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 379.560 | 8622.9 | 22.71802 | 3.7880 | 0.1969 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 948.900 | 22354.4 | 23.55823 | 9.4701 | 0.4809 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.05 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 2.92%
Average CF = 0.0496 with RSD = 3.58%

**14 Bentazon**
Retention time = 14.553 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 330.750 | 429853.0 | 1299.631 | 3.3009 | 10.2650 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 3.11 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.1098 with RSD = 0.00%

**15 Picloram**
Retention time = 14.553 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 330.750 | 429853.0 | 1299.631 | 3.3009 | 10.2650 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 3.11 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.1098 with RSD = 0.00%

**16 DINOSEB**
Retention time = 14.763 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 23.720 | 3571.2 | 150.556 | 0.2367 | 0.0853 | Manual | 2/18/2004 10:22: |
| 2 | 47.440 | 6479.3 | 136.5785 | 0.4735 | 0.1511 | 1H14048.07A | 2/18/2004 10:11: |
| 3 | 94.880 | 12682.2 | 133.6657 | 0.9469 | 0.2913 | 1H14048.08A | 2/18/2004 10:17: |
| 4 | 189.760 | 27064.3 | 142.6239 | 1.8938 | 0.6179 | 1H14048.09A | 2/18/2004 10:11: |
| 5 | 474.400 | 65848.8 | 138.8044 | 4.7345 | 1.4166 | 1H14048.10A | 2/18/2004 10:11: |

Calibration formula: Y = 0.322 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9895, Average error = 5.16%
Average CF = 0.3225 with RSD = 7.30%

**17 Acifluorfen**
Retention time = 19.061 min., Search window = 0.115 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #10, DBOFB
Single peak quantification by height
Internal standard reference component = #10, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 96.300 | 222158.0 | 2306.937 | 0.9611 | 5.3052 | Manual | 2/18/2004 10:22: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

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Calibration formula: Y = 5.52 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 5.5200 with RSD = 0.00%

# 6E
# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456B  Calibration File: 1H14048B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 2/17/04  2/17/04

| COMPOUND | CALIBRATION FACTORS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
|---|---|---|---|---|---|---|---|
| Dalapon | 1.30E-01 | 1.17E-01 | 1.09E-01 | 1.02E-01 | 8.47E-02 | 1.08E-01 | 15.6 |
| 3,5-DCBA | 3.02E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 6.04E-01 | ##### |
| Dichlorophenylacetic acid | 1.41E-01 | 1.33E-01 | 1.21E-01 | 1.15E-01 | 1.00E-01 | 1.22E-01 | 12.8 |
| Dicamba | 4.97E-01 | 5.23E-01 | 4.98E-01 | 4.69E-01 | 4.75E-01 | 4.93E-01 | 4.4 |
| Mcpp | 6.78E-04 | 6.30E-04 | 5.40E-04 | 5.03E-04 | 4.04E-04 | 5.51E-04 | 19.6 |
| Mcpa | 1.17E-03 | 9.69E-04 | 7.90E-04 | 6.85E-04 | 5.53E-04 | 8.33E-04 | 28.9 |
| 2,4-DP | 1.63E-01 | 1.55E-01 | 1.41E-01 | 1.20E-01 | 1.17E-01 | 1.39E-01 | 14.6 |
| 2,4-D | 1.72E-01 | 1.53E-01 | 1.35E-01 | 1.23E-01 | 1.13E-01 | 1.39E-01 | 16.9 |
| PCP | 1.31E+00 | 1.40E+00 | 1.43E+00 | 1.51E+00 | 1.45E+00 | 1.42E+00 | 5.2 |
| 2,4,5-TP | 4.43E-01 | 4.92E-01 | 4.93E-01 | 5.11E-01 | 5.71E-01 | 5.02E-01 | 9.2 |
| 2,4,5-T | 3.41E-01 | 3.65E-01 | 3.74E-01 | 3.96E-01 | 4.42E-01 | 3.84E-01 | 10.0 |
| 2,4-DB | 5.10E-02 | 4.99E-02 | 4.79E-02 | 5.01E-02 | 4.90E-02 | 4.96E-02 | 2.4 |
| Dinoseb | 3.36E-01 | 3.24E-01 | 3.12E-01 | 3.14E-01 | 2.92E-01 | 3.16E-01 | 5.1 |
| Bentazon | 1.16E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 2.31E-01 | ##### |
| Picloram | 7.72E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.54E+00 | ##### |
| Acifluorfen | 6.61E+00 | .00E+00 | .00E+00 | .00E+00 | .00E+00 | 1.32E+00 | ##### |

Average % RSD: 12.1

NR

2/18/04 MDH

8743



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\1H14048B.CAL** Version = 10
Internal standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 0
Amount units = PPB
17 components with 5 levels each

## 1 Dalapon

Retention time = 3.790 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 113.950 | 7691.2 | 67.49638 | 1.1372 | 0.1480 | Manual | 2/18/2004 10:29: |
| 2 | 227.900 | 14110.3 | 61.91439 | 2.2745 | 0.2652 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 455.800 | 26861.4 | 58.93236 | 4.5489 | 0.4949 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 912.440 | 50622.2 | 55.48006 | 9.1062 | 0.9272 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 2279.000 | 110521.0 | 48.49539 | 22.7445 | 1.9261 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.108 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8577, Average error = 11.18%
Average CF = 0.1084 with RSD = 15.60%

## 2 3,5-DCBA

Retention time = 8.893 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 93.200 | 146046.0 | 1567.017 | 0.9301 | 2.8094 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | 0 | | | | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | -1.000 | 0 | | | | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | -1.000 | 0 | | | | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | -1.000 | 0 | | | | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 3.02 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 3.0204 with RSD = 0.00%

## 3 DCAA

Retention time = 9.414 min., Search window = 0.092 min.

Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 46.940 | 3424.5 | 72.95473 | 0.4685 | 0.0659 | Manual | 2/18/2004 10:29: |
| 2 | 93.880 | 6627.7 | 70.59722 | 0.9369 | 0.1246 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 187.760 | 12297.3 | 65.49473 | 1.8739 | 0.2266 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 375.520 | 23526.8 | 62.65115 | 3.7477 | 0.4309 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 938.800 | 53997.3 | 57.51738 | 9.3693 | 0.9410 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.122 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9172, Average error = 9.71%
Average CF = 0.1220 with RSD = 12.84%

**4 DICAMBA**
Retention time = 9.653 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.700 | 1212.9 | 258.0662 | 0.0469 | 0.0233 | Manual | 2/18/2004 10:29: |
| 2 | 9.400 | 2612.7 | 277.9514 | 0.0938 | 0.0491 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18.800 | 5074.5 | 269.9214 | 0.1876 | 0.0935 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37.600 | 9604.3 | 255.4341 | 0.3752 | 0.1759 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94.000 | 25547.7 | 271.7835 | 0.9381 | 0.4452 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.493 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 3.38%
Average CF = 0.4925 with RSD = 4.42%

**5 MCPP**
Retention time = 9.738 min., Search window = 0.092 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4706.500 | 1655.5 | 0.3517506 | 46.9711 | 0.0318 | Manual | 2/18/2004 10:29: |
| 2 | 9413.000 | 3151.3 | 0.3347788 | 93.9421 | 0.0592 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18826.000 | 5506.7 | 0.2925072 | 187.8842 | 0.1015 | 1H14048B.08A | 2/18/2004 10:26: |

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| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 37666.800 | 10326.5 | 0.274155 | 375.9162 | 0.1891 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94130.000 | 21787.1 | 0.231458 | 939.4212 | 0.3797 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.7528, Average error = 14.96%
Average CF = 0.0006 with RSD = 19.54%

**6 MCPA**
Retention time = 10.020 min., Search window = 0.093 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4686.000 | 2834.3 | 0.6048342 | 46.7665 | 0.0545 | Manual | 2/18/2004 10:29: |
| 2 | 9372.000 | 4820.2 | 0.5143166 | 93.5329 | 0.0906 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18744.000 | 8017.1 | 0.4277164 | 187.0659 | 0.1477 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37535.200 | 14000.2 | 0.3729886 | 374.6028 | 0.2564 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 93720.000 | 29654.5 | 0.3164155 | 935.3293 | 0.5168 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.001 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.4806, Average error = 22.59%
Average CF = 0.0008 with RSD = 28.92%

**7 2,4-DP**
Retention time = 10.441 min., Search window = 0.094 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.300 | 4001.7 | 84.60213 | 0.4721 | 0.0770 | Manual | 2/18/2004 10:29: |
| 2 | 94.590 | 7771.1 | 82.15552 | 0.9440 | 0.1460 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 189.180 | 14457.7 | 76.42309 | 1.8880 | 0.2664 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 379.110 | 24884.7 | 65.63969 | 3.7835 | 0.4558 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 945.900 | 63485.1 | 67.11604 | 9.4401 | 1.1064 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.139 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9288, Average error = 11.76%
Average CF = 0.1393 with RSD = 14.57%

**8 DBOFB * Internal Standard * * Retention Time Reference ***

Retention time = 10.704 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 100.200 | 51984.1 | 518.8038 | Manual | 2/18/2004 10:29: |
| 2 | 100.200 | 53210.3 | 531.0405 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 100.200 | 54272.1 | 541.638 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 100.200 | 54595.8 | 544.8682 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 100.200 | 57380.0 | 572.6549 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 1.0 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.0000, Average error = 0.00%
Average CF = 541.8011 with RSD = 3.70%

**9 2,4-D**
Retention time = 10.863 min., Search window = 0.096 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.100 | 4201.7 | 89.20865 | 0.4701 | 0.0808 | Manual | 2/18/2004 10:29: |
| 2 | 94.190 | 7647.4 | 81.19143 | 0.9400 | 0.1437 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 188.380 | 13799.4 | 73.25294 | 1.8800 | 0.2543 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 376.750 | 25249.6 | 67.01959 | 3.7600 | 0.4625 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 941.900 | 61023.6 | 64.78774 | 9.4002 | 1.0635 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.139 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8982, Average error = 13.32%
Average CF = 0.1392 with RSD = 16.91%

**10 PCP**
Retention time = 11.460 min., Search window = 0.102 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 5.010 | 3409.3 | 680.4968 | 0.0500 | 0.0656 | Manual | 2/18/2004 10:29: |
| 2 | 10.030 | 7441.3 | 741.9078 | 0.1001 | 0.1398 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 20.060 | 15562.6 | 775.8026 | 0.2002 | 0.2868 | 1H14048B.08A | 2/18/2004 10:26: |

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| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 4 | 40.110 | 33037.8 | 823.6805 | 0.4003 | 0.6051 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 100.280 | 83480.9 | 832.4781 | 1.0008 | 1.4549 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 1.421 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.77%
Average CF = 1.4213 with RSD = 5.21%

**11 2,4,5-TP**
Retention time = 11.821 min., Search window = 0.100 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1* | 4.760 | 1095.0 | 230.0357 | 0.0475 | 0.0211 | Manual | 2/18/2004 10:29: |
| 2 | 9.510 | 2486.8 | 261.4915 | 0.0949 | 0.0467 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 19.020 | 5082.4 | 267.215 | 0.1898 | 0.0936 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 38.040 | 10583.3 | 278.214 | 0.3796 | 0.1938 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 95.100 | 31109.6 | 327.125 | 0.9491 | 0.5422 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.502 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9763, Average error = 6.17%
Average CF = 0.5022 with RSD = 9.16%

**12 2,4,5-T**
Retention time = 12.301 min., Search window = 0.103 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 4.740 | 838.5 | 176.8956 | 0.0473 | 0.0161 | Manual | 2/18/2004 10:29: |
| 2 | 9.480 | 1835.6 | 193.6303 | 0.0946 | 0.0345 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 18.960 | 3845.7 | 202.8344 | 0.1892 | 0.0709 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 37.920 | 8188.2 | 215.9327 | 0.3784 | 0.1500 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 94.800 | 24020.4 | 253.3803 | 0.9461 | 0.4186 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.384 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9714, Average error = 7.42%
Average CF = 0.3838 with RSD = 10.00%

**13 2,4-DB**

Retention time = 12.922 min., Search window = 0.105 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 47.450 | 1256.1 | 26.47165 | 0.4736 | 0.0242 | Manual | 2/18/2004 10:29: |
| 2 | 94.890 | 2512.0 | 26.47307 | 0.9470 | 0.0472 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 189.780 | 4919.7 | 25.92324 | 1.8940 | 0.0906 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 379.560 | 10367.7 | 27.31505 | 3.7880 | 0.1899 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 948.890 | 26616.2 | 28.0498 | 9.4700 | 0.4639 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.05 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.85%
Average CF = 0.0496 with RSD = 2.42%

**14 DINOSEB**
Retention time = 13.330 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 23.720 | 4131.8 | 174.1917 | 0.2367 | 0.0795 | Manual | 2/18/2004 10:29: |
| 2 | 47.440 | 8165.2 | 172.1155 | 0.4735 | 0.1535 | 1H14048B.07A | 2/18/2004 10:11: |
| 3 | 94.880 | 16029.3 | 168.9433 | 0.9469 | 0.2954 | 1H14048B.08A | 2/18/2004 10:26: |
| 4 | 189.760 | 32426.7 | 170.8829 | 1.8938 | 0.5939 | 1H14048B.09A | 2/18/2004 10:11: |
| 5 | 474.400 | 79451.4 | 167.4777 | 4.7345 | 1.3847 | 1H14048B.10A | 2/18/2004 10:12: |

Calibration formula: Y = 0.316 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9893, Average error = 3.64%
Average CF = 0.3156 with RSD = 5.09%

**15 Bentazon**
Retention time = 14.057 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 236.250 | 141696.0 | 599.7714 | 2.3578 | 2.7258 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 1.156 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 1.1561 with RSD = 0.00%

**16 Picloram**
Retention time = 14.601 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 94.500 | 378722.0 | 4007.64 | 0.9431 | 7.2853 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 7.725 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 7.7248 with RSD = 0.00%

**17 Acifluorfen**
Retention time = 17.469 min., Search window = 0.107 min.
Low alarm amount = 0, High alarm amount = 0
Group number = 0, Component constant = 0
Retention time reference component = #8, DBOFB
Single peak quantification by height
Internal standard reference component = #8, DBOFB

| Level | Amount | Height | Height/Amt | Amt ratio | Height ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|
| 1 | 96.300 | 330010.0 | 3426.895 | 0.9611 | 6.3483 | Manual | 2/18/2004 10:29: |
| 2 | -1.000 | -1 | | | | | |
| 3 | -1.000 | -1 | | | | | |
| 4 | -1.000 | -1 | | | | | |
| 5 | -1.000 | -1 | | | | | |

Calibration formula: Y = 6.605 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.00%
Average CF = 6.6054 with RSD = 0.00%

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H8456A  Init. Calib Date(s): 02/17/04  02/17/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 02/25/04

Lab File ID: 2H14048.04R  Time Analyzed: 10:49

Lab Standard ID: HERB2GZ  Initial Calibration: 1H14048

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 4.22 | 4.14 | 4.28 | 251.03 | 227.90 | 10.1 |
| Dichlorophenylacetic acid | 9.76 | 9.64 | 9.84 | 106.90 | 93.88 | 13.9 |
| Dicamba | 10.03 | 9.92 | 10.10 | 10.20 | 9.40 | 8.5 |
| Mcpp | 10.21 | 10.10 | 10.29 | 10517.53 | 9413.00 | 11.7 |
| Mcpa | 10.40 | 10.29 | 10.48 | 10860.76 | 9372.00 | 15.9 |
| 2,4-DP | 10.89 | 10.78 | 10.97 | 109.03 | 94.59 | 15.3 |
| 2,4-D | 11.18 | 11.07 | 11.26 | 103.06 | 94.19 | 9.4 |
| PCP | 11.64 | 11.53 | 11.73 | 10.07 | 10.03 | 0.4 |
| 2,4,5-TP | 12.27 | 12.15 | 12.35 | 9.88 | 9.51 | 3.9 |
| 2,4,5-T | 12.63 | 12.51 | 12.72 | 9.72 | 9.48 | 2.5 |
| 2,4-DB | 13.31 | 13.19 | 13.40 | 103.99 | 94.89 | 9.6 |
| Dinoseb | 14.78 | 14.65 | 14.88 | 48.86 | 47.44 | 3.0 |
| | | | | | Average of %D: | 8.7 |

8751



FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456B
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (2) : RTXCLPII ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048B.04R
Time Analyzed: 10:49
Lab Standard ID: HERB2GZ
Initial Calibration: 1H14048B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 3.80 | 3.69 | 3.89 | 246.77 | 227.90 | 8.3 |
| Dichlorophenylacetic acid | 9.43 | 9.32 | 9.51 | 106.36 | 93.88 | 13.3 |
| Dicamba | 9.67 | 9.56 | 9.75 | 10.02 | 9.40 | 6.6 |
| Mcpp | 9.76 | 9.65 | 9.83 | 10728.39 | 9413.00 | 14.0 |
| Mcpa | 10.04 | 9.93 | 10.11 | 10644.78 | 9372.00 | 13.6 |
| 2,4-DP | 10.46 | 10.35 | 10.54 | 105.39 | 94.59 | 11.4 |
| 2,4-D | 10.88 | 10.77 | 10.96 | 102.30 | 94.19 | 8.6 |
| PCP | 11.48 | 11.36 | 11.56 | 9.76 | 10.03 | -2.6 |
| 2,4,5-TP | 11.84 | 11.72 | 11.92 | 9.29 | 9.51 | -2.3 |
| 2,4,5-T | 12.32 | 12.20 | 12.40 | 10.30 | 9.48 | 8.6 |
| 2,4-DB | 12.94 | 12.82 | 13.03 | 98.90 | 94.89 | 4.2 |
| Dinoseb | 13.35 | 13.22 | 13.44 | 52.31 | 47.44 | 10.3 |
| | | | | | Average of %D: | 8.7 |

8752

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456A
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (1) : RTX-CLP ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048.15R
Time Analyzed: 15:41
Lab Standard ID: HERB3WP
Initial Calibration: 1H14048

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 4.21 | 4.14 | 4.28 | 464.69 | 455.80 | 2.0 |
| Dichlorophenylacetic acid | 9.74 | 9.64 | 9.84 | 189.12 | 187.76 | 0.7 |
| Dicamba | 10.01 | 9.92 | 10.10 | 18.84 | 18.80 | 0.2 |
| Mcpp | 10.19 | 10.10 | 10.29 | 18972.81 | 18826.00 | 0.8 |
| Mcpa | 10.38 | 10.29 | 10.48 | 18771.41 | 18744.00 | 0.1 |
| 2,4-DP | 10.87 | 10.78 | 10.97 | 196.33 | 189.18 | 3.8 |
| 2,4-D | 11.16 | 11.07 | 11.26 | 195.96 | 188.38 | 4.0 |
| PCP | 11.62 | 11.53 | 11.73 | 20.15 | 20.06 | 0.5 |
| 2,4,5-TP | 12.25 | 12.15 | 12.35 | 20.01 | 19.02 | 5.2 |
| 2,4,5-T | 12.61 | 12.51 | 12.72 | 21.24 | 18.96 | 12.0 |
| 2,4-DB | 13.29 | 13.19 | 13.40 | 209.33 | 189.78 | 10.3 |
| Dinoseb | 14.76 | 14.65 | 14.88 | 108.00 | 94.88 | 13.8 |

Average of %D: 4.5

8753



FORM VII

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories
Contract:
Lab Code: Case No.: SAS No.: SDG No.:
Instrument: H8456B
Init. Calib Date(s): 02/17/04 02/17/04
GC Column (2) : RTXCLPII ID: .32 (mm)
Date Analyzed: 02/25/04
Lab File ID: 2H14048B.15R
Time Analyzed: 15:41
Lab Standard ID: HERB3WP
Initial Calibration: 1H14048B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Dalapon | 3.79 | 3.69 | 3.89 | 454.56 | 455.80 | -0.3 |
| Dichlorophenylacetic acid | 9.41 | 9.32 | 9.51 | 187.63 | 187.76 | -0.1 |
| Dicamba | 9.65 | 9.56 | 9.75 | 19.18 | 18.80 | 2.0 |
| Mcpp | 9.74 | 9.65 | 9.83 | 18183.52 | 18826.00 | -3.4 |
| Mcpa | 10.02 | 9.93 | 10.11 | 17239.99 | 18744.00 | -8.0 |
| 2,4-DP | 10.44 | 10.35 | 10.54 | 192.32 | 189.18 | 1.7 |
| 2,4-D | 10.86 | 10.77 | 10.96 | 183.41 | 188.38 | -2.6 |
| PCP | 11.46 | 11.36 | 11.56 | 20.08 | 20.06 | 0.1 |
| 2,4,5-TP | 11.82 | 11.72 | 11.92 | 19.39 | 19.02 | 1.9 |
| 2,4,5-T | 12.30 | 12.20 | 12.40 | 19.95 | 18.96 | 5.2 |
| 2,4-DB | 12.92 | 12.82 | 13.03 | 197.47 | 189.78 | 4.1 |
| Dinoseb | 13.33 | 13.22 | 13.44 | 104.37 | 94.88 | 10.0 |
| | | | | | Average of %D: | 3.3 |

8754



FORM VII

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 001 | HERB1AA | HERB103C | 02/17/2004 | 16:27:41 | 1H14048 | 9.74 | 10.01 |
| 002 | HERB2AA | HERB203C | 02/17/2004 | 16:54:10 | 1H14048 | 9.74 | 10.01 |
| 003 | HERB3AA | HERB303C | 02/17/2004 | 17:20:41 | 1H14048 | 9.74 | 10.01 |
| 004 | HERB4AA | HERB403D | 02/17/2004 | 17:47:07 | 1H14048 | 9.74 | 10.01 |
| 005 | HERB5AA | HERB503C | 02/17/2004 | 18:13:37 | 1H14048 | 9.74 | 10.01 |
| 006 | AA | MDHEX03 | 02/17/2004 | 18:40:08 | 1H14048 | | |
| 007 | ICHBXAT | ICHBX03H | 02/17/2004 | 19:06:37 | 1H14048 | 9.74 | 10.01 |
| 008 | HX15HAA | HX15H03B | 02/17/2004 | 19:33:03 | 1H14048 | 9.74 | 10.00 |
| 009 | PBLKKF | BLANKA | 02/17/2004 | 19:59:33 | 1H14048 | 9.74 | 10.01 |
| 010 | MDL5W | MDLA | 02/17/2004 | 20:26:00 | 1H14048 | | |
| 011 | MDL5X | MDLB | 02/17/2004 | 20:52:31 | 1H14048 | | |
| 012 | MDL5Y | MDLC | 02/17/2004 | 21:19:01 | 1H14048 | | |
| 013 | MDL5Z | MDLD | 02/17/2004 | 21:45:28 | 1H14048 | | |
| 014 | MDL60 | MDLE | 02/17/2004 | 22:11:55 | 1H14048 | | |
| 015 | MDL61 | MDLF | 02/17/2004 | 22:38:24 | 1H14048 | | |
| 016 | MDL62 | MDLG | 02/17/2004 | 23:04:53 | 1H14048 | | |
| 017 | HERB4HU | HERB403D | 02/17/2004 | 23:31:23 | 1H14048 | 9.75 | 10.02 |
| 018 | HERB3AA | HERB303C | 02/17/2004 | 23:57:49 | CLH048 | | 10.02 |
| 019 | HERB4AA | HERB403D | 02/18/2004 | 00:24:17 | CLH048 | | 10.02 |
| 020 | HERB5AA | HERB503C | 02/18/2004 | 00:50:44 | CLH048 | | 10.02 |
| 021 | HERB6AA | HERB603B | 02/18/2004 | 01:17:14 | CLH048 | | 10.02 |
| 022 | HERB7AA | HERB703B | 02/18/2004 | 01:43:42 | CLH048 | | 10.01 |
| 023 | AA | MDHEX03 | 02/18/2004 | 02:10:07 | CLH048 | | |
| 024 | PBLKOG | BLANKA | 02/18/2004 | 02:36:33 | CLH048 | | 10.02 |
| 025 | LCSLZ | LCSA | 02/18/2004 | 03:03:02 | CLH048 | | 10.01 |
| 026 | 212-- | 4215679 | 02/18/2004 | 03:29:29 | CLH048 | | 10.01 |
| 027 | 212--MS | 4215680 | 02/18/2004 | 03:55:58 | CLH048 | | 10.02 |
| 028 | 212--MSD | 4215681 | 02/18/2004 | 04:22:23 | CLH048 | | 10.01 |
| 029 | HERB5BL | HERB503C | 02/18/2004 | 04:48:50 | CLH048 | | 10.01 |
| 030 | | CONDITIONER | 02/18/2004 | 08:25:24 | CLH048 | | 10.11 |
| 031 | | CONDITIONER | 02/18/2004 | 08:51:54 | CLH048 | | 9.92 |

ICAL Dates

1H14048 02/17/2004 - 02/17/2004

CLH048 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.74 | (9.64 - 9.84 Minutes) |
| 10.01 | (9.92 - 10.10 Minutes) |
| 10.02 | (9.92 - 10.12 Minutes) |

8755

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 032 | | CONDITIONER | 02/18/2004 | 09:18:23 | CLH048 | | 10.07 |
| 033 | HERB5BM | HERB503C | 02/18/2004 | 09:44:55 | CLH048 | | 9.98 |
| 034 | PBLKQ1 | BLANKA | 02/18/2004 | 10:11:26 | CLH048 | | 10.00 |
| 035 | LCSNO | LCSA | 02/18/2004 | 10:38:01 | CLH048 | | 10.01 |
| 036 | LCSDHH | LCSDA | 02/18/2004 | 11:04:32 | CLH048 | | 10.02 |
| 037 | LOC1- | 4215682 | 02/18/2004 | 11:31:05 | CLH048 | | 10.02 |
| 038 | HERB5BN | HERB503C | 02/18/2004 | 11:57:35 | CLH048 | | 10.02 |
| 039 | HERB3WF | HERB303C | 02/18/2004 | 12:24:10 | 1H14048 | 9.75 | 10.02 |
| 040 | PBLKQ0 | BLANKA | 02/18/2004 | 12:50:42 | 1H14048 | 9.76 | 10.02 |
| 041 | LCSNN | LCSA | 02/18/2004 | 13:17:16 | 1H14048 | 9.76 | 10.03 |
| 042 | LCSDHG | LCSDA | 02/18/2004 | 13:43:45 | 1H14048 | 9.76 | 10.02 |
| 043 | 283GR | 4217437 | 02/18/2004 | 14:10:17 | 1H14048 | 9.76 | 10.02 |
| 044 | 4052- | 4217438 | 02/18/2004 | 14:36:48 | 1H14048 | 9.75 | 10.02 |
| 045 | 503-3 | 4217439 | 02/18/2004 | 15:03:22 | 1H14048 | 9.76 | 10.03 |
| 046 | HERB3WG | HERB303C | 02/18/2004 | 15:29:52 | 1H14048 | 9.76 | 10.03 |
| 047 | HERB3WH | HERB303C FLO | 02/18/2004 | 15:56:21 | 1H14048 | 9.76 | 10.03 |
| 048 | | CONDITIONER | 02/23/2004 | 08:27:39 | 1H14048 | 9.66 | 9.93 |
| 049 | | CONDITIONER | 02/23/2004 | 08:54:11 | 1H14048 | 9.68 | 9.95 |
| 050 | | CONDITIONER | 02/23/2004 | 09:20:41 | 1H14048 | 9.71 | 9.98 |
| 051 | HERB4HV | HERB403D | 02/23/2004 | 09:47:12 | 1H14048 | 9.72 | 9.98 |
| 052 | HX15XAC | HX15X03C | 02/23/2004 | 10:13:45 | 1H14048 | 9.72 | 9.99 |
| 053 | PBLKV9 | BLANKA | 02/23/2004 | 10:40:18 | 1H14048 | 9.73 | 10.00 |
| 054 | LCST7 | LCSA | 02/23/2004 | 11:06:49 | 1H14048 | 9.73 | 10.00 |
| 055 | LCSDJL | LCSDA | 02/23/2004 | 11:33:20 | 1H14048 | 9.73 | 10.00 |
| 056 | 16001 | 4220679 | 02/23/2004 | 11:59:50 | 1H14048 | 9.73 | 10.00 |
| 057 | 16002 | 4220680 | 02/23/2004 | 12:26:24 | 1H14048 | 9.73 | 10.00 |
| 058 | 16003 | 4220681 | 02/23/2004 | 12:52:56 | 1H14048 | 9.73 | 9.99 |
| 059 | PBLKSM | BLANKA | 02/23/2004 | 13:19:29 | 1H14048 | 9.73 | 10.00 |
| 060 | LCSQN | LCS1 | 02/23/2004 | 13:46:00 | 1H14048 | 9.73 | 10.00 |
| 061 | LCSQO | LCS2 | 02/23/2004 | 14:12:31 | 1H14048 | 9.73 | 10.00 |
| 062 | LCSQP | LCS3 | 02/23/2004 | 14:39:02 | 1H14048 | 9.73 | 10.00 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1H14048 | 02/17/2004 - 02/17/2004 | DCAA = Dichlorophenylacetic acid | 9.74 | (9.64 - 9.84 Minutes) |
| | | DCMB = Dicamba | 10.01 | (9.92 - 10.10 Minutes) |
| CLH048 | 02/17/2004 - 02/18/2004 | DCMB = Dicamba | 10.02 | (9.92 - 10.12 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 063 | HERB3WI | HERB303C | 02/23/2004 | 15:05:34 | 1H14048 | 9.73 | 10.00 |
| 064 | LCSQQ | LCS4 | 02/23/2004 | 15:32:04 | 1H14048 | 9.72 | 9.99 |
| 065 | FITTE | 4218136 | 02/23/2004 | 15:58:33 | 1H14048 | 9.73 | 10.00 |
| 066 | WENC- | 4218137 | 02/23/2004 | 16:25:01 | 1H14048 | 9.72 | 9.99 |
| 067 | HERB3WJ | HERB303C | 02/23/2004 | 16:51:34 | 1H14048 | 9.73 | 9.99 |
| 068 | HERB3WK | HERB303C 2090 | 02/23/2004 | 17:18:06 | 1H14048 | 9.72 | 9.99 |
| 069 | HERB3WL | HERB303C 3032 | 02/23/2004 | 17:44:38 | 1H14048 | 9.72 | 9.99 |

| | ICAL Dates |
|---|---|
| 1H14048 | 02/17/2004 - 02/17/2004 |
| CLH048 | 02/17/2004 - 02/18/2004 |

DCAA = Dichlorophenylacetic acid
DCMB = Dicamba
DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.74 | (9.64 - 9.84 Minutes) |
| 10.01 | (9.92 - 10.10 Minutes) |
| 10.02 | (9.92 - 10.12 Minutes) |

9757

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 001 | HERB1AA | HERB103C | 02/17/2004 | 16:27:41 | 1H14048B | 9.41 | 9.65 |
| 002 | HERB2AA | HERB203C | 02/17/2004 | 16:54:10 | 1H14048B | 9.42 | 9.65 |
| 003 | HERB3AA | HERB303C | 02/17/2004 | 17:20:41 | 1H14048B | 9.41 | 9.65 |
| 004 | HERB4AA | HERB403D | 02/17/2004 | 17:47:07 | 1H14048B | 9.41 | 9.65 |
| 005 | HERB5AA | HERB503C | 02/17/2004 | 18:13:37 | 1H14048B | 9.41 | 9.65 |
| 006 | AA | MDHEX03 | 02/17/2004 | 18:40:08 | 1H14048B | | |
| 007 | ICHBXAT | ICHBX03H | 02/17/2004 | 19:06:37 | 1H14048B | 9.41 | 9.65 |
| 008 | HX15HAA | HX15H03B | 02/17/2004 | 19:33:03 | 1H14048B | | |
| 009 | PBLKKF | BLANKA | 02/17/2004 | 19:59:33 | 1H14048B | 9.41 | 9.66 |
| 010 | MDL5W | MDLA | 02/17/2004 | 20:26:00 | 1H14048B | | |
| 011 | MDL5X | MDLB | 02/17/2004 | 20:52:31 | 1H14048B | | |
| 012 | MDL5Y | MDLC | 02/17/2004 | 21:19:01 | 1H14048B | | |
| 013 | MDL5Z | MDLD | 02/17/2004 | 21:45:28 | 1H14048B | | |
| 014 | MDL60 | MDLE | 02/17/2004 | 22:11:55 | 1H14048B | | |
| 015 | MDL61 | MDLF | 02/17/2004 | 22:38:24 | 1H14048B | | |
| 016 | MDL62 | MDLG | 02/17/2004 | 23:04:53 | 1H14048B | | |
| 017 | HERB4HU | HERB403D | 02/17/2004 | 23:31:23 | 1H14048B | 9.42 | 9.66 |
| 018 | HERB3AA | HERB303C | 02/17/2004 | 23:57:49 | CLH048B | | 9.66 |
| 019 | HERB4AA | HERB403D | 02/18/2004 | 00:24:17 | CLH048B | | 9.67 |
| 020 | HERB5AA | HERB503C | 02/18/2004 | 00:50:44 | CLH048B | | 9.66 |
| 021 | HERB6AA | HERB603B | 02/18/2004 | 01:17:14 | CLH048B | | 9.66 |
| 022 | HERB7AA | HERB703B | 02/18/2004 | 01:43:42 | CLH048B | | 9.66 |
| 023 | AA | MDHEX03 | 02/18/2004 | 02:10:07 | CLH048B | | |
| 024 | PBLKOG | BLANKA | 02/18/2004 | 02:36:33 | CLH048B | | 9.66 |
| 025 | LCSLZ | LCSA | 02/18/2004 | 03:03:02 | CLH048B | | 9.66 |
| 026 | 212-- | 4215679 | 02/18/2004 | 03:29:29 | CLH048B | | 9.66 |
| 027 | 212--MS | 4215680 | 02/18/2004 | 03:55:58 | CLH048B | | 9.66 |
| 028 | 212--MSD | 4215681 | 02/18/2004 | 04:22:23 | CLH048B | | 9.66 |
| 029 | HERB5BL | HERB503C | 02/18/2004 | 04:48:50 | CLH048B | | 9.66 |
| 030 | | CONDITIONER | 02/18/2004 | 08:25:24 | CLH048B | | 9.65 |
| 031 | | CONDITIONER | 02/18/2004 | 08:51:54 | CLH048B | | 9.66 |

ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

CLH048B 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.41 | (9.32 - 9.51 Minutes) |
| 9.65 | (9.56 - 9.75 Minutes) |
| 9.66 | (9.56 - 9.76 Minutes) |

8258

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 032 | | CONDITIONER | 02/18/2004 | 09:18:23 | CLH048B | | 9.69 |
| 033 | HERB5BM | HERB503C | 02/18/2004 | 09:44:55 | CLH048B | | 9.63 |
| 034 | PBLKQ1 | BLANKA | 02/18/2004 | 10:11:26 | CLH048B | | 9.65 |
| 035 | LCSNO | LCSA | 02/18/2004 | 10:38:01 | CLH048B | | 9.66 |
| 036 | LCSDHH | LCSDA | 02/18/2004 | 11:04:32 | CLH048B | | 9.66 |
| 037 | LOC1- | 4215682 | 02/18/2004 | 11:31:05 | CLH048B | | 9.66 |
| 038 | HERB5BN | HERB503C | 02/18/2004 | 11:57:35 | CLH048B | | 9.66 |
| 039 | HERB3WF | HERB303C | 02/18/2004 | 12:24:10 | 1H14048B | 9.42 | 9.66 |
| 040 | PBLKQ0 | BLANKA | 02/18/2004 | 12:50:42 | 1H14048B | 9.43 | 9.67 |
| 041 | LCSNN | LCSA | 02/18/2004 | 13:17:16 | 1H14048B | 9.43 | 9.67 |
| 042 | LCSDHG | LCSDA | 02/18/2004 | 13:43:45 | 1H14048B | 9.43 | 9.67 |
| 043 | 283GR | 4217437 | 02/18/2004 | 14:10:17 | 1H14048B | 9.43 | 9.68 |
| 044 | 4052- | 4217438 | 02/18/2004 | 14:36:48 | 1H14048B | 9.42 | 9.67 |
| 045 | 503-3 | 4217439 | 02/18/2004 | 15:03:22 | 1H14048B | 9.43 | 9.67 |
| 046 | HERB3WG | HERB303C | 02/18/2004 | 15:29:52 | 1H14048B | 9.43 | 9.67 |
| 047 | HERB3WH | HERB303C FLO | 02/18/2004 | 15:56:21 | 1H14048B | 9.43 | 9.67 |
| 048 | | CONDITIONER | 02/23/2004 | 08:27:39 | 1H14048B | 9.33 | 9.57 |
| 049 | | CONDITIONER | 02/23/2004 | 08:54:11 | 1H14048B | 9.36 | 9.60 |
| 050 | | CONDITIONER | 02/23/2004 | 09:20:41 | 1H14048B | 9.38 | 9.62 |
| 051 | HERB4HV | HERB403D | 02/23/2004 | 09:47:12 | 1H14048B | 9.39 | 9.63 |
| 052 | HX15XAC | HX15X03C | 02/23/2004 | 10:13:45 | 1H14048B | | |
| 053 | PBLKV9 | BLANKA | 02/23/2004 | 10:40:18 | 1H14048B | 9.40 | 9.62 |
| 054 | LCST7 | LCSA | 02/23/2004 | 11:06:49 | 1H14048B | 9.40 | 9.64 |
| 055 | LCSDJL | LCSDA | 02/23/2004 | 11:33:20 | 1H14048B | 9.40 | 9.64 |
| 056 | 16001 | 4220679 | 02/23/2004 | 11:59:50 | 1H14048B | 9.40 | 9.66 |
| 057 | 16002 | 4220680 | 02/23/2004 | 12:26:24 | 1H14048B | 9.40 | 9.65 |
| 058 | 16003 | 4220681 | 02/23/2004 | 12:52:56 | 1H14048B | 9.40 | 9.65 |
| 059 | PBLKSM | BLANKA | 02/23/2004 | 13:19:29 | 1H14048B | 9.40 | 9.64 |
| 060 | LCSQN | LCS1 | 02/23/2004 | 13:46:00 | 1H14048B | 9.40 | 9.64 |
| 061 | LCSQO | LCS2 | 02/23/2004 | 14:12:31 | 1H14048B | 9.40 | 9.64 |
| 062 | LCSQP | LCS3 | 02/23/2004 | 14:39:02 | 1H14048B | 9.40 | 9.64 |

ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

CLH048B 02/17/2004 - 02/18/2004

DCAA = Dichlorophenylacetic acid

DCMB = Dicamba

DCMB = Dicamba

| ICAL RT | QC Limits |
|---|---|
| 9.41 | (9.32 - 9.51 Minutes) |
| 9.65 | (9.56 - 9.75 Minutes) |
| 9.66 | (9.56 - 9.76 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1H14048B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA | DCMB |
|---|---|---|---|---|---|---|---|
| 063 | HERB3WI | HERB303C | 02/23/2004 | 15:05:34 | 1H14048B | 9.40 | 9.64 |
| 064 | LCSQQ | LCS4 | 02/23/2004 | 15:32:04 | 1H14048B | 9.40 | 9.64 |
| 065 | FITTE | 4218136 | 02/23/2004 | 15:58:33 | 1H14048B | 9.40 | 9.64 |
| 066 | WENC- | 4218137 | 02/23/2004 | 16:25:01 | 1H14048B | 9.40 | 9.63 |
| 067 | HERB3WJ | HERB303C | 02/23/2004 | 16:51:34 | 1H14048B | 9.40 | 9.64 |
| 068 | HERB3WK | HERB303C 2090 | 02/23/2004 | 17:18:06 | 1H14048B | 9.40 | 9.64 |
| 069 | HERB3WL | HERB303C 3032 | 02/23/2004 | 17:44:38 | 1H14048B | 9.40 | 9.64 |

| | ICAL Dates |
|---|---|
| 1H14048B | 02/17/2004 - 02/17/2004 |
| CLH048B | 02/17/2004 - 02/18/2004 |

| | ICAL RT | QC Limits |
|---|---|---|
| DCAA = Dichlorophenylacetic acid | 9.41 | (9.32 - 9.51 Minutes) |
| DCMB = Dicamba | 9.65 | (9.56 - 9.75 Minutes) |
| DCMB = Dicamba | 9.66 | (9.56 - 9.76 Minutes) |

8758

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2H14048 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H8456A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA |
|---|---|---|---|---|---|---|
| 001 | HERB2GZ | HERB203C | 02/25/2004 | 10:49:10 | 1H14048 | 9.76 |
| 002 | PBLKXH | BLANKA | 02/25/2004 | 11:15:44 | 1H14048 | 9.74 |
| 003 | LCSVR | LCSA | 02/25/2004 | 11:42:18 | 1H14048 | 9.73 |
| 004 | I1-NV | 4217215 | 02/25/2004 | 12:08:52 | 1H14048 | 9.73 |
| 005 | I1-NVMS | 4217215 | 02/25/2004 | 12:35:22 | 1H14048 | 9.73 |
| 006 | BLA-2 | 4217866 | 02/25/2004 | 13:01:55 | 1H14048 | 9.74 |
| 007 | UN5NV | 4219006 | 02/25/2004 | 13:28:28 | 1H14048 | 9.74 |
| 008 | UN7NV | 4219022 | 02/25/2004 | 13:55:02 | 1H14048 | 9.74 |
| 009 | UN7NVMS | 4219022 | 02/25/2004 | 14:21:33 | 1H14048 | 9.74 |
| 010 | UN7NVMSD | 4219022 | 02/25/2004 | 14:48:04 | 1H14048 | 9.74 |
| 011 | TC407 | 4219669 | 02/25/2004 | 15:14:33 | 1H14048 | 9.74 |
| 012 | HERB3WP | HERB303C | 02/25/2004 | 15:41:06 | 1H14048 | 9.74 |
| 013 | BLA20 | 4221331 | 02/25/2004 | 16:07:38 | 1H14048 | 9.74 |
| 014 | BLA44 | 4221332 | 02/25/2004 | 16:34:09 | 1H14048 | 9.73 |
| 015 | PBLKWR | BLANKA | 02/25/2004 | 17:00:37 | 1H14048 | 9.73 |
| 016 | LCSUX | LCSA | 02/25/2004 | 17:27:07 | 1H14048 | 9.73 |
| 017 | LCSDK5 | LCSDA | 02/25/2004 | 17:53:34 | 1H14048 | 9.73 |
| 018 | HERB4HW | HERB404D | 02/25/2004 | 18:20:06 | 1H14048 | 9.73 |
| 019 | C7028 | 4219619 | 02/25/2004 | 18:46:34 | 1H14048 | 9.73 |
| 020 | HERB3WQ | HERB303C | 02/25/2004 | 19:13:02 | 1H14048 | 9.73 |
| 021 | | CONDITIONER | 02/26/2004 | 07:49:56 | 1H14048 | 9.65 |
| 022 | | CONDITIONER | 02/26/2004 | 08:16:26 | 1H14048 | 9.67 |
| 023 | | CONDITIONER | 02/26/2004 | 08:42:55 | 1H14048 | 9.70 |
| 024 | HERB2HA | HERB203C | 02/26/2004 | 09:09:27 | 1H14048 | 9.73 |
| 025 | PBLKYJ | BLANKA | 02/26/2004 | 09:35:58 | 1H14048 | 9.74 |
| 026 | LCSWS | LCSA | 02/26/2004 | 10:02:33 | 1H14048 | 9.74 |
| 027 | 38001 | 4221898 | 02/26/2004 | 10:29:03 | 1H14048 | 9.74 |
| 028 | 38001MS | 4221898 | 02/26/2004 | 10:55:35 | 1H14048 | 9.74 |
| 029 | 38001MSD | 4221898 | 02/26/2004 | 11:22:04 | 1H14048 | 9.74 |
| 030 | 38002 | 4221899 | 02/26/2004 | 11:48:39 | 1H14048 | 9.74 |
| 031 | HERB3WT | HERB303C | 02/26/2004 | 12:15:11 | 1H14048 | 9.74 |
| 032 | C7028 | 4219619 | 02/26/2004 | 12:41:44 | 1H14048 | 9.75 |
| 033 | HERB3WS | HERB303C | 02/26/2004 | 13:08:12 | 1H14048 | 9.74 |

ICAL Dates

1H14048 02/17/2004 - 02/17/2004

DCAA = Dichlorophenylacetic acid

ICAL RT QC Limits

9.74 (9.64 - 9.84 Minutes)

9761

# 8D
# ANALYTICAL SEQUENCE

Sequence: 2H14048B Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTXCLPII ID: 0.32

Instrument: H8456B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | DCAA |
|---|---|---|---|---|---|---|
| 001 | HERB2GZ | HERB203C | 02/25/2004 | 10:49:10 | 1H14048B | 9.43 |
| 002 | PBLKXH | BLANKA | 02/25/2004 | 11:15:44 | 1H14048B | 9.41 |
| 003 | LCSVR | LCSA | 02/25/2004 | 11:42:18 | 1H14048B | 9.41 |
| 004 | I1-NV | 4217215 | 02/25/2004 | 12:08:52 | 1H14048B | 9.40 |
| 005 | I1-NVMS | 4217215 | 02/25/2004 | 12:35:22 | 1H14048B | 9.40 |
| 006 | BLA-2 | 4217866 | 02/25/2004 | 13:01:55 | 1H14048B | 9.41 |
| 007 | UN5NV | 4219006 | 02/25/2004 | 13:28:28 | 1H14048B | 9.41 |
| 008 | UN7NV | 4219022 | 02/25/2004 | 13:55:02 | 1H14048B | 9.41 |
| 009 | UN7NVMS | 4219022 | 02/25/2004 | 14:21:33 | 1H14048B | 9.41 |
| 010 | UN7NVMSD | 4219022 | 02/25/2004 | 14:48:04 | 1H14048B | 9.41 |
| 011 | TC407 | 4219669 | 02/25/2004 | 15:14:33 | 1H14048B | 9.41 |
| 012 | HERB3WP | HERB303C | 02/25/2004 | 15:41:06 | 1H14048B | 9.41 |
| 013 | BLA20 | 4221331 | 02/25/2004 | 16:07:38 | 1H14048B | 9.41 |
| 014 | BLA44 | 4221332 | 02/25/2004 | 16:34:09 | 1H14048B | 9.40 |
| 015 | PBLKWR | BLANKA | 02/25/2004 | 17:00:37 | 1H14048B | 9.41 |
| 016 | LCSUX | LCSA | 02/25/2004 | 17:27:07 | 1H14048B | 9.40 |
| 017 | LCSDK5 | LCSDA | 02/25/2004 | 17:53:34 | 1H14048B | 9.40 |
| 018 | HERB4HW | HERB404D | 02/25/2004 | 18:20:06 | 1H14048B | 9.40 |
| 019 | C7028 | 4219619 | 02/25/2004 | 18:46:34 | 1H14048B | 9.40 |
| 020 | HERB3WQ | HERB303C | 02/25/2004 | 19:13:02 | 1H14048B | 9.40 |
| 021 | | CONDITIONER | 02/26/2004 | 07:49:56 | 1H14048B | 9.56 * |
| 022 | | CONDITIONER | 02/26/2004 | 08:16:26 | 1H14048B | 9.34 |
| 023 | | CONDITIONER | 02/26/2004 | 08:42:55 | 1H14048B | 9.37 |
| 024 | HERB2HA | HERB203C | 02/26/2004 | 09:09:27 | 1H14048B | 9.40 |
| 025 | PBLKYJ | BLANKA | 02/26/2004 | 09:35:58 | 1H14048B | 9.41 |
| 026 | LCSWS | LCSA | 02/26/2004 | 10:02:33 | 1H14048B | 9.41 |
| 027 | 38001 | 4221898 | 02/26/2004 | 10:29:03 | 1H14048B | 9.41 |
| 028 | 38001MS | 4221898 | 02/26/2004 | 10:55:35 | 1H14048B | 9.41 |
| 029 | 38001MSD | 4221898 | 02/26/2004 | 11:22:04 | 1H14048B | 9.41 |
| 030 | 38002 | 4221899 | 02/26/2004 | 11:48:39 | 1H14048B | 9.41 |
| 031 | HERB3WT | HERB303C | 02/26/2004 | 12:15:11 | 1H14048B | 9.41 |
| 032 | C7028 | 4219619 | 02/26/2004 | 12:41:44 | 1H14048B | 9.41 |
| 033 | HERB3WS | HERB303C | 02/26/2004 | 13:08:12 | 1H14048B | 9.41 |

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ICAL Dates

1H14048B 02/17/2004 - 02/17/2004

DCAA = Dichlorophenylacetic acid

ICAL RT QC Limits

9.41 (9.32 - 9.51 Minutes)

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\1h14048.seq

Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1

Method Directory: \\cp14\C-Drive\cpwin\DATA1

Number of Entries: 84

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 1h14048.01R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 2 | CONDITIONER | MISC | AA | 1h14048.02R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 3 | CONDITIONER | MISC | AA | 1h14048.03R | HERW.MET | 1 | 1 | 1 | 044799999 | |
| 4 | CONDITIONER | MISC | AA | 1h14048.04R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 5 | CONDITIONER | MISC | AA | 1h14048.05R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 6 | HERB103C | ICAL | AA | 1h14048.06R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 7 | HERB203C | ICAL | AA | 1h14048.07R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 8 | HERB303C | ICAL | AA | 1h14048.08R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 9 | HERB403D | ICAL | AA | 1h14048.09R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 10 | HERB503C | ICAL | AA | 1h14048.10R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 11 | MDHEX03C | MDL | AA | 1h14048.11R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 12 | ICHBX03H | CCAL | AT | 1h14048.12R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 13 | HX15H03B | ICAL | AA | 1h14048.13R | HERW.MET | 1 | 1 | 100.2 | 0335099999 | |
| 14 | BLANKA 2/13/04 RIF | BLK | AB | 1h14048.14R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 15 | MDLA 2/13/04 RIF | MDL | AB | 1h14048.15R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 16 | MDLB 2/13/04 RIF | MDL | AB | 1h14048.16R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 17 | MDLC 2/13/04 RIF | MDL | AB | 1h14048.17R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 18 | MDLD 2/13/04 RIF | MDL | AB | 1h14048.18R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 19 | MDLE 2/13/04 RIF | MDL | AB | 1h14048.19R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 20 | MDLF 2/13/04 RIF | MDL | AB | 1h14048.20R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 21 | MDLG 2/13/04 RIF | MDL | AB | 1h14048.21R | HERW.MET | 30 | 10 | 100.2 | 040430013A | 05592 |
| 22 | HERB403D | CCAL | HU | 1h14048.22R | HERW.MET | 1 | 1 | 100.2 | 040380004A | |
| 23 | HERB303C | ICAL | AA | 1h14048.23R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 24 | HERB403D | ICAL | AA | 1h14048.24R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 25 | HERB503C | ICAL | AA | 1h14048.25R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 26 | HERB603B | ICAL | AA | 1h14048.26R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 27 | HERB703B | ICAL | AA | 1h14048.27R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 28 | MDHEX03C | MDL | AA | 1h14048.28R | CLH.MET | 1 | 1 | 100.2 | 040380004A | |
| 29 | BLANKA 2/16/04F | BLK | AB | 1h14048.29R | CLH.MET | 1000 | 10 | 100.2 | 040470013A | 05300 |
| 30 | LCSA 2/16/04F | LCS | AB | 1h14048.30R | CLH.MET | 1000 | 10 | 100.2 | 040470013A | 05300 |
| 31 | 4215679F | T | AB | 1h14048.31R | CLH.MET | 1043 | 10 | 100.2 | 040470013A | 05300 |
| 32 | 4215680MSF | MS | AB | 1h14048.32R | CLH.MET | 1058 | 10 | 100.2 | 040470013A | 05300 |
| 33 | 4215681MSDF | MSD | AB | 1h14048.33R | CLH.MET | 1023 | 10 | 100.2 | 040470013A | 05300 |
| 34 | HERB503C | CCAL | BL | 1h14048.34R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 35 | CONDITIONER | CCAL | AA | 1h14048.35R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 36 | CONDITIONER | CCAL | AA | 1h14048.36R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 37 | CONDITIONER | CCAL | AA | 1h14048.37R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 38 | HERB503C | CCAL | BM | 1h14048.38R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 39 | BLANKA 2/17/04F | BLK | AB | 1h14048.39R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 40 | LCSA 2/17/04F | LCS | AB | 1h14048.40R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 41 | LCSDA 2/17/04F | LCSD | AB | 1h14048.41R | CLH.MET | 1000 | 10 | 100.2 | 040480010A | 05300 |
| 42 | 4215682F | T | AB | 1h14048.42R | CLH.MET | 1046 | 10 | 100.2 | 040480010A | 05300 |
| 43 | HERB503C | CCAL | BN | 1h14048.43R | CLHCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 44 | HERB303C | CCAL | WF | 1h14048.44R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 45 | BLANKA 2/17/04F | BLK | AB | 1h14048.45R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 46 | LCSA 2/17/04F | LCS | AB | 1h14048.46R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 47 | LCSDA 2/17/04F | LCSD | AB | 1h14048.47R | HERW.MET | 1000 | 10 | 100.2 | 040480009A | 05593 |
| 48 | 4217437F | T | AB | 1h14048.48R | HERW.MET | 1017 | 10 | 100.2 | 040480009A | 01856 |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\1h14048.seq

Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1

Method Directory: \\cp14\C-Drive\cpwin\DATA1

Number of Entries: 84

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 49 4217438F | T | AB | 1h14048.49R | HERW.MET | 925 | 10 | 100.2 | 040480009A | 01856 |
| 50 4217439F | T | AB | 1h14048.50R | HERW.MET | 988 | 10 | 100.2 | 040480009A | 01856 |
| 51 HERB303C | CCAL | WG | 1h14048.51R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 52 HERB303C FLOR | CCAL | WH | 1h14048.52R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 53 CONDITIONER | CCAL | AA | 1h14048.53R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 54 CONDITIONER | CCAL | AA | 1h14048.54R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 55 CONDITIONER | CCAL | AA | 1h14048.55R | HERISCC.MET | 1 | 1 | 100.2 | 040470013A | |
| 56 HERB403D | CCAL | HV | 1h14048.56R | HERW.MET | 1 | 1 | 100.2 | 040470013A | |
| 57 HX15X03C | CCAL | AC | 1h14048.57R | HERW.MET | 1 | 1 | 100.2 | 040470013A | |
| 58 BLANKA 2/21/04F | BLK | AB | 1h14048.58R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 59 LCSA 2/21/04F | LCS | AB | 1h14048.59R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 60 LCSDA 2/21/04F | LCSD | AB | 1h14048.60R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 05592 |
| 61 4220679F | T | AB | 1h14048.61R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 62 4220680F | T | AB | 1h14048.62R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 63 4220681F | T | AB | 1h14048.63R | HERW.MET | 30 | 10 | 100.2 | 040520001A | 01865 |
| 64 BLANKA 2/20/04F | BLK | AB | 1h14048.64R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 65 LCS1 2/20/04F | LCS | AB | 1h14048.65R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 66 LCS2 2/20/04F | LCS | AB | 1h14048.66R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 67 LCS3 2/20/04F | LCS | AB | 1h14048.67R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 68 HERB303C | CCAL | WI | 1h14048.68R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 69 LCS4 2/20/04F | LCS | AB | 1h14048.69R | HERW.MET | 1000 | 10 | 100.2 | 040500016A | 05593 |
| 70 4218136F | T | AB | 1h14048.70R | HERW.MET | 1027 | 10 | 100.2 | 040500016A | 01856 |
| 71 4218137F | T | AB | 1h14048.71R | HERW.MET | 1024 | 10 | 100.2 | 040500016A | 01856 |
| 72 HERB303C | CCAL | WJ | 1h14048.72R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 73 HERB303C 209050AR | CCAL | WK | 1h14048.73R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 74 HERB303C 303221AZ | CCAL | WL | 1h14048.74R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 75 CONDITIONER | CCAL | AA | 1h14048.75R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 76 CONDITIONER | CCAL | AA | 1h14048.76R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 77 CONDITIONER | CCAL | AA | 1h14048.77R | HERISCC.MET | 1 | 1 | 100.2 | 040500016A | |
| 78 HERB203C | CCAL | GY | 1h14048.78R | HERW.MET | 1 | 1 | 100.2 | 040500016A | |
| 79 BLANKA 2/24/04F | BLK | AB | 1h14048.79R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 80 LCSA 2/24/04F | LCS | AB | 1h14048.80R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 81 LCSDA 2/24/04F | LCSD | AB | 1h14048.81R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 82 4219619F DF10 | T | AC | 1h14048.82R | HERW.MET | 30 | 100 | 100.2 | 040540005A | 01865 |
| 83 4219619F | T | AB | 1h14048.83R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 01865 |
| 84 HERB303C | CCAL | WN | 1h14048.84R | HERISCCB.ME | 1 | 1 | 100.2 | 040500016A | |

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Set-up by: _____ Date: 2/25/04

2/24/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp14\C-Drive\Cpwin\DATA1\2H14048.seq
Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1
Method Directory: \\cp14\C-Drive\cpwin\DATA1
Number of Entries: 36

| | Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | MISC | AA | 2H14048.01R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 2 | CONDITIONER | MISC | AA | 2H14048.02R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 3 | CONDITIONER | MISC | AA | 2H14048.03R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 4 | HERB203C | CCAL | GZ | 2H14048.04R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 5 | BLANKA 2/24/04F | BLK | AB | 2H14048.05R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 6 | LCSA 2/24/04F | LCS | AB | 2H14048.06R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 7 | 4217215F | T | AB | 2H14048.07R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 8 | 4217215MSF | MS | AB | 2H14048.08R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 9 | 4217866F | T | AB | 2H14048.09R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 10 | 4219006F | T | AB | 2H14048.10R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 11 | 4219022F | T | AB | 2H14048.11R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 12 | 4219022MSF | MS | AB | 2H14048.12R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 13 | 4219022MSDF | MSD | AB | 2H14048.13R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 14 | 4219669F | T | AB | 2H14048.14R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 15 | HERB303C | CCAL | WP | 2H14048.15R | HERISCC.MET | 1 | 1 | 100.2 | 040550004A | |
| 16 | 4221331F | T | AB | 2H14048.16R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 17 | 4221332F | T | AB | 2H14048.17R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 18 | BLANKA 2/24/04F | BLK | AB | 2H14048.18R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 19 | LCSA 2/24/04F | LCS | AB | 2H14048.19R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 20 | LCSDA 2/24/04F | LCSD | AB | 2H14048.20R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 21 | HERB404D | CCAL | HW | 2H14048.21R | HERW.MET | 1 | 1 | 100.2 | 040540005A | |
| 22 | 4219619F | T | AB | 2H14048.22R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 01865 |
| 23 | HERB303C | CCAL | WQ | 2H14048.23R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 24 | CONDITIONER | CCAL | AA | 2H14048.24R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 25 | CONDITIONER | CCAL | AA | 2H14048.25R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 26 | CONDITIONER | CCAL | AA | 2H14048.26R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 27 | HERB203C | CCAL | HA | 2H14048.27R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 28 | BLANKA 2/25/04F | BLK | AB | 2H14048.28R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 29 | LCSA 2/25/04F | LCS | AB | 2H14048.29R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 30 | 4221898F | T | AB | 2H14048.30R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 31 | 4221898MSF | MS | AB | 2H14048.31R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 32 | 4221898MSDF | MSD | AB | 2H14048.32R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 33 | 4221899F | T | AB | 2H14048.33R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 01865 |
| 34 | HERB303C | CCAL | WT | 2H14048.34R | HERISCC.MET | 1 | 1 | 100.2 | 040560001A | |
| 35 | 4219619F DF10 | T | AC | 2H14048.35R | HERW.MET | 30 | 100 | 100.2 | 040540005A | 01865 |
| 36 | HERB303C | CCAL | WS | 2H14048.36R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |

8765

Set-up by: _____ Date: 2/26

2/26/04

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

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Chromatography Directory: \\cp14\C-Drive\cpwin\DATA1
Method Directory: \\cp14\C-Drive\cpwin\DATA1
Number of Entries: 36

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | MISC | AA | 2H14048.01R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 2 CONDITIONER | MISC | AA | 2H14048.02R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 3 CONDITIONER | MISC | AA | 2H14048.03R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 4 HERB203C | CCAL | GZ | 2H14048.04R | HERW.MET | 1 | 1 | 100.2 | 045599999 | |
| 5 BLANKA 2/24/04F | BLK | AB | 2H14048.05R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 6 LCSA 2/24/04F | LCS | AB | 2H14048.06R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 7 4217215F | T | AB | 2H14048.07R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 8 4217215MSF | MS | AB | 2H14048.08R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 9 4217866F | T | AB | 2H14048.09R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 10 4219006F | T | AB | 2H14048.10R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 11 4219022F | T | AB | 2H14048.11R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 12 4219022MSF | MS | AB | 2H14048.12R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 13 4219022MSDF | MSD | AB | 2H14048.13R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 14 4219669F | T | AB | 2H14048.14R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 15 HERB303C | CCAL | WP | 2H14048.15R | HERISCC.MET | 1 | 1 | 100.2 | 040550004A | |
| 16 4221331F | T | AB | 2H14048.16R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 17 4221332F | T | AB | 2H14048.17R | HERW.MET | 50 | 10 | 100.2 | 040550004A | 00952 |
| 18 BLANKA 2/24/04F | BLK | AB | 2H14048.18R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 19 LCSA 2/24/04F | LCS | AB | 2H14048.19R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 20 LCSDA 2/24/04F | LCSD | AB | 2H14048.20R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 05592 |
| 21 HERB404D | CCAL | HW | 2H14048.21R | HERW.MET | 1 | 1 | 100.2 | 040540005A | |
| 22 4219619F | T | AB | 2H14048.22R | HERW.MET | 30 | 10 | 100.2 | 040540005A | 01865 |
| 23 HERB303C | CCAL | WQ | 2H14048.23R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 24 CONDITIONER | CCAL | AA | 2H14048.24R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 25 CONDITIONER | CCAL | AA | 2H14048.25R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 26 CONDITIONER | CCAL | AA | 2H14048.26R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 27 HERB203C | CCAL | HA | 2H14048.27R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |
| 28 BLANKA 2/25/04F | BLK | AB | 2H14048.28R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 29 LCSA 2/25/04F | LCS | AB | 2H14048.29R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 30 4221898F | T | AB | 2H14048.30R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 31 4221898MSF | MS | AB | 2H14048.31R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 32 4221898MSDF | MSD | AB | 2H14048.32R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 05592 |
| 33 4221899F | T | AB | 2H14048.33R | HERW.MET | 30 | 10 | 100.2 | 040560001A | 01865 |
| 34 HERB303C | CCAL | WT | 2H14048.34R | HERISCC.MET | 1 | 1 | 100.2 | 040560001A | |
| 35 4219619F DF10 | T | AC | 2H14048.35R | HERW.MET | 30 | 100 | 100.2 | 040540005A | 01865 |
| 36 HERB303C | CCAL | WS | 2H14048.36R | HERISCC.MET | 1 | 1 | 100.2 | 040540005A | |

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Set-up by: _____ Date: 2/26/04

2/26/04

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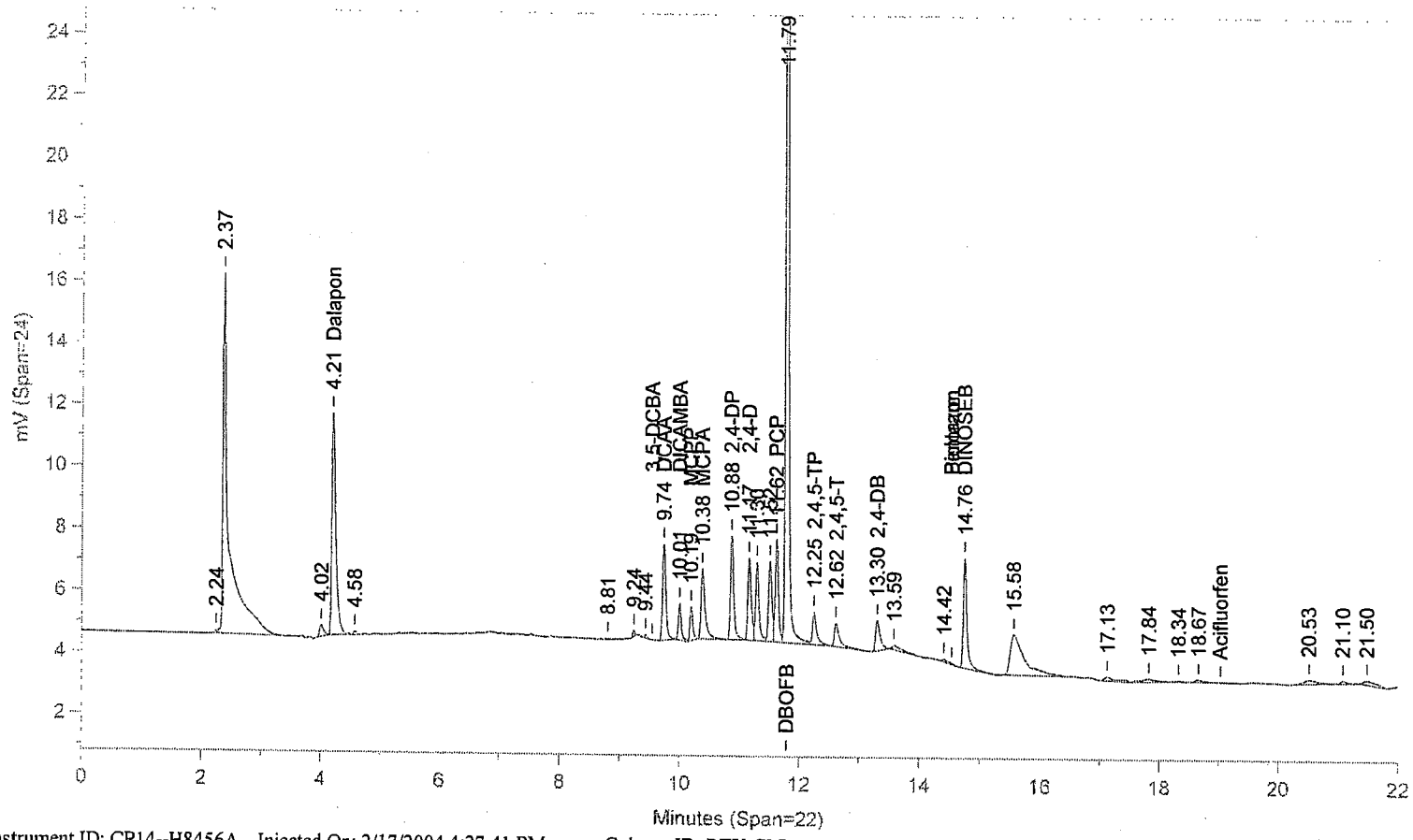
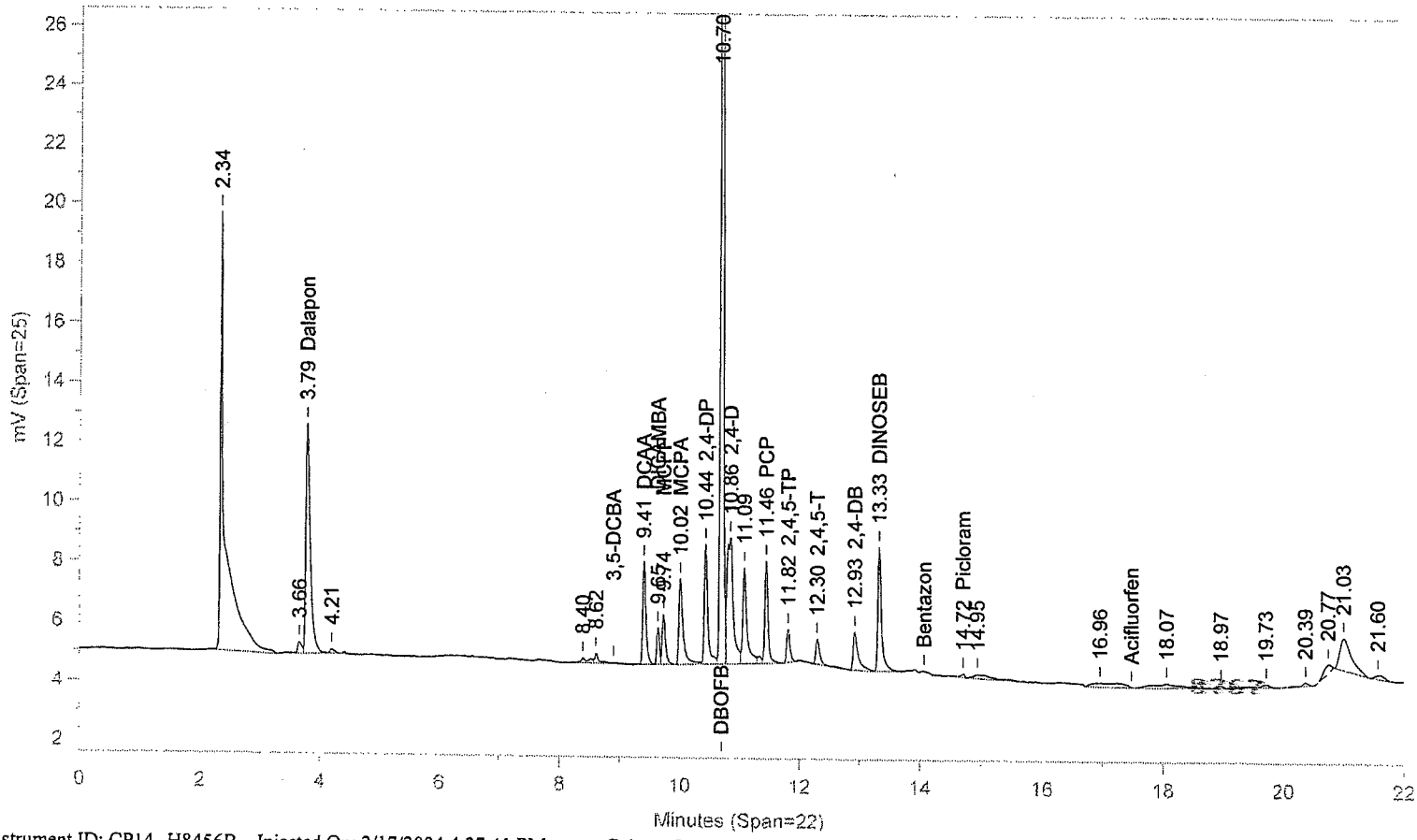



Instrument ID: CP14--H8456A Injected On: 2/17/2004 4:27:41 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.06R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 4:27:41 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

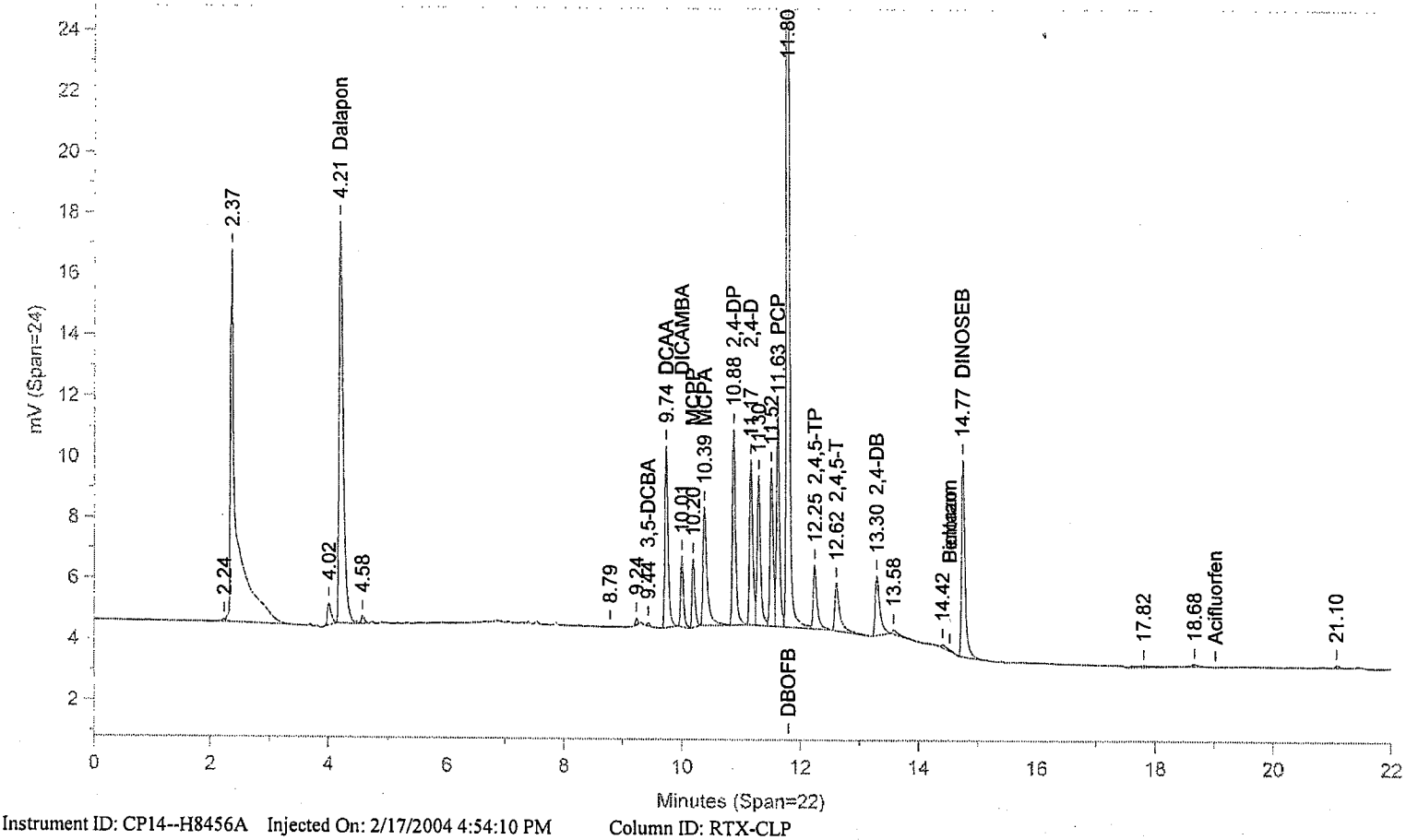
Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.208 | 7194 | 123.623 | Dalapon | 3.791 | 7691 | 128.149 | Dalapon |
| 9.741 | 3110 | 55.786 | DCAA | 9.414 | 3424 | 54.999 | DCAA |
| 10.007 | 1180 | 4.539 | DICAMBA | 9.652 | 1213 | 4.645 | DICAMBA |
| 10.194 | 1095 | 5849.113 | MCPP | 9.738 | 1656 | 6605.702 | MCPP |
| 10.385 | 2258 | 7243.784 | MCPA | 10.02 | 2834 | 7432.232 | MCPA |
| 10.876 | 3360 | 57.464 | 2,4-DP | 10.442 | 4002 | 57.314 | 2,4-DP |
| 11.793 | 41876 | 100.2 | DBOFB | 10.702 | 51984 | 100.2 | DBOFB |
| 11.166 | 2665 | 56.18 | 2,4-D | 10.861 | 4202 | 60.521 | 2,4-D |
| 11.624 | 3317 | 4.958 | PCP | 11.458 | 3409 | 4.624 | PCP |
| 12.251 | 1065 | 5.171 | 2,4,5-TP | 11.822 | 1095 | 4.294 | 2,4,5-TP |
| 12.615 | 759 | 5.504 | 2,4,5-T | 12.302 | 838 | 5.107 | 2,4,5-T |
| 13.299 | 974 | 70.389 | 2,4-DB | 12.926 | 1256 | 53.144 | 2,4-DB |
| 14.765 | 3571 | 27.857 | DINOSEB | 13.331 | 4132 | 27.146 | DINOSEB |
| . | 0 | . | Picloram | 14.72 | 110 | .031 | Picloram |

Files:
Area File: C:\CPWIN\DATA1\1H14048.06A
Area File: C:\CPWIN\DATA1\1H14048B.06A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:08 AM
File Reported On: 2/18/2004 at 10:11:11 AM

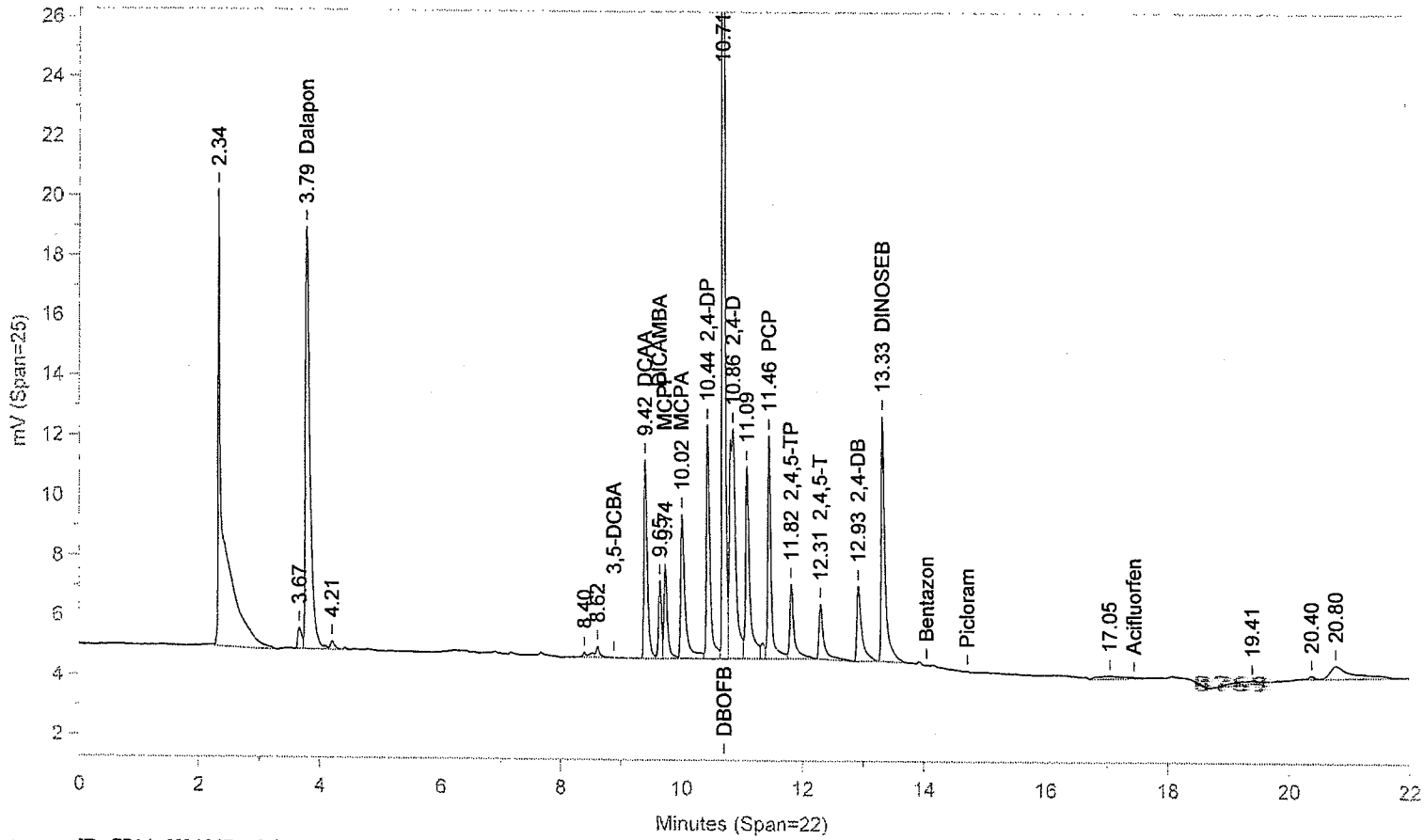
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.07R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 4:54:10 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.07R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 4:54:10 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.208 | 13231 | 226.196 | Dalapon | 3.792 | 14110 | 232.625 | Dalapon |
| 9.743 | 5986 | 103.558 | DCAA | 9.416 | 6628 | 102.806 | DCAA |
| 9.44 | 115 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.01 | 2325 | 9.138 | DICAMBA | 9.655 | 2613 | 9.847 | DICAMBA |
| 10.196 | 2253 | 10873.4 | MCPP | 9.74 | 3151 | 11340.07 | MCPP |
| 10.386 | 3890 | 11307.08 | MCPA | 10.022 | 4820 | 11578.93 | MCPA |
| 10.878 | 6466 | 105.679 | 2,4-DP | 10.444 | 7771 | 106.944 | 2,4-DP |
| 11.796 | 42894 | 100.2 | DBOFB | 10.705 | 53210 | 100.2 | DBOFB |
| 11.168 | 5444 | 106.534 | 2,4-D | 10.864 | 7647 | 106.424 | 2,4-D |
| 11.627 | 6915 | 10.05 | PCP | 11.462 | 7441 | 9.899 | PCP |
| 12.254 | 2094 | 9.447 | 2,4,5-TP | 11.824 | 2487 | 9.859 | 2,4,5-TP |
| 12.618 | 1560 | 10.421 | 2,4,5-T | 12.306 | 1836 | 10.692 | 2,4,5-T |
| 13.301 | 1954 | 121.287 | 2,4-DB | 12.928 | 2512 | 104.912 | 2,4-DB |
| 14.768 | 6479 | 47.625 | DINOSEB | 13.334 | 8165 | 51.391 | DINOSEB |

Files:
Area File: C:\CPWIN\DATA1\1H14048.07A
Area File: C:\CPWIN\DATA1\1H14048B.07A
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Method B: C:\CPWIN\DATA1\HERWB.MET
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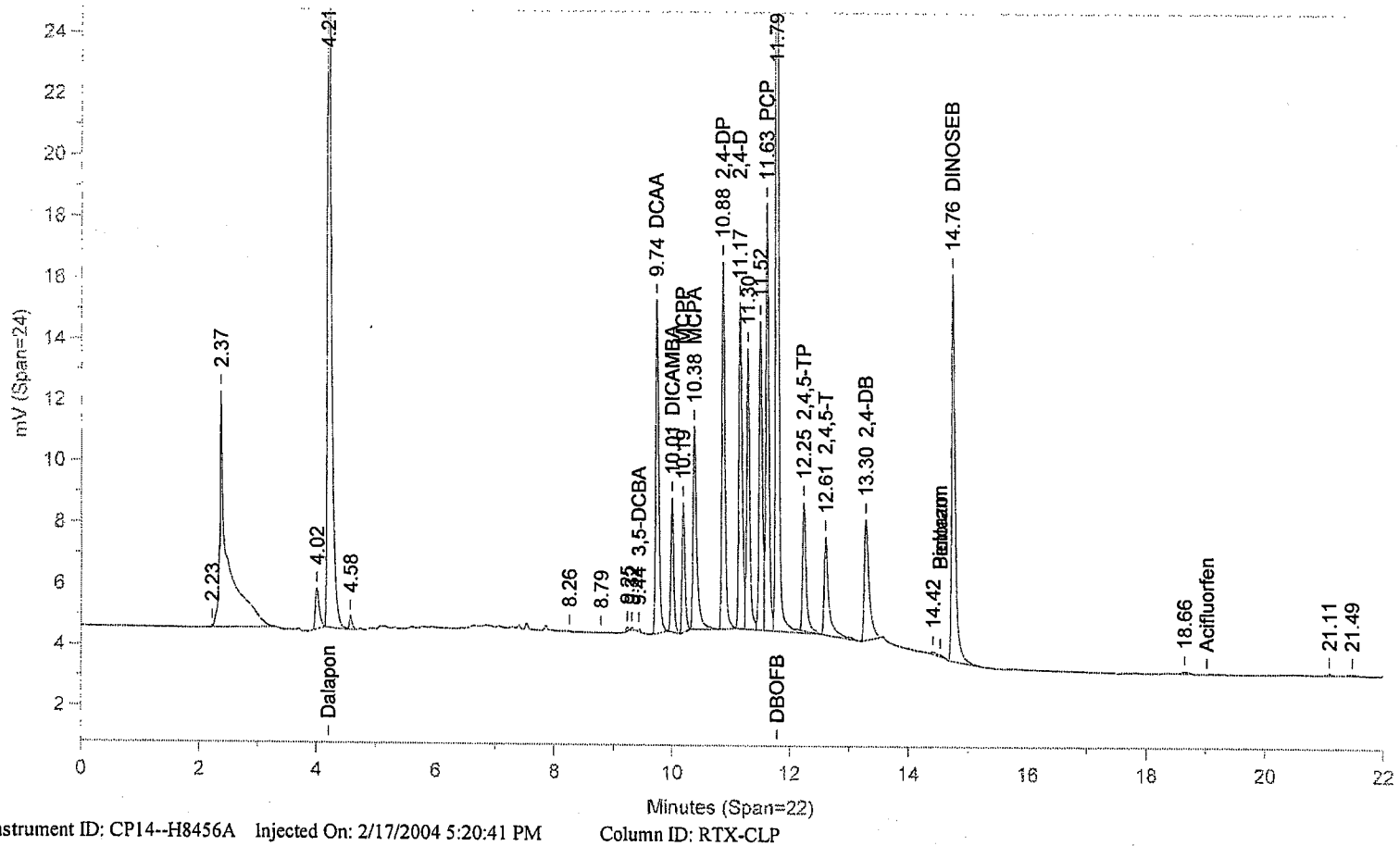
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:20 AM
File Reported On: 2/18/2004 at 10:11:23 AM

5778

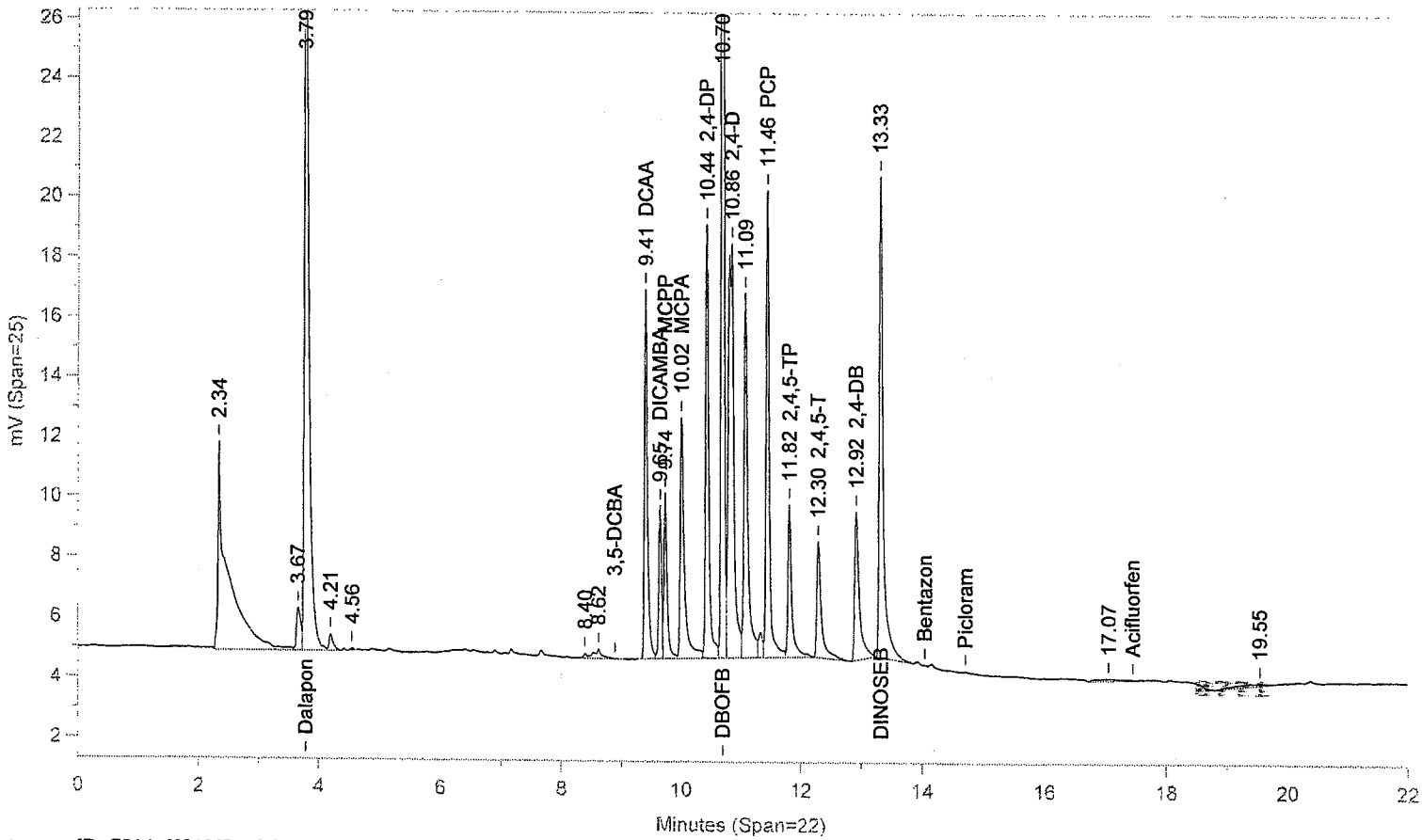
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.08R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 5:20:41 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.08R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 5:20:41 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.207 | 25015 | 429.566 | Dalapon | 3.79 | 26861 | 439.937 | Dalapon |
| 9.741 | 10938 | 185.799 | DCAA | 9.414 | 12297 | 186.553 | DCAA |
| 9.438 | 106 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.009 | 4395 | 18.185 | DICAMBA | 9.653 | 5075 | 18.83 | DICAMBA |
| 10.194 | 4239 | 19573.4 | MCPP | 9.738 | 5507 | 18811.52 | MCPP |
| 10.384 | 6640 | 18472.04 | MCPA | 10.02 | 8017 | 18290.41 | MCPA |
| 10.876 | 12047 | 192.698 | 2,4-DP | 10.441 | 14458 | 193.289 | 2,4-DP |
| 11.794 | 43533 | 100.2 | DBOFB | 10.704 | 54272 | 100.2 | DBOFB |
| 11.166 | 10706 | 199.978 | 2,4-D | 10.863 | 13799 | 187.696 | 2,4-D |
| 11.626 | 13968 | 20.029 | PCP | 11.46 | 15563 | 20.271 | PCP |
| 12.25 | 4203 | 18.514 | 2,4,5-TP | 11.821 | 5082 | 19.472 | 2,4,5-TP |
| 12.613 | 3209 | 20.235 | 2,4,5-T | 12.301 | 3846 | 20.922 | 2,4,5-T |
| 13.295 | 3944 | 221.171 | 2,4-DB | 12.922 | 4920 | 223.634 | 2,4-DB |
| 14.763 | 12682 | 91.784 | DINOSEB | 13.33 | 16029 | 97.655 | DINOSEB |

Files:
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Area File: C:\CPWIN\DATA1\1H14048B.08A
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Method B: C:\CPWIN\DATA1\HERWB.MET
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Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
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Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:32 AM
File Reported On: 2/18/2004 at 10:11:35 AM

8772

LANCASTER LABORATORIES

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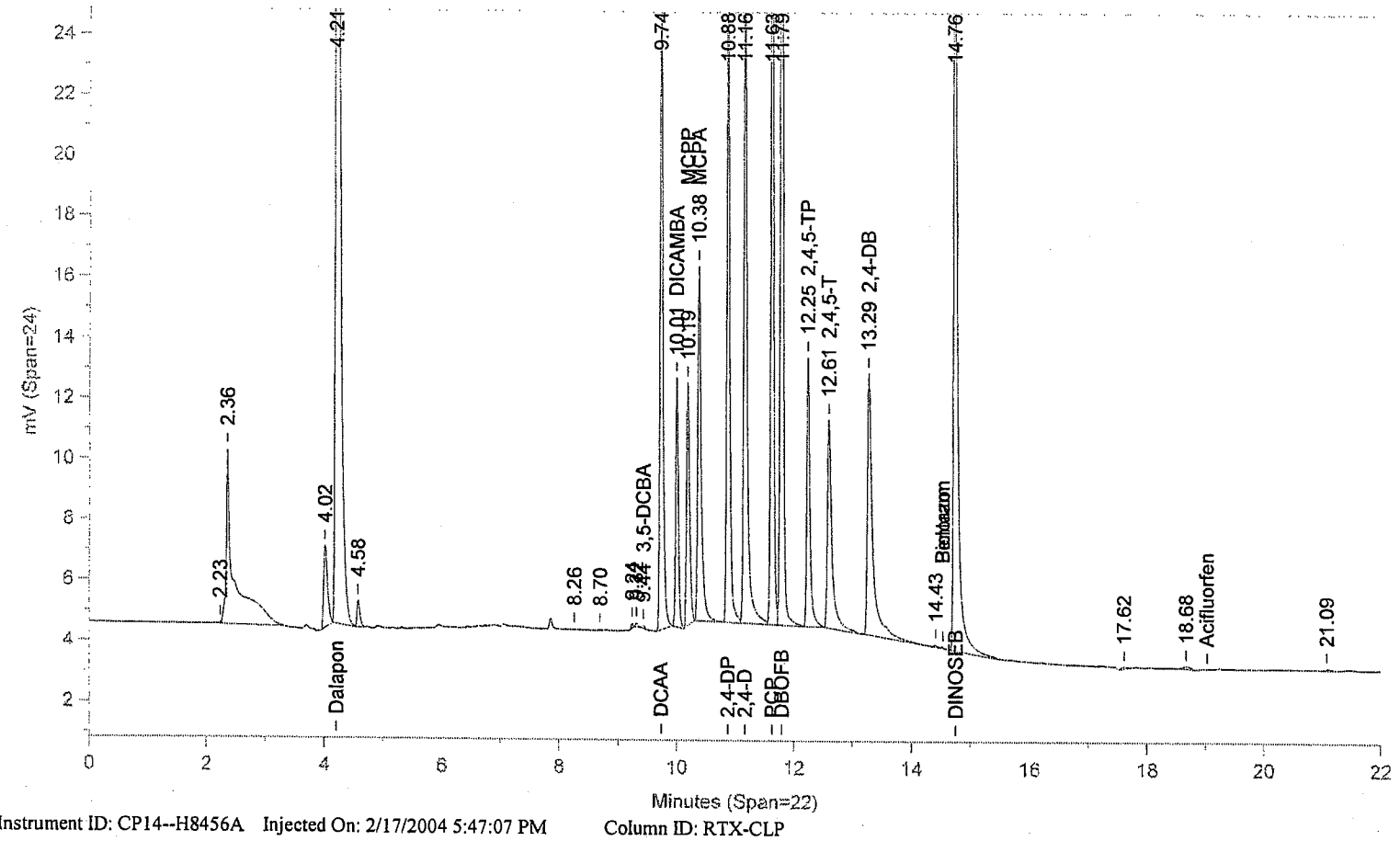


Instrument ID: CP14--H8456A Injected On: 2/17/2004 5:47:07 PM Column ID: RTX-CLP

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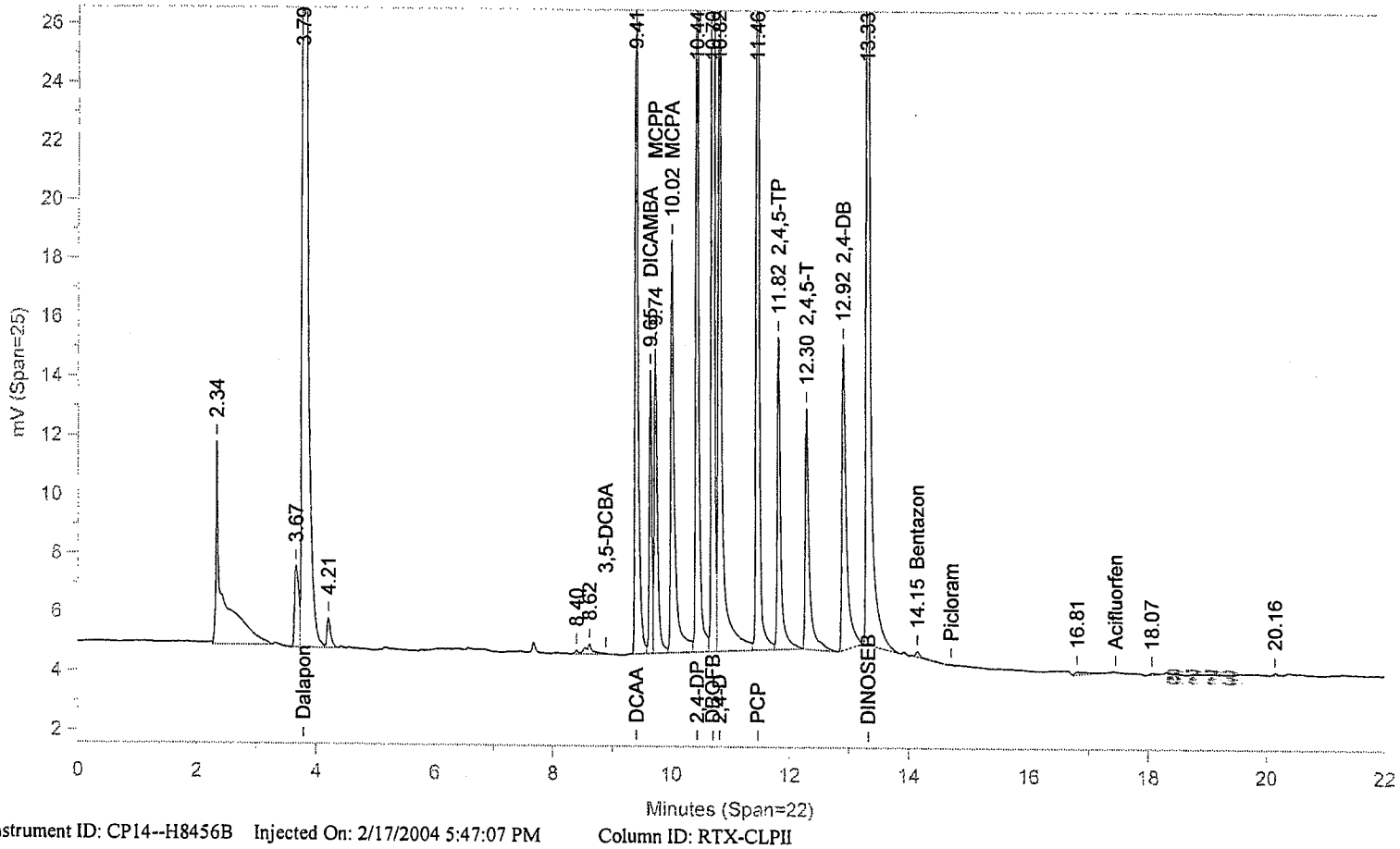



Instrument ID: CP14--H8456B Injected On: 2/17/2004 5:47:07 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

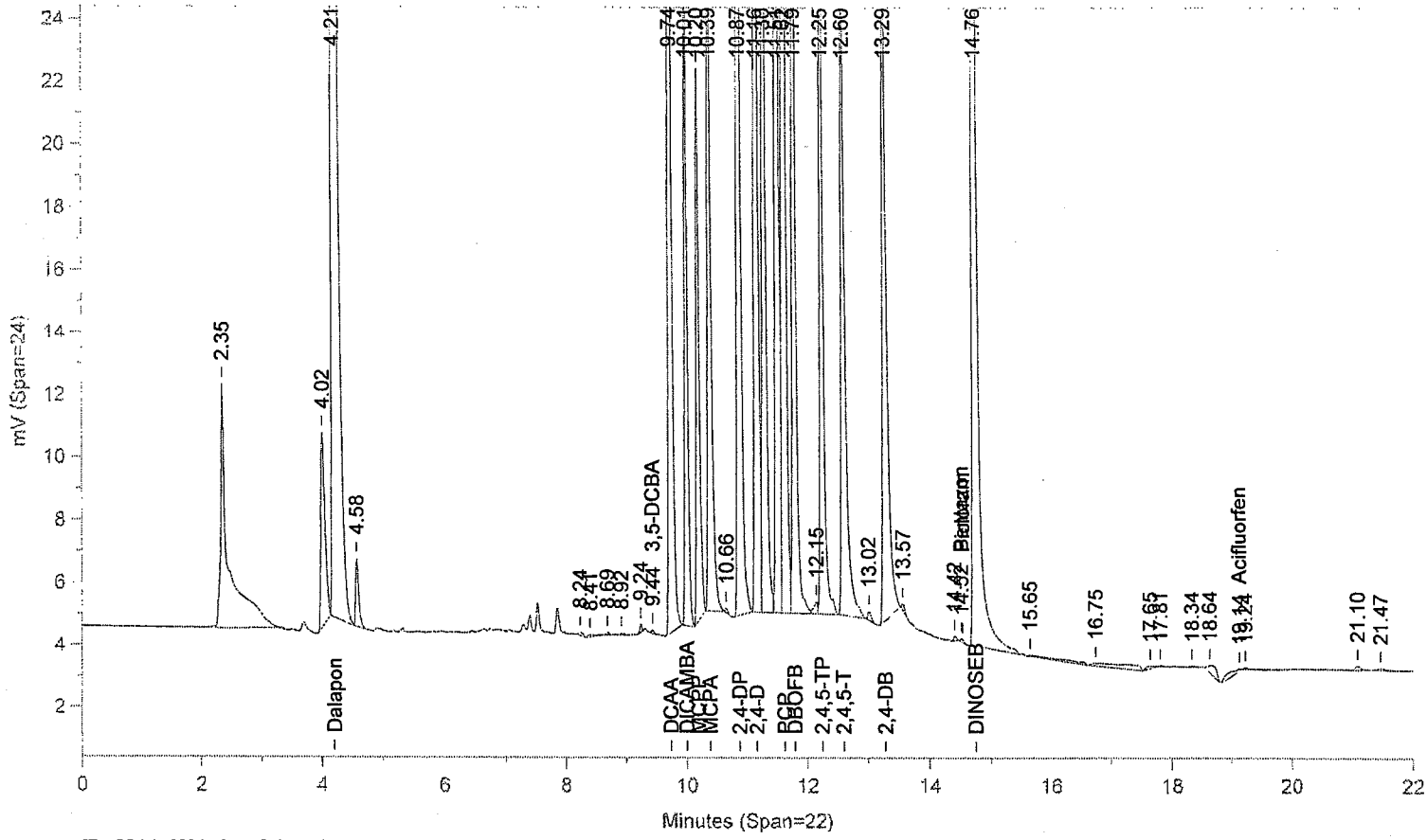
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.209 | 47640 | 825.108 | Dalapon | 3.792 | 50622 | 830.118 | Dalapon |
| 9.74 | 20771 | 349.905 | DCAA | 9.413 | 23527 | 353.396 | DCAA |
| 9.439 | 102 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.008 | 8233 | 34.031 | DICAMBA | 9.653 | 9604 | 35.56 | DICAMBA |
| 10.195 | 8063 | 36533.03 | MCPP | 9.739 | 10327 | 34594.74 | MCPP |
| 10.384 | 11682 | 31770.67 | MCPA | 10.02 | 14000 | 31199.81 | MCPA |
| 10.875 | 20611 | 325.902 | 2,4-DP | 10.441 | 24885 | 328.398 | 2,4-DP |
| 11.794 | 43797 | 100.2 | DBOFB | 10.704 | 54596 | 100.2 | DBOFB |
| 11.164 | 21153 | 382.157 | 2,4-D | 10.817 | 25250 | 339.636 | 2,4-D |
| 11.626 | 28675 | 40.934 | PCP | 11.46 | 33038 | 42.703 | PCP |
| 12.249 | 8889 | 38.383 | 2,4,5-TP | 11.82 | 10583 | 39.44 | 2,4,5-TP |
| 12.61 | 6878 | 41.023 | 2,4,5-T | 12.299 | 8188 | 42.016 | 2,4,5-T |
| 13.291 | 8623 | 439.866 | 2,4-DB | 12.919 | 10368 | 427.666 | 2,4-DB |
| 14.762 | 27064 | 193.007 | DINOSEB | 13.329 | 32427 | 192.047 | DINOSEB |
| . | 0 | . | Bentazon | 14.152 | 186 | . | Bentazon |

Files:
Area File: C:\CPWIN\DATA1\1H14048.09A
Area File: C:\CPWIN\DATA1\1H14048B.09A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:44 AM
File Reported On: 2/18/2004 at 10:11:47 AM

8774

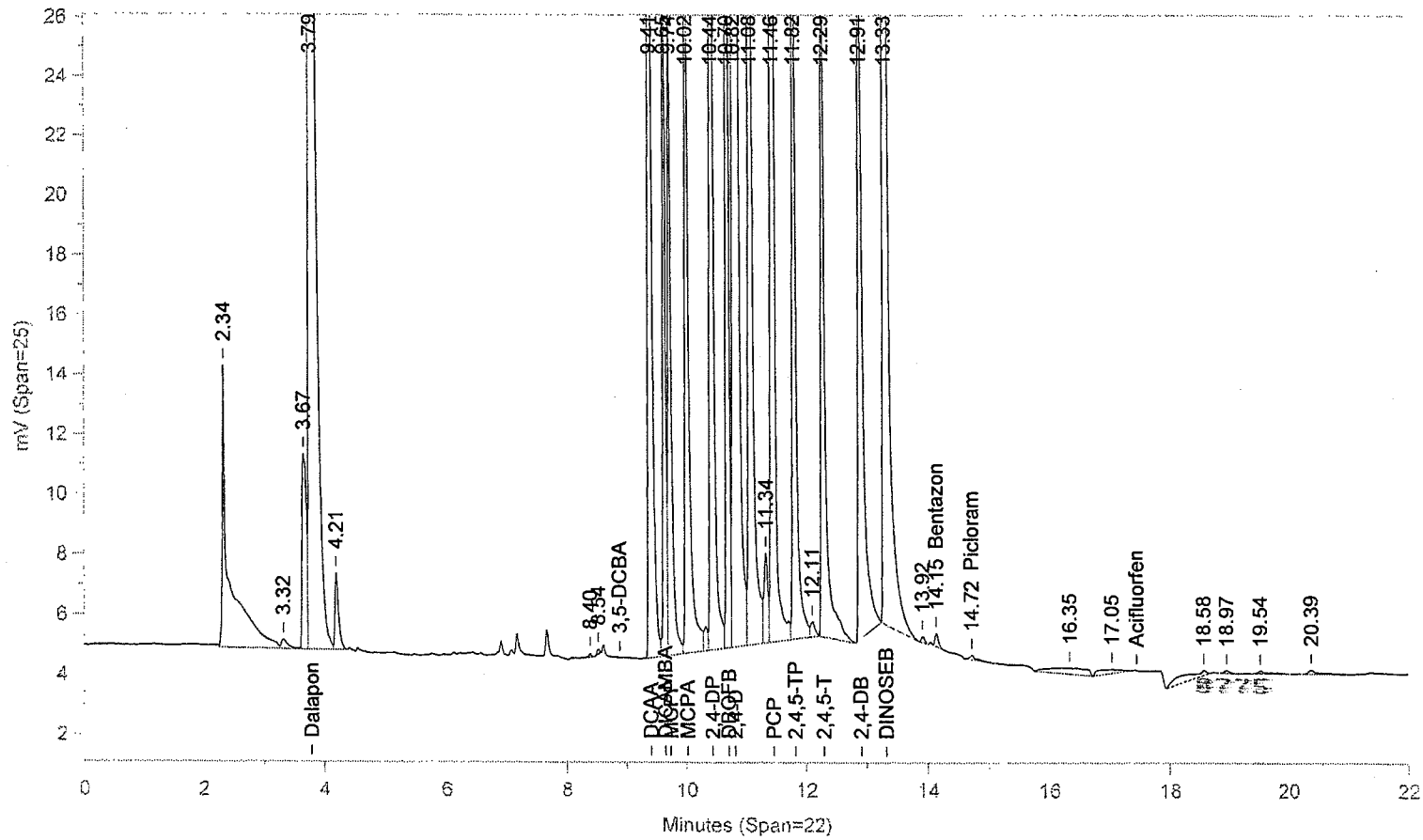
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.10R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:13:37 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.10R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:13:37 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

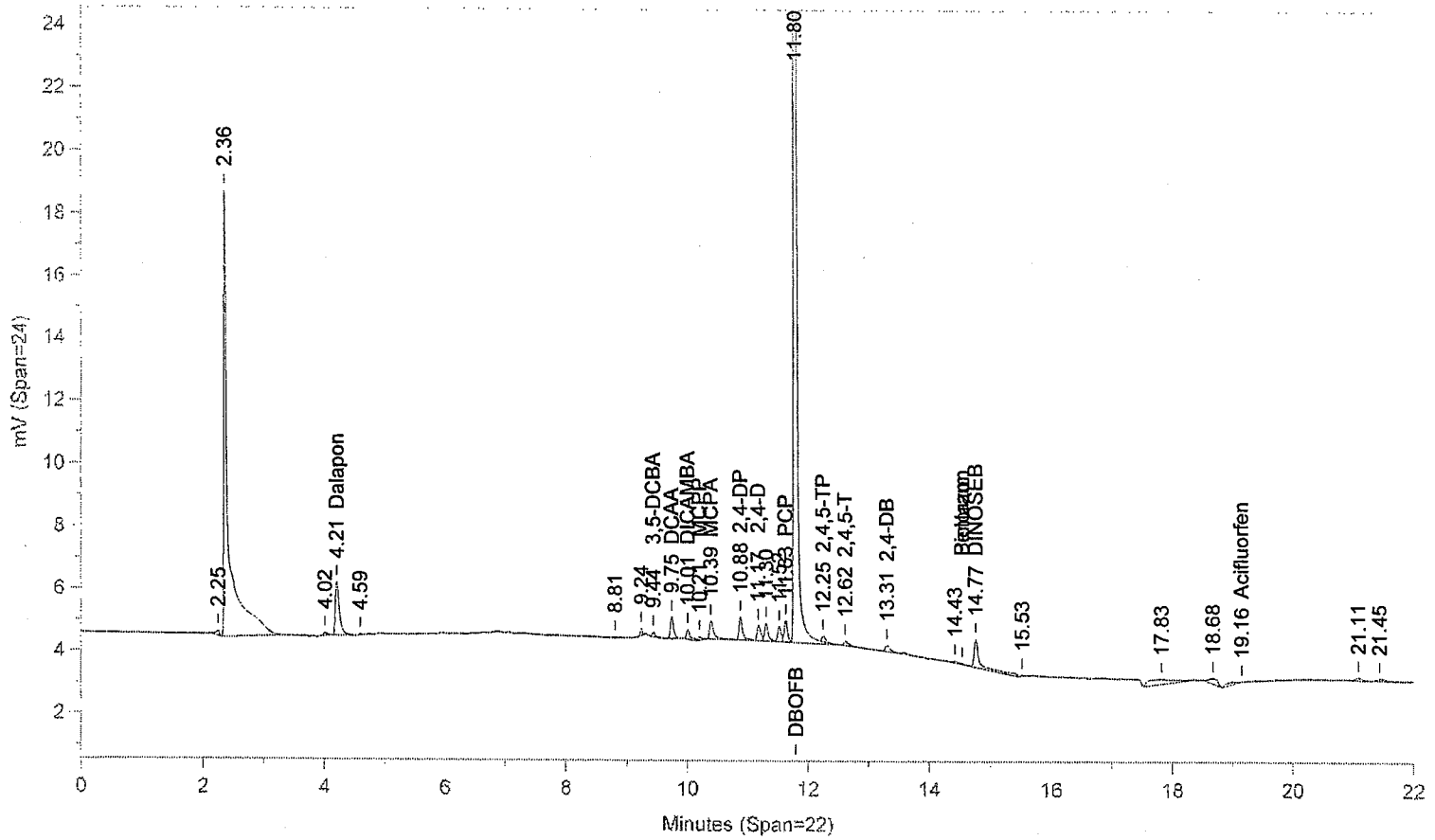
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.21 | 107148 | 1790.218 | Dalapon | 3.791 | 110521 | 1753.456 | Dalapon |
| 9.737 | 46932 | 746.565 | DCAA | 9.41 | 53997 | 772.559 | DCAA |
| 9.439 | 108 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.007 | 21538 | 85.306 | DICAMBA | 9.651 | 25548 | 90.583 | DICAMBA |
| 10.196 | 17683 | 75382.16 | MCPP | 9.741 | 21787 | 69144.15 | MCPP |
| 10.387 | 24836 | 63446.46 | MCPA | 10.023 | 29654 | 62442.2 | MCPA |
| 10.873 | 52641 | 785.818 | 2,4-DP | 10.438 | 63485 | 796.036 | 2,4-DP |
| 11.793 | 46484 | 100.2 | DBOFB | 10.702 | 57380 | 100.2 | DBOFB |
| 11.161 | 51075 | 857.756 | 2,4-D | 10.815 | 61024 | 769.638 | 2,4-D |
| 11.624 | 73310 | 98.681 | PCP | 11.458 | 83481 | 102.618 | PCP |
| 12.246 | 25983 | 105.026 | 2,4,5-TP | 11.818 | 31110 | 109.197 | 2,4,5-TP |
| 12.604 | 20492 | 111.704 | 2,4,5-T | 12.294 | 24020 | 113.129 | 2,4,5-T |
| 13.285 | 22354 | 1016.855 | 2,4-DB | 12.913 | 26616 | 985.947 | 2,4-DB |
| 14.76 | 65849 | 441.028 | DINOSEB | 13.325 | 79451 | 443.365 | DINOSEB |
| 14.524 | 93 | . | Bentazon | 14.149 | 434 | . | Bentazon |
| . | 0 | . | Picloram | 14.724 | 149 | 115.525 | Picloram |
| 19.136 | 79 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\1H14048.10A
Area File: C:\CPWIN\DATA1\1H14048B.10A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:11:54 AM
File Reported On: 2/18/2004 at 10:11:59 AM

5776

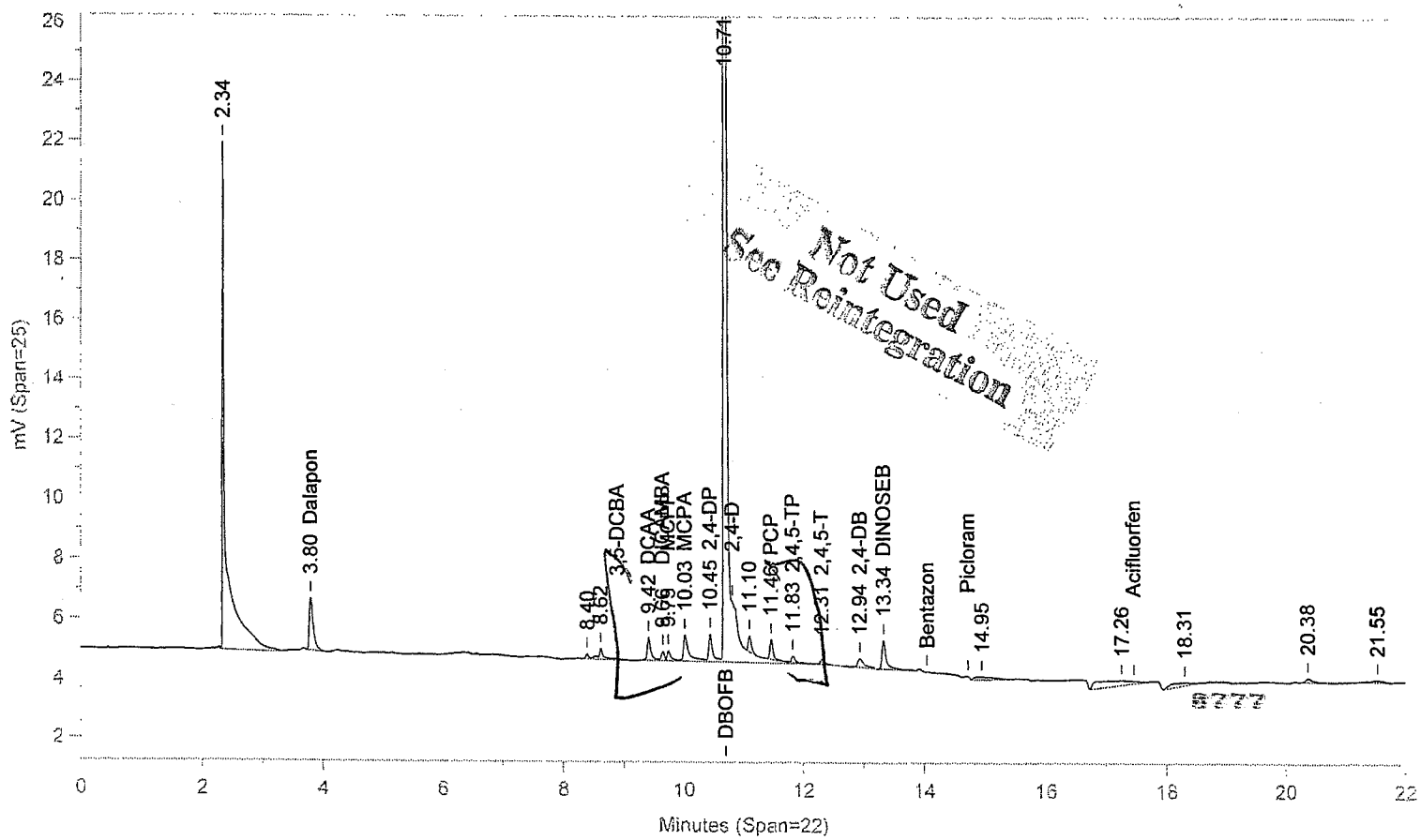
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\1H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\1H14048B.11R




Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

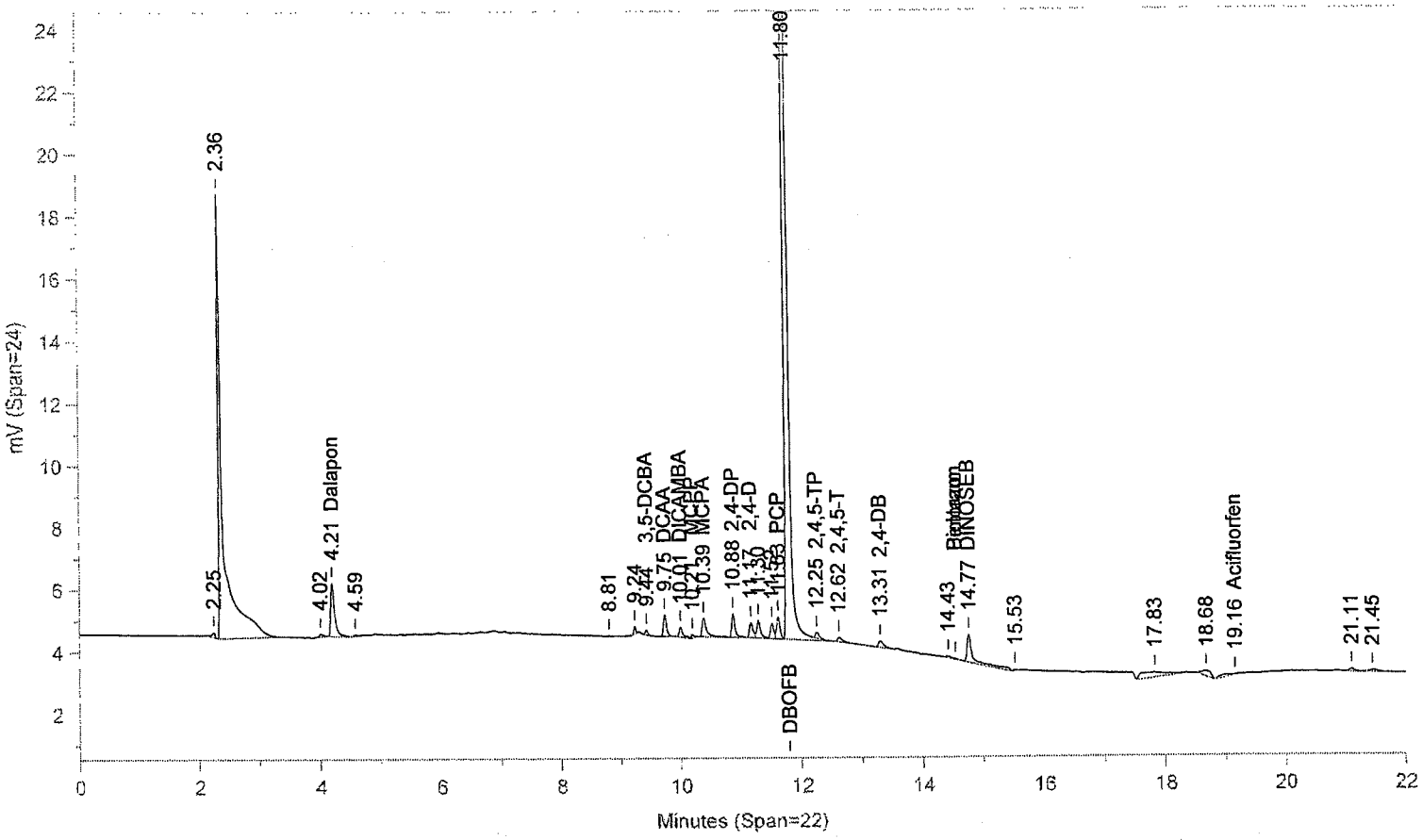
Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.212 | 1710 | 26.011 | Dalapon | 3.795 | 1749 | 25.395 | Dalapon |
| 9.746 | 695 | 9.915 | DCAA | 9.42 | 757 | 9.764 | DCAA |
| 9.443 | 153 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.011 | 305 | 1.085 | DICAMBA | 9.656 | 300 | .96 | DICAMBA |
| 10.205 | 115 | 439.701 | MCPP | 9.746 | 327 | 933.943 | MCPP |
| 10.393 | 586 | 1338.856 | MCPA | 10.028 | 862 | 1630.154 | MCPA |
| 10.881 | 741 | 9.919 | 2,4-DP | 10.447 | 921 | 10.4 | 2,4-DP |
| 11.797 | 51964 | 100.2 | DBOFB | 10.706 | 63678 | 100.2 | DBOFB |
| 11.172 | 479 | 7.143 | 2,4-D | . | 0 | . | 2,4-D |
| 11.628 | 700 | .843 | PCP | 11.462 | 658 | .729 | PCP |
| 12.255 | 184 | .663 | 2,4,5-TP | 11.827 | 203 | .637 | 2,4,5-TP |
| 12.623 | 143 | .678 | 2,4,5-T | 12.312 | 173 | .709 | 2,4,5-T |
| 13.307 | 204 | 7.947 | 2,4-DB | 12.941 | 285 | 9.04 | 2,4-DB |
| 14.77 | 889 | 5.314 | DINOSEB | 13.337 | 961 | 4.793 | DINOSEB |
| 19.158 | 8 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\1H14048.11A
Area File: C:\CPWIN\DATA1\1H14048B.11A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:12:06 AM
File Reported On: 2/18/2004 at 10:12:09 AM

Not Used
For Reintegration

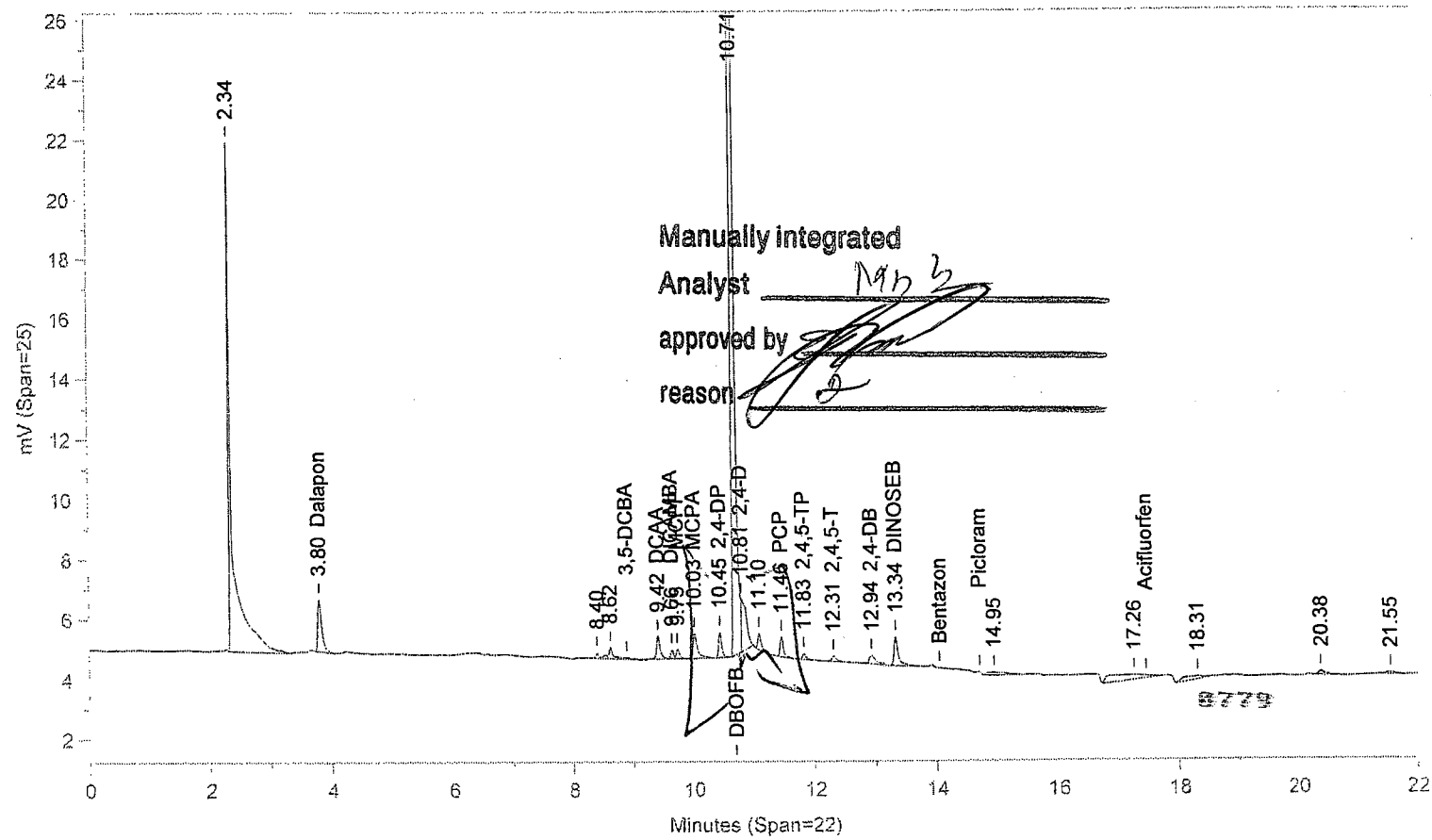
LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1H14048.11R




Instrument ID: CP14--H8456A Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLP

M=manually integrated

File: C:\CPWIN\DATA1\1H14048B.11R




Manually integrated

Analyst

approved by

reason

Instrument ID: CP14--H8456B Injected On: 2/17/2004 6:40:08 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

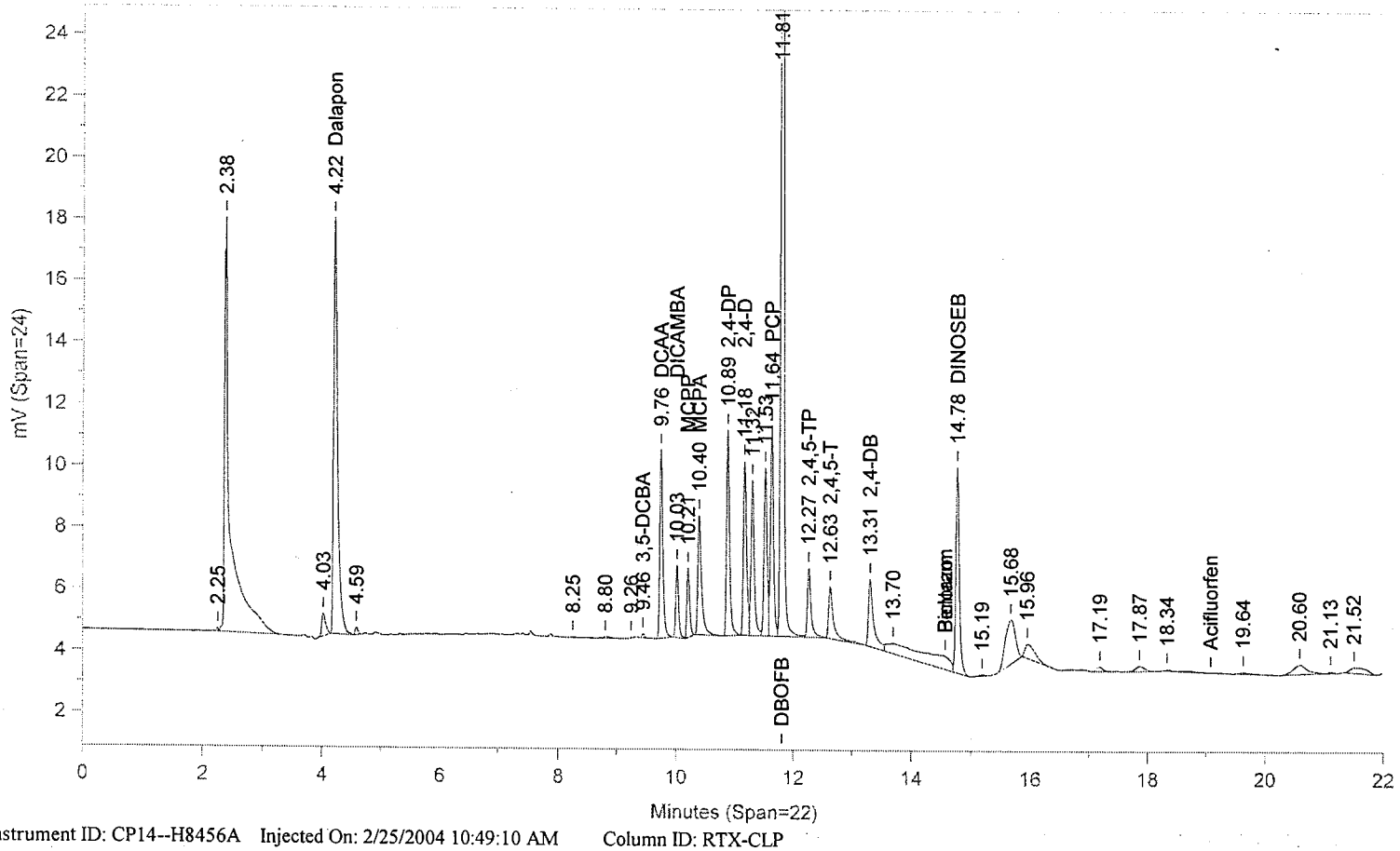
Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.212 | 1710 | 26.011 | Dalapon | 3.795 | 1749 | 25.463 | Dalapon |
| 9.746 | 695 | 9.915 | DCAA | 9.42 | 752 | 9.73 | DCAA |
| 9.443 | 153 | . | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.011 | 305 | 1.085 | DICAMBA | 9.656 | 287 | .92 | DICAMBA |
| 10.205 | 115 | 439.701 | MCPP | 9.746 | 310 | 888.757 | MCPP |
| 10.393 | 586 | 1338.856 | MCPA | 10.028 | 828 | 1569.243 | MCPA |
| 10.881 | 741 | 9.919 | 2,4-DP | 10.447 | 856 | 9.693 | 2,4-DP |
| 11.797 | 51964 | 100.2 | DBOFB | 10.706 | 63507 | 100.2 | DBOFB |
| 11.172 | 479 | 7.143 | 2,4-D | 10.807 | 1746 | 19.788 | 2,4-D |
| 11.628 | 700 | .843 | PCP | 11.462 | 658 | .731 | PCP |
| 12.255 | 184 | .663 | 2,4,5-TP | 11.827 | 203 | .639 | 2,4,5-TP |
| 12.623 | 143 | .678 | 2,4,5-T | 12.312 | 173 | .711 | 2,4,5-T |
| 13.307 | 204 | 7.947 | 2,4-DB | 12.941 | 285 | 9.064 | 2,4-DB |
| 14.77 | 889 | 5.314 | DINOSEB | 13.337 | 961 | 4.806 | DINOSEB |
| 19.158 | 8 | . | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/18/2004 10:16:30 AM
File Reported On: 2/18/2004 at 10:16:29 AM

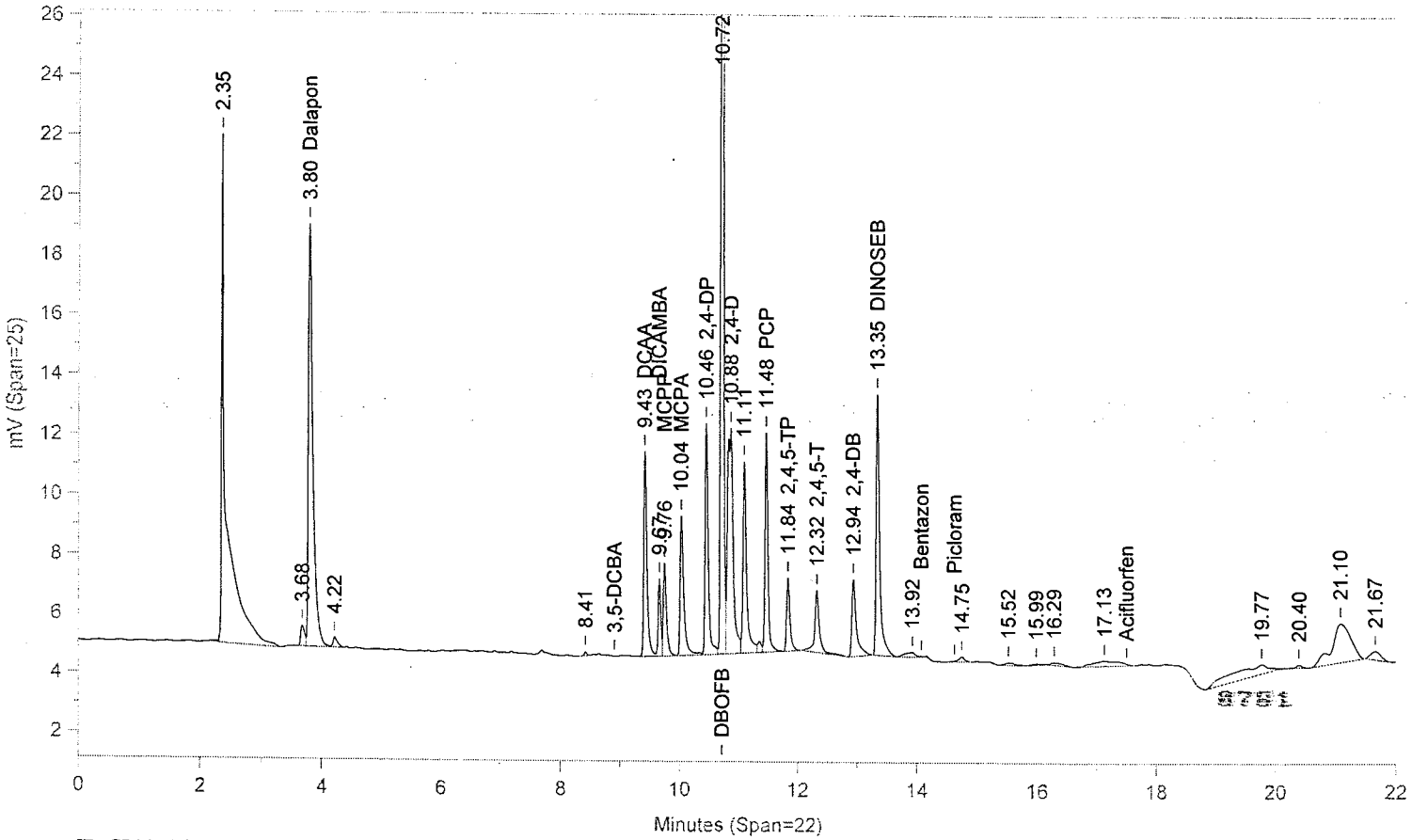
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.04R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 10:49:10 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.04R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 10:49:10 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

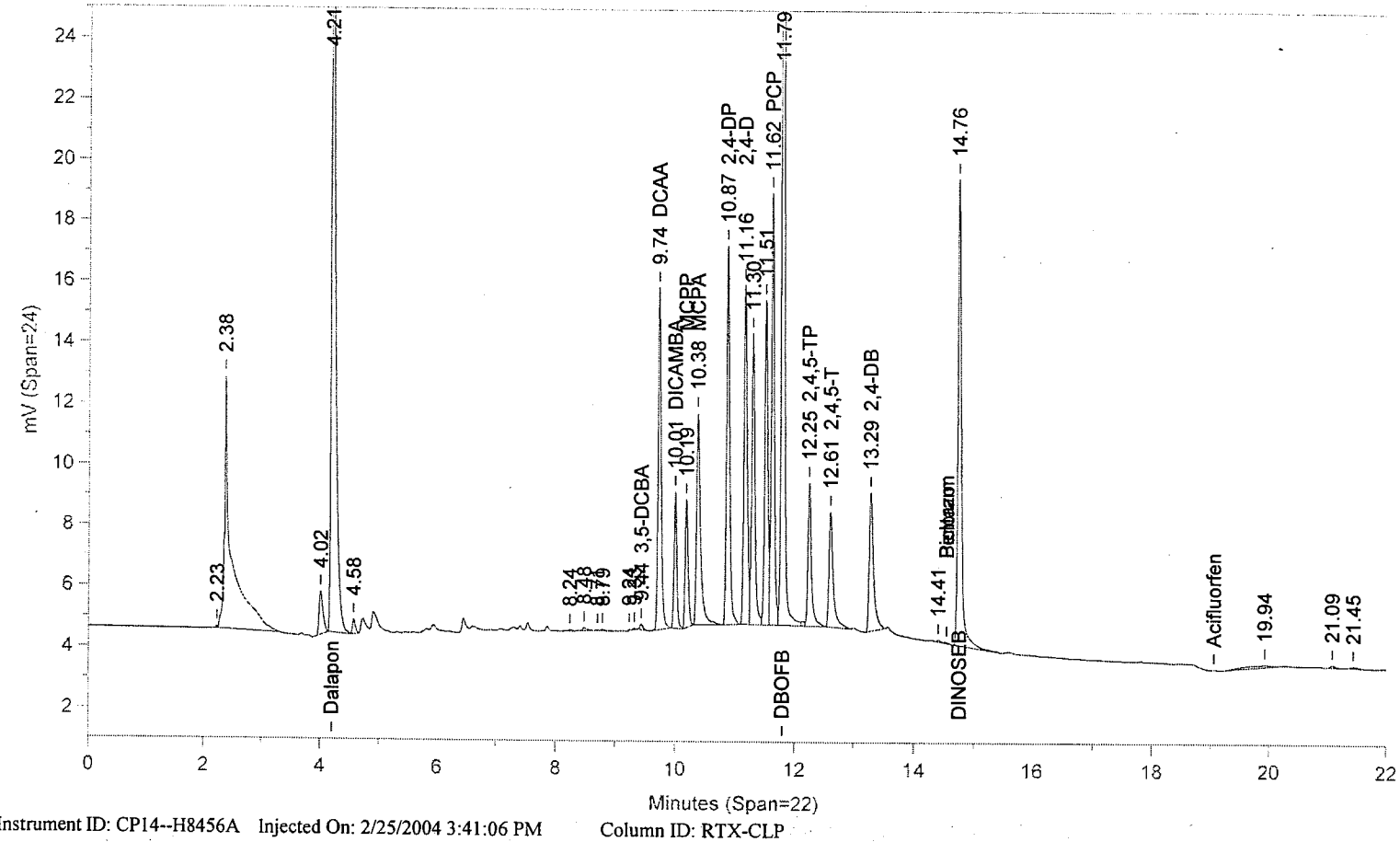
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.221 | 13532 | 251.031 | Dalapon | 3.805 | 14178 | 246.77 | Dalapon |
| 9.758 | 6145 | 106.896 | DCAA | 9.431 | 6876 | 106.359 | DCAA |
| 9.456 | 128 | .091 | 3,5-DCBA | . | 0 | . | 3,5-DCBA |
| 10.025 | 2352 | 10.197 | DICAMBA | 9.67 | 2616 | 10.021 | DICAMBA |
| 10.211 | 2262 | 10517.53 | MCPP | 9.755 | 3134 | 10728.39 | MCPP |
| 10.401 | 3899 | 10860.76 | MCPA | 10.036 | 4695 | 10644.78 | MCPA |
| 10.893 | 6682 | 109.032 | 2,4-DP | 10.458 | 7782 | 105.389 | 2,4-DP |
| 11.81 | 42609 | 100.2 | DBOFB | 10.72 | 53108 | 100.2 | DBOFB |
| 11.183 | 5667 | 103.062 | 2,4-D | 10.879 | 7550 | 102.304 | 2,4-D |
| 11.643 | 6859 | 10.071 | PCP | 11.477 | 7354 | 9.763 | PCP |
| 12.267 | 2255 | 9.885 | 2,4,5-TP | 11.837 | 2473 | 9.29 | 2,4,5-TP |
| 12.631 | 1685 | 9.72 | 2,4,5-T | 12.318 | 2095 | 10.297 | 2,4,5-T |
| 13.312 | 2192 | 103.994 | 2,4-DB | 12.939 | 2598 | 98.903 | 2,4-DB |
| 14.779 | 6701 | 48.86 | DINOSEB | 13.346 | 8749 | 52.305 | DINOSEB |

Files:
Area File: C:\CPWIN\DATA1\2H14048.04A
Area File: C:\CPWIN\DATA1\2H14048B.04A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 11:11:14 AM
File Reported On: 2/25/2004 at 11:11:16 AM

8782

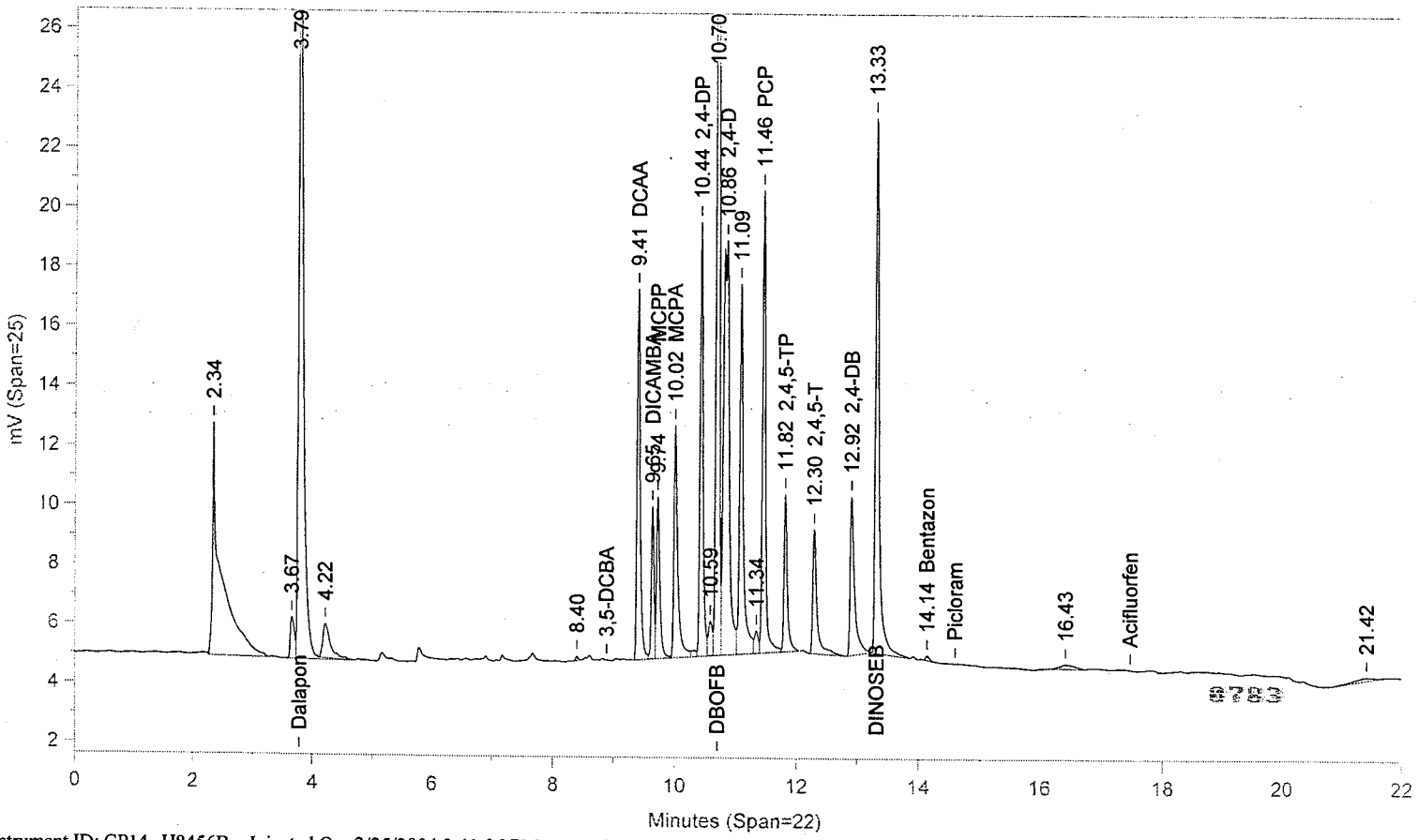
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.15R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 3:41:06 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.15R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 3:41:06 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 min

Volume Inj: Al#A

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 709

| RT A | Height A | Amount A | Compound A | RPD A | RT B | Height B | Amount B | Compound B | RPD B |
|---|---|---|---|---|---|---|---|---|---|
| 4.208 | 25932 | 464.691 | Dalapon | 2. | 3.79 | 26884 | 454.558 | Dalapon | -.3 |
| 9.739 | 11254 | 189.119 | DCAA | .7 | 9.411 | 12488 | 187.632 | DCAA | -.1 |
| 9.441 | 184 | .127 | 3,5-DCBA | -112.7 | . | 0 | . | 3,5-DCBA | ERR |
| 10.007 | 4499 | 18.844 | DICAMBA | .2 | 9.651 | 5155 | 19.183 | DICAMBA | 2. |
| 10.192 | 4224 | 18972.81 | MCPP | .8 | 9.736 | 5468 | 18183.52 | MCPP | -3.4 |
| 10.382 | 6977 | 18771.41 | MCPA | .1 | 10.018 | 7828 | 17239.99 | MCPA | -8. |
| 10.874 | 12456 | 196.33 | 2,4-DP | 3.8 | 10.439 | 14618 | 192.321 | 2,4-DP | 1.7 |
| 11.792 | 44111 | 100.2 | DBOFB | . | 10.702 | 54669 | 100.2 | DBOFB | . |
| 11.164 | 11155 | 195.958 | 2,4-D | 4. | 10.86 | 13934 | 183.412 | 2,4-D | -2.6 |
| 11.624 | 14209 | 20.151 | PCP | .5 | 11.458 | 15570 | 20.078 | PCP | .1 |
| 12.248 | 4724 | 20.005 | 2,4,5-TP | 5.2 | 11.818 | 5312 | 19.385 | 2,4,5-TP | 1.9 |
| 12.61 | 3812 | 21.244 | 2,4,5-T | 12. | 12.298 | 4177 | 19.948 | 2,4,5-T | 5.2 |
| 13.29 | 4568 | 209.332 | 2,4-DB | 10.3 | 12.917 | 5341 | 197.471 | 2,4-DB | 4.1 |
| 14.759 | 15332 | 107.995 | DINOSEB | 13.8 | 13.327 | 17971 | 104.373 | DINOSEB | 10. |
| . | 0 | . | Bentazon | ERR | 14.144 | 155 | .247 | Bentazon | -124.7 |

Files:
Area File: C:\CPWIN\DATA1\2H14048.15A
Area File: C:\CPWIN\DATA1\2H14048B.15A
Method A: C:\CPWIN\DATA1\HERISCC.MET
Method B: C:\CPWIN\DATA1\HERISCCB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERISCC.FMTA
Format B: C:\CPWIN\DATA1\HERISCC.FMT3
Area File Created On: 2/25/2004 4:03:10 PM
File Reported On: 2/25/2004 at 4:03:12 PM

07784

# Raw QC Data

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 2/24/04F PBLKXH Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: State:
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 11:15:44
Instrument : CP14--H8456A
Result file : 2H14048.05R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 109.8% Conc.: 43.923359

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.22 | 4.28 | 112 | 0.391827 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 4871 E | 0.653288 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 13410 | 43.923359 |
| **MCPP** | 10.10 | 10.25 | 10.29 | 450 | 393.731995 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 3178 | 1666.527466 |
| **2,4-DP** | 10.78 | 10.80 | 10.97 | 822 | 2.526106 |
| **2,4-D** | 11.07 | 11.23 | 11.26 | 1103 | 3.776308 |
| **PCP** | 11.53 | 11.67 | 11.73 | 543 | 0.150068 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 45263 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.19 | 12.35 | 86 | 0.071053 |
| **2,4,5-T** | 12.51 | 12.59 | 12.72 | 334 | 0.362339 |
| **2,4-DB** | 13.19 | 13.33 | 13.40 | 99 | 0.881009 |
| **Bentazon** | 14.44 | 14.47 | 14.67 | 845 E | 0.120256 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 549 | 0.753914 |
| **Acifluorfen** | 18.95 | 19.06 | 19.18 | 220 E | 0.017609 |

## Analysis Report (B)

Injected on : FEB 25, 2004 11:15:44
Instrument : CP14--H8456B
Result file : 2H14048B.05R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 105.5% Conc.: 42.19986

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.83 | 3.89 | 1825 | 6.095829 |
| **3,5-DCBA** | 8.79 | 8.92 | 9.00 | 1590 E | 0.190522 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 14220 | 42.199860 |
| **DICAMBA** | 9.56 | 9.60 | 9.75 | 799 | 0.587427 |
| **MCPP** | 9.65 | 9.81 | 9.83 | 208 | 136.548141 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 1364 | 3.544169 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 55361 | 2.004000 |
| **2,4,5-TP** | 11.72 | 11.77 | 11.92 | 1321 | 0.951946 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 667 | 4.872818 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 6.095829 | | | | ** 175.84 | |
| 3,5-DCBA | A | 0.653288 | | | E | ** 109.68 | |
| DCAA | A | 43.923359 | | | | 4.00 | |
| DICAMBA | | | | | | | |
| MCPP | A | 393.731995 | | | | ** 97.00 | |
| MCPA | | | | | | | |
| 2,4-DP | B | 3.544169 | | | | 33.54 | |
| 2,4-D | | | <10 | <2 | | | |
| PCP | | | | | | | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | | | <1 | <0.2 | | | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 4.872818 | | | | ** 138.75 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | | | | | E | | |

Units: ug/l

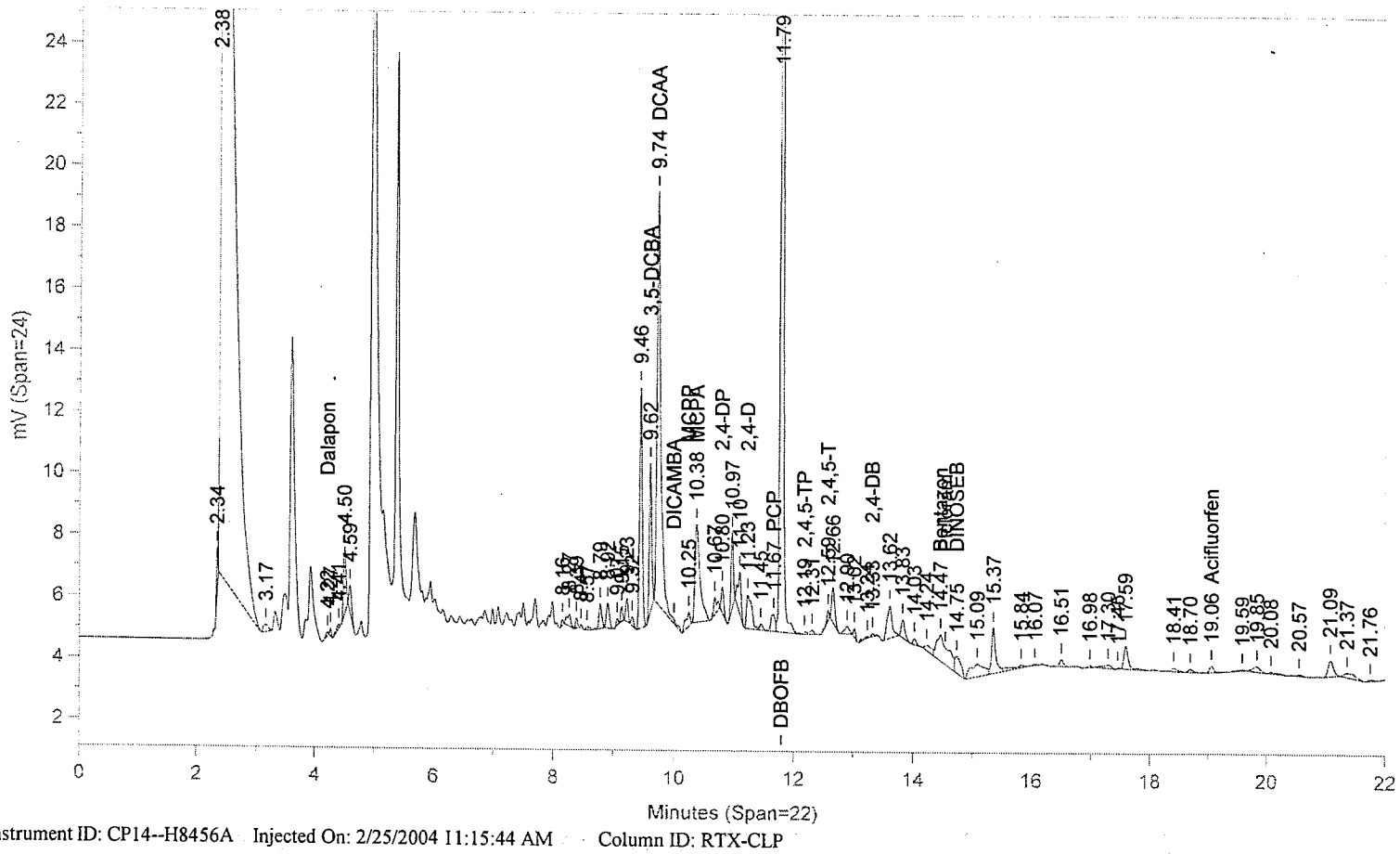
Reviewed by: [signature] Date: 2/26/04
Verified by: [signature] Date: 2/27/04

8786

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/25/04 12:37:52

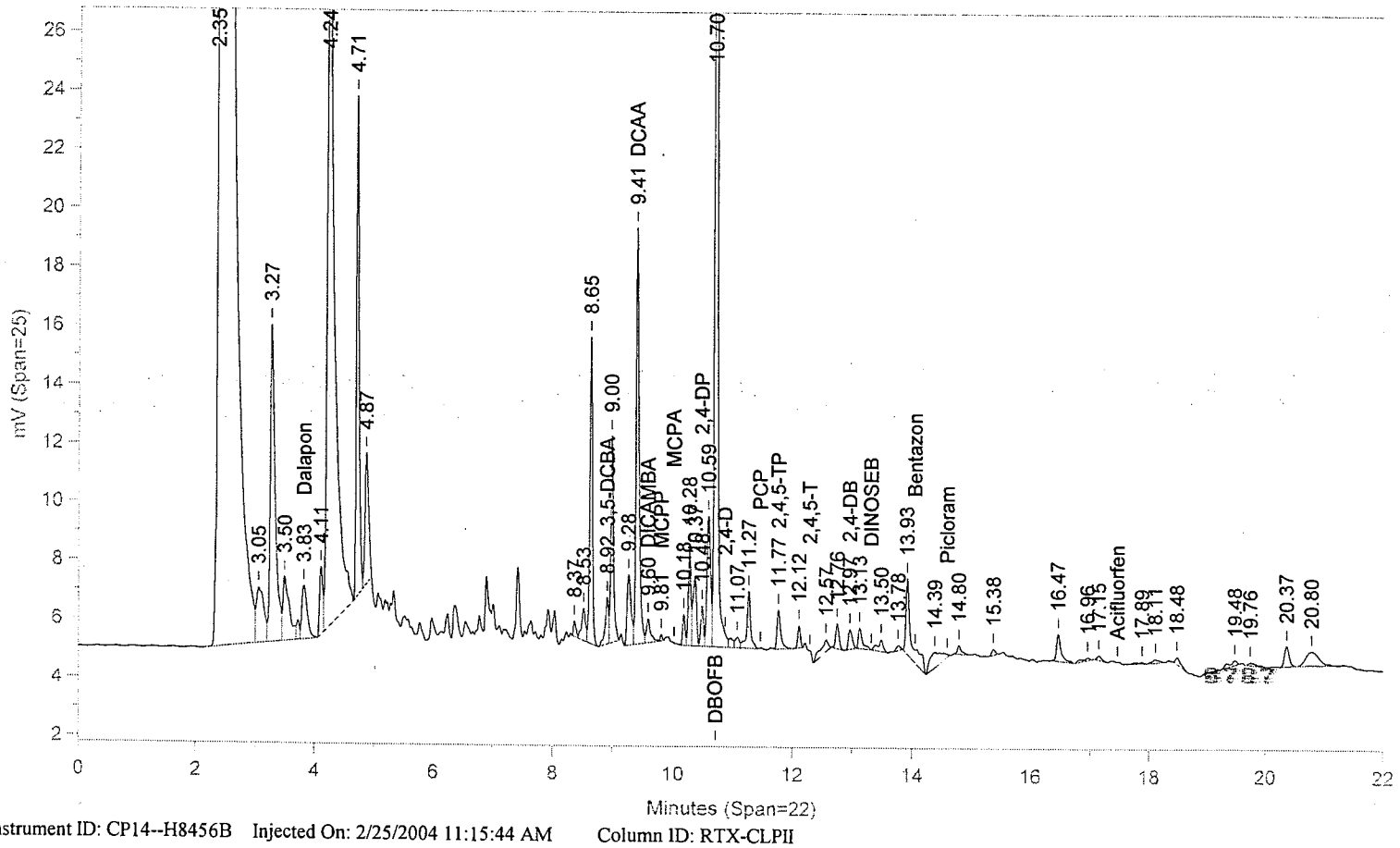
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.05R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 11:15:44 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.05R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 11:15:44 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.215 | 112 | .392 | Dalapon | 3.825 | 1825 | 6.096 | Dalapon |
| 9.618 | 4871 | .653 | 3,5-DCBA | 8.921 | 1590 | .191 | 3,5-DCBA |
| 9.741 | 13410 | 43.923 | DCAA | 9.411 | 14220 | 42.2 | DCAA |
| . | 0 | . | DICAMBA | 9.597 | 799 | .587 | DICAMBA |
| 10.248 | 450 | 393.732 | MCPP | 9.81 | 208 | 136.548 | MCPP |
| 10.376 | 3178 | 1666.527 | MCPA | . | 0 | . | MCPA |
| 10.801 | 822 | 2.526 | 2,4-DP | 10.483 | 1364 | 3.544 | 2,4-DP |
| 11.793 | 45263 | 2.004 | DBOFB | 10.703 | 55361 | 2.004 | DBOFB |
| 11.231 | 1103 | 3.776 | 2,4-D | . | 0 | . | 2,4-D |
| 11.666 | 543 | .15 | PCP | . | 0 | . | PCP |
| 12.187 | 86 | .071 | 2,4,5-TP | 11.768 | 1321 | .952 | 2,4,5-TP |
| 12.586 | 334 | .362 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.331 | 99 | .881 | 2,4-DB | 12.969 | 667 | 4.873 | 2,4-DB |
| 14.468 | 845 | .12 | Bentazon | . | 0 | . | Bentazon |
| 14.747 | 549 | .754 | DINOSEB | . | 0 | . | DINOSEB |
| 19.06 | 220 | .018 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.05A
Area File: C:\CPWIN\DATA1\2H14048B.05A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 11:37:48 AM
File Reported On: 2/25/2004 at 11:37:51 AM

8788

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 2/24/04F LCSVR Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: State:
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 11:42:18
Instrument : CP14--H8456A
Result file : 2H14048.06R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 86.9% Conc.: 34.757191

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.20 | 4.28 | 214 | 0.809194 |
| **3,5-DCBA** | 9.44 | 9.61 | 9.67 | 2297 E | 0.333972 |
| **DCAA** | 9.64 | 9.73 | 9.84 | 9789 | 34.757191 |
| **MCPP** | 10.10 | 10.25 | 10.29 | 74 | 70.551018 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1573 | 894.254822 |
| **2,4-DP** | 10.78 | 10.78 | 10.97 | 255 | 0.849918 |
| **2,4-D** | 11.07 | 11.16 | 11.26 | 1792 | 6.650123 |
| **PCP** | 11.53 | 11.63 | 11.73 | 547 | 0.163912 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 41752 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.24 | 12.35 | 9737 | 8.713263 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 589 | 0.693430 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 151 E | 0.013156 |

## Analysis Report (B)

Injected on : FEB 25, 2004 11:42:18
Instrument : CP14--H8456B
Result file : 2H14048B.06R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 89.9% Conc.: 35.946522

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **3,5-DCBA** | 8.79 | 8.91 | 9.00 | 1087 E | 0.141493 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 11157 | 35.946522 |
| **DICAMBA** | 9.56 | 9.59 | 9.75 | 397 | 0.317086 |
| **MCPP** | 9.65 | 9.76 | 9.83 | 282 | 200.764221 |
| **MCPA** | 9.93 | 9.92 | 10.11 | 282 | 133.237183 |
| **2,4-DP** | 10.35 | 10.47 | 10.54 | 617 | 1.740209 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 50991 | 2.004000 |
| **2,4-D** | 10.77 | 10.81 | 10.96 | 2973 | 8.391212 |
| **2,4,5-TP** | 11.72 | 11.81 | 11.92 | 10897 | 8.527424 |
| **2,4,5-T** | 12.20 | 12.27 | 12.40 | 604 | 0.618578 |
| **2,4-DB** | 12.82 | 12.96 | 13.03 | 572 | 4.535941 |
| **Acifluorfen** | 17.36 | 17.40 | 17.58 | 117 E | 0.006972 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | | | | | | | |
| 3,5-DCBA | A | 0.333972 | | | E | ** 80.96 | |
| DCAA | B | 35.946522 | | | | 3.36 | |
| DICAMBA | | | | | | | |
| MCPP | B | 200.764221 | | | | ** 95.99 | |
| MCPA | A | 894.254822 | | | | ** 148.13 | |
| 2,4-DP | B | 1.740209 | | | | ** 68.74 | |
| 2,4-D | B | 8.391212 | <10 | 2 | J | 23.15 | |
| PCP | | | | | | | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 8.713263 | 1 | 0.2 | | 2.16 | |
| 2,4,5-T | A | 0.693430 | | | | 11.41 | |
| 2,4-DB | | | | | | | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | | | | | | | |
| Acifluorfen | A | 0.013156 | | | E | ** 61.45 | |

Units: ug/l

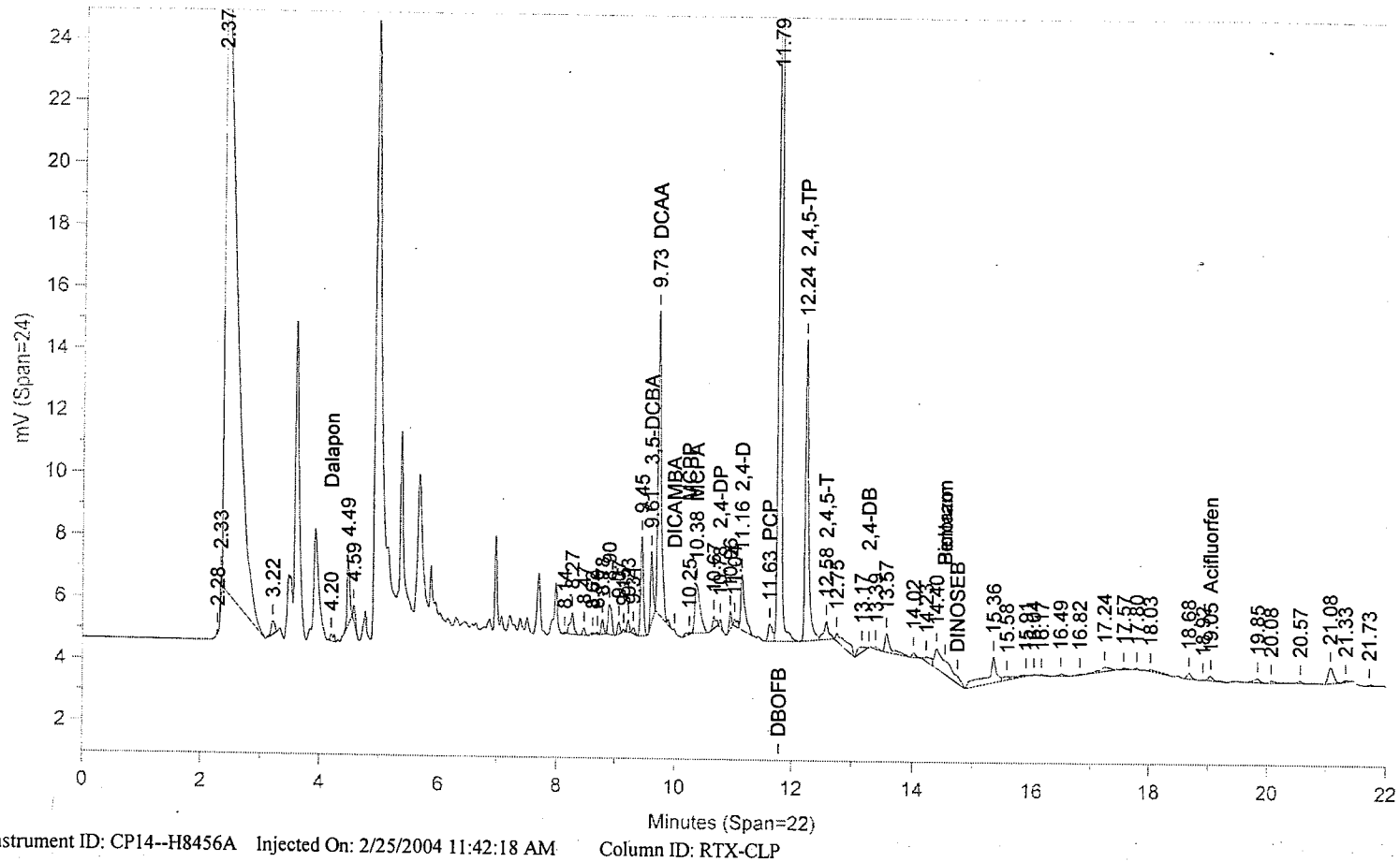
Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/26/04

8789

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/25/04 12:38:08

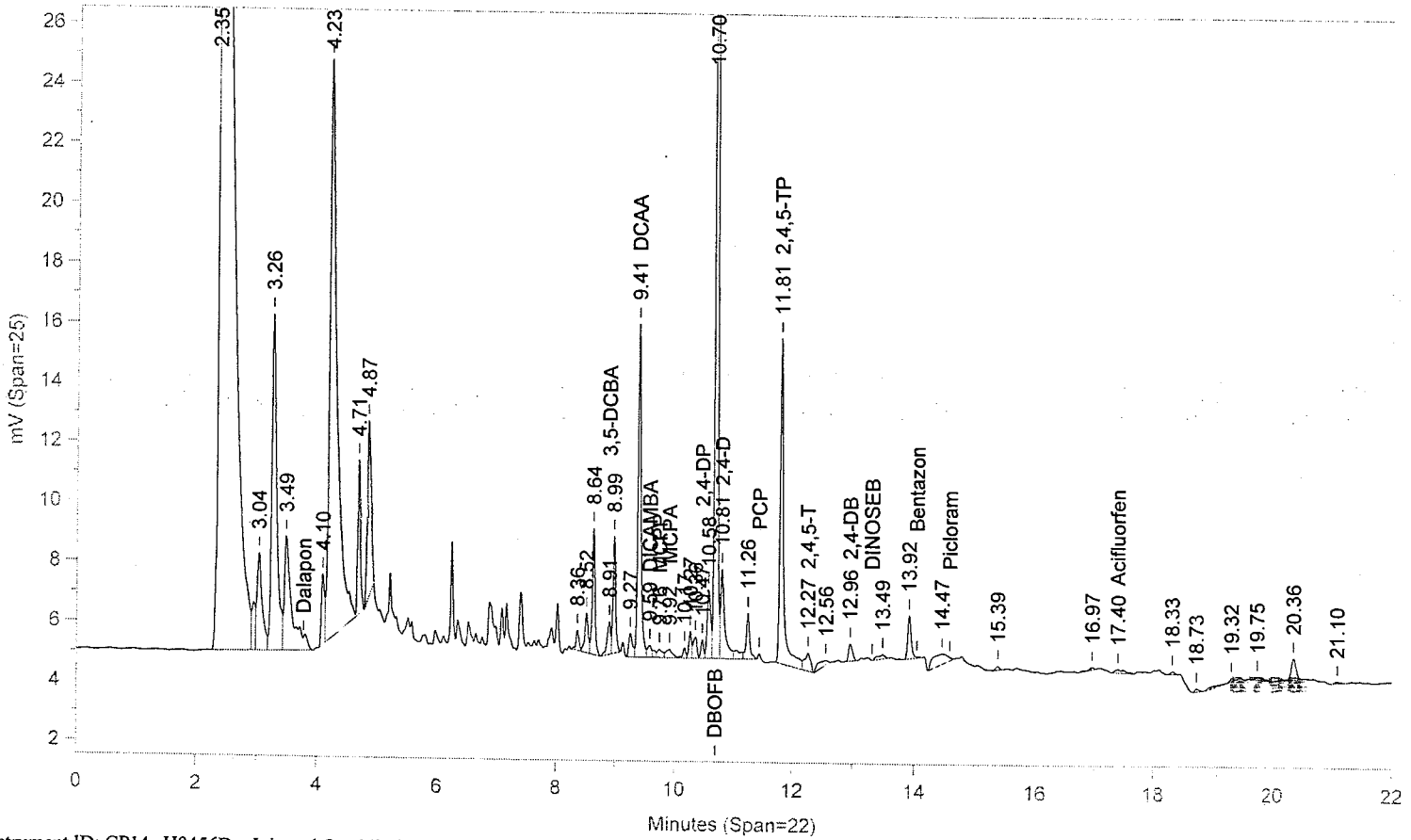
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.06R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 11:42:18 AM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2HI4048B.06R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 11:42:18 AM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.204 | 214 | .809 | Dalapon | . | 0 | . | Dalapon |
| 9.612 | 2297 | .334 | 3,5-DCBA | 8.913 | 1087 | .141 | 3,5-DCBA |
| 9.734 | 9789 | 34.757 | DCAA | 9.406 | 11157 | 35.947 | DCAA |
| . | 0 | . | DICAMBA | 9.594 | 397 | .317 | DICAMBA |
| 10.251 | 74 | 70.551 | MCPP | 9.755 | 282 | 200.764 | MCPP |
| 10.376 | 1573 | 894.255 | MCPA | 9.92 | 282 | 133.237 | MCPA |
| 10.783 | 255 | .85 | 2,4-DP | 10.474 | 617 | 1.74 | 2,4-DP |
| 11.786 | 41752 | 2.004 | DBOFB | 10.697 | 50991 | 2.004 | DBOFB |
| 11.161 | 1792 | 6.65 | 2,4-D | 10.812 | 2973 | 8.391 | 2,4-D |
| 11.631 | 547 | .164 | PCP | . | 0 | . | PCP |
| 12.241 | 9737 | 8.713 | 2,4,5-TP | 11.811 | 10897 | 8.527 | 2,4,5-TP |
| 12.578 | 589 | .693 | 2,4,5-T | 12.266 | 604 | .619 | 2,4,5-T |
| . | 0 | . | 2,4-DB | 12.964 | 572 | 4.536 | 2,4-DB |
| 19.052 | 151 | .013 | Acifluorfen | 17.4 | 117 | .007 | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.06A
Area File: C:\CPWIN\DATA1\2H14048B.06A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 12:04:20 PM
File Reported On: 2/25/2004 at 12:04:23 PM

8791

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **4219022** MSF UN7NVMS Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 14:21:33
Instrument : CP14--H8456A
Result file : 2H14048.12R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 124.6% Conc.: 49.859745

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.26 | 4.28 | 316 | 1.679332 |
| **3,5-DCBA** | 9.44 | 9.62 | 9.67 | 3431 E | 0.699320 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 10018 | 49.859745 |
| **DICAMBA** | 9.92 | 10.08 | 10.10 | 285 | 0.354105 |
| **MCPP** | 10.10 | 10.18 | 10.29 | 248 | 329.803955 |
| **MCPA** | 10.29 | 10.37 | 10.48 | 615 | 490.197449 |
| **2,4-DP** | 10.78 | 10.80 | 10.97 | 989 | 4.617748 |
| **2,4-D** | 11.07 | 11.17 | 11.26 | 1603 | 8.339655 |
| **PCP** | 11.53 | 11.63 | 11.73 | 839 | 0.352421 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 29787 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.25 | 12.35 | 9285 | 11.646132 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 538 | 0.887508 |
| **2,4-DB** | 13.19 | 13.32 | 13.40 | 42 | 0.571099 |
| **DINOSEB** | 14.65 | 14.78 | 14.88 | 790 | 1.647400 |
| **Acifluorfen** | 18.95 | 19.06 | 19.18 | 132 E | 0.016033 |

## Analysis Report (B)

Injected on : FEB 25, 2004 14:21:33
Instrument : CP14--H8456B
Result file : 2H14048B.12R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 116.4% Conc.: 46.552471

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.82 | 3.89 | 1153 | 5.690412 |
| **3,5-DCBA** | 8.79 | 8.92 | 9.00 | 1082 E | 0.191530 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 10619 | 46.552471 |
| **DICAMBA** | 9.56 | 9.60 | 9.75 | 323 | 0.350385 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 1089 | 4.181561 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 37474 | 2.004000 |
| **2,4-D** | 10.77 | 10.82 | 10.96 | 3047 | 11.700768 |
| **PCP** | 11.36 | 11.46 | 11.56 | 507 | 0.190744 |
| **2,4,5-TP** | 11.72 | 11.82 | 11.92 | 10457 | 11.135098 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 527 | 5.682556 |
| **DINOSEB** | 13.22 | 13.38 | 13.44 | 163 | 0.275733 |
| **Picloram** | 14.49 | 14.52 | 14.71 | 273 E | 0.018878 |
| **Acifluorfen** | 17.36 | 17.36 | 17.58 | 71 E | 0.005728 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 5.690412 | | | | ** 108.85 | |
| 3,5-DCBA | A | 0.699320 | | | E | ** 114.00 | |
| DCAA | A | 49.859745 | | | | 6.86 | |
| DICAMBA | A | 0.354105 | | | | 1.06 | |
| MCPP | | | | | | | |
| MCPA | | | | | | | |
| 2,4-DP | A | 4.617748 | | | | 9.91 | |
| 2,4-D | B | 11.700768 | 10 | 2 | | 33.54 | |
| PCP | A | 0.352421 | | | | ** 59.53 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 11.646132 | 1 | 0.2 | | 4.49 | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 5.682556 | | | | ** 163.47 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | A | 1.647400 | | | | ** 142.65 | |
| Acifluorfen | A | 0.016033 | | | E | ** 94.71 | |

Units: ug/l

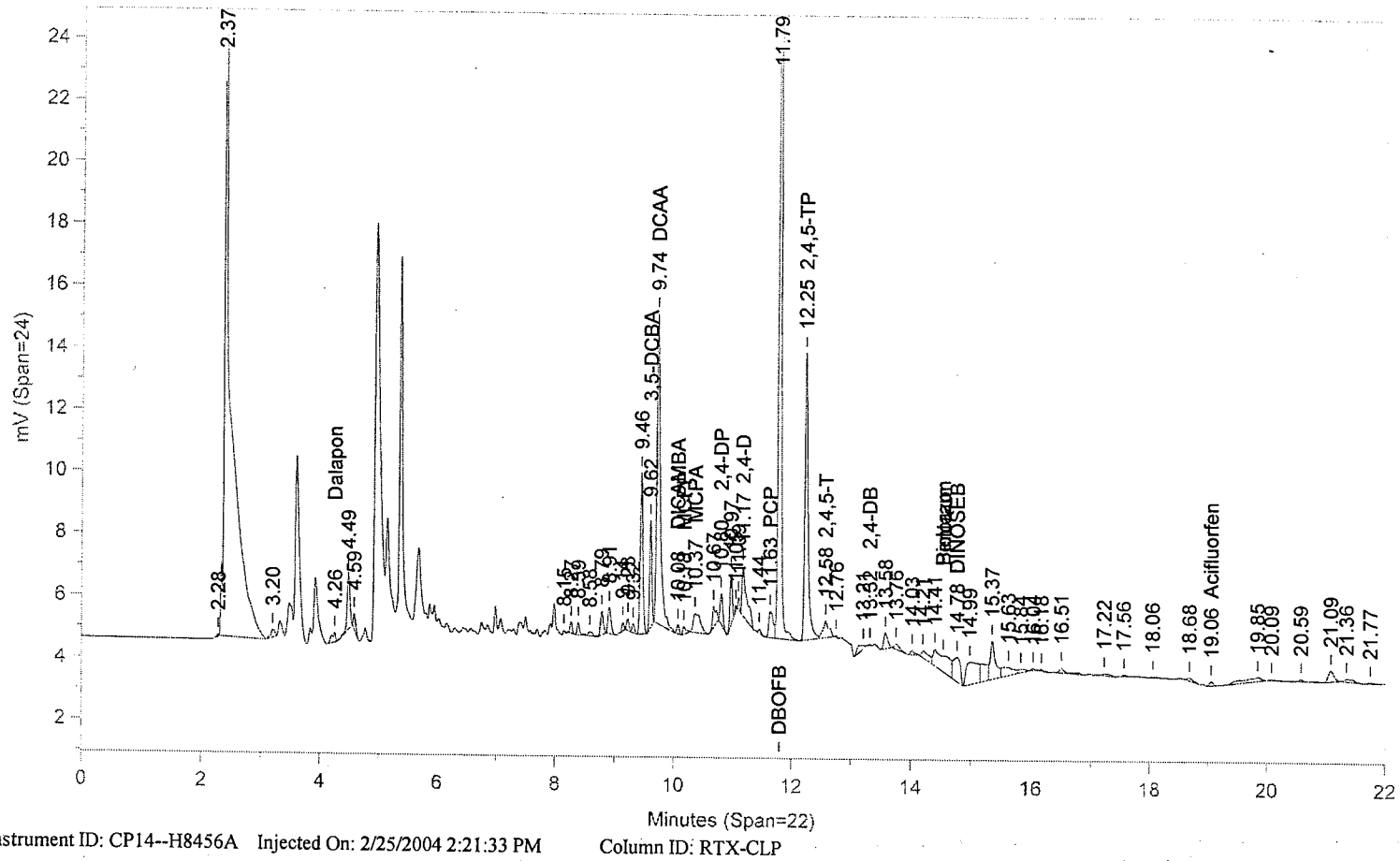
Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/27/04

8792

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:52:52

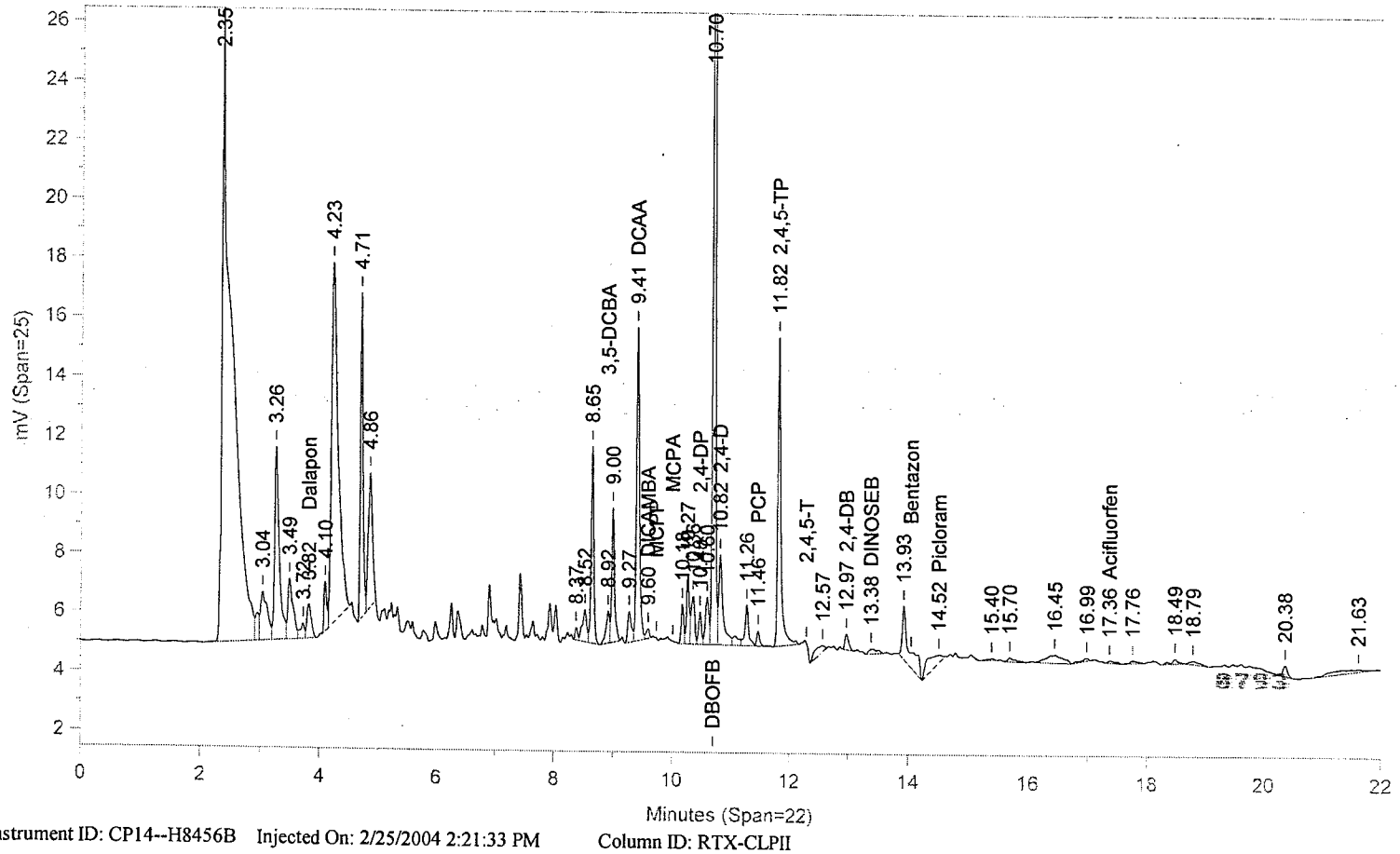
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.12R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 2:21:33 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.12R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 2:21:33 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.26 | 316 | 1.679 | Dalapon | 3.818 | 1153 | 5.69 | Dalapon |
| 9.616 | 3431 | .699 | 3,5-DCBA | 8.918 | 1082 | .192 | 3,5-DCBA |
| 9.738 | 10018 | 49.86 | DCAA | 9.41 | 10619 | 46.552 | DCAA |
| 10.083 | 285 | .354 | DICAMBA | 9.596 | 323 | .35 | DICAMBA |
| 10.181 | 248 | 329.804 | MCPP | . | 0 | . | MCPP |
| 10.368 | 615 | 490.197 | MCPA | . | 0 | . | MCPA |
| 10.802 | 989 | 4.618 | 2,4-DP | 10.479 | 1089 | 4.182 | 2,4-DP |
| 11.791 | 29787 | 2.004 | DBOFB | 10.7 | 37474 | 2.004 | DBOFB |
| 11.166 | 1603 | 8.34 | 2,4-D | 10.816 | 3047 | 11.701 | 2,4-D |
| 11.635 | 839 | .352 | PCP | 11.457 | 507 | .191 | PCP |
| 12.245 | 9285 | 11.646 | 2,4,5-TP | 11.816 | 10457 | 11.135 | 2,4,5-TP |
| 12.584 | 538 | .888 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.321 | 42 | .571 | 2,4-DB | 12.968 | 527 | 5.683 | 2,4-DB |
| 14.783 | 790 | 1.647 | DINOSEB | 13.38 | 163 | .276 | DINOSEB |
| . | 0 | . | Picloram | 14.52 | 273 | .019 | Picloram |
| 19.058 | 132 | .016 | Acifluorfen | 17.361 | 71 | .006 | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.12A
Area File: C:\CPWIN\DATA1\2H14048B.12A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 2:43:36 PM
File Reported On: 2/25/2004 at 2:43:39 PM

8784

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** 4219022 MSDF UN7NVMSI Sample ID: AB **Batchnumber: 040550004A**
Sample Amount: 50 ml Total Volume: 10 ml Analyst: 709 SDG: RAV02 State: VA
Analyses: 00952

## Analysis Report (A)

Injected on : FEB 25, 2004 14:48:04
Instrument : CP14--H8456A
Result file : 2H14048.13R
Calibration file : 1H14048.CAL
Method file : HERW.MET
%SSR(DCAA) : 128.2% Conc.: 51.284664

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 4.14 | 4.21 | 4.28 | 457 | 1.986665 |
| **3,5-DCBA** | 9.44 | 9.61 | 9.67 | 4985 E | 0.832754 |
| **DCAA** | 9.64 | 9.74 | 9.84 | 12571 | 51.284664 |
| **DICAMBA** | 9.92 | 10.08 | 10.10 | 411 | 0.417889 |
| **MCPP** | 10.10 | 10.25 | 10.29 | 496 | 541.286865 |
| **MCPA** | 10.29 | 10.38 | 10.48 | 1136 | 742.171692 |
| **2,4-DP** | 10.78 | 10.79 | 10.97 | 407 | 1.556253 |
| **2,4-D** | 11.07 | 11.16 | 11.26 | 2699 | 11.510244 |
| **PCP** | 11.53 | 11.63 | 11.73 | 961 | 0.330858 |
| **DBOFB** | 11.70 | 11.79 | 11.89 | 36339 | 2.004000 |
| **2,4,5-TP** | 12.15 | 12.24 | 12.35 | 12477 | 12.828421 |
| **2,4,5-T** | 12.51 | 12.58 | 12.72 | 369 | 0.499308 |
| **2,4-DB** | 13.19 | 13.32 | 13.40 | 91 | 1.015644 |
| **Bentazon** | 14.44 | 14.47 | 14.67 | 1249 E | 0.221578 |
| **DINOSEB** | 14.65 | 14.75 | 14.88 | 850 | 1.454369 |
| **Acifluorfen** | 18.95 | 19.05 | 19.18 | 155 E | 0.015514 |

## Analysis Report (B)

Injected on : FEB 25, 2004 14:48:04
Instrument : CP14--H8456B
Result file : 2H14048B.13R
Calibration file : 1H14048B.CAL
Method file : HERWB.MET
%SSR(DCAA) : 125% Conc.: 50.013382

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **Dalapon** | 3.69 | 3.82 | 3.89 | 1967 | 7.995684 |
| **3,5-DCBA** | 8.79 | 8.92 | 9.00 | 901 E | 0.131478 |
| **DCAA** | 9.32 | 9.41 | 9.51 | 13848 | 50.013382 |
| **DICAMBA** | 9.56 | 9.60 | 9.75 | 906 | 0.810561 |
| **MCPP** | 9.65 | 9.82 | 9.83 | 300 | 239.922775 |
| **2,4-DP** | 10.35 | 10.48 | 10.54 | 617 | 1.952212 |
| **DBOFB** | 10.61 | 10.70 | 10.80 | 45488 | 2.004000 |
| **2,4-D** | 10.77 | 10.81 | 10.96 | 4038 | 12.776676 |
| **PCP** | 11.36 | 11.46 | 11.56 | 911 | 0.282285 |
| **2,4,5-TP** | 11.72 | 11.81 | 11.92 | 14465 | 12.689519 |
| **2,4-DB** | 12.82 | 12.97 | 13.03 | 565 | 5.019195 |
| **DINOSEB** | 13.22 | 13.34 | 13.44 | 163 | 0.228126 |
| **Picloram** | 14.49 | 14.54 | 14.71 | 343 E | 0.019566 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dalapon | B | 7.995684 | | | | ** 120.39 | |
| 3,5-DCBA | A | 0.832754 | | | E | ** 145.46 | |
| DCAA | A | 51.284664 | | | | 2.51 | |
| DICAMBA | B | 0.810561 | | | | ** 63.93 | |
| MCPP | A | 541.286865 | | | | ** 77.15 | |
| MCPA | | | | | | | |
| 2,4-DP | B | 1.952212 | | | | 22.57 | |
| 2,4-D | B | 12.776676 | 10 | 2 | | 10.43 | |
| PCP | A | 0.330858 | | | | 15.84 | |
| DBOFB | A | 2.004000 | | | | 0.00 | |
| 2,4,5-TP | A | 12.828421 | 1 | 0.2 | | 1.09 | |
| 2,4,5-T | | | | | | | |
| 2,4-DB | B | 5.019195 | | | | ** 132.68 | |
| Picloram | | | | | E | | |
| Bentazon | | | | | E | | |
| DINOSEB | A | 1.454369 | | | | ** 145.76 | |
| Acifluorfen | | | | | E | | |

Units: ug/l

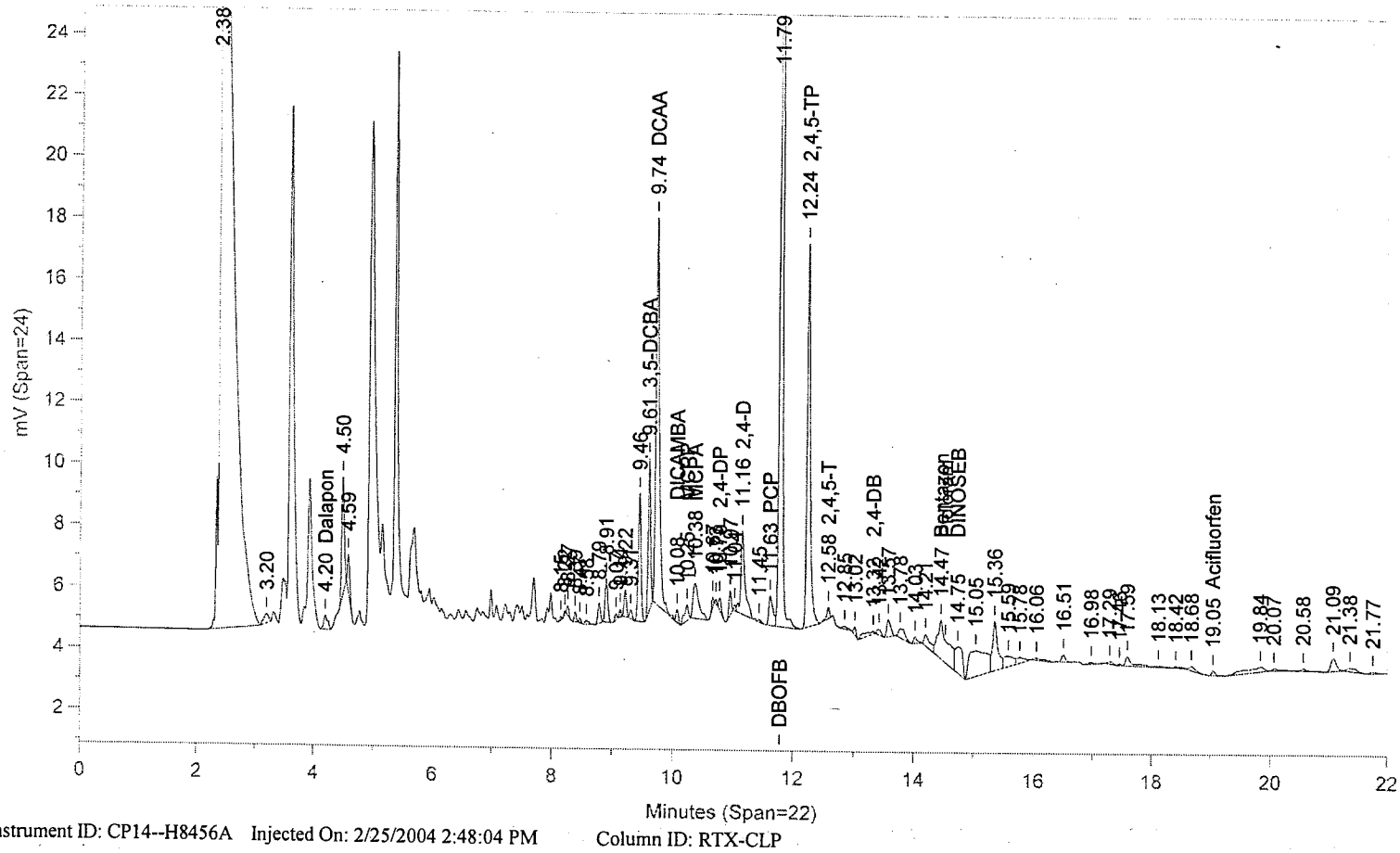
Reviewed by: _____ Date: 2/26/04
Verified by: _____ Date: 2/27/04

8795

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 2/26/04 07:53:09

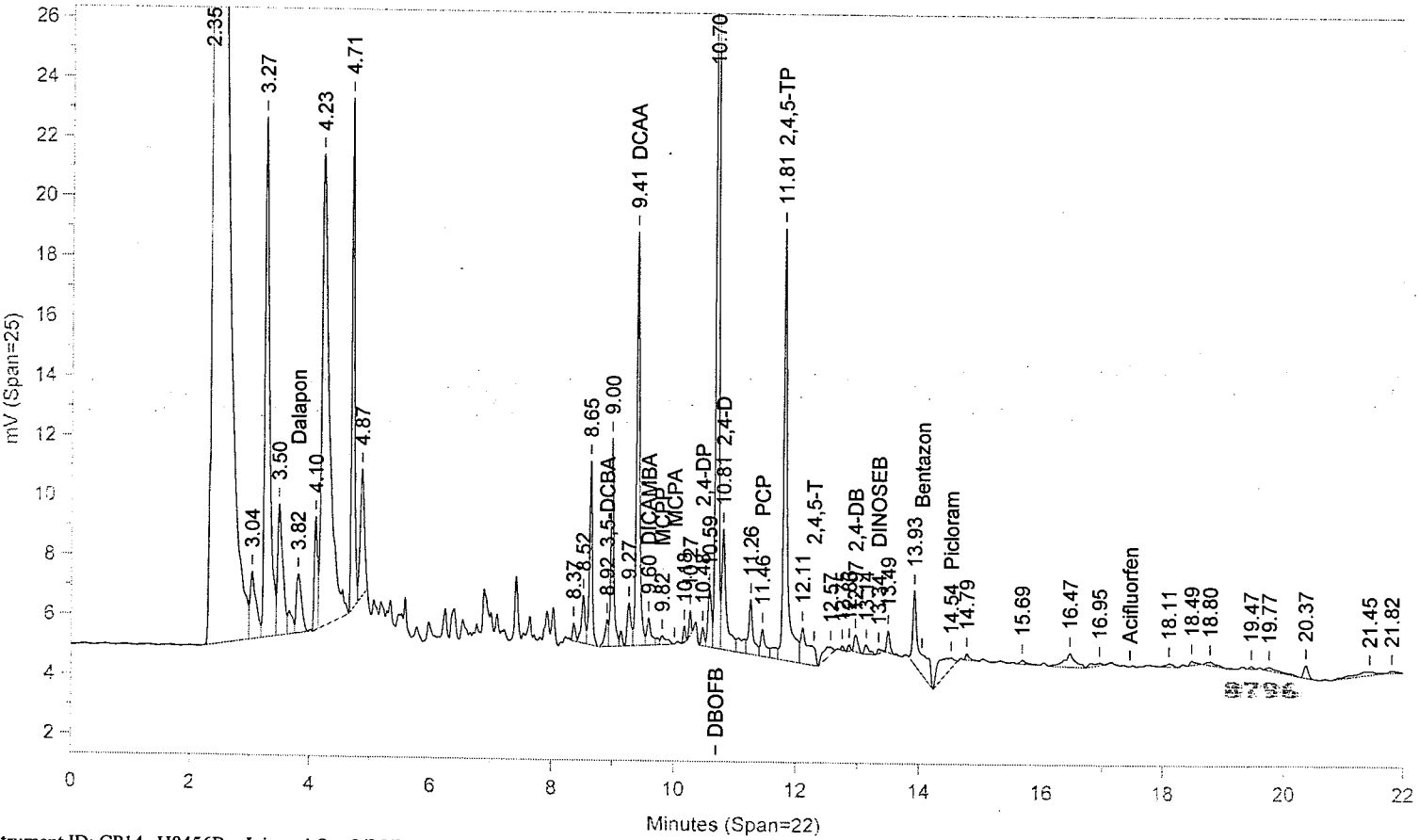
LANCASTER LABORATORIES

File: C:\CPWIN\DATA1\2H14048.13R




Instrument ID: CP14--H8456A Injected On: 2/25/2004 2:48:04 PM Column ID: RTX-CLP

File: C:\CPWIN\DATA1\2H14048B.13R




Instrument ID: CP14--H8456B Injected On: 2/25/2004 2:48:04 PM Column ID: RTX-CLPII

Oven Parameters: 85c hold 2 min; 30/min to 170; 10/min to 270; hold 6 minVolume Inj: 1

Detector A Parameters:
Threshold: -1 Width: 0.05 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Detector B Parameters:
Threshold: 1 Width: 0.07 Area Reject: 0
Calibration Type: Internal Quantitation: Height

Sample Weight: 50 Dilution Factor: 10
Analyst: 709

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.205 | 457 | 1.987 | Dalapon | 3.817 | 1967 | 7.996 | Dalapon |
| 9.615 | 4985 | .833 | 3,5-DCBA | 8.918 | 901 | .131 | 3,5-DCBA |
| 9.737 | 12571 | 51.285 | DCAA | 9.408 | 13848 | 50.013 | DCAA |
| 10.082 | 411 | .418 | DICAMBA | 9.596 | 906 | .811 | DICAMBA |
| 10.246 | 496 | 541.287 | MCPP | 9.816 | 300 | 239.923 | MCPP |
| 10.375 | 1136 | 742.172 | MCPA | . | 0 | . | MCPA |
| 10.791 | 407 | 1.556 | 2,4-DP | 10.48 | 617 | 1.952 | 2,4-DP |
| 11.79 | 36339 | 2.004 | DBOFB | 10.699 | 45488 | 2.004 | DBOFB |
| 11.164 | 2699 | 11.51 | 2,4-D | 10.815 | 4038 | 12.777 | 2,4-D |
| 11.629 | 961 | .331 | PCP | 11.456 | 911 | .282 | PCP |
| 12.243 | 12477 | 12.828 | 2,4,5-TP | 11.815 | 14465 | 12.69 | 2,4,5-TP |
| 12.581 | 369 | .499 | 2,4,5-T | . | 0 | . | 2,4,5-T |
| 13.323 | 91 | 1.016 | 2,4-DB | 12.965 | 565 | 5.019 | 2,4-DB |
| 14.748 | 850 | 1.454 | DINOSEB | 13.342 | 163 | .228 | DINOSEB |
| 14.471 | 1249 | .222 | Bentazon | . | 0 | . | Bentazon |
| . | 0 | . | Picloram | 14.536 | 343 | .02 | Picloram |
| 19.053 | 155 | .016 | Acifluorfen | . | 0 | . | Acifluorfen |

Files:
Area File: C:\CPWIN\DATA1\2H14048.13A
Area File: C:\CPWIN\DATA1\2H14048B.13A
Method A: C:\CPWIN\DATA1\HERW.MET
Method B: C:\CPWIN\DATA1\HERWB.MET
Calibration File A: C:\CPWIN\DATA1\1H14048.CAL
Calibration File B: C:\CPWIN\DATA1\1H14048B.CAL
Format A: C:\CPWIN\DATA1\HERWD.FMTA
Format B: C:\CPWIN\DATA1\HERWD.FMTB
Area File Created On: 2/25/2004 3:10:08 PM
File Reported On: 2/25/2004 at 3:10:09 PM

8797

# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: MDH 2/25/04

Prep Analysis # 00816 Water Sample Herbicide Extract

Prep Group # 3 Herbicide Leachates Dept: 24

Start Date: 2/24/04

Start Time: 21:50

Tech 1:

Tech 2:

BATCH NO. 040550004A

| QC | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKXH | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | | | 10.0 | ✓ | ✓ | NA | |
| LCSA | LCSVR | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 30A | Clear |
| 4217215MS | I1-NVMS | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 30A | Clear |
| 4219022MS | UN7NVMS | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 30A | Clear |
| 4219022MSD | UN7NVMSD | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | MS04008C | 1.0 | 10.0 | ✓ | ✓ | 30A | Clear |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | Sample # | Sample Code | Amt (ml) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4217215 bkg | I1-NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/1/04 | P |
| 2 | 4217866 | BLA-2 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 2/27/04 | P |
| 3 | 4219006 | UN5NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/2/04 | P |
| 4 | 4219022 bkg | UN7NV | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/2/04 | P |
| 5 | 4219669 | TC407 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/4/04 | P |
| 6 | 4221331 | BLA20 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/3/04 | P |
| 7 | 4221332 | BLA44 | 50 | IS0404024A<br>SS03328B | .1<br>1.0 | 10.0 | ✓ | ✓ | 30A | Clear | 952 | 3/3/04 | P |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

**Additional Comment:** * Empty Filter Lot # Area

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS03328B HERB SURROGATE STANDARD #1364 2/24/04

MS04008C TCLP HERB SPIKE

IS0404024A HERB INTERNAL STANDARD

8799

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| Extraction Fluid | 1223-02-23-04A | meCl2 | A02658 |
| NaCl | 33270 | 1N H2SO4 | 881912-04A |
| 6N NaOH | 3238-05 | Work Station: | Herb Area |
| Internal Standar | | Balance # | — |
| S-bath ID | 55.0 °C | S-bath ID | _ °C |
| N-Evap | 40.0 °C | | |

Documented temps are NIST corrected. 040550004A

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 00816 Water Sample Herbicide Extract

**Prep Group #** 3 Herbicide Leachates

**Verified:** MDA 2/25/07

**Start Date:** 2/25/07

**Start Time:** 04:45

**Tech 1:** RGT

**Tech 2:** —

**BATCH NO.** 040550004A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2.0 | 2.0 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4217215MS | | | | | | 952 |
| 4 | 4219022MS | | | | | | 952 |
| 5 | 4219022MSD | | | | | | 952 |
| 6 | 4217215 | | | | | | 952 |
| 7 | 4217866 | | | | | | 952 |
| 8 | 4219006 | | | | | | 952 |
| 9 | 4219022 | | | | | | 952 |
| 10 | 4219669 | | | | | | 952 |
| 11 | 4221331 | | | | | | 952 |
| 12 | 4221332 | ✓ | ✓ | | | | 952 |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |

**Additional Comment:** _____

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 50% Ether/Hexane | 7J1042404A | Diazald Sol'n | 7J1042504A |
| Ethyl Ether | A02400 | Hexane | YS1611 |
| Diazald | 13825-A | Aldrich (Acid) | 07693B |
| Florisil | 20740 AR | | |

| S-Evap/bath | — °C | S-Evap/bath | — °C | N-Evap | 40 °C |
|---|---|---|---|---|---|

The documented temperatures are NIST corrected.

8888

# Metals Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

*Where quality is a science.*

CASE NARRATIVE FOR INORGANICS

Laboratory Name: Lancaster Laboratories

SDG Number: RAV02

Date Received: 02/19/04

Dilutions:

Refer to the analysis run logs for samples requiring dilutions.

Explanatory Notes:

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

Calibration Standards:

Instrument calibration standards are prepared monthly from stock solutions purchased from Aldrich Chemical, EM Science, Fisher Scientific, High Purity, Inorganic Ventures, JT Baker, Spex Industries Inc., Ultra Scientific, or VHG Laboratories.

Case Narrative reviewed and approved by:

Date 3-3-04

Betty L. Umble, Specialist Coordinator
Inorganic Data Packages

9883

QUALITY ASSURANCE SUMMARY

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV02

| Client Sample ID. | Lab Sample ID. |
|---|---|
| UN7NV | 4219022 |

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO_

LEGEND

| | |
|---|---|
| FLAGS: (indicate matrix interference) | U = Below MDL B = Below LOQ |
| N = Matrix Spike OOS | METHODS: |
| * = Duplicate OOS | A = Flame Atomic Absorption |
| W = Method F Analytical Spike Recovery <85% or >115% when the sample conc. is <50% of the spike conc. | P = Inductively Coupled Plasma |
| | F = Graphite Furnace |
| | CV = Cold Vapor |
| S = Analysis Determined by MSA | NR = Not Required |
| + = MSA Correlation Coefficient <0.995 | TERMS: |
| E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution | MDL = Method Detection Limit |
| | LOQ = Limit of Quantitation |
| M = Duplicate Injection Precision not met | OOS = Out of Specification |
| Presence of FLAGS does not invalidate data | MSA = Method of Standard Addition |

I certify that this data package is technically accurate and complete. Release of the data contained in this data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

9884

Signature: _____ Name: Betty L. Umble

Date: 3-3-04 Title: Specialist Coordinator
Inorganic Data Packages

# Sample Data

QUALITY ASSURANCE SUMMARY

INORGANIC ANALYSIS DATA SHEET
FORM 1

CLIENT SAMPLE NO.

UN7NV

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02

Matrix (soil/water): WATER

Lab Sample ID: 4219022

Level (low/med): LOW

Date Received: 02/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L___

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 5.4 | B | | P |
| 7440-39-3 | Barium | 320 | | | P |
| 7440-43-9 | Cadmium | 0.87 | U | | P |
| 7440-47-3 | Chromium | 11.0 | | | P |
| 7439-92-1 | Lead | 9.3 | U | | P |
| 7439-97-6 | Mercury | 0.16 | U | | CV |
| 7782-49-2 | Selenium | 12.1 | | | P |
| 7440-22-4 | Silver | 1.8 | U | | P |

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

# Quality Control Data

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | M |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | True | Found | %R(2) | Found | %R(2) | |
| Arsenic | 600.0 | 582.14 | 97.0 | 500.0 | 465.85 | 93.2 | 479.65 | 95.9 | P |
| Barium | 600.0 | 607.47 | 101.2 | 500.0 | 488.07 | 97.6 | 496.71 | 99.3 | P |
| Cadmium | 600.0 | 596.88 | 99.5 | 500.0 | 483.88 | 96.8 | 496.00 | 99.2 | P |
| Chromium | 600.0 | 609.72 | 101.6 | 500.0 | 489.74 | 97.9 | 502.00 | 100.4 | P |
| Lead | 600.0 | 608.88 | 101.5 | 500.0 | 494.92 | 99.0 | 502.26 | 100.5 | P |
| Mercury | 2.5 | 2.45 | 98.0 | 1.0 | 1.02 | 102.0 | 1.07 | 107.0 | CV |
| Selenium | 600.0 | 611.22 | 101.9 | 500.0 | 493.86 | 98.8 | 499.41 | 99.9 | P |
| Silver | 600.0 | 614.04 | 102.3 | 500.0 | 502.61 | 100.5 | 510.77 | 102.2 | P |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | 500.0 | 481.51 | 96.3 | 486.03 | 97.2 | P |
| Barium | | | | 500.0 | 492.89 | 98.6 | 490.58 | 98.1 | P |
| Cadmium | | | | 500.0 | 499.14 | 99.8 | 505.24 | 101.0 | P |
| Chromium | | | | 500.0 | 504.07 | 100.8 | 506.89 | 101.4 | P |
| Lead | | | | 500.0 | 507.93 | 101.6 | 510.91 | 102.2 | P |
| Mercury | | | | 1.0 | 1.01 | 101.0 | 1.05 | 105.0 | CV |
| Selenium | | | | 500.0 | 499.16 | 99.8 | 503.13 | 100.6 | P |
| Silver | | | | 500.0 | 508.95 | 101.8 | 506.73 | 101.3 | P |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Mercury | | | | 1.0 | 1.00 | 100.0 | 1.09 | 109.0 | CV |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Mercury | | | | 1.0 | 1.04 | 104.0 | | | CV |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |

(1) Control Limits: All Metals 90-110 ✓
(2) Control Limits: Mercury 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

LOW LEVEL CHECK STANDARD FOR AA AND ICP

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

AA CRDL Standard Source: LLI_____

ICP CRDL Standard Source: LLI_____

Concentration Units: ug/L

| Analyte | AA | | | ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Initial | | | Final | |
| | True | Found | %R | True | Found | %R | Found | %R |
| Arsenic | | | | 10.0 | 7.64 | 76.4 | 9.32 | 93.2 |
| Barium | | | | 5.0 | 5.16 | 103.2 | 5.17 | 103.4 |
| Cadmium | | | | 5.0 | 5.44 | 108.8 | 5.57 | 111.4 |
| Chromium | | | | 5.0 | 4.61 | 92.2 | 4.83 | 96.6 |
| Lead | | | | 20.0 | 20.60 | 103.0 | 21.16 | 105.8 |
| Mercury | 0.2 | 0.19 | 95.0 | | | | | |
| Selenium | | | | 10.0 | 7.81 | 78.1 | 7.39 | 73.9 |
| Silver | | | | 5.0 | 4.78 | 95.6 | 5.39 | 107.8 |

Control Limits: All Metals 50-150% for samples < 10 times the value of the low level check standard

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Preparation Blank Matrix (soil/water): _WATER____

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L_____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.1 | U | 6.1 | U | 6.1 | U | 6.1 | U | 4.900 | U | P |
| Barium | 0.19 | U | 0.19 | U | 0.19 | U | 0.19 | U | 0.710 | B | P |
| Cadmium | 0.58 | U | 0.58 | U | 0.58 | U | 0.58 | U | 0.870 | U | P |
| Chromium | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 2.200 | U | P |
| Lead | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 9.300 | U | P |
| Mercury | 0.016 | U | 0.016 | U | -0.039 | B | -0.045 | B | 0.160 | U | CV |
| Selenium | 4.3 | U | 4.3 | U | 4.3 | U | 4.3 | U | 4.700 | U | P |
| Silver | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | 1.800 | U | P |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | 6.1 | U | | | | | | | P |
| Barium | | | 0.19 | U | | | | | | | P |
| Cadmium | | | 0.58 | U | | | | | | | P |
| Chromium | | | 1.1 | U | | | | | | | P |
| Lead | | | 2.0 | U | | | | | | | P |
| Mercury | | | -0.021 | B | -0.040 | B | -0.026 | B | | | CV |
| Selenium | | | 4.3 | U | | | | | | | P |
| Silver | | | 1.7 | U | | | | | | | P |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | | | | NR |
| Barium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Lead | | | | | | | | | | | NR |
| Mercury | | | -0.099 | B | | | | | | | CV |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |

QUALITY ASSURANCE SUMMARY

ICP INTERFERENCE CHECK SAMPLE

Lab Name: LANCASTER_LABORATORIES_____

SDG No.: RAV02__

ICP Instrument ID: 06383_____ ICS Source: LLI_____

Concentration Units: ug/L

| Analyte | True | | Initial Found | | | Final Found | | |
|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | Sol. AB | %R | Sol. A | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 509864 | 518713.7 | 103.7 | 513505 | 514775.3 | 103.0 |
| Arsenic | 0 | 100 | 1 | 102.5 | 102.5 | -2 | 98.1 | 98.1 |
| Barium | 0 | 500 | -1 | 524.9 | 105.0 | -1 | 516.0 | 103.2 |
| Cadmium | 0 | 1000 | 5 | 965.6 | 96.6 | 5 | 988.6 | 98.9 |
| Calcium | 500000 | 500000 | 531043 | 534038.6 | 106.8 | 541128 | 543974.7 | 108.8 |
| Chromium | 0 | 500 | -3 | 503.0 | 100.6 | -3 | 509.1 | 101.8 |
| Iron | 200000 | 200000 | 200350 | 203172.8 | 101.6 | 203709 | 205823.1 | 102.9 |
| Lead | 0 | 50 | 4 | 56.8 | 113.6 | 4 | 55.3 | 110.6 |
| Magnesium | 500000 | 500000 | 506237 | 514111.9 | 102.8 | 515982 | 521598.0 | 104.3 |
| Mercury | | | | | | | | |
| Selenium | 0 | 50 | -7 | 49.0 | 98.0 | -5 | 47.8 | 95.6 |
| Silver | 0 | 200 | -1 | 215.4 | 107.7 | 0 | 212.3 | 106.2 |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Lab Name: LANCASTER_LABORATORIES

CLIENT SAMPLE NO.

*19006S

SDG No.: RAV02

Matrix (soil/water): WATER_____

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limit %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | NR | | | | | | | | | | | | | | | | |
| Barium | NR | | | | | | | | | | | | | | | | |
| Cadmium | NR | | | | | | | | | | | | | | | | |
| Chromium | NR | | | | | | | | | | | | | | | | |
| Lead | NR | | | | | | | | | | | | | | | | |
| Mercury | CV | 0.1600 | U | 1.0600 | | 1.0700 | | 1.00 | 1.00 | 106 | | 107 | | 80 - 120 | 1 | | 20 |
| Selenium | NR | | | | | | | | | | | | | | | | |
| Silver | NR | | | | | | | | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Lab Name: LANCASTER_LABORATORIES

CLIENT SAMPLE NO.

UN7NVS

SDG No.: RAV02

Matrix (soil/water): WATER_____

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limit %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | P | 5.3700 | B | 2104.8100 | | 2103.0800 | | 2000.00 | 2000.00 | 105 | | 105 | | 86 - 119 | 0 | | 20 |
| Barium | P | 320.2100 | | 2380.8700 | | 2373.2000 | | 2000.00 | 2000.00 | 103 | | 103 | | 82 - 113 | 0 | | 20 |
| Cadmium | P | 0.8700 | U | 51.0900 | | 50.9100 | | 50.00 | 50.00 | 102 | | 102 | | 87 - 117 | 0 | | 20 |
| Chromium | P | 10.9700 | | 210.4300 | | 210.4700 | | 200.00 | 200.00 | 100 | | 100 | | 86 - 118 | 0 | | 20 |
| Lead | P | 9.3000 | U | 517.6300 | | 515.9000 | | 500.00 | 500.00 | 104 | | 103 | | 87 - 118 | 0 | | 20 |
| Mercury | NR | | | | | | | | | | | | | | | | |
| Selenium | P | 12.1100 | | 2136.8000 | | 2118.4300 | | 2000.00 | 2000.00 | 106 | | 105 | | 75 - 125 | 1 | | 20 |
| Silver | P | 1.8000 | U | 53.4300 | | 53.6900 | | 50.00 | 50.00 | 107 | | 107 | | 75 - 125 | 0 | | 20 |

QUALITY ASSURANCE SUMMARY

DUPLICATES

CLIENT SAMPLE No.

*19006D

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Matrix (soil/water): WATER_____ Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

| Analyte | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | | | | | | | | NR |
| Barium | | | | | | | | NR |
| Cadmium | | | | | | | | NR |
| Chromium | | | | | | | | NR |
| Lead | | | | | | | | NR |
| Mercury | | 0.1600 | U | 0.1600 | U | | | CV |
| Selenium | | | | | | | | NR |
| Silver | | | | | | | | NR |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

DUPLICATES

CLIENT SAMPLE No.

UN7NVD

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Matrix (soil/water): WATER_____ Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

| Analyte | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | | 5.3700 | B | 4.9000 | U | 200 | | P |
| Barium | | 320.2100 | | 324.9900 | | 1 | ✓ | P |
| Cadmium | | 0.8700 | U | 0.8700 | U | | | P |
| Chromium | 5.0 | 10.9700 | | 10.6600 | | 3 | ✓ | P |
| Lead | | 9.3000 | U | 9.3000 | U | | | P |
| Mercury | | | | | | | | NR |
| Selenium | 10.0 | 12.1100 | | 13.5900 | | 12 | ✓ | P |
| Silver | | 1.8000 | U | 1.8000 | U | | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

LABORATORY CONTROL SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Solid LCS Source: _____

Aqueous LCS Source: LLI_____

| Analyte | Aqueous (ug/L) True | Found | %R(1) | Solid (mg/kg) True | Found | C | Limit | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2000.0 | 2104.04 | 105 | | | | | | |
| Barium | 2000.0 | 2047.26 | 102 | | | | | | |
| Cadmium | 50.0 | 53.02 | 106 | | | | | | |
| Chromium | 200.0 | 206.51 | 103 | | | | | | |
| Lead | 500.0 | 532.04 | 106 | | | | | | |
| Mercury | 1.0 | 1.07 | 107 | | | | | | |
| Selenium | 2000.0 | 2135.21 | 107 | | | | | | |
| Silver | 50.0 | 53.36 | 107 | | | | | | |

Control Limits: Statistically determined

Statistical Windows: Waters LCS/LCSD

9/12/03

SW846 ICP

| Element | True value mg/L | Statistical Window |
|---|---|---|
| AL | 2 | 93-112 |
| SB | 0.5 | 94-112 |
| AS | 2 | 92-109 |
| BA | 2 | 93-109 |
| BE | 0.05 | 96-111 |
| B | 2 | 93-110 |
| CD | 0.05 | 97-111 |
| CA | 4 | 93-113 |
| CR | 0.2 | 95-112 |
| CO | 0.5 | 95-109 |
| CU | 0.25 | 92-110 |
| FE | 1 | 91-114 |
| PB | 0.5 | 93-110 |
| MG | 2 | 93-110 |
| MN | 0.5 | 93-110 |
| MO | 2 | 97-109 |
| NI | 0.5 | 93-110 |
| K | 4 | 80-120 |
| SE | 2 | 91-111 |
| AG | 0.05 | 96-114 |
| NA | 4 | 89-112 |
| SR | 1 | 97-107 |
| TL | 2 | 92-107 |
| SN | 4 | 95-112 |
| TI | 1 | 96-109 |
| V | 0.5 | 96-109 |
| ZN | 0.5 | 94-112 |

10/1/03

SW846 GFAA

| Element | True value mg/L | Statistical Window |
|---|---|---|
| SB | 50 | 80-120 |
| AS | 40 | 80-120 |
| BE | 2.5 | 80-120 |
| CD | 2.5 | 80-112 |
| CR | 10 | 79-109 |
| CU | 20 | 85-116 |
| PB | 20 | 80-120 |
| NI | 20 | 80-120 |
| SE | 10 | 80-114 |
| AG | 2.5 | 85-116 |
| TL | 50 | 80-120 |

10/1/03

SW846 Mercury

| Element | True value mg/L | Statistical Window |
|---|---|---|
| HG | 1 | 80-120 |

QUALITY ASSURANCE SUMMARY

CLIENT SAMPLE NO.

ICP SERIAL DILUTIONS

UN7NV L

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Matrix (soil/water): WATER_____ Level (low/med): LOW

Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Arsenic | 5.37 | B | 24.50 | U | 100 | | P |
| Barium | 320.21 | | 312.35 | | 2.5 | ✓ | P |
| Cadmium | 0.87 | U | 4.35 | U | | | P |
| Chromium | 10.97 | | 11.00 | U | 100 | | P |
| Lead | 9.30 | U | 46.50 | U | | | P |
| Mercury | | | | | | | NR |
| Selenium | 12.11 | | 23.50 | U | 100 | | P |
| Silver | 1.80 | U | 9.00 | U | | | P |

NOTE: An (E) in column "Q" indicates the presence of a chemical or physical interference in the matrix during analysis (% Difference > 10% when (I)> or = 50x MDL for ICP or (I) > or = 25x MDL for GFAA).

# Verification of Instrument Parameters

QUALITY ASSURANCE SUMMARY

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

ICP ID Number: ___06383 _____ Date: 01/15/04

Flame AA ID Number: _____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Arsenic | 189.04 | | 6.1 | P |
| Barium | 493.40 | | 0.19 | P |
| Cadmium | 226.50 | | 0.58 | P |
| Chromium | 267.71 | | 1.1 | P |
| Lead | 220.35 | | 2.0 | P |
| Mercury | | | | NR |
| Selenium | 196.02 | | 4.3 | P |
| Silver | 328.06 | | 1.7 | P |

Comments:

QUALITY ASSURANCE SUMMARY

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

ICP ID Number: _____ Date: 01/15/04

Flame AA ID Number: ___62016 _____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Arsenic | | | | NR |
| Barium | | | | NR |
| Cadmium | | | | NR |
| Chromium | | | | NR |
| Lead | | | | NR |
| Mercury | 254.00 | | 0.016 | CV |
| Selenium | | | | NR |
| Silver | | | | NR |

Comments:

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QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV02

Method: _P_ Matrix: (soil/water): WATER Date: 05/01/03

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Arsenic | 189.04 | | 10.0 | 4.9 |
| Barium | 493.40 | | 5.0 | 0.48 |
| Cadmium | 226.50 | | 5.0 | 0.87 |
| Chromium | 267.71 | | 5.0 | 2.2 |
| Lead | 220.35 | | 20.0 | 9.3 |
| Mercury | | | | |
| Selenium | 196.02 | | 10.0 | 4.7 |
| Silver | 328.06 | | 5.0 | 1.8 |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES

SDG No.: RAV02

Method: _CV_ Matrix: (soil/water): WATER Date: 05/01/03

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Arsenic | | | | |
| Barium | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| Lead | | | | |
| Mercury | 254.00 | | 0.20 | 0.16 |
| Selenium | | | | |
| Silver | | | | |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | Interelement Correction Factor for: AL | CA | FE | MG | CO |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Barium | 493.40 | 0.0000000 | 0.0000020 | 0.0000050 | 0.0000000 | 0.0000000 |
| Cadmium | 226.50 | -0.0000020 | 0.0000000 | 0.0000820 | 0.0000000 | -0.0001050 |
| Chromium | 267.71 | 0.0000000 | 0.0000000 | -0.0000040 | 0.0000040 | 0.0000000 |
| Lead1 | 220.35 | 0.0004960 | 0.0000000 | 0.0000890 | 0.0000060 | 0.0000510 |
| Lead2 | 220.35 | -0.0002510 | 0.0000000 | 0.0000490 | 0.0000040 | 0.0000440 |
| Mercury | | | | | | |
| Selenium1 | 196.02 | 0.0000030 | 0.0000000 | -0.0000230 | 0.0000000 | 0.0002580 |
| Selenium2 | 196.02 | 0.0000010 | 0.0000000 | -0.0002200 | 0.0000000 | -0.0004670 |
| Silver | 328.06 | 0.0000000 | 0.0000010 | 0.0000020 | 0.0000000 | 0.0000000 |

Comments:

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QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | Interelement Correction Factor for: CR | MN | MO | NI | TI |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | -0.0054790 | 0.0000000 | -0.0031670 | 0.0000000 | 0.0000000 |
| Barium | 493.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.50 | 0.0000000 | 0.0000000 | -0.0000980 | 0.0000000 | 0.0000000 |
| Chromium | 267.71 | 0.0000000 | 0.0000000 | -0.0002250 | 0.0000000 | 0.0000000 |
| Lead1 | 220.35 | 0.0000000 | 0.0000000 | -0.0003530 | 0.0002760 | 0.0000000 |
| Lead2 | 220.35 | 0.0000000 | 0.0000000 | -0.0005790 | 0.0000520 | -0.0006380 |
| Mercury | | | | | | |
| Selenium1 | 196.02 | -0.0000500 | 0.0005410 | 0.0000000 | 0.0000000 | 0.0000000 |
| Selenium2 | 196.02 | -0.0004360 | 0.0003200 | 0.0000000 | 0.0000000 | 0.0000000 |
| Silver | 328.06 | 0.0000060 | 0.0000000 | -0.0003660 | 0.0000000 | 0.0000000 |

Comments:

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QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV02___

ICP ID Number: ___06383____ Date: 4/7/03

| Analyte | Wave-length (nm) | Interelement Correction Factor for: V | -- | -- | -- | -- |
|---|---|---|---|---|---|---|
| Arsenic | 189.04 | 0.0000000 | | | | |
| Barium | 493.40 | 0.0000000 | | | | |
| Cadmium | 226.50 | 0.0000000 | | | | |
| Chromium | 267.71 | -0.0000350 | | | | |
| Lead1 | 220.35 | -0.0000100 | | | | |
| Lead2 | 220.35 | -0.0002890 | | | | |
| Mercury | | | | | | |
| Selenium1 | 196.02 | 0.0000000 | | | | |
| Selenium2 | 196.02 | 0.0000000 | | | | |
| Silver | 328.06 | 0.0000670 | | | | |

Comments:

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QUALITY ASSURANCE SUMMARY

ICP LINEAR RANGES (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

ICP ID Number: ___06383 _____ Date: 01/15/04

| Analyte | Integ. Time (Sec.) | Concentration (ug/L) | M |
|---|---|---|---|
| Arsenic | 10.00 | 40000.0 | P |
| Barium | 10.00 | 10000.0 | P |
| Cadmium | 10.00 | 50000.0 | P |
| Chromium | 10.00 | 120000.0 | P |
| Lead | 10.00 | 70000.0 | P |
| Mercury | | | NR |
| Selenium | 10.00 | 10000.0 | P |
| Silver | 10.00 | 10000.0 | P |

Comments:

# Preparation and Run Logs

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Method: P__

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| LCSW | 02/24/04 | | 50 |
| PBW | 02/24/04 | | 50 |
| UN7NV | 02/24/04 | | 50 |
| UN7NVD | 02/24/04 | | 50 |
| UN7NVM | 02/24/04 | | 50 |
| UN7NVS | 02/24/04 | | 50 |

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Method: CV_

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| *19006 | 02/24/04 | | 50 |
| *19006D | 02/24/04 | | 50 |
| *19006M | 02/24/04 | | 50 |
| *19006S | 02/24/04 | | 50 |
| LCSW | 02/24/04 | | 50 |
| PBW | 02/24/04 | | 50 |
| UN7NV | 02/24/04 | | 50 |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Instrument ID Number: 06383_____ Method: P_

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AS | BA | CD | CR | PB | HG | SE | AG |
| S0 | 1.00 | 0430 | | X | X | X | X | X | | X | X |
| S | 1.00 | 0435 | | | | | | | | | |
| S | 1.00 | 0439 | | X | X | X | | X | | X | X |
| S | 1.00 | 0444 | | | | | X | | | | |
| HS1 | 1.00 | 0448 | | | | | | | | | |
| HS2 | 1.00 | 0453 | | X | X | X | | X | | X | X |
| HS3 | 1.00 | 0459 | | | | | X | | | | |
| ICV | 1.00 | 0504 | | X | X | X | X | X | | X | X |
| ICB | 1.00 | 0509 | | X | X | X | X | X | | X | X |
| LLC | 1.00 | 0515 | | X | X | X | X | X | | X | X |
| ICSA | 1.00 | 0520 | | X | X | X | X | X | | X | X |
| ICSAB | 1.00 | 0526 | | X | X | X | X | X | | X | X |
| CCV | 1.00 | 0531 | | X | X | X | X | X | | X | X |
| CCB | 1.00 | 0537 | | X | X | X | X | X | | X | X |
| PBW | 1.00 | 0542 | | X | X | X | X | X | | X | X |
| LCSW | 1.00 | 0548 | | X | X | X | X | X | | X | X |
| UN7NV | 1.00 | 0553 | | X | X | X | X | X | | X | X |
| UN7NVA | 1.00 | 0558 | | | | | | | | | |
| UN7NVD | 1.00 | 0604 | | X | X | X | X | X | | X | X |
| UN7NVS | 1.00 | 0609 | | X | X | X | X | X | | X | X |
| UN7NVM | 1.00 | 0615 | | X | X | X | X | X | | X | X |
| UN7NVL | 5.00 | 0620 | | X | X | X | X | X | | X | X |
| ZZZZZZ | 20.00 | 0626 | | | | | | | | | |
| ZZZZZZ | 1.00 | 0631 | | | | | | | | | |
| CCV | 1.00 | 0637 | | X | X | X | X | X | | X | X |
| CCB | 1.00 | 0642 | | X | X | X | X | X | | X | X |
| ZZZZZZ | 1.00 | 0647 | | | | | | | | | |
| ZZZZZZ | 1.00 | 0653 | | | | | | | | | |
| ZZZZZZ | 1.00 | 0658 | | | | | | | | | |
| ZZZZZZ | 20.00 | 0704 | | | | | | | | | |
| ZZZZZZ | 1.00 | 0709 | | | | | | | | | |
| ZZZZZZ | 1.00 | 0715 | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Instrument ID Number: 06383_____ Method: P_

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AS | BA | CD | CR | PB | HG | SE | AG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 20.00 | 0720 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0726 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0731 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0736 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 0742 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 0747 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0753 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0758 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0804 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0815 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 0820 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 0825 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 0831 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 0836 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 0842 | | X | X | X | X | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: RAV02___

Instrument ID Number: 62016_____ Method: CV

Start Date: 02/25/04 End Date: 02/25/04

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AS | BA | CD | CR | PB | HG | SE | AG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1034 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1035 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1036 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1038 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1040 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1042 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1043 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1044 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PBW | 1.00 | 1046 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSW | 1.00 | 1047 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *19006 | 1.00 | 1049 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *19006D | 1.00 | 1050 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *19006S | 1.00 | 1051 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *19006M | 1.00 | 1052 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN7NV | 1.00 | 1054 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UN7NV | 1.00 | 1055 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1056 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1058 | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Raw Data

# ICP Data

Lancaster Laboratories

Data Reviewed By: JM01170 2-25-04

Method Reference
6010B

Data Verified By: NCH0243 2-25-04

Data File Name: 05602T63.DAT

Analyst: 1170

Run Name: 0405602T63

Instrument Parameters:

| | |
|---|---|
| Rinse Time: | 90 sec |
| Individual Integration Time: | 10 sec |
| Total Integration Time: | 30 sec |

| Element Symbol | Element Name | Wavelength(nm) |
|---|---|---|
| Ag | Silver | 328.06 |
| Al | Aluminum | 308.21 |
| As | Arsenic | 189.04 |
| B | Boron | 249.67 |
| Ba | Barium | 493.40 |
| Be | Beryllium | 313.04 |
| Ca | Calcium | 317.93 |
| Cd | Cadmium | 226.50 |
| Co | Cobalt | 228.61 |
| Cr | Chromium | 267.71 |
| Cu | Copper | 324.75 |
| Fe | Iron | 259.94 |
| K | Potassium | 766.49 |
| Mg | Magnesium | 279.07 |
| Mn | Manganese | 257.61 |
| Mo | Molybdenum | 202.03 |
| Na | Sodium | 330.23 |
| Ni | Nickel | 231.60 |
| Pb | Lead | 220.35/1 |
| Pb | Lead | 220.35/2 |
| Sb | Antimony | 206.83/1 |
| Se | Selenium | 196.02/2 |
| Se | Selenium | 196.02/1 |
| Sn | Tin | 189.98 |
| Sr | Strontium | 421.55 |
| Ti | Titanium | 334.94 |
| Tl | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| Y | Yttrium | 371.03 |
| Zn | Zinc | 206.20 |

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The 61E TRACE ICP uses a Crawford-Kunselman Noise Reduction Technique for lead and selenium. This requires the utilization of the first and second order wavelengths in the calculation of each of these metals determinations. The 61E TRACE ICP also utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

standard to compensate for fluctuations in nebulization and plas[redacted]
All Yttrium readings are expressed in counts.



LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 1 S0 02/25/04 04:30

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| Ag | 0.000 | -0.00423 | 3.333 | -0.00413 | -0.00439 | -0.00416 |
| Al | 0.000 | 0.00690 | 1.161 | 0.00699 | 0.00684 | 0.00687 |
| As | 0.000 | 0.00032 | 17.78 | 0.00029 | 0.00028 | 0.00038 |
| B | 0.000 | 0.00116 | 11.61 | 0.00121 | 0.00101 | 0.00127 |
| Ba | 0.000 | 0.00023 | 6.516 | 0.00024 | 0.00021 | 0.00023 |
| Be | 0.000 | -0.00076 | 0.330 | -0.00076 | -0.00076 | -0.00076 |
| Ca | 0.000 | -0.00260 | 1.476 | -0.00263 | -0.00261 | -0.00256 |
| Cd | 0.000 | 0.00000 | 2512. | -0.00016 | 0.00019 | -0.00005 |
| Co | 0.000 | -0.00006 | 17.07 | -0.00007 | -0.00006 | -0.00005 |
| Cr | 0.000 | 0.00012 | 3.539 | 0.00012 | 0.00012 | 0.00012 |
| Cu | 0.000 | -0.00102 | 4.305 | -0.00102 | -0.00106 | -0.00098 |
| Fe | 0.000 | 0.00060 | 31.10 | 0.00069 | 0.00038 | 0.00072 |
| K | 0.000 | 0.01840 | 15.40 | 0.02164 | 0.01637 | 0.01718 |
| Mg | 0.000 | 0.00010 | 29.80 | 0.00009 | 0.00008 | 0.00014 |
| Mn | 0.000 | 0.00001 | 22.00 | 0.00002 | 0.00002 | 0.00001 |
| Mo | 0.000 | -0.00004 | 131.3 | -0.00008 | -0.00006 | 0.00002 |
| Na | 0.000 | 0.00022 | 82.83 | 0.00041 | 0.00022 | 0.00004 |
| Ni | 0.000 | 0.00000 | 2819. | 0.00010 | -0.00012 | 0.00001 |
| Pb | 0.000 | 0.00039 | 167.7 | 0.00018 | 0.00114 | -0.00014 |
| Sb | 0.000 | 0.00129 | 43.54 | 0.00129 | 0.00072 | 0.00185 |
| Se | 0.000 | -0.00157 | 14.79 | -0.00160 | -0.00178 | -0.00132 |
| Sn | 0.000 | -0.00013 | 61.02 | -0.00018 | -0.00004 | -0.00017 |
| Sr | 0.000 | 0.00035 | 4.580 | 0.00037 | 0.00035 | 0.00034 |
| Ti | 0.000 | -0.00100 | 12.63 | -0.00095 | -0.00115 | -0.00092 |
| Tl | 0.000 | -0.00055 | 6.551 | -0.00057 | -0.00051 | -0.00058 |
| V | 0.000 | 0.00001 | 24.43 | 0.00001 | 0.00002 | 0.00001 |
| Y | N/A | 149270.67187 | 0.692 | 148084.00000 | 149756.00000 | 149972.00000 |
| Zn | 0.000 | 0.00002 | 147.8 | 0.00004 | -0.00002 | 0.00006 |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 2 S1 02/25/04 04:35

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| __Al | 50.000 | 0.76335 | 0.563 | 0.75893 | 0.76752 | 0.76361 |
| __Ca | 50.000 | 1.24218 | 0.517 | 1.23534 | 1.24811 | 1.24308 |
| __Fe | 50.000 | 8.16456 | 0.516 | 8.12024 | 8.20419 | 8.16924 |
| __K | 50.000 | 5.75285 | 0.323 | 5.74385 | 5.77424 | 5.74045 |
| __Mg | 50.000 | 0.74361 | 0.536 | 0.73936 | 0.74728 | 0.74419 |
| __Na | 50.000 | 0.11112 | 0.700 | 0.11022 | 0.11166 | 0.11147 |
| __Y | N/A | 147627.32812 | 0.465 | 147212.00000 | 147250.00000 | 148420.00000 |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 3 S2 02/25/04 04:39

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| Ag | 1.000 | 0.28369 | 0.237 | 0.28296 | 0.28429 | 0.28382 |
| As | 1.000 | 0.10347 | 0.246 | 0.10333 | 0.10377 | 0.10332 |
| B | 1.000 | 0.15936 | 0.554 | 0.15834 | 0.15991 | 0.15983 |
| Ba | 1.000 | 0.24081 | 0.311 | 0.24001 | 0.24150 | 0.24090 |
| Be | 1.000 | 0.37932 | 0.398 | 0.37760 | 0.38044 | 0.37993 |
| Cd | 1.000 | 0.75833 | 0.366 | 0.75531 | 0.76079 | 0.75888 |
| Co | 1.000 | 0.11137 | 0.398 | 0.11087 | 0.11170 | 0.11154 |
| Cu | 1.000 | 0.12281 | 0.324 | 0.12236 | 0.12314 | 0.12291 |
| Mn | 1.000 | 0.22469 | 0.365 | 0.22377 | 0.22533 | 0.22498 |
| Ni | 1.000 | 0.27488 | 0.453 | 0.27345 | 0.27576 | 0.27542 |
| Pb | 1.000 | 0.21715 | 0.913 | 0.21738 | 0.21506 | 0.21901 |
| Se | 1.000 | 0.11836 | 0.391 | 0.11834 | 0.11791 | 0.11883 |
| Sr | 1.000 | 0.50968 | 0.308 | 0.50797 | 0.51107 | 0.51000 |
| Tl | 1.000 | 0.04568 | 0.403 | 0.04553 | 0.04588 | 0.04562 |
| Y | N/A | 152154.00000 | 0.318 | 151663.00000 | 152632.00000 | 152167.00000 |
| Zn | 1.000 | 0.06223 | 0.497 | 0.06188 | 0.06234 | 0.06247 |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 4 S3 02/25/04 04:44

| ELEM | CONC (ppm) | AVG INTENSITY RATIO | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| Cr | 1.000 | 0.12399 | 1.347 | 0.12207 | 0.12486 | 0.12505 |
| Mo | 1.000 | 0.10236 | 2.435 | 0.09952 | 0.10337 | 0.10419 |
| Sb | 1.000 | 0.18753 | 1.453 | 0.18439 | 0.18905 | 0.18917 |
| Sn | 1.000 | 0.09630 | 1.437 | 0.09471 | 0.09696 | 0.09723 |
| Ti | 1.000 | 0.52581 | 1.272 | 0.51810 | 0.52915 | 0.53017 |
| V | 1.000 | 0.03144 | 1.098 | 0.03104 | 0.03162 | 0.03165 |
| Y | N/A | 151777.67187 | 0.102 | 151943.00000 | 151756.00000 | 151634.00000 |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 5 HS1 02/25/04 04:48

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00003 | 684.0 | -0.00007 | -0.00025 | 0.00022 | | |
| Al | 50.73395 | 2.071 | 49.52109 | 51.37911 | 51.30165 | | |
| As | 0.00150 | 133.0 | 0.00324 | 0.00195 | -0.00068 | | |
| B | -0.00239 | 36.33 | -0.00218 | -0.00334 | -0.00164 | | |
| Ba | 0.00010 | 25.26 | 0.00011 | 0.00007 | 0.00012 | | |
| Be | 0.00009 | 211.1 | 0.00032 | 0.00000 | -0.00003 | | |
| Ca | 50.71604 | 2.164 | 49.44910 | 51.37568 | 51.32335 | | |
| Cd | 0.00127 | 12.98 | 0.00115 | 0.00146 | 0.00121 | | |
| Co | -0.00059 | 22.90 | -0.00071 | -0.00044 | -0.00062 | | |
| Cr | -0.00062 | 48.93 | -0.00027 | -0.00084 | -0.00074 | | |
| Cu | 0.00086 | 16.80 | 0.00084 | 0.00073 | 0.00102 | | |
| Fe | 50.63522 | 2.234 | 49.32919 | 51.31333 | 51.26313 | | |
| K | 50.45930 | 1.618 | 49.51779 | 50.97428 | 50.88581 | | |
| Mg | 50.61149 | 2.120 | 49.37250 | 51.24356 | 51.21843 | | |
| Mn | -0.00079 | 8.668 | -0.00083 | -0.00071 | -0.00083 | | |
| Mo | 0.00175 | 59.36 | 0.00282 | 0.00073 | 0.00170 | | |
| Na | 50.37203 | 1.746 | 49.37947 | 51.05519 | 50.68142 | | |
| Ni | -0.00012 | 264.6 | 0.00001 | 0.00011 | -0.00050 | | |
| Pb | 0.00188 | 41.03 | 0.00213 | 0.00251 | 0.00102 | | |
| Sb | -0.00251 | 40.23 | -0.00329 | -0.00287 | -0.00136 | | |
| Se | -0.00555 | 32.90 | -0.00394 | -0.00754 | -0.00517 | | |
| Sn | 0.00069 | 472.5 | 0.00387 | 0.00084 | -0.00264 | | |
| Sr | -0.00624 | 1.975 | -0.00610 | -0.00629 | -0.00633 | | |
| Ti | -0.00028 | 39.83 | -0.00017 | -0.00040 | -0.00027 | | |
| Tl | 0.00558 | 26.75 | 0.00599 | 0.00392 | 0.00683 | | |
| V | 0.00168 | 3.821 | 0.00161 | 0.00171 | 0.00173 | | |
| Y | 152242.67187 | 1.129 | 154213.00000 | 151041.00000 | 151474.00000 | | |
| Zn | -0.00041 | 81.22 | -0.00065 | -0.00055 | -0.00002 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 6 HS2 02/25/04 04:53

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 1.00738 | 0.412 | 1.00361 | 1.00669 | 1.01183 | | |
| Al | -0.04045 | 14.00 | -0.03395 | -0.04427 | -0.04315 | | |
| As | 1.00268 | 0.352 | 0.99918 | 1.00625 | 1.00260 | | |
| B | 1.00773 | 0.515 | 1.00282 | 1.00720 | 1.01317 | | |
| Ba | 1.00853 | 0.501 | 1.00375 | 1.00802 | 1.01383 | | |
| Be | 1.00129 | 0.538 | 0.99586 | 1.00134 | 1.00665 | | |
| Ca | -0.04898 | 2.806 | -0.04746 | -0.04934 | -0.05014 | | |
| Cd | 0.99979 | 0.418 | 0.99596 | 0.99915 | 1.00425 | | |
| Co | 1.00069 | 0.529 | 0.99538 | 1.00073 | 1.00597 | | |
| Cr | -0.00088 | 24.03 | -0.00100 | -0.00064 | -0.00100 | | |
| Cu | 1.00913 | 0.458 | 1.00530 | 1.00783 | 1.01426 | | |
| Fe | -0.00498 | 20.00 | -0.00384 | -0.00540 | -0.00570 | | |
| K | 0.02964 | 12.78 | 0.02828 | 0.03393 | 0.02672 | | |
| Mg | -0.01358 | 14.71 | -0.01151 | -0.01374 | -0.01549 | | |
| Mn | 1.00261 | 0.496 | 0.99762 | 1.00262 | 1.00757 | | |
| Mo | -0.00005 | 1765. | -0.00054 | 0.00105 | -0.00067 | | |
| Na | 0.01412 | 151.0 | 0.00342 | 0.03870 | 0.00026 | | |
| Ni | 0.99888 | 0.470 | 0.99408 | 0.99909 | 1.00348 | | |
| Pb | 1.00058 | 1.274 | 0.98623 | 1.00490 | 1.01061 | | |
| Sb | -0.00218 | 16.32 | -0.00204 | -0.00192 | -0.00259 | | |
| Se | 1.00120 | 1.057 | 0.98934 | 1.00458 | 1.00968 | | |
| Sn | 0.00273 | 165.0 | -0.00152 | 0.00227 | 0.00745 | | |
| Sr | 1.00800 | 0.518 | 1.00304 | 1.00750 | 1.01345 | | |
| Ti | -0.00006 | 98.65 | -0.00002 | -0.00002 | -0.00012 | | |
| Tl | 0.99928 | 0.882 | 0.98915 | 1.00345 | 1.00523 | | |
| V | -0.00043 | 111.3 | -0.00070 | 0.00012 | -0.00070 | | |
| Y | 152746.67187 | 0.327 | 152696.00000 | 153270.00000 | 152274.00000 | | |
| Zn | 0.99904 | 0.366 | 0.99554 | 0.99873 | 1.00284 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 7 HS3 02/25/04 04:59

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00027 | 148.5 | 0.00004 | 0.00075 | 0.00003 | | |
| Al | -0.00407 | 168.5 | 0.00222 | -0.00304 | -0.01139 | | |
| As | -0.00154 | 15.52 | -0.00150 | -0.00132 | -0.00180 | | |
| B | 0.01143 | 3.940 | 0.01103 | 0.01192 | 0.01136 | | |
| Ba | 0.00006 | 85.81 | 0.00001 | 0.00012 | 0.00006 | | |
| Be | -0.00003 | 9.460 | -0.00003 | -0.00003 | -0.00003 | | |
| Ca | -0.04813 | 0.839 | -0.04837 | -0.04767 | -0.04837 | | |
| Cd | 0.00015 | 149.8 | 0.00040 | 0.00006 | -0.00002 | | |
| Co | -0.00001 | 3106. | -0.00014 | 0.00063 | -0.00055 | | |
| Cr | 1.01079 | 0.454 | 1.00664 | 1.01572 | 1.01001 | | |
| Cu | 0.00020 | 157.7 | 0.00012 | 0.00054 | -0.00007 | | |
| Fe | -0.00569 | 13.80 | -0.00479 | -0.00604 | -0.00624 | | |
| K | 0.03648 | 14.81 | 0.03872 | 0.04039 | 0.03031 | | |
| Mg | -0.01094 | 18.93 | -0.01049 | -0.00913 | -0.01320 | | |
| Mn | 0.00005 | 203.4 | 0.00017 | 0.00005 | -0.00006 | | |
| Mo | 1.01771 | 0.989 | 1.00631 | 1.02537 | 1.02146 | | |
| Na | 0.06997 | 134.9 | 0.14891 | 0.09570 | -0.03468 | | |
| Ni | -0.00045 | 70.22 | -0.00021 | -0.00033 | -0.00081 | | |
| Pb | 0.00077 | 138.8 | -0.00046 | 0.00144 | 0.00135 | | |
| Sb | 1.01487 | 0.571 | 1.00844 | 1.01969 | 1.01649 | | |
| Se | -0.00119 | 67.61 | -0.00026 | -0.00160 | -0.00172 | | |
| Sn | 1.00930 | 0.965 | 0.99888 | 1.01817 | 1.01086 | | |
| Sr | -0.00011 | 23.63 | -0.00008 | -0.00012 | -0.00013 | | |
| Ti | 1.01422 | 0.414 | 1.00991 | 1.01832 | 1.01442 | | |
| Tl | -0.00305 | 88.54 | -0.00011 | -0.00362 | -0.00543 | | |
| V | 1.01325 | 0.465 | 1.00859 | 1.01803 | 1.01314 | | |
| Y | 150638.67187 | 0.152 | 150567.00000 | 150453.00000 | 150896.00000 | | |
| Zn | -0.00029 | 254.0 | 0.00045 | -0.00029 | -0.00104 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 8 ICV 02/25/04 05:04

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.61404 | 0.308 | 0.61211 | 0.61591 | 0.61409 | | |
| Al | 30.94063 | 0.568 | 30.77437 | 31.12479 | 30.92273 | | |
| As | 0.58214 | 0.312 | 0.58072 | 0.58150 | 0.58419 | | |
| B | 0.63632 | 0.308 | 0.63412 | 0.63791 | 0.63692 | | |
| Ba | 0.60747 | 0.451 | 0.60542 | 0.61059 | 0.60640 | | |
| Be | 0.61746 | 0.843 | 0.61193 | 0.61819 | 0.62227 | | |
| Ca | 30.81862 | 0.983 | 30.51027 | 30.82963 | 31.11596 | | |
| Cd | 0.59688 | 0.801 | 0.59167 | 0.59792 | 0.60106 | | |
| Co | 0.60191 | 0.755 | 0.59693 | 0.60296 | 0.60584 | | |
| Cr | 0.60972 | 0.846 | 0.60400 | 0.61113 | 0.61404 | | |
| Cu | 0.61955 | 0.537 | 0.61717 | 0.62336 | 0.61813 | | |
| Fe | 30.68174 | 0.730 | 30.43099 | 30.75178 | 30.86244 | | |
| K | 30.68631 | 0.533 | 30.53346 | 30.85889 | 30.66658 | | |
| Mg | 30.36984 | 0.776 | 30.10931 | 30.43106 | 30.56916 | | |
| Mn | 0.61274 | 0.624 | 0.60851 | 0.61379 | 0.61594 | | |
| Mo | 0.61897 | 1.219 | 0.61060 | 0.62105 | 0.62526 | | |
| Na | 30.73337 | 0.579 | 30.60584 | 30.93676 | 30.65752 | | |
| Ni | 0.60646 | 0.878 | 0.60065 | 0.60761 | 0.61112 | | |
| Pb | 0.60888 | 1.176 | 0.60164 | 0.60905 | 0.61596 | | |
| Sb | 0.61427 | 0.690 | 0.60974 | 0.61814 | 0.61494 | | |
| Se | 0.61122 | 0.877 | 0.60569 | 0.61640 | 0.61155 | | |
| Sn | 0.61767 | 0.705 | 0.61306 | 0.61822 | 0.62173 | | |
| Sr | 0.61667 | 0.439 | 0.61411 | 0.61950 | 0.61639 | | |
| Ti | 0.61424 | 0.596 | 0.61008 | 0.61699 | 0.61564 | | |
| Tl | 0.58985 | 1.976 | 0.57868 | 0.58892 | 0.60194 | | |
| V | 0.61141 | 0.590 | 0.60724 | 0.61327 | 0.61371 | | |
| Y | 151693.00000 | 0.798 | 152672.00000 | 152068.00000 | 150339.00000 | | |
| Zn | 0.60379 | 1.186 | 0.59690 | 0.60328 | 0.61119 | | |

0851

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 9 ICB 02/25/04 05:09

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00023 | 130.1 | -0.00018 | 0.00004 | -0.00056 | | |
| Al | -0.03838 | 22.37 | -0.02967 | -0.03863 | -0.04685 | | |
| As | -0.00515 | 93.30 | -0.00552 | -0.00017 | -0.00977 | | |
| B | -0.00298 | 13.59 | -0.00300 | -0.00256 | -0.00337 | | |
| Ba | 0.00000 | 3042. | 0.00007 | -0.00001 | -0.00006 | | |
| Be | 0.00001 | 320.2 | 0.00001 | 0.00004 | -0.00002 | | |
| Ca | -0.05303 | 3.032 | -0.05435 | -0.05124 | -0.05350 | | |
| Cd | 0.00016 | 116.5 | 0.00033 | 0.00019 | -0.00004 | | |
| Co | -0.00066 | 45.98 | -0.00043 | -0.00053 | -0.00100 | | |
| Cr | -0.00055 | 83.08 | -0.00016 | -0.00043 | -0.00106 | | |
| Cu | 0.00029 | 64.87 | 0.00014 | 0.00050 | 0.00022 | | |
| Fe | -0.00518 | 15.93 | -0.00432 | -0.00523 | -0.00597 | | |
| K | 0.02799 | 23.24 | 0.03052 | 0.03286 | 0.02060 | | |
| Mg | -0.01478 | 21.77 | -0.01107 | -0.01641 | -0.01685 | | |
| Mn | 0.00002 | 167.3 | 0.00006 | 0.00003 | -0.00002 | | |
| Mo | 0.00045 | 133.7 | 0.00060 | 0.00098 | -0.00021 | | |
| Na | 0.02368 | 612.7 | 0.12807 | 0.08503 | -0.14205 | | |
| Ni | -0.00029 | 245.6 | 0.00008 | 0.00015 | -0.00113 | | |
| Pb | 0.00155 | 118.1 | 0.00303 | 0.00214 | -0.00050 | | |
| Sb | -0.00076 | 461.0 | 0.00315 | -0.00365 | -0.00179 | | |
| Se | -0.00101 | 166.3 | -0.00295 | -0.00026 | 0.00016 | | |
| Sn | 0.00064 | 475.2 | 0.00078 | 0.00366 | -0.00250 | | |
| Sr | -0.00018 | 29.43 | -0.00013 | -0.00017 | -0.00024 | | |
| Ti | 0.00004 | 405.0 | 0.00005 | 0.00021 | -0.00013 | | |
| Tl | 0.00320 | 150.7 | 0.00440 | 0.00731 | -0.00211 | | |
| V | -0.00022 | 285.3 | 0.00033 | -0.00008 | -0.00091 | | |
| Y | 154045.67187 | 0.675 | 152853.00000 | 154774.00000 | 154510.00000 | | |
| Zn | -0.00001 | 3532. | 0.00047 | -0.00005 | -0.00046 | | |

8852

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 10 LLC 02/25/04 05:15

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00478 | 4.574 | 0.00471 | 0.00460 | 0.00502 | | |
| Al | 0.17456 | 3.460 | 0.18143 | 0.17008 | 0.17218 | | |
| As | 0.00764 | 21.75 | 0.00735 | 0.00614 | 0.00943 | | |
| B | 0.04878 | 1.224 | 0.04891 | 0.04812 | 0.04929 | | |
| Ba | 0.00516 | 0.815 | 0.00512 | 0.00517 | 0.00520 | | |
| Be | 0.00514 | 0.140 | 0.00513 | 0.00514 | 0.00514 | | |
| Ca | 0.16014 | 0.531 | 0.16096 | 0.15926 | 0.16019 | | |
| Cd | 0.00544 | 0.755 | 0.00543 | 0.00548 | 0.00540 | | |
| Co | 0.00476 | 7.155 | 0.00504 | 0.00487 | 0.00438 | | |
| Cr | 0.00461 | 7.596 | 0.00489 | 0.00471 | 0.00422 | | |
| Cu | 0.01076 | 2.498 | 0.01051 | 0.01074 | 0.01104 | | |
| Fe | 0.20067 | 0.111 | 0.20077 | 0.20083 | 0.20042 | | |
| K | 0.49839 | 1.075 | 0.50458 | 0.49536 | 0.49524 | | |
| Mg | 0.08637 | 1.499 | 0.08508 | 0.08767 | 0.08636 | | |
| Mn | 0.00530 | 0.644 | 0.00528 | 0.00527 | 0.00533 | | |
| Mo | 0.00956 | 3.559 | 0.00981 | 0.00917 | 0.00971 | | |
| Na | 1.01026 | 17.91 | 1.00973 | 1.19148 | 0.82956 | | |
| Ni | 0.01034 | 5.938 | 0.00963 | 0.01071 | 0.01068 | | |
| Pb | 0.02060 | 3.761 | 0.02102 | 0.02108 | 0.01971 | | |
| Sb | 0.01150 | 9.650 | 0.01058 | 0.01118 | 0.01273 | | |
| Se | 0.00781 | 5.122 | 0.00816 | 0.00737 | 0.00790 | | |
| Sn | 0.02162 | 12.82 | 0.02004 | 0.02000 | 0.02482 | | |
| Sr | 0.00498 | 0.961 | 0.00504 | 0.00495 | 0.00496 | | |
| Ti | 0.00982 | 1.249 | 0.00996 | 0.00971 | 0.00980 | | |
| Tl | 0.02318 | 19.96 | 0.02680 | 0.02477 | 0.01797 | | |
| V | 0.00495 | 1.005 | 0.00500 | 0.00493 | 0.00491 | | |
| Y | 153314.67187 | 0.912 | 151739.00000 | 153791.00000 | 154414.00000 | | |
| Zn | 0.02008 | 2.690 | 0.02018 | 0.01949 | 0.02055 | | |

8853

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 11 ICSA 02/25/04 05:20

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00079 | 26.58 | -0.00084 | -0.00056 | -0.00097 | | |
| Al | 509.86434 | 0.876 | 504.76208 | 513.08020 | 511.75079 | | |
| As | 0.00095 | 772.5 | -0.00747 | 0.00388 | 0.00646 | | |
| B | -0.00430 | 28.58 | -0.00571 | -0.00371 | -0.00347 | | |
| Ba | -0.00071 | 7.525 | -0.00076 | -0.00071 | -0.00066 | | |
| Be | 0.00013 | 4.174 | 0.00013 | 0.00014 | 0.00013 | | |
| Ca | 531.04290 | 0.841 | 526.17211 | 534.95867 | 531.99792 | | |
| Cd | 0.00507 | 12.46 | 0.00438 | 0.00522 | 0.00562 | | |
| Co | 0.00328 | 16.69 | 0.00272 | 0.00381 | 0.00330 | | |
| Cr | -0.00347 | 11.52 | -0.00358 | -0.00302 | -0.00380 | | |
| Cu | 0.00321 | 17.42 | 0.00256 | 0.00355 | 0.00352 | | |
| Fe | 200.34965 | 0.690 | 198.75741 | 201.24874 | 201.04280 | | |
| K | 0.02970 | 45.91 | 0.04537 | 0.02331 | 0.02043 | | |
| Mg | 506.23666 | 0.978 | 500.53912 | 509.54067 | 508.63015 | | |
| Mn | 0.00360 | 6.265 | 0.00340 | 0.00384 | 0.00356 | | |
| Mo | -0.00178 | 145.0 | -0.00476 | -0.00053 | -0.00005 | | |
| Na | 0.02005 | 779.2 | 0.20015 | -0.07956 | -0.06042 | | |
| Ni | 0.00205 | 62.85 | 0.00070 | 0.00328 | 0.00218 | | |
| Pb | 0.00412 | 36.92 | 0.00404 | 0.00568 | 0.00264 | | |
| Sb | -0.00105 | 1491. | -0.01891 | 0.01087 | 0.00487 | | |
| Se | -0.00708 | 96.88 | -0.01202 | 0.00075 | -0.00997 | | |
| Sn | 0.00381 | 234.8 | -0.00652 | 0.00868 | 0.00929 | | |
| Sr | -0.07110 | 0.909 | -0.07038 | -0.07165 | -0.07126 | | |
| Ti | -0.00527 | 2.147 | -0.00514 | -0.00535 | -0.00532 | | |
| Tl | 0.00048 | 648.3 | -0.00101 | 0.00412 | -0.00165 | | |
| V | 0.00343 | 28.81 | 0.00229 | 0.00403 | 0.00398 | | |
| Y | 143128.32812 | 1.044 | 141441.00000 | 143656.00000 | 144288.00000 | | |
| Zn | 0.01176 | 19.35 | 0.00927 | 0.01225 | 0.01375 | | |

8854

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 12 ICSAB 02/25/04 05:26

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.21540 | 0.768 | 0.21509 | 0.21719 | 0.21392 | | |
| Al | 518.71368 | 0.894 | 520.16320 | 522.45629 | 513.52154 | | |
| As | 0.10253 | 6.963 | 0.10869 | 0.10418 | 0.09470 | | |
| B | -0.00185 | 28.52 | -0.00127 | -0.00197 | -0.00230 | | |
| Ba | 0.52487 | 0.907 | 0.52657 | 0.52854 | 0.51949 | | |
| Be | 0.51171 | 0.867 | 0.51276 | 0.51553 | 0.50684 | | |
| Ca | 534.03863 | 1.136 | 535.19567 | 539.44873 | 527.47155 | | |
| Cd | 0.96560 | 0.934 | 0.96853 | 0.97279 | 0.95548 | | |
| Co | 0.49456 | 0.895 | 0.49627 | 0.49788 | 0.48953 | | |
| Cr | 0.50299 | 0.932 | 0.50468 | 0.50661 | 0.49769 | | |
| Cu | 0.54769 | 0.869 | 0.54983 | 0.55101 | 0.54223 | | |
| Fe | 203.17285 | 0.964 | 203.52990 | 204.92939 | 201.05923 | | |
| K | 0.02194 | 62.88 | 0.00832 | 0.03591 | 0.02158 | | |
| Mg | 514.11187 | 0.809 | 514.95324 | 517.78771 | 509.59472 | | |
| Mn | 0.50926 | 0.890 | 0.51045 | 0.51307 | 0.50425 | | |
| Mo | -0.00114 | 103.1 | -0.00023 | -0.00071 | -0.00247 | | |
| Na | -0.05846 | 49.08 | -0.03195 | -0.05449 | -0.08893 | | |
| Ni | 0.97320 | 0.801 | 0.97515 | 0.97985 | 0.96461 | | |
| Pb | 0.05683 | 3.647 | 0.05769 | 0.05446 | 0.05832 | | |
| Sb | 0.63363 | 1.233 | 0.64229 | 0.63150 | 0.62710 | | |
| Se | 0.04896 | 5.407 | 0.04946 | 0.05131 | 0.04609 | | |
| Sn | 0.00419 | 73.39 | 0.00146 | 0.00358 | 0.00753 | | |
| Sr | -0.07140 | 1.146 | -0.07156 | -0.07213 | -0.07052 | | |
| Ti | -0.00541 | 3.945 | -0.00561 | -0.00544 | -0.00518 | | |
| Tl | 0.10270 | 1.652 | 0.10288 | 0.10092 | 0.10430 | | |
| V | 0.51873 | 0.933 | 0.51964 | 0.52306 | 0.51350 | | |
| Y | 142352.00000 | 0.735 | 141983.00000 | 141539.00000 | 143534.00000 | | |
| Zn | 0.96946 | 0.771 | 0.97236 | 0.97506 | 0.96097 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 13 CCV 02/25/04 05:31

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50261 | 0.772 | 0.50344 | 0.49838 | 0.50602 | | |
| Al | 25.51491 | 0.899 | 25.55221 | 25.26894 | 25.72360 | | |
| As | 0.46585 | 0.927 | 0.46920 | 0.46098 | 0.46738 | | |
| B | 0.50520 | 0.904 | 0.50429 | 0.50116 | 0.51016 | | |
| Ba | 0.48807 | 0.893 | 0.48884 | 0.48338 | 0.49200 | | |
| Be | 0.49586 | 0.959 | 0.49603 | 0.49102 | 0.50054 | | |
| Ca | 25.23265 | 0.974 | 25.18734 | 25.01252 | 25.49808 | | |
| Cd | 0.48388 | 0.817 | 0.48420 | 0.47978 | 0.48767 | | |
| Co | 0.48922 | 0.872 | 0.48827 | 0.48550 | 0.49388 | | |
| Cr | 0.48974 | 0.930 | 0.48933 | 0.48541 | 0.49449 | | |
| Cu | 0.49884 | 0.928 | 0.49920 | 0.49404 | 0.50328 | | |
| Fe | 25.41178 | 0.929 | 25.39751 | 25.18296 | 25.65488 | | |
| K | 25.26233 | 0.751 | 25.35788 | 25.04363 | 25.38548 | | |
| Mg | 25.20248 | 0.889 | 25.18736 | 24.98617 | 25.43391 | | |
| Mn | 0.49243 | 0.919 | 0.49257 | 0.48784 | 0.49689 | | |
| Mo | 0.49308 | 0.977 | 0.48990 | 0.49071 | 0.49863 | | |
| Na | 25.44402 | 0.831 | 25.42978 | 25.23984 | 25.66244 | | |
| Ni | 0.48537 | 0.605 | 0.48365 | 0.48369 | 0.48876 | | |
| Pb | 0.49492 | 0.815 | 0.49799 | 0.49035 | 0.49642 | | |
| Sb | 0.48960 | 1.527 | 0.48630 | 0.48434 | 0.49816 | | |
| Se | 0.49386 | 0.893 | 0.49713 | 0.48884 | 0.49562 | | |
| Sn | 0.49643 | 1.382 | 0.49633 | 0.48962 | 0.50334 | | |
| Sr | 0.49679 | 0.888 | 0.49763 | 0.49202 | 0.50072 | | |
| Ti | 0.49189 | 0.951 | 0.49226 | 0.48704 | 0.49637 | | |
| Tl | 0.47418 | 1.659 | 0.46621 | 0.47438 | 0.48194 | | |
| V | 0.49099 | 0.931 | 0.49121 | 0.48630 | 0.49545 | | |
| Y | 150665.67187 | 1.494 | 148203.00000 | 152620.00000 | 151174.00000 | | |
| Zn | 0.48373 | 0.857 | 0.48209 | 0.48066 | 0.48845 | | |

8856

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 14 CCB 02/25/04 05:37

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00006 | 243.0 | 0.00009 | -0.00010 | 0.00019 | | |
| Al | -0.02202 | 60.62 | -0.00684 | -0.02729 | -0.03193 | | |
| As | -0.00372 | 13.85 | -0.00421 | -0.00376 | -0.00318 | | |
| B | -0.00285 | 70.83 | -0.00104 | -0.00246 | -0.00503 | | |
| Ba | -0.00002 | 88.74 | 0.00000 | -0.00001 | -0.00004 | | |
| Be | 0.00009 | 106.5 | 0.00020 | 0.00005 | 0.00001 | | |
| Ca | -0.04193 | 9.953 | -0.03711 | -0.04426 | -0.04443 | | |
| Cd | 0.00019 | 40.77 | 0.00027 | 0.00011 | 0.00020 | | |
| Co | -0.00025 | 25.93 | -0.00022 | -0.00033 | -0.00021 | | |
| Cr | -0.00014 | 519.4 | 0.00067 | -0.00031 | -0.00079 | | |
| Cu | 0.00027 | 15.00 | 0.00023 | 0.00027 | 0.00032 | | |
| Fe | -0.00028 | 850.7 | 0.00254 | -0.00152 | -0.00188 | | |
| K | 0.04272 | 5.938 | 0.04437 | 0.04399 | 0.03980 | | |
| Mg | -0.00049 | 937.4 | 0.00372 | 0.00030 | -0.00553 | | |
| Mn | 0.00013 | 66.35 | 0.00021 | 0.00003 | 0.00015 | | |
| Mo | 0.00040 | 331.9 | 0.00192 | -0.00049 | -0.00023 | | |
| Na | 0.17319 | 65.22 | 0.29174 | 0.06680 | 0.16102 | | |
| Ni | 0.00000 | 15576 | 0.00045 | -0.00075 | 0.00030 | | |
| Pb | 0.00043 | 206.5 | 0.00052 | 0.00126 | -0.00050 | | |
| Sb | 0.00055 | 347.1 | 0.00010 | 0.00268 | -0.00111 | | |
| Se | -0.00315 | 6.251 | -0.00298 | -0.00337 | -0.00310 | | |
| Sn | 0.00149 | 204.6 | 0.00487 | -0.00109 | 0.00070 | | |
| Sr | -0.00015 | 36.50 | -0.00009 | -0.00020 | -0.00016 | | |
| Ti | -0.00014 | 71.57 | -0.00005 | -0.00012 | -0.00025 | | |
| Tl | -0.00019 | 441.2 | 0.00024 | -0.00120 | 0.00036 | | |
| V | 0.00021 | 491.3 | 0.00143 | -0.00028 | -0.00049 | | |
| Y | 149764.00000 | 0.648 | 148649.00000 | 150430.00000 | 150213.00000 | | |
| Zn | 0.00046 | 97.10 | 0.00082 | 0.00060 | -0.00003 | | |

6857

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 15 PBW 02/25/04 05:42
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00056 | 138.5 | -0.00080 | -0.00120 | 0.00031 | | |
| Al | -0.01922 | 40.06 | -0.01035 | -0.02423 | -0.02307 | | |
| As | -0.00271 | 43.95 | -0.00165 | -0.00248 | -0.00400 | | |
| B | 0.01437 | 10.99 | 0.01613 | 0.01307 | 0.01392 | | |
| Ba | 0.00071 | 6.206 | 0.00066 | 0.00073 | 0.00074 | | |
| Be | 0.00000 | 992.7 | 0.00000 | 0.00008 | -0.00005 | | |
| Ca | -0.01308 | 27.19 | -0.01689 | -0.01251 | -0.00985 | | |
| Cd | 0.00012 | 160.0 | -0.00010 | 0.00027 | 0.00020 | | |
| Co | -0.00032 | 103.0 | -0.00062 | -0.00038 | 0.00003 | | |
| Cr | -0.00044 | 89.18 | -0.00090 | -0.00026 | -0.00016 | | |
| Cu | 0.00128 | 39.48 | 0.00080 | 0.00123 | 0.00180 | | |
| Fe | -0.00012 | 227.0 | 0.00008 | -0.00046 | 0.00000 | | |
| K | 0.08940 | 23.65 | 0.06739 | 0.10957 | 0.09124 | | |
| Mg | 0.00658 | 79.48 | 0.00649 | 0.00139 | 0.01185 | | |
| Mn | 0.00040 | 3.364 | 0.00039 | 0.00041 | 0.00041 | | |
| Mo | -0.00059 | 131.0 | -0.00145 | 0.00003 | -0.00034 | | |
| Na | 1178.24658 | 0.497 | 1184.70922 | 1176.73840 | 1173.29211 | | |
| Ni | -0.00020 | 90.02 | -0.00036 | -0.00022 | 0.00000 | | |
| Pb | 0.00104 | 72.74 | 0.00148 | 0.00149 | 0.00016 | | |
| Sb | -0.00591 | 19.09 | -0.00630 | -0.00679 | -0.00464 | | |
| Se | 0.00357 | 66.70 | 0.00382 | 0.00107 | 0.00582 | | |
| Sn | 0.08282 | 0.537 | 0.08334 | 0.08252 | 0.08262 | | |
| Sr | 0.00030 | 3.722 | 0.00032 | 0.00030 | 0.00030 | | |
| Ti | 0.00042 | 18.63 | 0.00045 | 0.00033 | 0.00048 | | |
| Tl | 0.00125 | 116.2 | 0.00245 | 0.00168 | -0.00036 | | |
| V | 0.00000 | 2449. | 0.00013 | 0.00012 | -0.00029 | | |
| Y | 152414.00000 | 0.770 | 151208.00000 | 152479.00000 | 153555.00000 | | |
| Zn | 0.00248 | 0.919 | 0.00250 | 0.00248 | 0.00246 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 16 LCSW 02/25/04 05:48
****,1-1,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05336 | 1.295 | 0.05414 | 0.05284 | 0.05309 | | |
| Al | 2.17943 | 1.608 | 2.21947 | 2.15430 | 2.16452 | | |
| ✓As | 2.10404 | 0.899 | 2.12590 | 2.09305 | 2.09317 | | |
| B | 2.17895 | 0.994 | 2.20306 | 2.16107 | 2.17271 | | |
| ✓Ba | 2.04726 | 1.083 | 2.07271 | 2.03206 | 2.03700 | | |
| Be | 0.05254 | 0.881 | 0.05306 | 0.05220 | 0.05235 | | |
| Ca | 4.15770 | 0.740 | 4.19250 | 4.13407 | 4.14652 | | |
| ✓Cd | 0.05302 | 1.073 | 0.05367 | 0.05261 | 0.05279 | | |
| Co | 0.52154 | 0.830 | 0.52652 | 0.51861 | 0.51950 | | |
| ✓Cr | 0.20651 | 1.168 | 0.20926 | 0.20476 | 0.20550 | | |
| ✓Cu | 0.27104 | 0.996 | 0.27414 | 0.26917 | 0.26982 | | |
| Fe | 1.04008 | 1.024 | 1.05238 | 1.03383 | 1.03403 | | |
| K | 5.78087 | 0.789 | 5.83284 | 5.74745 | 5.76232 | | |
| Mg | 2.05450 | 0.853 | 2.07372 | 2.03936 | 2.05042 | | |
| Mn | 0.51873 | 0.893 | 0.52404 | 0.51551 | 0.51663 | | |
| Mo | 2.12529 | 0.241 | 2.12824 | 2.11936 | 2.12826 | | |
| Na | 1298.11767 | 0.612 | 1307.09899 | 1291.97851 | 1295.27551 | | |
| ✓Ni | 0.52279 | 0.634 | 0.52653 | 0.52022 | 0.52161 | | |
| ✓Pb | 0.53204 | 0.197 | 0.53129 | 0.53158 | 0.53324 | | |
| Sb | 0.52341 | 1.151 | 0.53010 | 0.51841 | 0.52171 | | |
| ✓Se | 2.13521 | 0.355 | 2.13066 | 2.13098 | 2.14397 | | |
| Sn | 4.43063 | 0.897 | 4.47625 | 4.40337 | 4.41226 | | |
| Sr | 1.02950 | 1.047 | 1.04186 | 1.02201 | 1.02463 | | |
| Ti | 1.02188 | 0.941 | 1.03278 | 1.01453 | 1.01833 | | |
| Tl | 2.07659 | 0.119 | 2.07897 | 2.07403 | 2.07677 | | |
| V | 0.51693 | 1.029 | 0.52303 | 0.51324 | 0.51451 | | |
| Y | 151229.67187 | 1.168 | 149193.00000 | 152344.00000 | 152152.00000 | | |
| ✓Zn | 0.52902 | 0.870 | 0.53428 | 0.52574 | 0.52704 | | |

8859

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 17 4219022 02/25/04 05:53
U***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00125 | 11.41 | -0.00111 | -0.00140 | -0.00125 | | |
| Al | 0.00351 | 291.4 | 0.01342 | 0.00415 | -0.00703 | | |
| As | 0.00537 | 18.06 | 0.00648 | 0.00490 | 0.00472 | | |
| B | 0.37932 | 0.402 | 0.37848 | 0.38108 | 0.37839 | | |
| Ba | 0.32021 | 0.436 | 0.31874 | 0.32152 | 0.32037 | | |
| Be | 0.00011 | 71.50 | 0.00021 | 0.00010 | 0.00004 | | |
| Ca | 1263.00317 | 0.565 | 1258.97497 | 1271.24792 | 1258.78662 | | |
| Cd | 0.00059 | 10.56 | 0.00061 | 0.00064 | 0.00052 | | |
| Co | 0.00418 | 16.72 | 0.00473 | 0.00441 | 0.00339 | | |
| Cr | 0.01097 | 1.424 | 0.01112 | 0.01097 | 0.01081 | | |
| Cu | 0.00647 | 3.407 | 0.00647 | 0.00670 | 0.00626 | | |
| Fe | 0.00274 | 23.29 | 0.00347 | 0.00246 | 0.00229 | | |
| K | 29.48326 | 0.342 | 29.47480 | 29.58835 | 29.38664 | | |
| Mg | 12.61985 | 0.442 | 12.55991 | 12.67024 | 12.62941 | | |
| Mn | 1.23569 | 0.502 | 1.22898 | 1.24122 | 1.23687 | | |
| Mo | 0.03765 | 5.833 | 0.03929 | 0.03850 | 0.03515 | | |
| Na | 1314.45202 | 0.431 | 1308.34790 | 1319.56091 | 1315.44726 | | |
| Ni | 0.01481 | 1.150 | 0.01479 | 0.01499 | 0.01465 | | |
| Pb | 0.00335 | 3.915 | 0.00345 | 0.00339 | 0.00320 | | |
| Sb | 0.00333 | 57.70 | 0.00430 | 0.00457 | 0.00111 | | |
| Se | 0.01211 | 17.79 | 0.01347 | 0.00962 | 0.01324 | | |
| Sn | 0.00906 | 17.05 | 0.00747 | 0.01056 | 0.00915 | | |
| Sr | 2.34692 | 0.492 | 2.33481 | 2.35786 | 2.34808 | | |
| Ti | -0.00185 | 5.510 | -0.00196 | -0.00182 | -0.00177 | | |
| Tl | 0.00191 | 185.0 | 0.00415 | -0.00217 | 0.00376 | | |
| V | 0.00999 | 3.625 | 0.01040 | 0.00970 | 0.00988 | | |
| Y | 143652.67187 | 0.362 | 143165.00000 | 143592.00000 | 144201.00000 | | |
| Zn | 0.00251 | 19.55 | 0.00304 | 0.00207 | 0.00242 | | |

8868

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 18 4219022 02/25/04 05:58
UP**,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.01982 | 1.435 | 0.01961 | 0.01970 | 0.02014 | | |
| Al | 1.10625 | 0.388 | 1.11121 | 1.10358 | 1.10394 | | |
| As | 0.49472 | 0.919 | 0.49968 | 0.49074 | 0.49373 | | |
| B | 0.62707 | 0.157 | 0.62756 | 0.62594 | 0.62771 | | |
| Ba | 0.36808 | 0.080 | 0.36805 | 0.36780 | 0.36839 | | |
| Be | 0.01930 | 0.185 | 0.01926 | 0.01931 | 0.01932 | | |
| Ca | 1220.47241 | 0.268 | 1216.77563 | 1221.61621 | 1223.02526 | | |
| Cd | 0.04835 | 0.148 | 0.04840 | 0.04827 | 0.04839 | | |
| Co | 0.10219 | 0.257 | 0.10206 | 0.10202 | 0.10249 | | |
| Cr | 0.20488 | 0.309 | 0.20422 | 0.20548 | 0.20493 | | |
| Cu | 0.54506 | 0.061 | 0.54543 | 0.54478 | 0.54497 | | |
| Fe | 0.49319 | 0.105 | 0.49283 | 0.49379 | 0.49295 | | |
| K | 32.19405 | 0.381 | 32.05305 | 32.25046 | 32.27865 | | |
| Mg | 13.45433 | 0.166 | 13.43131 | 13.45571 | 13.47599 | | |
| Mn | 1.28092 | 0.153 | 1.27876 | 1.28138 | 1.28262 | | |
| Mo | 0.23476 | 1.399 | 0.23108 | 0.23579 | 0.23740 | | |
| Na | 1309.20849 | 0.219 | 1306.04858 | 1309.89807 | 1311.67883 | | |
| Ni | 0.16191 | 0.562 | 0.16240 | 0.16247 | 0.16086 | | |
| Pb | 0.49613 | 0.385 | 0.49601 | 0.49428 | 0.49810 | | |
| Sb | 0.39967 | 0.424 | 0.39991 | 0.39786 | 0.40122 | | |
| Se | 0.84034 | 0.338 | 0.83728 | 0.84289 | 0.84086 | | |
| Sn | 0.61099 | 0.164 | 0.61215 | 0.61036 | 0.61046 | | |
| Sr | 2.35335 | 0.081 | 2.35226 | 2.35222 | 2.35557 | | |
| Ti | 0.09875 | 0.448 | 0.09824 | 0.09902 | 0.09900 | | |
| Tl | 0.98447 | 0.245 | 0.98308 | 0.98307 | 0.98726 | | |
| V | 0.10815 | 0.433 | 0.10860 | 0.10817 | 0.10766 | | |
| Y | 143967.00000 | 0.150 | 143852.00000 | 143832.00000 | 144217.00000 | | |
| Zn | 0.11847 | 0.656 | 0.11769 | 0.11847 | 0.11925 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 19 4219022 02/25/04 06:04
D***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | -0.00176 | 37.90 | -0.00254 | -0.00137 | -0.00139 | | |
| Al | 0.00836 | 69.13 | 0.01406 | 0.00852 | 0.00250 | | |
| ✓As | 0.00281 | 35.76 | 0.00344 | 0.00334 | 0.00165 | | |
| B | 0.38219 | 0.184 | 0.38154 | 0.38295 | 0.38209 | | |
| ✓Ba | 0.32499 | 0.387 | 0.32459 | 0.32640 | 0.32398 | | |
| Be | 0.00021 | 93.96 | 0.00044 | 0.00014 | 0.00006 | | |
| Ca | 1271.50598 | 1.257 | 1255.76879 | 1287.74548 | 1271.00366 | | |
| ✓Cd | 0.00055 | 65.63 | 0.00016 | 0.00060 | 0.00089 | | |
| Co | 0.00405 | 5.744 | 0.00420 | 0.00378 | 0.00417 | | |
| ✓Cr | 0.01066 | 4.654 | 0.01015 | 0.01071 | 0.01114 | | |
| ✓Cu | 0.00586 | 11.16 | 0.00519 | 0.00591 | 0.00650 | | |
| Fe | -0.00033 | 165.8 | -0.00069 | -0.00061 | 0.00030 | | |
| K | 30.20254 | 0.364 | 30.15035 | 30.32894 | 30.12833 | | |
| Mg | 12.83937 | 0.623 | 12.76154 | 12.92137 | 12.83521 | | |
| Mn | 1.25535 | 0.583 | 1.24807 | 1.26271 | 1.25526 | | |
| Mo | 0.03399 | 0.751 | 0.03369 | 0.03412 | 0.03415 | | |
| Na | 1333.49462 | 0.274 | 1330.86035 | 1337.67065 | 1331.95300 | | |
| ✓Ni | 0.01484 | 6.927 | 0.01419 | 0.01603 | 0.01431 | | |
| ✓Pb | 0.00179 | 58.81 | 0.00107 | 0.00301 | 0.00130 | | |
| Sb | 0.00270 | 54.74 | 0.00215 | 0.00157 | 0.00437 | | |
| ✓Se | 0.01359 | 5.859 | 0.01267 | 0.01403 | 0.01407 | | |
| Sn | 0.00904 | 13.72 | 0.00866 | 0.00804 | 0.01043 | | |
| Sr | 2.38295 | 0.328 | 2.38106 | 2.39156 | 2.37623 | | |
| Ti | -0.00204 | 2.416 | -0.00205 | -0.00199 | -0.00208 | | |
| Tl | -0.00068 | 565.1 | 0.00300 | -0.00037 | -0.00466 | | |
| V | 0.01031 | 3.626 | 0.00989 | 0.01060 | 0.01043 | | |
| Y | 144358.32812 | 0.786 | 144073.00000 | 143393.00000 | 145609.00000 | | |
| ✓Zn | -0.00064 | 121.4 | -0.00135 | -0.00078 | 0.00019 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 20 4219022 02/25/04 06:09
R***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05343 | 0.131 | 0.05348 | 0.05335 | 0.05346 | | |
| Al | 2.21117 | 0.707 | 2.22917 | 2.20356 | 2.20079 | | |
| ✓As | 2.10481 | 0.094 | 2.10644 | 2.10261 | 2.10537 | | |
| B | 2.56715 | 0.222 | 2.57324 | 2.56188 | 2.56634 | | |
| ✓Ba | 2.38087 | 0.322 | 2.38915 | 2.37400 | 2.37947 | | |
| Be | 0.05094 | 0.260 | 0.05108 | 0.05082 | 0.05093 | | |
| Ca | 1270.10424 | 0.229 | 1267.00451 | 1270.52209 | 1272.78613 | | |
| ✓Cd | 0.05109 | 0.332 | 0.05090 | 0.05119 | 0.05119 | | |
| Co | 0.51026 | 0.038 | 0.51022 | 0.51048 | 0.51009 | | |
| ✓Cr | 0.21043 | 0.345 | 0.21029 | 0.21121 | 0.20978 | | |
| ✓Cu | 0.28261 | 0.404 | 0.28393 | 0.28192 | 0.28198 | | |
| Fe | 1.01799 | 0.020 | 1.01823 | 1.01790 | 1.01783 | | |
| K | 35.58146 | 0.131 | 35.57344 | 35.53911 | 35.63183 | | |
| Mg | 14.83527 | 0.097 | 14.82408 | 14.83022 | 14.85152 | | |
| Mn | 1.76177 | 0.122 | 1.76081 | 1.76025 | 1.76425 | | |
| Mo | 2.11349 | 0.751 | 2.09610 | 2.11714 | 2.12723 | | |
| Na | 1335.00622 | 0.141 | 1335.50231 | 1332.91967 | 1336.59680 | | |
| ✓Ni | 0.52118 | 0.144 | 0.52126 | 0.52039 | 0.52188 | | |
| ✓Pb | 0.51763 | 0.405 | 0.51632 | 0.52005 | 0.51651 | | |
| Sb | 0.53426 | 0.810 | 0.53710 | 0.53640 | 0.52927 | | |
| ✓Se | 2.13680 | 0.618 | 2.12377 | 2.15021 | 2.13643 | | |
| Sn | 4.23287 | 0.193 | 4.22616 | 4.23045 | 4.24199 | | |
| Sr | 3.38156 | 0.291 | 3.39173 | 3.37204 | 3.38089 | | |
| Ti | 1.01118 | 0.095 | 1.01178 | 1.01007 | 1.01169 | | |
| Tl | 2.01008 | 0.962 | 1.99116 | 2.00926 | 2.02982 | | |
| V | 0.51979 | 0.167 | 0.52041 | 0.51880 | 0.52017 | | |
| Y | 144480.32812 | 0.478 | 143718.00000 | 144656.00000 | 145067.00000 | | |
| ✓Zn | 0.49991 | 0.593 | 0.49654 | 0.50215 | 0.50103 | | |

8863

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 21 4219022 02/25/04 06:15
M***,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| ✓Ag | 0.05369 | 1.153 | 0.05316 | 0.05437 | 0.05353 | | |
| Al | 2.19208 | 0.262 | 2.19445 | 2.19627 | 2.18553 | | |
| ✓As | 2.10308 | 0.014 | 2.10275 | 2.10336 | 2.10313 | | |
| B | 2.55674 | 0.223 | 2.56116 | 2.55878 | 2.55027 | | |
| ✓Ba | 2.37320 | 0.205 | 2.37140 | 2.37872 | 2.36950 | | |
| Be | 0.05074 | 0.522 | 0.05044 | 0.05093 | 0.05084 | | |
| Ca | 1295.20434 | 1.518 | 1273.05200 | 1310.63842 | 1301.92248 | | |
| ✓Cd | 0.05091 | 0.905 | 0.05048 | 0.05087 | 0.05139 | | |
| Co | 0.50894 | 0.778 | 0.50514 | 0.51305 | 0.50862 | | |
| ✓Cr | 0.21047 | 1.085 | 0.20793 | 0.21236 | 0.21111 | | |
| ✓Cu | 0.28139 | 0.366 | 0.28124 | 0.28249 | 0.28045 | | |
| Fe | 1.01866 | 0.608 | 1.01161 | 1.02324 | 1.02114 | | |
| K | 36.02463 | 0.600 | 35.93457 | 36.27152 | 35.86780 | | |
| Mg | 14.97822 | 0.589 | 14.87741 | 15.04158 | 15.01568 | | |
| Mn | 1.77221 | 0.588 | 1.76049 | 1.78042 | 1.77573 | | |
| Mo | 2.11387 | 0.966 | 2.09038 | 2.12746 | 2.12378 | | |
| Na | 1343.42126 | 0.315 | 1339.53710 | 1347.93444 | 1342.79235 | | |
| ✓Ni | 0.52028 | 0.588 | 0.51738 | 0.52348 | 0.51998 | | |
| ✓Pb | 0.51590 | 2.359 | 0.50200 | 0.52466 | 0.52104 | | |
| Sb | 0.53339 | 0.658 | 0.53474 | 0.53603 | 0.52940 | | |
| ✓Se | 2.11843 | 2.151 | 2.06641 | 2.15131 | 2.13758 | | |
| Sn | 4.22752 | 0.656 | 4.19569 | 4.24668 | 4.24018 | | |
| Sr | 3.38520 | 0.283 | 3.37800 | 3.39609 | 3.38149 | | |
| Ti | 1.00576 | 0.490 | 1.00036 | 1.01001 | 1.00692 | | |
| Tl | 2.01082 | 1.577 | 1.97570 | 2.03737 | 2.01941 | | |
| V | 0.51913 | 0.585 | 0.51565 | 0.52129 | 0.52043 | | |
| Y | 143980.32812 | 1.230 | 145845.00000 | 142320.00000 | 143776.00000 | | |
| ✓Zn | 0.50056 | 0.681 | 0.49668 | 0.50310 | 0.50189 | | |

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LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 22 4219022 02/25/04 06:20
UL**,50-50,DF5,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00053 | 118.6 | 0.00117 | -0.00009 | 0.00053 | | |
| Al | -0.01640 | 48.34 | -0.00745 | -0.02257 | -0.01917 | | |
| As | 0.00093 | 230.3 | 0.00321 | 0.00063 | -0.00105 | | |
| B | 0.07821 | 1.245 | 0.07933 | 0.07775 | 0.07754 | | |
| Ba | 0.06247 | 0.397 | 0.06257 | 0.06219 | 0.06265 | | |
| Be | 0.00005 | 85.34 | 0.00000 | 0.00006 | 0.00010 | | |
| Ca | 196.44129 | 0.254 | 196.47715 | 195.92382 | 196.92291 | | |
| Cd | 0.00028 | 129.2 | -0.00002 | 0.00018 | 0.00069 | | |
| Co | 0.00099 | 51.84 | 0.00051 | 0.00093 | 0.00153 | | |
| Cr | 0.00148 | 26.46 | 0.00107 | 0.00153 | 0.00186 | | |
| Cu | 0.00151 | 32.97 | 0.00127 | 0.00116 | 0.00208 | | |
| Fe | -0.00475 | 6.327 | -0.00449 | -0.00508 | -0.00467 | | |
| K | 4.28367 | 0.581 | 4.26112 | 4.27947 | 4.31042 | | |
| Mg | 2.45810 | 0.103 | 2.45730 | 2.45605 | 2.46096 | | |
| Mn | 0.24272 | 0.198 | 0.24299 | 0.24216 | 0.24300 | | |
| Mo | 0.01072 | 19.57 | 0.01314 | 0.00960 | 0.00942 | | |
| Na | 283.16662 | 0.216 | 283.26068 | 282.51208 | 283.72711 | | |
| Ni | 0.00258 | 63.67 | 0.00098 | 0.00248 | 0.00427 | | |
| Pb | 0.00066 | 72.59 | 0.00066 | 0.00018 | 0.00114 | | |
| Sb | 0.00061 | 328.8 | 0.00239 | -0.00158 | 0.00104 | | |
| Se | 0.00124 | 193.3 | 0.00403 | -0.00015 | -0.00013 | | |
| Sn | 0.00263 | 97.61 | -0.00023 | 0.00473 | 0.00341 | | |
| Sr | 0.46884 | 0.269 | 0.47001 | 0.46750 | 0.46902 | | |
| Ti | -0.00007 | 52.23 | -0.00007 | -0.00004 | -0.00012 | | |
| Tl | 0.00890 | 45.63 | 0.01030 | 0.01208 | 0.00432 | | |
| V | 0.00186 | 1.048 | 0.00189 | 0.00185 | 0.00185 | | |
| Y | 147989.00000 | 0.840 | 146559.00000 | 148824.00000 | 148584.00000 | | |
| Zn | 0.00227 | 7.640 | 0.00234 | 0.00207 | 0.00240 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 23 Q219022 02/25/04 06:26
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.18365 | 0.290 | 0.18303 | 0.18394 | 0.18398 | | |
| Al | 0.41636 | 0.609 | 0.41905 | 0.41601 | 0.41402 | | |
| As | 0.21795 | 0.100 | 0.21787 | 0.21779 | 0.21820 | | |
| B | 0.25122 | 0.290 | 0.25040 | 0.25143 | 0.25182 | | |
| Ba | 1.77430 | 0.673 | 1.76069 | 1.78306 | 1.77915 | | |
| Be | 0.22267 | 0.711 | 0.22086 | 0.22378 | 0.22339 | | |
| Ca | 47.76588 | 0.780 | 47.33623 | 48.00254 | 47.95885 | | |
| Cd | 0.04411 | 0.411 | 0.04393 | 0.04429 | 0.04412 | | |
| Co | 0.21240 | 0.601 | 0.21102 | 0.21264 | 0.21354 | | |
| Cr | 0.21372 | 0.817 | 0.21172 | 0.21451 | 0.21493 | | |
| Cu | 0.21700 | 0.677 | 0.21530 | 0.21774 | 0.21795 | | |
| Fe | 0.20895 | 0.858 | 0.20690 | 0.21025 | 0.20969 | | |
| K | 3.10619 | 0.363 | 3.09559 | 3.10493 | 3.11806 | | |
| Mg | 2.74068 | 0.595 | 2.72200 | 2.75217 | 2.74788 | | |
| Mn | 0.27742 | 0.670 | 0.27533 | 0.27889 | 0.27804 | | |
| Mo | 0.43287 | 1.406 | 0.42587 | 0.43579 | 0.43694 | | |
| Na | 68.39972 | 0.666 | 67.88088 | 68.73496 | 68.58333 | | |
| Ni | 0.21453 | 1.161 | 0.21168 | 0.21630 | 0.21560 | | |
| Pb | 0.11869 | 1.175 | 0.11744 | 0.12019 | 0.11842 | | |
| Sb | 0.21135 | 0.629 | 0.21046 | 0.21070 | 0.21288 | | |
| Se | 0.04365 | 3.000 | 0.04273 | 0.04308 | 0.04515 | | |
| Sn | 2.15607 | 0.879 | 2.13417 | 2.16698 | 2.16706 | | |
| Sr | 0.31332 | 0.656 | 0.31096 | 0.31472 | 0.31429 | | |
| Ti | 0.43084 | 0.792 | 0.42698 | 0.43346 | 0.43208 | | |
| Tl | 0.20991 | 1.604 | 0.20608 | 0.21126 | 0.21239 | | |
| V | 0.21892 | 0.647 | 0.21729 | 0.21961 | 0.21986 | | |
| Y | 152533.00000 | 0.130 | 152313.00000 | 152586.00000 | 152700.00000 | | |
| Zn | 0.24098 | 0.678 | 0.23912 | 0.24163 | 0.24219 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 24 4219006 02/25/04 06:31
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00076 | 119.6 | -0.00182 | -0.00013 | -0.00034 | | |
| Al | 0.01700 | 98.16 | 0.03624 | 0.00846 | 0.00630 | | |
| X As | -0.00154 | 154.4 | -0.00392 | -0.00152 | 0.00083 | | |
| B | 0.03178 | 3.888 | 0.03310 | 0.03161 | 0.03064 | | |
| X Ba | 0.55272 | 2.345 | 0.56768 | 0.54490 | 0.54557 | | |
| Be | 0.00018 | 78.61 | 0.00034 | 0.00013 | 0.00006 | | |
| Ca | 657.27166 | 2.668 | 677.46643 | 645.83361 | 648.51501 | | |
| X Cd | 0.00069 | 34.29 | 0.00041 | 0.00080 | 0.00085 | | |
| Co | 0.00858 | 4.472 | 0.00841 | 0.00831 | 0.00902 | | |
| X Cr | 0.00045 | 67.50 | 0.00060 | 0.00065 | 0.00010 | | |
| Cu | 0.00927 | 3.000 | 0.00907 | 0.00915 | 0.00959 | | |
| Fe | 0.00347 | 12.17 | 0.00396 | 0.00325 | 0.00321 | | |
| K | 6.60860 | 2.208 | 6.77698 | 6.53004 | 6.51879 | | |
| Mg | 10.08314 | 2.025 | 10.31773 | 9.94458 | 9.98711 | | |
| Mn | 3.65918 | 2.178 | 3.75090 | 3.60667 | 3.61998 | | |
| Mo | 0.00083 | 141.9 | 0.00220 | 0.00015 | 0.00015 | | |
| Na | 1315.68713 | 1.539 | 1339.06701 | 1303.47497 | 1304.51940 | | |
| Ni | 0.01142 | 2.503 | 0.01173 | 0.01116 | 0.01138 | | |
| X Pb | 0.01900 | 14.63 | 0.01859 | 0.01644 | 0.02196 | | |
| Sb | -0.00550 | 26.48 | -0.00532 | -0.00705 | -0.00415 | | |
| X Se | 0.00304 | 86.72 | 0.00008 | 0.00515 | 0.00389 | | |
| Sn | 0.00987 | 16.63 | 0.01141 | 0.01006 | 0.00814 | | |
| Sr | 0.38009 | 2.242 | 0.38993 | 0.37492 | 0.37543 | | |
| Ti | -0.00116 | 27.53 | -0.00118 | -0.00147 | -0.00083 | | |
| Tl | -0.00274 | 107.0 | -0.00144 | -0.00067 | -0.00610 | | |
| V | 0.00030 | 146.3 | -0.00004 | 0.00080 | 0.00015 | | |
| Y | 145347.00000 | 2.166 | 141718.00000 | 146967.00000 | 147356.00000 | | |
| Zn | 0.00867 | 10.22 | 0.00900 | 0.00934 | 0.00766 | | |

8857

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 25 CCV 02/25/04 06:37

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.51077 | 0.595 | 0.51412 | 0.50818 | 0.51001 | | |
| Al | 26.02376 | 0.612 | 26.19797 | 25.88545 | 25.98785 | | |
| As | 0.47965 | 0.282 | 0.48082 | 0.47817 | 0.47998 | | |
| B | 0.51752 | 0.470 | 0.51985 | 0.51499 | 0.51773 | | |
| Ba | 0.49671 | 0.786 | 0.50110 | 0.49363 | 0.49539 | | |
| Be | 0.50718 | 0.698 | 0.51125 | 0.50476 | 0.50553 | | |
| Ca | 25.75607 | 0.585 | 25.92574 | 25.63768 | 25.70479 | | |
| Cd | 0.49600 | 0.522 | 0.49899 | 0.49435 | 0.49467 | | |
| Co | 0.50009 | 0.739 | 0.50422 | 0.49708 | 0.49897 | | |
| Cr | 0.50200 | 0.537 | 0.50491 | 0.49958 | 0.50151 | | |
| Cu | 0.50699 | 0.638 | 0.51057 | 0.50427 | 0.50613 | | |
| Fe | 25.95505 | 0.668 | 26.15183 | 25.82405 | 25.88929 | | |
| K | 25.83378 | 0.544 | 25.96628 | 25.68620 | 25.84885 | | |
| Mg | 25.72422 | 0.630 | 25.91075 | 25.61633 | 25.64558 | | |
| Mn | 0.50259 | 0.697 | 0.50653 | 0.49983 | 0.50139 | | |
| Mo | 0.50572 | 0.090 | 0.50543 | 0.50547 | 0.50625 | | |
| Na | 26.15943 | 0.428 | 26.28894 | 26.09788 | 26.09148 | | |
| Ni | 0.49675 | 0.523 | 0.49973 | 0.49493 | 0.49560 | | |
| Pb | 0.50226 | 0.386 | 0.50017 | 0.50400 | 0.50260 | | |
| Sb | 0.50090 | 1.118 | 0.50455 | 0.49445 | 0.50369 | | |
| Se | 0.49941 | 0.561 | 0.49990 | 0.49640 | 0.50194 | | |
| Sn | 0.50719 | 0.289 | 0.50839 | 0.50764 | 0.50555 | | |
| Sr | 0.50522 | 0.725 | 0.50929 | 0.50218 | 0.50419 | | |
| Ti | 0.50101 | 0.618 | 0.50451 | 0.49859 | 0.49994 | | |
| Tl | 0.48258 | 0.691 | 0.47902 | 0.48563 | 0.48308 | | |
| V | 0.49952 | 0.530 | 0.50251 | 0.49747 | 0.49858 | | |
| Y | 150837.00000 | 0.633 | 149833.00000 | 151735.00000 | 150943.00000 | | |
| Zn | 0.49850 | 0.352 | 0.50044 | 0.49702 | 0.49803 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 26 CCB 02/25/04 06:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00023 | 263.8 | -0.00005 | 0.00096 | -0.00019 | | |
| Al | -0.03094 | 21.08 | -0.02621 | -0.02823 | -0.03838 | | |
| As | -0.00116 | 275.9 | -0.00279 | 0.00254 | -0.00324 | | |
| B | -0.00123 | 89.84 | -0.00141 | -0.00004 | -0.00224 | | |
| Ba | 0.00004 | 121.4 | 0.00009 | 0.00003 | 0.00000 | | |
| Be | 0.00011 | 44.35 | 0.00016 | 0.00006 | 0.00012 | | |
| Ca | -0.03949 | 13.95 | -0.03999 | -0.03375 | -0.04474 | | |
| Cd | 0.00034 | 30.61 | 0.00044 | 0.00023 | 0.00034 | | |
| Co | -0.00033 | 226.7 | -0.00098 | 0.00050 | -0.00052 | | |
| Cr | -0.00041 | 67.56 | -0.00025 | -0.00074 | -0.00024 | | |
| Cu | 0.00020 | 305.0 | -0.00030 | 0.00088 | 0.00002 | | |
| Fe | -0.00544 | 14.29 | -0.00471 | -0.00536 | -0.00626 | | |
| K | 0.03929 | 6.580 | 0.03762 | 0.03798 | 0.04227 | | |
| Mg | -0.01066 | 64.50 | -0.00465 | -0.00917 | -0.01817 | | |
| Mn | 0.00017 | 50.74 | 0.00027 | 0.00009 | 0.00015 | | |
| Mo | 0.00069 | 54.52 | 0.00113 | 0.00054 | 0.00041 | | |
| Na | 0.25903 | 54.26 | 0.40609 | 0.24500 | 0.12601 | | |
| Ni | 0.00029 | 390.0 | -0.00020 | 0.00161 | -0.00052 | | |
| Pb | 0.00069 | 177.1 | 0.00202 | 0.00044 | -0.00038 | | |
| Sb | 0.00176 | 99.59 | 0.00079 | 0.00379 | 0.00070 | | |
| Se | -0.00391 | 14.54 | -0.00342 | -0.00454 | -0.00378 | | |
| Sn | 0.00252 | 27.17 | 0.00173 | 0.00283 | 0.00299 | | |
| Sr | -0.00013 | 30.08 | -0.00008 | -0.00015 | -0.00015 | | |
| Ti | -0.00018 | 16.86 | -0.00019 | -0.00021 | -0.00015 | | |
| Tl | 0.00230 | 236.6 | 0.00414 | 0.00660 | -0.00383 | | |
| V | 0.00013 | 461.3 | 0.00076 | -0.00049 | 0.00014 | | |
| Y | 150012.00000 | 0.707 | 150496.00000 | 150745.00000 | 148795.00000 | | |
| Zn | 0.00006 | 1674. | -0.00100 | 0.00123 | -0.00003 | | |

8869

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 27 4219669 02/25/04 06:47
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00018 | 246.7 | -0.00066 | 0.00025 | -0.00015 | | |
| Al | 0.43298 | 2.485 | 0.44361 | 0.43325 | 0.42209 | | |
| X As | 0.00009 | 1791. | -0.00105 | 0.00212 | -0.00077 | | |
| B | 0.02329 | 3.417 | 0.02315 | 0.02415 | 0.02257 | | |
| X Ba | 0.23662 | 0.095 | 0.23656 | 0.23688 | 0.23644 | | |
| Be | 0.00018 | 33.47 | 0.00023 | 0.00019 | 0.00011 | | |
| Ca | 365.00598 | 0.256 | 365.00262 | 365.94265 | 364.07269 | | |
| X Cd | 0.00077 | 31.14 | 0.00049 | 0.00091 | 0.00090 | | |
| Co | 0.07226 | 0.871 | 0.07165 | 0.07291 | 0.07222 | | |
| X Cr | 0.00108 | 23.06 | 0.00109 | 0.00133 | 0.00083 | | |
| X Cu | 0.00764 | 1.076 | 0.00761 | 0.00773 | 0.00757 | | |
| Fe | 0.50937 | 0.107 | 0.50952 | 0.50982 | 0.50876 | | |
| K | 1.69016 | 1.335 | 1.66815 | 1.71326 | 1.68906 | | |
| Mg | 25.12740 | 0.174 | 25.10833 | 25.17765 | 25.09622 | | |
| Mn | 0.76091 | 0.242 | 0.75949 | 0.76300 | 0.76024 | | |
| Mo | 0.00203 | 43.55 | 0.00121 | 0.00297 | 0.00191 | | |
| Na | 1315.04394 | 0.170 | 1312.62988 | 1317.06494 | 1315.43688 | | |
| X Ni | 0.07192 | 0.813 | 0.07147 | 0.07258 | 0.07171 | | |
| X Pb | 0.00937 | 15.62 | 0.01074 | 0.00955 | 0.00782 | | |
| Sb | -0.00467 | 14.46 | -0.00389 | -0.00512 | -0.00499 | | |
| X Se | 0.00356 | 31.26 | 0.00229 | 0.00403 | 0.00436 | | |
| Sn | 0.00716 | 13.92 | 0.00663 | 0.00655 | 0.00832 | | |
| Sr | 0.61182 | 0.147 | 0.61120 | 0.61286 | 0.61139 | | |
| Ti | -0.00040 | 33.65 | -0.00026 | -0.00040 | -0.00054 | | |
| Tl | -0.00203 | 152.6 | -0.00545 | 0.00064 | -0.00130 | | |
| V | 0.00186 | 40.49 | 0.00181 | 0.00264 | 0.00113 | | |
| Y | 148223.00000 | 1.106 | 146428.00000 | 148599.00000 | 149642.00000 | | |
| X Zn | 0.28035 | 0.608 | 0.28005 | 0.28219 | 0.27882 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 28 4219697 02/25/04 06:53
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00021 | 3.639 | -0.00020 | -0.00021 | -0.00021 | | |
| Al | 0.49822 | 2.097 | 0.51013 | 0.49055 | 0.49399 | | |
| X As | -0.00153 | 290.8 | 0.00121 | 0.00086 | -0.00669 | | |
| B | 0.05384 | 1.381 | 0.05349 | 0.05334 | 0.05469 | | |
| X Ba | 0.38924 | 0.893 | 0.39183 | 0.38529 | 0.39060 | | |
| Be | 0.00080 | 5.903 | 0.00085 | 0.00080 | 0.00076 | | |
| Ca | 38.88766 | 0.807 | 39.03121 | 38.52768 | 39.10409 | | |
| X Cd | 0.00081 | 31.25 | 0.00062 | 0.00110 | 0.00072 | | |
| Co | 0.02300 | 0.688 | 0.02290 | 0.02292 | 0.02318 | | |
| X Cr | 0.01055 | 4.270 | 0.01107 | 0.01027 | 0.01032 | | |
| Cu | 0.01809 | 2.083 | 0.01800 | 0.01777 | 0.01851 | | |
| Fe | 2.46465 | 0.799 | 2.47719 | 2.44195 | 2.47481 | | |
| K | 22.69489 | 0.942 | 22.86198 | 22.45375 | 22.76893 | | |
| Mg | 10.90901 | 0.846 | 10.95550 | 10.80264 | 10.96890 | | |
| Mn | 3.33664 | 0.807 | 3.35375 | 3.30558 | 3.35057 | | |
| Mo | -0.00073 | 154.6 | 0.00041 | -0.00185 | -0.00076 | | |
| Na | 1294.95800 | 0.600 | 1298.97680 | 1285.99841 | 1299.89880 | | |
| Ni | 0.02479 | 2.370 | 0.02547 | 0.02441 | 0.02449 | | |
| X Pb | 0.00898 | 10.57 | 0.00940 | 0.00964 | 0.00789 | | |
| Sb | -0.00470 | 25.91 | -0.00351 | -0.00595 | -0.00465 | | |
| X Se | 0.00214 | 99.62 | 0.00461 | 0.00098 | 0.00084 | | |
| Sn | 0.00729 | 11.21 | 0.00651 | 0.00814 | 0.00723 | | |
| Sr | 0.18357 | 0.915 | 0.18487 | 0.18167 | 0.18417 | | |
| Ti | 0.00116 | 21.75 | 0.00093 | 0.00113 | 0.00144 | | |
| Tl | 0.00381 | 71.88 | 0.00422 | 0.00089 | 0.00633 | | |
| V | 0.00013 | 387.1 | 0.00064 | 0.00020 | -0.00042 | | |
| Y | 149150.67187 | 0.890 | 147831.00000 | 150486.00000 | 149135.00000 | | |
| Zn | 0.03683 | 3.513 | 0.03683 | 0.03554 | 0.03812 | | |

8871

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 29 4219913 02/25/04 06:58
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | 0.00025 | 172.9 | 0.00010 | 0.00075 | -0.00008 | | |
| Al | 0.01204 | 15.19 | 0.01414 | 0.01117 | 0.01080 | | |
| X As | 0.07795 | 6.248 | 0.07306 | 0.07800 | 0.08280 | | |
| B | 0.35216 | 1.690 | 0.34533 | 0.35624 | 0.35492 | | |
| X Ba | 0.05918 | 0.940 | 0.05854 | 0.05951 | 0.05950 | | |
| Be | 0.00017 | 46.22 | 0.00027 | 0.00013 | 0.00012 | | |
| Ca | 199.01356 | 1.787 | 194.90638 | 201.06591 | 201.06837 | | |
| X Cd | 0.00321 | 4.098 | 0.00308 | 0.00321 | 0.00334 | | |
| Co | 0.03360 | 0.203 | 0.03367 | 0.03359 | 0.03353 | | |
| X Cr | 0.00415 | 8.355 | 0.00392 | 0.00455 | 0.00399 | | |
| Cu | 0.01594 | 2.694 | 0.01546 | 0.01606 | 0.01629 | | |
| Fe | 14.75684 | 1.632 | 14.47864 | 14.89248 | 14.89939 | | |
| K | 321.97555 | 1.788 | 315.43740 | 324.19531 | 326.29397 | | |
| Mg | 14.18296 | 1.723 | 13.90071 | 14.31904 | 14.32913 | | |
| Mn | 1.64181 | 1.621 | 1.61108 | 1.65662 | 1.65774 | | |
| Mo | 0.07968 | 2.836 | 0.07707 | 0.08101 | 0.08097 | | |
| Na | 1119.77978 | 1.232 | 1104.03942 | 1125.51501 | 1129.78479 | | |
| Ni | 0.45858 | 1.723 | 0.44959 | 0.46174 | 0.46442 | | |
| X Pb | 0.01134 | 17.84 | 0.01148 | 0.01329 | 0.00925 | | |
| Sb | 0.08934 | 2.692 | 0.08829 | 0.09209 | 0.08764 | | |
| X Se | 0.00224 | 98.66 | 0.00089 | 0.00103 | 0.00480 | | |
| Sn | 0.00616 | 14.01 | 0.00593 | 0.00543 | 0.00711 | | |
| Sr | 0.55992 | 1.395 | 0.55091 | 0.56409 | 0.56477 | | |
| Ti | 0.00021 | 31.17 | 0.00014 | 0.00027 | 0.00022 | | |
| Tl | 0.00631 | 45.55 | 0.00451 | 0.00963 | 0.00479 | | |
| V | 0.00825 | 1.069 | 0.00815 | 0.00831 | 0.00829 | | |
| Y | 152109.67187 | 0.500 | 152859.00000 | 151338.00000 | 152132.00000 | | |
| Zn | 2.14569 | 1.836 | 2.10023 | 2.16997 | 2.16688 | | |

8872

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 30 Q219913 02/25/04 07:04
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.19072 | 0.947 | 0.18989 | 0.19280 | 0.18948 | | |
| Al | 0.43454 | 3.652 | 0.44102 | 0.44615 | 0.41645 | | |
| As | 0.21997 | 1.401 | 0.21927 | 0.22334 | 0.21730 | | |
| B | 0.25793 | 0.813 | 0.25747 | 0.26022 | 0.25610 | | |
| Ba | 4.47590 | 0.813 | 4.43511 | 4.50512 | 4.48748 | | |
| Be | 0.22702 | 1.061 | 0.22425 | 0.22817 | 0.22863 | | |
| Ca | 11.26876 | 1.109 | 11.12557 | 11.32414 | 11.35657 | | |
| Cd | 0.04477 | 0.875 | 0.04440 | 0.04474 | 0.04518 | | |
| Co | 0.22265 | 0.946 | 0.22056 | 0.22478 | 0.22260 | | |
| Cr | 0.22302 | 1.172 | 0.22007 | 0.22391 | 0.22507 | | |
| Cu | 0.22557 | 0.838 | 0.22410 | 0.22770 | 0.22490 | | |
| Fe | 0.89629 | 1.050 | 0.88544 | 0.90222 | 0.90121 | | |
| K | 13.13291 | 0.623 | 13.04344 | 13.20408 | 13.15121 | | |
| Mg | 2.86299 | 0.952 | 2.83297 | 2.88624 | 2.86976 | | |
| Mn | 0.30064 | 0.998 | 0.29720 | 0.30198 | 0.30274 | | |
| Mo | 0.45015 | 1.181 | 0.44404 | 0.45371 | 0.45271 | | |
| Na | 56.88325 | 0.757 | 56.39055 | 57.18998 | 57.06923 | | |
| Ni | 0.24269 | 1.219 | 0.23929 | 0.24409 | 0.24469 | | |
| Pb | 0.22323 | 2.766 | 0.21626 | 0.22803 | 0.22539 | | |
| Sb | 0.21740 | 2.550 | 0.21578 | 0.22357 | 0.21284 | | |
| Se | 0.04074 | 9.127 | 0.03681 | 0.04421 | 0.04121 | | |
| Sn | 2.23936 | 1.082 | 2.21156 | 2.25036 | 2.25614 | | |
| Sr | 0.25248 | 0.829 | 0.25010 | 0.25402 | 0.25332 | | |
| Ti | 0.44545 | 0.924 | 0.44072 | 0.44830 | 0.44732 | | |
| Tl | 0.21681 | 1.798 | 0.21486 | 0.22130 | 0.21427 | | |
| V | 0.22401 | 1.067 | 0.22125 | 0.22533 | 0.22546 | | |
| Y | 153875.00000 | 0.736 | 152877.00000 | 153642.00000 | 155106.00000 | | |
| Zn | 0.32171 | 1.360 | 0.31672 | 0.32350 | 0.32490 | | |

8973

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 31 4220283 02/25/04 07:09
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | 0.00044 | 107.0 | 0.00099 | 0.00016 | 0.00017 | | |
| Al | 1.57612 | 0.512 | 1.58238 | 1.56700 | 1.57899 | | |
| XAs | 0.00029 | 400.6 | 0.00153 | -0.00079 | 0.00013 | | |
| B | 0.02575 | 2.428 | 0.02646 | 0.02547 | 0.02531 | | |
| XBa | 0.10848 | 0.272 | 0.10826 | 0.10837 | 0.10881 | | |
| Be | 0.00026 | 8.116 | 0.00026 | 0.00029 | 0.00024 | | |
| Ca | 3.75189 | 0.492 | 3.73090 | 3.75913 | 3.76563 | | |
| XCd | 0.00099 | 21.67 | 0.00083 | 0.00124 | 0.00091 | | |
| Co | 0.00600 | 11.99 | 0.00683 | 0.00564 | 0.00554 | | |
| XCr | 0.00523 | 8.837 | 0.00569 | 0.00523 | 0.00476 | | |
| Cu | 0.17123 | 0.452 | 0.17038 | 0.17141 | 0.17189 | | |
| Fe | 2.65525 | 0.476 | 2.64070 | 2.66134 | 2.66371 | | |
| K | 0.98616 | 2.027 | 1.00803 | 0.98164 | 0.96881 | | |
| Mg | 9.26839 | 0.562 | 9.20824 | 9.29900 | 9.29793 | | |
| Mn | 0.35275 | 0.388 | 0.35123 | 0.35314 | 0.35389 | | |
| Mo | 0.00006 | 1237. | 0.00075 | 0.00028 | -0.00084 | | |
| Na | 1308.47167 | 0.635 | 1299.08056 | 1311.41662 | 1314.91796 | | |
| Ni | 0.04982 | 0.736 | 0.04946 | 0.04979 | 0.05020 | | |
| XPb | 0.02154 | 3.925 | 0.02223 | 0.02060 | 0.02179 | | |
| Sb | 0.00530 | 27.75 | 0.00373 | 0.00551 | 0.00665 | | |
| XSe | -0.00055 | 339.9 | -0.00272 | 0.00032 | 0.00073 | | |
| Sn | 0.00538 | 115.8 | -0.00078 | 0.01168 | 0.00525 | | |
| Sr | 0.02039 | 0.102 | 0.02038 | 0.02038 | 0.02041 | | |
| Ti | 0.00202 | 4.541 | 0.00196 | 0.00197 | 0.00213 | | |
| Tl | -0.00207 | 98.34 | -0.00281 | 0.00023 | -0.00365 | | |
| V | 0.00083 | 40.47 | 0.00114 | 0.00090 | 0.00047 | | |
| Y | 146080.00000 | 1.974 | 142769.00000 | 148054.00000 | 147417.00000 | | |
| Zn | 5.61402 | 0.533 | 5.57948 | 5.63036 | 5.63223 | | |

8874

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 32 4220301 02/25/04 07:15
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00020 | 88.80 | -0.00018 | -0.00003 | -0.00039 | | |
| Al | -0.01482 | 31.13 | -0.01018 | -0.01941 | -0.01487 | | |
| X As | 0.00054 | 473.5 | -0.00029 | -0.00150 | 0.00341 | | |
| B | 0.08100 | 1.058 | 0.08058 | 0.08044 | 0.08199 | | |
| X Ba | 0.03323 | 0.523 | 0.03303 | 0.03334 | 0.03333 | | |
| Be | 0.00008 | 147.4 | 0.00023 | 0.00001 | 0.00001 | | |
| Ca | 4.22978 | 0.917 | 4.18734 | 4.26348 | 4.23853 | | |
| X Cd | 0.00036 | 16.23 | 0.00036 | 0.00030 | 0.00042 | | |
| Co | 0.06156 | 2.034 | 0.06040 | 0.06289 | 0.06141 | | |
| X Cr | 0.00145 | 15.77 | 0.00129 | 0.00172 | 0.00136 | | |
| Cu | 0.00466 | 8.776 | 0.00421 | 0.00501 | 0.00477 | | |
| Fe | 3.05012 | 0.777 | 3.02414 | 3.07062 | 3.05558 | | |
| K | 0.47225 | 3.732 | 0.45773 | 0.49186 | 0.46717 | | |
| Mg | 1.52093 | 1.063 | 1.50477 | 1.53712 | 1.52090 | | |
| Mn | 15.23638 | 0.760 | 15.10882 | 15.33490 | 15.26543 | | |
| Mo | -0.00098 | 58.93 | -0.00158 | -0.00042 | -0.00095 | | |
| Na | 1287.99401 | 0.596 | 1279.14514 | 1291.94470 | 1292.89208 | | |
| Ni | 0.44496 | 0.906 | 0.44037 | 0.44794 | 0.44657 | | |
| X Pb | 0.00136 | 92.70 | 0.00239 | -0.00004 | 0.00175 | | |
| Sb | -0.00372 | 121.6 | -0.00699 | -0.00561 | 0.00144 | | |
| X Se | 0.00139 | 31.91 | 0.00091 | 0.00145 | 0.00180 | | |
| Sn | 0.00807 | 43.14 | 0.00859 | 0.01127 | 0.00436 | | |
| Sr | 0.03909 | 0.661 | 0.03879 | 0.03923 | 0.03925 | | |
| Ti | 0.00125 | 14.96 | 0.00107 | 0.00145 | 0.00124 | | |
| Tl | 0.00421 | 76.16 | 0.00741 | 0.00423 | 0.00099 | | |
| V | 0.00036 | 155.7 | -0.00027 | 0.00078 | 0.00057 | | |
| Y | 150714.32812 | 0.431 | 151156.00000 | 151019.00000 | 149968.00000 | | |
| Zn | 0.01198 | 1.872 | 0.01173 | 0.01217 | 0.01204 | | |

8875

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 33 Q220301 02/25/04 07:20
****,50-50,DF20,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.16579 | 0.402 | 0.16509 | 0.16642 | 0.16586 | | |
| Al | 0.41941 | 0.876 | 0.42361 | 0.41785 | 0.41678 | | |
| As | 0.21529 | 0.991 | 0.21775 | 0.21395 | 0.21416 | | |
| B | 0.23748 | 0.727 | 0.23555 | 0.23889 | 0.23800 | | |
| Ba | 4.21165 | 0.346 | 4.19569 | 4.21497 | 4.22429 | | |
| Be | 0.21959 | 0.295 | 0.21884 | 0.22002 | 0.21991 | | |
| Ca | 2.37539 | 0.249 | 2.36865 | 2.37980 | 2.37773 | | |
| Cd | 0.04376 | 0.246 | 0.04368 | 0.04388 | 0.04370 | | |
| Co | 0.21805 | 0.787 | 0.21762 | 0.21994 | 0.21659 | | |
| Cr | 0.21516 | 0.352 | 0.21523 | 0.21588 | 0.21437 | | |
| Cu | 0.21473 | 0.345 | 0.21388 | 0.21520 | 0.21513 | | |
| Fe | 0.35056 | 0.154 | 0.34995 | 0.35075 | 0.35099 | | |
| K | 2.15789 | 0.474 | 2.16868 | 2.15670 | 2.14828 | | |
| Mg | 2.21818 | 0.340 | 2.21016 | 2.22513 | 2.21925 | | |
| Mn | 0.92118 | 0.248 | 0.91859 | 0.92206 | 0.92290 | | |
| Mo | 0.43143 | 0.820 | 0.42735 | 0.43326 | 0.43369 | | |
| Na | 67.82109 | 0.215 | 67.70511 | 67.77336 | 67.98479 | | |
| Ni | 0.23467 | 0.323 | 0.23382 | 0.23529 | 0.23490 | | |
| Pb | 0.21839 | 0.390 | 0.21761 | 0.21930 | 0.21827 | | |
| Sb | 0.21038 | 1.082 | 0.21257 | 0.21054 | 0.20802 | | |
| Se | 0.04121 | 7.779 | 0.03760 | 0.04231 | 0.04372 | | |
| Sn | 2.17748 | 0.388 | 2.16780 | 2.18345 | 2.18119 | | |
| Sr | 0.21881 | 0.344 | 0.21802 | 0.21889 | 0.21952 | | |
| Ti | 0.43153 | 0.353 | 0.42978 | 0.43261 | 0.43220 | | |
| Tl | 0.20666 | 3.686 | 0.19867 | 0.21384 | 0.20747 | | |
| V | 0.21557 | 0.448 | 0.21474 | 0.21663 | 0.21532 | | |
| Y | 152133.00000 | 0.508 | 151485.00000 | 151924.00000 | 152990.00000 | | |
| Zn | 0.22151 | 0.607 | 0.22034 | 0.22298 | 0.22121 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 34 4220720 02/25/04 07:26
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00020 | 144.9 | -0.00027 | -0.00045 | 0.00011 | | |
| Al | 0.32769 | 2.445 | 0.33618 | 0.32665 | 0.32025 | | |
| As | 0.00284 | 102.2 | 0.00011 | 0.00251 | 0.00591 | | |
| B | 0.03569 | 2.057 | 0.03542 | 0.03513 | 0.03653 | | |
| Ba | 0.83037 | 0.133 | 0.83027 | 0.83153 | 0.82931 | | |
| Be | 0.00160 | 9.129 | 0.00176 | 0.00154 | 0.00149 | | |
| Ca | 27.79736 | 0.276 | 27.70946 | 27.85284 | 27.82978 | | |
| Cd | 0.00087 | 23.71 | 0.00098 | 0.00063 | 0.00100 | | |
| Co | 0.03958 | 1.741 | 0.04022 | 0.03885 | 0.03967 | | |
| Cr | 0.00068 | 25.01 | 0.00084 | 0.00050 | 0.00071 | | |
| Cu | 0.02004 | 1.078 | 0.01985 | 0.01999 | 0.02027 | | |
| Fe | 0.11833 | 0.885 | 0.11780 | 0.11766 | 0.11954 | | |
| K | 2.17281 | 0.337 | 2.16981 | 2.18116 | 2.16746 | | |
| Mg | 8.18680 | 0.277 | 8.16128 | 8.19425 | 8.20486 | | |
| Mn | 4.93393 | 0.170 | 4.92569 | 4.94253 | 4.93358 | | |
| Mo | -0.00033 | 80.27 | -0.00056 | -0.00042 | -0.00003 | | |
| Na | 1281.48010 | 0.097 | 1280.09106 | 1282.51745 | 1281.83190 | | |
| Ni | 0.02993 | 1.754 | 0.02935 | 0.03007 | 0.03037 | | |
| X Pb | 0.01648 | 3.751 | 0.01580 | 0.01662 | 0.01701 | | |
| Sb | -0.00572 | 34.28 | -0.00760 | -0.00369 | -0.00587 | | |
| Se | 0.00203 | 59.15 | 0.00250 | 0.00294 | 0.00066 | | |
| Sn | 0.00756 | 15.02 | 0.00719 | 0.00884 | 0.00666 | | |
| Sr | 0.26346 | 0.131 | 0.26330 | 0.26386 | 0.26322 | | |
| Ti | 0.00362 | 8.952 | 0.00337 | 0.00349 | 0.00399 | | |
| Tl | 0.00315 | 49.55 | 0.00160 | 0.00473 | 0.00313 | | |
| V | 0.00058 | 35.88 | 0.00059 | 0.00037 | 0.00079 | | |
| Y | 151007.32812 | 0.583 | 149996.00000 | 151611.00000 | 151415.00000 | | |
| Zn | 0.02260 | 0.766 | 0.02240 | 0.02268 | 0.02271 | | |

8877

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 35 4220723 02/25/04 07:31
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00025 | 270.8 | 0.00038 | 0.00085 | -0.00048 | | |
| Al | 0.26554 | 4.187 | 0.27396 | 0.26973 | 0.25294 | | |
| As | 0.00012 | 535.2 | -0.00019 | -0.00032 | 0.00089 | | |
| B | 0.03249 | 1.782 | 0.03182 | 0.03280 | 0.03286 | | |
| Ba | 0.78656 | 0.208 | 0.78482 | 0.78808 | 0.78679 | | |
| Be | 0.00122 | 7.144 | 0.00132 | 0.00118 | 0.00116 | | |
| Ca | 28.44309 | 0.380 | 28.31856 | 28.51373 | 28.49698 | | |
| Cd | 0.00069 | 4.453 | 0.00072 | 0.00066 | 0.00069 | | |
| Co | 0.02091 | 2.290 | 0.02129 | 0.02108 | 0.02037 | | |
| Cr | 0.00036 | 132.4 | 0.00091 | 0.00017 | 0.00000 | | |
| Cu | 0.02993 | 0.717 | 0.02984 | 0.03018 | 0.02978 | | |
| Fe | 0.09182 | 1.166 | 0.09179 | 0.09290 | 0.09076 | | |
| K | 1.87641 | 0.337 | 1.86994 | 1.87672 | 1.88258 | | |
| Mg | 7.51827 | 0.228 | 7.49843 | 7.52846 | 7.52792 | | |
| Mn | 3.83540 | 0.313 | 3.82171 | 3.84430 | 3.84019 | | |
| Mo | -0.00116 | 148.0 | -0.00054 | 0.00016 | -0.00312 | | |
| Na | 1265.96020 | 0.304 | 1261.51184 | 1268.12304 | 1268.24560 | | |
| Ni | 0.02053 | 0.519 | 0.02041 | 0.02062 | 0.02055 | | |
| X Pb | 0.15512 | 1.962 | 0.15420 | 0.15264 | 0.15852 | | |
| Sb | -0.00302 | 55.63 | -0.00458 | -0.00123 | -0.00326 | | |
| Se | -0.00043 | 506.1 | 0.00209 | -0.00186 | -0.00152 | | |
| Sn | 0.00675 | 2.090 | 0.00661 | 0.00674 | 0.00690 | | |
| Sr | 0.24191 | 0.205 | 0.24136 | 0.24232 | 0.24205 | | |
| Ti | 0.00402 | 2.067 | 0.00397 | 0.00412 | 0.00397 | | |
| Tl | 0.00155 | 287.7 | 0.00003 | 0.00658 | -0.00195 | | |
| V | -0.00005 | 345.1 | -0.00005 | -0.00026 | 0.00014 | | |
| Y | 153348.00000 | 0.559 | 152736.00000 | 152980.00000 | 154328.00000 | | |
| Zn | 0.02117 | 4.414 | 0.02125 | 0.02206 | 0.02019 | | |

8878

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 36 4220725 02/25/04 07:36
****,25-25,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | -0.00028 | 182.5 | 0.00011 | -0.00009 | -0.00087 | | |
| Al | 0.00063 | 96.59 | 0.00113 | -0.00005 | 0.00082 | | |
| XAs | -0.00220 | 112.4 | 0.00065 | -0.00373 | -0.00354 | | |
| B | 0.05238 | 0.683 | 0.05205 | 0.05233 | 0.05276 | | |
| XBa | 0.00251 | 0.525 | 0.00250 | 0.00251 | 0.00252 | | |
| Be | -0.00009 | 26.27 | -0.00010 | -0.00006 | -0.00010 | | |
| Ca | 0.44320 | 0.993 | 0.43813 | 0.44542 | 0.44606 | | |
| XCd | 0.00028 | 84.42 | 0.00052 | 0.00004 | 0.00028 | | |
| Co | -0.00067 | 36.16 | -0.00040 | -0.00071 | -0.00088 | | |
| XCr | 0.00137 | 32.15 | 0.00170 | 0.00087 | 0.00154 | | |
| Cu | 0.01415 | 1.688 | 0.01443 | 0.01403 | 0.01400 | | |
| Fe | 0.00325 | 6.985 | 0.00345 | 0.00329 | 0.00300 | | |
| K | 2.07712 | 1.124 | 2.06407 | 2.10409 | 2.06320 | | |
| Mg | 0.04064 | 6.612 | 0.04343 | 0.03806 | 0.04044 | | |
| Mn | 0.00107 | 11.12 | 0.00119 | 0.00107 | 0.00095 | | |
| Mo | 0.00051 | 176.3 | 0.00153 | 0.00022 | -0.00021 | | |
| Na | 1360.46875 | 0.601 | 1351.02465 | 1365.51672 | 1364.86486 | | |
| Ni | 0.00887 | 17.35 | 0.01063 | 0.00815 | 0.00782 | | |
| XPb | 0.00042 | 309.6 | 0.00045 | -0.00091 | 0.00173 | | |
| Sb | -0.00460 | 21.07 | -0.00513 | -0.00520 | -0.00348 | | |
| XSe | -0.00290 | 95.31 | -0.00184 | -0.00082 | -0.00604 | | |
| Sn | 0.00598 | 70.95 | 0.01021 | 0.00172 | 0.00600 | | |
| Sr | 0.01192 | 0.555 | 0.01185 | 0.01197 | 0.01195 | | |
| Ti | 0.00041 | 44.80 | 0.00058 | 0.00021 | 0.00044 | | |
| Tl | 0.00271 | 303.4 | 0.01153 | -0.00481 | 0.00143 | | |
| V | 0.00038 | 129.9 | 0.00092 | 0.00032 | -0.00008 | | |
| Y | 155576.32812 | 1.036 | 157395.00000 | 154322.00000 | 155012.00000 | | |
| Zn | 0.02639 | 1.939 | 0.02639 | 0.02588 | 0.02690 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 37 CCV 02/25/04 07:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50895 | 0.113 | 0.50962 | 0.50857 | 0.50867 | | |
| Al | 25.93685 | 0.158 | 25.97880 | 25.93511 | 25.89664 | | |
| As | 0.48151 | 0.462 | 0.48383 | 0.47940 | 0.48130 | | |
| B | 0.51511 | 0.162 | 0.51432 | 0.51598 | 0.51503 | | |
| Ba | 0.49289 | 0.136 | 0.49356 | 0.49291 | 0.49221 | | |
| Be | 0.50902 | 0.174 | 0.50989 | 0.50904 | 0.50812 | | |
| Ca | 26.14757 | 0.119 | 26.15673 | 26.17329 | 26.11269 | | |
| Cd | 0.49914 | 0.418 | 0.50100 | 0.49953 | 0.49688 | | |
| Co | 0.50354 | 0.207 | 0.50463 | 0.50346 | 0.50254 | | |
| Cr | 0.50407 | 0.280 | 0.50488 | 0.50488 | 0.50244 | | |
| Cu | 0.50449 | 0.123 | 0.50516 | 0.50393 | 0.50437 | | |
| Fe | 26.02387 | 0.132 | 26.05788 | 26.02469 | 25.98903 | | |
| K | 25.67649 | 0.383 | 25.77812 | 25.66996 | 25.58138 | | |
| Mg | 25.81304 | 0.186 | 25.85446 | 25.82456 | 25.76011 | | |
| Mn | 0.50312 | 0.208 | 0.50426 | 0.50289 | 0.50220 | | |
| Mo | 0.50297 | 0.723 | 0.49891 | 0.50594 | 0.50405 | | |
| Na | 26.10794 | 0.479 | 26.20983 | 26.14567 | 25.96830 | | |
| Ni | 0.49966 | 0.157 | 0.49876 | 0.50000 | 0.50022 | | |
| Pb | 0.50793 | 0.762 | 0.50785 | 0.51184 | 0.50409 | | |
| Sb | 0.50013 | 0.257 | 0.50162 | 0.49946 | 0.49931 | | |
| Se | 0.49916 | 0.462 | 0.49956 | 0.50125 | 0.49668 | | |
| Sn | 0.50694 | 0.620 | 0.50423 | 0.51040 | 0.50620 | | |
| Sr | 0.50259 | 0.151 | 0.50342 | 0.50241 | 0.50193 | | |
| Ti | 0.50059 | 0.068 | 0.50047 | 0.50097 | 0.50032 | | |
| Tl | 0.48891 | 1.071 | 0.48286 | 0.49204 | 0.49182 | | |
| V | 0.50051 | 0.294 | 0.50178 | 0.50087 | 0.49889 | | |
| Y | 150172.67187 | 0.321 | 149855.00000 | 149935.00000 | 150728.00000 | | |
| Zn | 0.50452 | 0.491 | 0.50723 | 0.50396 | 0.50237 | | |

9996

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 38 CCB 02/25/04 07:47

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00006 | 587.5 | -0.00004 | 0.00029 | -0.00044 | | |
| Al | -0.03927 | 6.856 | -0.03656 | -0.03931 | -0.04194 | | |
| As | -0.00161 | 260.5 | 0.00311 | -0.00489 | -0.00305 | | |
| B | -0.00214 | 27.48 | -0.00233 | -0.00261 | -0.00148 | | |
| Ba | 0.00002 | 120.7 | 0.00001 | 0.00000 | 0.00004 | | |
| Be | 0.00000 | 1518. | 0.00010 | -0.00005 | -0.00006 | | |
| Ca | -0.05468 | 2.369 | -0.05324 | -0.05573 | -0.05508 | | |
| Cd | 0.00027 | 40.02 | 0.00030 | 0.00014 | 0.00035 | | |
| Co | -0.00045 | 73.99 | -0.00007 | -0.00055 | -0.00072 | | |
| Cr | -0.00042 | 49.73 | -0.00064 | -0.00021 | -0.00043 | | |
| Cu | 0.00024 | 113.0 | -0.00001 | 0.00054 | 0.00021 | | |
| Fe | -0.00523 | 11.37 | -0.00455 | -0.00563 | -0.00552 | | |
| K | 0.04826 | 12.92 | 0.05543 | 0.04522 | 0.04412 | | |
| Mg | -0.01240 | 28.12 | -0.01420 | -0.00838 | -0.01463 | | |
| Mn | 0.00020 | 7.805 | 0.00020 | 0.00018 | 0.00021 | | |
| Mo | 0.00011 | 841.0 | 0.00111 | 0.00009 | -0.00085 | | |
| Na | 0.29224 | 30.68 | 0.32255 | 0.19134 | 0.36283 | | |
| Ni | -0.00026 | 142.5 | 0.00009 | -0.00065 | -0.00022 | | |
| Pb | 0.00035 | 152.3 | -0.00001 | 0.00010 | 0.00096 | | |
| Sb | -0.00029 | 481.6 | 0.00079 | 0.00020 | -0.00188 | | |
| Se | -0.00305 | 94.50 | -0.00010 | -0.00588 | -0.00319 | | |
| Sn | 0.00191 | 56.16 | 0.00098 | 0.00309 | 0.00166 | | |
| Sr | -0.00016 | 5.986 | -0.00017 | -0.00015 | -0.00015 | | |
| Ti | -0.00002 | 282.2 | -0.00011 | -0.00001 | 0.00004 | | |
| Tl | 0.00423 | 88.52 | 0.00827 | 0.00353 | 0.00088 | | |
| V | 0.00005 | 219.5 | 0.00012 | 0.00012 | -0.00008 | | |
| Y | 153183.00000 | 0.474 | 153892.00000 | 152440.00000 | 153217.00000 | | |
| Zn | -0.00039 | 189.5 | 0.00047 | -0.00088 | -0.00078 | | |

9881

LANCASTER LABORATORIES

Run Name: 040560ZT63 INSTRUMENT ID: 06383

Tube: 39 4220726 02/25/04 07:53
****,25-25,DF1,040555705004,S,,

| ELEM | | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|---|
| XAg | | -0.00029 | 76.75 | -0.00054 | -0.00008 | -0.00027 | | |
| Al | | 0.03411 | 7.729 | 0.03659 | 0.03134 | 0.03439 | | |
| XAs | | 0.00250 | 114.3 | -0.00058 | 0.00507 | 0.00303 | | |
| B | | 4.38196 | 1.629 | 4.46430 | 4.34491 | 4.33668 | | |
| XBa | | 0.04131 | 1.817 | 0.04218 | 0.04086 | 0.04090 | | |
| Be | | -0.00001 | 605.4 | 0.00008 | -0.00010 | -0.00002 | | |
| Ca | | 530.32806 | 1.891 | 541.88049 | 525.28228 | 523.82141 | | |
| XCd | | 0.00072 | 30.57 | 0.00054 | 0.00096 | 0.00065 | | |
| Co | | 0.00555 | 7.533 | 0.00527 | 0.00535 | 0.00603 | | |
| XCr | | 0.01406 | 1.981 | 0.01435 | 0.01404 | 0.01379 | | |
| Cu | | 0.02257 | 0.878 | 0.02257 | 0.02238 | 0.02278 | | |
| Fe | | 1.70376 | 1.640 | 1.73601 | 1.68864 | 1.68663 | | |
| K | C | 517.95520 | 86.63 | 0.00000 | 789.46105 | 764.40454 | | |
| Mg | | 4.27956 | 1.437 | 4.35052 | 4.24641 | 4.24174 | | |
| Mn | | 0.34565 | 1.641 | 0.35219 | 0.34263 | 0.34212 | | |
| Mo | | 0.00856 | 3.881 | 0.00856 | 0.00822 | 0.00889 | | |
| Na | | 1894.42895 | 1.302 | 1922.76770 | 1882.85986 | 1877.65917 | | |
| Ni | | 0.04855 | 2.724 | 0.04996 | 0.04835 | 0.04734 | | |
| XPb | | 0.00443 | 57.26 | 0.00578 | 0.00600 | 0.00150 | | |
| Sb | | -0.00225 | 157.4 | -0.00303 | -0.00534 | 0.00161 | | |
| XSe | | -0.00256 | 67.03 | -0.00358 | -0.00353 | -0.00057 | | |
| Sn | | 0.00525 | 42.58 | 0.00620 | 0.00685 | 0.00269 | | |
| Sr | | 0.55963 | 1.840 | 0.57149 | 0.55445 | 0.55296 | | |
| Ti | | -0.00050 | 74.40 | -0.00087 | -0.00049 | -0.00013 | | |
| Tl | | 0.00238 | 230.7 | 0.00722 | -0.00360 | 0.00354 | | |
| V | | 0.00035 | 122.5 | 0.00001 | 0.00020 | 0.00083 | | |
| Y | | 149811.67187 | 0.779 | 148571.00000 | 149976.00000 | 150888.00000 | | |
| Zn | | 0.13905 | 1.189 | 0.14093 | 0.13837 | 0.13784 | | |

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 40 4220727 02/25/04 07:58
****,25-25,DF1,040555705004,S,,

| ELEM | | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|---|
| Ag | k | 0.00004 | 412.3 | -0.00006 | 0.00028 | -0.00006 | N | |
| Al | | 0.16048 | 8.365 | 0.17591 | 0.15146 | 0.15407 | | |
| As | | 0.00143 | 71.38 | 0.00239 | 0.00156 | 0.00035 | | |
| B | | 3.68697 | 0.553 | 3.69930 | 3.66340 | 3.69820 | | |
| Ba | k | 0.04532 | 0.488 | 0.04539 | 0.04507 | 0.04549 | N | |
| Be | | 0.00021 | 86.32 | 0.00041 | 0.00018 | 0.00004 | | |
| Ca | C | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | | |
| Cd | | 0.00311 | 1.432 | 0.00307 | 0.00316 | 0.00311 | | |
| Co | | 0.01381 | 1.590 | 0.01402 | 0.01359 | 0.01383 | | |
| Cr | | 0.00162 | 28.16 | 0.00185 | 0.00109 | 0.00192 | | |
| Cu | | 0.01000 | 3.205 | 0.00965 | 0.01006 | 0.01028 | | |
| Fe | | 3.12051 | 0.432 | 3.12658 | 3.10505 | 3.12990 | | |
| K | | 11.13635 | 0.587 | 11.18963 | 11.06327 | 11.15615 | | |
| Mg | | 16.65078 | 0.443 | 16.67768 | 16.56722 | 16.70746 | | |
| Mn | | 1.62624 | 0.482 | 1.62993 | 1.61722 | 1.63156 | | |
| Mo | | -0.00057 | 51.96 | -0.00031 | -0.00049 | -0.00089 | | |
| Na | | 1669.66540 | 0.353 | 1670.33178 | 1663.46179 | 1675.20275 | | |
| Ni | | 0.18462 | 1.098 | 0.18605 | 0.18230 | 0.18551 | | |
| Pb | | 0.00504 | 9.767 | 0.00448 | 0.00521 | 0.00542 | | |
| Sb | | -0.00650 | 33.00 | -0.00482 | -0.00576 | -0.00891 | | |
| Se | | 0.00415 | 18.55 | 0.00395 | 0.00350 | 0.00500 | | |
| Sn | | 0.00929 | 19.88 | 0.00755 | 0.00910 | 0.01123 | | |
| Sr | k | 1.29943 | 0.561 | 1.30431 | 1.29105 | 1.30293 | | |
| Ti | | -0.00439 | 5.435 | -0.00440 | -0.00415 | -0.00463 | | |
| Tl | | 0.00868 | 24.41 | 0.00780 | 0.01110 | 0.00713 | | |
| V | | 0.00017 | 375.6 | 0.00017 | -0.00047 | 0.00081 | | |
| Y | | 148040.32812 | 1.001 | 146380.00000 | 149233.00000 | 148508.00000 | | |
| Zn | k | 3.20865 | 0.338 | 3.21301 | 3.19628 | 3.21665 | | |

8883

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 41 4220902 02/25/04 08:04
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | -0.00066 | 110.3 | -0.00150 | -0.00028 | -0.00020 | | |
| Al | 0.18341 | 2.639 | 0.18881 | 0.17947 | 0.18194 | | |
| XAs | -0.00447 | 43.25 | -0.00666 | -0.00299 | -0.00376 | | |
| B | 0.05008 | 1.409 | 0.05081 | 0.04940 | 0.05003 | | |
| XBa | 0.32425 | 0.465 | 0.32598 | 0.32325 | 0.32351 | | |
| Be | 0.00049 | 1.459 | 0.00049 | 0.00050 | 0.00048 | | |
| Ca | 138.37536 | 0.158 | 138.23977 | 138.25836 | 138.62797 | | |
| XCd | 0.00190 | 9.081 | 0.00199 | 0.00170 | 0.00202 | | |
| Co | 0.02778 | 2.649 | 0.02693 | 0.02814 | 0.02826 | | |
| XCr | 0.00070 | 169.3 | 0.00197 | -0.00038 | 0.00052 | | |
| Cu | 0.03510 | 0.903 | 0.03475 | 0.03520 | 0.03536 | | |
| Fe | 0.06864 | 0.221 | 0.06872 | 0.06873 | 0.06846 | | |
| K | 3.35936 | 2.512 | 3.45623 | 3.30153 | 3.32032 | | |
| Mg | 47.11197 | 0.170 | 47.16188 | 47.01939 | 47.15463 | | |
| Mn | 4.41422 | 0.197 | 4.42371 | 4.40653 | 4.41241 | | |
| Mo | -0.00126 | 26.87 | -0.00137 | -0.00154 | -0.00088 | | |
| Na | 1292.11267 | 0.293 | 1296.45336 | 1289.43798 | 1290.44653 | | |
| Ni | 0.01539 | 5.999 | 0.01645 | 0.01494 | 0.01478 | | |
| XPb | 0.01629 | 6.658 | 0.01730 | 0.01514 | 0.01642 | | |
| Sb | -0.00527 | 16.22 | -0.00479 | -0.00476 | -0.00625 | | |
| XSe | 0.00081 | 564.7 | -0.00361 | 0.00555 | 0.00050 | | |
| Sn | 0.01038 | 57.10 | 0.01708 | 0.00825 | 0.00581 | | |
| Sr | 0.18573 | 0.539 | 0.18689 | 0.18514 | 0.18517 | | |
| Ti | 0.00128 | 20.74 | 0.00097 | 0.00146 | 0.00142 | | |
| Tl | -0.00228 | 119.3 | -0.00073 | -0.00068 | -0.00544 | | |
| V | 0.00051 | 95.63 | 0.00081 | -0.00005 | 0.00079 | | |
| Y | 148963.32812 | 0.965 | 147314.00000 | 149619.00000 | 149957.00000 | | |
| Zn | 0.17843 | 0.401 | 0.17772 | 0.17916 | 0.17842 | | |

8884

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 42 4221331 02/25/04 08:09
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| XAg | 0.00159 | 55.42 | 0.00063 | 0.00177 | 0.00238 | | |
| Al | -0.01713 | 54.32 | -0.00677 | -0.01982 | -0.02479 | | |
| XAs | -0.00235 | 204.5 | -0.00749 | 0.00208 | -0.00166 | | |
| B | 0.01561 | 10.93 | 0.01375 | 0.01711 | 0.01595 | | |
| XBa | 0.00444 | 1.331 | 0.00437 | 0.00448 | 0.00446 | | |
| Be | -0.00015 | 85.52 | -0.00030 | -0.00006 | -0.00008 | | |
| Ca | 0.06595 | 7.056 | 0.06929 | 0.06063 | 0.06793 | | |
| XCd | 0.00023 | 156.6 | -0.00011 | 0.00020 | 0.00060 | | |
| Co | -0.00097 | 100.2 | -0.00205 | -0.00073 | -0.00014 | | |
| XCr | 0.00016 | 270.6 | -0.00033 | 0.00036 | 0.00045 | | |
| Cu | 0.00256 | 34.57 | 0.00156 | 0.00288 | 0.00324 | | |
| Fe | -0.00071 | 123.8 | -0.00171 | -0.00040 | -0.00002 | | |
| K | 0.16719 | 10.39 | 0.18447 | 0.16738 | 0.14972 | | |
| Mg | 0.00139 | 369.8 | -0.00454 | 0.00489 | 0.00384 | | |
| Mn | 0.00046 | 23.33 | 0.00041 | 0.00038 | 0.00058 | | |
| Mo | -0.00124 | 74.94 | -0.00229 | -0.00047 | -0.00097 | | |
| Na | 1261.18701 | 0.772 | 1249.97778 | 1267.67358 | 1265.90966 | | |
| Ni | -0.00032 | 249.8 | -0.00112 | -0.00032 | 0.00048 | | |
| XPb | 0.00311 | 42.21 | 0.00462 | 0.00245 | 0.00225 | | |
| Sb | -0.00610 | 49.80 | -0.00901 | -0.00637 | -0.00294 | | |
| XSe | 0.00142 | 273.0 | -0.00292 | 0.00265 | 0.00453 | | |
| Sn | 0.00349 | 289.8 | -0.00816 | 0.00851 | 0.01014 | | |
| Sr | 0.00055 | 1.417 | 0.00054 | 0.00054 | 0.00055 | | |
| Ti | 0.00147 | 34.50 | 0.00088 | 0.00177 | 0.00176 | | |
| Tl | -0.00795 | 54.74 | -0.01291 | -0.00625 | -0.00471 | | |
| V | 0.00019 | 215.3 | -0.00027 | 0.00054 | 0.00032 | | |
| Y | 150387.00000 | 3.533 | 144284.00000 | 152889.00000 | 153988.00000 | | |
| Zn | 0.00399 | 24.79 | 0.00287 | 0.00436 | 0.00475 | | |

5885

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 43 4221332 02/25/04 08:15
****,50-50,DF1,040555705004,S,,

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| X Ag | -0.00004 | 1548. | 0.00054 | 0.00014 | -0.00082 | | |
| Al | -0.03313 | 15.90 | -0.02775 | -0.03336 | -0.03828 | | |
| X As | 0.00015 | 906.8 | 0.00141 | 0.00046 | -0.00140 | | |
| B | 0.01793 | 4.164 | 0.01776 | 0.01874 | 0.01728 | | |
| X Ba | 0.00404 | 0.525 | 0.00402 | 0.00406 | 0.00406 | | |
| Be | -0.00007 | 170.9 | 0.00007 | -0.00017 | -0.00014 | | |
| Ca | 0.01142 | 78.52 | 0.02171 | 0.00531 | 0.00722 | | |
| X Cd | 0.00020 | 95.76 | 0.00008 | 0.00042 | 0.00009 | | |
| Co | -0.00072 | 108.9 | -0.00047 | -0.00009 | -0.00162 | | |
| X Cr | -0.00032 | 130.0 | -0.00080 | -0.00010 | -0.00005 | | |
| Cu | 0.00211 | 8.329 | 0.00217 | 0.00225 | 0.00191 | | |
| Fe | -0.00256 | 12.38 | -0.00261 | -0.00221 | -0.00284 | | |
| K | 0.12725 | 4.702 | 0.12042 | 0.13161 | 0.12970 | | |
| Mg | -0.00771 | 28.00 | -0.00687 | -0.00609 | -0.01016 | | |
| Mn | 0.00030 | 10.43 | 0.00031 | 0.00033 | 0.00027 | | |
| Mo | -0.00058 | 124.0 | -0.00039 | 0.00002 | -0.00137 | | |
| Na | 1285.68078 | 1.191 | 1268.01916 | 1293.58862 | 1295.43444 | | |
| Ni | 0.00011 | 1289. | -0.00133 | 0.00159 | 0.00008 | | |
| X Pb | 0.00248 | 29.45 | 0.00224 | 0.00330 | 0.00190 | | |
| Sb | -0.00444 | 54.69 | -0.00252 | -0.00718 | -0.00364 | | |
| X Se | -0.00082 | 76.26 | -0.00152 | -0.00029 | -0.00065 | | |
| Sn | 0.00572 | 19.89 | 0.00444 | 0.00611 | 0.00663 | | |
| Sr | 0.00056 | 9.704 | 0.00049 | 0.00060 | 0.00058 | | |
| Ti | 0.00118 | 7.436 | 0.00124 | 0.00121 | 0.00108 | | |
| Tl | -0.00188 | 225.8 | 0.00247 | -0.00210 | -0.00601 | | |
| V | -0.00057 | 55.60 | -0.00029 | -0.00091 | -0.00049 | | |
| Y | 153345.32812 | 1.545 | 156042.00000 | 151598.00000 | 152396.00000 | | |
| Zn | 0.00337 | 10.20 | 0.00313 | 0.00377 | 0.00322 | | |

9886

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 44 LLC 02/25/04 08:20

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.00539 | 25.76 | 0.00409 | 0.00685 | 0.00523 | | |
| Al | 0.16508 | 4.935 | 0.16302 | 0.17406 | 0.15816 | | |
| As | 0.00932 | 22.90 | 0.00815 | 0.01178 | 0.00802 | | |
| B | 0.04993 | 2.246 | 0.04914 | 0.05122 | 0.04944 | | |
| Ba | 0.00517 | 3.490 | 0.00503 | 0.00537 | 0.00511 | | |
| Be | 0.00515 | 2.605 | 0.00530 | 0.00507 | 0.00507 | | |
| Ca | 0.17707 | 1.470 | 0.17842 | 0.17872 | 0.17407 | | |
| Cd | 0.00557 | 1.398 | 0.00551 | 0.00566 | 0.00554 | | |
| Co | 0.00570 | 24.45 | 0.00509 | 0.00730 | 0.00472 | | |
| Cr | 0.00483 | 12.77 | 0.00460 | 0.00553 | 0.00436 | | |
| Cu | 0.01147 | 10.15 | 0.01037 | 0.01269 | 0.01135 | | |
| Fe | 0.20277 | 0.589 | 0.20251 | 0.20408 | 0.20173 | | |
| K | 0.51058 | 5.912 | 0.49226 | 0.54543 | 0.49407 | | |
| Mg | 0.09319 | 9.307 | 0.08559 | 0.10264 | 0.09135 | | |
| Mn | 0.00532 | 0.068 | 0.00532 | 0.00532 | 0.00532 | | |
| Mo | 0.00910 | 6.710 | 0.00961 | 0.00927 | 0.00842 | | |
| Na | 1.37033 | 1.357 | 1.38811 | 1.35101 | 1.37186 | | |
| Ni | 0.00990 | 2.469 | 0.00975 | 0.01018 | 0.00977 | | |
| Pb | 0.02116 | 4.584 | 0.02215 | 0.02021 | 0.02113 | | |
| Sb | 0.01439 | 39.23 | 0.00899 | 0.02026 | 0.01392 | | |
| Se | 0.00739 | 21.15 | 0.00705 | 0.00603 | 0.00910 | | |
| Sn | 0.02343 | 13.49 | 0.02236 | 0.02699 | 0.02095 | | |
| Sr | 0.00489 | 0.176 | 0.00490 | 0.00488 | 0.00489 | | |
| Ti | 0.01010 | 3.313 | 0.00974 | 0.01040 | 0.01016 | | |
| Tl | 0.02748 | 33.27 | 0.02799 | 0.03636 | 0.01809 | | |
| V | 0.00471 | 6.751 | 0.00458 | 0.00508 | 0.00448 | | |
| Y | 156158.32812 | 1.141 | 158178.00000 | 155492.00000 | 154805.00000 | | |
| Zn | 0.02179 | 5.247 | 0.02219 | 0.02268 | 0.02050 | | |

8887

LANCASTER LABORATORIES

Run Name: 040560ZT63 INSTRUMENT ID: 06383

Tube: 45 ICSA 02/25/04 08:25

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00042 | 77.07 | -0.00009 | -0.00042 | -0.00074 | | |
| Al | 513.50531 | 0.156 | 514.39453 | 513.29888 | 512.82244 | | |
| As | -0.00240 | 33.61 | -0.00186 | -0.00201 | -0.00333 | | |
| B | -0.00271 | 19.13 | -0.00217 | -0.00320 | -0.00278 | | |
| Ba | -0.00066 | 13.03 | -0.00057 | -0.00074 | -0.00067 | | |
| Be | 0.00016 | 129.2 | 0.00040 | 0.00005 | 0.00003 | | |
| Ca | 541.12756 | 0.565 | 544.56738 | 540.10540 | 538.70989 | | |
| Cd | 0.00485 | 4.711 | 0.00459 | 0.00499 | 0.00498 | | |
| Co | 0.00388 | 25.35 | 0.00501 | 0.00321 | 0.00343 | | |
| Cr | -0.00303 | 22.78 | -0.00237 | -0.00374 | -0.00297 | | |
| Cu | 0.00406 | 7.912 | 0.00427 | 0.00369 | 0.00421 | | |
| Fe | 203.70904 | 0.338 | 204.48893 | 203.45707 | 203.18113 | | |
| K | 0.01942 | 103.2 | -0.00160 | 0.03834 | 0.02155 | | |
| Mg | 515.98205 | 0.185 | 517.08636 | 515.39569 | 515.46411 | | |
| Mn | 0.00361 | 2.392 | 0.00351 | 0.00365 | 0.00368 | | |
| Mo | -0.00094 | 49.11 | -0.00146 | -0.00058 | -0.00077 | | |
| Na | 0.13913 | 153.6 | 0.36055 | -0.06613 | 0.12298 | | |
| Ni | 0.00185 | 22.29 | 0.00141 | 0.00190 | 0.00223 | | |
| Pb | 0.00402 | 39.66 | 0.00315 | 0.00304 | 0.00586 | | |
| Sb | -0.00133 | 292.9 | -0.00352 | -0.00364 | 0.00317 | | |
| Se | -0.00533 | 64.37 | -0.00852 | -0.00169 | -0.00577 | | |
| Sn | 0.00895 | 50.82 | 0.01031 | 0.00387 | 0.01265 | | |
| Sr | -0.07256 | 0.555 | -0.07301 | -0.07244 | -0.07223 | | |
| Ti | -0.00551 | 4.514 | -0.00525 | -0.00575 | -0.00552 | | |
| Tl | -0.00164 | 181.6 | -0.00445 | 0.00150 | -0.00199 | | |
| V | 0.00454 | 14.49 | 0.00528 | 0.00402 | 0.00433 | | |
| Y | 146208.32812 | 0.689 | 145223.00000 | 146163.00000 | 147239.00000 | | |
| Zn | 0.01284 | 11.40 | 0.01274 | 0.01143 | 0.01435 | | |

8888

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 46 ICSAB 02/25/04 08:31

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.21228 | 0.696 | 0.21087 | 0.21214 | 0.21382 | | |
| Al | 514.77526 | 0.353 | 512.85198 | 515.00286 | 516.47094 | | |
| As | 0.09806 | 1.627 | 0.09631 | 0.09943 | 0.09844 | | |
| B | -0.00146 | 46.83 | -0.00176 | -0.00194 | -0.00067 | | |
| Ba | 0.51605 | 0.232 | 0.51503 | 0.51577 | 0.51737 | | |
| Be | 0.52002 | 0.449 | 0.51779 | 0.51981 | 0.52245 | | |
| Ca | 543.97467 | 0.632 | 541.04699 | 543.11322 | 547.76385 | | |
| Cd | 0.98863 | 0.342 | 0.98544 | 0.98826 | 0.99219 | | |
| Co | 0.50296 | 0.585 | 0.50006 | 0.50289 | 0.50594 | | |
| Cr | 0.50914 | 0.509 | 0.50684 | 0.50862 | 0.51195 | | |
| Cu | 0.54018 | 0.245 | 0.53900 | 0.53991 | 0.54161 | | |
| Fe | 205.82312 | 0.450 | 204.94715 | 205.72938 | 206.79281 | | |
| K | 0.02738 | 88.34 | 0.00942 | 0.01783 | 0.05490 | | |
| Mg | 521.59796 | 0.453 | 519.28607 | 521.49615 | 524.01165 | | |
| Mn | 0.51300 | 0.324 | 0.51161 | 0.51254 | 0.51484 | | |
| Mo | -0.00055 | 266.5 | -0.00224 | 0.00058 | -0.00001 | | |
| Na | 0.01073 | 1081. | -0.06211 | -0.05033 | 0.14466 | | |
| Ni | 0.98538 | 0.288 | 0.98353 | 0.98397 | 0.98865 | | |
| Pb | 0.05527 | 4.105 | 0.05265 | 0.05654 | 0.05662 | | |
| Sb | 0.63569 | 0.923 | 0.63421 | 0.63070 | 0.64216 | | |
| Se | 0.04778 | 5.644 | 0.04470 | 0.04888 | 0.04975 | | |
| Sn | 0.00706 | 85.80 | 0.01293 | 0.00742 | 0.00082 | | |
| Sr | -0.07297 | 0.663 | -0.07251 | -0.07291 | -0.07348 | | |
| Ti | -0.00550 | 1.871 | -0.00557 | -0.00554 | -0.00538 | | |
| Tl | 0.10025 | 0.477 | 0.10075 | 0.10021 | 0.09979 | | |
| V | 0.52261 | 0.356 | 0.52102 | 0.52214 | 0.52466 | | |
| Y | 148416.67187 | 0.681 | 148272.00000 | 149492.00000 | 147486.00000 | | |
| Zn | 1.00240 | 0.508 | 0.99652 | 1.00518 | 1.00551 | | |

8889

LANCASTER LABORATORIES

Run Name: 0405602T63 INSTRUMENT ID: 06383

Tube: 47 CCV 02/25/04 08:36

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | 0.50673 | 0.210 | 0.50561 | 0.50685 | 0.50774 | | |
| Al | 25.84488 | 0.385 | 25.73340 | 25.87565 | 25.92559 | | |
| As | 0.48603 | 0.735 | 0.48387 | 0.48407 | 0.49016 | | |
| B | 0.51701 | 0.430 | 0.51472 | 0.51713 | 0.51917 | | |
| Ba | 0.49058 | 0.316 | 0.48895 | 0.49075 | 0.49204 | | |
| Be | 0.51365 | 0.409 | 0.51134 | 0.51417 | 0.51545 | | |
| Ca | 26.33996 | 0.548 | 26.18050 | 26.37758 | 26.46180 | | |
| Cd | 0.50524 | 0.388 | 0.50326 | 0.50528 | 0.50719 | | |
| Co | 0.50779 | 0.326 | 0.50588 | 0.50876 | 0.50873 | | |
| Cr | 0.50689 | 0.575 | 0.50381 | 0.50724 | 0.50961 | | |
| Cu | 0.50496 | 0.246 | 0.50352 | 0.50562 | 0.50574 | | |
| Fe | 26.20690 | 0.448 | 26.07772 | 26.23529 | 26.30768 | | |
| K | 25.34927 | 0.370 | 25.24132 | 25.41148 | 25.39502 | | |
| Mg | 26.14099 | 0.415 | 26.01992 | 26.17327 | 26.22978 | | |
| Mn | 0.50590 | 0.401 | 0.50363 | 0.50653 | 0.50754 | | |
| Mo | 0.50824 | 1.368 | 0.50074 | 0.50949 | 0.51448 | | |
| Na | 25.78866 | 0.370 | 25.68866 | 25.87899 | 25.79834 | | |
| Ni | 0.50303 | 0.322 | 0.50252 | 0.50173 | 0.50485 | | |
| Pb | 0.51091 | 0.995 | 0.50515 | 0.51279 | 0.51478 | | |
| Sb | 0.50057 | 0.450 | 0.49802 | 0.50232 | 0.50136 | | |
| Se | 0.50313 | 1.034 | 0.49766 | 0.50803 | 0.50370 | | |
| Sn | 0.51687 | 0.910 | 0.51147 | 0.51902 | 0.52012 | | |
| Sr | 0.50074 | 0.330 | 0.49894 | 0.50108 | 0.50219 | | |
| Ti | 0.50187 | 0.362 | 0.49988 | 0.50229 | 0.50345 | | |
| Tl | 0.49439 | 1.337 | 0.48685 | 0.49923 | 0.49708 | | |
| V | 0.50284 | 0.476 | 0.50013 | 0.50372 | 0.50467 | | |
| Y | 157437.00000 | 0.274 | 156938.00000 | 157673.00000 | 157700.00000 | | |
| Zn | 0.51677 | 0.468 | 0.51412 | 0.51732 | 0.51886 | | |

8898

LANCASTER LABORATORIES

Run Name: 040560ZT63 INSTRUMENT ID: 06383

Tube: 48 CCB 02/25/04 08:42

| ELEM | AVG (ppm) | %RSD | INTEGRATIONS #1 | #2 | #3 | REREAD | REDIG |
|---|---|---|---|---|---|---|---|
| Ag | -0.00022 | 145.2 | -0.00053 | 0.00012 | -0.00027 | | |
| Al | -0.03462 | 21.85 | -0.02593 | -0.03811 | -0.03981 | | |
| As | -0.00149 | 28.14 | -0.00101 | -0.00181 | -0.00163 | | |
| B | -0.00176 | 77.90 | -0.00031 | -0.00194 | -0.00305 | | |
| Ba | -0.00001 | 457.7 | -0.00002 | -0.00005 | 0.00004 | | |
| Be | -0.00006 | 94.24 | 0.00000 | -0.00006 | -0.00012 | | |
| Ca | -0.03555 | 8.863 | -0.03192 | -0.03721 | -0.03753 | | |
| Cd | 0.00030 | 48.27 | 0.00015 | 0.00031 | 0.00044 | | |
| Co | -0.00008 | 267.6 | -0.00029 | 0.00016 | -0.00012 | | |
| Cr | -0.00049 | 197.2 | -0.00147 | 0.00048 | -0.00049 | | |
| Cu | 0.00093 | 24.98 | 0.00084 | 0.00076 | 0.00120 | | |
| Fe | 0.00048 | 385.8 | 0.00263 | -0.00071 | -0.00047 | | |
| K | 0.03520 | 21.57 | 0.03058 | 0.04396 | 0.03104 | | |
| Mg | 0.00516 | 99.04 | 0.00956 | -0.00044 | 0.00637 | | |
| Mn | 0.00012 | 104.6 | -0.00002 | 0.00023 | 0.00017 | | |
| Mo | 0.00027 | 253.4 | 0.00022 | -0.00039 | 0.00097 | | |
| Na | 0.16002 | 78.68 | 0.06058 | 0.30160 | 0.11789 | | |
| Ni | -0.00018 | 380.4 | -0.00097 | 0.00038 | 0.00003 | | |
| Pb | -0.00026 | 498.7 | -0.00158 | 0.00101 | -0.00021 | | |
| Sb | 0.00009 | 1892. | 0.00152 | 0.00079 | -0.00202 | | |
| Se | 0.00101 | 169.4 | 0.00292 | 0.00055 | -0.00042 | | |
| Sn | 0.00249 | 120.3 | 0.00251 | 0.00549 | -0.00051 | | |
| Sr | -0.00018 | 17.73 | -0.00021 | -0.00014 | -0.00020 | | |
| Ti | 0.00003 | 174.8 | 0.00005 | -0.00003 | 0.00007 | | |
| Tl | 0.00101 | 525.6 | 0.00708 | -0.00288 | -0.00116 | | |
| V | 0.00017 | 286.1 | 0.00011 | 0.00072 | -0.00029 | | |
| Zn | 0.00000 | 9294. | -0.00046 | -0.00046 | 0.00096 | | |

Data Reviewed by: JMG 1170 2-25-04

Data Verified by: NCH0243 2-25-04

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# Mercury Data

LANCASTER LABRATORIES

MERCURY ANALYZER

DATA REVIEWED BY: JW354 2-25-04 METHOD REFERENCE: SW-846 7470A

DATA VERIFIED BY: JLM1163 2/25/04

DATA FILE NAME: 0405601.PRN
RUN NAME: 0405601M05 INSTRUMENT NO: 62016

ANALYST: 354 ELEMENT: HG

8893

RUN NAME: 0405601M05
PAGE: 1
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 1 02/25/04 09:08

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.0000 | -638.0 |

---

TUBE: 2 02/25/04 09:10

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0.2 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.2000 | 25835.0 |

---

TUBE: 3 02/25/04 09:11

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S0.5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.5000 | 57450.0 |

---

TUBE: 4 02/25/04 09:12

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S1.0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0000 | 122057.0 |

---

TUBE: 5 02/25/04 09:14

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S2.5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 2.5000 | 300820.0 |

---

TUBE: 6 02/25/04 09:15

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| S5.0 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 5.0000 | 564108.0 | Correlation Coefficient = 0.99941 |

---

TUBE: 7 02/25/04 09:16

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| ICV | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 2.4500 | 282749.0 | %RECOVERY = 98.0 |

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---

RUN NAME: 0405601M05
PAGE: 2
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 8 02/25/04 09:18

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| ICB | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0140 | 2789.0 |

---

TUBE: 9 02/25/04 09:19

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CRA | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 0.1920 | 26106.0 |

---

TUBE: 10 02/25/04 09:21

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 1 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0200 | 120424.0 |

%RECOVERY = 102.0

---

TUBE: 11 02/25/04 09:22

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 1 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0100 | 3206.0 |

---

TUBE: 12 02/25/04 09:23

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0030 | 3956.0 | — | — |

---

TUBE: 13 02/25/04 09:24

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0300 | 121703.0 | — | — |

---

TUBE: 14 02/25/04 09:25

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218105 | U****** | 50 | 50 | 1 | 040555713001 |

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| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4660.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 3
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 15 02/25/04 09:27

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218107 | D****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0500 | -1271.0 | — | — |

---

TUBE: 16 02/25/04 09:28

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218106 | R****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 1.0400 | 122519.0 | — | — |

---

TUBE: 17 02/25/04 09:29

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218106 | M****** | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0400 | 122669.0 | — | — |

---

TUBE: 18 02/25/04 09:31

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218108 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0210 | 1957.0 | — | — |

---

TUBE: 19 02/25/04 09:32

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218109 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0430 | -564.0 | — | — |

---

TUBE: 20 02/25/04 09:33

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218110 | ******* | 50 | 50 | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0150 | 2659.0 | — | — |

---

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RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 4
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 21 02/25/04 09:34

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218111 | ******* | 50 | 50 | | 1 | 040555713001 |

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| -0.0130 | 2906.0 | — | — |

---

TUBE: 22 02/25/04 09:36

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCV 2 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0700 | 125839.0 |

%RECOVERY = 107.0

---

TUBE: 23 02/25/04 09:37

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCB 2 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0390 | -34.0 |

---

TUBE: 24 02/25/04 09:39

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218112 | ******* | 50 | 50 | | 1 | 040555713001 |

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0160 | 6112.0 | — | — |

---

TUBE: 25 02/25/04 09:40

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218848 | ******* | 50 | 50 | | 1 | 040555713001 |

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0180 | 6433.0 | — | — |

---

TUBE: 26 02/25/04 09:41

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218849 | ******* | 50 | 50 | | 1 | 040555713001 |

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| 0.0330 | 8060.0 | — | — |

---

TUBE: 27 02/25/04 09:42

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218850 | ******* | 50 | 50 | | 1 | 040555713001 |

| AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|
| -0.0150 | 2662.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 5
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 28 02/25/04 09:43

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218851 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0010 | 4203.0 | — | — |

---

TUBE: 29 02/25/04 09:44

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218852 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4677.0 | — | — |

---

TUBE: 30 02/25/04 09:47

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218853 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0710 | 12374.0 | — | — |

---

TUBE: 31 02/25/04 09:48

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218854 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0230 | 6987.0 | — | — |

---

TUBE: 32 02/25/04 09:50

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218855 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0320 | 711.0 | — | — |

---

TUBE: 33 02/25/04 09:51

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218856 | ******* | 50 | 50 | | 1 | 040555713001 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0010 | 4404.0 | — | — |

---

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 6
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 34 02/25/04 09:53

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 3 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0100 | 119159.0 |

%RECOVERY = 101.0

---

TUBE: 35 02/25/04 09:54

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 3 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0450 | -767.0 |

---

TUBE: 36 02/25/04 09:55

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0130 | 2841.0 | — | — |

---

TUBE: 37 02/25/04 09:57

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0900 | 128230.0 | — | — |

---

TUBE: 38 02/25/04 09:58

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218114 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0640 | -2931.0 | — | — |

---

TUBE: 39 02/25/04 09:59

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218115 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0110 | 5607.0 | — | — |

---

TUBE: 40 02/25/04 10:00

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218116 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0510 | -1454.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 7
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 41 02/25/04 10:01

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218117 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0350 | 357.0 | — | — |

---

TUBE: 42 02/25/04 10:02

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218118 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0400 | 8897.0 | — | — |

---

TUBE: 43 02/25/04 10:04

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218858 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0190 | 6451.0 | — | — |

---

TUBE: 44 02/25/04 10:06

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218859 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0010 | 4418.0 | — | — |

---

TUBE: 45 02/25/04 10:07

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218860 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0420 | -371.0 | — | — |

---

TUBE: 46 02/25/04 10:09

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 4 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0500 | 123823.0 |

%RECOVERY = 105.0

---

TUBE: 47 02/25/04 10:10

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 4 | ******* | 0 | 0 | 1 | [illegible] |

| AVG(ppb) | Intensity |
|---|---|
| -0.0210 | 1959.0 |

---

RUN NAME: 0405601M05

LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 8
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 48 02/25/04 10:12

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218861 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0170 | 2425.0 | — | — |

---

TUBE: 49 02/25/04 10:13

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218863 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0160 | 2489.0 | — | — |

---

TUBE: 50 02/25/04 10:15

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220918 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0070 | 5129.0 | — | — |

---

TUBE: 51 02/25/04 10:16

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220919 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0110 | 5609.0 | — | — |

---

TUBE: 52 02/25/04 10:17

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220920 | ******* | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0050 | 4966.0 | — | — |

---

TUBE: 53 02/25/04 10:19

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220921 | U****** | 50 | 50 | | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0030 | 4700.0 | — | — |

---

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RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 9
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 54 02/25/04 10:20

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220923 | D****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0550 | -1924.0 | — | — |

---

TUBE: 55 02/25/04 10:21

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220922 | R****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 1.0200 | 120291.0 | — | — |

---

TUBE: 56 02/25/04 10:22

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4220922 | M****** | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 125399.0 | — | — |

---

TUBE: 57 02/25/04 10:24

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| 4218862 | ******* | 50 | 50 | 1 | 040555713002 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0060 | 3674.0 | — | — |

---

TUBE: 58 02/25/04 10:25

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCV 5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0000 | 117829.0 |

%RECOVERY = 100.0

---

TUBE: 59 02/25/04 10:26

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| CCB 5 | ******* | 0 | 0 | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0400 | -183.0 |

---

TUBE: 60 02/25/04 10:27

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | BATCH NUMBER |
|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0070 | 3599.0 | — | — |

RUN NAME: 0405601M05
PAGE: 10
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 61 02/25/04 10:28

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0800 | 126302.0 | — | — |

---

TUBE: 62 02/25/04 10:30

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218136 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0110 | 3043.0 | — | — |

---

TUBE: 63 02/25/04 10:31

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4218137 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0120 | 5740.0 | — | — |

---

TUBE: 64 02/25/04 10:33

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220308 | U****** | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0040 | 3944.0 | — | — |

---

TUBE: 65 02/25/04 10:34

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220308 | D****** | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0400 | -167.0 | — | — |

---

TUBE: 66 02/25/04 10:35

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220308 | R****** | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0900 | 127651.0 | — | — |

---

— 8383

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 11
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 67 02/25/04 10:36

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220308 | M******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0800 | 126345.0 | — | — |

---

TUBE: 68 02/25/04 10:38

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220310 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0540 | -1794.0 | — | — |

---

TUBE: 69 02/25/04 10:39

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4220312 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | -0.0170 | 2466.0 | — | — |

---

TUBE: 70 02/25/04 10:40

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCV 6 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| 1.0900 | 127456.0 |

%RECOVERY = 109.0

---

TUBE: 71 02/25/04 10:42

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCB 6 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0260 | 1390.0 |

---

TUBE: 72 02/25/04 10:43

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4221482 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 0.0180 | 6412.0 | — | — |

---

TUBE: 73 02/25/04 10:44

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4221507 | ******* | 50 | 50 | | 1 | 040555713003 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 0.0390 | 8796.0 | — | — |

---

RUN NAME: 0405601M05
PAGE: 12
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 74 02/25/04 10:46

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| PBW | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| — | -0.0260 | 1350.0 | — | — |

---

TUBE: 75 02/25/04 10:47

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| LCSW | ******* | 1 | 1 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 126269.0 | — | — |

---

TUBE: 76 02/25/04 10:49

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | U****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0220 | 6829.0 | — | — |

---

TUBE: 77 02/25/04 10:50

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | D****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 0.0510 | 10132.0 | — | — |

---

TUBE: 78 02/25/04 10:51

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | R****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0600 | 124563.0 | — | — |

---

TUBE: 79 02/25/04 10:52

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219006 | M****** | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 1.0700 | 126223.0 | — | — |

---

8985

RUN NAME: 0405601M05
LANCASTER LABRATORIES

RUN NAME: 0405601M05
PAGE: 13
ANALYST: 354

LANCASTER LABRATORIES
INSTRUMENT ID: 62016
CV ELEMENT: HG

TUBE: 80 02/25/04 10:54

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219022 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0130 | 2838.0 | — | — |

---

TUBE: 81 02/25/04 10:55

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219022 | QA***** | 10 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| ✓ | 2.9300 | 336284.0 | — | — |

---

TUBE: 82 02/25/04 10:56

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCV 7 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity | |
|---|---|---|
| 1.0400 | 121797.0 | %RECOVERY = 104.0 |

---

TUBE: 83 02/25/04 10:58

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| CCB 7 | ******* | 0 | 0 | | 1 | |

| AVG(ppb) | Intensity |
|---|---|
| -0.0990 | -6876.0 |

---

TUBE: 84 02/25/04 10:59

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219669 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | -0.0220 | 1860.0 | — | — |

---

TUBE: 85 02/25/04 11:01

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219667 | ******* | 50 | 50 | | 1 | 040555713004 |

9 6 2-25-04 DV3S-1

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0760 | 13018.0 | — | — |

---

TUBE: 86 02/25/04 11:02

| SAMPLE | CLASS | IVOL/WT | FVOL | DF | | BATCH NUMBER |
|---|---|---|---|---|---|---|
| 4219913 | ******* | 50 | 50 | | 1 | 040555713004 |

| V | AVG(ppb) | Intensity | RR | RD |
|---|---|---|---|---|
| X | 0.0290 | 7583.0 | — | — |

---

# Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Water Digestion Logbook
## AA/ICP – 820/1848/5705/5706/6360

Batch # 040555 5705 004

Digest Type: AA/ICP/GF(Sb)-SW846
COC (Y/N): No

Start Time [24:00] ON Hotplate/IN HotBlock: 21:20
End Time [24:00] OFF Hotplate/OUT of HotBlock: 23:25
[May include time for cooling, reagent additions, etc.]

| | Sample # | T | Initial Vol (mL) | Final Vol (mL) | SDG # | AA (A) | ICP (I) | GF (G) | Reagents: 1:1 $HNO_3$ Lot # Z | 1:1 HCl Lot # 023 | $HNO_3$ Lot # Y07028 | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Vol Added (mL) | Vol Added (mL) | Vol Added (mL) | |
| 1 | 4219006 | 1 | 50 | 50 | RAV021 | | I | | | 5mL | 3mL | 08a |
| 2 | 9022 LL | | | | RAV02 | | | | | | | |
| 3 | 9022 QA | | | | ARF29 | | | | | | | 08B |
| 4 | 9669 | | | | | | | | | | | 08a |
| 5 | 9697 | | | | | | | | | | | |
| 6 | 9913 | | | | | | | | | | | |
| 7 | 9913DA | | | | | | | | | | | 08B |
| 8 | 4220283 | | | | | | | | | | | 08a Rush due 3/3 |
| 9 | 0301 | | | | | | | | | | | Rush due 2/27 |
| 10 | 0301 QA | | | | CLV85 | | | | | | | 08B |
| 11 | 0720 | | | | | | | | | | | 08a |
| 12 | 0723 | | 25 | 25 | | | | | | | | |
| 13 | 0725 | | | | | | | | | 2.5mL | 1.5mL | 99a Limited sample! Preserved in aliquots Rush! due 2/25 |
| 14 | 0726 | | | | | | | | | | | |
| 15 | 0727 | | | | | | | | | | | |
| 16 | 0902 | | 50 | 50 | | | | | | 5mL | 3mL | 08a |
| 17 | 1331 | | | | | | | | | | | |
| 18 | 1332 | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| Dup (D) | 4219022 | 1 | 50 | 50 | RAV02 | | I | | | 5mL | 3mL | 08a |
| Spike (R) | 9022 | | | | | | | | | | | |
| MSD (M) | 9022 | | | | | | | | | | | |
| Blank | BLANK* | | | | | | | | | | | +LCSW Ext. fluid used Lot: 123002230A |

* A Blank and LCS(s) [same initial volume(s)] were digested in this batch in a similar manner as field samples and adjusted to the same final volume.

| Spike Information | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample # | | Sol'n ID | 1 | 2 | 3 | 4 | 5 | 8 |
| 4219022 | (R) | Lot # | 365 | 036 | 357 | 346A | 008 | |
| 4219022 | (M) | Vol Added (mL) | 1mL | | | | | |
| QC | LCS | Vol Added (mL) | | | | | | |
| | LCSD | | | | | | | |

Digest Date: 2-23-04 (4) @AMS0862 2-24-04

Digested by (Init./Emp. #): AMS0862



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# Water Digestion Logbook
## Hg – 5713

Batch # 040557 5713 004

| | Sample # | T | Initial Vol (mL) | Final Vol (mL) | DF | SDG # |
|---|---|---|---|---|---|---|
| 1 | 4219006U | 1 | 50 | 50 | 1 | RAVQ1 |
| 2 | 9022 | ↓ | ↓ | ↓ | ↓ | RAVQ2 |
| 3 | 9022BA | | 10 | | | ↓ |
| 4 | 9669 | | 50 | | | ARF29 |
| 5 | 9697 | | ↓ | | | |
| 6 | 9913 | | ↓ | | | |
| 7 | 9913BA | | 10 | | | |
| 8 | 422 0283 | | 50 | | | |
| 9 | 0301 | | 50 | | | |
| 10 | 0301BA | | 10 | | | |
| 11 | 0725 | | 25 | | | |
| 12 | 0726 | | ↓ | | | |
| 13 | 0727 | | ↓ | | | |
| 14 | 0902 | | 50 | | | |
| 15 | 1331 | | ↓ | | | |
| 16 | 1332 | ↓ | ↓ | ↓ | ↓ | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| Dup (D) | 4219006D | 1 | 50 | 50 | 1 | RAVQ1 |
| Spike (R) | 9006R | ↓ | ↓ | ↓ | ↓ | ↓ |
| MSD (M) | 9006M | ↓ | ↓ | ↓ | ↓ | ↓ |
| Blank | BLANK* | ↓ | ↓ | ↓ | ↓ | ↓ |

*A Blank and LCS(s) [same initial volume(s)] were digested in this batch in a similar manner as field samples and adjusted to the same final volume.

| Spike Information | | |
|---|---|---|
| QC LCS | Soln ID | 1 ppm Hg |
| | Lot # | 055 |
| | Vol Added (mL) | 0.05 mL → 50 |
| LCSD | | 1.0 @ NSM823 2.24.04 |
| Sample # 4219006 (R) | Soln ID | 1 ppm Hg |
| | Lot # | 055 |
| 4219006 (M) | Vol Added (mL) | 0.05 mL → 50 |

1502.01

67 044362

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Digest Type Hg-SW846 COC (Y/N) N Start Time 1730

| | Notes |
|---|---|
| 1 | manual digestion 08A |
| 2 | ↓ |
| 3 | 08B |
| 4 | 08A |
| 5 | ↓ |
| 6 | 08B |
| 7 | 08A |
| 8 | ↓ |
| 9 | 08B |
| 10 | |
| 11 | 99A · Very limited sample. |
| 12 | ↓ ↓ Hold 15 min KMnO4 |
| 13 | ↓ |
| 14 | 08A |
| 15 | ↓ |
| 16 | ↓ |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| Dup | manual digestion 08A |
| Spike | ↓ ↓ |
| MSD | |
| Blank | |

| Reagent | Lot # | Vol. Added (mL)* | Vol. Added (mL)** |
|---|---|---|---|
| $H_2SO_4$ | 287647420057 | ~~0.3~~ | 2.5 |
| $HNO_3$ | 407028 | 0.15 | 1.25 |
| 5% $KMnO_4$ | 047 | 0.9 | 7.5 |
| 5% $K_2S_2O_8$ | 042 | ~~0.48~~ | 4.0 |
| NaCl/$NH_2OH$.HCl | | ~~0.36~~ | ③ see ecm log NSM823 2.24.04 |

*Automated digester volumes added to each field and QC sample.
**Manual digestion volumes added to each field and QC sample.

Digest Date: 2/24/04

Digested by (Init/Emp#): NSM823

1502a.01

044362 67

# Leachate Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Extraction Logbook

Date 2-23-04 A
Tech 1 CJ 1230
Tech 2 —

| Sample # | Ana. # 947 or 1339 | Particle size appropriate? | Matrix: Soil/solid sludge Ash | Pre-filtration? | Initial pH | pH Meter ID | 2nd pH | pH Meter ID | Thermometer ID | Balance ID | Sample Weight (g) | Extraction Fluid Volume (mL) | Extraction Fluid Type | Vessel ID | Tumbler ID | pH Meter ID | Final pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4219006 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 8.90 | 28-3 28-6 | 1.63 | 28-3 28-6 | 28-1 | 28-1 28-2 | 100.0 100.0 100.0 | 2000 2000.0 2000.0 | 1 2 | WT3 A WT6 B | 28-123 | 28-3 28-6 | 6.18 |
| 4219022 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 10.07 | 28-3 28-6 | 2.34 | 28-3 28-6 | 28-1 | 28-1 28-2 | 100.0 100.0 100.0 | 2000.0 2000.0 2000.0 | 1 2 | WT7 A WT9 B WT14 C | 28-123 | 28-3 28-6 | 6.69 |
| 4219669 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 9.46 | 28-3 28-6 | 1.52 | 28-3 28-6 | 28-1 | 28-1 28-2 | 150.0 | 3000.0 | 1 2 | 37 | 28-123 | 28-3 28-6 | 5.45 |
| 4219697 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 8.76 | 28-3 28-6 | 1.34 | 28-3 28-6 | 28-1 | 28-1 28-2 | 100.0 | 2000.0 | 1 2 | P7 | 28-123 | 28-3 28-6 | 5.02 |
| 4219913 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 7.99 ~~5.80~~ | 28-3 28-6 | B20 | 28-3 28-6 | 28-1 | 28-1 28-2 | 84.80 | 1696 | 1 2 | W126 | 28-123 | 28-3 28-6 | 5.38 |
| 4220283 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 9.17 | 28-3 28-6 | 1.28 | 28-3 28-6 | 28-1 | 28-1 28-2 | 160.0 | 2000.0 | 1 2 | P41 | 28-123 | 28-3 28-6 | 5.01 |
| 4220301 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 4.63 | 28-3 28-6 | — | 28-3 28-6 | 28-1 | 28-1 28-2 | 150.0 | 3000.0 | 1 2 | 34 | 28-123 | 28-3 28-6 | 4.89 |
| 4220420 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 6.00 | 28-3 28-6 | 1.31 | 28-3 28-6 | 28-1 | 28-1 28-2 | 100.0 | 2000.0 | 1 2 | P45 | 28-123 | 28-3 28-6 | 4.97 |
| 4220423 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 6.30 | 28-3 28-6 | 1.29 | 28-3 28-6 | 28-1 | 28-1 28-2 | ↓ | ↓ | 1 2 | P47 | 28-123 | 28-3 28-6 | 5.00 |
| 4220902 | 947 1339 | Y N | Soil Solid Sludge Ash | Y N | 8.82 | 28-3 28-6 | 1.32 | 28-3 28-6 | 28-1 | 28-1 28-2 | ↓ | ↓ | 1 2 | P48 | 28-123 | 28-3 28-6 | 5.20 |

Comments:

Verified by: JS092 Date: 2/27/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Leachate Preservation/Batch Sheet

**Extraction Started (date/time)** 2.23.04 (1230) by QJ 1230

**Extraction Ended (date/time)** 2-24-04 (0630) by QJ 1230

Batch #: 04054 - 970 - 0947A

Waste Type: (Soil) Solid Sludge Ash Filtration _____

| | Sample # | Ext. Fluid | Lot Number | Metals * $HNO_3$ pH<2 | | BNA * $Na_2S_2O_3$ | | Pest/Herb* $Na_2S_2O_3$ | | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| BLANK | 4221331 | 1 | 123002304A | ✓ | IP | ✓ | 16 | ✓ | 16 | |
| 1 | 4219006 | 1 | | ✓ | IP | ✓ | 16 | ✓ | 16 | |
| 2 | 4219022 | 1 | | SPK | 20 | SPK | 26 | SPK | 26 | |
| 3 | 4219669 | 1 | | ✓ | IP | ✓ | 16 | ✓ | 16 | |
| 4 | 4219697 | 1 | | ✓ | IP | | | | | |
| 5 | 4220920 | 1 | | ✓ | IP | | | | | |
| 6 | 4220923 | 1 | | ✓ | IP | | | | | |
| 7 | 4220902 | 1 | | ✓ | IP | | | | | |
| 8 | | | | | | | | | | |
| 9 44 | 4221332 Mercury | | | ✓ | IP | ✓ | 16 | ✓ | 16 | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

*Check if Sample gets these parameters.
SPK is a batch matrix spike.

Volume of metals spike bottle: 200 ml

Metals Spike Lot #1: 237152A Volume Added: 4ml

Lot #2: 237152B Volume Added: 4ml

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# SPLP / TCLP VOLATILE EXTRACTION LOGBOOK

Date: 2-23-04
Tech 1: M.O.S. 1457
Tech 2: _____

| Sample # | Analysis # 946, 1339 2573 or 8792 | Matrix: Soil/Solid Sludge Ash | Pre-Filtration? | Balance ID | Weigh of residue extracted (g) | Volume of extraction fluid (mL) | Extraction Fluid | Vessel ID | Tumbler ID |
|---|---|---|---|---|---|---|---|---|---|
| TCLP 2573 BLK 4221333 | 946, 1339 (2573) 8792 | soil solid sludge ash filtration | Y (N) | 28- 1 28- 2 | — | 500.00 | TCLP #1 DI $H_2O$ | 04 | 28- 4 (28-5) 28- 7 28-8 |
| 4219007 | (946) 1339 2573, 8792 | (soil) solid sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.0 | 500.00 | TCLP #1 DI $H_2O$ | 01 | 28- 4 (28-5) 28- 7 28-8 |
| 4219023 | (946) 1339 2573, 8792 | (soil) solid sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.0 | 500.00 | TCLP #1 DI $H_2O$ | 02 | 28- 4 (28-5) 28- 7 28-8 |
| 4219670 | (946) 1339 2573, 8792 | (soil) solid sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.0 | 500.00 | TCLP #1 DI $H_2O$ | 06 | 28- 4 (28-5) 28- 7 28-8 |
| 4219914 | (946) 1339 2573, 8792 | soil solid (sludge) ash filtration | (Y) N | 28- 1 (28- 2) | ③ MOS 2-23-04 423.49 | 470 | TCLP #1 DI $H_2O$ | 07 | 28- 4 (28-5) 28- 7 28-8 |
| 4220721 | (946) 1339 2573, 8792 | (soil) solid sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.00 | 500.00 | TCLP #1 DI $H_2O$ | 11 | 28- 4 (28-5) 28- 7 28-8 |
| 4220724 | (946) 1339 2573, 8792 | (soil) solid sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.00 | 500.00 | TCLP #1 DI $H_2O$ | 08 | 28- 4 (28-5) 28- 7 28-8 |
| 4220302 | 946, 1339 (2573) 8792 | soil (solid) sludge ash filtration | Y (N) | 28- 1 (28- 2) | 25.00 | 500.0 | (TCLP #1) DI $H_2O$ | 10 | 28- 4 (28-5) 28- 7 28-8 |
| | ~~946, 1339~~ 2573, 8792 | ~~soil solid sludge~~ ash filtration | ~~Y~~ N | ~~28- 1~~ 28- 2 | | | TCLP #1 DI $H_2O$ | | 28- 4 ~~28-5~~ ~~28- 7~~ 28-8 |
| | ~~946, 1339~~ 2573, 8792 | ~~soil solid sludge~~ ash filtration | ~~Y~~ N | ~~28- 1~~ 28- 2 | | | TCLP #1 ~~DI $H_2O$~~ | | 28- 4 28-5 28- 7 28-8 |

Comments: _____ Verified by: TS 092 Date: 2/27/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# TCLP Volatile Leachates
## Batch Sheet

Extraction Started (date/time) 2-23-04 (13:30) by: (3) M.O.S. 1457 M.O.S. 1457

Extraction Ended (date/time) 2-24-04 (7:30) by: M.O.S. 1457

Leachate Batch #: 04054 - 1457 - 02573 0946 -

Analytical Batch #:

Extraction Fluid Lot #: 1457022304A

| | Sample # | Matrix | Acquired SPK | Acquired BK | Acquired MS | Acquired MSD | Bottles Dept. 21 | Bottles Dept. 25 | Bottles Dept. 32 | Bottles Other |
|---|---|---|---|---|---|---|---|---|---|---|
| EXBLK | TCLP 2573 4221333 | EXT FLUID #1 | | | | | 1 | | | |
| 1 | 421907 | SOIL | | | | | 3 | | | |
| 2 | 421923 | SOIL | | | | | 3 | | | |
| 3 | 421914 | SLUDGE | | | | | 3 | | | |
| 4 | 4220721 | SOIL | | | | | 3 | | | |
| 5 | 4220724 | SOIL | | | | | 3 | | | |
| 6 | 4220302 | SOLID | | | | | 1 | | | |
| 7 | 421670 | SOIL | | | | | 3 | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
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| 20 | | | | | | | | | | |

# Instrumental Analysis Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

*Where quality is a science.*

## Case Narrative

**CLIENT:** Draper Aden Associates, Inc.
**SDG:** RAV02

**Lancaster Laboratories**
**Instrumental Analysis**

**Sample Numbers:**

| LLI #'s | Sample Code | Comments |
|---|---|---|
| 4219021 | UNIT7 | MSD/MS/BKG |

**Analysis:**
Dilutions are listed in the table below:

| Sample | Reactive Cyanide |
|---|---|
| 4219021M | 5 |
| 4219021S | 5 |
| LCS/F | 250 |
| LCS/S | 10 |

**Quality Control and Non Conformance Summary:**
QC was within specifications.

**Data Interpretation:**
No further interpretation of data is needed.

Case Narrative Reviewed and Approved by:

Catherine A. Connors for Date: 3/5/04
Sandra J. Miller, Specialist/Coordinator

# QC Summary

# Lancaster Laboratories

**CLIENT:** Draper Aden Associates, Inc.
**SDG:** RAV02

| Analyte | Batch Numbers | Sample Numbers |
|---|---|---|
| Reactive Cyanide | 04057104201A | 4219021 M, S, B<br>LCS/F<br>LCS/S |

# Lancaster Laboratories

Quality Control Summary
Method Blank
Instrumental Water Quality
Matrix: SOIL
SDG: RAV02

| Analyte | Analysis Date | Method | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|
| Reactive Cyanide | 02/26/04 | AK | 04057104201 | ND | mg/kg | 100 | 100 |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| AK = Alpkem | J = Estimated Value |
| DOC = Dissolved Organic Carbon | LOQ = Limit of Quantitation |
| IC = Ion Chromatography | MDL = Method Detection Limit |
| TKN = Total Kjeldahl Nitrogen | NA = Not Applicable |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | |

# Lancaster Laboratories

Quality Control Summary
Matrix Spike (MS)
Matrix Spike Duplicate (MSD)
Instrumental Water Quality
Matrix: SOIL
SDG: RAV02

| Sample Number | Sample Code | Analyte | Spike Analysis Date | ME | Batch # | Sample Result | MS Spike Added | MSD Spike Added | MS Result | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | %RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4219021 | UNIT7 | Reactive Cyanide | 02/26/04 | AK | 04057104201A | ND | 997.5 | 997.5 | ND | ND | mg/kg | NA | NA | NA - NA | NA | NA |
| 4219021 | UNIT7 | | | | | | | | | | | | | | | |

Comments:

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

If the background result was more than four times the spike added amount the percent recovery is program deleted.

ABBREVIATION KEY

| | |
|---|---|
| AK = Alpkem | J = Estimated Value < LOQ |
| DOC = Dissolved Organic Carbon | LOQ = Limit of Quantitation |
| IC = Ion Chromatography | ME = Method |
| RA = Rapid Analyzer | NA = Not Applicable |
| TKN = Total Kjeldahl Nitrogen | ND = Non Detected |
| TOC = Total Organic Carbon | R = Spike |
| TOX = Total Organic Halogen | M = Spike Duplicate |
| | * = Out of Specification |

# Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Instrumental Water Quality
Matrix: SOIL
SDG: RAV02

| Batch Numbers | Analyte | Analysis Date | ME | True LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
|---|---|---|---|---|---|---|---|---|---|---|
| 04057104201 | Reactive Cyanide | 02/26/04 | AK | 997.5 | 990.635 ✓ | NA | mg/kg | 926 - 1134 ✓ | NA | NA |

ABBREVIATION KEY

AK = Alpkem
DOC = Dissolved Organic Carbon
IC = Ion Chromatography
TKN = Total Kjeldahl Nitrogen
TOC = Total Organic Carbon
TOX = Total Organic Halogen
ME = Method
NA = Not Applicable
ND = Not Detected
* = Out of Specification
RA = Rapid Analyzer

8922

# Lancaster Laboratories

Quality Control Summary
Initial And Continuing Calibration
Instrumental Analysis
Reactive Cyanide
SDG: RAV02
Instrument Identification: 4758

| Initial Calibration Verification/Blank | True Value | Result (mg/L) | % Recovery |
|---|---|---|---|
| ICV | 0.15 | 0.14940 | 100 ✓ |
| ICB | 0 | ND | NA |

| Continuing Calibration Verification/Blank | True Value | Result (mg/L) | % Recovery |
|---|---|---|---|
| CCV1 | 0.05 | 0.05220 | 104 ✓ |
| CCB 1 | 0 | ND | NA |
| CCV2 | 0.15 | 0.15390 | 103 ✓ |
| CCB 2 | 0 | ND | NA |

*=Out of Specifications

Initial Calibration Date: 02/26/04
Continuing Calibration Dates: 02/26/04

| | True Value (mg/L) | Acceptance Range |
|---|---|---|
| ICV/CCV | Varies | +/- 10% |
| ICB/CCB | 0 | < LOQ |

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 01/09/04

| Analysis Number | Analysis Name | Method | True MDL | True LOQ | Units |
|---|---|---|---|---|---|
| 0217 | Total Kjeldahl Nitrogen | AK | 0.5 | 1 | mg/l |
| 0219 | Nitrite Nitrogen | AK | 0.015 | 0.05 | mg/l |
| 0220/7882 | Nitrate Nitrogen | AK | 0.04 | 0.1 | mg/l |
| 0224 | Chloride | IC | 0.3 | 0.4 | mg/l |
| 0227/0345 | Total Phosphorus | AK | 0.04 | 0.05 | mg/l |
| 0228 | Sulfate | IC | 0.3 | 1 | mg/l |
| 0237 | Total Cyanide, EPA | AK | .005 | .010 | mg/l |
| 0241 | Free Cyanide | AK | 0.004 | 0.005 | mg/l |
| 0273/0354 | TOC (Water) | TOC | 0.5 | 2 | mg/l |
| 0332/1506 | Nitrite-Nitrogen | IC | 0.08 | 0.1 | mg/l |
| 0368 | Nitrate-Nitrogen | IC | 0.08 | 0.1 | mg/l |
| 0434 | Phenol (Water), EPA | AK | 0.012 | 0.04 | mg/l |
| 0574/0555 | TOX (Water) | TOX | 7 | 20 | ug/l |
| 1123 | Reactive Cyanide | AK | 100 | 100 | mg/kg |
| 1503 | TOX (Solid) | TOX | 70 | 200 | mg/kg |
| 1504 | Fluoride | IC | 0.08 | 0.1 | mg/l |
| 1505 | Bromide | IC | 0.4 | 0.5 | mg/l |
| 1511 | Total Kjeldahl Nitrogen | AK | 150 | 400 | mg/kg |
| 1546 | Soluble Phosphorus | AK | 0.05 | 0.15 | mg/l |
| 1549 | Amenable Cyanide, Waters | AK | .005 | .010 | mg/l |
| 1550 | Total Carbon | TC | 0.6 | 2 | mg/l |
| 2079/0383 | TOC Combustion | TOC | 60 | 170 | mg/kg |
| 2109 | Titrimetric Cyanide | NA | 0.6 | 2 | mg/l |
| 2111/2118/2121/7 | Moisture | RA | 1 | 1 | % |
| 2353 | CLP Moisture | RA | 1 | 1 | % |
| 2393 | Phenol (Water), SW-846 | AK | 0.009 | 0.03 | mg/l |

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

# Raw Data

LANCASTER LABORATORIES

CYANIDE REACTIVITY

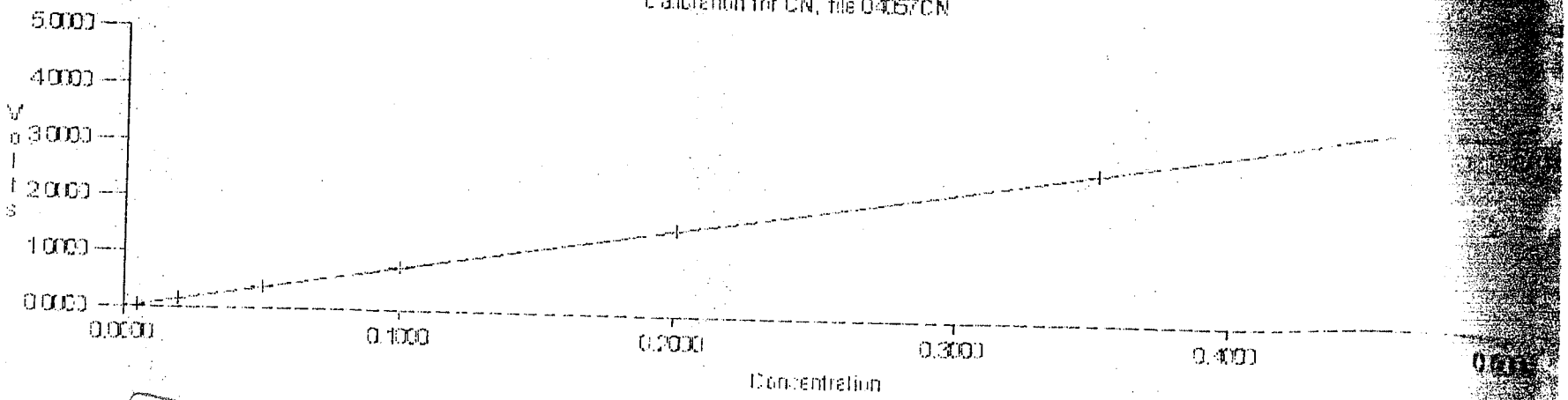
Report for 04057CN.ACF [S1]
Date:2/26/04
Base Configuration: CN

| Sam# | Cup# | Identifier | Dil | Date | Time | Volts | CN mg/L | Status |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | SYNC | 1.000 | 2/26/04 | 2:50:56 PM | 2.9683 | 0.3435 | |
| 2 | 2 | RINSE | 1.000 | 2/26/04 | 2:52:05 PM | 0.3468 | 0.0002 | NP |
| 3 | 3 | W | 1.000 | 2/26/04 | 2:53:15 PM | 0.3460 | 0.0001 | NP |
| 4 | 4 | C1 | 1.000 | 2/26/04 | 2:54:25 PM | 0.3790 | 0.0045 | NP |
| 5 | 5 | C2 | 1.000 | 2/26/04 | 2:55:35 PM | 0.4965 | 0.0199 | |
| 6 | 6 | C3 | 1.000 | 2/26/04 | 2:56:45 PM | 0.7258 | 0.0501 | |
| 7 | 7 | C4 | 1.000 | 2/26/04 | 2:57:54 PM | 1.1088 | 0.1003 | |
| 8 | 8 | C5 | 1.000 | 2/26/04 | 2:59:04 PM | 1.8754 | 0.2008 | |
| 9 | 9 | C6 | 1.000 | 2/26/04 | 3:00:14 PM | 3.0104 | 0.3495 | |
| | | Curve Type | | | | | 1st Order | |
| | | Correlation | | | | | 0.99999 | |
| | | Intercept | | | | | -0.0007 | |
| | | Slope | | | | | 7.6352 | |
| 10 | 10 | RINSE | 1.000 | 2/26/04 | 3:01:24 PM | 0.3446 | 0.0004 | NP |
| 11 | 11 | W | 1.000 | 2/26/04 | 3:02:34 PM | 0.3416 | 0.0001 | NP |
| 12 | 12 | ICV | 1.000 | 2/26/04 | 3:03:44 PM | 1.4816 | 0.1494 | |
| 13 | 13 | W | 1.000 | 2/26/04 | 3:04:54 PM | 0.3417 | 0.0001 | NP |
| 14 | 14 | REACBLK | 1.000 | 2/26/04 | 3:06:04 PM | 0.3365 | -0.0006 | NP |
| 15 | 15 | REACFLSK | 250.000 | 2/26/04 | 3:07:14 PM | 1.4703 | 36.9750 | |
| 16 | 16 | REACSTD | 10.000 | 2/26/04 | 3:08:23 PM | 0.7884 | 0.5857 | |
| 17 | 17 | 4217214 | 1.000 | 2/26/04 | 3:09:33 PM | 0.3373 | -0.0005 | NP |
| 18 | 18 | 4219005 | 1.000 | 2/26/04 | 3:10:43 PM | 0.3352 | -0.0008 | NP |
| 19 | 19 | 4219021 | 1.000 | 2/26/04 | 3:11:53 PM | 0.3373 | -0.0005 | NP |
| 20 | 20 | 4219688 | 1.000 | 2/26/04 | 3:13:03 PM | 0.3355 | -0.0008 | NP |
| 21 | 21 | 4219912 | 1.000 | 2/26/04 | 3:14:13 PM | 0.3346 | -0.0009 | NP |
| 22 | 22 | 4220300 | 1.000 | 2/26/04 | 3:15:23 PM | 0.3349 | -0.0008 | NP |
| 23 | 23 | 4219021-R | 5.000 | 2/26/04 | 3:16:33 PM | 1.0981 | 0.4956 | |
| 24 | 24 | CCV1 | 1.000 | 2/26/04 | 3:17:43 PM | 0.7397 | 0.0522 | |
| 25 | 25 | W | 1.000 | 2/26/04 | 3:18:53 PM | 0.3422 | 0.0001 | NP |
| 26 | 26 | 4219021-M | 5.000 | 2/26/04 | 3:20:02 PM | 1.1959 | 0.5597 | |
| 27 | 27 | 4223331 | 1.000 | 2/26/04 | 3:21:12 PM | 0.3361 | -0.0006 | NP |
| 28 | 28 | LCSW | 1.000 | 2/26/04 | 3:22:22 PM | 1.8312 | 0.1952 | |

LANCASTER LABORATORIES

CYANIDE REACTIVITY

| Report for 04057CN.ACF [S1] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date:2/26/04 | | | | | | | | |
| Base Configuration: CN | | | | | | | | |
| Sam# | Cup# | Identifier | Dil | Date | Time | Volts | CN mg/L | Status |
| 29 | 29 | PBW | 1.000 | 2/26/04 | 3:23:32 PM | 0.3365 | -0.0004 | NP |
| 30 | 30 | 4222322 | 1.000 | 2/26/04 | 3:24:42 PM | 0.3370 | -0.0004 | NP |
| 31 | 31 | 4222930 | 1.000 | 2/26/04 | 3:25:52 PM | 0.3375 | -0.0002 | NP |
| 32 | 32 | 4222932-U | 1.000 | 2/26/04 | 3:27:02 PM | 0.5247 | 0.0243 | |
| 33 | 33 | 4222932-R | 1.000 | 2/26/04 | 3:28:12 PM | 1.9465 | 0.2106 | |
| 34 | 34 | 4222932-D | 1.000 | 2/26/04 | 3:29:22 PM | 0.5113 | 0.0227 | |
| 35 | 35 | LCSW | 1.000 | 2/26/04 | 3:30:32 PM | 1.8473 | 0.1977 | |
| 36 | 36 | CCV2 | 1.000 | 2/26/04 | 3:31:42 PM | 1.5121 | 0.1539 | |
| 37 | 37 | W | 1.000 | 2/26/04 | 3:32:51 PM | 0.3376 | 0.0001 | NP |
| 38 | 38 | PBW | 1.000 | 2/26/04 | 3:34:01 PM | 0.3349 | -0.0003 | NP |
| 39 | 39 | 4221475 | 1.000 | 2/26/04 | 3:35:11 PM | 0.7136 | 0.0493 | NP |
| 40 | 40 | 4223084-U | 1.000 | 2/26/04 | 3:36:21 PM | 0.4836 | 0.0192 | NP |
| 41 | 41 | 4223085-R | 1.000 | 2/26/04 | 3:37:31 PM | 1.9313 | 0.2088 | |
| 42 | 42 | 4223087-D | 1.000 | 2/26/04 | 3:38:41 PM | 0.6201 | 0.0371 | NP |
| 43 | 43 | 4223088 | 1.000 | 2/26/04 | 3:39:51 PM | 0.5647 | 0.0298 | NP |
| 44 | 44 | 4223089 | 1.000 | 2/26/04 | 3:41:01 PM | 0.3411 | 0.0006 | NP |
| 45 | 45 | LCSW | 1.000 | 2/26/04 | 3:42:11 PM | 1.7057 | 0.1793 | |
| 46 | 46 | PBW | 1.000 | 2/26/04 | 3:43:21 PM | 0.3361 | -0.0001 | NP |
| 47 | 47 | 4221167-U | 1.000 | 2/26/04 | 3:44:30 PM | 0.3329 | -0.0005 | NP |
| 48 | 48 | CCV3 | 1.000 | 2/26/04 | 3:45:41 PM | 1.8885 | 0.2033 | |
| 49 | 49 | W | 1.000 | 2/26/04 | 3:46:50 PM | 0.3373 | 0.0001 | NP |
| 50 | 50 | 4221167-D | 1.000 | 2/26/04 | 3:48:00 PM | 0.3333 | -0.0004 | NP |
| 51 | 51 | 4221167-R | 1.000 | 2/26/04 | 3:49:10 PM | 1.7640 | 0.1870 | |
| 52 | 52 | 4221168 | 1.000 | 2/26/04 | 3:50:20 PM | 0.3352 | -0.0002 | NP |
| 53 | 53 | 4221169 | 1.000 | 2/26/04 | 3:51:30 PM | 0.3333 | -0.0004 | NP |
| 54 | 54 | 4221170 | 1.000 | 2/26/04 | 3:52:40 PM | 0.3318 | -0.0006 | NP |
| 55 | 55 | 4221239 | 1.000 | 2/26/04 | 3:53:50 PM | 0.3491 | 0.0016 | NP |
| 56 | 56 | 4221240 | 1.000 | 2/26/04 | 3:55:00 PM | 0.3622 | 0.0033 | NP |
| 57 | 57 | 4221241 | 1.000 | 2/26/04 | 3:56:10 PM | 0.3471 | 0.0013 | NP |
| 58 | 58 | 4221464 | 1.000 | 2/26/04 | 3:57:19 PM | 0.3321 | -0.0006 | NP |
| 59 | 59 | LCSW | 1.000 | 2/26/04 | 3:58:29 PM | 1.8736 | 0.2013 | |
| 60 | 60 | CCV2 | 1.000 | 2/26/04 | 3:59:39 PM | 1.5110 | 0.1538 | |




1st Order Y=[illegible]
R^2=0.[illegible] A=-0.0007
Correlation=0.[illegible]

LANCASTER LABORATORIES

# CYANIDE REACTIVITY

FEB 26 2004

9525

Analysis: Total Cyan
Date of Analysis: 2/26/04
Analyst: 1505 KWE1505

# Lancaster Laboratories Instrumental Water Quality Report

| | |
|---|---|
| Analyte: | Total Cyanide |
| Run Time: | 14:50:56 |
| Sample Table Name: | |
| IAG Run Name: | 0405703C02 |
| Instrument Number: | 04758 |
| Detector ID: | 9037 |

Calibration Information

| | |
|---|---|
| Calibration Type: | LINEAR |
| Number of Calibrants: | 6 |

| | Volts | Calc Conc | True Conc |
|---|---|---|---|
| S1 | 0.3790 | 0.0045 | 0.005 |
| S2 | 0.4965 | 0.0199 | 0.020 |
| S3 | 0.7258 | 0.0501 | 0.050 |
| S4 | 1.1088 | 0.1003 | 0.100 |
| S5 | 1.8754 | 0.2008 | 0.200 |
| S6 | 3.0104 | 0.3495 | 0.350 |

| QC Values | True Value | Range |
|---|---|---|
| ICV Waters (mg/l) | 0.15 | 0.13425 - 0.1656 |
| ICB/CCB (mg/l) | | 0 - 0.01 |
| CCV1 (mg/l) | 0.05 | 0.04475 - 0.0552 |
| CCV2 (mg/l) | 0.15 | 0.13425 - 0.1656 |
| CCV3 (mg/l) | 0.2 | 0.179 - 0.2208 |
| CRDL (mg/l) | | Not Applicable |
| LCS Waters (mg/l) | 0.2 | 0.179 - 0.2208 |
| PB Waters (mg/l) | 0 | 0 - 0.01 |
| LCS Solids (mg/kg) | 10 | 8.95 - 11.04 |
| PB Solids (mg/kg) | 0 | 0 - 0.5 |

| Curve Information |
|---|
| recorded in: |
| Book#:042203 |
| Page#:038 |

Status flags
AR - above range
BR - below range
NP - no peak found
UM - user modified

Analyst : KWE1505 Date: 2/27/04

Verified By: BJG Date: 2/27/04

8929

RUN NAME: 04057CN.
PAGE: 1
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 1 Date: 2/26/04 Time: 14:50:56 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| SYNC | 1 | 2.9683 | 0.34350 | |

Comments:

Cup# 2 Date: 2/26/04 Time: 14:52:05 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| RINSE | 1 | 0.3468 | 0.00020 | NP |

Comments:

Cup# 3 Date: 2/26/04 Time: 14:53:15 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S0 | 1 | 0.3460 | 0.00010 | NP |

Comments:

Cup# 4 Date: 2/26/04 Time: 14:54:25 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S1 | 1 | 0.3790 | 0.00450 | NP |

Comments:

Cup# 5 Date: 2/26/04 Time: 14:55:35 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S2 | 1 | 0.4965 | 0.01990 | |

Comments:

Cup# 6 Date: 2/26/04 Time: 14:56:45 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S3 | 1 | 0.7258 | 0.05010 | |

Comments:

Cup# 7 Date: 2/26/04 Time: 14:57:54 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S4 | 1 | 1.1088 | 0.10030 | |

Comments:

Cup# 8 Date: 2/26/04 Time: 14:59:04 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S5 | 1 | 1.8754 | 0.20080 | |

Comments:

Cup# 9 Date: 2/26/04 Time: 15:00:14 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l ) | SF |
|---|---|---|---|---|
| S6 | 1 | 3.0104 | 0.34950 | |

Comments:

RUN NAME: 04057CN.
PAGE: 2
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

Cup# 10 Date: 2/26/04 Time: 15:01:24 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
|---|---|---|---|---|
| RINSE | 1 | 0.3446 | 0.00040 | NP |

Comments:

Cup# 11 Date: 2/26/04 Time: 15:02:34 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| W | ******* | 1 | 0.0000 | 0 | 0.3416 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.00010 | 0.00010 | NP | | |

Comments:

Cup# 12 Date: 2/26/04 Time: 15:03:44 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
|---|---|---|---|---|
| ICV | 1 | 1.4816 | 0.14940 | |

% Recovery = 100

Comments: IS

Cup# 13 Date: 2/26/04 Time: 15:04:54 SDG:

| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
|---|---|---|---|---|
| ICB | 1 | 0.3417 | 0.00010 | NP |

Comments: IS

Cup# 14 Date: 2/26/04 Time: 15:06:04 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| PB | ******* | 1 | 10.0000 | 500 | 0.3365 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00060 | -0.03000 | NP | 04057104201A | |

Comments:

Cup# 15 Date: 2/26/04 Time: 15:07:14 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| LCS | **F**** | 250 | 10.0000 | 260 | 1.4703 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.14790 | 961.35000 | | 04057104201A | |

Comments:

Cup# 16 Date: 2/26/04 Time: 15:08:23 SDG:

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| LCS | **S**** | 10 | 10.0000 | 500 | 0.7884 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.05857 | 29.28500 | | 04057104201A | |

Comments: TV = 997.5mg/kg Calc Value = 990.635mg/kg

RUN NAME: 04057CN.
PAGE: 3
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 17 | 2/26/04 | 15:09:33 | |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4217214 | ******* | 1 | 10.1850 | 500 | 0.3373 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00050 | -0.02455 | NP | 04057104201A | |

Comments:

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 18 | 2/26/04 | 15:10:43 | RAV01 |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219005 | ******* | 1 | 10.2660 | 500 | 0.3352 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03896 | NP | 04057104201A | |

Comments:

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 19 | 2/26/04 | 15:11:53 | RAV02 |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219021 | U****** | 1 | 10.1620 | 500 | 0.3373 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00050 | -0.02460 | NP | 04057104201A | |

Comments:

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 20 | 2/26/04 | 15:13:03 | ARF29 |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219668 | ******* | 1 | 10.0790 | 500 | 0.3355 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03969 | NP | 04057104201A | |

Comments:

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 21 | 2/26/04 | 15:14:13 | |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4219912 | ******* | 1 | 10.0580 | 500 | 0.3346 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00090 | -0.04474 | NP | 04057104201A | |

Comments:

| Cup# | Date | Time | SDG |
|---|---|---|---|
| 22 | 2/26/04 | 15:15:23 | |

| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
|---|---|---|---|---|---|
| 4220300 | ******* | 1 | 10.3860 | 500 | 0.3349 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00080 | -0.03851 | NP | 04057104201A | |

Comments:

RUN NAME: 04057CN.
PAGE: 4
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

| Cup# 23 | Date: 2/26/04 | Time: 15:16:33 | SDG: RAV02 | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4219021 | R****** | 5 | 10.0430 | 500 | 1.0981 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.09912 | 24.67390 | | 04057104201A | |

Comments: SA = ~~1000mg/kg~~ 997.5mg/kg  %Rec = 2
#3 CWE1505 2/27/04

| Cup# 24 | Date: 2/26/04 | Time: 15:17:43 | SDG: | |
|---|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCV1 | 1 | 0.7397 | 0.05220 | |

% Recovery = 104

Comments: IS

| Cup# 25 | Date: 2/26/04 | Time: 15:18:53 | SDG: | |
|---|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCB 1 | 1 | 0.3422 | 0.00010 | NP |

Comments: IS

| Cup# 26 | Date: 2/26/04 | Time: 15:20:02 | SDG: RAV02 | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4219021 | M****** | 5 | 10.0530 | 500 | 1.1959 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.11194 | 27.83746 | | 04057104201A | |

Comments: SA = ~~1000mg/kg~~ 997.5mg/kg  %Rec = 3
#3 CWE1505 2/27/04

| Cup# 27 | Date: 2/26/04 | Time: 15:21:12 | SDG: | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4223331 | ******* | 1 | 10.0220 | 500 | 0.3361 |

| Raw Result (mg/l) | Calc Result (mg/kg) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00060 | -0.02993 | NP | 04057104201A | |

Comments:

| Cup# 28 | Date: 2/26/04 | Time: 15:22:22 | SDG: | | |
|---|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| LCSW | ******* | 1 | 50.0000 | 50 | 1.8312 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.19520 | 0.19520 | | 04057102101A | |

Comments: TV = 0.2mg/l  %Rec = 98  IS

RUN NAME: 04057CN.
PAGE: 6
ANALYST: 1505

LANCASTER LABORATORIES
INSTRUMENT ID: 04758
Analyte: Total Cyanide

| Cup# 35 | Date: 2/26/04 | Time: 15:30:32 | SDG: | |
|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| LCSW | ******* | 1 | 50.0000 | 50 | 1.8473 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.19770 | 0.19770 | | 04057117101A | |

Comments: TV = 0.2mg/L % Rec = 99 IS

| Cup# 36 | Date: 2/26/04 | Time: 15:31:42 | SDG: |
|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCV2 | 1 | 1.5121 | 0.15390 | |

% Recovery = 103

Comments: IS

| Cup# 37 | Date: 2/26/04 | Time: 15:32:51 | SDG: |
|---|---|---|---|
| Sample ID | Dil | Volts | Raw Result (mg/l) | SF |
| CCB 2 | 1 | 0.3376 | 0.00010 | NP |

Comments: IS

| Cup# 38 | Date: 2/26/04 | Time: 15:34:01 | SDG: | |
|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| PBW | ******* | 1 | 50.0000 | 50 | 0.3349 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| -0.00030 | -0.00030 | NP | 04057117101A | |

Comments: <2xQ IS

| Cup# 39 | Date: 2/26/04 | Time: 15:35:11 | SDG: TBE43 | |
|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4221475 | ***A*** | 1 | 50.0000 | 50 | 0.7136 |

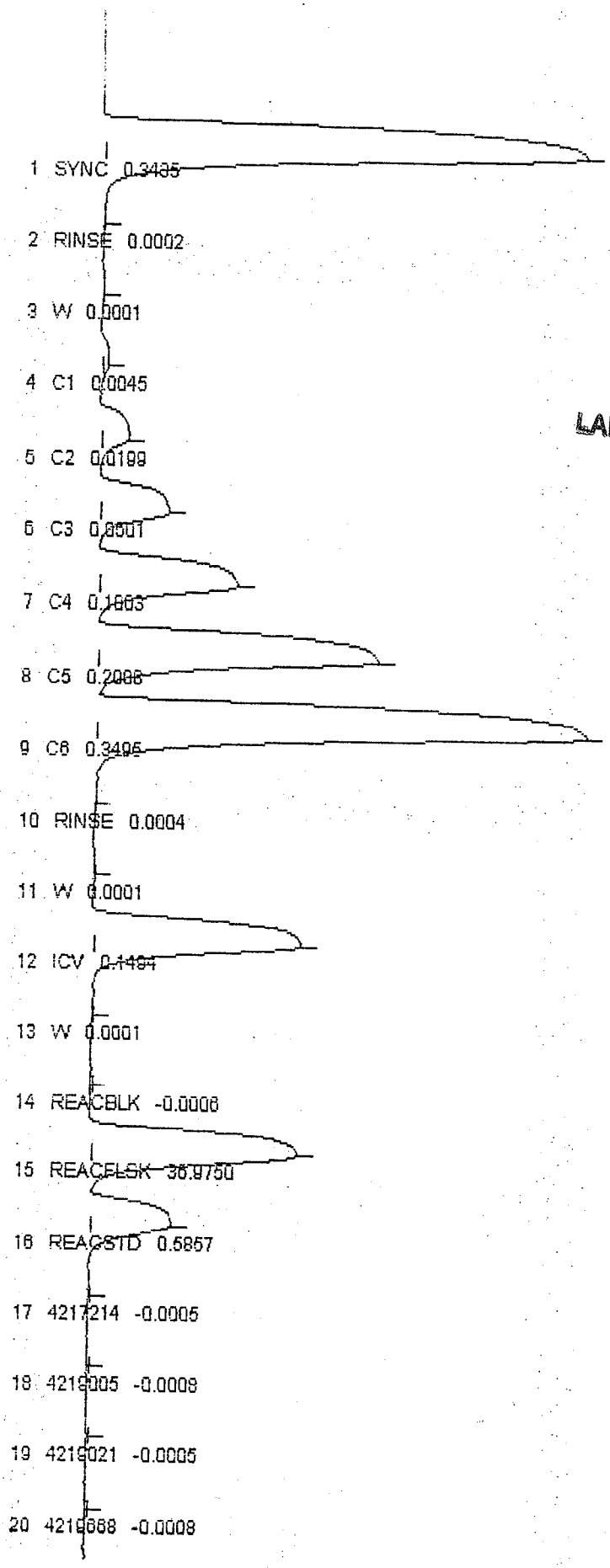
| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.04930 | 0.04930 | NP | 04057117101A | |

Comments: See Cup 74

| Cup# 40 | Date: 2/26/04 | Time: 15:36:21 | SDG: TBE44 | |
|---|---|---|---|---|
| Sample ID | Class | Dil | IVol/Wt | FVol | Volts |
| 4223084 | U**A*** | 1 | 50.0000 | 50 | 0.4836 |

| Raw Result (mg/l) | Calc Result (mg/l) | SF | Batch Number | Ver |
|---|---|---|---|---|
| 0.01920 | 0.01920 | NP | 04057117101A | |

Comments: See Cup 75

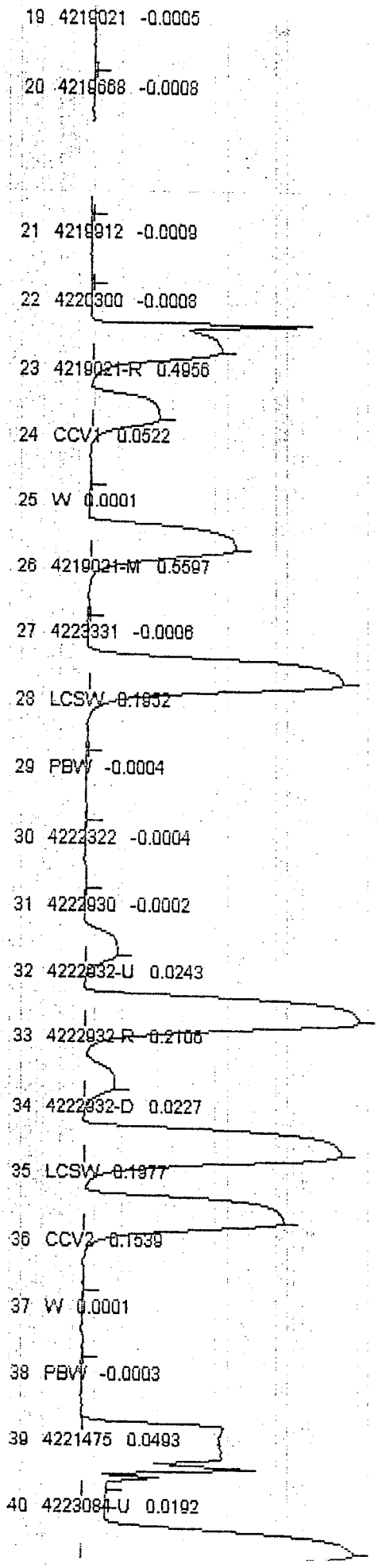



LANCASTER LABORATORIES

CYANIDE
REACTIVITY

FEB 26 2004

5935




LANCASTER LABORATORIES

CYANIDE REACTIVITY

FEB 26 2004

C:\FASPAC\04057CN.ACF System 1 Channel 1 [CN]

8936

# Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601-5994

# RAW DATA LOGBOOK

## REACTIVITY (Prep) Analysis #1121

## REACTIVE SULFIDE (Titrimetric) Analysis #1122

Batch #: 04057 | 112 | 101 | A

Init./Emp. #: SEH416 Date: 2/26/04 Time: 0800 Balance I.D. #: 6640

$Na_2S_2O_3$ Normality: 0.0249N $Na_2S_2O_3$ Ref. (Book/Pg.): 044338 p. 7

Iodine Normality: 0.025N Iodine Ref. (Book/Pg.): 042899 p. 59

Sulfide Std. Ref. (Book/Pg.): 044338 p. 14 Cyanide Std. Ref. (Book/Pg.): 037470/50/17-18

| Sample Number | Sample Wt. (g) | D.F. | $Na_2S_2O_3$ (mL) | Iodine (mL) | Calc. Value (mg/kg) | LOQ (mg/kg) | Comments |
|---|---|---|---|---|---|---|---|
| BLANK | 10.002 | 1 | 10.15 | 10 | 0 | 100 | (13) |
| SULFIDE | 10.237 | 1 | 4.95 | 10 | 500.1 | ↓ | (15) 88% |
| CYANIDE | 10.004 | 1 | — | — | — | — | TV = 997.5 mg/l |
| 4217214 | 10.185 | 1 | 10.1 | 10 | 0 | 100 | 21A |
| 4219005 | 10.266 | 1 | 10.05 | 10 | 2.9 | | |
| 4219021 | 10.162 | 1 | 10.2 | 10 | 0 | | |
| 4219668 | 10.079 | 1 | 10.0 | 10 | 5.0 | | 74A |
| 4219912 | 10.058 | 1 | 10.0 | 10 | 8.0 | | |
| 4220300 | 10.386 | 1 | 10.05 | 10 | 2.9 | | 21A |
| CYANIDE 4219021 MS | 10.043 | 1 | — | — | — | — | +10 ml of 997.5 mg/l |
| CYANIDE 4219021 MSD | 10.053 | 1 | — | — | — | — | |
| SULFIDE 4219668 MS | 10.305 | 1 | 8.05 | 10 | 196.6 | 100 | SA = 553 (15) 36% 74A +10 ml of 570 mg/l |
| SULFIDE 4219668 MSD | 10.343 | 1 | 8.5 | 10 | 152.5 | | SA = 551 (15) 28% R = 25 +10 ml of 570 mg/l |
| 4223331 | 10.022 | 1 | 2.75 | 10 | 729.9 | | 21A |

D.F. = Dilution Factor

Verified by: RH/355 Date: 2/26/04

# Miscellaneous Analysis Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

*Where quality is a science.*

**CLIENT: Draper Aden Associates, Inc.**
**SDG:** RAV02

**LANCASTER LABORATORIES**

**MISCELLANEOUS WET CHEMISTRY**

**SAMPLE NUMBERS:**

| Sample # | Sample Code | Comments |
|---|---|---|
| 4219010 | 7GP17 | |
| 4219011 | 7GP18 | |
| 4219012 | 7GP19 | |
| 4219013 | 7GP20 | Background |
| 4219014 | 7GP20 | |
| 4219015 | 7GP20 | Duplicate |
| 4219016 | 7GP21 | |
| 4219017 | 7GP22 | |
| 4219018 | 72222 | |
| 4219019 | 7GP23 | |
| 4219020 | 7GP24 | |
| 4219021 | UNIT7 | |

**ANALYSIS:**
No problems were encountered during analysis.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**
QC was within specification.

**DATA INTERPRETATION:**
Determination of corrosivity is based on the pH values.

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Catherine L. Cammarata for Date: 3/3/04
Sandra J. Miller
Specialist/Coordinator

8941

# QC Summary

# *Lancaster Laboratories*

Quality Control Summary
Method Blank
Miscellaneous Wet Chemistry
SDG: RAV02

Method Blank Analysis — Matrix: SOIL

| Parameter | Sample Number | Sample Code | Method | Analysis Date | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|---|---|
| Reactive Sulfide | 4219021 P219668 | UNIT7 B,MS,MSD | TI | 2/26/04 | 04057112101 | ND | mg/kg | 27 | 100 |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | MSD = Matrix Spike Duplicate |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |
| B = Background | D = Duplicate |
| MS = Matrix Spike | LS = Low Spike |
| HS = High Spike | PDS = Post Digestion Spike (P) |

# Lancaster Laboratories

Quality Control Summary
Matrix Spike Analysis/ Matrix Spike Duplicate
Miscellaneous Wet Chemistry
SDG: RAV02

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | Matrix: SOIL | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| 4219021 | UNIT7 | 04057112101 | Reactive Sulfide | TI | 2/26/04 | P219668 | 8.0 | P219668 | 553 | 196.6 | P219668 | 551 | 152.5 | mg/kg | 36 | 28 | 15 - 107 | 25 | 29 |

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

If the background result was more than four times the spike added amount the percent recovery is program deleted.

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | ND = Not Detected |
| DI = Distillaton | ME = Method |
| G = Gravimetric | MS = Matrix Spike |
| IR = Infrared Spectrophotometry | NA = Not Applicable |
| M = Meter | LOQ = Limit of Quantitation |
| OD = Oven Dried | * = Out of Specification |
| TI = Titration | J = Estimated Value < LOQ |
| MSD = Matrix Spike Duplicate | |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: RAV02

| Sample Information | Duplicate Analysis | | | | | | | | | Matrix: SOIL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| 4219010 | 7GP17 | 04051820007 | Moisture | OD | 2/20/04 | 4219013 | 19.05 | 4219015 | 16.60 | % | 14 | 15 |
| 4219011 | 7GP18 | | | | | | | | | | | |
| 4219012 | 7GP19 | | | | | | | | | | | |
| 4219013 | 7GP20 | | | | | | | | | | | |
| 4219014 | 7GP20 | | | | | | | | | | | |
| 4219015 | 7GP20 | | | | | | | | | | | |
| 4219016 | 7GP21 | | | | | | | | | | | |
| 4219017 | 7GP22 | | | | | | | | | | | |
| 4219018 | 72222 | | | | | | | | | | | |
| 4219019 | 7GP23 | | | | | | | | | | | |
| 4219020 | 7GP24 | | | | | | | | | | | |
| 4219021 | UNIT7 | 04054039401 | pH | M | 2/23/04 | P219243 | 4.73 | P219243 | 4.73 | NA | 0 | 1 |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

If the background and/or duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG: RAV02

| Sample Info. | Laboratory Control Standards | | | | | | | | Matrix: SOIL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
| 4219010 | 7GP17 | 04051820007 | Moisture | OD | 2/20/04 | 89.5 | 89.45 | NA | % | 88.6 - 90.4 | NA | NA |
| 4219011 | 7GP18 | | | | | | | | | | | |
| 4219012 | 7GP19 | | | | | | | | | | | |
| 4219013 | 7GP20 | | | | | | | | | | | |
| 4219014 | 7GP20 | | | | | | | | | | | |
| 4219015 | 7GP20 | | | | | | | | | | | |
| 4219016 | 7GP21 | | | | | | | | | | | |
| 4219017 | 7GP22 | | | | | | | | | | | |
| 4219018 | 72222 | | | | | | | | | | | |
| 4219019 | 7GP23 | | | | | | | | | | | |
| 4219020 | 7GP24 | | | | | | | | | | | |
| 4219021 | UNIT7 | 04057112101 | Reactive Sulfide | TI | 2/26/04 | 570 | 500.1 | NA | mg/kg | 431 - 571 | NA | NA |
| 4219021 | UNIT7 | 04054039401 | pH | M | 2/23/04 | 6.87 | 6.89 | NA | NA | 6.82 - 6.93 | NA | NA |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

8946

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

| ANALYSIS | LL # | MDL | ANALYSIS | LL # | MDL |
|---|---|---|---|---|---|
| Acidity | 476 | 2 mg/l | Oil and Grease | 231 | 2.5 mg/l |
| Acidity | 4530 | 3 mg/l | Oil and Grease | 236 | 430 mg/kg |
| Alkalinity to pH 4.5 | 202 | 0.41 mg/l as CaCO3 | Oil and Grease | 429 | 0.40 mg/l |
| Ammonia Nitrogen | 573 | 4.2 mg/kg | Oil and Grease | 2446 | 233 mg/kg |
| Ammonia Nitrogen | 221 | 0.11 mg/l | Orthophosphate | 226 | 0.01 mg/l |
| Ammonia Nitrogen | 6914 | 0.03 mg/l | | | |
| BOD | 235 | 0.80 mg/l | Petroleum Hydrocarbons | 1126, 8140 | 0.40 mg/l |
| Carbonaceous BOD | 1364 | 0.80 mg/l | Petroleum Hydrocarbons | 1554 | 0.50 mg/l |
| Chemical Oxygen Demand | 1553 | 2.1 mg/l | Petroleum Hydrocarbons | 1562 | 23 mg/kg |
| Chemical Oxygen Demand | 234 | 300 mg/kg | Petroleum Hydrocarbons | 1663 | 21 mg/kg |
| Chemical Oxygen Demand | 4001 | 8.2 mg/l | | | |
| Chloride | 1124 | 0.20 mg/l | Petroleum Hydrocarbons | 8129 | 9 mg/kg |
| Chlorine Residual | 240 | 0.04 mg/l | Petroleum Hydrocarbons | 8141 | 12.6 mg/kg |
| Dissolved Oxygen | 428 | 0.09 mg/l | Silica | 559 | 0.024 mg/l |
| | | | Soluble BOD | 541 | 0.80 mg/l |
| Ferrous Iron | 8344 | 0.008 mg/l | Specific Conductance | 280 | 1.7 umhos/cm |
| Fluoride | 263 | 0.03 mg/l | Specific Gravity | 1443 | 0.005 |
| Fluoride Distillation | 2200 | 0.03 mg/l | Sulfate | 1125 | 1.5 mg/l |
| Hexane Extractable Materials(Silica-Gel Treated) | 8078 | 1.3 mg/l | Sulfide | 230 | 0.022 mg/l |
| Hexane Extractable Materials | 8079 | 1.7 mg/l | Sulfide, Acid Volatile | 1630 | 0.39 micromol/g |
| Hexavalent Chromium | 276 | 0.003 mg/l | Sulfide Titration | 1333 | 0.53 mg/l |
| Hexavalent Chromium | 425 | 0.50 mg/kg | Sulfide Titration | 1122 | 27 mg/kg |
| Hexavalent Chromium | 1446 | 0.0007 mg/l | Sulfide Titration | 487 | 8.4 mg/kg |
| Hexavalent Chromium | 4858 | 0.38 mg/kg | Sulfite | 229 | 1.2 mg/l |
| Hexavalent Chromium | 4859 | 0.004 mg/l | Total Dissolved Solids | 212 | 9.7 mg/l |
| | | | Total Hardness | 216 | 0.49 mg/l as CaCO3 |
| | | | Total Solids | 203 | 6.3 mg/l |
| M.B.A.S. | 225 | 0.035 mg/l | Total Suspended Solids | 206 | 3.0 mg/l |
| Moisture | 111 | 0.5 % | Turbidity | 279 | 0.09 NTU |
| Moisture | 1353 | 0.5 % | UV Absorbance | 7120 | 0.006cm-1 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Revised 1/31/04

# Raw Data

37
ven 2
ndshelf
Right Side



# Batch#: 04051820007

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1602 Time Out: 0845

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P1

| # | Sample ID | Date Added | Comments | | Analysis# |
|---|---|---|---|---|---|
| 1) | LCS 89.5% | 02/20/04 12:37 | | | |
| 2) | 4217561 | 02/20/04 12:36 | moist sandy gritty soil | 34A | 00111 |
| 3) | 4217562 | 02/20/04 12:36 | | | 00111 |
| 4) | 4217563 | 02/20/04 12:36 | | | 00111 |
| 5) | 4217564 | 02/20/04 12:36 | | | 00111 |
| 6) | 4217565 | 02/20/04 12:36 | sludge | | 00111 |
| 7) | 4217651 | 02/20/04 12:36 | soil w/roots, rocks | | 00111 |
| 8) | 4217652 | 02/20/04 12:36 | | | 00111 |
| 9) | 4217652DUP | 02/20/04 12:37 | | | 00111 |
| 10) | 4217653 | 02/20/04 12:36 | | | 00111 |
| 11) | 4218168 | 02/20/04 12:36 | sandy soil | 20A | 00111 |
| 12) | 4218279 | 02/20/04 12:36 | moist sandy soil | 77A | 00111 |
| 13) | 4218280 | 02/20/04 12:36 | sandy soil | 59A | 00111 |
| 14) | 4219010 | 02/20/04 12:36 | sandy soil w/rocks | 77A | 00111 |
| 15) | 4219011 | 02/20/04 12:36 | clay pieces | | 00111 |
| 16) | 4219012 | 02/20/04 12:36 | sandy soil w/rocks | | 00111 |
| 17) | 4219013 | 02/20/04 12:36 | clay pieces | | 00111 |
| 18) | 4219014MS | 02/20/04 12:36 | | | 00118 |
| 19) | 4219015MSD | 02/20/04 12:36 | | | 00121 |
| 20) | 4219016 | 02/20/04 12:36 | sandy soil w/small rocks | | 00111 |
| 21) | 4219017 | 02/20/04 12:36 | | | 00111 |
| 22) | 4219018 | 02/20/04 12:36 | | | 00111 |

Signature: Scott Trusler 1201 Date: 2/20/04

Printed by 00236 on 02/20/2004 at 12:37

✓ LC 943 2/23/04

# Batch#: 04051820007

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1602 Time Out: 0515

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P1

| # | Sample ID | Date Added | Comments | Analysis# |
|---|---|---|---|---|
| 23) | 4219019 | 02/20/04 12:36 | Sandy soil w/small rocks 77A | 00111 |
| 24) | 4219020 | 02/20/04 12:36 | Sandy soil w/ clay pieces ↓ | 00111 |

**Signature:** Scott Dressler 1201 **Date:** 2/20/04

**Printed by 00236 on 02/20/2004 at 12:37**

✓ LC943 2/23/04

# Batch#: 04051820007

## LLENS Batch Chronology Report - Moisture

| # | Operation | Instrument | Date | Time | Analyst |
|---|---|---|---|---|---|
| 1) | Batch Creation | | 02/20/2004 | 12:36 | 00236 |
| 2) | Pre-Drying Wt. | 009001 | 02/20/2004 | 14:56 | 01201 |
| 3) | Dry Sample Wt. | 009001 | 02/21/2004 | 07:04 | 00382 |
| 4) | Calculate/Transmit | LLENS2 | 02/21/2004 | 07:08 | 00382 |

Comments: ✓ jc 943 2/23/04

8951

Printed by 00382 on 02/21/2004 at 07:08

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture | |
|---|---|---|---|---|---|---|---|---|---|---|
| LCS 89.5% | A | | | 1.1367 | 5.0027 | 1.6643 | | | 89.45 | 100% (5) |
| 4217561 | A | 00111 | | 1.1512 | 8.8840 | 8.5131 | | | 17.13 | ✓ |
| 4217562 | A | 00111 | | 1.1460 | 7.8504 | 7.3340 | | | 21.18 | ✓ Repeat (1/2) T2 on batch 04055-02 A) |
| 4217563 | A | 00111 | | 1.1559 | 9.3291 | 9.0080 | | | 15.83 | ✓ |
| 4217564 | A | 00111 | | 1.1581 | 9.3905 | 9.5108 | | | 11.05 | ✓ |
| 4217565 | A | 00111 | | 1.1352 | 7.9413 | 7.8716 | | | 15.17 | ✓ |
| 4217651 | A | 00111 | | 1.1515 | 7.1848 | 6.8227 | | | 21.07 | ✓ |
| 4217652 | A | 00111 | | 1.1622 | 7.7312 | 7.1149 | | | 23.00 | ✓ |
| 4217652DUP | A | 00111 | | 1.1412 | 8.2044 | 7.5166 | 0.71 | 3.14 | 22.29 | R=3% (13) |
| 4217653 | A | 00111 | | 1.1400 | 6.4438 | 6.0802 | | | 23.33 | ✓ |
| 4218168 | B | 00111 | | 1.1374 | 8.9514 | 9.2392 | | | 9.49 | ✓ |
| 4218279 | A | 00111 | | 1.1410 | 8.5256 | 9.1231 | | | 6.37 | ✓ |
| 4218280 | A | 00111 | | 1.1534 | 8.2468 | 9.0512 | | | 4.23 | ✓ |
| 4219010 | B | 00111 | | 1.1443 | 6.1187 | 6.2639 | | | 16.33 | ✓ |
| 4219011 | B | 00111 | | 1.1370 | 8.9291 | 8.5784 | | | 16.66 | ✓ |
| 4219012 | B | 00111 | | 1.1355 | 7.3731 | 7.1958 | | | 17.81 | ✓ |
| 4219013 | B | 00111 | | 1.1386 | 7.8367 | 7.4824 | | | 19.05 | ✓ |
| 4219014MS | B | 00118 | | | | | | | 19.05 | ✓ |
| 4219015MSD | B | 00118 | | | | | | | 19.05 | ✓ |
| 4219015MSD | B | 00121 | | 1.1409 | 7.6831 | 7.5485 | 2.45 | 13.74 | 16.60 | ✓ R=14% (13) |
| 4219016 | B | 00111 | | 1.1481 | 7.9555 | 7.7165 | | | 17.44 | ✓ |
| 4219017 | B | 00111 | | 1.1394 | 7.6990 | 7.4948 | | | 17.45 | ✓ |
| 4219018 | B | 00111 | | 1.1437 | 6.7507 | 6.6359 | | | 18.64 | ✓ |
| 4219019 | B | 00111 | | 1.1537 | 6.7908 | 6.6083 | | | 19.68 | ✓ |

Printed by 00382 on 02/21/2004 at 07:08

✓ LC 943 2/23/04

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture |
|---|---|---|---|---|---|---|---|---|---|
| 4219020 | B | 00111 | | 1.1539 | 7.4037 | 7.4341 | | | 15.17 |

Printed by 00382 on 02/21/2004 at 07:08

✓LC 943 2/23/04

C3C3

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601-5994

# RAW DATA LOGBOOK

## REACTIVITY (Prep) Analysis #1121

## REACTIVE SULFIDE (Titrimetric) Analysis #1122

Batch #: 04057 | 112 | 101 | A

Init./Emp. #: SEH416 Date: 2/26/04 Time: 0900 Balance I.D. #: 6640

$Na_2S_2O_3$ Normality: 0.0249N $Na_2S_2O_3$ Ref. (Book/Pg.): 044338 p. 7

Iodine Normality: 0.0251N Iodine Ref. (Book/Pg.): 042899 p. 59

Sulfide Std. Ref. (Book/Pg.): 044338 p. 14 Cyanide Std. Ref. (Book/Pg.): 037470/50/17-18

| Sample Number | Sample Wt. (g) | D.F. | $Na_2S_2O_3$ (mL) | Iodine (mL) | Calc. Value (mg/kg) | LOQ (mg/kg) | Comments |
|---|---|---|---|---|---|---|---|
| BLANK | 10.002 | 1 | 10.15 | 10 | 0 | 100 | (13) |
| SULFIDE | 10.237 | 1 | 9.95 | 10 | 500.1 | ↓ | (15) 88% |
| CYANIDE | 10.004 | 1 | — | — | — | — | TV = 997.5 mg/l |
| 4217214 | 10.185 | 1 | 10.1 | 10 | 0 | 100 | 21A |
| 4219005 | 10.266 | 1 | 10.05 | 10 | 2.9 | | |
| 4219021 | 10.162 | 1 | 10.2 | 10 | 0 | | |
| 4219668 | 10.079 | 1 | 10.0 | 10 | 8.0 | | 74A |
| 4219912 | 10.058 | 1 | 10.0 | 10 | 8.0 | | |
| 4220300 | 10.386 | 1 | 10.05 | 10 | 2.9 | | 21A |
| CYANIDE 4219021 MS | 10.043 | 1 | — | — | — | — | +10 ml of 997.5 mg/l |
| CYANIDE 4219021 MSD | 10.053 | 1 | — | — | — | — | |
| SULFIDE 4219668 MS | 10.305 | 1 | 8.05 | 10 | 196.6 | 100 | SA = 553 (15) 36% 74A +10 ml of 570 mg/l |
| SULFIDE 4219668 MSD | 10.343 | 1 | 8.5 | 10 | 152.5 | | SA = 551 (15) 28% +10 ml of 570 mg/l |
| 4223331 | 10.022 | 1 | 2.75 | 10 | 729.9 | | 21A |

D.F. = Dilution Factor

Verified by: RH/355 Date: 2/26/04

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# Raw Data Logbook
## Ignitability (Solids)
## Analysis #542

Batch No. 040555 | 054 | 201 | A

Init./Emp. #: SAE/227

Pensky-Martens Closed Flash Tester Inst. #: 1089

| Date | Sample Number | Air (Y/N) | Water (Y/N) | Friction (Y/N) | Closed Cup Flame Source (Y/N) | @ 0527 Comments |
|---|---|---|---|---|---|---|
| 2-24-04 | 4219005 | N | N | N | N | Dirt Cwerd Stones 21A |
| ↓ | 4219021 | N | N | N | N | Dirt & Stones |
| ↓ | 4219668 | N | N | N | N | Oily Sandy Soil |
| ↓ | 4220300 | N | N | N | N | Oily Stone Chips ↓ |
| | | | | | | |
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| | | | | | | 0955 |

Verified By: RN/355 Date: 2/25/04

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Raw Data Logbook
## Solid pH (Analysis #0394)
## Corrosivity (Analysis #0496)

soln C Ref (Book/pg): 44338p6 Balance ID#: 2910

Batch # 0 4 0 5 4 | 0 3 9 | 4 0 1 A

Date: 2-23-04 Inst #: 6166
Time: 20:00 Upld Date: 2-23-04
Analyst: JMG/239 Upld by: JMG/239

| | Sample Number | Sample Wt. (g) | DI $H_2O$ Wt. (g) | Reading | LOQ | Std. True Value | QC# | Temp (°C) | Batch Letter | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LCS | – | – | 6.89 | 0.01 | 6.87 | 1 | 11.7 | A | Soln C 100% |
| 2 | PH2 | – | – | 2.08 | 0.01 | | | 20.9 | | |
| 3 | PH12 | – | – | 12.07 | 0.01 | | | 21.4 | | |
| 4 | 4219005 | 25 | 25 | 7.64 | 0.01 | | | 21.4 | | 21A |
| 5 | 4219005 | ↓ | ↓ | 7.65 | 0.01 | | | 21.4 | | 496 |
| 6 | 4219005 | | | 7.65 | 0.01 | | | 21.4 | | |
| 7 | 4219021 | | | 9.06 | 0.01 | | | 21.2 | | |
| 8 | 4219021 | | | 9.07 | 0.01 | | | 21.2 | | 496 |
| 9 | 4219021 | | | 9.07 | 0.01 | | | 21.2 | | |
| 10 | 4219912 | | | 7.68 | 0.01 | | | 21.6 | | |
| 11 | 4219912 | | | 7.67 | 0.01 | | | 21.6 | | 496 |
| 12 | 4219912 | ↓ | ↓ | 7.67 | 0.01 | | | 21.6 | | ↓ |
| 13 | CCV | – | – | 6.90 | 0.01 | | | 14.2 | | Soln C 100% |
| 14 | 4219243 U | 25 | 25 | 4.73 | 0.01 | | | 16.2 | | 20A |
| 15 | 4219243 D | ↓ | ↓ | 4.73 | 0.01 | | | 16.4 | | RPD=0 ↓ |
| 16 | 4219668 | | | 7.75 | 0.01 | | | 21.3 | | 21A |
| 17 | 4220300 | ↓ | ↓ | 4.32 | 0.01 | | | 21.6 | | ↓ |
| 18 | CCV | – | – | 6.90 | 0.01 | | | 14.5 | | Soln C 100% |
| 19 | | | | | 0.01 | | | | | |
| 20 | | | | | 0.01 | | | | | |
| 21 | | | | | 0.01 | | | | | |
| 22 | | | | | 0.01 | | | | | |
| 23 | | | | | 0.01 | | | | | |
| 24 | | | | | 0.01 | | | | | |
| 25 | | | | | 0.01 | | | | | |
| 26 | | | | | 0.01 | | | | | |
| 27 | | | | | 0.01 | | | | | |
| 28 | | | | | 0.01 | | | | | |
| 29 | | | | | 0.01 | | | | | |
| 30 | | | | | 0.01 | | | | | |
| 31 | | | | | 0.01 | | | | | |

Verified by: MIG/1124 Date: 2/24/04 8956

# Data Package

***Type I Data Package***

***Analytical Data Report Package***
***for***
***Draper Aden Associates, Inc.***

*RAAP - Radford, VA Geoprobe Borings #BO2271-01*
*Soil Samples*
*Collected on 03/24/04*
*Sample No. 4241642-4241652*

*SDG# RAV04*

*PA Cert. # 36-037*
*NY Cert. # 10670*
*NJ Cert. # PA011*
*NC Cert. # 521*

***Prepared by*** Patricia Weirich

***Quality Assurance Review*** Raymond L. Troyer

***Date*** 4/6/04

***Delivery Date*** 4/8/04

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## Sample Reference List for SDG Number RAV04 with a Data Package Type of I

**11200 - Draper Aden Associates, Inc.**
RAAP - Radford, VA Geoprobe Borings #BO2271-01

| Lab Sample Number | Lab Sample Code | Client Sample Description |
|---|---|---|
| 4241642 | 7GP17 | 7GP-17(11') Grab Soil Sample |
| 4241643 | 7GP18 | 7GP-18(14') Grab Soil Sample |
| 4241644 | 7GP19 | 7GP-19(14') Grab Soil Sample |
| 4241645 | 7GP45 | 7GP-20(14.5') Unspiked Grab Soil Sample |
| 4241646 | 7GP45 | 7GP-20(14.5')MS Matrix Spike Grab Soil Sample |
| 4241647 | 7GP45 | 7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample |
| 4241648 | UGP21 | 7GP-21(13.5') Grab Soil Sample |
| 4241649 | 7GP22 | 7GP-22(13') Grab Soil Sample |
| 4241650 | 2222D | 7GP-22-22(13') Grab Soil Sample |
| 4241651 | 7GP23 | 7GP-23(12.5') Grab Soil Sample |
| 4241652 | 7GP24 | 7GP-24(14') Grab Soil Sample |

# CHAIN OF CUSTODY RECORD 11200 889623 4241642-52

**Laboratory:** Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA 17605-2425/ Kay Hower, Manager/ (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RAAP, Radford, Virginia |
| **Attn:** | 0 | **Attn:** | Janet C. Frazier | **Location:** | HWMU7 |
| **Address:** | 0<br>0 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Event:** | Geoprobe borings |
| **Phone:** | 0 | **Phone:** | (540) 552-0444 | **DAA JN:** | B02271-01 |
| **Fax:** | 0 | **Fax:** | (540) 552-0291 | **Lab JN:** | |
| **Fax:** | 0 | | | | |

**Project Specific (PS) or Batch (B) QC:** ☑ YES ☐ NO
**Sample Collection for Project Complete?** ☑ YES ☐ NO
**Carrier:** UPS
**Tracking Number:**

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑ YES ☐ NO
Bill: ☐ Client ☑ Consultant
Preserved and shipped on ice: ☑ YES ☐ NO

**GENERAL NOTES:** SV 8270C/Pest?PCBS 8081A

| Box 4 - Sample Type | G | G | G | G | G | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | U | U | | | | |
| Required pH of Sample | | | | | <2 | | | | |
| Box 2 - Preservative | | | H | H | A | | | | |
| Box 5 - Sample Container Type | | | CG (2 oz.) | CG | 40mL voa | | | | |

| Sample ID | Date: 2004 | Time | Box 1: Matrix | Number of Bottles | | | Moisture | TCL Organics - Pest/PCBS/SV | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7GP-17 (11') | 3/24 | 13:20 | S | 2 | | | X | X | | | | | |
| 7GP-18 (14') | 3/24 | 13:45 | S | 2 | | | X | X | | | | | |
| 7GP-19 (14') | 3/24 | 14:05 | S | 2 | | | X | X | | | | | |
| 7GP-20 (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | | |
| 7GP-20 MS (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | | |
| 7GP-20 MSD (14.5') | 3/24 | 14:40 | S | 2 | | | X | X | | | | | |
| 7GP-21 (13.5') | 3/24 | 16:15 | S | 2 | | | X | X | | | | | |
| 7GP-22 (13') | 3/24 | 15:55 | S | 2 | | | X | X | | | | | |
| 7GP-22-22 (13') | 3/24 | 15:55 | S | 2 | | | X | X | | | | | |
| 7GP-23 (12.5') | 3/24 | 15:30 | S | 2 | | | X | X | | | | | |
| 7GP-24 (14') | 3/24 | 15:05 | S | 2 | | | X | X | | | | | |

**Clients Special Instructions:** level 4 with add.

Received by lab in Good Condition ____ Yes ____ No  Custody Seal Intact ____ Yes ____ No  Temperature upon arrival ____  Received on Ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 3/24/04 | #1 Relinquished by (Signature): Darren Kidwell | Date: 3/24/04 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 09:00 | Company Name: DAA | Time: 17:15 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): HEATHER CARNOHAT | Date: 3/25/04 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: LAN | Time: 0420 | |

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

# Environmental Sample Administration
# Receipt Documentation Log

**Client/Project:** Draper V-Assoc

**Date of Receipt:** 3/25/04

**Time of Receipt:** 0920

**Source Code:** 60-1

**Shipping Container Sealed:** (Y) / N

**Custody Seal Present:** (Y) / N

**Custody Seal Intact** (Y) / N / NA

**Package:** (Chilled) / Not Chilled

**Unpacker Emp. No.:** 173

| Temperature of Shipping Containers | |
|---|---|
| #1 | #2 |
| Thermometer ID: HB12059 | Thermometer ID: HB12059 |
| Temp.: 3.0 C | Temp.: 3.0 C |
| Temp. (Bottle) / Surface Temp. | Temp. (Bottle) / Surface Temp. |
| Wet Ice / Dry Ice / Ice Packs (Blue, Blue) | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |
| #3 | #4 |
| Thermometer ID: HB12059 | Thermometer ID: HB12059 |
| Temp.: 4.0 C | Temp.: 4.0 C |
| Temp. (Bottle) / Surface Temp. | Temp. (Bottle) / Surface Temp. |
| Wet (Ice) / Dry Ice / Ice Packs | Wet (Ice) / Dry Ice / Ice Packs |
| Ice Present? (Y) / N Loose / (Bagged) | Ice Present? (Y) / N Loose / (Bagged) |

**Paperwork Discrepancy/Unpacking Problems:**

3 $H_2O$ TBs.

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| Heather Calcagni | 3/25/04 | 1006 | Unpacking |
| [signature] | 3/25/04 | 1010 | (Place in Storage) or Entry |
| [signature] | 3/25/04 | 1018 | Remove from Storage + Ent |
| | | | Place in Storage or Entry |
| | | | Entry |

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# METHODOLOGY SUMMARY/REFERENCE

## *6006 Solid Sample Pesticide Extraction*

A sonic probe extraction with hexane and acetone is used. Alternatively, the sample may be soxhlet extracted with hexane and acetone. Florisil cleanup is used to minimize interference.

Reference: Test Methods for Evaluating Solid Wastes, SW-846, Method 3550B, December 1996 (Sonic Probe)

**********

## *1225 TCL Pesticides in Solids*

The sample is solvent extracted and cleaned using a Florisil column. The resulting extract is quantitatively analyzed by gas chromatography with an electron capture detector.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8081A/8082, December 1996

**********

## *4688/4689 TCL Semivolatiles by 8270C (soils)*

The sample is solvent extracted and then analyzed by GC/MS for the target compound list.

Reference: Test Methods for Evaluating Solid Waste SW-846, Method 8270C, Update III, December 1996

**********

## *0111 Moisture (solid)*

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and Wastes USEPA 600/4-79-020, Method 160.3 (modified)

6004

## 0118 Moisture (solid)

This value reflects the background moisture value. It is used to calculate dry weight reports for matrix spike and matrix spike duplicate samples.

Reference: See background sample moisture method reference

**********

## 0121 Moisture Duplicate (solid)

This analysis is required to check the precision of the moisture analysis. The value is not used in report calculations.

Reference: See background sample moisture method reference



Lancaster Laboratories, Inc • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 889623. Samples arrived at the laboratory on Thursday, March 25, 2004.

| Client Description | Lancaster Labs Number |
|---|---|
| 7GP-17(11') Grab Soil Sample | 4241642 |
| 7GP-18(14') Grab Soil Sample | 4241643 |
| 7GP-19(14') Grab Soil Sample | 4241644 |
| 7GP-20(14.5') Unspiked Grab Soil Sample | 4241645 |
| 7GP-20(14.5')MS Matrix Spike Grab Soil Sample | 4241646 |
| 7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample | 4241647 |
| 7GP-21(13.5') Grab Soil Sample | 4241648 |
| 7GP-22(13') Grab Soil Sample | 4241649 |
| 7GP-22-22(13') Grab Soil Sample | 4241650 |
| 7GP-23(12.5') Grab Soil Sample | 4241651 |
| 7GP-24(14') Grab Soil Sample | 4241652 |

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

| | | |
|---|---|---|
| 1 COPY TO | Draper Aden Associates, Inc. | Attn: Ms. Janet Frazier |
| 1 COPY TO | Data Package Group | |

3886

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300.

Respectfully Submitted,

Michele A. Jarosick

Michele A Jarosick
Senior Chemist

5887

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241642**

**7GP-17(11') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV04-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 18.3 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 1.0 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.61 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.9 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 2.9 | 2.9 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.71 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.54 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 2.3 | 2.3 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.7 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 37. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.3 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.9 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.3 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 340. | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.37 | 1.1 | ug/kg | 1 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor epoxide, heptachlor and | | | | | | |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



Lancaster Laboratories Sample No. SW 4241642

7GP-17(11') Grab Soil Sample
RAAP - Radford, VA Geoprobe Borings #BO2271-01

Collected:03/24/2004 13:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV04-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | endosulfan II. Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 82. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 820. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 82. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 82. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241642**

**7GP-17(11') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV04-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 820. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,500. | | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 120. | J | 82. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 82. | 820. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 560. | | 200. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 82. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 82. | 410. | ug/kg | 1 |

*=This limit was used in the calculation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241642**

**7GP-17(11') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:20 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP17 SDG#: RAV04-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 82. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 41. | 410. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 12:34 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 11:24 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 11:24 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

5011

*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241643**

**7GP-18(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV04-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.2 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 0.97 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 0.97 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.59 | 1.7 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.38 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.38 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.58 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 0.97 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 0.97 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 0.97 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 1.4 | 1.4 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.38 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.68 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 38. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.51 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 2.0 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.38 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.5 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 3.8 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 35. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.0 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.7 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.0 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 180. | 3.8 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 3.8 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.38 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.97 | 0.97 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.35 | 1.0 | ug/kg | 1 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachor epoxide, alpha chlordane | | | | | | |

*=This limit was used in the calculation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241643**

**7GP-18(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV04-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | and endosulfan II. Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | 390. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | 390. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | 390. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | 390. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | 390. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | 390. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 190. | 780. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | 390. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | 390. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | 390. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | 390. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | 390. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | 390. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | 390. | ug/kg | 1 |

*=This limit was used in the calculation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241643**

**7GP-18(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV04-02

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 39. | 390. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 39. | 390. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 190. | 970. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 78. | 390. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 190. | 970. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 780. | 2,300. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 190. | 970. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 78. | 390. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 2,100. | | 39. | 390. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 78. | 390. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 78. | 390. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 78. | 780. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 340. | J | 190. | 390. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 78. | 390. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 39. | 390. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 39. | 390. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 78. | 390. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241643**

**7GP-18(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 13:45 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP18 SDG#: RAV04-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | 390. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | 390. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | 390. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 12:55 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 13:39 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 13:39 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

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*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241644**

**7GP-19(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV04-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 19.7 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01220 | Aldrin | 309-00-2 | N.D. | 3.2 | 9.3 | ug/kg | 5 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01223 | Endrin | 72-20-8 | N.D. | 3.1 | 11. | ug/kg | 5 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 25. | 75. | ug/kg | 5 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 3.6 | 11. | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 68. | 210. | ug/kg | 5 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 2.7 | 8.1 | ug/kg | 5 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 11. | 11. | ug/kg | 5 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 6.2 | 19. | ug/kg | 5 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 21. | 110. | ug/kg | 5 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 62. | 190. | ug/kg | 5 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 27. | 110. | ug/kg | 5 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 25. | 110. | ug/kg | 5 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 37. | 110. | ug/kg | 5 |
| 01998 | PCB-1254 | 11097-69-1 | 530. | 21. | 110. | ug/kg | 5 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 21. | 110. | ug/kg | 5 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 1.9 | 5.6 | ug/kg | 5 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for endosulfan II. | | | | | | |

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241644**

**7GP-19(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV04-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 83. | 420. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 42. | 420. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 42. | 420. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 42. | 420. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 42. | 420. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 42. | 420. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 83. | 420. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | 830. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 83. | 420. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 83. | 420. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 42. | 420. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 42. | 420. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241644**

**7GP-19(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 14:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV04-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 83. | 420. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 830. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 83. | 420. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 900. | | 42. | 420. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 110. | J | 83. | 420. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 83. | 420. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 83. | 830. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 470. | | 210. | 420. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 83. | 420. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 83. | 420. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241644**

**7GP-19(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:53
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP19 SDG#: RAV04-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 83. | 420. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 42. | 420. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 13:56 | Richard A Shober | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 13:37 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 13:37 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

8819

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241645**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 20.2 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01220 | Aldrin | 309-00-2 | N.D. | 3.2 | 9.4 | ug/kg | 5 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01223 | Endrin | 72-20-8 | N.D. | 3.1 | 11. | ug/kg | 5 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 25. | 75. | ug/kg | 5 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 3.6 | 11. | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 69. | 210. | ug/kg | 5 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 2.8 | 8.1 | ug/kg | 5 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 11. | 11. | ug/kg | 5 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 6.3 | 19. | ug/kg | 5 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 21. | 110. | ug/kg | 5 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 63. | 190. | ug/kg | 5 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 27. | 110. | ug/kg | 5 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 25. | 110. | ug/kg | 5 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 38. | 110. | ug/kg | 5 |
| 01998 | PCB-1254 | 11097-69-1 | 350. | 21. | 110. | ug/kg | 5 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 21. | 110. | ug/kg | 5 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 11. | 11. | ug/kg | 5 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 1.9 | 5.6 | ug/kg | 5 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for endosulfan II and endrin ketone. | | | | | | |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241645**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 84. | 420. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 42. | 420. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 42. | 420. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 42. | 420. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 42. | 420. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 42. | 420. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 42. | 420. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 84. | 420. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | 840. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 84. | 420. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 42. | 420. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 42. | 420. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 84. | 420. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 42. | 420. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 42. | 420. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 42. | 420. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241645**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 280. | J | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 840. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,000. | | 42. | 420. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 84. | 840. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 290. | J | 210. | 420. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
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MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241645**

**7GP-20(14.5') Unspiked Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 84. | 420. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 42. | 420. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 14:17 | Richard A Shober | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 09:59 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 09:59 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

5023

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241646**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 20.2 | 0.50 | 0.50 | % | 1 |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 4.3 | 21. | ug/kg | 20 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 21. | 21. | ug/kg | 20 |
| 01220 | Aldrin | 309-00-2 | N.D. | 13. | 38. | ug/kg | 20 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 8.3 | 43. | ug/kg | 20 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 8.3 | 43. | ug/kg | 20 |
| 01223 | Endrin | 72-20-8 | N.D. | 13. | 43. | ug/kg | 20 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 100. | 300. | ug/kg | 20 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 4.3 | 21. | ug/kg | 20 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 4.3 | 21. | ug/kg | 20 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 4.3 | 21. | ug/kg | 20 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 4.3 | 21. | ug/kg | 20 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 8.3 | 43. | ug/kg | 20 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 15. | 43. | ug/kg | 20 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 280. | 830. | ug/kg | 20 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 11. | 33. | ug/kg | 20 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 43. | 43. | ug/kg | 20 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 8.3 | 43. | ug/kg | 20 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 25. | 75. | ug/kg | 20 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 83. | 430. | ug/kg | 20 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 250. | 750. | ug/kg | 20 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 110. | 430. | ug/kg | 20 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 100. | 430. | ug/kg | 20 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 150. | 450. | ug/kg | 20 |
| 01998 | PCB-1254 | 11097-69-1 | 3,100. | 83. | 430. | ug/kg | 20 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 83. | 430. | ug/kg | 20 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 43. | 43. | ug/kg | 20 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 21. | 21. | ug/kg | 20 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 7.5 | 23. | ug/kg | 20 |

Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor, alpha chlordane, endosulfan II, and endrin ketone.
Despite numerous cleanup methods, we were unable to reach our usual reporting limits.

9824

*=This limit was used in the evaluation of the final result

MEMBER ACIL
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241646**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | 3,700. | 42. | 420. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,700. | 42. | 420. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,600. | 42. | 420. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,400. | 42. | 420. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,700. | 42. | 420. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,900. | 84. | 420. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,400. | 42. | 420. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,600. | 84. | 420. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 3,500. | 210. | 840. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 4,400. | 42. | 420. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,800. | 84. | 420. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,700. | 42. | 420. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,000. | 42. | 420. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,700. | 84. | 420. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,300. | 42. | 420. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,700. | 42. | 420. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,900. | 42. | 420. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 4,100. | 42. | 420. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241646**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | 4,000. | 42. | 420. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,300. | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,200. | 84. | 420. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,600. J | 840. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 1,800. | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 4,000. | 84. | 420. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 6,700. | 42. | 420. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 3,900. | 84. | 420. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 4,200. | 84. | 420. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 4,000. | 42. | 420. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 3,800. | 84. | 840. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4,700. | 210. | 420. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 4,300. | 84. | 420. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,000. | 42. | 420. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,700. | 42. | 420. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 4,000. | 84. | 420. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,900. | 42. | 420. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,500. | 84. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241646**

**7GP-20(14.5')MS Matrix Spike Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | 3,800. | 42. | 420. | ug/kg | 1 |

Di-n-butylphthalate was detected in the method blank at a concentration of 94. ug/kg. The blank value was not subtracted from the analytical result.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 15:19 | Richard A Shober | 20 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 10:54 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 10:54 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

5927

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241647**

**7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 20.2 | | 0.50 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 19.7 | | 0.50 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 4.6 | J | 1.1 | 5.2 | ug/kg | 5 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 6.9 | 6.9 | ug/kg | 5 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 3.2 | 9.4 | ug/kg | 5 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 2.1 | 11. | ug/kg | 5 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 2.1 | 11. | ug/kg | 5 |
| 01223 | Endrin | 72-20-8 | N.D. | | 3.1 | 11. | ug/kg | 5 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 75. | 75. | ug/kg | 5 |
| 01981 | Alpha BHC | 319-84-6 | 4.1 | J | 1.1 | 5.2 | ug/kg | 5 |
| 01982 | Beta BHC | 319-85-7 | 5.1 | J | 1.1 | 5.2 | ug/kg | 5 |
| 01983 | Delta BHC | 319-86-8 | 4.7 | J | 1.1 | 5.2 | ug/kg | 5 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 9.1 | 9.1 | ug/kg | 5 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 11. | 11. | ug/kg | 5 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 3.6 | 11. | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 69. | 210. | ug/kg | 5 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 8.1 | 8.1 | ug/kg | 5 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 11. | 11. | ug/kg | 5 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 11. | 11. | ug/kg | 5 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 6.3 | 19. | ug/kg | 5 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 21. | 110. | ug/kg | 5 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 63. | 190. | ug/kg | 5 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 27. | 110. | ug/kg | 5 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 25. | 110. | ug/kg | 5 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 38. | 110. | ug/kg | 5 |
| 01998 | PCB-1254 | 11097-69-1 | 720. | | 21. | 110. | ug/kg | 5 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 21. | 110. | ug/kg | 5 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 11. | 11. | ug/kg | 5 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 5.2 | 5.2 | ug/kg | 5 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 1.9 | 5.6 | ug/kg | 5 |
| | Due to interfering peaks on the chromatogram, the values reported represent | | | | | | | |

5525

*=This limit was used in the evaluation of the final result

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241647**

**7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | the lowest reporting limits obtainable for heptachlor, heptachlor epoxide, alpha chlordane, 4,4-DDE, endosulfan I, endosulfan II, methoxychlor, endosulfan sulfate, and endrin ketone. Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | 3,600. | 42. | 420. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,700. | 42. | 420. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,500. | 42. | 420. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,400. | 42. | 420. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,500. | 42. | 420. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 4,000. | 84. | 420. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,400. | 42. | 420. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,400. | 42. | 420. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,400. | 42. | 420. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 42. | 420. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,500. | 84. | 420. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 4,900. | 210. | 840. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 4,200. | 42. | 420. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,800. | 84. | 420. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,800. | 42. | 420. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,000. | 42. | 420. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,800. | 84. | 420. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | 8829 | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,500. | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241647**

**7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,600. | 42. | 420. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,800. | 42. | 420. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 4,100. | 42. | 420. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | 3,900. | 42. | 420. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,400. | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,200. | 84. | 420. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 4,100. | 42. | 420. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,600. J | 840. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 1,700. | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 4,000. | 84. | 420. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 6,900. | 42. | 420. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,700. | 42. | 420. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 4,000. | 84. | 420. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,600. | 42. | 420. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 4,200. | 84. | 420. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 4,000. | 42. | 420. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 3,900. | 84. | 840. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4,800. | 210. | 420. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 4,400. | 84. | 420. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 3,900. | 42. | 420. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,400. | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241647**

**7GP-20(14.5')MSD Matrix Spike Dup Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 14:40 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP45 SDG#: RAV04-04MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 3,800. | 42. | 420. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,400. | 42. | 420. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 4,000. | 84. | 420. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,800. | 42. | 420. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,600. | 84. | 420. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | 3,700. | 42. | 420. | ug/kg | 1 |

Di-n-butylphthalate was detected in the method blank at a concentration of 94. ug/kg. The blank value was not subtracted from the analytical result.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 15:39 | Richard A Shober | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 11:49 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 11:49 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

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*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241648**

**7GP-21(13.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 16:15 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UGP21 SDG#: RAV04-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 20.4 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01220 | Aldrin | 309-00-2 | N.D. | 3.2 | 9.4 | ug/kg | 5 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01223 | Endrin | 72-20-8 | N.D. | 3.1 | 11. | ug/kg | 5 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 25. | 75. | ug/kg | 5 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 5.2 | 5.2 | ug/kg | 5 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 3.6 | 11. | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 69. | 210. | ug/kg | 5 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 2.8 | 8.2 | ug/kg | 5 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 11. | 11. | ug/kg | 5 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 6.3 | 19. | ug/kg | 5 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 21. | 110. | ug/kg | 5 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 63. | 190. | ug/kg | 5 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 27. | 110. | ug/kg | 5 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 25. | 110. | ug/kg | 5 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 38. | 110. | ug/kg | 5 |
| 01998 | PCB-1254 | 11097-69-1 | 500. | 21. | 110. | ug/kg | 5 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 21. | 110. | ug/kg | 5 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 2.1 | 11. | ug/kg | 5 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 1.1 | 5.2 | ug/kg | 5 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 1.9 | 5.7 | ug/kg | 5 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor epoxide and endosulfan II. | | | | | | |

0832

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241648**

**7GP-21(13.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 16:15 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UGP21 SDG#: RAV04-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| | Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | | |
| 01185 | Phenol | 108-95-2 | 66. | J | 42. | 420. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | | 210. | 840. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | | 84. | 420. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | | 84. | 420. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



MEMBER ACIL
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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241648**

**7GP-21(13.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 16:15 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UGP21 SDG#: RAV04-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 840. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 2,800. | | 42. | 420. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 120. | J | 84. | 420. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 84. | 840. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 1,000. | | 210. | 420. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 84. | 420. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 42. | 420. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 42. | 420. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 84. | 420. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 42. | 420. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241648**

**7GP-21(13.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 16:15 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:54
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UGP21 SDG#: RAV04-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 84. | 420. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 42. | 420. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 16:21 | Richard A Shober | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 14:21 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 14:21 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

0035

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241649**

**7GP-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV04-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 19.6 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 2.1 | 2.1 | ug/kg | 2 |
| 01220 | Aldrin | 309-00-2 | N.D. | 1.3 | 3.7 | ug/kg | 2 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01223 | Endrin | 72-20-8 | N.D. | 1.2 | 4.2 | ug/kg | 2 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 10. | 30. | ug/kg | 2 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 3.1 | 3.1 | ug/kg | 2 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 1.4 | 4.2 | ug/kg | 2 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 27. | 82. | ug/kg | 2 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 1.1 | 3.2 | ug/kg | 2 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 4.2 | 4.2 | ug/kg | 2 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 2.5 | 7.5 | ug/kg | 2 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 8.2 | 42. | ug/kg | 2 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 25. | 75. | ug/kg | 2 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 11. | 42. | ug/kg | 2 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 10. | 42. | ug/kg | 2 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 15. | 45. | ug/kg | 2 |
| 01998 | PCB-1254 | 11097-69-1 | 380. | 8.2 | 42. | ug/kg | 2 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 8.2 | 42. | ug/kg | 2 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.75 | 2.2 | ug/kg | 2 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor, heptachor epoxide and | | | | | | |

0036

*=This limit was used in the calculation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241649**

**7GP-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV04-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | endosulfan II. Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 83. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 83. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | 830. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 83. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 83. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241649**

**7GP-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV04-06

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 83. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 830. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,300. | | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 130. | J | 83. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 83. | 830. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 880. | | 210. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 83. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241649**

**7GP-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP22 SDG#: RAV04-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 83. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 41. | 410. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 17:02 | Richard A Shober | 2 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 15:06 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 15:06 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

9839

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241650**

**7GP-22-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV04-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 19.2 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01220 | Aldrin | 309-00-2 | N.D. | 1.3 | 3.7 | ug/kg | 2 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01223 | Endrin | 72-20-8 | N.D. | 1.2 | 4.2 | ug/kg | 2 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 9.9 | 30. | ug/kg | 2 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 2.8 | 2.8 | ug/kg | 2 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 1.4 | 4.2 | ug/kg | 2 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 27. | 82. | ug/kg | 2 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 1.1 | 3.2 | ug/kg | 2 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 4.2 | 4.2 | ug/kg | 2 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 2.5 | 7.4 | ug/kg | 2 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 8.2 | 42. | ug/kg | 2 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 25. | 74. | ug/kg | 2 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 11. | 42. | ug/kg | 2 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 9.9 | 42. | ug/kg | 2 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 15. | 45. | ug/kg | 2 |
| 01998 | PCB-1254 | 11097-69-1 | 330. | 8.2 | 42. | ug/kg | 2 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 8.2 | 42. | ug/kg | 2 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.82 | 4.2 | ug/kg | 2 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.42 | 2.1 | ug/kg | 2 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.74 | 2.2 | ug/kg | 2 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor epoxide and endosulfan II. | | | | | | |

*=This limit was used in the evaluation of the final result

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**Lancaster Laboratories Sample No. SW 4241650**

**7GP-22-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV04-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 83. | 410. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 41. | 410. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 41. | 410. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 41. | 410. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 41. | 410. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 83. | 410. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | 830. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 83. | 410. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 41. | 410. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 41. | 410. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 83. | 410. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 41. | 410. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 41. | 410. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 41. | 410. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



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MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241650**

**7GP-22-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV04-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 83. | 410. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 830. | 2,500. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 4,300. | | 41. | 410. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 200. | J | 83. | 410. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 83. | 830. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 520. | | 210. | 410. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 83. | 410. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 41. | 410. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 41. | 410. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 83. | 410. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 41. | 410. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241650**

**7GP-22-22(13') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:55 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

2222D SDG#: RAV04-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 83. | 410. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 41. | 410. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 17:22 | Richard A Shober | 2 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 15:50 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 15:50 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

8643

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241651**

**7GP-23(12.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:30 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV04-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.3 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 1.0 | 1.0 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.62 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.60 | 2.1 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.8 | 15. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 3.4 | 3.4 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.70 | 2.1 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 40. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.53 | 1.6 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 2.1 | 2.1 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.2 | 21. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.8 | 21. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.3 | 22. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | 400. | 4.0 | 21. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 4.0 | 21. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.40 | 2.1 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | 1.0 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.36 | 1.1 | ug/kg | 1 |
| | Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits obtainable for heptachlor, heptachlor epoxide, | | | | | | |

3044

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241651**

**7GP-23(12.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:30 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV04-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| | endosulfan II. Despite numerous cleanup methods, we were unable to reach our usual reporting limits. | | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 810. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |

0845

*=This limit was used in the evaluation of the final result

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241651**

**7GP-23(12.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:30 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV04-08

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 81. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 810. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | 1,000. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 81. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,400. | | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 100. | J | 81. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 81. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 81. | 810. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 600. | | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 81. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 81. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result



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MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241651**

**7GP-23(12.5') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:30 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:55
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP23 SDG#: RAV04-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | 400. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 17:43 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/29/2004 16:35 | Chad A Moline | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/29/2004 16:35 | Chad A Moline | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 2 | 03/27/2004 15:00 | Mark P Mastropietro | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

9547

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241652**

**7GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:56
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV04-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.7 | 0.50 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.60 | 1.8 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.59 | 2.0 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | 14. | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.69 | 2.0 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | 39. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.52 | 1.5 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | 3.6 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | 36. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | 20. | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 4.7 | 20. | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 7.1 | 21. | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 3.9 | 20. | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | 2.0 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | 0.98 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.36 | 1.1 | ug/kg | 1 |
| | | | | | | | 8848 |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | | |

*=This limit was used in the evaluation of the final result

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PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241652**

**7GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #B02271-01**

Collected:03/24/2004 15:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:56
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV04-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01185 | Phenol | 108-95-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | 400. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | 400. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | 790. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | 400. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | 400. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | 400. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | 400. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | 8849 | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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MEMBER ACIL

Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241652**

**7GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:56
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV04-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit* | Dry Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | 990. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | 990. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | 2,400. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | 990. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | 400. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | 400. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | 400. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | 400. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | 400. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | 790. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 200. | 400. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | 400. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | 400. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | 400. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | 400. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | 400. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | 400. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | 400. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | 400. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | 400. | ug/kg | 1 |

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories



**Lancaster Laboratories Sample No. SW 4241652**

**7GP-24(14') Grab Soil Sample**
**RAAP - Radford, VA Geoprobe Borings #BO2271-01**

Collected:03/24/2004 15:05 by DK

Account Number: 11200

Submitted: 03/25/2004 09:20
Reported: 03/31/2004 at 16:56
Discard: 05/01/2004

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

7GP24 SDG#: RAV04-09

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 03/26/2004 13:45 | Scott W Freisher | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 03/30/2004 18:04 | Richard A Shober | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 03/26/2004 22:48 | Jolene M Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 03/26/2004 22:48 | Jolene M Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 03/25/2004 18:00 | Sally L Appleyard | 1 |
| 06006 | PPL Pesticide Solid Extraction | SW-846 3550B | 2 | 03/30/2004 03:00 | David V Hershey Jr | 1 |

3051

*=This limit was used in the evaluation of the final result

# Semivolatiles by GC/MS Data

# Case Narrative
# Conformance/Nonconformance
# Summary

## CASE NARRATIVE

**Client: Draper Aden Associates, Inc.**
**SDG #: RAV04**

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

**SAMPLE NUMBER(S) :**

| LL #'s | Sample Code | Matrix Soil | Comments |
|---|---|---|---|
| 4241642 | 7GP17 | X | Unspiked |
| 4241642 | 7GP17MS | X | Matrix Spike |
| 4241642 | 7GP17MSD | X | Matrix Spike Dup |
| 4241643 | 7GP18 | X | |
| 4241644 | 7GP19 | X | |
| 4241645 | 7GP45 | X | Unspiked |
| 4241646 | 7GP45MS | X | Matrix Spike |
| 4241647 | 7GP45MSD | X | Matrix Spike Dup |
| 4241648 | UGP21 | X | |
| 4241649 | 7GP22 | X | |
| 4241650 | 2222D | X | |
| 4241651 | 7GP23 | X | |
| 4241652 | 7GP24 | X | |

**LABORATORY SUBMITTED QC:**

| | | | |
|---|---|---|---|
| SBLKLA087 | SBLKLA0874 | X | Method Blank |
| SBLKLC085 | SBLKLC0857 | X | Method Blank |
| 085LCLCS | 085LCLCS7 | X | Lab Control Sample |
| 087LALCS | 087LALCS4 | X | Lab Control Sample |

**SAMPLE PREPARATION:**

No problems were encountered during the extraction of these samples.

0054

## Case Narrative (continued)
## SDG: RAV04

**ANALYSIS:**

The method used for analysis was SW-846 8270C.

All samples were analyzed for the SOW OLM03.2 list of semivolatile compounds.

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**

Di-n-butylphthalate was detected in SBLKLC0857 at a concentration below the limit of quantitation. This value was not subtracted from the analytical results of the associated samples.

The relative percent difference (RPD) for hexachlorocyclopentadiene between 7GP45MS and 7GP45MSD was greater than 30 percent.

The RPD's for 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol between 7GP17MS and 7GP17MSD were greater than 30 percent.

All other QC was within specifications.

**DATA INTERPRETATION:**

Only non-conformances for client requested compounds are addressed in this case narrative.

Sample numbers 4241646 and 4241647 are represented on forms as 5GP45MS and 5GP45MSD, respectively, in this data package.

No further interpretation is necessary for the data submitted.

8855

## Case Narrative (continued)
## SDG: RAV04

Case Narrative Reviewed and Approved by:

Christine M. Ratcliff for CJN Date: 4-1-04

Charles J. Neslund
Group Leader, GC/MS Semivolatiles

0056

# QC Summary

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dc254.d DFTPP Injection Date: 03/19/04

Instrument ID: HP06780 DFTPP Injection Time: 08:59

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 47.7 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 76.0 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 55.2 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.73 |
| 275 | 10.0 - 30.0% of mass 198 | 15.9 |
| 365 | Greater than 1.00% of mass 198 | 1.8 |
| 441 | Present, and less than mass 443 | 10.6 |
| 442 | Greater than 40.0 % of mass 198 | 68.8 |
| 443 | 17.0 - 23.0% of mass 442 | 13.4 ( 19.4)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD080 | STD0754 | dc255.d | 03/19/04 | 09:20 |
| 02 | SSTD120 | STD0754 | dc256.d | 03/19/04 | 11:02 |
| 03 | SSTD050 | STD0754 | dc257.d | 03/19/04 | 11:51 |
| 04 | SSTD030 | STD0754 | dc258.d | 03/19/04 | 12:38 |
| 05 | SSTD015 | STD0754 | dc259.d | 03/19/04 | 13:27 |
| 06 | SSTD005 | STD0754 | dc260.d | 03/19/04 | 14:15 |
| 07 | SSTD001 | 8270MDL0754 | dc261.d | 03/19/04 | 15:04 |
| 08 | SSTD050 | ICV0224 | dc262.d | 03/19/04 | 15:52 |
| 09 | NC-16 | 4233417 | dc263.d | 03/19/04 | 16:41 |
| 10 | NC-17 | 4233418 | dc264.d | 03/19/04 | 17:29 |
| 11 | SECC | SECC0754 | dc265.d | 03/19/04 | 18:18 |

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dc385.d DFTPP Injection Date: 03/29/04

Instrument ID: HP06780 DFTPP Injection Time: 07:59

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 49.3 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 80.6 |
| 70 | Less than 2.0% of mass 69 | 0.36 ( 0.45)1 |
| 127 | 40.0 - 60.0% of mass 198 | 57.8 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.9 |
| 275 | 10.0 - 30.0% of mass 198 | 15.9 |
| 365 | Greater than 1.00% of mass 198 | 1.69 |
| 441 | Present, and less than mass 443 | 10.6 |
| 442 | Greater than 40.0 % of mass 198 | 65.9 |
| 443 | 17.0 - 23.0% of mass 442 | 12.2 ( 18.5)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0854 | dc386.d | 03/29/04 | 08:22 |
| 02 | -B051DL | 4239019DL | dc387.d | 03/29/04 | 09:10 |
| 03 | SBLKLA0874 | SBLKLA087 | dc388.d | 03/29/04 | 09:55 |
| 04 | 087LALCS4 | 087LALCS | dc389.d | 03/29/04 | 10:39 |
| 05 | 7GP17 | 4241642 | dc390.d | 03/29/04 | 11:24 |
| 06 | 7GP17MS | 4241642 | dc391.d | 03/29/04 | 12:08 |
| 07 | 7GP17MSD | 4241642 | dc392.d | 03/29/04 | 12:53 |
| 08 | 7GP19 | 4241644 | dc393.d | 03/29/04 | 13:37 |
| 09 | UGP21 | 4241648 | dc394.d | 03/29/04 | 14:21 |
| 10 | 7GP22 | 4241649 | dc395.d | 03/29/04 | 15:06 |
| 11 | 2222D | 4241650 | dc396.d | 03/29/04 | 15:50 |
| 12 | 7GP23 | 4241651 | dc397.d | 03/29/04 | 16:35 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: gc282.d DFTPP Injection Date: 03/20/04

Instrument ID: HP06777 DFTPP Injection Time: 12:47

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 41.0 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 57.6 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 50.5 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.23 |
| 275 | 10.0 - 30.0% of mass 198 | 23.5 |
| 365 | Greater than 1.00% of mass 198 | 2.59 |
| 441 | Present, and less than mass 443 | 11.8 |
| 442 | Greater than 40.0 % of mass 198 | 78.5 |
| 443 | 17.0 - 23.0% of mass 442 | 14.8 ( 18.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD080 | STD0754 | gc283.d | 03/20/04 | 13:10 |
| 02 | SSTD120 | STD0754 | gc284.d | 03/20/04 | 14:09 |
| 03 | SSTD050 | STD0754 | gc285.d | 03/20/04 | 15:06 |
| 04 | SSTD030 | STD0754 | gc286.d | 03/20/04 | 16:03 |
| 05 | SSTD015 | STD0754 | gc287.d | 03/20/04 | 17:00 |
| 06 | SSTD005 | STD0754 | gc288.d | 03/20/04 | 17:57 |
| 07 | SSTD001 | 8270MDL0494 | gc289.d | 03/20/04 | 18:54 |
| 08 | SECC | ICV0224 | gc290.d | 03/20/04 | 19:51 |



FORM V SV

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: gc380.d DFTPP Injection Date: 03/26/04

Instrument ID: HP06777 DFTPP Injection Time: 06:48

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 42.0 |
| 68 | Less than 2.0% of mass 69 | 0.53 ( 0.88)1 |
| 69 | Mass 69 relative abundance | 60.3 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 53.4 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.58 |
| 275 | 10.0 - 30.0% of mass 198 | 22.4 |
| 365 | Greater than 1.00% of mass 198 | 3.3 |
| 441 | Present, and less than mass 443 | 10.4 |
| 442 | Greater than 40.0 % of mass 198 | 73.6 |
| 443 | 17.0 - 23.0% of mass 442 | 12.8 ( 17.3)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD080 | STD0854 | gc381.d | 03/26/04 | 07:10 |
| 02 | SBLKLC0857 | SBLKLC085 | gc382.d | 03/26/04 | 08:09 |
| 03 | 085LCLCS7 | 085LCLCS | gc383.d | 03/26/04 | 09:04 |
| 04 | 7GP45 | 4241645 | gc384.d | 03/26/04 | 09:59 |
| 05 | 5GP45MS | 4241646 | gc385.d | 03/26/04 | 10:54 |
| 06 | 5GP45MSD | 4241647 | gc386.d | 03/26/04 | 11:49 |
| 07 | 7GP18 | 4241643 | gc388.d | 03/26/04 | 13:39 |

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: gc39y.d DFTPP Injection Date: 03/26/04

Instrument ID: HP06777 DFTPP Injection Time: 20:30

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 41.9 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 60.7 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 52.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.05 |
| 275 | 10.0 - 30.0% of mass 198 | 21.9 |
| 365 | Greater than 1.00% of mass 198 | 2.73 |
| 441 | Present, and less than mass 443 | 10.3 |
| 442 | Greater than 40.0 % of mass 198 | 70.5 |
| 443 | 17.0 - 23.0% of mass 442 | 11.5 ( 16.4)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD030 | STD0854 | gc394.d | 03/26/04 | 20:53 |
| 02 | 7GP24 | 4241652 | gc396.d | 03/26/04 | 22:48 |
| 03 | SBLKWI0857 | SBLKWI085 | gc397.d | 03/26/04 | 23:43 |
| 04 | 085WILCS7 | 085WILCS | gc398.d | 03/27/04 | 00:37 |
| 05 | 085WILCSD7 | 085WILCSD | gc399.d | 03/27/04 | 01:31 |
| 06 | PW20-RE | 4233098RE | gc400.d | 03/27/04 | 02:25 |
| 07 | SMW14RE | 4233100RE | gc401.d | 03/27/04 | 03:19 |
| 08 | SMW64RE | 4233103RE | gc404.d | 03/27/04 | 07:00 |
| 09 | SMW15RE | 4233104RE | gc405.d | 03/27/04 | 07:55 |

# SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: RAV04

| | LL #'s | EPA SAMPLE NO. | S1 (2FP) # | S2 (PHL) # | S3 (TBP) # | S4 (NBZ) # | S5 (TPH) # | S6 (FBP) # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 4241642 | 7GP17 | 82 | 83 | 84 | 89 | 90 | 89 | 0 |
| 02 | 4241642 | 7GP17MS | 88 | 90 | 84 | 93 | 99 | 87 | 0 |
| 03 | 4241642 | 7GP17MSD | 85 | 85 | 80 | 90 | 96 | 88 | 0 |
| 04 | 4241643 | 7GP18 | 78 | 81 | 87 | 83 | 90 | 85 | 0 |
| 05 | 4241644 | 7GP19 | 78 | 81 | 78 | 83 | 85 | 82 | 0 |
| 06 | 4241645 | 7GP45 | 80 | 83 | 89 | 85 | 93 | 87 | 0 |
| 07 | 4241646 | 7GP45MS | 84 | 87 | 96 | 88 | 94 | 92 | 0 |
| 08 | 4241647 | 7GP45MSD | 83 | 88 | 98 | 87 | 96 | 88 | 0 |
| 09 | 4241648 | UGP21 | 85 | 85 | 79 | 87 | 87 | 84 | 0 |
| 10 | 4241649 | 7GP22 | 87 | 86 | 88 | 89 | 95 | 92 | 0 |
| 11 | 4241650 | 2222D | 88 | 87 | 81 | 94 | 95 | 89 | 0 |
| 12 | 4241651 | 7GP23 | 85 | 88 | 84 | 91 | 91 | 90 | 0 |
| 13 | 4241652 | 7GP24 | 72 | 84 | 103 | 90 | 105 | 90 | 0 |
| 14 | SBLKLC085 | SBLKLC0857 | 81 | 86 | 99 | 88 | 97 | 92 | 0 |
| 15 | SBLKLA087 | SBLKLA0874 | 82 | 83 | 93 | 86 | 87 | 86 | 0 |
| 16 | 085LCLCS | 085LCLCS7 | 87 | 90 | 105 | 91 | 99 | 93 | 0 |
| 17 | 087LALCS | 087LALCS4 | 85 | 87 | 95 | 91 | 101 | 90 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (41-119) |
| S2 (PHL) = Phenol-d6 | (45-120) |
| S3 (TBP) = 2,4,6-Tribromophenol | (46-136) |
| S4 (NBZ) = Nitrobenzene-d5 | (47-128) |
| S5 (TPH) = Terphenyl-d14 | (49-133) |
| S6 (FBP) = 2-Fluorobiphenyl | (55-123) |

# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

8853



FORM II SV-1

# SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKLC0857

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: gc382.d Lab Sample ID: SBLKLC085

Date Extracted: 03/25/04 Extraction: Sonc

Date Analyzed: 03/26/04 Time Analyzed: 08:09

Matrix (soil/water): SOIL Level: (low/med) LOW

Instrument ID: HP06777

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 085LCLCS7 | 085LCLCS | gc383.d | 03/26/04 |
| 02 | 7GP45 | 4241645 | gc384.d | 03/26/04 |
| 03 | 5GP45MS | 4241646 | gc385.d | 03/26/04 |
| 04 | 5GP45MSD | 4241647 | gc386.d | 03/26/04 |
| 05 | 7GP18 | 4241643 | gc388.d | 03/26/04 |
| 06 | 7GP24 | 4241652 | gc396.d | 03/26/04 |

COMMENTS:

0054

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLKLA0874

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dc388.d Lab Sample ID: SBLKLA087

Date Extracted: 03/27/04 Extraction: Sonc

Date Analyzed: 03/29/04 Time Analyzed: 09:55

Matrix (soil/water): SOIL Level: (low/med) LOW

Instrument ID: HP06780

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 087LALCS4 | 087LALCS | dc389.d | 03/29/04 |
| 02 | 7GP17 | 4241642 | dc390.d | 03/29/04 |
| 03 | 7GP17MS | 4241642 | dc391.d | 03/29/04 |
| 04 | 7GP17MSD | 4241642 | dc392.d | 03/29/04 |
| 05 | 7GP19 | 4241644 | dc393.d | 03/29/04 |
| 06 | UGP21 | 4241648 | dc394.d | 03/29/04 |
| 07 | 7GP22 | 4241649 | dc395.d | 03/29/04 |
| 08 | 2222D | 4241650 | dc396.d | 03/29/04 |
| 09 | 7GP23 | 4241651 | dc397.d | 03/29/04 |

COMMENTS:

5865

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLC0857

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLC085

Sample wt/vol: 30 (g/mL) G Lab File ID: gc382.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL UG/KG | Q |
|---|---|---|---|---|
| 108-95-2 | Phenol | | 33 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | | 33 | U |
| 95-57-8 | 2-Chlorophenol | | 33 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 33 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 33 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 33 | U |
| 95-48-7 | 2-Methylphenol | | 33 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | | 33 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | | 33 | U |
| 106-44-5 | 4-Methylphenol | | 67 | U |
| 67-72-1 | Hexachloroethane | | 33 | U |
| 98-95-3 | Nitrobenzene | | 33 | U |
| 78-59-1 | Isophorone | | 33 | U |
| 88-75-5 | 2-Nitrophenol | | 33 | U |
| 105-67-9 | 2,4-Dimethylphenol | | 33 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | | 33 | U |
| 120-83-2 | 2,4-Dichlorophenol | | 33 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | 33 | U |
| 91-20-3 | Naphthalene | | 33 | U |
| 106-47-8 | 4-Chloroaniline | | 33 | U |
| 87-68-3 | Hexachlorobutadiene | | 67 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | 67 | U |
| 91-57-6 | 2-Methylnaphthalene | | 33 | U |
| 77-47-4 | Hexachlorocyclopentadiene | | 170 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | 33 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | | 33 | U |
| 91-58-7 | 2-Chloronaphthalene | | 33 | U |
| 88-74-4 | 2-Nitroaniline | | 33 | U |
| 131-11-3 | Dimethylphthalate | | 67 | U |
| 606-20-2 | 2,6-Dinitrotoluene | | 33 | U |

8666

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKLC0857

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLC085

Sample wt/vol: 30 (g/mL) G Lab File ID: gc382.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MDL UG/KG | Q |
|---|---|---|---|
| 208-96-8 | Acenaphthylene | 33 | U |
| 99-09-2 | 3-Nitroaniline | 67 | U |
| 83-32-9 | Acenaphthene | 33 | U |
| 51-28-5 | 2,4-Dinitrophenol | 670 | U |
| 100-02-7 | 4-Nitrophenol | 170 | U |
| 132-64-9 | Dibenzofuran | 33 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 67 | U |
| 84-66-2 | Diethylphthalate | 67 | U |
| 86-73-7 | Fluorene | 33 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 33 | U |
| 100-01-6 | 4-Nitroaniline | 67 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 170 | U |
| 86-30-6 | N-Nitrosodiphenylamine | 33 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 33 | U |
| 118-74-1 | Hexachlorobenzene | 33 | U |
| 87-86-5 | Pentachlorophenol | 170 | U |
| 85-01-8 | Phenanthrene | 33 | U |
| 120-12-7 | Anthracene | 33 | U |
| 86-74-8 | Carbazole | 33 | U |
| 84-74-2 | Di-n-butylphthalate | 94 | J |
| 206-44-0 | Fluoranthene | 33 | U |
| 129-00-0 | Pyrene | 33 | U |
| 85-68-7 | Butylbenzylphthalate | 67 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 67 | U |
| 56-55-3 | Benzo(a)anthracene | 33 | U |
| 218-01-9 | Chrysene | 33 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 170 | U |
| 117-84-0 | Di-n-octylphthalate | 67 | U |
| 205-99-2 | Benzo(b)fluoranthene | 33 | U |
| 207-08-9 | Benzo(k)fluoranthene | 33 | U |

8867

1C cont

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLC0857

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLC085

Sample wt/vol: 30 (g/mL) G Lab File ID: gc382.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/25/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL UG/KG | Q |
|---|---|---|---|---|
| 50-32-8 | Benzo(a)pyrene | | 33 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | | 33 | U |
| 53-70-3 | Dibenz(a,h)anthracene | | 33 | U |
| 191-24-2 | Benzo(g,h,i)perylene | | 33 | U |

3558

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLA0874

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLA087

Sample wt/vol: 30 (g/mL) G Lab File ID: dc388.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/27/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/29/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/KG | Q |
|---|---|---|---|---|---|
| 108-95-2 | Phenol | | | 33 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | | | 33 | U |
| 95-57-8 | 2-Chlorophenol | | | 33 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | | 33 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | | 33 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | | 33 | U |
| 95-48-7 | 2-Methylphenol | | | 33 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | | | 33 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | | | 33 | U |
| 106-44-5 | 4-Methylphenol | | | 67 | U |
| 67-72-1 | Hexachloroethane | | | 33 | U |
| 98-95-3 | Nitrobenzene | | | 33 | U |
| 78-59-1 | Isophorone | | | 33 | U |
| 88-75-5 | 2-Nitrophenol | | | 33 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 33 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | | | 33 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 33 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | | | 33 | U |
| 91-20-3 | Naphthalene | | | 33 | U |
| 106-47-8 | 4-Chloroaniline | | | 33 | U |
| 87-68-3 | Hexachlorobutadiene | | | 67 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 67 | U |
| 91-57-6 | 2-Methylnaphthalene | | | 33 | U |
| 77-47-4 | Hexachlorocyclopentadiene | | | 170 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 33 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | | | 33 | U |
| 91-58-7 | 2-Chloronaphthalene | | | 33 | U |
| 88-74-4 | 2-Nitroaniline | | | 33 | U |
| 131-11-3 | Dimethylphthalate | | | 67 | U |
| 606-20-2 | 2,6-Dinitrotoluene | | | 33 | U |

8869

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLA0874

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLA087

Sample wt/vol: 30 (g/mL) G Lab File ID: dc388.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/27/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/29/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/KG | Q |
|---|---|---|---|---|---|
| 208-96-8 | Acenaphthylene | | | 33 | U |
| 99-09-2 | 3-Nitroaniline | | | 67 | U |
| 83-32-9 | Acenaphthene | | | 33 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 670 | U |
| 100-02-7 | 4-Nitrophenol | | | 170 | U |
| 132-64-9 | Dibenzofuran | | | 33 | U |
| 121-14-2 | 2,4-Dinitrotoluene | | | 67 | U |
| 84-66-2 | Diethylphthalate | | | 67 | U |
| 86-73-7 | Fluorene | | | 33 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | | | 33 | U |
| 100-01-6 | 4-Nitroaniline | | | 67 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 170 | U |
| 86-30-6 | N-Nitrosodiphenylamine | | | 33 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | | | 33 | U |
| 118-74-1 | Hexachlorobenzene | | | 33 | U |
| 87-86-5 | Pentachlorophenol | | | 170 | U |
| 85-01-8 | Phenanthrene | | | 33 | U |
| 120-12-7 | Anthracene | | | 33 | U |
| 86-74-8 | Carbazole | | | 33 | U |
| 84-74-2 | Di-n-butylphthalate | | | 67 | U |
| 206-44-0 | Fluoranthene | | | 33 | U |
| 129-00-0 | Pyrene | | | 33 | U |
| 85-68-7 | Butylbenzylphthalate | | | 67 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | | | 67 | U |
| 56-55-3 | Benzo(a)anthracene | | | 33 | U |
| 218-01-9 | Chrysene | | | 33 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | | | 170 | U |
| 117-84-0 | Di-n-octylphthalate | | | 67 | U |
| 205-99-2 | Benzo(b)fluoranthene | | | 33 | U |
| 207-08-9 | Benzo(k)fluoranthene | | | 33 | U |

5878

1C cont

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKLA0874

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) SOIL Lab Sample ID: SBLKLA087

Sample wt/vol: 30 (g/mL) G Lab File ID: dc388.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 03/27/04

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/29/04

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sonc

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/KG | Q |
|---|---|---|---|---|---|
| 50-32-8 | Benzo(a)pyrene | | | 33 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | | | 33 | U |
| 53-70-3 | Dibenz(a,h)anthracene | | | 33 | U |
| 191-24-2 | Benzo(g,h,i)perylene | | | 33 | U |

8071

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:gc384.d
7GP45 4241645
AMT USED:30.0 g
FINAL VOL:1 ml

MATRIX SPIKE:gc385.d
7GP45MS 4241646
AMT USED: 30.0 g
FINAL VOL: 1 ml

SPIKE DUPLICATE:gc386.d
7GP45MSD 4241647
AMT USED: 30.0 g
FINAL VOL: 1 ml

INSTRUMENT: HP06777  DILUTION FACTOR: 1  BATCH: 04085SLC026

%MOISTURE: 20  EXTRACT SPIKE LEVEL: 4166.67

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 4166.67 | 4166.67 | ND | 3709.95 | 3630.15 | 89 | 87 | 30-137 | YES | 2 | 30 | YES |
| bis(2-Chloroethyl)ether | 4166.67 | 4166.67 | ND | 3476.58 | 3486.14 | 83 | 84 | 40-132 | YES | 1 | 30 | YES |
| 2-Chlorophenol | 4166.67 | 4166.67 | ND | 3656.93 | 3738.27 | 88 | 90 | 46-124 | YES | 2 | 30 | YES |
| 1,3-Dichlorobenzene | 4166.67 | 4166.67 | ND | 3437.96 | 3420.73 | 83 | 82 | 37-118 | YES | 1 | 30 | YES |
| 1,4-Dichlorobenzene | 4166.67 | 4166.67 | ND | 3552.53 | 3508.22 | 85 | 84 | 38-116 | YES | 1 | 30 | YES |
| 1,2-Dichlorobenzene | 4166.67 | 4166.67 | ND | 3450.74 | 3383.75 | 83 | 81 | 41-115 | YES | 2 | 30 | YES |
| 2-Methylphenol | 4166.67 | 4166.67 | ND | 3716.18 | 3772.80 | 89 | 91 | 42-125 | YES | 2 | 30 | YES |
| 2,2'-oxybis(1-Chloropropane | 4166.67 | 4166.67 | ND | 3941.87 | 3968.06 | 95 | 95 | 50-143 | YES | 0 | 30 | YES |
| N-Nitroso-di-n-propylamine | 4166.67 | 4166.67 | ND | 3346.40 | 3354.76 | 80 | 81 | 46-127 | YES | 1 | 30 | YES |
| 4-Methylphenol | 4166.67 | 4166.67 | ND | 3679.19 | 3783.86 | 88 | 91 | 40-132 | YES | 3 | 30 | YES |
| Hexachloroethane | 4166.67 | 4166.67 | ND | 3503.74 | 3406.85 | 84 | 82 | 20-135 | YES | 2 | 30 | YES |
| Nitrobenzene | 4166.67 | 4166.67 | ND | 3625.63 | 3551.98 | 87 | 85 | 39-137 | YES | 2 | 30 | YES |
| Isophorone | 4166.67 | 4166.67 | ND | 3518.69 | 3464.17 | 84 | 83 | 47-128 | YES | 1 | 30 | YES |
| 2-Nitrophenol | 4166.67 | 4166.67 | ND | 3683.57 | 3672.25 | 88 | 88 | 42-133 | YES | 0 | 30 | YES |
| 2,4-Dimethylphenol | 4166.67 | 4166.67 | ND | 3816.65 | 3754.51 | 92 | 90 | 44-131 | YES | 2 | 30 | YES |
| bis(2-Chloroethoxy)methane | 4166.67 | 4166.67 | ND | 3914.13 | 3916.82 | 94 | 94 | 50-136 | YES | 0 | 30 | YES |
| 2,4-Dichlorophenol | 4166.67 | 4166.67 | ND | 3689.74 | 3730.06 | 89 | 90 | 38-133 | YES | 1 | 30 | YES |
| 1,2,4-Trichlorobenzene | 4166.67 | 4166.67 | ND | 3672.01 | 3536.40 | 88 | 85 | 37-132 | YES | 3 | 30 | YES |
| Naphthalene | 4166.67 | 4166.67 | ND | 3775.86 | 3621.13 | 91 | 87 | 38-132 | YES | 4 | 30 | YES |
| 4-Chloroaniline | 4166.67 | 4166.67 | ND | 3319.15 | 3472.51 | 80 | 83 | 6-126 | YES | 4 | 30 | YES |
| Hexachlorobutadiene | 4166.67 | 4166.67 | ND | 3631.41 | 3449.75 | 87 | 83 | 38-134 | YES | 5 | 30 | YES |
| 4-Chloro-3-methylphenol | 4166.67 | 4166.67 | ND | 3933.00 | 4003.06 | 94 | 96 | 47-136 | YES | 2 | 30 | YES |
| 2-Methylnaphthalene | 4166.67 | 4166.67 | ND | 3681.17 | 3629.01 | 88 | 87 | 42-128 | YES | 1 | 30 | YES |
| Hexachlorocyclopentadiene | 8333.33 | 8333.33 | ND | 3472.60 | 4850.23 | 42 | 58 | 5-140 | YES | 32 | 30 | NO |
| 2,4,6-Trichlorophenol | 4166.67 | 4166.67 | ND | 3669.04 | 3462.67 | 88 | 83 | 41-132 | YES | 6 | 30 | YES |
| 2,4,5-Trichlorophenol | 4166.67 | 4166.67 | ND | 3844.09 | 3793.42 | 92 | 91 | 41-132 | YES | 1 | 30 | YES |
| 2-Chloronaphthalene | 4166.67 | 4166.67 | ND | 3815.46 | 3646.83 | 92 | 88 | 45-127 | YES | 4 | 30 | YES |
| 2-Nitroaniline | 4166.67 | 4166.67 | ND | 4041.26 | 4065.56 | 97 | 98 | 47-137 | YES | 1 | 30 | YES |
| Dimethylphthalate | 4166.67 | 4166.67 | ND | 3799.22 | 3802.42 | 91 | 91 | 52-125 | YES | 0 | 30 | YES |
| 2,6-Dinitrotoluene | 4166.67 | 4166.67 | ND | 3761.48 | 3743.90 | 90 | 90 | 52-124 | YES | 0 | 30 | YES |
| Acenaphthylene | 4166.67 | 4166.67 | ND | 4374.28 | 4228.70 | 105 | 101 | 46-128 | YES | 4 | 30 | YES |
| 3-Nitroaniline | 4166.67 | 4166.67 | ND | 4004.16 | 4032.34 | 96 | 97 | 26-131 | YES | 1 | 30 | YES |
| Acenaphthene | 4166.67 | 4166.67 | ND | 3991.94 | 3882.33 | 96 | 93 | 48-132 | YES | 3 | 30 | YES |
| 2,4-Dinitrophenol | 4166.67 | 4166.67 | ND | 1550.03 | 1580.06 | 37 | 38 | 20-143 | YES | 3 | 30 | YES |
| 4-Nitrophenol | 4166.67 | 4166.67 | 281.84 | 3297.70 | 3398.76 | 72 | 75 | 14-172 | YES | 4 | 30 | YES |
| Dibenzofuran | 4166.67 | 4166.67 | ND | 3913.61 | 3770.42 | 94 | 90 | 39-129 | YES | 4 | 30 | YES |
| 2,4-Dinitrotoluene | 4166.67 | 4166.67 | ND | 4235.20 | 4229.29 | 102 | 102 | 47-138 | YES | 0 | 30 | YES |
| Diethylphthalate | 4166.67 | 4166.67 | ND | 3999.45 | 3960.04 | 96 | 95 | 53-128 | YES | 1 | 30 | YES |
| Fluorene | 4166.67 | 4166.67 | ND | 3749.38 | 3646.72 | 90 | 88 | 39-137 | YES | 2 | 30 | YES |
| 4-Chlorophenyl-phenylether | 4166.67 | 4166.67 | ND | 3751.86 | 3726.94 | 90 | 89 | 52-122 | YES | 1 | 30 | YES |
| 4-Nitroaniline | 4166.67 | 4166.67 | ND | 3505.61 | 3586.30 | 84 | 86 | 27-133 | YES | 2 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 4166.67 | 4166.67 | ND | 1752.55 | 1739.78 | 42 | 42 | 5-150 | YES | 0 | 30 | YES |
| N-Nitrosodiphenylamine | 4166.67 | 4166.67 | 2979.81 | 6649.76 | 6849.76 | 88 | 93 | 46-131 | YES | 6 | 30 | YES |
| 4-Bromophenyl-phenylether | 4166.67 | 4166.67 | ND | 3741.71 | 3635.12 | 90 | 87 | 49-133 | YES | 3 | 30 | YES |
| Hexachlorobenzene | 4166.67 | 4166.67 | ND | 3677.34 | 3625.68 | 88 | 87 | 44-133 | YES | 1 | 30 | YES |
| Pentachlorophenol | 4166.67 | 4166.67 | ND | 2756.06 | 2752.87 | 66 | 66 | 5-138 | YES | 0 | 30 | YES |
| Phenanthrene | 4166.67 | 4166.67 | ND | 3793.66 | 3726.94 | 91 | 89 | 29-143 | YES | 2 | 30 | YES |
| Anthracene | 4166.67 | 4166.67 | ND | 3772.88 | 3755.81 | 91 | 90 | 35-138 | YES | 1 | 30 | YES |
| Carbazole | 4166.67 | 4166.67 | ND | 3813.01 | 3693.12 | 92 | 89 | 41-133 | YES | 3 | 30 | YES |
| Di-n-butylphthalate | 4166.67 | 4166.67 | ND | 3935.24 | 3966.79 | 94 | 95 | 51-126 | YES | 1 | 30 | YES |
| Fluoranthene | 4166.67 | 4166.67 | ND | 3708.50 | 3605.46 | 89 | 87 | 19-145 | YES | 2 | 30 | YES |
| Pyrene | 4166.67 | 4166.67 | ND | 3928.60 | 4115.79 | 94 | 99 | 28-144 | YES | 5 | 30 | YES |
| Butylbenzylphthalate | 4166.67 | 4166.67 | ND | 4211.04 | 4228.12 | 101 | 101 | 40-141 | YES | 0 | 30 | YES |
| 3,3'-Dichlorobenzidine | 4166.67 | 4166.67 | ND | 3818.35 | 3871.19 | 92 | 93 | 2-129 | YES | 1 | 30 | YES |
| Benzo(a)anthracene | 4166.67 | 4166.67 | ND | 3963.44 | 3833.51 | 95 | 92 | 26-144 | YES | 3 | 30 | YES |
| Chrysene | 4166.67 | 4166.67 | ND | 3927.52 | 3956.68 | 94 | 95 | 23-150 | YES | 1 | 30 | YES |

COMMENTS: _____

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

| UNSPIKED:gc384.d | MATRIX SPIKE:gc385.d | SPIKE DUPLICATE:gc386.d |
|---|---|---|
| 7GP45 4241645 | 7GP45MS 4241646 | 7GP45MSD 4241647 |
| AMT USED:30.0 g | AMT USED: 30.0 g | AMT USED: 30.0 g |
| FINAL VOL:1 ml | FINAL VOL: 1 ml | FINAL VOL: 1 ml |

INSTRUMENT: HP06777  DILUTION FACTOR: 1  BATCH: 04085SLC026

%MOISTURE: 20  EXTRACT SPIKE LEVEL: 4166.67

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | 4166.67 | 4166.67 | 291.01 | 4647.57 | 4750.99 | 105 | 107 | 48-137 | YES | 2 | 30 | YES |
| Di-n-octylphthalate | 4166.67 | 4166.67 | ND | 4276.46 | 4362.76 | 103 | 105 | 38-147 | YES | 2 | 30 | YES |
| Benzo(b)fluoranthene | 4166.67 | 4166.67 | ND | 3905.87 | 3886.71 | 94 | 93 | 32-140 | YES | 1 | 30 | YES |
| Benzo(k)fluoranthene | 4166.67 | 4166.67 | ND | 3936.37 | 3831.39 | 94 | 92 | 36-143 | YES | 2 | 30 | YES |
| Benzo(a)pyrene | 4166.67 | 4166.67 | ND | 3961.02 | 3862.06 | 95 | 93 | 23-154 | YES | 2 | 30 | YES |
| Indeno(1,2,3-cd)pyrene | 4166.67 | 4166.67 | ND | 3724.04 | 3420.55 | 89 | 82 | 36-141 | YES | 8 | 30 | YES |
| Dibenz(a,h)anthracene | 4166.67 | 4166.67 | ND | 3925.14 | 3753.70 | 94 | 90 | 19-163 | YES | 4 | 30 | YES |
| Benzo(g,h,i)perylene | 4166.67 | 4166.67 | ND | 3642.15 | 3423.09 | 87 | 82 | 17-152 | YES | 6 | 30 | YES |

COMMENTS: 0073

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

UNSPIKED:dc390.d
7GP17 4241642
AMT USED:30.0 g
FINAL VOL:1 ml

MATRIX SPIKE:dc391.d
7GP17MS 4241642
AMT USED: 30.0 g
FINAL VOL: 1 ml

SPIKE DUPLICATE:dc392.d
7GP17MSD 4241642
AMT USED: 30.0 g
FINAL VOL: 1 ml

INSTRUMENT: HP06780  DILUTION FACTOR: 1  BATCH: 04087SLA026

%MOISTURE: 18  EXTRACT SPIKE LEVEL: 4065.04

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 4065.04 | 4065.04 | ND | 3834.72 | 3618.47 | 94 | 89 | 30-137 | YES | 5 | 30 | YES |
| bis(2-Chloroethyl)ether | 4065.04 | 4065.04 | ND | 3620.15 | 3551.47 | 89 | 87 | 40-132 | YES | 2 | 30 | YES |
| 2-Chlorophenol | 4065.04 | 4065.04 | ND | 3804.53 | 3621.56 | 94 | 89 | 46-124 | YES | 5 | 30 | YES |
| 1,3-Dichlorobenzene | 4065.04 | 4065.04 | ND | 3304.17 | 3203.89 | 81 | 79 | 37-118 | YES | 2 | 30 | YES |
| 1,4-Dichlorobenzene | 4065.04 | 4065.04 | ND | 3361.01 | 3249.47 | 83 | 80 | 38-116 | YES | 4 | 30 | YES |
| 1,2-Dichlorobenzene | 4065.04 | 4065.04 | ND | 3340.17 | 3168.65 | 82 | 78 | 41-115 | YES | 5 | 30 | YES |
| 2-Methylphenol | 4065.04 | 4065.04 | ND | 3562.25 | 3448.24 | 88 | 85 | 42-125 | YES | 3 | 30 | YES |
| 2,2'-oxybis(1-Chloropropane | 4065.04 | 4065.04 | ND | 4199.45 | 4125.32 | 103 | 101 | 50-143 | YES | 2 | 30 | YES |
| N-Nitroso-di-n-propylamine | 4065.04 | 4065.04 | ND | 3530.07 | 3411.23 | 87 | 84 | 46-127 | YES | 4 | 30 | YES |
| 4-Methylphenol | 4065.04 | 4065.04 | ND | 3477.61 | 3385.72 | 86 | 83 | 40-132 | YES | 4 | 30 | YES |
| Hexachloroethane | 4065.04 | 4065.04 | ND | 3299.73 | 3311.32 | 81 | 81 | 20-135 | YES | 0 | 30 | YES |
| Nitrobenzene | 4065.04 | 4065.04 | ND | 3672.28 | 3637.73 | 90 | 89 | 39-137 | YES | 1 | 30 | YES |
| Isophorone | 4065.04 | 4065.04 | ND | 3573.96 | 3491.97 | 88 | 86 | 47-128 | YES | 2 | 30 | YES |
| 2-Nitrophenol | 4065.04 | 4065.04 | ND | 3567.28 | 3534.59 | 88 | 87 | 42-133 | YES | 1 | 30 | YES |
| 2,4-Dimethylphenol | 4065.04 | 4065.04 | ND | 3911.22 | 3756.51 | 96 | 92 | 44-131 | YES | 4 | 30 | YES |
| bis(2-Chloroethoxy)methane | 4065.04 | 4065.04 | ND | 4091.86 | 4078.78 | 101 | 100 | 50-136 | YES | 1 | 30 | YES |
| 2,4-Dichlorophenol | 4065.04 | 4065.04 | ND | 3734.17 | 3647.63 | 92 | 90 | 38-133 | YES | 2 | 30 | YES |
| 1,2,4-Trichlorobenzene | 4065.04 | 4065.04 | ND | 3646.12 | 3466.34 | 90 | 85 | 37-132 | YES | 6 | 30 | YES |
| Naphthalene | 4065.04 | 4065.04 | ND | 3559.34 | 3405.38 | 88 | 84 | 38-132 | YES | 5 | 30 | YES |
| 4-Chloroaniline | 4065.04 | 4065.04 | ND | 3637.23 | 3320.07 | 89 | 82 | 6-126 | YES | 8 | 30 | YES |
| Hexachlorobutadiene | 4065.04 | 4065.04 | ND | 3504.31 | 3245.98 | 86 | 80 | 38-134 | YES | 7 | 30 | YES |
| 4-Chloro-3-methylphenol | 4065.04 | 4065.04 | ND | 4088.66 | 3819.92 | 101 | 94 | 47-136 | YES | 7 | 30 | YES |
| 2-Methylnaphthalene | 4065.04 | 4065.04 | ND | 3617.69 | 3387.50 | 89 | 83 | 42-128 | YES | 7 | 30 | YES |
| Hexachlorocyclopentadiene | 8130.08 | 8130.08 | ND | 3673.68 | 4141.38 | 45 | 51 | 5-140 | YES | 12 | 30 | YES |
| 2,4,6-Trichlorophenol | 4065.04 | 4065.04 | ND | 2951.19 | 2921.90 | 73 | 72 | 41-132 | YES | 1 | 30 | YES |
| 2,4,5-Trichlorophenol | 4065.04 | 4065.04 | ND | 3375.77 | 3485.01 | 83 | 86 | 41-132 | YES | 4 | 30 | YES |
| 2-Chloronaphthalene | 4065.04 | 4065.04 | ND | 3619.17 | 3610.37 | 89 | 89 | 45-127 | YES | 0 | 30 | YES |
| 2-Nitroaniline | 4065.04 | 4065.04 | ND | 4134.13 | 4002.88 | 102 | 98 | 47-137 | YES | 4 | 30 | YES |
| Dimethylphthalate | 4065.04 | 4065.04 | ND | 3827.40 | 3748.45 | 94 | 92 | 52-125 | YES | 2 | 30 | YES |
| 2,6-Dinitrotoluene | 4065.04 | 4065.04 | ND | 3820.25 | 3773.50 | 94 | 93 | 52-124 | YES | 1 | 30 | YES |
| Acenaphthylene | 4065.04 | 4065.04 | ND | 3992.79 | 4083.39 | 98 | 100 | 46-128 | YES | 2 | 30 | YES |
| 3-Nitroaniline | 4065.04 | 4065.04 | ND | 3983.66 | 3761.06 | 98 | 93 | 26-131 | YES | 5 | 30 | YES |
| Acenaphthene | 4065.04 | 4065.04 | ND | 3782.15 | 3751.29 | 93 | 92 | 48-132 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 4065.04 | 4065.04 | ND | 1773.86 | 1214.25 | 44 | 30 | 20-143 | YES | 38 | 30 | NO |
| 4-Nitrophenol | 4065.04 | 4065.04 | ND | 3887.01 | 3885.98 | 96 | 96 | 14-172 | YES | 0 | 30 | YES |
| Dibenzofuran | 4065.04 | 4065.04 | ND | 3707.54 | 3648.57 | 91 | 90 | 39-129 | YES | 1 | 30 | YES |
| 2,4-Dinitrotoluene | 4065.04 | 4065.04 | ND | 4369.62 | 4214.00 | 107 | 104 | 47-138 | YES | 3 | 30 | YES |
| Diethylphthalate | 4065.04 | 4065.04 | ND | 4097.75 | 3831.51 | 101 | 94 | 53-128 | YES | 7 | 30 | YES |
| Fluorene | 4065.04 | 4065.04 | ND | 3500.11 | 3429.95 | 86 | 84 | 39-137 | YES | 2 | 30 | YES |
| 4-Chlorophenyl-phenylether | 4065.04 | 4065.04 | ND | 3381.56 | 3237.03 | 83 | 80 | 52-122 | YES | 4 | 30 | YES |
| 4-Nitroaniline | 4065.04 | 4065.04 | ND | 3893.67 | 3920.36 | 96 | 96 | 27-133 | YES | 0 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 4065.04 | 4065.04 | ND | 2207.45 | 1353.77 | 54 | 33 | 5-150 | YES | 48 | 30 | NO |
| N-Nitrosodiphenylamine | 4065.04 | 4065.04 | 3523.16 | 7507.27 | 7048.13 | 98 | 87 | 46-131 | YES | 12 | 30 | YES |
| 4-Bromophenyl-phenylether | 4065.04 | 4065.04 | ND | 3891.19 | 3943.68 | 96 | 97 | 49-133 | YES | 1 | 30 | YES |
| Hexachlorobenzene | 4065.04 | 4065.04 | ND | 3895.47 | 3844.28 | 96 | 95 | 44-133 | YES | 1 | 30 | YES |
| Pentachlorophenol | 4065.04 | 4065.04 | ND | 3771.75 | 3962.06 | 93 | 97 | 5-138 | YES | 4 | 30 | YES |
| Phenanthrene | 4065.04 | 4065.04 | ND | 3834.26 | 3850.37 | 94 | 95 | 29-143 | YES | 1 | 30 | YES |
| Anthracene | 4065.04 | 4065.04 | ND | 3836.69 | 4046.59 | 94 | 100 | 35-138 | YES | 6 | 30 | YES |
| Carbazole | 4065.04 | 4065.04 | ND | 3819.23 | 3927.24 | 94 | 97 | 41-133 | YES | 3 | 30 | YES |
| Di-n-butylphthalate | 4065.04 | 4065.04 | 123.74 | 4209.39 | 4103.25 | 101 | 98 | 51-126 | YES | 3 | 30 | YES |
| Fluoranthene | 4065.04 | 4065.04 | ND | 3534.86 | 3630.02 | 87 | 89 | 19-145 | YES | 2 | 30 | YES |
| Pyrene | 4065.04 | 4065.04 | ND | 4206.34 | 4068.31 | 103 | 100 | 28-144 | YES | 3 | 30 | YES |
| Butylbenzylphthalate | 4065.04 | 4065.04 | ND | 4525.11 | 4346.37 | 111 | 107 | 40-141 | YES | 4 | 30 | YES |
| 3,3'-Dichlorobenzidine | 4065.04 | 4065.04 | ND | 4267.33 | 3980.79 | 105 | 98 | 2-129 | YES | 7 | 30 | YES |
| Benzo(a)anthracene | 4065.04 | 4065.04 | ND | 3716.70 | 3638.43 | 91 | 90 | 26-144 | YES | 1 | 30 | YES |
| Chrysene | 4065.04 | 4065.04 | ND | 3966.67 | 3803.98 | 98 | 94 | 23-150 | YES | 4 | 30 | YES |

8574

COMMENTS: _____

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS  Lab Code: LANCAS

| | | |
|---|---|---|
| UNSPIKED:dc390.d | MATRIX SPIKE:dc391.d | SPIKE DUPLICATE:dc392.d |
| 7GP17 4241642 | 7GP17MS 4241642 | 7GP17MSD 4241642 |
| AMT USED:30.0 g | AMT USED: 30.0 g | AMT USED: 30.0 g |
| FINAL VOL:1 ml | FINAL VOL: 1 ml | FINAL VOL: 1 ml |

INSTRUMENT: HP06780  DILUTION FACTOR: 1  BATCH: 04087SLA026

%MOISTURE: 18  EXTRACT SPIKE LEVEL: 4065.04

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/KG | MS CONC UG/KG | MSD CONC UG/KG | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX | INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | 4065.04 | 4065.04 | 558.47 | 6126.94 | 4712.82 | 137 | 102 | 48-137 | YES | 29 | 30 | YES |
| Di-n-octylphthalate | 4065.04 | 4065.04 | ND | 4219.52 | 4194.32 | 104 | 103 | 38-147 | YES | 1 | 30 | YES |
| Benzo(b)fluoranthene | 4065.04 | 4065.04 | ND | 3960.93 | 3806.04 | 97 | 94 | 32-140 | YES | 3 | 30 | YES |
| Benzo(k)fluoranthene | 4065.04 | 4065.04 | ND | 3784.64 | 3820.70 | 93 | 94 | 36-143 | YES | 1 | 30 | YES |
| Benzo(a)pyrene | 4065.04 | 4065.04 | ND | 4068.24 | 4041.41 | 100 | 99 | 23-154 | YES | 1 | 30 | YES |
| Indeno(1,2,3-cd)pyrene | 4065.04 | 4065.04 | ND | 3921.08 | 4101.01 | 96 | 101 | 36-141 | YES | 5 | 30 | YES |
| Dibenz(a,h)anthracene | 4065.04 | 4065.04 | ND | 4294.18 | 4414.94 | 106 | 109 | 19-163 | YES | 3 | 30 | YES |
| Benzo(g,h,i)perylene | 4065.04 | 4065.04 | ND | 4011.32 | 4013.01 | 99 | 99 | 17-152 | YES | 0 | 30 | YES |



COMMENTS: _____

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06777

Method: SW-846 8270C  File ID: gc383.d

LCS SAMPLE NO: 085LCLCS  BATCH: 04085SLC026  Sample Code: 085LCLCS7

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Phenol | 3333.33 | 3081.20 | 92 | 67 - 108 | YES |
| bis(2-Chloroethyl)ether | 3333.33 | 2921.92 | 88 | 66 - 104 | YES |
| 2-Chlorophenol | 3333.33 | 3129.07 | 94 | 74 - 104 | YES |
| 1,3-Dichlorobenzene | 3333.33 | 2926.10 | 88 | 62 - 105 | YES |
| 1,4-Dichlorobenzene | 3333.33 | 3019.69 | 91 | 62 - 104 | YES |
| 1,2-Dichlorobenzene | 3333.33 | 2936.13 | 88 | 64 - 101 | YES |
| 2-Methylphenol | 3333.33 | 3145.41 | 94 | 68 - 103 | YES |
| 2,2'-oxybis(1-Chloropropane | 3333.33 | 3222.08 | 97 | 66 - 138 | YES |
| N-Nitroso-di-n-propylamine | 3333.33 | 2816.82 | 85 | 62 - 109 | YES |
| 4-Methylphenol | 3333.33 | 3149.08 | 94 | 65 - 113 | YES |
| Hexachloroethane | 3333.33 | 3034.93 | 91 | 62 - 105 | YES |
| Nitrobenzene | 3333.33 | 3040.96 | 91 | 70 - 106 | YES |
| Isophorone | 3333.33 | 2980.36 | 89 | 70 - 103 | YES |
| 2-Nitrophenol | 3333.33 | 3114.32 | 93 | 76 - 111 | YES |
| 2,4-Dimethylphenol | 3333.33 | 3169.92 | 95 | 68 - 103 | YES |
| bis(2-Chloroethoxy)methane | 3333.33 | 3232.60 | 97 | 75 - 114 | YES |
| 2,4-Dichlorophenol | 3333.33 | 3033.45 | 91 | 76 - 104 | YES |
| 1,2,4-Trichlorobenzene | 3333.33 | 3001.11 | 90 | 72 - 102 | YES |
| Naphthalene | 3333.33 | 3123.80 | 94 | 73 - 103 | YES |
| 4-Chloroaniline | 3333.33 | 1383.75 | 42 | 14 - 104 | YES |
| Hexachlorobutadiene | 3333.33 | 3092.34 | 93 | 69 - 108 | YES |
| 4-Chloro-3-methylphenol | 3333.33 | 3320.73 | 100 | 72 - 117 | YES |
| 2-Methylnaphthalene | 3333.33 | 3016.07 | 90 | 70 - 102 | YES |
| Hexachlorocyclopentadiene | 6666.67 | 6813.38 | 102 | 9 - 154 | YES |
| 2,4,6-Trichlorophenol | 3333.33 | 3242.97 | 97 | 75 - 106 | YES |
| 2,4,5-Trichlorophenol | 3333.33 | 3262.54 | 98 | 76 - 110 | YES |
| 2-Chloronaphthalene | 3333.33 | 3051.47 | 92 | 72 - 103 | YES |
| 2-Nitroaniline | 3333.33 | 3402.64 | 102 | 76 - 117 | YES |
| Dimethylphthalate | 3333.33 | 3199.87 | 96 | 76 - 108 | YES |
| 2,6-Dinitrotoluene | 3333.33 | 3155.94 | 95 | 75 - 108 | YES |
| Acenaphthylene | 3333.33 | 3578.45 | 107 | 66 - 113 | YES |
| 3-Nitroaniline | 3333.33 | 2959.03 | 89 | 53 - 107 | YES |
| Acenaphthene | 3333.33 | 3316.23 | 99 | 76 - 109 | YES |
| 2,4-Dinitrophenol | 3333.33 | 2707.02 | 81 | 21 - 120 | YES |
| 4-Nitrophenol | 3333.33 | 2896.87 | 87 | 55 - 133 | YES |
| Dibenzofuran | 3333.33 | 3211.54 | 96 | 72 - 107 | YES |
| 2,4-Dinitrotoluene | 3333.33 | 3568.76 | 107 | 75 - 118 | YES |
| Diethylphthalate | 3333.33 | 3282.96 | 98 | 75 - 109 | YES |
| Fluorene | 3333.33 | 3052.87 | 92 | 66 - 115 | YES |
| 4-Chlorophenyl-phenylether | 3333.33 | 3094.06 | 93 | 70 - 108 | YES |
| 4-Nitroaniline | 3333.33 | 2760.09 | 83 | 48 - 96 | YES |
| 4,6-Dinitro-2-methylphenol | 3333.33 | 3372.11 | 101 | 41 - 121 | YES |
| N-Nitrosodiphenylamine | 3333.33 | 2900.82 | 87 | 67 - 105 | YES |
| 4-Bromophenyl-phenylether | 3333.33 | 3141.70 | 94 | 74 - 110 | YES |
| Hexachlorobenzene | 3333.33 | 3122.19 | 94 | 72 - 110 | YES |
| Pentachlorophenol | 3333.33 | 2327.38 | 70 | 47 - 110 | YES |
| Phenanthrene | 3333.33 | 3266.47 | 98 | 70 - 107 | YES |
| Anthracene | 3333.33 | 3239.61 | 97 | 71 - 107 | YES |
| Carbazole | 3333.33 | 3206.95 | 96 | 73 - 107 | YES |
| Di-n-butylphthalate | 3333.33 | 3408.25 | 102 | 73 - 109 | YES |
| Fluoranthene | 3333.33 | 3238.15 | 97 | 69 - 107 | YES |
| Pyrene | 3333.33 | 3341.72 | 100 | 71 - 110 | YES |
| Butylbenzylphthalate | 3333.33 | 3659.77 | 110 | 75 - 117 | YES |
| 3,3'-Dichlorobenzidine | 3333.33 | 1653.61 | 50 | 9 - 101 | YES |
| Benzo(a)anthracene | 3333.33 | 3346.84 | 100 | 74 - 107 | YES |
| Chrysene | 3333.33 | 3342.97 | 100 | 72 - 109 | YES |
| bis(2-Ethylhexyl)phthalate | 3333.33 | 3953.32 | 119 | 63 - 131 | YES |
| Di-n-octylphthalate | 3333.33 | 3595.24 | 108 | 67 - 115 | YES |
| Benzo(b)fluoranthene | 3333.33 | 3393.74 | 102 | 71 - 113 | YES |

NC = Could not calculate

Comments: _____

0876

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06777

Method: SW-846 8270C  File ID: gc383.d

LCS SAMPLE NO: 085LCLCS  BATCH: 04085SLC026  Sample Code: 085LCLCS7

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Benzo(k)fluoranthene | 3333.33 | 3391.09 | 102 | 75 - 112 | YES |
| Benzo(a)pyrene | 3333.33 | 3450.88 | 104 | 79 - 113 | YES |
| Indeno(1,2,3-cd)pyrene | 3333.33 | 3163.11 | 95 | 74 - 113 | YES |
| Dibenz(a,h)anthracene | 3333.33 | 3407.09 | 102 | 80 - 125 | YES |
| Benzo(g,h,i)perylene | 3333.33 | 3123.22 | 94 | 74 - 119 | YES |

NC = Could not calculate

Comments: _____

0077

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06780

Method: SW-846 8270C  File ID: dc389.d

LCS SAMPLE NO: 087LALCS  BATCH: 04087SLA026  Sample Code: 087LALCS4

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Phenol | 3333.33 | 3060.05 | 92 | 67 - 108 | YES |
| bis(2-Chloroethyl)ether | 3333.33 | 2990.30 | 90 | 66 - 104 | YES |
| 2-Chlorophenol | 3333.33 | 3095.79 | 93 | 74 - 104 | YES |
| 1,3-Dichlorobenzene | 3333.33 | 2880.09 | 86 | 62 - 105 | YES |
| 1,4-Dichlorobenzene | 3333.33 | 2924.17 | 88 | 62 - 104 | YES |
| 1,2-Dichlorobenzene | 3333.33 | 2904.66 | 87 | 64 - 101 | YES |
| 2-Methylphenol | 3333.33 | 2922.77 | 88 | 68 - 103 | YES |
| 2,2'-oxybis(1-Chloropropane | 3333.33 | 3505.36 | 105 | 66 - 138 | YES |
| N-Nitroso-di-n-propylamine | 3333.33 | 2952.43 | 89 | 62 - 109 | YES |
| 4-Methylphenol | 3333.33 | 2812.21 | 84 | 65 - 113 | YES |
| Hexachloroethane | 3333.33 | 2979.41 | 89 | 62 - 105 | YES |
| Nitrobenzene | 3333.33 | 3115.22 | 93 | 70 - 106 | YES |
| Isophorone | 3333.33 | 2978.95 | 89 | 70 - 103 | YES |
| 2-Nitrophenol | 3333.33 | 3108.76 | 93 | 76 - 111 | YES |
| 2,4-Dimethylphenol | 3333.33 | 2963.31 | 89 | 68 - 103 | YES |
| bis(2-Chloroethoxy)methane | 3333.33 | 3366.23 | 101 | 75 - 114 | YES |
| 2,4-Dichlorophenol | 3333.33 | 3162.66 | 95 | 76 - 104 | YES |
| 1,2,4-Trichlorobenzene | 3333.33 | 2929.49 | 88 | 72 - 102 | YES |
| Naphthalene | 3333.33 | 2979.26 | 89 | 73 - 103 | YES |
| 4-Chloroaniline | 3333.33 | 2445.47 | 73 | 14 - 104 | YES |
| Hexachlorobutadiene | 3333.33 | 2911.32 | 87 | 69 - 108 | YES |
| 4-Chloro-3-methylphenol | 3333.33 | 3194.20 | 96 | 72 - 117 | YES |
| 2-Methylnaphthalene | 3333.33 | 2896.69 | 87 | 70 - 102 | YES |
| Hexachlorocyclopentadiene | 6666.67 | 6807.67 | 102 | 9 - 154 | YES |
| 2,4,6-Trichlorophenol | 3333.33 | 3025.23 | 91 | 75 - 106 | YES |
| 2,4,5-Trichlorophenol | 3333.33 | 3136.59 | 94 | 76 - 110 | YES |
| 2-Chloronaphthalene | 3333.33 | 2924.28 | 88 | 72 - 103 | YES |
| 2-Nitroaniline | 3333.33 | 3192.71 | 96 | 76 - 117 | YES |
| Dimethylphthalate | 3333.33 | 3145.92 | 94 | 76 - 108 | YES |
| 2,6-Dinitrotoluene | 3333.33 | 3162.40 | 95 | 75 - 108 | YES |
| Acenaphthylene | 3333.33 | 3379.46 | 101 | 66 - 113 | YES |
| 3-Nitroaniline | 3333.33 | 2705.62 | 81 | 53 - 107 | YES |
| Acenaphthene | 3333.33 | 3059.46 | 92 | 76 - 109 | YES |
| 2,4-Dinitrophenol | 3333.33 | 3023.40 | 91 | 21 - 120 | YES |
| 4-Nitrophenol | 3333.33 | 3408.68 | 102 | 55 - 133 | YES |
| Dibenzofuran | 3333.33 | 2989.88 | 90 | 72 - 107 | YES |
| 2,4-Dinitrotoluene | 3333.33 | 3528.12 | 106 | 75 - 118 | YES |
| Diethylphthalate | 3333.33 | 3293.76 | 99 | 75 - 109 | YES |
| Fluorene | 3333.33 | 2792.29 | 84 | 66 - 115 | YES |
| 4-Chlorophenyl-phenylether | 3333.33 | 2655.04 | 80 | 70 - 108 | YES |
| 4-Nitroaniline | 3333.33 | 2848.13 | 85 | 48 - 96 | YES |
| 4,6-Dinitro-2-methylphenol | 3333.33 | 3581.28 | 107 | 41 - 121 | YES |
| N-Nitrosodiphenylamine | 3333.33 | 3169.00 | 95 | 67 - 105 | YES |
| 4-Bromophenyl-phenylether | 3333.33 | 3162.04 | 95 | 74 - 110 | YES |
| Hexachlorobenzene | 3333.33 | 3223.91 | 97 | 72 - 110 | YES |
| Pentachlorophenol | 3333.33 | 3247.77 | 97 | 47 - 110 | YES |
| Phenanthrene | 3333.33 | 3282.03 | 98 | 70 - 107 | YES |
| Anthracene | 3333.33 | 3352.90 | 101 | 71 - 107 | YES |
| Carbazole | 3333.33 | 3199.43 | 96 | 73 - 107 | YES |
| Di-n-butylphthalate | 3333.33 | 3556.75 | 107 | 73 - 109 | YES |
| Fluoranthene | 3333.33 | 3158.23 | 95 | 69 - 107 | YES |
| Pyrene | 3333.33 | 3369.70 | 101 | 71 - 110 | YES |
| Butylbenzylphthalate | 3333.33 | 3714.87 | 111 | 75 - 117 | YES |
| 3,3'-Dichlorobenzidine | 3333.33 | 2476.12 | 74 | 9 - 101 | YES |
| Benzo(a)anthracene | 3333.33 | 3083.00 | 92 | 74 - 107 | YES |
| Chrysene | 3333.33 | 3300.96 | 99 | 72 - 109 | YES |
| bis(2-Ethylhexyl)phthalate | 3333.33 | 3592.49 | 108 | 63 - 131 | YES |
| Di-n-octylphthalate | 3333.33 | 3478.86 | 104 | 67 - 115 | YES |
| Benzo(b)fluoranthene | 3333.33 | 3318.40 | 100 | 71 - 113 | YES |

NC = Could not calculate

Comments: _____

5878

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS  LAB CODE: LANCAS  INSTRUMENT: HP06780

Method: SW-846 8270C  File ID: dc389.d

LCS SAMPLE NO: 087LALCS  BATCH: 04087SLA026  Sample Code: 087LALCS4

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/Kg | QCREF REC % | RANGE LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Benzo(k)fluoranthene | 3333.33 | 3474.67 | 104 | 75 - 112 | YES |
| Benzo(a)pyrene | 3333.33 | 3559.25 | 107 | 79 - 113 | YES |
| Indeno(1,2,3-cd)pyrene | 3333.33 | 3586.76 | 108 | 74 - 113 | YES |
| Dibenz(a,h)anthracene | 3333.33 | 3703.39 | 111 | 80 - 125 | YES |
| Benzo(g,h,i)perylene | 3333.33 | 3497.00 | 105 | 74 - 119 | YES |

NC = Could not calculate

Comments: _____

0879

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dc386.d Date Analyzed: 03/29/04

Instrument ID: HP06780 Time Analyzed: 08:22

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 230501 | 10.404 | 811296 | 13.030 | 371050 | 16.683 |
| | UPPER LIMIT | 461002 | 10.904 | 1622592 | 13.530 | 742100 | 17.183 |
| | LOWER LIMIT | 115251 | 9.904 | 405648 | 12.530 | 185525 | 16.183 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | -B051DL | 221678 | 10.419 | 704247 | 13.051 | 375641 | 16.674 |
| 02 | SBLKLA0874 | 161088 | 10.407 | 566801 | 13.025 | 253971 | 16.670 |
| 03 | 087LALCS4 | 166133 | 10.412 | 589726 | 13.028 | 272648 | 16.679 |
| 04 | 7GP17 | 165895 | 10.408 | 593884 | 13.026 | 265940 | 16.674 |
| 05 | 7GP17MS | 154485 | 10.412 | 542346 | 13.029 | 251002 | 16.684 |
| 06 | 7GP17MSD | 167771 | 10.413 | 586391 | 13.030 | 258322 | 16.684 |
| 07 | 7GP19 | 155303 | 10.408 | 548591 | 13.026 | 251860 | 16.672 |
| 08 | UGP21 | 167412 | 10.408 | 606124 | 13.027 | 271111 | 16.676 |
| 09 | 7GP22 | 160365 | 10.408 | 583586 | 13.027 | 244803 | 16.675 |
| 10 | 2222D | 168432 | 10.409 | 600982 | 13.028 | 267516 | 16.679 |
| 11 | 7GP23 | 165367 | 10.409 | 601608 | 13.027 | 255691 | 16.675 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dc386.d Date Analyzed: 03/29/04

Instrument ID: HP06780 Time Analyzed: 08:22

| | | IS4 (PHN) | | IS5 (CRY) | | IS6 (PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 461206 | 19.858 | 282607 | 25.702 | 291584 | 29.638 |
| | UPPER LIMIT | 922412 | 20.358 | 565214 | 26.202 | 583168 | 30.138 |
| | LOWER LIMIT | 230603 | 19.358 | 141304 | 25.202 | 145792 | 29.138 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | -B051DL | 485710 | 19.847 | 326766 | 25.689 | 286405 | 29.631 |
| 02 | SBLKLA0874 | 327427 | 19.840 | 230493 | 25.686 | 201291 | 29.626 |
| 03 | 087LALCS4 | 330346 | 19.856 | 202296 | 25.706 | 194092 | 29.636 |
| 04 | 7GP17 | 337309 | 19.842 | 219539 | 25.689 | 188394 | 29.624 |
| 05 | 7GP17MS | 306343 | 19.858 | 173474 | 25.711 | 177998 | 29.645 |
| 06 | 7GP17MSD | 305232 | 19.856 | 186103 | 25.707 | 180393 | 29.643 |
| 07 | 7GP19 | 320405 | 19.848 | 209505 | 25.690 | 186859 | 29.637 |
| 08 | UGP21 | 335601 | 19.845 | 210425 | 25.696 | 192724 | 29.646 |
| 09 | 7GP22 | 306725 | 19.854 | 187696 | 25.697 | 174413 | 29.647 |
| 10 | 2222D | 316548 | 19.849 | 191854 | 25.701 | 181264 | 29.653 |
| 11 | 7GP23 | 320685 | 19.854 | 193028 | 25.698 | 176590 | 29.644 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): gc381.d Date Analyzed: 03/26/04

Instrument ID: HP06777 Time Analyzed: 07:10

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 260334 | 12.546 | 993925 | 16.321 | 453576 | 21.715 |
| | UPPER LIMIT | 520668 | 13.046 | 1987850 | 16.821 | 907152 | 22.215 |
| | LOWER LIMIT | 130167 | 12.046 | 496963 | 15.821 | 226788 | 21.215 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKLC0857 | 289203 | 12.547 | 1064449 | 16.311 | 489464 | 21.706 |
| 02 | 085LCLCS7 | 272189 | 12.547 | 1002025 | 16.311 | 446676 | 21.716 |
| 03 | 7GP45 | 265890 | 12.549 | 993253 | 16.313 | 461442 | 21.708 |
| 04 | 5GP45MS | 234578 | 12.547 | 845479 | 16.322 | 373687 | 21.717 |
| 05 | 5GP45MSD | 255808 | 12.557 | 961354 | 16.321 | 435309 | 21.716 |
| 06 | 7GP18 | 263818 | 12.558 | 989160 | 16.312 | 450380 | 21.706 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8682

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): gc381.d Date Analyzed: 03/26/04

Instrument ID: HP06777 Time Analyzed: 07:10

| | | IS4 (PHN) | | IS5 (CRY) | | IS6 (PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 745835 | 26.305 | 808349 | 32.912 | 837880 | 38.231 |
| | UPPER LIMIT | 1491670 | 26.805 | 1616698 | 33.412 | 1675760 | 38.731 |
| | LOWER LIMIT | 372918 | 25.805 | 404175 | 32.412 | 418940 | 37.731 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKLC0857 | 834474 | 26.285 | 898192 | 32.892 | 910866 | 38.222 |
| 02 | 085LCLCS7 | 768747 | 26.296 | 836842 | 32.913 | 847364 | 38.243 |
| 03 | 7GP45 | 758202 | 26.287 | 774779 | 32.894 | 835099 | 38.224 |
| 04 | 5GP45MS | 646396 | 26.296 | 674057 | 32.913 | 714522 | 38.243 |
| 05 | 5GP45MSD | 776900 | 26.306 | 748696 | 32.912 | 757309 | 38.253 |
| 06 | 7GP18 | 760890 | 26.296 | 767567 | 32.903 | 794672 | 38.244 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

0083

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): gc394.d Date Analyzed: 03/26/04

Instrument ID: HP06777 Time Analyzed: 20:53

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 377365 | 11.939 | 1413006 | 15.682 | 628838 | 21.044 |
| | UPPER LIMIT | 754730 | 12.439 | 2826012 | 16.182 | 1257676 | 21.544 |
| | LOWER LIMIT | 188683 | 11.439 | 706503 | 15.182 | 314419 | 20.544 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 7GP24 | 348669 | 11.939 | 1325530 | 15.671 | 614223 | 21.044 |
| 02 | SBLKWI0857 | 348937 | 11.940 | 1329308 | 15.683 | 597193 | 21.045 |
| 03 | 085WILCS7 | 339092 | 11.940 | 1232520 | 15.682 | 549461 | 21.056 |
| 04 | 085WILCSD7 | 329531 | 11.939 | 1228090 | 15.693 | 547298 | 21.055 |
| 05 | PW20-RE | 324348 | 11.951 | 519956* | 15.715 | 519027 | 21.056 |
| 06 | SMW14RE | 320898 | 11.938 | 1048522 | 15.724 | 523535 | 21.043 |
| 07 | SMW64RE | 355411 | 11.940 | 1313652 | 15.683 | 576260 | 21.045 |
| 08 | SMW15RE | 356147 | 11.943 | 989345 | 15.718 | 539619 | 21.048 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

0084

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): gc394.d Date Analyzed: 03/26/04

Instrument ID: HP06777 Time Analyzed: 20:53

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 1012718 | 25.623 | 929334 | 32.251 | 817406 | 36.906 |
| | UPPER LIMIT | 2025436 | 26.123 | 1858668 | 32.751 | 1634812 | 37.406 |
| | LOWER LIMIT | 506359 | 25.123 | 464667 | 31.751 | 408703 | 36.406 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 7GP24 | 1004084 | 25.613 | 904984 | 32.241 | 781569 | 36.895 |
| 02 | SBLKWI0857 | 997181 | 25.624 | 897820 | 32.242 | 768851 | 36.907 |
| 03 | 085WILCS7 | 911791 | 25.635 | 757960 | 32.263 | 679945 | 36.917 |
| 04 | 085WILCSD7 | 925581 | 25.635 | 748945 | 32.262 | 650573 | 36.917 |
| 05 | PW20-RE | 802758 | 25.636 | 701096 | 32.253 | 654337 | 36.907 |
| 06 | SMW14RE | 858916 | 25.623 | 840809 | 32.251 | 755804 | 36.905 |
| 07 | SMW64RE | 953343 | 25.625 | 845352 | 32.242 | 777715 | 36.907 |
| 08 | SMW15RE | 831877 | 25.638 | 740787 | 32.255 | 665067 | 36.910 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

0005

# Sample Data

7GP17

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241642

Data file: /chem/HP06780.i/04mar29.b/dc390.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 11:24 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.408 | (-0.004) | 874 | 152.0 | 165895 | ( -28) | 40.00 | |
| 52) Naphthalene-d8 | 13.026 | ( 0.004) | 1139 | 136.0 | 593884 | ( -27) | 40.00 | |
| 96) Acenaphthene-d10 | 16.674 | ( 0.009) | 1508 | 164.0 | 265940 | ( -28) | 40.00 | |
| 133) Phenanthrene-d10 | 19.842 | ( 0.015) | 1828 | 188.0 | 337309 | ( -27) | 40.00 | |
| 165) Chrysene-d12 | 25.689 | ( 0.013) | 2416 | 240.0 | 219539 | ( -22) | 40.00 | |
| 173) Perylene-d12 | 29.624 | ( 0.014) | 2811 | 264.0 | 188394 | ( -35) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.671 | ( 0.004) | 112 | 1277279 | 163.598 | 82% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.647 | ( 0.001) | 99 | 1476268 | 165.801 | 83% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.534 | ( 0.000) | 82 | 590930 | 89.478 | 89% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.260 | ( 0.000) | 172 | 745494 | 89.116 | 89% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.317 | ( 0.000) | 330 | 171515 | 167.246 | 84% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.833 | (-0.001) | 244 | 426258 | 89.982 | 90% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | ND | ND | | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.412~~ | ~~( 0.000)~~ | ~~45~~ | ~~67497~~ | ~~8.096~~ | ~~296.34~~ | | ~~#~~ | ~~1.00~~ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.534~~ | ~~( 0.027)~~ | ~~70~~ | ~~69781~~ | ~~17.107~~ | ~~570.23~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | ND | ND | | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | | 1.00 |
| 53) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | ND | ND | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



6857

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241642

Data file: /chem/HP06780.i/04mar29.b/dc390.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 11:24 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 97) Acenaphthene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | Below MDL, Do not report | | | | | 5.00 |
| 102) Dibenzofuran | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.059(-0.014)~~ | ~~166~~ | ~~27750~~ | ~~3.479~~ | ~~115.96~~ | | | ~~1.00~~ ✓ |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | ND | ND | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.059(-0.001) | 169 | 518326 | 86.670 | 2888.99 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 136) Anthracene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 138) Carbazole | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.577( 0.000) | 149 | 49867 | 3.044 | 101.47 | | | 2.00 |
| 145) Fluoranthene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 152) Pyrene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | Below MDL, Do not report | | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 166) Chrysene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.659( 0.000) | 149 | 116416 | 13.738 | 457.94 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | Below MDL, Do not report | | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |



6088

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241642

Data file: /chem/HP06780.i/04mar29.b/dc390.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 11:24 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

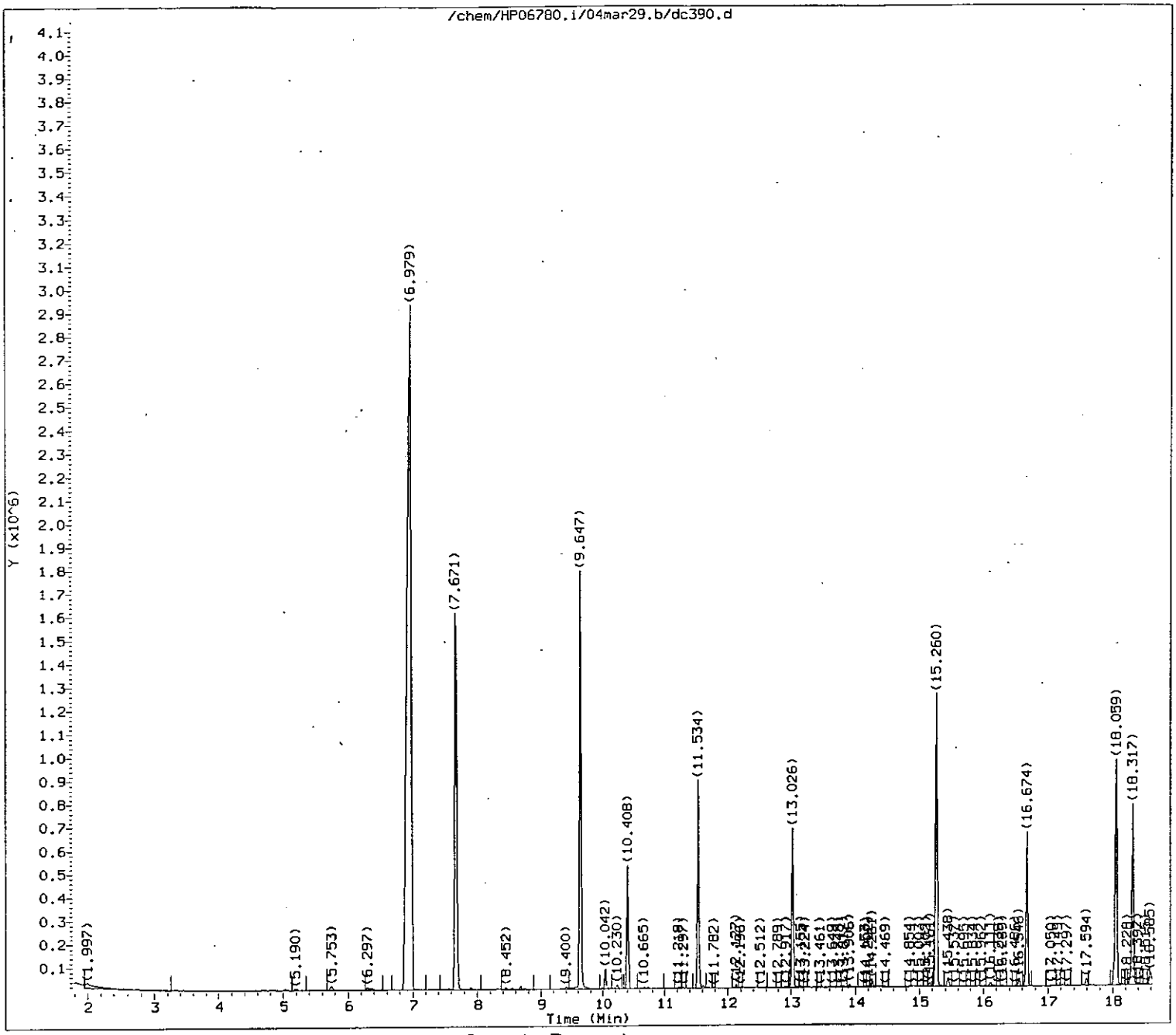
Total number of targets = 64

Comments: ✓ = false positive

Analyst: Michele Jarosick RB 3/29/04 Date: 3-29-04
Auditor: Date: 3/29/04



5889




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

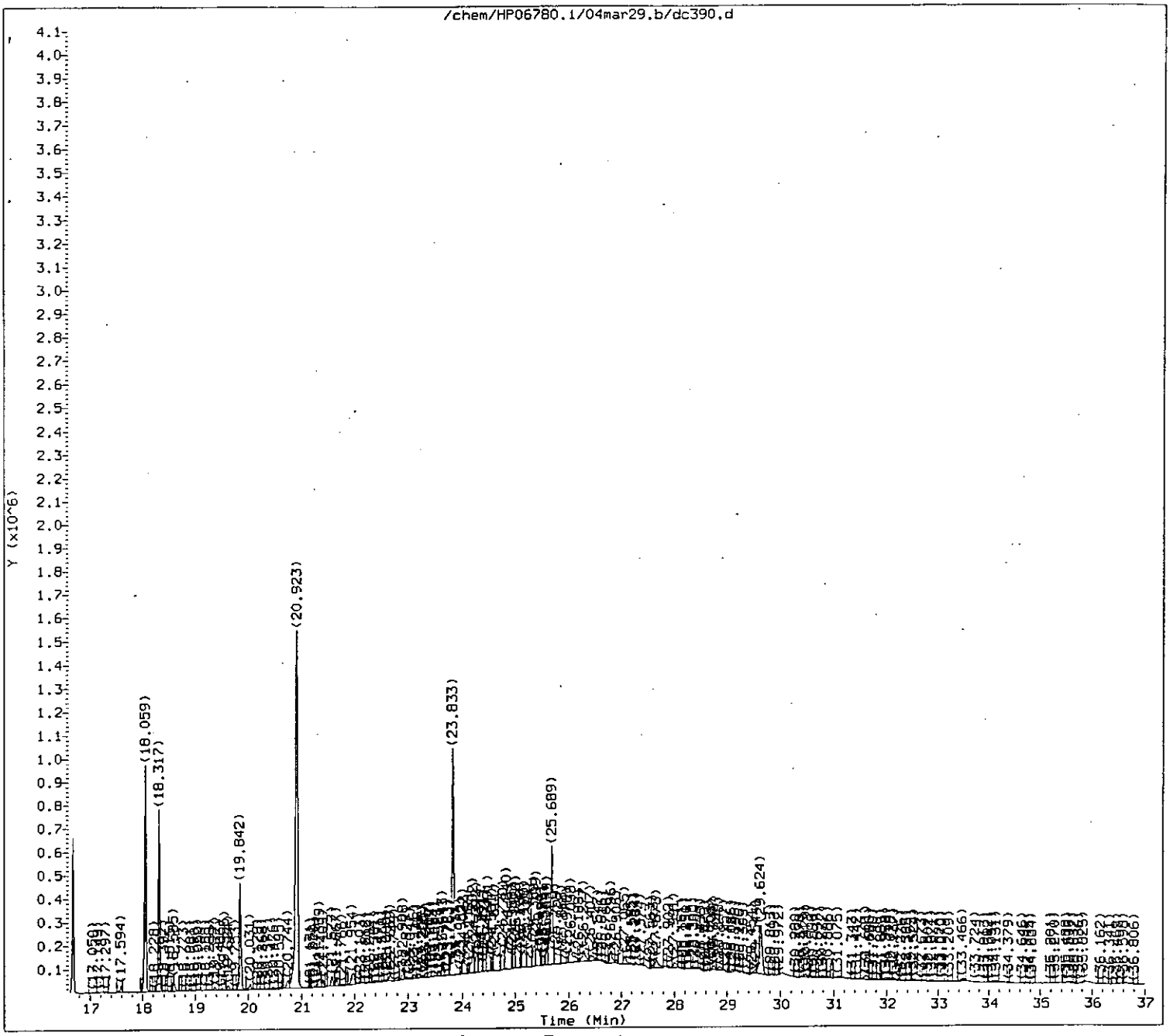
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17

Lab Sample ID: 4241642

6898

RB1568
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc390.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 11:24  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17  Lab Sample ID: 4241642

8891

RB1568
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc390.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 11:24  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17  Lab Sample ID: 4241642

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.408 | 152 | 165895 | 40.000 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.042~~ | ~~45~~ | ~~67497~~ | ~~8.896~~ ✓ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.534~~ | ~~70~~ | ~~69781~~ | ~~17.107~~ ✓ |
| 52) Naphthalene-d8 | (2) | 13.026 | 136 | 593884 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.674 | 164 | 265940 | 40.000 |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.059~~ | ~~166~~ | ~~27750~~ | ~~3.479~~ ✓ |
| 115) N-Nitrosodiphenylamine | (4) | 18.059 | 169 | 518326 | 86.670 |
| 133) Phenanthrene-d10 | (4) | 19.842 | 188 | 337309 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 21.577 | 149 | 49867 | 3.044 |
| 165) Chrysene-d12 | (5) | 25.689 | 240 | 219539 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.659 | 149 | 116416 | 13.738 |
| 173) Perylene-d12 | (6) | 29.624 | 264 | 188394 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.671 | 112 | 1277279 | 163.598 |
| 15) Phenol-d6 | (1) | 9.647 | 99 | 1476268 | 165.801 |
| 38) Nitrobenzene-d5 | (2) | 11.534 | 82 | 590930 | 89.478 |
| 77) 2-Fluorobiphenyl | (3) | 15.260 | 172 | 745494 | 89.116 |
| 117) 2,4,6-Tribromophenol | (3) | 18.317 | 330 | 171515 | 167.246 |
| 154) Terphenyl-d14 | (5) | 23.833 | 244 | 426258 | 89.982 |

M = Compound was manually integrated.  A = User selected an alternate hit

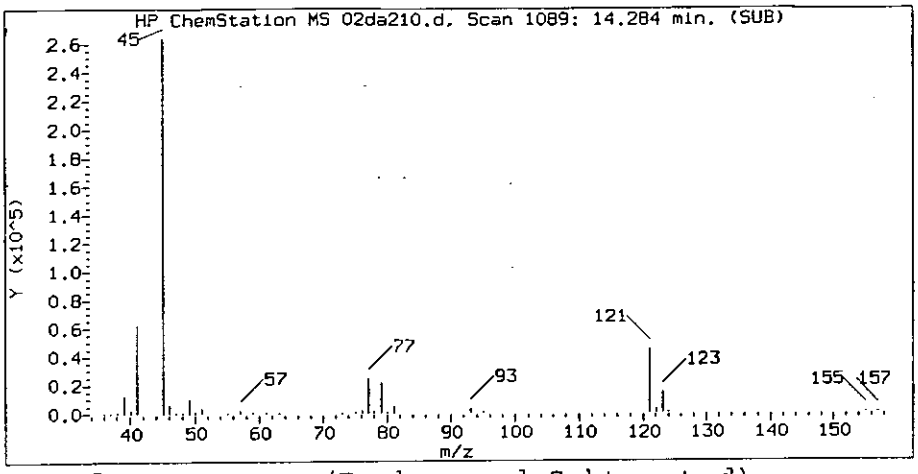
✓ = False Positive

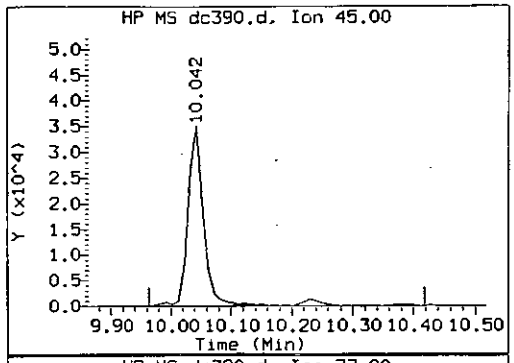
RB1568

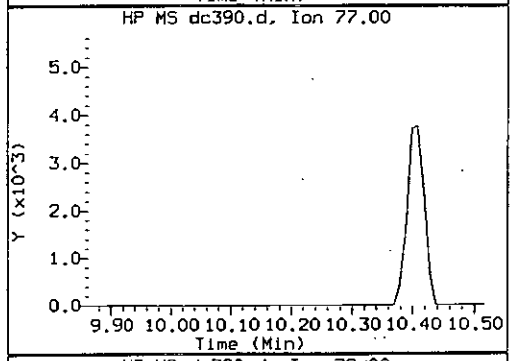
3-29-04

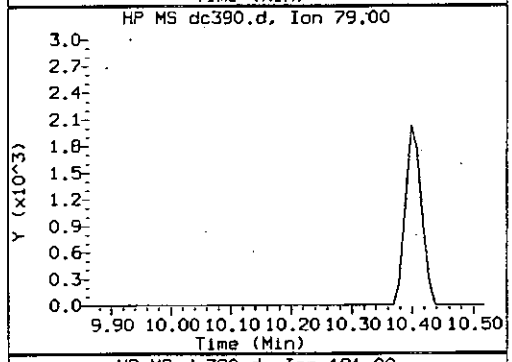
8892

Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

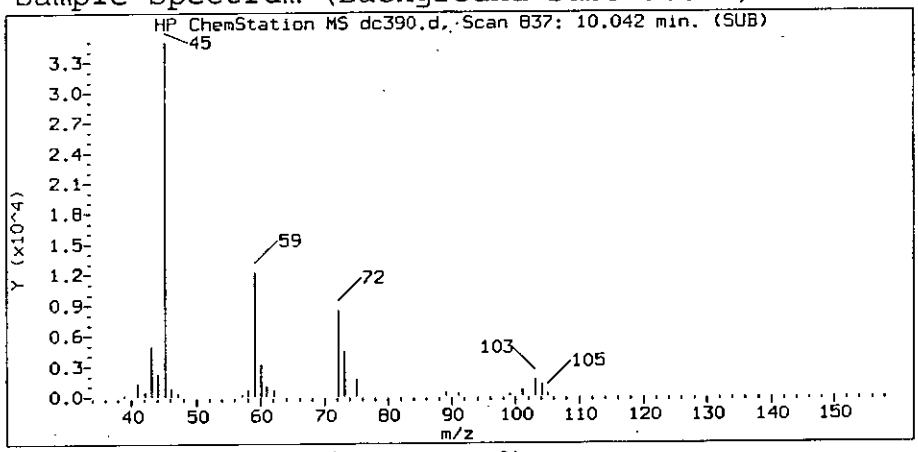


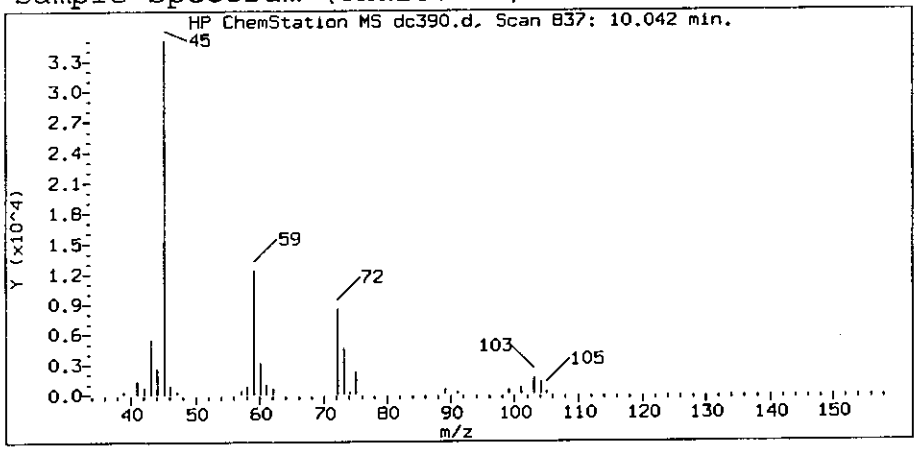



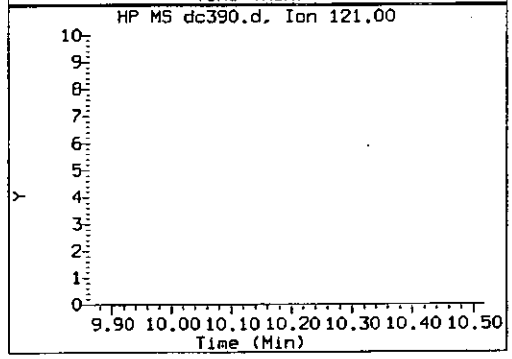




Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

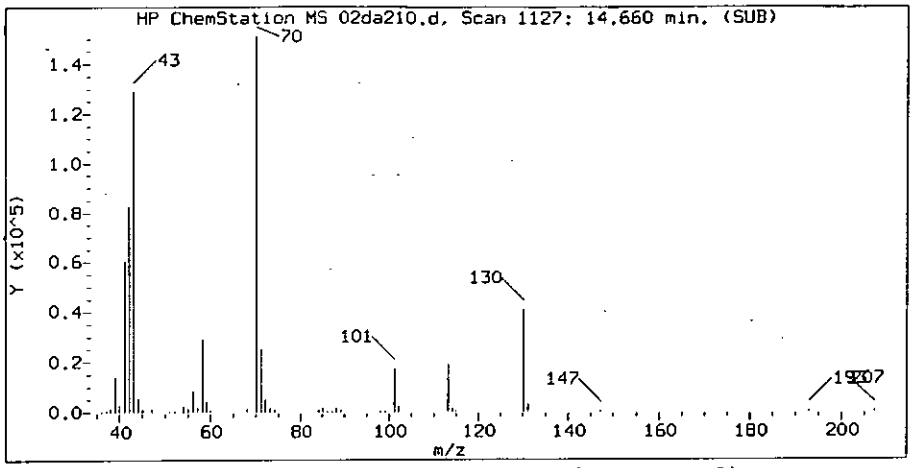
Sample Name: 7GP17

Lab Sample ID: 4241642

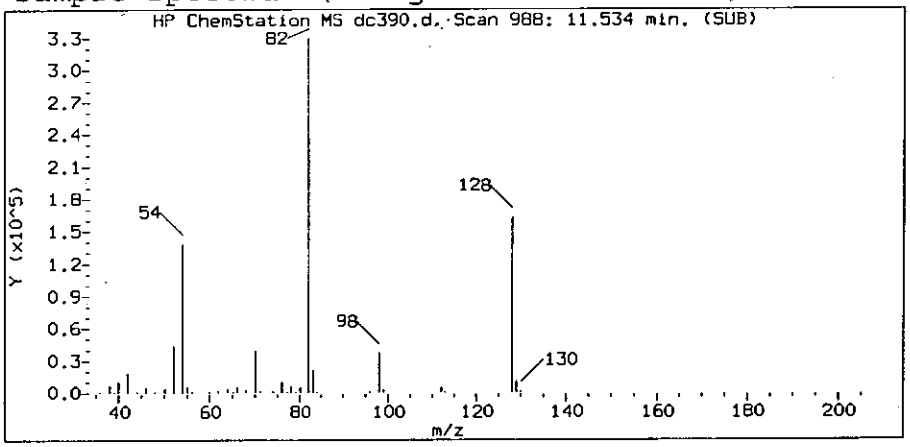
| | |
|---|---|
| Compound Number | : 27 |
| Compound Name | : 2,2'-oxybis(1-Chloropropane) |
| Scan Number | : 837 |
| Retention Time (minutes) | : 10.042 |
| Quant Ion | : 45.0 |
| Area (flag) | : 67497 |
| Concentration (ng/ul) | : 8.8963 |

False Positive
RB1568
3-29-04

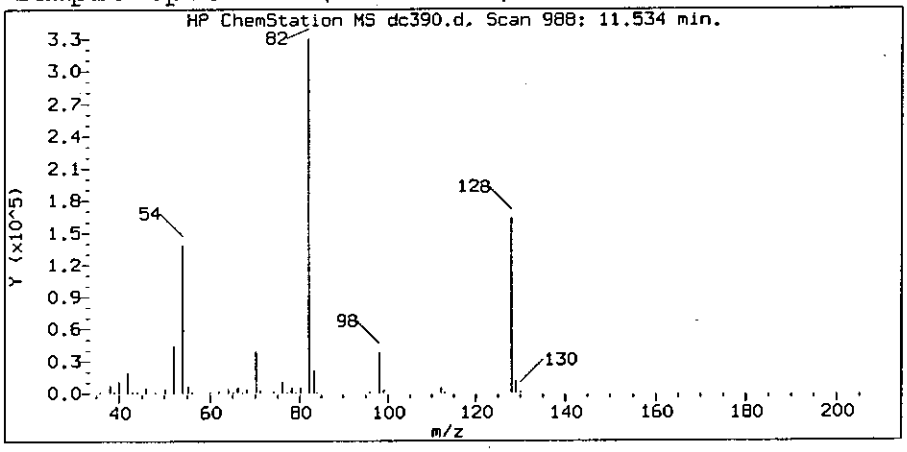
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

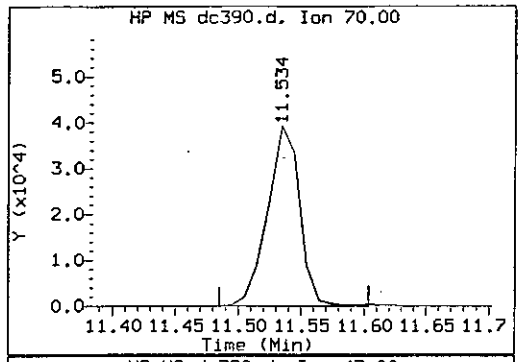


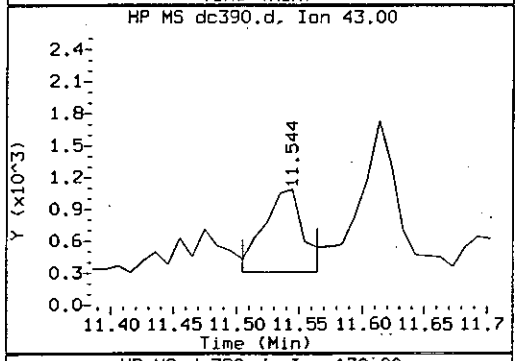

Sample Spectrum (Background Subtracted)

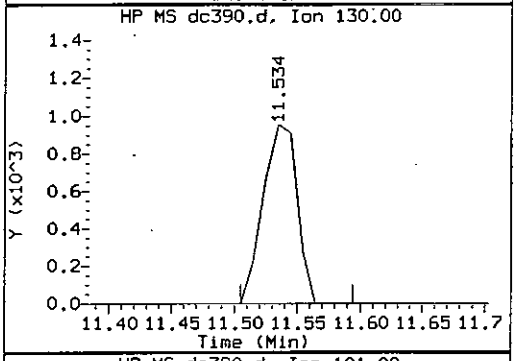


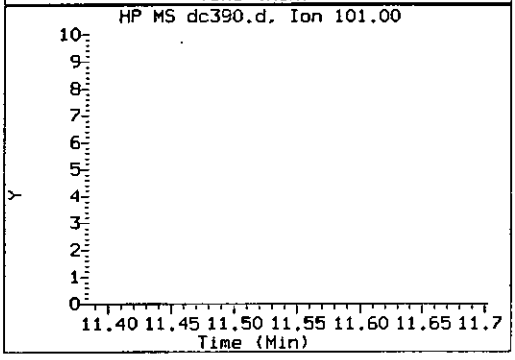

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

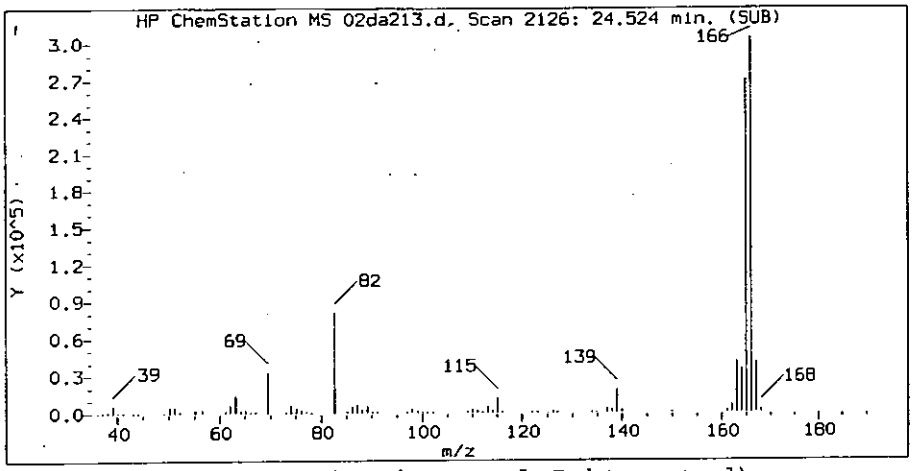
Sample Name: 7GP17

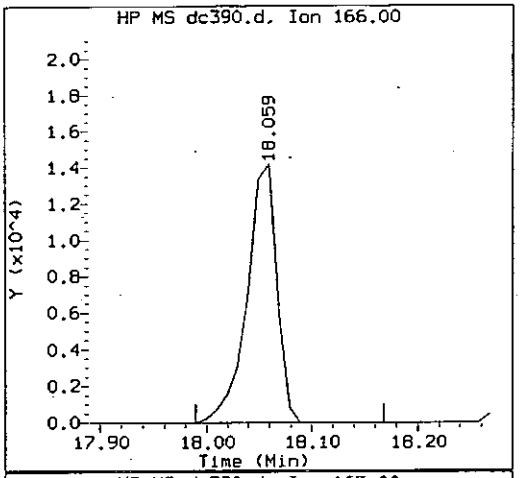
Lab Sample ID: 4241642

| | |
|---|---|
| Compound Number | : 31 |
| Compound Name | : N-Nitroso-di-n-propylamine |
| Scan Number | : 988 |
| Retention Time (minutes) | : 11.534 |
| Quant Ion | : 70.0 |
| Area (flag) | : 69781 |
| Concentration (ng/ul) | : 17.1068 |

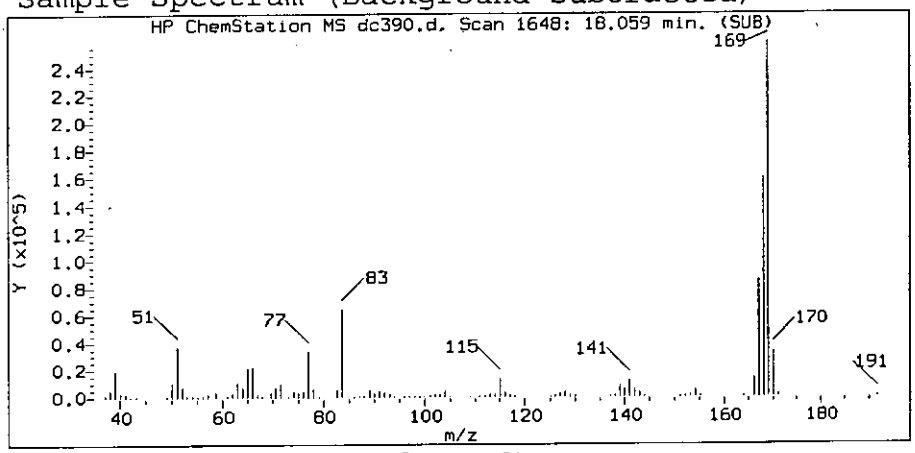
False Positive
RB 5/28
5/28/04

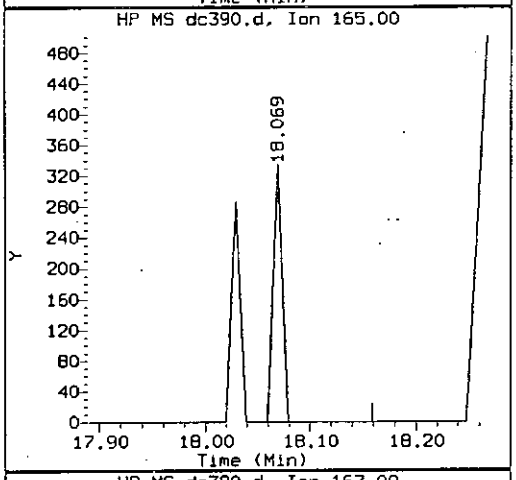
Reference Standard Spectrum for Fluorene



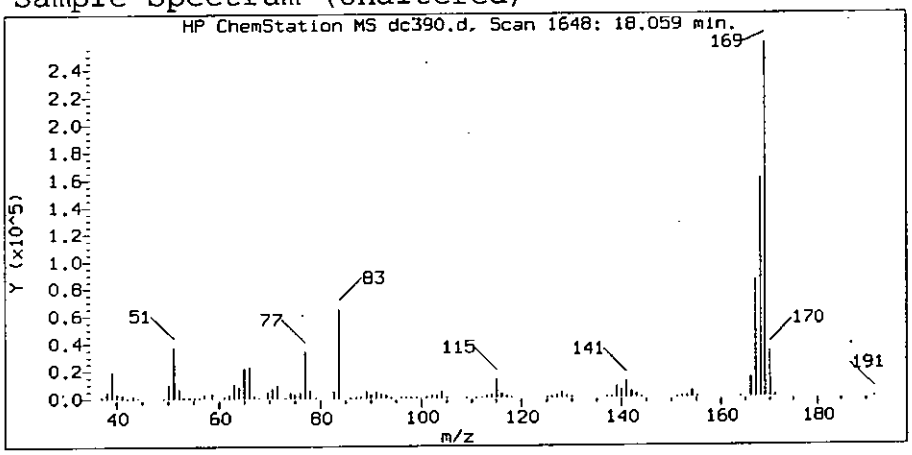



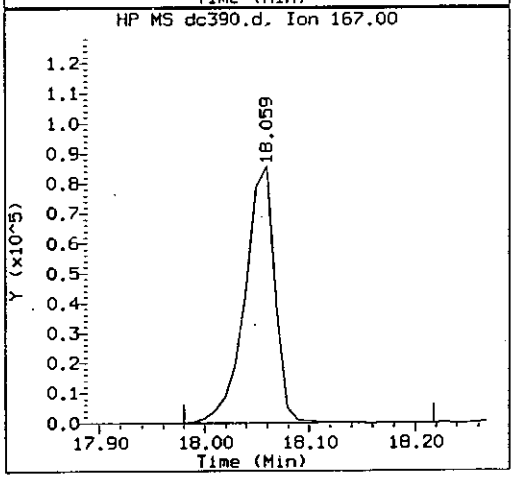

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17

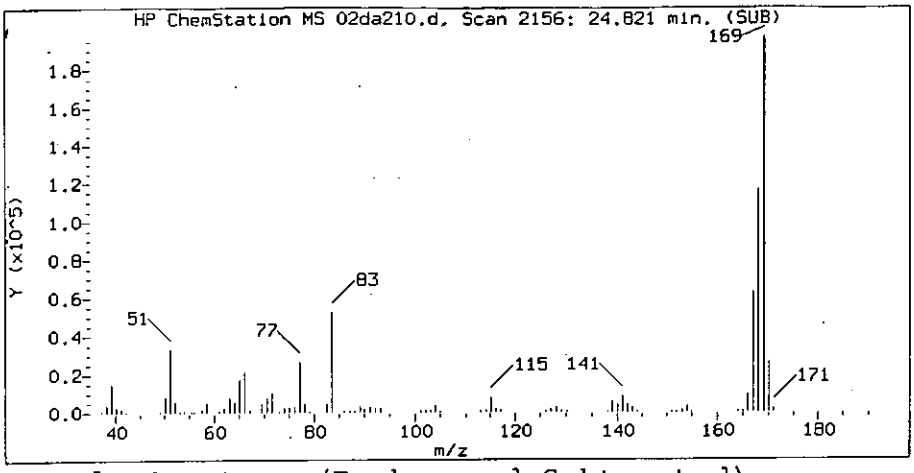
Lab Sample ID: 4241642

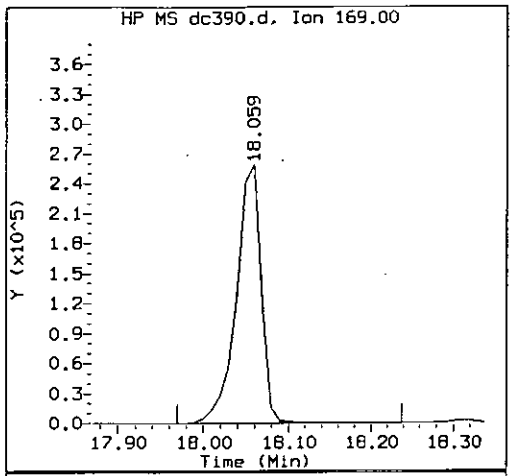
| | |
|---|---|
| Compound Number | : 109 |
| Compound Name | : Fluorene |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.059 |
| Quant Ion | : 166.0 |
| Area (flag) | : 27750 |
| Concentration (ng/ul) | : 3.4788 |

False Positive

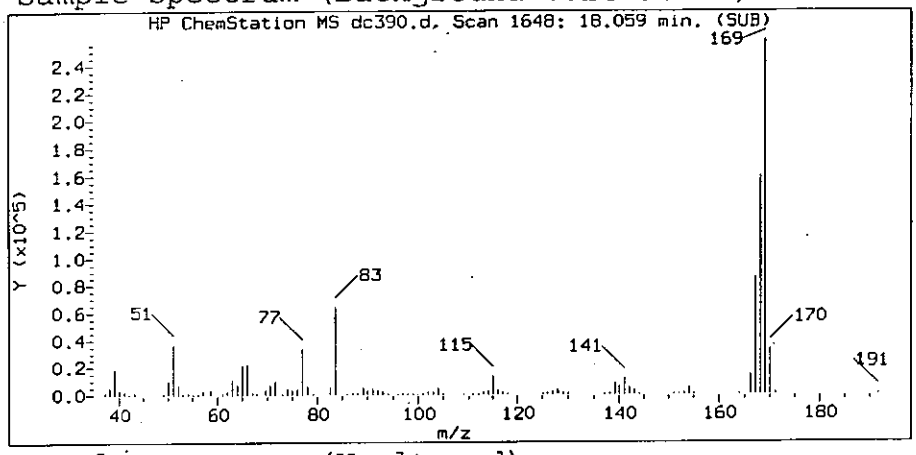
Re 1568
5-29-04

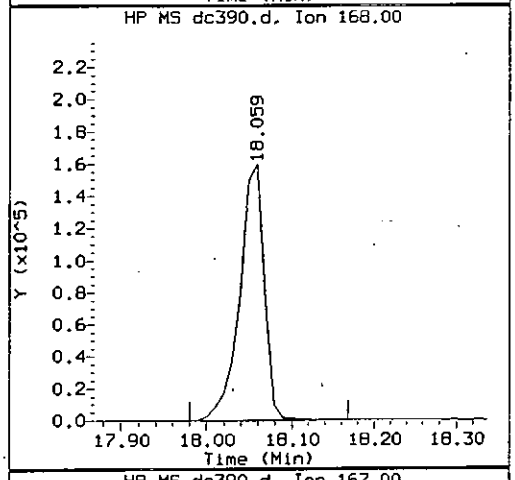
Reference Standard Spectrum for N-Nitrosodiphenylamine



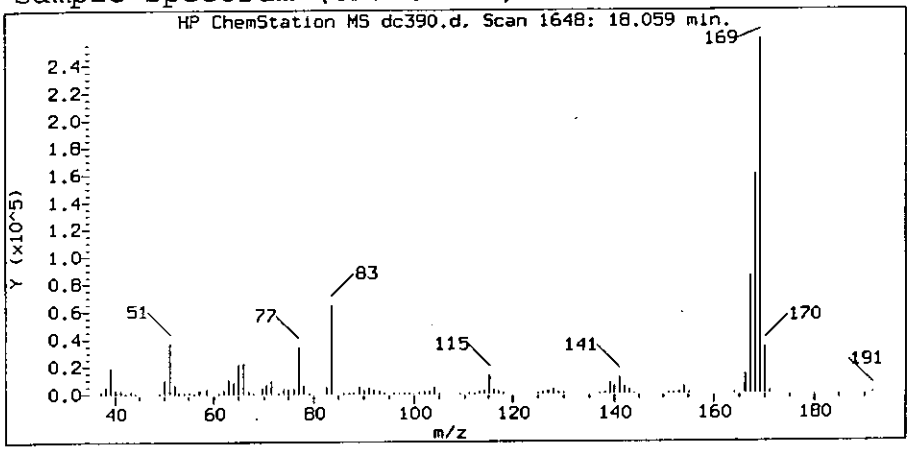



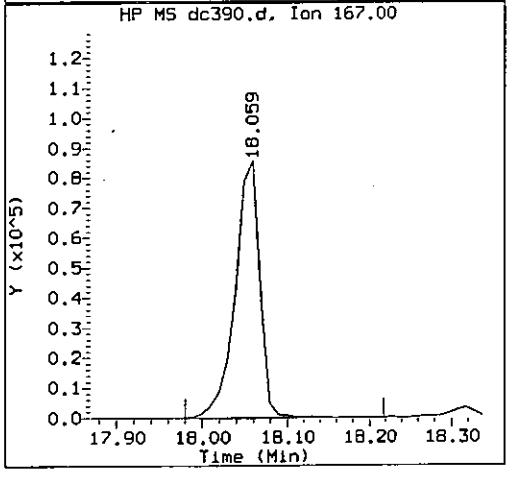

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

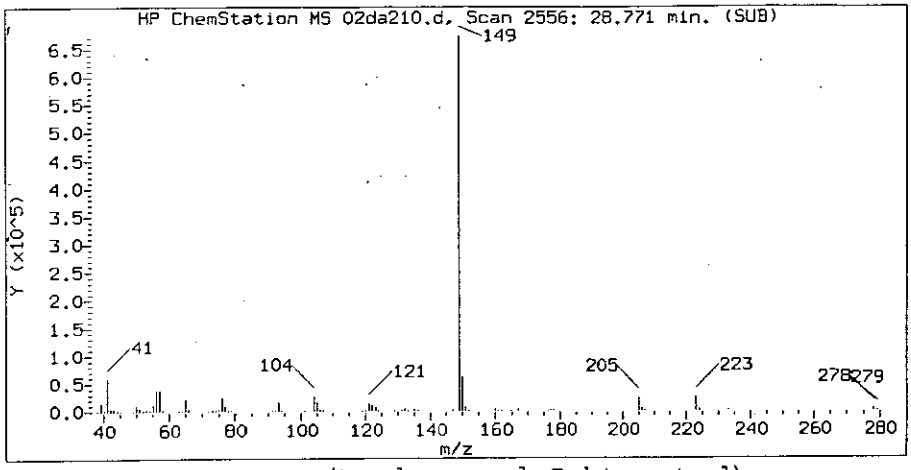
Sample Name: 7GP17

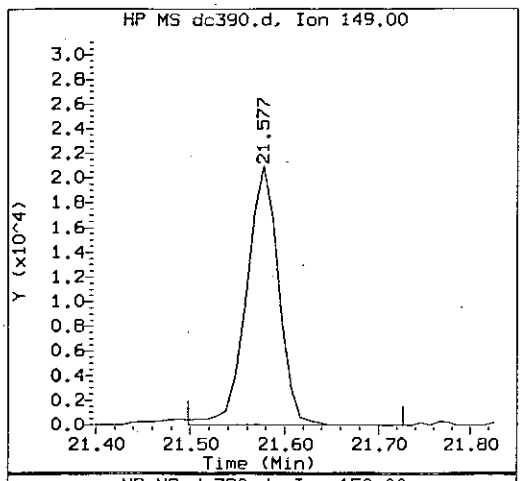
Lab Sample ID: 4241642

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.059 |
| Quant Ion | : 169.0 |
| Area (flag) | : 518326 |
| Concentration (ng/ul) | : 86.6698 |

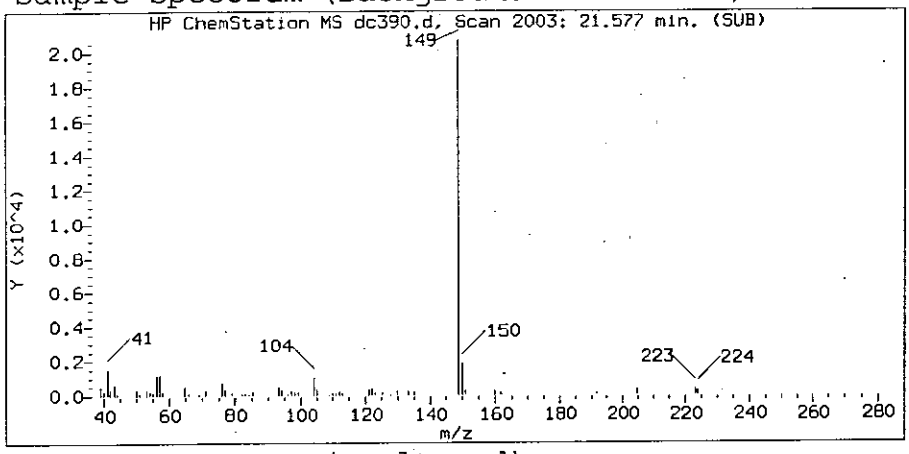
BJTCB
3-29-04

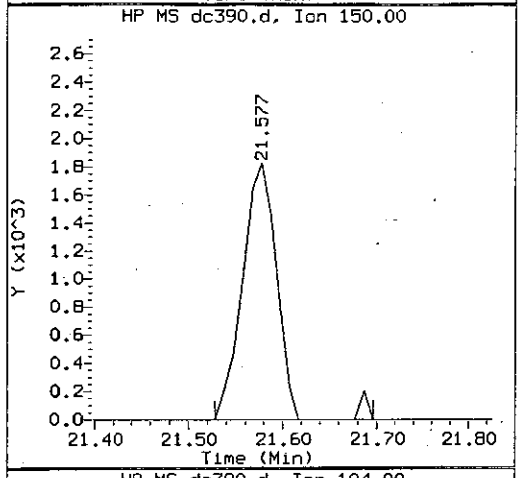
Reference Standard Spectrum for Di-n-butylphthalate



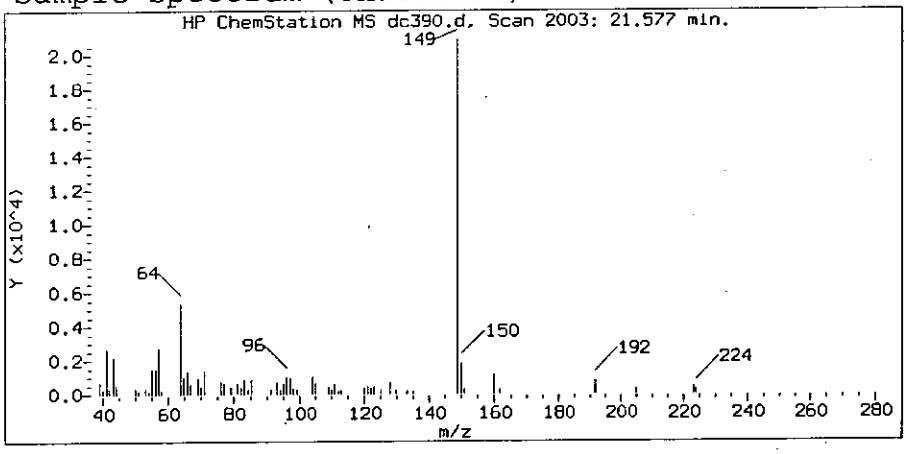



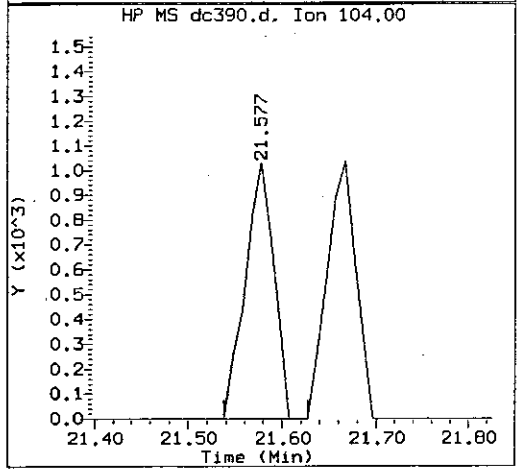

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17

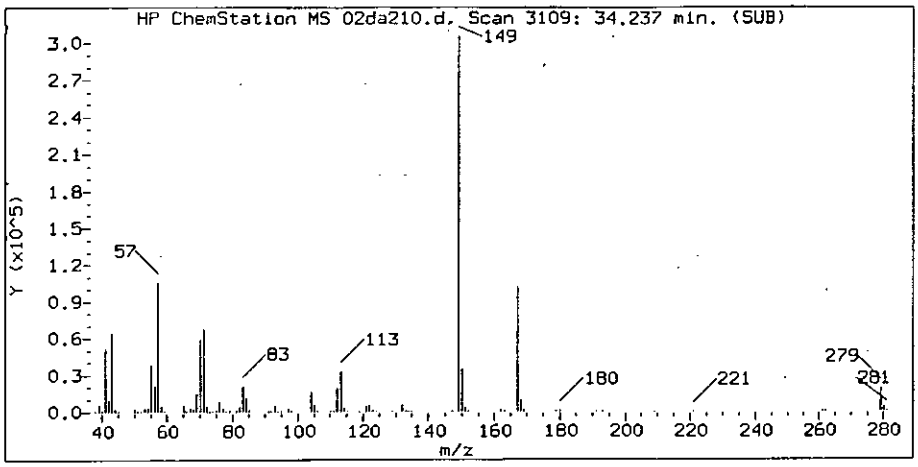
Lab Sample ID: 4241642

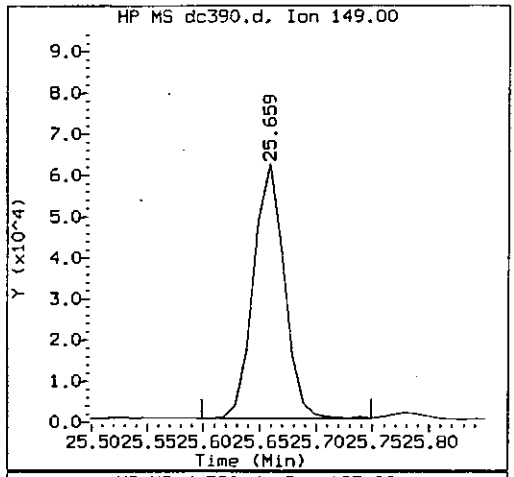
| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2003 |
| Retention Time (minutes) | : 21.577 |
| Quant Ion | : 149.0 |
| Area (flag) | : 49867 |
| Concentration (ng/ul) | : 3.0440 |

RB 15/28

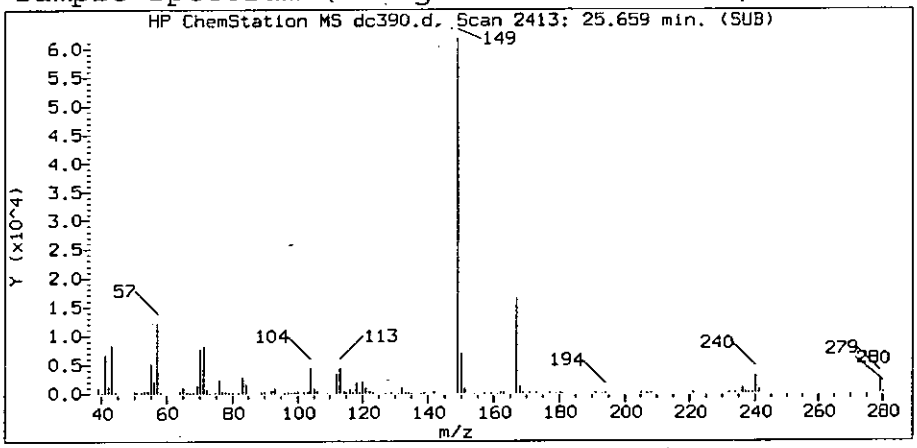
3/29/04

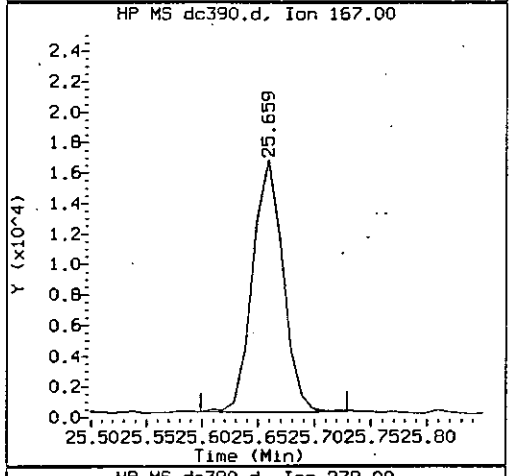
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



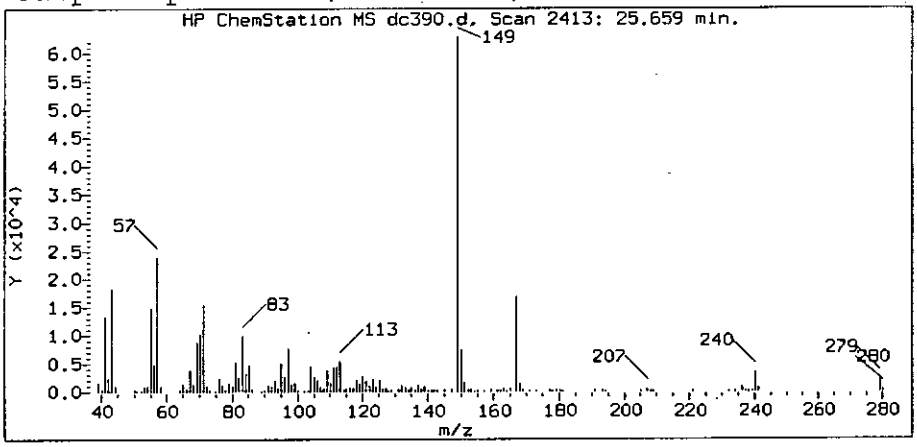



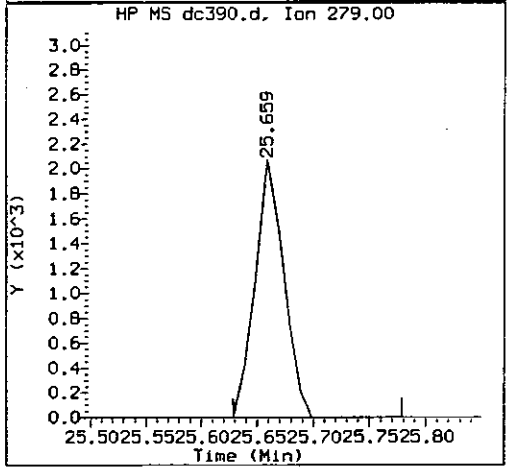

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc390.d
Injection date and time: 29-MAR-2004 11:24

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:28 rpb01568

Sample Name: 7GP17

Lab Sample ID: 4241642

| | |
|---|---|
| Compound Number | : 167 |
| Compound Name | : bis(2-Ethylhexyl)phthalate |
| Scan Number | : 2413 |
| Retention Time (minutes) | : 25.659 |
| Quant Ion | : 149.0 |
| Area (flag) | : 116416 |
| Concentration (ng/ul) | : 13.7383 |

RB1528
3/29-04

7GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241643

Data file: /chem/HP06777.i/04mar26.b/gc388.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 13:39 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.558 | (-0.012) | 842 | 152.0 | 263818 | ( 1) | 40.00 | |
| 52) Naphthalene-d8 | 16.312 | ( 0.009) | 1192 | 136.0 | 989160 | ( 0) | 40.00 | |
| 96) Acenaphthene-d10 | 21.706 | ( 0.009) | 1695 | 164.0 | 450380 | ( -1) | 40.00 | |
| 133) Phenanthrene-d10 | 26.296 | ( 0.009) | 2123 | 188.0 | 760890 | ( 2) | 40.00 | |
| 165) Chrysene-d12 | 32.903 | ( 0.009) | 2739 | 240.0 | 767567 | ( -5) | 40.00 | |
| 173) Perylene-d12 | 38.244 | (-0.012) | 3237 | 264.0 | 794672 | ( -5) | 40.00 | |

\# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC.= NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.901 | ( 0.002) | 112 | 1577090 | 156.557 | 78% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.443 | ( 0.001) | 99 | 1977897 | 162.736 | 81% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.156 | ( 0.000) | 82 | 811998 | 82.606 | 83% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.625 | ( 0.000) | 172 | 1290250 | 85.137 | 85% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.151 | (-0.001) | 330 | 699070 | 173.243 | 87% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.404 | (-0.001) | 244 | 1354799 | 89.519 | 90% | | 49 - 133 |

\# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 41) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | | Below MDL, Do not report | | | | 2.00 |



5899

7GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241643

Data file: /chem/HP06777.i/04mar26.b/gc388.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 13:39 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | | | | | ND | ND | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | | ND | ND | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 21.695( 0.017) | | 109 | 665 | 6.684 | 222.81 | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | | Below MDL, Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | | ND | ND | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | | Below MDL, Do not report | | | | 2.00 |
| 109) Fluorene | (3) | 23.776( 0.017) | | 166 | 33334 | 2.159 | 71.96 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | | Below MDL, Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 23.776( 0.000) | | 169 | 606025 | 54.757 | 1825.25 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 136) Anthracene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 138) Carbazole | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | | | | | Below MDL, Do not report | | | | 2.00 |
| 145) Fluoranthene | (4) | | | | | Below MDL, Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | | Below MDL, Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | | | Below MDL, Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.795( 0.000) | | 149 | 166318 | 8.638 | 287.94 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | | Below MDL, Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |



0100

7GP18

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241643

Data file: /chem/HP06777.i/04mar26.b/gc388.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 13:39 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vc): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

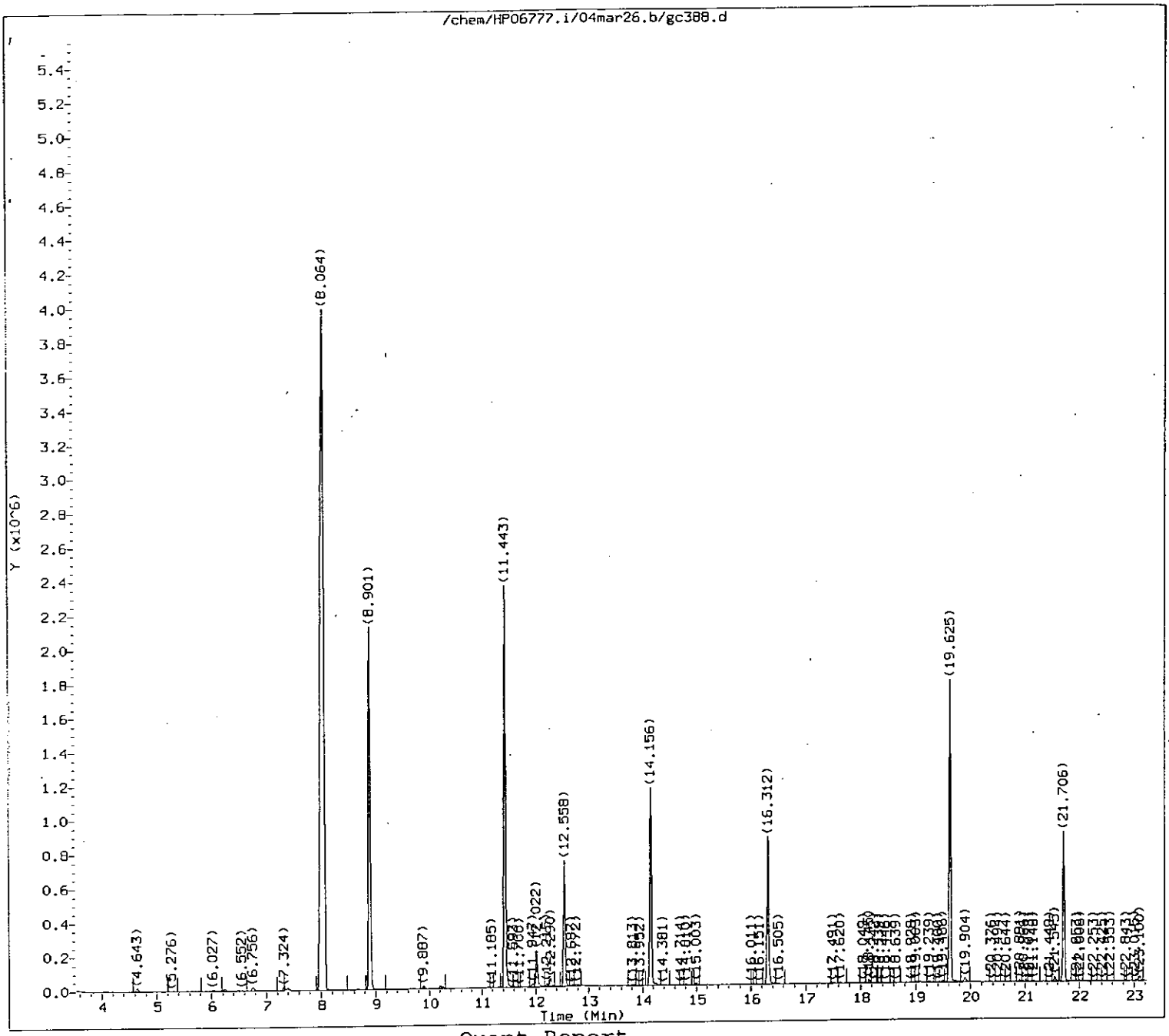
Total number of targets = 64

Comments: √ False Positive

Analyst: [signature] Date: 3-27-04
Auditor: [signature] Date: 3/29/04



8181




Quant Report

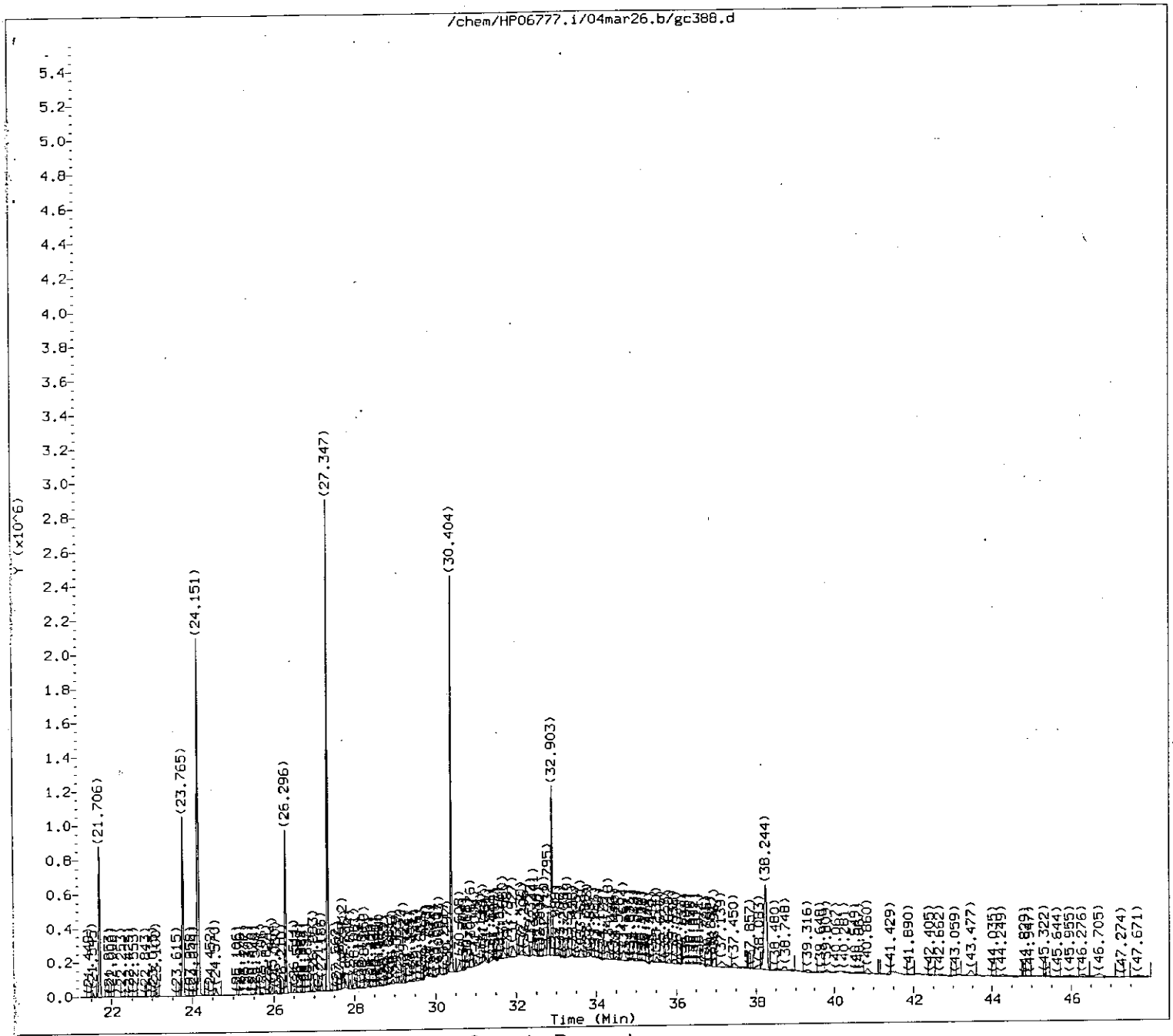
Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc388.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 13:39  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP18  Lab Sample ID: 4241643

Bcm
3-17-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP18

Lab Sample ID: 4241643

BGoss 3-27-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39
Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08
Sublist used: STC804
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

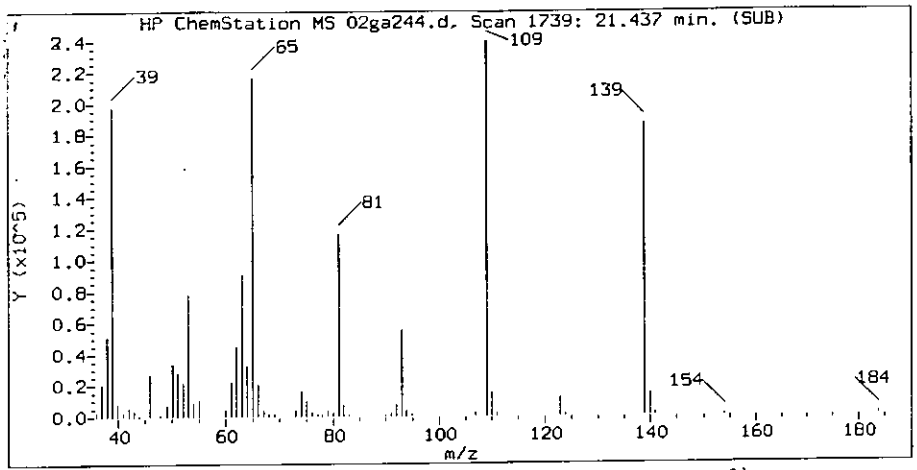
Sample Name: 7GP18
Lab Sample ID: 4241643

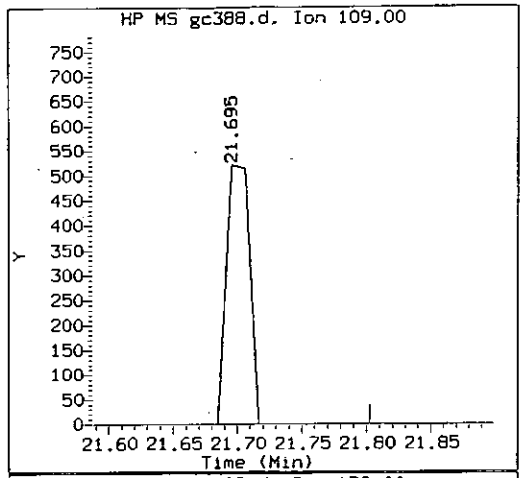
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 12.558 | 152 | 263818 | 40.000 |
| 52) Naphthalene-d8 | (2) | 16.312 | 136 | 989160 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 21.706 | 164 | 450380 | 40.000 |
| ~~101) 4-Nitrophenol~~ | ~~(3)~~ | ~~21.695~~ | ~~109~~ | ~~665~~ | ~~6.684~~ |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~23.776~~ | ~~166~~ | ~~33334~~ | ~~2.159~~ |
| 115) N-Nitrosodiphenylamine | (4) | 23.776 | 169 | 606025 | 54.757 |
| 133) Phenanthrene-d10 | (4) | 26.296 | 188 | 760890 | 40.000 |
| 165) Chrysene-d12 | (5) | 32.903 | 240 | 767567 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.795 | 149 | 166318 | 8.638 |
| 173) Perylene-d12 | (6) | 38.244 | 264 | 794672 | 40.000 |
| 9) 2-Fluorophenol | (1) | 8.901 | 112 | 1577090 | 156.557 |
| 15) Phenol-d6 | (1) | 11.443 | 99 | 1977897 | 162.736 |
| 38) Nitrobenzene-d5 | (2) | 14.156 | 82 | 811998 | 82.606 |
| 77) 2-Fluorobiphenyl | (3) | 19.625 | 172 | 1290250 | 85.137 |
| 117) 2,4,6-Tribromophenol | (3) | 24.151 | 330 | 699070 | 173.243 |
| 154) Terphenyl-d14 | (5) | 30.404 | 244 | 1354799 | 89.519 |

M = Compound was manually integrated.
A = User selected an alternate hit

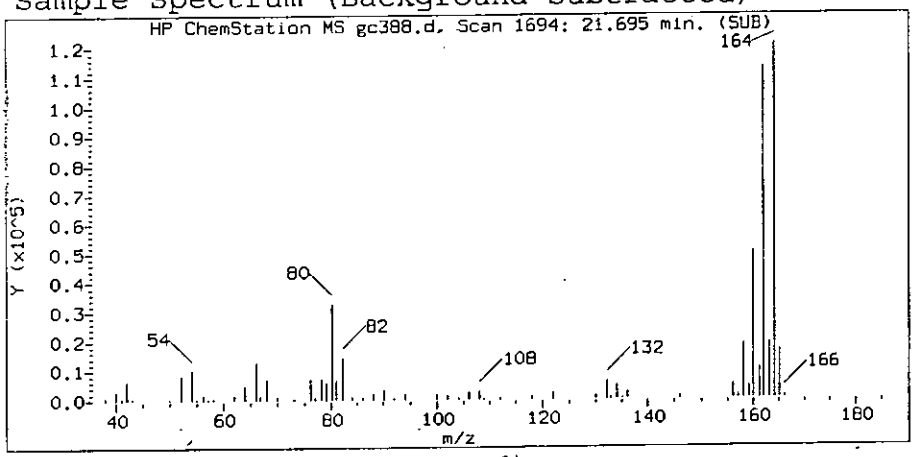
✓ False Positive
BGM
3-27-04

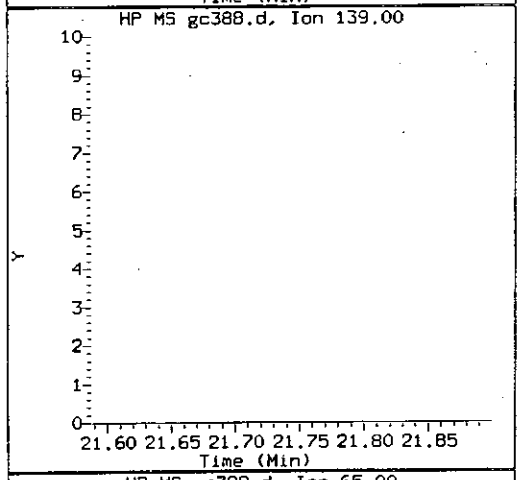
Reference Standard Spectrum for 4-Nitrophenol



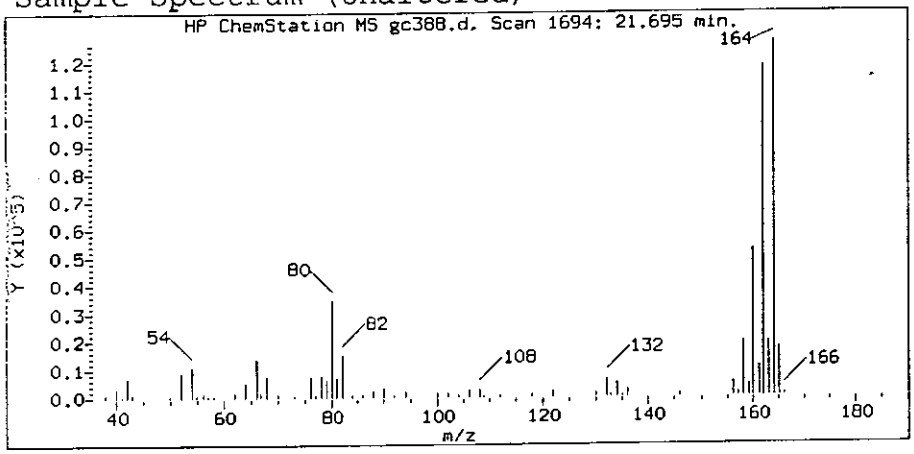



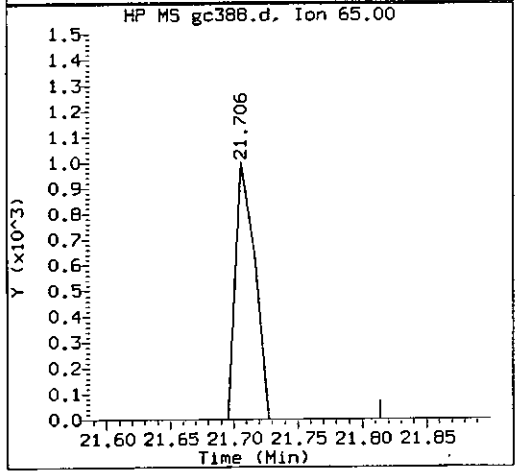

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP18

Lab Sample ID: 4241643

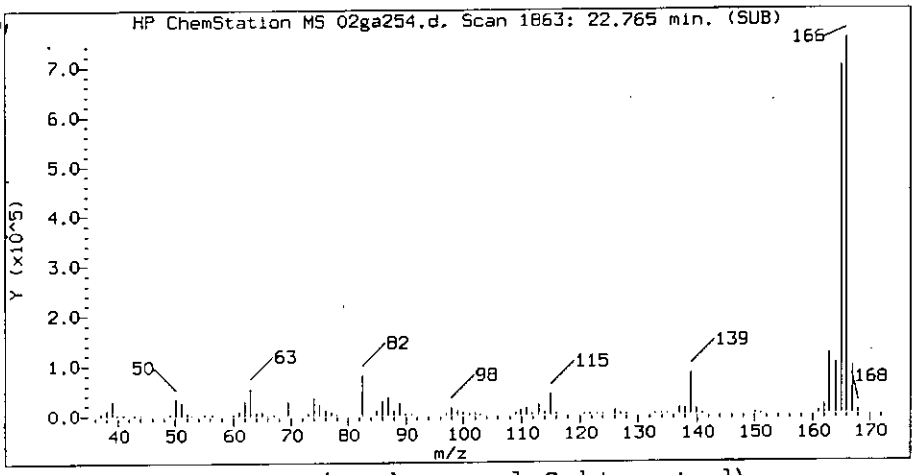
| | |
|---|---|
| Compound Number | : 101 |
| Compound Name | : 4-Nitrophenol |
| Scan Number | : 1694 |
| Retention Time (minutes) | : 21.695 |
| Quant Ion | : 109.0 |
| Area (flag) | : 665 |
| Concentration (ng/ul) | : 6.6842 |

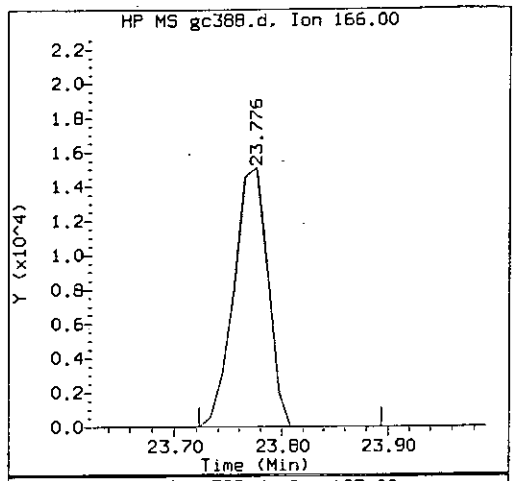
Bruce Robinson
BGR
3-27-04

8105

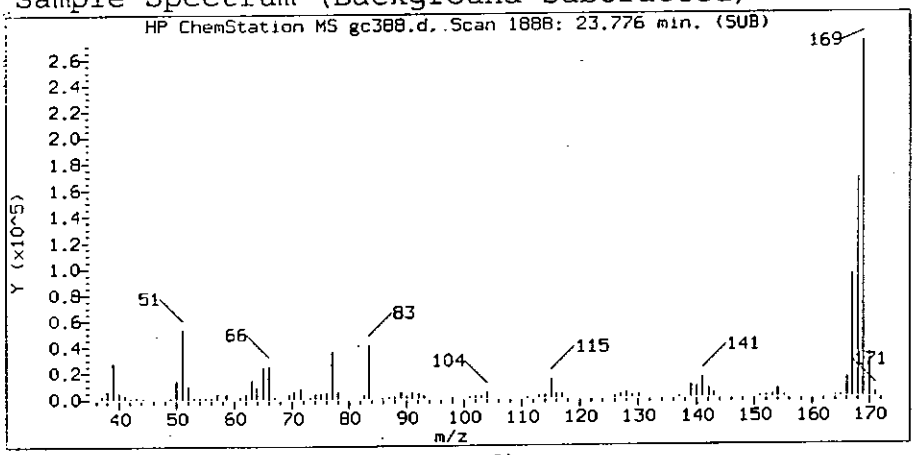
Hit Data Report for data file /chem/HP06777.i/04mar26.b/gc388.d, generated on 03/26/2004 at 15:08

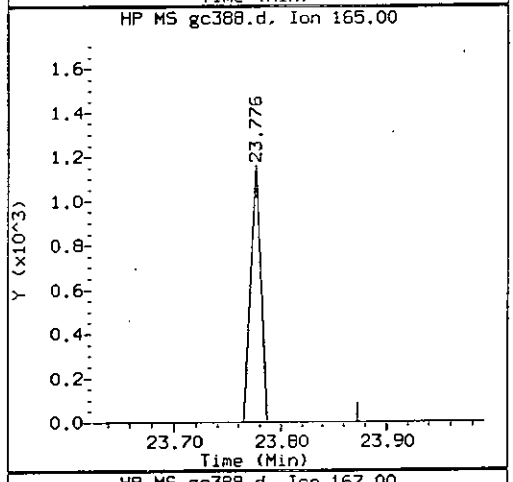
Reference Standard Spectrum for Fluorene



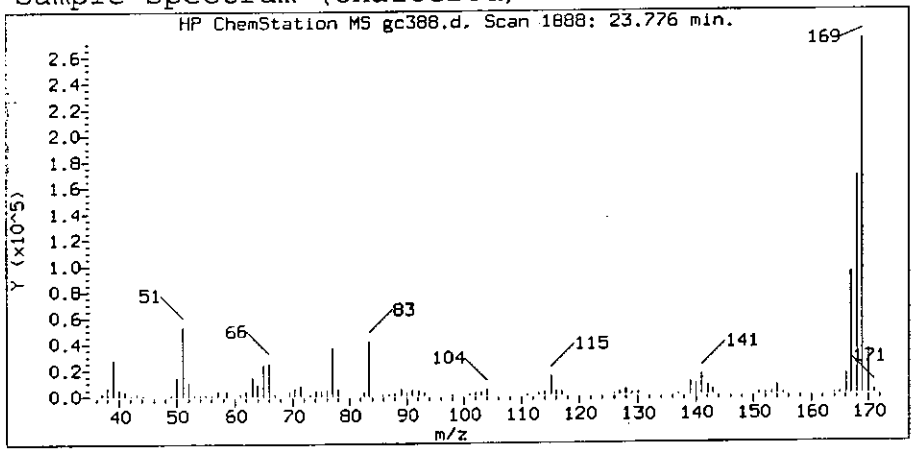



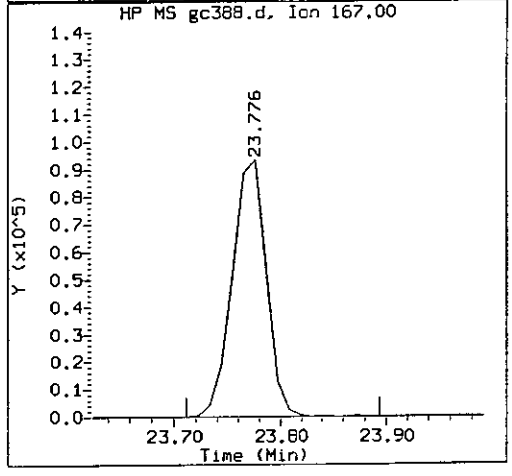

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

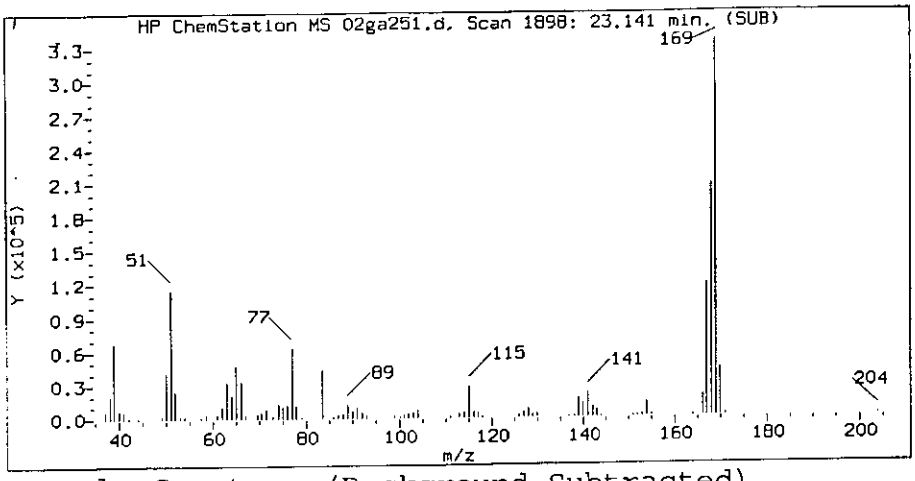
Sample Name: 7GP18

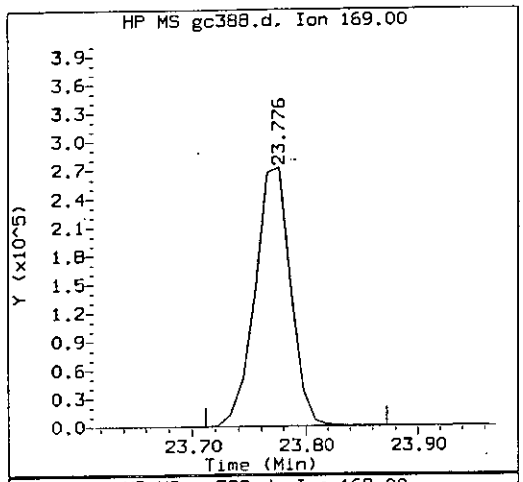
Lab Sample ID: 4241643

| | |
|---|---|
| Compound Number | : 109 |
| Compound Name | : Fluorene |
| Scan Number | : 1888 |
| Retention Time (minutes) | : 23.776 |
| Quant Ion | : 166.0 |
| Area (flag) | : 33334 |
| Concentration (ng/ul) | : 2.1587 |

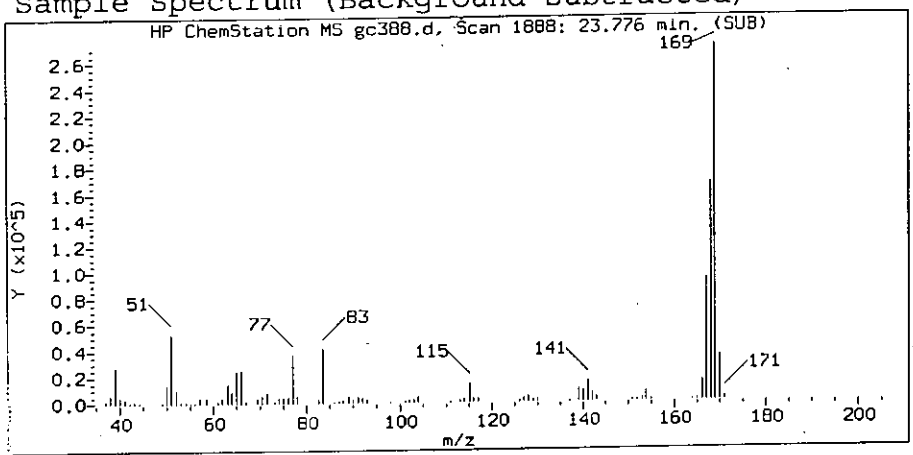
3186

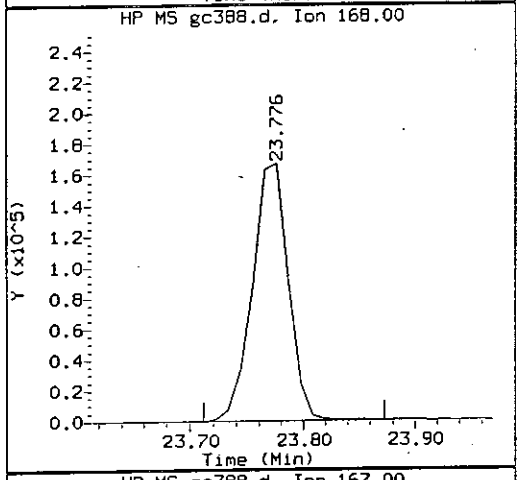
Reference Standard Spectrum for N-Nitrosodiphenylamine



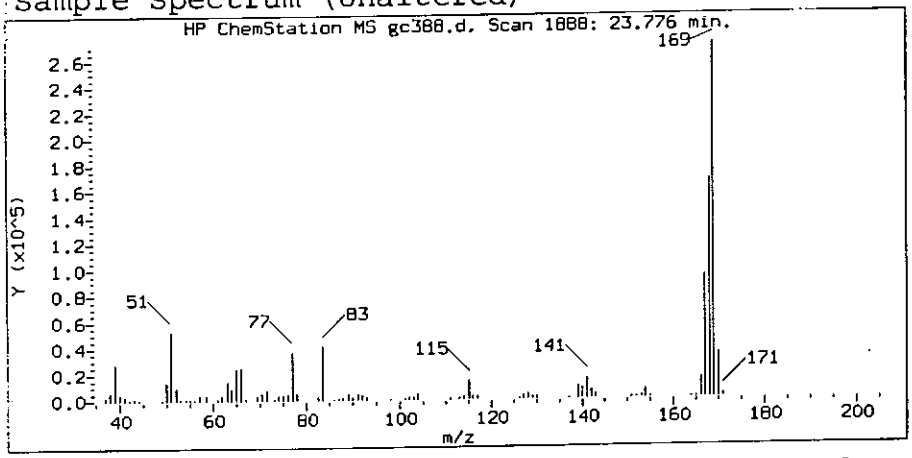



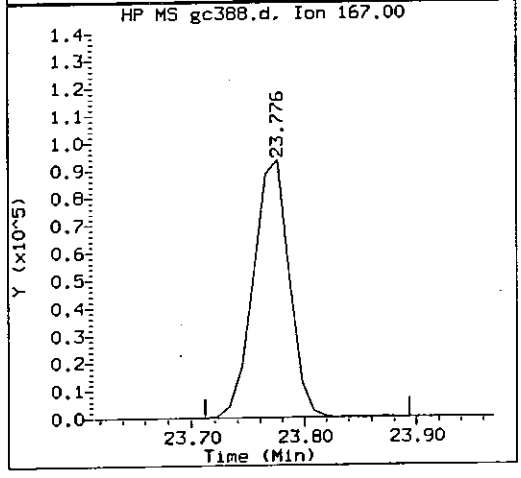

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

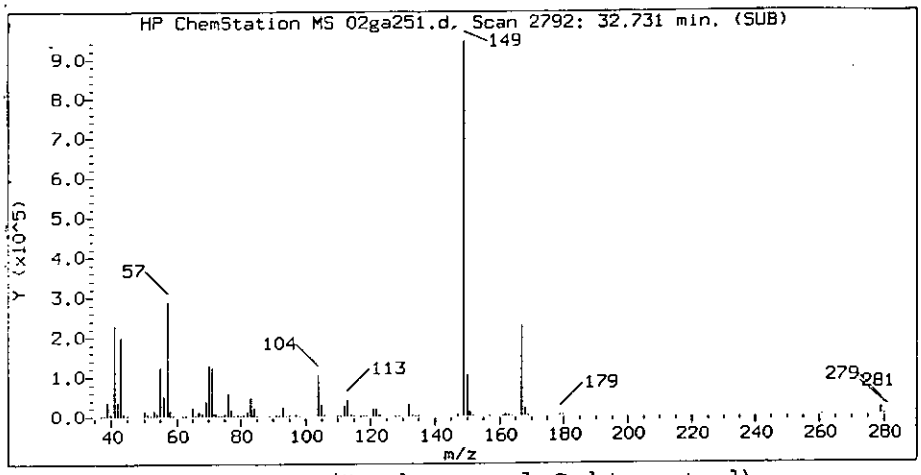
Sample Name: 7GP18

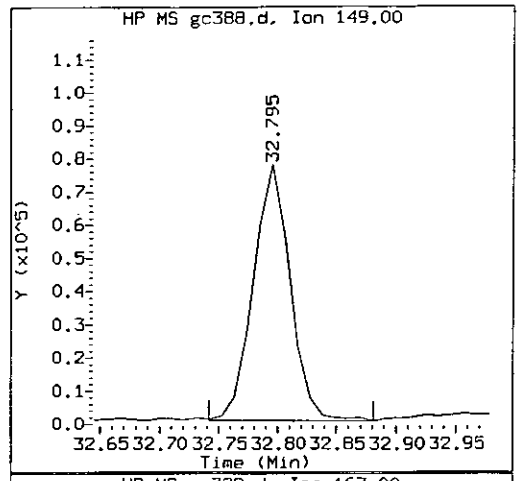
Lab Sample ID: 4241643

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1888 |
| Retention Time (minutes) | : 23.776 |
| Quant Ion | : 169.0 |
| Area (flag) | : 606025 |
| Concentration (ng/ul) | : 54.7574 |

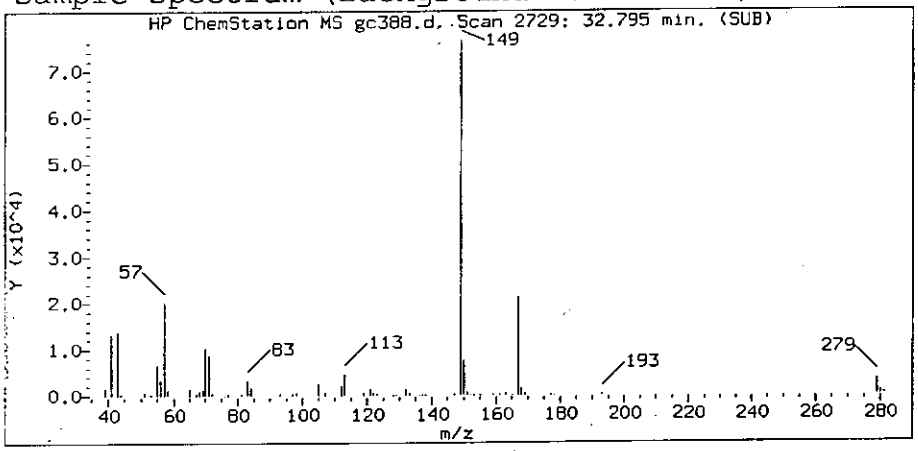
OK
BGM 3-27-04 5187

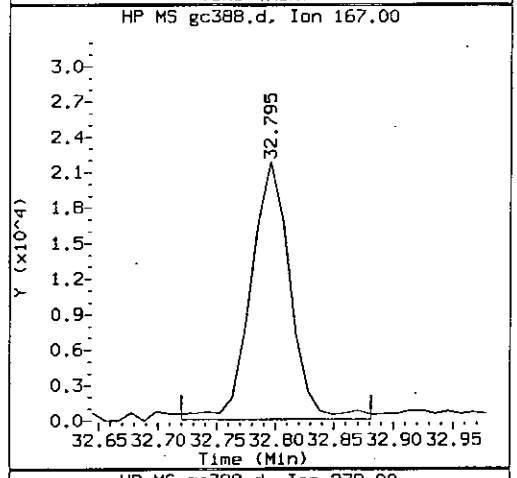
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



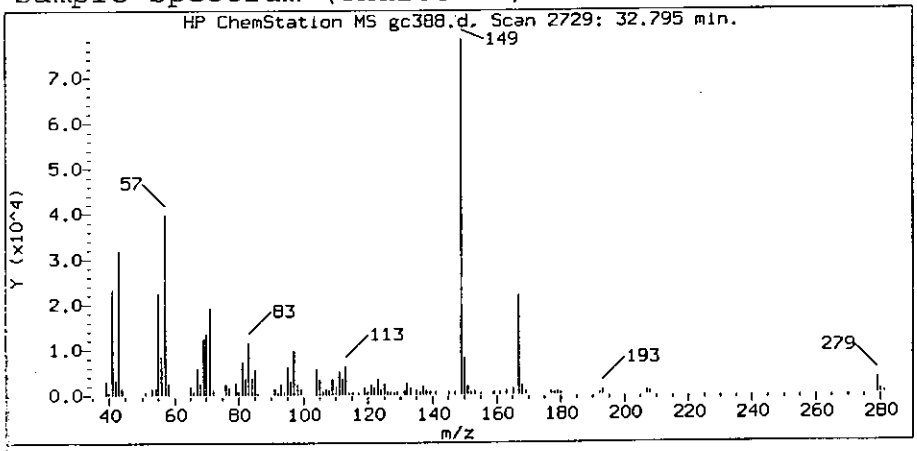



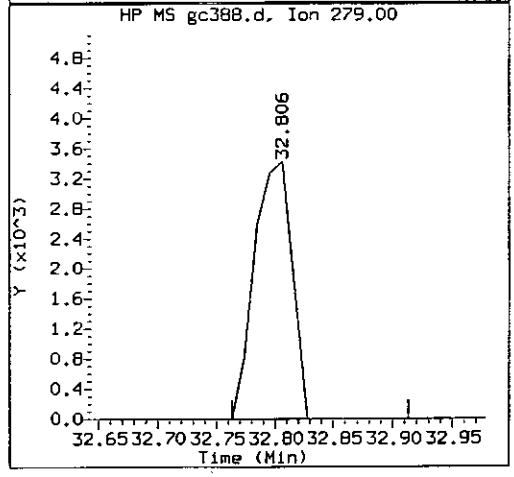

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc388.d
Injection date and time: 26-MAR-2004 13:39

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP18

Lab Sample ID: 4241643

| | |
|---|---|
| Compound Number | : 167 |
| Compound Name | : bis(2-Ethylhexyl)phthalate |
| Scan Number | : 2729 |
| Retention Time (minutes) | : 32.795 |
| Quant Ion | : 149.0 |
| Area (flag) | : 166318 |
| Concentration (ng/ul) | : 8.6381 |

OK
BGm 5188
3-27-04

7GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241644

Data file: /chem/HP06780.i/04mar29.b/dc393.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 13:37 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.408(-0.005) | 874 | 152.0 | 155303( -33) | 40.00 | |
| 52) Naphthalene-d8 | 13.026( 0.004) | 1139 | 136.0 | 548591( -32) | 40.00 | |
| 96) Acenaphthene-d10 | 16.672( 0.011) | 1508 | 164.0 | 251860( -32) | 40.00 | |
| 133) Phenanthrene-d10 | 19.848( 0.010) | 1829 | 188.0 | 320405( -31) | 40.00 | |
| 165) Chrysene-d12 | 25.690( 0.012) | 2417 | 240.0 | 209505( -26) | 40.00 | |
| 173) Perylene-d12 | 29.637( 0.001) | 2813 | 264.0 | 186859( -36) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.671( 0.004) | 112 | 1142845 | 156.363 | 78% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.647( 0.001) | 99 | 1346892 | 161.588 | 81% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.534( 0.000) | 82 | 505245 | 82.820 | 83% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.268(-0.001) | 172 | 648896 | 81.906 | 82% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.324(-0.001) | 330 | 151481 | 155.968 | 78% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.835(-0.001) | 244 | 385568 | 85.290 | 85% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | ND | ND | | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043( 0.088)~~ | ~~45~~ | ~~47427~~ | ~~6.677~~ | ~~222.58~~ | | ~~#~~ | ~~1.00~~ |
| ~~34) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.534( 0.037)~~ | ~~70~~ | ~~61072~~ | ~~15.993~~ | ~~533.10~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | ND | ND | | | | 1.00 |
| 39) Nitrobenzene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | ND | ND | | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | ND | ND | | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | ND | ND | | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | ND | ND | | | | 1.00 |
| 53) Naphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | ND | ND | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | ND | ND | | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | Below MDL, Do not report | | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |



9189

7GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241644

Data file: /chem/HP06780.i/04mar29.b/dc393.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 13:37 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 97) Acenaphthene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | Below MDL, Do not report | | | | | 5.00 |
| ~~102) Dibenzofuran~~ | ~~(3)~~ | ~~18.056( 0.057)~~ | | ~~168~~ | ~~75707~~ | ~~7.517~~ | ~~250.57~~ | | | ~~1.00~~ |
| 103) 2,4-Dinitrotoluene | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 109) Fluorene | (3) | | | | Below MDL, Do not report | | | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | | ND | ND | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.056( 0.000) | | 169 | 123565 | 21.751 | 725.05 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 136) Anthracene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 138) Carbazole | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.581( 0.000) | | 149 | 40754 | 2.619 | 87.30 | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, Do not report | | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, Do not report | | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 166) Chrysene | (5) | | | | Below MDL, Do not report | | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.660( 0.000) | | 149 | 90741 | 11.221 | 374.04 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, Do not report | | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | Below MDL, Do not report | | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |

7GP19

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241644

Data file: /chem/HP06780.i/04mar29.b/dc393.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 13:37 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

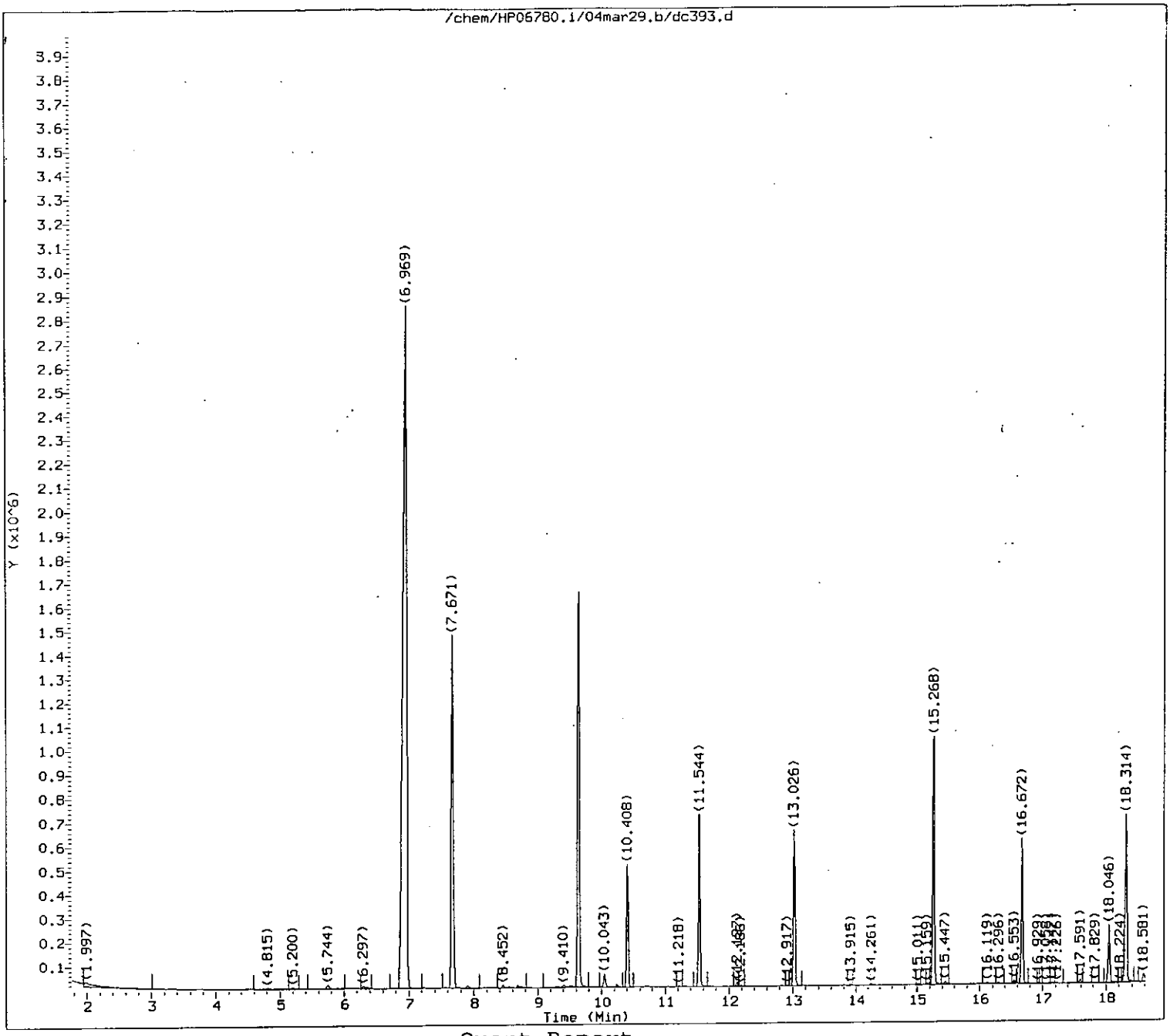
Total number of targets = 64

Comments: ✓ = false positive

Analyst: Michele Garnick RB 3/30/04 Date: 3-29-04
Auditor: Date: 3/29/04



#111




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

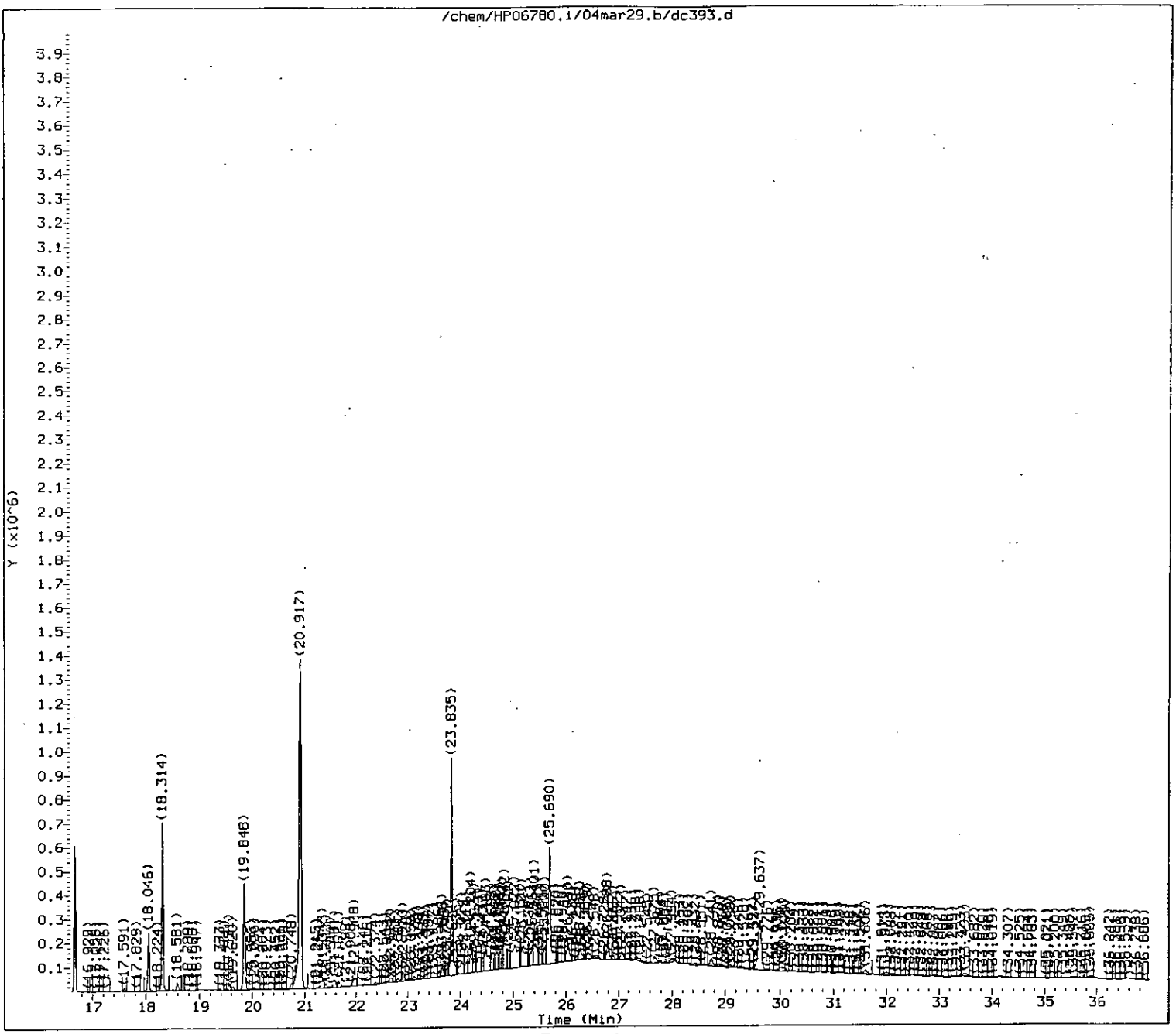
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP19

Lab Sample ID: 4241644

8112

RB1568
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc393.d Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 13:37 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP19 Lab Sample ID: 4241644

8113
RBI568
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08
Sublist used: STC804
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP19
Lab Sample ID: 4241644

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.408 | 152 | 155303 | 40.000 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~45~~ | ~~47427~~ | ~~6.677~~ ✓ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.534~~ | ~~70~~ | ~~61072~~ | ~~15.993~~ ✓ |
| 52) Naphthalene-d8 | (2) | 13.026 | 136 | 548591 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.672 | 164 | 251860 | 40.000 |
| ~~102) Dibenzofuran~~ | ~~(3)~~ | ~~18.056~~ | ~~168~~ | ~~75787~~ | ~~7.517~~ ✓ |
| 115) N-Nitrosodiphenylamine | (4) | 18.056 | 169 | 123565 | 21.751 |
| 133) Phenanthrene-d10 | (4) | 19.848 | 188 | 320405 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 21.581 | 149 | 40754 | 2.619 |
| 165) Chrysene-d12 | (5) | 25.690 | 240 | 209505 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.660 | 149 | 90741 | 11.221 |
| 173) Perylene-d12 | (6) | 29.637 | 264 | 186859 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.671 | 112 | 1142845 | 156.363 |
| 15) Phenol-d6 | (1) | 9.647 | 99 | 1346892 | 161.588 |
| 38) Nitrobenzene-d5 | (2) | 11.534 | 82 | 505245 | 82.820 |
| 77) 2-Fluorobiphenyl | (3) | 15.268 | 172 | 648896 | 81.906 |
| 117) 2,4,6-Tribromophenol | (3) | 18.324 | 330 | 151481 | 155.968 |
| 154) Terphenyl-d14 | (5) | 23.835 | 244 | 385568 | 85.290 |

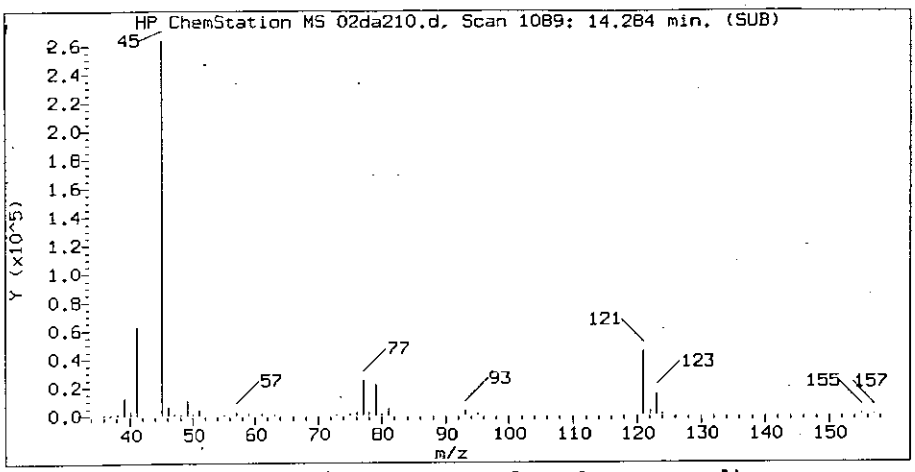
M = Compound was manually integrated.
A = User selected an alternate hit

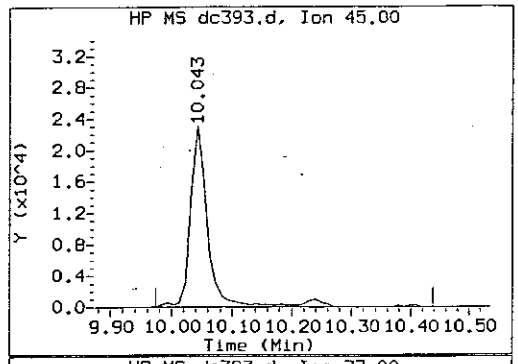
✓ = False Positive

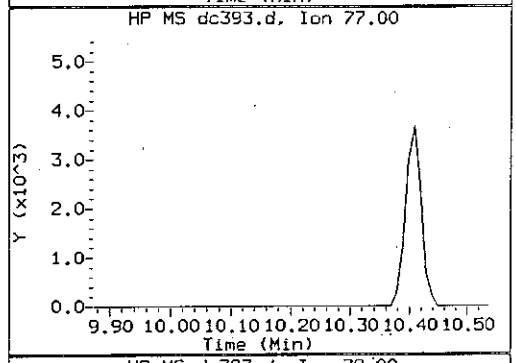
RB1568

3-29-04

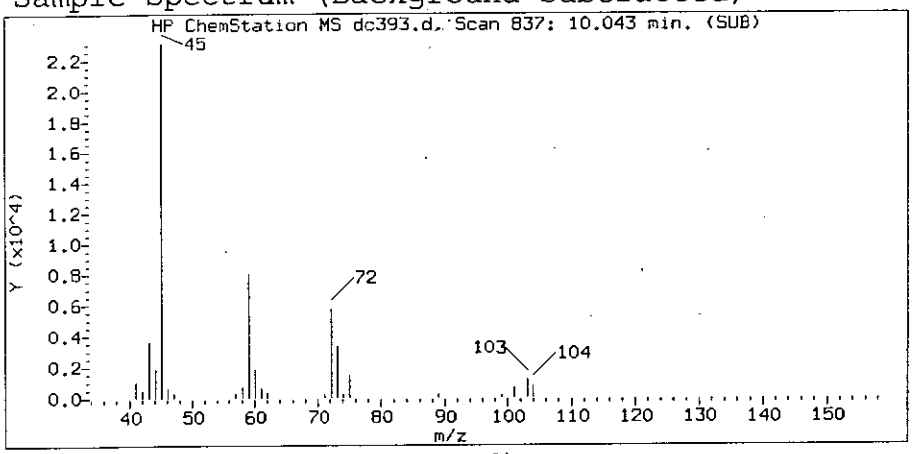
Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

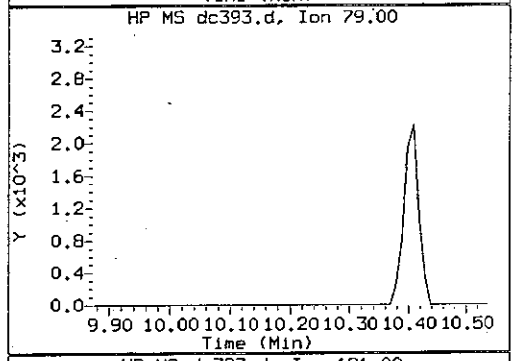


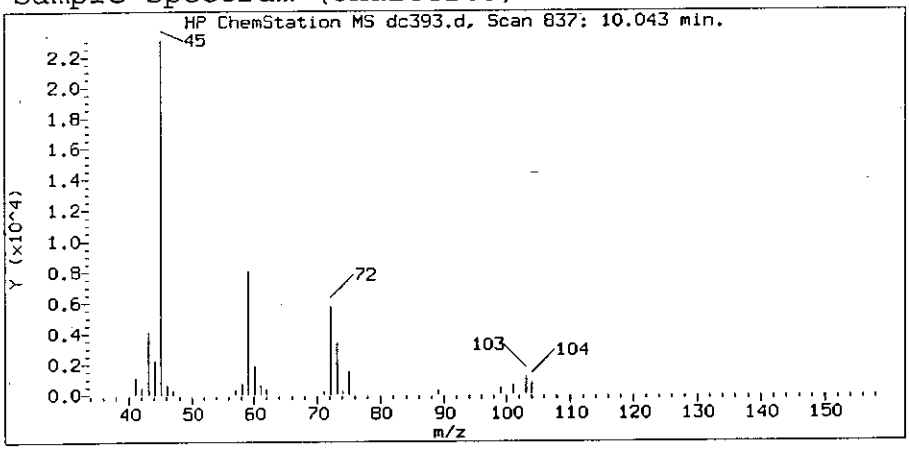



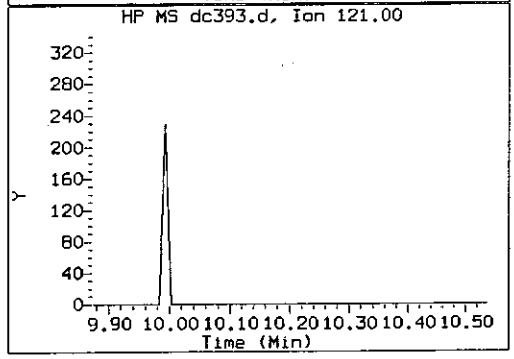

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

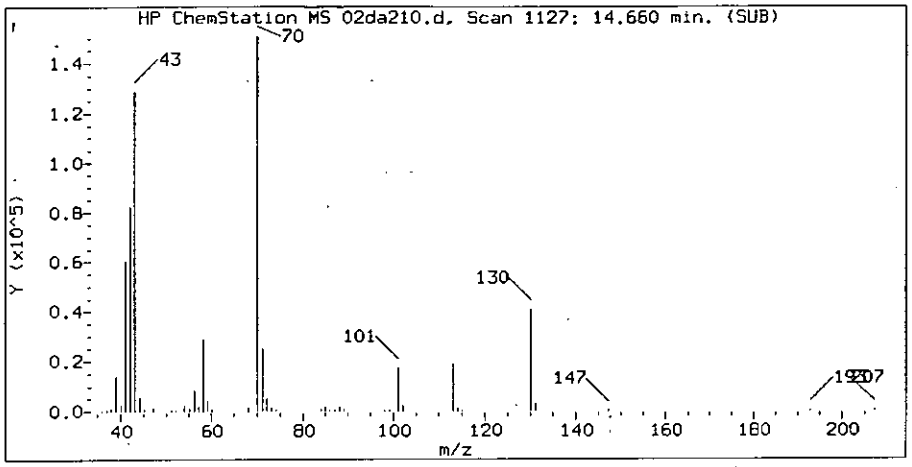
Sample Name: 7GP19

Lab Sample ID: 4241644

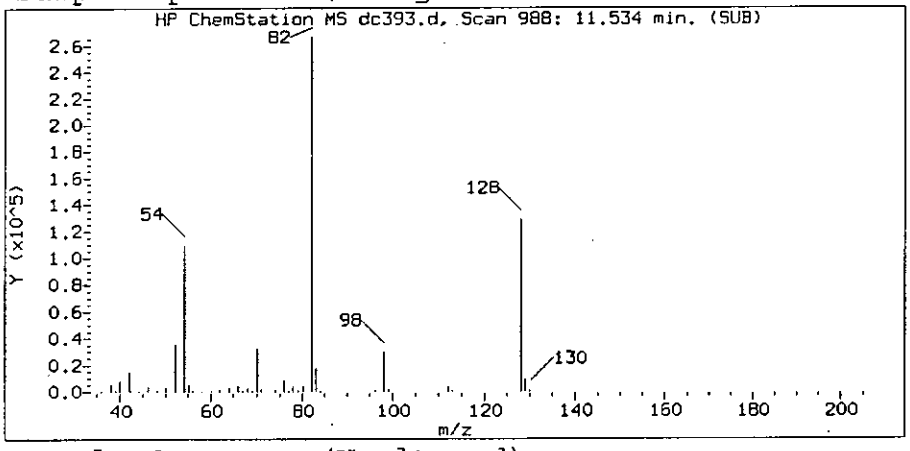
False Positive
RB 1528
3/29/04

| | |
|---|---|
| Compound Number | : 27 |
| Compound Name | : 2,2'-oxybis(1-Chloropropane) |
| Scan Number | : 837 |
| Retention Time (minutes) | : 10.043 |
| Quant Ion | : 45.0 |
| Area (flag) | : 47427 |
| Concentration (ng/ul) | : 6.6773 |

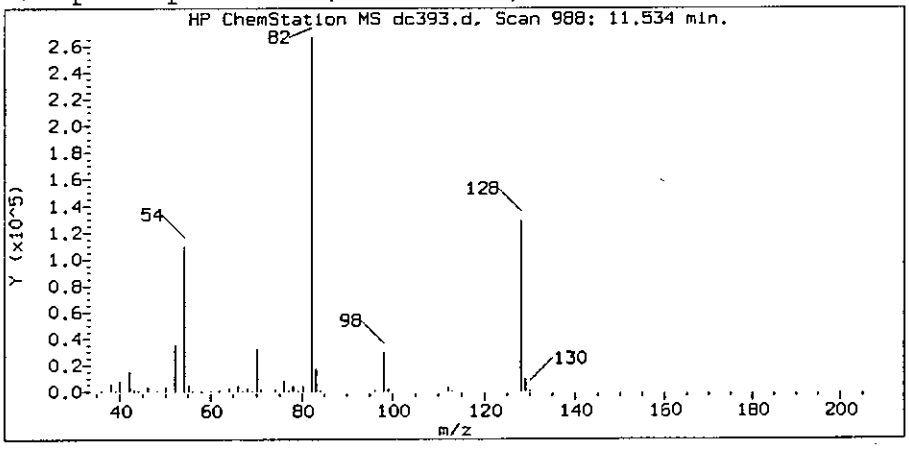
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

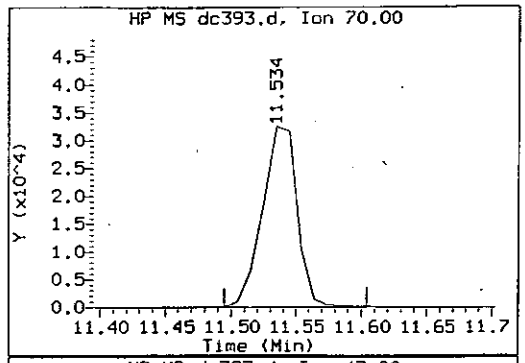


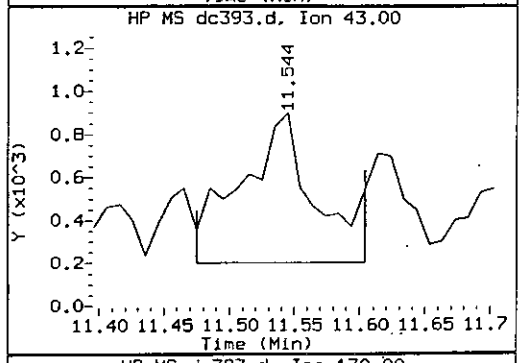

Sample Spectrum (Background Subtracted)

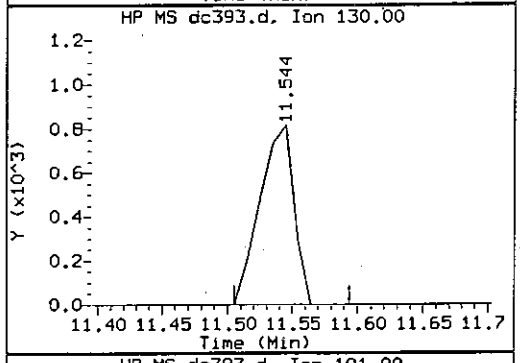


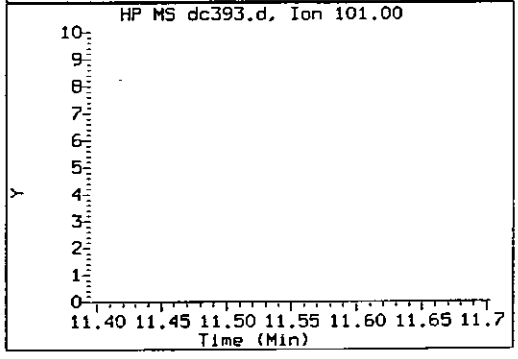

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

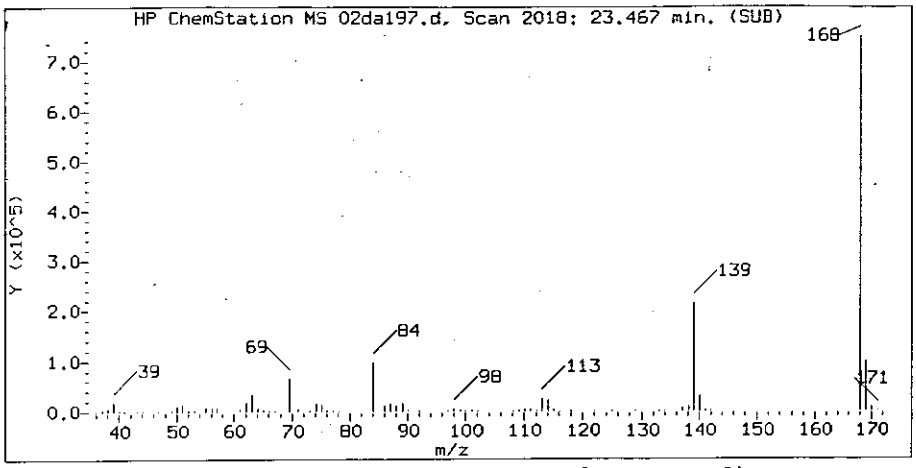
Sample Name: 7GP19

Lab Sample ID: 4241644

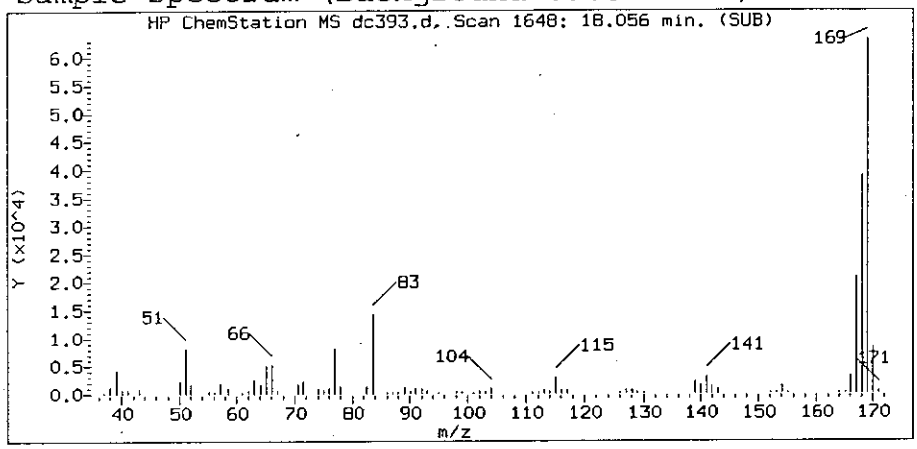
| | |
|---|---|
| Compound Number | : 31 |
| Compound Name | : N-Nitroso-di-n-propylamine |
| Scan Number | : 988 |
| Retention Time (minutes) | : 11.534 |
| Quant Ion | : 70.0 |
| Area (flag) | : 61072 |
| Concentration (ng/ul) | : 15.9929 |

False Positive
RB 3/29-04

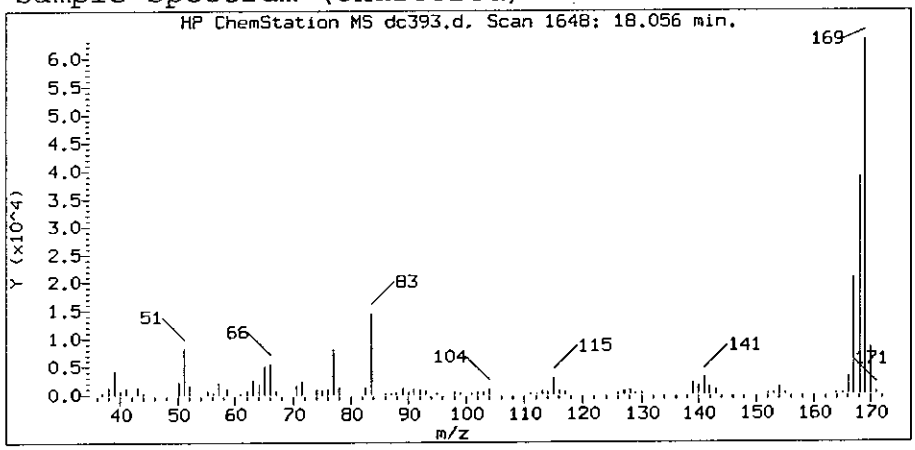
Reference Standard Spectrum for Dibenzofuran

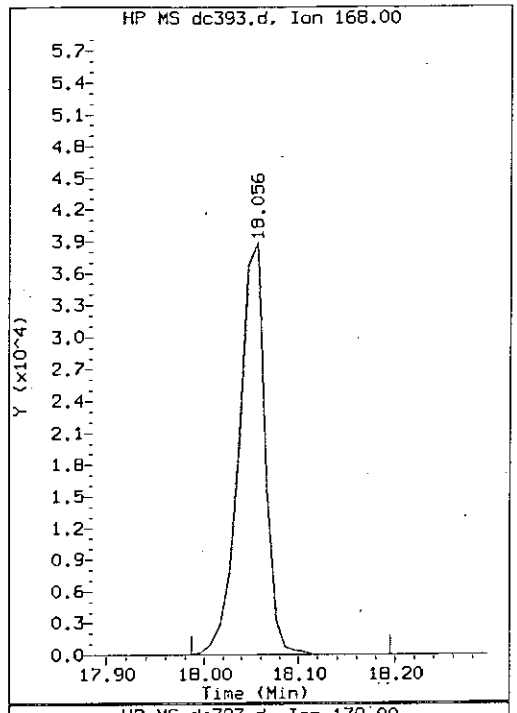


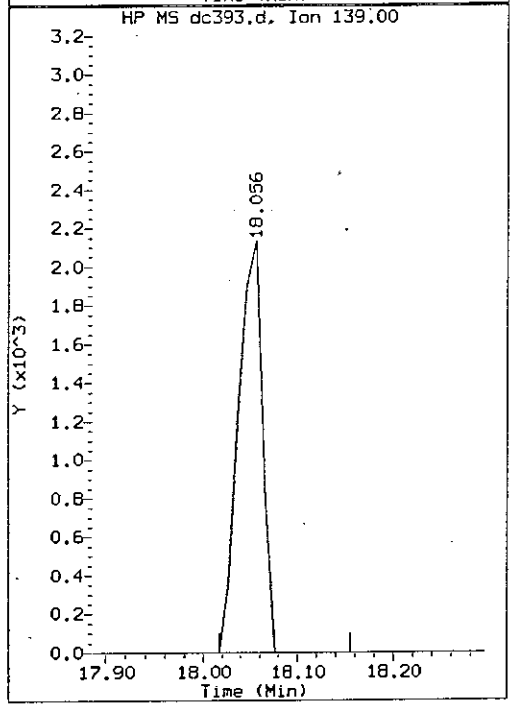

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

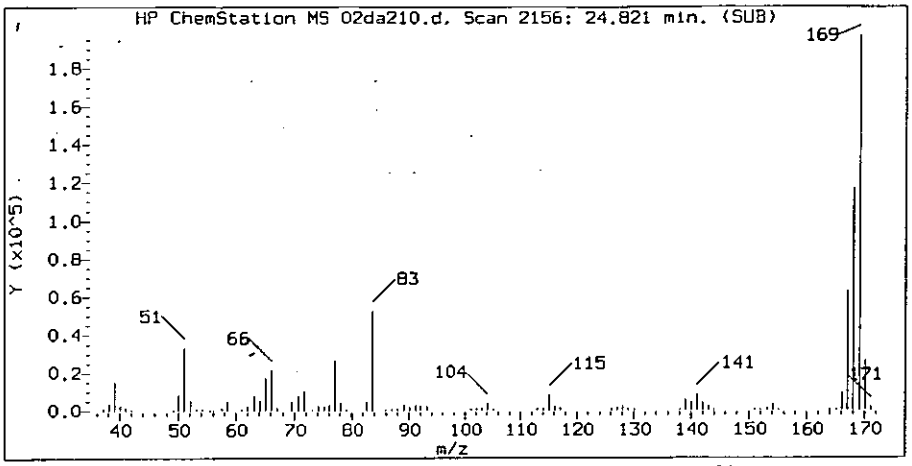
Sample Name: 7GP19

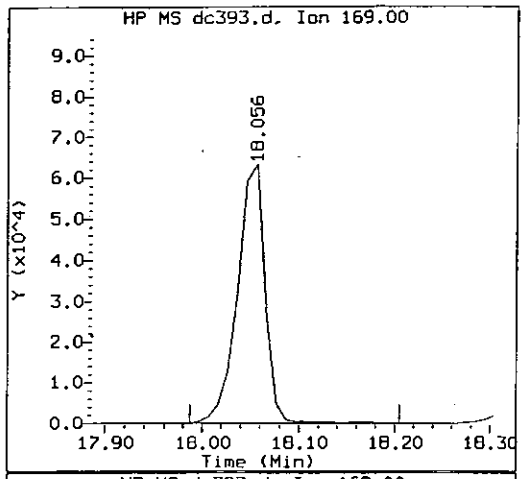
Lab Sample ID: 4241644

| | |
|---|---|
| Compound Number | : 102 |
| Compound Name | : Dibenzofuran |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.056 |
| Quant Ion | : 168.0 |
| Area (flag) | : 75787 |
| Concentration (ng/ul) | : 7.5171 |

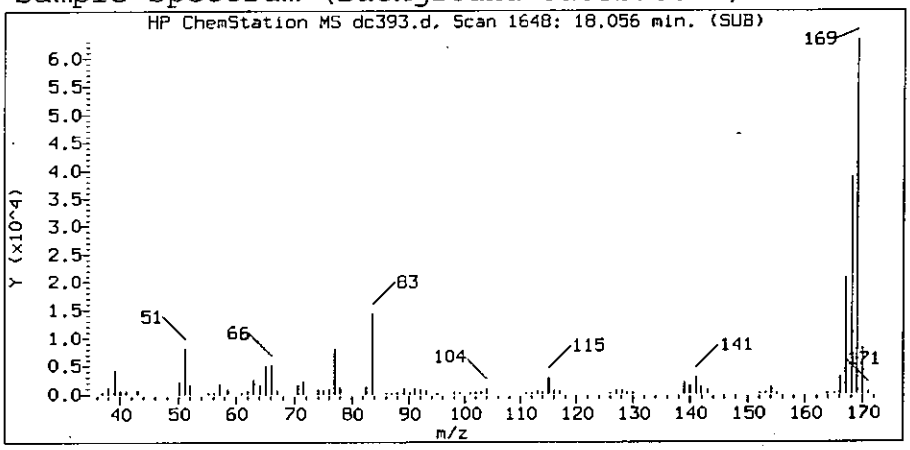
False Positive
RB1528
5-29-04

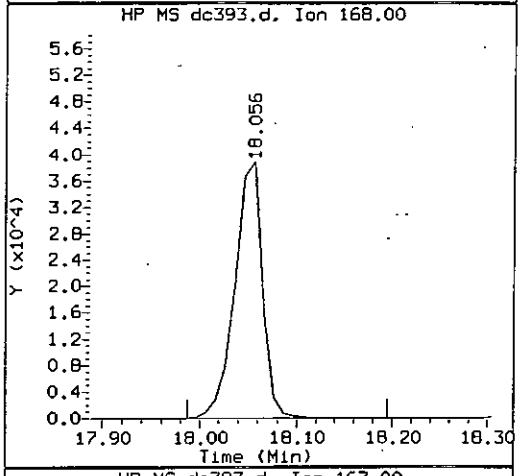
Reference Standard Spectrum for N-Nitrosodiphenylamine



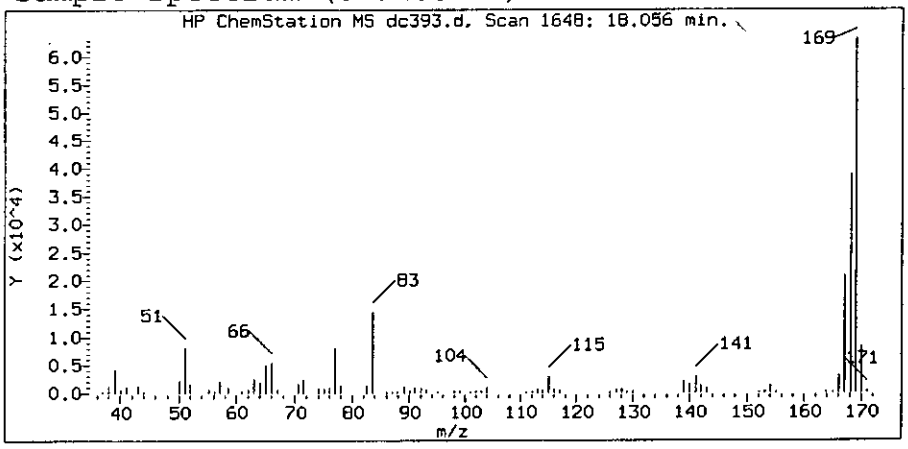



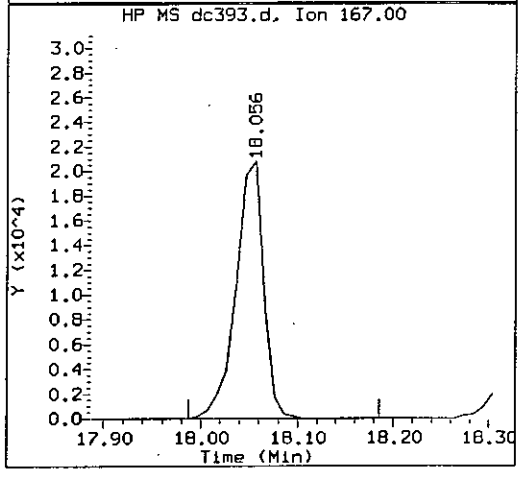

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

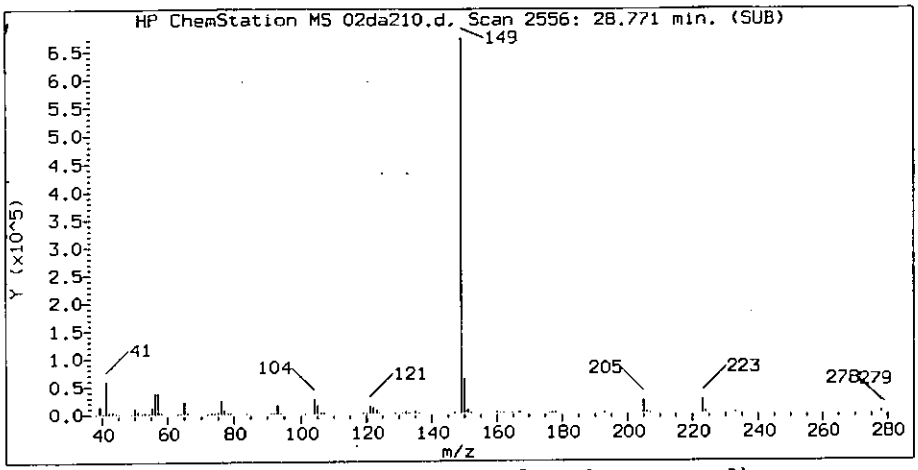
Sample Name: 7GP19

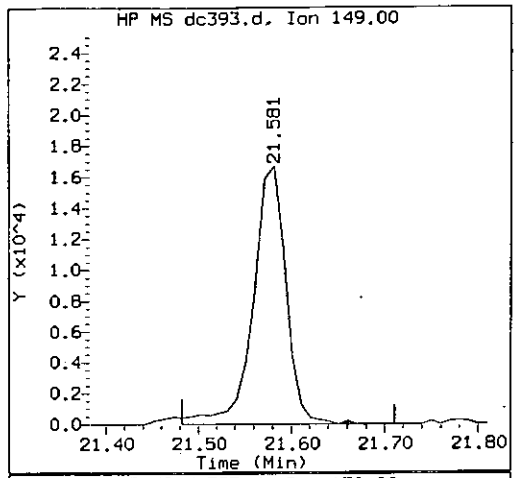
Lab Sample ID: 4241644

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.056 |
| Quant Ion | : 169.0 |
| Area (flag) | : 123565 |
| Concentration (ng/ul) | : 21.7515 |

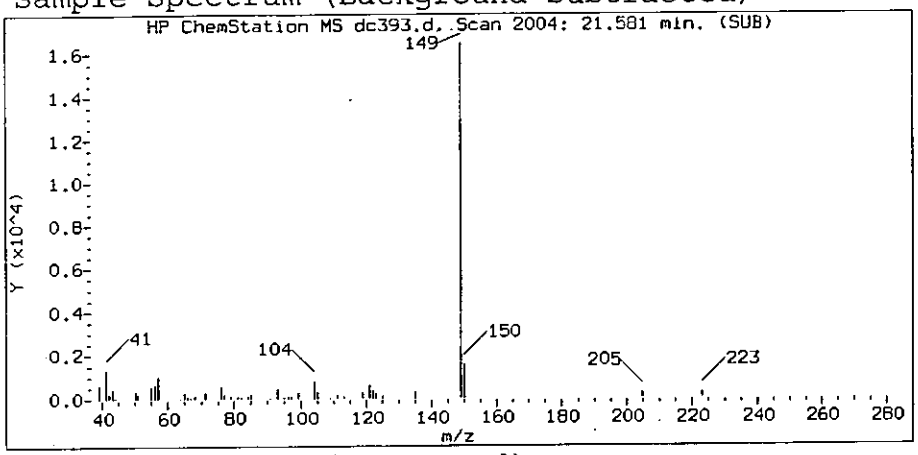
RB 3-29-04

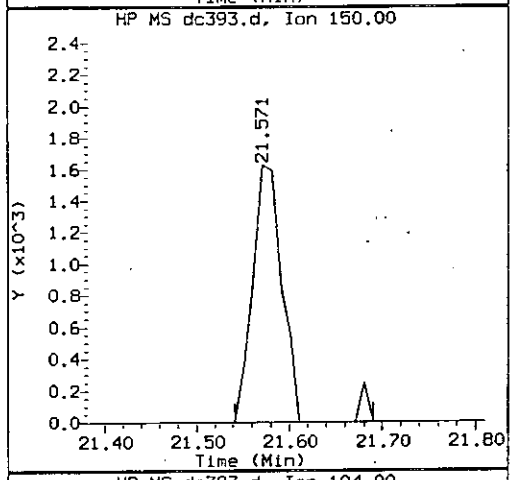
Reference Standard Spectrum for Di-n-butylphthalate



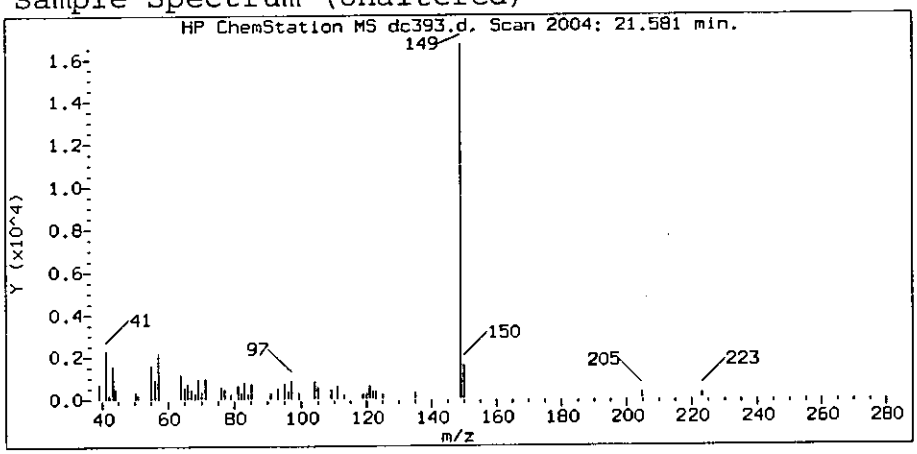



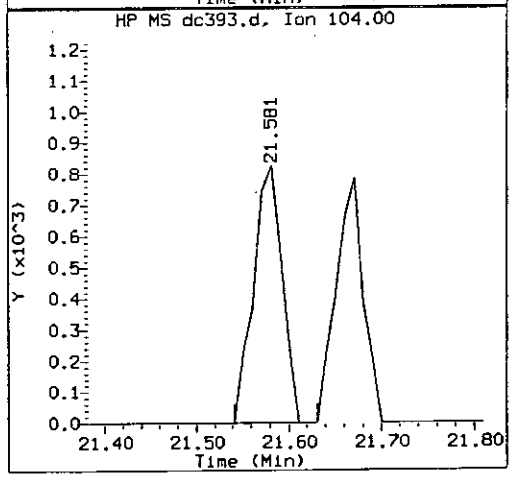

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

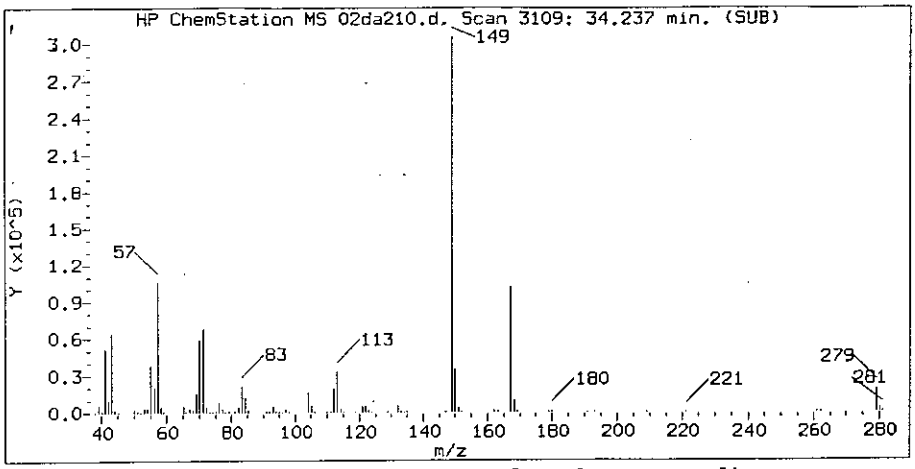
Sample Name: 7GP19

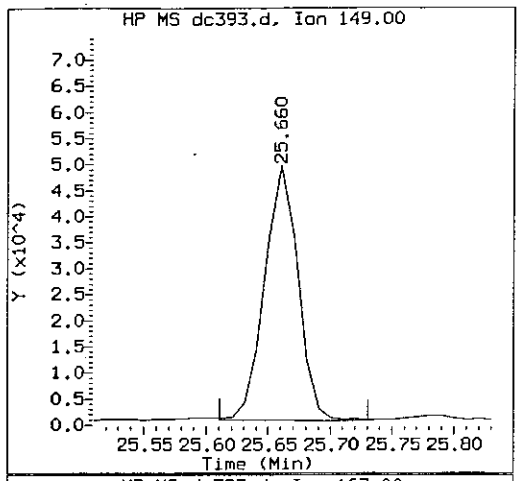
Lab Sample ID: 4241644

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2004 |
| Retention Time (minutes) | : 21.581 |
| Quant Ion | : 149.0 |
| Area (flag) | : 40754 |
| Concentration (ng/ul) | : 2.6190 |

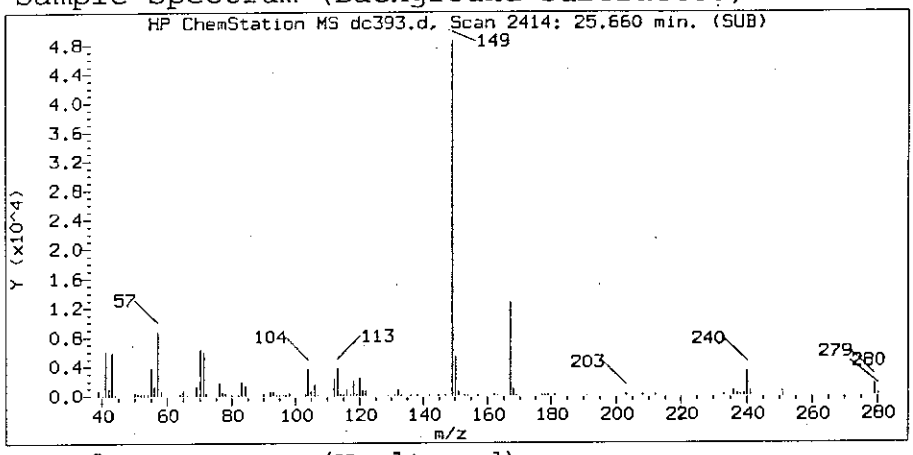
RB1528
8119
5-29-04

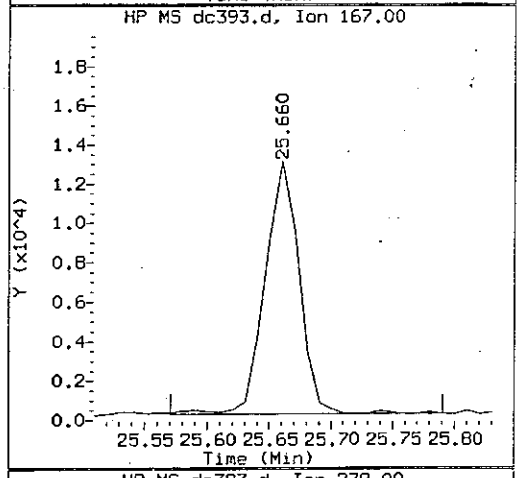
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



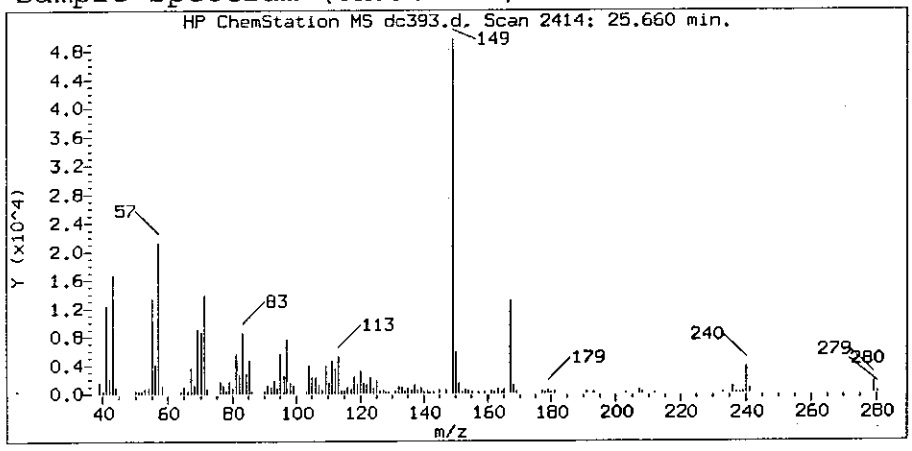



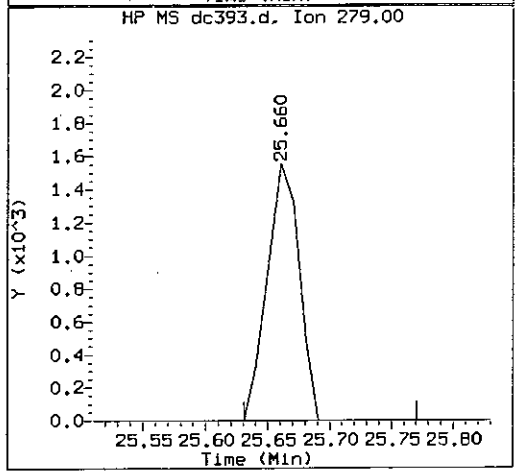

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc393.d
Injection date and time: 29-MAR-2004 13:37

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP19

Lab Sample ID: 4241644

Compound Number : 167
Compound Name : bis(2-Ethylhexyl)phthalate
Scan Number : 2414
Retention Time (minutes): 25.660
Quant Ion : 149.0
Area (flag) : 90741
Concentration (ng/ul) : 11.2212

3-29-04

Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc393.d, generated on 03/29/2004 at 15:29

7GP45

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241645

Data file: /chem/HP06777.i/04mar26.b/gc384.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 09:59 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.549 | (-0.003) | 841 | 152.0 | 265890 | ( 2) | 40.00 | |
| 52) Naphthalene-d8 | 16.313 | ( 0.007) | 1192 | 136.0 | 993253 | ( 0) | 40.00 | |
| 96) Acenaphthene-d10 | 21.708 | ( 0.007) | 1695 | 164.0 | 461442 | ( 2) | 40.00 | |
| 133) Phenanthrene-d10 | 26.287 | ( 0.018) | 2122 | 188.0 | 758202 | ( 2) | 40.00 | |
| 165) Chrysene-d12 | 32.894 | ( 0.018) | 2738 | 240.0 | 774779 | ( -4) | 40.00 | |
| 173) Perylene-d12 | 38.224 | ( 0.007) | 3235 | 264.0 | 835099 | ( 0) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.892 | ( 0.002) | 112 | 1634243 | 160.966 | 80% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.444 | ( 0.000) | 99 | 2037310 | 166.318 | 83% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.147 | ( 0.001) | 82 | 834738 | 84.569 | 85% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.616 | ( 0.000) | 172 | 1350521 | 86.978 | 87% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.142 | ( 0.000) | 330 | 733205 | 177.347 | 89% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.395 | (-0.001) | 244 | 1424764 | 93.266 | 93% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | ND | ND | | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | | | | ND | ND | | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | | | | ND | ND | | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | ND | ND | | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | | 1.00 |
| 53) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | ND | ND | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |



9121

7GP45

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241645

Data file: /chem/HP06777.i/04mar26.b/gc384.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 09:59 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | | | | | ND | ND | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | | ND | ND | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 22.062 | ( 0.000) | 109 | 952 | 6.764 | 225.48 | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 109) Fluorene | (3) | | | | | ND | ND | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 23.767 | ( 0.000) | 169 | 788698 | 71.515 | 2383.85 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 136) Anthracene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 138) Carbazole | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | | | | Below MDL, | Do not report | | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.786 | ( 0.000) | 149 | 135736 | 6.984 | 232.81 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |



8122

7GP45

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241645

Data file: /chem/HP06777.i/04mar26.b/gc384.d Blank Data file reference:/chem/HP06777.i/04mar26.h/gc382.d
Injection date and time: 26-MAR-2004 09:59 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

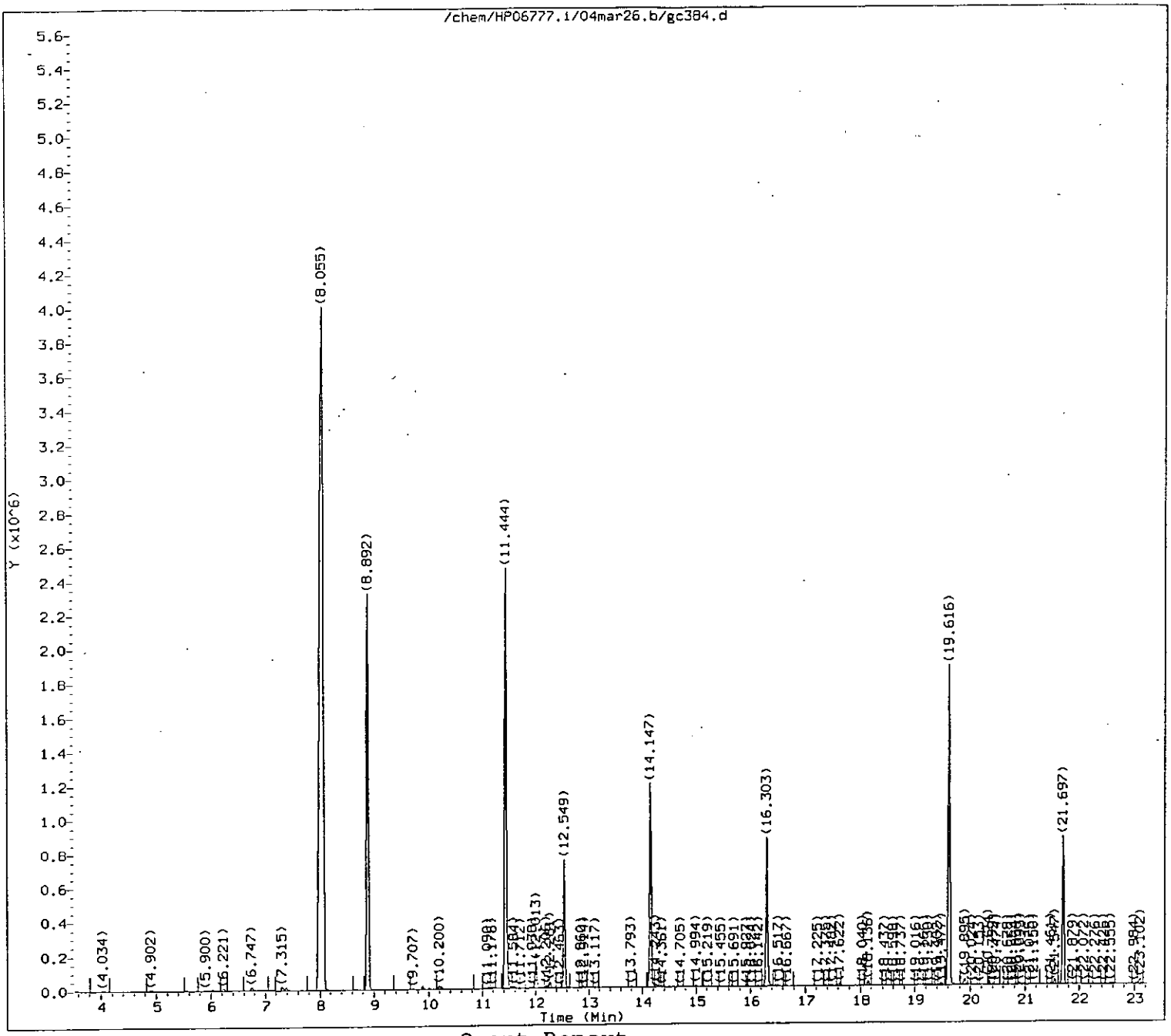
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: [signature] Date: 3-29-04
Auditor: [signature] Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc384.d
Injection date and time: 26-MAR-2004 09:59

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

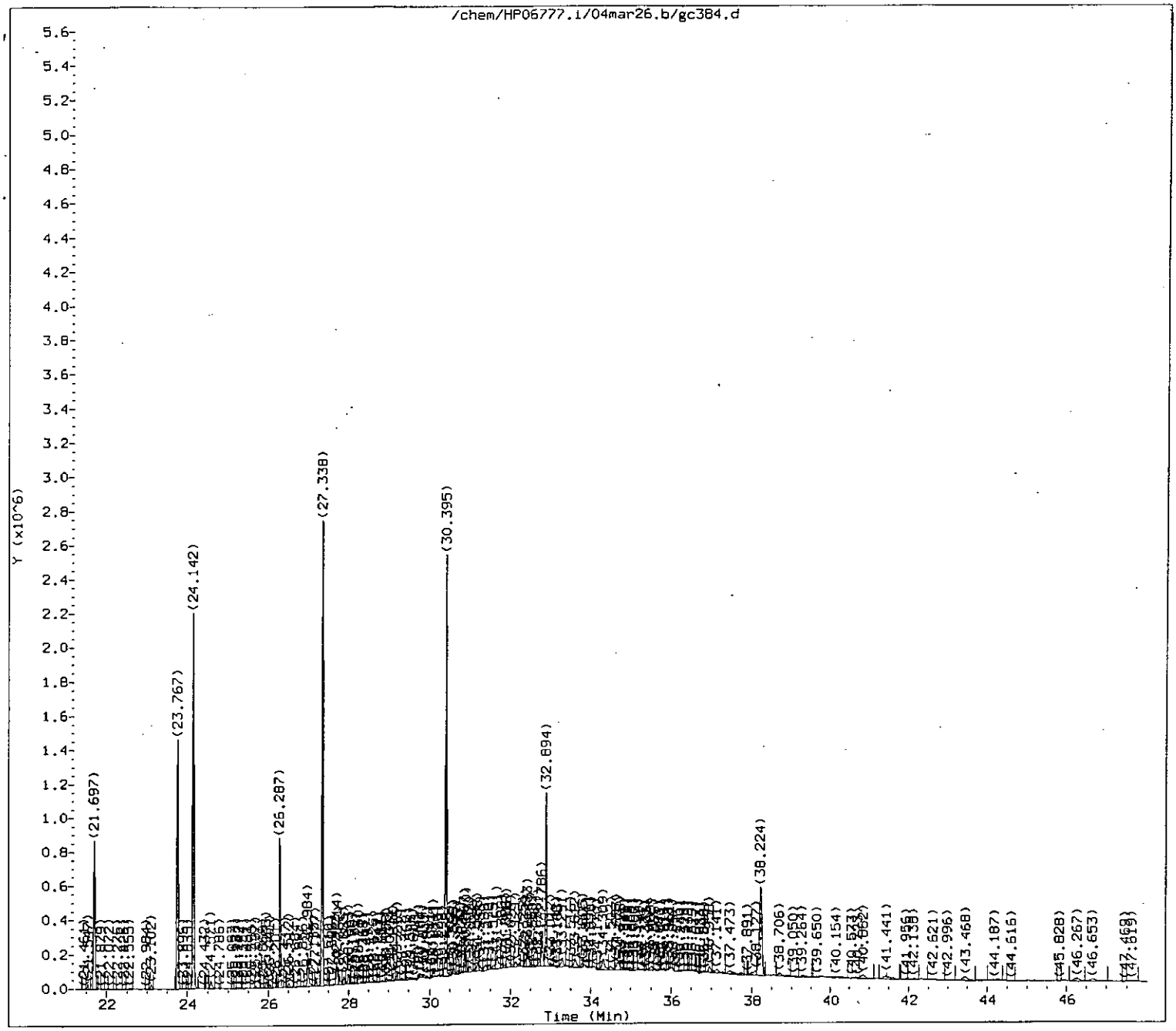
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Sample Name: 7GP45

Lab Sample ID: 4241645

BGM 3.26.04

0124




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc384.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 09:59  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Sample Name: 7GP45  Lab Sample ID: 4241645

BGM 3-26-04

9125

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc384.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 09:59  Analyst ID: bkg00522

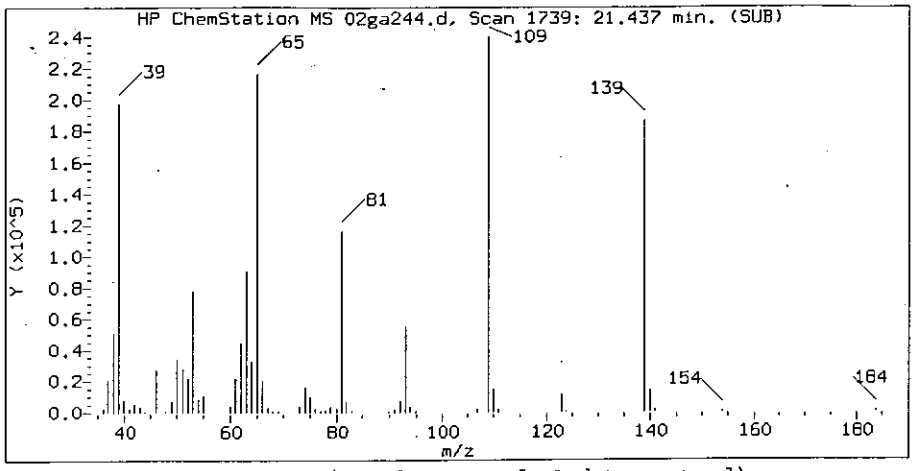
Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

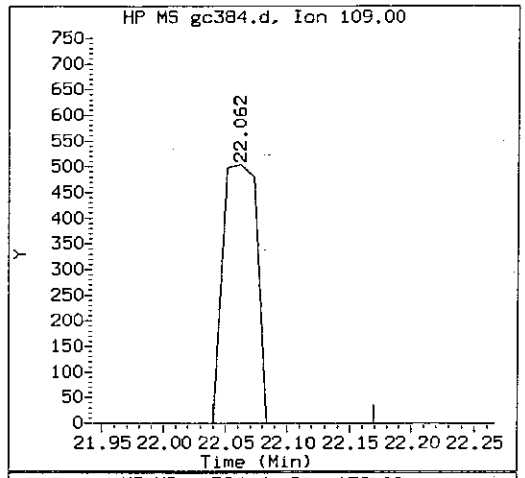
Sample Name: 7GP45  Lab Sample ID: 4241645

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.549 | 152 | 265890 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 16.313 | 136 | 993253 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 21.708 | 164 | 461442 | 40.000 |
| 101) | 4-Nitrophenol | (3) | 22.062 | 109 | 952 | 6.764 |
| 115) | N-Nitrosodiphenylamine | (4) | 23.767 | 169 | 788698 | 71.515 |
| 133) | Phenanthrene-d10 | (4) | 26.287 | 188 | 758202 | 40.000 |
| 165) | Chrysene-d12 | (5) | 32.894 | 240 | 774779 | 40.000 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 32.786 | 149 | 135736 | 6.984 |
| 173) | Perylene-d12 | (6) | 38.224 | 264 | 835099 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.892 | 112 | 1634243 | 160.966 |
| 15) | Phenol-d6 | (1) | 11.444 | 99 | 2037310 | 166.318 |
| 38) | Nitrobenzene-d5 | (2) | 14.147 | 82 | 834738 | 84.569 |
| 77) | 2-Fluorobiphenyl | (3) | 19.616 | 172 | 1350521 | 86.978 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.142 | 330 | 733205 | 177.347 |
| 154) | Terphenyl-d14 | (5) | 30.395 | 244 | 1424764 | 93.266 |

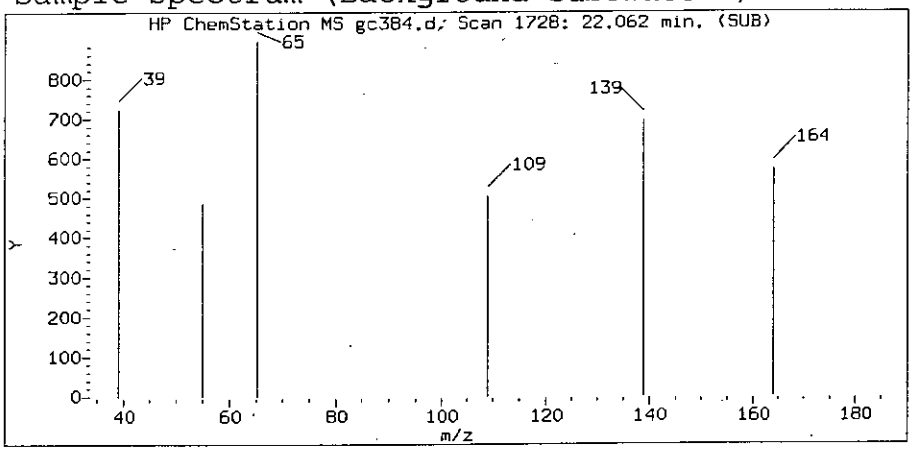
M = Compound was manually integrated.  A = User selected an alternate hit

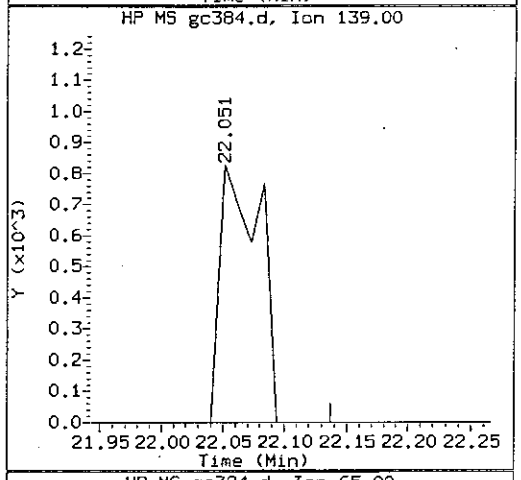
Reference Standard Spectrum for 4-Nitrophenol



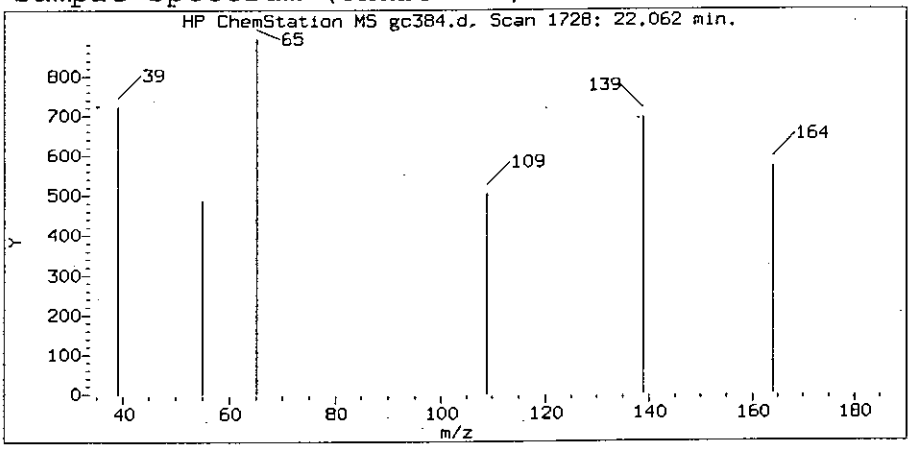



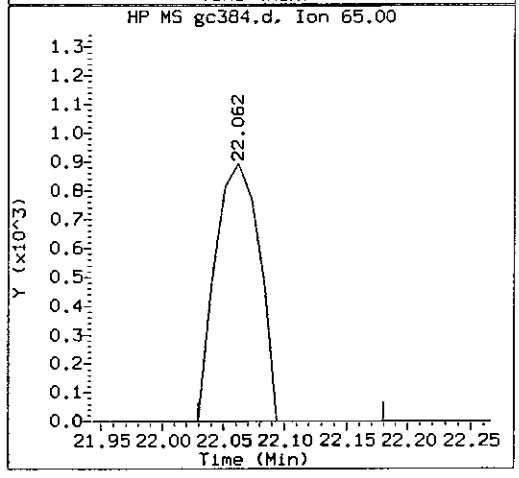

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc384.d
Injection date and time: 26-MAR-2004 09:59

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Sample Name: 7GP45

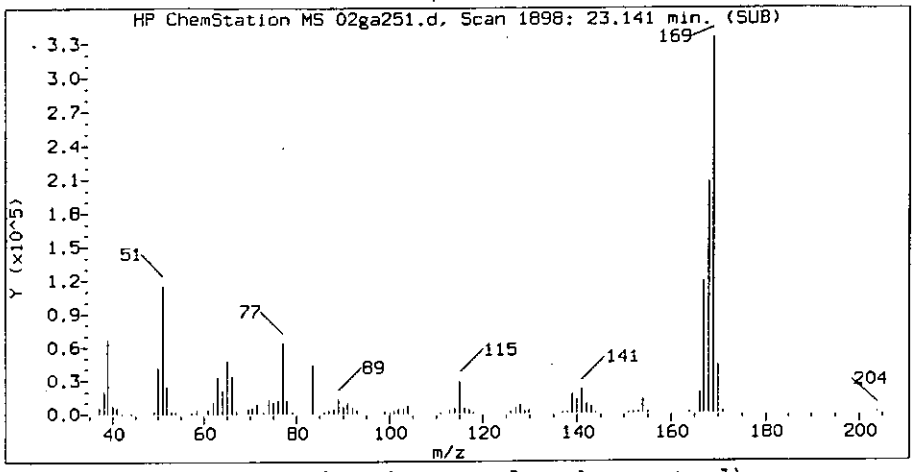
Lab Sample ID: 4241645

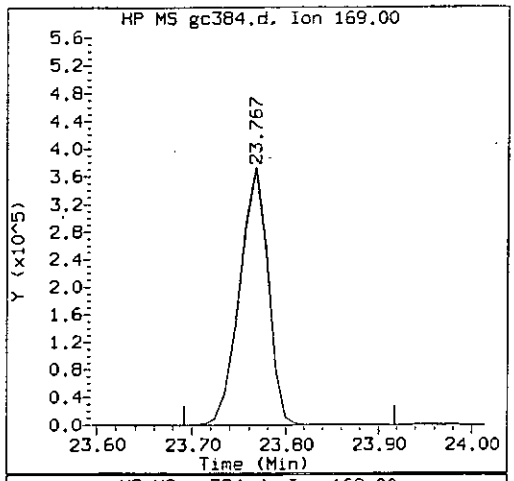
| | | |
|---|---|---|
| Compound Number | : | 101 |
| Compound Name | : | 4-Nitrophenol |
| Scan Number | : | 1728 |
| Retention Time (minutes) | : | 22.062 |
| Quant Ion | : | 109.0 |
| Area (flag) | : | 952 |
| Concentration (ng/ul) | : | 6.7643 |

OK
BKG
3-26-04

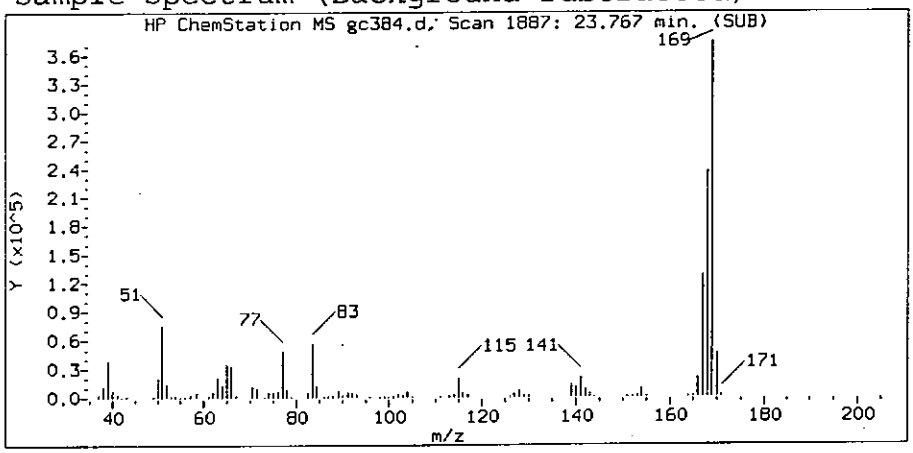
9127

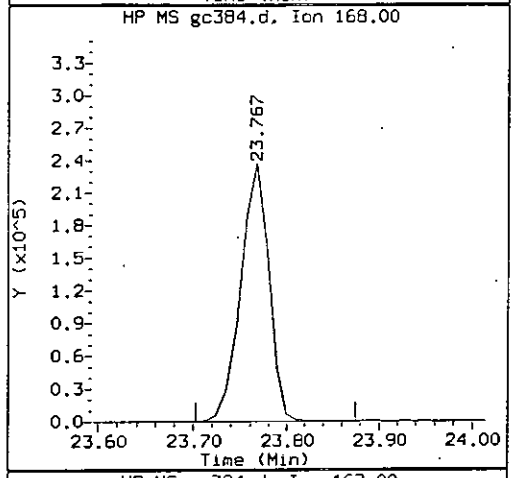
Reference Standard Spectrum for N-Nitrosodiphenylamine



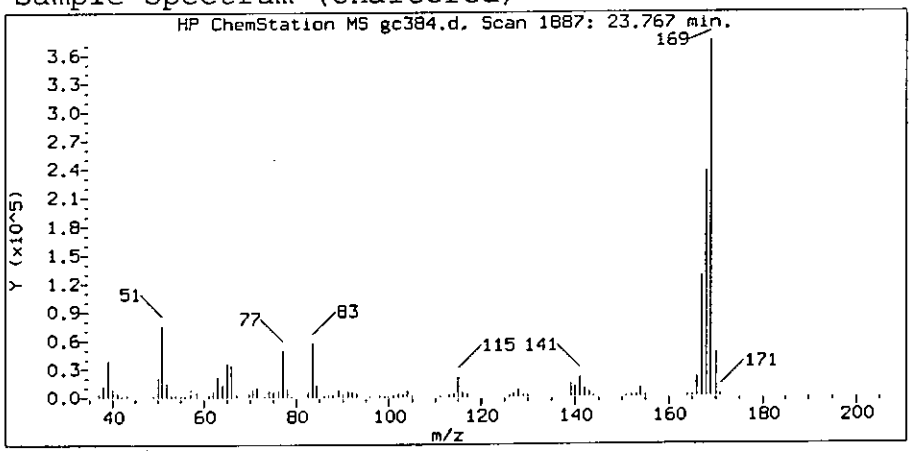



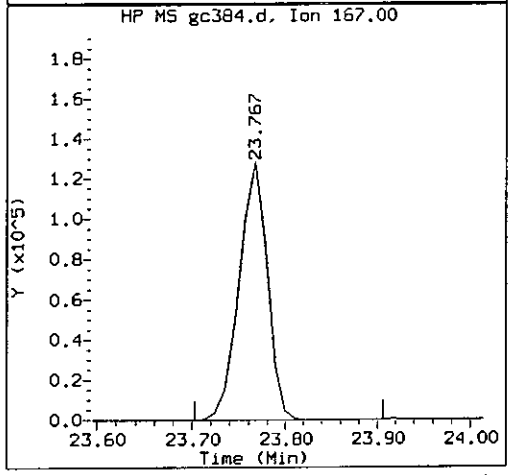

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc384.d
Injection date and time: 26-MAR-2004 09:59

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

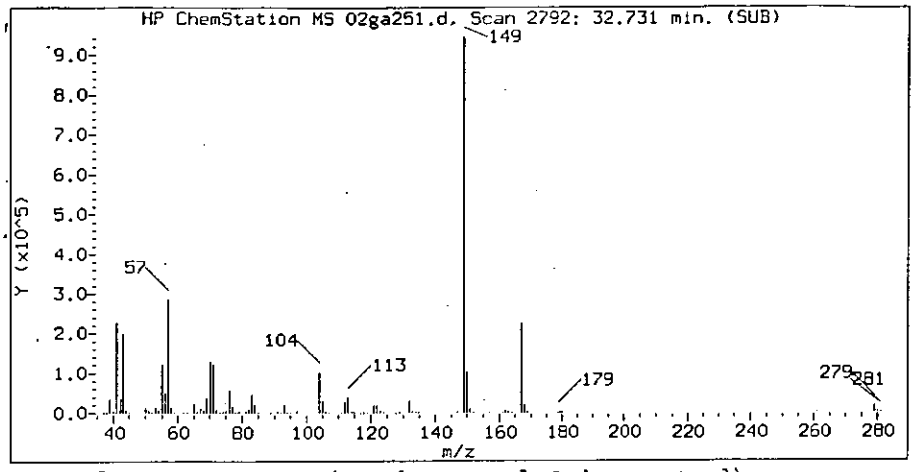
Sample Name: 7GP45

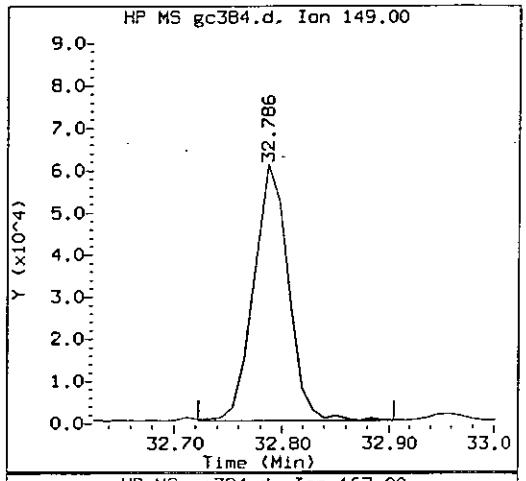
Lab Sample ID: 4241645

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1887 |
| Retention Time (minutes) | : 23.767 |
| Quant Ion | : 169.0 |
| Area (flag) | : 788698 |
| Concentration (ng/ul) | : 71.5155 |

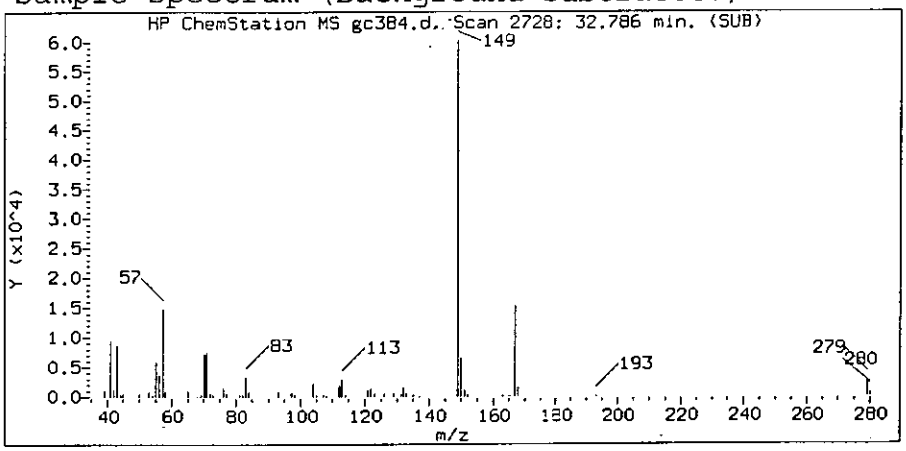
OK
BGoll
3/26/04 #128

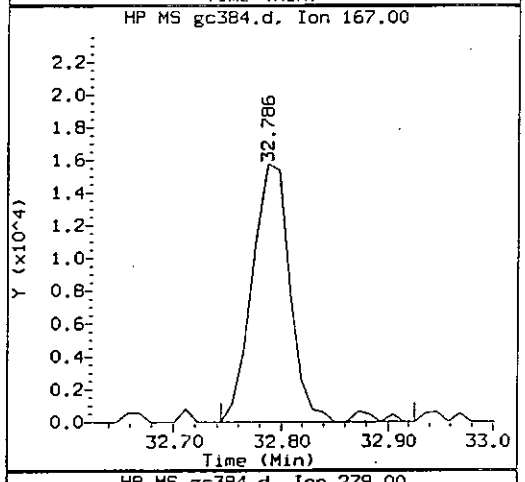
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



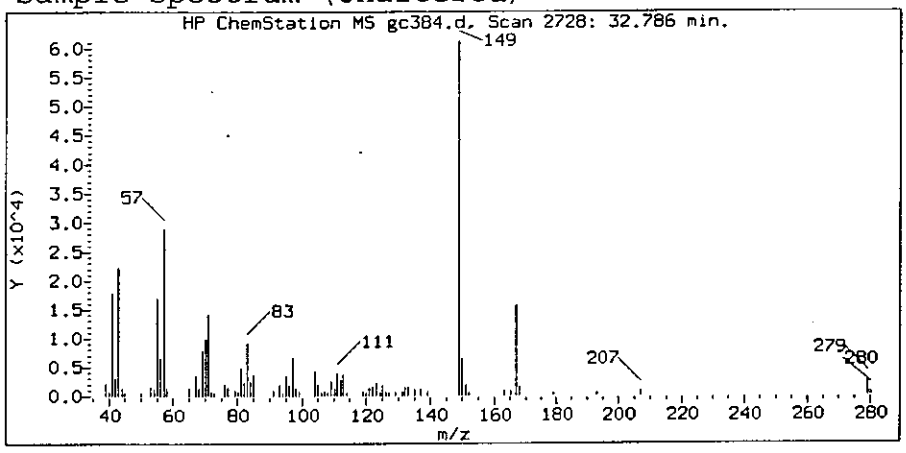



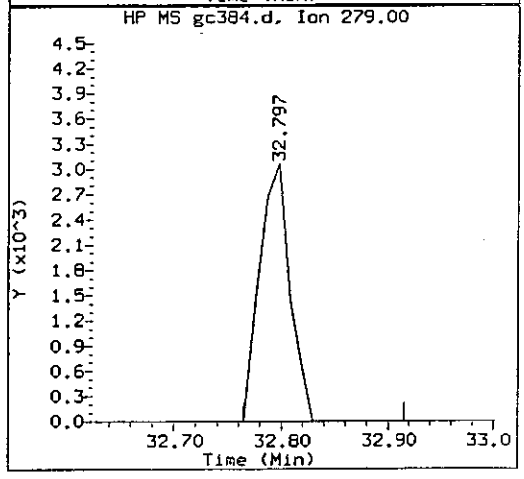

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc384.d
Injection date and time: 26-MAR-2004 09:59

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:54 bkg00522

Sample Name: 7GP45

Lab Sample ID: 4241645

Compound Number : 167
Compound Name : bis(2-Ethylhexyl)phthalate
Scan Number : 2728
Retention Time (minutes): 32.786
Quant Ion : 149.0
Area (flag) : 135736
Concentration (ng/ul) : 6.9842

OK
BSM
2-26-04 1129

UGP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241648

Data file: /chem/HP06780.i/04mar29.b/dc394.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 14:21 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.408 | (-0.005) | 874 | 152.0 | 167412 | ( -27) | 40.00 | |
| 52) Naphthalene-d8 | 13.027 | ( 0.003) | 1139 | 136.0 | 606124 | ( -25) | 40.00 | |
| 96) Acenaphthene-d10 | 16.676 | ( 0.007) | 1508 | 164.0 | 271111 | ( -27) | 40.00 | |
| 133) Phenanthrene-d10 | 19.845 | ( 0.013) | 1828 | 188.0 | 335601 | ( -27) | 40.00 | |
| 165) Chrysene-d12 | 25.696 | ( 0.006) | 2416 | 240.0 | 210425 | ( -26) | 40.00 | |
| 173) Perylene-d12 | 29.646 | (-0.008) | 2812 | 264.0 | 192724 | ( -34) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.681 | ( 0.003) | 112 | 1333978 | 169.312 | 85% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.647 | ( 0.001) | 99 | 1535148 | 170.851 | 85% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.545 | ( 0.000) | 82 | 587987 | 87.235 | 87% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.261 | ( 0.000) | 172 | 718405 | 84.240 | 84% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.319 | ( 0.000) | 330 | 166129 | 158.904 | 79% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.839 | (-0.001) | 244 | 395013 | 86.997 | 87% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.667 | ( 0.001) | 94 | 14571 | 1.577 | 52.55 | | | 1.00 |
| ~~10) bis(2-Chloroethyl)ether~~ | ~~(1)~~ | ~~9.716~~ | ~~( 0.015)~~ | ~~93~~ | ~~10321~~ | ~~1.446~~ | ~~48.20~~ | | | ~~1.00~~ |
| 19) 2-Chlorophenol | (1) | | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~( 0.000)~~ | ~~45~~ | ~~52230~~ | ~~6.822~~ | ~~227.39~~ | | ~~#~~ | ~~1.00~~ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~( 0.028)~~ | ~~70~~ | ~~69331~~ | ~~17.000~~ | ~~566.68~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



8138

UGP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241648

Data file: /chem/HP06780.i/04mar29.b/dc394.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 14:21 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | Below MDL, | Do not report | | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 109) Fluorene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.051 | ( 0.000) | 169 | 402939 | 67.719 | 2257.29 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 136) Anthracene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 138) Carbazole | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.581 | ( 0.000) | 149 | 44850 | 2.752 | 91.72 | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.666 | ( 0.000) | 149 | 196004 | 24.132 | 804.41 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |

UGP21

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241648

Data file: /chem/HP06780.i/04mar29.b/dc394.d Blank Data file reference:**/chem/HP06780.i/04mar29.b/dc388.d**
Injection date and time: 29-MAR-2004 14:21 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

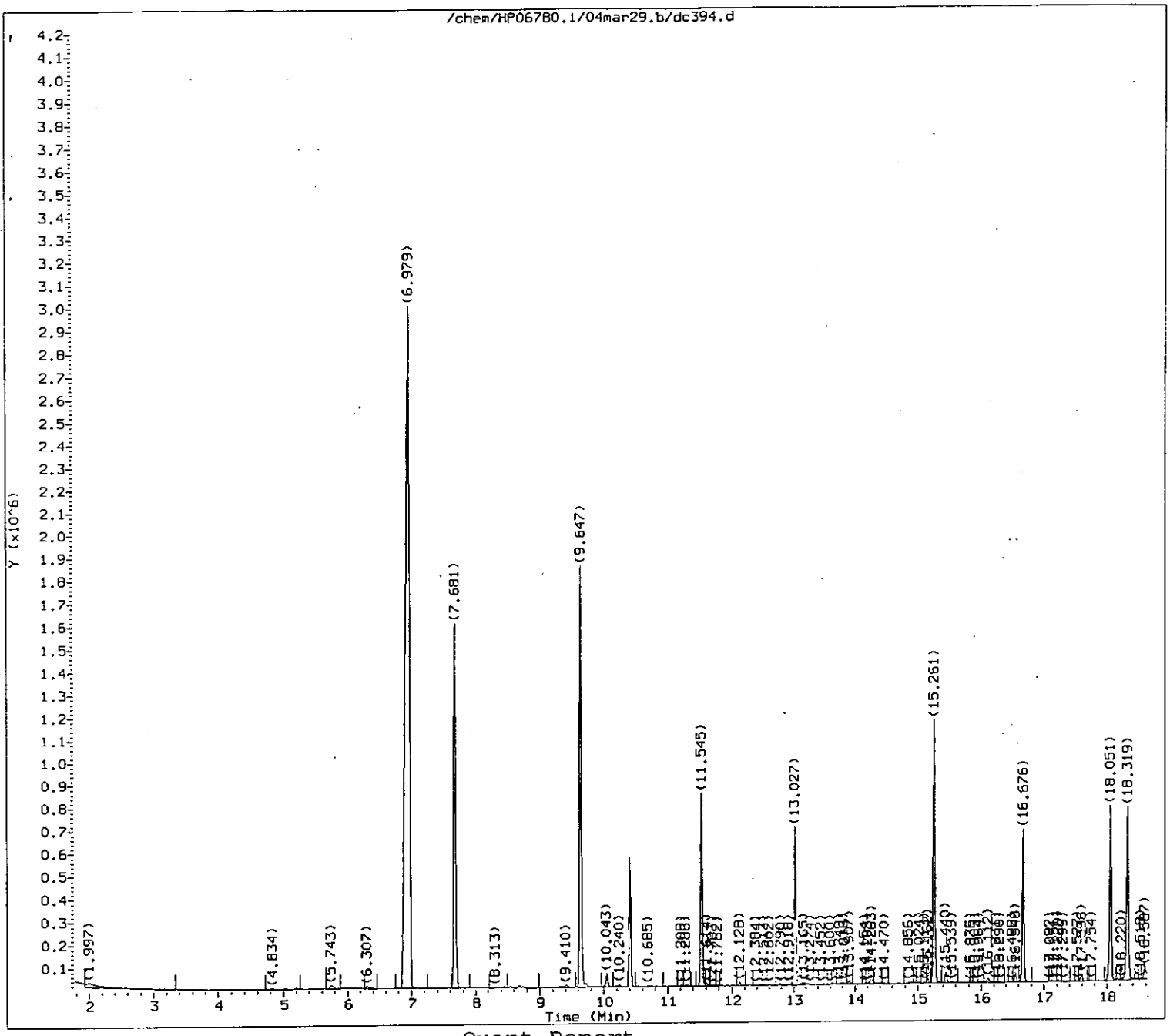
Total number of targets = 64

Comments: √ = fake positive

Analyst: Michelle Jardrick RB 1568 Date: 3-29-04
Auditor: Date: 3/29/04



9132




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

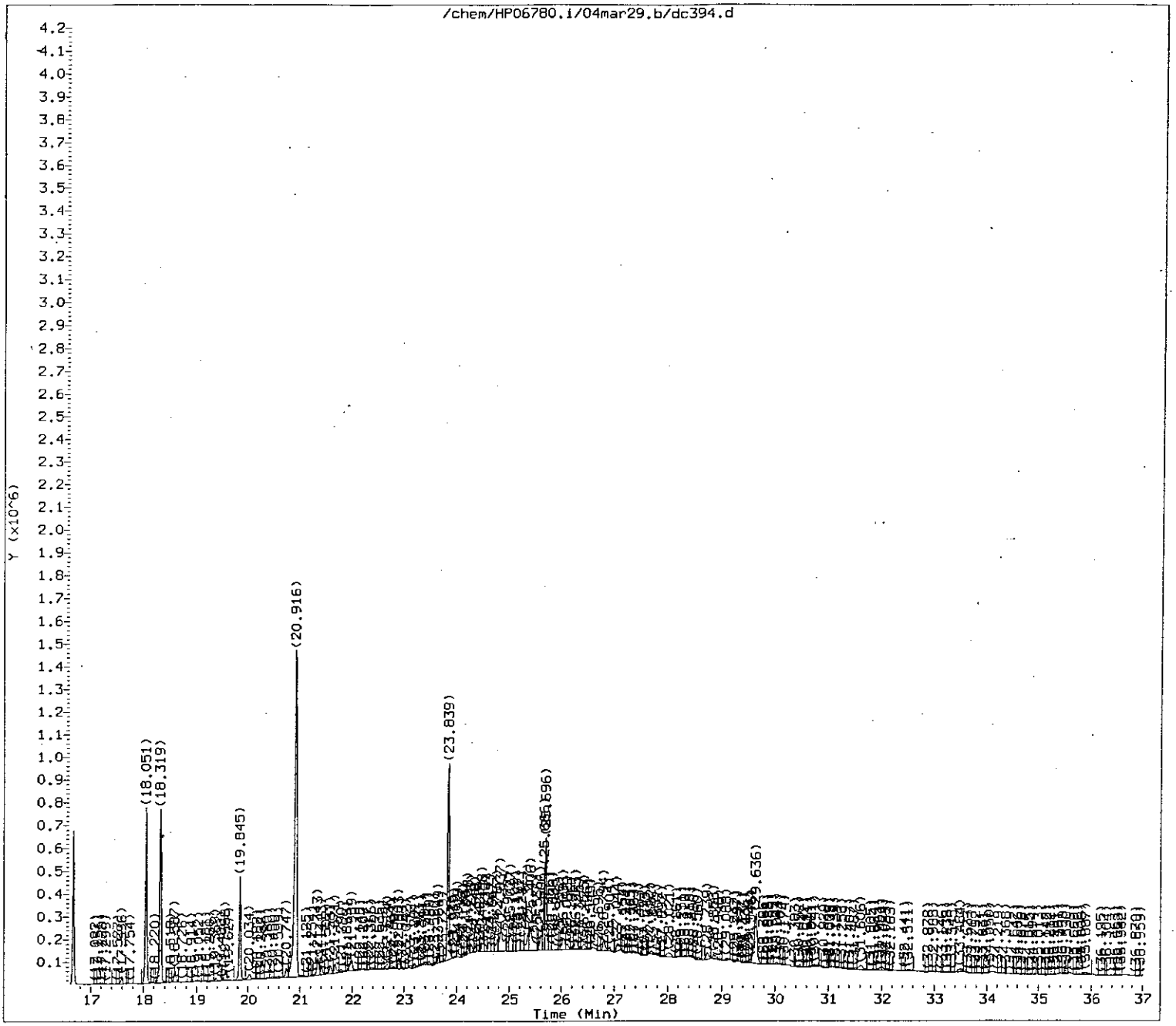
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

Lab Sample ID: 4241648

9133

RB 15168
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc394.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 14:21  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21  Lab Sample ID: 4241648

8134

RB1568
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc394.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 14:21  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21  Lab Sample ID: 4241648

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.667 | 94 | 14571 | 1.577 ✓ |
| ~~18) bis(2-Chloroethyl)ether~~ | ~~(1)~~ | ~~9.716~~ | ~~93~~ | ~~10321~~ | ~~1.446~~ ✓ |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.408 | 152 | 167412 | 40.000 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~45~~ | ~~52230~~ | ~~6.822~~ ✓ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~70~~ | ~~69981~~ | ~~17.000~~ ✓ |
| 52) Naphthalene-d8 | (2) | 13.027 | 136 | 606124 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.676 | 164 | 271111 | 40.000 |
| 115) N-Nitrosodiphenylamine | (4) | 18.051 | 169 | 402939 | 67.719 |
| 133) Phenanthrene-d10 | (4) | 19.845 | 188 | 335601 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 21.581 | 149 | 44850 | 2.752 |
| 165) Chrysene-d12 | (5) | 25.696 | 240 | 210425 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.666 | 149 | 196004 | 24.132 |
| 173) Perylene-d12 | (6) | 29.646 | 264 | 192724 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.681 | 112 | 1333978 | 169.312 |
| 15) Phenol-d6 | (1) | 9.647 | 99 | 1535148 | 170.851 |
| 38) Nitrobenzene-d5 | (2) | 11.545 | 82 | 587987 | 87.235 |
| 77) 2-Fluorobiphenyl | (3) | 15.261 | 172 | 718405 | 84.240 |
| 117) 2,4,6-Tribromophenol | (3) | 18.319 | 330 | 166129 | 158.904 |
| 154) Terphenyl-d14 | (5) | 23.839 | 244 | 395013 | 86.997 |

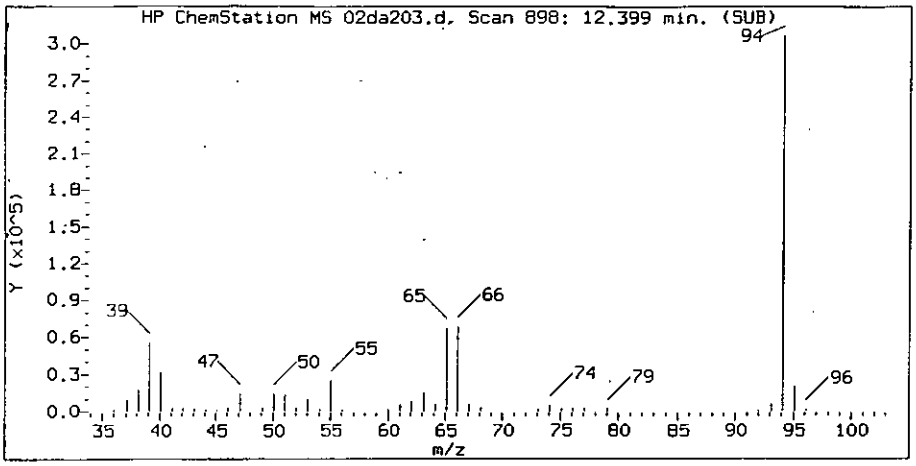
M = Compound was manually integrated.  A = User selected an alternate hit

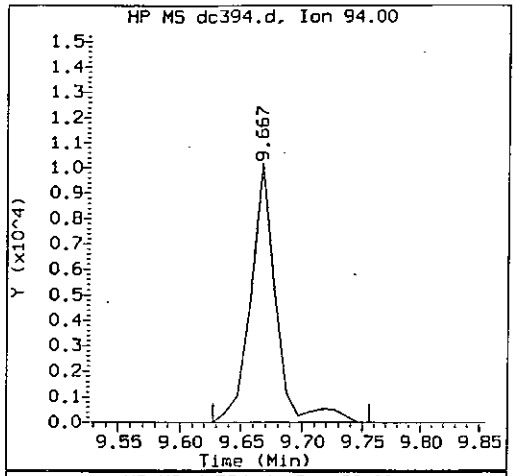
✓ = False Positive

RB 1524

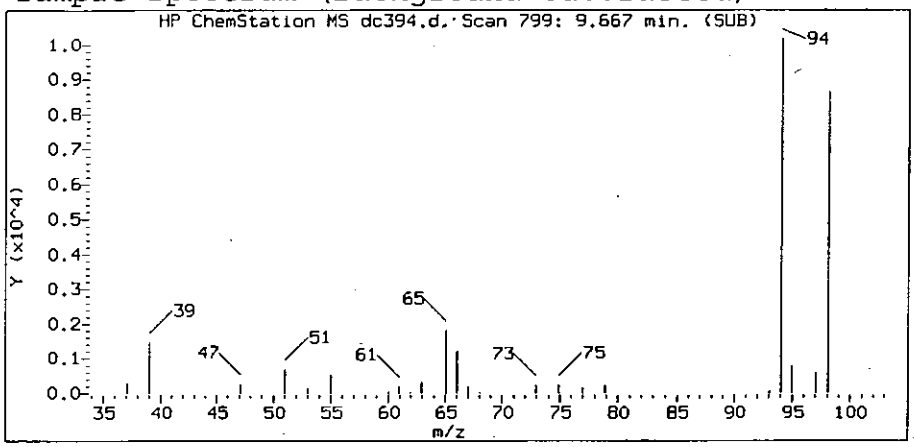
3-29-04

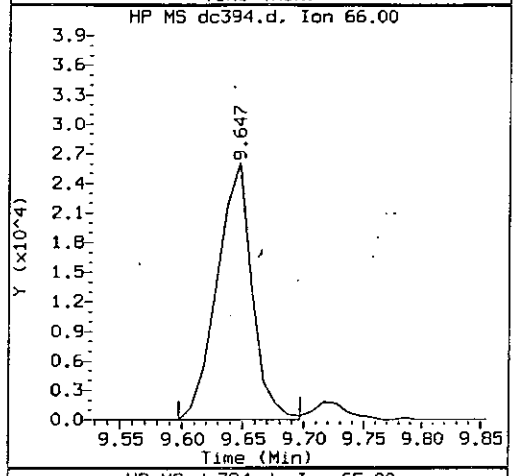
Reference Standard Spectrum for Phenol



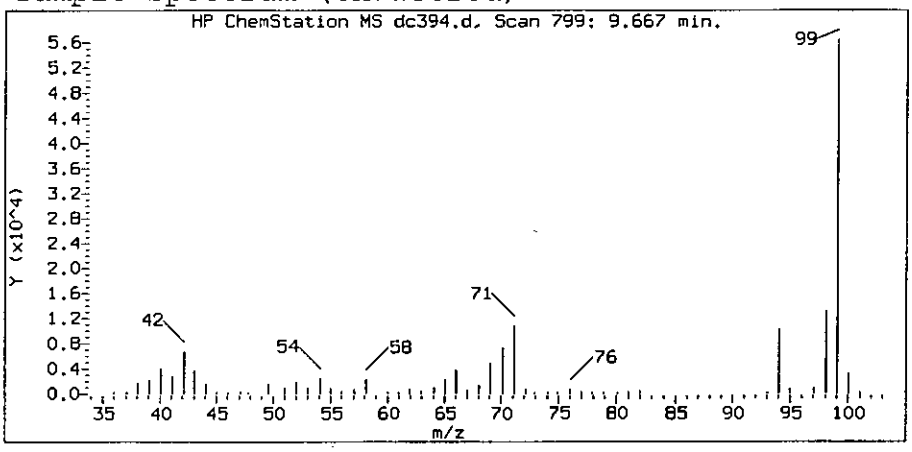



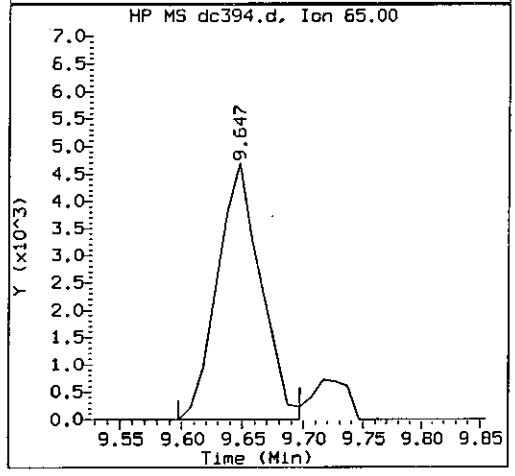

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

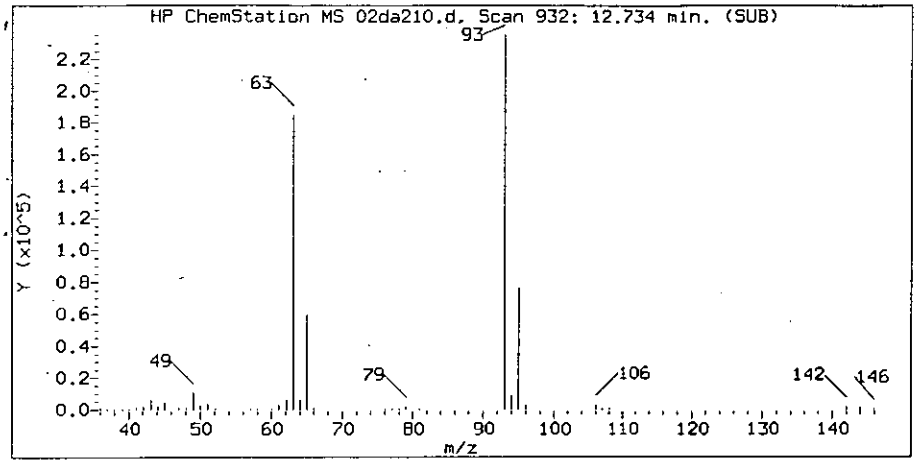
Lab Sample ID: 4241648

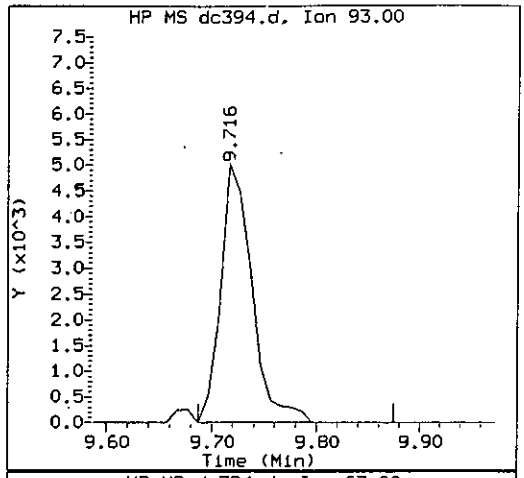
| | |
|---|---|
| Compound Number | : 16 |
| Compound Name | : Phenol |
| Scan Number | : 799 |
| Retention Time (minutes) | : 9.667 |
| Quant Ion | : 94.0 |
| Area (flag) | : 14571 |
| Concentration (ng/ul) | : 1.5766 |

RB1528
9133 29-04

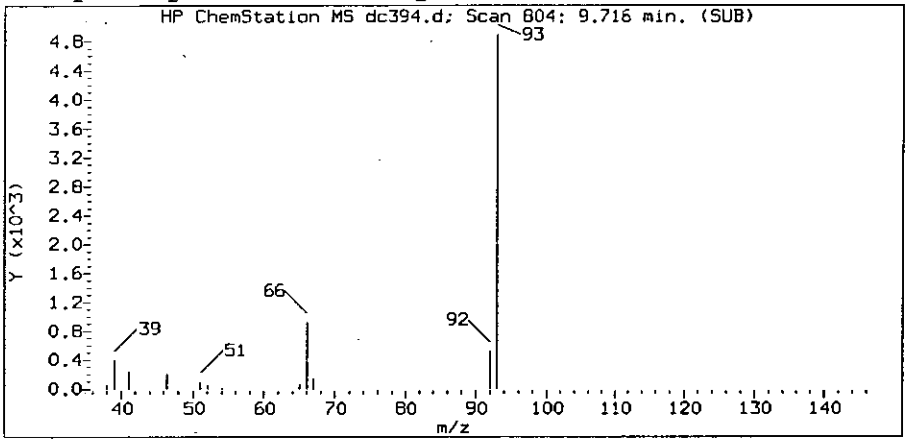
Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc394.d, generated on 03/29/2004 at 15:30

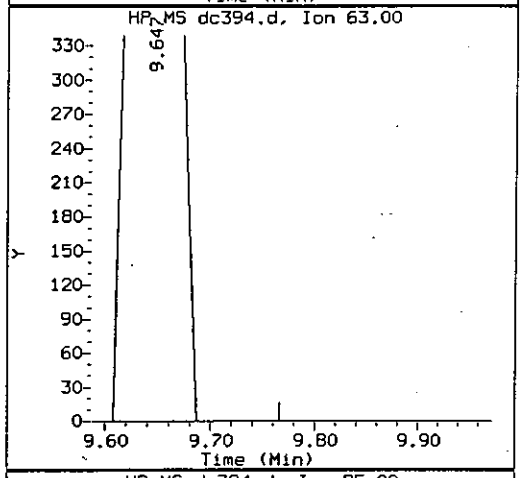
Reference Standard Spectrum for bis(2-Chloroethyl)ether



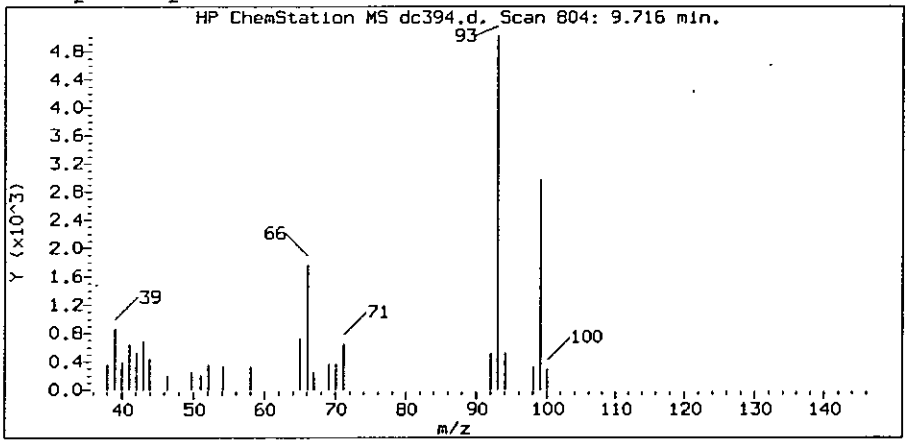



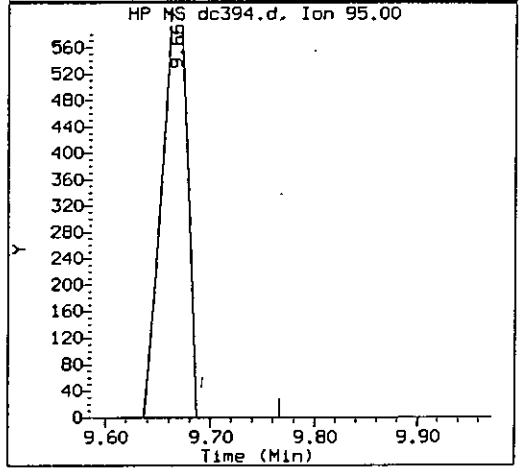

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

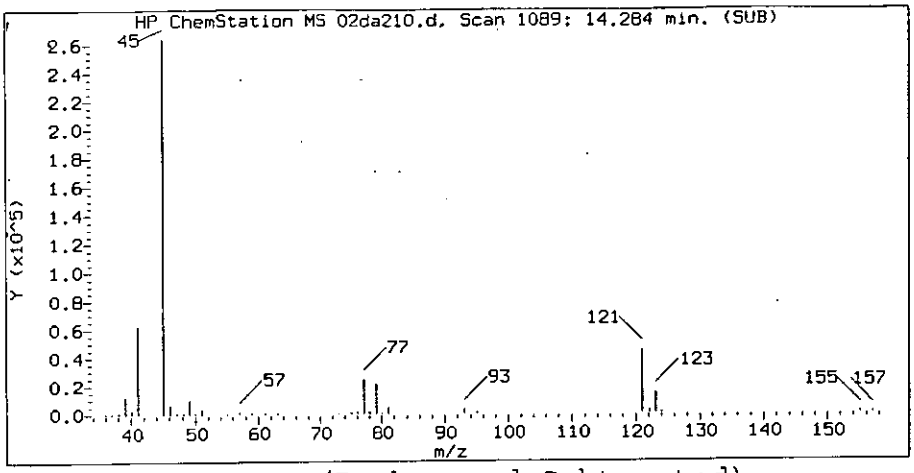
Lab Sample ID: 4241648

| | |
|---|---|
| Compound Number | : 18 |
| Compound Name | : bis(2-Chloroethyl)ether |
| Scan Number | : 804 |
| Retention Time (minutes) | : 9.716 |
| Quant Ion | : 93.0 |
| Area (flag) | : 10321 |
| Concentration (ng/ul) | : 1.4460 |

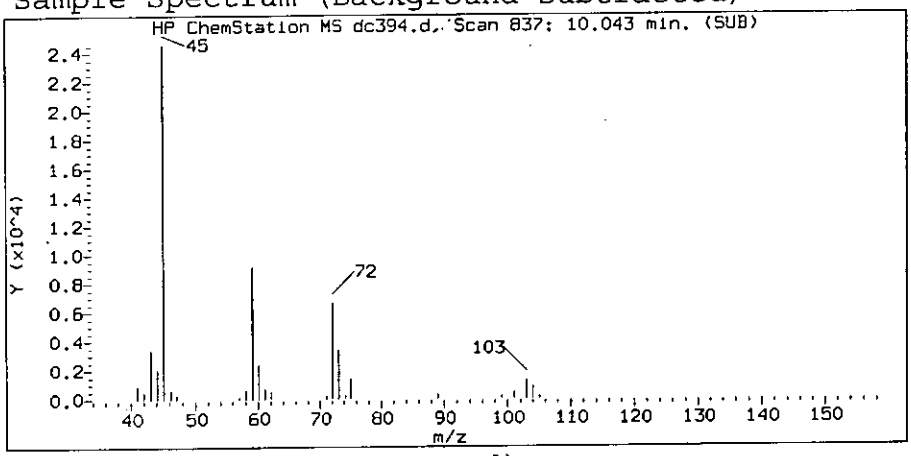
False Positive

RB1568
3137
3-29-04

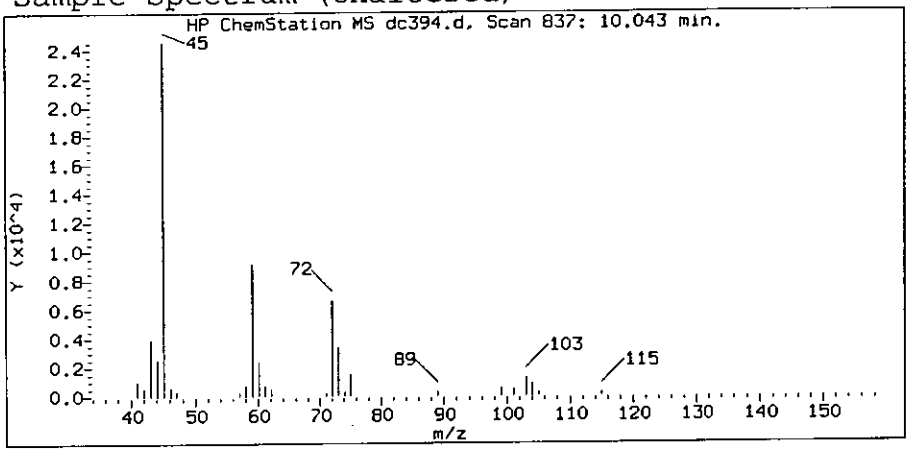
Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

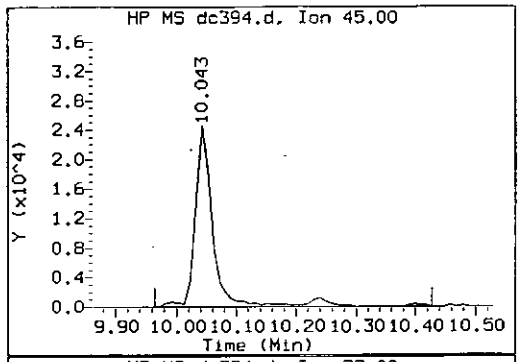


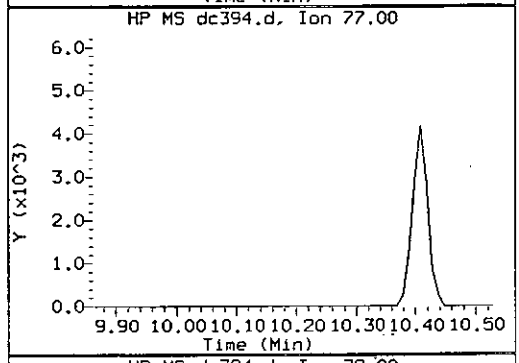

Sample Spectrum (Background Subtracted)

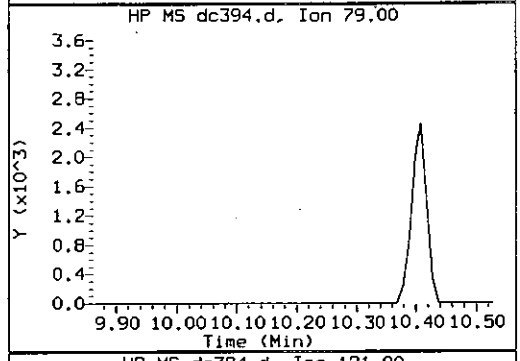


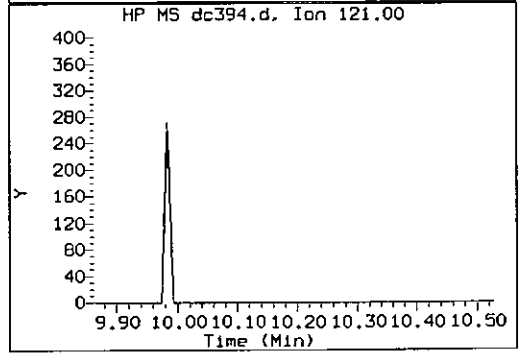

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

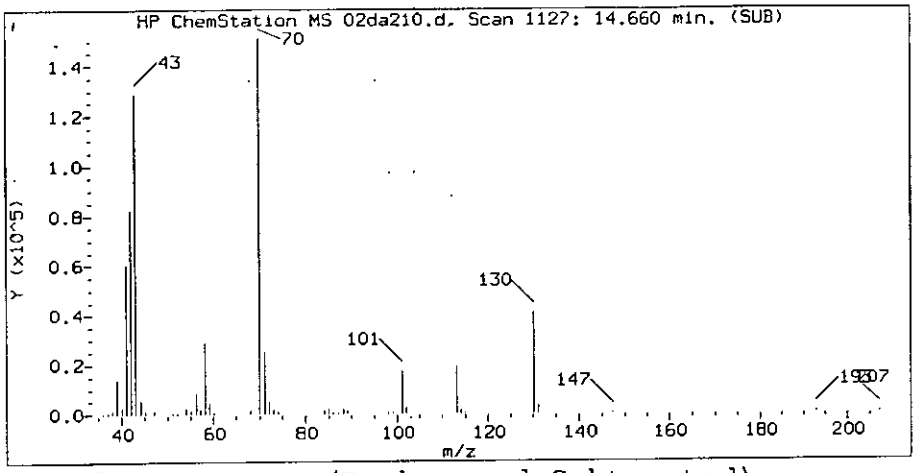
Lab Sample ID: 4241648

| | |
|---|---|
| Compound Number | : 27 |
| Compound Name | : 2,2'-oxybis(1-Chloropropane) |
| Scan Number | : 837 |
| Retention Time (minutes) | : 10.043 |
| Quant Ion | : 45.0 |
| Area (flag) | : 52230 |
| Concentration (ng/ul) | : 6.8217 |

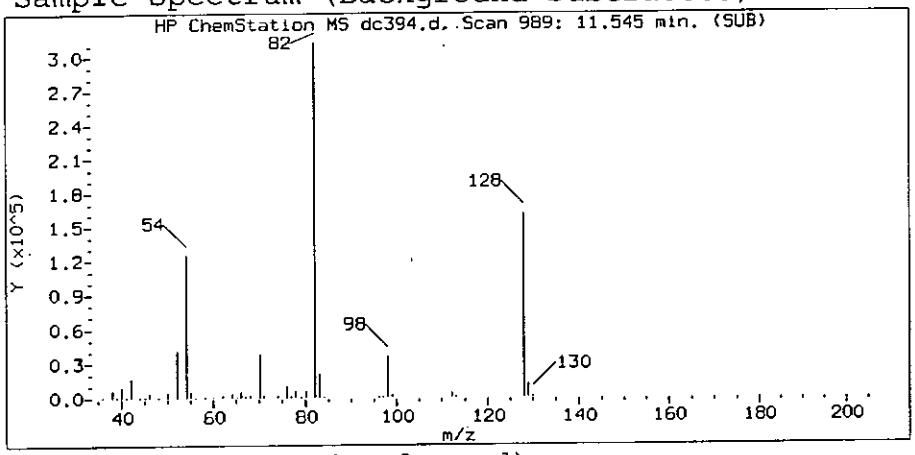
False Positive

RB1528
8138
3-29-04

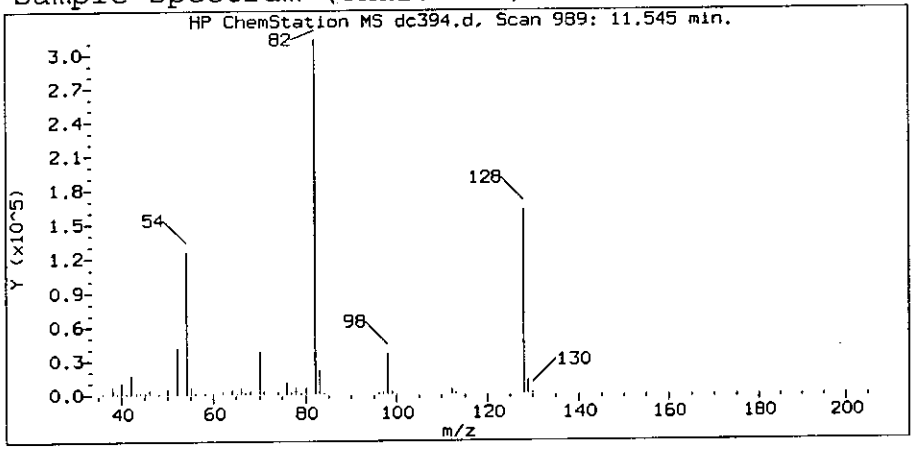
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

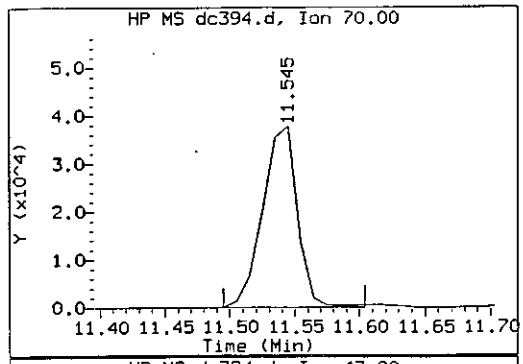


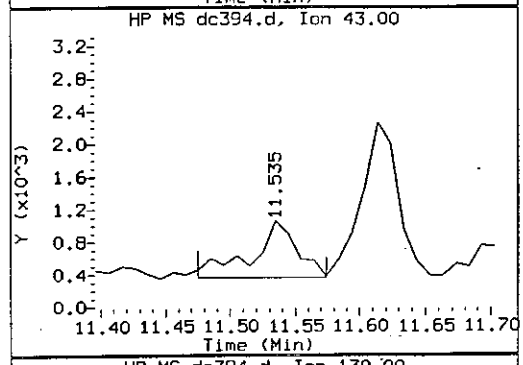

Sample Spectrum (Background Subtracted)

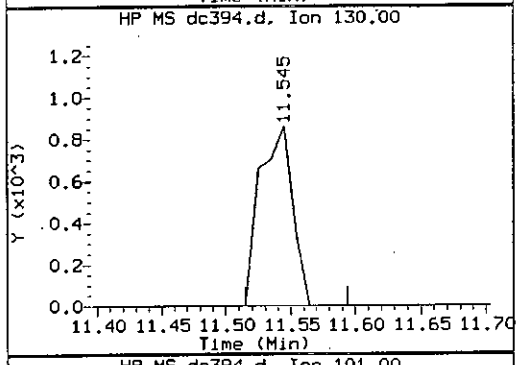


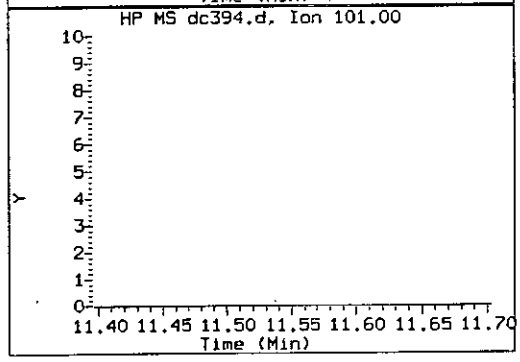

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

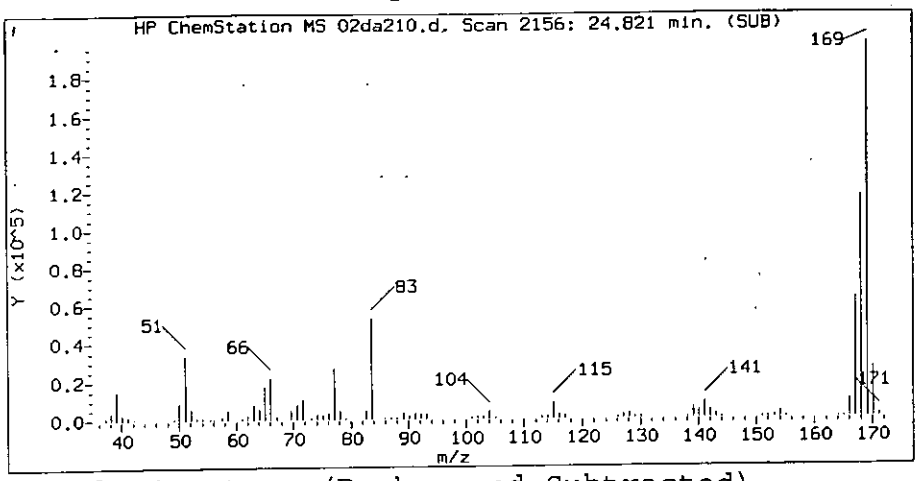
Lab Sample ID: 4241648

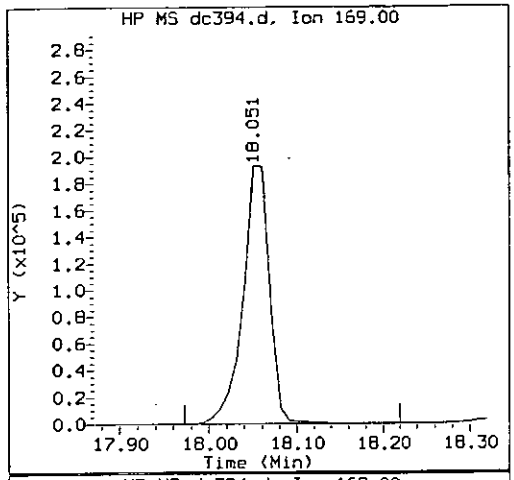
| | |
|---|---|
| Compound Number | : 31 |
| Compound Name | : N-Nitroso-di-n-propylamine |
| Scan Number | : 989 |
| Retention Time (minutes) | : 11.545 |
| Quant Ion | : 70.0 |
| Area (flag) | : 69981 |
| Concentration (ng/ul) | : 17.0004 |

False Positive

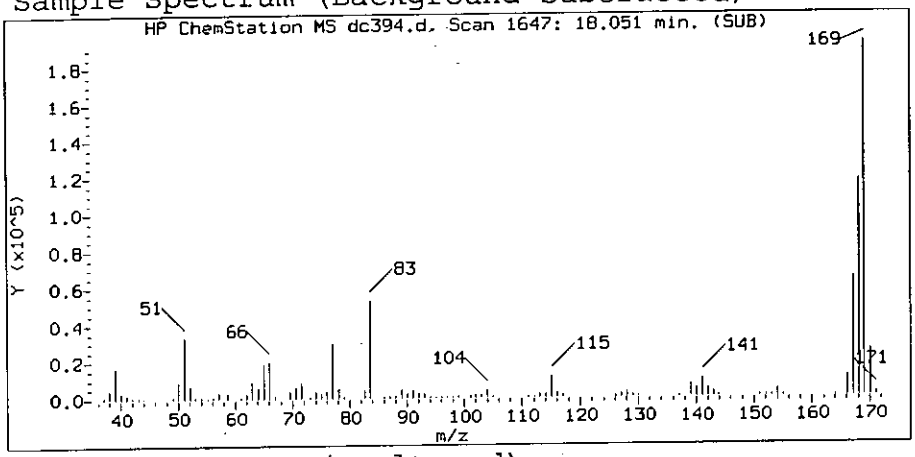
RB1528
#139
3-29-04

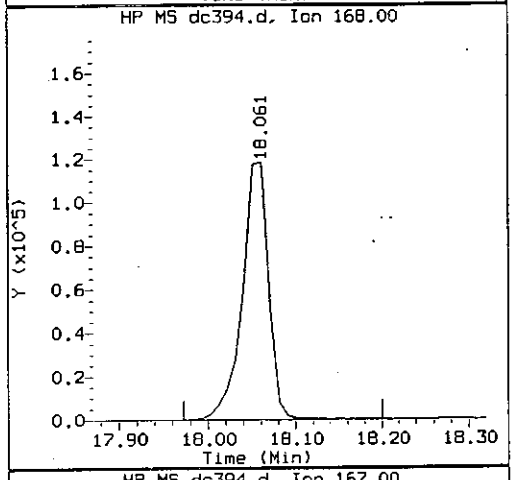
Reference Standard Spectrum for N-Nitrosodiphenylamine



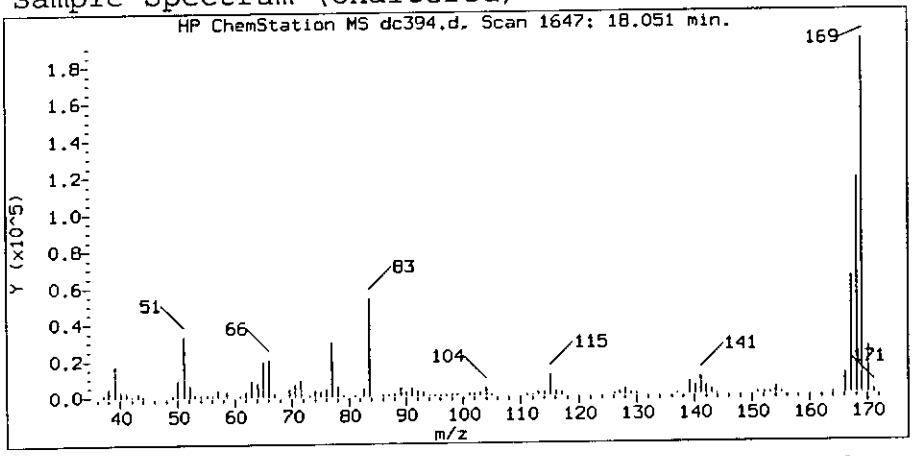



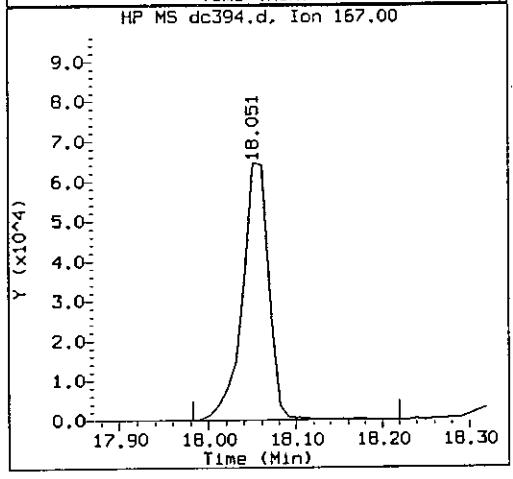

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

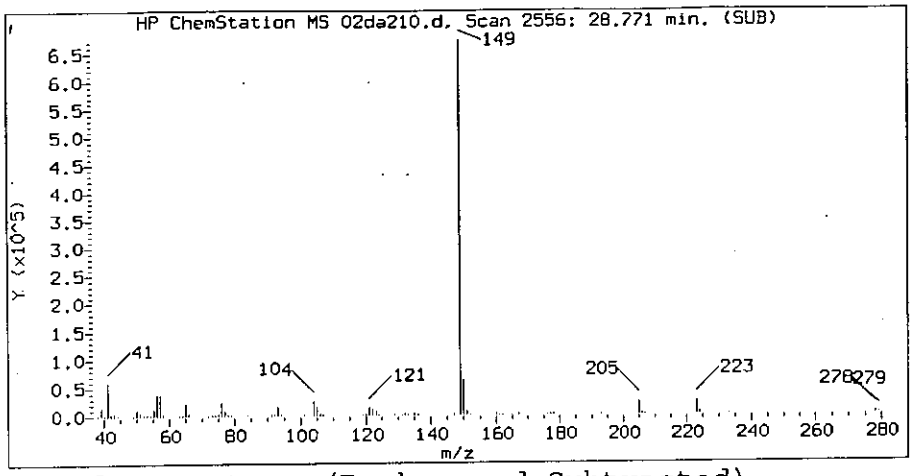
Sample Name: UGP21

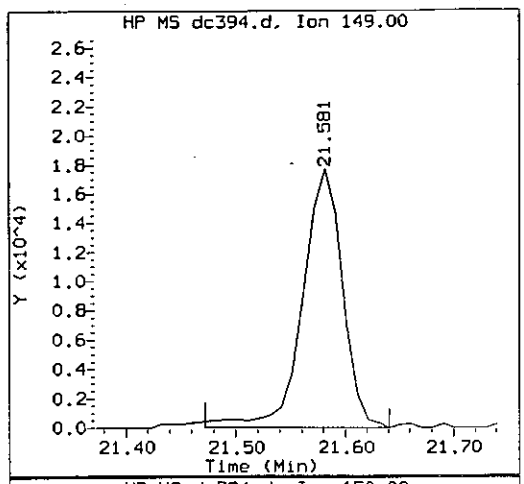
Lab Sample ID: 4241648

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1647 |
| Retention Time (minutes) | : 18.051 |
| Quant Ion | : 169.0 |
| Area (flag) | : 402939 |
| Concentration (ng/ul) | : 67.7187 |

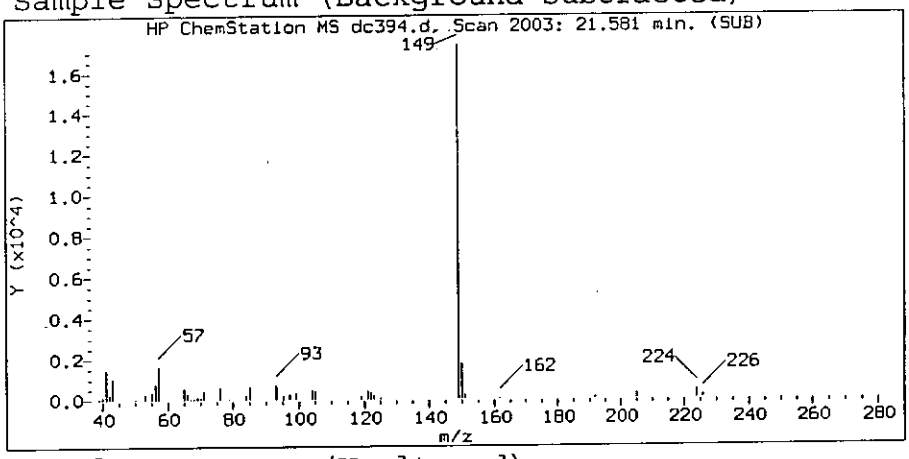
rpb01568
3-29-04

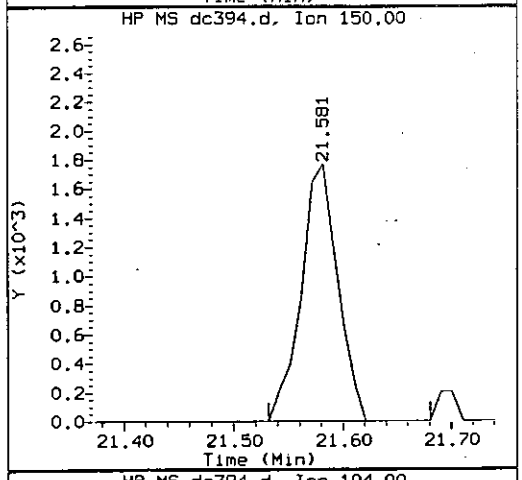
Reference Standard Spectrum for Di-n-butylphthalate



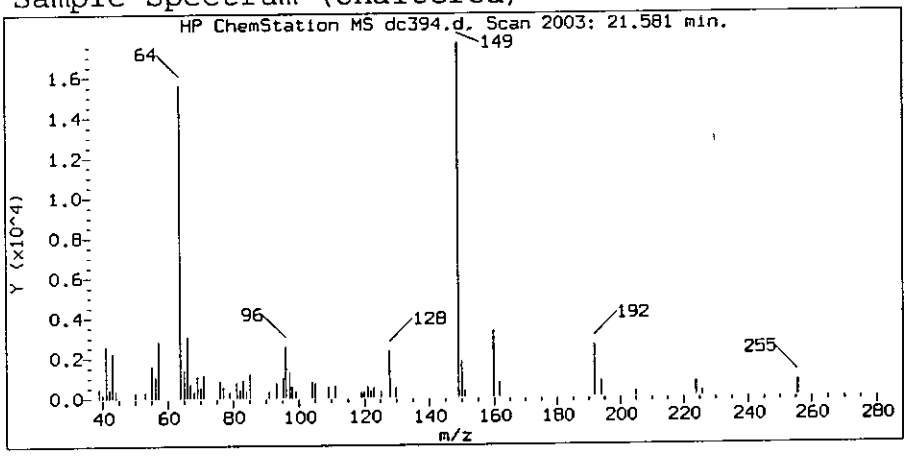



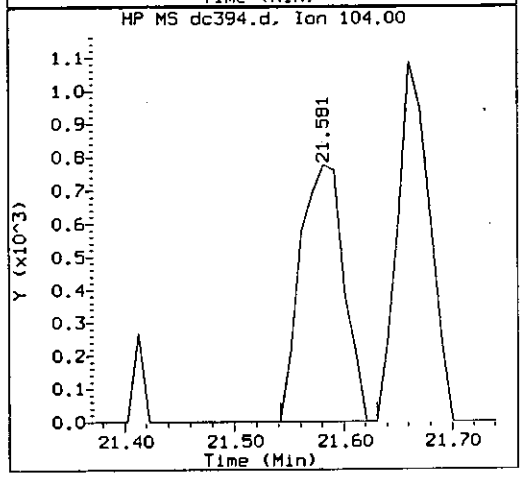

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

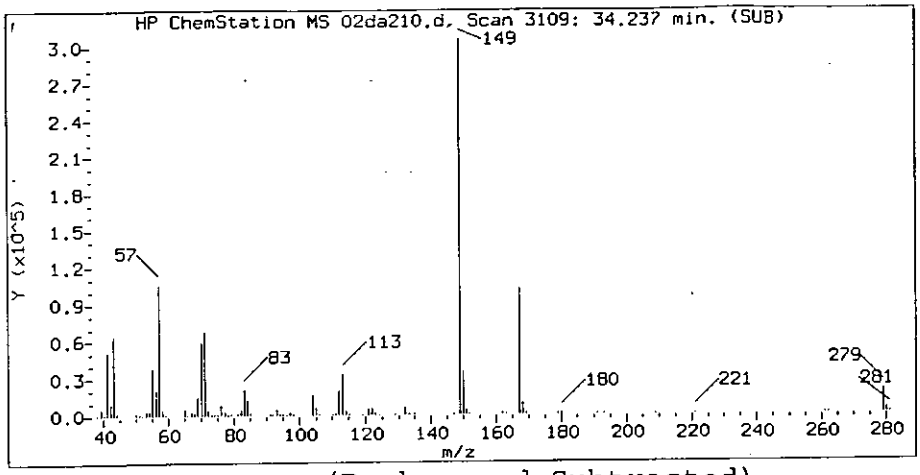
Sample Name: UGP21

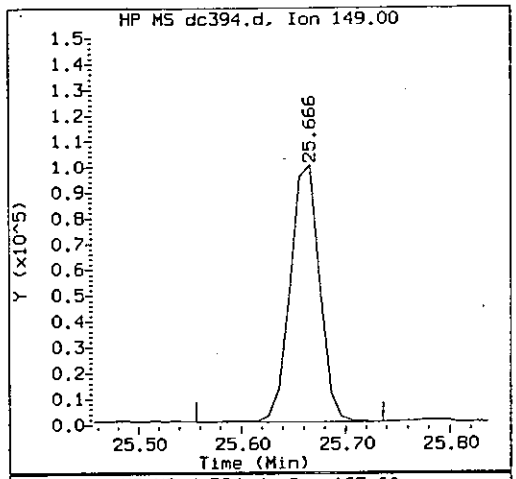
Lab Sample ID: 4241648

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2003 |
| Retention Time (minutes) | : 21.581 |
| Quant Ion | : 149.0 |
| Area (flag) | : 44850 |
| Concentration (ng/ul) | : 2.7517 |

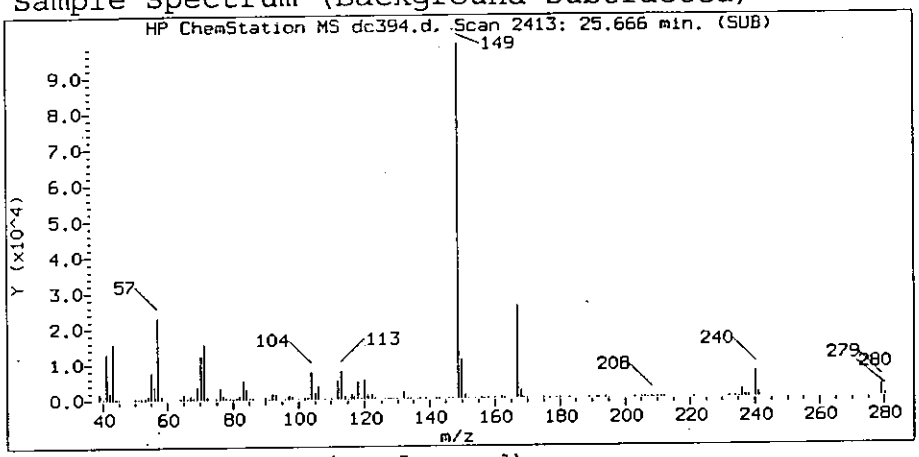
RB1528
3-29-04

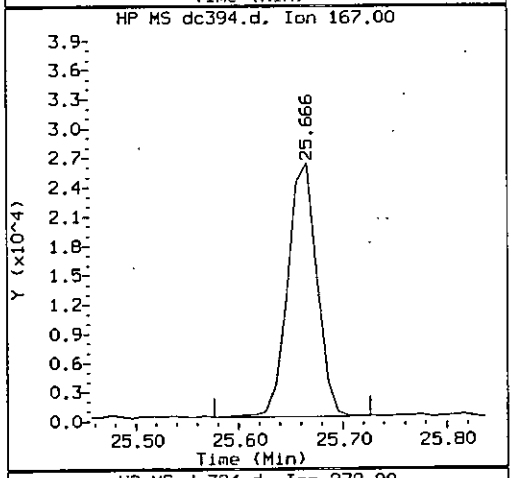
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



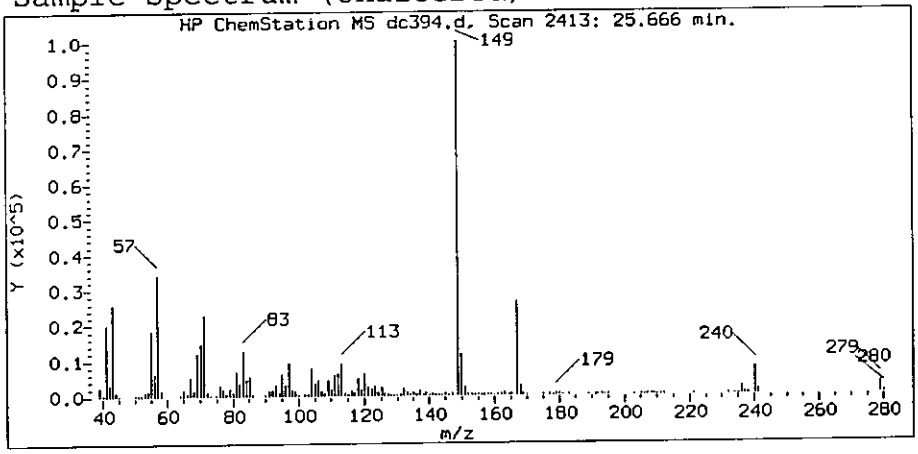



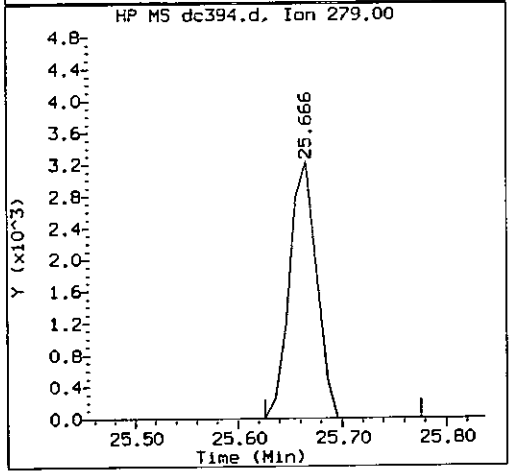

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc394.d
Injection date and time: 29-MAR-2004 14:21

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:30 rpb01568

Sample Name: UGP21

Lab Sample ID: 4241648

| | |
|---|---|
| Compound Number | : 167 |
| Compound Name | : bis(2-Ethylhexyl)phthalate |
| Scan Number | : 2413 |
| Retention Time (minutes) | : 25.666 |
| Quant Ion | : 149.0 |
| Area (flag) | : 196004 |
| Concentration (ng/ul) | : 24.1323 |

#142 B1568
3-29-04

7GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241649

Data file: /chem/HP06780.i/04mar29.b/dc395.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:06 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.408 | (-0.005) | 874 | 152.0 | 160365 | ( -30) | 40.00 | |
| 52) Naphthalene-d8 | 13.027 | ( 0.004) | 1139 | 136.0 | 583586 | ( -28) | 40.00 | |
| 96) Acenaphthene-d10 | 16.675 | ( 0.008) | 1508 | 164.0 | 244803 | ( -34) | 40.00 | |
| 133) Phenanthrene-d10 | 19.854 | ( 0.004) | 1829 | 188.0 | 306725 | ( -33) | 40.00 | |
| 165) Chrysene-d12 | 25.697 | ( 0.005) | 2416 | 240.0 | 187696 | ( -34) | 40.00 | |
| 173) Perylene-d12 | 29.647 | (-0.009) | 2812 | 264.0 | 174413 | ( -40) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.681 | ( 0.003) | 112 | 1309775 | 173.546 | 87% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.647 | ( 0.001) | 99 | 1477471 | 171.658 | 86% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.545 | ( 0.000) | 82 | 574709 | 88.557 | 89% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.260 | ( 0.000) | 172 | 706965 | 91.808 | 92% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.318 | ( 0.000) | 330 | 165349 | 175.155 | 88% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.840 | (-0.001) | 244 | 385614 | 95.212 | 95% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | ND | ND | | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | ND | ND | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.042~~ | ~~( 0.008)~~ | ~~45~~ | ~~40506~~ | ~~5.533~~ | ~~104.10~~ | | ~~#~~ | ~~1.00~~ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~( 0.038)~~ | ~~70~~ | ~~67545~~ | ~~17.130~~ | ~~570.99~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | ND | ND | | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | | 1.00 |
| 53) Naphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | ND | ND | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



8143

7GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241649

Data file: /chem/HP06780.i/04mar29.b/dc395.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:06 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 97) Acenaphthene | (3) | | | | Below MDL, Do not report | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | Below MDL, Do not report | | | | 5.00 |
| ~~102) Dibenzofuran~~ | ~~(3)~~ | ~~18.060( 0.057)~~ | ~~168~~ | ~~264554~~ | ~~26.997~~ | ~~899.89~~ | | | ~~1.00~~ |
| 103) 2,4-Dinitrotoluene | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.060( 0.014)~~ | ~~166~~ | ~~22571~~ | ~~3.074~~ | ~~102.46~~ | | | ~~1.00~~ |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | Below MDL, Do not report | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | ND | ND | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.060( 0.000) | 169 | 436719 | 80.306 | 2676.85 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 136) Anthracene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 138) Carbazole | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.581( 0.000) | 149 | 48306 | 3.243 | 108.09 | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | | Below MDL, Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.657( 0.000) | 149 | 154044 | 21.263 | 708.76 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | Below MDL, Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |

7GP22

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241649

Data file: /chem/HP06780.i/04mar29.b/dc395.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:06 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

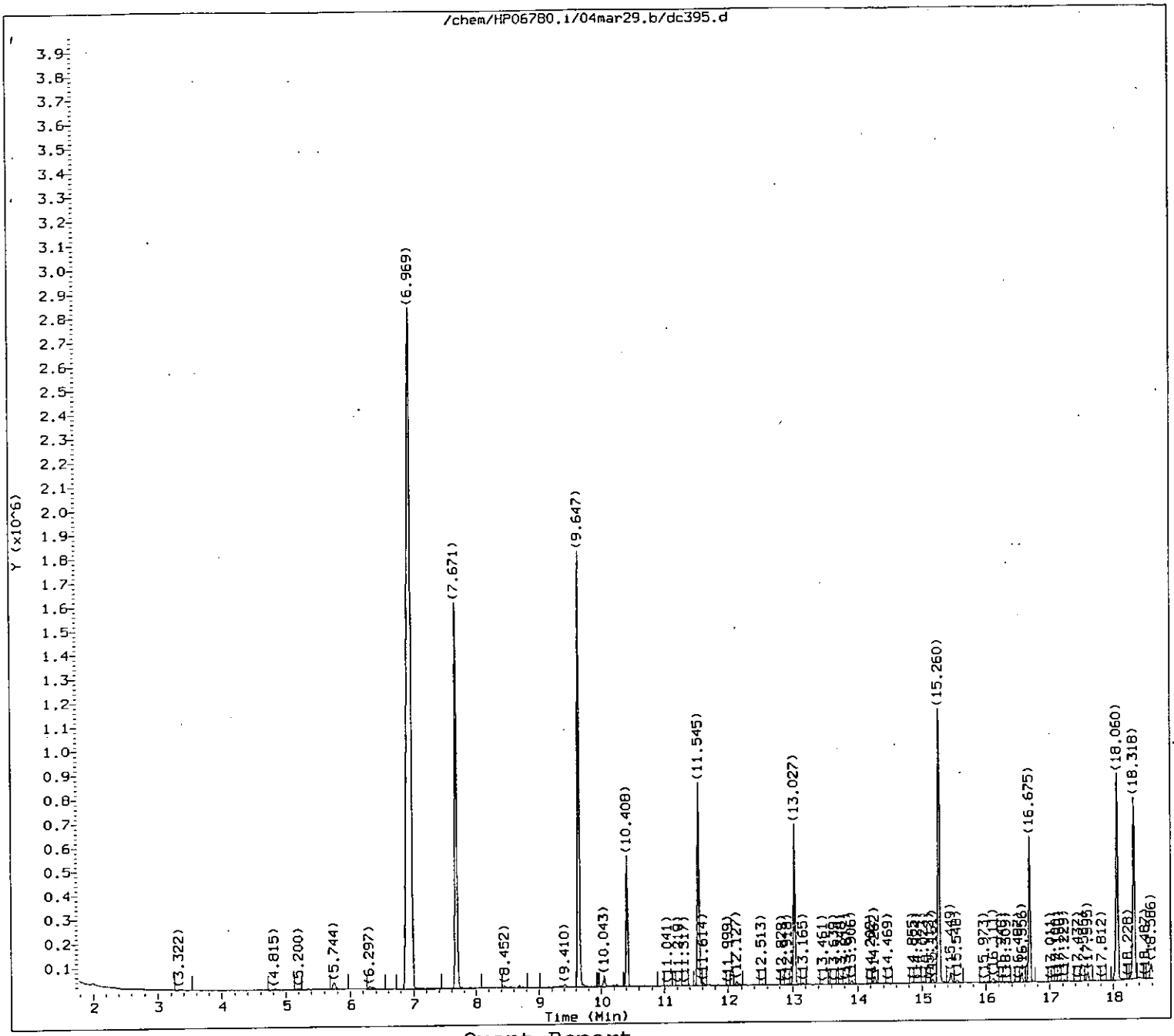
Total number of targets = 64

Comments: ✓ = False Positive

Analyst: Michele Garbacik R.B 15Q4 Date: 3-29-04
Auditor: Date: 3/29/04



0145




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

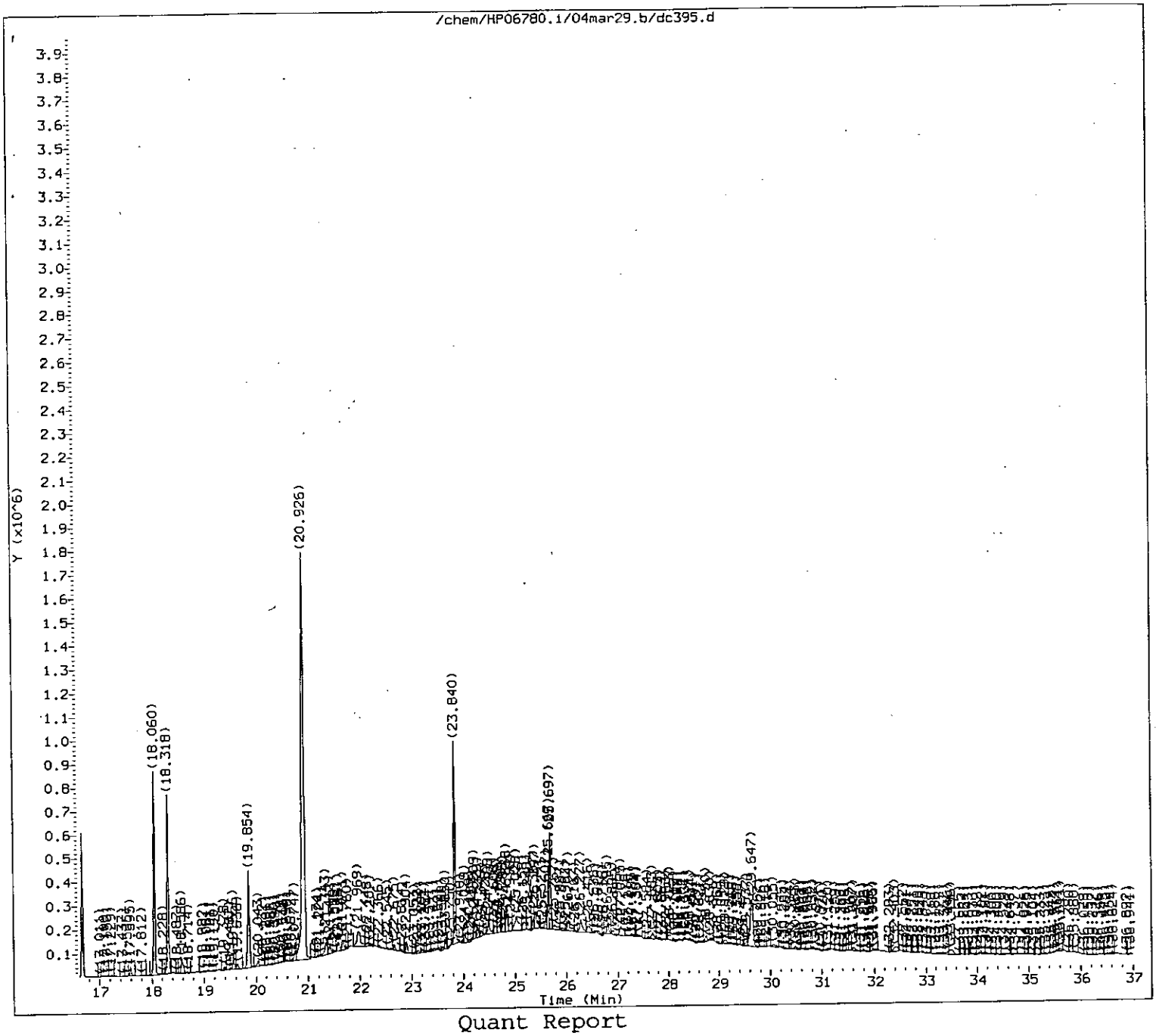
Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

Lab Sample ID: 4241649

5145

RB1568
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

Lab Sample ID: 4241649

9147

RB 3/30
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

Lab Sample ID: 4241649

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.408 | 152 | 160365 | 40.000 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~45~~ | ~~40506~~ | ~~5.523~~ ✓ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~70~~ | ~~67545~~ | ~~17.130~~ ✓ |
| 52) Naphthalene-d8 | (2) | 13.027 | 136 | 583586 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.675 | 164 | 244803 | 40.000 ✓ |
| ~~102) Dibenzofuran~~ | ~~(3)~~ | ~~18.060~~ | ~~168~~ | ~~264554~~ | ~~26.997~~ ✓ |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.060~~ | ~~166~~ | ~~22571~~ | ~~3.074~~ ✓ |
| 115) N-Nitrosodiphenylamine | (4) | 18.060 | 169 | 436719 | 80.306 |
| 133) Phenanthrene-d10 | (4) | 19.854 | 188 | 306725 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 21.581 | 149 | 48306 | 3.243 |
| 165) Chrysene-d12 | (5) | 25.697 | 240 | 187696 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.657 | 149 | 154044 | 21.263 |
| 173) Perylene-d12 | (6) | 29.647 | 264 | 174413 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.681 | 112 | 1309775 | 173.546 |
| 15) Phenol-d6 | (1) | 9.647 | 99 | 1477471 | 171.658 |
| 38) Nitrobenzene-d5 | (2) | 11.545 | 82 | 574709 | 88.557 |
| 77) 2-Fluorobiphenyl | (3) | 15.260 | 172 | 706965 | 91.808 |
| 117) 2,4,6-Tribromophenol | (3) | 18.318 | 330 | 165349 | 175.155 |
| 154) Terphenyl-d14 | (5) | 23.840 | 244 | 385614 | 95.212 |

M = Compound was manually integrated.

A = User selected an alternate hit

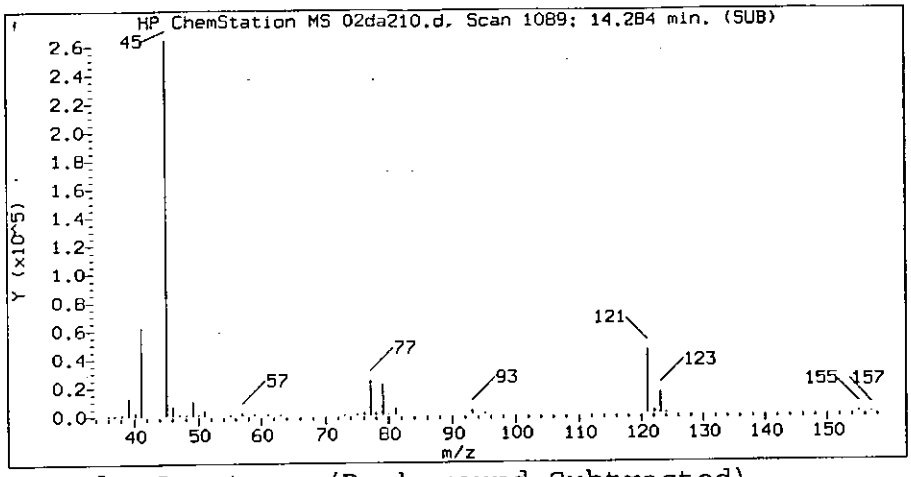
✓ = False Positive

RB1568

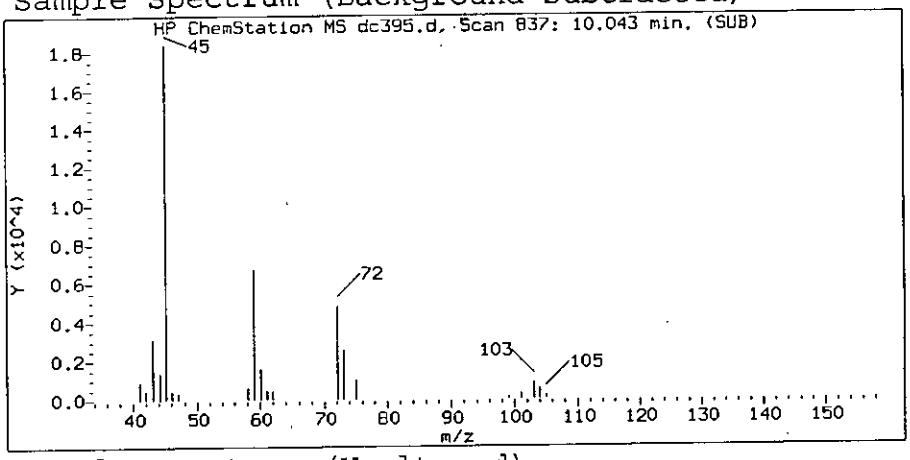
3-29-04

8148

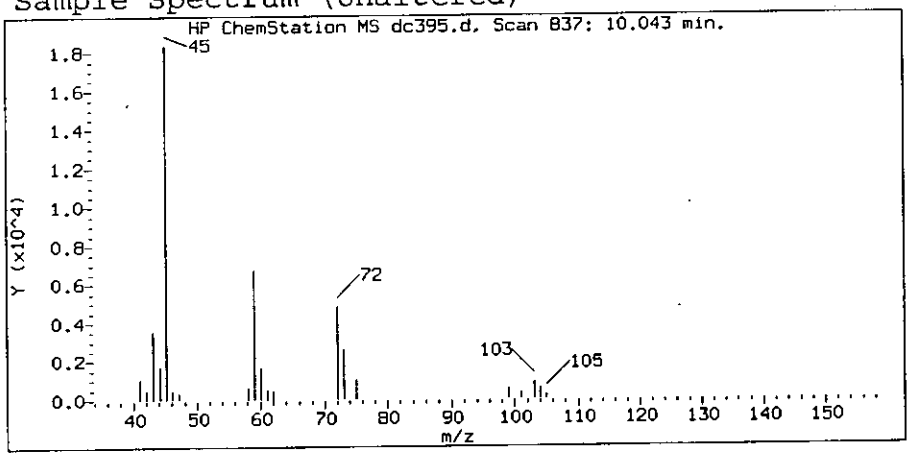
Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

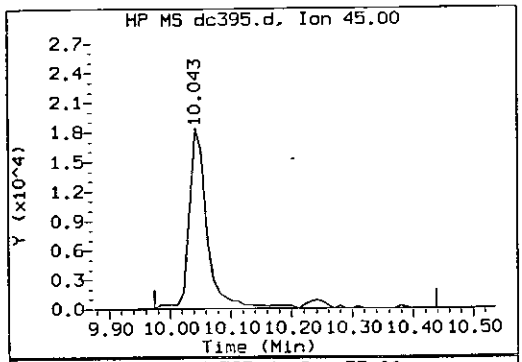


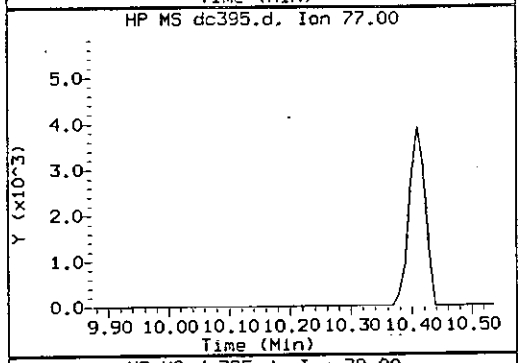

Sample Spectrum (Background Subtracted)

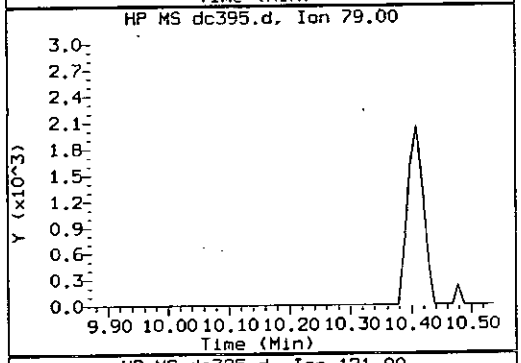


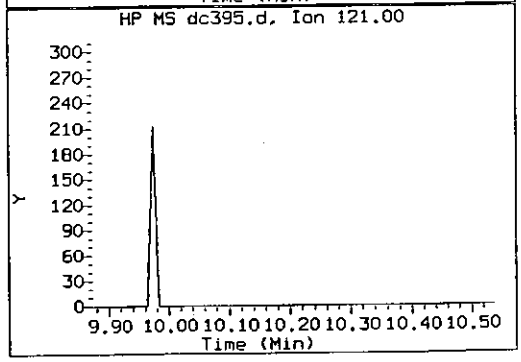

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

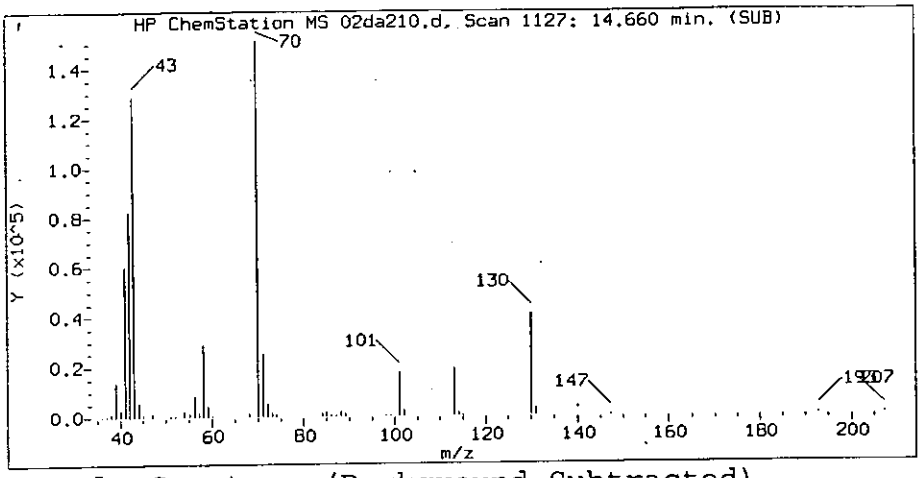
Lab Sample ID: 4241649

False Positive

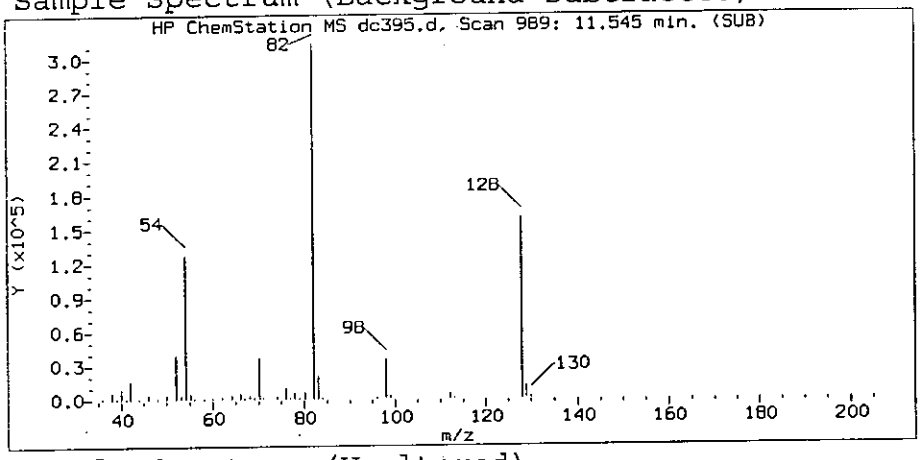
| | |
|---|---|
| Compound Number | : 27 |
| Compound Name | : 2,2'-oxybis(1-Chloropropane) |
| Scan Number | : 837 |
| Retention Time (minutes) | : 10.043 |
| Quant Ion | : 45.0 |
| Area (flag) | : 40506 |
| Concentration (ng/ul) | : 5.5229 |

rpb01568
3-29-04

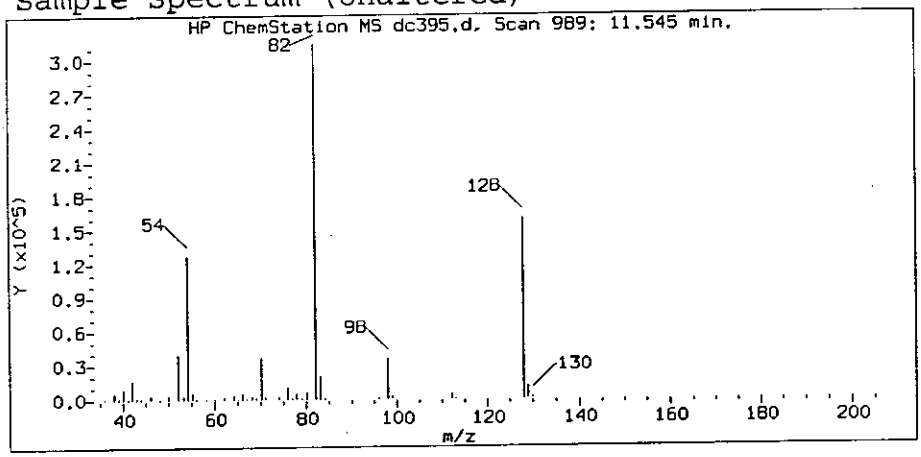
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

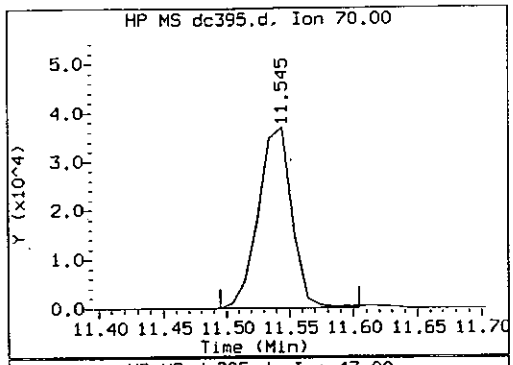


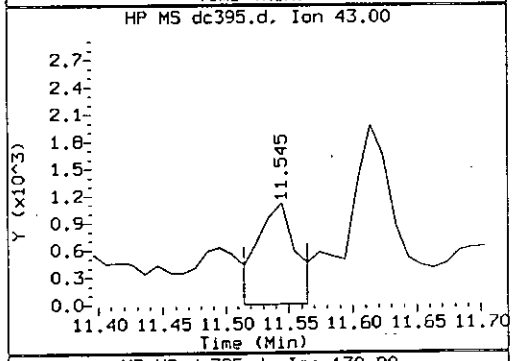

Sample Spectrum (Background Subtracted)

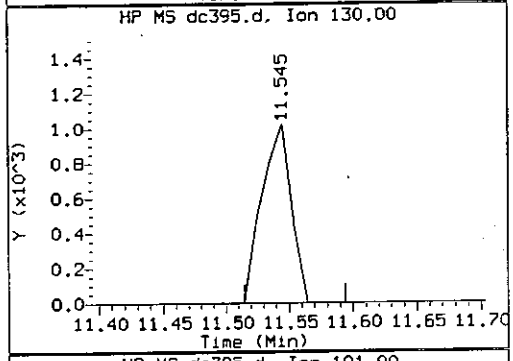


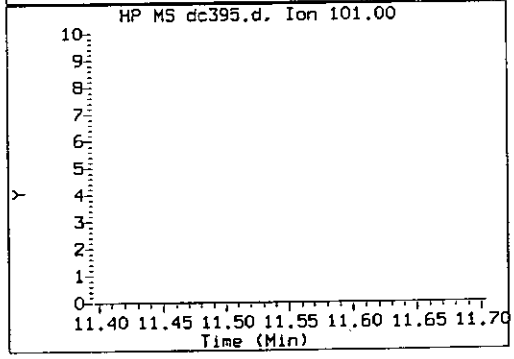

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

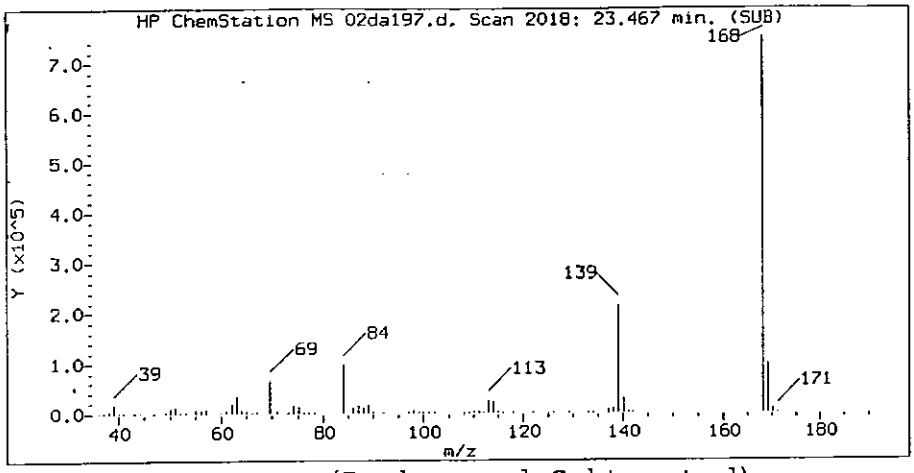
Sample Name: 7GP22

Lab Sample ID: 4241649

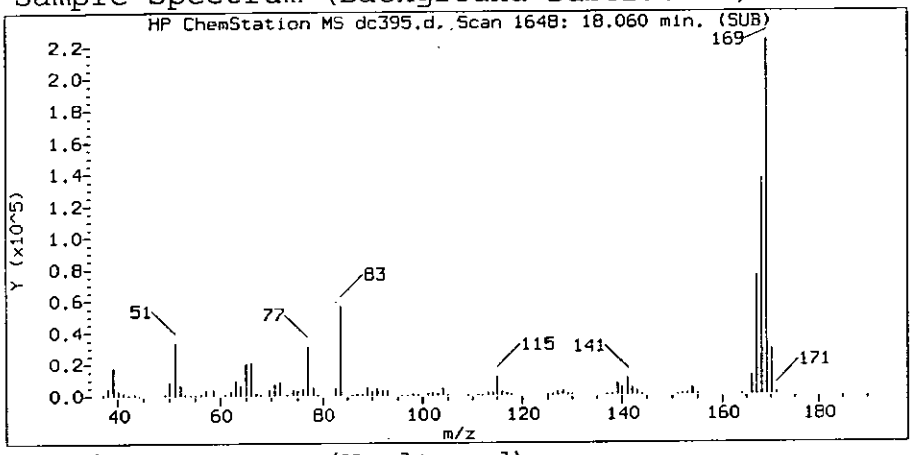
| | |
|---|---|
| Compound Number | : 31 |
| Compound Name | : N-Nitroso-di-n-propylamine |
| Scan Number | : 989 |
| Retention Time (minutes) | : 11.545 |
| Quant Ion | : 70.0 |
| Area (flag) | : 67545 |
| Concentration (ng/ul) | : 17.1297 |

False Positive
RB 1578
3/29-04

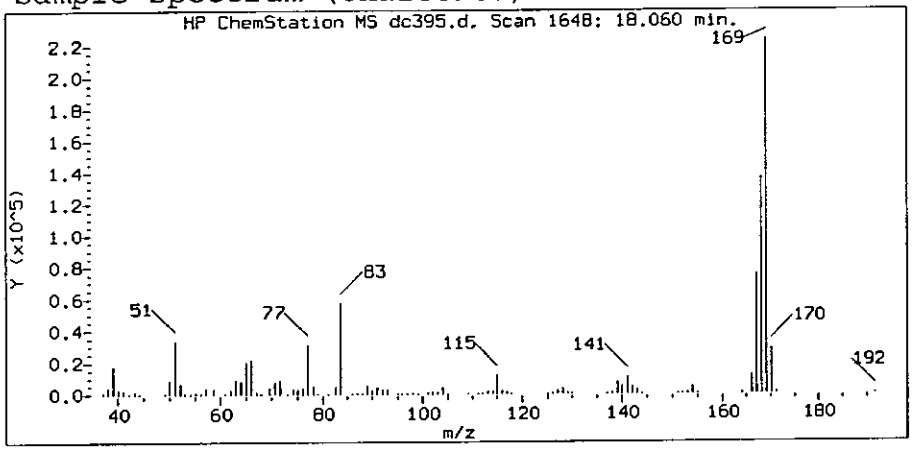
Reference Standard Spectrum for Dibenzofuran

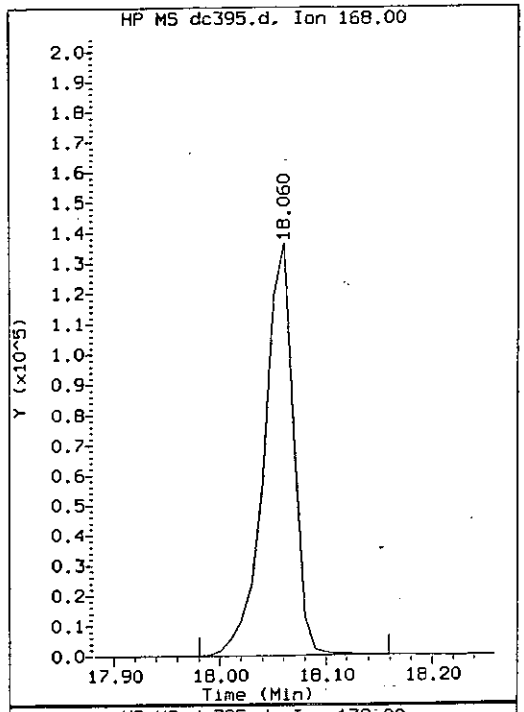


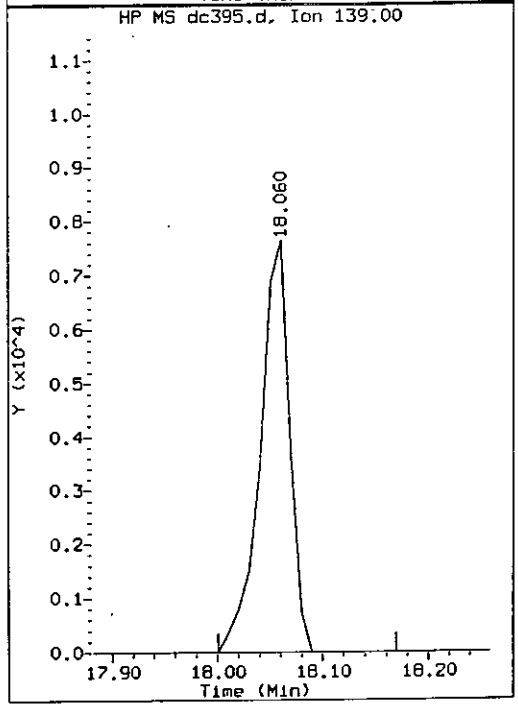

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

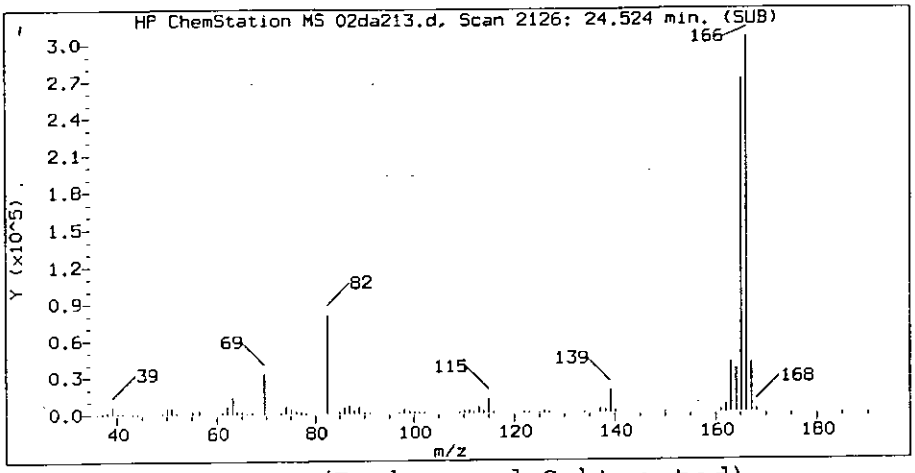
Sample Name: 7GP22

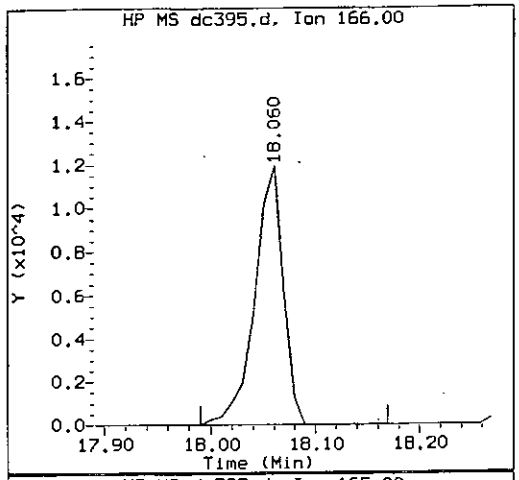
Lab Sample ID: 4241649

| | | |
|---|---|---|
| Compound Number | : | 102 |
| Compound Name | : | Dibenzofuran |
| Scan Number | : | 1648 |
| Retention Time (minutes) | : | 18.060 |
| Quant Ion | : | 168.0 |
| Area (flag) | : | 264554 |
| Concentration (ng/ul) | : | 26.9968 |

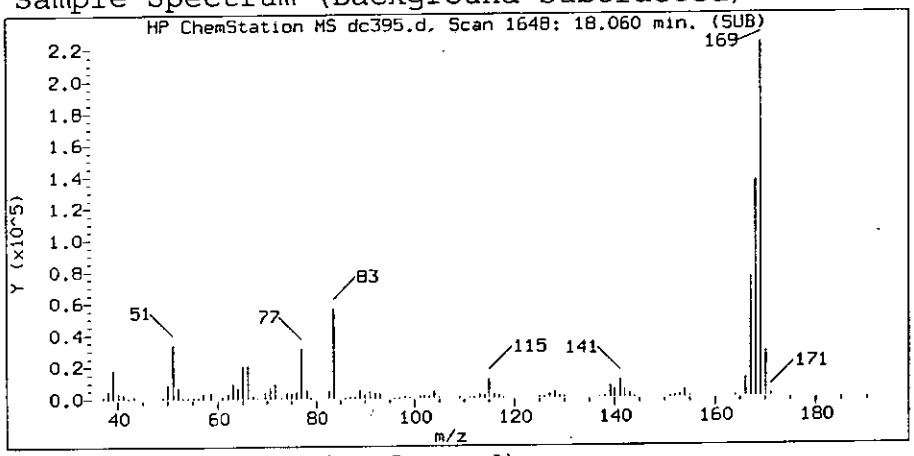
False Positive
RB1568
3-29-04

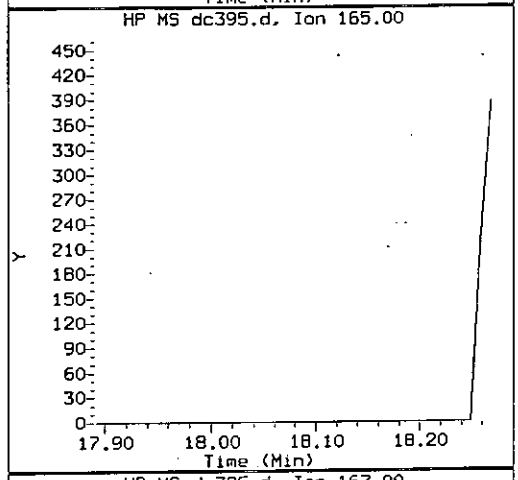
Reference Standard Spectrum for Fluorene



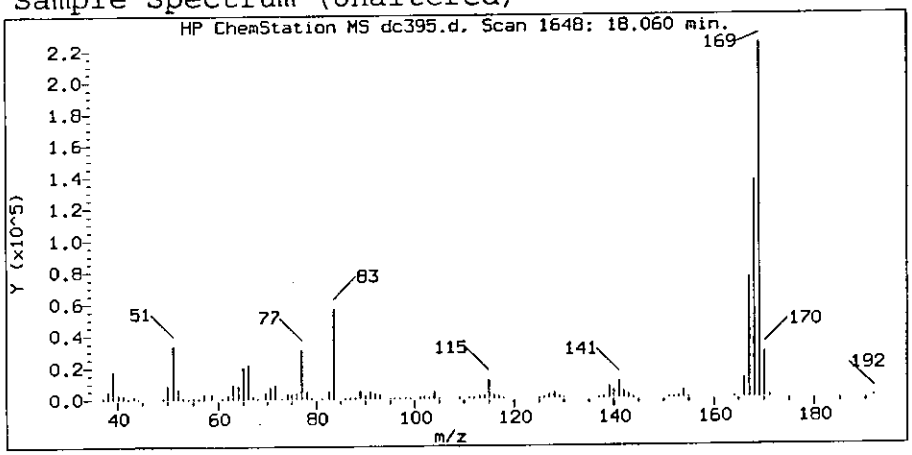



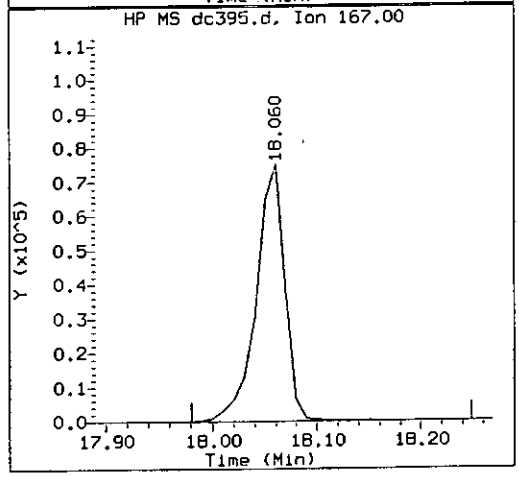

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

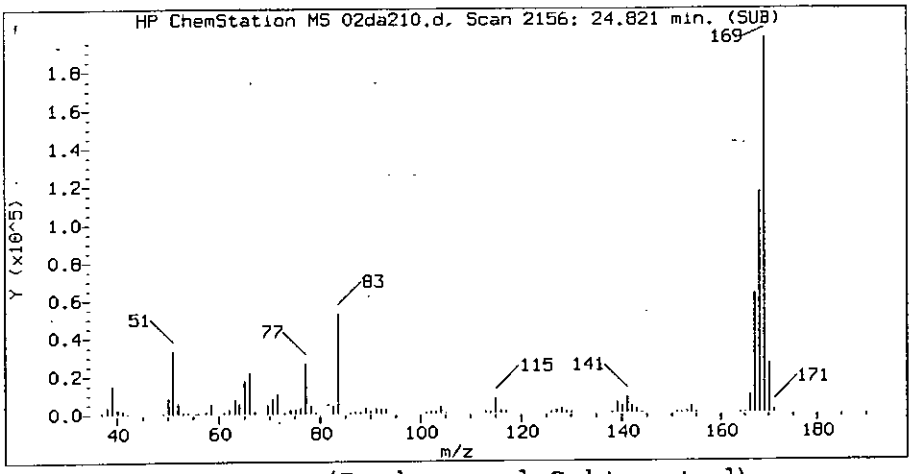
Sample Name: 7GP22

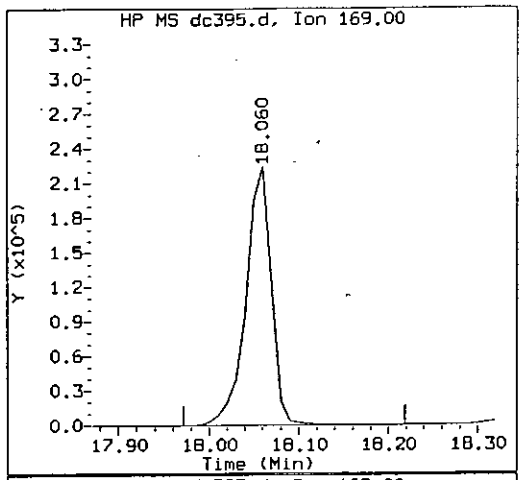
Lab Sample ID: 4241649

| | |
|---|---|
| Compound Number | : 109 |
| Compound Name | : Fluorene |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.060 |
| Quant Ion | : 166.0 |
| Area (flag) | : 22571 |
| Concentration (ng/ul) | : 3.0738 |

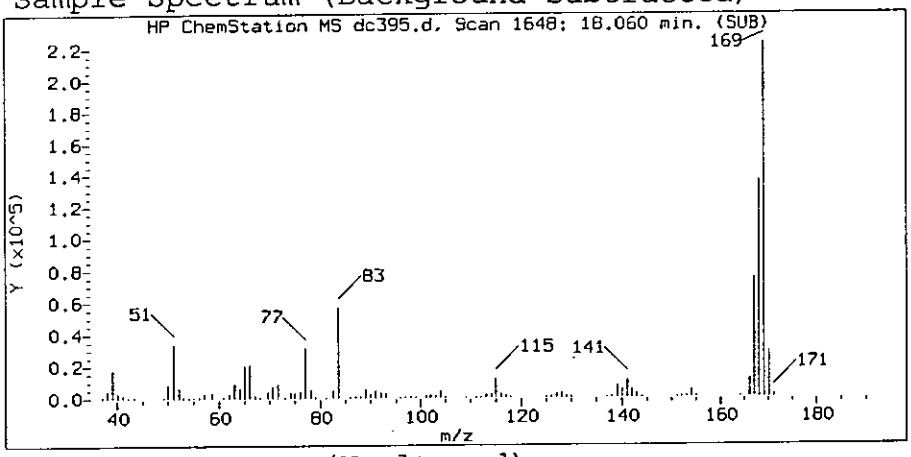
False Positive
RB1528
3-29-04

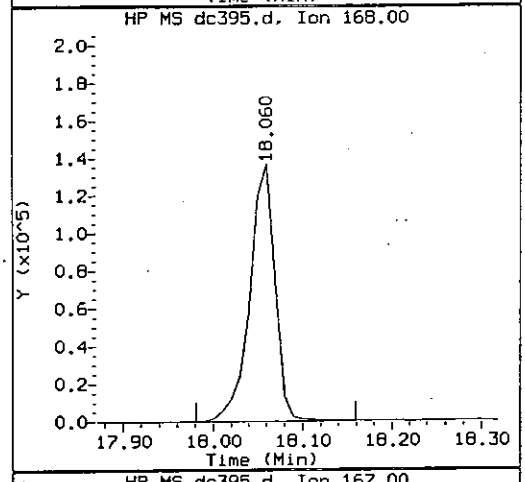
Reference Standard Spectrum for N-Nitrosodiphenylamine



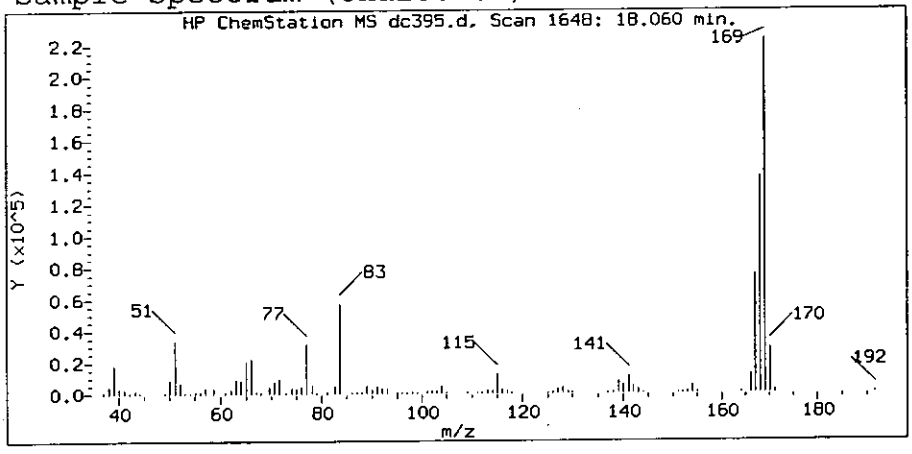



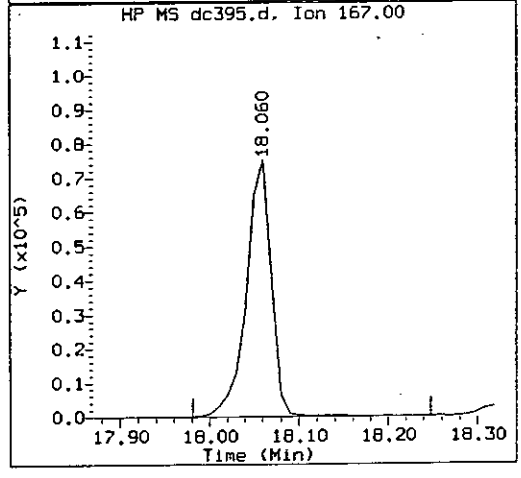

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

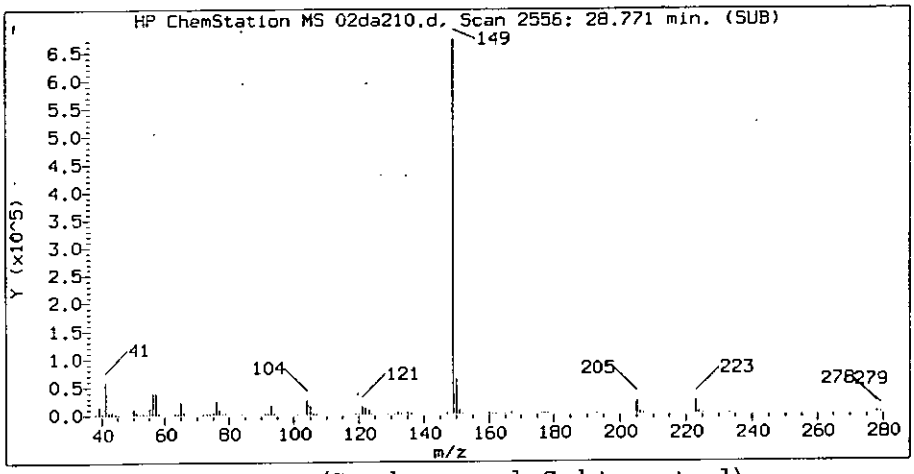
Lab Sample ID: 4241649

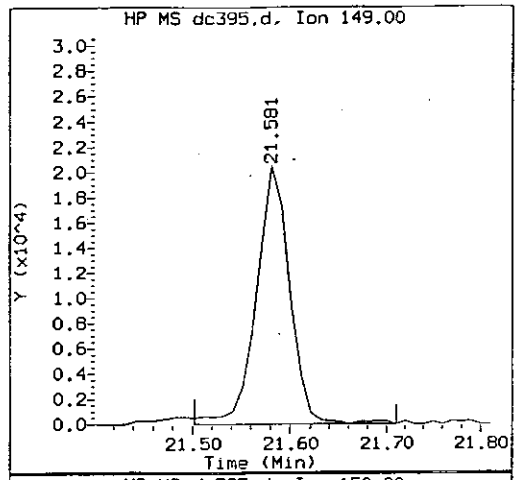
| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.060 |
| Quant Ion | : 169.0 |
| Area (flag) | : 436719 |
| Concentration (ng/ul) | : 80.3055 |

B158
8153
3-29-04

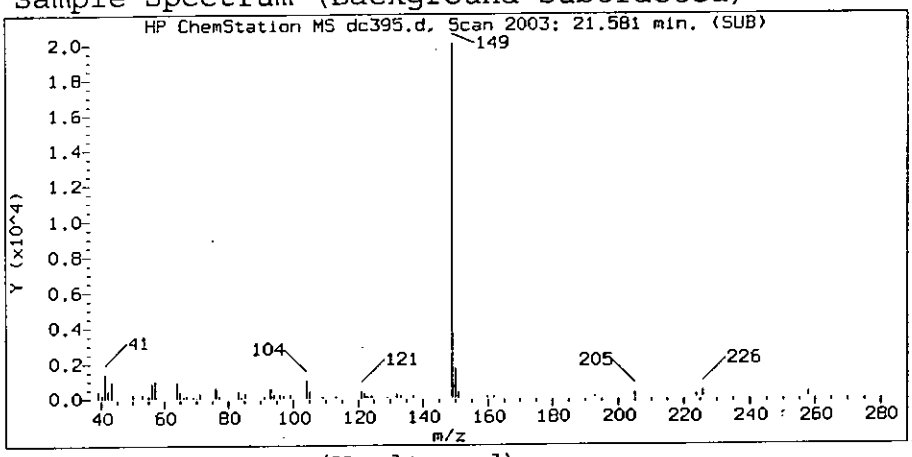
Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc395.d, generated on 03/29/2004 at 15:53

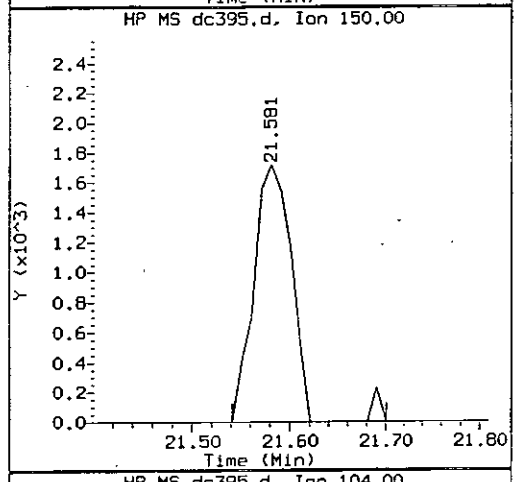
Reference Standard Spectrum for Di-n-butylphthalate



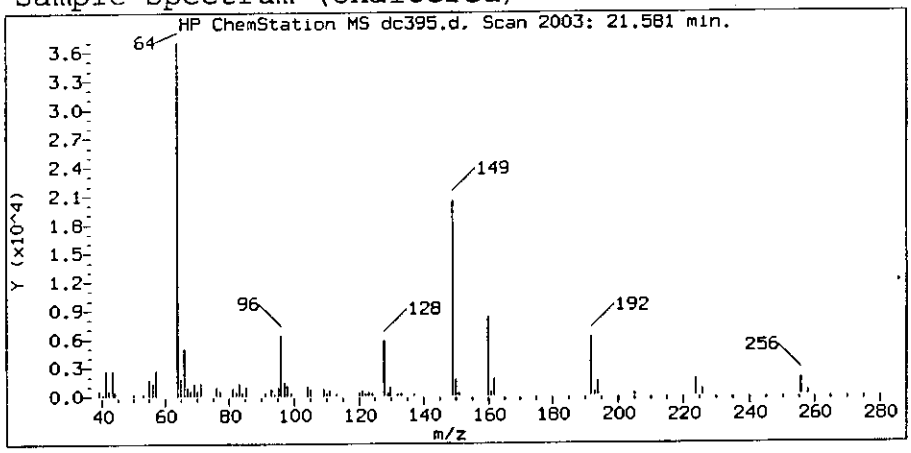



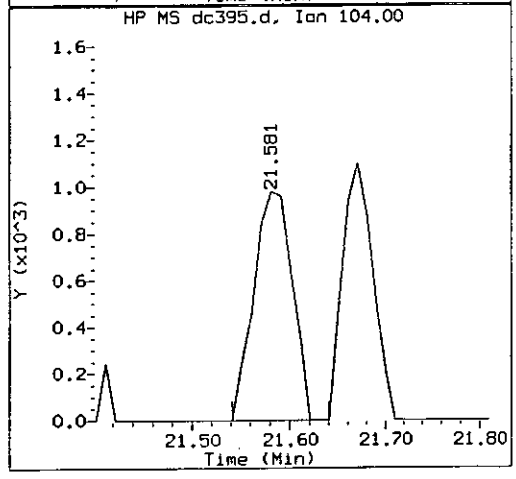

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

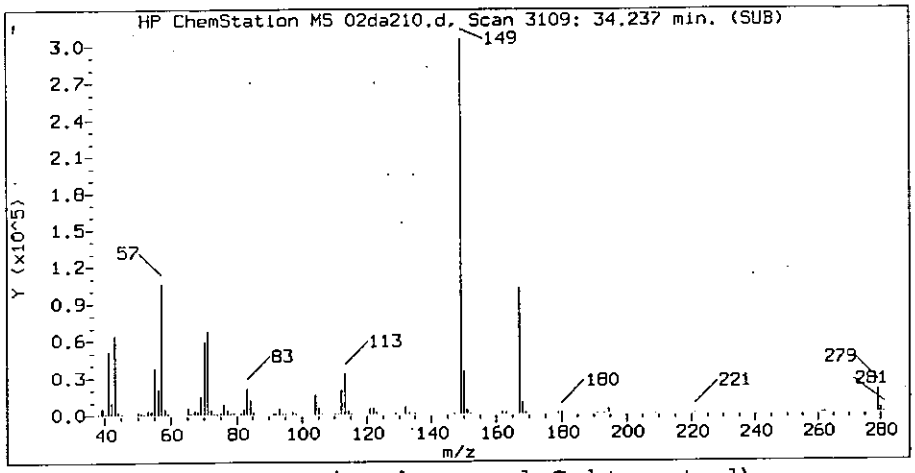
Sample Name: 7GP22

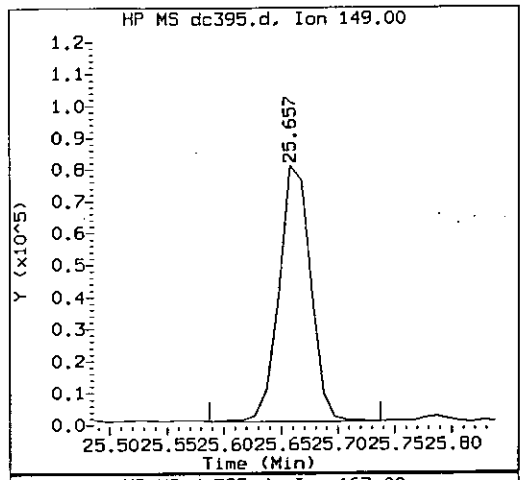
Lab Sample ID: 4241649

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2003 |
| Retention Time (minutes) | : 21.581 |
| Quant Ion | : 149.0 |
| Area (flag) | : 48306 |
| Concentration (ng/ul) | : 3.2427 |

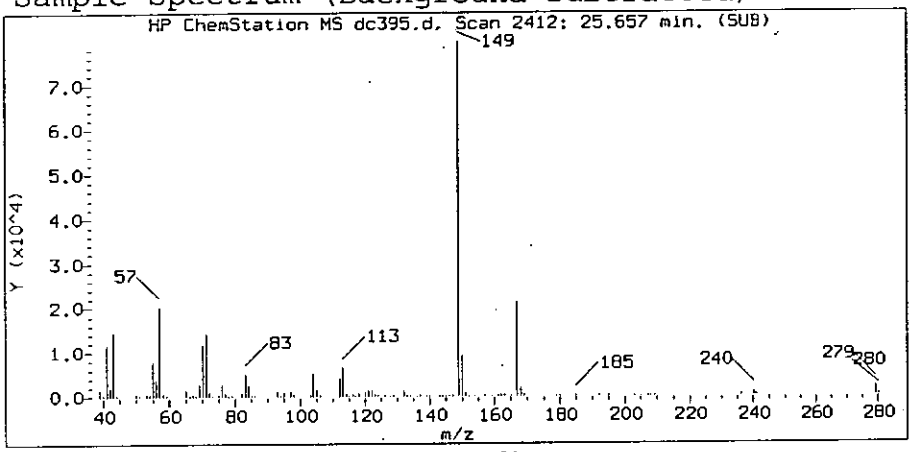
RB1568
0154
3-29-04

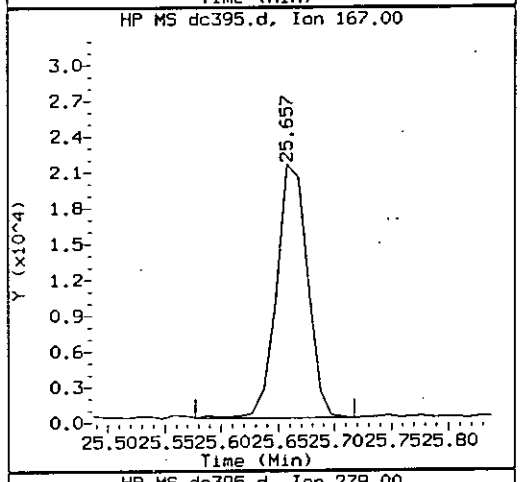
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



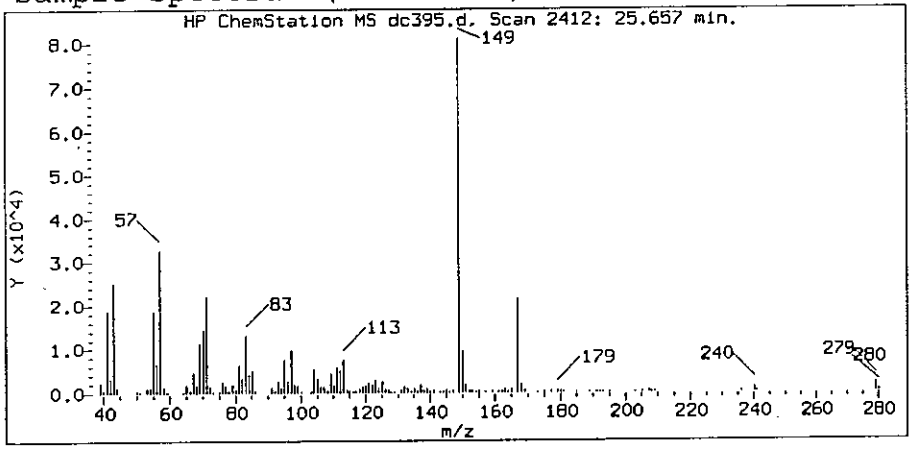



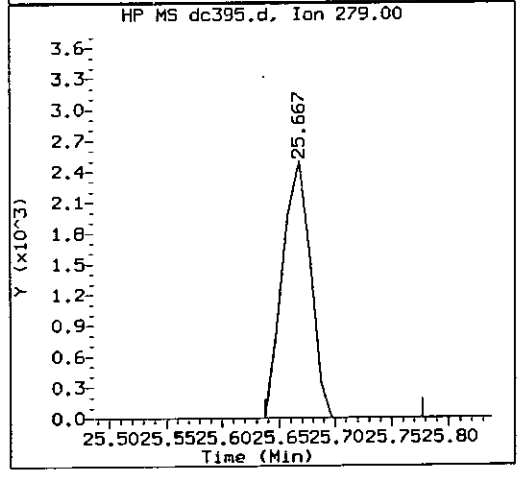

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc395.d
Injection date and time: 29-MAR-2004 15:06

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:53 rpb01568

Sample Name: 7GP22

Lab Sample ID: 4241649

| | |
|---|---|
| Compound Number | : 167 |
| Compound Name | : bis(2-Ethylhexyl)phthalate |
| Scan Number | : 2412 |
| Retention Time (minutes) | : 25.657 |
| Quant Ion | : 149.0 |
| Area (flag) | : 154044 |
| Concentration (ng/ul) | : 21.2628 |

RB1568
8155
3-29-04

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241650

Data file: /chem/HP06780.i/04mar29.b/dc396.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:50 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.409(-0.005) | 874 | 152.0 | 168432( -27) | 40.00 | |
| 52) Naphthalene-d8 | 13.028( 0.002) | 1139 | 136.0 | 600982( -26) | 40.00 | |
| 96) Acenaphthene-d10 | 16.679( 0.004) | 1508 | 164.0 | 267516( -28) | 40.00 | |
| 133) Phenanthrene-d10 | 19.849( 0.008) | 1828 | 188.0 | 316548( -31) | 40.00 | |
| 165) Chrysene-d12 | 25.701( 0.001) | 2415 | 240.0 | 191854( -32) | 40.00 | |
| 173) Perylene-d12 | 29.653(-0.015) | 2810 | 264.0 | 181264( -38) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.681( 0.003) | 112 | 1394297 | 175.897 | 88% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.647( 0.001) | 99 | 1571693 | 173.859 | 87% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.545( 0.000) | 82 | 627809 | 93.940 | 94% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.264( 0.000) | 172 | 752049 | 89.370 | 89% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.323( 0.000) | 330 | 167853 | 162.711 | 81% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.838( 0.000) | 244 | 392423 | 94.793 | 95% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | ND | ND | | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | ND | ND | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 1.00 |
| ~~27) 2,2' oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043( 0.008)~~ | ~~45~~ | ~~69273~~ | ~~0.993~~ | ~~299.76~~ | | ~~#~~ | ~~1.00~~ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545( 0.028)~~ | ~~70~~ | ~~76491~~ | ~~18.469~~ | ~~615.64~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | ND | ND | | | | 1.00 |
| 39) Nitrobenzene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | ND | ND | | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | ND | ND | | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | ND | ND | | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | ND | ND | | | | 1.00 |
| 53) Naphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | ND | ND | | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | ND | ND | | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | Below MDL, Do not report | | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | Below MDL, Do not report | | | | | 1.00 |



8156

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241650

Data file: /chem/HP06780.i/04mar29.b/dc396.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:50 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 97) Acenaphthene | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | Below MDL, Do not report | | | | | 5.00 |
| 102) Dibenzofuran | (3) | | | Below MDL, Do not report | | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.065(-0.014)~~ | ~~166~~ | ~~31141~~ | ~~3.681~~ | ~~129.36~~ | | | ~~1.00~~ |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | Below MDL, Do not report | | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | ND | ND | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.065(-0.001) | 169 | 580392 | 103.413 | 3447.09 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 136) Anthracene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 138) Carbazole | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.587( 0.000) | 149 | 76114 | 4.951 | 165.03 | | | 2.00 |
| 145) Fluoranthene | (4) | | | Below MDL, Do not report | | | | | 1.00 |
| 152) Pyrene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | Below MDL, Do not report | | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 166) Chrysene | (5) | | | Below MDL, Do not report | | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.660( 0.000) | 149 | 93221 | 12.588 | 419.62 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | Below MDL, Do not report | | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | Below MDL, Do not report | | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |



8157

2222D

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241650

Data file: /chem/HP06780.i/04mar29.b/dc396.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 15:50 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

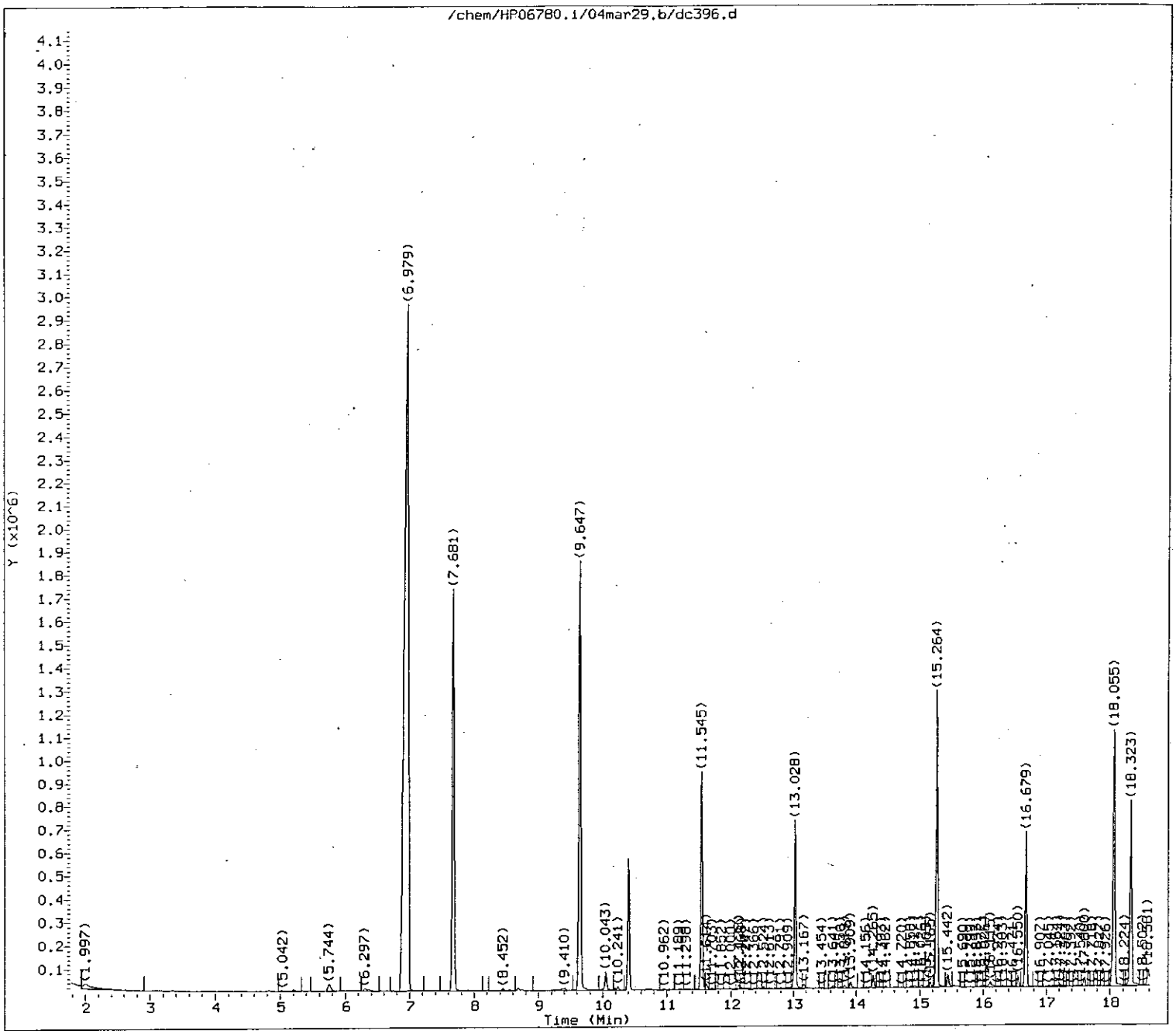
Total number of targets = 64

Comments: ✓ = False Positive

Analyst: RB 1568 Michelle Jarosick Date: 3-29-04
Auditor: Date: 3/29/04



5158




Quant Report

Target Revision 3.5

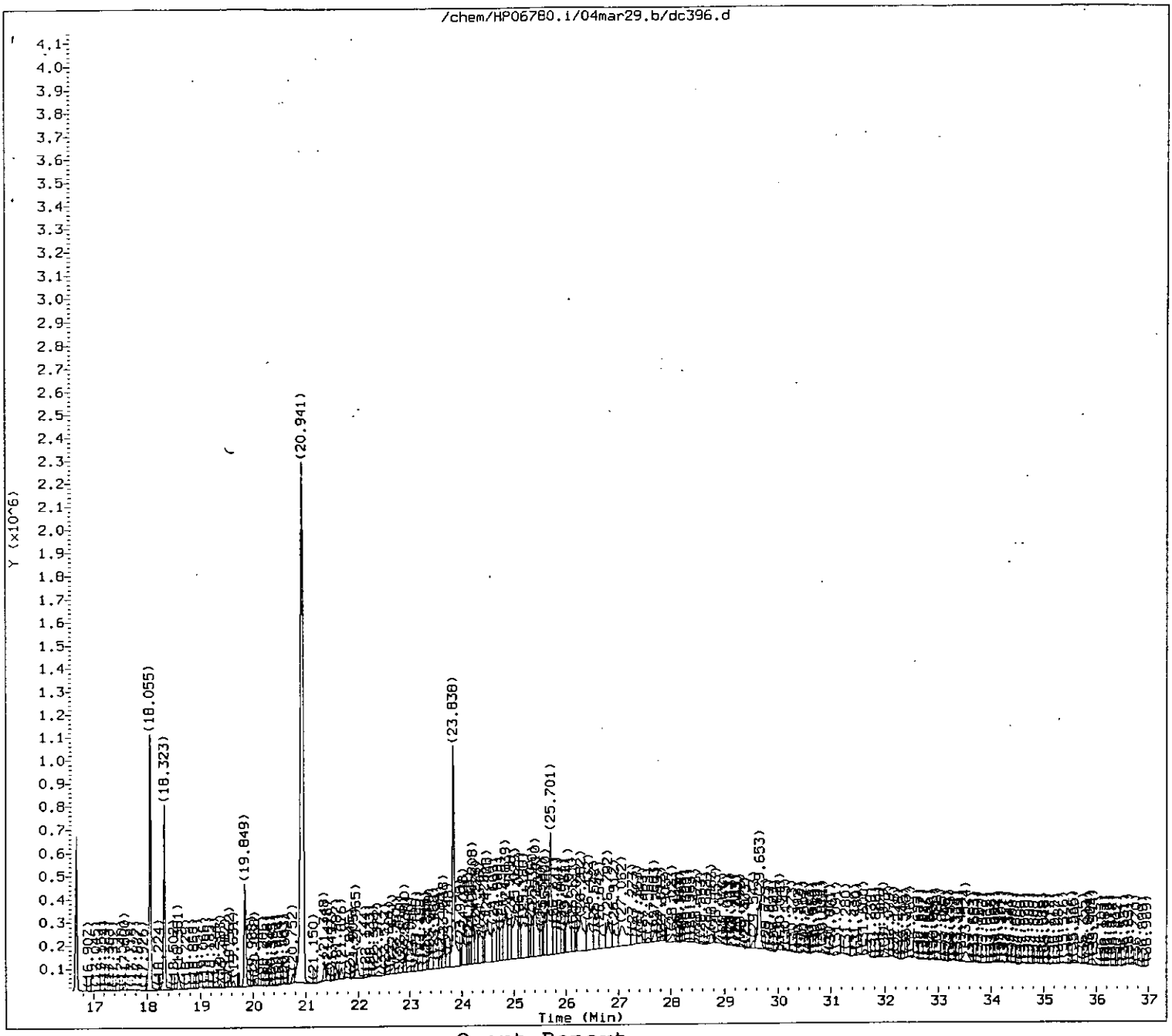
Data File: /chem/HP06780.i/04mar29.b/dc396.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 15:50  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D  Lab Sample ID: 4241650

8159

RB1528
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D

Lab Sample ID: 4241650

8166

RB1568
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc396.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 15:50  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D  Lab Sample ID: 4241650

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 10.409 | 152 | 168432 | 40.000 |
| ~~27)~~ | ~~2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~45~~ | ~~69273~~ | ~~8.993~~ ✓ |
| ~~31)~~ | ~~N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~70~~ | ~~76491~~ | ~~18.469~~ ✓ |
| 52) | Naphthalene-d8 | (2) | 13.028 | 136 | 600982 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 16.679 | 164 | 267516 | 40.000 |
| ~~109)~~ | ~~Fluorene~~ | ~~(3)~~ | ~~18.065~~ | ~~166~~ | ~~31141~~ | ~~3.881~~ ✓ |
| 115) | N-Nitrosodiphenylamine | (4) | 18.065 | 169 | 580392 | 103.413 |
| 133) | Phenanthrene-d10 | (4) | 19.849 | 188 | 316548 | 40.000 |
| 140) | Di-n-butylphthalate | (4) | 21.587 | 149 | 76114 | 4.951 |
| 165) | Chrysene-d12 | (5) | 25.701 | 240 | 191854 | 40.000 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 25.660 | 149 | 93221 | 12.588 |
| 173) | Perylene-d12 | (6) | 29.653 | 264 | 181264 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 7.681 | 112 | 1394297 | 175.897 |
| 15) | Phenol-d6 | (1) | 9.647 | 99 | 1571693 | 173.859 |
| 38) | Nitrobenzene-d5 | (2) | 11.545 | 82 | 627809 | 93.940 |
| 77) | 2-Fluorobiphenyl | (3) | 15.264 | 172 | 752049 | 89.370 |
| 117) | 2,4,6-Tribromophenol | (3) | 18.323 | 330 | 167853 | 162.711 |
| 154) | Terphenyl-d14 | (5) | 23.838 | 244 | 392423 | 94.793 |

M = Compound was manually integrated.  A = User selected an alternate hit

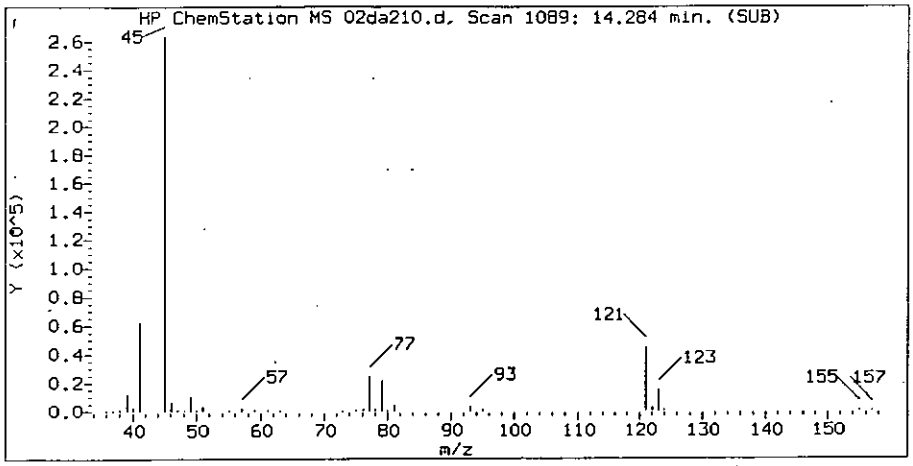
✓ = False Positive

RB 1568

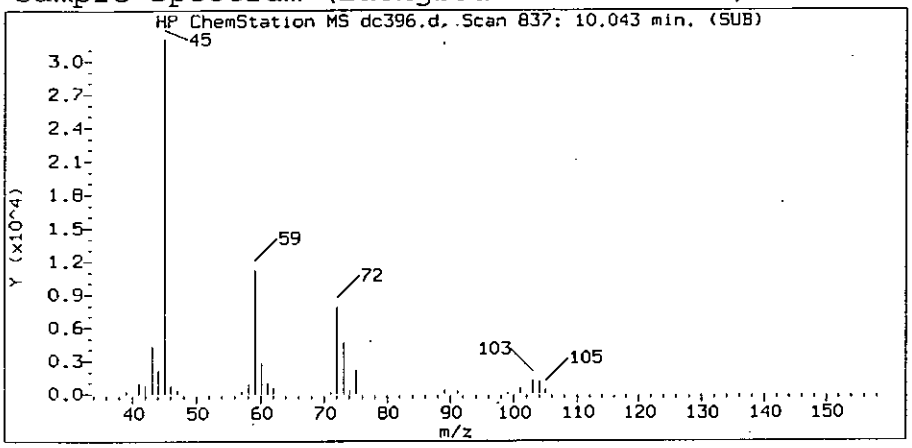
3-29-04

8161

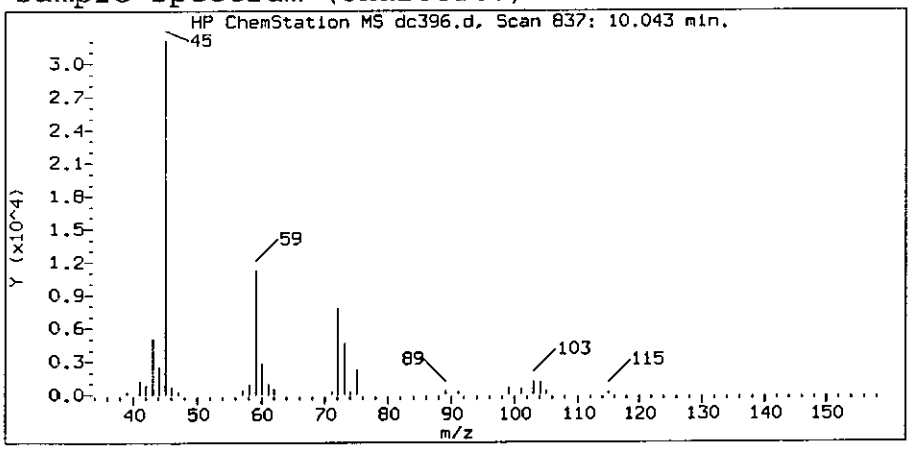
Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

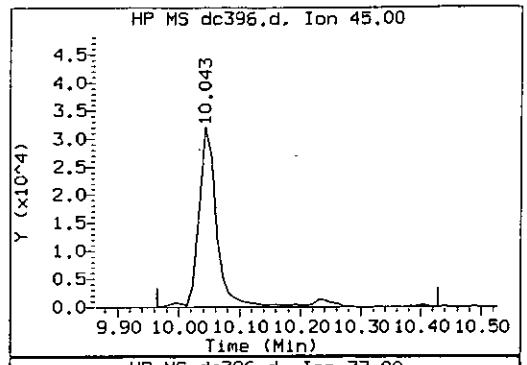


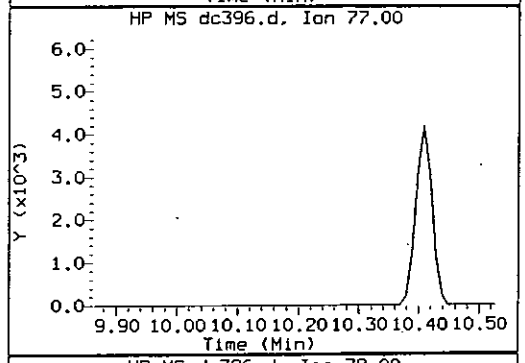

Sample Spectrum (Background Subtracted)

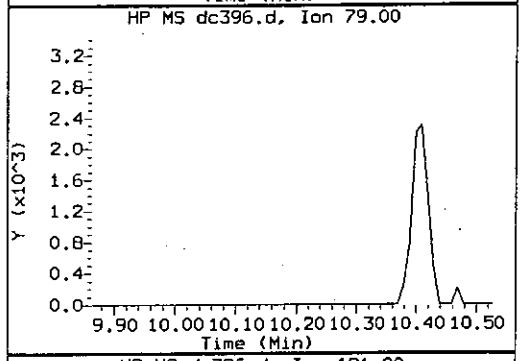


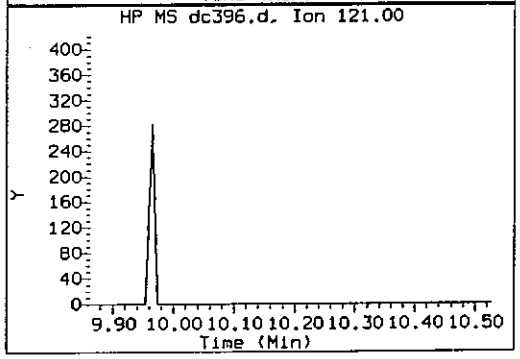

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D

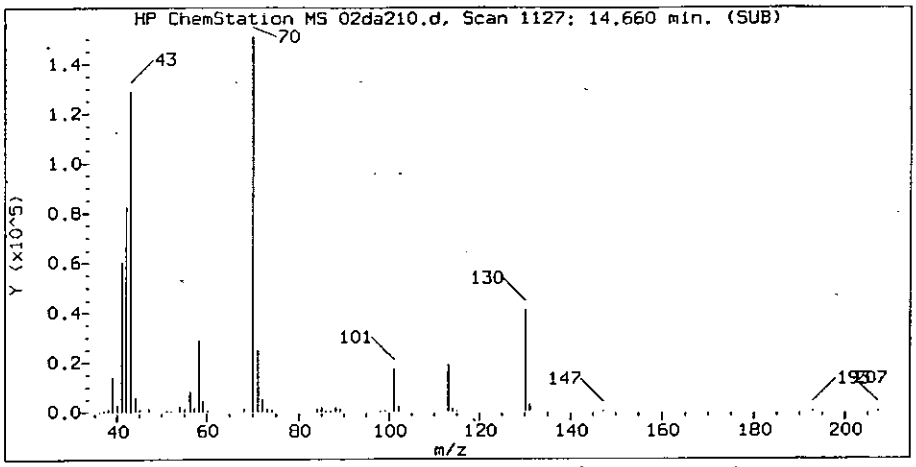
Lab Sample ID: 4241650

Compound Number : 27
Compound Name : 2,2'-oxybis(1-Chloropropane)
Scan Number : 837
Retention Time (minutes): 10.043
Quant Ion : 45.0
Area (flag) : 69273
Concentration (ng/ul) : 8.9928

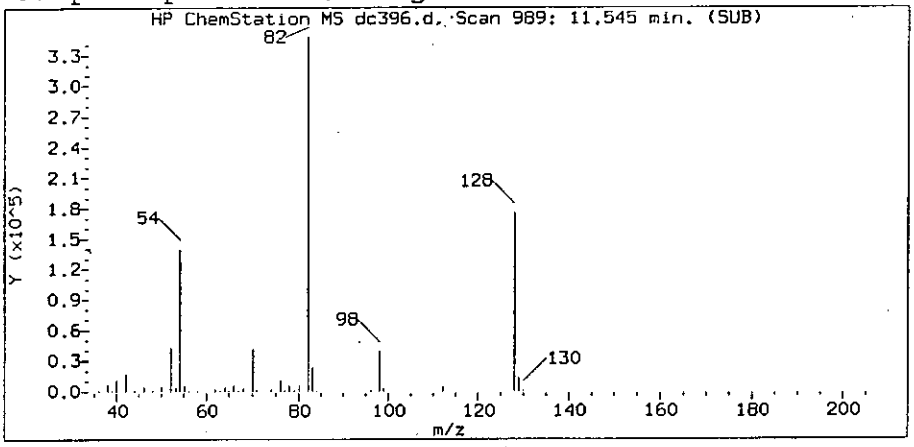
False Positive
RB1578
3/29-04

Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc396.d, generated on 03/29/2004 at 16:58

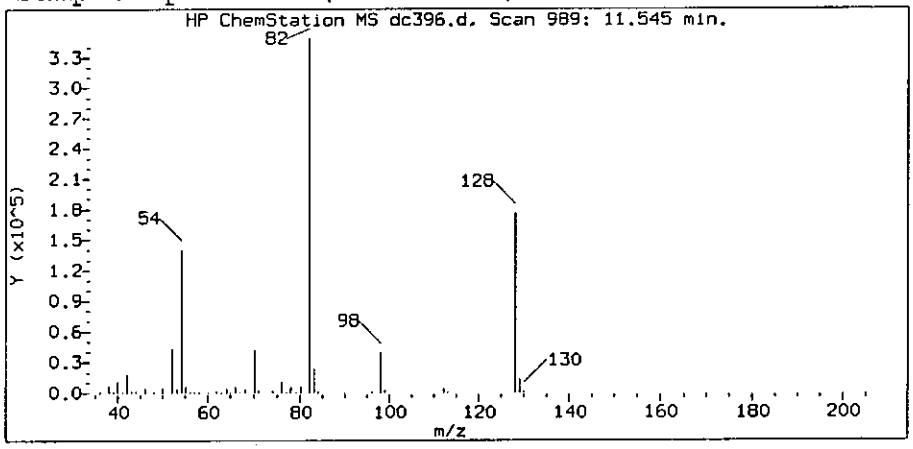
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

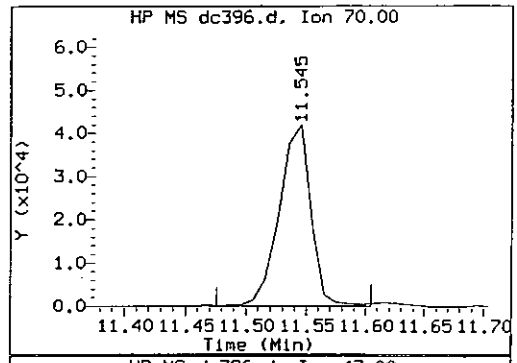


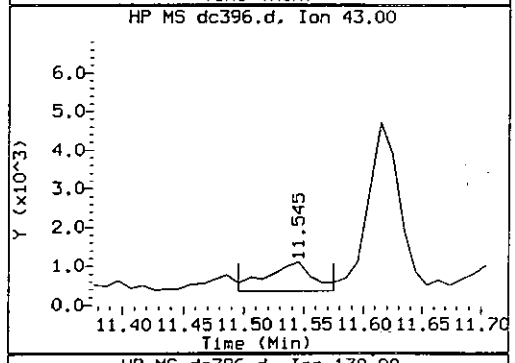

Sample Spectrum (Background Subtracted)

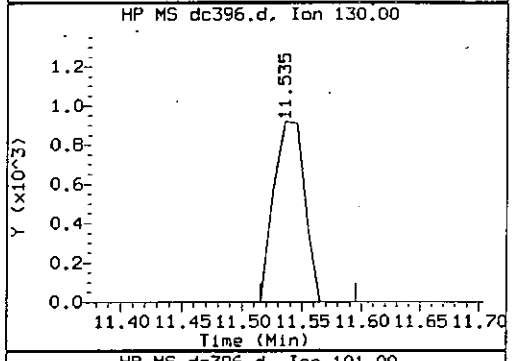


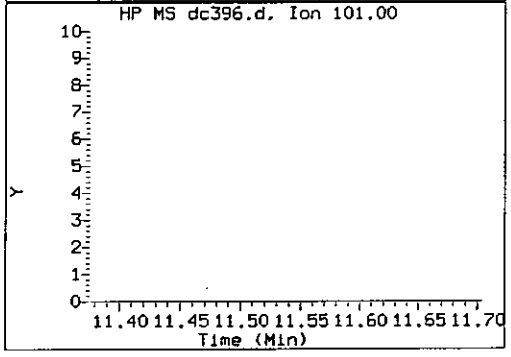

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D

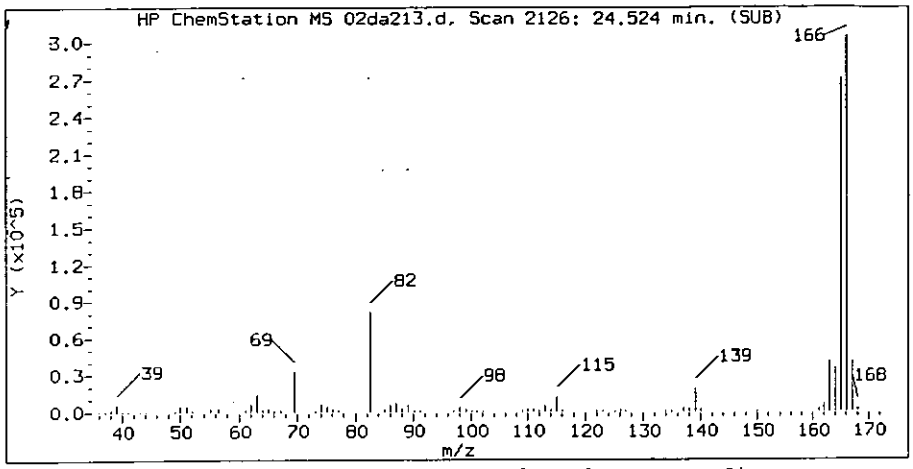
Lab Sample ID: 4241650 False Positive

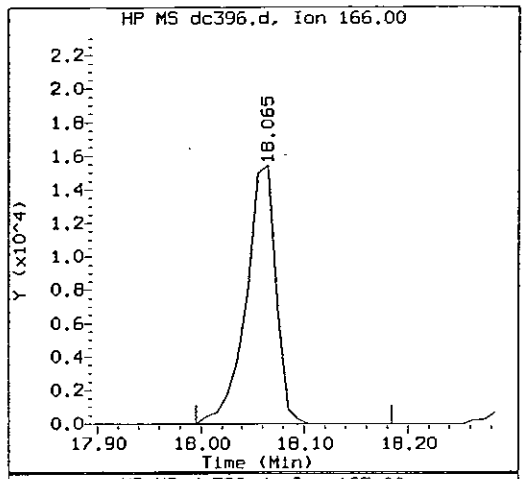
Compound Number : 31
Compound Name : N-Nitroso-di-n-propylamine
Scan Number : 989
Retention Time (minutes): 11.545
Quant Ion : 70.0
Area (flag) : 76491
Concentration (ng/ul) : 18.4693

RB 1568

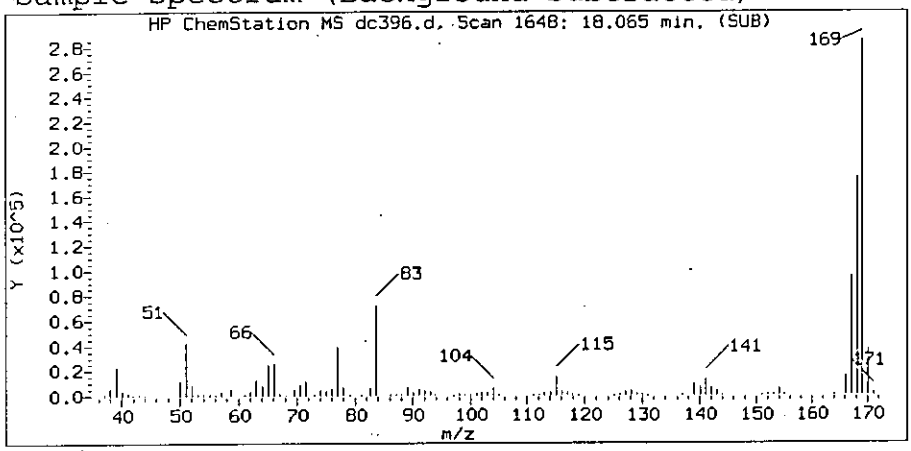
3/29/04

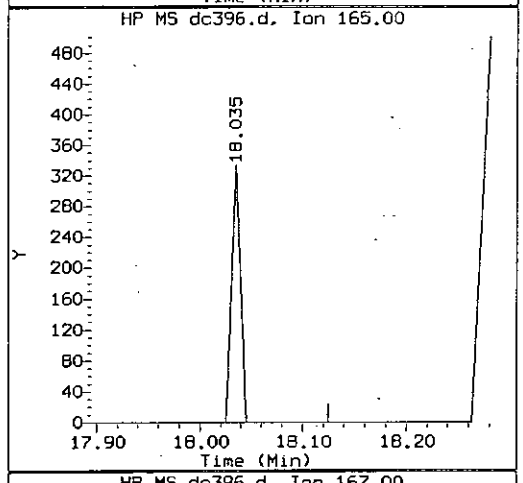
Reference Standard Spectrum for Fluorene



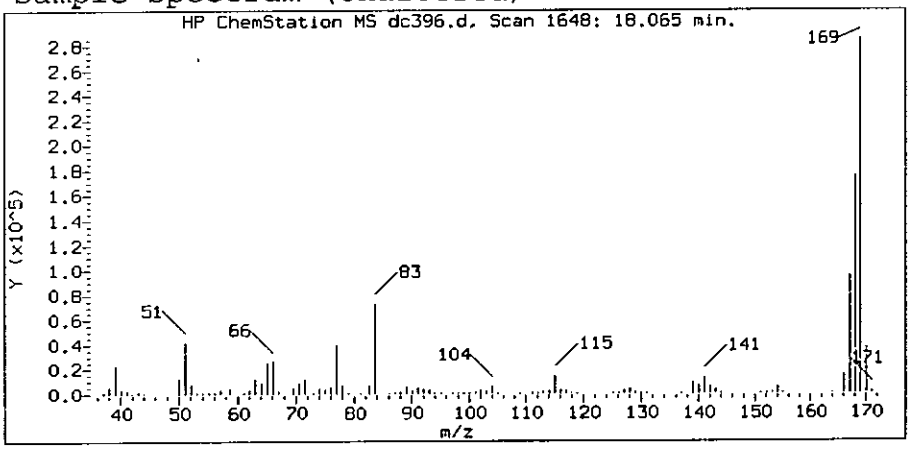



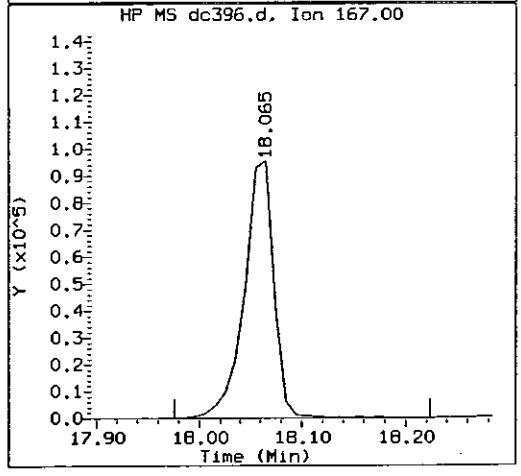

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D

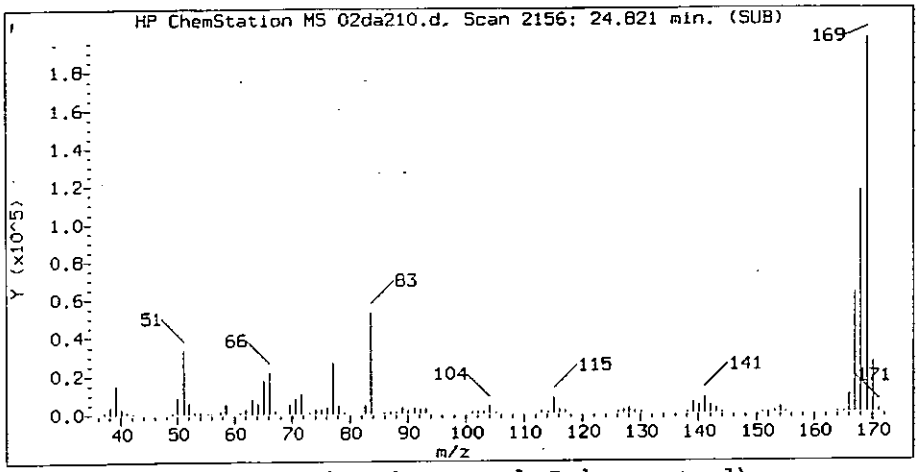
Lab Sample ID: 4241650

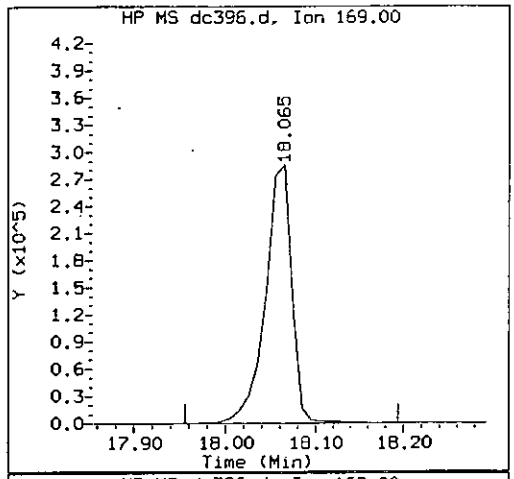
False Positive

RB1528
#164
3-29-04

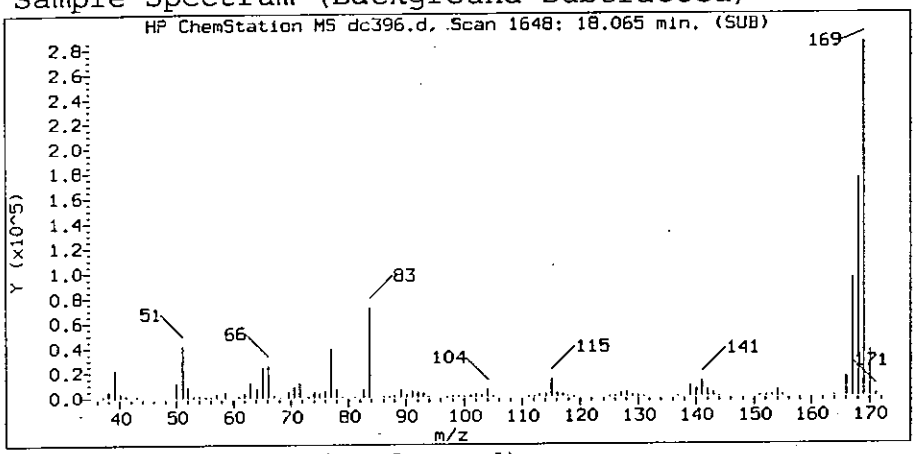
| | | |
|---|---|---|
| Compound Number | : | 109 |
| Compound Name | : | Fluorene |
| Scan Number | : | 1648 |
| Retention Time (minutes) | : | 18.065 |
| Quant Ion | : | 166.0 |
| Area (flag) | : | 31141 |
| Concentration (ng/ul) | : | 3.8809 |

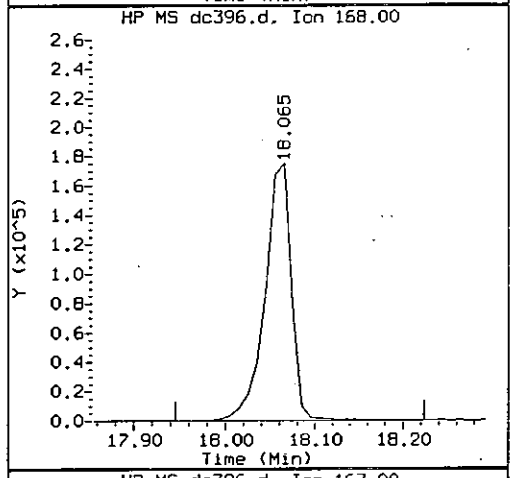
Reference Standard Spectrum for N-Nitrosodiphenylamine



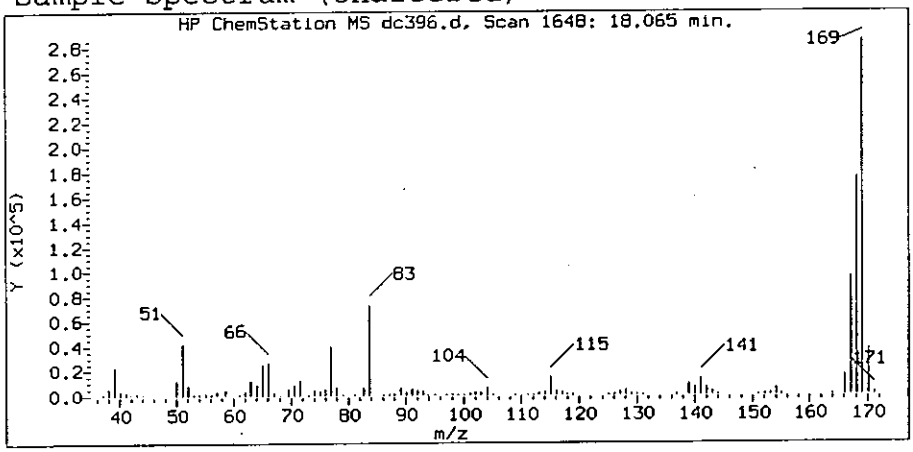



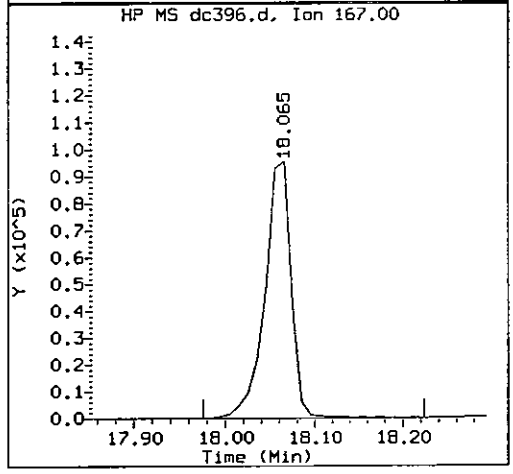

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

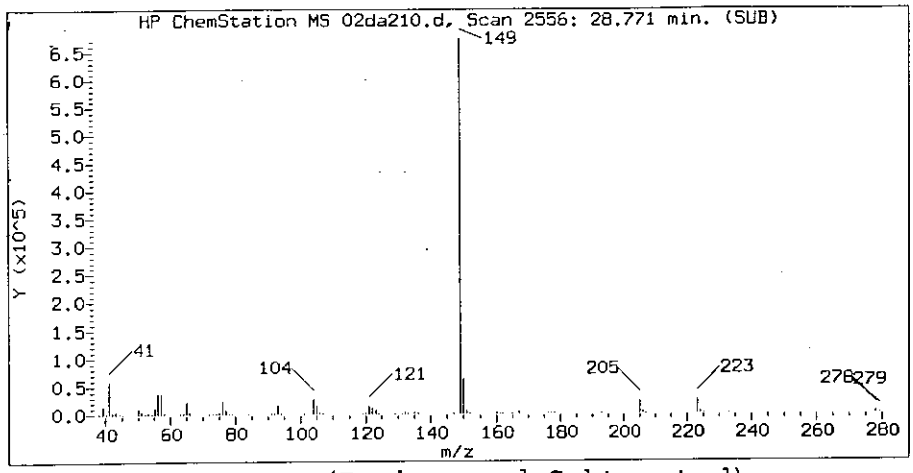
Sample Name: 2222D

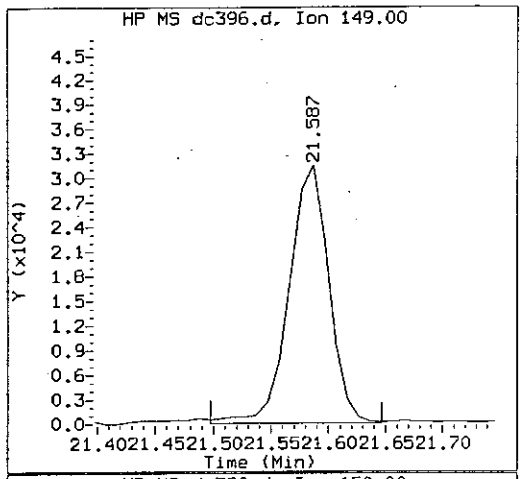
Lab Sample ID: 4241650

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.065 |
| Quant Ion | : 169.0 |
| Area (flag) | : 580392 |
| Concentration (ng/ul) | : 103.4128 |

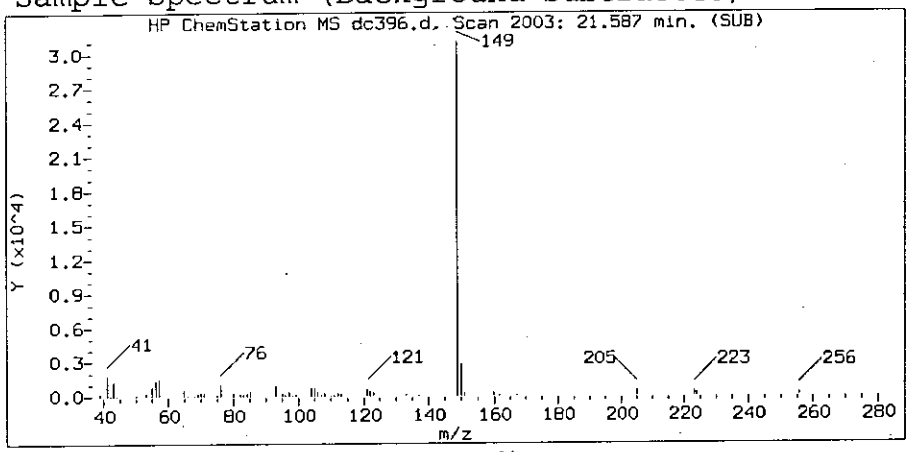
RB1588
8165
3-29-04

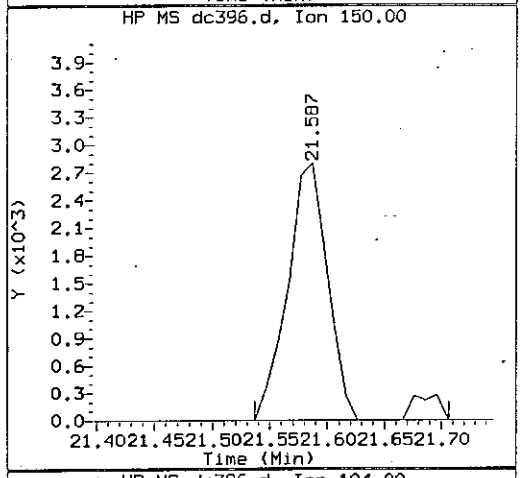
Reference Standard Spectrum for Di-n-butylphthalate



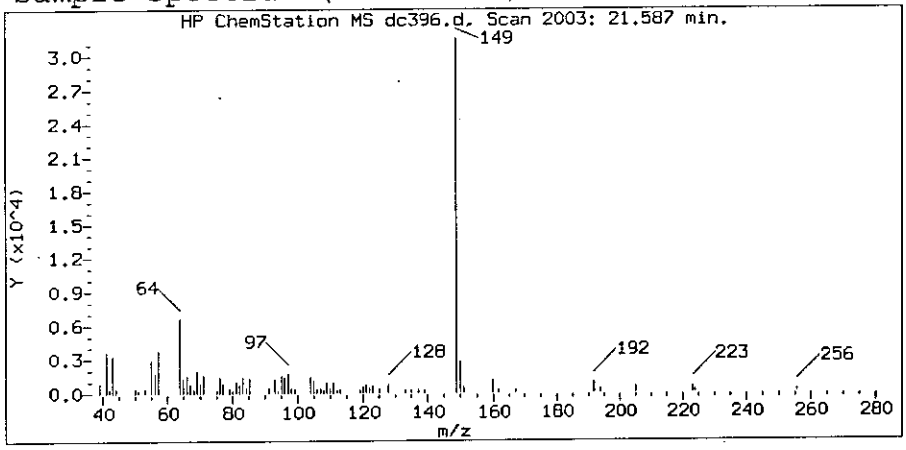



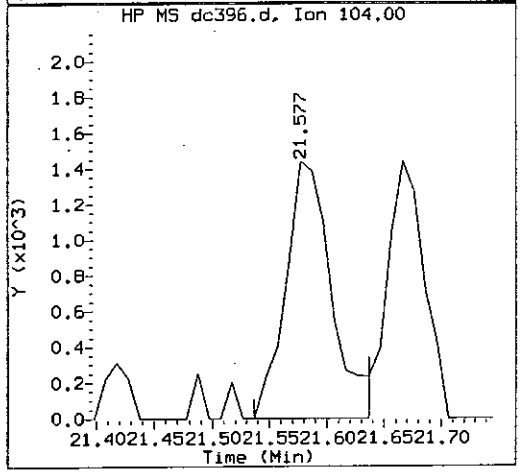

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

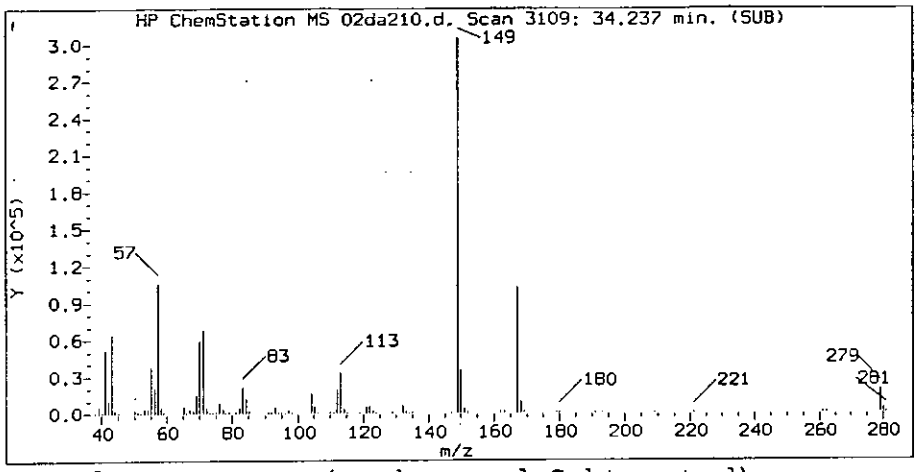
Sample Name: 2222D

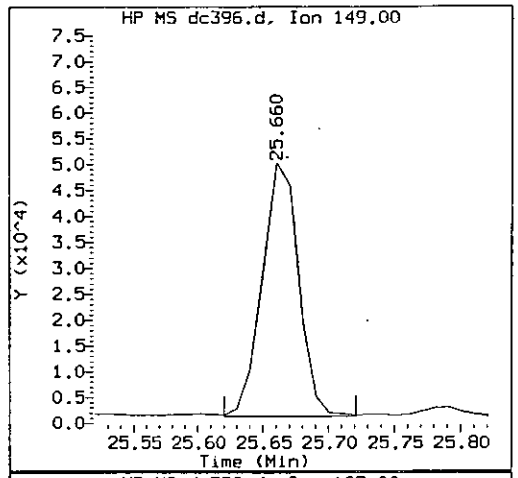
Lab Sample ID: 4241650

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2003 |
| Retention Time (minutes) | : 21.587 |
| Quant Ion | : 149.0 |
| Area (flag) | : 76114 |
| Concentration (ng/ul) | : 4.9509 |

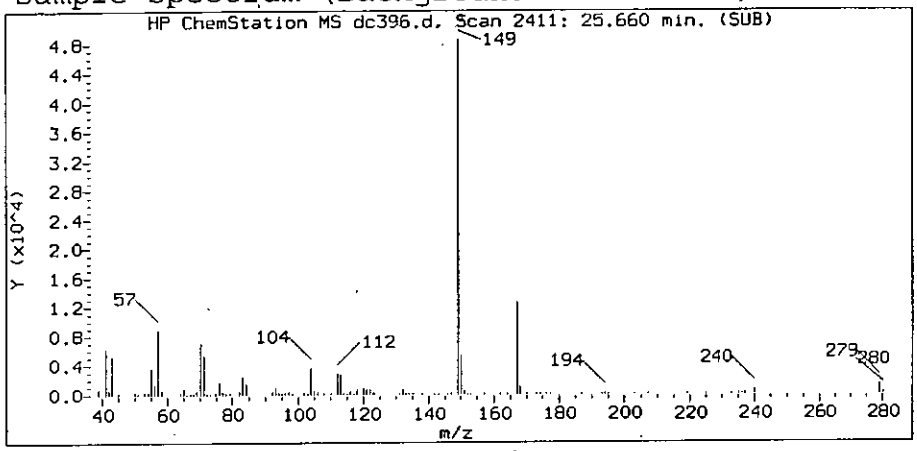
RB1568
3-29-04

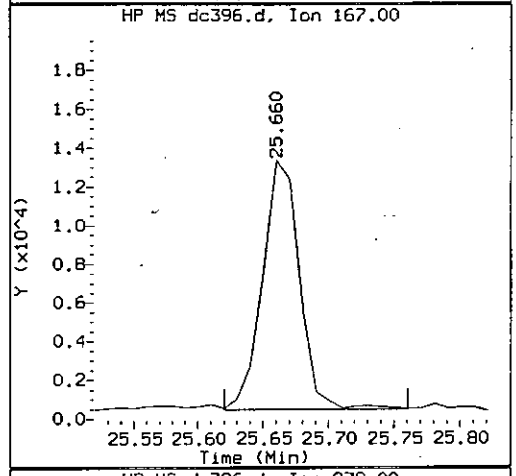
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



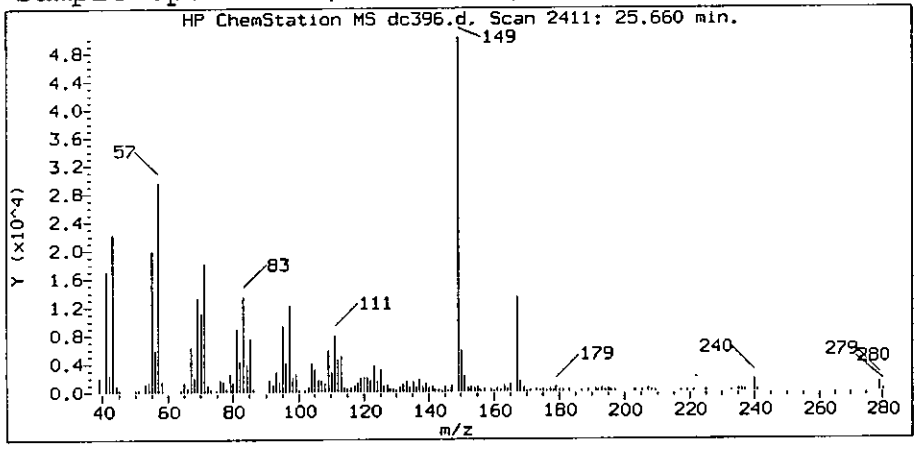



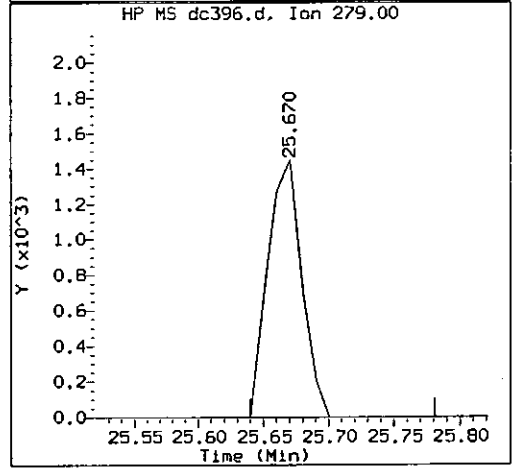

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc396.d
Injection date and time: 29-MAR-2004 15:50

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 16:58 rpb01568

Sample Name: 2222D

Lab Sample ID: 4241650

| | | |
|---|---|---|
| Compound Number | : | 167 |
| Compound Name | : | bis(2-Ethylhexyl)phthalate |
| Scan Number | : | 2411 |
| Retention Time (minutes) | : | 25.660 |
| Quant Ion | : | 149.0 |
| Area (flag) | : | 93221 |
| Concentration (ng/ul) | : | 12.5885 |

RPB 3/29/04

7GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241651

Data file: /chem/HP06780.i/04mar29.b/dc397.d Blank Data file reference:/chem/HP06780.i/04mar29.h/dc388.d
Injection date and time: 29-MAR-2004 16:35 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.409(-0.005) | 874 | 152.0 | 165367( -28) | 40.00 | |
| 52) Naphthalene-d8 | 13.027( 0.003) | 1139 | 136.0 | 601608( -26) | 40.00 | |
| 96) Acenaphthene-d10 | 16.675( 0.008) | 1508 | 164.0 | 255691( -31) | 40.00 | |
| 133) Phenanthrene-d10 | 19.854( 0.004) | 1829 | 188.0 | 320685( -30) | 40.00 | |
| 165) Chrysene-d12 | 25.698( 0.004) | 2416 | 240.0 | 193028( -32) | 40.00 | |
| 173) Perylene-d12 | 29.644(-0.006) | 2811 | 264.0 | 176590( -39) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.671( 0.004) | 112 | 1323740 | 170.091 | 85% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.648( 0.001) | 99 | 1566753 | 176.525 | 88% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.545( 0.000) | 82 | 608653 | 90.978 | 91% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.271(-0.001) | 172 | 725187 | 90.164 | 90% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.328(-0.001) | 330 | 164952 | 167.294 | 84% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.839(-0.001) | 244 | 377413 | 90.613 | 91% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| ~~27) 2,2' oxybis(1 Chloropropane)~~ | ~~(1)~~ | ~~10.043( 0.008)~~ | ~~45~~ | ~~49174~~ | ~~6.502~~ | ~~216.73~~ | | ~~#~~ | ~~1.00~~ |
| ~~34) N-Nitroso-di n propylamine~~ | ~~(1)~~ | ~~11.545( 0.028)~~ | ~~70~~ | ~~71669~~ | ~~17.626~~ | ~~587.53~~ | | | ~~1.00~~ |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | Below MDL, Do not report | | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | 1.00 |



8158

7GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241651

Data file: /chem/HP06780.i/04mar29.b/dc397.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 16:35 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | Below MDL, | Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | Below MDL, | Do not report | | | | 2.00 |
| 97) Acenaphthene | (3) | | | Below MDL, | Do not report | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | Below MDL, | Do not report | | | | 5.00 |
| 102) Dibenzofuran | (3) | | | Below MDL, | Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | Below MDL, | Do not report | | | | 2.00 |
| 107) Diethylphthalate | (3) | | | Below MDL, | Do not report | | | | 2.00 |
| 109) ~~Fluorene~~ | ~~(3)~~ | ~~18.061( 0.014)~~ | ~~166~~ | ~~25296~~ | ~~3.298~~ | ~~109.94~~ | | | ~~1.00~~ |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | Below MDL, | Do not report | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.061( 0.000) | 169 | 478755 | 84.203 | 2806.76 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | Below MDL, | Do not report | | | | 1.00 |
| 136) Anthracene | (4) | | | Below MDL, | Do not report | | | | 1.00 |
| 138) Carbazole | (4) | | | Below MDL, | Do not report | | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.581( 0.000) | 149 | 40567 | 2.605 | 86.82 | | | 2.00 |
| 145) Fluoranthene | (4) | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.667( 0.000) | 149 | 111327 | 14.942 | 498.07 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | Below MDL, | Do not report | | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | Below MDL, | Do not report | | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |

7GP23

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241651

Data file: /chem/HP06780.i/04mar29.b/dc397.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 16:35 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

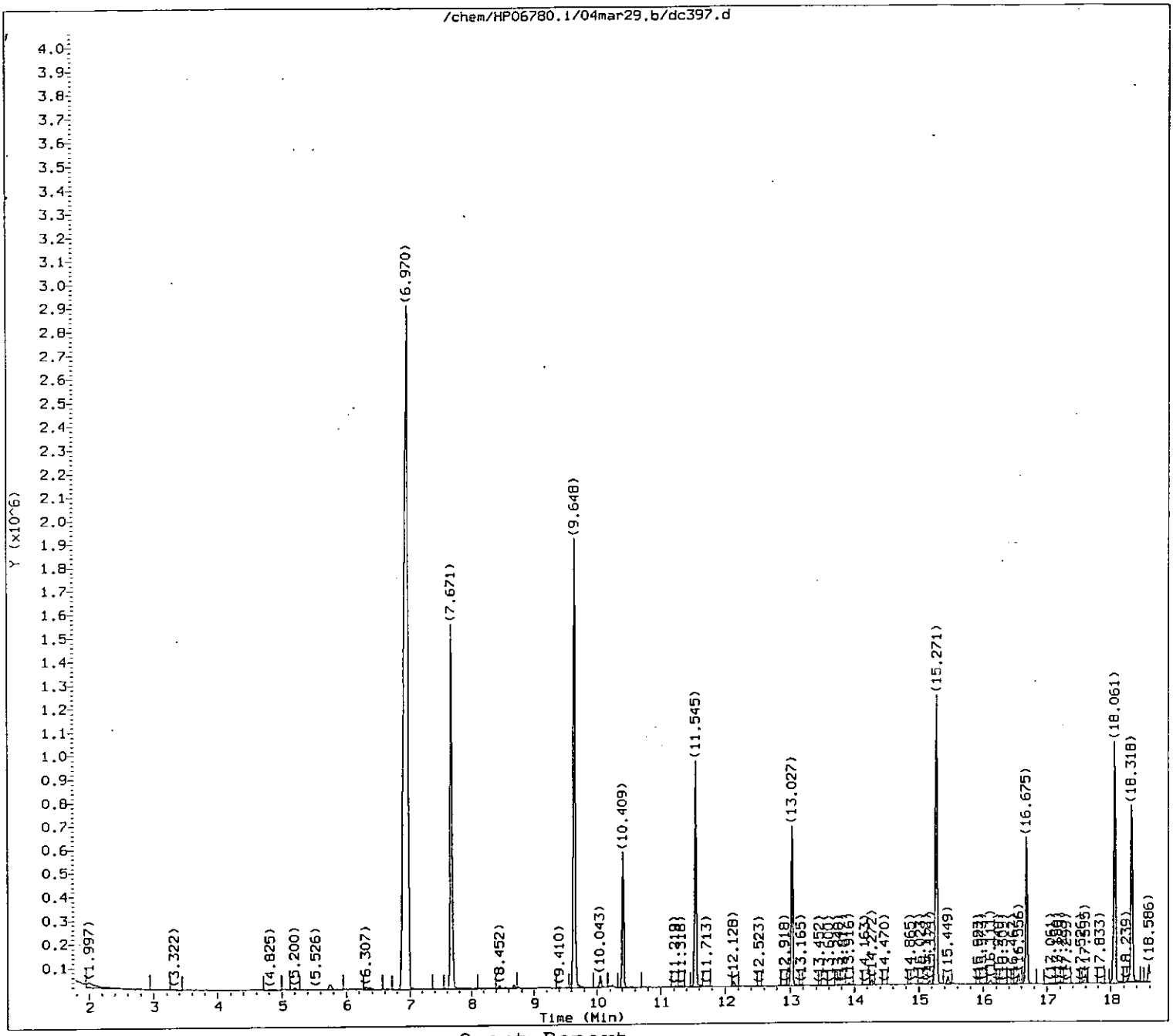
Total number of targets = 64

Comments: √ = False positive

Analyst: Michelle Jarosick RB1568 Date: 3-29-04
Auditor: Date: 3/29/04



5176




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

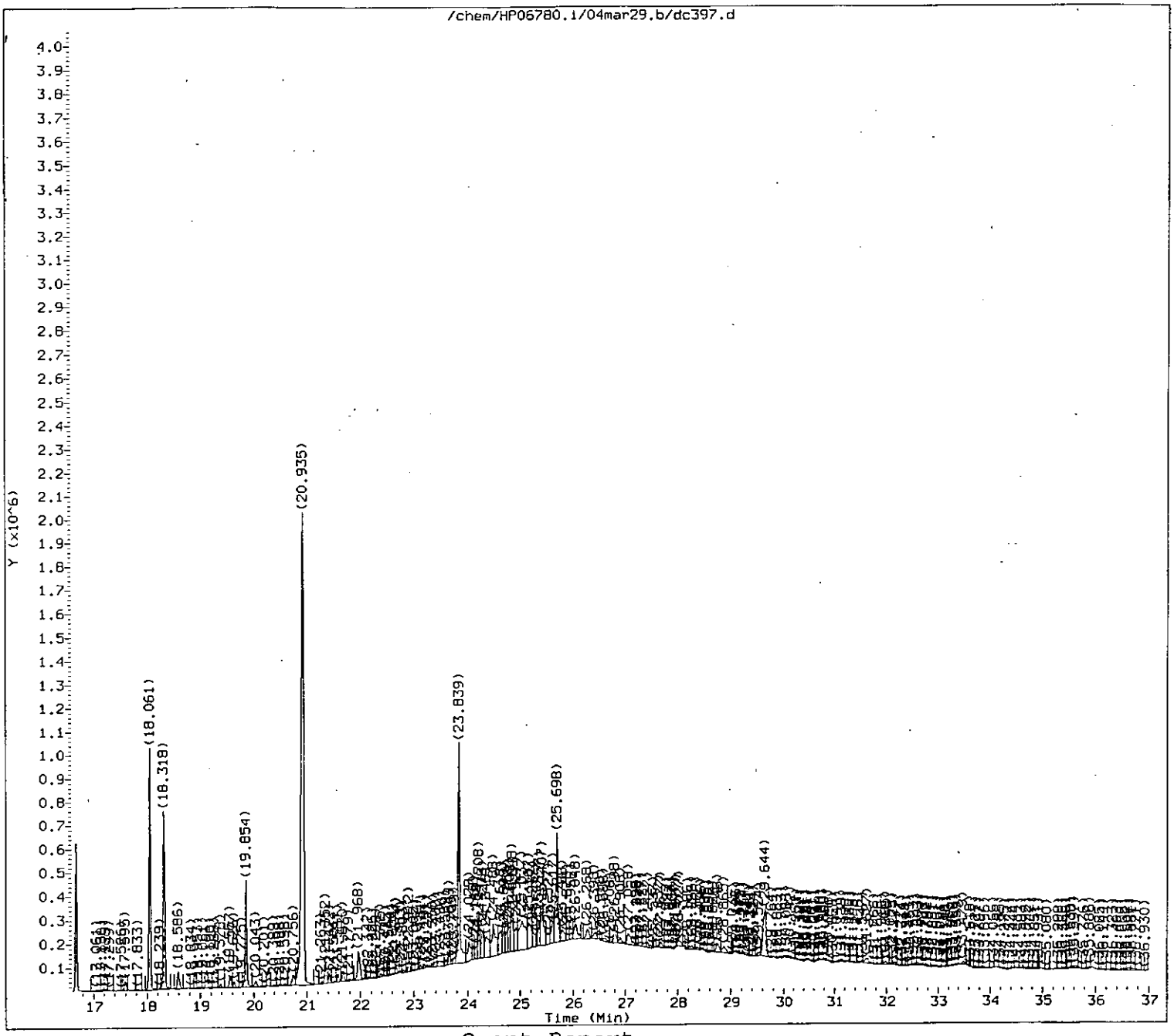
Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Sample Name: 7GP23

Lab Sample ID: 4241651

#171

RB1528
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Sample Name: 7GP23

Lab Sample ID: 4241651

8172

RB1568

3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08
Sublist used: STC804
Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Sample Name: 7GP23
Lab Sample ID: 4241651

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.409 | 152 | 165367 | 40.000 |
| ~~27) 2,2'-oxybis(1-Chloropropane)~~ | ~~(1)~~ | ~~10.043~~ | ~~45~~ | ~~49174~~ | ~~6.502~~ ✓ |
| ~~31) N-Nitroso-di-n-propylamine~~ | ~~(1)~~ | ~~11.545~~ | ~~70~~ | ~~71669~~ | ~~17.626~~ ✓ |
| 52) Naphthalene-d8 | (2) | 13.027 | 136 | 601608 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.675 | 164 | 255691 | 40.000 |
| ~~109) Fluorene~~ | ~~(3)~~ | ~~18.061~~ | ~~166~~ | ~~25296~~ | ~~3.298~~ ✓ |
| 115) N-Nitrosodiphenylamine | (4) | 18.061 | 169 | 478755 | 84.203 |
| 133) Phenanthrene-d10 | (4) | 19.854 | 188 | 320685 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 21.581 | 149 | 40567 | 2.605 |
| 165) Chrysene-d12 | (5) | 25.698 | 240 | 193028 | 40.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.667 | 149 | 111327 | 14.942 |
| 173) Perylene-d12 | (6) | 29.644 | 264 | 176590 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.671 | 112 | 1323740 | 170.091 |
| 15) Phenol-d6 | (1) | 9.648 | 99 | 1566753 | 176.525 |
| 38) Nitrobenzene-d5 | (2) | 11.545 | 82 | 608653 | 90.978 |
| 77) 2-Fluorobiphenyl | (3) | 15.271 | 172 | 725187 | 90.164 |
| 117) 2,4,6-Tribromophenol | (3) | 18.328 | 330 | 164952 | 167.294 |
| 154) Terphenyl-d14 | (5) | 23.839 | 244 | 377413 | 90.613 |

M = Compound was manually integrated.
A = User selected an alternate hit

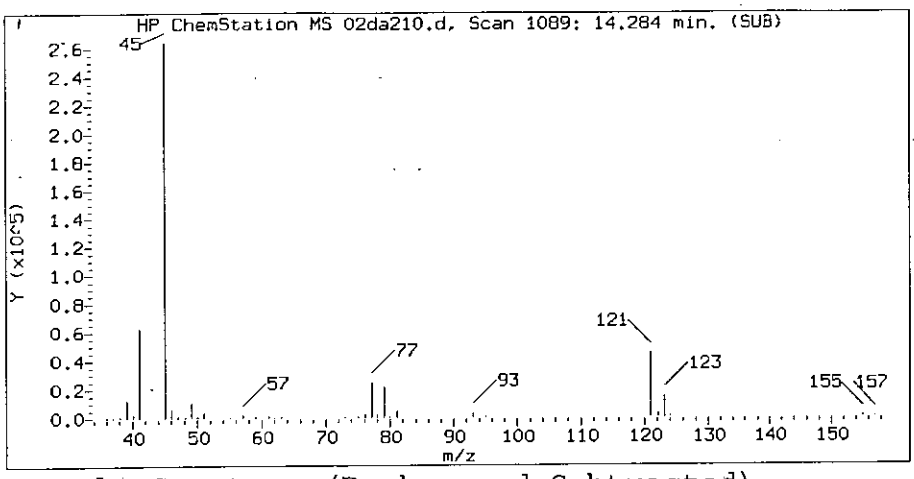
✓ = False Positive

RB1568

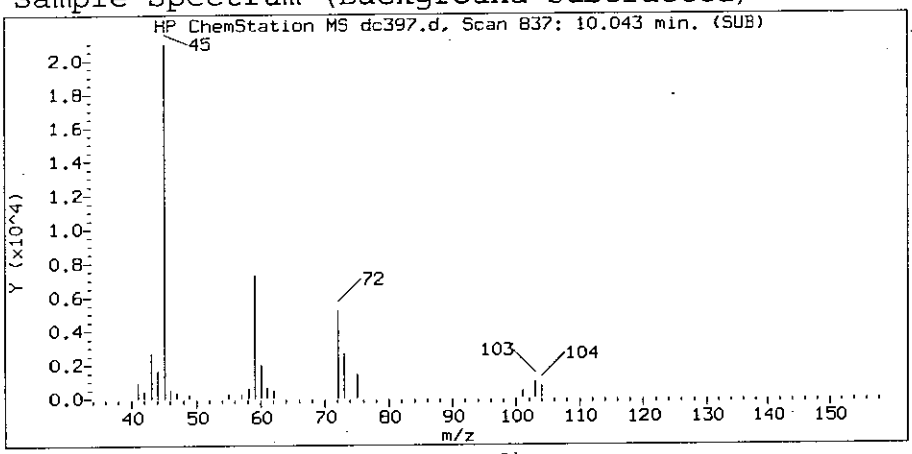
3-29-04

8173

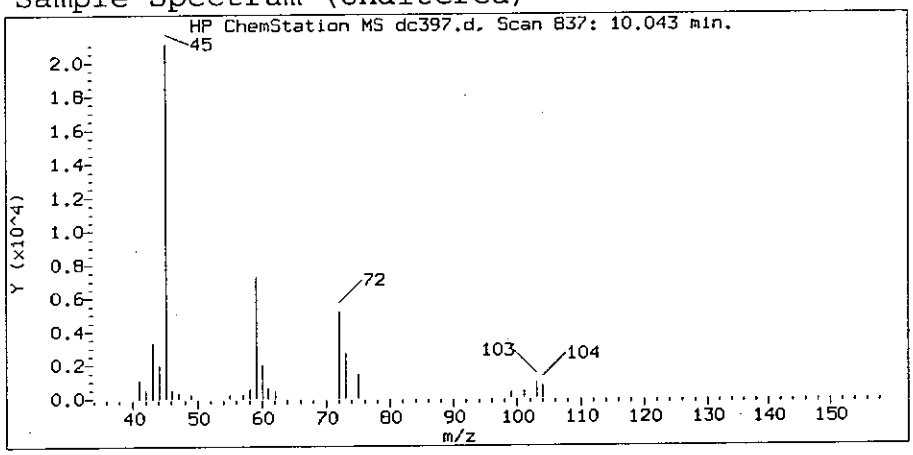
Reference Standard Spectrum for 2,2'-oxybis(1-Chloropropane)

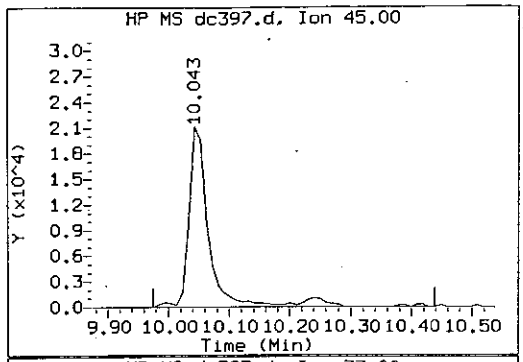


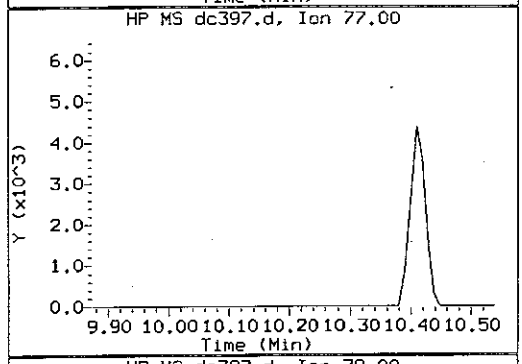

Sample Spectrum (Background Subtracted)

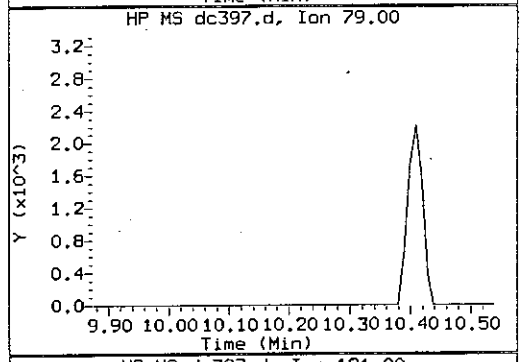


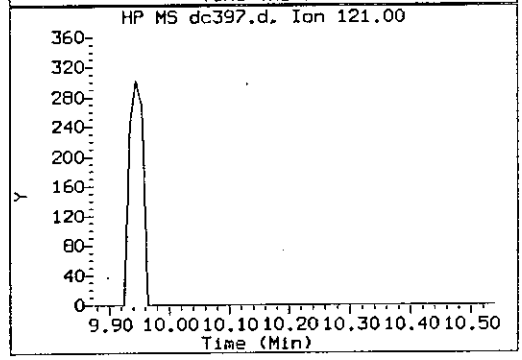

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

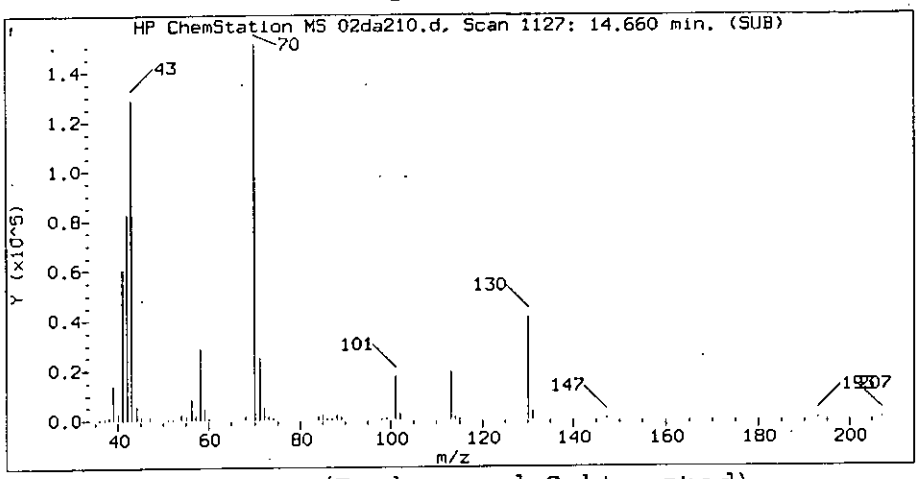
Sample Name: 7GP23

Lab Sample ID: 4241651

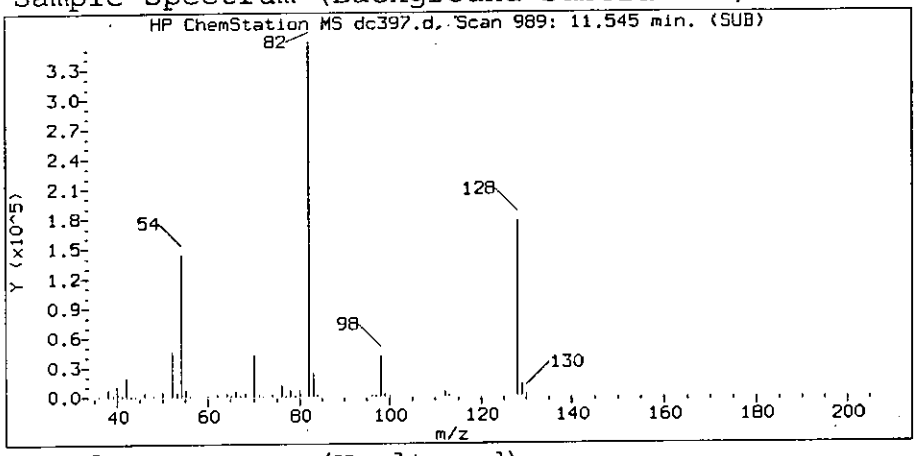
| | |
|---|---|
| Compound Number | : 27 |
| Compound Name | : 2,2'-oxybis(1-Chloropropane) |
| Scan Number | : 837 |
| Retention Time (minutes) | : 10.043 |
| Quant Ion | : 45.0 |
| Area (flag) | : 49174 |
| Concentration (ng/ul) | : 6.5020 |

False Positive
RB1528
03-29-04

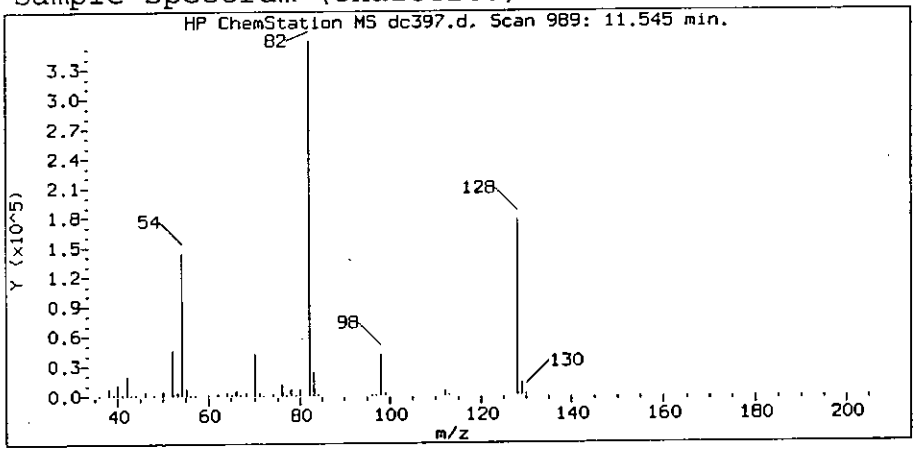
Reference Standard Spectrum for N-Nitroso-di-n-propylamine

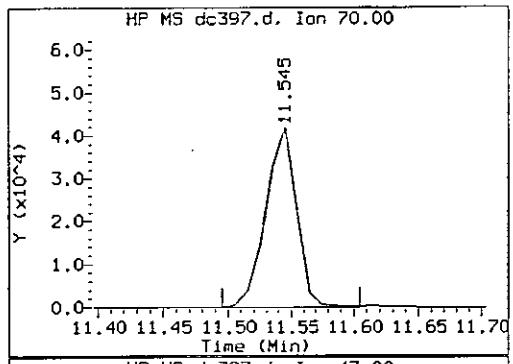


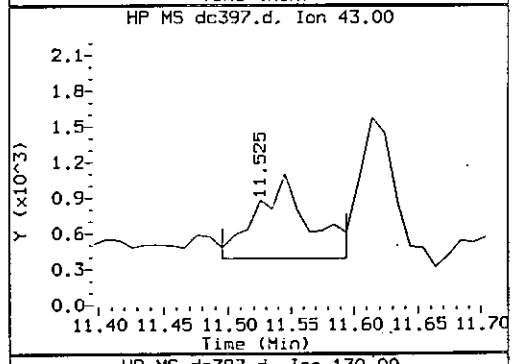

Sample Spectrum (Background Subtracted)

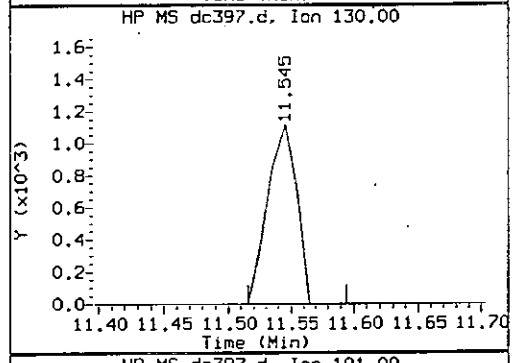


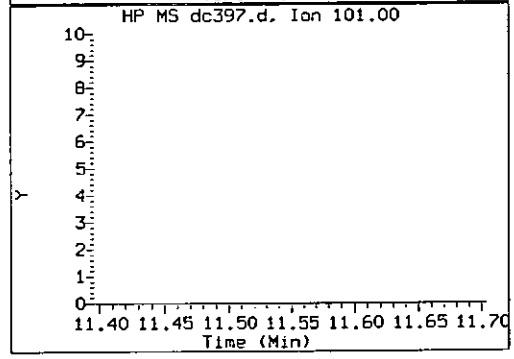

Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Sample Name: 7GP23

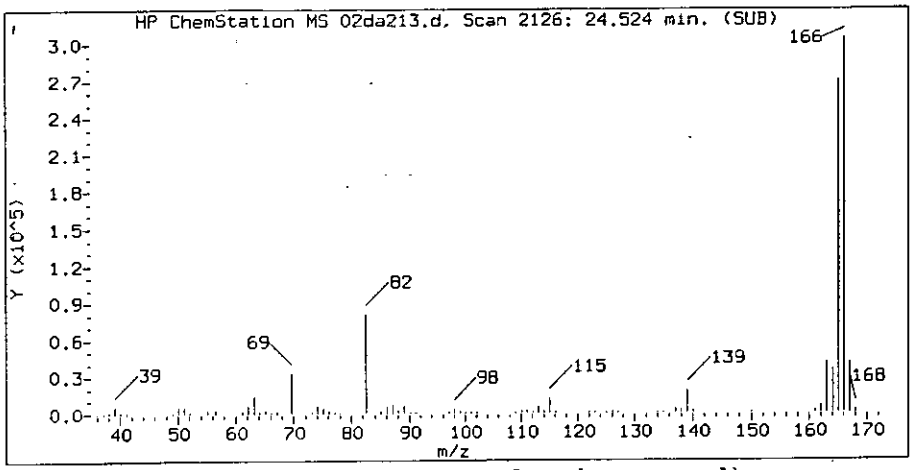
Lab Sample ID: 4241651

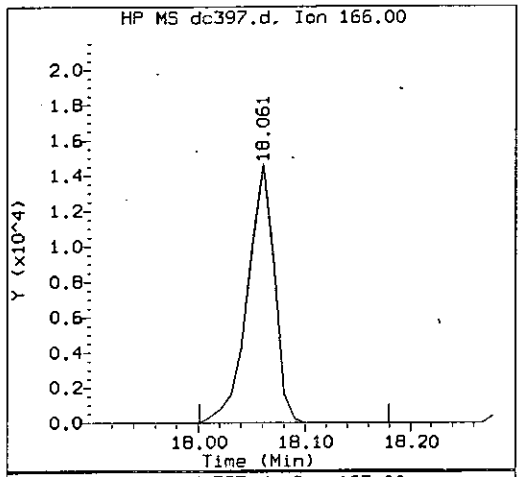
| | |
|---|---|
| Compound Number | : 31 |
| Compound Name | : N-Nitroso-di-n-propylamine |
| Scan Number | : 989 |
| Retention Time (minutes) | : 11.545 |
| Quant Ion | : 70.0 |
| Area (flag) | : 71669 |
| Concentration (ng/ul) | : 17.6258 |

False Positive
8175 RB1528
3-29-04

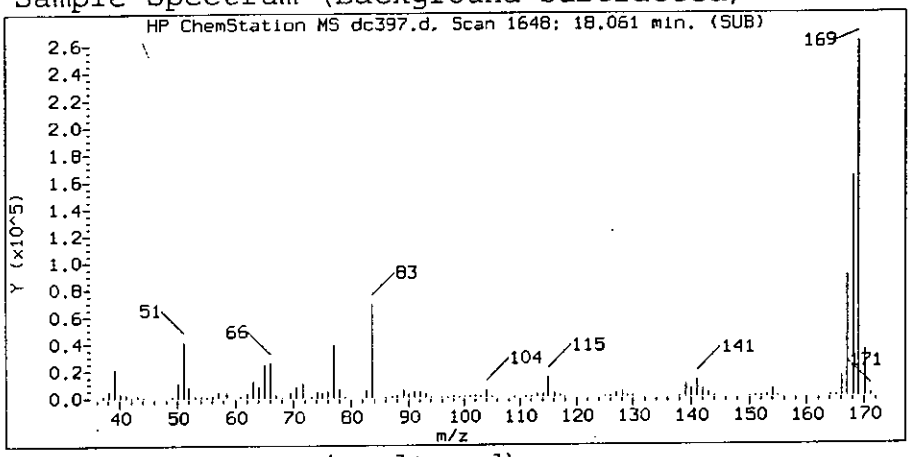
Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc397.d, generated on 03/29/2004 at 17:15

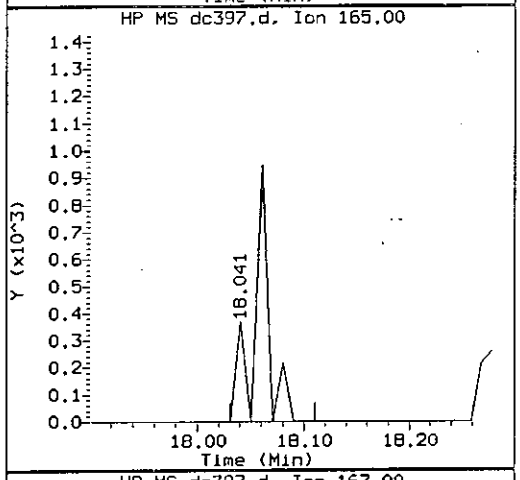
Reference Standard Spectrum for Fluorene



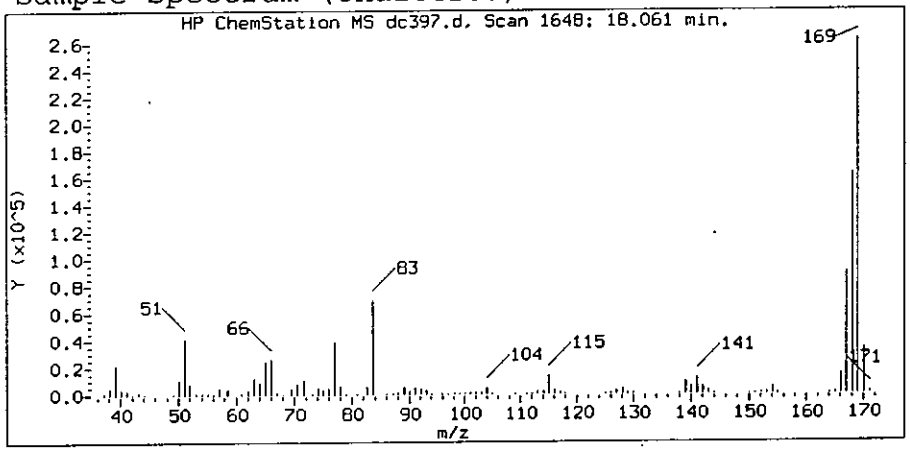



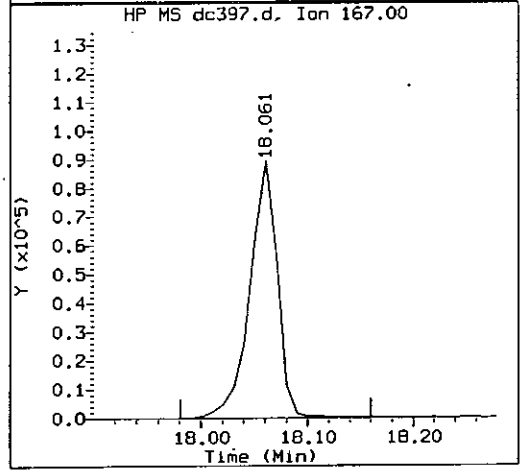

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

Sample Name: 7GP23

Lab Sample ID: 4241651

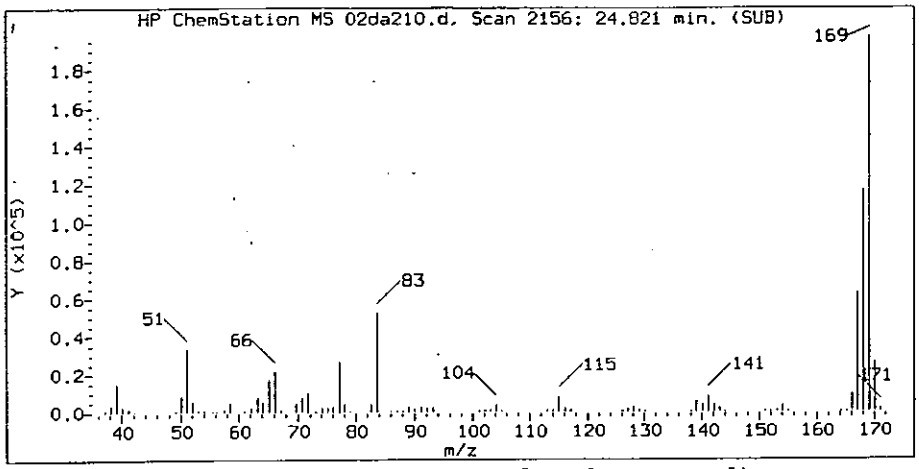
| | |
|---|---|
| Compound Number | : 109 |
| Compound Name | : Fluorene |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.061 |
| Quant Ion | : 166.0 |
| Area (flag) | : 25296 |
| Concentration (ng/ul) | : 3.2982 |

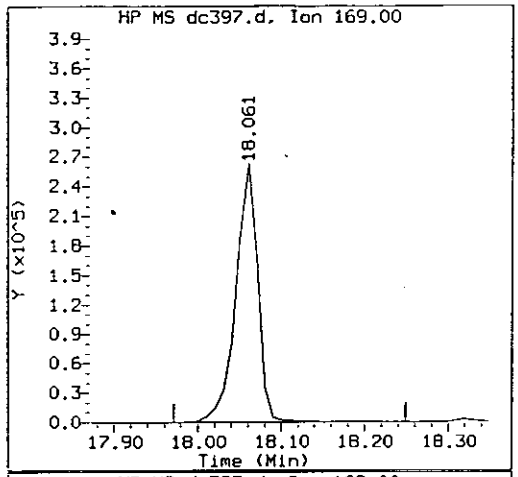
False Positive

RB1568
3-29-04

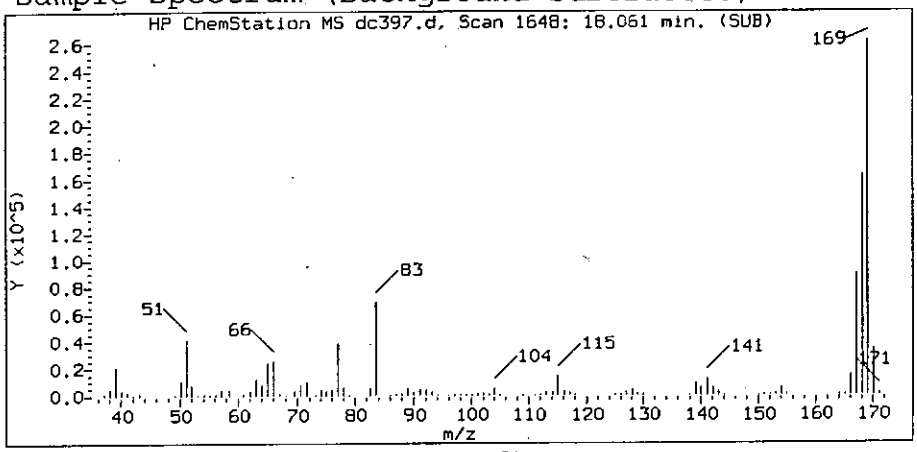
Hit Data Report for data file /chem/HP06780.i/04mar29.b/dc397.d, generated on 03/29/2004 at 17:15

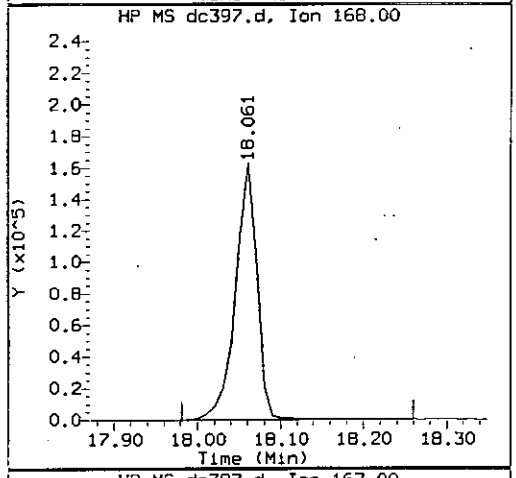
Reference Standard Spectrum for N-Nitrosodiphenylamine



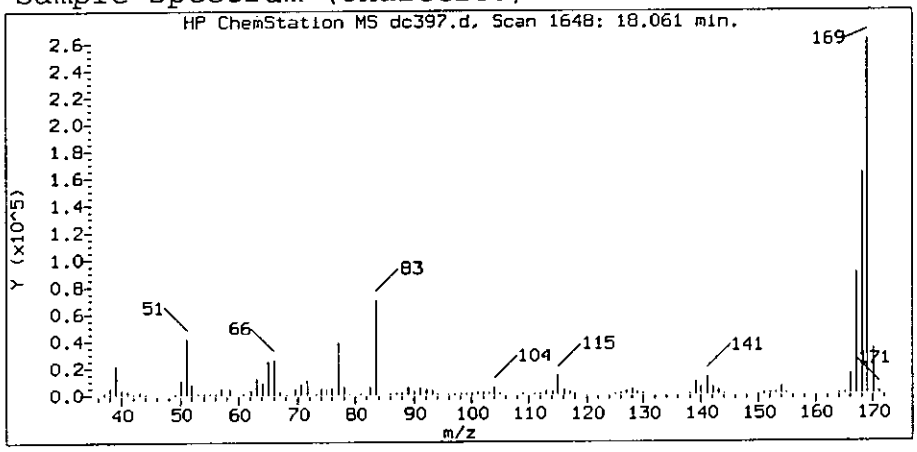



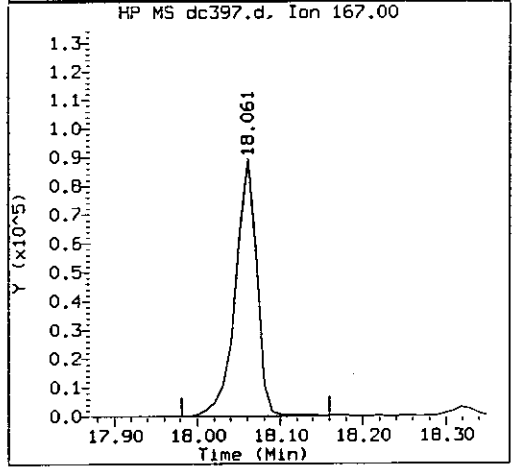

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

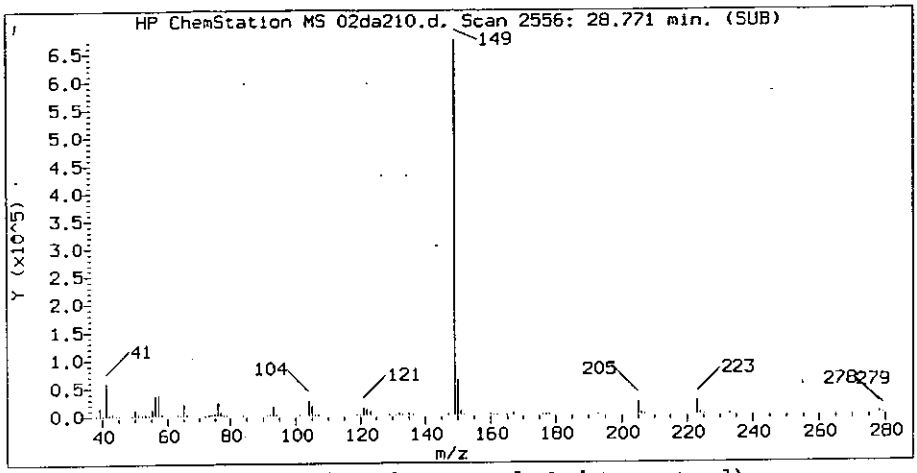
Sample Name: 7GP23

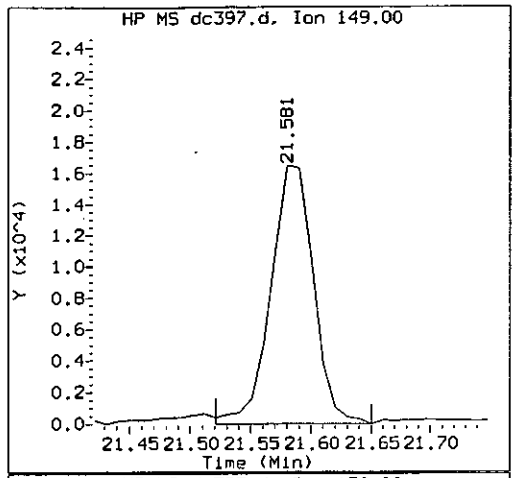
Lab Sample ID: 4241651

| | |
|---|---|
| Compound Number | : 115 |
| Compound Name | : N-Nitrosodiphenylamine |
| Scan Number | : 1648 |
| Retention Time (minutes) | : 18.061 |
| Quant Ion | : 169.0 |
| Area (flag) | : 478755 |
| Concentration (ng/ul) | : 84.2029 |

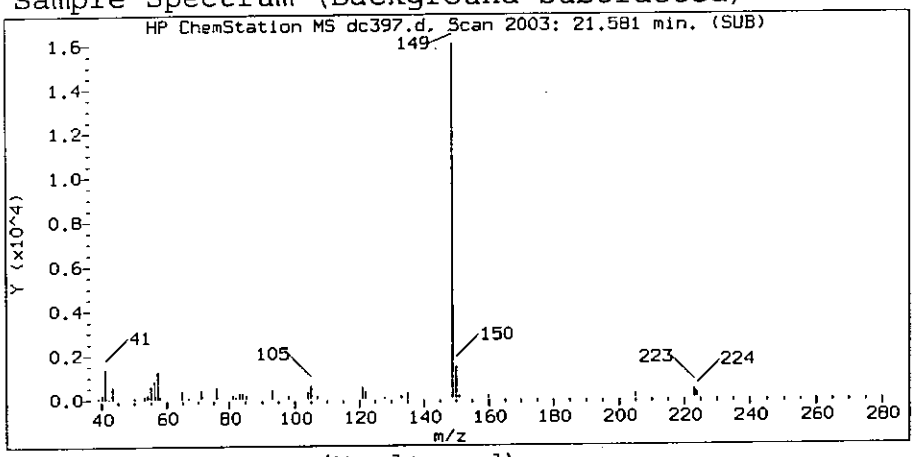
RB 1568
3-29-04

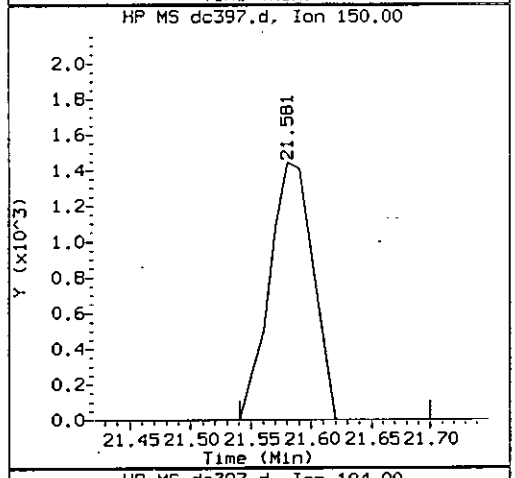
Reference Standard Spectrum for Di-n-butylphthalate



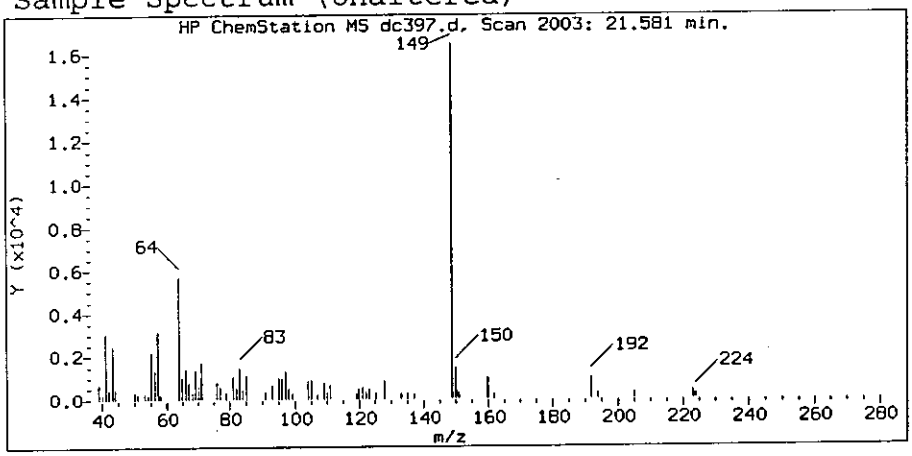



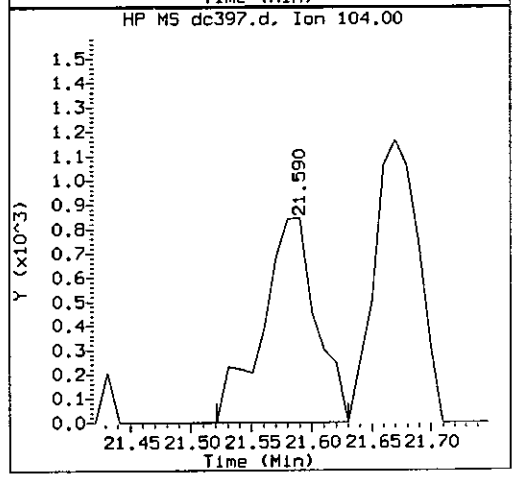

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 17:15 rpb01568

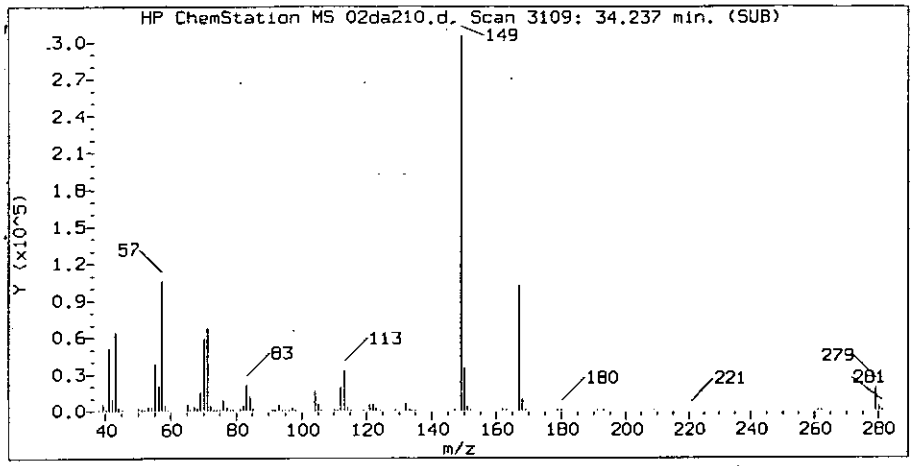
Sample Name: 7GP23

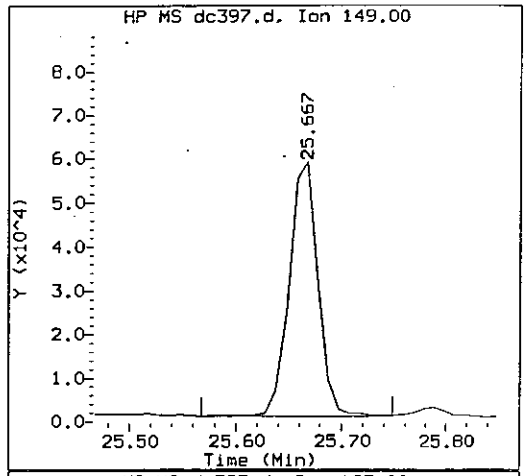
Lab Sample ID: 4241651

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2003 |
| Retention Time (minutes) | : 21.581 |
| Quant Ion | : 149.0 |
| Area (flag) | : 40567 |
| Concentration (ng/ul) | : 2.6047 |

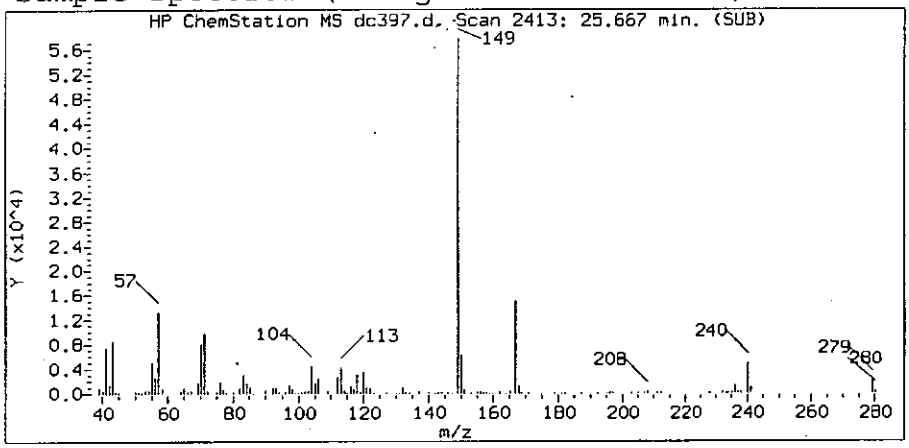
RB1568
3178 3-29-04

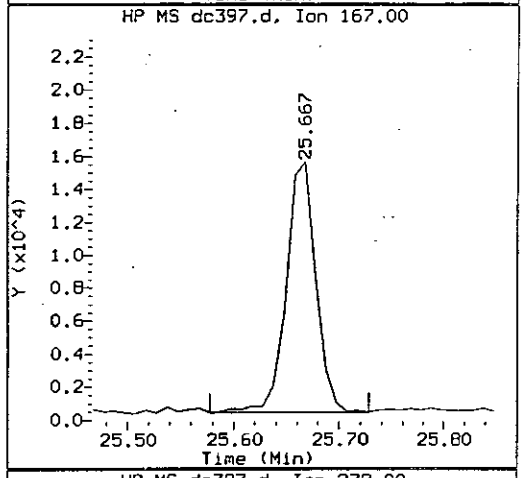
Reference Standard Spectrum for bis(2-Ethylhexyl)phthalate



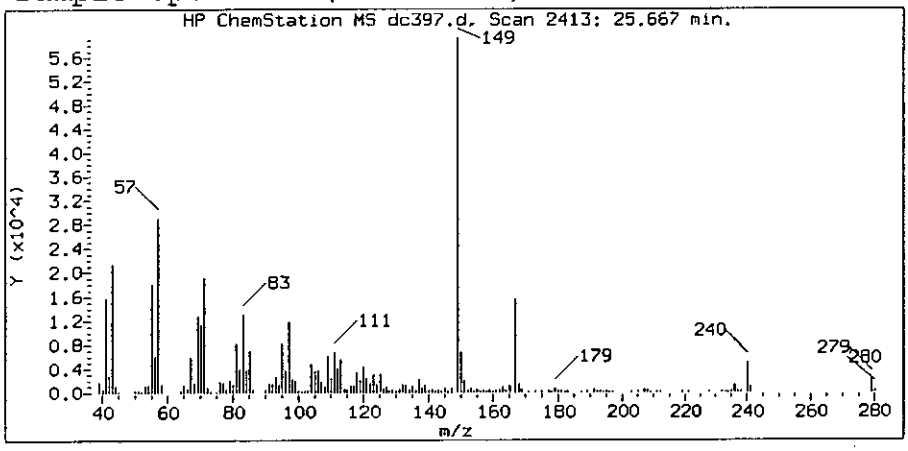



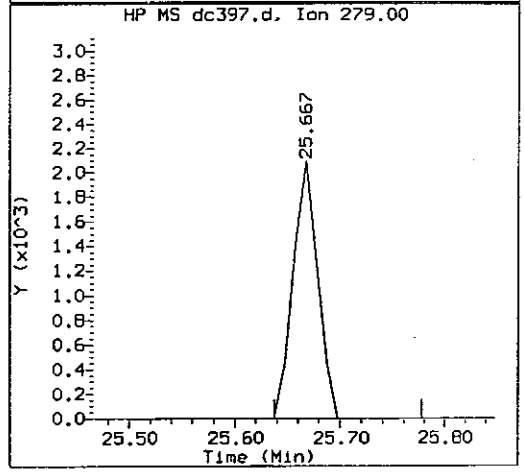

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06780.i/04mar29.b/dc397.d
Injection date and time: 29-MAR-2004 16:35

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: all

Date, time and analyst ID of latest file update: 29-Mar-2004 17:14 Automation

Sample Name: 7GP23

Lab Sample ID: 4241651

Compound Number : 167
Compound Name : bis(2-Ethylhexyl)phthalate
Scan Number : 2413
Retention Time (minutes): 25.667
Quant Ion : 149.0
Area (flag) : 111327
Concentration (ng/ul) : 14.9422

SITE B-1568
3-29-04

7GP24

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241652

Data file: /chem/HP06777.i/04mar26a.b/gc396.d Blank Data file reference: /chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 22:48 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Method used: /chem/HP06777.i/04mar26a.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26a.b/gc394.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 11.939( 0.000) | 831 | 152.0 | 348669( -8) | 40.00 | |
| 52) Naphthalene-d8 | 15.671( 0.010) | 1179 | 136.0 | 1325530( -6) | 40.00 | |
| 96) Acenaphthene-d10 | 21.044( 0.000) | 1680 | 164.0 | 614223( -2) | 40.00 | |
| 133) Phenanthrene-d10 | 25.613( 0.010) | 2106 | 188.0 | 1004084( -1) | 40.00 | |
| 165) Chrysene-d12 | 32.241( 0.010) | 2724 | 240.0 | 904984( -3) | 40.00 | |
| 173) Perylene-d12 | 36.895( 0.010) | 3158 | 264.0 | 781569( -4) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.314(-0.001) | 112 | 1923924 | 144.509 | 72% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 10.899(-0.003) | 99 | 2706108 | 168.467 | 84% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 13.537(-0.001) | 82 | 1181216 | 89.673 | 90% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 18.985( 0.000) | 172 | 1861564 | 90.069 | 90% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 23.479(-0.001) | 330 | 1129374 | 205.223 | 103% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 29.849(-0.001) | 244 | 1868005 | 104.687 | 105% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | ND | ND | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | | | | Below MDL, Do not report | | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 41) Isophorone | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | ND | ND | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | ND | ND | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | 1.00 |



5188

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06777.i/04mar26a.b/gc396.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 22:48 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Method used: /chem/HP06777.i/04mar26a.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 26-MAR-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26a.b/gc394.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | | ND | ND | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | | ND | ND | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | | ND | ND | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 109) Fluorene | (3) | | | | | ND | ND | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | | ND | ND | | | 1.00 |
| 136) Anthracene | (4) | | | | | ND | ND | | | 1.00 |
| 138) Carbazole | (4) | | | | | ND | ND | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | | | | Below MDL, | Do not report | | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, | Do not report | | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |

7GP24

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241652

Data file: /chem/HP06777.i/04mar26a.b/gc396.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 22:48 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Method used: /chem/HP06777.i/04mar26a.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 22:10
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26a.b/gc394.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

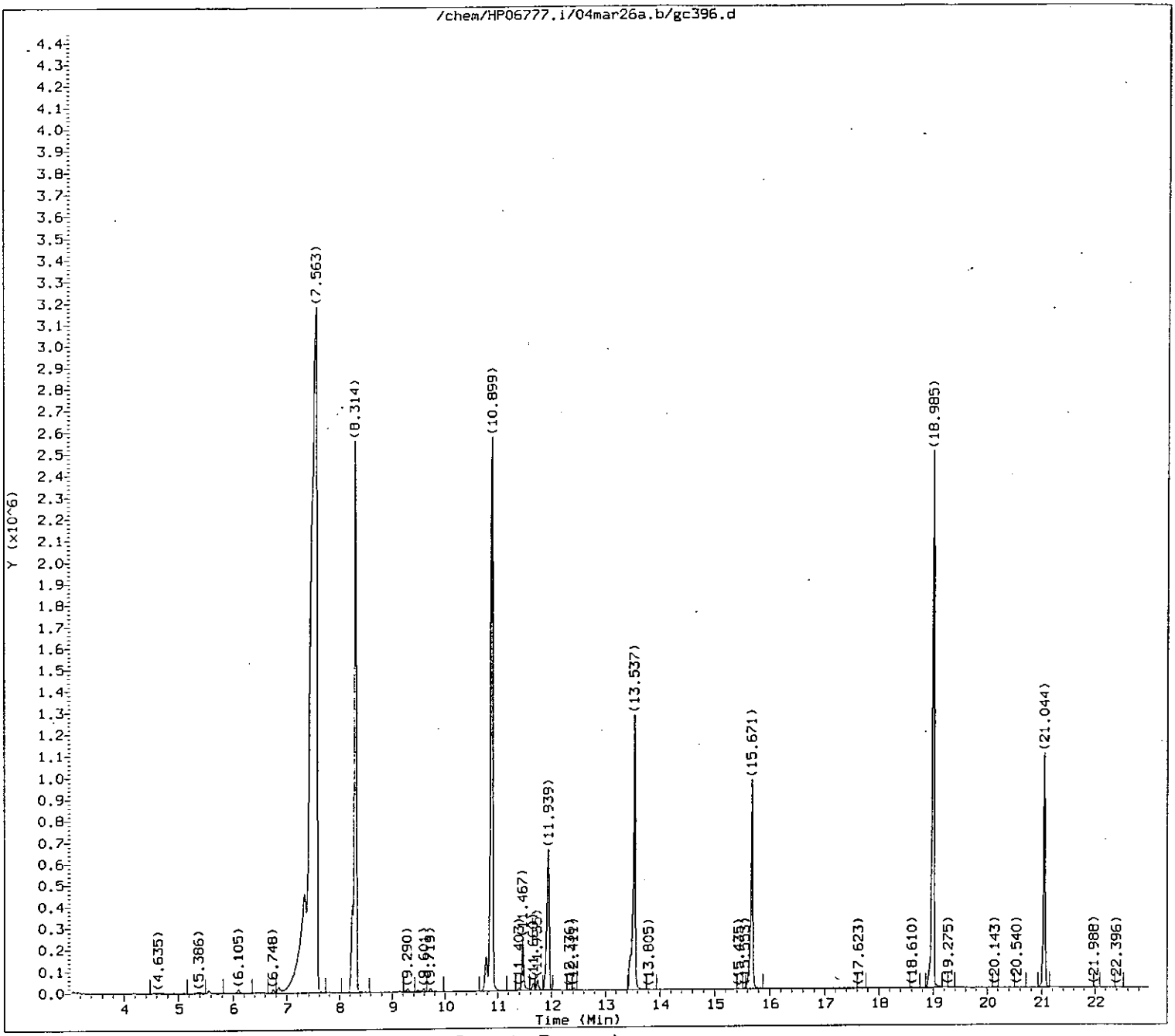
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: B Michelle Jarosick Date: 3-29-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc396.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 22:48  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 22:10
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Sample Name: 7GP24  Lab Sample ID: 4241652

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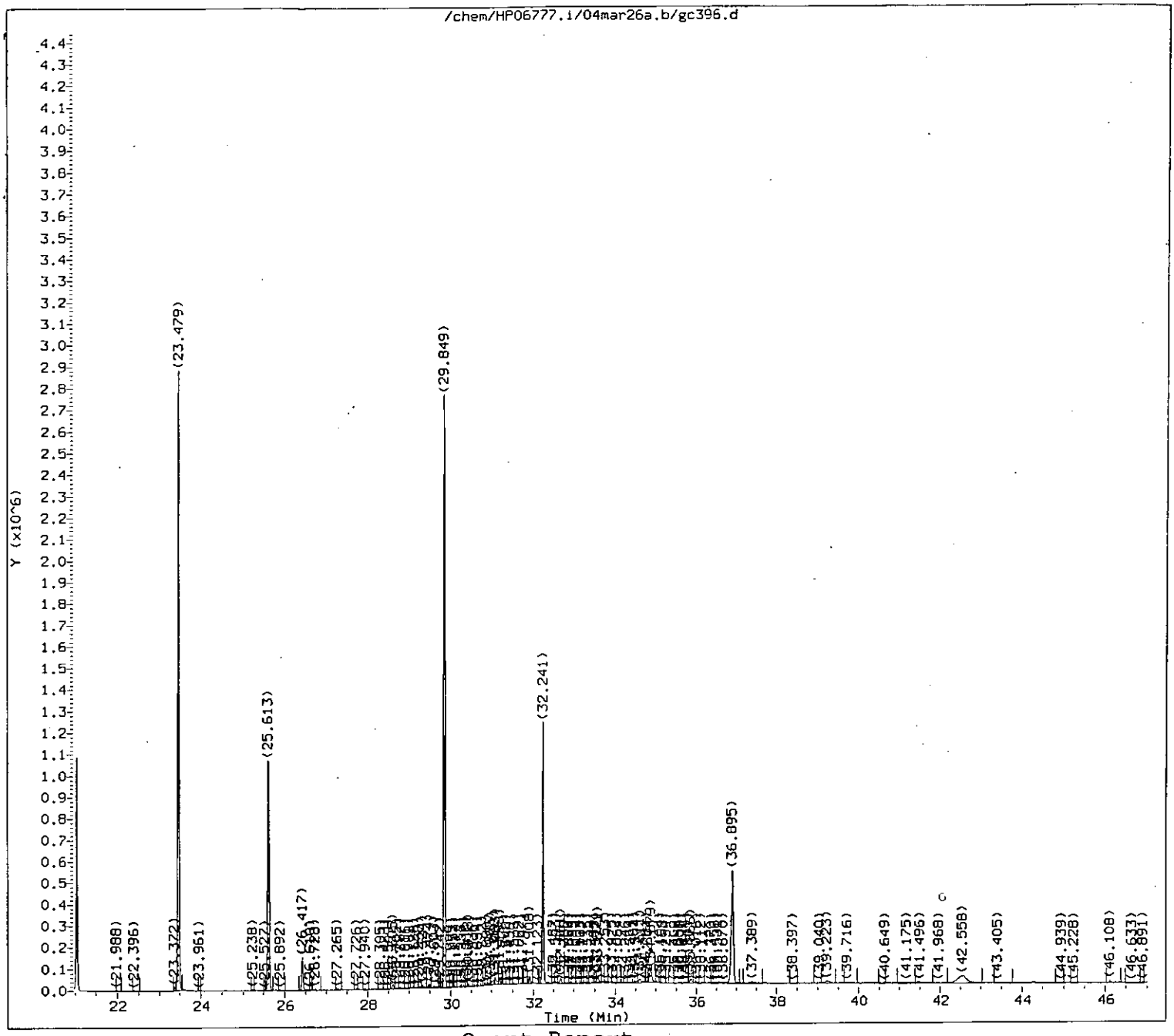
3.27.04

0183




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc396.d Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 22:48 Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 22:10
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Sample Name: 7GP24 Lab Sample ID: 4241652

BGW
3.27.04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc396.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 22:48  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 22:10
Date, time and analyst ID of latest file update: 27-Mar-2004 05:44 bkg00522

Sample Name: 7GP24  Lab Sample ID: 4241652

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 11.939 | 152 | 348669 | 40.000 |
| 52) | Naphthalene-d8 | (2) | 15.671 | 136 | 1325530 | 40.000 |
| 96) | Acenaphthene-d10 | (3) | 21.044 | 164 | 614223 | 40.000 |
| 133) | Phenanthrene-d10 | (4) | 25.613 | 188 | 1004084 | 40.000 |
| 165) | Chrysene-d12 | (5) | 32.241 | 240 | 904984 | 40.000 |
| 173) | Perylene-d12 | (6) | 36.895 | 264 | 781569 | 40.000 |
| 9) | 2-Fluorophenol | (1) | 8.314 | 112 | 1923924 | 144.509 |
| 15) | Phenol-d6 | (1) | 10.899 | 99 | 2706108 | 168.467 |
| 38) | Nitrobenzene-d5 | (2) | 13.537 | 82 | 1181216 | 89.673 |
| 77) | 2-Fluorobiphenyl | (3) | 18.985 | 172 | 1861564 | 90.069 |
| 117) | 2,4,6-Tribromophenol | (3) | 23.479 | 330 | 1129374 | 205.223 |
| 154) | Terphenyl-d14 | (5) | 29.849 | 244 | 1868005 | 104.687 |

M = Compound was manually integrated.  A = User selected an alternate hit

# Standards Data

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP06780  Calibration Date(s): 03/19/04  03/19/04

Calibration Times: 09:20  14:15

Min $\overline{RRF}$ for SPCC(#) = 0.050  Max %RSD for CCC(*) = 30%

LAB FILE ID:  RRF5 = dc260.d  RRF15 = dc259.d  RRF30 = dc258.d
RRF50 = dc257.d  RRF80 = dc255.d  RRF120 = dc256.d

| COMPOUND | | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | | 0.697 | 0.734 | 0.696 | 0.749 | 0.754 | 0.718 | | 0.724 | 3 | AVG | |
| N-Nitrosodimethylamine | | 1.014 | 1.058 | 1.069 | 1.157 | 1.197 | 1.116 | | 1.102 | 6 | AVG | |
| Pyridine | | 1.831 | 1.858 | 1.781 | 1.895 | 1.946 | 1.823 | | 1.856 | 3 | AVG | |
| 2-Picoline | | 1.860 | 1.893 | 1.814 | 1.879 | 1.908 | 1.786 | | 1.857 | 3 | AVG | |
| Aniline | | 2.797 | 2.709 | 2.619 | 2.649 | 2.648 | 2.407 | | 2.638 | 5 | AVG | |
| Phenol | * | 2.310 | 2.309 | 2.146 | 2.260 | 2.171 | 2.054 | | 2.208 | 5 | AVG | * |
| bis(2-Chloroethyl)ether | | 1.796 | 1.796 | 1.679 | 1.720 | 1.674 | 1.567 | | 1.705 | 5 | AVG | |
| 2-Chlorophenol | | 1.636 | 1.575 | 1.506 | 1.547 | 1.504 | 1.431 | | 1.533 | 5 | AVG | |
| 1,3-Dichlorobenzene | | 1.698 | 1.671 | 1.579 | 1.590 | 1.497 | 1.433 | | 1.578 | 6 | AVG | |
| 1,4-Dichlorobenzene | * | 1.690 | 1.691 | 1.570 | 1.608 | 1.508 | 1.454 | | 1.587 | 6 | AVG | * |
| Benzyl alcohol | | 1.231 | 1.182 | 1.178 | 1.184 | 1.192 | 1.112 | | 1.180 | 3 | AVG | |
| 1,2-Dichlorobenzene | | 1.628 | 1.622 | 1.542 | 1.582 | 1.481 | 1.378 | | 1.539 | 6 | AVG | |
| 2-Methylphenol | | 1.783 | 1.753 | 1.632 | 1.713 | 1.572 | 1.577 | | 1.672 | 5 | AVG | |
| 2,2'-oxybis(1-Chloropropane) | | 1.864 | 1.914 | 1.816 | 1.895 | 1.740 | 1.747 | | 1.829 | 4 | AVG | |
| bis(2-Chloroisopropyl)ether | | 1.864 | 1.914 | 1.816 | 1.895 | 1.740 | 1.747 | | 1.829 | 4 | AVG | |
| Acetophenone | | 2.400 | 2.354 | 2.162 | 2.151 | 2.016 | 1.884 | | 2.161 | 9 | AVG | |
| N-Nitroso-di-n-propylamine | # | 1.087 | 1.099 | 1.034 | 1.014 | 0.829 | 0.839 | | 0.984 | 12 | AVG | # |
| 4-Methylphenol | | 1.777 | 1.799 | 1.674 | 1.627 | 1.486 | 1.441 | | 1.634 | 9 | AVG | |
| o-Toluidine | | 2.738 | 2.752 | 2.640 | 2.587 | 2.514 | 2.385 | | 2.603 | 5 | AVG | |
| Hexachloroethane | | 0.820 | 0.827 | 0.777 | 0.792 | 0.777 | 0.740 | | 0.789 | 4 | AVG | |
| Nitrobenzene | | 0.417 | 0.436 | 0.421 | 0.411 | 0.411 | 0.410 | | 0.418 | 2 | AVG | |
| Isophorone | | 0.899 | 0.888 | 0.878 | 0.861 | 0.860 | 0.837 | | 0.871 | 3 | AVG | |
| 2-Nitrophenol | * | 0.242 | 0.261 | 0.257 | 0.264 | 0.251 | 0.246 | | 0.254 | 3 | AVG | * |
| 2,4-Dimethylphenol | | 0.453 | 0.457 | 0.440 | 0.445 | 0.425 | 0.398 | | 0.437 | 5 | AVG | |
| bis(2-Chloroethoxy)methane | | 0.540 | 0.552 | 0.543 | 0.550 | 0.511 | 0.504 | | 0.533 | 4 | AVG | |
| Benzoic acid | | 0.184 | 0.160 | 0.172 | 0.174 | 0.184 | 0.200 | | 0.179 | 8 | AVG | |
| 2,4-Dichlorophenol | * | 0.289 | 0.318 | 0.312 | 0.318 | 0.304 | 0.290 | | 0.305 | 4 | AVG | * |
| 1,2,4-Trichlorobenzene | | 0.267 | 0.277 | 0.259 | 0.269 | 0.260 | 0.246 | | 0.263 | 4 | AVG | |
| Naphthalene | | 1.148 | 1.113 | 1.051 | 1.037 | 0.972 | 0.918 | | 1.040 | 8 | AVG | |
| 4-Chloroaniline | | 0.507 | 0.522 | 0.501 | 0.489 | 0.454 | 0.448 | | 0.487 | 6 | AVG | |
| Hexachlorobutadiene | * | 0.120 | 0.118 | 0.113 | 0.112 | 0.109 | 0.106 | | 0.113 | 5 | AVG | * |
| Caprolactam | | 0.149 | 0.162 | 0.154 | 0.141 | 0.139 | 0.144 | | 0.148 | 6 | AVG | |
| 4-Chloro-3-methylphenol | * | 0.358 | 0.363 | 0.369 | 0.354 | 0.355 | 0.339 | | 0.356 | 3 | AVG | * |
| 2-Methylnaphthalene | | 0.718 | 0.718 | 0.676 | 0.648 | 0.603 | 0.582 | | 0.658 | 9 | AVG | |
| 1-Methylnaphthalene | | 0.670 | 0.673 | 0.640 | 0.620 | 0.597 | 0.561 | | 0.627 | 7 | AVG | |
| Hexachlorocyclopentadiene | # | 0.060 | 0.110 | 0.135 | 0.163 | 0.176 | 0.171 | | 0.136 | 33 | 1STDEG | # |
| 2,4,6-Trichlorophenol | * | 0.343 | 0.347 | 0.341 | 0.343 | 0.360 | 0.338 | | 0.345 | 2 | AVG | * |
| 2,4,5-Trichlorophenol | | 0.361 | 0.370 | 0.362 | 0.353 | 0.359 | 0.344 | | 0.358 | 2 | AVG | |
| Biphenyl | | 1.803 | 1.704 | 1.636 | 1.581 | 1.536 | 1.518 | | 1.630 | 7 | AVG | |
| Diphenyl | | 1.803 | 1.704 | 1.636 | 1.581 | 1.536 | 1.518 | | 1.630 | 7 | AVG | |
| 1,1'-Biphenyl | | 1.803 | 1.704 | 1.636 | 1.581 | 1.536 | 1.518 | | 1.630 | 7 | AVG | |
| 2-Chloronaphthalene | | 1.341 | 1.377 | 1.320 | 1.263 | 1.249 | 1.230 | | 1.297 | 4 | AVG | |
| Diphenyl ether | | 0.837 | 0.805 | 0.783 | 0.765 | 0.747 | 0.742 | | 0.780 | 5 | AVG | |
| 2-Nitroaniline | | 0.570 | 0.593 | 0.575 | 0.597 | 0.576 | 0.570 | | 0.580 | 2 | AVG | |
| Dimethylphthalate | | 1.527 | 1.473 | 1.477 | 1.382 | 1.405 | 1.291 | | 1.426 | 6 | AVG | |
| 2,6-Dinitrotoluene | | 0.400 | 0.393 | 0.389 | 0.375 | 0.387 | 0.375 | | 0.387 | 3 | AVG | |
| Acenaphthylene | | 2.073 | 1.990 | 1.892 | 1.892 | 1.840 | 1.768 | | 1.909 | 6 | AVG | |
| 3-Nitroaniline | | 0.480 | 0.488 | 0.494 | 0.487 | 0.496 | 0.477 | | 0.487 | 2 | AVG | |
| Acenaphthene | * | 1.322 | 1.309 | 1.216 | 1.158 | 1.119 | 1.079 | | 1.201 | 8 | AVG | * |
| 2,4-Dinitrophenol | # | 0.088 | 0.120 | 0.148 | 0.164 | 0.175 | 0.178 | | 0.145 | 24 | 1STDEG | # |
| 4-Nitrophenol | # | 0.136 | 0.150 | 0.157 | 0.160 | 0.161 | 0.169 | | 0.155 | 7 | AVG | # |
| Dibenzofuran | | 1.738 | 1.706 | 1.583 | 1.534 | 1.563 | 1.483 | | 1.601 | 6 | AVG | |

5187 - 1237
3-19-04

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06780 Calibration Date(s): 03/19/04 03/19/04

Calibration Times: 09:20 14:15

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = dc260.d RRF15 = dc259.d RRF30 = dc258.d
RRF50 = dc257.d RRF80 = dc255.d RRF120 = dc256.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dinitrotoluene | 0.462 | 0.454 | 0.464 | 0.433 | 0.429 | 0.444 | | 0.448 | 3 | AVG | |
| | 1-Naphthylamine | 1.383 | 1.383 | 1.277 | 1.258 | 1.207 | 1.196 | | 1.284 | 6 | AVG | |
| | 2,3,4,6-Tetrachlorophenol | 0.222 | 0.239 | 0.228 | 0.238 | 0.246 | 0.242 | | 0.236 | 4 | AVG | |
| | 2-Naphthylamine | 1.453 | 1.419 | 1.385 | 1.373 | 1.330 | 1.276 | | 1.373 | 5 | AVG | |
| | Diethylphthalate | 1.548 | 1.531 | 1.438 | 1.370 | 1.294 | 1.346 | | 1.421 | 7 | AVG | |
| | Fluorene | 1.424 | 1.277 | 1.242 | 1.170 | 1.019 | 1.066 | | 1.200 | 12 | AVG | |
| | 4-Chlorophenyl-phenylether | 0.523 | 0.492 | 0.469 | 0.467 | 0.449 | 0.432 | | 0.472 | 7 | AVG | |
| | 4-Nitroaniline | 0.503 | 0.474 | 0.461 | 0.442 | 0.433 | 0.437 | | 0.458 | 6 | AVG | |
| | 4,6-Dinitro-2-methylphenol | 0.129 | 0.143 | 0.163 | 0.180 | 0.185 | 0.180 | | 0.163 | 14 | AVG | |
| * | N-Nitrosodiphenylamine (1) | 0.729 | 0.736 | 0.686 | 0.741 | 0.683 | 0.680 | | 0.709 | 4 | AVG | * |
| | 1,2-Diphenylhydrazine | 1.335 | 1.417 | 1.300 | 1.426 | 1.303 | 1.285 | | 1.344 | 5 | AVG | |
| | 4-Bromophenyl-phenylether | 0.200 | 0.198 | 0.182 | 0.201 | 0.192 | 0.181 | | 0.192 | 5 | AVG | |
| | Hexachlorobenzene | 0.212 | 0.231 | 0.214 | 0.220 | 0.215 | 0.203 | | 0.215 | 4 | AVG | |
| * | Pentachlorophenol | 0.075 | 0.090 | 0.088 | 0.100 | 0.109 | 0.104 | | 0.094 | 13 | AVG | * |
| | Phenanthrene | 1.204 | 1.232 | 1.120 | 1.113 | 1.065 | 1.081 | | 1.136 | 6 | AVG | |
| | Anthracene | 1.224 | 1.237 | 1.158 | 1.210 | 1.108 | 1.096 | | 1.172 | 5 | AVG | |
| | Carbazole | 1.336 | 1.301 | 1.229 | 1.244 | 1.237 | 1.174 | | 1.254 | 5 | AVG | |
| | Di-n-butylphthalate | 2.000 | 2.053 | 1.915 | 1.935 | 1.893 | 1.859 | | 1.943 | 4 | AVG | |
| * | Fluoranthene | 1.164 | 1.160 | 1.076 | 1.014 | 0.977 | 0.927 | | 1.053 | 9 | AVG | * |
| | Benzidine | 0.674 | 0.786 | 0.789 | 0.772 | 0.785 | 0.720 | | 0.754 | 6 | AVG | |
| | Pyrene | 1.710 | 1.700 | 1.609 | 1.632 | 1.551 | 1.403 | | 1.601 | 7 | AVG | |
| | Butylbenzylphthalate | 1.291 | 1.245 | 1.198 | 1.167 | 1.118 | 1.032 | | 1.175 | 8 | AVG | |
| | 3,3'-Dichlorobenzidine | 0.470 | 0.470 | 0.457 | 0.436 | 0.429 | 0.405 | | 0.445 | 6 | AVG | |
| | 4,4'-Methylenebis(2-Chloroanil | 0.212 | 0.239 | 0.227 | 0.216 | 0.209 | 0.195 | | 0.216 | 7 | AVG | |
| | Benzo(a)anthracene | 1.324 | 1.333 | 1.333 | 1.319 | 1.309 | 1.212 | | 1.305 | 4 | AVG | |
| | Chrysene | 1.322 | 1.304 | 1.227 | 1.239 | 1.234 | 1.171 | | 1.250 | 4 | AVG | |
| | bis(2-Ethylhexyl)phthalate | 1.700 | 1.702 | 1.592 | 1.490 | 1.435 | 1.345 | | 1.544 | 9 | AVG | |
| * | Di-n-octylphthalate | 3.070 | 3.208 | 3.303 | 3.159 | 3.039 | 2.965 | | 3.124 | 4 | AVG | * |
| | 7,12-Dimethylbenz[a]anthracene | 0.526 | 0.585 | 0.582 | 0.564 | 0.548 | 0.526 | | 0.555 | 5 | AVG | |
| | Benzo(b)fluoranthene | 1.265 | 1.244 | 1.266 | 1.221 | 1.212 | 1.162 | | 1.228 | 3 | AVG | |
| | Benzo(k)fluoranthene | 1.225 | 1.269 | 1.245 | 1.203 | 1.173 | 1.082 | | 1.200 | 6 | AVG | |
| * | Benzo(a)pyrene | 1.107 | 1.151 | 1.158 | 1.134 | 1.112 | 1.039 | | 1.117 | 4 | AVG | * |
| | Indeno(1,2,3-cd)pyrene | 1.062 | 1.082 | 1.110 | 1.128 | 1.153 | 1.114 | | 1.108 | 3 | AVG | |
| | Dibenz(a,h)anthracene | 0.965 | 1.017 | 1.025 | 1.017 | 1.026 | 0.988 | | 1.006 | 2 | AVG | |
| | Benzo(g,h,i)perylene | 1.082 | 1.119 | 1.097 | 1.096 | 1.119 | 1.102 | | 1.102 | 1 | AVG | |
| | 2-Fluorophenol | 1.928 | 1.938 | 1.766 | 1.925 | 1.910 | 1.828 | | 1.882 | 4 | AVG | |
| | Phenol-d5 | 2.238 | 2.216 | 2.081 | 2.192 | 2.173 | 1.981 | | 2.147 | 5 | AVG | |
| | Phenol-d6 | 2.238 | 2.216 | 2.081 | 2.192 | 2.173 | 1.981 | | 2.147 | 5 | AVG | |
| | Nitrobenzene-d5 | 0.443 | 0.459 | 0.452 | 0.436 | 0.444 | 0.435 | | 0.445 | 2 | AVG | |
| | 2-Fluorobiphenyl | 1.313 | 1.344 | 1.258 | 1.248 | 1.207 | 1.179 | | 1.258 | 5 | AVG | |
| | 2,4,6-Tribromophenol | 0.159 | 0.161 | 0.160 | 0.154 | 0.146 | 0.145 | | 0.154 | 5 | AVG | |
| | Terphenyl-d14 | 0.924 | 0.924 | 0.857 | 0.828 | 0.859 | 0.786 | | 0.863 | 6 | AVG | |
| | | | | | | | | | Average %RSD | 6 | | |

(1) Cannot be separated from Diphenylamine

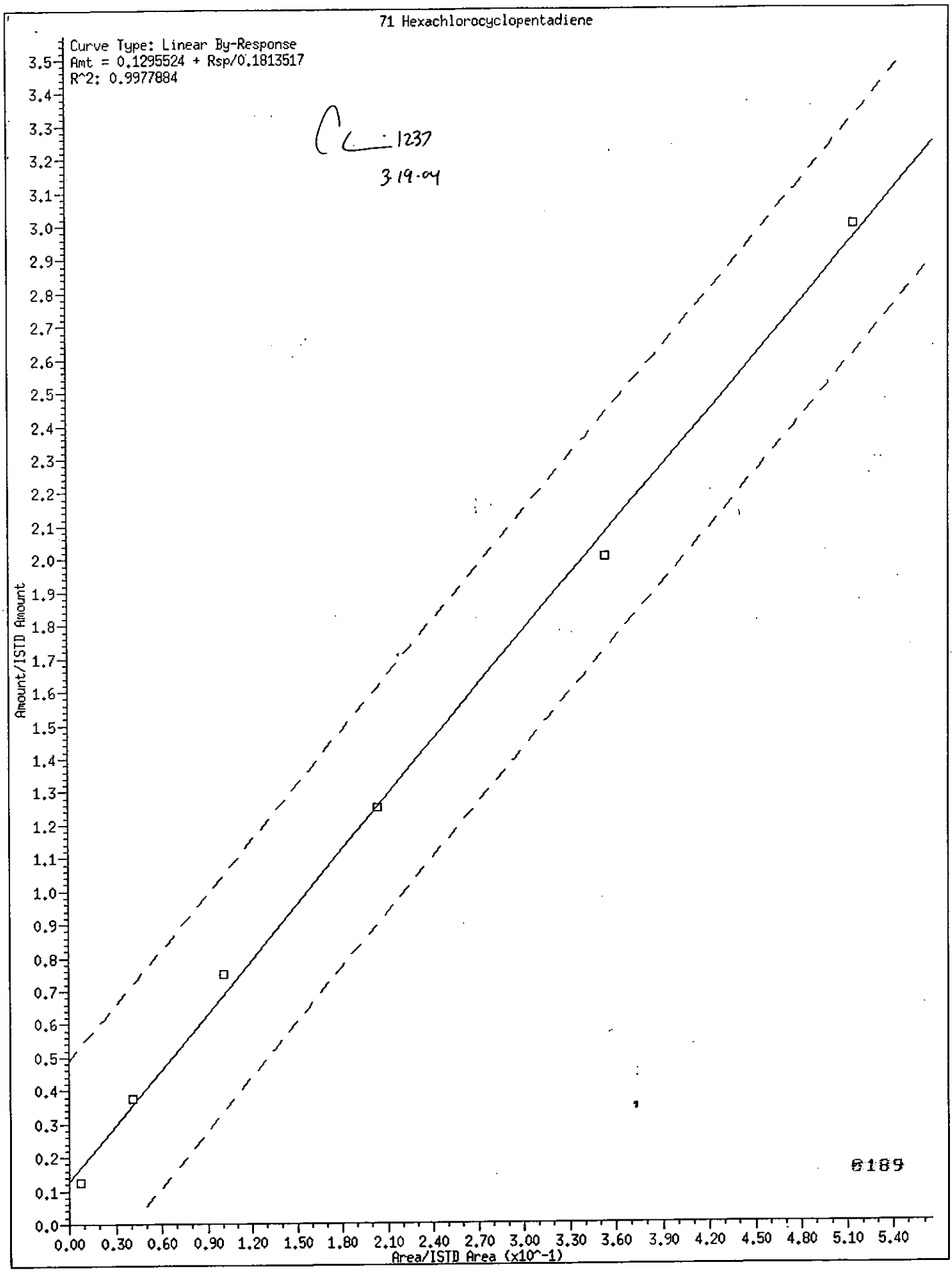
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

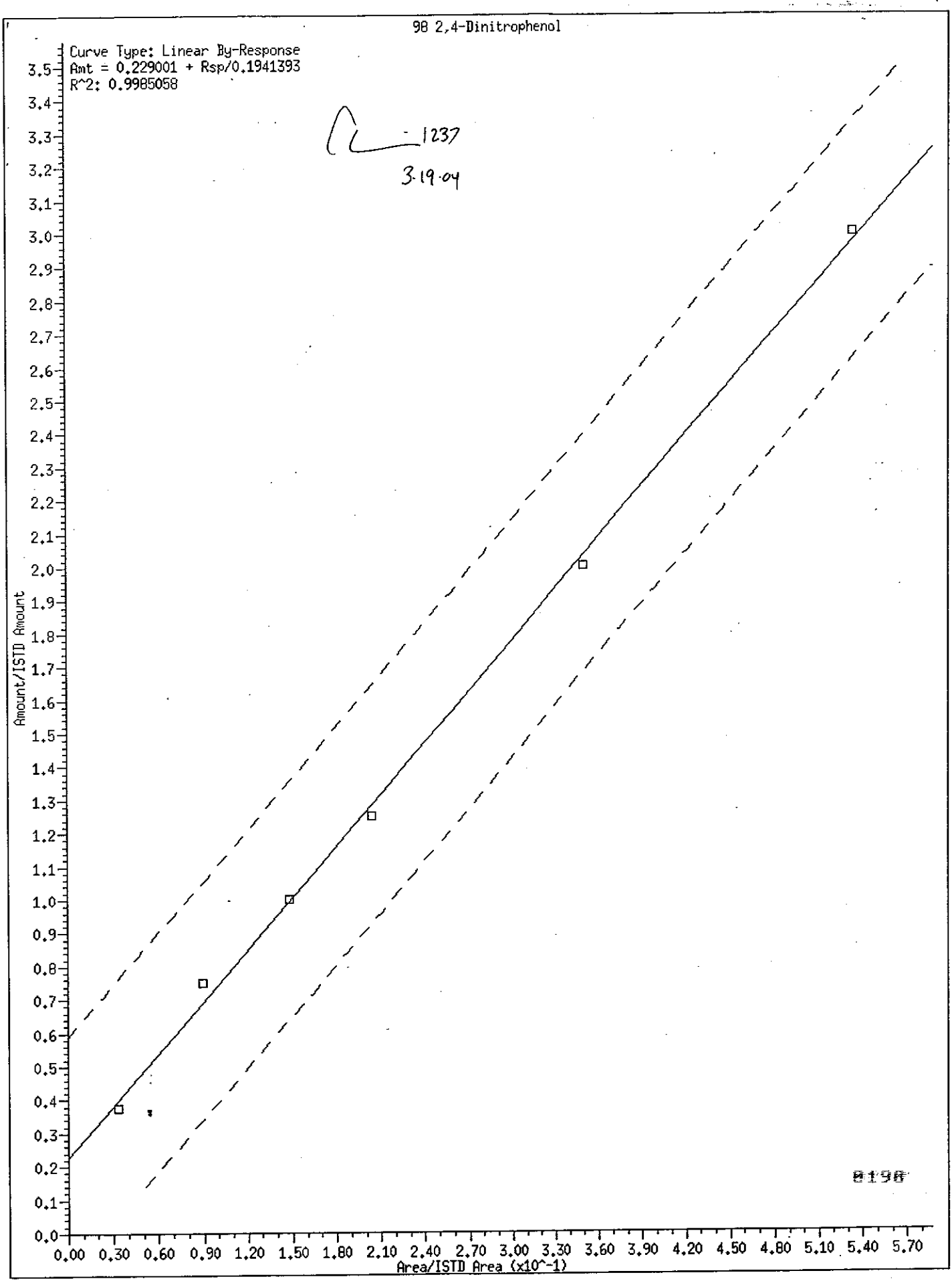
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul in the 5 standard.

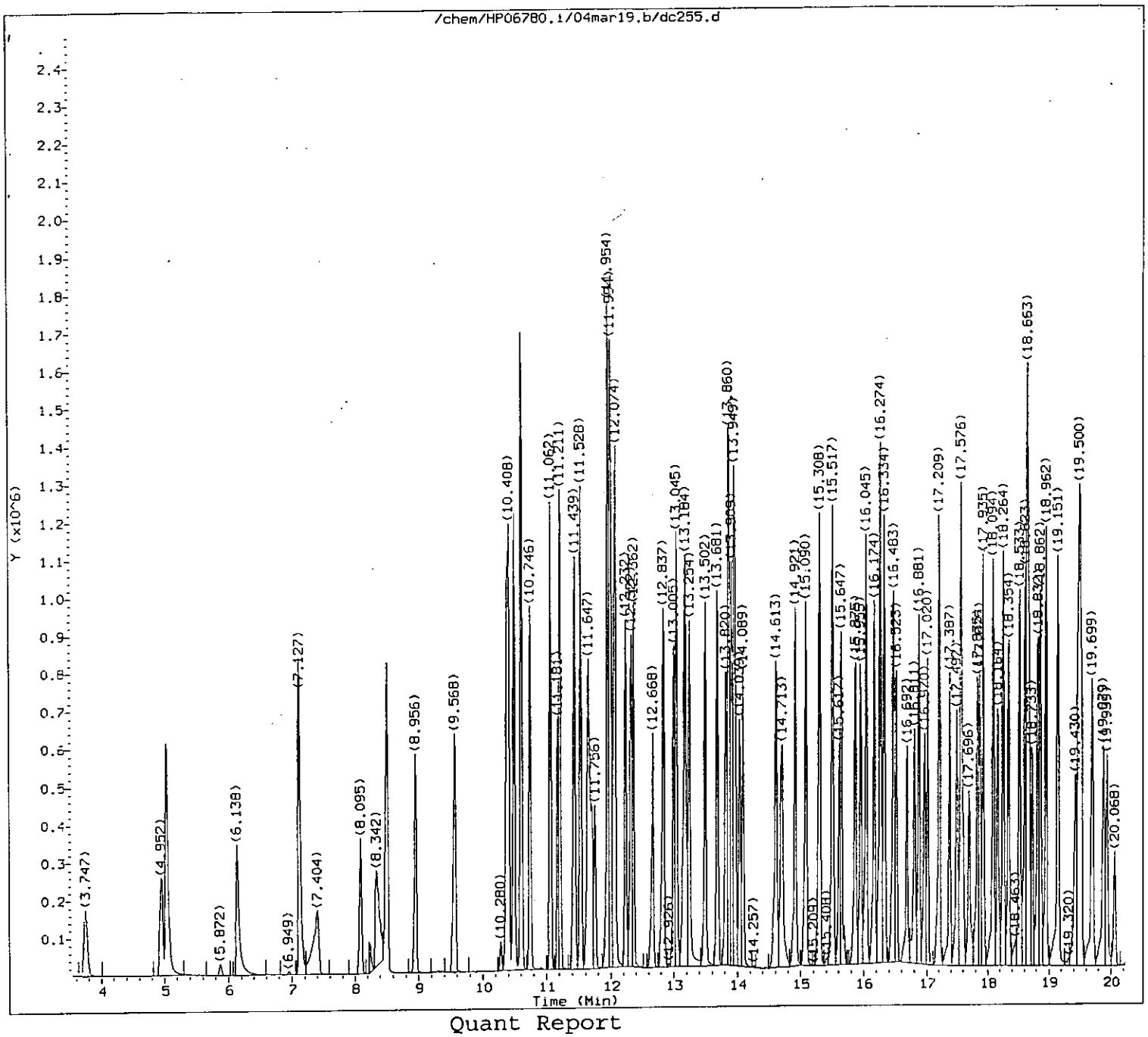
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.

Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5 ,15, 30 standards.

9188


71 Hexachlorocyclopentadiene
Curve Type: Linear By-Response
Amt = 0.1295524 + Rsp/0.1813517
R^2: 0.9977884
C = 1237
3-19-04
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5
0.00 0.30 0.60 0.90 1.20 1.50 1.80 2.10 2.40 2.70 3.00 3.30 3.60 3.90 4.20 4.50 4.80 5.10 5.40
6189


98 2,4-Dinitrophenol
Curve Type: Linear By-Response
Amt = 0.229001 + Rsp/0.1941393
R^2: 0.9985058
1237
3-19-04
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.00 0.30 0.60 0.90 1.20 1.50 1.80 2.10 2.40 2.70 3.00 3.30 3.60 3.90 4.20 4.50 4.80 5.10 5.40 5.70
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc255.d
Injection date and time: 19-MAR-2004 09:20

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 11:11

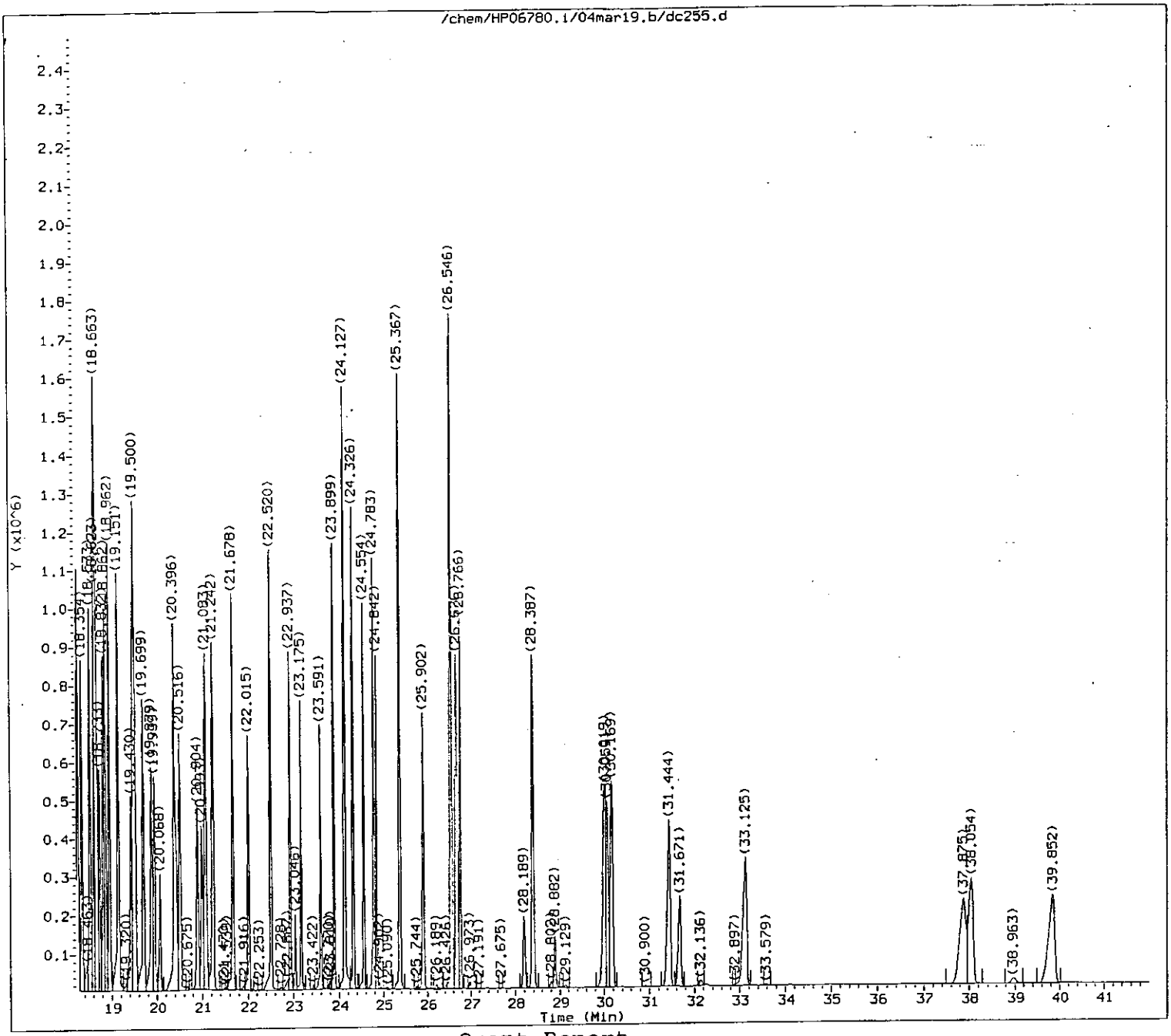
Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 11:11 cam01237

Sample Name: SSTD080

Lab Sample ID: STD0754

8191
1237
3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc255.d
Injection date and time: 19-MAR-2004 09:20

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 11:11

Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 11:11 cam01237

Sample Name: SSTD080

Lab Sample ID: STD0754

8192 — 127

3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc255.d
Injection date and time: 19-MAR-2004 09:20
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 11:11
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 11:11 cam01237

Sample Name: SSTD080
Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 3.747 | 88 | 303097 | 80.000 |
| 2) | N-Nitrosodimethylamine | (1) | 4.952 | 74 | 481350 | 80.000 |
| 3) | Pyridine | (1) | 5.031 | 79 | 782858 | 80.000 |
| 5) | 2-Picoline | (1) | 7.117 | 93 | 767444 | 80.000 |
| 13) | Aniline | (1) | 10.498 | 93 | 1065128 | 80.000 |
| 16) | Phenol | (1) | 10.408 | 94 | 873329 | 80.000 |
| 18) | bis(2-Chloroethyl)ether | (1) | 10.607 | 93 | 673288 | 80.000 |
| 19) | 2-Chlorophenol | (1) | 10.746 | 128 | 604864 | 80.000 |
| 20) | 1,3-Dichlorobenzene | (1) | 11.062 | 146 | 602154 | 80.000 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 11.181 | 152 | 201122 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 11.211 | 146 | 606768 | 80.000 |
| 24) | Benzyl alcohol | (1) | 11.439 | 108 | 479325 | 80.000 |
| 25) | 1,2-Dichlorobenzene | (1) | 11.528 | 146 | 595882 | 80.000 |
| 26) | 2-Methylphenol | (1) | 11.647 | 108 | 632323 | 80.000 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.697 | 45 | 699969 | 80.000 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 11.697 | 45 | 699969 | 80.000 |
| 30) | Acetophenone | (1) | 12.004 | 105 | 810905 | 80.000 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 11.994 | 70 | 333525 | 80.000 |
| 33) | 4-Methylphenol | (1) | 11.954 | 108 | 597908 | 80.000 |
| 34) | o-Toluidine | (1) | 12.074 | 106 | 1011399 | 80.000 |
| 37) | Hexachloroethane | (1) | 12.232 | 117 | 312387 | 80.000 |
| 39) | Nitrobenzene | (2) | 12.362 | 77 | 590306 | 80.000 |
| 41) | Isophorone | (2) | 12.837 | 82 | 1233691 | 80.000 |
| 42) | 2-Nitrophenol | (2) | 13.005 | 139 | 359802 | 80.000 |
| 44) | 2,4-Dimethylphenol | (2) | 13.045 | 107 | 609643 | 80.000 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 13.254 | 93 | 733855 | 80.000 |
| 47) | Benzoic acid | (2) | 13.234 | 105 | 264504 | 80.000 |
| 49) | 2,4-Dichlorophenol | (2) | 13.502 | 162 | 436687 | 80.000 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 13.681 | 180 | 373459 | 80.000 |
| 52) | Naphthalene-d8 | (2) | 13.820 | 136 | 717632 | 40.000 |
| 53) | Naphthalene | (2) | 13.860 | 128 | 1395782 | 80.000 |
| 55) | 4-Chloroaniline | (2) | 13.949 | 127 | 652097 | 80.000 |
| 59) | Hexachlorobutadiene | (2) | 14.089 | 225 | 155960 | 80.000 |
| 62) | Caprolactam | (2) | 14.713 | 113 | 199123 | 80.000 |
| 67) | 4-Chloro-3-methylphenol | (2) | 14.921 | 107 | 509250 | 80.000 |
| 69) | 2-Methylnaphthalene | (2) | 15.308 | 142 | 865160 | 80.000 |
| 70) | 1-Methylnaphthalene | (2) | 15.517 | 142 | 856927 | 80.000 |
| 71) | Hexachlorocyclopentadiene | (3) | 15.617 | 237 | 115998 | 80.000 |
| 74) | 2,4,6-Trichlorophenol | (3) | 15.875 | 196 | 236944 | 80.000 |
| 76) | 2,4,5-Trichlorophenol | (3) | 15.955 | 196 | 236239 | 80.000 |
| 80) | Biphenyl | (3) | 16.274 | 154 | 1011376 | 80.000 |
| 81) | Diphenyl | (3) | 16.274 | 154 | 1011376 | 80.000 |
| 82) | 1,1'-Biphenyl | (3) | 16.274 | 154 | 1011376 | 80.000 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc255.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 09:20  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 11:11
Date, time and analyst ID of latest file update: 19-Mar-2004 11:11 cam01237

Sample Name: SSTD080  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 16.334 | 162 | 822563 | 80.000 |
| 86) | Diphenyl ether | (3) | 16.483 | 170 | 491997 | 80.000 |
| 87) | 2-Nitroaniline | (3) | 16.523 | 138 | 379425 | 80.000 |
| 90) | Dimethylphthalate | (3) | 16.881 | 163 | 925259 | 80.000 |
| 92) | 2,6-Dinitrotoluene | (3) | 17.020 | 165 | 254998 | 80.000 |
| 93) | Acenaphthylene | (3) | 17.209 | 152 | 1211682 | 80.000 |
| 95) | 3-Nitroaniline | (3) | 17.387 | 138 | 326951 | 80.000 |
| 96) | Acenaphthene-d10 | (3) | 17.497 | 164 | 329279 | 40.000 |
| 97) | Acenaphthene | (3) | 17.576 | 153 | 736901 | 80.000 |
| 98) | 2,4-Dinitrophenol | (3) | 17.606 | 184 | 115265 | 80.000 |
| 101) | 4-Nitrophenol | (3) | 17.696 | 109 | 105706 | 80.000 |
| 102) | Dibenzofuran | (3) | 17.935 | 168 | 1029117 | 80.000 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.875 | 165 | 282420 | 80.000 |
| 104) | 1-Naphthylamine | (3) | 18.094 | 143 | 795046 | 80.000 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 18.174 | 232 | 162310 | 80.000 |
| 106) | 2-Naphthylamine | (3) | 18.264 | 143 | 876162 | 80.000 |
| 107) | Diethylphthalate | (3) | 18.354 | 149 | 852105 | 80.000 |
| 109) | Fluorene | (3) | 18.653 | 166 | 671298 | 80.000 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 18.623 | 204 | 295668 | 80.000 |
| 112) | 4-Nitroaniline | (3) | 18.693 | 138 | 285163 | 80.000 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 18.742 | 198 | 155091 | 80.000 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.872 | 169 | 572053 | 80.000 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.962 | 77 | 1091325 | 80.000 |
| 123) | 4-Bromophenyl-phenylether | (4) | 19.709 | 248 | 160409 | 80.000 |
| 125) | Hexachlorobenzene | (4) | 19.889 | 284 | 179787 | 80.000 |
| 129) | Pentachlorophenol | (4) | 20.396 | 266 | 91414 | 80.000 |
| 133) | Phenanthrene-d10 | (4) | 20.993 | 188 | 418781 | 40.000 |
| 135) | Phenanthrene | (4) | 21.083 | 178 | 891887 | 80.000 |
| 136) | Anthracene | (4) | 21.242 | 178 | 927759 | 80.000 |
| 138) | Carbazole | (4) | 21.678 | 167 | 1036213 | 80.000 |
| 140) | Di-n-butylphthalate | (4) | 22.520 | 149 | 1585340 | 80.000 |
| 145) | Fluoranthene | (4) | 23.899 | 202 | 818440 | 80.000 |
| 150) | Benzidine | (5) | 24.127 | 184 | 1227639 | 240.000 |
| 152) | Pyrene | (5) | 24.326 | 202 | 808815 | 80.000 |
| 159) | Butylbenzylphthalate | (5) | 25.367 | 149 | 583047 | 80.000 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 26.556 | 252 | 223863 | 80.000 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 26.546 | 231 | 108743 | 80.000 |
| 164) | Benzo(a)anthracene | (5) | 26.666 | 228 | 682712 | 80.000 |
| 165) | Chrysene-d12 | (5) | 26.696 | 240 | 260738 | 40.000 |
| 166) | Chrysene | (5) | 26.766 | 228 | 643691 | 80.000 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 26.536 | 149 | 748248 | 80.000 |
| 168) | Di-n-octylphthalate | (6) | 28.387 | 149 | 1582234 | 80.000 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 30.009 | 256 | 285504 | 80.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

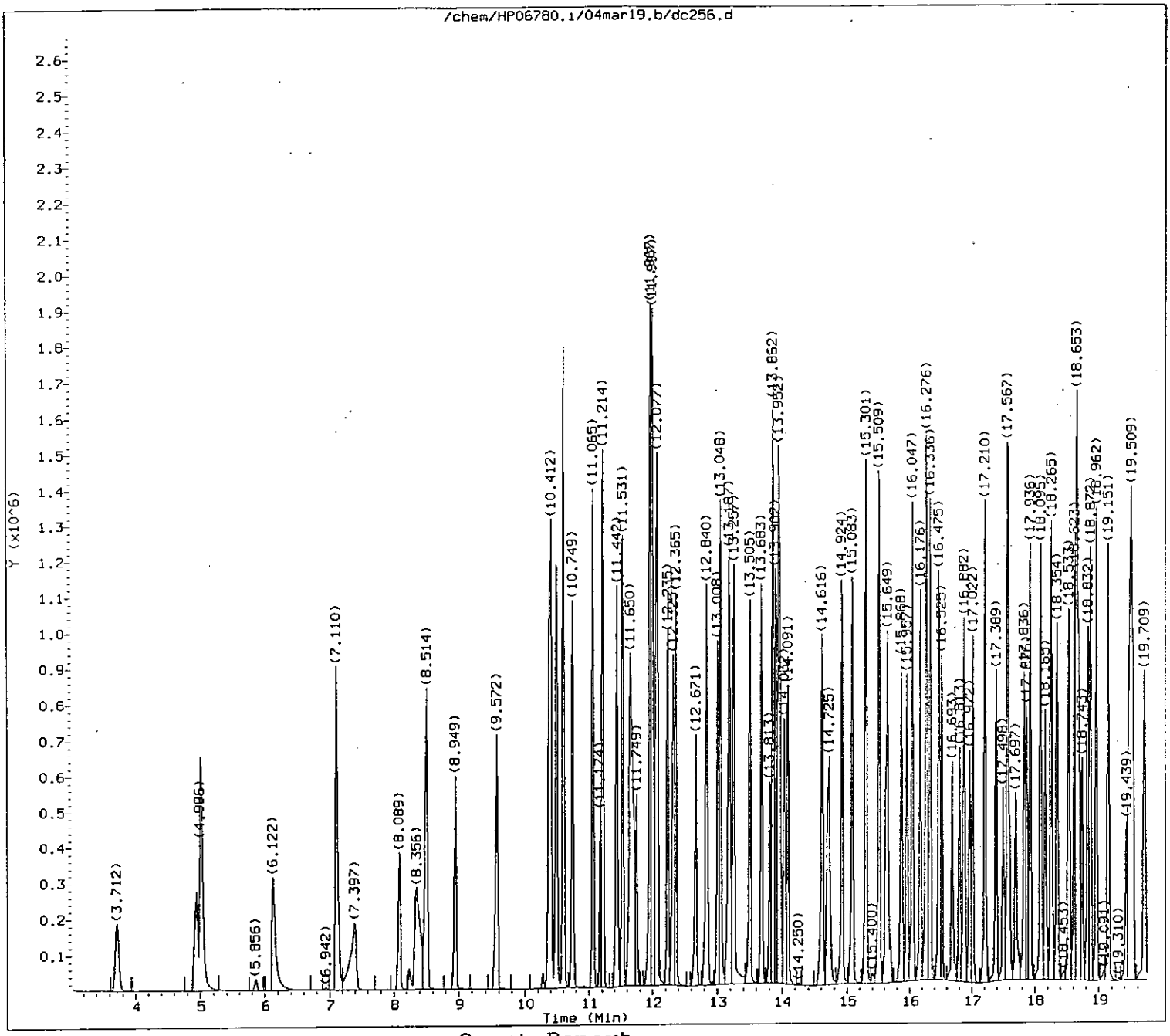
Data File: /chem/HP06780.i/04mar19.b/dc255.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 09:20  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 11:11
Date, time and analyst ID of latest file update: 19-Mar-2004 11:11 cam01237

Sample Name: SSTD080  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 30.069 | 252 | 631009 | 80.000 |
| 171) Benzo(k)fluoranthene | (6) | 30.169 | 252 | 610726 | 80.000 |
| 172) Benzo(a)pyrene | (6) | 31.444 | 252 | 579185 | 80.000 |
| 173) Perylene-d12 | (6) | 31.671 | 264 | 260332 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 37.875 | 276 | 600359 | 80.000 |
| 176) Dibenz(a,h)anthracene | (6) | 38.054 | 278 | 534070 | 80.000 |
| 177) Benzo(g,h,i)perylene | (6) | 39.852 | 276 | 582688 | 80.000 |
| 9) 2-Fluorophenol | (1) | 8.511 | 112 | 768214 | 80.000 |
| 14) Phenol-d5 | (1) | 10.379 | 99 | 874045 | 80.000 |
| 15) Phenol-d6 | (1) | 10.379 | 99 | 874045 | 80.000 |
| 38) Nitrobenzene-d5 | (2) | 12.322 | 82 | 637514 | 80.000 |
| 77) 2-Fluorobiphenyl | (3) | 16.045 | 172 | 795136 | 80.000 |
| 117) 2,4,6-Tribromophenol | (3) | 19.161 | 330 | 96425 | 80.000 |
| 154) Terphenyl-d14 | (5) | 24.554 | 244 | 447962 | 80.000 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc256.d
Injection date and time: 19-MAR-2004 11:02

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 11:45

Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 11:45 Automation

Sample Name: SSTD120

Lab Sample ID: STD0754

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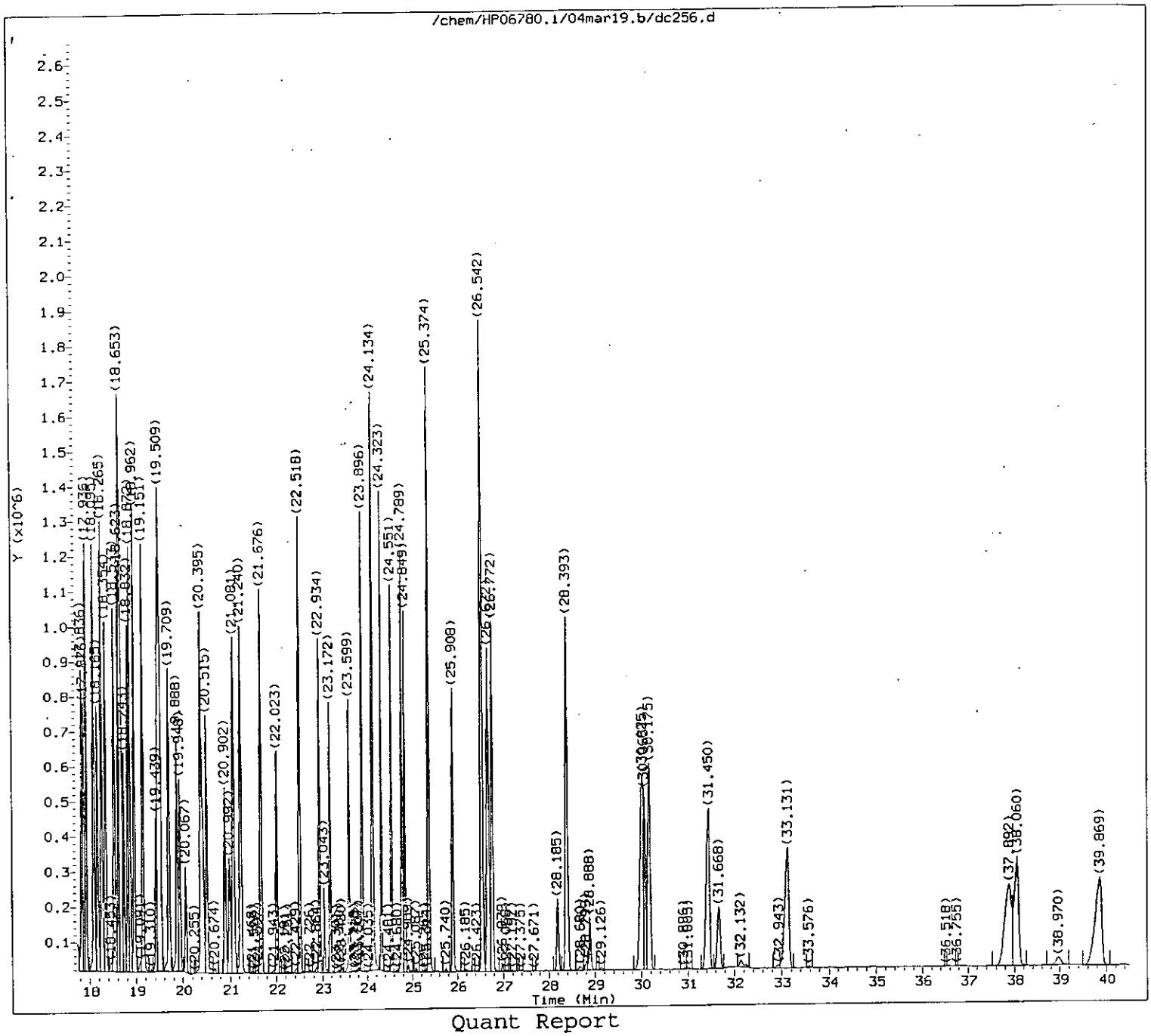
-1237

3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc256.d
Injection date and time: 19-MAR-2004 11:02

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 11:45

Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 11:45 Automation

Sample Name: SSTD120

Lab Sample ID: STD0754

01237

3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc256.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:02  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 11:45
Date, time and analyst ID of latest file update: 19-Mar-2004 11:45 Automation

Sample Name: SSTD120  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 3.721 | 88 | 332092 | 117.079 |
| 2) | N-Nitrosodimethylamine | (1) | 4.946 | 74 | 516310 | 115.806 |
| 3) | Pyridine | (1) | 5.016 | 79 | 843523 | 116.077 |
| 5) | 2-Picoline | (1) | 7.110 | 93 | 826342 | 116.035 |
| 13) | Aniline | (1) | 10.501 | 93 | 1113648 | 114.274 |
| 16) | Phenol | (1) | 10.412 | 94 | 950304 | 116.666 |
| 18) | bis(2-Chloroethyl)ether | (1) | 10.610 | 93 | 725172 | 116.053 |
| 19) | 2-Chlorophenol | (1) | 10.749 | 128 | 662098 | 117.022 |
| 20) | 1,3-Dichlorobenzene | (1) | 11.065 | 146 | 662857 | 117.360 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 11.174 | 152 | 154237 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 11.214 | 146 | 673005 | 117.814 |
| 24) | Benzyl alcohol | (1) | 11.442 | 108 | 514422 | 115.839 |
| 25) | 1,2-Dichlorobenzene | (1) | 11.531 | 146 | 637483 | 115.648 |
| 26) | 2-Methylphenol | (1) | 11.650 | 108 | 729697 | 120.191 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 11.700 | 45 | 808355 | 120.235 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 11.700 | 45 | 808355 | 120.235 |
| 30) | Acetophenone | (1) | 11.997 | 105 | 871964 | 115.954 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 11.997 | 70 | 388331 | 120.725 |
| 33) | 4-Methylphenol | (1) | 11.957 | 108 | 666889 | 118.148 |
| 34) | o-Toluidine | (1) | 12.077 | 106 | 1103633 | 116.834 |
| 37) | Hexachloroethane | (1) | 12.235 | 117 | 342574 | 117.132 |
| 39) | Nitrobenzene | (2) | 12.365 | 77 | 651488 | 119.787 |
| 41) | Isophorone | (2) | 12.840 | 82 | 1329790 | 118.371 |
| 42) | 2-Nitrophenol | (2) | 13.008 | 139 | 391834 | 118.987 |
| 44) | 2,4-Dimethylphenol | (2) | 13.048 | 107 | 633247 | 116.151 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 13.257 | 93 | 800559 | 119.090 |
| 47) | Benzoic acid | (2) | 13.247 | 105 | 317797 | 124.881 |
| 49) | 2,4-Dichlorophenol | (2) | 13.505 | 162 | 460777 | 117.093 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 13.683 | 180 | 391343 | 116.678 |
| 52) | Naphthalene-d8 | (2) | 13.813 | 136 | 529882 | 40.000 |
| 53) | Naphthalene | (2) | 13.862 | 128 | 1459289 | 116.541 |
| 55) | 4-Chloroaniline | (2) | 13.952 | 127 | 712765 | 119.208 |
| 59) | Hexachlorobutadiene | (2) | 14.091 | 225 | 168084 | 118.362 |
| 62) | Caprolactam | (2) | 14.725 | 113 | 229210 | 122.313 |
| 67) | 4-Chloro-3-methylphenol | (2) | 14.924 | 107 | 538964 | 117.273 |
| 69) | 2-Methylnaphthalene | (2) | 15.301 | 142 | 925287 | 117.902 |
| 70) | 1-Methylnaphthalene | (2) | 15.509 | 142 | 891579 | 116.250 |
| 71) | Hexachlorocyclopentadiene | (3) | 15.619 | 237 | 121460 | 118.331 |
| 74) | 2,4,6-Trichlorophenol | (3) | 15.868 | 196 | 239892 | 116.313 |
| 76) | 2,4,5-Trichlorophenol | (3) | 15.957 | 196 | 244254 | 117.572 |
| 80) | Biphenyl | (3) | 16.276 | 154 | 1076561 | 119.317 |
| 81) | Diphenyl | (3) | 16.276 | 154 | 1076561 | 119.317 |
| 82) | 1,1'-Biphenyl | (3) | 16.276 | 154 | 1076561 | 119.317 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc256.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:02  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 11:45
Date, time and analyst ID of latest file update: 19-Mar-2004 11:45 Automation

Sample Name: SSTD120  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 16.336 | 162 | 872041 | 119.074 |
| 86) | Diphenyl ether | (3) | 16.475 | 170 | 526302 | 119.613 |
| 87) | 2-Nitroaniline | (3) | 16.525 | 138 | 404123 | 119.353 |
| 90) | Dimethylphthalate | (3) | 16.882 | 163 | 915125 | 114.912 |
| 92) | 2,6-Dinitrotoluene | (3) | 17.022 | 165 | 265648 | 118.024 |
| 93) | Acenaphthylene | (3) | 17.210 | 152 | 1253646 | 117.612 |
| 95) | 3-Nitroaniline | (3) | 17.389 | 138 | 338313 | 117.619 |
| 96) | Acenaphthene-d10 | (3) | 17.498 | 164 | 236343 | 40.000 |
| 97) | Acenaphthene | (3) | 17.567 | 153 | 765220 | 117.832 |
| 98) | 2,4-Dinitrophenol | (3) | 17.607 | 184 | 126045 | 120.934 |
| 101) | 4-Nitrophenol | (3) | 17.697 | 109 | 119764 | 123.061 |
| 102) | Dibenzofuran | (3) | 17.936 | 168 | 1051769 | 116.876 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.876 | 165 | 314850 | 122.091 |
| 104) | 1-Naphthylamine | (3) | 18.095 | 143 | 847997 | 119.438 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 18.175 | 232 | 171259 | 118.790 |
| 106) | 2-Naphthylamine | (3) | 18.265 | 143 | 904812 | 117.500 |
| 107) | Diethylphthalate | (3) | 18.354 | 149 | 954246 | 122.362 |
| 109) | Fluorene | (3) | 18.653 | 166 | 755892 | 122.690 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 18.623 | 204 | 306286 | 117.687 |
| 112) | 4-Nitroaniline | (3) | 18.703 | 138 | 310043 | 120.588 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 18.743 | 198 | 160664 | 118.426 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.872 | 169 | 605307 | 119.698 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.962 | 77 | 1144555 | 119.165 |
| 123) | 4-Bromophenyl-phenylether | (4) | 19.709 | 248 | 161545 | 116.732 |
| 125) | Hexachlorobenzene | (4) | 19.888 | 284 | 180449 | 116.530 |
| 129) | Pentachlorophenol | (4) | 20.405 | 266 | 93021 | 117.355 |
| 133) | Phenanthrene-d10 | (4) | 20.992 | 188 | 296906 | 40.000 |
| 135) | Phenanthrene | (4) | 21.081 | 178 | 963108 | 120.918 |
| 136) | Anthracene | (4) | 21.240 | 178 | 976256 | 119.365 |
| 138) | Carbazole | (4) | 21.676 | 167 | 1045825 | 116.863 |
| 140) | Di-n-butylphthalate | (4) | 22.518 | 149 | 1656117 | 118.929 |
| 145) | Fluoranthene | (4) | 23.896 | 202 | 825868 | 116.851 |
| 150) | Benzidine | (5) | 24.134 | 184 | 1257186 | 344.587 |
| 152) | Pyrene | (5) | 24.323 | 202 | 816261 | 113.987 |
| 159) | Butylbenzylphthalate | (5) | 25.374 | 149 | 600573 | 115.212 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 26.562 | 252 | 235609 | 116.502 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 26.552 | 231 | 113485 | 115.995 |
| 164) | Benzo(a)anthracene | (5) | 26.672 | 228 | 705161 | 115.376 |
| 165) | Chrysene-d12 | (5) | 26.702 | 240 | 193933 | 40.000 |
| 166) | Chrysene | (5) | 26.772 | 228 | 681168 | 116.828 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 26.532 | 149 | 782374 | 116.110 |
| 168) | Di-n-octylphthalate | (6) | 28.393 | 149 | 1742795 | 118.531 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 30.005 | 256 | 308889 | 117.456 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

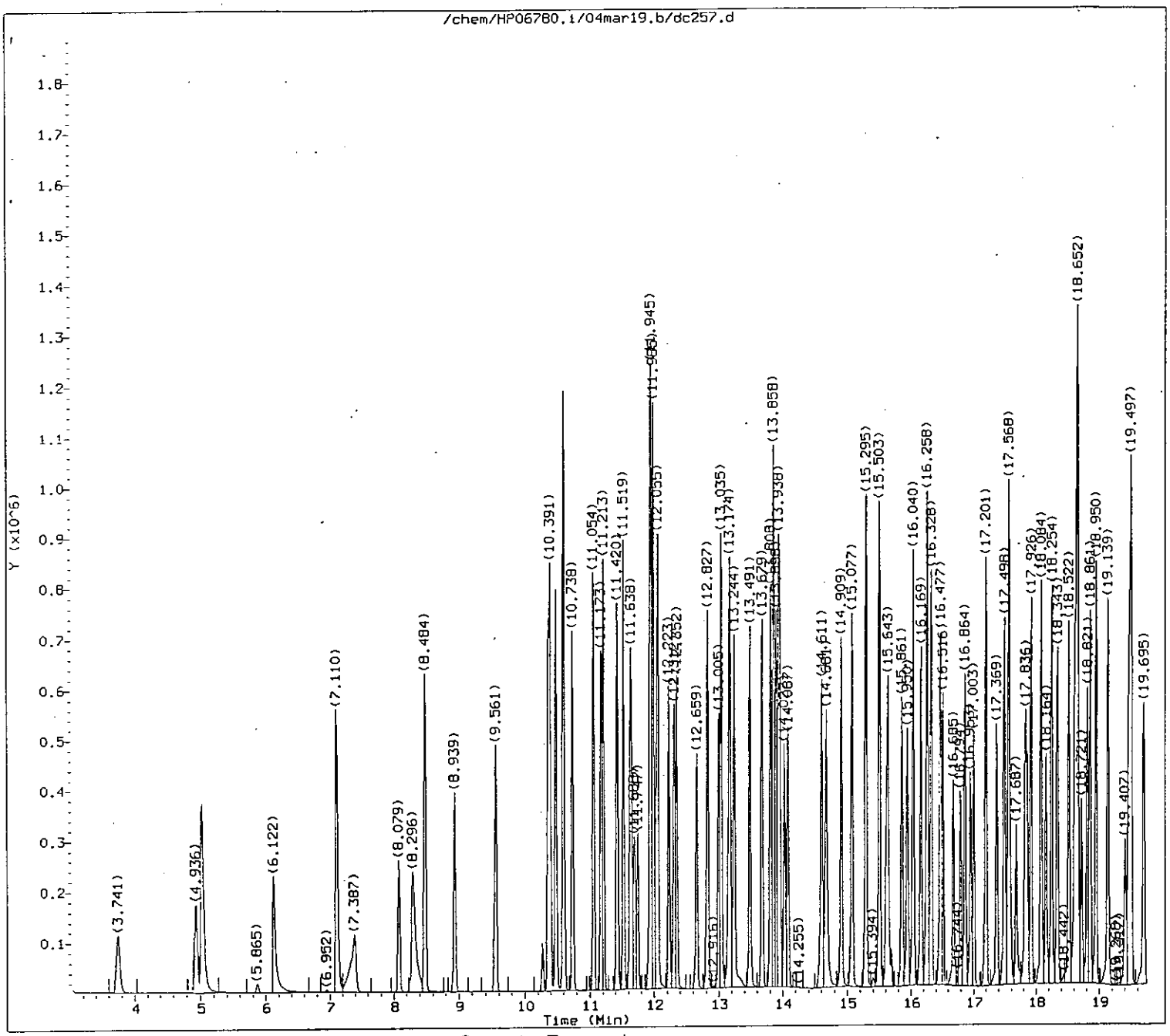
Data File: /chem/HP06780.i/04mar19.b/dc256.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:02  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 11:45
Date, time and analyst ID of latest file update: 19-Mar-2004 11:45 Automation

Sample Name: SSTD120  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 30.065 | 252 | 682743 | 117.460 |
| 171) Benzo(k)fluoranthene | (6) | 30.175 | 252 | 636187 | 115.185 |
| 172) Benzo(a)pyrene | (6) | 31.450 | 252 | 610376 | 115.881 |
| 173) Perylene-d12 | (6) | 31.668 | 264 | 195904 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 37.892 | 276 | 654453 | 117.909 |
| 176) Dibenz(a,h)anthracene | (6) | 38.060 | 278 | 580731 | 117.758 |
| 177) Benzo(g,h,i)perylene | (6) | 39.869 | 276 | 647750 | 119.083 |
| 9) 2-Fluorophenol | (1) | 8.514 | 112 | 845759 | 117.367 |
| 14) Phenol-d5 | (1) | 10.382 | 99 | 916750 | 114.463 |
| 15) Phenol-d6 | (1) | 10.382 | 99 | 916750 | 114.463 |
| 38) Nitrobenzene-d5 | (2) | 12.325 | 82 | 691354 | 118.735 |
| 77) 2-Fluorobiphenyl | (3) | 16.047 | 172 | 835653 | 118.551 |
| 117) 2,4,6-Tribromophenol | (3) | 19.161 | 330 | 102818 | 119.421 |
| 154) Terphenyl-d14 | (5) | 24.551 | 244 | 457407 | 114.688 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

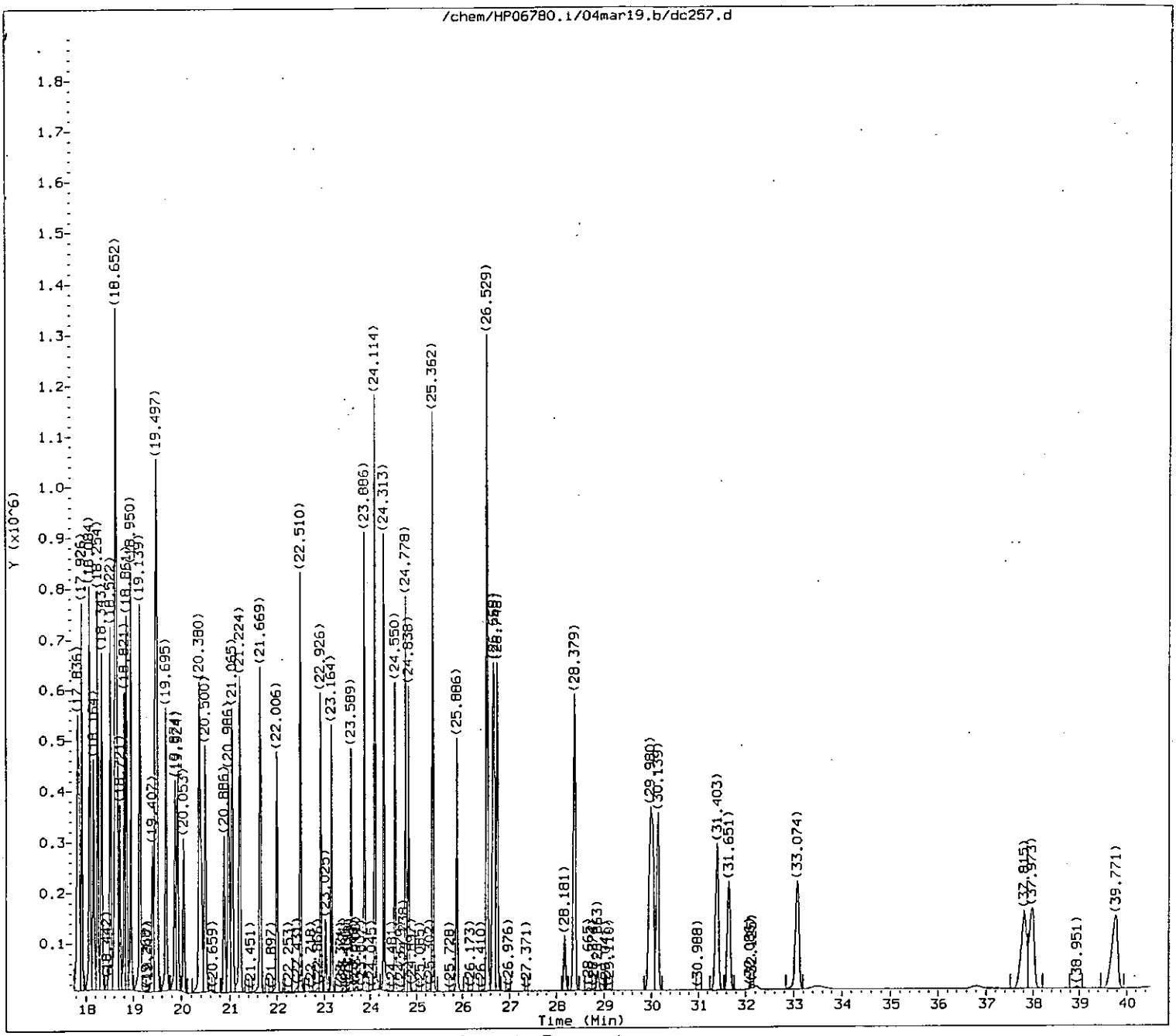
Data File: /chem/HP06780.i/04mar19.b/dc257.d
Injection date and time: 19-MAR-2004 11:51
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 12:33
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050
Lab Sample ID: STD0754

#257 - 1237

3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc257.d
Injection date and time: 19-MAR-2004 11:51
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 12:33
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050
Lab Sample ID: STD0754

8282 - 1237
3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc257.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:51  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 12:33
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.741 | 88 | 190781 | 50.591 |
| 2) N-Nitrosodimethylamine | (1) | 4.936 | 74 | 294751 | 50.015 |
| 3) Pyridine | (1) | 5.025 | 79 | 482803 | 50.180 |
| 5) 2-Picoline | (1) | 7.110 | 93 | 478805 | 50.578 |
| 13) Aniline | (1) | 10.490 | 93 | 674980 | 51.579 |
| 16) Phenol | (1) | 10.391 | 94 | 575740 | 52.268 |
| 18) bis(2-Chloroethyl)ether | (1) | 10.599 | 93 | 438305 | 52.008 |
| 19) 2-Chlorophenol | (1) | 10.738 | 128 | 394277 | 51.786 |
| 20) 1,3-Dichlorobenzene | (1) | 11.054 | 146 | 405236 | 52.779 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.173 | 152 | 203845 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.213 | 146 | 409788 | 52.773 |
| 24) Benzyl alcohol | (1) | 11.420 | 108 | 301809 | 50.940 |
| 25) 1,2-Dichlorobenzene | (1) | 11.519 | 146 | 403093 | 53.432 |
| 26) 2-Methylphenol | (1) | 11.638 | 108 | 436463 | 52.847 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 11.688 | 45 | 482958 | 52.820 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 11.688 | 45 | 482958 | 52.820 |
| 30) Acetophenone | (1) | 11.985 | 105 | 548013 | 53.313 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.975 | 70 | 258262 | 56.687 |
| 33) 4-Methylphenol | (1) | 11.935 | 108 | 414491 | 53.576 |
| 34) o-Toluidine | (1) | 12.065 | 106 | 659070 | 51.827 |
| 37) Hexachloroethane | (1) | 12.223 | 117 | 201796 | 51.450 |
| 39) Nitrobenzene | (2) | 12.352 | 77 | 373065 | 49.999 |
| 41) Isophorone | (2) | 12.827 | 82 | 782828 | 50.525 |
| 42) 2-Nitrophenol | (2) | 13.005 | 139 | 239635 | 51.987 |
| 44) 2,4-Dimethylphenol | (2) | 13.035 | 107 | 404664 | 52.662 |
| 46) bis(2-Chloroethoxy)methane | (2) | 13.244 | 93 | 499486 | 52.698 |
| 47) Benzoic acid | (2) | 13.194 | 105 | 158359 | 46.807 |
| 49) 2,4-Dichlorophenol | (2) | 13.491 | 162 | 289221 | 52.326 |
| 50) 1,2,4-Trichlorobenzene | (2) | 13.679 | 180 | 244113 | 51.993 |
| 52) Naphthalene-d8 | (2) | 13.808 | 136 | 726964 | 40.000 |
| 53) Naphthalene | (2) | 13.858 | 128 | 942323 | 53.134 |
| 55) 4-Chloroaniline | (2) | 13.938 | 127 | 444369 | 52.706 |
| 59) Hexachlorobutadiene | (2) | 14.087 | 225 | 101496 | 51.378 |
| 62) Caprolactam | (2) | 14.681 | 113 | 128010 | 49.860 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.909 | 107 | 321431 | 50.649 |
| 69) 2-Methylnaphthalene | (2) | 15.295 | 142 | 588720 | 53.025 |
| 70) 1-Methylnaphthalene | (2) | 15.503 | 142 | 563727 | 52.328 |
| 71) Hexachlorocyclopentadiene | (3) | 15.613 | 237 | 68257 | 47.858 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.861 | 196 | 143867 | 49.429 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.950 | 196 | 148103 | 50.153 |
| 80) Biphenyl | (3) | 16.258 | 154 | 662762 | 51.157 |
| 81) Diphenyl | (3) | 16.258 | 154 | 662762 | 51.157 |
| 82) 1,1'-Biphenyl | (3) | 16.258 | 154 | 662762 | 51.157 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc257.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:51  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 12:33
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 83) 2-Chloronaphthalene | (3) | 16.328 | 162 | 529701 | 50.638 |
| 86) Diphenyl ether | (3) | 16.477 | 170 | 320585 | 50.883 |
| 87) 2-Nitroaniline | (3) | 16.516 | 138 | 250112 | 51.346 |
| 90) Dimethylphthalate | (3) | 16.874 | 163 | 579462 | 50.838 |
| 92) 2,6-Dinitrotoluene | (3) | 17.013 | 165 | 157325 | 49.497 |
| 93) Acenaphthylene | (3) | 17.201 | 152 | 793443 | 51.606 |
| 95) 3-Nitroaniline | (3) | 17.369 | 138 | 204029 | 49.986 |
| 96) Acenaphthene-d10 | (3) | 17.498 | 164 | 335431 | 40.000 |
| 97) Acenaphthene | (3) | 17.568 | 153 | 485538 | 51.755 |
| 98) 2,4-Dinitrophenol | (3) | 17.598 | 184 | 68782 | 47.610 |
| 101) 4-Nitrophenol | (3) | 17.687 | 109 | 66988 | 48.989 |
| 102) Dibenzofuran | (3) | 17.926 | 168 | 643151 | 50.237 |
| 103) 2,4-Dinitrotoluene | (3) | 17.866 | 165 | 181423 | 49.712 |
| 104) 1-Naphthylamine | (3) | 18.084 | 143 | 527519 | 51.543 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 18.164 | 232 | 99876 | 49.202 |
| 106) 2-Naphthylamine | (3) | 18.254 | 143 | 575569 | 51.745 |
| 107) Diethylphthalate | (3) | 18.343 | 149 | 574269 | 51.241 |
| 109) Fluorene | (3) | 18.652 | 166 | 490690 | 53.918 |
| 110) 4-Chlorophenyl-phenylether | (3) | 18.612 | 204 | 195829 | 51.972 |
| 112) 4-Nitroaniline | (3) | 18.672 | 138 | 185320 | 50.521 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 18.721 | 198 | 90927 | 49.521 |
| 115) N-Nitrosodiphenylamine | (4) | 18.861 | 169 | 374133 | 52.852 |
| 116) 1,2-Diphenylhydrazine | (4) | 18.950 | 77 | 719533 | 53.281 |
| 123) 4-Bromophenyl-phenylether | (4) | 19.695 | 248 | 101241 | 52.468 |
| 125) Hexachlorobenzene | (4) | 19.874 | 284 | 110850 | 51.729 |
| 129) Pentachlorophenol | (4) | 20.390 | 266 | 50338 | 47.750 |
| 133) Phenanthrene-d10 | (4) | 20.986 | 188 | 403765 | 40.000 |
| 135) Phenanthrene | (4) | 21.065 | 178 | 561911 | 51.236 |
| 136) Anthracene | (4) | 21.224 | 178 | 610585 | 53.162 |
| 138) Carbazole | (4) | 21.669 | 167 | 627961 | 51.055 |
| 140) Di-n-butylphthalate | (4) | 22.510 | 149 | 976807 | 51.043 |
| 145) Fluoranthene | (4) | 23.886 | 202 | 511919 | 52.128 |
| 150) Benzidine | (5) | 24.114 | 184 | 757119 | 152.599 |
| 152) Pyrene | (5) | 24.313 | 202 | 533189 | 53.369 |
| 159) Butylbenzylphthalate | (5) | 25.362 | 149 | 381285 | 52.759 |
| 162) 3,3'-Dichlorobenzidine | (5) | 26.539 | 252 | 142349 | 51.453 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 26.529 | 231 | 70629 | 52.311 |
| 164) Benzo(a)anthracene | (5) | 26.659 | 228 | 431071 | 51.521 |
| 165) Chrysene-d12 | (5) | 26.689 | 240 | 261447 | 40.000 |
| 166) Chrysene | (5) | 26.758 | 228 | 405063 | 51.012 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 26.529 | 149 | 486868 | 52.341 |
| 168) Di-n-octylphthalate | (6) | 28.379 | 149 | 982970 | 51.711 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 29.980 | 256 | 175623 | 51.674 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc257.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:51  Analyst ID: cam01237

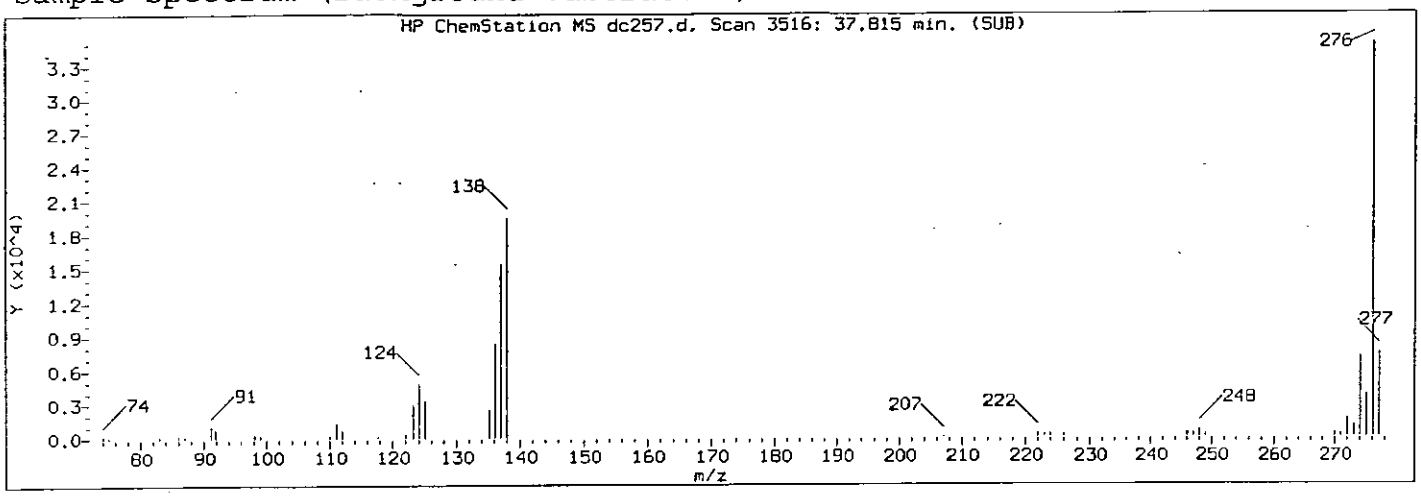
Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 12:33
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0754

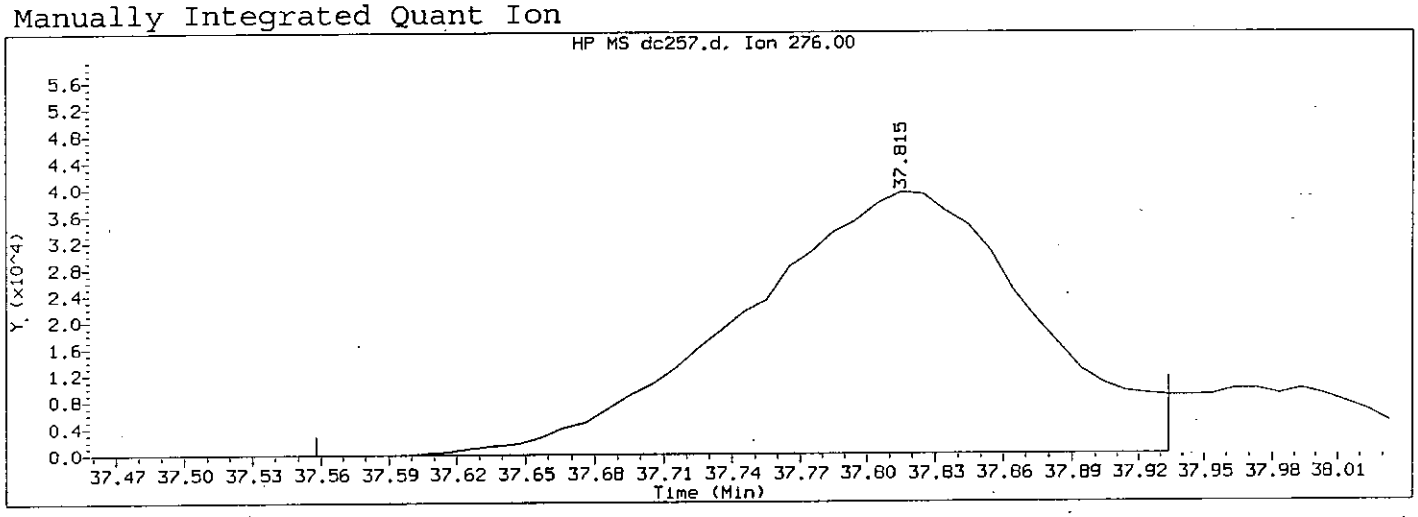
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 30.030 | 252 | 379945 | 50.951 |
| 171) | Benzo(k)fluoranthene | (6) | 30.139 | 252 | 374400 | 52.181 |
| 172) | Benzo(a)pyrene | (6) | 31.413 | 252 | 352992 | 51.793 |
| 173) | Perylene-d12 | (6) | 31.661 | 264 | 248941 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 37.815 | 276 | 351082M | 49.851 |
| 176) | Dibenz(a,h)anthracene | (6) | 37.993 | 278 | 316415 | 50.327 |
| 177) | Benzo(g,h,i)perylene | (6) | 39.771 | 276 | 341003 | 49.554 |
| 9) | 2-Fluorophenol | (1) | 8.484 | 112 | 490485 | 50.991 |
| 14) | Phenol-d5 | (1) | 10.361 | 99 | 558455 | 51.806 |
| 15) | Phenol-d6 | (1) | 10.361 | 99 | 558455 | 51.806 |
| 38) | Nitrobenzene-d5 | (2) | 12.312 | 82 | 396047 | 49.718 |
| 77) | 2-Fluorobiphenyl | (3) | 16.040 | 172 | 523189 | 51.508 |
| 117) | 2,4,6-Tribromophenol | (3) | 19.149 | 330 | 64364 | 51.751 |
| 154) | Terphenyl-d14 | (5) | 24.550 | 244 | 270639 | 50.223 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc257.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 11:51 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 12:33
Date, time and analyst ID of latest file update: 19-Mar-2004 12:35 cam01237

Sample Name: SSTD050 Lab Sample ID: STD0754

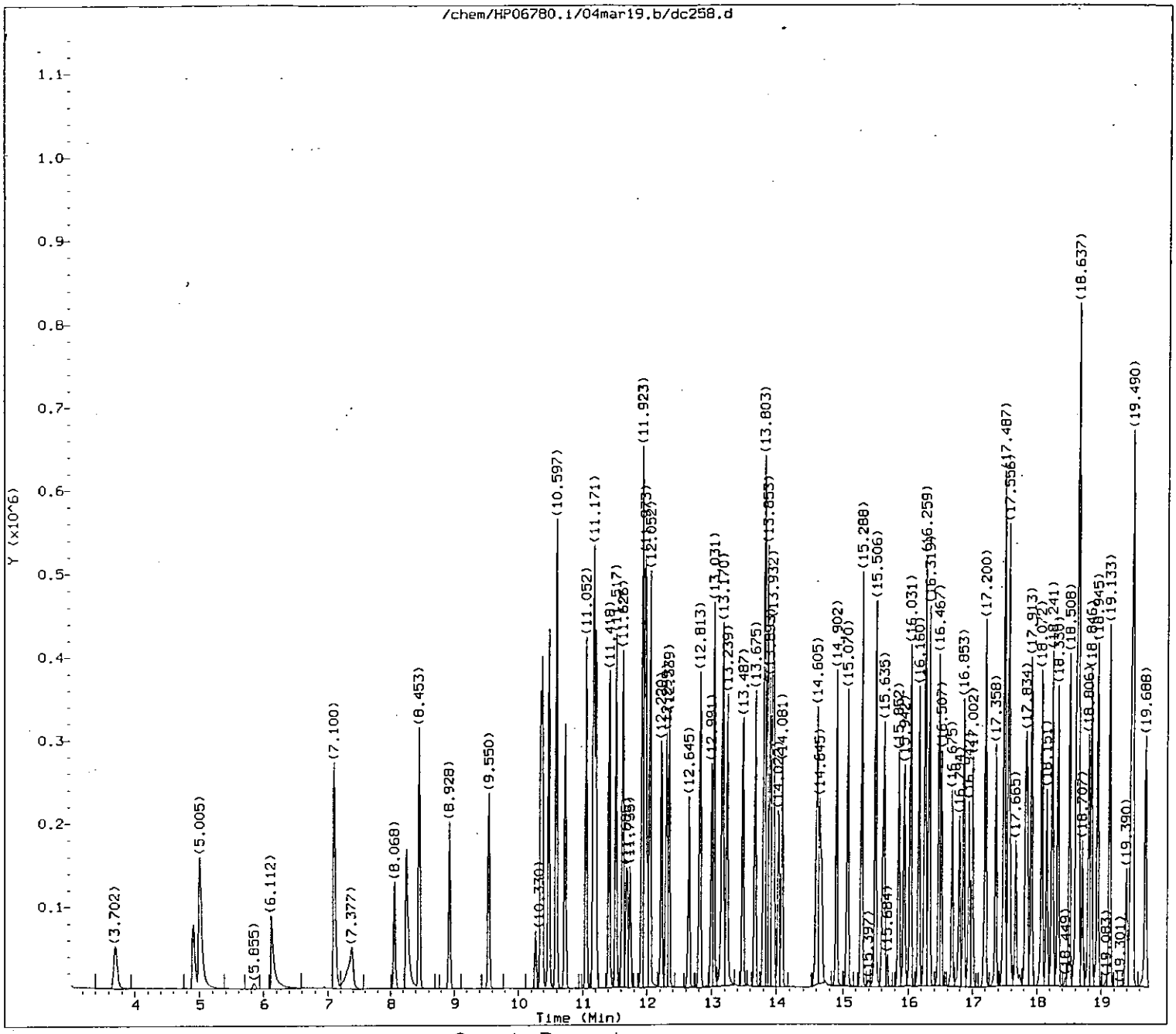
Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3516
Retention Time (minutes): 37.815
Quant Ion : 276
Area (flag) : 351082 M
Concentration (ng/ul) : 49.8507
Integration start scan : 3489 Integration stop scan: 3527
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: 1237 3.19.04

GC/MS audit/management approval: [illegible] 3/22/04 8286

Manual Integration Report for data file /chem/HP06780.i/04mar19.b/dc257.d, generated on 03/19/2004 at 12:35




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc258.d
Injection date and time: 19-MAR-2004 12:38

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 13:21

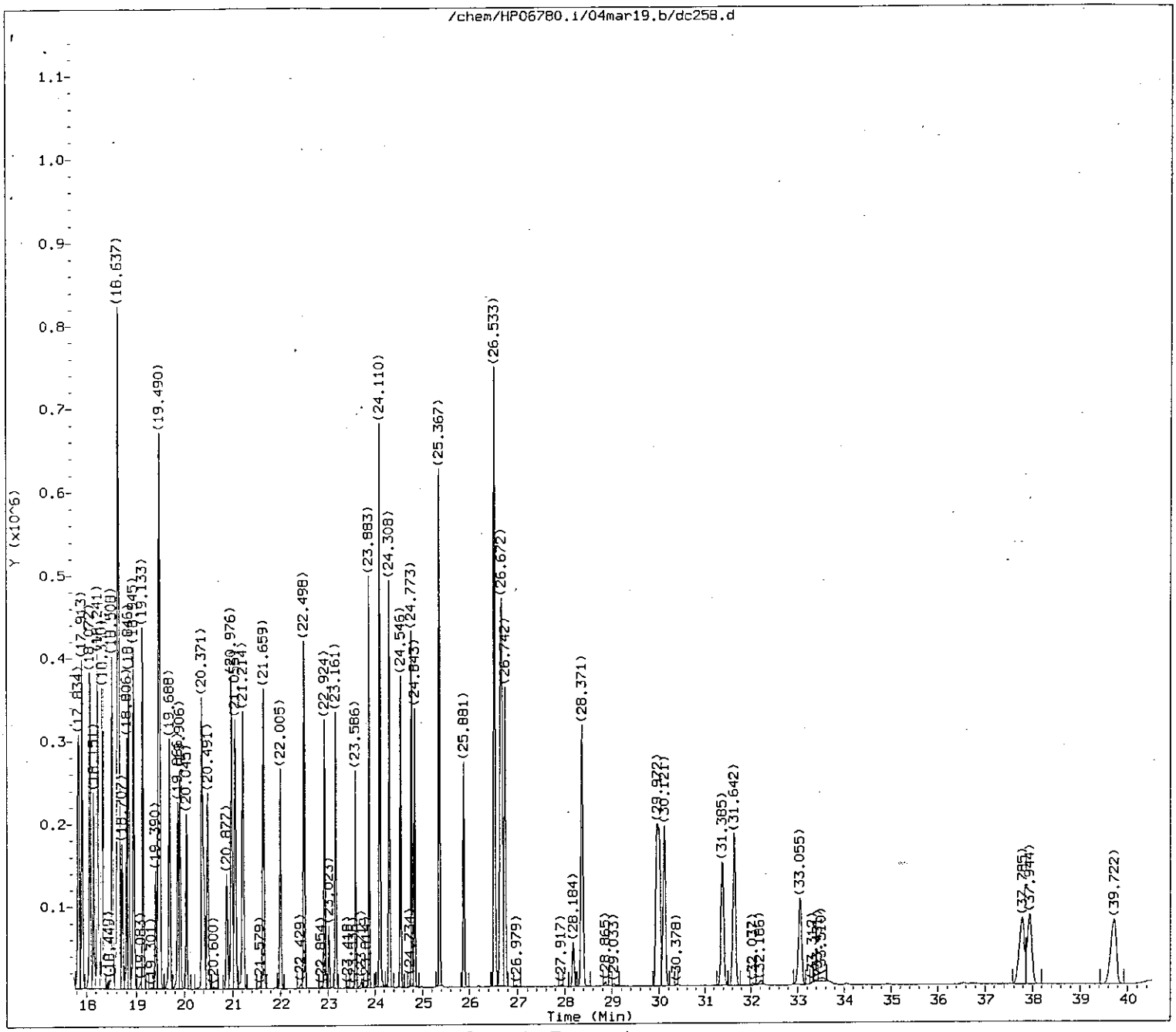
Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 13:21 Automation

Sample Name: SSTD030

Lab Sample ID: STD0754

8270 - 1237
3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc258.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 12:38 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 13:21
Date, time and analyst ID of latest file update: 19-Mar-2004 13:21 Automation

Sample Name: SSTD030 Lab Sample ID: STD0754

- 1237
3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc258.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 12:38  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 13:21
Date, time and analyst ID of latest file update: 19-Mar-2004 13:21 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.702 | 88 | 84485 | 28.628 |
| 2) N-Nitrosodimethylamine | (1) | 4.897 | 74 | 129882 | 28.272 |
| 3) Pyridine | (1) | 5.005 | 79 | 216281 | 28.702 |
| 5) 2-Picoline | (1) | 7.100 | 93 | 220358 | 29.470 |
| 13) Aniline | (1) | 10.479 | 93 | 318066 | 30.442 |
| 16) Phenol | (1) | 10.380 | 94 | 260706 | 29.842 |
| 18) bis(2-Chloroethyl)ether | (1) | 10.597 | 93 | 203933 | 30.342 |
| 19) 2-Chlorophenol | (1) | 10.726 | 128 | 182872 | 30.174 |
| 20) 1,3-Dichlorobenzene | (1) | 11.052 | 146 | 191753 | 31.063 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.171 | 152 | 161954 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.201 | 146 | 190685 | 30.676 |
| 24) Benzyl alcohol | (1) | 11.418 | 108 | 143098 | 30.299 |
| 25) 1,2-Dichlorobenzene | (1) | 11.517 | 146 | 187303 | 30.928 |
| 26) 2-Methylphenol | (1) | 11.626 | 108 | 198277 | 30.163 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 11.685 | 45 | 220553 | 30.270 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 11.685 | 45 | 220553 | 30.270 |
| 30) Acetophenone | (1) | 11.973 | 105 | 262650 | 31.592 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.963 | 70 | 125575 | 33.387 |
| 33) 4-Methylphenol | (1) | 11.923 | 108 | 203340 | 32.253 |
| 34) o-Toluidine | (1) | 12.052 | 106 | 320638 | 31.283 |
| 37) Hexachloroethane | (1) | 12.220 | 117 | 94426 | 30.226 |
| 39) Nitrobenzene | (2) | 12.339 | 77 | 178432 | 30.580 |
| 41) Isophorone | (2) | 12.813 | 82 | 371949 | 30.668 |
| 42) 2-Nitrophenol | (2) | 12.991 | 139 | 108740 | 30.271 |
| 44) 2,4-Dimethylphenol | (2) | 13.031 | 107 | 186555 | 30.925 |
| 46) bis(2-Chloroethoxy)methane | (2) | 13.239 | 93 | 230031 | 30.918 |
| 47) Benzoic acid | (2) | 13.160 | 105 | 97048 | 37.644 |
| 49) 2,4-Dichlorophenol | (2) | 13.487 | 162 | 132215 | 30.586 |
| 50) 1,2,4-Trichlorobenzene | (2) | 13.675 | 180 | 109815 | 30.077 |
| 52) Naphthalene-d8 | (2) | 13.803 | 136 | 564827 | 40.000 |
| 53) Naphthalene | (2) | 13.853 | 128 | 445099 | 31.694 |
| 55) 4-Chloroaniline | (2) | 13.932 | 127 | 212221 | 31.762 |
| 59) Hexachlorobutadiene | (2) | 14.081 | 225 | 47993 | 30.941 |
| 62) Caprolactam | (2) | 14.645 | 113 | 65294 | 32.004 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.902 | 107 | 156264 | 31.251 |
| 69) 2-Methylnaphthalene | (2) | 15.288 | 142 | 286317 | 32.331 |
| 70) 1-Methylnaphthalene | (2) | 15.506 | 142 | 271107 | 31.757 |
| 71) Hexachlorocyclopentadiene | (3) | 15.605 | 237 | 27030 | 25.042 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.852 | 196 | 68516 | 29.608 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.942 | 196 | 72634 | 30.598 |
| 80) Biphenyl | (3) | 16.259 | 154 | 328617 | 31.304 |
| 81) Diphenyl | (3) | 16.259 | 154 | 328617 | 31.304 |
| 82) 1,1'-Biphenyl | (3) | 16.259 | 154 | 328617 | 31.304 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc258.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 12:38  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 13:21
Date, time and analyst ID of latest file update: 19-Mar-2004 13:21 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 16.319 | 162 | 265153 | 31.288 |
| 86) | Diphenyl ether | (3) | 16.467 | 170 | 157308 | 30.941 |
| 87) | 2-Nitroaniline | (3) | 16.507 | 138 | 115484 | 29.766 |
| 90) | Dimethylphthalate | (3) | 16.853 | 163 | 296760 | 31.912 |
| 92) | 2,6-Dinitrotoluene | (3) | 17.002 | 165 | 78067 | 30.565 |
| 93) | Acenaphthylene | (3) | 17.200 | 152 | 380135 | 30.716 |
| 95) | 3-Nitroaniline | (3) | 17.358 | 138 | 99233 | 30.333 |
| 96) | Acenaphthene-d10 | (3) | 17.487 | 164 | 267853 | 40.000 |
| 97) | Acenaphthene | (3) | 17.556 | 153 | 244284 | 31.915 |
| 98) | 2,4-Dinitrophenol | (3) | 17.586 | 184 | 39662 | 35.632 |
| 101) | 4-Nitrophenol | (3) | 17.665 | 109 | 31619 | 29.211 |
| 102) | Dibenzofuran | (3) | 17.913 | 168 | 317993 | 30.822 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.854 | 165 | 93233 | 31.470 |
| 104) | 1-Naphthylamine | (3) | 18.072 | 143 | 256464 | 31.024 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 18.151 | 232 | 45731 | 28.639 |
| 106) | 2-Naphthylamine | (3) | 18.241 | 143 | 278278 | 30.987 |
| 107) | Diethylphthalate | (3) | 18.330 | 149 | 288839 | 31.674 |
| 109) | Fluorene | (3) | 18.637 | 166 | 249522 | 33.138 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 18.607 | 204 | 94283 | 30.990 |
| 112) | 4-Nitroaniline | (3) | 18.647 | 138 | 92684 | 31.215 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 18.707 | 198 | 42853 | 27.579 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.846 | 169 | 180650 | 29.522 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.945 | 77 | 341980 | 29.351 |
| 123) | 4-Bromophenyl-phenylether | (4) | 19.688 | 248 | 47858 | 28.893 |
| 125) | Hexachlorobenzene | (4) | 19.866 | 284 | 56199 | 30.134 |
| 129) | Pentachlorophenol | (4) | 20.381 | 266 | 30969 | 35.167 |
| 133) | Phenanthrene-d10 | (4) | 20.976 | 188 | 350875 | 40.000 |
| 135) | Phenanthrene | (4) | 21.055 | 178 | 294859 | 30.698 |
| 136) | Anthracene | (4) | 21.214 | 178 | 304747 | 30.398 |
| 138) | Carbazole | (4) | 21.659 | 167 | 323514 | 30.200 |
| 140) | Di-n-butylphthalate | (4) | 22.508 | 149 | 503975 | 30.228 |
| 145) | Fluoranthene | (4) | 23.883 | 202 | 283068 | 32.316 |
| 150) | Benzidine | (5) | 24.110 | 184 | 414398 | 92.637 |
| 152) | Pyrene | (5) | 24.308 | 202 | 281662 | 31.168 |
| 159) | Butylbenzylphthalate | (5) | 25.357 | 149 | 209765 | 31.844 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 26.533 | 252 | 80033 | 31.766 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 26.523 | 231 | 39695 | 32.145 |
| 164) | Benzo(a)anthracene | (5) | 26.652 | 228 | 233408 | 30.925 |
| 165) | Chrysene-d12 | (5) | 26.682 | 240 | 233422 | 40.000 |
| 166) | Chrysene | (5) | 26.742 | 228 | 214785 | 30.222 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 26.533 | 149 | 278626 | 32.586 |
| 168) | Di-n-octylphthalate | (6) | 28.371 | 149 | 520375 | 31.793 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 29.962 | 256 | 91648 | 31.442 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

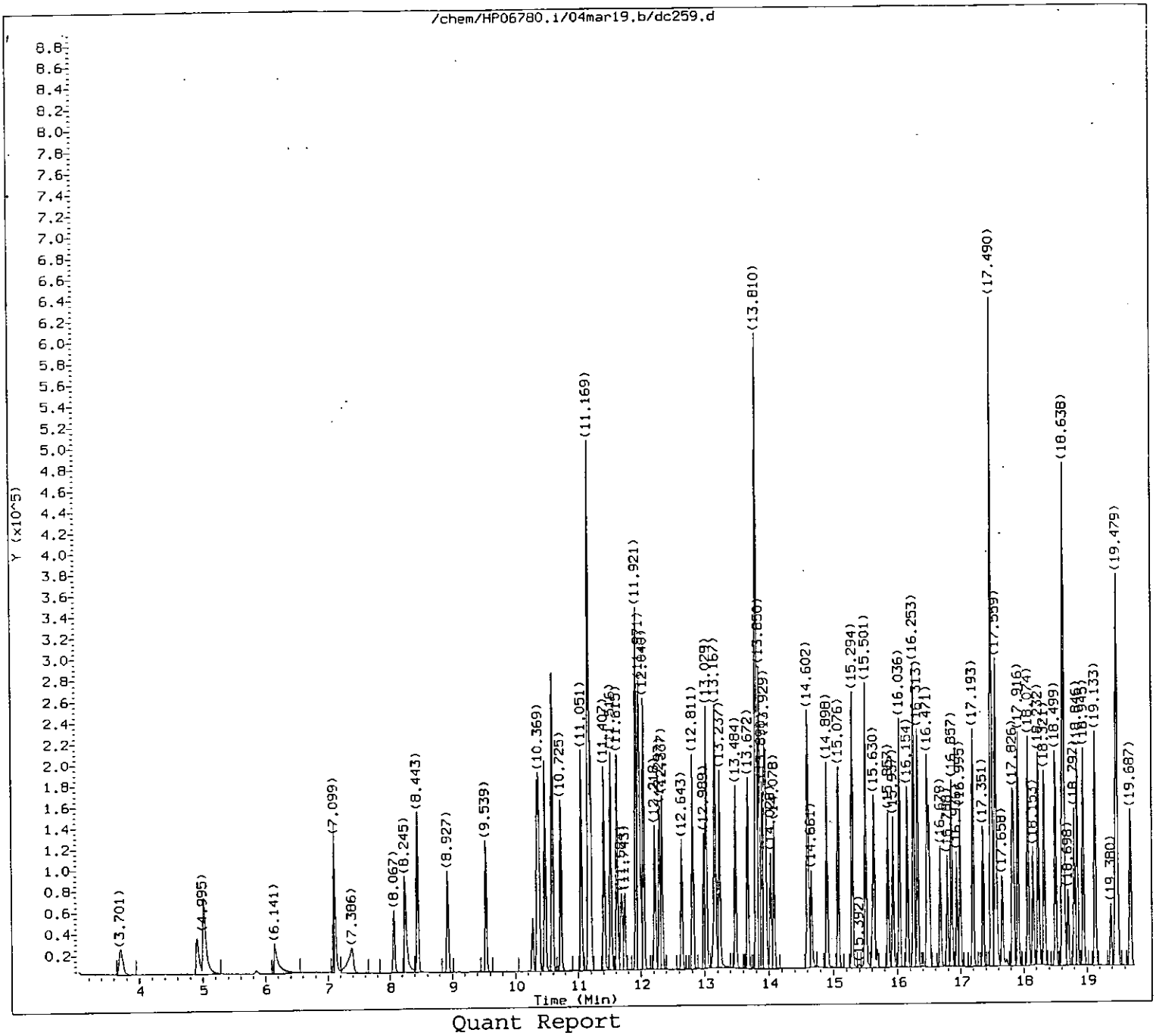
Data File: /chem/HP06780.i/04mar19.b/dc258.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 12:38  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 13:21
Date, time and analyst ID of latest file update: 19-Mar-2004 13:21 Automation

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 30.012 | 252 | 199416 | 31.249 |
| 171) | Benzo(k)fluoranthene | (6) | 30.121 | 252 | 196147 | 31.761 |
| 172) | Benzo(a)pyrene | (6) | 31.395 | 252 | 182462 | 31.275 |
| 173) | Perylene-d12 | (6) | 31.642 | 264 | 210080 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 37.776 | 276 | 174934 | 29.573 |
| 176) | Dibenz(a,h)anthracene | (6) | 37.944 | 278 | 161521 | 30.331 |
| 177) | Benzo(g,h,i)perylene | (6) | 39.722 | 276 | 172845 | 29.823 |
| 9) | 2-Fluorophenol | (1) | 8.453 | 112 | 214535 | 28.530 |
| 14) | Phenol-d5 | (1) | 10.350 | 99 | 252798 | 29.636 |
| 15) | Phenol-d6 | (1) | 10.350 | 99 | 252798 | 29.636 |
| 38) | Nitrobenzene-d5 | (2) | 12.299 | 82 | 191562 | 30.708 |
| 77) | 2-Fluorobiphenyl | (3) | 16.031 | 172 | 252739 | 30.862 |
| 117) | 2,4,6-Tribromophenol | (3) | 19.143 | 330 | 32216 | 31.793 |
| 154) | Terphenyl-d14 | (5) | 24.546 | 244 | 150100 | 30.890 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc259.d
Injection date and time: 19-MAR-2004 13:27

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:10

Sublist used: all1

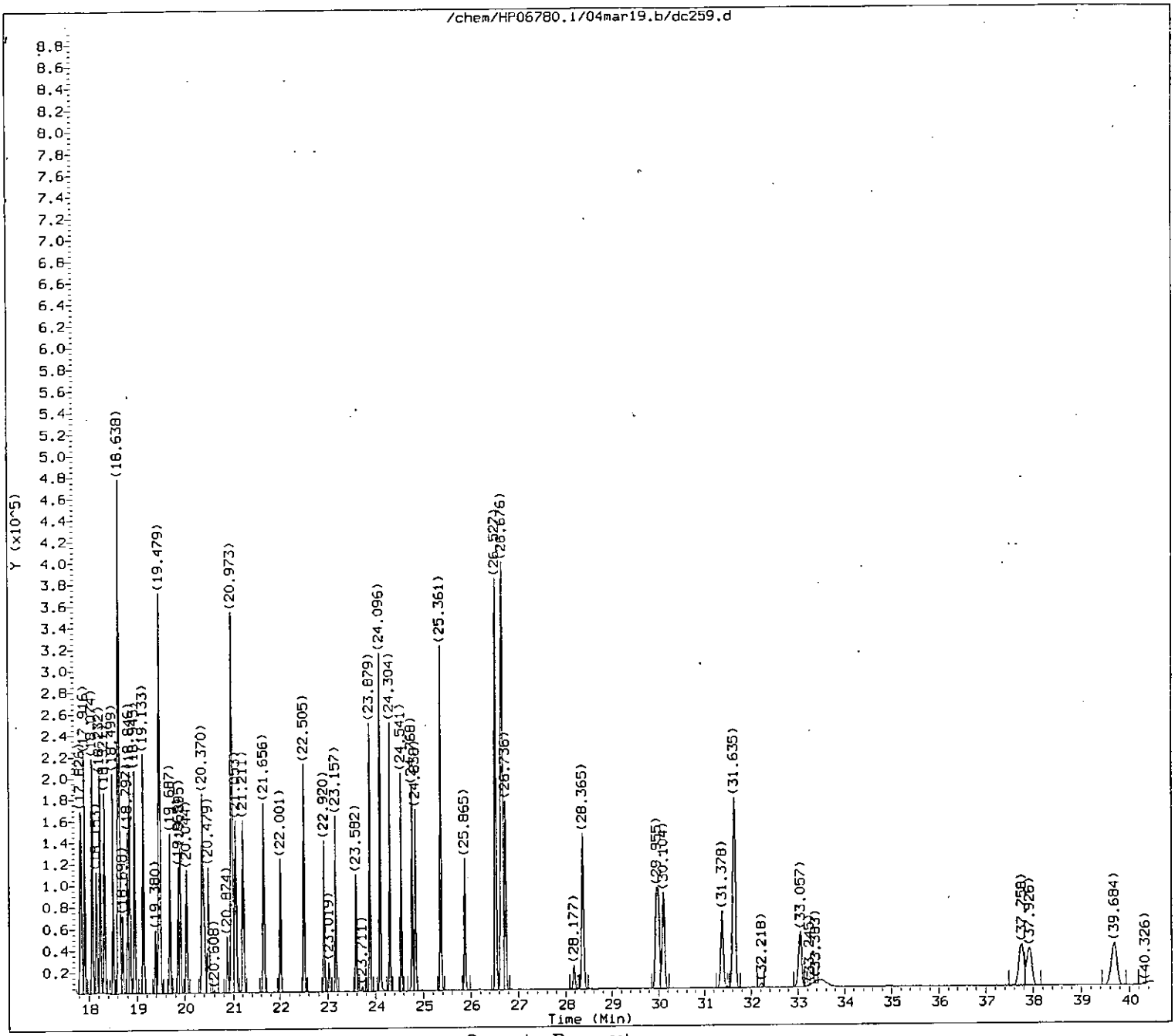
Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015

Lab Sample ID: STD0754

8212 - 1237

3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc259.d
Injection date and time: 19-MAR-2004 13:27

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:10

Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015

Lab Sample ID: STD0754

8213 - 1237
3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc259.d
Injection date and time: 19-MAR-2004 13:27
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:10
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015
Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.711 | 88 | 41171 | 15.077 |
| 2) N-Nitrosodimethylamine | (1) | 4.906 | 74 | 59392 | 14.181 |
| 3) Pyridine | (1) | 5.015 | 79 | 104254 | 14.977 |
| 5) 2-Picoline | (1) | 7.099 | 93 | 106222 | 15.297 |
| 13) Aniline | (1) | 10.477 | 93 | 152016 | 15.589 |
| 16) Phenol | (1) | 10.379 | 94 | 129582 | 15.829 |
| 18) bis(2-Chloroethyl)ether | (1) | 10.596 | 93 | 100817 | 15.969 |
| 19) 2-Chlorophenol | (1) | 10.725 | 128 | 88395 | 15.620 |
| 20) 1,3-Dichlorobenzene | (1) | 11.051 | 146 | 93782 | 16.130 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.169 | 152 | 149665 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.199 | 146 | 94882 | 16.190 |
| 24) Benzyl alcohol | (1) | 11.407 | 108 | 66335 | 15.158 |
| 25) 1,2-Dichlorobenzene | (1) | 11.516 | 146 | 91025 | 15.995 |
| 26) 2-Methylphenol | (1) | 11.624 | 108 | 98364 | 15.939 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 11.684 | 45 | 107416 | 15.753 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 11.684 | 45 | 107416 | 15.753 |
| 30) Acetophenone | (1) | 11.971 | 105 | 132090 | 16.704 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.951 | 70 | 61662 | 17.115 |
| 33) 4-Methylphenol | (1) | 11.921 | 108 | 100953 | 16.806 |
| 34) o-Toluidine | (1) | 12.040 | 106 | 154480 | 16.030 |
| 37) Hexachloroethane | (1) | 12.218 | 117 | 46405 | 15.847 |
| 39) Nitrobenzene | (2) | 12.337 | 77 | 87178 | 15.654 |
| 41) Isophorone | (2) | 12.811 | 82 | 177591 | 15.406 |
| 42) 2-Nitrophenol | (2) | 12.989 | 139 | 52281 | 15.332 |
| 44) 2,4-Dimethylphenol | (2) | 13.029 | 107 | 91453 | 15.836 |
| 46) bis(2-Chloroethoxy)methane | (2) | 13.237 | 93 | 110363 | 15.565 |
| 47) Benzoic acid | (2) | 13.147 | 105 | 63790 | 26.890 |
| 49) 2,4-Dichlorophenol | (2) | 13.484 | 162 | 63596 | 15.464 |
| 50) 1,2,4-Trichlorobenzene | (2) | 13.672 | 180 | 55383 | 15.843 |
| 52) Naphthalene-d8 | (2) | 13.810 | 136 | 533210 | 40.000 |
| 53) Naphthalene | (2) | 13.850 | 128 | 222503 | 16.393 |
| 55) 4-Chloroaniline | (2) | 13.929 | 127 | 104431 | 16.220 |
| 59) Hexachlorobutadiene | (2) | 14.078 | 225 | 23694 | 15.930 |
| 62) Caprolactam | (2) | 14.611 | 113 | 32297 | 16.383 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.898 | 107 | 72555 | 15.295 |
| 69) 2-Methylnaphthalene | (2) | 15.294 | 142 | 143656 | 16.697 |
| 70) 1-Methylnaphthalene | (2) | 15.501 | 142 | 134485 | 16.320 |
| 71) Hexachlorocyclopentadiene | (3) | 15.610 | 237 | 10136 | 10.903 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.857 | 196 | 32107 | 15.064 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.937 | 196 | 34172 | 15.512 |
| 80) Biphenyl | (3) | 16.253 | 154 | 157434 | 16.023 |
| 81) Diphenyl | (3) | 16.253 | 154 | 157434 | 16.023 |
| 82) 1,1'-Biphenyl | (3) | 16.253 | 154 | 157434 | 16.023 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc259.d
Injection date and time: 19-MAR-2004 13:27
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:10
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015
Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 83) 2-Chloronaphthalene | (3) | 16.313 | 162 | 127289 | 16.042 |
| 86) Diphenyl ether | (3) | 16.471 | 170 | 74351 | 15.707 |
| 87) 2-Nitroaniline | (3) | 16.501 | 138 | 54777 | 15.275 |
| 90) Dimethylphthalate | (3) | 16.857 | 163 | 136141 | 15.721 |
| 92) 2,6-Dinitrotoluene | (3) | 16.995 | 165 | 36341 | 15.369 |
| 93) Acenaphthylene | (3) | 17.193 | 152 | 183937 | 15.909 |
| 95) 3-Nitroaniline | (3) | 17.361 | 138 | 45061 | 14.977 |
| 96) Acenaphthene-d10 | (3) | 17.490 | 164 | 246441 | 40.000 |
| 97) Acenaphthene | (3) | 17.559 | 153 | 120950 | 16.691 |
| 98) 2,4-Dinitrophenol | (3) | 17.579 | 184 | 22141 | 22.898 |
| 101) 4-Nitrophenol | (3) | 17.658 | 109 | 13863 | 14.123 |
| 102) Dibenzofuran | (3) | 17.916 | 168 | 157643 | 16.259 |
| 103) 2,4-Dinitrotoluene | (3) | 17.846 | 165 | 41981 | 15.319 |
| 104) 1-Naphthylamine | (3) | 18.074 | 143 | 127828 | 16.411 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 18.153 | 232 | 22114 | 15.042 |
| 106) 2-Naphthylamine | (3) | 18.232 | 143 | 131111 | 15.686 |
| 107) Diethylphthalate | (3) | 18.321 | 149 | 141507 | 16.457 |
| 109) Fluorene | (3) | 18.638 | 166 | 118046 | 16.588 |
| 110) 4-Chlorophenyl-phenylether | (3) | 18.608 | 204 | 45432 | 15.969 |
| 112) 4-Nitroaniline | (3) | 18.638 | 138 | 43798 | 15.815 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 18.698 | 198 | 16767 | 12.578 |
| 115) N-Nitrosodiphenylamine | (4) | 18.846 | 169 | 86474 | 15.659 |
| 116) 1,2-Diphenylhydrazine | (4) | 18.945 | 77 | 166412 | 15.791 |
| 123) 4-Bromophenyl-phenylether | (4) | 19.687 | 248 | 23239 | 15.569 |
| 125) Hexachlorobenzene | (4) | 19.865 | 284 | 27072 | 15.994 |
| 129) Pentachlorophenol | (4) | 20.370 | 266 | 21255 | 27.585 |
| 133) Phenanthrene-d10 | (4) | 20.973 | 188 | 313173 | 40.000 |
| 135) Phenanthrene | (4) | 21.053 | 178 | 144645 | 16.461 |
| 136) Anthracene | (4) | 21.211 | 178 | 145239 | 15.969 |
| 138) Carbazole | (4) | 21.656 | 167 | 152807 | 15.775 |
| 140) Di-n-butylphthalate | (4) | 22.505 | 149 | 241110 | 15.947 |
| 145) Fluoranthene | (4) | 23.879 | 202 | 136216 | 16.878 |
| 150) Benzidine | (5) | 24.106 | 184 | 190085 | 45.912 |
| 152) Pyrene | (5) | 24.304 | 202 | 137022 | 16.150 |
| 159) Butylbenzylphthalate | (5) | 25.361 | 149 | 100329 | 16.207 |
| 162) 3,3'-Dichlorobenzidine | (5) | 26.527 | 252 | 37914 | 16.055 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 26.527 | 231 | 19243 | 16.500 |
| 164) Benzo(a)anthracene | (5) | 26.646 | 228 | 107446 | 15.366 |
| 165) Chrysene-d12 | (5) | 26.676 | 240 | 214943 | 40.000 |
| 166) Chrysene | (5) | 26.736 | 228 | 105094 | 15.835 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 26.527 | 149 | 137225 | 16.882 |
| 168) Di-n-octylphthalate | (6) | 28.365 | 149 | 241032 | 15.351 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 29.945 | 256 | 43923 | 15.633 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc259.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 13:27  Analyst ID: cam01237

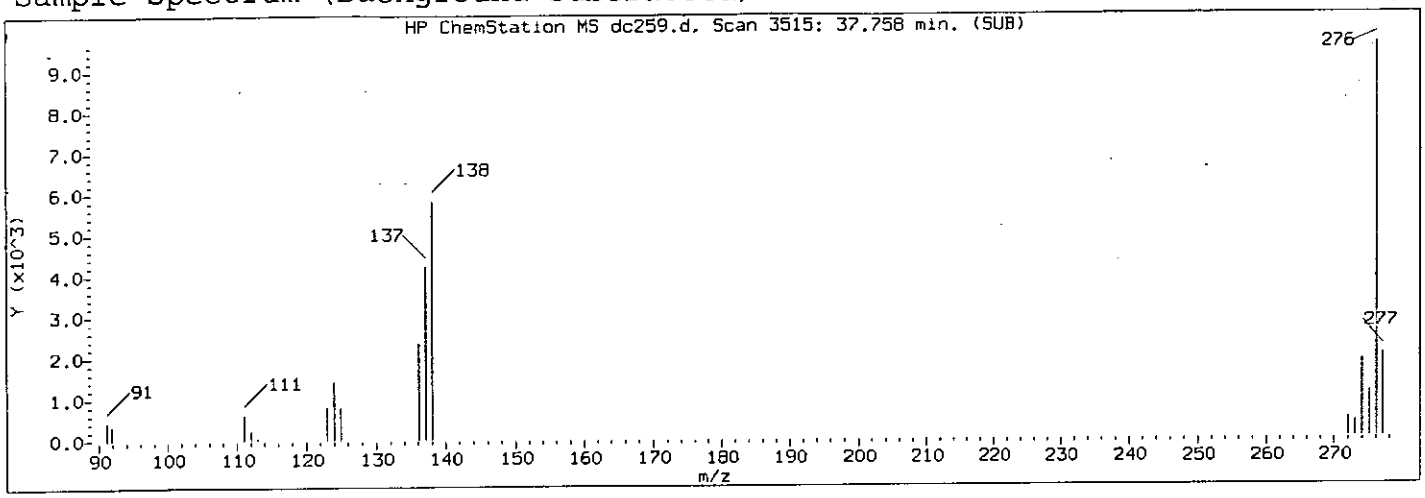
Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 14:10
Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015  Lab Sample ID: STD0754

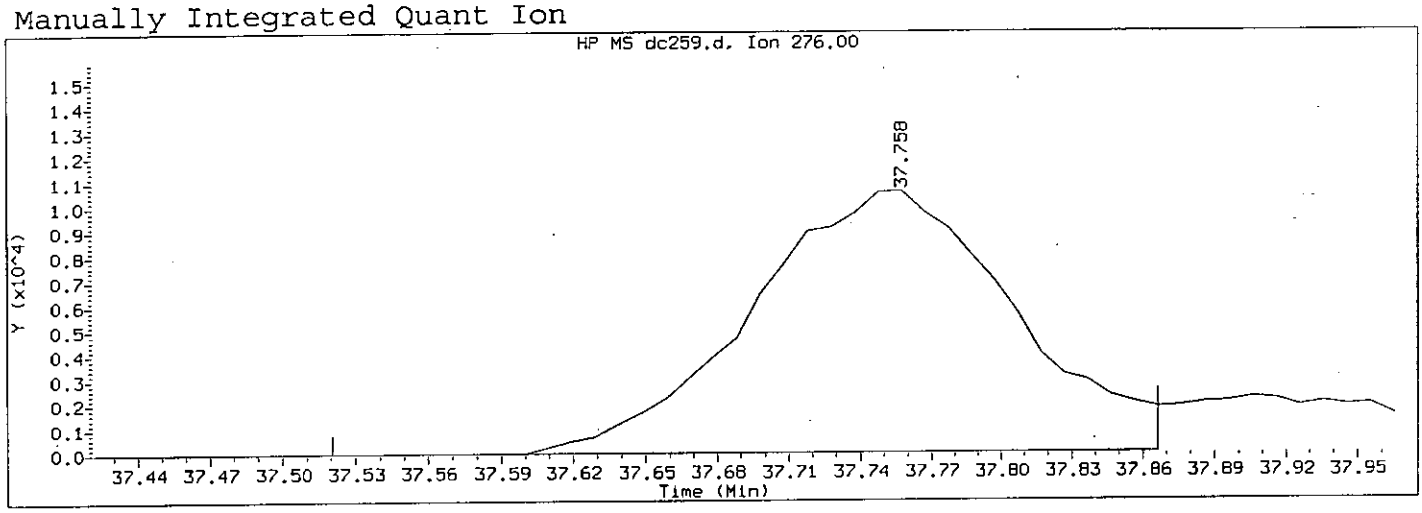
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 29.995 | 252 | 93450 | 15.282 |
| 171) | Benzo(k)fluoranthene | (6) | 30.104 | 252 | 95339 | 15.935 |
| 172) | Benzo(a)pyrene | (6) | 31.388 | 252 | 86507 | 15.435 |
| 173) | Perylene-d12 | (6) | 31.645 | 264 | 200354 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 37.758 | 276 | 81266M | 14.521 |
| 176) | Dibenz(a,h)anthracene | (6) | 37.926 | 278 | 76407 | 15.035 |
| 177) | Benzo(g,h,i)perylene | (6) | 39.684 | 276 | 84045 | 15.164 |
| 9) | 2-Fluorophenol | (1) | 8.453 | 112 | 108776 | 15.518 |
| 14) | Phenol-d5 | (1) | 10.349 | 99 | 124391 | 15.618 |
| 15) | Phenol-d6 | (1) | 10.349 | 99 | 124391 | 15.618 |
| 38) | Nitrobenzene-d5 | (2) | 12.297 | 82 | 91734 | 15.458 |
| 77) | 2-Fluorobiphenyl | (3) | 16.036 | 172 | 124235 | 16.167 |
| 117) | 2,4,6-Tribromophenol | (3) | 19.143 | 330 | 14859 | 15.741 |
| 154) | Terphenyl-d14 | (5) | 24.541 | 244 | 74464 | 16.285 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc259.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 13:27 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 14:10
Date, time and analyst ID of latest file update: 19-Mar-2004 14:14 cam01237

Sample Name: SSTD015 Lab Sample ID: STD0754

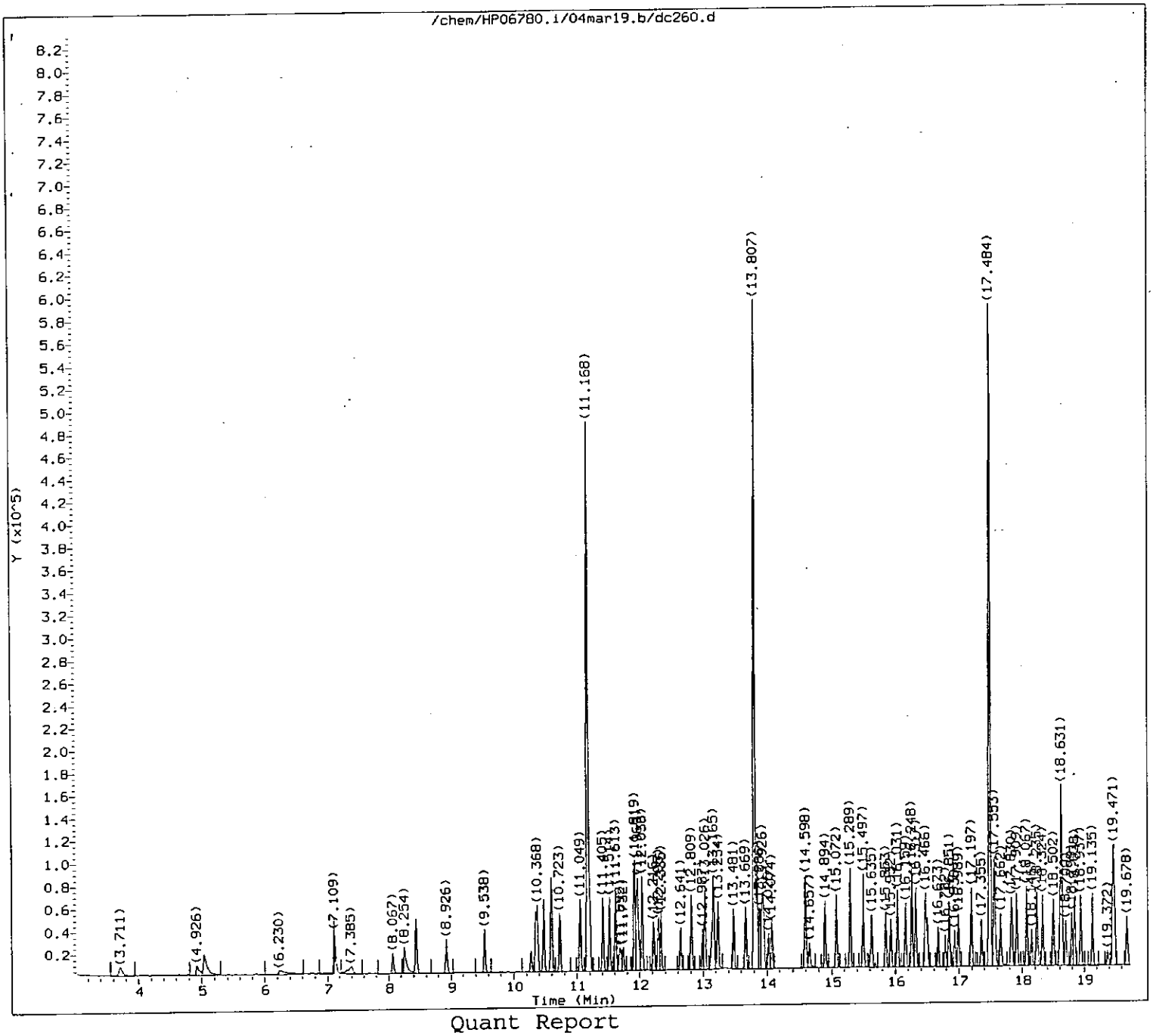
Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3515
Retention Time (minutes): 37.758
Quant Ion : 276
Area (flag) : 81266 M
Concentration (ng/ul) : 14.5205
Integration start scan : 3490 Integration stop scan: 3525
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: 1237 3.19.04

GC/MS audit/management approval: KC/8623 3/22/04 8217

Manual Integration Report for data file /chem/HP06780.i/04mar19.b/dc259.d, generated on 03/19/2004 at 14:14




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc260.d
Injection date and time: 19-MAR-2004 14:15

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:58

Sublist used: all1

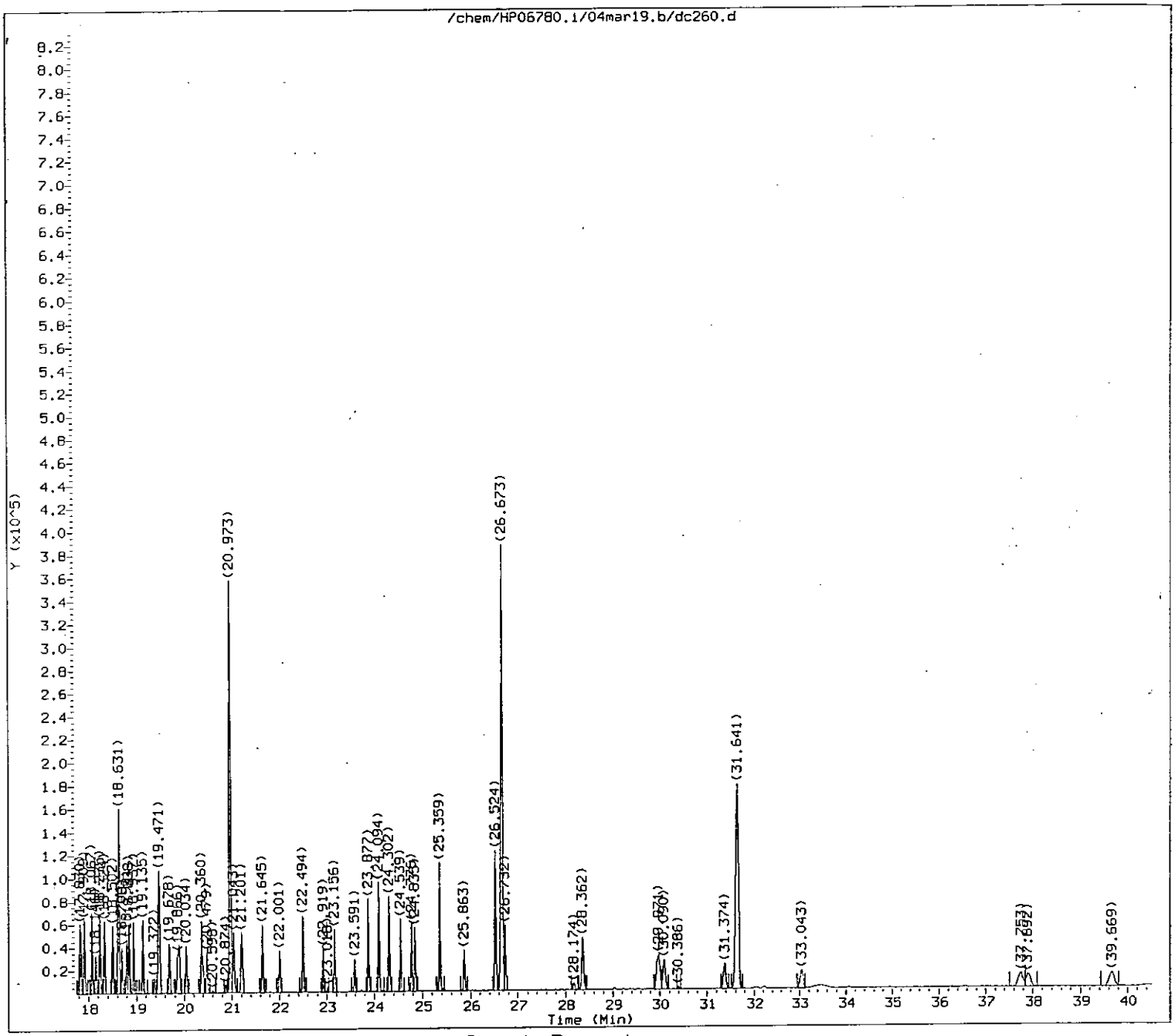
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005

Lab Sample ID: STD0754

8218 -1237

3-19-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc260.d
Injection date and time: 19-MAR-2004 14:15

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:58

Sublist used: all1

Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005

Lab Sample ID: STD0754

8219 1237

3-19-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc260.d
Injection date and time: 19-MAR-2004 14:15
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:58
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005
Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.711 | 88 | 12031 | 4.809 |
| 2) N-Nitrosodimethylamine | (1) | 4.926 | 74 | 17504M | 4.600 |
| 3) Pyridine | (1) | 5.035 | 79 | 31629 | 4.935 |
| 5) 2-Picoline | (1) | 7.109 | 93 | 32115 | 5.008 |
| 13) Aniline | (1) | 10.476 | 93 | 48297 | 5.301 |
| 16) Phenol | (1) | 10.368 | 94 | 39888 | 5.230 |
| 18) bis(2-Chloroethyl)ether | (1) | 10.585 | 93 | 31015 | 5.265 |
| 19) 2-Chlorophenol | (1) | 10.723 | 128 | 28256 | 5.336 |
| 20) 1,3-Dichlorobenzene | (1) | 11.049 | 146 | 29326 | 5.381 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.168 | 152 | 138160 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.198 | 146 | 29190 | 5.325 |
| 24) Benzyl alcohol | (1) | 11.405 | 108 | 21255 | 5.216 |
| 25) 1,2-Dichlorobenzene | (1) | 11.514 | 146 | 28118 | 5.290 |
| 26) 2-Methylphenol | (1) | 11.613 | 108 | 30787 | 5.332 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 11.692 | 45 | 32192 | 5.095 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 11.692 | 45 | 32192 | 5.095 |
| 30) Acetophenone | (1) | 11.969 | 105 | 41442 | 5.552 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.949 | 70 | 18769 | 5.525 |
| 33) 4-Methylphenol | (1) | 11.919 | 108 | 30693 | 5.438 |
| 34) o-Toluidine | (1) | 12.038 | 106 | 47281 | 5.259 |
| 37) Hexachloroethane | (1) | 12.216 | 117 | 14163 | 5.198 |
| 39) Nitrobenzene | (2) | 12.335 | 77 | 26385 | 4.995 |
| 41) Isophorone | (2) | 12.809 | 82 | 56876 | 5.166 |
| 42) 2-Nitrophenol | (2) | 12.987 | 139 | 15324 | 4.779 |
| 44) 2,4-Dimethylphenol | (2) | 13.026 | 107 | 28645 | 5.189 |
| 46) bis(2-Chloroethoxy)methane | (2) | 13.234 | 93 | 34158 | 5.065 |
| 47) Benzoic acid | (2) | 13.135 | 105 | 34934M | 15.433 |
| 49) 2,4-Dichlorophenol | (2) | 13.481 | 162 | 18251 | 4.729 |
| 50) 1,2,4-Trichlorobenzene | (2) | 13.669 | 180 | 16857 | 5.069 |
| 52) Naphthalene-d8 | (2) | 13.807 | 136 | 505852 | 40.000 |
| 53) Naphthalene | (2) | 13.847 | 128 | 72591 | 5.520 |
| 55) 4-Chloroaniline | (2) | 13.926 | 127 | 32065 | 5.206 |
| 59) Hexachlorobutadiene | (2) | 14.084 | 225 | 7582 | 5.307 |
| 62) Caprolactam | (2) | 14.588 | 113 | 9424 | 5.032 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.894 | 107 | 22633 | 5.024 |
| 69) 2-Methylnaphthalene | (2) | 15.289 | 142 | 45431 | 5.463 |
| 70) 1-Methylnaphthalene | (2) | 15.497 | 142 | 42384 | 5.347 |
| 71) Hexachlorocyclopentadiene | (3) | 15.606 | 237 | 1711 | 2.195 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.853 | 196 | 9850 | 4.962 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.932 | 196 | 10372 | 5.040 |
| 80) Biphenyl | (3) | 16.248 | 154 | 51800 | 5.532 |
| 81) Diphenyl | (3) | 16.248 | 154 | 51800 | 5.532 |
| 82) 1,1'-Biphenyl | (3) | 16.248 | 154 | 51800 | 5.532 |

M = Compound was manually integrated.
A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc260.d
Injection date and time: 19-MAR-2004 14:15
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:58
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005
Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 16.317 | 162 | 38543 | 5.172 |
| 86) | Diphenyl ether | (3) | 16.466 | 170 | 24043 | 5.366 |
| 87) | 2-Nitroaniline | (3) | 16.495 | 138 | 16375 | 4.913 |
| 90) | Dimethylphthalate | (3) | 16.851 | 163 | 43878 | 5.355 |
| 92) | 2,6-Dinitrotoluene | (3) | 16.989 | 165 | 11501 | 5.178 |
| 93) | Acenaphthylene | (3) | 17.197 | 152 | 59548 | 5.428 |
| 95) | 3-Nitroaniline | (3) | 17.355 | 138 | 13781 | 4.925 |
| 96) | Acenaphthene-d10 | (3) | 17.484 | 164 | 229856 | 40.000 |
| 97) | Acenaphthene | (3) | 17.553 | 153 | 37984 | 5.506 |
| 98) | 2,4-Dinitrophenol | (3) | 17.573 | 184 | 7546 | 9.033 |
| 101) | 4-Nitrophenol | (3) | 17.652 | 109 | 7806 | 8.741 |
| 102) | Dibenzofuran | (3) | 17.909 | 168 | 49950 | 5.429 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.840 | 165 | 13283 | 5.163 |
| 104) | 1-Naphthylamine | (3) | 18.067 | 143 | 39743 | 5.386 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 18.146 | 232 | 6374 | 4.703 |
| 106) | 2-Naphthylamine | (3) | 18.235 | 143 | 41756 | 5.293 |
| 107) | Diethylphthalate | (3) | 18.324 | 149 | 44480 | 5.447 |
| 109) | Fluorene | (3) | 18.631 | 166 | 40907 | 5.933 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 18.611 | 204 | 15017 | 5.537 |
| 112) | 4-Nitroaniline | (3) | 18.631 | 138 | 14454 | 5.487 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 18.700 | 198 | 10045 | 7.883 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.848 | 169 | 28415 | 5.136 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.937 | 77 | 52068 | 4.966 |
| 123) | 4-Bromophenyl-phenylether | (4) | 19.688 | 248 | 7815 | 5.211 |
| 125) | Hexachlorobenzene | (4) | 19.866 | 284 | 8278 | 4.924 |
| 129) | Pentachlorophenol | (4) | 20.370 | 266 | 8758 | 11.882 |
| 133) | Phenanthrene-d10 | (4) | 20.973 | 188 | 312026 | 40.000 |
| 135) | Phenanthrene | (4) | 21.043 | 178 | 46951 | 5.299 |
| 136) | Anthracene | (4) | 21.201 | 178 | 47757 | 5.223 |
| 138) | Carbazole | (4) | 21.645 | 167 | 52119 | 5.329 |
| 140) | Di-n-butylphthalate | (4) | 22.504 | 149 | 78021 | 5.149 |
| 145) | Fluoranthene | (4) | 23.877 | 202 | 45418 | 5.529 |
| 150) | Benzidine | (5) | 24.094 | 184 | 54263 | 13.409 |
| 152) | Pyrene | (5) | 24.302 | 202 | 45868 | 5.342 |
| 159) | Butylbenzylphthalate | (5) | 25.359 | 149 | 34633 | 5.494 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 26.524 | 252 | 12614 | 5.289 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 26.514 | 231 | 5697 | 4.911 |
| 164) | Benzo(a)anthracene | (5) | 26.643 | 228 | 35519 | 5.074 |
| 165) | Chrysene-d12 | (5) | 26.673 | 240 | 214546 | 40.000 |
| 166) | Chrysene | (5) | 26.732 | 228 | 35463 | 5.291 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 26.524 | 149 | 45597 | 5.506 |
| 168) | Di-n-octylphthalate | (6) | 28.362 | 149 | 76144 | 4.914 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 29.942 | 256 | 13039 | 4.736 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc260.d
Injection date and time: 19-MAR-2004 14:15
Instrument ID: HP06780.i
Analyst ID: cam01237

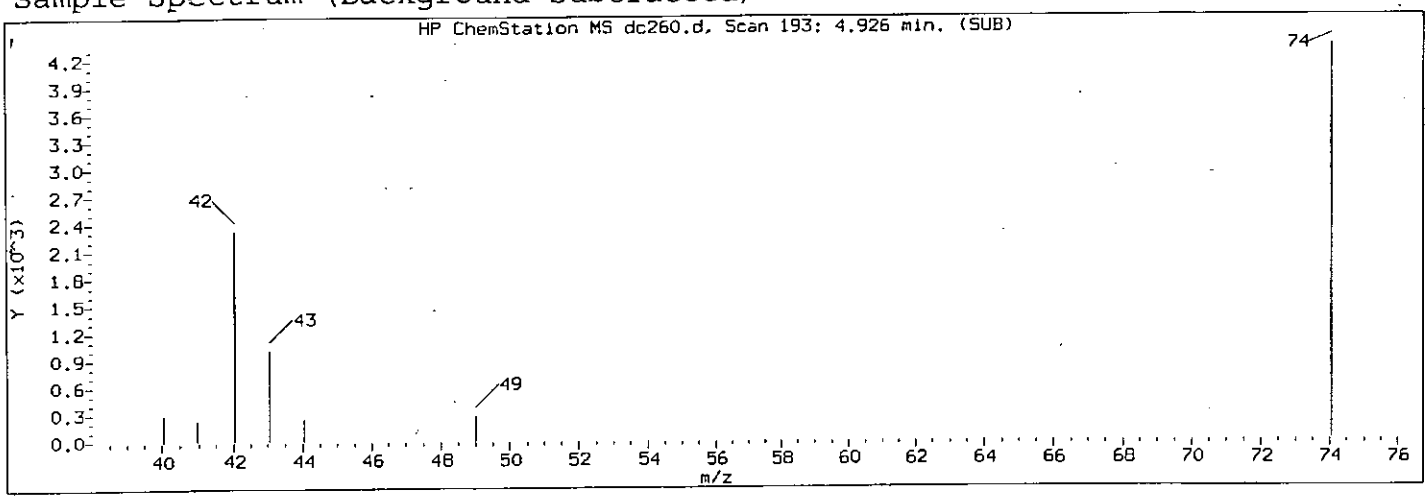
Method used: /chem/HP06780.i/04mar19.b/m8270.m
Calibration date and time: 19-MAR-2004 14:58
Sublist used: all1
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005
Lab Sample ID: STD0754

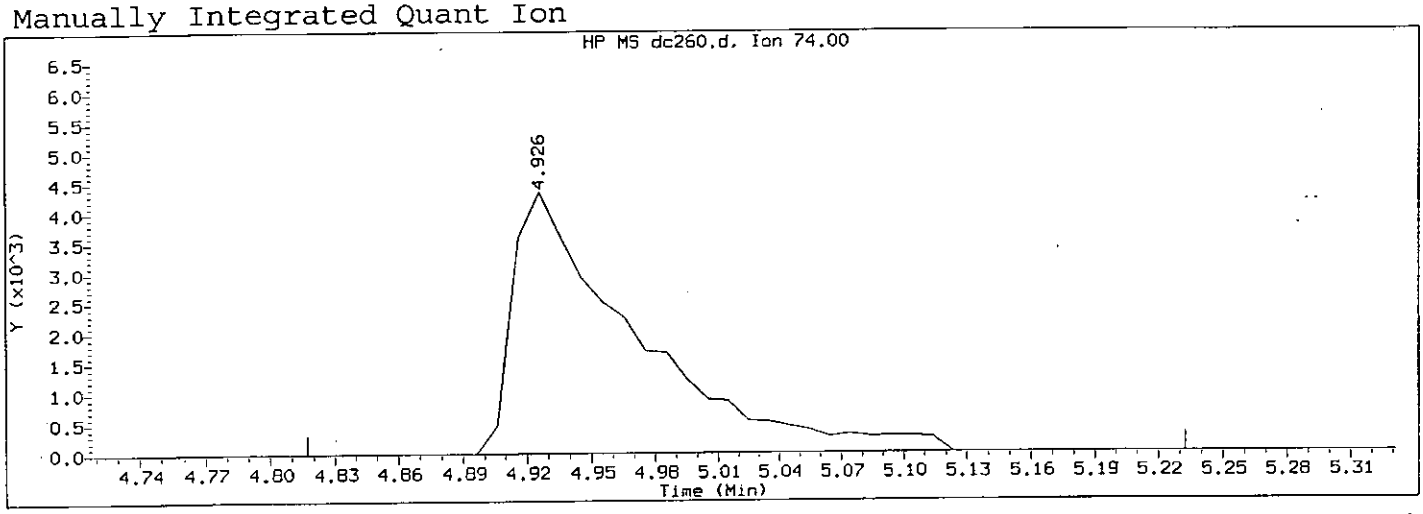
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 29.991 | 252 | 31381 | 5.151 |
| 171) Benzo(k)fluoranthene | (6) | 30.100 | 252 | 30388 | 5.107 |
| 172) Benzo(a)pyrene | (6) | 31.374 | 252 | 27465 | 4.957 |
| 173) Perylene-d12 | (6) | 31.641 | 264 | 198398 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 37.743 | 276 | 26325M | 4.790 |
| 176) Dibenz(a,h)anthracene | (6) | 37.921 | 278 | 23924 | 4.793 |
| 177) Benzo(g,h,i)perylene | (6) | 39.659 | 276 | 26825 | 4.906 |
| 9) 2-Fluorophenol | (1) | 8.442 | 112 | 33297 | 5.121 |
| 14) Phenol-d5 | (1) | 10.338 | 99 | 38646 | 5.212 |
| 15) Phenol-d6 | (1) | 10.338 | 99 | 38646 | 5.212 |
| 38) Nitrobenzene-d5 | (2) | 12.295 | 82 | 28010 | 4.979 |
| 77) 2-Fluorobiphenyl | (3) | 16.031 | 172 | 37732 | 5.219 |
| 117) 2,4,6-Tribromophenol | (3) | 19.135 | 330 | 4580 | 5.167 |
| 154) Terphenyl-d14 | (5) | 24.539 | 244 | 24783 | 5.353 |

M = Compound was manually integrated.
A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc260.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 14:15 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 14:58
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005 Lab Sample ID: STD0754

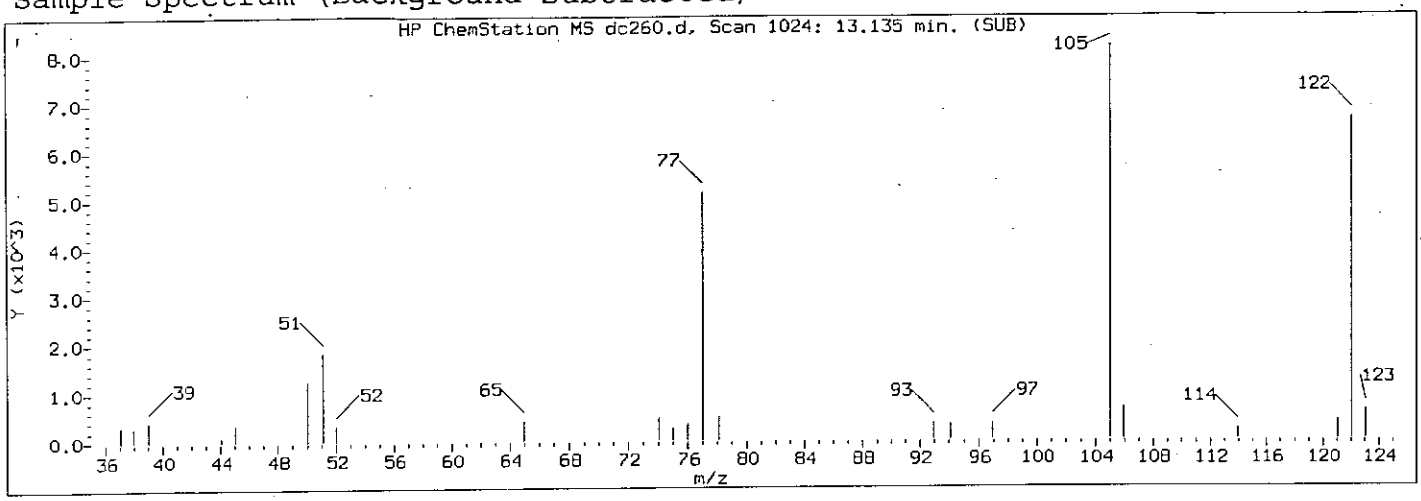
Compound Number : 2
Compound Name : N-Nitrosodimethylamine
Scan Number : 193
Retention Time (minutes): 4.926
Quant Ion : 74
Area (flag) : 17504 M
Concentration (ng/ul) : 4.5999
Integration start scan : 181 Integration stop scan: 223
Y at integration start : 0 Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

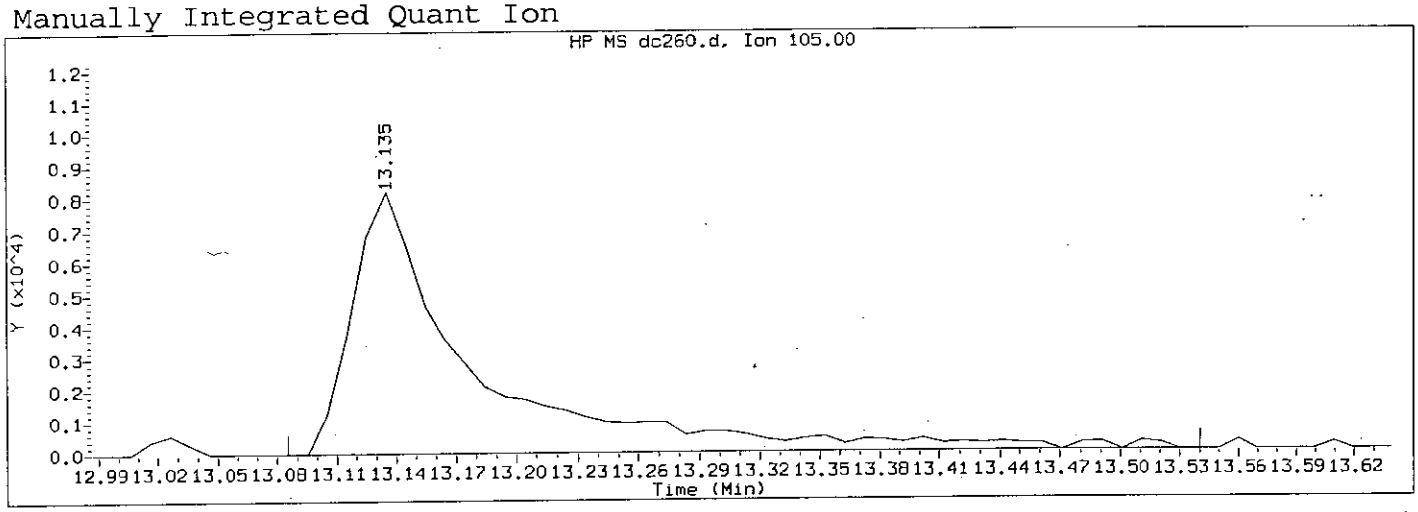
Analyst responsible for change: CC 1237 3.19.04

GC/MS audit/management approval: KC/8603 3/22/04 8223

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc260.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 14:15 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 14:58
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

Sample Name: SSTD005 Lab Sample ID: STD0754

Compound Number : 47
Compound Name : Benzoic acid
Scan Number : 1024
Retention Time (minutes): 13.135
Quant Ion : 105
Area (flag) : 34934 M
Concentration (ng/ul) : 15.4329
Integration start scan : 1018 Integration stop scan: 1064
Y at integration start : 0 Y at integration end: 0

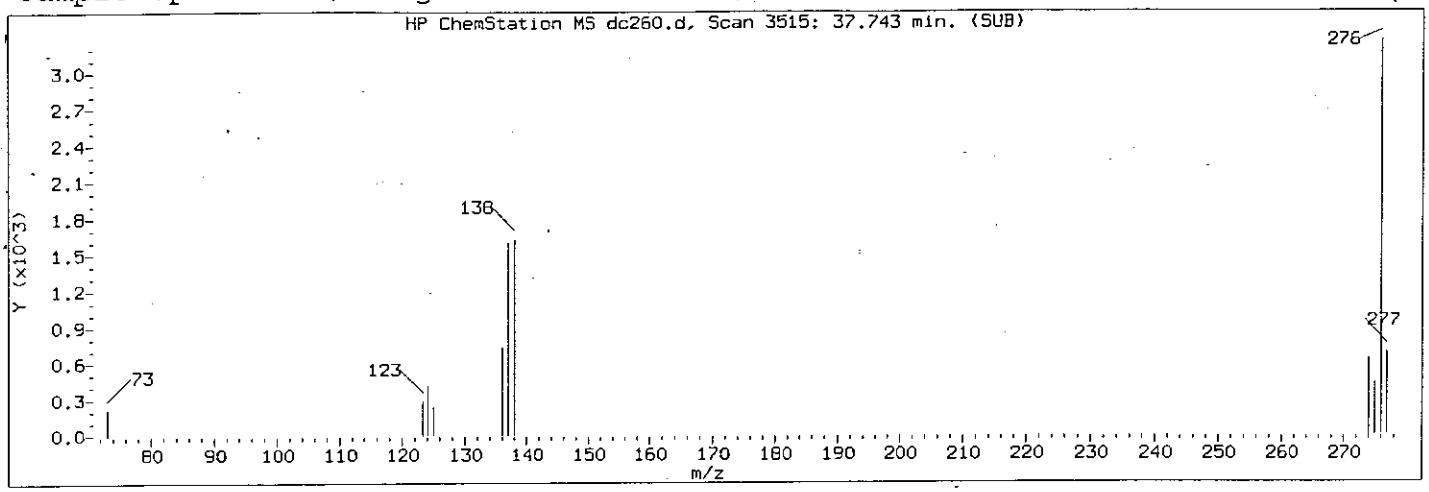
Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: CC - 1237 3.19.04

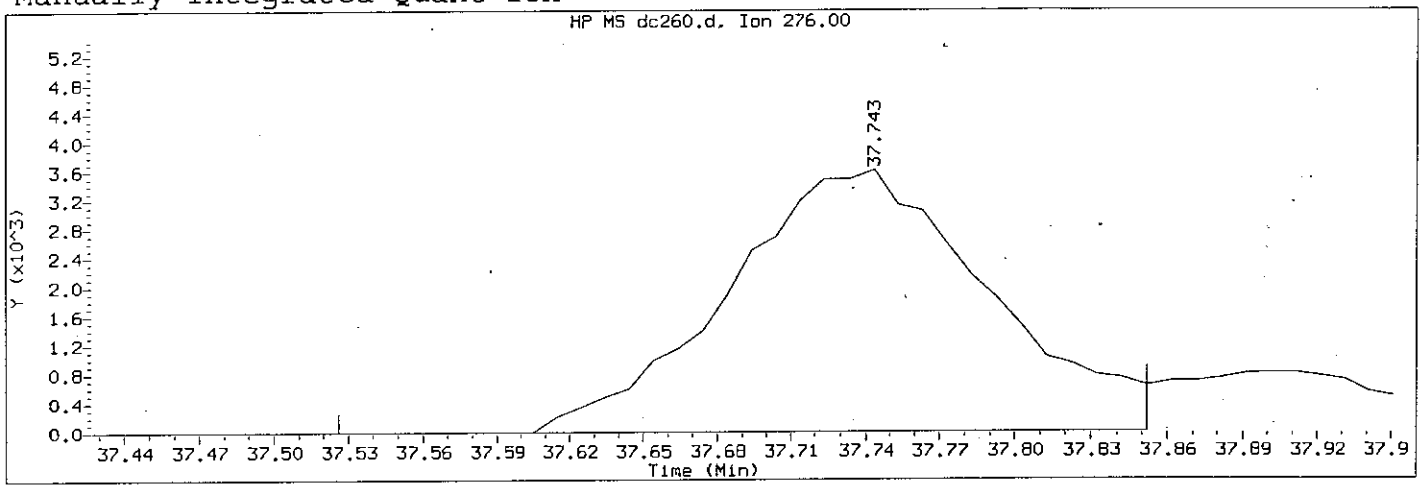
GC/MS audit/management approval: *CC/8103 3/22/04 0224

Manual Integration Report for data file /chem/HP06780.i/04mar19.b/dc260.d, generated on 03/19/2004 at 15:00

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc260.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 14:15  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 14:58
Date, time and analyst ID of latest file update: 19-Mar-2004 15:00 cam01237

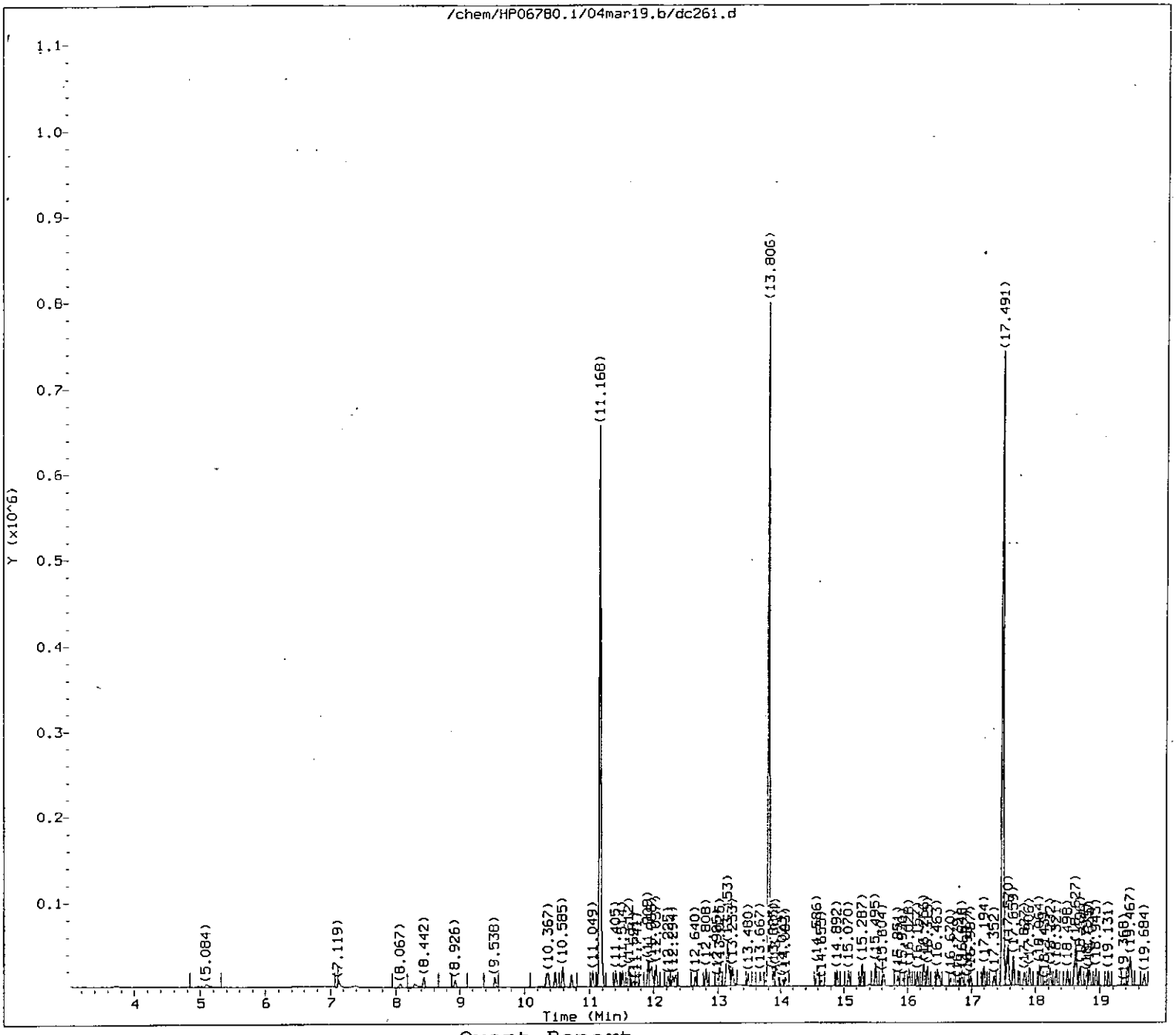
Sample Name: SSTD005  Lab Sample ID: STD0754

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3515
Retention Time (minutes): 37.743
Quant Ion : 276
Area (flag) : 26325 M
Concentration (ng/ul) : 4.7901
Integration start scan : 3492  Integration stop scan: 3525
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: CC 1237 3.19.04

GC/MS audit/management approval: CC/863 3/22/04 8225




Quant Report

Target Revision 3.5

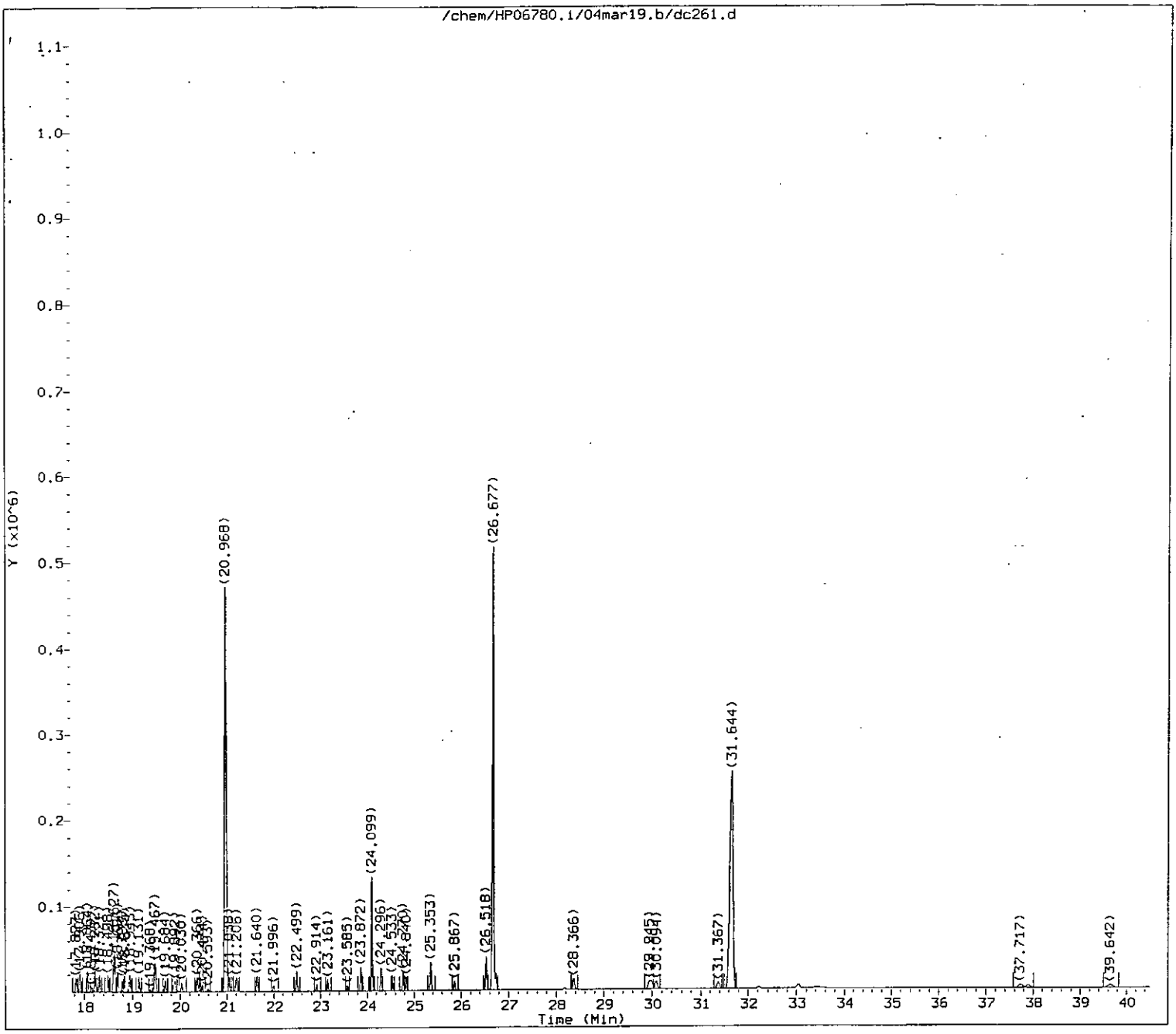
Data File: /chem/HP06780.i/04mar19.b/dc261.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

3226

RB1568
3-22-4




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc261.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

8227

RB 3-22-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc261.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.721 | 88 | 3323 | 0.918 |
| 2) N-Nitrosodimethylamine | (1) | 4.975 | 74 | 4277 | 0.777 |
| 3) Pyridine | (1) | 5.084 | 79 | 7522M | 0.812 |
| 5) 2-Picoline | (1) | 7.129 | 93 | 9448 | 1.019 |
| 13) Aniline | (1) | 10.476 | 93 | 14504 | 1.101 |
| 16) Phenol | (1) | 10.367 | 94 | 12789 | 1.159 |
| 18) bis(2-Chloroethyl)ether | (1) | 10.585 | 93 | 9944 | 1.167 |
| 19) 2-Chlorophenol | (1) | 10.723 | 128 | 8523 | 1.113 |
| 20) 1,3-Dichlorobenzene | (1) | 11.049 | 146 | 8913 | 1.131 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.168 | 152 | 199803 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.197 | 146 | 9270 | 1.169 |
| 24) Benzyl alcohol | (1) | 11.405 | 108 | 6516 | 1.106 |
| 25) 1,2-Dichlorobenzene | (1) | 11.514 | 146 | 8607 | 1.120 |
| 26) 2-Methylphenol | (1) | 11.612 | 108 | 9187 | 1.100 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 11.691 | 45 | 10044 | 1.099 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 11.691 | 45 | 10044 | 1.099 |
| 30) Acetophenone | (1) | 11.968 | 105 | 13437 | 1.245 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.938 | 70 | 6030 | 1.227 |
| 33) 4-Methylphenol | (1) | 11.909 | 108 | 9874 | 1.210 |
| 34) o-Toluidine | (1) | 12.037 | 106 | 14692 | 1.130 |
| 37) Hexachloroethane | (1) | 12.225 | 117 | 4007 | 1.017 |
| 39) Nitrobenzene | (2) | 12.334 | 77 | 8378 | 1.195 |
| 41) Isophorone | (2) | 12.808 | 82 | 18651 | 1.277 |
| 42) 2-Nitrophenol | (2) | 12.985 | 139 | 4530 | 1.065 |
| 44) 2,4-Dimethylphenol | (2) | 13.025 | 107 | 8981 | 1.226 |
| 46) bis(2-Chloroethoxy)methane | (2) | 13.233 | 93 | 10991 | 1.228 |
| 47) Benzoic acid | (2) | 13.144 | 105 | 42235 | 14.061 |
| 49) 2,4-Dichlorophenol | (2) | 13.480 | 162 | 6083 | 1.188 |
| 50) 1,2,4-Trichlorobenzene | (2) | 13.667 | 180 | 5448 | 1.235 |
| 52) Naphthalene-d8 | (2) | 13.806 | 136 | 671254 | 40.000 |
| 53) Naphthalene | (2) | 13.845 | 128 | 23247M | 1.332 |
| 55) 4-Chloroaniline | (2) | 13.924 | 127 | 10433 | 1.277 |
| 59) Hexachlorobutadiene | (2) | 14.083 | 225 | 2303 | 1.215 |
| 62) Caprolactam | (2) | 14.586 | 113 | 3313 | 1.333 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.892 | 107 | 7420 | 1.241 |
| 69) 2-Methylnaphthalene | (2) | 15.287 | 142 | 14575 | 1.321 |
| 70) 1-Methylnaphthalene | (2) | 15.495 | 142 | 13450 | 1.279 |
| 71) Hexachlorocyclopentadiene | (3) | 15.604 | 237 | 3365 | 7.529 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.851 | 196 | 2857 | 1.046 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.930 | 196 | 3212 | 1.134 |
| 80) Biphenyl | (3) | 16.256 | 154 | 17113 | 1.328 |
| 81) Diphenyl | (3) | 16.256 | 154 | 17113 | 1.328 |
| 82) 1,1'-Biphenyl | (3) | 16.256 | 154 | 17113 | 1.328 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc261.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 16.315 | 162 | 12902 | 1.258 |
| 86) | Diphenyl ether | (3) | 16.463 | 170 | 8049 | 1.305 |
| 87) | 2-Nitroaniline | (3) | 16.493 | 138 | 5009 | 1.092 |
| 90) | Dimethylphthalate | (3) | 16.848 | 163 | 15430 | 1.368 |
| 92) | 2,6-Dinitrotoluene | (3) | 16.987 | 165 | 3351 | 1.096 |
| 93) | Acenaphthylene | (3) | 17.194 | 152 | 20155 | 1.335 |
| 95) | 3-Nitroaniline | (3) | 17.352 | 138 | 4153 | 1.079 |
| 96) | Acenaphthene-d10 | (3) | 17.491 | 164 | 316312 | 40.000 |
| 97) | Acenaphthene | (3) | 17.550 | 153 | 12810 | 1.349 |
| 98) | 2,4-Dinitrophenol | (3) | 17.570 | 184 | 11050 | 16.358 |
| 101) | 4-Nitrophenol | (3) | 17.659 | 109 | 5668 | 4.612 |
| 102) | Dibenzofuran | (3) | 17.916 | 168 | 17062 | 1.348 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.837 | 165 | 4352 | 1.229 |
| 104) | 1-Naphthylamine | (3) | 18.064 | 143 | 14944 | 1.472 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 18.153 | 232 | 1799 | 0.965 |
| 106) | 2-Naphthylamine | (3) | 18.232 | 143 | 15212 | 1.401 |
| 107) | Diethylphthalate | (3) | 18.321 | 149 | 15336 | 1.365 |
| 109) | Fluorene | (3) | 18.637 | 166 | 13306 | 1.402 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 18.607 | 204 | 4883 | 1.308 |
| 112) | 4-Nitroaniline | (3) | 18.627 | 138 | 4863 | 1.341 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 18.696 | 198 | 6214 | 3.499 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.844 | 169 | 9908 | 1.285 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.943 | 77 | 17589 | 1.203 |
| 123) | 4-Bromophenyl-phenylether | (4) | 19.684 | 248 | 2721 | 1.302 |
| 125) | Hexachlorobenzene | (4) | 19.862 | 284 | 3000 | 1.280 |
| 129) | Pentachlorophenol | (4) | 20.366 | 266 | 3088 | 3.006 |
| 133) | Phenanthrene-d10 | (4) | 20.968 | 188 | 434926 | 40.000 |
| 135) | Phenanthrene | (4) | 21.048 | 178 | 15948 | 1.291 |
| 136) | Anthracene | (4) | 21.206 | 178 | 16614 | 1.304 |
| 138) | Carbazole | (4) | 21.640 | 167 | 18137 | 1.330 |
| 140) | Di-n-butylphthalate | (4) | 22.499 | 149 | 26910 | 1.274 |
| 145) | Fluoranthene | (4) | 23.872 | 202 | 16496 | 1.441 |
| 150) | Benzidine | (5) | 24.099 | 184 | 79208 | 13.222 |
| 152) | Pyrene | (5) | 24.306 | 202 | 16294 | 1.282 |
| 159) | Butylbenzylphthalate | (5) | 25.353 | 149 | 12445 | 1.334 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 26.518 | 252 | 4597 | 1.302 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 26.518 | 231 | 2066 | 1.203 |
| 164) | Benzo(a)anthracene | (5) | 26.637 | 228 | 14782 | 1.426 |
| 165) | Chrysene-d12 | (5) | 26.677 | 240 | 317606 | 40.000 |
| 166) | Chrysene | (5) | 26.736 | 228 | 13138 | 1.324 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 26.528 | 149 | 16905 | 1.379 |
| 168) | Di-n-octylphthalate | (6) | 28.356 | 149 | 25537 | 1.108 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 29.935 | 256 | 5046 | 1.232 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar19.b/dc261.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04  Analyst ID: cam01237

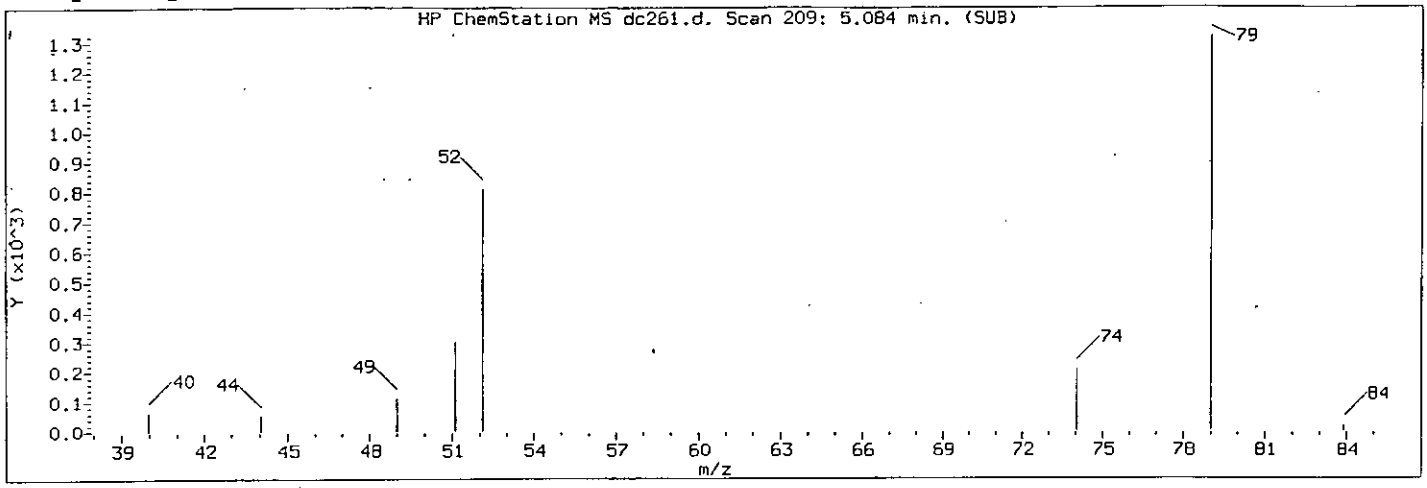
Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

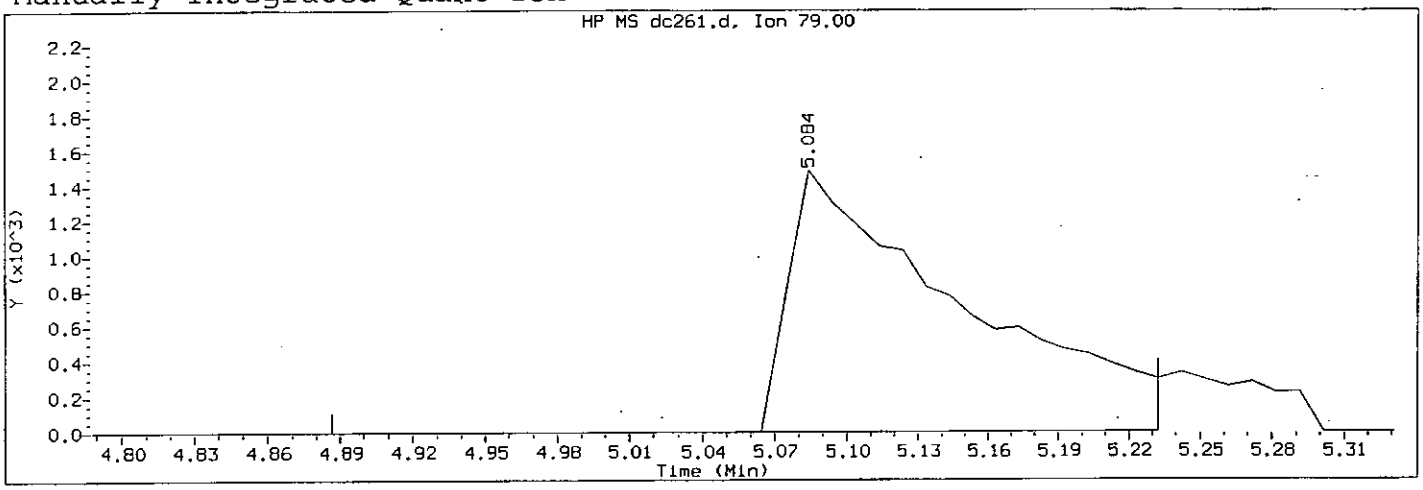
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 29.975 | 252 | 12035 | 1.328 |
| 171) | Benzo(k)fluoranthene | (6) | 30.094 | 252 | 11114 | 1.256 |
| 172) | Benzo(a)pyrene | (6) | 31.367 | 252 | 9680 | 1.175 |
| 173) | Perylene-d12 | (6) | 31.654 | 264 | 295119 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 37.717 | 276 | 8545M | 1.045 |
| 176) | Dibenz(a,h)anthracene | (6) | 37.905 | 278 | 7654 | 1.031 |
| 177) | Benzo(g,h,i)perylene | (6) | 39.633 | 276 | 8212 | 1.010 |
| 9) | 2-Fluorophenol | (1) | 8.442 | 112 | 10587 | 1.126 |
| 14) | Phenol-d5 | (1) | 10.338 | 99 | 12187 | 1.136 |
| 15) | Phenol-d6 | (1) | 10.338 | 99 | 12187 | 1.136 |
| 38) | Nitrobenzene-d5 | (2) | 12.294 | 82 | 8403 | 1.126 |
| 77) | 2-Fluorobiphenyl | (3) | 16.028 | 172 | 12291 | 1.235 |
| 117) | 2,4,6-Tribromophenol | (3) | 19.141 | 330 | 1461 | 1.198 |
| 154) | Terphenyl-d14 | (5) | 24.533 | 244 | 9235 | 1.348 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc261.d  Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m  Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 22-Mar-2004 15:59 rpb01568

Sample Name: SSTD001  Lab Sample ID: 8270MDL0754

Compound Number : 3
Compound Name : Pyridine
Scan Number : 209
Retention Time (minutes): 5.084
Quant Ion : 79
Area (flag) : 7522 M
Concentration (ng/ul) : 0.8116
Integration start scan : 188  Integration stop scan: 223
Y at integration start : 0  Y at integration end: 0

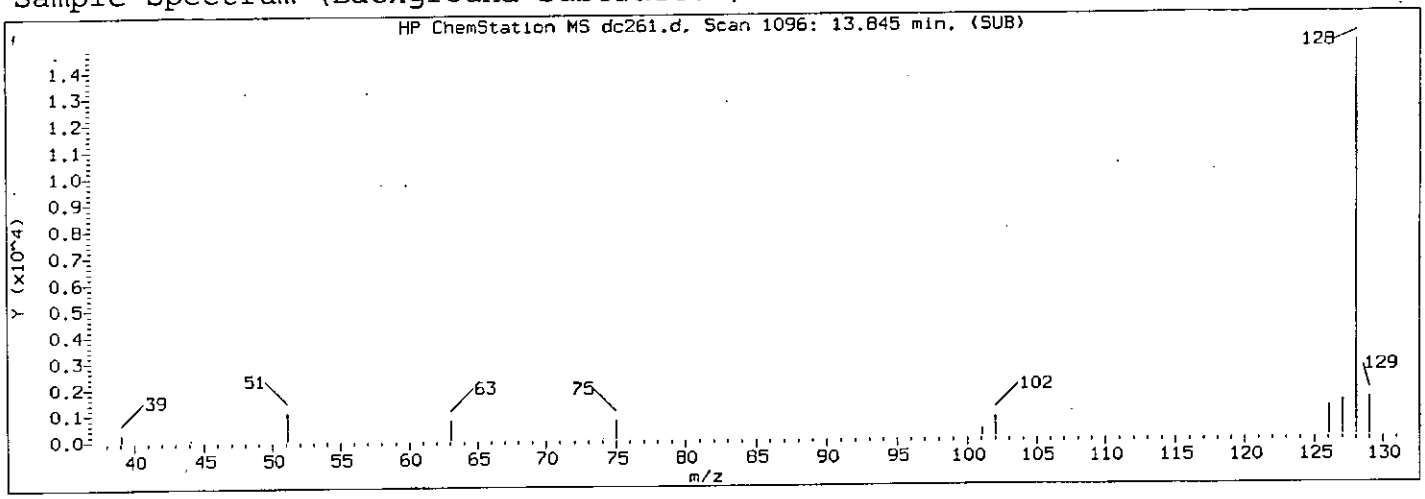
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: RB 15C8 3-22-04

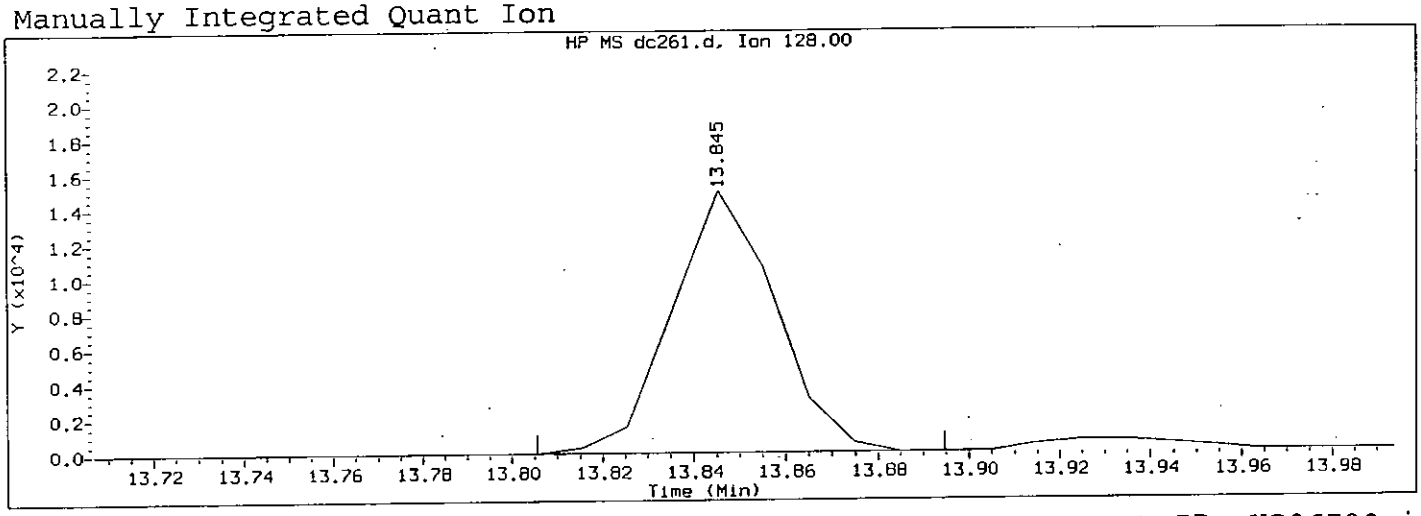
GC/MS audit/management approval: RC 8603 3/23/04 8231

Manual Integration Report for data file /chem/HP06780.i/04mar19.b/dc261.d, generated on 03/22/2004 at 16:01

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc261.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 19-Mar-2004 20:50 rpb01568

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

Compound Number : 53
Compound Name : Naphthalene
Scan Number : 1096
Retention Time (minutes): 13.845
Quant Ion : 128
Area (flag) : 23247 M
Concentration (ng/ul) : 1.3322
Integration start scan : 1091 Integration stop scan: 1100
Y at integration start : 0 Y at integration end: 0

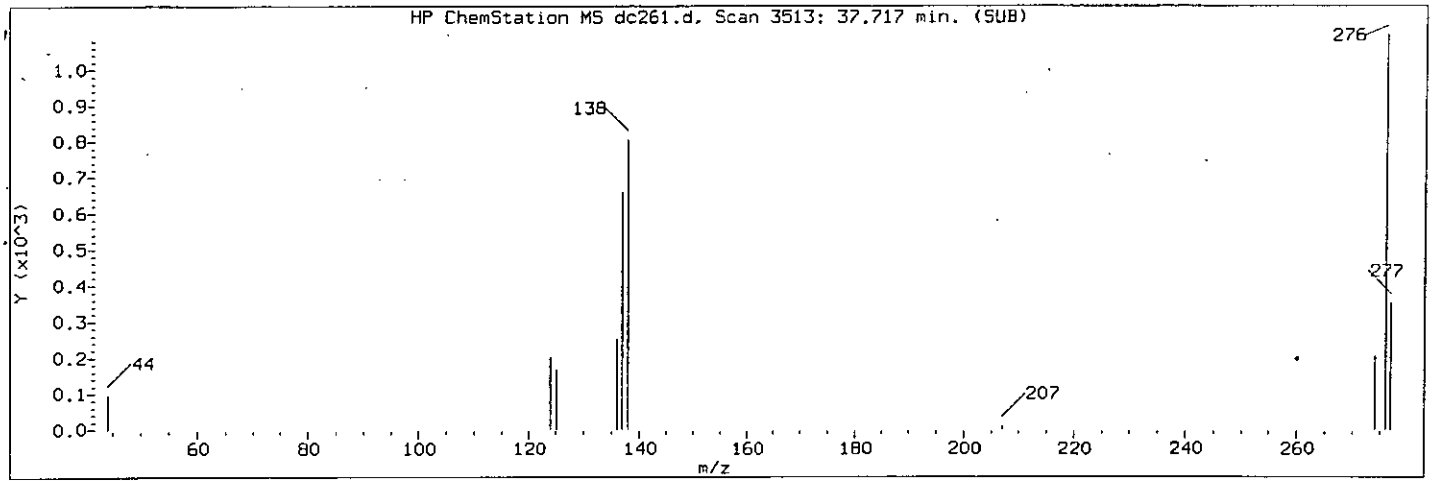
Reason for manual integration (circle one): missed peak ~~improper integration~~

Analyst responsible for change: RBUSS 3-19-04

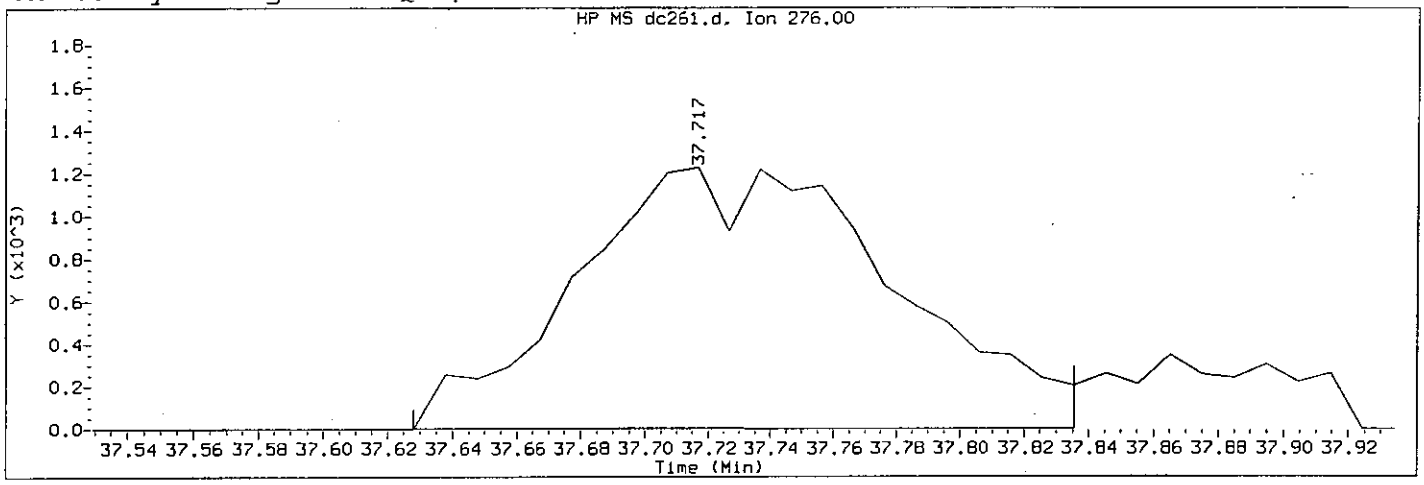
GC/MS audit/management approval: KC/8623 3/22/04

8232

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar19.b/dc261.d Instrument ID: HP06780.i
Injection date and time: 19-MAR-2004 15:04 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar19.b/m8270.m Sublist used: all1
Calibration date and time: 19-MAR-2004 15:03
Date, time and analyst ID of latest file update: 19-Mar-2004 20:50 rpb01568

Sample Name: SSTD001 Lab Sample ID: 8270MDL0754

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3513
Retention Time (minutes): 37.717
Quant Ion : 276
Area (flag) : 8545 M
Concentration (ng/ul) : 1.0453
Integration start scan : 3503 Integration stop scan: 3524
Y at integration start : 2 Y at integration end: 1

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: RB1728 3-19-04

GC/MS audit/management approval: KC/8103 3/22/04 5233

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date(s): 03/20/04 03/20/04

Calibration Times: 13:10 17:57

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF5 = gc288.d RRF15 = gc287.d RRF30 = gc286.d
RRF50 = gc285.d RRF80 = gc283.d RRF120 = gc284.d

| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.640 | 0.720 | 0.684 | 0.712 | 0.751 | 0.742 | | 0.708 | 6 | AVG | |
| | N-Nitrosodimethylamine | 0.953 | 1.050 | 1.027 | 1.088 | 1.126 | 1.116 | | 1.060 | 6 | AVG | |
| | Pyridine | 1.653 | 1.724 | 1.679 | 1.774 | 1.823 | 1.794 | | 1.741 | 4 | AVG | |
| | 2-Picoline | 1.564 | 1.614 | 1.599 | 1.682 | 1.687 | 1.664 | | 1.635 | 3 | AVG | |
| | Aniline | 2.242 | 2.349 | 2.219 | 2.309 | 2.403 | 2.337 | | 2.310 | 3 | AVG | |
| * | Phenol | 1.736 | 1.877 | 1.824 | 1.883 | 1.899 | 1.894 | | 1.852 | 3 | AVG | * |
| | bis(2-Chloroethyl)ether | 1.464 | 1.536 | 1.525 | 1.540 | 1.502 | 1.498 | | 1.511 | 2 | AVG | |
| | 2-Chlorophenol | 1.530 | 1.545 | 1.516 | 1.595 | 1.616 | 1.611 | | 1.569 | 3 | AVG | |
| | 1,3-Dichlorobenzene | 1.579 | 1.574 | 1.543 | 1.603 | 1.629 | 1.588 | | 1.586 | 2 | AVG | |
| * | 1,4-Dichlorobenzene | 1.628 | 1.616 | 1.531 | 1.592 | 1.594 | 1.614 | | 1.596 | 2 | AVG | * |
| | Benzyl alcohol | 0.837 | 0.886 | 0.894 | 0.950 | 0.981 | 0.961 | | 0.918 | 6 | AVG | |
| | 1,2-Dichlorobenzene | 1.480 | 1.528 | 1.458 | 1.544 | 1.587 | 1.556 | | 1.525 | 3 | AVG | |
| | 2-Methylphenol | 1.171 | 1.318 | 1.239 | 1.304 | 1.329 | 1.326 | | 1.281 | 5 | AVG | |
| | 2,2'-oxybis(1-Chloropropane) | 2.331 | 2.428 | 2.407 | 2.478 | 2.441 | 2.397 | | 2.414 | 2 | AVG | |
| | bis(2-Chloroisopropyl)ether | 2.331 | 2.428 | 2.407 | 2.478 | 2.441 | 2.397 | | 2.414 | 2 | AVG | |
| | Acetophenone | 1.823 | 1.976 | 1.950 | 2.011 | 2.009 | 1.998 | | 1.961 | 4 | AVG | |
| # | N-Nitroso-di-n-propylamine | 0.967 | 1.043 | 1.032 | 1.051 | 1.006 | 0.987 | | 1.014 | 3 | AVG | # |
| | 4-Methylphenol | 1.204 | 1.327 | 1.334 | 1.405 | 1.415 | 1.433 | | 1.353 | 6 | AVG | |
| | o-Toluidine | 2.077 | 2.222 | 2.141 | 2.254 | 2.254 | 2.204 | | 2.192 | 3 | AVG | |
| | Hexachloroethane | 0.721 | 0.733 | 0.709 | 0.743 | 0.777 | 0.754 | | 0.739 | 3 | AVG | |
| | Nitrobenzene | 0.370 | 0.387 | 0.381 | 0.397 | 0.398 | 0.402 | | 0.389 | 3 | AVG | |
| | Isophorone | 0.705 | 0.733 | 0.742 | 0.785 | 0.786 | 0.784 | | 0.756 | 5 | AVG | |
| * | 2-Nitrophenol | 0.198 | 0.219 | 0.222 | 0.236 | 0.246 | 0.248 | | 0.228 | 8 | AVG | * |
| | 2,4-Dimethylphenol | 0.349 | 0.375 | 0.361 | 0.386 | 0.385 | 0.385 | | 0.373 | 4 | AVG | |
| | bis(2-Chloroethoxy)methane | 0.434 | 0.467 | 0.441 | 0.459 | 0.463 | 0.459 | | 0.454 | 3 | AVG | |
| | Benzoic acid | 0.111 | 0.159 | 0.178 | 0.203 | 0.258 | 0.503 | | 0.235 | 59 | AVG | |
| * | 2,4-Dichlorophenol | 0.270 | 0.294 | 0.296 | 0.311 | 0.330 | 0.327 | | 0.305 | 7 | AVG | * |
| | 1,2,4-Trichlorobenzene | 0.314 | 0.311 | 0.300 | 0.327 | 0.324 | 0.324 | | 0.317 | 3 | AVG | |
| | Naphthalene | 1.017 | 1.039 | 1.012 | 1.093 | 1.097 | 1.098 | | 1.059 | 4 | AVG | |
| | 4-Chloroaniline | 0.455 | 0.488 | 0.468 | 0.516 | 0.505 | 0.515 | | 0.491 | 5 | AVG | |
| * | Hexachlorobutadiene | 0.182 | 0.180 | 0.179 | 0.188 | 0.192 | 0.187 | | 0.185 | 3 | AVG | * |
| | Caprolactam | 0.102 | 0.121 | 0.120 | 0.127 | 0.127 | 0.128 | | 0.121 | 8 | AVG | |
| * | 4-Chloro-3-methylphenol | 0.267 | 0.300 | 0.292 | 0.312 | 0.325 | 0.324 | | 0.303 | 7 | AVG | * |
| | 2-Methylnaphthalene | 0.633 | 0.653 | 0.650 | 0.694 | 0.702 | 0.699 | | 0.672 | 4 | AVG | |
| | 1-Methylnaphthalene | 0.611 | 0.624 | 0.612 | 0.652 | 0.660 | 0.654 | | 0.635 | 4 | AVG | |
| # | Hexachlorocyclopentadiene | 0.162 | 0.222 | 0.253 | 0.287 | 0.330 | 0.328 | | 0.264 | 25 | 1STDEG | # |
| * | 2,4,6-Trichlorophenol | 0.377 | 0.403 | 0.416 | 0.438 | 0.461 | 0.462 | | 0.426 | 8 | AVG | * |
| | 2,4,5-Trichlorophenol | 0.386 | 0.447 | 0.438 | 0.481 | 0.502 | 0.509 | | 0.461 | 10 | AVG | |
| | Biphenyl | 1.521 | 1.575 | 1.531 | 1.659 | 1.663 | 1.720 | | 1.611 | 5 | AVG | |
| | Diphenyl | 1.521 | 1.575 | 1.531 | 1.659 | 1.663 | 1.720 | | 1.611 | 5 | AVG | |
| | 1,1'-Biphenyl | 1.521 | 1.575 | 1.531 | 1.659 | 1.663 | 1.720 | | 1.611 | 5 | AVG | |
| | 2-Chloronaphthalene | 1.172 | 1.281 | 1.215 | 1.297 | 1.330 | 1.341 | | 1.273 | 5 | AVG | |
| | Diphenyl ether | 0.758 | 0.801 | 0.771 | 0.831 | 0.835 | 0.851 | | 0.808 | 5 | AVG | |
| | 2-Nitroaniline | 0.483 | 0.529 | 0.531 | 0.563 | 0.592 | 0.604 | | 0.550 | 8 | AVG | |
| | Dimethylphthalate | 1.436 | 1.445 | 1.416 | 1.510 | 1.555 | 1.579 | | 1.490 | 5 | AVG | |
| | 2,6-Dinitrotoluene | 0.355 | 0.360 | 0.346 | 0.371 | 0.389 | 0.394 | | 0.369 | 5 | AVG | |
| | Acenaphthylene | 1.705 | 1.787 | 1.727 | 1.856 | 1.930 | 1.942 | | 1.824 | 6 | AVG | |
| | 3-Nitroaniline | 0.412 | 0.448 | 0.444 | 0.473 | 0.493 | 0.514 | | 0.464 | 8 | AVG | |
| * | Acenaphthene | 1.112 | 1.143 | 1.138 | 1.206 | 1.224 | 1.264 | | 1.181 | 5 | AVG | * |
| # | 2,4-Dinitrophenol | 0.127 | 0.188 | 0.211 | 0.229 | 0.262 | 0.275 | | 0.215 | 25 | 1STDEG | # |
| # | 4-Nitrophenol | 0.171 | 0.200 | 0.212 | 0.235 | 0.268 | 0.281 | | 0.228 | 18 | 1STDEG | # |
| | Dibenzofuran | 1.658 | 1.699 | 1.665 | 1.729 | 1.778 | 1.861 | | 1.732 | 4 | AVG | |

Not valid for: benzoic acid



FORM VI SV-1

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date(s): 03/20/04 03/20/04

Calibration Times: 13:10 17:57

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

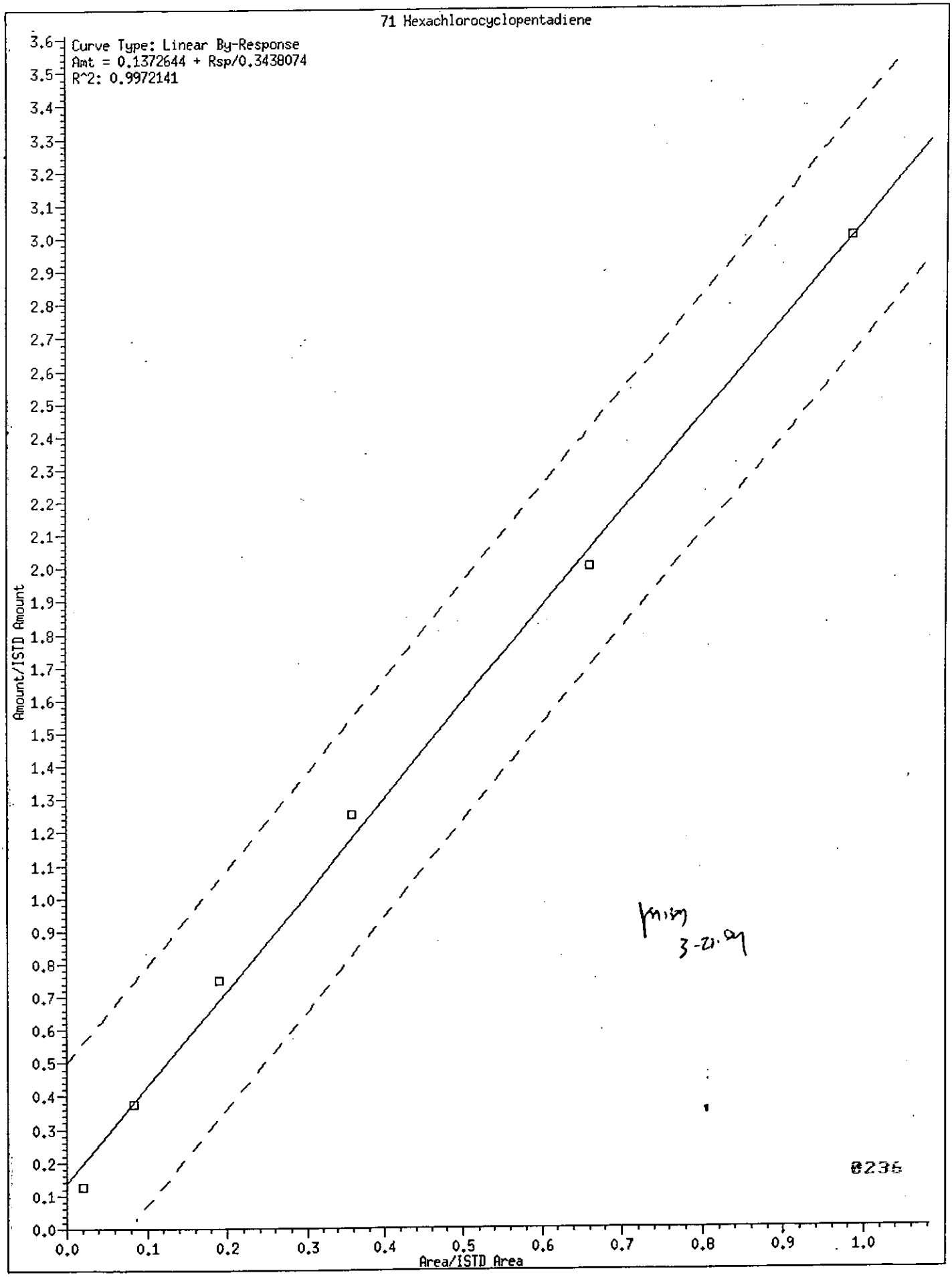
LAB FILE ID: RRF5 = gc288.d RRF15 = gc287.d RRF30 = gc286.d
RRF50 = gc285.d RRF80 = gc283.d RRF120 = gc284.d

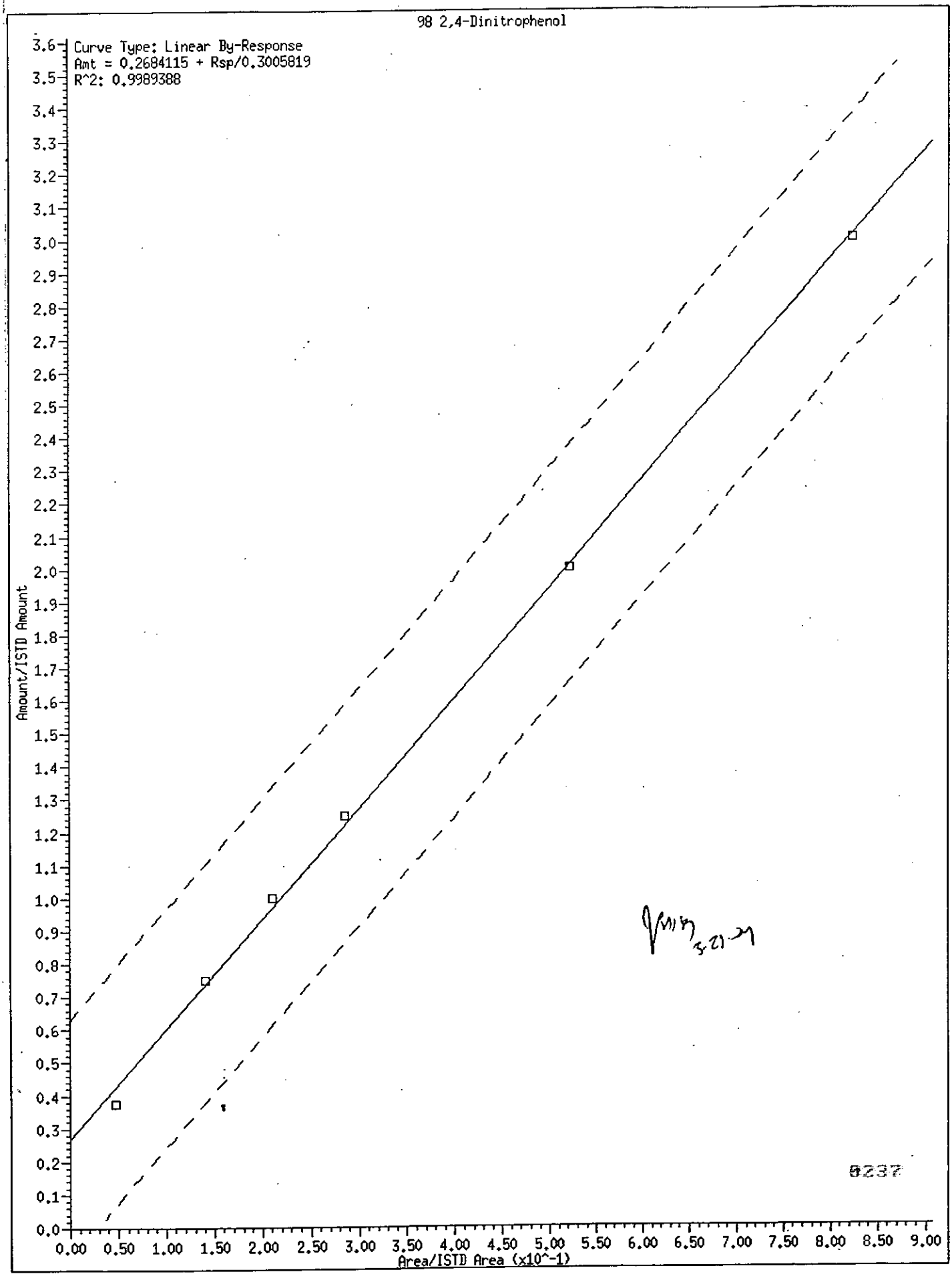
| | COMPOUND | RRF5 | RRF15 | RRF30 | RRF50 | RRF80 | RRF120 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dinitrotoluene | 0.430 | 0.459 | 0.437 | 0.467 | 0.485 | 0.489 | | 0.461 | 5 | AVG | |
| | 1-Naphthylamine | 1.112 | 1.181 | 1.214 | 1.320 | 1.229 | 1.316 | | 1.229 | 7 | AVG | |
| | 2,3,4,6-Tetrachlorophenol | 0.307 | 0.335 | 0.343 | 0.390 | 0.415 | 0.419 | | 0.368 | 13 | AVG | |
| | 2-Naphthylamine | 1.248 | 1.261 | 1.293 | 1.433 | 1.446 | 1.480 | | 1.360 | 8 | AVG | |
| | Diethylphthalate | 1.531 | 1.620 | 1.600 | 1.698 | 1.738 | 1.742 | | 1.655 | 5 | AVG | |
| | Fluorene | 1.275 | 1.358 | 1.325 | 1.462 | 1.425 | 1.383 | | 1.371 | 5 | AVG | |
| | 4-Chlorophenyl-phenylether | 0.589 | 0.620 | 0.596 | 0.662 | 0.658 | 0.637 | | 0.627 | 5 | AVG | |
| | 4-Nitroaniline | 0.410 | 0.506 | 0.486 | 0.526 | 0.509 | 0.518 | | 0.493 | 9 | AVG | |
| | 4,6-Dinitro-2-methylphenol | 0.144 | 0.155 | 0.162 | 0.172 | 0.190 | 0.195 | | 0.170 | 12 | AVG | |
| * | N-Nitrosodiphenylamine (1) | 0.523 | 0.569 | 0.575 | 0.590 | 0.611 | 0.624 | | 0.582 | 6 | AVG | * |
| | 1,2-Diphenylhydrazine | 0.947 | 0.989 | 0.993 | 1.022 | 1.040 | 1.026 | | 1.003 | 3 | AVG | |
| | 4-Bromophenyl-phenylether | 0.231 | 0.249 | 0.249 | 0.262 | 0.273 | 0.283 | | 0.258 | 7 | AVG | |
| | Hexachlorobenzene | 0.335 | 0.340 | 0.336 | 0.352 | 0.372 | 0.387 | | 0.353 | 6 | AVG | |
| * | Pentachlorophenol | 0.123 | 0.155 | 0.173 | 0.192 | 0.228 | 0.231 | | 0.184 | 23 | 1STDEG | * |
| | Phenanthrene | 1.043 | 1.099 | 1.073 | 1.125 | 1.196 | 1.199 | | 1.123 | 6 | AVG | |
| | Anthracene | 1.075 | 1.135 | 1.105 | 1.179 | 1.239 | 1.246 | | 1.163 | 6 | AVG | |
| | Carbazole | 1.036 | 1.148 | 1.149 | 1.215 | 1.290 | 1.316 | | 1.192 | 9 | AVG | |
| | Di-n-butylphthalate | 1.557 | 1.725 | 1.739 | 1.845 | 1.976 | 2.010 | | 1.809 | 9 | AVG | |
| * | Fluoranthene | 1.149 | 1.194 | 1.247 | 1.319 | 1.414 | 1.398 | | 1.287 | 8 | AVG | * |
| | Benzidine | 0.474 | 0.567 | 0.631 | 0.697 | 0.663 | 0.604 | | 0.606 | 13 | AVG | |
| | Pyrene | 1.058 | 1.131 | 1.102 | 1.233 | 1.252 | 1.223 | | 1.166 | 7 | AVG | |
| | Butylbenzylphthalate | 0.648 | 0.769 | 0.758 | 0.834 | 0.799 | 0.727 | | 0.756 | 9 | AVG | |
| | 3,3'-Dichlorobenzidine | 0.428 | 0.504 | 0.538 | 0.577 | 0.509 | 0.457 | | 0.502 | 11 | AVG | |
| | 4,4'-Methylenebis(2-Chloroanil | 0.177 | 0.212 | 0.223 | 0.242 | 0.214 | 0.190 | | 0.210 | 11 | AVG | |
| | Benzo(a)anthracene | 1.036 | 1.072 | 1.053 | 1.120 | 1.112 | 1.114 | | 1.084 | 3 | AVG | |
| | Chrysene | 0.951 | 0.980 | 0.955 | 1.046 | 1.041 | 1.038 | | 1.002 | 4 | AVG | |
| | bis(2-Ethylhexyl)phthalate | 0.924 | 1.071 | 1.064 | 1.131 | 0.962 | 0.868 | | 1.003 | 10 | AVG | |
| * | Di-n-octylphthalate | 1.407 | 1.633 | 1.668 | 1.840 | 1.888 | 1.924 | | 1.727 | 11 | AVG | * |
| | 7,12-Dimethylbenz[a]anthracene | 0.429 | 0.513 | 0.548 | 0.603 | 0.611 | 0.618 | | 0.553 | 13 | AVG | |
| | Benzo(b)fluoranthene | 1.078 | 1.175 | 1.178 | 1.272 | 1.279 | 1.312 | | 1.216 | 7 | AVG | |
| | Benzo(k)fluoranthene | 1.054 | 1.116 | 1.116 | 1.191 | 1.188 | 1.170 | | 1.139 | 5 | AVG | |
| * | Benzo(a)pyrene | 0.963 | 1.059 | 1.038 | 1.144 | 1.161 | 1.192 | | 1.093 | 8 | AVG | * |
| | Indeno(1,2,3-cd)pyrene | 0.982 | 1.112 | 1.116 | 1.214 | 1.187 | 1.211 | | 1.137 | 8 | AVG | |
| | Dibenz(a,h)anthracene | 0.911 | 1.034 | 1.027 | 1.132 | 1.105 | 1.123 | | 1.055 | 8 | AVG | |
| | Benzo(g,h,i)perylene | 0.986 | 1.098 | 1.128 | 1.233 | 1.192 | 1.213 | | 1.142 | 8 | AVG | |
| | 2-Fluorophenol | 1.413 | 1.520 | 1.512 | 1.582 | 1.575 | 1.561 | | 1.527 | 4 | AVG | |
| | Phenol-d5 | 1.702 | 1.816 | 1.832 | 1.904 | 1.915 | 1.887 | | 1.843 | 4 | AVG | |
| | Phenol-d6 | 1.702 | 1.816 | 1.832 | 1.904 | 1.915 | 1.887 | | 1.843 | 4 | AVG | |
| | Nitrobenzene-d5 | 0.369 | 0.398 | 0.384 | 0.415 | 0.406 | 0.413 | | 0.398 | 5 | AVG | |
| | 2-Fluorobiphenyl | 1.286 | 1.325 | 1.277 | 1.359 | 1.384 | 1.445 | | 1.346 | 5 | AVG | |
| | 2,4,6-Tribromophenol | 0.299 | 0.325 | 0.327 | 0.375 | 0.401 | 0.424 | | 0.358 | 14 | AVG | |
| | Terphenyl-d14 | 0.734 | 0.770 | 0.767 | 0.824 | 0.841 | 0.797 | | 0.789 | 5 | AVG | |
| | | | | | | | | | Average %RSD | 7 | | |

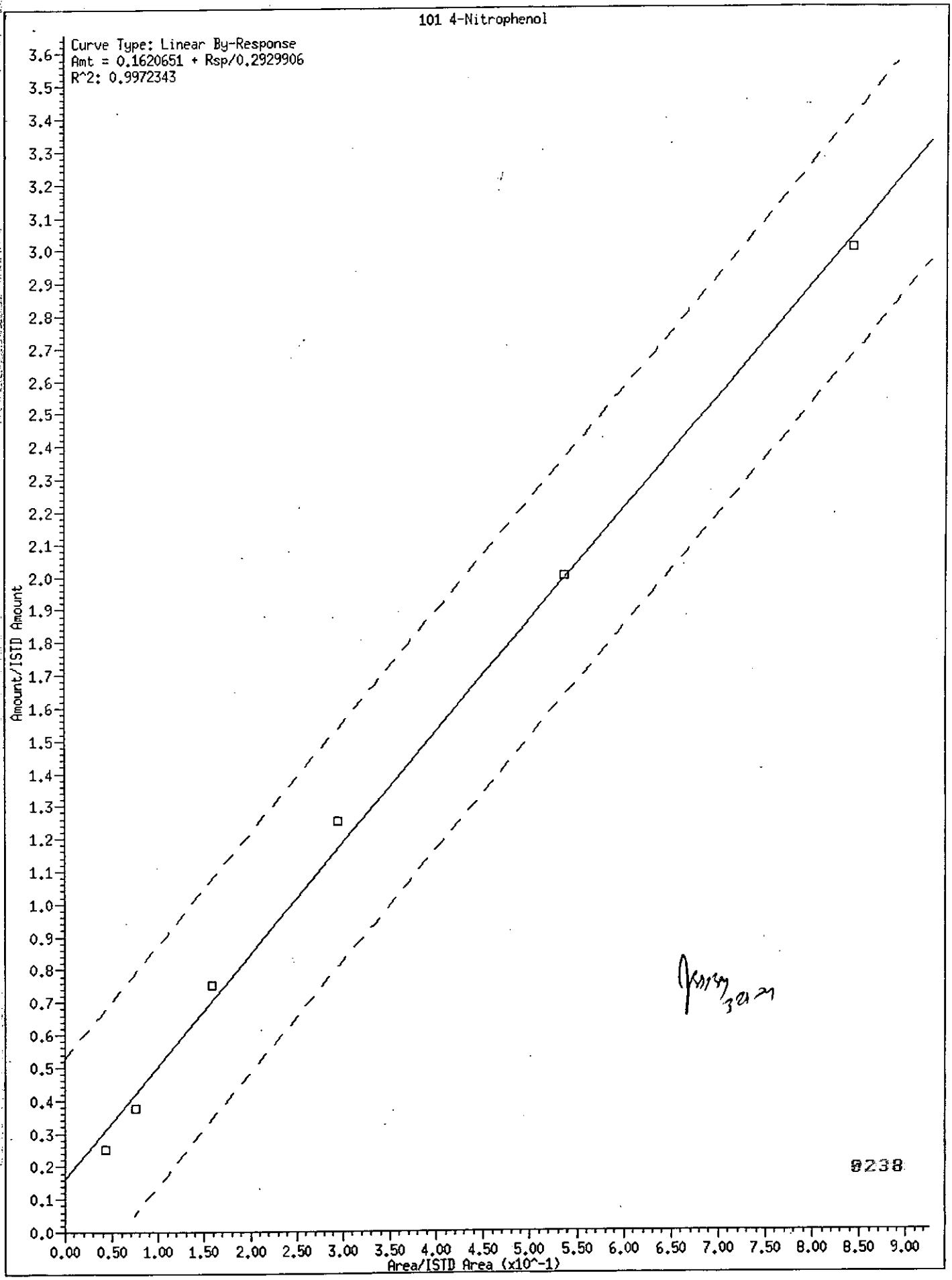
(1) Cannot be separated from Diphenylamine

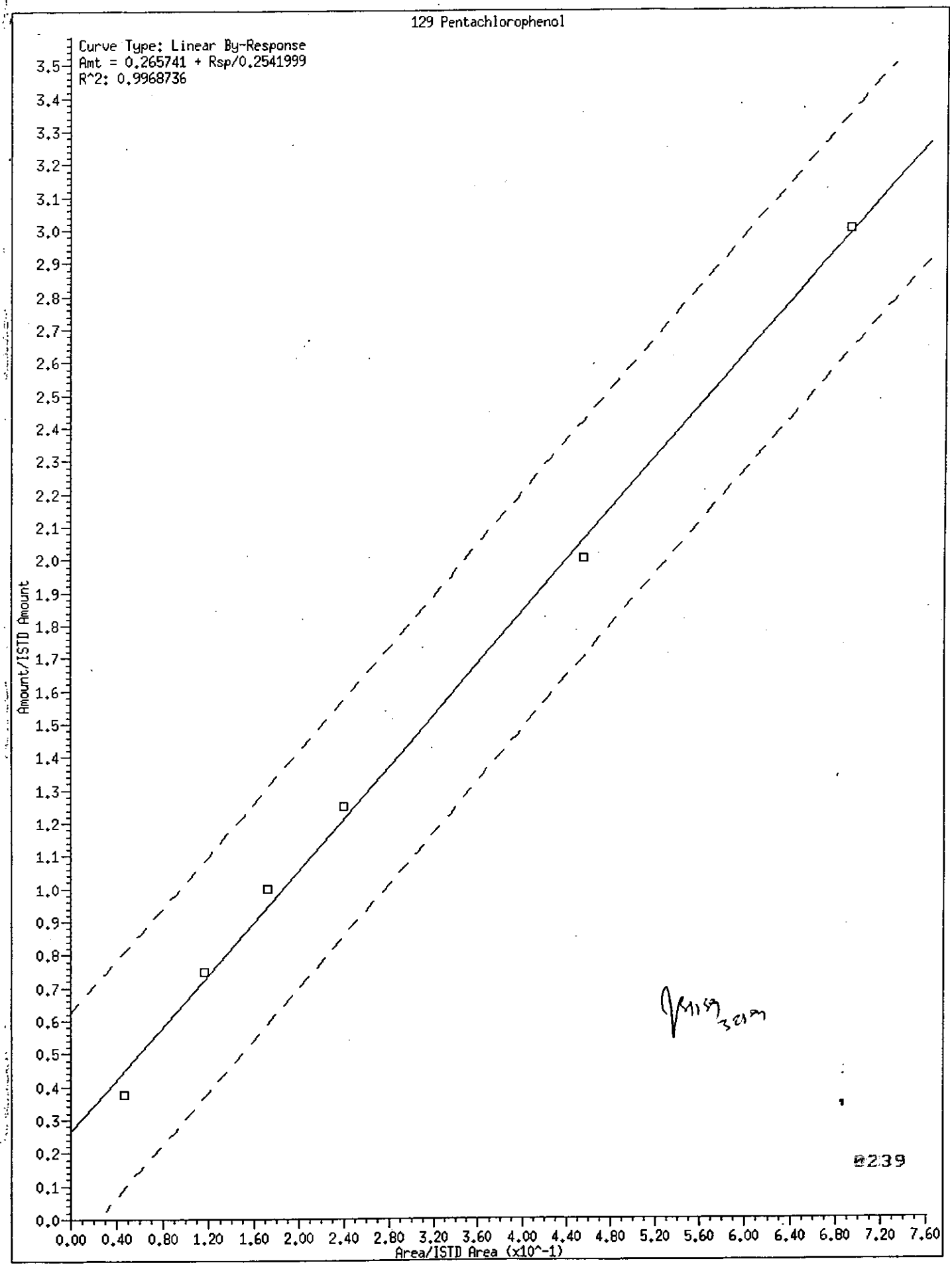
0235

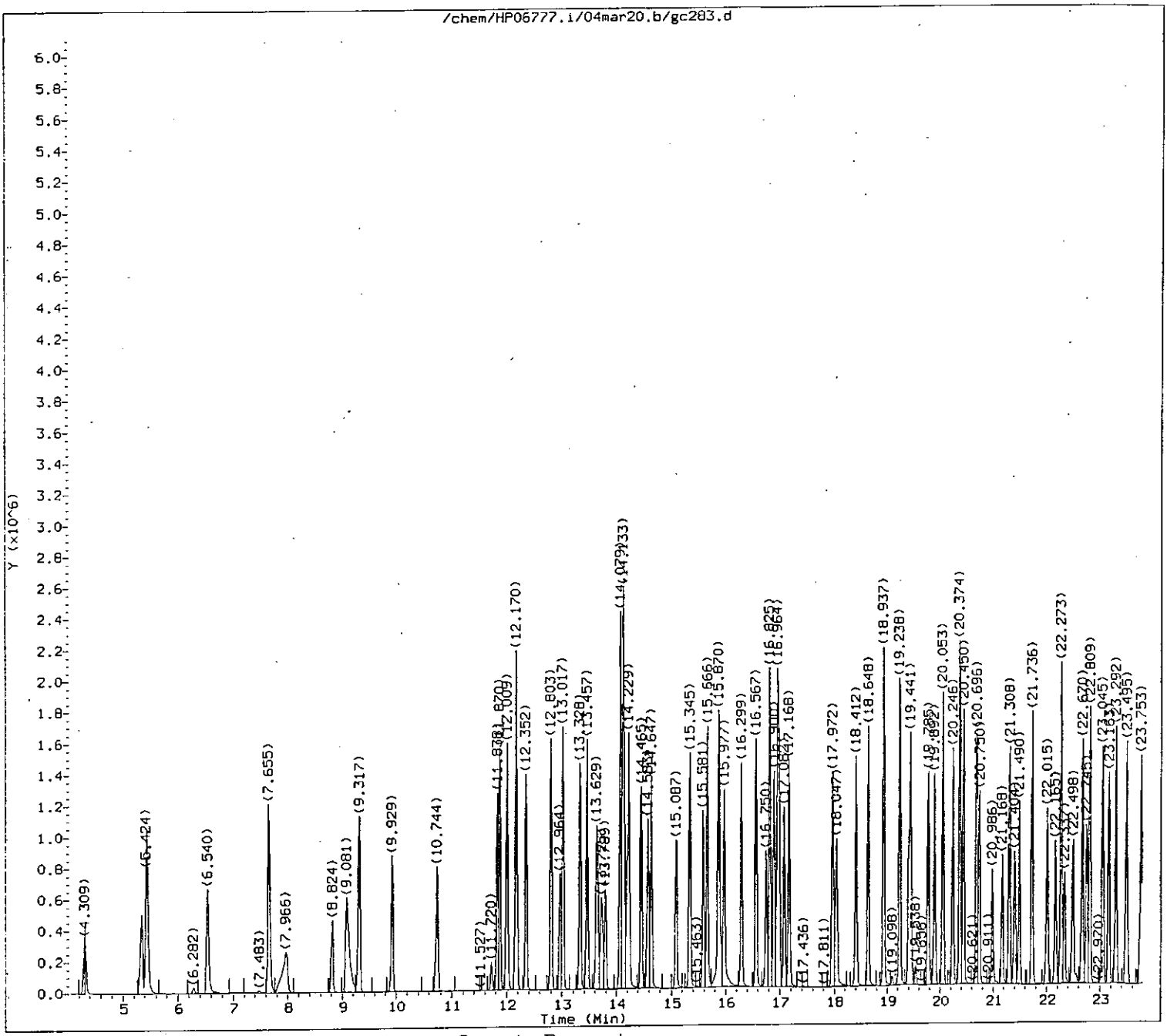
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid, Pentachlorophenol and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5 ,15, 30 standards.


71 Hexachlorocyclopentadiene
Curve Type: Linear By-Response
Amt = 0.1372644 + Rsp/0.3438074
R^2: 0.9972141
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3-21-09
0236


98 2,4-Dinitrophenol
Curve Type: Linear By-Response
Amt = 0.2684115 + Rsp/0.3005819
R^2: 0.9989388
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00
0237


101 4-Nitrophenol
Curve Type: Linear By-Response
Amt = 0.1620651 + Rsp/0.2929906
R^2: 0.9972343
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
9238


129 Pentachlorophenol
Curve Type: Linear By-Response
Amt = 0.265741 + Rsp/0.2541999
R^2: 0.9968736
Amount/ISTD Amount
Area/ISTD Area (x10^-1)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
3.1
3.2
3.3
3.4
3.5
0.00
0.40
0.80
1.20
1.60
2.00
2.40
2.80
3.20
3.60
4.00
4.40
4.80
5.20
5.60
6.00
6.40
6.80
7.20
7.60
0239




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc283.d
Injection date and time: 20-MAR-2004 13:10

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:15

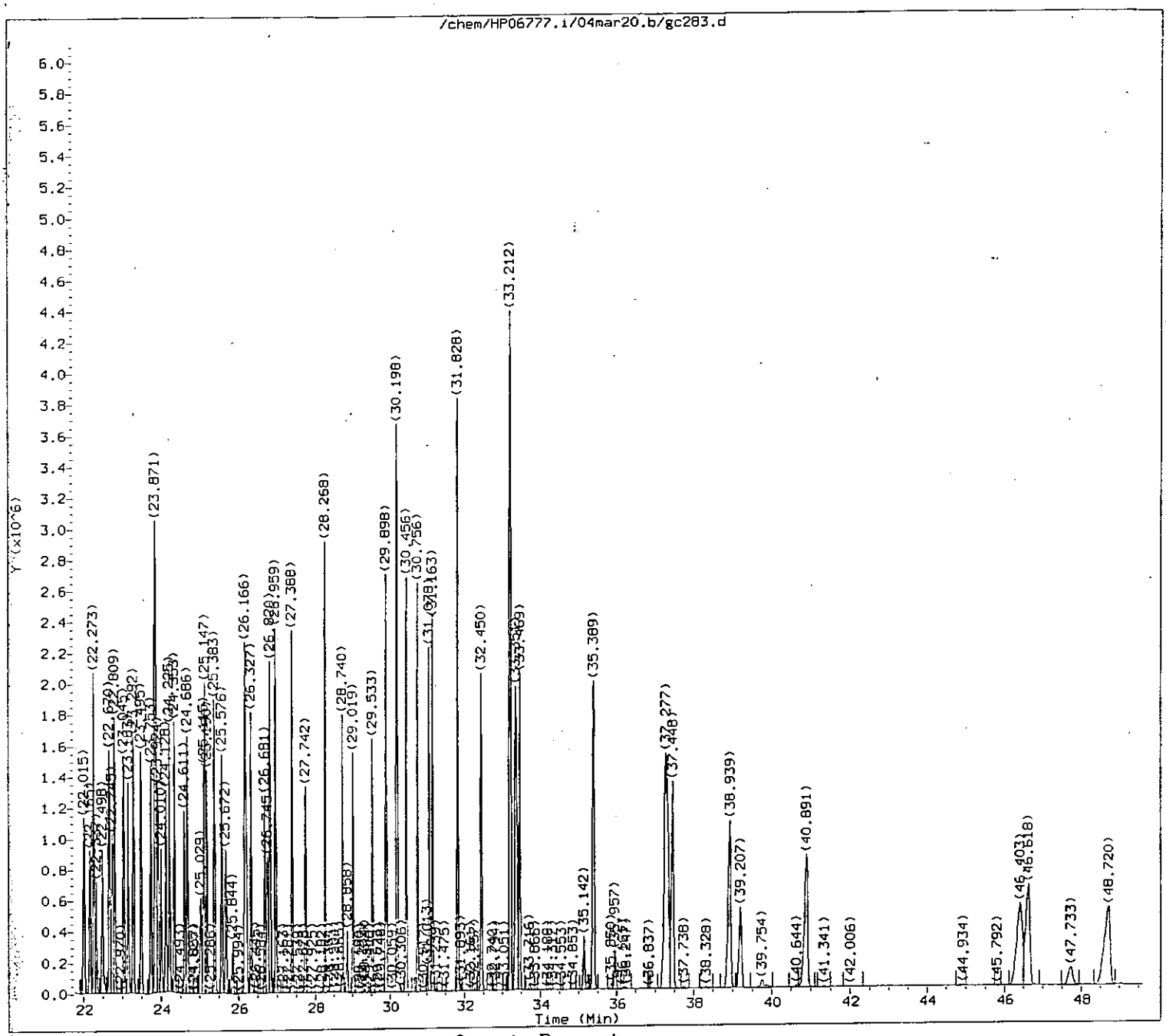
Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:15 jbs01304

Sample Name: SSTD080

Lab Sample ID: STD0754

8248




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc283.d
Injection date and time: 20-MAR-2004 13:10

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:15

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:15 jbs01304

Sample Name: SSTD080

Lab Sample ID: STD0754

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc283.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 13:10  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:15
Date, time and analyst ID of latest file update: 21-Mar-2004 14:15 jbs01304

Sample Name: SSTD080  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 4.309 | 88 | 416525 | 80.000 |
| 2) N-Nitrosodimethylamine | (1) | 5.349 | 74 | 624328 | 80.000 |
| 3) Pyridine | (1) | 5.435 | 79 | 1010917 | 80.000 |
| 5) 2-Picoline | (1) | 7.655 | 93 | 935002 | 80.000 |
| 13) Aniline | (1) | 12.009 | 93 | 1332370 | 80.000 |
| 16) Phenol | (1) | 11.870 | 94 | 1052799 | 80.000 |
| 18) bis(2-Chloroethyl)ether | (1) | 12.181 | 93 | 832935 | 80.000 |
| 19) 2-Chlorophenol | (1) | 12.352 | 128 | 896158 | 80.000 |
| 20) 1,3-Dichlorobenzene | (1) | 12.803 | 146 | 903283 | 80.000 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 12.964 | 152 | 277197 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.017 | 146 | 883728 | 80.000 |
| 24) Benzyl alcohol | (1) | 13.328 | 108 | 544004 | 80.000 |
| 25) 1,2-Dichlorobenzene | (1) | 13.457 | 146 | 879817 | 80.000 |
| 26) 2-Methylphenol | (1) | 13.629 | 108 | 736877 | 80.000 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.725 | 45 | 1353257 | 80.000 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 13.725 | 45 | 1353257 | 80.000 |
| 30) Acetophenone | (1) | 14.133 | 105 | 1114002 | 80.000 |
| 31) N-Nitroso-di-n-propylamine | (1) | 14.133 | 70 | 557683 | 80.000 |
| 33) 4-Methylphenol | (1) | 14.079 | 108 | 784633 | 80.000 |
| 34) o-Toluidine | (1) | 14.240 | 106 | 1249696 | 80.000 |
| 37) Hexachloroethane | (1) | 14.465 | 117 | 430883 | 80.000 |
| 39) Nitrobenzene | (2) | 14.647 | 77 | 815016 | 80.000 |
| 41) Isophorone | (2) | 15.345 | 82 | 1607114 | 80.000 |
| 42) 2-Nitrophenol | (2) | 15.581 | 139 | 502948 | 80.000 |
| 44) 2,4-Dimethylphenol | (2) | 15.666 | 107 | 787957 | 80.000 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.977 | 93 | 948199 | 80.000 |
| 47) Benzoic acid | (2) | 15.924 | 105 | 528105 | 80.000 |
| 49) 2,4-Dichlorophenol | (2) | 16.299 | 162 | 676160 | 80.000 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.567 | 180 | 662139 | 80.000 |
| 52) Naphthalene-d8 | (2) | 16.750 | 136 | 1022981 | 40.000 |
| 53) Naphthalene | (2) | 16.825 | 128 | 2243962 | 80.000 |
| 55) 4-Chloroaniline | (2) | 16.964 | 127 | 1033656 | 80.000 |
| 59) Hexachlorobutadiene | (2) | 17.168 | 225 | 393460 | 80.000 |
| 62) Caprolactam | (2) | 18.047 | 113 | 260405 | 80.000 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.412 | 107 | 664656 | 80.000 |
| 69) 2-Methylnaphthalene | (2) | 18.937 | 142 | 1435567 | 80.000 |
| 70) 1-Methylnaphthalene | (2) | 19.238 | 142 | 1350213 | 80.000 |
| 71) Hexachlorocyclopentadiene | (3) | 19.409 | 237 | 307841 | 80.000 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.785 | 196 | 430301 | 80.000 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.892 | 196 | 468381 | 80.000 |
| 80) Biphenyl | (3) | 20.374 | 154 | 1552388 | 80.000 |
| 81) Diphenyl | (3) | 20.374 | 154 | 1552388 | 80.000 |
| 82) 1,1'-Biphenyl | (3) | 20.374 | 154 | 1552388 | 80.000 |

M = Compound was manually integrated.  A = User selected an alternate hit.

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc283.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 13:10  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:15
Date, time and analyst ID of latest file update: 21-Mar-2004 14:15 jbs01304

Sample Name: SSTD080  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 83) 2-Chloronaphthalene | (3) | 20.450 | 162 | 1241867 | 80.000 |
| 86) Diphenyl ether | (3) | 20.696 | 170 | 779727 | 80.000 |
| 87) 2-Nitroaniline | (3) | 20.750 | 138 | 553130 | 80.000 |
| 90) Dimethylphthalate | (3) | 21.308 | 163 | 1452114 | 80.000 |
| 92) 2,6-Dinitrotoluene | (3) | 21.490 | 165 | 363164 | 80.000 |
| 93) Acenaphthylene | (3) | 21.736 | 152 | 1802068 | 80.000 |
| 95) 3-Nitroaniline | (3) | 22.015 | 138 | 460242 | 80.000 |
| 96) Acenaphthene-d10 | (3) | 22.165 | 164 | 466851 | 40.000 |
| 97) Acenaphthene | (3) | 22.273 | 153 | 1142681 | 80.000 |
| 98) 2,4-Dinitrophenol | (3) | 22.337 | 184 | 244172 | 80.000 |
| 101) 4-Nitrophenol | (3) | 22.498 | 109 | 250277 | 80.000 |
| 102) Dibenzofuran | (3) | 22.809 | 168 | 1660528 | 80.000 |
| 103) 2,4-Dinitrotoluene | (3) | 22.745 | 165 | 452405 | 80.000 |
| 104) 1-Naphthylamine | (3) | 23.045 | 143 | 1147765 | 80.000 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 23.163 | 232 | 387844 | 80.000 |
| 106) 2-Naphthylamine | (3) | 23.292 | 143 | 1350236 | 80.000 |
| 107) Diethylphthalate | (3) | 23.495 | 149 | 1622859 | 80.000 |
| 109) Fluorene | (3) | 23.871 | 166 | 1330435 | 80.000 |
| 110) 4-Chlorophenyl-phenylether | (3) | 23.860 | 204 | 614029 | 80.000 |
| 112) 4-Nitroaniline | (3) | 23.946 | 138 | 475697 | 80.000 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 24.010 | 198 | 290590 | 80.000 |
| 115) N-Nitrosodiphenylamine | (4) | 24.225 | 169 | 935725 | 80.000 |
| 116) 1,2-Diphenylhydrazine | (4) | 24.353 | 77 | 1593658 | 80.000 |
| 123) 4-Bromophenyl-phenylether | (4) | 25.383 | 248 | 418780 | 80.000 |
| 125) Hexachlorobenzene | (4) | 25.576 | 284 | 569227 | 80.000 |
| 129) Pentachlorophenol | (4) | 26.166 | 266 | 349465 | 80.000 |
| 133) Phenanthrene-d10 | (4) | 26.745 | 188 | 766071 | 40.000 |
| 135) Phenanthrene | (4) | 26.820 | 178 | 1831870 | 80.000 |
| 136) Anthracene | (4) | 26.959 | 178 | 1898280 | 80.000 |
| 138) Carbazole | (4) | 27.388 | 167 | 1976140 | 80.000 |
| 140) Di-n-butylphthalate | (4) | 28.268 | 149 | 3028038 | 80.000 |
| 145) Fluoranthene | (4) | 29.898 | 202 | 2166894 | 80.000 |
| 150) Benzidine | (5) | 30.198 | 184 | 3477048 | 240.000 |
| 152) Pyrene | (5) | 30.456 | 202 | 2188838 | 80.000 |
| 159) Butylbenzylphthalate | (5) | 31.818 | 149 | 1396185 | 80.000 |
| 162) 3,3'-Dichlorobenzidine | (5) | 33.223 | 252 | 888848 | 80.000 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 33.212 | 231 | 373925 | 80.000 |
| 164) Benzo(a)anthracene | (5) | 33.351 | 228 | 1943817 | 80.000 |
| 165) Chrysene-d12 | (5) | 33.384 | 240 | 873892 | 40.000 |
| 166) Chrysene | (5) | 33.469 | 228 | 1820190 | 80.000 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 33.212 | 149 | 1682121 | 80.000 |
| 168) Di-n-octylphthalate | (6) | 35.389 | 149 | 3468919 | 80.000 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 37.266 | 256 | 1122280 | 80.000 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

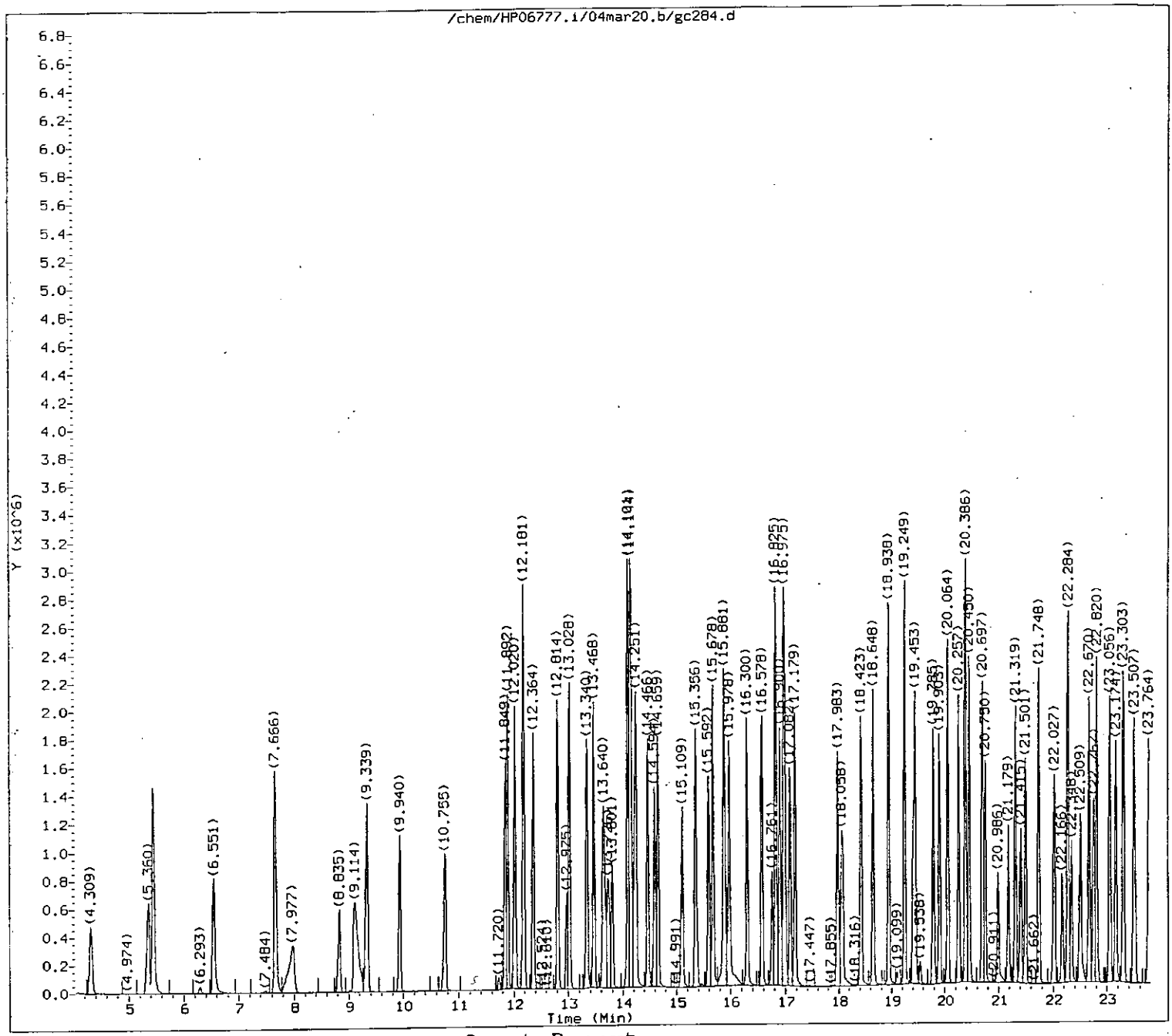
Data File: /chem/HP06777.i/04mar20.b/gc283.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 13:10  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:15
Date, time and analyst ID of latest file update: 21-Mar-2004 14:15 jbs01304

Sample Name: SSTD080  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.319 | 252 | 2349885 | 80.000 |
| 171) Benzo(k)fluoranthene | (6) | 37.448 | 252 | 2182475 | 80.000 |
| 172) Benzo(a)pyrene | (6) | 38.939 | 252 | 2133098 | 80.000 |
| 173) Perylene-d12 | (6) | 39.207 | 264 | 918886 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.403 | 276 | 2180993 | 80.000 |
| 176) Dibenz(a,h)anthracene | (6) | 46.629 | 278 | 2030529 | 80.000 |
| 177) Benzo(g,h,i)perylene | (6) | 48.709 | 276 | 2190559 | 80.000 |
| 9) 2-Fluorophenol | (1) | 9.317 | 112 | 873379 | 80.000 |
| 14) Phenol-d5 | (1) | 11.838 | 99 | 1061639 | 80.000 |
| 15) Phenol-d6 | (1) | 11.838 | 99 | 1061639 | 80.000 |
| 38) Nitrobenzene-d5 | (2) | 14.583 | 82 | 830677 | 80.000 |
| 77) 2-Fluorobiphenyl | (3) | 20.053 | 172 | 1292232 | 80.000 |
| 117) 2,4,6-Tribromophenol | (3) | 24.611 | 330 | 373992 | 80.000 |
| 154) Terphenyl-d14 | (5) | 30.756 | 244 | 1469139 | 80.000 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc284.d
Injection date and time: 20-MAR-2004 14:09

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

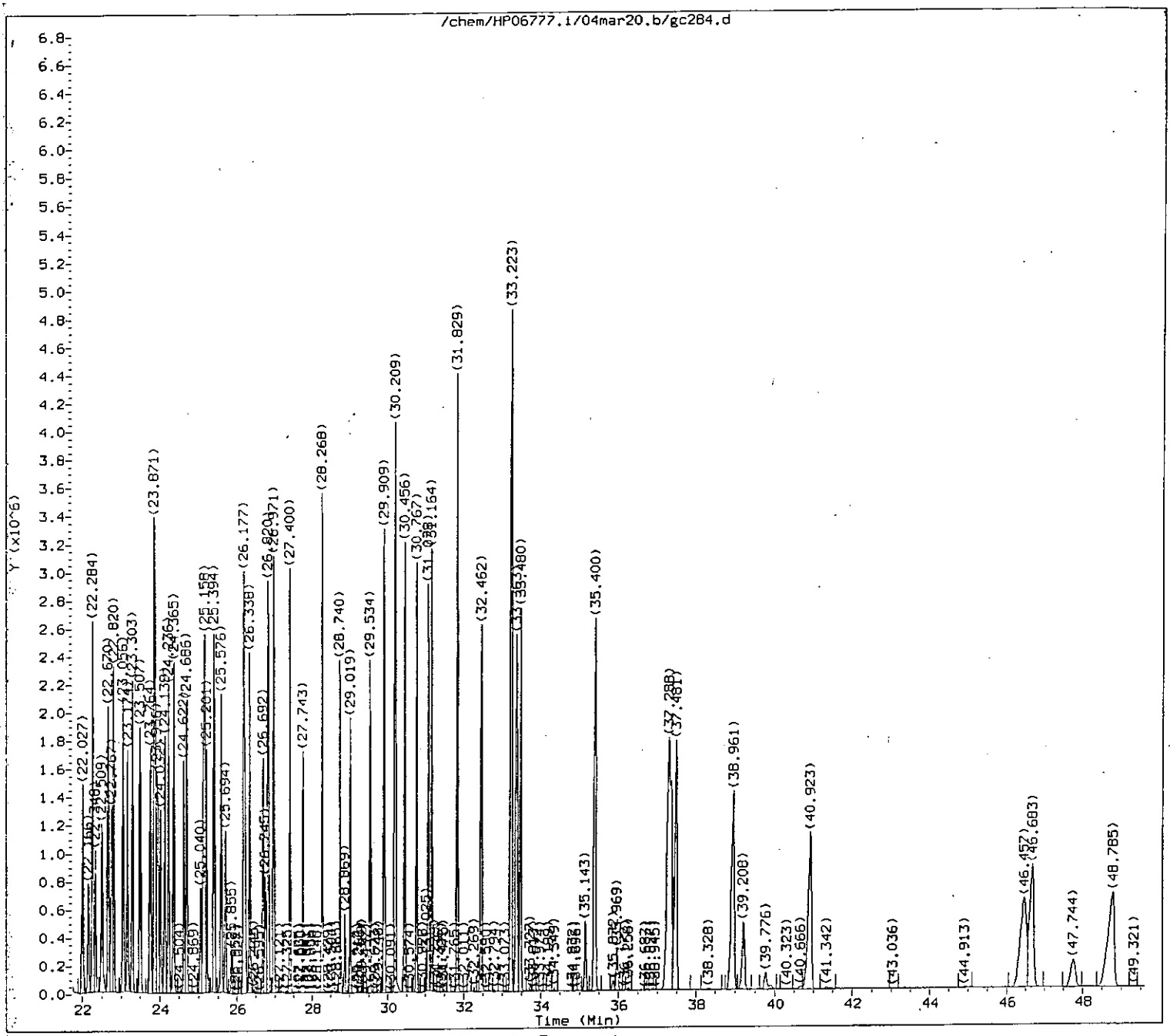
Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120

Lab Sample ID: STD0754

8245




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc284.d
Injection date and time: 20-MAR-2004 14:09

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120

Lab Sample ID: STD0754

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc284.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 14:09  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.309 | 88 | 558217 | 125.748 |
| 2) | N-Nitrosodimethylamine | (1) | 5.360 | 74 | 839984 | 126.374 |
| 3) | Pyridine | (1) | 5.446 | 79 | 1350071 | 123.665 |
| 5) | 2-Picoline | (1) | 7.666 | 93 | 1252053 | 122.134 |
| 13) | Aniline | (1) | 12.020 | 93 | 1758196 | 121.395 |
| 16) | Phenol | (1) | 11.892 | 94 | 1424670 | 122.679 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.192 | 93 | 1126862 | 118.957 |
| 19) | 2-Chlorophenol | (1) | 12.364 | 128 | 1211925 | 123.205 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.814 | 146 | 1194650 | 120.136 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.975 | 152 | 250790 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.028 | 146 | 1213998 | 121.352 |
| 24) | Benzyl alcohol | (1) | 13.340 | 108 | 722835 | 125.559 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.468 | 146 | 1170899 | 122.424 |
| 26) | 2-Methylphenol | (1) | 13.640 | 108 | 997336 | 124.158 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.726 | 45 | 1803495 | 119.176 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.726 | 45 | 1803495 | 119.176 |
| 30) | Acetophenone | (1) | 14.144 | 105 | 1503221 | 122.247 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.155 | 70 | 742658 | 116.768 |
| 33) | 4-Methylphenol | (1) | 14.090 | 108 | 1078146 | 127.091 |
| 34) | o-Toluidine | (1) | 14.251 | 106 | 1658336 | 120.660 |
| 37) | Hexachloroethane | (1) | 14.466 | 117 | 567545 | 122.401 |
| 39) | Nitrobenzene | (2) | 14.659 | 77 | 1114318 | 123.858 |
| 41) | Isophorone | (2) | 15.356 | 82 | 2175948 | 124.502 |
| 42) | 2-Nitrophenol | (2) | 15.592 | 139 | 688218 | 130.420 |
| 44) | 2,4-Dimethylphenol | (2) | 15.678 | 107 | 1067952 | 123.685 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.978 | 93 | 1272687 | 121.321 |
| 47) | Benzoic acid | (2) | 15.967 | 105 | 1393952 | 256.144 |
| 49) | 2,4-Dichlorophenol | (2) | 16.310 | 162 | 907554 | 128.764 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.578 | 180 | 897523 | 122.662 |
| 52) | Naphthalene-d8 | (2) | 16.761 | 136 | 924644 | 40.000 |
| 53) | Naphthalene | (2) | 16.825 | 128 | 3045034 | 124.368 |
| 55) | 4-Chloroaniline | (2) | 16.975 | 127 | 1427257 | 125.756 |
| 59) | Hexachlorobutadiene | (2) | 17.179 | 225 | 517642 | 121.300 |
| 62) | Caprolactam | (2) | 18.080 | 113 | 356000 | 127.225 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.423 | 107 | 898920 | 128.218 |
| 69) | 2-Methylnaphthalene | (2) | 18.949 | 142 | 1940341 | 124.951 |
| 70) | 1-Methylnaphthalene | (2) | 19.249 | 142 | 1813356 | 123.476 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.410 | 237 | 405975 | 149.189 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.785 | 196 | 572561 | 130.158 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.903 | 196 | 630261 | 132.617 |
| 80) | Biphenyl | (3) | 20.386 | 154 | 2129662 | 128.069 |
| 81) | Diphenyl | (3) | 20.386 | 154 | 2129662 | 128.069 |
| 82) | 1,1'-Biphenyl | (3) | 20.386 | 154 | 2129662 | 128.069 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc284.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 14:09  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 20.450 | 162 | 1660794 | 126.459 |
| 86) | Diphenyl ether | (3) | 20.697 | 170 | 1054154 | 126.418 |
| 87) | 2-Nitroaniline | (3) | 20.761 | 138 | 747472 | 131.608 |
| 90) | Dimethylphthalate | (3) | 21.319 | 163 | 1955680 | 127.148 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.501 | 165 | 488087 | 128.117 |
| 93) | Acenaphthylene | (3) | 21.748 | 152 | 2404602 | 127.712 |
| 95) | 3-Nitroaniline | (3) | 22.027 | 138 | 636585 | 132.934 |
| 96) | Acenaphthene-d10 | (3) | 22.166 | 164 | 412816 | 40.000 |
| 97) | Acenaphthene | (3) | 22.284 | 153 | 1565450 | 128.426 |
| 98) | 2,4-Dinitrophenol | (3) | 22.348 | 184 | 340409 | 153.262 |
| 101) | 4-Nitrophenol | (3) | 22.509 | 109 | 347626 | 147.849 |
| 102) | Dibenzofuran | (3) | 22.820 | 168 | 2304231 | 128.937 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.767 | 165 | 605450 | 127.203 |
| 104) | 1-Naphthylamine | (3) | 23.056 | 143 | 1629514 | 128.497 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.174 | 232 | 519326 | 136.663 |
| 106) | 2-Naphthylamine | (3) | 23.303 | 143 | 1833107 | 130.593 |
| 107) | Diethylphthalate | (3) | 23.507 | 149 | 2157992 | 126.351 |
| 109) | Fluorene | (3) | 23.882 | 166 | 1712643 | 121.004 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.860 | 204 | 788659 | 121.901 |
| 112) | 4-Nitroaniline | (3) | 23.957 | 138 | 641742 A | 126.259 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 24.032 | 198 | 401501 | 137.942 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.236 | 169 | 1283703 | 128.606 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.365 | 77 | 2113243 | 122.835 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.394 | 248 | 581883 | 131.497 |
| 125) | Hexachlorobenzene | (4) | 25.587 | 284 | 795848 | 131.261 |
| 129) | Pentachlorophenol | (4) | 26.166 | 266 | 474750 | 150.629 |
| 133) | Phenanthrene-d10 | (4) | 26.745 | 188 | 686243 | 40.000 |
| 135) | Phenanthrene | (4) | 26.820 | 178 | 2468963 | 128.206 |
| 136) | Anthracene | (4) | 26.971 | 178 | 2564395 | 128.522 |
| 138) | Carbazole | (4) | 27.400 | 167 | 2709041 | 132.440 |
| 140) | Di-n-butylphthalate | (4) | 28.268 | 149 | 4138631 | 133.367 |
| 145) | Fluoranthene | (4) | 29.909 | 202 | 2877800 | 130.345 |
| 150) | Benzidine | (5) | 30.209 | 184 | 4296990 | 358.713 |
| 152) | Pyrene | (5) | 30.456 | 202 | 2902671 | 125.846 |
| 159) | Butylbenzylphthalate | (5) | 31.829 | 149 | 1725563 | 115.478 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.234 | 252 | 1084721 | 109.249 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.223 | 231 | 451091 | 108.866 |
| 164) | Benzo(a)anthracene | (5) | 33.363 | 228 | 2642723 | 123.241 |
| 165) | Chrysene-d12 | (5) | 33.395 | 240 | 790923 | 40.000 |
| 166) | Chrysene | (5) | 33.480 | 228 | 2463319 | 124.338 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.212 | 149 | 2059059 | 103.784 |
| 168) | Di-n-octylphthalate | (6) | 35.400 | 149 | 4727106 | 133.678 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.288 | 256 | 1518872 | 133.986 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc284.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 14:09  Analyst ID: jmg00068

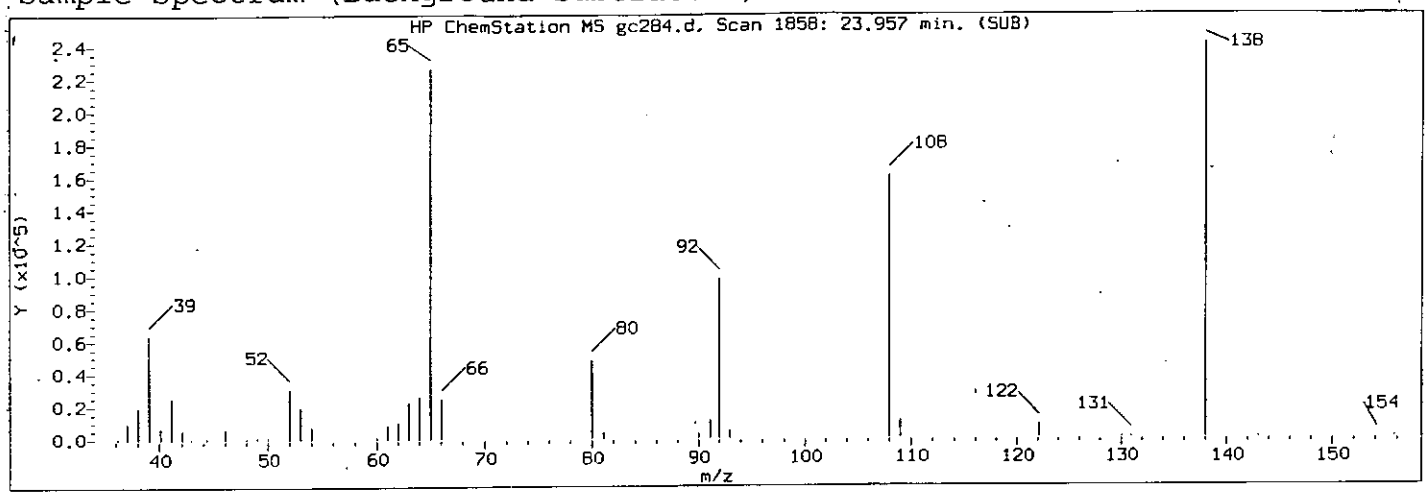
Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120  Lab Sample ID: STD0754

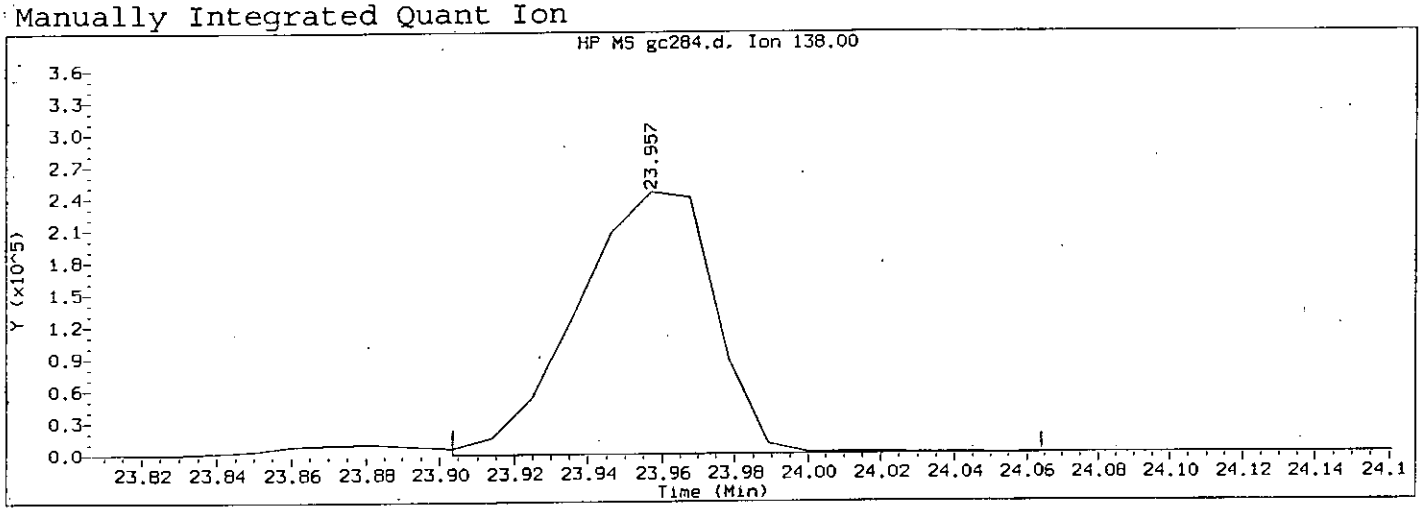
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.352 | 252 | 3224031 | 129.499 |
| 171) Benzo(k)fluoranthene | (6) | 37.481 | 252 | 2875488 | 123.268 |
| 172) Benzo(a)pyrene | (6) | 38.961 | 252 | 2928139 | 130.848 |
| 173) Perylene-d12 | (6) | 39.208 | 264 | 819171 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.468 | 276 | 2975914M | 129.003 |
| 176) Dibenz(a,h)anthracene | (6) | 46.683 | 278 | 2759787 | 127.691 |
| 177) Benzo(g,h,i)perylene | (6) | 48.785 | 276 | 2980763 | 127.489 |
| 9) 2-Fluorophenol | (1) | 9.339 | 112 | 1174727 | 122.673 |
| 14) Phenol-d5 | (1) | 11.849 | 99 | 1419980 | 122.901 |
| 15) Phenol-d6 | (1) | 11.849 | 99 | 1419980 | 122.901 |
| 38) Nitrobenzene-d5 | (2) | 14.594 | 82 | 1145240 | 124.636 |
| 77) 2-Fluorobiphenyl | (3) | 20.064 | 172 | 1790001 | 128.861 |
| 117) 2,4,6-Tribromophenol | (3) | 24.622 | 330 | 524841 | 141.901 |
| 154) Terphenyl-d14 | (5) | 30.767 | 244 | 1892083 | 121.328 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar20.b/gc284.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 14:09  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120  Lab Sample ID: STD0754

| | |
|---|---|
| Compound Number | : 112 |
| Compound Name | : 4-Nitroaniline |
| Scan Number | : 1858 |
| Retention Time (minutes) | : 23.957 |
| Quant Ion | : 138 |
| Area (flag) | : 641742A |
| Concentration (ng/ul) | : 126.2593 |
| Integration start scan | : 1852 Integration stop scan: 1867 |
| Y at integration start | : 0 Y at integration end: 0 |

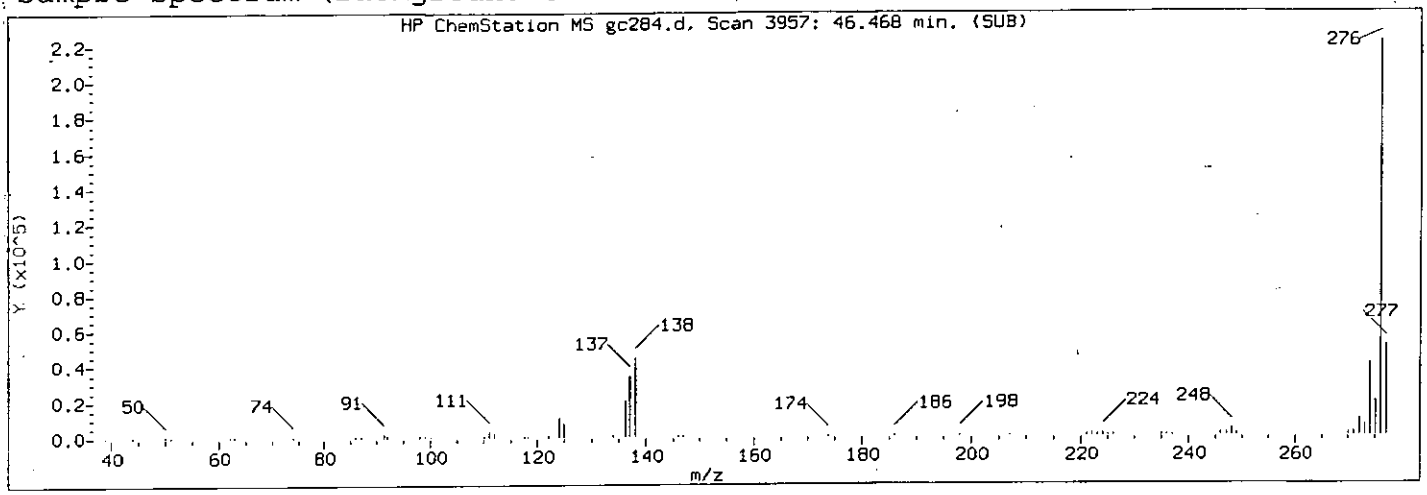
Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: JMG 3/24

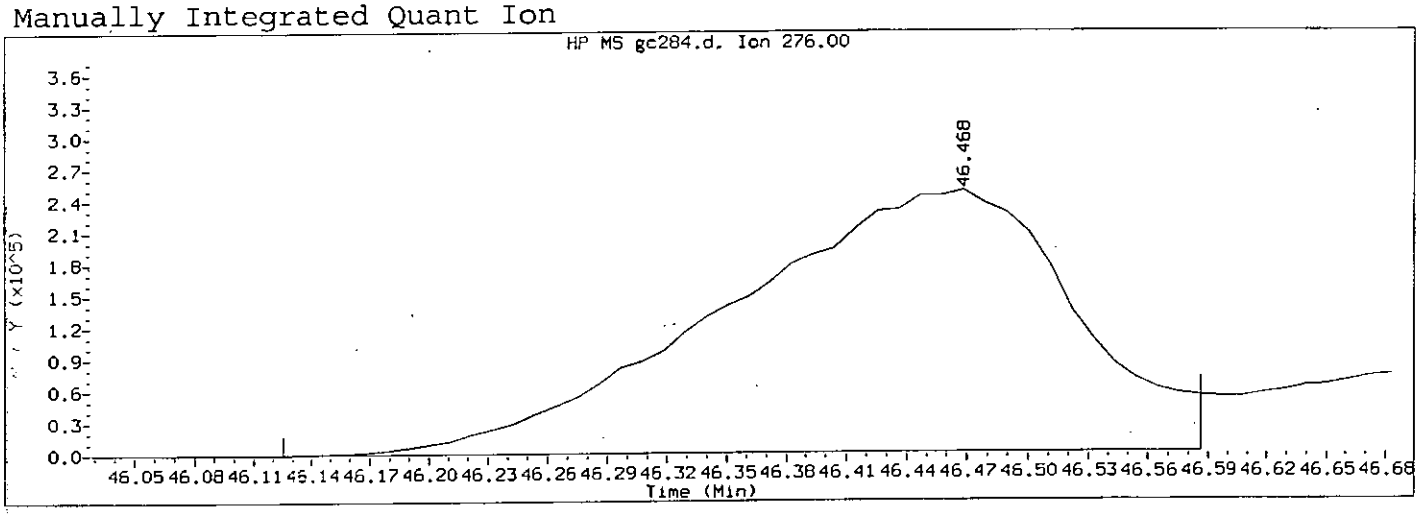
GC/MS audit/management approval: mgl 758 3/23/04 8250

Manual Integration Report for data file /chem/HP06777.i/04mar20.b/gc284.d, generated on 03/21/2004 at 14:23

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar20.b/gc284.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 14:09  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:23 jbs01304

Sample Name: SSTD120  Lab Sample ID: STD0754

| | |
|---|---|
| Compound Number | : 175 |
| Compound Name | : Indeno(1,2,3-cd)pyrene |
| Scan Number | : 3957 |
| Retention Time (minutes) | : 46.468 |
| Quant Ion | : 276 |
| Area (flag) | : 2975914 M |
| Concentration (ng/ul) | : 129.0031 |
| Integration start scan | : 3924 Integration stop scan: 3967 |
| Y at integration start | : 889 Y at integration end: 889 |

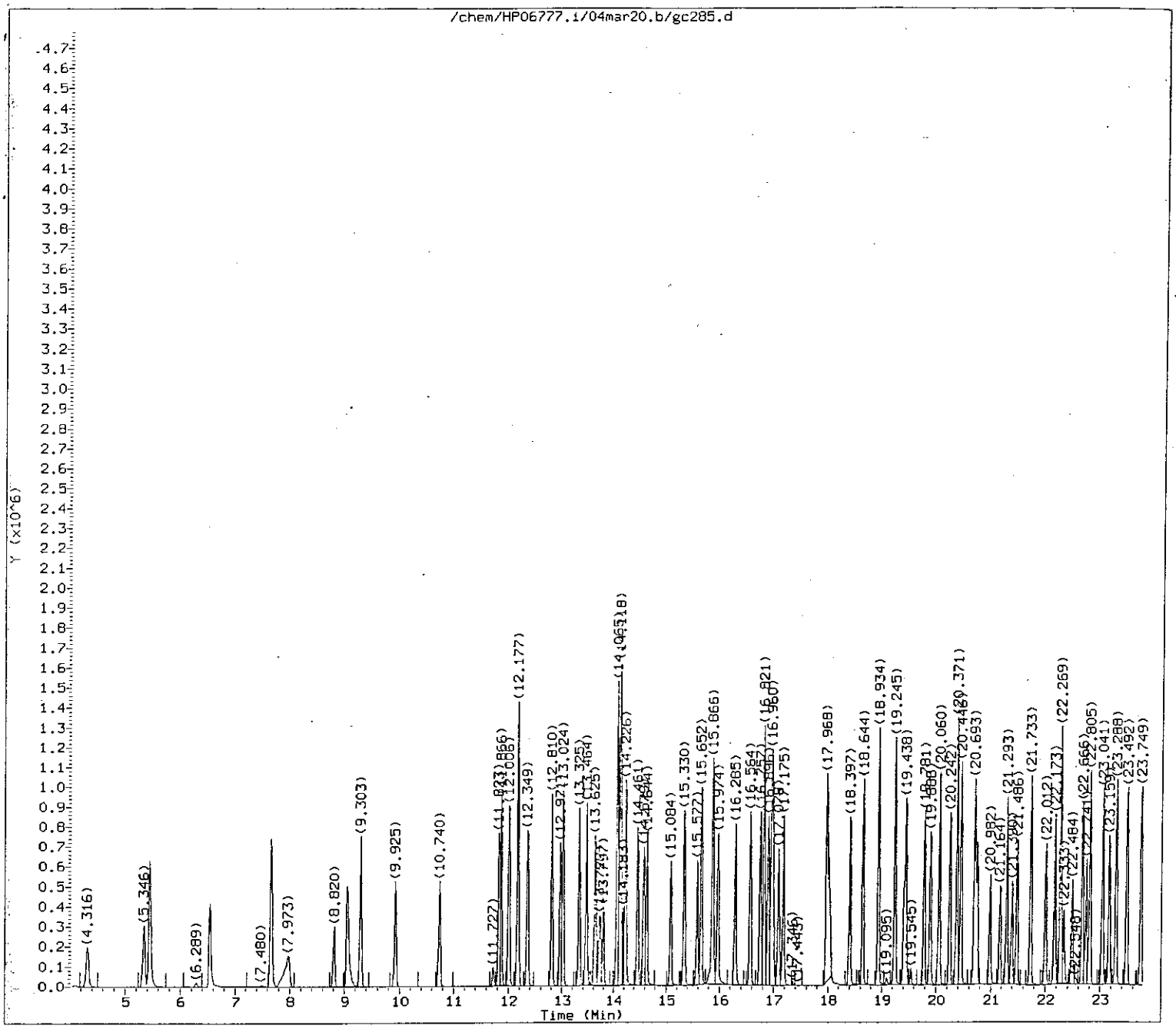
Reason for manual integration (circle one): missed peak / improper integration

Analyst responsible for change: JMG 3/23/04

GC/MS audit/management approval: mg1758 3/23/04

0251

Manual Integration Report for data file /chem/HP06777.i/04mar20.b/gc284.d, generated on 03/21/2004 at 14:23




Quant Report

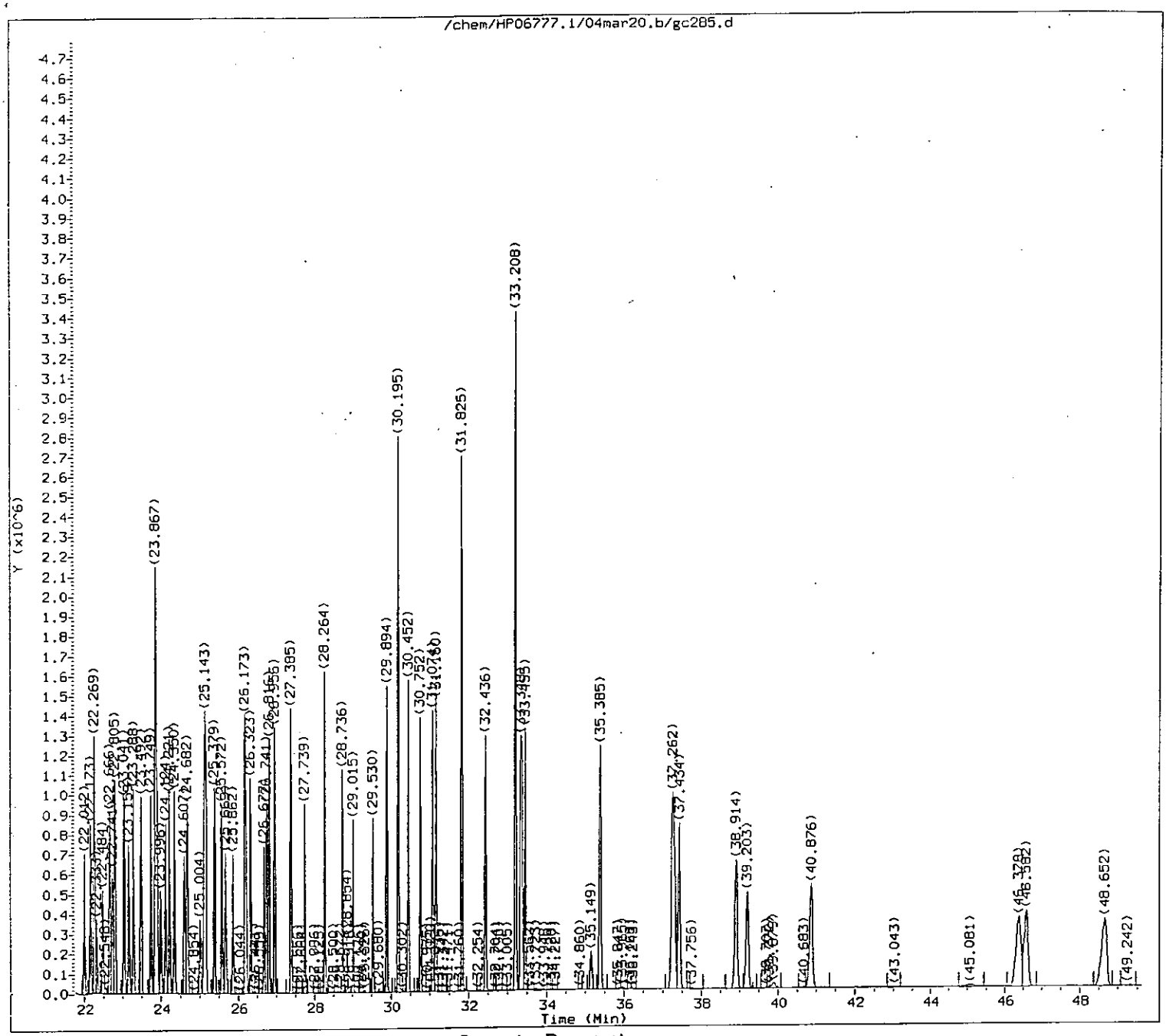
Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc285.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 15:06  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD050  Lab Sample ID: STD0754

8252




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc285.d
Injection date and time: 20-MAR-2004 15:06

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD050

Lab Sample ID: STD0754

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc285.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 15:06  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.316 | 88 | 233974 | 48.417 |
| 2) | N-Nitrosodimethylamine | (1) | 5.346 | 74 | 357720 | 49.005 |
| 3) | Pyridine | (1) | 5.442 | 79 | 583063 | 49.345 |
| 5) | 2-Picoline | (1) | 7.662 | 93 | 553058 | 50.139 |
| 13) | Aniline | (1) | 12.016 | 93 | 759217 | 49.140 |
| 16) | Phenol | (1) | 11.866 | 94 | 619150 | 49.772 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.177 | 93 | 506421 | 50.889 |
| 19) | 2-Chlorophenol | (1) | 12.349 | 128 | 524341 | 49.613 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.810 | 146 | 527071 | 49.890 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.971 | 152 | 262995 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.024 | 146 | 523264 | 49.748 |
| 24) | Benzyl alcohol | (1) | 13.325 | 108 | 312414 | 49.285 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.464 | 146 | 507543 | 49.408 |
| 26) | 2-Methylphenol | (1) | 13.625 | 108 | 428819 | 49.420 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.722 | 45 | 814700 | 50.809 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.722 | 45 | 814700 | 50.809 |
| 30) | Acetophenone | (1) | 14.129 | 105 | 661008 | 50.117 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.118 | 70 | 345582 | 51.797 |
| 33) | 4-Methylphenol | (1) | 14.065 | 108 | 461743 | 49.540 |
| 34) | o-Toluidine | (1) | 14.226 | 106 | 740969 | 50.369 |
| 37) | Hexachloroethane | (1) | 14.461 | 117 | 244339 | 49.010 |
| 39) | Nitrobenzene | (2) | 14.644 | 77 | 480242 | 49.788 |
| 41) | Isophorone | (2) | 15.341 | 82 | 949015 | 50.023 |
| 42) | 2-Nitrophenol | (2) | 15.588 | 139 | 284976 | 48.480 |
| 44) | 2,4-Dimethylphenol | (2) | 15.663 | 107 | 465856 | 50.046 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.974 | 93 | 555045 | 49.876 |
| 47) | Benzoic acid | (2) | 15.856 | 105 | 245177 | 31.591 |
| 49) | 2,4-Dichlorophenol | (2) | 16.295 | 162 | 375993 | 48.181 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.574 | 180 | 394489 | 50.300 |
| 52) | Naphthalene-d8 | (2) | 16.757 | 136 | 966538 | 40.000 |
| 53) | Naphthalene | (2) | 16.821 | 128 | 1320237 | 49.863 |
| 55) | 4-Chloroaniline | (2) | 16.960 | 127 | 622845 | 50.368 |
| 59) | Hexachlorobutadiene | (2) | 17.175 | 225 | 227024 | 49.726 |
| 62) | Caprolactam | (2) | 18.011 | 113 | 153540 | 49.811 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.397 | 107 | 376659 | 48.678 |
| 69) | 2-Methylnaphthalene | (2) | 18.934 | 142 | 838507 | 49.688 |
| 70) | 1-Methylnaphthalene | (2) | 19.245 | 142 | 787679 | 49.752 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.406 | 237 | 160801 | 45.622 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.781 | 196 | 245229 | 48.288 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.899 | 196 | 269392 | 48.404 |
| 80) | Biphenyl | (3) | 20.371 | 154 | 928179 | 49.360 |
| 81) | Diphenyl | (3) | 20.371 | 154 | 928179 | 49.360 |
| 82) | 1,1'-Biphenyl | (3) | 20.371 | 154 | 928179 | 49.360 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc285.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 15:06  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD050  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 20.446 | 162 | 725954 | 49.040 |
| 86) | Diphenyl ether | (3) | 20.693 | 170 | 465015 | 49.521 |
| 87) | 2-Nitroaniline | (3) | 20.746 | 138 | 315293 | 48.040 |
| 90) | Dimethylphthalate | (3) | 21.293 | 163 | 845171 | 48.780 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.486 | 165 | 207360 | 48.185 |
| 93) | Acenaphthylene | (3) | 21.733 | 152 | 1038691 | 48.613 |
| 95) | 3-Nitroaniline | (3) | 22.012 | 138 | 264895 | 47.970 |
| 96) | Acenaphthene-d10 | (3) | 22.173 | 164 | 447626 | 40.000 |
| 97) | Acenaphthene | (3) | 22.269 | 153 | 674606 | 48.964 |
| 98) | 2,4-Dinitrophenol | (3) | 22.333 | 184 | 128078 | 44.867 |
| 101) | 4-Nitrophenol | (3) | 22.484 | 109 | 131757 | 45.040 |
| 102) | Dibenzofuran | (3) | 22.805 | 168 | 967443 | 48.314 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.741 | 165 | 261499 | 48.657 |
| 104) | 1-Naphthylamine | (3) | 23.041 | 143 | 738800 | 51.238 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.159 | 232 | 217966 | 47.729 |
| 106) | 2-Naphthylamine | (3) | 23.288 | 143 | 802020 | 49.317 |
| 107) | Diethylphthalate | (3) | 23.492 | 149 | 950216 | 49.188 |
| 109) | Fluorene | (3) | 23.878 | 166 | 818078 | 51.362 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.867 | 204 | 370199 | 50.736 |
| 112) | 4-Nitroaniline | (3) | 23.921 | 138 | 294171 | 74.529 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.996 | 198 | 159080 | 46.431 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.221 | 169 | 543940 | 48.495 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.350 | 77 | 943016 | 49.644 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.379 | 248 | 241354 | 48.002 |
| 125) | Hexachlorobenzene | (4) | 25.572 | 284 | 324616 | 47.555 |
| 129) | Pentachlorophenol | (4) | 26.162 | 266 | 177041 | 44.249 |
| 133) | Phenanthrene-d10 | (4) | 26.741 | 188 | 737949 | 40.000 |
| 135) | Phenanthrene | (4) | 26.816 | 178 | 1037840 | 47.945 |
| 136) | Anthracene | (4) | 26.956 | 178 | 1087635 | 48.275 |
| 138) | Carbazole | (4) | 27.385 | 167 | 1120340 | 47.689 |
| 140) | Di-n-butylphthalate | (4) | 28.264 | 149 | 1702220 | 47.463 |
| 145) | Fluoranthene | (4) | 29.894 | 202 | 1216881 | 47.897 |
| 150) | Benzidine | (5) | 30.195 | 184 | 2125095 | 159.670 |
| 152) | Pyrene | (5) | 30.452 | 202 | 1253881 | 49.875 |
| 159) | Butylbenzylphthalate | (5) | 31.825 | 149 | 848035 | 53.009 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.208 | 252 | 586697 | 56.104 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.208 | 231 | 245659 | 56.130 |
| 164) | Benzo(a)anthracene | (5) | 33.348 | 228 | 1139000 | 50.217 |
| 165) | Chrysene-d12 | (5) | 33.380 | 240 | 813414 | 40.000 |
| 166) | Chrysene | (5) | 33.455 | 228 | 1063324 | 50.192 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.219 | 149 | 1149656 | 57.281 |
| 168) | Di-n-octylphthalate | (6) | 35.385 | 149 | 1967529 | 48.848 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.251 | 256 | 644467 | 49.371 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

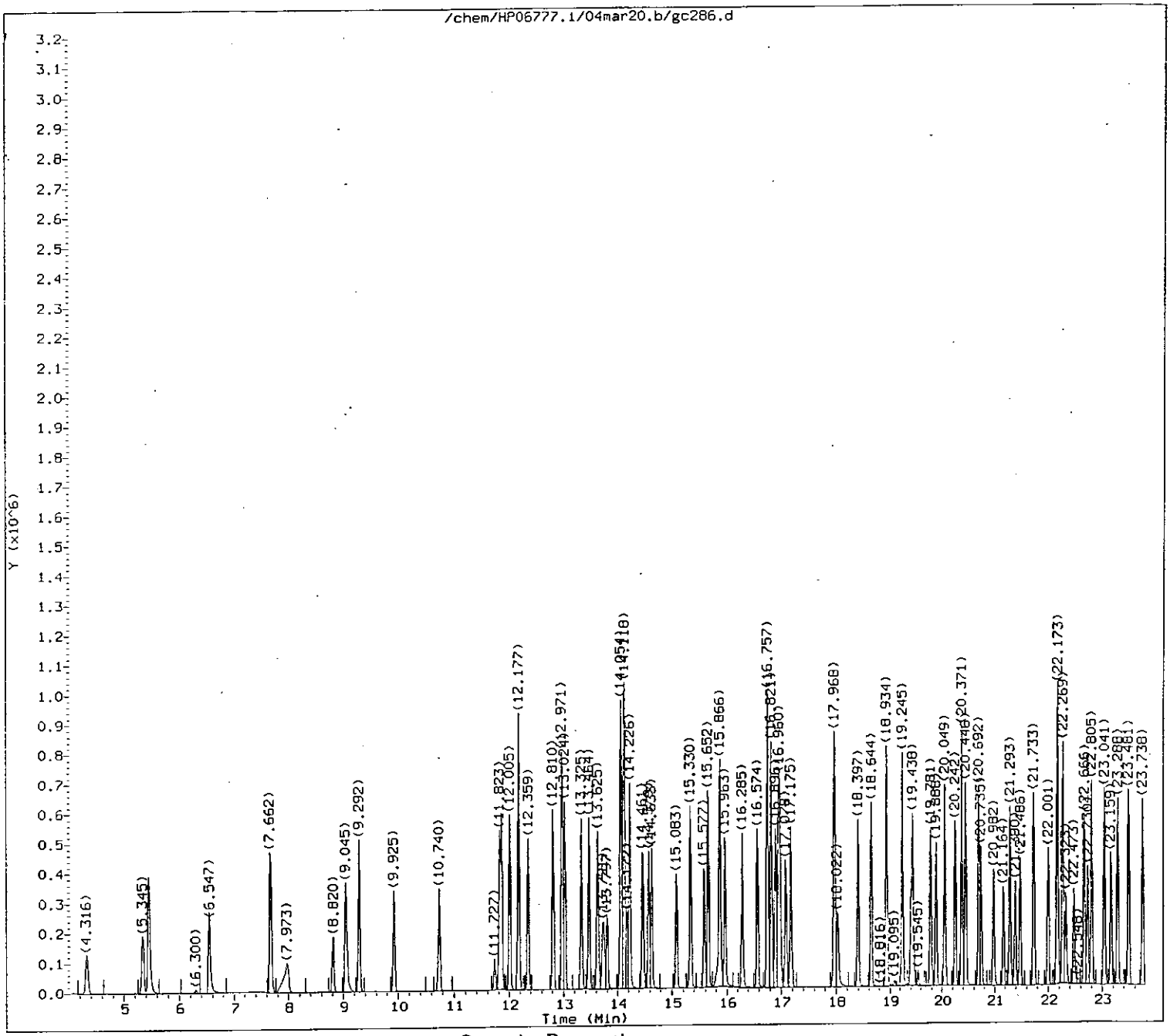
Data File: /chem/HP06777.i/04mar20.b/gc285.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 15:06  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD050  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.305 | 252 | 1359810 | 49.397 |
| 171) Benzo(k)fluoranthene | (6) | 37.434 | 252 | 1273490 | 50.350 |
| 172) Benzo(a)pyrene | (6) | 38.925 | 252 | 1222958 | 49.081 |
| 173) Perylene-d12 | (6) | 39.203 | 264 | 855240 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.389 | 276 | 1297900 | 61.893 |
| 176) Dibenz(a,h)anthracene | (6) | 46.593 | 278 | 1210205 | 50.539 |
| 177) Benzo(g,h,i)perylene | (6) | 48.652 | 276 | 1318170 | 50.841 |
| 9) 2-Fluorophenol | (1) | 9.303 | 112 | 520087 | 50.290 |
| 14) Phenol-d5 | (1) | 11.823 | 99 | 625867 | 50.047 |
| 15) Phenol-d6 | (1) | 11.823 | 99 | 625867 | 50.047 |
| 38) Nitrobenzene-d5 | (2) | 14.579 | 82 | 501449 | 50.455 |
| 77) 2-Fluorobiphenyl | (3) | 20.060 | 172 | 760168 | 48.661 |
| 117) 2,4,6-Tribromophenol | (3) | 24.607 | 330 | 209724 | 46.886 |
| 154) Terphenyl-d14 | (5) | 30.763 | 244 | 837843 | 50.204 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

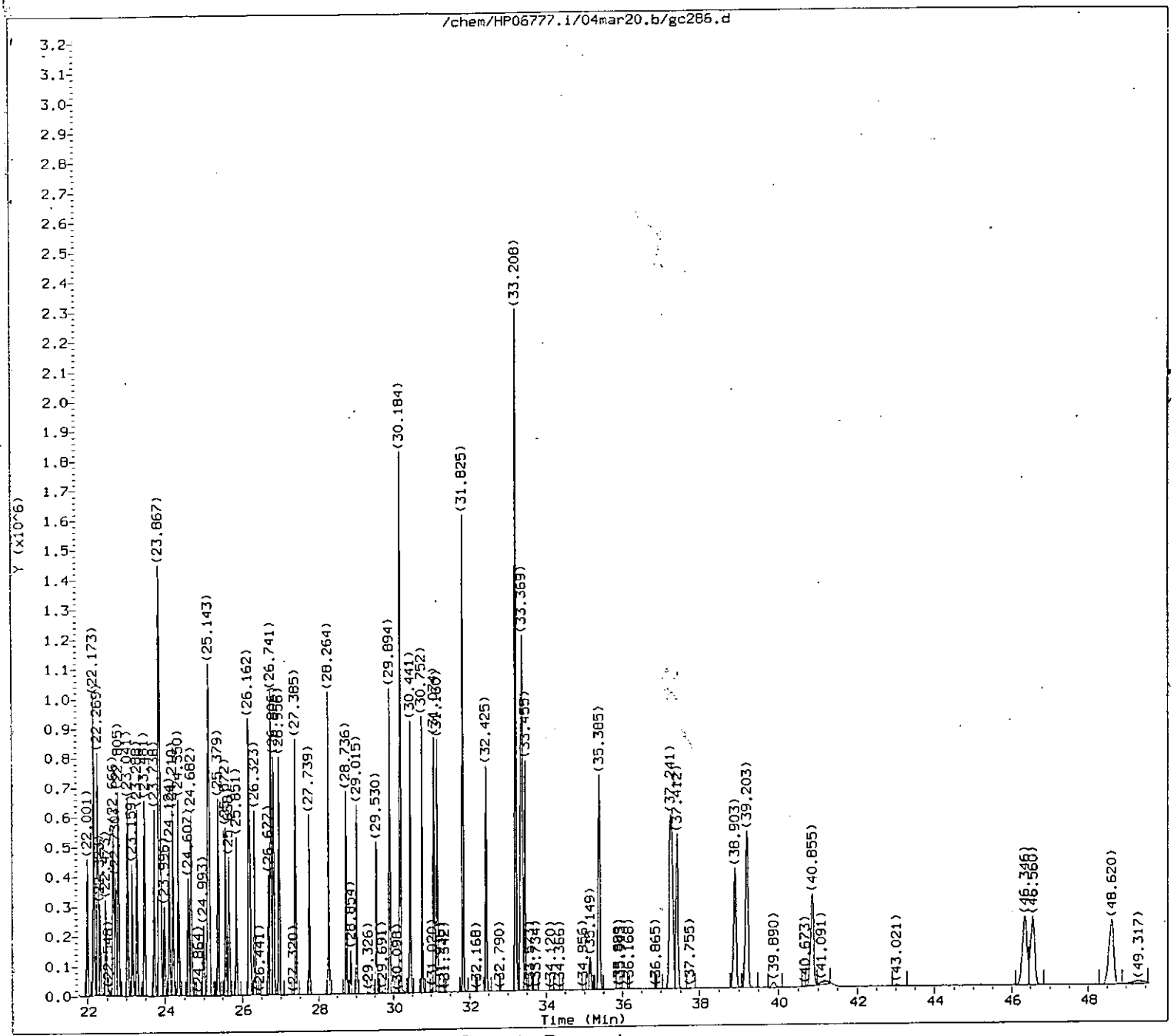
Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc286.d
Injection date and time: 20-MAR-2004 16:03
Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17
Sublist used: all1
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD030
Lab Sample ID: STD0754

9257




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc286.d
Injection date and time: 20-MAR-2004 16:03

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD030

Lab Sample ID: STD0754

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc286.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 16:03  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.316 | 88 | 149025 | 28.399 |
| 2) | N-Nitrosodimethylamine | (1) | 5.345 | 74 | 223880 | 28.281 |
| 3) | Pyridine | (1) | 5.453 | 79 | 365939 | 28.491 |
| 5) | 2-Picoline | (1) | 7.662 | 93 | 348635 | 28.936 |
| 13) | Aniline | (1) | 12.005 | 93 | 483756 | 28.730 |
| 16) | Phenol | (1) | 11.866 | 94 | 397664 | 29.186 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.177 | 93 | 332417 | 30.168 |
| 19) | 2-Chlorophenol | (1) | 12.359 | 128 | 330536 | 28.706 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.810 | 146 | 336313 | 29.094 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.971 | 152 | 290659 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.024 | 146 | 333644 | 29.015 |
| 24) | Benzyl alcohol | (1) | 13.325 | 108 | 194874 | 28.332 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.464 | 146 | 317768 | 28.467 |
| 26) | 2-Methylphenol | (1) | 13.625 | 108 | 270093 | 28.602 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.721 | 45 | 524703 | 29.706 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.721 | 45 | 524703 | 29.706 |
| 30) | Acetophenone | (1) | 14.129 | 105 | 425080 | 29.367 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.108 | 70 | 224973 | 30.381 |
| 33) | 4-Methylphenol | (1) | 14.054 | 108 | 290909 | 28.661 |
| 34) | o-Toluidine | (1) | 14.226 | 106 | 466721 | 29.020 |
| 37) | Hexachloroethane | (1) | 14.461 | 117 | 154497 | 28.505 |
| 39) | Nitrobenzene | (2) | 14.633 | 77 | 308257 | 28.935 |
| 41) | Isophorone | (2) | 15.330 | 82 | 601484 | 28.760 |
| 42) | 2-Nitrophenol | (2) | 15.588 | 139 | 180139 | 28.024 |
| 44) | 2,4-Dimethylphenol | (2) | 15.652 | 107 | 292810 | 28.588 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.963 | 93 | 357217 | 29.032 |
| 47) | Benzoic acid | (2) | 15.856 | 105 | 192501 | 24.974 |
| 49) | 2,4-Dichlorophenol | (2) | 16.285 | 162 | 239984 | 28.099 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.574 | 180 | 243017 | 28.262 |
| 52) | Naphthalene-d8 | (2) | 16.757 | 136 | 1080153 | 40.000 |
| 53) | Naphthalene | (2) | 16.821 | 128 | 819553 | 28.239 |
| 55) | 4-Chloroaniline | (2) | 16.950 | 127 | 379082 | 28.031 |
| 59) | Hexachlorobutadiene | (2) | 17.175 | 225 | 144717 | 28.756 |
| 62) | Caprolactam | (2) | 17.979 | 113 | 97358 | 28.678 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.397 | 107 | 236676 | 27.983 |
| 69) | 2-Methylnaphthalene | (2) | 18.934 | 142 | 526745 | 28.420 |
| 70) | 1-Methylnaphthalene | (2) | 19.245 | 142 | 495913 | 28.497 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.406 | 237 | 94359 | 25.338 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.781 | 196 | 155039 | 28.063 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.888 | 196 | 163485 | 27.243 |
| 80) | Biphenyl | (3) | 20.371 | 154 | 571032 | 27.949 |
| 81) | Diphenyl | (3) | 20.371 | 154 | 571032 | 27.949 |
| 82) | 1,1'-Biphenyl | (3) | 20.371 | 154 | 571032 | 27.949 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc286.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 16:03  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD030  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 20.446 | 162 | 453103 | 28.119 |
| 86) | Diphenyl ether | (3) | 20.692 | 170 | 287787 | 28.147 |
| 87) | 2-Nitroaniline | (3) | 20.735 | 138 | 197917 | 27.800 |
| 90) | Dimethylphthalate | (3) | 21.293 | 163 | 528336 | 28.038 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.486 | 165 | 128920 | 27.659 |
| 93) | Acenaphthylene | (3) | 21.733 | 152 | 644179 | 27.795 |
| 95) | 3-Nitroaniline | (3) | 22.001 | 138 | 165697 | 27.694 |
| 96) | Acenaphthene-d10 | (3) | 22.173 | 164 | 497430 | 40.000 |
| 97) | Acenaphthene | (3) | 22.269 | 153 | 424456 | 28.259 |
| 98) | 2,4-Dinitrophenol | (3) | 22.333 | 184 | 104885 | 34.562 |
| 101) | 4-Nitrophenol | (3) | 22.473 | 109 | 79043 | 25.524 |
| 102) | Dibenzofuran | (3) | 22.805 | 168 | 621194 | 28.410 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.730 | 165 | 163052 | 27.929 |
| 104) | 1-Naphthylamine | (3) | 23.041 | 143 | 452852 | 28.678 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.159 | 232 | 127948 | 26.260 |
| 106) | 2-Naphthylamine | (3) | 23.288 | 143 | 482305 | 27.446 |
| 107) | Diethylphthalate | (3) | 23.481 | 149 | 596823 | 28.320 |
| 109) | Fluorene | (3) | 23.867 | 166 | 494332 | 28.419 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.856 | 204 | 222359 | 28.025 |
| 112) | 4-Nitroaniline | (3) | 23.910 | 138 | 181217 | 37.755 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.996 | 198 | 97175 | 27.004 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.210 | 169 | 345364 | 28.762 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.350 | 77 | 596174 | 29.182 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.379 | 248 | 149702 | 28.034 |
| 125) | Hexachlorobenzene | (4) | 25.572 | 284 | 201717 | 27.873 |
| 129) | Pentachlorophenol | (4) | 26.162 | 266 | 138449 | 33.588 |
| 133) | Phenanthrene-d10 | (4) | 26.741 | 188 | 800868 | 40.000 |
| 135) | Phenanthrene | (4) | 26.806 | 178 | 644428 | 28.032 |
| 136) | Anthracene | (4) | 26.956 | 178 | 663788 | 27.809 |
| 138) | Carbazole | (4) | 27.385 | 167 | 690070 | 27.744 |
| 140) | Di-n-butylphthalate | (4) | 28.264 | 149 | 1044511 | 27.563 |
| 145) | Fluoranthene | (4) | 29.894 | 202 | 748739 | 27.815 |
| 150) | Benzidine | (5) | 30.184 | 184 | 1287188 | 87.505 |
| 152) | Pyrene | (5) | 30.452 | 202 | 749834 | 27.486 |
| 159) | Butylbenzylphthalate | (5) | 31.825 | 149 | 515652 | 29.165 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.208 | 252 | 365822 | 31.010 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.208 | 231 | 151893 | 30.828 |
| 164) | Benzo(a)anthracene | (5) | 33.348 | 228 | 716410 | 28.719 |
| 165) | Chrysene-d12 | (5) | 33.380 | 240 | 907321 | 40.000 |
| 166) | Chrysene | (5) | 33.455 | 228 | 650065 | 28.092 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.208 | 149 | 724050 | 31.723 |
| 168) | Di-n-octylphthalate | (6) | 35.385 | 149 | 1166959 | 27.351 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.230 | 256 | 383000 | 27.619 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

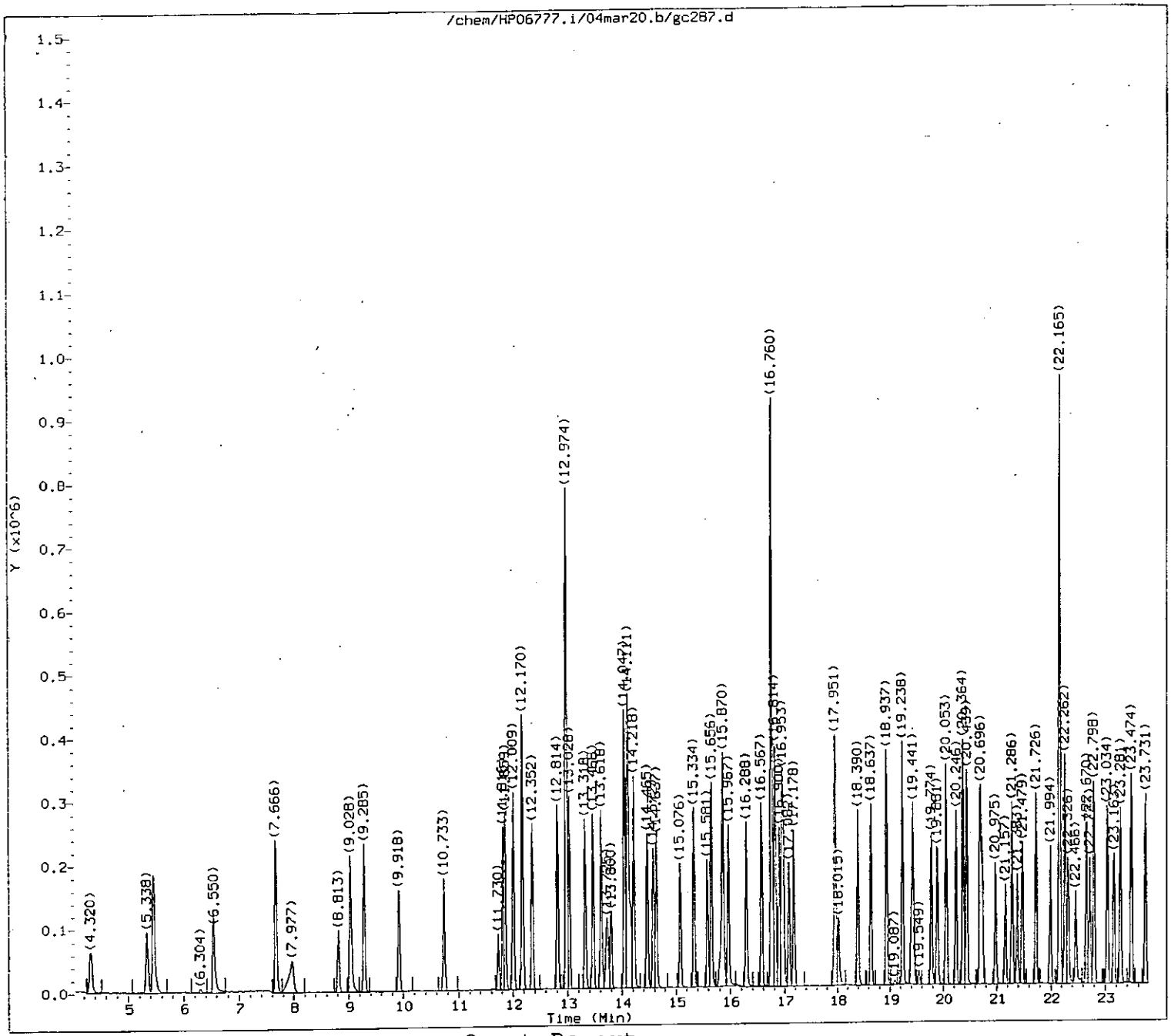
Data File: /chem/HP06777.i/04mar20.b/gc286.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 16:03  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD030  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.284 | 252 | 824139 | 28.049 |
| 171) Benzo(k)fluoranthene | (6) | 37.412 | 252 | 780774 | 28.713 |
| 172) Benzo(a)pyrene | (6) | 38.903 | 252 | 726148 | 27.475 |
| 173) Perylene-d12 | (6) | 39.203 | 264 | 932604 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.346 | 276 | 780281 | 32.989 |
| 176) Dibenz(a,h)anthracene | (6) | 46.560 | 278 | 718310 | 28.092 |
| 177) Benzo(g,h,i)perylene | (6) | 48.609 | 276 | 788829 | 28.397 |
| 9) 2-Fluorophenol | (1) | 9.292 | 112 | 329693 | 29.126 |
| 14) Phenol-d5 | (1) | 11.823 | 99 | 399440 | 29.168 |
| 15) Phenol-d6 | (1) | 11.823 | 99 | 399440 | 29.168 |
| 38) Nitrobenzene-d5 | (2) | 14.579 | 82 | 310877 | 28.467 |
| 77) 2-Fluorobiphenyl | (3) | 20.060 | 172 | 476360 | 28.038 |
| 117) 2,4,6-Tribromophenol | (3) | 24.607 | 330 | 121970 | 25.708 |
| 154) Terphenyl-d14 | (5) | 30.752 | 244 | 521723 | 28.495 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc287.d
Injection date and time: 20-MAR-2004 17:00

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

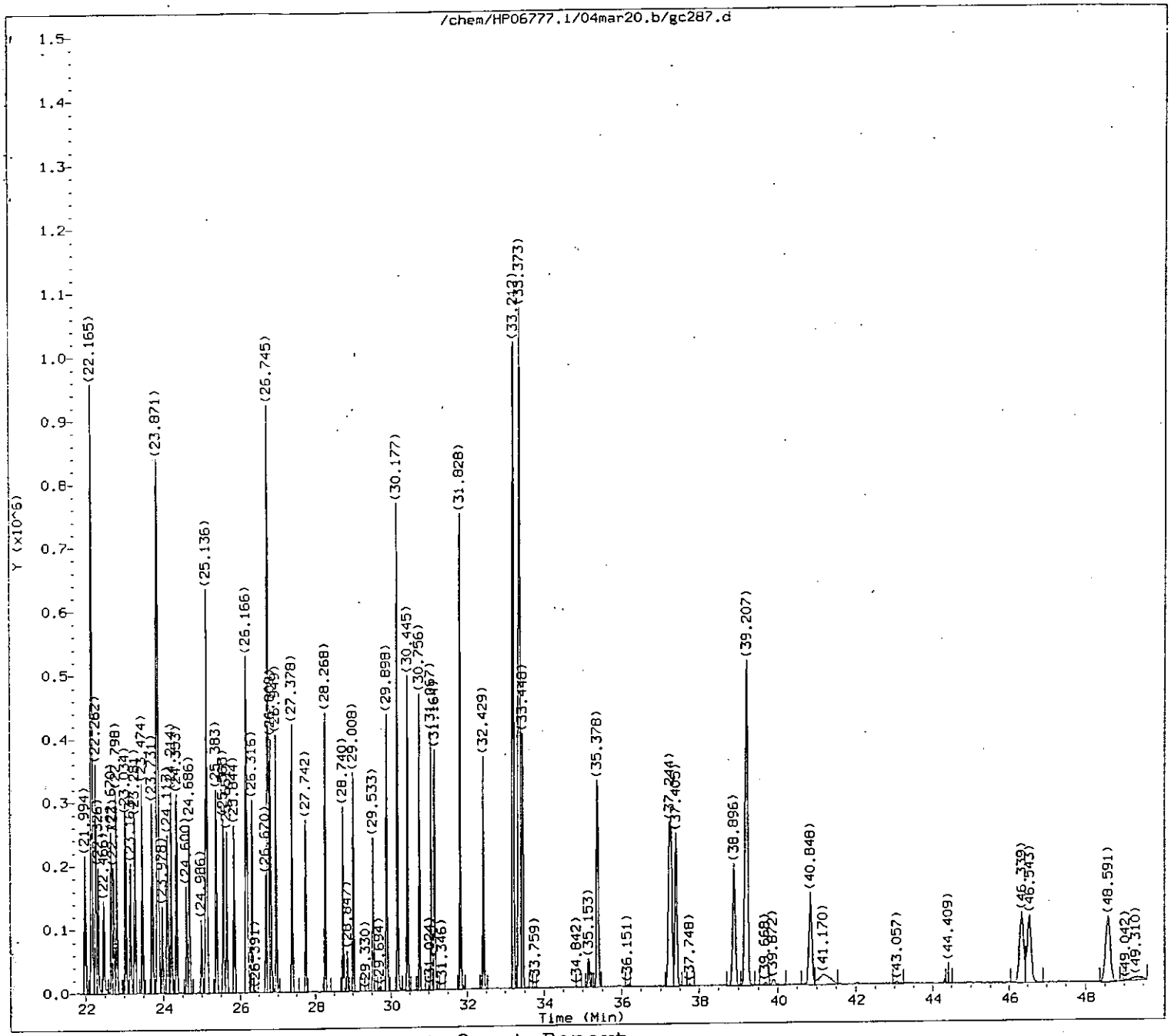
Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015

Lab Sample ID: STD0754

0262




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc287.d
Injection date and time: 20-MAR-2004 17:00

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015

Lab Sample ID: STD0754

8263

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc287.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:00  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 4.320 | 88 | 74904 | 15.246 |
| 2) N-Nitrosodimethylamine | (1) | 5.328 | 74 | 109305 | 14.858 |
| 3) Pyridine | (1) | 5.456 | 79 | 179498 | 14.856 |
| 5) 2-Picoline | (1) | 7.666 | 93 | 167999 | 14.807 |
| 13) Aniline | (1) | 12.009 | 93 | 244505 | 15.253 |
| 16) Phenol | (1) | 11.859 | 94 | 195412 | 15.204 |
| 18) bis(2-Chloroethyl)ether | (1) | 12.170 | 93 | 159858 | 15.247 |
| 19) 2-Chlorophenol | (1) | 12.352 | 128 | 160792 | 14.769 |
| 20) 1,3-Dichlorobenzene | (1) | 12.814 | 146 | 163819 | 14.885 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 12.974 | 152 | 277567 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.028 | 146 | 168190 | 15.190 |
| 24) Benzyl alcohol | (1) | 13.318 | 108 | 92240 | 14.477 |
| 25) 1,2-Dichlorobenzene | (1) | 13.468 | 146 | 159070 | 15.027 |
| 26) 2-Methylphenol | (1) | 13.618 | 108 | 137221 | 15.435 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.725 | 45 | 252730 | 15.089 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 13.725 | 45 | 252730 | 15.089 |
| 30) Acetophenone | (1) | 14.122 | 105 | 205682 | 15.113 |
| 31) N-Nitroso-di-n-propylamine | (1) | 14.101 | 70 | 108581 | 15.425 |
| 33) 4-Methylphenol | (1) | 14.047 | 108 | 138105 | 14.709 |
| 34) o-Toluidine | (1) | 14.218 | 106 | 231299 | 15.206 |
| 37) Hexachloroethane | (1) | 14.465 | 117 | 76290 | 14.866 |
| 39) Nitrobenzene | (2) | 14.637 | 77 | 149658 | 14.917 |
| 41) Isophorone | (2) | 15.334 | 82 | 283551 | 14.548 |
| 42) 2-Nitrophenol | (2) | 15.581 | 139 | 84759 | 14.403 |
| 44) 2,4-Dimethylphenol | (2) | 15.656 | 107 | 144931 | 15.052 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.967 | 93 | 180426 | 15.423 |
| 47) Benzoic acid | (2) | 15.838 | 105 | 123286 | 20.314 |
| 49) 2,4-Dichlorophenol | (2) | 16.288 | 162 | 113823 | 14.481 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.567 | 180 | 120284 | 14.741 |
| 52) Naphthalene-d8 | (2) | 16.760 | 136 | 1031144 | 40.000 |
| 53) Naphthalene | (2) | 16.814 | 128 | 401773 | 14.715 |
| 55) 4-Chloroaniline | (2) | 16.953 | 127 | 188614 | 14.902 |
| 59) Hexachlorobutadiene | (2) | 17.178 | 225 | 69675 | 14.641 |
| 62) Caprolactam | (2) | 17.951 | 113 | 46834 | 15.009 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.390 | 107 | 116021 | 14.840 |
| 69) 2-Methylnaphthalene | (2) | 18.937 | 142 | 252361 | 14.573 |
| 70) 1-Methylnaphthalene | (2) | 19.238 | 142 | 241107 | 14.722 |
| 71) Hexachlorocyclopentadiene | (3) | 19.409 | 237 | 39852 | 12.657 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.774 | 196 | 72251 | 14.195 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.892 | 196 | 80048 | 14.557 |
| 80) Biphenyl | (3) | 20.364 | 154 | 282193 | 14.666 |
| 81) Diphenyl | (3) | 20.364 | 154 | 282193 | 14.666 |
| 82) 1,1'-Biphenyl | (3) | 20.364 | 154 | 282193 | 14.666 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc287.d
Injection date and time: 20-MAR-2004 17:00
Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17
Sublist used: all1
Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015
Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 83) 2-Chloronaphthalene | (3) | 20.439 | 162 | 229379 | 15.095 |
| 86) Diphenyl ether | (3) | 20.696 | 170 | 143459 | 14.869 |
| 87) 2-Nitroaniline | (3) | 20.728 | 138 | 94759 | 14.419 |
| 90) Dimethylphthalate | (3) | 21.286 | 163 | 258773 | 14.540 |
| 92) 2,6-Dinitrotoluene | (3) | 21.479 | 165 | 64516 | 14.636 |
| 93) Acenaphthylene | (3) | 21.726 | 152 | 320086 | 14.693 |
| 95) 3-Nitroaniline | (3) | 21.994 | 138 | 80218 | 14.477 |
| 96) Acenaphthene-d10 | (3) | 22.165 | 164 | 477656 | 40.000 |
| 97) Acenaphthene | (3) | 22.273 | 153 | 204719 | 14.515 |
| 98) 2,4-Dinitrophenol | (3) | 22.326 | 184 | 67360 | 26.211 |
| 101) 4-Nitrophenol | (3) | 22.466 | 109 | 35840 | 13.174 |
| 102) Dibenzofuran | (3) | 22.798 | 168 | 304332 | 14.718 |
| 103) 2,4-Dinitrotoluene | (3) | 22.723 | 165 | 82301 | 14.944 |
| 104) 1-Naphthylamine | (3) | 23.045 | 143 | 211616 | 14.422 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 23.163 | 232 | 60003 | 13.647 |
| 106) 2-Naphthylamine | (3) | 23.281 | 143 | 225804 | 13.903 |
| 107) Diethylphthalate | (3) | 23.474 | 149 | 290241 | 14.687 |
| 109) Fluorene | (3) | 23.871 | 166 | 243287 | 14.856 |
| 110) 4-Chlorophenyl-phenylether | (3) | 23.860 | 204 | 111141 | 14.847 |
| 112) 4-Nitroaniline | (3) | 23.892 | 138 | 90584 | 15.403 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.989 | 198 | 44829 | 13.738 |
| 115) N-Nitrosodiphenylamine | (4) | 24.214 | 169 | 164240 | 14.676 |
| 116) 1,2-Diphenylhydrazine | (4) | 24.353 | 77 | 285197 | 14.786 |
| 123) 4-Bromophenyl-phenylether | (4) | 25.383 | 248 | 71974 | 14.508 |
| 125) Hexachlorobenzene | (4) | 25.565 | 284 | 98010 | 14.419 |
| 129) Pentachlorophenol | (4) | 26.155 | 266 | 89710 | 25.388 |
| 133) Phenanthrene-d10 | (4) | 26.745 | 188 | 769364 | 40.000 |
| 135) Phenanthrene | (4) | 26.809 | 178 | 317133 | 14.689 |
| 136) Anthracene | (4) | 26.949 | 178 | 327379 | 14.635 |
| 138) Carbazole | (4) | 27.378 | 167 | 331260 | 14.445 |
| 140) Di-n-butylphthalate | (4) | 28.268 | 149 | 497708 | 14.306 |
| 145) Fluoranthene | (4) | 29.898 | 202 | 344563 | 13.920 |
| 150) Benzidine | (5) | 30.177 | 184 | 558444 | 42.131 |
| 152) Pyrene | (5) | 30.445 | 202 | 371052 | 14.538 |
| 159) Butylbenzylphthalate | (5) | 31.818 | 149 | 252333 | 15.261 |
| 162) 3,3'-Dichlorobenzidine | (5) | 33.201 | 252 | 165496 | 15.064 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 33.201 | 231 | 69436 | 15.145 |
| 164) Benzo(a)anthracene | (5) | 33.341 | 228 | 351841 | 14.828 |
| 165) Chrysene-d12 | (5) | 33.373 | 240 | 875173 | 40.000 |
| 166) Chrysene | (5) | 33.448 | 228 | 321506 | 14.666 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 33.212 | 149 | 351462 | 16.010 |
| 168) Di-n-octylphthalate | (6) | 35.378 | 149 | 548787 | 14.189 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 37.223 | 256 | 172284 | 13.895 |

M = Compound was manually integrated.

A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc287.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:00  Analyst ID: jmg00068

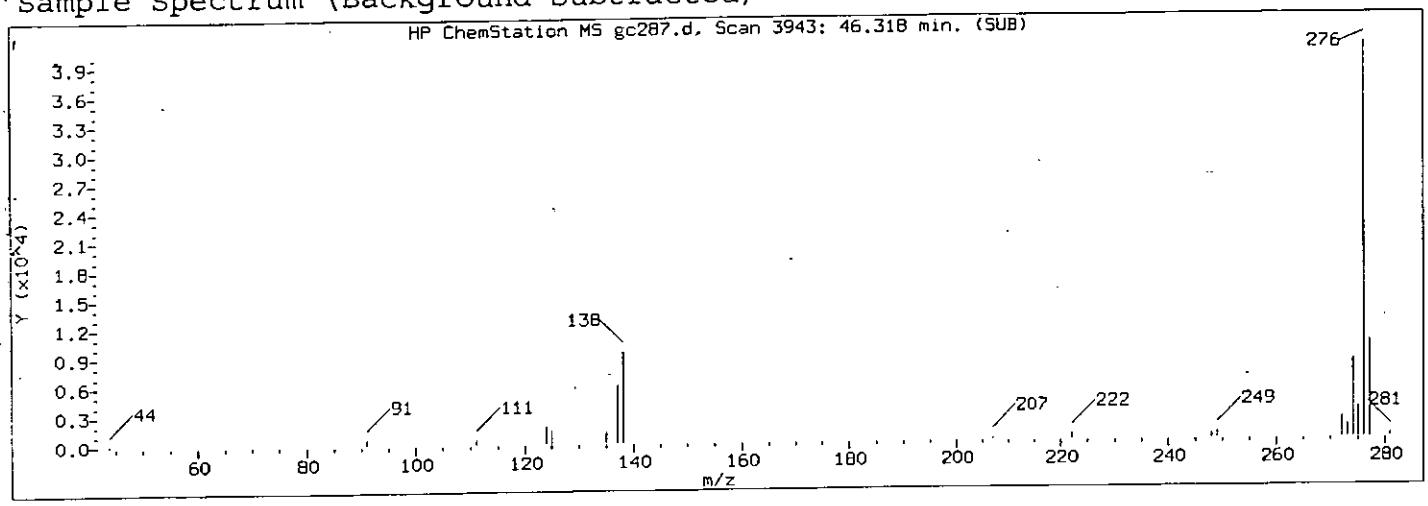
Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015  Lab Sample ID: STD0754

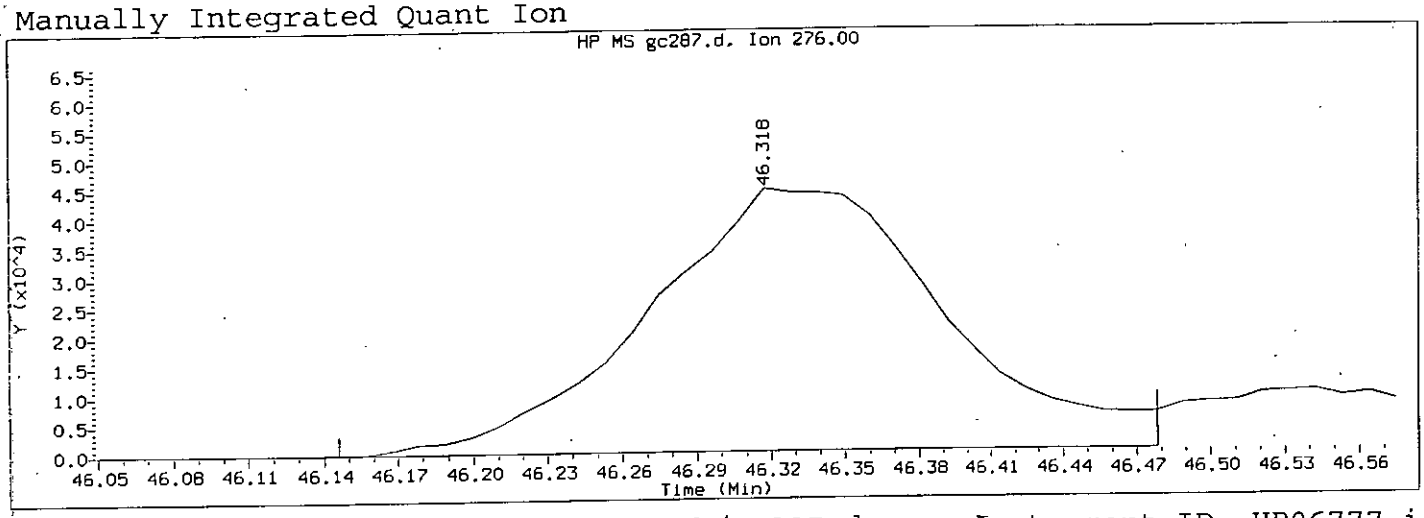
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.277 | 252 | 394891 | 14.502 |
| 171) Benzo(k)fluoranthene | (6) | 37.405 | 252 | 374851 | 14.692 |
| 172) Benzo(a)pyrene | (6) | 38.896 | 252 | 355851 | 14.538 |
| 173) Perylene-d12 | (6) | 39.207 | 264 | 895994 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.318 | 276 | 373608M | 14.671 |
| 176) Dibenz(a,h)anthracene | (6) | 46.532 | 278 | 347506 | 14.700 |
| 177) Benzo(g,h,i)perylene | (6) | 48.591 | 276 | 369045 | 14.431 |
| 9) 2-Fluorophenol | (1) | 9.285 | 112 | 158228 | 14.929 |
| 14) Phenol-d5 | (1) | 11.816 | 99 | 189067 | 14.785 |
| 15) Phenol-d6 | (1) | 11.816 | 99 | 189067 | 14.785 |
| 38) Nitrobenzene-d5 | (2) | 14.572 | 82 | 154081 | 15.037 |
| 77) 2-Fluorobiphenyl | (3) | 20.053 | 172 | 237347 | 14.767 |
| 117) 2,4,6-Tribromophenol | (3) | 24.611 | 330 | 58167 | 13.592 |
| 154) Terphenyl-d14 | (5) | 30.756 | 244 | 252676 | 14.643 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar20.b/gc287.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:00  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:25 jbs01304

Sample Name: SSTD015  Lab Sample ID: STD0754

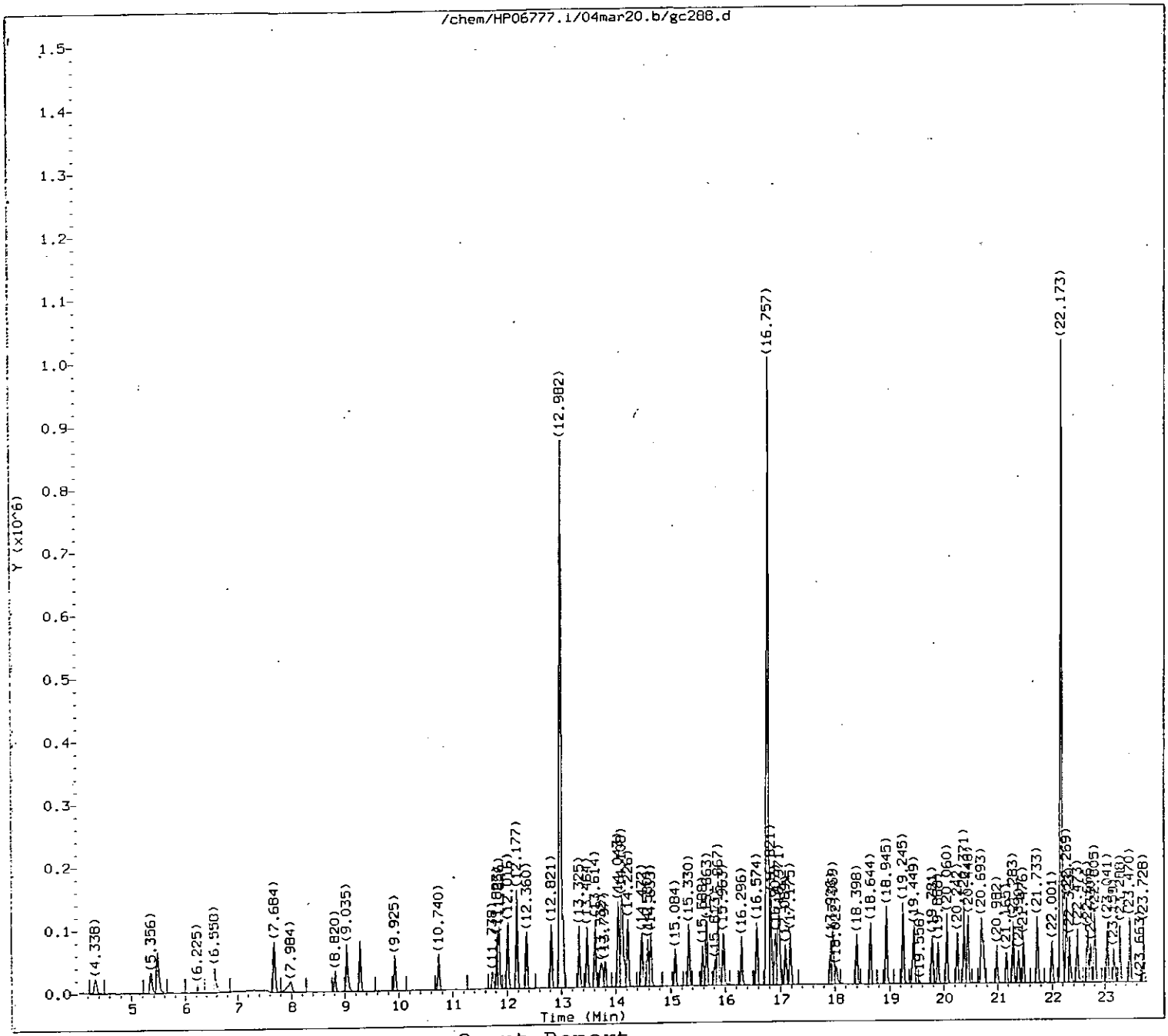
| | | |
|---|---|---|
| Compound Number | : | 175 |
| Compound Name | : | Indeno(1,2,3-cd)pyrene |
| Scan Number | : | 3943 |
| Retention Time (minutes) | : | 46.318 |
| Quant Ion | : | 276 |
| Area (flag) | : | 373608 M |
| Concentration (ng/ul) | : | 14.6707 |
| Integration start scan | : | 3926 Integration stop scan: 3957 |
| Y at integration start | : | 12 Y at integration end: 12 |

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: JMG 3/24

GC/MS audit/management approval: mg 758 3/23/04 8257

Manual Integration Report for data file /chem/HP06777.i/04mar20.b/gc287.d, generated on 03/21/2004 at 14:25




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc288.d
Injection date and time: 20-MAR-2004 17:57

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

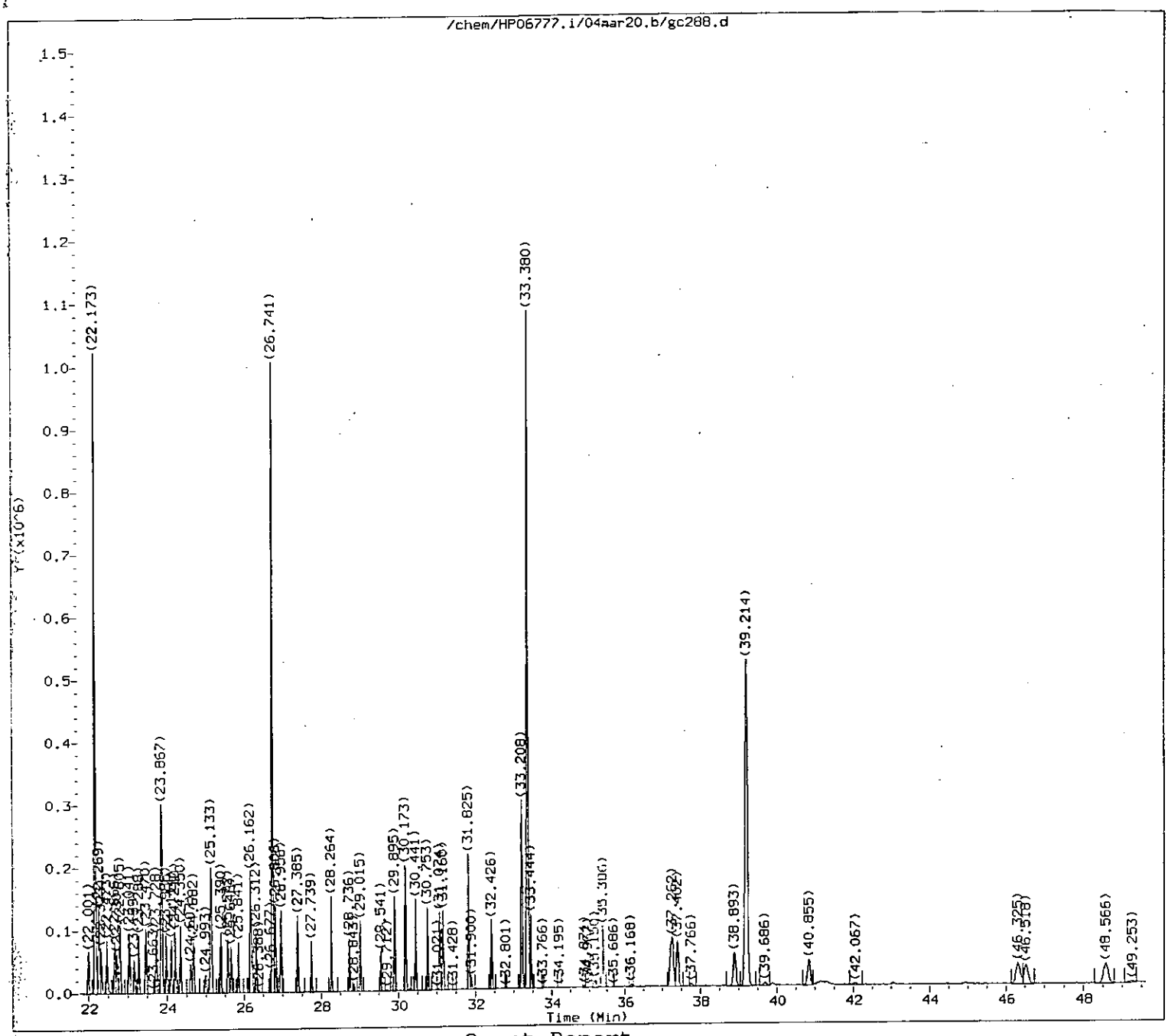
Sublist used: all

Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD005

Lab Sample ID: STD0754

8268




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc288.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:57  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD005  Lab Sample ID: STD0754

8269

3/31/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc288.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:57  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD005  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 4.338 | 88 | 24531 | 4.519 |
| 2) | N-Nitrosodimethylamine | (1) | 5.356 | 74 | 36531 | 4.495 |
| 3) | Pyridine | (1) | 5.474 | 79 | 63359 | 4.746 |
| 5) | 2-Picoline | (1) | 7.684 | 93 | 59958 | 4.783 |
| 13) | Aniline | (1) | 12.016 | 93 | 85956 | 4.854 |
| 16) | Phenol | (1) | 11.856 | 94 | 66539 | 4.686 |
| 18) | bis(2-Chloroethyl)ether | (1) | 12.177 | 93 | 56119 | 4.845 |
| 19) | 2-Chlorophenol | (1) | 12.360 | 128 | 58655 | 4.876 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.821 | 146 | 60539 | 4.979 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.982 | 152 | 306667 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 13.025 | 146 | 62402 | 5.101 |
| 24) | Benzyl alcohol | (1) | 13.325 | 108 | 32077 | 4.557 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.475 | 146 | 56722 | 4.850 |
| 26) | 2-Methylphenol | (1) | 13.614 | 108 | 44878 | 4.569 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.732 | 45 | 89342 | 4.828 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.732 | 45 | 89342 | 4.828 |
| 30) | Acetophenone | (1) | 14.118 | 105 | 69898 | 4.649 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 14.097 | 70 | 37070 | 4.767 |
| 33) | 4-Methylphenol | (1) | 14.054 | 108 | 46157 | 4.450 |
| 34) | o-Toluidine | (1) | 14.226 | 106 | 79625 | 4.738 |
| 37) | Hexachloroethane | (1) | 14.472 | 117 | 27631 | 4.873 |
| 39) | Nitrobenzene | (2) | 14.633 | 77 | 50752 | 4.754 |
| 41) | Isophorone | (2) | 15.330 | 82 | 96708 | 4.664 |
| 42) | 2-Nitrophenol | (2) | 15.588 | 139 | 27196 | 4.344 |
| 44) | 2,4-Dimethylphenol | (2) | 15.663 | 107 | 47886 | 4.674 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.963 | 93 | 59467 | 4.778 |
| 47) | Benzoic acid | (2) | 15.813 | 105 | 45805 | 7.094 |
| 49) | 2,4-Dichlorophenol | (2) | 16.296 | 162 | 37022 | 4.427 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.574 | 180 | 43124 | 4.967 |
| 52) | Naphthalene-d8 | (2) | 16.757 | 136 | 1097092 | 40.000 |
| 53) | Naphthalene | (2) | 16.821 | 128 | 139486 | 4.802 |
| 55) | 4-Chloroaniline | (2) | 16.961 | 127 | 62377 | 4.632 |
| 59) | Hexachlorobutadiene | (2) | 17.186 | 225 | 24959 | 4.929 |
| 62) | Caprolactam | (2) | 17.926 | 113 | 14029 | 4.226 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.398 | 107 | 36596 | 4.399 |
| 69) | 2-Methylnaphthalene | (2) | 18.945 | 142 | 86756 | 4.709 |
| 70) | 1-Methylnaphthalene | (2) | 19.245 | 142 | 83731 | 4.805 |
| 71) | Hexachlorocyclopentadiene | (3) | 19.416 | 237 | 10092 | 3.067 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.781 | 196 | 23528 | 4.423 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.888 | 196 | 24077 | 4.190 |
| 80) | Biphenyl | (3) | 20.371 | 154 | 94881 | 4.719 |
| 81) | Diphenyl | (3) | 20.371 | 154 | 94881 | 4.719 |
| 82) | 1,1'-Biphenyl | (3) | 20.371 | 154 | 94881 | 4.719 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc288.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:57  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD005  Lab Sample ID: STD0754

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 20.446 | 162 | 73107 | 4.603 |
| 86) | Diphenyl ether | (3) | 20.693 | 170 | 47311 | 4.692 |
| 87) | 2-Nitroaniline | (3) | 20.736 | 138 | 30135 | 4.388 |
| 90) | Dimethylphthalate | (3) | 21.283 | 163 | 89634 | 4.819 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.476 | 165 | 22180 | 4.815 |
| 93) | Acenaphthylene | (3) | 21.733 | 152 | 106363 | 4.672 |
| 95) | 3-Nitroaniline | (3) | 22.001 | 138 | 25689 | 4.436 |
| 96) | Acenaphthene-d10 | (3) | 22.173 | 164 | 499190 | 40.000 |
| 97) | Acenaphthene | (3) | 22.269 | 153 | 69417 | 4.709 |
| 98) | 2,4-Dinitrophenol | (3) | 22.323 | 184 | 23797 | 8.861 |
| 101) | 4-Nitrophenol | (3) | 22.473 | 109 | 21310 | 7.495 |
| 102) | Dibenzofuran | (3) | 22.805 | 168 | 103431 | 4.786 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.730 | 165 | 26825 | 4.661 |
| 104) | 1-Naphthylamine | (3) | 23.041 | 143 | 69381 | 4.524 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.159 | 232 | 19158 | 4.169 |
| 106) | 2-Naphthylamine | (3) | 23.288 | 143 | 77844 | 4.586 |
| 107) | Diethylphthalate | (3) | 23.470 | 149 | 95504 | 4.624 |
| 109) | Fluorene | (3) | 23.867 | 166 | 79582 | 4.650 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.857 | 204 | 36736 | 4.696 |
| 112) | 4-Nitroaniline | (3) | 23.889 | 138 | 25590 | 5.002 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.985 | 198 | 29732 | 8.467 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.210 | 169 | 54097 | 4.492 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.350 | 77 | 97983 | 4.721 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.379 | 248 | 23935 | 4.483 |
| 125) | Hexachlorobenzene | (4) | 25.572 | 284 | 34661 | 4.738 |
| 129) | Pentachlorophenol | (4) | 26.162 | 266 | 38286 | 10.068 |
| 133) | Phenanthrene-d10 | (4) | 26.741 | 188 | 827965 | 40.000 |
| 135) | Phenanthrene | (4) | 26.806 | 178 | 107938 | 4.646 |
| 136) | Anthracene | (4) | 26.956 | 178 | 111222 | 4.620 |
| 138) | Carbazole | (4) | 27.385 | 167 | 107267 | 4.346 |
| 140) | Di-n-butylphthalate | (4) | 28.264 | 149 | 161120 | 4.303 |
| 145) | Fluoranthene | (4) | 29.895 | 202 | 118949 | 4.465 |
| 150) | Benzidine | (5) | 30.184 | 184 | 164650 | 11.729 |
| 152) | Pyrene | (5) | 30.441 | 202 | 122527 | 4.533 |
| 159) | Butylbenzylphthalate | (5) | 31.825 | 149 | 75019 | 4.284 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.208 | 252 | 49616 | 4.264 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.198 | 231 | 20492 | 4.220 |
| 164) | Benzo(a)anthracene | (5) | 33.348 | 228 | 120013 | 4.776 |
| 165) | Chrysene-d12 | (5) | 33.380 | 240 | 926831 | 40.000 |
| 166) | Chrysene | (5) | 33.455 | 228 | 110216 | 4.747 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.219 | 149 | 107096 | 4.606 |
| 168) | Di-n-octylphthalate | (6) | 35.386 | 149 | 166724 | 4.074 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.219 | 256 | 50871 | 3.878 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

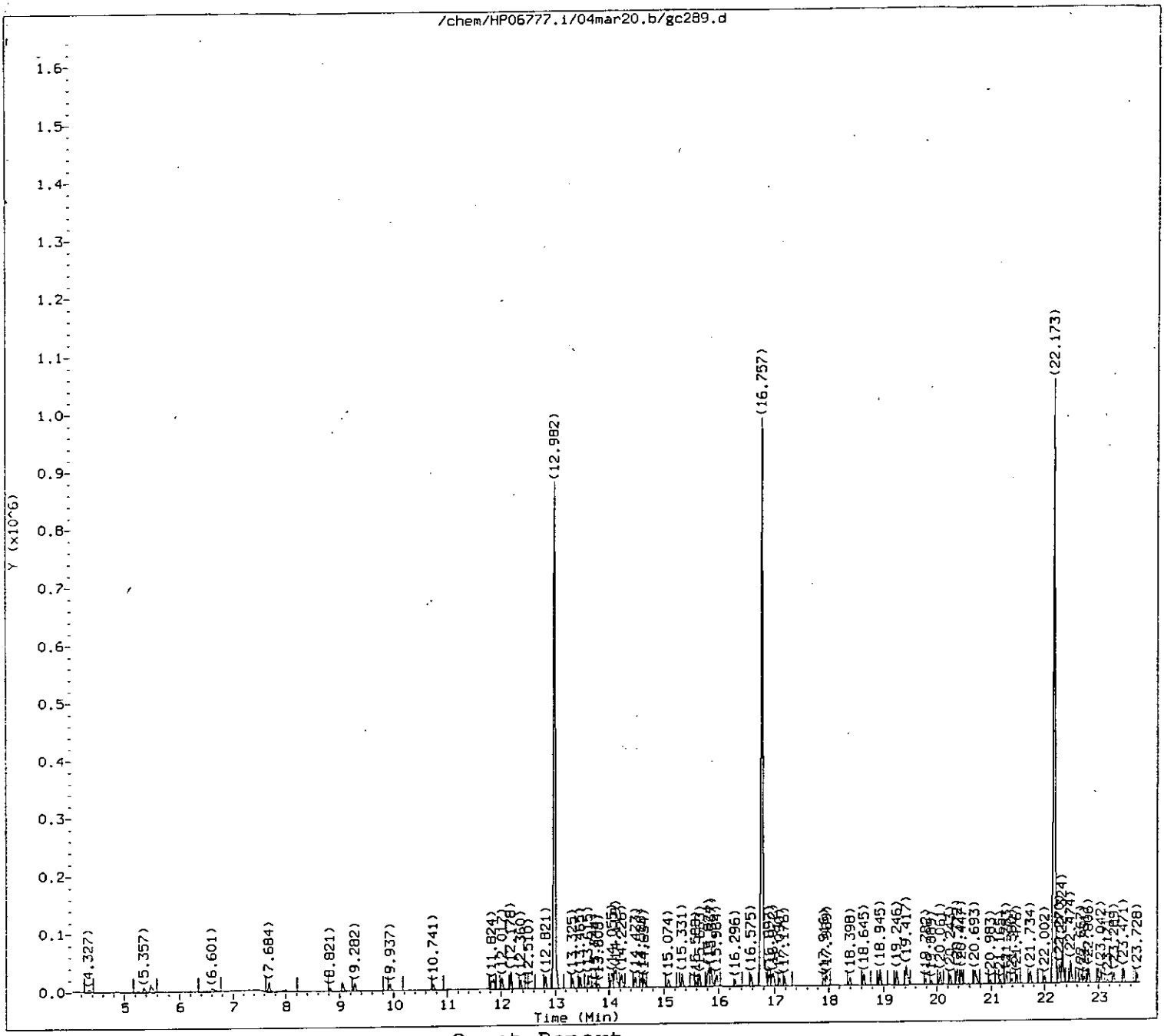
Data File: /chem/HP06777.i/04mar20.b/gc288.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 17:57  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 14:17 jbs01304

Sample Name: SSTD005  Lab Sample ID: STD0754

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.273 | 252 | 127732 | 4.434 |
| 171) Benzo(k)fluoranthene | (6) | 37.402 | 252 | 124839 | 4.625 |
| 172) Benzo(a)pyrene | (6) | 38.893 | 252 | 114099 | 4.406 |
| 173) Perylene-d12 | (6) | 39.214 | 264 | 947932 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.325 | 276 | 116374 | 4.839 |
| 176) Dibenz(a,h)anthracene | (6) | 46.529 | 278 | 107948 | 4.316 |
| 177) Benzo(g,h,i)perylene | (6) | 48.556 | 276 | 116828 | 4.318 |
| 9) 2-Fluorophenol | (1) | 9.282 | 112 | 54157 | 4.625 |
| 14) Phenol-d5 | (1) | 11.823 | 99 | 65239 | 4.618 |
| 15) Phenol-d6 | (1) | 11.823 | 99 | 65239 | 4.618 |
| 38) Nitrobenzene-d5 | (2) | 14.580 | 82 | 50586 | 4.640 |
| 77) 2-Fluorobiphenyl | (3) | 20.060 | 172 | 80243 | 4.777 |
| 117) 2,4,6-Tribromophenol | (3) | 24.607 | 330 | 18686 | 4.178 |
| 154) Terphenyl-d14 | (5) | 30.763 | 244 | 84979 | 4.650 |

M = Compound was manually integrated.  A = User selected an alternate hit




Quant Report

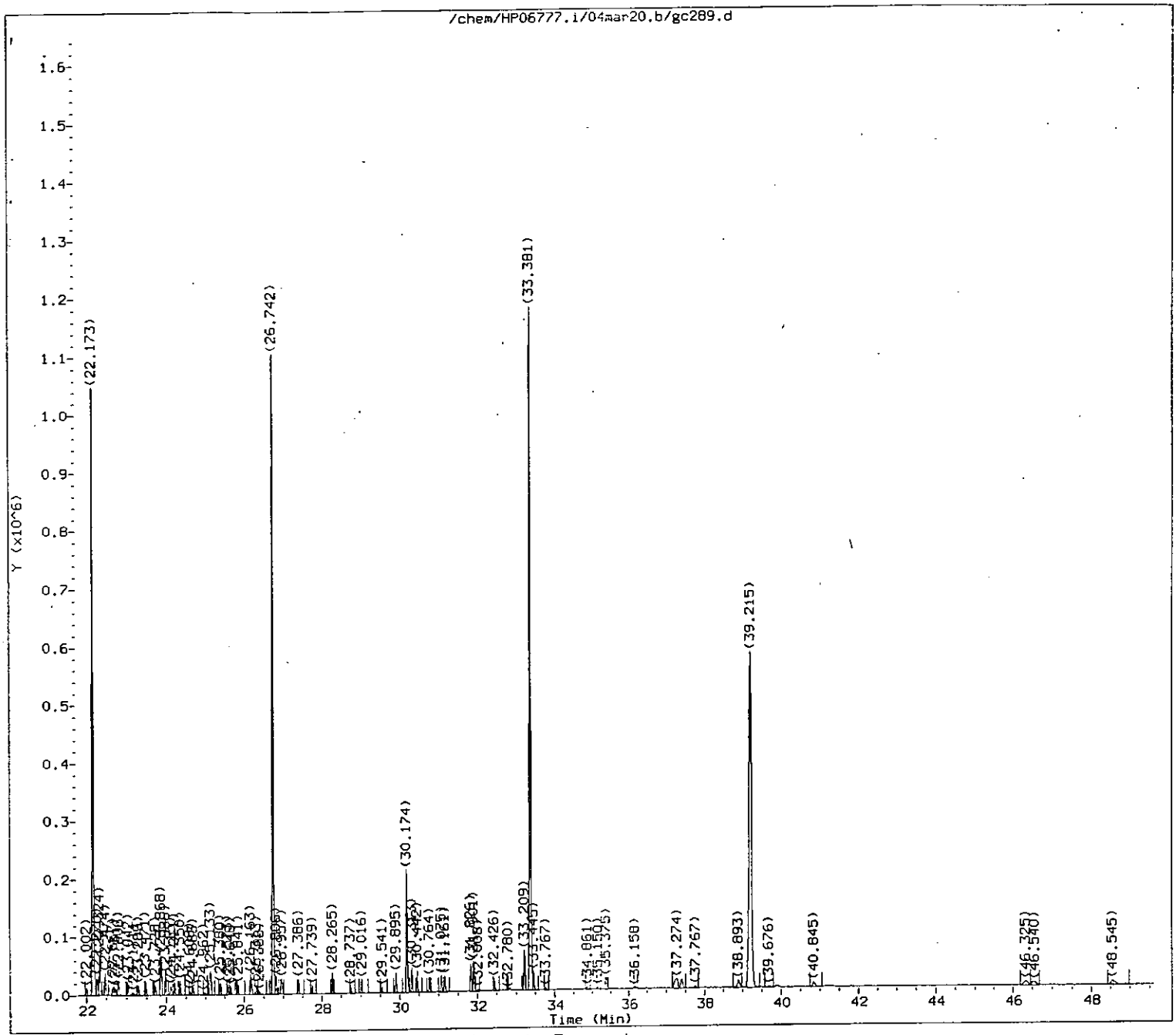
Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc289.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 18:54  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001  Lab Sample ID: 8270MDL0494

0273




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc289.d
Injection date and time: 20-MAR-2004 18:54

Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m
Calibration date and time: 21-MAR-2004 14:17

Sublist used: all1

Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001

Lab Sample ID: 8270MDL0494

3274

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc289.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 18:54  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001  Lab Sample ID: 8270MDL0494

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 4.349 | 88 | 5297 | 0.958 |
| 2) N-Nitrosodimethylamine | (1) | 5.357 | 74 | 7625 | 0.921 |
| 3) Pyridine | (1) | 5.475 | 79 | 12743 | 0.937 |
| 5) 2-Picoline | (1) | 7.684 | 93 | 12668 | 0.992 |
| 13) Aniline | (1) | 12.006 | 93 | 20026 | 1.110 |
| 16) Phenol | (1) | 11.856 | 94 | 14447 | 0.998 |
| 18) bis(2-Chloroethyl)ether | (1) | 12.178 | 93 | 14012 | 1.187 |
| 19) 2-Chlorophenol | (1) | 12.360 | 128 | 11836 | 0.966 |
| 20) 1,3-Dichlorobenzene | (1) | 12.821 | 146 | 15067 | 1.216 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 12.982 | 152 | 312516 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 13.036 | 146 | 13111 | 1.052 |
| 24) Benzyl alcohol | (1) | 13.325 | 108 | 7335 | 1.022 |
| 25) 1,2-Dichlorobenzene | (1) | 13.465 | 146 | 12387 | 1.039 |
| 26) 2-Methylphenol | (1) | 13.615 | 108 | 10329 | 1.032 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.733 | 45 | 21568 | 1.144 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 13.733 | 45 | 21568 | 1.144 |
| 30) Acetophenone | (1) | 14.119 | 105 | 15970 | 1.042 |
| 31) N-Nitroso-di-n-propylamine | (1) | 14.098 | 70 | 7926 | 1.000 |
| 33) 4-Methylphenol | (1) | 14.055 | 108 | 10599 | 1.003 |
| 34) o-Toluidine | (1) | 14.226 | 106 | 17957 | 1.048 |
| 37) Hexachloroethane | (1) | 14.473 | 117 | 6193 | 1.072 |
| 39) Nitrobenzene | (2) | 14.645 | 77 | 12175 | 1.108 |
| 41) Isophorone | (2) | 15.331 | 82 | 21694 | 1.016 |
| 42) 2-Nitrophenol | (2) | 15.588 | 139 | 5885 | 0.913 |
| 44) 2,4-Dimethylphenol | (2) | 15.663 | 107 | 10880 | 1.031 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.975 | 93 | 14316 | 1.117 |
| 47) Benzoic acid | (2) | 15.824 | 105 | 40299 | 6.062 |
| 49) 2,4-Dichlorophenol | (2) | 16.296 | 162 | 7858 | 0.913 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.575 | 180 | 9745 | 1.090 |
| 52) Naphthalene-d8 | (2) | 16.757 | 136 | 1129551 | 40.000 |
| 53) Naphthalene | (2) | 16.822 | 128 | 33395 | 1.117 |
| 55) 4-Chloroaniline | (2) | 16.961 | 127 | 13270 | 0.957 |
| 59) Hexachlorobutadiene | (2) | 17.176 | 225 | 6225 | 1.194 |
| 62) Caprolactam | (2) | 17.916 | 113 | 2862 | 0.837 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.398 | 107 | 7984 | 0.932 |
| 69) 2-Methylnaphthalene | (2) | 18.945 | 142 | 19947 | 1.051 |
| 70) 1-Methylnaphthalene | (2) | 19.246 | 142 | 19842 | 1.106 |
| 71) Hexachlorocyclopentadiene | (3) | 19.417 | 237 | 11758 | 8.129 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.782 | 196 | 4566 | 0.826 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.889 | 196 | 4087 | 0.685 |
| 80) Biphenyl | (3) | 20.372 | 154 | 22394 | 1.072 |
| 81) Diphenyl | (3) | 20.372 | 154 | 22394 | 1.072 |
| 82) 1,1'-Biphenyl | (3) | 20.372 | 154 | 22394 | 1.072 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc289.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 18:54  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001  Lab Sample ID: 8270MDL0494

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 20.447 | 162 | 18296 | 1.109 |
| 86) | Diphenyl ether | (3) | 20.693 | 170 | 12093 | 1.155 |
| 87) | 2-Nitroaniline | (3) | 20.736 | 138 | 5932 | 0.832 |
| 90) | Dimethylphthalate | (3) | 21.283 | 163 | 22386 | 1.159 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.487 | 165 | 4441 | 0.928 |
| 93) | Acenaphthylene | (3) | 21.734 | 152 | 25189 | 1.065 |
| 95) | 3-Nitroaniline | (3) | 22.002 | 138 | 4967 | 0.826 |
| 96) | Acenaphthene-d10 | (3) | 22.173 | 164 | 518522 | 40.000 |
| 97) | Acenaphthene | (3) | 22.270 | 153 | 19176 | 1.252 |
| 98) | 2,4-Dinitrophenol | (3) | 22.334 | 184 | 23962 | 16.886 |
| 101) | 4-Nitrophenol | (3) | 22.484 | 109 | 9526 | 8.991 |
| 102) | Dibenzofuran | (3) | 22.806 | 168 | 27456 | 1.223 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.731 | 165 | 6015 | 1.006 |
| 104) | 1-Naphthylamine | (3) | 23.042 | 143 | 18823 | 1.182 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 23.171 | 232 | 3324 | 0.696 |
| 106) | 2-Naphthylamine | (3) | 23.289 | 143 | 18505 | 1.050 |
| 107) | Diethylphthalate | (3) | 23.482 | 149 | 25472 | 1.187 |
| 109) | Fluorene | (3) | 23.879 | 166 | 19100 | 1.074 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.857 | 204 | 9109 | 1.121 |
| 112) | 4-Nitroaniline | (3) | 23.879 | 138 | 6302 | 0.987 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.986 | 198 | 12210 | 3.284 |
| 115) | N-Nitrosodiphenylamine | (4) | 24.211 | 169 | 13696 | 1.074 |
| 116) | 1,2-Diphenylhydrazine | (4) | 24.350 | 77 | 23175 | 1.055 |
| 123) | 4-Bromophenyl-phenylether | (4) | 25.391 | 248 | 6579 | 1.164 |
| 125) | Hexachlorobenzene | (4) | 25.573 | 284 | 8721 | 1.126 |
| 129) | Pentachlorophenol | (4) | 26.163 | 266 | 8226 | 12.106 |
| 133) | Phenanthrene-d10 | (4) | 26.742 | 188 | 876567 | 40.000 |
| 135) | Phenanthrene | (4) | 26.806 | 178 | 26120 | 1.062 |
| 136) | Anthracene | (4) | 26.957 | 178 | 27631 | 1.084 |
| 138) | Carbazole | (4) | 27.386 | 167 | 26393 | 1.010 |
| 140) | Di-n-butylphthalate | (4) | 28.265 | 149 | 39693 | 1.001 |
| 145) | Fluoranthene | (4) | 29.895 | 202 | 28994 | 1.028 |
| 150) | Benzidine | (5) | 30.185 | 184 | 166789 | 10.935 |
| 152) | Pyrene | (5) | 30.442 | 202 | 31521 | 1.073 |
| 159) | Butylbenzylphthalate | (5) | 31.826 | 149 | 19008 | 0.999 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 33.209 | 252 | 12085 | 0.956 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 33.209 | 231 | 4393 | 0.833 |
| 164) | Benzo(a)anthracene | (5) | 33.338 | 228 | 32856 | 1.203 |
| 165) | Chrysene-d12 | (5) | 33.381 | 240 | 1007089 | 40.000 |
| 166) | Chrysene | (5) | 33.445 | 228 | 27836 | 1.103 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 33.220 | 149 | 25244 | 0.999 |
| 168) | Di-n-octylphthalate | (6) | 35.397 | 149 | 41014 | 0.931 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 37.220 | 256 | 14280 | 1.011 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar20.b/gc289.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 18:54  Analyst ID: jmg00068

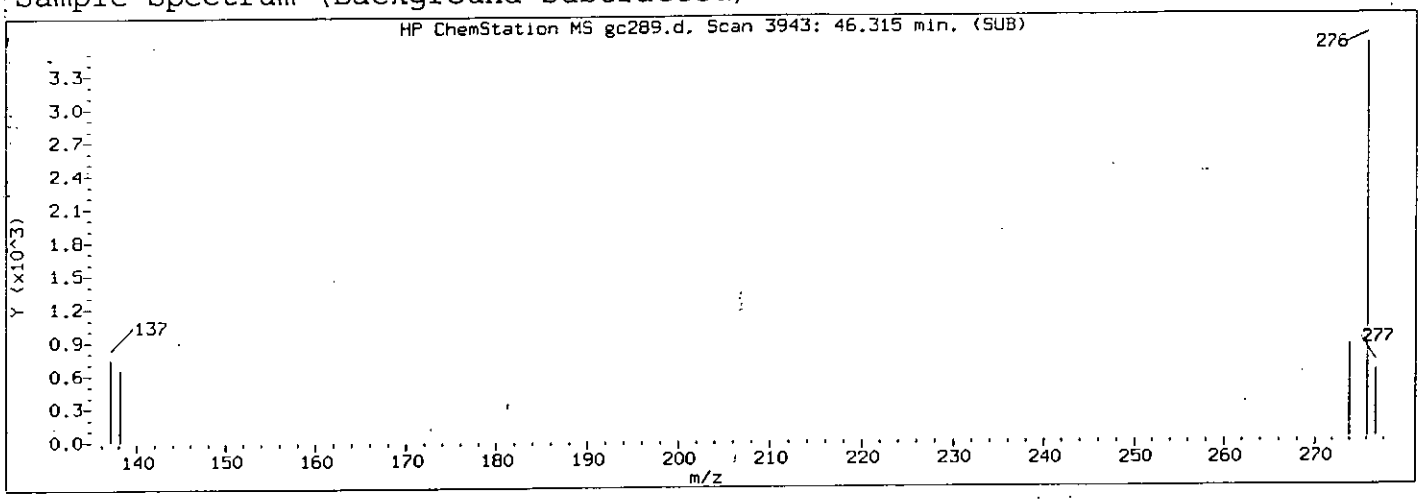
Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001  Lab Sample ID: 8270MDL0494

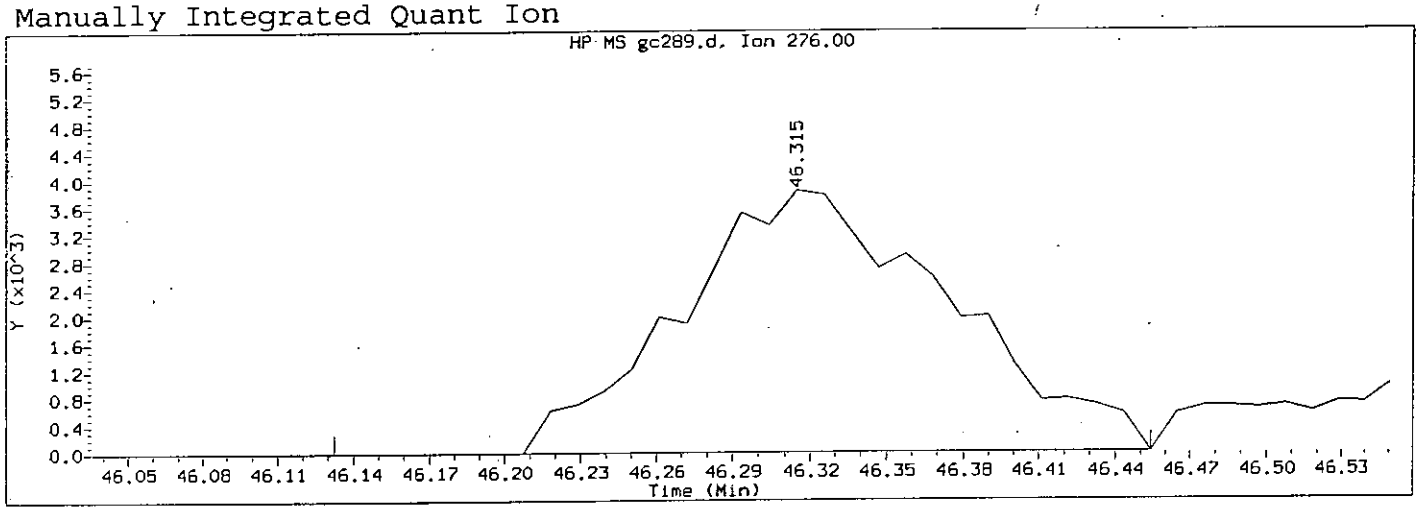
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 37.263 | 252 | 32017 | 1.032 |
| 171) Benzo(k)fluoranthene | (6) | 37.402 | 252 | 30706 | 1.056 |
| 172) Benzo(a)pyrene | (6) | 38.893 | 252 | 27783 | 0.996 |
| 173) Perylene-d12 | (6) | 39.215 | 264 | 1020793 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 46.315 | 276 | 28264M | 0.974 |
| 176) Dibenz(a,h)anthracene | (6) | 46.529 | 278 | 25097 | 0.932 |
| 177) Benzo(g,h,i)perylene | (6) | 48.578 | 276 | 28376 | 0.974 |
| 9) 2-Fluorophenol | (1) | 9.282 | 112 | 11552 | 0.968 |
| 14) Phenol-d5 | (1) | 11.824 | 99 | 13127 | 0.912 |
| 15) Phenol-d6 | (1) | 11.824 | 99 | 13127 | 0.912 |
| 38) Nitrobenzene-d5 | (2) | 14.580 | 82 | 10926 | 0.973 |
| 77) 2-Fluorobiphenyl | (3) | 20.061 | 172 | 20017 | 1.147 |
| 117) 2,4,6-Tribromophenol | (3) | 24.619 | 330 | 2907 | 0.626 |
| 154) Terphenyl-d14 | (5) | 30.764 | 244 | 21604 | 1.088 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar20.b/gc289.d  Instrument ID: HP06777.i
Injection date and time: 20-MAR-2004 18:54  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar20.b/m8270.m  Sublist used: all1
Calibration date and time: 21-MAR-2004 14:17
Date, time and analyst ID of latest file update: 21-Mar-2004 15:13 jbs01304

Sample Name: SSTD001  Lab Sample ID: 8270MDL0494

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3943
Retention Time (minutes): 46.315
Quant Ion : 276
Area (flag) : 28264 M
Concentration (ng/ul) : 0.9742
Integration start scan : 3925  Integration stop scan: 3955
Y at integration start : 0  Y at integration end: 0

Reason for manual integration (circle one): missed peak improper integration

Analyst responsible for change: [signature]

GC/MS audit/management approval: [signature] 3/23/04

Manual Integration Report for data file /chem/HP06777.i/04mar20.b/gc289.d, generated on 03/21/2004 at 15:15

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06780 Calibration Date: 03/29/04 Time: 08:22

Lab File ID: dc386.d Init. Calib. Date(s): 03/19/04 03/19/04

Init. Calib. Times(s): 09:20 14:15

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.724 | 0.741 | 51.150 | 50.0 | 2 |
| | N-Nitrosodimethylamine | 1.102 | 1.174 | 53.290 | 50.0 | 7 |
| | Pyridine | 1.856 | 1.882 | 50.710 | 50.0 | 1 |
| | 2-Picoline | 1.857 | 1.910 | 51.430 | 50.0 | 3 |
| | Aniline | 2.638 | 2.668 | 50.570 | 50.0 | 1 |
| * | Phenol | 2.208 | 2.134 | 48.330 | 50.0 | -3* |
| | bis(2-Chloroethyl)ether | 1.705 | 1.726 | 50.620 | 50.0 | 1 |
| | 2-Chlorophenol | 1.533 | 1.482 | 48.330 | 50.0 | -3 |
| | 1,3-Dichlorobenzene | 1.578 | 1.548 | 49.060 | 50.0 | -2 |
| * | 1,4-Dichlorobenzene | 1.587 | 1.564 | 49.290 | 50.0 | -1* |
| | Benzyl alcohol | 1.180 | 1.216 | 51.540 | 50.0 | 3 |
| | 1,2-Dichlorobenzene | 1.539 | 1.488 | 48.360 | 50.0 | -3 |
| | 2-Methylphenol | 1.672 | 1.660 | 49.650 | 50.0 | -1 |
| | 2,2'-oxybis(1-Chloropropane) | 1.829 | 1.873 | 51.180 | 50.0 | 2 |
| | bis(2-Chloroisopropyl)ether | 1.829 | 1.873 | 51.180 | 50.0 | 2 |
| | Acetophenone | 2.161 | 2.027 | 46.890 | 50.0 | -6 |
| # | N-Nitroso-di-n-propylamine | 0.984 | 0.972 | 49.400 | 50.0 | -1# |
| | 4-Methylphenol | 1.634 | 1.520 | 46.510 | 50.0 | -7 |
| | o-Toluidine | 2.603 | 2.580 | 49.560 | 50.0 | -1 |
| | Hexachloroethane | 0.789 | 0.778 | 49.310 | 50.0 | -1 |
| | Nitrobenzene | 0.418 | 0.418 | 50.030 | 50.0 | 0 |
| | Isophorone | 0.871 | 0.860 | 49.380 | 50.0 | -1 |
| * | 2-Nitrophenol | 0.254 | 0.265 | 52.200 | 50.0 | 4* |
| | 2,4-Dimethylphenol | 0.437 | 0.446 | 51.070 | 50.0 | 2 |
| | bis(2-Chloroethoxy)methane | 0.533 | 0.540 | 50.650 | 50.0 | 1 |
| | Benzoic acid | 0.179 | 0.179 | 50.020 | 50.0 | 0 |
| * | 2,4-Dichlorophenol | 0.305 | 0.313 | 51.330 | 50.0 | 3* |
| | 1,2,4-Trichlorobenzene | 0.263 | 0.248 | 47.140 | 50.0 | -6 |
| | Naphthalene | 1.040 | 0.997 | 47.930 | 50.0 | -4 |
| | 4-Chloroaniline | 0.487 | 0.479 | 49.180 | 50.0 | -2 |
| * | Hexachlorobutadiene | 0.113 | 0.109 | 48.160 | 50.0 | -4* |
| | Caprolactam | 0.148 | 0.131 | 44.260 | 50.0 | -11 |
| * | 4-Chloro-3-methylphenol | 0.356 | 0.357 | 50.140 | 50.0 | 0* |
| | 2-Methylnaphthalene | 0.658 | 0.624 | 47.430 | 50.0 | -5 |
| | 1-Methylnaphthalene | 0.627 | 0.616 | 49.110 | 50.0 | -2 |
| # | Hexachlorocyclopentadiene | 0.136 | 0.149 | 46.230 | 50.0 | -8# |

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3.29.04

FORM VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06780 Calibration Date: 03/29/04 Time: 08:22

Lab File ID: dc386.d Init. Calib. Date(s): 03/19/04 03/19/04

Init. Calib. Times(s): 09:20 14:15

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| * | 2,4,6-Trichlorophenol | 0.345 | 0.351 | 50.750 | 50.0 | 1* |
| | 2,4,5-Trichlorophenol | 0.358 | 0.364 | 50.770 | 50.0 | 2 |
| | Biphenyl | 1.630 | 1.576 | 48.370 | 50.0 | -3 |
| | Diphenyl | 1.630 | 1.576 | 48.370 | 50.0 | -3 |
| | 1,1'-Biphenyl | 1.630 | 1.576 | 48.370 | 50.0 | -3 |
| | 2-Chloronaphthalene | 1.297 | 1.284 | 49.520 | 50.0 | -1 |
| | Diphenyl ether | 0.780 | 0.774 | 49.620 | 50.0 | -1 |
| | 2-Nitroaniline | 0.580 | 0.611 | 52.630 | 50.0 | 5 |
| | Dimethylphthalate | 1.426 | 1.446 | 50.720 | 50.0 | 1 |
| | 2,6-Dinitrotoluene | 0.387 | 0.400 | 51.700 | 50.0 | 3 |
| | Acenaphthylene | 1.909 | 1.884 | 49.340 | 50.0 | -1 |
| | 3-Nitroaniline | 0.487 | 0.503 | 51.680 | 50.0 | 3 |
| * | Acenaphthene | 1.201 | 1.191 | 49.620 | 50.0 | -1* |
| # | 2,4-Dinitrophenol | 0.145 | 0.172 | 53.570 | 50.0 | 7# |
| # | 4-Nitrophenol | 0.155 | 0.164 | 52.850 | 50.0 | 6# |
| | Dibenzofuran | 1.601 | 1.571 | 49.050 | 50.0 | -2 |
| | 2,4-Dinitrotoluene | 0.448 | 0.462 | 51.580 | 50.0 | 3 |
| | 1-Naphthylamine | 1.284 | 1.316 | 51.240 | 50.0 | 2 |
| | 2,3,4,6-Tetrachlorophenol | 0.236 | 0.240 | 50.970 | 50.0 | 2 |
| | 2-Naphthylamine | 1.373 | 1.447 | 52.720 | 50.0 | 5 |
| | Diethylphthalate | 1.421 | 1.329 | 46.740 | 50.0 | -7 |
| | Fluorene | 1.200 | 1.156 | 48.170 | 50.0 | -4 |
| | 4-Chlorophenyl-phenylether | 0.472 | 0.438 | 46.420 | 50.0 | -7 |
| | 4-Nitroaniline | 0.458 | 0.482 | 52.570 | 50.0 | 5 |
| | 4,6-Dinitro-2-methylphenol | 0.163 | 0.174 | 53.370 | 50.0 | 7 |
| * | N-Nitrosodiphenylamine (1) | 0.709 | 0.730 | 51.440 | 50.0 | 3* |
| | 1,2-Diphenylhydrazine | 1.344 | 1.370 | 50.970 | 50.0 | 2 |
| | 4-Bromophenyl-phenylether | 0.192 | 0.193 | 50.170 | 50.0 | 0 |
| | Hexachlorobenzene | 0.215 | 0.223 | 51.780 | 50.0 | 4 |
| * | Pentachlorophenol | 0.094 | 0.098 | 52.040 | 50.0 | 4* |
| | Phenanthrene | 1.136 | 1.110 | 48.870 | 50.0 | -2 |
| | Anthracene | 1.172 | 1.134 | 48.350 | 50.0 | -3 |
| | Carbazole | 1.254 | 1.224 | 48.800 | 50.0 | -2 |
| | Di-n-butylphthalate | 1.943 | 1.958 | 50.400 | 50.0 | 1 |
| * | Fluoranthene | 1.053 | 1.017 | 48.280 | 50.0 | -3* |
| | Benzidine | 0.754 | 0.826 | 164.240 | 150.0 | 9 |

9288

(1) Cannot be Separated from Diphenylamine

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06780 Calibration Date: 03/29/04 Time: 08:22

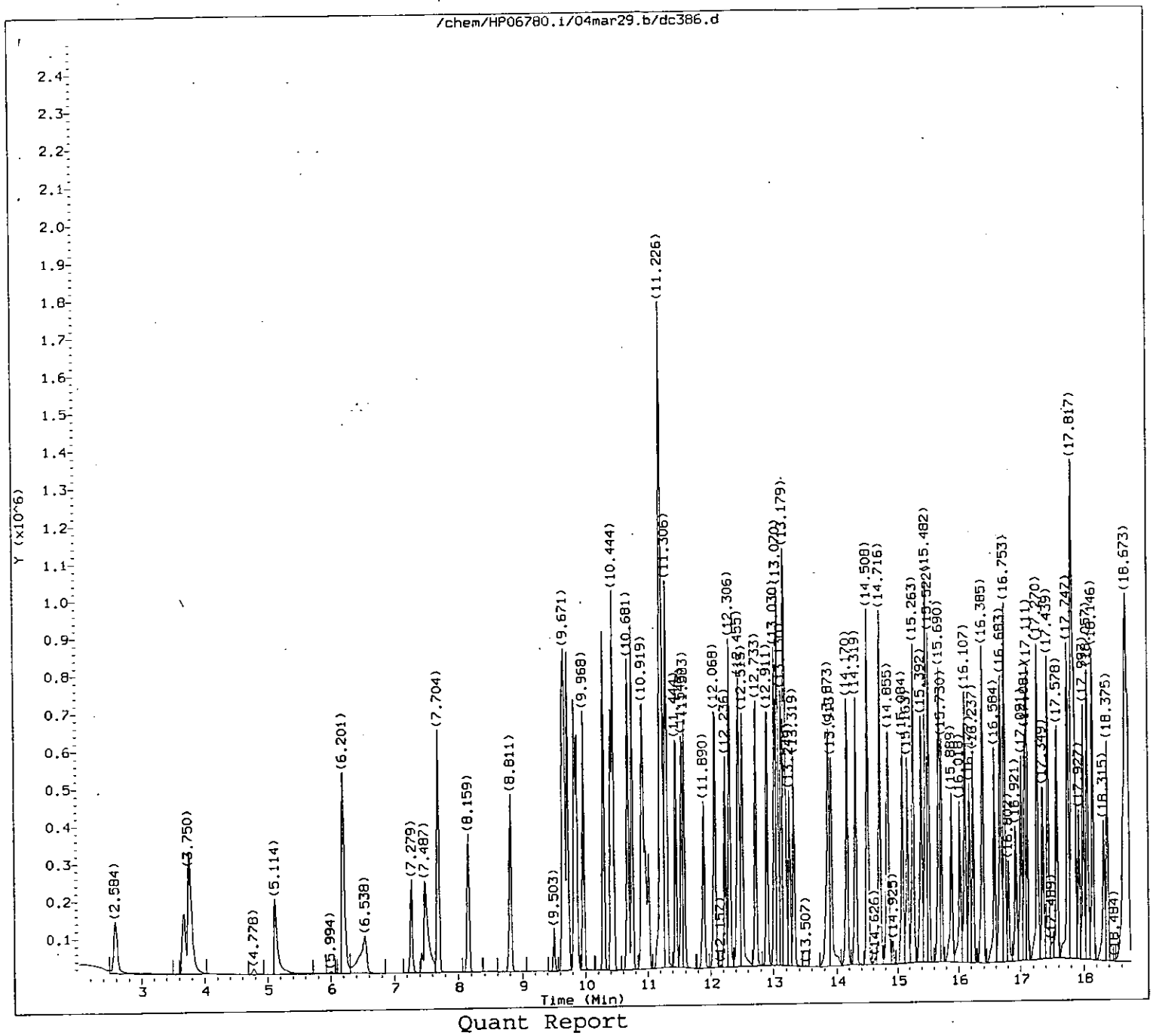
Lab File ID: dc386.d Init. Calib. Date(s): 03/19/04 03/19/04

Init. Calib. Times(s): 09:20 14:15

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | Pyrene | 1.601 | 1.667 | 52.080 | 50.0 | 4 |
| | Butylbenzylphthalate | 1.175 | 1.315 | 55.930 | 50.0 | 12 |
| | 3,3'-Dichlorobenzidine | 0.445 | 0.456 | 51.230 | 50.0 | 2 |
| | 4,4'-Methylenebis(2-Chloroanil | 0.216 | 0.234 | 54.010 | 50.0 | 8 |
| | Benzo(a)anthracene | 1.305 | 1.246 | 47.730 | 50.0 | -5 |
| | Chrysene | 1.250 | 1.234 | 49.390 | 50.0 | -1 |
| | bis(2-Ethylhexyl)phthalate | 1.544 | 1.668 | 54.020 | 50.0 | 8 |
| * | Di-n-octylphthalate | 3.124 | 3.206 | 51.310 | 50.0 | 3* |
| | 7,12-Dimethylbenz[a]anthracene | 0.555 | 0.523 | 47.070 | 50.0 | -6 |
| | Benzo(b)fluoranthene | 1.228 | 1.190 | 48.450 | 50.0 | -3 |
| | Benzo(k)fluoranthene | 1.200 | 1.109 | 46.210 | 50.0 | -8 |
| * | Benzo(a)pyrene | 1.117 | 1.072 | 47.980 | 50.0 | -4* |
| | Indeno(1,2,3-cd)pyrene | 1.108 | 1.107 | 49.950 | 50.0 | 0 |
| | Dibenz(a,h)anthracene | 1.006 | 0.986 | 49.010 | 50.0 | -2 |
| | Benzo(g,h,i)perylene | 1.102 | 1.076 | 48.790 | 50.0 | -2 |
| | 2-Fluorophenol | 1.882 | 1.896 | 50.350 | 50.0 | 1 |
| | Phenol-d5 | 2.147 | 2.125 | 49.500 | 50.0 | -1 |
| | Phenol-d6 | 2.147 | 2.125 | 49.500 | 50.0 | -1 |
| | Nitrobenzene-d5 | 0.445 | 0.445 | 49.990 | 50.0 | 0 |
| | 2-Fluorobiphenyl | 1.258 | 1.260 | 50.070 | 50.0 | 0 |
| | 2,4,6-Tribromophenol | 0.154 | 0.174 | 56.520 | 50.0 | 13 |
| | Terphenyl-d14 | 0.863 | 0.884 | 51.240 | 50.0 | 2 |
| | | | | Average %Drift: | | 3 |

0281




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc386.d
Injection date and time: 29-MAR-2004 08:22

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

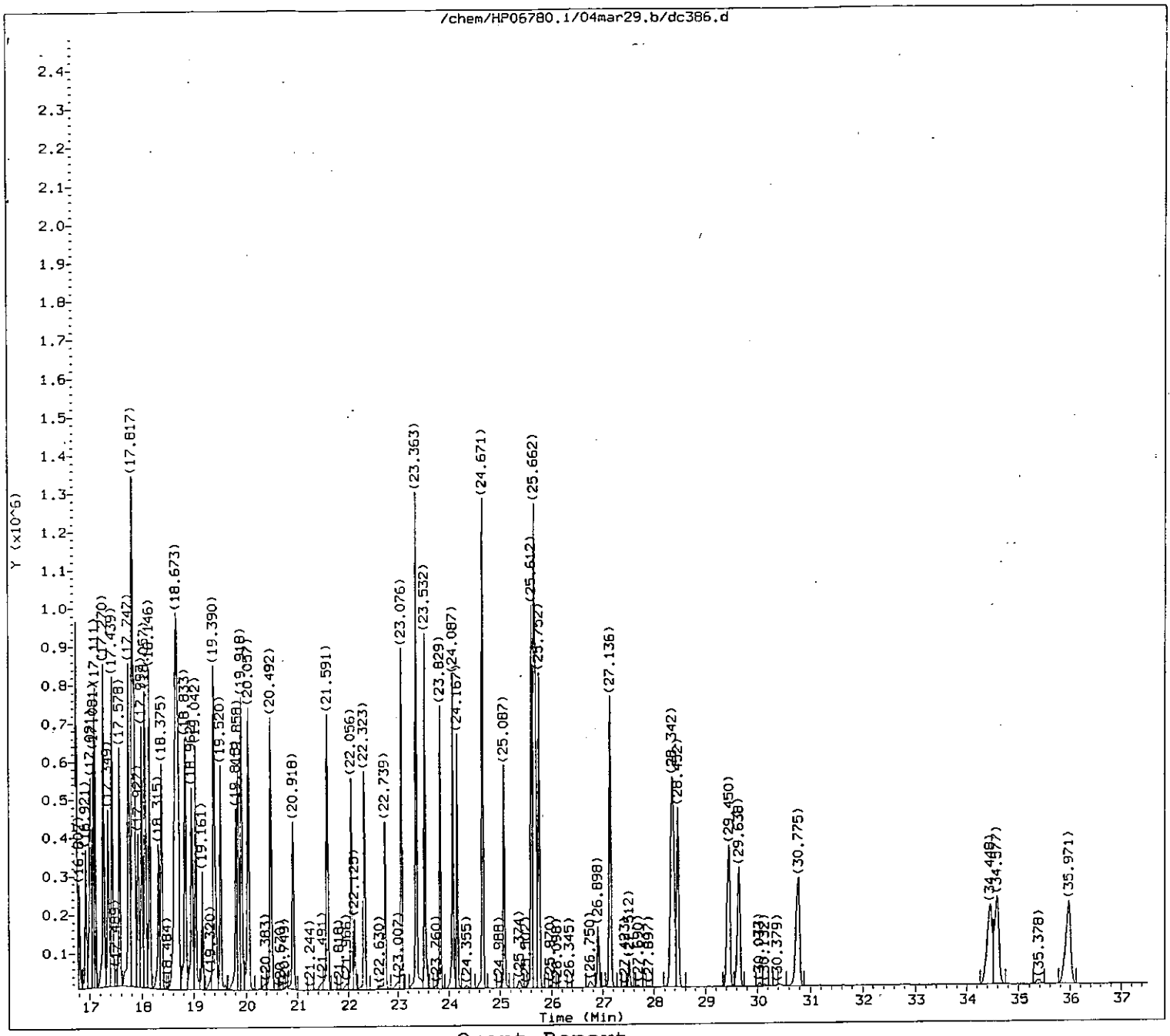
Sublist used: all1

Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050

Lab Sample ID: STD0854

1237
8282 3.29.04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc386.d
Injection date and time: 29-MAR-2004 08:22

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: all1

Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050

Lab Sample ID: STD0854

3283 - 1237
3.29.04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc386.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 08:22  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: all1
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0854

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 2.584 | 88 | 213506 | 51.155 |
| 2) | N-Nitrosodimethylamine | (1) | 3.671 | 74 | 338315 | 53.289 |
| 3) | Pyridine | (1) | 3.760 | 79 | 542246 | 50.711 |
| 5) | 2-Picoline | (1) | 6.201 | 93 | 550196 | 51.428 |
| 13) | Aniline | (1) | 9.731 | 93 | 768646 | 50.565 |
| 16) | Phenol | (1) | 9.671 | 94 | 614977 | 48.329 |
| 18) | bis(2-Chloroethyl)ether | (1) | 9.869 | 93 | 497424 | 50.616 |
| 19) | 2-Chlorophenol | (1) | 9.968 | 128 | 427016 | 48.335 |
| 20) | 1,3-Dichlorobenzene | (1) | 10.285 | 146 | 446056 | 49.055 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 10.404 | 152 | 230501 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 10.444 | 146 | 450737 | 49.288 |
| 24) | Benzyl alcohol | (1) | 10.681 | 108 | 350360 | 51.535 |
| 25) | 1,2-Dichlorobenzene | (1) | 10.750 | 146 | 428796 | 48.355 |
| 26) | 2-Methylphenol | (1) | 10.919 | 108 | 478294 | 49.654 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 10.959 | 45 | 539524 | 51.179 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 10.959 | 45 | 539524 | 51.179 |
| 30) | Acetophenone | (1) | 11.236 | 105 | 583945 | 46.890 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 11.246 | 70 | 280012 | 49.405 |
| 33) | 4-Methylphenol | (1) | 11.226 | 108 | 437994 | 46.514 |
| 34) | o-Toluidine | (1) | 11.306 | 106 | 743259 | 49.557 |
| 37) | Hexachloroethane | (1) | 11.444 | 117 | 224159 | 49.310 |
| 39) | Nitrobenzene | (2) | 11.583 | 77 | 423866 | 50.033 |
| 41) | Isophorone | (2) | 12.068 | 82 | 871943 | 49.383 |
| 42) | 2-Nitrophenol | (2) | 12.236 | 139 | 268454 | 52.199 |
| 44) | 2,4-Dimethylphenol | (2) | 12.306 | 107 | 452209 | 51.074 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 12.515 | 93 | 547798 | 50.645 |
| 47) | Benzoic acid | (2) | 12.485 | 105 | 181609 | 50.024 |
| 49) | 2,4-Dichlorophenol | (2) | 12.733 | 162 | 317746 | 51.331 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 12.911 | 180 | 251438 | 47.142 |
| 52) | Naphthalene-d8 | (2) | 13.030 | 136 | 811296 | 40.000 |
| 53) | Naphthalene | (2) | 13.080 | 128 | 1010899 | 47.932 |
| 55) | 4-Chloroaniline | (2) | 13.179 | 127 | 485820 | 49.183 |
| 59) | Hexachlorobutadiene | (2) | 13.319 | 225 | 110345 | 48.160 |
| 62) | Caprolactam | (2) | 13.913 | 113 | 132926 | 44.258 |
| 67) | 4-Chloro-3-methylphenol | (2) | 14.170 | 107 | 362234 | 50.138 |
| 69) | 2-Methylnaphthalene | (2) | 14.508 | 142 | 632569 | 47.428 |
| 70) | 1-Methylnaphthalene | (2) | 14.716 | 142 | 624342 | 49.106 |
| 71) | Hexachlorocyclopentadiene | (3) | 14.825 | 237 | 69048 | 46.227 |
| 74) | 2,4,6-Trichlorophenol | (3) | 15.084 | 196 | 162603 | 50.746 |
| 76) | 2,4,5-Trichlorophenol | (3) | 15.163 | 196 | 168645 | 50.765 |
| 80) | Biphenyl | (3) | 15.482 | 154 | 731070 | 48.365 |
| 81) | Diphenyl | (3) | 15.482 | 154 | 731070 | 48.365 |
| 82) | 1,1'-Biphenyl | (3) | 15.482 | 154 | 731070 | 48.365 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc386.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 08:22  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: all1
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0854

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 15.522 | 162 | 595685 | 49.518 |
| 86) | Diphenyl ether | (3) | 15.690 | 170 | 358868 | 49.616 |
| 87) | 2-Nitroaniline | (3) | 15.730 | 138 | 283166 | 52.629 |
| 90) | Dimethylphthalate | (3) | 16.107 | 163 | 670809 | 50.716 |
| 92) | 2,6-Dinitrotoluene | (3) | 16.237 | 165 | 185380 | 51.701 |
| 93) | Acenaphthylene | (3) | 16.385 | 152 | 873807 | 49.338 |
| 95) | 3-Nitroaniline | (3) | 16.584 | 138 | 233407 | 51.677 |
| 96) | Acenaphthene-d10 | (3) | 16.683 | 164 | 371050 | 40.000 |
| 97) | Acenaphthene | (3) | 16.753 | 153 | 552552 | 49.618 |
| 98) | 2,4-Dinitrophenol | (3) | 16.802 | 184 | 79981 | 53.572 |
| 101) | 4-Nitrophenol | (3) | 16.921 | 109 | 76181 | 52.845 |
| 102) | Dibenzofuran | (3) | 17.111 | 168 | 728522 | 49.048 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.081 | 165 | 214218 | 51.580 |
| 104) | 1-Naphthylamine | (3) | 17.270 | 143 | 610381 | 51.243 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 17.359 | 232 | 111513 | 50.975 |
| 106) | 2-Naphthylamine | (3) | 17.439 | 143 | 671325 | 52.719 |
| 107) | Diethylphthalate | (3) | 17.578 | 149 | 616201 | 46.745 |
| 109) | Fluorene | (3) | 17.827 | 166 | 536111 | 48.169 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 17.817 | 204 | 203216 | 46.420 |
| 112) | 4-Nitroaniline | (3) | 17.867 | 138 | 223557 | 52.570 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 17.927 | 198 | 100519 | 53.370 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.057 | 169 | 420652 | 51.442 |
| 116) | 1,2-Diphenylhydrazine | (4) | 18.146 | 77 | 789997 | 50.972 |
| 123) | 4-Bromophenyl-phenylether | (4) | 18.843 | 248 | 111209 | 50.166 |
| 125) | Hexachlorobenzene | (4) | 18.962 | 284 | 128670 | 51.776 |
| 129) | Pentachlorophenol | (4) | 19.390 | 266 | 56696 | 52.041 |
| 133) | Phenanthrene-d10 | (4) | 19.858 | 188 | 461206 | 40.000 |
| 135) | Phenanthrene | (4) | 19.918 | 178 | 640093 | 48.873 |
| 136) | Anthracene | (4) | 20.057 | 178 | 653480 | 48.353 |
| 138) | Carbazole | (4) | 20.492 | 167 | 705402 | 48.798 |
| 140) | Di-n-butylphthalate | (4) | 21.591 | 149 | 1128981 | 50.402 |
| 145) | Fluoranthene | (4) | 23.076 | 202 | 586203 | 48.277 |
| 150) | Benzidine | (5) | 23.363 | 184 | 875457 | 164.237 |
| 152) | Pyrene | (5) | 23.532 | 202 | 589030 | 52.081 |
| 159) | Butylbenzylphthalate | (5) | 24.671 | 149 | 464428 | 55.934 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 25.612 | 252 | 160926 | 51.229 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 25.612 | 231 | 82533 | 54.015 |
| 164) | Benzo(a)anthracene | (5) | 25.682 | 228 | 440164 | 47.734 |
| 165) | Chrysene-d12 | (5) | 25.702 | 240 | 282607 | 40.000 |
| 166) | Chrysene | (5) | 25.762 | 228 | 436033 | 49.388 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 25.662 | 149 | 589220 | 54.016 |
| 168) | Di-n-octylphthalate | (6) | 27.136 | 149 | 1168390 | 51.306 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 28.332 | 256 | 190472 | 47.075 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc386.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 08:22  Analyst ID: cam01237

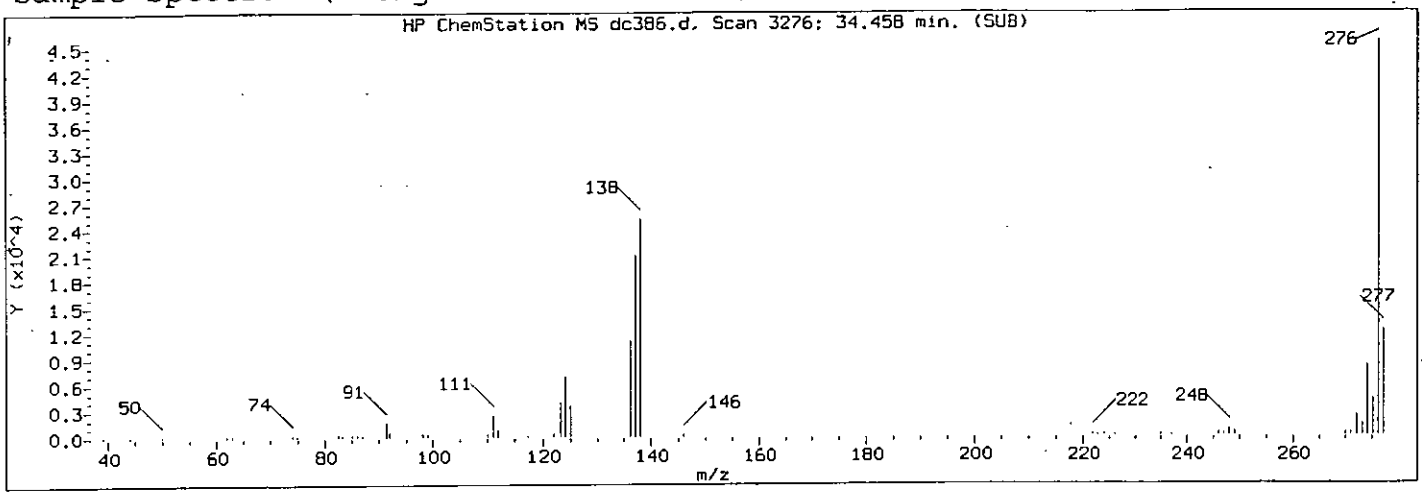
Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: all1
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0854

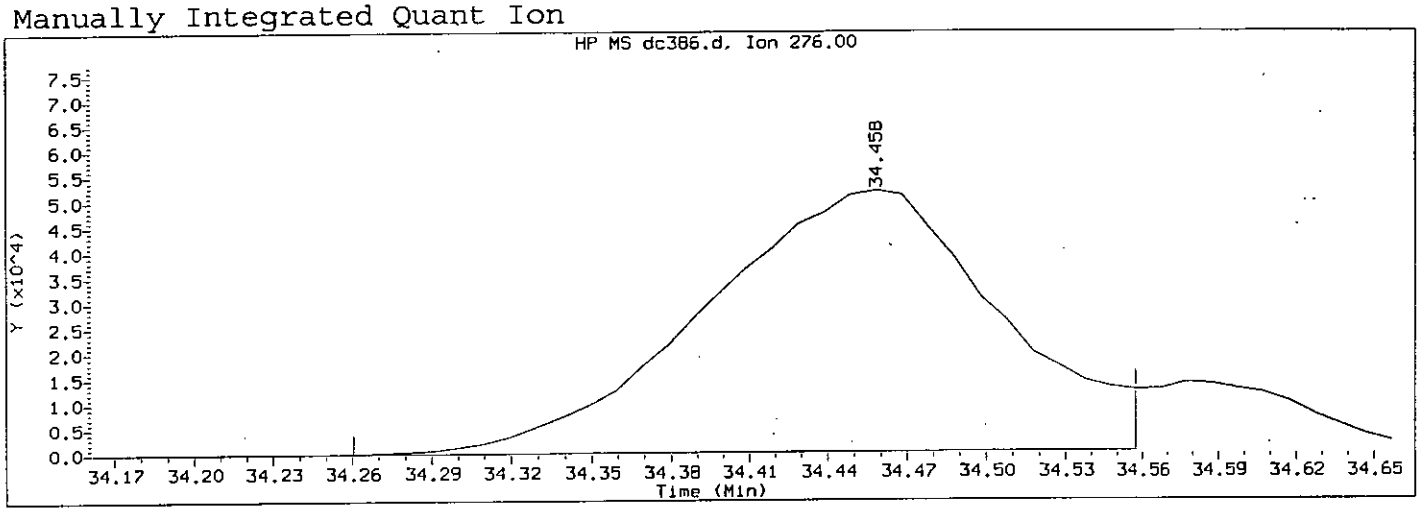
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 28.372 | 252 | 433792 | 48.450 |
| 171) | Benzo(k)fluoranthene | (6) | 28.462 | 252 | 404117 | 46.212 |
| 172) | Benzo(a)pyrene | (6) | 29.450 | 252 | 390709 | 47.982 |
| 173) | Perylene-d12 | (6) | 29.638 | 264 | 291584 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 34.458 | 276 | 403457M | 49.950 |
| 176) | Dibenz(a,h)anthracene | (6) | 34.587 | 278 | 359492 | 49.009 |
| 177) | Benzo(g,h,i)perylene | (6) | 35.971 | 276 | 392102 | 48.793 |
| 9) | 2-Fluorophenol | (1) | 7.704 | 112 | 546213 | 50.352 |
| 14) | Phenol-d5 | (1) | 9.651 | 99 | 612349 | 49.497 |
| 15) | Phenol-d6 | (1) | 9.651 | 99 | 612349 | 49.497 |
| 38) | Nitrobenzene-d5 | (2) | 11.543 | 82 | 451037 | 49.994 |
| 77) | 2-Fluorobiphenyl | (3) | 15.263 | 172 | 584362 | 50.066 |
| 117) | 2,4,6-Tribromophenol | (3) | 18.325 | 330 | 80878 | 56.524 |
| 154) | Terphenyl-d14 | (5) | 23.829 | 244 | 312453 | 51.238 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar29.b/dc386.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 08:22  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: all1
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 09:08 cam01237

Sample Name: SSTD050  Lab Sample ID: STD0854

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3276
Retention Time (minutes): 34.458
Quant Ion : 276
Area (flag) : 403457 M
Concentration (ng/ul) : 49.9499
Integration start scan : 3255 Integration stop scan: 3285
Y at integration start : 0 Y at integration end: 199

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: 1237 3-29-04

GC/MS audit/management approval: mgl758 3/29/04 8287

Manual Integration Report for data file /chem/HP06780.i/04mar29.b/dc386.d, generated on 03/29/2004 at 09:08

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 07:10

Lab File ID: gc381.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF80 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.708 | 0.709 | 80.090 | 80.0 | 0 |
| | N-Nitrosodimethylamine | 1.060 | 1.105 | 83.350 | 80.0 | 4 |
| | Pyridine | 1.741 | 1.817 | 83.480 | 80.0 | 4 |
| | 2-Picoline | 1.635 | 1.710 | 83.650 | 80.0 | 5 |
| | Aniline | 2.310 | 2.339 | 80.990 | 80.0 | 1 |
| * | Phenol | 1.852 | 1.923 | 83.050 | 80.0 | 4* |
| | bis(2-Chloroethyl)ether | 1.511 | 1.553 | 82.210 | 80.0 | 3 |
| | 2-Chlorophenol | 1.569 | 1.621 | 82.670 | 80.0 | 3 |
| | 1,3-Dichlorobenzene | 1.586 | 1.605 | 80.950 | 80.0 | 1 |
| * | 1,4-Dichlorobenzene | 1.596 | 1.650 | 82.720 | 80.0 | 3* |
| | Benzyl alcohol | 0.918 | 1.021 | 88.940 | 80.0 | 11 |
| | 1,2-Dichlorobenzene | 1.525 | 1.568 | 82.210 | 80.0 | 3 |
| | 2-Methylphenol | 1.281 | 1.377 | 86.010 | 80.0 | 8 |
| | 2,2'-oxybis(1-Chloropropane) | 2.414 | 2.426 | 80.400 | 80.0 | 0 |
| | bis(2-Chloroisopropyl)ether | 2.414 | 2.426 | 80.400 | 80.0 | 0 |
| | Acetophenone | 1.961 | 2.020 | 82.420 | 80.0 | 3 |
| # | N-Nitroso-di-n-propylamine | 1.014 | 1.009 | 79.580 | 80.0 | -1# |
| | 4-Methylphenol | 1.353 | 1.418 | 83.860 | 80.0 | 5 |
| | o-Toluidine | 2.192 | 2.214 | 80.800 | 80.0 | 1 |
| | Hexachloroethane | 0.739 | 0.788 | 85.240 | 80.0 | 7 |
| | Nitrobenzene | 0.389 | 0.391 | 80.350 | 80.0 | 0 |
| | Isophorone | 0.756 | 0.753 | 79.700 | 80.0 | 0 |
| * | 2-Nitrophenol | 0.228 | 0.232 | 81.280 | 80.0 | 2* |
| | 2,4-Dimethylphenol | 0.373 | 0.382 | 81.760 | 80.0 | 2 |
| | bis(2-Chloroethoxy)methane | 0.454 | 0.443 | 78.010 | 80.0 | -2 |
| | Benzoic acid | 0.235 | 0.218 | 74.080 | 80.0 | -7 |
| * | 2,4-Dichlorophenol | 0.305 | 0.306 | 80.400 | 80.0 | 0* |
| | 1,2,4-Trichlorobenzene | 0.317 | 0.312 | 78.950 | 80.0 | -1 |
| | Naphthalene | 1.059 | 1.053 | 79.570 | 80.0 | -1 |
| | 4-Chloroaniline | 0.491 | 0.485 | 79.030 | 80.0 | -1 |
| * | Hexachlorobutadiene | 0.185 | 0.177 | 76.650 | 80.0 | -4* |
| | Caprolactam | 0.121 | 0.132 | 87.180 | 80.0 | 9 |
| * | 4-Chloro-3-methylphenol | 0.303 | 0.319 | 84.190 | 80.0 | 5* |
| | 2-Methylnaphthalene | 0.672 | 0.659 | 78.450 | 80.0 | -2 |
| | 1-Methylnaphthalene | 0.635 | 0.633 | 79.660 | 80.0 | 0 |
| # | Hexachlorocyclopentadiene | 0.264 | 0.290 | 72.990 | 80.0 | -9# |

BGow 3-26-04

0288

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 07:10

Lab File ID: gc381.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF80 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| * 2,4,6-Trichlorophenol | 0.426 | 0.437 | 81.980 | 80.0 | 2* |
| 2,4,5-Trichlorophenol | 0.461 | 0.474 | 82.430 | 80.0 | 3 |
| Biphenyl | 1.611 | 1.611 | 79.980 | 80.0 | 0 |
| Diphenyl | 1.611 | 1.611 | 79.980 | 80.0 | 0 |
| 1,1'-Biphenyl | 1.611 | 1.611 | 79.980 | 80.0 | 0 |
| 2-Chloronaphthalene | 1.273 | 1.262 | 79.330 | 80.0 | -1 |
| Diphenyl ether | 0.808 | 0.808 | 79.950 | 80.0 | 0 |
| 2-Nitroaniline | 0.550 | 0.577 | 83.930 | 80.0 | 5 |
| Dimethylphthalate | 1.490 | 1.517 | 81.420 | 80.0 | 2 |
| 2,6-Dinitrotoluene | 0.369 | 0.382 | 82.820 | 80.0 | 4 |
| Acenaphthylene | 1.824 | 1.836 | 80.520 | 80.0 | 1 |
| 3-Nitroaniline | 0.464 | 0.497 | 85.670 | 80.0 | 7 |
| * Acenaphthene | 1.181 | 1.162 | 78.700 | 80.0 | -2* |
| # 2,4-Dinitrophenol | 0.215 | 0.232 | 72.410 | 80.0 | -9# |
| # 4-Nitrophenol | 0.228 | 0.247 | 74.020 | 80.0 | -7# |
| Dibenzofuran | 1.732 | 1.743 | 80.540 | 80.0 | 1 |
| 2,4-Dinitrotoluene | 0.461 | 0.482 | 83.530 | 80.0 | 4 |
| 1-Naphthylamine | 1.229 | 1.305 | 84.990 | 80.0 | 6 |
| 2,3,4,6-Tetrachlorophenol | 0.368 | 0.374 | 81.330 | 80.0 | 2 |
| 2-Naphthylamine | 1.360 | 1.437 | 84.500 | 80.0 | 6 |
| Diethylphthalate | 1.655 | 1.728 | 83.530 | 80.0 | 4 |
| Fluorene | 1.371 | 1.329 | 77.550 | 80.0 | -3 |
| 4-Chlorophenyl-phenylether | 0.627 | 0.599 | 76.400 | 80.0 | -4 |
| 4-Nitroaniline | 0.493 | 0.508 | 82.490 | 80.0 | 3 |
| 4,6-Dinitro-2-methylphenol | 0.170 | 0.187 | 88.310 | 80.0 | 10 |
| * N-Nitrosodiphenylamine (1) | 0.582 | 0.582 | 80.040 | 80.0 | 0* |
| 1,2-Diphenylhydrazine | 1.003 | 1.019 | 81.280 | 80.0 | 2 |
| 4-Bromophenyl-phenylether | 0.258 | 0.260 | 80.720 | 80.0 | 1 |
| Hexachlorobenzene | 0.353 | 0.346 | 78.290 | 80.0 | -2 |
| * Pentachlorophenol | 0.184 | 0.186 | 69.210 | 80.0 | -13* |
| Phenanthrene | 1.123 | 1.132 | 80.700 | 80.0 | 1 |
| Anthracene | 1.163 | 1.188 | 81.740 | 80.0 | 2 |
| Carbazole | 1.192 | 1.237 | 83.020 | 80.0 | 4 |
| Di-n-butylphthalate | 1.809 | 1.961 | 86.710 | 80.0 | 8 |
| * Fluoranthene | 1.287 | 1.347 | 83.730 | 80.0 | 5* |
| Benzidine | 0.606 | 0.665 | 263.330 | 240.0 | 10 |

(1) Cannot be Separated from Diphenylamine

8289

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 07:10

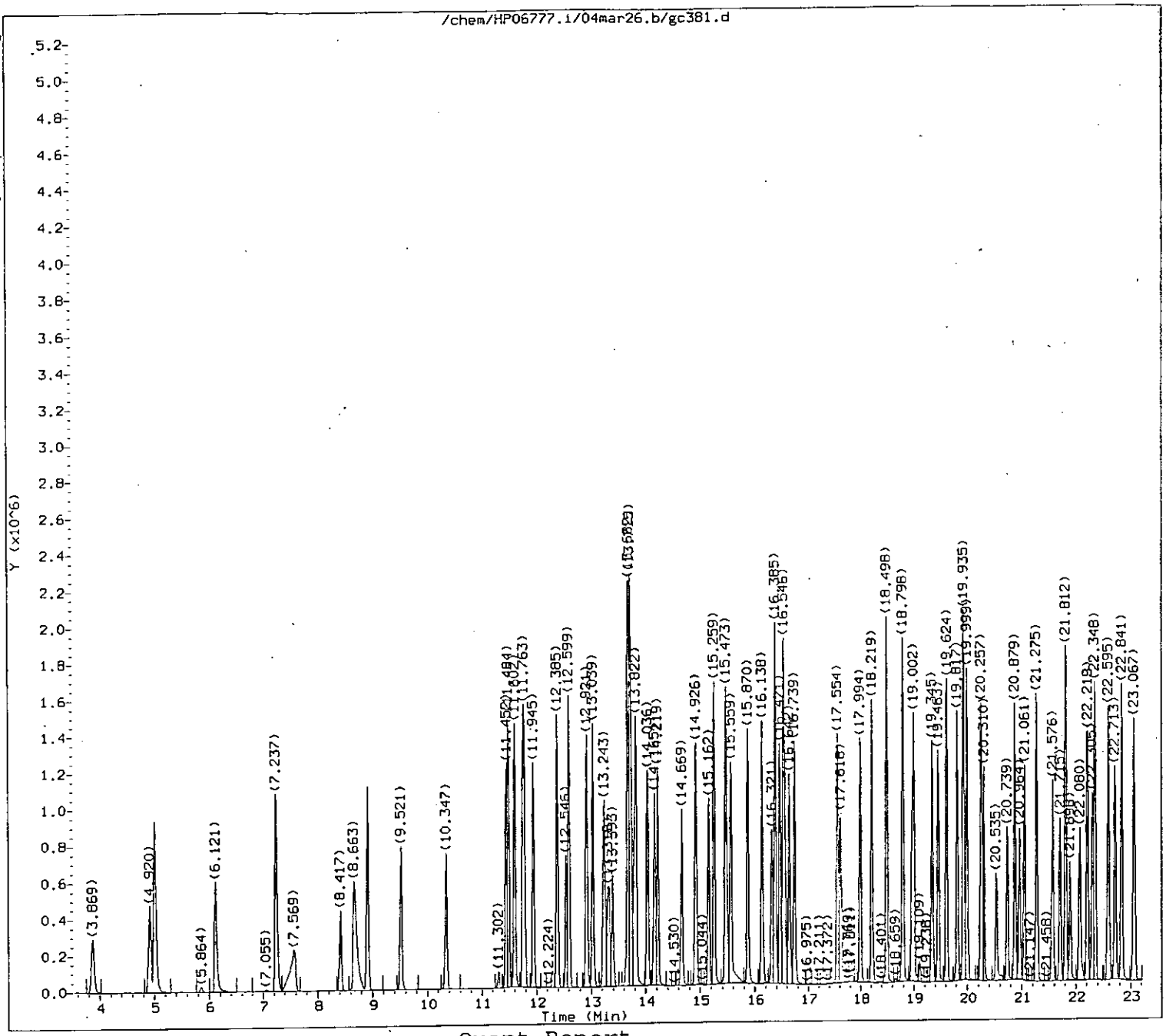
Lab File ID: gc381.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF80 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | Pyrene | 1.166 | 1.238 | 84.920 | 80.0 | 6 |
| | Butylbenzylphthalate | 0.756 | 0.824 | 87.230 | 80.0 | 9 |
| | 3,3'-Dichlorobenzidine | 0.502 | 0.534 | 85.080 | 80.0 | 6 |
| | 4,4'-Methylenebis(2-Chloroanil | 0.210 | 0.231 | 88.340 | 80.0 | 10 |
| | Benzo(a)anthracene | 1.084 | 1.110 | 81.900 | 80.0 | 2 |
| | Chrysene | 1.002 | 1.027 | 82.020 | 80.0 | 3 |
| | bis(2-Ethylhexyl)phthalate | 1.003 | 1.145 | 91.310 | 80.0 | 14 |
| * | Di-n-octylphthalate | 1.727 | 2.010 | 93.120 | 80.0 | 16* |
| | 7,12-Dimethylbenz[a]anthracene | 0.553 | 0.597 | 86.240 | 80.0 | 8 |
| | Benzo(b)fluoranthene | 1.216 | 1.260 | 82.900 | 80.0 | 4 |
| | Benzo(k)fluoranthene | 1.139 | 1.152 | 80.880 | 80.0 | 1 |
| * | Benzo(a)pyrene | 1.093 | 1.118 | 81.850 | 80.0 | 2* |
| | Indeno(1,2,3-cd)pyrene | 1.137 | 1.124 | 79.110 | 80.0 | -1 |
| | Dibenz(a,h)anthracene | 1.055 | 1.046 | 79.280 | 80.0 | -1 |
| | Benzo(g,h,i)perylene | 1.142 | 1.102 | 77.210 | 80.0 | -3 |
| | 2-Fluorophenol | 1.527 | 1.551 | 81.260 | 80.0 | 2 |
| | Phenol-d5 | 1.843 | 1.966 | 85.370 | 80.0 | 7 |
| | Phenol-d6 | 1.843 | 1.966 | 85.370 | 80.0 | 7 |
| | Nitrobenzene-d5 | 0.398 | 0.402 | 80.870 | 80.0 | 1 |
| | 2-Fluorobiphenyl | 1.346 | 1.333 | 79.250 | 80.0 | -1 |
| | 2,4,6-Tribromophenol | 0.358 | 0.373 | 83.260 | 80.0 | 4 |
| | Terphenyl-d14 | 0.789 | 0.849 | 86.160 | 80.0 | 8 |
| | | | | Average %Drift: | | 4 |

0290




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc381.d
Injection date and time: 26-MAR-2004 07:10

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

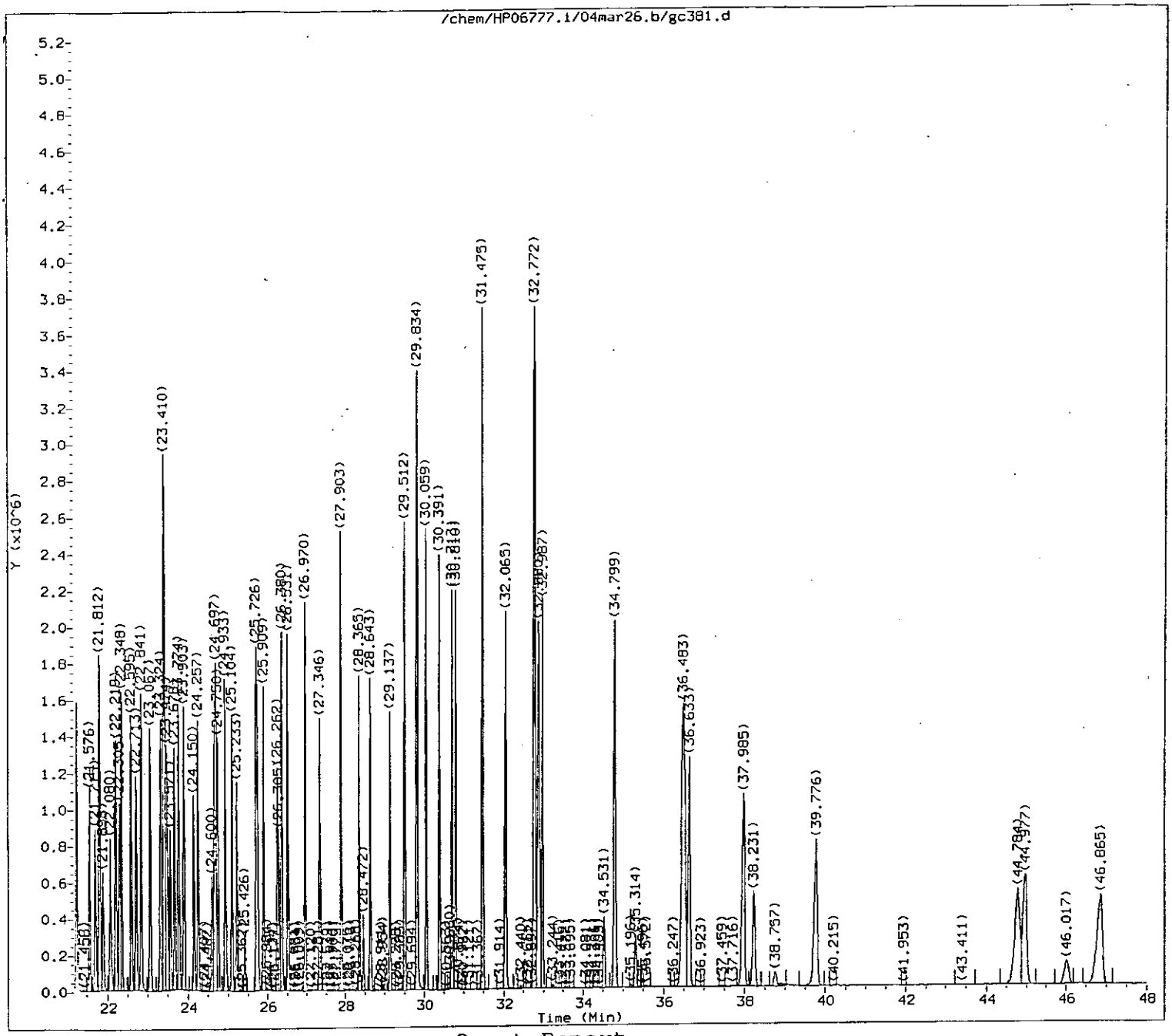
Sublist used: all1

Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080

Lab Sample ID: STD0854

BGR
3-26-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc381.d
Injection date and time: 26-MAR-2004 07:10
Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Sublist used: all1
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080
Lab Sample ID: STD0854

BGm
3.26.04

9292

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc381.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 07:10  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080  Lab Sample ID: STD0854

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 1) | 1,4-Dioxane | (1) | 3.869 | 88 | 369063 | 80.090 |
| 2) | N-Nitrosodimethylamine | (1) | 4.920 | 74 | 575111 | 83.352 |
| 3) | Pyridine | (1) | 5.006 | 79 | 946029 | 83.478 |
| 5) | 2-Picoline | (1) | 7.237 | 93 | 890138 | 83.647 |
| 13) | Aniline | (1) | 11.602 | 93 | 1217658 | 80.991 |
| 16) | Phenol | (1) | 11.484 | 94 | 1001218 | 83.055 |
| 18) | bis(2-Chloroethyl)ether | (1) | 11.773 | 93 | 808437 | 82.214 |
| 19) | 2-Chlorophenol | (1) | 11.945 | 128 | 844179 | 82.674 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.385 | 146 | 835667 | 80.955 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.546 | 152 | 260334 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 12.599 | 146 | 859072 | 82.725 |
| 24) | Benzyl alcohol | (1) | 12.921 | 108 | 531510 | 88.941 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.039 | 146 | 816221 | 82.212 |
| 26) | 2-Methylphenol | (1) | 13.243 | 108 | 717199 | 86.010 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.318 | 45 | 1262943 | 80.397 |
| 28) | bis(2-Chloroisopropyl)ether | (1) | 13.318 | 45 | 1262943 | 80.397 |
| 30) | Acetophenone | (1) | 13.715 | 105 | 1052009 | 82.417 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 13.725 | 70 | 525402 | 79.580 |
| 33) | 4-Methylphenol | (1) | 13.682 | 108 | 738450 | 83.857 |
| 34) | o-Toluidine | (1) | 13.822 | 106 | 1152727 | 80.797 |
| 37) | Hexachloroethane | (1) | 14.026 | 117 | 410260 | 85.236 |
| 39) | Nitrobenzene | (2) | 14.219 | 77 | 777087 | 80.354 |
| 41) | Isophorone | (2) | 14.926 | 82 | 1497258 | 79.697 |
| 42) | 2-Nitrophenol | (2) | 15.162 | 139 | 461031 | 81.278 |
| 44) | 2,4-Dimethylphenol | (2) | 15.259 | 107 | 758890 | 81.765 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.559 | 93 | 879682 | 78.012 |
| 47) | Benzoic acid | (2) | 15.538 | 105 | 433349 | 74.079 |
| 49) | 2,4-Dichlorophenol | (2) | 15.870 | 162 | 609112 | 80.397 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.138 | 180 | 620955 | 78.949 |
| 52) | Naphthalene-d8 | (2) | 16.321 | 136 | 993925 | 40.000 |
| 53) | Naphthalene | (2) | 16.385 | 128 | 2094162 | 79.570 |
| 55) | 4-Chloroaniline | (2) | 16.535 | 127 | 964201 | 79.034 |
| 59) | Hexachlorobutadiene | (2) | 16.739 | 225 | 351593 | 76.647 |
| 62) | Caprolactam | (2) | 17.618 | 113 | 262235 | 87.184 |
| 67) | 4-Chloro-3-methylphenol | (2) | 17.994 | 107 | 634489 | 84.193 |
| 69) | 2-Methylnaphthalene | (2) | 18.498 | 142 | 1309495 | 78.449 |
| 70) | 1-Methylnaphthalene | (2) | 18.798 | 142 | 1257468 | 79.656 |
| 71) | Hexachlorocyclopentadiene | (3) | 18.970 | 237 | 263146 | 72.989 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.345 | 196 | 396214 | 81.976 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.463 | 196 | 430419 | 82.428 |
| 80) | Biphenyl | (3) | 19.935 | 154 | 1461341 | 79.982 |
| 81) | Diphenyl | (3) | 19.935 | 154 | 1461341 | 79.982 |
| 82) | 1,1'-Biphenyl | (3) | 19.935 | 154 | 1461341 | 79.982 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc381.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 07:10  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080  Lab Sample ID: STD0854

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 83) | 2-Chloronaphthalene | (3) | 19.999 | 162 | 1144729 | 79.331 |
| 86) | Diphenyl ether | (3) | 20.257 | 170 | 732527 | 79.953 |
| 87) | 2-Nitroaniline | (3) | 20.310 | 138 | 523778 | 83.935 |
| 90) | Dimethylphthalate | (3) | 20.879 | 163 | 1376048 | 81.424 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.061 | 165 | 346662 | 82.817 |
| 93) | Acenaphthylene | (3) | 21.275 | 152 | 1665652 | 80.516 |
| 95) | 3-Nitroaniline | (3) | 21.576 | 138 | 450765 | 85.671 |
| 96) | Acenaphthene-d10 | (3) | 21.715 | 164 | 453576 | 40.000 |
| 97) | Acenaphthene | (3) | 21.812 | 153 | 1054093 | 78.705 |
| 98) | 2,4-Dinitrophenol | (3) | 21.898 | 184 | 210223 | 72.414 |
| 101) | 4-Nitrophenol | (3) | 22.080 | 109 | 224373 | 74.017 |
| 102) | Dibenzofuran | (3) | 22.348 | 168 | 1581481 | 80.542 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.305 | 165 | 436827 | 83.528 |
| 104) | 1-Naphthylamine | (3) | 22.595 | 143 | 1184199 | 84.990 |
| 105) | 2,3,4,6-Tetrachlorophenol | (3) | 22.713 | 232 | 339586 | 81.333 |
| 106) | 2-Naphthylamine | (3) | 22.841 | 143 | 1303255 | 84.502 |
| 107) | Diethylphthalate | (3) | 23.067 | 149 | 1567460 | 83.528 |
| 109) | Fluorene | (3) | 23.420 | 166 | 1205986 | 77.550 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.410 | 204 | 543116 | 76.404 |
| 112) | 4-Nitroaniline | (3) | 23.495 | 138 | 460645 | 82.485 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.571 | 198 | 279367 | 88.312 |
| 115) | N-Nitrosodiphenylamine | (4) | 23.774 | 169 | 868260 | 80.035 |
| 116) | 1,2-Diphenylhydrazine | (4) | 23.903 | 77 | 1519771 | 81.280 |
| 123) | 4-Bromophenyl-phenylether | (4) | 24.933 | 248 | 388191 | 80.716 |
| 125) | Hexachlorobenzene | (4) | 25.104 | 284 | 515933 | 78.295 |
| 129) | Pentachlorophenol | (4) | 25.715 | 266 | 277647 | 69.208 |
| 133) | Phenanthrene-d10 | (4) | 26.305 | 188 | 745835 | 40.000 |
| 135) | Phenanthrene | (4) | 26.380 | 178 | 1689052 | 80.700 |
| 136) | Anthracene | (4) | 26.531 | 178 | 1772585 | 81.740 |
| 138) | Carbazole | (4) | 26.970 | 167 | 1845556 | 83.017 |
| 140) | Di-n-butylphthalate | (4) | 27.903 | 149 | 2924433 | 86.710 |
| 145) | Fluoranthene | (4) | 29.512 | 202 | 2009157 | 83.730 |
| 150) | Benzidine | (5) | 29.834 | 184 | 3223894 | 263.329 |
| 152) | Pyrene | (5) | 30.070 | 202 | 2001964 | 84.925 |
| 159) | Butylbenzylphthalate | (5) | 31.485 | 149 | 1332107 | 87.225 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 32.772 | 252 | 863354 | 85.079 |
| 163) | 4,4'-Methylenebis(2-Chloroanil | (5) | 32.772 | 231 | 374121 | 88.344 |
| 164) | Benzo(a)anthracene | (5) | 32.880 | 228 | 1794965 | 81.902 |
| 165) | Chrysene-d12 | (5) | 32.912 | 240 | 808349 | 40.000 |
| 166) | Chrysene | (5) | 32.987 | 228 | 1660700 | 82.018 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 32.794 | 149 | 1851524 | 91.312 |
| 168) | Di-n-octylphthalate | (6) | 34.799 | 149 | 3368039 | 93.118 |
| 169) | 7,12-Dimethylbenz[a]anthracene | (6) | 36.472 | 256 | 999917 | 86.238 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc381.d
Injection date and time: 26-MAR-2004 07:10
Instrument ID: HP06777.i
Analyst ID: bkg00522

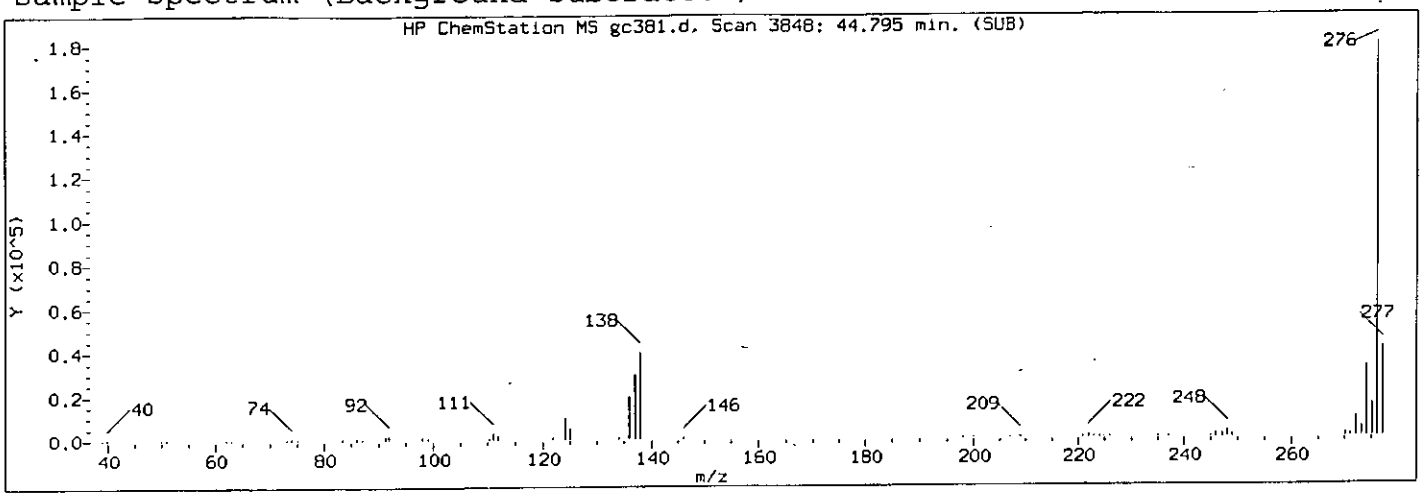
Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08
Sublist used: all1
Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080
Lab Sample ID: STD0854

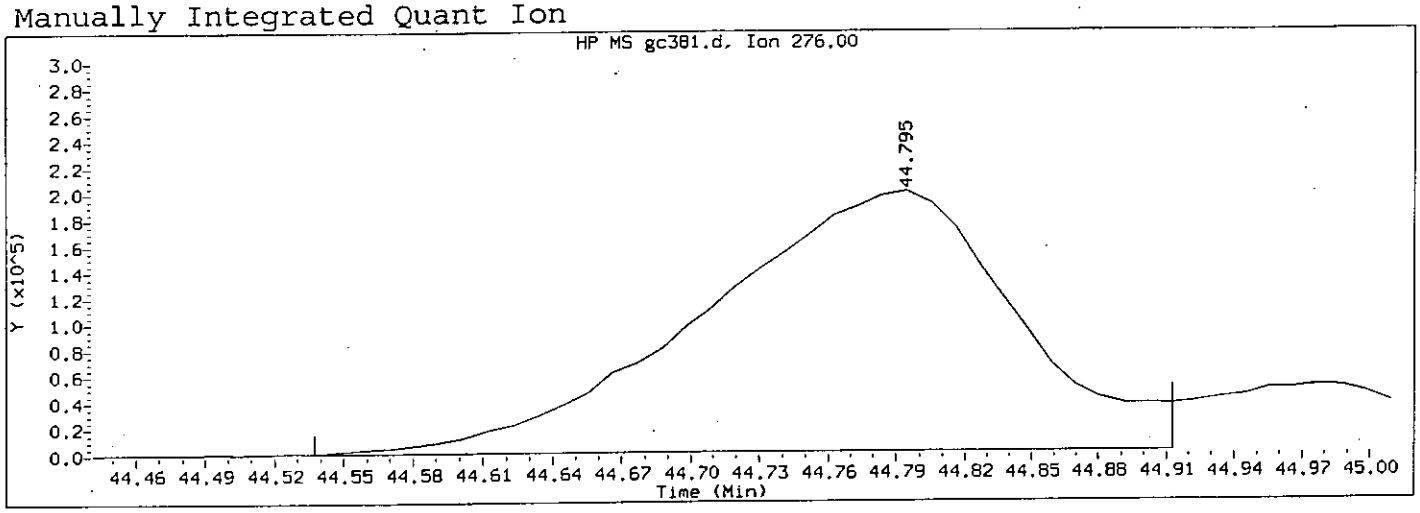
| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 170) | Benzo(b)fluoranthene | (6) | 36.515 | 252 | 2110916 | 82.895 |
| 171) | Benzo(k)fluoranthene | (6) | 36.644 | 252 | 1929903 | 80.885 |
| 172) | Benzo(a)pyrene | (6) | 37.985 | 252 | 1873454 | 81.848 |
| 173) | Perylene-d12 | (6) | 38.231 | 264 | 837880 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 44.795 | 276 | 1883916M | 79.107 |
| 176) | Dibenz(a,h)anthracene | (6) | 44.988 | 278 | 1752502 | 79.275 |
| 177) | Benzo(g,h,i)perylene | (6) | 46.865 | 276 | 1846388 | 77.208 |
| 9) | 2-Fluorophenol | (1) | 8.921 | 112 | 807797 | 81.263 |
| 14) | Phenol-d5 | (1) | 11.441 | 99 | 1023885 | 85.370 |
| 15) | Phenol-d6 | (1) | 11.441 | 99 | 1023885 | 85.370 |
| 38) | Nitrobenzene-d5 | (2) | 14.165 | 82 | 798717 | 80.865 |
| 77) | 2-Fluorobiphenyl | (3) | 19.624 | 172 | 1209607 | 79.254 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.150 | 330 | 338358 | 83.261 |
| 154) | Terphenyl-d14 | (5) | 30.391 | 244 | 1373223 | 86.159 |

M = Compound was manually integrated.
A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar26.b/gc381.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 07:10  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 08:08 bkg00522

Sample Name: SSTD080  Lab Sample ID: STD0854

| | | |
|---|---|---|
| Compound Number | : | 175 |
| Compound Name | : | Indeno(1,2,3-cd)pyrene |
| Scan Number | : | 3848 |
| Retention Time (minutes) | : | 44.795 |
| Quant Ion | : | 276 |
| Area (flag) | : | 1883916 M |
| Concentration (ng/ul) | : | 79.1075 |
| Integration start scan | : | 3823 Integration stop scan: 3858 |
| Y at integration start | : | 1381 Y at integration end: 1381 |

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: BL 822 3-26-04

GC/MS audit/management approval: mg1758 3/29/04 8296

Manual Integration Report for data file /chem/HP06777.i/04mar26.b/gc381.d, generated on 03/26/2004 at 08:08

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 20:53

Lab File ID: gc394.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| | COMPOUND | RRF | RRF30 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|---|
| | 1,4-Dioxane | 0.708 | 0.740 | 31.370 | 30.0 | 5 |
| | N-Nitrosodimethylamine | 1.060 | 1.114 | 31.540 | 30.0 | 5 |
| | Pyridine | 1.741 | 1.778 | 30.630 | 30.0 | 2 |
| | 2-Picoline | 1.635 | 1.655 | 30.370 | 30.0 | 1 |
| | Aniline | 2.310 | 2.302 | 29.900 | 30.0 | 0 |
| * | Phenol | 1.852 | 1.872 | 30.320 | 30.0 | 1* |
| | bis(2-Chloroethyl)ether | 1.511 | 1.518 | 30.150 | 30.0 | 0 |
| | 2-Chlorophenol | 1.569 | 1.557 | 29.780 | 30.0 | -1 |
| | 1,3-Dichlorobenzene | 1.586 | 1.520 | 28.750 | 30.0 | -4 |
| * | 1,4-Dichlorobenzene | 1.596 | 1.525 | 28.670 | 30.0 | -4* |
| | Benzyl alcohol | 0.918 | 0.966 | 31.550 | 30.0 | 5 |
| | 1,2-Dichlorobenzene | 1.525 | 1.466 | 28.820 | 30.0 | -4 |
| | 2-Methylphenol | 1.281 | 1.297 | 30.370 | 30.0 | 1 |
| | 2,2'-oxybis(1-Chloropropane) | 2.414 | 2.371 | 29.470 | 30.0 | -2 |
| | bis(2-Chloroisopropyl)ether | 2.414 | 2.371 | 29.470 | 30.0 | -2 |
| | Acetophenone | 1.961 | 1.962 | 30.010 | 30.0 | 0 |
| # | N-Nitroso-di-n-propylamine | 1.014 | 0.976 | 28.870 | 30.0 | -4# |
| | 4-Methylphenol | 1.353 | 1.336 | 29.620 | 30.0 | -1 |
| | o-Toluidine | 2.192 | 2.161 | 29.580 | 30.0 | -1 |
| | Hexachloroethane | 0.739 | 0.732 | 29.700 | 30.0 | -1 |
| | Nitrobenzene | 0.389 | 0.380 | 29.320 | 30.0 | -2 |
| | Isophorone | 0.756 | 0.732 | 29.040 | 30.0 | -3 |
| * | 2-Nitrophenol | 0.228 | 0.221 | 29.010 | 30.0 | -3* |
| | 2,4-Dimethylphenol | 0.373 | 0.373 | 29.960 | 30.0 | 0 |
| | bis(2-Chloroethoxy)methane | 0.454 | 0.435 | 28.780 | 30.0 | -4 |
| | Benzoic acid | 0.235 | 0.125 | 21.200 | 40.0 | -47 |
| * | 2,4-Dichlorophenol | 0.305 | 0.291 | 28.610 | 30.0 | -5* |
| | 1,2,4-Trichlorobenzene | 0.317 | 0.300 | 28.400 | 30.0 | -5 |
| | Naphthalene | 1.059 | 1.009 | 28.570 | 30.0 | -5 |
| | 4-Chloroaniline | 0.491 | 0.465 | 28.410 | 30.0 | -5 |
| * | Hexachlorobutadiene | 0.185 | 0.174 | 28.270 | 30.0 | -6* |
| | Caprolactam | 0.121 | 0.118 | 29.140 | 30.0 | -3 |
| * | 4-Chloro-3-methylphenol | 0.303 | 0.298 | 29.490 | 30.0 | -2* |
| | 2-Methylnaphthalene | 0.672 | 0.645 | 28.820 | 30.0 | -4 |
| | 1-Methylnaphthalene | 0.635 | 0.606 | 28.630 | 30.0 | -5 |
| # | Hexachlorocyclopentadiene | 0.264 | 0.232 | 25.710 | 30.0 | -14# |

8297

Images 3/26/04

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 20:53

Lab File ID: gc394.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF30 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| * 2,4,6-Trichlorophenol | 0.426 | 0.413 | 29.060 | 30.0 | -3* |
| 2,4,5-Trichlorophenol | 0.461 | 0.458 | 29.820 | 30.0 | -1 |
| Biphenyl | 1.611 | 1.541 | 28.690 | 30.0 | -4 |
| Diphenyl | 1.611 | 1.541 | 28.690 | 30.0 | -4 |
| 1,1'-Biphenyl | 1.611 | 1.541 | 28.690 | 30.0 | -4 |
| 2-Chloronaphthalene | 1.273 | 1.256 | 29.600 | 30.0 | -1 |
| Diphenyl ether | 0.808 | 0.803 | 29.800 | 30.0 | -1 |
| 2-Nitroaniline | 0.550 | 0.570 | 31.070 | 30.0 | 4 |
| Dimethylphthalate | 1.490 | 1.463 | 29.440 | 30.0 | -2 |
| 2,6-Dinitrotoluene | 0.369 | 0.373 | 30.290 | 30.0 | 1 |
| Acenaphthylene | 1.824 | 1.797 | 29.550 | 30.0 | -1 |
| 3-Nitroaniline | 0.464 | 0.465 | 30.040 | 30.0 | 0 |
| * Acenaphthene | 1.181 | 1.144 | 29.050 | 30.0 | -3* |
| # 2,4-Dinitrophenol | 0.215 | 0.166 | 32.820 | 40.0 | -18# |
| # 4-Nitrophenol | 0.228 | 0.194 | 26.390 | 30.0 | -12# |
| Dibenzofuran | 1.732 | 1.717 | 29.750 | 30.0 | -1 |
| 2,4-Dinitrotoluene | 0.461 | 0.449 | 29.180 | 30.0 | -3 |
| 1-Naphthylamine | 1.229 | 1.234 | 30.140 | 30.0 | 0 |
| 2,3,4,6-Tetrachlorophenol | 0.368 | 0.328 | 26.690 | 30.0 | -11 |
| 2-Naphthylamine | 1.360 | 1.387 | 30.590 | 30.0 | 2 |
| Diethylphthalate | 1.655 | 1.698 | 30.770 | 30.0 | 3 |
| Fluorene | 1.371 | 1.318 | 28.840 | 30.0 | -4 |
| 4-Chlorophenyl-phenylether | 0.627 | 0.581 | 27.790 | 30.0 | -7 |
| 4-Nitroaniline | 0.493 | 0.478 | 29.100 | 30.0 | -3 |
| 4,6-Dinitro-2-methylphenol | 0.170 | 0.161 | 28.500 | 30.0 | -5 |
| * N-Nitrosodiphenylamine (1) | 0.582 | 0.568 | 29.290 | 30.0 | -2* |
| 1,2-Diphenylhydrazine | 1.003 | 1.030 | 30.800 | 30.0 | 3 |
| 4-Bromophenyl-phenylether | 0.258 | 0.246 | 28.560 | 30.0 | -5 |
| Hexachlorobenzene | 0.353 | 0.328 | 27.810 | 30.0 | -7 |
| * Pentachlorophenol | 0.184 | 0.136 | 32.020 | 40.0 | -20* |
| Phenanthrene | 1.123 | 1.063 | 28.420 | 30.0 | -5 |
| Anthracene | 1.163 | 1.119 | 28.870 | 30.0 | -4 |
| Carbazole | 1.192 | 1.140 | 28.690 | 30.0 | -4 |
| Di-n-butylphthalate | 1.809 | 1.792 | 29.720 | 30.0 | -1 |
| * Fluoranthene | 1.287 | 1.199 | 27.960 | 30.0 | -7* |
| Benzidine | 0.606 | 0.672 | 99.850 | 90.0 | 11 |

(1) Cannot be Separated from Diphenylamine

8298

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP06777 Calibration Date: 03/26/04 Time: 20:53

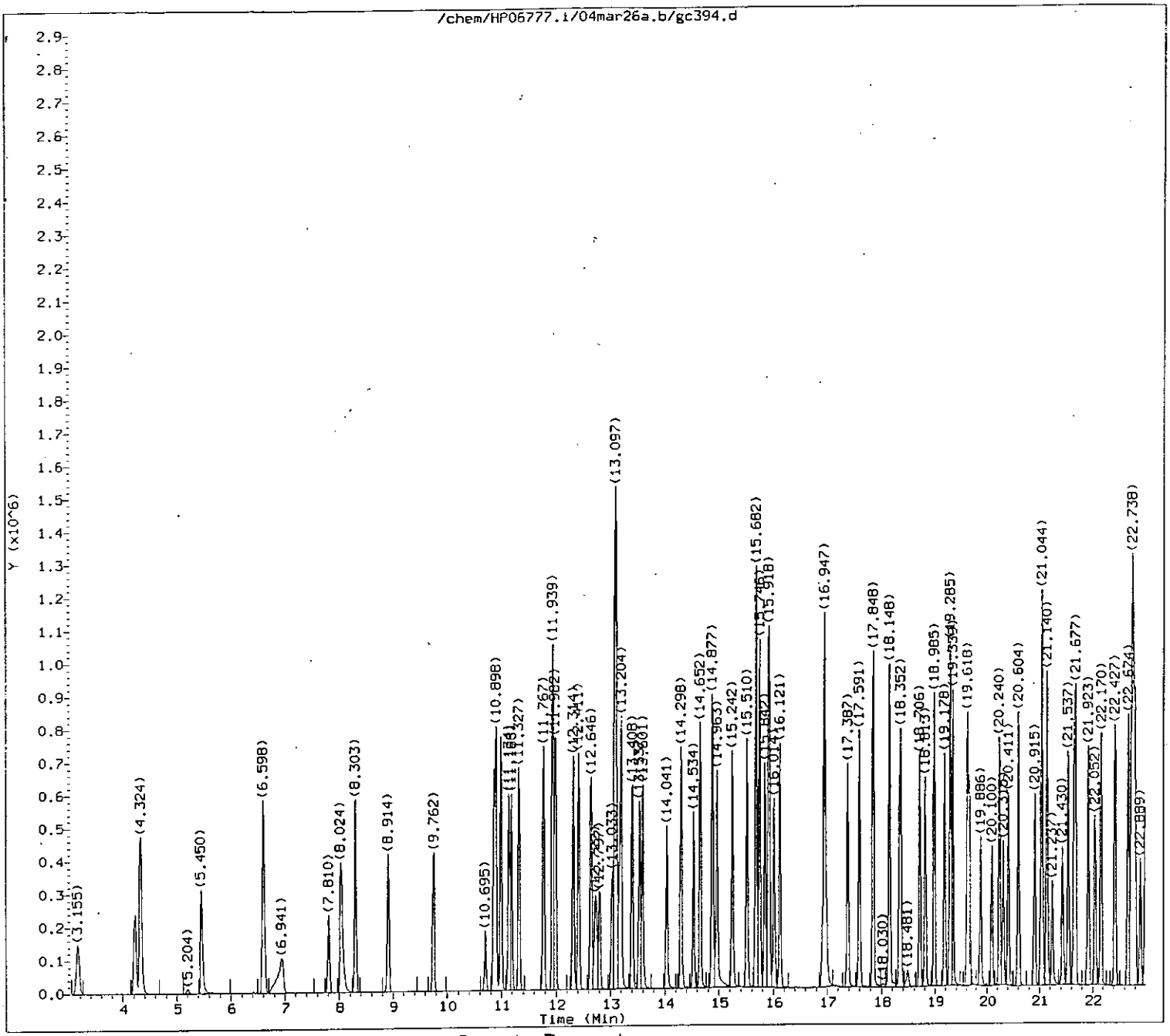
Lab File ID: gc394.d Init. Calib. Date(s): 03/20/04 03/20/04

Init. Calib. Times(s): 13:10 17:57

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF30 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Pyrene | 1.166 | 1.339 | 34.440 | 30.0 | 15 |
| Butylbenzylphthalate | 0.756 | 0.853 | 33.850 | 30.0 | 13 |
| 3,3'-Dichlorobenzidine | 0.502 | 0.500 | 29.860 | 30.0 | 0 |
| 4,4'-Methylenebis(2-Chloroanil | 0.210 | 0.223 | 31.860 | 30.0 | 6 |
| Benzo(a)anthracene | 1.084 | 1.090 | 30.140 | 30.0 | 0 |
| Chrysene | 1.002 | 0.983 | 29.440 | 30.0 | -2 |
| bis(2-Ethylhexyl)phthalate | 1.003 | 1.068 | 31.930 | 30.0 | 6 |
| * Di-n-octylphthalate | 1.727 | 1.982 | 34.430 | 30.0 | 15* |
| 7,12-Dimethylbenz[a]anthracene | 0.553 | 0.580 | 31.450 | 30.0 | 5 |
| Benzo(b)fluoranthene | 1.216 | 1.228 | 30.310 | 30.0 | 1 |
| Benzo(k)fluoranthene | 1.139 | 1.165 | 30.690 | 30.0 | 2 |
| * Benzo(a)pyrene | 1.093 | 1.061 | 29.120 | 30.0 | -3* |
| Indeno(1,2,3-cd)pyrene | 1.137 | 0.958 | 25.270 | 30.0 | -16 |
| Dibenz(a,h)anthracene | 1.055 | 0.888 | 25.250 | 30.0 | -16 |
| Benzo(g,h,i)perylene | 1.142 | 0.948 | 24.900 | 30.0 | -17 |
| 2-Fluorophenol | 1.527 | 1.483 | 29.130 | 30.0 | -3 |
| Phenol-d5 | 1.843 | 1.889 | 30.750 | 30.0 | 3 |
| Phenol-d6 | 1.843 | 1.889 | 30.750 | 30.0 | 3 |
| Nitrobenzene-d5 | 0.398 | 0.393 | 29.640 | 30.0 | -1 |
| 2-Fluorobiphenyl | 1.346 | 1.322 | 29.460 | 30.0 | -2 |
| 2,4,6-Tribromophenol | 0.358 | 0.332 | 27.790 | 30.0 | -7 |
| Terphenyl-d14 | 0.789 | 0.860 | 32.710 | 30.0 | 9 |
| | | | Average %Drift: | | 5 |

8299




Quant Report

Target Revision 3.5

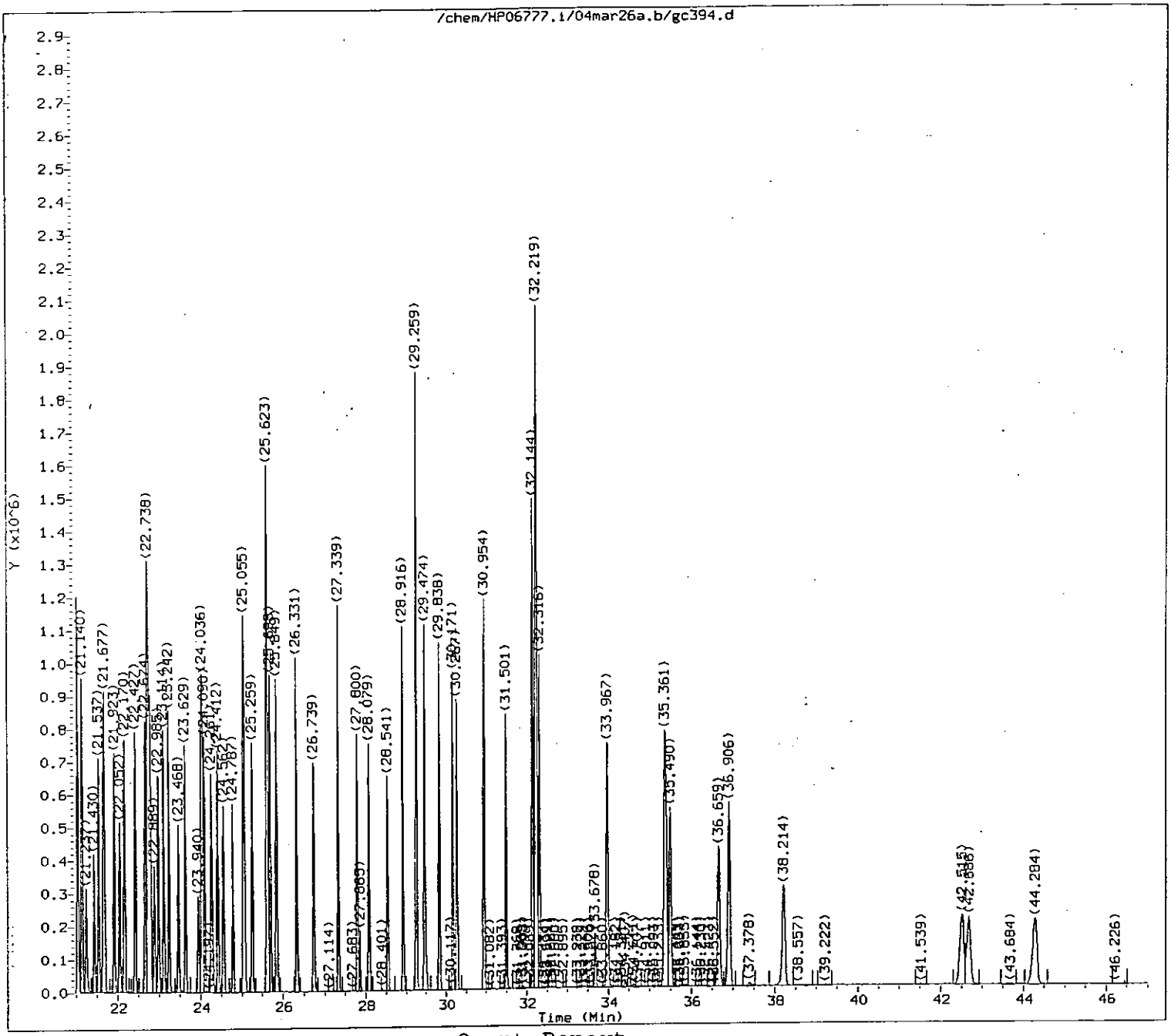
Data File: /chem/HP06777.i/04mar26a.b/gc394.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 20:53  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 21:55
Date, time and analyst ID of latest file update: 26-Mar-2004 21:56 jmg00068

Sample Name: SSTD030  Lab Sample ID: STD0854

9388

jmg00 3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc394.d
Injection date and time: 26-MAR-2004 20:53
Instrument ID: HP06777.i
Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m
Calibration date and time: 26-MAR-2004 21:55
Sublist used: all1
Date, time and analyst ID of latest file update: 26-Mar-2004 21:56 jmg00068

Sample Name: SSTD030
Lab Sample ID: STD0854

9381

jmg 8
3/26/04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc394.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 20:53  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 21:55
Date, time and analyst ID of latest file update: 26-Mar-2004 21:56 jmg00068

Sample Name: SSTD030  Lab Sample ID: STD0854

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 3.155 | 88 | 209570 | 31.375 |
| 2) N-Nitrosodimethylamine | (1) | 4.217 | 74 | 315411 | 31.536 |
| 3) Pyridine | (1) | 4.324 | 79 | 503209 | 30.633 |
| 5) 2-Picoline | (1) | 6.598 | 93 | 468464 | 30.370 |
| 13) Aniline | (1) | 10.995 | 93 | 651634 | 29.901 |
| 16) Phenol | (1) | 10.898 | 94 | 529766 | 30.317 |
| 18) bis(2-Chloroethyl)ether | (1) | 11.188 | 93 | 429709 | 30.147 |
| 19) 2-Chlorophenol | (1) | 11.327 | 128 | 440741 | 29.777 |
| 20) 1,3-Dichlorobenzene | (1) | 11.767 | 146 | 430207 | 28.751 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 11.939 | 152 | 377365 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 11.992 | 146 | 431596 | 28.672 |
| 24) Benzyl alcohol | (1) | 12.314 | 108 | 273308 | 31.551 |
| 25) 1,2-Dichlorobenzene | (1) | 12.421 | 146 | 414782 | 28.821 |
| 26) 2-Methylphenol | (1) | 12.646 | 108 | 367045 | 30.367 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 12.722 | 45 | 671084 | 29.471 |
| 28) bis(2-Chloroisopropyl)ether | (1) | 12.722 | 45 | 671084 | 29.471 |
| 30) Acetophenone | (1) | 13.097 | 105 | 555303 | 30.012 |
| 31) N-Nitroso-di-n-propylamine | (1) | 13.118 | 70 | 276253 | 28.866 |
| 33) 4-Methylphenol | (1) | 13.086 | 108 | 378080 | 29.619 |
| 34) o-Toluidine | (1) | 13.204 | 106 | 611702 | 29.579 |
| 37) Hexachloroethane | (1) | 13.408 | 117 | 207234 | 29.703 |
| 39) Nitrobenzene | (2) | 13.601 | 77 | 403038 | 29.315 |
| 41) Isophorone | (2) | 14.298 | 82 | 775471 | 29.035 |
| 42) 2-Nitrophenol | (2) | 14.534 | 139 | 233959 | 29.013 |
| 44) 2,4-Dimethylphenol | (2) | 14.652 | 107 | 395360 | 29.963 |
| 46) bis(2-Chloroethoxy)methane | (2) | 14.963 | 93 | 461439 | 28.785 |
| 47) Benzoic acid | (2) | 14.909 | 105 | 176311 | 21.200 |
| 49) 2,4-Dichlorophenol | (2) | 15.242 | 162 | 308135 | 28.608 |
| 50) 1,2,4-Trichlorobenzene | (2) | 15.510 | 180 | 317533 | 28.398 |
| 52) Naphthalene-d8 | (2) | 15.682 | 136 | 1413006 | 40.000 |
| 53) Naphthalene | (2) | 15.746 | 128 | 1068980 | 28.570 |
| 55) 4-Chloroaniline | (2) | 15.907 | 127 | 492800 | 28.414 |
| 59) Hexachlorobutadiene | (2) | 16.121 | 225 | 184330 | 28.266 |
| 62) Caprolactam | (2) | 16.947 | 113 | 124601 | 29.139 |
| 67) 4-Chloro-3-methylphenol | (2) | 17.376 | 107 | 316001 | 29.495 |
| 69) 2-Methylnaphthalene | (2) | 17.848 | 142 | 683994 | 28.823 |
| 70) 1-Methylnaphthalene | (2) | 18.148 | 142 | 642584 | 28.633 |
| 71) Hexachlorocyclopentadiene | (3) | 18.331 | 237 | 109298 | 25.712 |
| 74) 2,4,6-Trichlorophenol | (3) | 18.706 | 196 | 194699 | 29.056 |
| 76) 2,4,5-Trichlorophenol | (3) | 18.813 | 196 | 215896 | 29.822 |
| 80) Biphenyl | (3) | 19.285 | 154 | 726791 | 28.692 |
| 81) Diphenyl | (3) | 19.285 | 154 | 726791 | 28.692 |
| 82) 1,1'-Biphenyl | (3) | 19.285 | 154 | 726791 | 28.692 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc394.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 20:53  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 21:55
Date, time and analyst ID of latest file update: 26-Mar-2004 21:56 jmg00068

Sample Name: SSTD030  Lab Sample ID: STD0854

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 83) 2-Chloronaphthalene | (3) | 19.339 | 162 | 592262 | 29.605 |
| 86) Diphenyl ether | (3) | 19.618 | 170 | 378556 | 29.802 |
| 87) 2-Nitroaniline | (3) | 19.660 | 138 | 268834 | 31.073 |
| 90) Dimethylphthalate | (3) | 20.240 | 163 | 689833 | 29.442 |
| 92) 2,6-Dinitrotoluene | (3) | 20.411 | 165 | 175784 | 30.290 |
| 93) Acenaphthylene | (3) | 20.604 | 152 | 847565 | 29.552 |
| 95) 3-Nitroaniline | (3) | 20.915 | 138 | 219153 | 30.043 |
| 96) Acenaphthene-d10 | (3) | 21.044 | 164 | 628838 | 40.000 |
| 97) Acenaphthene | (3) | 21.140 | 153 | 539355 | 29.047 |
| 98) 2,4-Dinitrophenol | (3) | 21.237 | 184 | 104356 | 32.820 |
| 101) 4-Nitrophenol | (3) | 21.430 | 109 | 91691 | 26.389 |
| 102) Dibenzofuran | (3) | 21.677 | 168 | 809770 | 29.746 |
| 103) 2,4-Dinitrotoluene | (3) | 21.655 | 165 | 211581 | 29.182 |
| 104) 1-Naphthylamine | (3) | 21.923 | 143 | 582145 | 30.136 |
| 105) 2,3,4,6-Tetrachlorophenol | (3) | 22.052 | 232 | 154522 | 26.694 |
| 106) 2-Naphthylamine | (3) | 22.170 | 143 | 654132 | 30.593 |
| 107) Diethylphthalate | (3) | 22.427 | 149 | 800614 | 30.773 |
| 109) Fluorene | (3) | 22.738 | 166 | 621826 | 28.842 |
| 110) 4-Chlorophenyl-phenylether | (3) | 22.760 | 204 | 273886 | 27.791 |
| 112) 4-Nitroaniline | (3) | 22.803 | 138 | 225326 | 29.103 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 22.899 | 198 | 122423 | 28.501 |
| 115) N-Nitrosodiphenylamine | (4) | 23.114 | 169 | 431416 | 29.287 |
| 116) 1,2-Diphenylhydrazine | (4) | 23.242 | 77 | 782021 | 30.802 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.261 | 248 | 186521 | 28.562 |
| 125) Hexachlorobenzene | (4) | 24.412 | 284 | 248851 | 27.812 |
| 129) Pentachlorophenol | (4) | 25.034 | 266 | 137658 | 32.019 |
| 133) Phenanthrene-d10 | (4) | 25.623 | 188 | 1012718 | 40.000 |
| 135) Phenanthrene | (4) | 25.698 | 178 | 807678 | 28.420 |
| 136) Anthracene | (4) | 25.849 | 178 | 849948 | 28.865 |
| 138) Carbazole | (4) | 26.331 | 167 | 865890 | 28.685 |
| 140) Di-n-butylphthalate | (4) | 27.339 | 149 | 1360904 | 29.717 |
| 145) Fluoranthene | (4) | 28.916 | 202 | 910907 | 27.957 |
| 150) Benzidine | (5) | 29.259 | 184 | 1405462 | 99.854 |
| 152) Pyrene | (5) | 29.474 | 202 | 933301 | 34.437 |
| 159) Butylbenzylphthalate | (5) | 30.964 | 149 | 594287 | 33.848 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.144 | 252 | 348412 | 29.864 |
| 163) 4,4'-Methylenebis(2-Chloroanil | (5) | 32.155 | 231 | 155104 | 31.858 |
| 164) Benzo(a)anthracene | (5) | 32.219 | 228 | 759510 | 30.144 |
| 165) Chrysene-d12 | (5) | 32.251 | 240 | 929334 | 40.000 |
| 166) Chrysene | (5) | 32.316 | 228 | 685416 | 29.444 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.219 | 149 | 744299 | 31.928 |
| 168) Di-n-octylphthalate | (6) | 33.978 | 149 | 1214911 | 34.431 |
| 169) 7,12-Dimethylbenz[a]anthracene | (6) | 35.361 | 256 | 355776 | 31.452 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26a.b/gc394.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 20:53  Analyst ID: jmg00068

Method used: /chem/HP06777.i/04mar26a.b/m8270.m  Sublist used: all1
Calibration date and time: 26-MAR-2004 21:55
Date, time and analyst ID of latest file update: 26-Mar-2004 21:56 jmg00068

Sample Name: SSTD030  Lab Sample ID: STD0854

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 170) Benzo(b)fluoranthene | (6) | 35.394 | 252 | 752919 | 30.308 |
| 171) Benzo(k)fluoranthene | (6) | 35.490 | 252 | 714295 | 30.687 |
| 172) Benzo(a)pyrene | (6) | 36.659 | 252 | 650311 | 29.123 |
| 173) Perylene-d12 | (6) | 36.906 | 264 | 817406 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 42.515 | 276 | 587070 | 25.269 |
| 176) Dibenz(a,h)anthracene | (6) | 42.686 | 278 | 544620 | 25.253 |
| 177) Benzo(g,h,i)perylene | (6) | 44.284 | 276 | 581026 | 24.905 |
| 9) 2-Fluorophenol | (1) | 8.303 | 112 | 419698 | 29.127 |
| 14) Phenol-d5 | (1) | 10.866 | 99 | 534680 | 30.755 |
| 15) Phenol-d6 | (1) | 10.866 | 99 | 534680 | 30.755 |
| 38) Nitrobenzene-d5 | (2) | 13.537 | 82 | 416156 | 29.637 |
| 77) 2-Fluorobiphenyl | (3) | 18.985 | 172 | 623450 | 29.464 |
| 117) 2,4,6-Tribromophenol | (3) | 23.468 | 330 | 156597 | 27.795 |
| 154) Terphenyl-d14 | (5) | 29.838 | 244 | 599444 | 32.714 |

M = Compound was manually integrated.  A = User selected an alternate hit

# Raw QC Data

Data File: /chem/HP06780.i/04mar19.b/dc254.d



Date : 19-MAR-2004 08:59

Client ID: DFTPP

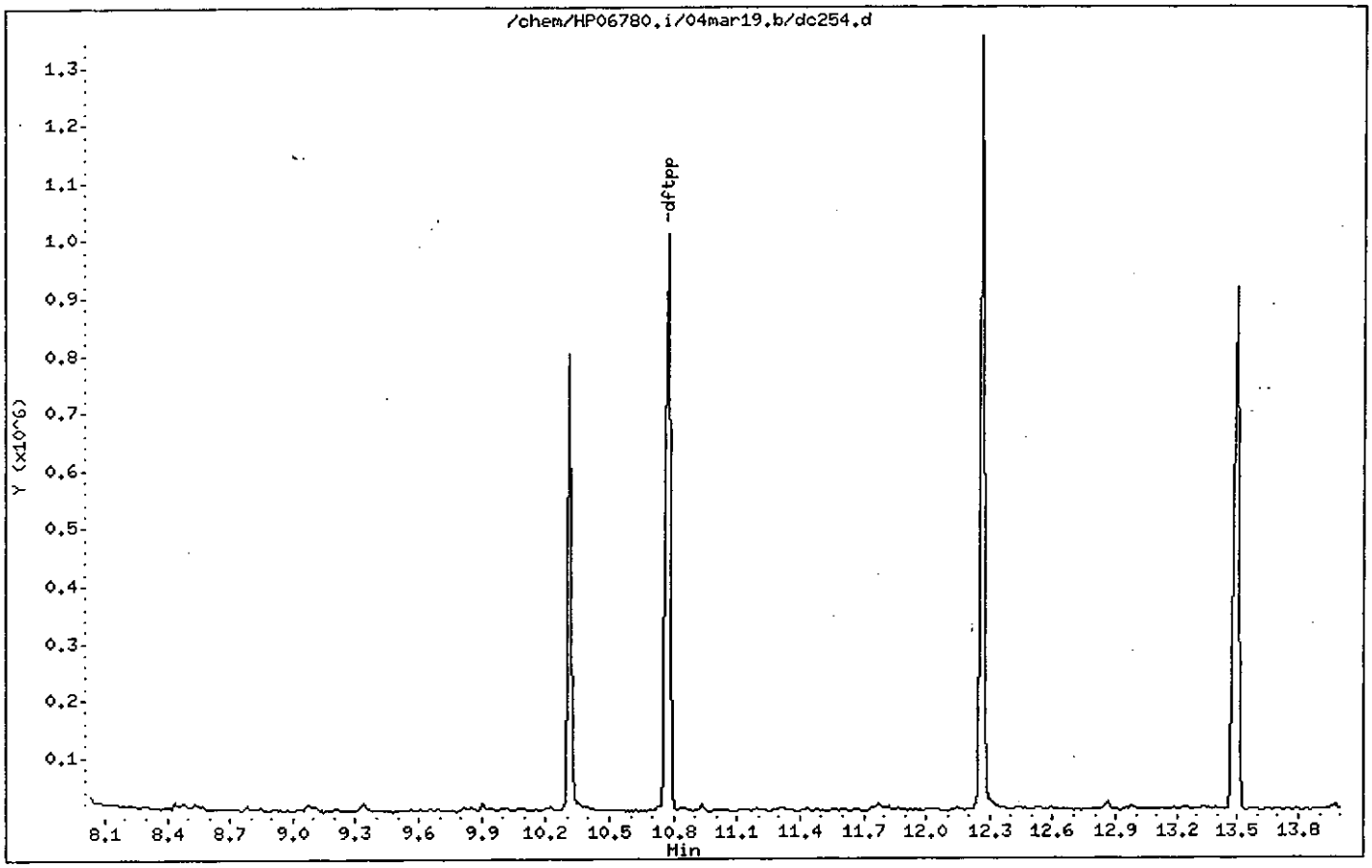
Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06780.i/04mar19.b/dc254.d

Date : 19-MAR-2004 08:59

Client ID: DFTPP

Instrument: HP06780.i

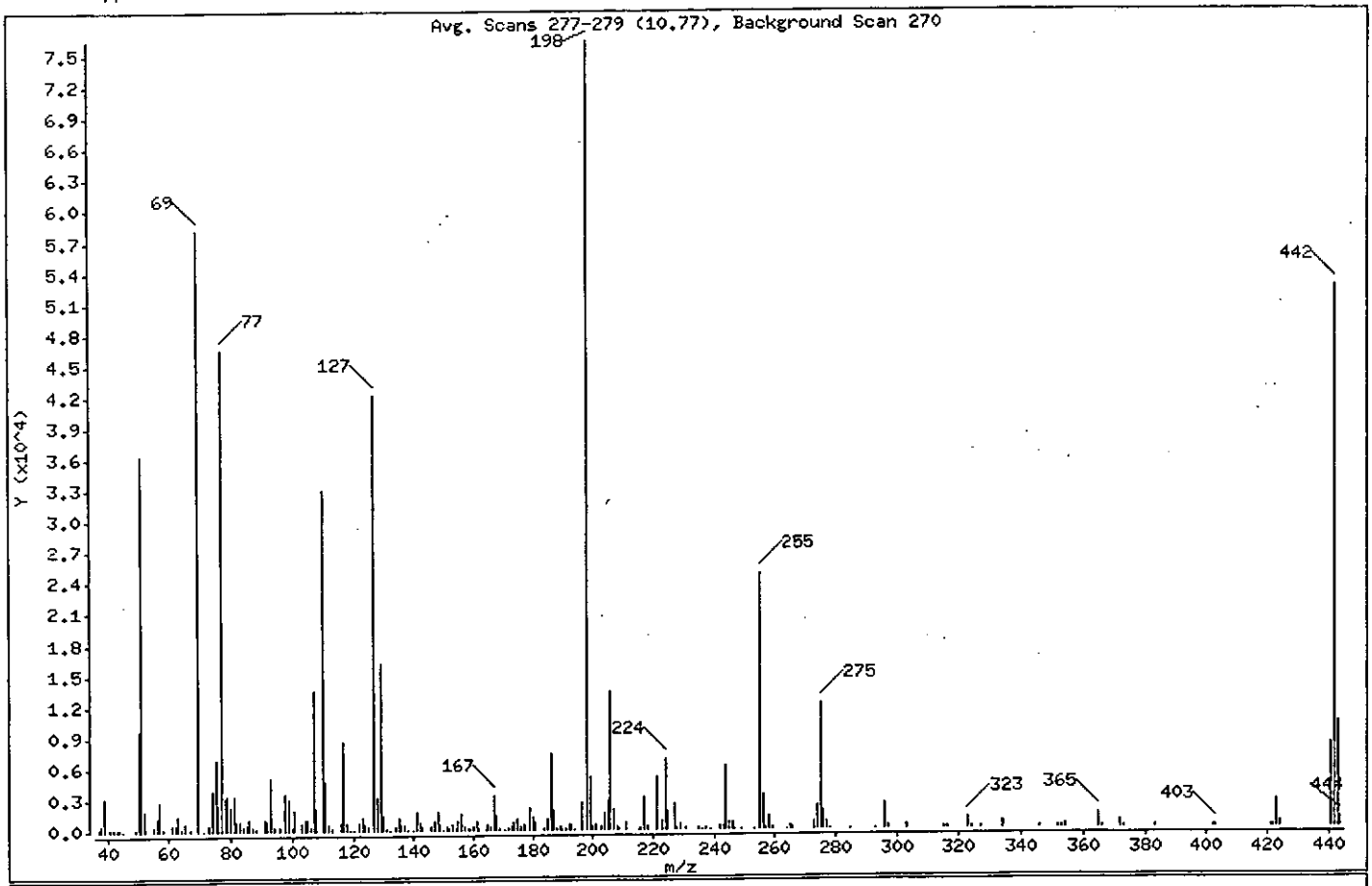
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 47.68 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 75.99 |
| 70 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 127 | 40.00 - 60.00% of mass 198 | 55.20 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.73 |
| 275 | 10.00 - 30.00% of mass 198 | 15.95 |
| 365 | Greater than 1.00% of mass 198 | 1.80 |
| 441 | Present, but less than mass 443 | 10.62 |
| 442 | 40.00 - 100.00% of mass 198 | 68.75 |
| 443 | 17.00 - 23.00% of mass 442 | 13.35 ( 19.41) |

6387

Data File: /chem/HP06780.i/04mar19.b/dc254.d

Date : 19-MAR-2004 08:59

Client ID: DFTPP

Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

Data File: dc254.d

Spectrum: Avg. Scans 277-279 (10,77), Background Scan 270

Location of Maximum: 198.00

Number of points: 208

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 173 | 107.00 | 13507 | 171.00 | 81 | 245.00 | 672 |
| 38.00 | 499 | 108.00 | 2080 | 172.00 | 231 | 246.00 | 762 |
| 39.00 | 3145 | 110.00 | 33064 | 173.00 | 270 | 247.00 | 79 |
| 41.00 | 165 | 111.00 | 4788 | 174.00 | 644 | 249.00 | 82 |
| 42.00 | 112 | 112.00 | 584 | 175.00 | 1111 | 253.00 | 78 |
| 43.00 | 177 | 113.00 | 88 | 176.00 | 408 | 255.00 | 24776 |
| 44.00 | 237 | 116.00 | 720 | 177.00 | 600 | 256.00 | 3393 |
| 45.00 | 80 | 117.00 | 8563 | 179.00 | 2023 | 257.00 | 137 |
| 49.00 | 206 | 118.00 | 634 | 180.00 | 1176 | 258.00 | 1181 |
| 50.00 | 9618 | 119.00 | 68 | 181.00 | 633 | 259.00 | 94 |
| 51.00 | 36432 | 120.00 | 72 | 184.00 | 122 | 264.00 | 67 |
| 52.00 | 1921 | 122.00 | 699 | 185.00 | 1084 | 265.00 | 336 |
| 55.00 | 302 | 123.00 | 1235 | 186.00 | 7312 | 266.00 | 139 |
| 56.00 | 1223 | 124.00 | 565 | 187.00 | 1867 | 273.00 | 740 |
| 57.00 | 2884 | 125.00 | 407 | 188.00 | 185 | 274.00 | 2272 |
| 58.00 | 190 | 127.00 | 42184 | 189.00 | 378 | 275.00 | 12188 |
| 61.00 | 504 | 128.00 | 3184 | 190.00 | 79 | 276.00 | 1689 |
| 62.00 | 505 | 129.00 | 16113 | 191.00 | 129 | 277.00 | 739 |
| 63.00 | 1421 | 130.00 | 1363 | 192.00 | 613 | 278.00 | 76 |
| 64.00 | 195 | 131.00 | 252 | 193.00 | 544 | 285.00 | 81 |
| 65.00 | 778 | 132.00 | 69 | 194.00 | 69 | 293.00 | 68 |
| 67.00 | 98 | 134.00 | 415 | 196.00 | 2605 | 296.00 | 2544 |
| 69.00 | 58072 | 135.00 | 1152 | 198.00 | 76416 | 297.00 | 420 |
| 71.00 | 78 | 136.00 | 476 | 199.00 | 5142 | 303.00 | 383 |
| 73.00 | 524 | 137.00 | 543 | 200.00 | 383 | 315.00 | 248 |
| 74.00 | 3905 | 138.00 | 81 | 201.00 | 458 | 316.00 | 117 |
| 75.00 | 6842 | 140.00 | 87 | 203.00 | 349 | 323.00 | 1055 |
| 76.00 | 2394 | 141.00 | 1674 | 204.00 | 1646 | 324.00 | 91 |
| 77.00 | 46640 | 142.00 | 722 | 205.00 | 2861 | 327.00 | 110 |
| 78.00 | 3172 | 143.00 | 427 | 206.00 | 13281 | 334.00 | 624 |
| 79.00 | 3258 | 146.00 | 271 | 207.00 | 1952 | 346.00 | 220 |
| 80.00 | 2281 | 147.00 | 950 | 208.00 | 420 | 352.00 | 251 |
| 81.00 | 3393 | 148.00 | 1765 | 209.00 | 160 | 353.00 | 216 |
| 82.00 | 858 | 149.00 | 496 | 211.00 | 641 | 354.00 | 324 |
| 83.00 | 934 | 150.00 | 67 | 215.00 | 85 | 365.00 | 1374 |

Data File: /chem/HP06780.i/04mar19.b/dc254.d

Date : 19-MAR-2004 08:59

Client ID: DFTPP

Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

Data File: dc254.d

Spectrum: Avg. Scans 277-279 (10.77), Background Scan 270

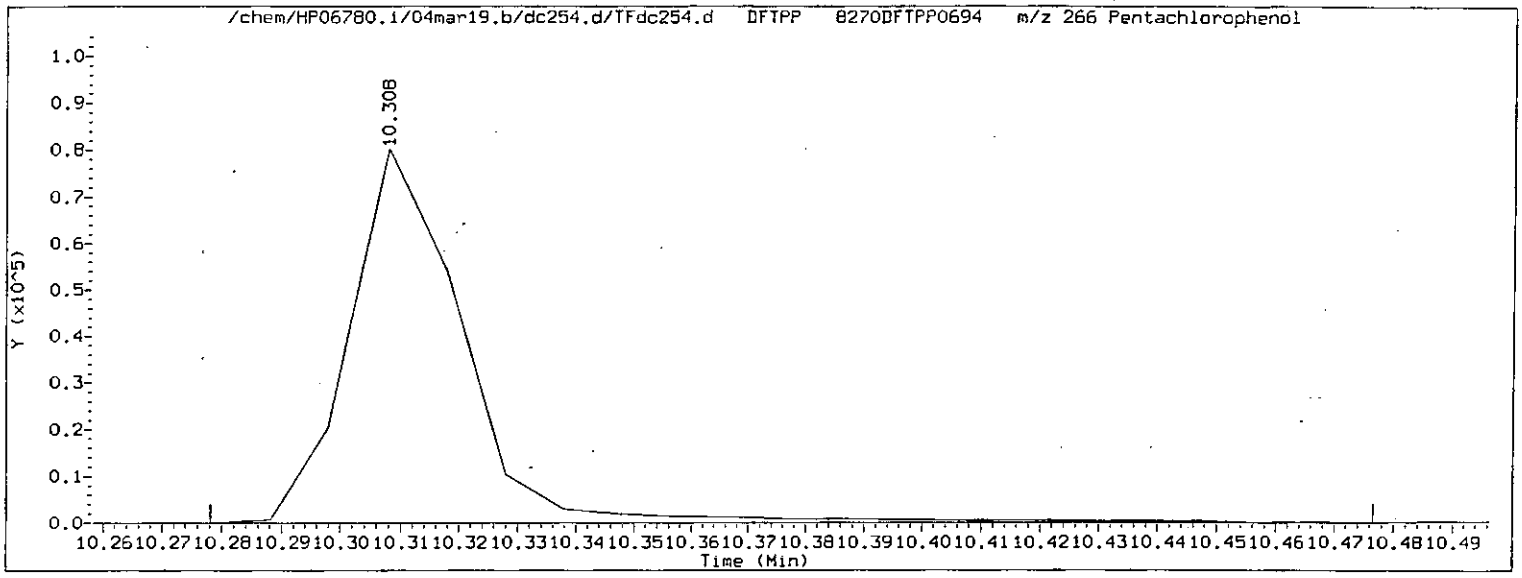
Location of Maximum: 198.00

Number of points: 208

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 84.00 | 342 | 151.00 | 417 | 216.00 | 104 | 366.00 | 176 |
| 85.00 | 613 | 152.00 | 99 | 217.00 | 3147 | 372.00 | 647 |
| 86.00 | 1076 | 153.00 | 478 | 218.00 | 287 | 373.00 | 102 |
| 87.00 | 357 | 154.00 | 174 | 221.00 | 5025 | 383.00 | 102 |
| 88.00 | 194 | 155.00 | 849 | 223.00 | 840 | 402.00 | 215 |
| 91.00 | 1025 | 156.00 | 1510 | 224.00 | 6793 | 403.00 | 251 |
| 92.00 | 805 | 157.00 | 393 | 225.00 | 1781 | 421.00 | 260 |
| 93.00 | 5091 | 158.00 | 233 | 227.00 | 2379 | 422.00 | 233 |
| 94.00 | 427 | 159.00 | 214 | 228.00 | 230 | 423.00 | 2627 |
| 96.00 | 368 | 160.00 | 435 | 229.00 | 576 | 424.00 | 466 |
| 98.00 | 3550 | 161.00 | 847 | 231.00 | 131 | 441.00 | 8119 |
| 99.00 | 2928 | 162.00 | 199 | 235.00 | 118 | 442.00 | 52536 |
| 100.00 | 403 | 164.00 | 82 | 236.00 | 77 | 443.00 | 10200 |
| 101.00 | 1946 | 165.00 | 606 | 237.00 | 213 | 444.00 | 924 |
| 103.00 | 717 | 166.00 | 382 | 239.00 | 73 | | |
| 104.00 | 1052 | 167.00 | 3351 | 242.00 | 277 | | |
| 105.00 | 1073 | 168.00 | 1415 | 243.00 | 331 | | |
| 106.00 | 421 | 169.00 | 230 | 244.00 | 6082 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

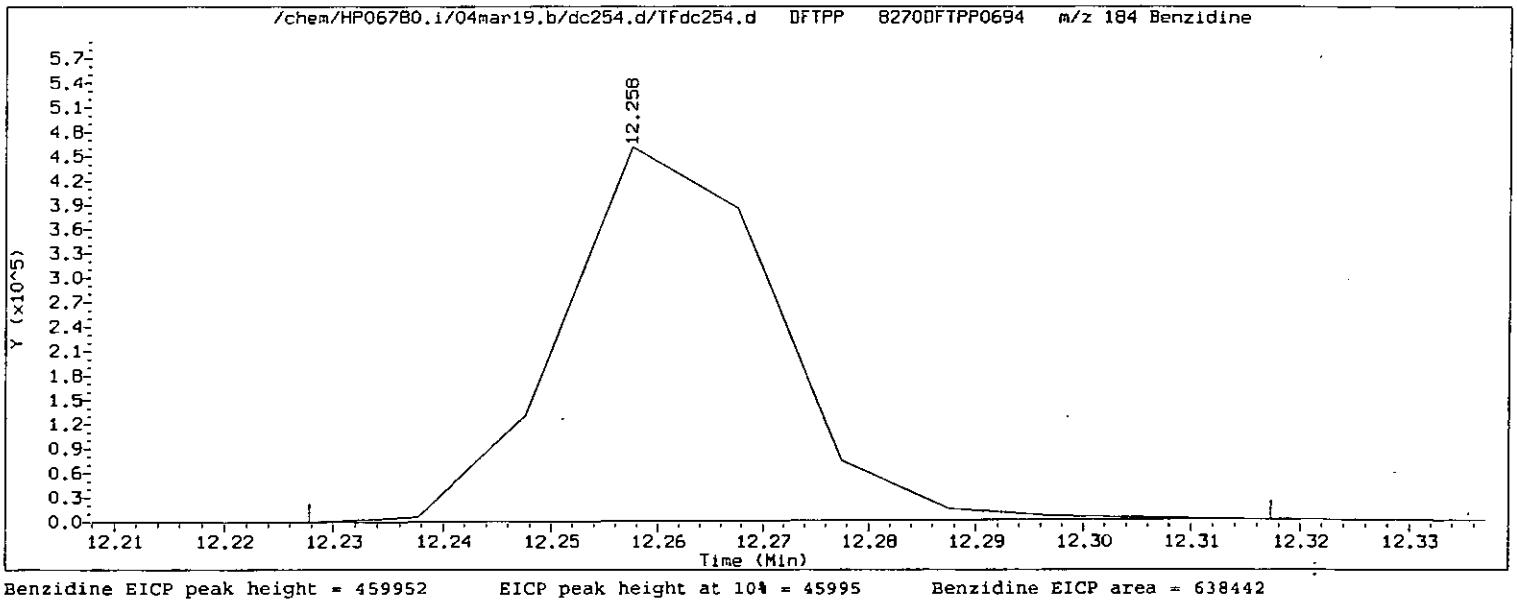
Instrument ID: HP06780.i  Injection Date: 19-MAR-2004 08:59  Operator: cam01237




Pentachlorophenol EICP peak height = 80344  EICP peak height at 10% = 8034  Pentachlorophenol EICP area = 105877

Pentachlorophenol EICP peak apex (min.) = 10.308
RT at 10% of front half of EICP (min.) = 10.292  'Front' peak width (min.) = 0.0162000000
RT at 10% of back half of EICP (min.) = 10.331  'Tailing' peak width (min.) = 0.0231833333

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0231833333}{0.0162000000} = 1.431$




Benzidine EICP peak height = 459952  EICP peak height at 10% = 45995  Benzidine EICP area = 638442

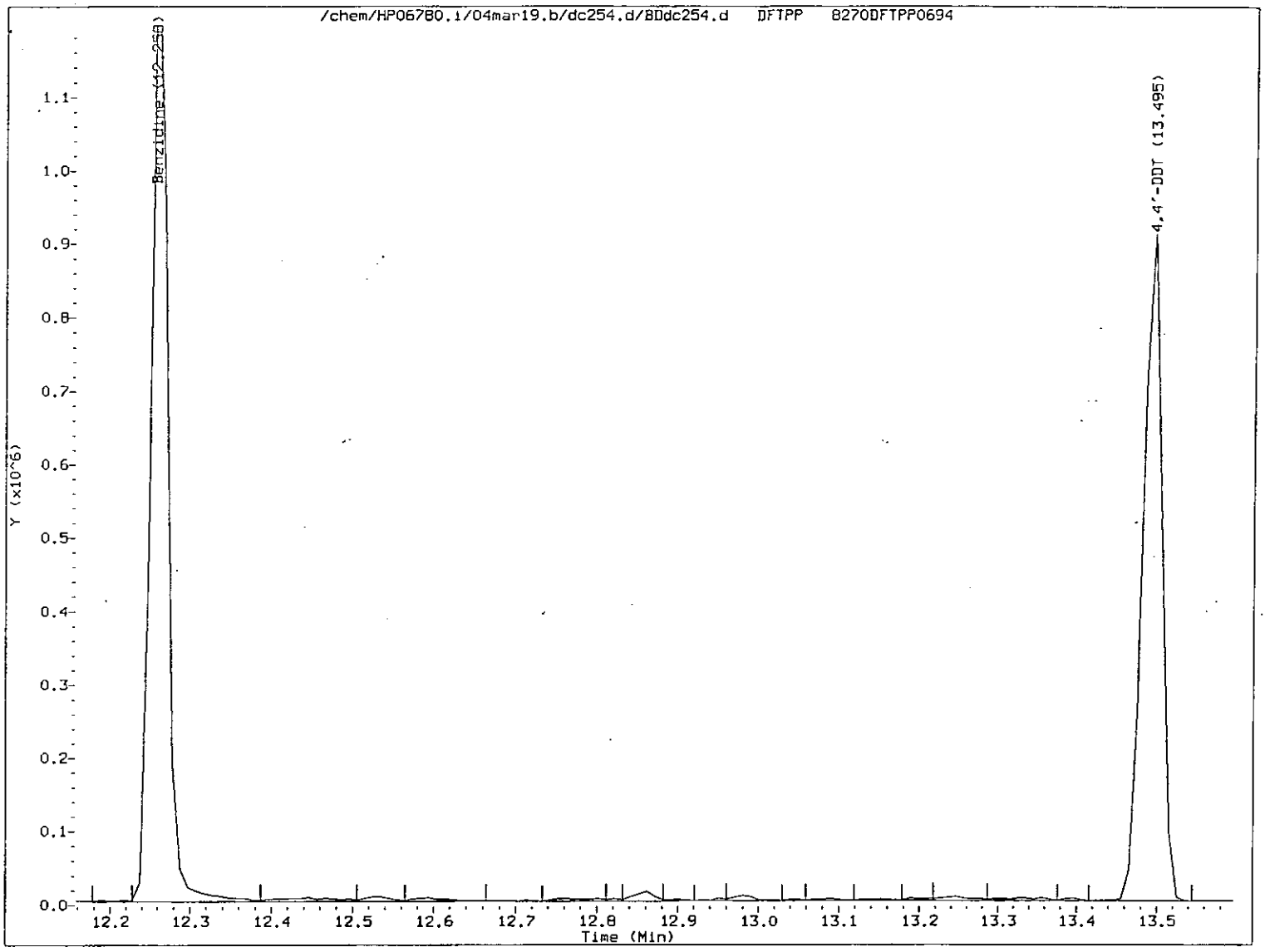
Benzidine EICP peak apex (min.) = 12.258
RT at 10% of front half of EICP (min.) = 12.241  'Front' peak width (min.) = 0.0166666667
RT at 10% of back half of EICP (min.) = 12.282  'Tailing' peak width (min.) = 0.0247833333

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0247833333}{0.0166666667} = 1.487$


printed on 03/19/2004 at 09:15

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06780.i Injection Date: 19-MAR-2004 08:59 Operator: cam01237




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 1496734} \times 100 = 0.0$$

9311


printed on 03/19/2004 at 11:09

Data File: /chem/HP06780.i/04mar29.b/dc385.d

Date : 29-MAR-2004 07:59

Client ID: DFTPP

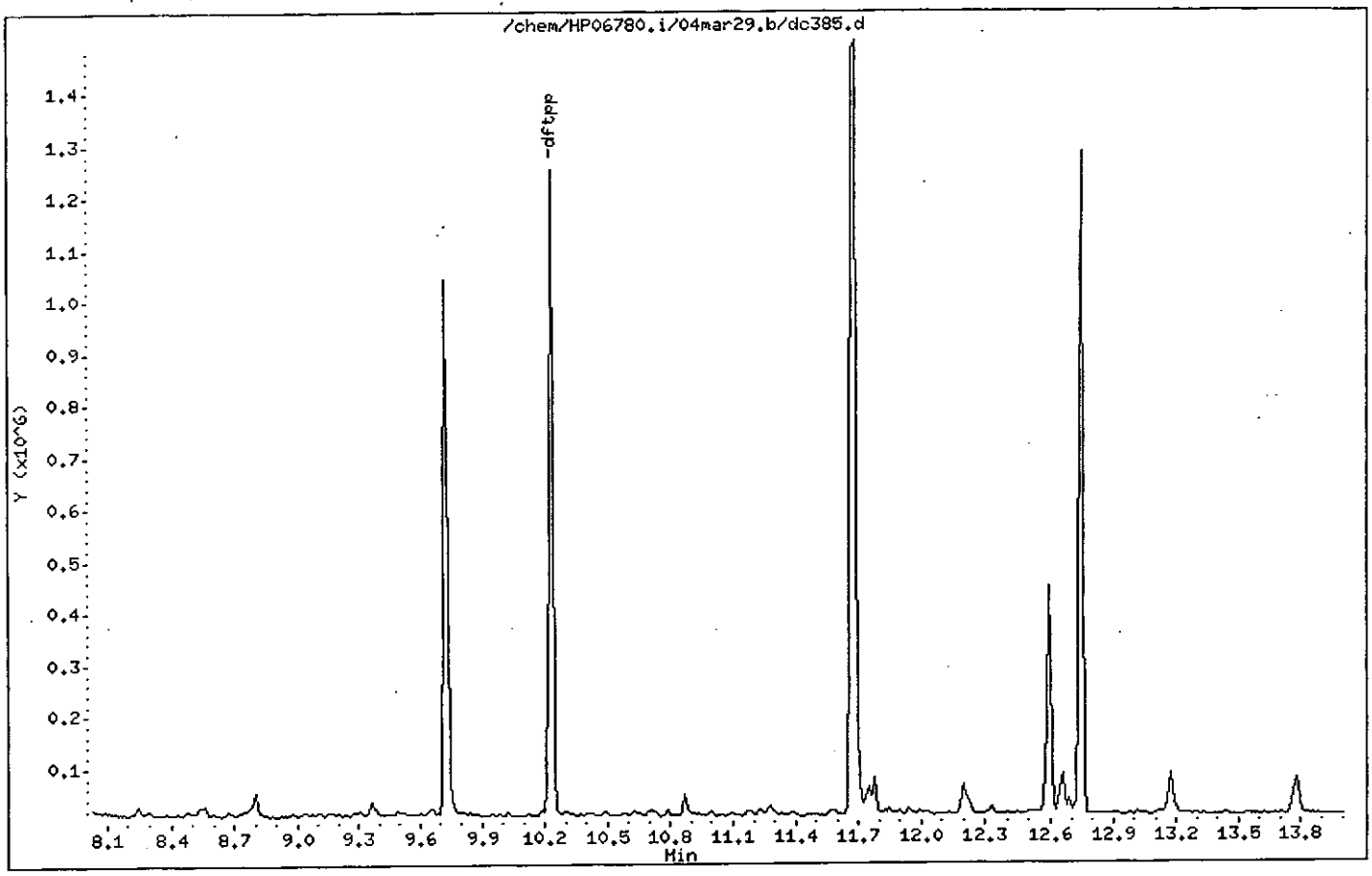
Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06780.i/04mar29.b/dc385.d

Date : 29-MAR-2004 07:59

Client ID: DFTPP

Instrument: HP06780.i

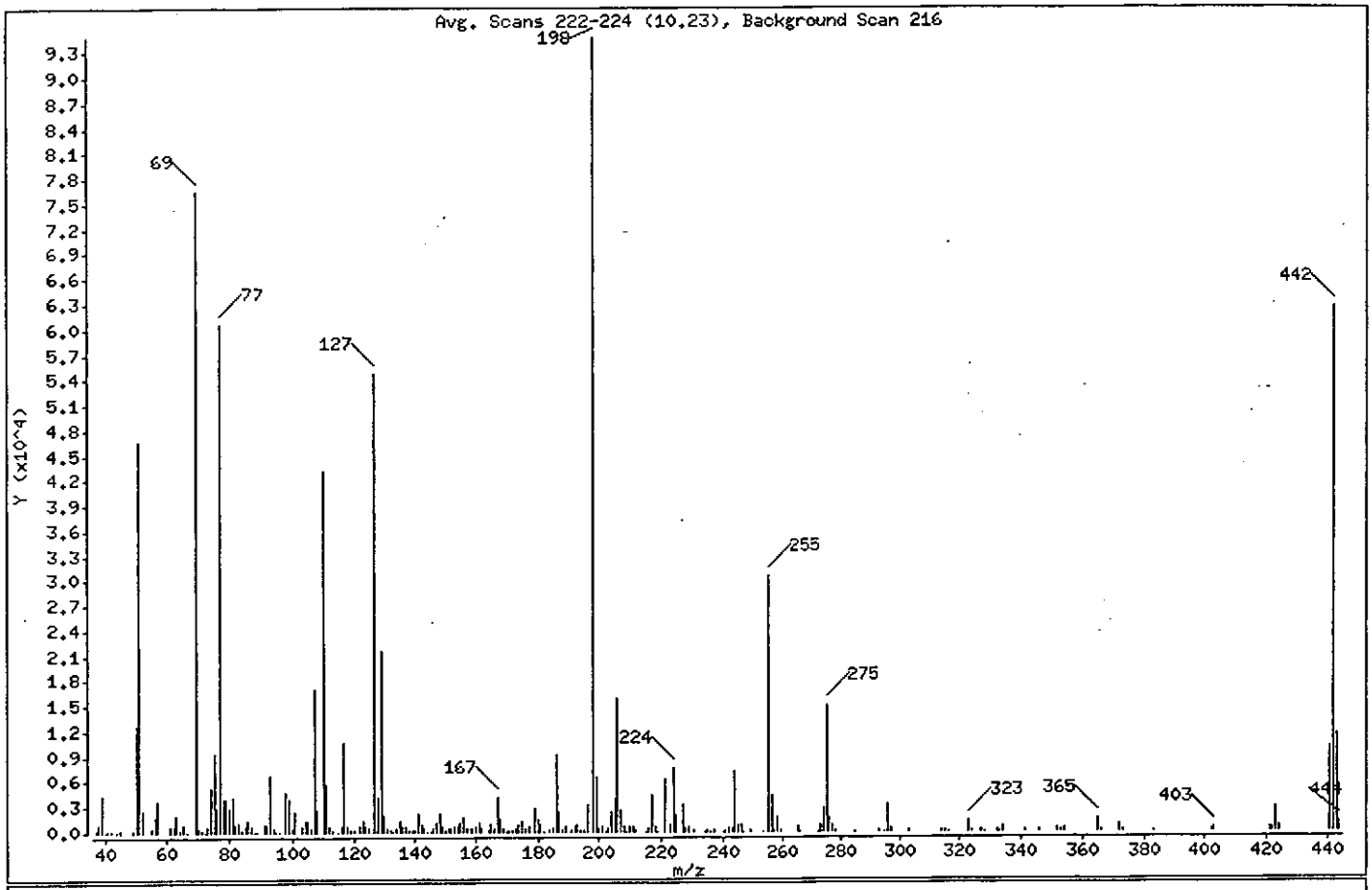
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 49.29 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 80.63 |
| 70 | Less than 2.00% of mass 69 | 0.36 ( 0.45) |
| 127 | 40.00 - 60.00% of mass 198 | 57.78 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.90 |
| 275 | 10.00 - 30.00% of mass 198 | 15.92 |
| 365 | Greater than 1.00% of mass 198 | 1.69 |
| 441 | Present, but less than mass 443 | 10.63 |
| 442 | 40.00 - 100.00% of mass 198 | 65.95 |
| 443 | 17.00 - 23.00% of mass 442 | 12.17 ( 18.45) |

8313

Data File: /chem/HP06780.i/04mar29.b/dc385.d

Date : 29-MAR-2004 07:59

Client ID: DFTPP

Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

Data File: dc385.d

Spectrum: Avg. Scans 222-224 (10.23), Background Scan 216

Location of Maximum: 198.00

Number of points: 230

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 37.00 | 218 | 110.00 | 43096 | 172.00 | 249 | 244.00 | 7190 |
| 38.00 | 781 | 111.00 | 5724 | 173.00 | 431 | 245.00 | 955 |
| 39.00 | 4297 | 112.00 | 746 | 174.00 | 849 | 246.00 | 902 |
| 40.00 | 70 | 113.00 | 186 | 175.00 | 1375 | 247.00 | 94 |
| 41.00 | 110 | 115.00 | 77 | 176.00 | 514 | 249.00 | 203 |
| 42.00 | 141 | 116.00 | 713 | 177.00 | 579 | 253.00 | 80 |
| 44.00 | 11 | 117.00 | 10701 | 179.00 | 2788 | 255.00 | 30592 |
| 45.00 | 158 | 118.00 | 757 | 180.00 | 1564 | 256.00 | 4398 |
| 49.00 | 213 | 119.00 | 112 | 181.00 | 883 | 257.00 | 288 |
| 50.00 | 12661 | 120.00 | 138 | 182.00 | 77 | 258.00 | 1719 |
| 51.00 | 46736 | 122.00 | 733 | 184.00 | 138 | 259.00 | 278 |
| 52.00 | 2660 | 123.00 | 1284 | 185.00 | 393 | 265.00 | 660 |
| 55.00 | 382 | 124.00 | 761 | 186.00 | 9228 | 266.00 | 71 |
| 56.00 | 1697 | 125.00 | 536 | 187.00 | 2487 | 272.00 | 75 |
| 57.00 | 3622 | 127.00 | 54792 | 188.00 | 191 | 273.00 | 904 |
| 61.00 | 667 | 128.00 | 4046 | 189.00 | 553 | 274.00 | 2796 |
| 62.00 | 691 | 129.00 | 21592 | 191.00 | 288 | 275.00 | 15100 |
| 63.00 | 1922 | 130.00 | 1923 | 192.00 | 747 | 276.00 | 1844 |
| 64.00 | 208 | 131.00 | 409 | 193.00 | 877 | 277.00 | 864 |
| 65.00 | 905 | 132.00 | 116 | 194.00 | 154 | 278.00 | 187 |
| 66.00 | 71 | 133.00 | 88 | 195.00 | 226 | 285.00 | 80 |
| 69.00 | 76464 | 134.00 | 452 | 196.00 | 3257 | 293.00 | 207 |
| 70.00 | 344 | 135.00 | 1224 | 198.00 | 94832 | 295.00 | 80 |
| 71.00 | 212 | 136.00 | 551 | 199.00 | 6544 | 296.00 | 3377 |
| 72.00 | 81 | 137.00 | 692 | 200.00 | 469 | 297.00 | 420 |
| 73.00 | 603 | 138.00 | 174 | 201.00 | 570 | 303.00 | 302 |
| 74.00 | 5167 | 139.00 | 158 | 202.00 | 90 | 314.00 | 180 |
| 75.00 | 9330 | 140.00 | 150 | 203.00 | 400 | 315.00 | 292 |
| 76.00 | 2856 | 141.00 | 2246 | 204.00 | 2374 | 316.00 | 74 |
| 77.00 | 60696 | 142.00 | 848 | 205.00 | 3979 | 323.00 | 1379 |
| 78.00 | 3936 | 143.00 | 507 | 206.00 | 15897 | 324.00 | 193 |
| 79.00 | 4027 | 144.00 | 93 | 207.00 | 2605 | 327.00 | 254 |
| 80.00 | 2817 | 145.00 | 96 | 208.00 | 558 | 328.00 | 76 |
| 81.00 | 4238 | 146.00 | 349 | 209.00 | 82 | 332.00 | 150 |
| 82.00 | 933 | 147.00 | 1040 | 210.00 | 608 | 333.00 | 85 |

Data File: /chem/HP06780.i/04mar29.b/dc385.d

Date : 29-MAR-2004 07:59

Client ID: DFTPP

Instrument: HP06780.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: cam01237

Column phase: DB-5

Column diameter: 0.25

Data File: dc385.d

Spectrum: Avg. Scans 222-224 (10.23), Background Scan 216

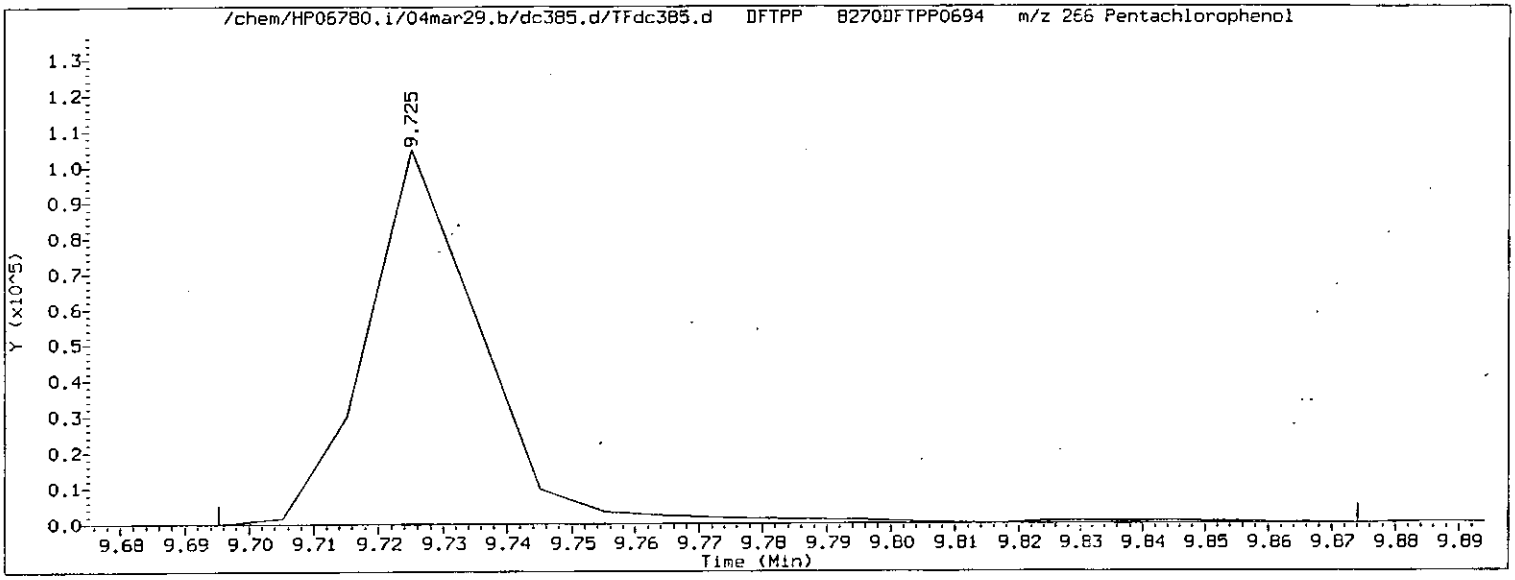
Location of Maximum: 198.00

Number of points: 230

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 83.00 | 1163 | 148.00 | 2269 | 211.00 | 627 | 334.00 | 744 |
| 84.00 | 260 | 149.00 | 637 | 212.00 | 178 | 341.00 | 173 |
| 85.00 | 649 | 150.00 | 226 | 215.00 | 98 | 346.00 | 252 |
| 86.00 | 1332 | 151.00 | 413 | 216.00 | 441 | 352.00 | 376 |
| 87.00 | 570 | 152.00 | 377 | 217.00 | 4349 | 353.00 | 240 |
| 88.00 | 83 | 153.00 | 628 | 218.00 | 563 | 354.00 | 450 |
| 89.00 | 69 | 154.00 | 617 | 219.00 | 88 | 365.00 | 1605 |
| 91.00 | 886 | 155.00 | 1066 | 221.00 | 6411 | 366.00 | 124 |
| 92.00 | 946 | 156.00 | 1807 | 223.00 | 807 | 372.00 | 786 |
| 93.00 | 6664 | 157.00 | 542 | 224.00 | 7639 | 373.00 | 185 |
| 94.00 | 503 | 158.00 | 337 | 225.00 | 1887 | 383.00 | 107 |
| 95.00 | 77 | 159.00 | 341 | 227.00 | 3291 | 402.00 | 317 |
| 96.00 | 85 | 160.00 | 632 | 228.00 | 479 | 403.00 | 349 |
| 98.00 | 4728 | 161.00 | 998 | 229.00 | 622 | 421.00 | 434 |
| 99.00 | 3854 | 162.00 | 371 | 231.00 | 298 | 422.00 | 386 |
| 100.00 | 467 | 164.00 | 140 | 234.00 | 87 | 423.00 | 2939 |
| 101.00 | 2498 | 165.00 | 879 | 235.00 | 192 | 424.00 | 712 |
| 103.00 | 732 | 166.00 | 527 | 236.00 | 98 | 441.00 | 10077 |
| 104.00 | 1279 | 167.00 | 4195 | 237.00 | 171 | 442.00 | 62544 |
| 105.00 | 1350 | 168.00 | 1593 | 240.00 | 79 | 443.00 | 11539 |
| 106.00 | 342 | 169.00 | 345 | 241.00 | 222 | 444.00 | 1063 |
| 107.00 | 16896 | 170.00 | 82 | 242.00 | 418 | | |
| 108.00 | 2605 | 171.00 | 127 | 243.00 | 408 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

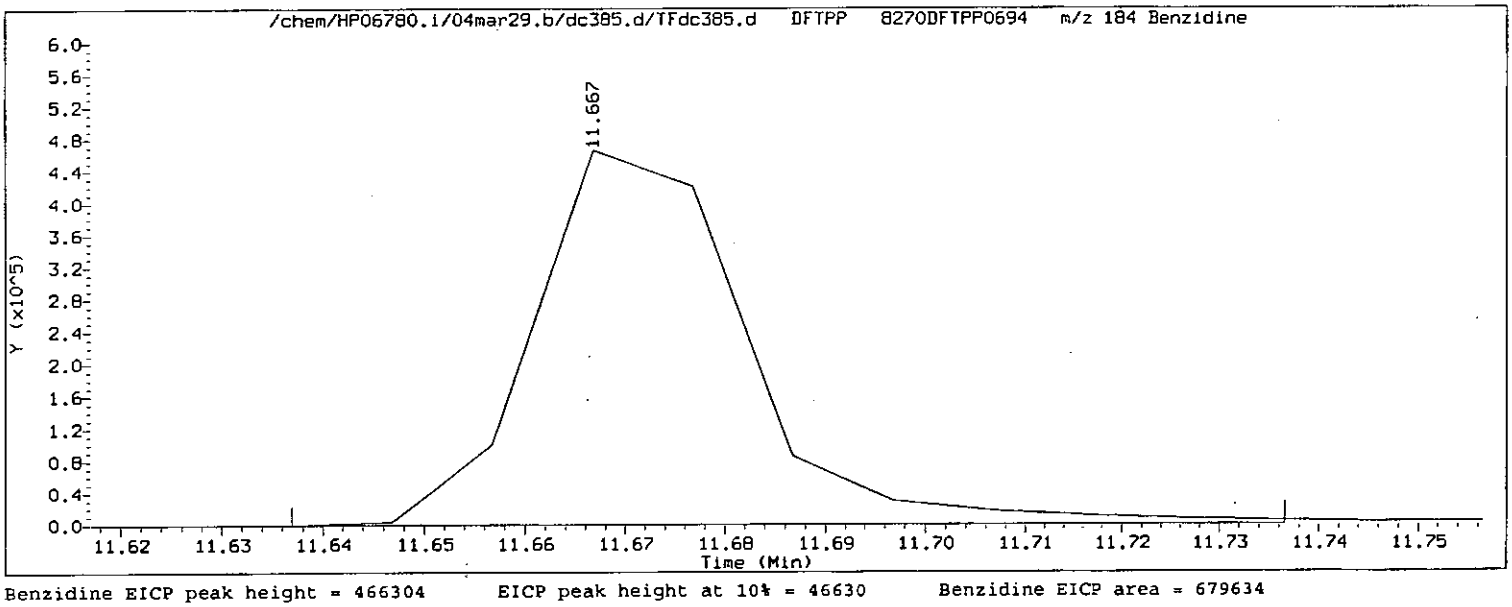
Instrument ID: HP06780.i  Injection Date: 29-MAR-2004 07:59  Operator: cam01237




Pentachlorophenol EICP peak height = 105080  EICP peak height at 10% = 10508  Pentachlorophenol EICP area = 128847

Pentachlorophenol EICP peak apex (min.) = 9.725
RT at 10% of front half of EICP (min.) = 9.708  'Front' peak width (min.) = 0.0168000000
RT at 10% of back half of EICP (min.) = 9.745  'Tailing' peak width (min.) = 0.0198500000

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0198500000}{0.0168000000} = 1.182$




Benzidine EICP peak height = 466304  EICP peak height at 10% = 46630  Benzidine EICP area = 679634

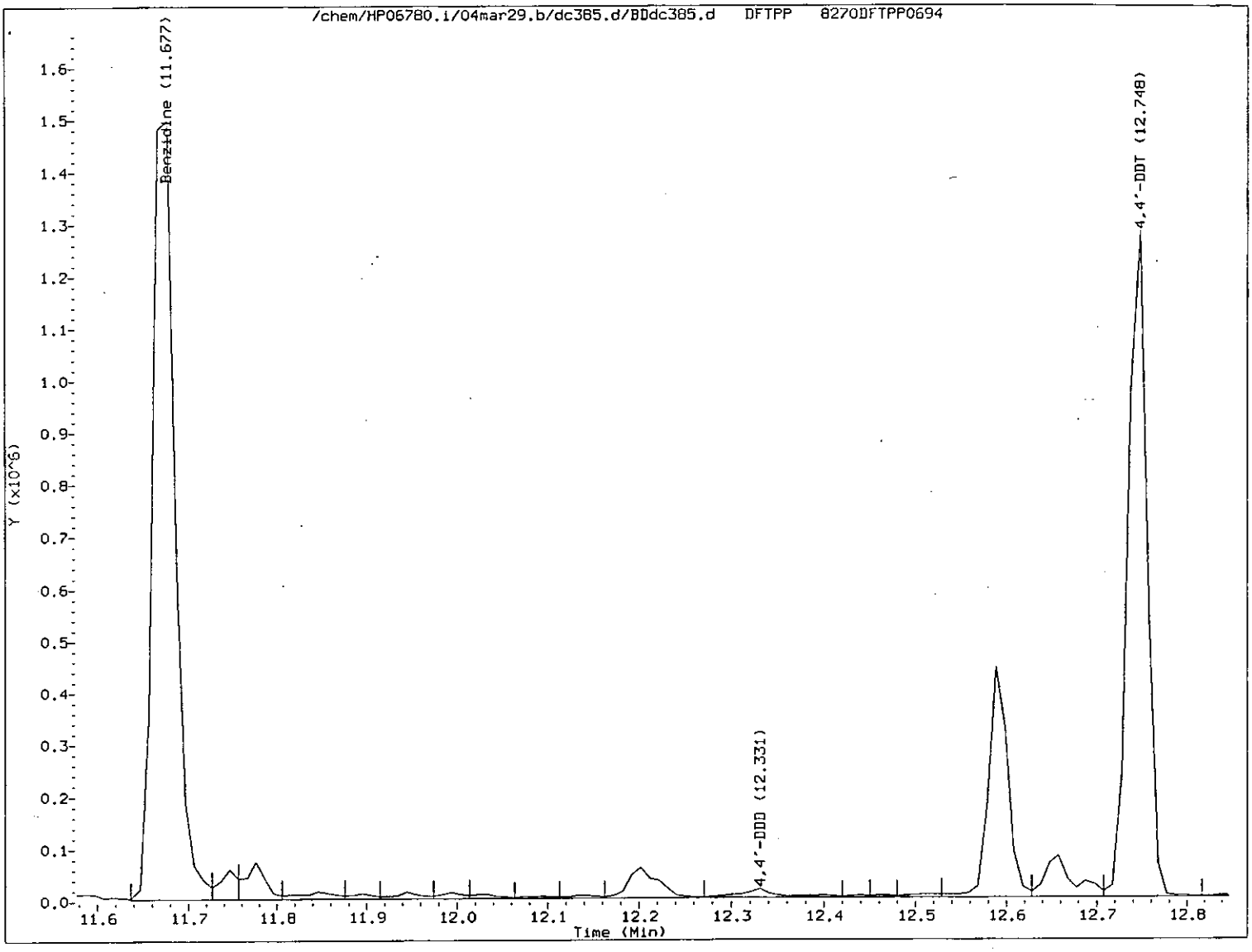
Benzidine EICP peak apex (min.) = 11.667
RT at 10% of front half of EICP (min.) = 11.651  'Front' peak width (min.) = 0.0153333333
RT at 10% of back half of EICP (min.) = 11.693  'Tailing' peak width (min.) = 0.0267000000

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0267000000}{0.0153333333} = 1.741$


printed on 03/29/2004 at 08:15

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06780.i  Injection Date: 29-MAR-2004 07:59  Operator: cam01237




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 49196}{0 + 49196 + 1862230} \times 100 = 2.6$$

9317


printed on 03/29/2004 at 09:26

Data File: /chem/HP06777.i/04mar20.b/gc282.d

Date : 20-MAR-2004 12:47

Client ID: DFTPP

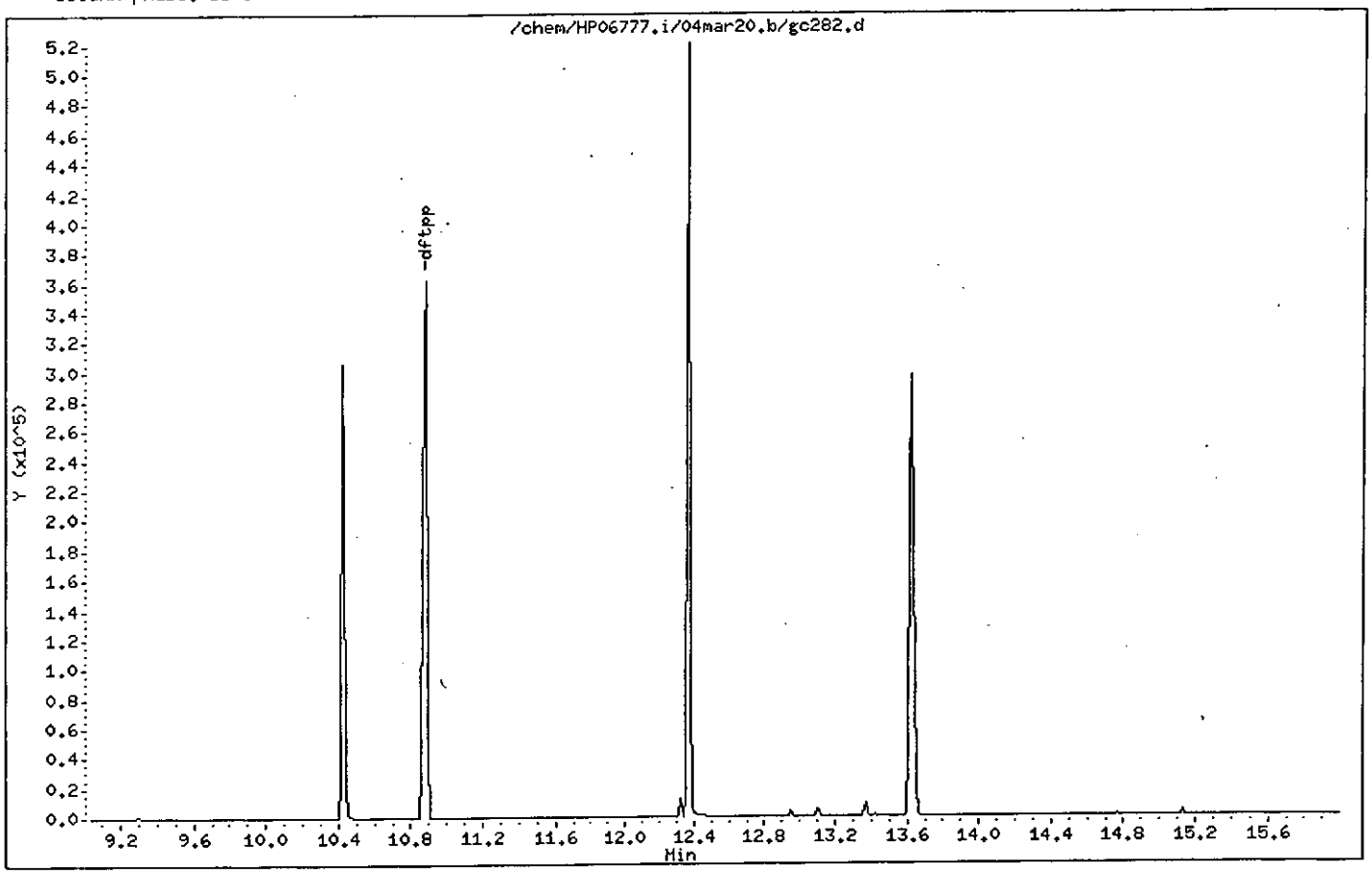
Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25



-Data File: /chem/HP06777.i/04mar20.b/gc282.d

Date : 20-MAR-2004 12:47

Client ID: DFTPP

Instrument: HP06777.i

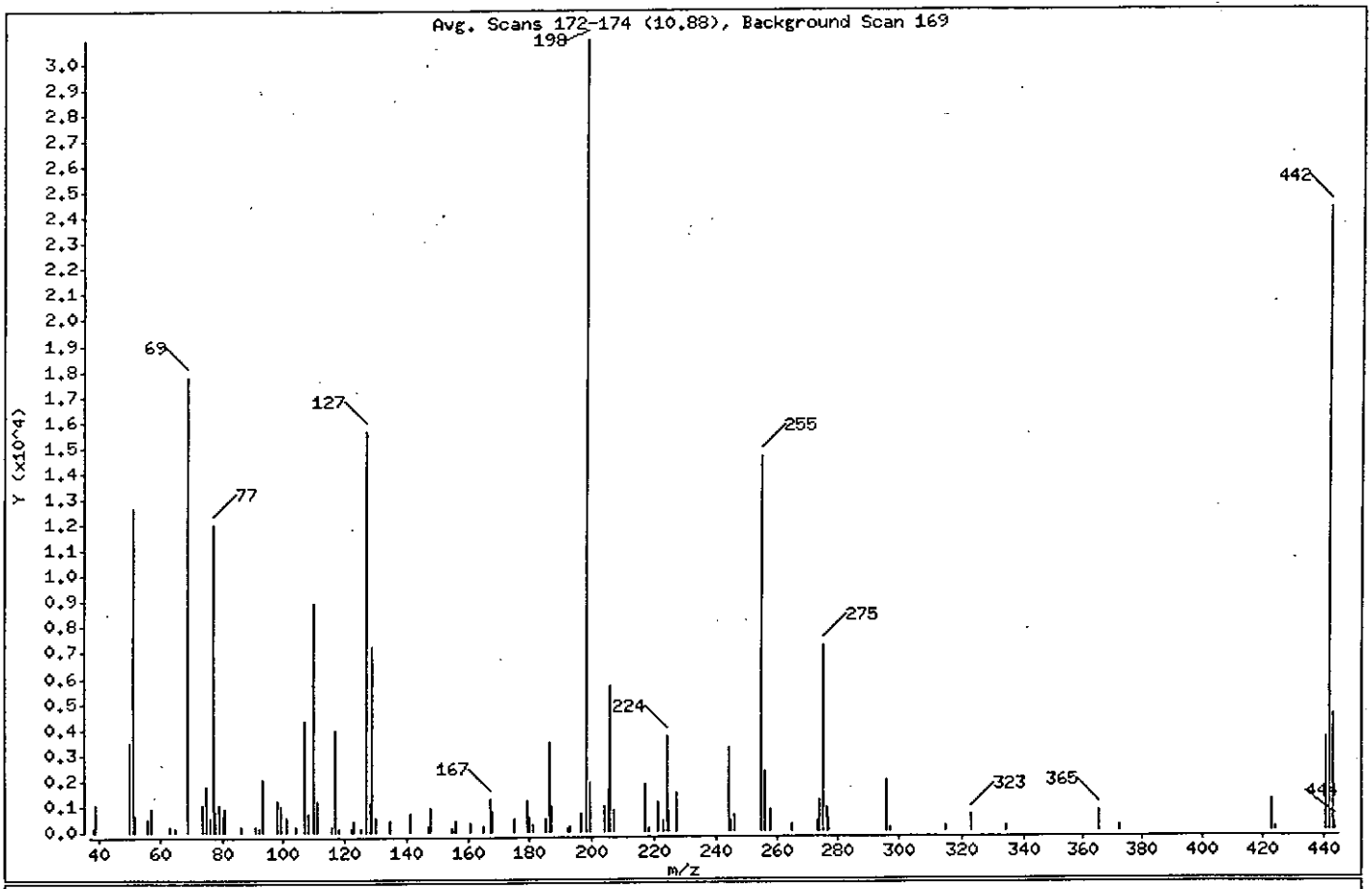
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 40.99 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 57.56 |
| 70 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 127 | 40.00 - 60.00% of mass 198 | 50.53 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.23 |
| 275 | 10.00 - 30.00% of mass 198 | 23.52 |
| 365 | Greater than 1.00% of mass 198 | 2.59 |
| 441 | Present, but less than mass 443 | 11.83 |
| 442 | 40.00 - 99.99% of mass 198 | 78.53 |
| 443 | 17.00 - 23.00% of mass 442 | 14.78 ( 18.82) |

0319

Data File: /chem/HP06777.i/04mar20.b/gc282.d

Date : 20-MAR-2004 12:47

Client ID: DFTPP

Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25

Data File: gc282.d

Spectrum: Avg. Scans 172-174 (10.88), Background Scan 169

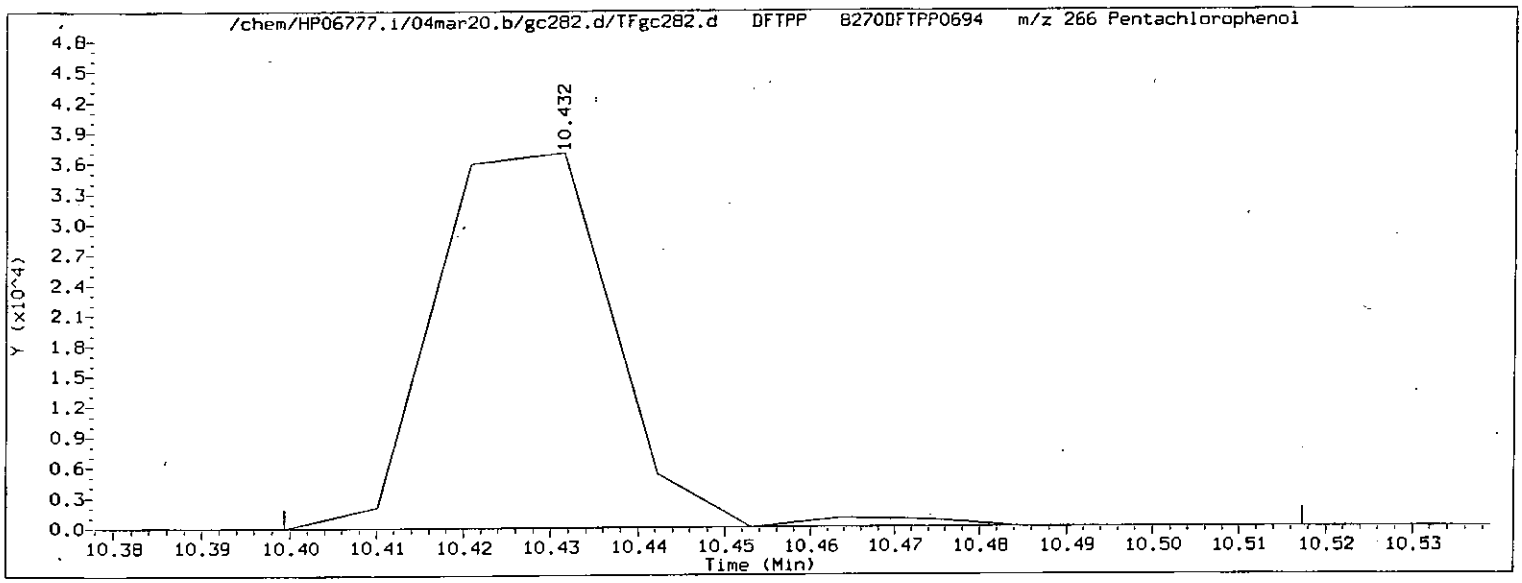
Location of Maximum: 198.00

Number of points: 98

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 38.00 | 172 | 104.00 | 185 | 175.00 | 489 | 246.00 | 607 |
| 39.00 | 1070 | 107.00 | 4330 | 179.00 | 1235 | 255.00 | 14610 |
| 50.00 | 3483 | 108.00 | 698 | 180.00 | 536 | 256.00 | 2319 |
| 51.00 | 12667 | 110.00 | 8924 | 181.00 | 311 | 258.00 | 878 |
| 52.00 | 616 | 111.00 | 1180 | 185.00 | 467 | 265.00 | 255 |
| 56.00 | 469 | 116.00 | 181 | 186.00 | 3469 | 273.00 | 403 |
| 57.00 | 955 | 117.00 | 4006 | 187.00 | 974 | 274.00 | 1194 |
| 63.00 | 230 | 118.00 | 169 | 192.00 | 171 | 275.00 | 7269 |
| 65.00 | 155 | 122.00 | 169 | 193.00 | 183 | 276.00 | 893 |
| 69.00 | 17784 | 123.00 | 422 | 196.00 | 719 | 277.00 | 498 |
| 74.00 | 1054 | 125.00 | 170 | 198.00 | 30904 | 296.00 | 2009 |
| 75.00 | 1809 | 127.00 | 15617 | 199.00 | 1926 | 297.00 | 169 |
| 76.00 | 587 | 128.00 | 1110 | 204.00 | 1006 | 315.00 | 202 |
| 77.00 | 12016 | 129.00 | 7230 | 205.00 | 1613 | 323.00 | 615 |
| 78.00 | 752 | 130.00 | 592 | 206.00 | 5684 | 334.00 | 183 |
| 79.00 | 1043 | 135.00 | 451 | 207.00 | 875 | 365.00 | 802 |
| 80.00 | 629 | 141.00 | 724 | 217.00 | 1841 | 372.00 | 194 |
| 81.00 | 947 | 147.00 | 191 | 218.00 | 164 | 423.00 | 1203 |
| 86.00 | 180 | 148.00 | 937 | 221.00 | 1167 | 424.00 | 160 |
| 91.00 | 179 | 155.00 | 169 | 223.00 | 432 | 441.00 | 3657 |
| 92.00 | 151 | 156.00 | 442 | 224.00 | 3679 | 442.00 | 24264 |
| 93.00 | 2093 | 161.00 | 352 | 225.00 | 791 | 443.00 | 4568 |
| 98.00 | 1239 | 165.00 | 189 | 227.00 | 1516 | 444.00 | 295 |
| 99.00 | 981 | 167.00 | 1282 | 244.00 | 3271 | | |
| 101.00 | 564 | 168.00 | 755 | 245.00 | 403 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

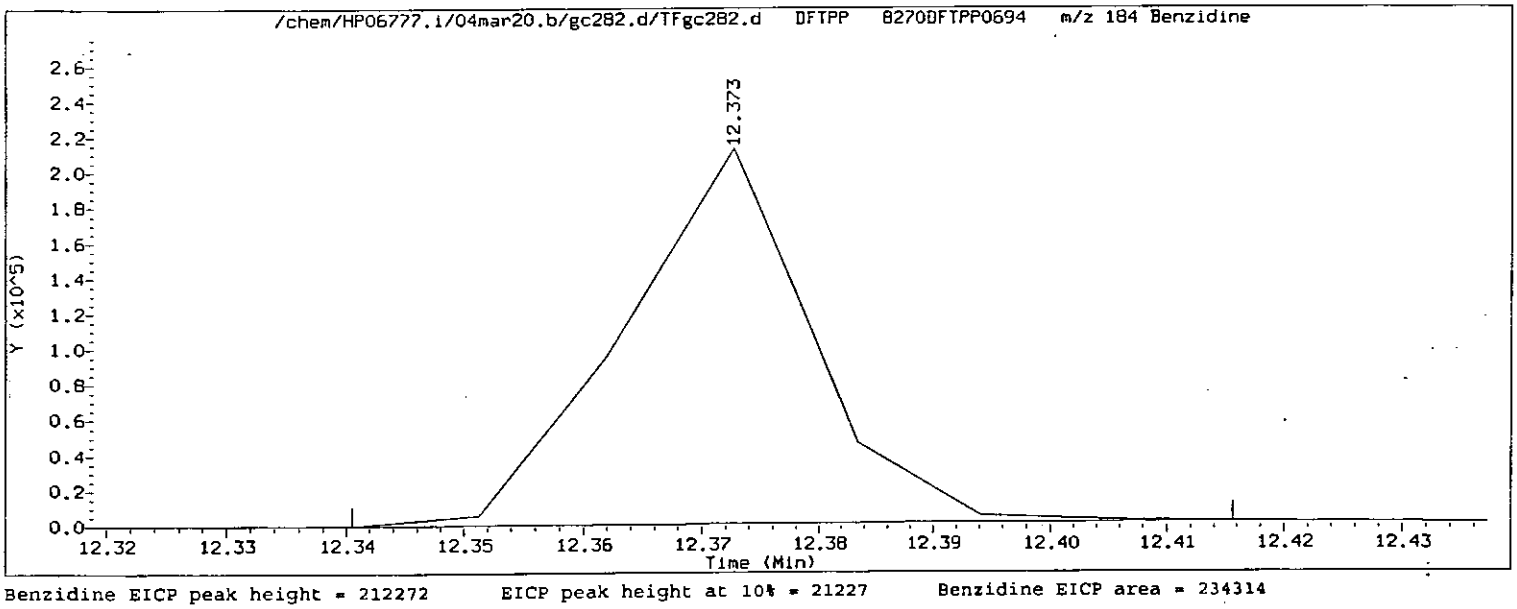
Instrument ID: HP06777.i  Injection Date: 20-MAR-2004 12:47  Operator: jmg00068




Pentachlorophenol EICP peak height = 36960  EICP peak height at 10% = 3696  Pentachlorophenol EICP area = 52583

Pentachlorophenol EICP peak apex (min.) = 10.432
RT at 10% of front half of EICP (min.) = 10.411  'Front' peak width (min.) = 0.0209000000
RT at 10% of back half of EICP (min.) = 10.445  'Tailing' peak width (min.) = 0.0139666667

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0139666667}{0.0209000000} = 0.668$$




Benzidine EICP peak height = 212272  EICP peak height at 10% = 21227  Benzidine EICP area = 234314

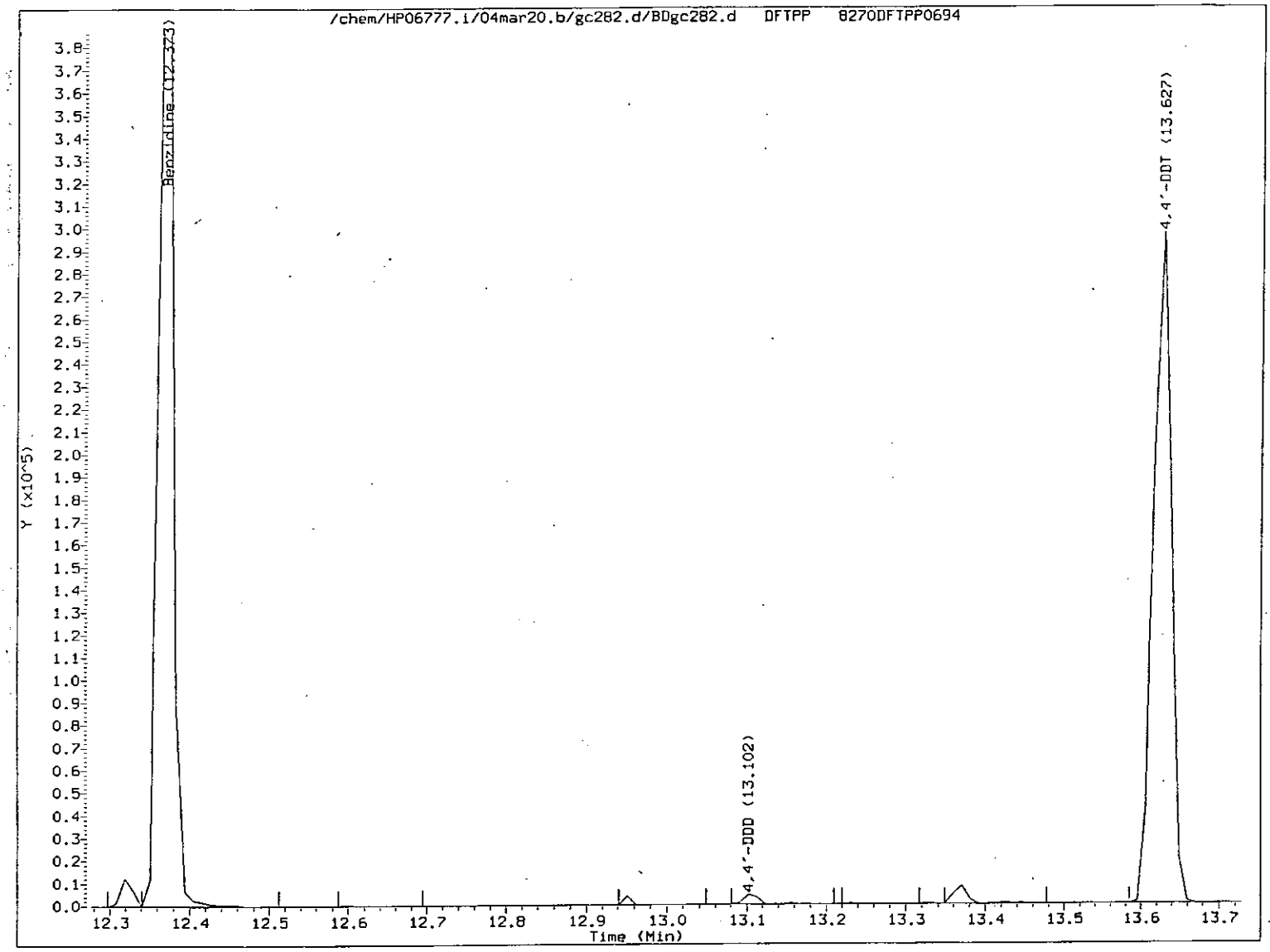
Benzidine EICP peak apex (min.) = 12.373
RT at 10% of front half of EICP (min.) = 12.353  'Front' peak width (min.) = 0.0195166667
RT at 10% of back half of EICP (min.) = 12.390  'Tailing' peak width (min.) = 0.0170833333

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0170833333}{0.0195166667} = 0.875$$


printed on 03/20/2004 at 13:05

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06777.i  Injection Date: 20-MAR-2004 12:47  Operator: jmg00068




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 5648}{0 + 5648 + 477825} \times 100 = 1.2$$

0322


printed on 03/20/2004 at 13:05

Data File: /chem/HP06777.i/04mar26.b/gc380.d

Date : 26-MAR-2004 06:48

Client ID: DFTPP

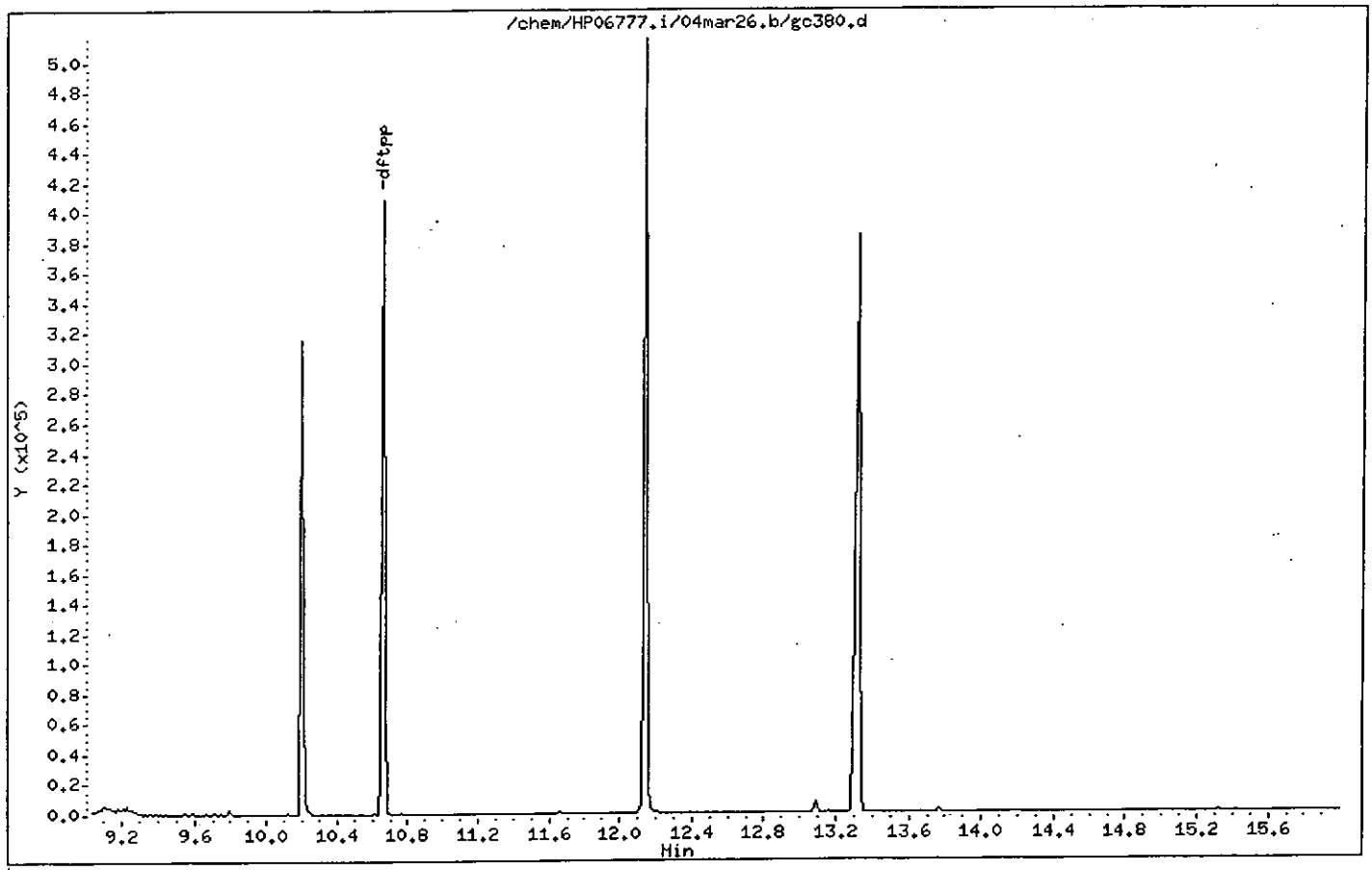
Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: bkg00522

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06777.i/04mar26.b/gc380.d

Date : 26-MAR-2004 06:48

Client ID: DFTPP

Instrument: HP06777.i

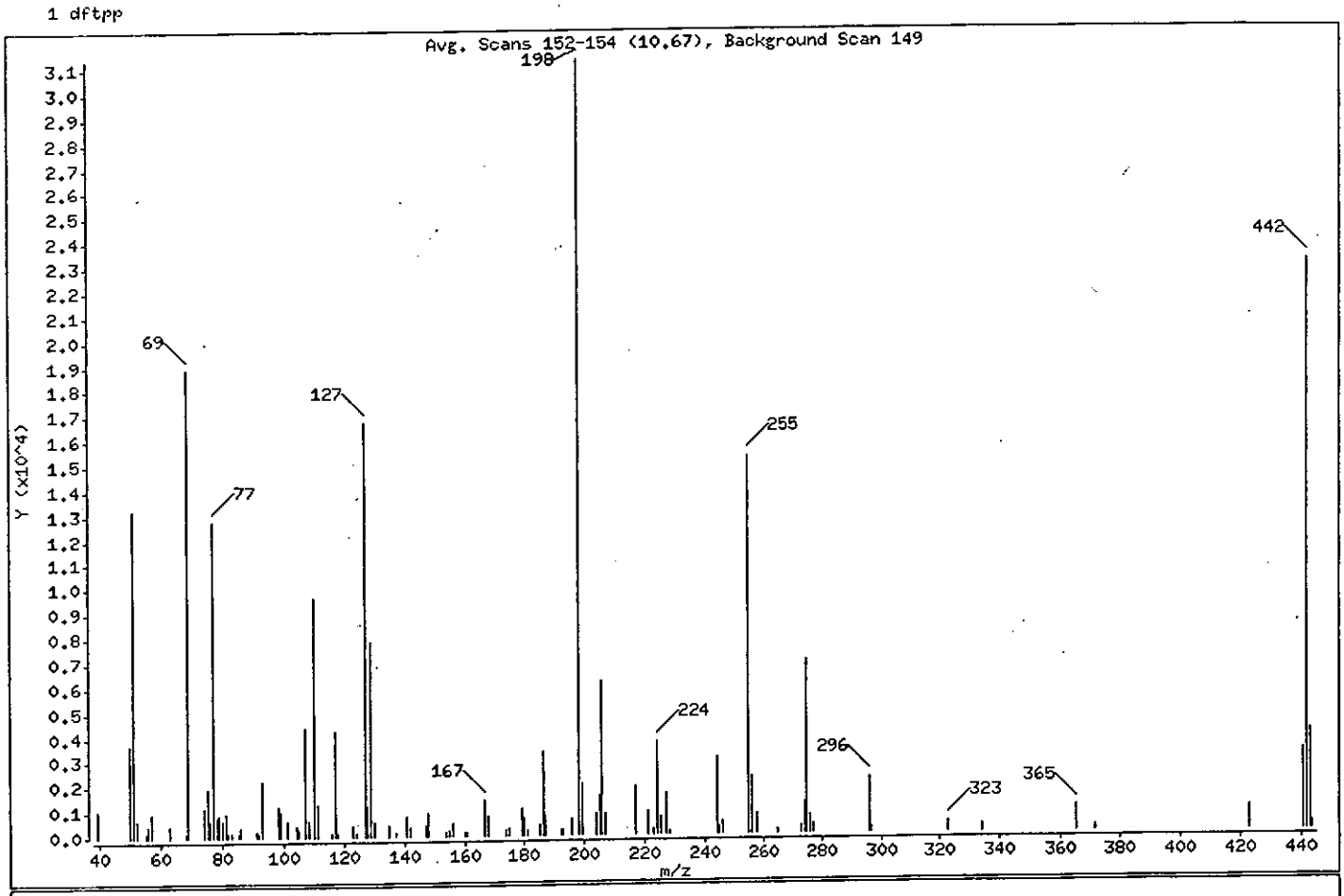
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: bkg00522

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| | | |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 41.96 |
| 68 | Less than 2.00% of mass 69 | 0.53 ( 0.88) |
| 69 | Mass 69 relative abundance | 60.33 |
| 70 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 127 | 40.00 - 60.00% of mass 198 | 53.41 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.58 |
| 275 | 10.00 - 30.00% of mass 198 | 22.40 |
| 365 | Greater than 1.00% of mass 198 | 3.30 |
| 441 | Present, but less than mass 443 | 10.38 |
| 442 | 40.00 - 99.99% of mass 198 | 73.64 |
| 443 | 17.00 - 23.00% of mass 442 | 12.77 ( 17.34) |

Data File: /chem/HP06777.i/04mar26.b/gc380.d

Date : 26-MAR-2004 06:48

Client ID: DFTPP

Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: bkg00522

Column phase: DB-5

Column diameter: 0.25

Data File: gc380.d

Spectrum: Avg. Scans 152-154 (10.67), Background Scan 149

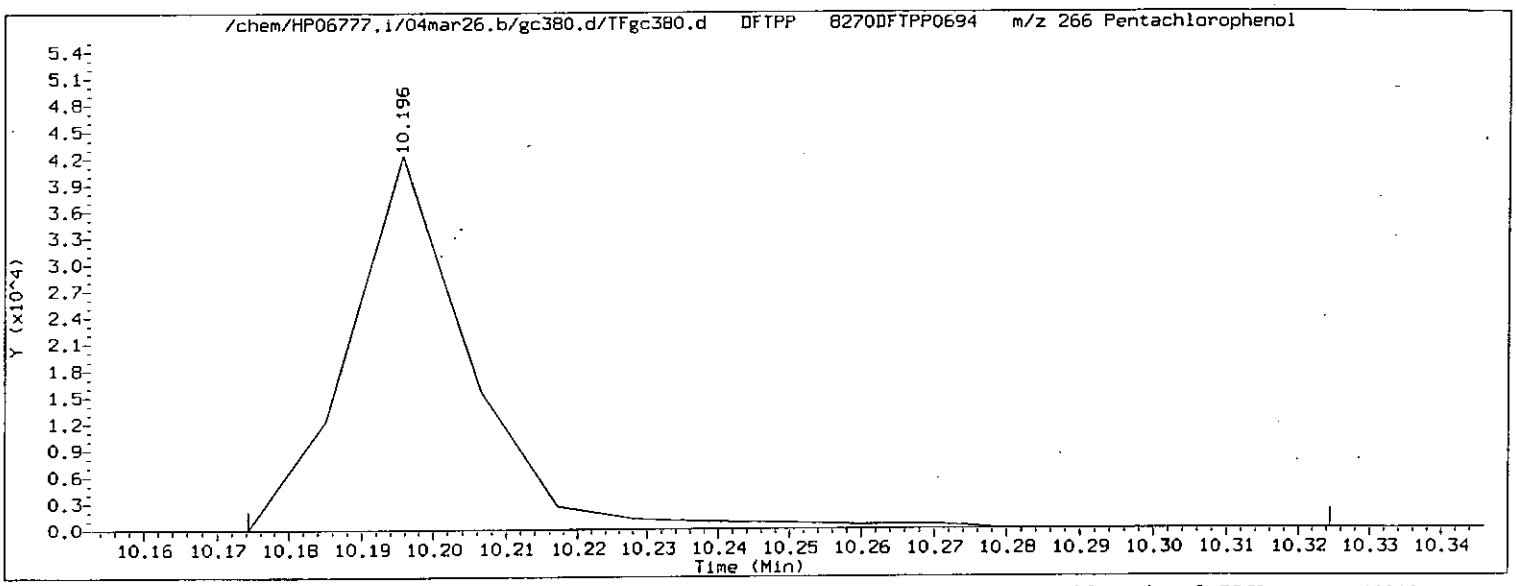
Location of Maximum: 198.00

Number of points: 103

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 39.00 | 1105 | 99.00 | 1013 | 160.00 | 162 | 227.00 | 1634 |
| 50.00 | 3657 | 101.00 | 662 | 161.00 | 170 | 228.00 | 153 |
| 51.00 | 13165 | 104.00 | 430 | 167.00 | 1436 | 244.00 | 3099 |
| 52.00 | 625 | 105.00 | 321 | 168.00 | 806 | 245.00 | 271 |
| 55.00 | 150 | 107.00 | 4389 | 174.00 | 215 | 246.00 | 483 |
| 56.00 | 445 | 108.00 | 624 | 175.00 | 278 | 255.00 | 15316 |
| 57.00 | 927 | 110.00 | 9634 | 179.00 | 1050 | 256.00 | 2326 |
| 63.00 | 454 | 111.00 | 1290 | 180.00 | 709 | 258.00 | 791 |
| 68.00 | 167 | 116.00 | 160 | 181.00 | 219 | 265.00 | 180 |
| 69.00 | 18928 | 117.00 | 4250 | 185.00 | 419 | 273.00 | 294 |
| 74.00 | 1168 | 118.00 | 152 | 186.00 | 3382 | 274.00 | 1207 |
| 75.00 | 1981 | 123.00 | 452 | 187.00 | 806 | 275.00 | 7027 |
| 76.00 | 678 | 124.00 | 157 | 192.00 | 197 | 276.00 | 702 |
| 77.00 | 12759 | 127.00 | 16752 | 193.00 | 205 | 277.00 | 355 |
| 78.00 | 796 | 128.00 | 1223 | 196.00 | 619 | 296.00 | 2200 |
| 79.00 | 889 | 129.00 | 7881 | 198.00 | 31368 | 297.00 | 207 |
| 80.00 | 675 | 130.00 | 591 | 199.00 | 2066 | 323.00 | 411 |
| 81.00 | 936 | 135.00 | 465 | 204.00 | 890 | 334.00 | 262 |
| 82.00 | 151 | 137.00 | 151 | 205.00 | 1554 | 365.00 | 1035 |
| 83.00 | 171 | 141.00 | 763 | 206.00 | 6225 | 372.00 | 247 |
| 85.00 | 166 | 142.00 | 330 | 207.00 | 839 | 423.00 | 947 |
| 86.00 | 389 | 147.00 | 411 | 217.00 | 1960 | 441.00 | 3258 |
| 91.00 | 207 | 148.00 | 967 | 221.00 | 935 | 442.00 | 23104 |
| 92.00 | 159 | 154.00 | 159 | 223.00 | 222 | 443.00 | 4007 |
| 93.00 | 2260 | 155.00 | 227 | 224.00 | 3721 | 444.00 | 324 |
| 98.00 | 1260 | 156.00 | 531 | 225.00 | 708 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

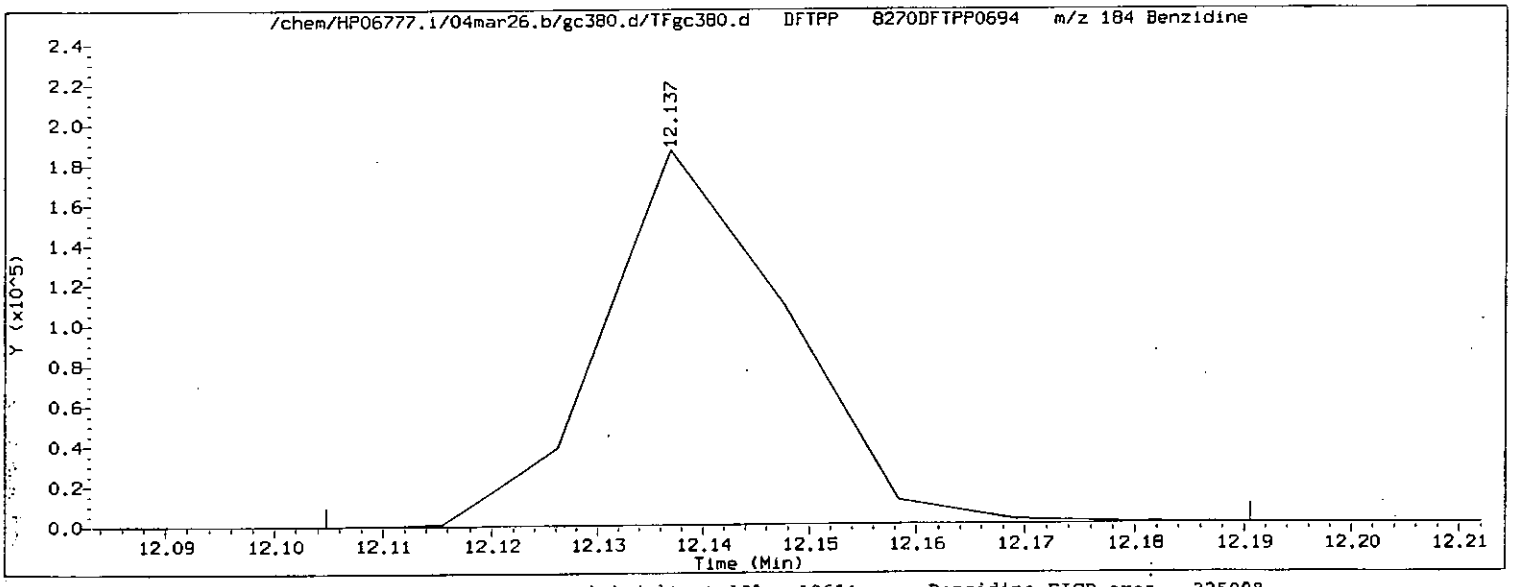
Instrument ID: HP06777.i  Injection Date: 26-MAR-2004 06:48  Operator: bkg00522




Pentachlorophenol EICP peak height = 42344  EICP peak height at 10% = 4234  Pentachlorophenol EICP area = 49313

Pentachlorophenol EICP peak apex (min.) = 10.196
RT at 10% of front half of EICP (min.) = 10.178  'Front' peak width (min.) = 0.0177500000
RT at 10% of back half of EICP (min.) = 10.216  'Tailing' peak width (min.) = 0.0201000000

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0201000000}{0.0177500000} = 1.132$




Benzidine EICP peak height = 186540  EICP peak height at 10% = 18654  Benzidine EICP area = 225008

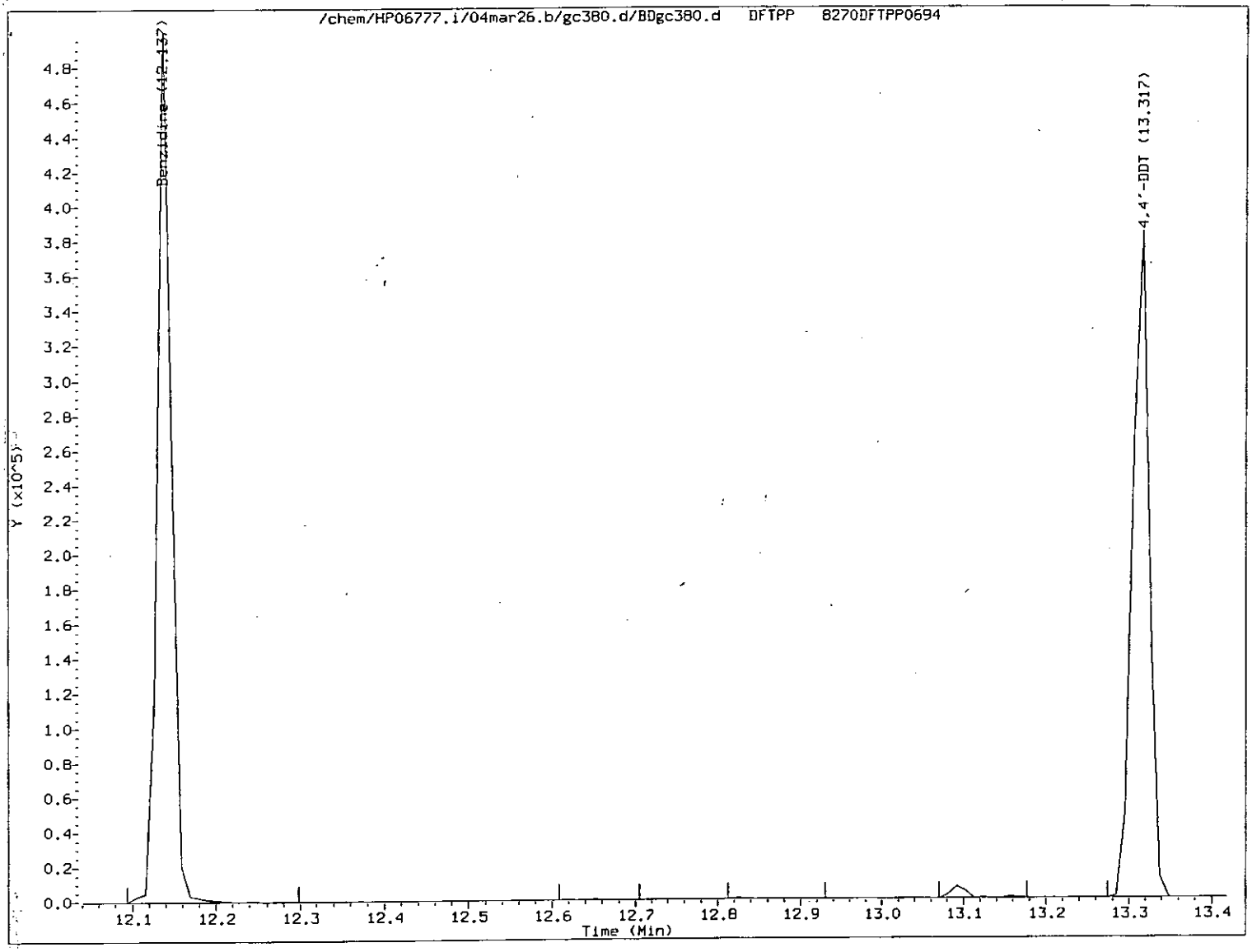
Benzidine EICP peak apex (min.) = 12.137
RT at 10% of front half of EICP (min.) = 12.121  'Front' peak width (min.) = 0.0163333333
RT at 10% of back half of EICP (min.) = 12.158  'Tailing' peak width (min.) = 0.0207166667

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0207166667}{0.0163333333} = 1.268$


printed on 03/26/2004 at 07:06

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06777.i Injection Date: 26-MAR-2004 06:48 Operator: bkg00522




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 0}{0 + 0 + 552410} \times 100 = 0.0$$

0327


printed on 03/26/2004 at 07:06

Data File: /chem/HP06777.i/04mar26a.b/gc39y.d

Date : 26-MAR-2004 20:30

Client ID: DFTPP

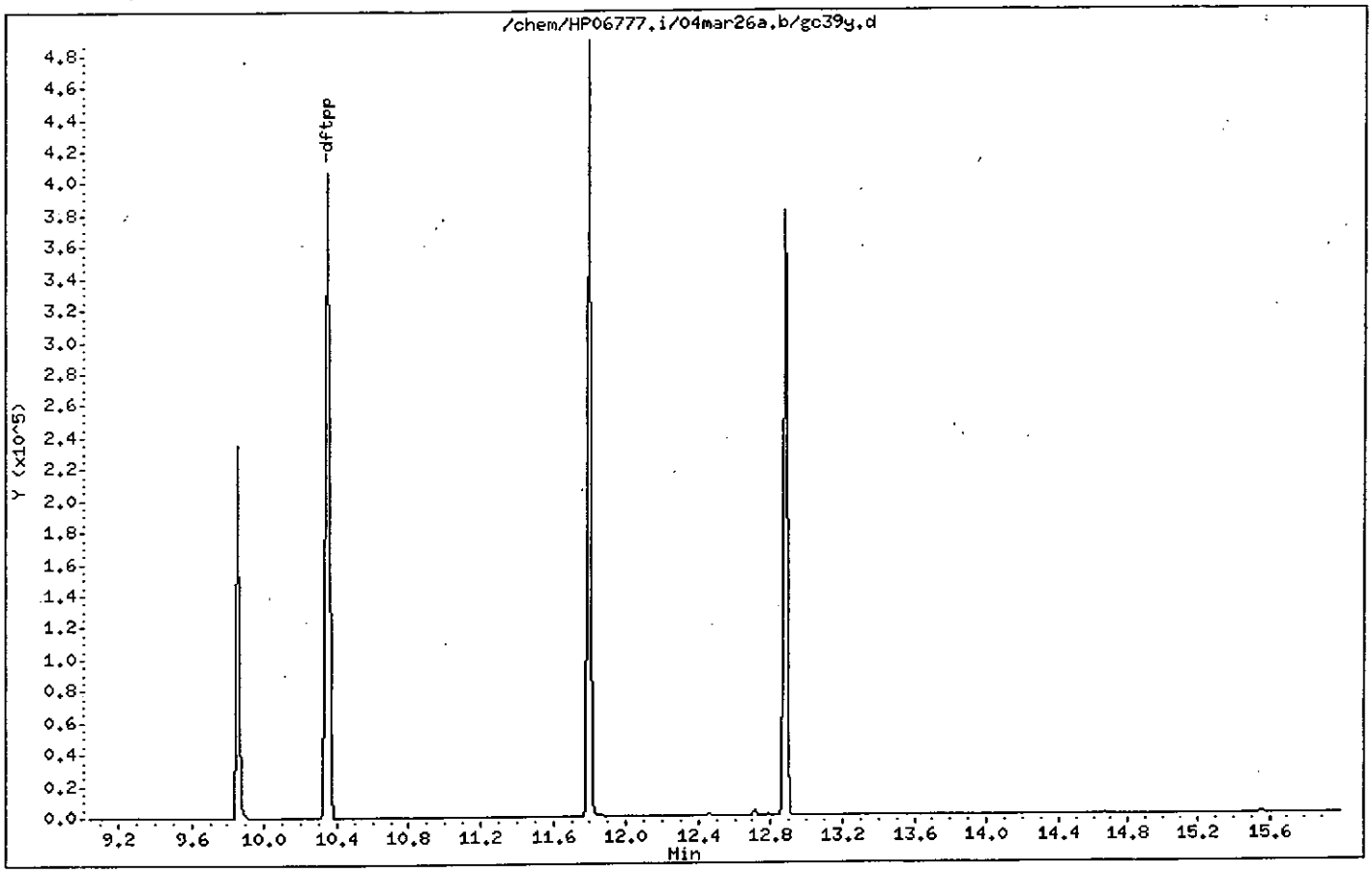
Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/HP06777.i/04mar26a.b/gc39y.d

Date : 26-MAR-2004 20:30

Client ID: DFTPP

Instrument: HP06777.i

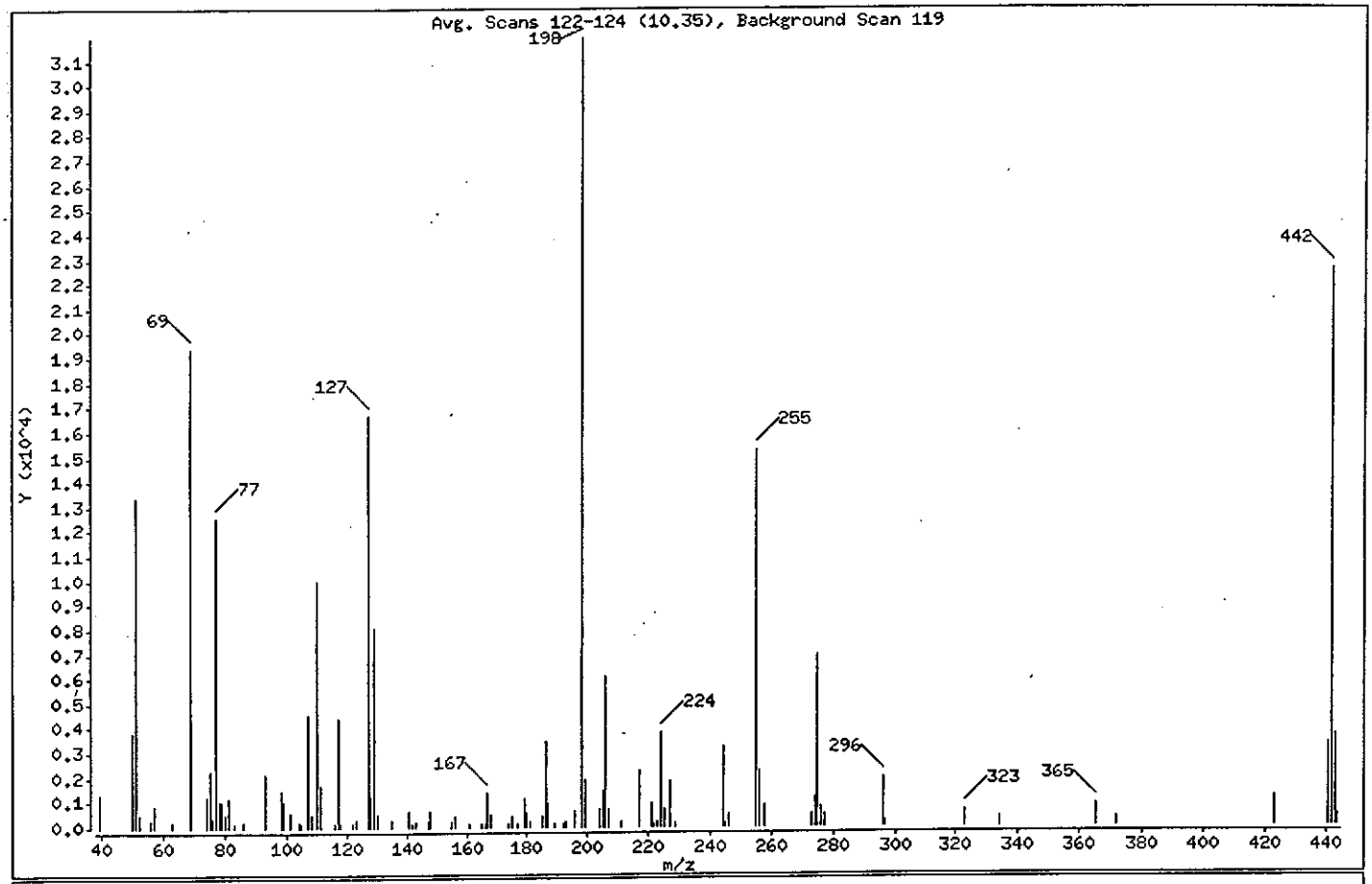
Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| | | |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 30.00 - 60.00% of mass 198 | 41.86 |
| 68 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 69 | Mass 69 relative abundance | 60.72 |
| 70 | Less than 2.00% of mass 69 | 0.00 ( 0.00) |
| 127 | 40.00 - 60.00% of mass 198 | 52.13 |
| 197 | Less than 1.00% of mass 198 | 0.00 |
| 199 | 5.00 - 9.00% of mass 198 | 6.05 |
| 275 | 10.00 - 30.00% of mass 198 | 21.93 |
| 365 | Greater than 1.00% of mass 198 | 2.73 |
| 441 | Present, but less than mass 443 | 10.34 |
| 442 | 40.00 - 99.99% of mass 198 | 70.49 |
| 443 | 17.00 - 23.00% of mass 442 | 11.53 ( 16.36) * |

8329

Data File: /chem/HP06777.i/04mar26a.b/gc39y.d

Date : 26-MAR-2004 20:30

Client ID: DFTPP

Instrument: HP06777.i

Sample Info: DFTPP;8270DFTPP0694;;;;;

Operator: jmg00068

Column phase: DB-5

Column diameter: 0.25

Data File: gc39y.d

Spectrum: Avg. Scans 122-124 (10.35), Background Scan 119

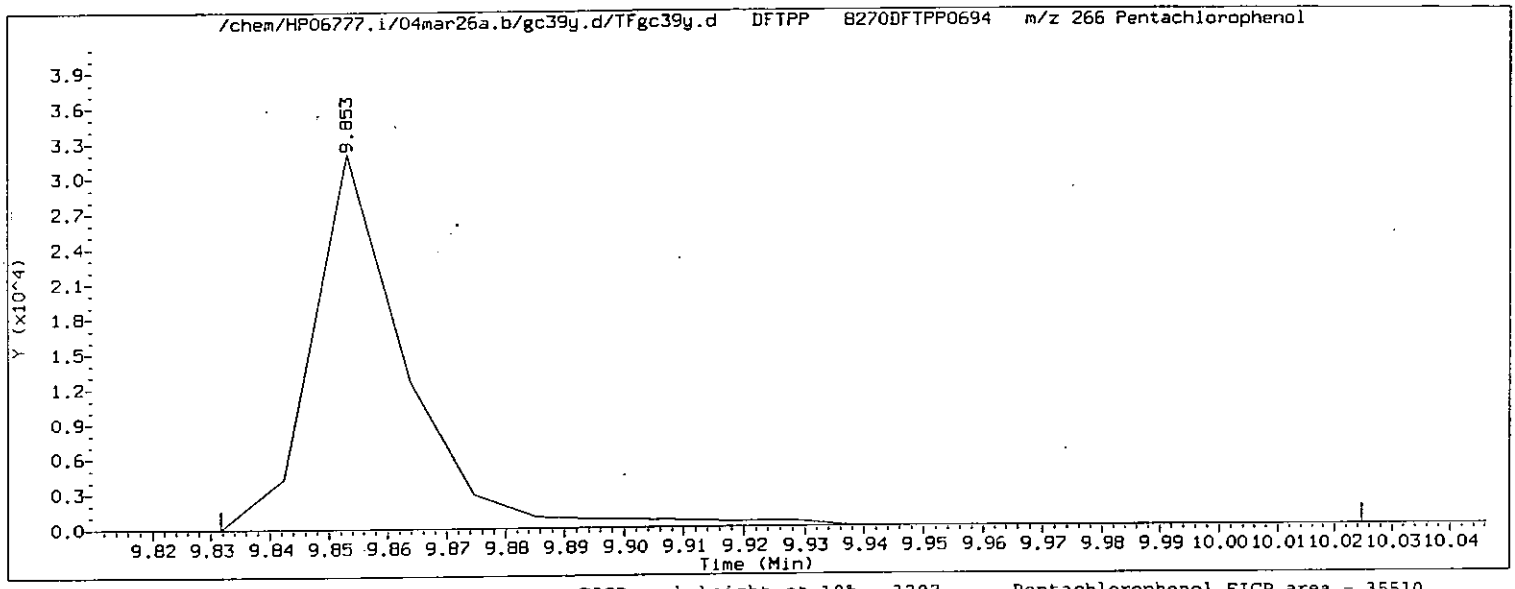
Location of Maximum: 198.00

Number of points: 100

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 39.00 | 1287 | 110.00 | 9951 | 177.00 | 155 | 244.00 | 3212 |
| 50.00 | 3840 | 111.00 | 1712 | 179.00 | 1162 | 245.00 | 169 |
| 51.00 | 13363 | 116.00 | 155 | 180.00 | 592 | 246.00 | 523 |
| 52.00 | 536 | 117.00 | 4392 | 181.00 | 251 | 255.00 | 15232 |
| 56.00 | 276 | 118.00 | 163 | 185.00 | 469 | 256.00 | 2298 |
| 57.00 | 865 | 122.00 | 157 | 186.00 | 3468 | 258.00 | 860 |
| 63.00 | 245 | 123.00 | 296 | 187.00 | 935 | 273.00 | 516 |
| 69.00 | 19376 | 127.00 | 16640 | 189.00 | 158 | 274.00 | 1145 |
| 74.00 | 1240 | 128.00 | 1276 | 192.00 | 176 | 275.00 | 6999 |
| 75.00 | 2251 | 129.00 | 8067 | 193.00 | 207 | 276.00 | 791 |
| 76.00 | 385 | 130.00 | 523 | 196.00 | 641 | 277.00 | 496 |
| 77.00 | 12518 | 135.00 | 321 | 198.00 | 31920 | 296.00 | 1990 |
| 78.00 | 1011 | 141.00 | 685 | 199.00 | 1932 | 297.00 | 198 |
| 79.00 | 1049 | 142.00 | 153 | 204.00 | 727 | 323.00 | 625 |
| 80.00 | 532 | 143.00 | 185 | 205.00 | 1478 | 334.00 | 385 |
| 81.00 | 1142 | 147.00 | 189 | 206.00 | 6077 | 365.00 | 872 |
| 83.00 | 168 | 148.00 | 695 | 207.00 | 764 | 372.00 | 363 |
| 86.00 | 222 | 155.00 | 225 | 211.00 | 193 | 423.00 | 1147 |
| 93.00 | 2156 | 156.00 | 462 | 217.00 | 2288 | 441.00 | 3302 |
| 98.00 | 1481 | 161.00 | 175 | 221.00 | 939 | 442.00 | 22496 |
| 99.00 | 1040 | 165.00 | 172 | 222.00 | 155 | 443.00 | 3681 |
| 101.00 | 580 | 166.00 | 165 | 223.00 | 228 | 444.00 | 432 |
| 104.00 | 245 | 167.00 | 1421 | 224.00 | 3789 | | |
| 105.00 | 164 | 168.00 | 501 | 225.00 | 719 | | |
| 107.00 | 4533 | 174.00 | 161 | 227.00 | 1807 | | |
| 108.00 | 549 | 175.00 | 441 | 229.00 | 157 | | |

# Assessment of GC Column Performance and Injection Port Inertness for

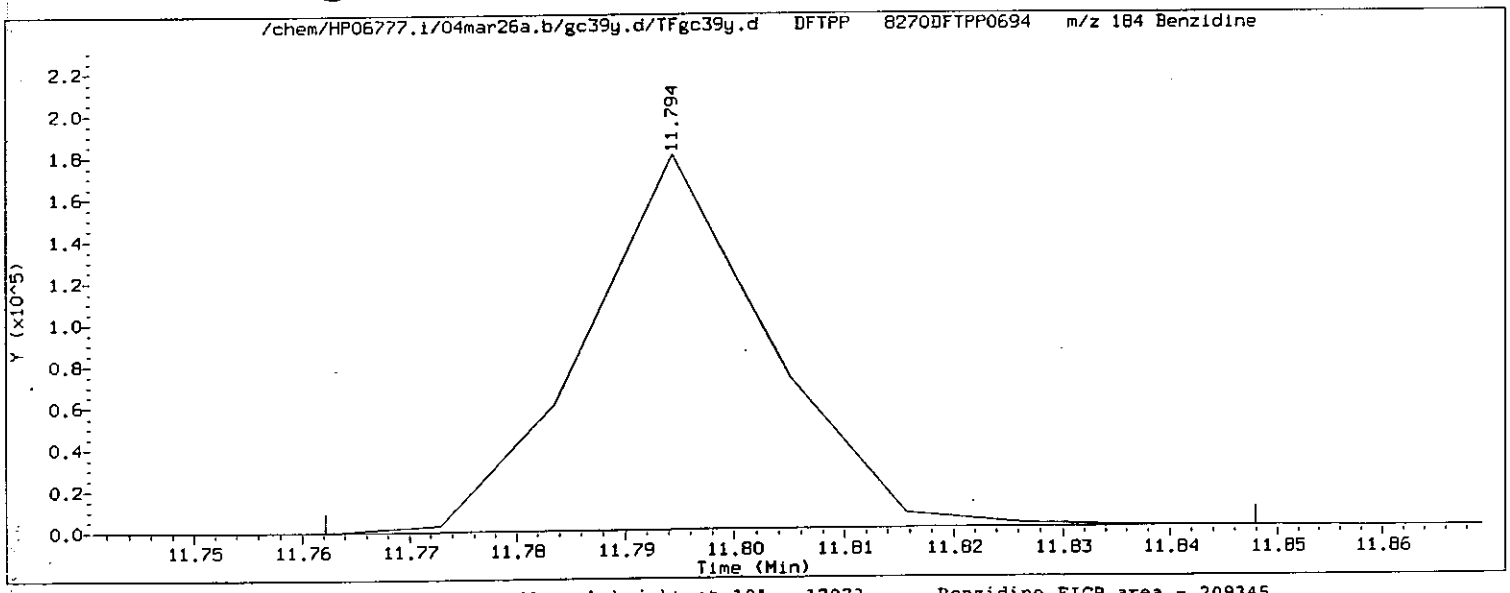
Instrument ID: HP06777.i  Injection Date: 26-MAR-2004 20:30  Operator: jmg00068




Pentachlorophenol EICP peak height = 32072  EICP peak height at 10% = 3207  Pentachlorophenol EICP area = 35510

Pentachlorophenol EICP peak apex (min.) = 9.853
RT at 10% of front half of EICP (min.) = 9.840  'Front' peak width (min.) = 0.0134666667
RT at 10% of back half of EICP (min.) = 9.874  'Tailing' peak width (min.) = 0.0211166667

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0211166667}{0.0134666667} = 1.568$




Benzidine EICP peak height = 179728  EICP peak height at 10% = 17973  Benzidine EICP area = 209345

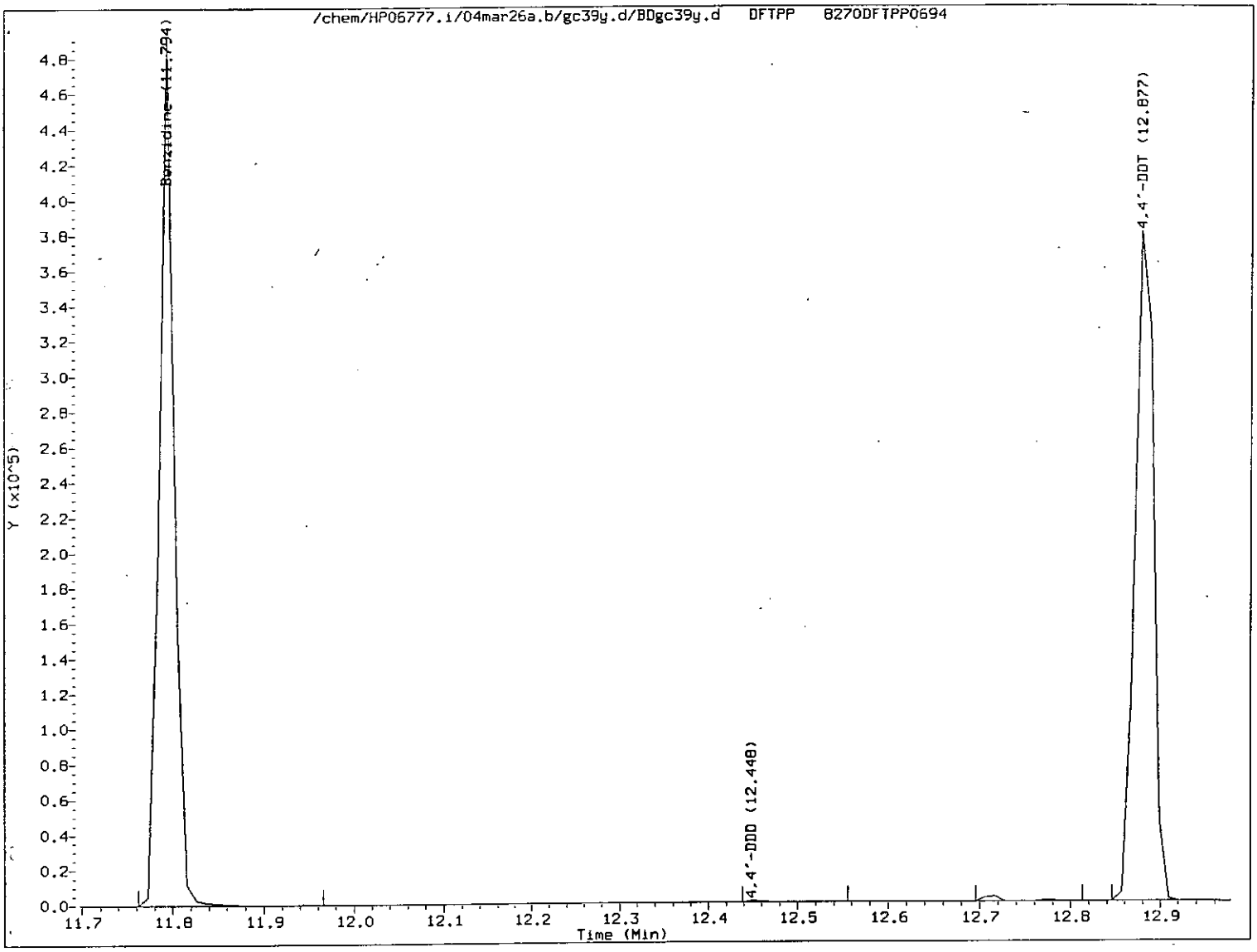
Benzidine EICP peak apex (min.) = 11.794
RT at 10% of front half of EICP (min.) = 11.776  'Front' peak width (min.) = 0.0186166667
RT at 10% of back half of EICP (min.) = 11.814  'Tailing' peak width (min.) = 0.0197166667

Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0197166667}{0.0186166667} = 1.059$


printed on 03/26/2004 at 20:48

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP06777.i Injection Date: 26-MAR-2004 20:30 Operator: jmg00068




$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{0 + 1068}{0 + 1068 + 563967} \times 100 = 0.2$$

0332

# SBLKLC0857 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLC085

Data file: /chem/HP06777.i/04mar26.b/gc382.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.547 | (-0.001) | 841 | 152.0 | 289203 | ( 11) | 40.00 | |
| 52) Naphthalene-d8 | 16.311 | ( 0.009) | 1192 | 136.0 | 1064449 | ( 7) | 40.00 | |
| 96) Acenaphthene-d10 | 21.706 | ( 0.009) | 1695 | 164.0 | 489464 | ( 8) | 40.00 | |
| 133) Phenanthrene-d10 | 26.285 | ( 0.020) | 2122 | 188.0 | 834474 | ( 12) | 40.00 | |
| 165) Chrysene-d12 | 32.892 | ( 0.020) | 2738 | 240.0 | 898192 | ( 11) | 40.00 | |
| 173) Perylene-d12 | 38.222 | ( 0.009) | 3235 | 264.0 | 910866 | ( 9) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.890 | ( 0.003) | 112 | 1785611 | 161.698 | 81% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.442 | ( 0.000) | 99 | 2298061 | 172.481 | 86% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.156 | ( 0.000) | 82 | 925587 | 87.501 | 88% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.614 | ( 0.000) | 172 | 1513646 | 91.903 | 92% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.140 | ( 0.000) | 330 | 868374 | 198.016 | 99% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.393 | (-0.001) | 244 | 1714918 | 96.835 | 97% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | | ND | ND | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | ND | ND | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | Below MDL, Do not report | | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 41) Isophorone | (2) | | | | | ND | ND | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | Below MDL, Do not report | | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | | ND | ND | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | | ND | ND | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | Below MDL, Do not report | | | | | 1.00 |



8333

# SBLKLC0857 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLC085

Data file: /chem/HP06777.i/04mar26.b/gc382.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | ND | ND | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | ND | ND | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | ND | ND | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | ND | ND | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | ND | ND | | | 2.00 |
| 107) Diethylphthalate | (3) | | | Below MDL, | Do not report | | | | 2.00 |
| 109) Fluorene | (3) | | | | ND | ND | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | ND | ND | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | | | | ND | ND | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | ND | ND | | | 1.00 |
| 136) Anthracene | (4) | | | | ND | ND | | | 1.00 |
| 138) Carbazole | (4) | | | | ND | ND | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 27.883( 0.000) | 149 | 106136 | 2.813 | 93.76 | | | 2.00 |
| 145) Fluoranthene | (4) | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 166) Chrysene | (5) | | | Below MDL, | Do not report | | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | | | Below MDL, | Do not report | | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | Below MDL, | Do not report | | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | ND | ND | | | 1.00 |

Data file: /chem/HP06777.i/04mar26.b/gc382.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

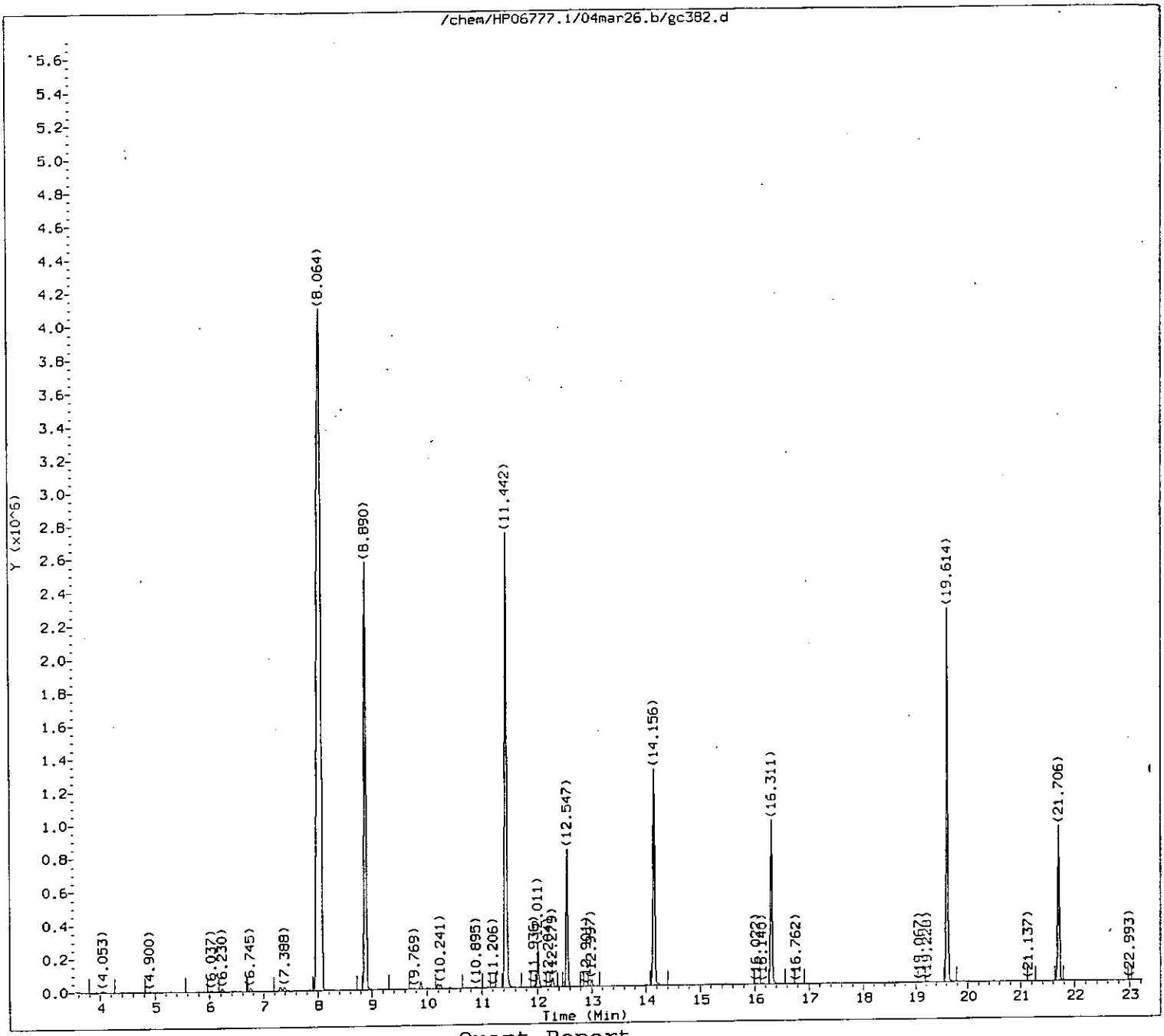
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Michelle Jarosick (MW) Date: 3-26-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

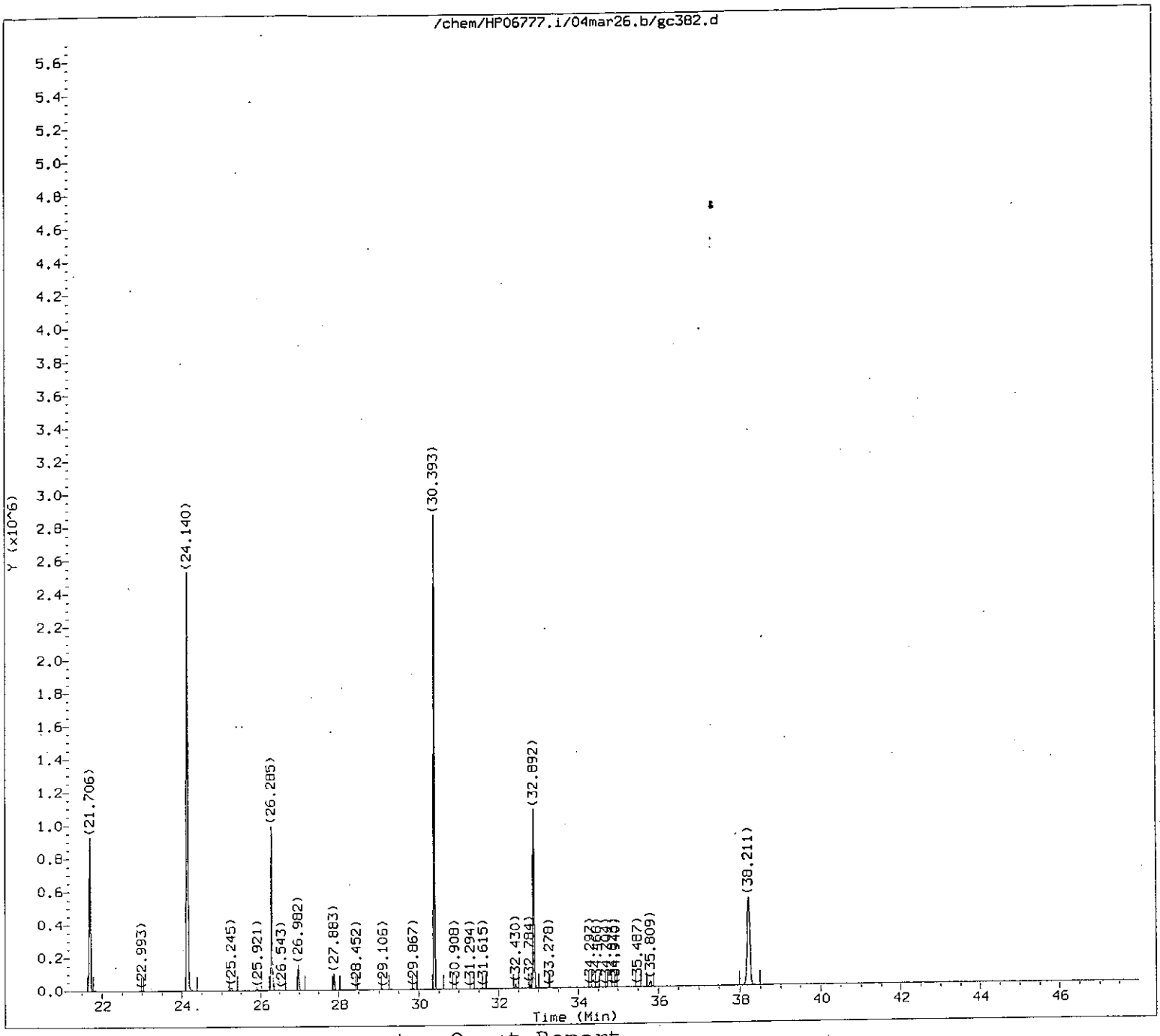
Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Sample Name: SBLKLC0857

Lab Sample ID: SBLKLC085

BGM
3/26/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Sample Name: SBLKLC0857

Lab Sample ID: SBLKLC085

BGM 3/26/04

0337

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc382.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 08:09  Analyst ID: bkg00522

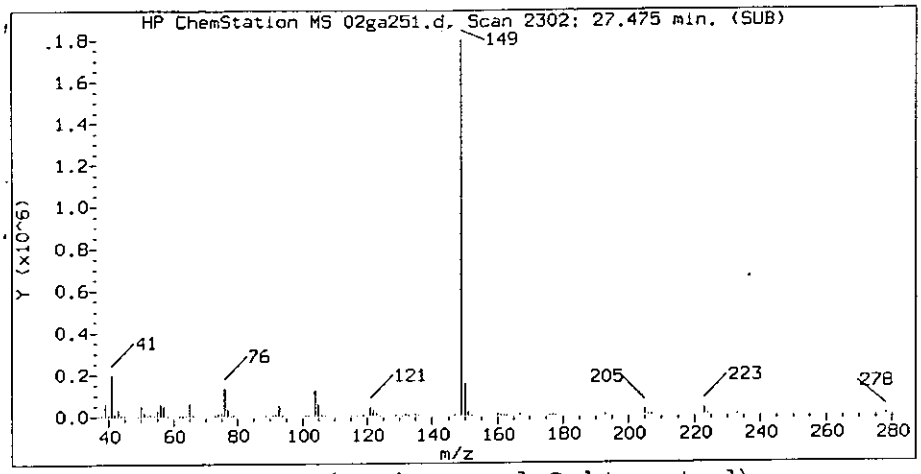
Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

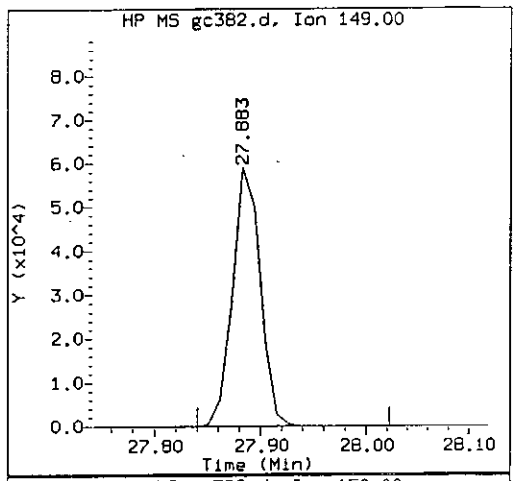
Sample Name: SBLKLC0857  Lab Sample ID: SBLKLC085

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 12.547 | 152 | 289203 | 40.000 |
| 52) Naphthalene-d8 | (2) | 16.311 | 136 | 1064449 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 21.706 | 164 | 489464 | 40.000 |
| 133) Phenanthrene-d10 | (4) | 26.285 | 188 | 834474 | 40.000 |
| 140) Di-n-butylphthalate | (4) | 27.883 | 149 | 106136 | 2.813 |
| 165) Chrysene-d12 | (5) | 32.892 | 240 | 898192 | 40.000 |
| 173) Perylene-d12 | (6) | 38.222 | 264 | 910866 | 40.000 |
| 9) 2-Fluorophenol | (1) | 8.890 | 112 | 1785611 | 161.698 |
| 15) Phenol-d6 | (1) | 11.442 | 99 | 2298061 | 172.481 |
| 38) Nitrobenzene-d5 | (2) | 14.156 | 82 | 925587 | 87.501 |
| 77) 2-Fluorobiphenyl | (3) | 19.614 | 172 | 1513646 | 91.903 |
| 117) 2,4,6-Tribromophenol | (3) | 24.140 | 330 | 868374 | 198.016 |
| 154) Terphenyl-d14 | (5) | 30.393 | 244 | 1714918 | 96.835 |

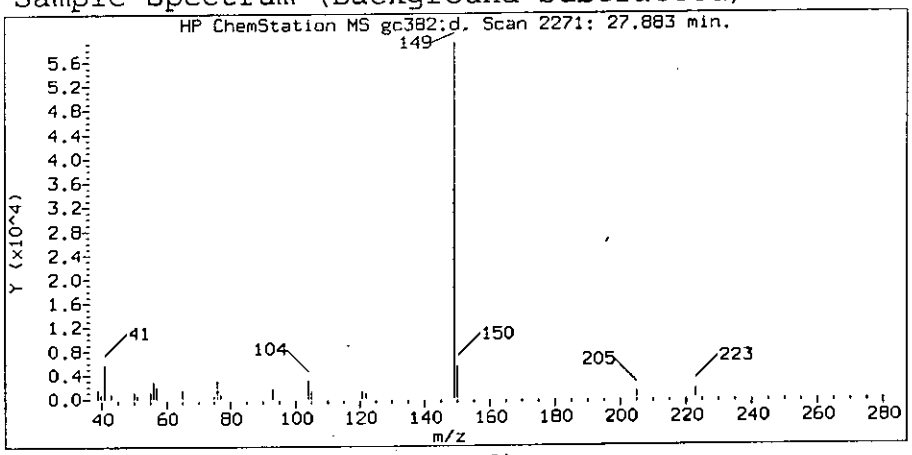
M = Compound was manually integrated.  A = User selected an alternate hit

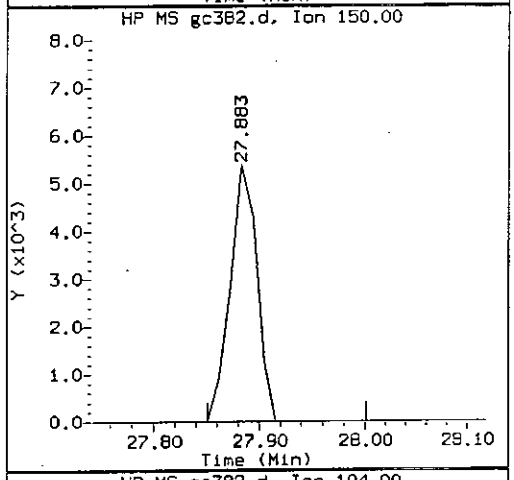
Reference Standard Spectrum for Di-n-butylphthalate



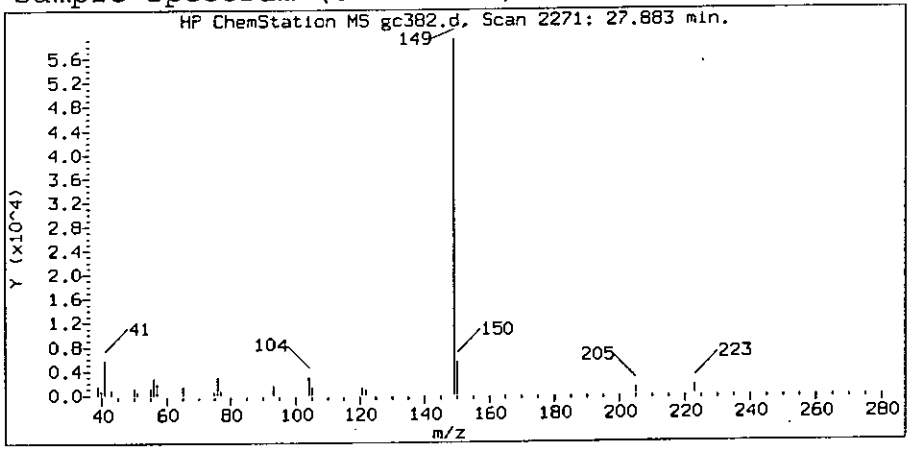



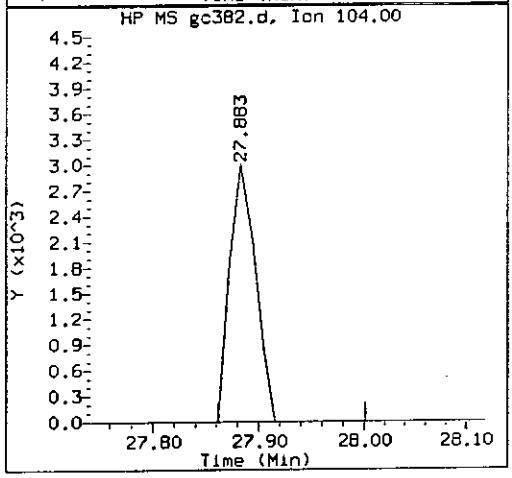

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 08:09

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:07 bkg00522

Sample Name: SBLKLC0857

Lab Sample ID: SBLKLC085

| | |
|---|---|
| Compound Number | : 140 |
| Compound Name | : Di-n-butylphthalate |
| Scan Number | : 2271 |
| Retention Time (minutes) | : 27.883 |
| Quant Ion | : 149.0 |
| Area (flag) | : 106136 |
| Concentration (ng/ul) | : 2.8127 |

DIC
Bkgw
3264339

# SBLKLA0874 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles SBLKLA087

Data file: /chem/HP06780.i/04mar29.b/dc388.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 09:55 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.407(-0.004) | 874 | 152.0 | 161088( -30) | 40.00 | |
| 52) Naphthalene-d8 | 13.025( 0.005) | 1139 | 136.0 | 566801( -30) | 40.00 | |
| 96) Acenaphthene-d10 | 16.670( 0.013) | 1508 | 164.0 | 253971( -32) | 40.00 | |
| 133) Phenanthrene-d10 | 19.840( 0.017) | 1829 | 188.0 | 327427( -29) | 40.00 | |
| 165) Chrysene-d12 | 25.686( 0.016) | 2421 | 240.0 | 230493( -18) | 40.00 | |
| 173) Perylene-d12 | 29.626( 0.012) | 2820 | 264.0 | 201291( -31) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.671( 0.004) | 112 | 1244459 | 164.151 | 82% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.636( 0.002) | 99 | 1426967 | 165.046 | 83% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.533( 0.000) | 82 | 544035 | 86.313 | 86% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.257( 0.000) | 172 | 690324 | 86.410 | 86% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.319(-0.001) | 330 | 182411 | 186.254 | 93% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.829(-0.001) | 244 | 433269 | 87.115 | 87% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | | | | | ND | ND | | | 1.00 |
| 19) 2-Chlorophenol | (1) | | | | | ND | ND | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | | | | | ND | ND | | | 1.00 |
| 26) 2-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | | | | | ND | ND | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | | | | | ND | ND | | | 1.00 |
| 33) 4-Methylphenol | (1) | | | | | Below MDL, Do not report | | | | 2.00 |
| 37) Hexachloroethane | (1) | | | | | ND | ND | | | 1.00 |
| 39) Nitrobenzene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 41) Isophorone | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 42) 2-Nitrophenol | (2) | | | | | ND | ND | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | | | | | ND | ND | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | | | | | ND | ND | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | | | | | ND | ND | | | 1.00 |
| 53) Naphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |
| 55) 4-Chloroaniline | (2) | | | | | ND | ND | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | | | | | ND | ND | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | | | | | ND | ND | | | 2.00 |
| 69) 2-Methylnaphthalene | (2) | | | | | Below MDL, Do not report | | | | 1.00 |

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Injection date and time: 29-MAR-2004 09:55 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 71) Hexachlorocyclopentadiene | (3) | | | | | ND | ND | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | | | | | ND | ND | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | | | | | ND | ND | | | 1.00 |
| 87) 2-Nitroaniline | (3) | | | | | ND | ND | | | 1.00 |
| 90) Dimethylphthalate | (3) | | | | | ND | ND | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | | | | | ND | ND | | | 1.00 |
| 93) Acenaphthylene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 95) 3-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 97) Acenaphthene | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | | | | | ND | ND | | | 20.00 |
| 101) 4-Nitrophenol | (3) | | | | Below MDL, | Do not report | | | | 5.00 |
| 102) Dibenzofuran | (3) | | | | Below MDL, | Do not report | | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | | | | | ND | ND | | | 2.00 |
| 107) Diethylphthalate | (3) | | | | Below MDL, | Do not report | | | | 2.00 |
| 109) Fluorene | (3) | | | | | ND | ND | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | | | | | ND | ND | | | 1.00 |
| 112) 4-Nitroaniline | (3) | | | | | ND | ND | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | | | | Below MDL, | Do not report | | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | | | | | ND | ND | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | | | | | ND | ND | | | 1.00 |
| 125) Hexachlorobenzene | (4) | | | | | ND | ND | | | 1.00 |
| 129) Pentachlorophenol | (4) | | | | | ND | ND | | | 5.00 |
| 135) Phenanthrene | (4) | | | | | ND | ND | | | 1.00 |
| 136) Anthracene | (4) | | | | | ND | ND | | | 1.00 |
| 138) Carbazole | (4) | | | | | ND | ND | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | | | | Below MDL, | Do not report | | | | 2.00 |
| 145) Fluoranthene | (4) | | | | Below MDL, | Do not report | | | | 1.00 |
| 152) Pyrene | (5) | | | | Below MDL, | Do not report | | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | | | | Below MDL, | Do not report | | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | | | | | ND | ND | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | | | | | ND | ND | | | 1.00 |
| 166) Chrysene | (5) | | | | | ND | ND | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | | | | Below MDL, | Do not report | | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | | | | Below MDL, | Do not report | | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | | | | | ND | ND | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | | | | | ND | ND | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | | | | | ND | ND | | | 1.00 |

Data file: /chem/HP06780.i/04mar29.b/dc388.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 09:55 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

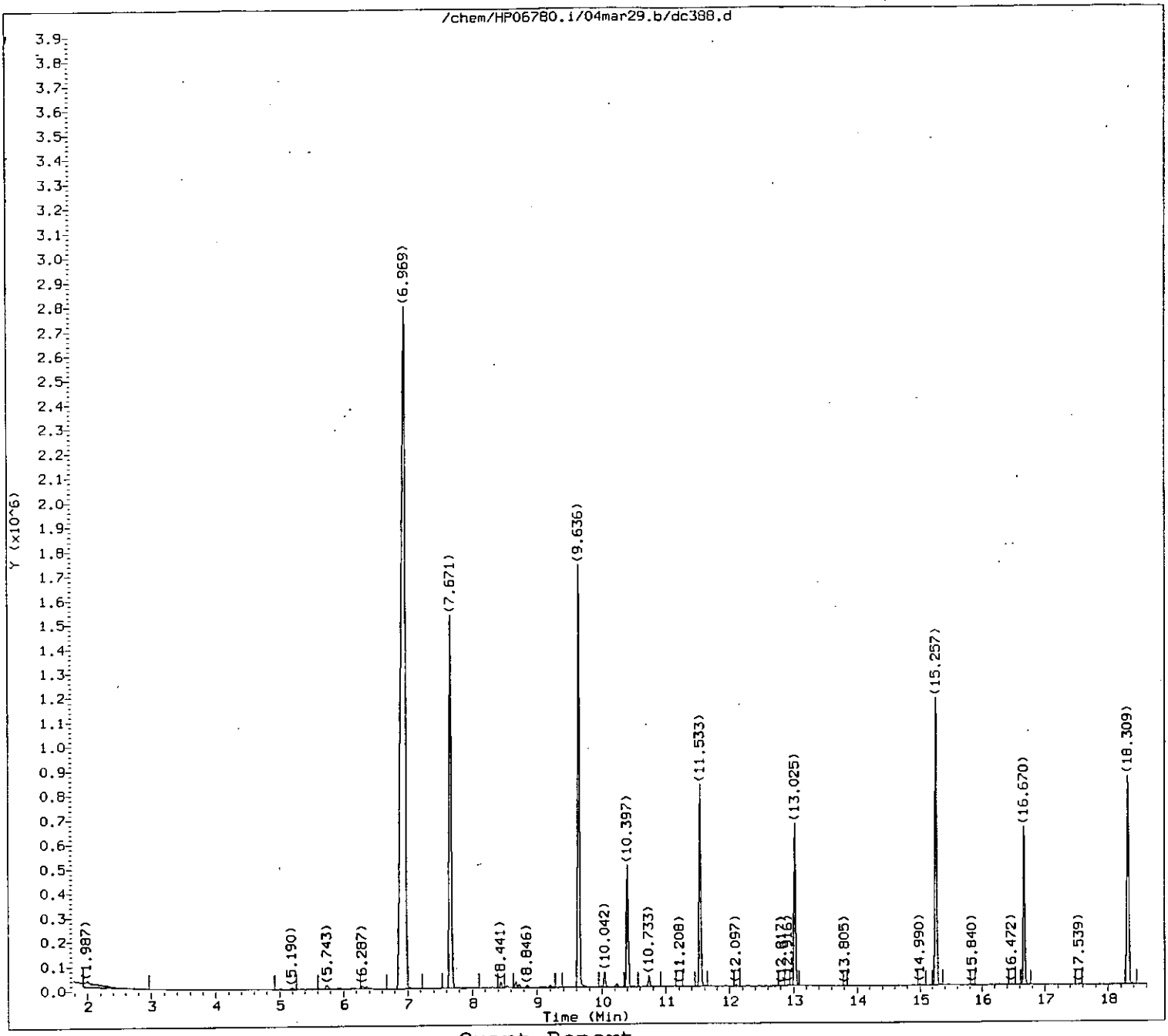
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | | | | | ND | ND | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Michelle Garbrick RB 1579 Date: 3-29-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 09:55

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

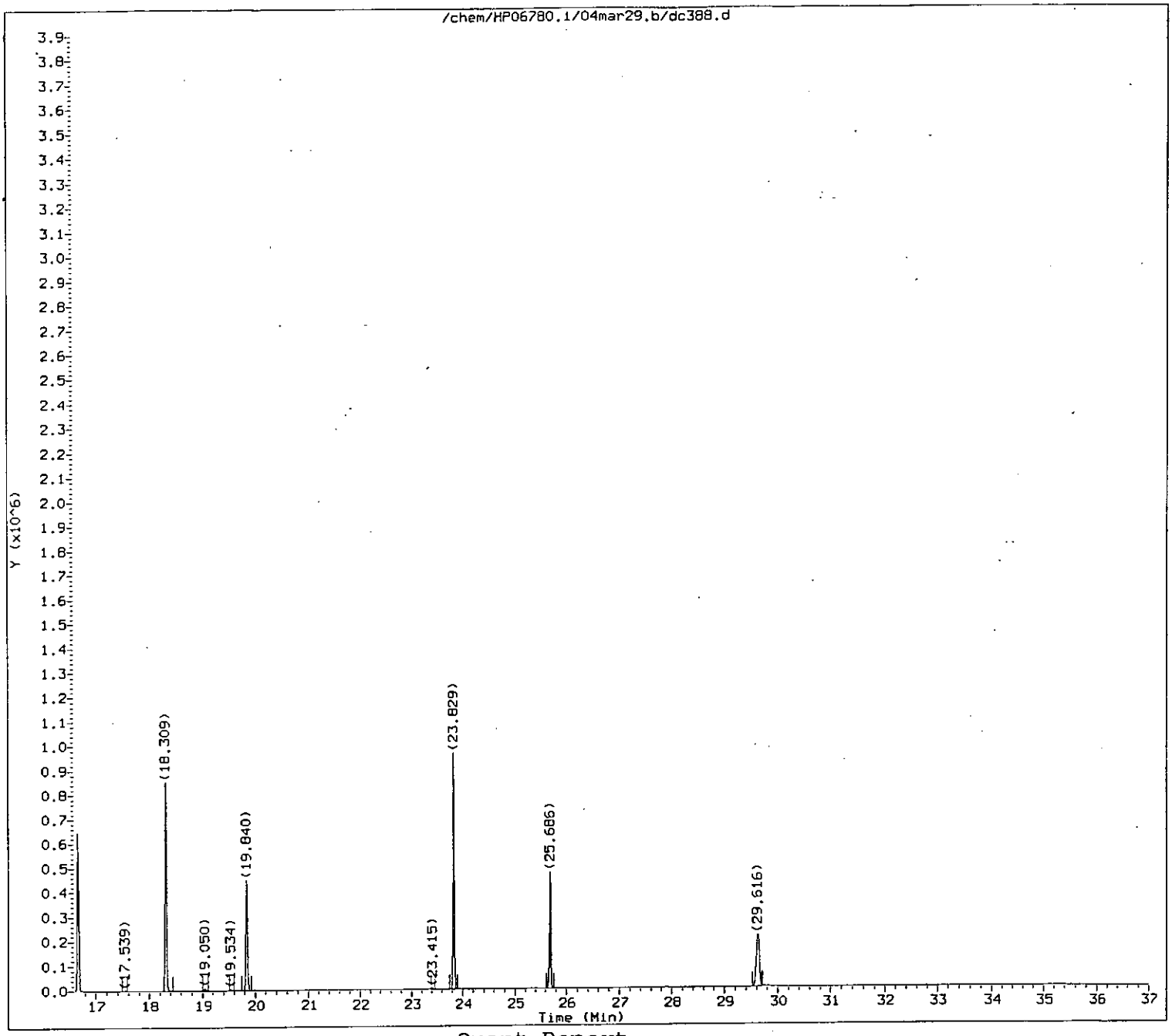
Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Sample Name: SBLKLA0874

Lab Sample ID: SBLKLA087

8343

RB1508
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 09:55

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Sample Name: SBLKLA0874

Lab Sample ID: SBLKLA087

8344

RB1578
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc388.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 09:55  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 11:58 cam01237

Sample Name: SBLKLA0874  Lab Sample ID: SBLKLA087

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.407 | 152 | 161088 | 40.000 |
| 52) Naphthalene-d8 | (2) | 13.025 | 136 | 566801 | 40.000 |
| 96) Acenaphthene-d10 | (3) | 16.670 | 164 | 253971 | 40.000 |
| 133) Phenanthrene-d10 | (4) | 19.840 | 188 | 327427 | 40.000 |
| 165) Chrysene-d12 | (5) | 25.686 | 240 | 230493 | 40.000 |
| 173) Perylene-d12 | (6) | 29.626 | 264 | 201291 | 40.000 |
| 9) 2-Fluorophenol | (1) | 7.671 | 112 | 1244459 | 164.151 |
| 15) Phenol-d6 | (1) | 9.636 | 99 | 1426967 | 165.046 |
| 38) Nitrobenzene-d5 | (2) | 11.533 | 82 | 544035 | 86.313 |
| 77) 2-Fluorobiphenyl | (3) | 15.257 | 172 | 690324 | 86.410 |
| 117) 2,4,6-Tribromophenol | (3) | 18.319 | 330 | 182411 | 186.254 |
| 154) Terphenyl-d14 | (5) | 23.829 | 244 | 433269 | 87.115 |

M = Compound was manually integrated.  A = User selected an alternate hit

7GP17MS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241642

Data file: /chem/HP06780.i/04mar29.b/dc391.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:08 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.412(-0.009) | 874 | 152.0 | 154485( -33) | 40.00 | |
| 52) Naphthalene-d8 | 13.029( 0.001) | 1138 | 136.0 | 542346( -33) | 40.00 | |
| 96) Acenaphthene-d10 | 16.684(-0.001) | 1506 | 164.0 | 251002( -32) | 40.00 | |
| 133) Phenanthrene-d10 | 19.858( 0.000) | 1825 | 188.0 | 306343( -34) | 40.00 | |
| 165) Chrysene-d12 | 25.711(-0.009) | 2412 | 240.0 | 173474( -39) | 40.00 | |
| 173) Perylene-d12 | 29.645(-0.007) | 2806 | 264.0 | 177998( -39) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.673( 0.004) | 112 | 1279766 | 176.024 | 88% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.650( 0.001) | 99 | 1488758 | 179.553 | 90% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.542( 0.000) | 82 | 563634 | 93.455 | 93% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.263( 0.000) | 172 | 688872 | 87.249 | 87% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.327( 0.000) | 330 | 163109 | 168.515 | 84% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.831( 0.000) | 244 | 369759 | 98.782 | 99% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.679( 0.000) | 94 | 804519 | 94.334 | 3144.47 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 9.868( 0.001) | 93 | 586560 | 89.056 | 2968.53 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 9.977( 0.000) | 128 | 554161 | 93.592 | 3119.72 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 10.293( 0.000) | 146 | 495351 | 81.282 | 2709.42 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 10.442( 0.001) | 146 | 506757 | 82.681 | 2756.03 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 10.749( 0.001) | 146 | 488343 | 82.168 | 2738.94 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 10.918( 0.001) | 108 | 565740 | 87.631 | 2921.04 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 10.967( 0.000) | 45 | 729889 | 103.307 | 3443.55 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.245( 0.001) | 70 | 329867 | 86.840 | 2894.66 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 11.225( 0.001) | 108 | 539899 | 85.549 | 2851.64 | | | 2.00 |
| 37) Hexachloroethane | (1) | 11.453( 0.000) | 117 | 247313 | 81.173 | 2705.78 | | | 1.00 |
| 39) Nitrobenzene | (2) | 11.592(-0.001) | 77 | 511613 | 90.338 | 3011.27 | | | 1.00 |
| 41) Isophorone | (2) | 12.077(-0.001) | 82 | 1037744 | 87.919 | 2930.65 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 12.236( 0.000) | 139 | 301703 | 87.755 | 2925.17 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 12.315(-0.001) | 107 | 569485 | 96.216 | 3207.20 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 12.513( 0.000) | 93 | 727839 | 100.660 | 3355.32 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 12.732( 0.000) | 162 | 380127 | 91.861 | 3062.02 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 12.910( 0.000) | 180 | 319808 | 89.694 | 2989.82 | | | 1.00 |
| 53) Naphthalene | (2) | 13.079( 0.000) | 128 | 1234479 | 87.560 | 2918.66 | | | 1.00 |
| 55) 4-Chloroaniline | (2) | 13.178( 0.000) | 127 | 590832 | 89.476 | 2982.53 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 13.317( 0.000) | 225 | 132038 | 86.206 | 2873.54 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.180(-0.001) | 107 | 485779 | 100.581 | 3352.70 | | | 2.00 |



8346

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06780.i/04mar29.b/dc391.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:08 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 14.507( 0.000) | 142 | 793483 | 88.995 | 2966.50 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 14.825( 0.000) | 237 | 96946 | 90.373 | 3012.42 | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.093(-0.001) | 196 | 157364 | 72.599 | 2419.98 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.173(-0.001) | 196 | 186621 | 83.044 | 2768.13 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 15.531(-0.001) | 162 | 724511 | 89.032 | 2967.72 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 15.730( 0.000) | 138 | 370153 | 101.700 | 3389.98 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 16.117(-0.001) | 163 | 842430 | 94.154 | 3138.47 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 16.237( 0.000) | 165 | 227947 | 93.978 | 3132.60 | | | 1.00 |
| 93) Acenaphthylene | (3) | 16.396(-0.001) | 152 | 1176769 | 98.223 | 3274.09 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 16.584( 0.000) | 138 | 299418 | 97.998 | 3266.60 | | | 2.00 |
| 97) Acenaphthene | (3) | 16.753( 0.000) | 153 | 700896 | 93.041 | 3101.37 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 16.803( 0.000) | 184 | 42001 | 43.637 | 1454.57 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 16.932(-0.001) | 109 | 93247 | 95.620 | 3187.35 | | | 5.00 |
| 102) Dibenzofuran | (3) | 17.112( 0.000) | 168 | 916398 | 91.206 | 3040.19 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 17.082( 0.000) | 165 | 301991 | 107.493 | 3583.09 | | | 2.00 |
| 107) Diethylphthalate | (3) | 17.580( 0.000) | 149 | 898909 | 100.805 | 3360.15 | | | 2.00 |
| 109) Fluorene | (3) | 17.828( 0.000) | 166 | 648259 | 86.103 | 2870.09 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 17.818( 0.000) | 204 | 246347 | 83.186 | 2772.88 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 17.868( 0.000) | 138 | 275545 | 95.784 | 3192.81 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 17.928( 0.000) | 198 | 67934 | 54.303 | 1810.11 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.068(-0.001) | 169 | 1003073 | 184.679 | 6155.96 | | E | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 18.843( 0.000) | 248 | 140950 | 95.723 | 3190.78 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 18.973(-0.001) | 284 | 158181 | 95.829 | 3194.29 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 19.391( 0.000) | 266 | 67142 | 92.785 | 3092.83 | | | 5.00 |
| 135) Phenanthrene | (4) | 19.918( 0.000) | 178 | 820545 | 94.323 | 3144.09 | | | 1.00 |
| 136) Anthracene | (4) | 20.057( 0.000) | 178 | 847247 | 94.382 | 3146.08 | | | 1.00 |
| 138) Carbazole | (4) | 20.495( 0.000) | 167 | 902109 | 93.953 | 3131.77 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.588( 0.000) | 149 | 1540645 | 103.551 | 3451.70 | | | 2.00 |
| 145) Fluoranthene | (4) | 23.082( 0.000) | 202 | 701341 | 86.958 | 2898.58 | | | 1.00 |
| 152) Pyrene | (5) | 23.541( 0.000) | 202 | 718365 | 103.476 | 3449.20 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 24.680( 0.000) | 149 | 567361 | 111.318 | 3710.59 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 25.621( 0.000) | 252 | 202420 | 104.976 | 3499.21 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 25.691( 0.000) | 228 | 517525 | 91.431 | 3047.70 | | | 1.00 |
| 166) Chrysene | (5) | 25.761( 0.000) | 228 | 528823 | 97.580 | 3252.67 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.671( 0.000) | 149 | 1009212 | 150.723 | 5024.09 | | E | 5.00 |
| 168) Di-n-octylphthalate | (6) | 27.151( 0.000) | 149 | 1443017 | 103.800 | 3460.01 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 28.388( 0.000) | 252 | 532563 | 97.439 | 3247.96 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 28.478( 0.000) | 252 | 497009 | 93.102 | 3103.41 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 29.465( 0.000) | 252 | 497469 | 100.079 | 3335.96 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 34.497(-0.001) | 276 | 475614 | 96.458 | 3215.28 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 34.636(-0.001) | 278 | 473016 | 105.637 | 3521.23 | | | 1.00 |

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06780.i/04mar29.b/dc391.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:08 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

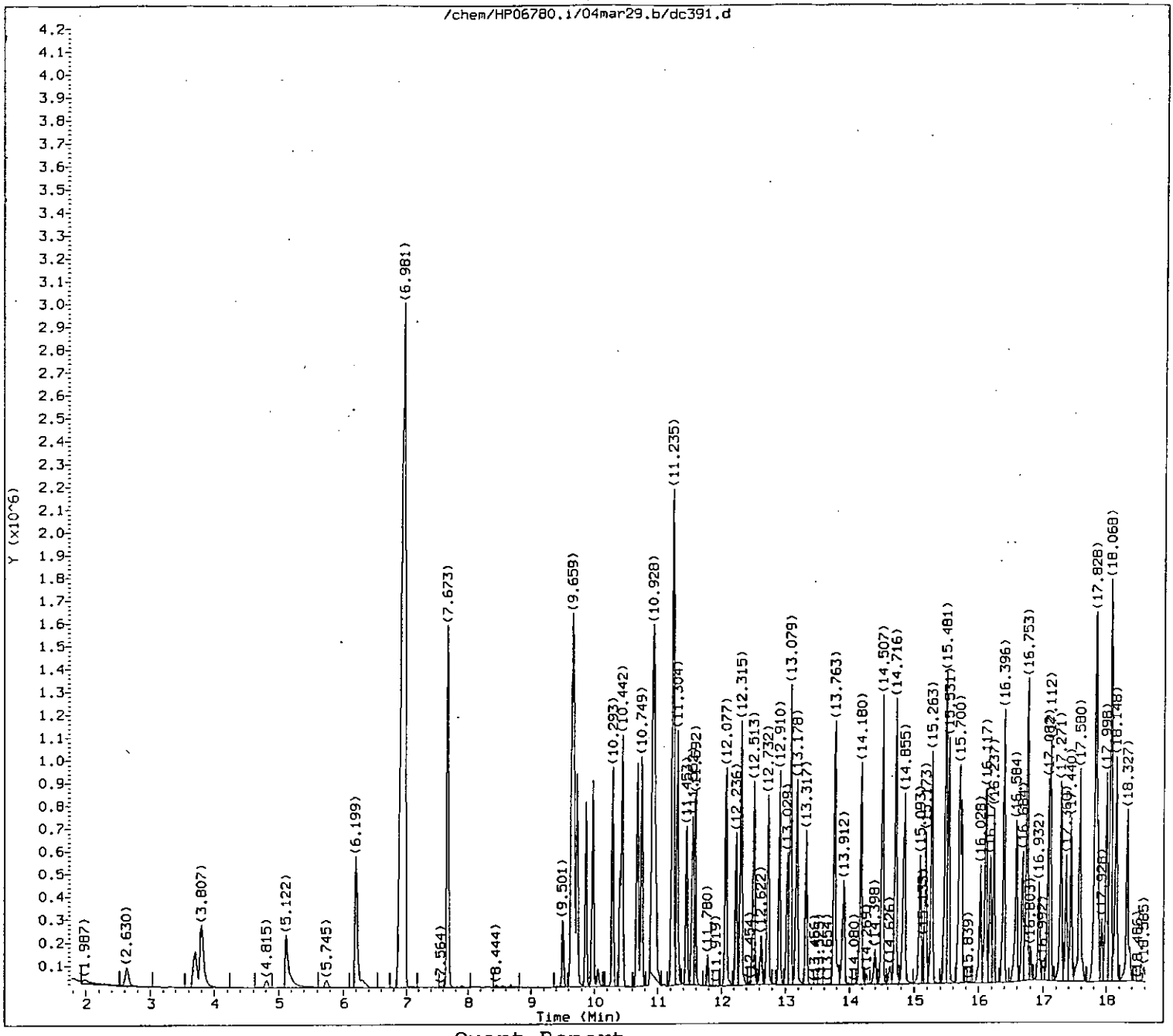
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 36.016 | (-0.001) | 276 | 484082 | 98.679 | 3289.29 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Michele Jarosick B 1548 Date: 3-29-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc391.d
Injection date and time: 29-MAR-2004 12:08

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

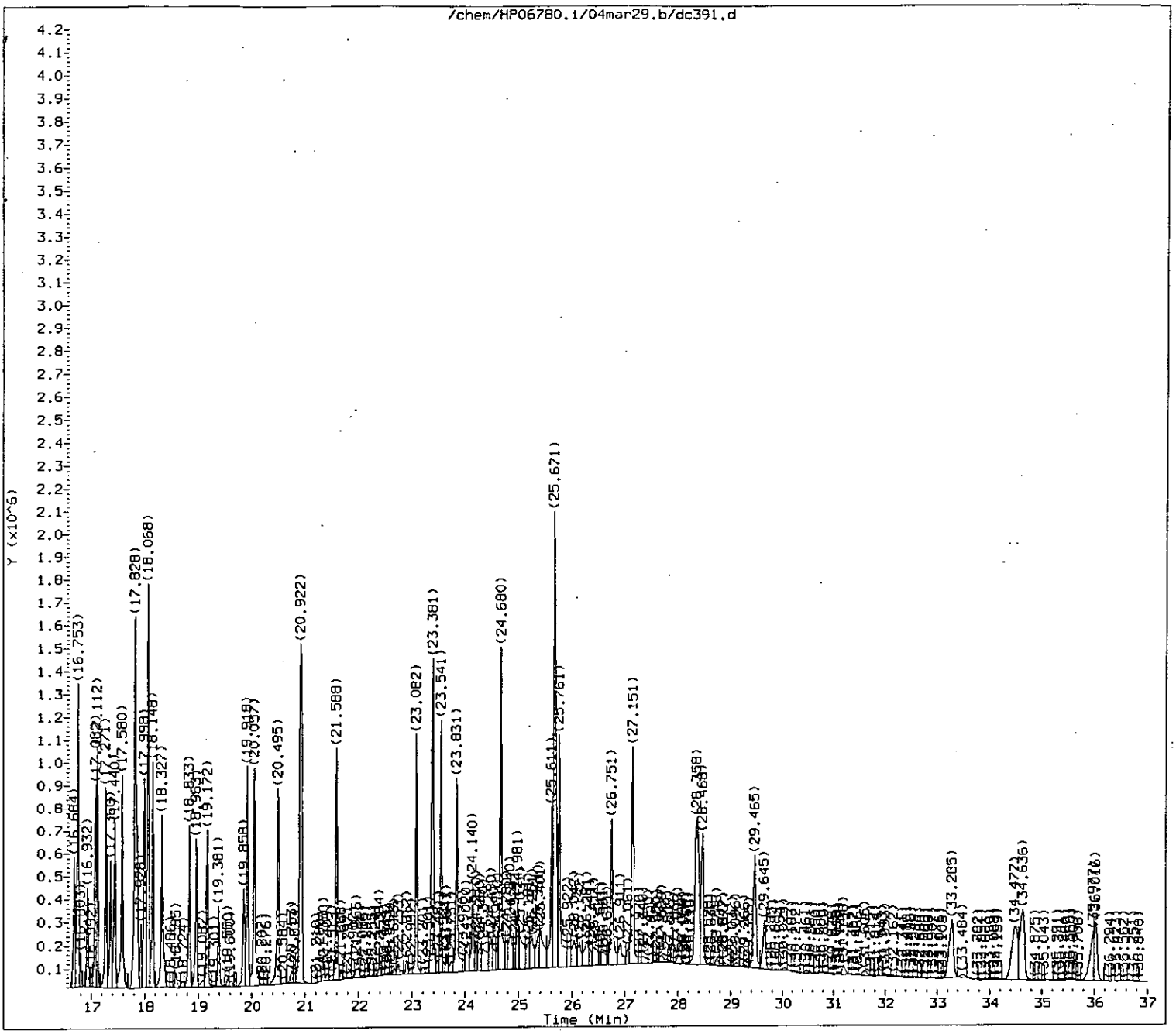
Sample Name: 7GP17MS

Lab Sample ID: 4241642

0349

RB1548

3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc391.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:08  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP17MS  Lab Sample ID: 4241642

8350

RB1SCT
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc391.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:08  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP17MS  Lab Sample ID: 4241642

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 16) | Phenol | (1) | 9.679 | 94 | 804519 | 94.334 |
| 18) | bis(2-Chloroethyl)ether | (1) | 9.868 | 93 | 586560 | 89.056 |
| 19) | 2-Chlorophenol | (1) | 9.977 | 128 | 554161 | 93.592 |
| 20) | 1,3-Dichlorobenzene | (1) | 10.293 | 146 | 495351 | 81.282 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 10.412 | 152 | 154485 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 10.442 | 146 | 506757 | 82.681 |
| 25) | 1,2-Dichlorobenzene | (1) | 10.749 | 146 | 488343 | 82.168 |
| 26) | 2-Methylphenol | (1) | 10.918 | 108 | 565740 | 87.631 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 10.967 | 45 | 729889 | 103.307 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 11.245 | 70 | 329867 | 86.840 |
| 33) | 4-Methylphenol | (1) | 11.225 | 108 | 539899 | 85.549 |
| 37) | Hexachloroethane | (1) | 11.453 | 117 | 247313 | 81.173 |
| 39) | Nitrobenzene | (2) | 11.592 | 77 | 511613 | 90.338 |
| 41) | Isophorone | (2) | 12.077 | 82 | 1037744 | 87.919 |
| 42) | 2-Nitrophenol | (2) | 12.236 | 139 | 301703 | 87.755 |
| 44) | 2,4-Dimethylphenol | (2) | 12.315 | 107 | 569485 | 96.216 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 12.513 | 93 | 727839 | 100.660 |
| 49) | 2,4-Dichlorophenol | (2) | 12.732 | 162 | 380127 | 91.861 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 12.910 | 180 | 319808 | 89.694 |
| 52) | Naphthalene-d8 | (2) | 13.029 | 136 | 542346 | 40.000 |
| 53) | Naphthalene | (2) | 13.079 | 128 | 1234479 | 87.560 |
| 55) | 4-Chloroaniline | (2) | 13.178 | 127 | 590832 | 89.476 |
| 59) | Hexachlorobutadiene | (2) | 13.317 | 225 | 132038 | 86.206 |
| 67) | 4-Chloro-3-methylphenol | (2) | 14.180 | 107 | 485779 | 100.581 |
| 69) | 2-Methylnaphthalene | (2) | 14.507 | 142 | 793483 | 88.995 |
| 71) | Hexachlorocyclopentadiene | (3) | 14.825 | 237 | 96946 | 90.373 |
| 74) | 2,4,6-Trichlorophenol | (3) | 15.093 | 196 | 157364 | 72.599 |
| 76) | 2,4,5-Trichlorophenol | (3) | 15.173 | 196 | 186621 | 83.044 |
| 83) | 2-Chloronaphthalene | (3) | 15.531 | 162 | 724511 | 89.032 |
| 87) | 2-Nitroaniline | (3) | 15.730 | 138 | 370153 | 101.700 |
| 90) | Dimethylphthalate | (3) | 16.117 | 163 | 842430 | 94.154 |
| 92) | 2,6-Dinitrotoluene | (3) | 16.237 | 165 | 227947 | 93.978 |
| 93) | Acenaphthylene | (3) | 16.396 | 152 | 1176769 | 98.223 |
| 95) | 3-Nitroaniline | (3) | 16.584 | 138 | 299418 | 97.998 |
| 96) | Acenaphthene-d10 | (3) | 16.684 | 164 | 251002 | 40.000 |
| 97) | Acenaphthene | (3) | 16.753 | 153 | 700896 | 93.041 |
| 98) | 2,4-Dinitrophenol | (3) | 16.803 | 184 | 42001 | 43.637 |
| 101) | 4-Nitrophenol | (3) | 16.932 | 109 | 93247 | 95.620 |
| 102) | Dibenzofuran | (3) | 17.112 | 168 | 916398 | 91.206 |
| 103) | 2,4-Dinitrotoluene | (3) | 17.082 | 165 | 301991 | 107.493 |
| 107) | Diethylphthalate | (3) | 17.580 | 149 | 898909 | 100.805 |
| 109) | Fluorene | (3) | 17.828 | 166 | 648259 | 86.103 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 17.818 | 204 | 246347 | 83.186 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc391.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:08  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 15:29 rpb01568

Sample Name: 7GP17MS  Lab Sample ID: 4241642

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 112) | 4-Nitroaniline | (3) | 17.868 | 138 | 275545 | 95.784 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 17.928 | 198 | 67934 | 54.303 |
| 115) | N-Nitrosodiphenylamine | (4) | 18.068 | 169 | 1003073 | 184.679 |
| 123) | 4-Bromophenyl-phenylether | (4) | 18.843 | 248 | 140950 | 95.723 |
| 125) | Hexachlorobenzene | (4) | 18.973 | 284 | 158181 | 95.829 |
| 129) | Pentachlorophenol | (4) | 19.391 | 266 | 67142 | 92.785 |
| 133) | Phenanthrene-d10 | (4) | 19.858 | 188 | 306343 | 40.000 |
| 135) | Phenanthrene | (4) | 19.918 | 178 | 820545 | 94.323 |
| 136) | Anthracene | (4) | 20.057 | 178 | 847247 | 94.382 |
| 138) | Carbazole | (4) | 20.495 | 167 | 902109 | 93.953 |
| 140) | Di-n-butylphthalate | (4) | 21.588 | 149 | 1540645 | 103.551 |
| 145) | Fluoranthene | (4) | 23.082 | 202 | 701341 | 86.958 |
| 152) | Pyrene | (5) | 23.541 | 202 | 718365 | 103.476 |
| 159) | Butylbenzylphthalate | (5) | 24.680 | 149 | 567361 | 111.318 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 25.621 | 252 | 202420 | 104.976 |
| 164) | Benzo(a)anthracene | (5) | 25.691 | 228 | 517525 | 91.431 |
| 165) | Chrysene-d12 | (5) | 25.711 | 240 | 173474 | 40.000 |
| 166) | Chrysene | (5) | 25.761 | 228 | 528823 | 97.580 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 25.671 | 149 | 1009212 | 150.723 |
| 168) | Di-n-octylphthalate | (6) | 27.151 | 149 | 1443017 | 103.800 |
| 170) | Benzo(b)fluoranthene | (6) | 28.388 | 252 | 532563 | 97.439 |
| 171) | Benzo(k)fluoranthene | (6) | 28.478 | 252 | 497009 | 93.102 |
| 172) | Benzo(a)pyrene | (6) | 29.465 | 252 | 497469 | 100.079 |
| 173) | Perylene-d12 | (6) | 29.645 | 264 | 177998 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 34.497 | 276 | 475614 | 96.458 |
| 176) | Dibenz(a,h)anthracene | (6) | 34.636 | 278 | 473016 | 105.637 |
| 177) | Benzo(g,h,i)perylene | (6) | 36.016 | 276 | 484082 | 98.679 |
| 9) | 2-Fluorophenol | (1) | 7.673 | 112 | 1279766 | 176.024 |
| 15) | Phenol-d6 | (1) | 9.650 | 99 | 1488758 | 179.553 |
| 38) | Nitrobenzene-d5 | (2) | 11.542 | 82 | 563634 | 93.455 |
| 77) | 2-Fluorobiphenyl | (3) | 15.263 | 172 | 688872 | 87.249 |
| 117) | 2,4,6-Tribromophenol | (3) | 18.327 | 330 | 163109 | 168.515 |
| 154) | Terphenyl-d14 | (5) | 23.831 | 244 | 369759 | 98.782 |

M = Compound was manually integrated.  A = User selected an alternate hit

7GP17MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241642

Data file: /chem/HP06780.i/04mar29.b/dc392.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:53 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT | (+/-RT) | Scan | QIon | Area | (+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.413 | (-0.009) | 874 | 152.0 | 167771 | ( -27) | 40.00 | |
| 52) Naphthalene-d8 | 13.030 | ( 0.001) | 1138 | 136.0 | 586391 | ( -28) | 40.00 | |
| 96) Acenaphthene-d10 | 16.684 | (-0.001) | 1506 | 164.0 | 258322 | ( -30) | 40.00 | |
| 133) Phenanthrene-d10 | 19.856 | ( 0.002) | 1825 | 188.0 | 305232 | ( -34) | 40.00 | |
| 165) Chrysene-d12 | 25.707 | (-0.005) | 2412 | 240.0 | 186103 | ( -34) | 40.00 | |
| 173) Perylene-d12 | 29.643 | (-0.005) | 2806 | 264.0 | 180393 | ( -38) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.673 | ( 0.004) | 112 | 1339467 | 169.645 | 85% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.660 | ( 0.000) | 99 | 1532214 | 170.160 | 85% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.553 | (-0.001) | 82 | 589380 | 90.384 | 90% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.273 | (-0.001) | 172 | 715041 | 87.997 | 88% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.326 | ( 0.000) | 330 | 160193 | 160.812 | 80% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.837 | ( 0.000) | 244 | 383600 | 95.525 | 96% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.679 | ( 0.000) | 94 | 824438 | 89.014 | 2967.14 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 9.868 | ( 0.001) | 93 | 624919 | 87.366 | 2912.20 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 9.977 | ( 0.000) | 128 | 572876 | 89.090 | 2969.68 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 10.294 | ( 0.000) | 146 | 521626 | 78.816 | 2627.19 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 10.442 | ( 0.001) | 146 | 532075 | 79.937 | 2664.56 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 10.749 | ( 0.001) | 146 | 503109 | 77.949 | 2598.30 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 10.918 | ( 0.001) | 108 | 594731 | 84.827 | 2827.55 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 10.968 | ( 0.000) | 45 | 778669 | 101.483 | 3382.77 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.245 | ( 0.001) | 70 | 346176 | 83.916 | 2797.21 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 11.225 | ( 0.001) | 108 | 570839 | 83.289 | 2776.29 | | | 2.00 |
| 37) Hexachloroethane | (1) | 11.453 | ( 0.000) | 117 | 269526 | 81.459 | 2715.28 | | | 1.00 |
| 39) Nitrobenzene | (2) | 11.592 | (-0.001) | 77 | 547957 | 89.488 | 2982.94 | | | 1.00 |
| 41) Isophorone | (2) | 12.077 | (-0.001) | 82 | 1096281 | 85.903 | 2863.42 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 12.236 | ( 0.000) | 139 | 323215 | 86.951 | 2898.36 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 12.315 | (-0.001) | 107 | 591379 | 92.410 | 3080.34 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 12.514 | ( 0.000) | 93 | 784433 | 100.338 | 3344.60 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 12.742 | (-0.001) | 162 | 401473 | 89.732 | 2991.06 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 12.910 | ( 0.000) | 180 | 328731 | 85.272 | 2842.40 | | | 1.00 |
| 53) Naphthalene | (2) | 13.079 | ( 0.000) | 128 | 1276997 | 83.772 | 2792.41 | | | 1.00 |
| 55) 4-Chloroaniline | (2) | 13.179 | ( 0.000) | 127 | 583110 | 81.674 | 2722.45 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 13.318 | ( 0.000) | 225 | 132237 | 79.851 | 2661.70 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.180 | (-0.001) | 107 | 490707 | 93.970 | 3132.33 | | | 2.00 |

7GP17MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241642

Data file: /chem/HP06780.i/04mar29.b/dc392.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:53 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 14.507( 0.000) | 142 | 803336 | 83.333 | 2777.75 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 14.835(-0.001) | 237 | 113248 | 101.878 | 3395.93 | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.093(-0.001) | 196 | 160346 | 71.879 | 2395.96 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.173(-0.001) | 196 | 198279 | 85.731 | 2857.71 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 15.531(-0.001) | 162 | 743827 | 88.815 | 2960.50 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 15.740(-0.001) | 138 | 368854 | 98.471 | 3282.36 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 16.117(-0.001) | 163 | 849114 | 92.212 | 3073.73 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 16.237( 0.000) | 165 | 231724 | 92.828 | 3094.27 | | | 1.00 |
| 93) Acenaphthylene | (3) | 16.396(-0.001) | 152 | 1238567 | 100.451 | 3348.38 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 16.594(-0.001) | 138 | 290931 | 92.522 | 3084.07 | | | 2.00 |
| 97) Acenaphthene | (3) | 16.753( 0.000) | 153 | 715450 | 92.282 | 3076.06 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 16.803( 0.000) | 184 | 25966 | 29.871 | 995.68 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 16.942(-0.001) | 109 | 95941 | 95.595 | 3186.51 | | | 5.00 |
| 102) Dibenzofuran | (3) | 17.111( 0.000) | 168 | 928122 | 89.755 | 2991.83 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 17.081( 0.000) | 165 | 299729 | 103.664 | 3455.48 | | | 2.00 |
| 107) Diethylphthalate | (3) | 17.579( 0.000) | 149 | 865018 | 94.255 | 3141.84 | | | 2.00 |
| 109) Fluorene | (3) | 17.828( 0.000) | 166 | 653791 | 84.377 | 2812.56 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 17.818( 0.000) | 204 | 242695 | 79.631 | 2654.36 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 17.868( 0.000) | 138 | 285525 | 96.441 | 3214.70 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 17.927( 0.000) | 198 | 41511 | 33.303 | 1110.09 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.067(-0.001) | 169 | 938310 | 173.384 | 5779.46 | | E | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 18.842( 0.000) | 248 | 142333 | 97.014 | 3233.81 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 18.971(-0.001) | 284 | 155536 | 94.569 | 3152.31 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 19.389( 0.000) | 266 | 70274 | 97.467 | 3248.89 | | | 5.00 |
| 135) Phenanthrene | (4) | 19.926(-0.001) | 178 | 821005 | 94.719 | 3157.30 | | | 1.00 |
| 136) Anthracene | (4) | 20.055( 0.000) | 178 | 890358 | 99.546 | 3318.20 | | | 1.00 |
| 138) Carbazole | (4) | 20.502(-0.001) | 167 | 924256 | 96.610 | 3220.33 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.595( 0.000) | 149 | 1496351 | 100.940 | 3364.67 | | | 2.00 |
| 145) Fluoranthene | (4) | 23.078( 0.000) | 202 | 717610 | 89.299 | 2976.62 | | | 1.00 |
| 152) Pyrene | (5) | 23.537( 0.000) | 202 | 745373 | 100.080 | 3336.01 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 24.676( 0.000) | 149 | 584623 | 106.921 | 3564.02 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 25.617( 0.000) | 252 | 202575 | 97.928 | 3264.25 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 25.687( 0.000) | 228 | 543508 | 89.505 | 2983.51 | | | 1.00 |
| 166) Chrysene | (5) | 25.768( 0.000) | 228 | 544053 | 93.578 | 3119.26 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.667( 0.000) | 149 | 832796 | 115.935 | 3864.51 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | 27.147( 0.000) | 149 | 1453697 | 103.180 | 3439.34 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 28.395(-0.001) | 252 | 518623 | 93.629 | 3120.95 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 28.475( 0.000) | 252 | 508496 | 93.989 | 3132.98 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 29.473(-0.001) | 252 | 500838 | 99.419 | 3313.96 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 34.498(-0.001) | 276 | 504132 | 100.885 | 3362.82 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 34.637(-0.001) | 278 | 492861 | 108.607 | 3620.25 | | | 1.00 |

7GP17MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241642

Data file: /chem/HP06780.i/04mar29.b/dc392.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 12:53 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

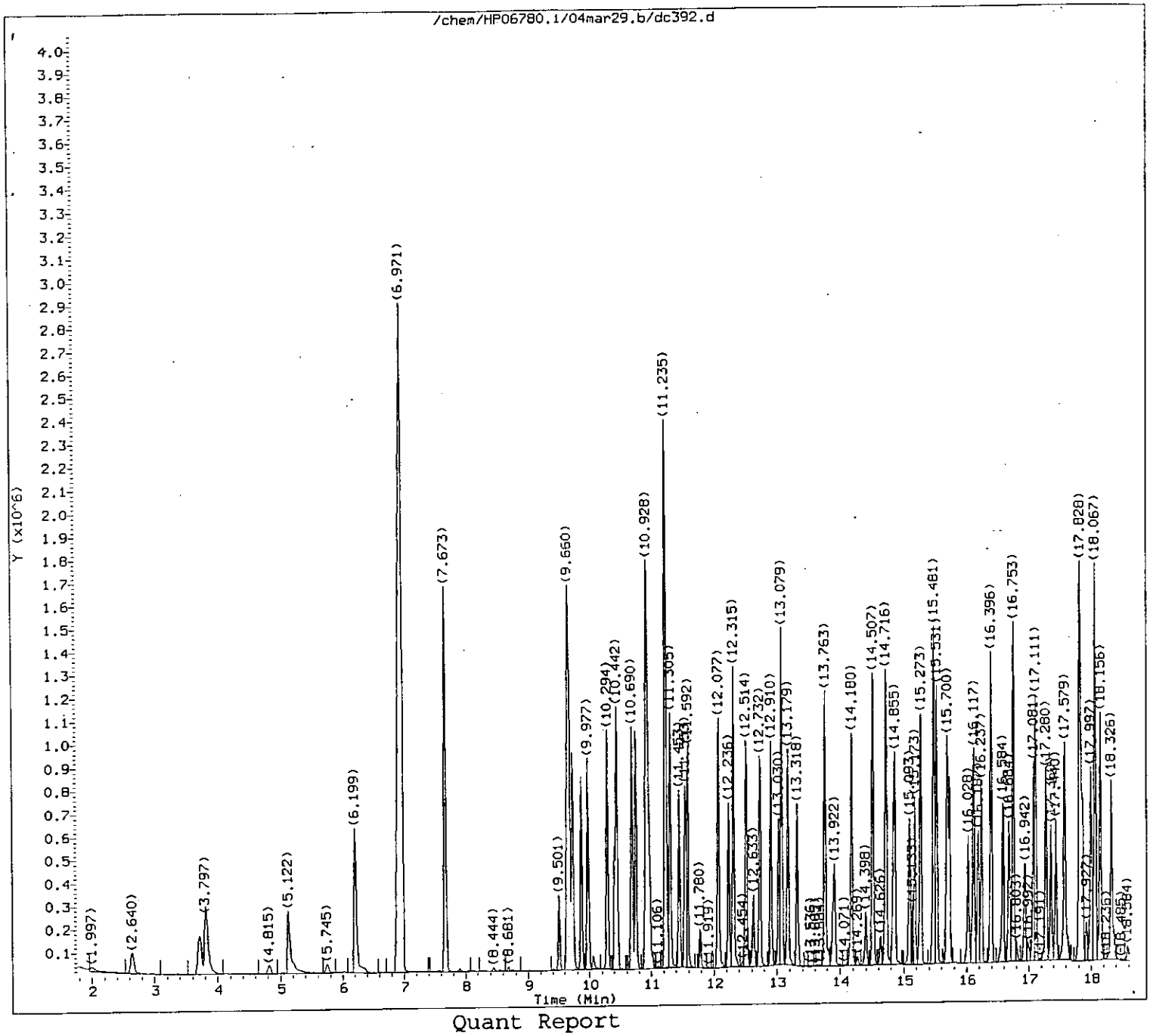
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 36.018 | (-0.001) | 276 | 490802 | 98.720 | 3290.67 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Michelle Jarosick B1528 Date: 3-29-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc392.d
Injection date and time: 29-MAR-2004 12:53

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

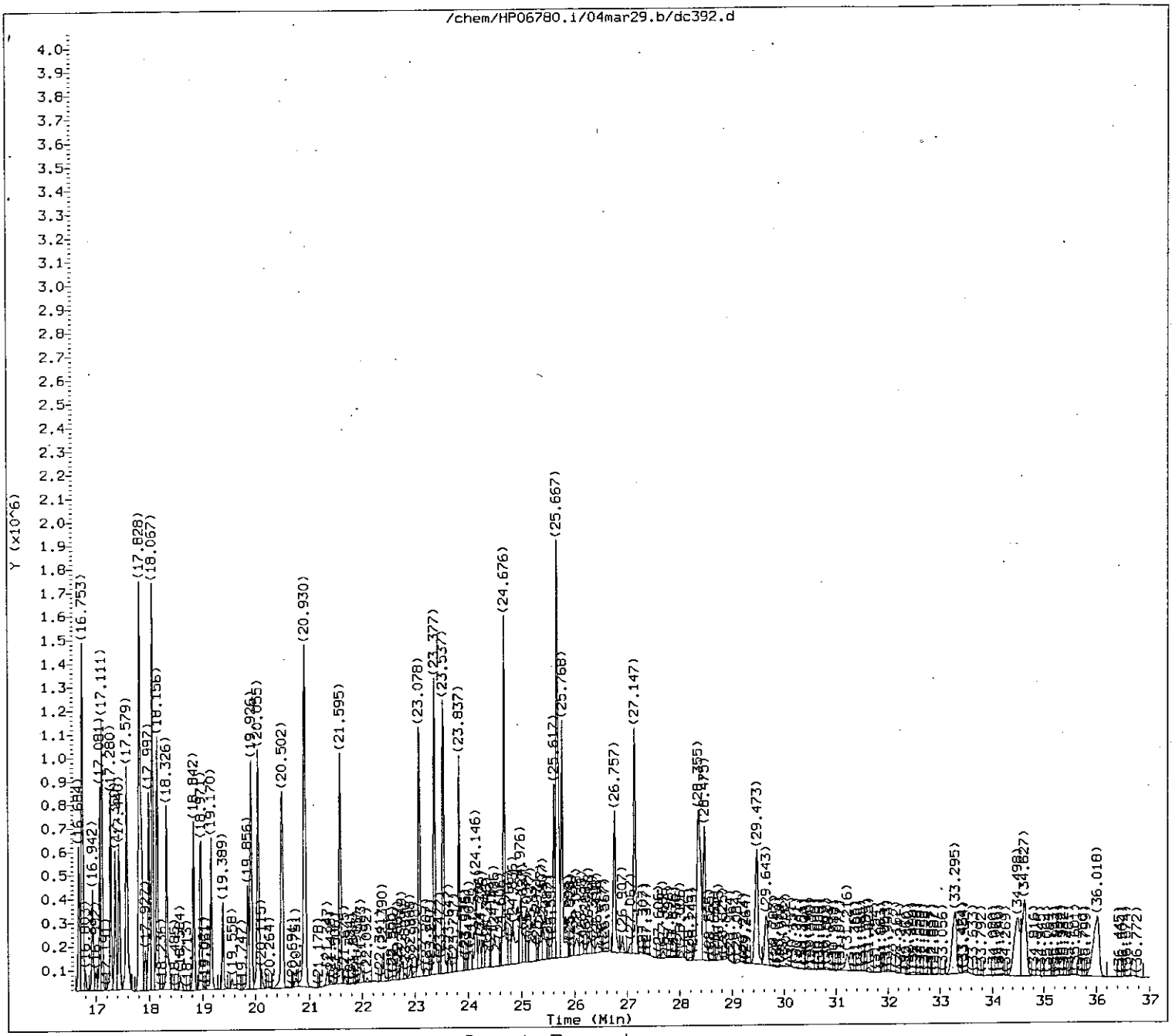
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Sample Name: 7GP17MSD

Lab Sample ID: 4241642

8356

RB1568
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc392.d
Injection date and time: 29-MAR-2004 12:53
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08
Sublist used: STC804
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Sample Name: 7GP17MSD
Lab Sample ID: 4241642

0357

RB 1568
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc392.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:53  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Sample Name: 7GP17MSD  Lab Sample ID: 4241642

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.679 | 94 | 824438 | 89.014 |
| 18) bis(2-Chloroethyl)ether | (1) | 9.868 | 93 | 624919 | 87.366 |
| 19) 2-Chlorophenol | (1) | 9.977 | 128 | 572876 | 89.090 |
| 20) 1,3-Dichlorobenzene | (1) | 10.294 | 146 | 521626 | 78.816 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.413 | 152 | 167771 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 10.442 | 146 | 532075 | 79.937 |
| 25) 1,2-Dichlorobenzene | (1) | 10.749 | 146 | 503109 | 77.949 |
| 26) 2-Methylphenol | (1) | 10.918 | 108 | 594731 | 84.827 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 10.968 | 45 | 778669 | 101.483 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.245 | 70 | 346176 | 83.916 |
| 33) 4-Methylphenol | (1) | 11.225 | 108 | 570839 | 83.289 |
| 37) Hexachloroethane | (1) | 11.453 | 117 | 269526 | 81.459 |
| 39) Nitrobenzene | (2) | 11.592 | 77 | 547957 | 89.488 |
| 41) Isophorone | (2) | 12.077 | 82 | 1096281 | 85.903 |
| 42) 2-Nitrophenol | (2) | 12.236 | 139 | 323215 | 86.951 |
| 44) 2,4-Dimethylphenol | (2) | 12.315 | 107 | 591379 | 92.410 |
| 46) bis(2-Chloroethoxy)methane | (2) | 12.514 | 93 | 784433 | 100.338 |
| 49) 2,4-Dichlorophenol | (2) | 12.742 | 162 | 401473 | 89.732 |
| 50) 1,2,4-Trichlorobenzene | (2) | 12.910 | 180 | 328731 | 85.272 |
| 52) Naphthalene-d8 | (2) | 13.030 | 136 | 586391 | 40.000 |
| 53) Naphthalene | (2) | 13.079 | 128 | 1276997 | 83.772 |
| 55) 4-Chloroaniline | (2) | 13.179 | 127 | 583110 | 81.674 |
| 59) Hexachlorobutadiene | (2) | 13.318 | 225 | 132237 | 79.851 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.180 | 107 | 490707 | 93.970 |
| 69) 2-Methylnaphthalene | (2) | 14.507 | 142 | 803336 | 83.333 |
| 71) Hexachlorocyclopentadiene | (3) | 14.835 | 237 | 113248 | 101.878 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.093 | 196 | 160346 | 71.879 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.173 | 196 | 198279 | 85.731 |
| 83) 2-Chloronaphthalene | (3) | 15.531 | 162 | 743827 | 88.815 |
| 87) 2-Nitroaniline | (3) | 15.740 | 138 | 368854 | 98.471 |
| 90) Dimethylphthalate | (3) | 16.117 | 163 | 849114 | 92.212 |
| 92) 2,6-Dinitrotoluene | (3) | 16.237 | 165 | 231724 | 92.828 |
| 93) Acenaphthylene | (3) | 16.396 | 152 | 1238567 | 100.451 |
| 95) 3-Nitroaniline | (3) | 16.594 | 138 | 290931 | 92.522 |
| 96) Acenaphthene-d10 | (3) | 16.684 | 164 | 258322 | 40.000 |
| 97) Acenaphthene | (3) | 16.753 | 153 | 715450 | 92.282 |
| 98) 2,4-Dinitrophenol | (3) | 16.803 | 184 | 25966 | 29.871 |
| 101) 4-Nitrophenol | (3) | 16.942 | 109 | 95941 | 95.595 |
| 102) Dibenzofuran | (3) | 17.111 | 168 | 928122 | 89.755 |
| 103) 2,4-Dinitrotoluene | (3) | 17.081 | 165 | 299729 | 103.664 |
| 107) Diethylphthalate | (3) | 17.579 | 149 | 865018 | 94.255 |
| 109) Fluorene | (3) | 17.828 | 166 | 653791 | 84.377 |
| 110) 4-Chlorophenyl-phenylether | (3) | 17.818 | 204 | 242695 | 79.631 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc392.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:53  Analyst ID: cam01237

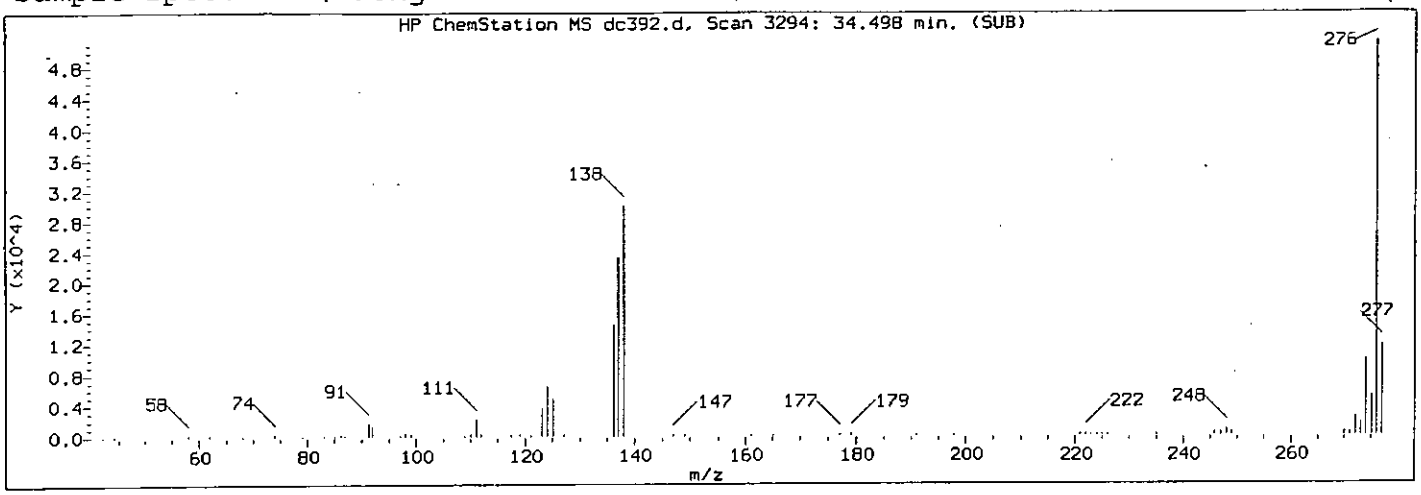
Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Sample Name: 7GP17MSD  Lab Sample ID: 4241642

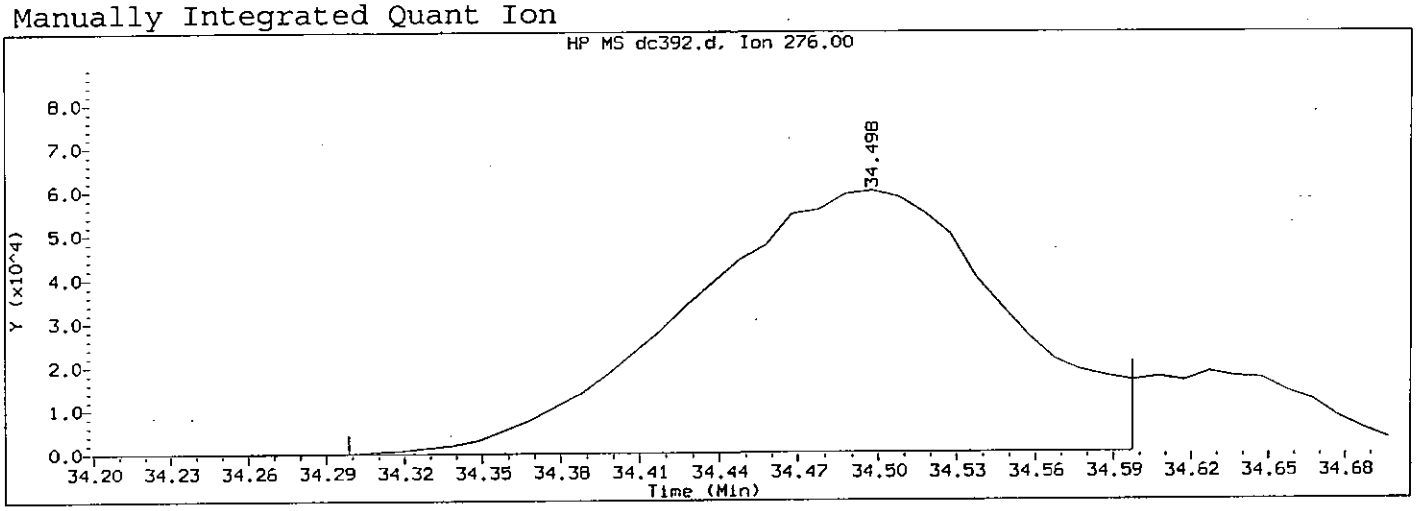
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 112) 4-Nitroaniline | (3) | 17.868 | 138 | 285525 | 96.441 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 17.927 | 198 | 41511 | 33.303 |
| 115) N-Nitrosodiphenylamine | (4) | 18.067 | 169 | 938310 | 173.384 |
| 123) 4-Bromophenyl-phenylether | (4) | 18.842 | 248 | 142333 | 97.014 |
| 125) Hexachlorobenzene | (4) | 18.971 | 284 | 155536 | 94.569 |
| 129) Pentachlorophenol | (4) | 19.389 | 266 | 70274 | 97.467 |
| 133) Phenanthrene-d10 | (4) | 19.856 | 188 | 305232 | 40.000 |
| 135) Phenanthrene | (4) | 19.926 | 178 | 821005 | 94.719 |
| 136) Anthracene | (4) | 20.055 | 178 | 890358 | 99.546 |
| 138) Carbazole | (4) | 20.502 | 167 | 924256 | 96.610 |
| 140) Di-n-butylphthalate | (4) | 21.595 | 149 | 1496351 | 100.940 |
| 145) Fluoranthene | (4) | 23.078 | 202 | 717610 | 89.299 |
| 152) Pyrene | (5) | 23.537 | 202 | 745373 | 100.080 |
| 159) Butylbenzylphthalate | (5) | 24.676 | 149 | 584623 | 106.921 |
| 162) 3,3'-Dichlorobenzidine | (5) | 25.617 | 252 | 202575 | 97.928 |
| 164) Benzo(a)anthracene | (5) | 25.687 | 228 | 543508 | 89.505 |
| 165) Chrysene-d12 | (5) | 25.707 | 240 | 186103 | 40.000 |
| 166) Chrysene | (5) | 25.768 | 228 | 544053 | 93.578 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.667 | 149 | 832796 | 115.935 |
| 168) Di-n-octylphthalate | (6) | 27.147 | 149 | 1453697 | 103.180 |
| 170) Benzo(b)fluoranthene | (6) | 28.395 | 252 | 518623 | 93.629 |
| 171) Benzo(k)fluoranthene | (6) | 28.475 | 252 | 508496 | 93.989 |
| 172) Benzo(a)pyrene | (6) | 29.473 | 252 | 500838 | 99.419 |
| 173) Perylene-d12 | (6) | 29.643 | 264 | 180393 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 34.498 | 276 | 504132M | 100.885 |
| 176) Dibenz(a,h)anthracene | (6) | 34.637 | 278 | 492861 | 108.607 |
| 177) Benzo(g,h,i)perylene | (6) | 36.018 | 276 | 490802 | 98.720 |
| 9) 2-Fluorophenol | (1) | 7.673 | 112 | 1339467 | 169.645 |
| 15) Phenol-d6 | (1) | 9.660 | 99 | 1532214 | 170.160 |
| 38) Nitrobenzene-d5 | (2) | 11.553 | 82 | 589380 | 90.384 |
| 77) 2-Fluorobiphenyl | (3) | 15.273 | 172 | 715041 | 87.997 |
| 117) 2,4,6-Tribromophenol | (3) | 18.326 | 330 | 160193 | 160.812 |
| 154) Terphenyl-d14 | (5) | 23.837 | 244 | 383600 | 95.525 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar29.b/dc392.d Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 12:53 Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 19:17 rpb01568

Sample Name: 7GP17MSD Lab Sample ID: 4241642

| | |
|---|---|
| Compound Number | : 175 |
| Compound Name | : Indeno(1,2,3-cd)pyrene |
| Scan Number | : 3294 |
| Retention Time (minutes) | : 34.498 |
| Quant Ion | : 276 |
| Area (flag) | : 504132 M |
| Concentration (ng/ul) | : 100.8847 |
| Integration start scan | : 3273 Integration stop scan: 3303 |
| Y at integration start | : 0 Y at integration end: 165 |

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: RBISS 3-29-04

GC/MS audit/management approval: MS1758 3/29/04

7GP45MS

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241646

Data file: /chem/HP06777.i/04mar26.b/gc385.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 10:54 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.547(-0.002) | 841 | 152.0 | 234578( -10) | 40.00 | |
| 52) Naphthalene-d8 | 16.322(-0.002) | 1193 | 136.0 | 845479( -15) | 40.00 | |
| 96) Acenaphthene-d10 | 21.717(-0.002) | 1696 | 164.0 | 373687( -18) | 40.00 | |
| 133) Phenanthrene-d10 | 26.296( 0.009) | 2123 | 188.0 | 646396( -13) | 40.00 | |
| 165) Chrysene-d12 | 32.913(-0.002) | 2740 | 240.0 | 674057( -17) | 40.00 | |
| 173) Perylene-d12 | 38.243(-0.012) | 3237 | 264.0 | 714522( -15) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.901( 0.002) | 112 | 1496746 | 167.102 | 84% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.453(-0.001) | 99 | 1885490 | 174.470 | 87% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.167( 0.000) | 82 | 737749 | 87.807 | 88% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.625( 0.000) | 172 | 1160218 | 92.269 | 92% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.162( 0.000) | 330 | 640238 | 191.227 | 96% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.393( 0.000) | 244 | 1251803 | 94.188 | 94% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 11.485( 0.000) | 94 | 967164 | 89.039 | 2967.96 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 11.775( 0.000) | 93 | 739302 | 83.438 | 2781.26 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 11.947( 0.000) | 128 | 807516 | 87.766 | 2925.54 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 12.386( 0.000) | 146 | 767464 | 82.511 | 2750.37 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 12.601( 0.000) | 146 | 797809 | 85.261 | 2842.03 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 13.040( 0.000) | 146 | 740889 | 82.818 | 2760.60 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.233( 0.001) | 108 | 670121 | 89.188 | 2972.95 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.319( 0.000) | 45 | 1339109 | 94.605 | 3153.49 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 13.705( 0.002) | 70 | 477783 | 80.314 | 2677.12 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 13.673( 0.001) | 108 | 700651 | 88.300 | 2943.35 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.027( 0.000) | 117 | 364700 | 84.090 | 2802.99 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.220( 0.000) | 77 | 715827 | 87.015 | 2900.50 | | | 1.00 |
| 41) Isophorone | (2) | 14.917( 0.001) | 82 | 1349567 | 84.449 | 2814.95 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 15.153( 0.001) | 139 | 426569 | 88.406 | 2946.86 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 15.260( 0.000) | 107 | 723196 | 91.600 | 3053.32 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.561( 0.000) | 93 | 901074 | 93.939 | 3131.30 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 15.872( 0.000) | 162 | 570707 | 88.554 | 2951.79 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.140( 0.000) | 180 | 589631 | 88.128 | 2937.61 | | | 1.00 |
| 53) Naphthalene | (2) | 16.387( 0.000) | 128 | 2028801 | 90.621 | 3020.69 | | | 1.00 |
| 55) 4-Chloroaniline | *(2) | 16.526( 0.001) | 127 | 826682 | 79.660 | 2655.32 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 16.740( 0.000) | 225 | 340081 | 87.154 | 2905.13 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 17.995( 0.000) | 107 | 605111 | 94.392 | 3146.40 | | | 2.00 |



9361

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06777.i/04mar26.b/gc385.d Blank Data file reference:/chem/HP06777.i/04mar26.h/gc382.d
Injection date and time: 26-MAR-2004 10:54 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 18.499 | ( 0.000) | 142 | 1254481 | 88.348 | 2944.94 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 18.971 | ( 0.000) | 237 | 250053 | 83.342 | 2778.08 | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.347 | ( 0.000) | 196 | 350645 | 88.057 | 2935.24 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.465 | ( 0.000) | 196 | 396897 | 92.258 | 3075.27 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 20.001 | ( 0.000) | 162 | 1088620 | 91.571 | 3052.37 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 20.312 | ( 0.000) | 138 | 498645 | 96.990 | 3233.00 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 20.880 | ( 0.000) | 163 | 1269539 | 91.181 | 3039.38 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 21.062 | ( 0.000) | 165 | 311324 | 90.276 | 3009.18 | | | 1.00 |
| 93) Acenaphthylene | (3) | 21.277 | ( 0.000) | 152 | 1789287 | 104.983 | 3499.43 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 21.577 | ( 0.000) | 138 | 416576 | 96.100 | 3203.33 | | | 2.00 |
| 97) Acenaphthene | (3) | 21.824 | ( 0.000) | 153 | 1057139 | 95.807 | 3193.55 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 21.888 | ( 0.000) | 184 | 74314 | 37.201 | 1240.02 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 22.071 | ( 0.000) | 109 | 198889 | 79.145 | 2638.16 | | | 5.00 |
| 102) Dibenzofuran | (3) | 22.349 | ( 0.000) | 168 | 1519462 | 93.927 | 3130.89 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.307 | ( 0.000) | 165 | 437945 | 101.645 | 3388.16 | | | 2.00 |
| 107) Diethylphthalate | (3) | 23.068 | ( 0.000) | 149 | 1484001 | 95.987 | 3199.56 | | | 2.00 |
| 109) Fluorene | (3) | 23.422 | ( 0.000) | 166 | 1152891 | 89.985 | 2999.50 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 23.411 | ( 0.000) | 204 | 527342 | 90.045 | 3001.49 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 23.476 | ( 0.001) | 138 | 387100 | 84.135 | 2804.49 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.561 | ( 0.000) | 198 | 115317 | 42.061 | 1402.04 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 23.787 | (-0.001) | 169 | 1500519 | 159.594 | 5319.81 | | E | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.934 | ( 0.000) | 248 | 374303 | 89.801 | 2993.37 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.106 | ( 0.000) | 284 | 504035 | 88.256 | 2941.87 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 25.706 | ( 0.000) | 266 | 228050 | 66.145 | 2204.85 | | | 5.00 |
| 135) Phenanthrene | (4) | 26.371 | ( 0.000) | 178 | 1651565 | 91.048 | 3034.93 | | | 1.00 |
| 136) Anthracene | (4) | 26.521 | ( 0.000) | 178 | 1701816 | 90.549 | 3018.30 | | | 1.00 |
| 138) Carbazole | (4) | 26.972 | ( 0.000) | 167 | 1763181 | 91.512 | 3050.41 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 27.894 | ( 0.000) | 149 | 2760654 | 94.446 | 3148.19 | 93.76 | B | 2.00 |
| 145) Fluoranthene | (4) | 29.514 | ( 0.000) | 202 | 1850962 | 89.004 | 2966.80 | | | 1.00 |
| 152) Pyrene | (5) | 30.071 | ( 0.000) | 202 | 1853403 | 94.287 | 3142.88 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 31.487 | ( 0.000) | 149 | 1287047 | 101.065 | 3368.84 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.774 | ( 0.000) | 252 | 775443 | 91.640 | 3054.68 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 32.881 | ( 0.000) | 228 | 1738373 | 95.123 | 3170.75 | | | 1.00 |
| 166) Chrysene | (5) | 32.988 | ( 0.000) | 228 | 1591503 | 94.260 | 3142.01 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.795 | ( 0.000) | 149 | 1885980 | 111.542 | 3718.06 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | 34.801 | ( 0.000) | 149 | 3165717 | 102.635 | 3421.17 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 36.528 | ( 0.000) | 252 | 2035653 | 93.741 | 3124.70 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 36.645 | ( 0.000) | 252 | 1922245 | 94.473 | 3149.10 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 37.997 | ( 0.000) | 252 | 1855601 | 95.064 | 3168.81 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 44.818 | ( 0.000) | 276 | 1815110 | 89.377 | 2979.23 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 45.021 | ( 0.000) | 278 | 1775915 | 94.203 | 3140.11 | | | 1.00 |

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles 4241646

Data file: /chem/HP06777.i/04mar26.b/gc385.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 10:54 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 46.898 | ( 0.000) | 276 | 1782646 | 87.412 | 2913.72 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

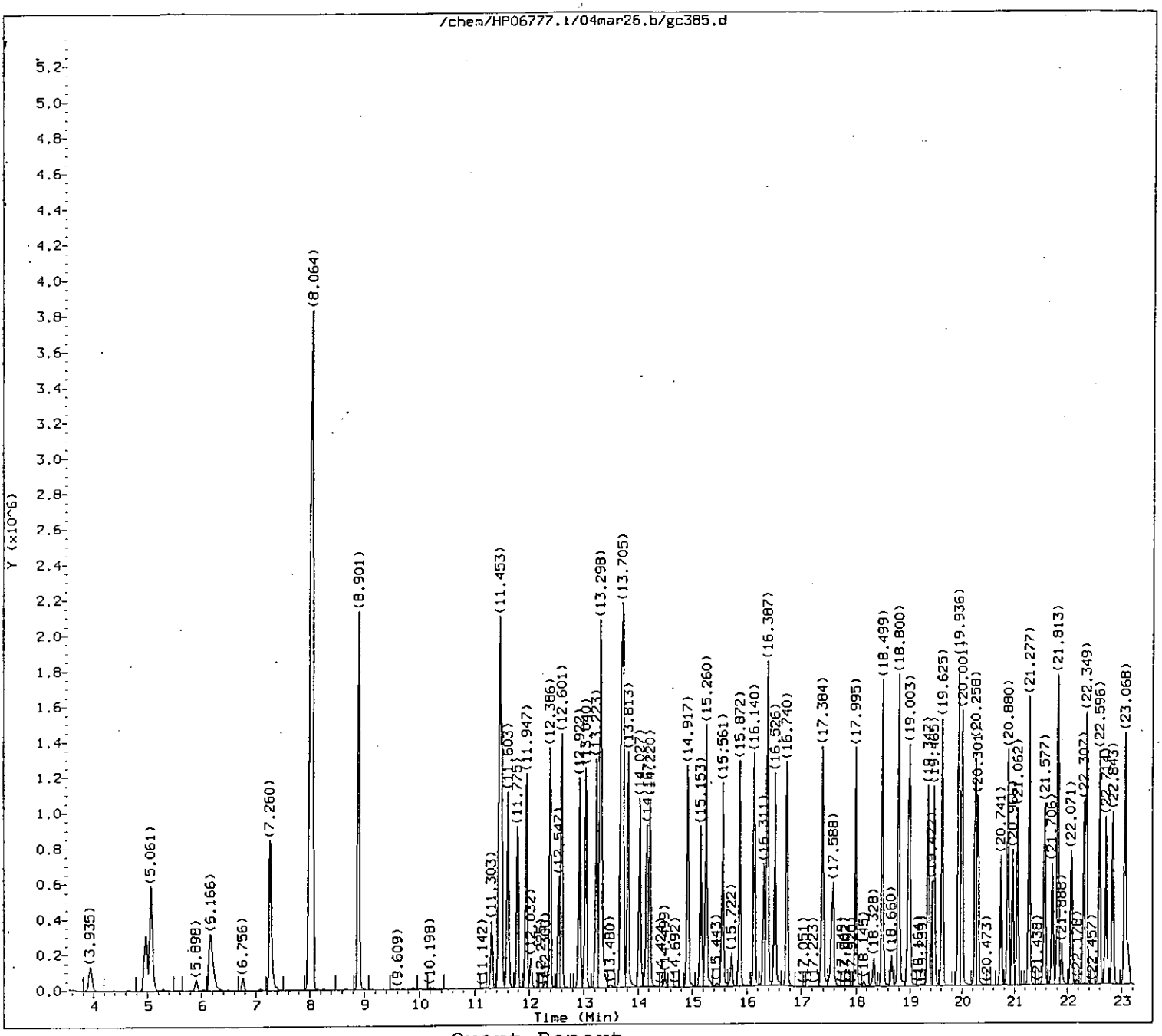
Total number of targets = 64

Comments:

Analyst: B Kirchner Jarosick Date: 3-29-04
Auditor: Date: 3/29/04



8363




Quant Report

Target Revision 3.5

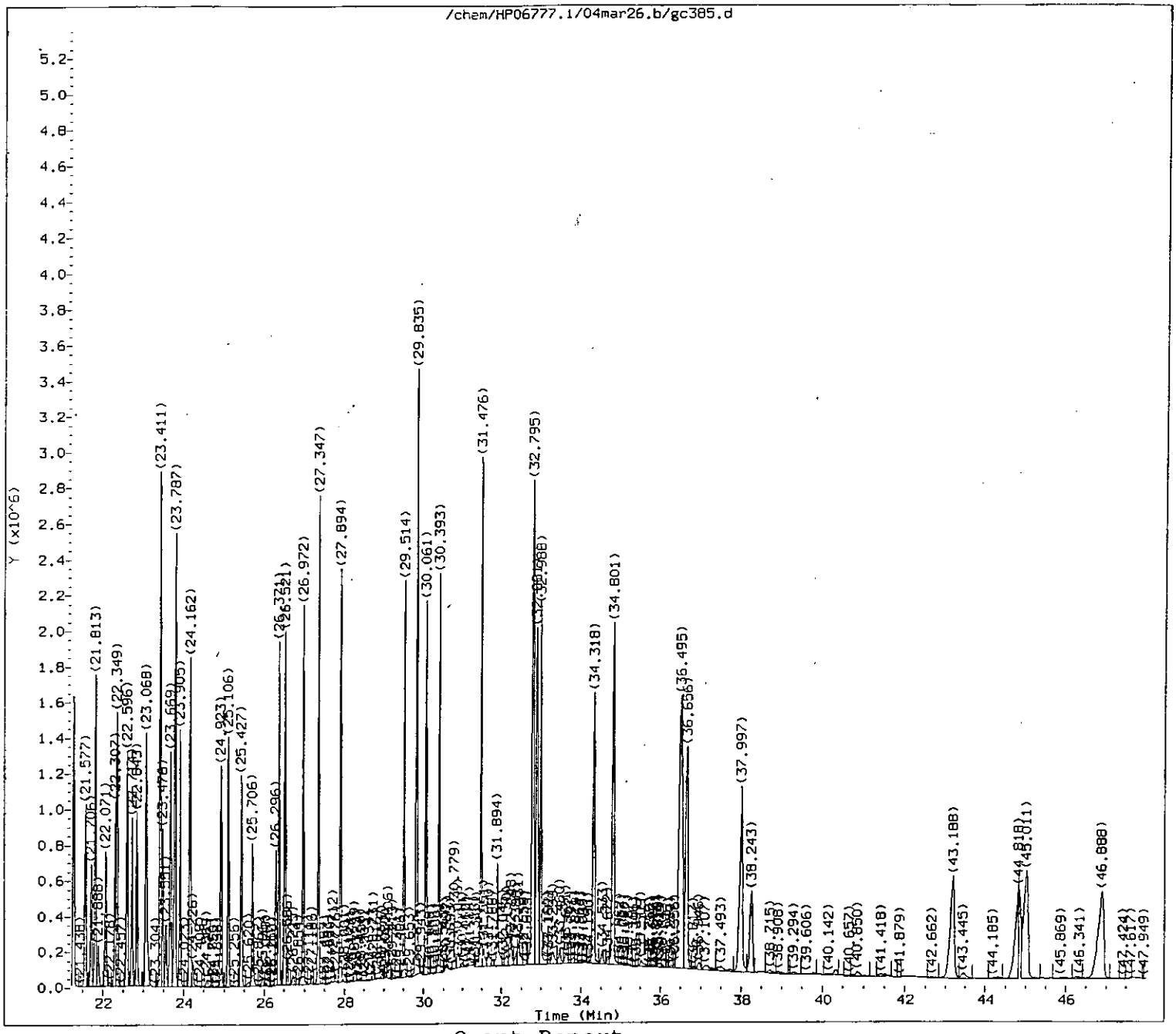
Data File: /chem/HP06777.i/04mar26.b/gc385.d Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 10:54 Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Sample Name: 7GP45MS Lab Sample ID: 4241646

YBGm
3-27-04

8364




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc385.d Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 10:54 Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Sample Name: 7GP45MS Lab Sample ID: 4241646

BGM 3-27-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc385.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 10:54  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Sample Name: 7GP45MS  Lab Sample ID: 4241646

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 16) | Phenol | (1) | 11.485 | 94 | 967164 | 89.039 |
| 18) | bis(2-Chloroethyl)ether | (1) | 11.775 | 93 | 739302 | 83.438 |
| 19) | 2-Chlorophenol | (1) | 11.947 | 128 | 807516 | 87.766 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.386 | 146 | 767464 | 82.511 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.547 | 152 | 234578 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 12.601 | 146 | 797809 | 85.261 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.040 | 146 | 740889 | 82.818 |
| 26) | 2-Methylphenol | (1) | 13.233 | 108 | 670121 | 89.188 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.319 | 45 | 1339109 | 94.605 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 13.705 | 70 | 477783 | 80.314 |
| 33) | 4-Methylphenol | (1) | 13.673 | 108 | 700651 | 88.300 |
| 37) | Hexachloroethane | (1) | 14.027 | 117 | 364700 | 84.090 |
| 39) | Nitrobenzene | (2) | 14.220 | 77 | 715827 | 87.015 |
| 41) | Isophorone | (2) | 14.917 | 82 | 1349567 | 84.449 |
| 42) | 2-Nitrophenol | (2) | 15.153 | 139 | 426569 | 88.406 |
| 44) | 2,4-Dimethylphenol | (2) | 15.260 | 107 | 723196 | 91.600 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.561 | 93 | 901074 | 93.939 |
| 49) | 2,4-Dichlorophenol | (2) | 15.872 | 162 | 570707 | 88.554 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.140 | 180 | 589631 | 88.128 |
| 52) | Naphthalene-d8 | (2) | 16.322 | 136 | 845479 | 40.000 |
| 53) | Naphthalene | (2) | 16.387 | 128 | 2028801 | 90.621 |
| 55) | 4-Chloroaniline | (2) | 16.526 | 127 | 826682 | 79.660 |
| 59) | Hexachlorobutadiene | (2) | 16.740 | 225 | 340081 | 87.154 |
| 67) | 4-Chloro-3-methylphenol | (2) | 17.995 | 107 | 605111 | 94.392 |
| 69) | 2-Methylnaphthalene | (2) | 18.499 | 142 | 1254481 | 88.348 |
| 71) | Hexachlorocyclopentadiene | (3) | 18.971 | 237 | 250053 | 83.342 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.347 | 196 | 350645 | 88.057 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.465 | 196 | 396897 | 92.258 |
| 83) | 2-Chloronaphthalene | (3) | 20.001 | 162 | 1088620 | 91.571 |
| 87) | 2-Nitroaniline | (3) | 20.312 | 138 | 498645 | 96.990 |
| 90) | Dimethylphthalate | (3) | 20.880 | 163 | 1269539 | 91.181 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.062 | 165 | 311324 | 90.276 |
| 93) | Acenaphthylene | (3) | 21.277 | 152 | 1789287 | 104.983 |
| 95) | 3-Nitroaniline | (3) | 21.577 | 138 | 416576 | 96.100 |
| 96) | Acenaphthene-d10 | (3) | 21.717 | 164 | 373687 | 40.000 |
| 97) | Acenaphthene | (3) | 21.824 | 153 | 1057139 | 95.807 |
| 98) | 2,4-Dinitrophenol | (3) | 21.888 | 184 | 74314 | 37.201 |
| 101) | 4-Nitrophenol | (3) | 22.071 | 109 | 198889 | 79.145 |
| 102) | Dibenzofuran | (3) | 22.349 | 168 | 1519462 | 93.927 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.307 | 165 | 437945 | 101.645 |
| 107) | Diethylphthalate | (3) | 23.068 | 149 | 1484001 | 95.987 |
| 109) | Fluorene | (3) | 23.422 | 166 | 1152891 | 89.985 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.411 | 204 | 527342 | 90.045 |

M = Compound was manually integrated.  A = User selected an alternate hit.

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc385.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 10:54  Analyst ID: bkg00522

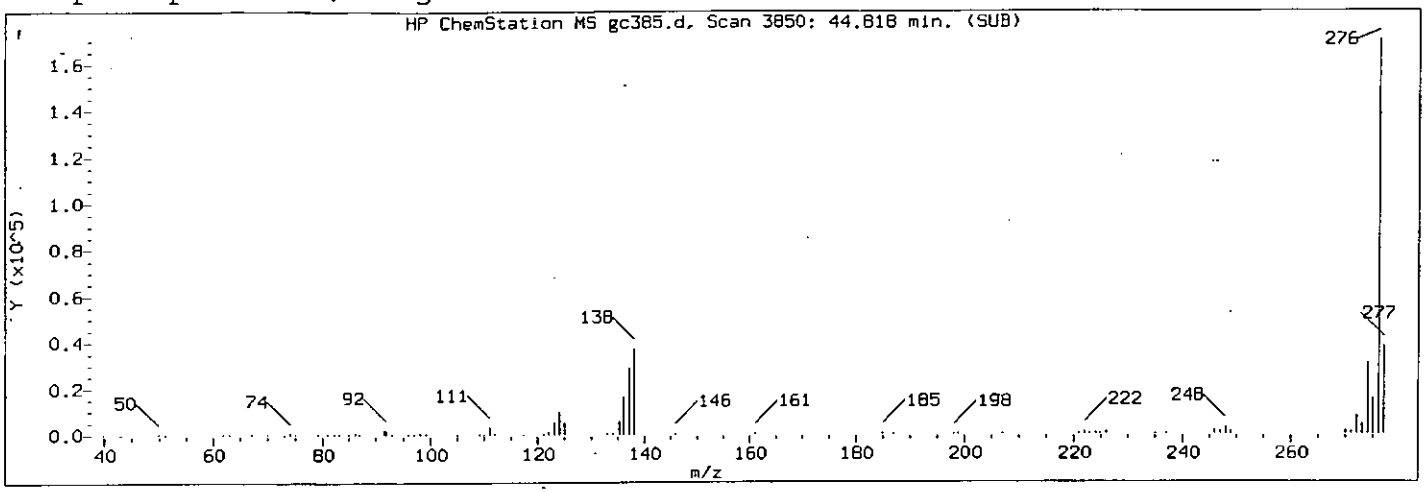
Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Sample Name: 7GP45MS  Lab Sample ID: 4241646

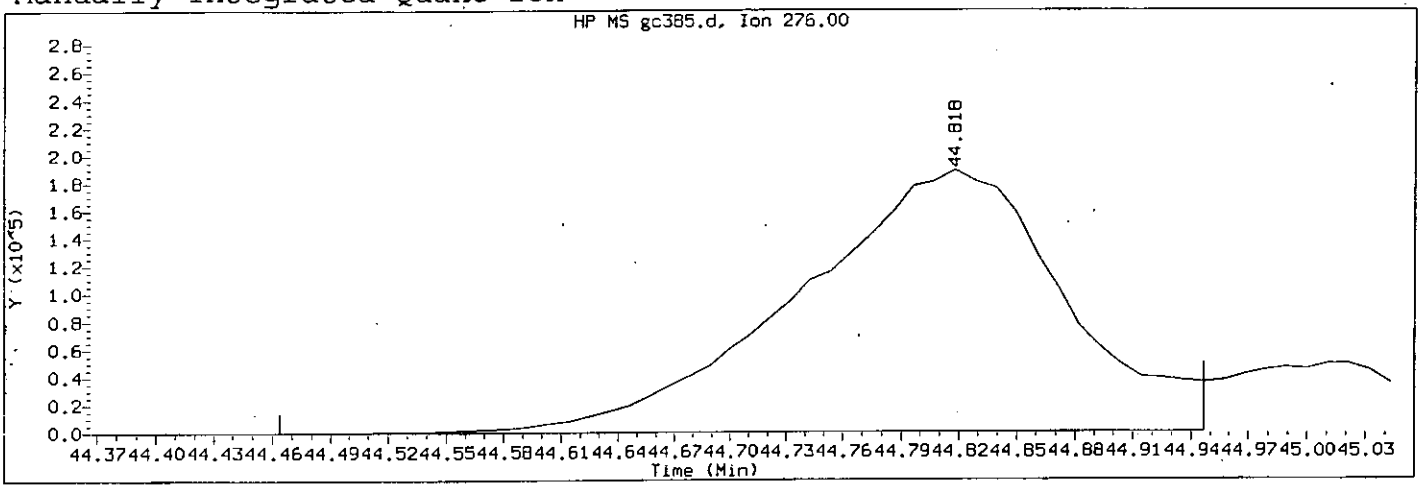
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 112) 4-Nitroaniline | (3) | 23.476 | 138 | 387100 | 84.135 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.561 | 198 | 115317 | 42.061 |
| 115) N-Nitrosodiphenylamine | (4) | 23.787 | 169 | 1500519 | 159.594 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.934 | 248 | 374303 | 89.801 |
| 125) Hexachlorobenzene | (4) | 25.106 | 284 | 504035 | 88.256 |
| 129) Pentachlorophenol | (4) | 25.706 | 266 | 228050 | 66.145 |
| 133) Phenanthrene-d10 | (4) | 26.296 | 188 | 646396 | 40.000 |
| 135) Phenanthrene | (4) | 26.371 | 178 | 1651565 | 91.048 |
| 136) Anthracene | (4) | 26.521 | 178 | 1701816 | 90.549 |
| 138) Carbazole | (4) | 26.972 | 167 | 1763181 | 91.512 |
| 140) Di-n-butylphthalate | (4) | 27.894 | 149 | 2760654 | 94.446 |
| 145) Fluoranthene | (4) | 29.514 | 202 | 1850962 | 89.004 |
| 152) Pyrene | (5) | 30.071 | 202 | 1853403 | 94.287 |
| 159) Butylbenzylphthalate | (5) | 31.487 | 149 | 1287047 | 101.065 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.774 | 252 | 775443 | 91.640 |
| 164) Benzo(a)anthracene | (5) | 32.881 | 228 | 1738373 | 95.123 |
| 165) Chrysene-d12 | (5) | 32.913 | 240 | 674057 | 40.000 |
| 166) Chrysene | (5) | 32.988 | 228 | 1591503 | 94.260 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.795 | 149 | 1885980 | 111.542 |
| 168) Di-n-octylphthalate | (6) | 34.801 | 149 | 3165717 | 102.635 |
| 170) Benzo(b)fluoranthene | (6) | 36.528 | 252 | 2035653 | 93.741 |
| 171) Benzo(k)fluoranthene | (6) | 36.645 | 252 | 1922245 | 94.473 |
| 172) Benzo(a)pyrene | (6) | 37.997 | 252 | 1855601 | 95.064 |
| 173) Perylene-d12 | (6) | 38.243 | 264 | 714522 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 44.818 | 276 | 1815110M | 89.377 |
| 176) Dibenz(a,h)anthracene | (6) | 45.021 | 278 | 1775915 | 94.203 |
| 177) Benzo(g,h,i)perylene | (6) | 46.898 | 276 | 1782646 | 87.412 |
| 9) 2-Fluorophenol | (1) | 8.901 | 112 | 1496746 | 167.102 |
| 15) Phenol-d6 | (1) | 11.453 | 99 | 1885490 | 174.470 |
| 38) Nitrobenzene-d5 | (2) | 14.167 | 82 | 737749 | 87.807 |
| 77) 2-Fluorobiphenyl | (3) | 19.625 | 172 | 1160218 | 92.269 |
| 117) 2,4,6-Tribromophenol | (3) | 24.162 | 330 | 640238 | 191.227 |
| 154) Terphenyl-d14 | (5) | 30.393 | 244 | 1251803 | 94.188 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06777.i/04mar26.b/gc385.d Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 10:54 Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 21:30 jmg00068

Sample Name: 7GP45MS Lab Sample ID: 4241646

| | | |
|---|---|---|
| Compound Number | : | 175 |
| Compound Name | : | Indeno(1,2,3-cd)pyrene |
| Scan Number | : | 3850 |
| Retention Time (minutes) | : | 44.818 |
| Quant Ion | : | 276 |
| Area (flag) | : | 1815110 M |
| Concentration (ng/ul) | : | 89.3769 |
| Integration start scan | : | 3816 Integration stop scan: 3861 |
| Y at integration start | : | 0 Y at integration end: 0 |

Reason for manual integration (circle one): missed peak (improper integration)

Analyst responsible for change: [signature] 3-27-04

GC/MS audit/management approval: [signature] 3/29/04

Manual Integration Report for data file /chem/HP06777.i/04mar26.b/gc385.d, generated on 03/26/2004 at 21:30

7GP45MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241647

Data file: /chem/HP06777.i/04mar26.b/gc386.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 11:49 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.557(-0.011) | 842 | 152.0 | 255808( -2) | 40.00 | |
| 52) Naphthalene-d8 | 16.321(-0.001) | 1193 | 136.0 | 961354( -3) | 40.00 | |
| 96) Acenaphthene-d10 | 21.716(-0.001) | 1696 | 164.0 | 435309( -4) | 40.00 | |
| 133) Phenanthrene-d10 | 26.306(-0.001) | 2124 | 188.0 | 776900( 4) | 40.00 | |
| 165) Chrysene-d12 | 32.912(-0.001) | 2740 | 240.0 | 748696( -7) | 40.00 | |
| 173) Perylene-d12 | 38.253(-0.022) | 3238 | 264.0 | 757309( -10) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.900( 0.002) | 112 | 1628388 | 166.711 | 83% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.452( 0.000) | 99 | 2075043 | 176.074 | 88% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.166( 0.000) | 82 | 834968 | 87.399 | 87% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.625( 0.000) | 172 | 1284233 | 87.674 | 88% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.161( 0.000) | 330 | 764659 | 196.058 | 98% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.403( 0.000) | 244 | 1420144 | 96.202 | 96% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 11.495( 0.000) | 94 | 1032010 | 87.124 | 2904.12 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 11.785( 0.000) | 93 | 808428 | 83.667 | 2788.91 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 11.946( 0.001) | 128 | 900186 | 89.718 | 2990.62 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 12.385( 0.001) | 146 | 832728 | 82.098 | 2736.58 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 12.600( 0.001) | 146 | 859162 | 84.197 | 2806.58 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 13.040( 0.001) | 146 | 792256 | 81.210 | 2707.00 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.233( 0.002) | 108 | 741903 | 90.547 | 3018.24 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.329( 0.000) | 45 | 1470007 | 95.234 | 3174.45 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 13.715( 0.002) | 70 | 522326 | 80.514 | 2683.81 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 13.683( 0.001) | 108 | 785800 | 90.813 | 3027.09 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.037( 0.000) | 117 | 386708 | 81.764 | 2725.48 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.219( 0.000) | 77 | 797398 | 85.247 | 2841.58 | | | 1.00 |
| 41) Isophorone | (2) | 14.927( 0.000) | 82 | 1510750 | 83.140 | 2771.33 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 15.163( 0.000) | 139 | 483540 | 88.134 | 2937.80 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 15.260( 0.000) | 107 | 808924 | 90.108 | 3003.61 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.560( 0.000) | 93 | 1025273 | 94.004 | 3133.45 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 15.882(-0.001) | 162 | 656015 | 89.521 | 2984.05 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.139( 0.000) | 180 | 645681 | 84.873 | 2829.12 | | | 1.00 |
| 53) Naphthalene | (2) | 16.386( 0.000) | 128 | 2212326 | 86.907 | 2896.91 | | | 1.00 |
| 55) 4-Chloroaniline | (2) | 16.536( 0.000) | 127 | 983412 | 83.340 | 2778.01 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 16.750(-0.001) | 225 | 367346 | 82.794 | 2759.80 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.005(-0.001) | 107 | 700300 | 96.074 | 3202.45 | | | 2.00 |



8369

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06777.i/04mar26.b/gc386.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 11:49 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | 1.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 18.498 | ( 0.000) | 142 | 1406199 | 87.096 | 2903.21 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 18.970 | ( 0.000) | 237 | 414995 | 116.406 | 3880.18 | | | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.356 | ( 0.000) | 196 | 385492 | 83.104 | 2770.14 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.474 | ( 0.000) | 196 | 456252 | 91.042 | 3034.73 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 20.000 | ( 0.000) | 162 | 1212090 | 87.524 | 2917.47 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 20.311 | ( 0.000) | 138 | 584366 | 97.573 | 3252.45 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 20.890 | ( 0.000) | 163 | 1480134 | 91.258 | 3041.93 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 21.062 | ( 0.000) | 165 | 360967 | 89.854 | 2995.12 | | | 1.00 |
| 93) Acenaphthylene | (3) | 21.287 | ( 0.000) | 152 | 2014975 | 101.489 | 3382.96 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 21.587 | ( 0.000) | 138 | 488686 | 96.776 | 3225.87 | | | 2.00 |
| 97) Acenaphthene | (3) | 21.823 | ( 0.000) | 153 | 1197649 | 93.176 | 3105.86 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 21.898 | ( 0.000) | 184 | 88926 | 37.921 | 1264.05 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 22.081 | ( 0.000) | 109 | 239420 | 81.570 | 2719.01 | | | 5.00 |
| 102) Dibenzofuran | (3) | 22.359 | ( 0.000) | 168 | 1705265 | 90.490 | 3016.34 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.316 | ( 0.000) | 165 | 509451 | 101.503 | 3383.43 | | | 2.00 |
| 107) Diethylphthalate | (3) | 23.067 | ( 0.000) | 149 | 1711685 | 95.041 | 3168.03 | | | 2.00 |
| 109) Fluorene | (3) | 23.421 | ( 0.000) | 166 | 1306235 | 87.521 | 2917.38 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 23.421 | ( 0.000) | 204 | 610221 | 89.447 | 2981.55 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 23.485 | ( 0.000) | 138 | 461313 | 86.071 | 2869.04 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.571 | ( 0.000) | 198 | 137589 | 41.755 | 1391.82 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 23.796 | (-0.001) | 169 | 1857709 | 164.394 | 5479.81 | | E | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.933 | ( 0.000) | 248 | 437057 | 87.243 | 2908.09 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.116 | ( 0.000) | 284 | 597287 | 87.016 | 2900.55 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 25.716 | ( 0.000) | 266 | 273715 | 66.069 | 2202.30 | | | 5.00 |
| 135) Phenanthrene | (4) | 26.381 | ( 0.000) | 178 | 1950095 | 89.447 | 2981.55 | | | 1.00 |
| 136) Anthracene | (4) | 26.531 | ( 0.000) | 178 | 2036154 | 90.140 | 3004.65 | | | 1.00 |
| 138) Carbazole | (4) | 26.982 | ( 0.000) | 167 | 2052527 | 88.635 | 2954.50 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 27.904 | ( 0.000) | 149 | 3344624 | 95.203 | 3173.44 | 93.76 | B | 2.00 |
| 145) Fluoranthene | (4) | 29.523 | ( 0.000) | 202 | 2162854 | 86.531 | 2884.37 | | | 1.00 |
| 152) Pyrene | (5) | 30.070 | ( 0.000) | 202 | 2156722 | 98.779 | 3292.64 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 31.486 | ( 0.000) | 149 | 1435361 | 101.475 | 3382.50 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.773 | ( 0.000) | 252 | 873229 | 92.909 | 3096.96 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 32.891 | ( 0.000) | 228 | 1867567 | 92.004 | 3066.81 | | | 1.00 |
| 166) Chrysene | (5) | 32.988 | ( 0.000) | 228 | 1780858 | 94.960 | 3165.34 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.805 | ( 0.000) | 149 | 2141429 | 114.024 | 3800.79 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | 34.800 | ( 0.001) | 149 | 3422997 | 104.706 | 3490.21 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 36.537 | ( 0.000) | 252 | 2146966 | 93.281 | 3109.37 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 36.655 | ( 0.000) | 252 | 1983017 | 91.953 | 3065.11 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 38.007 | ( 0.000) | 252 | 1917584 | 92.689 | 3089.65 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 44.828 | ( 0.000) | 276 | 1767023 | 82.093 | 2736.44 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 45.010 | ( 0.000) | 278 | 1800050 | 90.089 | 3002.96 | | | 1.00 |

7GP45MSD

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

4241647

Data file: /chem/HP06777.i/04mar26.b/gc386.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 11:49 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 46.919 | (-0.001) | 276 | 1775753 | 82.154 | 2738.47 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

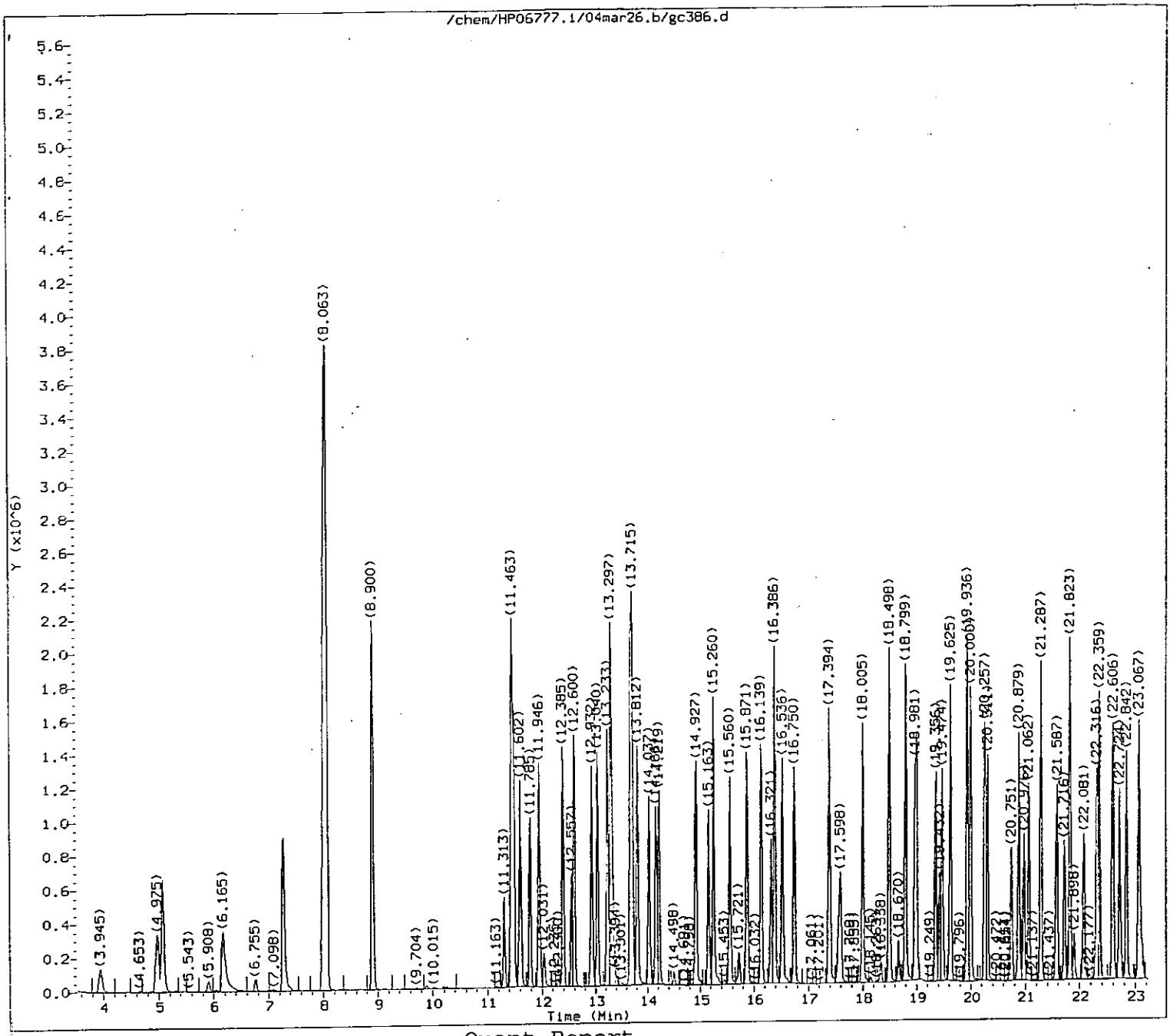
Total number of targets = 64

Comments:

Analyst: Bonnie Jarosick Date: 3-29-04
Auditor: Date: 3/29/04



8371




Quant Report

Target Revision 3.5

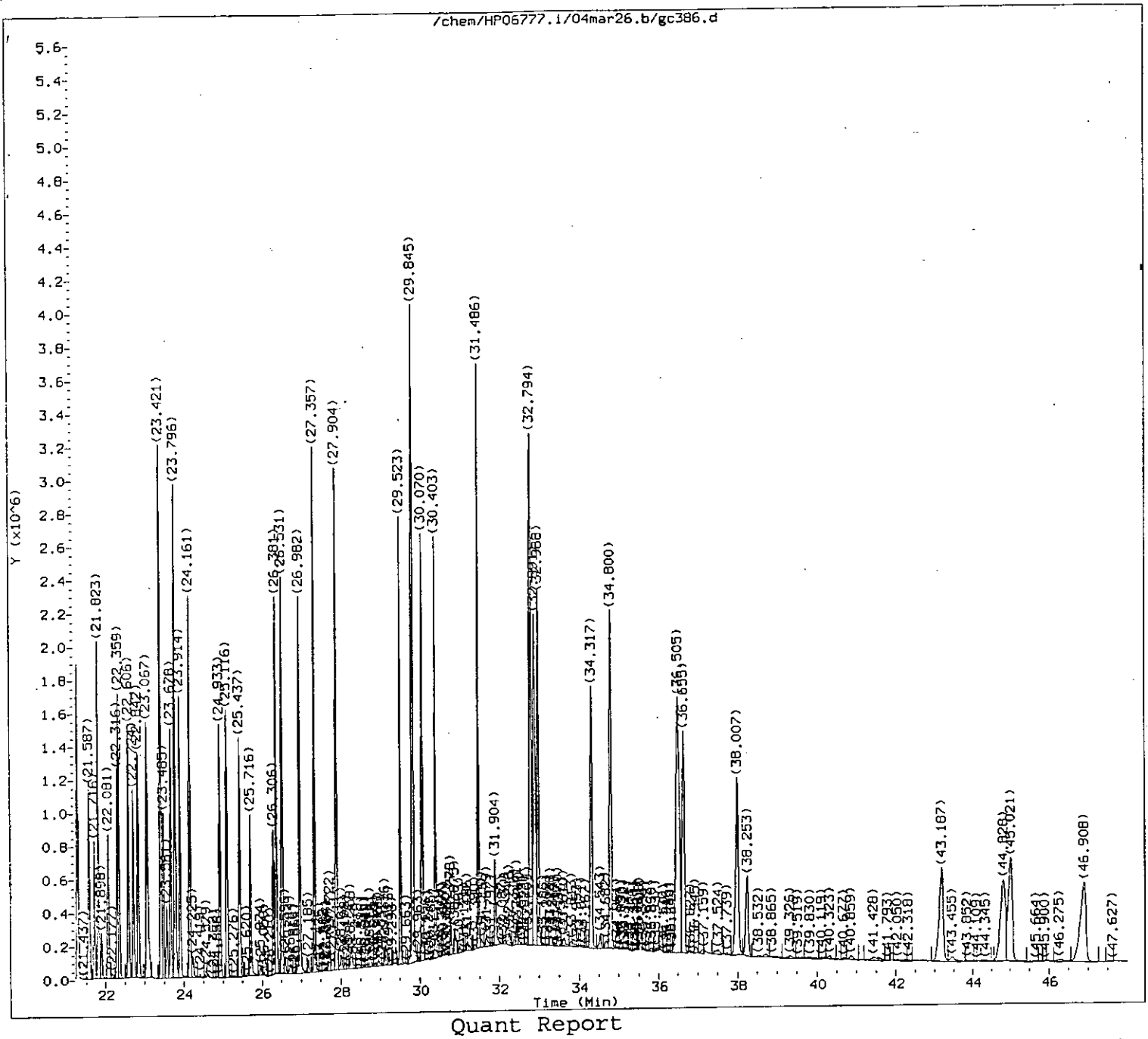
Data File: /chem/HP06777.i/04mar26.b/gc386.d Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 11:49 Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP45MSD Lab Sample ID: 4241647

BGm
3-27-04

0372




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc386.d
Injection date and time: 26-MAR-2004 11:49

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP45MSD

Lab Sample ID: 4241647

BGm
3-27-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc386.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 11:49  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP45MSD  Lab Sample ID: 4241647

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 16) | Phenol | (1) | 11.495 | 94 | 1032010 | 87.124 |
| 18) | bis(2-Chloroethyl)ether | (1) | 11.785 | 93 | 808428 | 83.667 |
| 19) | 2-Chlorophenol | (1) | 11.946 | 128 | 900186 | 89.718 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.385 | 146 | 832728 | 82.098 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.557 | 152 | 255808 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 12.600 | 146 | 859162 | 84.197 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.040 | 146 | 792256 | 81.210 |
| 26) | 2-Methylphenol | (1) | 13.233 | 108 | 741903 | 90.547 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.329 | 45 | 1470007 | 95.234 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 13.715 | 70 | 522326 | 80.514 |
| 33) | 4-Methylphenol | (1) | 13.683 | 108 | 785800 | 90.813 |
| 37) | Hexachloroethane | (1) | 14.037 | 117 | 386708 | 81.764 |
| 39) | Nitrobenzene | (2) | 14.219 | 77 | 797398 | 85.247 |
| 41) | Isophorone | (2) | 14.927 | 82 | 1510750 | 83.140 |
| 42) | 2-Nitrophenol | (2) | 15.163 | 139 | 483540 | 88.134 |
| 44) | 2,4-Dimethylphenol | (2) | 15.260 | 107 | 808924 | 90.108 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.560 | 93 | 1025273 | 94.004 |
| 49) | 2,4-Dichlorophenol | (2) | 15.882 | 162 | 656015 | 89.521 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.139 | 180 | 645681 | 84.873 |
| 52) | Naphthalene-d8 | (2) | 16.321 | 136 | 961354 | 40.000 |
| 53) | Naphthalene | (2) | 16.386 | 128 | 2212326 | 86.907 |
| 55) | 4-Chloroaniline | (2) | 16.536 | 127 | 983412 | 83.340 |
| 59) | Hexachlorobutadiene | (2) | 16.750 | 225 | 367346 | 82.794 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.005 | 107 | 700300 | 96.074 |
| 69) | 2-Methylnaphthalene | (2) | 18.498 | 142 | 1406199 | 87.096 |
| 71) | Hexachlorocyclopentadiene | (3) | 18.970 | 237 | 414995 | 116.406 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.356 | 196 | 385492 | 83.104 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.474 | 196 | 456252 | 91.042 |
| 83) | 2-Chloronaphthalene | (3) | 20.000 | 162 | 1212090 | 87.524 |
| 87) | 2-Nitroaniline | (3) | 20.311 | 138 | 584366 | 97.573 |
| 90) | Dimethylphthalate | (3) | 20.890 | 163 | 1480134 | 91.258 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.062 | 165 | 360967 | 89.854 |
| 93) | Acenaphthylene | (3) | 21.287 | 152 | 2014975 | 101.489 |
| 95) | 3-Nitroaniline | (3) | 21.587 | 138 | 488686 | 96.776 |
| 96) | Acenaphthene-d10 | (3) | 21.716 | 164 | 435309 | 40.000 |
| 97) | Acenaphthene | (3) | 21.823 | 153 | 1197649 | 93.176 |
| 98) | 2,4-Dinitrophenol | (3) | 21.898 | 184 | 88926 | 37.921 |
| 101) | 4-Nitrophenol | (3) | 22.081 | 109 | 239420 | 81.570 |
| 102) | Dibenzofuran | (3) | 22.359 | 168 | 1705265 | 90.490 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.316 | 165 | 509451 | 101.503 |
| 107) | Diethylphthalate | (3) | 23.067 | 149 | 1711685 | 95.041 |
| 109) | Fluorene | (3) | 23.421 | 166 | 1306235 | 87.521 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.421 | 204 | 610221 | 89.447 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc386.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 11:49  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 15:08 jmg00068

Sample Name: 7GP45MSD  Lab Sample ID: 4241647

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 112) 4-Nitroaniline | (3) | 23.485 | 138 | 461313 | 86.071 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.571 | 198 | 137589 | 41.755 |
| 115) N-Nitrosodiphenylamine | (4) | 23.796 | 169 | 1857709 | 164.394 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.933 | 248 | 437057 | 87.243 |
| 125) Hexachlorobenzene | (4) | 25.116 | 284 | 597287 | 87.016 |
| 129) Pentachlorophenol | (4) | 25.716 | 266 | 273715 | 66.069 |
| 133) Phenanthrene-d10 | (4) | 26.306 | 188 | 776900 | 40.000 |
| 135) Phenanthrene | (4) | 26.381 | 178 | 1950095 | 89.447 |
| 136) Anthracene | (4) | 26.531 | 178 | 2036154 | 90.140 |
| 138) Carbazole | (4) | 26.982 | 167 | 2052527 | 88.635 |
| 140) Di-n-butylphthalate | (4) | 27.904 | 149 | 3344624 | 95.203 |
| 145) Fluoranthene | (4) | 29.523 | 202 | 2162854 | 86.531 |
| 152) Pyrene | (5) | 30.070 | 202 | 2156722 | 98.779 |
| 159) Butylbenzylphthalate | (5) | 31.486 | 149 | 1435361 | 101.475 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.773 | 252 | 873229 | 92.909 |
| 164) Benzo(a)anthracene | (5) | 32.891 | 228 | 1867567 | 92.004 |
| 165) Chrysene-d12 | (5) | 32.912 | 240 | 748696 | 40.000 |
| 166) Chrysene | (5) | 32.988 | 228 | 1780858 | 94.960 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.805 | 149 | 2141429 | 114.024 |
| 168) Di-n-octylphthalate | (6) | 34.800 | 149 | 3422997 | 104.706 |
| 170) Benzo(b)fluoranthene | (6) | 36.537 | 252 | 2146966 | 93.281 |
| 171) Benzo(k)fluoranthene | (6) | 36.655 | 252 | 1983017 | 91.953 |
| 172) Benzo(a)pyrene | (6) | 38.007 | 252 | 1917584 | 92.689 |
| 173) Perylene-d12 | (6) | 38.253 | 264 | 757309 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 44.828 | 276 | 1767023 | 82.093 |
| 176) Dibenz(a,h)anthracene | (6) | 45.010 | 278 | 1800050 | 90.089 |
| 177) Benzo(g,h,i)perylene | (6) | 46.919 | 276 | 1775753 | 82.154 |
| 9) 2-Fluorophenol | (1) | 8.900 | 112 | 1628388 | 166.711 |
| 15) Phenol-d6 | (1) | 11.452 | 99 | 2075043 | 176.074 |
| 38) Nitrobenzene-d5 | (2) | 14.166 | 82 | 834968 | 87.399 |
| 77) 2-Fluorobiphenyl | (3) | 19.625 | 172 | 1284233 | 87.674 |
| 117) 2,4,6-Tribromophenol | (3) | 24.161 | 330 | 764659 | 196.058 |
| 154) Terphenyl-d14 | (5) | 30.403 | 244 | 1420144 | 96.202 |

M = Compound was manually integrated.  A = User selected an alternate hit

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06777.i/04mar26.b/gc383.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 12.547(-0.001) | 841 | 152.0 | 272189( 5) | 40.00 | |
| 52) Naphthalene-d8 | 16.311( 0.010) | 1192 | 136.0 | 1002025( 1) | 40.00 | |
| 96) Acenaphthene-d10 | 21.716(-0.001) | 1696 | 164.0 | 446676( -2) | 40.00 | |
| 133) Phenanthrene-d10 | 26.296( 0.010) | 2123 | 188.0 | 768747( 3) | 40.00 | |
| 165) Chrysene-d12 | 32.913(-0.001) | 2740 | 240.0 | 836842( 4) | 40.00 | |
| 173) Perylene-d12 | 38.243(-0.012) | 3237 | 264.0 | 847364( 1) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 8.890( 0.003) | 112 | 1815239 | 174.656 | 87% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 11.453(-0.001) | 99 | 2267184 | 180.800 | 90% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 14.166(-0.001) | 82 | 907550 | 91.141 | 91% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 19.625( 0.000) | 172 | 1397871 | 93.003 | 93% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 24.162( 0.000) | 330 | 838016 | 209.399 | 105% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 30.393( 0.000) | 244 | 1641605 | 99.491 | 99% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 11.496(-0.001) | 94 | 1165054 | 92.436 | 3081.20 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 11.785(-0.001) | 93 | 901224 | 87.658 | 2921.92 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 11.946( 0.000) | 128 | 1002175 | 93.872 | 3129.07 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 12.386( 0.000) | 146 | 947416 | 87.783 | 2926.10 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 12.600( 0.000) | 146 | 983597 | 90.591 | 3019.69 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 13.040( 0.000) | 146 | 914346 | 88.084 | 2936.13 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 13.233( 0.001) | 108 | 822672 | 94.362 | 3145.41 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 13.319( 0.000) | 45 | 1587614 | 96.662 | 3222.08 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 13.716( 0.001) | 70 | 583318 | 84.504 | 2816.82 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 13.684( 0.000) | 108 | 869817 | 94.472 | 3149.08 | | | 2.00 |
| 37) Hexachloroethane | (1) | 14.027( 0.000) | 117 | 458190 | 91.048 | 3034.93 | | | 1.00 |
| 39) Nitrobenzene | (2) | 14.220(-0.001) | 77 | 889449 | 91.229 | 3040.96 | | | 1.00 |
| 41) Isophorone | (2) | 14.917( 0.000) | 82 | 1693432 | 89.411 | 2980.36 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 15.164(-0.001) | 139 | 534280 | 93.430 | 3114.32 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 15.260(-0.001) | 107 | 889829 | 95.097 | 3169.92 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 15.560(-0.001) | 93 | 1102461 | 96.978 | 3232.60 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 15.882(-0.001) | 162 | 695088 | 91.004 | 3033.45 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 16.140(-0.001) | 180 | 713912 | 90.033 | 3001.11 | | | 1.00 |
| 53) Naphthalene | (2) | 16.386(-0.001) | 128 | 2486527 | 93.714 | 3123.80 | | | 1.00 |
| 55) 4-Chloroaniline | (2) | 16.526( 0.000) | 127 | 510568 | 41.512 | 1383.75 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 16.740(-0.001) | 225 | 429022 | 92.770 | 3092.34 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 18.006(-0.001) | 107 | 756886 | 99.622 | 3320.73 | | | 2.00 |

Data file: /chem/HP06777.i/04mar26.b/gc383.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 18.499 | (-0.001) | 142 | 1522666 | 90.482 | 3016.07 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 18.971 | ( 0.000) | 237 | 763670 | 204.401 | 6813.38 | | E | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 19.346 | ( 0.000) | 196 | 463075 | 97.289 | 3242.97 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 19.464 | ( 0.000) | 196 | 503308 | 97.876 | 3262.54 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 20.000 | ( 0.000) | 162 | 1300868 | 91.544 | 3051.47 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 20.311 | ( 0.000) | 138 | 627315 | 102.079 | 3402.64 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 20.880 | ( 0.000) | 163 | 1597640 | 95.996 | 3199.87 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 21.062 | ( 0.000) | 165 | 390280 | 94.678 | 3155.94 | | | 1.00 |
| 93) Acenaphthylene | (3) | 21.287 | ( 0.000) | 152 | 2187067 | 107.353 | 3578.45 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 21.577 | ( 0.000) | 138 | 459967 | 88.771 | 2959.03 | | | 2.00 |
| 97) Acenaphthene | (3) | 21.824 | ( 0.000) | 153 | 1312163 | 99.487 | 3316.23 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 21.899 | ( 0.000) | 184 | 236551 | 81.211 | 2707.02 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 22.081 | ( 0.000) | 109 | 263129 | 86.906 | 2896.87 | | | 5.00 |
| 102) Dibenzofuran | (3) | 22.360 | ( 0.000) | 168 | 1863032 | 96.346 | 3211.54 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 22.306 | ( 0.000) | 165 | 551387 | 107.063 | 3568.76 | | | 2.00 |
| 107) Diethylphthalate | (3) | 23.068 | ( 0.000) | 149 | 1820095 | 98.489 | 3282.96 | | | 2.00 |
| 109) Fluorene | (3) | 23.422 | ( 0.000) | 166 | 1402595 | 91.586 | 3052.87 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 23.411 | ( 0.000) | 204 | 649782 | 92.822 | 3094.06 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 23.486 | ( 0.000) | 138 | 455383 | 82.803 | 2760.09 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 23.572 | ( 0.000) | 198 | 329852 | 101.163 | 3372.11 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 23.786 | (-0.001) | 169 | 973086 | 87.025 | 2900.82 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 24.934 | ( 0.000) | 248 | 467211 | 94.251 | 3141.70 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 25.105 | ( 0.000) | 284 | 636182 | 93.666 | 3122.19 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 25.706 | ( 0.000) | 266 | 289174 | 69.821 | 2327.38 | | | 5.00 |
| 135) Phenanthrene | (4) | 26.371 | ( 0.000) | 178 | 2114025 | 97.994 | 3266.47 | | | 1.00 |
| 136) Anthracene | (4) | 26.521 | ( 0.000) | 178 | 2172341 | 97.188 | 3239.61 | | | 1.00 |
| 138) Carbazole | (4) | 26.972 | ( 0.000) | 167 | 2204533 | 96.209 | 3206.95 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 27.894 | ( 0.000) | 149 | 3554413 | 102.248 | 3408.25 | 93.76 | B | 2.00 |
| 145) Fluoranthene | (4) | 29.513 | ( 0.000) | 202 | 2402657 | 97.145 | 3238.15 | | | 1.00 |
| 152) Pyrene | (5) | 30.071 | ( 0.000) | 202 | 2446572 | 100.251 | 3341.72 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 31.487 | ( 0.000) | 149 | 1735861 | 109.793 | 3659.77 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 32.763 | ( 0.000) | 252 | 521150 | 49.608 | 1653.61 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 32.881 | ( 0.000) | 228 | 2278048 | 100.405 | 3346.84 | | | 1.00 |
| 166) Chrysene | (5) | 32.988 | ( 0.000) | 228 | 2102225 | 100.289 | 3342.97 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 32.795 | ( 0.000) | 149 | 2489599 | 118.600 | 3953.32 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | 34.801 | ( 0.000) | 149 | 3945304 | 107.857 | 3595.24 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 36.538 | ( 0.000) | 252 | 2621975 | 101.812 | 3393.74 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 36.656 | ( 0.000) | 252 | 2454807 | 101.733 | 3391.09 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 38.007 | ( 0.000) | 252 | 2396470 | 103.526 | 3450.88 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 44.828 | (-0.001) | 276 | 2285435 | 94.893 | 3163.12 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 45.032 | (-0.001) | 278 | 2285151 | 102.213 | 3407.09 | | | 1.00 |



8377

085LCLCS7 Lancaster Labs Quantitation Report GC/MS Semi-Volatiles 085LCLCS

Data file: /chem/HP06777.i/04mar26.b/gc383.d Blank Data file reference:/chem/HP06777.i/04mar26.b/gc382.d
Injection date and time: 26-MAR-2004 09:04 Instrument ID: HP06777.i Batch: 04085SLC
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 26-MAR-2004 08:08
Mid Level Daily Calibration Standard Reference: /chem/HP06777.i/04mar26.b/gc381.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 46.919 | (-0.001) | 276 | 2266072 | 93.697 | 3123.22 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

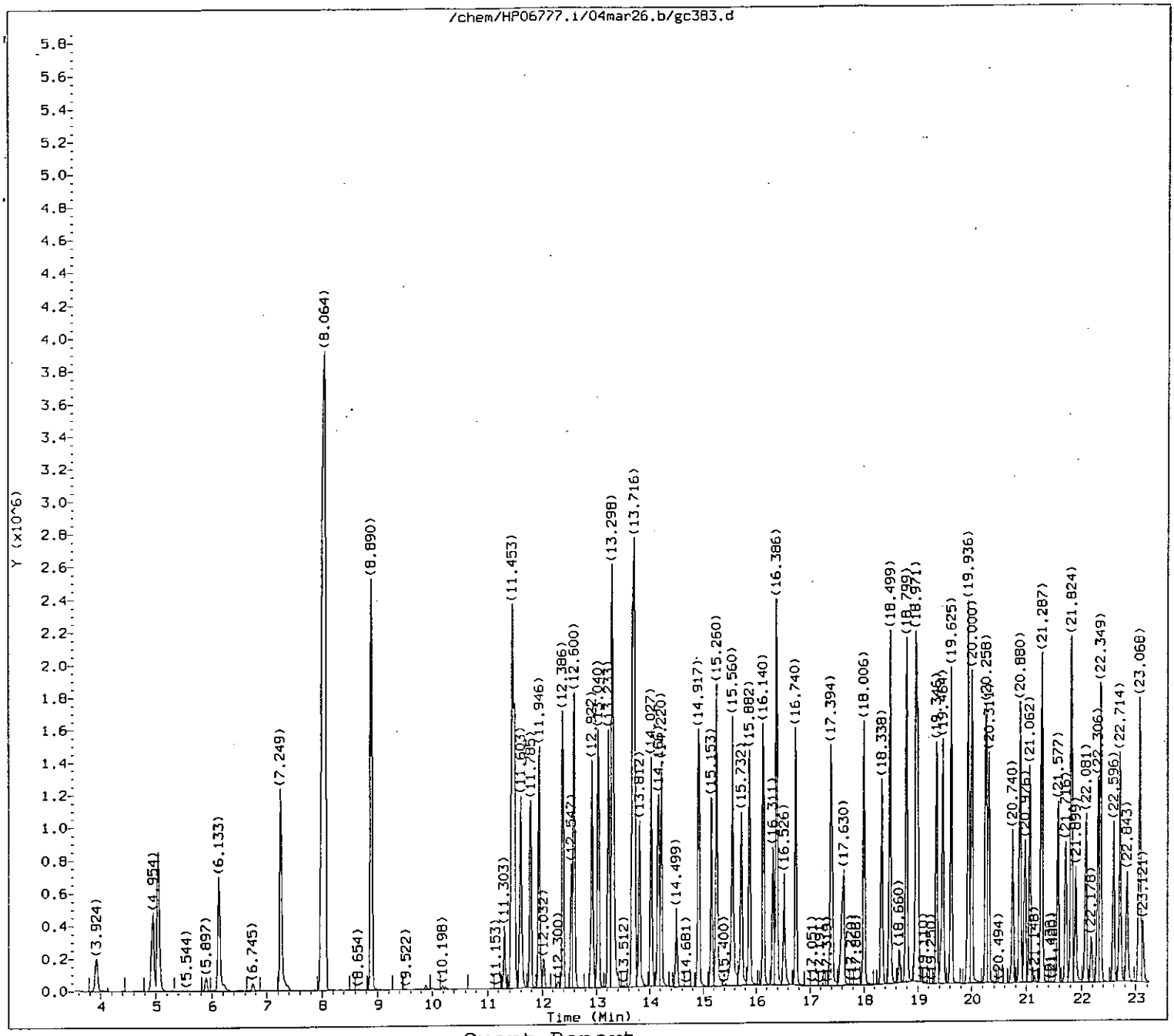
Total number of targets = 64

Comments:

Analyst: Michelle Garwick (MG) Date: 3/26/04
Auditor: Michelle Garwick Date: 3/29/04



8378




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc383.d
Injection date and time: 26-MAR-2004 09:04

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

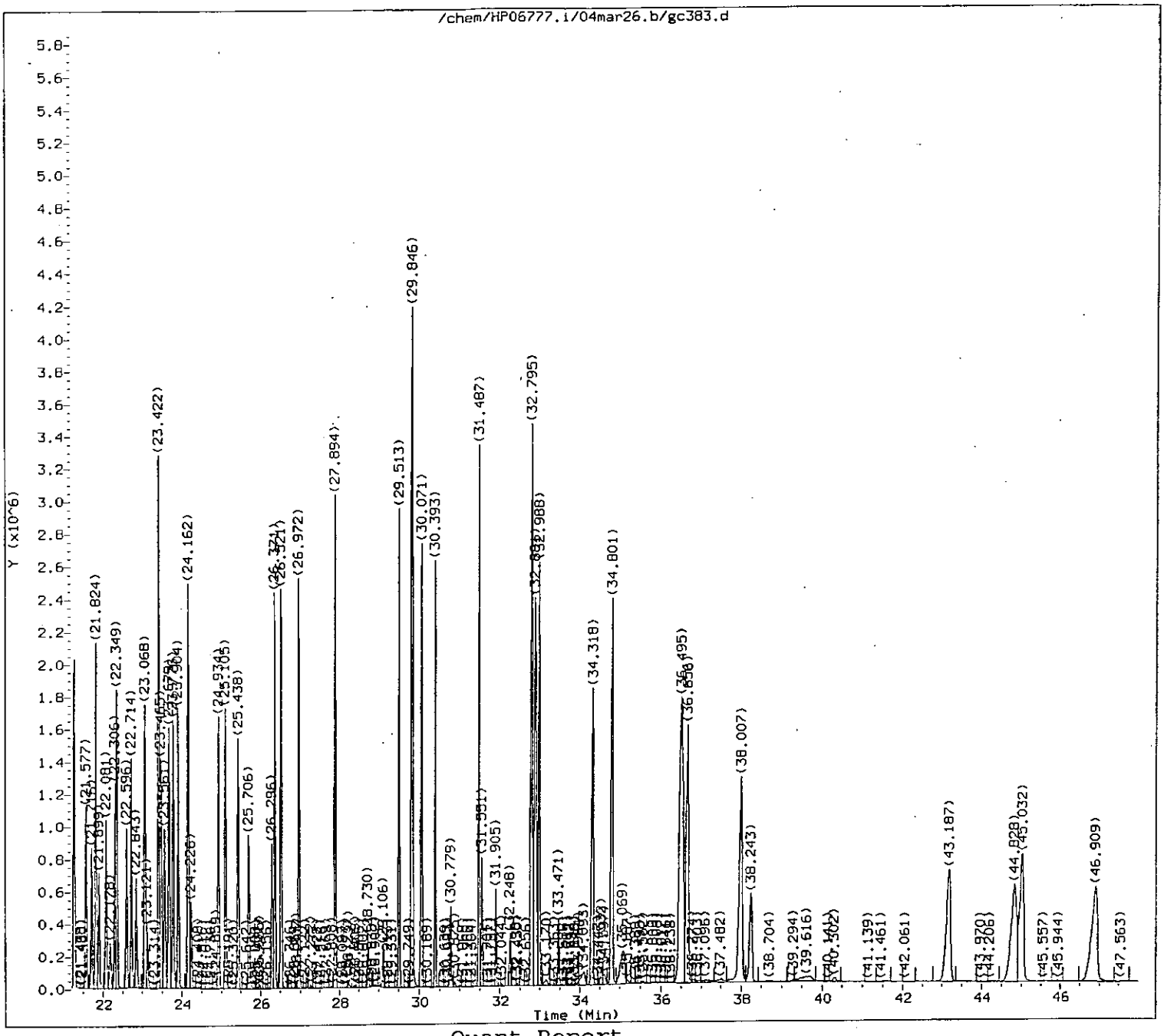
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Sample Name: 085LCLCS7

Lab Sample ID: 085LCLCS

BGon
3.26.04

0379




Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc383.d
Injection date and time: 26-MAR-2004 09:04

Instrument ID: HP06777.i
Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m
Calibration date and time: 26-MAR-2004 08:08

Sublist used: STC804

Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Sample Name: 085LCLCS7

Lab Sample ID: 085LCLCS

3.26.04

8388

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc383.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 09:04  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Sample Name: 085LCLCS7  Lab Sample ID: 085LCLCS

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 16) | Phenol | (1) | 11.496 | 94 | 1165054 | 92.436 |
| 18) | bis(2-Chloroethyl)ether | (1) | 11.785 | 93 | 901224 | 87.658 |
| 19) | 2-Chlorophenol | (1) | 11.946 | 128 | 1002175 | 93.872 |
| 20) | 1,3-Dichlorobenzene | (1) | 12.386 | 146 | 947416 | 87.783 |
| 21) | 1,4-Dichlorobenzene-d4 | (1) | 12.547 | 152 | 272189 | 40.000 |
| 22) | 1,4-Dichlorobenzene | (1) | 12.600 | 146 | 983597 | 90.591 |
| 25) | 1,2-Dichlorobenzene | (1) | 13.040 | 146 | 914346 | 88.084 |
| 26) | 2-Methylphenol | (1) | 13.233 | 108 | 822672 | 94.362 |
| 27) | 2,2'-oxybis(1-Chloropropane) | (1) | 13.319 | 45 | 1587614 | 96.662 |
| 31) | N-Nitroso-di-n-propylamine | (1) | 13.716 | 70 | 583318 | 84.504 |
| 33) | 4-Methylphenol | (1) | 13.684 | 108 | 869817 | 94.472 |
| 37) | Hexachloroethane | (1) | 14.027 | 117 | 458190 | 91.048 |
| 39) | Nitrobenzene | (2) | 14.220 | 77 | 889449 | 91.229 |
| 41) | Isophorone | (2) | 14.917 | 82 | 1693432 | 89.411 |
| 42) | 2-Nitrophenol | (2) | 15.164 | 139 | 534280 | 93.430 |
| 44) | 2,4-Dimethylphenol | (2) | 15.260 | 107 | 889829 | 95.097 |
| 46) | bis(2-Chloroethoxy)methane | (2) | 15.560 | 93 | 1102461 | 96.978 |
| 49) | 2,4-Dichlorophenol | (2) | 15.882 | 162 | 695088 | 91.004 |
| 50) | 1,2,4-Trichlorobenzene | (2) | 16.140 | 180 | 713912 | 90.033 |
| 52) | Naphthalene-d8 | (2) | 16.311 | 136 | 1002025 | 40.000 |
| 53) | Naphthalene | (2) | 16.386 | 128 | 2486527 | 93.714 |
| 55) | 4-Chloroaniline | (2) | 16.526 | 127 | 510568 | 41.512 |
| 59) | Hexachlorobutadiene | (2) | 16.740 | 225 | 429022 | 92.770 |
| 67) | 4-Chloro-3-methylphenol | (2) | 18.006 | 107 | 756886 | 99.622 |
| 69) | 2-Methylnaphthalene | (2) | 18.499 | 142 | 1522666 | 90.482 |
| 71) | Hexachlorocyclopentadiene | (3) | 18.971 | 237 | 763670 | 204.401 |
| 74) | 2,4,6-Trichlorophenol | (3) | 19.346 | 196 | 463075 | 97.289 |
| 76) | 2,4,5-Trichlorophenol | (3) | 19.464 | 196 | 503308 | 97.876 |
| 83) | 2-Chloronaphthalene | (3) | 20.000 | 162 | 1300868 | 91.544 |
| 87) | 2-Nitroaniline | (3) | 20.311 | 138 | 627315 | 102.079 |
| 90) | Dimethylphthalate | (3) | 20.880 | 163 | 1597640 | 95.996 |
| 92) | 2,6-Dinitrotoluene | (3) | 21.062 | 165 | 390280 | 94.678 |
| 93) | Acenaphthylene | (3) | 21.287 | 152 | 2187067 | 107.353 |
| 95) | 3-Nitroaniline | (3) | 21.577 | 138 | 459967 | 88.771 |
| 96) | Acenaphthene-d10 | (3) | 21.716 | 164 | 446676 | 40.000 |
| 97) | Acenaphthene | (3) | 21.824 | 153 | 1312163 | 99.487 |
| 98) | 2,4-Dinitrophenol | (3) | 21.899 | 184 | 236551 | 81.211 |
| 101) | 4-Nitrophenol | (3) | 22.081 | 109 | 263129 | 86.906 |
| 102) | Dibenzofuran | (3) | 22.360 | 168 | 1863032 | 96.346 |
| 103) | 2,4-Dinitrotoluene | (3) | 22.306 | 165 | 551387 | 107.063 |
| 107) | Diethylphthalate | (3) | 23.068 | 149 | 1820095 | 98.489 |
| 109) | Fluorene | (3) | 23.422 | 166 | 1402595 | 91.586 |
| 110) | 4-Chlorophenyl-phenylether | (3) | 23.411 | 204 | 649782 | 92.822 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06777.i/04mar26.b/gc383.d  Instrument ID: HP06777.i
Injection date and time: 26-MAR-2004 09:04  Analyst ID: bkg00522

Method used: /chem/HP06777.i/04mar26.b/m8270.m  Sublist used: STC804
Calibration date and time: 26-MAR-2004 08:08
Date, time and analyst ID of latest file update: 26-Mar-2004 10:08 bkg00522

Sample Name: 085LCLCS7  Lab Sample ID: 085LCLCS

| | Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|---|
| 112) | 4-Nitroaniline | (3) | 23.486 | 138 | 455383 | 82.803 |
| 113) | 4,6-Dinitro-2-methylphenol | (4) | 23.572 | 198 | 329852 | 101.163 |
| 115) | N-Nitrosodiphenylamine | (4) | 23.786 | 169 | 973086 | 87.025 |
| 123) | 4-Bromophenyl-phenylether | (4) | 24.934 | 248 | 467211 | 94.251 |
| 125) | Hexachlorobenzene | (4) | 25.105 | 284 | 636182 | 93.666 |
| 129) | Pentachlorophenol | (4) | 25.706 | 266 | 289174 | 69.821 |
| 133) | Phenanthrene-d10 | (4) | 26.296 | 188 | 768747 | 40.000 |
| 135) | Phenanthrene | (4) | 26.371 | 178 | 2114025 | 97.994 |
| 136) | Anthracene | (4) | 26.521 | 178 | 2172341 | 97.188 |
| 138) | Carbazole | (4) | 26.972 | 167 | 2204533 | 96.209 |
| 140) | Di-n-butylphthalate | (4) | 27.894 | 149 | 3554413 | 102.248 |
| 145) | Fluoranthene | (4) | 29.513 | 202 | 2402657 | 97.145 |
| 152) | Pyrene | (5) | 30.071 | 202 | 2446572 | 100.251 |
| 159) | Butylbenzylphthalate | (5) | 31.487 | 149 | 1735861 | 109.793 |
| 162) | 3,3'-Dichlorobenzidine | (5) | 32.763 | 252 | 521150 | 49.608 |
| 164) | Benzo(a)anthracene | (5) | 32.881 | 228 | 2278048 | 100.405 |
| 165) | Chrysene-d12 | (5) | 32.913 | 240 | 836842 | 40.000 |
| 166) | Chrysene | (5) | 32.988 | 228 | 2102225 | 100.289 |
| 167) | bis(2-Ethylhexyl)phthalate | (5) | 32.795 | 149 | 2489599 | 118.600 |
| 168) | Di-n-octylphthalate | (6) | 34.801 | 149 | 3945304 | 107.857 |
| 170) | Benzo(b)fluoranthene | (6) | 36.538 | 252 | 2621975 | 101.812 |
| 171) | Benzo(k)fluoranthene | (6) | 36.656 | 252 | 2454807 | 101.733 |
| 172) | Benzo(a)pyrene | (6) | 38.007 | 252 | 2396470 | 103.526 |
| 173) | Perylene-d12 | (6) | 38.243 | 264 | 847364 | 40.000 |
| 175) | Indeno(1,2,3-cd)pyrene | (6) | 44.828 | 276 | 2285435 | 94.893 |
| 176) | Dibenz(a,h)anthracene | (6) | 45.032 | 278 | 2285151 | 102.213 |
| 177) | Benzo(g,h,i)perylene | (6) | 46.919 | 276 | 2266072 | 93.697 |
| 9) | 2-Fluorophenol | (1) | 8.890 | 112 | 1815239 | 174.656 |
| 15) | Phenol-d6 | (1) | 11.453 | 99 | 2267184 | 180.800 |
| 38) | Nitrobenzene-d5 | (2) | 14.166 | 82 | 907550 | 91.141 |
| 77) | 2-Fluorobiphenyl | (3) | 19.625 | 172 | 1397871 | 93.003 |
| 117) | 2,4,6-Tribromophenol | (3) | 24.162 | 330 | 838016 | 209.399 |
| 154) | Terphenyl-d14 | (5) | 30.393 | 244 | 1641605 | 99.491 |

M = Compound was manually integrated.  A = User selected an alternate hit

# 087LALCS4

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles

# 087LALCS

Data file: /chem/HP06780.i/04mar29.b/dc389.d Blank Data file reference:**/chem/HP06780.i/04mar29.b/dc388.d**
Injection date and time: 29-MAR-2004 10:39 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: **STC804**
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Area) | Conc(ng/ul) | QC Flag |
|---|---|---|---|---|---|---|
| 21) 1,4-Dichlorobenzene-d4 | 10.412(-0.008) | 874 | 152.0 | 166133( -28) | 40.00 | |
| 52) Naphthalene-d8 | 13.028( 0.002) | 1138 | 136.0 | 589726( -27) | 40.00 | |
| 96) Acenaphthene-d10 | 16.679( 0.004) | 1506 | 164.0 | 272648( -27) | 40.00 | |
| 133) Phenanthrene-d10 | 19.856( 0.001) | 1826 | 188.0 | 330346( -28) | 40.00 | |
| 165) Chrysene-d12 | 25.706(-0.004) | 2417 | 240.0 | 202296( -28) | 40.00 | |
| 173) Perylene-d12 | 29.636( 0.002) | 2814 | 264.0 | 194092( -33) | 40.00 | |

# = RETENTION TIME OUT OF RANGE * = INTERNAL STANDARD OUT OF RANGE NC = NOT ABLE TO CALCULATE

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 9) 2-Fluorophenol | (1) | 7.673( 0.004) | 112 | 1331016 | 170.237 | 85% | | 41 - 119 |
| 15) Phenol-d6 | (1) | 9.649( 0.001) | 99 | 1546560 | 173.447 | 87% | | 45 - 120 |
| 38) Nitrobenzene-d5 | (2) | 11.551(-0.001) | 82 | 597893 | 91.171 | 91% | | 47 - 128 |
| 77) 2-Fluorobiphenyl | (3) | 15.271(-0.001) | 172 | 775777 | 90.455 | 90% | | 55 - 123 |
| 117) 2,4,6-Tribromophenol | (3) | 18.330(-0.001) | 330 | 200693 | 190.883 | 95% | | 46 - 136 |
| 154) Terphenyl-d14 | (5) | 23.834( 0.000) | 244 | 438785 | 100.521 | 101% | | 49 - 133 |

# = RELATIVE RETENTION TIME OUT OF RANGE * = PERCENT REC.OUT OF RANGE D = DILUTED OUT NC = NOT ABLE TO CALCULATE

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.679( 0.000) | 94 | 841952 | 91.802 | 3060.05 | | | 1.00 |
| 18) bis(2-Chloroethyl)ether | (1) | 9.867( 0.001) | 93 | 635412 | 89.709 | 2990.30 | | | 1.00 |
| 19) 2-Chlorophenol | (1) | 9.976( 0.000) | 128 | 591374 | 92.874 | 3095.79 | | | 1.00 |
| 20) 1,3-Dichlorobenzene | (1) | 10.293( 0.000) | 146 | 566257 | 86.403 | 2880.09 | | | 1.00 |
| 22) 1,4-Dichlorobenzene | (1) | 10.442( 0.001) | 146 | 578215 | 87.725 | 2924.17 | | | 1.00 |
| 25) 1,2-Dichlorobenzene | (1) | 10.748( 0.001) | 146 | 556939 | 87.140 | 2904.66 | | | 1.00 |
| 26) 2-Methylphenol | (1) | 10.917( 0.001) | 108 | 608756 | 87.683 | 2922.77 | | | 1.00 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 10.967( 0.000) | 45 | 799011 | 105.161 | 3505.36 | | | 1.00 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.244( 0.001) | 70 | 361819 | 88.573 | 2952.43 | | | 1.00 |
| 33) 4-Methylphenol | (1) | 11.224( 0.001) | 108 | 572580 | 84.366 | 2812.21 | | | 2.00 |
| 37) Hexachloroethane | (1) | 11.452( 0.000) | 117 | 292856 | 89.382 | 2979.41 | | | 1.00 |
| 39) Nitrobenzene | (2) | 11.591(-0.001) | 77 | 575512 | 93.457 | 3115.22 | | | 1.00 |
| 41) Isophorone | (2) | 12.076(-0.001) | 82 | 1147000 | 89.369 | 2978.95 | | | 1.00 |
| 42) 2-Nitrophenol | (2) | 12.235( 0.000) | 139 | 348650 | 93.263 | 3108.76 | | | 1.00 |
| 44) 2,4-Dimethylphenol | (2) | 12.314(-0.001) | 107 | 572147 | 88.899 | 2963.31 | | | 1.00 |
| 46) bis(2-Chloroethoxy)methane | (2) | 12.512( 0.000) | 93 | 793996 | 100.987 | 3366.23 | | | 1.00 |
| 49) 2,4-Dichlorophenol | (2) | 12.741(-0.001) | 162 | 426920 | 94.880 | 3162.66 | | | 1.00 |
| 50) 1,2,4-Trichlorobenzene | (2) | 12.909( 0.000) | 180 | 340730 | 87.885 | 2929.49 | | | 1.00 |
| 53) Naphthalene | (2) | 13.078( 0.000) | 128 | 1370193 | 89.378 | 2979.26 | | | 1.00 |
| 55) 4-Chloroaniline | (2) | 13.177( 0.000) | 127 | 526763 | 73.364 | 2445.47 | | | 1.00 |
| 59) Hexachlorobutadiene | (2) | 13.316( 0.000) | 225 | 145461 | 87.340 | 2911.32 | | | 2.00 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.178(-0.001) | 107 | 503245 | 95.826 | 3194.20 | | | 2.00 |

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06780.i/04mar29.b/dc389.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 10:39 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|
| 69) 2-Methylnaphthalene | (2) | 14.515(-0.001) | 142 | 842497 | 86.901 | 2896.69 | | | 1.00 |
| 71) Hexachlorocyclopentadiene | (3) | 14.833(-0.001) | 237 | 246049 | 204.230 | 6807.67 | | E | 5.00 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.091(-0.001) | 196 | 213687 | 90.757 | 3025.23 | | | 1.00 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.171(-0.001) | 196 | 229698 | 94.098 | 3136.59 | | | 1.00 |
| 83) 2-Chloronaphthalene | (3) | 15.529(-0.001) | 162 | 775473 | 87.728 | 2924.28 | | | 1.00 |
| 87) 2-Nitroaniline | (3) | 15.737(-0.001) | 138 | 378676 | 95.781 | 3192.71 | | | 1.00 |
| 90) Dimethylphthalate | (3) | 16.114(-0.001) | 163 | 917254 | 94.378 | 3145.92 | | | 2.00 |
| 92) 2,6-Dinitrotoluene | (3) | 16.243(-0.001) | 165 | 249960 | 94.872 | 3162.40 | | | 1.00 |
| 93) Acenaphthylene | (3) | 16.392(-0.001) | 152 | 1319390 | 101.384 | 3379.46 | | | 1.00 |
| 95) 3-Nitroaniline | (3) | 16.590(-0.001) | 138 | 269385 | 81.169 | 2705.62 | | | 2.00 |
| 97) Acenaphthene | (3) | 16.749( 0.000) | 153 | 751054 | 91.784 | 3059.46 | | | 1.00 |
| 98) 2,4-Dinitrophenol | (3) | 16.809(-0.001) | 184 | 107904 | 90.702 | 3023.40 | | | 20.00 |
| 101) 4-Nitrophenol | (3) | 16.928(-0.001) | 109 | 108322 | 102.260 | 3408.68 | | | 5.00 |
| 102) Dibenzofuran | (3) | 17.107( 0.000) | 168 | 978954 | 89.696 | 2989.88 | | | 1.00 |
| 103) 2,4-Dinitrotoluene | (3) | 17.087(-0.001) | 165 | 323002 | 105.844 | 3528.12 | | | 2.00 |
| 107) Diethylphthalate | (3) | 17.574( 0.000) | 149 | 957137 | 98.813 | 3293.76 | | | 2.00 |
| 109) Fluorene | (3) | 17.832(-0.001) | 166 | 685077 | 83.769 | 2792.29 | | | 1.00 |
| 110) 4-Chlorophenyl-phenylether | (3) | 17.822(-0.001) | 204 | 256220 | 79.651 | 2655.04 | | | 1.00 |
| 112) 4-Nitroaniline | (3) | 17.872(-0.001) | 138 | 266996 | 85.444 | 2848.13 | | | 2.00 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 17.932( 0.000) | 198 | 144938 | 107.438 | 3581.28 | | | 5.00 |
| 115) N-Nitrosodiphenylamine | (4) | 18.062( 0.000) | 169 | 556826 | 95.070 | 3169.00 | | | 1.00 |
| 123) 4-Bromophenyl-phenylether | (4) | 18.835( 0.000) | 248 | 150625 | 94.861 | 3162.04 | | | 1.00 |
| 125) Hexachlorobenzene | (4) | 18.965( 0.000) | 284 | 172157 | 96.717 | 3223.91 | | | 1.00 |
| 129) Pentachlorophenol | (4) | 19.381( 0.000) | 266 | 76030 | 97.433 | 3247.77 | | | 5.00 |
| 135) Phenanthrene | (4) | 19.926(-0.001) | 178 | 923658 | 98.461 | 3282.03 | | | 1.00 |
| 136) Anthracene | (4) | 20.055( 0.000) | 178 | 973692 | 100.587 | 3352.90 | | | 1.00 |
| 138) Carbazole | (4) | 20.491( 0.000) | 167 | 993809 | 95.983 | 3199.43 | | | 1.00 |
| 140) Di-n-butylphthalate | (4) | 21.588( 0.000) | 149 | 1711922 | 106.703 | 3556.75 | | | 2.00 |
| 145) Fluoranthene | (4) | 23.081( 0.000) | 202 | 824041 | 94.747 | 3158.23 | | | 1.00 |
| 152) Pyrene | (5) | 23.537( 0.000) | 202 | 818410 | 101.091 | 3369.70 | | | 1.00 |
| 159) Butylbenzylphthalate | (5) | 24.675( 0.000) | 149 | 662389 | 111.446 | 3714.87 | | | 2.00 |
| 162) 3,3'-Dichlorobenzidine | (5) | 25.616( 0.000) | 252 | 167035 | 74.284 | 2476.12 | | | 2.00 |
| 164) Benzo(a)anthracene | (5) | 25.686( 0.000) | 228 | 610500 | 92.490 | 3083.00 | | | 1.00 |
| 166) Chrysene | (5) | 25.766( 0.000) | 228 | 625840 | 99.029 | 3300.96 | | | 1.00 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.666( 0.000) | 149 | 841538 | 107.775 | 3592.49 | | | 5.00 |
| 168) Di-n-octylphthalate | (6) | 27.142( 0.000) | 149 | 1582064 | 104.366 | 3478.86 | | | 2.00 |
| 170) Benzo(b)fluoranthene | (6) | 28.389(-0.001) | 252 | 593309 | 99.552 | 3318.40 | | | 1.00 |
| 171) Benzo(k)fluoranthene | (6) | 28.468( 0.000) | 252 | 606780 | 104.240 | 3474.67 | | | 1.00 |
| 172) Benzo(a)pyrene | (6) | 29.457( 0.000) | 252 | 578757 | 106.777 | 3559.25 | | | 1.00 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 34.476(-0.001) | 276 | 578535 | 107.603 | 3586.76 | | | 1.00 |
| 176) Dibenz(a,h)anthracene | (6) | 34.625(-0.001) | 278 | 542467 | 111.102 | 3703.39 | | | 1.00 |

Lancaster Labs
Quantitation Report GC/MS Semi-Volatiles



Data file: /chem/HP06780.i/04mar29.b/dc389.d Blank Data file reference:/chem/HP06780.i/04mar29.b/dc388.d
Injection date and time: 29-MAR-2004 10:39 Instrument ID: HP06780.i Batch: 04087SLA
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m Sublist used: STC804
Calibration date and time (Last Method Edit): 29-MAR-2004 09:08
Mid Level Daily Calibration Standard Reference: /chem/HP06780.i/04mar29.b/dc386.d

Sample Concentration Formula: On-Column Amount * DF * (GpcCleanup+1)*Uf*Vt/(Vi*Ws) Matrix: SOIL GPC Cleanup: No

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Volume Injected (Vi): 1 ul
Sample Weight (Ws): 30.0 g Final Extract Volume (Vt): 1000 ul

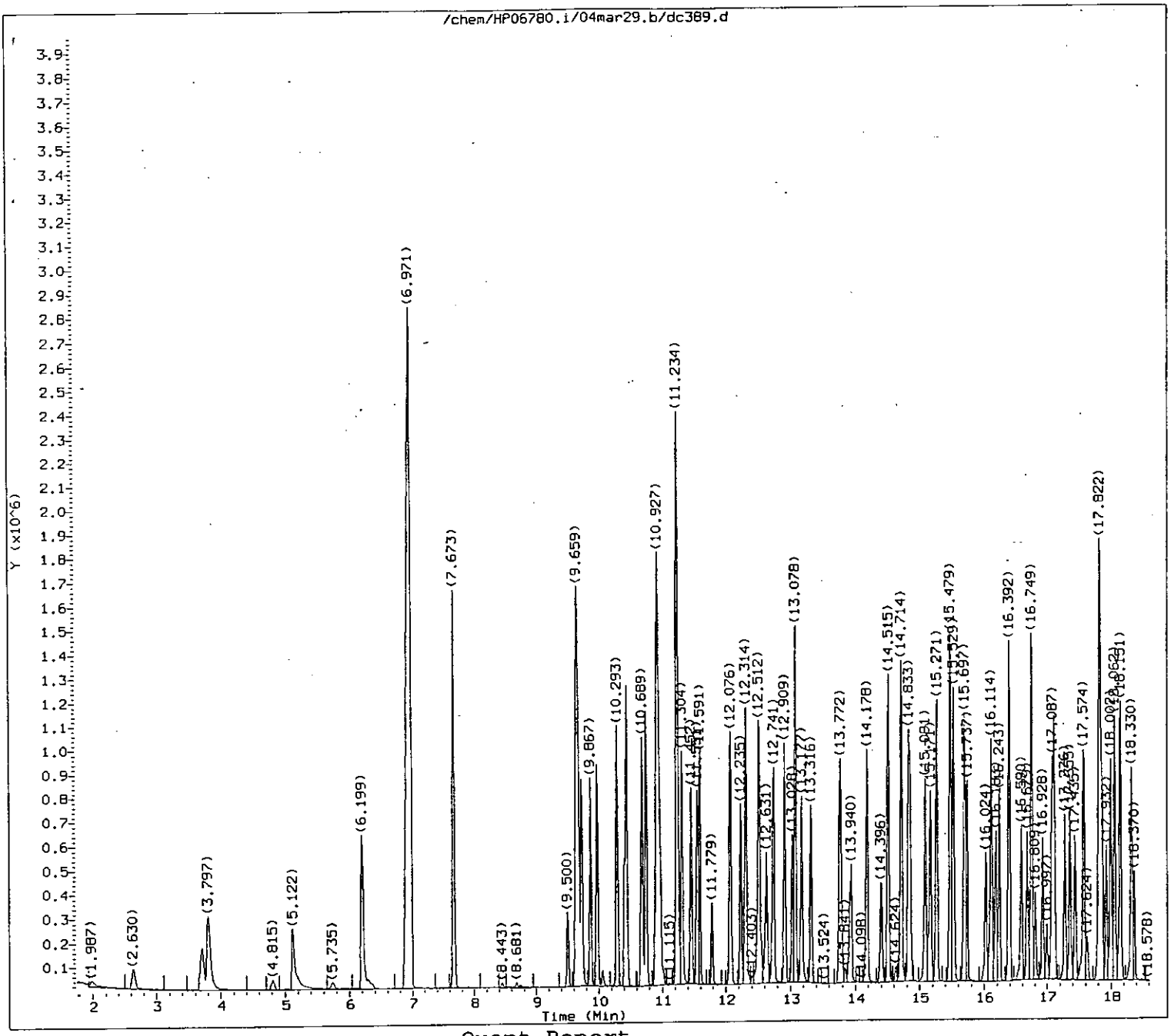
| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (ng/ul) |
|---|---|---|---|---|---|---|---|---|---|---|
| 177) Benzo(g,h,i)perylene | (6) | 36.018 | (-0.002) | 276 | 561184 | 104.910 | 3497.00 | | | 1.00 |

E = CONC. OUT OF CAL. RANGE # = RELATIVE RETENTION TIME OUT OF RANGE

Total number of targets = 64

Comments:

Analyst: Michele Garosick RB 3-29-04 Date: 3-29-04
Auditor: Date: 3/29/04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc389.d
Injection date and time: 29-MAR-2004 10:39

Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08

Sublist used: STC804

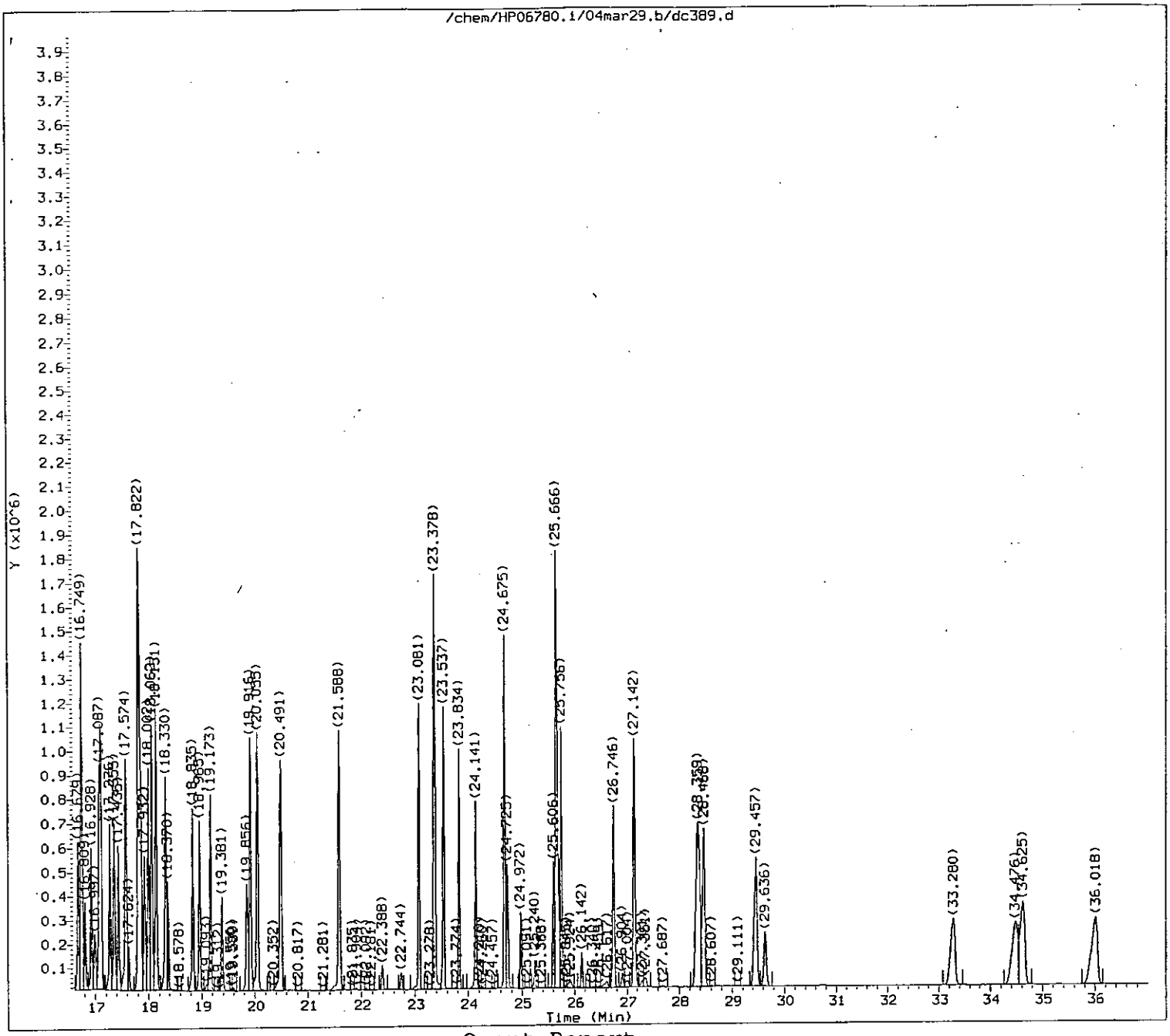
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Sample Name: 087LALCS4

Lab Sample ID: 087LALCS

0386

RB1528
3-29-04




Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc389.d
Injection date and time: 29-MAR-2004 10:39
Instrument ID: HP06780.i
Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m
Calibration date and time: 29-MAR-2004 09:08
Sublist used: STC804
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Sample Name: 087LALCS4
Lab Sample ID: 087LALCS

~~8387~~ RB 1528
3-29-04

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc389.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 10:39  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Sample Name: 087LALCS4  Lab Sample ID: 087LALCS

| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 16) Phenol | (1) | 9.679 | 94 | 841952 | 91.802 |
| 18) bis(2-Chloroethyl)ether | (1) | 9.867 | 93 | 635412 | 89.709 |
| 19) 2-Chlorophenol | (1) | 9.976 | 128 | 591374 | 92.874 |
| 20) 1,3-Dichlorobenzene | (1) | 10.293 | 146 | 566257 | 86.403 |
| 21) 1,4-Dichlorobenzene-d4 | (1) | 10.412 | 152 | 166133 | 40.000 |
| 22) 1,4-Dichlorobenzene | (1) | 10.442 | 146 | 578215 | 87.725 |
| 25) 1,2-Dichlorobenzene | (1) | 10.748 | 146 | 556939 | 87.140 |
| 26) 2-Methylphenol | (1) | 10.917 | 108 | 608756 | 87.683 |
| 27) 2,2'-oxybis(1-Chloropropane) | (1) | 10.967 | 45 | 799011 | 105.161 |
| 31) N-Nitroso-di-n-propylamine | (1) | 11.244 | 70 | 361819 | 88.573 |
| 33) 4-Methylphenol | (1) | 11.224 | 108 | 572580 | 84.366 |
| 37) Hexachloroethane | (1) | 11.452 | 117 | 292856 | 89.382 |
| 39) Nitrobenzene | (2) | 11.591 | 77 | 575512 | 93.457 |
| 41) Isophorone | (2) | 12.076 | 82 | 1147000 | 89.369 |
| 42) 2-Nitrophenol | (2) | 12.235 | 139 | 348650 | 93.263 |
| 44) 2,4-Dimethylphenol | (2) | 12.314 | 107 | 572147 | 88.899 |
| 46) bis(2-Chloroethoxy)methane | (2) | 12.512 | 93 | 793996 | 100.987 |
| 49) 2,4-Dichlorophenol | (2) | 12.741 | 162 | 426920 | 94.880 |
| 50) 1,2,4-Trichlorobenzene | (2) | 12.909 | 180 | 340730 | 87.885 |
| 52) Naphthalene-d8 | (2) | 13.028 | 136 | 589726 | 40.000 |
| 53) Naphthalene | (2) | 13.078 | 128 | 1370193 | 89.378 |
| 55) 4-Chloroaniline | (2) | 13.177 | 127 | 526763 | 73.364 |
| 59) Hexachlorobutadiene | (2) | 13.316 | 225 | 145461 | 87.340 |
| 67) 4-Chloro-3-methylphenol | (2) | 14.178 | 107 | 503245 | 95.826 |
| 69) 2-Methylnaphthalene | (2) | 14.515 | 142 | 842497 | 86.901 |
| 71) Hexachlorocyclopentadiene | (3) | 14.833 | 237 | 246049 | 204.230 |
| 74) 2,4,6-Trichlorophenol | (3) | 15.091 | 196 | 213687 | 90.757 |
| 76) 2,4,5-Trichlorophenol | (3) | 15.171 | 196 | 229698 | 94.098 |
| 83) 2-Chloronaphthalene | (3) | 15.529 | 162 | 775473 | 87.728 |
| 87) 2-Nitroaniline | (3) | 15.737 | 138 | 378676 | 95.781 |
| 90) Dimethylphthalate | (3) | 16.114 | 163 | 917254 | 94.378 |
| 92) 2,6-Dinitrotoluene | (3) | 16.243 | 165 | 249960 | 94.872 |
| 93) Acenaphthylene | (3) | 16.392 | 152 | 1319390 | 101.384 |
| 95) 3-Nitroaniline | (3) | 16.590 | 138 | 269385 | 81.169 |
| 96) Acenaphthene-d10 | (3) | 16.679 | 164 | 272648 | 40.000 |
| 97) Acenaphthene | (3) | 16.749 | 153 | 751054 | 91.784 |
| 98) 2,4-Dinitrophenol | (3) | 16.809 | 184 | 107904 | 90.702 |
| 101) 4-Nitrophenol | (3) | 16.928 | 109 | 108322 | 102.260 |
| 102) Dibenzofuran | (3) | 17.107 | 168 | 978954 | 89.696 |
| 103) 2,4-Dinitrotoluene | (3) | 17.087 | 165 | 323002 | 105.844 |
| 107) Diethylphthalate | (3) | 17.574 | 149 | 957137 | 98.813 |
| 109) Fluorene | (3) | 17.832 | 166 | 685077 | 83.769 |
| 110) 4-Chlorophenyl-phenylether | (3) | 17.822 | 204 | 256220 | 79.651 |

M = Compound was manually integrated.  A = User selected an alternate hit

Quant Report

Target Revision 3.5

Data File: /chem/HP06780.i/04mar29.b/dc389.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 10:39  Analyst ID: cam01237

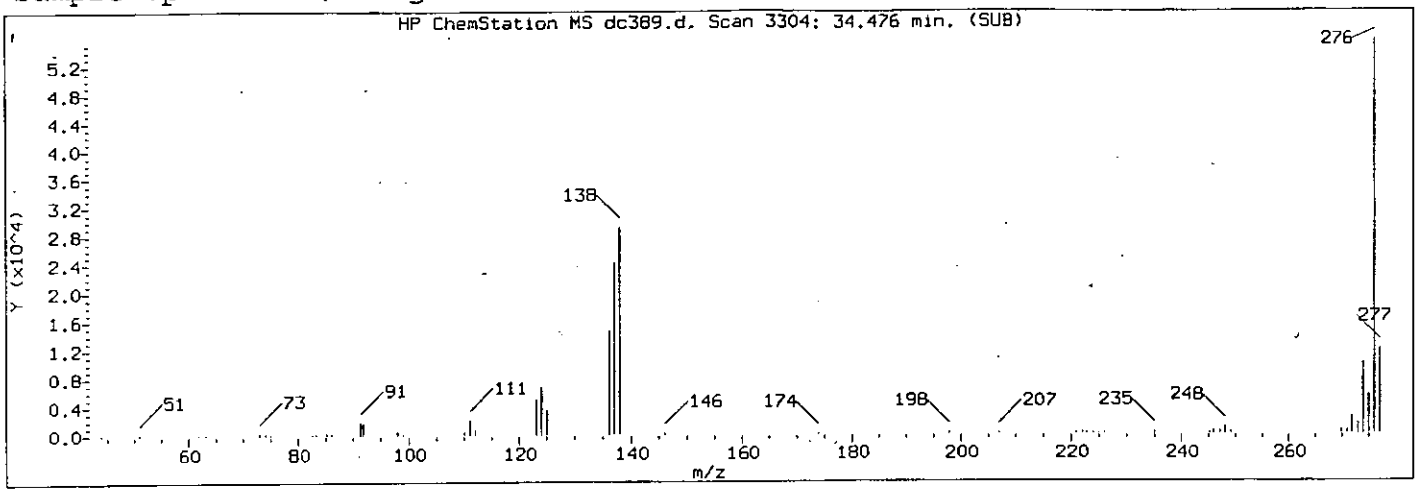
Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Sample Name: 087LALCS4  Lab Sample ID: 087LALCS

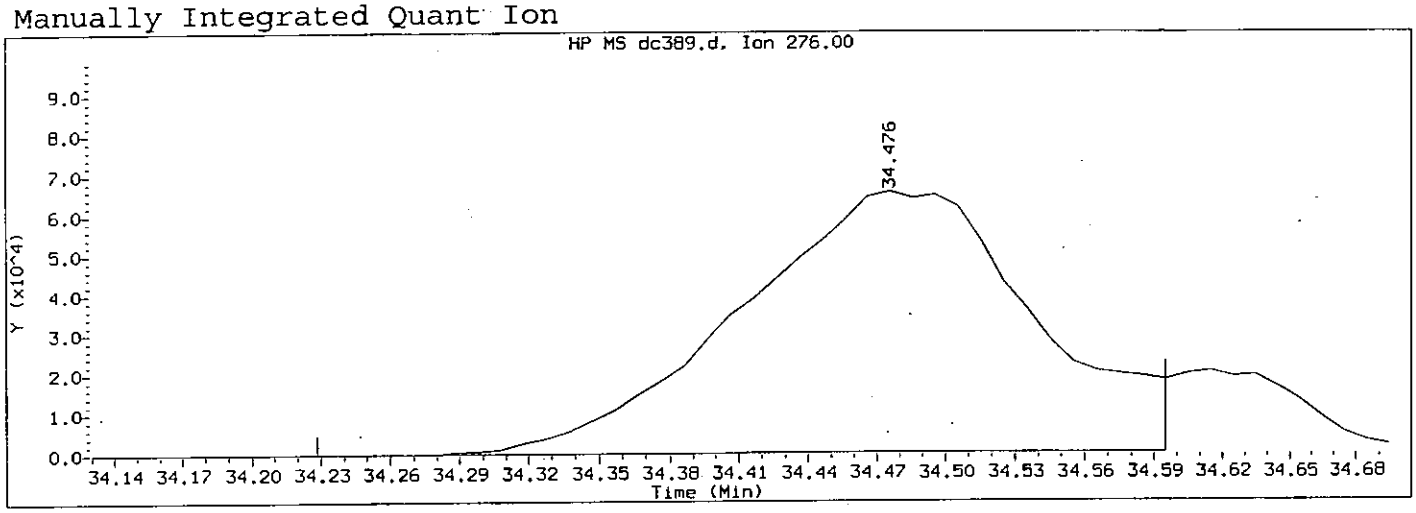
| Compounds | I.S. Ref. | RT | QIon | Area | Conc. (on column) |
|---|---|---|---|---|---|
| 112) 4-Nitroaniline | (3) | 17.872 | 138 | 266996 | 85.444 |
| 113) 4,6-Dinitro-2-methylphenol | (4) | 17.932 | 198 | 144938 | 107.438 |
| 115) N-Nitrosodiphenylamine | (4) | 18.062 | 169 | 556826 | 95.070 |
| 123) 4-Bromophenyl-phenylether | (4) | 18.835 | 248 | 150625 | 94.861 |
| 125) Hexachlorobenzene | (4) | 18.965 | 284 | 172157 | 96.717 |
| 129) Pentachlorophenol | (4) | 19.381 | 266 | 76030 | 97.433 |
| 133) Phenanthrene-d10 | (4) | 19.856 | 188 | 330346 | 40.000 |
| 135) Phenanthrene | (4) | 19.926 | 178 | 923658 | 98.461 |
| 136) Anthracene | (4) | 20.055 | 178 | 973692 | 100.587 |
| 138) Carbazole | (4) | 20.491 | 167 | 993809 | 95.983 |
| 140) Di-n-butylphthalate | (4) | 21.588 | 149 | 1711922 | 106.703 |
| 145) Fluoranthene | (4) | 23.081 | 202 | 824041 | 94.747 |
| 152) Pyrene | (5) | 23.537 | 202 | 818410 | 101.091 |
| 159) Butylbenzylphthalate | (5) | 24.675 | 149 | 662389 | 111.446 |
| 162) 3,3'-Dichlorobenzidine | (5) | 25.616 | 252 | 167035 | 74.284 |
| 164) Benzo(a)anthracene | (5) | 25.686 | 228 | 610500 | 92.490 |
| 165) Chrysene-d12 | (5) | 25.706 | 240 | 202296 | 40.000 |
| 166) Chrysene | (5) | 25.766 | 228 | 625840 | 99.029 |
| 167) bis(2-Ethylhexyl)phthalate | (5) | 25.666 | 149 | 841538 | 107.775 |
| 168) Di-n-octylphthalate | (6) | 27.142 | 149 | 1582064 | 104.366 |
| 170) Benzo(b)fluoranthene | (6) | 28.389 | 252 | 593309 | 99.552 |
| 171) Benzo(k)fluoranthene | (6) | 28.468 | 252 | 606780 | 104.240 |
| 172) Benzo(a)pyrene | (6) | 29.457 | 252 | 578757 | 106.777 |
| 173) Perylene-d12 | (6) | 29.636 | 264 | 194092 | 40.000 |
| 175) Indeno(1,2,3-cd)pyrene | (6) | 34.476 | 276 | 578535M | 107.603 |
| 176) Dibenz(a,h)anthracene | (6) | 34.625 | 278 | 542467 | 111.102 |
| 177) Benzo(g,h,i)perylene | (6) | 36.018 | 276 | 561184 | 104.910 |
| 9) 2-Fluorophenol | (1) | 7.673 | 112 | 1331016 | 170.237 |
| 15) Phenol-d6 | (1) | 9.649 | 99 | 1546560 | 173.447 |
| 38) Nitrobenzene-d5 | (2) | 11.551 | 82 | 597893 | 91.171 |
| 77) 2-Fluorobiphenyl | (3) | 15.271 | 172 | 775777 | 90.455 |
| 117) 2,4,6-Tribromophenol | (3) | 18.330 | 330 | 200693 | 190.883 |
| 154) Terphenyl-d14 | (5) | 23.834 | 244 | 438785 | 100.521 |

M = Compound was manually integrated.  A = User selected an alternate hit

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP06780.i/04mar29.b/dc389.d  Instrument ID: HP06780.i
Injection date and time: 29-MAR-2004 10:39  Analyst ID: cam01237

Method used: /chem/HP06780.i/04mar29.b/m8270.m  Sublist used: STC804
Calibration date and time: 29-MAR-2004 09:08
Date, time and analyst ID of latest file update: 29-Mar-2004 12:00 cam01237

Sample Name: 087LALCS4  Lab Sample ID: 087LALCS

Compound Number : 175
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3304
Retention Time (minutes): 34.476
Quant Ion : 276
Area (flag) : 578535 M
Concentration (ng/ul) : 107.6027
Integration start scan : 3278  Integration stop scan: 3315
Y at integration start : 0  Y at integration end: 164

Reason for manual integration (circle one): missed peak ~~improper integration~~

Analyst responsible for change: RB1758 3-29-04

GC/MS audit/management approval: MB1758 3/29/04 ~~3398~~

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06780 **HP #04**

*** Shift #1 Analyst:_____ *** Shift #2 Analyst: RB1528 3-22-04

Comment Code:

| | | | | | |
|---|---|---|---|---|---|
| R | = | Reinjection necessary | X | = | Sample sent to be reextracted |
| S | = | Surrogate problem | I | = | Internal Standard problem |
| NU | = | Not used | F | = | Further dilution required |
| MR | = | Meets requirements | IUO | = | Internal use only |
| Cz | = | Confirms z, (z = I or X) | T | = | Injected outside valid tune period |

Other problems or comments are as follows:

Data Directory Path is - D:\DATA\04MAR19\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | DC254.D | DFTPP | 8270DFTPP0694 | 19 Mar 2004 | 08:59 | | | ok |
| 2 | DC255.D | SSTD080 | STD0754 | 19 Mar 2004 | 09:20 | | | ok |
| 2 | DC25A.D | SSTD080 | STD0754 | 19 Mar 2004 | 10:11 | | | nu |
| 3 | DC256.D | SSTD120 | STD0754 | 19 Mar 2004 | 11:02 | | | ok |
| 4 | DC257.D | SSTD050 | STD0754 | 19 Mar 2004 | 11:51 | | | ok |
| 5 | DC258.D | SSTD030 | STD0754 | 19 Mar 2004 | 12:38 | | | ok |
| 6 | DC259.D | SSTD015 | STD0754 | 19 Mar 2004 | 13:27 | | | ok |
| 7 | DC260.D | SSTD005 | STD0754 | 19 Mar 2004 | 14:15 | | | ok |
| 8 | DC261.D | SSTD001 | 8270MDL0754 | 19 Mar 2004 | 15:04 | | | ok |
| 9 | DC262.D | SSTD050 | ICV0224 | 19 Mar 2004 | 15:52 | | | ok |
| 10 | DC263.D | NC-16 | 4233417 | 19 Mar 2004 | 16:41 | 04072SLB | | ok |
| 11 | DC264.D | NC-17 | 4233418 | 19 Mar 2004 | 17:29 | 04072SLB | | ok |
| 4 | DC265.D | SECC | SECC0754 | 19 Mar 2004 | 18:18 | | | ok |

Lancaster Laboratories
Seml-Volatiles

Runlog for Hewlett Packard GC/MS System HP06780 **HP #04**

*** Shift #1 Analyst:_____ *** Shift #2 Analyst: RBSR 3-29-04

Comment Code:

| | | | |
|---|---|---|---|
| R = Reinjection necessary | | X = | Sample sent to be reextracted |
| S = Surrogate problem | | I = | Internal Standard problem |
| NU = Not used | | F = | Further dilution required |
| MR = Meets requirements | | IUO = | Internal use only |
| Cz = Confirms z, (z = I or X) | | T = | Injected outside valid tune period |

Other problems or comments are as follows:

Data Directory Path is - D:\DATA\04MAR29\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | DC385.D | DFTPP | 8270DFTPP0694 | 29 Mar 2004 | 07:59 | | | ok |
| 2 | DC386.D | SSTD050 | STD0854 | 29 Mar 2004 | 08:22 | | | ok |
| 3 | DC387.D | ~B051DL | 4239019DL | 29 Mar 2004 | 09:10 | 04084WAF | 20 | ok |
| 4 | DC388.D | SBLKLA0874 | SBLKLA087 | 29 Mar 2004 | 09:55 | 04087SLA | | ok |
| 5 | DC389.D | 087LALCS4 | 087LALCS | 29 Mar 2004 | 10:39 | 04087SLA | | ok |
| 6 | DC390.D | 7GP17 | 4241642 | 29 Mar 2004 | 11:24 | 04087SLA | | ok |
| 7 | DC391.D | 7GP17MS | 4241642 | 29 Mar 2004 | 12:08 | 04087SLA | | ok |
| 8 | DC392.D | 7GP17MSD | 4241642 | 29 Mar 2004 | 12:53 | 04087SLA | | ok |
| 9 | DC393.D | 7GP19 | 4241644 | 29 Mar 2004 | 13:37 | 04087SLA | | ok |
| 10 | DC394.D | UGP21 | 4241648 | 29 Mar 2004 | 14:21 | 04087SLA | | ok |
| 11 | DC395.D | 7GP22 | 4241649 | 29 Mar 2004 | 15:06 | 04087SLA | | ok |
| 12 | DC396.D | 2222D | 4241650 | 29 Mar 2004 | 15:50 | 04087SLA | | ok |
| 13 | DC397.D | 7GP23 | 4241651 | 29 Mar 2004 | 16:35 | 04087SLA | | ok |

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Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06777 **HP #07**

*** Shift #1 Analyst: OBS *** Shift #2 Analyst: *

Comment Code:

| | | | |
|---|---|---|---|
| R = Reinjection necessary | | X = | Sample sent to be reextracted |
| S = Surrogate problem | | I = | Internal Standard problem |
| NU = Not used | | F = | Further dilution required |
| MR = Meets requirements | | IUO = | Internal use only |
| Cz = Confirms z, (z = I or X) | | T = | Injected outside valid tune period |

Other problems or comments are as follows:

*

*

*

*

Data Directory Path is - D:\DATA\04MAR20\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | GC282.D | DFTPP | 8270DFTPP0694 | 20 Mar 2004 | 12:47 | | | OK |
| 2 | GC283.D | SSTD080 | STD0754 | 20 Mar 2004 | 13:10 | | | |
| 3 | GC284.D | SSTD120 | STD0754 | 20 Mar 2004 | 14:09 | | | |
| 4 | GC285.D | SSTD050 | STD0754 | 20 Mar 2004 | 15:06 | | | |
| 5 | GC286.D | SSTD030 | STD0754 | 20 Mar 2004 | 16:03 | | | |
| 6 | GC287.D | SSTD015 | STD0754 | 20 Mar 2004 | 17:00 | | | |
| 7 | GC288.D | SSTD005 | STD0754 | 20 Mar 2004 | 17:57 | | | |
| 8 | GC289.D | SSTD001 | 8270MDL0494 | 20 Mar 2004 | 18:54 | | | |
| 9 | GC290.D | SSTD050 | ICV0224 | 20 Mar 2004 | 19:51 | | | |

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06777 **HP #07**

*** Shift #1 Analyst:_____ *** Shift #2 Analyst: Imgue

Comment Code:

| | | | |
|---|---|---|---|
| R = Reinjection necessary | | X = | Sample sent to be reextracted |
| S = Surrogate problem | | I = | Internal Standard problem |
| NU = Not used | | F = | Further dilution required |
| MR = Meets requirements | | IUO = | Internal use only |
| Cz = Confirms z, (z = I or X) | | T = | Injected outside valid tune period |

Other problems or comments are as follows:

*_____

*_____

*_____

*_____

Data Directory Path is - D:\DATA\04MAR26\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | GC380.D | DFTPP | 8270DFTPP0694 | 26 Mar 2004 | 06:48 | | | mr |
| 2 | GC381.D | SSTD080 | STD0854 | 26 Mar 2004 | 07:10 | | | mr |
| 11 | GC382.D | SBLKLC0857 | SBLKLC085 | 26 Mar 2004 | 08:09 | 04085SLC | | mr |
| 12 | GC383.D | 085LCLCS7 | 085LCLCS | 26 Mar 2004 | 09:04 | 04085SLC | | mr |
| 13 | GC384.D | 7GP45 | 4241645 | 26 Mar 2004 | 09:59 | 04085SLC | | mr |
| 14 | GC385.D | 7GP45MS | 4241646 | 26 Mar 2004 | 10:54 | 04085SLC | | mr |
| 15 | GC386.D | 7GP45MSD | 4241647 | 26 Mar 2004 | 11:49 | 04085SLC | | mr |
| 16 | GC387.D | 7GP17 | 4241642 | 26 Mar 2004 | 12:44 | 04085SLC | | nu |
| 17 | GC388.D | 7GP18 | 4241643 | 26 Mar 2004 | 13:39 | 04085SLC | | mr |
| 18 | GC389.D | 7GP19 | 4241644 | 26 Mar 2004 | 14:35 | 04085SLC | | nu |
| 19 | GC390.D | UGP21 | 4241648 | 26 Mar 2004 | 15:30 | 04085SLC | | nu |
| 20 | GC391.D | 7GP22 | 4241649 | 26 Mar 2004 | 16:25 | 04085SLC | | nu |
| 21 | GC392.D | 2222D | 4241650 | 26 Mar 2004 | 17:20 | 04085SLC | | nu |

Lancaster Laboratories
Semi-Volatiles

Runlog for Hewlett Packard GC/MS System HP06777 **HP #07**

*** Shift #1 Analyst: _____ *** Shift #2 Analyst: Jmg68

Comment Code:

| | | | |
|---|---|---|---|
| R = | Reinjection necessary | X = | Sample sent to be reextracted |
| S = | Surrogate problem | I = | Internal Standard problem |
| NU = | Not used | F = | Further dilution required |
| MR = | Meets requirements | IUO = | Internal use only |
| Cz = | Confirms z, (z = I or X) | T = | Injected outside valid tune period |

Other problems or comments are as follows:

Data Directory Path is - D:\DATA\04MAR26A\

| ALS Btl # | Laboratory File ID | Client ID | Lab Sample ID | Date injected | Time injected | Case and SDG Number or Extraction Batch Number | Dilution Factor | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | GC393.D | DFTPP | 8270DFTPP0694 | 26 Mar 2004 | 19:01 | | | nu |
| 1 | GC39Z.D | DFTPP | 8270DFTPP0694 | 26 Mar 2004 | 19:51 | | | nu |
| 1 | GC39Y.D | DFTPP | 8270DFTPP0694 | 26 Mar 2004 | 20:30 | | | mr |
| 2 | GC394.D | SSTD030 | STD0854 | 26 Mar 2004 | 20:53 | | | mr |
| 3 | GC395.D | 7GP23 | 4241651 | 26 Mar 2004 | 21:54 | 04085SLC | | nu |
| 4 | GC396.D | 7GP24 | 4241652 | 26 Mar 2004 | 22:48 | 04085SLC | | mr |
| 5 | GC397.D | SBLKWI0857 | SBLKWI085 | 26 Mar 2004 | 23:43 | 04085WAI | | mr |
| 6 | GC398.D | 085WILCS7 | 085WILCS | 27 Mar 2004 | 00:37 | 04085WAI | | mr |
| 7 | GC399.D | 085WILCSD7 | 085WILCSD | 27 Mar 2004 | 01:31 | 04085WAI | | mr |
| 8 | GC400.D | PW20-RE | 4233098RE | 27 Mar 2004 | 02:25 | 04085WAI | | mr |
| 9 | GC401.D | SMW14RE | 4233100RE | 27 Mar 2004 | 03:19 | 04085WAI | | mr |
| 10 | GC402.D | SMW73RE | 4233101RE | 27 Mar 2004 | 04:14 | 04085WAI | | NU~~mr~~ ③CMR/4/12 3/30/04 |
| 11 | GC403.D | SMW74RE | 4233102RE | 27 Mar 2004 | 06:06 | 04085WAI | | NU~~mr~~ |
| 12 | GC404.D | SMW64RE | 4233103RE | 27 Mar 2004 | 07:00 | 04085WAI | | mr |
| 13 | GC405.D | SMW15RE | 4233104RE | 27 Mar 2004 | 07:55 | 04085WAI | | mr |

# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: BGray 3-26-04

Prep Analysis # 00381 BNA Soil Extraction

Prep Group # 702 TC8 - Soil/Solid Dept: 26

Start Date: 3/25/04

Start Time: 18:00

Tech 1: CAnderson

Tech 2:

BATCH NO. 04085SLC026

| QC | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANK6 | PBLKST | 30.0 | SS0406826A | 1.0 | | | 1.0 | | | | |
| LCS6 | LCSNZ | 30.0 | SS0406826A | | MS0407726A | 1.0 | | | | | |
| 4241646MS | 5GP45MS | 30.0 | SS0406826A | | MS0407726A | | | | | | 2M STones / fine / dry |
| 4241647MSD | 5GP45MSD | 30.0 | SS0406826A | | MS0407726A | | | | | | 2M |

SLA 3/25/04

| | Sample # | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4241642 | 7GP17 | 30.0 | SS0406826A | 1.0 | 1.0 | | | | 2M STones fine dry | 4688 4689 | 3/30/04 | S |
| 2 | 4241643 | 7GP18 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 3 | 4241644 | 7GP19 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 4 | 4241645 bkg | 7GP45 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 5 | 4241648 | UGP21 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 6 | 4241649 | 7GP22 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 7 | 4241650 | 2222D | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 8 | 4241651 | 7GP23 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 9 | 4241652 | 7GP24 | 30.0 | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

DSM

20

SLA 3/25/04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



**Spike Solutions:**

SS0406826A BNA SURROGATE STANDARD

MS0407726A LCS SPIKE MIX KBlair

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 1:1 AcMeCl | 185031804 | MeCl | A07635 |
| MeOH | 226838 | | |
| Rack ID: | | Work Station: | Sam 3 |
| Internal Standard | LV00735 | Balance # | 532 |
| S-bath ID | °C | S-bath ID | °C |
| N-Evap | °C | | |

Documented temps are NIST corrected. 04085SLC026

8397

RUSH

# Organic Extraction Batchlog

Reviewed: CC 1237

Prep Analysis # 00381 BNA Soil Extraction

Prep Group # 702 TC8 - Soil/Solid Dept: 26

Start Date: 3-27-04

Start Time: 15:00

Tech 1: MM1424

Tech 2:

BATCH NO. 04087SLA026

| QC | Sample Code | Amt (g) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANK6 | PBLKTP | 30.0 | SS0406826A | 1.0 | | | 1.0 | | | | |
| LCS6 | LCSOQ | | SS0406826A | | MS0407726A | 1.0 | | | | | |
| 4241642MS R | 7GP17MS | | SS0406826A | | MS0407726A | | | | | 2A | Arid Brown Soil |
| 4241642MSD R | 7GP17MSD | | SS0406826A | | MS0407726A | | | | | 2A | |

| | Sample # | | Sample Code | Amt (g) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4241642 bkg | R | 7GP17 | 30.0 | SS0406826A | 1.0 | 1.0 | | | 2A | Arid Brown Soil | 4688 4689 | 3/30/04 | S |
| 2 | 4241644 | R | 7GP19 | | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 3 | 4241648 | R | UGP21 | | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 4 | 4241649 | R | 7GP22 | | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 5 | 4241650 | R | 2222D | | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 6 | 4241651 | R | 7GP23 | | SS0406826A | | | | | | | 4688 4689 | 3/30/04 | S |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | MM1424 3-27-04 | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |

2 of M 18

**Additional Comment:** Nobody was available to confirm New SS #1 or witness spiking.

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 1:1 MeCl2/acetone | 185031504 | | |
| Na2SO4 | Baker | | |
| | | | |
| Rack ID: | | Work Station: | Sonicator 4 |
| Internal Standard | LB00730 | Balance # | 3782 |
| S-bath ID 10 | 95 °C | S-bath ID | °C |
| N-Evap | °C | | |

**Spike Solutions:**

~~SS0406826A~~ BNA SURROGATE STANDARD

MS0407726A LCS SPIKE MIX

Documented temps are NIST corrected. 04087SLA026

8398

# Organochlorine Pesticides Data

# Case Narrative
# Conformance/Nonconformance
# Summary

Lancaster Laboratories

**CLIENT: Draper Aden Associates, Inc.**
**SDG: RAV04**

## LANCASTER LABORATORIES

## TCL Pesticides

| | | MATRIX | | |
|---|---|---|---|---|
| **LLI SAMPLE #** | **SAMPLE CODE** | **WATER** | **SOLID** | **COMMENTS** |
| BLANKA | PBLKVE | | X | Method Blank |
| LCSA | LCSQ8 | | X | Laboratory Control Spike |
| 4241642 | 7GP17 | | X | |
| 4241643 | 7GP18 | | X | |
| 4241644 | 7GP19 | | X | DF5 |
| 4241645 | 7GP45 | | X | Background DF5 |
| 4241646MS | 7GP45MS | | X | Matrix Spike DF20 |
| 4241647MSD | 7GP45MSD | | X | Matrix Spike Dup DF5 |
| 4241648 | UGP21 | | X | DF5 |
| 4241649 | 7GP22 | | X | DF2 |
| 4241650 | 2222D | | X | DF2 |
| 4241651 | 7GP23 | | X | |
| 4241652 | 7GP24 | | X | |
| | | | | |

### A. Sample Preparation:

Florisil and Copper cleanups were used to minimize interferences. The samples were originally scheduled for an additional acid cleanup; however this cleanup was never performed. Dilutions were required for various samples due to the aroclor concentration detected in the samples. No other problems were encountered with the preparation of the samples.

### B. Analysis:

The analysis was performed using the following runs:

- 1C13088, 1C13088B, 2C13088, 2C13088B

No problems were encountered. All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

A retention time update was performed using calibration files 1C13088.73-.74 and the calibration name changed to 2C13088.

### C. Quality Control:

5491

All reported surrogates are within the QC limits.

Lancaster Laboratories

The matrix spike data is outside the QC criteria. See Form 3 for matrix spike data.

The LCS data are within the QC limits.

**D. Data Interpretation:**

The method blank was evaluated to the MDL. Values between the MDL and the LOQ are reported with a "J" qualifier.
The reporting limits for heptachlor, heptachlor epoxide, and endosulfan II were raised due to interference from aroclors detected in samples 7GP17, 7GP18, 7GP22, and 7GP23. The reporting limit for endosulfan II was raised due to interference from aroclors detected in samples 7GP19 and 7GP45. The reporting limits for heptachlor epoxide and endosulfan II were raised due to interference from aroclors detected in samples UGP21 and 2222D.
No further interpretation is needed.

**Data codes:**

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

**Narrative reviewed and approved by:**

**Jenifer E. Hess, Group Leader** — **Date** 4/5/04

8402

# QC Summary

# 2F
# SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: RAV04

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

| SAMPLE | SAMPLE CODE NO. | TCX 1 % REC # | TCX 2 % REC # | DCB 1 % REC # | DCB 2 % REC # | TOT OUT |
|---|---|---|---|---|---|---|
| 4241642 | 7GP17 | 86 | 100 | 91 | 96 | 0 |
| 4241643 | 7GP18 | 82 | 95 | 86 | 88 | 0 |
| 4241644 | 7GP19 | 95 | 91 | 130 | 106 | 0 |
| 4241645 | 7GP45 | 86 | 95 | 109 | 111 | 0 |
| 4241646 MS | 7GP45MS | 141 | 96 | 120 | 129 | 0 |
| 4241647 MSD | 7GP45MSD | 34 D | 94 | 107 | 112 | 0 |
| 4241648 | UGP21 | 95 | 85 | 102 | 104 | 0 |
| 4241649 | 7GP22 | 86 | 93 | 94 | 100 | 0 |
| 4241650 | 2222D | 87 | 93 | 97 | 101 | 0 |
| 4241651 | 7GP23 | 81 | 95 | 87 | 93 | 0 |
| 4241652 | 7GP24 | 84 | 87 | 88 | 92 | 0 |
| BLANKA | PBLKVE | 91 | 95 | 94 | 96 | 0 |
| LCSA | LCSQ8 | 97 | 98 | 94 | 98 | 0 |

MD 4/7/04 7

| | | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|---|
| TCX | = Tetrachloro-m-xylene | (58 - 149) | 9.62 | ug/Kg |
| DCB | = Decachlorobiphenyl | (62 - 159) | 9.74 | ug/Kg |

# Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

# 3F

## Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 7GP45

| Compound | Spike Added (ug/kg) | Sample Concen (ug/kg) | MS Concen (ug/kg) | MSD Concen (ug/kg) | MS % Rec # | MSD % Rec # | MS-MSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 3.34 | 0 | 0 | 3.26 | 0* | 98 | (64 - 134) | | 35 |
| gamma-BHC (Lindane) | 3.32 | 0 | 0 | 3.70 | 0* | 111 | (43 - 154) | | 35 |
| beta-BHC | 3.48 | 0 | 0 | 4.04 | 0* | 116 | (31 - 176) | | 35 |
| delta-BHC | 3.47 | 0 | 0 | 3.79 | 0* | 109 | (68 - 158) | | 35 |
| Heptachlor | 3.33 | 0 | 0 | 0 | 0* | 0* | (70 - 138) | | 35 |
| Aldrin | 3.33 | 0 | 0 | 0 | 0* | 0* | (58 - 159) | | 35 |
| Heptachlor epoxide | 3.45 | 0 | 0 | 0 | 0* | 0* | (69 - 133) | | 35 |
| gamma-Chlordane | 3.23 | 0 | 0 | 0 | 0* | 0* | (30 - 157) | | 50 |
| alpha-Chlordane | 3.30 | 0 | 0 | 0 | 0* | 0* | (46 - 163) | | 50 |
| 4,4'-DDE | 6.69 | 0 | 0 | 0 | 0* | 0* | (48 - 175) | | 35 |
| Endosulfan I | 3.35 | 0 | 0 | 0 | 0* | 0* | (41 - 166) | | 35 |
| Dieldrin | 6.71 | 0 | 0 | 0 | 0* | 0* | (68 - 139) | | 35 |
| Endrin | 6.74 | 0 | 0 | 0 | 0* | 0* | (48 - 188) | | 35 |
| 4,4'-DDD | 6.63 | 0 | 0 | 0 | 0* | 0* | (52 - 181) | | 35 |
| Endosulfan II | 6.85 | 0 | 0 | 0 | 0* | 0* | (65 - 144) | | 35 |
| 4,4'-DDT | 6.69 | 0 | 0 | 0 | 0* | 0* | (62 - 166) | | 35 |
| Endrin aldehyde | 6.71 | 0 | 0 | 0 | 0* | 0* | (63 - 125) | | 35 |
| Methoxychlor | 33.25 | 0 | 0 | 0 | 0* | 0* | (74 - 162) | | 35 |
| Endosulfan sulfate | 7.08 | 0 | 0 | 0 | 0* | 0* | (65 - 154) | | 35 |
| Endrin ketone | 6.89 | 0 | 0 | 0 | 0* | 0* | (33 - 173) | | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 36 out of 40 outside limits

8485

Comments: Results calculated on as-received basis.

Sample No.: 4241645 Batch: 040890035A

# 3F

## Soil Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSQ8

| Compound | Spike Added (ug/kg) | LCS Concen (ug/kg) | LCSD Concen (ug/kg) | LCS % Rec # | LCSD % Rec # | LCS-LCSD % REC Limits | % RPD # | % RPD Lim |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 3.34 | 3.18 | | 95 | | (70 - 134) | | 35 |
| gamma-BHC (Lindane) | 3.32 | 3.34 | | 101 | | (74 - 133) | | 35 |
| beta-BHC | 3.48 | 3.52 | | 101 | | (68 - 137) | | 35 |
| delta-BHC | 3.47 | 3.41 | | 98 | | (53 - 167) | | 35 |
| Heptachlor | 3.33 | 3.52 | | 106 | | (72 - 143) | | 35 |
| Aldrin | 3.33 | 3.25 | | 98 | | (74 - 137) | | 35 |
| Heptachlor epoxide | 3.45 | 3.52 | | 102 | | (72 - 132) | | 35 |
| gamma-Chlordane | 3.23 | 3.33 | | 103 | | (63 - 145) | | 50 |
| alpha-Chlordane | 3.30 | 3.29 | | 100 | | (76 - 133) | | 50 |
| 4,4'-DDE | 6.69 | 6.99 | | 104 | | (71 - 143) | | 35 |
| Endosulfan I | 3.35 | 3.44 | | 103 | | (71 - 130) | | 35 |
| Dieldrin | 6.71 | 6.68 | | 100 | | (71 - 133) | | 35 |
| Endrin | 6.74 | 7.20 | | 107 | | (68 - 133) | | 35 |
| 4,4'-DDD | 6.63 | 6.93 | | 105 | | (60 - 153) | | 35 |
| Endosulfan II | 6.85 | 7.22 | | 105 | | (73 - 134) | | 35 |
| 4,4'-DDT | 6.69 | 7.34 | | 110 | | (67 - 152) | | 35 |
| Endrin aldehyde | 6.71 | 5.28 | | 79 | | (47 - 145) | | 35 |
| Methoxychlor | 33.25 | 36.90 | | 111 | | (56 - 168) | | 35 |
| Endosulfan sulfate | 7.08 | 7.33 | | 104 | | (58 - 133) | | 35 |
| Endrin ketone | 6.89 | 7.12 | | 103 | | (70 - 143) | | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 0 out of 20 outside limits

6406

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 040890035A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO. PBLKVE

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: RAV04

Lab Sample ID BLANKA

Lab File ID: 1C13088.75R 1C13088B.75R

Matrix: (soil/water) SOIL

Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N

Date Extracted: 3/30/04

Date Analyzed (1): 3/30/04

Date Analyzed (2): 3/30/04

Time Analyzed (1): 11:53:39

Time Analyzed (2): 11:53:39

Instrument ID (1): H6722A

Instrument ID (2): H6722B

GC Column: RTX-CLP ID: 0.32 (mm)

GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | 7GP17 | 4241642 | 3/30/04 | 3/30/04 |
| 02 | 7GP18 | 4241643 | 3/30/04 | 3/30/04 |
| 03 | 7GP19 | 4241644 | 3/30/04 | 3/30/04 |
| 04 | 7GP45 | 4241645 | 3/30/04 | 3/30/04 |
| 05 | 7GP45MS | 4241646 | 3/30/04 | 3/30/04 |
| 06 | 7GP45MSD | 4241647 | 3/30/04 | 3/30/04 |
| 07 | UGP21 | 4241648 | 3/30/04 | 3/30/04 |
| 08 | 7GP22 | 4241649 | 3/30/04 | 3/30/04 |
| 09 | 2222D | 4241650 | 3/30/04 | 3/30/04 |
| 10 | 7GP23 | 4241651 | 3/30/04 | 3/30/04 |
| 11 | 7GP24 | 4241652 | 3/30/04 | 3/30/04 |
| 12 | PBLKVE | BLANKA | 3/30/04 | 3/30/04 |
| 13 | LCSQ8 | LCSA | 3/30/04 | 3/30/04 |

MD 4/7/04

0487

COMMENTS: _____

_____

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKVE

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Matrix: (soil/water)** SOIL **Lab Sample ID:** BLANKA

**Sample wt/vol:** 30 (g/ml) g **Lab File ID:** 1C13088.75R

**% Moisture:** **Decanted: (Y/N)** **Date Received:**

**Extraction: (SepF/Cont/Sonc)** SONC **Date Extracted:** 3/30/04

**Concentrated Extract Volume:** 10000 (uL) **Date Analyzed:** 3/30/04

**Injection Volume:** 2 (uL) **Dilution Factor:** 1

**GPC Cleanup: (Y/N)** N **pH:** **Sulfur Cleanup: (Y/N)** N

| CAS NO. | COMPOUND | CONCENTRATION UNITS (UG/L or UG/KG) ug/kg | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.17 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.17 | U |
| 319-85-7 | beta-BHC | 0.17 | U |
| 319-86-8 | delta-BHC | 0.17 | U |
| 76-44-8 | Heptachlor | 0.17 | U |
| 309-00-2 | Aldrin | 0.51 | U |
| 1024-57-3 | Heptachlor epoxide | 0.17 | U |
| 5103-74-2 | gamma-Chlordane | 0.30 | U |
| 5103-71-9 | alpha-Chlordane | 0.17 | U |
| 72-55-9 | 4,4'-DDE | 0.33 | U |
| 959-98-8 | Endosulfan I | 0.44 | U |
| 60-57-1 | Dieldrin | 0.33 | U |
| 72-20-8 | Endrin | 0.50 | U |
| 72-54-8 | 4,4'-DDD | 0.58 | U |
| 33213-65-9 | Endosulfan II | 0.33 | U |
| 50-29-3 | 4,4'-DDT | 0.33 | U |
| 7421-93-4 | Endrin aldehyde | 1.0 | U |
| 72-43-5 | Methoxychlor | 4.0 | U |
| 1031-07-8 | Endosulfan sulfate | 0.33 | U |
| 53494-70-5 | Endrin ketone | 0.33 | U |
| 12674-11-2 | Aroclor-1016 | 3.3 | U |
| 11104-28-2 | Aroclor-1221 | 10 | U |
| 11141-16-5 | Aroclor-1232 | 4.3 | U |
| 53469-21-9 | Aroclor-1242 | 4.0 | U |
| 12672-29-6 | Aroclor-1248 | 6.0 | U |
| 11097-69-1 | Aroclor-1254 | 3.3 | U |
| 11096-82-5 | Aroclor-1260 | 3.3 | U |
| 8001-35-2 | Toxaphene | 11 | U |

# Sample Data

# Analysis LOQ/MDL Report

Analysis: 01225 Name: TCL Pesticides in Solids

Description: Default Values

| Compound | Units | LOQ | MDL |
|---|---|---|---|
| gamma-BHC (Lindane) | ug/kg | 0.83 | 0.17 |
| Heptachlor | ug/kg | 0.83 | 0.17 |
| Aldrin | ug/kg | 1.5 | 0.51 |
| 4,4'-DDT | ug/kg | 1.7 | 0.33 |
| Dieldrin | ug/kg | 1.7 | 0.33 |
| Endrin | ug/kg | 1.7 | 0.5 |
| Methoxychlor | ug/kg | 12 | 4 |
| alpha-BHC | ug/kg | 0.83 | 0.17 |
| beta-BHC | ug/kg | 0.83 | 0.17 |
| delta-BHC | ug/kg | 0.83 | 0.17 |
| Heptachlor epoxide | ug/kg | 0.83 | 0.17 |
| 4,4'-DDE | ug/kg | 1.7 | 0.33 |
| 4,4'-DDD | ug/kg | 1.7 | 0.58 |
| Toxaphene | ug/kg | 33 | 11 |
| Endosulfan I | ug/kg | 1.3 | 0.44 |
| Endosulfan II | ug/kg | 1.7 | 0.33 |
| Endosulfan sulfate | ug/kg | 1.7 | 0.33 |
| Endrin aldehyde | ug/kg | 3 | 1 |
| Aroclor-1016 | ug/kg | 17 | 3.3 |
| Aroclor-1221 | ug/kg | 30 | 10 |
| Aroclor-1232 | ug/kg | 17 | 4.3 |
| Aroclor-1242 | ug/kg | 17 | 4 |
| Aroclor-1248 | ug/kg | 18 | 6 |
| Aroclor-1254 | ug/kg | 17 | 3.3 |
| Aroclor-1260 | ug/kg | 17 | 3.3 |
| Endrin ketone | ug/kg | 1.7 | 0.33 |
| alpha-Chlordane | ug/kg | 0.83 | 0.17 |
| gamma-Chlordane | ug/kg | 0.9 | 0.3 |

9410

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241642R** ACF 7GP17 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722A
Result file : 1C13088.77R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 86% Conc.: 8.275331
%SSR(DCB) : 91.4% Conc.: 8.902293

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.31 | 4.34 | 94228 | 8.275331 |
| HCB | 4.86 | 4.91 | 4.92 | 968384 E | 46.389469 |
| alpha-BHC | 5.11 | 5.11 | 5.17 | 9667 | 0.695852 |
| delta-BHC | 5.96 | 6.00 | 6.02 | 6042 | 0.458007 |
| Heptachlor | 6.25 | 6.28 | 6.31 | 31089 | 2.097262 |
| Hept. epoxide | 7.51 | 7.52 | 7.57 | 27741 | 2.316851 |
| g. Chlordane | 7.68 | 7.72 | 7.74 | 7232 | 0.622582 |
| a. Chlordane | 7.85 | 7.90 | 7.91 | 51996 | 4.193824 |
| 4,4'-DDE | 7.94 | 7.96 | 8.00 | 103592 | 9.812980 |
| Endrin | 8.67 | 8.71 | 8.73 | 119749 | 13.425718 |
| Endosulfan II | 8.97 | 9.00 | 9.03 | 17763 | 1.806441 |
| Endrin aldehyde | 9.52 | 9.54 | 9.58 | 16711 | 2.018898 |
| Endo. sulfate | 10.08 | 10.14 | 10.14 | 1734 | 0.197722 |
| DCB | 11.79 | 11.81 | 11.85 | 101700 | 8.902293 |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722B
Result file : 1C13088B.77R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 99.8% Conc.: 9.601056
%SSR(DCB) : 96.4% Conc.: 9.393229

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.83 | 4.86 | 56345 | 9.601056 |
| HCB | 5.52 | 5.55 | 5.58 | 3503 | 0.420739 |
| gamma-BHC | 6.25 | 6.30 | 6.31 | 6152 | 1.174133 |
| beta-BHC | 6.38 | 6.40 | 6.44 | 2926 | 0.843600 |
| Heptachlor | 6.89 | 6.92 | 6.95 | 3033 | 0.547575 |
| Telodrin | 7.58 | 7.61 | 7.64 | 48327 E | 8.855420 |
| Hept. epoxide | 8.14 | 8.15 | 8.20 | 61772 E | 11.409188 |
| o,p-DDE | 8.38 | 8.39 | 8.44 | 72602 E | 19.463413 |
| Endosulfan I | 8.68 | 8.70 | 8.74 | 4675 | 0.942269 |
| o,p-DDT | 9.47 | 9.52 | 9.53 | 68477 E | 19.395878 |
| Kepone | 9.61 | 9.67 | 9.67 | 1820 | 3.519176 |
| Endosulfan II | 9.73 | 9.74 | 9.79 | 68357 E | 14.274416 |
| 4,4'-DDT | 9.96 | 10.00 | 10.02 | 63705 E | 17.564716 |
| Endrin aldehyde | 10.17 | 10.18 | 10.23 | 2836 | 0.653001 |
| Endrin ketone | 11.28 | 11.33 | 11.34 | 23156 | 4.722812 |
| DCB | 13.32 | 13.34 | 13.38 | 47776 | 9.393229 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | B | | 9.601056 | | | | 14.83 | |
| HCB | A | | 46.389469 | | | E | ** 196.40 | |
| alpha-BHC | | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | | <0.83 | <0.17 | | | |
| beta-BHC | | | | <0.83 | <0.17 | | | |
| delta-BHC | | | | <0.83 | <0.17 | | | |
| Heptachlor | A B | 0.548 | 2.097262 | ~~0.83~~ | ~~0.17~~ | ③ | ** 117.19 | 156 |
| Aldrin | | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | ~~0.83~~ | ~~0.17~~ | | | |
| Hept. epoxide | B A | 2.32 | 11.409188 | ~~0.83~~ | ~~0.17~~ | ⑤ | ** 132.48 | |
| g. Chlordane | | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | | |
| Endrin | | | | <1.7 | <0.5 | | | |
| 4,4'-DDD | | | | <1.7 | <0.58 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B A | 1.81 | 14.274416 | ~~1.7~~ | ~~0.33~~ | ⑤ | ** 155.07 | |
| 4,4'-DDT | | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | | <3 | <1 | | | |

nitrobenzene & PCBs.

8411

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:13:47

⑤ 2014
3.31.04

# Lancaster Laboratories Single Component Data Summary

**Sample Name: 4241642R** ACF 7GP17 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13–H6722A
Result file : 1C13088.77R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13–H6722B
Result file : 1C13088B.77R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | B | 9.393229 | | | | 5.37 | |

Units: ug/kg

Reviewed by: _____ Date: 3/31/04
Verified by: _____ Date: 3/31/04

0412

%Difference = High - Low Amount divided by the Average times 100
* %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:13:47

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241642R ACF 7GP17 Sample ID: AB **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 12:34:39
**Instrument** H6722A
**Result file** 1C13088.77R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 86.0% Conc: 8.275331
%SSR(DCB) 91.4% Conc: 8.902293

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.58 | 7.62 | 139135.1718 | 240.417295 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 103592.1562 | 267.86197 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 165911.5 | 258.91332 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 128006.0546 | 274.677972 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 187059.5937 | 352.269277 | | | 6 |

Height summation: **723704.476563**
Concentration CF: **278.827967** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 12:34:39
**Instrument** H6722B
**Result file** 1C13088B.77R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 99.8% Conc: 9.601056
%SSR(DCB) 96.4% Conc: 9.393229

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 61771.90625 | 249.177768 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 72601.89843 | 260.547963 | | | 2 |
| E | 8.83 | 8.85 | 8.89 | 48322.48437 | 275.871465 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 100816.6562 | 271.511836 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 76668.3125 | 281.680981 | | | 5 |
| E | 9.97 | 10.00 | 10.03 | 63704.88671 | 228.678355 | | | 6 |

Height summation: **423886.144532**
Concentration CF: **261.244728** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 30 | |
| Aroclor-1254 | A | 278.827967 | 17 | 3.3 | E | 6.51 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

9413

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241642R** ACF 7GP17 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722A
Result file : 1C13088.77R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 86% Conc.: 8.275331
%SSR(DCB) : 91.4% Conc.: 8.902293

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **87.20** | |
| 4.81 | 4.82 | 4.87 | 1241.248657 | 5.186246 | | | 1 |
| 5.32 | 5.36 | 5.38 | 25866.28125 | 62.799102 | | | 2 |
| 5.97 | 6.00 | 6.03 | 6042.345215 | 8.898964 | | | 3 |
| 6.24 | 6.28 | 6.30 | 31088.88867 | 118.601405 | | | 5 |
| 6.71 | 6.74 | 6.77 | 30270.11328 | 95.143399 | | | 6 |
| Height Summation | | | **94508.877075** | | | | |
| Amount Avg CF: | | | **58.125823** | Linear: | | | |
| **Aroclor-1221** | | | | | **3** | **136.66** | |
| 4.54 | 4.58 | 4.60 | 2071.750244 | 13.912885 | | | 1 |
| E 4.75 | 4.76 | 4.81 | 8139.216309 | 105.15926 | | | 2 |
| 4.81 | 4.82 | 4.87 | 1241.248657 | 3.618607 | | | 3 |
| Height Summation | | | **11452.215210** | | | | |
| Amount Avg CF: | | | **40.896917** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **89.18** | |
| 4.81 | 4.82 | 4.87 | 1241.248657 | 4.720116 | | | 1 |
| E 5.32 | 5.36 | 5.38 | 25866.28125 | 145.531377 | | | 2 |
| 5.97 | 6.00 | 6.03 | 6042.345215 | 19.893801 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 31088.88867 | 267.084952 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 30270.11328 | 221.697435 | | | 6 |
| Height Summation | | | **94508.877075** | | | | |
| Amount Avg CF: | | | **131.785536** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **87.87** | |
| 4.81 | 4.82 | 4.87 | 1241.248657 | 5.646215 | | | 1 |
| E 5.32 | 5.36 | 5.38 | 25866.28125 | 72.171916 | | | 2 |
| 5.97 | 6.00 | 6.03 | 6042.345215 | 10.454005 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 31088.88867 | 139.534321 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 30270.11328 | 107.44982 | | | 6 |
| Height Summation | | | **94508.877075** | | | | |
| Amount Avg CF: | | | **67.051255** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **98.73** | |
| E 5.32 | 5.36 | 5.38 | 25866.28125 | 152.883219 | | | 1 |
| E 6.71 | 6.74 | 6.77 | 30270.11328 | 71.748395 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 125209.5234 | 619.805709 | | | 3 |
| 7.28 | 7.30 | 7.34 | 21702.47070 | 53.901853 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 165911.5 | 713.984322 | | | 6 |
| Height Summation | | | **368959.888672** | | | | |
| Amount Avg CF: | | | **322.4647** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **32.69** | |
| E 7.22 | 7.25 | 7.28 | 36731.89843 | 102.702604 | | | 1 |
| E 7.56 | 7.58 | 7.62 | 139135.1718 | 240.417295 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 103592.1562 | 267.86197 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 165911.5 | 258.91332 | | | 4 |
| E 8.45 | 8.48 | 8.51 | 128006.0546 | 274.677972 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 187059.5937 | 352.269277 | | | 6 |
| Height Summation | | | **760436.375001** | | | | |
| Amount Avg CF: | | | **249.47374** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722B
Result file : 1C13088B.77R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 99.8% Conc.: 9.601056
%SSR(DCB) : 96.4% Conc.: 9.393229

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **171.99** | |
| 5.52 | 5.55 | 5.58 | 3503.261963 | 26.774597 | | | 1 |
| 6.10 | 6.13 | 6.16 | 2244.030518 | 10.535574 | | | 2 |
| 6.74 | 6.77 | 6.80 | 4679.40918 | 13.834785 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1299.580688 | 10.457848 | | | 5 |
| 7.56 | 7.61 | 7.62 | 48327.48828 | 270.08849 | | | 6 |
| Height Summation | | | **60053.770630** | | | | |
| Amount Avg CF: | | | **66.338259** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 5.52 | 5.55 | 5.58 | 3503.261963 | 19.399115 | | | 3 |
| Height Summation | | | **3503.261963** | | | | |
| Amount Avg CF: | | | **19.399115** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **184.91** | |
| 5.52 | 5.55 | 5.58 | 3503.261963 | 24.82151 | | | 1 |
| 6.10 | 6.13 | 6.16 | 2244.030518 | 22.337897 | | | 2 |
| 6.74 | 6.77 | 6.80 | 4679.40918 | 31.812038 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1299.580688 | 24.150298 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 48327.48828 | 641.419828 | | | 6 |
| Height Summation | | | **60053.770630** | | | | |
| Amount Avg CF: | | | **148.908314** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **172.30** | |
| 5.52 | 5.55 | 5.58 | 3503.261963 | 29.237926 | | | 1 |
| 6.10 | 6.13 | 6.16 | 2244.030518 | 12.169782 | | | 2 |
| 6.73 | 6.77 | 6.79 | 4679.40918 | 16.340348 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1299.580688 | 12.608982 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 48327.48828 | 311.177829 | | | 6 |
| Height Summation | | | **60053.770630** | | | | |
| Amount Avg CF: | | | **76.306973** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **27.65** | |
| E 7.19 | 7.21 | 7.25 | 28006.24218 | 143.14585 | | | 1 |
| E 7.56 | 7.61 | 7.62 | 48327.48828 | 205.717911 | | | 2 |
| E 8.06 | 8.09 | 8.12 | 26361.23046 | 108.26203 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 61771.90625 | 227.262683 | | | 5 |
| E 8.44 | 8.47 | 8.50 | 41936.55468 | 181.655233 | | | 6 |
| Height Summation | | | **206403.421876** | | | | |
| Amount Avg CF: | | | **173.208741** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **7.55** | |
| E 8.12 | 8.15 | 8.18 | 61771.90625 | 249.177768 | | | 1 |
| E 8.36 | 8.39 | 8.42 | 72601.89843 | 260.547963 | | | 2 |
| E 8.83 | 8.85 | 8.89 | 48322.48437 | 275.871465 | | | 3 |
| E 8.98 | 9.01 | 9.04 | 100816.6562 | 271.511836 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 76668.3125 | 281.680981 | | | 5 |
| E 9.97 | 10.00 | 10.03 | 63704.88671 | 228.678355 | | | 6 |
| Height Summation | | | **423886.144532** | | | | |
| Amount Avg CF: | | | **261.244728** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **41.39** | |
| 9.23 | 9.26 | 9.29 | 59198.66796 | 185.727548 | | | 1 |
| 9.49 | 9.52 | 9.55 | 68477.13281 | 183.643683 | | | 2 |
| 9.97 | 10.00 | 10.03 | 63704.88671 | 190.224391 | | | 3 |
| 10.47 | 10.47 | 10.53 | 44436.95312 | 175.945624 | | | 4 |
| 10.78 | 10.80 | 10.84 | 26079.5625 | 53.408366 | | | 5 |
| 11.30 | 11.33 | 11.36 | 23155.62304 | 84.791594 | | | 6 |
| Height Summation | | | **285052.826173** | | | | |
| Amount Avg CF: | | | **145.623534** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:14:16

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241642R** ACF 7GP17 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722A
Result file : 1C13088.77R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 6 | 57.85 | |
| 8.33 | 8.35 | 8.39 | 74381.60937 | 140.50844 | | | 1 |
| 8.68 | 8.71 | 8.74 | 119749.3593 | 178.036081 | | | 2 |
| 9.05 | 9.08 | 9.11 | 187059.5937 | 269.164108 | | | 3 |
| 9.19 | 9.21 | 9.25 | 22080.35351 | 50.030231 | | | 4 |
| 9.91 | 9.93 | 9.97 | 71455.80468 | 70.768481 | | | 5 |
| 10.28 | 10.30 | 10.34 | 152374.0468 | 268.249205 | | | 6 |
| Height Summation | | | **627100.767579** | | | | |
| Amount Avg CF: | | | **162.792758** | Linear: | | | |
| **Chlordane** | | | | | 4 | 68.65 | |
| 6.25 | 6.28 | 6.31 | 31088.88867 | 49.725823 | | | 2 |
| 6.86 | 6.91 | 6.92 | 12395.26367 | 19.654467 | | | 3 |
| 7.68 | 7.72 | 7.74 | 7232.162598 | 6.039276 | | | 4 |
| 7.85 | 7.90 | 7.91 | 51995.69140 | 34.072281 | | | 5 |
| Height Summation | | | **102712.006348** | | | | |
| Amount Avg CF: | | | **27.372962** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 118.75 | |
| 8.70 | 8.71 | 8.76 | 119749.3593 | 1117.9094 | | | 1 |
| 10.41 | 10.42 | 10.47 | 18539.91601 | 97.427431 | | | 6 |
| Height Summation | | | **138289.275391** | | | | |
| Amount Avg CF: | | | **607.668416** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:34:39
Instrument : CP13--H6722B
Result file : 1C13088B.77R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 3 | 101.81 | |
| 6.89 | 6.92 | 6.95 | 3032.716309 | 12.940431 | | | 2 |
| 7.56 | 7.61 | 7.62 | 48327.48828 | 156.751228 | | | 3 |
| 8.51 | 8.53 | 8.57 | 25206.84960 | 50.216934 | | | 5 |
| Height Summation | | | **76567.054199** | | | | |
| Amount Avg CF: | | | **73.302864** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 40.34 | |
| 9.83 | 9.85 | 9.89 | 7469.369629 | 71.371319 | | | 3 |
| 10.17 | 10.18 | 10.23 | 2835.830078 | 39.691692 | | | 4 |
| Height Summation | | | **10305.199707** | | | | |
| Amount Avg CF: | | | **55.531506** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 17 | 3.3 | | 13.20 | 4 | 40 | |
| Aroclor-1221 | | | 30 | 10 | E | ** 71.31 | 3 | 5 | |
| Aroclor-1232 | | | 17 | 4.3 | E | 12.20 | 4 | 10 | |
| Aroclor-1242 | | | 17 | 4 | E | 12.91 | 4 | 30 | |
| Aroclor-1248 | | | 18 | 6 | E | ** 60.22 | 4 | 30 | |
| Aroclor-1254 | | | 17 | 3.3 | E | 4.61 | 4 | 40 | |
| Aroclor-1260 | | | 17 | 3.3 | | 11.13 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 91.24 | 2 | 20 | |
| Toxaphene | | | 33 | 11 | | ** 166.51 | 4 | 30 | |

Units: ug/kg

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*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:14:16

Sample Name: **4241642RACF AB7GP17 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 12:48:39pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.77R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 96627.6 | 0.544 | BV | 0.039 | 41019.42 | 0.626 |
| 2 | 3.640 | | 0.0000 | 0.000 | 1690.6 | 0.010 | VB | 0.026 | 1101.16 | 0.017 |
| 3 | 3.711 | | 0.0000 | 0.000 | 6791.1 | 0.038 | BB | 0.038 | 2946.22 | 0.045 |
| 4 | 3.862 | | 0.0000 | 0.000 | 11719.6 | 0.066 | BB | 0.036 | 5439.75 | 0.083 |
| 5 | 3.955 | | 0.0000 | 0.000 | 92068.4 | 0.518 | BB | 0.038 | 39989.10 | 0.610 |
| 6 | 4.066 | | 0.0000 | 0.000 | 38008.8 | 0.214 | BB | 0.042 | 15230.96 | 0.232 |
| 7 | 4.188 | | 0.0000 | 0.000 | 21129.3 | 0.119 | BB | 0.033 | 10534.39 | 0.161 |
| 8 | 4.310 | TCX | 248.2599 | 8.176 | 255259.1 | 1.437 | BB | 0.045 | 94227.94 | 1.437 |
| 9 | 4.494 | | 0.0000 | 0.000 | 6515.6 | 0.037 | BB | 0.050 | 2190.21 | 0.033 |
| 10 | 4.580 | | 0.0000 | 0.000 | 5917.0 | 0.033 | BB | 0.048 | 2071.75 | 0.032 |
| 11 | 4.635 | | 0.0000 | 0.000 | 987.9 | 0.006 | BB | 0.023 | 726.83 | 0.011 |
| 12 | 4.671 | | 0.0000 | 0.000 | 615.0 | 0.003 | BB | 0.023 | 438.59 | 0.007 |
| 13 | 4.761 | | 0.0000 | 0.000 | 23768.8 | 0.134 | BB | 0.049 | 8139.22 | 0.124 |
| 14 | 4.816 | | 0.0000 | 0.000 | 1841.8 | 0.010 | BB | 0.025 | 1241.25 | 0.019 |
| 15 | 4.912 | HCB | 1391.6840 | 45.833 | 2041772.0 | 11.495 | BB | 0.035 | 968383.60 | 14.769 |
| 16 | 5.115 | alpha-BHC | 20.8756 | 0.688 | 27423.8 | 0.154 | BB | 0.047 | 9666.75 | 0.147 |
| 17 | 5.240 | | 0.0000 | 0.000 | 5079.7 | 0.029 | BB | 0.031 | 2745.77 | 0.042 |
| 18 | 5.309 | | 0.0000 | 0.000 | 847.3 | 0.005 | BB | 0.025 | 555.39 | 0.008 |
| 19 | 5.363 | | 0.0000 | 0.000 | 48618.5 | 0.274 | BB | 0.031 | 25866.28 | 0.394 |
| 20 | 5.460 | | 0.0000 | 0.000 | 63100.1 | 0.355 | BB | 0.030 | 35517.77 | 0.542 |
| 21 | 5.553 | | 0.0000 | 0.000 | 45772.2 | 0.258 | BB | 0.029 | 26198.17 | 0.400 |
| 22 | 5.672 | | 0.0000 | 0.000 | 6333.2 | 0.036 | BB | 0.054 | 1969.47 | 0.030 |
| 23 | 5.776 | | 0.0000 | 0.000 | 19811.5 | 0.112 | BB | 0.041 | 8023.26 | 0.122 |
| 24 | 5.912 | | 0.0000 | 0.000 | 10152.4 | 0.057 | BB | 0.031 | 5504.31 | 0.084 |
| 25 | 5.999 | delta-BHC | 13.7402 | 0.453 | 17459.9 | 0.098 | BB | 0.048 | 6042.35 | 0.092 |
| 26 | 6.086 | | 0.0000 | 0.000 | 9503.6 | 0.054 | BV | 0.041 | 3855.22 | 0.059 |
| 27 | 6.284 | Heptachlor | 62.9179 | 2.072 | 197026.4 | 1.109 | VV | 0.106 | 31088.89 | 0.474 |
| 28 | 6.357 | | 0.0000 | 0.000 | 81233.6 | 0.457 | VV | 0.050 | 26820.26 | 0.409 |
| 29 | 6.437 | | 0.0000 | 0.000 | 98850.8 | 0.557 | VV | 0.034 | 48964.23 | 0.747 |
| 30 | 6.475 | | 0.0000 | 0.000 | 3394467.0 | 19.111 | VV | 0.058 | 975558.30 | 14.878 |
| 31 | 6.622 | | 0.0000 | 0.000 | 9722.4 | 0.055 | VB | 0.039 | 4122.91 | 0.063 |
| 32 | 6.741 | | 0.0000 | 0.000 | 93480.8 | 0.526 | BV | 0.051 | 30270.11 | 0.462 |
| 33 | 6.857 | | 0.0000 | 0.000 | 23732.6 | 0.134 | VV | 0.035 | 11286.37 | 0.172 |
| 34 | 6.906 | | 0.0000 | 0.000 | 46157.3 | 0.260 | VB | 0.062 | 12395.26 | 0.189 |
| 35 | 7.072 | | 0.0000 | 0.000 | 251932.6 | 1.418 | BB | 0.041 | 101720.80 | 1.551 |
| 36 | 7.204 | | 0.0000 | 0.000 | 208757.5 | 1.175 | BB | 0.028 | 125209.50 | 1.910 |
| 37 | 7.246 | | 0.0000 | 0.000 | 47556.1 | 0.268 | BB | 0.022 | 36731.90 | 0.560 |
| 38 | 7.303 | | 0.0000 | 0.000 | 63242.9 | 0.356 | BB | 0.049 | 21702.47 | 0.331 |
| 39 | 7.521 | Hept. epoxide | 69.5055 | 2.289 | 56120.0 | 0.316 | BV | 0.034 | 27740.77 | 0.423 |
| 40 | 7.585 | | 0.0000 | 0.000 | 383143.7 | 2.157 | VV | 0.046 | 139135.20 | 2.122 |
| 41 | 7.638 | | 0.0000 | 0.000 | 168068.4 | 0.946 | VV | 0.042 | 66150.77 | 1.009 |
| 42 | 7.719 | g. Chlordane | 18.6774 | 0.615 | 18923.7 | 0.107 | VV | 0.044 | 7232.16 | 0.110 |
| 43 | 7.836 | | 0.0000 | 0.000 | 32405.1 | 0.182 | VV | 0.047 | 11614.73 | 0.177 |
| 44 | 7.901 | a. Chlordane | 125.8147 | 4.144 | 120892.5 | 0.681 | VV | 0.039 | 51995.69 | 0.793 |
| 45 | 7.958 | 4,4'-DDE | 294.3894 | 9.695 | 251566.3 | 1.416 | VV | 0.040 | 103592.20 | 1.580 |
| 46 | 8.014 | | 0.0000 | 0.000 | 88436.2 | 0.498 | VB | 0.037 | 40074.73 | 0.611 |
| 47 | 8.118 | | 0.0000 | 0.000 | 448607.3 | 2.526 | BV | 0.045 | 165911.50 | 2.530 |
| 48 | 8.275 | | 0.0000 | 0.000 | 90441.0 | 0.509 | VB | 0.059 | 25563.67 | 0.390 |
| 49 | 8.353 | | 0.0000 | 0.000 | 194194.6 | 1.093 | BV | 0.044 | 74381.61 | 1.134 |
| 50 | 8.477 | | 0.0000 | 0.000 | 307448.8 | 1.731 | VV | 0.040 | 128006.10 | 1.952 |
| 51 | 8.553 | | 0.0000 | 0.000 | 35392.3 | 0.199 | VB | 0.036 | 16587.17 | 0.253 |
| 52 | 8.631 | | 0.0000 | 0.000 | 39227.1 | 0.221 | BV | 0.033 | 19864.38 | 0.303 |
| 53 | 8.706 | Endrin | 402.7715 | 13.265 | 454840.3 | 2.561 | VV | 0.063 | 119749.40 | 1.826 |
| 54 | 8.844 | | 0.0000 | 0.000 | 281110.9 | 1.583 | VV | 0.060 | 77556.18 | 1.183 |
| 55 | 8.942 | | 0.0000 | 0.000 | 28148.0 | 0.158 | VV | 0.031 | 15068.06 | 0.230 |
| 56 | 9.002 | Endosulfan II | 54.1932 | 1.785 | 31874.7 | 0.179 | VB | 0.030 | 17762.81 | 0.271 |
| 57 | 9.079 | | 0.0000 | 0.000 | 548844.9 | 3.090 | BV | 0.049 | 187059.60 | 2.853 |
| 58 | 9.213 | | 0.0000 | 0.000 | 58968.6 | 0.332 | VB | 0.045 | 22080.35 | 0.337 |
| 59 | 9.305 | | 0.0000 | 0.000 | 2612622.0 | 14.709 | BB | 0.046 | 953502.10 | 14.542 |
| 60 | 9.457 | | 0.0000 | 0.000 | 83750.3 | 0.472 | BB | 0.033 | 41853.98 | 0.638 |
| 61 | 9.541 | Endrin aldehyde | 60.5669 | 1.995 | 29366.5 | 0.165 | BV | 0.029 | 16711.50 | 0.255 |
| 62 | 9.596 | | 0.0000 | 0.000 | 19979.1 | 0.112 | VB | 0.031 | 10914.36 | 0.166 |
| 63 | 9.662 | | 0.0000 | 0.000 | 16899.8 | 0.095 | BB | 0.031 | 9226.61 | 0.141 |
| 64 | 9.773 | | 0.0000 | 0.000 | 78637.8 | 0.443 | BB | 0.036 | 36310.89 | 0.554 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.855 | | 0.0000 | 0.000 | 22609.6 | 0.127 | BB | 0.030 | 12679.67 | 0.193 |
| 66 | 9.931 | | 0.0000 | 0.000 | 185072.4 | 1.042 | BV | 0.043 | 71455.80 | 1.090 |
| 67 | 10.063 | | 0.0000 | 0.000 | 5114.8 | 0.029 | VB | 0.034 | 2481.20 | 0.038 |
| 68 | 10.137 | Endo. sulfate | 5.9317 | 0.195 | 2905.1 | 0.016 | BV | 0.028 | 1733.60 | 0.026 |
| 69 | 10.177 | | 0.0000 | 0.000 | 5494.3 | 0.031 | VB | 0.031 | 2911.07 | 0.044 |
| 70 | 10.241 | | 0.0000 | 0.000 | 33288.9 | 0.187 | BB | 0.026 | 21186.30 | 0.323 |
| 71 | 10.296 | | 0.0000 | 0.000 | 460554.8 | 2.593 | BV | 0.050 | 152374.10 | 2.324 |
| 72 | 10.418 | | 0.0000 | 0.000 | 50460.6 | 0.284 | VB | 0.045 | 18539.92 | 0.283 |
| 73 | 10.550 | | 0.0000 | 0.000 | 4114.0 | 0.023 | BV | 0.038 | 1801.01 | 0.027 |
| 74 | 10.593 | | 0.0000 | 0.000 | 11249.8 | 0.063 | VV | 0.039 | 4837.00 | 0.074 |
| 75 | 10.681 | | 0.0000 | 0.000 | 441329.8 | 2.485 | VV | 0.043 | 170466.90 | 2.600 |
| 76 | 10.766 | | 0.0000 | 0.000 | 39432.1 | 0.222 | VV | 0.060 | 11002.20 | 0.168 |
| 77 | 10.837 | | 0.0000 | 0.000 | 22974.6 | 0.129 | VV | 0.044 | 8786.16 | 0.134 |
| 78 | 10.883 | | 0.0000 | 0.000 | 10808.2 | 0.061 | VV | 0.036 | 4996.27 | 0.076 |
| 79 | 10.965 | | 0.0000 | 0.000 | 13576.9 | 0.076 | VV | 0.044 | 5196.16 | 0.079 |
| 80 | 11.019 | | 0.0000 | 0.000 | 6003.4 | 0.034 | VB | 0.045 | 2231.60 | 0.034 |
| 81 | 11.123 | | 0.0000 | 0.000 | 63864.6 | 0.360 | BB | 0.058 | 18375.29 | 0.280 |
| 82 | 11.214 | | 0.0000 | 0.000 | 1241.0 | 0.007 | BB | 0.024 | 862.96 | 0.013 |
| 83 | 11.310 | | 0.0000 | 0.000 | 8369.3 | 0.047 | BB | 0.036 | 3883.85 | 0.059 |
| 84 | 11.398 | | 0.0000 | 0.000 | 2020646.0 | 11.376 | BB | 0.045 | 751416.80 | 11.460 |
| 85 | 11.732 | | 0.0000 | 0.000 | 3342.3 | 0.019 | BB | 0.035 | 1571.61 | 0.024 |
| 86 | 11.815 | DCB | 267.0688 | 8.796 | 321187.8 | 1.808 | BB | 0.053 | 101700.50 | 1.551 |
| 87 | 12.078 | | 0.0000 | 0.000 | 8545.4 | 0.048 | BB | 0.058 | 2441.61 | 0.037 |
| 88 | 12.135 | | 0.0000 | 0.000 | 4593.2 | 0.026 | BB | 0.033 | 2297.45 | 0.035 |
| 89 | 12.222 | | 0.0000 | 0.000 | 2154.8 | 0.012 | BB | 0.042 | 862.41 | 0.013 |
| 90 | 12.273 | | 0.0000 | 0.000 | 28861.4 | 0.162 | BB | 0.044 | 10942.98 | 0.167 |
| 91 | 12.451 | | 0.0000 | 0.000 | 15466.3 | 0.087 | BB | 0.048 | 5382.14 | 0.082 |
| 92 | 12.592 | | 0.0000 | 0.000 | 26776.7 | 0.151 | BB | 0.073 | 6107.84 | 0.093 |
| 93 | 12.828 | | 0.0000 | 0.000 | 25104.4 | 0.141 | BB | 0.058 | 7275.80 | 0.111 |
| 94 | 12.939 | | 0.0000 | 0.000 | 12091.6 | 0.068 | BB | 0.056 | 3604.12 | 0.055 |
| 95 | 13.063 | | 0.0000 | 0.000 | 717.5 | 0.004 | BB | 0.026 | 468.49 | 0.007 |
| 96 | 13.124 | | 0.0000 | 0.000 | 3969.8 | 0.022 | BB | 0.039 | 1705.85 | 0.026 |
| 97 | 13.233 | | 0.0000 | 0.000 | 11413.7 | 0.064 | BB | 0.049 | 3871.69 | 0.059 |
| 98 | 13.329 | | 0.0000 | 0.000 | 1251.7 | 0.007 | BB | 0.054 | 386.90 | 0.006 |
| 99 | 13.443 | | 0.0000 | 0.000 | 2484.7 | 0.014 | BB | 0.042 | 978.23 | 0.015 |
| 100 | 13.493 | | 0.0000 | 0.000 | 4849.9 | 0.027 | BB | 0.080 | 1014.33 | 0.015 |
| 101 | 13.645 | | 0.0000 | 0.000 | 4905.4 | 0.028 | BB | 0.046 | 1780.62 | 0.027 |
| 102 | 13.745 | | 0.0000 | 0.000 | 3388.2 | 0.019 | BB | 0.041 | 1385.86 | 0.021 |
| 103 | 13.810 | | 0.0000 | 0.000 | 405.2 | 0.002 | BB | 0.031 | 220.29 | 0.003 |
| 104 | 13.878 | | 0.0000 | 0.000 | 16260.0 | 0.092 | BB | 0.058 | 4658.54 | 0.071 |

Total Area = 17761770.0, Total Amount = 3036.397, Total Height = 6557018.0, Sample Units = PPB

Sample Name: **4241642RACF AB7GP17 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 12:48:39pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.77R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.046 | | 0.0000 | 0.000 | 2667.5 | 0.061 | BB | 0.041 | 1081.92 | 0.058 |
| 2 | 3.116 | | 0.0000 | 0.000 | 706.8 | 0.016 | BB | 0.024 | 487.10 | 0.026 |
| 3 | 3.162 | | 0.0000 | 0.000 | 1216.0 | 0.028 | BB | 0.027 | 759.32 | 0.040 |
| 4 | 3.211 | | 0.0000 | 0.000 | 2748.1 | 0.063 | BB | 0.036 | 1269.83 | 0.068 |
| 5 | 3.340 | | 0.0000 | 0.000 | 4120.5 | 0.094 | BB | 0.046 | 1478.42 | 0.079 |
| 6 | 3.413 | | 0.0000 | 0.000 | 12213.8 | 0.278 | BB | 0.040 | 5053.56 | 0.269 |
| 7 | 3.519 | | 0.0000 | 0.000 | 3272.4 | 0.075 | BB | 0.034 | 1614.11 | 0.086 |
| 8 | 3.680 | | 0.0000 | 0.000 | 51093.3 | 1.164 | BB | 0.036 | 23495.03 | 1.250 |
| 9 | 3.757 | | 0.0000 | 0.000 | 3529.8 | 0.080 | BB | 0.035 | 1686.30 | 0.090 |
| 10 | 3.898 | | 0.0000 | 0.000 | 2494.2 | 0.057 | BB | 0.053 | 778.00 | 0.041 |
| 11 | 4.020 | | 0.0000 | 0.000 | 6184.3 | 0.141 | BB | 0.039 | 2671.46 | 0.142 |
| 12 | 4.154 | | 0.0000 | 0.000 | 17393.7 | 0.396 | BB | 0.038 | 7612.89 | 0.405 |
| 13 | 4.201 | | 0.0000 | 0.000 | 9608.1 | 0.219 | BB | 0.029 | 5538.38 | 0.295 |
| 14 | 4.291 | | 0.0000 | 0.000 | 1576.1 | 0.036 | BB | 0.030 | 874.62 | 0.047 |
| 15 | 4.417 | | 0.0000 | 0.000 | 14169.0 | 0.323 | BB | 0.048 | 4944.27 | 0.263 |
| 16 | 4.551 | | 0.0000 | 0.000 | 50610.8 | 1.153 | BB | 0.038 | 21967.74 | 1.169 |
| 17 | 4.665 | | 0.0000 | 0.000 | 4081.4 | 0.093 | BB | 0.039 | 1732.43 | 0.092 |
| 18 | 4.826 TCX | | 288.0317 | 7.820 | 120453.3 | 2.745 | BB | 0.036 | 56345.12 | 2.998 |
| 19 | 4.978 | | 0.0000 | 0.000 | 76602.2 | 1.746 | BB | 0.046 | 28021.14 | 1.491 |
| 20 | 5.183 | | 0.0000 | 0.000 | 11846.3 | 0.270 | BB | 0.058 | 3375.07 | 0.180 |
| 21 | 5.283 | | 0.0000 | 0.000 | 2282.3 | 0.052 | BB | 0.050 | 756.11 | 0.040 |
| 22 | 5.405 | | 0.0000 | 0.000 | 3913.6 | 0.089 | BB | 0.060 | 1095.38 | 0.058 |
| 23 | 5.547 HCB | | 12.6222 | 0.343 | 10197.7 | 0.232 | BB | 0.049 | 3503.26 | 0.186 |
| 24 | 5.686 | | 0.0000 | 0.000 | 28447.6 | 0.648 | BB | 0.045 | 10523.14 | 0.560 |
| 25 | 5.804 | | 0.0000 | 0.000 | 18950.2 | 0.432 | BB | 0.032 | 9876.44 | 0.525 |
| 26 | 5.928 | | 0.0000 | 0.000 | 10503.1 | 0.239 | BV | 0.031 | 5719.09 | 0.304 |
| 27 | 5.998 | | 0.0000 | 0.000 | 3897.7 | 0.089 | VB | 0.050 | 1293.42 | 0.069 |
| 28 | 6.127 | | 0.0000 | 0.000 | 7081.0 | 0.161 | BV | 0.053 | 2244.03 | 0.119 |
| 29 | 6.198 | | 0.0000 | 0.000 | 3532.5 | 0.080 | VV | 0.044 | 1342.91 | 0.071 |
| 30 | 6.262 | | 0.0000 | 0.000 | 5973.9 | 0.136 | VV | 0.034 | 2959.30 | 0.157 |
| 31 | 6.299 gamma-BHC | | 35.2240 | 0.956 | 14202.4 | 0.324 | VV | 0.038 | 6151.81 | 0.327 |
| 32 | 6.352 | | 0.0000 | 0.000 | 4923.3 | 0.112 | VV | 0.032 | 2564.34 | 0.136 |
| 33 | 6.395 beta-BHC | | 25.3080 | 0.687 | 7432.7 | 0.169 | VV | 0.042 | 2926.04 | 0.156 |
| 34 | 6.474 | | 0.0000 | 0.000 | 5352.3 | 0.122 | VV | 0.048 | 1861.44 | 0.099 |
| 35 | 6.533 | | 0.0000 | 0.000 | 9720.9 | 0.222 | VV | 0.052 | 3098.02 | 0.165 |
| 36 | 6.626 | | 0.0000 | 0.000 | 16470.8 | 0.375 | VV | 0.033 | 8399.23 | 0.447 |
| 37 | 6.769 | | 0.0000 | 0.000 | 17122.7 | 0.390 | VB | 0.061 | 4679.41 | 0.249 |
| 38 | 6.922 Heptachlor | | 16.4273 | 0.446 | 5649.9 | 0.129 | BB | 0.031 | 3032.72 | 0.161 |
| 39 | 7.091 | | 0.0000 | 0.000 | 2543.5 | 0.058 | BB | 0.033 | 1299.58 | 0.069 |
| 40 | 7.164 | | 0.0000 | 0.000 | 1763.8 | 0.040 | BV | 0.034 | 870.23 | 0.046 |
| 41 | 7.215 | | 0.0000 | 0.000 | 61787.3 | 1.408 | VV | 0.037 | 28006.24 | 1.490 |
| 42 | 7.278 | | 0.0000 | 0.000 | 19404.7 | 0.442 | VV | 0.038 | 8455.35 | 0.450 |
| 43 | 7.331 | | 0.0000 | 0.000 | 9471.1 | 0.216 | VV | 0.048 | 3308.69 | 0.176 |
| 44 | 7.425 | | 0.0000 | 0.000 | 62228.8 | 1.418 | VV | 0.039 | 26280.34 | 1.398 |
| 45 | 7.535 | | 0.0000 | 0.000 | 1440.6 | 0.033 | VV | 0.036 | 675.39 | 0.036 |
| 46 | 7.606 Telodrin | | 265.6626 | 7.212 | 128540.6 | 2.929 | VB | 0.044 | 48327.49 | 2.571 |
| 47 | 7.791 | | 0.0000 | 0.000 | 154636.9 | 3.524 | BB | 0.039 | 66841.20 | 3.556 |
| 48 | 7.963 | | 0.0000 | 0.000 | 5976.0 | 0.136 | BV | 0.034 | 2914.28 | 0.155 |
| 49 | 8.011 | | 0.0000 | 0.000 | 24411.8 | 0.556 | VV | 0.048 | 8463.11 | 0.450 |
| 50 | 8.088 | | 0.0000 | 0.000 | 59452.3 | 1.355 | VV | 0.038 | 26361.23 | 1.402 |
| 51 | 8.150 Hept. epoxide | | 342.2756 | 9.292 | 141675.6 | 3.228 | VV | 0.038 | 61771.91 | 3.286 |
| 52 | 8.258 | | 0.0000 | 0.000 | 25464.0 | 0.580 | VV | 0.037 | 11354.47 | 0.604 |
| 53 | 8.308 | | 0.0000 | 0.000 | 38160.0 | 0.870 | VV | 0.037 | 17352.58 | 0.923 |
| 54 | 8.387 o,p-DDE | | 583.9024 | 15.852 | 160433.1 | 3.656 | VV | 0.037 | 72601.90 | 3.863 |
| 55 | 8.469 | | 0.0000 | 0.000 | 94659.6 | 2.157 | VV | 0.038 | 41936.55 | 2.231 |
| 56 | 8.531 | | 0.0000 | 0.000 | 62859.5 | 1.432 | VB | 0.042 | 25206.85 | 1.341 |
| 57 | 8.699 Endosulfan I | | 28.2681 | 0.767 | 9914.3 | 0.226 | BB | 0.035 | 4674.55 | 0.249 |
| 58 | 8.777 | | 0.0000 | 0.000 | 48488.5 | 1.105 | BB | 0.033 | 24274.21 | 1.291 |
| 59 | 8.855 | | 0.0000 | 0.000 | 93156.0 | 2.123 | BB | 0.032 | 48322.48 | 2.571 |
| 60 | 8.937 | | 0.0000 | 0.000 | 27679.2 | 0.631 | BV | 0.031 | 14892.77 | 0.792 |
| 61 | 9.007 | | 0.0000 | 0.000 | 254205.6 | 5.793 | VB | 0.042 | 100816.70 | 5.364 |
| 62 | 9.140 | | 0.0000 | 0.000 | 33739.1 | 0.769 | BV | 0.047 | 11950.12 | 0.636 |
| 63 | 9.257 | | 0.0000 | 0.000 | 147081.0 | 3.352 | VV | 0.041 | 59198.67 | 3.150 |
| 64 | 9.293 | | 0.0000 | 0.000 | 166526.2 | 3.795 | VB | 0.036 | 76668.31 | 4.079 |

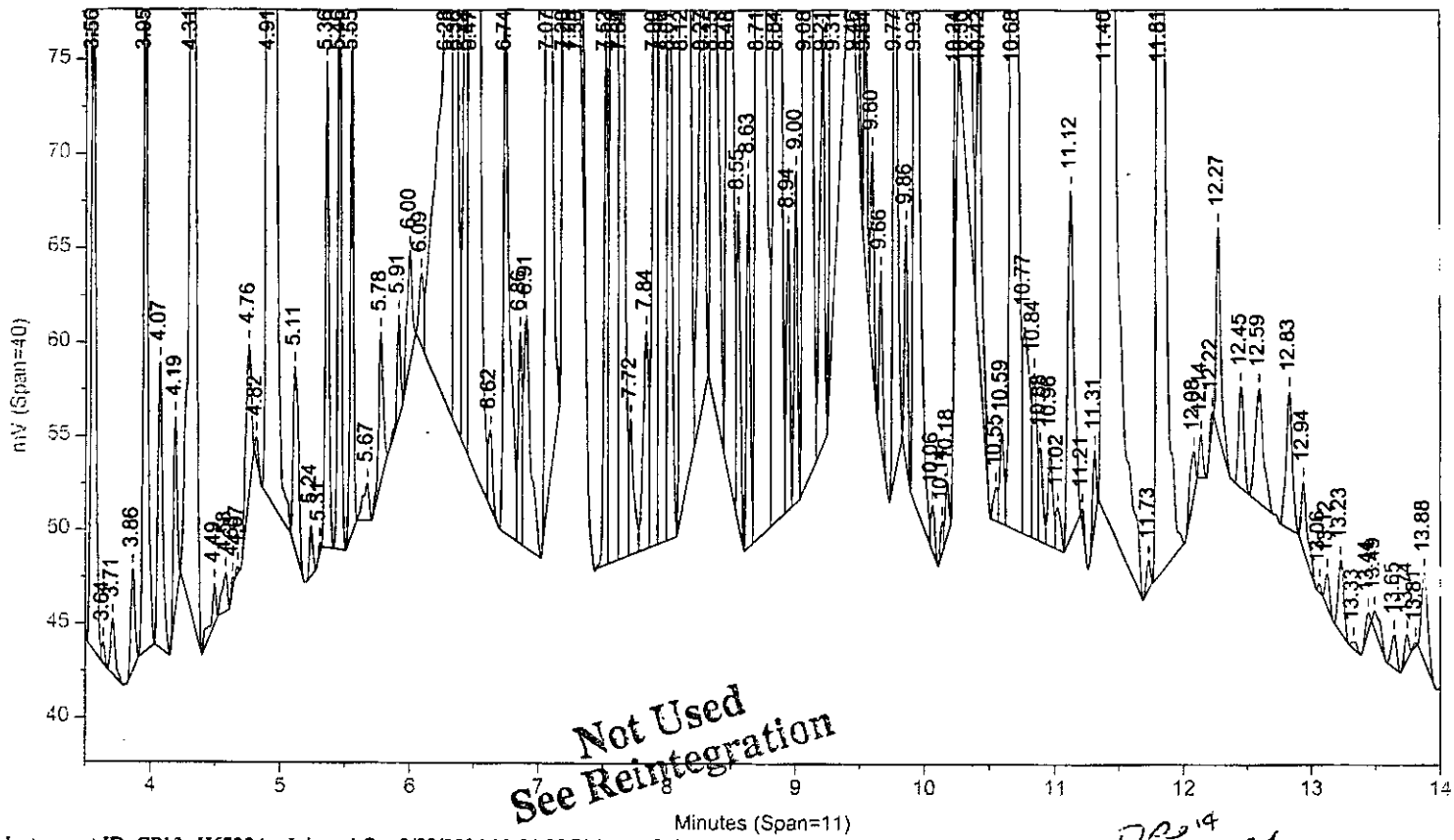
9418

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.437 | | 0.0000 | 0.000 | 42683.4 | 0.973 | BV | 0.043 | 16668.04 | 0.887 |
| 66 | 9.515 | o,p-DDT | 581.8763 | 15.797 | 158939.3 | 3.622 | VB | 0.039 | 68477.13 | 3.643 |
| 67 | 9.671 | Kepone | 105.5753 | 2.866 | 3583.4 | 0.082 | BV | 0.033 | 1820.26 | 0.097 |
| 68 | 9.737 | Endosulfan II | 428.2325 | 11.626 | 230932.5 | 5.262 | VB | 0.056 | 68357.30 | 3.637 |
| 69 | 9.854 | | 0.0000 | 0.000 | 13710.0 | 0.312 | BB | 0.031 | 7469.37 | 0.397 |
| 70 | 9.947 | | 0.0000 | 0.000 | 191732.0 | 4.369 | BB | 0.029 | 108808.70 | 5.789 |
| 71 | 9.995 | 4,4'-DDT | 526.9415 | 14.306 | 97044.2 | 2.211 | BB | 0.025 | 63704.89 | 3.389 |
| 72 | 10.106 | | 0.0000 | 0.000 | 5752.1 | 0.131 | BB | 0.026 | 3655.13 | 0.194 |
| 73 | 10.138 | | 0.0000 | 0.000 | 9583.0 | 0.218 | BB | 0.022 | 7294.79 | 0.388 |
| 74 | 10.175 | Endrin aldehyde | 19.5900 | 0.532 | 2961.2 | 0.067 | BB | 0.017 | 2835.83 | 0.151 |
| 75 | 10.299 | | 0.0000 | 0.000 | 16347.8 | 0.373 | BB | 0.049 | 5594.81 | 0.298 |
| 76 | 10.472 | | 0.0000 | 0.000 | 126580.1 | 2.884 | BB | 0.047 | 44436.95 | 2.364 |
| 77 | 10.595 | | 0.0000 | 0.000 | 10821.0 | 0.247 | BB | 0.029 | 6180.57 | 0.329 |
| 78 | 10.673 | | 0.0000 | 0.000 | 36091.1 | 0.822 | BB | 0.033 | 18495.42 | 0.984 |
| 79 | 10.738 | | 0.0000 | 0.000 | 87787.5 | 2.000 | BB | 0.032 | 45873.29 | 2.441 |
| 80 | 10.804 | | 0.0000 | 0.000 | 47251.4 | 1.077 | BB | 0.030 | 26079.56 | 1.388 |
| 81 | 10.924 | | 0.0000 | 0.000 | 8904.1 | 0.203 | BB | 0.026 | 5784.21 | 0.308 |
| 82 | 10.969 | | 0.0000 | 0.000 | 4743.6 | 0.108 | BB | 0.025 | 3161.20 | 0.168 |
| 83 | 11.103 | | 0.0000 | 0.000 | 124208.4 | 2.830 | BB | 0.038 | 53989.65 | 2.872 |
| 84 | 11.331 | Endrin ketone | 141.6844 | 3.847 | 90629.6 | 2.065 | BB | 0.065 | 23155.62 | 1.232 |
| 85 | 11.575 | | 0.0000 | 0.000 | 8522.6 | 0.194 | BB | 0.048 | 2935.68 | 0.156 |
| 86 | 11.679 | | 0.0000 | 0.000 | 2841.6 | 0.065 | BB | 0.041 | 1142.95 | 0.061 |
| 87 | 11.763 | | 0.0000 | 0.000 | 4418.2 | 0.101 | BB | 0.057 | 1285.61 | 0.068 |
| 88 | 11.883 | | 0.0000 | 0.000 | 694.2 | 0.016 | BB | 0.032 | 365.34 | 0.019 |
| 89 | 11.944 | | 0.0000 | 0.000 | 450313.3 | 10.261 | BB | 0.041 | 184606.10 | 9.822 |
| 90 | 12.106 | | 0.0000 | 0.000 | 4691.5 | 0.107 | BB | 0.045 | 1736.18 | 0.092 |
| 91 | 12.217 | | 0.0000 | 0.000 | 18495.0 | 0.421 | BB | 0.042 | 7269.19 | 0.387 |
| 92 | 12.305 | | 0.0000 | 0.000 | 2514.9 | 0.057 | BB | 0.065 | 648.63 | 0.035 |
| 93 | 12.453 | | 0.0000 | 0.000 | 205.6 | 0.005 | BB | 0.017 | 205.01 | 0.011 |
| 94 | 12.518 | | 0.0000 | 0.000 | 334.1 | 0.008 | BB | 0.021 | 266.23 | 0.014 |
| 95 | 12.578 | | 0.0000 | 0.000 | 1206.1 | 0.027 | BB | 0.032 | 625.37 | 0.033 |
| 96 | 12.649 | | 0.0000 | 0.000 | 2979.1 | 0.068 | BB | 0.042 | 1177.28 | 0.063 |
| 97 | 12.760 | | 0.0000 | 0.000 | 5226.4 | 0.119 | BB | 0.037 | 2363.47 | 0.126 |
| 98 | 12.812 | | 0.0000 | 0.000 | 964.7 | 0.022 | BB | 0.023 | 713.88 | 0.038 |
| 99 | 12.988 | | 0.0000 | 0.000 | 2291.6 | 0.052 | BB | 0.042 | 914.51 | 0.049 |
| 100 | 13.050 | | 0.0000 | 0.000 | 1245.1 | 0.028 | BB | 0.043 | 483.03 | 0.026 |
| 101 | 13.143 | | 0.0000 | 0.000 | 898.4 | 0.020 | BB | 0.043 | 344.27 | 0.018 |
| 102 | 13.248 | | 0.0000 | 0.000 | 5397.1 | 0.123 | BB | 0.038 | 2343.04 | 0.125 |
| 103 | 13.344 | DCB | 281.7969 | 7.650 | 138499.6 | 3.156 | BB | 0.048 | 47775.59 | 2.542 |
| 104 | 13.448 | | 0.0000 | 0.000 | 1696.0 | 0.039 | BB | 0.039 | 722.00 | 0.038 |
| 105 | 13.686 | | 0.0000 | 0.000 | 14849.6 | 0.338 | BB | 0.069 | 3594.73 | 0.191 |
| 106 | 13.886 | | 0.0000 | 0.000 | 1958.4 | 0.045 | BB | 0.055 | 592.46 | 0.032 |

Total Area = 4388469.0, Total Amount = 3683.418, Total Height = 1879591.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.77R

—— C:\CPWIN\DATA1\1C13088.77R

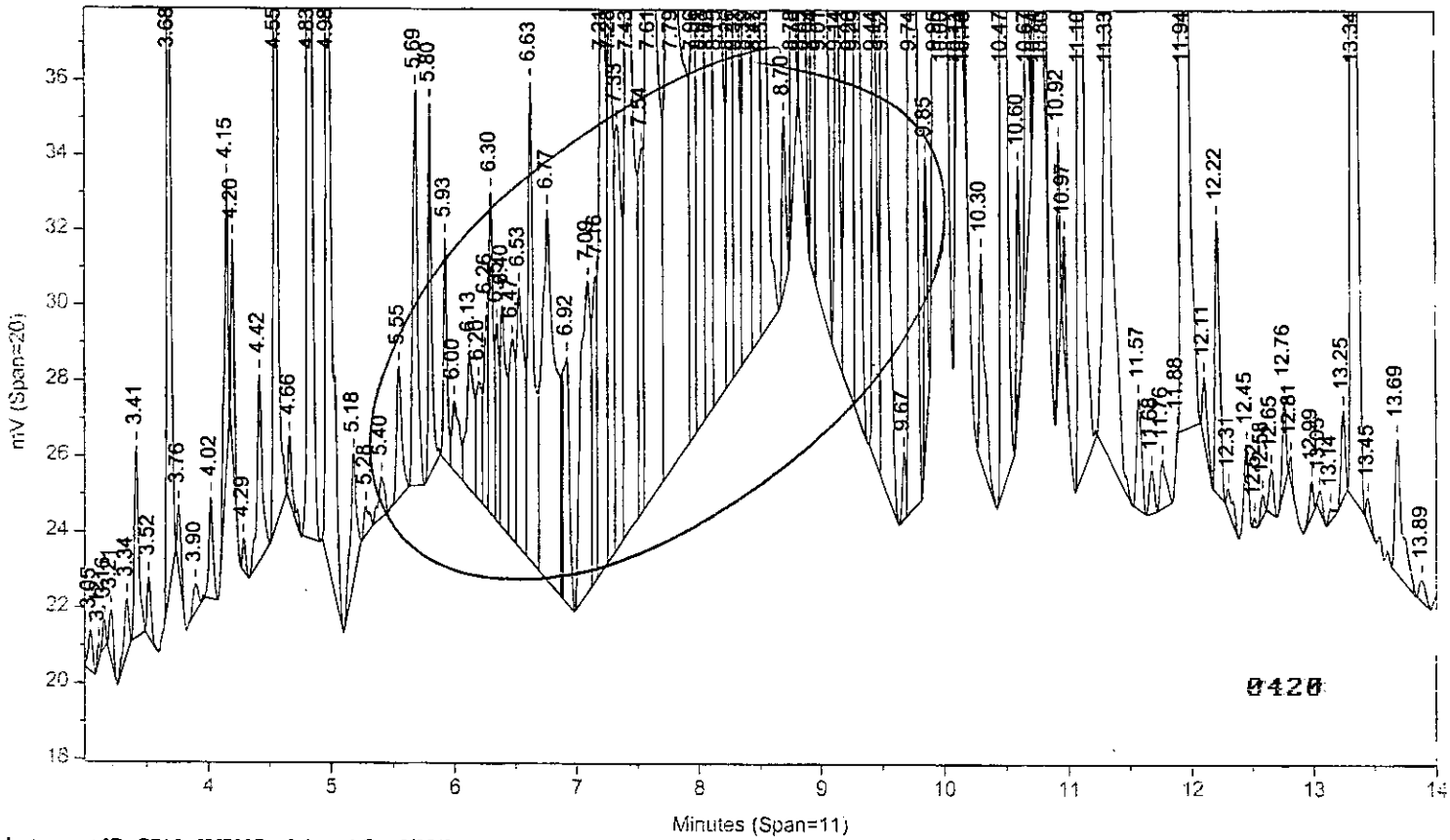



Instrument ID: CP13--H6722A Injected On: 3/30/2004 12:34:39 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

DR 3.31.04

File: C:\CPWIN\DATA1\1C13088B.77R

—— C:\CPWIN\DATA1\1C13088B.77R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 12:34:39 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.77R

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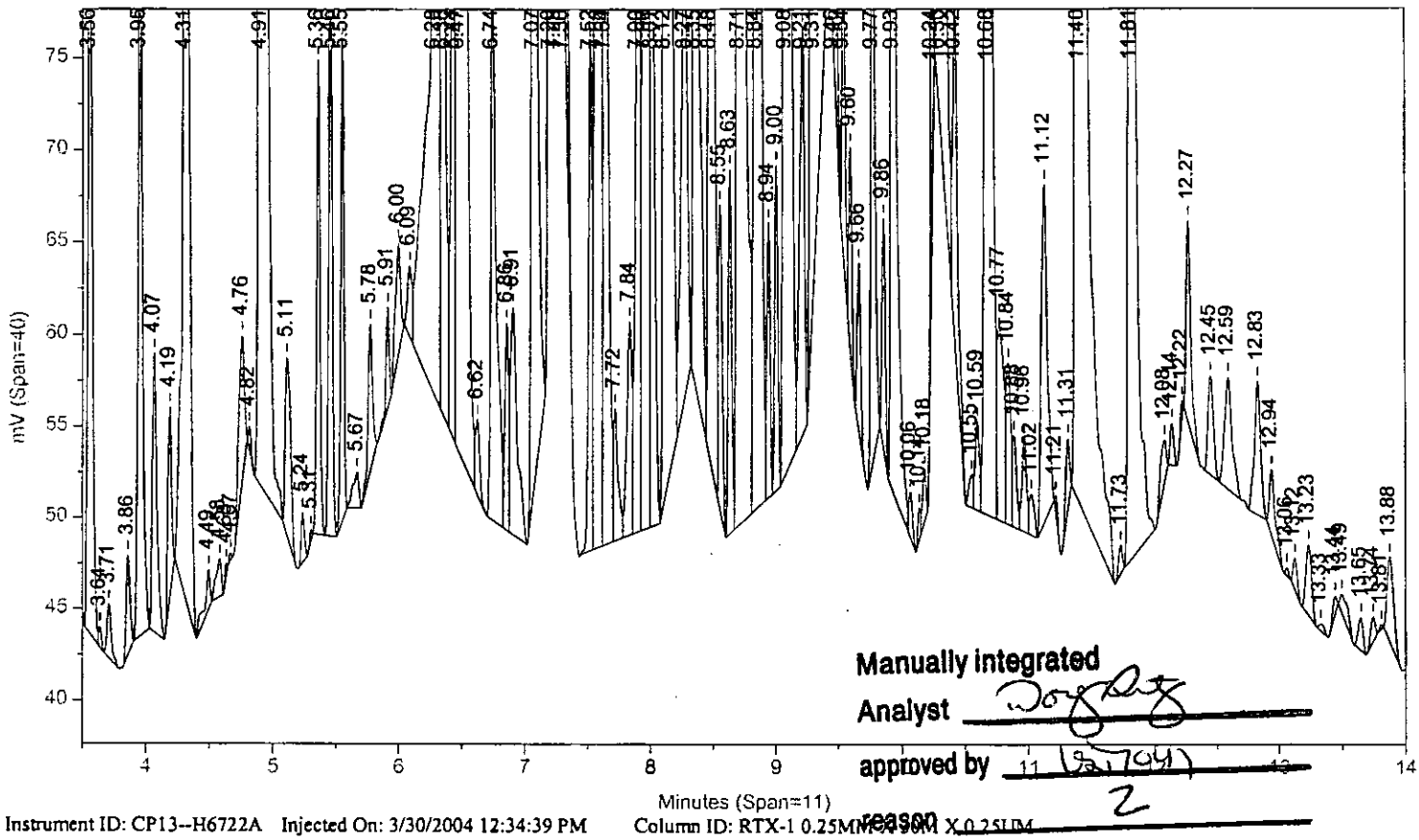


Instrument ID: CP13--H6722A Injected On: 3/30/2004 12:34:39 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.77R

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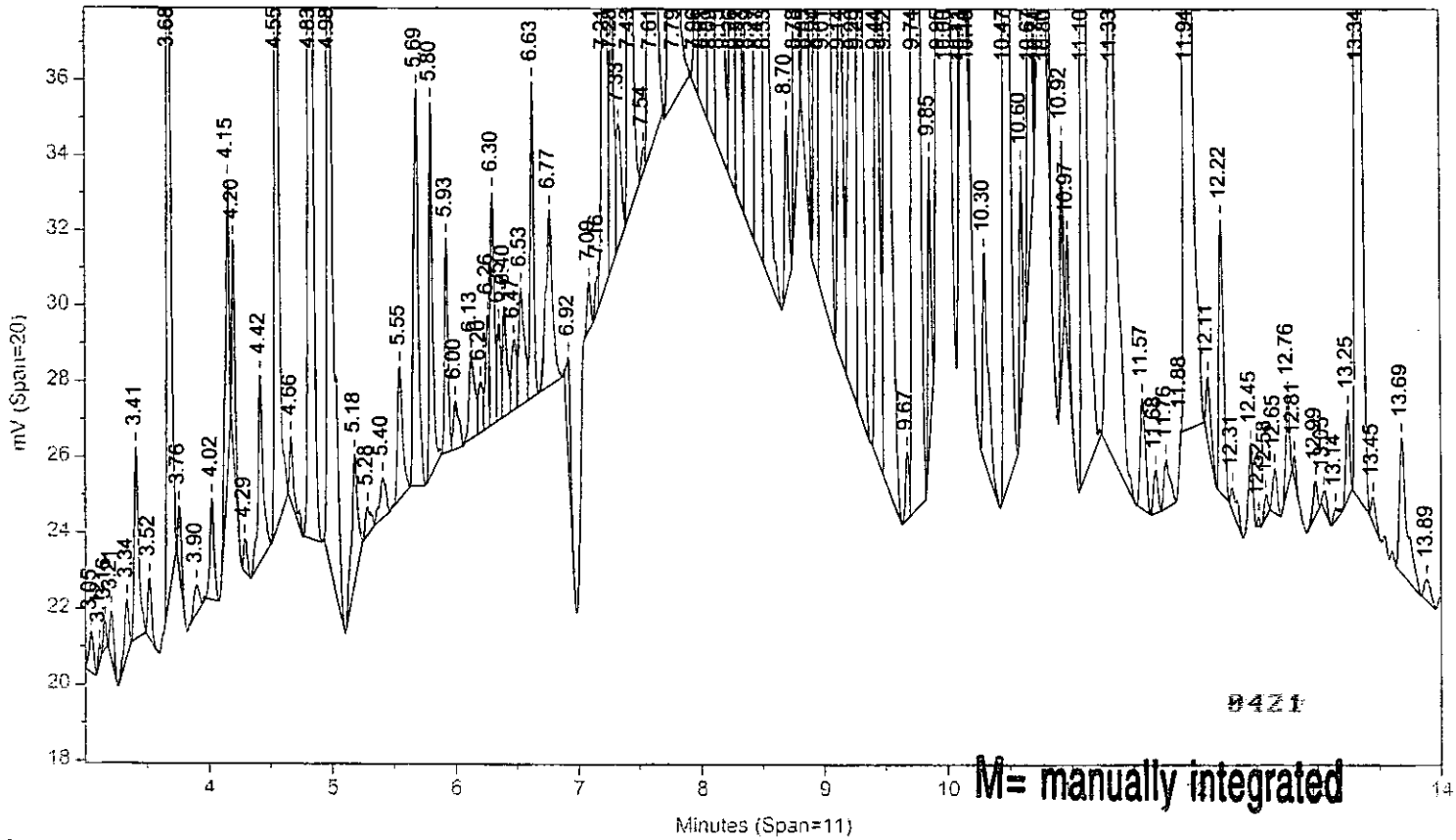



Instrument ID: CP13--H6722B Injected On: 3/30/2004 12:34:39 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

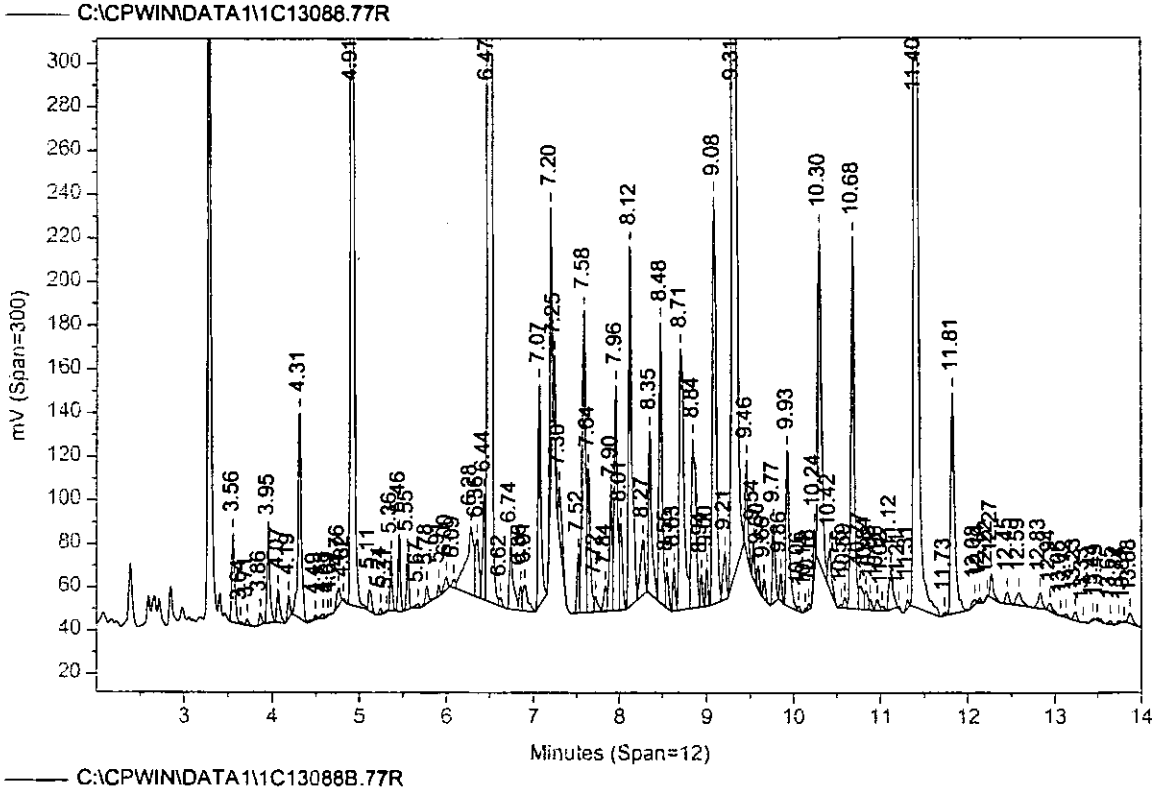
Sample Weight: 30 Dilution Factor: 10
Analyst: 120

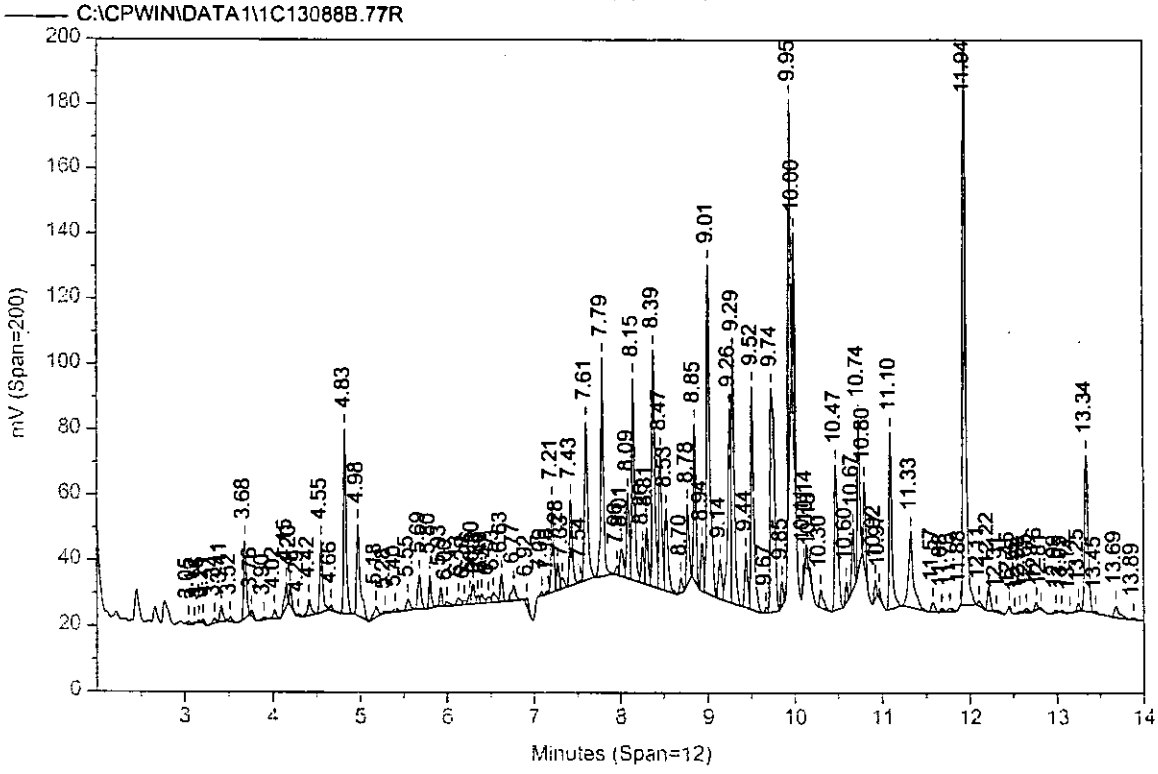
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 94228 | 8.27533 | TCX | 4.826 | 56345 | 9.60106 | TCX |
| 4.912 | 968384 | 46.38947 | HCB | 5.547 | 3503 | .42074 | HCB |
| 5.115 | 9667 | .69585 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.999 | 6042 | .45801 | delta-BHC | . | 0 | . | delta-BHC |
| 6.284 | 31089 | 2.09726 | Heptachlor | 6.922 | 3033 | .54758 | Heptachlor |
| . | 0 | . | gamma-BHC | 6.299 | 6152 | 1.17413 | gamma-BHC |
| . | 0 | . | beta-BHC | 6.395 | 2926 | .8436 | beta-BHC |
| 7.521 | 27741 | 3.62151 | o,p-DDE | 8.387 | 72602 | 19.46341 | o,p-DDE |
| . | 0 | . | Telodrin | 7.606 | 48327 | 8.85542 | Telodrin |
| 7.719 | 7232 | .62258 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.901 | 51996 | 4.19382 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.958 | 103592 | 9.81298 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.15 | 61772 | 11.40919 | Hept. epoxide |
| 8.553 | 16587 | 2.15535 | o,p-DDT | 9.515 | 68477 | 19.39588 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.699 | 4675 | .94227 | Endosulfan I |
| 8.706 | 119749 | 13.42572 | Endrin | . | 0 | . | Endrin |
| 9.002 | 17763 | 1.80644 | Endosulfan II | 9.737 | 68357 | 14.27442 | Endosulfan II |
| 9.541 | 16711 | 2.0189 | Endrin aldehyde | 10.175 | 2836 | .653 | Endrin aldehyde |
| . | 0 | . | Kepone | 9.671 | 1820 | 3.51918 | Kepone |
| . | 0 | . | 4,4'-DDT | 9.995 | 63705 | 17.56472 | 4,4'-DDT |
| 10.137 | 1734 | .19772 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.331 | 23156 | 4.72281 | Endrin ketone |
| 11.815 | 101700 | 8.90229 | DCB | 13.344 | 47776 | 9.39323 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 8:27:52 AM
File Reported On: 3/31/2004 at 8:27:54 AM

0422

10X REPLOTS


C:\CPWIN\DATA1\1C13088.77R
mV (Span=300)
Minutes (Span=12)


C:\CPWIN\DATA1\1C13088B.77R
mV (Span=200)
Minutes (Span=12)

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241643R** ACF 7GP18 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13–H6722A
Result file : 1C13088.78R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 81.6% Conc.: 7.846811
%SSR(DCB) : 85.8% Conc.: 8.357573

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 89349 | 7.846811 |
| **HCB** | 4.86 | 4.90 | 4.92 | 927327 E | 44.422695 |
| **alpha-BHC** | 5.11 | 5.11 | 5.17 | 4341 | 0.312477 |
| **Hept. epoxide** | 7.51 | 7.52 | 7.57 | 14201 | 1.186003 |
| **g. Chlordane** | 7.68 | 7.72 | 7.74 | 4752 | 0.409055 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 27466 | 2.215362 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 54891 | 5.199625 |
| **Endrin** | 8.67 | 8.71 | 8.73 | 56773 | 6.365164 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 6657 | 0.677008 |
| **Endrin aldehyde** | 9.52 | 9.54 | 9.58 | 7759 | 0.937308 |
| **Methoxychlor** | 9.70 | 9.72 | 9.76 | 9257 | 1.834296 |
| **DCB** | 11.79 | 11.82 | 11.85 | 95478 | 8.357573 |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13–H6722B
Result file : 1C13088B.78R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.1% Conc.: 9.145467
%SSR(DCB) : 88.3% Conc.: 8.596078

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.83 | 4.86 | 53671 | 9.145467 |
| **HCB** | 5.52 | 5.56 | 5.58 | 2412 | 0.289644 |
| **gamma-BHC** | 6.25 | 6.30 | 6.31 | 2868 | 0.547409 |
| **beta-BHC** | 6.38 | 6.43 | 6.44 | 603 | 0.173722 |
| **Heptachlor** | 6.89 | 6.92 | 6.95 | 5661 | 1.022121 |
| **Telodrin** | 7.58 | 7.60 | 7.64 | 15656 | 2.868808 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 39766 E | 7.344658 |
| **o,p-DDE** | 8.38 | 8.39 | 8.44 | 45197 | 12.116588 |
| **a. Chlordane** | 8.59 | 8.62 | 8.65 | 1436 | 0.255231 |
| **Endosulfan I** | 8.68 | 8.70 | 8.74 | 2826 | 0.569713 |
| **o,p-DDT** | 9.47 | 9.52 | 9.53 | 33734 | 9.554887 |
| **4,4'-DDD** | 9.55 | 9.59 | 9.61 | 2474 | 0.737535 |
| **Endosulfan II** | 9.73 | 9.74 | 9.79 | 32200 | 6.724020 |
| **4,4'-DDT** | 9.96 | 10.00 | 10.02 | 30310 | 8.356979 |
| **Endrin aldehyde** | 10.17 | 10.18 | 10.23 | 1444 | 0.332581 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 9156 | 1.867439 |
| **DCB** | 13.32 | 13.35 | 13.38 | 43721 | 8.596078 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | B | 9.145467 | | | | | 15.29 | |
| HCB | A | 44.422695 | | | | E | ** 197.41 | |
| alpha-BHC | | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | | <0.83 | <0.17 | | | |
| beta-BHC | | | | <0.83 | <0.17 | | | |
| delta-BHC | | | | <0.83 | <0.17 | | | |
| Heptachlor | | | | <0.83 | <0.17 | | | |
| Aldrin | | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | 612 W | | | | |
| Hept. epoxide | B (A) | 1.19 | 7.344658 | ~~0.83~~ | ~~0.17~~ | ~~E~~ (E) | ** 144.39 | |
| g. Chlordane | | | | <0.9 | <0.3 | | | surface |
| a. Chlordane | A (B) | 0.255 | 2.215362 | < 0.83 | ~~0.17~~ (E) | | ** 158.68 | due to |
| 4,4'-DDE | | | | <1.7 | <0.33 | | | PCBs |
| Endosulfan I | | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | | |
| Endrin | | | | <1.7 | <0.5 | | | |
| 4,4'-DDD | | | | <1.7 | <0.58 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B (A) | 0.68 | 6.724020 | < 1.7 | ~~0.33~~ (E) | | ** 163.41 | ~~8424~~ |
| 4,4'-DDT | | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | | <3 | <1 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:16:48

(E) 00219
33104

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241643R** ACF 7GP18 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722A
Result file : 1C13088.78R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722B
Result file : 1C13088B.78R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | B | 8.596078 | | | | 2.81 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

9425

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:16:48

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241643R ACF 7GP18 Sample ID: AB **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 12:55:16
**Instrument** H6722A
**Result file** 1C13088.78R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 81.6% Conc: 7.846811
%SSR(DCB) 85.8% Conc: 8.357573

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.59 | 7.62 | 76955.74218 | 132.974942 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 54890.59375 | 141.932586 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 91170.67187 | 142.276463 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 69722.39843 | 149.611728 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 94940.09375 | 178.790499 | | | 6 |

Height summation: **387679.500001**
Concentration CF: **149.117244** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 12:55:16
**Instrument** H6722B
**Result file** 1C13088B.78R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 95.1% Conc: 9.145467
%SSR(DCB) 88.3% Conc: 8.596078

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 39765.63281 | 160.40806 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 45196.96875 | 162.199315 | | | 2 |
| E | 8.83 | 8.86 | 8.89 | 28545.55078 | 162.965605 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 59255.01953 | 159.581162 | | | 4 |
| E | 9.26 | 9.30 | 9.32 | 43149.96484 | 158.533872 | | | 5 |
| E | 9.97 | 10.00 | 10.03 | 30309.65039 | 108.801088 | | | 6 |

Height summation: **246222.78711**
Concentration CF: **152.081517** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | (3) | | 4 | 30 | |
| Aroclor-1254 | B | 152.081517 | 17 | 3.3 | E 4/9/04 | 1.97 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

9426

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241643R** ACF 7GP18 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722A
Result file : 1C13088.78R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 81.6% Conc.: 7.846811
%SSR(DCB) : 85.8% Conc.: 8.357573

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **2** | **110.23** | |
| 5.32 | 5.36 | 5.38 | 3127.759277 | 7.593688 | | | 2 |
| 6.71 | 6.74 | 6.77 | 19493.48632 | 61.270882 | | | 6 |
| Height Summation | | | **22621.245605** | | | | |
| Amount Avg CF: | | | **34.432285** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 4.54 | 4.59 | 4.60 | 1287.538086 | 8.64649 | | | 1 |
| Height Summation | | | **1287.538086** | | | | |
| Amount Avg CF: | | | **8.64649** | Linear: | | | |
| **Aroclor-1232** | | | | | **2** | **110.38** | |
| 5.32 | 5.36 | 5.38 | 3127.759277 | 17.597702 | | | 2 |
| E 6.71 | 6.74 | 6.77 | 19493.48632 | 142.769731 | | | 6 |
| Height Summation | | | **22621.245605** | | | | |
| Amount Avg CF: | | | **80.183717** | Linear: | | | |
| **Aroclor-1242** | | | | | **2** | **109.74** | |
| 5.32 | 5.36 | 5.38 | 3127.759277 | 8.727052 | | | 2 |
| E 6.71 | 6.74 | 6.77 | 19493.48632 | 69.196028 | | | 6 |
| Height Summation | | | **22621.245605** | | | | |
| Amount Avg CF: | | | **38.96154** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **112.43** | |
| 5.32 | 5.36 | 5.38 | 3127.759277 | 18.486689 | | | 1 |
| 6.71 | 6.74 | 6.77 | 19493.48632 | 46.20486 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 50203.18359 | 248.513204 | | | 3 |
| 7.28 | 7.30 | 7.34 | 13174.56347 | 32.721315 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 91170.67187 | 392.344294 | | | 6 |
| Height Summation | | | **177169.664551** | | | | |
| Amount Avg CF: | | | **147.654072** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **27.08** | |
| 7.22 | 7.25 | 7.28 | 24279.01562 | 67.88427 | | | 1 |
| E 7.56 | 7.59 | 7.62 | 76955.74218 | 132.974942 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 54890.59375 | 141.932586 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 91170.67187 | 142.276463 | | | 4 |
| E 8.45 | 8.48 | 8.51 | 69722.39843 | 149.611728 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 94940.09375 | 178.790499 | | | 6 |
| Height Summation | | | **411958.515626** | | | | |
| Amount Avg CF: | | | **135.578415** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **59.59** | |
| 8.33 | 8.35 | 8.39 | 36321.10546 | 68.61134 | | | 1 |
| 8.68 | 8.71 | 8.74 | 56773.45703 | 84.407331 | | | 2 |
| 9.05 | 9.08 | 9.11 | 94940.09375 | 136.611361 | | | 3 |
| 9.19 | 9.21 | 9.25 | 9027.349609 | 20.4544 | | | 4 |
| 9.91 | 9.93 | 9.97 | 30201.3125 | 29.91081 | | | 5 |
| 10.28 | 10.30 | 10.34 | 57055.10156 | 100.44352 | | | 6 |
| Height Summation | | | **284318.419922** | | | | |
| Amount Avg CF: | | | **73.40646** | Linear: | | | |
| **Chlordane** | | | | | **3** | **69.43** | |
| 6.86 | 6.91 | 6.92 | 5563.492188 | 8.821714 | | | 3 |
| 7.68 | 7.72 | 7.74 | 4751.746582 | 3.967984 | | | 4 |
| 7.85 | 7.90 | 7.91 | 27466.40234 | 17.998472 | | | 5 |
| Height Summation | | | **37781.641114** | | | | |
| Amount Avg CF: | | | **10.262723** | Linear: | | | |

interfice w/ 7120

$\bar{X}_s = 140.126$
RSD: 12.7

## Analysis Report (B)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722B
Result file : 1C13088B.78R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 95.1% Conc.: 9.145467
%SSR(DCB) : 88.3% Conc.: 8.596078

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **4** | **97.93** | |
| 5.52 | 5.56 | 5.58 | 2411.706055 | 18.432095 | | | 1 |
| 6.74 | 6.77 | 6.80 | 3888.070557 | 11.495173 | | | 3 |
| 7.07 | 7.09 | 7.13 | 3165.739502 | 25.475004 | | | 5 |
| 7.56 | 7.60 | 7.62 | 15656.20507 | 87.498046 | | | 6 |
| Height Summation | | | **25121.721192** | | | | |
| Amount Avg CF: | | | **35.72508** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 5.52 | 5.56 | 5.58 | 2411.706055 | 13.354686 | | | 3 |
| Height Summation | | | **2411.706055** | | | | |
| Amount Avg CF: | | | **13.354686** | Linear: | | | |
| **Aroclor-1232** | | | | | **4** | **114.35** | |
| 5.52 | 5.56 | 5.58 | 2411.706055 | 17.087556 | | | 1 |
| 6.74 | 6.77 | 6.80 | 3888.070557 | 26.432279 | | | 3 |
| 7.07 | 7.09 | 7.13 | 3165.739502 | 58.829401 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 15656.20507 | 207.794792 | | | 6 |
| Height Summation | | | **25121.721192** | | | | |
| Amount Avg CF: | | | **77.536007** | Linear: | | | |
| **Aroclor-1242** | | | | | **4** | **97.54** | |
| 5.52 | 5.56 | 5.58 | 2411.706055 | 20.127893 | | | 1 |
| 6.73 | 6.77 | 6.79 | 3888.070557 | 13.577019 | | | 3 |
| 7.07 | 7.09 | 7.13 | 3165.739502 | 30.715102 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 15656.20507 | 100.809375 | | | 6 |
| Height Summation | | | **25121.721192** | | | | |
| Amount Avg CF: | | | **41.307347** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **42.12** | |
| E 7.19 | 7.22 | 7.25 | 19218.41210 | 98.229385 | | | 1 |
| 7.56 | 7.60 | 7.62 | 15656.20507 | 66.644511 | | | 2 |
| E 8.06 | 8.09 | 8.12 | 18907.84960 | 77.651997 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 39765.63281 | 146.300235 | | | 5 |
| E 8.44 | 8.47 | 8.50 | 41495.27343 | 179.743749 | | | 6 |
| Height Summation | | | **135043.373047** | | | | |
| Amount Avg CF: | | | **113.713975** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **13.98** | |
| E 8.12 | 8.15 | 8.18 | 39765.63281 | 160.40806 | | | 1 |
| E 8.36 | 8.39 | 8.42 | 45196.96875 | 162.199315 | | | 2 |
| E 8.83 | 8.86 | 8.89 | 28545.55078 | 162.965605 | | | 3 |
| E 8.98 | 9.01 | 9.04 | 59255.01953 | 159.581162 | | | 4 |
| E 9.26 | 9.30 | 9.32 | 43149.96484 | 158.533872 | | | 5 |
| E 9.97 | 10.00 | 10.03 | 30309.65039 | 108.801088 | | | 6 |
| Height Summation | | | **246222.787110** | | | | |
| Amount Avg CF: | | | **152.081517** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **47.40** | |
| 9.23 | 9.26 | 9.29 | 31343.79882 | 98.336789 | | | 1 |
| 9.49 | 9.52 | 9.55 | 33733.51953 | 90.467394 | | | 2 |
| 9.97 | 10.00 | 10.03 | 30309.65039 | 90.505377 | | | 3 |
| 10.47 | 10.47 | 10.53 | 20258.23828 | 80.211358 | | | 4 |
| 10.78 | 10.81 | 10.84 | 10744.44628 | 22.003564 | | | 5 |
| 11.30 | 11.33 | 11.36 | 9155.922852 | 33.52729 | | | 6 |
| Height Summation | | | **135545.576172** | | | | |
| Amount Avg CF: | | | **69.175295** | Linear: | | | |

0427

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:17:12

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241643R** ACF 7GP18 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722A
Result file : 1C13088.78R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | 3 | 133.19 | |
| 8.70 | 8.71 | 8.76 | 56773.45703 | 530.003514 | | | 1 |
| 9.69 | 9.72 | 9.75 | 9256.523438 | 70.013347 | | | 4 |
| 10.41 | 10.42 | 10.47 | 5248.51709 | 27.581006 | | | 6 |
| Height Summation | | | 71278.497559 | | | | |
| Amount Avg CF: | | | 209.199289 | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:55:16
Instrument : CP13--H6722B
Result file : 1C13088B.78R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 4 | 73.48 | |
| 6.89 | 6.92 | 6.95 | 5660.966309 | 24.155027 | | | 2 |
| 7.56 | 7.60 | 7.62 | 15656.20507 | 50.781232 | | | 3 |
| 8.51 | 8.53 | 8.57 | 15345.48730 | 30.571187 | | | 5 |
| 8.59 | 8.62 | 8.65 | 1435.53772 | 2.581335 | | | 6 |
| Height Summation | | | 38098.196412 | | | | |
| Amount Avg CF: | | | 27.022195 | Linear: | | | |
| **Toxaphene** | | | | | 3 | 160.12 | |
| 9.01 | 9.01 | 9.07 | 59255.01953 | 1171.302448 | | | 1 |
| 9.83 | 9.86 | 9.89 | 4397.047363 | 42.014666 | | | 3 |
| 10.17 | 10.18 | 10.23 | 1444.322632 | 20.21546 | | | 4 |
| Height Summation | | | 65096.389526 | | | | |
| Amount Avg CF: | | | 411.177525 | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 17 | 3.3 | | 3.69 | 4 | 40 | |
| Aroclor-1221 | | | 30 | 10 | | ** 42.80 | 3 | 5 | |
| Aroclor-1232 | | | 17 | 4.3 | E | 3.36 | 4 | 10 | |
| Aroclor-1242 | | | 17 | 4 | E | 5.84 | 4 | 30 | |
| Aroclor-1248 | | | 18 | 6 | E | 25.97 | 4 | 30 | |
| Aroclor-1254 | | | 17 | 3.3 | E | 11.47 | 4 | 40 | |
| Aroclor-1260 | | | 17 | 3.3 | | 5.94 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 89.90 | 2 | 20 | |
| Toxaphene | | | 33 | 11 | | ** 65.11 | 4 | 30 | |

Units: ug/kg

9428

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:17:12

Sample Name: **4241643RACF AB7GP18 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 01:09:16pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.78R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.557 | | 0.0000 | 0.000 | 67772.1 | 0.369 | BB | 0.037 | 30448.81 | 0.689 |
| 2 | 3.676 | | 0.0000 | 0.000 | 1992.7 | 0.011 | BB | 0.043 | 763.66 | 0.017 |
| 3 | 3.872 | | 0.0000 | 0.000 | 3589.8 | 0.020 | BB | 0.055 | 1083.00 | 0.024 |
| 4 | 3.963 | | 0.0000 | 0.000 | 18424.2 | 0.100 | BB | 0.041 | 7446.12 | 0.168 |
| 5 | 4.067 | | 0.0000 | 0.000 | 23761.0 | 0.129 | BB | 0.033 | 11850.03 | 0.268 |
| 6 | 4.134 | | 0.0000 | 0.000 | 10126.3 | 0.055 | BB | 0.028 | 5980.12 | 0.135 |
| 7 | 4.190 | | 0.0000 | 0.000 | 5793.9 | 0.032 | BB | 0.029 | 3354.44 | 0.076 |
| 8 | 4.311 | TCX | 235.4043 | 9.838 | 211655.9 | 1.153 | BB | 0.039 | 89348.55 | 2.021 |
| 9 | 4.498 | | 0.0000 | 0.000 | 11924.5 | 0.065 | BB | 0.085 | 2335.26 | 0.053 |
| 10 | 4.587 | | 0.0000 | 0.000 | 2675.4 | 0.015 | BB | 0.035 | 1287.54 | 0.029 |
| 11 | 4.898 | HCB | 1332.6810 | 55.693 | 3783514.0 | 20.619 | BB | 0.068 | 927327.00 | 20.978 |
| 12 | 5.112 | alpha-BHC | 9.3743 | 0.392 | 8907.7 | 0.049 | BB | 0.034 | 4340.92 | 0.098 |
| 13 | 5.311 | | 0.0000 | 0.000 | 1592.1 | 0.009 | BB | 0.031 | 852.19 | 0.019 |
| 14 | 5.364 | | 0.0000 | 0.000 | 7423.5 | 0.040 | BB | 0.040 | 3127.76 | 0.071 |
| 15 | 5.461 | | 0.0000 | 0.000 | 6432.4 | 0.035 | BB | 0.029 | 3687.47 | 0.083 |
| 16 | 5.553 | | 0.0000 | 0.000 | 2550.4 | 0.014 | BB | 0.028 | 1510.42 | 0.034 |
| 17 | 5.695 | | 0.0000 | 0.000 | 14515.1 | 0.079 | BB | 0.044 | 5559.60 | 0.126 |
| 18 | 5.778 | | 0.0000 | 0.000 | 34946.6 | 0.190 | BV | 0.051 | 11371.49 | 0.257 |
| 19 | 6.363 | | 0.0000 | 0.000 | 2738194.0 | 14.922 | VV | 0.223 | 204360.90 | 4.623 |
| 20 | 6.468 | | 0.0000 | 0.000 | 5497141.0 | 29.958 | VV | 0.100 | 913548.80 | 20.666 |
| 21 | 6.741 | | 0.0000 | 0.000 | 65049.4 | 0.354 | VV | 0.056 | 19493.49 | 0.441 |
| 22 | 6.857 | | 0.0000 | 0.000 | 12409.9 | 0.068 | VV | 0.038 | 5415.64 | 0.123 |
| 23 | 6.912 | | 0.0000 | 0.000 | 20726.3 | 0.113 | VB | 0.062 | 5563.49 | 0.126 |
| 24 | 7.073 | | 0.0000 | 0.000 | 72231.1 | 0.394 | BB | 0.042 | 28408.14 | 0.643 |
| 25 | 7.205 | | 0.0000 | 0.000 | 83572.1 | 0.455 | BB | 0.028 | 50203.18 | 1.136 |
| 26 | 7.249 | | 0.0000 | 0.000 | 33492.6 | 0.183 | BB | 0.023 | 24279.02 | 0.549 |
| 27 | 7.303 | | 0.0000 | 0.000 | 36262.9 | 0.198 | BB | 0.046 | 13174.56 | 0.298 |
| 28 | 7.522 | Hept. epoxide | 35.5801 | 1.487 | 30067.5 | 0.164 | BV | 0.035 | 14200.58 | 0.321 |
| 29 | 7.586 | | 0.0000 | 0.000 | 212260.7 | 1.157 | VV | 0.046 | 76955.74 | 1.741 |
| 30 | 7.639 | | 0.0000 | 0.000 | 89299.1 | 0.487 | VV | 0.042 | 35667.04 | 0.807 |
| 31 | 7.717 | g. Chlordane | 12.2716 | 0.513 | 14211.9 | 0.077 | VV | 0.050 | 4751.75 | 0.107 |
| 32 | 7.836 | | 0.0000 | 0.000 | 21159.8 | 0.115 | VV | 0.052 | 6776.38 | 0.153 |
| 33 | 7.902 | a. Chlordane | 66.4608 | 2.777 | 67035.4 | 0.365 | VV | 0.041 | 27466.40 | 0.621 |
| 34 | 7.960 | 4,4'-DDE | 155.9887 | 6.519 | 132435.7 | 0.722 | VV | 0.040 | 54890.59 | 1.242 |
| 35 | 8.016 | | 0.0000 | 0.000 | 40459.0 | 0.220 | VB | 0.036 | 18992.08 | 0.430 |
| 36 | 8.120 | | 0.0000 | 0.000 | 242793.0 | 1.323 | BV | 0.044 | 91170.67 | 2.062 |
| 37 | 8.276 | | 0.0000 | 0.000 | 54155.3 | 0.295 | VB | 0.063 | 14415.83 | 0.326 |
| 38 | 8.354 | | 0.0000 | 0.000 | 95638.2 | 0.521 | BV | 0.044 | 36321.11 | 0.822 |
| 39 | 8.478 | | 0.0000 | 0.000 | 168692.9 | 0.919 | VV | 0.040 | 69722.40 | 1.577 |
| 40 | 8.552 | | 0.0000 | 0.000 | 14430.5 | 0.079 | VB | 0.031 | 7652.24 | 0.173 |
| 41 | 8.631 | | 0.0000 | 0.000 | 15523.2 | 0.085 | BB | 0.030 | 8580.58 | 0.194 |
| 42 | 8.708 | Endrin | 190.9549 | 7.980 | 228324.5 | 1.244 | BV | 0.067 | 56773.46 | 1.284 |
| 43 | 8.846 | | 0.0000 | 0.000 | 141055.6 | 0.769 | VV | 0.057 | 41133.82 | 0.931 |
| 44 | 8.942 | | 0.0000 | 0.000 | 11302.8 | 0.062 | VB | 0.030 | 6297.63 | 0.142 |
| 45 | 9.005 | Endosulfan II | 20.3103 | 0.849 | 11673.5 | 0.064 | BV | 0.029 | 6657.05 | 0.151 |
| 46 | 9.081 | | 0.0000 | 0.000 | 275211.2 | 1.500 | VV | 0.048 | 94940.09 | 2.148 |
| 47 | 9.214 | | 0.0000 | 0.000 | 24660.9 | 0.134 | VB | 0.046 | 9027.35 | 0.204 |
| 48 | 9.311 | | 0.0000 | 0.000 | 1576538.0 | 8.592 | BB | 0.040 | 652918.80 | 14.770 |
| 49 | 9.459 | | 0.0000 | 0.000 | 42154.2 | 0.230 | BB | 0.032 | 21642.49 | 0.490 |
| 50 | 9.543 | Endrin aldehyde | 28.1192 | 1.175 | 13730.7 | 0.075 | BV | 0.029 | 7758.60 | 0.176 |
| 51 | 9.597 | | 0.0000 | 0.000 | 6761.1 | 0.037 | VB | 0.028 | 3991.40 | 0.090 |
| 52 | 9.674 | | 0.0000 | 0.000 | 14015.0 | 0.076 | BV | 0.031 | 7518.00 | 0.170 |
| 53 | 9.716 | Methoxychlor | 55.0289 | 2.300 | 30782.7 | 0.168 | VV | 0.055 | 9256.52 | 0.209 |
| 54 | 9.773 | | 0.0000 | 0.000 | 53726.4 | 0.293 | VB | 0.041 | 21632.27 | 0.489 |
| 55 | 9.857 | | 0.0000 | 0.000 | 8424.6 | 0.046 | BB | 0.029 | 4879.08 | 0.110 |
| 56 | 9.933 | | 0.0000 | 0.000 | 82982.6 | 0.452 | BB | 0.046 | 30201.31 | 0.683 |
| 57 | 10.145 | | 0.0000 | 0.000 | 1608.4 | 0.009 | BB | 0.037 | 716.77 | 0.016 |
| 58 | 10.243 | | 0.0000 | 0.000 | 9838.4 | 0.054 | BB | 0.026 | 6287.07 | 0.142 |
| 59 | 10.301 | | 0.0000 | 0.000 | 173210.6 | 0.944 | BV | 0.051 | 57055.10 | 1.291 |
| 60 | 10.419 | | 0.0000 | 0.000 | 22977.6 | 0.125 | VB | 0.073 | 5248.52 | 0.119 |
| 61 | 10.567 | | 0.0000 | 0.000 | 2499.6 | 0.014 | BB | 0.041 | 1025.94 | 0.023 |
| 62 | 10.684 | | 0.0000 | 0.000 | 160513.2 | 0.875 | BV | 0.039 | 68099.61 | 1.541 |
| 63 | 10.792 | | 0.0000 | 0.000 | 3667.7 | 0.020 | VB | 0.066 | 922.93 | 0.021 |
| 64 | 10.974 | | 0.0000 | 0.000 | 3753.8 | 0.020 | BB | 0.037 | 1687.09 | 0.038 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.024 | | 0.0000 | 0.000 | 3005.0 | 0.016 | BB | 0.047 | 1057.70 | 0.024 |
| 66 | 11.130 | | 0.0000 | 0.000 | 51519.1 | 0.281 | BB | 0.075 | 11385.17 | 0.258 |
| 67 | 11.308 | | 0.0000 | 0.000 | 3095.7 | 0.017 | BB | 0.041 | 1252.72 | 0.028 |
| 68 | 11.401 | | 0.0000 | 0.000 | 961972.7 | 5.242 | BB | 0.050 | 318891.10 | 7.214 |
| 69 | 11.817 | DCB | 250.7272 | 10.478 | 312045.5 | 1.701 | BB | 0.054 | 95477.55 | 2.160 |
| 70 | 11.976 | | 0.0000 | 0.000 | 174.4 | 0.001 | BB | 0.024 | 123.57 | 0.003 |
| 71 | 12.081 | | 0.0000 | 0.000 | 16431.6 | 0.090 | BB | 0.082 | 3341.26 | 0.076 |
| 72 | 12.276 | | 0.0000 | 0.000 | 35725.7 | 0.195 | BB | 0.067 | 8825.86 | 0.200 |
| 73 | 12.456 | | 0.0000 | 0.000 | 4268.4 | 0.023 | BB | 0.045 | 1581.10 | 0.036 |
| 74 | 12.591 | | 0.0000 | 0.000 | 18222.5 | 0.099 | BB | 0.081 | 3730.51 | 0.084 |
| 75 | 12.785 | | 0.0000 | 0.000 | 1029.0 | 0.006 | BB | 0.029 | 585.95 | 0.013 |
| 76 | 12.828 | | 0.0000 | 0.000 | 1005.5 | 0.005 | BB | 0.033 | 503.70 | 0.011 |
| 77 | 12.946 | | 0.0000 | 0.000 | 13404.6 | 0.073 | BB | 0.060 | 3700.63 | 0.084 |
| 78 | 13.122 | | 0.0000 | 0.000 | 14184.7 | 0.077 | BB | 0.074 | 3196.36 | 0.072 |
| 79 | 13.235 | | 0.0000 | 0.000 | 2308.6 | 0.013 | BB | 0.037 | 1038.60 | 0.023 |
| 80 | 13.348 | | 0.0000 | 0.000 | 23465.6 | 0.128 | BB | 0.161 | 2429.03 | 0.055 |
| 81 | 13.647 | | 0.0000 | 0.000 | 2027.3 | 0.011 | BB | 0.047 | 725.35 | 0.016 |
| 82 | 13.747 | | 0.0000 | 0.000 | 5297.2 | 0.029 | BB | 0.066 | 1340.09 | 0.030 |
| 83 | 13.881 | | 0.0000 | 0.000 | 6255.5 | 0.034 | BB | 0.054 | 1946.83 | 0.044 |

Total Area = 18349690.0, Total Amount = 2392.901, Total Height = 4420489.0, Sample Units = PPB

Sample Name: **4241643RACF AB7GP18 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 01:09:16pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.78R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.046 | | 0.0000 | 0.000 | 5011.9 | 0.177 | BB | 0.033 | 2547.05 | 0.213 |
| 2 | 3.112 | | 0.0000 | 0.000 | 1540.3 | 0.055 | BB | 0.023 | 1124.79 | 0.094 |
| 3 | 3.160 | | 0.0000 | 0.000 | 22725.4 | 0.804 | BB | 0.039 | 9788.53 | 0.820 |
| 4 | 3.338 | | 0.0000 | 0.000 | 2133.2 | 0.075 | BB | 0.051 | 701.88 | 0.059 |
| 5 | 3.411 | | 0.0000 | 0.000 | 7663.0 | 0.271 | BB | 0.046 | 2782.21 | 0.233 |
| 6 | 3.515 | | 0.0000 | 0.000 | 2144.8 | 0.076 | BB | 0.040 | 890.30 | 0.075 |
| 7 | 3.681 | | 0.0000 | 0.000 | 42382.9 | 1.500 | BB | 0.037 | 19346.57 | 1.620 |
| 8 | 3.907 | | 0.0000 | 0.000 | 5826.1 | 0.206 | BB | 0.062 | 1569.24 | 0.131 |
| 9 | 4.202 | | 0.0000 | 0.000 | 22177.2 | 0.785 | BB | 0.040 | 9132.61 | 0.765 |
| 10 | 4.423 | | 0.0000 | 0.000 | 2061.4 | 0.073 | BB | 0.032 | 1079.22 | 0.090 |
| 11 | 4.551 | | 0.0000 | 0.000 | 267893.4 | 9.479 | BB | 0.038 | 116338.70 | 9.744 |
| 12 | 4.731 | | 0.0000 | 0.000 | 700.8 | 0.025 | BB | 0.027 | 439.85 | 0.037 |
| 13 | 4.827 | TCX | 274.3640 | 12.972 | 114545.8 | 4.053 | BB | 0.036 | 53671.43 | 4.495 |
| 14 | 4.980 | | 0.0000 | 0.000 | 43758.1 | 1.548 | BB | 0.051 | 14270.92 | 1.195 |
| 15 | 5.093 | | 0.0000 | 0.000 | 2780.4 | 0.098 | BB | 0.027 | 1713.45 | 0.144 |
| 16 | 5.181 | | 0.0000 | 0.000 | 1612.3 | 0.057 | BB | 0.048 | 561.44 | 0.047 |
| 17 | 5.320 | | 0.0000 | 0.000 | 185.6 | 0.007 | BB | 0.018 | 176.00 | 0.015 |
| 18 | 5.404 | | 0.0000 | 0.000 | 2430.2 | 0.086 | BB | 0.039 | 1049.39 | 0.088 |
| 19 | 5.558 | HCB | 8.6893 | 0.411 | 7860.9 | 0.278 | BB | 0.054 | 2411.71 | 0.202 |
| 20 | 5.674 | | 0.0000 | 0.000 | 7869.7 | 0.278 | BB | 0.034 | 3883.06 | 0.325 |
| 21 | 5.723 | | 0.0000 | 0.000 | 293.6 | 0.010 | BB | 0.018 | 273.87 | 0.023 |
| 22 | 5.803 | | 0.0000 | 0.000 | 1495.1 | 0.053 | BB | 0.029 | 861.43 | 0.072 |
| 23 | 5.864 | | 0.0000 | 0.000 | 1516.9 | 0.054 | BB | 0.029 | 884.65 | 0.074 |
| 24 | 5.924 | | 0.0000 | 0.000 | 1145.4 | 0.041 | BB | 0.032 | 587.65 | 0.049 |
| 25 | 6.041 | | 0.0000 | 0.000 | 3452.9 | 0.122 | BV | 0.078 | 736.92 | 0.062 |
| 26 | 6.159 | | 0.0000 | 0.000 | 5164.5 | 0.183 | VV | 0.095 | 902.81 | 0.076 |
| 27 | 6.266 | | 0.0000 | 0.000 | 7277.9 | 0.258 | VV | 0.053 | 2302.91 | 0.193 |
| 28 | 6.300 | gamma-BHC | 16.4223 | 0.776 | 7009.4 | 0.248 | VV | 0.041 | 2868.12 | 0.240 |
| 29 | 6.352 | | 0.0000 | 0.000 | 3588.0 | 0.127 | VV | 0.039 | 1544.68 | 0.129 |
| 30 | 6.431 | beta-BHC | 5.2117 | 0.246 | 2117.4 | 0.075 | VV | 0.059 | 602.56 | 0.050 |
| 31 | 6.490 | | 0.0000 | 0.000 | 1513.8 | 0.054 | VV | 0.041 | 621.95 | 0.052 |
| 32 | 6.538 | | 0.0000 | 0.000 | 1617.4 | 0.057 | VB | 0.034 | 797.12 | 0.067 |
| 33 | 6.627 | | 0.0000 | 0.000 | 63795.6 | 2.257 | BB | 0.031 | 34739.04 | 2.910 |
| 34 | 6.772 | | 0.0000 | 0.000 | 11022.4 | 0.390 | BB | 0.047 | 3888.07 | 0.326 |
| 35 | 6.922 | Heptachlor | 30.6636 | 1.450 | 12692.2 | 0.449 | BB | 0.037 | 5660.97 | 0.474 |
| 36 | 7.093 | | 0.0000 | 0.000 | 28722.7 | 1.016 | BB | 0.151 | 3165.74 | 0.265 |
| 37 | 7.217 | | 0.0000 | 0.000 | 43071.4 | 1.524 | BV | 0.037 | 19218.41 | 1.610 |
| 38 | 7.280 | | 0.0000 | 0.000 | 11720.9 | 0.415 | VV | 0.036 | 5501.86 | 0.461 |
| 39 | 7.342 | | 0.0000 | 0.000 | 6424.2 | 0.227 | VV | 0.052 | 2071.49 | 0.173 |
| 40 | 7.427 | | 0.0000 | 0.000 | 40470.7 | 1.432 | VV | 0.040 | 16809.38 | 1.408 |
| 41 | 7.603 | Telodrin | 86.0642 | 4.069 | 57606.8 | 2.038 | VB | 0.061 | 15656.21 | 1.311 |
| 42 | 7.793 | | 0.0000 | 0.000 | 69217.5 | 2.449 | BV | 0.041 | 28103.41 | 2.354 |
| 43 | 7.918 | | 0.0000 | 0.000 | 2747.6 | 0.097 | VB | 0.439 | 104.24 | 0.009 |
| 44 | 7.966 | | 0.0000 | 0.000 | 3693.7 | 0.131 | BV | 0.032 | 1937.81 | 0.162 |
| 45 | 8.013 | | 0.0000 | 0.000 | 19146.2 | 0.677 | VV | 0.052 | 6162.27 | 0.516 |
| 46 | 8.091 | | 0.0000 | 0.000 | 44341.1 | 1.569 | VV | 0.039 | 18907.85 | 1.584 |
| 47 | 8.152 | Hept. epoxide | 220.3397 | 10.418 | 88393.5 | 3.128 | VB | 0.037 | 39765.63 | 3.331 |
| 48 | 8.259 | | 0.0000 | 0.000 | 10781.7 | 0.381 | BV | 0.032 | 5654.92 | 0.474 |
| 49 | 8.310 | | 0.0000 | 0.000 | 21894.7 | 0.775 | VV | 0.036 | 10170.80 | 0.852 |
| 50 | 8.390 | o,p-DDE | 363.4976 | 17.186 | 99801.5 | 3.531 | VV | 0.037 | 45196.97 | 3.785 |
| 51 | 8.469 | | 0.0000 | 0.000 | 91300.5 | 3.231 | VV | 0.037 | 41495.27 | 3.475 |
| 52 | 8.533 | | 0.0000 | 0.000 | 35387.5 | 1.252 | VV | 0.038 | 15345.49 | 1.285 |
| 53 | 8.618 | a. Chlordane | 7.6569 | 0.362 | 2638.2 | 0.093 | VB | 0.031 | 1435.54 | 0.120 |
| 54 | 8.698 | Endosulfan I | 17.0914 | 0.808 | 5629.1 | 0.199 | BB | 0.033 | 2826.31 | 0.237 |
| 55 | 8.779 | | 0.0000 | 0.000 | 28107.7 | 0.995 | BB | 0.033 | 14223.38 | 1.191 |
| 56 | 8.858 | | 0.0000 | 0.000 | 55667.6 | 1.970 | BB | 0.033 | 28545.55 | 2.391 |
| 57 | 8.939 | | 0.0000 | 0.000 | 15442.0 | 0.546 | BV | 0.030 | 8445.80 | 0.707 |
| 58 | 9.010 | | 0.0000 | 0.000 | 144460.4 | 5.111 | VB | 0.041 | 59255.02 | 4.963 |
| 59 | 9.142 | | 0.0000 | 0.000 | 16668.4 | 0.590 | BV | 0.045 | 6218.46 | 0.521 |
| 60 | 9.259 | | 0.0000 | 0.000 | 75590.1 | 2.675 | VV | 0.040 | 31343.80 | 2.625 |
| 61 | 9.296 | | 0.0000 | 0.000 | 97138.0 | 3.437 | VB | 0.038 | 43149.96 | 3.614 |
| 62 | 9.439 | | 0.0000 | 0.000 | 18993.3 | 0.672 | BV | 0.040 | 7974.36 | 0.668 |
| 63 | 9.518 | o,p-DDT | 286.6466 | 13.552 | 73837.1 | 2.613 | VV | 0.036 | 33733.52 | 2.825 |
| 64 | 9.587 | 4,4'-DDD | 22.1261 | 1.046 | 4445.9 | 0.157 | VB | 0.030 | 2473.85 | 0.207 |

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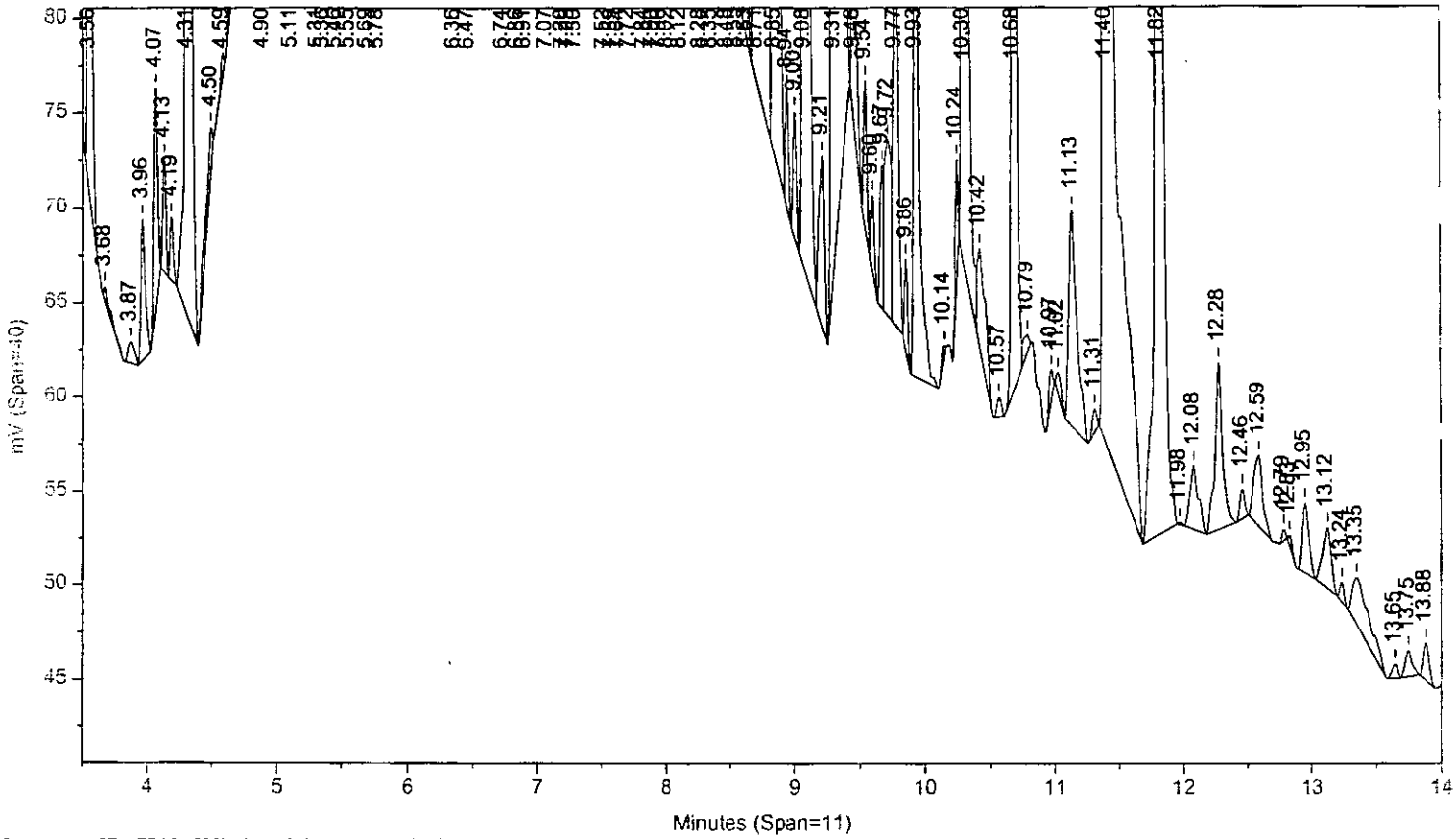
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.739 | Endosulfan II | 201.7206 | 9.537 | 110989.8 | 3.927 | BB | 0.057 | 32199.98 | 2.697 |
| 66 | 9.857 | | 0.0000 | 0.000 | 9041.0 | 0.320 | BB | 0.034 | 4397.05 | 0.368 |
| 67 | 9.948 | | 0.0000 | 0.000 | 119370.1 | 4.224 | BB | 0.029 | 68033.77 | 5.698 |
| 68 | 9.997 | 4,4'-DDT | 250.7094 | 11.853 | 48371.9 | 1.712 | BB | 0.027 | 30309.65 | 2.539 |
| 69 | 10.109 | | 0.0000 | 0.000 | 2484.3 | 0.088 | BB | 0.028 | 1493.54 | 0.125 |
| 70 | 10.141 | | 0.0000 | 0.000 | 3799.9 | 0.134 | BB | 0.022 | 2888.60 | 0.242 |
| 71 | 10.179 | Endrin aldehyde | 9.9774 | 0.472 | 1765.2 | 0.062 | BB | 0.020 | 1444.32 | 0.121 |
| 72 | 10.300 | | 0.0000 | 0.000 | 5832.1 | 0.206 | BB | 0.043 | 2280.63 | 0.191 |
| 73 | 10.475 | | 0.0000 | 0.000 | 56151.7 | 1.987 | BB | 0.046 | 20258.24 | 1.697 |
| 74 | 10.597 | | 0.0000 | 0.000 | 5517.7 | 0.195 | BB | 0.031 | 2981.12 | 0.250 |
| 75 | 10.676 | | 0.0000 | 0.000 | 16503.0 | 0.584 | BB | 0.032 | 8648.77 | 0.724 |
| 76 | 10.741 | | 0.0000 | 0.000 | 31287.0 | 1.107 | BB | 0.032 | 16246.63 | 1.361 |
| 77 | 10.806 | | 0.0000 | 0.000 | 19068.1 | 0.675 | BB | 0.030 | 10744.45 | 0.900 |
| 78 | 10.922 | | 0.0000 | 0.000 | 898.4 | 0.032 | BB | 0.023 | 639.02 | 0.054 |
| 79 | 11.104 | | 0.0000 | 0.000 | 33780.1 | 1.195 | BB | 0.031 | 18035.82 | 1.511 |
| 80 | 11.193 | | 0.0000 | 0.000 | 23895.5 | 0.846 | BB | 0.063 | 6354.46 | 0.532 |
| 81 | 11.334 | Endrin ketone | 56.0232 | 2.649 | 35542.4 | 1.258 | BB | 0.065 | 9155.92 | 0.767 |
| 82 | 11.571 | | 0.0000 | 0.000 | 2422.0 | 0.086 | BB | 0.045 | 900.44 | 0.075 |
| 83 | 11.761 | | 0.0000 | 0.000 | 20438.3 | 0.723 | BB | 0.093 | 3671.70 | 0.308 |
| 84 | 11.946 | | 0.0000 | 0.000 | 195801.4 | 6.928 | BB | 0.042 | 78153.63 | 6.546 |
| 85 | 12.107 | | 0.0000 | 0.000 | 4769.9 | 0.169 | BB | 0.050 | 1582.81 | 0.133 |
| 86 | 12.223 | | 0.0000 | 0.000 | 6361.2 | 0.225 | BB | 0.041 | 2571.03 | 0.215 |
| 87 | 12.303 | | 0.0000 | 0.000 | 3358.8 | 0.119 | BB | 0.050 | 1129.05 | 0.095 |
| 88 | 12.646 | | 0.0000 | 0.000 | 12578.0 | 0.445 | BB | 0.087 | 2415.35 | 0.202 |
| 89 | 12.763 | | 0.0000 | 0.000 | 2158.5 | 0.076 | BB | 0.032 | 1131.76 | 0.095 |
| 90 | 12.811 | | 0.0000 | 0.000 | 647.8 | 0.023 | BB | 0.027 | 406.10 | 0.034 |
| 91 | 12.917 | | 0.0000 | 0.000 | 9863.7 | 0.349 | BB | 0.083 | 1980.48 | 0.166 |
| 92 | 13.248 | | 0.0000 | 0.000 | 4607.0 | 0.163 | BB | 0.046 | 1659.60 | 0.139 |
| 93 | 13.347 | DCB | 257.8823 | 12.193 | 126886.4 | 4.490 | BB | 0.048 | 43721.14 | 3.662 |
| 94 | 13.693 | | 0.0000 | 0.000 | 5711.3 | 0.202 | BB | 0.062 | 1528.56 | 0.128 |
| 95 | 13.894 | | 0.0000 | 0.000 | 5937.5 | 0.210 | BB | 0.074 | 1343.28 | 0.113 |

Total Area = 2826186.0, Total Amount = 2115.086, Total Height = 1193951.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.78R

C:\CPWIN\DATA1\1C13088.78R

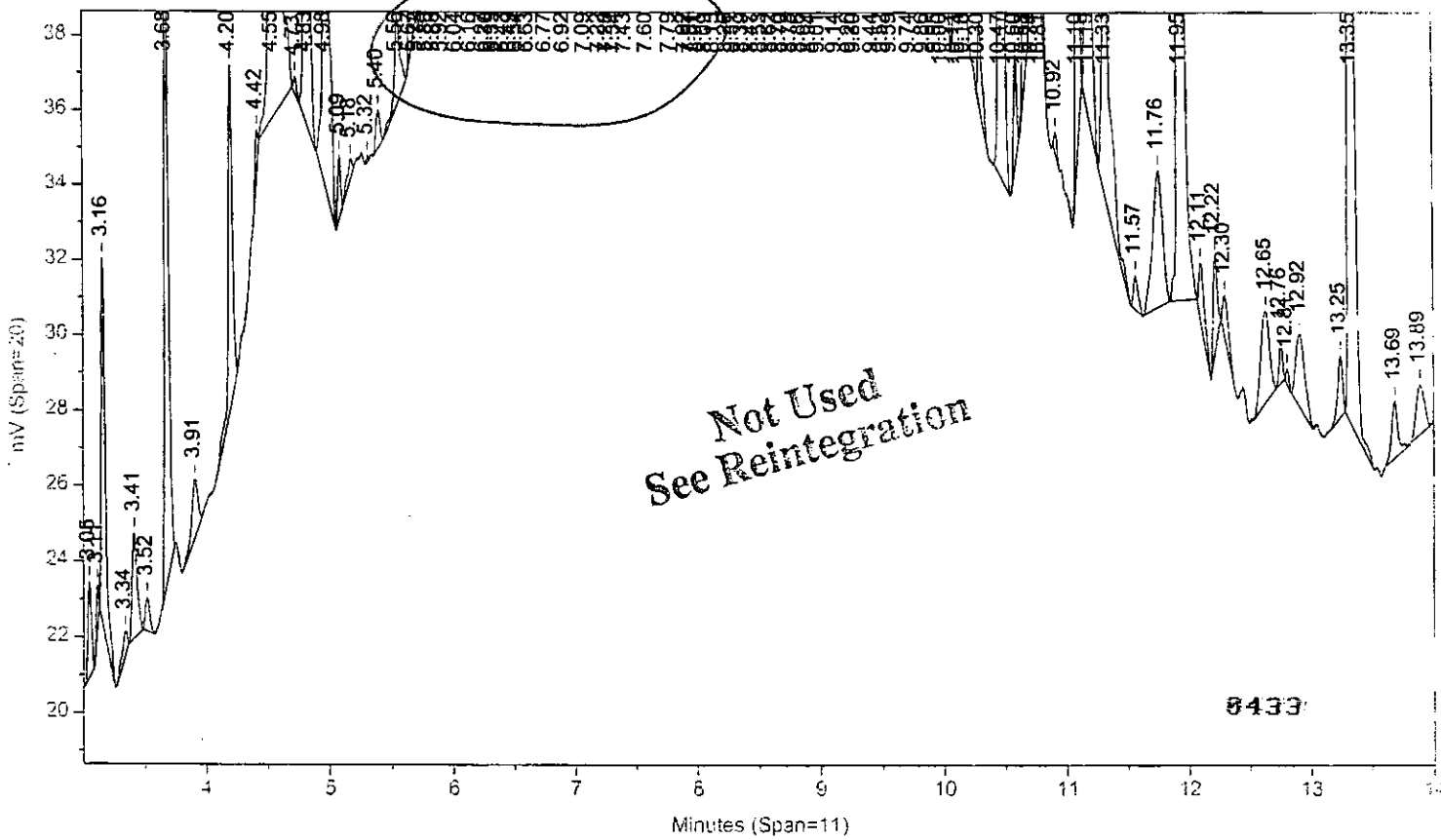



Instrument ID: CP13--H6722A Injected On: 3/30/2004 12:55:16 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

D014 3.31.04

File: C:\CPWIN\DATA1\1C13088B.78R

C:\CPWIN\DATA1\1C13088B.78R

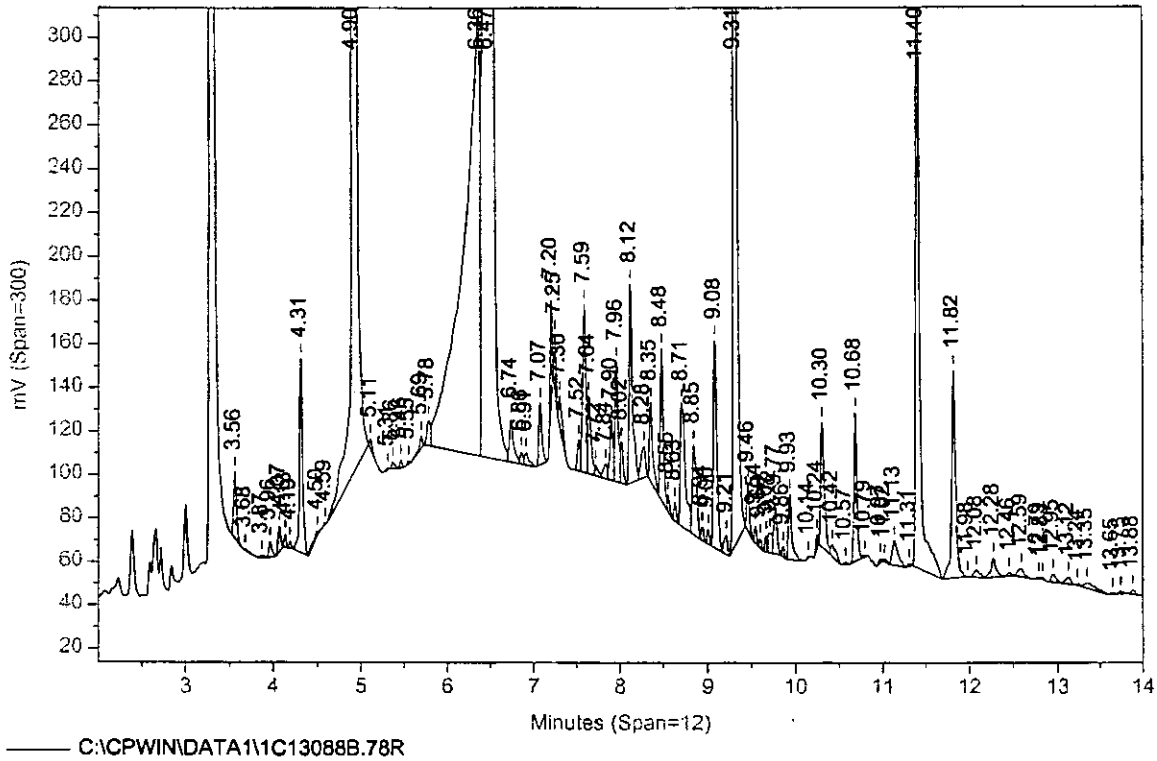



Not Used
See Reintegration

8433

Instrument ID: CP13--H6722B Injected On: 3/30/2004 12:55:16 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

C:\CPWIN\DATA1\1C13088.78R

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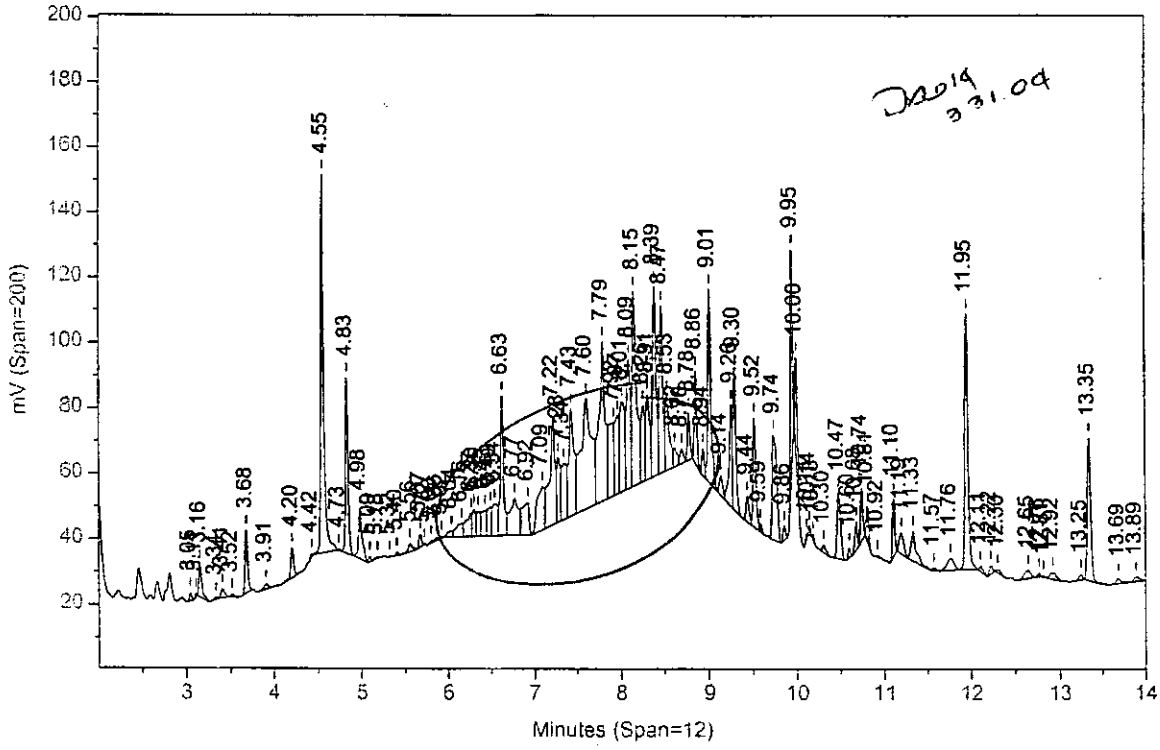
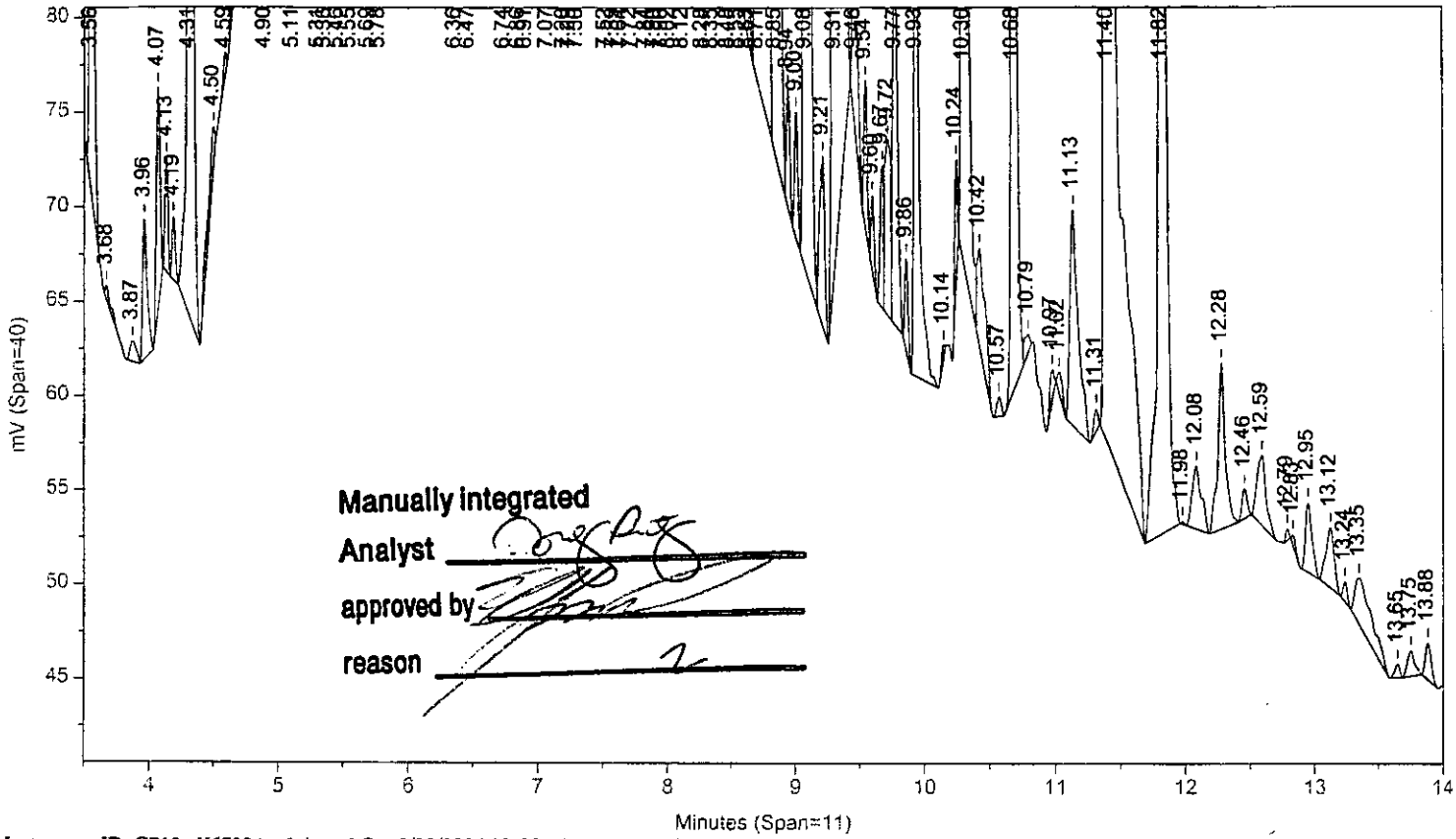



Not Used
See Reintegration

5434

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.78R

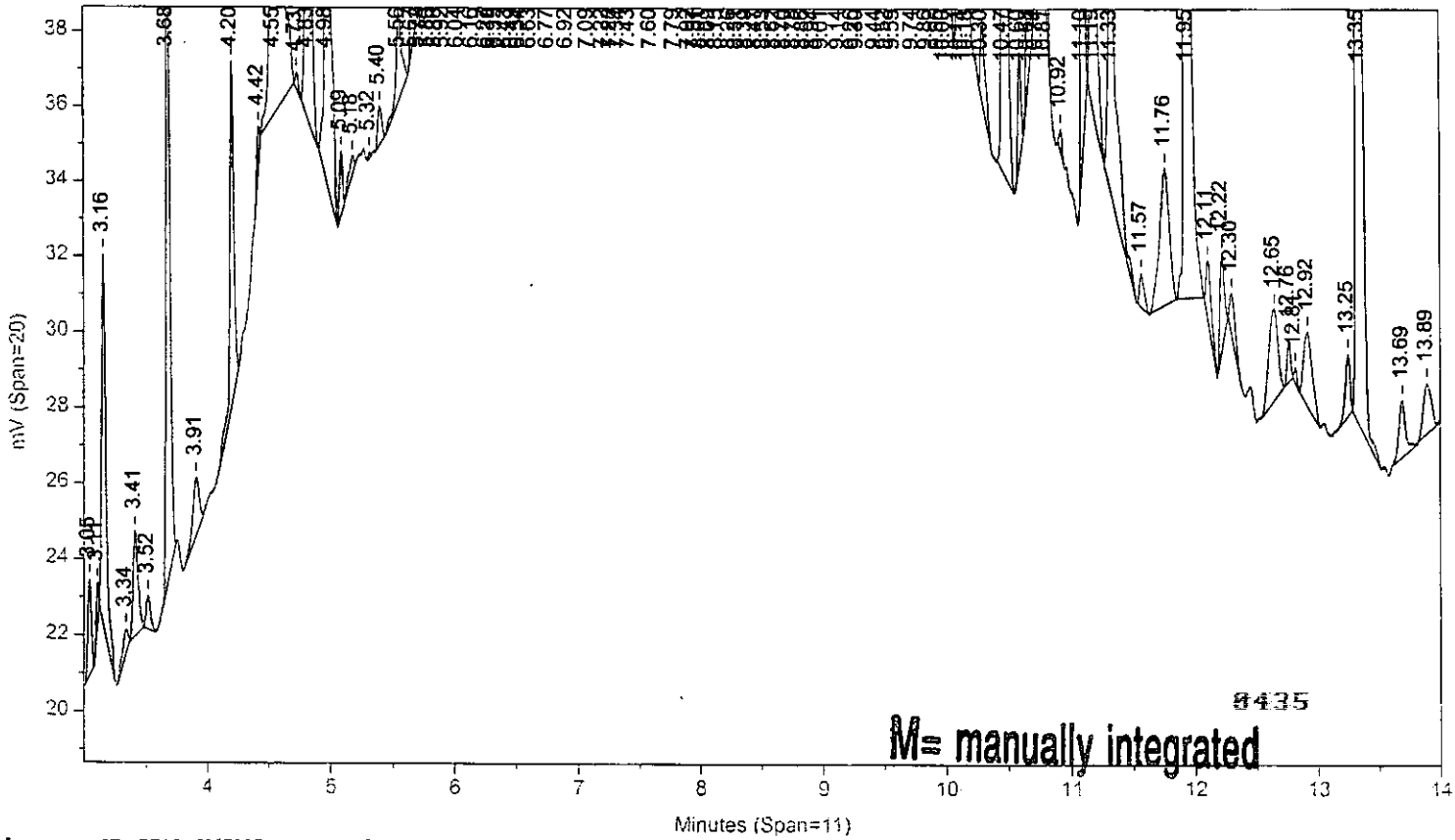
C:\CPWIN\DATA1\1C13088.78R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 12:55:16 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.78R

C:\CPWIN\DATA1\1C13088B.78R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 12:55:16 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

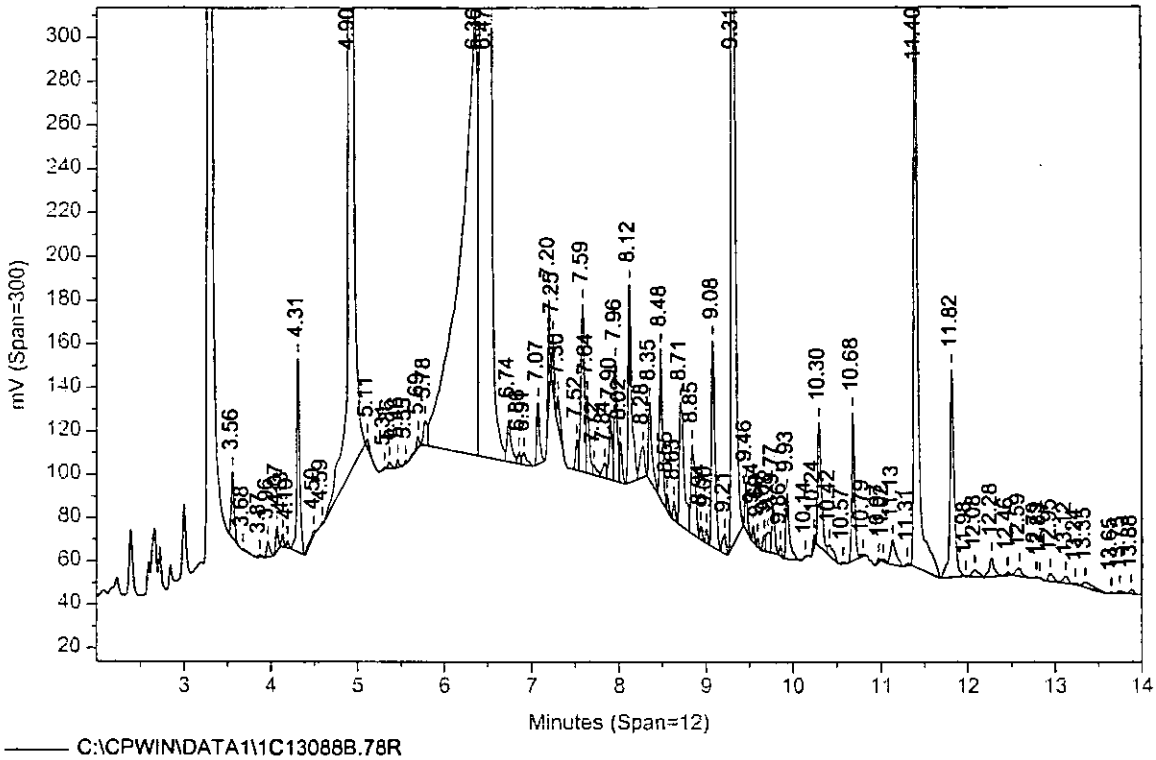
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.311 | 89349 | 7.84681 | TCX | 4.827 | 53671 | 9.14547 | TCX |
| 4.898 | 927327 | 44.4227 | HCB | 5.558 | 2412 | .28964 | HCB |
| 5.112 | 4341 | .31248 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | gamma-BHC | 6.3 | 2868 | .54741 | gamma-BHC |
| . | 0 | . | beta-BHC | 6.431 | 603 | .17372 | beta-BHC |
| . | 0 | . | Heptachlor | 6.922 | 5661 | 1.02212 | Heptachlor |
| 7.522 | 14201 | 1.85386 | o,p-DDE | 8.39 | 45197 | 12.11659 | o,p-DDE |
| . | 0 | . | Telodrin | 7.603 | 15656 | 2.86881 | Telodrin |
| 7.717 | 4752 | .40905 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.902 | 27466 | 2.21536 | a. Chlordane | 8.618 | 1436 | .25523 | a. Chlordane |
| 7.96 | 54891 | 5.19962 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.152 | 39766 | 7.34466 | Hept. epoxide |
| 8.552 | 7652 | .99434 | o,p-DDT | 9.518 | 33734 | 9.55489 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.698 | 2826 | .56971 | Endosulfan I |
| 8.708 | 56773 | 6.36516 | Endrin | . | 0 | . | Endrin |
| 9.005 | 6657 | .67701 | Endosulfan II | 9.739 | 32200 | 6.72402 | Endosulfan II |
| 9.543 | 7759 | .93731 | Endrin aldehyde | 10.179 | 1444 | .33258 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.587 | 2474 | .73754 | 4,4'-DDD |
| 9.716 | 9257 | 1.8343 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.997 | 30310 | 8.35698 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.334 | 9156 | 1.86744 | Endrin ketone |
| 11.817 | 95478 | 8.35757 | DCB | 13.347 | 43721 | 8.59608 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 8:33:34 AM
File Reported On: 3/31/2004 at 8:33:36 AM

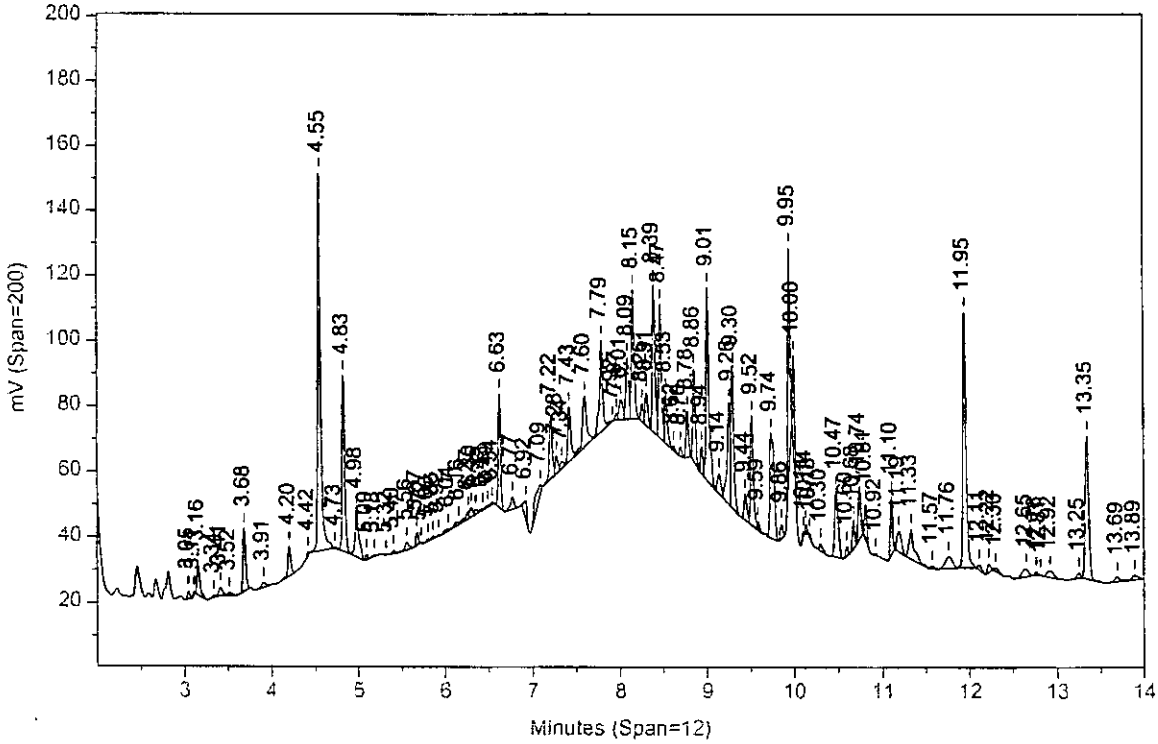
9436

10X REPLOTS

C:\CPWIN\DATA1\1C13088.78R




C:\CPWIN\DATA1\1C13088B.78R



# Lancaster Laboratories Single Component Data Summary

**Sample Name: 4241644R** ACF DF5 7GP19 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13–H6722A
Result file : 1C13088.81R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 95.1% Conc.: 9.152529
%SSR(DCB) : 129.8% Conc.: 12.643199

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 20843 | 9.152529 |
| **HCB** | 4.86 | 4.92 | 4.92 | 114059 | 27.319433 |
| **alpha-BHC** | 5.11 | 5.11 | 5.17 | 3889 | 1.399642 |
| **delta-BHC** | 5.96 | 6.00 | 6.02 | 1375 | 0.521129 |
| **Heptachlor** | 6.25 | 6.28 | 6.31 | 2835 | 0.956242 |
| **o,p-DDE** | 7.48 | 7.52 | 7.54 | 8350 | 5.450334 |
| **g. Chlordane** | 7.68 | 7.72 | 7.74 | 1359 | 0.584737 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 15373 | 6.199695 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 31108 | 14.733884 |
| **o,p-DDT** | 8.51 | 8.55 | 8.57 | 3592 | 2.333425 |
| **Endrin** | 8.67 | 8.71 | 8.73 | 36094 | 20.233585 |
| **Endosulfan II** | 8.97 | 9.01 | 9.03 | 5250 | 2.669340 |
| **Endrin aldehyde** | 9.52 | 9.54 | 9.58 | 11233 | 6.785414 |
| **Methoxychlor** | 9.70 | 9.73 | 9.76 | 7677 | 7.606690 |
| **DCB** | 11.79 | 11.81 | 11.85 | 28887 | 12.643199 |

## Analysis Report (B)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13–H6722B
Result file : 1C13088B.81R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 90.6% Conc.: 8.714009
%SSR(DCB) : 106.4% Conc.: 10.365955

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.83 | 4.86 | 10228 | 8.714009 |
| **HCB** | 5.52 | 5.56 | 5.58 | 682 | 0.409359 |
| **gamma-BHC** | 6.25 | 6.30 | 6.31 | 1128 | 1.076418 |
| **Telodrin** | 7.58 | 7.60 | 7.64 | 8095 | 7.416642 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 19288 | 17.812494 |
| **o,p-DDE** | 8.38 | 8.39 | 8.44 | 22770 | 30.521338 |
| **Endosulfan I** | 8.68 | 8.70 | 8.74 | 1488 | 1.499501 |
| **o,p-DDT** | 9.47 | 9.52 | 9.53 | 20739 | 29.370716 |
| **Endosulfan II** | 9.73 | 9.74 | 9.79 | 22393 | 23.380514 |
| **4,4'-DDT** | 9.96 | 10.00 | 10.02 | 16340 | 22.526583 |
| **Endrin aldehyde** | 10.17 | 10.18 | 10.23 | 1658 | 1.909189 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 4820 | 4.915242 |
| **DCB** | 13.32 | 13.34 | 13.38 | 10545 | 10.365955 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 9.152529 | | | | 4.91 | |
| HCB | A | 27.319433 | | | | ** 194.09 | |
| alpha-BHC | | | <4.15 | <0.85 | | | |
| gamma-BHC | | | <4.15 | <0.85 | | | |
| beta-BHC | | | <4.15 | <0.85 | | | |
| delta-BHC | | | <4.15 | <0.85 | | | |
| Heptachlor | | | <4.15 | <0.85 | | | |
| Aldrin | | | <7.5 | <2.55 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | B | 30.521338 | | | | ** 139.39 | |
| Hept. epoxide | | | <4.15 | <0.85 | | | |
| g. Chlordane | | | <4.5 | <1.5 | | | |
| a. Chlordane | | | <4.15 | <0.85 | | | |
| 4,4'-DDE | | | <8.5 | <1.65 | | | |
| Endosulfan I | | | <6.5 | <2.2 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <8.5 | <1.65 | | | |
| o,p-DDT | B | 29.370716 | | | | ** 170.56 | |
| Endrin | | | <8.5 | <2.5 | | | |
| 4,4'-DDD | | | <8.5 | <2.9 | | | |
| Kepone | | | | | | | |
| Endosulfan II | B (A) 2.67 | 23.380514 | C 8.5 | ~~1.65~~ (6) | | ** 159.01 | with a due to PCB's 0438 |
| 4,4'-DDT | | | <8.5 | <1.65 | | | |
| Endrin aldehyde | | | <15 | <5 | | | |
| Methoxychlor | | | <60 | <20 | | | |
| Mirex | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:25:43

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241644R** ACF DF5 7GP19 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722A
Result file : 1C13088.81R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722B
Result file : 1C13088B.81R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endo. sulfate | | | <8.5 | <1.65 | | | |
| Endrin ketone | | | <8.5 | <1.65 | | | |
| DCB | A | 12.643199 | | | | 19.79 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

8439

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:25:43

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241644R ACF DF5 7GP19 Sample ID: AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 50 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 13:56:54
**Instrument** H6722A
**Result file** 1C13088.81R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 95.1% Conc: 9.152529
%SSR(DCB) 129.8% Conc: 12.643199

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| | 7.56 | 7.59 | 7.62 | 45873.47656: | 396.333184 | | | 2 |
| | 7.93 | 7.96 | 7.99 | 31108.08007! | 402.186417 | | | 3 |
| | 8.09 | 8.12 | 8.15 | 49638.85546! | 387.319772 | | | 4 |
| | 8.45 | 8.48 | 8.51 | 38325.38671! | 411.196936 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 57416.35937! | 540.630368 | | | 6 |
| Height summation: | | | | **222362.158204** | | | | |
| Concentration CF: | | | | **427.533335** | L: | | | |

## Analysis Report (B)

**Injected on** Mar 30, 2004 13:56:54
**Instrument** H6722B
**Result file** 1C13088B.81R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 90.6% Conc: 8.714009
%SSR(DCB) 106.4% Conc: 10.365955

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| | 8.12 | 8.15 | 8.18 | 19288.16992: | 389.026616 | | | 1 |
| | 8.36 | 8.39 | 8.42 | 22769.97460! | 408.575439 | | | 2 |
| | 8.83 | 8.86 | 8.89 | 14265.39648· | 407.203383 | | | 3 |
| | 8.98 | 9.01 | 9.04 | 30010.00195: | 404.1034 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 23919.02539· | 439.394994 | | | 5 |
| | 9.97 | 10.00 | 10.03 | 16340.18261: | 293.277821 | | | 6 |
| Height summation: | | | | **126592.750976** | | | | |
| Concentration CF: | | | | **390.263609** | L: | | | |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <85 | <16.5 | | | 4 | 40 | |
| Aroclor-1221 | | | <150 | <50 | | | 3 | 5 | |
| Aroclor-1232 | | | <85 | <21.5 | | | 4 | 10 | |
| Aroclor-1242 | | | <85 | <20 | | | 4 | 30 | |
| Aroclor-1248 | | | <90 | <30 | | | 4 | 30 | |
| Aroclor-1254 | A | 427.533335 | 85 | 16.5 | E (3) | 9.11 | 4 | 40 | |
| Aroclor-1260 | | | <85 | <16.5 | VLI 4/1 04 | | 4 | 40 | |
| Toxaphene | | | <165 | <55 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8448

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241644R** ACF DF5 7GP19 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722A
Result file : 1C13088.81R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 95.1% Conc.: 9.152529
%SSR(DCB) : 129.8% Conc.: 12.643199

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **119.51** | |
| 5.32 | 5.36 | 5.38 | 1973.372681 | 23.955131 | | | 2 |
| 5.97 | 6.00 | 6.03 | 1375.018433 | 10.125405 | | | 3 |
| 6.16 | 6.18 | 6.22 | 644.405029 | 8.737843 | | | 4 |
| 6.24 | 6.28 | 6.30 | 2834.982178 | 54.076052 | | | 5 |
| 6.71 | 6.74 | 6.77 | 9505.163086 | 149.380598 | | | 6 |
| Height Summation | | | **16332.941407** | | | | |
| Amount Avg CF: | | | **49.255006** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **106.69** | |
| 4.54 | 4.58 | 4.60 | 573.547424 | 19.258352 | | | 1 |
| 4.75 | 4.76 | 4.81 | 2129.370361 | 137.558091 | | | 2 |
| Height Summation | | | **2702.917785** | | | | |
| Amount Avg CF: | | | **78.408222** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **121.22** | |
| 5.32 | 5.36 | 5.38 | 1973.372681 | 55.513903 | | | 2 |
| 5.97 | 6.00 | 6.03 | 1375.018433 | 22.635535 | | | 3 |
| 6.16 | 6.18 | 6.22 | 644.405029 | 19.12054 | | | 4 |
| 6.24 | 6.28 | 6.30 | 2834.982178 | 121.7768 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 9505.163086 | 348.077699 | | | 6 |
| Height Summation | | | **16332.941407** | | | | |
| Amount Avg CF: | | | **113.424895** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **117.72** | |
| 5.32 | 5.36 | 5.38 | 1973.372681 | 27.530453 | | | 2 |
| 5.97 | 6.00 | 6.03 | 1375.018433 | 11.89476 | | | 3 |
| 6.16 | 6.18 | 6.22 | 644.405029 | 10.13652 | | | 4 |
| 6.24 | 6.28 | 6.30 | 2834.982178 | 63.620369 | | | 5 |
| 6.71 | 6.74 | 6.77 | 9505.163086 | 168.702386 | | | 6 |
| Height Summation | | | **16332.941407** | | | | |
| Amount Avg CF: | | | **56.376898** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **113.80** | |
| 5.32 | 5.36 | 5.38 | 1973.372681 | 58.318311 | | | 1 |
| 6.71 | 6.74 | 6.77 | 9505.163086 | 112.649099 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 47199.77343 | 1168.22939 | | | 3 |
| 7.28 | 7.30 | 7.34 | 6821.443359 | 84.711193 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 49638.85546 | 1068.08041 | | | 6 |
| Height Summation | | | **115138.608033** | | | | |
| Amount Avg CF: | | | **498.397681** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **35.06** | |
| 7.22 | 7.25 | 7.28 | 9582.746094 | 133.967072 | | | 1 |
| 7.56 | 7.59 | 7.62 | 45873.47656 | 396.333184 | | | 2 |
| 7.93 | 7.96 | 7.99 | 31108.08007 | 402.186417 | | | 3 |
| 8.09 | 8.12 | 8.15 | 49638.85546 | 387.319772 | | | 4 |
| 8.45 | 8.48 | 8.51 | 38325.38671 | 411.196936 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 57416.35937 | 540.630368 | | | 6 |
| Height Summation | | | **231944.904298** | | | | |
| Amount Avg CF: | | | **378.605625** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722B
Result file : 1C13088B.81R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 90.6% Conc.: 8.714009
%SSR(DCB) : 106.4% Conc.: 10.365955

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **137.68** | |
| 5.52 | 5.56 | 5.58 | 681.700256 | 26.050364 | | | 1 |
| 6.10 | 6.12 | 6.16 | 463.876923 | 10.889357 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1025.319336 | 15.156905 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1291.533691 | 51.965466 | | | 5 |
| 7.56 | 7.60 | 7.62 | 8095.103516 | 226.206075 | | | 6 |
| Height Summation | | | **11557.533722** | | | | |
| Amount Avg CF: | | | **66.053633** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 5.52 | 5.56 | 5.58 | 681.700256 | 18.874383 | | | 3 |
| Height Summation | | | **681.700256** | | | | |
| Amount Avg CF: | | | **18.874383** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **149.71** | |
| 5.52 | 5.56 | 5.58 | 681.700256 | 24.150106 | | | 1 |
| 6.10 | 6.12 | 6.16 | 463.876923 | 23.087999 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1025.319336 | 34.852153 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1291.533691 | 120.003799 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 8095.103516 | 537.205645 | | | 6 |
| Height Summation | | | **11557.533722** | | | | |
| Amount Avg CF: | | | **147.85994** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **137.08** | |
| 5.52 | 5.56 | 5.58 | 681.700256 | 28.447061 | | | 1 |
| 6.10 | 6.12 | 6.16 | 463.876923 | 12.578441 | | | 2 |
| 6.73 | 6.77 | 6.79 | 1025.319336 | 17.901913 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1291.533691 | 62.654537 | | | 5 |
| 7.56 | 7.60 | 7.62 | 8095.103516 | 260.619456 | | | 6 |
| Height Summation | | | **11557.533722** | | | | |
| Amount Avg CF: | | | **76.440282** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **31.81** | |
| 7.19 | 7.21 | 7.25 | 9328.154297 | 238.390886 | | | 1 |
| 7.56 | 7.60 | 7.62 | 8095.103516 | 172.294055 | | | 2 |
| 8.06 | 8.09 | 8.12 | 8310.695313 | 170.654542 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 19288.16992 | 354.811881 | | | 5 |
| 8.44 | 8.47 | 8.50 | 12638.24121 | 273.723327 | | | 6 |
| Height Summation | | | **57660.364259** | | | | |
| Amount Avg CF: | | | **241.974938** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **12.88** | |
| 8.12 | 8.15 | 8.18 | 19288.16992 | 389.026616 | | | 1 |
| 8.36 | 8.39 | 8.42 | 22769.97460 | 408.575439 | | | 2 |
| 8.83 | 8.86 | 8.89 | 14265.39648 | 407.203383 | | | 3 |
| 8.98 | 9.01 | 9.04 | 30010.00195 | 404.1034 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 23919.02539 | 439.394994 | | | 5 |
| 9.97 | 10.00 | 10.03 | 16340.18261 | 293.277821 | | | 6 |
| Height Summation | | | **126592.750976** | | | | |
| Amount Avg CF: | | | **390.263609** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **56.38** | |
| 9.23 | 9.26 | 9.29 | 18660.21875 | 292.719144 | | | 1 |
| 9.49 | 9.52 | 9.55 | 20738.65625 | 278.087228 | | | 2 |
| 9.97 | 10.00 | 10.03 | 16340.18261 | 243.960978 | | | 3 |
| 10.47 | 10.47 | 10.53 | 23696.85546 | 469.131852 | | | 4 |
| 10.78 | 10.80 | 10.84 | 10597.96679 | 108.517943 | | | 5 |
| 11.30 | 11.33 | 11.36 | 4819.818848 | 88.246411 | | | 6 |
| Height Summation | | | **94853.698731** | | | | |
| Amount Avg CF: | | | **246.777259** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average
Printed on: 3/31/04 09:26:13

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241644R** ACF DF5 7GP19 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722A
Result file : 1C13088.81R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 6 | 56.58 | |
| 8.33 | 8.35 | 8.39 | 22949.12109 | 216.756886 | | | 1 |
| 8.68 | 8.71 | 8.74 | 36094.29687 | 268.314052 | | | 2 |
| 9.05 | 9.08 | 9.11 | 57416.35937 | 413.088226 | | | 3 |
| 9.19 | 9.22 | 9.25 | 7449.363281 | 84.394791 | | | 4 |
| 9.91 | 9.93 | 9.97 | 26311.19140 | 130.290539 | | | 5 |
| 10.28 | 10.30 | 10.34 | 16803.71289 | 147.911758 | | | 6 |
| Height Summation | | | **167024.044922** | | | | |
| Amount Avg CF: | | | **210.126042** | Linear: | | | |
| **Chlordane** | | | | | 5 | 83.89 | |
| 6.14 | 6.18 | 6.20 | 644.405029 | 6.791442 | | | 1 |
| 6.25 | 6.28 | 6.31 | 2834.982178 | 22.67238 | | | 2 |
| 6.86 | 6.91 | 6.92 | 2778.299561 | 22.026961 | | | 3 |
| 7.68 | 7.72 | 7.74 | 1358.509277 | 5.67217 | | | 4 |
| 7.85 | 7.90 | 7.91 | 15372.95996 | 50.368771 | | | 5 |
| Height Summation | | | **22989.156006** | | | | |
| Amount Avg CF: | | | **21.506345** | Linear: | | | |
| **Toxaphene** | | | | | 3 | 106.56 | |
| 8.70 | 8.71 | 8.76 | 36094.29687 | 1684.77535 | | | 1 |
| 9.69 | 9.73 | 9.75 | 7677.224609 | 290.34021 | | | 4 |
| 10.41 | 10.42 | 10.47 | 11074.88867 | 290.993215 | | | 6 |
| Height Summation | | | **54846.410156** | | | | |
| Amount Avg CF: | | | **755.369592** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 13:56:54
Instrument : CP13--H6722B
Result file : 1C13088B.81R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 2 | 32.43 | |
| 7.56 | 7.60 | 7.62 | 8095.103516 | 131.283196 | | | 3 |
| 8.51 | 8.53 | 8.57 | 8262.477539 | 82.302289 | | | 5 |
| Height Summation | | | **16357.581055** | | | | |
| Amount Avg CF: | | | **106.792743** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 24.41 | |
| 9.83 | 9.86 | 9.89 | 3442.49707 | 164.468735 | | | 3 |
| 10.17 | 10.18 | 10.23 | 1658.232422 | 116.047239 | | | 4 |
| Height Summation | | | **5100.729492** | | | | |
| Amount Avg CF: | | | **140.257987** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 85 | 16.5 | | 29.14 | 4 | 40 | |
| Aroclor-1221 | | | 150 | 50 | | ** 122.39 | 3 | 5 | |
| Aroclor-1232 | | | 85 | 21.5 | E | 26.36 | 4 | 10 | |
| Aroclor-1242 | | | 85 | 20 | | 30.21 | 4 | 30 | |
| Aroclor-1248 | | | 90 | 30 | E | ** 69.27 | 4 | 30 | |
| Aroclor-1254 | | | 85 | 16.5 | E | 3.03 | 4 | 40 | |
| Aroclor-1260 | | | 85 | 16.5 | | 16.04 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 132.95 | 2 | 20 | |
| Toxaphene | | | 165 | 55 | | ** 137.36 | 4 | 30 | |

Units: ug/kg

8442

** Peak found within more than one window
D Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:26:13

Sample Name: **4241644RACF DF5 AC7GP19 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 02:10:54pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.81R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.556 | | 0.0000 | 0.000 | 31424.8 | 0.545 | BB | 0.038 | 13919.61 | 0.587 |
| 2 | 3.651 | | 0.0000 | 0.000 | 2254.9 | 0.039 | BB | 0.042 | 885.03 | 0.037 |
| 3 | 3.875 | | 0.0000 | 0.000 | 3389.9 | 0.059 | BB | 0.051 | 1108.55 | 0.047 |
| 4 | 3.958 | | 0.0000 | 0.000 | 5925.9 | 0.103 | BB | 0.047 | 2108.72 | 0.089 |
| 5 | 4.066 | | 0.0000 | 0.000 | 8045.4 | 0.139 | BB | 0.041 | 3253.16 | 0.137 |
| 6 | 4.189 | | 0.0000 | 0.000 | 30643.3 | 0.531 | BB | 0.038 | 13393.76 | 0.565 |
| 7 | 4.311 | TCX | 274.5759 | 7.718 | 43478.4 | 0.753 | BB | 0.035 | 20843.25 | 0.879 |
| 8 | 4.428 | | 0.0000 | 0.000 | 2326.5 | 0.040 | BB | 0.048 | 812.50 | 0.034 |
| 9 | 4.493 | | 0.0000 | 0.000 | 1221.2 | 0.021 | BB | 0.027 | 762.53 | 0.032 |
| 10 | 4.580 | | 0.0000 | 0.000 | 1178.7 | 0.020 | BB | 0.034 | 573.55 | 0.024 |
| 11 | 4.633 | | 0.0000 | 0.000 | 2077.4 | 0.036 | BB | 0.033 | 1041.69 | 0.044 |
| 12 | 4.759 | | 0.0000 | 0.000 | 8595.2 | 0.149 | BB | 0.067 | 2129.37 | 0.090 |
| 13 | 4.915 | HCB | 819.5830 | 23.037 | 271843.1 | 4.711 | BB | 0.040 | 114059.00 | 4.809 |
| 14 | 5.113 | alpha-BHC | 41.9893 | 1.180 | 10215.8 | 0.177 | BB | 0.044 | 3888.76 | 0.164 |
| 15 | 5.237 | | 0.0000 | 0.000 | 431.3 | 0.007 | BB | 0.026 | 278.00 | 0.012 |
| 16 | 5.306 | | 0.0000 | 0.000 | 266.7 | 0.005 | BB | 0.025 | 181.20 | 0.008 |
| 17 | 5.362 | | 0.0000 | 0.000 | 4045.9 | 0.070 | BB | 0.034 | 1973.37 | 0.083 |
| 18 | 5.460 | | 0.0000 | 0.000 | 4872.0 | 0.084 | BB | 0.034 | 2365.11 | 0.100 |
| 19 | 5.551 | | 0.0000 | 0.000 | 3470.9 | 0.060 | BB | 0.030 | 1912.38 | 0.081 |
| 20 | 5.670 | | 0.0000 | 0.000 | 1897.2 | 0.033 | BB | 0.056 | 564.09 | 0.024 |
| 21 | 5.773 | | 0.0000 | 0.000 | 5606.3 | 0.097 | BB | 0.045 | 2062.26 | 0.087 |
| 22 | 5.911 | | 0.0000 | 0.000 | 733.2 | 0.013 | BB | 0.027 | 453.99 | 0.019 |
| 23 | 5.998 | delta-BHC | 15.6339 | 0.439 | 4517.7 | 0.078 | BB | 0.055 | 1375.02 | 0.058 |
| 24 | 6.083 | | 0.0000 | 0.000 | 1051.9 | 0.018 | BB | 0.032 | 544.16 | 0.023 |
| 25 | 6.184 | | 0.0000 | 0.000 | 1776.0 | 0.031 | BV | 0.046 | 644.41 | 0.027 |
| 26 | 6.283 | Heptachlor | 28.6873 | 0.806 | 7999.7 | 0.139 | VB | 0.047 | 2834.98 | 0.120 |
| 27 | 6.359 | | 0.0000 | 0.000 | 7830.7 | 0.136 | BB | 0.029 | 4424.45 | 0.187 |
| 28 | 6.438 | | 0.0000 | 0.000 | 18830.2 | 0.326 | BV | 0.028 | 11189.22 | 0.472 |
| 29 | 6.492 | | 0.0000 | 0.000 | 1426926.0 | 24.728 | VB | 0.031 | 762985.10 | 32.167 |
| 30 | 6.621 | | 0.0000 | 0.000 | 801.3 | 0.014 | BB | 0.029 | 461.76 | 0.019 |
| 31 | 6.741 | | 0.0000 | 0.000 | 26385.1 | 0.457 | BV | 0.046 | 9505.16 | 0.401 |
| 32 | 6.857 | | 0.0000 | 0.000 | 7848.5 | 0.136 | VV | 0.038 | 3457.15 | 0.146 |
| 33 | 6.915 | | 0.0000 | 0.000 | 9875.1 | 0.171 | VB | 0.059 | 2778.30 | 0.117 |
| 34 | 7.075 | | 0.0000 | 0.000 | 36775.0 | 0.637 | BB | 0.044 | 13914.42 | 0.587 |
| 35 | 7.204 | | 0.0000 | 0.000 | 83168.4 | 1.441 | BB | 0.029 | 47199.77 | 1.990 |
| 36 | 7.246 | | 0.0000 | 0.000 | 11865.8 | 0.206 | BB | 0.021 | 9582.75 | 0.404 |
| 37 | 7.302 | | 0.0000 | 0.000 | 18647.9 | 0.323 | BB | 0.046 | 6821.44 | 0.288 |
| 38 | 7.421 | | 0.0000 | 0.000 | 637.7 | 0.011 | BB | 0.025 | 425.49 | 0.018 |
| 39 | 7.522 | o,p-DDE | 163.5100 | 4.596 | 16460.0 | 0.285 | BV | 0.033 | 8349.92 | 0.352 |
| 40 | 7.586 | | 0.0000 | 0.000 | 127739.2 | 2.214 | VV | 0.046 | 45873.48 | 1.934 |
| 41 | 7.638 | | 0.0000 | 0.000 | 46929.7 | 0.813 | VV | 0.038 | 20752.84 | 0.875 |
| 42 | 7.724 | g. Chlordane | 17.5421 | 0.493 | 3114.3 | 0.054 | VB | 0.038 | 1358.51 | 0.057 |
| 43 | 7.837 | | 0.0000 | 0.000 | 6190.8 | 0.107 | BV | 0.038 | 2728.81 | 0.115 |
| 44 | 7.903 | a. Chlordane | 185.9909 | 5.228 | 35515.6 | 0.615 | VV | 0.039 | 15372.96 | 0.648 |
| 45 | 7.960 | 4,4'-DDE | 442.0165 | 12.424 | 73114.3 | 1.267 | VV | 0.039 | 31108.08 | 1.311 |
| 46 | 8.016 | | 0.0000 | 0.000 | 23634.2 | 0.410 | VB | 0.038 | 10477.23 | 0.442 |
| 47 | 8.120 | | 0.0000 | 0.000 | 128311.8 | 2.224 | BV | 0.043 | 49638.86 | 2.093 |
| 48 | 8.277 | | 0.0000 | 0.000 | 44530.6 | 0.772 | VB | 0.068 | 10930.88 | 0.461 |
| 49 | 8.355 | | 0.0000 | 0.000 | 62875.3 | 1.090 | BV | 0.046 | 22949.12 | 0.968 |
| 50 | 8.478 | | 0.0000 | 0.000 | 91855.3 | 1.592 | VV | 0.040 | 38325.39 | 1.616 |
| 51 | 8.553 | o,p-DDT | 70.0028 | 1.968 | 6677.6 | 0.116 | VB | 0.031 | 3591.53 | 0.151 |
| 52 | 8.632 | | 0.0000 | 0.000 | 9561.6 | 0.166 | BB | 0.031 | 5217.23 | 0.220 |
| 53 | 8.708 | Endrin | 607.0076 | 17.062 | 137733.7 | 2.387 | BV | 0.064 | 36094.30 | 1.522 |
| 54 | 8.847 | | 0.0000 | 0.000 | 80813.5 | 1.400 | VV | 0.061 | 21910.19 | 0.924 |
| 55 | 8.943 | | 0.0000 | 0.000 | 11071.9 | 0.192 | VV | 0.038 | 4858.69 | 0.205 |
| 56 | 9.006 | Endosulfan II | 80.0802 | 2.251 | 11728.8 | 0.203 | VV | 0.037 | 5249.55 | 0.221 |
| 57 | 9.081 | | 0.0000 | 0.000 | 169530.1 | 2.938 | VB | 0.049 | 57416.36 | 2.421 |
| 58 | 9.217 | | 0.0000 | 0.000 | 17082.3 | 0.296 | BB | 0.038 | 7449.36 | 0.314 |
| 59 | 9.311 | | 0.0000 | 0.000 | 865911.9 | 15.006 | BB | 0.044 | 329762.80 | 13.903 |
| 60 | 9.460 | | 0.0000 | 0.000 | 28654.6 | 0.497 | BV | 0.040 | 11907.69 | 0.502 |
| 61 | 9.544 | Endrin aldehyde | 203.5624 | 5.722 | 27425.4 | 0.475 | VV | 0.041 | 11233.30 | 0.474 |
| 62 | 9.595 | | 0.0000 | 0.000 | 9946.2 | 0.172 | VB | 0.031 | 5280.95 | 0.223 |
| 63 | 9.729 | Methoxychlor | 228.2007 | 6.414 | 29221.3 | 0.506 | BV | 0.063 | 7677.22 | 0.324 |
| 64 | 9.772 | | 0.0000 | 0.000 | 42017.7 | 0.728 | VB | 0.047 | 14789.32 | 0.624 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.857 | | 0.0000 | 0.000 | 4182.0 | 0.072 | BB | 0.027 | 2548.36 | 0.107 |
| 66 | 9.934 | | 0.0000 | 0.000 | 72691.5 | 1.260 | BB | 0.046 | 26311.19 | 1.109 |
| 67 | 10.148 | | 0.0000 | 0.000 | 7889.4 | 0.137 | BB | 0.066 | 1990.32 | 0.084 |
| 68 | 10.243 | | 0.0000 | 0.000 | 53664.8 | 0.930 | BB | 0.031 | 28939.13 | 1.220 |
| 69 | 10.303 | | 0.0000 | 0.000 | 37870.7 | 0.656 | BB | 0.038 | 16803.71 | 0.708 |
| 70 | 10.422 | | 0.0000 | 0.000 | 43252.6 | 0.750 | BB | 0.065 | 11074.89 | 0.467 |
| 71 | 10.591 | | 0.0000 | 0.000 | 354.8 | 0.006 | BB | 0.022 | 274.50 | 0.012 |
| 72 | 10.684 | | 0.0000 | 0.000 | 188044.2 | 3.259 | BV | 0.041 | 76880.36 | 3.241 |
| 73 | 10.796 | | 0.0000 | 0.000 | 24777.4 | 0.429 | VV | 0.059 | 6946.13 | 0.293 |
| 74 | 10.843 | | 0.0000 | 0.000 | 27792.2 | 0.482 | VB | 0.060 | 7734.07 | 0.326 |
| 75 | 11.028 | | 0.0000 | 0.000 | 7885.9 | 0.137 | BB | 0.082 | 1601.19 | 0.068 |
| 76 | 11.135 | | 0.0000 | 0.000 | 60528.2 | 1.049 | BB | 0.097 | 10405.04 | 0.439 |
| 77 | 11.310 | | 0.0000 | 0.000 | 3044.1 | 0.053 | BB | 0.042 | 1207.23 | 0.051 |
| 78 | 11.400 | | 0.0000 | 0.000 | 707004.3 | 12.252 | BB | 0.043 | 272379.30 | 11.483 |
| 79 | 11.518 | | 0.0000 | 0.000 | 22812.1 | 0.395 | BB | 0.138 | 2751.75 | 0.116 |
| 80 | 11.814 | DCB | 379.2960 | 10.661 | 137106.6 | 2.376 | BB | 0.079 | 28887.37 | 1.218 |
| 81 | 12.075 | | 0.0000 | 0.000 | 14922.7 | 0.259 | BB | 0.080 | 3119.97 | 0.132 |
| 82 | 12.277 | | 0.0000 | 0.000 | 26914.9 | 0.466 | BB | 0.092 | 4873.88 | 0.205 |
| 83 | 12.457 | | 0.0000 | 0.000 | 796.6 | 0.014 | BB | 0.036 | 365.05 | 0.015 |
| 84 | 12.570 | | 0.0000 | 0.000 | 17636.7 | 0.306 | BB | 0.076 | 3867.59 | 0.163 |
| 85 | 12.733 | | 0.0000 | 0.000 | 1578.8 | 0.027 | BB | 0.069 | 383.61 | 0.016 |
| 86 | 12.784 | | 0.0000 | 0.000 | 1425.7 | 0.025 | BB | 0.050 | 476.47 | 0.020 |
| 87 | 12.947 | | 0.0000 | 0.000 | 12918.3 | 0.224 | BB | 0.071 | 3014.24 | 0.127 |
| 88 | 13.126 | | 0.0000 | 0.000 | 29421.0 | 0.510 | BB | 0.096 | 5117.29 | 0.216 |
| 89 | 13.359 | | 0.0000 | 0.000 | 42831.0 | 0.742 | BB | 0.143 | 5001.35 | 0.211 |
| 90 | 13.657 | | 0.0000 | 0.000 | 1220.1 | 0.021 | BB | 0.044 | 462.86 | 0.020 |
| 91 | 13.745 | | 0.0000 | 0.000 | 3640.1 | 0.063 | BB | 0.074 | 821.22 | 0.035 |
| 92 | 13.879 | | 0.0000 | 0.000 | 1727.2 | 0.030 | BB | 0.041 | 702.45 | 0.030 |

Total Area = 5770461.0, Total Amount = 3557.678, Total Height = 2371959.0, Sample Units = PPB

Sample Name: **4241644RACF DF5 AC7GP19 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 02:10:55pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.81R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.373 | | 0.0000 | 0.000 | 763.0 | 0.052 | BB | 0.160 | 79.68 | 0.014 |
| 2 | 3.409 | | 0.0000 | 0.000 | 783.9 | 0.053 | BB | 0.044 | 296.41 | 0.051 |
| 3 | 3.681 | | 0.0000 | 0.000 | 21011.8 | 1.419 | BB | 0.045 | 7819.02 | 1.345 |
| 4 | 4.150 | | 0.0000 | 0.000 | 841.6 | 0.057 | BB | 0.045 | 308.38 | 0.053 |
| 5 | 4.200 | | 0.0000 | 0.000 | 3641.3 | 0.246 | BB | 0.036 | 1684.99 | 0.290 |
| 6 | 4.373 | | 0.0000 | 0.000 | 106.3 | 0.007 | BB | 0.020 | 86.85 | 0.015 |
| 7 | 4.417 | | 0.0000 | 0.000 | 11963.8 | 0.808 | BB | 0.039 | 5143.30 | 0.885 |
| 8 | 4.556 | | 0.0000 | 0.000 | 9526.5 | 0.643 | BB | 0.058 | 2719.68 | 0.468 |
| 9 | 4.826 | TCX | 261.4203 | 5.449 | 23242.1 | 1.570 | BB | 0.038 | 10227.87 | 1.760 |
| 10 | 4.978 | | 0.0000 | 0.000 | 28012.5 | 1.892 | BB | 0.046 | 10044.88 | 1.728 |
| 11 | 5.182 | | 0.0000 | 0.000 | 7248.6 | 0.490 | BB | 0.127 | 949.02 | 0.163 |
| 12 | 5.323 | | 0.0000 | 0.000 | 260.0 | 0.018 | BB | 0.028 | 156.94 | 0.027 |
| 13 | 5.557 | HCB | 12.2808 | 0.256 | 2215.3 | 0.150 | BB | 0.054 | 681.70 | 0.117 |
| 14 | 5.673 | | 0.0000 | 0.000 | 4667.7 | 0.315 | BB | 0.042 | 1873.27 | 0.322 |
| 15 | 5.803 | | 0.0000 | 0.000 | 1125.1 | 0.076 | BB | 0.031 | 609.19 | 0.105 |
| 16 | 5.923 | | 0.0000 | 0.000 | 706.6 | 0.048 | BV | 0.038 | 310.62 | 0.053 |
| 17 | 6.123 | | 0.0000 | 0.000 | 1264.1 | 0.085 | VB | 0.045 | 463.88 | 0.080 |
| 18 | 6.263 | | 0.0000 | 0.000 | 552.7 | 0.037 | BV | 0.024 | 389.83 | 0.067 |
| 19 | 6.298 | gamma-BHC | 32.2925 | 0.673 | 2485.8 | 0.168 | VV | 0.037 | 1127.97 | 0.194 |
| 20 | 6.356 | | 0.0000 | 0.000 | 844.5 | 0.057 | VB | 0.030 | 476.46 | 0.082 |
| 21 | 6.533 | | 0.0000 | 0.000 | 632.6 | 0.043 | BV | 0.037 | 286.38 | 0.049 |
| 22 | 6.625 | | 0.0000 | 0.000 | 1783.9 | 0.120 | VB | 0.033 | 910.54 | 0.157 |
| 23 | 6.768 | | 0.0000 | 0.000 | 3944.5 | 0.266 | BB | 0.064 | 1025.32 | 0.176 |
| 24 | 7.086 | | 0.0000 | 0.000 | 13533.5 | 0.914 | BB | 0.175 | 1291.53 | 0.222 |
| 25 | 7.144 | | 0.0000 | 0.000 | 512.6 | 0.035 | BV | 0.029 | 290.98 | 0.050 |
| 26 | 7.214 | | 0.0000 | 0.000 | 20606.4 | 1.392 | VV | 0.037 | 9328.15 | 1.605 |
| 27 | 7.275 | | 0.0000 | 0.000 | 8911.2 | 0.602 | VV | 0.054 | 2762.99 | 0.475 |
| 28 | 7.427 | | 0.0000 | 0.000 | 7117.1 | 0.481 | VB | 0.040 | 2949.96 | 0.508 |
| 29 | 7.603 | Telodrin | 222.4993 | 4.638 | 26143.0 | 1.766 | BV | 0.054 | 8095.10 | 1.393 |
| 30 | 7.790 | | 0.0000 | 0.000 | 59259.6 | 4.003 | VV | 0.039 | 25605.10 | 4.406 |
| 31 | 7.965 | | 0.0000 | 0.000 | 1322.7 | 0.089 | VV | 0.032 | 694.32 | 0.119 |
| 32 | 8.012 | | 0.0000 | 0.000 | 7591.7 | 0.513 | VV | 0.051 | 2477.41 | 0.426 |
| 33 | 8.087 | | 0.0000 | 0.000 | 19227.9 | 1.299 | VV | 0.039 | 8310.70 | 1.430 |
| 34 | 8.150 | Hept. epoxide | 534.3748 | 11.139 | 44651.5 | 3.016 | VB | 0.039 | 19288.17 | 3.319 |
| 35 | 8.258 | | 0.0000 | 0.000 | 4998.0 | 0.338 | BV | 0.032 | 2606.05 | 0.448 |
| 36 | 8.308 | | 0.0000 | 0.000 | 9124.0 | 0.616 | VB | 0.034 | 4506.79 | 0.775 |
| 37 | 8.388 | o,p-DDE | 915.6401 | 19.086 | 51042.2 | 3.448 | BV | 0.037 | 22769.97 | 3.918 |
| 38 | 8.471 | | 0.0000 | 0.000 | 30359.8 | 2.051 | VV | 0.040 | 12638.24 | 2.175 |
| 39 | 8.531 | | 0.0000 | 0.000 | 22032.9 | 1.488 | VB | 0.044 | 8262.48 | 1.422 |
| 40 | 8.696 | Endosulfan I | 44.9850 | 0.938 | 3179.2 | 0.215 | BB | 0.036 | 1487.79 | 0.256 |
| 41 | 8.777 | | 0.0000 | 0.000 | 14666.9 | 0.991 | BB | 0.033 | 7309.63 | 1.258 |
| 42 | 8.856 | | 0.0000 | 0.000 | 28580.9 | 1.930 | BB | 0.033 | 14265.40 | 2.455 |
| 43 | 8.937 | | 0.0000 | 0.000 | 7677.9 | 0.519 | BV | 0.031 | 4064.56 | 0.699 |
| 44 | 9.008 | | 0.0000 | 0.000 | 76443.1 | 5.163 | VV | 0.042 | 30010.00 | 5.164 |
| 45 | 9.140 | | 0.0000 | 0.000 | 14067.1 | 0.950 | VV | 0.055 | 4246.96 | 0.731 |
| 46 | 9.258 | | 0.0000 | 0.000 | 42625.9 | 2.879 | VV | 0.038 | 18660.22 | 3.211 |
| 47 | 9.293 | | 0.0000 | 0.000 | 54202.2 | 3.661 | VB | 0.038 | 23919.03 | 4.116 |
| 48 | 9.437 | | 0.0000 | 0.000 | 10867.1 | 0.734 | BV | 0.039 | 4645.86 | 0.799 |
| 49 | 9.517 | o,p-DDT | 881.1215 | 18.366 | 49433.2 | 3.339 | VB | 0.040 | 20738.66 | 3.568 |
| 50 | 9.744 | Endosulfan II | 701.4154 | 14.620 | 71406.8 | 4.823 | BB | 0.053 | 22392.91 | 3.853 |
| 51 | 9.857 | | 0.0000 | 0.000 | 8311.0 | 0.561 | BB | 0.040 | 3442.50 | 0.592 |
| 52 | 9.947 | | 0.0000 | 0.000 | 68128.0 | 4.602 | BB | 0.030 | 37324.94 | 6.422 |
| 53 | 9.996 | 4,4'-DDT | 675.7975 | 14.086 | 24493.1 | 1.654 | BB | 0.025 | 16340.18 | 2.812 |
| 54 | 10.107 | | 0.0000 | 0.000 | 3351.6 | 0.226 | BB | 0.026 | 2171.25 | 0.374 |
| 55 | 10.178 | Endrin aldehyde | 57.2757 | 1.194 | 2672.4 | 0.181 | BB | 0.027 | 1658.23 | 0.285 |
| 56 | 10.295 | | 0.0000 | 0.000 | 2384.0 | 0.161 | BB | 0.041 | 958.88 | 0.165 |
| 57 | 10.472 | | 0.0000 | 0.000 | 61856.4 | 4.178 | BB | 0.044 | 23696.86 | 4.077 |
| 58 | 10.597 | | 0.0000 | 0.000 | 4307.1 | 0.291 | BB | 0.031 | 2325.02 | 0.400 |
| 59 | 10.672 | | 0.0000 | 0.000 | 13264.1 | 0.896 | BB | 0.038 | 5890.48 | 1.014 |
| 60 | 10.744 | | 0.0000 | 0.000 | 4736.3 | 0.320 | BB | 0.029 | 2747.95 | 0.473 |
| 61 | 10.804 | | 0.0000 | 0.000 | 21034.3 | 1.421 | BB | 0.033 | 10597.97 | 1.824 |
| 62 | 10.917 | | 0.0000 | 0.000 | 993.1 | 0.067 | BB | 0.033 | 501.77 | 0.086 |
| 63 | 10.968 | | 0.0000 | 0.000 | 3079.5 | 0.208 | BB | 0.037 | 1387.16 | 0.239 |
| 64 | 11.103 | | 0.0000 | 0.000 | 42082.7 | 2.842 | BB | 0.032 | 21801.59 | 3.751 |

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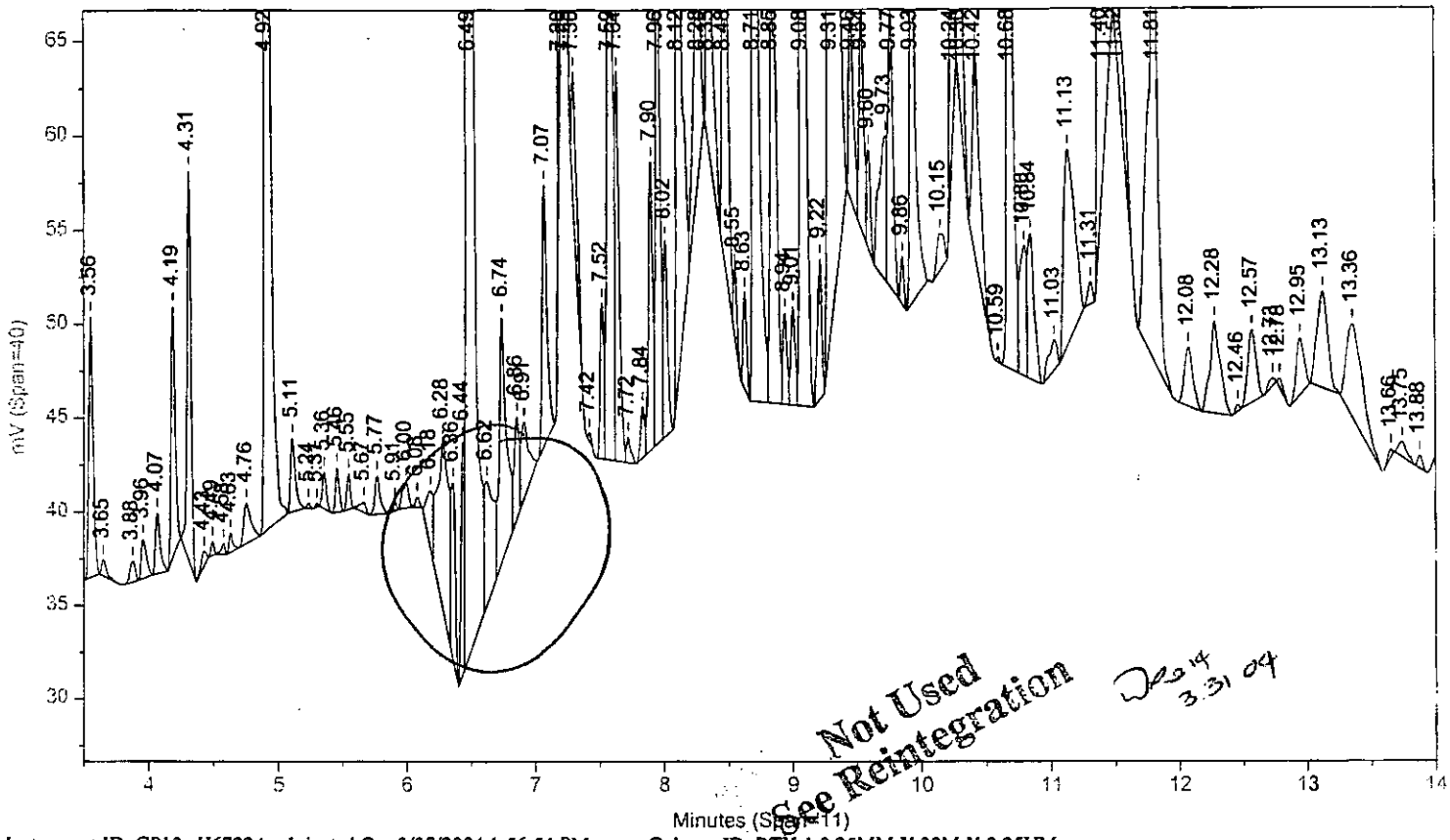
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.188 | | 0.0000 | 0.000 | 18565.7 | 1.254 | BB | 0.063 | 4894.14 | 0.842 |
| 66 | 11.331 | Endrin ketone | 147.4573 | 3.074 | 11845.3 | 0.800 | BB | 0.041 | 4819.82 | 0.829 |
| 67 | 11.387 | | 0.0000 | 0.000 | 3857.9 | 0.261 | BB | 0.047 | 1376.51 | 0.237 |
| 68 | 11.586 | | 0.0000 | 0.000 | 1437.4 | 0.097 | BB | 0.049 | 486.09 | 0.084 |
| 69 | 11.764 | | 0.0000 | 0.000 | 36374.9 | 2.457 | BB | 0.094 | 6416.05 | 1.104 |
| 70 | 11.944 | | 0.0000 | 0.000 | 208006.8 | 14.049 | BB | 0.048 | 72665.80 | 12.503 |
| 71 | 12.217 | | 0.0000 | 0.000 | 3378.7 | 0.228 | BB | 0.035 | 1595.59 | 0.275 |
| 72 | 12.295 | | 0.0000 | 0.000 | 12074.5 | 0.816 | BB | 0.069 | 2916.78 | 0.502 |
| 73 | 12.636 | | 0.0000 | 0.000 | 22404.3 | 1.513 | BB | 0.087 | 4277.28 | 0.736 |
| 74 | 12.763 | | 0.0000 | 0.000 | 1555.6 | 0.105 | BB | 0.056 | 463.62 | 0.080 |
| 75 | 12.918 | | 0.0000 | 0.000 | 19581.8 | 1.323 | BB | 0.084 | 3874.51 | 0.667 |
| 76 | 13.248 | | 0.0000 | 0.000 | 4260.5 | 0.288 | BB | 0.055 | 1285.17 | 0.221 |
| 77 | 13.345 | DCB | 310.9787 | 6.482 | 32677.7 | 2.207 | BB | 0.052 | 10544.61 | 1.814 |
| 78 | 13.685 | | 0.0000 | 0.000 | 6601.0 | 0.446 | BB | 0.076 | 1445.11 | 0.249 |
| 79 | 13.897 | | 0.0000 | 0.000 | 10005.4 | 0.676 | BB | 0.084 | 1975.36 | 0.340 |

Total Area = 1480529.0, Total Amount = 4797.539, Total Height = 581172.3, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.81R

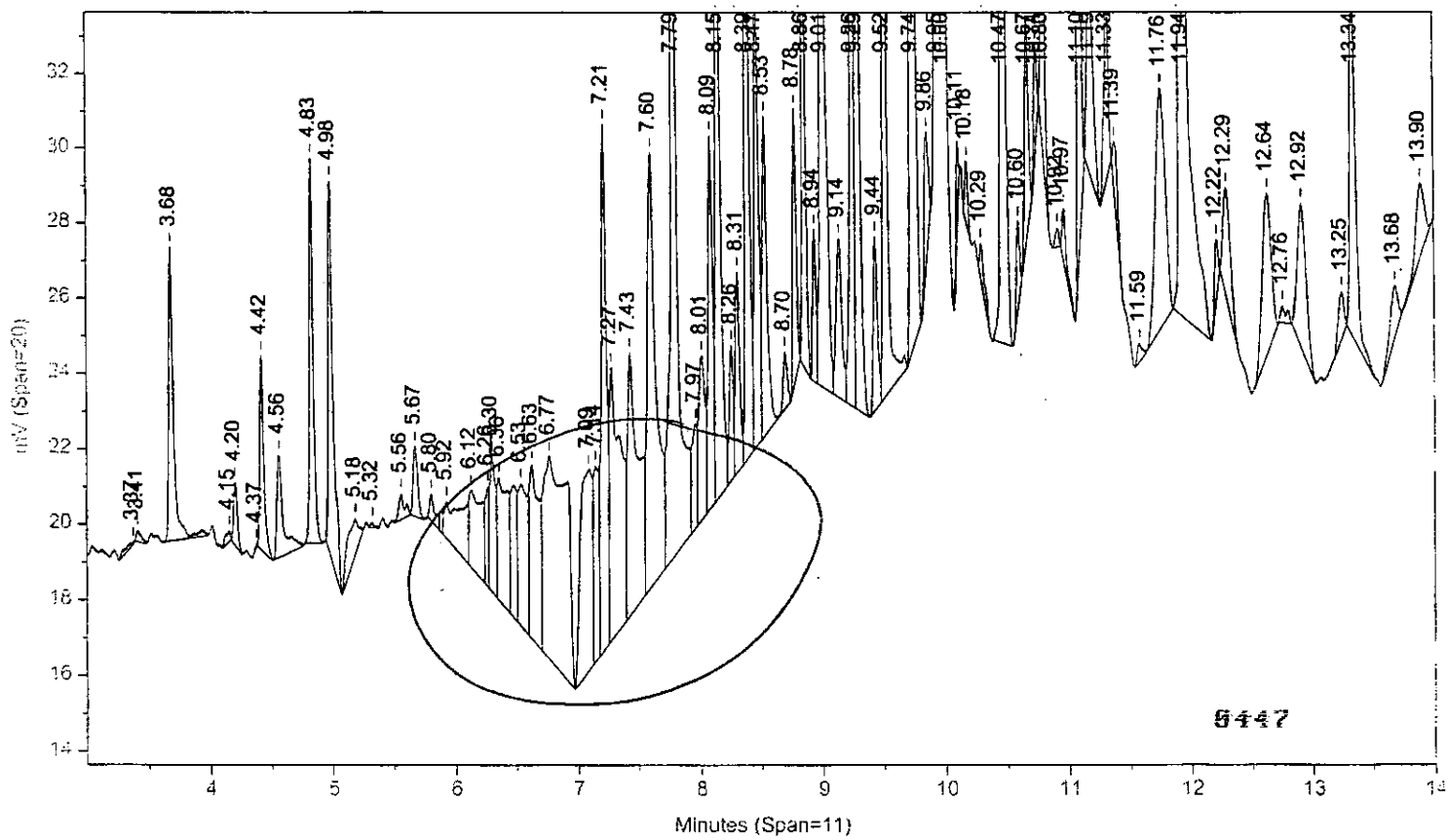
—— C:\CPWIN\DATA1\1C13088.81R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 1:56:54 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.81R

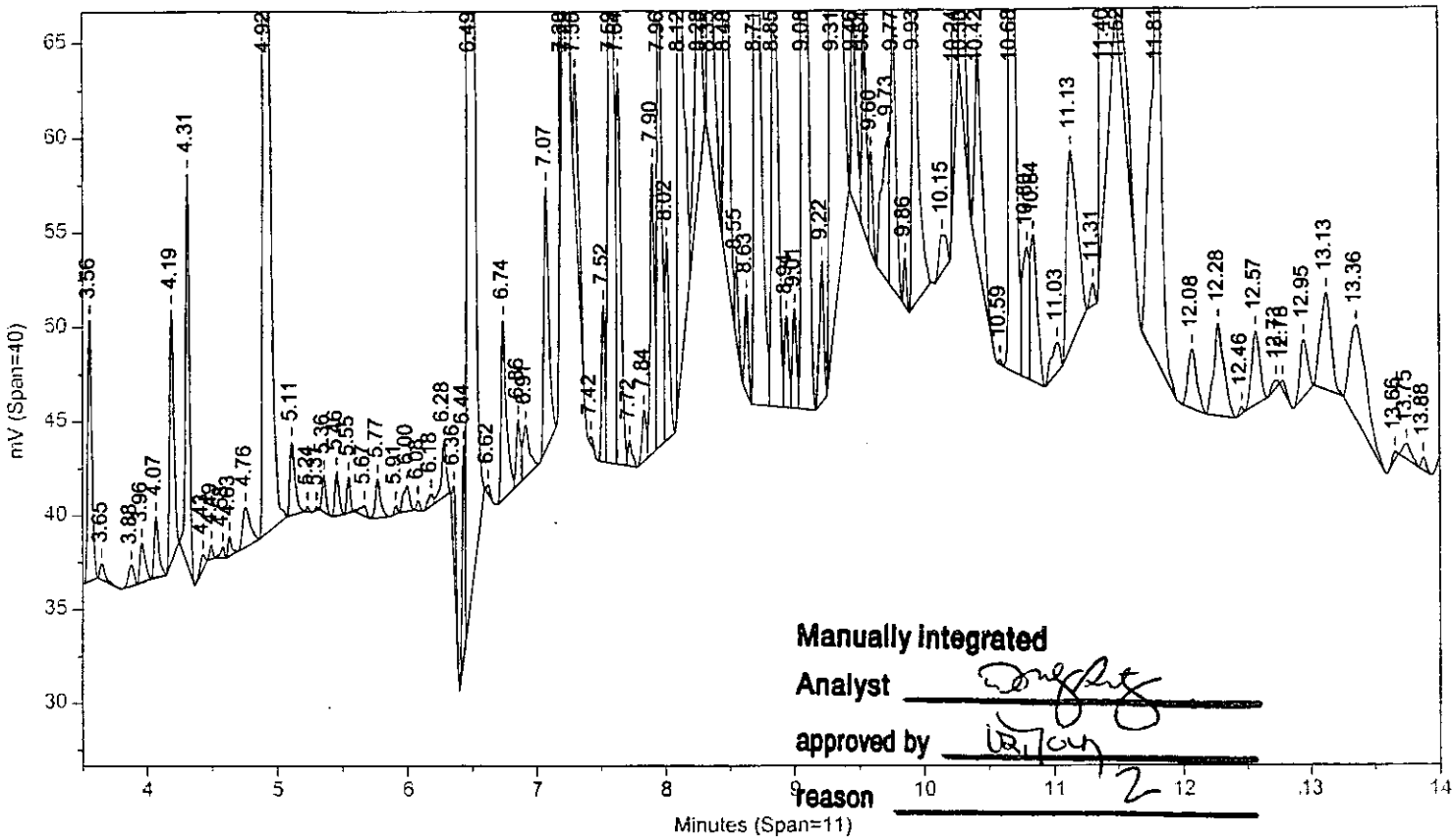
—— C:\CPWIN\DATA1\1C13088B.81R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 1:56:55 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.81R

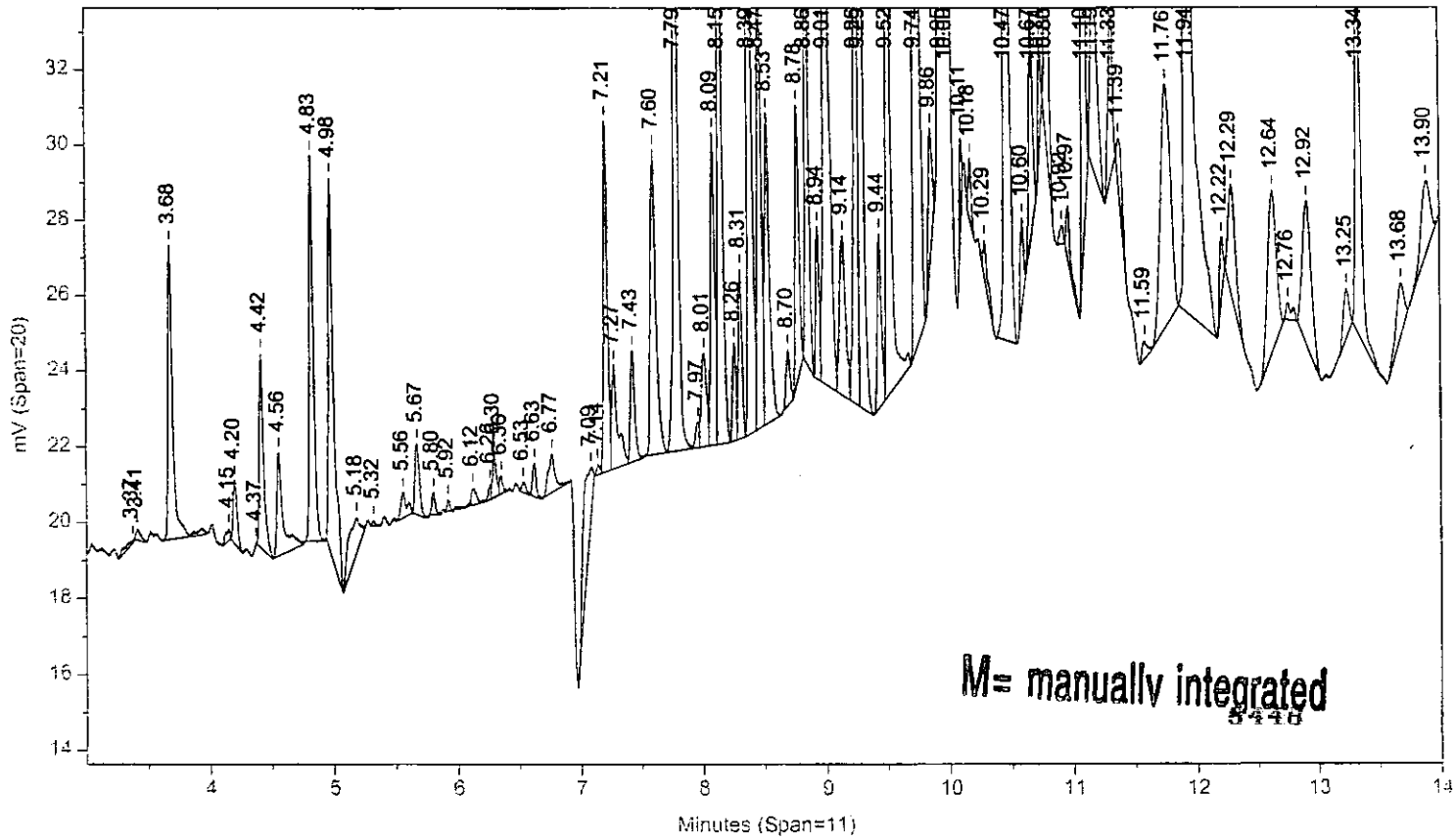
C:\CPWIN\DATA1\1C13088.81R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 1:56:54 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.81R

C:\CPWIN\DATA1\1C13088B.81R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 1:56:55 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 50
Analyst: 120

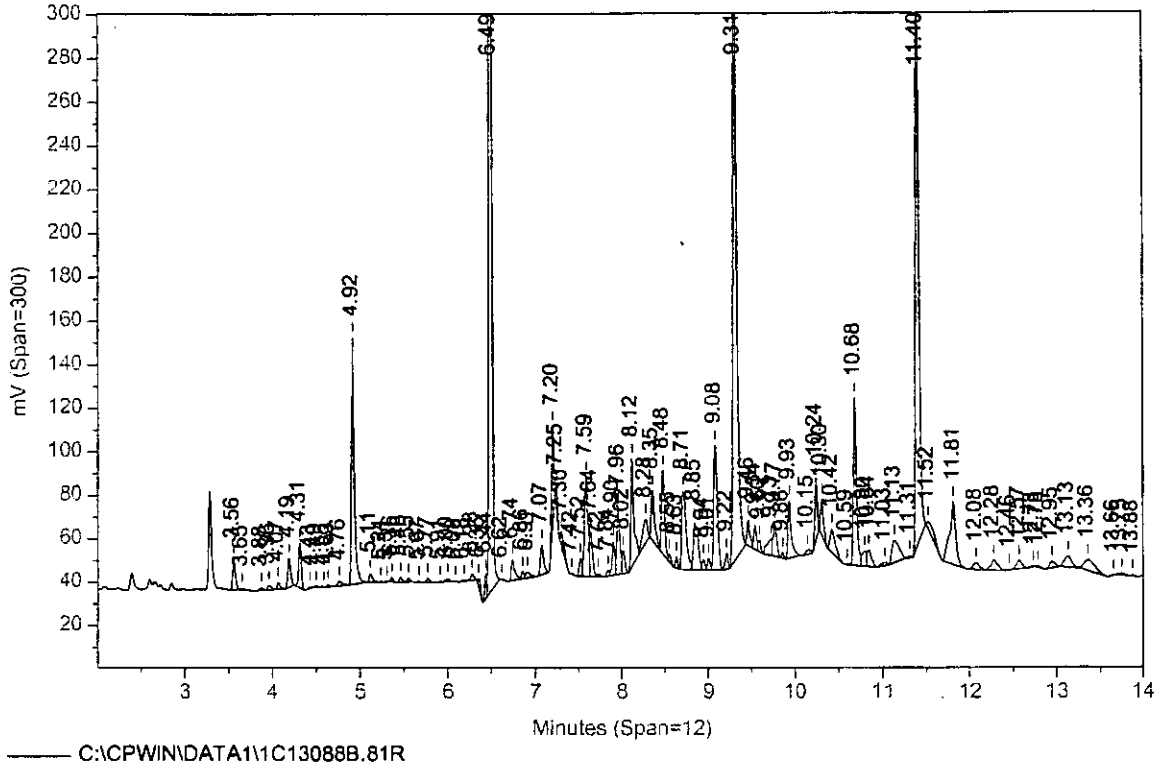
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.311 | 20843 | 9.15253 | TCX | 4.826 | 10228 | 8.71401 | TCX |
| 4.915 | 114059 | 27.31943 | HCB | 5.557 | 682 | .40936 | HCB |
| 5.113 | 3889 | 1.39964 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.998 | 1375 | .52113 | delta-BHC | . | 0 | . | delta-BHC |
| 6.283 | 2835 | .95624 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | gamma-BHC | 6.298 | 1128 | 1.07642 | gamma-BHC |
| 7.522 | 8350 | 5.45033 | o,p-DDE | 8.388 | 22770 | 30.52134 | o,p-DDE |
| . | 0 | . | Telodrin | 7.603 | 8095 | 7.41664 | Telodrin |
| 7.724 | 1359 | .58474 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.903 | 15373 | 6.1997 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.96 | 31108 | 14.73388 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.15 | 19288 | 17.81249 | Hept. epoxide |
| 8.553 | 3592 | 2.33343 | o,p-DDT | 9.517 | 20739 | 29.37072 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.696 | 1488 | 1.4995 | Endosulfan I |
| 8.708 | 36094 | 20.23359 | Endrin | . | 0 | . | Endrin |
| 9.006 | 5250 | 2.66934 | Endosulfan II | 9.744 | 22393 | 23.38051 | Endosulfan II |
| 9.544 | 11233 | 6.78541 | Endrin aldehyde | 10.178 | 1658 | 1.90919 | Endrin aldehyde |
| 9.729 | 7677 | 7.60669 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.996 | 16340 | 22.52658 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.331 | 4820 | 4.91524 | Endrin ketone |
| 11.814 | 28887 | 12.6432 | DCB | 13.345 | 10545 | 10.36596 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 8:46:06 AM
File Reported On: 3/31/2004 at 8:46:08 AM

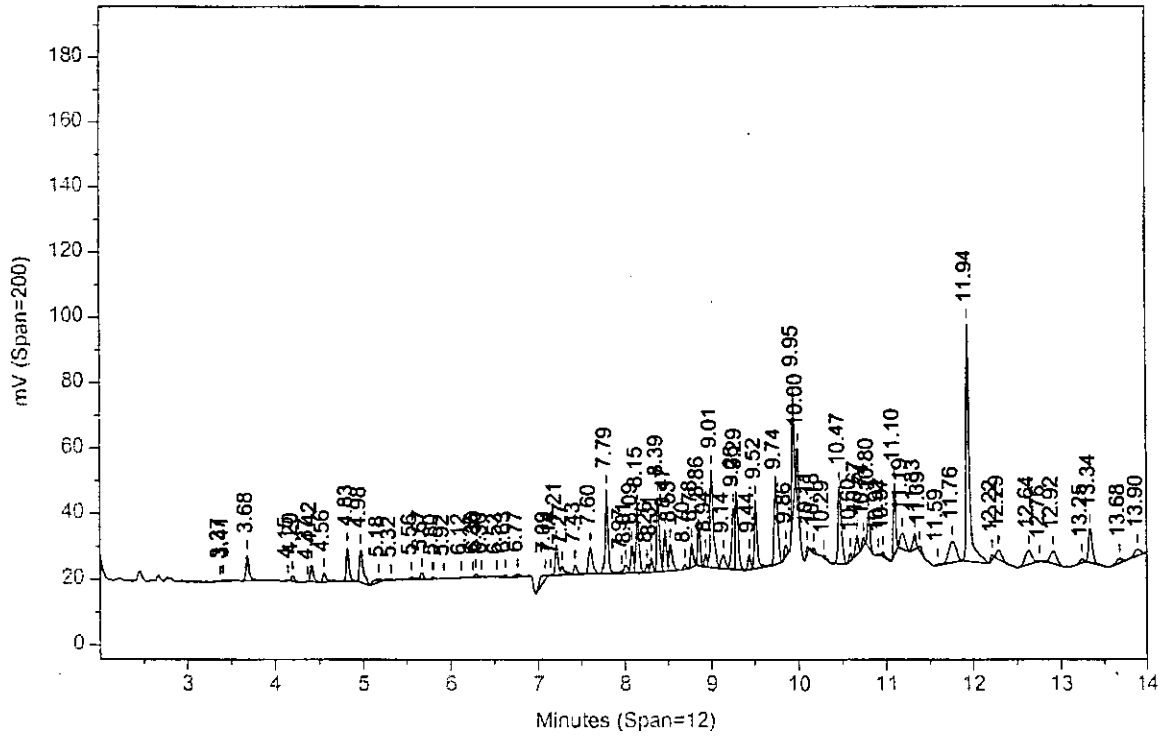
8449

10X REPLOTS

C:\CPWIN\DATA1\1C13088.81R




C:\CPWIN\DATA1\1C13088B.81R




5456

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241645R** ACF DF5 7GP45 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13–H6722A
Result file : 1C13088.82R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 86.5% Conc.: 8.317202
%SSR(DCB) : 109% Conc.: 10.620624

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 18941 | 8.317202 |
| **HCB** | 4.86 | 4.91 | 4.92 | 432943 E | 103.698486 |
| **alpha-BHC** | 5.11 | 5.11 | 5.17 | 1750 | 0.629786 |
| **delta-BHC** | 5.96 | 5.97 | 6.02 | 2540 | 0.962705 |
| **Heptachlor** | 6.25 | 6.28 | 6.31 | 2523 | 0.851081 |
| **o,p-DDE** | 7.48 | 7.52 | 7.54 | 5400 | 3.524692 |
| **g. Chlordane** | 7.68 | 7.73 | 7.74 | 29380 | 12.645738 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 9794 | 3.949708 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 20156 | 9.546775 |
| **o,p-DDT** | 8.51 | 8.56 | 8.57 | 3212 | 2.087169 |
| **Endrin** | 8.67 | 8.71 | 8.73 | 25783 | 14.453156 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 3292 | 1.673927 |
| **Endrin aldehyde** | 9.52 | 9.54 | 9.58 | 3145 | 1.899717 |
| **Methoxychlor** | 9.70 | 9.72 | 9.76 | 2498 | 2.474782 |
| **Endrin ketone** | 10.46 | 10.47 | 10.52 | 4818 | 2.298407 |
| **DCB** | 11.79 | 11.82 | 11.85 | 24266 | 10.620624 |

## Analysis Report (B)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13–H6722B
Result file : 1C13088B.82R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.2% Conc.: 9.157321
%SSR(DCB) : 110.5% Conc.: 10.766077

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.83 | 4.86 | 10748 | 9.157321 |
| **HCB** | 5.52 | 5.56 | 5.58 | 488 | 0.292973 |
| **gamma-BHC** | 6.25 | 6.30 | 6.31 | 1126 | 1.074253 |
| **Telodrin** | 7.58 | 7.61 | 7.64 | 14435 | 13.224731 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 11850 | 10.943638 |
| **o,p-DDE** | 8.38 | 8.39 | 8.44 | 14720 | 19.730417 |
| **Endosulfan I** | 8.68 | 8.69 | 8.74 | 1121 | 1.129597 |
| **o,p-DDT** | 9.47 | 9.52 | 9.53 | 14381 | 20.366781 |
| **4,4'-DDD** | 9.55 | 9.59 | 9.61 | 7910 | 11.790946 |
| **Endosulfan II** | 9.73 | 9.74 | 9.79 | 11936 | 12.462243 |
| **4,4'-DDT** | 9.96 | 10.00 | 10.02 | 10240 | 14.117041 |
| **Endrin aldehyde** | 10.17 | 10.18 | 10.23 | 659 | 0.759113 |
| **Mirex** | 11.25 | 11.26 | 11.31 | 573 | 0.708983 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 3009 | 3.068079 |
| **DCB** | 13.32 | 13.34 | 13.38 | 10952 | 10.766077 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 9.157321 | | | | 9.62 | |
| HCB | A | 103.698486 | | | E | ** 198.87 | |
| alpha-BHC | | | <4.15 | <0.85 | | | |
| gamma-BHC | | | <4.15 | <0.85 | | | |
| beta-BHC | | | <4.15 | <0.85 | | | |
| delta-BHC | | | <4.15 | <0.85 | | | |
| Heptachlor | | | <4.15 | <0.85 | | | |
| Aldrin | | | <7.5 | <2.55 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | B | 19.730417 | | | | ** 139.37 | |
| Hept. epoxide | | | <4.15 | <0.85 | | | |
| g. Chlordane | | | <4.5 | <1.5 | | | |
| a. Chlordane | | | <4.15 | <0.85 | | | |
| 4,4'-DDE | | | <8.5 | <1.65 | | | |
| Endosulfan I | | | <6.5 | <2.2 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <8.5 | <1.65 | | | |
| o,p-DDT | B | 20.366781 | | | | ** 162.82 | |
| Endrin | | | <8.5 | <2.5 | | | |
| 4,4'-DDD | | | <8.5 | <2.9 | | | |
| Kepone | | | | | | | matrix |
| Endosulfan II | B (A) | 1.67 12.462243 | ~~8.5~~ | ~~1.65~~ | (E) | ** 152.63 | due to |
| 4,4'-DDT | | | <8.5 | <1.65 | | | PCB 951 |
| Endrin aldehyde | | | <15 | <5 | | | |
| Methoxychlor | | | <60 | <20 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 09:29:09

(2) DD 3.31.04

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241645R** ACF DF5 7GP45 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

**Analysis Report (A)**

| | |
|---|---|
| Injected on | : MAR 30, 2004 14:17:31 |
| Instrument | : CP13--H6722A |
| Result file | : 1C13088.82R |
| Calibration file | : 2C13088.CAL |
| Method file | : PESTD.MET |

**Analysis Report (B)**

| | |
|---|---|
| Injected on | : MAR 30, 2004 14:17:31 |
| Instrument | : CP13--H6722B |
| Result file | : 1C13088B.82R |
| Calibration file | : 2C13088B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Mirex | | | | | | | |
| Endo. sulfate | | | <8.5 | <1.65 | | | |
| Endrin ketone | B | 3.068079 | <8.5 | ~~1.65~~ | J | 28.68 | |
| DCB | B | 10.766077 | | | | 1.36 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

#452

%Difference = High - Low Amount divided by the Average times 100
**.%Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:29:09

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241645R ACF DF5 7GP45 Sample ID: AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 50 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 14:17:31
**Instrument** H6722A
**Result file** 1C13088.82R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 86.5% Conc: 8.317202
%SSR(DCB) 109.0% Conc: 10.620624

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 7.56 | 7.59 | 7.62 | 29877.20507 | 258.130159 | | | 2 |
| 7.93 | 7.96 | 7.99 | 20156.38476 | 260.595451 | | | 3 |
| 8.09 | 8.12 | 8.15 | 33109.125 | 258.342353 | | | 4 |
| 8.45 | 8.48 | 8.51 | 26507.77148 | 284.404551 | | | 5 |
| 9.05 | 9.08 | 9.11 | 36763.08984 | 346.159927 | | | 6 |
| Height summation: | | | **146413.576172** | | | | |
| Concentration | | CF: | **281.526488** | L: | | | |

## Analysis Report (B)

**Injected on** Mar 30, 2004 14:17:31
**Instrument** H6722B
**Result file** 1C13088B.82R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 95.2% Conc: 9.157321
%SSR(DCB) 110.5% Conc: 10.766077

| Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | |
| 8.12 | 8.15 | 8.18 | 11850.26464 | 239.010148 | | | 1 |
| 8.36 | 8.39 | 8.42 | 14719.57519 | 264.122249 | | | 2 |
| 8.83 | 8.86 | 8.89 | 8772.727539 | 250.416056 | | | 3 |
| 8.98 | 9.01 | 9.04 | 19524.87695 | 262.91465 | | | 4 |
| 9.26 | 9.29 | 9.32 | 14916.83203 | 274.023762 | | | 5 |
| 9.97 | 10.00 | 10.03 | 10240.125 | 183.79241 | | | 6 |
| Height summation: | | | **80024.401366** | | | | |
| Concentration | | CF: | **245.713213** | L: | | | |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <85 | <16.5 | | | 4 | 40 | |
| Aroclor-1221 | | | <150 | <50 | | | 3 | 5 | |
| Aroclor-1232 | | | <85 | <21.5 | | | 4 | 10 | |
| Aroclor-1242 | | | <85 | <20 | | | 4 | 30 | |
| Aroclor-1248 | | | <90 | <30 | | | 4 | 30 | |
| Aroclor-1254 | A | 281.526488 | 85 | 16.5 | | 13.59 | 4 | 40 | |
| Aroclor-1260 | | | <85 | <16.5 | | | 4 | 40 | |
| Toxaphene | | | <165 | <55 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8453

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241645R** ACF DF5 7GP45 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13--H6722A
Result file : 1C13088.82R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 86.5% Conc.: 8.317202
%SSR(DCB) : 109% Conc.: 10.620624

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **3** | **72.17** | |
| 5.97 | 5.97 | 6.03 | 2540.133789 | 18.70512 | | | 3 |
| 6.24 | 6.28 | 6.30 | 2523.20874 | 48.129109 | | | 5 |
| 6.71 | 6.74 | 6.77 | 6142.888672 | 96.539993 | | | 6 |
| Height Summation | | | **11206.231201** | | | | |
| Amount Avg CF: | | | **54.458074** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **120.12** | |
| 4.54 | 4.58 | 4.60 | 610.466797 | 20.498016 | | | 1 |
| 4.75 | 4.76 | 4.81 | 3896.90625 | 251.741545 | | | 2 |
| Height Summation | | | **4507.373047** | | | | |
| Amount Avg CF: | | | **136.119781** | Linear: | | | |
| **Aroclor-1232** | | | | | **3** | **74.13** | |
| 5.97 | 5.97 | 6.03 | 2540.133789 | 41.815648 | | | 3 |
| 6.24 | 6.28 | 6.30 | 2523.20874 | 108.384557 | | | 5 |
| 6.71 | 6.74 | 6.77 | 6142.888672 | 224.951696 | | | 6 |
| Height Summation | | | **11206.231201** | | | | |
| Amount Avg CF: | | | **125.050634** | Linear: | | | |
| **Aroclor-1242** | | | | | **3** | **70.08** | |
| 5.97 | 5.97 | 6.03 | 2540.133789 | 21.973728 | | | 3 |
| 6.24 | 6.28 | 6.30 | 2523.20874 | 56.623803 | | | 5 |
| 6.71 | 6.74 | 6.77 | 6142.888672 | 109.027059 | | | 6 |
| Height Summation | | | **11206.231201** | | | | |
| Amount Avg CF: | | | **62.54153** | Linear: | | | |
| **Aroclor-1248** | | | | | **4** | **95.80** | |
| 6.71 | 6.74 | 6.77 | 6142.888672 | 72.801578 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 20015.94726 | 495.409536 | | | 3 |
| 7.28 | 7.30 | 7.34 | 5090.912109 | 63.220819 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 33109.125 | 712.409814 | | | 6 |
| Height Summation | | | **64358.873047** | | | | |
| Amount Avg CF: | | | **335.960437** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **30.84** | |
| 7.22 | 7.25 | 7.28 | 7824.501953 | 109.386767 | | | 1 |
| 7.56 | 7.59 | 7.62 | 29877.20507 | 258.130159 | | | 2 |
| 7.93 | 7.96 | 7.99 | 20156.38476 | 260.595451 | | | 3 |
| 8.09 | 8.12 | 8.15 | 33109.125 | 258.342353 | | | 4 |
| 8.45 | 8.48 | 8.51 | 26507.77148 | 284.404551 | | | 5 |
| 9.05 | 9.08 | 9.11 | 36763.08984 | 346.159927 | | | 6 |
| Height Summation | | | **154238.078125** | | | | |
| Amount Avg CF: | | | **252.836535** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **58.29** | |
| 8.33 | 8.36 | 8.39 | 15052.83691 | 142.175643 | | | 1 |
| 8.68 | 8.71 | 8.74 | 25782.69726 | 191.660749 | | | 2 |
| 9.05 | 9.08 | 9.11 | 36763.08984 | 264.496038 | | | 3 |
| 9.19 | 9.22 | 9.25 | 3788.002686 | 42.914768 | | | 4 |
| 9.91 | 9.93 | 9.97 | 13529.66601 | 66.99763 | | | 5 |
| 10.28 | 10.30 | 10.34 | 29165.29101 | 256.722397 | | | 6 |
| Height Summation | | | **124081.583742** | | | | |
| Amount Avg CF: | | | **160.827871** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13--H6722B
Result file : 1C13088B.82R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.2% Conc.: 9.157321
%SSR(DCB) : 110.5% Conc.: 10.766077

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **168.81** | |
| 5.52 | 5.56 | 5.58 | 487.885406 | 18.64396 | | | 1 |
| 6.10 | 6.13 | 6.16 | 753.068787 | 17.67804 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1338.344727 | 19.78424 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1068.16272 | 42.97803 | | | 5 |
| 7.56 | 7.61 | 7.62 | 14434.50488 | 403.351567 | | | 6 |
| Height Summation | | | **18081.966523** | | | | |
| Amount Avg CF: | | | **100.487167** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **24.97** | |
| 5.22 | 5.27 | 5.28 | 295.115265 | 19.300008 | | | 1 |
| 5.52 | 5.56 | 5.58 | 487.885406 | 13.508189 | | | 3 |
| Height Summation | | | **783.000671** | | | | |
| Amount Avg CF: | | | **16.404099** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **175.91** | |
| 5.52 | 5.56 | 5.58 | 487.885406 | 17.283966 | | | 1 |
| 6.10 | 6.13 | 6.16 | 753.068787 | 37.481605 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1338.344727 | 45.492359 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1068.16272 | 99.249122 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 14434.50488 | 957.899734 | | | 6 |
| Height Summation | | | **18081.966523** | | | | |
| Amount Avg CF: | | | **231.481357** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **168.17** | |
| 5.52 | 5.56 | 5.58 | 487.885406 | 20.35925 | | | 1 |
| 6.10 | 6.13 | 6.16 | 753.068787 | 20.420139 | | | 2 |
| 6.73 | 6.77 | 6.79 | 1338.344727 | 23.367286 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1068.16272 | 51.818424 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 14434.50488 | 464.714601 | | | 6 |
| Height Summation | | | **18081.966523** | | | | |
| Amount Avg CF: | | | **116.13594** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **37.56** | |
| 7.19 | 7.21 | 7.25 | 6107.544922 | 156.084794 | | | 1 |
| 7.56 | 7.61 | 7.62 | 14434.50488 | 307.220207 | | | 2 |
| 8.06 | 8.09 | 8.12 | 5229.772949 | 107.389872 | | | 4 |
| 8.12 | 8.15 | 8.18 | 11850.26464 | 217.989301 | | | 5 |
| 8.44 | 8.47 | 8.50 | 9552.833984 | 206.898528 | | | 6 |
| Height Summation | | | **47174.921386** | | | | |
| Amount Avg CF: | | | **199.11654** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **13.30** | |
| 8.12 | 8.15 | 8.18 | 11850.26464 | 239.010148 | | | 1 |
| 8.36 | 8.39 | 8.42 | 14719.57519 | 264.122249 | | | 2 |
| 8.83 | 8.86 | 8.89 | 8772.727539 | 250.416056 | | | 3 |
| 8.98 | 9.01 | 9.04 | 19524.87695 | 262.91465 | | | 4 |
| 9.26 | 9.29 | 9.32 | 14916.83203 | 274.023762 | | | 5 |
| 9.97 | 10.00 | 10.03 | 10240.125 | 183.79241 | | | 6 |
| Height Summation | | | **80024.401366** | | | | |
| Amount Avg CF: | | | **245.713213** | Linear: | | | |

8454

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:30:23

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241645R** ACF DF5 7GP45 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13-H6722A
Result file : 1C13088.82R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **4** | **100.82** | |
| 6.25 | 6.28 | 6.31 | 2523.20874 | 20.179015 | | | 2 |
| 6.86 | 6.91 | 6.92 | 2659.30835 | 21.083573 | | | 3 |
| 7.68 | 7.73 | 7.74 | 29379.61328 | 122.668412 | | | 4 |
| 7.85 | 7.90 | 7.91 | 9793.820313 | 32.088986 | | | 5 |
| Height Summation | | | **44355.950684** | | | | |
| Amount Avg CF: | | | **49.004997** | Linear: | | | |
| **Toxaphene** | | | | | 3 | **129.03** | |
| 8.70 | 8.71 | 8.76 | 25782.69726 | 1203.460285 | | | 1 |
| 9.69 | 9.72 | 9.75 | 2497.72998 | 94.460106 | | | 4 |
| 10.41 | 10.42 | 10.47 | 5825.773438 | 153.072468 | | | 6 |
| + 10.41 | 10.47 | 10.47 | 4817.797363 | 126.58785 | | | 6 |
| Height Summation | | | **34106.200684** | | | | |
| Amount Avg CF: | | | **483.664286** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 14:17:31
Instrument : CP13-H6722B
Result file : 1C13088B.82R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **6** | **49.48** | |
| 9.23 | 9.26 | 9.29 | 11231.09472 | 176.179951 | | | 1 |
| 9.49 | 9.52 | 9.55 | 14380.98046 | 192.836361 | | | 2 |
| 9.97 | 10.00 | 10.03 | 10240.125 | 152.886352 | | | 3 |
| 10.47 | 10.48 | 10.53 | 7199.212891 | 142.524399 | | | 4 |
| 10.78 | 10.81 | 10.84 | 4253.282227 | 43.551508 | | | 5 |
| 11.30 | 11.33 | 11.36 | 3008.516357 | 55.083143 | | | 6 |
| Height Summation | | | **50313.211671** | | | | |
| Amount Avg CF: | | | **127.176952** | Linear: | | | |
| **Chlordane** | | | | | **2** | **89.80** | |
| 7.56 | 7.61 | 7.62 | 14434.50488 | 234.093106 | | | 3 |
| 8.51 | 8.53 | 8.57 | 5246.992676 | 52.265136 | | | 5 |
| Height Summation | | | **19681.497559** | | | | |
| Amount Avg CF: | | | **143.179121** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **31.07** | |
| 9.83 | 9.86 | 9.89 | 1509.573608 | 72.121387 | | | 3 |
| 10.17 | 10.18 | 10.23 | 659.330322 | 46.14158 | | | 4 |
| Height Summation | | | **2168.903930** | | | | |
| Amount Avg CF: | | | **59.131484** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 85 | 16.5 | | ** 59.41 | 4 | 40 | |
| | | | 85 | 24 | | | | | |
| Aroclor-1221 | | | 150 | 50 | | ** 156.98 | 3 | 5 | |
| Aroclor-1232 | | | 85 | 21.5 | | ** 59.70 | 4 | 10 | |
| Aroclor-1242 | | | 85 | 20 | | ** 59.99 | 4 | 30 | |
| | | | 85 | 25 | | | | | |
| Aroclor-1248 | | | 85 | 24.5 | E | ** 51.15 | 4 | 30 | |
| | | | 90 | 30 | E | | | | |
| Aroclor-1254 | | | 85 | 16.5 | | 2.86 | 4 | 40 | |
| | | | 85 | 28.5 | | | | | |
| Aroclor-1260 | | | 85 | 16.5 | | 23.37 | 4 | 40 | |
| | | | 85 | 22 | | | | | |
| Chlordane | | | 85 | 20 | | ** 98.00 | 2 | 20 | |
| Toxaphene | | | 165 | 55 | | ** 156.42 | 4 | 30 | |

Units: ug/kg

9455

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:30:23

Sample Name: **4241645RACF DF5 AC7GP45 T 040890035A 08899**
Acquired from CP13--H6722A via port 3 on 3/30/04 02:31:31pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.82R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.556 | | 0.0000 | 0.000 | 30679.3 | 0.498 | BB | 0.039 | 13039.62 | 0.550 |
| 2 | 3.711 | | 0.0000 | 0.000 | 1375.2 | 0.022 | BB | 0.048 | 474.89 | 0.020 |
| 3 | 3.873 | | 0.0000 | 0.000 | 2624.3 | 0.043 | BB | 0.039 | 1127.18 | 0.048 |
| 4 | 3.958 | | 0.0000 | 0.000 | 10589.0 | 0.172 | BB | 0.044 | 4021.00 | 0.170 |
| 5 | 4.068 | | 0.0000 | 0.000 | 3415.6 | 0.055 | BB | 0.032 | 1760.73 | 0.074 |
| 6 | 4.132 | | 0.0000 | 0.000 | 3503.9 | 0.057 | BB | 0.029 | 2005.46 | 0.085 |
| 7 | 4.188 | | 0.0000 | 0.000 | 2621.0 | 0.043 | BB | 0.029 | 1507.36 | 0.064 |
| 8 | 4.271 | | 0.0000 | 0.000 | 870.3 | 0.014 | BB | 0.031 | 469.98 | 0.020 |
| 9 | 4.309 | TCX | 249.5160 | 4.630 | 38811.5 | 0.630 | BB | 0.034 | 18940.94 | 0.799 |
| 10 | 4.435 | | 0.0000 | 0.000 | 2699.8 | 0.044 | BB | 0.044 | 1025.84 | 0.043 |
| 11 | 4.489 | | 0.0000 | 0.000 | 4542.1 | 0.074 | BB | 0.032 | 2384.79 | 0.101 |
| 12 | 4.579 | | 0.0000 | 0.000 | 1303.0 | 0.021 | BB | 0.036 | 610.47 | 0.026 |
| 13 | 4.634 | | 0.0000 | 0.000 | 4102.5 | 0.067 | BB | 0.038 | 1784.74 | 0.075 |
| 14 | 4.760 | | 0.0000 | 0.000 | 14727.8 | 0.239 | BB | 0.063 | 3896.91 | 0.164 |
| 15 | 4.915 | HCB | 3110.9550 | 57.728 | 820390.4 | 13.309 | BB | 0.032 | 432942.70 | 18.266 |
| 16 | 5.114 | alpha-BHC | 18.8936 | 0.351 | 6167.9 | 0.100 | BB | 0.059 | 1749.79 | 0.074 |
| 17 | 5.311 | | 0.0000 | 0.000 | 695.4 | 0.011 | BB | 0.026 | 446.52 | 0.019 |
| 18 | 5.388 | | 0.0000 | 0.000 | 38204.1 | 0.620 | BB | 0.043 | 14880.96 | 0.628 |
| 19 | 5.459 | | 0.0000 | 0.000 | 10472.9 | 0.170 | BB | 0.027 | 6507.34 | 0.275 |
| 20 | 5.553 | | 0.0000 | 0.000 | 7199.7 | 0.117 | BB | 0.028 | 4219.73 | 0.178 |
| 21 | 5.690 | | 0.0000 | 0.000 | 4084.4 | 0.066 | BB | 0.050 | 1363.22 | 0.058 |
| 22 | 5.774 | | 0.0000 | 0.000 | 4023.8 | 0.065 | BB | 0.036 | 1856.82 | 0.078 |
| 23 | 5.912 | | 0.0000 | 0.000 | 1256.1 | 0.020 | BB | 0.032 | 661.75 | 0.028 |
| 24 | 5.973 | delta-BHC | 28.8811 | 0.536 | 6968.9 | 0.113 | BB | 0.046 | 2540.13 | 0.107 |
| 25 | 6.065 | | 0.0000 | 0.000 | 9928.5 | 0.161 | BB | 0.040 | 4159.15 | 0.175 |
| 26 | 6.284 | Heptachlor | 25.5324 | 0.474 | 6412.9 | 0.104 | BB | 0.042 | 2523.21 | 0.106 |
| 27 | 6.359 | | 0.0000 | 0.000 | 10101.0 | 0.164 | BB | 0.030 | 5564.63 | 0.235 |
| 28 | 6.482 | | 0.0000 | 0.000 | 2790396.0 | 45.268 | BB | 0.048 | 977635.60 | 41.246 |
| 29 | 6.623 | | 0.0000 | 0.000 | 1328.2 | 0.022 | BB | 0.030 | 734.93 | 0.031 |
| 30 | 6.741 | | 0.0000 | 0.000 | 18807.2 | 0.305 | BV | 0.051 | 6142.89 | 0.259 |
| 31 | 6.856 | | 0.0000 | 0.000 | 4463.0 | 0.072 | VV | 0.036 | 2069.14 | 0.087 |
| 32 | 6.912 | | 0.0000 | 0.000 | 12354.4 | 0.200 | VB | 0.077 | 2659.31 | 0.112 |
| 33 | 7.074 | | 0.0000 | 0.000 | 78392.2 | 1.272 | BB | 0.042 | 30809.09 | 1.300 |
| 34 | 7.205 | | 0.0000 | 0.000 | 33682.8 | 0.546 | BB | 0.028 | 20015.95 | 0.844 |
| 35 | 7.248 | | 0.0000 | 0.000 | 11404.1 | 0.185 | BB | 0.024 | 7824.50 | 0.330 |
| 36 | 7.304 | | 0.0000 | 0.000 | 14717.8 | 0.239 | BB | 0.048 | 5090.91 | 0.215 |
| 37 | 7.523 | o,p-DDE | 105.7408 | 1.962 | 10897.8 | 0.177 | BV | 0.034 | 5399.83 | 0.228 |
| 38 | 7.587 | | 0.0000 | 0.000 | 84130.7 | 1.365 | VV | 0.047 | 29877.21 | 1.260 |
| 39 | 7.639 | | 0.0000 | 0.000 | 31777.8 | 0.516 | VV | 0.040 | 13318.68 | 0.562 |
| 40 | 7.726 | g. Chlordane | 379.3721 | 7.040 | 58688.7 | 0.952 | VV | 0.033 | 29379.61 | 1.240 |
| 41 | 7.835 | | 0.0000 | 0.000 | 6395.1 | 0.104 | VV | 0.046 | 2313.03 | 0.098 |
| 42 | 7.903 | a. Chlordane | 118.4912 | 2.199 | 23225.3 | 0.377 | VV | 0.040 | 9793.82 | 0.413 |
| 43 | 7.961 | 4,4'-DDE | 286.4033 | 5.315 | 47346.2 | 0.768 | VV | 0.039 | 20156.38 | 0.850 |
| 44 | 8.015 | | 0.0000 | 0.000 | 17641.6 | 0.286 | VB | 0.037 | 8040.81 | 0.339 |
| 45 | 8.120 | | 0.0000 | 0.000 | 91120.3 | 1.478 | BV | 0.046 | 33109.13 | 1.397 |
| 46 | 8.276 | | 0.0000 | 0.000 | 20864.5 | 0.338 | VB | 0.064 | 5402.79 | 0.228 |
| 47 | 8.355 | | 0.0000 | 0.000 | 39517.8 | 0.641 | BV | 0.044 | 15052.84 | 0.635 |
| 48 | 8.479 | | 0.0000 | 0.000 | 63895.2 | 1.037 | VV | 0.040 | 26507.77 | 1.118 |
| 49 | 8.556 | o,p-DDT | 62.6151 | 1.162 | 6538.6 | 0.106 | VB | 0.034 | 3212.50 | 0.136 |
| 50 | 8.633 | | 0.0000 | 0.000 | 6899.5 | 0.112 | BV | 0.032 | 3596.12 | 0.152 |
| 51 | 8.708 | Endrin | 433.5947 | 8.046 | 85938.9 | 1.394 | VV | 0.056 | 25782.70 | 1.088 |
| 52 | 8.793 | | 0.0000 | 0.000 | 52547.4 | 0.852 | VV | 0.041 | 21543.37 | 0.909 |
| 53 | 8.845 | | 0.0000 | 0.000 | 52409.7 | 0.850 | VV | 0.056 | 15610.95 | 0.659 |
| 54 | 8.944 | | 0.0000 | 0.000 | 4835.8 | 0.078 | VV | 0.032 | 2499.34 | 0.105 |
| 55 | 9.004 | Endosulfan II | 50.2178 | 0.932 | 6132.2 | 0.099 | VV | 0.031 | 3291.96 | 0.139 |
| 56 | 9.082 | | 0.0000 | 0.000 | 109117.7 | 1.770 | VV | 0.049 | 36763.09 | 1.551 |
| 57 | 9.217 | | 0.0000 | 0.000 | 9928.4 | 0.161 | VB | 0.044 | 3788.00 | 0.160 |
| 58 | 9.312 | | 0.0000 | 0.000 | 566118.4 | 9.184 | BB | 0.044 | 214725.50 | 9.059 |
| 59 | 9.460 | | 0.0000 | 0.000 | 16080.0 | 0.261 | BB | 0.035 | 7580.22 | 0.320 |
| 60 | 9.544 | Endrin aldehyde | 56.9915 | 1.058 | 5395.1 | 0.088 | BV | 0.029 | 3144.99 | 0.133 |
| 61 | 9.600 | | 0.0000 | 0.000 | 3973.5 | 0.064 | VB | 0.029 | 2258.27 | 0.095 |
| 62 | 9.669 | | 0.0000 | 0.000 | 4039.1 | 0.066 | BV | 0.035 | 1949.18 | 0.082 |
| 63 | 9.716 | Methoxychlor | 74.2435 | 1.378 | 6205.3 | 0.101 | VV | 0.041 | 2497.73 | 0.105 |
| 64 | 9.774 | | 0.0000 | 0.000 | 17282.0 | 0.280 | VB | 0.041 | 6966.81 | 0.294 |

9456

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.858 | | 0.0000 | 0.000 | 3488.7 | 0.057 | BB | 0.028 | 2104.08 | 0.089 |
| 66 | 9.933 | | 0.0000 | 0.000 | 35627.0 | 0.578 | BB | 0.044 | 13529.67 | 0.571 |
| 67 | 10.073 | | 0.0000 | 0.000 | 2213.6 | 0.036 | BB | 0.034 | 1097.12 | 0.046 |
| 68 | 10.178 | | 0.0000 | 0.000 | 8682.5 | 0.141 | BB | 0.038 | 3855.21 | 0.163 |
| 69 | 10.244 | | 0.0000 | 0.000 | 5639.6 | 0.091 | BV | 0.028 | 3342.85 | 0.141 |
| 70 | 10.301 | | 0.0000 | 0.000 | 108285.8 | 1.757 | VV | 0.062 | 29165.29 | 1.230 |
| 71 | 10.418 | | 0.0000 | 0.000 | 15706.1 | 0.255 | VV | 0.045 | 5825.77 | 0.246 |
| 72 | 10.471 | Endrin ketone | 68.9522 | 1.279 | 15564.0 | 0.252 | VV | 0.054 | 4817.80 | 0.203 |
| 73 | 10.594 | | 0.0000 | 0.000 | 37455.7 | 0.608 | VV | 0.090 | 6913.55 | 0.292 |
| 74 | 10.684 | | 0.0000 | 0.000 | 50823.9 | 0.825 | VV | 0.041 | 20421.15 | 0.862 |
| 75 | 10.771 | | 0.0000 | 0.000 | 6543.9 | 0.106 | VV | 0.056 | 1953.71 | 0.082 |
| 76 | 10.853 | | 0.0000 | 0.000 | 14822.7 | 0.240 | VB | 0.063 | 3933.35 | 0.166 |
| 77 | 10.970 | | 0.0000 | 0.000 | 8763.5 | 0.142 | BB | 0.072 | 2032.37 | 0.086 |
| 78 | 11.130 | | 0.0000 | 0.000 | 17652.7 | 0.286 | BB | 0.072 | 4085.74 | 0.172 |
| 79 | 11.313 | | 0.0000 | 0.000 | 6431.0 | 0.104 | BB | 0.034 | 3135.91 | 0.132 |
| 80 | 11.401 | | 0.0000 | 0.000 | 224411.3 | 3.641 | BB | 0.044 | 84369.88 | 3.560 |
| 81 | 11.516 | | 0.0000 | 0.000 | 6926.9 | 0.112 | BB | 0.195 | 591.62 | 0.025 |
| 82 | 11.816 | DCB | 318.6187 | 5.912 | 77834.6 | 1.263 | BB | 0.053 | 24266.16 | 1.024 |
| 83 | 11.910 | | 0.0000 | 0.000 | 626.3 | 0.010 | BB | 0.026 | 403.93 | 0.017 |
| 84 | 11.978 | | 0.0000 | 0.000 | 292.3 | 0.005 | BB | 0.028 | 171.47 | 0.007 |
| 85 | 12.055 | | 0.0000 | 0.000 | 8950.2 | 0.145 | BB | 0.053 | 2832.54 | 0.120 |
| 86 | 12.144 | | 0.0000 | 0.000 | 1315.0 | 0.021 | BB | 0.034 | 640.88 | 0.027 |
| 87 | 12.276 | | 0.0000 | 0.000 | 4100.1 | 0.067 | BB | 0.044 | 1561.03 | 0.066 |
| 88 | 12.332 | | 0.0000 | 0.000 | 2082.6 | 0.034 | BB | 0.031 | 1103.75 | 0.047 |
| 89 | 12.455 | | 0.0000 | 0.000 | 3213.6 | 0.052 | BB | 0.043 | 1258.00 | 0.053 |
| 90 | 12.587 | | 0.0000 | 0.000 | 14482.3 | 0.235 | BB | 0.105 | 2304.93 | 0.097 |
| 91 | 12.798 | | 0.0000 | 0.000 | 2652.1 | 0.043 | BB | 0.073 | 605.01 | 0.026 |
| 92 | 12.943 | | 0.0000 | 0.000 | 3608.2 | 0.059 | BB | 0.067 | 900.68 | 0.038 |
| 93 | 13.130 | | 0.0000 | 0.000 | 5857.7 | 0.095 | BB | 0.073 | 1341.84 | 0.057 |
| 94 | 13.234 | | 0.0000 | 0.000 | 702.9 | 0.011 | BB | 0.037 | 317.35 | 0.013 |
| 95 | 13.342 | | 0.0000 | 0.000 | 1983.2 | 0.032 | BB | 0.052 | 632.26 | 0.027 |
| 96 | 13.419 | | 0.0000 | 0.000 | 816.3 | 0.013 | BB | 0.037 | 366.11 | 0.015 |
| 97 | 13.650 | | 0.0000 | 0.000 | 853.6 | 0.014 | BB | 0.049 | 289.16 | 0.012 |
| 98 | 13.747 | | 0.0000 | 0.000 | 991.3 | 0.016 | BB | 0.048 | 345.46 | 0.015 |
| 99 | 13.877 | | 0.0000 | 0.000 | 2457.6 | 0.040 | BB | 0.055 | 742.28 | 0.031 |

Total Area = 6164117.0, Total Amount = 5389.019, Total Height = 2370269.0, Sample Units = PPB

Sample Name: **4241645RACF DF5 AC7GP45 T 040890035A 08899**
Acquired from CP13--H6722B via port 4 on 3/30/04 02:31:31pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.82R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.043 | | 0.0000 | 0.000 | 1020.6 | 0.101 | BB | 0.039 | 438.07 | 0.111 |
| 2 | 3.159 | | 0.0000 | 0.000 | 6710.3 | 0.663 | BB | 0.042 | 2671.65 | 0.677 |
| 3 | 3.336 | | 0.0000 | 0.000 | 1717.4 | 0.170 | BB | 0.055 | 520.76 | 0.132 |
| 4 | 3.415 | | 0.0000 | 0.000 | 4833.3 | 0.478 | BB | 0.043 | 1891.32 | 0.479 |
| 5 | 3.514 | | 0.0000 | 0.000 | 1092.5 | 0.108 | BB | 0.037 | 496.05 | 0.126 |
| 6 | 3.680 | | 0.0000 | 0.000 | 15204.6 | 1.503 | BB | 0.038 | 6728.92 | 1.705 |
| 7 | 3.758 | | 0.0000 | 0.000 | 548.5 | 0.054 | BB | 0.026 | 348.57 | 0.088 |
| 8 | 3.876 | | 0.0000 | 0.000 | 4579.9 | 0.453 | BB | 0.079 | 972.29 | 0.246 |
| 9 | 4.148 | | 0.0000 | 0.000 | 917.1 | 0.091 | BB | 0.036 | 424.74 | 0.108 |
| 10 | 4.203 | | 0.0000 | 0.000 | 2471.7 | 0.244 | BB | 0.034 | 1205.38 | 0.305 |
| 11 | 4.381 | | 0.0000 | 0.000 | 236.4 | 0.023 | BB | 0.032 | 124.81 | 0.032 |
| 12 | 4.417 | | 0.0000 | 0.000 | 1795.9 | 0.178 | BB | 0.035 | 849.68 | 0.215 |
| 13 | 4.553 | | 0.0000 | 0.000 | 21303.8 | 2.106 | BB | 0.040 | 8821.78 | 2.235 |
| 14 | 4.663 | | 0.0000 | 0.000 | 864.6 | 0.085 | BB | 0.028 | 507.98 | 0.129 |
| 15 | 4.827 | TCX | 274.7196 | 7.066 | 24953.0 | 2.467 | BB | 0.039 | 10748.20 | 2.724 |
| 16 | 4.979 | | 0.0000 | 0.000 | 21481.1 | 2.124 | BB | 0.060 | 5986.58 | 1.517 |
| 17 | 5.180 | | 0.0000 | 0.000 | 7677.5 | 0.759 | BB | 0.110 | 1166.39 | 0.296 |
| 18 | 5.274 | | 0.0000 | 0.000 | 600.6 | 0.059 | BB | 0.034 | 295.12 | 0.075 |
| 19 | 5.404 | | 0.0000 | 0.000 | 752.5 | 0.074 | BB | 0.029 | 437.11 | 0.111 |
| 20 | 5.556 | HCB | 8.7892 | 0.226 | 1416.3 | 0.140 | BB | 0.048 | 487.89 | 0.124 |
| 21 | 5.685 | | 0.0000 | 0.000 | 4642.8 | 0.459 | BB | 0.043 | 1812.95 | 0.459 |
| 22 | 5.802 | | 0.0000 | 0.000 | 2856.9 | 0.282 | BB | 0.029 | 1623.14 | 0.411 |
| 23 | 5.929 | | 0.0000 | 0.000 | 1967.6 | 0.195 | BV | 0.034 | 967.53 | 0.245 |
| 24 | 5.990 | | 0.0000 | 0.000 | 2468.2 | 0.244 | VV | 0.076 | 539.23 | 0.137 |
| 25 | 6.131 | | 0.0000 | 0.000 | 4829.8 | 0.478 | VV | 0.107 | 753.07 | 0.191 |
| 26 | 6.261 | | 0.0000 | 0.000 | 1111.4 | 0.110 | VV | 0.031 | 602.19 | 0.153 |
| 27 | 6.297 | gamma-BHC | 32.2276 | 0.829 | 3844.1 | 0.380 | VV | 0.057 | 1125.70 | 0.285 |
| 28 | 6.487 | | 0.0000 | 0.000 | 27241.3 | 2.693 | VV | 0.076 | 5956.26 | 1.509 |
| 29 | 6.624 | | 0.0000 | 0.000 | 14231.5 | 1.407 | VV | 0.049 | 4868.74 | 1.234 |
| 30 | 6.767 | | 0.0000 | 0.000 | 5866.7 | 0.580 | VB | 0.073 | 1338.34 | 0.339 |
| 31 | 7.119 | | 0.0000 | 0.000 | 2286.4 | 0.226 | BB | 0.036 | 1068.16 | 0.271 |
| 32 | 7.215 | | 0.0000 | 0.000 | 13370.9 | 1.322 | BV | 0.036 | 6107.54 | 1.548 |
| 33 | 7.278 | | 0.0000 | 0.000 | 5589.2 | 0.553 | VB | 0.056 | 1675.02 | 0.424 |
| 34 | 7.427 | | 0.0000 | 0.000 | 13264.6 | 1.311 | BB | 0.039 | 5609.79 | 1.422 |
| 35 | 7.540 | | 0.0000 | 0.000 | 327.0 | 0.032 | BV | 0.026 | 211.23 | 0.054 |
| 36 | 7.609 | Telodrin | 396.7419 | 10.205 | 39084.7 | 3.864 | VV | 0.045 | 14434.50 | 3.658 |
| 37 | 7.791 | | 0.0000 | 0.000 | 26830.6 | 2.653 | VB | 0.040 | 11080.60 | 2.808 |
| 38 | 7.963 | | 0.0000 | 0.000 | 1033.2 | 0.102 | BV | 0.034 | 508.62 | 0.129 |
| 39 | 8.025 | | 0.0000 | 0.000 | 22881.3 | 2.262 | VV | 0.033 | 11451.56 | 2.902 |
| 40 | 8.089 | | 0.0000 | 0.000 | 11974.2 | 1.184 | VV | 0.038 | 5229.77 | 1.325 |
| 41 | 8.151 | Hept. epoxide | 328.3091 | 8.445 | 26602.4 | 2.630 | VB | 0.037 | 11850.26 | 3.003 |
| 42 | 8.258 | | 0.0000 | 0.000 | 3801.7 | 0.376 | BV | 0.035 | 1810.04 | 0.459 |
| 43 | 8.308 | | 0.0000 | 0.000 | 6972.8 | 0.689 | VV | 0.037 | 3163.40 | 0.802 |
| 44 | 8.389 | o,p-DDE | 591.9125 | 15.225 | 33831.3 | 3.345 | VV | 0.038 | 14719.58 | 3.730 |
| 45 | 8.468 | | 0.0000 | 0.000 | 24116.8 | 2.384 | VV | 0.042 | 9552.83 | 2.421 |
| 46 | 8.532 | | 0.0000 | 0.000 | 17022.7 | 1.683 | VV | 0.054 | 5246.99 | 1.330 |
| 47 | 8.694 | Endosulfan I | 33.8879 | 0.872 | 2730.2 | 0.270 | VB | 0.041 | 1120.77 | 0.284 |
| 48 | 8.777 | | 0.0000 | 0.000 | 9264.9 | 0.916 | BB | 0.034 | 4508.95 | 1.143 |
| 49 | 8.856 | | 0.0000 | 0.000 | 17473.0 | 1.728 | BB | 0.033 | 8772.73 | 2.223 |
| 50 | 8.937 | | 0.0000 | 0.000 | 4629.6 | 0.458 | BV | 0.031 | 2457.20 | 0.623 |
| 51 | 9.009 | | 0.0000 | 0.000 | 49932.3 | 4.937 | VB | 0.043 | 19524.88 | 4.948 |
| 52 | 9.145 | | 0.0000 | 0.000 | 5805.5 | 0.574 | BV | 0.049 | 1986.25 | 0.503 |
| 53 | 9.259 | | 0.0000 | 0.000 | 27044.3 | 2.674 | VV | 0.040 | 11231.09 | 2.846 |
| 54 | 9.294 | | 0.0000 | 0.000 | 33951.8 | 3.357 | VV | 0.038 | 14916.83 | 3.780 |
| 55 | 9.439 | | 0.0000 | 0.000 | 7245.2 | 0.716 | VV | 0.041 | 2926.06 | 0.741 |
| 56 | 9.517 | o,p-DDT | 611.0034 | 15.716 | 33371.2 | 3.299 | VV | 0.039 | 14380.98 | 3.644 |
| 57 | 9.592 | 4,4'-DDD | 353.7284 | 9.099 | 22014.7 | 2.177 | VV | 0.046 | 7909.88 | 2.004 |
| 58 | 9.738 | Endosulfan II | 373.8673 | 9.617 | 42812.3 | 4.233 | VB | 0.060 | 11935.83 | 3.025 |
| 59 | 9.855 | | 0.0000 | 0.000 | 3151.1 | 0.312 | BB | 0.035 | 1509.57 | 0.383 |
| 60 | 9.948 | | 0.0000 | 0.000 | 47661.7 | 4.712 | BB | 0.030 | 26274.95 | 6.658 |
| 61 | 9.996 | 4,4'-DDT | 423.5112 | 10.893 | 15595.8 | 1.542 | BB | 0.025 | 10240.13 | 2.595 |
| 62 | 10.107 | | 0.0000 | 0.000 | 1687.5 | 0.167 | BB | 0.024 | 1162.61 | 0.295 |
| 63 | 10.140 | | 0.0000 | 0.000 | 903.3 | 0.089 | BB | 0.018 | 822.69 | 0.208 |
| 64 | 10.178 | Endrin aldehyde | 22.7734 | 0.586 | 1227.9 | 0.121 | BB | 0.031 | 659.33 | 0.167 |

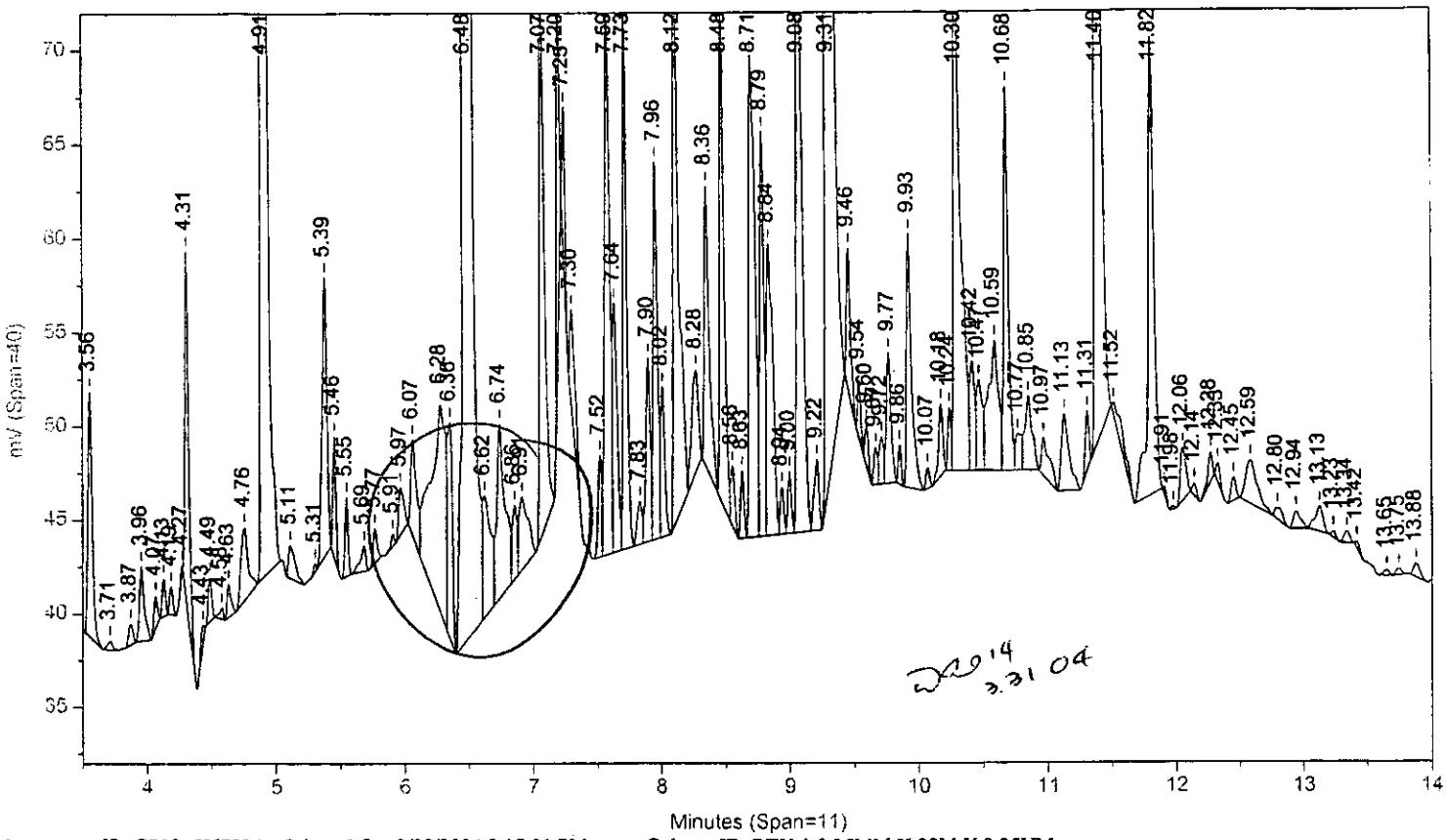
9458

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.295 | | 0.0000 | 0.000 | 2020.1 | 0.200 | BB | 0.044 | 760.60 | 0.193 |
| 66 | 10.476 | | 0.0000 | 0.000 | 21059.9 | 2.082 | BB | 0.049 | 7199.21 | 1.824 |
| 67 | 10.598 | | 0.0000 | 0.000 | 2979.3 | 0.295 | BB | 0.033 | 1505.69 | 0.382 |
| 68 | 10.674 | | 0.0000 | 0.000 | 6325.1 | 0.625 | BB | 0.032 | 3253.71 | 0.824 |
| 69 | 10.741 | | 0.0000 | 0.000 | 18131.2 | 1.793 | BB | 0.032 | 9332.37 | 2.365 |
| 70 | 10.806 | | 0.0000 | 0.000 | 7658.6 | 0.757 | BB | 0.030 | 4253.28 | 1.078 |
| 71 | 10.930 | | 0.0000 | 0.000 | 6872.7 | 0.679 | BB | 0.050 | 2294.82 | 0.582 |
| 72 | 11.103 | | 0.0000 | 0.000 | 12253.4 | 1.211 | BB | 0.034 | 6038.06 | 1.530 |
| 73 | 11.192 | | 0.0000 | 0.000 | 3097.0 | 0.306 | BB | 0.050 | 1031.58 | 0.261 |
| 74 | 11.265 | Mirex | 21.2695 | 0.547 | 735.2 | 0.073 | BB | 0.021 | 573.08 | 0.145 |
| 75 | 11.332 | Endrin ketone | 92.0424 | 2.367 | 11322.9 | 1.119 | BB | 0.063 | 3008.52 | 0.762 |
| 76 | 11.589 | | 0.0000 | 0.000 | 2348.9 | 0.232 | BB | 0.044 | 883.81 | 0.224 |
| 77 | 11.776 | | 0.0000 | 0.000 | 15019.3 | 1.485 | BB | 0.127 | 1963.93 | 0.498 |
| 78 | 11.946 | | 0.0000 | 0.000 | 54119.7 | 5.351 | BB | 0.040 | 22730.22 | 5.760 |
| 79 | 12.028 | | 0.0000 | 0.000 | 1991.2 | 0.197 | BB | 0.031 | 1083.76 | 0.275 |
| 80 | 12.220 | | 0.0000 | 0.000 | 2728.3 | 0.270 | BB | 0.043 | 1066.97 | 0.270 |
| 81 | 12.303 | | 0.0000 | 0.000 | 2898.5 | 0.287 | BB | 0.055 | 880.63 | 0.223 |
| 82 | 12.583 | | 0.0000 | 0.000 | 1394.9 | 0.138 | BB | 0.037 | 625.27 | 0.158 |
| 83 | 12.699 | | 0.0000 | 0.000 | 38498.3 | 3.806 | BB | 0.193 | 3332.64 | 0.844 |
| 84 | 13.250 | | 0.0000 | 0.000 | 952.9 | 0.094 | BB | 0.037 | 433.14 | 0.110 |
| 85 | 13.345 | DCB | 322.9823 | 8.308 | 31286.9 | 3.093 | BB | 0.048 | 10951.63 | 2.775 |
| 86 | 13.893 | | 0.0000 | 0.000 | 3017.5 | 0.298 | BB | 0.077 | 655.72 | 0.166 |

Total Area = 1011442.0, Total Amount = 3887.766, Total Height = 394629.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.82R

C:\CPWIN\DATA1\1C13088.82R

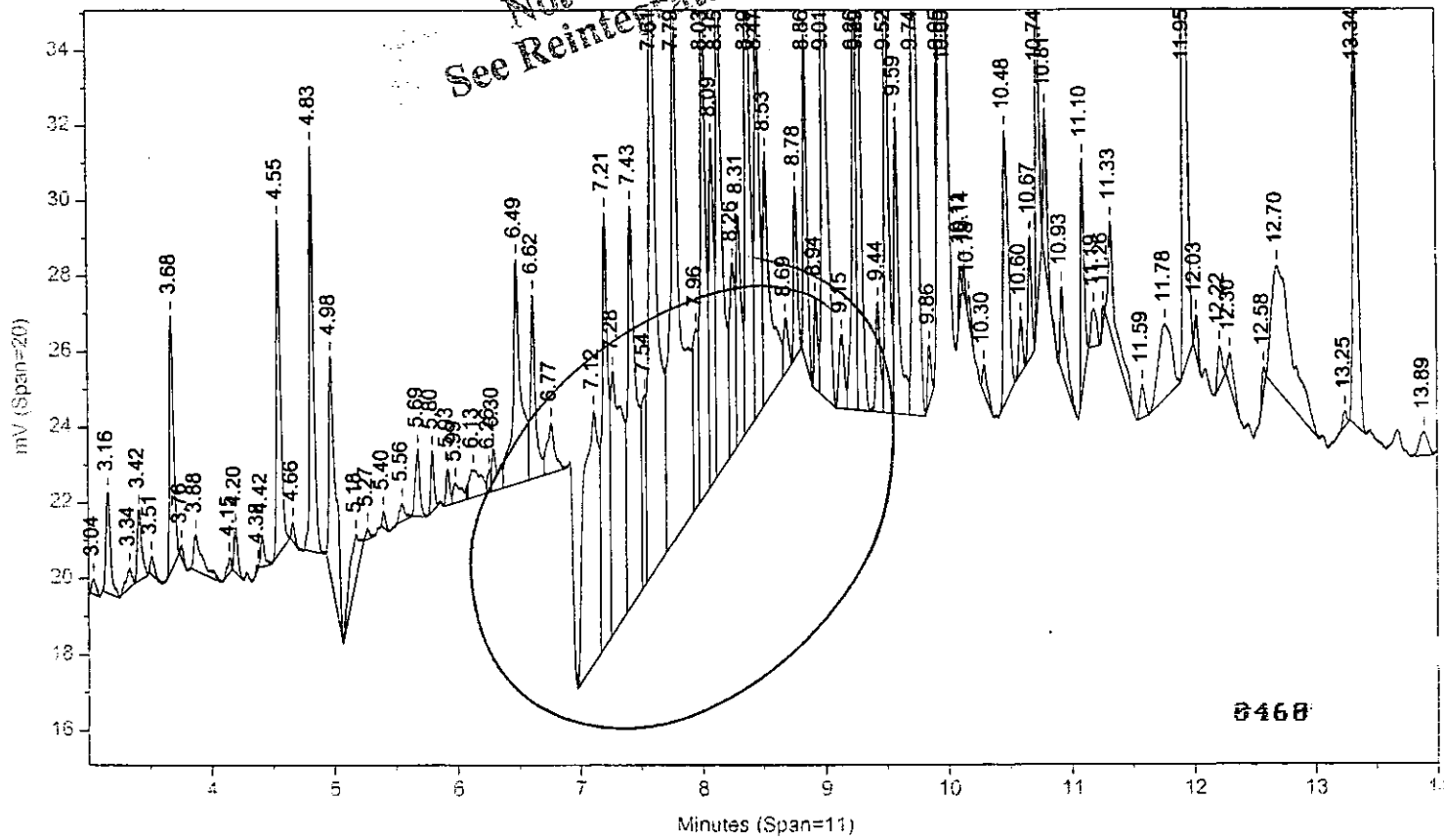



Instrument ID: CP13--H6722A Injected On: 3/30/2004 2:17:31 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.82R

C:\CPWIN\DATA1\1C13088B.82R

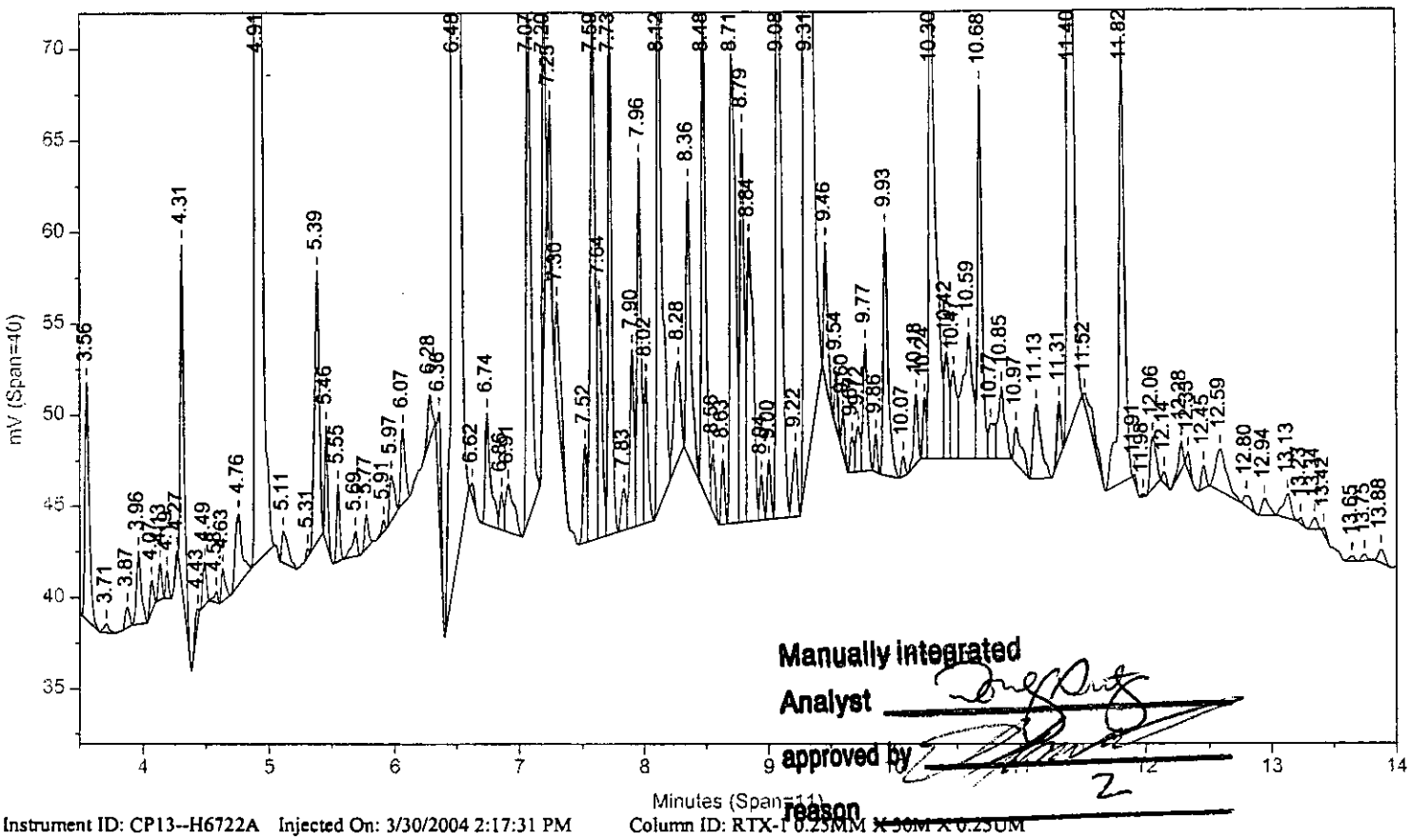
Not Used See Reinteration




Instrument ID: CP13--H6722B Injected On: 3/30/2004 2:17:31 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.82R

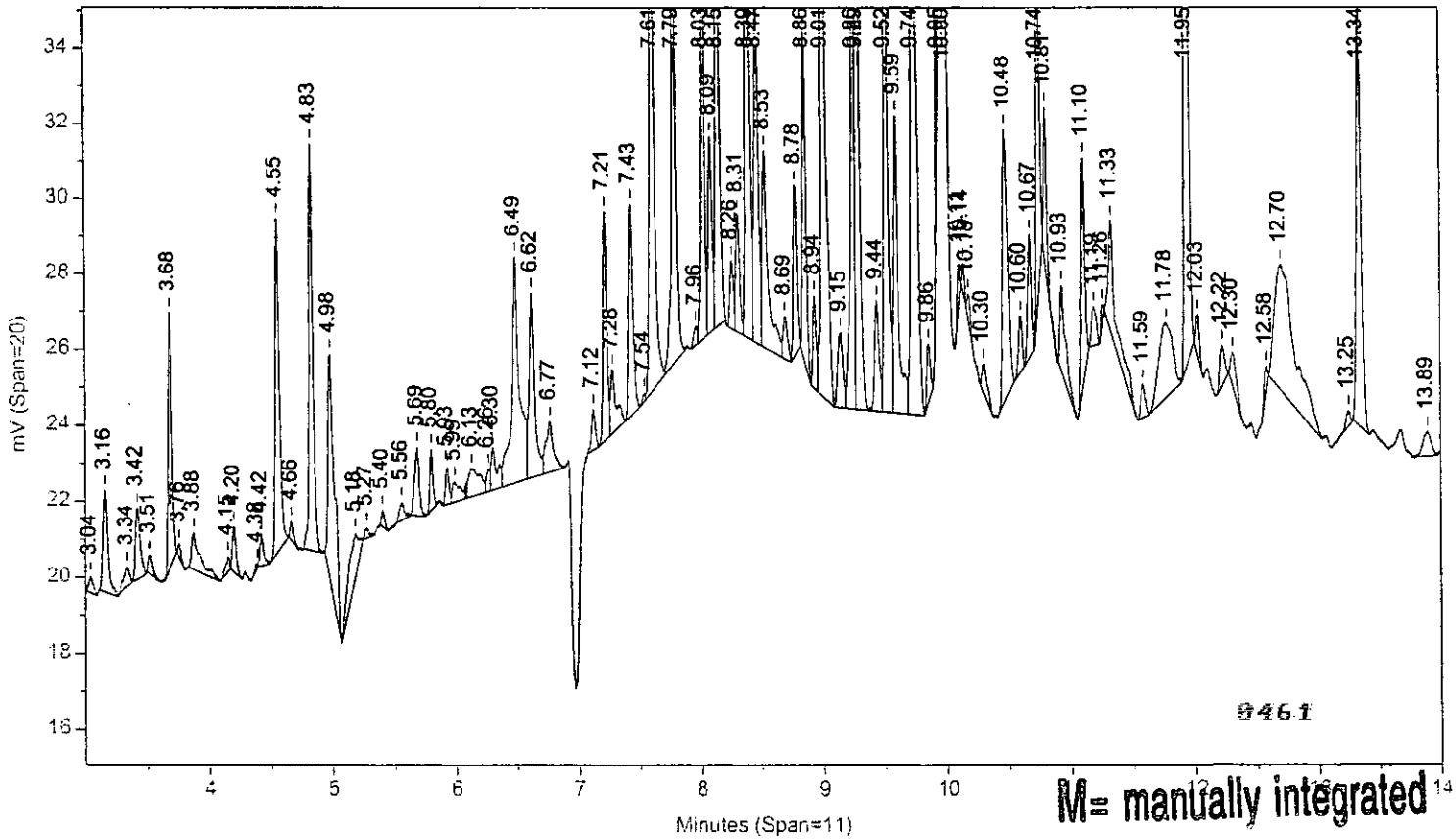
—— C:\CPWIN\DATA1\1C13088.82R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 2:17:31 PM Column ID: RTX-1 0.25MM ~~X 30M~~ X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.82R

—— C:\CPWIN\DATA1\1C13088B.82R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 2:17:31 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 50
Analyst: 120

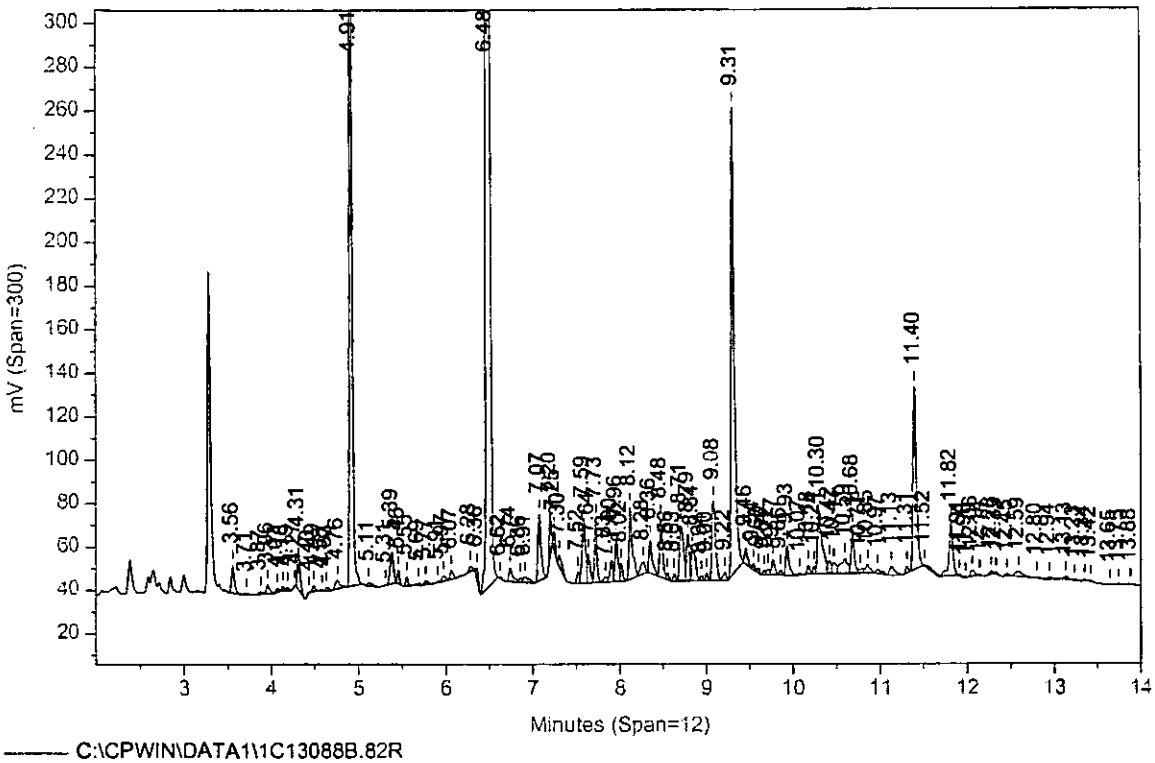
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.309 | 18941 | 8.3172 | TCX | 4.827 | 10748 | 9.15732 | TCX |
| 4.915 | 432943 | 103.6985 | HCB | 5.556 | 488 | .29297 | HCB |
| 5.114 | 1750 | .62979 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.973 | 2540 | .9627 | delta-BHC | . | 0 | . | delta-BHC |
| 6.284 | 2523 | .85108 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | gamma-BHC | 6.297 | 1126 | 1.07425 | gamma-BHC |
| 7.523 | 5400 | 3.52469 | o,p-DDE | 8.389 | 14720 | 19.73042 | o,p-DDE |
| . | 0 | . | Telodrin | 7.609 | 14435 | 13.22473 | Telodrin |
| 7.726 | 29380 | 12.64574 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.903 | 9794 | 3.94971 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.961 | 20156 | 9.54677 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.151 | 11850 | 10.94364 | Hept. epoxide |
| 8.556 | 3212 | 2.08717 | o,p-DDT | 9.517 | 14381 | 20.36678 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.694 | 1121 | 1.1296 | Endosulfan I |
| 8.708 | 25783 | 14.45316 | Endrin | . | 0 | . | Endrin |
| 9.004 | 3292 | 1.67393 | Endosulfan II | 9.738 | 11936 | 12.46224 | Endosulfan II |
| 9.544 | 3145 | 1.89972 | Endrin aldehyde | 10.178 | 659 | .75911 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.592 | 7910 | 11.79095 | 4,4'-DDD |
| 9.716 | 2498 | 2.47478 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.996 | 10240 | 14.11704 | 4,4'-DDT |
| 10.471 | 4818 | 2.29841 | Endrin ketone | 11.332 | 3009 | 3.06808 | Endrin ketone |
| . | 0 | . | Mirex | 11.265 | 573 | .70898 | Mirex |
| 11.816 | 24266 | 10.62062 | DCB | 13.345 | 10952 | 10.76608 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 8:51:30 AM
File Reported On: 3/31/2004 at 8:51:32 AM

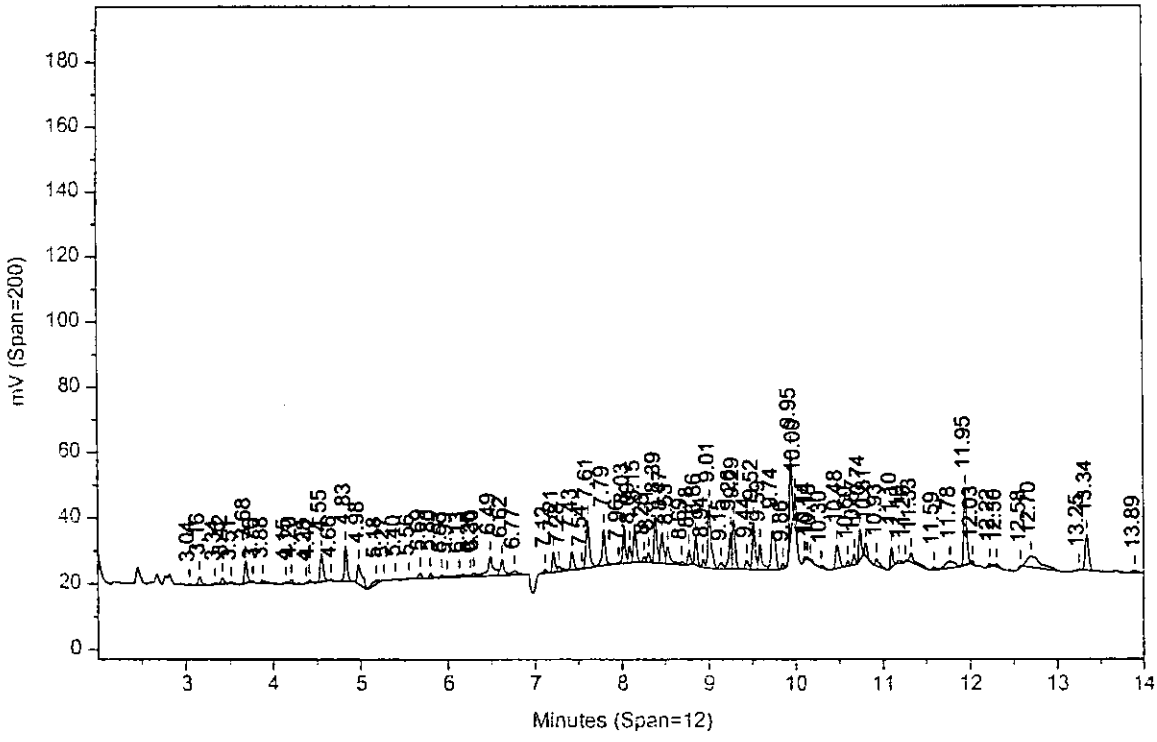
9462

10X REPLOTS

C:\CPWIN\DATA1\1C13088.82R




C:\CPWIN\DATA1\1C13088B.82R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241648R** ACF DF5 UGP21 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13--H6722A
Result file : 1C13088.88R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 95.2% Conc.: 9.15975
%SSR(DCB) : 101.6% Conc.: 9.891828

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.31 | 4.34 | 20860 | 9.159750 |
| alpha-BHC | 5.11 | 5.11 | 5.17 | 1789 | 0.643834 |
| delta-BHC | 5.96 | 6.00 | 6.02 | 964 | 0.365466 |
| Heptachlor | 6.25 | 6.29 | 6.31 | 9983 | 3.367336 |
| Hept. epoxide | 7.51 | 7.52 | 7.57 | 7655 | 3.196695 |
| g. Chlordane | 7.68 | 7.73 | 7.74 | 3556 | 1.530792 |
| a. Chlordane | 7.85 | 7.90 | 7.91 | 13958 | 5.628984 |
| 4,4'-DDE | 7.94 | 7.96 | 8.00 | 28255 | 13.382792 |
| Endrin | 8.67 | 8.71 | 8.73 | 35491 | 19.895540 |
| Endosulfan II | 8.97 | 9.01 | 9.03 | 4135 | 2.102718 |
| Endrin aldehyde | 9.52 | 9.55 | 9.58 | 5704 | 3.445560 |
| Endo. sulfate | 10.08 | 10.14 | 10.14 | 274 | 0.156251 |
| DCB | 11.79 | 11.82 | 11.85 | 22601 | 9.891828 |

## Analysis Report (B)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13--H6722B
Result file : 1C13088B.88R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 85.4% Conc.: 8.219106
%SSR(DCB) : 104.1% Conc.: 10.143151

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.83 | 4.86 | 9647 | 8.219106 |
| HCB | 5.52 | 5.56 | 5.58 | 448 | 0.269026 |
| gamma-BHC | 6.25 | 6.29 | 6.31 | 510 | 0.486764 |
| Telodrin | 7.58 | 7.61 | 7.64 | 6742 | 6.177217 |
| Hept. epoxide | 8.14 | 8.15 | 8.20 | 16129 | 14.895290 |
| o,p-DDE | 8.38 | 8.39 | 8.44 | 20130 | 26.982540 |
| Endosulfan I | 8.68 | 8.70 | 8.74 | 1155 | 1.163888 |
| o,p-DDT | 9.47 | 9.52 | 9.53 | 20165 | 28.558306 |
| Endosulfan II | 9.73 | 9.74 | 9.79 | 17959 | 18.751339 |
| 4,4'-DDT | 9.96 | 10.00 | 10.02 | 18532 | 25.548265 |
| Endrin aldehyde | 10.17 | 10.18 | 10.23 | 1232 | 1.418287 |
| Endrin ketone | 11.28 | 11.33 | 11.34 | 6828 | 6.963052 |
| DCB | 13.32 | 13.35 | 13.38 | 10318 | 10.143151 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | A | 9.159750 | | | | | 10.83 | |
| HCB | | | | | | | | |
| alpha-BHC | | | | <4.15 | <0.85 | | | |
| gamma-BHC | | | | <4.15 | <0.85 | | | |
| beta-BHC | | | | <4.15 | <0.85 | | | |
| delta-BHC | | | | <4.15 | <0.85 | | | |
| Heptachlor | | | | <4.15 | <0.85 | | | |
| Aldrin | | | | <7.5 | <2.55 | | | |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | | | | | |
| Hept. epoxide | B (A) | 3.20 | 14.895290 | < 4.15 | ~~0.85~~ | (3) | ** 129.32 | matrix due to PCB |
| g. Chlordane | | | | <4.5 | <1.5 | | | |
| a. Chlordane | | | | <4.15 | <0.85 | | | |
| 4,4'-DDE | | | | <8.5 | <1.65 | | | |
| Endosulfan I | | | | <6.5 | <2.2 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <8.5 | <1.65 | | | |
| o,p-DDT | | | | | | | | |
| Endrin | | | | <8.5 | <2.5 | | | |
| 4,4'-DDD | | | | <8.5 | <2.9 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B (A) | 2.10 | 18.751339 | < 8.5 | ~~1.65~~ | (3) | ** 159.67 | |
| 4,4'-DDT | | | | <8.5 | <1.65 | | | |
| Endrin aldehyde | | | | <15 | <5 | | | |
| Methoxychlor | | | | <60 | <20 | | | |
| Mirex | | | | | | | | 5464 |
| Endo. sulfate | | | | <8.5 | <1.65 | | | |
| Endrin ketone | | | | <8.5 | <1.65 | | | |

%Difference = High - Low Amount divided by the Average times 100
**,%Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:54:13

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241648R** ACF DF5 UGP21 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

Analysis Report (A)

| | |
|---|---|
| Injected on | : MAR 30, 2004 16:21:04 |
| Instrument | : CP13--H6722A |
| Result file | : 1C13088.88R |
| Calibration file | : 2C13088.CAL |
| Method file | : PESTD.MET |

Analysis Report (B)

| | |
|---|---|
| Injected on | : MAR 30, 2004 16:21:04 |
| Instrument | : CP13--H6722B |
| Result file | : 1C13088B.88R |
| Calibration file | : 2C13088B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| DCB | B | 10.143151 | | | | 2.51 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

9465

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 09:54:13

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241648R ACF DF5 UGP21 Sample ID: AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 50 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 16:21:04
**Instrument** H6722A
**Result file** 1C13088.88R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 95.2% Conc: 9.15975
%SSR(DCB) 101.6% Conc: 9.891828

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| | 7.56 | 7.59 | 7.62 | 40634.22656 | 351.067623 | | | 2 |
| | 7.93 | 7.96 | 7.99 | 28255.47851 | 365.306044 | | | 3 |
| | 8.09 | 8.12 | 8.15 | 45038.39453 | 351.423507 | | | 4 |
| | 8.45 | 8.48 | 8.51 | 36442.97265 | 391.000326 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 55564.89453 | 523.197042 | | | 6 |

Height summation: **205935.966797**
Concentration CF: **396.398908** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 16:21:04
**Instrument** H6722B
**Result file** 1C13088B.88R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 85.4% Conc: 8.219106
%SSR(DCB) 104.1% Conc: 10.143151

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| | 8.12 | 8.15 | 8.18 | 16129.29101 | 325.314611 | | | 1 |
| | 8.36 | 8.39 | 8.42 | 20129.90820 | 361.20313 | | | 2 |
| | 8.83 | 8.86 | 8.89 | 12365.27343 | 352.964685 | | | 3 |
| | 8.98 | 9.01 | 9.04 | 26342.33007 | 354.71591 | | | 4 |
| | 9.26 | 9.29 | 9.32 | 21160.00390 | 388.711481 | | | 5 |
| | 9.97 | 10.00 | 10.03 | 18532.02929 | 332.617652 | | | 6 |

Height summation: **114658.835938**
Concentration CF: **352.587912** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <85 | <16.5 | | | 4 | 40 | |
| Aroclor-1221 | | | <150 | <50 | | | 3 | 5 | |
| Aroclor-1232 | | | <85 | <21.5 | | | 4 | 10 | |
| Aroclor-1242 | | | <85 | <20 | | | 4 | 30 | |
| Aroclor-1248 | | | <90 | <30 | | | 4 | 30 | |
| Aroclor-1254 | A | 396.398908 | 85 | 16.5 | E (3) | 11.70 | 4 | 40 | |
| Aroclor-1260 | | | <85 | <16.5 | MT 4/4/04 | | 4 | 40 | |
| Toxaphene | | | <165 | <55 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04
Verified By: _____ Date: 3/31/04

9466

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241648R** ACF DF5 UGP21 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13--H6722A
Result file : 1C13088.88R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 95.2% Conc.: 9.15975
%SSR(DCB) : 101.6% Conc.: 9.891828

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 107.57 | |
| 5.32 | 5.36 | 5.38 | 1225.326416 | 14.874461 | | | 2 |
| 5.97 | 6.00 | 6.03 | 964.296204 | 7.100916 | | | 3 |
| 6.24 | 6.29 | 6.30 | 9983.178711 | 190.424791 | | | 5 |
| 6.71 | 6.74 | 6.77 | 7076.769531 | 111.216615 | | | 6 |
| Height Summation | | | **19249.570862** | | | | |
| Amount Avg CF: | | | **80.904196** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 127.79 | |
| 4.54 | 4.58 | 4.60 | 379.156525 | 12.73117 | | | 1 |
| 4.75 | 4.76 | 4.81 | 3891.691162 | 251.404648 | | | 2 |
| Height Summation | | | **4270.847687** | | | | |
| Amount Avg CF: | | | **132.067909** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 106.63 | |
| 5.32 | 5.36 | 5.38 | 1225.326416 | 34.470251 | | | 2 |
| 5.97 | 6.00 | 6.03 | 964.296204 | 15.874231 | | | 3 |
| E 6.24 | 6.29 | 6.30 | 9983.178711 | 428.827938 | | | 5 |
| 6.71 | 6.74 | 6.77 | 7076.769531 | 259.150278 | | | 6 |
| Height Summation | | | **19249.570862** | | | | |
| Amount Avg CF: | | | **184.580675** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 108.69 | |
| 5.32 | 5.36 | 5.38 | 1225.326416 | 17.094486 | | | 2 |
| 5.97 | 6.00 | 6.03 | 964.296204 | 8.341759 | | | 3 |
| 6.24 | 6.29 | 6.30 | 9983.178711 | 224.034394 | | | 5 |
| 6.71 | 6.74 | 6.77 | 7076.769531 | 125.602043 | | | 6 |
| Height Summation | | | **19249.570862** | | | | |
| Amount Avg CF: | | | **93.768171** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 124.93 | |
| 5.32 | 5.36 | 5.38 | 1225.326416 | 36.211592 | | | 1 |
| 6.71 | 6.74 | 6.77 | 7076.769531 | 83.869335 | | | 2 |
| E 7.16 | 7.21 | 7.22 | 17709.59570 | 438.325625 | | | 3 |
| 7.28 | 7.30 | 7.34 | 5438.437012 | 67.536511 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 45038.39453 | 969.092185 | | | 6 |
| Height Summation | | | **76488.523193** | | | | |
| Amount Avg CF: | | | **319.00705** | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 30.52 | |
| 7.22 | 7.25 | 7.28 | 12823.03027 | 179.26634 | | | 1 |
| 7.56 | 7.59 | 7.62 | 40634.22656 | 351.067623 | | | 2 |
| 7.93 | 7.96 | 7.99 | 28255.47851 | 365.306044 | | | 3 |
| 8.09 | 8.12 | 8.15 | 45038.39453 | 351.423507 | | | 4 |
| 8.45 | 8.48 | 8.51 | 36442.97265 | 391.000326 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 55564.89453 | 523.197042 | | | 6 |
| Height Summation | | | **218758.997070** | | | | |
| Amount Avg CF: | | | **360.210147** | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 53.14 | |
| 8.33 | 8.36 | 8.39 | 23162.80273 | 218.775132 | | | 1 |
| 8.68 | 8.71 | 8.74 | 35491.26171 | 263.831271 | | | 2 |
| 9.05 | 9.08 | 9.11 | 55564.89453 | 399.767661 | | | 3 |
| 9.19 | 9.22 | 9.25 | 7054.850098 | 79.9253 | | | 4 |
| 9.91 | 9.93 | 9.97 | 20857.56054 | 103.284673 | | | 5 |
| 10.28 | 10.30 | 10.34 | 30532.94921 | 268.76097 | | | 6 |
| Height Summation | | | **172664.318848** | | | | |
| Amount Avg CF: | | | **222.390835** | Linear: | | | |

intrfce w/ 7.21

$\bar{X}S = 396.45$ RSD: 18.7

## Analysis Report (B)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13--H6722B
Result file : 1C13088B.88R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 85.4% Conc.: 8.219106
%SSR(DCB) : 104.1% Conc.: 10.143151

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 133.14 | |
| 5.52 | 5.56 | 5.58 | 448.00528 | 17.119989 | | | 1 |
| 6.10 | 6.13 | 6.16 | 331.183289 | 7.774418 | | | 2 |
| 6.74 | 6.77 | 6.80 | 869.80835 | 12.858046 | | | 3 |
| 7.07 | 7.08 | 7.13 | 1493.314941 | 60.08423 | | | 5 |
| 7.56 | 7.61 | 7.62 | 6742.296875 | 188.403831 | | | 6 |
| Height Summation | | | **9884.608735** | | | | |
| Amount Avg CF: | | | **57.248103** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 5.52 | 5.56 | 5.58 | 448.00528 | 12.40402 | | | 3 |
| Height Summation | | | **448.005280** | | | | |
| Amount Avg CF: | | | **12.40402** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 142.69 | |
| 5.52 | 5.56 | 5.58 | 448.00528 | 15.871162 | | | 1 |
| 6.10 | 6.13 | 6.16 | 331.183289 | 16.483595 | | | 2 |
| 6.74 | 6.77 | 6.80 | 869.80835 | 29.5661 | | | 3 |
| 7.07 | 7.08 | 7.13 | 1493.314941 | 138.752452 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 6742.296875 | 447.430961 | | | 6 |
| Height Summation | | | **9884.608735** | | | | |
| Amount Avg CF: | | | **129.620854** | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 132.29 | |
| 5.52 | 5.56 | 5.58 | 448.00528 | 18.695069 | | | 1 |
| 6.10 | 6.13 | 6.16 | 331.183289 | 8.980333 | | | 2 |
| 6.73 | 6.77 | 6.79 | 869.80835 | 15.186716 | | | 3 |
| 7.07 | 7.08 | 7.13 | 1493.314941 | 72.443295 | | | 5 |
| 7.56 | 7.61 | 7.62 | 6742.296875 | 217.066247 | | | 6 |
| Height Summation | | | **9884.608735** | | | | |
| Amount Avg CF: | | | **66.474332** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 35.17 | |
| 7.19 | 7.21 | 7.25 | 6982.785156 | 178.452487 | | | 1 |
| 7.56 | 7.61 | 7.62 | 6742.296875 | 143.501274 | | | 2 |
| 8.06 | 8.09 | 8.12 | 6439.111816 | 132.222833 | | | 4 |
| 8.12 | 8.15 | 8.18 | 16129.29101 | 296.703321 | | | 5 |
| 8.44 | 8.47 | 8.50 | 11316.21679 | 245.090472 | | | 6 |
| Height Summation | | | **47609.701660** | | | | |
| Amount Avg CF: | | | **199.194077** | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 6.38 | |
| 8.12 | 8.15 | 8.18 | 16129.29101 | 325.314611 | | | 1 |
| 8.36 | 8.39 | 8.42 | 20129.90820 | 361.20313 | | | 2 |
| 8.83 | 8.86 | 8.89 | 12365.27343 | 352.964685 | | | 3 |
| 8.98 | 9.01 | 9.04 | 26342.33007 | 354.71591 | | | 4 |
| 9.26 | 9.29 | 9.32 | 21160.00390 | 388.711481 | | | 5 |
| 9.97 | 10.00 | 10.03 | 18532.02929 | 332.617652 | | | 6 |
| Height Summation | | | **114658.835938** | | | | |
| Amount Avg CF: | | | **352.587912** | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 39.53 | |
| 9.23 | 9.26 | 9.29 | 17327.56054 | 271.813999 | | | 1 |
| 9.49 | 9.52 | 9.55 | 20165.01367 | 270.395183 | | | 2 |
| 9.97 | 10.00 | 10.03 | 18532.02929 | 276.685524 | | | 3 |
| 10.47 | 10.47 | 10.53 | 11111.59765 | 219.978739 | | | 4 |
| 10.78 | 10.81 | 10.84 | 8624.443359 | 88.310038 | | | 5 |
| 11.30 | 11.33 | 11.36 | 6827.873535 | 125.012029 | | | 6 |
| Height Summation | | | **82588.518066** | | | | |
| Amount Avg CF: | | | **208.699252** | Linear: | | | |

867

Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:54:40

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241648R** ACF DF5 UGP21 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13–H6722A
Result file : 1C13088.88R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 4 | 79.52 | |
| 6.25 | 6.29 | 6.31 | 9983.178711 | 79.8391 | | | 2 |
| 6.86 | 6.91 | 6.92 | 1904.783447 | 15.101536 | | | 3 |
| 7.68 | 7.73 | 7.74 | 3556.460693 | 14.849256 | | | 4 |
| 7.85 | 7.90 | 7.91 | 13957.80761 | 45.732091 | | | 5 |
| Height Summation | | | **29402.230468** | | | | |
| Amount Avg CF: | | | **38.880496** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 8.70 | 8.71 | 8.76 | 35491.26171 | 1656.627447 | | | 1 |
| Height Summation | | | **35491.261719** | | | | |
| Amount Avg CF: | | | **1656.627447** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 16:21:04
Instrument : CP13–H6722B
Result file : 1C13088B.88R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 2 | 38.88 | |
| 7.56 | 7.61 | 7.62 | 6742.296875 | 109.343911 | | | 3 |
| 8.51 | 8.53 | 8.57 | 6243.041992 | 62.186753 | | | 5 |
| Height Summation | | | **12985.338867** | | | | |
| Amount Avg CF: | | | **85.765332** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 4.63 | |
| 9.83 | 9.86 | 9.89 | 1926.615967 | 92.046002 | | | 3 |
| 10.17 | 10.18 | 10.23 | 1231.858521 | 86.208531 | | | 4 |
| Height Summation | | | **3158.474488** | | | | |
| Amount Avg CF: | | | **89.127267** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 85 | 16.5 | | 34.25 | 4 | 40 | |
| Aroclor-1221 | | | 150 | 50 | | ** 165.66 | 3 | 5 | |
| Aroclor-1232 | | | 85 | 21.5 | E | 34.98 | 4 | 10 | |
| Aroclor-1242 | | | 85 | 20 | | 34.07 | 4 | 30 | |
| Aroclor-1248 | | | 90 | 30 | E | ** 46.24 | 4 | 30 | |
| Aroclor-1254 | | | 85 | 16.5 | E | 2.14 | 4 | 40 | |
| Aroclor-1260 | | | 85 | 16.5 | | 6.35 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 75.23 | 2 | 20 | |
| Toxaphene | | | 165 | 55 | | ** 179.58 | 4 | 30 | |

Units: ug/kg

0458

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:54:40

Sample Name: **4241648RACF DF5 ACUGP21 T 040890035A 01225 .**
Acquired from CP13--H6722A via port 3 on 3/30/04 04:35:04pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.88R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 15447.0 | 0.254 | BB | 0.037 | 7022.43 | 0.305 |
| 2 | 3.643 | | 0.0000 | 0.000 | 315.8 | 0.005 | BB | 0.024 | 220.56 | 0.010 |
| 3 | 3.716 | | 0.0000 | 0.000 | 458.5 | 0.008 | BB | 0.047 | 163.27 | 0.007 |
| 4 | 3.883 | | 0.0000 | 0.000 | 2057.8 | 0.034 | BB | 0.049 | 704.29 | 0.031 |
| 5 | 3.958 | | 0.0000 | 0.000 | 5673.7 | 0.093 | BB | 0.050 | 1895.42 | 0.082 |
| 6 | 4.067 | | 0.0000 | 0.000 | 4495.1 | 0.074 | BB | 0.047 | 1581.44 | 0.069 |
| 7 | 4.189 | | 0.0000 | 0.000 | 2752.3 | 0.045 | BB | 0.034 | 1349.24 | 0.059 |
| 8 | 4.310 | TCX | 274.7925 | 12.588 | 48573.7 | 0.800 | BB | 0.039 | 20859.70 | 0.905 |
| 9 | 4.451 | | 0.0000 | 0.000 | 3950.7 | 0.065 | BB | 0.089 | 737.36 | 0.032 |
| 10 | 4.495 | | 0.0000 | 0.000 | 445.3 | 0.007 | BB | 0.026 | 282.12 | 0.012 |
| 11 | 4.578 | | 0.0000 | 0.000 | 921.5 | 0.015 | BB | 0.041 | 379.16 | 0.016 |
| 12 | 4.673 | | 0.0000 | 0.000 | 857.2 | 0.014 | BB | 0.059 | 241.21 | 0.010 |
| 13 | 4.756 | | 0.0000 | 0.000 | 14793.3 | 0.244 | BB | 0.063 | 3891.69 | 0.169 |
| 14 | 4.915 | | 0.0000 | 0.000 | 804302.9 | 13.242 | BB | 0.031 | 430067.30 | 18.653 |
| 15 | 5.113 | alpha-BHC | 19.3150 | 0.885 | 4551.5 | 0.075 | BB | 0.042 | 1788.83 | 0.078 |
| 16 | 5.364 | | 0.0000 | 0.000 | 3448.3 | 0.057 | BB | 0.047 | 1225.33 | 0.053 |
| 17 | 5.459 | | 0.0000 | 0.000 | 1773.7 | 0.029 | BB | 0.030 | 998.90 | 0.043 |
| 18 | 5.553 | | 0.0000 | 0.000 | 1119.0 | 0.018 | BB | 0.026 | 704.76 | 0.031 |
| 19 | 5.640 | | 0.0000 | 0.000 | 1854.2 | 0.031 | BB | 0.067 | 460.68 | 0.020 |
| 20 | 5.775 | | 0.0000 | 0.000 | 4759.0 | 0.078 | BB | 0.044 | 1808.86 | 0.078 |
| 21 | 6.001 | delta-BHC | 10.9640 | 0.502 | 3443.5 | 0.057 | BB | 0.060 | 964.30 | 0.042 |
| 22 | 6.091 | | 0.0000 | 0.000 | 5563.6 | 0.092 | BV | 0.050 | 1870.09 | 0.081 |
| 23 | 6.285 | Heptachlor | 101.0201 | 4.628 | 80353.4 | 1.323 | VV | 0.134 | 9983.18 | 0.433 |
| 24 | 6.357 | | 0.0000 | 0.000 | 40130.8 | 0.661 | VB | 0.056 | 11908.57 | 0.517 |
| 25 | 6.482 | | 0.0000 | 0.000 | 2850050.0 | 46.923 | SBB | 0.048 | 982938.70 | 42.633 |
| 26 | 6.742 | | 0.0000 | 0.000 | 19704.8 | 0.324 | TVV | 0.046 | 7076.77 | 0.307 |
| 27 | 6.857 | | 0.0000 | 0.000 | 6157.7 | 0.101 | TVV | 0.039 | 2636.94 | 0.114 |
| 28 | 6.910 | | 0.0000 | 0.000 | 6564.9 | 0.108 | TVB | 0.057 | 1904.78 | 0.083 |
| 29 | 7.075 | | 0.0000 | 0.000 | 35504.5 | 0.585 | BB | 0.045 | 13080.54 | 0.567 |
| 30 | 7.205 | | 0.0000 | 0.000 | 30995.1 | 0.510 | BB | 0.029 | 17709.60 | 0.768 |
| 31 | 7.250 | | 0.0000 | 0.000 | 19061.1 | 0.314 | BB | 0.025 | 12823.03 | 0.556 |
| 32 | 7.304 | | 0.0000 | 0.000 | 16458.6 | 0.271 | BB | 0.050 | 5438.44 | 0.236 |
| 33 | 7.523 | Hept. epoxide | 95.9008 | 4.393 | 16022.9 | 0.264 | BV | 0.035 | 7655.11 | 0.332 |
| 34 | 7.587 | | 0.0000 | 0.000 | 111868.9 | 1.842 | VV | 0.046 | 40634.23 | 1.762 |
| 35 | 7.639 | | 0.0000 | 0.000 | 44356.4 | 0.730 | VV | 0.040 | 18323.21 | 0.795 |
| 36 | 7.725 | g. Chlordane | 45.9238 | 2.104 | 8283.8 | 0.136 | VV | 0.039 | 3556.46 | 0.154 |
| 37 | 7.838 | | 0.0000 | 0.000 | 7362.3 | 0.121 | VV | 0.041 | 3019.42 | 0.131 |
| 38 | 7.904 | a. Chlordane | 168.8695 | 7.736 | 33322.5 | 0.549 | VV | 0.040 | 13957.81 | 0.605 |
| 39 | 7.961 | 4,4'-DDE | 401.4837 | 18.391 | 68122.7 | 1.122 | VV | 0.040 | 28255.48 | 1.226 |
| 40 | 8.017 | | 0.0000 | 0.000 | 20318.0 | 0.335 | VB | 0.036 | 9361.60 | 0.406 |
| 41 | 8.121 | | 0.0000 | 0.000 | 123927.6 | 2.040 | BV | 0.046 | 45038.39 | 1.953 |
| 42 | 8.275 | | 0.0000 | 0.000 | 24987.9 | 0.411 | VB | 0.060 | 6917.46 | 0.300 |
| 43 | 8.356 | | 0.0000 | 0.000 | 61176.3 | 1.007 | BV | 0.044 | 23162.80 | 1.005 |
| 44 | 8.479 | | 0.0000 | 0.000 | 89774.0 | 1.478 | VV | 0.041 | 36442.97 | 1.581 |
| 45 | 8.554 | | 0.0000 | 0.000 | 8381.1 | 0.138 | VB | 0.035 | 3998.26 | 0.173 |
| 46 | 8.634 | | 0.0000 | 0.000 | 12230.7 | 0.201 | BV | 0.034 | 5954.99 | 0.258 |
| 47 | 8.709 | Endrin | 596.8662 | 27.341 | 133886.4 | 2.204 | VV | 0.063 | 35491.26 | 1.539 |
| 48 | 8.848 | | 0.0000 | 0.000 | 36572.4 | 0.602 | VV | 0.031 | 19483.77 | 0.845 |
| 49 | 8.870 | | 0.0000 | 0.000 | 36587.4 | 0.602 | VV | 0.033 | 18269.89 | 0.792 |
| 50 | 8.943 | | 0.0000 | 0.000 | 7109.7 | 0.117 | VB | 0.032 | 3734.19 | 0.162 |
| 51 | 9.007 | Endosulfan II | 63.0815 | 2.890 | 7592.5 | 0.125 | BV | 0.031 | 4135.22 | 0.179 |
| 52 | 9.082 | | 0.0000 | 0.000 | 165409.6 | 2.723 | VV | 0.050 | 55564.89 | 2.410 |
| 53 | 9.217 | | 0.0000 | 0.000 | 18684.1 | 0.308 | VB | 0.044 | 7054.85 | 0.306 |
| 54 | 9.314 | | 0.0000 | 0.000 | 381265.6 | 6.277 | BB | 0.045 | 141868.10 | 6.153 |
| 55 | 9.462 | | 0.0000 | 0.000 | 27960.4 | 0.460 | BB | 0.037 | 12573.55 | 0.545 |
| 56 | 9.545 | Endrin aldehyde | 103.3668 | 4.735 | 10053.2 | 0.166 | BV | 0.029 | 5704.15 | 0.247 |
| 57 | 9.600 | | 0.0000 | 0.000 | 5613.3 | 0.092 | VB | 0.029 | 3190.30 | 0.138 |
| 58 | 9.665 | | 0.0000 | 0.000 | 4810.3 | 0.079 | BB | 0.033 | 2399.39 | 0.104 |
| 59 | 9.775 | | 0.0000 | 0.000 | 21281.4 | 0.350 | BB | 0.036 | 9986.42 | 0.433 |
| 60 | 9.859 | | 0.0000 | 0.000 | 5932.0 | 0.098 | BB | 0.031 | 3236.85 | 0.140 |
| 61 | 9.934 | | 0.0000 | 0.000 | 53350.2 | 0.878 | BB | 0.043 | 20857.56 | 0.905 |
| 62 | 10.141 | Endo. sulfate | 4.6875 | 0.215 | 546.1 | 0.009 | BB | 0.033 | 274.00 | 0.012 |
| 63 | 10.246 | | 0.0000 | 0.000 | 4303.2 | 0.071 | BB | 0.027 | 2664.85 | 0.116 |
| 64 | 10.304 | | 0.0000 | 0.000 | 90403.8 | 1.488 | BV | 0.049 | 30532.95 | 1.324 |

9469

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.404 | | 0.0000 | 0.000 | 8807.4 | 0.145 | VB | 0.057 | 2567.09 | 0.111 |
| 66 | 10.574 | | 0.0000 | 0.000 | 1826.9 | 0.030 | BV | 0.057 | 538.56 | 0.023 |
| 67 | 10.685 | | 0.0000 | 0.000 | 35767.2 | 0.589 | VV | 0.041 | 14427.73 | 0.626 |
| 68 | 10.776 | | 0.0000 | 0.000 | 9853.0 | 0.162 | VV | 0.069 | 2385.95 | 0.103 |
| 69 | 10.855 | | 0.0000 | 0.000 | 7943.0 | 0.131 | VB | 0.045 | 2960.54 | 0.128 |
| 70 | 10.973 | | 0.0000 | 0.000 | 2669.8 | 0.044 | BB | 0.065 | 683.63 | 0.030 |
| 71 | 11.113 | | 0.0000 | 0.000 | 17228.9 | 0.284 | BB | 0.071 | 4068.56 | 0.176 |
| 72 | 11.306 | | 0.0000 | 0.000 | 326.4 | 0.005 | BB | 0.042 | 129.49 | 0.006 |
| 73 | 11.403 | | 0.0000 | 0.000 | 205368.2 | 3.381 | BB | 0.045 | 76575.31 | 3.321 |
| 74 | 11.516 | | 0.0000 | 0.000 | 1093.7 | 0.018 | BB | 0.030 | 610.86 | 0.026 |
| 75 | 11.818 | DCB | 296.7548 | 13.594 | 71614.8 | 1.179 | BB | 0.053 | 22601.00 | 0.980 |
| 76 | 12.081 | | 0.0000 | 0.000 | 1424.9 | 0.023 | BB | 0.050 | 478.57 | 0.021 |
| 77 | 12.277 | | 0.0000 | 0.000 | 8073.8 | 0.133 | BB | 0.067 | 2006.70 | 0.087 |
| 78 | 12.457 | | 0.0000 | 0.000 | 1344.1 | 0.022 | BB | 0.044 | 508.66 | 0.022 |
| 79 | 12.596 | | 0.0000 | 0.000 | 5681.9 | 0.094 | BB | 0.089 | 1065.05 | 0.046 |
| 80 | 12.834 | | 0.0000 | 0.000 | 2311.4 | 0.038 | BB | 0.052 | 736.24 | 0.032 |
| 81 | 12.938 | | 0.0000 | 0.000 | 2714.4 | 0.045 | BB | 0.060 | 757.83 | 0.033 |
| 82 | 13.073 | | 0.0000 | 0.000 | 331.3 | 0.005 | BB | 0.029 | 193.45 | 0.008 |
| 83 | 13.125 | | 0.0000 | 0.000 | 1549.0 | 0.026 | BB | 0.040 | 649.05 | 0.028 |
| 84 | 13.236 | | 0.0000 | 0.000 | 815.7 | 0.013 | BB | 0.037 | 368.92 | 0.016 |
| 85 | 13.355 | | 0.0000 | 0.000 | 679.7 | 0.011 | BB | 0.053 | 212.34 | 0.009 |
| 86 | 13.443 | | 0.0000 | 0.000 | 1868.5 | 0.031 | BB | 0.045 | 698.22 | 0.030 |
| 87 | 13.533 | | 0.0000 | 0.000 | 606.8 | 0.010 | BB | 0.040 | 250.20 | 0.011 |
| 88 | 13.651 | | 0.0000 | 0.000 | 2060.1 | 0.034 | BB | 0.046 | 746.64 | 0.032 |
| 89 | 13.751 | | 0.0000 | 0.000 | 961.4 | 0.016 | BB | 0.047 | 341.72 | 0.015 |
| 90 | 13.882 | | 0.0000 | 0.000 | 2870.3 | 0.047 | BB | 0.047 | 1015.46 | 0.044 |

Total Area = 6073829.0, Total Amount = 2183.026, Total Height = 2305596.0, Sample Units = PPB

Sample Name: **4241648RACF DF5 ACUGP21 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 04:35:04pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.88R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.049 | | 0.0000 | 0.000 | 1274.9 | 0.122 | BB | 0.063 | 338.00 | 0.085 |
| 2 | 3.343 | | 0.0000 | 0.000 | 721.7 | 0.069 | BB | 0.042 | 284.59 | 0.071 |
| 3 | 3.414 | | 0.0000 | 0.000 | 1230.0 | 0.118 | BB | 0.047 | 436.66 | 0.110 |
| 4 | 3.520 | | 0.0000 | 0.000 | 340.3 | 0.033 | BB | 0.026 | 216.73 | 0.054 |
| 5 | 3.681 | | 0.0000 | 0.000 | 16867.1 | 1.616 | BB | 0.068 | 4157.36 | 1.044 |
| 6 | 4.134 | | 0.0000 | 0.000 | 179.3 | 0.017 | BB | 0.062 | 48.00 | 0.012 |
| 7 | 4.202 | | 0.0000 | 0.000 | 1805.9 | 0.173 | BB | 0.034 | 878.57 | 0.221 |
| 8 | 4.416 | | 0.0000 | 0.000 | 1985.9 | 0.190 | BB | 0.048 | 685.46 | 0.172 |
| 9 | 4.553 | | 0.0000 | 0.000 | 25067.8 | 2.401 | BB | 0.048 | 8752.60 | 2.197 |
| 10 | 4.826 | TCX | 246.5732 | 5.495 | 21691.8 | 2.078 | BB | 0.037 | 9646.99 | 2.422 |
| 11 | 4.980 | | 0.0000 | 0.000 | 21866.3 | 2.094 | BB | 0.066 | 5561.67 | 1.396 |
| 12 | 5.407 | | 0.0000 | 0.000 | 31329.9 | 3.001 | BB | 0.664 | 786.70 | 0.198 |
| 13 | 5.560 | HCB | 8.0708 | 0.180 | 1160.0 | 0.111 | BB | 0.043 | 448.01 | 0.112 |
| 14 | 5.668 | | 0.0000 | 0.000 | 2933.4 | 0.281 | BB | 0.046 | 1064.44 | 0.267 |
| 15 | 5.798 | | 0.0000 | 0.000 | 642.0 | 0.061 | BB | 0.039 | 274.75 | 0.069 |
| 16 | 5.927 | | 0.0000 | 0.000 | 373.2 | 0.036 | BB | 0.025 | 245.52 | 0.062 |
| 17 | 6.094 | | 0.0000 | 0.000 | 770.6 | 0.074 | BV | 0.140 | 91.67 | 0.023 |
| 18 | 6.128 | | 0.0000 | 0.000 | 1335.0 | 0.128 | VB | 0.067 | 331.18 | 0.083 |
| 19 | 6.259 | | 0.0000 | 0.000 | 570.6 | 0.055 | BV | 0.027 | 350.71 | 0.088 |
| 20 | 6.294 | gamma-BHC | 14.6029 | 0.325 | 1031.6 | 0.099 | VB | 0.034 | 510.07 | 0.128 |
| 21 | 6.508 | | 0.0000 | 0.000 | 328.5 | 0.031 | BV | 0.052 | 105.43 | 0.026 |
| 22 | 6.530 | | 0.0000 | 0.000 | 535.6 | 0.051 | VB | 0.026 | 347.17 | 0.087 |
| 23 | 6.624 | | 0.0000 | 0.000 | 6850.2 | 0.656 | BB | 0.032 | 3524.49 | 0.885 |
| 24 | 6.767 | | 0.0000 | 0.000 | 2689.5 | 0.258 | BB | 0.052 | 869.81 | 0.218 |
| 25 | 7.085 | | 0.0000 | 0.000 | 14337.2 | 1.373 | BB | 0.160 | 1493.31 | 0.375 |
| 26 | 7.215 | | 0.0000 | 0.000 | 15883.4 | 1.521 | BV | 0.038 | 6982.79 | 1.753 |
| 27 | 7.275 | | 0.0000 | 0.000 | 5178.8 | 0.496 | VV | 0.042 | 2045.22 | 0.513 |
| 28 | 7.428 | | 0.0000 | 0.000 | 7642.5 | 0.732 | VB | 0.040 | 3167.50 | 0.795 |
| 29 | 7.605 | Telodrin | 185.3165 | 4.130 | 22051.9 | 2.112 | BV | 0.055 | 6742.30 | 1.693 |
| 30 | 7.791 | | 0.0000 | 0.000 | 29689.3 | 2.844 | VB | 0.043 | 11589.02 | 2.910 |
| 31 | 7.959 | | 0.0000 | 0.000 | 820.4 | 0.079 | BV | 0.028 | 481.66 | 0.121 |
| 32 | 8.018 | | 0.0000 | 0.000 | 7490.6 | 0.717 | VV | 0.050 | 2517.84 | 0.632 |
| 33 | 8.088 | | 0.0000 | 0.000 | 14377.5 | 1.377 | VV | 0.037 | 6439.11 | 1.617 |
| 34 | 8.150 | Hept. epoxide | 446.8587 | 9.958 | 38632.1 | 3.700 | VV | 0.040 | 16129.29 | 4.049 |
| 35 | 8.256 | | 0.0000 | 0.000 | 6313.5 | 0.605 | VV | 0.038 | 2792.39 | 0.701 |
| 36 | 8.309 | | 0.0000 | 0.000 | 10889.3 | 1.043 | VV | 0.039 | 4628.07 | 1.162 |
| 37 | 8.388 | o,p-DDE | 809.4762 | 18.039 | 45700.9 | 4.377 | VV | 0.038 | 20129.91 | 5.054 |
| 38 | 8.469 | | 0.0000 | 0.000 | 27056.9 | 2.592 | VV | 0.040 | 11316.22 | 2.841 |
| 39 | 8.532 | | 0.0000 | 0.000 | 16041.6 | 1.537 | VB | 0.043 | 6243.04 | 1.567 |
| 40 | 8.699 | Endosulfan I | 34.9166 | 0.778 | 2344.6 | 0.225 | BB | 0.034 | 1154.80 | 0.290 |
| 41 | 8.777 | | 0.0000 | 0.000 | 13230.7 | 1.267 | BB | 0.034 | 6422.71 | 1.613 |
| 42 | 8.856 | | 0.0000 | 0.000 | 24401.8 | 2.337 | BB | 0.033 | 12365.27 | 3.104 |
| 43 | 8.937 | | 0.0000 | 0.000 | 6327.6 | 0.606 | BV | 0.030 | 3546.95 | 0.891 |
| 44 | 9.009 | | 0.0000 | 0.000 | 69682.0 | 6.674 | VV | 0.044 | 26342.33 | 6.614 |
| 45 | 9.140 | | 0.0000 | 0.000 | 9844.6 | 0.943 | VV | 0.049 | 3323.33 | 0.834 |
| 46 | 9.258 | | 0.0000 | 0.000 | 38361.4 | 3.674 | VV | 0.037 | 17327.56 | 4.350 |
| 47 | 9.294 | | 0.0000 | 0.000 | 48345.9 | 4.631 | VB | 0.038 | 21160.00 | 5.313 |
| 48 | 9.438 | | 0.0000 | 0.000 | 12190.6 | 1.168 | BV | 0.042 | 4803.02 | 1.206 |
| 49 | 9.517 | o,p-DDT | 856.7491 | 19.093 | 46130.5 | 4.418 | VB | 0.038 | 20165.01 | 5.063 |
| 50 | 9.738 | Endosulfan II | 562.5402 | 12.536 | 60834.8 | 5.827 | BB | 0.056 | 17959.27 | 4.509 |
| 51 | 9.855 | | 0.0000 | 0.000 | 3665.7 | 0.351 | BB | 0.032 | 1926.62 | 0.484 |
| 52 | 9.952 | | 0.0000 | 0.000 | 26377.8 | 2.527 | BB | 0.031 | 13970.70 | 3.508 |
| 53 | 9.997 | 4,4'-DDT | 766.4479 | 17.080 | 31135.2 | 2.982 | BB | 0.028 | 18532.03 | 4.653 |
| 54 | 10.107 | | 0.0000 | 0.000 | 2540.2 | 0.243 | BB | 0.025 | 1698.81 | 0.427 |
| 55 | 10.138 | | 0.0000 | 0.000 | 1016.3 | 0.097 | BB | 0.019 | 896.10 | 0.225 |
| 56 | 10.177 | Endrin aldehyde | 42.5486 | 0.948 | 1686.4 | 0.162 | BB | 0.023 | 1231.86 | 0.309 |
| 57 | 10.298 | | 0.0000 | 0.000 | 4511.4 | 0.432 | BB | 0.048 | 1551.44 | 0.390 |
| 58 | 10.475 | | 0.0000 | 0.000 | 33346.4 | 3.194 | BB | 0.050 | 11111.60 | 2.790 |
| 59 | 10.595 | | 0.0000 | 0.000 | 4356.1 | 0.417 | BB | 0.032 | 2248.24 | 0.564 |
| 60 | 10.674 | | 0.0000 | 0.000 | 10707.1 | 1.026 | BB | 0.033 | 5475.99 | 1.375 |
| 61 | 10.743 | | 0.0000 | 0.000 | 10019.3 | 0.960 | BB | 0.030 | 5505.24 | 1.382 |
| 62 | 10.806 | | 0.0000 | 0.000 | 17050.1 | 1.633 | BB | 0.033 | 8624.44 | 2.165 |
| 63 | 11.104 | | 0.0000 | 0.000 | 14942.0 | 1.431 | BB | 0.051 | 4861.77 | 1.221 |
| 64 | 11.333 | Endrin ketone | 208.8916 | 4.655 | 27472.0 | 2.631 | BB | 0.067 | 6827.87 | 1.714 |

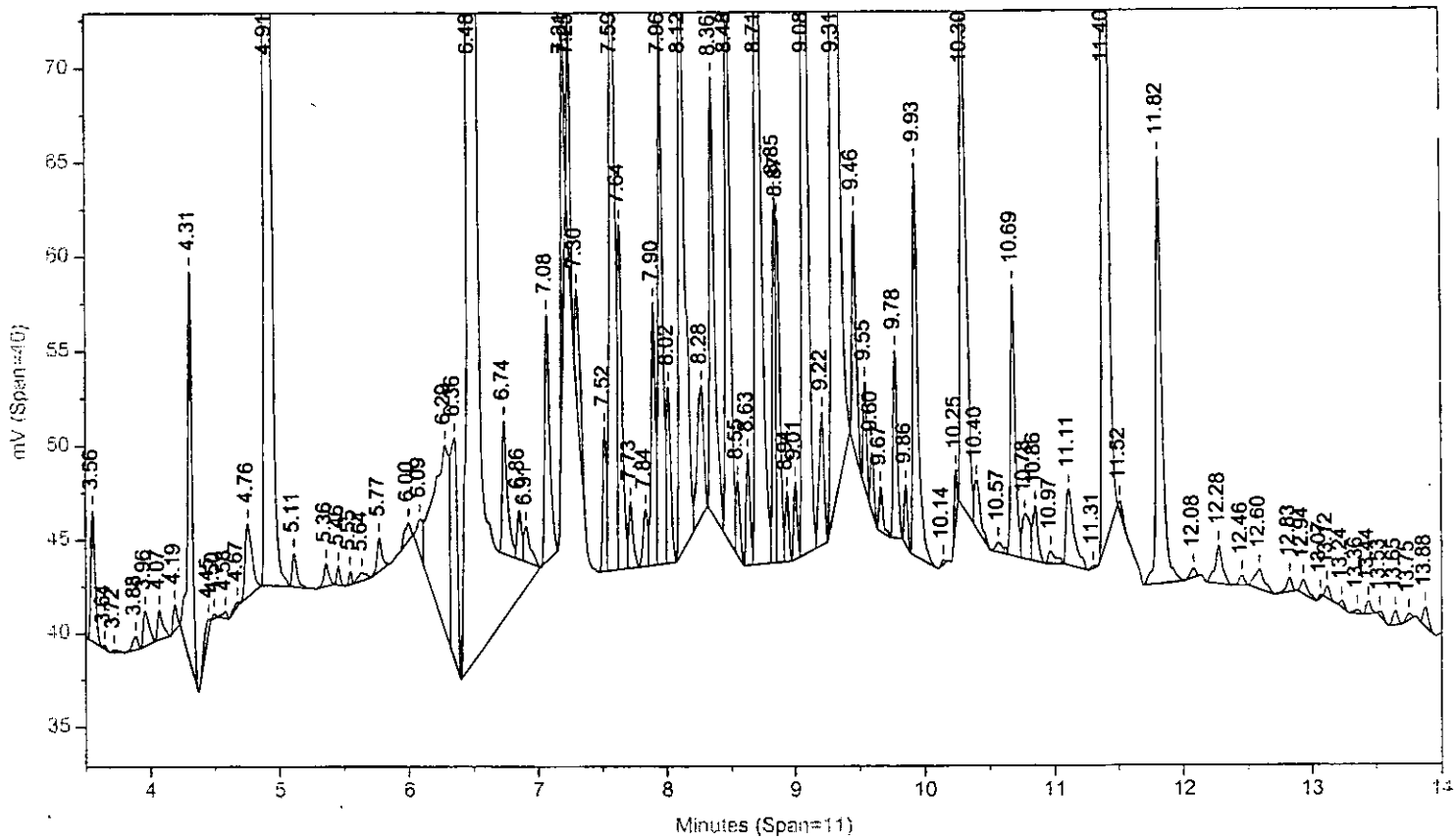
8471

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.677 | | 0.0000 | 0.000 | 702.8 | 0.067 | BB | 0.043 | 271.16 | 0.068 |
| 66 | 11.772 | | 0.0000 | 0.000 | 1390.8 | 0.133 | BB | 0.060 | 387.84 | 0.097 |
| 67 | 11.947 | | 0.0000 | 0.000 | 58642.5 | 5.617 | BB | 0.045 | 21861.93 | 5.489 |
| 68 | 12.113 | | 0.0000 | 0.000 | 885.9 | 0.085 | BB | 0.038 | 391.56 | 0.098 |
| 69 | 12.218 | | 0.0000 | 0.000 | 6931.5 | 0.664 | BB | 0.063 | 1822.22 | 0.457 |
| 70 | 12.760 | | 0.0000 | 0.000 | 17901.9 | 1.715 | BB | 0.225 | 1328.63 | 0.334 |
| 71 | 13.346 | DCB | 304.2945 | 6.781 | 30552.5 | 2.926 | BB | 0.049 | 10317.96 | 2.590 |
| 72 | 13.903 | | 0.0000 | 0.000 | 820.5 | 0.079 | BB | 0.058 | 236.11 | 0.059 |

Total Area = 1044036.0, Total Amount = 4487.287, Total Height = 398304.6, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.88R

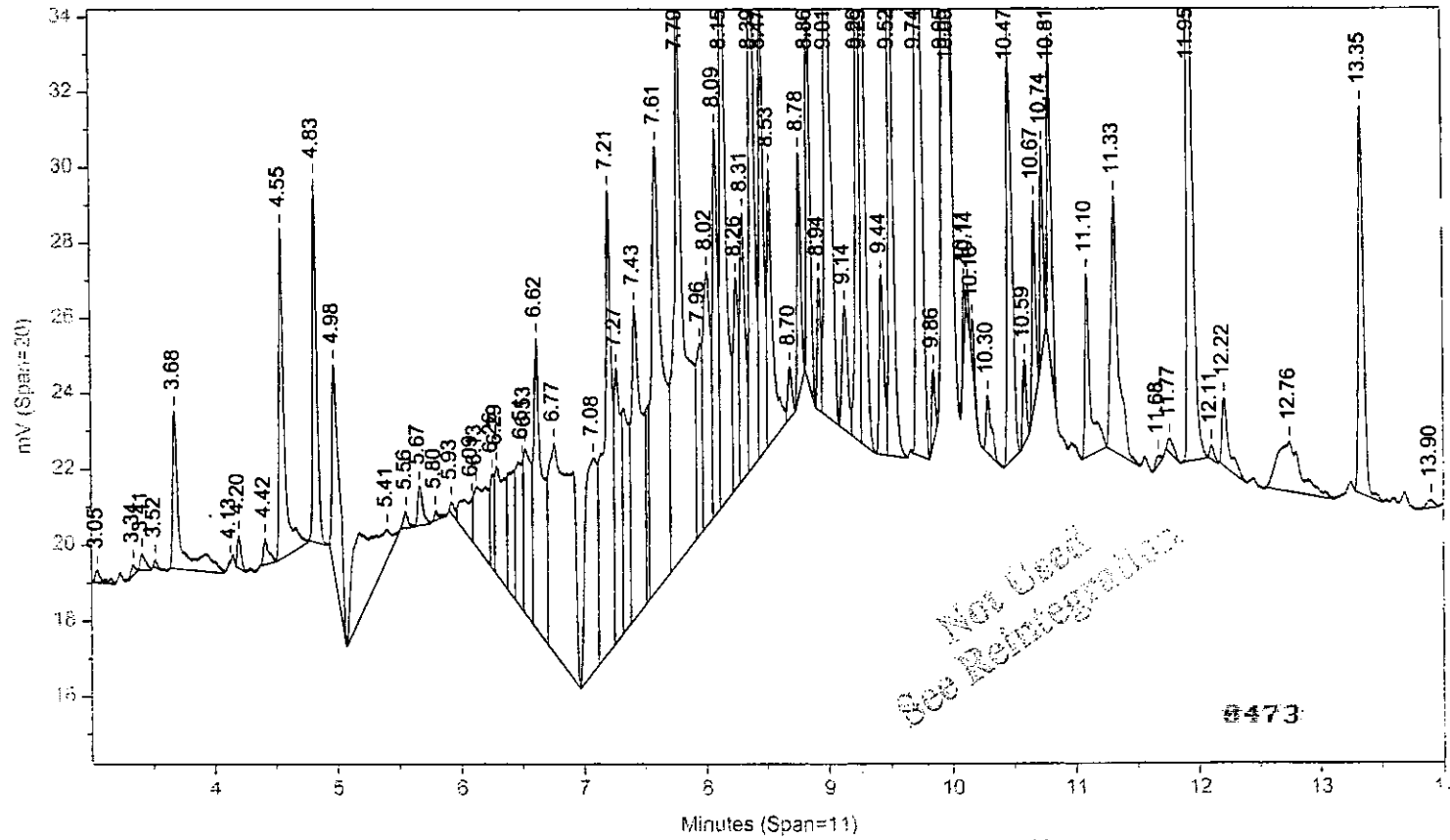
C:\CPWIN\DATA1\1C13088.88R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 4:21:04 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.88R

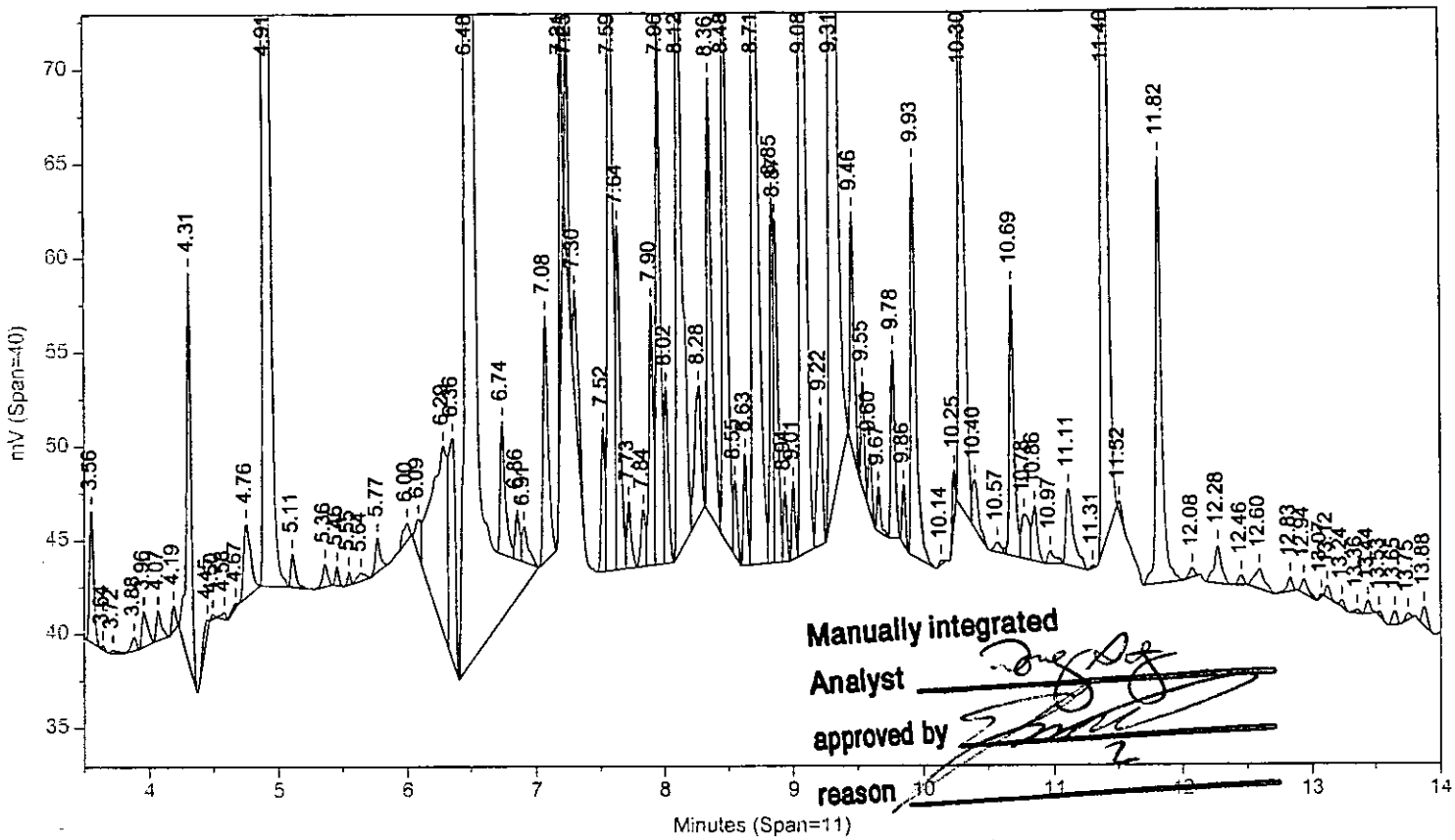
C:\CPWIN\DATA1\1C13088B.88R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 4:21:04 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.88R

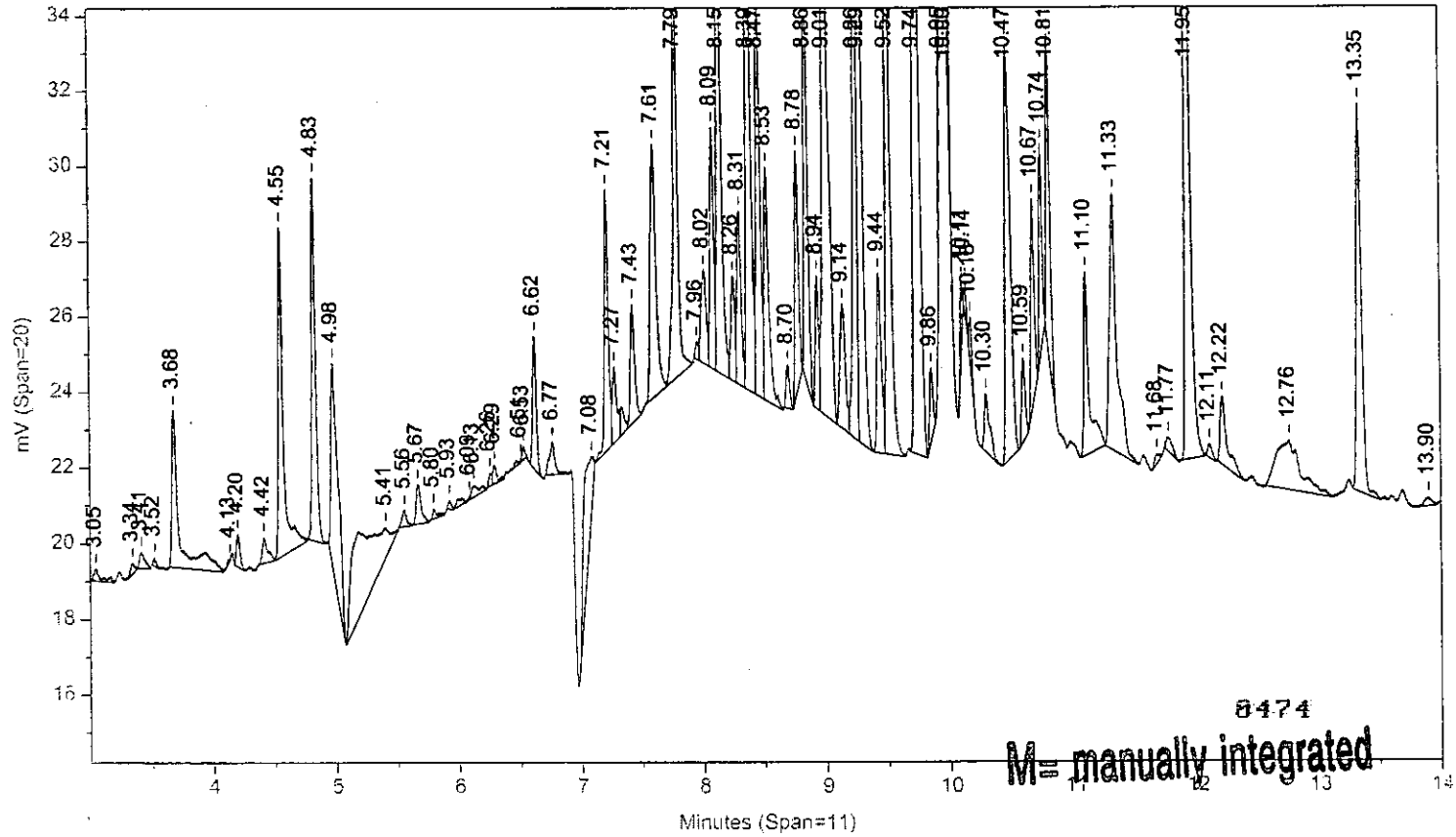
C:\CPWIN\DATA1\1C13088.88R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 4:21:04 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.88R

C:\CPWIN\DATA1\1C13088B.88R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 4:21:04 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 50
Analyst: 120

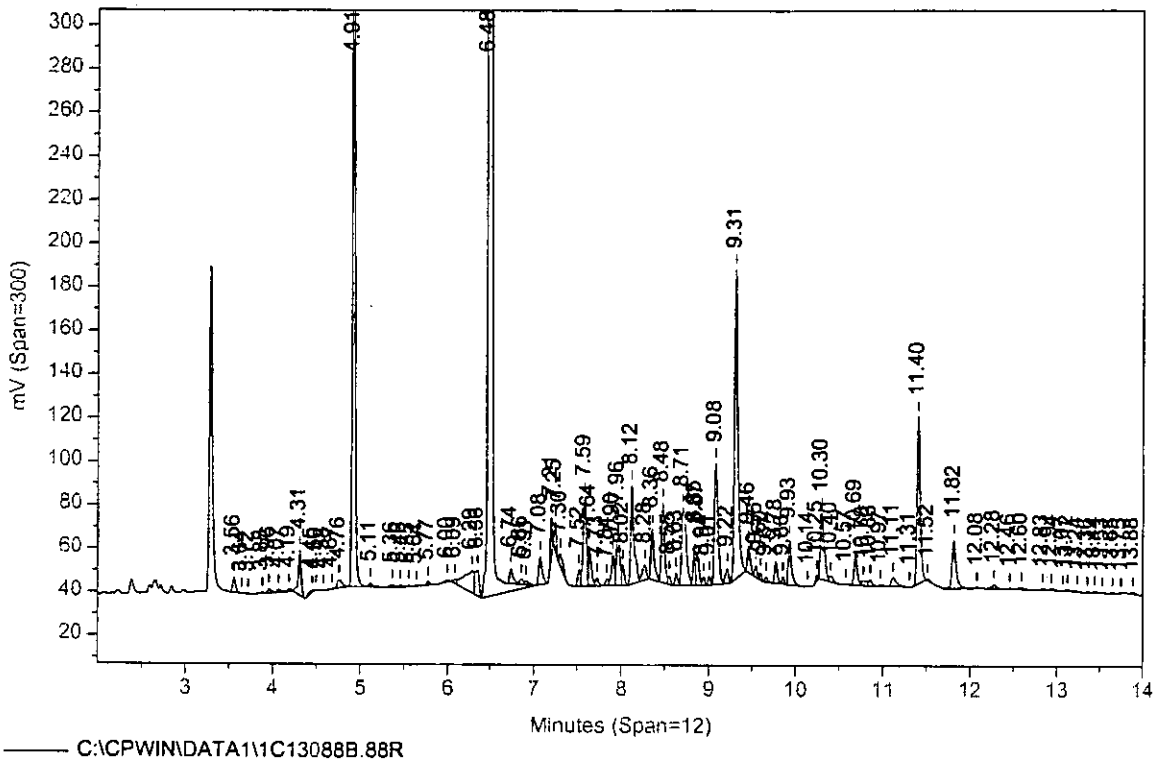
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 20860 | 9.15975 | TCX | 4.826 | 9647 | 8.21911 | TCX |
| 4.915 | 430067 | 103.0098 | HCB | 5.56 | 448 | .26903 | HCB |
| 5.113 | 1789 | .64383 | alpha-BHC | . | 0 | . | alpha-BHC |
| 6.001 | 964 | .36547 | delta-BHC | . | 0 | . | delta-BHC |
| 6.285 | 9983 | 3.36734 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | gamma-BHC | 6.294 | 510 | .48676 | gamma-BHC |
| 7.523 | 7655 | 4.99681 | o,p-DDE | 8.388 | 20130 | 26.98254 | o,p-DDE |
| . | 0 | . | Telodrin | 7.605 | 6742 | 6.17722 | Telodrin |
| 7.725 | 3556 | 1.53079 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.904 | 13958 | 5.62898 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.961 | 28255 | 13.38279 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.15 | 16129 | 14.89529 | Hept. epoxide |
| 8.554 | 3998 | 2.59768 | o,p-DDT | 9.517 | 20165 | 28.55831 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.699 | 1155 | 1.16389 | Endosulfan I |
| 8.709 | 35491 | 19.89554 | Endrin | . | 0 | . | Endrin |
| 9.007 | 4135 | 2.10272 | Endosulfan II | 9.738 | 17959 | 18.75134 | Endosulfan II |
| 9.545 | 5704 | 3.44556 | Endrin aldehyde | 10.177 | 1232 | 1.41829 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDT | 9.997 | 18532 | 25.54827 | 4,4'-DDT |
| 10.141 | 274 | .15625 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.333 | 6828 | 6.96305 | Endrin ketone |
| 11.818 | 22601 | 9.89183 | DCB | 13.346 | 10318 | 10.14315 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 9:01:10 AM
File Reported On: 3/31/2004 at 9:01:12 AM

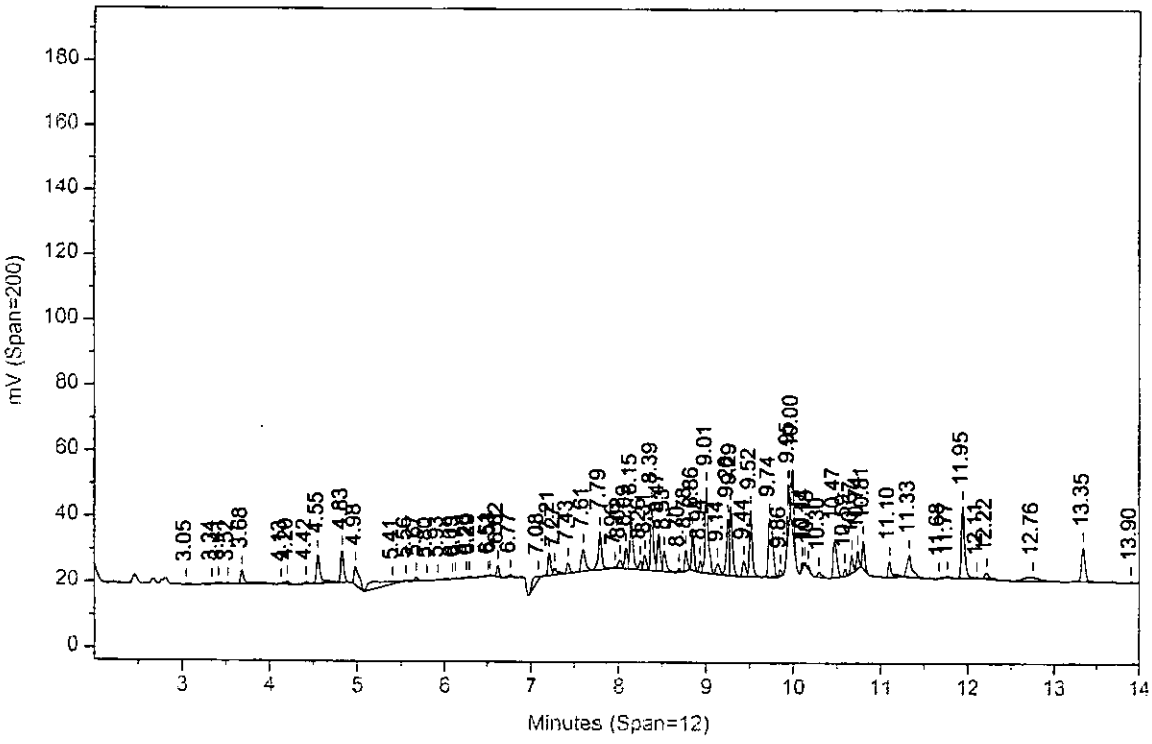
0475

10X REPLOTS

C:\CPWIN\DATA1\1C13088.88R




C:\CPWIN\DATA1\1C13088B.88R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241649R** ACF DF2 7GP22 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722A
Result file : 1C13088.90R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 85.5% Conc.: 8.226392
%SSR(DCB) : 94.3% Conc.: 9.18617

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.31 | 4.34 | 46835 | 8.226392 |
| HCB | 4.86 | 4.91 | 4.92 | 983512 E | 94.228348 |
| alpha-BHC | 5.11 | 5.11 | 5.17 | 4173 | 0.600844 |
| delta-BHC | 5.96 | 6.00 | 6.02 | 2461 | 0.373117 |
| Heptachlor | 6.25 | 6.29 | 6.31 | 23553 | 3.177825 |
| Hept. epoxide | 7.51 | 7.52 | 7.57 | 14605 | 2.439540 |
| g. Chlordane | 7.68 | 7.72 | 7.74 | 2796 | 0.481316 |
| a. Chlordane | 7.85 | 7.90 | 7.91 | 28237 | 4.555039 |
| 4,4'-DDE | 7.94 | 7.96 | 8.00 | 56198 | 10.646921 |
| Endrin | 8.67 | 8.71 | 8.73 | 60251 | 13.510101 |
| Endosulfan II | 8.97 | 9.00 | 9.03 | 6974 | 1.418528 |
| Endrin aldehyde | 9.52 | 9.54 | 9.58 | 9119 | 2.203302 |
| Endo. sulfate | 10.08 | 10.14 | 10.14 | 1184 | 0.270020 |
| DCB | 11.79 | 11.81 | 11.85 | 52472 | 9.186170 |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722B
Result file : 1C13088B.90R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 92.6% Conc.: 8.90958
%SSR(DCB) : 100.1% Conc.: 9.747336

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.83 | 4.86 | 26144 | 8.909580 |
| HCB | 5.52 | 5.56 | 5.58 | 1103 | 0.264874 |
| gamma-BHC | 6.25 | 6.30 | 6.31 | 2323 | 0.886691 |
| beta-BHC | 6.38 | 6.39 | 6.44 | 328 | 0.189213 |
| Heptachlor | 6.89 | 6.92 | 6.95 | 2773 | 1.001487 |
| Telodrin | 7.58 | 7.60 | 7.64 | 13669 | 5.009507 |
| Hept. epoxide | 8.14 | 8.15 | 8.20 | 36479 E | 13.475240 |
| o,p-DDE | 8.38 | 8.39 | 8.44 | 41003 | 21.984655 |
| Endosulfan I | 8.68 | 8.70 | 8.74 | 2506 | 1.010098 |
| o,p-DDT | 9.47 | 9.51 | 9.53 | 34344 | 19.455355 |
| Kepone | 9.61 | 9.67 | 9.67 | 574 | 2.219306 |
| Endosulfan II | 9.73 | 9.74 | 9.79 | 35684 | 14.903117 |
| 4,4'-DDT | 9.96 | 9.99 | 10.02 | 25626 | 14.131367 |
| Endrin aldehyde | 10.17 | 10.17 | 10.23 | 1572 | 0.723853 |
| Endrin ketone | 11.28 | 11.33 | 11.34 | 11204 | 4.570362 |
| DCB | 13.32 | 13.34 | 13.38 | 24788 | 9.747336 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | B | 8.909580 | | | | | 7.97 | |
| HCB | A | 94.228348 | | | | E | ** 198.88 | |
| alpha-BHC | | | | <1.66 | <0.34 | | | |
| gamma-BHC | | | | <1.66 | <0.34 | | | |
| beta-BHC | | | | <1.66 | <0.34 | | | |
| delta-BHC | | | | <1.66 | <0.34 | | | |
| Heptachlor | A (B) | 1.00 | 3.177825 | C 1.66 | ~~0.34~~ | (E) | ** 104.15 | |
| Aldrin | | | | <3 | <1.02 | | | |
| Telodrin | | | | | | | | ~~interfered~~ |
| o,p-DDE | | | | | | | | due to |
| Hept. epoxide | B (A) | 2.44 | 13.475240 | C25W ~~1.66~~ | ~~0.34~~ | E (E) | ** 138.68 | PCBs |
| g. Chlordane | | | | <1.8 | <0.6 | | | |
| a. Chlordane | | | | <1.66 | <0.34 | | | |
| 4,4'-DDE | | | | <3.4 | <0.66 | | | |
| Endosulfan I | | | | <2.6 | <0.88 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <3.4 | <0.66 | | | |
| o,p-DDT | | | | | | | | |
| Endrin | | | | <3.4 | <1 | | | |
| 4,4'-DDD | | | | <3.4 | <1.16 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B (A) | 1.42 | 14.903117 | C 3.4 | ~~0.66~~ | (E) | ** 165.24 | |
| 4,4'-DDT | | | | <3.4 | <0.66 | | | 8477 |
| Endrin aldehyde | | | | <6 | <2 | | | |
| Methoxychlor | | | | <24 | <8 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 10:00:00

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241649R** ACF DF2 7GP22 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13-H6722A
Result file : 1C13088.90R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13-H6722B
Result file : 1C13088B.90R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Mirex | | | | | | | |
| Endo. sulfate | | | <3.4 | <0.66 | | | |
| Endrin ketone | | | <3.4 | <0.66 | | | |
| DCB | B | 9.747336 | | | | 5.93 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

8478

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 10:00:00

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241649R ACF DF2 7GP22 Sample ID:AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 20 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 17:02:19
**Instrument** H6722A
**Result file** 1C13088.90R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 85.5% Conc: 8.226392
%SSR(DCB) 94.3% Conc: 9.18617

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.58 | 7.62 | 78143.64843 | 270.055146 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 56197.88671 | 290.6258 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 91929.39843 | 286.920988 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 69621.66406 | 298.79114 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 95900.54687 | 361.198436 | | | 6 |

Height summation: **391793.144533**
Concentration CF: **301.518302** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 17:02:19
**Instrument** H6722B
**Result file** 1C13088B.90R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 92.6% Conc: 8.90958
%SSR(DCB) 100.1% Conc: 9.747336

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 36478.99218 | 294.300578 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 41003.28125 | 294.29868 | | | 2 |
| E | 8.83 | 8.85 | 8.89 | 25752.95898 | 294.045582 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 55022.17578 | 296.363171 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 40401 | 296.868235 | | | 5 |
| E | 9.97 | 9.99 | 10.03 | 25626.29101 | 183.978918 | | | 6 |

Height summation: **224284.699219**
Concentration CF: **276.642527** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <34 | <6.6 | | | 4 | 40 | |
| Aroclor-1221 | | | <60 | <20 | | | 3 | 5 | |
| Aroclor-1232 | | | <34 | <8.6 | | | 4 | 10 | |
| Aroclor-1242 | | | <34 | <8 | | | 4 | 30 | |
| Aroclor-1248 | | | <36 | <12 | | | 4 | 30 | |
| Aroclor-1254 | A | 301.518302 | 34 | 6.6 | ~~E~~ (3) | 8.61 | 4 | 40 | |
| Aroclor-1260 | | | <34 | <6.6 | NV 4/14/04 | | 4 | 40 | |
| Toxaphene | | | <66 | <22 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8479

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241649R** ACF DF2 7GP22 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722A
Result file : 1C13088.90R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 85.5% Conc.: 8.226392
%SSR(DCB) : 94.3% Conc.: 9.18617

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **4** | **102.96** | |
| 5.32 | 5.36 | 5.38 | 3669.744385 | 17.819079 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2461.210449 | 7.249577 | | | 3 |
| 6.24 | 6.29 | 6.30 | 23553.33203 | 179.707825 | | | 5 |
| 6.71 | 6.74 | 6.77 | 18290.87695 | 114.98181 | | | 6 |
| Height Summation | | | **47975.163818** | | | | |
| Amount Avg CF: | | | **79.939573** | Linear: | | | |
| **Aroclor-1221** | | | | | **2** | **52.70** | |
| 4.54 | 4.58 | 4.60 | 1617.210327 | 21.720823 | | | 1 |
| 4.75 | 4.79 | 4.81 | 1839.049316 | 47.521299 | | | 2 |
| Height Summation | | | **3456.259643** | | | | |
| Amount Avg CF: | | | **34.621061** | Linear: | | | |
| **Aroclor-1232** | | | | | **4** | **102.13** | |
| 5.32 | 5.36 | 5.38 | 3669.744385 | 41.294143 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2461.210449 | 16.206565 | | | 3 |
| E 6.24 | 6.29 | 6.30 | 23553.33203 | 404.693819 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 18290.87695 | 267.923708 | | | 6 |
| Height Summation | | | **47975.163818** | | | | |
| Amount Avg CF: | | | **182.529559** | Linear: | | | |
| **Aroclor-1242** | | | | | **4** | **103.95** | |
| 5.32 | 5.36 | 5.38 | 3669.744385 | 20.47859 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2461.210449 | 8.516397 | | | 3 |
| E 6.24 | 6.29 | 6.30 | 23553.33203 | 211.425904 | | | 5 |
| 6.71 | 6.74 | 6.77 | 18290.87695 | 129.854251 | | | 6 |
| Height Summation | | | **47975.163818** | | | | |
| Amount Avg CF: | | | **92.568786** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **112.18** | |
| 5.32 | 5.36 | 5.38 | 3669.744385 | 43.380208 | | | 1 |
| 6.71 | 6.74 | 6.77 | 18290.87695 | 86.708698 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 85039.54687 | 841.916736 | | | 3 |
| 7.28 | 7.30 | 7.34 | 14134.11132 | 70.209038 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 91929.39843 | 791.218803 | | | 6 |
| Height Summation | | | **213063.677979** | | | | |
| Amount Avg CF: | | | **366.686697** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **31.51** | |
| 7.22 | 7.25 | 7.28 | 19367.62890 | 108.304008 | | | |
| E 7.56 | 7.58 | 7.62 | 78143.64843 | 270.055146 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 56197.88671 | 290.6258 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 91929.39843 | 286.920988 | | | 4 |
| E 8.45 | 8.48 | 8.51 | 69621.66406 | 298.79114 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 95900.54687 | 361.198436 | | | 6 |
| Height Summation | | | **411160.773439** | | | | |
| Amount Avg CF: | | | **269.31592** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **55.42** | |
| 8.33 | 8.35 | 8.39 | 39701.08593 | 149.992389 | | | 1 |
| 8.68 | 8.71 | 8.74 | 60251.00781 | 179.155085 | | | 2 |
| 9.05 | 9.08 | 9.11 | 95900.54687 | 275.986755 | | | 3 |
| 9.19 | 9.21 | 9.25 | 10762.10937 | 48.770126 | | | 4 |
| 9.91 | 9.93 | 9.97 | 34770.15234 | 68.871406 | | | 5 |
| 10.28 | 10.30 | 10.34 | 47859.85937 | 168.511232 | | | 6 |
| Height Summation | | | **289244.761720** | | | | |
| Amount Avg CF: | | | **148.547832** | Linear: | | | |

multiply conc/7120

$\bar{X}_S = 301.52$ RSD: 12%

## Analysis Report (B)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722B
Result file : 1C13088B.90R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 92.6% Conc.: 8.90958
%SSR(DCB) : 100.1% Conc.: 9.747336

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | **5** | **137.49** | |
| 5.52 | 5.56 | 5.58 | 1102.729614 | 16.8558 | | | 1 |
| 6.10 | 6.13 | 6.16 | 981.88501 | 9.21977 | | | 2 |
| 6.74 | 6.77 | 6.80 | 2802.119385 | 16.569066 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1625.638184 | 26.163327 | | | 5 |
| 7.56 | 7.60 | 7.62 | 13669.41699 | 152.788913 | | | 6 |
| Height Summation | | | **20181.789185** | | | | |
| Amount Avg CF: | | | **44.319375** | Linear: | | | |
| **Aroclor-1221** | | | | | **1** | | |
| 5.52 | 5.56 | 5.58 | 1102.729614 | 12.212606 | | | 3 |
| Height Summation | | | **1102.729614** | | | | |
| Amount Avg CF: | | | **12.212606** | Linear: | | | |
| **Aroclor-1232** | | | | | **5** | **149.42** | |
| 5.52 | 5.56 | 5.58 | 1102.729614 | 15.626244 | | | 1 |
| 6.10 | 6.13 | 6.16 | 981.88501 | 19.548082 | | | 2 |
| 6.74 | 6.77 | 6.80 | 2802.119385 | 38.099309 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1625.638184 | 60.418945 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 13669.41699 | 362.85085 | | | 6 |
| Height Summation | | | **20181.789185** | | | | |
| Amount Avg CF: | | | **99.308686** | Linear: | | | |
| **Aroclor-1242** | | | | | **5** | **136.92** | |
| 5.52 | 5.56 | 5.58 | 1102.729614 | 18.406575 | | | 1 |
| 6.10 | 6.13 | 6.16 | 981.88501 | 10.649879 | | | 2 |
| 6.73 | 6.77 | 6.79 | 2802.119385 | 19.569824 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1625.638184 | 31.54501 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 13669.41699 | 176.03313 | | | 6 |
| Height Summation | | | **20181.789185** | | | | |
| Amount Avg CF: | | | **51.240884** | Linear: | | | |
| **Aroclor-1248** | | | | | **5** | **33.74** | |
| E 7.19 | 7.21 | 7.25 | 17987.47460 | 183.875603 | | | 1 |
| 7.56 | 7.60 | 7.62 | 13669.41699 | 116.374511 | | | 2 |
| E 8.06 | 8.09 | 8.12 | 16479.59179 | 135.358936 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 36478.99218 | 268.41696 | | | 5 |
| E 8.44 | 8.47 | 8.50 | 25955.91015 | 224.864772 | | | 6 |
| Height Summation | | | **110571.385742** | | | | |
| Amount Avg CF: | | | **185.778156** | Linear: | | | |
| **Aroclor-1254** | | | | | **6** | **16.42** | |
| E 8.12 | 8.15 | 8.18 | 36478.99218 | 294.300578 | | | 1 |
| E 8.36 | 8.39 | 8.42 | 41003.28125 | 294.29868 | | | 2 |
| E 8.83 | 8.85 | 8.89 | 25752.95898 | 294.045582 | | | 3 |
| E 8.98 | 9.01 | 9.04 | 55022.17578 | 296.363171 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 40401 | 296.868235 | | | 5 |
| E 9.97 | 9.99 | 10.03 | 25626.29101 | 183.978918 | | | 6 |
| Height Summation | | | **224284.699219** | | | | |
| Amount Avg CF: | | | **276.642527** | Linear: | | | |
| **Aroclor-1260** | | | | | **6** | **42.29** | |
| 9.23 | 9.26 | 9.29 | 31178.26562 | 195.634903 | | | 1 |
| 9.49 | 9.51 | 9.55 | 34343.55468 | 184.206803 | | | 2 |
| 9.97 | 9.99 | 10.03 | 25626.29101 | 153.041497 | | | 3 |
| 10.47 | 10.47 | 10.53 | 25442.94921 | 201.479861 | | | 4 |
| 10.78 | 10.80 | 10.84 | 14038.29687 | 57.498089 | | | 5 |
| 11.30 | 11.33 | 11.36 | 11204.08593 | 82.054567 | | | 6 |
| Height Summation | | | **141833.443361** | | | | |
| Amount Avg CF: | | | **145.65262** | Linear: | | | |

9400

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:00:28

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241649R** ACF DF2 7GP22 Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722A
Result file : 1C13088.90R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 4 | 95.28 | |
| 6.25 | 6.29 | 6.31 | 23553.33203 | 75.345814 | | | 2 |
| 6.86 | 6.91 | 6.92 | 4609.76416 | 14.618884 | | | 3 |
| 7.68 | 7.72 | 7.74 | 2795.581543 | 4.668946 | | | 4 |
| 7.85 | 7.90 | 7.91 | 28237.04492 | 37.006933 | | | 5 |
| Height Summation | | | **59195.722656** | | | | |
| Amount Avg CF: | | | **32.910144** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 131.70 | |
| 8.70 | 8.71 | 8.76 | 60251.00781 | 1124.935755 | | | 1 |
| 10.41 | 10.41 | 10.47 | 3811.131592 | 40.055064 | | | 6 |
| Height Summation | | | **64062.139405** | | | | |
| Amount Avg CF: | | | **582.49541** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:02:19
Instrument : CP13--H6722B
Result file : 1C13088B.90R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 3 | 57.39 | |
| 6.89 | 6.92 | 6.95 | 2773.342773 | 23.667398 | | | 2 |
| 7.56 | 7.60 | 7.62 | 13669.41699 | 88.674085 | | | 3 |
| 8.51 | 8.53 | 8.57 | 14464.79589 | 57.633358 | | | 5 |
| Height Summation | | | **30907.555663** | | | | |
| Amount Avg CF: | | | **56.65828** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 29.90 | |
| 9.83 | 9.85 | 9.89 | 3536.740234 | 67.588519 | | | 3 |
| 10.17 | 10.17 | 10.23 | 1571.763428 | 43.998369 | | | 4 |
| Height Summation | | | **5108.503662** | | | | |
| Amount Avg CF: | | | **55.793444** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 34 | 6.6 | | ** 57.33 | 4 | 40 | |
| Aroclor-1221 | | | 60 | 20 | | ** 95.69 | 3 | 5 | |
| Aroclor-1232 | | | 34 | 8.6 | E | ** 59.06 | 4 | 10 | |
| Aroclor-1242 | | | 34 | 8 | E | ** 57.48 | 4 | 30 | |
| Aroclor-1248 | | | 36 | 12 | E | ** 65.49 | 4 | 30 | |
| Aroclor-1254 | | | 34 | 6.6 | E | 2.68 | 4 | 40 | |
| Aroclor-1260 | | | 34 | 6.6 | | 1.97 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 53.03 | 2 | 20 | |
| Toxaphene | | | 66 | 22 | | ** 165.04 | 4 | 30 | |

Units: ug/kg



Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:00:28

Sample Name: **4241649RACF DF2 AC7GP22 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 05:16:19pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.90R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 34788.1 | 0.263 | BB | 0.038 | 15427.10 | 0.336 |
| 2 | 3.650 | | 0.0000 | 0.000 | 3648.1 | 0.028 | BB | 0.033 | 1866.93 | 0.041 |
| 3 | 3.709 | | 0.0000 | 0.000 | 1711.5 | 0.013 | BB | 0.032 | 883.00 | 0.019 |
| 4 | 3.875 | | 0.0000 | 0.000 | 2340.6 | 0.018 | BB | 0.046 | 844.61 | 0.018 |
| 5 | 3.957 | | 0.0000 | 0.000 | 24671.8 | 0.186 | BB | 0.042 | 9863.95 | 0.215 |
| 6 | 4.068 | | 0.0000 | 0.000 | 10478.5 | 0.079 | BB | 0.047 | 3710.60 | 0.081 |
| 7 | 4.189 | | 0.0000 | 0.000 | 24591.7 | 0.186 | BB | 0.036 | 11363.26 | 0.248 |
| 8 | 4.310 | TCX | 246.7918 | 5.437 | 110434.7 | 0.834 | BB | 0.039 | 46835.35 | 1.020 |
| 9 | 4.486 | | 0.0000 | 0.000 | 10672.1 | 0.081 | BB | 0.075 | 2360.40 | 0.051 |
| 10 | 4.582 | | 0.0000 | 0.000 | 3067.5 | 0.023 | BB | 0.032 | 1617.21 | 0.035 |
| 11 | 4.634 | | 0.0000 | 0.000 | 2151.5 | 0.016 | BB | 0.025 | 1419.70 | 0.031 |
| 12 | 4.675 | | 0.0000 | 0.000 | 114.4 | 0.001 | BB | 0.017 | 109.72 | 0.002 |
| 13 | 4.791 | | 0.0000 | 0.000 | 10506.9 | 0.079 | BB | 0.095 | 1839.05 | 0.040 |
| 14 | 4.905 | HCB | 2826.8500 | 62.272 | 2452471.0 | 18.522 | BB | 0.042 | 983511.80 | 21.428 |
| 15 | 5.112 | alpha-BHC | 18.0253 | 0.397 | 9250.2 | 0.070 | BB | 0.037 | 4173.45 | 0.091 |
| 16 | 5.264 | | 0.0000 | 0.000 | 545.2 | 0.004 | BB | 0.022 | 409.72 | 0.009 |
| 17 | 5.309 | | 0.0000 | 0.000 | 796.5 | 0.006 | BB | 0.025 | 524.82 | 0.011 |
| 18 | 5.363 | | 0.0000 | 0.000 | 7701.0 | 0.058 | BB | 0.035 | 3669.74 | 0.080 |
| 19 | 5.459 | | 0.0000 | 0.000 | 7185.4 | 0.054 | BB | 0.031 | 3915.36 | 0.085 |
| 20 | 5.553 | | 0.0000 | 0.000 | 4947.4 | 0.037 | BB | 0.027 | 3058.32 | 0.067 |
| 21 | 5.692 | | 0.0000 | 0.000 | 7826.7 | 0.059 | BB | 0.054 | 2437.26 | 0.053 |
| 22 | 5.775 | | 0.0000 | 0.000 | 9996.8 | 0.075 | BB | 0.038 | 4335.55 | 0.094 |
| 23 | 6.003 | delta-BHC | 11.1935 | 0.247 | 7912.3 | 0.060 | BB | 0.054 | 2461.21 | 0.054 |
| 24 | 6.093 | | 0.0000 | 0.000 | 7683.7 | 0.058 | BV | 0.041 | 3139.65 | 0.068 |
| 25 | 6.287 | Heptachlor | 95.3347 | 2.100 | 157635.8 | 1.191 | VV | 0.112 | 23553.33 | 0.513 |
| 26 | 6.357 | | 0.0000 | 0.000 | 106050.9 | 0.801 | VV | 0.063 | 28164.64 | 0.614 |
| 27 | 6.475 | | 0.0000 | 0.000 | 3790383.0 | 28.626 | VB | 0.066 | 956914.10 | 20.849 |
| 28 | 6.740 | | 0.0000 | 0.000 | 50287.8 | 0.380 | BV | 0.046 | 18290.88 | 0.399 |
| 29 | 6.856 | | 0.0000 | 0.000 | 14751.3 | 0.111 | VV | 0.038 | 6426.66 | 0.140 |
| 30 | 6.911 | | 0.0000 | 0.000 | 16420.0 | 0.124 | VB | 0.059 | 4609.76 | 0.100 |
| 31 | 7.072 | | 0.0000 | 0.000 | 85217.2 | 0.644 | BB | 0.047 | 30439.51 | 0.663 |
| 32 | 7.203 | | 0.0000 | 0.000 | 146271.6 | 1.105 | BB | 0.029 | 85039.55 | 1.853 |
| 33 | 7.245 | | 0.0000 | 0.000 | 23234.0 | 0.175 | BB | 0.020 | 19367.63 | 0.422 |
| 34 | 7.302 | | 0.0000 | 0.000 | 39792.3 | 0.301 | BB | 0.047 | 14134.11 | 0.308 |
| 35 | 7.521 | Hept. epoxide | 73.1862 | 1.612 | 29398.2 | 0.222 | BV | 0.034 | 14604.89 | 0.318 |
| 36 | 7.585 | | 0.0000 | 0.000 | 215157.5 | 1.625 | VV | 0.046 | 78143.65 | 1.703 |
| 37 | 7.637 | | 0.0000 | 0.000 | 91763.4 | 0.693 | VV | 0.042 | 36122.94 | 0.787 |
| 38 | 7.719 | g. Chlordane | 14.4395 | 0.318 | 7613.4 | 0.057 | VV | 0.045 | 2795.58 | 0.061 |
| 39 | 7.836 | | 0.0000 | 0.000 | 16557.3 | 0.125 | VV | 0.045 | 6105.09 | 0.133 |
| 40 | 7.901 | a. Chlordane | 136.6512 | 3.010 | 65601.4 | 0.495 | VV | 0.039 | 28237.04 | 0.615 |
| 41 | 7.959 | 4,4'-DDE | 319.4076 | 7.036 | 135613.2 | 1.024 | VV | 0.040 | 56197.89 | 1.224 |
| 42 | 8.014 | | 0.0000 | 0.000 | 43145.5 | 0.326 | VB | 0.037 | 19541.24 | 0.426 |
| 43 | 8.118 | | 0.0000 | 0.000 | 245930.8 | 1.857 | BV | 0.045 | 91929.40 | 2.003 |
| 44 | 8.275 | | 0.0000 | 0.000 | 47907.0 | 0.362 | VB | 0.057 | 13918.97 | 0.303 |
| 45 | 8.353 | | 0.0000 | 0.000 | 103747.3 | 0.784 | BV | 0.044 | 39701.09 | 0.865 |
| 46 | 8.477 | | 0.0000 | 0.000 | 167364.8 | 1.264 | VV | 0.040 | 69621.66 | 1.517 |
| 47 | 8.553 | | 0.0000 | 0.000 | 17675.9 | 0.133 | VB | 0.036 | 8290.98 | 0.181 |
| 48 | 8.630 | | 0.0000 | 0.000 | 19050.3 | 0.144 | BV | 0.033 | 9672.03 | 0.211 |
| 49 | 8.706 | Endrin | 405.3030 | 8.928 | 238373.2 | 1.800 | VV | 0.066 | 60251.01 | 1.313 |
| 50 | 8.844 | | 0.0000 | 0.000 | 150665.7 | 1.138 | VV | 0.060 | 41897.25 | 0.913 |
| 51 | 8.941 | | 0.0000 | 0.000 | 13713.2 | 0.104 | VB | 0.032 | 7075.49 | 0.154 |
| 52 | 9.004 | Endosulfan II | 42.5558 | 0.937 | 12266.5 | 0.093 | BV | 0.029 | 6974.22 | 0.152 |
| 53 | 9.079 | | 0.0000 | 0.000 | 283309.9 | 2.140 | VV | 0.049 | 95900.55 | 2.089 |
| 54 | 9.213 | | 0.0000 | 0.000 | 28269.1 | 0.213 | VB | 0.044 | 10762.11 | 0.234 |
| 55 | 9.309 | | 0.0000 | 0.000 | 1775297.0 | 13.408 | BB | 0.041 | 719592.60 | 15.678 |
| 56 | 9.457 | | 0.0000 | 0.000 | 42981.6 | 0.325 | BB | 0.035 | 20646.84 | 0.450 |
| 57 | 9.541 | Endrin aldehyde | 66.0991 | 1.456 | 15936.1 | 0.120 | BV | 0.029 | 9118.96 | 0.199 |
| 58 | 9.596 | | 0.0000 | 0.000 | 9427.1 | 0.071 | VB | 0.029 | 5392.91 | 0.117 |
| 59 | 9.663 | | 0.0000 | 0.000 | 10785.4 | 0.081 | BB | 0.034 | 5328.55 | 0.116 |
| 60 | 9.773 | | 0.0000 | 0.000 | 35560.7 | 0.269 | BB | 0.036 | 16678.17 | 0.363 |
| 61 | 9.855 | | 0.0000 | 0.000 | 10290.3 | 0.078 | BB | 0.030 | 5705.77 | 0.124 |
| 62 | 9.931 | | 0.0000 | 0.000 | 89012.0 | 0.672 | BV | 0.043 | 34770.15 | 0.758 |
| 63 | 10.059 | | 0.0000 | 0.000 | 985.8 | 0.007 | VB | 0.029 | 573.98 | 0.013 |
| 64 | 10.141 | Endo. sulfate | 8.1006 | 0.178 | 2307.3 | 0.017 | BV | 0.032 | 1183.75 | 0.026 |

9482

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.176 | | 0.0000 | 0.000 | 2147.8 | 0.016 | VB | 0.034 | 1052.82 | 0.023 |
| 66 | 10.240 | | 0.0000 | 0.000 | 26917.5 | 0.203 | BB | 0.028 | 16096.73 | 0.351 |
| 67 | 10.299 | | 0.0000 | 0.000 | 128502.9 | 0.970 | BB | 0.045 | 47859.86 | 1.043 |
| 68 | 10.413 | | 0.0000 | 0.000 | 11217.9 | 0.085 | BB | 0.049 | 3811.13 | 0.083 |
| 69 | 10.569 | | 0.0000 | 0.000 | 5126.4 | 0.039 | BV | 0.056 | 1522.65 | 0.033 |
| 70 | 10.681 | | 0.0000 | 0.000 | 317993.5 | 2.402 | VV | 0.041 | 129261.70 | 2.816 |
| 71 | 10.796 | | 0.0000 | 0.000 | 30343.3 | 0.229 | VV | 0.057 | 8928.27 | 0.195 |
| 72 | 10.835 | | 0.0000 | 0.000 | 23895.1 | 0.180 | VV | 0.053 | 7560.90 | 0.165 |
| 73 | 10.966 | | 0.0000 | 0.000 | 8892.7 | 0.067 | VV | 0.049 | 3011.36 | 0.066 |
| 74 | 11.027 | | 0.0000 | 0.000 | 3348.2 | 0.025 | VB | 0.044 | 1264.55 | 0.028 |
| 75 | 11.125 | | 0.0000 | 0.000 | 35581.3 | 0.269 | BB | 0.056 | 10537.09 | 0.230 |
| 76 | 11.216 | | 0.0000 | 0.000 | 1515.4 | 0.011 | BB | 0.026 | 972.50 | 0.021 |
| 77 | 11.304 | | 0.0000 | 0.000 | 2730.9 | 0.021 | BB | 0.041 | 1099.64 | 0.024 |
| 78 | 11.398 | | 0.0000 | 0.000 | 1291087.0 | 9.751 | BB | 0.046 | 465041.50 | 10.132 |
| 79 | 11.741 | | 0.0000 | 0.000 | 639.0 | 0.005 | BB | 0.041 | 257.50 | 0.006 |
| 80 | 11.814 | DCB | 275.5851 | 6.071 | 160128.3 | 1.209 | BB | 0.051 | 52471.75 | 1.143 |
| 81 | 12.083 | | 0.0000 | 0.000 | 4443.0 | 0.034 | BB | 0.054 | 1376.34 | 0.030 |
| 82 | 12.133 | | 0.0000 | 0.000 | 254.4 | 0.002 | BB | 0.023 | 182.29 | 0.004 |
| 83 | 12.219 | | 0.0000 | 0.000 | 1579.6 | 0.012 | BB | 0.039 | 682.57 | 0.015 |
| 84 | 12.272 | | 0.0000 | 0.000 | 15188.1 | 0.115 | BB | 0.043 | 5861.95 | 0.128 |
| 85 | 12.453 | | 0.0000 | 0.000 | 9955.3 | 0.075 | BB | 0.050 | 3333.35 | 0.073 |
| 86 | 12.593 | | 0.0000 | 0.000 | 14152.1 | 0.107 | BB | 0.080 | 2952.06 | 0.064 |
| 87 | 12.730 | | 0.0000 | 0.000 | 110.8 | 0.001 | BB | 0.021 | 87.15 | 0.002 |
| 88 | 12.783 | | 0.0000 | 0.000 | 694.3 | 0.005 | BB | 0.029 | 404.59 | 0.009 |
| 89 | 12.829 | | 0.0000 | 0.000 | 798.9 | 0.006 | BB | 0.035 | 381.40 | 0.008 |
| 90 | 12.940 | | 0.0000 | 0.000 | 8244.5 | 0.062 | BB | 0.058 | 2388.24 | 0.052 |
| 91 | 13.066 | | 0.0000 | 0.000 | 356.9 | 0.003 | BB | 0.027 | 219.74 | 0.005 |
| 92 | 13.118 | | 0.0000 | 0.000 | 1508.7 | 0.011 | BB | 0.041 | 617.43 | 0.013 |
| 93 | 13.231 | | 0.0000 | 0.000 | 6427.4 | 0.049 | BB | 0.051 | 2084.73 | 0.045 |
| 94 | 13.338 | | 0.0000 | 0.000 | 1147.8 | 0.009 | BB | 0.050 | 381.75 | 0.008 |
| 95 | 13.437 | | 0.0000 | 0.000 | 780.1 | 0.006 | BB | 0.038 | 345.90 | 0.008 |
| 96 | 13.491 | | 0.0000 | 0.000 | 1634.7 | 0.012 | BB | 0.062 | 441.49 | 0.010 |
| 97 | 13.643 | | 0.0000 | 0.000 | 1766.7 | 0.013 | BB | 0.048 | 612.45 | 0.013 |
| 98 | 13.745 | | 0.0000 | 0.000 | 2005.1 | 0.015 | BB | 0.045 | 747.05 | 0.016 |
| 99 | 13.880 | | 0.0000 | 0.000 | 8542.0 | 0.065 | BB | 0.058 | 2461.60 | 0.054 |

Total Area = 13240900.0, Total Amount = 4539.524, Total Height = 4589765.0, Sample Units = PPB

Sample Name: **4241649RACF DF2 AC7GP22 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 05:16:19pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.90R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.048 | | 0.0000 | 0.000 | 1373.7 | 0.053 | BB | 0.045 | 512.51 | 0.047 |
| 2 | 3.159 | | 0.0000 | 0.000 | 71805.1 | 2.757 | BB | 0.043 | 27608.72 | 2.555 |
| 3 | 3.332 | | 0.0000 | 0.000 | 1284.5 | 0.049 | BB | 0.040 | 530.91 | 0.049 |
| 4 | 3.413 | | 0.0000 | 0.000 | 5016.8 | 0.193 | BB | 0.043 | 1929.36 | 0.179 |
| 5 | 3.519 | | 0.0000 | 0.000 | 1954.6 | 0.075 | BB | 0.037 | 875.97 | 0.081 |
| 6 | 3.680 | | 0.0000 | 0.000 | 19712.1 | 0.757 | BB | 0.037 | 8846.85 | 0.819 |
| 7 | 3.756 | | 0.0000 | 0.000 | 785.4 | 0.030 | BB | 0.027 | 479.18 | 0.044 |
| 8 | 3.921 | | 0.0000 | 0.000 | 2206.4 | 0.085 | BB | 0.052 | 707.50 | 0.065 |
| 9 | 4.155 | | 0.0000 | 0.000 | 2947.6 | 0.113 | BB | 0.039 | 1266.74 | 0.117 |
| 10 | 4.202 | | 0.0000 | 0.000 | 2720.2 | 0.104 | BB | 0.032 | 1401.86 | 0.130 |
| 11 | 4.300 | | 0.0000 | 0.000 | 680.5 | 0.026 | BB | 0.040 | 285.56 | 0.026 |
| 12 | 4.417 | | 0.0000 | 0.000 | 11492.2 | 0.441 | BB | 0.042 | 4526.55 | 0.419 |
| 13 | 4.551 | | 0.0000 | 0.000 | 79887.5 | 3.067 | BB | 0.040 | 33503.11 | 3.100 |
| 14 | 4.826 | TCX | 267.2874 | 7.520 | 58575.9 | 2.249 | BB | 0.037 | 26143.55 | 2.419 |
| 15 | 4.977 | | 0.0000 | 0.000 | 48597.4 | 1.866 | BB | 0.044 | 18250.24 | 1.689 |
| 16 | 5.184 | | 0.0000 | 0.000 | 10132.2 | 0.389 | BB | 0.105 | 1614.71 | 0.149 |
| 17 | 5.406 | | 0.0000 | 0.000 | 1851.1 | 0.071 | BB | 0.044 | 698.71 | 0.065 |
| 18 | 5.560 | HCB | 7.9462 | 0.224 | 4065.0 | 0.156 | BB | 0.061 | 1102.73 | 0.102 |
| 19 | 5.671 | | 0.0000 | 0.000 | 6789.9 | 0.261 | BB | 0.044 | 2565.72 | 0.237 |
| 20 | 5.799 | | 0.0000 | 0.000 | 2334.9 | 0.090 | BB | 0.044 | 888.28 | 0.082 |
| 21 | 5.926 | | 0.0000 | 0.000 | 1774.8 | 0.068 | BB | 0.034 | 867.68 | 0.080 |
| 22 | 6.033 | | 0.0000 | 0.000 | 1774.8 | 0.068 | BV | 0.084 | 351.12 | 0.032 |
| 23 | 6.127 | | 0.0000 | 0.000 | 4027.4 | 0.155 | VV | 0.068 | 981.89 | 0.091 |
| 24 | 6.260 | | 0.0000 | 0.000 | 2163.2 | 0.083 | VV | 0.030 | 1187.90 | 0.110 |
| 25 | 6.297 | gamma-BHC | 26.6007 | 0.748 | 4815.4 | 0.185 | VV | 0.035 | 2322.89 | 0.215 |
| 26 | 6.351 | | 0.0000 | 0.000 | 967.7 | 0.037 | VV | 0.025 | 634.82 | 0.059 |
| 27 | 6.388 | beta-BHC | 5.6764 | 0.160 | 482.8 | 0.019 | VV | 0.025 | 328.14 | 0.030 |
| 28 | 6.433 | | 0.0000 | 0.000 | 169.2 | 0.006 | VV | 0.022 | 130.35 | 0.012 |
| 29 | 6.480 | | 0.0000 | 0.000 | 838.1 | 0.032 | VB | 0.035 | 399.92 | 0.037 |
| 30 | 6.531 | | 0.0000 | 0.000 | 1863.1 | 0.072 | BB | 0.030 | 1027.59 | 0.095 |
| 31 | 6.624 | | 0.0000 | 0.000 | 22482.0 | 0.863 | BB | 0.032 | 11692.13 | 1.082 |
| 32 | 6.766 | | 0.0000 | 0.000 | 9504.9 | 0.365 | BB | 0.057 | 2802.12 | 0.259 |
| 33 | 6.918 | Heptachlor | 30.0446 | 0.845 | 5863.2 | 0.225 | BB | 0.035 | 2773.34 | 0.257 |
| 34 | 7.093 | | 0.0000 | 0.000 | 16278.9 | 0.625 | BB | 0.167 | 1625.64 | 0.150 |
| 35 | 7.214 | | 0.0000 | 0.000 | 40758.2 | 1.565 | BV | 0.038 | 17987.47 | 1.665 |
| 36 | 7.276 | | 0.0000 | 0.000 | 11994.5 | 0.460 | VV | 0.038 | 5260.38 | 0.487 |
| 37 | 7.340 | | 0.0000 | 0.000 | 4442.8 | 0.171 | VB | 0.044 | 1684.83 | 0.156 |
| 38 | 7.425 | | 0.0000 | 0.000 | 35413.1 | 1.360 | BB | 0.039 | 14962.66 | 1.385 |
| 39 | 7.599 | Telodrin | 150.2852 | 4.228 | 44594.4 | 1.712 | BB | 0.054 | 13669.42 | 1.265 |
| 40 | 7.790 | | 0.0000 | 0.000 | 104061.2 | 3.995 | BB | 0.038 | 45925.19 | 4.250 |
| 41 | 7.959 | | 0.0000 | 0.000 | 3633.5 | 0.139 | BV | 0.035 | 1746.15 | 0.162 |
| 42 | 8.008 | | 0.0000 | 0.000 | 15441.7 | 0.593 | VV | 0.051 | 5061.09 | 0.468 |
| 43 | 8.088 | | 0.0000 | 0.000 | 37763.1 | 1.450 | VV | 0.038 | 16479.59 | 1.525 |
| 44 | 8.149 | Hept. epoxide | 404.2572 | 11.373 | 88593.7 | 3.401 | VV | 0.040 | 36478.99 | 3.376 |
| 45 | 8.256 | | 0.0000 | 0.000 | 16572.2 | 0.636 | VV | 0.039 | 7030.72 | 0.651 |
| 46 | 8.308 | | 0.0000 | 0.000 | 25047.1 | 0.962 | VV | 0.041 | 10285.65 | 0.952 |
| 47 | 8.387 | o,p-DDE | 659.5397 | 18.555 | 92918.0 | 3.567 | VV | 0.038 | 41003.28 | 3.795 |
| 48 | 8.467 | | 0.0000 | 0.000 | 60596.1 | 2.326 | VV | 0.039 | 25955.91 | 2.402 |
| 49 | 8.531 | | 0.0000 | 0.000 | 37005.0 | 1.421 | VB | 0.043 | 14464.80 | 1.339 |
| 50 | 8.698 | Endosulfan I | 30.3029 | 0.853 | 5261.1 | 0.202 | BB | 0.035 | 2505.52 | 0.232 |
| 51 | 8.775 | | 0.0000 | 0.000 | 26838.3 | 1.030 | BB | 0.034 | 13184.07 | 1.220 |
| 52 | 8.854 | | 0.0000 | 0.000 | 50257.2 | 1.929 | BB | 0.033 | 25752.96 | 2.383 |
| 53 | 8.936 | | 0.0000 | 0.000 | 14667.1 | 0.563 | BV | 0.031 | 7815.82 | 0.723 |
| 54 | 9.007 | | 0.0000 | 0.000 | 138203.9 | 5.306 | VB | 0.042 | 55022.18 | 5.092 |
| 55 | 9.139 | | 0.0000 | 0.000 | 16467.5 | 0.632 | BV | 0.047 | 5892.95 | 0.545 |
| 56 | 9.256 | | 0.0000 | 0.000 | 74472.0 | 2.859 | VV | 0.040 | 31178.27 | 2.885 |
| 57 | 9.292 | | 0.0000 | 0.000 | 92552.7 | 3.553 | VB | 0.038 | 40401.00 | 3.739 |
| 58 | 9.437 | | 0.0000 | 0.000 | 20095.1 | 0.771 | BV | 0.041 | 8084.87 | 0.748 |
| 59 | 9.515 | o,p-DDT | 583.6606 | 16.421 | 79708.2 | 3.060 | VB | 0.039 | 34343.55 | 3.178 |
| 60 | 9.669 | Kepone | 66.5792 | 1.873 | 1051.6 | 0.040 | BV | 0.031 | 573.96 | 0.053 |
| 61 | 9.738 | Endosulfan II | 447.0935 | 12.578 | 121198.4 | 4.653 | VB | 0.057 | 35684.01 | 3.302 |
| 62 | 9.853 | | 0.0000 | 0.000 | 6628.1 | 0.254 | BB | 0.031 | 3536.74 | 0.327 |
| 63 | 9.945 | | 0.0000 | 0.000 | 150516.0 | 5.779 | BB | 0.030 | 83567.76 | 7.734 |
| 64 | 9.994 | 4,4'-DDT | 423.9410 | 11.927 | 38299.3 | 1.470 | BB | 0.025 | 25626.29 | 2.372 |

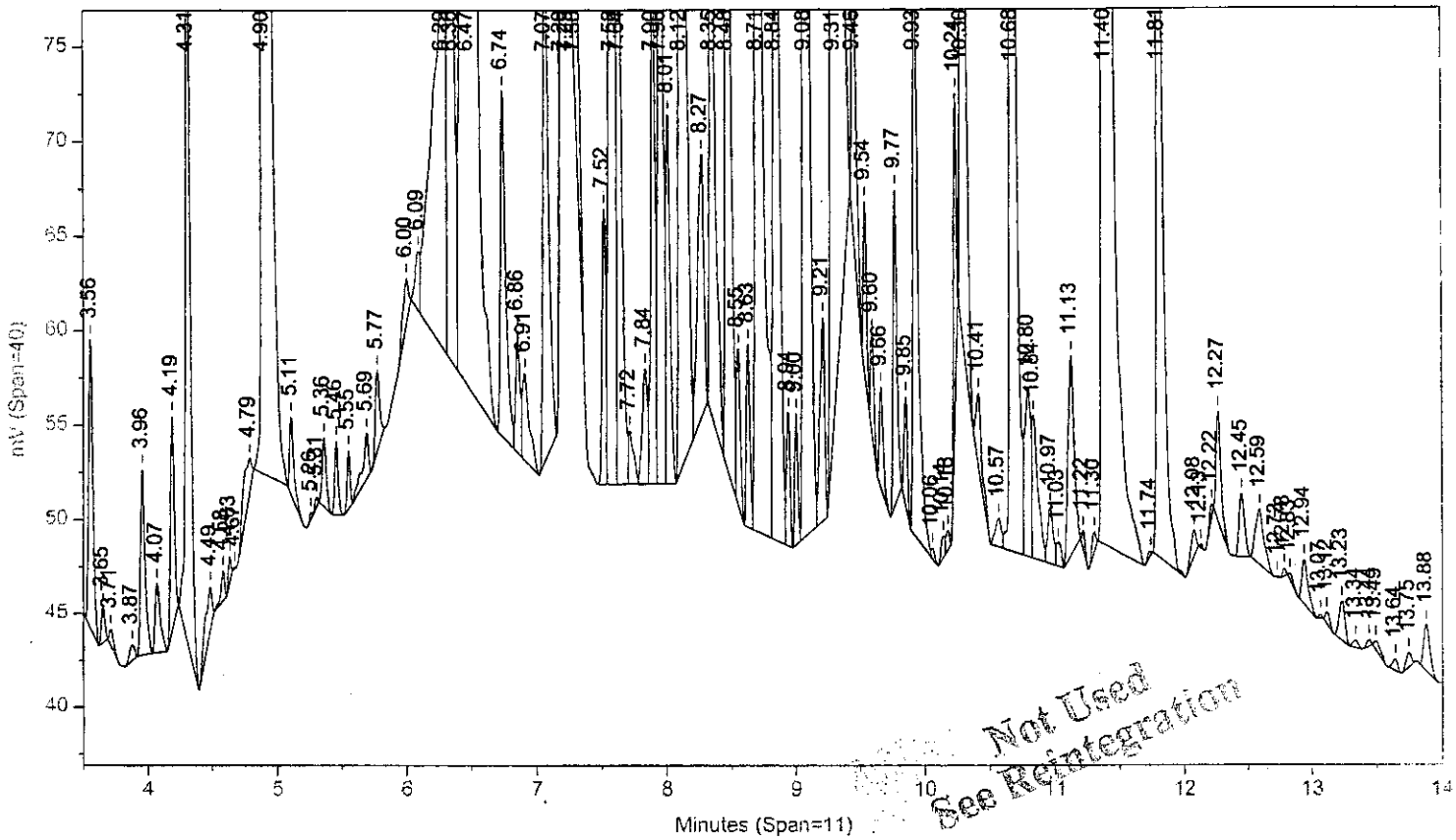
3484

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.104 | | 0.0000 | 0.000 | 3082.7 | 0.118 | BB | 0.022 | 2291.36 | 0.212 |
| 66 | 10.137 | | 0.0000 | 0.000 | 3235.0 | 0.124 | BB | 0.020 | 2658.67 | 0.246 |
| 67 | 10.174 | Endrin aldehyde | 21.7156 | 0.611 | 2198.2 | 0.084 | BB | 0.023 | 1571.76 | 0.145 |
| 68 | 10.297 | | 0.0000 | 0.000 | 7390.3 | 0.284 | BB | 0.049 | 2509.36 | 0.232 |
| 69 | 10.471 | | 0.0000 | 0.000 | 70670.1 | 2.713 | BB | 0.046 | 25442.95 | 2.355 |
| 70 | 10.594 | | 0.0000 | 0.000 | 5969.3 | 0.229 | BB | 0.031 | 3230.38 | 0.299 |
| 71 | 10.672 | | 0.0000 | 0.000 | 17695.4 | 0.679 | BB | 0.033 | 8976.47 | 0.831 |
| 72 | 10.739 | | 0.0000 | 0.000 | 21089.0 | 0.810 | BB | 0.031 | 11428.04 | 1.058 |
| 73 | 10.804 | | 0.0000 | 0.000 | 27343.7 | 1.050 | BB | 0.032 | 14038.30 | 1.299 |
| 74 | 10.920 | | 0.0000 | 0.000 | 380.0 | 0.015 | BB | 0.019 | 334.20 | 0.031 |
| 75 | 10.968 | | 0.0000 | 0.000 | 1984.3 | 0.076 | BB | 0.039 | 849.60 | 0.079 |
| 76 | 11.101 | | 0.0000 | 0.000 | 100077.2 | 3.842 | BB | 0.039 | 42591.00 | 3.942 |
| 77 | 11.329 | Endrin ketone | 137.1109 | 3.857 | 42551.1 | 1.634 | BB | 0.063 | 11204.09 | 1.037 |
| 78 | 11.569 | | 0.0000 | 0.000 | 3096.7 | 0.119 | BB | 0.044 | 1169.02 | 0.108 |
| 79 | 11.687 | | 0.0000 | 0.000 | 1673.7 | 0.064 | BB | 0.049 | 571.68 | 0.053 |
| 80 | 11.760 | | 0.0000 | 0.000 | 4555.9 | 0.175 | BB | 0.051 | 1494.00 | 0.138 |
| 81 | 11.942 | | 0.0000 | 0.000 | 305312.6 | 11.721 | BB | 0.041 | 122830.00 | 11.367 |
| 82 | 12.104 | | 0.0000 | 0.000 | 2490.7 | 0.096 | BB | 0.041 | 1006.92 | 0.093 |
| 83 | 12.217 | | 0.0000 | 0.000 | 13581.2 | 0.521 | BB | 0.059 | 3807.81 | 0.352 |
| 84 | 12.754 | | 0.0000 | 0.000 | 28193.6 | 1.082 | BB | 0.163 | 2889.35 | 0.267 |
| 85 | 13.240 | | 0.0000 | 0.000 | 3878.7 | 0.149 | BB | 0.043 | 1510.94 | 0.140 |
| 86 | 13.343 | DCB | 292.4201 | 8.227 | 71245.8 | 2.735 | BB | 0.048 | 24788.33 | 2.294 |
| 87 | 13.685 | | 0.0000 | 0.000 | 3422.6 | 0.131 | BB | 0.063 | 911.14 | 0.084 |
| 88 | 13.875 | | 0.0000 | 0.000 | 1352.5 | 0.052 | BB | 0.051 | 439.46 | 0.041 |

Total Area = 2604740.0, Total Amount = 3554.461, Total Height = 1080575.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.90R

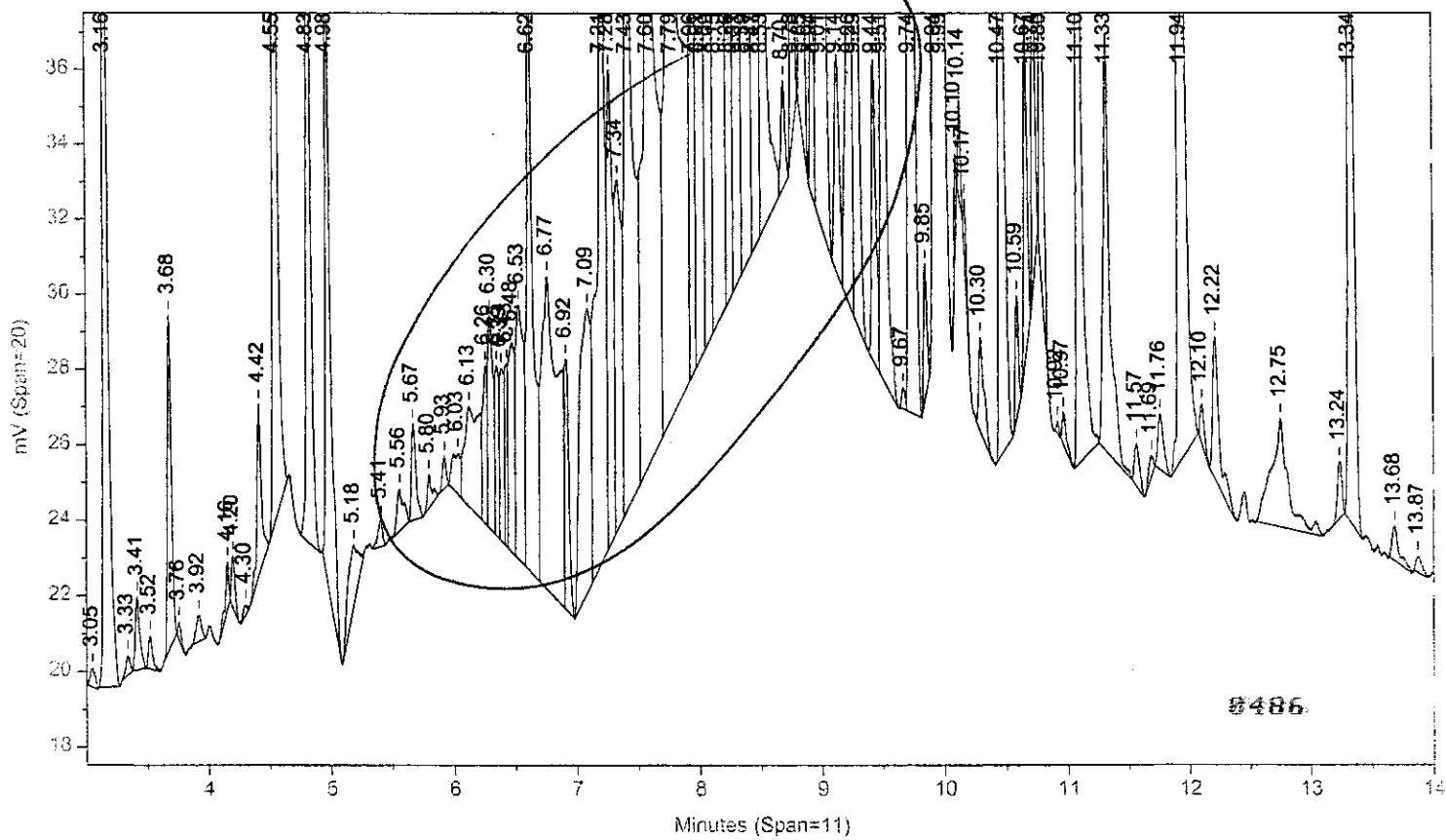
C:\CPWIN\DATA1\1C13088.90R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:02:19 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.90R

C:\CPWIN\DATA1\1C13088B.90R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:02:19 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.90R

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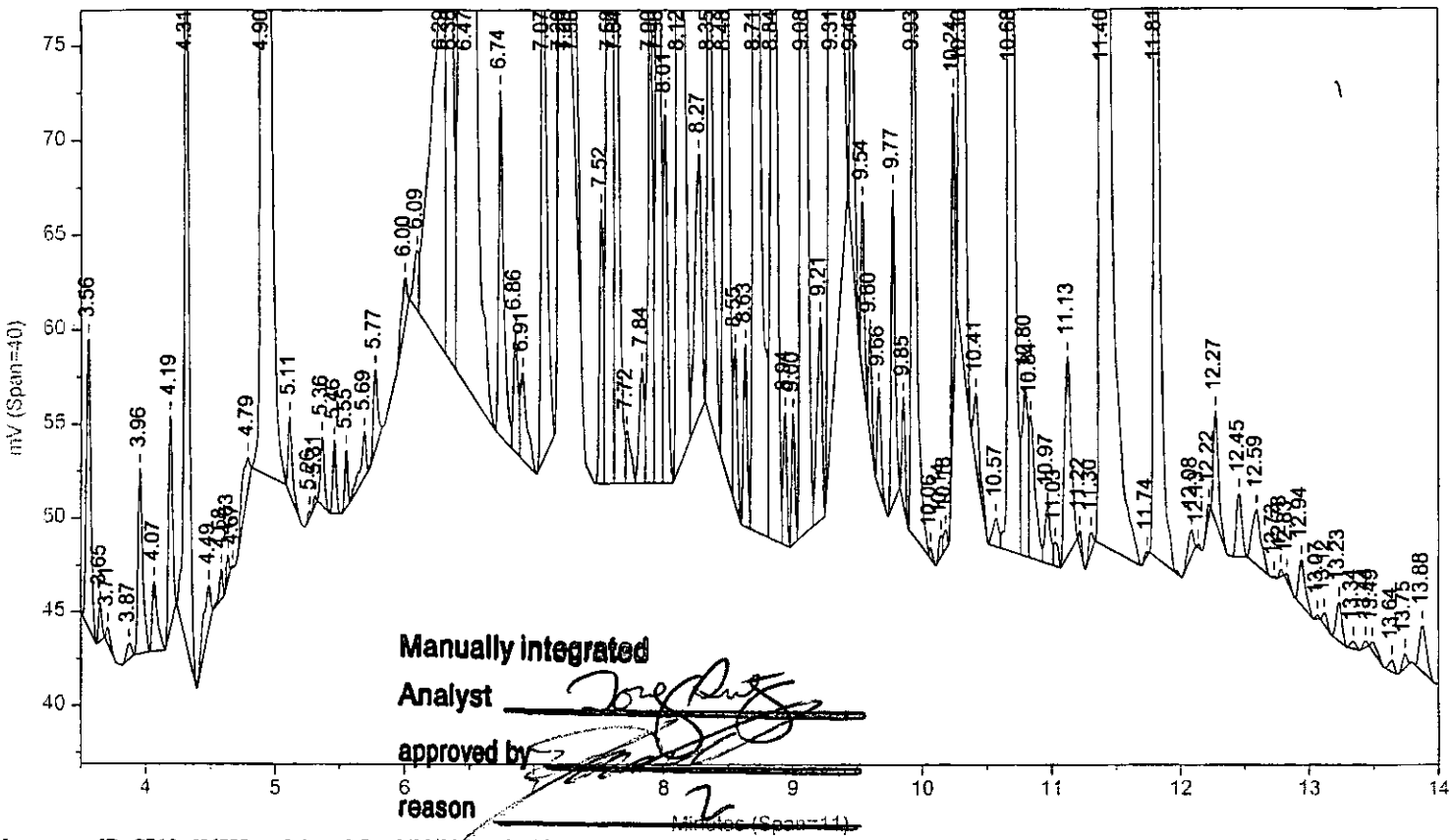


Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:02:19 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.90R

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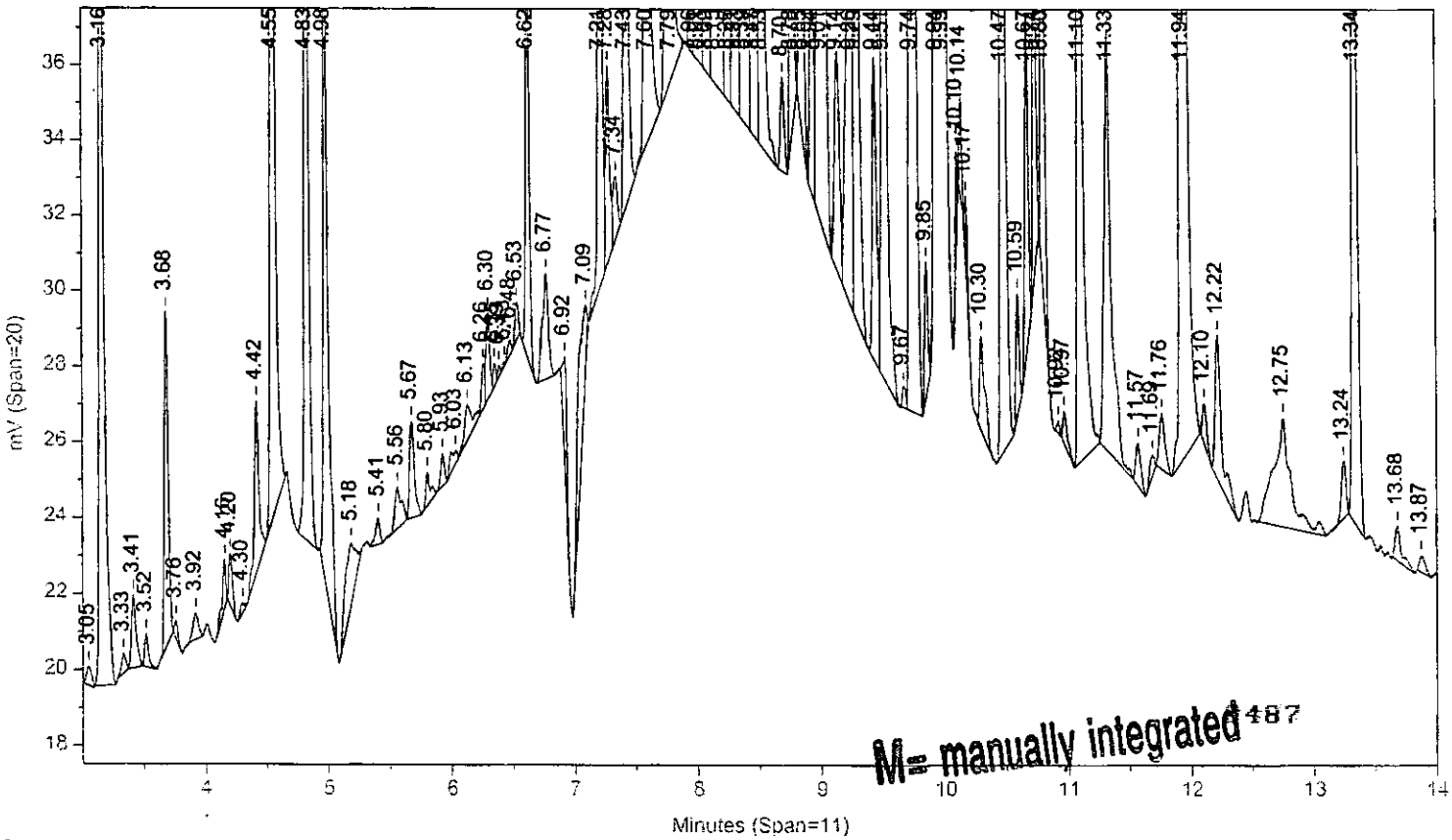



Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:02:19 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 20
Analyst: 120

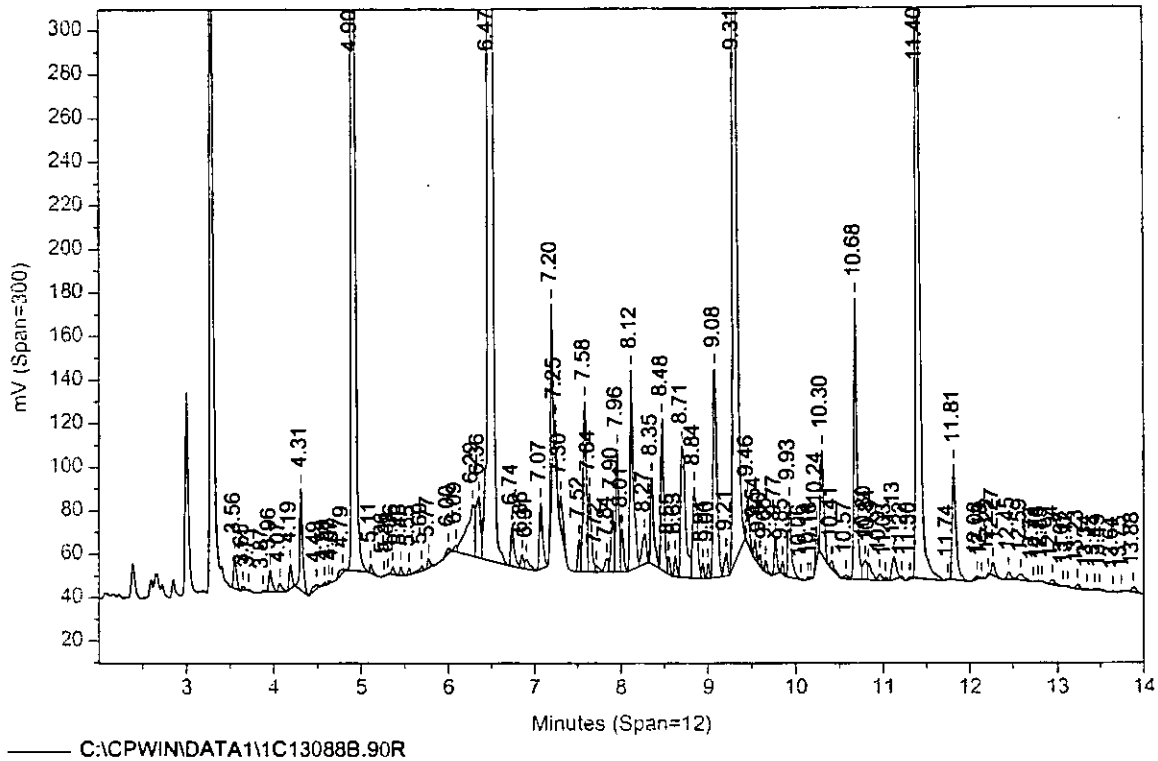
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 46835 | 8.22639 | TCX | 4.826 | 26144 | 8.90958 | TCX |
| 4.905 | 983512 | 94.22835 | HCB | 5.56 | 1103 | .26487 | HCB |
| 5.112 | 4173 | .60084 | alpha-BHC | . | 0 | . | alpha-BHC |
| 6.003 | 2461 | .37312 | delta-BHC | . | 0 | . | delta-BHC |
| 6.287 | 23553 | 3.17782 | Heptachlor | 6.918 | 2773 | 1.00149 | Heptachlor |
| . | 0 | . | gamma-BHC | 6.297 | 2323 | .88669 | gamma-BHC |
| . | 0 | . | beta-BHC | 6.388 | 328 | .18921 | beta-BHC |
| 7.521 | 14605 | 3.81329 | o,p-DDE | 8.387 | 41003 | 21.98466 | o,p-DDE |
| . | 0 | . | Telodrin | 7.599 | 13669 | 5.00951 | Telodrin |
| 7.719 | 2796 | .48132 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.901 | 28237 | 4.55504 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.959 | 56198 | 10.64692 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.149 | 36479 | 13.47524 | Hept. epoxide |
| 8.553 | 8291 | 2.15467 | o,p-DDT | 9.515 | 34344 | 19.45535 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.698 | 2506 | 1.0101 | Endosulfan I |
| 8.706 | 60251 | 13.5101 | Endrin | . | 0 | . | Endrin |
| 9.004 | 6974 | 1.41853 | Endosulfan II | 9.738 | 35684 | 14.90312 | Endosulfan II |
| 9.541 | 9119 | 2.2033 | Endrin aldehyde | 10.174 | 1572 | .72385 | Endrin aldehyde |
| . | 0 | . | Kepone | 9.669 | 574 | 2.21931 | Kepone |
| . | 0 | . | 4,4'-DDT | 9.994 | 25626 | 14.13137 | 4,4'-DDT |
| 10.141 | 1184 | .27002 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.329 | 11204 | 4.57036 | Endrin ketone |
| 11.814 | 52472 | 9.18617 | DCB | 13.343 | 24788 | 9.74734 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 9:03:32 AM
File Reported On: 3/31/2004 at 9:03:34 AM

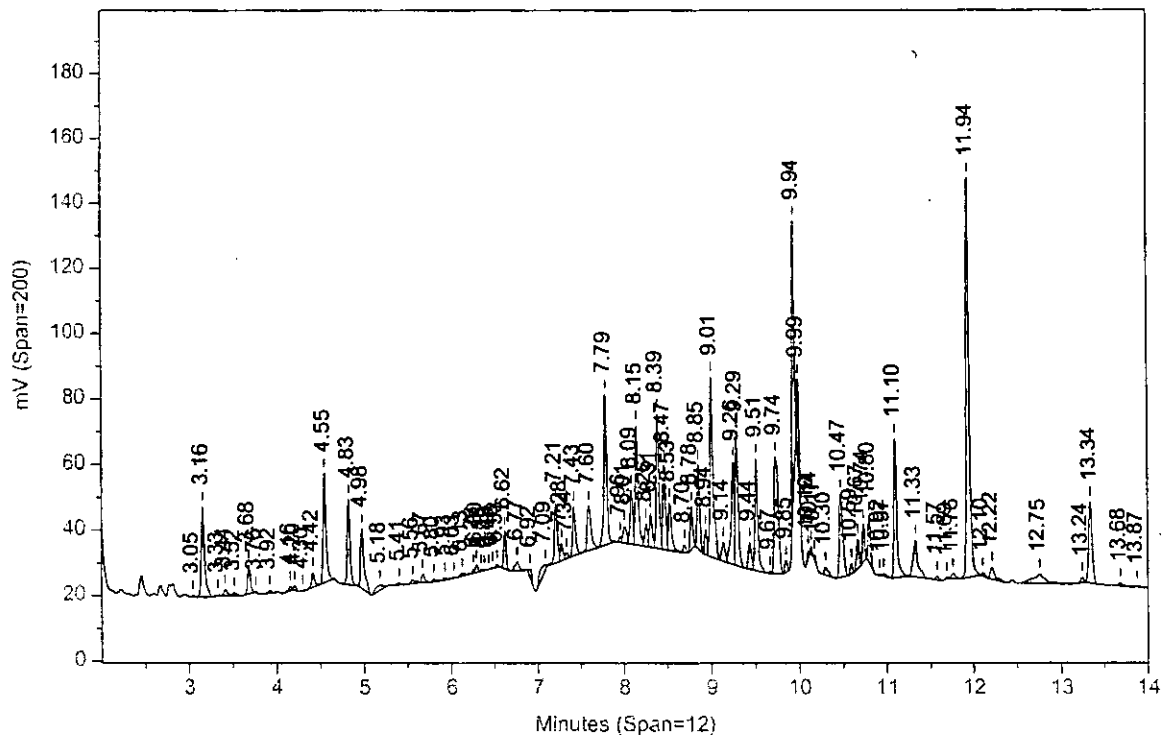
9488

10X REPLOTS

C:\CPWIN\DATA1\1C13088.90R




C:\CPWIN\DATA1\1C13088B.90R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241650R** ACF DF2 2222D Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722A
Result file : 1C13088.91R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 86.6% Conc.: 8.326415
%SSR(DCB) : 97.5% Conc.: 9.49492

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 47405 | 8.326415 |
| **alpha-BHC** | 5.11 | 5.11 | 5.17 | 4699 | 0.676445 |
| **delta-BHC** | 5.96 | 6.00 | 6.02 | 2927 | 0.443706 |
| **Heptachlor** | 6.25 | 6.28 | 6.31 | 15573 | 2.101149 |
| **Hept. epoxide** | 7.51 | 7.52 | 7.57 | 13381 | 2.235050 |
| **g. Chlordane** | 7.68 | 7.72 | 7.74 | 2232 | 0.384364 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 24677 | 3.980824 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 49476 | 9.373473 |
| **Endrin** | 8.67 | 8.71 | 8.73 | 52890 | 11.859507 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 6760 | 1.375048 |
| **Endrin aldehyde** | 9.52 | 9.54 | 9.58 | 7534 | 1.820300 |
| **Methoxychlor** | 9.70 | 9.71 | 9.76 | 4957 | 1.964685 |
| **Endo. sulfate** | 10.08 | 10.14 | 10.14 | 1071 | 0.244262 |
| **DCB** | 11.79 | 11.81 | 11.85 | 54235 | 9.494920 |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722B
Result file : 1C13088B.91R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 92.5% Conc.: 8.90259
%SSR(DCB) : 101.5% Conc.: 9.882742

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.82 | 4.86 | 26123 | 8.902590 |
| **HCB** | 5.52 | 5.56 | 5.58 | 1528 | 0.366950 |
| **gamma-BHC** | 6.25 | 6.30 | 6.31 | 3336 | 1.273580 |
| **beta-BHC** | 6.38 | 6.38 | 6.44 | 1273 | 0.734201 |
| **Telodrin** | 7.58 | 7.60 | 7.64 | 20584 | 7.543688 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 30105 | 11.120815 |
| **o,p-DDE** | 8.38 | 8.39 | 8.44 | 35148 | 18.845039 |
| **Endosulfan I** | 8.68 | 8.70 | 8.74 | 2205 | 0.888996 |
| **o,p-DDT** | 9.47 | 9.51 | 9.53 | 30385 | 17.212822 |
| **Endosulfan II** | 9.73 | 9.74 | 9.79 | 32308 | 13.493231 |
| **4,4'-DDT** | 9.96 | 9.99 | 10.02 | 21299 | 11.745394 |
| **Endrin aldehyde** | 10.17 | 10.17 | 10.23 | 1348 | 0.620835 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 9161 | 3.736781 |
| **DCB** | 13.32 | 13.34 | 13.38 | 25133 | 9.882742 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | B | | 8.902590 | | | | 6.69 | |
| HCB | | | | | | | | |
| alpha-BHC | | | | <1.66 | <0.34 | | | |
| gamma-BHC | | | | <1.66 | <0.34 | | | |
| beta-BHC | | | | <1.66 | <0.34 | | | |
| delta-BHC | | | | <1.66 | <0.34 | | | |
| Heptachlor | | | | <1.66 | <0.34 | | | |
| Aldrin | | | | <3 | <1.02 | | | |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | 42.3W | | | | |
| Hept. epoxide | B (A) | 2.24 | 11.120815 | ~~1.66~~ | ~~0.34~~ (E) | | ** 133.06 | suspect due to PCBs |
| g. Chlordane | | | | <1.8 | <0.6 | | | |
| a. Chlordane | | | | <1.66 | <0.34 | | | |
| 4,4'-DDE | | | | <3.4 | <0.66 | | | |
| Endosulfan I | | | | <2.6 | <0.88 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <3.4 | <0.66 | | | |
| o,p-DDT | | | | | | | | |
| Endrin | | | | <3.4 | <1 | | | |
| 4,4'-DDD | | | | <3.4 | <1.16 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B (A) | 1.38 | 13.493231 | L 3.4 | ~~0.66~~ (E) | | ** 163.01 | |
| 4,4'-DDT | | | | <3.4 | <0.66 | | | |
| Endrin aldehyde | | | | <6 | <2 | | | |
| Methoxychlor | | | | <24 | <8 | | | #458 |
| Mirex | | | | | | | | |
| Endo. sulfate | | | | <3.4 | <0.66 | | | |

%Difference = High - Low Amount divided by the Average times 100
**%Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 10:03:04

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241650R** ACF DF2 2222D Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722A
Result file : 1C13088.91R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722B
Result file : 1C13088B.91R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endrin ketone | | | <3.4 | <0.66 | | | |
| DCB | B | 9.882742 | | | | 4.00 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

8491

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 10:03:04

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241650R ACF DF2 2222D Sample ID: AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 20 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 17:22:57
**Instrument** H6722A
**Result file** 1C13088.91R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 86.6% Conc: 8.326415
%SSR(DCB) 97.5% Conc: 9.49492

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.58 | 7.62 | 70800.96875 | 244.679719 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 49476.22265 | 255.864903 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 80085.08593 | 249.953686 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 60670.41796 | 260.375611 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 83826.63281 | 315.72342 | | | 6 |

Height summation: **344859.328126**
Concentration CF: **265.319468** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 17:22:57
**Instrument** H6722B
**Result file** 1C13088B.91R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 92.5% Conc: 8.90259
%SSR(DCB) 101.5% Conc: 9.882742

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 30105.29882 | 242.879704 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 35147.62890 | 252.270074 | | | 2 |
| E | 8.83 | 8.85 | 8.89 | 22590.53320 | 257.937213 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 48061.80859 | 258.872896 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 35535.85156 | 261.118921 | | | 5 |
| | 9.97 | 9.99 | 10.03 | 21299.49023 | 152.915502 | | | 6 |

Height summation: **192740.611328**
Concentration CF: **237.665718** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <34 | <6.6 | | | 4 | 40 | |
| Aroclor-1221 | | | <60 | <20 | | | 3 | 5 | |
| Aroclor-1232 | | | <34 | <8.6 | | | 4 | 10 | |
| Aroclor-1242 | | | <34 | <8 | | | 4 | 30 | |
| Aroclor-1248 | | | <36 | <12 | | | 4 | 30 | |
| Aroclor-1254 | A | 265.319468 | 34 | 6.6 | E (3) | 11.00 | 4 | 40 | |
| Aroclor-1260 | | | <34 | <6.6 | WS 4/4/04 | | 4 | 40 | |
| Toxaphene | | | <66 | <22 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04
Verified By: _____ Date: 3/31/04

8492

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241650R** ACF DF2 2222D Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722A
Result file : 1C13088.91R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 86.6% Conc.: 8.326415
%SSR(DCB) : 97.5% Conc.: 9.49492

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 87.29 | |
| 5.32 | 5.36 | 5.38 | 5011.93457 | 24.336315 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2926.840576 | 8.621106 | | | 3 |
| 6.24 | 6.28 | 6.30 | 15573.24804 | 118.821173 | | | 5 |
| 6.71 | 6.74 | 6.77 | 17870.77734 | 112.340941 | | | 6 |
| Height Summation | | | 41382.800537 | | | | |
| Amount Avg CF: | | | 66.029884 | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 10.97 | |
| 4.54 | 4.58 | 4.60 | 1547.445313 | 20.783806 | | | 1 |
| + 4.75 | 4.76 | 4.81 | 800.424927 | 20.683095 | | | 2 |
| 4.75 | 4.79 | 4.81 | 939.62616 | 24.280075 | | | 2 |
| Height Summation | | | 2487.071473 | | | | |
| Amount Avg CF: | | | 22.531941 | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 87.18 | |
| 5.32 | 5.36 | 5.38 | 5011.93457 | 56.397263 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2926.840576 | 19.272644 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 15573.24804 | 267.579857 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 17870.77734 | 261.770114 | | | 6 |
| Height Summation | | | 41382.800537 | | | | |
| Amount Avg CF: | | | 151.25497 | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 87.40 | |
| 5.32 | 5.36 | 5.38 | 5011.93457 | 27.968529 | | | 2 |
| 5.97 | 6.00 | 6.03 | 2926.840576 | 10.127593 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 15573.24804 | 139.792877 | | | 5 |
| 6.71 | 6.74 | 6.77 | 17870.77734 | 126.871796 | | | 6 |
| Height Summation | | | 41382.800537 | | | | |
| Amount Avg CF: | | | 76.190199 | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 112.70 | |
| 5.32 | 5.36 | 5.38 | 5011.93457 | 59.246297 | | | 1 |
| 6.71 | 6.74 | 6.77 | 17870.77734 | 84.717198 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 89072.20312 | 881.841229 | | | 3 |
| 7.28 | 7.30 | 7.34 | 11537.83105 | 57.312412 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 80085.08593 | 689.277064 | | | 6 |
| Height Summation | | | 203577.832032 | | | | |
| Amount Avg CF: | | | 354.47884 | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 36.54 | |
| 7.22 | 7.24 | 7.28 | 12018.55566 | 67.207904 | | | |
| E 7.56 | 7.58 | 7.62 | 70800.96875 | 244.679719 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 49476.22265 | 255.864903 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 80085.08593 | 249.953686 | | | |
| E 8.45 | 8.48 | 8.51 | 60670.41796 | 260.375611 | | | |
| E 9.05 | 9.08 | 9.11 | 83826.63281 | 315.72342 | | | 6 |
| Height Summation | | | 356877.883790 | | | | |
| Amount Avg CF: | | | 232.300874 | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 56.16 | |
| 8.33 | 8.35 | 8.39 | 34540.125 | 130.49406 | | | 1 |
| 8.68 | 8.71 | 8.74 | 52889.84765 | 157.266832 | | | 2 |
| 9.05 | 9.08 | 9.11 | 83826.63281 | 241.239921 | | | 3 |
| 9.19 | 9.21 | 9.25 | 8864.31543 | 40.169986 | | | 4 |
| 9.91 | 9.93 | 9.97 | 29519.60546 | 58.471321 | | | 5 |
| 10.28 | 10.30 | 10.34 | 45830.97265 | 161.367663 | | | 6 |
| Height Summation | | | 255471.499024 | | | | |
| Amount Avg CF: | | | 131.501631 | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722B
Result file : 1C13088B.91R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 92.5% Conc.: 8.90259
%SSR(DCB) : 101.5% Conc.: 9.882742

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 155.61 | |
| 5.52 | 5.56 | 5.58 | 1527.692993 | 23.351588 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1156.046265 | 10.855121 | | | 2 |
| 6.74 | 6.77 | 6.80 | 2959.60083 | 17.500261 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1402.059326 | 22.565007 | | | 5 |
| 7.56 | 7.60 | 7.62 | 20584.42773 | 230.080942 | | | 6 |
| Height Summation | | | 27629.827148 | | | | |
| Amount Avg CF: | | | 60.870584 | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 5.52 | 5.56 | 5.58 | 1527.692993 | 16.919027 | | | 3 |
| Height Summation | | | 1527.692993 | | | | |
| Amount Avg CF: | | | 16.919027 | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 167.83 | |
| 5.52 | 5.56 | 5.58 | 1527.692993 | 21.648194 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1156.046265 | 23.015411 | | | 2 |
| 6.74 | 6.77 | 6.80 | 2959.60083 | 40.240522 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1402.059326 | 52.109348 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 20584.42773 | 546.407875 | | | 6 |
| Height Summation | | | 27629.827148 | | | | |
| Amount Avg CF: | | | 136.68427 | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 155.40 | |
| 5.52 | 5.56 | 5.58 | 1527.692993 | 25.499991 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1156.046265 | 12.538895 | | | 2 |
| 6.73 | 6.77 | 6.79 | 2959.60083 | 20.669664 | | | 3 |
| 7.07 | 7.09 | 7.13 | 1402.059326 | 27.206531 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 20584.42773 | 265.083817 | | | 6 |
| Height Summation | | | 27629.827148 | | | | |
| Amount Avg CF: | | | 70.19978 | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 25.48 | |
| E 7.19 | 7.21 | 7.25 | 16452.48437 | 168.184281 | | | 1 |
| E 7.56 | 7.60 | 7.62 | 20584.42773 | 175.245419 | | | 2 |
| 8.06 | 8.09 | 8.12 | 12381.76953 | 101.700526 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 30105.29882 | 221.518532 | | | 5 |
| E 8.44 | 8.47 | 8.50 | 20710.59179 | 179.422816 | | | 6 |
| Height Summation | | | 100234.572265 | | | | |
| Amount Avg CF: | | | 169.214315 | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 17.69 | |
| E 8.12 | 8.15 | 8.18 | 30105.29882 | 242.879704 | | | 1 |
| E 8.36 | 8.39 | 8.42 | 35147.62890 | 252.270074 | | | 2 |
| E 8.83 | 8.85 | 8.89 | 22590.53320 | 257.937213 | | | 3 |
| E 8.98 | 9.01 | 9.04 | 48061.80859 | 258.872896 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 35535.85156 | 261.118921 | | | 5 |
| 9.97 | 9.99 | 10.03 | 21299.49023 | 152.915502 | | | 6 |
| Height Summation | | | 192740.611328 | | | | |
| Amount Avg CF: | | | 237.665718 | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 44.87 | |
| 9.23 | 9.26 | 9.29 | 26949.07812 | 169.097933 | | | 1 |
| 9.49 | 9.51 | 9.55 | 30384.92578 | 162.974104 | | | 2 |
| 9.97 | 9.99 | 10.03 | 21299.49023 | 127.201625 | | | 3 |
| 10.47 | 10.47 | 10.53 | 22396.86132 | 177.358233 | | | 4 |
| 10.78 | 10.80 | 10.84 | 11240.23046 | 46.037762 | | | 5 |
| 11.30 | 11.33 | 11.36 | 9160.589844 | 67.08876 | | | 6 |
| Height Summation | | | 121431.175781 | | | | |
| Amount Avg CF: | | | 124.959736 | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:03:32

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241650R** ACF DF2 2222D Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 20 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722A
Result file : 1C13088.91R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **4** | **75.93** | |
| 6.25 | 6.28 | 6.31 | 15573.24804 | 49.817964 | | | 2 |
| 6.86 | 6.91 | 6.92 | 5682.296875 | 18.020192 | | | 3 |
| 7.68 | 7.72 | 7.74 | 2232.461914 | 3.728471 | | | 4 |
| 7.85 | 7.90 | 7.91 | 24677.43945 | 32.341782 | | | 5 |
| Height Summation | | | **48165.446289** | | | | |
| Amount Avg CF: | | | **25.977102** | Linear: | | | |
| **Toxaphene** | | | | | **3** | **139.75** | |
| 8.70 | 8.71 | 8.76 | 52889.84765 | 987.496855 | | | 1 |
| 9.69 | 9.71 | 9.75 | 4957.257813 | 74.990187 | | | 4 |
| 10.41 | 10.42 | 10.47 | 6752.088379 | 70.964575 | | | 6 |
| Height Summation | | | **64599.193848** | | | | |
| Amount Avg CF: | | | **377.817206** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:22:57
Instrument : CP13--H6722B
Result file : 1C13088B.91R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **2** | **64.15** | |
| 7.56 | 7.60 | 7.62 | 20584.42773 | 133.532052 | | | 3 |
| 8.51 | 8.53 | 8.57 | 12598.20996 | 50.196156 | | | 5 |
| Height Summation | | | **33182.637695** | | | | |
| Amount Avg CF: | | | **91.864104** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **37.23** | |
| 9.83 | 9.85 | 9.89 | 3385.681152 | 64.701719 | | | 3 |
| 10.17 | 10.17 | 10.23 | 1348.07019 | 37.736525 | | | 4 |
| Height Summation | | | **4733.751342** | | | | |
| Amount Avg CF: | | | **51.219122** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 34 | 6.6 | | 8.13 | 4 | 40 | |
| Aroclor-1221 | | | 60 | 20 | | 28.46 | 3 | 5 | |
| Aroclor-1232 | | | 34 | 8.6 | E | 10.12 | 4 | 10 | |
| Aroclor-1242 | | | 34 | 8 | E | 8.18 | 4 | 30 | |
| Aroclor-1248 | | | 36 | 12 | E | ** 70.75 | 4 | 30 | |
| Aroclor-1254 | | | 34 | 6.6 | E | 2.28 | 4 | 40 | |
| Aroclor-1260 | | | 34 | 6.6 | | 5.10 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 111.82 | 2 | 20 | |
| Toxaphene | | | 66 | 22 | | ** 152.25 | 4 | 30 | |

Units: ug/kg

8494

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:03:32

Sample Name: **4241650RACF DF2 AC2222D T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 05:36:57pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.91R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 50063.6 | 0.444 | BB | 0.038 | 22100.23 | 0.519 |
| 2 | 3.649 | | 0.0000 | 0.000 | 4671.4 | 0.041 | BB | 0.034 | 2288.75 | 0.054 |
| 3 | 3.709 | | 0.0000 | 0.000 | 1048.6 | 0.009 | BB | 0.026 | 671.52 | 0.016 |
| 4 | 3.876 | | 0.0000 | 0.000 | 2538.2 | 0.023 | BB | 0.046 | 909.83 | 0.021 |
| 5 | 3.957 | | 0.0000 | 0.000 | 17880.2 | 0.159 | BB | 0.047 | 6387.73 | 0.150 |
| 6 | 4.066 | | 0.0000 | 0.000 | 17684.6 | 0.157 | BB | 0.043 | 6877.21 | 0.162 |
| 7 | 4.188 | | 0.0000 | 0.000 | 20552.6 | 0.182 | BB | 0.035 | 9674.97 | 0.227 |
| 8 | 4.309 TCX | | 249.7925 | 15.340 | 114022.1 | 1.011 | BB | 0.040 | 47404.81 | 1.114 |
| 9 | 4.448 | | 0.0000 | 0.000 | 2373.5 | 0.021 | BB | 0.059 | 671.90 | 0.016 |
| 10 | 4.487 | | 0.0000 | 0.000 | 2569.6 | 0.023 | BB | 0.028 | 1536.46 | 0.036 |
| 11 | 4.579 | | 0.0000 | 0.000 | 3401.3 | 0.030 | BB | 0.037 | 1547.45 | 0.036 |
| 12 | 4.634 | | 0.0000 | 0.000 | 1104.0 | 0.010 | BB | 0.025 | 726.04 | 0.017 |
| 13 | 4.761 | | 0.0000 | 0.000 | 2991.6 | 0.027 | BB | 0.062 | 800.42 | 0.019 |
| 14 | 4.787 | | 0.0000 | 0.000 | 1408.5 | 0.012 | BB | 0.025 | 939.63 | 0.022 |
| 15 | 4.914 | | 0.0000 | 0.000 | 1471736.0 | 13.050 | BB | 0.032 | 764252.90 | 17.954 |
| 16 | 5.112 alpha-BHC | | 20.2934 | 1.246 | 12484.8 | 0.111 | BB | 0.044 | 4698.58 | 0.110 |
| 17 | 5.257 | | 0.0000 | 0.000 | 1125.1 | 0.010 | BB | 0.042 | 442.26 | 0.010 |
| 18 | 5.308 | | 0.0000 | 0.000 | 315.5 | 0.003 | BB | 0.021 | 252.24 | 0.006 |
| 19 | 5.362 | | 0.0000 | 0.000 | 10692.2 | 0.095 | BB | 0.036 | 5011.93 | 0.118 |
| 20 | 5.459 | | 0.0000 | 0.000 | 9736.6 | 0.086 | BB | 0.032 | 5089.68 | 0.120 |
| 21 | 5.552 | | 0.0000 | 0.000 | 7163.2 | 0.064 | BB | 0.028 | 4290.82 | 0.101 |
| 22 | 5.674 | | 0.0000 | 0.000 | 5500.1 | 0.049 | BB | 0.069 | 1333.95 | 0.031 |
| 23 | 5.774 | | 0.0000 | 0.000 | 13956.0 | 0.124 | BB | 0.043 | 5438.73 | 0.128 |
| 24 | 5.999 delta-BHC | | 13.3112 | 0.817 | 10748.6 | 0.095 | BB | 0.061 | 2926.84 | 0.069 |
| 25 | 6.088 | | 0.0000 | 0.000 | 4833.2 | 0.043 | BV | 0.043 | 1882.22 | 0.044 |
| 26 | 6.225 | | 0.0000 | 0.000 | 37176.0 | 0.330 | VV | 0.072 | 8631.86 | 0.203 |
| 27 | 6.283 Heptachlor | | 63.0345 | 3.871 | 65653.1 | 0.582 | VV | 0.070 | 15573.25 | 0.366 |
| 28 | 6.355 | | 0.0000 | 0.000 | 40516.4 | 0.359 | VB | 0.047 | 14470.92 | 0.340 |
| 29 | 6.436 | | 0.0000 | 0.000 | 36724.1 | 0.326 | BV | 0.026 | 23227.26 | 0.546 |
| 30 | 6.478 | | 0.0000 | 0.000 | 3192941.0 | 28.311 | VV | 0.055 | 968639.90 | 22.756 |
| 31 | 6.618 | | 0.0000 | 0.000 | 15949.3 | 0.141 | VV | 0.052 | 5135.06 | 0.121 |
| 32 | 6.740 | | 0.0000 | 0.000 | 54586.1 | 0.484 | VV | 0.051 | 17870.78 | 0.420 |
| 33 | 6.855 | | 0.0000 | 0.000 | 14688.0 | 0.130 | VV | 0.038 | 6385.00 | 0.150 |
| 34 | 6.910 | | 0.0000 | 0.000 | 23518.3 | 0.209 | VB | 0.069 | 5682.30 | 0.133 |
| 35 | 7.072 | | 0.0000 | 0.000 | 113727.2 | 1.008 | BB | 0.044 | 43181.53 | 1.014 |
| 36 | 7.203 | | 0.0000 | 0.000 | 156817.3 | 1.390 | BB | 0.029 | 89072.20 | 2.093 |
| 37 | 7.244 | | 0.0000 | 0.000 | 15278.0 | 0.135 | BB | 0.021 | 12018.56 | 0.282 |
| 38 | 7.302 | | 0.0000 | 0.000 | 34290.8 | 0.304 | BB | 0.050 | 11537.83 | 0.271 |
| 39 | 7.420 | | 0.0000 | 0.000 | 1345.0 | 0.012 | BB | 0.024 | 933.59 | 0.022 |
| 40 | 7.521 Hept. epoxide | | 67.0515 | 4.118 | 27220.9 | 0.241 | BV | 0.034 | 13380.66 | 0.314 |
| 41 | 7.585 | | 0.0000 | 0.000 | 195641.6 | 1.735 | VV | 0.046 | 70800.97 | 1.663 |
| 42 | 7.637 | | 0.0000 | 0.000 | 82097.9 | 0.728 | VV | 0.042 | 32458.01 | 0.763 |
| 43 | 7.719 g. Chlordane | | 11.5309 | 0.708 | 5806.2 | 0.051 | VB | 0.043 | 2232.46 | 0.052 |
| 44 | 7.836 | | 0.0000 | 0.000 | 14307.2 | 0.127 | BV | 0.045 | 5295.97 | 0.124 |
| 45 | 7.901 a. Chlordane | | 119.4247 | 7.334 | 56974.7 | 0.505 | VV | 0.038 | 24677.44 | 0.580 |
| 46 | 7.959 4,4'-DDE | | 281.2042 | 17.269 | 118413.4 | 1.050 | VV | 0.040 | 49476.22 | 1.162 |
| 47 | 8.014 | | 0.0000 | 0.000 | 37173.1 | 0.330 | VB | 0.036 | 17408.96 | 0.409 |
| 48 | 8.118 | | 0.0000 | 0.000 | 214821.9 | 1.905 | BV | 0.045 | 80085.09 | 1.881 |
| 49 | 8.275 | | 0.0000 | 0.000 | 44452.3 | 0.394 | VB | 0.059 | 12498.23 | 0.294 |
| 50 | 8.353 | | 0.0000 | 0.000 | 90745.3 | 0.805 | BV | 0.044 | 34540.13 | 0.811 |
| 51 | 8.477 | | 0.0000 | 0.000 | 147084.6 | 1.304 | VV | 0.040 | 60670.42 | 1.425 |
| 52 | 8.553 | | 0.0000 | 0.000 | 16472.4 | 0.146 | VB | 0.036 | 7714.02 | 0.181 |
| 53 | 8.630 | | 0.0000 | 0.000 | 16522.6 | 0.147 | BV | 0.032 | 8590.68 | 0.202 |
| 54 | 8.707 Endrin | | 355.7852 | 21.849 | 204756.4 | 1.816 | VV | 0.065 | 52889.85 | 1.243 |
| 55 | 8.844 | | 0.0000 | 0.000 | 126753.2 | 1.124 | VV | 0.060 | 35396.82 | 0.832 |
| 56 | 8.941 | | 0.0000 | 0.000 | 11801.0 | 0.105 | VB | 0.031 | 6245.01 | 0.147 |
| 57 | 9.004 Endosulfan II | | 41.2514 | 2.533 | 11751.4 | 0.104 | BV | 0.029 | 6760.45 | 0.159 |
| 58 | 9.079 | | 0.0000 | 0.000 | 246125.5 | 2.182 | VV | 0.049 | 83826.63 | 1.969 |
| 59 | 9.213 | | 0.0000 | 0.000 | 23102.0 | 0.205 | VB | 0.043 | 8864.32 | 0.208 |
| 60 | 9.308 | | 0.0000 | 0.000 | 1797531.0 | 15.938 | BB | 0.041 | 725345.40 | 17.040 |
| 61 | 9.457 | | 0.0000 | 0.000 | 37293.4 | 0.331 | BB | 0.034 | 18442.71 | 0.433 |
| 62 | 9.541 Endrin aldehyde | | 54.6090 | 3.354 | 13433.0 | 0.119 | BV | 0.030 | 7533.80 | 0.177 |
| 63 | 9.595 | | 0.0000 | 0.000 | 8548.8 | 0.076 | VB | 0.031 | 4612.94 | 0.108 |
| 64 | 9.667 | | 0.0000 | 0.000 | 13056.6 | 0.116 | BV | 0.039 | 5584.51 | 0.131 |

3 00914 3.31.04
Not Used See Interpretation

8495

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.708 | Methoxychlor | 58.9406 | 3.620 | 12850.5 | 0.114 | VV | 0.043 | 4957.26 | 0.116 |
| 66 | 9.771 | | 0.0000 | 0.000 | 39382.8 | 0.349 | VB | 0.040 | 16550.38 | 0.389 |
| 67 | 9.854 | | 0.0000 | 0.000 | 8677.9 | 0.077 | BB | 0.029 | 4909.57 | 0.115 |
| 68 | 9.931 | | 0.0000 | 0.000 | 76505.8 | 0.678 | BV | 0.043 | 29519.61 | 0.693 |
| 69 | 10.059 | | 0.0000 | 0.000 | 1213.3 | 0.011 | VB | 0.030 | 668.82 | 0.016 |
| 70 | 10.141 | Endo. sulfate | 7.3278 | 0.450 | 2288.6 | 0.020 | BV | 0.036 | 1070.82 | 0.025 |
| 71 | 10.180 | | 0.0000 | 0.000 | 1508.3 | 0.013 | VB | 0.034 | 740.06 | 0.017 |
| 72 | 10.241 | | 0.0000 | 0.000 | 27365.5 | 0.243 | BB | 0.028 | 16501.36 | 0.388 |
| 73 | 10.298 | | 0.0000 | 0.000 | 123143.0 | 1.092 | BB | 0.045 | 45830.97 | 1.077 |
| 74 | 10.419 | | 0.0000 | 0.000 | 18659.7 | 0.165 | BB | 0.046 | 6752.09 | 0.159 |
| 75 | 10.569 | | 0.0000 | 0.000 | 4212.5 | 0.037 | BV | 0.054 | 1291.93 | 0.030 |
| 76 | 10.681 | | 0.0000 | 0.000 | 281835.2 | 2.499 | VV | 0.041 | 114671.90 | 2.694 |
| 77 | 10.797 | | 0.0000 | 0.000 | 25678.0 | 0.228 | VV | 0.054 | 7906.51 | 0.186 |
| 78 | 10.838 | | 0.0000 | 0.000 | 23336.0 | 0.207 | VB | 0.054 | 7238.39 | 0.170 |
| 79 | 10.968 | | 0.0000 | 0.000 | 5853.7 | 0.052 | BV | 0.045 | 2183.14 | 0.051 |
| 80 | 11.030 | | 0.0000 | 0.000 | 4174.3 | 0.037 | VB | 0.047 | 1495.90 | 0.035 |
| 81 | 11.125 | | 0.0000 | 0.000 | 31663.0 | 0.281 | BB | 0.057 | 9245.92 | 0.217 |
| 82 | 11.213 | | 0.0000 | 0.000 | 891.2 | 0.008 | BB | 0.025 | 601.26 | 0.014 |
| 83 | 11.311 | | 0.0000 | 0.000 | 1203.1 | 0.011 | BB | 0.047 | 426.54 | 0.010 |
| 84 | 11.397 | | 0.0000 | 0.000 | 1164740.0 | 10.327 | BB | 0.048 | 408236.20 | 9.591 |
| 85 | 11.813 | DCB | 284.8476 | 17.492 | 171623.5 | 1.522 | BB | 0.053 | 54235.34 | 1.274 |
| 86 | 12.079 | | 0.0000 | 0.000 | 9265.6 | 0.082 | BB | 0.073 | 2101.21 | 0.049 |
| 87 | 12.273 | | 0.0000 | 0.000 | 30941.5 | 0.274 | BB | 0.067 | 7713.68 | 0.181 |
| 88 | 12.450 | | 0.0000 | 0.000 | 5095.6 | 0.045 | BB | 0.045 | 1881.74 | 0.044 |
| 89 | 12.586 | | 0.0000 | 0.000 | 16618.8 | 0.147 | BB | 0.093 | 2965.41 | 0.070 |
| 90 | 12.728 | | 0.0000 | 0.000 | 219.0 | 0.002 | BB | 0.028 | 131.49 | 0.003 |
| 91 | 12.788 | | 0.0000 | 0.000 | 592.4 | 0.005 | BB | 0.031 | 320.23 | 0.008 |
| 92 | 12.940 | | 0.0000 | 0.000 | 9792.8 | 0.087 | BB | 0.058 | 2817.28 | 0.066 |
| 93 | 13.069 | | 0.0000 | 0.000 | 286.1 | 0.003 | BB | 0.032 | 148.52 | 0.003 |
| 94 | 13.120 | | 0.0000 | 0.000 | 2824.1 | 0.025 | BB | 0.044 | 1058.64 | 0.025 |
| 95 | 13.233 | | 0.0000 | 0.000 | 4375.1 | 0.039 | BB | 0.045 | 1615.73 | 0.038 |
| 96 | 13.338 | | 0.0000 | 0.000 | 2720.7 | 0.024 | BB | 0.060 | 754.36 | 0.018 |
| 97 | 13.433 | | 0.0000 | 0.000 | 614.1 | 0.005 | BB | 0.033 | 307.73 | 0.007 |
| 98 | 13.492 | | 0.0000 | 0.000 | 1850.4 | 0.016 | BB | 0.057 | 545.81 | 0.013 |
| 99 | 13.645 | | 0.0000 | 0.000 | 2360.7 | 0.021 | BB | 0.050 | 791.69 | 0.019 |
| 100 | 13.744 | | 0.0000 | 0.000 | 1845.3 | 0.016 | BB | 0.045 | 684.01 | 0.016 |
| 101 | 13.803 | | 0.0000 | 0.000 | 99.4 | 0.001 | BB | 0.022 | 75.14 | 0.002 |
| 102 | 13.875 | | 0.0000 | 0.000 | 6046.5 | 0.054 | BB | 0.055 | 1817.89 | 0.043 |

Total Area = 11278050.0, Total Amount = 1628.405, Total Height = 4256613.0, Sample Units = PPB

3 331.04

Not Used
See Reintegration

6496

Sample Name: **4241650RACF DF2 AC2222D T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 05:36:57pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.91R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.044 | | 0.0000 | 0.000 | 1178.5 | 0.051 | BB | 0.042 | 473.07 | 0.049 |
| 2 | 3.159 | | 0.0000 | 0.000 | 49986.9 | 2.158 | BB | 0.043 | 19352.25 | 1.984 |
| 3 | 3.337 | | 0.0000 | 0.000 | 1364.5 | 0.059 | BB | 0.042 | 546.49 | 0.056 |
| 4 | 3.410 | | 0.0000 | 0.000 | 4872.3 | 0.210 | BB | 0.044 | 1862.18 | 0.191 |
| 5 | 3.515 | | 0.0000 | 0.000 | 1557.2 | 0.067 | BB | 0.035 | 744.91 | 0.076 |
| 6 | 3.680 | | 0.0000 | 0.000 | 27066.4 | 1.168 | BB | 0.037 | 12348.01 | 1.266 |
| 7 | 3.752 | | 0.0000 | 0.000 | 942.3 | 0.041 | BB | 0.030 | 529.58 | 0.054 |
| 8 | 3.917 | | 0.0000 | 0.000 | 2449.1 | 0.106 | BB | 0.054 | 755.40 | 0.077 |
| 9 | 4.011 | | 0.0000 | 0.000 | 1285.0 | 0.055 | BB | 0.038 | 568.07 | 0.058 |
| 10 | 4.118 | | 0.0000 | 0.000 | 826.3 | 0.036 | BB | 0.028 | 490.74 | 0.050 |
| 11 | 4.152 | | 0.0000 | 0.000 | 581.2 | 0.025 | BB | 0.018 | 538.21 | 0.055 |
| 12 | 4.200 | | 0.0000 | 0.000 | 6896.4 | 0.298 | BB | 0.034 | 3362.95 | 0.345 |
| 13 | 4.295 | | 0.0000 | 0.000 | 722.2 | 0.031 | BB | 0.038 | 319.49 | 0.033 |
| 14 | 4.377 | | 0.0000 | 0.000 | 292.2 | 0.013 | BB | 0.030 | 162.64 | 0.017 |
| 15 | 4.415 | | 0.0000 | 0.000 | 8765.8 | 0.378 | BB | 0.038 | 3842.39 | 0.394 |
| 16 | 4.551 | | 0.0000 | 0.000 | 39090.3 | 1.688 | BB | 0.041 | 15731.99 | 1.613 |
| 17 | 4.661 | | 0.0000 | 0.000 | 775.0 | 0.033 | BB | 0.026 | 493.34 | 0.051 |
| 18 | 4.825 | TCX | 267.0777 | 8.370 | 58238.9 | 2.514 | BB | 0.037 | 26123.04 | 2.679 |
| 19 | 4.977 | | 0.0000 | 0.000 | 57500.8 | 2.482 | BB | 0.044 | 21591.91 | 2.214 |
| 20 | 5.180 | | 0.0000 | 0.000 | 9925.5 | 0.428 | BB | 0.102 | 1619.47 | 0.166 |
| 21 | 5.403 | | 0.0000 | 0.000 | 1076.1 | 0.046 | BB | 0.038 | 473.67 | 0.049 |
| 22 | 5.557 | HCB | 11.0085 | 0.345 | 4811.8 | 0.208 | BB | 0.052 | 1527.69 | 0.157 |
| 23 | 5.674 | | 0.0000 | 0.000 | 7493.0 | 0.323 | BB | 0.045 | 2791.62 | 0.286 |
| 24 | 5.802 | | 0.0000 | 0.000 | 2877.9 | 0.124 | BB | 0.039 | 1236.22 | 0.127 |
| 25 | 5.924 | | 0.0000 | 0.000 | 2308.7 | 0.100 | BV | 0.033 | 1163.05 | 0.119 |
| 26 | 5.994 | | 0.0000 | 0.000 | 2355.5 | 0.102 | VV | 0.076 | 515.59 | 0.053 |
| 27 | 6.124 | | 0.0000 | 0.000 | 5727.2 | 0.247 | VV | 0.083 | 1156.05 | 0.119 |
| 28 | 6.264 | | 0.0000 | 0.000 | 3545.3 | 0.153 | VV | 0.033 | 1810.07 | 0.186 |
| 29 | 6.299 | gamma-BHC | 38.2074 | 1.197 | 8193.5 | 0.354 | VV | 0.041 | 3336.43 | 0.342 |
| 30 | 6.348 | | 0.0000 | 0.000 | 3357.5 | 0.145 | VV | 0.037 | 1518.74 | 0.156 |
| 31 | 6.385 | beta-BHC | 22.0260 | 0.690 | 4487.6 | 0.194 | VV | 0.059 | 1273.29 | 0.131 |
| 32 | 6.476 | | 0.0000 | 0.000 | 3736.9 | 0.161 | VV | 0.043 | 1447.65 | 0.148 |
| 33 | 6.532 | | 0.0000 | 0.000 | 8808.3 | 0.380 | VV | 0.058 | 2531.77 | 0.260 |
| 34 | 6.622 | | 0.0000 | 0.000 | 14728.1 | 0.636 | VV | 0.036 | 6742.55 | 0.691 |
| 35 | 6.768 | | 0.0000 | 0.000 | 10607.0 | 0.458 | VB | 0.060 | 2959.60 | 0.303 |
| 36 | 7.090 | | 0.0000 | 0.000 | 13958.3 | 0.603 | BB | 0.166 | 1402.06 | 0.144 |
| 37 | 7.149 | | 0.0000 | 0.000 | 958.3 | 0.041 | BV | 0.030 | 525.05 | 0.054 |
| 38 | 7.213 | | 0.0000 | 0.000 | 37084.2 | 1.601 | VV | 0.038 | 16452.48 | 1.687 |
| 39 | 7.275 | | 0.0000 | 0.000 | 10772.9 | 0.465 | VV | 0.037 | 4814.45 | 0.494 |
| 40 | 7.337 | | 0.0000 | 0.000 | 4791.4 | 0.207 | VV | 0.047 | 1704.69 | 0.175 |
| 41 | 7.425 | | 0.0000 | 0.000 | 32328.3 | 1.396 | VV | 0.041 | 13195.25 | 1.353 |
| 42 | 7.537 | | 0.0000 | 0.000 | 585.5 | 0.025 | VV | 0.023 | 425.71 | 0.044 |
| 43 | 7.604 | Telodrin | 226.3107 | 7.092 | 62165.6 | 2.684 | VB | 0.050 | 20584.43 | 2.111 |
| 44 | 7.789 | | 0.0000 | 0.000 | 108449.8 | 4.682 | BB | 0.038 | 47677.61 | 4.889 |
| 45 | 7.960 | | 0.0000 | 0.000 | 1350.5 | 0.058 | BV | 0.030 | 753.75 | 0.077 |
| 46 | 8.007 | | 0.0000 | 0.000 | 5240.4 | 0.226 | VB | 0.033 | 2677.19 | 0.275 |
| 47 | 8.086 | | 0.0000 | 0.000 | 25714.3 | 1.110 | BV | 0.035 | 12381.77 | 1.270 |
| 48 | 8.148 | Hept. epoxide | 333.6245 | 10.455 | 66162.7 | 2.856 | VB | 0.037 | 30105.30 | 3.087 |
| 49 | 8.256 | | 0.0000 | 0.000 | 9051.9 | 0.391 | BV | 0.033 | 4549.48 | 0.467 |
| 50 | 8.306 | | 0.0000 | 0.000 | 14991.5 | 0.647 | VV | 0.034 | 7348.51 | 0.754 |
| 51 | 8.386 | o,p-DDE | 565.3512 | 17.717 | 77781.8 | 3.358 | VV | 0.037 | 35147.63 | 3.604 |
| 52 | 8.467 | | 0.0000 | 0.000 | 48431.6 | 2.091 | VV | 0.039 | 20710.59 | 2.124 |
| 53 | 8.530 | | 0.0000 | 0.000 | 31536.6 | 1.361 | VB | 0.042 | 12598.21 | 1.292 |
| 54 | 8.695 | Endosulfan I | 26.6699 | 0.836 | 4881.3 | 0.211 | BB | 0.037 | 2205.13 | 0.226 |
| 55 | 8.775 | | 0.0000 | 0.000 | 23375.8 | 1.009 | BB | 0.033 | 11630.64 | 1.193 |
| 56 | 8.854 | | 0.0000 | 0.000 | 44066.2 | 1.902 | BB | 0.033 | 22590.53 | 2.317 |
| 57 | 8.935 | | 0.0000 | 0.000 | 12538.9 | 0.541 | BV | 0.032 | 6606.44 | 0.677 |
| 58 | 9.006 | | 0.0000 | 0.000 | 120929.8 | 5.221 | VB | 0.042 | 48061.81 | 4.928 |
| 59 | 9.138 | | 0.0000 | 0.000 | 14314.7 | 0.618 | BV | 0.047 | 5110.62 | 0.524 |
| 60 | 9.255 | | 0.0000 | 0.000 | 63925.3 | 2.760 | VV | 0.040 | 26949.08 | 2.763 |
| 61 | 9.291 | | 0.0000 | 0.000 | 80690.3 | 3.483 | VB | 0.038 | 35535.85 | 3.644 |
| 62 | 9.436 | | 0.0000 | 0.000 | 17230.1 | 0.744 | BV | 0.041 | 7002.57 | 0.718 |
| 63 | 9.514 | o,p-DDT | 516.3846 | 16.182 | 70106.2 | 3.027 | VB | 0.038 | 30384.93 | 3.116 |
| 64 | 9.676 | | 0.0000 | 0.000 | 1238.0 | 0.053 | BV | 0.031 | 659.91 | 0.068 |

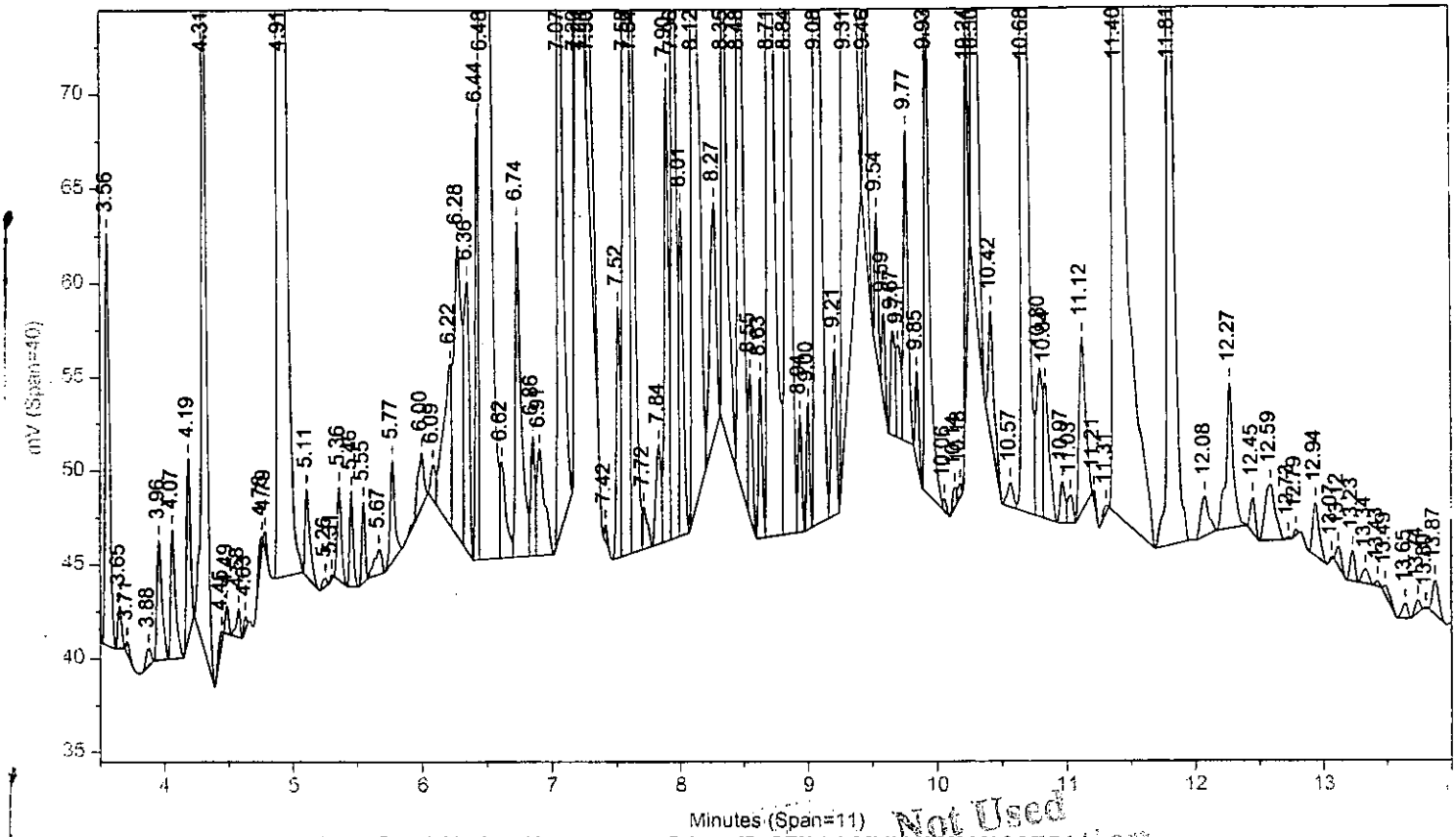
8497

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.738 | Endosulfan II | 404.7969 | 12.685 | 107195.7 | 4.628 | VB | 0.055 | 32308.18 | 3.313 |
| 66 | 9.852 | | 0.0000 | 0.000 | 6508.2 | 0.281 | BB | 0.032 | 3385.68 | 0.347 |
| 67 | 9.945 | | 0.0000 | 0.000 | 157184.8 | 6.786 | BB | 0.030 | 86679.16 | 8.888 |
| 68 | 9.993 | 4,4'-DDT | 352.3618 | 11.042 | 30564.4 | 1.319 | BB | 0.024 | 21299.49 | 2.184 |
| 69 | 10.104 | | 0.0000 | 0.000 | 2625.5 | 0.113 | BB | 0.023 | 1910.13 | 0.196 |
| 70 | 10.137 | | 0.0000 | 0.000 | 2294.4 | 0.099 | BB | 0.019 | 1968.47 | 0.202 |
| 71 | 10.174 | Endrin aldehyde | 18.6250 | 0.584 | 2004.3 | 0.087 | BB | 0.025 | 1348.07 | 0.138 |
| 72 | 10.295 | | 0.0000 | 0.000 | 5069.4 | 0.219 | BB | 0.042 | 2033.15 | 0.208 |
| 73 | 10.470 | | 0.0000 | 0.000 | 60653.0 | 2.618 | BB | 0.045 | 22396.86 | 2.297 |
| 74 | 10.595 | | 0.0000 | 0.000 | 4030.8 | 0.174 | BB | 0.028 | 2376.85 | 0.244 |
| 75 | 10.671 | | 0.0000 | 0.000 | 17249.5 | 0.745 | BB | 0.035 | 8174.87 | 0.838 |
| 76 | 10.738 | | 0.0000 | 0.000 | 22869.3 | 0.987 | BB | 0.031 | 12313.35 | 1.263 |
| 77 | 10.803 | | 0.0000 | 0.000 | 21278.4 | 0.919 | BB | 0.032 | 11240.23 | 1.153 |
| 78 | 10.918 | | 0.0000 | 0.000 | 643.9 | 0.028 | BB | 0.022 | 496.01 | 0.051 |
| 79 | 10.969 | | 0.0000 | 0.000 | 4184.2 | 0.181 | BB | 0.038 | 1830.79 | 0.188 |
| 80 | 11.101 | | 0.0000 | 0.000 | 71369.7 | 3.081 | BB | 0.033 | 35749.81 | 3.666 |
| 81 | 11.177 | | 0.0000 | 0.000 | 6950.2 | 0.300 | BB | 0.055 | 2092.59 | 0.215 |
| 82 | 11.329 | Endrin ketone | 112.1034 | 3.513 | 33099.3 | 1.429 | BB | 0.060 | 9160.59 | 0.939 |
| 83 | 11.567 | | 0.0000 | 0.000 | 2897.9 | 0.125 | BB | 0.044 | 1089.00 | 0.112 |
| 84 | 11.755 | | 0.0000 | 0.000 | 12690.5 | 0.548 | BB | 0.092 | 2307.69 | 0.237 |
| 85 | 11.941 | | 0.0000 | 0.000 | 273216.7 | 11.795 | BB | 0.042 | 108251.70 | 11.101 |
| 86 | 12.106 | | 0.0000 | 0.000 | 2282.0 | 0.099 | BB | 0.039 | 975.35 | 0.100 |
| 87 | 12.216 | | 0.0000 | 0.000 | 7553.3 | 0.326 | BB | 0.043 | 2935.06 | 0.301 |
| 88 | 12.296 | | 0.0000 | 0.000 | 1266.9 | 0.055 | BB | 0.044 | 481.70 | 0.049 |
| 89 | 12.640 | | 0.0000 | 0.000 | 4755.0 | 0.205 | BB | 0.090 | 879.99 | 0.090 |
| 90 | 12.757 | | 0.0000 | 0.000 | 8811.2 | 0.380 | BB | 0.088 | 1667.43 | 0.171 |
| 91 | 13.052 | | 0.0000 | 0.000 | 807.4 | 0.035 | BB | 0.041 | 326.87 | 0.034 |
| 92 | 13.241 | | 0.0000 | 0.000 | 3102.0 | 0.134 | BB | 0.045 | 1148.13 | 0.118 |
| 93 | 13.341 | DCB | 296.4823 | 9.291 | 74078.4 | 3.198 | BB | 0.049 | 25132.67 | 2.577 |
| 94 | 13.679 | | 0.0000 | 0.000 | 3753.4 | 0.162 | BB | 0.072 | 871.11 | 0.089 |
| 95 | 13.880 | | 0.0000 | 0.000 | 2320.2 | 0.100 | BB | 0.061 | 631.86 | 0.065 |

Total Area = 2316393.0, Total Amount = 3191.03, Total Height = 975194.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.91R

C:\CPWIN\DATA1\1C13088.91R



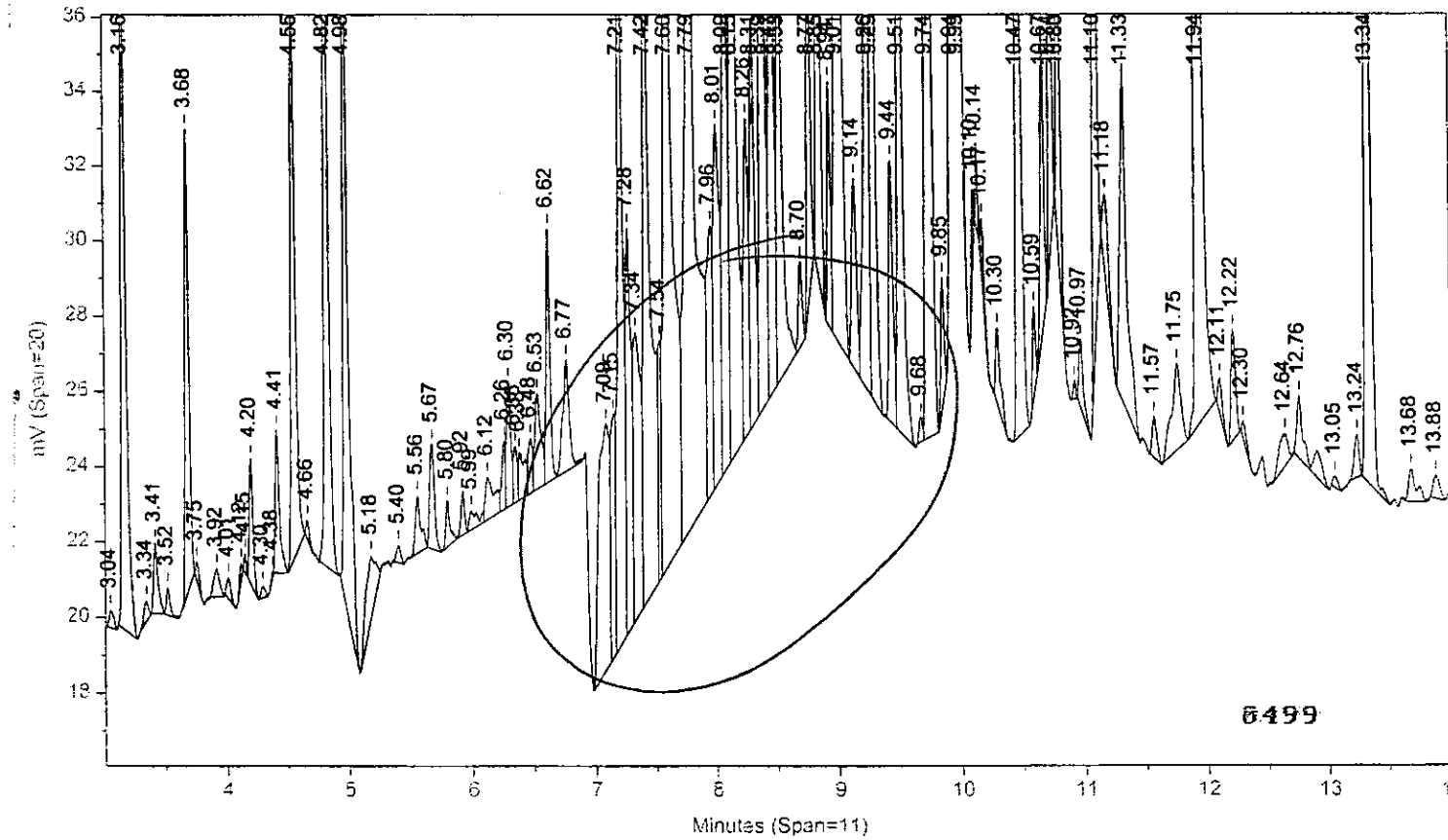

Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:22:57 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

Not Used See Reintegration

File: C:\CPWIN\DATA1\1C13088B.91R

Dop 3.31.04

C:\CPWIN\DATA1\1C13088B.91R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:22:57 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.91R

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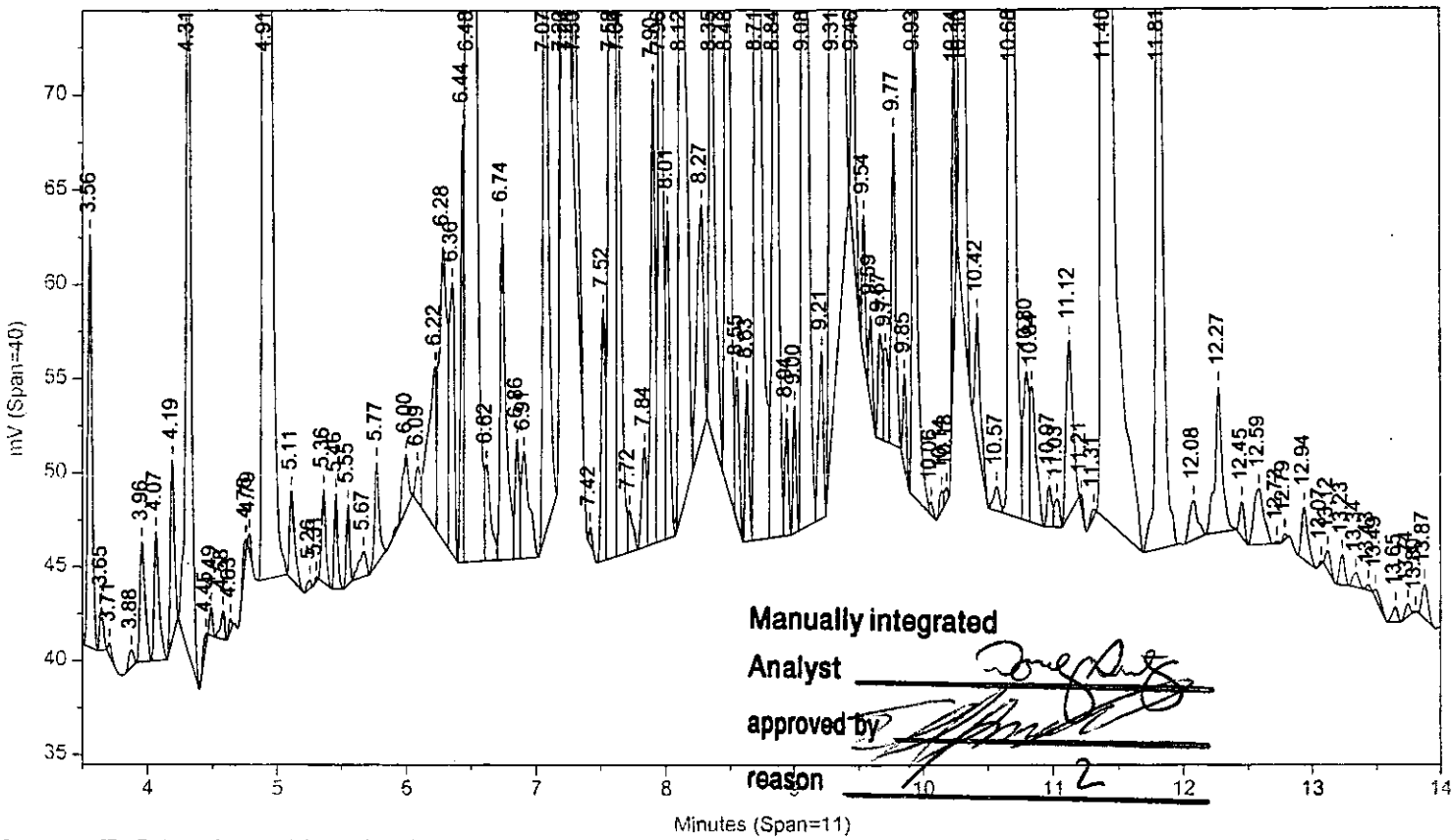


Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:22:57 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

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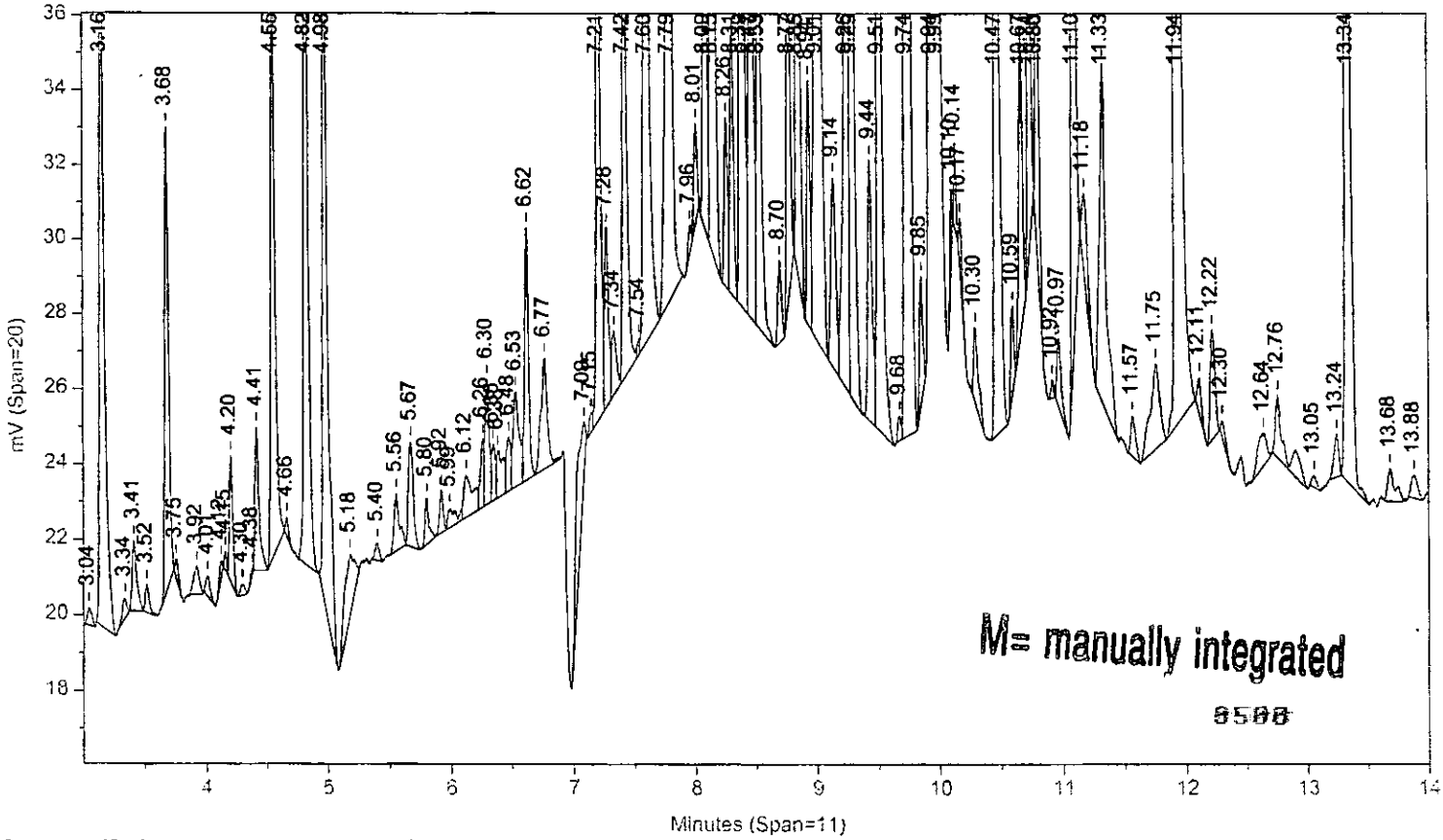



Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:22:57 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 20
Analyst: 120

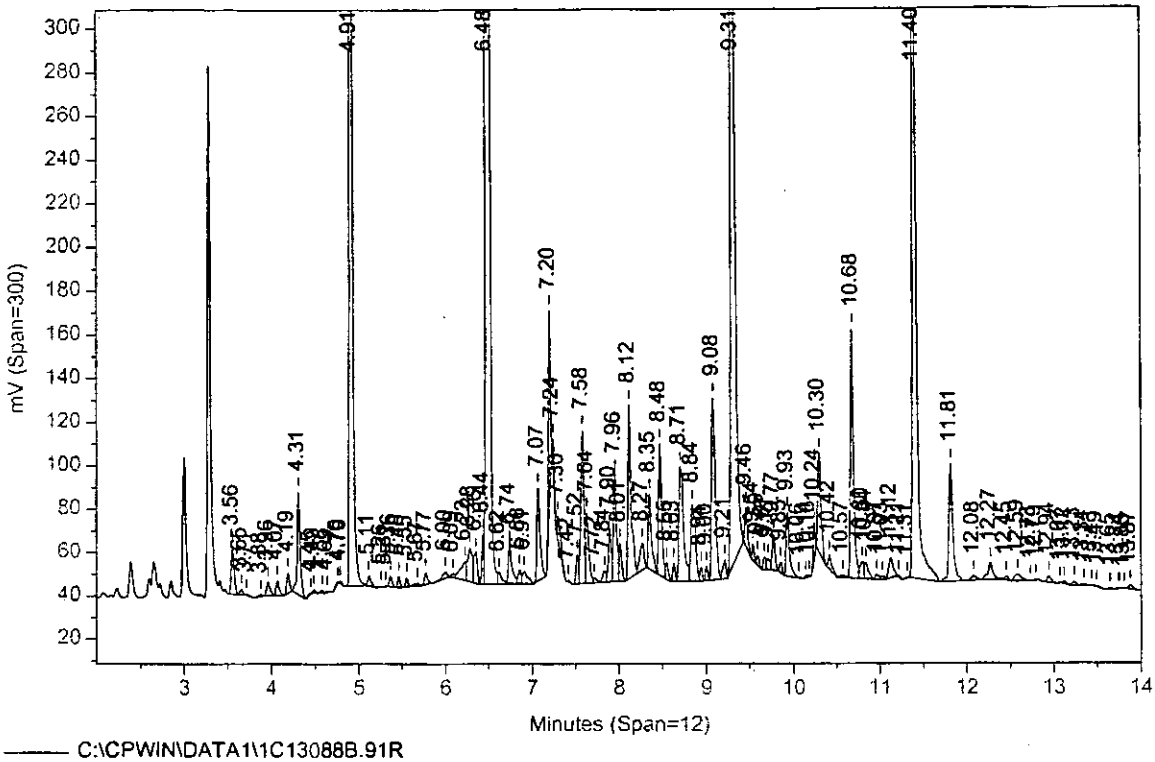
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.309 | 47405 | 8.32642 | TCX | 4.825 | 26123 | 8.90259 | TCX |
| 4.914 | 764253 | 73.22158 | HCB | 5.557 | 1528 | .36695 | HCB |
| 5.112 | 4699 | .67645 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.999 | 2927 | .44371 | delta-BHC | . | 0 | . | delta-BHC |
| 6.283 | 15573 | 2.10115 | Heptachlor | . | 0 | . | Heptachlor |
| . | 0 | . | gamma-BHC | 6.299 | 3336 | 1.27358 | gamma-BHC |
| . | 0 | . | beta-BHC | 6.385 | 1273 | .7342 | beta-BHC |
| 7.521 | 13381 | 3.49364 | o,p-DDE | 8.386 | 35148 | 18.84504 | o,p-DDE |
| . | 0 | . | Telodrin | 7.604 | 20584 | 7.54369 | Telodrin |
| 7.719 | 2232 | .38436 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.901 | 24677 | 3.98082 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.959 | 49476 | 9.37347 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.148 | 30105 | 11.12082 | Hept. epoxide |
| 8.553 | 7714 | 2.00473 | o,p-DDT | 9.514 | 30385 | 17.21282 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.695 | 2205 | .889 | Endosulfan I |
| 8.707 | 52890 | 11.85951 | Endrin | . | 0 | . | Endrin |
| 9.004 | 6760 | 1.37505 | Endosulfan II | 9.738 | 32308 | 13.49323 | Endosulfan II |
| 9.541 | 7534 | 1.8203 | Endrin aldehyde | 10.174 | 1348 | .62083 | Endrin aldehyde |
| 9.708 | 4957 | 1.96469 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.993 | 21299 | 11.74539 | 4,4'-DDT |
| 10.141 | 1071 | .24426 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.329 | 9161 | 3.73678 | Endrin ketone |
| 11.813 | 54235 | 9.49492 | DCB | 13.341 | 25133 | 9.88274 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 9:06:40 AM
File Reported On: 3/31/2004 at 9:06:43 AM

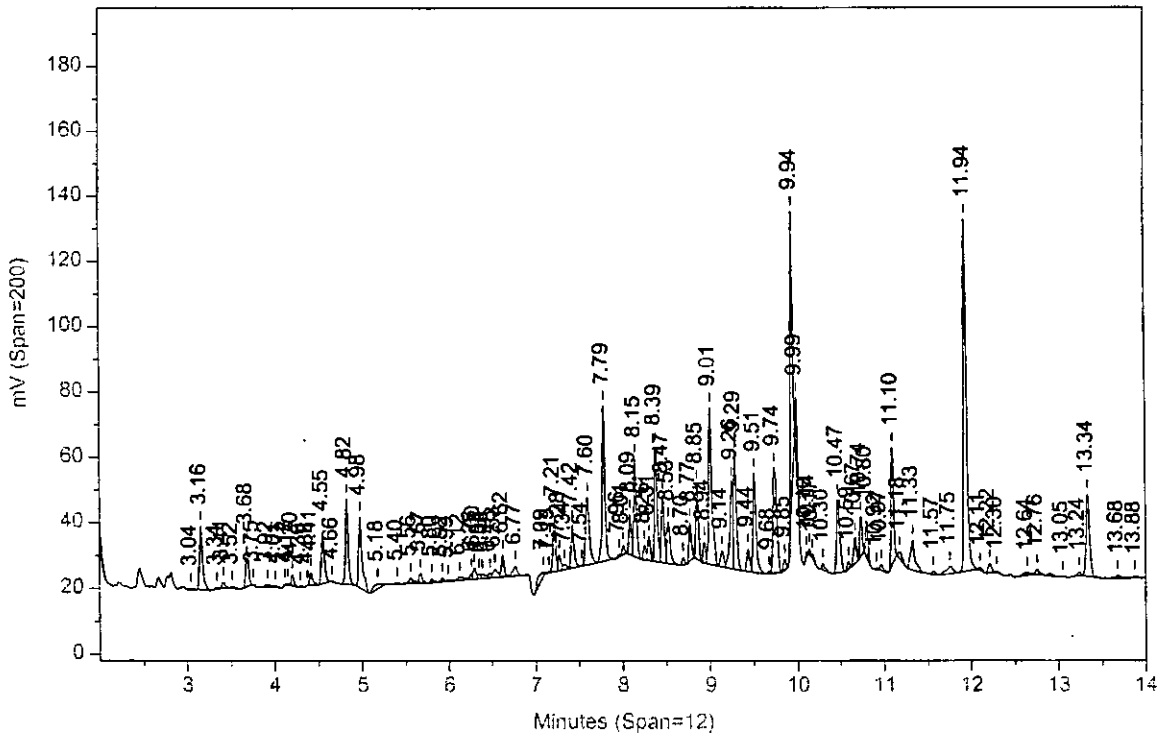
8561

10X REPLOTS

C:\CPWIN\DATA1\1C13088.91R




C:\CPWIN\DATA1\1C13088B.91R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241651R** ACF 7GP23 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722A
Result file : 1C13088.92R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 81.4% Conc.: 7.830473
%SSR(DCB) : 87.4% Conc.: 8.512815

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 89163 | 7.830473 |
| **HCB** | 4.86 | 4.91 | 4.92 | 969579 E | 46.446739 |
| **alpha-BHC** | 5.11 | 5.11 | 5.17 | 9529 | 0.685940 |
| **delta-BHC** | 5.96 | 6.00 | 6.02 | 5808 | 0.440262 |
| **Heptachlor** | 6.25 | 6.28 | 6.31 | 46699 | 3.150335 |
| **Hept. epoxide** | 7.51 | 7.52 | 7.57 | 32554 | 2.718860 |
| **g. Chlordane** | 7.68 | 7.72 | 7.74 | 30479 | 2.623788 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 62316 | 5.026231 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 123680 | 11.715824 |
| **o,p-DDT** | 8.51 | 8.55 | 8.57 | 18569 | 2.412823 |
| **Endrin** | 8.67 | 8.70 | 8.73 | 121348 E | 13.604984 |
| **Endosulfan II** | 8.97 | 9.00 | 9.03 | 15665 | 1.593098 |
| **Endrin aldehyde** | 9.52 | 9.54 | 9.58 | 18170 | 2.195113 |
| **Endo. sulfate** | 10.08 | 10.13 | 10.14 | 4970 | 0.566867 |
| **DCB** | 11.79 | 11.81 | 11.85 | 97251 | 8.512815 |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722B
Result file : 1C13088B.92R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.3% Conc.: 9.171865
%SSR(DCB) : 93.2% Conc.: 9.078782

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.82 | 4.86 | 53826 | 9.171865 |
| **HCB** | 5.52 | 5.56 | 5.58 | 1657 | 0.199035 |
| **gamma-BHC** | 6.25 | 6.30 | 6.31 | 11586 | 2.211342 |
| **beta-BHC** | 6.38 | 6.42 | 6.44 | 274 | 0.078941 |
| **Heptachlor** | 6.89 | 6.92 | 6.95 | 2715 | 0.490179 |
| **Telodrin** | 7.58 | 7.60 | 7.64 | 42078 E | 7.710275 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 76705 E | 14.167282 |
| **o,p-DDE** | 8.38 | 8.38 | 8.44 | 87617 E | 23.488768 |
| **Endosulfan I** | 8.68 | 8.69 | 8.74 | 5914 | 1.192062 |
| **o,p-DDT** | 9.47 | 9.51 | 9.53 | 71295 E | 20.194090 |
| **Kepone** | 9.61 | 9.67 | 9.67 | 1702 | 3.289932 |
| **Endosulfan II** | 9.73 | 9.74 | 9.79 | 95769 E | 19.998640 |
| **4,4'-DDT** | 9.96 | 9.99 | 10.02 | 54149 E | 14.930028 |
| **Endrin aldehyde** | 10.17 | 10.17 | 10.23 | 3367 | 0.775356 |
| **Endo. sulfate** | 10.53 | 10.56 | 10.59 | 372 | 0.087806 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 22131 | 4.513919 |
| **DCB** | 13.32 | 13.34 | 13.38 | 46176 | 9.078782 |

## Summary Report

| Compound Name | Column | Higher Amount Found | | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|---|
| TCX | B | | 9.171865 | | | | 15.78 | |
| HCB | A | | 46.446739 | | | E | ** 198.29 | |
| alpha-BHC | | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | | <0.83 | <0.17 | | | |
| beta-BHC | | | | <0.83 | <0.17 | | | |
| delta-BHC | | | | <0.83 | <0.17 | | | |
| Heptachlor | A (B) | 0.49 | 3.150335 | C 0.83 | ~~0.17~~ (3) | | ** 146.14 | matrix |
| Aldrin | | | | <1.5 | <0.51 | | | due to |
| Telodrin | | | | | | | | |
| o,p-DDE | | | | 2.8W | | | | PCBs |
| Hept. epoxide | B (A) | 2.72 | 14.167282 | ~~0.83~~ | ~~0.17~~ | ~~E~~ (5) | ** 135.60 | |
| g. Chlordane | | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | | |
| Dieldrin | | | | <1.7 | <0.33 | | | |
| o,p-DDT | B | | 20.194090 | | | E | ** 157.31 | |
| Endrin | | | | <1.7 | <0.5 | | | |
| 4,4'-DDD | | | | <1.7 | <0.58 | | | |
| Kepone | | | | | | | | |
| Endosulfan II | B (A) | 1.59 | 19.998640 | C 1.7 | ~~0.33~~ | ~~E~~ (6) | ** 170.49 | ~~0503~~ |
| 4,4'-DDT | | | | <1.7 | <0.33 | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 10:06:08

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241651R** ACF 7GP23 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722A
Result file : 1C13088.92R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722B
Result file : 1C13088B.92R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | B | 9.078782 | | | | 6.43 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

8584

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 10:06:08

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241651R ACF 7GP23 Sample ID: AB **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

**Injected on** Mar 30, 2004 17:43:31
**Instrument** H6722A
**Result file** 1C13088.92R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) 81.4% Conc: 7.830473
%SSR(DCB) 87.4% Conc: 8.512815

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.58 | 7.62 | 169469.3125 | 292.832884 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 123679.8046 | 319.803327 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 202401.1093 | 315.857208 | | | 4 |
| E | 8.45 | 8.47 | 8.51 | 152509.7812 | 327.258562 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 202136.4531 | 380.66191 | | | 6 |

Height summation: **850196.460938**
Concentration CF: **327.282778** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 17:43:31
**Instrument** H6722B
**Result file** 1C13088B.92R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 95.3% Conc: 9.171865
%SSR(DCB) 93.2% Conc: 9.078782

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 76704.85156 | 309.414827 | | | 1 |
| E | 8.36 | 8.38 | 8.42 | 87617.16406 | 314.433564 | | | 2 |
| E | 8.83 | 8.85 | 8.89 | 60018.625 | 342.644344 | | | 3 |
| E | 8.98 | 9.00 | 9.04 | 124874.1171 | 336.30158 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 91353.94531 | 335.636303 | | | 5 |
| E | 9.97 | 9.99 | 10.03 | 54149.22265 | 194.376849 | | | 6 |

Height summation: **494717.925783**
Concentration CF: **305.467911** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 30 | |
| Aroclor-1254 | A | 327.282778 | 17 | 3.3 | E (3) | 6.90 | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | 4/4/04 | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8585

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241651R** ACF 7GP23 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722A
Result file : 1C13088.92R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 81.4% Conc.: 7.830473
%SSR(DCB) : 87.4% Conc.: 8.512815

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 98.07 | |
| 5.32 | 5.36 | 5.38 | 8704.177734 | 21.13232 | | | 2 |
| 5.97 | 6.00 | 6.03 | 5808.249023 | 8.554195 | | | 3 |
| 6.24 | 6.28 | 6.30 | 46699.17578 | 178.153293 | | | 5 |
| 6.71 | 6.74 | 6.77 | 41783.59765 | 131.331966 | | | 6 |
| Height Summation | | | **102995.200194** | | | | |
| Amount Avg CF: | | | **84.792944** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 92.83 | |
| 4.54 | 4.58 | 4.60 | 3095.556396 | 20.788277 | | | 1 |
| E 4.75 | 4.76 | 4.81 | 7756.842285 | 100.21896 | | | 2 |
| Height Summation | | | **10852.398681** | | | | |
| Amount Avg CF: | | | **60.503619** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 97.48 | |
| 5.32 | 5.36 | 5.38 | 8704.177734 | 48.972288 | | | 2 |
| 5.97 | 6.00 | 6.03 | 5808.249023 | 19.123063 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 46699.17578 | 401.193083 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 41783.59765 | 306.021862 | | | 6 |
| Height Summation | | | **102995.200194** | | | | |
| Amount Avg CF: | | | **193.827574** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 98.79 | |
| 5.32 | 5.36 | 5.38 | 8704.177734 | 24.286336 | | | 2 |
| 5.97 | 6.00 | 6.03 | 5808.249023 | 10.048989 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 46699.17578 | 209.597 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 41783.59765 | 148.319235 | | | 6 |
| Height Summation | | | **102995.200194** | | | | |
| Amount Avg CF: | | | **98.06289** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 121.66 | |
| 5.32 | 5.36 | 5.38 | 8704.177734 | 51.446232 | | | 1 |
| E 6.71 | 6.74 | 6.77 | 41783.59765 | 99.038482 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 341228.9687 | 1689.133998 | | | 3 |
| E 7.28 | 7.30 | 7.34 | 73710.9375 | 183.073907 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 202401.1093 | 871.013877 | | | 6 |
| Height Summation | | | 667828.791015 | | | | |
| Amount Avg CF: | | | **578.741299** | Linear: | | | |
| **Aroclor-1254** | | | | | 5 | 9.93 | |
| E 7.56 | 7.58 | 7.62 | 169469.3125 | 292.832884 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 123679.8046 | 319.803327 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 202401.1093 | 315.857208 | | | 4 |
| E 8.45 | 8.47 | 8.51 | 152509.7812 | 327.258562 | | | 5 |
| E 9.05 | 9.08 | 9.11 | 202136.4531 | 380.66191 | | | 6 |
| Height Summation | | | **850106.460938** | | | | |
| Amount Avg CF: | | | **327.282778** | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 65.09 | |
| 8.33 | 8.35 | 8.39 | 78547.35937 | 148.37763 | | | 1 |
| 8.68 | 8.70 | 8.74 | 121348.3125 | 180.413307 | | | 2 |
| E 9.05 | 9.08 | 9.11 | 202136.4531 | 290.858528 | | | 3 |
| 9.19 | 9.21 | 9.25 | 18087.65039 | 40.983462 | | | 4 |
| 9.91 | 9.93 | 9.97 | 64318.28906 | 63.699621 | | | 5 |
| 10.28 | 10.30 | 10.34 | 62570.07812 | 110.152444 | | | 6 |
| Height Summation | | | **547008.142579** | | | | |
| Amount Avg CF: | | | **139.080832** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13--H6722B
Result file : 1C13088B.92R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.3% Conc.: 9.171865
%SSR(DCB) : 93.2% Conc.: 9.078782

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 170.28 | |
| 5.52 | 5.56 | 5.58 | 1657.250366 | 12.66597 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1753.239258 | 8.231342 | | | 2 |
| 6.74 | 6.76 | 6.80 | 5012.066406 | 14.818294 | | | 3 |
| 7.07 | 7.09 | 7.13 | 2476.925049 | 19.932049 | | | 5 |
| 7.56 | 7.60 | 7.62 | 42077.98437 | 235.161803 | | | 6 |
| Height Summation | | | **52977.465454** | | | | |
| Amount Avg CF: | | | **58.161892** | Linear: | | | |
| **Aroclor-1221** | | | | | 3 | 31.52 | |
| 5.22 | 5.27 | 5.28 | 388.164734 | 5.077055 | | | 1 |
| 5.43 | 5.47 | 5.49 | 340.56604 | 6.083856 | | | 2 |
| 5.52 | 5.56 | 5.58 | 1657.250366 | 9.17693 | | | 3 |
| Height Summation | | | **2385.981140** | | | | |
| Amount Avg CF: | | | **6.77928** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 178.15 | |
| 5.52 | 5.56 | 5.58 | 1657.250366 | 11.742044 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1753.239258 | 17.452382 | | | 2 |
| 6.74 | 6.76 | 6.80 | 5012.066406 | 34.073542 | | | 3 |
| 7.07 | 7.09 | 7.13 | 2476.925049 | 46.029061 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 42077.98437 | 558.474161 | | | 6 |
| Height Summation | | | **52977.465454** | | | | |
| Amount Avg CF: | | | **133.554238** | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 169.80 | |
| 5.52 | 5.56 | 5.58 | 1657.250366 | 13.83127 | | | 1 |
| 6.10 | 6.12 | 6.16 | 1753.239258 | 9.508133 | | | 2 |
| 6.73 | 6.76 | 6.79 | 5012.066406 | 17.501977 | | | 3 |
| 7.07 | 7.09 | 7.13 | 2476.925049 | 24.031985 | | | 5 |
| E 7.56 | 7.60 | 7.62 | 42077.98437 | 270.937644 | | | 6 |
| Height Summation | | | **52977.465454** | | | | |
| Amount Avg CF: | | | **67.162202** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 23.90 | |
| E 7.19 | 7.21 | 7.25 | 40276.82031 | 205.86338 | | | 1 |
| E 7.56 | 7.60 | 7.62 | 42077.98437 | 179.115352 | | | 2 |
| E 8.06 | 8.09 | 8.12 | 36599.5 | 150.309226 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 76704.85156 | 282.201917 | | | 5 |
| E 8.44 | 8.47 | 8.50 | 51416.17968 | 222.717821 | | | 6 |
| Height Summation | | | **247075.335939** | | | | |
| Amount Avg CF: | | | **208.041539** | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 18.33 | |
| E 8.12 | 8.15 | 8.18 | 76704.85156 | 309.414827 | | | 1 |
| E 8.36 | 8.38 | 8.42 | 87617.16406 | 314.433564 | | | 2 |
| E 8.83 | 8.85 | 8.89 | 60018.625 | 342.644344 | | | 3 |
| E 8.98 | 9.00 | 9.04 | 124874.1171 | 336.30158 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 91353.94531 | 335.636303 | | | 5 |
| E 9.97 | 9.99 | 10.03 | 54149.22265 | 194.376849 | | | 6 |
| Height Summation | | | **494717.925783** | | | | |
| Amount Avg CF: | | | **305.467911** | Linear: | | | |

0506

*Peak found within more than one window
+Duplicate Peak in window - not included in average
Printed on: 3/31/04 10:06:36

# Lancaster Laboratories-Multiple Component Peak Data Report

**Sample Name: 4241651R** ACF 7GP23 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13–H6722A
Result file : 1C13088.92R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **4** | **64.35** | |
| 6.25 | 6.28 | 6.31 | 46699.17578 | 74.694048 | | | 2 |
| 6.86 | 6.91 | 6.92 | 10779.18554 | 17.091944 | | | 3 |
| 7.68 | 7.72 | 7.74 | 30479 | 25.451734 | | | 4 |
| 7.85 | 7.90 | 7.91 | 62316.00390 | 40.835083 | | | 5 |
| Height Summation | | | **150273.365234** | | | | |
| Amount Avg CF: | | | **39.518202** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **113.21** | |
| 8.70 | 8.70 | 8.76 | 121348.3125 | 1132.836283 | | | 1 |
| 10.41 | 10.42 | 10.47 | 23880.84179 | 125.494046 | | | 6 |
| Height Summation | | | **145229.154297** | | | | |
| Amount Avg CF: | | | **629.165165** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 17:43:31
Instrument : CP13–H6722B
Result file : 1C13088B.92R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | **5** | **59.72** | |
| + 9.23 | 9.25 | 9.29 | 64606.1875 | 202.692885 | | | 1 |
| E 9.23 | 9.29 | 9.29 | 91353.94531 | 286.610237 | | | 1 |
| 9.49 | 9.51 | 9.55 | 71295.21093 | 191.201275 | | | 2 |
| 9.97 | 9.99 | 10.03 | 54149.22265 | 161.690939 | | | 3 |
| 10.78 | 10.80 | 10.84 | 26559.62304 | 54.391483 | | | 5 |
| 11.30 | 11.33 | 11.36 | 22131.4375 | 81.041217 | | | 6 |
| Height Summation | | | **265489.439454** | | | | |
| Amount Avg CF: | | | **154.98703** | Linear: | | | |
| **Chlordane** | | | | | **3** | **89.40** | |
| 6.89 | 6.92 | 6.95 | 2714.833252 | 11.584042 | | | 2 |
| 7.56 | 7.60 | 7.62 | 42077.98437 | 136.480831 | | | 3 |
| 8.51 | 8.53 | 8.57 | 31452.70312 | 62.659885 | | | 5 |
| Height Summation | | | **76245.520752** | | | | |
| Amount Avg CF: | | | **70.241586** | Linear: | | | |
| **Toxaphene** | | | | | **2** | **46.99** | |
| 9.83 | 9.85 | 9.89 | 9841.617188 | 94.038618 | | | 3 |
| 10.17 | 10.17 | 10.23 | 3367.189453 | 47.128863 | | | 4 |
| Height Summation | | | **13208.806641** | | | | |
| Amount Avg CF: | | | **70.583741** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 17 | 3.3 | | 37.26 | 4 | 40 | |
| Aroclor-1221 | | | 30 | 10 | E | ** 159.70 | 3 | 5 | |
| Aroclor-1232 | | | 17 | 4.3 | E | 36.82 | 4 | 10 | |
| Aroclor-1242 | | | 17 | 4 | E | 37.40 | 4 | 30 | |
| Aroclor-1248 | | | 18 | 6 | E | ** 94.23 | 4 | 30 | |
| Aroclor-1254 | | | 17 | 3.3 | E | 6.90 | 4 | 40 | |
| Aroclor-1260 | | | 17 | 3.3 | E | 10.82 | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 55.98 | 2 | 20 | |
| Toxaphene | | | 33 | 11 | | ** 159.65 | 4 | 30 | |

Units: ug/kg

0507

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:06:36

Sample Name: **4241651RACF AB7GP23 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 05:57:31pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.92R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.554 | | 0.0000 | 0.000 | 94492.5 | 0.407 | BB | 0.038 | 41294.08 | 0.551 |
| 2 | 3.648 | | 0.0000 | 0.000 | 11023.3 | 0.047 | BB | 0.034 | 5461.62 | 0.073 |
| 3 | 3.708 | | 0.0000 | 0.000 | 4441.3 | 0.019 | BB | 0.027 | 2703.69 | 0.036 |
| 4 | 3.867 | | 0.0000 | 0.000 | 5157.8 | 0.022 | BB | 0.043 | 1988.53 | 0.027 |
| 5 | 3.954 | | 0.0000 | 0.000 | 33402.6 | 0.144 | BB | 0.045 | 12391.04 | 0.165 |
| 6 | 4.064 | | 0.0000 | 0.000 | 37342.0 | 0.161 | BB | 0.043 | 14440.68 | 0.193 |
| 7 | 4.186 | | 0.0000 | 0.000 | 108543.2 | 0.467 | BB | 0.037 | 48682.13 | 0.649 |
| 8 | 4.308 | TCX | 234.9142 | 7.150 | 208192.1 | 0.896 | BB | 0.039 | 89162.52 | 1.189 |
| 9 | 4.442 | | 0.0000 | 0.000 | 4702.1 | 0.020 | BB | 0.046 | 1688.94 | 0.023 |
| 10 | 4.491 | | 0.0000 | 0.000 | 3079.1 | 0.013 | BB | 0.024 | 2122.76 | 0.028 |
| 11 | 4.577 | | 0.0000 | 0.000 | 7922.8 | 0.034 | BB | 0.043 | 3095.56 | 0.041 |
| 12 | 4.631 | | 0.0000 | 0.000 | 2047.4 | 0.009 | BB | 0.023 | 1489.82 | 0.020 |
| 13 | 4.668 | | 0.0000 | 0.000 | 217.4 | 0.001 | BB | 0.016 | 219.98 | 0.003 |
| 14 | 4.760 | | 0.0000 | 0.000 | 34226.2 | 0.147 | BB | 0.074 | 7756.84 | 0.103 |
| 15 | 4.905 | HCB | 1393.4020 | 42.408 | 2509211.0 | 10.804 | BB | 0.043 | 969579.10 | 12.926 |
| 16 | 5.054 | | 0.0000 | 0.000 | 6251.2 | 0.027 | BB | 0.026 | 3932.69 | 0.052 |
| 17 | 5.110 | alpha-BHC | 20.5782 | 0.626 | 21776.8 | 0.094 | BB | 0.038 | 9529.06 | 0.127 |
| 18 | 5.240 | | 0.0000 | 0.000 | 1533.0 | 0.007 | BB | 0.034 | 752.40 | 0.010 |
| 19 | 5.306 | | 0.0000 | 0.000 | 739.5 | 0.003 | BB | 0.024 | 505.13 | 0.007 |
| 20 | 5.362 | | 0.0000 | 0.000 | 19578.2 | 0.084 | BB | 0.037 | 8704.18 | 0.116 |
| 21 | 5.459 | | 0.0000 | 0.000 | 16832.7 | 0.072 | BB | 0.035 | 7943.06 | 0.106 |
| 22 | 5.551 | | 0.0000 | 0.000 | 14940.1 | 0.064 | BB | 0.028 | 8945.88 | 0.119 |
| 23 | 5.671 | | 0.0000 | 0.000 | 17839.0 | 0.077 | BB | 0.038 | 7778.27 | 0.104 |
| 24 | 5.773 | | 0.0000 | 0.000 | 27854.0 | 0.120 | BB | 0.044 | 10442.96 | 0.139 |
| 25 | 5.997 | delta-BHC | 13.2079 | 0.402 | 21079.8 | 0.091 | BB | 0.060 | 5808.25 | 0.077 |
| 26 | 6.084 | | 0.0000 | 0.000 | 10286.0 | 0.044 | BV | 0.044 | 3918.05 | 0.052 |
| 27 | 6.282 | Heptachlor | 94.5101 | 2.876 | 253125.3 | 1.090 | VV | 0.090 | 46699.18 | 0.623 |
| 28 | 6.356 | | 0.0000 | 0.000 | 91657.6 | 0.395 | VV | 0.047 | 32269.82 | 0.430 |
| 29 | 6.434 | | 0.0000 | 0.000 | 144928.5 | 0.624 | VV | 0.033 | 72837.63 | 0.971 |
| 30 | 6.472 | | 0.0000 | 0.000 | 3798018.0 | 16.353 | SBB | 0.066 | 964958.10 | 12.865 |
| 31 | 6.617 | | 0.0000 | 0.000 | 3316.8 | 0.014 | TVB | 0.028 | 1999.70 | 0.027 |
| 32 | 6.739 | | 0.0000 | 0.000 | 118369.4 | 0.510 | BV | 0.047 | 41783.60 | 0.557 |
| 33 | 6.855 | | 0.0000 | 0.000 | 34836.3 | 0.150 | VV | 0.039 | 14796.72 | 0.197 |
| 34 | 6.908 | | 0.0000 | 0.000 | 37079.5 | 0.160 | VB | 0.057 | 10779.19 | 0.144 |
| 35 | 7.070 | | 0.0000 | 0.000 | 177948.1 | 0.766 | BB | 0.042 | 71241.89 | 0.950 |
| 36 | 7.201 | | 0.0000 | 0.000 | 1064740.0 | 4.584 | BV | 0.052 | 341229.00 | 4.549 |
| 37 | 7.300 | | 0.0000 | 0.000 | 256199.4 | 1.103 | VV | 0.058 | 73710.94 | 0.983 |
| 38 | 7.418 | | 0.0000 | 0.000 | 6377.1 | 0.027 | VB | 0.027 | 3883.55 | 0.052 |
| 39 | 7.519 | Hept. epoxide | 81.5658 | 2.482 | 63057.1 | 0.272 | BV | 0.032 | 32554.21 | 0.434 |
| 40 | 7.583 | | 0.0000 | 0.000 | 460068.3 | 1.981 | VV | 0.045 | 169469.30 | 2.259 |
| 41 | 7.635 | | 0.0000 | 0.000 | 211061.9 | 0.909 | VV | 0.043 | 81281.85 | 1.084 |
| 42 | 7.721 | g. Chlordane | 78.7137 | 2.396 | 67966.1 | 0.293 | VV | 0.037 | 30479.00 | 0.406 |
| 43 | 7.833 | | 0.0000 | 0.000 | 30109.5 | 0.130 | VV | 0.041 | 12125.63 | 0.162 |
| 44 | 7.899 | a. Chlordane | 150.7869 | 4.589 | 146079.7 | 0.629 | VV | 0.039 | 62316.00 | 0.831 |
| 45 | 7.957 | 4,4'-DDE | 351.4747 | 10.697 | 289494.0 | 1.246 | VV | 0.039 | 123679.80 | 1.649 |
| 46 | 8.012 | | 0.0000 | 0.000 | 104462.6 | 0.450 | VB | 0.037 | 46658.38 | 0.622 |
| 47 | 8.116 | | 0.0000 | 0.000 | 527547.9 | 2.271 | BV | 0.043 | 202401.10 | 2.698 |
| 48 | 8.274 | | 0.0000 | 0.000 | 102065.3 | 0.439 | VB | 0.056 | 30266.44 | 0.404 |
| 49 | 8.350 | | 0.0000 | 0.000 | 208344.8 | 0.897 | BV | 0.044 | 78547.36 | 1.047 |
| 50 | 8.474 | | 0.0000 | 0.000 | 365302.2 | 1.573 | VV | 0.040 | 152509.80 | 2.033 |
| 51 | 8.550 | o,p-DDT | 72.3847 | 2.203 | 38100.8 | 0.164 | VB | 0.034 | 18568.67 | 0.248 |
| 52 | 8.629 | | 0.0000 | 0.000 | 39941.1 | 0.172 | BV | 0.032 | 20564.53 | 0.274 |
| 53 | 8.704 | Endrin | 408.1495 | 12.422 | 460735.0 | 1.984 | VV | 0.063 | 121348.30 | 1.618 |
| 54 | 8.842 | | 0.0000 | 0.000 | 315458.2 | 1.358 | VV | 0.057 | 92120.83 | 1.228 |
| 55 | 8.939 | | 0.0000 | 0.000 | 31981.2 | 0.138 | VB | 0.032 | 16544.13 | 0.221 |
| 56 | 9.002 | Endosulfan II | 47.7929 | 1.455 | 27662.6 | 0.119 | BV | 0.029 | 15665.00 | 0.209 |
| 57 | 9.076 | | 0.0000 | 0.000 | 591257.4 | 2.546 | VV | 0.049 | 202136.50 | 2.695 |
| 58 | 9.209 | | 0.0000 | 0.000 | 48578.9 | 0.209 | VB | 0.045 | 18087.65 | 0.241 |
| 59 | 9.295 | | 0.0000 | 0.000 | 3669241.0 | 15.798 | BB | 0.065 | 945121.40 | 12.600 |
| 60 | 9.455 | | 0.0000 | 0.000 | 96821.5 | 0.417 | BB | 0.034 | 47264.80 | 0.630 |
| 61 | 9.538 | Endrin aldehyde | 65.8534 | 2.004 | 34978.8 | 0.151 | BV | 0.032 | 18170.12 | 0.242 |
| 62 | 9.590 | | 0.0000 | 0.000 | 24416.0 | 0.105 | VB | 0.033 | 12258.41 | 0.163 |
| 63 | 9.661 | | 0.0000 | 0.000 | 19347.3 | 0.083 | BB | 0.037 | 8711.50 | 0.116 |
| 64 | 9.770 | | 0.0000 | 0.000 | 79735.3 | 0.343 | BB | 0.035 | 37863.81 | 0.505 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.852 | | 0.0000 | 0.000 | 20515.5 | 0.088 | BB | 0.029 | 11710.62 | 0.156 |
| 66 | 9.929 | | 0.0000 | 0.000 | 162947.8 | 0.702 | BV | 0.042 | 64318.29 | 0.857 |
| 67 | 10.057 | | 0.0000 | 0.000 | 1553.3 | 0.007 | VB | 0.024 | 1082.40 | 0.014 |
| 68 | 10.129 | Endo. sulfate | 17.0060 | 0.518 | 11061.2 | 0.048 | BV | 0.037 | 4970.20 | 0.066 |
| 69 | 10.177 | | 0.0000 | 0.000 | 13651.5 | 0.059 | VB | 0.027 | 8485.15 | 0.113 |
| 70 | 10.237 | | 0.0000 | 0.000 | 212242.7 | 0.914 | BB | 0.030 | 118974.90 | 1.586 |
| 71 | 10.296 | | 0.0000 | 0.000 | 141848.2 | 0.611 | BB | 0.038 | 62570.08 | 0.834 |
| 72 | 10.418 | | 0.0000 | 0.000 | 63652.5 | 0.274 | BB | 0.044 | 23880.84 | 0.318 |
| 73 | 10.526 | | 0.0000 | 0.000 | 2492.0 | 0.011 | BV | 0.031 | 1342.93 | 0.018 |
| 74 | 10.564 | | 0.0000 | 0.000 | 2426.0 | 0.010 | VV | 0.033 | 1207.96 | 0.016 |
| 75 | 10.614 | | 0.0000 | 0.000 | 7140.7 | 0.031 | VV | 0.032 | 3662.55 | 0.049 |
| 76 | 10.678 | | 0.0000 | 0.000 | 1099762.0 | 4.735 | VV | 0.040 | 457939.60 | 6.105 |
| 77 | 10.794 | | 0.0000 | 0.000 | 47074.9 | 0.203 | VV | 0.039 | 20167.43 | 0.269 |
| 78 | 10.833 | | 0.0000 | 0.000 | 75818.3 | 0.326 | VB | 0.054 | 23387.87 | 0.312 |
| 79 | 10.963 | | 0.0000 | 0.000 | 7080.6 | 0.030 | BB | 0.033 | 3565.18 | 0.048 |
| 80 | 11.041 | | 0.0000 | 0.000 | 11149.0 | 0.048 | BB | 0.035 | 5327.52 | 0.071 |
| 81 | 11.123 | | 0.0000 | 0.000 | 68185.0 | 0.294 | BB | 0.050 | 22858.90 | 0.305 |
| 82 | 11.215 | | 0.0000 | 0.000 | 6448.8 | 0.028 | BB | 0.029 | 3758.22 | 0.050 |
| 83 | 11.385 | | 0.0000 | 0.000 | 3530705.0 | 15.202 | BB | 0.061 | 962753.60 | 12.835 |
| 84 | 11.731 | | 0.0000 | 0.000 | 2741.9 | 0.012 | BB | 0.046 | 999.84 | 0.013 |
| 85 | 11.811 | DCB | 255.3844 | 7.773 | 296781.2 | 1.278 | BB | 0.051 | 97251.05 | 1.297 |
| 86 | 12.077 | | 0.0000 | 0.000 | 11196.9 | 0.048 | BB | 0.053 | 3550.93 | 0.047 |
| 87 | 12.196 | | 0.0000 | 0.000 | 23282.1 | 0.100 | BB | 0.056 | 6988.71 | 0.093 |
| 88 | 12.270 | | 0.0000 | 0.000 | 23831.6 | 0.103 | BB | 0.038 | 10394.30 | 0.139 |
| 89 | 12.450 | | 0.0000 | 0.000 | 6034.7 | 0.026 | BB | 0.042 | 2381.59 | 0.032 |
| 90 | 12.563 | | 0.0000 | 0.000 | 27667.4 | 0.119 | BB | 0.099 | 4676.52 | 0.062 |
| 91 | 12.728 | | 0.0000 | 0.000 | 932.3 | 0.004 | BB | 0.028 | 557.28 | 0.007 |
| 92 | 12.783 | | 0.0000 | 0.000 | 1663.3 | 0.007 | BB | 0.029 | 968.54 | 0.013 |
| 93 | 12.830 | | 0.0000 | 0.000 | 2281.2 | 0.010 | BB | 0.037 | 1034.68 | 0.014 |
| 94 | 12.936 | | 0.0000 | 0.000 | 33473.4 | 0.144 | BB | 0.054 | 10333.82 | 0.138 |
| 95 | 13.066 | | 0.0000 | 0.000 | 827.8 | 0.004 | BB | 0.030 | 453.98 | 0.006 |
| 96 | 13.119 | | 0.0000 | 0.000 | 4847.5 | 0.021 | BB | 0.042 | 1919.36 | 0.026 |
| 97 | 13.227 | | 0.0000 | 0.000 | 9679.3 | 0.042 | BB | 0.048 | 3372.19 | 0.045 |
| 98 | 13.338 | | 0.0000 | 0.000 | 3422.7 | 0.015 | BB | 0.055 | 1044.64 | 0.014 |
| 99 | 13.435 | | 0.0000 | 0.000 | 2956.3 | 0.013 | BB | 0.038 | 1289.27 | 0.017 |
| 100 | 13.490 | | 0.0000 | 0.000 | 4181.2 | 0.018 | BB | 0.063 | 1111.12 | 0.015 |
| 101 | 13.649 | | 0.0000 | 0.000 | 6337.8 | 0.027 | BB | 0.051 | 2073.85 | 0.028 |
| 102 | 13.742 | | 0.0000 | 0.000 | 3229.4 | 0.014 | BB | 0.038 | 1404.30 | 0.019 |
| 103 | 13.804 | | 0.0000 | 0.000 | 630.0 | 0.003 | BB | 0.026 | 410.57 | 0.005 |
| 104 | 13.871 | | 0.0000 | 0.000 | 10507.4 | 0.045 | BB | 0.053 | 3333.44 | 0.044 |

Total Area = 23225390.0, Total Amount = 3285.725, Total Height = 7500756.0, Sample Units = PPB

Sample Name: **4241651RACF AB7GP23 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 05:57:31pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.92R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.047 | | 0.0000 | 0.000 | 2304.2 | 0.039 | BB | 0.046 | 836.54 | 0.032 |
| 2 | 3.120 | | 0.0000 | 0.000 | 397.7 | 0.007 | BB | 0.033 | 201.84 | 0.008 |
| 3 | 3.156 | | 0.0000 | 0.000 | 1638.3 | 0.027 | BB | 0.027 | 997.04 | 0.038 |
| 4 | 3.204 | | 0.0000 | 0.000 | 1202.9 | 0.020 | BB | 0.038 | 531.39 | 0.020 |
| 5 | 3.344 | | 0.0000 | 0.000 | 3135.2 | 0.052 | BB | 0.058 | 897.63 | 0.034 |
| 6 | 3.411 | | 0.0000 | 0.000 | 10913.7 | 0.183 | BB | 0.043 | 4208.78 | 0.161 |
| 7 | 3.513 | | 0.0000 | 0.000 | 4020.1 | 0.067 | BB | 0.035 | 1935.85 | 0.074 |
| 8 | 3.678 | | 0.0000 | 0.000 | 50373.4 | 0.843 | BB | 0.036 | 23453.42 | 0.898 |
| 9 | 3.754 | | 0.0000 | 0.000 | 1907.8 | 0.032 | BB | 0.031 | 1039.51 | 0.040 |
| 10 | 3.900 | | 0.0000 | 0.000 | 4236.3 | 0.071 | BB | 0.052 | 1352.18 | 0.052 |
| 11 | 4.010 | | 0.0000 | 0.000 | 4339.4 | 0.073 | BB | 0.041 | 1756.37 | 0.067 |
| 12 | 4.151 | | 0.0000 | 0.000 | 4091.7 | 0.069 | BB | 0.040 | 1685.50 | 0.065 |
| 13 | 4.198 | | 0.0000 | 0.000 | 15418.6 | 0.258 | BB | 0.034 | 7659.39 | 0.293 |
| 14 | 4.291 | | 0.0000 | 0.000 | 1345.6 | 0.023 | BB | 0.035 | 646.11 | 0.025 |
| 15 | 4.414 | | 0.0000 | 0.000 | 47387.7 | 0.793 | BB | 0.039 | 20119.89 | 0.771 |
| 16 | 4.550 | | 0.0000 | 0.000 | 74885.0 | 1.254 | BB | 0.041 | 30784.04 | 1.179 |
| 17 | 4.659 | | 0.0000 | 0.000 | 2372.8 | 0.040 | BB | 0.032 | 1244.73 | 0.048 |
| 18 | 4.823 | TCX | 275.1559 | 6.971 | 117090.0 | 1.960 | BB | 0.036 | 53826.35 | 2.061 |
| 19 | 4.975 | | 0.0000 | 0.000 | 129234.8 | 2.164 | BB | 0.038 | 56525.70 | 2.165 |
| 20 | 5.083 | | 0.0000 | 0.000 | 847.4 | 0.014 | BB | 0.019 | 741.28 | 0.028 |
| 21 | 5.179 | | 0.0000 | 0.000 | 7944.5 | 0.133 | BB | 0.057 | 2316.93 | 0.089 |
| 22 | 5.273 | | 0.0000 | 0.000 | 623.7 | 0.010 | BB | 0.027 | 388.16 | 0.015 |
| 23 | 5.319 | | 0.0000 | 0.000 | 365.7 | 0.006 | BB | 0.020 | 297.88 | 0.011 |
| 24 | 5.356 | | 0.0000 | 0.000 | 212.6 | 0.004 | BB | 0.019 | 188.43 | 0.007 |
| 25 | 5.402 | | 0.0000 | 0.000 | 1349.9 | 0.023 | BB | 0.031 | 729.23 | 0.028 |
| 26 | 5.473 | | 0.0000 | 0.000 | 603.3 | 0.010 | BB | 0.030 | 340.57 | 0.013 |
| 27 | 5.556 | HCB | 5.9710 | 0.151 | 3354.3 | 0.056 | BB | 0.034 | 1657.25 | 0.063 |
| 28 | 5.598 | | 0.0000 | 0.000 | 3784.4 | 0.063 | BB | 0.028 | 2253.11 | 0.086 |
| 29 | 5.670 | | 0.0000 | 0.000 | 14309.3 | 0.240 | BB | 0.039 | 6099.31 | 0.234 |
| 30 | 5.799 | | 0.0000 | 0.000 | 3628.4 | 0.061 | BB | 0.036 | 1698.98 | 0.065 |
| 31 | 5.923 | | 0.0000 | 0.000 | 4039.7 | 0.068 | BB | 0.032 | 2073.00 | 0.079 |
| 32 | 5.993 | | 0.0000 | 0.000 | 2119.3 | 0.035 | BB | 0.051 | 699.39 | 0.027 |
| 33 | 6.124 | | 0.0000 | 0.000 | 4994.9 | 0.084 | BV | 0.047 | 1753.24 | 0.067 |
| 34 | 6.206 | | 0.0000 | 0.000 | 1429.4 | 0.024 | VV | 0.041 | 574.37 | 0.022 |
| 35 | 6.297 | gamma-BHC | 66.3403 | 1.681 | 27786.6 | 0.465 | VV | 0.040 | 11586.22 | 0.444 |
| 36 | 6.349 | | 0.0000 | 0.000 | 4295.3 | 0.072 | VB | 0.031 | 2274.03 | 0.087 |
| 37 | 6.421 | beta-BHC | 2.3682 | 0.060 | 305.9 | 0.005 | BV | 0.019 | 273.81 | 0.010 |
| 38 | 6.468 | | 0.0000 | 0.000 | 3445.4 | 0.058 | VV | 0.038 | 1497.79 | 0.057 |
| 39 | 6.531 | | 0.0000 | 0.000 | 7727.2 | 0.129 | VV | 0.049 | 2609.43 | 0.100 |
| 40 | 6.622 | | 0.0000 | 0.000 | 23156.1 | 0.388 | VB | 0.033 | 11644.05 | 0.446 |
| 41 | 6.764 | | 0.0000 | 0.000 | 16998.5 | 0.285 | BB | 0.057 | 5012.07 | 0.192 |
| 42 | 6.918 | Heptachlor | 14.7054 | 0.373 | 5392.9 | 0.090 | BB | 0.033 | 2714.83 | 0.104 |
| 43 | 7.092 | | 0.0000 | 0.000 | 18674.0 | 0.313 | BB | 0.126 | 2476.93 | 0.095 |
| 44 | 7.211 | | 0.0000 | 0.000 | 90295.3 | 1.512 | BV | 0.037 | 40276.82 | 1.543 |
| 45 | 7.274 | | 0.0000 | 0.000 | 25383.3 | 0.425 | VV | 0.036 | 11766.73 | 0.451 |
| 46 | 7.333 | | 0.0000 | 0.000 | 8812.3 | 0.148 | VB | 0.044 | 3341.97 | 0.128 |
| 47 | 7.423 | | 0.0000 | 0.000 | 37034.4 | 0.620 | BB | 0.039 | 15952.76 | 0.611 |
| 48 | 7.601 | Telodrin | 231.3083 | 5.860 | 129040.1 | 2.160 | BB | 0.051 | 42077.98 | 1.612 |
| 49 | 7.787 | | 0.0000 | 0.000 | 299345.1 | 5.012 | BV | 0.037 | 135545.30 | 5.191 |
| 50 | 7.959 | | 0.0000 | 0.000 | 8908.1 | 0.149 | VV | 0.039 | 3856.29 | 0.148 |
| 51 | 8.018 | | 0.0000 | 0.000 | 44855.7 | 0.751 | VV | 0.045 | 16517.09 | 0.633 |
| 52 | 8.085 | | 0.0000 | 0.000 | 81635.4 | 1.367 | VV | 0.037 | 36599.50 | 1.402 |
| 53 | 8.146 | Hept. epoxide | 425.0185 | 10.767 | 167232.5 | 2.800 | VB | 0.036 | 76704.85 | 2.938 |
| 54 | 8.255 | | 0.0000 | 0.000 | 24757.1 | 0.414 | BV | 0.033 | 12373.68 | 0.474 |
| 55 | 8.305 | | 0.0000 | 0.000 | 39651.4 | 0.664 | VV | 0.034 | 19296.06 | 0.739 |
| 56 | 8.384 | o,p-DDE | 704.6630 | 17.852 | 189486.4 | 3.172 | VV | 0.036 | 87617.16 | 3.356 |
| 57 | 8.466 | | 0.0000 | 0.000 | 116806.6 | 1.956 | VV | 0.038 | 51416.18 | 1.969 |
| 58 | 8.528 | | 0.0000 | 0.000 | 76236.0 | 1.276 | VB | 0.040 | 31452.70 | 1.205 |
| 59 | 8.695 | Endosulfan I | 35.7619 | 0.906 | 12391.4 | 0.207 | BB | 0.035 | 5913.76 | 0.226 |
| 60 | 8.773 | | 0.0000 | 0.000 | 59372.2 | 0.994 | BB | 0.033 | 29912.72 | 1.146 |
| 61 | 8.852 | | 0.0000 | 0.000 | 114703.7 | 1.920 | BB | 0.032 | 60018.63 | 2.299 |
| 62 | 8.934 | | 0.0000 | 0.000 | 36265.8 | 0.607 | BV | 0.032 | 18874.73 | 0.723 |
| 63 | 9.004 | | 0.0000 | 0.000 | 302377.2 | 5.062 | VB | 0.040 | 124874.10 | 4.782 |
| 64 | 9.138 | | 0.0000 | 0.000 | 36883.9 | 0.618 | BV | 0.048 | 12807.71 | 0.491 |

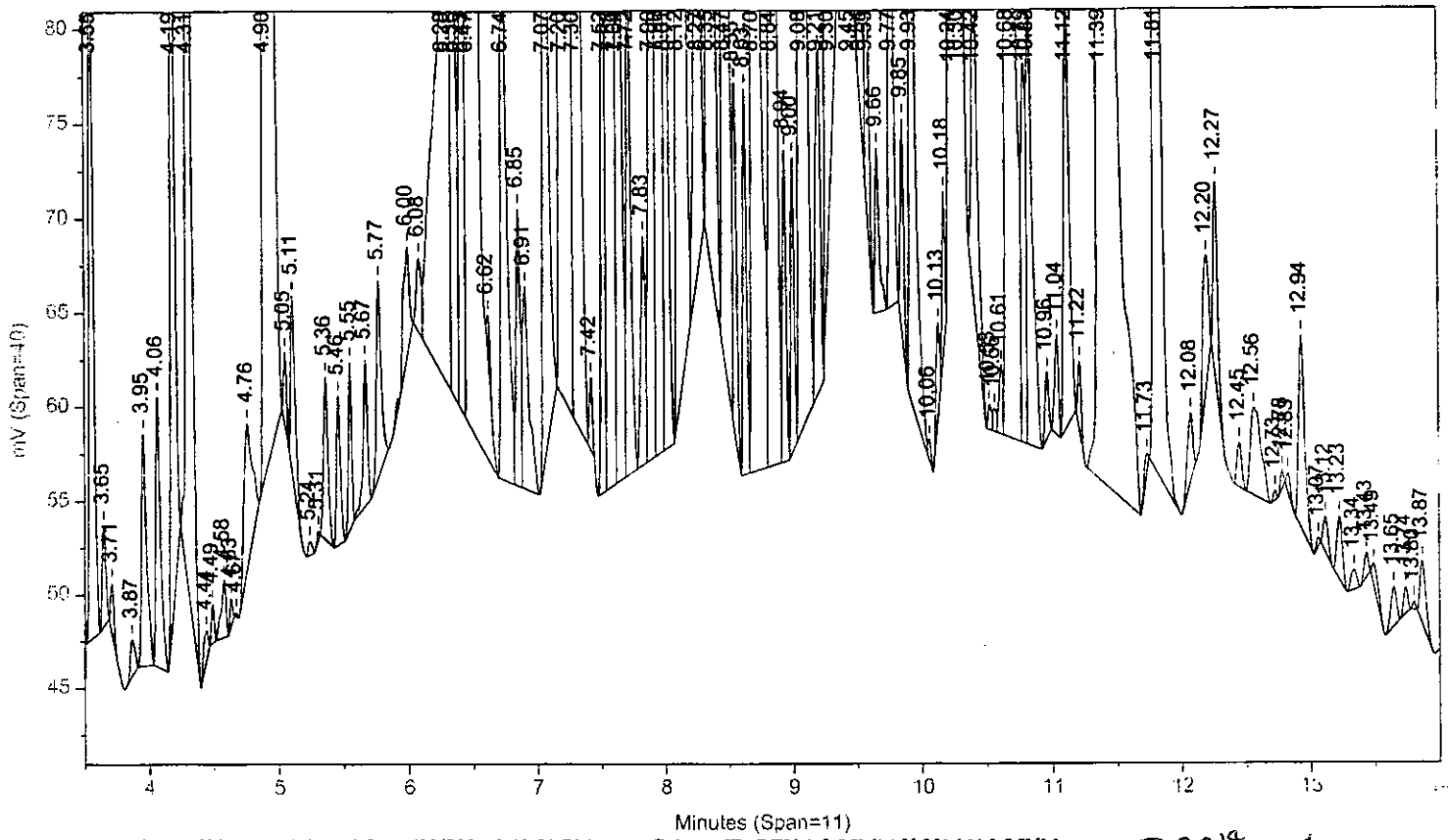
0518

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.253 | | 0.0000 | 0.000 | 158101.0 | 2.647 | VV | 0.041 | 64606.19 | 2.474 |
| 66 | 9.290 | | 0.0000 | 0.000 | 198424.2 | 3.322 | VV | 0.036 | 91353.95 | 3.499 |
| 67 | 9.435 | | 0.0000 | 0.000 | 44142.0 | 0.739 | VV | 0.042 | 17519.78 | 0.671 |
| 68 | 9.512 | o,p-DDT | 605.8227 | 15.348 | 161252.9 | 2.700 | VB | 0.038 | 71295.21 | 2.730 |
| 69 | 9.670 | Kepone | 98.6980 | 2.500 | 3383.6 | 0.057 | BV | 0.033 | 1701.68 | 0.065 |
| 70 | 9.738 | Endosulfan II | 599.9592 | 15.199 | 303445.5 | 5.080 | VB | 0.053 | 95769.45 | 3.668 |
| 71 | 9.849 | | 0.0000 | 0.000 | 18968.3 | 0.318 | BB | 0.032 | 9841.62 | 0.377 |
| 72 | 9.942 | | 0.0000 | 0.000 | 478871.0 | 8.017 | BB | 0.030 | 270230.60 | 10.349 |
| 73 | 9.991 | 4,4'-DDT | 447.9008 | 11.347 | 79257.6 | 1.327 | BB | 0.024 | 54149.22 | 2.074 |
| 74 | 10.102 | | 0.0000 | 0.000 | 5579.0 | 0.093 | BB | 0.025 | 3714.90 | 0.142 |
| 75 | 10.134 | | 0.0000 | 0.000 | 5594.7 | 0.094 | BB | 0.020 | 4682.44 | 0.179 |
| 76 | 10.173 | Endrin aldehyde | 23.2607 | 0.589 | 4838.7 | 0.081 | BB | 0.024 | 3367.19 | 0.129 |
| 77 | 10.252 | | 0.0000 | 0.000 | 202.1 | 0.003 | BB | 0.013 | 266.08 | 0.010 |
| 78 | 10.296 | | 0.0000 | 0.000 | 13827.7 | 0.232 | BB | 0.040 | 5771.50 | 0.221 |
| 79 | 10.466 | | 0.0000 | 0.000 | 208955.9 | 3.498 | BB | 0.039 | 88540.45 | 3.391 |
| 80 | 10.559 | Endo. sulfate | 2.6342 | 0.067 | 446.6 | 0.007 | BB | 0.020 | 372.34 | 0.014 |
| 81 | 10.600 | | 0.0000 | 0.000 | 6446.4 | 0.108 | BB | 0.030 | 3531.73 | 0.135 |
| 82 | 10.670 | | 0.0000 | 0.000 | 43588.4 | 0.730 | BB | 0.036 | 20247.13 | 0.775 |
| 83 | 10.736 | | 0.0000 | 0.000 | 32138.5 | 0.538 | BB | 0.030 | 18122.83 | 0.694 |
| 84 | 10.801 | | 0.0000 | 0.000 | 52140.9 | 0.873 | BB | 0.033 | 26559.62 | 1.017 |
| 85 | 10.924 | | 0.0000 | 0.000 | 1402.8 | 0.023 | BB | 0.024 | 966.16 | 0.037 |
| 86 | 10.967 | | 0.0000 | 0.000 | 12929.9 | 0.216 | BB | 0.034 | 6346.98 | 0.243 |
| 87 | 11.099 | | 0.0000 | 0.000 | 350776.8 | 5.873 | BB | 0.039 | 149665.40 | 5.732 |
| 88 | 11.328 | Endrin ketone | 135.4176 | 3.431 | 81161.8 | 1.359 | BB | 0.061 | 22131.44 | 0.848 |
| 89 | 11.506 | | 0.0000 | 0.000 | 976.1 | 0.016 | BB | 0.024 | 668.34 | 0.026 |
| 90 | 11.567 | | 0.0000 | 0.000 | 6966.3 | 0.117 | BB | 0.041 | 2833.84 | 0.109 |
| 91 | 11.686 | | 0.0000 | 0.000 | 11369.2 | 0.190 | BB | 0.033 | 5679.07 | 0.217 |
| 92 | 11.749 | | 0.0000 | 0.000 | 18306.3 | 0.306 | BB | 0.041 | 7363.00 | 0.282 |
| 93 | 11.939 | | 0.0000 | 0.000 | 931507.2 | 15.595 | BB | 0.040 | 384744.40 | 14.735 |
| 94 | 12.100 | | 0.0000 | 0.000 | 2951.9 | 0.049 | BB | 0.040 | 1227.95 | 0.047 |
| 95 | 12.216 | | 0.0000 | 0.000 | 18421.9 | 0.308 | BB | 0.041 | 7531.21 | 0.288 |
| 96 | 12.324 | | 0.0000 | 0.000 | 9895.8 | 0.166 | BB | 0.046 | 3548.96 | 0.136 |
| 97 | 12.645 | | 0.0000 | 0.000 | 4298.1 | 0.072 | BB | 0.097 | 737.58 | 0.028 |
| 98 | 12.754 | | 0.0000 | 0.000 | 6985.4 | 0.117 | BB | 0.041 | 2829.07 | 0.108 |
| 99 | 12.804 | | 0.0000 | 0.000 | 1371.4 | 0.023 | BB | 0.029 | 792.91 | 0.030 |
| 100 | 13.047 | | 0.0000 | 0.000 | 2502.9 | 0.042 | BB | 0.050 | 841.70 | 0.032 |
| 101 | 13.142 | | 0.0000 | 0.000 | 735.6 | 0.012 | BB | 0.040 | 304.64 | 0.012 |
| 102 | 13.228 | | 0.0000 | 0.000 | 10263.4 | 0.172 | BB | 0.051 | 3379.11 | 0.129 |
| 103 | 13.340 | DCB | 272.3635 | 6.900 | 133910.9 | 2.242 | BB | 0.048 | 46176.26 | 1.768 |
| 104 | 13.603 | | 0.0000 | 0.000 | 657.4 | 0.011 | BB | 0.031 | 355.44 | 0.014 |
| 105 | 13.678 | | 0.0000 | 0.000 | 7847.8 | 0.131 | BB | 0.079 | 1653.88 | 0.063 |
| 106 | 13.877 | | 0.0000 | 0.000 | 3061.5 | 0.051 | BB | 0.059 | 860.67 | 0.033 |

Total Area = 5973065.0, Total Amount = 3947.349, Total Height = 2611082.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.92R

C:\CPWIN\DATA1\1C13088.92R

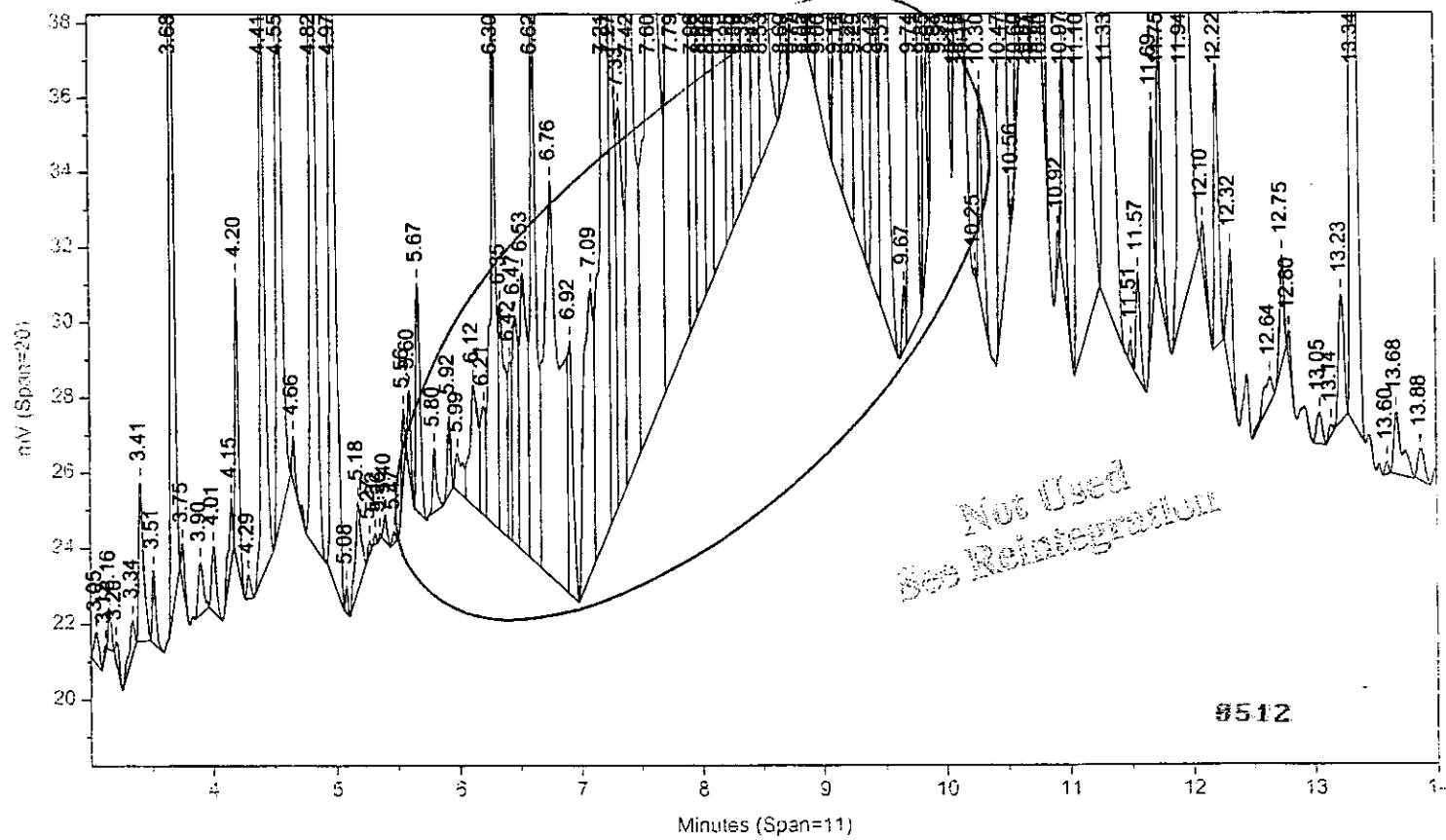



Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:43:31 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

3.31.04

File: C:\CPWIN\DATA1\1C13088B.92R

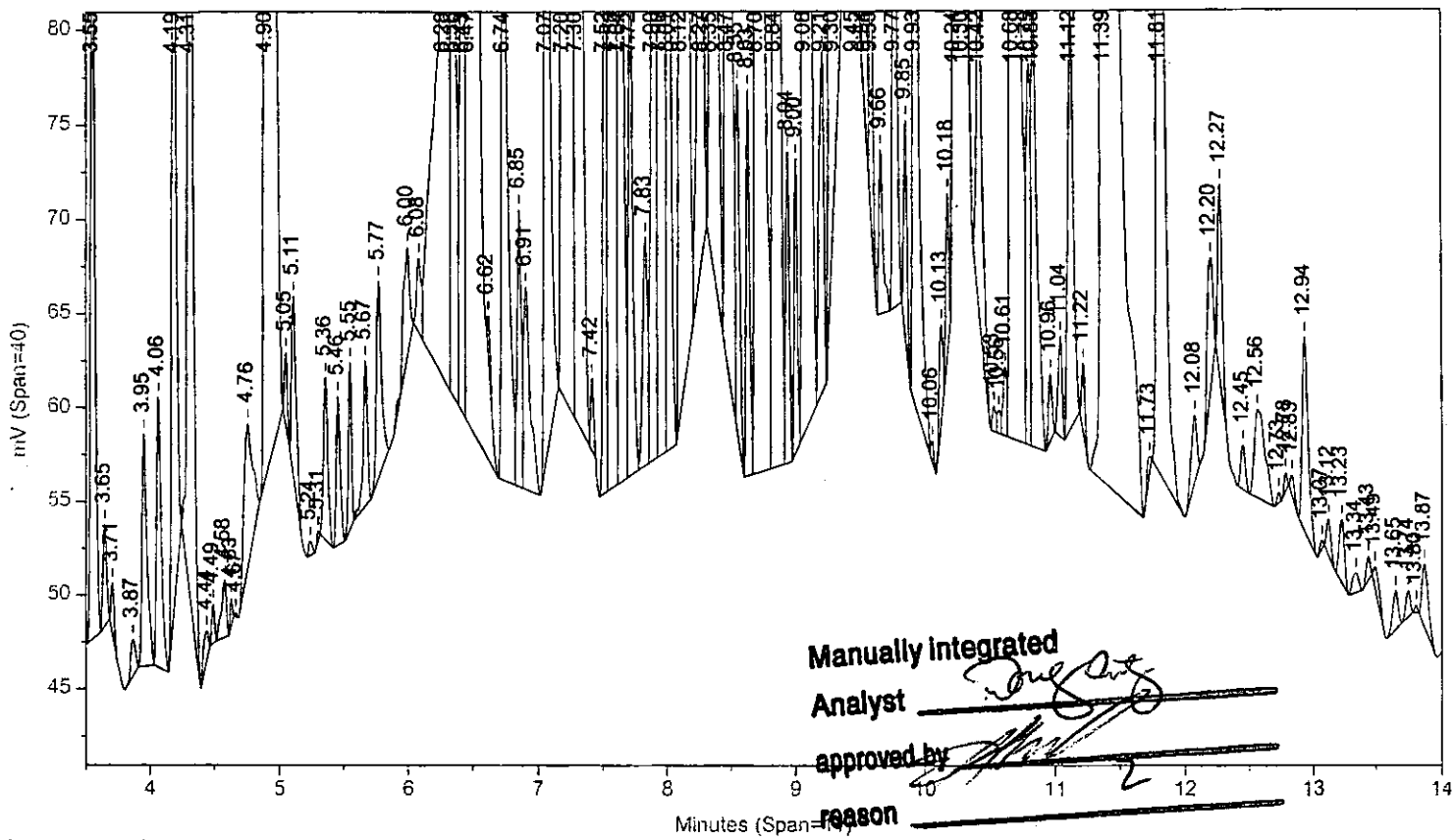
C:\CPWIN\DATA1\1C13088B.92R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:43:31 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.92R

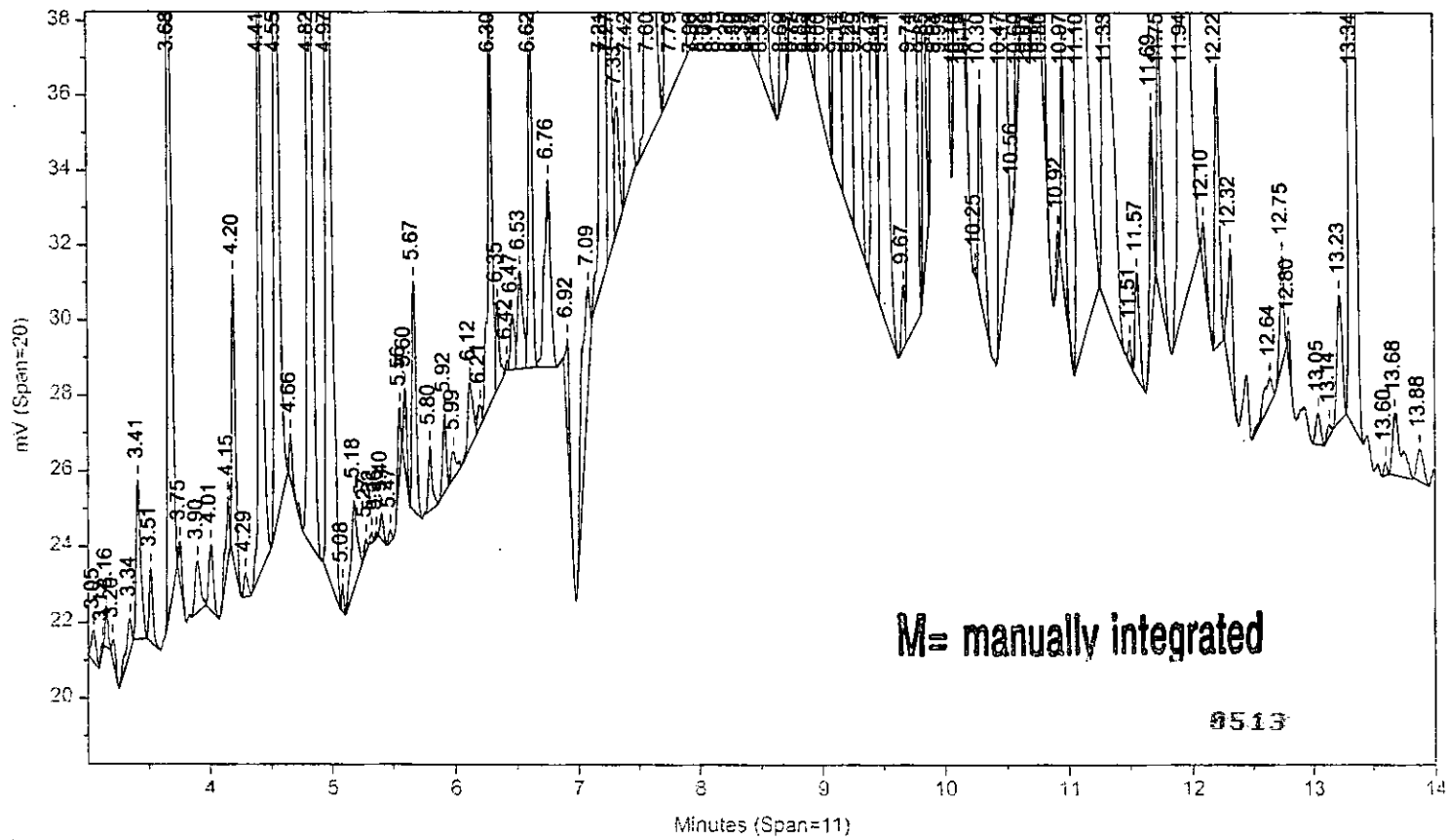
C:\CPWIN\DATA1\1C13088.92R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 5:43:31 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.92R

C:\CPWIN\DATA1\1C13088B.92R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 5:43:31 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

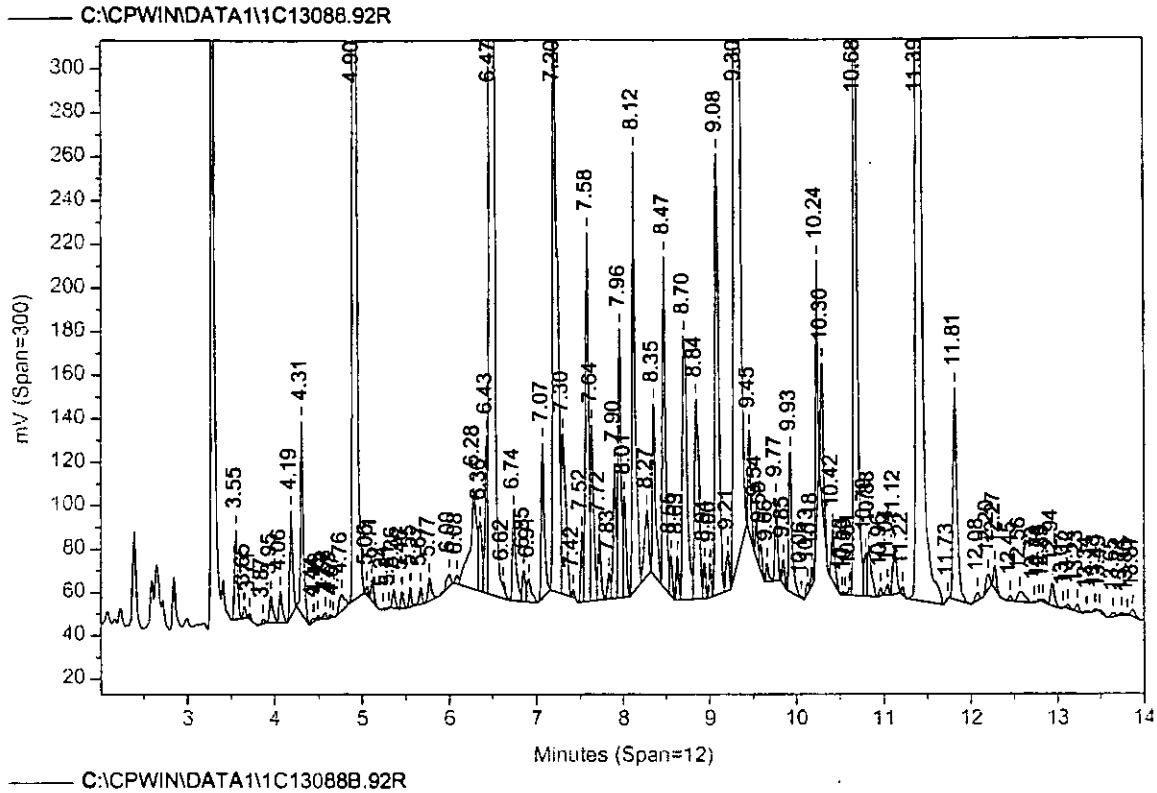
Sample Weight: 30 Dilution Factor: 10
Analyst: 120

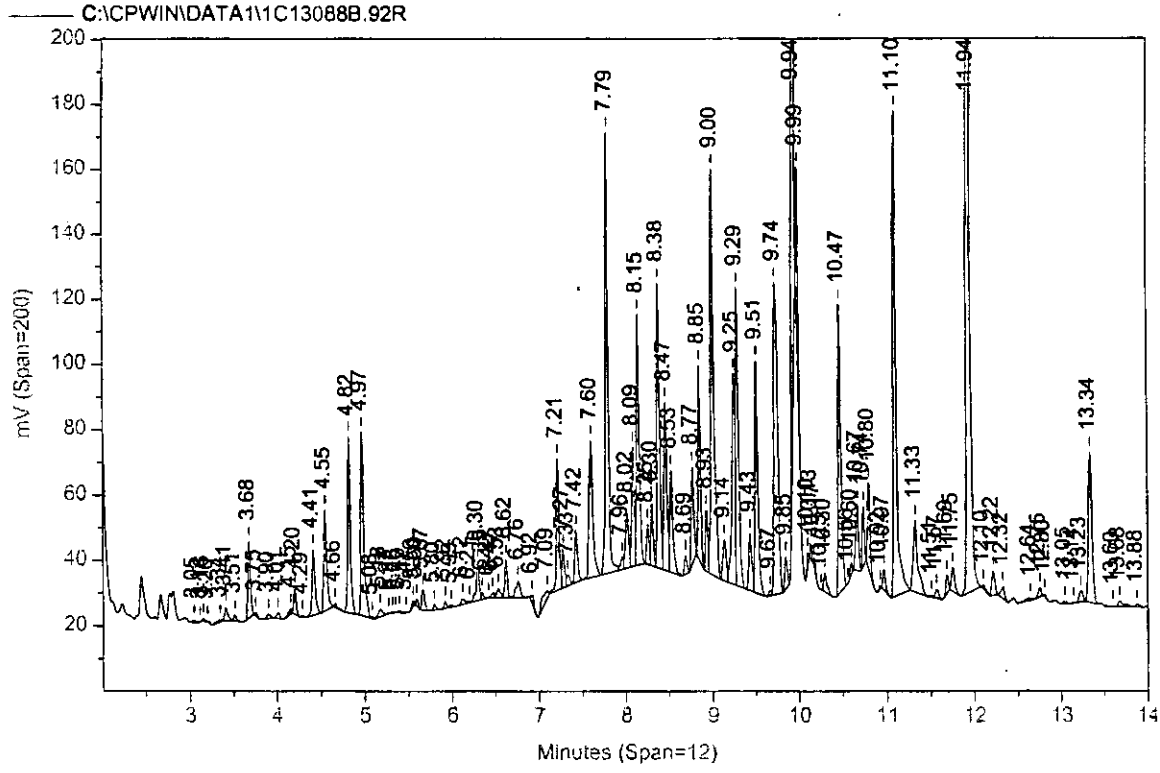
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.308 | 89163 | 7.83047 | TCX | 4.823 | 53826 | 9.17186 | TCX |
| 4.905 | 969579 | 46.44674 | HCB | 5.556 | 1657 | .19903 | HCB |
| 5.11 | 9529 | .68594 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.997 | 5808 | .44026 | delta-BHC | . | 0 | . | delta-BHC |
| 6.282 | 46699 | 3.15034 | Heptachlor | 6.918 | 2715 | .49018 | Heptachlor |
| . | 0 | . | gamma-BHC | 6.297 | 11586 | 2.21134 | gamma-BHC |
| . | 0 | . | beta-BHC | 6.421 | 274 | .07894 | beta-BHC |
| 7.519 | 32554 | 4.24989 | o,p-DDE | 8.384 | 87617 | 23.48877 | o,p-DDE |
| . | 0 | . | Telodrin | 7.601 | 42078 | 7.71028 | Telodrin |
| 7.721 | 30479 | 2.62379 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.899 | 62316 | 5.02623 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.957 | 123680 | 11.71582 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.146 | 76705 | 14.16728 | Hept. epoxide |
| 8.55 | 18569 | 2.41282 | o,p-DDT | 9.512 | 71295 | 20.19409 | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.695 | 5914 | 1.19206 | Endosulfan I |
| 8.704 | 121348 | 13.60498 | Endrin | . | 0 | . | Endrin |
| 9.002 | 15665 | 1.5931 | Endosulfan II | 9.738 | 95769 | 19.99864 | Endosulfan II |
| 9.538 | 18170 | 2.19511 | Endrin aldehyde | 10.173 | 3367 | .77536 | Endrin aldehyde |
| . | 0 | . | Kepone | 9.67 | 1702 | 3.28993 | Kepone |
| . | 0 | . | 4,4'-DDT | 9.991 | 54149 | 14.93003 | 4,4'-DDT |
| 10.129 | 4970 | .56687 | Endo. sulfate | 10.559 | 372 | .08781 | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.328 | 22131 | 4.51392 | Endrin ketone |
| 11.811 | 97251 | 8.51281 | DCB | 13.34 | 46176 | 9.07878 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 9:08:12 AM
File Reported On: 3/31/2004 at 9:08:14 AM

0514

10X REPLOTS


C:\CPWIN\DATA1\1C13088.92R
mV (Span=300)
Minutes (Span=12)


C:\CPWIN\DATA1\1C13088B.92R
mV (Span=200)
Minutes (Span=12)

# Lancaster Laboratories Single Component Data Summary

**Sample Name: 4241652R** ACF 7GP24 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722A
Result file : 1C13088.93R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 83.8% Conc.: 8.063739
%SSR(DCB) : 88.5% Conc.: 8.618499

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.31 | 4.34 | 91819 | 8.063739 |
| HCB | 4.85 | 4.91 | 4.91 | 1727 | 0.082753 |
| alpha-BHC | 5.11 | 5.16 | 5.17 | 979 | 0.070506 |
| delta-BHC | 5.96 | 5.97 | 6.02 | 10051 | 0.761880 |
| Heptachlor | 6.25 | 6.25 | 6.31 | 3892 | 0.262559 |
| Hept. epoxide | 7.51 | 7.52 | 7.57 | 256 | 0.021382 |
| g. Chlordane | 7.68 | 7.73 | 7.74 | 98770 E | 8.502645 |
| a. Chlordane | 7.85 | 7.88 | 7.91 | 581 | 0.046886 |
| 4,4'-DDE | 7.94 | 7.99 | 8.00 | 1595 | 0.151131 |
| Endosulfan I | 8.04 | 8.07 | 8.10 | 1503 | 0.138125 |
| Kepone | 8.73 | 8.78 | 8.79 | 1177 | 1.008585 |
| Endrin aldehyde | 9.52 | 9.55 | 9.58 | 3116 | 0.376409 |
| Methoxychlor | 9.70 | 9.72 | 9.76 | 20404 | 4.043277 |
| Mirex | 9.95 | 9.98 | 10.01 | 2113 | 0.252647 |
| DCB | 11.79 | 11.82 | 11.85 | 98458 | 8.618499 |

## Analysis Report (B)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722B
Result file : 1C13088B.93R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 87% Conc.: 8.367307
%SSR(DCB) : 92.3% Conc.: 8.986468

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.82 | 4.86 | 49105 | 8.367307 |
| HCB | 5.52 | 5.56 | 5.58 | 1394 | 0.167451 |
| o,p-DDE | 8.38 | 8.40 | 8.44 | 2156 | 0.577910 |
| o,p-DDD | 9.06 | 9.11 | 9.12 | 590 | 0.197495 |
| 4,4'-DDD | 9.55 | 9.61 | 9.61 | 1021 | 0.304295 |
| DCB | 13.32 | 13.34 | 13.38 | 45707 | 8.986468 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 8.367307 | | | | 3.70 | |
| HCB | B | 0.167451 | | | | ** 67.70 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Heptachlor epoxide | | | <0.83 | <0.17 | | | |
| o,p-DDE | | | | | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Kepone | | | | | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | 8516 |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 3/30/04 21:13:23

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241652R** ACF 7GP24 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

**Analysis Report (A)**

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722A
Result file : 1C13088.93R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722B
Result file : 1C13088B.93R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |
| DCB | B | 8.986468 | | | | 4.18 | |

Units: ug/kg

Reviewed by: Date: 3.31.04
Verified by: Date: 3/31/04

0517

Difference = High - Low Amount divided by the Average times 100
%Difference > 40
ecovery outside QC Limits
nted on: 3/30/04 21:13:23

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241652R ACF 7GP24 Sample ID: AB **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 18:04:10 |
| **Instrument** | H6722A |
| **Result file** | 1C13088.93R |
| **Calibration file** | 2C13088 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 83.8% | Conc: | 8.063739 |
| %SSR(DCB) | 88.5% | Conc: | 8.618499 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 18:04:10 |
| **Instrument** | H6722B |
| **Result file** | 1C13088B.93R |
| **Calibration file** | 2C13088B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 87.0% | Conc: | 8.367307 |
| %SSR(DCB) | 92.3% | Conc: | 8.986468 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 30 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

0518

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241652R** ACF 7GP24 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722A
Result file : 1C13088.93R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 83.8% Conc.: 8.063739
%SSR(DCB) : 88.5% Conc.: 8.618499

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 137.87 | |
| 5.32 | 5.34 | 5.38 | 97.358986 | 0.236372 | | | 2 |
| 6.24 | 6.25 | 6.30 | 3892.057617 | 14.847861 | | | 5 |
| 6.71 | 6.77 | 6.77 | 693.8255 | 2.180795 | | | 6 |
| Height Summation | | | **4683.242103** | | | | |
| Amount Avg CF: | | | **5.755009** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| E 4.75 | 4.75 | 4.81 | 8886.638672 | 114.816011 | | | 2 |
| Height Summation | | | **8886.638672** | | | | |
| Amount Avg CF: | | | **114.816011** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 136.88 | |
| 5.32 | 5.34 | 5.38 | 97.358986 | 0.547771 | | | 2 |
| 6.24 | 6.25 | 6.30 | 3892.057617 | 33.436706 | | | 5 |
| 6.71 | 6.77 | 6.77 | 693.8255 | 5.081558 | | | 6 |
| Height Summation | | | **4683.242103** | | | | |
| Amount Avg CF: | | | **13.022012** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 138.99 | |
| 5.32 | 5.34 | 5.38 | 97.358986 | 0.27165 | | | 2 |
| 6.24 | 6.25 | 6.30 | 3892.057617 | 17.46848 | | | 5 |
| 6.71 | 6.77 | 6.77 | 693.8255 | 2.462872 | | | 6 |
| Height Summation | | | **4683.242103** | | | | |
| Amount Avg CF: | | | **6.734334** | Linear: | | | |
| **Aroclor-1248** | | | | | 2 | 68.11 | |
| 5.32 | 5.34 | 5.38 | 97.358986 | 0.575442 | | | 1 |
| 6.71 | 6.77 | 6.77 | 693.8255 | 1.644555 | | | 2 |
| Height Summation | | | **791.184486** | | | | |
| Amount Avg CF: | | | **1.109999** | Linear: | | | |
| **Aroclor-1254** | | | | | 3 | 115.45 | |
| 7.22 | 7.24 | 7.28 | 5367.931641 | 15.008768 | | | 1 |
| 7.56 | 7.58 | 7.62 | 285.900452 | 0.494019 | | | 2 |
| 7.93 | 7.99 | 7.99 | 1595.441772 | 4.125391 | | | 3 |
| Height Summation | | | **7249.273865** | | | | |
| Amount Avg CF: | | | **6.542726** | Linear: | | | |
| **Aroclor-1260** | | | | | 2 | 122.76 | |
| 8.33 | 8.34 | 8.39 | 1321.114136 | 2.495613 | | | 1 |
| 10.28 | 10.30 | 10.34 | 20072.40234 | 35.336766 | | | 6 |
| Height Summation | | | **21393.516480** | | | | |
| Amount Avg CF: | | | **18.91619** | Linear: | | | |
| **Chlordane** | | | | | 4 | 179.01 | |
| 6.86 | 6.91 | 6.92 | 2836.321045 | 4.497394 | | | 3 |
| 7.68 | 7.73 | 7.74 | 98770.20312 | 82.478853 | | | 4 |
| 7.85 | 7.88 | 7.91 | 581.295715 | 0.380918 | | | 5 |
| 8.87 | 8.88 | 8.93 | 933.94281 | 2.22528 | | | 6 |
| Height Summation | | | **103121.762695** | | | | |
| Amount Avg CF: | | | **22.395611** | Linear: | | | |
| **Toxaphene** | | | | | 4 | 160.52 | |
| 9.11 | 9.15 | 9.17 | 289.987091 | 1.82679 | | | 2 |
| 9.69 | 9.72 | 9.75 | 20403.84570 | 154.328085 | | | 4 |
| 9.95 | 9.98 | 10.01 | 2113.46875 | 9.180213 | | | 5 |
| 10.41 | 10.45 | 10.47 | 3089.053223 | 16.233003 | | | 6 |
| Height Summation | | | **25896.354767** | | | | |
| Amount Avg CF: | | | **45.392023** | Linear: | | | |

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/30/04 21:13:37

## Analysis Report (B)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13--H6722B
Result file : 1C13088B.93R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 87% Conc.: 8.367307
%SSR(DCB) : 92.3% Conc.: 8.986468

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 53.81 | |
| 5.52 | 5.56 | 5.58 | 1394.272461 | 10.656093 | | | 1 |
| 6.10 | 6.10 | 6.16 | 639.219849 | 3.001095 | | | 2 |
| 6.74 | 6.77 | 6.80 | 3383.414551 | 10.003146 | | | 3 |
| Height Summation | | | **5416.906861** | | | | |
| Amount Avg CF: | | | **7.886778** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 5.52 | 5.56 | 5.58 | 1394.272461 | 7.720705 | | | 3 |
| Height Summation | | | **1394.272461** | | | | |
| Amount Avg CF: | | | **7.720705** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 67.04 | |
| 5.52 | 5.56 | 5.58 | 1394.272461 | 9.878778 | | | 1 |
| 6.10 | 6.10 | 6.16 | 639.219849 | 6.363027 | | | 2 |
| 6.74 | 6.77 | 6.80 | 3383.414551 | 23.001475 | | | 3 |
| Height Summation | | | **5416.906861** | | | | |
| Amount Avg CF: | | | **13.081093** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 53.15 | |
| 5.52 | 5.56 | 5.58 | 1394.272461 | 11.636479 | | | 1 |
| 6.10 | 6.10 | 6.16 | 639.219849 | 3.466604 | | | 2 |
| 6.73 | 6.77 | 6.79 | 3383.414551 | 11.814776 | | | 3 |
| Height Summation | | | **5416.906861** | | | | |
| Amount Avg CF: | | | **8.97262** | Linear: | | | |
| **Aroclor-1248** | | | | | 2 | 1.61 | |
| 7.19 | 7.20 | 7.25 | 1893.237183 | 9.676737 | | | 1 |
| 8.44 | 8.45 | 8.50 | 2183.538818 | 9.458365 | | | 6 |
| Height Summation | | | **4076.776001** | | | | |
| Amount Avg CF: | | | **9.567551** | Linear: | | | |
| **Aroclor-1254** | | | | | 2 | 32.43 | |
| 8.36 | 8.40 | 8.42 | 2155.702393 | 7.736215 | | | 2 |
| 8.83 | 8.86 | 8.89 | 849.601746 | 4.850348 | | | 3 |
| Height Summation | | | **3005.304139** | | | | |
| Amount Avg CF: | | | **6.293282** | Linear: | | | |
| **Chlordane** | | | | | 1 | | |
| + 8.40 | 8.40 | 8.46 | 2155.702393 | 3.444916 | | | 4 |
| 8.40 | 8.45 | 8.46 | 2183.538818 | 3.4894 | | | 4 |
| Height Summation | | | **2183.538818** | | | | |
| Amount Avg CF: | | | **3.4894** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 29.12 | |
| 9.83 | 9.86 | 9.89 | 1306.189453 | 12.480901 | | | 3 |
| 10.86 | 10.90 | 10.92 | 700.389832 | 8.218217 | | | 5 |
| Height Summation | | | **2006.579285** | | | | |
| Amount Avg CF: | | | **10.349559** | Linear: | | | |

0519

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241652R** ACF 7GP24 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01225

## Analysis Report (A)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13–H6722A
Result file : 1C13088.93R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 30, 2004 18:04:10
Instrument : CP13–H6722B
Result file : 1C13088B.93R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 17 | 3.3 | | 31.25 | 4 | 40 | |
| Aroclor-1221 | | | 30 | 10 | E | ** 174.80 | 3 | 5 | |
| Aroclor-1232 | | | 17 | 4.3 | | 0.45 | 4 | 10 | |
| Aroclor-1242 | | | 17 | 4 | | 28.50 | 4 | 30 | |
| Aroclor-1248 | | | 18 | 6 | | ** 158.42 | 4 | 30 | |
| Aroclor-1254 | | | 17 | 3.3 | | 3.89 | 4 | 40 | |
| Aroclor-1260 | | | 17 | 3.3 | | | 4 | 40 | |
| Chlordane | | | 0 | 0 | | ** 146.08 | 2 | 20 | |
| Toxaphene | | | 33 | 11 | | ** 125.73 | 4 | 30 | |

Units: ug/kg

0528

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/30/04 21:13:37

Sample Name: **4241652RACF AB7GP24 T 040890035A 01225**
Acquired from CP13--H6722A via port 3 on 3/30/04 06:18:10pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.93R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.554 | | 0.0000 | 0.000 | 122268.8 | 6.663 | BB | 0.043 | 46852.57 | 8.442 |
| 2 | 3.705 | | 0.0000 | 0.000 | 1056.0 | 0.058 | BB | 0.055 | 317.21 | 0.057 |
| 3 | 3.882 | | 0.0000 | 0.000 | 6979.4 | 0.380 | BB | 0.095 | 1227.55 | 0.221 |
| 4 | 3.983 | | 0.0000 | 0.000 | 16885.6 | 0.920 | BB | 0.081 | 3484.01 | 0.628 |
| 5 | 4.063 | | 0.0000 | 0.000 | 36428.9 | 1.985 | BB | 0.039 | 15513.55 | 2.795 |
| 6 | 4.311 | TCX | 241.9122 | 24.887 | 233904.3 | 12.746 | BB | 0.042 | 91818.63 | 16.544 |
| 7 | 4.477 | | 0.0000 | 0.000 | 3563.4 | 0.194 | BB | 0.139 | 428.05 | 0.077 |
| 8 | 4.633 | | 0.0000 | 0.000 | 3318.7 | 0.181 | BB | 0.029 | 1925.91 | 0.347 |
| 9 | 4.671 | | 0.0000 | 0.000 | 272.0 | 0.015 | BB | 0.018 | 246.79 | 0.044 |
| 10 | 4.755 | | 0.0000 | 0.000 | 22209.2 | 1.210 | BB | 0.042 | 8886.64 | 1.601 |
| 11 | 4.906 | HCB | 2.4826 | 0.255 | 6982.1 | 0.380 | BB | 0.067 | 1727.48 | 0.311 |
| 12 | 5.024 | | 0.0000 | 0.000 | 748.8 | 0.041 | BB | 0.036 | 342.54 | 0.062 |
| 13 | 5.165 | alpha-BHC | 2.1152 | 0.218 | 2726.8 | 0.149 | BB | 0.046 | 979.47 | 0.176 |
| 14 | 5.245 | | 0.0000 | 0.000 | 2227.6 | 0.121 | BB | 0.039 | 949.09 | 0.171 |
| 15 | 5.343 | | 0.0000 | 0.000 | 133.2 | 0.007 | BB | 0.023 | 97.36 | 0.018 |
| 16 | 5.391 | | 0.0000 | 0.000 | 186.0 | 0.010 | BB | 0.022 | 139.98 | 0.025 |
| 17 | 5.470 | | 0.0000 | 0.000 | 1708.4 | 0.093 | BB | 0.104 | 272.62 | 0.049 |
| 18 | 5.638 | | 0.0000 | 0.000 | 2409.5 | 0.131 | BB | 0.051 | 787.82 | 0.142 |
| 19 | 5.697 | | 0.0000 | 0.000 | 72.7 | 0.004 | BB | 0.018 | 66.74 | 0.012 |
| 20 | 5.772 | | 0.0000 | 0.000 | 8554.2 | 0.466 | BB | 0.043 | 3287.16 | 0.592 |
| 21 | 5.967 | delta-BHC | 22.8564 | 2.351 | 23404.6 | 1.275 | BB | 0.039 | 10051.25 | 1.811 |
| 22 | 6.084 | | 0.0000 | 0.000 | 2095.6 | 0.114 | BB | 0.037 | 933.94 | 0.168 |
| 23 | 6.255 | Heptachlor | 7.8768 | 0.810 | 14388.7 | 0.784 | BV | 0.062 | 3892.06 | 0.701 |
| 24 | 6.352 | | 0.0000 | 0.000 | 1015.0 | 0.055 | VV | 0.036 | 464.95 | 0.084 |
| 25 | 6.416 | | 0.0000 | 0.000 | 351.0 | 0.019 | VB | 0.029 | 204.60 | 0.037 |
| 26 | 6.495 | | 0.0000 | 0.000 | 28119.3 | 1.532 | BB | 0.047 | 10002.27 | 1.802 |
| 27 | 6.769 | | 0.0000 | 0.000 | 2488.1 | 0.136 | BV | 0.060 | 693.83 | 0.125 |
| 28 | 6.844 | | 0.0000 | 0.000 | 9801.7 | 0.534 | VV | 0.033 | 4902.99 | 0.883 |
| 29 | 6.914 | | 0.0000 | 0.000 | 7426.2 | 0.405 | VB | 0.044 | 2836.32 | 0.511 |
| 30 | 7.064 | | 0.0000 | 0.000 | 33289.9 | 1.814 | BB | 0.053 | 10470.25 | 1.887 |
| 31 | 7.242 | | 0.0000 | 0.000 | 23060.6 | 1.257 | BV | 0.072 | 5367.93 | 0.967 |
| 32 | 7.416 | | 0.0000 | 0.000 | 1028.9 | 0.056 | VB | 0.039 | 440.31 | 0.079 |
| 33 | 7.524 | Hept. epoxide | 0.6415 | 0.066 | 765.6 | 0.042 | BB | 0.050 | 256.01 | 0.046 |
| 34 | 7.585 | | 0.0000 | 0.000 | 514.5 | 0.028 | BB | 0.030 | 285.90 | 0.052 |
| 35 | 7.659 | | 0.0000 | 0.000 | 5728.3 | 0.312 | BV | 0.034 | 2781.95 | 0.501 |
| 36 | 7.727 | g. Chlordane | 255.0793 | 26.242 | 201249.9 | 10.967 | VV | 0.034 | 98770.20 | 17.797 |
| 37 | 7.879 | a. Chlordane | 1.4066 | 0.145 | 2000.4 | 0.109 | VB | 0.057 | 581.30 | 0.105 |
| 38 | 7.986 | 4,4'-DDE | 4.5339 | 0.466 | 4165.8 | 0.227 | BB | 0.044 | 1595.44 | 0.287 |
| 39 | 8.074 | Endosulfan I | 4.1437 | 0.426 | 3521.9 | 0.192 | BB | 0.039 | 1503.09 | 0.271 |
| 40 | 8.272 | | 0.0000 | 0.000 | 17548.2 | 0.956 | BB | 0.100 | 2931.64 | 0.528 |
| 41 | 8.344 | | 0.0000 | 0.000 | 7755.5 | 0.423 | BB | 0.098 | 1321.11 | 0.238 |
| 42 | 8.622 | | 0.0000 | 0.000 | 1186.6 | 0.065 | BV | 0.025 | 794.26 | 0.143 |
| 43 | 8.651 | | 0.0000 | 0.000 | 1622.6 | 0.088 | VB | 0.025 | 1075.38 | 0.194 |
| 44 | 8.777 | Kepone | 30.2576 | 3.113 | 7235.8 | 0.394 | BV | 0.102 | 1177.22 | 0.212 |
| 45 | 8.882 | | 0.0000 | 0.000 | 2218.2 | 0.121 | VV | 0.040 | 933.94 | 0.168 |
| 46 | 8.970 | | 0.0000 | 0.000 | 16347.3 | 0.891 | VV | 0.102 | 2679.45 | 0.483 |
| 47 | 9.149 | | 0.0000 | 0.000 | 382.6 | 0.021 | VB | 0.022 | 289.99 | 0.052 |
| 48 | 9.318 | | 0.0000 | 0.000 | 16294.6 | 0.888 | BB | 0.046 | 5855.22 | 1.055 |
| 49 | 9.426 | | 0.0000 | 0.000 | 9649.4 | 0.526 | BB | 0.054 | 2958.41 | 0.533 |
| 50 | 9.550 | Endrin aldehyde | 11.2923 | 1.162 | 11195.3 | 0.610 | BV | 0.060 | 3115.74 | 0.561 |
| 51 | 9.716 | Methoxychlor | 121.2983 | 12.479 | 137474.6 | 7.492 | VB | 0.112 | 20403.85 | 3.676 |
| 52 | 9.982 | Mirex | 7.5794 | 0.780 | 11354.8 | 0.619 | BV | 0.090 | 2113.47 | 0.381 |
| 53 | 10.030 | | 0.0000 | 0.000 | 4148.2 | 0.226 | VV | 0.039 | 1784.47 | 0.322 |
| 54 | 10.147 | | 0.0000 | 0.000 | 29384.7 | 1.601 | VB | 0.130 | 3779.61 | 0.681 |
| 55 | 10.300 | | 0.0000 | 0.000 | 68559.2 | 3.736 | BV | 0.057 | 20072.40 | 3.617 |
| 56 | 10.452 | | 0.0000 | 0.000 | 15273.6 | 0.832 | VV | 0.082 | 3089.05 | 0.557 |
| 57 | 10.685 | | 0.0000 | 0.000 | 10697.1 | 0.583 | VV | 0.078 | 2292.36 | 0.413 |
| 58 | 10.858 | | 0.0000 | 0.000 | 16531.4 | 0.901 | VB | 0.050 | 5523.73 | 0.995 |
| 59 | 11.016 | | 0.0000 | 0.000 | 5683.5 | 0.310 | BB | 0.076 | 1247.12 | 0.225 |
| 60 | 11.155 | | 0.0000 | 0.000 | 29770.6 | 1.622 | BB | 0.082 | 6018.45 | 1.084 |
| 61 | 11.308 | | 0.0000 | 0.000 | 5225.6 | 0.285 | BB | 0.060 | 1444.78 | 0.260 |
| 62 | 11.529 | | 0.0000 | 0.000 | 124565.8 | 6.788 | BB | 0.160 | 12989.80 | 2.341 |
| 63 | 11.817 | DCB | 258.5550 | 26.599 | 324604.8 | 17.689 | BB | 0.055 | 98458.38 | 17.741 |
| 64 | 12.067 | | 0.0000 | 0.000 | 11523.8 | 0.628 | BB | 0.112 | 1707.68 | 0.308 |

9521

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 12.286 | | 0.0000 | 0.000 | 1169.2 | 0.064 | BB | 0.073 | 267.70 | 0.048 |
| 66 | 12.570 | | 0.0000 | 0.000 | 10907.6 | 0.594 | BB | 0.087 | 2095.55 | 0.378 |
| 67 | 12.709 | | 0.0000 | 0.000 | 7153.1 | 0.390 | BB | 0.130 | 913.70 | 0.165 |
| 68 | 12.953 | | 0.0000 | 0.000 | 10917.3 | 0.595 | BB | 0.086 | 2117.94 | 0.382 |
| 69 | 13.117 | | 0.0000 | 0.000 | 23121.7 | 1.260 | BB | 0.101 | 3804.14 | 0.685 |
| 70 | 13.348 | | 0.0000 | 0.000 | 47617.2 | 2.595 | BB | 0.154 | 5149.17 | 0.928 |
| 71 | 13.725 | | 0.0000 | 0.000 | 10888.6 | 0.593 | BB | 0.152 | 1191.00 | 0.215 |

Total Area = 1835060.0, Total Amount = 972.031, Total Height = 554982.5, Sample Units = PPB

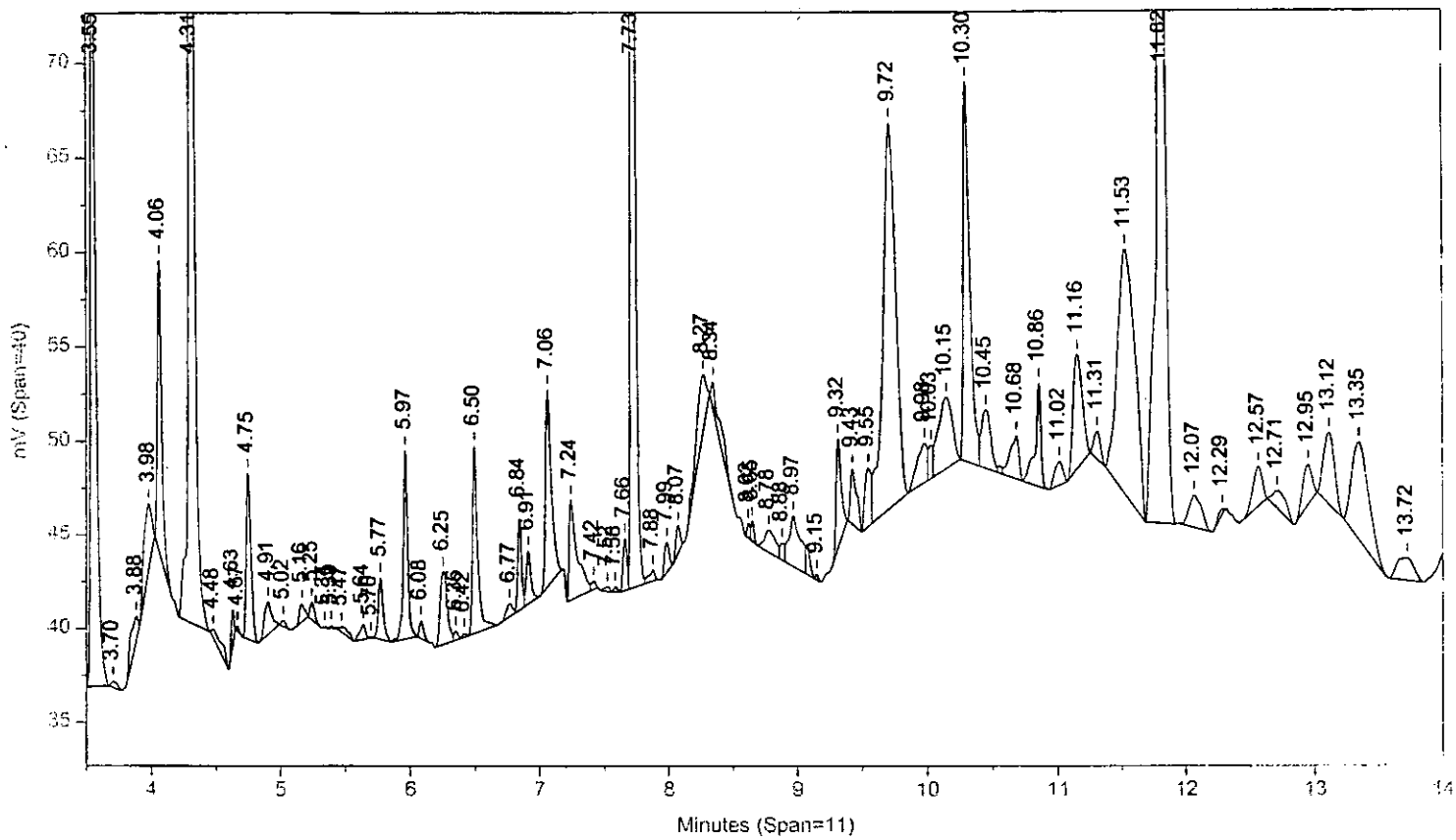
Sample Name: **4241652RACF AB7GP24 T 040890035A 01225**
Acquired from CP13--H6722B via port 4 on 3/30/04 06:18:10pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.93R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.046 | | 0.0000 | 0.000 | 1090.4 | 0.121 | BB | 0.042 | 428.26 | 0.159 |
| 2 | 3.223 | | 0.0000 | 0.000 | 705.2 | 0.078 | BB | 0.030 | 392.20 | 0.146 |
| 3 | 3.281 | | 0.0000 | 0.000 | 611.0 | 0.068 | BB | 0.038 | 269.19 | 0.100 |
| 4 | 3.409 | | 0.0000 | 0.000 | 7327.9 | 0.813 | BB | 0.078 | 1575.81 | 0.585 |
| 5 | 3.677 | | 0.0000 | 0.000 | 67605.0 | 7.498 | BB | 0.042 | 27039.34 | 10.041 |
| 6 | 3.920 | | 0.0000 | 0.000 | 1113.7 | 0.124 | BB | 0.035 | 536.22 | 0.199 |
| 7 | 4.024 | | 0.0000 | 0.000 | 15728.0 | 1.744 | BB | 0.122 | 2154.39 | 0.800 |
| 8 | 4.199 | | 0.0000 | 0.000 | 20505.1 | 2.274 | BB | 0.037 | 9282.58 | 3.447 |
| 9 | 4.662 | | 0.0000 | 0.000 | 1304.6 | 0.145 | BB | 0.037 | 580.21 | 0.215 |
| 10 | 4.733 | | 0.0000 | 0.000 | 277.1 | 0.031 | BB | 0.025 | 185.43 | 0.069 |
| 11 | 4.823 | TCX | 251.0192 | 44.983 | 102449.7 | 11.363 | BB | 0.035 | 49104.69 | 18.235 |
| 12 | 5.004 | | 0.0000 | 0.000 | 10755.2 | 1.193 | BB | 0.071 | 2515.82 | 0.934 |
| 13 | 5.180 | | 0.0000 | 0.000 | 1813.9 | 0.201 | BB | 0.054 | 555.66 | 0.206 |
| 14 | 5.403 | | 0.0000 | 0.000 | 2195.0 | 0.243 | BB | 0.041 | 885.12 | 0.329 |
| 15 | 5.557 | HCB | 5.0235 | 0.900 | 4909.7 | 0.545 | BV | 0.059 | 1394.27 | 0.518 |
| 16 | 6.101 | | 0.0000 | 0.000 | 6886.2 | 0.764 | VV | 0.180 | 639.22 | 0.237 |
| 17 | 6.254 | | 0.0000 | 0.000 | 7035.6 | 0.780 | VV | 0.164 | 714.66 | 0.265 |
| 18 | 6.466 | | 0.0000 | 0.000 | 15861.6 | 1.759 | VV | 0.081 | 3276.53 | 1.217 |
| 19 | 6.770 | | 0.0000 | 0.000 | 24245.1 | 2.689 | VV | 0.119 | 3383.41 | 1.256 |
| 20 | 7.019 | | 0.0000 | 0.000 | 15932.3 | 1.767 | VV | 0.104 | 2553.83 | 0.948 |
| 21 | 7.196 | | 0.0000 | 0.000 | 11510.2 | 1.277 | VV | 0.101 | 1893.24 | 0.703 |
| 22 | 7.318 | | 0.0000 | 0.000 | 12448.5 | 1.381 | VV | 0.057 | 3623.64 | 1.346 |
| 23 | 7.428 | | 0.0000 | 0.000 | 18214.3 | 2.020 | VV | 0.059 | 5177.66 | 1.923 |
| 24 | 7.533 | | 0.0000 | 0.000 | 19039.5 | 2.112 | VV | 0.065 | 4888.20 | 1.815 |
| 25 | 7.671 | | 0.0000 | 0.000 | 6569.1 | 0.729 | VB | 0.050 | 2177.75 | 0.809 |
| 26 | 7.907 | | 0.0000 | 0.000 | 13450.1 | 1.492 | BV | 0.179 | 1254.35 | 0.466 |
| 27 | 7.953 | | 0.0000 | 0.000 | 4720.5 | 0.524 | VV | 0.055 | 1431.59 | 0.532 |
| 28 | 8.025 | | 0.0000 | 0.000 | 93782.9 | 10.402 | VV | 0.039 | 39767.01 | 14.767 |
| 29 | 8.309 | | 0.0000 | 0.000 | 6773.5 | 0.751 | VV | 0.073 | 1554.64 | 0.577 |
| 30 | 8.402 | o,p-DDE | 17.3373 | 3.107 | 5355.5 | 0.594 | VV | 0.041 | 2155.70 | 0.801 |
| 31 | 8.449 | | 0.0000 | 0.000 | 25840.8 | 2.866 | VV | 0.197 | 2183.54 | 0.811 |
| 32 | 8.863 | | 0.0000 | 0.000 | 4638.5 | 0.514 | VB | 0.091 | 849.60 | 0.315 |
| 33 | 9.110 | o,p-DDD | 5.9249 | 1.062 | 2728.3 | 0.303 | BV | 0.077 | 589.71 | 0.219 |
| 34 | 9.169 | | 0.0000 | 0.000 | 2808.0 | 0.311 | VB | 0.045 | 1048.55 | 0.389 |
| 35 | 9.607 | 4,4'-DDD | 9.1288 | 1.636 | 7243.4 | 0.803 | BB | 0.118 | 1020.67 | 0.379 |
| 36 | 9.857 | | 0.0000 | 0.000 | 5191.3 | 0.576 | BB | 0.066 | 1306.19 | 0.485 |
| 37 | 9.949 | | 0.0000 | 0.000 | 2187.4 | 0.243 | BB | 0.037 | 976.27 | 0.363 |
| 38 | 10.148 | | 0.0000 | 0.000 | 4735.7 | 0.525 | BB | 0.052 | 1508.18 | 0.560 |
| 39 | 10.246 | | 0.0000 | 0.000 | 1967.4 | 0.218 | BB | 0.054 | 611.03 | 0.227 |
| 40 | 10.435 | | 0.0000 | 0.000 | 3402.2 | 0.377 | BB | 0.070 | 808.97 | 0.300 |
| 41 | 10.600 | | 0.0000 | 0.000 | 1160.6 | 0.129 | BB | 0.097 | 199.17 | 0.074 |
| 42 | 10.682 | | 0.0000 | 0.000 | 1048.2 | 0.116 | BB | 0.053 | 328.46 | 0.122 |
| 43 | 10.744 | | 0.0000 | 0.000 | 25483.0 | 2.826 | BB | 0.045 | 9420.60 | 3.498 |
| 44 | 10.896 | | 0.0000 | 0.000 | 3051.7 | 0.338 | BB | 0.073 | 700.39 | 0.260 |
| 45 | 11.190 | | 0.0000 | 0.000 | 67145.5 | 7.447 | BB | 0.084 | 13386.93 | 4.971 |
| 46 | 11.380 | | 0.0000 | 0.000 | 10444.6 | 1.158 | BB | 0.091 | 1913.30 | 0.711 |
| 47 | 11.760 | | 0.0000 | 0.000 | 26085.6 | 2.893 | BB | 0.108 | 4038.63 | 1.500 |
| 48 | 12.292 | | 0.0000 | 0.000 | 20542.8 | 2.279 | BB | 0.108 | 3177.29 | 1.180 |
| 49 | 12.636 | | 0.0000 | 0.000 | 26355.9 | 2.923 | BB | 0.125 | 3501.70 | 1.300 |
| 50 | 12.908 | | 0.0000 | 0.000 | 11422.2 | 1.267 | BB | 0.081 | 2337.00 | 0.868 |
| 51 | 13.239 | | 0.0000 | 0.000 | 2345.7 | 0.260 | BB | 0.064 | 609.60 | 0.226 |
| 52 | 13.343 | DCB | 269.5941 | 48.312 | 133510.8 | 14.808 | BB | 0.049 | 45706.74 | 16.973 |
| 53 | 13.676 | | 0.0000 | 0.000 | 2487.0 | 0.276 | BB | 0.093 | 444.60 | 0.165 |
| 54 | 13.889 | | 0.0000 | 0.000 | 9548.4 | 1.059 | BB | 0.129 | 1229.71 | 0.457 |

Total Area = 901591.4, Total Amount = 558.028, Total Height = 269287.4, Sample Units = PPB

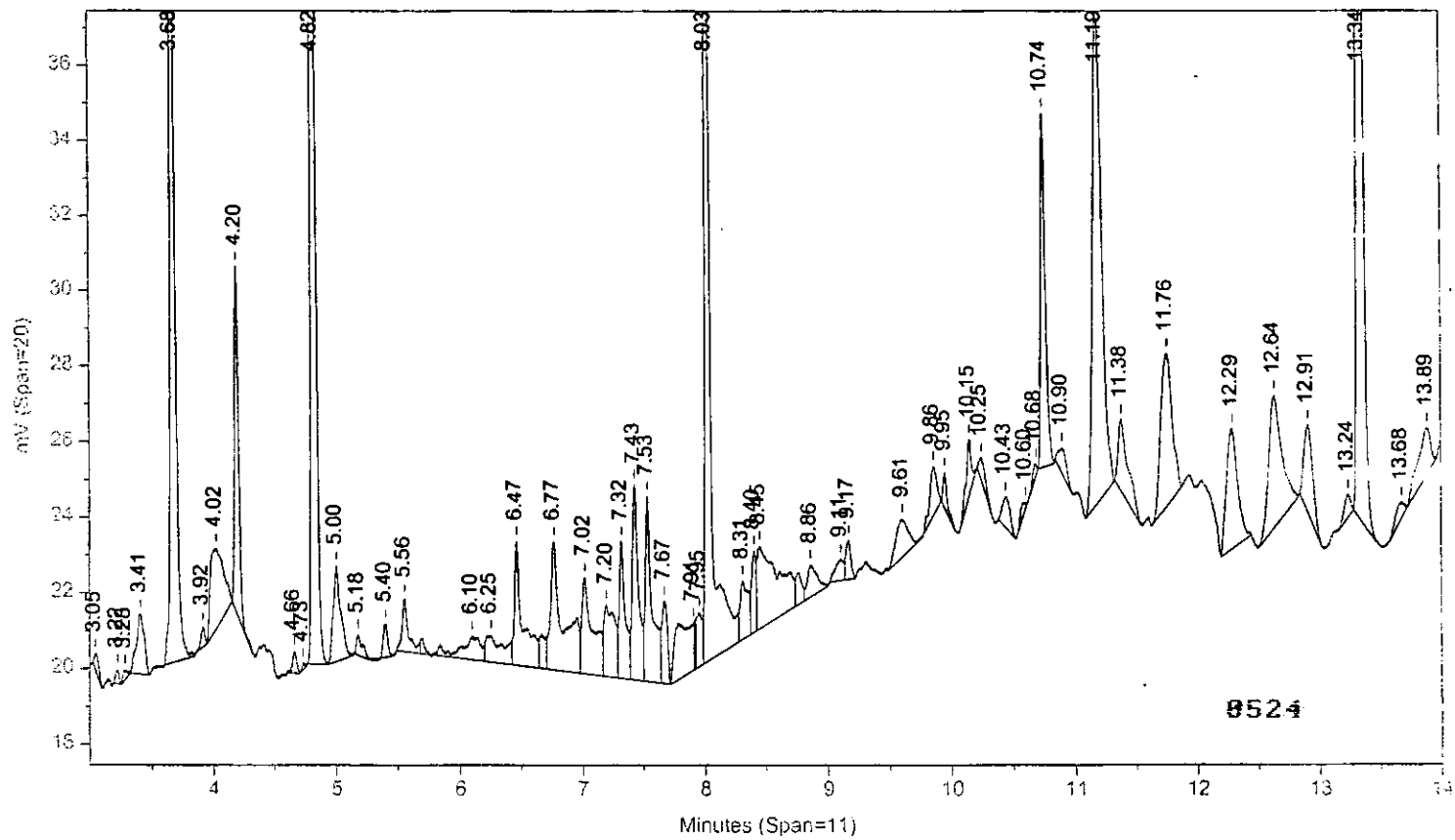
9523

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.93R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 6:04:10 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.93R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 6:04:10 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: IN

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

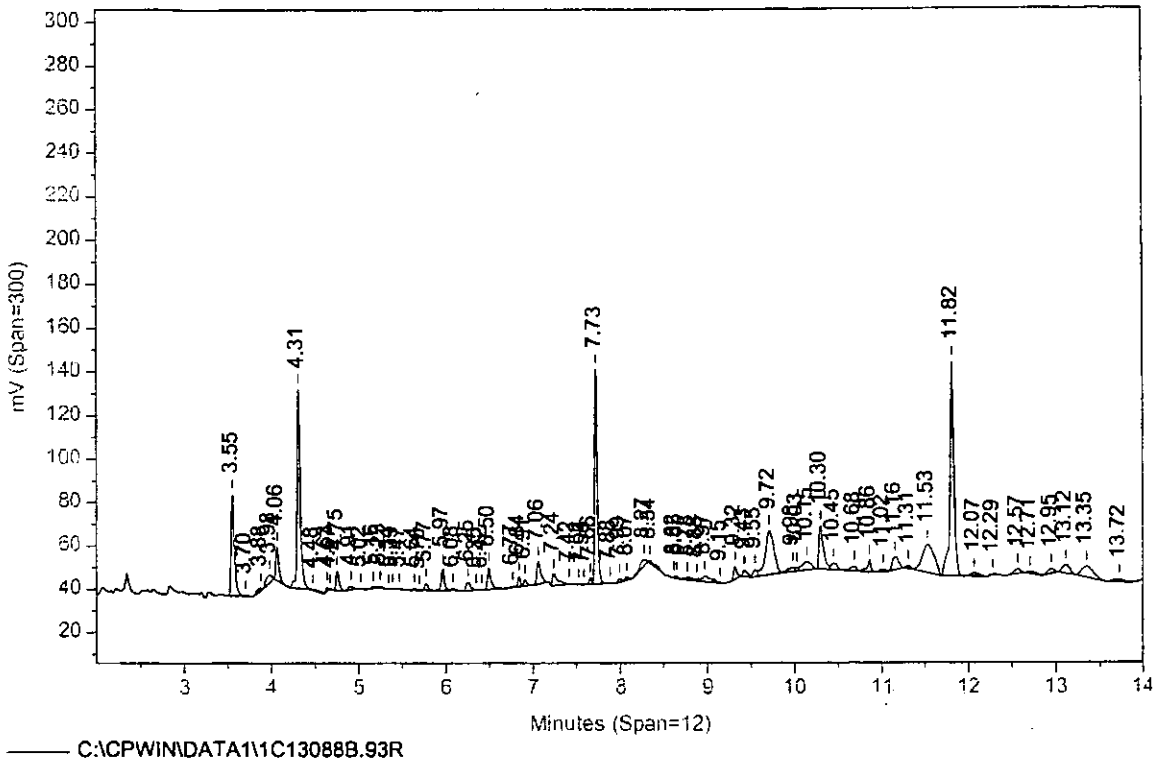
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.311 | 91819 | 8.06374 | TCX | 4.823 | 49105 | 8.36731 | TCX |
| 4.906 | 1727 | .08275 | HCB | 5.557 | 1394 | .16745 | HCB |
| 5.165 | 979 | .07051 | alpha-BHC | . | 0 | . | alpha-BHC |
| 5.967 | 10051 | .76188 | delta-BHC | . | 0 | . | delta-BHC |
| 6.255 | 3892 | .26256 | Heptachlor | . | 0 | . | Heptachlor |
| 7.524 | 256 | .02138 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.727 | 98770 | 8.50264 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.879 | 581 | .04689 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.986 | 1595 | .15113 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.074 | 1503 | .13812 | Endosulfan I | . | 0 | . | Endosulfan I |
| . | 0 | . | o,p-DDE | 8.402 | 2156 | .57791 | o,p-DDE |
| 8.777 | 1177 | 1.00859 | Kepone | . | 0 | . | Kepone |
| . | 0 | . | o,p-DDD | 9.11 | 590 | .1975 | o,p-DDD |
| 9.55 | 3116 | .37641 | Endrin aldehyde | . | 0 | . | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.607 | 1021 | .30429 | 4,4'-DDD |
| 9.716 | 20404 | 4.04328 | Methoxychlor | . | 0 | . | Methoxychlor |
| 9.982 | 2113 | .25265 | Mirex | . | 0 | . | Mirex |
| 11.817 | 98458 | 8.6185 | DCB | 13.343 | 45707 | 8.98647 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.93A
Area File: C:\CPWIN\DATA1\1C13088B.93A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:18:02 PM
File Reported On: 3/30/2004 at 8:18:11 PM

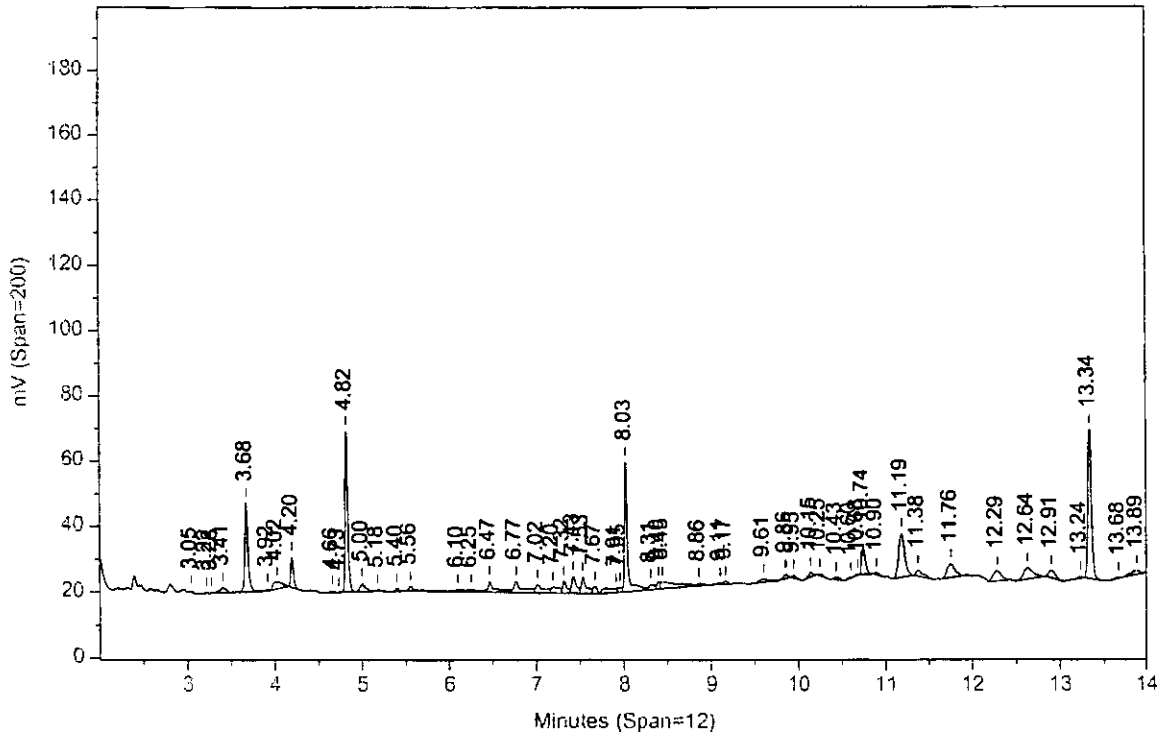
10X REPLOTS

9525

C:\CPWIN\DATA1\1C13088.93R




C:\CPWIN\DATA1\1C13088B.93R



# Standards Data

6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 1C13088

GC Column (1) : RTX-CLP ID: 0.32 (mm) Update File:

Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 | 4.29 | 4.35 |
| Hcb | 4.89 | 4.89 | 4.89 | 4.89 | 4.89 | 4.89 | 4.86 | 4.92 |
| alpha-BHC | 5.15 | 5.15 | 5.15 | 5.15 | 5.15 | 5.15 | 5.12 | 5.18 |
| gamma-BHC (Lindane) | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| beta-BHC | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.71 | 5.77 |
| delta-BHC | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 5.97 | 6.03 |
| Heptachlor | 6.29 | 6.29 | 6.29 | 6.29 | 6.29 | 6.29 | 6.26 | 6.32 |
| Aldrin | 6.72 | 6.72 | 6.72 | 6.72 | 6.72 | 6.72 | 6.69 | 6.75 |
| Telodrin | 7.01 | 7.01 | 7.01 | 7.01 | 7.01 | 7.01 | 6.98 | 7.04 |
| o,p-DDE | 7.52 | 7.52 | 7.52 | 7.52 | 7.52 | 7.52 | 7.49 | 7.55 |
| Heptachlor epoxide | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.55 | 7.52 | 7.58 |
| gamma-Chlordane | 7.72 | 7.72 | 7.72 | 7.72 | 7.72 | 7.72 | 7.69 | 7.75 |
| alpha-Chlordane | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.89 | 7.86 | 7.92 |
| 4,4'-DDE | 7.98 | 7.98 | 7.98 | 7.98 | 7.98 | 7.98 | 7.95 | 8.01 |
| Endosulfan I | 8.09 | 8.09 | 8.09 | 8.09 | 8.09 | 8.09 | 8.06 | 8.12 |
| o,p-DDD | 8.21 | 8.21 | 8.21 | 8.21 | 8.21 | 8.21 | 8.18 | 8.24 |
| Dieldrin | 8.40 | 8.40 | 8.40 | 8.40 | 8.40 | 8.40 | 8.37 | 8.43 |
| o,p-DDT | 8.55 | 8.55 | 8.55 | 8.55 | 8.55 | 8.55 | 8.52 | 8.58 |
| Endrin | 8.72 | 8.71 | 8.71 | 8.71 | 8.71 | 8.71 | 8.68 | 8.74 |
| 4,4'-DDD | 8.77 | 8.77 | 8.77 | 8.77 | 8.77 | 8.77 | 8.74 | 8.80 |
| Kepone | 8.77 | 8.77 | 8.77 | 8.77 | 8.77 | 8.77 | 8.74 | 8.80 |
| Endosulfan II | 9.02 | 9.02 | 9.02 | 9.01 | 9.01 | 9.02 | 8.99 | 9.05 |
| 4,4'-DDT | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 | 9.13 | 9.10 | 9.16 |
| Endrin aldehyde | 9.56 | 9.56 | 9.56 | 9.56 | 9.56 | 9.56 | 9.53 | 9.59 |
| Methoxychlor | 9.75 | 9.74 | 9.74 | 9.74 | 9.74 | 9.74 | 9.71 | 9.77 |
| Mirex | 10.00 | 10.00 | 10.00 | 10.00 | 9.99 | 10.00 | 9.97 | 10.03 |
| Endosulfan sulfate | 10.13 | 10.13 | 10.13 | 10.12 | 10.12 | 10.13 | 10.10 | 10.16 |
| Endrin ketone | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.47 | 10.53 |
| Decachlorobiphenyl | 11.84 | 11.84 | 11.84 | 11.83 | 11.83 | 11.84 | 11.81 | 11.87 |

8528

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13088

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Update File: 1C13088.73R

Date(s) Analyzed: 3/30/04  3/30/04

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | | | 4.31 | | | 4.31 | 4.28 | 4.34 |
| Hcb | | | 4.35 | | | 4.89 | 4.86 | 4.92 |
| alpha-BHC | | | 5.14 | | | 5.14 | 5.11 | 5.17 |
| gamma-BHC (Lindane) | | | 5.60 | | | 5.60 | 5.57 | 5.63 |
| beta-BHC | | | 5.73 | | | 5.73 | 5.70 | 5.76 |
| delta-BHC | | | 5.99 | | | 5.99 | 5.96 | 6.02 |
| Heptachlor | | | 6.28 | | | 6.28 | 6.25 | 6.31 |
| Aldrin | | | 6.71 | | | 6.71 | 6.68 | 6.74 |
| Telodrin | | | 7.01 | | | 7.01 | 6.98 | 7.04 |
| o,p-DDE | | | 7.51 | | | 7.51 | 7.48 | 7.54 |
| Heptachlor epoxide | | | 7.54 | | | 7.54 | 7.51 | 7.57 |
| gamma-Chlordane | | | 7.71 | | | 7.71 | 7.68 | 7.74 |
| alpha-Chlordane | | | 7.88 | | | 7.88 | 7.85 | 7.91 |
| 4,4'-DDE | | | 7.97 | | | 7.97 | 7.94 | 8.00 |
| Endosulfan I | | | 8.07 | | | 8.07 | 8.04 | 8.10 |
| o,p-DDD | | | 8.20 | | | 8.20 | 8.17 | 8.23 |
| Dieldrin | | | 8.39 | | | 8.39 | 8.36 | 8.42 |
| o,p-DDT | | | 8.54 | | | 8.54 | 8.51 | 8.57 |
| Endrin | | | 8.70 | | | 8.70 | 8.67 | 8.73 |
| 4,4'-DDD | | | 8.76 | | | 8.76 | 8.73 | 8.79 |
| Kepone | | | 8.76 | | | 8.76 | 8.73 | 8.79 |
| Endosulfan II | | | 9.00 | | | 9.00 | 8.97 | 9.03 |
| 4,4'-DDT | | | 9.12 | | | 9.12 | 9.09 | 9.15 |
| Endrin aldehyde | | | 9.55 | | | 9.55 | 9.52 | 9.58 |
| Methoxychlor | | | 9.73 | | | 9.73 | 9.70 | 9.76 |
| Mirex | | | 9.96 | | | 9.99 | 9.96 | 10.02 |
| Endosulfan sulfate | | | 10.11 | | | 10.11 | 10.08 | 10.14 |
| Endrin ketone | | | 10.49 | | | 10.49 | 10.46 | 10.52 |
| Decachlorobiphenyl | | | 11.82 | | | 11.82 | 11.79 | 11.85 |

4/1/04

9529



FORM VI-1

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 1C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Update File:

Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 | 4.84 | 4.81 | 4.87 |
| Hcb | 5.56 | 5.56 | 5.56 | 5.56 | 5.56 | 5.56 | 5.53 | 5.59 |
| alpha-BHC | 5.77 | 5.77 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| gamma-BHC (Lindane) | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 | 6.30 | 6.27 | 6.33 |
| beta-BHC | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 | 6.39 | 6.45 |
| delta-BHC | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.85 | 6.82 | 6.88 |
| Heptachlor | 6.94 | 6.94 | 6.94 | 6.94 | 6.94 | 6.94 | 6.91 | 6.97 |
| Aldrin | 7.40 | 7.40 | 7.40 | 7.40 | 7.40 | 7.40 | 7.37 | 7.43 |
| Telodrin | 7.62 | 7.62 | 7.62 | 7.62 | 7.62 | 7.62 | 7.59 | 7.65 |
| Heptachlor epoxide | 8.19 | 8.19 | 8.19 | 8.19 | 8.19 | 8.19 | 8.16 | 8.22 |
| o,p-DDE | 8.42 | 8.42 | 8.42 | 8.42 | 8.42 | 8.42 | 8.39 | 8.45 |
| gamma-Chlordane | 8.44 | 8.44 | 8.44 | 8.44 | 8.44 | 8.44 | 8.41 | 8.47 |
| alpha-Chlordane | 8.64 | 8.64 | 8.64 | 8.63 | 8.63 | 8.64 | 8.61 | 8.67 |
| Endosulfan I | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.73 | 8.70 | 8.76 |
| 4,4'-DDE | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.83 | 8.80 | 8.86 |
| Dieldrin | 9.09 | 9.09 | 9.09 | 9.09 | 9.09 | 9.09 | 9.06 | 9.12 |
| o,p-DDD | 9.10 | 9.11 | 9.11 | 9.11 | 9.10 | 9.11 | 9.08 | 9.14 |
| Endrin | 9.51 | 9.50 | 9.50 | 9.50 | 9.50 | 9.50 | 9.47 | 9.53 |
| o,p-DDT | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.48 | 9.54 |
| 4,4'-DDD | 9.60 | 9.60 | 9.60 | 9.59 | 9.59 | 9.60 | 9.57 | 9.63 |
| Kepone | 9.66 | 9.66 | 9.66 | 9.66 | 9.66 | 9.66 | 9.63 | 9.69 |
| Endosulfan II | 9.78 | 9.78 | 9.78 | 9.78 | 9.78 | 9.78 | 9.75 | 9.81 |
| 4,4'-DDT | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 10.01 | 9.98 | 10.04 |
| Endrin aldehyde | 10.22 | 10.22 | 10.22 | 10.22 | 10.22 | 10.22 | 10.19 | 10.25 |
| Endosulfan sulfate | 10.58 | 10.58 | 10.58 | 10.57 | 10.57 | 10.58 | 10.55 | 10.61 |
| Methoxychlor | 10.88 | 10.88 | 10.88 | 10.88 | 10.88 | 10.88 | 10.85 | 10.91 |
| Mirex | 11.30 | 11.30 | 11.30 | 11.30 | 11.29 | 11.30 | 11.27 | 11.33 |
| Endrin ketone | 11.34 | 11.34 | 11.34 | 11.33 | 11.33 | 11.34 | 11.31 | 11.37 |
| Decachlorobiphenyl | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.35 | 13.41 |

8530

6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Update File: 1C13088B.73R

Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | | | 4.83 | | | 4.83 | 4.80 | 4.86 |
| Hcb | | | 5.55 | | | 5.55 | 5.52 | 5.58 |
| alpha-BHC | | | 5.75 | | | 5.75 | 5.72 | 5.78 |
| gamma-BHC (Lindane) | | | 6.28 | | | 6.28 | 6.25 | 6.31 |
| beta-BHC | | | 6.41 | | | 6.41 | 6.38 | 6.44 |
| delta-BHC | | | 6.83 | | | 6.83 | 6.80 | 6.86 |
| Heptachlor | | | 6.92 | | | 6.92 | 6.89 | 6.95 |
| Aldrin | | | 7.38 | | | 7.38 | 7.35 | 7.41 |
| Telodrin | | | 7.61 | | | 7.61 | 7.58 | 7.64 |
| Heptachlor epoxide | | | 8.17 | | | 8.17 | 8.14 | 8.20 |
| o,p-DDE | | | 8.41 | | | 8.41 | 8.38 | 8.44 |
| gamma-Chlordane | | | 8.42 | | | 8.42 | 8.39 | 8.45 |
| alpha-Chlordane | | | 8.62 | | | 8.62 | 8.59 | 8.65 |
| Endosulfan I | | | 8.71 | | | 8.71 | 8.68 | 8.74 |
| 4,4'-DDE | | | 8.81 | | | 8.81 | 8.78 | 8.84 |
| Dieldrin | | | 9.07 | | | 9.07 | 9.04 | 9.10 |
| o,p-DDD | | | 9.09 | | | 9.09 | 9.06 | 9.12 |
| Endrin | | | 9.49 | | | 9.49 | 9.46 | 9.52 |
| o,p-DDT | | | 9.50 | | | 9.50 | 9.47 | 9.53 |
| 4,4'-DDD | | | 9.58 | | | 9.58 | 9.55 | 9.61 |
| Kepone | | | 9.64 | | | 9.64 | 9.61 | 9.67 |
| Endosulfan II | | | 9.76 | | | 9.76 | 9.73 | 9.79 |
| 4,4'-DDT | | | 9.99 | | | 9.99 | 9.96 | 10.02 |
| Endrin aldehyde | | | 10.20 | | | 10.20 | 10.17 | 10.23 |
| Endosulfan sulfate | | | 10.56 | | | 10.56 | 10.53 | 10.59 |
| Methoxychlor | | | 10.86 | | | 10.86 | 10.83 | 10.89 |
| Mirex | | | 11.28 | | | 11.28 | 11.25 | 11.31 |
| Endrin ketone | | | 11.31 | | | 11.31 | 11.28 | 11.34 |
| Decachlorobiphenyl | | | 13.35 | | | 13.35 | 13.32 | 13.38 |

4/1/04

9531



FORM VI-1

# 6E
# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 1C13088

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/28/04  3/29/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Tetrachloro-m-xylene | 3.99E+03 | 3.88E+03 | 3.77E+03 | 3.71E+03 | 3.63E+03 | 3.80E+03 | 3.8 |
| Hcb | 7.59E+03 | 7.17E+03 | 7.09E+03 | 6.72E+03 | 6.22E+03 | 6.96E+03 | 7.4 |
| alpha-BHC | 4.16E+03 | 4.44E+03 | 4.68E+03 | 4.87E+03 | 5.01E+03 | 4.63E+03 | 7.3 |
| gamma-BHC (Lindane) | 4.33E+03 | 4.51E+03 | 4.68E+03 | 4.79E+03 | 4.87E+03 | 4.64E+03 | 4.7 |
| beta-BHC | 2.65E+03 | 2.62E+03 | 2.57E+03 | 2.54E+03 | 2.50E+03 | 2.58E+03 | 2.3 |
| delta-BHC | 4.00E+03 | 4.26E+03 | 4.42E+03 | 4.60E+03 | 4.71E+03 | 4.40E+03 | 6.3 |
| Heptachlor | 5.00E+03 | 4.99E+03 | 4.91E+03 | 4.91E+03 | 4.90E+03 | 4.94E+03 | 1.0 |
| Aldrin | 3.97E+03 | 3.91E+03 | 3.96E+03 | 4.02E+03 | 4.08E+03 | 3.99E+03 | 1.6 |
| Telodrin | 4.25E+03 | 4.09E+03 | 4.14E+03 | 3.99E+03 | 3.83E+03 | 4.06E+03 | 3.9 |
| o,p-DDE | 2.63E+03 | 2.51E+03 | 2.58E+03 | 2.55E+03 | 2.50E+03 | 2.55E+03 | 2.0 |
| Heptachlor epoxide | 4.09E+03 | 4.03E+03 | 3.97E+03 | 3.94E+03 | 3.92E+03 | 3.99E+03 | 1.7 |
| gamma-Chlordane | 3.88E+03 | 3.94E+03 | 3.86E+03 | 3.84E+03 | 3.83E+03 | 3.87E+03 | 1.1 |
| alpha-Chlordane | 4.71E+03 | 4.11E+03 | 4.01E+03 | 3.94E+03 | 3.90E+03 | 4.13E+03 | 8.0 |
| 4,4'-DDE | 3.45E+03 | 3.47E+03 | 3.50E+03 | 3.58E+03 | 3.60E+03 | 3.52E+03 | 1.9 |
| Endosulfan I | 3.79E+03 | 3.65E+03 | 3.58E+03 | 3.56E+03 | 3.56E+03 | 3.63E+03 | 2.7 |
| o,p-DDD | 2.21E+03 | 2.12E+03 | 2.16E+03 | 2.15E+03 | 2.12E+03 | 2.15E+03 | 1.9 |
| Dieldrin | 3.45E+03 | 3.44E+03 | 3.49E+03 | 3.51E+03 | 3.56E+03 | 3.49E+03 | 1.4 |
| o,p-DDT | 2.64E+03 | 2.54E+03 | 2.59E+03 | 2.55E+03 | 2.51E+03 | 2.57E+03 | 2.0 |
| Endrin | 2.96E+03 | 2.96E+03 | 2.96E+03 | 2.99E+03 | 3.00E+03 | 2.97E+03 | .6 |
| 4,4'-DDD | 2.91E+03 | 2.79E+03 | 2.80E+03 | 2.85E+03 | 2.89E+03 | 2.85E+03 | 1.8 |
| Kepone | 2.14E+02 | 3.31E+02 | 4.10E+02 | 3.91E+02 | 5.99E+02 | 3.89E+02 | 36.0 |
| Endosulfan II | 3.39E+03 | 3.34E+03 | 3.25E+03 | 3.21E+03 | 3.20E+03 | 3.28E+03 | 2.5 |
| 4,4'-DDT | 2.88E+03 | 2.90E+03 | 2.91E+03 | 2.91E+03 | 2.92E+03 | 2.90E+03 | .5 |
| Endrin aldehyde | 2.94E+03 | 2.85E+03 | 2.72E+03 | 2.66E+03 | 2.62E+03 | 2.76E+03 | 4.8 |
| Methoxychlor | 1.90E+03 | 1.73E+03 | 1.64E+03 | 1.59E+03 | 1.55E+03 | 1.68E+03 | 8.2 |
| Mirex | 3.26E+03 | 2.95E+03 | 2.82E+03 | 2.58E+03 | 2.33E+03 | 2.79E+03 | 12.7 |
| Endosulfan sulfate | 3.13E+03 | 2.98E+03 | 2.88E+03 | 2.83E+03 | 2.80E+03 | 2.92E+03 | 4.5 |
| Endrin ketone | 3.56E+03 | 3.54E+03 | 3.49E+03 | 3.44E+03 | 3.43E+03 | 3.49E+03 | 1.7 |
| Decachlorobiphenyl | 4.60E+03 | 3.99E+03 | 3.64E+03 | 3.48E+03 | 3.33E+03 | 3.81E+03 | 13.3 |

Average % RSD: 5.1

0532

Calibration File Name: **C:\CPWIN\DATA1\1C13088.CAL** Version = 7
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

## 1 TCX

Retention time = 4.321 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 15369.6 | 3992.096 | Manual | 3/29/2004 9:44:3 |
| 2 | 19.240 | 74702.1 | 3882.646 | Manual | 3/29/2004 9:44:3 |
| 3 | 38.480 | 144991.1 | 3767.96 | Manual | 3/29/2004 9:44:3 |
| 4 | 57.720 | 214092.9 | 3709.163 | Manual | 3/29/2004 9:44:3 |
| 5 | 76.960 | 279042.5 | 3625.812 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3795.536 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9955, Average error = 2.99%
Average CF = 3795.5360 with RSD = 3.80%

## 2 HCB

Retention time = 4.894 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7593.2 | 7593.21 | Manual | 3/29/2004 9:44:3 |
| 2 | 2.500 | 17918.6 | 7167.424 | Manual | 3/29/2004 9:44:3 |
| 3 | 5.000 | 35425.9 | 7085.176 | Manual | 3/29/2004 9:44:3 |
| 4 | 10.000 | 67218.3 | 6721.827 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 124483.0 | 6224.15 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 6958.357 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9750, Average error = 5.58%
Average CF = 6958.3570 with RSD = 7.39%

## 3 alpha-BHC

Retention time = 5.151 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8533

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4161.2 | 4161.208 | Manual | 3/29/2004 9:44:3 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 22204.0 | 4440.798 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 46757.9 | 4675.791 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 74006.2 | 4868.828 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 100133.1 | 5006.655 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4630.656 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9881, Average error = 5.70%
Average CF = 4630.6560 with RSD = 7.30%

**4 gamma-BHC**
Retention time = 5.612 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4325.3 | 4325.298 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 22534.4 | 4506.876 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 46843.4 | 4684.344 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 72832.1 | 4791.588 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 97345.8 | 4867.292 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4635.08 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9950, Average error = 3.78%
Average CF = 4635.0800 with RSD = 4.74%

**5 beta-BHC**
Retention time = 5.743 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2650.4 | 2650.437 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 13101.7 | 2620.346 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25709.2 | 2570.921 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 38553.2 | 2536.395 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 50094.5 | 2504.724 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2576.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9983, Average error = 1.83%
Average CF = 2576.5650 with RSD = 2.31%

**6 delta-BHC**
Retention time = 5.999 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

0534

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4004.6 | 4004.55 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 21304.4 | 4260.876 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 44156.0 | 4415.602 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 69867.5 | 4596.549 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 94204.9 | 4710.247 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4397.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9907, Average error = 4.82%
Average CF = 4397.5650 with RSD = 6.34%

**7 Heptachlor**
Retention time = 6.294 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5003.9 | 5003.869 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 24944.0 | 4988.802 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 49089.6 | 4908.956 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 74619.0 | 4909.145 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 97903.1 | 4895.155 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4941.186 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 0.89%
Average CF = 4941.1860 with RSD = 1.03%

**8 Aldrin**
Retention time = 6.717 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3966.4 | 3966.444 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 19560.2 | 3912.032 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 39607.7 | 3960.773 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 61036.3 | 4015.547 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 81602.2 | 4080.111 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3986.981 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9990, Average error = 1.22%
Average CF = 3986.9810 with RSD = 1.60%

**9 Telodrin**
Retention time = 7.013 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9535

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4252.7 | 4252.72 | Manual | 3/29/2004 9:44:3 |
| 2 | 2.500 | 10228.6 | 4091.436 | Manual | 3/29/2004 9:44:3 |
| 3 | 5.000 | 20685.8 | 4137.154 | Manual | 3/29/2004 9:44:3 |
| 4 | 10.000 | 39944.2 | 3994.421 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 76676.0 | 3833.798 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4061.906 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9937, Average error = 2.91%
Average CF = 4061.9060 with RSD = 3.88%

**10 o,p-DDE**
Retention time = 7.522 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5251.1 | 2625.55 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 12530.4 | 2506.08 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25761.8 | 2576.18 | Manual | 3/29/2004 9:44:3 |
| 4 | 20.000 | 51097.0 | 2554.852 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 100160.4 | 2504.01 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2553.334 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.51%
Average CF = 2553.3350 with RSD = 2.00%

**11 Hept. epoxide**
Retention time = 7.550 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4088.9 | 4088.919 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 20145.7 | 4029.136 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 39743.9 | 3974.389 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 59928.3 | 3942.651 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 78414.0 | 3920.702 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3991.159 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.36%
Average CF = 3991.1590 with RSD = 1.71%

9536

**12 g. Chlordane**
Retention time = 7.718 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3883.3 | 3883.269 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 19707.2 | 3941.43 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 38626.2 | 3862.622 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 58378.9 | 3840.717 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 76652.9 | 3832.645 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3872.136 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.83%
Average CF = 3872.1370 with RSD = 1.12%

**13 a. Chlordane**
Retention time = 7.893 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4710.2 | 4710.22 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 20529.0 | 4105.796 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 40073.7 | 4007.37 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 59921.0 | 3942.17 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 77960.8 | 3898.04 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4132.719 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9907, Average error = 5.59%
Average CF = 4132.7190 with RSD = 8.04%

**14 4,4'-DDE**
Retention time = 7.978 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6891.4 | 3445.677 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 34655.2 | 3465.522 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 70096.0 | 3504.8 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 108735.6 | 3576.829 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 144063.3 | 3601.583 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3518.882 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 1.60%
Average CF = 3518.8820 with RSD = 1.94%

0537

**15 Endosulfan I**
Retention time = 8.085 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3790.7 | 3790.736 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 18252.0 | 3650.404 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 35807.8 | 3580.781 | Manual | 3/29/2004 9:44:3 |
| 4 | 15.200 | 54082.6 | 3558.066 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 71138.5 | 3556.924 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3627.382 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 2.06%
Average CF = 3627.3820 with RSD = 2.73%

**16 o,p-DDD**
Retention time = 8.212 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4428.4 | 2214.2 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 10590.3 | 2118.058 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 21647.3 | 2164.73 | Manual | 3/29/2004 9:44:3 |
| 4 | 20.000 | 43038.2 | 2151.911 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 84689.2 | 2117.229 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2153.226 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.35%
Average CF = 2153.2260 with RSD = 1.86%

**17 Dieldrin**
Retention time = 8.402 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6897.6 | 3448.817 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 34431.8 | 3443.179 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 69834.7 | 3491.734 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 106831.7 | 3514.201 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 142389.2 | 3559.73 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3491.532 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.04%
Average CF = 3491.5320 with RSD = 1.38%

9538

**18 o,p-DDT**
Retention time = 8.546 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5272.4 | 2636.2 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 12690.4 | 2538.072 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25909.9 | 2590.991 | Manual | 3/29/2004 9:44:3 |
| 4 | 20.000 | 51090.8 | 2554.539 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 100263.1 | 2506.578 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2565.276 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9990, Average error = 1.51%
Average CF = 2565.2760 with RSD = 1.95%

**19 Endrin**
Retention time = 8.713 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5926.0 | 2963.01 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 29614.2 | 2961.415 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 59196.1 | 2959.806 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 90748.4 | 2985.146 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 119851.7 | 2996.292 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2973.134 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.47%
Average CF = 2973.1340 with RSD = 0.56%

**20 4,4'-DDD**
Retention time = 8.767 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5811.8 | 2905.878 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 27921.9 | 2792.193 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 55945.1 | 2797.253 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 86610.1 | 2849.018 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 115450.5 | 2886.262 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2846.121 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.44%
Average CF = 2846.1210 with RSD = 1.80%

#539

**21 Kepone**
Retention time = 8.770 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 2136.2 | 213.622 | Manual | 3/29/2004 9:44:3 |
| 2 | 25.000 | 8286.8 | 331.4728 | Manual | 3/29/2004 9:44:3 |
| 3 | 50.000 | 20505.5 | 410.1096 | Manual | 3/29/2004 9:44:3 |
| 4 | 100.000 | 39127.1 | 391.2709 | Manual | 3/29/2004 9:44:3 |
| 5 | 200.000 | 119771.9 | 598.8595 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 389.067 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8072, Average error = 23.96%
Average CF = 389.0670 with RSD = 36.02%

**22 Endosulfan II**
Retention time = 9.016 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6783.0 | 3391.492 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 33351.5 | 3335.153 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 65059.8 | 3252.992 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 97609.2 | 3210.828 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 127917.7 | 3197.943 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3277.681 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 2.09%
Average CF = 3277.6810 with RSD = 2.54%

**23 4,4'-DDT**
Retention time = 9.131 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5765.8 | 2882.919 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 28996.7 | 2899.665 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 58144.2 | 2907.209 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 88469.4 | 2910.178 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 116982.9 | 2924.573 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2904.909 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.37%
Average CF = 2904.9090 with RSD = 0.53%

0548

**24 Endrin aldehyde**

Retention time = 9.559 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5884.6 | 2942.313 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 28471.2 | 2847.119 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 54460.6 | 2723.03 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 80881.8 | 2660.584 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 104913.8 | 2622.845 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2759.178 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9936, Average error = 3.93%
Average CF = 2759.1780 with RSD = 4.82%

**25 Methoxychlor**
Retention time = 9.743 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 18973.1 | 1897.314 | Manual | 3/29/2004 9:44:3 |
| 2 | 50.000 | 86704.9 | 1734.098 | Manual | 3/29/2004 9:44:3 |
| 3 | 100.000 | 163929.4 | 1639.294 | Manual | 3/29/2004 9:44:3 |
| 4 | 152.000 | 241147.0 | 1586.493 | Manual | 3/29/2004 9:44:3 |
| 5 | 200.000 | 310681.4 | 1553.407 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 1682.121 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9834, Average error = 6.35%
Average CF = 1682.1210 with RSD = 8.22%

**26 Mirex**
Retention time = 9.996 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 16305.5 | 3261.096 | Manual | 3/29/2004 9:44:3 |
| 2 | 12.500 | 36887.2 | 2950.974 | Manual | 3/29/2004 9:44:3 |
| 3 | 25.000 | 70544.0 | 2821.761 | Manual | 3/29/2004 9:44:3 |
| 4 | 50.000 | 128829.1 | 2576.582 | Manual | 3/29/2004 9:44:3 |
| 5 | 100.000 | 233174.0 | 2331.74 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2788.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9273, Average error = 9.59%
Average CF = 2788.4310 with RSD = 12.73%

8541

**27 Endo. sulfate**
Retention time = 10.125 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6251.9 | 3125.951 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 29750.6 | 2975.059 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 57613.9 | 2880.694 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 85971.1 | 2827.997 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 112134.0 | 2803.35 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2922.61 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9955, Average error = 3.50%
Average CF = 2922.6100 with RSD = 4.49%

**28 Endrin ketone**
Retention time = 10.498 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7129.6 | 3564.809 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 35394.0 | 3539.4 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 69891.0 | 3494.551 | Manual | 3/29/2004 9:44:3 |
| 4 | 30.400 | 104689.2 | 3443.724 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 137016.1 | 3425.402 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3493.577 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9991, Average error = 1.35%
Average CF = 3493.5770 with RSD = 1.71%

**29 DCB**
Retention time = 11.836 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 17933.2 | 4598.249 | Manual | 3/29/2004 9:44:3 |
| 2 | 19.480 | 77783.9 | 3993.014 | Manual | 3/29/2004 9:44:3 |
| 3 | 38.960 | 141637.1 | 3635.449 | Manual | 3/29/2004 9:44:3 |
| 4 | 58.440 | 203639.5 | 3484.591 | Manual | 3/29/2004 9:44:3 |
| 5 | 77.920 | 259382.0 | 3328.824 | Manual | 3/29/2004 9:44:3 |

9542

Calibration formula: Y = 3808.025 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9509, Average error = 10.24%
Average CF = 3808.0250 with RSD = 13.28%

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13088

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 3.99E+03 | 3.88E+03 | 3.77E+03 | 3.71E+03 | 3.63E+03 | 3.80E+03 | 3.8 |
| Hcb | 7.59E+03 | 7.17E+03 | 7.09E+03 | 6.72E+03 | 6.22E+03 | 6.96E+03 | 7.4 |
| alpha-BHC | 4.16E+03 | 4.44E+03 | 4.68E+03 | 4.87E+03 | 5.01E+03 | 4.63E+03 | 7.3 |
| gamma-BHC (Lindane) | 4.33E+03 | 4.51E+03 | 4.68E+03 | 4.79E+03 | 4.87E+03 | 4.64E+03 | 4.7 |
| beta-BHC | 2.65E+03 | 2.62E+03 | 2.57E+03 | 2.54E+03 | 2.50E+03 | 2.58E+03 | 2.3 |
| delta-BHC | 4.00E+03 | 4.26E+03 | 4.42E+03 | 4.60E+03 | 4.71E+03 | 4.40E+03 | 6.3 |
| Heptachlor | 5.00E+03 | 4.99E+03 | 4.91E+03 | 4.91E+03 | 4.90E+03 | 4.94E+03 | 1.0 |
| Aldrin | 3.97E+03 | 3.91E+03 | 3.96E+03 | 4.02E+03 | 4.08E+03 | 3.99E+03 | 1.6 |
| Telodrin | 4.25E+03 | 4.09E+03 | 4.14E+03 | 3.99E+03 | 3.83E+03 | 4.06E+03 | 3.9 |
| o,p-DDE | 2.63E+03 | 2.51E+03 | 2.58E+03 | 2.55E+03 | 2.50E+03 | 2.55E+03 | 2.0 |
| Heptachlor epoxide | 4.09E+03 | 4.03E+03 | 3.97E+03 | 3.94E+03 | 3.92E+03 | 3.99E+03 | 1.7 |
| gamma-Chlordane | 3.88E+03 | 3.94E+03 | 3.86E+03 | 3.84E+03 | 3.83E+03 | 3.87E+03 | 1.1 |
| alpha-Chlordane | 4.71E+03 | 4.11E+03 | 4.01E+03 | 3.94E+03 | 3.90E+03 | 4.13E+03 | 8.0 |
| 4,4'-DDE | 3.45E+03 | 3.47E+03 | 3.50E+03 | 3.58E+03 | 3.60E+03 | 3.52E+03 | 1.9 |
| Endosulfan I | 3.79E+03 | 3.65E+03 | 3.58E+03 | 3.56E+03 | 3.56E+03 | 3.63E+03 | 2.7 |
| o,p-DDD | 2.21E+03 | 2.12E+03 | 2.16E+03 | 2.15E+03 | 2.12E+03 | 2.15E+03 | 1.9 |
| Dieldrin | 3.45E+03 | 3.44E+03 | 3.49E+03 | 3.51E+03 | 3.56E+03 | 3.49E+03 | 1.4 |
| o,p-DDT | 2.64E+03 | 2.54E+03 | 2.59E+03 | 2.55E+03 | 2.51E+03 | 2.57E+03 | 2.0 |
| Endrin | 2.96E+03 | 2.96E+03 | 2.96E+03 | 2.99E+03 | 3.00E+03 | 2.97E+03 | .6 |
| 4,4'-DDD | 2.91E+03 | 2.79E+03 | 2.80E+03 | 2.85E+03 | 2.89E+03 | 2.85E+03 | 1.8 |
| Kepone | 2.14E+02 | 3.31E+02 | 4.10E+02 | 3.91E+02 | 5.99E+02 | 3.89E+02 | 36.0 |
| Endosulfan II | 3.39E+03 | 3.34E+03 | 3.25E+03 | 3.21E+03 | 3.20E+03 | 3.28E+03 | 2.5 |
| 4,4'-DDT | 2.88E+03 | 2.90E+03 | 2.91E+03 | 2.91E+03 | 2.92E+03 | 2.90E+03 | .5 |
| Endrin aldehyde | 2.94E+03 | 2.85E+03 | 2.72E+03 | 2.66E+03 | 2.62E+03 | 2.76E+03 | 4.8 |
| Methoxychlor | 1.90E+03 | 1.73E+03 | 1.64E+03 | 1.59E+03 | 1.55E+03 | 1.68E+03 | 8.2 |
| Mirex | 3.26E+03 | 2.95E+03 | 2.82E+03 | 2.58E+03 | 2.33E+03 | 2.79E+03 | 12.7 |
| Endosulfan sulfate | 3.13E+03 | 2.98E+03 | 2.88E+03 | 2.83E+03 | 2.80E+03 | 2.92E+03 | 4.5 |
| Endrin ketone | 3.56E+03 | 3.54E+03 | 3.49E+03 | 3.44E+03 | 3.43E+03 | 3.49E+03 | 1.7 |
| Decachlorobiphenyl | 4.60E+03 | 3.99E+03 | 3.64E+03 | 3.48E+03 | 3.33E+03 | 3.81E+03 | 13.3 |

Average % RSD: 5.1

8543



FORM VI-2

Calibration File Name: **C:\CPWIN\DATA1\2C13088.CAL** Version = 4
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

MIXE RTs updated 8 99.88C)
DJ 3.31.04

## 1 TCX

Retention time = 4.312 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 15369.6 | 3992.096 | Manual | 3/29/2004 9:44:3 |
| 2 | 19.240 | 74702.1 | 3882.646 | Manual | 3/29/2004 9:44:3 |
| 3 | 38.480 | 144991.1 | 3767.96 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 57.720 | 214092.9 | 3709.163 | Manual | 3/29/2004 9:44:3 |
| 5 | 76.960 | 279042.5 | 3625.812 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3795.536 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9955, Average error = 2.99%
Average CF = 3795.5360 with RSD = 3.80%

## 2 HCB

Retention time = 4.888 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 7593.2 | 7593.21 | Manual | 3/29/2004 9:44:3 |
| 2 | 2.500 | 17918.6 | 7167.424 | Manual | 3/29/2004 9:44:3 |
| 3 | 5.000 | 35425.9 | 7085.176 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 10.000 | 67218.3 | 6721.827 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 124483.0 | 6224.15 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 6958.357 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9750, Average error = 5.58%
Average CF = 6958.3570 with RSD = 7.39%

## 3 alpha-BHC

Retention time = 5.140 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8544

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4161.2 | 4161.208 | Manual | 3/29/2004 9:44:3 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 22204.0 | 4440.798 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 46757.9 | 4675.791 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 74006.2 | 4868.828 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 100133.1 | 5006.655 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4630.656 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9881, Average error = 5.70%
Average CF = 4630.6560 with RSD = 7.30%

**4 gamma-BHC**
Retention time = 5.602 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4325.3 | 4325.298 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 22534.4 | 4506.876 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 46843.4 | 4684.344 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 72832.1 | 4791.588 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 97345.8 | 4867.292 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4635.08 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9950, Average error = 3.78%
Average CF = 4635.0800 with RSD = 4.74%

**5 beta-BHC**
Retention time = 5.732 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2650.4 | 2650.437 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 13101.7 | 2620.346 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25709.2 | 2570.921 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 38553.2 | 2536.395 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 50094.5 | 2504.724 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2576.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9983, Average error = 1.83%
Average CF = 2576.5650 with RSD = 2.31%

**6 delta-BHC**
Retention time = 5.989 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9545

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4004.6 | 4004.55 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 21304.4 | 4260.876 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 44156.0 | 4415.602 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 69867.5 | 4596.549 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 94204.9 | 4710.247 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4397.565 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9907, Average error = 4.82%
Average CF = 4397.5650 with RSD = 6.34%

**7 Heptachlor**
Retention time = 6.283 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 5003.9 | 5003.869 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 24944.0 | 4988.802 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 49089.6 | 4908.956 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 74619.0 | 4909.145 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 97903.1 | 4895.155 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4941.186 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 0.89%
Average CF = 4941.1860 with RSD = 1.03%

**8 Aldrin**
Retention time = 6.706 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3966.4 | 3966.444 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 19560.2 | 3912.032 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 39607.7 | 3960.773 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 61036.3 | 4015.547 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 81602.2 | 4080.111 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3986.981 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9990, Average error = 1.22%
Average CF = 3986.9810 with RSD = 1.60%

**9 Telodrin**
Retention time = 7.005 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8546

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4252.7 | 4252.72 | Manual | 3/29/2004 9:44:3 |
| 2 | 2.500 | 10228.6 | 4091.436 | Manual | 3/29/2004 9:44:3 |
| 3 | 5.000 | 20685.8 | 4137.154 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 10.000 | 39944.2 | 3994.421 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 76676.0 | 3833.798 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4061.906 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9937, Average error = 2.91%
Average CF = 4061.9060 with RSD = 3.88%

**10 o,p-DDE**
Retention time = 7.513 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5251.1 | 2625.55 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 12530.4 | 2506.08 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25761.8 | 2576.18 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 20.000 | 51097.0 | 2554.852 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 100160.4 | 2504.01 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2553.334 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.51%
Average CF = 2553.3350 with RSD = 2.00%

**11 Hept. epoxide**
Retention time = 7.538 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4088.9 | 4088.919 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 20145.7 | 4029.136 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 39743.9 | 3974.389 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 59928.3 | 3942.651 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 78414.0 | 3920.702 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3991.159 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.36%
Average CF = 3991.1590 with RSD = 1.71%

8547

**12 g. Chlordane**
Retention time = 7.706 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3883.3 | 3883.269 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 19707.2 | 3941.43 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 38626.2 | 3862.622 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 58378.9 | 3840.717 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 76652.9 | 3832.645 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3872.136 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.83%
Average CF = 3872.1370 with RSD = 1.12%

**13 a. Chlordane**
Retention time = 7.881 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 4710.2 | 4710.22 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 20529.0 | 4105.796 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 40073.7 | 4007.37 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 59921.0 | 3942.17 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 77960.8 | 3898.04 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 4132.719 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9907, Average error = 5.59%
Average CF = 4132.7190 with RSD = 8.04%

**14 4,4'-DDE**
Retention time = 7.967 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6891.4 | 3445.677 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 34655.2 | 3465.522 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 70096.0 | 3504.8 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 108735.6 | 3576.829 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 144063.3 | 3601.583 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3518.882 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 1.60%
Average CF = 3518.8820 with RSD = 1.94%

9548

**15 Endosulfan I**
Retention time = 8.073 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 3790.7 | 3790.736 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 18252.0 | 3650.404 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 35807.8 | 3580.781 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 15.200 | 54082.6 | 3558.066 | Manual | 3/29/2004 9:44:3 |
| 5 | 20.000 | 71138.5 | 3556.924 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3627.382 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9988, Average error = 2.06%
Average CF = 3627.3820 with RSD = 2.73%

**16 o,p-DDD**
Retention time = 8.203 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 4428.4 | 2214.2 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 10590.3 | 2118.058 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 21647.3 | 2164.73 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 20.000 | 43038.2 | 2151.911 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 84689.2 | 2117.229 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2153.226 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.35%
Average CF = 2153.2260 with RSD = 1.86%

**17 Dieldrin**
Retention time = 8.389 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6897.6 | 3448.817 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 34431.8 | 3443.179 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 69834.7 | 3491.734 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 106831.7 | 3514.201 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 142389.2 | 3559.73 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3491.532 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9993, Average error = 1.04%
Average CF = 3491.5320 with RSD = 1.38%

8549

**18 o,p-DDT**
Retention time = 8.536 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5272.4 | 2636.2 | Manual | 3/29/2004 9:44:3 |
| 2 | 5.000 | 12690.4 | 2538.072 | Manual | 3/29/2004 9:44:3 |
| 3 | 10.000 | 25909.9 | 2590.991 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 20.000 | 51090.8 | 2554.539 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 100263.1 | 2506.578 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2565.276 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9990, Average error = 1.51%
Average CF = 2565.2760 with RSD = 1.95%

**19 Endrin**
Retention time = 8.701 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5926.0 | 2963.01 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 29614.2 | 2961.415 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 59196.1 | 2959.806 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 90748.4 | 2985.146 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 119851.7 | 2996.292 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2973.134 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.47%
Average CF = 2973.1340 with RSD = 0.56%

**20 4,4'-DDD**
Retention time = 8.755 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5811.8 | 2905.878 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 27921.9 | 2792.193 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 55945.1 | 2797.253 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 86610.1 | 2849.018 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 115450.5 | 2886.262 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2846.121 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.44%
Average CF = 2846.1210 with RSD = 1.80%

9558

**21 Kepone**
Retention time = 8.760 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 2136.2 | 213.622 | Manual | 3/29/2004 9:44:3 |
| 2 | 25.000 | 8286.8 | 331.4728 | Manual | 3/29/2004 9:44:3 |
| 3 | 50.000 | 20505.5 | 410.1096 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 100.000 | 39127.1 | 391.2709 | Manual | 3/29/2004 9:44:3 |
| 5 | 200.000 | 119771.9 | 598.8595 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 389.067 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.8072, Average error = 23.96%
Average CF = 389.0670 with RSD = 36.02%

**22 Endosulfan II**
Retention time = 9.003 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6783.0 | 3391.492 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 33351.5 | 3335.153 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 65059.8 | 3252.992 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 97609.2 | 3210.828 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 127917.7 | 3197.943 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3277.681 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 2.09%
Average CF = 3277.6810 with RSD = 2.54%

**23 4,4'-DDT**
Retention time = 9.119 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5765.8 | 2882.919 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 28996.7 | 2899.665 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 58144.2 | 2907.209 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 88469.4 | 2910.178 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 116982.9 | 2924.573 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2904.909 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9999, Average error = 0.37%
Average CF = 2904.9090 with RSD = 0.53%

3551

**24 Endrin aldehyde**

Retention time = 9.546 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 5884.6 | 2942.313 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 28471.2 | 2847.119 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 54460.6 | 2723.03 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 80881.8 | 2660.584 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 104913.8 | 2622.845 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2759.178 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9936, Average error = 3.93%
Average CF = 2759.1780 with RSD = 4.82%

**25 Methoxychlor**
Retention time = 9.731 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 18973.1 | 1897.314 | Manual | 3/29/2004 9:44:3 |
| 2 | 50.000 | 86704.9 | 1734.098 | Manual | 3/29/2004 9:44:3 |
| 3 | 100.000 | 163929.4 | 1639.294 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 152.000 | 241147.0 | 1586.493 | Manual | 3/29/2004 9:44:3 |
| 5 | 200.000 | 310681.4 | 1553.407 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 1682.121 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9834, Average error = 6.35%
Average CF = 1682.1210 with RSD = 8.22%

**26 Mirex**
Retention time = 9.985 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 16305.5 | 3261.096 | Manual | 3/29/2004 9:44:3 |
| 2 | 12.500 | 36887.2 | 2950.974 | Manual | 3/29/2004 9:44:3 |
| 3 | 25.000 | 70544.0 | 2821.761 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 50.000 | 128829.1 | 2576.582 | Manual | 3/29/2004 9:44:3 |
| 5 | 100.000 | 233174.0 | 2331.74 | Manual | 3/29/2004 9:44:3 |

0552

Calibration formula: Y = 2788.431 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9273, Average error = 9.59%
Average CF = 2788.4310 with RSD = 12.73%

**27 Endo. sulfate**
Retention time = 10.113 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 6251.9 | 3125.951 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 29750.6 | 2975.059 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 57613.9 | 2880.694 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 85971.1 | 2827.997 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 112134.0 | 2803.35 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 2922.61 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9955, Average error = 3.50%
Average CF = 2922.6100 with RSD = 4.49%

**28 Endrin ketone**
Retention time = 10.486 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 7129.6 | 3564.809 | Manual | 3/29/2004 9:44:3 |
| 2 | 10.000 | 35394.0 | 3539.4 | Manual | 3/29/2004 9:44:3 |
| 3 | 20.000 | 69891.0 | 3494.551 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 30.400 | 104689.2 | 3443.724 | Manual | 3/29/2004 9:44:3 |
| 5 | 40.000 | 137016.1 | 3425.402 | Manual | 3/29/2004 9:44:3 |

Calibration formula: Y = 3493.577 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9991, Average error = 1.35%
Average CF = 3493.5770 with RSD = 1.71%

**29 DCB**
Retention time = 11.821 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 17933.2 | 4598.249 | Manual | 3/29/2004 9:44:3 |
| 2 | 19.480 | 77783.9 | 3993.014 | Manual | 3/29/2004 9:44:3 |
| 3 | 38.960 | 141637.1 | 3635.449 | 1C13088.73A | 3/30/2004 7:42:0 |
| 4 | 58.440 | 203639.5 | 3484.591 | Manual | 3/29/2004 9:44:3 |
| 5 | 77.920 | 259382.0 | 3328.824 | Manual | 3/29/2004 9:44:3 |

8553

Calibration formula: Y = 3808.025 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9509, Average error = 10.24%
Average CF = 3808.0250 with RSD = 13.28%

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 1C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | CALIBRATION FACTORS | | | | | | %RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 1.89E+03 | 1.96E+03 | 1.98E+03 | 1.98E+03 | 1.96E+03 | 1.96E+03 | 1.9 |
| Hcb | 2.93E+03 | 2.74E+03 | 2.80E+03 | 2.75E+03 | 2.66E+03 | 2.78E+03 | 3.6 |
| alpha-BHC | 1.70E+03 | 1.58E+03 | 1.66E+03 | 1.78E+03 | 1.88E+03 | 1.72E+03 | 6.7 |
| gamma-BHC (Lindane) | 1.77E+03 | 1.63E+03 | 1.71E+03 | 1.78E+03 | 1.84E+03 | 1.75E+03 | 4.4 |
| beta-BHC | 1.29E+03 | 1.15E+03 | 1.12E+03 | 1.11E+03 | 1.12E+03 | 1.16E+03 | 6.5 |
| delta-BHC | 1.80E+03 | 1.58E+03 | 1.60E+03 | 1.70E+03 | 1.78E+03 | 1.69E+03 | 6.0 |
| Heptachlor | 2.05E+03 | 1.85E+03 | 1.79E+03 | 1.77E+03 | 1.78E+03 | 1.85E+03 | 6.5 |
| Aldrin | 1.75E+03 | 1.62E+03 | 1.65E+03 | 1.71E+03 | 1.77E+03 | 1.70E+03 | 3.7 |
| Telodrin | 1.97E+03 | 1.80E+03 | 1.82E+03 | 1.77E+03 | 1.73E+03 | 1.82E+03 | 5.1 |
| Heptachlor epoxide | 1.97E+03 | 1.78E+03 | 1.75E+03 | 1.76E+03 | 1.77E+03 | 1.80E+03 | 5.1 |
| o,p-DDE | 1.23E+03 | 1.18E+03 | 1.25E+03 | 1.26E+03 | 1.29E+03 | 1.24E+03 | 3.4 |
| gamma-Chlordane | 1.90E+03 | 1.82E+03 | 1.79E+03 | 1.80E+03 | 1.80E+03 | 1.82E+03 | 2.3 |
| alpha-Chlordane | 1.93E+03 | 1.87E+03 | 1.85E+03 | 1.85E+03 | 1.88E+03 | 1.87E+03 | 1.6 |
| Endosulfan I | 1.65E+03 | 1.64E+03 | 1.64E+03 | 1.66E+03 | 1.67E+03 | 1.65E+03 | .9 |
| 4,4'-DDE | 1.40E+03 | 1.51E+03 | 1.61E+03 | 1.69E+03 | 1.75E+03 | 1.59E+03 | 8.7 |
| Dieldrin | 1.57E+03 | 1.62E+03 | 1.67E+03 | 1.71E+03 | 1.77E+03 | 1.67E+03 | 4.7 |
| o,p-DDD | 1.01E+03 | 9.82E+02 | 1.00E+03 | 9.98E+02 | 9.81E+02 | 9.95E+02 | 1.4 |
| Endrin | 1.20E+03 | 1.24E+03 | 1.27E+03 | 1.31E+03 | 1.33E+03 | 1.27E+03 | 4.3 |
| o,p-DDT | 1.23E+03 | 1.17E+03 | 1.20E+03 | 1.16E+03 | 1.12E+03 | 1.18E+03 | 3.5 |
| 4,4'-DDD | 1.08E+03 | 1.11E+03 | 1.11E+03 | 1.14E+03 | 1.15E+03 | 1.12E+03 | 2.3 |
| Kepone | 7.56E+01 | 1.43E+02 | 1.83E+02 | 1.79E+02 | 2.80E+02 | 1.72E+02 | 43.1 |
| Endosulfan II | 1.58E+03 | 1.59E+03 | 1.59E+03 | 1.60E+03 | 1.61E+03 | 1.60E+03 | .7 |
| 4,4'-DDT | 1.23E+03 | 1.23E+03 | 1.20E+03 | 1.19E+03 | 1.19E+03 | 1.21E+03 | 1.8 |
| Endrin aldehyde | 1.48E+03 | 1.48E+03 | 1.44E+03 | 1.42E+03 | 1.41E+03 | 1.45E+03 | 2.2 |
| Endosulfan sulfate | 1.40E+03 | 1.41E+03 | 1.42E+03 | 1.41E+03 | 1.42E+03 | 1.41E+03 | .5 |
| Methoxychlor | 7.31E+02 | 6.64E+02 | 6.23E+02 | 6.00E+02 | 5.86E+02 | 6.41E+02 | 9.1 |
| Mirex | 1.54E+03 | 1.41E+03 | 1.37E+03 | 1.26E+03 | 1.15E+03 | 1.35E+03 | 11.0 |
| Endrin ketone | 1.68E+03 | 1.65E+03 | 1.62E+03 | 1.62E+03 | 1.61E+03 | 1.63E+03 | 1.6 |
| Decachlorobiphenyl | 2.04E+03 | 1.79E+03 | 1.62E+03 | 1.55E+03 | 1.48E+03 | 1.70E+03 | 13.2 |

Average % RSD: 5.7

0554

Calibration File Name: **C:\CPWIN\DATA1\1C13088B.CAL** Version = 7
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

**1 TCX**
Retention time = 4.839 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 7278.1 | 1890.425 | Manual | 3/29/2004 9:54:0 |
| 2 | 19.240 | 37796.4 | 1964.469 | Manual | 3/29/2004 9:54:0 |
| 3 | 38.480 | 76135.3 | 1978.569 | Manual | 3/29/2004 9:54:0 |
| 4 | 57.720 | 114528.0 | 1984.2 | Manual | 3/29/2004 9:54:0 |
| 5 | 76.960 | 151103.3 | 1963.4 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1956.213 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 1.35%
Average CF = 1956.2130 with RSD = 1.93%

**2 HCB**
Retention time = 5.559 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2930.3 | 2930.25 | Manual | 3/29/2004 9:54:0 |
| 2 | 2.500 | 6840.5 | 2736.192 | Manual | 3/29/2004 9:54:0 |
| 3 | 5.000 | 14007.7 | 2801.548 | Manual | 3/29/2004 9:54:0 |
| 4 | 10.000 | 27495.3 | 2749.53 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 53197.7 | 2659.886 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 2775.481 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9967, Average error = 2.61%
Average CF = 2775.4810 with RSD = 3.61%

**3 alpha-BHC**
Retention time = 5.768 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

8555

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1703.9 | 1703.93 | Manual | 3/29/2004 9:54:0 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 7893.1 | 1578.625 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16649.6 | 1664.955 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 27083.1 | 1781.783 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 37623.6 | 1881.177 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1722.094 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9859, Average error = 5.08%
Average CF = 1722.0940 with RSD = 6.69%

**4 gamma-BHC**
Retention time = 6.300 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1773.7 | 1773.704 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8167.2 | 1633.445 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17138.1 | 1713.807 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 26997.9 | 1776.18 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 36705.6 | 1835.282 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1746.484 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9952, Average error = 3.34%
Average CF = 1746.4840 with RSD = 4.38%

**5 beta-BHC**
Retention time = 6.420 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1288.2 | 1288.239 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5734.6 | 1146.918 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 11215.7 | 1121.565 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 16848.2 | 1108.434 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 22314.0 | 1115.7 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1156.171 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9953, Average error = 4.57%
Average CF = 1156.1710 with RSD = 6.51%

**6 delta-BHC**
Retention time = 6.848 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

0556

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1804.4 | 1804.427 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 7914.2 | 1582.845 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 15999.6 | 1599.958 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 25860.4 | 1701.342 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35595.6 | 1779.781 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1693.671 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9943, Average error = 4.83%
Average CF = 1693.6710 with RSD = 5.96%

**7 Heptachlor**
Retention time = 6.937 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2054.5 | 2054.495 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9239.8 | 1847.961 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17851.6 | 1785.155 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 26873.1 | 1767.968 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35503.4 | 1775.169 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1846.15 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9946, Average error = 4.55%
Average CF = 1846.1500 with RSD = 6.54%

**8 Aldrin**
Retention time = 7.400 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1745.2 | 1745.209 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8108.0 | 1621.602 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16508.8 | 1650.875 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 26004.7 | 1710.835 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35361.3 | 1768.064 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1699.317 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 2.97%
Average CF = 1699.3170 with RSD = 3.65%

**9 Telodrin**
Retention time = 7.618 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9557

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1972.4 | 1972.36 | Manual | 3/29/2004 9:54:0 |
| 2 | 2.500 | 4508.6 | 1803.44 | Manual | 3/29/2004 9:54:0 |
| 3 | 5.000 | 9113.1 | 1822.616 | Manual | 3/29/2004 9:54:0 |
| 4 | 10.000 | 17666.0 | 1766.599 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 34612.7 | 1730.636 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1819.13 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9951, Average error = 3.45%
Average CF = 1819.1300 with RSD = 5.09%

**10 Hept. epoxide**
Retention time = 8.186 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1968.2 | 1968.204 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8912.2 | 1782.437 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17450.1 | 1745.005 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 26702.1 | 1756.72 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35426.8 | 1771.342 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1804.742 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.62%
Average CF = 1804.7420 with RSD = 5.12%

**11 o,p-DDE**
Retention time = 8.422 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2467.6 | 1233.81 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5899.5 | 1179.892 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 12450.3 | 1245.029 | Manual | 3/29/2004 9:54:0 |
| 4 | 20.000 | 25275.3 | 1263.766 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 51778.3 | 1294.458 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1243.391 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 2.35%
Average CF = 1243.3910 with RSD = 3.40%

9558

**12 g. Chlordane**
Retention time = 8.441 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1896.3 | 1896.333 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9109.1 | 1821.822 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17917.9 | 1791.794 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 27377.9 | 1801.176 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 36085.0 | 1804.251 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1823.075 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.61%
Average CF = 1823.0750 with RSD = 2.32%

**13 a. Chlordane**
Retention time = 8.635 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1926.6 | 1926.554 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9333.5 | 1866.706 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 18508.9 | 1850.895 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 28163.9 | 1852.891 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 37541.2 | 1877.062 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1874.822 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.15%
Average CF = 1874.8220 with RSD = 1.64%

**14 Endosulfan I**
Retention time = 8.726 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1649.2 | 1649.196 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8216.9 | 1643.385 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16385.2 | 1638.523 | Manual | 3/29/2004 9:54:0 |
| 4 | 15.200 | 25282.3 | 1663.313 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 33476.5 | 1673.827 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1653.649 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.72%
Average CF = 1653.6490 with RSD = 0.88%

9559

**15 4,4'-DDE**
Retention time = 8.830 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2797.1 | 1398.554 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 15142.0 | 1514.2 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 32100.0 | 1605.001 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 51286.6 | 1687.059 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 69846.7 | 1746.168 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1590.197 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9834, Average error = 6.73%
Average CF = 1590.1970 with RSD = 8.69%

**16 Dieldrin**
Retention time = 9.090 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3134.2 | 1567.123 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 16209.0 | 1620.896 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 33329.5 | 1666.476 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 51871.9 | 1706.313 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 70934.8 | 1773.37 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1666.835 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9933, Average error = 3.50%
Average CF = 1666.8350 with RSD = 4.74%

**17 o,p-DDD**
Retention time = 9.105 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2026.3 | 1013.125 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 4910.8 | 982.1639 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 10020.8 | 1002.085 | Manual | 3/29/2004 9:54:0 |
| 4 | 20.000 | 19957.5 | 997.873 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 39251.6 | 981.2889 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 995.307 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.09%
Average CF = 995.3072 with RSD = 1.37%

0568

**18 Endrin**
Retention time = 9.503 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2391.5 | 1195.745 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 12429.2 | 1242.924 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 25399.6 | 1269.982 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 39774.0 | 1308.356 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 53351.6 | 1333.791 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1270.159 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9953, Average error = 3.21%
Average CF = 1270.1590 with RSD = 4.27%

**19 o,p-DDT**
Retention time = 9.511 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2466.6 | 1233.295 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5845.9 | 1169.188 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 11960.4 | 1196.038 | Manual | 3/29/2004 9:54:0 |
| 4 | 20.000 | 23270.0 | 1163.502 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 44885.7 | 1122.142 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1176.833 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9958, Average error = 2.57%
Average CF = 1176.8330 with RSD = 3.50%

**20 4,4'-DDD**
Retention time = 9.595 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2166.6 | 1083.292 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 11074.8 | 1107.477 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 22286.0 | 1114.302 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 34522.0 | 1135.592 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 45988.0 | 1149.699 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1118.072 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 1.76%
Average CF = 1118.0720 with RSD = 2.30%

9561

**21 Kepone**
Retention time = 9.659 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 755.5 | 75.551 | Manual | 3/29/2004 9:54:0 |
| 2 | 25.000 | 3586.6 | 143.466 | Manual | 3/29/2004 9:54:0 |
| 3 | 50.000 | 9159.5 | 183.189 | Manual | 3/29/2004 9:54:0 |
| 4 | 100.000 | 17939.0 | 179.3901 | Manual | 3/29/2004 9:54:0 |
| 5 | 200.000 | 56093.9 | 280.4693 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 172.413 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.7692, Average error = 29.19%
Average CF = 172.4131 with RSD = 43.07%

**22 Endosulfan II**
Retention time = 9.782 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3166.2 | 1583.078 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 15929.3 | 1592.925 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 31843.3 | 1592.162 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 48630.6 | 1599.69 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 64539.0 | 1613.474 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1596.266 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 0.52%
Average CF = 1596.2660 with RSD = 0.71%

**23 4,4'-DDT**
Retention time = 10.007 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2469.3 | 1234.672 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 12297.8 | 1229.78 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 23991.2 | 1199.558 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 36249.9 | 1192.431 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 47533.5 | 1188.337 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1208.956 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 1.54%
Average CF = 1208.9560 with RSD = 1.79%

0562

**24 Endrin aldehyde**

Retention time = 10.217 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2965.1 | 1482.543 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 14785.8 | 1478.58 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 28853.4 | 1442.671 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 43313.7 | 1424.792 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 56374.4 | 1409.36 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1447.589 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 1.82%
Average CF = 1447.5890 with RSD = 2.24%

**25 Endo. sulfate**
Retention time = 10.575 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2806.5 | 1403.226 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 14129.2 | 1412.915 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 28323.7 | 1416.184 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 43012.4 | 1414.881 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 56812.4 | 1420.309 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1413.503 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.31%
Average CF = 1413.5030 with RSD = 0.45%

**26 Methoxychlor**
Retention time = 10.880 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 7310.4 | 731.0396 | Manual | 3/29/2004 9:54:0 |
| 2 | 50.000 | 33197.0 | 663.9408 | Manual | 3/29/2004 9:54:0 |
| 3 | 100.000 | 62252.0 | 622.5204 | Manual | 3/29/2004 9:54:0 |
| 4 | 152.000 | 91174.0 | 599.8288 | Manual | 3/29/2004 9:54:0 |
| 5 | 200.000 | 117279.5 | 586.3975 | Manual | 3/29/2004 9:54:0 |

8563

Calibration formula: Y = 640.745 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9790, Average error = 7.08%
Average CF = 640.7454 with RSD = 9.12%

**27 Mirex**
Retention time = 11.296 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 7702.3 | 1540.452 | Manual | 3/29/2004 9:54:0 |
| 2 | 12.500 | 17616.0 | 1409.282 | Manual | 3/29/2004 9:54:0 |
| 3 | 25.000 | 34367.1 | 1374.685 | Manual | 3/29/2004 9:54:0 |
| 4 | 50.000 | 62836.3 | 1256.726 | Manual | 3/29/2004 9:54:0 |
| 5 | 100.000 | 115481.5 | 1154.815 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1347.192 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9477, Average error = 8.40%
Average CF = 1347.1920 with RSD = 10.96%

**28 Endrin ketone**
Retention time = 11.335 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3350.2 | 1675.099 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 16485.4 | 1648.544 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 32361.3 | 1618.064 | Manual | 3/29/2004 9:54:0 |
| 4 | 30.400 | 49145.9 | 1616.642 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 64528.1 | 1613.203 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1634.311 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.35%
Average CF = 1634.3110 with RSD = 1.64%

**29 DCB**
Retention time = 13.378 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 7962.0 | 2041.526 | Manual | 3/29/2004 9:54:0 |
| 2 | 19.480 | 34789.5 | 1785.908 | Manual | 3/29/2004 9:54:0 |
| 3 | 38.960 | 63163.0 | 1621.226 | Manual | 3/29/2004 9:54:0 |
| 4 | 58.440 | 90328.6 | 1545.664 | Manual | 3/29/2004 9:54:0 |
| 5 | 77.920 | 115526.7 | 1482.632 | Manual | 3/29/2004 9:54:0 |

9564

Calibration formula: Y = 1695.391 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9502, Average error = 10.30%
Average CF = 1695.3910 with RSD = 13.23%

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | CALIBRATION FACTORS | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | %RSD |
| Tetrachloro-m-xylene | 1.89E+03 | 1.96E+03 | 1.98E+03 | 1.98E+03 | 1.96E+03 | 1.96E+03 | 1.9 |
| Hcb | 2.93E+03 | 2.74E+03 | 2.80E+03 | 2.75E+03 | 2.66E+03 | 2.78E+03 | 3.6 |
| alpha-BHC | 1.70E+03 | 1.58E+03 | 1.66E+03 | 1.78E+03 | 1.88E+03 | 1.72E+03 | 6.7 |
| gamma-BHC (Lindane) | 1.77E+03 | 1.63E+03 | 1.71E+03 | 1.78E+03 | 1.84E+03 | 1.75E+03 | 4.4 |
| beta-BHC | 1.29E+03 | 1.15E+03 | 1.12E+03 | 1.11E+03 | 1.12E+03 | 1.16E+03 | 6.5 |
| delta-BHC | 1.80E+03 | 1.58E+03 | 1.60E+03 | 1.70E+03 | 1.78E+03 | 1.69E+03 | 6.0 |
| Heptachlor | 2.05E+03 | 1.85E+03 | 1.79E+03 | 1.77E+03 | 1.78E+03 | 1.85E+03 | 6.5 |
| Aldrin | 1.75E+03 | 1.62E+03 | 1.65E+03 | 1.71E+03 | 1.77E+03 | 1.70E+03 | 3.7 |
| Telodrin | 1.97E+03 | 1.80E+03 | 1.82E+03 | 1.77E+03 | 1.73E+03 | 1.82E+03 | 5.1 |
| Heptachlor epoxide | 1.97E+03 | 1.78E+03 | 1.75E+03 | 1.76E+03 | 1.77E+03 | 1.80E+03 | 5.1 |
| o,p-DDE | 1.23E+03 | 1.18E+03 | 1.25E+03 | 1.26E+03 | 1.29E+03 | 1.24E+03 | 3.4 |
| gamma-Chlordane | 1.90E+03 | 1.82E+03 | 1.79E+03 | 1.80E+03 | 1.80E+03 | 1.82E+03 | 2.3 |
| alpha-Chlordane | 1.93E+03 | 1.87E+03 | 1.85E+03 | 1.85E+03 | 1.88E+03 | 1.87E+03 | 1.6 |
| Endosulfan I | 1.65E+03 | 1.64E+03 | 1.64E+03 | 1.66E+03 | 1.67E+03 | 1.65E+03 | .9 |
| 4,4'-DDE | 1.40E+03 | 1.51E+03 | 1.61E+03 | 1.69E+03 | 1.75E+03 | 1.59E+03 | 8.7 |
| Dieldrin | 1.57E+03 | 1.62E+03 | 1.67E+03 | 1.71E+03 | 1.77E+03 | 1.67E+03 | 4.7 |
| o,p-DDD | 1.01E+03 | 9.82E+02 | 1.00E+03 | 9.98E+02 | 9.81E+02 | 9.95E+02 | 1.4 |
| Endrin | 1.20E+03 | 1.24E+03 | 1.27E+03 | 1.31E+03 | 1.33E+03 | 1.27E+03 | 4.3 |
| o,p-DDT | 1.23E+03 | 1.17E+03 | 1.20E+03 | 1.16E+03 | 1.12E+03 | 1.18E+03 | 3.5 |
| 4,4'-DDD | 1.08E+03 | 1.11E+03 | 1.11E+03 | 1.14E+03 | 1.15E+03 | 1.12E+03 | 2.3 |
| Kepone | 7.56E+01 | 1.43E+02 | 1.83E+02 | 1.79E+02 | 2.80E+02 | 1.72E+02 | 43.1 |
| Endosulfan II | 1.58E+03 | 1.59E+03 | 1.59E+03 | 1.60E+03 | 1.61E+03 | 1.60E+03 | .7 |
| 4,4'-DDT | 1.23E+03 | 1.23E+03 | 1.20E+03 | 1.19E+03 | 1.19E+03 | 1.21E+03 | 1.8 |
| Endrin aldehyde | 1.48E+03 | 1.48E+03 | 1.44E+03 | 1.42E+03 | 1.41E+03 | 1.45E+03 | 2.2 |
| Endosulfan sulfate | 1.40E+03 | 1.41E+03 | 1.42E+03 | 1.41E+03 | 1.42E+03 | 1.41E+03 | .5 |
| Methoxychlor | 7.31E+02 | 6.64E+02 | 6.23E+02 | 6.00E+02 | 5.86E+02 | 6.41E+02 | 9.1 |
| Mirex | 1.54E+03 | 1.41E+03 | 1.37E+03 | 1.26E+03 | 1.15E+03 | 1.35E+03 | 11.0 |
| Endrin ketone | 1.68E+03 | 1.65E+03 | 1.62E+03 | 1.62E+03 | 1.61E+03 | 1.63E+03 | 1.6 |
| Decachlorobiphenyl | 2.04E+03 | 1.79E+03 | 1.62E+03 | 1.55E+03 | 1.48E+03 | 1.70E+03 | 13.2 |

Average % RSD: 5.7

9565

Calibration File Name: **C:\CPWIN\DATA1\2C13088B.CAL** Version = 4
External standard calibration
Standard injection volume = 1
No sample weight correction
Area reject threshold = 0
Reference peak area reject threshold = 50
Amount units = PPB
29 components with 5 levels each

MIXE RTs updated 8 99.896 7. 2014 3.31.04

## 1 TCX

Retention time = 4.826 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.850 | 7278.1 | 1890.425 | Manual | 3/29/2004 9:54:0 |
| 2 | 19.240 | 37796.4 | 1964.469 | Manual | 3/29/2004 9:54:0 |
| 3 | 38.480 | 76135.3 | 1978.569 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 57.720 | 114528.0 | 1984.2 | Manual | 3/29/2004 9:54:0 |
| 5 | 76.960 | 151103.3 | 1963.4 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1956.213 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 1.35%
Average CF = 1956.2130 with RSD = 1.93%

## 2 HCB

Retention time = 5.550 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2930.3 | 2930.25 | Manual | 3/29/2004 9:54:0 |
| 2 | 2.500 | 6840.5 | 2736.192 | Manual | 3/29/2004 9:54:0 |
| 3 | 5.000 | 14007.7 | 2801.548 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 10.000 | 27495.3 | 2749.53 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 53197.7 | 2659.886 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 2775.481 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9967, Average error = 2.61%
Average CF = 2775.4810 with RSD = 3.61%

## 3 alpha-BHC

Retention time = 5.754 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

9566

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1703.9 | 1703.93 | Manual | 3/29/2004 9:54:0 |

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 2 | 5.000 | 7893.1 | 1578.625 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16649.6 | 1664.955 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 27083.1 | 1781.783 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 37623.6 | 1881.177 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1722.094 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9859, Average error = 5.08%
Average CF = 1722.0940 with RSD = 6.69%

**4 gamma-BHC**
Retention time = 6.284 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1773.7 | 1773.704 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8167.2 | 1633.445 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17138.1 | 1713.807 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 26997.9 | 1776.18 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 36705.6 | 1835.282 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1746.484 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9952, Average error = 3.34%
Average CF = 1746.4840 with RSD = 4.38%

**5 beta-BHC**
Retention time = 6.405 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1288.2 | 1288.239 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5734.6 | 1146.918 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 11215.7 | 1121.565 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 16848.2 | 1108.434 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 22314.0 | 1115.7 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1156.171 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9953, Average error = 4.57%
Average CF = 1156.1710 with RSD = 6.51%

**6 delta-BHC**
Retention time = 6.833 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

0567

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1804.4 | 1804.427 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 7914.2 | 1582.845 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 15999.6 | 1599.958 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 25860.4 | 1701.342 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35595.6 | 1779.781 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1693.671 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9943, Average error = 4.83%
Average CF = 1693.6710 with RSD = 5.96%

**7 Heptachlor**
Retention time = 6.921 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 2054.5 | 2054.495 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9239.8 | 1847.961 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17851.6 | 1785.155 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 26873.1 | 1767.968 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35503.4 | 1775.169 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1846.15 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9946, Average error = 4.55%
Average CF = 1846.1500 with RSD = 6.54%

**8 Aldrin**
Retention time = 7.384 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1745.2 | 1745.209 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8108.0 | 1621.602 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16508.8 | 1650.875 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 26004.7 | 1710.835 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35361.3 | 1768.064 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1699.317 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9968, Average error = 2.97%
Average CF = 1699.3170 with RSD = 3.65%

**9 Telodrin**
0568
Retention time = 7.606 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1972.4 | 1972.36 | Manual | 3/29/2004 9:54:0 |
| 2 | 2.500 | 4508.6 | 1803.44 | Manual | 3/29/2004 9:54:0 |
| 3 | 5.000 | 9113.1 | 1822.616 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 10.000 | 17666.0 | 1766.599 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 34612.7 | 1730.636 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1819.13 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9951, Average error = 3.45%
Average CF = 1819.1300 with RSD = 5.09%

**10 Hept. epoxide**
Retention time = 8.169 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1968.2 | 1968.204 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8912.2 | 1782.437 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17450.1 | 1745.005 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 26702.1 | 1756.72 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 35426.8 | 1771.342 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1804.742 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9981, Average error = 3.62%
Average CF = 1804.7420 with RSD = 5.12%

**11 o,p-DDE**
Retention time = 8.409 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2467.6 | 1233.81 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5899.5 | 1179.892 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 12450.3 | 1245.029 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 20.000 | 25275.3 | 1263.766 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 51778.3 | 1294.458 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1243.391 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9972, Average error = 2.35%
Average CF = 1243.3910 with RSD = 3.40%

**12 g. Chlordane**
Retention time = 8.424 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component

8569

Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1896.3 | 1896.333 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9109.1 | 1821.822 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 17917.9 | 1791.794 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 27377.9 | 1801.176 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 36085.0 | 1804.251 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1823.075 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.61%
Average CF = 1823.0750 with RSD = 2.32%

**13 a. Chlordane**
Retention time = 8.618 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1926.6 | 1926.554 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 9333.5 | 1866.706 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 18508.9 | 1850.895 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 28163.9 | 1852.891 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 37541.2 | 1877.062 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1874.822 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 1.15%
Average CF = 1874.8220 with RSD = 1.64%

**14 Endosulfan I**
Retention time = 8.708 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 1.000 | 1649.2 | 1649.196 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 8216.9 | 1643.385 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 16385.2 | 1638.523 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 15.200 | 25282.3 | 1663.313 | Manual | 3/29/2004 9:54:0 |
| 5 | 20.000 | 33476.5 | 1673.827 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1653.649 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9997, Average error = 0.72%
Average CF = 1653.6490 with RSD = 0.88%

9579

**15 4,4'-DDE**
Retention time = 8.814 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.1
Group number = 0, Component constant = 0

No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2797.1 | 1398.554 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 15142.0 | 1514.2 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 32100.0 | 1605.001 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 51286.6 | 1687.059 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 69846.7 | 1746.168 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1590.197 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9834, Average error = 6.73%
Average CF = 1590.1970 with RSD = 8.69%

**16 Dieldrin**
Retention time = 9.072 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3134.2 | 1567.123 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 16209.0 | 1620.896 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 33329.5 | 1666.476 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 51871.9 | 1706.313 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 70934.8 | 1773.37 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1666.835 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9933, Average error = 3.50%
Average CF = 1666.8350 with RSD = 4.74%

**17 o,p-DDD**
Retention time = 9.091 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2026.3 | 1013.125 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 4910.8 | 982.1639 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 10020.8 | 1002.085 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 20.000 | 19957.5 | 997.873 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 39251.6 | 981.2889 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 995.307 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9996, Average error = 1.09%
Average CF = 995.3072 with RSD = 1.37%

8571

**18 Endrin**
Retention time = 9.485 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2

Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2391.5 | 1195.745 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 12429.2 | 1242.924 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 25399.6 | 1269.982 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 39774.0 | 1308.356 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 53351.6 | 1333.791 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1270.159 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9953, Average error = 3.21%
Average CF = 1270.1590 with RSD = 4.27%

**19 o,p-DDT**
Retention time = 9.496 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2466.6 | 1233.295 | Manual | 3/29/2004 9:54:0 |
| 2 | 5.000 | 5845.9 | 1169.188 | Manual | 3/29/2004 9:54:0 |
| 3 | 10.000 | 11960.4 | 1196.038 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 20.000 | 23270.0 | 1163.502 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 44885.7 | 1122.142 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1176.833 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9958, Average error = 2.57%
Average CF = 1176.8330 with RSD = 3.50%

**20 4,4'-DDD**
Retention time = 9.578 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2166.6 | 1083.292 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 11074.8 | 1107.477 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 22286.0 | 1114.302 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 34522.0 | 1135.592 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 45988.0 | 1149.699 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1118.072 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9985, Average error = 1.76%
Average CF = 1118.0720 with RSD = 2.30%

9572

**21 Kepone**
Retention time = 9.644 min., Search window = 0.030 min.

Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 755.5 | 75.551 | Manual | 3/29/2004 9:54:0 |
| 2 | 25.000 | 3586.6 | 143.466 | Manual | 3/29/2004 9:54:0 |
| 3 | 50.000 | 9159.5 | 183.189 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 100.000 | 17939.0 | 179.3901 | Manual | 3/29/2004 9:54:0 |
| 5 | 200.000 | 56093.9 | 280.4693 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 172.413 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.7692, Average error = 29.19%
Average CF = 172.4131 with RSD = 43.07%

**22 Endosulfan II**
Retention time = 9.764 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3166.2 | 1583.078 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 15929.3 | 1592.925 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 31843.3 | 1592.162 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 48630.6 | 1599.69 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 64539.0 | 1613.474 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1596.266 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9998, Average error = 0.52%
Average CF = 1596.2660 with RSD = 0.71%

**23 4,4'-DDT**
Retention time = 9.990 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2469.3 | 1234.672 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 12297.8 | 1229.78 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 23991.2 | 1199.558 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 36249.9 | 1192.431 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 47533.5 | 1188.337 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1208.956 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9992, Average error = 1.54%
Average CF = 1208.9560 with RSD = 1.79%

9573

**24 Endrin aldehyde**

Retention time = 10.199 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2965.1 | 1482.543 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 14785.8 | 1478.58 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 28853.4 | 1442.671 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 43313.7 | 1424.792 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 56374.4 | 1409.36 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1447.589 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9984, Average error = 1.82%
Average CF = 1447.5890 with RSD = 2.24%

**25 Endo. sulfate**
Retention time = 10.556 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 2806.5 | 1403.226 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 14129.2 | 1412.915 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 28323.7 | 1416.184 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 43012.4 | 1414.881 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 56812.4 | 1420.309 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1413.503 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 1.0000, Average error = 0.31%
Average CF = 1413.5030 with RSD = 0.45%

**26 Methoxychlor**
Retention time = 10.863 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 10.000 | 7310.4 | 731.0396 | Manual | 3/29/2004 9:54:0 |
| 2 | 50.000 | 33197.0 | 663.9408 | Manual | 3/29/2004 9:54:0 |
| 3 | 100.000 | 62252.0 | 622.5204 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 152.000 | 91174.0 | 599.8288 | Manual | 3/29/2004 9:54:0 |
| 5 | 200.000 | 117279.5 | 586.3975 | Manual | 3/29/2004 9:54:0 |

9574

Calibration formula: Y = 640.745 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9790, Average error = 7.08%
Average CF = 640.7454 with RSD = 9.12%

**27 Mirex**
Retention time = 11.279 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 5.000 | 7702.3 | 1540.452 | Manual | 3/29/2004 9:54:0 |
| 2 | 12.500 | 17616.0 | 1409.282 | Manual | 3/29/2004 9:54:0 |
| 3 | 25.000 | 34367.1 | 1374.685 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 50.000 | 62836.3 | 1256.726 | Manual | 3/29/2004 9:54:0 |
| 5 | 100.000 | 115481.5 | 1154.815 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1347.192 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9477, Average error = 8.40%
Average CF = 1347.1920 with RSD = 10.96%

**28 Endrin ketone**
Retention time = 11.313 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 2.000 | 3350.2 | 1675.099 | Manual | 3/29/2004 9:54:0 |
| 2 | 10.000 | 16485.4 | 1648.544 | Manual | 3/29/2004 9:54:0 |
| 3 | 20.000 | 32361.3 | 1618.064 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 30.400 | 49145.9 | 1616.642 | Manual | 3/29/2004 9:54:0 |
| 5 | 40.000 | 64528.1 | 1613.203 | Manual | 3/29/2004 9:54:0 |

Calibration formula: Y = 1634.311 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9995, Average error = 1.35%
Average CF = 1634.3110 with RSD = 1.64%

**29 DCB**
Retention time = 13.348 min., Search window = 0.030 min.
Low alarm amount = 0, High alarm amount = 0.2
Group number = 0, Component constant = 0
No retention time reference component
Single peak quantification by height

| Level | Amount | Height | Height/Amt | Source | Date and time |
|---|---|---|---|---|---|
| 1 | 3.900 | 7962.0 | 2041.526 | Manual | 3/29/2004 9:54:0 |
| 2 | 19.480 | 34789.5 | 1785.908 | Manual | 3/29/2004 9:54:0 |
| 3 | 38.960 | 63163.0 | 1621.226 | 1C13088B.73A | 3/30/2004 7:39:4 |
| 4 | 58.440 | 90328.6 | 1545.664 | Manual | 3/29/2004 9:54:0 |
| 5 | 77.920 | 115526.7 | 1482.632 | Manual | 3/29/2004 9:54:0 |

8575

Calibration formula: Y = 1695.391 X
Fit type = Avg CF with equal weighting, forced to origin
Coefficient of determination = 0.9502, Average error = 10.30%
Average CF = 1695.3910 with RSD = 13.23%

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 1C13088

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/28/04  3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.85 | 4.82 | 4.88 | 80 | 1 | 50 | 4384 | 9.6 |
| | | | | | | 2 | 100 | 8519 | |
| | | | | | | 3 | 200 | 16455 | |
| | | | | | | 4 | 500 | 37276 | |
| | | | | | | 5 | 1000 | 69205 | |
| | 2 | 5.36 | 5.33 | 5.39 | 137 | 1 | 50 | 7752 | 11.8 |
| | | | | | | 2 | 100 | 14819 | |
| | | | | | | 3 | 200 | 28359 | |
| | | | | | | 4 | 500 | 62918 | |
| | | | | | | 5 | 1000 | 115625 | |
| | 3 | 6.01 | 5.98 | 6.04 | 226 | 1 | 50 | 12659 | 10.8 |
| | | | | | | 2 | 100 | 24314 | |
| | | | | | | 3 | 200 | 46566 | |
| | | | | | | 4 | 500 | 104152 | |
| | | | | | | 5 | 1000 | 194195 | |
| | 4 | 6.19 | 6.16 | 6.22 | 123 | 1 | 50 | 6806 | 9.9 |
| | | | | | | 2 | 100 | 13138 | |
| | | | | | | 3 | 200 | 25227 | |
| | | | | | | 4 | 500 | 57187 | |
| | | | | | | 5 | 1000 | 106555 | |
| | 5 | 6.28 | 6.25 | 6.31 | 87 | 1 | 50 | 4672 | 6.1 |
| | | | | | | 2 | 100 | 9052 | |
| | | | | | | 3 | 200 | 17801 | |
| | | | | | | 4 | 500 | 41773 | |
| | | | | | | 5 | 1000 | 80378 | |
| | 6 | 6.75 | 6.72 | 6.78 | 106 | 1 | 50 | 5859 | 9.6 |
| | | | | | | 2 | 100 | 11278 | |
| | | | | | | 3 | 200 | 21816 | |
| | | | | | | 4 | 500 | 49438 | |
| | | | | | | 5 | 1000 | 92339 | |
| Aroclor-1221 | 1 | 4.57 | 4.54 | 4.60 | 50 | 1 | 200 | 9927 | |
| | 2 | 4.79 | 4.76 | 4.82 | 26 | 1 | 200 | 5160 | |
| | 3 | 4.85 | 4.82 | 4.88 | 114 | 1 | 200 | 22868 | |
| Aroclor-1232 | 1 | 4.85 | 4.82 | 4.88 | 88 | 1 | 200 | 17531 | |
| | 2 | 5.36 | 5.33 | 5.39 | 59 | 1 | 200 | 11849 | |
| | 3 | 6.01 | 5.98 | 6.04 | 101 | 1 | 200 | 20249 | |
| | 4 | 6.19 | 6.16 | 6.22 | 56 | 1 | 200 | 11234 | |
| | 5 | 6.28 | 6.25 | 6.31 | 39 | 1 | 200 | 7760 | |
| | 6 | 6.75 | 6.72 | 6.78 | 46 | 1 | 200 | 9103 | |

8576

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 1C13088

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.85 | 4.82 | 4.88 | 73 | 1 | 200 | 14656 | |
| | 2 | 5.36 | 5.33 | 5.39 | 119 | 1 | 200 | 23893 | |
| | 3 | 6.01 | 5.98 | 6.04 | 193 | 1 | 200 | 38533 | |
| | 4 | 6.19 | 6.16 | 6.22 | 106 | 1 | 200 | 21191 | |
| | 5 | 6.28 | 6.25 | 6.31 | 74 | 1 | 200 | 14854 | |
| | 6 | 6.75 | 6.72 | 6.78 | 94 | 1 | 200 | 18781 | |
| Aroclor-1248 | 1 | 5.36 | 5.33 | 5.39 | 56 | 1 | 200 | 11279 | |
| | 2 | 6.75 | 6.72 | 6.78 | 141 | 1 | 200 | 28126 | |
| | 3 | 7.20 | 7.17 | 7.23 | 67 | 1 | 200 | 13468 | |
| | 4 | 7.31 | 7.28 | 7.34 | 134 | 1 | 200 | 26842 | |
| | 5 | 7.35 | 7.32 | 7.38 | 150 | 1 | 200 | 30014 | |
| | 6 | 8.13 | 8.10 | 8.16 | 77 | 1 | 200 | 15492 | |
| Aroclor-1254 | 1 | 7.26 | 7.23 | 7.29 | 119 | 1 | 250 | 29804 | |
| | 2 | 7.60 | 7.57 | 7.63 | 193 | 1 | 250 | 48227 | |
| | 3 | 7.97 | 7.94 | 8.00 | 129 | 1 | 250 | 32228 | |
| | 4 | 8.13 | 8.10 | 8.16 | 214 | 1 | 250 | 53400 | |
| | 5 | 8.49 | 8.46 | 8.52 | 155 | 1 | 250 | 38835 | |
| | 6 | 9.10 | 9.07 | 9.13 | 177 | 1 | 250 | 44251 | |

0577

# 6F
# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 1C13088

GC Column (1): RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/28/04  3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.37 | 8.34 | 8.40 | 176 | 1 | 50 | 10151 | 13.3 |
| | | | | | | 2 | 100 | 19226 | |
| | | | | | | 3 | 200 | 36313 | |
| | | | | | | 4 | 500 | 79627 | |
| | | | | | | 5 | 1000 | 146186 | |
| | 2 | 8.72 | 8.69 | 8.75 | 224 | 1 | 50 | 13127 | 14.4 |
| | | | | | | 2 | 100 | 24557 | |
| | | | | | | 3 | 200 | 45772 | |
| | | | | | | 4 | 500 | 100177 | |
| | | | | | | 5 | 1000 | 183703 | |
| | 3 | 9.09 | 9.06 | 9.12 | 232 | 1 | 50 | 13063 | 11.0 |
| | | | | | | 2 | 100 | 24869 | |
| | | | | | | 3 | 200 | 47364 | |
| | | | | | | 4 | 500 | 106061 | |
| | | | | | | 5 | 1000 | 199383 | |
| | 4 | 9.23 | 9.20 | 9.26 | 147 | 1 | 50 | 8263 | 11.6 |
| | | | | | | 2 | 100 | 15932 | |
| | | | | | | 3 | 200 | 30308 | |
| | | | | | | 4 | 500 | 67454 | |
| | | | | | | 5 | 1000 | 124529 | |
| | 5 | 9.95 | 9.92 | 9.98 | 337 | 1 | 50 | 19028 | 10.8 |
| | | | | | | 2 | 100 | 35903 | |
| | | | | | | 3 | 200 | 68703 | |
| | | | | | | 4 | 500 | 154193 | |
| | | | | | | 5 | 1000 | 291375 | |
| | 6 | 10.32 | 10.29 | 10.35 | 189 | 1 | 50 | 10541 | 9.3 |
| | | | | | | 2 | 100 | 19822 | |
| | | | | | | 3 | 200 | 38836 | |
| | | | | | | 4 | 500 | 88302 | |
| | | | | | | 5 | 1000 | 166892 | |
| Chlordane (Technical) | 1 | 6.18 | 6.15 | 6.21 | 158 | 1 | 200.8 | 31755 | |
| | 2 | 6.29 | 6.26 | 6.32 | 208 | 1 | 200.8 | 41847 | |
| | 3 | 6.90 | 6.87 | 6.93 | 210 | 1 | 200.8 | 42212 | |
| | 4 | 7.72 | 7.69 | 7.75 | 399 | 1 | 200.8 | 80154 | |
| | 5 | 7.89 | 7.86 | 7.92 | 509 | 1 | 200.8 | 102143 | |
| | 6 | 8.91 | 8.88 | 8.94 | 140 | 1 | 200.8 | 28092 | |

9578

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 1C13088

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.74 | 8.71 | 8.77 | 36 | 1 | 500 | 17853 | |
| | 2 | 9.15 | 9.12 | 9.18 | 53 | 1 | 500 | 26457 | |
| | 3 | 9.52 | 9.49 | 9.55 | 67 | 1 | 500 | 33487 | |
| | 4 | 9.73 | 9.70 | 9.76 | 44 | 1 | 500 | 22035 | |
| | 5 | 9.99 | 9.96 | 10.02 | 77 | 1 | 500 | 38370 | |
| | 6 | 10.46 | 10.43 | 10.49 | 63 | 1 | 500 | 31716 | |

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# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13088

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 4.84 | 4.81 | 4.87 | 80 | 1 | 50 | 4384 | 9.6 |
| | | | | | | 2 | 100 | 8519 | |
| | | | | | | 3 | 200 | 16455 | |
| | | | | | | 4 | 500 | 37276 | |
| | | | | | | 5 | 1000 | 69205 | |
| | 2 | 5.35 | 5.32 | 5.38 | 137 | 1 | 50 | 7752 | 11.8 |
| | | | | | | 2 | 100 | 14819 | |
| | | | | | | 3 | 200 | 28359 | |
| | | | | | | 4 | 500 | 62918 | |
| | | | | | | 5 | 1000 | 115625 | |
| | 3 | 6.00 | 5.97 | 6.03 | 226 | 1 | 50 | 12659 | 10.8 |
| | | | | | | 2 | 100 | 24314 | |
| | | | | | | 3 | 200 | 46566 | |
| | | | | | | 4 | 500 | 104152 | |
| | | | | | | 5 | 1000 | 194195 | |
| | 4 | 6.19 | 6.16 | 6.22 | 123 | 1 | 50 | 6806 | 9.9 |
| | | | | | | 2 | 100 | 13138 | |
| | | | | | | 3 | 200 | 25227 | |
| | | | | | | 4 | 500 | 57187 | |
| | | | | | | 5 | 1000 | 106555 | |
| | 5 | 6.27 | 6.24 | 6.30 | 87 | 1 | 50 | 4672 | 6.1 |
| | | | | | | 2 | 100 | 9052 | |
| | | | | | | 3 | 200 | 17801 | |
| | | | | | | 4 | 500 | 41773 | |
| | | | | | | 5 | 1000 | 80378 | |
| | 6 | 6.74 | 6.71 | 6.77 | 106 | 1 | 50 | 5859 | 9.6 |
| | | | | | | 2 | 100 | 11278 | |
| | | | | | | 3 | 200 | 21816 | |
| | | | | | | 4 | 500 | 49438 | |
| | | | | | | 5 | 1000 | 92339 | |
| Aroclor-1221 | 1 | 4.57 | 4.54 | 4.60 | 50 | 1 | 200 | 9927 | |
| | 2 | 4.78 | 4.75 | 4.81 | 26 | 1 | 200 | 5160 | |
| | 3 | 4.84 | 4.81 | 4.87 | 114 | 1 | 200 | 22868 | |
| Aroclor-1232 | 1 | 4.84 | 4.81 | 4.87 | 88 | 1 | 200 | 17531 | |
| | 2 | 5.35 | 5.32 | 5.38 | 59 | 1 | 200 | 11849 | |
| | 3 | 6.00 | 5.97 | 6.03 | 101 | 1 | 200 | 20249 | |
| | 4 | 6.19 | 6.16 | 6.22 | 56 | 1 | 200 | 11234 | |
| | 5 | 6.27 | 6.24 | 6.30 | 39 | 1 | 200 | 7760 | |
| | 6 | 6.74 | 6.71 | 6.77 | 46 | 1 | 200 | 9103 | |

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13088

GC Column (1): RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 4.84 | 4.81 | 4.87 | 73 | 1 | 200 | 14656 | |
| | 2 | 5.35 | 5.32 | 5.38 | 119 | 1 | 200 | 23893 | |
| | 3 | 6.00 | 5.97 | 6.03 | 193 | 1 | 200 | 38533 | |
| | 4 | 6.19 | 6.16 | 6.22 | 106 | 1 | 200 | 21191 | |
| | 5 | 6.27 | 6.24 | 6.30 | 74 | 1 | 200 | 14854 | |
| | 6 | 6.74 | 6.71 | 6.77 | 94 | 1 | 200 | 18781 | |
| Aroclor-1248 | 1 | 5.35 | 5.32 | 5.38 | 56 | 1 | 200 | 11279 | |
| | 2 | 6.74 | 6.71 | 6.77 | 141 | 1 | 200 | 28126 | |
| | 3 | 7.19 | 7.16 | 7.22 | 67 | 1 | 200 | 13468 | |
| | 4 | 7.31 | 7.28 | 7.34 | 134 | 1 | 200 | 26842 | |
| | 5 | 7.34 | 7.31 | 7.37 | 150 | 1 | 200 | 30014 | |
| | 6 | 8.12 | 8.09 | 8.15 | 77 | 1 | 200 | 15492 | |
| Aroclor-1254 | 1 | 7.25 | 7.22 | 7.28 | 119 | 1 | 250 | 29804 | |
| | 2 | 7.59 | 7.56 | 7.62 | 193 | 1 | 250 | 48227 | |
| | 3 | 7.96 | 7.93 | 7.99 | 129 | 1 | 250 | 32228 | |
| | 4 | 8.12 | 8.09 | 8.15 | 214 | 1 | 250 | 53400 | |
| | 5 | 8.48 | 8.45 | 8.51 | 155 | 1 | 250 | 38835 | |
| | 6 | 9.08 | 9.05 | 9.11 | 177 | 1 | 250 | 44251 | |

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Calibration File: 2C13088

GC Column (1) : RTX-CLP  ID: 0.32 (mm)  Date(s) Analyzed: 3/30/04  3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 8.36 | 8.33 | 8.39 | 176 | 1 | 50 | 10151 | 13.3 |
| | | | | | | 2 | 100 | 19226 | |
| | | | | | | 3 | 200 | 36313 | |
| | | | | | | 4 | 500 | 79627 | |
| | | | | | | 5 | 1000 | 146186 | |
| | 2 | 8.71 | 8.68 | 8.74 | 224 | 1 | 50 | 13127 | 14.4 |
| | | | | | | 2 | 100 | 24557 | |
| | | | | | | 3 | 200 | 45772 | |
| | | | | | | 4 | 500 | 100177 | |
| | | | | | | 5 | 1000 | 183703 | |
| | 3 | 9.08 | 9.05 | 9.11 | 232 | 1 | 50 | 13063 | 11.0 |
| | | | | | | 2 | 100 | 24869 | |
| | | | | | | 3 | 200 | 47364 | |
| | | | | | | 4 | 500 | 106061 | |
| | | | | | | 5 | 1000 | 199383 | |
| | 4 | 9.22 | 9.19 | 9.25 | 147 | 1 | 50 | 8263 | 11.6 |
| | | | | | | 2 | 100 | 15932 | |
| | | | | | | 3 | 200 | 30308 | |
| | | | | | | 4 | 500 | 67454 | |
| | | | | | | 5 | 1000 | 124529 | |
| | 5 | 9.94 | 9.91 | 9.97 | 337 | 1 | 50 | 19028 | 10.8 |
| | | | | | | 2 | 100 | 35903 | |
| | | | | | | 3 | 200 | 68703 | |
| | | | | | | 4 | 500 | 154193 | |
| | | | | | | 5 | 1000 | 291375 | |
| | 6 | 10.31 | 10.28 | 10.34 | 189 | 1 | 50 | 10541 | 9.3 |
| | | | | | | 2 | 100 | 19822 | |
| | | | | | | 3 | 200 | 38836 | |
| | | | | | | 4 | 500 | 88302 | |
| | | | | | | 5 | 1000 | 166892 | |
| Chlordane (Technical) | 1 | 6.17 | 6.14 | 6.20 | 158 | 1 | 200.8 | 31755 | |
| | 2 | 6.28 | 6.25 | 6.31 | 208 | 1 | 200.8 | 41847 | |
| | 3 | 6.89 | 6.86 | 6.92 | 210 | 1 | 200.8 | 42212 | |
| | 4 | 7.71 | 7.68 | 7.74 | 399 | 1 | 200.8 | 80154 | |
| | 5 | 7.88 | 7.85 | 7.91 | 509 | 1 | 200.8 | 102143 | |
| | 6 | 8.90 | 8.87 | 8.93 | 140 | 1 | 200.8 | 28092 | |

9582

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Calibration File: 2C13088

GC Column (1) : RTX-CLP ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 8.73 | 8.70 | 8.76 | 36 | 1 | 500 | 17853 | |
| | 2 | 9.14 | 9.11 | 9.17 | 53 | 1 | 500 | 26457 | |
| | 3 | 9.51 | 9.48 | 9.54 | 67 | 1 | 500 | 33487 | |
| | 4 | 9.72 | 9.69 | 9.75 | 44 | 1 | 500 | 22035 | |
| | 5 | 9.98 | 9.95 | 10.01 | 77 | 1 | 500 | 38370 | |
| | 6 | 10.44 | 10.41 | 10.47 | 63 | 1 | 500 | 31716 | |

9583

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 1C13088B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/28/04  3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 5.56 | 5.53 | 5.59 | 44 | 1 | 50 | 2372 | 8.1 |
| | | | | | | 2 | 100 | 4606 | |
| | | | | | | 3 | 200 | 8923 | |
| | | | | | | 4 | 500 | 20547 | |
| | | | | | | 5 | 1000 | 38866 | |
| | 2 | 6.14 | 6.11 | 6.17 | 71 | 1 | 50 | 4066 | 12.8 |
| | | | | | | 2 | 100 | 7687 | |
| | | | | | | 3 | 200 | 14652 | |
| | | | | | | 4 | 500 | 32266 | |
| | | | | | | 5 | 1000 | 59021 | |
| | 3 | 6.78 | 6.75 | 6.81 | 113 | 1 | 50 | 6151 | 6.9 |
| | | | | | | 2 | 100 | 11520 | |
| | | | | | | 3 | 200 | 23047 | |
| | | | | | | 4 | 500 | 53592 | |
| | | | | | | 5 | 1000 | 103090 | |
| | 4 | 6.97 | 6.94 | 7.00 | 69 | 1 | 50 | 3822 | 8.7 |
| | | | | | | 2 | 100 | 7087 | |
| | | | | | | 3 | 200 | 14215 | |
| | | | | | | 4 | 500 | 32487 | |
| | | | | | | 5 | 1000 | 60993 | |
| | 5 | 7.11 | 7.08 | 7.14 | 41 | 1 | 50 | 2168 | 3.0 |
| | | | | | | 2 | 100 | 4075 | |
| | | | | | | 3 | 200 | 8384 | |
| | | | | | | 4 | 500 | 20393 | |
| | | | | | | 5 | 1000 | 40306 | |
| | 6 | 7.60 | 7.57 | 7.63 | 60 | 1 | 50 | 3356 | 9.7 |
| | | | | | | 2 | 100 | 6197 | |
| | | | | | | 3 | 200 | 12241 | |
| | | | | | | 4 | 500 | 27858 | |
| | | | | | | 5 | 1000 | 52210 | |
| Aroclor-1221 | 1 | 5.26 | 5.23 | 5.29 | 25 | 1 | 200 | 5097 | |
| | 2 | 5.47 | 5.44 | 5.50 | 19 | 1 | 200 | 3732 | |
| | 3 | 5.56 | 5.53 | 5.59 | 60 | 1 | 200 | 12039 | |
| Aroclor-1232 | 1 | 5.56 | 5.53 | 5.59 | 47 | 1 | 200 | 9409 | |
| | 2 | 6.14 | 6.11 | 6.17 | 33 | 1 | 200 | 6697 | |
| | 3 | 6.78 | 6.75 | 6.81 | 49 | 1 | 200 | 9806 | |
| | 4 | 6.97 | 6.94 | 7.00 | 31 | 1 | 200 | 6113 | |
| | 5 | 7.11 | 7.08 | 7.14 | 18 | 1 | 200 | 3587 | |
| | 6 | 7.60 | 7.57 | 7.63 | 25 | 1 | 200 | 5023 | |

0584

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 1C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 5.56 | 5.53 | 5.59 | 40 | 1 | 200 | 7988 | |
| | 2 | 6.14 | 6.11 | 6.17 | 61 | 1 | 200 | 12293 | |
| | 3 | 6.78 | 6.75 | 6.81 | 95 | 1 | 200 | 19091 | |
| | 4 | 6.96 | 6.93 | 6.99 | 59 | 1 | 200 | 11764 | |
| | 5 | 7.11 | 7.08 | 7.14 | 34 | 1 | 200 | 6871 | |
| | 6 | 7.60 | 7.57 | 7.63 | 52 | 1 | 200 | 10354 | |
| Aroclor-1248 | 1 | 7.23 | 7.20 | 7.26 | 65 | 1 | 200 | 13043 | |
| | 2 | 7.60 | 7.57 | 7.63 | 78 | 1 | 200 | 15661 | |
| | 3 | 7.77 | 7.74 | 7.80 | 68 | 1 | 200 | 13516 | |
| | 4 | 8.10 | 8.07 | 8.13 | 81 | 1 | 200 | 16233 | |
| | 5 | 8.17 | 8.14 | 8.20 | 91 | 1 | 200 | 18121 | |
| | 6 | 8.48 | 8.45 | 8.51 | 77 | 1 | 200 | 15391 | |
| Aroclor-1254 | 1 | 8.16 | 8.13 | 8.19 | 83 | 1 | 250 | 20659 | |
| | 2 | 8.40 | 8.37 | 8.43 | 93 | 1 | 250 | 23221 | |
| | 3 | 8.87 | 8.84 | 8.90 | 58 | 1 | 250 | 14597 | |
| | 4 | 9.02 | 8.99 | 9.05 | 124 | 1 | 250 | 30943 | |
| | 5 | 9.31 | 9.28 | 9.34 | 91 | 1 | 250 | 22682 | |
| | 6 | 10.01 | 9.98 | 10.04 | 93 | 1 | 250 | 23215 | |

9585

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 1C13088B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/28/04  3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 9.28 | 9.25 | 9.31 | 106 | 1 | 50 | 6165 | 13.2 |
| | | | | | | 2 | 100 | 11498 | |
| | | | | | | 3 | 200 | 21684 | |
| | | | | | | 4 | 500 | 48051 | |
| | | | | | | 5 | 1000 | 88427 | |
| | 2 | 9.53 | 9.50 | 9.56 | 124 | 1 | 50 | 7133 | 12.8 |
| | | | | | | 2 | 100 | 13506 | |
| | | | | | | 3 | 200 | 25468 | |
| | | | | | | 4 | 500 | 56195 | |
| | | | | | | 5 | 1000 | 104012 | |
| | 3 | 10.01 | 9.98 | 10.04 | 112 | 1 | 50 | 6199 | 9.5 |
| | | | | | | 2 | 100 | 11809 | |
| | | | | | | 3 | 200 | 22885 | |
| | | | | | | 4 | 500 | 51956 | |
| | | | | | | 5 | 1000 | 97746 | |
| | 4 | 10.52 | 10.49 | 10.55 | 84 | 1 | 50 | 4600 | 8.7 |
| | | | | | | 2 | 100 | 8922 | |
| | | | | | | 3 | 200 | 17269 | |
| | | | | | | 4 | 500 | 39409 | |
| | | | | | | 5 | 1000 | 74565 | |
| | 5 | 10.82 | 10.79 | 10.85 | 163 | 1 | 50 | 8995 | 8.7 |
| | | | | | | 2 | 100 | 17136 | |
| | | | | | | 3 | 200 | 33099 | |
| | | | | | | 4 | 500 | 76003 | |
| | | | | | | 5 | 1000 | 145090 | |
| | 6 | 11.35 | 11.32 | 11.38 | 91 | 1 | 50 | 4951 | 7.7 |
| | | | | | | 2 | 100 | 9525 | |
| | | | | | | 3 | 200 | 18623 | |
| | | | | | | 4 | 500 | 43088 | |
| | | | | | | 5 | 1000 | 81587 | |
| Chlordane (Technical) | 1 | 6.72 | 6.69 | 6.75 | 66 | 1 | 200.8 | 13321 | |
| | 2 | 6.93 | 6.90 | 6.96 | 78 | 1 | 200.8 | 15686 | |
| | 3 | 7.60 | 7.57 | 7.63 | 103 | 1 | 200.8 | 20636 | |
| | 4 | 8.44 | 8.41 | 8.47 | 209 | 1 | 200.8 | 41884 | |
| | 5 | 8.56 | 8.53 | 8.59 | 167 | 1 | 200.8 | 33598 | |
| | 6 | 8.63 | 8.60 | 8.66 | 185 | 1 | 200.8 | 37223 | |

0586

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 1C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/28/04 3/29/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 9.05 | 9.02 | 9.08 | 17 | 1 | 500 | 8432 | |
| | 2 | 9.35 | 9.32 | 9.38 | 12 | 1 | 500 | 6124 | |
| | 3 | 9.88 | 9.85 | 9.91 | 35 | 1 | 500 | 17443 | |
| | 4 | 10.21 | 10.18 | 10.24 | 24 | 1 | 500 | 11908 | |
| | 5 | 10.90 | 10.87 | 10.93 | 28 | 1 | 500 | 14204 | |
| | 6 | 11.47 | 11.44 | 11.50 | 19 | 1 | 500 | 9581 | |

8587

# 6F

## INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Calibration File: 2C13088B

GC Column (2) : RTXCLPII  ID: 0.32 (mm)  Date(s) Analyzed: 3/30/04  3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 1 | 5.55 | 5.52 | 5.58 | 44 | 1 | 50 | 2372 | 8.1 |
| | | | | | | 2 | 100 | 4606 | |
| | | | | | | 3 | 200 | 8923 | |
| | | | | | | 4 | 500 | 20547 | |
| | | | | | | 5 | 1000 | 38866 | |
| | 2 | 6.13 | 6.10 | 6.16 | 71 | 1 | 50 | 4066 | 12.8 |
| | | | | | | 2 | 100 | 7687 | |
| | | | | | | 3 | 200 | 14652 | |
| | | | | | | 4 | 500 | 32266 | |
| | | | | | | 5 | 1000 | 59021 | |
| | 3 | 6.77 | 6.74 | 6.80 | 113 | 1 | 50 | 6151 | 6.9 |
| | | | | | | 2 | 100 | 11520 | |
| | | | | | | 3 | 200 | 23047 | |
| | | | | | | 4 | 500 | 53592 | |
| | | | | | | 5 | 1000 | 103090 | |
| | 4 | 6.95 | 6.92 | 6.98 | 69 | 1 | 50 | 3822 | 8.7 |
| | | | | | | 2 | 100 | 7087 | |
| | | | | | | 3 | 200 | 14215 | |
| | | | | | | 4 | 500 | 32487 | |
| | | | | | | 5 | 1000 | 60993 | |
| | 5 | 7.10 | 7.07 | 7.13 | 41 | 1 | 50 | 2168 | 3.0 |
| | | | | | | 2 | 100 | 4075 | |
| | | | | | | 3 | 200 | 8384 | |
| | | | | | | 4 | 500 | 20393 | |
| | | | | | | 5 | 1000 | 40306 | |
| | 6 | 7.59 | 7.56 | 7.62 | 60 | 1 | 50 | 3356 | 9.7 |
| | | | | | | 2 | 100 | 6197 | |
| | | | | | | 3 | 200 | 12241 | |
| | | | | | | 4 | 500 | 27858 | |
| | | | | | | 5 | 1000 | 52210 | |
| Aroclor-1221 | 1 | 5.25 | 5.22 | 5.28 | 25 | 1 | 200 | 5097 | |
| | 2 | 5.46 | 5.43 | 5.49 | 19 | 1 | 200 | 3732 | |
| | 3 | 5.55 | 5.52 | 5.58 | 60 | 1 | 200 | 12039 | |
| Aroclor-1232 | 1 | 5.55 | 5.52 | 5.58 | 47 | 1 | 200 | 9409 | |
| | 2 | 6.13 | 6.10 | 6.16 | 33 | 1 | 200 | 6697 | |
| | 3 | 6.77 | 6.74 | 6.80 | 49 | 1 | 200 | 9806 | |
| | 4 | 6.96 | 6.93 | 6.99 | 31 | 1 | 200 | 6113 | |
| | 5 | 7.10 | 7.07 | 7.13 | 18 | 1 | 200 | 3587 | |
| | 6 | 7.59 | 7.56 | 7.62 | 25 | 1 | 200 | 5023 | |

8588

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13088B

GC Column (2) : RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1242 | 1 | 5.55 | 5.52 | 5.58 | 40 | 1 | 200 | 7988 | |
| | 2 | 6.13 | 6.10 | 6.16 | 61 | 1 | 200 | 12293 | |
| | 3 | 6.76 | 6.73 | 6.79 | 95 | 1 | 200 | 19091 | |
| | 4 | 6.95 | 6.92 | 6.98 | 59 | 1 | 200 | 11764 | |
| | 5 | 7.10 | 7.07 | 7.13 | 34 | 1 | 200 | 6871 | |
| | 6 | 7.59 | 7.56 | 7.62 | 52 | 1 | 200 | 10354 | |
| Aroclor-1248 | 1 | 7.22 | 7.19 | 7.25 | 65 | 1 | 200 | 13043 | |
| | 2 | 7.59 | 7.56 | 7.62 | 78 | 1 | 200 | 15661 | |
| | 3 | 7.76 | 7.73 | 7.79 | 68 | 1 | 200 | 13516 | |
| | 4 | 8.09 | 8.06 | 8.12 | 81 | 1 | 200 | 16233 | |
| | 5 | 8.15 | 8.12 | 8.18 | 91 | 1 | 200 | 18121 | |
| | 6 | 8.47 | 8.44 | 8.50 | 77 | 1 | 200 | 15391 | |
| Aroclor-1254 | 1 | 8.15 | 8.12 | 8.18 | 83 | 1 | 250 | 20659 | |
| | 2 | 8.39 | 8.36 | 8.42 | 93 | 1 | 250 | 23221 | |
| | 3 | 8.86 | 8.83 | 8.89 | 58 | 1 | 250 | 14597 | |
| | 4 | 9.01 | 8.98 | 9.04 | 124 | 1 | 250 | 30943 | |
| | 5 | 9.29 | 9.26 | 9.32 | 91 | 1 | 250 | 22682 | |
| | 6 | 10.00 | 9.97 | 10.03 | 93 | 1 | 250 | 23215 | |

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13088B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 9.26 | 9.23 | 9.29 | 106 | 1 | 50 | 6165 | 13.2 |
| | | | | | | 2 | 100 | 11498 | |
| | | | | | | 3 | 200 | 21684 | |
| | | | | | | 4 | 500 | 48051 | |
| | | | | | | 5 | 1000 | 88427 | |
| | 2 | 9.52 | 9.49 | 9.55 | 124 | 1 | 50 | 7133 | 12.8 |
| | | | | | | 2 | 100 | 13506 | |
| | | | | | | 3 | 200 | 25468 | |
| | | | | | | 4 | 500 | 56195 | |
| | | | | | | 5 | 1000 | 104012 | |
| | 3 | 10.00 | 9.97 | 10.03 | 112 | 1 | 50 | 6199 | 9.5 |
| | | | | | | 2 | 100 | 11809 | |
| | | | | | | 3 | 200 | 22885 | |
| | | | | | | 4 | 500 | 51956 | |
| | | | | | | 5 | 1000 | 97746 | |
| | 4 | 10.50 | 10.47 | 10.53 | 84 | 1 | 50 | 4600 | 8.7 |
| | | | | | | 2 | 100 | 8922 | |
| | | | | | | 3 | 200 | 17269 | |
| | | | | | | 4 | 500 | 39409 | |
| | | | | | | 5 | 1000 | 74565 | |
| | 5 | 10.81 | 10.78 | 10.84 | 163 | 1 | 50 | 8995 | 8.7 |
| | | | | | | 2 | 100 | 17136 | |
| | | | | | | 3 | 200 | 33099 | |
| | | | | | | 4 | 500 | 76003 | |
| | | | | | | 5 | 1000 | 145090 | |
| | 6 | 11.33 | 11.30 | 11.36 | 91 | 1 | 50 | 4951 | 7.7 |
| | | | | | | 2 | 100 | 9525 | |
| | | | | | | 3 | 200 | 18623 | |
| | | | | | | 4 | 500 | 43088 | |
| | | | | | | 5 | 1000 | 81587 | |
| Chlordane (Technical) | 1 | 6.71 | 6.68 | 6.74 | 66 | 1 | 200.8 | 13321 | |
| | 2 | 6.92 | 6.89 | 6.95 | 78 | 1 | 200.8 | 15686 | |
| | 3 | 7.59 | 7.56 | 7.62 | 103 | 1 | 200.8 | 20636 | |
| | 4 | 8.43 | 8.40 | 8.46 | 209 | 1 | 200.8 | 41884 | |
| | 5 | 8.54 | 8.51 | 8.57 | 167 | 1 | 200.8 | 33598 | |
| | 6 | 8.62 | 8.59 | 8.65 | 185 | 1 | 200.8 | 37223 | |

0590

6F

# INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Calibration File: 2C13088B

GC Column (2): RTXCLPII ID: 0.32 (mm) Date(s) Analyzed: 3/30/04 3/30/04

| COMPOUND | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | LEVEL | AMOUNT (ng) | PEAK HEIGHT | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | 1 | 9.04 | 9.01 | 9.07 | 17 | 1 | 500 | 8432 | |
| | 2 | 9.34 | 9.31 | 9.37 | 12 | 1 | 500 | 6124 | |
| | 3 | 9.86 | 9.83 | 9.89 | 35 | 1 | 500 | 17443 | |
| | 4 | 10.20 | 10.17 | 10.23 | 24 | 1 | 500 | 11908 | |
| | 5 | 10.89 | 10.86 | 10.92 | 28 | 1 | 500 | 14204 | |
| | 6 | 11.45 | 11.42 | 11.48 | 19 | 1 | 500 | 9581 | |

8591

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 03/28/04  03/29/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 03/29/04

Lab File ID: 1C13088.15R  Time Analyzed: 0:19

Lab Standard ID: ICMAXAA  Initial Calibration: 1C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.32 | 4.29 | 4.35 | 38.01 | 38.48 | -1.2 |
| alpha-BHC | 5.15 | 5.12 | 5.18 | 9.72 | 10.00 | -2.8 |
| gamma-BHC (Lindane) | 5.61 | 5.58 | 5.64 | 9.92 | 10.00 | -0.8 |
| beta-BHC | 5.74 | 5.71 | 5.77 | 10.11 | 10.00 | 1.1 |
| delta-BHC | 6.00 | 5.97 | 6.03 | 10.19 | 10.00 | 1.9 |
| Heptachlor | 6.29 | 6.26 | 6.32 | 9.88 | 10.00 | -1.2 |
| Aldrin | 6.72 | 6.69 | 6.75 | 10.32 | 10.00 | 3.2 |
| Heptachlor epoxide | 7.55 | 7.52 | 7.58 | 10.25 | 10.00 | 2.5 |
| gamma-Chlordane | 7.72 | 7.69 | 7.75 | 10.03 | 10.00 | 0.3 |
| alpha-Chlordane | 7.89 | 7.86 | 7.92 | 9.70 | 10.00 | -3.0 |
| 4,4'-DDE | 7.98 | 7.95 | 8.01 | 20.08 | 20.00 | 0.4 |
| Endosulfan I | 8.08 | 8.06 | 8.12 | 9.93 | 10.00 | -0.7 |
| Dieldrin | 8.40 | 8.37 | 8.43 | 19.56 | 20.00 | -2.2 |
| Endrin | 8.71 | 8.68 | 8.74 | 19.86 | 20.00 | -0.7 |
| 4,4'-DDD | 8.77 | 8.74 | 8.80 | 21.46 | 20.00 | 7.3 |
| Endosulfan II | 9.01 | 8.99 | 9.05 | 20.18 | 20.00 | 0.9 |
| 4,4'-DDT | 9.13 | 9.10 | 9.16 | 20.19 | 20.00 | 1.0 |
| Endrin aldehyde | 9.56 | 9.53 | 9.59 | 19.92 | 20.00 | -0.4 |
| Methoxychlor | 9.74 | 9.71 | 9.77 | 97.55 | 100.00 | -2.4 |
| Endosulfan sulfate | 10.12 | 10.10 | 10.16 | 19.97 | 20.00 | -0.2 |
| Endrin ketone | 10.50 | 10.47 | 10.53 | 20.00 | 20.00 | 0 |
| Decachlorobiphenyl | 11.83 | 11.81 | 11.87 | 36.13 | 38.96 | -7.3 |

Average of %D: 1.9

8592

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/28/04 03/29/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/29/04

Lab File ID: 1C13088B.15R Time Analyzed: 0:19

Lab Standard ID: ICMAXAA Initial Calibration: 1C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.84 | 4.81 | 4.87 | 38.72 | 38.48 | 0.6 |
| alpha-BHC | 5.77 | 5.74 | 5.80 | 9.48 | 10.00 | -5.2 |
| gamma-BHC (Lindane) | 6.30 | 6.27 | 6.33 | 9.76 | 10.00 | -2.4 |
| beta-BHC | 6.42 | 6.39 | 6.45 | 9.93 | 10.00 | -0.7 |
| delta-BHC | 6.85 | 6.82 | 6.88 | 9.75 | 10.00 | -2.5 |
| Heptachlor | 6.93 | 6.91 | 6.97 | 9.77 | 10.00 | -2.3 |
| Aldrin | 7.40 | 7.37 | 7.43 | 10.23 | 10.00 | 2.3 |
| Heptachlor epoxide | 8.18 | 8.16 | 8.22 | 10.11 | 10.00 | 1.1 |
| gamma-Chlordane | 8.44 | 8.41 | 8.47 | 10.00 | 10.00 | 0 |
| alpha-Chlordane | 8.63 | 8.61 | 8.67 | 10.05 | 10.00 | 0.5 |
| Endosulfan I | 8.72 | 8.70 | 8.76 | 10.12 | 10.00 | 1.2 |
| 4,4'-DDE | 8.83 | 8.80 | 8.86 | 20.31 | 20.00 | 1.5 |
| Dieldrin | 9.09 | 9.06 | 9.12 | 19.81 | 20.00 | -0.9 |
| Endrin | 9.50 | 9.47 | 9.53 | 20.11 | 20.00 | 0.6 |
| 4,4'-DDD | 9.59 | 9.57 | 9.63 | 20.62 | 20.00 | 3.1 |
| Endosulfan II | 9.78 | 9.75 | 9.81 | 20.37 | 20.00 | 1.9 |
| 4,4'-DDT | 10.00 | 9.98 | 10.04 | 20.46 | 20.00 | 2.3 |
| Endrin aldehyde | 10.21 | 10.19 | 10.25 | 20.33 | 20.00 | 1.6 |
| Endosulfan sulfate | 10.57 | 10.55 | 10.61 | 20.40 | 20.00 | 2.0 |
| Methoxychlor | 10.88 | 10.85 | 10.91 | 100.46 | 100.00 | 0.5 |
| Endrin ketone | 11.33 | 11.31 | 11.37 | 20.40 | 20.00 | 2.0 |
| Decachlorobiphenyl | 13.37 | 13.35 | 13.41 | 36.70 | 38.96 | -5.8 |

Average of %D: 1.9

0593

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 03/28/04  03/29/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 03/29/04

Lab File ID: 1C13088.33R  Time Analyzed: 6:30

Lab Standard ID: IC16XAA  Initial Calibration: 1C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.32 | 4.29 | 4.35 | 9.92 | 9.62 | 3.2 |
| Decachlorobiphenyl | 11.83 | 11.81 | 11.87 | 10.48 | 9.74 | 7.6 |
| Aroclor-1016 | 4.85 | 4.82 | 4.88 | 204.70 | 200.00 | 2.4 |
| | 5.36 | 5.33 | 5.39 | | | |
| | 6.01 | 5.98 | 6.04 | | | |
| | 6.19 | 6.16 | 6.22 | | | |
| | 6.28 | 6.25 | 6.31 | | | |
| | 6.75 | 6.72 | 6.78 | | | |
| Aroclor-1260 | 8.37 | 8.34 | 8.40 | 199.96 | 200.00 | 0 |
| | 8.72 | 8.69 | 8.75 | | | |
| | 9.09 | 9.06 | 9.12 | | | |
| | 9.23 | 9.20 | 9.26 | | | |
| | 9.95 | 9.92 | 9.98 | | | |
| | 10.32 | 10.29 | 10.35 | | | |

Average of %D: 3.3

0594

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 03/28/04  03/29/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 03/29/04

Lab File ID: 1C13088B.33R  Time Analyzed: 6:30

Lab Standard ID: IC16XAA  Initial Calibration: 1C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.83 | 4.81 | 4.87 | 9.34 | 9.62 | -2.9 |
| Decachlorobiphenyl | 13.37 | 13.35 | 13.41 | 10.75 | 9.74 | 10.4 |
| Aroclor-1016 | 5.55 | 5.53 | 5.59 | 204.74 | 200.00 | 2.4 |
| | 6.13 | 6.11 | 6.17 | | | |
| | 6.77 | 6.75 | 6.81 | | | |
| | 6.96 | 6.94 | 7.00 | | | |
| | 7.11 | 7.08 | 7.14 | | | |
| | 7.60 | 7.57 | 7.63 | | | |
| Aroclor-1260 | 9.27 | 9.25 | 9.31 | 204.99 | 200.00 | 2.5 |
| | 9.53 | 9.50 | 9.56 | | | |
| | 10.01 | 9.98 | 10.04 | | | |
| | 10.51 | 10.49 | 10.55 | | | |
| | 10.82 | 10.79 | 10.85 | | | |
| | 11.35 | 11.32 | 11.38 | | | |

Average of %D: 4.6

0595



FORM VII

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Init. Calib Date(s): 03/30/04 03/30/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088.72R Time Analyzed: 10:51

Lab Standard ID: PEMPM Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 19.82 | 20.10 | -1.4 |
| alpha-BHC | 5.14 | 5.11 | 5.17 | 10.31 | 10.00 | 3.1 |
| gamma-BHC (Lindane) | 5.60 | 5.57 | 5.63 | 9.73 | 10.00 | -2.7 |
| beta-BHC | 5.73 | 5.70 | 5.76 | 10.12 | 10.00 | 1.2 |
| 4,4'-DDE | 7.97 | 7.94 | 8.00 | 0.47 | | |
| Endrin | 8.70 | 8.67 | 8.73 | 49.27 | 50.10 | -1.6 |
| 4,4'-DDT | 9.12 | 9.09 | 9.15 | 99.04 | 100.20 | -1.2 |
| Endrin aldehyde | 9.55 | 9.52 | 9.58 | 1.03 | | |
| Methoxychlor | 9.73 | 9.70 | 9.76 | 225.33 | 250.50 | -10.0 |
| Endrin ketone | 10.48 | 10.46 | 10.52 | 1.73 | | |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 19.29 | 20.00 | -3.6 |

4'4-DDT % breakdown:0.6 Endrin % breakdown: 5.7 Combined % breakdown:6.3

8596

7D

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/30/04 03/30/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088B.72R Time Analyzed: 10:51

Lab Standard ID: PEMPM Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.82 | 4.80 | 4.86 | 19.52 | 20.10 | -2.9 |
| alpha-BHC | 5.75 | 5.72 | 5.78 | 10.43 | 10.00 | 4.3 |
| gamma-BHC (Lindane) | 6.28 | 6.25 | 6.31 | 10.05 | 10.00 | 0.5 |
| beta-BHC | 6.40 | 6.38 | 6.44 | 10.47 | 10.00 | 4.7 |
| 4,4'-DDE | 8.82 | 8.78 | 8.84 | 0.97 | | |
| Endrin | 9.48 | 9.46 | 9.52 | 54.93 | 50.10 | 9.6 |
| 4,4'-DDD | 9.57 | 9.55 | 9.61 | 1.18 | | |
| 4,4'-DDT | 9.99 | 9.96 | 10.02 | 105.20 | 100.20 | 5.0 |
| Endrin aldehyde | 10.20 | 10.17 | 10.23 | 1.14 | | |
| Methoxychlor | 10.86 | 10.83 | 10.89 | 245.55 | 250.50 | -2.0 |
| Endrin ketone | 11.31 | 11.28 | 11.34 | 1.78 | | |
| Decachlorobiphenyl | 13.35 | 13.32 | 13.38 | 19.96 | 20.00 | -0.2 |

4'4-DDT % breakdown:2.2 Endrin % breakdown: 6.1 Combined % breakdown: 8.3

0597

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Init. Calib Date(s): 03/30/04 03/30/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088.73R Time Analyzed: 11:12

Lab Standard ID: MIXA3RD Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 38.43 | 38.48 | -0.1 |
| alpha-BHC | 5.14 | 5.11 | 5.17 | 10.22 | 10.00 | 2.2 |
| gamma-BHC (Lindane) | 5.60 | 5.57 | 5.63 | 10.23 | 10.00 | 2.3 |
| beta-BHC | 5.73 | 5.70 | 5.76 | 10.24 | 10.00 | 2.4 |
| delta-BHC | 5.99 | 5.96 | 6.02 | 10.16 | 10.00 | 1.6 |
| Heptachlor | 6.28 | 6.25 | 6.31 | 10.26 | 10.00 | 2.6 |
| Aldrin | 6.71 | 6.68 | 6.74 | 10.10 | 10.00 | 1.0 |
| Heptachlor epoxide | 7.54 | 7.51 | 7.57 | 10.14 | 10.00 | 1.4 |
| gamma-Chlordane | 7.71 | 7.68 | 7.74 | 10.14 | 10.00 | 1.4 |
| alpha-Chlordane | 7.88 | 7.85 | 7.91 | 9.79 | 10.00 | -2.1 |
| 4,4'-DDE | 7.97 | 7.94 | 8.00 | 20.39 | 20.00 | 1.9 |
| Endosulfan I | 8.07 | 8.04 | 8.10 | 10.03 | 10.00 | 0.3 |
| Dieldrin | 8.39 | 8.36 | 8.42 | 20.13 | 20.00 | 0.7 |
| Endrin | 8.70 | 8.67 | 8.73 | 19.95 | 20.00 | -0.3 |
| 4,4'-DDD | 8.76 | 8.73 | 8.79 | 20.28 | 20.00 | 1.4 |
| Endosulfan II | 9.00 | 8.97 | 9.03 | 20.16 | 20.00 | 0.8 |
| 4,4'-DDT | 9.12 | 9.09 | 9.15 | 20.45 | 20.00 | 2.2 |
| Endrin aldehyde | 9.55 | 9.52 | 9.58 | 19.98 | 20.00 | -0.1 |
| Methoxychlor | 9.73 | 9.70 | 9.76 | 100.23 | 100.00 | 0.2 |
| Endosulfan sulfate | 10.11 | 10.08 | 10.14 | 19.91 | 20.00 | -0.4 |
| Endrin ketone | 10.49 | 10.46 | 10.52 | 20.38 | 20.00 | 1.9 |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 37.64 | 38.96 | -3.4 |

Average of %D: 1.4

0598

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/30/04 03/30/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088B.73R Time Analyzed: 11:12

Lab Standard ID: MIXA3RD Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.83 | 4.80 | 4.86 | 39.37 | 38.48 | 2.3 |
| alpha-BHC | 5.75 | 5.72 | 5.78 | 10.36 | 10.00 | 3.6 |
| gamma-BHC (Lindane) | 6.28 | 6.25 | 6.31 | 10.54 | 10.00 | 5.4 |
| beta-BHC | 6.41 | 6.38 | 6.44 | 10.61 | 10.00 | 6.1 |
| delta-BHC | 6.83 | 6.80 | 6.86 | 10.27 | 10.00 | 2.7 |
| Heptachlor | 6.92 | 6.89 | 6.95 | 10.72 | 10.00 | 7.2 |
| Aldrin | 7.38 | 7.35 | 7.41 | 10.29 | 10.00 | 2.9 |
| Heptachlor epoxide | 8.17 | 8.14 | 8.20 | 10.33 | 10.00 | 3.3 |
| gamma-Chlordane | 8.42 | 8.39 | 8.45 | 10.43 | 10.00 | 4.3 |
| alpha-Chlordane | 8.62 | 8.59 | 8.65 | 10.54 | 10.00 | 5.4 |
| Endosulfan I | 8.71 | 8.68 | 8.74 | 10.51 | 10.00 | 5.1 |
| 4,4'-DDE | 8.81 | 8.78 | 8.84 | 21.65 | 20.00 | 8.2 |
| Dieldrin | 9.07 | 9.04 | 9.10 | 20.91 | 20.00 | 4.5 |
| Endrin | 9.48 | 9.46 | 9.52 | 21.02 | 20.00 | 5.1 |
| 4,4'-DDD | 9.58 | 9.55 | 9.61 | 22.28 | 20.00 | 11.4 |
| Endosulfan II | 9.76 | 9.73 | 9.79 | 21.03 | 20.00 | 5.1 |
| 4,4'-DDT | 9.99 | 9.96 | 10.02 | 22.14 | 20.00 | 10.7 |
| Endrin aldehyde | 10.20 | 10.17 | 10.23 | 20.99 | 20.00 | 4.9 |
| Endosulfan sulfate | 10.56 | 10.53 | 10.59 | 20.96 | 20.00 | 4.8 |
| Methoxychlor | 10.86 | 10.83 | 10.89 | 111.56 | 100.00 | 11.6 |
| Endrin ketone | 11.31 | 11.28 | 11.34 | 22.21 | 20.00 | 11.1 |
| Decachlorobiphenyl | 13.35 | 13.32 | 13.38 | 39.21 | 38.96 | 0.6 |
| | | | | | Average of %D: | 5.7 |

0599

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722A  Init. Calib Date(s): 03/30/04  03/30/04

GC Column (1) : RTX-CLP  ID: .32 (mm)  Date Analyzed: 03/30/04

Lab File ID: 1C13088.74R  Time Analyzed: 11:32

Lab Standard ID: AR163HB  Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 8.19 | 7.70 | 6.4 |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 8.78 | 7.79 | 12.6 |
| Aroclor-1016 | 4.84 | 4.81 | 4.87 | 211.55 | 200.00 | 5.8 |
| | 5.35 | 5.32 | 5.38 | | | |
| | 6.00 | 5.97 | 6.03 | | | |
| | 6.19 | 6.16 | 6.22 | | | |
| | 6.27 | 6.24 | 6.30 | | | |
| | 6.74 | 6.71 | 6.77 | | | |
| Aroclor-1260 | 8.36 | 8.33 | 8.39 | 208.31 | 200.00 | 4.2 |
| | 8.71 | 8.68 | 8.74 | | | |
| | 9.08 | 9.05 | 9.11 | | | |
| | 9.22 | 9.19 | 9.25 | | | |
| | 9.94 | 9.91 | 9.97 | | | |
| | 10.31 | 10.28 | 10.34 | | | |

Average of %D: 7.3

9688

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H6722B  Init. Calib Date(s): 03/30/04  03/30/04

GC Column (2) : RTXCLPII  ID: .32 (mm)  Date Analyzed: 03/30/04

Lab File ID: 1C13088B.74R  Time Analyzed: 11:32

Lab Standard ID: AR163HB  Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.83 | 4.80 | 4.86 | 7.69 | 7.70 | -0.1 |
| Decachlorobiphenyl | 13.35 | 13.32 | 13.38 | 9.04 | 7.79 | 16.0 |
| Aroclor-1016 | 5.55 | 5.52 | 5.58 | 211.90 | 200.00 | 5.9 |
| | 6.13 | 6.10 | 6.16 | | | |
| | 6.76 | 6.74 | 6.80 | | | |
| | 6.95 | 6.92 | 6.98 | | | |
| | 7.10 | 7.07 | 7.13 | | | |
| | 7.59 | 7.56 | 7.62 | | | |
| Aroclor-1260 | 9.26 | 9.23 | 9.29 | 210.15 | 200.00 | 5.1 |
| | 9.52 | 9.49 | 9.55 | | | |
| | 10.00 | 9.97 | 10.03 | | | |
| | 10.50 | 10.47 | 10.53 | | | |
| | 10.81 | 10.78 | 10.84 | | | |
| | 11.33 | 11.30 | 11.36 | | | |

Average of %D: 6.8

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Init. Calib Date(s): 03/30/04 03/30/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088.94R Time Analyzed: 18:24

Lab Standard ID: PEMPN Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 19.60 | 20.10 | -2.5 |
| alpha-BHC | 5.14 | 5.11 | 5.17 | 10.19 | 10.00 | 1.9 |
| gamma-BHC (Lindane) | 5.60 | 5.57 | 5.63 | 9.62 | 10.00 | -3.8 |
| beta-BHC | 5.73 | 5.70 | 5.76 | 9.90 | 10.00 | -1.0 |
| 4,4'-DDE | 7.97 | 7.94 | 8.00 | 0.44 | | |
| Endrin | 8.70 | 8.67 | 8.73 | 48.62 | 50.10 | -3.0 |
| 4,4'-DDT | 9.12 | 9.09 | 9.15 | 94.34 | 100.20 | -5.8 |
| Endrin aldehyde | 9.55 | 9.52 | 9.58 | 0.87 | | |
| Methoxychlor | 9.73 | 9.70 | 9.76 | 211.99 | 250.50 | -15.4 |
| Endrin ketone | 10.48 | 10.46 | 10.52 | 2.42 | | |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 18.74 | 20.00 | -6.3 |

4'4-DDT % breakdown:0.6 Endrin % breakdown: 7 Combined % breakdown:7.6

9682

# 7D
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/30/04 03/30/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088B.94R Time Analyzed: 18:24

Lab Standard ID: PEMPN Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.82 | 4.80 | 4.86 | 19.41 | 20.10 | -3.5 |
| alpha-BHC | 5.75 | 5.72 | 5.78 | 10.66 | 10.00 | 6.6 |
| gamma-BHC (Lindane) | 6.28 | 6.25 | 6.31 | 10.15 | 10.00 | 1.5 |
| beta-BHC | 6.40 | 6.38 | 6.44 | 10.87 | 10.00 | 8.7 |
| 4,4'-DDE | 8.81 | 8.78 | 8.84 | 0.57 | | |
| Endrin | 9.48 | 9.46 | 9.52 | 55.21 | 50.10 | 10.2 |
| 4,4'-DDD | 9.58 | 9.55 | 9.61 | 2.44 | | |
| 4,4'-DDT | 9.99 | 9.96 | 10.02 | 100.37 | 100.20 | 0.2 |
| Endrin aldehyde | 10.20 | 10.17 | 10.23 | 1.14 | | |
| Methoxychlor | 10.86 | 10.83 | 10.89 | 233.79 | 250.50 | -6.7 |
| Endrin ketone | 11.31 | 11.28 | 11.34 | 1.81 | | |
| Decachlorobiphenyl | 13.35 | 13.32 | 13.38 | 19.84 | 20.00 | -0.8 |

4'4-DDT % breakdown:2.9 Endrin % breakdown: 6.2 Combined % breakdown:9.1

8603

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Init. Calib Date(s): 03/30/04 03/30/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088.95R Time Analyzed: 18:45

Lab Standard ID: MIXA3RE Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 38.34 | 38.48 | -0.4 |
| alpha-BHC | 5.14 | 5.11 | 5.17 | 10.18 | 10.00 | 1.8 |
| gamma-BHC (Lindane) | 5.60 | 5.57 | 5.63 | 10.22 | 10.00 | 2.2 |
| beta-BHC | 5.73 | 5.70 | 5.76 | 10.14 | 10.00 | 1.4 |
| delta-BHC | 5.99 | 5.96 | 6.02 | 10.21 | 10.00 | 2.1 |
| Heptachlor | 6.28 | 6.25 | 6.31 | 9.51 | 10.00 | -4.9 |
| Aldrin | 6.70 | 6.68 | 6.74 | 9.95 | 10.00 | -0.5 |
| Heptachlor epoxide | 7.54 | 7.51 | 7.57 | 9.88 | 10.00 | -1.2 |
| gamma-Chlordane | 7.70 | 7.68 | 7.74 | 10.04 | 10.00 | 0.4 |
| alpha-Chlordane | 7.88 | 7.85 | 7.91 | 9.56 | 10.00 | -4.4 |
| 4,4'-DDE | 7.97 | 7.94 | 8.00 | 20.22 | 20.00 | 1.1 |
| Endosulfan I | 8.07 | 8.04 | 8.10 | 9.84 | 10.00 | -1.6 |
| Dieldrin | 8.39 | 8.36 | 8.42 | 19.96 | 20.00 | -0.2 |
| Endrin | 8.70 | 8.67 | 8.73 | 19.75 | 20.00 | -1.2 |
| 4,4'-DDD | 8.75 | 8.73 | 8.79 | 20.43 | 20.00 | 2.1 |
| Endosulfan II | 9.00 | 8.97 | 9.03 | 19.90 | 20.00 | -0.5 |
| 4,4'-DDT | 9.12 | 9.09 | 9.15 | 19.68 | 20.00 | -1.6 |
| Endrin aldehyde | 9.54 | 9.52 | 9.58 | 19.62 | 20.00 | -1.9 |
| Methoxychlor | 9.73 | 9.70 | 9.76 | 95.07 | 100.00 | -4.9 |
| Endosulfan sulfate | 10.11 | 10.08 | 10.14 | 19.83 | 20.00 | -0.8 |
| Endrin ketone | 10.48 | 10.46 | 10.52 | 20.25 | 20.00 | 1.3 |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 37.17 | 38.96 | -4.6 |

Average of %D: 1.9

8684

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/30/04 03/30/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088B.95R Time Analyzed: 18:45

Lab Standard ID: MIXA3RE Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.82 | 4.80 | 4.86 | 39.46 | 38.48 | 2.6 |
| alpha-BHC | 5.75 | 5.72 | 5.78 | 10.51 | 10.00 | 5.1 |
| gamma-BHC (Lindane) | 6.28 | 6.25 | 6.31 | 10.76 | 10.00 | 7.6 |
| beta-BHC | 6.40 | 6.38 | 6.44 | 10.80 | 10.00 | 8.0 |
| delta-BHC | 6.83 | 6.80 | 6.86 | 10.50 | 10.00 | 5.0 |
| Heptachlor | 6.92 | 6.89 | 6.95 | 9.89 | 10.00 | -1.1 |
| Aldrin | 7.38 | 7.35 | 7.41 | 10.26 | 10.00 | 2.6 |
| Heptachlor epoxide | 8.17 | 8.14 | 8.20 | 10.06 | 10.00 | 0.6 |
| gamma-Chlordane | 8.42 | 8.39 | 8.45 | 10.15 | 10.00 | 1.5 |
| alpha-Chlordane | 8.61 | 8.59 | 8.65 | 10.18 | 10.00 | 1.8 |
| Endosulfan I | 8.70 | 8.68 | 8.74 | 10.10 | 10.00 | 1.0 |
| 4,4'-DDE | 8.81 | 8.78 | 8.84 | 21.73 | 20.00 | 8.6 |
| Dieldrin | 9.07 | 9.04 | 9.10 | 20.89 | 20.00 | 4.4 |
| Endrin | 9.48 | 9.46 | 9.52 | 20.78 | 20.00 | 3.9 |
| 4,4'-DDD | 9.57 | 9.55 | 9.61 | 23.34 | 20.00 | 16.7 |
| Endosulfan II | 9.76 | 9.73 | 9.79 | 20.54 | 20.00 | 2.7 |
| 4,4'-DDT | 9.99 | 9.96 | 10.02 | 21.26 | 20.00 | 6.3 |
| Endrin aldehyde | 10.20 | 10.17 | 10.23 | 20.51 | 20.00 | 2.6 |
| Endosulfan sulfate | 10.55 | 10.53 | 10.59 | 20.93 | 20.00 | 4.7 |
| Methoxychlor | 10.86 | 10.83 | 10.89 | 106.19 | 100.00 | 6.2 |
| Endrin ketone | 11.31 | 11.28 | 11.34 | 21.74 | 20.00 | 8.7 |
| Decachlorobiphenyl | 13.34 | 13.32 | 13.38 | 39.50 | 38.96 | 1.4 |
| | | | | | Average of %D: | 4.7 |

8605

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722A Init. Calib Date(s): 03/30/04 03/30/04

GC Column (1) : RTX-CLP ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088.96R Time Analyzed: 19:06

Lab Standard ID: AR163HC Initial Calibration: 2C13088

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.31 | 4.28 | 4.34 | 8.29 | 7.70 | 7.7 |
| Decachlorobiphenyl | 11.82 | 11.79 | 11.85 | 8.67 | 7.79 | 11.3 |
| Aroclor-1016 | 4.84 | 4.81 | 4.87 | 211.45 | 200.00 | 5.7 |
| | 5.35 | 5.32 | 5.38 | | | |
| | 6.00 | 5.97 | 6.03 | | | |
| | 6.18 | 6.16 | 6.22 | | | |
| | 6.27 | 6.24 | 6.30 | | | |
| | 6.74 | 6.71 | 6.77 | | | |
| Aroclor-1260 | 8.36 | 8.33 | 8.39 | 206.53 | 200.00 | 3.3 |
| | 8.71 | 8.68 | 8.74 | | | |
| | 9.08 | 9.05 | 9.11 | | | |
| | 9.22 | 9.19 | 9.25 | | | |
| | 9.94 | 9.91 | 9.97 | | | |
| | 10.31 | 10.28 | 10.34 | | | |

Average of %D: 7.0

8686

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H6722B Init. Calib Date(s): 03/30/04 03/30/04

GC Column (2) : RTXCLPII ID: .32 (mm) Date Analyzed: 03/30/04

Lab File ID: 1C13088B.96R Time Analyzed: 19:06

Lab Standard ID: AR163HC Initial Calibration: 2C13088B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 4.82 | 4.80 | 4.86 | 7.75 | 7.70 | 0.7 |
| Decachlorobiphenyl | 13.34 | 13.32 | 13.38 | 9.16 | 7.79 | 17.6 |
| Aroclor-1016 | 5.54 | 5.52 | 5.58 | 213.08 | 200.00 | 6.5 |
| | 6.12 | 6.10 | 6.16 | | | |
| | 6.76 | 6.74 | 6.80 | | | |
| | 6.95 | 6.92 | 6.98 | | | |
| | 7.09 | 7.07 | 7.13 | | | |
| | 7.59 | 7.56 | 7.62 | | | |
| Aroclor-1260 | 9.26 | 9.23 | 9.29 | 210.51 | 200.00 | 5.3 |
| | 9.52 | 9.49 | 9.55 | | | |
| | 10.00 | 9.97 | 10.03 | | | |
| | 10.50 | 10.47 | 10.53 | | | |
| | 10.81 | 10.78 | 10.84 | | | |
| | 11.33 | 11.30 | 11.36 | | | |

Average of %D: 7.5

8687

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 03/28/2004 | 20:11:59 | 1C13088 | 4.32 | 11.84 |
| 002 | PEMAA | EVALX03C | 03/28/2004 | 20:32:38 | 1C13088 | 4.32 | 11.84 |
| 003 | MIXA1AA | MIXA10424B | 03/28/2004 | 20:53:17 | 1C13088 | 4.32 | 11.84 |
| 004 | MIXA2AA | MIXA20424B | 03/28/2004 | 21:13:42 | 1C13088 | 4.32 | 11.84 |
| 005 | MIXA3AA | MIXA30424B | 03/28/2004 | 21:34:21 | 1C13088 | 4.32 | 11.84 |
| 006 | MIXA4AA | MIXA40424B | 03/28/2004 | 21:54:58 | 1C13088 | 4.32 | 11.83 |
| 007 | MIXA5AA | MIXA50424B | 03/28/2004 | 22:15:38 | 1C13088 | 4.32 | 11.83 |
| 008 | MIXE1AA | MIXE10424A | 03/28/2004 | 22:36:15 | 1C13088 | 4.32 | 11.84 |
| 009 | MIXE2AA | MIXE20424A | 03/28/2004 | 22:56:55 | 1C13088 | 4.32 | 11.84 |
| 010 | MIXE3AA | MIXE30424A | 03/28/2004 | 23:17:33 | 1C13088 | 4.32 | 11.84 |
| 011 | MIXE4AA | MIXE40424A | 03/28/2004 | 23:38:11 | 1C13088 | 4.32 | 11.84 |
| 012 | MIXE5AA | MIXE50424A | 03/28/2004 | 23:58:48 | 1C13088 | 4.32 | 11.83 |
| 013 | ICMAXAA | ICMAX0424B | 03/29/2004 | 00:19:27 | 1C13088 | 4.32 | 11.83 |
| 014 | TOXWXAA | TOXWX03B | 03/29/2004 | 00:40:07 | 1C13088 | 4.32 | 11.83 |
| 015 | CHLDXAA | CHLDX03B | 03/29/2004 | 01:00:45 | 1C13088 | 4.32 | 11.83 |
| 016 | AR161AA | AR1610424D | 03/29/2004 | 01:21:22 | 1C13088 | 4.32 | 11.83 |
| 017 | AR162AA | AR1620424D | 03/29/2004 | 01:42:00 | 1C13088 | 4.32 | 11.84 |
| 018 | AR163AA | AR1630424D | 03/29/2004 | 02:02:37 | 1C13088 | 4.32 | 11.83 |
| 019 | AR164AA | AR1640424E | 03/29/2004 | 02:23:16 | 1C13088 | 4.32 | 11.83 |
| 020 | AR165AA | AR1650424D | 03/29/2004 | 02:43:53 | 1C13088 | 4.32 | 11.83 |
| 021 | AR210AA | AR210424A | 03/29/2004 | 03:04:31 | 1C13088 | 4.32 | 11.84 |
| 022 | AR32XAA | AR32X03C | 03/29/2004 | 03:25:04 | 1C13088 | 4.32 | 11.83 |
| 023 | AR420AA | AR420424A | 03/29/2004 | 03:45:41 | 1C13088 | 4.32 | 11.83 |
| 024 | AR483AA | AR4830424A | 03/29/2004 | 04:06:17 | 1C13088 | 4.32 | 11.83 |
| 025 | AR543AA | AR5430424A | 03/29/2004 | 04:26:55 | 1C13088 | 4.32 | 11.83 |
| 026 | MDLAXAA | MDLAX0424B | 03/29/2004 | 04:47:30 | 1C13088 | 4.32 | 11.83 |
| 027 | MDLEXAA | MDLEX0424A | 03/29/2004 | 05:08:04 | 1C13088 | 4.32 | 11.83 |
| 028 | MD16XAA | MD16X0424A | 03/29/2004 | 05:28:39 | 1C13088 | 4.32 | 11.83 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088 | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.32 | (4.29 - 4.35 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.84 | (11.81 - 11.87 Minutes) |
| 2C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |
| 4C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 029 | MDTXXAA | MDTXX03B | 03/29/2004 | 05:49:15 | 1C13088 | 4.32 | 11.83 |
| 030 | MDCHXAA | MDCHX03B | 03/29/2004 | 06:09:49 | 1C13088 | 4.32 | 11.83 |
| 031 | IC16XAA | IC16X0424B | 03/29/2004 | 06:30:23 | 1C13088 | 4.32 | 11.83 |
| 032 | AA | CONDITIONER | 03/29/2004 | 11:42:13 | 1C13088 | 4.34 | 11.85 |
| 033 | PBLKP5 | BLANKA | 03/29/2004 | 12:02:37 | 1C13088 | 4.32 | 11.83 |
| 034 | LCSKE | LCSA | 03/29/2004 | 12:23:15 | 1C13088 | 4.32 | 11.83 |
| 035 | MVI47 | 4237073 | 03/29/2004 | 12:43:52 | 1C13088 | 4.32 | 11.82 |
| 036 | 039MV | 4238264 | 03/29/2004 | 13:04:30 | 1C13088 | 4.32 | 11.87 |
| 037 | BACK1 | 4239035 | 03/29/2004 | 13:25:11 | 1C13088 | 4.32 | 11.82 |
| 038 | BACK1MS | 4239035 | 03/29/2004 | 13:45:50 | 1C13088 | 4.32 | 11.82 |
| 039 | BACK1MSD | 4239035 | 03/29/2004 | 14:06:28 | 1C13088 | 4.32 | 11.82 |
| 040 | BACK2 | 4239036 | 03/29/2004 | 14:26:49 | 1C13088 | 4.32 | 11.82 |
| 041 | BACK3 | 4239037 | 03/29/2004 | 14:47:28 | 1C13088 | 4.32 | 11.82 |
| 042 | PBLKP5 | BLANKA | 03/29/2004 | 15:08:08 | 1C13088 | 4.32 | 11.83 |
| 043 | LCSKE | LCSA | 03/29/2004 | 15:28:46 | 1C13088 | 4.32 | 11.83 |
| 044 | SR112 | 4238770 | 03/29/2004 | 15:49:07 | 1C13088 | 4.32 | 11.83 |
| 045 | SR234 | 4238773 | 03/29/2004 | 16:09:43 | 1C13088 | 4.32 | 11.83 |
| 046 | SR356 | 4238776 | 03/29/2004 | 16:30:20 | 1C13088 | 4.32 | 11.83 |
| 047 | SR4S7 | 4238779 | 03/29/2004 | 16:50:59 | 1C13088 | 4.32 | 11.82 |
| 048 | SR589 | 4238782 | 03/29/2004 | 17:11:21 | 1C13088 | 4.32 | 11.82 |
| 049 | SR610 | 4238785 | 03/29/2004 | 17:31:42 | 1C13088 | 4.32 | 11.82 |
| 050 | SR711 | 4238788 | 03/29/2004 | 17:52:17 | 1C13088 | 4.32 | 11.82 |
| 051 | PEMPI | EVALX03C | 03/29/2004 | 18:12:55 | 1C13088 | 4.32 | 11.83 |
| 052 | MIXA3RB | MIXA30424B | 03/29/2004 | 18:33:33 | 1C13088 | 4.32 | 11.83 |
| 053 | AR163GZ | AR1630424D | 03/29/2004 | 18:54:11 | 1C13088 | 4.32 | 11.83 |
| 054 | | CONDITIONER | 03/29/2004 | 20:24:01 | 1C13088 | 4.29 | 11.85 |
| 055 | PBLKU4 | BLANKA | 03/29/2004 | 20:44:40 | 1C13088 | 4.32 | 11.83 |
| 056 | LCSP4 | LCSA | 03/29/2004 | 21:05:17 | 1C13088 | 4.32 | 11.83 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088 | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.32 | (4.29 - 4.35 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.84 | (11.81 - 11.87 Minutes) |
| 2C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |
| 4C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |

8669

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088 Lab Name: Lancaster laboratories Contract:

Lab.Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 057 | EW-11 | 4240586 | 03/29/2004 | 21:25:56 | 1C13088 | 4.32 | 11.82 |
| 058 | GP12B | 4241994 | 03/29/2004 | 21:46:34 | 1C13088 | 4.32 | 11.83 |
| 059 | GP12BMS | 4241995 | 03/29/2004 | 22:07:15 | 1C13088 | 4.32 | 11.82 |
| 060 | GP12BMSD | 4241996 | 03/29/2004 | 22:27:52 | 1C13088 | 4.31 | 11.82 |
| 061 | FB325 | 4241998 | 03/29/2004 | 22:48:29 | 1C13088 | 4.31 | 11.82 |
| 062 | BACK2 | 4239036 | 03/29/2004 | 23:09:05 | 1C13088 | 4.31 | 11.82 |
| 063 | BACK3 | 4239037 | 03/29/2004 | 23:29:28 | 1C13088 | 4.31 | 11.82 |
| 064 | PEMPJ | EVALX03C | 03/29/2004 | 23:50:06 | 1C13088 | 4.31 | 11.83 |
| 065 | MIXA4OU | MIXA40424B | 03/30/2004 | 00:10:44 | 1C13088 | 4.31 | 11.82 |
| 066 | AR164YU | AR1640424E | 03/30/2004 | 00:31:19 | 1C13088 | 4.31 | 11.83 |
| 067 | AA | CONDITIONER | 03/30/2004 | 09:50:02 | 1C13088 | 4.33 | 11.83 |
| 068 | | CONDITIONER | 03/30/2004 | 10:10:41 | 1C13088 | 4.31 | 11.82 |
| 069 | | CONDITIONER | 03/30/2004 | 10:31:20 | 1C13088 | 4.31 | 11.82 |
| 070 | PEMPM | EVALX03C | 03/30/2004 | 10:51:42 | 1C13088 | 4.31 | 11.82 |
| 071 | MIXA3RD | MIXA30424B | 03/30/2004 | 11:12:21 | 1C13088 | 4.31 | 11.82 |
| 072 | AR163HB | AR1630424D | 03/30/2004 | 11:32:58 | 1C13088 | 4.31 | 11.82 |
| 073 | PBLKVE | BLANKA | 03/30/2004 | 11:53:39 | 2C13088 | 4.31 | 11.82 |
| 074 | LCSQ8 | LCSA | 03/30/2004 | 12:14:14 | 2C13088 | 4.31 | 11.82 |
| 075 | 7GP17 | 4241642 | 03/30/2004 | 12:34:39 | 2C13088 | 4.31 | 11.81 |
| 076 | 7GP18 | 4241643 | 03/30/2004 | 12:55:16 | 2C13088 | 4.31 | 11.82 |
| 077 | 7GP18 | 4241643 | 03/30/2004 | 13:15:55 | 2C13088 | 4.31 | 11.82 |
| 078 | 7GP19 | 4241644 | 03/30/2004 | 13:36:32 | 2C13088 | 4.31 | 11.81 |
| 079 | 7GP19 | 4241644 | 03/30/2004 | 13:56:54 | 2C13088 | 4.31 | 11.81 |
| 080 | 7GP45 | 4241645 | 03/30/2004 | 14:17:31 | 2C13088 | 4.31 | 11.82 |
| 081 | 7GP45 | 4241645 | 03/30/2004 | 14:38:11 | 2C13088 | 4.31 | 11.82 |
| 082 | 7GP45MS | 4241646 | 03/30/2004 | 14:58:49 | 2C13088 | 4.31 | 11.82 |
| 083 | 7GP45MS | 4241646 | 03/30/2004 | 15:19:29 | 2C13088 | 4.31 | 11.82 |
| 084 | 7GP45MSD | 4241647 | 03/30/2004 | 15:39:49 | 2C13088 | 4.30 | 11.82 |

NO 4/7/04 3

ICAL Dates

| | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088 | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.32 | (4.29 - 4.35 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.84 | (11.81 - 11.87 Minutes) |
| 2C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |
| 4C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |

8616

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H6722A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 085 | 8GP45MSD | 4241647 | 03/30/2004 | 16:00:26 | 2C13088 | 4.31 | 11.82 |
| 086 | UGP21 | 4241648 | 03/30/2004 | 16:21:04 | 2C13088 | 4.31 | 11.82 |
| 087 | UGP21 | 4241648 | 03/30/2004 | 16:41:43 | 2C13088 | 4.31 | 11.82 |
| 088 | 7GP22 | 4241649 | 03/30/2004 | 17:02:19 | 2C13088 | 4.31 | 11.81 |
| 089 | 2222D | 4241650 | 03/30/2004 | 17:22:57 | 2C13088 | 4.31 | 11.81 |
| 090 | 7GP23 | 4241651 | 03/30/2004 | 17:43:31 | 2C13088 | 4.31 | 11.81 |
| 091 | 7GP24 | 4241652 | 03/30/2004 | 18:04:10 | 2C13088 | 4.31 | 11.82 |
| 092 | PEMPN | EVALX03C | 03/30/2004 | 18:24:47 | 2C13088 | 4.31 | 11.82 |
| 093 | MIXA3RE | MIXA30424B | 03/30/2004 | 18:45:25 | 2C13088 | 4.31 | 11.82 |
| 094 | AR163HC | AR1630424D | 03/30/2004 | 19:06:01 | 2C13088 | 4.31 | 11.82 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088 | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.32 | (4.29 - 4.35 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.84 | (11.81 - 11.87 Minutes) |
| 2C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |
| 4C13088 | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.31 | (4.28 - 4.34 Minutes) |
| | | DCB = Decachlorobiphenyl | 11.82 | (11.79 - 11.85 Minutes) |

9611

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX03B | 03/28/2004 | 20:11:59 | 1C13088B | 4.84 | 13.38 |
| 002 | PEMAA | EVALX03C | 03/28/2004 | 20:32:38 | 1C13088B | 4.84 | 13.38 |
| 003 | MIXA1AA | MIXA10424B | 03/28/2004 | 20:53:17 | 1C13088B | 4.84 | 13.38 |
| 004 | MIXA2AA | MIXA20424B | 03/28/2004 | 21:13:42 | 1C13088B | 4.84 | 13.38 |
| 005 | MIXA3AA | MIXA30424B | 03/28/2004 | 21:34:21 | 1C13088B | 4.84 | 13.38 |
| 006 | MIXA4AA | MIXA40424B | 03/28/2004 | 21:54:58 | 1C13088B | 4.84 | 13.38 |
| 007 | MIXA5AA | MIXA50424B | 03/28/2004 | 22:15:38 | 1C13088B | 4.84 | 13.38 |
| 008 | MIXE1AA | MIXE10424A | 03/28/2004 | 22:36:15 | 1C13088B | 4.84 | 13.38 |
| 009 | MIXE2AA | MIXE20424A | 03/28/2004 | 22:56:55 | 1C13088B | 4.84 | 13.38 |
| 010 | MIXE3AA | MIXE30424A | 03/28/2004 | 23:17:33 | 1C13088B | 4.84 | 13.38 |
| 011 | MIXE4AA | MIXE40424A | 03/28/2004 | 23:38:11 | 1C13088B | 4.84 | 13.38 |
| 012 | MIXE5AA | MIXE50424A | 03/28/2004 | 23:58:48 | 1C13088B | 4.84 | 13.37 |
| 013 | ICMAXAA | ICMAX0424B | 03/29/2004 | 00:19:27 | 1C13088B | 4.84 | 13.37 |
| 014 | TOXWXAA | TOXWX03B | 03/29/2004 | 00:40:07 | 1C13088B | 4.84 | 13.38 |
| 015 | CHLDXAA | CHLDX03B | 03/29/2004 | 01:00:45 | 1C13088B | 4.84 | 13.37 |
| 016 | AR161AA | AR1610424D | 03/29/2004 | 01:21:22 | 1C13088B | 4.84 | 13.37 |
| 017 | AR162AA | AR1620424D | 03/29/2004 | 01:42:00 | 1C13088B | 4.84 | 13.37 |
| 018 | AR163AA | AR1630424D | 03/29/2004 | 02:02:37 | 1C13088B | 4.84 | 13.37 |
| 019 | AR164AA | AR1640424E | 03/29/2004 | 02:23:16 | 1C13088B | 4.84 | 13.37 |
| 020 | AR165AA | AR1650424D | 03/29/2004 | 02:43:53 | 1C13088B | 4.84 | 13.37 |
| 021 | AR210AA | AR210424A | 03/29/2004 | 03:04:31 | 1C13088B | 4.84 | 13.37 |
| 022 | AR32XAA | AR32X03C | 03/29/2004 | 03:25:04 | 1C13088B | 4.84 | 13.37 |
| 023 | AR420AA | AR420424A | 03/29/2004 | 03:45:41 | 1C13088B | 4.84 | 13.37 |
| 024 | AR483AA | AR4830424A | 03/29/2004 | 04:06:17 | 1C13088B | 4.84 | 13.37 |
| 025 | AR543AA | AR5430424A | 03/29/2004 | 04:26:55 | 1C13088B | 4.84 | 13.37 |
| 026 | MDLAXAA | MDLAX0424B | 03/29/2004 | 04:47:30 | 1C13088B | 4.83 | 13.37 |
| 027 | MDLEXAA | MDLEX0424A | 03/29/2004 | 05:08:04 | 1C13088B | 4.83 | 13.37 |
| 028 | MD16XAA | MD16X0424A | 03/29/2004 | 05:28:39 | 1C13088B | 4.84 | 13.37 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088B | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.84 | (4.81 - 4.87 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.38 | (13.35 - 13.41 Minutes) |
| 2C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |
| 4C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |

0612

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 029 | MDTXXAA | MDTXX03B | 03/29/2004 | 05:49:15 | 1C13088B | 4.84 | 13.38 |
| 030 | MDCHXAA | MDCHX03B | 03/29/2004 | 06:09:49 | 1C13088B | 4.83 | 13.37 |
| 031 | IC16XAA | IC16X0424B | 03/29/2004 | 06:30:23 | 1C13088B | 4.83 | 13.37 |
| 032 | AA | CONDITIONER | 03/29/2004 | 11:42:13 | 1C13088B | 4.84 | 13.38 |
| 033 | PBLKP5 | BLANKA | 03/29/2004 | 12:02:37 | 1C13088B | 4.84 | 13.37 |
| 034 | LCSKE | LCSA | 03/29/2004 | 12:23:15 | 1C13088B | 4.84 | 13.37 |
| 035 | MVI47 | 4237073 | 03/29/2004 | 12:43:52 | 1C13088B | 4.83 | 13.36 |
| 036 | 039MV | 4238264 | 03/29/2004 | 13:04:30 | 1C13088B | 4.83 | 13.36 |
| 037 | BACK1 | 4239035 | 03/29/2004 | 13:25:11 | 1C13088B | 4.83 | 13.36 |
| 038 | BACK1MS | 4239035 | 03/29/2004 | 13:45:50 | 1C13088B | 4.83 | 13.36 |
| 039 | BACK1MSD | 4239035 | 03/29/2004 | 14:06:28 | 1C13088B | 4.83 | 13.36 |
| 040 | BACK2 | 4239036 | 03/29/2004 | 14:26:49 | 1C13088B | 4.83 | 13.36 |
| 041 | BACK3 | 4239037 | 03/29/2004 | 14:47:28 | 1C13088B | 4.83 | 13.36 |
| 042 | PBLKP5 | BLANKA | 03/29/2004 | 15:08:08 | 1C13088B | 4.83 | 13.36 |
| 043 | LCSKE | LCSA | 03/29/2004 | 15:28:46 | 1C13088B | 4.83 | 13.36 |
| 044 | SR112 | 4238770 | 03/29/2004 | 15:49:07 | 1C13088B | 4.83 | 13.36 |
| 045 | SR234 | 4238773 | 03/29/2004 | 16:09:43 | 1C13088B | 4.83 | 13.36 |
| 046 | SR356 | 4238776 | 03/29/2004 | 16:30:20 | 1C13088B | 4.83 | 13.36 |
| 047 | SR4S7 | 4238779 | 03/29/2004 | 16:50:59 | 1C13088B | 4.83 | 13.36 |
| 048 | SR589 | 4238782 | 03/29/2004 | 17:11:21 | 1C13088B | 4.83 | 13.36 |
| 049 | SR610 | 4238785 | 03/29/2004 | 17:31:42 | 1C13088B | 4.83 | 13.36 |
| 050 | SR711 | 4238788 | 03/29/2004 | 17:52:17 | 1C13088B | 4.83 | 13.36 |
| 051 | PEMPI | EVALX03C | 03/29/2004 | 18:12:55 | 1C13088B | 4.83 | 13.36 |
| 052 | MIXA3RB | MIXA30424B | 03/29/2004 | 18:33:33 | 1C13088B | 4.83 | 13.36 |
| 053 | AR163GZ | AR1630424D | 03/29/2004 | 18:54:11 | 1C13088B | 4.83 | 13.36 |
| 054 | | CONDITIONER | 03/29/2004 | 20:24:01 | 1C13088B | | |
| 055 | PBLKU4 | BLANKA | 03/29/2004 | 20:44:40 | 1C13088B | 4.83 | 13.36 |
| 056 | LCSP4 | LCSA | 03/29/2004 | 21:05:17 | 1C13088B | 4.83 | 13.36 |

| ICAL Dates | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088B | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.84 | (4.81 - 4.87 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.38 | (13.35 - 13.41 Minutes) |
| 2C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |
| 4C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |

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# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 057 | EW-11 | 4240586 | 03/29/2004 | 21:25:56 | 1C13088B | 4.83 | 13.36 |
| 058 | GP12B | 4241994 | 03/29/2004 | 21:46:34 | 1C13088B | 4.83 | 13.36 |
| 059 | GP12BMS | 4241995 | 03/29/2004 | 22:07:15 | 1C13088B | 4.83 | 13.36 |
| 060 | GP12BMSD | 4241996 | 03/29/2004 | 22:27:52 | 1C13088B | 4.83 | 13.36 |
| 061 | FB325 | 4241998 | 03/29/2004 | 22:48:29 | 1C13088B | 4.83 | 13.35 |
| 062 | BACK2 | 4239036 | 03/29/2004 | 23:09:05 | 1C13088B | 4.83 | 13.35 |
| 063 | BACK3 | 4239037 | 03/29/2004 | 23:29:28 | 1C13088B | 4.83 | 13.36 |
| 064 | PEMPJ | EVALX03C | 03/29/2004 | 23:50:06 | 1C13088B | 4.83 | 13.36 |
| 065 | MIXA4OU | MIXA40424B | 03/30/2004 | 00:10:44 | 1C13088B | 4.83 | 13.36 |
| 066 | AR164YU | AR1640424E | 03/30/2004 | 00:31:19 | 1C13088B | 4.83 | 13.36 |
| 067 | AA | CONDITIONER | 03/30/2004 | 09:50:02 | 1C13088B | 4.83 | 13.36 |
| 068 | | CONDITIONER | 03/30/2004 | 10:10:41 | 1C13088B | 4.83 | 13.35 |
| 069 | | CONDITIONER | 03/30/2004 | 10:31:20 | 1C13088B | 4.83 | |
| 070 | PEMPM | EVALX03C | 03/30/2004 | 10:51:42 | 1C13088B | 4.82 | 13.35 |
| 071 | MIXA3RD | MIXA30424B | 03/30/2004 | 11:12:21 | 1C13088B | 4.83 | 13.35 |
| 072 | AR163HB | AR1630424D | 03/30/2004 | 11:32:58 | 1C13088B | 4.83 | 13.35 |
| 073 | PBLKVE | BLANKA | 03/30/2004 | 11:53:39 | 2C13088B | 4.83 | 13.35 |
| 074 | LCSQ8 | LCSA | 03/30/2004 | 12:14:14 | 2C13088B | 4.83 | 13.35 |
| 075 | 7GP17 | 4241642 | 03/30/2004 | 12:34:39 | 2C13088B | 4.83 | 13.34 |
| 076 | 7GP18 | 4241643 | 03/30/2004 | 12:55:16 | 2C13088B | 4.83 | 13.35 |
| 077 | 7GP18 | 4241643 | 03/30/2004 | 13:15:55 | 2C13088B | 4.83 | 13.35 |
| 078 | 7GP19 | 4241644 | 03/30/2004 | 13:36:32 | 2C13088B | 4.82 | 13.34 |
| 079 | 7GP19 | 4241644 | 03/30/2004 | 13:56:54 | 2C13088B | 4.83 | 13.34 |
| 080 | 7GP45 | 4241645 | 03/30/2004 | 14:17:31 | 2C13088B | 4.83 | 13.34 |
| 081 | 7GP45 | 4241645 | 03/30/2004 | 14:38:11 | 2C13088B | 4.82 | 13.35 |
| 082 | 7GP45MS | 4241646 | 03/30/2004 | 14:58:49 | 2C13088B | 4.83 | 13.35 |
| 083 | 7GP45MS | 4241646 | 03/30/2004 | 15:19:29 | 2C13088B | 4.83 | 13.35 |
| 084 | 7GP45MSD | 4241647 | 03/30/2004 | 15:39:49 | 2C13088B | 4.83 | 13.34 |

no cl 17104 3

ICAL Dates

| | | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088B | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.84 | (4.81 - 4.87 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.38 | (13.35 - 13.41 Minutes) |
| 2C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |
| 4C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |

9614

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1C13088B  Lab Name: Lancaster laboratories  Contract:

Lab Code:  Case No.:  SAS No:  SDG No.:

GC Column: RTXCLPII  ID: 0.32

Instrument: H6722B

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 085 | 7GP45MSD | 4241647 | 03/30/2004 | 16:00:26 | 2C13088B | 4.82 | 13.35 |
| 086 | UGP21 | 4241648 | 03/30/2004 | 16:21:04 | 2C13088B | 4.83 | 13.35 |
| 087 | UGP21 | 4241648 | 03/30/2004 | 16:41:43 | 2C13088B | 4.82 | 13.35 |
| 088 | 7GP22 | 4241649 | 03/30/2004 | 17:02:19 | 2C13088B | 4.83 | 13.34 |
| 089 | 2222D | 4241650 | 03/30/2004 | 17:22:57 | 2C13088B | 4.82 | 13.34 |
| 090 | 7GP23 | 4241651 | 03/30/2004 | 17:43:31 | 2C13088B | 4.82 | 13.34 |
| 091 | 7GP24 | 4241652 | 03/30/2004 | 18:04:10 | 2C13088B | 4.82 | 13.34 |
| 092 | PEMPN | EVALX03C | 03/30/2004 | 18:24:47 | 2C13088B | 4.82 | 13.35 |
| 093 | MIXA3RE | MIXA30424B | 03/30/2004 | 18:45:25 | 2C13088B | 4.82 | 13.34 |
| 094 | AR163HC | AR1630424D | 03/30/2004 | 19:06:01 | 2C13088B | 4.82 | 13.34 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1C13088B | 03/28/2004 - 03/29/2004 | TCX = Tetrachloro-m-xylene | 4.84 | (4.81 - 4.87 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.38 | (13.35 - 13.41 Minutes) |
| 2C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |
| 4C13088B | 03/30/2004 - 03/30/2004 | TCX = Tetrachloro-m-xylene | 4.83 | (4.80 - 4.86 Minutes) |
| | | DCB = Decachlorobiphenyl | 13.35 | (13.32 - 13.38 Minutes) |

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# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp13\C-Drive\CPWIN\DATA1\1c13088.seq
Chromatography Directory: \\cp13\C-Drive\cpwin\DATA1
Method Directory: \\cp13\C-Drive\cpwin\DATA1
Number of Entries: 96

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | MISC | AA | 1c13088.01R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 2 CONDITIONER | MISC | AA | 1c13088.02R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 3 IBLKX03B | PIBLK | AA | 1c13088.03R | PESTD.MET | 1000 | 10 | 1 | 048799999 | |
| 4 EVALX03C | IPEM | AA | 1c13088.04R | EVALD.MET | 1 | 1 | 1 | 048799999 | |
| 5 MIXA10424B | ICAL | AA | 1c13088.05R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 6 MIXA20424B | ICAL | AA | 1c13088.06R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 7 MIXA30424B | ICAL | AA | 1c13088.07R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 8 MIXA40424B | ICAL | AA | 1c13088.08R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 9 MIXA50424B | ICAL | AA | 1c13088.09R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 10 MIXE10424A | ICAL | AA | 1c13088.10R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 11 MIXE20424A | ICAL | AA | 1c13088.11R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 12 MIXE30424A | ICAL | AA | 1c13088.12R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 13 MIXE40424A | ICAL | AA | 1c13088.13R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 14 MIXE50424A | ICAL | AA | 1c13088.14R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 15 ICMAX0424B | CCAL | AA | 1c13088.15R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 16 TOXWX03B | ICAL | AA | 1c13088.16R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 17 CHLDX03B | ICAL | AA | 1c13088.17R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 18 AR1610424D | ICAL | AA | 1c13088.18R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 19 AR1620424D | ICAL | AA | 1c13088.19R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 20 AR1630424D | ICAL | AA | 1c13088.20R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 21 AR1640424E | ICAL | AA | 1c13088.21R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 22 AR1650424D | ICAL | AA | 1c13088.22R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 23 AR210424A | ICAL | AA | 1c13088.23R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 24 AR32X03C | ICAL | AA | 1c13088.24R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 25 AR420424A | ICAL | AA | 1c13088.25R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 26 AR4830424A | ICAL | AA | 1c13088.26R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 27 AR5430424A | ICAL | AA | 1c13088.27R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 28 MDLAX0424B | ICAL | AA | 1c13088.28R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 29 MDLEX0424A | ICAL | AA | 1c13088.29R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 30 MD16X0424A | ICAL | AA | 1c13088.30R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 31 MDTXX03B | ICAL | AA | 1c13088.31R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 32 MDCHX03B | ICAL | AA | 1c13088.32R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 33 IC16X0424B | CCAL | AA | 1c13088.33R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 34 CONDITIONER | MISC | AA | 1c13088.34R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 35 BLANKA 3/22/04FG | BLK | AC | 1c13088.35R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 36 LCSA 3/22/04FG | LCS | AC | 1c13088.36R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 37 4237073FG DF20 | T | AE | 1c13088.37R | PESTD.MET | 30 | 250 | 1 | 040820006A | 01225 |
| 38 4238264FG DF20 | T | AE | 1c13088.38R | PESTD.MET | 30 | 200 | 1 | 040820006A | 01225 |
| 39 4239035FG | T | AC | 1c13088.39R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 40 4239035MSFG | MS | AC | 1c13088.40R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 41 4239035MSDFG | MSD | AC | 1c13088.41R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 42 4239036FG | T | AD | 1c13088.42R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |
| 43 4239037FG | T | AC | 1c13088.43R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |
| 44 BLANKA 3/22/04CF | BLK | AD | 1c13088.44R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 45 LCSA 3/22/04CF | LCS | AD | 1c13088.45R | PESTD.MET | 30 | 10 | 1 | 040820006A | 08899 |
| 46 4238770CF DF10 | T | AD | 1c13088.46R | PESTD.MET | 30 | 100 | 1 | 040820006A | 01225 |
| 47 4238773CF DF10 | T | AD | 1c13088.47R | PESTD.MET | 30 | 100 | 1 | 040820006A | 01225 |
| 48 4238776CF DF10 | T | AD | 1c13088.48R | PESTD.MET | 30 | 100 | 1 | 040820006A | 01225 |
| 49 4238779CF | T | AC | 1c13088.49R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |
| 50 4238782CF | T | AC | 1c13088.50R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |

# Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\cp13\C-Drive\CPWIN\DATA1\1c13088.seq
Chromatography Directory: \\cp13\C-Drive\cpwin\DATA1
Method Directory: \\cp13\C-Drive\cpwin\DATA1
Number of Entries: 96

| Samplename | Code | ID | FileName | Method | Samp Wt | DF | Int Std | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| 51 4238785CF | T | AC | 1c13088.51R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |
| 52 4238788CF | T | AC | 1c13088.52R | PESTD.MET | 30 | 10 | 1 | 040820006A | 01225 |
| 53 EVALX03C | PEM | PI | 1c13088.53R | EVALD.MET | 1 | 1 | 1 | 048899999 | |
| 54 MIXA30424B | CCAL | RB | 1c13088.54R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 55 AR1630424D | CCAL | GZ | 1c13088.55R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 56 CONDITIONER | MISC | AA | 1c13088.56R | PESTD.MET | 1 | 1 | 1 | 048799999 | |
| 57 BLANKA 3/29/04F | BLK | AB | 1c13088.57R | PESTD.MET | 1000 | 10 | 1 | 040870012A | 06010 |
| 58 LCSA 3/29/04F | LCS | AB | 1c13088.58R | PESTD.MET | 1000 | 10 | 1 | 040870012A | 06010 |
| 59 4240586F | T | AB | 1c13088.59R | PESTD.MET | 1005 | 10 | 1 | 040870012A | 01599 |
| 60 4241994F | T | AB | 1c13088.60R | PESTD.MET | 937 | 10 | 1 | 040870012A | 06010 |
| 61 4241995MSF | MS | AB | 1c13088.61R | PESTD.MET | 972 | 10 | 1 | 040870012A | 06010 |
| 62 4241996MSDF | MSD | AB | 1c13088.62R | PESTD.MET | 992 | 10 | 1 | 040870012A | 06010 |
| 63 4241998F | T | AB | 1c13088.63R | PESTD.MET | 880 | 10 | 1 | 040870012A | 01599 |
| 64 4239036FG DF2 | T | AE | 1c13088.64R | PESTD.MET | 30 | 20 | 1 | 040820006A | 01225 |
| 65 4239037FG DF5 | T | AD | 1c13088.65R | PESTD.MET | 30 | 50 | 1 | 040820006A | 01225 |
| 66 EVALX03C | PEM | PJ | 1c13088.66R | EVALD.MET | 1 | 1 | 1 | 048899999 | |
| 67 MIXA40424B | CCAL | OU | 1c13088.67R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 68 AR1640424E | CCAL | YU | 1c13088.68R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 69 CONDITIONER | MISC | AA | 1c13088.69R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 70 CONDITIONER | MISC | AA | 1c13088.70R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 71 CONDITIONER | MISC | AA | 1c13088.71R | PESTD.MET | 1 | 1 | 1 | 048899999 | |
| 72 EVALX03C | PEM | PM | 1c13088.72R | EVALD.MET | 1 | 1 | 1 | 048999999 | |
| 73 MIXA30424B | CCAL | RD | 1c13088.73R | PESTD.MET | 1 | 1 | 1 | 048999999 | |
| 74 AR1630424D | CCAL | HB | 1c13088.74R | PESTD.MET | 1 | 1 | 1 | 048999999 | |
| 75 BLANKA 3/30/04ACF | BLK | AB | 1c13088.75R | PESTD.MET | 30 | 10 | 1 | 040890035A | 08899 |
| 76 LCSA 3/30/04ACF | LCS | AB | 1c13088.76R | PESTD.MET | 30 | 10 | 1 | 040890035A | 08899 |
| 77 4241642RACF | T | AB | 1c13088.77R | PESTD.MET | 30 | 10 | 1 | 040890035A | 01225 |
| 78 4241643RACF | T | AB | 1c13088.78R | PESTD.MET | 30 | 10 | 1 | 040890035A | 01225 |
| 79 4241643RACF DF5 | T | AC | 1c13088.79R | PESTD.MET | 30 | 50 | 1 | 040890035A | 01225 |
| 80 4241644RACF | T | AB | 1c13088.80R | PESTD.MET | 30 | 10 | 1 | 040890035A | 01225 |
| 81 4241644RACF DF5 | T | AC | 1c13088.81R | PESTD.MET | 30 | 50 | 1 | 040890035A | 01225 |
| 82 4241645RACF DF5 | T | AC | 1c13088.82R | PESTD.MET | 30 | 50 | 1 | 040890035A | 08899 |
| 83 4241645RACF DF20 | T | AD | 1c13088.83R | PESTD.MET | 30 | 200 | 1 | 040890035A | 08899 |
| 84 4241646RMSACF DF5 | MS | AC | 1c13088.84R | PESTD.MET | 30 | 50 | 1 | 040890035A | 08899 |
| 85 4241646RMSACF DF20 | MS | AD | 1c13088.85R | PESTD.MET | 30 | 200 | 1 | 040890035A | 08899 |
| 86 4241647RMSDACF DF5 | MSD | AC | 1c13088.86R | PESTD.MET | 30 | 50 | 1 | 040890035A | 08899 |
| 87 4241647RMSDACF DF20 | MSD | AD | 1c13088.87R | PESTD.MET | 30 | 200 | 1 | 040890035A | 08899 |
| 88 4241648RACF DF5 | T | AC | 1c13088.88R | PESTD.MET | 30 | 50 | 1 | 040890035A | 01225 |
| 89 4241648RACF DF20 | T | AD | 1c13088.89R | PESTD.MET | 30 | 200 | 1 | 040890035A | 01225 |
| 90 4241649RACF DF2 | T | AC | 1c13088.90R | PESTD.MET | 30 | 20 | 1 | 040890035A | 01225 |
| 91 4241650RACF DF2 | T | AC | 1c13088.91R | PESTD.MET | 30 | 20 | 1 | 040890035A | 01225 |
| 92 4241651RACF | T | AB | 1c13088.92R | PESTD.MET | 30 | 10 | 1 | 040890035A | 01225 |
| 93 4241652RACF | T | AB | 1c13088.93R | PESTD.MET | 30 | 10 | 1 | 040890035A | 01225 |
| 94 EVALX03C | PEM | PN | 1c13088.94R | EVALD.MET | 1 | 1 | 1 | 048999999 | |
| 95 MIXA30424B | CCAL | RE | 1c13088.95R | PESTD.MET | 1 | 1 | 1 | 048999999 | |
| 96 AR1630424D | CCAL | HC | 1c13088.96R | PESTD.MET | 1 | 1 | 1 | 048999999 | |

8617

Set-up by: _____ Date: 4/1/4

3/30/04

Sample Name: **EVALX03C AAPEMAA IPEM 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 08:46:38pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: C:\CPWIN\DATA1\1C13088.04R
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.561 | | 0.0000 | 0.000 | 1001.7 | 0.040 | BB | 0.029 | 567.85 | 0.053 |
| 2 | 3.897 | | 0.0000 | 0.000 | 2901.7 | 0.117 | BB | 0.080 | 605.75 | 0.056 |
| 3 | 3.987 | | 0.0000 | 0.000 | 349.2 | 0.014 | BB | 0.031 | 186.05 | 0.017 |
| 4 | 4.126 | | 0.0000 | 0.000 | 717.7 | 0.029 | BB | 0.100 | 119.26 | 0.011 |
| 5 | 4.323 | TCX | 20.9089 | 4.748 | 180313.2 | 7.260 | BB | 0.040 | 74600.96 | 6.947 |
| 6 | 4.765 | | 0.0000 | 0.000 | 1046.8 | 0.042 | BB | 0.087 | 201.47 | 0.019 |
| 7 | 4.898 | HCB | 0.1321 | 0.030 | 1705.7 | 0.069 | BB | 0.034 | 827.40 | 0.077 |
| 8 | 5.152 | alpha-BHC | 10.2701 | 2.332 | 99551.3 | 4.008 | BB | 0.035 | 47436.40 | 4.418 |
| 9 | 5.614 | gamma-BHC | 9.8140 | 2.228 | 94150.7 | 3.791 | BB | 0.035 | 44593.37 | 4.153 |
| 10 | 5.744 | beta-BHC | 10.8180 | 2.456 | 57731.6 | 2.325 | BB | 0.038 | 25603.61 | 2.384 |
| 11 | 5.846 | | 0.0000 | 0.000 | 229.1 | 0.009 | BB | 0.023 | 169.46 | 0.016 |
| 12 | 5.945 | | 0.0000 | 0.000 | 96.5 | 0.004 | BB | 0.032 | 50.03 | 0.005 |
| 13 | 6.039 | | 0.0000 | 0.000 | 53.3 | 0.002 | BB | 0.023 | 39.27 | 0.004 |
| 14 | 6.096 | | 0.0000 | 0.000 | 1201.1 | 0.048 | BB | 0.043 | 460.28 | 0.043 |
| 15 | 6.511 | | 0.0000 | 0.000 | 1371.9 | 0.055 | BV | 0.047 | 490.10 | 0.046 |
| 16 | 6.698 | Aldrin | 0.0169 | 0.004 | 364.6 | 0.015 | VB | 0.091 | 67.04 | 0.006 |
| 17 | 6.932 | | 0.0000 | 0.000 | 174.0 | 0.007 | BB | 0.042 | 69.76 | 0.006 |
| 18 | 7.096 | | 0.0000 | 0.000 | 1120.0 | 0.045 | BV | 0.056 | 335.69 | 0.031 |
| 19 | 7.224 | | 0.0000 | 0.000 | 1906.5 | 0.077 | VB | 0.071 | 445.09 | 0.041 |
| 20 | 7.543 | Hept. epoxide | 0.0160 | 0.004 | 143.4 | 0.006 | BB | 0.038 | 62.55 | 0.006 |
| 21 | 7.735 | g. Chlordane | 0.0379 | 0.009 | 251.9 | 0.010 | BB | 0.031 | 135.53 | 0.013 |
| 22 | 7.862 | | 0.0000 | 0.000 | 3935.1 | 0.158 | BV | 0.096 | 679.96 | 0.063 |
| 23 | 7.980 | 4,4'-DDE | 0.5545 | 0.126 | 4809.4 | 0.194 | VV | 0.042 | 1923.63 | 0.179 |
| 24 | 8.084 | Endosulfan I | 0.0399 | 0.009 | 413.4 | 0.017 | VB | 0.051 | 135.36 | 0.013 |
| 25 | 8.284 | | 0.0000 | 0.000 | 285.5 | 0.011 | BV | 0.046 | 102.82 | 0.010 |
| 26 | 8.481 | | 0.0000 | 0.000 | 480.0 | 0.019 | VV | 0.061 | 130.43 | 0.012 |
| 27 | 8.548 | o,p-DDT | 0.7699 | 0.175 | 4429.3 | 0.178 | VB | 0.038 | 1928.68 | 0.180 |
| 28 | 8.716 | Endrin | 45.6243 | 10.360 | 339892.3 | 13.686 | BV | 0.039 | 144339.10 | 13.442 |
| 29 | 8.844 | | 0.0000 | 0.000 | 538.8 | 0.022 | VB | 0.026 | 347.81 | 0.032 |
| 30 | 9.004 | Endosulfan II | 0.0994 | 0.023 | 973.8 | 0.039 | BV | 0.051 | 319.08 | 0.030 |
| 31 | 9.132 | 4,4'-DDT | 95.2233 | 21.622 | 602352.8 | 24.254 | VB | 0.036 | 276721.90 | 25.771 |
| 32 | 9.341 | | 0.0000 | 0.000 | 548.5 | 0.022 | BB | 0.062 | 147.94 | 0.014 |
| 33 | 9.563 | Endrin aldehyde | 0.9328 | 0.212 | 6362.3 | 0.256 | BV | 0.043 | 2475.13 | 0.231 |
| 34 | 9.644 | | 0.0000 | 0.000 | 1377.2 | 0.055 | VV | 0.048 | 475.24 | 0.044 |
| 35 | 9.744 | Methoxychlor | 223.2882 | 50.701 | 826592.4 | 33.283 | VB | 0.038 | 362215.40 | 33.733 |
| 36 | 10.297 | | 0.0000 | 0.000 | 10952.1 | 0.441 | BV | 0.045 | 4097.97 | 0.382 |
| 37 | 10.360 | | 0.0000 | 0.000 | 3025.7 | 0.122 | VB | 0.037 | 1359.61 | 0.127 |
| 38 | 10.494 | Endrin ketone | 1.6690 | 0.379 | 14344.8 | 0.578 | BV | 0.043 | 5603.84 | 0.522 |
| 39 | 10.665 | | 0.0000 | 0.000 | 908.0 | 0.037 | VV | 0.077 | 197.18 | 0.018 |
| 40 | 10.781 | | 0.0000 | 0.000 | 498.7 | 0.020 | VV | 0.061 | 136.30 | 0.013 |
| 41 | 10.882 | | 0.0000 | 0.000 | 1368.8 | 0.055 | VB | 0.034 | 664.34 | 0.062 |
| 42 | 11.110 | | 0.0000 | 0.000 | 177.7 | 0.007 | BB | 0.054 | 55.31 | 0.005 |
| 43 | 11.354 | | 0.0000 | 0.000 | 125.1 | 0.005 | BB | 0.044 | 46.96 | 0.004 |
| 44 | 11.544 | | 0.0000 | 0.000 | 1087.7 | 0.044 | BB | 0.047 | 384.85 | 0.036 |
| 45 | 11.840 | DCB | 20.1889 | 4.584 | 211427.4 | 8.513 | BB | 0.049 | 72165.88 | 6.721 |
| 46 | 12.447 | | 0.0000 | 0.000 | 225.6 | 0.009 | BB | 0.059 | 63.57 | 0.006 |

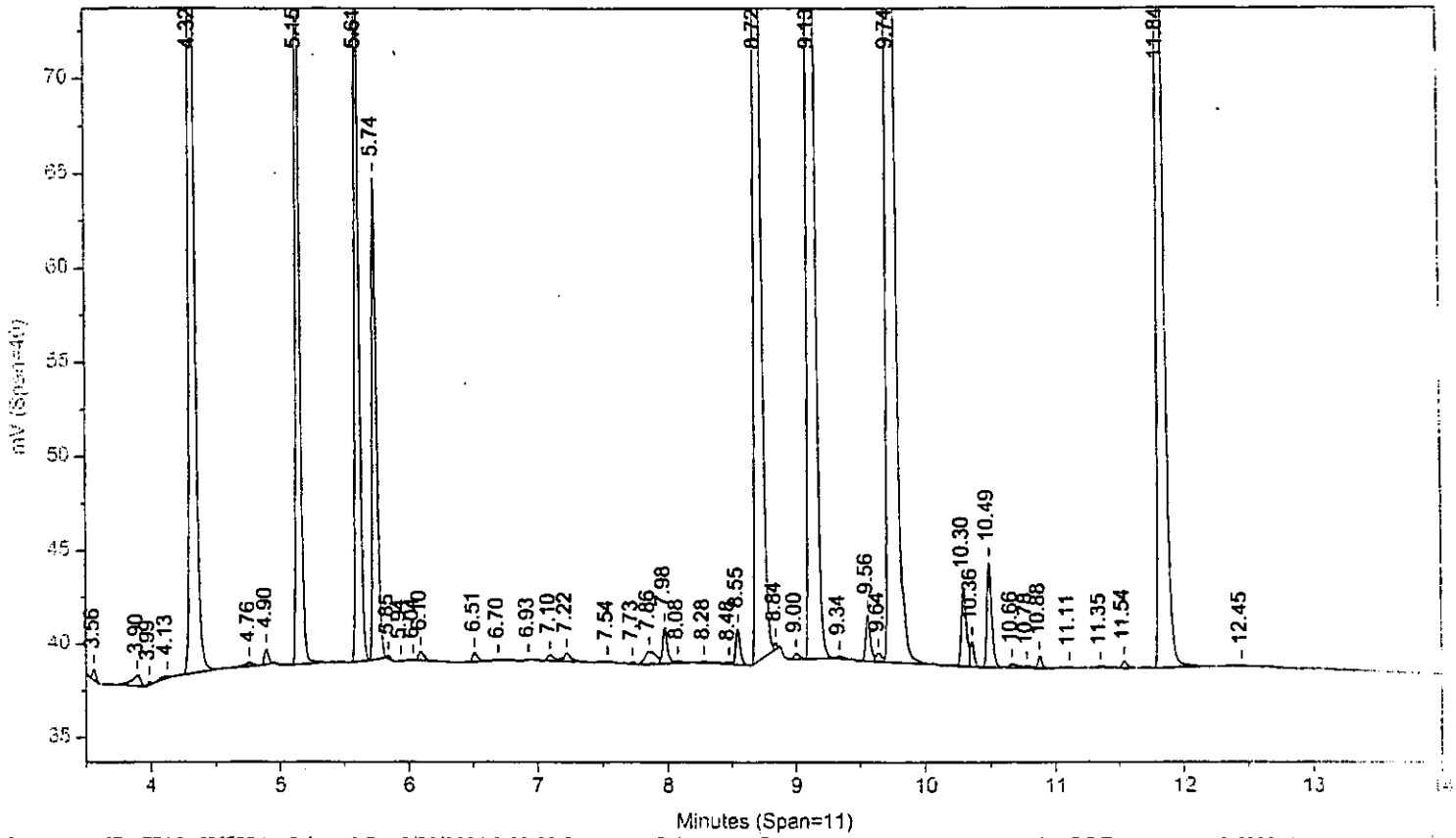
Total Area = 2483515.0, Total Amount = 440.404, Total Height = 1073785.0, Sample Units = PPB

Sample Name: **EVALX03C AAPEMAA IPEM 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 08:46:38pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.04R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.614 | | 0.0000 | 0.000 | 1663.3 | 0.183 | BB | 0.164 | 169.22 | 0.040 |
| 2 | 3.686 | | 0.0000 | 0.000 | 6219.4 | 0.683 | BB | 0.169 | 613.87 | 0.143 |
| 3 | 4.041 | | 0.0000 | 0.000 | 1174.3 | 0.129 | BB | 0.032 | 609.30 | 0.142 |
| 4 | 4.841 | TCX | 20.4704 | 3.660 | 78937.8 | 8.665 | BB | 0.035 | 37780.56 | 8.824 |
| 5 | 5.406 | | 0.0000 | 0.000 | 716.0 | 0.079 | BB | 0.031 | 385.22 | 0.090 |
| 6 | 5.770 | alpha-BHC | 12.0123 | 2.148 | 33132.2 | 3.637 | BV | 0.033 | 16789.76 | 3.922 |
| 7 | 6.301 | gamma-BHC | 12.0695 | 2.158 | 31871.4 | 3.499 | VV | 0.033 | 16216.26 | 3.788 |
| 8 | 6.422 | beta-BHC | 13.5046 | 2.414 | 28900.3 | 3.172 | VB | 0.044 | 11068.78 | 2.585 |
| 9 | 8.830 | 4,4'-DDE | 0.5659 | 0.101 | 4311.1 | 0.473 | BB | 0.092 | 780.58 | 0.182 |
| 10 | 9.505 | Endrin | 63.7874 | 11.404 | 135110.7 | 14.831 | BB | 0.035 | 64635.19 | 15.097 |
| 11 | 9.931 | | 0.0000 | 0.000 | 526.1 | 0.058 | BB | 0.028 | 310.08 | 0.072 |
| 12 | 10.008 | 4,4'-DDT | 124.6919 | 22.292 | 209741.8 | 23.023 | BB | 0.032 | 108772.60 | 25.406 |
| 13 | 10.222 | Endrin aldehyde | 1.3248 | 0.237 | 3570.2 | 0.392 | BB | 0.041 | 1456.61 | 0.340 |
| 14 | 10.881 | Methoxychlor | 283.7473 | 50.728 | 266779.3 | 29.285 | BB | 0.034 | 131217.30 | 30.648 |
| 15 | 11.046 | | 0.0000 | 0.000 | 1669.6 | 0.183 | BB | 0.035 | 785.16 | 0.183 |
| 16 | 11.197 | | 0.0000 | 0.000 | 3764.9 | 0.413 | BB | 0.040 | 1568.76 | 0.366 |
| 17 | 11.332 | Endrin ketone | 2.3875 | 0.427 | 7145.0 | 0.784 | BB | 0.043 | 2739.26 | 0.640 |
| 18 | 13.383 | DCB | 24.7837 | 4.431 | 95757.9 | 10.511 | BB | 0.050 | 32240.82 | 7.530 |

Total Area = 910991.3, Total Amount = 559.345, Total Height = 428139.3, Sample Units = PPB

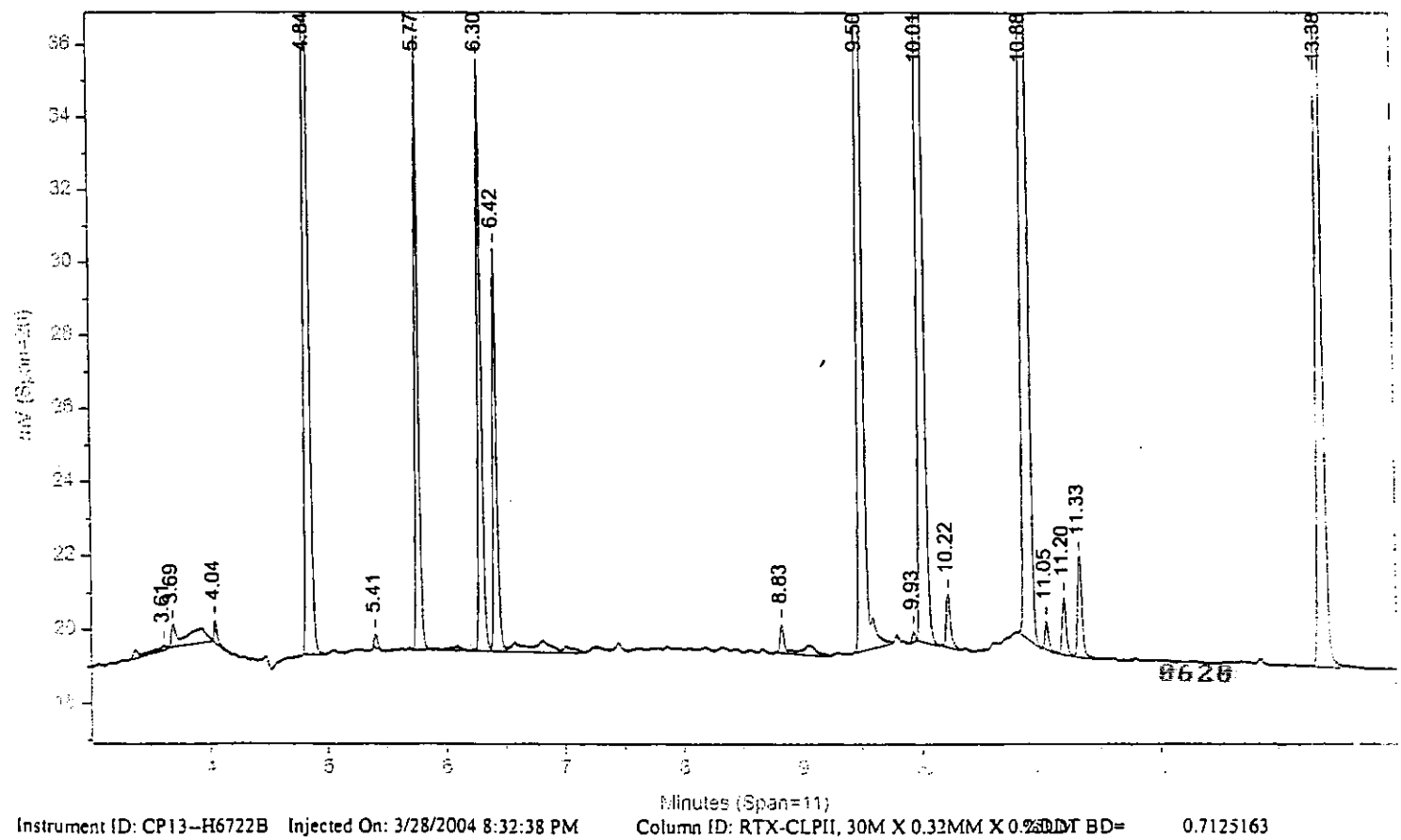
LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.04R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 8:32:38 PM

Column ID: RTX-1 0.25MM X 30M X 0.25UM%DDT BD= 0.6903515
%ENDRIN BD= 5.300536

File: C:\CPWIN\DATA1\1C13088B.04R




Instrument ID: CP13--H6722B Injected On: 3/28/2004 8:32:38 PM

Column ID: RTX-CLPII, 30M X 0.32MM X 0.5UM%DDT BD= 0.7125163
%ENDRIN BD= 6.095885

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.323 | 74601 | 20.909 | TCX | 4.841 | 37781 | 20.47 | TCX |
| 4.898 | 827 | .132 | HCB | . | 0 | . | HCB |
| 5.152 | 47436 | 10.27 | alpha-BHC | 5.77 | 16790 | 12.012 | alpha-BHC |
| 5.614 | 44593 | 9.814 | gamma-BHC | 6.301 | 16216 | 12.07 | gamma-BHC |
| 5.744 | 25604 | 10.818 | beta-BHC | 6.422 | 11069 | 13.505 | beta-BHC |
| 6.698 | 67 | .017 | Aldrin | . | 0 | . | Aldrin |
| 7.543 | 63 | .016 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.735 | 136 | .038 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.98 | 1924 | .555 | 4,4'-DDE | 8.83 | 781 | .566 | 4,4'-DDE |
| 8.084 | 135 | .04 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.548 | 1929 | .77 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.716 | 144339 | 45.624 | Endrin | 9.505 | 64635 | 63.787 | Endrin |
| 9.004 | 319 | .099 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.132 | 276722 | 95.223 | 4,4'-DDT | 10.008 | 108773 | 124.692 | 4,4'-DDT |
| 9.563 | 2475 | .933 | Endrin aldehyde | 10.222 | 1457 | 1.325 | Endrin aldehyde |
| 9.744 | 362215 | 223.288 | Methoxychlor | 10.881 | 131217 | 283.747 | Methoxychlor |
| 10.494 | 5604 | 1.669 | Endrin ketone | 11.332 | 2739 | 2.387 | Endrin ketone |
| 11.84 | 72166 | 20.189 | DCB | 13.383 | 32241 | 24.784 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.04A
Area File: C:\CPWIN\DATA1\1C13088B.04A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/29/2004 8:45:26 AM
File Reported On: 3/29/2004 at 8:45:36 AM

Sample Name: **MIXA10424B AAMIXA1AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 09:07:17pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.05R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.561 | | 0.0000 | 0.000 | 1115.1 | 0.289 | BB | 0.029 | 640.80 | 0.412 |
| 2 | 3.648 | | 0.0000 | 0.000 | 104.0 | 0.027 | BB | 0.037 | 46.49 | 0.030 |
| 3 | 3.893 | | 0.0000 | 0.000 | 3806.0 | 0.987 | BB | 0.063 | 1008.18 | 0.648 |
| 4 | 3.988 | | 0.0000 | 0.000 | 512.4 | 0.133 | BB | 0.033 | 256.87 | 0.165 |
| 5 | 4.322 | TCX | 4.3077 | 8.647 | 39690.9 | 10.290 | BB | 0.043 | 15369.57 | 9.878 |
| 6 | 4.553 | | 0.0000 | 0.000 | 111.7 | 0.029 | BB | 0.043 | 43.45 | 0.028 |
| 7 | 4.774 | | 0.0000 | 0.000 | 539.1 | 0.140 | BB | 0.067 | 134.33 | 0.086 |
| 8 | 4.897 | HCB | 0.0297 | 0.060 | 596.7 | 0.155 | BB | 0.053 | 186.23 | 0.120 |
| 9 | 5.023 | | 0.0000 | 0.000 | 331.4 | 0.086 | BB | 0.057 | 96.12 | 0.062 |
| 10 | 5.150 | alpha-BHC | 0.9009 | 1.808 | 8875.8 | 2.301 | BB | 0.036 | 4161.21 | 2.674 |
| 11 | 5.328 | | 0.0000 | 0.000 | 149.3 | 0.039 | BB | 0.045 | 54.93 | 0.035 |
| 12 | 5.481 | | 0.0000 | 0.000 | 286.0 | 0.074 | BB | 0.048 | 100.04 | 0.064 |
| 13 | 5.612 | gamma-BHC | 0.9519 | 1.911 | 9587.5 | 2.486 | BB | 0.037 | 4325.30 | 2.780 |
| 14 | 5.743 | beta-BHC | 1.1199 | 2.248 | 5921.5 | 1.535 | BB | 0.037 | 2650.44 | 1.703 |
| 15 | 5.999 | delta-BHC | 0.9176 | 1.842 | 8614.1 | 2.233 | BB | 0.036 | 4004.55 | 2.574 |
| 16 | 6.115 | | 0.0000 | 0.000 | 234.2 | 0.061 | BB | 0.038 | 103.65 | 0.067 |
| 17 | 6.200 | | 0.0000 | 0.000 | 150.9 | 0.039 | BV | 0.038 | 66.61 | 0.043 |
| 18 | 6.294 | Heptachlor | 1.1130 | 2.234 | 11058.6 | 2.867 | VB | 0.037 | 5003.87 | 3.216 |
| 19 | 6.516 | | 0.0000 | 0.000 | 289.1 | 0.075 | BV | 0.052 | 93.43 | 0.060 |
| 20 | 6.717 | Aldrin | 1.0024 | 2.012 | 9843.3 | 2.552 | VV | 0.041 | 3966.44 | 2.549 |
| 21 | 6.940 | | 0.0000 | 0.000 | 1004.9 | 0.261 | VB | 0.090 | 185.59 | 0.119 |
| 22 | 7.090 | | 0.0000 | 0.000 | 469.1 | 0.122 | BV | 0.046 | 169.95 | 0.109 |
| 23 | 7.197 | | 0.0000 | 0.000 | 899.7 | 0.233 | VB | 0.151 | 99.46 | 0.064 |
| 24 | 7.551 | Hept. epoxide | 1.0467 | 2.101 | 9524.1 | 2.469 | BB | 0.039 | 4088.92 | 2.628 |
| 25 | 7.719 | g. Chlordane | 1.0848 | 2.178 | 8900.7 | 2.308 | BV | 0.038 | 3883.27 | 2.496 |
| 26 | 7.894 | a. Chlordane | 1.0856 | 2.179 | 13685.6 | 3.548 | VV | 0.048 | 4710.22 | 3.027 |
| 27 | 7.979 | 4,4'-DDE | 1.9865 | 3.988 | 16254.5 | 4.214 | VV | 0.039 | 6891.35 | 4.429 |
| 28 | 8.086 | Endosulfan I | 1.1165 | 2.241 | 10024.5 | 2.599 | VV | 0.044 | 3790.74 | 2.436 |
| 29 | 8.402 | Dieldrin | 1.9878 | 3.990 | 17816.7 | 4.619 | VB | 0.043 | 6897.63 | 4.433 |
| 30 | 8.715 | Endrin | 1.8732 | 3.760 | 13230.5 | 3.430 | BV | 0.037 | 5926.02 | 3.808 |
| 31 | 8.768 | 4,4'-DDD | 1.8895 | 3.793 | 14144.9 | 3.667 | VB | 0.041 | 5811.76 | 3.735 |
| 32 | 9.018 | Endosulfan II | 2.1125 | 4.241 | 16347.2 | 4.238 | BV | 0.040 | 6782.98 | 4.359 |
| 33 | 9.131 | 4,4'-DDT | 1.9841 | 3.983 | 12905.8 | 3.346 | VB | 0.037 | 5765.84 | 3.706 |
| 34 | 9.339 | | 0.0000 | 0.000 | 248.5 | 0.064 | BV | 0.053 | 78.46 | 0.050 |
| 35 | 9.442 | | 0.0000 | 0.000 | 719.4 | 0.187 | VV | 0.055 | 217.42 | 0.140 |
| 36 | 9.561 | Endrin aldehyde | 2.2176 | 4.452 | 14735.5 | 3.820 | VB | 0.042 | 5884.62 | 3.782 |
| 37 | 9.746 | Methoxychlor | 11.6960 | 23.478 | 43056.7 | 11.163 | BB | 0.038 | 18973.14 | 12.193 |
| 38 | 10.128 | Endo. sulfate | 2.2526 | 4.522 | 14653.1 | 3.799 | BB | 0.039 | 6251.90 | 4.018 |
| 39 | 10.361 | | 0.0000 | 0.000 | 3321.6 | 0.861 | BB | 0.061 | 914.38 | 0.588 |
| 40 | 10.501 | Endrin ketone | 2.1235 | 4.263 | 16767.7 | 4.347 | BB | 0.039 | 7129.62 | 4.582 |
| 41 | 10.660 | | 0.0000 | 0.000 | 72.1 | 0.019 | BB | 0.030 | 39.94 | 0.026 |
| 42 | 10.881 | | 0.0000 | 0.000 | 384.8 | 0.100 | BB | 0.035 | 183.91 | 0.118 |
| 43 | 11.182 | | 0.0000 | 0.000 | 1532.7 | 0.397 | BB | 0.061 | 416.80 | 0.268 |
| 44 | 11.343 | | 0.0000 | 0.000 | 1622.8 | 0.421 | BB | 0.174 | 155.24 | 0.100 |
| 45 | 11.556 | | 0.0000 | 0.000 | 176.0 | 0.046 | BB | 0.049 | 60.26 | 0.039 |
| 46 | 11.839 | DCB | 5.0169 | 10.071 | 51215.4 | 13.278 | BB | 0.048 | 17933.17 | 11.525 |
| 47 | 13.796 | | 0.0000 | 0.000 | 173.0 | 0.045 | BB | 0.063 | 46.13 | 0.030 |

Total Area = 385705.2, Total Amount = 49.817, Total Height = 155601.2, Sample Units = PPB

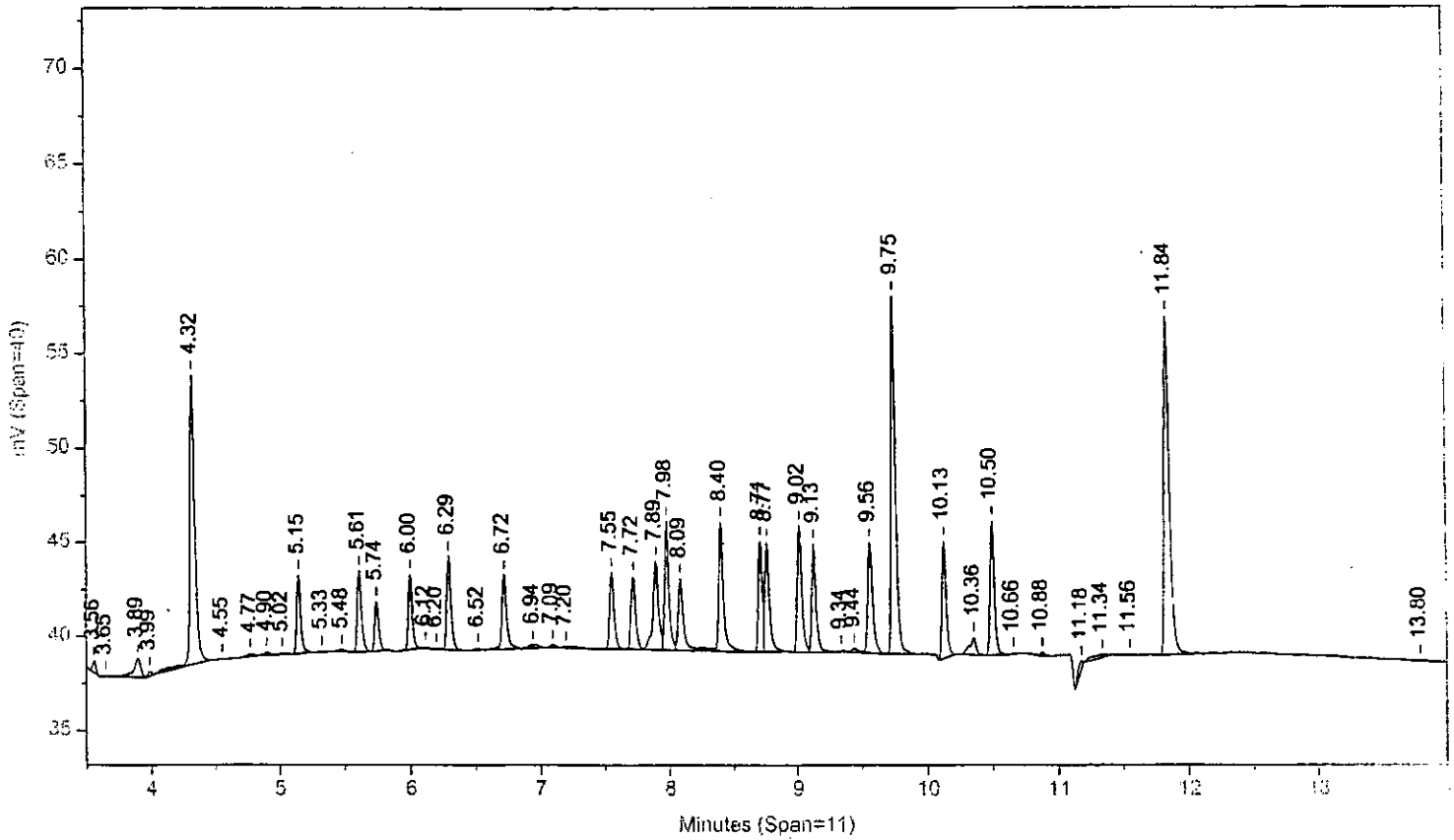
Sample Name: **MIXA10424B AAMIXA1AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 09:07:17pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.05R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.689 | | 0.0000 | 0.000 | 13246.4 | 6.726 | BB | 0.318 | 693.94 | 1.028 |
| 2 | 4.264 | | 0.0000 | 0.000 | 1368.1 | 0.695 | BB | 0.027 | 842.02 | 1.247 |
| 3 | 4.476 | | 0.0000 | 0.000 | 617.0 | 0.313 | BB | 0.028 | 369.18 | 0.547 |
| 4 | 4.841 | TCX | 3.9435 | 6.342 | 23434.6 | 11.898 | BV | 0.054 | 7278.14 | 10.780 |
| 5 | 5.768 | alpha-BHC | 1.2191 | 1.960 | 8510.4 | 4.321 | VV | 0.083 | 1703.93 | 2.524 |
| 6 | 6.298 | gamma-BHC | 1.3201 | 2.123 | 4388.1 | 2.228 | VV | 0.041 | 1773.70 | 2.627 |
| 7 | 6.423 | beta-BHC | 1.5717 | 2.528 | 7907.0 | 4.015 | VV | 0.102 | 1288.24 | 1.908 |
| 8 | 6.849 | delta-BHC | 1.3339 | 2.145 | 4387.6 | 2.228 | VV | 0.041 | 1804.43 | 2.673 |
| 9 | 6.938 | Heptachlor | 1.6568 | 2.664 | 8502.7 | 4.317 | VV | 0.069 | 2054.50 | 3.043 |
| 10 | 7.401 | Aldrin | 1.3071 | 2.102 | 9562.1 | 4.855 | VV | 0.091 | 1745.21 | 2.585 |
| 11 | 8.187 | Hept. epoxide | 1.3694 | 2.202 | 5509.8 | 2.797 | VV | 0.047 | 1968.20 | 2.915 |
| 12 | 8.444 | g. Chlordane | 1.3132 | 2.112 | 4460.2 | 2.265 | VV | 0.039 | 1896.33 | 2.809 |
| 13 | 8.636 | a. Chlordane | 1.3230 | 2.128 | 4058.9 | 2.061 | VV | 0.035 | 1926.55 | 2.854 |
| 14 | 8.729 | Endosulfan I | 1.2668 | 2.037 | 3485.3 | 1.770 | VB | 0.035 | 1649.20 | 2.443 |
| 15 | 8.832 | 4,4'-DDE | 2.0279 | 3.261 | 6060.6 | 3.077 | BB | 0.036 | 2797.11 | 4.143 |
| 16 | 9.092 | Dieldrin | 2.3294 | 3.746 | 6730.2 | 3.417 | BB | 0.036 | 3134.25 | 4.642 |
| 17 | 9.505 | Endrin | 2.3601 | 3.795 | 5199.1 | 2.640 | BV | 0.036 | 2391.49 | 3.542 |
| 18 | 9.595 | 4,4'-DDD | 2.4054 | 3.868 | 4891.7 | 2.484 | VB | 0.038 | 2166.58 | 3.209 |
| 19 | 9.784 | Endosulfan II | 2.5478 | 4.097 | 7081.6 | 3.595 | BB | 0.037 | 3166.16 | 4.690 |
| 20 | 10.007 | 4,4'-DDT | 2.8307 | 4.552 | 5085.1 | 2.582 | BB | 0.034 | 2469.34 | 3.658 |
| 21 | 10.219 | Endrin aldehyde | 2.6968 | 4.337 | 6396.6 | 3.248 | BB | 0.036 | 2965.09 | 4.392 |
| 22 | 10.577 | Endo. sulfate | 2.5123 | 4.040 | 7405.8 | 3.760 | BB | 0.044 | 2806.45 | 4.157 |
| 23 | 10.883 | Methoxychlor | 15.8082 | 25.422 | 15287.4 | 7.762 | BB | 0.035 | 7310.40 | 10.828 |
| 24 | 11.337 | Endrin ketone | 2.9200 | 4.696 | 9062.5 | 4.601 | BB | 0.045 | 3350.20 | 4.962 |
| 25 | 13.383 | DCB | 6.1204 | 9.842 | 24318.6 | 12.347 | BB | 0.051 | 7961.95 | 11.793 |

Total Area = 196957.5, Total Amount = 62.184, Total Height = 67512.57, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.05R

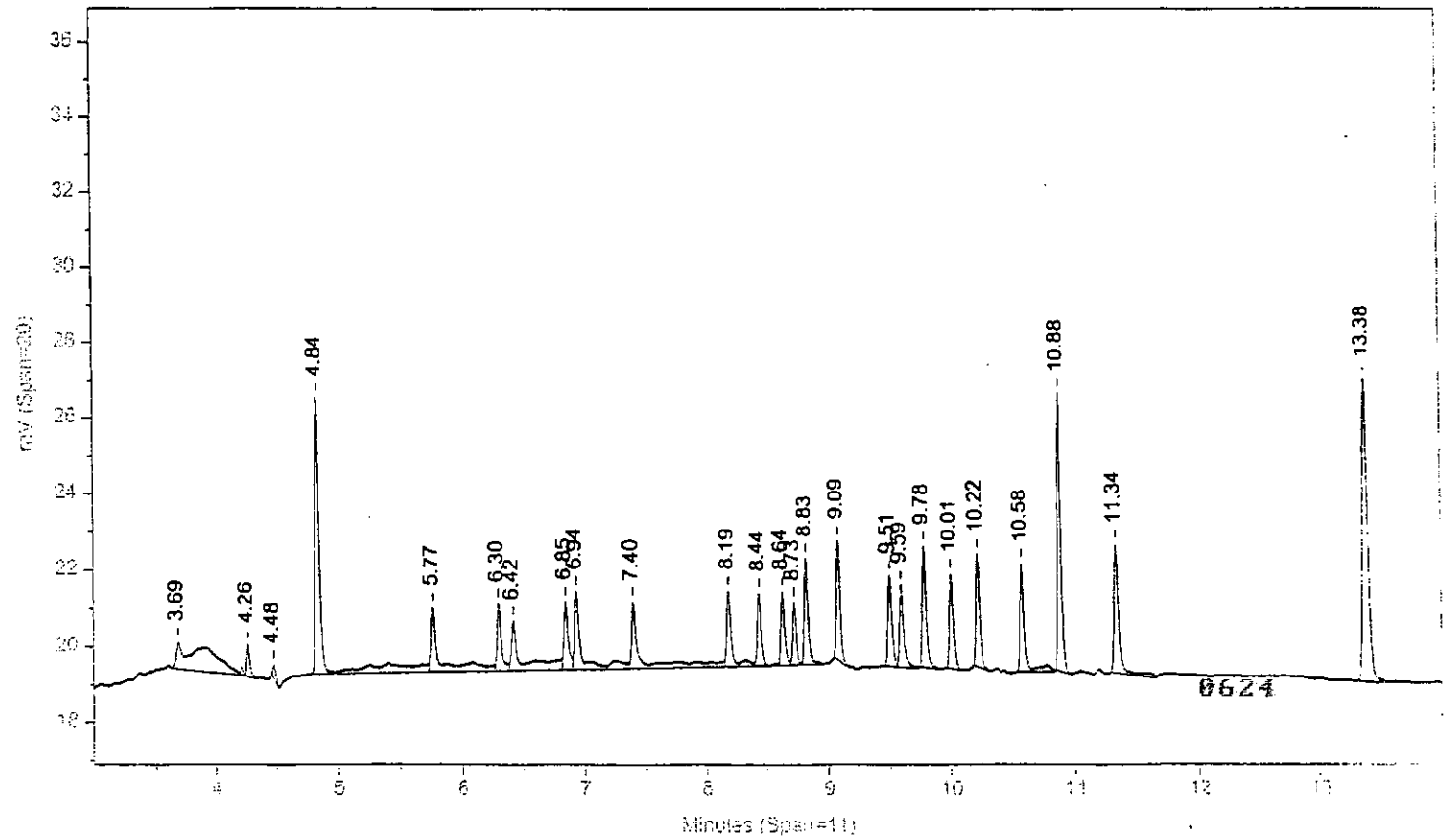
—— C:\CPWIN\DATA1\1C13088.05R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 8:53:17 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.05R

—— C:\CPWIN\DATA1\1C13088B.05R




Instrument ID: CP13--H6722B Injected On: 3/28/2004 8:53:17 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

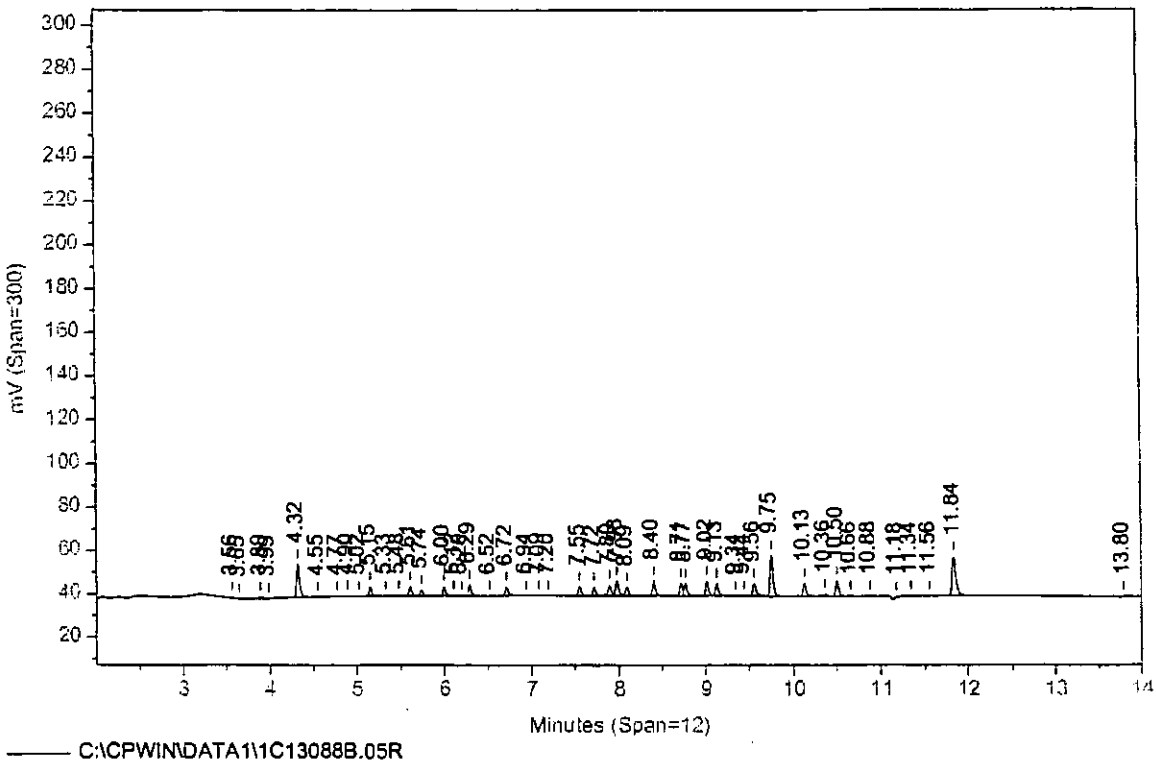
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.322 | 15370 | 4.30773 | TCX | 4.841 | 7278 | 3.94347 | TCX |
| 4.897 | 186 | .02972 | HCB | . | 0 | . | HCB |
| 5.15 | 4161 | .90091 | alpha-BHC | 5.768 | 1704 | 1.21908 | alpha-BHC |
| 5.612 | 4325 | .9519 | gamma-BHC | 6.298 | 1774 | 1.32014 | gamma-BHC |
| 5.743 | 2650 | 1.11986 | beta-BHC | 6.423 | 1288 | 1.57173 | beta-BHC |
| 5.999 | 4005 | .91763 | delta-BHC | 6.849 | 1804 | 1.33387 | delta-BHC |
| 6.294 | 5004 | 1.11299 | Heptachlor | 6.938 | 2054 | 1.65675 | Heptachlor |
| 6.717 | 3966 | 1.00238 | Aldrin | 7.401 | 1745 | 1.30707 | Aldrin |
| 7.551 | 4089 | 1.04666 | Hept. epoxide | 8.187 | 1968 | 1.36937 | Hept. epoxide |
| 7.719 | 3883 | 1.0848 | g. Chlordane | 8.444 | 1896 | 1.31318 | g. Chlordane |
| 7.894 | 4710 | 1.08562 | a. Chlordane | 8.636 | 1927 | 1.32303 | a. Chlordane |
| 7.979 | 6891 | 1.98652 | 4,4'-DDE | 8.832 | 2797 | 2.02794 | 4,4'-DDE |
| 8.086 | 3791 | 1.11653 | Endosulfan I | 8.729 | 1649 | 1.26677 | Endosulfan I |
| 8.402 | 6898 | 1.98781 | Dieldrin | 9.092 | 3134 | 2.32945 | Dieldrin |
| 8.715 | 5926 | 1.87316 | Endrin | 9.505 | 2391 | 2.36012 | Endrin |
| 8.768 | 5812 | 1.88951 | 4,4'-DDD | 9.595 | 2167 | 2.40542 | 4,4'-DDD |
| 9.018 | 6783 | 2.11253 | Endosulfan II | 9.784 | 3166 | 2.5478 | Endosulfan II |
| 9.131 | 5766 | 1.98409 | 4,4'-DDT | 10.007 | 2469 | 2.83074 | 4,4'-DDT |
| 9.561 | 5885 | 2.21762 | Endrin aldehyde | 10.219 | 2965 | 2.69684 | Endrin aldehyde |
| 9.746 | 18973 | 11.69602 | Methoxychlor | 10.883 | 7310 | 15.80816 | Methoxychlor |
| 10.128 | 6252 | 2.25263 | Endo. sulfate | 10.577 | 2806 | 2.5123 | Endo. sulfate |
| 10.501 | 7130 | 2.12345 | Endrin ketone | 11.337 | 3350 | 2.91997 | Endrin ketone |
| 11.839 | 17933 | 5.01692 | DCB | 13.383 | 7962 | 6.1204 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.05A
Area File: C:\CPWIN\DATA1\1C13088B.05A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 8:45:46 AM
File Reported On: 3/29/2004 at 8:45:57 AM

8625

10X REPLOTS

C:\CPWIN\DATA1\1C13088.05R

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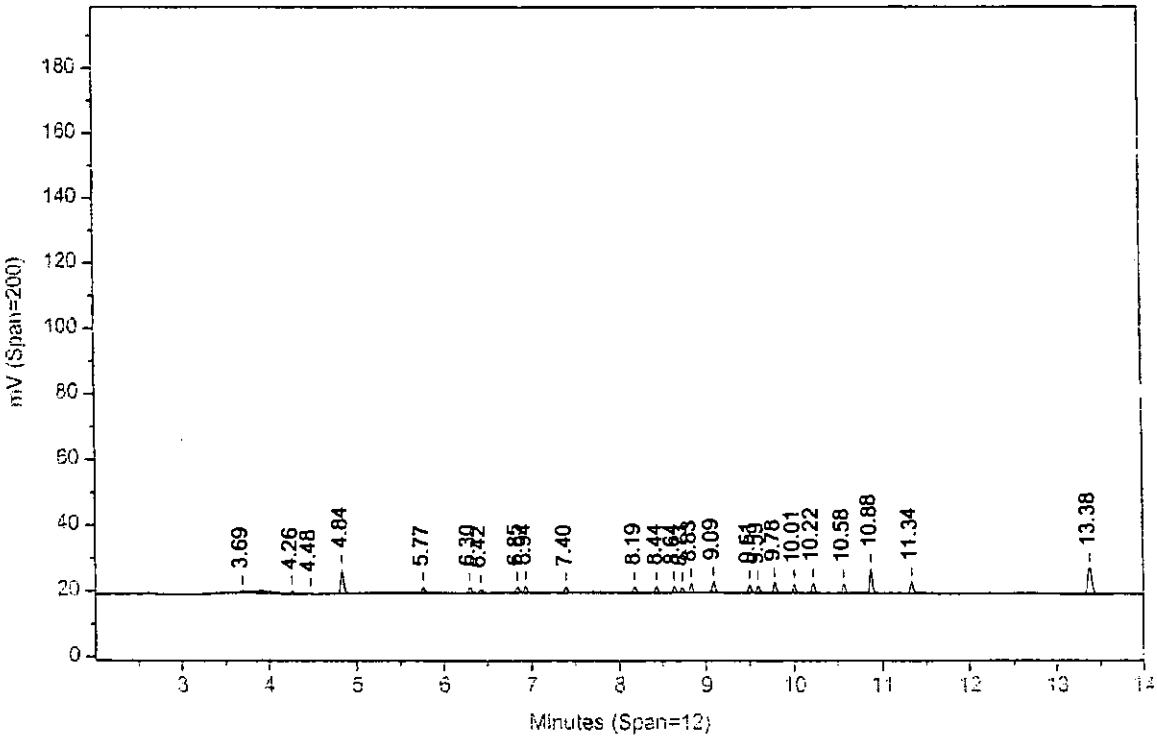


Sample Name: **MIXA20424B AAMIXA2AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 09:27:42pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.06R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.559 | | 0.0000 | 0.000 | 538.8 | 0.031 | BB | 0.026 | 351.97 | 0.048 |
| 2 | 3.667 | | 0.0000 | 0.000 | 263.2 | 0.015 | BB | 0.071 | 62.10 | 0.008 |
| 3 | 3.891 | | 0.0000 | 0.000 | 3838.7 | 0.218 | BB | 0.061 | 1050.16 | 0.143 |
| 4 | 3.989 | | 0.0000 | 0.000 | 950.3 | 0.054 | BB | 0.033 | 476.09 | 0.065 |
| 5 | 4.126 | | 0.0000 | 0.000 | 643.7 | 0.037 | BB | 0.097 | 110.49 | 0.015 |
| 6 | 4.321 | TCX | 20.5891 | 8.708 | 181048.0 | 10.297 | BB | 0.040 | 74702.12 | 10.161 |
| 7 | 4.760 | | 0.0000 | 0.000 | 576.5 | 0.033 | BB | 0.071 | 134.40 | 0.018 |
| 8 | 4.897 | HCB | 0.1708 | 0.072 | 1823.2 | 0.104 | BB | 0.036 | 850.00 | 0.116 |
| 9 | 5.020 | | 0.0000 | 0.000 | 255.4 | 0.015 | BB | 0.052 | 82.64 | 0.011 |
| 10 | 5.150 | alpha-BHC | 4.8314 | 2.043 | 47209.3 | 2.685 | BB | 0.035 | 22203.99 | 3.020 |
| 11 | 5.480 | | 0.0000 | 0.000 | 309.2 | 0.018 | BB | 0.048 | 108.04 | 0.015 |
| 12 | 5.612 | gamma-BHC | 4.9627 | 2.099 | 48492.3 | 2.758 | BB | 0.036 | 22534.38 | 3.065 |
| 13 | 5.742 | beta-BHC | 5.4563 | 2.308 | 29417.3 | 1.673 | BB | 0.037 | 13101.73 | 1.782 |
| 14 | 5.843 | | 0.0000 | 0.000 | 214.5 | 0.012 | BB | 0.026 | 139.13 | 0.019 |
| 15 | 5.999 | delta-BHC | 4.8799 | 2.064 | 45696.5 | 2.599 | BV | 0.036 | 21304.38 | 2.898 |
| 16 | 6.207 | | 0.0000 | 0.000 | 598.1 | 0.034 | VV | 0.058 | 172.47 | 0.023 |
| 17 | 6.294 | Heptachlor | 5.4278 | 2.296 | 55370.4 | 3.149 | VV | 0.037 | 24944.01 | 3.393 |
| 18 | 6.505 | | 0.0000 | 0.000 | 3197.2 | 0.182 | VB | 0.034 | 1582.31 | 0.215 |
| 19 | 6.717 | Aldrin | 4.9642 | 2.100 | 44812.2 | 2.549 | BV | 0.038 | 19560.16 | 2.661 |
| 20 | 6.924 | | 0.0000 | 0.000 | 976.2 | 0.056 | VB | 0.087 | 186.88 | 0.025 |
| 21 | 7.088 | | 0.0000 | 0.000 | 289.0 | 0.016 | BB | 0.038 | 126.22 | 0.017 |
| 22 | 7.183 | | 0.0000 | 0.000 | 288.6 | 0.016 | BB | 0.039 | 123.39 | 0.017 |
| 23 | 7.550 | Hept. epoxide | 5.1855 | 2.193 | 46849.4 | 2.664 | BV | 0.039 | 20145.68 | 2.740 |
| 24 | 7.718 | g. Chlordane | 5.3140 | 2.248 | 46218.9 | 2.629 | VV | 0.039 | 19707.15 | 2.681 |
| 25 | 7.893 | a. Chlordane | 5.0366 | 2.130 | 49844.2 | 2.835 | VV | 0.040 | 20528.98 | 2.792 |
| 26 | 7.978 | 4,4'-DDE | 9.7815 | 4.137 | 78344.0 | 4.456 | VV | 0.038 | 34655.22 | 4.714 |
| 27 | 8.085 | Endosulfan I | 5.2491 | 2.220 | 44846.8 | 2.551 | VB | 0.041 | 18252.02 | 2.483 |
| 28 | 8.402 | Dieldrin | 9.8435 | 4.163 | 80630.4 | 4.586 | BB | 0.039 | 34431.79 | 4.684 |
| 29 | 8.714 | Endrin | 9.5656 | 4.046 | 65696.4 | 3.736 | BV | 0.037 | 29614.15 | 4.028 |
| 30 | 8.767 | 4,4'-DDD | 9.3958 | 3.974 | 65338.2 | 3.716 | VB | 0.039 | 27921.93 | 3.798 |
| 31 | 9.016 | Endosulfan II | 10.3415 | 4.374 | 79288.6 | 4.509 | BV | 0.040 | 33351.53 | 4.537 |
| 32 | 9.131 | 4,4'-DDT | 10.0380 | 4.246 | 64739.9 | 3.682 | VV | 0.037 | 28996.65 | 3.944 |
| 33 | 9.296 | | 0.0000 | 0.000 | 50.8 | 0.003 | VB | 0.022 | 38.50 | 0.005 |
| 34 | 9.427 | | 0.0000 | 0.000 | 1314.6 | 0.075 | BV | 0.042 | 526.68 | 0.072 |
| 35 | 9.560 | Endrin aldehyde | 10.6455 | 4.503 | 72134.5 | 4.103 | VV | 0.042 | 28471.19 | 3.873 |
| 36 | 9.744 | Methoxychlor | 52.6386 | 22.264 | 198701.4 | 11.301 | VB | 0.038 | 86704.88 | 11.794 |
| 37 | 9.949 | | 0.0000 | 0.000 | 1023.5 | 0.058 | BB | 0.040 | 429.70 | 0.058 |
| 38 | 10.127 | Endo. sulfate | 10.5248 | 4.451 | 70144.9 | 3.989 | BB | 0.039 | 29750.59 | 4.047 |
| 39 | 10.246 | | 0.0000 | 0.000 | 76.5 | 0.004 | BV | 0.019 | 65.71 | 0.009 |
| 40 | 10.304 | | 0.0000 | 0.000 | 3883.5 | 0.221 | VV | 0.048 | 1343.52 | 0.183 |
| 41 | 10.359 | | 0.0000 | 0.000 | 3451.0 | 0.196 | VB | 0.038 | 1501.29 | 0.204 |
| 42 | 10.500 | Endrin ketone | 10.4467 | 4.418 | 84372.4 | 4.799 | BV | 0.040 | 35394.00 | 4.814 |
| 43 | 10.658 | | 0.0000 | 0.000 | 618.3 | 0.035 | VV | 0.062 | 165.46 | 0.023 |
| 44 | 10.789 | | 0.0000 | 0.000 | 794.2 | 0.045 | VV | 0.065 | 204.23 | 0.028 |
| 45 | 10.879 | | 0.0000 | 0.000 | 810.6 | 0.046 | VB | 0.036 | 372.78 | 0.051 |
| 46 | 11.182 | | 0.0000 | 0.000 | 1472.3 | 0.084 | BB | 0.069 | 353.44 | 0.048 |
| 47 | 11.352 | | 0.0000 | 0.000 | 2988.2 | 0.170 | BB | 0.199 | 250.35 | 0.034 |
| 48 | 11.540 | | 0.0000 | 0.000 | 807.6 | 0.046 | BB | 0.045 | 301.72 | 0.041 |
| 49 | 11.837 | DCB | 21.1447 | 8.943 | 227034.2 | 12.912 | BB | 0.049 | 77783.91 | 10.580 |

Total Area = 1758284.0, Total Amount = 236.434, Total Height = 735170.0, Sample Units = PPB

9627

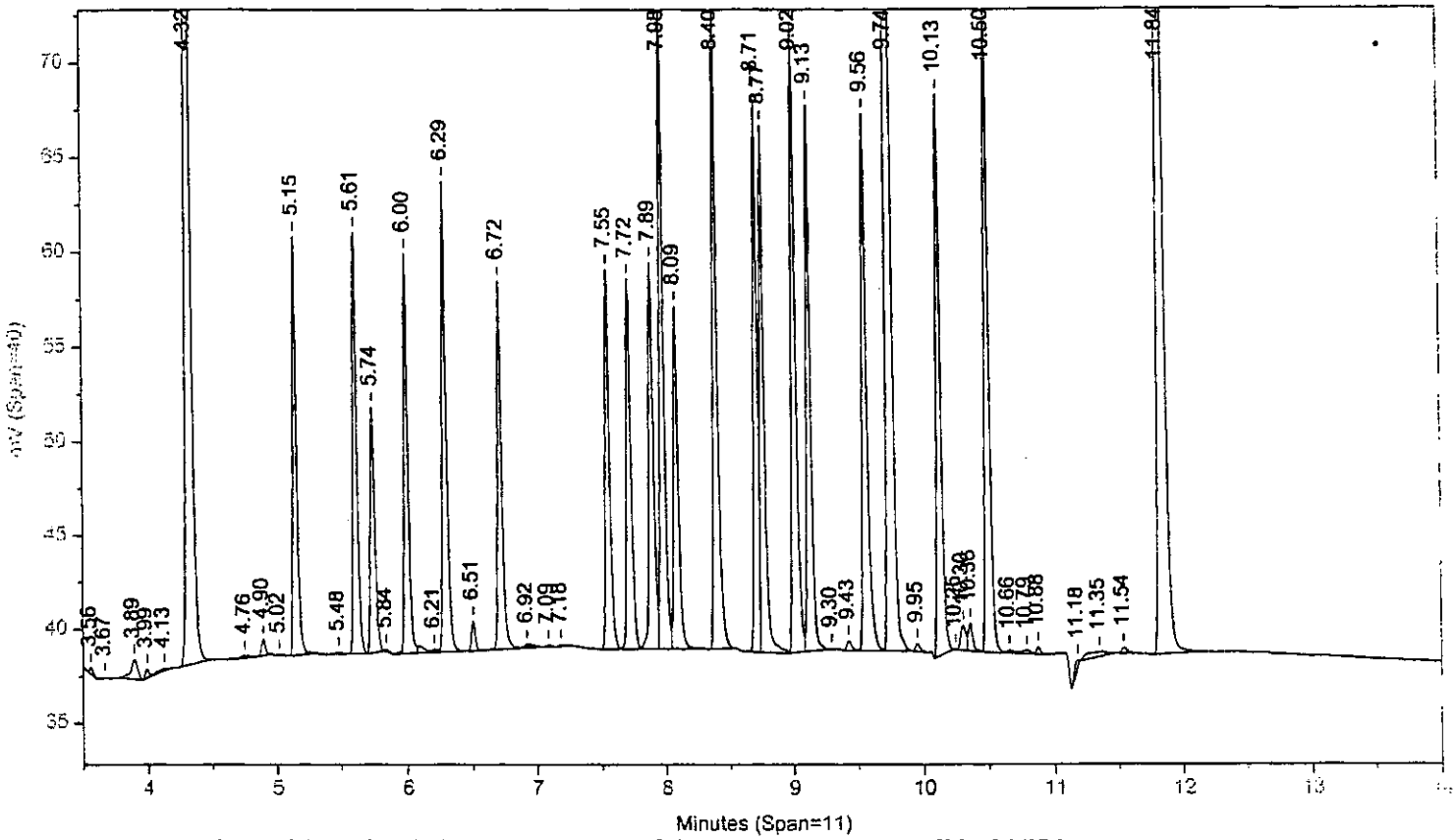
Sample Name: **MIXA20424B AAMIXA2AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 09:27:42pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.06R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.967 | | 0.0000 | 0.000 | 12073.9 | 1.660 | BB | 0.323 | 622.72 | 0.195 |
| 2 | 4.473 | | 0.0000 | 0.000 | 676.2 | 0.093 | BB | 0.030 | 372.95 | 0.117 |
| 3 | 4.840 | TCX | 20.1209 | 7.225 | 79394.3 | 10.918 | BB | 0.035 | 37796.38 | 11.835 |
| 4 | 5.403 | | 0.0000 | 0.000 | 808.3 | 0.111 | BB | 0.035 | 386.33 | 0.121 |
| 5 | 5.768 | alpha-BHC | 5.4381 | 1.953 | 16441.5 | 2.261 | BV | 0.035 | 7893.13 | 2.472 |
| 6 | 6.300 | gamma-BHC | 5.7315 | 2.058 | 16620.7 | 2.286 | VV | 0.034 | 8167.23 | 2.557 |
| 7 | 6.421 | beta-BHC | 6.2936 | 2.260 | 14443.9 | 1.986 | VV | 0.042 | 5734.59 | 1.796 |
| 8 | 6.848 | delta-BHC | 5.5422 | 1.990 | 16166.0 | 2.223 | VV | 0.034 | 7914.23 | 2.478 |
| 9 | 6.937 | Heptachlor | 6.6158 | 2.376 | 21416.6 | 2.945 | VV | 0.039 | 9239.80 | 2.893 |
| 10 | 7.401 | Aldrin | 5.6395 | 2.025 | 20610.0 | 2.834 | VV | 0.042 | 8108.01 | 2.539 |
| 11 | 8.187 | Hept. epoxide | 5.8821 | 2.112 | 20032.1 | 2.755 | VV | 0.037 | 8912.19 | 2.791 |
| 12 | 8.442 | g. Chlordane | 6.0174 | 2.161 | 19378.8 | 2.665 | VB | 0.035 | 9109.11 | 2.852 |
| 13 | 8.635 | a. Chlordane | 6.0024 | 2.155 | 19623.3 | 2.699 | BV | 0.035 | 9333.53 | 2.923 |
| 14 | 8.727 | Endosulfan I | 5.9635 | 2.142 | 17414.2 | 2.395 | VB | 0.035 | 8216.92 | 2.573 |
| 15 | 8.831 | 4,4'-DDE | 10.7049 | 3.844 | 30382.9 | 4.178 | BB | 0.033 | 15142.00 | 4.741 |
| 16 | 9.091 | Dieldrin | 11.6583 | 4.187 | 34254.2 | 4.710 | BB | 0.035 | 16208.96 | 5.075 |
| 17 | 9.504 | Endrin | 11.7346 | 4.214 | 26463.6 | 3.639 | BV | 0.035 | 12429.24 | 3.892 |
| 18 | 9.596 | 4,4'-DDD | 11.7878 | 4.233 | 23269.9 | 3.200 | VB | 0.035 | 11074.77 | 3.468 |
| 19 | 9.784 | Endosulfan II | 12.1266 | 4.355 | 34046.4 | 4.682 | BB | 0.036 | 15929.25 | 4.988 |
| 20 | 10.007 | 4,4'-DDT | 13.0179 | 4.675 | 25226.2 | 3.469 | BB | 0.034 | 12297.80 | 3.851 |
| 21 | 10.218 | Endrin aldehyde | 12.5592 | 4.510 | 32367.1 | 4.451 | BB | 0.036 | 14785.80 | 4.630 |
| 22 | 10.382 | | 0.0000 | 0.000 | 1267.5 | 0.174 | BB | 0.044 | 481.36 | 0.151 |
| 23 | 10.576 | Endo. sulfate | 11.9136 | 4.278 | 31051.9 | 4.270 | BB | 0.037 | 14129.15 | 4.424 |
| 24 | 10.882 | Methoxychlor | 65.7550 | 23.613 | 69047.7 | 9.495 | BB | 0.035 | 33197.04 | 10.395 |
| 25 | 11.202 | | 0.0000 | 0.000 | 1517.1 | 0.209 | BB | 0.042 | 608.25 | 0.190 |
| 26 | 11.337 | Endrin ketone | 13.3256 | 4.785 | 40152.9 | 5.522 | BB | 0.041 | 16485.44 | 5.162 |
| 27 | 13.380 | DCB | 24.6408 | 8.849 | 103042.9 | 14.170 | BB | 0.049 | 34789.49 | 10.893 |

Total Area = 727190.3, Total Amount = 278.471, Total Height = 319365.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.06R

—— C:\CPWIN\DATA1\1C13088.06R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 9:13:42 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.06R

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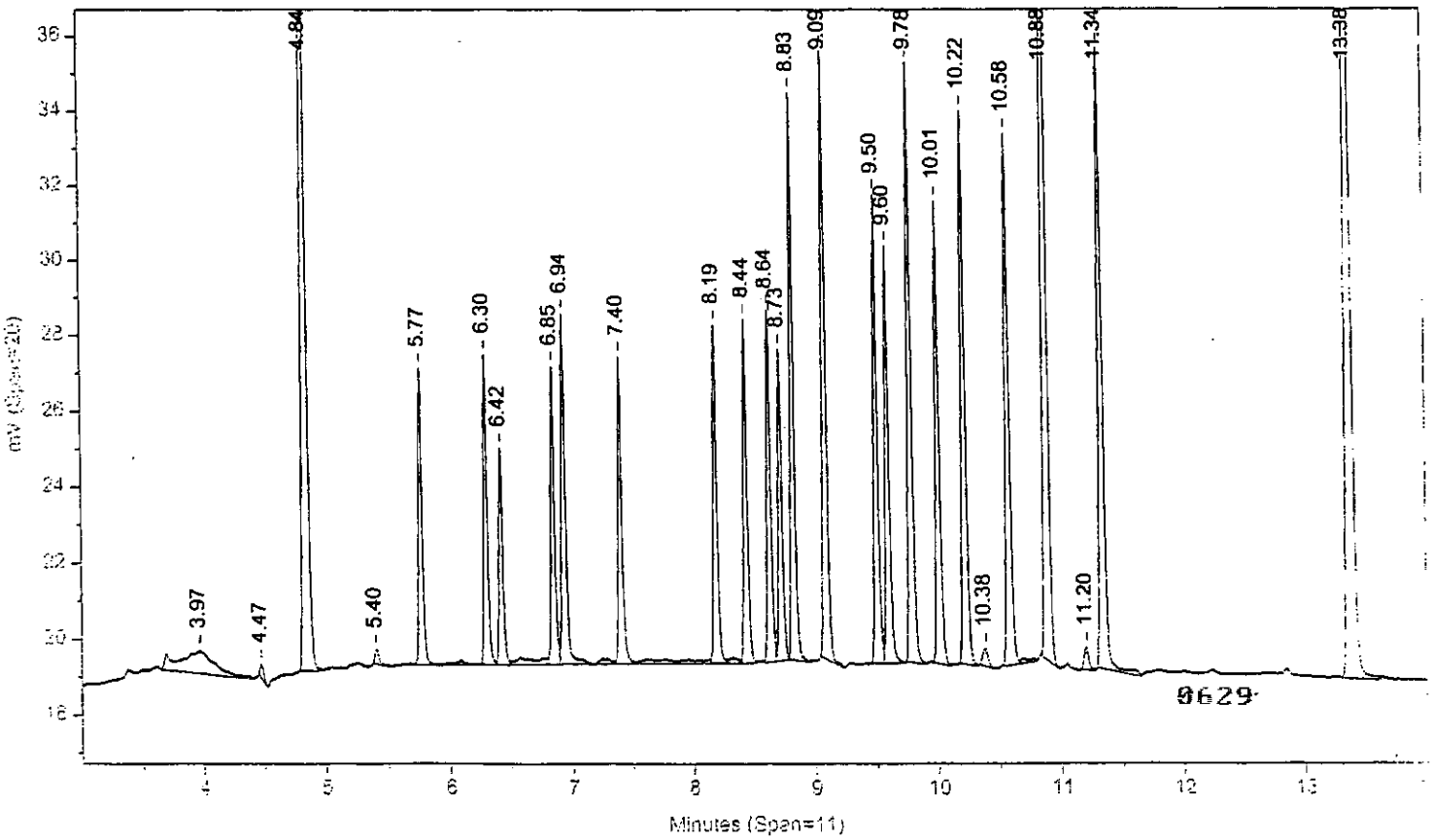



Instrument ID: CP13--H6722B Injected On: 3/28/2004 9:13:42 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

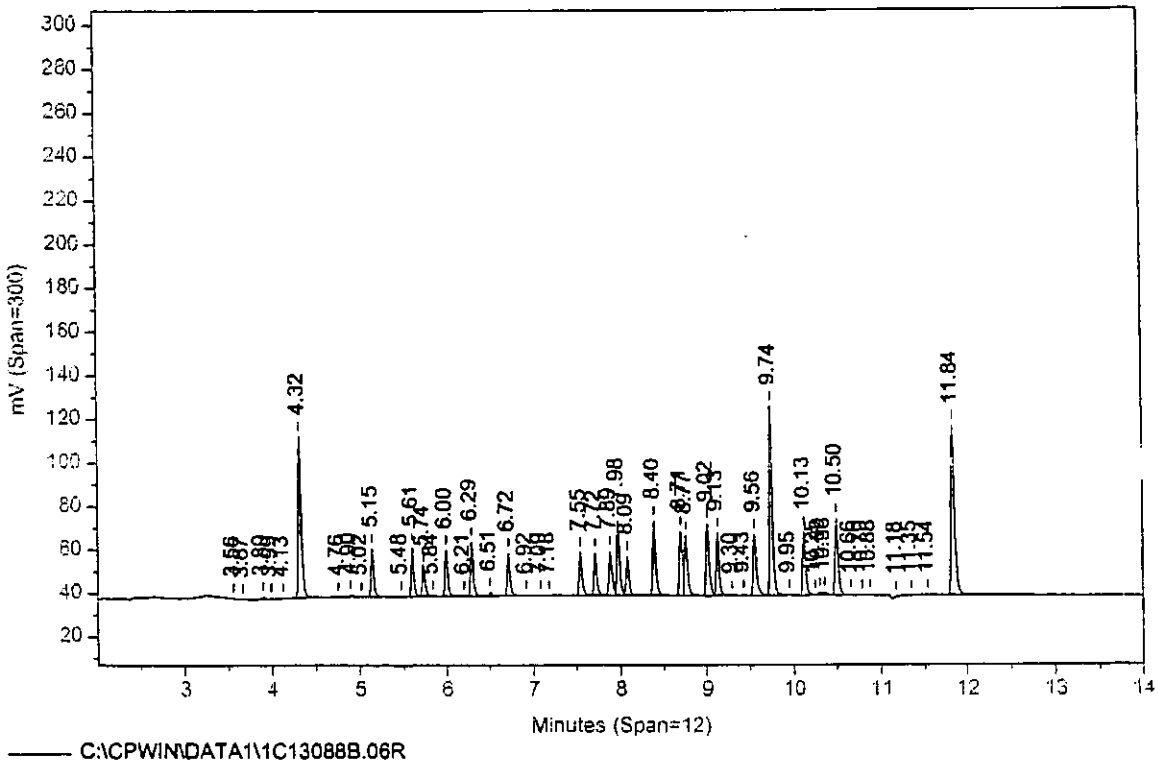
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.321 | 74702 | 20.58912 | TCX | 4.84 | 37796 | 20.12087 | TCX |
| 4.897 | 850 | .17081 | HCB | . | 0 | . | HCB |
| 5.15 | 22204 | 4.83136 | alpha-BHC | 5.768 | 7893 | 5.43812 | alpha-BHC |
| 5.612 | 22534 | 4.9627 | gamma-BHC | 6.3 | 8167 | 5.7315 | gamma-BHC |
| 5.742 | 13102 | 5.45627 | beta-BHC | 6.421 | 5735 | 6.29362 | beta-BHC |
| 5.999 | 21304 | 4.87986 | delta-BHC | 6.848 | 7914 | 5.54219 | delta-BHC |
| 6.294 | 24944 | 5.42776 | Heptachlor | 6.937 | 9240 | 6.61583 | Heptachlor |
| 6.717 | 19560 | 4.96417 | Aldrin | 7.401 | 8108 | 5.63952 | Aldrin |
| 7.55 | 20146 | 5.18549 | Hept. epoxide | 8.187 | 8912 | 5.88208 | Hept. epoxide |
| 7.718 | 19707 | 5.31401 | g. Chlordane | 8.442 | 9109 | 6.01739 | g. Chlordane |
| 7.893 | 20529 | 5.0366 | a. Chlordane | 8.635 | 9334 | 6.00236 | a. Chlordane |
| 7.978 | 34655 | 9.78148 | 4,4'-DDE | 8.831 | 15142 | 10.70493 | 4,4'-DDE |
| 8.085 | 18252 | 5.24907 | Endosulfan I | 8.727 | 8217 | 5.96354 | Endosulfan I |
| 8.402 | 34432 | 9.84351 | Dieldrin | 9.091 | 16209 | 11.65827 | Dieldrin |
| 8.714 | 29614 | 9.56561 | Endrin | 9.504 | 12429 | 11.73462 | Endrin |
| 8.767 | 27922 | 9.39583 | 4,4'-DDD | 9.596 | 11075 | 11.7878 | 4,4'-DDD |
| 9.016 | 33352 | 10.34154 | Endosulfan II | 9.784 | 15929 | 12.12658 | Endosulfan II |
| 9.131 | 28997 | 10.03805 | 4,4'-DDT | 10.007 | 12298 | 13.01792 | 4,4'-DDT |
| 9.56 | 28471 | 10.64546 | Endrin aldehyde | 10.218 | 14786 | 12.55925 | Endrin aldehyde |
| 9.744 | 86705 | 52.63862 | Methoxychlor | 10.882 | 33197 | 65.75504 | Methoxychlor |
| 10.127 | 29751 | 10.52484 | Endo. sulfate | 10.576 | 14129 | 11.91364 | Endo. sulfate |
| 10.5 | 35394 | 10.44666 | Endrin ketone | 11.337 | 16485 | 13.32561 | Endrin ketone |
| 11.837 | 77784 | 21.14472 | DCB | 13.38 | 34789 | 24.64075 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.06A
Area File: C:\CPWIN\DATA1\1C13088B.06A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 8:46:12 AM
File Reported On: 3/29/2004 at 8:46:24 AM

9638

10X REPLOTS

C:\CPWIN\DATA1\1C13088.06R

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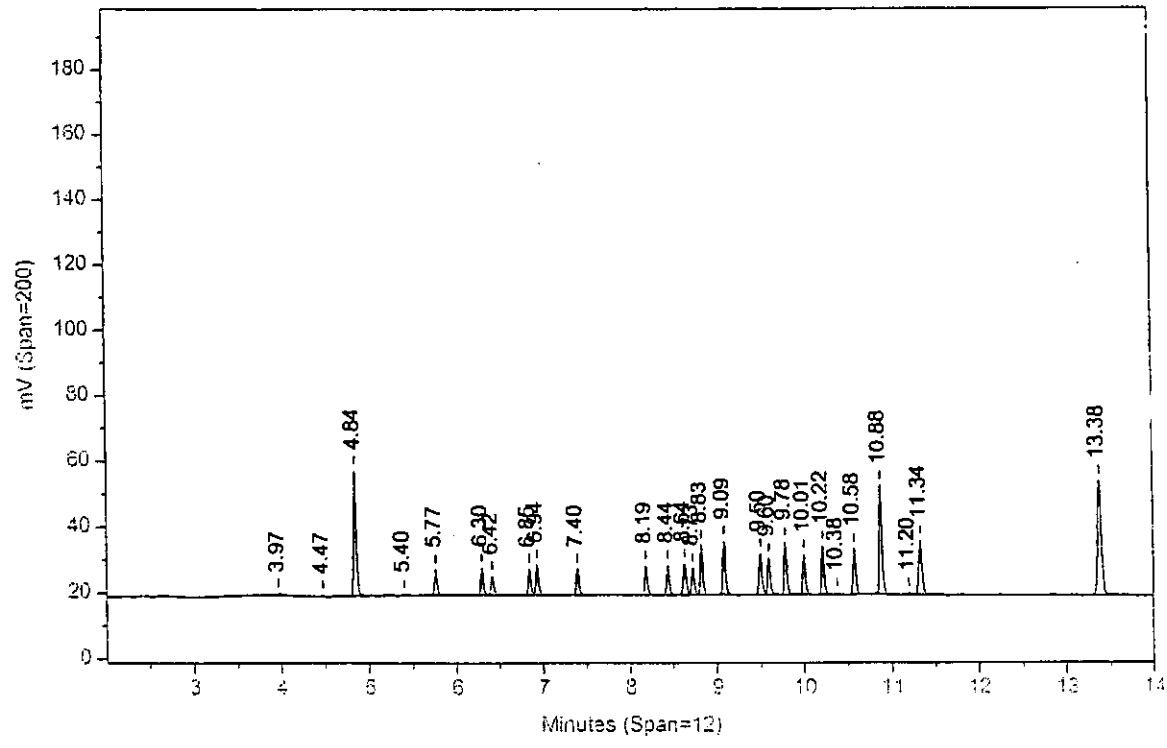


Sample Name: **MIXA30424B AAMIXA3AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 09:48:21pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.07R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.561 | | 0.0000 | 0.000 | 927.8 | 0.027 | BB | 0.029 | 535.92 | 0.037 |
| 2 | 3.891 | | 0.0000 | 0.000 | 3887.2 | 0.114 | BB | 0.062 | 1040.55 | 0.073 |
| 3 | 3.993 | | 0.0000 | 0.000 | 2118.7 | 0.062 | BB | 0.036 | 989.97 | 0.069 |
| 4 | 4.321 | TCX | 39.3731 | 8.604 | 355893.3 | 10.467 | BB | 0.041 | 144991.10 | 10.127 |
| 5 | 4.760 | | 0.0000 | 0.000 | 434.5 | 0.013 | BB | 0.063 | 114.88 | 0.008 |
| 6 | 4.897 | HCB | 0.4480 | 0.098 | 3485.5 | 0.103 | BB | 0.034 | 1695.99 | 0.118 |
| 7 | 5.029 | | 0.0000 | 0.000 | 208.9 | 0.006 | BB | 0.051 | 68.19 | 0.005 |
| 8 | 5.151 | alpha-BHC | 10.2022 | 2.229 | 98243.1 | 2.889 | BB | 0.035 | 46757.91 | 3.266 |
| 9 | 5.478 | | 0.0000 | 0.000 | 313.6 | 0.009 | BB | 0.052 | 100.54 | 0.007 |
| 10 | 5.612 | gamma-BHC | 10.2926 | 2.249 | 99038.5 | 2.913 | BB | 0.035 | 46843.44 | 3.272 |
| 11 | 5.743 | beta-BHC | 10.4886 | 2.292 | 57865.5 | 1.702 | BB | 0.038 | 25709.21 | 1.796 |
| 12 | 5.844 | | 0.0000 | 0.000 | 469.1 | 0.014 | BB | 0.027 | 286.24 | 0.020 |
| 13 | 5.999 | delta-BHC | 10.1235 | 2.212 | 91005.4 | 2.677 | BB | 0.034 | 44156.02 | 3.084 |
| 14 | 6.108 | | 0.0000 | 0.000 | 906.3 | 0.027 | BB | 0.037 | 406.91 | 0.028 |
| 15 | 6.205 | | 0.0000 | 0.000 | 265.4 | 0.008 | BB | 0.034 | 131.51 | 0.009 |
| 16 | 6.294 | Heptachlor | 10.4583 | 2.285 | 107912.4 | 3.174 | BB | 0.037 | 49089.56 | 3.429 |
| 17 | 6.506 | | 0.0000 | 0.000 | 854.5 | 0.025 | BB | 0.034 | 414.71 | 0.029 |
| 18 | 6.717 | Aldrin | 10.0458 | 2.195 | 88644.7 | 2.607 | BB | 0.037 | 39607.73 | 2.766 |
| 19 | 6.922 | | 0.0000 | 0.000 | 701.3 | 0.021 | BB | 0.068 | 171.41 | 0.012 |
| 20 | 7.086 | | 0.0000 | 0.000 | 261.7 | 0.008 | BV | 0.045 | 97.74 | 0.007 |
| 21 | 7.181 | | 0.0000 | 0.000 | 1052.4 | 0.031 | VB | 0.076 | 232.21 | 0.016 |
| 22 | 7.550 | Hept. epoxide | 10.1584 | 2.220 | 91947.5 | 2.704 | BV | 0.039 | 39743.89 | 2.776 |
| 23 | 7.718 | g. Chlordane | 10.2321 | 2.236 | 91196.5 | 2.682 | VV | 0.039 | 38626.22 | 2.698 |
| 24 | 7.893 | a. Chlordane | 9.8379 | 2.150 | 94096.7 | 2.767 | VV | 0.039 | 40073.70 | 2.799 |
| 25 | 7.978 | 4,4'-DDE | 19.7689 | 4.320 | 158528.7 | 4.662 | VV | 0.038 | 70096.00 | 4.896 |
| 26 | 8.085 | Endosulfan I | 10.1340 | 2.215 | 87936.0 | 2.586 | VB | 0.041 | 35807.81 | 2.501 |
| 27 | 8.402 | Dieldrin | 19.9576 | 4.361 | 161852.4 | 4.760 | BV | 0.039 | 69834.67 | 4.878 |
| 28 | 8.544 | o,p-DDT | 0.1901 | 0.042 | 698.5 | 0.021 | VB | 0.041 | 284.72 | 0.020 |
| 29 | 8.713 | Endrin | 19.3100 | 4.220 | 130755.8 | 3.846 | BV | 0.037 | 59196.13 | 4.135 |
| 30 | 8.767 | 4,4'-DDD | 19.0708 | 4.167 | 128385.1 | 3.776 | VV | 0.038 | 55945.07 | 3.908 |
| 31 | 9.016 | Endosulfan II | 20.0345 | 4.378 | 154255.0 | 4.537 | VV | 0.040 | 65059.84 | 4.544 |
| 32 | 9.131 | 4,4'-DDT | 20.1171 | 4.396 | 128248.9 | 3.772 | VV | 0.037 | 58144.19 | 4.061 |
| 33 | 9.333 | | 0.0000 | 0.000 | 706.7 | 0.021 | VB | 0.070 | 169.27 | 0.012 |
| 34 | 9.424 | | 0.0000 | 0.000 | 2676.8 | 0.079 | BV | 0.043 | 1034.78 | 0.072 |
| 35 | 9.559 | Endrin aldehyde | 20.1212 | 4.397 | 138360.4 | 4.069 | VV | 0.042 | 54460.60 | 3.804 |
| 36 | 9.743 | Methoxychlor | 98.7196 | 21.573 | 375726.7 | 11.050 | VB | 0.038 | 163929.40 | 11.450 |
| 37 | 10.125 | Endo. sulfate | 20.1530 | 4.404 | 136462.9 | 4.013 | BB | 0.039 | 57613.87 | 4.024 |
| 38 | 10.299 | | 0.0000 | 0.000 | 6578.7 | 0.193 | BV | 0.042 | 2592.09 | 0.181 |
| 39 | 10.358 | | 0.0000 | 0.000 | 4143.0 | 0.122 | VB | 0.037 | 1850.57 | 0.129 |
| 40 | 10.498 | Endrin ketone | 20.4171 | 4.462 | 167045.0 | 4.913 | BV | 0.040 | 69891.02 | 4.882 |
| 41 | 10.659 | | 0.0000 | 0.000 | 1223.3 | 0.036 | VV | 0.067 | 304.49 | 0.021 |
| 42 | 10.766 | | 0.0000 | 0.000 | 841.8 | 0.025 | VV | 0.079 | 176.52 | 0.012 |
| 43 | 10.879 | | 0.0000 | 0.000 | 978.1 | 0.029 | VB | 0.037 | 438.75 | 0.031 |
| 44 | 10.988 | | 0.0000 | 0.000 | 145.5 | 0.004 | BB | 0.041 | 59.49 | 0.004 |
| 45 | 11.183 | | 0.0000 | 0.000 | 1528.2 | 0.045 | BB | 0.066 | 385.81 | 0.027 |
| 46 | 11.256 | | 0.0000 | 0.000 | 609.9 | 0.018 | BB | 0.064 | 158.03 | 0.011 |
| 47 | 11.368 | | 0.0000 | 0.000 | 305.3 | 0.009 | BB | 0.075 | 68.04 | 0.005 |
| 48 | 11.539 | | 0.0000 | 0.000 | 1512.1 | 0.044 | BB | 0.048 | 522.74 | 0.037 |
| 49 | 11.836 | DCB | 37.9525 | 8.294 | 418083.4 | 12.296 | BB | 0.049 | 141637.10 | 9.893 |
| 50 | 12.440 | | 0.0000 | 0.000 | 350.3 | 0.010 | BB | 0.059 | 99.25 | 0.007 |
| 51 | 12.599 | | 0.0000 | 0.000 | 438.6 | 0.013 | BB | 0.091 | 79.89 | 0.006 |

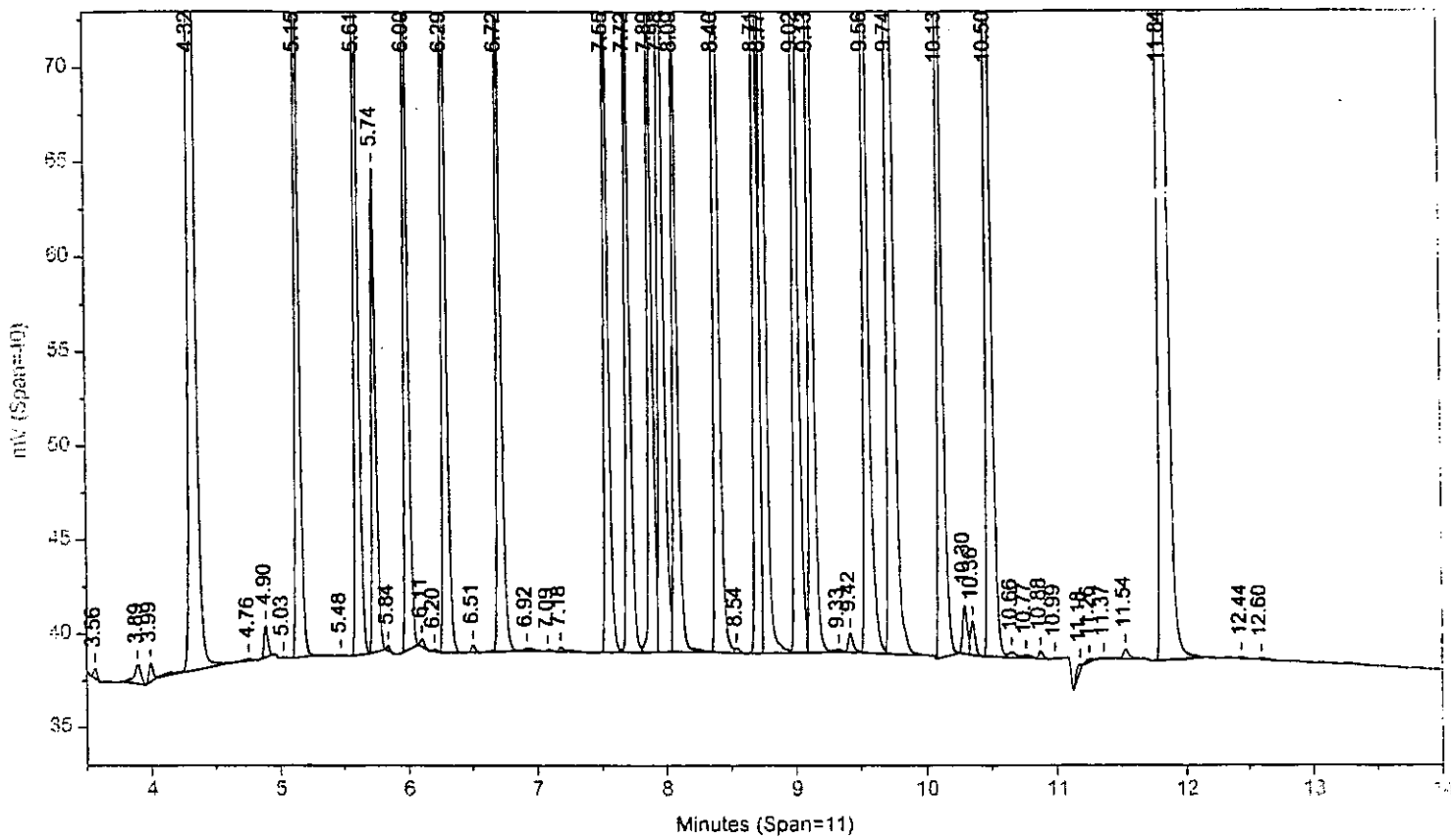
Total Area = 3400108.0, Total Amount = 457.607, Total Height = 1431726.0, Sample Units = PPB

Sample Name: **MIXA30424B AAMIXA3AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 09:48:21pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.07R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.614 | | 0.0000 | 0.000 | 1994.0 | 0.144 | BB | 0.170 | 195.15 | 0.031 |
| 2 | 3.695 | | 0.0000 | 0.000 | 11712.3 | 0.847 | BB | 0.343 | 568.77 | 0.090 |
| 3 | 4.471 | | 0.0000 | 0.000 | 723.5 | 0.052 | BB | 0.033 | 369.01 | 0.059 |
| 4 | 4.776 | | 0.0000 | 0.000 | 1990.2 | 0.144 | BB | 0.556 | 59.67 | 0.009 |
| 5 | 4.839 | TCX | 39.9793 | 7.739 | 156913.3 | 11.353 | BB | 0.034 | 76135.32 | 12.088 |
| 6 | 5.409 | | 0.0000 | 0.000 | 1149.3 | 0.083 | BV | 0.024 | 796.67 | 0.126 |
| 7 | 5.768 | alpha-BHC | 11.0655 | 2.142 | 31480.3 | 2.278 | VV | 0.032 | 16649.55 | 2.643 |
| 8 | 6.300 | gamma-BHC | 11.4965 | 2.226 | 33369.5 | 2.414 | VB | 0.032 | 17138.07 | 2.721 |
| 9 | 6.420 | beta-BHC | 11.4801 | 2.222 | 22995.4 | 1.664 | BB | 0.034 | 11215.65 | 1.781 |
| 10 | 6.848 | delta-BHC | 10.7518 | 2.081 | 30969.0 | 2.241 | BV | 0.032 | 15999.58 | 2.540 |
| 11 | 6.937 | Heptachlor | 11.7488 | 2.274 | 37539.8 | 2.716 | VB | 0.035 | 17851.55 | 2.834 |
| 12 | 7.400 | Aldrin | 11.0064 | 2.131 | 35665.9 | 2.580 | BV | 0.036 | 16508.75 | 2.621 |
| 13 | 8.186 | Hept. epoxide | 10.9597 | 2.122 | 37439.0 | 2.709 | VV | 0.036 | 17450.05 | 2.770 |
| 14 | 8.441 | g. Chlordane | 11.2362 | 2.175 | 37510.8 | 2.714 | VB | 0.035 | 17917.94 | 2.845 |
| 15 | 8.635 | a. Chlordane | 11.2807 | 2.184 | 38677.6 | 2.798 | BV | 0.035 | 18508.95 | 2.939 |
| 16 | 8.726 | Endosulfan I | 11.2826 | 2.184 | 34776.7 | 2.516 | VV | 0.035 | 16385.23 | 2.601 |
| 17 | 8.830 | 4,4'-DDE | 22.0924 | 4.277 | 62767.8 | 4.541 | VB | 0.033 | 32100.03 | 5.096 |
| 18 | 9.090 | Dieldrin | 22.9336 | 4.440 | 68298.5 | 4.941 | BB | 0.034 | 33329.51 | 5.292 |
| 19 | 9.503 | Endrin | 22.9390 | 4.441 | 53025.5 | 3.836 | BV | 0.035 | 25399.63 | 4.033 |
| 20 | 9.595 | 4,4'-DDD | 22.6800 | 4.390 | 45920.7 | 3.322 | VB | 0.034 | 22286.04 | 3.538 |
| 21 | 9.782 | Endosulfan II | 22.9771 | 4.448 | 66749.5 | 4.829 | BB | 0.035 | 31843.25 | 5.056 |
| 22 | 10.007 | 4,4'-DDT | 23.6998 | 4.588 | 48576.1 | 3.515 | BB | 0.034 | 23991.17 | 3.809 |
| 23 | 10.217 | Endrin aldehyde | 23.1036 | 4.472 | 62414.3 | 4.516 | BB | 0.036 | 28853.41 | 4.581 |
| 24 | 10.373 | | 0.0000 | 0.000 | 2350.5 | 0.170 | BB | 0.046 | 850.17 | 0.135 |
| 25 | 10.575 | Endo. sulfate | 22.7404 | 4.402 | 60529.4 | 4.379 | BB | 0.036 | 28323.68 | 4.497 |
| 26 | 10.880 | Methoxychlor | 114.7587 | 22.216 | 128502.3 | 9.297 | BB | 0.034 | 62252.04 | 9.883 |
| 27 | 11.199 | | 0.0000 | 0.000 | 2899.6 | 0.210 | BB | 0.043 | 1132.35 | 0.180 |
| 28 | 11.335 | Endrin ketone | 24.2234 | 4.689 | 76947.1 | 5.567 | BB | 0.040 | 32361.29 | 5.138 |
| 29 | 12.850 | | 0.0000 | 0.000 | 511.6 | 0.037 | BB | 0.037 | 227.47 | 0.036 |
| 30 | 13.378 | DCB | 42.1347 | 8.157 | 187753.3 | 13.584 | BB | 0.050 | 63162.98 | 10.028 |

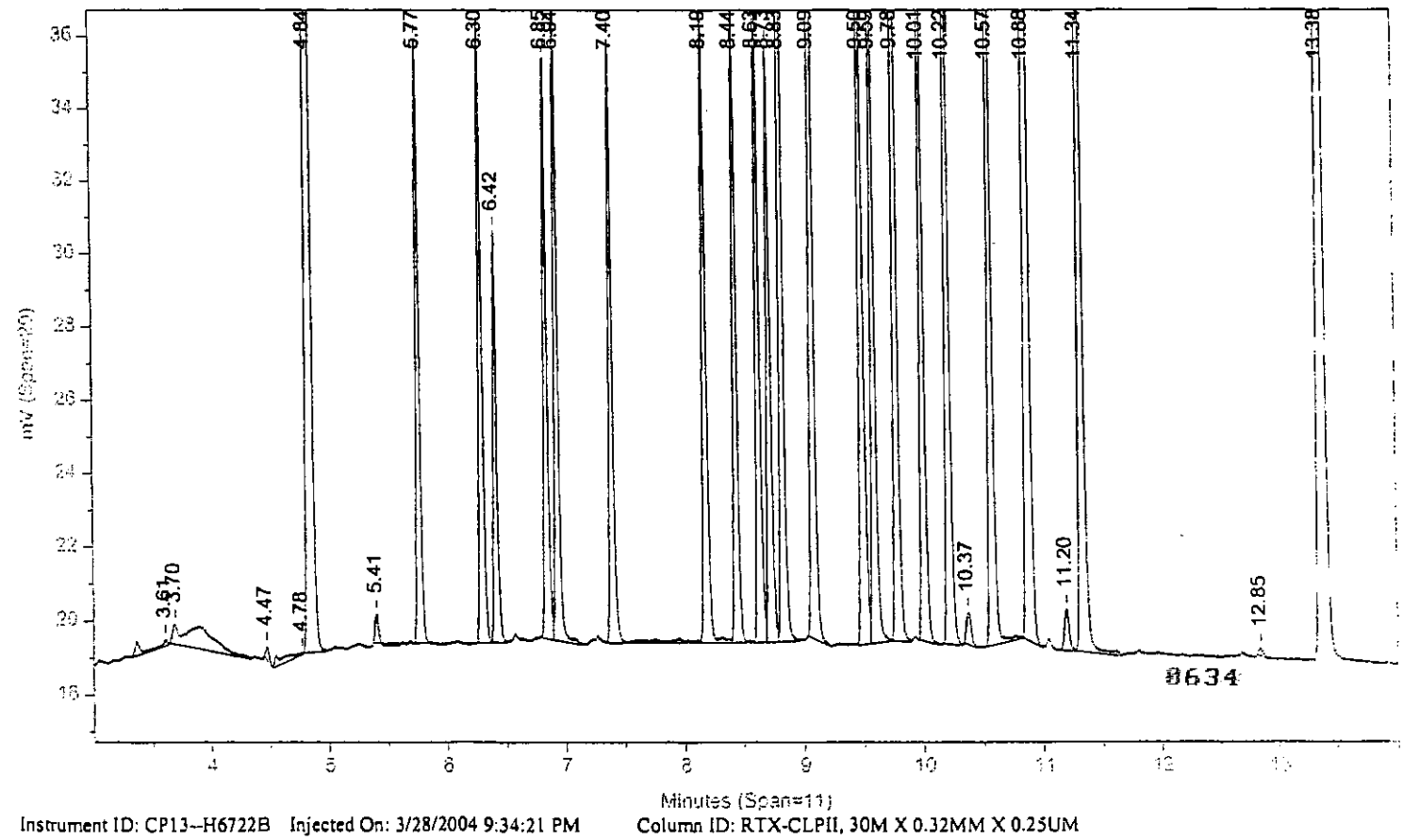
Total Area = 1382153.0, Total Amount = 516.57, Total Height = 629863.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.07R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 9:34:21 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.07R




Instrument ID: CP13--H6722B Injected On: 3/28/2004 9:34:21 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

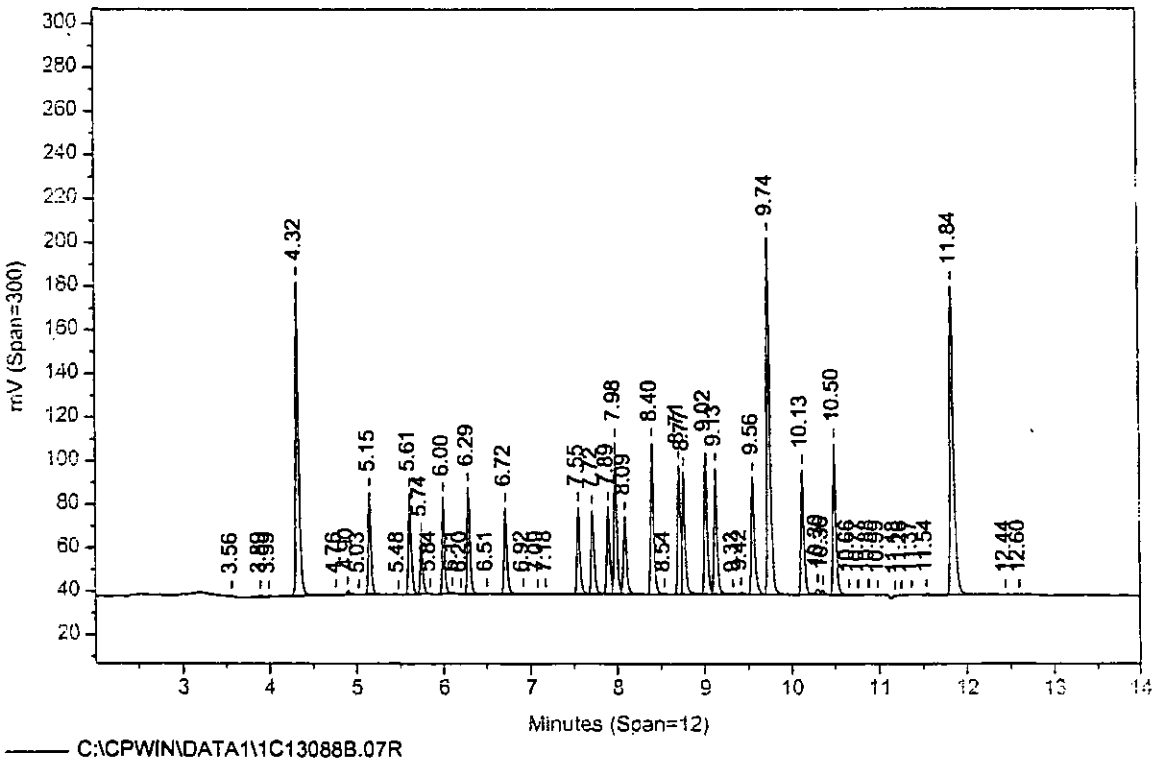
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.321 | 144991 | 39.37308 | TCX | 4.839 | 76135 | 39.97928 | TCX |
| 4.897 | 1696 | .448 | HCB | . | 0 | . | HCB |
| 5.151 | 46758 | 10.20218 | alpha-BHC | 5.768 | 16650 | 11.06548 | alpha-BHC |
| 5.612 | 46843 | 10.29261 | gamma-BHC | 6.3 | 17138 | 11.49646 | gamma-BHC |
| 5.743 | 25709 | 10.4886 | beta-BHC | 6.42 | 11216 | 11.48015 | beta-BHC |
| 5.999 | 44156 | 10.1235 | delta-BHC | 6.848 | 16000 | 10.75179 | delta-BHC |
| 6.294 | 49090 | 10.45831 | Heptachlor | 6.937 | 17852 | 11.74884 | Heptachlor |
| 6.717 | 39608 | 10.04583 | Aldrin | 7.4 | 16509 | 11.00637 | Aldrin |
| 7.55 | 39744 | 10.15843 | Hept. epoxide | 8.186 | 17450 | 10.95966 | Hept. epoxide |
| 7.718 | 38626 | 10.23212 | g. Chlordane | 8.441 | 17918 | 11.23623 | g. Chlordane |
| 7.893 | 40074 | 9.83791 | a. Chlordane | 8.635 | 18509 | 11.28074 | a. Chlordane |
| 7.978 | 70096 | 19.76895 | 4,4'-DDE | 8.83 | 32100 | 22.09241 | 4,4'-DDE |
| 8.085 | 35808 | 10.13405 | Endosulfan I | 8.726 | 16385 | 11.2826 | Endosulfan I |
| 8.402 | 69835 | 19.95755 | Dieldrin | 9.09 | 33330 | 22.93359 | Dieldrin |
| 8.544 | 285 | .19007 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.713 | 59196 | 19.31002 | Endrin | 9.503 | 25400 | 22.93902 | Endrin |
| 8.767 | 55945 | 19.07076 | 4,4'-DDD | 9.595 | 22286 | 22.68 | 4,4'-DDD |
| 9.016 | 65060 | 20.03454 | Endosulfan II | 9.782 | 31843 | 22.97706 | Endosulfan II |
| 9.131 | 58144 | 20.11711 | 4,4'-DDT | 10.007 | 23991 | 23.69978 | 4,4'-DDT |
| 9.559 | 54461 | 20.12116 | Endrin aldehyde | 10.217 | 28853 | 23.10357 | Endrin aldehyde |
| 9.743 | 163929 | 98.71959 | Methoxychlor | 10.88 | 62252 | 114.7587 | Methoxychlor |
| 10.125 | 57614 | 20.153 | Endo. sulfate | 10.575 | 28324 | 22.74044 | Endo. sulfate |
| 10.498 | 69891 | 20.4171 | Endrin ketone | 11.335 | 32361 | 24.22344 | Endrin ketone |
| 11.836 | 141637 | 37.95247 | DCB | 13.378 | 63163 | 42.13469 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.07A
Area File: C:\CPWIN\DATA1\1C13088B.07A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 8:46:40 AM
File Reported On: 3/29/2004 at 8:46:50 AM

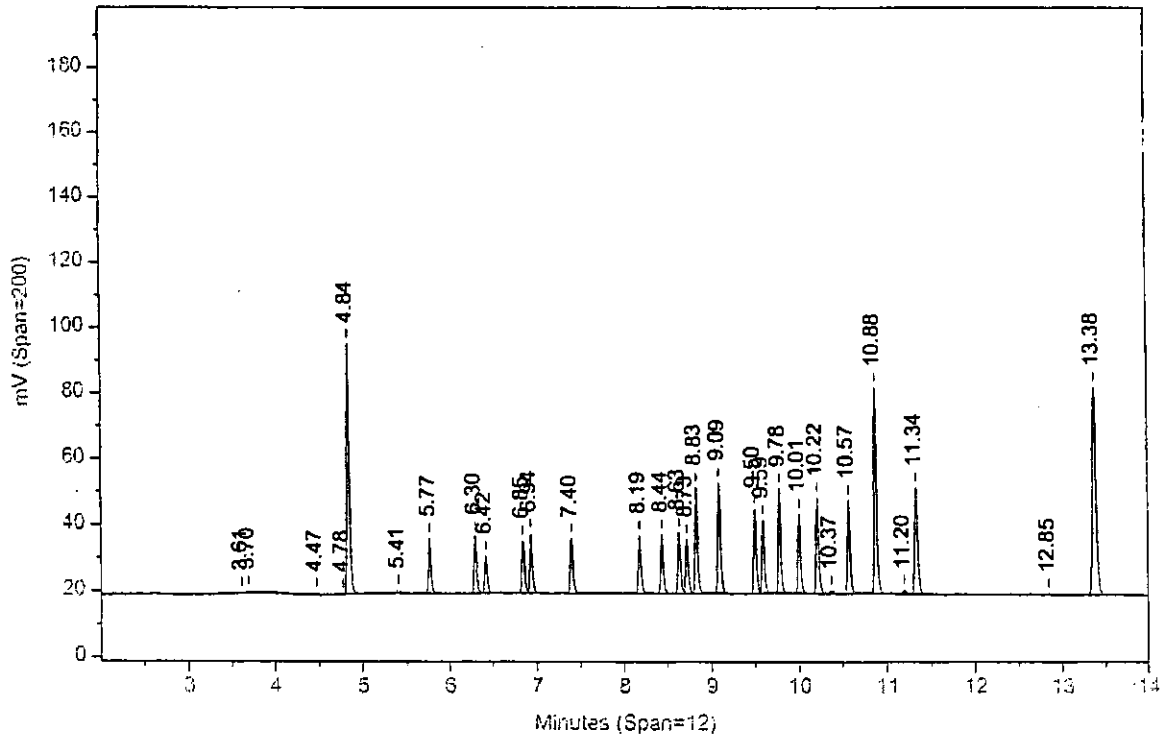
8635

10X REPLOTS

C:\CPWIN\DATA1\1C13088.07R




C:\CPWIN\DATA1\1C13088B.07R



Sample Name: **MIXA40424B AAMIXA4AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 10:08:58pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.08R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.560 | | 0.0000 | 0.000 | 781.8 | 0.015 | BB | 0.028 | 467.27 | 0.022 |
| 2 | 3.697 | | 0.0000 | 0.000 | 225.4 | 0.004 | BB | 0.091 | 41.22 | 0.002 |
| 3 | 3.892 | | 0.0000 | 0.000 | 4183.6 | 0.082 | BB | 0.061 | 1140.56 | 0.053 |
| 4 | 3.992 | | 0.0000 | 0.000 | 2283.8 | 0.045 | BB | 0.033 | 1159.93 | 0.054 |
| 5 | 4.130 | | 0.0000 | 0.000 | 508.0 | 0.010 | BB | 0.061 | 138.98 | 0.006 |
| 6 | 4.321 | TCX | 57.4678 | 8.406 | 523254.0 | 10.292 | BB | 0.041 | 214092.90 | 9.955 |
| 7 | 4.762 | | 0.0000 | 0.000 | 908.5 | 0.018 | BB | 0.085 | 177.28 | 0.008 |
| 8 | 4.897 | HCB | 0.9926 | 0.145 | 5292.0 | 0.104 | BB | 0.034 | 2566.03 | 0.119 |
| 9 | 4.959 | | 0.0000 | 0.000 | 199.7 | 0.004 | BB | 0.020 | 166.65 | 0.008 |
| 10 | 5.151 | alpha-BHC | 16.1324 | 2.360 | 154202.5 | 3.033 | BB | 0.035 | 74006.19 | 3.441 |
| 11 | 5.304 | | 0.0000 | 0.000 | 265.6 | 0.005 | BB | 0.040 | 109.87 | 0.005 |
| 12 | 5.476 | | 0.0000 | 0.000 | 358.5 | 0.007 | BB | 0.042 | 140.95 | 0.007 |
| 13 | 5.612 | gamma-BHC | 15.9197 | 2.329 | 154425.8 | 3.038 | BB | 0.035 | 72832.13 | 3.386 |
| 14 | 5.742 | beta-BHC | 15.4281 | 2.257 | 86882.8 | 1.709 | BB | 0.038 | 38553.20 | 1.793 |
| 15 | 5.844 | | 0.0000 | 0.000 | 672.6 | 0.013 | BB | 0.027 | 421.50 | 0.020 |
| 16 | 5.999 | delta-BHC | 16.0165 | 2.343 | 146499.9 | 2.882 | BV | 0.035 | 69867.54 | 3.249 |
| 17 | 6.210 | | 0.0000 | 0.000 | 749.9 | 0.015 | VV | 0.049 | 256.20 | 0.012 |
| 18 | 6.294 | Heptachlor | 15.6081 | 2.283 | 164141.5 | 3.229 | VV | 0.037 | 74619.00 | 3.470 |
| 19 | 6.506 | | 0.0000 | 0.000 | 374.3 | 0.007 | VB | 0.043 | 144.02 | 0.007 |
| 20 | 6.717 | Aldrin | 15.4346 | 2.258 | 135994.0 | 2.675 | BB | 0.037 | 61036.31 | 2.838 |
| 21 | 6.922 | | 0.0000 | 0.000 | 885.1 | 0.017 | BB | 0.075 | 196.13 | 0.009 |
| 22 | 7.089 | | 0.0000 | 0.000 | 310.9 | 0.006 | BB | 0.039 | 132.56 | 0.006 |
| 23 | 7.181 | | 0.0000 | 0.000 | 577.5 | 0.011 | BB | 0.034 | 286.79 | 0.013 |
| 24 | 7.549 | Hept. epoxide | 15.2036 | 2.224 | 138527.1 | 2.725 | BV | 0.039 | 59928.29 | 2.787 |
| 25 | 7.717 | g. Chlordane | 15.3006 | 2.238 | 136988.5 | 2.695 | VV | 0.039 | 58378.89 | 2.714 |
| 26 | 7.893 | a. Chlordane | 14.6268 | 2.139 | 139302.9 | 2.740 | VV | 0.039 | 59920.99 | 2.786 |
| 27 | 7.978 | 4,4'-DDE | 30.7205 | 4.494 | 242964.6 | 4.779 | VV | 0.037 | 108735.60 | 5.056 |
| 28 | 8.085 | Endosulfan I | 15.1461 | 2.215 | 130752.7 | 2.572 | VB | 0.040 | 54082.61 | 2.515 |
| 29 | 8.401 | Dieldrin | 30.5476 | 4.468 | 247624.2 | 4.871 | BV | 0.039 | 106831.70 | 4.967 |
| 30 | 8.543 | o,p-DDT | 0.4293 | 0.063 | 1045.6 | 0.021 | VB | 0.041 | 428.57 | 0.020 |
| 31 | 8.712 | Endrin | 29.8765 | 4.370 | 194981.6 | 3.835 | BV | 0.036 | 90748.44 | 4.220 |
| 32 | 8.766 | 4,4'-DDD | 29.8822 | 4.371 | 202760.8 | 3.988 | VB | 0.039 | 86610.13 | 4.027 |
| 33 | 9.014 | Endosulfan II | 29.9148 | 4.376 | 231425.8 | 4.552 | BV | 0.040 | 97609.16 | 4.539 |
| 34 | 9.130 | 4,4'-DDT | 30.5629 | 4.470 | 194144.7 | 3.819 | VB | 0.037 | 88469.41 | 4.114 |
| 35 | 9.290 | | 0.0000 | 0.000 | 73.1 | 0.001 | BB | 0.021 | 58.12 | 0.003 |
| 36 | 9.329 | | 0.0000 | 0.000 | 214.3 | 0.004 | BB | 0.033 | 107.88 | 0.005 |
| 37 | 9.424 | | 0.0000 | 0.000 | 3704.6 | 0.073 | BV | 0.042 | 1467.42 | 0.068 |
| 38 | 9.557 | Endrin aldehyde | 29.6241 | 4.333 | 205161.3 | 4.036 | VV | 0.042 | 80881.76 | 3.761 |
| 39 | 9.741 | Methoxychlor | 144.4298 | 21.126 | 551616.2 | 10.850 | VB | 0.038 | 241147.00 | 11.213 |
| 40 | 9.993 | Mirex | 0.1451 | 0.021 | 827.6 | 0.016 | BB | 0.100 | 137.87 | 0.006 |
| 41 | 10.124 | Endo. sulfate | 29.7757 | 4.355 | 204372.2 | 4.020 | BB | 0.040 | 85971.09 | 3.997 |
| 42 | 10.297 | | 0.0000 | 0.000 | 10101.6 | 0.199 | BV | 0.043 | 3904.70 | 0.182 |
| 43 | 10.356 | | 0.0000 | 0.000 | 3048.0 | 0.060 | VB | 0.036 | 1401.48 | 0.065 |
| 44 | 10.497 | Endrin ketone | 30.3568 | 4.440 | 252767.9 | 4.972 | BV | 0.040 | 104689.20 | 4.868 |
| 45 | 10.658 | | 0.0000 | 0.000 | 1660.2 | 0.033 | VV | 0.066 | 421.77 | 0.020 |
| 46 | 10.774 | | 0.0000 | 0.000 | 768.3 | 0.015 | VV | 0.071 | 181.30 | 0.008 |
| 47 | 10.879 | | 0.0000 | 0.000 | 1335.6 | 0.026 | VB | 0.034 | 645.41 | 0.030 |
| 48 | 11.030 | | 0.0000 | 0.000 | 126.2 | 0.002 | BB | 0.063 | 33.16 | 0.002 |
| 49 | 11.182 | | 0.0000 | 0.000 | 1975.9 | 0.039 | BB | 0.066 | 499.85 | 0.023 |
| 50 | 11.302 | | 0.0000 | 0.000 | 817.2 | 0.016 | BB | 0.203 | 67.03 | 0.003 |
| 51 | 11.371 | | 0.0000 | 0.000 | 198.0 | 0.004 | BB | 0.055 | 60.39 | 0.003 |
| 52 | 11.537 | | 0.0000 | 0.000 | 2486.0 | 0.049 | BB | 0.049 | 841.05 | 0.039 |
| 53 | 11.834 | DCB | 54.1195 | 7.916 | 597273.9 | 11.748 | BB | 0.049 | 203639.50 | 9.469 |
| 54 | 12.349 | | 0.0000 | 0.000 | 40.4 | 0.001 | BB | 0.019 | 35.04 | 0.002 |
| 55 | 12.434 | | 0.0000 | 0.000 | 279.4 | 0.005 | BB | 0.048 | 96.67 | 0.004 |
| 56 | 12.597 | | 0.0000 | 0.000 | 553.0 | 0.011 | BB | 0.116 | 79.52 | 0.004 |

0637

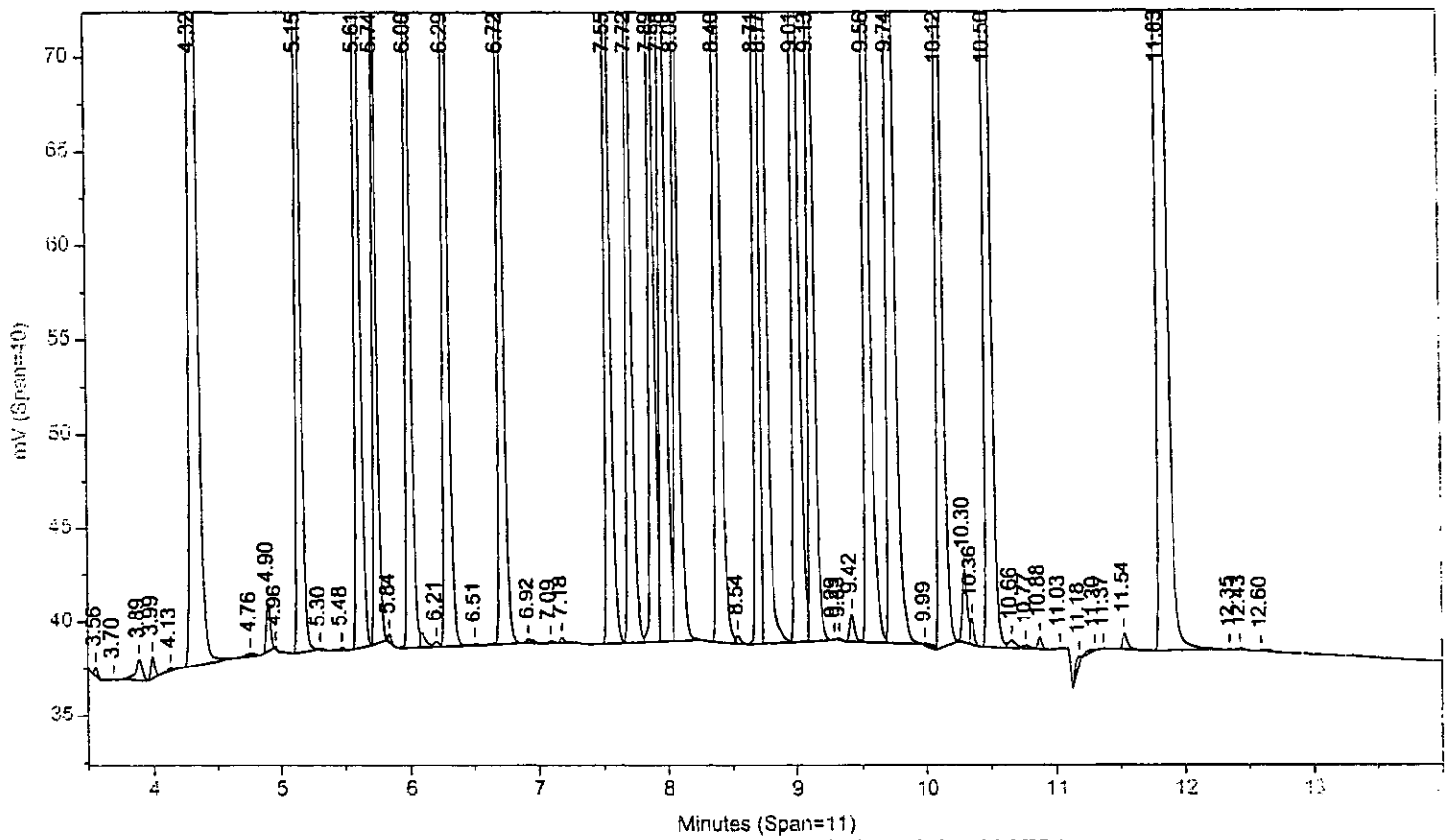
Total Area = 5083897.0, Total Amount = 683.662, Total Height = 2150664.0, Sample Units = PPB

Sample Name: **MIXA40424B AAMIXA4AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 10:08:58pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.08R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.373 | | 0.0000 | 0.000 | 1874.1 | 0.091 | BB | 0.060 | 520.83 | 0.054 |
| 2 | 3.690 | | 0.0000 | 0.000 | 11928.0 | 0.576 | BB | 0.353 | 562.50 | 0.059 |
| 3 | 4.473 | | 0.0000 | 0.000 | 720.9 | 0.035 | BB | 0.030 | 401.47 | 0.042 |
| 4 | 4.777 | | 0.0000 | 0.000 | 1749.7 | 0.085 | BB | 0.397 | 73.53 | 0.008 |
| 5 | 4.839 | TCX | 59.4926 | 7.988 | 233668.9 | 11.293 | BB | 0.034 | 114528.00 | 11.956 |
| 6 | 5.407 | | 0.0000 | 0.000 | 2642.3 | 0.128 | BB | 0.035 | 1246.22 | 0.130 |
| 7 | 5.769 | alpha-BHC | 17.3006 | 2.323 | 50980.5 | 2.464 | BB | 0.031 | 27083.10 | 2.827 |
| 8 | 6.299 | gamma-BHC | 17.1984 | 2.309 | 51699.3 | 2.498 | BV | 0.032 | 26997.93 | 2.818 |
| 9 | 6.420 | beta-BHC | 16.2269 | 2.179 | 34933.5 | 1.688 | VV | 0.035 | 16848.20 | 1.759 |
| 10 | 6.577 | | 0.0000 | 0.000 | 2585.1 | 0.125 | VV | 0.111 | 388.38 | 0.041 |
| 11 | 6.848 | delta-BHC | 16.7432 | 2.248 | 49500.4 | 2.392 | VV | 0.032 | 25860.40 | 2.700 |
| 12 | 6.936 | Heptachlor | 16.4937 | 2.215 | 57330.9 | 2.771 | VV | 0.036 | 26873.11 | 2.805 |
| 13 | 7.400 | Aldrin | 16.6347 | 2.234 | 54998.8 | 2.658 | VV | 0.035 | 26004.69 | 2.715 |
| 14 | 8.186 | Hept. epoxide | 16.0666 | 2.157 | 56073.4 | 2.710 | VV | 0.035 | 26702.14 | 2.788 |
| 15 | 8.440 | g. Chlordane | 16.3654 | 2.197 | 56346.1 | 2.723 | VB | 0.034 | 27377.88 | 2.858 |
| 16 | 8.634 | a. Chlordane | 16.3654 | 2.197 | 58176.4 | 2.811 | BV | 0.034 | 28163.95 | 2.940 |
| 17 | 8.725 | Endosulfan I | 16.6297 | 2.233 | 52910.2 | 2.557 | VV | 0.035 | 25282.35 | 2.639 |
| 18 | 8.829 | 4,4'-DDE | 34.2954 | 4.605 | 98340.1 | 4.752 | VB | 0.032 | 51286.60 | 5.354 |
| 19 | 9.089 | Dieldrin | 34.1093 | 4.580 | 105247.9 | 5.086 | BB | 0.034 | 51871.91 | 5.415 |
| 20 | 9.502 | Endrin | 34.3106 | 4.607 | 81643.0 | 3.946 | BV | 0.034 | 39774.02 | 4.152 |
| 21 | 9.594 | 4,4'-DDD | 33.6476 | 4.518 | 70144.3 | 3.390 | VV | 0.034 | 34521.99 | 3.604 |
| 22 | 9.781 | Endosulfan II | 33.3891 | 4.483 | 101250.6 | 4.893 | VB | 0.035 | 48630.59 | 5.077 |
| 23 | 10.005 | 4,4'-DDT | 33.6315 | 4.516 | 72698.3 | 3.513 | BB | 0.033 | 36249.89 | 3.784 |
| 24 | 10.216 | Endrin aldehyde | 32.8613 | 4.412 | 92583.4 | 4.474 | BB | 0.036 | 43313.68 | 4.522 |
| 25 | 10.380 | | 0.0000 | 0.000 | 3772.2 | 0.182 | BB | 0.048 | 1310.77 | 0.137 |
| 26 | 10.573 | Endo. sulfate | 32.9641 | 4.426 | 90999.6 | 4.398 | BB | 0.035 | 43012.37 | 4.490 |
| 27 | 10.878 | Methoxychlor | 158.2295 | 21.246 | 186210.5 | 8.999 | BB | 0.034 | 91173.98 | 9.518 |
| 28 | 11.047 | | 0.0000 | 0.000 | 756.4 | 0.037 | BB | 0.034 | 366.31 | 0.038 |
| 29 | 11.196 | | 0.0000 | 0.000 | 3863.6 | 0.187 | BB | 0.040 | 1621.84 | 0.169 |
| 30 | 11.333 | Endrin ketone | 34.2690 | 4.601 | 114875.1 | 5.552 | BB | 0.039 | 49145.91 | 5.131 |
| 31 | 12.845 | | 0.0000 | 0.000 | 922.9 | 0.045 | BB | 0.043 | 361.79 | 0.038 |
| 32 | 13.376 | DCB | 57.5231 | 7.724 | 267806.2 | 12.942 | BB | 0.049 | 90328.58 | 9.430 |

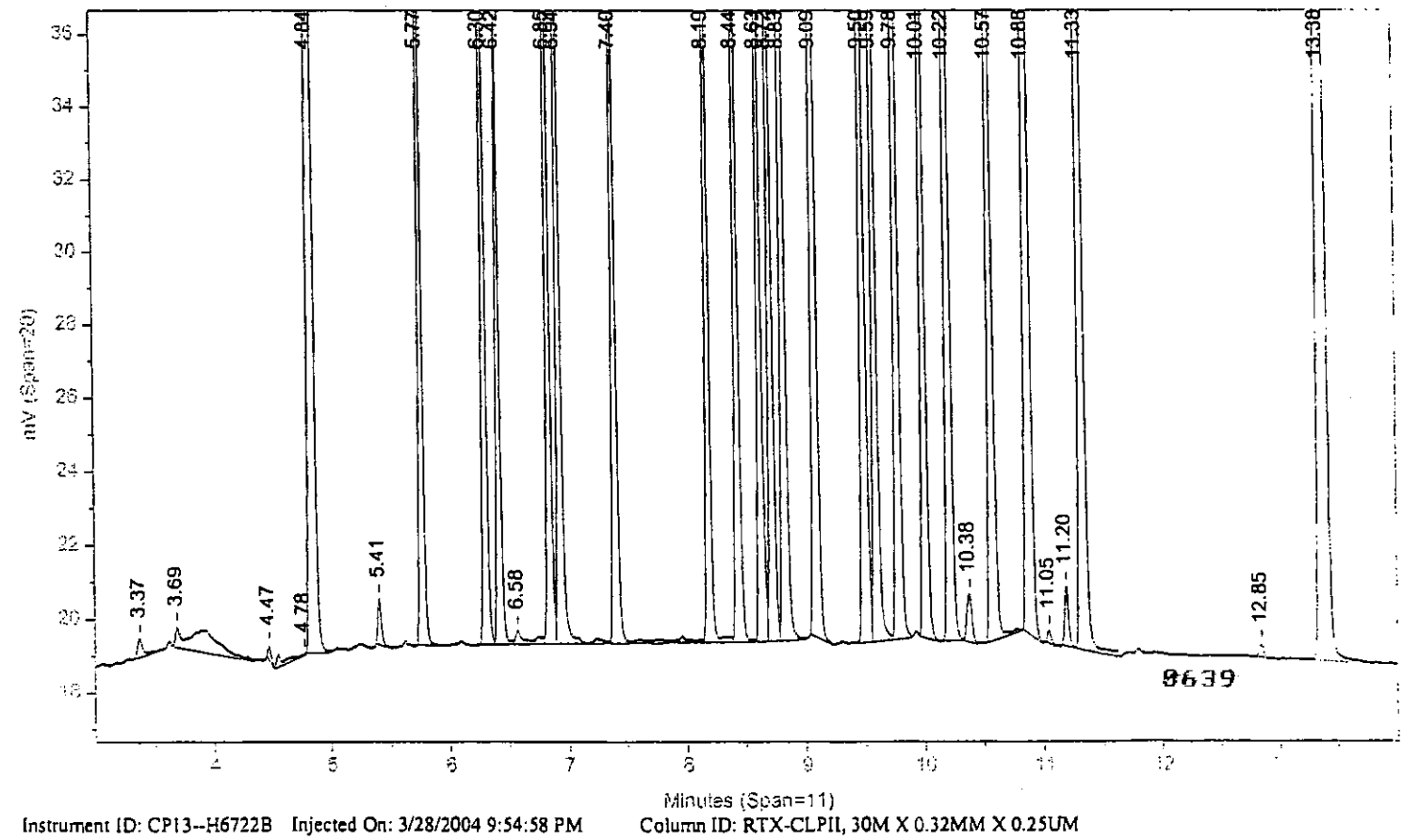
Total Area = 2069233.0, Total Amount = 744.748, Total Height = 957885.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.08R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 9:54:58 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.08R




Instrument ID: CP13--H6722B Injected On: 3/28/2004 9:54:58 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

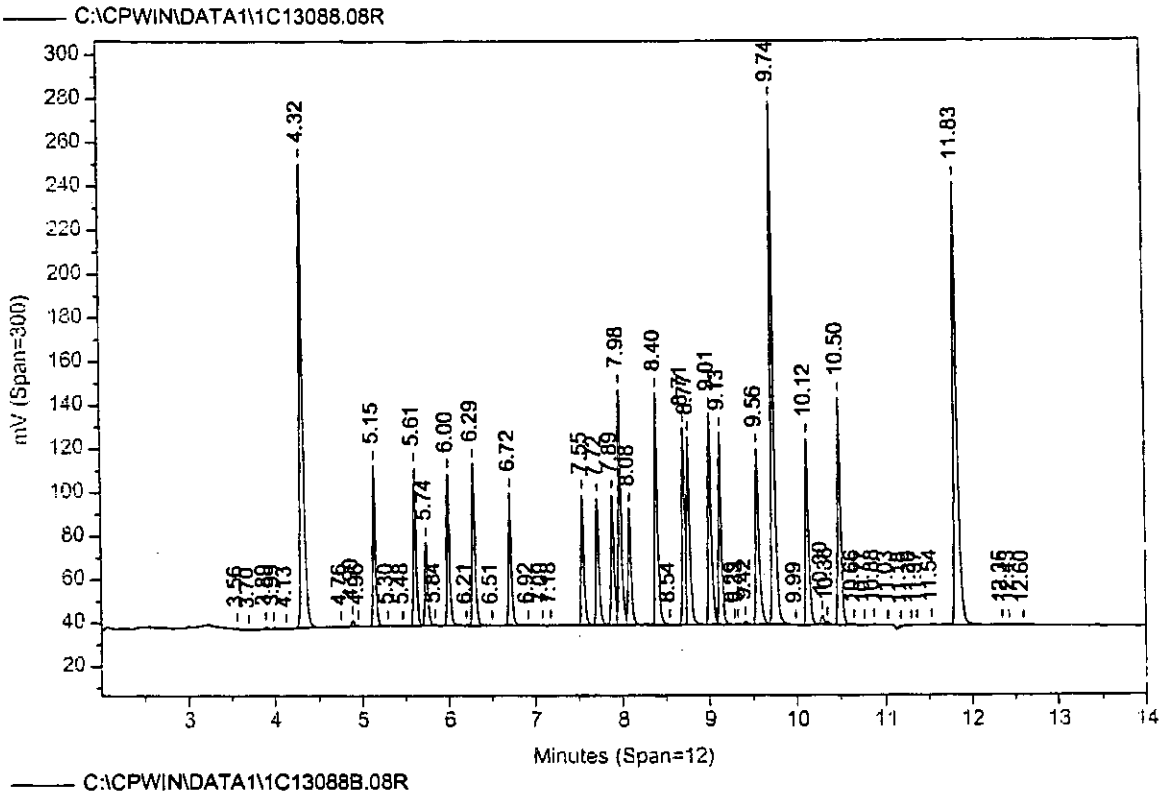
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.321 | 214093 | 57.46776 | TCX | 4.839 | 114528 | 59.49261 | TCX |
| 4.897 | 2566 | .99263 | HCB | . | 0 | . | HCB |
| 5.151 | 74006 | 16.13238 | alpha-BHC | 5.769 | 27083 | 17.30064 | alpha-BHC |
| 5.612 | 72832 | 15.91971 | gamma-BHC | 6.299 | 26998 | 17.1984 | gamma-BHC |
| 5.742 | 38553 | 15.42809 | beta-BHC | 6.42 | 16848 | 16.22686 | beta-BHC |
| 5.999 | 69868 | 16.01654 | delta-BHC | 6.848 | 25860 | 16.74323 | delta-BHC |
| 6.294 | 74619 | 15.60814 | Heptachlor | 6.936 | 26873 | 16.49372 | Heptachlor |
| 6.717 | 61036 | 15.43459 | Aldrin | 7.4 | 26005 | 16.63474 | Aldrin |
| 7.549 | 59928 | 15.20359 | Hept. epoxide | 8.186 | 26702 | 16.0666 | Hept. epoxide |
| 7.717 | 58379 | 15.30064 | g. Chlordane | 8.44 | 27378 | 16.36539 | g. Chlordane |
| 7.893 | 59921 | 14.62677 | a. Chlordane | 8.634 | 28164 | 16.36543 | a. Chlordane |
| 7.978 | 108736 | 30.72055 | 4,4'-DDE | 8.829 | 51287 | 34.29538 | 4,4'-DDE |
| 8.085 | 54083 | 15.14614 | Endosulfan I | 8.725 | 25282 | 16.62968 | Endosulfan I |
| 8.401 | 106832 | 30.54755 | Dieldrin | 9.089 | 51872 | 34.10933 | Dieldrin |
| 8.543 | 429 | .42928 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.712 | 90748 | 29.87649 | Endrin | 9.502 | 39774 | 34.31058 | Endrin |
| 8.766 | 86610 | 29.88215 | 4,4'-DDD | 9.594 | 34522 | 33.64761 | 4,4'-DDD |
| 9.014 | 97609 | 29.91475 | Endosulfan II | 9.781 | 48631 | 33.3891 | Endosulfan II |
| 9.13 | 88469 | 30.56286 | 4,4'-DDT | 10.005 | 36250 | 33.6315 | 4,4'-DDT |
| 9.557 | 80882 | 29.62407 | Endrin aldehyde | 10.216 | 43314 | 32.86133 | Endrin aldehyde |
| 9.741 | 241147 | 144.4298 | Methoxychlor | 10.878 | 91174 | 158.2295 | Methoxychlor |
| 9.993 | 138 | .14514 | Mirex | . | 0 | . | Mirex |
| 10.124 | 85971 | 29.77572 | Endo. sulfate | 10.573 | 43012 | 32.96414 | Endo. sulfate |
| 10.497 | 104689 | 30.3568 | Endrin ketone | 11.333 | 49146 | 34.26902 | Endrin ketone |
| 11.834 | 203640 | 54.11954 | DCB | 13.376 | 90329 | 57.5231 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.08A
Area File: C:\CPWIN\DATA1\1C13088B.08A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 8:47:06 AM
File Reported On: 3/29/2004 at 8:47:16 AM

0648

10X REPLOTS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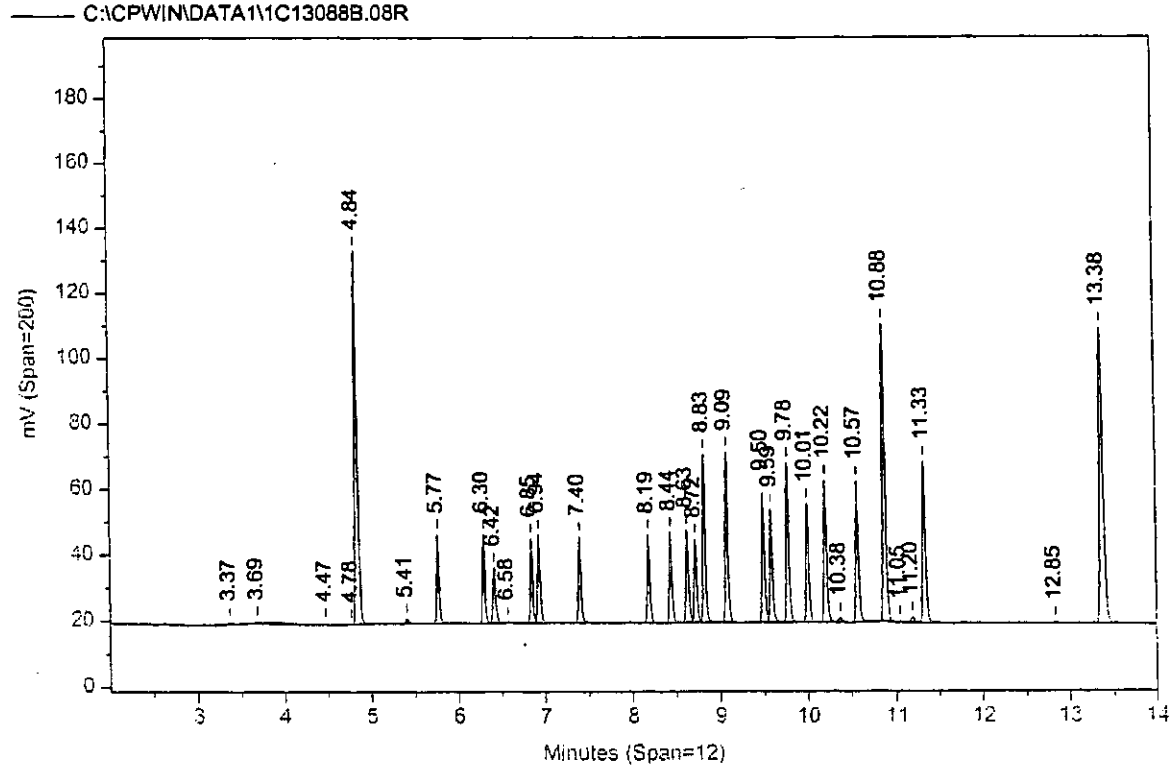
C:\CPWIN\DATA1\1C13088B.08R
mV (Span=200)
Minutes (Span=12)
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4.84
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6.58
7.40
8.19
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8.63
8.72
8.83
9.09
9.50
9.78
10.01
10.22
10.38
10.57
10.88
11.05
11.20
11.33
12.85
13.38

Sample Name: **MIXA50424B AAMIXA5AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/28/04 10:29:38pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.09R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.562 | | 0.0000 | 0.000 | 2845.0 | 0.043 | BB | 0.033 | 1450.73 | 0.051 |
| 2 | 3.891 | | 0.0000 | 0.000 | 4275.8 | 0.064 | BB | 0.062 | 1146.04 | 0.041 |
| 3 | 3.993 | | 0.0000 | 0.000 | 2840.2 | 0.043 | BB | 0.033 | 1432.60 | 0.051 |
| 4 | 4.321 | TCX | 74.1749 | 8.301 | 682993.4 | 10.266 | BB | 0.041 | 279042.50 | 9.901 |
| 5 | 4.762 | | 0.0000 | 0.000 | 814.3 | 0.012 | BB | 0.078 | 173.11 | 0.006 |
| 6 | 4.897 | HCB | 2.4228 | 0.271 | 6915.7 | 0.104 | BB | 0.034 | 3392.45 | 0.120 |
| 7 | 4.957 | | 0.0000 | 0.000 | 254.0 | 0.004 | BB | 0.022 | 190.97 | 0.007 |
| 8 | 5.151 | alpha-BHC | 21.7677 | 2.436 | 208835.6 | 3.139 | BB | 0.035 | 100133.10 | 3.553 |
| 9 | 5.303 | | 0.0000 | 0.000 | 263.8 | 0.004 | BB | 0.039 | 111.39 | 0.004 |
| 10 | 5.478 | | 0.0000 | 0.000 | 355.3 | 0.005 | BB | 0.044 | 135.46 | 0.005 |
| 11 | 5.612 | gamma-BHC | 21.1715 | 2.369 | 206462.5 | 3.103 | BB | 0.035 | 97345.84 | 3.454 |
| 12 | 5.742 | beta-BHC | 19.7383 | 2.209 | 113295.0 | 1.703 | BB | 0.038 | 50094.49 | 1.777 |
| 13 | 5.844 | | 0.0000 | 0.000 | 907.1 | 0.014 | BB | 0.027 | 565.68 | 0.020 |
| 14 | 5.999 | delta-BHC | 21.5523 | 2.412 | 199761.2 | 3.003 | BV | 0.035 | 94204.94 | 3.342 |
| 15 | 6.204 | | 0.0000 | 0.000 | 842.5 | 0.013 | VV | 0.048 | 291.43 | 0.010 |
| 16 | 6.293 | Heptachlor | 20.1556 | 2.256 | 214650.3 | 3.226 | VV | 0.037 | 97903.09 | 3.474 |
| 17 | 6.506 | | 0.0000 | 0.000 | 454.2 | 0.007 | VV | 0.045 | 169.73 | 0.006 |
| 18 | 6.717 | Aldrin | 20.5824 | 2.304 | 180553.0 | 2.714 | VV | 0.037 | 81602.23 | 2.895 |
| 19 | 6.928 | | 0.0000 | 0.000 | 1058.7 | 0.016 | VB | 0.081 | 218.74 | 0.008 |
| 20 | 7.090 | | 0.0000 | 0.000 | 459.3 | 0.007 | BB | 0.043 | 178.52 | 0.006 |
| 21 | 7.181 | | 0.0000 | 0.000 | 915.7 | 0.014 | BB | 0.039 | 394.81 | 0.014 |
| 22 | 7.549 | Hept. epoxide | 19.7946 | 2.215 | 181278.4 | 2.725 | BV | 0.039 | 78414.05 | 2.782 |
| 23 | 7.717 | g. Chlordane | 19.9492 | 2.233 | 180187.8 | 2.708 | VV | 0.039 | 76652.91 | 2.720 |
| 24 | 7.893 | a. Chlordane | 18.9642 | 2.122 | 181583.2 | 2.729 | VV | 0.039 | 77960.80 | 2.766 |
| 25 | 7.978 | 4,4'-DDE | 40.8739 | 4.575 | 322862.5 | 4.853 | VV | 0.037 | 144063.30 | 5.112 |
| 26 | 8.085 | Endosulfan I | 19.7828 | 2.214 | 173165.1 | 2.603 | VB | 0.041 | 71138.48 | 2.524 |
| 27 | 8.401 | Dieldrin | 40.8370 | 4.570 | 327630.1 | 4.925 | BV | 0.038 | 142389.20 | 5.052 |
| 28 | 8.544 | o,p-DDT | 1.1160 | 0.125 | 1355.5 | 0.020 | VB | 0.040 | 561.85 | 0.020 |
| 29 | 8.712 | Endrin | 39.9225 | 4.468 | 257603.8 | 3.872 | BV | 0.036 | 119851.70 | 4.252 |
| 30 | 8.766 | 4,4'-DDD | 40.2603 | 4.506 | 270349.9 | 4.064 | VV | 0.039 | 115450.50 | 4.096 |
| 31 | 9.014 | Endosulfan II | 39.1513 | 4.382 | 302067.3 | 4.540 | VV | 0.039 | 127917.70 | 4.539 |
| 32 | 9.130 | 4,4'-DDT | 40.4216 | 4.524 | 256322.7 | 3.853 | VB | 0.037 | 116982.90 | 4.151 |
| 33 | 9.294 | | 0.0000 | 0.000 | 113.7 | 0.002 | BB | 0.027 | 69.03 | 0.002 |
| 34 | 9.330 | | 0.0000 | 0.000 | 182.7 | 0.003 | BB | 0.029 | 103.64 | 0.004 |
| 35 | 9.423 | | 0.0000 | 0.000 | 4870.1 | 0.073 | BV | 0.042 | 1913.80 | 0.068 |
| 36 | 9.557 | Endrin aldehyde | 38.2450 | 4.280 | 265544.3 | 3.991 | VV | 0.042 | 104913.80 | 3.722 |
| 37 | 9.741 | Methoxychlor | 185.6418 | 20.777 | 711385.3 | 10.693 | VB | 0.038 | 310681.40 | 11.023 |
| 38 | 9.991 | Mirex | 0.2888 | 0.032 | 660.4 | 0.010 | BB | 0.083 | 132.41 | 0.005 |
| 39 | 10.124 | Endo. sulfate | 38.6078 | 4.321 | 266165.8 | 4.001 | BB | 0.040 | 112134.00 | 3.979 |
| 40 | 10.297 | | 0.0000 | 0.000 | 13670.5 | 0.205 | BV | 0.044 | 5122.66 | 0.182 |
| 41 | 10.356 | | 0.0000 | 0.000 | 3467.8 | 0.052 | VB | 0.035 | 1663.53 | 0.059 |
| 42 | 10.497 | Endrin ketone | 39.5260 | 4.424 | 330354.1 | 4.966 | BV | 0.040 | 137016.10 | 4.861 |
| 43 | 10.659 | | 0.0000 | 0.000 | 2119.7 | 0.032 | VV | 0.067 | 525.99 | 0.019 |
| 44 | 10.768 | | 0.0000 | 0.000 | 810.4 | 0.012 | VV | 0.062 | 218.14 | 0.008 |
| 45 | 10.879 | | 0.0000 | 0.000 | 2161.2 | 0.032 | VB | 0.035 | 1020.98 | 0.036 |
| 46 | 11.184 | | 0.0000 | 0.000 | 1890.4 | 0.028 | BB | 0.069 | 455.24 | 0.016 |
| 47 | 11.373 | | 0.0000 | 0.000 | 2087.0 | 0.031 | BB | 0.261 | 133.24 | 0.005 |
| 48 | 11.538 | | 0.0000 | 0.000 | 2998.3 | 0.045 | BB | 0.045 | 1099.63 | 0.039 |
| 49 | 11.834 | DCB | 68.5653 | 7.674 | 759073.4 | 11.410 | BB | 0.049 | 259382.00 | 9.203 |
| 50 | 12.430 | | 0.0000 | 0.000 | 519.9 | 0.008 | BB | 0.062 | 139.43 | 0.005 |
| 51 | 12.614 | | 0.0000 | 0.000 | 635.0 | 0.010 | BB | 0.087 | 121.18 | 0.004 |

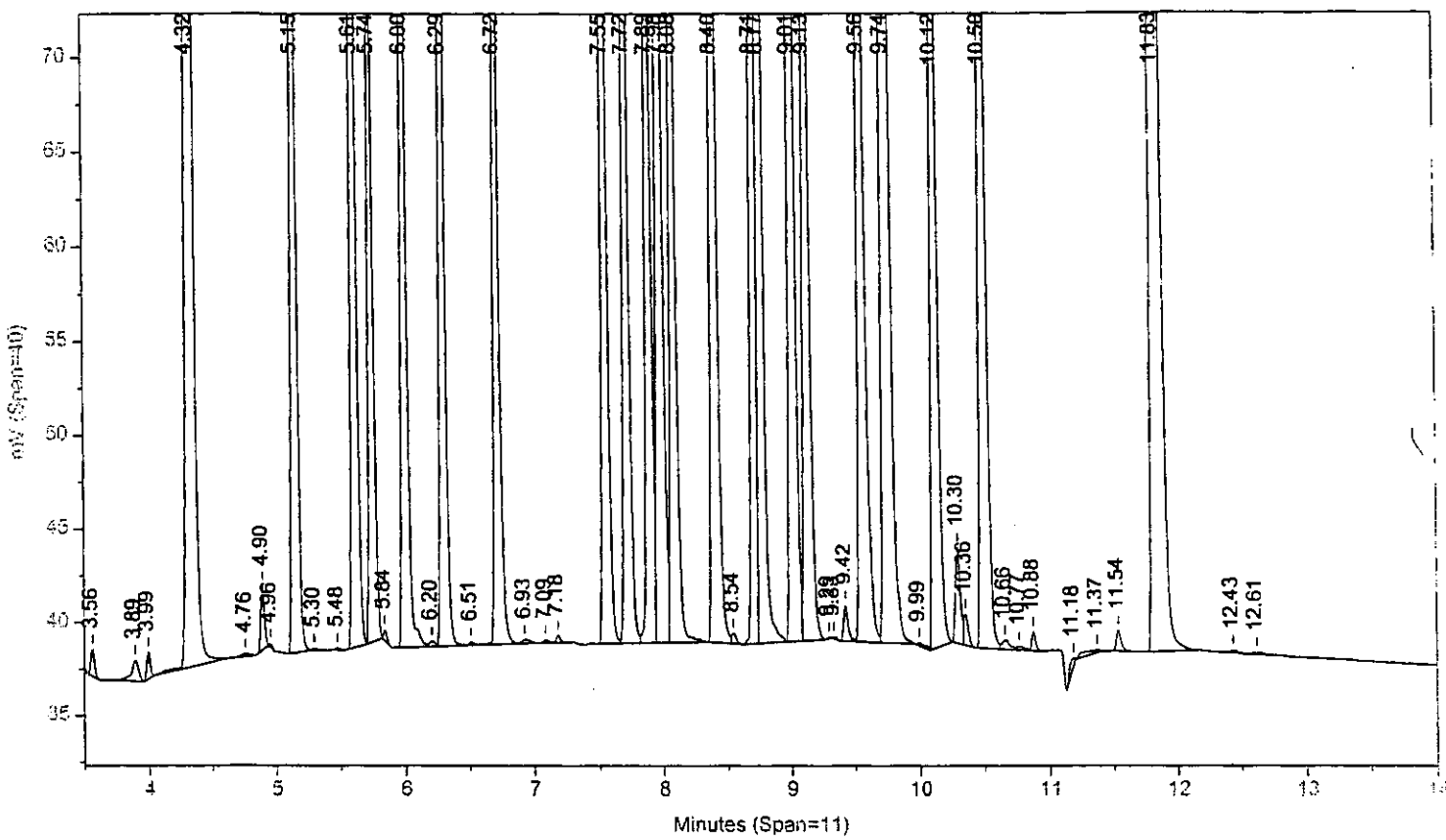
Total Area = 6652869.0, Total Amount = 893.513, Total Height = 2818408.0, Sample Units = PPB

Sample Name: **MIXA50424B AAMIXA5AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/28/04 10:29:38pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.09R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.368 | | 0.0000 | 0.000 | 2081.4 | 0.077 | BB | 0.052 | 671.05 | 0.053 |
| 2 | 3.693 | | 0.0000 | 0.000 | 12495.6 | 0.462 | BB | 0.187 | 1110.95 | 0.088 |
| 3 | 4.475 | | 0.0000 | 0.000 | 995.6 | 0.037 | BB | 0.034 | 482.97 | 0.038 |
| 4 | 4.547 | | 0.0000 | 0.000 | 1711.3 | 0.063 | BB | 0.063 | 449.84 | 0.035 |
| 5 | 4.838 | TCX | 77.8530 | 8.281 | 308241.5 | 11.409 | BB | 0.034 | 151103.30 | 11.906 |
| 6 | 5.406 | | 0.0000 | 0.000 | 3938.5 | 0.146 | BB | 0.039 | 1680.57 | 0.132 |
| 7 | 5.768 | alpha-BHC | 22.9623 | 2.442 | 71178.6 | 2.635 | BV | 0.032 | 37623.55 | 2.964 |
| 8 | 6.299 | gamma-BHC | 22.1964 | 2.361 | 69733.7 | 2.581 | VV | 0.032 | 36705.64 | 2.892 |
| 9 | 6.420 | beta-BHC | 20.3714 | 2.167 | 45863.4 | 1.698 | VV | 0.034 | 22314.01 | 1.758 |
| 10 | 6.571 | | 0.0000 | 0.000 | 3307.9 | 0.122 | VV | 0.109 | 504.17 | 0.040 |
| 11 | 6.848 | delta-BHC | 22.0716 | 2.348 | 67022.2 | 2.481 | VV | 0.031 | 35595.63 | 2.805 |
| 12 | 6.936 | Heptachlor | 20.4519 | 2.175 | 73721.1 | 2.729 | VB | 0.035 | 35503.38 | 2.797 |
| 13 | 7.400 | Aldrin | 21.7221 | 2.310 | 71331.8 | 2.640 | BV | 0.034 | 35361.29 | 2.786 |
| 14 | 8.186 | Hept. epoxide | 20.4530 | 2.175 | 73106.5 | 2.706 | VV | 0.034 | 35426.84 | 2.791 |
| 15 | 8.440 | g. Chlordane | 20.6537 | 2.197 | 73682.3 | 2.727 | VB | 0.034 | 36085.02 | 2.843 |
| 16 | 8.634 | a. Chlordane | 20.9106 | 2.224 | 76046.5 | 2.815 | BV | 0.034 | 37541.23 | 2.958 |
| 17 | 8.725 | Endosulfan I | 21.0913 | 2.243 | 69663.2 | 2.578 | VV | 0.035 | 33476.53 | 2.638 |
| 18 | 8.830 | 4,4'-DDE | 45.3923 | 4.828 | 131937.0 | 4.883 | VB | 0.031 | 69846.71 | 5.503 |
| 19 | 9.089 | Dieldrin | 44.6655 | 4.751 | 140553.1 | 5.202 | BB | 0.033 | 70934.80 | 5.589 |
| 20 | 9.502 | Endrin | 44.0236 | 4.682 | 108054.1 | 3.999 | BV | 0.034 | 53351.63 | 4.204 |
| 21 | 9.594 | 4,4'-DDD | 43.0038 | 4.574 | 91634.7 | 3.392 | VB | 0.033 | 45987.98 | 3.624 |
| 22 | 9.781 | Endosulfan II | 42.3301 | 4.502 | 132228.1 | 4.894 | BB | 0.034 | 64538.97 | 5.085 |
| 23 | 10.005 | 4,4'-DDT | 41.6160 | 4.426 | 94622.1 | 3.502 | BB | 0.033 | 47533.46 | 3.745 |
| 24 | 10.215 | Endrin aldehyde | 40.7785 | 4.337 | 119959.4 | 4.440 | BB | 0.035 | 56374.41 | 4.442 |
| 25 | 10.379 | | 0.0000 | 0.000 | 4834.3 | 0.179 | BB | 0.046 | 1735.78 | 0.137 |
| 26 | 10.573 | Endo. sulfate | 41.8398 | 4.450 | 119144.7 | 4.410 | BB | 0.035 | 56812.38 | 4.476 |
| 27 | 10.878 | Methoxychlor | 192.8165 | 20.508 | 237973.2 | 8.808 | BB | 0.034 | 117279.50 | 9.241 |
| 28 | 11.049 | | 0.0000 | 0.000 | 918.3 | 0.034 | BB | 0.035 | 440.60 | 0.035 |
| 29 | 11.194 | | 0.0000 | 0.000 | 5271.8 | 0.195 | BB | 0.041 | 2132.51 | 0.168 |
| 30 | 11.333 | Endrin ketone | 42.1584 | 4.484 | 149535.7 | 5.535 | BB | 0.039 | 64528.13 | 5.084 |
| 31 | 12.841 | | 0.0000 | 0.000 | 1339.7 | 0.050 | BB | 0.045 | 498.29 | 0.039 |
| 32 | 13.376 | DCB | 70.8345 | 7.534 | 339652.4 | 12.571 | BB | 0.049 | 115526.70 | 9.103 |

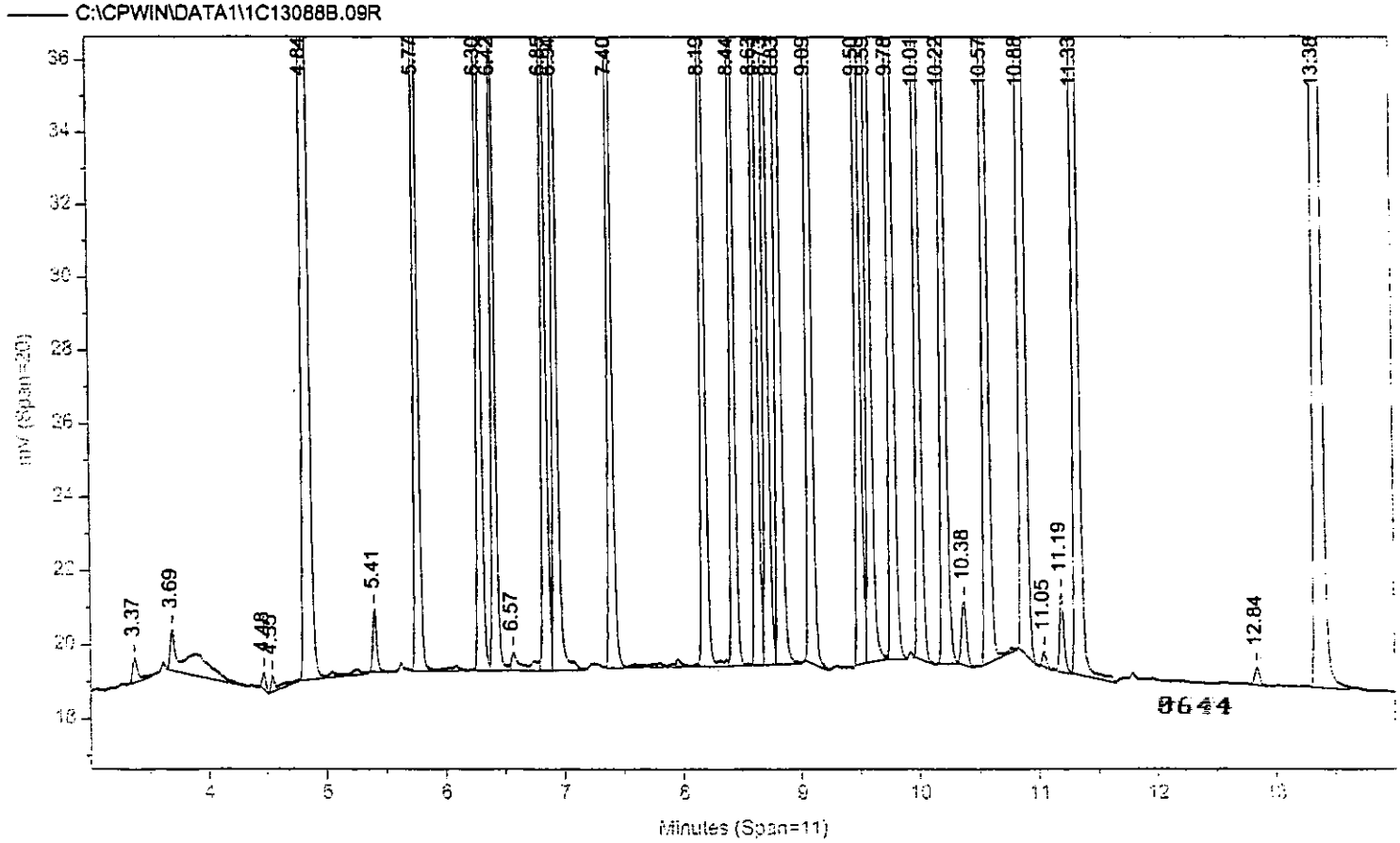
Total Area = 2701780.0, Total Amount = 940.196, Total Height = 1269158.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.09R




Instrument ID: CP13--H6722A Injected On: 3/28/2004 10:15:38 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.09R




Instrument ID: CP13--H6722B Injected On: 3/28/2004 10:15:38 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: IN

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

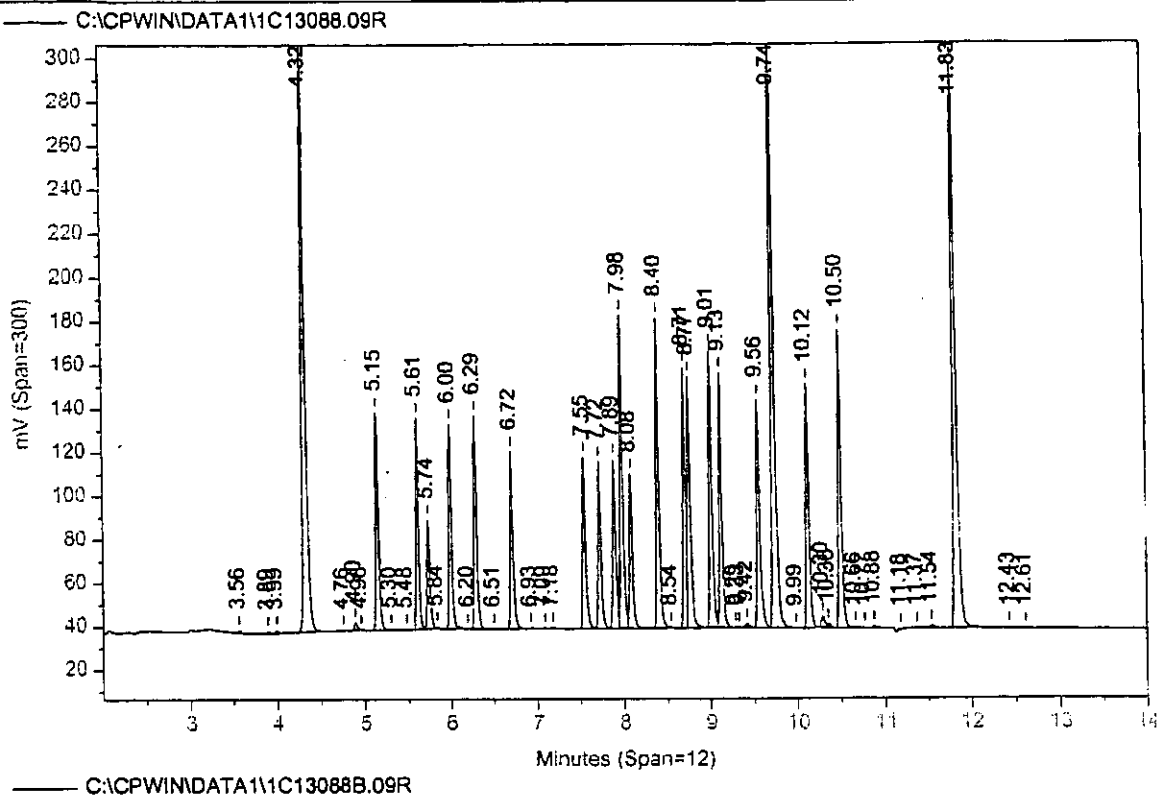
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.321 | 279043 | 74.17491 | TCX | 4.838 | 151103 | 77.85298 | TCX |
| 4.897 | 3392 | 2.42275 | HCB | . | 0 | . | HCB |
| 5.151 | 100133 | 21.76773 | alpha-BHC | 5.768 | 37624 | 22.96229 | alpha-BHC |
| 5.612 | 97346 | 21.17147 | gamma-BHC | 6.299 | 36706 | 22.19635 | gamma-BHC |
| 5.742 | 50094 | 19.73831 | beta-BHC | 6.42 | 22314 | 20.37143 | beta-BHC |
| 5.999 | 94205 | 21.5523 | delta-BHC | 6.848 | 35596 | 22.07155 | delta-BHC |
| 6.293 | 97903 | 20.15561 | Heptachlor | 6.936 | 35503 | 20.45191 | Heptachlor |
| 6.717 | 81602 | 20.58241 | Aldrin | 7.4 | 35361 | 21.72208 | Aldrin |
| 7.549 | 78414 | 19.79463 | Hept. epoxide | 8.186 | 35427 | 20.45296 | Hept. epoxide |
| 7.717 | 76653 | 19.94917 | g. Chlordane | 8.44 | 36085 | 20.65367 | g. Chlordane |
| 7.893 | 77961 | 18.96416 | a. Chlordane | 8.634 | 37541 | 20.9106 | a. Chlordane |
| 7.978 | 144063 | 40.87391 | 4,4'-DDE | 8.83 | 69847 | 45.39228 | 4,4'-DDE |
| 8.085 | 71138 | 19.78277 | Endosulfan I | 8.725 | 33477 | 21.09128 | Endosulfan I |
| 8.401 | 142389 | 40.83699 | Dieldrin | 9.089 | 70935 | 44.66551 | Dieldrin |
| 8.544 | 562 | 1.11603 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.712 | 119852 | 39.92246 | Endrin | 9.502 | 53352 | 44.02358 | Endrin |
| 8.766 | 115451 | 40.26028 | 4,4'-DDD | 9.594 | 45988 | 43.00381 | 4,4'-DDD |
| 9.014 | 127918 | 39.15131 | Endosulfan II | 9.781 | 64539 | 42.3301 | Endosulfan II |
| 9.13 | 116983 | 40.42155 | 4,4'-DDT | 10.005 | 47533 | 41.61603 | 4,4'-DDT |
| 9.557 | 104914 | 38.24501 | Endrin aldehyde | 10.215 | 56374 | 40.77849 | Endrin aldehyde |
| 9.741 | 310681 | 185.6418 | Methoxychlor | 10.878 | 117279 | 192.8165 | Methoxychlor |
| 9.991 | 132 | .28884 | Mirex | . | 0 | . | Mirex |
| 10.124 | 112134 | 38.60784 | Endo. sulfate | 10.573 | 56812 | 41.83979 | Endo. sulfate |
| 10.497 | 137016 | 39.52601 | Endrin ketone | 11.333 | 64528 | 42.15843 | Endrin ketone |
| 11.834 | 259382 | 68.56525 | DCB | 13.376 | 115527 | 70.8345 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.09A
Area File: C:\CPWIN\DATA1\1C13088B.09A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 8:47:32 AM
File Reported On: 3/29/2004 at 8:47:43 AM

9645

10X REPLOTS


C:\CPWIN\DATA1\1C13088.09R
mV (Span=300)
Minutes (Span=12)
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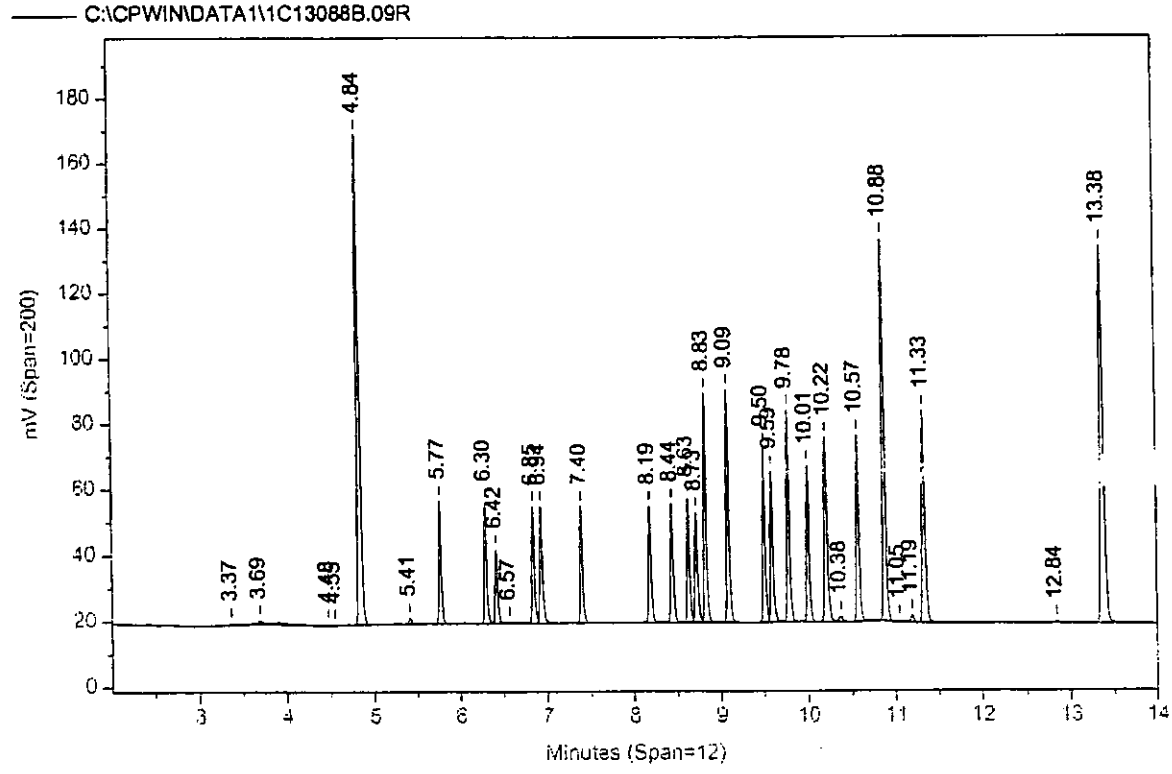
4.32
5.15
5.61
6.00
6.29
6.72
7.98
8.40
9.01
9.56
10.12
10.50
11.83


C:\CPWIN\DATA1\1C13088B.09R
mV (Span=200)
Minutes (Span=12)
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3.69
4.84
5.41
5.77
6.30
6.42
7.40
8.19
8.83
9.09
9.78
10.01
10.22
10.57
10.88
11.33
12.84
13.38

Sample Name: **ICMAX0424B AAICMAXAA CCAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 12:33:27am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.15R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.556 | | 0.0000 | 0.000 | 234.2 | 0.007 | BB | 0.023 | 170.98 | 0.012 |
| 2 | 3.890 | | 0.0000 | 0.000 | 5481.3 | 0.161 | BB | 0.084 | 1081.75 | 0.075 |
| 3 | 3.991 | | 0.0000 | 0.000 | 1703.3 | 0.050 | BB | 0.033 | 862.24 | 0.060 |
| 4 | 4.320 | TCX | 38.0077 | 8.387 | 352358.2 | 10.328 | BB | 0.041 | 144259.50 | 10.066 |
| 5 | 4.766 | | 0.0000 | 0.000 | 510.8 | 0.015 | BB | 0.076 | 111.67 | 0.008 |
| 6 | 4.896 | HCB | 0.2368 | 0.052 | 3378.5 | 0.099 | BB | 0.034 | 1647.96 | 0.115 |
| 7 | 5.149 | alpha-BHC | 9.7175 | 2.144 | 94424.8 | 2.768 | BB | 0.035 | 44998.41 | 3.140 |
| 8 | 5.300 | | 0.0000 | 0.000 | 173.7 | 0.005 | BB | 0.051 | 56.40 | 0.004 |
| 9 | 5.467 | | 0.0000 | 0.000 | 203.1 | 0.006 | BB | 0.050 | 67.27 | 0.005 |
| 10 | 5.611 | gamma-BHC | 9.9249 | 2.190 | 98048.0 | 2.874 | BB | 0.036 | 46002.54 | 3.210 |
| 11 | 5.741 | beta-BHC | 10.1087 | 2.231 | 58757.8 | 1.722 | BB | 0.038 | 26045.80 | 1.817 |
| 12 | 5.843 | | 0.0000 | 0.000 | 467.8 | 0.014 | BB | 0.027 | 293.46 | 0.020 |
| 13 | 5.998 | delta-BHC | 10.1898 | 2.248 | 94621.6 | 2.773 | BV | 0.035 | 44810.16 | 3.127 |
| 14 | 6.204 | | 0.0000 | 0.000 | 578.8 | 0.017 | VV | 0.050 | 191.60 | 0.013 |
| 15 | 6.292 | Heptachlor | 9.8755 | 2.179 | 108093.5 | 3.168 | VB | 0.037 | 48796.88 | 3.405 |
| 16 | 6.504 | | 0.0000 | 0.000 | 1229.5 | 0.036 | BV | 0.038 | 534.45 | 0.037 |
| 17 | 6.716 | Aldrin | 10.3172 | 2.277 | 92530.9 | 2.712 | VV | 0.037 | 41134.36 | 2.870 |
| 18 | 6.920 | | 0.0000 | 0.000 | 909.7 | 0.027 | VB | 0.073 | 206.78 | 0.014 |
| 19 | 7.113 | | 0.0000 | 0.000 | 553.1 | 0.016 | BB | 0.056 | 166.02 | 0.012 |
| 20 | 7.181 | | 0.0000 | 0.000 | 649.8 | 0.019 | BV | 0.037 | 292.91 | 0.020 |
| 21 | 7.250 | | 0.0000 | 0.000 | 501.6 | 0.015 | VB | 0.077 | 108.36 | 0.008 |
| 22 | 7.548 | Hept. epoxide | 10.2519 | 2.262 | 94537.9 | 2.771 | BB | 0.039 | 40916.85 | 2.855 |
| 23 | 7.716 | g. Chlordane | 10.0319 | 2.214 | 91199.0 | 2.673 | BV | 0.039 | 38844.84 | 2.710 |
| 24 | 7.892 | a. Chlordane | 9.7035 | 2.141 | 94554.9 | 2.771 | VV | 0.039 | 40101.64 | 2.798 |
| 25 | 7.977 | 4,4'-DDE | 20.0802 | 4.431 | 157703.4 | 4.622 | VV | 0.037 | 70659.82 | 4.930 |
| 26 | 8.084 | Endosulfan I | 9.9337 | 2.192 | 87842.9 | 2.575 | VB | 0.041 | 36033.45 | 2.514 |
| 27 | 8.400 | Dieldrin | 19.5642 | 4.317 | 158584.2 | 4.648 | BB | 0.039 | 68309.00 | 4.766 |
| 28 | 8.712 | Endrin | 19.8571 | 4.382 | 128334.3 | 3.762 | BV | 0.036 | 59037.72 | 4.119 |
| 29 | 8.766 | 4,4'-DDD | 21.4579 | 4.735 | 146618.4 | 4.298 | VV | 0.040 | 61071.76 | 4.261 |
| 30 | 9.014 | Endosulfan II | 20.1777 | 4.452 | 157099.5 | 4.605 | VV | 0.040 | 66136.05 | 4.615 |
| 31 | 9.129 | 4,4'-DDT | 20.1947 | 4.456 | 129944.3 | 3.809 | VV | 0.037 | 58663.90 | 4.093 |
| 32 | 9.333 | | 0.0000 | 0.000 | 560.4 | 0.016 | VB | 0.056 | 166.86 | 0.012 |
| 33 | 9.424 | | 0.0000 | 0.000 | 2972.2 | 0.087 | BV | 0.043 | 1158.60 | 0.081 |
| 34 | 9.557 | Endrin aldehyde | 19.9153 | 4.394 | 138904.2 | 4.071 | VV | 0.042 | 54949.88 | 3.834 |
| 35 | 9.741 | Methoxychlor | 97.5547 | 21.526 | 378710.7 | 11.100 | VB | 0.038 | 164098.80 | 11.450 |
| 36 | 10.124 | Endo. sulfate | 19.9679 | 4.406 | 138204.9 | 4.051 | BB | 0.039 | 58358.37 | 4.072 |
| 37 | 10.298 | | 0.0000 | 0.000 | 7304.3 | 0.214 | BV | 0.046 | 2635.71 | 0.184 |
| 38 | 10.355 | | 0.0000 | 0.000 | 2279.0 | 0.067 | VB | 0.035 | 1096.24 | 0.076 |
| 39 | 10.497 | Endrin ketone | 19.9958 | 4.412 | 168560.0 | 4.941 | BV | 0.040 | 69856.94 | 4.874 |
| 40 | 10.655 | | 0.0000 | 0.000 | 1233.7 | 0.036 | VV | 0.070 | 295.52 | 0.021 |
| 41 | 10.763 | | 0.0000 | 0.000 | 788.7 | 0.023 | VV | 0.065 | 200.83 | 0.014 |
| 42 | 10.879 | | 0.0000 | 0.000 | 1189.0 | 0.035 | VB | 0.037 | 538.31 | 0.038 |
| 43 | 11.537 | | 0.0000 | 0.000 | 1458.6 | 0.043 | BB | 0.047 | 512.40 | 0.036 |
| 44 | 11.834 | DCB | 36.1335 | 7.973 | 407563.5 | 11.946 | BB | 0.049 | 137597.10 | 9.601 |
| 45 | 12.430 | | 0.0000 | 0.000 | 138.1 | 0.004 | BB | 0.042 | 54.23 | 0.004 |

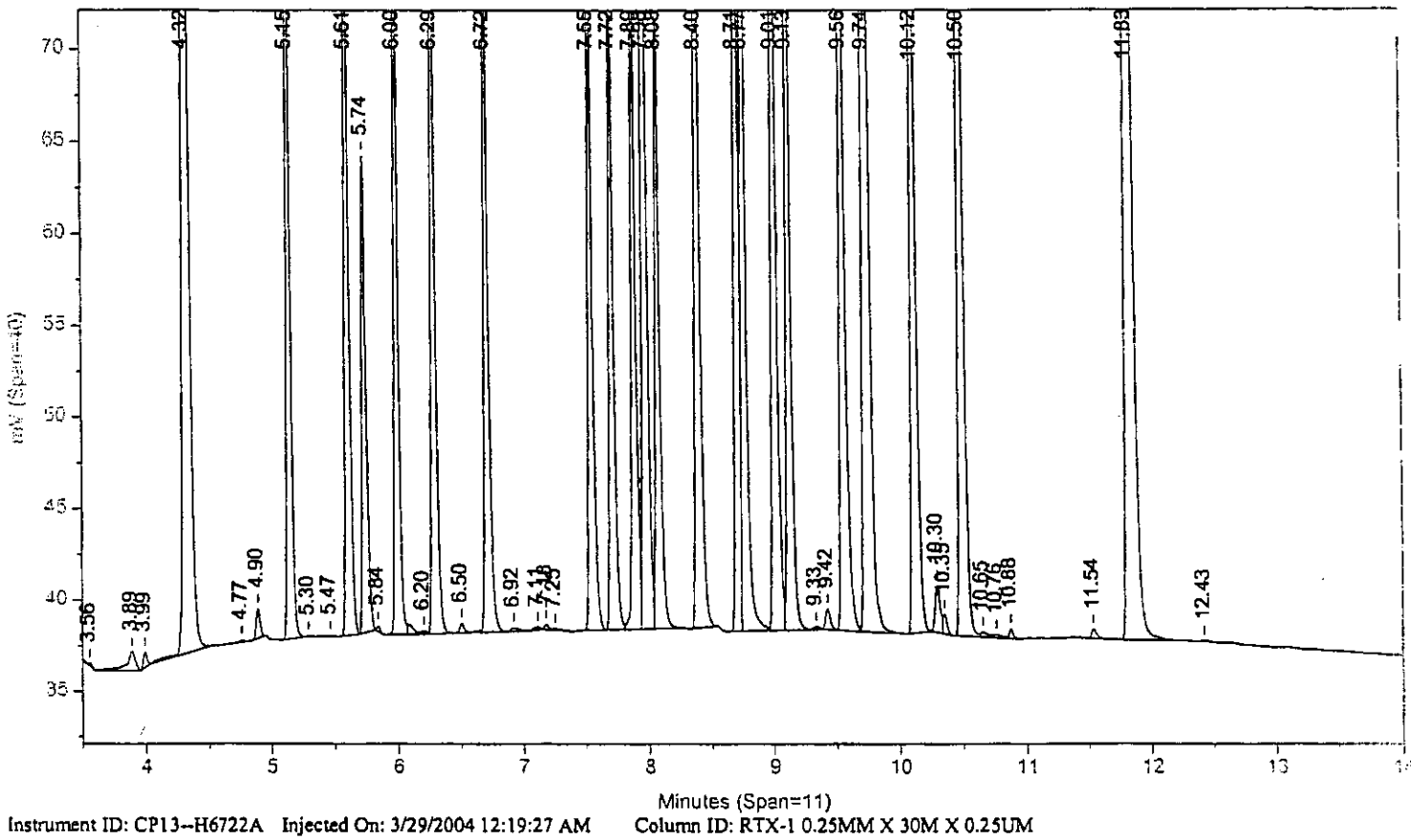
Total Area = 3411696.0, Total Amount = 453.198, Total Height = 1433134.0, Sample Units = PPB

Sample Name: **ICMAX0424B AAICMAXAA CCAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 12:33:27am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.15R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.898 | | 0.0000 | 0.000 | 24525.5 | 1.730 | BB | 0.391 | 1044.53 | 0.163 |
| 2 | 4.471 | | 0.0000 | 0.000 | 606.3 | 0.043 | BB | 0.030 | 334.38 | 0.052 |
| 3 | 4.770 | | 0.0000 | 0.000 | 1911.6 | 0.135 | BB | 0.377 | 84.61 | 0.013 |
| 4 | 4.838 | TCX | 38.7208 | 8.167 | 158114.6 | 11.153 | BB | 0.035 | 75746.08 | 11.811 |
| 5 | 5.403 | | 0.0000 | 0.000 | 1877.1 | 0.132 | BB | 0.036 | 871.68 | 0.136 |
| 6 | 5.767 | alpha-BHC | 9.4753 | 1.999 | 31767.0 | 2.241 | BB | 0.032 | 16317.31 | 2.544 |
| 7 | 6.298 | gamma-BHC | 9.7577 | 2.058 | 33299.3 | 2.349 | BB | 0.033 | 17041.70 | 2.657 |
| 8 | 6.418 | beta-BHC | 9.9318 | 2.095 | 23740.4 | 1.675 | BB | 0.034 | 11482.89 | 1.791 |
| 9 | 6.846 | delta-BHC | 9.7478 | 2.056 | 32045.6 | 2.260 | BV | 0.032 | 16509.50 | 2.574 |
| 10 | 6.935 | Heptachlor | 9.7675 | 2.060 | 37013.3 | 2.611 | VV | 0.034 | 18032.34 | 2.812 |
| 11 | 7.277 | | 0.0000 | 0.000 | 477.2 | 0.034 | VB | 0.025 | 315.52 | 0.049 |
| 12 | 7.398 | Aldrin | 10.2295 | 2.158 | 37417.6 | 2.639 | BV | 0.036 | 17383.22 | 2.711 |
| 13 | 8.184 | Hept. epoxide | 10.1128 | 2.133 | 38830.0 | 2.739 | VV | 0.035 | 18251.03 | 2.846 |
| 14 | 8.439 | g. Chlordane | 9.9961 | 2.108 | 38151.1 | 2.691 | VB | 0.035 | 18223.68 | 2.842 |
| 15 | 8.633 | a. Chlordane | 10.0535 | 2.121 | 39160.0 | 2.762 | BV | 0.035 | 18848.45 | 2.939 |
| 16 | 8.724 | Endosulfan I | 10.1229 | 2.135 | 35617.2 | 2.512 | VV | 0.035 | 16739.77 | 2.610 |
| 17 | 8.828 | 4,4'-DDE | 20.3066 | 4.283 | 63577.9 | 4.485 | VB | 0.033 | 32291.53 | 5.035 |
| 18 | 9.088 | Dieldrin | 19.8133 | 4.179 | 68064.1 | 4.801 | BB | 0.034 | 33025.46 | 5.150 |
| 19 | 9.500 | Endrin | 20.1107 | 4.242 | 53264.8 | 3.757 | BV | 0.035 | 25543.83 | 3.983 |
| 20 | 9.593 | 4,4'-DDD | 20.6222 | 4.350 | 46132.8 | 3.254 | VV | 0.033 | 23057.12 | 3.595 |
| 21 | 9.657 | Kepone | 16.2174 | 3.421 | 6746.0 | 0.476 | VB | 0.040 | 2796.09 | 0.436 |
| 22 | 9.780 | Endosulfan II | 20.3705 | 4.297 | 68306.4 | 4.818 | BB | 0.035 | 32516.69 | 5.070 |
| 23 | 10.004 | 4,4'-DDT | 20.4582 | 4.315 | 50192.7 | 3.541 | BB | 0.034 | 24733.03 | 3.857 |
| 24 | 10.215 | Endrin aldehyde | 20.3266 | 4.287 | 63555.8 | 4.483 | BB | 0.036 | 29424.63 | 4.588 |
| 25 | 10.369 | | 0.0000 | 0.000 | 2138.5 | 0.151 | BB | 0.045 | 788.60 | 0.123 |
| 26 | 10.572 | Endo. sulfate | 20.3996 | 4.303 | 62065.3 | 4.378 | BB | 0.036 | 28834.95 | 4.496 |
| 27 | 10.878 | Methoxychlor | 100.4574 | 21.189 | 133630.6 | 9.426 | BB | 0.035 | 64367.61 | 10.037 |
| 28 | 11.195 | | 0.0000 | 0.000 | 2836.9 | 0.200 | BB | 0.041 | 1146.26 | 0.179 |
| 29 | 11.333 | Endrin ketone | 20.3983 | 4.303 | 77862.3 | 5.492 | BB | 0.039 | 33337.12 | 5.198 |
| 30 | 13.374 | DCB | 36.7019 | 7.741 | 184714.2 | 13.030 | BB | 0.049 | 62224.10 | 9.703 |

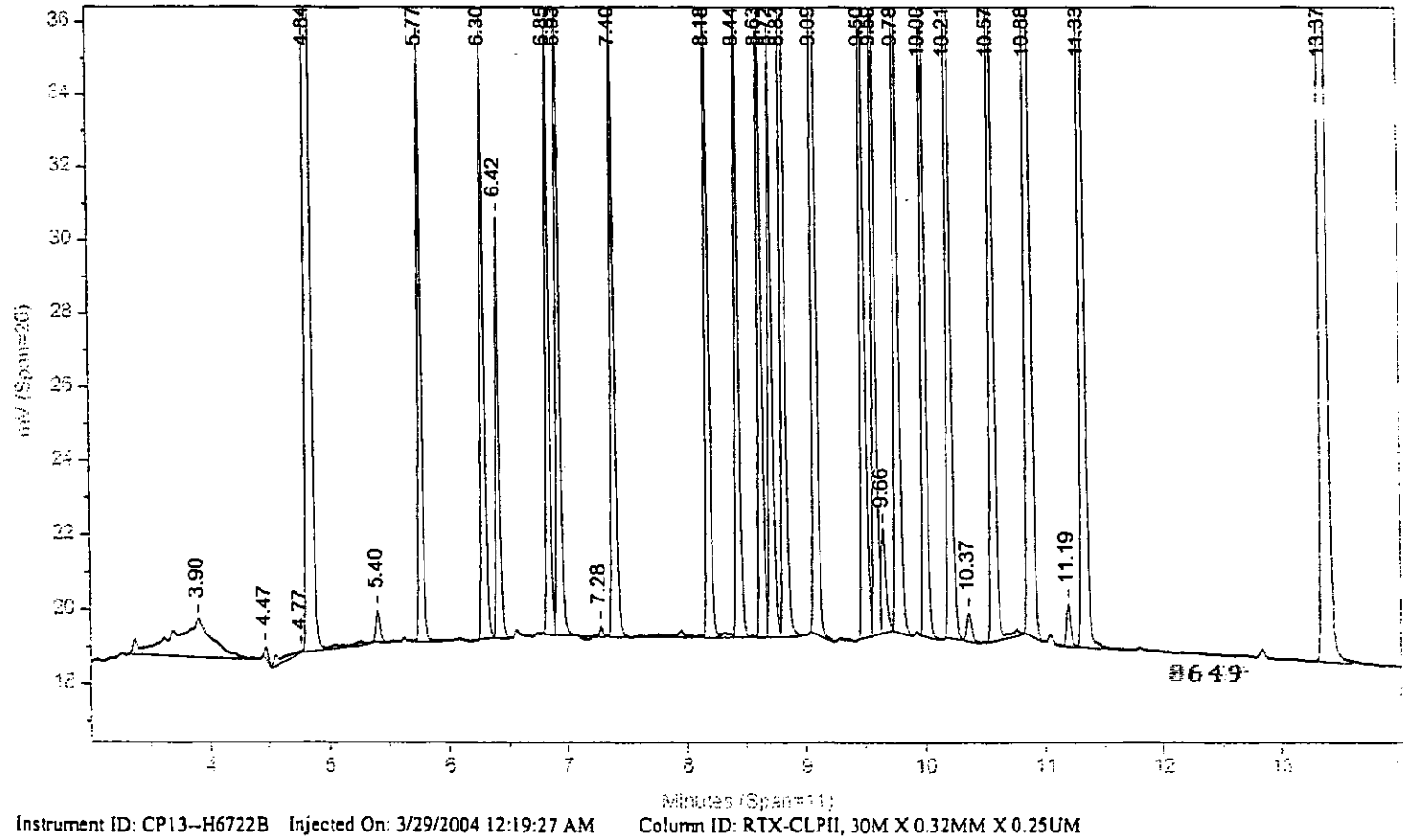
Total Area = 1417642.0, Total Amount = 474.098, Total Height = 641313.7, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.15R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 12:19:27 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.15R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 12:19:27 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

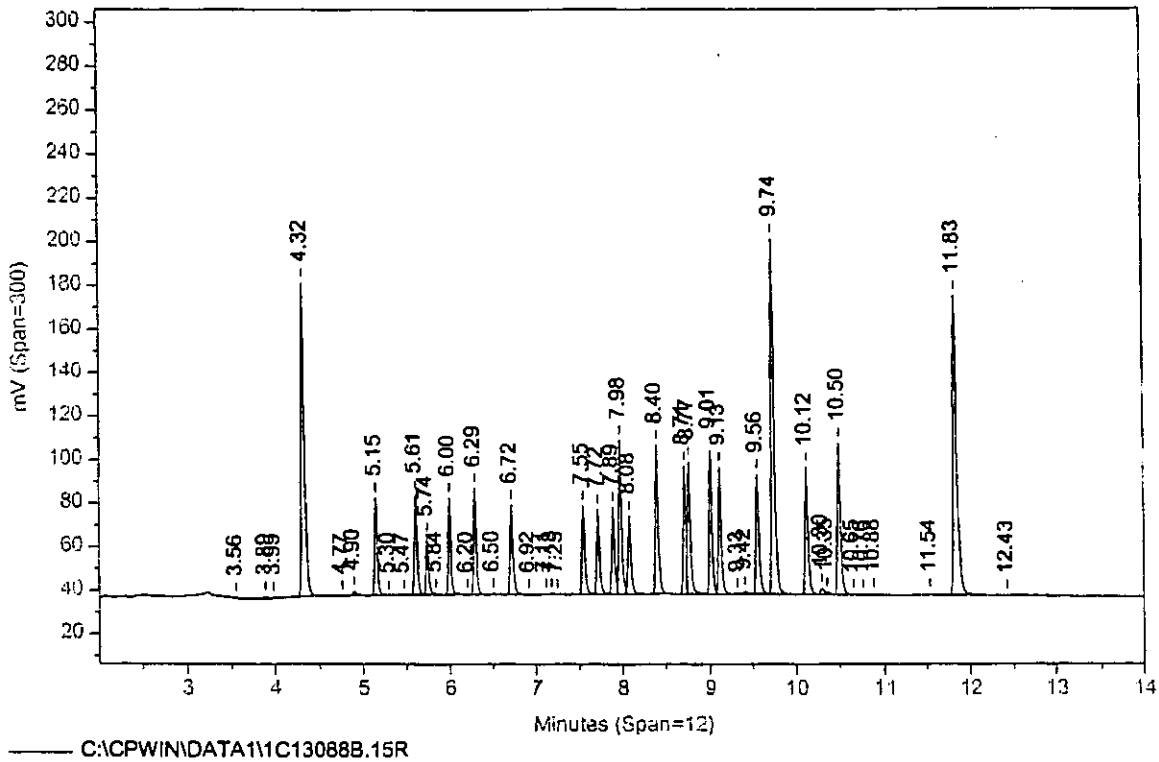
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.32 | 144259 | 38.00767 | TCX | 4.838 | 75746 | 38.72078 | TCX |
| 4.896 | 1648 | .23683 | HCB | . | 0 | . | HCB |
| 5.149 | 44998 | 9.7175 | alpha-BHC | 5.767 | 16317 | 9.47527 | alpha-BHC |
| 5.611 | 46003 | 9.92486 | gamma-BHC | 6.298 | 17042 | 9.75772 | gamma-BHC |
| 5.741 | 26046 | 10.10873 | beta-BHC | 6.418 | 11483 | 9.93182 | beta-BHC |
| 5.998 | 44810 | 10.18977 | delta-BHC | 6.846 | 16509 | 9.74776 | delta-BHC |
| 6.292 | 48797 | 9.87554 | Heptachlor | 6.935 | 18032 | 9.76754 | Heptachlor |
| 6.716 | 41134 | 10.31717 | Aldrin | 7.398 | 17383 | 10.22953 | Aldrin |
| 7.548 | 40917 | 10.25187 | Hept. epoxide | 8.184 | 18251 | 10.11282 | Hept. epoxide |
| 7.716 | 38845 | 10.03189 | g. Chlordane | 8.439 | 18224 | 9.99612 | g. Chlordane |
| 7.892 | 40102 | 9.70345 | a. Chlordane | 8.633 | 18848 | 10.05346 | a. Chlordane |
| 7.977 | 70660 | 20.08019 | 4,4'-DDE | 8.828 | 32292 | 20.30663 | 4,4'-DDE |
| 8.084 | 36033 | 9.93373 | Endosulfan I | 8.724 | 16740 | 10.12293 | Endosulfan I |
| 8.4 | 68309 | 19.56419 | Dieldrin | 9.088 | 33025 | 19.81327 | Dieldrin |
| 8.712 | 59038 | 19.85707 | Endrin | 9.5 | 25544 | 20.11073 | Endrin |
| 8.766 | 61072 | 21.4579 | 4,4'-DDD | 9.593 | 23057 | 20.62221 | 4,4'-DDD |
| 9.014 | 66136 | 20.17769 | Endosulfan II | 9.78 | 32517 | 20.37047 | Endosulfan II |
| 9.129 | 58664 | 20.19475 | 4,4'-DDT | 10.004 | 24733 | 20.45818 | 4,4'-DDT |
| 9.557 | 54950 | 19.91531 | Endrin aldehyde | 10.215 | 29425 | 20.32665 | Endrin aldehyde |
| . | 0 | . | Kepone | 9.657 | 2796 | 16.21739 | Kepone |
| 9.741 | 164099 | 97.5547 | Methoxychlor | 10.878 | 64368 | 100.4574 | Methoxychlor |
| 10.124 | 58358 | 19.9679 | Endo. sulfate | 10.572 | 28835 | 20.39964 | Endo. sulfate |
| 10.497 | 69857 | 19.99582 | Endrin ketone | 11.333 | 33337 | 20.39828 | Endrin ketone |
| 11.834 | 137597 | 36.13345 | DCB | 13.374 | 62224 | 36.70191 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.15A
Area File: C:\CPWIN\DATA1\1C13088B.15A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:57:24 AM
File Reported On: 3/29/2004 at 9:57:33 AM

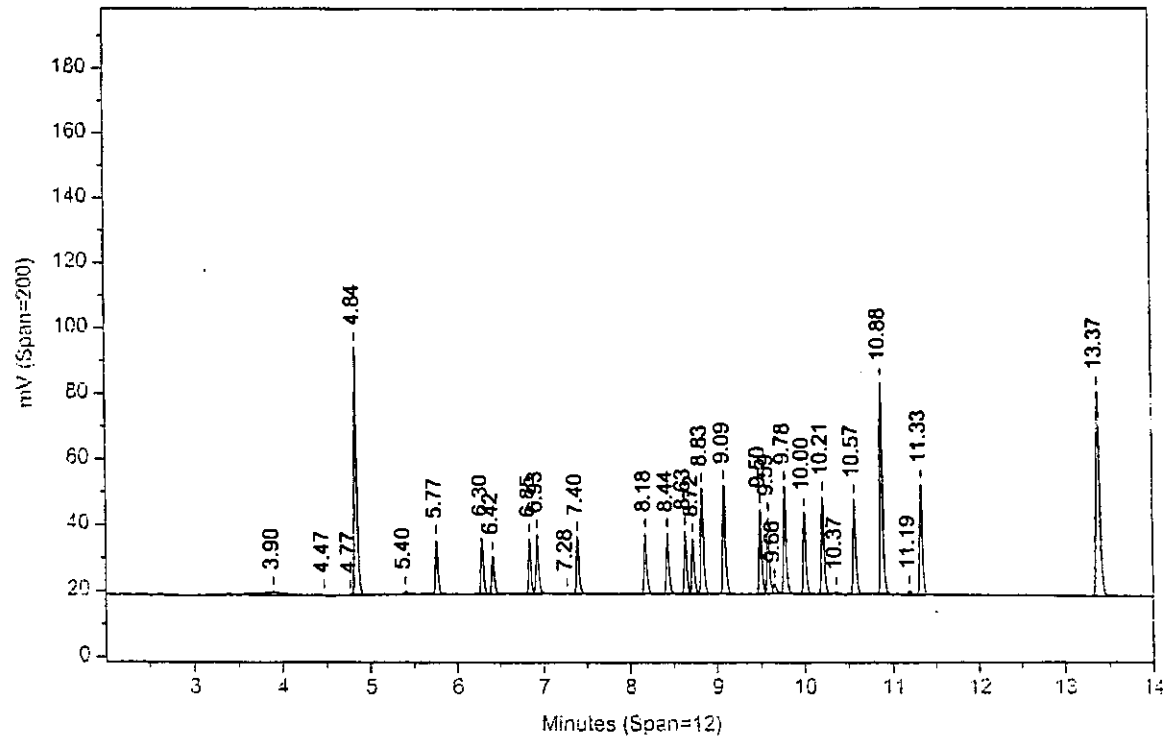
8658

10X REPLOTS

C:\CPWIN\DATA1\1C13088.15R




C:\CPWIN\DATA1\1C13088B.15R



Sample Name: **TOXWX03B AATOXWXAA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 12:54:07am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.16R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.559 | | 0.0000 | 0.000 | 891.0 | 0.040 | BB | 0.029 | 513.14 | 0.066 |
| 2 | 3.650 | | 0.0000 | 0.000 | 131.0 | 0.006 | BB | 0.031 | 69.58 | 0.009 |
| 3 | 3.809 | | 0.0000 | 0.000 | 334.9 | 0.015 | BB | 0.037 | 151.49 | 0.020 |
| 4 | 3.893 | | 0.0000 | 0.000 | 1327.7 | 0.059 | BB | 0.048 | 460.23 | 0.059 |
| 5 | 3.990 | | 0.0000 | 0.000 | 326.9 | 0.015 | BB | 0.039 | 138.03 | 0.018 |
| 6 | 4.071 | | 0.0000 | 0.000 | 459.5 | 0.021 | BB | 0.036 | 213.81 | 0.028 |
| 7 | 4.320 | TCX | 19.6846 | 17.657 | 181436.5 | 8.110 | BB | 0.040 | 74713.63 | 9.623 |
| 8 | 4.536 | | 0.0000 | 0.000 | 189.9 | 0.008 | BB | 0.039 | 81.38 | 0.010 |
| 9 | 4.767 | | 0.0000 | 0.000 | 720.8 | 0.032 | BB | 0.078 | 153.41 | 0.020 |
| 10 | 4.896 | HCB | 0.1274 | 0.114 | 1856.1 | 0.083 | BB | 0.035 | 886.26 | 0.114 |
| 11 | 4.961 | | 0.0000 | 0.000 | 142.0 | 0.006 | BB | 0.029 | 82.50 | 0.011 |
| 12 | 5.147 | alpha-BHC | 0.3091 | 0.277 | 3324.2 | 0.149 | BB | 0.039 | 1431.53 | 0.184 |
| 13 | 5.319 | | 0.0000 | 0.000 | 91.2 | 0.004 | BB | 0.043 | 35.42 | 0.005 |
| 14 | 5.583 | gamma-BHC | 0.1923 | 0.173 | 2405.5 | 0.108 | BB | 0.045 | 891.43 | 0.115 |
| 15 | 5.778 | | 0.0000 | 0.000 | 215.4 | 0.010 | BB | 0.081 | 44.57 | 0.006 |
| 16 | 5.844 | | 0.0000 | 0.000 | 408.9 | 0.018 | BB | 0.033 | 204.91 | 0.026 |
| 17 | 5.994 | delta-BHC | 0.0171 | 0.015 | 291.4 | 0.013 | BB | 0.065 | 75.30 | 0.010 |
| 18 | 6.110 | | 0.0000 | 0.000 | 1110.2 | 0.050 | BV | 0.045 | 407.97 | 0.053 |
| 19 | 6.159 | | 0.0000 | 0.000 | 1187.7 | 0.053 | VV | 0.049 | 402.91 | 0.052 |
| 20 | 6.282 | Heptachlor | 0.0359 | 0.032 | 478.3 | 0.021 | VV | 0.045 | 177.23 | 0.023 |
| 21 | 6.345 | | 0.0000 | 0.000 | 717.2 | 0.032 | VB | 0.055 | 217.98 | 0.028 |
| 22 | 6.505 | | 0.0000 | 0.000 | 1962.2 | 0.088 | BV | 0.057 | 574.58 | 0.074 |
| 23 | 6.693 | Aldrin | 0.0985 | 0.088 | 1962.2 | 0.088 | VV | 0.083 | 392.83 | 0.051 |
| 24 | 6.783 | | 0.0000 | 0.000 | 1470.5 | 0.066 | VB | 0.051 | 477.97 | 0.062 |
| 25 | 6.906 | | 0.0000 | 0.000 | 1461.5 | 0.065 | BV | 0.065 | 375.60 | 0.048 |
| 26 | 6.963 | | 0.0000 | 0.000 | 6611.5 | 0.296 | VB | 0.052 | 2125.49 | 0.274 |
| 27 | 7.126 | | 0.0000 | 0.000 | 383.1 | 0.017 | BB | 0.031 | 202.93 | 0.026 |
| 28 | 7.162 | | 0.0000 | 0.000 | 149.6 | 0.007 | BB | 0.021 | 119.58 | 0.015 |
| 29 | 7.205 | | 0.0000 | 0.000 | 202.7 | 0.009 | BB | 0.022 | 152.93 | 0.020 |
| 30 | 7.307 | | 0.0000 | 0.000 | 1890.7 | 0.085 | BV | 0.036 | 876.83 | 0.113 |
| 31 | 7.360 | | 0.0000 | 0.000 | 860.9 | 0.038 | VB | 0.027 | 523.30 | 0.067 |
| 32 | 7.416 | | 0.0000 | 0.000 | 4013.3 | 0.179 | BB | 0.032 | 2109.95 | 0.272 |
| 33 | 7.471 | | 0.0000 | 0.000 | 1832.2 | 0.082 | BB | 0.033 | 924.32 | 0.119 |
| 34 | 7.556 | Hept. epoxide | 0.1975 | 0.177 | 1564.0 | 0.070 | BV | 0.033 | 788.19 | 0.102 |
| 35 | 7.688 | | 0.0000 | 0.000 | 6580.9 | 0.294 | VV | 0.075 | 1463.73 | 0.189 |
| 36 | 7.747 | g. Chlordane | 0.3450 | 0.309 | 3447.5 | 0.154 | VB | 0.043 | 1335.97 | 0.172 |
| 37 | 7.880 | a. Chlordane | 1.4863 | 1.333 | 26617.5 | 1.190 | BB | 0.072 | 6142.64 | 0.791 |
| 38 | 7.999 | 4,4'-DDE | 0.1703 | 0.153 | 902.2 | 0.040 | BV | 0.025 | 599.16 | 0.077 |
| 39 | 8.082 | Endosulfan I | 1.1747 | 1.054 | 14520.4 | 0.649 | VV | 0.057 | 4260.91 | 0.549 |
| 40 | 8.163 | | 0.0000 | 0.000 | 3805.3 | 0.170 | VB | 0.044 | 1434.95 | 0.185 |
| 41 | 8.255 | | 0.0000 | 0.000 | 4509.0 | 0.202 | BV | 0.036 | 2106.85 | 0.271 |
| 42 | 8.350 | | 0.0000 | 0.000 | 31079.0 | 1.389 | VV | 0.050 | 10277.81 | 1.324 |
| 43 | 8.397 | Dieldrin | 2.5234 | 2.263 | 21655.3 | 0.968 | VB | 0.041 | 8810.70 | 1.135 |
| 44 | 8.518 | o,p-DDT | 5.6249 | 5.045 | 44384.5 | 1.984 | BV | 0.051 | 14429.52 | 1.859 |
| 45 | 8.606 | | 0.0000 | 0.000 | 77829.1 | 3.479 | VV | 0.072 | 17998.51 | 2.318 |
| 46 | 8.738 | Endrin | 6.0048 | 5.386 | 66725.0 | 2.983 | VV | 0.062 | 17853.17 | 2.300 |
| 47 | 8.818 | | 0.0000 | 0.000 | 37778.5 | 1.689 | VV | 0.039 | 15979.07 | 2.058 |
| 48 | 8.869 | | 0.0000 | 0.000 | 30729.7 | 1.374 | VV | 0.050 | 10208.91 | 1.315 |
| 49 | 8.986 | | 0.0000 | 0.000 | 64679.3 | 2.891 | VV | 0.065 | 16576.22 | 2.135 |
| 50 | 9.025 | Endosulfan II | 4.6014 | 4.127 | 34807.9 | 1.556 | VV | 0.038 | 15081.93 | 1.943 |
| 51 | 9.106 | | 0.0000 | 0.000 | 72519.9 | 3.242 | VV | 0.061 | 19908.29 | 2.564 |
| 52 | 9.148 | 4,4'-DDT | 9.1076 | 8.169 | 69381.7 | 3.101 | VV | 0.044 | 26456.89 | 3.408 |
| 53 | 9.220 | | 0.0000 | 0.000 | 2972.3 | 0.133 | VB | 0.028 | 1763.22 | 0.227 |
| 54 | 9.289 | | 0.0000 | 0.000 | 1798.2 | 0.080 | BB | 0.034 | 883.88 | 0.114 |
| 55 | 9.350 | | 0.0000 | 0.000 | 36742.8 | 1.642 | BV | 0.045 | 13506.68 | 1.740 |
| 56 | 9.428 | | 0.0000 | 0.000 | 82065.8 | 3.668 | VV | 0.049 | 27993.35 | 3.606 |
| 57 | 9.516 | | 0.0000 | 0.000 | 117332.6 | 5.245 | VV | 0.058 | 33486.82 | 4.313 |
| 58 | 9.587 | Endrin aldehyde | 3.3981 | 3.048 | 26213.4 | 1.172 | VV | 0.047 | 9375.83 | 1.208 |
| 59 | 9.674 | | 0.0000 | 0.000 | 38078.3 | 1.702 | VV | 0.034 | 18642.33 | 2.401 |
| 60 | 9.727 | Methoxychlor | 13.0996 | 11.750 | 56711.0 | 2.535 | VV | 0.043 | 22035.14 | 2.838 |
| 61 | 9.805 | | 0.0000 | 0.000 | 6789.6 | 0.304 | VB | 0.026 | 4388.46 | 0.565 |
| 62 | 9.867 | | 0.0000 | 0.000 | 70975.8 | 3.173 | BV | 0.051 | 23361.55 | 3.009 |
| 63 | 9.989 | Mirex | 13.7604 | 12.343 | 136686.0 | 6.110 | VV | 0.059 | 38369.99 | 4.942 |
| 64 | 10.046 | | 0.0000 | 0.000 | 94508.5 | 4.225 | VV | 0.054 | 29303.29 | 3.774 |

8652

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.105 | Endo. sulfate | 10.4357 | 9.361 | 80606.0 | 3.603 | VV | 0.044 | 30499.51 | 3.928 |
| 66 | 10.202 | | 0.0000 | 0.000 | 29883.8 | 1.336 | VB | 0.033 | 14993.75 | 1.931 |
| 67 | 10.282 | | 0.0000 | 0.000 | 39921.1 | 1.785 | BV | 0.045 | 14624.04 | 1.884 |
| 68 | 10.352 | | 0.0000 | 0.000 | 29696.9 | 1.327 | VV | 0.046 | 10792.38 | 1.390 |
| 69 | 10.455 | | 0.0000 | 0.000 | 99817.0 | 4.462 | VV | 0.052 | 31715.77 | 4.085 |
| 70 | 10.539 | | 0.0000 | 0.000 | 13086.0 | 0.585 | VV | 0.029 | 7418.07 | 0.955 |
| 71 | 10.579 | | 0.0000 | 0.000 | 40208.0 | 1.797 | VV | 0.040 | 16743.12 | 2.157 |
| 72 | 10.644 | | 0.0000 | 0.000 | 63743.0 | 2.849 | VV | 0.047 | 22401.50 | 2.885 |
| 73 | 10.724 | | 0.0000 | 0.000 | 18385.2 | 0.822 | VV | 0.035 | 8729.93 | 1.124 |
| 74 | 10.761 | | 0.0000 | 0.000 | 25863.8 | 1.156 | VV | 0.038 | 11207.50 | 1.444 |
| 75 | 10.807 | | 0.0000 | 0.000 | 14573.3 | 0.651 | VV | 0.037 | 6519.18 | 0.840 |
| 76 | 10.884 | | 0.0000 | 0.000 | 3908.4 | 0.175 | VB | 0.037 | 1777.02 | 0.229 |
| 77 | 10.970 | | 0.0000 | 0.000 | 11445.3 | 0.512 | BB | 0.058 | 3289.48 | 0.424 |
| 78 | 11.141 | | 0.0000 | 0.000 | 7966.1 | 0.356 | BB | 0.040 | 3318.93 | 0.427 |
| 79 | 11.221 | | 0.0000 | 0.000 | 11513.0 | 0.515 | BB | 0.042 | 4605.85 | 0.593 |
| 80 | 11.351 | | 0.0000 | 0.000 | 5530.9 | 0.247 | BB | 0.056 | 1653.55 | 0.213 |
| 81 | 11.503 | | 0.0000 | 0.000 | 3583.8 | 0.160 | BB | 0.041 | 1442.13 | 0.186 |
| 82 | 11.605 | | 0.0000 | 0.000 | 9202.7 | 0.411 | BB | 0.055 | 2806.97 | 0.362 |
| 83 | 11.740 | | 0.0000 | 0.000 | 565.4 | 0.025 | BB | 0.038 | 245.88 | 0.032 |
| 84 | 11.835 | DCB | 19.0897 | 17.123 | 212037.6 | 9.478 | BB | 0.049 | 72694.24 | 9.363 |
| 85 | 11.988 | | 0.0000 | 0.000 | 1838.6 | 0.082 | BB | 0.037 | 824.46 | 0.106 |
| 86 | 12.124 | | 0.0000 | 0.000 | 2829.1 | 0.126 | BB | 0.039 | 1201.12 | 0.155 |
| 87 | 12.203 | | 0.0000 | 0.000 | 448.2 | 0.020 | BB | 0.032 | 230.42 | 0.030 |
| 88 | 12.329 | | 0.0000 | 0.000 | 823.9 | 0.037 | BB | 0.064 | 213.99 | 0.028 |
| 89 | 12.467 | | 0.0000 | 0.000 | 1099.5 | 0.049 | BB | 0.063 | 293.00 | 0.038 |
| 90 | 12.548 | | 0.0000 | 0.000 | 227.4 | 0.010 | BB | 0.035 | 108.57 | 0.014 |
| 91 | 12.649 | | 0.0000 | 0.000 | 1351.2 | 0.060 | BB | 0.042 | 535.37 | 0.069 |
| 92 | 12.775 | | 0.0000 | 0.000 | 1413.2 | 0.063 | BB | 0.064 | 366.65 | 0.047 |
| 93 | 13.168 | | 0.0000 | 0.000 | 253.3 | 0.011 | BB | 0.041 | 103.24 | 0.013 |

Total Area = 2237059.0, Total Amount = 111.485, Total Height = 776388.7, Sample Units = PPB

Sample Name: **TOXWX03B AATOXWXAA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 12:54:07am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: C:\CPWIN\DATA1\1C13088B.16R
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.690 | | 0.0000 | 0.000 | 12601.2 | 1.671 | BB | 0.416 | 504.31 | 0.173 |
| 2 | 4.838 | TCX | 19.3407 | 20.814 | 81291.7 | 10.778 | BB | 0.036 | 37834.59 | 12.947 |
| 3 | 5.403 | | 0.0000 | 0.000 | 698.4 | 0.093 | BB | 0.029 | 394.90 | 0.135 |
| 4 | 5.761 | alpha-BHC | 0.2947 | 0.317 | 988.3 | 0.131 | BB | 0.032 | 507.50 | 0.174 |
| 5 | 6.278 | gamma-BHC | 0.1846 | 0.199 | 674.5 | 0.089 | BB | 0.035 | 322.34 | 0.110 |
| 6 | 7.244 | | 0.0000 | 0.000 | 824.3 | 0.109 | BB | 0.045 | 303.64 | 0.104 |
| 7 | 7.523 | | 0.0000 | 0.000 | 2160.6 | 0.286 | BB | 0.063 | 568.95 | 0.195 |
| 8 | 7.705 | | 0.0000 | 0.000 | 1017.9 | 0.135 | BV | 0.055 | 311.22 | 0.106 |
| 9 | 7.937 | | 0.0000 | 0.000 | 1030.9 | 0.137 | VV | 0.045 | 385.65 | 0.132 |
| 10 | 7.970 | | 0.0000 | 0.000 | 3553.9 | 0.471 | VV | 0.040 | 1468.72 | 0.503 |
| 11 | 8.084 | | 0.0000 | 0.000 | 943.6 | 0.125 | VV | 0.041 | 385.25 | 0.132 |
| 12 | 8.164 | Hept. epoxide | 0.6747 | 0.726 | 4952.5 | 0.657 | VB | 0.068 | 1217.67 | 0.417 |
| 13 | 8.314 | | 0.0000 | 0.000 | 2697.8 | 0.358 | BV | 0.038 | 1182.78 | 0.405 |
| 14 | 8.418 | o,p-DDE | 0.5945 | 0.640 | 2612.2 | 0.346 | VV | 0.059 | 739.16 | 0.253 |
| 15 | 8.531 | | 0.0000 | 0.000 | 11358.8 | 1.506 | VB | 0.056 | 3396.82 | 1.162 |
| 16 | 8.684 | | 0.0000 | 0.000 | 1566.2 | 0.208 | BV | 0.039 | 667.41 | 0.228 |
| 17 | 8.743 | Endosulfan I | 0.7595 | 0.817 | 2594.5 | 0.344 | VV | 0.034 | 1255.94 | 0.430 |
| 18 | 8.796 | | 0.0000 | 0.000 | 2247.1 | 0.298 | VB | 0.035 | 1067.54 | 0.365 |
| 19 | 8.856 | 4,4'-DDE | 0.3338 | 0.359 | 670.0 | 0.089 | BV | 0.021 | 530.89 | 0.182 |
| 20 | 8.892 | | 0.0000 | 0.000 | 3992.1 | 0.529 | VB | 0.050 | 1323.63 | 0.453 |
| 21 | 8.984 | | 0.0000 | 0.000 | 1232.1 | 0.163 | BV | 0.028 | 721.27 | 0.247 |
| 22 | 9.053 | | 0.0000 | 0.000 | 25290.4 | 3.353 | VB | 0.050 | 8431.50 | 2.885 |
| 23 | 9.200 | | 0.0000 | 0.000 | 9659.7 | 1.281 | BV | 0.038 | 4232.38 | 1.448 |
| 24 | 9.293 | | 0.0000 | 0.000 | 12851.6 | 1.704 | VV | 0.052 | 4138.36 | 1.416 |
| 25 | 9.351 | | 0.0000 | 0.000 | 15365.0 | 2.037 | VV | 0.042 | 6124.29 | 2.096 |
| 26 | 9.403 | | 0.0000 | 0.000 | 25961.1 | 3.442 | VV | 0.067 | 6448.70 | 2.207 |
| 27 | 9.490 | Endrin | 2.3552 | 2.535 | 9173.8 | 1.216 | VB | 0.051 | 2991.45 | 1.024 |
| 28 | 9.605 | 4,4'-DDD | 5.7247 | 6.161 | 15735.9 | 2.086 | BV | 0.041 | 6400.63 | 2.190 |
| 29 | 9.698 | | 0.0000 | 0.000 | 9952.5 | 1.319 | VV | 0.034 | 4826.12 | 1.651 |
| 30 | 9.753 | Endosulfan II | 4.0538 | 4.362 | 13238.9 | 1.755 | VB | 0.034 | 6470.87 | 2.214 |
| 31 | 9.879 | | 0.0000 | 0.000 | 46780.9 | 6.202 | BB | 0.045 | 17442.51 | 5.969 |
| 32 | 9.985 | 4,4'-DDT | 4.8445 | 5.213 | 13102.1 | 1.737 | BB | 0.037 | 5856.84 | 2.004 |
| 33 | 10.125 | | 0.0000 | 0.000 | 18526.5 | 2.456 | BB | 0.041 | 7445.88 | 2.548 |
| 34 | 10.211 | Endrin aldehyde | 8.2259 | 8.852 | 32681.1 | 4.333 | BB | 0.046 | 11907.74 | 4.075 |
| 35 | 10.331 | | 0.0000 | 0.000 | 30896.6 | 4.096 | BB | 0.052 | 9857.48 | 3.373 |
| 36 | 10.397 | | 0.0000 | 0.000 | 3607.5 | 0.478 | BB | 0.029 | 2047.26 | 0.701 |
| 37 | 10.492 | | 0.0000 | 0.000 | 13848.8 | 1.836 | BB | 0.039 | 5852.61 | 2.003 |
| 38 | 10.564 | Endo. sulfate | 3.8871 | 4.183 | 8773.5 | 1.163 | BB | 0.027 | 5494.46 | 1.880 |
| 39 | 10.644 | | 0.0000 | 0.000 | 4153.7 | 0.551 | BB | 0.025 | 2817.07 | 0.964 |
| 40 | 10.691 | | 0.0000 | 0.000 | 1139.4 | 0.151 | BB | 0.025 | 768.45 | 0.263 |
| 41 | 10.726 | | 0.0000 | 0.000 | 4735.4 | 0.628 | BB | 0.031 | 2540.29 | 0.869 |
| 42 | 10.827 | | 0.0000 | 0.000 | 2453.0 | 0.325 | BB | 0.023 | 1806.79 | 0.618 |
| 43 | 10.902 | Methoxychlor | 22.1679 | 23.856 | 35229.1 | 4.671 | BB | 0.041 | 14204.01 | 4.861 |
| 44 | 10.967 | | 0.0000 | 0.000 | 22924.7 | 3.039 | BB | 0.043 | 8852.68 | 3.029 |
| 45 | 11.046 | | 0.0000 | 0.000 | 11638.1 | 1.543 | BB | 0.029 | 6700.17 | 2.293 |
| 46 | 11.172 | | 0.0000 | 0.000 | 10702.9 | 1.419 | BB | 0.038 | 4669.16 | 1.598 |
| 47 | 11.239 | | 0.0000 | 0.000 | 12087.2 | 1.603 | BB | 0.041 | 4864.54 | 1.665 |
| 48 | 11.387 | | 0.0000 | 0.000 | 17625.6 | 2.337 | BB | 0.050 | 5847.02 | 2.001 |
| 49 | 11.466 | | 0.0000 | 0.000 | 24571.2 | 3.258 | BB | 0.043 | 9581.45 | 3.279 |
| 50 | 11.564 | | 0.0000 | 0.000 | 7882.3 | 1.045 | BB | 0.058 | 2250.78 | 0.770 |
| 51 | 11.657 | | 0.0000 | 0.000 | 7191.8 | 0.953 | BB | 0.033 | 3683.15 | 1.260 |
| 52 | 11.731 | | 0.0000 | 0.000 | 19065.4 | 2.528 | BB | 0.043 | 7353.64 | 2.516 |
| 53 | 11.827 | | 0.0000 | 0.000 | 5057.7 | 0.671 | BB | 0.033 | 2561.47 | 0.877 |
| 54 | 11.930 | | 0.0000 | 0.000 | 10077.3 | 1.336 | BB | 0.065 | 2573.78 | 0.881 |
| 55 | 12.043 | | 0.0000 | 0.000 | 1956.5 | 0.259 | BB | 0.037 | 879.86 | 0.301 |
| 56 | 12.103 | | 0.0000 | 0.000 | 523.7 | 0.069 | BB | 0.027 | 326.28 | 0.112 |
| 57 | 12.193 | | 0.0000 | 0.000 | 4058.3 | 0.538 | BB | 0.048 | 1408.33 | 0.482 |
| 58 | 12.309 | | 0.0000 | 0.000 | 1427.4 | 0.189 | BB | 0.050 | 479.40 | 0.164 |
| 59 | 12.483 | | 0.0000 | 0.000 | 1092.8 | 0.145 | BB | 0.030 | 603.38 | 0.206 |
| 60 | 12.538 | | 0.0000 | 0.000 | 2986.0 | 0.396 | BB | 0.043 | 1151.65 | 0.394 |
| 61 | 12.643 | | 0.0000 | 0.000 | 2209.5 | 0.293 | BB | 0.043 | 856.72 | 0.293 |
| 62 | 13.057 | | 0.0000 | 0.000 | 277.2 | 0.037 | BB | 0.027 | 173.78 | 0.059 |
| 63 | 13.114 | | 0.0000 | 0.000 | 1013.5 | 0.134 | BB | 0.036 | 467.37 | 0.160 |
| 64 | 13.194 | | 0.0000 | 0.000 | 571.3 | 0.076 | BB | 0.033 | 290.12 | 0.099 |

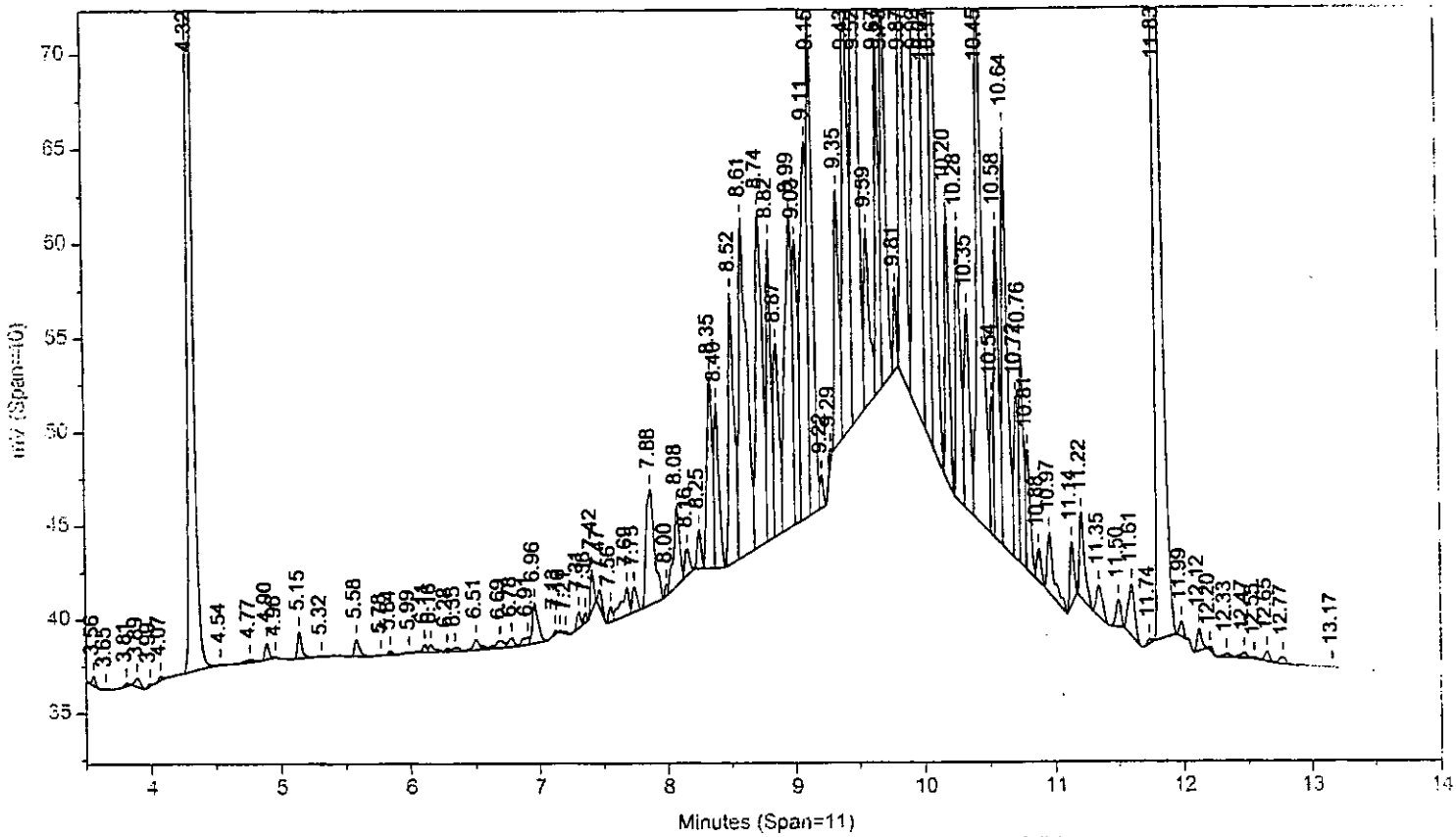
0654

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 13.375 DCB | | 19.4823 | 20.966 | 95604.6 | 12.675 | BB | 0.048 | 33030.09 | 11.303 |
| 66 | 13.492 | | 0.0000 | 0.000 | 854.7 | 0.113 | BB | 0.033 | 426.43 | 0.146 |

Total Area = 754264.8, Total Amount = 92.924, Total Height = 292227.2, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.16R

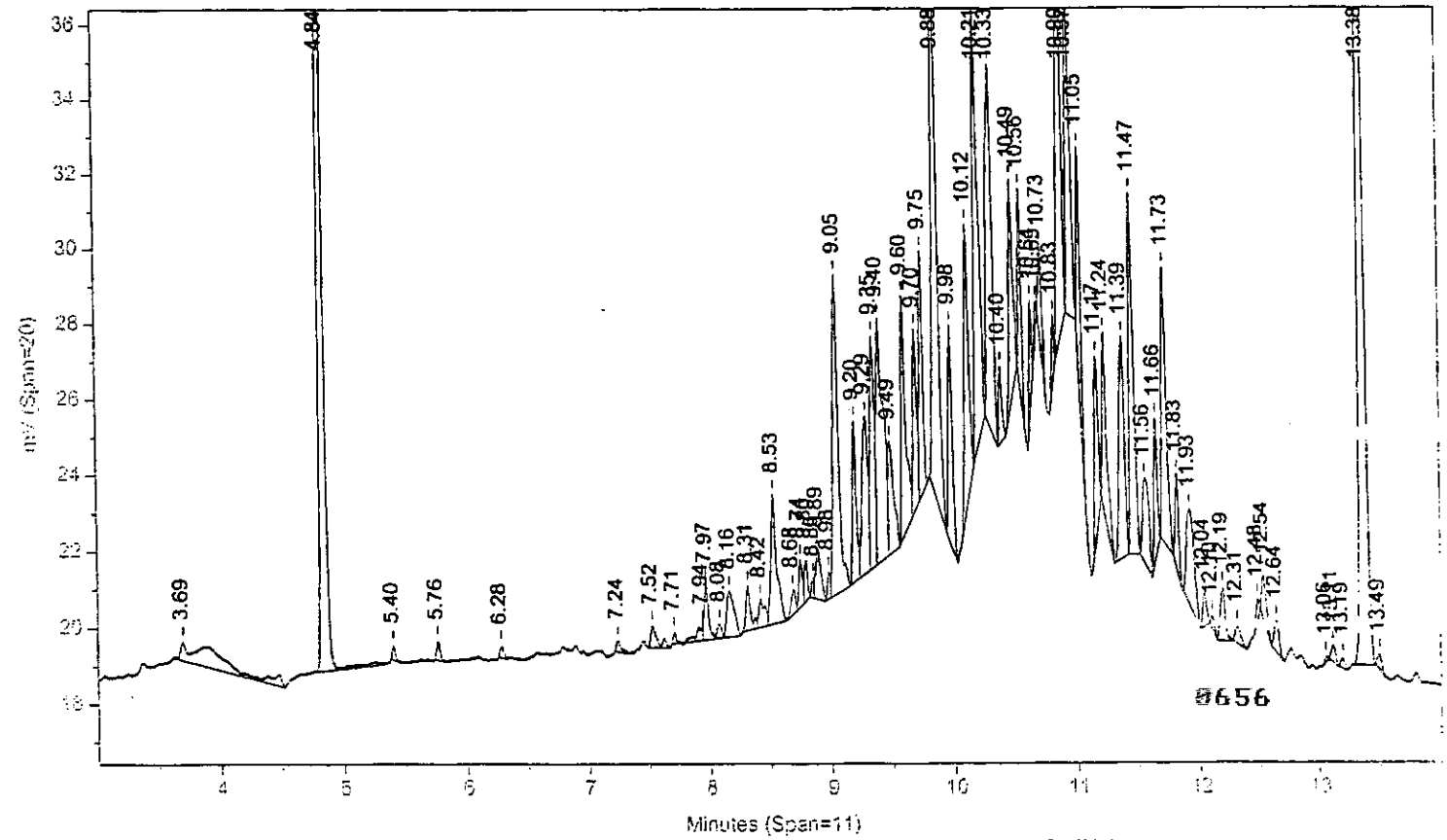
C:\CPWIN\DATA1\1C13088.16R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 12:40:07 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.16R

C:\CPWIN\DATA1\1C13088B.16R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 12:40:07 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

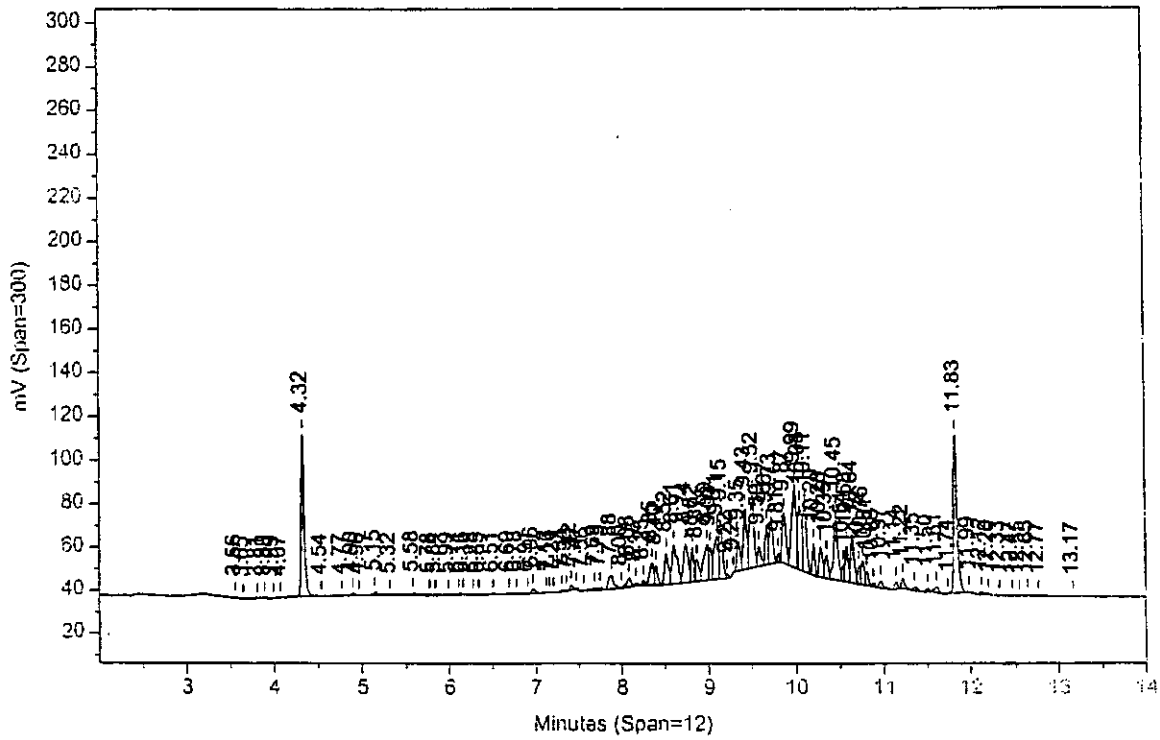
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.32 | 74714 | 19.68461 | TCX | 4.838 | 37835 | 19.34074 | TCX |
| 4.896 | 886 | .12737 | HCB | . | 0 | . | HCB |
| 5.147 | 1432 | .30914 | alpha-BHC | 5.761 | 507 | .2947 | alpha-BHC |
| 5.583 | 891 | .19232 | gamma-BHC | 6.278 | 322 | .18457 | gamma-BHC |
| 5.994 | 75 | .01712 | delta-BHC | . | 0 | . | delta-BHC |
| 6.282 | 177 | .03587 | Heptachlor | . | 0 | . | Heptachlor |
| 6.693 | 393 | .09853 | Aldrin | . | 0 | . | Aldrin |
| 7.556 | 788 | .19748 | Hept. epoxide | 8.164 | 1218 | .67471 | Hept. epoxide |
| 7.747 | 1336 | .34502 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.88 | 6143 | 1.48634 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.999 | 599 | .17027 | 4,4'-DDE | 8.856 | 531 | .33385 | 4,4'-DDE |
| 8.082 | 4261 | 1.17465 | Endosulfan I | 8.743 | 1256 | .7595 | Endosulfan I |
| 8.397 | 8811 | 2.52345 | Dieldrin | . | 0 | . | Dieldrin |
| . | 0 | . | o,p-DDE | 8.418 | 739 | .59447 | o,p-DDE |
| 8.518 | 14430 | 5.62494 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.738 | 17853 | 6.00483 | Endrin | 9.49 | 2991 | 2.35518 | Endrin |
| 9.025 | 15082 | 4.6014 | Endosulfan II | 9.753 | 6471 | 4.05375 | Endosulfan II |
| 9.148 | 26457 | 9.10765 | 4,4'-DDT | 9.985 | 5857 | 4.84455 | 4,4'-DDT |
| 9.587 | 9376 | 3.39805 | Endrin aldehyde | 10.211 | 11908 | 8.22591 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.605 | 6401 | 5.72471 | 4,4'-DDD |
| 9.727 | 22035 | 13.09962 | Methoxychlor | 10.902 | 14204 | 22.16794 | Methoxychlor |
| 9.989 | 38370 | 13.76043 | Mirex | . | 0 | . | Mirex |
| 10.105 | 30500 | 10.43571 | Endo. sulfate | 10.564 | 5494 | 3.88712 | Endo. sulfate |
| 11.835 | 72694 | 19.08975 | DCB | 13.375 | 33030 | 19.48228 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.16A
Area File: C:\CPWIN\DATA1\1C13088B.16A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:57:48 AM
File Reported On: 3/29/2004 at 9:57:58 AM

8657

10X REPLOTS

C:\CPWIN\DATA1\1C13088.16R

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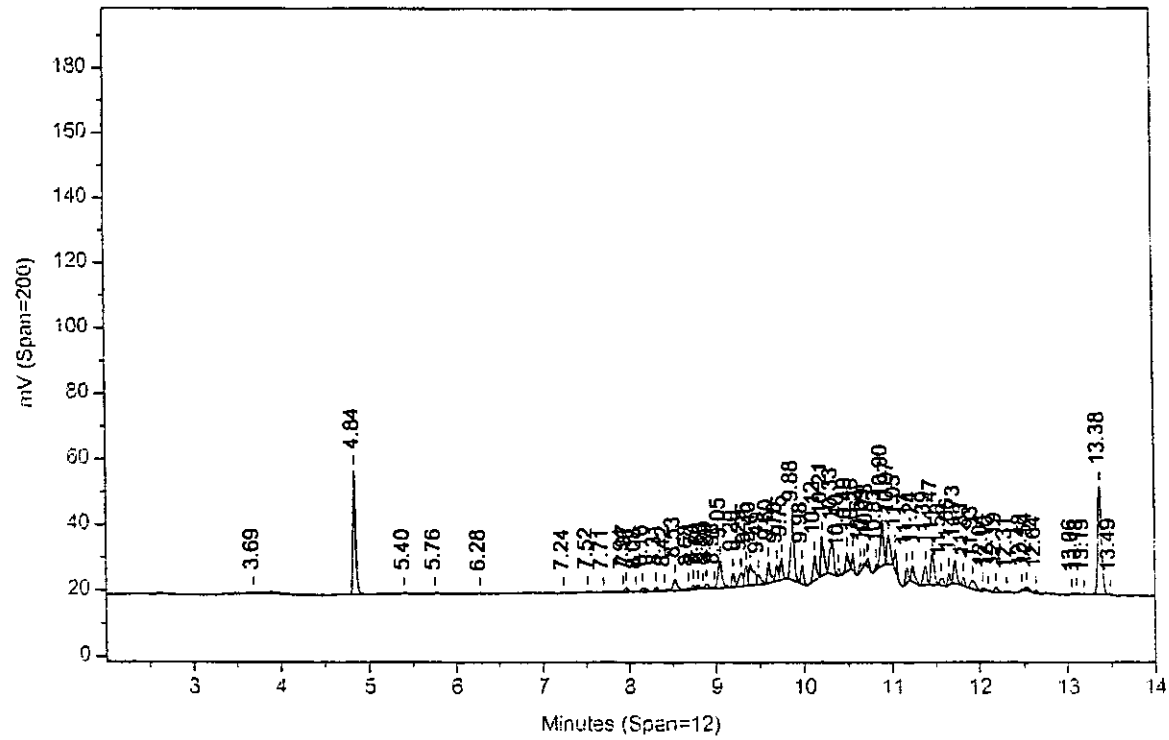


Sample Name: **AR1610424D AAAR161AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 01:35:22am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.18R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.559 | | 0.0000 | 0.000 | 1155.3 | 0.185 | BB | 0.030 | 633.45 | 0.284 |
| 2 | 3.698 | | 0.0000 | 0.000 | 147.8 | 0.024 | BB | 0.035 | 71.12 | 0.032 |
| 3 | 3.893 | | 0.0000 | 0.000 | 2160.9 | 0.346 | BB | 0.066 | 549.70 | 0.246 |
| 4 | 3.987 | | 0.0000 | 0.000 | 434.1 | 0.069 | BB | 0.036 | 199.02 | 0.089 |
| 5 | 4.319 | TCX | 2.0800 | 11.044 | 22327.3 | 3.573 | BB | 0.047 | 7894.70 | 3.536 |
| 6 | 4.569 | | 0.0000 | 0.000 | 1954.1 | 0.313 | BB | 0.045 | 721.80 | 0.323 |
| 7 | 4.787 | | 0.0000 | 0.000 | 1169.0 | 0.187 | BB | 0.030 | 648.98 | 0.291 |
| 8 | 4.848 | | 0.0000 | 0.000 | 10542.0 | 1.687 | BB | 0.040 | 4383.58 | 1.963 |
| 9 | 5.032 | | 0.0000 | 0.000 | 1483.6 | 0.237 | BB | 0.043 | 578.94 | 0.259 |
| 10 | 5.209 | | 0.0000 | 0.000 | 184.3 | 0.029 | BB | 0.082 | 37.50 | 0.017 |
| 11 | 5.360 | | 0.0000 | 0.000 | 25211.7 | 4.034 | BB | 0.054 | 7751.71 | 3.472 |
| 12 | 5.531 | | 0.0000 | 0.000 | 2139.7 | 0.342 | BB | 0.039 | 920.36 | 0.412 |
| 13 | 5.615 | gamma-BHC | 0.1679 | 0.891 | 1375.5 | 0.220 | BB | 0.029 | 778.17 | 0.349 |
| 14 | 5.650 | | 0.0000 | 0.000 | 4066.3 | 0.651 | BB | 0.030 | 2288.43 | 1.025 |
| 15 | 5.820 | | 0.0000 | 0.000 | 169.4 | 0.027 | BB | 0.037 | 75.85 | 0.034 |
| 16 | 5.908 | | 0.0000 | 0.000 | 4164.3 | 0.666 | BB | 0.040 | 1752.42 | 0.785 |
| 17 | 6.009 | delta-BHC | 2.8787 | 15.285 | 42662.3 | 6.827 | BB | 0.056 | 12659.26 | 5.670 |
| 18 | 6.090 | | 0.0000 | 0.000 | 684.8 | 0.110 | BB | 0.026 | 431.97 | 0.193 |
| 19 | 6.194 | | 0.0000 | 0.000 | 18336.5 | 2.934 | BV | 0.045 | 6806.49 | 3.049 |
| 20 | 6.281 | Heptachlor | 0.9454 | 5.020 | 10945.2 | 1.751 | VB | 0.039 | 4671.51 | 2.092 |
| 21 | 6.443 | | 0.0000 | 0.000 | 5119.3 | 0.819 | BV | 0.030 | 2871.59 | 1.286 |
| 22 | 6.476 | | 0.0000 | 0.000 | 4974.7 | 0.796 | VB | 0.033 | 2487.51 | 1.114 |
| 23 | 6.751 | | 0.0000 | 0.000 | 19571.5 | 3.132 | BV | 0.056 | 5859.13 | 2.624 |
| 24 | 6.866 | | 0.0000 | 0.000 | 6716.9 | 1.075 | VV | 0.037 | 3012.20 | 1.349 |
| 25 | 6.919 | | 0.0000 | 0.000 | 9950.8 | 1.592 | VB | 0.051 | 3272.84 | 1.466 |
| 26 | 7.069 | | 0.0000 | 0.000 | 2524.8 | 0.404 | BB | 0.044 | 958.86 | 0.429 |
| 27 | 7.200 | | 0.0000 | 0.000 | 767.6 | 0.123 | BV | 0.030 | 424.78 | 0.190 |
| 28 | 7.262 | | 0.0000 | 0.000 | 8035.3 | 1.286 | VB | 0.041 | 3271.75 | 1.465 |
| 29 | 7.533 | o,p-DDE | 0.2308 | 1.225 | 1375.5 | 0.220 | BV | 0.039 | 589.20 | 0.264 |
| 30 | 7.599 | | 0.0000 | 0.000 | 12759.6 | 2.042 | VB | 0.047 | 4529.27 | 2.029 |
| 31 | 7.856 | | 0.0000 | 0.000 | 4244.5 | 0.679 | BV | 0.098 | 724.80 | 0.325 |
| 32 | 7.969 | 4,4'-DDE | 0.7367 | 3.912 | 6909.5 | 1.106 | VB | 0.044 | 2592.31 | 1.161 |
| 33 | 8.131 | | 0.0000 | 0.000 | 3410.4 | 0.546 | BV | 0.031 | 1831.57 | 0.820 |
| 34 | 8.184 | o,p-DDD | 1.7963 | 9.538 | 7805.7 | 1.249 | VB | 0.034 | 3867.90 | 1.732 |
| 35 | 8.266 | | 0.0000 | 0.000 | 2724.7 | 0.436 | BB | 0.037 | 1241.47 | 0.556 |
| 36 | 8.368 | | 0.0000 | 0.000 | 25259.5 | 4.042 | BB | 0.041 | 10151.21 | 4.547 |
| 37 | 8.497 | | 0.0000 | 0.000 | 2553.7 | 0.409 | BB | 0.041 | 1033.37 | 0.463 |
| 38 | 8.645 | | 0.0000 | 0.000 | 3931.6 | 0.629 | BV | 0.037 | 1771.31 | 0.793 |
| 39 | 8.720 | Endrin | 4.4152 | 23.444 | 51706.1 | 8.274 | VV | 0.066 | 13126.84 | 5.879 |
| 40 | 8.889 | | 0.0000 | 0.000 | 14496.9 | 2.320 | VV | 0.041 | 5865.34 | 2.627 |
| 41 | 9.021 | Endosulfan II | 0.1540 | 0.818 | 1060.2 | 0.170 | VV | 0.035 | 504.64 | 0.226 |
| 42 | 9.094 | | 0.0000 | 0.000 | 43155.7 | 6.905 | VV | 0.055 | 13063.16 | 5.851 |
| 43 | 9.233 | | 0.0000 | 0.000 | 20592.8 | 3.295 | VV | 0.042 | 8263.38 | 3.701 |
| 44 | 9.293 | | 0.0000 | 0.000 | 11851.6 | 1.896 | VB | 0.042 | 4684.65 | 2.098 |
| 45 | 9.416 | | 0.0000 | 0.000 | 2731.3 | 0.437 | BV | 0.036 | 1251.31 | 0.560 |
| 46 | 9.475 | | 0.0000 | 0.000 | 2766.9 | 0.443 | VV | 0.047 | 971.43 | 0.435 |
| 47 | 9.560 | Endrin aldehyde | 2.8798 | 15.291 | 18655.3 | 2.985 | VV | 0.039 | 7945.93 | 3.559 |
| 48 | 9.614 | | 0.0000 | 0.000 | 11126.3 | 1.780 | VV | 0.040 | 4635.39 | 2.076 |
| 49 | 9.676 | | 0.0000 | 0.000 | 5609.4 | 0.898 | VV | 0.040 | 2321.41 | 1.040 |
| 50 | 9.742 | Methoxychlor | 0.1804 | 0.958 | 530.9 | 0.085 | VV | 0.029 | 303.51 | 0.136 |
| 51 | 9.787 | | 0.0000 | 0.000 | 2032.5 | 0.325 | VB | 0.036 | 950.18 | 0.426 |
| 52 | 9.868 | | 0.0000 | 0.000 | 3129.0 | 0.501 | BV | 0.036 | 1454.30 | 0.651 |
| 53 | 9.947 | | 0.0000 | 0.000 | 51140.3 | 8.183 | VB | 0.045 | 19027.55 | 8.522 |
| 54 | 10.196 | | 0.0000 | 0.000 | 150.8 | 0.024 | BB | 0.026 | 95.71 | 0.043 |
| 55 | 10.245 | | 0.0000 | 0.000 | 183.3 | 0.029 | BV | 0.028 | 107.53 | 0.048 |
| 56 | 10.322 | | 0.0000 | 0.000 | 38804.1 | 6.209 | VV | 0.061 | 10541.08 | 4.721 |
| 57 | 10.414 | | 0.0000 | 0.000 | 14958.8 | 2.394 | VV | 0.052 | 4799.18 | 2.150 |
| 58 | 10.659 | | 0.0000 | 0.000 | 1335.2 | 0.214 | VV | 0.050 | 445.19 | 0.199 |
| 59 | 10.726 | | 0.0000 | 0.000 | 508.4 | 0.081 | VV | 0.030 | 284.38 | 0.127 |
| 60 | 10.788 | | 0.0000 | 0.000 | 6141.2 | 0.983 | VV | 0.044 | 2313.07 | 1.036 |
| 61 | 10.877 | | 0.0000 | 0.000 | 576.4 | 0.092 | VB | 0.036 | 269.11 | 0.121 |
| 62 | 11.004 | | 0.0000 | 0.000 | 131.5 | 0.021 | BB | 0.045 | 49.06 | 0.022 |
| 63 | 11.121 | | 0.0000 | 0.000 | 11749.8 | 1.880 | BB | 0.039 | 5017.44 | 2.247 |
| 64 | 11.536 | | 0.0000 | 0.000 | 4337.7 | 0.694 | BB | 0.045 | 1615.70 | 0.724 |

8659

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.835 | DCB | 2.3678 | 12.573 | 25536.7 | 4.086 | BB | 0.047 | 9016.68 | 4.038 |

Total Area = 624948.4, Total Amount = 18.833, Total Height = 223269.2, Sample Units = PPB

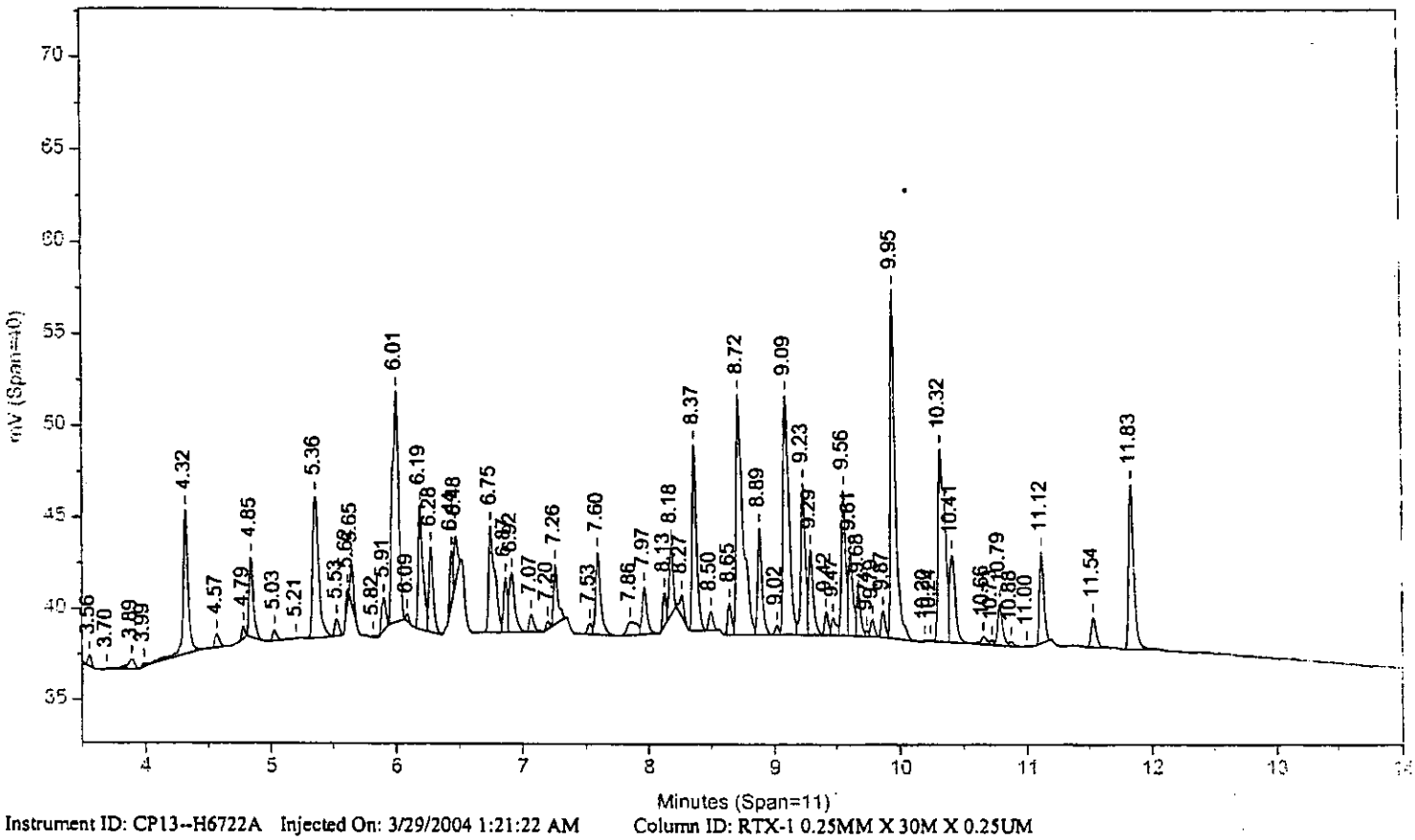
Sample Name: **AR1610424D AAAR161AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 01:35:23am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.18R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.690 | | 0.0000 | 0.000 | 13226.7 | 3.828 | BB | 0.322 | 685.35 | 0.572 |
| 2 | 4.837 | TCX | 1.8100 | 5.320 | 8083.3 | 2.340 | BB | 0.038 | 3540.79 | 2.955 |
| 3 | 5.257 | | 0.0000 | 0.000 | 963.7 | 0.279 | BB | 0.037 | 432.92 | 0.361 |
| 4 | 5.465 | | 0.0000 | 0.000 | 821.5 | 0.238 | BB | 0.033 | 413.20 | 0.345 |
| 5 | 5.557 | HCB | 0.8545 | 2.512 | 4855.0 | 1.405 | BV | 0.034 | 2371.64 | 1.979 |
| 6 | 5.891 | | 0.0000 | 0.000 | 741.8 | 0.215 | VV | 0.039 | 317.89 | 0.265 |
| 7 | 6.142 | | 0.0000 | 0.000 | 15136.9 | 4.381 | VB | 0.062 | 4065.62 | 3.393 |
| 8 | 6.441 | beta-BHC | 1.2662 | 3.722 | 3161.4 | 0.915 | BV | 0.036 | 1463.96 | 1.222 |
| 9 | 6.490 | | 0.0000 | 0.000 | 5573.0 | 1.613 | VV | 0.044 | 2114.71 | 1.765 |
| 10 | 6.625 | | 0.0000 | 0.000 | 3777.4 | 1.093 | VV | 0.067 | 941.25 | 0.786 |
| 11 | 6.776 | | 0.0000 | 0.000 | 22170.4 | 6.417 | VV | 0.060 | 6150.59 | 5.133 |
| 12 | 6.965 | Heptachlor | 2.0704 | 6.085 | 10450.8 | 3.025 | VV | 0.046 | 3822.21 | 3.190 |
| 13 | 7.109 | | 0.0000 | 0.000 | 4692.6 | 1.358 | VV | 0.036 | 2167.55 | 1.809 |
| 14 | 7.158 | | 0.0000 | 0.000 | 1887.9 | 0.546 | VV | 0.037 | 853.68 | 0.712 |
| 15 | 7.228 | | 0.0000 | 0.000 | 6173.8 | 1.787 | VV | 0.038 | 2720.45 | 2.270 |
| 16 | 7.292 | | 0.0000 | 0.000 | 6161.0 | 1.783 | VV | 0.042 | 2469.03 | 2.061 |
| 17 | 7.350 | | 0.0000 | 0.000 | 6340.4 | 1.835 | VV | 0.059 | 1788.19 | 1.492 |
| 18 | 7.602 | Telodrin | 1.8449 | 5.422 | 7576.6 | 2.193 | VV | 0.038 | 3356.08 | 2.801 |
| 19 | 7.663 | | 0.0000 | 0.000 | 4238.4 | 1.227 | VV | 0.050 | 1422.96 | 1.188 |
| 20 | 7.768 | | 0.0000 | 0.000 | 9061.2 | 2.623 | VV | 0.059 | 2538.20 | 2.118 |
| 21 | 7.974 | | 0.0000 | 0.000 | 3003.4 | 0.869 | VV | 0.069 | 722.25 | 0.603 |
| 22 | 8.101 | | 0.0000 | 0.000 | 1474.4 | 0.427 | VV | 0.039 | 628.43 | 0.524 |
| 23 | 8.166 | Hept. epoxide | 1.4064 | 4.134 | 7330.5 | 2.122 | VV | 0.048 | 2538.12 | 2.118 |
| 24 | 8.320 | | 0.0000 | 0.000 | 1476.0 | 0.427 | VV | 0.044 | 560.59 | 0.468 |
| 25 | 8.403 | o,p-DDE | 2.0558 | 6.042 | 8571.6 | 2.481 | VB | 0.056 | 2556.18 | 2.133 |
| 26 | 8.873 | | 0.0000 | 0.000 | 1446.9 | 0.419 | BV | 0.048 | 501.74 | 0.419 |
| 27 | 9.023 | | 0.0000 | 0.000 | 5334.2 | 1.544 | VV | 0.054 | 1655.84 | 1.382 |
| 28 | 9.067 | Dieldrin | 1.7893 | 5.259 | 7232.2 | 2.093 | VV | 0.040 | 2982.41 | 2.489 |
| 29 | 9.151 | | 0.0000 | 0.000 | 4123.5 | 1.194 | VB | 0.050 | 1362.82 | 1.137 |
| 30 | 9.276 | | 0.0000 | 0.000 | 15369.0 | 4.448 | BV | 0.042 | 6165.47 | 5.145 |
| 31 | 9.451 | | 0.0000 | 0.000 | 3001.7 | 0.869 | VV | 0.039 | 1272.20 | 1.062 |
| 32 | 9.533 | o,p-DDT | 6.0613 | 17.815 | 16789.7 | 4.860 | VB | 0.039 | 7133.14 | 5.953 |
| 33 | 9.752 | Endosulfan II | 3.0030 | 8.826 | 14216.8 | 4.115 | BB | 0.049 | 4793.58 | 4.000 |
| 34 | 9.901 | | 0.0000 | 0.000 | 976.5 | 0.283 | BB | 0.037 | 443.75 | 0.370 |
| 35 | 10.013 | 4,4'-DDT | 5.1277 | 15.071 | 19356.7 | 5.603 | BB | 0.052 | 6199.17 | 5.173 |
| 36 | 10.123 | | 0.0000 | 0.000 | 8069.6 | 2.336 | BB | 0.034 | 3943.74 | 3.291 |
| 37 | 10.197 | Endrin aldehyde | 1.2921 | 3.798 | 3627.6 | 1.050 | BB | 0.032 | 1870.48 | 1.561 |
| 38 | 10.351 | | 0.0000 | 0.000 | 1230.6 | 0.356 | BB | 0.035 | 590.45 | 0.493 |
| 39 | 10.517 | | 0.0000 | 0.000 | 11080.8 | 3.207 | BB | 0.040 | 4599.60 | 3.839 |
| 40 | 10.614 | | 0.0000 | 0.000 | 4605.4 | 1.333 | BB | 0.035 | 2208.67 | 1.843 |
| 41 | 10.686 | | 0.0000 | 0.000 | 4221.7 | 1.222 | BB | 0.053 | 1327.21 | 1.108 |
| 42 | 10.824 | | 0.0000 | 0.000 | 20865.4 | 6.039 | BB | 0.039 | 8994.50 | 7.506 |
| 43 | 11.030 | | 0.0000 | 0.000 | 636.9 | 0.184 | BB | 0.036 | 297.33 | 0.248 |
| 44 | 11.351 | Endrin ketone | 3.0292 | 8.904 | 23908.2 | 6.920 | BB | 0.080 | 4950.72 | 4.132 |
| 45 | 11.999 | | 0.0000 | 0.000 | 2187.4 | 0.633 | BB | 0.040 | 913.16 | 0.762 |
| 46 | 12.234 | | 0.0000 | 0.000 | 6035.8 | 1.747 | BB | 0.047 | 2142.65 | 1.788 |
| 47 | 12.841 | | 0.0000 | 0.000 | 2441.4 | 0.707 | BB | 0.055 | 746.11 | 0.623 |
| 48 | 13.374 | DCB | 2.4122 | 7.090 | 11780.5 | 3.410 | BB | 0.048 | 4089.57 | 3.413 |

Total Area = 345488.5, Total Amount = 34.023, Total Height = 119826.1, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.18R

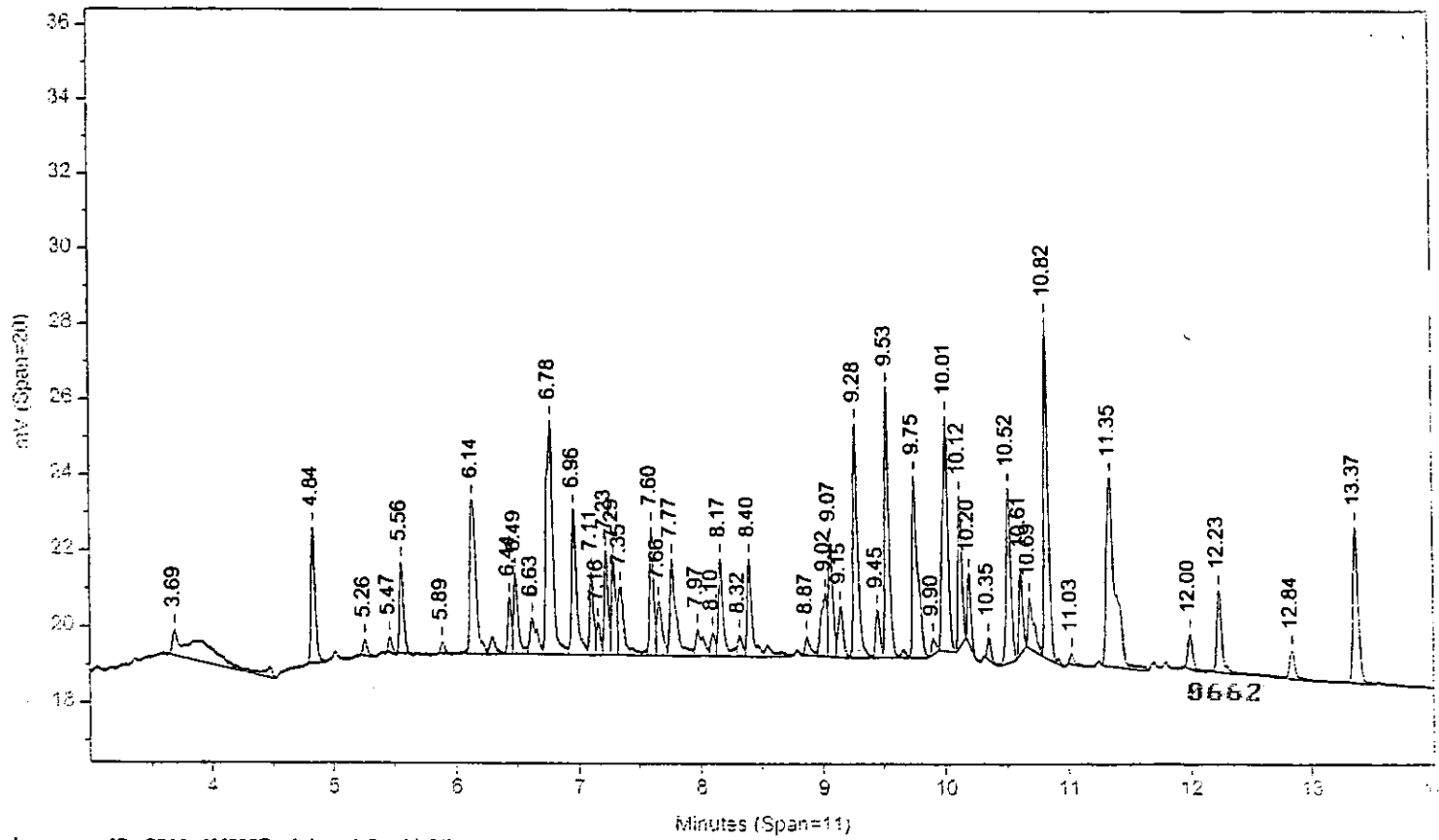
C:\CPWIN\DATA1\1C13088.18R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 1:21:22 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.18R

C:\CPWIN\DATA1\1C13088B.18R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 1:21:23 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: IN

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

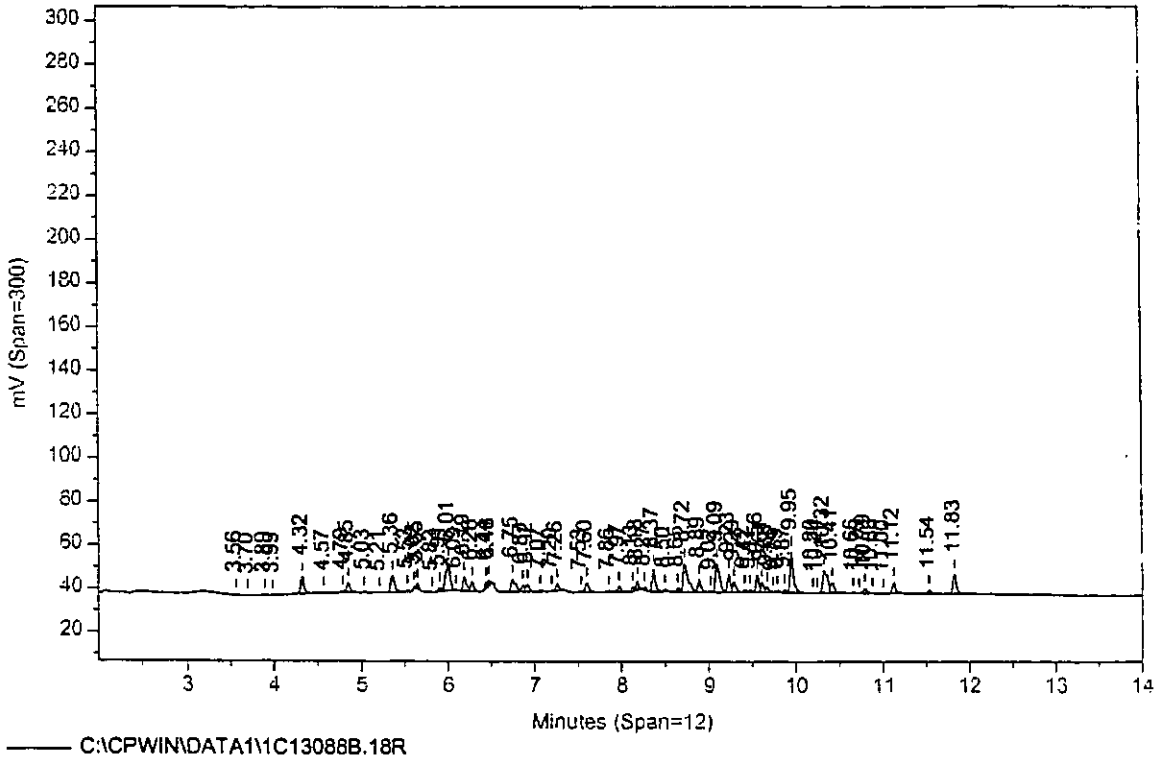
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 7895 | 2.08 | TCX | 4.837 | 3541 | 1.81002 | TCX |
| . | 0 | . | HCB | 5.557 | 2372 | .8545 | HCB |
| 5.615 | 778 | .16789 | gamma-BHC | . | 0 | . | gamma-BHC |
| 6.009 | 12659 | 2.8787 | delta-BHC | . | 0 | . | delta-BHC |
| 6.281 | 4672 | .94542 | Heptachlor | 6.965 | 3822 | 2.07037 | Heptachlor |
| . | 0 | . | beta-BHC | 6.441 | 1464 | 1.26621 | beta-BHC |
| 7.533 | 589 | .23076 | o,p-DDE | 8.403 | 2556 | 2.05582 | o,p-DDE |
| . | 0 | . | Telodrin | 7.602 | 3356 | 1.84488 | Telodrin |
| 7.969 | 2592 | .73668 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.166 | 2538 | 1.40636 | Hept. epoxide |
| 8.184 | 3868 | 1.79633 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.72 | 13127 | 4.41515 | Endrin | . | 0 | . | Endrin |
| 9.021 | 505 | .15396 | Endosulfan II | 9.752 | 4794 | 3.00299 | Endosulfan II |
| . | 0 | . | Dieldrin | 9.067 | 2982 | 1.78926 | Dieldrin |
| . | 0 | . | o,p-DDT | 9.533 | 7133 | 6.0613 | o,p-DDT |
| 9.56 | 7946 | 2.87982 | Endrin aldehyde | 10.197 | 1870 | 1.29213 | Endrin aldehyde |
| 9.742 | 304 | .18043 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 10.013 | 6199 | 5.12771 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.351 | 4951 | 3.02924 | Endrin ketone |
| 11.835 | 9017 | 2.36781 | DCB | 13.374 | 4090 | 2.41217 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.18A
Area File: C:\CPWIN\DATA1\1C13088B.18A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:58:36 AM
File Reported On: 3/29/2004 at 9:58:45 AM

9663

10X REPLOTS

C:\CPWIN\DATA1\1C13088.18R

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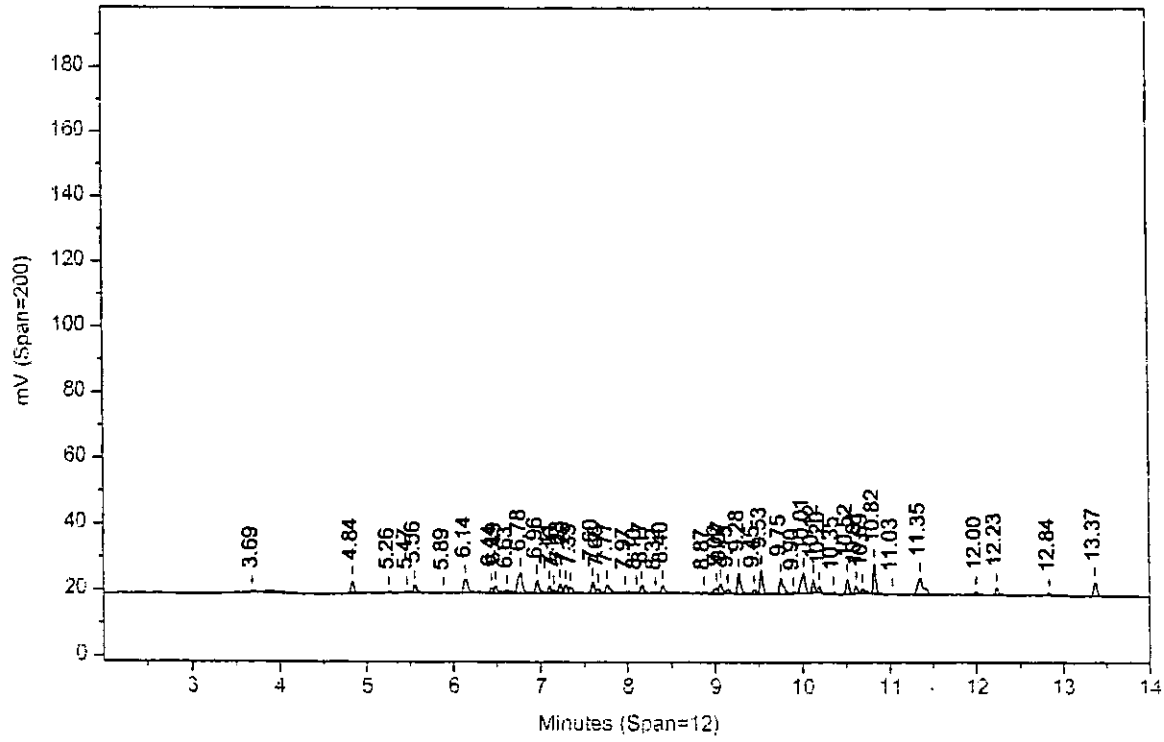

Sample Name: **AR1620424D AAAR162AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 01:56:00am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.19R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.560 | | 0.0000 | 0.000 | 1132.5 | 0.091 | BB | 0.031 | 612.52 | 0.137 |
| 2 | 3.891 | | 0.0000 | 0.000 | 3959.8 | 0.317 | BB | 0.062 | 1069.06 | 0.239 |
| 3 | 3.982 | | 0.0000 | 0.000 | 208.6 | 0.017 | BB | 0.029 | 119.51 | 0.027 |
| 4 | 4.136 | | 0.0000 | 0.000 | 707.6 | 0.057 | BB | 0.108 | 108.70 | 0.024 |
| 5 | 4.231 | | 0.0000 | 0.000 | 159.3 | 0.013 | BB | 0.026 | 102.93 | 0.023 |
| 6 | 4.321 | TCX | 4.0262 | 11.160 | 38284.0 | 3.060 | BB | 0.042 | 15281.46 | 3.412 |
| 7 | 4.571 | | 0.0000 | 0.000 | 3505.4 | 0.280 | BB | 0.041 | 1409.29 | 0.315 |
| 8 | 4.788 | | 0.0000 | 0.000 | 2235.7 | 0.179 | BB | 0.029 | 1284.64 | 0.287 |
| 9 | 4.849 | | 0.0000 | 0.000 | 20393.0 | 1.630 | BB | 0.040 | 8518.63 | 1.902 |
| 10 | 5.034 | | 0.0000 | 0.000 | 3051.5 | 0.244 | BB | 0.045 | 1124.16 | 0.251 |
| 11 | 5.211 | | 0.0000 | 0.000 | 99.6 | 0.008 | BB | 0.023 | 71.38 | 0.016 |
| 12 | 5.361 | | 0.0000 | 0.000 | 48033.1 | 3.840 | BB | 0.054 | 14819.41 | 3.309 |
| 13 | 5.533 | | 0.0000 | 0.000 | 4228.4 | 0.338 | BB | 0.039 | 1818.42 | 0.406 |
| 14 | 5.617 | gamma-BHC | 0.3418 | 0.947 | 2549.9 | 0.204 | BB | 0.027 | 1584.44 | 0.354 |
| 15 | 5.651 | | 0.0000 | 0.000 | 7608.9 | 0.608 | BB | 0.030 | 4279.42 | 0.956 |
| 16 | 5.744 | beta-BHC | 0.0605 | 0.168 | 237.7 | 0.019 | BB | 0.025 | 155.89 | 0.035 |
| 17 | 5.909 | | 0.0000 | 0.000 | 8333.7 | 0.666 | BB | 0.040 | 3472.85 | 0.776 |
| 18 | 6.009 | delta-BHC | 5.5291 | 15.325 | 81370.6 | 6.505 | BB | 0.056 | 24314.49 | 5.430 |
| 19 | 6.090 | | 0.0000 | 0.000 | 1231.8 | 0.098 | BB | 0.025 | 833.31 | 0.186 |
| 20 | 6.195 | | 0.0000 | 0.000 | 35385.7 | 2.829 | BV | 0.045 | 13137.79 | 2.934 |
| 21 | 6.282 | Heptachlor | 1.8320 | 5.078 | 21231.6 | 1.697 | VB | 0.039 | 9052.15 | 2.021 |
| 22 | 6.444 | | 0.0000 | 0.000 | 18065.4 | 1.444 | BV | 0.034 | 8793.68 | 1.964 |
| 23 | 6.475 | | 0.0000 | 0.000 | 23929.2 | 1.913 | VV | 0.039 | 10134.34 | 2.263 |
| 24 | 6.527 | | 0.0000 | 0.000 | 18161.1 | 1.452 | VV | 0.044 | 6932.07 | 1.548 |
| 25 | 6.676 | | 0.0000 | 0.000 | 220.3 | 0.018 | VV | 0.050 | 73.76 | 0.016 |
| 26 | 6.752 | | 0.0000 | 0.000 | 37768.1 | 3.019 | VV | 0.056 | 11277.96 | 2.518 |
| 27 | 6.867 | | 0.0000 | 0.000 | 13268.4 | 1.061 | VV | 0.037 | 5994.58 | 1.339 |
| 28 | 6.919 | | 0.0000 | 0.000 | 18640.4 | 1.490 | VB | 0.049 | 6286.79 | 1.404 |
| 29 | 7.069 | | 0.0000 | 0.000 | 4934.0 | 0.394 | BB | 0.043 | 1891.75 | 0.422 |
| 30 | 7.200 | | 0.0000 | 0.000 | 2285.6 | 0.183 | BV | 0.036 | 1072.02 | 0.239 |
| 31 | 7.263 | | 0.0000 | 0.000 | 22291.2 | 1.782 | VV | 0.052 | 7130.31 | 1.592 |
| 32 | 7.349 | | 0.0000 | 0.000 | 3780.3 | 0.302 | VB | 0.037 | 1715.97 | 0.383 |
| 33 | 7.533 | o,p-DDE | 0.4288 | 1.189 | 2380.5 | 0.190 | BV | 0.036 | 1094.93 | 0.245 |
| 34 | 7.599 | | 0.0000 | 0.000 | 24334.0 | 1.945 | VB | 0.047 | 8666.05 | 1.935 |
| 35 | 7.848 | | 0.0000 | 0.000 | 2562.0 | 0.205 | BV | 0.059 | 718.61 | 0.160 |
| 36 | 7.912 | a. Chlordane | 0.1536 | 0.426 | 1482.0 | 0.118 | VV | 0.039 | 634.58 | 0.142 |
| 37 | 7.970 | 4,4'-DDE | 1.4190 | 3.933 | 13350.7 | 1.067 | VB | 0.045 | 4993.43 | 1.115 |
| 38 | 8.132 | | 0.0000 | 0.000 | 6736.3 | 0.538 | BV | 0.032 | 3549.09 | 0.793 |
| 39 | 8.185 | o,p-DDD | 3.4745 | 9.631 | 15078.6 | 1.205 | VB | 0.034 | 7481.42 | 1.671 |
| 40 | 8.266 | | 0.0000 | 0.000 | 5545.5 | 0.443 | BB | 0.038 | 2446.32 | 0.546 |
| 41 | 8.368 | | 0.0000 | 0.000 | 48821.8 | 3.903 | BV | 0.042 | 19226.01 | 4.293 |
| 42 | 8.499 | | 0.0000 | 0.000 | 6389.3 | 0.511 | VV | 0.047 | 2280.89 | 0.509 |
| 43 | 8.563 | o,p-DDT | 0.1859 | 0.515 | 952.0 | 0.076 | VB | 0.033 | 476.78 | 0.106 |
| 44 | 8.646 | | 0.0000 | 0.000 | 7968.0 | 0.637 | BV | 0.037 | 3544.45 | 0.791 |
| 45 | 8.721 | Endrin | 8.2596 | 22.894 | 97071.2 | 7.760 | VV | 0.066 | 24556.91 | 5.484 |
| 46 | 8.890 | | 0.0000 | 0.000 | 28744.2 | 2.298 | VB | 0.042 | 11490.75 | 2.566 |
| 47 | 9.022 | Endosulfan II | 0.2981 | 0.826 | 2054.4 | 0.164 | BV | 0.035 | 977.02 | 0.218 |
| 48 | 9.095 | | 0.0000 | 0.000 | 83192.1 | 6.650 | VV | 0.056 | 24868.50 | 5.553 |
| 49 | 9.234 | | 0.0000 | 0.000 | 39752.4 | 3.178 | VV | 0.042 | 15932.16 | 3.558 |
| 50 | 9.294 | | 0.0000 | 0.000 | 23640.3 | 1.890 | VB | 0.043 | 9255.33 | 2.067 |
| 51 | 9.416 | | 0.0000 | 0.000 | 5503.6 | 0.440 | BV | 0.036 | 2554.74 | 0.570 |
| 52 | 9.475 | | 0.0000 | 0.000 | 5598.5 | 0.448 | VV | 0.048 | 1952.24 | 0.436 |
| 53 | 9.560 | Endrin aldehyde | 5.5521 | 15.389 | 36135.0 | 2.889 | VV | 0.039 | 15319.37 | 3.421 |
| 54 | 9.614 | | 0.0000 | 0.000 | 22216.5 | 1.776 | VV | 0.041 | 9070.94 | 2.026 |
| 55 | 9.676 | | 0.0000 | 0.000 | 11630.7 | 0.930 | VV | 0.041 | 4694.00 | 1.048 |
| 56 | 9.788 | | 0.0000 | 0.000 | 4199.7 | 0.336 | VB | 0.036 | 1928.94 | 0.431 |
| 57 | 9.868 | | 0.0000 | 0.000 | 6200.9 | 0.496 | BV | 0.036 | 2898.52 | 0.647 |
| 58 | 9.948 | | 0.0000 | 0.000 | 97944.5 | 7.830 | VB | 0.045 | 35902.69 | 8.017 |
| 59 | 10.323 | | 0.0000 | 0.000 | 70705.8 | 5.652 | BV | 0.059 | 19822.03 | 4.426 |
| 60 | 10.415 | | 0.0000 | 0.000 | 29393.6 | 2.350 | VV | 0.053 | 9308.94 | 2.079 |
| 61 | 10.660 | | 0.0000 | 0.000 | 2030.6 | 0.162 | VV | 0.043 | 790.58 | 0.177 |
| 62 | 10.737 | | 0.0000 | 0.000 | 1707.0 | 0.136 | VV | 0.034 | 836.35 | 0.187 |
| 63 | 10.789 | | 0.0000 | 0.000 | 11781.5 | 0.942 | VV | 0.044 | 4494.47 | 1.004 |
| 64 | 10.878 | | 0.0000 | 0.000 | 2361.3 | 0.189 | VB | 0.037 | 1059.75 | 0.237 |

9665

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.122 | | 0.0000 | 0.000 | 27101.1 | 2.166 | BB | 0.045 | 10070.07 | 2.249 |
| 66 | 11.537 | | 0.0000 | 0.000 | 9263.4 | 0.741 | BB | 0.048 | 3199.89 | 0.715 |
| 67 | 11.835 DCB | | 4.5168 | 12.520 | 49674.5 | 3.971 | BB | 0.048 | 17200.21 | 3.841 |
| 68 | 13.759 | | 0.0000 | 0.000 | 146.4 | 0.012 | BB | 0.049 | 49.87 | 0.011 |

Total Area = 1250943.0, Total Amount = 36.078, Total Height = 447820.6, Sample Units = PPB

Sample Name: **AR1620424D AAAR162AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 01:56:00am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.19R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.690 | | 0.0000 | 0.000 | 11180.4 | 1.820 | BB | 0.295 | 631.86 | 0.277 |
| 2 | 4.475 | | 0.0000 | 0.000 | 889.6 | 0.145 | BB | 0.035 | 420.27 | 0.185 |
| 3 | 4.838 | TCX | 3.6512 | 5.422 | 16152.5 | 2.629 | BB | 0.038 | 7142.48 | 3.137 |
| 4 | 5.017 | | 0.0000 | 0.000 | 921.0 | 0.150 | BB | 0.037 | 412.64 | 0.181 |
| 5 | 5.260 | | 0.0000 | 0.000 | 1606.3 | 0.261 | BB | 0.035 | 760.24 | 0.334 |
| 6 | 5.469 | | 0.0000 | 0.000 | 1924.0 | 0.313 | BB | 0.035 | 920.79 | 0.404 |
| 7 | 5.559 | HCB | 1.6597 | 2.465 | 11123.6 | 1.811 | BV | 0.040 | 4606.46 | 2.023 |
| 8 | 5.896 | | 0.0000 | 0.000 | 1966.9 | 0.320 | VV | 0.050 | 659.17 | 0.289 |
| 9 | 6.140 | | 0.0000 | 0.000 | 26041.1 | 4.239 | VV | 0.056 | 7686.54 | 3.375 |
| 10 | 6.300 | gamma-BHC | 0.4873 | 0.724 | 2189.2 | 0.356 | VB | 0.043 | 851.06 | 0.374 |
| 11 | 6.439 | beta-BHC | 2.4654 | 3.661 | 6014.2 | 0.979 | BV | 0.035 | 2850.41 | 1.252 |
| 12 | 6.492 | | 0.0000 | 0.000 | 9038.1 | 1.471 | VB | 0.039 | 3888.90 | 1.708 |
| 13 | 6.623 | | 0.0000 | 0.000 | 1776.8 | 0.289 | BB | 0.027 | 1084.77 | 0.476 |
| 14 | 6.777 | | 0.0000 | 0.000 | 38485.0 | 6.264 | BB | 0.056 | 11520.28 | 5.059 |
| 15 | 6.967 | Heptachlor | 3.8387 | 5.701 | 17805.6 | 2.898 | BV | 0.042 | 7086.86 | 3.112 |
| 16 | 7.109 | | 0.0000 | 0.000 | 8255.6 | 1.344 | VV | 0.034 | 4075.25 | 1.790 |
| 17 | 7.162 | | 0.0000 | 0.000 | 3310.4 | 0.539 | VV | 0.038 | 1437.39 | 0.631 |
| 18 | 7.229 | | 0.0000 | 0.000 | 10782.5 | 1.755 | VV | 0.037 | 4900.39 | 2.152 |
| 19 | 7.292 | | 0.0000 | 0.000 | 10934.2 | 1.780 | VV | 0.040 | 4551.93 | 1.999 |
| 20 | 7.350 | | 0.0000 | 0.000 | 9282.9 | 1.511 | VV | 0.047 | 3310.65 | 1.454 |
| 21 | 7.603 | Telodrin | 3.4063 | 5.059 | 13409.8 | 2.183 | VV | 0.036 | 6196.59 | 2.721 |
| 22 | 7.663 | | 0.0000 | 0.000 | 6951.3 | 1.131 | VV | 0.046 | 2522.69 | 1.108 |
| 23 | 7.770 | | 0.0000 | 0.000 | 14675.2 | 2.389 | VV | 0.053 | 4647.35 | 2.041 |
| 24 | 7.977 | | 0.0000 | 0.000 | 4291.7 | 0.699 | VV | 0.060 | 1188.77 | 0.522 |
| 25 | 8.103 | | 0.0000 | 0.000 | 2208.9 | 0.360 | VV | 0.036 | 1013.77 | 0.445 |
| 26 | 8.165 | Hept. epoxide | 2.5836 | 3.837 | 11903.3 | 1.938 | VV | 0.043 | 4662.77 | 2.048 |
| 27 | 8.323 | | 0.0000 | 0.000 | 1976.4 | 0.322 | VV | 0.041 | 809.97 | 0.356 |
| 28 | 8.404 | o,p-DDE | 3.8715 | 5.749 | 12225.6 | 1.990 | VV | 0.042 | 4813.74 | 2.114 |
| 29 | 8.553 | | 0.0000 | 0.000 | 1781.7 | 0.290 | VB | 0.071 | 416.08 | 0.183 |
| 30 | 8.875 | | 0.0000 | 0.000 | 2563.5 | 0.417 | BV | 0.046 | 919.19 | 0.404 |
| 31 | 9.024 | | 0.0000 | 0.000 | 9735.7 | 1.585 | VV | 0.053 | 3052.02 | 1.340 |
| 32 | 9.067 | Dieldrin | 3.3108 | 4.917 | 13446.6 | 2.189 | VV | 0.041 | 5518.64 | 2.423 |
| 33 | 9.153 | | 0.0000 | 0.000 | 7824.4 | 1.274 | VB | 0.050 | 2634.32 | 1.157 |
| 34 | 9.277 | | 0.0000 | 0.000 | 28472.9 | 4.635 | BB | 0.041 | 11497.56 | 5.049 |
| 35 | 9.454 | | 0.0000 | 0.000 | 5869.2 | 0.955 | BV | 0.040 | 2465.57 | 1.083 |
| 36 | 9.534 | o,p-DDT | 11.4768 | 17.044 | 30588.9 | 4.979 | VV | 0.038 | 13506.33 | 5.931 |
| 37 | 9.660 | Kepone | 2.0751 | 3.082 | 695.7 | 0.113 | VB | 0.032 | 357.78 | 0.157 |
| 38 | 9.753 | Endosulfan II | 5.7923 | 8.602 | 26940.9 | 4.385 | BB | 0.049 | 9246.06 | 4.060 |
| 39 | 9.903 | | 0.0000 | 0.000 | 1857.6 | 0.302 | BB | 0.038 | 815.76 | 0.358 |
| 40 | 10.014 | 4,4'-DDT | 9.7679 | 14.506 | 37021.6 | 6.026 | BB | 0.052 | 11808.97 | 5.186 |
| 41 | 10.124 | | 0.0000 | 0.000 | 15146.3 | 2.465 | BB | 0.033 | 7555.80 | 3.318 |
| 42 | 10.196 | Endrin aldehyde | 2.5409 | 3.773 | 7136.8 | 1.162 | BB | 0.032 | 3678.13 | 1.615 |
| 43 | 10.317 | | 0.0000 | 0.000 | 151.0 | 0.025 | BB | 0.021 | 121.47 | 0.053 |
| 44 | 10.353 | | 0.0000 | 0.000 | 2297.8 | 0.374 | BB | 0.033 | 1152.86 | 0.506 |
| 45 | 10.517 | | 0.0000 | 0.000 | 21098.4 | 3.434 | BB | 0.039 | 8921.54 | 3.918 |
| 46 | 10.614 | | 0.0000 | 0.000 | 8676.9 | 1.412 | BB | 0.034 | 4196.25 | 1.843 |
| 47 | 10.687 | | 0.0000 | 0.000 | 7794.5 | 1.269 | BB | 0.053 | 2467.87 | 1.084 |
| 48 | 10.825 | | 0.0000 | 0.000 | 39004.1 | 6.349 | BB | 0.038 | 17136.13 | 7.525 |
| 49 | 11.029 | | 0.0000 | 0.000 | 1713.6 | 0.279 | BB | 0.046 | 619.55 | 0.272 |
| 50 | 11.350 | Endrin ketone | 5.8283 | 8.655 | 44492.1 | 7.242 | BB | 0.078 | 9525.33 | 4.183 |
| 51 | 11.791 | | 0.0000 | 0.000 | 764.4 | 0.124 | BB | 0.037 | 347.34 | 0.153 |
| 52 | 11.998 | | 0.0000 | 0.000 | 4169.5 | 0.679 | BB | 0.040 | 1740.83 | 0.764 |
| 53 | 12.236 | | 0.0000 | 0.000 | 11459.1 | 1.865 | BB | 0.046 | 4168.30 | 1.830 |
| 54 | 12.840 | | 0.0000 | 0.000 | 3937.2 | 0.641 | BB | 0.046 | 1427.90 | 0.627 |
| 55 | 13.374 | DCB | 4.5810 | 6.803 | 22397.8 | 3.646 | BB | 0.048 | 7766.65 | 3.411 |

Total Area = 614360.4, Total Amount = 67.337, Total Height = 227718.1, Sample Units = PPB

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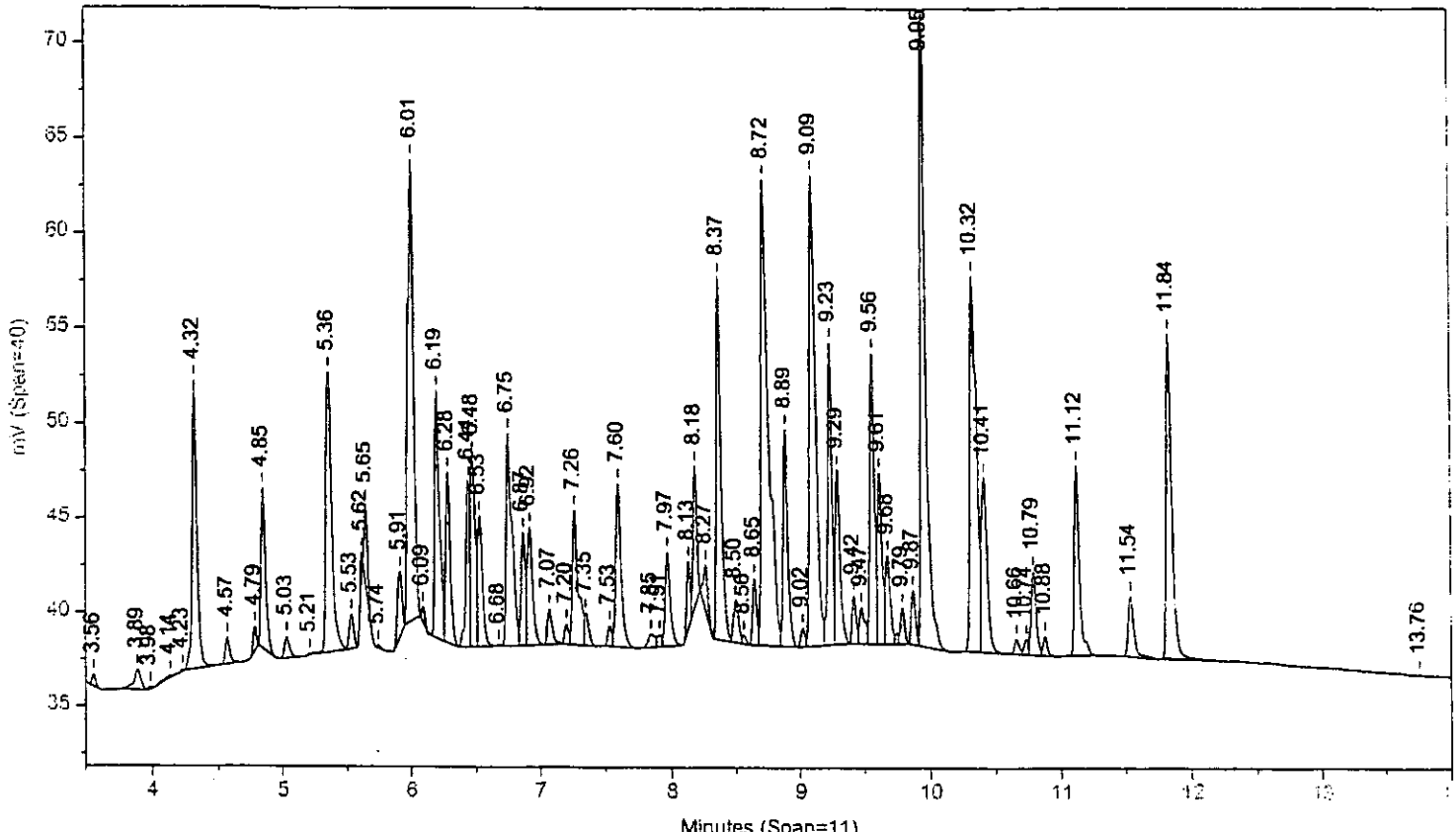
LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.19R

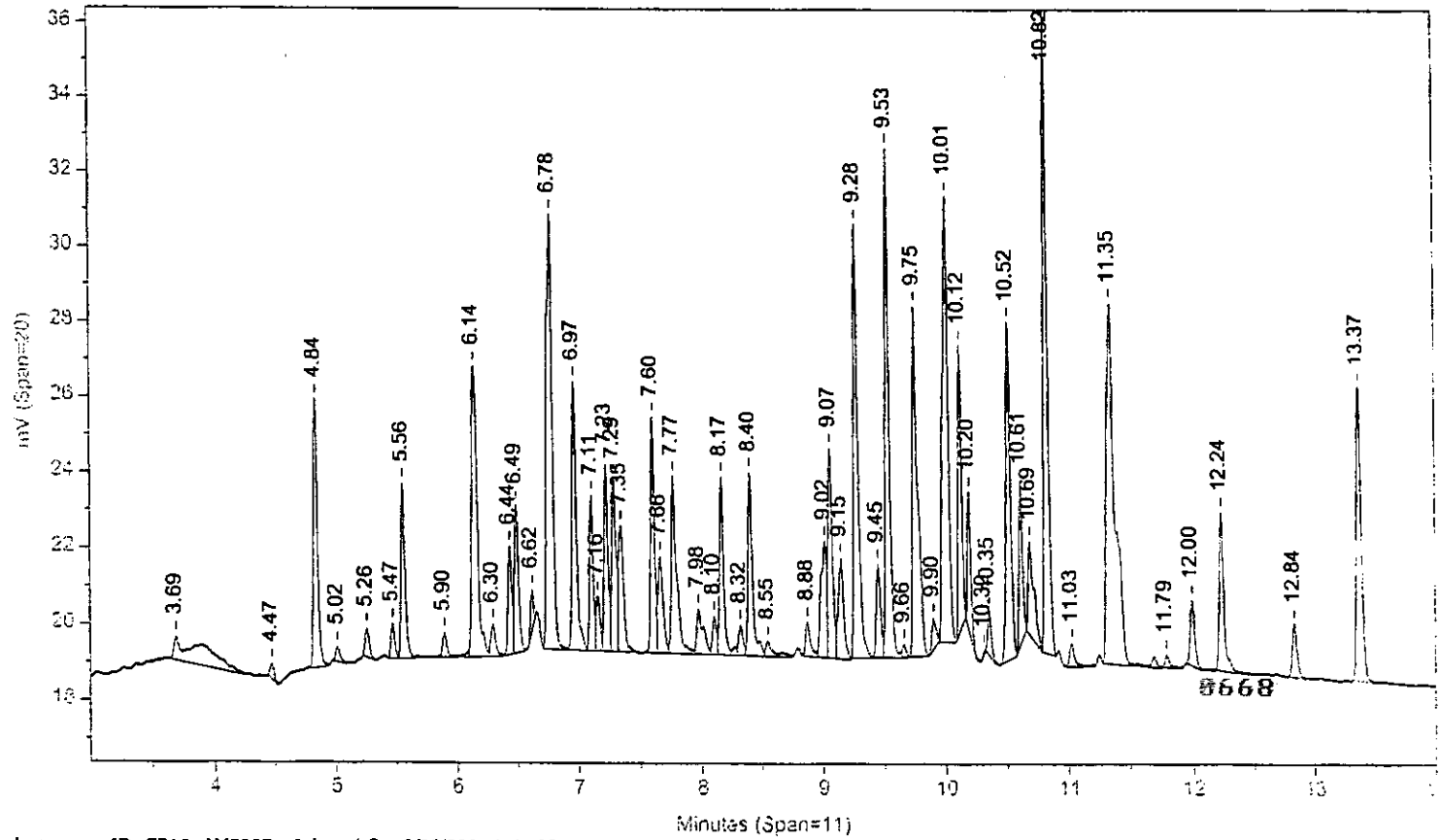
C:\CPWIN\DATA1\1C13088.19R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 1:42:00 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.19R

C:\CPWIN\DATA1\1C13088B.19R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 1:42:00 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

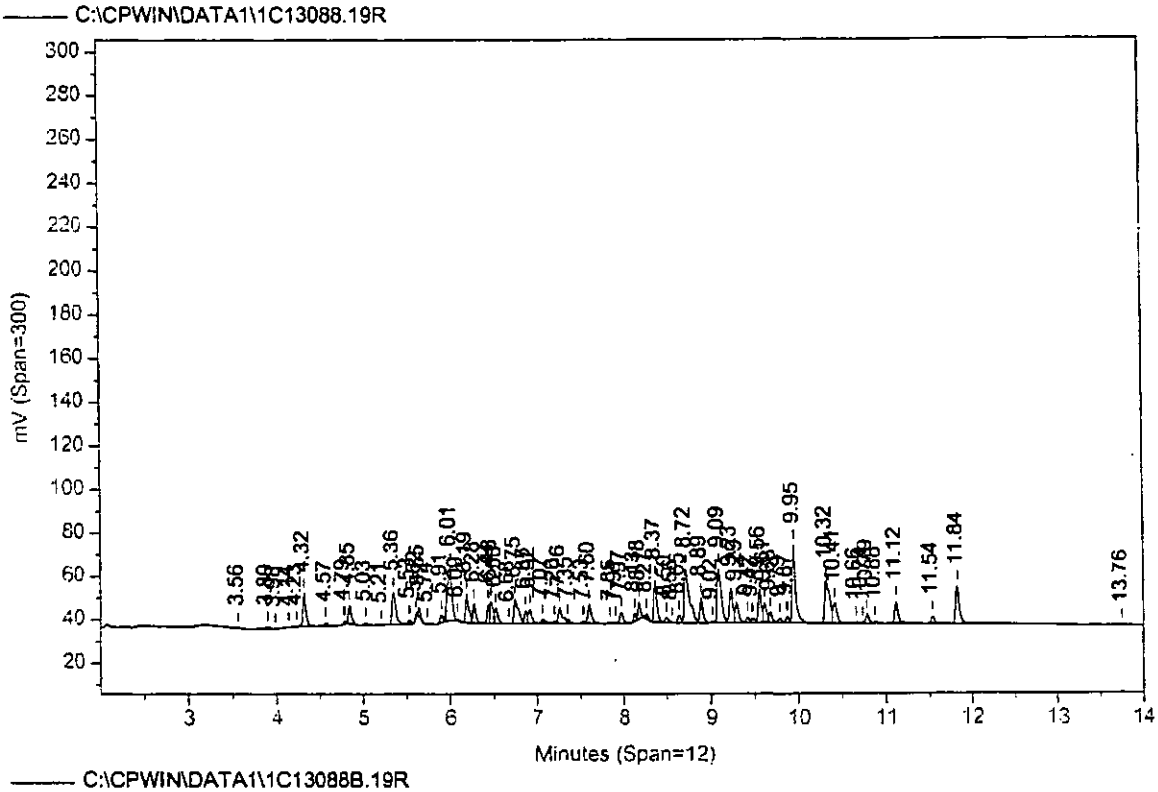
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

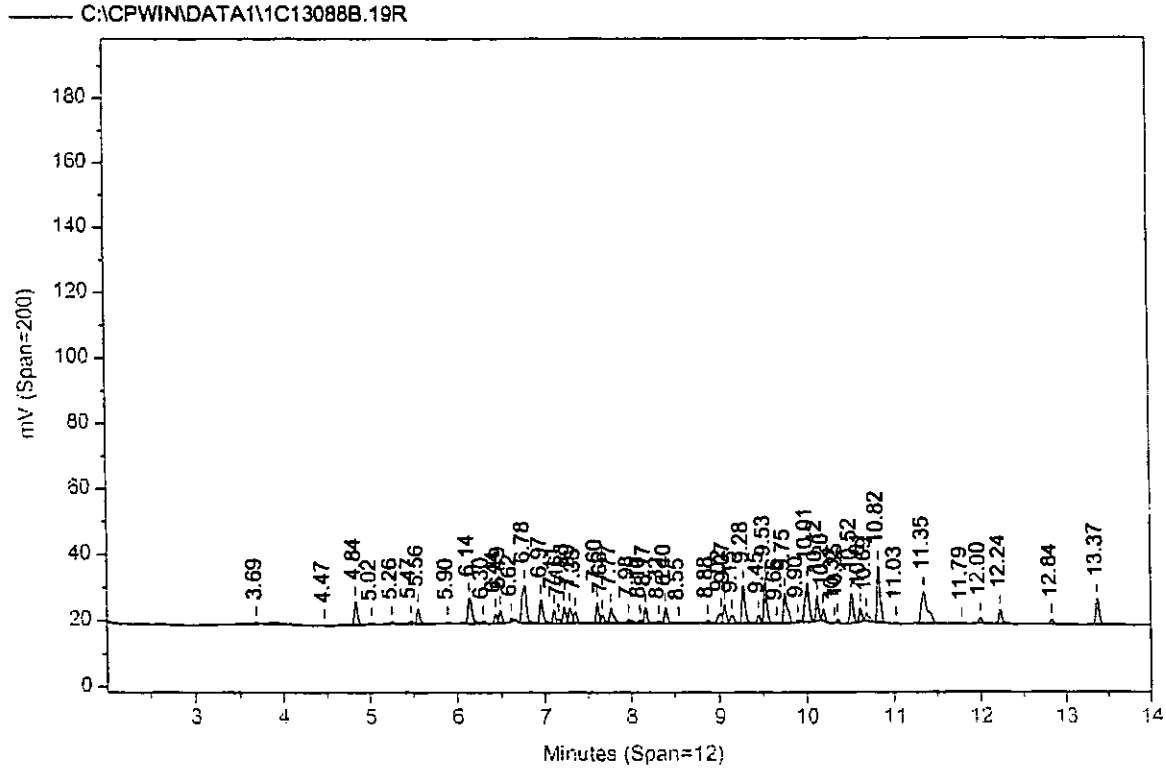
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.321 | 15281 | 4.02617 | TCX | 4.838 | 7142 | 3.65118 | TCX |
| . | 0 | . | HCB | 5.559 | 4606 | 1.6597 | HCB |
| 5.617 | 1584 | .34184 | gamma-BHC | 6.3 | 851 | .4873 | gamma-BHC |
| 5.744 | 156 | .0605 | beta-BHC | 6.439 | 2850 | 2.46539 | beta-BHC |
| 6.009 | 24314 | 5.52908 | delta-BHC | . | 0 | . | delta-BHC |
| 6.282 | 9052 | 1.83198 | Heptachlor | 6.967 | 7087 | 3.83873 | Heptachlor |
| 7.533 | 1095 | .42882 | o,p-DDE | 8.404 | 4814 | 3.87146 | o,p-DDE |
| . | 0 | . | Telodrin | 7.603 | 6197 | 3.40635 | Telodrin |
| 7.912 | 635 | .15355 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.97 | 4993 | 1.41904 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.165 | 4663 | 2.58362 | Hept. epoxide |
| 8.185 | 7481 | 3.47452 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.563 | 477 | .18586 | o,p-DDT | 9.534 | 13506 | 11.47684 | o,p-DDT |
| 8.721 | 24557 | 8.2596 | Endrin | . | 0 | . | Endrin |
| 9.022 | 977 | .29808 | Endosulfan II | 9.753 | 9246 | 5.7923 | Endosulfan II |
| . | 0 | . | Dieldrin | 9.067 | 5519 | 3.31085 | Dieldrin |
| 9.56 | 15319 | 5.55215 | Endrin aldehyde | 10.196 | 3678 | 2.54086 | Endrin aldehyde |
| . | 0 | . | Kepone | 9.66 | 358 | 2.0751 | Kepone |
| . | 0 | . | 4,4'-DDT | 10.014 | 11809 | 9.76791 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.35 | 9525 | 5.82835 | Endrin ketone |
| 1.835 | 17200 | 4.51683 | DCB | 13.374 | 7767 | 4.58104 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.19A
Area File: C:\CPWIN\DATA1\1C13088B.19A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:58:58 AM
File Reported On: 3/29/2004 at 9:59:08 AM

0669

10X REPLOTS


C:\CPWIN\DATA1\1C13088.19R
mV (Span=300)
Minutes (Span=12)


C:\CPWIN\DATA1\1C13088B.19R
mV (Span=200)
Minutes (Span=12)

Sample Name: **AR1630424D AAAR163AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 02:16:37am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.20R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.557 | | 0.0000 | 0.000 | 1153.9 | 0.048 | BB | 0.032 | 601.43 | 0.069 |
| 2 | 3.893 | | 0.0000 | 0.000 | 2630.8 | 0.110 | BB | 0.072 | 609.39 | 0.070 |
| 3 | 3.989 | | 0.0000 | 0.000 | 430.3 | 0.018 | BB | 0.041 | 176.73 | 0.020 |
| 4 | 4.231 | | 0.0000 | 0.000 | 355.5 | 0.015 | BB | 0.028 | 215.40 | 0.025 |
| 5 | 4.319 | TCX | 8.0755 | 7.630 | 75946.9 | 3.166 | BB | 0.041 | 30650.93 | 3.500 |
| 6 | 4.569 | | 0.0000 | 0.000 | 7088.5 | 0.296 | BB | 0.041 | 2864.95 | 0.327 |
| 7 | 4.787 | | 0.0000 | 0.000 | 4516.0 | 0.188 | BB | 0.030 | 2521.35 | 0.288 |
| 8 | 4.847 | | 0.0000 | 0.000 | 39292.6 | 1.638 | BB | 0.040 | 16455.36 | 1.879 |
| 9 | 5.032 | | 0.0000 | 0.000 | 5726.2 | 0.239 | BB | 0.043 | 2200.15 | 0.251 |
| 10 | 5.214 | | 0.0000 | 0.000 | 86.2 | 0.004 | BB | 0.031 | 46.93 | 0.005 |
| 11 | 5.360 | | 0.0000 | 0.000 | 92442.3 | 3.854 | BB | 0.054 | 28358.77 | 3.238 |
| 12 | 5.531 | | 0.0000 | 0.000 | 8664.6 | 0.361 | BB | 0.039 | 3704.27 | 0.423 |
| 13 | 5.615 | gamma-BHC | 0.6770 | 0.640 | 5469.6 | 0.228 | BB | 0.029 | 3138.00 | 0.358 |
| 14 | 5.650 | | 0.0000 | 0.000 | 14368.0 | 0.599 | BB | 0.029 | 8303.26 | 0.948 |
| 15 | 5.742 | beta-BHC | 0.1102 | 0.104 | 410.2 | 0.017 | BB | 0.024 | 284.06 | 0.032 |
| 16 | 5.908 | | 0.0000 | 0.000 | 16553.5 | 0.690 | BB | 0.039 | 7015.75 | 0.801 |
| 17 | 6.008 | delta-BHC | 10.5890 | 10.005 | 155355.4 | 6.476 | BB | 0.056 | 46565.72 | 5.317 |
| 18 | 6.088 | | 0.0000 | 0.000 | 2327.5 | 0.097 | BB | 0.024 | 1614.48 | 0.184 |
| 19 | 6.140 | | 0.0000 | 0.000 | 194.1 | 0.008 | BB | 0.014 | 223.66 | 0.026 |
| 20 | 6.194 | | 0.0000 | 0.000 | 68445.4 | 2.853 | BV | 0.045 | 25227.04 | 2.880 |
| 21 | 6.281 | Heptachlor | 3.6026 | 3.404 | 41658.1 | 1.737 | VB | 0.039 | 17801.09 | 2.033 |
| 22 | 6.442 | | 0.0000 | 0.000 | 32785.2 | 1.367 | BV | 0.032 | 16912.40 | 1.931 |
| 23 | 6.474 | | 0.0000 | 0.000 | 47389.5 | 1.976 | VV | 0.040 | 19686.62 | 2.248 |
| 24 | 6.525 | | 0.0000 | 0.000 | 37682.1 | 1.571 | VB | 0.046 | 13698.89 | 1.564 |
| 25 | 6.674 | | 0.0000 | 0.000 | 107.1 | 0.004 | BV | 0.031 | 58.16 | 0.007 |
| 26 | 6.751 | | 0.0000 | 0.000 | 73544.0 | 3.066 | VV | 0.056 | 21815.53 | 2.491 |
| 27 | 6.866 | | 0.0000 | 0.000 | 26747.8 | 1.115 | VV | 0.038 | 11856.19 | 1.354 |
| 28 | 6.917 | | 0.0000 | 0.000 | 35240.6 | 1.469 | VB | 0.049 | 12090.19 | 1.380 |
| 29 | 7.067 | | 0.0000 | 0.000 | 9784.9 | 0.408 | BB | 0.044 | 3748.22 | 0.428 |
| 30 | 7.199 | | 0.0000 | 0.000 | 4395.8 | 0.183 | BV | 0.034 | 2139.71 | 0.244 |
| 31 | 7.262 | | 0.0000 | 0.000 | 43882.2 | 1.829 | VV | 0.053 | 13826.22 | 1.579 |
| 32 | 7.349 | | 0.0000 | 0.000 | 7557.5 | 0.315 | VB | 0.037 | 3445.85 | 0.393 |
| 33 | 7.532 | o,p-DDE | 0.8447 | 0.798 | 4828.7 | 0.201 | BV | 0.037 | 2156.76 | 0.246 |
| 34 | 7.598 | | 0.0000 | 0.000 | 47328.4 | 1.973 | VB | 0.047 | 16744.88 | 1.912 |
| 35 | 7.855 | | 0.0000 | 0.000 | 2140.0 | 0.089 | BV | 0.053 | 677.68 | 0.077 |
| 36 | 7.911 | a. Chlordane | 0.2350 | 0.222 | 2499.4 | 0.104 | VV | 0.043 | 971.15 | 0.111 |
| 37 | 7.968 | 4,4'-DDE | 2.7568 | 2.605 | 25848.3 | 1.078 | VB | 0.044 | 9700.91 | 1.108 |
| 38 | 8.131 | | 0.0000 | 0.000 | 13329.7 | 0.556 | BV | 0.031 | 7077.39 | 0.808 |
| 39 | 8.184 | o,p-DDD | 6.6044 | 6.240 | 28377.0 | 1.183 | VB | 0.033 | 14220.74 | 1.624 |
| 40 | 8.265 | | 0.0000 | 0.000 | 11100.7 | 0.463 | BB | 0.039 | 4701.70 | 0.537 |
| 41 | 8.367 | | 0.0000 | 0.000 | 91722.1 | 3.824 | BV | 0.042 | 36313.30 | 4.146 |
| 42 | 8.497 | | 0.0000 | 0.000 | 12422.0 | 0.518 | VV | 0.046 | 4466.84 | 0.510 |
| 43 | 8.563 | o,p-DDT | 0.3587 | 0.339 | 1812.0 | 0.076 | VB | 0.033 | 920.12 | 0.105 |
| 44 | 8.645 | | 0.0000 | 0.000 | 15898.2 | 0.663 | BV | 0.038 | 7031.74 | 0.803 |
| 45 | 8.719 | Endrin | 15.3951 | 14.545 | 148265.4 | 6.181 | VV | 0.054 | 45771.61 | 5.226 |
| 46 | 8.785 | Kepone | 36.0098 | 34.022 | 30305.2 | 1.263 | VV | 0.036 | 14010.23 | 1.600 |
| 47 | 8.889 | | 0.0000 | 0.000 | 55048.3 | 2.295 | VB | 0.041 | 22130.72 | 2.527 |
| 48 | 9.020 | Endosulfan II | 0.5020 | 0.474 | 3301.4 | 0.138 | BV | 0.033 | 1645.30 | 0.188 |
| 49 | 9.093 | | 0.0000 | 0.000 | 157825.0 | 6.579 | VV | 0.056 | 47364.45 | 5.408 |
| 50 | 9.233 | | 0.0000 | 0.000 | 76945.1 | 3.208 | VV | 0.042 | 30308.05 | 3.461 |
| 51 | 9.293 | | 0.0000 | 0.000 | 45161.0 | 1.883 | VB | 0.042 | 18052.97 | 2.061 |
| 52 | 9.415 | | 0.0000 | 0.000 | 10939.2 | 0.456 | BV | 0.035 | 5152.40 | 0.588 |
| 53 | 9.474 | | 0.0000 | 0.000 | 11630.3 | 0.485 | VV | 0.049 | 3964.38 | 0.453 |
| 54 | 9.559 | Endrin aldehyde | 10.6672 | 10.078 | 68215.9 | 2.844 | VV | 0.039 | 29432.62 | 3.361 |
| 55 | 9.614 | | 0.0000 | 0.000 | 45878.1 | 1.913 | VV | 0.043 | 17839.80 | 2.037 |
| 56 | 9.675 | | 0.0000 | 0.000 | 23222.9 | 0.968 | VV | 0.041 | 9506.68 | 1.085 |
| 57 | 9.739 | Methoxychlor | 0.6916 | 0.653 | 1918.0 | 0.080 | VV | 0.027 | 1163.29 | 0.133 |
| 58 | 9.787 | | 0.0000 | 0.000 | 8392.8 | 0.350 | VB | 0.036 | 3850.48 | 0.440 |
| 59 | 9.867 | | 0.0000 | 0.000 | 12443.8 | 0.519 | BV | 0.036 | 5833.34 | 0.666 |
| 60 | 9.947 | | 0.0000 | 0.000 | 188040.5 | 7.839 | VB | 0.046 | 68703.02 | 7.845 |
| 61 | 10.241 | | 0.0000 | 0.000 | 73.8 | 0.003 | BV | 0.022 | 55.33 | 0.006 |
| 62 | 10.322 | | 0.0000 | 0.000 | 134834.4 | 5.621 | VV | 0.058 | 38836.47 | 4.434 |
| 63 | 10.414 | | 0.0000 | 0.000 | 60317.8 | 2.515 | VV | 0.054 | 18510.21 | 2.114 |
| 64 | 10.659 | | 0.0000 | 0.000 | 3809.5 | 0.159 | VV | 0.041 | 1550.17 | 0.177 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.728 | | 0.0000 | 0.000 | 1610.3 | 0.067 | VV | 0.031 | 868.15 | 0.099 |
| 66 | 10.789 | | 0.0000 | 0.000 | 23364.3 | 0.974 | VB | 0.045 | 8748.91 | 0.999 |
| 67 | 11.121 | | 0.0000 | 0.000 | 54685.8 | 2.280 | BB | 0.046 | 19979.00 | 2.281 |
| 68 | 11.536 | | 0.0000 | 0.000 | 17635.6 | 0.735 | BB | 0.046 | 6420.96 | 0.733 |
| 69 | 11.834 DCB | | 8.7220 | 8.241 | 95291.6 | 3.972 | BB | 0.048 | 33213.66 | 3.792 |
| 70 | 13.330 | | 0.0000 | 0.000 | 95.6 | 0.004 | BB | 0.034 | 46.18 | 0.005 |

Total Area = 2398790.0, Total Amount = 105.841, Total Height = 875798.3, Sample Units = PPB

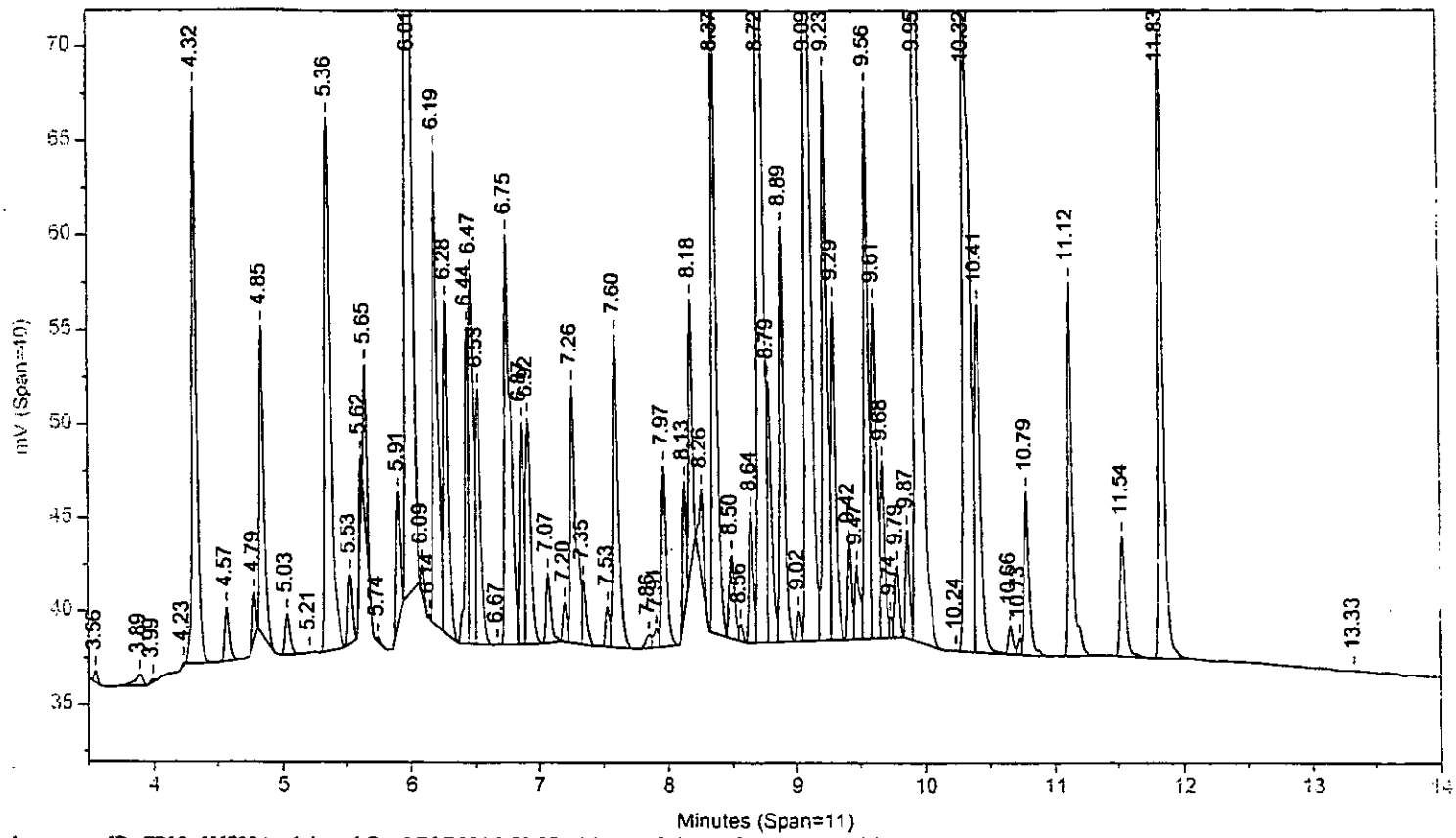
Sample Name: **AR1630424D AAAR163AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 02:16:37am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.20R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.686 | | 0.0000 | 0.000 | 13383.0 | 1.125 | BB | 0.400 | 558.28 | 0.125 |
| 2 | 4.837 | TCX | 7.5308 | 6.512 | 32400.5 | 2.725 | BB | 0.037 | 14731.91 | 3.301 |
| 3 | 5.014 | | 0.0000 | 0.000 | 1792.7 | 0.151 | BB | 0.037 | 808.80 | 0.181 |
| 4 | 5.258 | | 0.0000 | 0.000 | 3460.1 | 0.291 | BB | 0.039 | 1488.74 | 0.334 |
| 5 | 5.469 | | 0.0000 | 0.000 | 3848.4 | 0.324 | BB | 0.036 | 1792.75 | 0.402 |
| 6 | 5.557 | HCB | 3.2149 | 2.780 | 20550.9 | 1.728 | BB | 0.038 | 8922.86 | 1.999 |
| 7 | 5.895 | | 0.0000 | 0.000 | 3390.7 | 0.285 | BV | 0.044 | 1277.84 | 0.286 |
| 8 | 6.138 | | 0.0000 | 0.000 | 49608.6 | 4.172 | VV | 0.056 | 14652.34 | 3.283 |
| 9 | 6.298 | gamma-BHC | 0.9589 | 0.829 | 4649.2 | 0.391 | VV | 0.046 | 1674.70 | 0.375 |
| 10 | 6.437 | beta-BHC | 4.9554 | 4.285 | 11916.0 | 1.002 | VV | 0.035 | 5729.32 | 1.284 |
| 11 | 6.490 | | 0.0000 | 0.000 | 19145.2 | 1.610 | VV | 0.041 | 7868.41 | 1.763 |
| 12 | 6.621 | | 0.0000 | 0.000 | 7461.8 | 0.628 | VV | 0.037 | 3373.44 | 0.756 |
| 13 | 6.657 | | 0.0000 | 0.000 | 4490.7 | 0.378 | VV | 0.034 | 2200.66 | 0.493 |
| 14 | 6.776 | | 0.0000 | 0.000 | 78037.0 | 6.563 | VV | 0.056 | 23047.31 | 5.164 |
| 15 | 6.965 | Heptachlor | 7.6996 | 6.658 | 36684.8 | 3.085 | VV | 0.043 | 14214.59 | 3.185 |
| 16 | 7.108 | | 0.0000 | 0.000 | 17748.6 | 1.493 | VV | 0.035 | 8383.75 | 1.879 |
| 17 | 7.159 | | 0.0000 | 0.000 | 7007.0 | 0.589 | VV | 0.036 | 3252.79 | 0.729 |
| 18 | 7.228 | | 0.0000 | 0.000 | 21135.6 | 1.777 | VV | 0.036 | 9704.27 | 2.175 |
| 19 | 7.290 | | 0.0000 | 0.000 | 21658.4 | 1.821 | VV | 0.040 | 8986.20 | 2.014 |
| 20 | 7.347 | | 0.0000 | 0.000 | 20582.4 | 1.731 | VV | 0.052 | 6657.91 | 1.492 |
| 21 | 7.601 | Telodrin | 6.7291 | 5.819 | 26990.1 | 2.270 | VV | 0.037 | 12241.15 | 2.743 |
| 22 | 7.662 | | 0.0000 | 0.000 | 14041.8 | 1.181 | VV | 0.046 | 5044.95 | 1.130 |
| 23 | 7.769 | | 0.0000 | 0.000 | 29007.1 | 2.439 | VV | 0.052 | 9239.21 | 2.070 |
| 24 | 7.976 | | 0.0000 | 0.000 | 8410.9 | 0.707 | VV | 0.059 | 2360.06 | 0.529 |
| 25 | 8.102 | | 0.0000 | 0.000 | 4493.0 | 0.378 | VV | 0.038 | 1970.96 | 0.442 |
| 26 | 8.164 | Hept. epoxide | 5.0013 | 4.325 | 22398.7 | 1.884 | VV | 0.041 | 9026.05 | 2.023 |
| 27 | 8.322 | | 0.0000 | 0.000 | 3462.5 | 0.291 | VV | 0.040 | 1451.46 | 0.325 |
| 28 | 8.403 | o,p-DDE | 7.4227 | 6.419 | 21388.7 | 1.799 | VV | 0.039 | 9229.33 | 2.068 |
| 29 | 8.550 | | 0.0000 | 0.000 | 2394.2 | 0.201 | VV | 0.060 | 662.95 | 0.149 |
| 30 | 8.793 | | 0.0000 | 0.000 | 833.3 | 0.070 | VB | 0.034 | 411.04 | 0.092 |
| 31 | 8.872 | | 0.0000 | 0.000 | 4251.6 | 0.358 | BV | 0.041 | 1736.88 | 0.389 |
| 32 | 9.022 | | 0.0000 | 0.000 | 18891.6 | 1.589 | VV | 0.054 | 5879.91 | 1.318 |
| 33 | 9.066 | Dieldrin | 6.2762 | 5.427 | 24464.2 | 2.057 | VV | 0.039 | 10461.35 | 2.344 |
| 34 | 9.152 | | 0.0000 | 0.000 | 14643.3 | 1.231 | VV | 0.049 | 5010.46 | 1.123 |
| 35 | 9.275 | | 0.0000 | 0.000 | 53468.1 | 4.496 | VB | 0.041 | 21683.52 | 4.859 |
| 36 | 9.452 | | 0.0000 | 0.000 | 11552.8 | 0.972 | BV | 0.040 | 4797.24 | 1.075 |
| 37 | 9.532 | o,p-DDT | 21.6410 | 18.714 | 57433.9 | 4.830 | VB | 0.038 | 25467.88 | 5.707 |
| 38 | 9.751 | | 0.0000 | 0.000 | 52257.8 | 4.395 | BB | 0.048 | 18027.80 | 4.040 |
| 39 | 9.901 | | 0.0000 | 0.000 | 3926.1 | 0.330 | BB | 0.039 | 1676.41 | 0.376 |
| 40 | 10.012 | 4,4'-DDT | 18.9296 | 16.369 | 71761.2 | 6.035 | BB | 0.052 | 22885.05 | 5.128 |
| 41 | 10.122 | | 0.0000 | 0.000 | 29157.0 | 2.452 | BB | 0.034 | 14365.67 | 3.219 |
| 42 | 10.195 | Endrin aldehyde | 5.1090 | 4.418 | 14145.6 | 1.190 | BB | 0.032 | 7395.66 | 1.657 |
| 43 | 10.314 | | 0.0000 | 0.000 | 204.2 | 0.017 | BB | 0.018 | 186.23 | 0.042 |
| 44 | 10.353 | | 0.0000 | 0.000 | 4451.0 | 0.374 | BB | 0.033 | 2248.84 | 0.504 |
| 45 | 10.516 | | 0.0000 | 0.000 | 40857.3 | 3.436 | BB | 0.039 | 17268.77 | 3.870 |
| 46 | 10.612 | | 0.0000 | 0.000 | 16732.2 | 1.407 | BB | 0.034 | 8099.98 | 1.815 |
| 47 | 10.685 | | 0.0000 | 0.000 | 5582.5 | 0.469 | BB | 0.027 | 3425.22 | 0.768 |
| 48 | 10.823 | | 0.0000 | 0.000 | 74963.2 | 6.304 | BB | 0.038 | 33098.70 | 7.417 |
| 49 | 10.914 | | 0.0000 | 0.000 | 793.0 | 0.067 | BB | 0.029 | 453.64 | 0.102 |
| 50 | 11.027 | | 0.0000 | 0.000 | 2792.1 | 0.235 | BB | 0.041 | 1122.19 | 0.251 |
| 51 | 11.249 | | 0.0000 | 0.000 | 881.4 | 0.074 | BB | 0.031 | 481.21 | 0.108 |
| 52 | 11.349 | Endrin ketone | 11.3952 | 9.854 | 86976.6 | 7.314 | BB | 0.078 | 18623.32 | 4.173 |
| 53 | 11.689 | | 0.0000 | 0.000 | 1777.8 | 0.150 | BB | 0.043 | 685.92 | 0.154 |
| 54 | 11.791 | | 0.0000 | 0.000 | 1467.1 | 0.123 | BB | 0.039 | 628.97 | 0.141 |
| 55 | 11.998 | | 0.0000 | 0.000 | 8408.7 | 0.707 | BB | 0.041 | 3437.91 | 0.770 |
| 56 | 12.234 | | 0.0000 | 0.000 | 22764.2 | 1.914 | BB | 0.045 | 8437.86 | 1.891 |
| 57 | 12.839 | | 0.0000 | 0.000 | 7963.5 | 0.670 | BB | 0.047 | 2838.70 | 0.636 |
| 58 | 13.373 | DCB | 8.7794 | 7.592 | 44185.0 | 3.716 | BB | 0.049 | 14884.55 | 3.335 |

8673

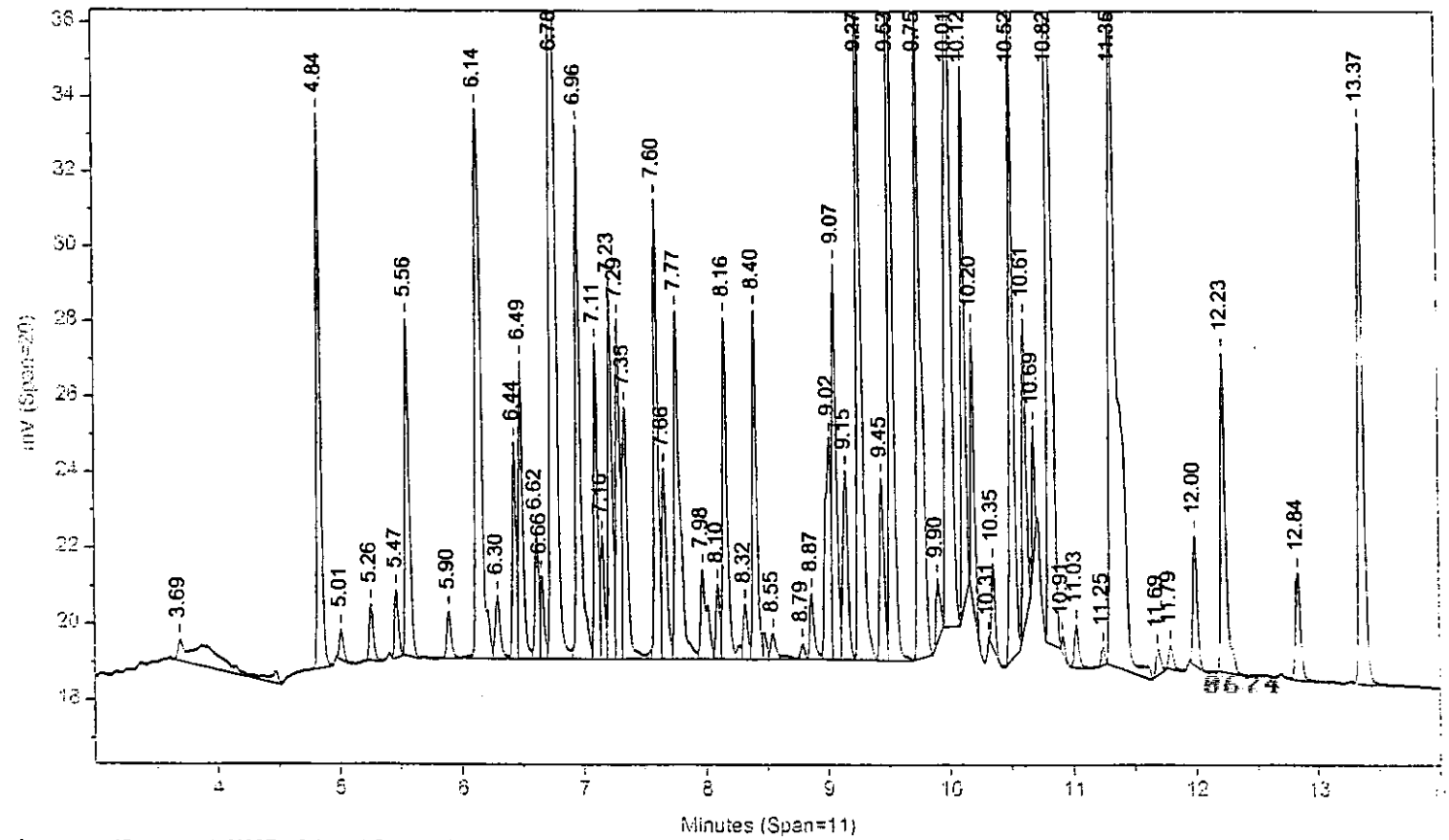
Total Area = 1189125.0, Total Amount = 115.643, Total Height = 446273.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.20R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 2:02:37 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.20R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 2:02:37 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

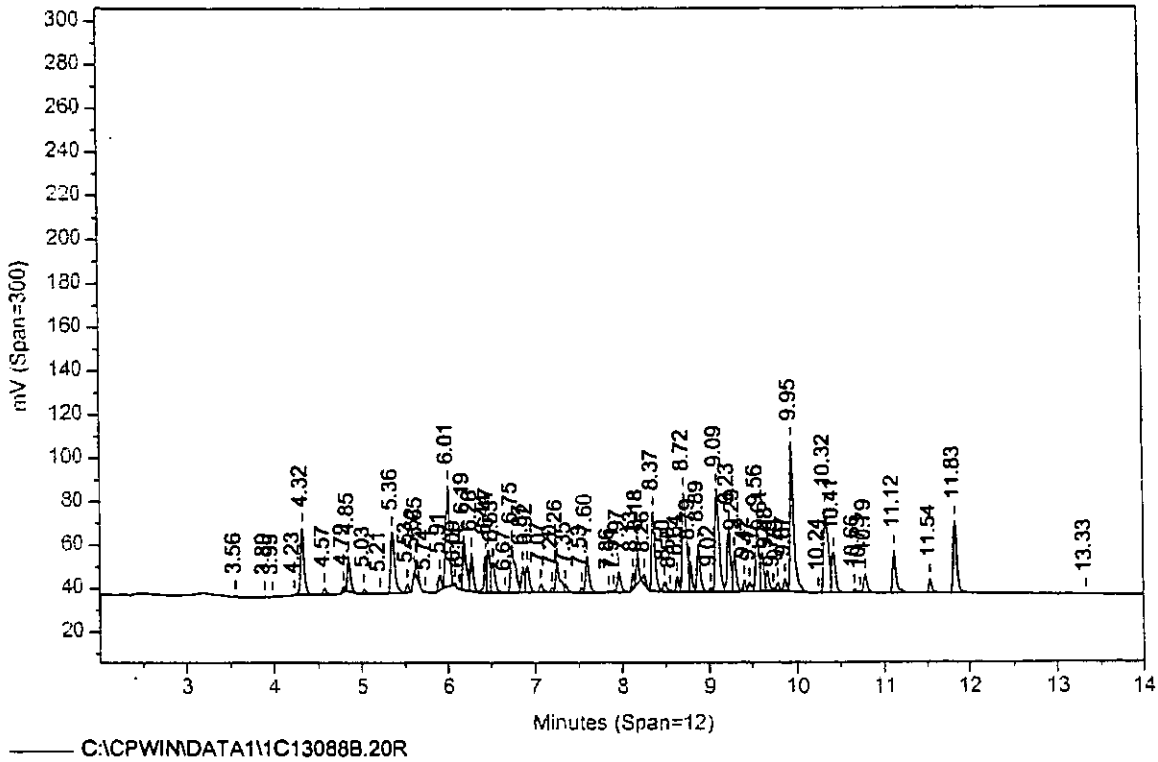
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 30651 | 8.07552 | TCX | 4.837 | 14732 | 7.53083 | TCX |
| . | 0 | . | HCB | 5.557 | 8923 | 3.21489 | HCB |
| 5.615 | 3138 | .67701 | gamma-BHC | 6.298 | 1675 | .9589 | gamma-BHC |
| 5.742 | 284 | .11025 | beta-BHC | 6.437 | 5729 | 4.95542 | beta-BHC |
| 6.008 | 46566 | 10.58898 | delta-BHC | . | 0 | . | delta-BHC |
| 6.281 | 17801 | 3.60259 | Heptachlor | 6.965 | 14215 | 7.69959 | Heptachlor |
| 7.532 | 2157 | .84468 | o,p-DDE | 8.403 | 9229 | 7.42271 | o,p-DDE |
| . | 0 | . | Telodrin | 7.601 | 12241 | 6.72912 | Telodrin |
| 7.911 | 971 | .23499 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.968 | 9701 | 2.75682 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.164 | 9026 | 5.0013 | Hept. epoxide |
| 8.184 | 14221 | 6.60439 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.563 | 920 | .35868 | o,p-DDT | 9.532 | 25468 | 21.64103 | o,p-DDT |
| 8.719 | 45772 | 15.39507 | Endrin | . | 0 | . | Endrin |
| 8.785 | 14010 | 36.00981 | Kepone | . | 0 | . | Kepone |
| 9.02 | 1645 | .50197 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.066 | 10461 | 6.27617 | Dieldrin |
| 9.559 | 29433 | 10.66717 | Endrin aldehyde | 10.195 | 7396 | 5.10895 | Endrin aldehyde |
| 9.739 | 1163 | .69156 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 10.012 | 22885 | 18.92961 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.349 | 18623 | 11.39521 | Endrin ketone |
| 11.834 | 33214 | 8.72202 | DCB | 13.373 | 14885 | 8.77942 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.20A
Area File: C:\CPWIN\DATA1\1C13088B.20A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:59:22 AM
File Reported On: 3/29/2004 at 9:59:32 AM

9675

10X REPLOTS

C:\CPWIN\DATA1\1C13088.20R

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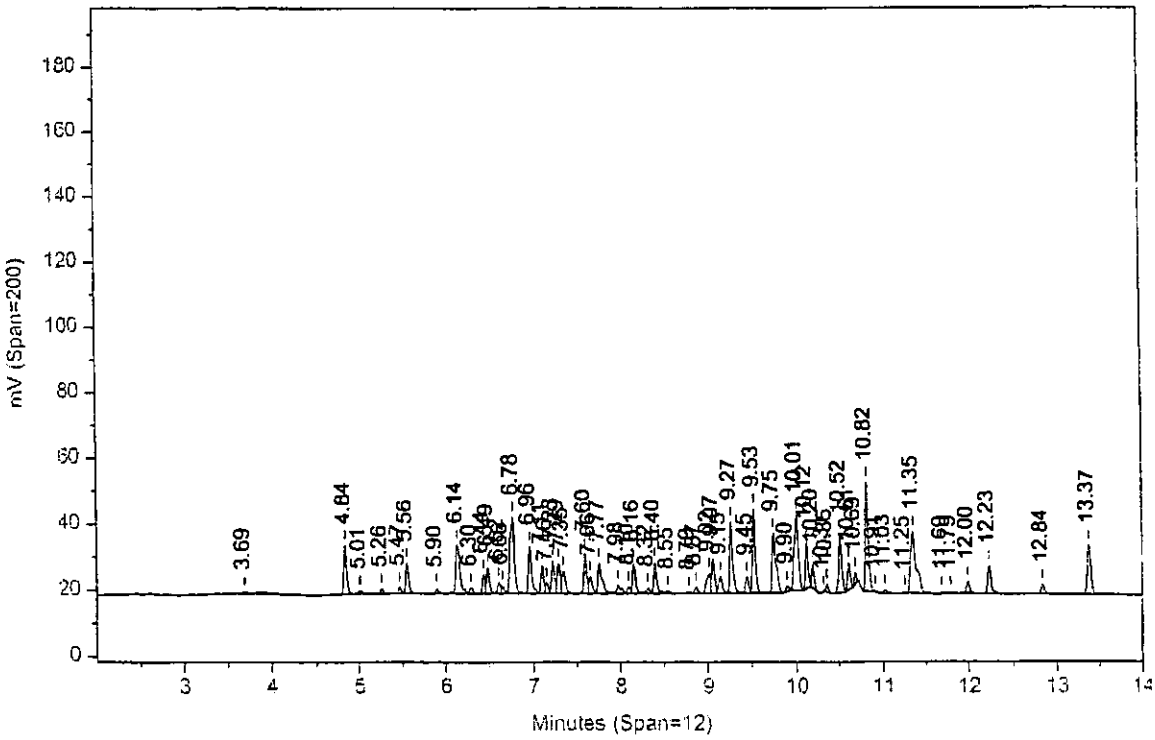



8676

Sample Name: **AR1640424E AAAR164AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 02:37:16am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.21R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.553 | | 0.0000 | 0.000 | 1041.1 | 0.019 | BB | 0.034 | 508.03 | 0.026 |
| 2 | 3.892 | | 0.0000 | 0.000 | 3103.8 | 0.058 | BB | 0.079 | 654.24 | 0.034 |
| 3 | 3.985 | | 0.0000 | 0.000 | 269.5 | 0.005 | BB | 0.033 | 135.67 | 0.007 |
| 4 | 4.075 | | 0.0000 | 0.000 | 206.5 | 0.004 | BB | 0.037 | 92.04 | 0.005 |
| 5 | 4.128 | | 0.0000 | 0.000 | 185.9 | 0.003 | BB | 0.037 | 83.60 | 0.004 |
| 6 | 4.230 | | 0.0000 | 0.000 | 734.5 | 0.014 | BB | 0.027 | 447.01 | 0.023 |
| 7 | 4.319 | TCX | 15.7848 | 10.412 | 148906.4 | 2.772 | BB | 0.041 | 59911.71 | 3.084 |
| 8 | 4.569 | | 0.0000 | 0.000 | 17175.8 | 0.320 | BB | 0.041 | 6909.39 | 0.356 |
| 9 | 4.787 | | 0.0000 | 0.000 | 10719.8 | 0.200 | BB | 0.030 | 6034.92 | 0.311 |
| 10 | 4.847 | | 0.0000 | 0.000 | 88300.3 | 1.644 | BB | 0.039 | 37275.84 | 1.919 |
| 11 | 5.032 | | 0.0000 | 0.000 | 13549.2 | 0.252 | BB | 0.043 | 5281.06 | 0.272 |
| 12 | 5.248 | | 0.0000 | 0.000 | 65.9 | 0.001 | BB | 0.032 | 34.63 | 0.002 |
| 13 | 5.359 | | 0.0000 | 0.000 | 206179.0 | 3.838 | BB | 0.055 | 62917.80 | 3.239 |
| 14 | 5.531 | | 0.0000 | 0.000 | 20536.2 | 0.382 | BB | 0.039 | 8789.38 | 0.452 |
| 15 | 5.615 | gamma-BHC | 1.9530 | 1.288 | 12672.0 | 0.236 | BB | 0.023 | 9052.30 | 0.466 |
| 16 | 5.649 | | 0.0000 | 0.000 | 31735.8 | 0.591 | BB | 0.028 | 18721.28 | 0.964 |
| 17 | 5.742 | beta-BHC | 0.2771 | 0.183 | 1070.2 | 0.020 | BB | 0.025 | 713.94 | 0.037 |
| 18 | 5.908 | | 0.0000 | 0.000 | 38755.2 | 0.721 | BB | 0.039 | 16482.38 | 0.848 |
| 19 | 6.007 | delta-BHC | 23.6839 | 15.623 | 346153.0 | 6.444 | BB | 0.055 | 104151.70 | 5.361 |
| 20 | 6.088 | | 0.0000 | 0.000 | 5104.3 | 0.095 | BB | 0.025 | 3469.06 | 0.179 |
| 21 | 6.141 | | 0.0000 | 0.000 | 829.7 | 0.015 | BV | 0.018 | 758.76 | 0.039 |
| 22 | 6.193 | | 0.0000 | 0.000 | 156085.5 | 2.906 | VV | 0.045 | 57187.42 | 2.944 |
| 23 | 6.281 | Heptachlor | 8.4541 | 5.577 | 98242.3 | 1.829 | VB | 0.039 | 41773.38 | 2.150 |
| 24 | 6.442 | | 0.0000 | 0.000 | 74738.8 | 1.391 | BV | 0.033 | 37819.68 | 1.947 |
| 25 | 6.473 | | 0.0000 | 0.000 | 104911.6 | 1.953 | VV | 0.040 | 44017.66 | 2.266 |
| 26 | 6.525 | | 0.0000 | 0.000 | 85742.7 | 1.596 | VB | 0.046 | 31246.63 | 1.608 |
| 27 | 6.750 | | 0.0000 | 0.000 | 167880.2 | 3.125 | BV | 0.057 | 49437.70 | 2.545 |
| 28 | 6.866 | | 0.0000 | 0.000 | 62831.7 | 1.170 | VV | 0.038 | 27851.35 | 1.434 |
| 29 | 6.917 | | 0.0000 | 0.000 | 82522.8 | 1.536 | VB | 0.049 | 28278.21 | 1.456 |
| 30 | 7.067 | | 0.0000 | 0.000 | 20669.3 | 0.385 | BB | 0.040 | 8673.07 | 0.446 |
| 31 | 7.199 | | 0.0000 | 0.000 | 6366.6 | 0.119 | BB | 0.029 | 3702.06 | 0.191 |
| 32 | 7.261 | | 0.0000 | 0.000 | 67389.8 | 1.254 | BV | 0.038 | 29323.86 | 1.509 |
| 33 | 7.307 | | 0.0000 | 0.000 | 21056.5 | 0.392 | VV | 0.033 | 10537.63 | 0.542 |
| 34 | 7.348 | | 0.0000 | 0.000 | 14965.5 | 0.279 | VB | 0.034 | 7339.22 | 0.378 |
| 35 | 7.532 | o,p-DDE | 2.0246 | 1.335 | 10913.0 | 0.203 | BV | 0.035 | 5169.37 | 0.266 |
| 36 | 7.598 | | 0.0000 | 0.000 | 107913.7 | 2.009 | VB | 0.048 | 37699.65 | 1.940 |
| 37 | 7.853 | | 0.0000 | 0.000 | 2089.0 | 0.039 | BV | 0.047 | 733.39 | 0.038 |
| 38 | 7.913 | a. Chlordane | 0.4530 | 0.299 | 4416.9 | 0.082 | VV | 0.039 | 1872.33 | 0.096 |
| 39 | 7.968 | 4,4'-DDE | 6.3633 | 4.197 | 59576.2 | 1.109 | VB | 0.044 | 22391.63 | 1.153 |
| 40 | 8.131 | | 0.0000 | 0.000 | 31331.5 | 0.583 | BV | 0.031 | 16657.99 | 0.857 |
| 41 | 8.183 | o,p-DDD | 14.8816 | 9.817 | 63049.6 | 1.174 | VB | 0.033 | 32043.46 | 1.649 |
| 42 | 8.264 | | 0.0000 | 0.000 | 25659.1 | 0.478 | BB | 0.039 | 10971.09 | 0.565 |
| 43 | 8.366 | | 0.0000 | 0.000 | 200327.6 | 3.729 | BV | 0.042 | 79627.16 | 4.099 |
| 44 | 8.497 | | 0.0000 | 0.000 | 28913.2 | 0.538 | VV | 0.046 | 10535.28 | 0.542 |
| 45 | 8.563 | o,p-DDT | 0.8720 | 0.575 | 4329.7 | 0.081 | VB | 0.032 | 2236.83 | 0.115 |
| 46 | 8.644 | | 0.0000 | 0.000 | 37282.6 | 0.694 | BV | 0.038 | 16378.90 | 0.843 |
| 47 | 8.718 | Endrin | 33.6942 | 22.226 | 393556.0 | 7.326 | VV | 0.065 | 100177.30 | 5.156 |
| 48 | 8.889 | | 0.0000 | 0.000 | 127386.2 | 2.371 | VB | 0.042 | 51059.34 | 2.628 |
| 49 | 9.020 | Endosulfan II | 1.2105 | 0.799 | 7967.3 | 0.148 | BV | 0.033 | 3967.70 | 0.204 |
| 50 | 9.093 | | 0.0000 | 0.000 | 357402.2 | 6.653 | VV | 0.056 | 106060.60 | 5.459 |
| 51 | 9.232 | | 0.0000 | 0.000 | 166884.5 | 3.107 | VV | 0.041 | 67454.20 | 3.472 |
| 52 | 9.292 | | 0.0000 | 0.000 | 107700.2 | 2.005 | VB | 0.043 | 41444.71 | 2.133 |
| 53 | 9.415 | | 0.0000 | 0.000 | 26306.5 | 0.490 | BV | 0.035 | 12363.35 | 0.636 |
| 54 | 9.474 | | 0.0000 | 0.000 | 27932.2 | 0.520 | VV | 0.049 | 9521.49 | 0.490 |
| 55 | 9.558 | Endrin aldehyde | 24.1289 | 15.916 | 154383.2 | 2.874 | VV | 0.039 | 66576.05 | 3.427 |
| 56 | 9.613 | | 0.0000 | 0.000 | 102523.4 | 1.908 | VV | 0.042 | 40903.76 | 2.105 |
| 57 | 9.675 | | 0.0000 | 0.000 | 57494.7 | 1.070 | VV | 0.043 | 22250.07 | 1.145 |
| 58 | 9.739 | Methoxychlor | 1.6954 | 1.118 | 4654.5 | 0.087 | VV | 0.027 | 2851.85 | 0.147 |
| 59 | 9.786 | | 0.0000 | 0.000 | 20323.1 | 0.378 | VB | 0.036 | 9395.75 | 0.484 |
| 60 | 9.867 | | 0.0000 | 0.000 | 29737.5 | 0.554 | BV | 0.036 | 13884.34 | 0.715 |
| 61 | 9.946 | | 0.0000 | 0.000 | 425194.1 | 7.915 | VB | 0.046 | 154192.90 | 7.937 |
| 62 | 10.243 | | 0.0000 | 0.000 | 76.1 | 0.001 | BV | 0.023 | 56.35 | 0.003 |
| 63 | 10.321 | | 0.0000 | 0.000 | 309179.7 | 5.755 | VV | 0.058 | 88301.61 | 4.545 |
| 64 | 10.413 | | 0.0000 | 0.000 | 141888.6 | 2.641 | VV | 0.055 | 43344.43 | 2.231 |

8677

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.659 | | 0.0000 | 0.000 | 8617.2 | 0.160 | VV | 0.039 | 3649.48 | 0.188 |
| 66 | 10.735 | | 0.0000 | 0.000 | 7689.3 | 0.143 | VV | 0.035 | 3701.77 | 0.191 |
| 67 | 10.787 | | 0.0000 | 0.000 | 55273.5 | 1.029 | VV | 0.044 | 21103.84 | 1.086 |
| 68 | 10.875 | | 0.0000 | 0.000 | 2802.1 | 0.052 | VB | 0.040 | 1167.48 | 0.060 |
| 69 | 11.121 | | 0.0000 | 0.000 | 129108.2 | 2.403 | BB | 0.046 | 46560.47 | 2.397 |
| 70 | 11.535 | | 0.0000 | 0.000 | 42448.3 | 0.790 | BB | 0.046 | 15474.15 | 0.796 |
| 71 | 11.833 DCB | | 16.1212 | 10.634 | 179031.0 | 3.333 | BB | 0.049 | 61389.81 | 3.160 |

Total Area = 5372058.0, Total Amount = 151.598, Total Height = 1942783.0, Sample Units = PPB

Sample Name: **AR1640424E AAAR164AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 02:37:16am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.21R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

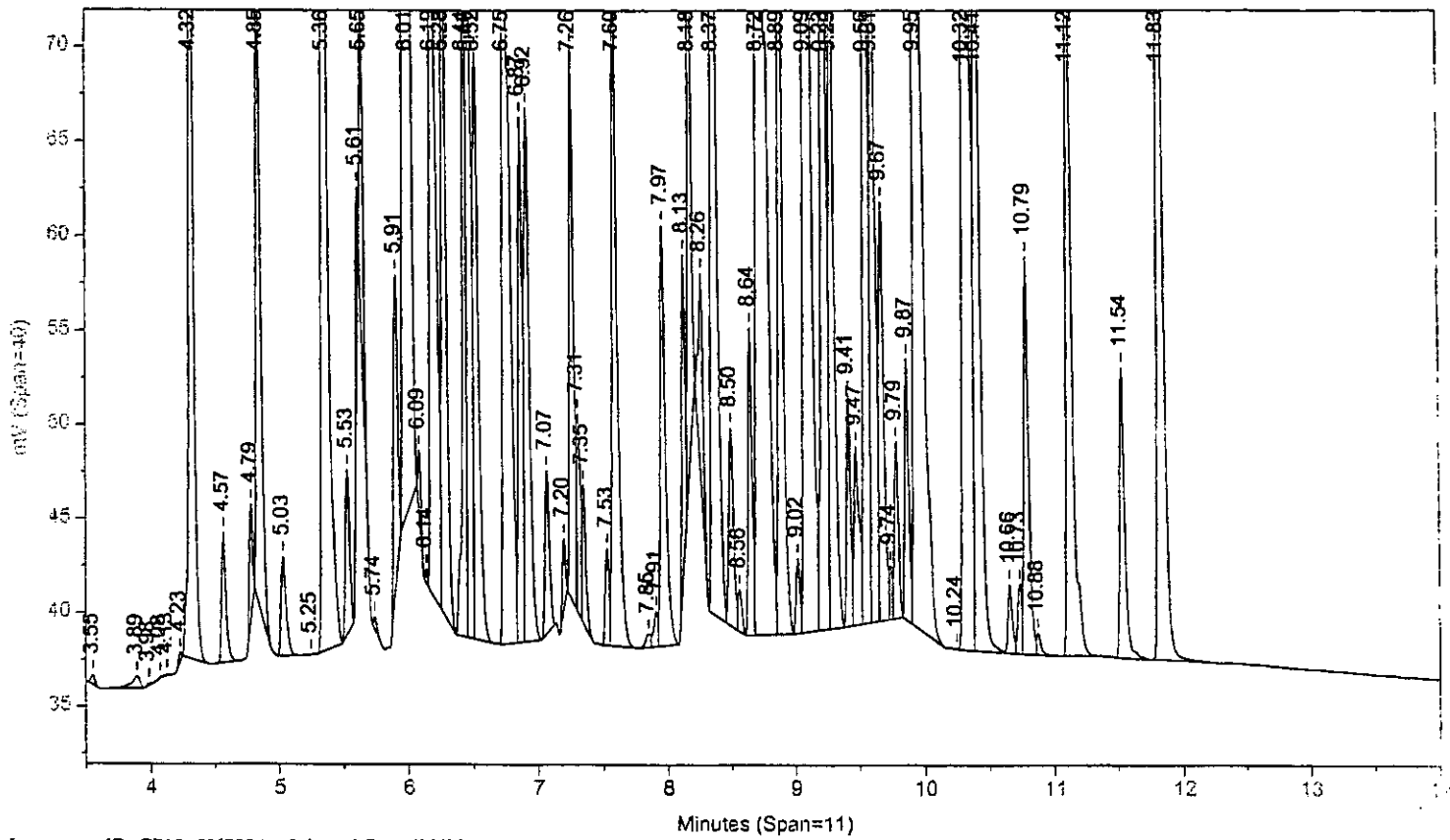
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.884 | | 0.0000 | 0.000 | 12768.1 | 0.482 | BB | 0.391 | 543.72 | 0.053 |
| 2 | 4.837 | TCX | 15.3183 | 5.962 | 63843.4 | 2.408 | BB | 0.036 | 29965.86 | 2.930 |
| 3 | 4.977 | | 0.0000 | 0.000 | 250.6 | 0.009 | BB | 0.026 | 159.41 | 0.016 |
| 4 | 5.012 | | 0.0000 | 0.000 | 3710.2 | 0.140 | BB | 0.035 | 1744.94 | 0.171 |
| 5 | 5.260 | | 0.0000 | 0.000 | 8110.9 | 0.306 | BB | 0.038 | 3558.32 | 0.348 |
| 6 | 5.401 | | 0.0000 | 0.000 | 446.0 | 0.017 | BB | 0.025 | 291.91 | 0.029 |
| 7 | 5.468 | | 0.0000 | 0.000 | 9087.4 | 0.343 | BB | 0.035 | 4288.79 | 0.419 |
| 8 | 5.557 | HCB | 7.4029 | 2.881 | 46471.4 | 1.753 | BB | 0.038 | 20546.59 | 2.009 |
| 9 | 5.894 | | 0.0000 | 0.000 | 7083.4 | 0.267 | BV | 0.039 | 3009.52 | 0.294 |
| 10 | 6.137 | | 0.0000 | 0.000 | 102626.6 | 3.871 | VV | 0.053 | 32266.29 | 3.155 |
| 11 | 6.216 | | 0.0000 | 0.000 | 5948.8 | 0.224 | VV | 0.033 | 2977.84 | 0.291 |
| 12 | 6.298 | gamma-BHC | 2.2708 | 0.884 | 10576.6 | 0.399 | VV | 0.044 | 3965.85 | 0.388 |
| 13 | 6.437 | beta-BHC | 11.6211 | 4.523 | 27699.3 | 1.045 | VV | 0.034 | 13436.03 | 1.314 |
| 14 | 6.489 | | 0.0000 | 0.000 | 42319.8 | 1.596 | VV | 0.039 | 17991.30 | 1.759 |
| 15 | 6.621 | | 0.0000 | 0.000 | 16820.4 | 0.634 | VV | 0.036 | 7823.00 | 0.765 |
| 16 | 6.659 | | 0.0000 | 0.000 | 10130.3 | 0.382 | VV | 0.033 | 5096.07 | 0.498 |
| 17 | 6.775 | | 0.0000 | 0.000 | 176785.4 | 6.668 | VV | 0.055 | 53592.12 | 5.240 |
| 18 | 6.964 | Heptachlor | 17.5973 | 6.848 | 81940.1 | 3.091 | VV | 0.042 | 32487.18 | 3.176 |
| 19 | 7.108 | | 0.0000 | 0.000 | 42010.4 | 1.585 | VV | 0.034 | 20392.91 | 1.994 |
| 20 | 7.159 | | 0.0000 | 0.000 | 16258.9 | 0.613 | VV | 0.036 | 7559.04 | 0.739 |
| 21 | 7.227 | | 0.0000 | 0.000 | 46416.3 | 1.751 | VV | 0.036 | 21586.30 | 2.111 |
| 22 | 7.289 | | 0.0000 | 0.000 | 46329.5 | 1.747 | VV | 0.038 | 20303.18 | 1.985 |
| 23 | 7.346 | | 0.0000 | 0.000 | 46502.2 | 1.754 | VV | 0.051 | 15144.47 | 1.481 |
| 24 | 7.550 | | 0.0000 | 0.000 | 746.2 | 0.028 | VV | 0.028 | 448.86 | 0.044 |
| 25 | 7.600 | Telodrin | 15.3142 | 5.960 | 59703.4 | 2.252 | VV | 0.036 | 27858.48 | 2.724 |
| 26 | 7.662 | | 0.0000 | 0.000 | 31899.9 | 1.203 | VV | 0.046 | 11650.08 | 1.139 |
| 27 | 7.768 | | 0.0000 | 0.000 | 65568.7 | 2.473 | VV | 0.051 | 21340.11 | 2.087 |
| 28 | 7.976 | | 0.0000 | 0.000 | 12541.1 | 0.473 | VV | 0.038 | 5488.56 | 0.537 |
| 29 | 8.014 | | 0.0000 | 0.000 | 6605.0 | 0.249 | VV | 0.033 | 3293.55 | 0.322 |
| 30 | 8.102 | | 0.0000 | 0.000 | 10248.3 | 0.387 | VV | 0.037 | 4570.62 | 0.447 |
| 31 | 8.164 | Hept. epoxide | 11.3127 | 4.403 | 47377.9 | 1.787 | VV | 0.039 | 20416.47 | 1.996 |
| 32 | 8.273 | | 0.0000 | 0.000 | 1649.1 | 0.062 | VV | 0.035 | 783.39 | 0.077 |
| 33 | 8.321 | | 0.0000 | 0.000 | 7439.3 | 0.281 | VV | 0.039 | 3202.40 | 0.313 |
| 34 | 8.402 | o,p-DDE | 16.6901 | 6.495 | 47055.9 | 1.775 | VV | 0.038 | 20752.33 | 2.029 |
| 35 | 8.480 | | 0.0000 | 0.000 | 3846.0 | 0.145 | VV | 0.039 | 1661.71 | 0.162 |
| 36 | 8.548 | | 0.0000 | 0.000 | 4716.8 | 0.178 | VB | 0.051 | 1554.40 | 0.152 |
| 37 | 8.791 | | 0.0000 | 0.000 | 1736.0 | 0.065 | BB | 0.033 | 872.38 | 0.085 |
| 38 | 8.871 | | 0.0000 | 0.000 | 9150.7 | 0.345 | BV | 0.037 | 4126.29 | 0.403 |
| 39 | 9.021 | | 0.0000 | 0.000 | 42807.7 | 1.615 | VV | 0.053 | 13567.30 | 1.327 |
| 40 | 9.065 | Dieldrin | 14.1945 | 5.524 | 54217.4 | 2.045 | VV | 0.038 | 23659.87 | 2.313 |
| 41 | 9.152 | | 0.0000 | 0.000 | 33791.7 | 1.275 | VV | 0.049 | 11495.53 | 1.124 |
| 42 | 9.274 | | 0.0000 | 0.000 | 116029.5 | 4.376 | VV | 0.040 | 48051.46 | 4.698 |
| 43 | 9.453 | | 0.0000 | 0.000 | 26637.9 | 1.005 | VV | 0.040 | 11070.95 | 1.082 |
| 44 | 9.531 | o,p-DDT | 47.7508 | 18.583 | 123913.9 | 4.674 | VB | 0.037 | 56194.73 | 5.494 |
| 45 | 9.751 | | 0.0000 | 0.000 | 118252.6 | 4.460 | BB | 0.047 | 41538.55 | 4.061 |
| 46 | 9.902 | | 0.0000 | 0.000 | 9573.3 | 0.361 | BB | 0.040 | 3949.18 | 0.386 |
| 47 | 10.011 | 4,4'-DDT | 42.9757 | 16.725 | 161828.3 | 6.104 | BB | 0.052 | 51955.69 | 5.080 |
| 48 | 10.121 | | 0.0000 | 0.000 | 64009.7 | 2.414 | BB | 0.033 | 32368.36 | 3.165 |
| 49 | 10.194 | Endrin aldehyde | 11.7716 | 4.581 | 32429.0 | 1.223 | BB | 0.032 | 17040.40 | 1.666 |
| 50 | 10.317 | | 0.0000 | 0.000 | 627.7 | 0.024 | BB | 0.029 | 365.12 | 0.036 |
| 51 | 10.353 | | 0.0000 | 0.000 | 10389.2 | 0.392 | BB | 0.032 | 5441.58 | 0.532 |
| 52 | 10.515 | | 0.0000 | 0.000 | 92729.8 | 3.498 | BB | 0.039 | 39408.94 | 3.853 |
| 53 | 10.612 | | 0.0000 | 0.000 | 38200.7 | 1.441 | BB | 0.034 | 18694.35 | 1.828 |
| 54 | 10.686 | | 0.0000 | 0.000 | 34727.6 | 1.310 | BB | 0.051 | 11337.89 | 1.109 |
| 55 | 10.822 | | 0.0000 | 0.000 | 168494.4 | 6.355 | BB | 0.037 | 76003.13 | 7.431 |
| 56 | 10.917 | | 0.0000 | 0.000 | 1917.3 | 0.072 | BB | 0.028 | 1132.30 | 0.111 |
| 57 | 11.026 | | 0.0000 | 0.000 | 6390.7 | 0.241 | BB | 0.040 | 2648.39 | 0.259 |
| 58 | 11.247 | | 0.0000 | 0.000 | 2128.2 | 0.080 | BB | 0.031 | 1151.51 | 0.113 |
| 59 | 11.349 | Endrin ketone | 26.3647 | 10.260 | 193691.8 | 7.306 | BB | 0.075 | 43088.06 | 4.213 |
| 60 | 11.692 | | 0.0000 | 0.000 | 2997.6 | 0.113 | BB | 0.039 | 1287.43 | 0.126 |
| 61 | 11.790 | | 0.0000 | 0.000 | 3729.9 | 0.141 | BB | 0.040 | 1540.84 | 0.151 |
| 62 | 11.996 | | 0.0000 | 0.000 | 22795.7 | 0.860 | BB | 0.044 | 8614.31 | 0.842 |
| 63 | 12.234 | | 0.0000 | 0.000 | 54111.6 | 2.041 | BB | 0.045 | 19856.35 | 1.941 |
| 64 | 12.837 | | 0.0000 | 0.000 | 18876.3 | 0.712 | BB | 0.046 | 6790.40 | 0.664 |

0679

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 13.372 DCB | | 16.3690 | 6.370 | 81573.8 | 3.077 | BB | 0.049 | 27751.89 | 2.713 |

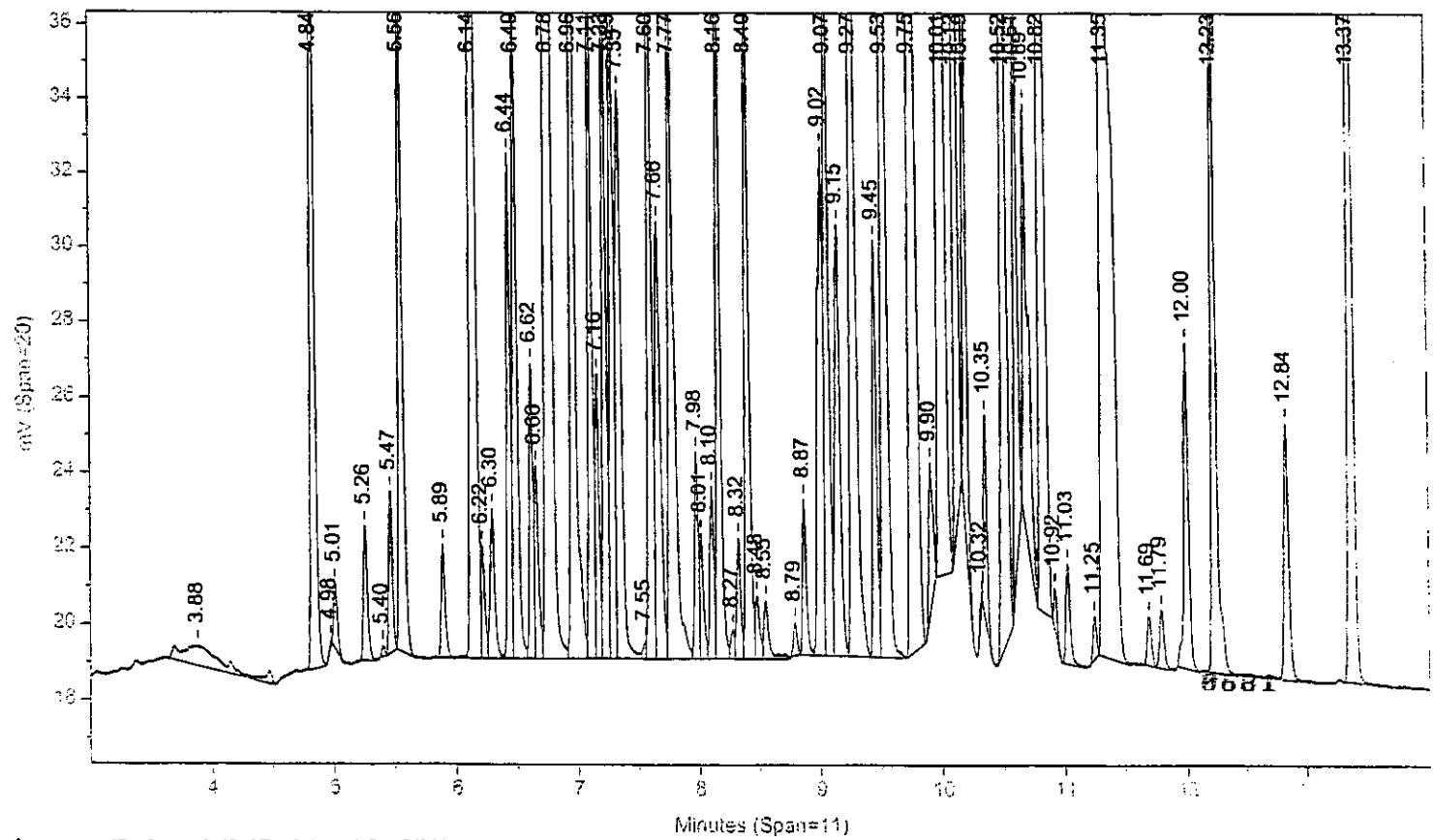
Total Area = 2651294.0, Total Amount = 256.954, Total Height = 1022755.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.21R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 2:23:16 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.21R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 2:23:16 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

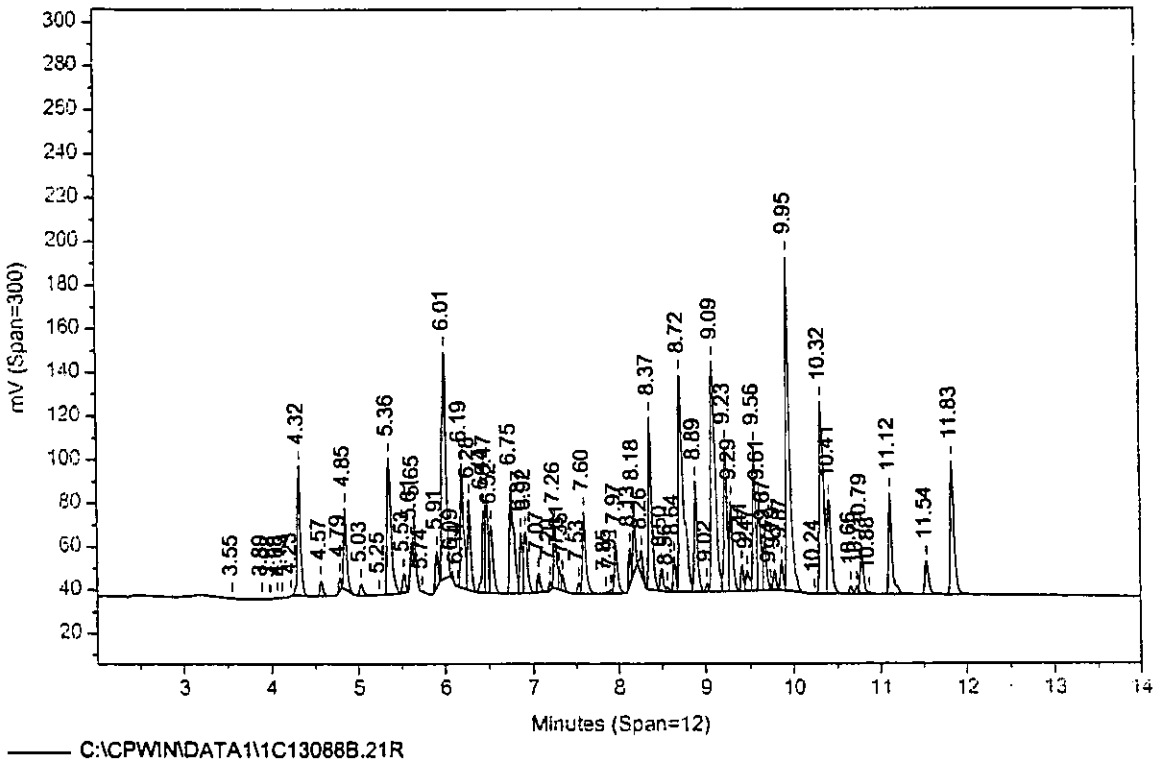
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 59912 | 15.78478 | TCX | 4.837 | 29966 | 15.3183 | TCX |
| . | 0 | . | HCB | 5.557 | 20547 | 7.40289 | HCB |
| 5.615 | 9052 | 1.953 | gamma-BHC | 6.298 | 3966 | 2.27076 | gamma-BHC |
| 5.742 | 714 | .27709 | beta-BHC | 6.437 | 13436 | 11.62114 | beta-BHC |
| 6.007 | 104152 | 23.68394 | delta-BHC | . | 0 | . | delta-BHC |
| 6.281 | 41773 | 8.45412 | Heptachlor | 6.964 | 32487 | 17.59726 | Heptachlor |
| 7.532 | 5169 | 2.02456 | o,p-DDE | 8.402 | 20752 | 16.69011 | o,p-DDE |
| . | 0 | . | Telodrin | 7.6 | 27858 | 15.31418 | Telodrin |
| 7.913 | 1872 | .45305 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.968 | 22392 | 6.36328 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.164 | 20416 | 11.31268 | Hept. epoxide |
| 8.183 | 32043 | 14.88161 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.563 | 2237 | .87196 | o,p-DDT | 9.531 | 56195 | 47.75081 | o.p-DDT |
| 8.718 | 100177 | 33.69419 | Endrin | . | 0 | . | Endrin |
| 9.02 | 3968 | 1.21052 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.065 | 23660 | 14.19448 | Dieldrin |
| 9.558 | 66576 | 24.12894 | Endrin aldehyde | 10.194 | 17040 | 11.77157 | Endrin aldehyde |
| 9.739 | 2852 | 1.69539 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 10.011 | 51956 | 42.97568 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.349 | 43088 | 26.36467 | Endrin ketone |
| 11.833 | 61390 | 16.12117 | DCB | 13.372 | 27752 | 16.36902 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.21A
Area File: C:\CPWIN\DATA1\1C13088B.21A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 9:59:46 AM
File Reported On: 3/29/2004 at 9:59:56 AM

9682

10X REPLOTS

C:\CPWIN\DATA1\1C13088.21R

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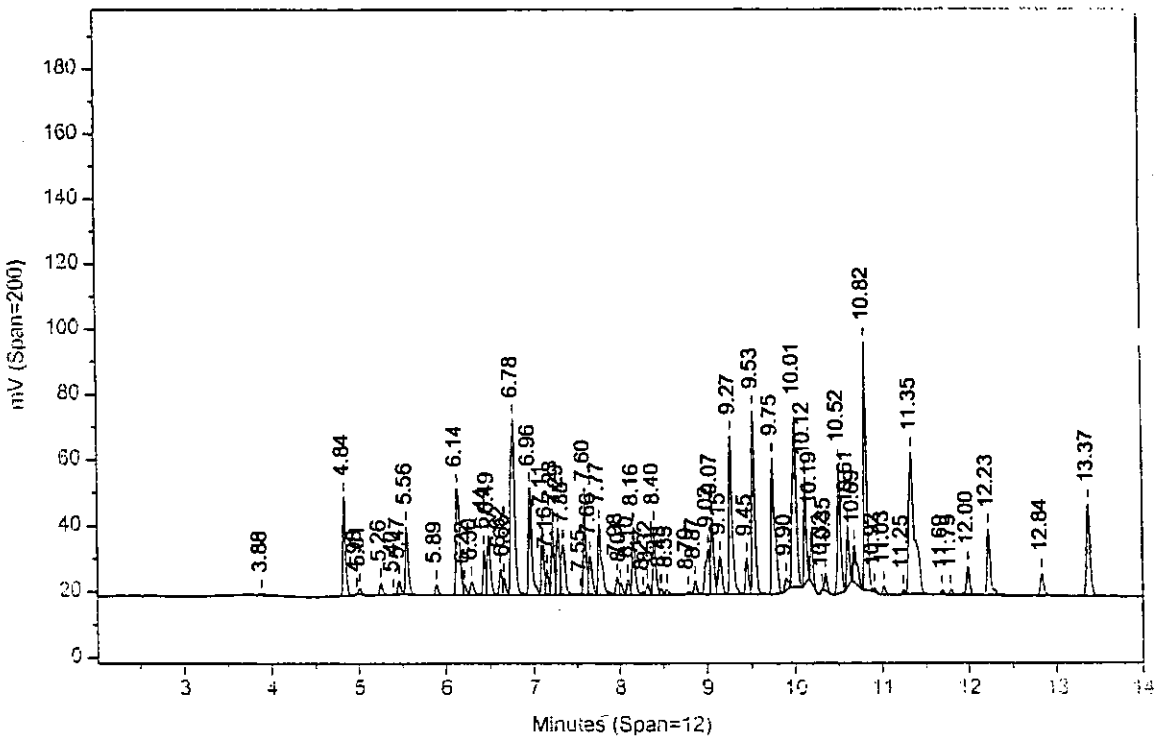


Sample Name: **AR1650424D AAAR165AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 02:57:53am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.22R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.553 | | 0.0000 | 0.000 | 2027.7 | 0.020 | BB | 0.038 | 878.85 | 0.023 |
| 2 | 3.893 | | 0.0000 | 0.000 | 2946.9 | 0.029 | BB | 0.068 | 719.24 | 0.019 |
| 3 | 3.989 | | 0.0000 | 0.000 | 241.8 | 0.002 | BB | 0.038 | 105.67 | 0.003 |
| 4 | 4.122 | | 0.0000 | 0.000 | 702.3 | 0.007 | BB | 0.058 | 203.03 | 0.005 |
| 5 | 4.231 | | 0.0000 | 0.000 | 1641.9 | 0.016 | BB | 0.026 | 1060.06 | 0.028 |
| 6 | 4.320 | TCX | 38.2268 | 8.974 | 359763.2 | 3.527 | BB | 0.041 | 145091.10 | 3.854 |
| 7 | 4.571 | | 0.0000 | 0.000 | 33677.5 | 0.330 | BB | 0.041 | 13567.98 | 0.360 |
| 8 | 4.788 | | 0.0000 | 0.000 | 20297.5 | 0.199 | BB | 0.029 | 11685.28 | 0.310 |
| 9 | 4.848 | | 0.0000 | 0.000 | 163674.2 | 1.605 | BB | 0.039 | 69204.81 | 1.838 |
| 10 | 5.033 | | 0.0000 | 0.000 | 26669.9 | 0.261 | BB | 0.043 | 10372.69 | 0.276 |
| 11 | 5.210 | | 0.0000 | 0.000 | 94.7 | 0.001 | BB | 0.027 | 59.08 | 0.002 |
| 12 | 5.253 | | 0.0000 | 0.000 | 83.5 | 0.001 | BB | 0.027 | 51.86 | 0.001 |
| 13 | 5.360 | | 0.0000 | 0.000 | 379195.9 | 3.718 | BB | 0.055 | 115624.50 | 3.071 |
| 14 | 5.533 | | 0.0000 | 0.000 | 39363.1 | 0.386 | BB | 0.039 | 16856.69 | 0.448 |
| 15 | 5.616 | gamma-BHC | 3.1055 | 0.729 | 22588.7 | 0.221 | BB | 0.026 | 14394.15 | 0.382 |
| 16 | 5.650 | | 0.0000 | 0.000 | 59020.7 | 0.579 | BB | 0.028 | 34897.44 | 0.927 |
| 17 | 5.743 | beta-BHC | 0.4997 | 0.117 | 1980.7 | 0.019 | BB | 0.026 | 1287.62 | 0.034 |
| 18 | 5.842 | | 0.0000 | 0.000 | 211.2 | 0.002 | BB | 0.022 | 160.97 | 0.004 |
| 19 | 5.909 | | 0.0000 | 0.000 | 73894.6 | 0.725 | BB | 0.039 | 31207.42 | 0.829 |
| 20 | 6.008 | delta-BHC | 44.1597 | 10.367 | 638008.6 | 6.256 | BB | 0.055 | 194195.00 | 5.158 |
| 21 | 6.088 | | 0.0000 | 0.000 | 8596.3 | 0.084 | BB | 0.024 | 5963.90 | 0.158 |
| 22 | 6.142 | | 0.0000 | 0.000 | 1744.1 | 0.017 | BV | 0.018 | 1616.92 | 0.043 |
| 23 | 6.194 | | 0.0000 | 0.000 | 289221.9 | 2.836 | VV | 0.045 | 106555.20 | 2.830 |
| 24 | 6.282 | Heptachlor | 16.2670 | 3.819 | 190242.0 | 1.865 | VB | 0.039 | 80378.05 | 2.135 |
| 25 | 6.443 | | 0.0000 | 0.000 | 146928.8 | 1.441 | BV | 0.035 | 69550.52 | 1.847 |
| 26 | 6.474 | | 0.0000 | 0.000 | 182234.9 | 1.787 | VV | 0.037 | 81091.09 | 2.154 |
| 27 | 6.526 | | 0.0000 | 0.000 | 165281.6 | 1.621 | VB | 0.047 | 58902.67 | 1.565 |
| 28 | 6.751 | | 0.0000 | 0.000 | 313520.9 | 3.074 | BV | 0.057 | 92338.97 | 2.453 |
| 29 | 6.867 | | 0.0000 | 0.000 | 118492.7 | 1.162 | VV | 0.037 | 53317.28 | 1.416 |
| 30 | 6.918 | | 0.0000 | 0.000 | 159296.6 | 1.562 | VB | 0.049 | 53788.08 | 1.429 |
| 31 | 7.069 | | 0.0000 | 0.000 | 46692.3 | 0.458 | BB | 0.045 | 17447.92 | 0.463 |
| 32 | 7.200 | | 0.0000 | 0.000 | 12610.5 | 0.124 | BB | 0.028 | 7381.73 | 0.196 |
| 33 | 7.262 | | 0.0000 | 0.000 | 122424.1 | 1.200 | BV | 0.038 | 54384.04 | 1.445 |
| 34 | 7.308 | | 0.0000 | 0.000 | 40700.4 | 0.399 | VV | 0.034 | 20157.57 | 0.535 |
| 35 | 7.350 | | 0.0000 | 0.000 | 30141.1 | 0.296 | VB | 0.035 | 14325.47 | 0.381 |
| 36 | 7.459 | | 0.0000 | 0.000 | 104.5 | 0.001 | BB | 0.017 | 103.02 | 0.003 |
| 37 | 7.533 | o,p-DDE | 3.9447 | 0.926 | 22046.7 | 0.216 | BV | 0.036 | 10072.18 | 0.268 |
| 38 | 7.599 | | 0.0000 | 0.000 | 199992.2 | 1.961 | VB | 0.048 | 69800.74 | 1.854 |
| 39 | 7.853 | | 0.0000 | 0.000 | 2106.2 | 0.021 | BV | 0.043 | 814.30 | 0.022 |
| 40 | 7.915 | a. Chlordane | 0.8265 | 0.194 | 7121.7 | 0.070 | VV | 0.035 | 3415.79 | 0.091 |
| 41 | 7.969 | 4,4'-DDE | 11.9169 | 2.798 | 112413.7 | 1.102 | VB | 0.045 | 41934.24 | 1.114 |
| 42 | 8.132 | | 0.0000 | 0.000 | 58925.1 | 0.578 | BV | 0.031 | 31380.78 | 0.834 |
| 43 | 8.184 | | 0.0000 | 0.000 | 115857.0 | 1.136 | VB | 0.032 | 59590.01 | 1.583 |
| 44 | 8.238 | o,p-DDD | 3.2995 | 0.775 | 6888.8 | 0.068 | BV | 0.016 | 7104.67 | 0.189 |
| 45 | 8.265 | | 0.0000 | 0.000 | 42718.3 | 0.419 | VB | 0.033 | 21304.90 | 0.566 |
| 46 | 8.367 | | 0.0000 | 0.000 | 362214.2 | 3.551 | BV | 0.041 | 146186.00 | 3.883 |
| 47 | 8.498 | | 0.0000 | 0.000 | 55081.8 | 0.540 | VV | 0.046 | 20153.10 | 0.535 |
| 48 | 8.564 | o,p-DDT | 1.7144 | 0.402 | 8804.9 | 0.086 | VB | 0.033 | 4397.97 | 0.117 |
| 49 | 8.645 | | 0.0000 | 0.000 | 69871.0 | 0.685 | BV | 0.038 | 30980.55 | 0.823 |
| 50 | 8.719 | Endrin | 61.7876 | 14.505 | 590821.5 | 5.793 | VV | 0.054 | 183702.90 | 4.880 |
| 51 | 8.785 | Kepone | 153.6271 | 36.065 | 128096.7 | 1.256 | VV | 0.036 | 59771.23 | 1.588 |
| 52 | 8.889 | | 0.0000 | 0.000 | 241312.4 | 2.366 | VB | 0.041 | 97280.98 | 2.584 |
| 53 | 9.021 | Endosulfan II | 2.3286 | 0.547 | 15017.6 | 0.147 | BV | 0.033 | 7632.36 | 0.203 |
| 54 | 9.093 | | 0.0000 | 0.000 | 664754.7 | 6.518 | VV | 0.056 | 199383.10 | 5.296 |
| 55 | 9.232 | | 0.0000 | 0.000 | 306097.8 | 3.001 | VV | 0.041 | 124529.20 | 3.308 |
| 56 | 9.293 | | 0.0000 | 0.000 | 204405.4 | 2.004 | VB | 0.044 | 77943.77 | 2.070 |
| 57 | 9.416 | | 0.0000 | 0.000 | 51331.9 | 0.503 | BV | 0.035 | 24265.53 | 0.645 |
| 58 | 9.474 | | 0.0000 | 0.000 | 55176.6 | 0.541 | VV | 0.049 | 18663.05 | 0.496 |
| 59 | 9.558 | Endrin aldehyde | 45.0186 | 10.569 | 285637.3 | 2.801 | VV | 0.038 | 124214.20 | 3.300 |
| 60 | 9.613 | | 0.0000 | 0.000 | 198598.6 | 1.947 | VV | 0.043 | 76599.75 | 2.035 |
| 61 | 9.675 | | 0.0000 | 0.000 | 105412.5 | 1.034 | VV | 0.041 | 42531.44 | 1.130 |
| 62 | 9.739 | Methoxychlor | 3.3195 | 0.779 | 9167.3 | 0.090 | VV | 0.027 | 5583.79 | 0.148 |
| 63 | 9.787 | | 0.0000 | 0.000 | 40016.2 | 0.392 | VB | 0.036 | 18497.00 | 0.491 |
| 64 | 9.867 | | 0.0000 | 0.000 | 58085.5 | 0.570 | BV | 0.036 | 26801.05 | 0.712 |

8684

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.946 | | 0.0000 | 0.000 | 795633.8 | 7.801 | VB | 0.046 | 291375.00 | 7.740 |
| 66 | 10.321 | | 0.0000 | 0.000 | 580815.8 | 5.695 | BV | 0.058 | 166892.20 | 4.433 |
| 67 | 10.413 | | 0.0000 | 0.000 | 275803.0 | 2.704 | VV | 0.056 | 82481.02 | 2.191 |
| 68 | 10.660 | | 0.0000 | 0.000 | 17274.2 | 0.169 | VV | 0.040 | 7249.11 | 0.193 |
| 69 | 10.736 | | 0.0000 | 0.000 | 13546.7 | 0.133 | VV | 0.033 | 6779.43 | 0.180 |
| 70 | 10.789 | | 0.0000 | 0.000 | 109581.1 | 1.074 | VB | 0.045 | 40747.45 | 1.082 |
| 71 | 11.122 | | 0.0000 | 0.000 | 249119.0 | 2.443 | BB | 0.047 | 88621.43 | 2.354 |
| 72 | 11.536 | | 0.0000 | 0.000 | 83502.6 | 0.819 | BB | 0.046 | 30189.76 | 0.802 |
| 73 | 11.833 | DCB | 35.9259 | 8.434 | 401528.1 | 3.937 | BB | 0.049 | 136806.80 | 3.634 |

Total Area = 10199100.0, Total Amount = 425.968, Total Height = 3764602.0, Sample Units = PPB

Sample Name: **AR1650424D AAAR165AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 02:57:53am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.22R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

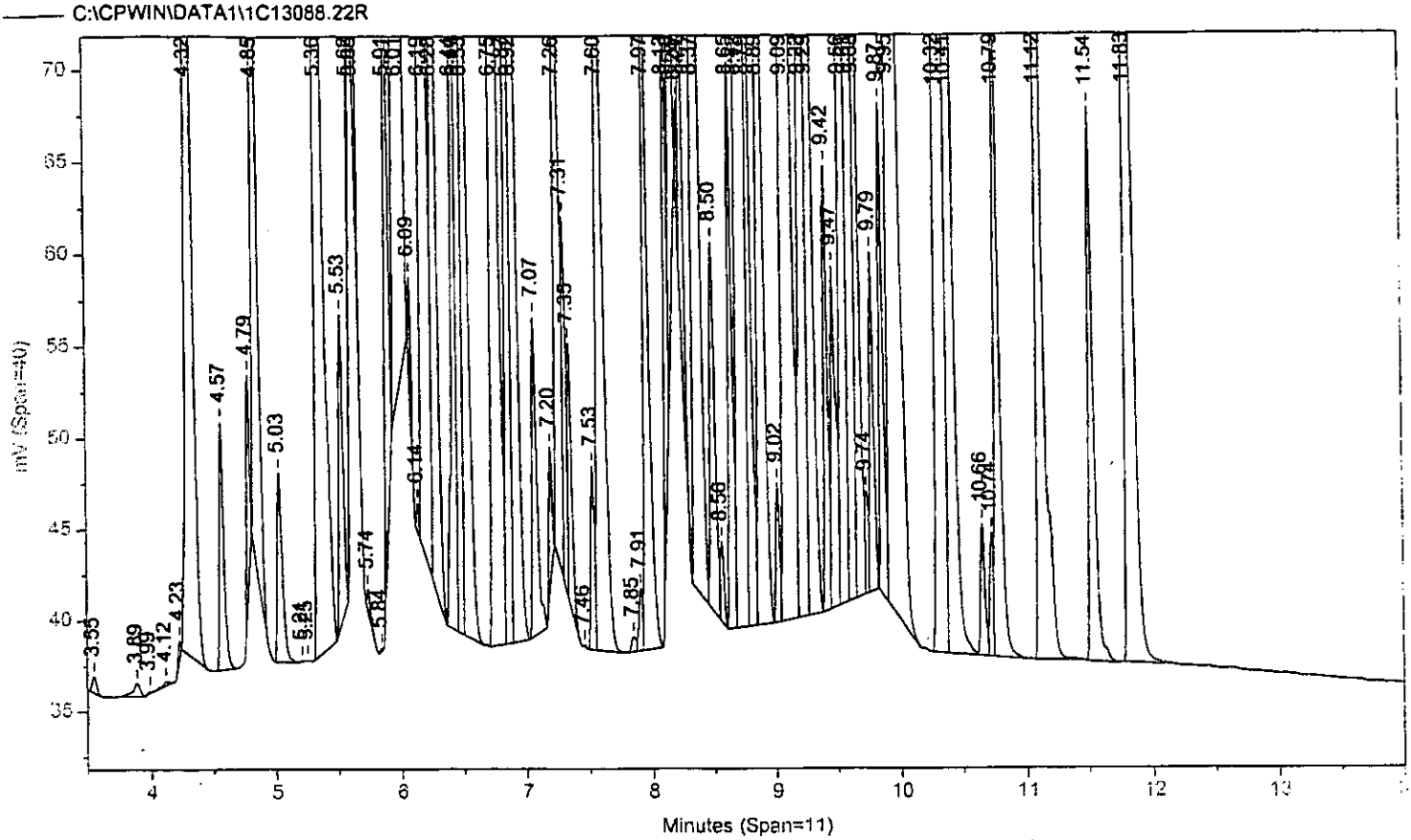
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.613 | | 0.0000 | 0.000 | 1903.7 | 0.038 | BB | 0.185 | 171.59 | 0.009 |
| 2 | 3.693 | | 0.0000 | 0.000 | 5816.2 | 0.117 | BB | 0.322 | 301.18 | 0.015 |
| 3 | 4.153 | | 0.0000 | 0.000 | 1008.0 | 0.020 | BB | 0.037 | 453.64 | 0.023 |
| 4 | 4.837 | TCX | 39.2482 | 7.876 | 158050.1 | 3.192 | BB | 0.034 | 76777.74 | 3.918 |
| 5 | 5.015 | | 0.0000 | 0.000 | 12522.5 | 0.253 | BB | 0.050 | 4189.33 | 0.214 |
| 6 | 5.260 | | 0.0000 | 0.000 | 16024.8 | 0.324 | BB | 0.038 | 7110.22 | 0.363 |
| 7 | 5.406 | | 0.0000 | 0.000 | 1185.0 | 0.024 | BB | 0.029 | 688.13 | 0.035 |
| 8 | 5.468 | | 0.0000 | 0.000 | 17317.9 | 0.350 | BB | 0.035 | 8318.13 | 0.425 |
| 9 | 5.557 | HCB | 14.0035 | 2.810 | 86098.6 | 1.739 | BB | 0.037 | 38866.37 | 1.984 |
| 10 | 5.895 | | 0.0000 | 0.000 | 13059.7 | 0.264 | BB | 0.038 | 5803.62 | 0.296 |
| 11 | 6.137 | | 0.0000 | 0.000 | 186766.8 | 3.772 | BV | 0.053 | 59020.52 | 3.012 |
| 12 | 6.216 | | 0.0000 | 0.000 | 10409.4 | 0.210 | VV | 0.031 | 5583.87 | 0.285 |
| 13 | 6.299 | gamma-BHC | 4.3821 | 0.879 | 20107.5 | 0.406 | VB | 0.044 | 7653.31 | 0.391 |
| 14 | 6.438 | beta-BHC | 22.3360 | 4.482 | 51677.4 | 1.044 | BV | 0.033 | 25824.22 | 1.318 |
| 15 | 6.490 | | 0.0000 | 0.000 | 78755.7 | 1.590 | VV | 0.039 | 33892.12 | 1.730 |
| 16 | 6.622 | | 0.0000 | 0.000 | 31365.5 | 0.633 | VV | 0.035 | 15065.10 | 0.769 |
| 17 | 6.660 | | 0.0000 | 0.000 | 20098.6 | 0.406 | VV | 0.034 | 9992.52 | 0.510 |
| 18 | 6.776 | | 0.0000 | 0.000 | 331676.6 | 6.698 | VV | 0.054 | 103089.70 | 5.261 |
| 19 | 6.964 | Heptachlor | 33.0377 | 6.630 | 151572.5 | 3.061 | VV | 0.041 | 60992.53 | 3.113 |
| 20 | 7.109 | | 0.0000 | 0.000 | 80638.5 | 1.629 | VV | 0.033 | 40306.03 | 2.057 |
| 21 | 7.160 | | 0.0000 | 0.000 | 31226.6 | 0.631 | VV | 0.036 | 14385.61 | 0.734 |
| 22 | 7.228 | | 0.0000 | 0.000 | 85261.2 | 1.722 | VV | 0.036 | 39608.02 | 2.021 |
| 23 | 7.290 | | 0.0000 | 0.000 | 86309.5 | 1.743 | VV | 0.038 | 37692.68 | 1.924 |
| 24 | 7.347 | | 0.0000 | 0.000 | 82574.4 | 1.668 | VV | 0.048 | 28437.27 | 1.451 |
| 25 | 7.601 | Telodrin | 28.7005 | 5.759 | 110272.9 | 2.227 | VV | 0.035 | 52209.88 | 2.665 |
| 26 | 7.662 | | 0.0000 | 0.000 | 60346.9 | 1.219 | VV | 0.045 | 22246.63 | 1.135 |
| 27 | 7.769 | | 0.0000 | 0.000 | 122587.1 | 2.476 | VV | 0.050 | 40554.34 | 2.070 |
| 28 | 7.977 | | 0.0000 | 0.000 | 23537.3 | 0.475 | VV | 0.037 | 10553.76 | 0.539 |
| 29 | 8.016 | | 0.0000 | 0.000 | 12788.7 | 0.258 | VV | 0.033 | 6389.58 | 0.326 |
| 30 | 8.103 | | 0.0000 | 0.000 | 18996.9 | 0.384 | VV | 0.036 | 8736.84 | 0.446 |
| 31 | 8.164 | Hept. epoxide | 21.1335 | 4.241 | 86476.7 | 1.746 | VV | 0.038 | 38140.52 | 1.946 |
| 32 | 8.271 | | 0.0000 | 0.000 | 2831.9 | 0.057 | VV | 0.034 | 1384.91 | 0.071 |
| 33 | 8.324 | | 0.0000 | 0.000 | 13892.8 | 0.281 | VV | 0.039 | 5982.67 | 0.305 |
| 34 | 8.403 | o,p-DDE | 30.8835 | 6.197 | 85249.5 | 1.722 | VV | 0.037 | 38400.29 | 1.960 |
| 35 | 8.478 | | 0.0000 | 0.000 | 7176.9 | 0.145 | VV | 0.038 | 3166.89 | 0.162 |
| 36 | 8.547 | | 0.0000 | 0.000 | 8245.8 | 0.167 | VB | 0.047 | 2948.55 | 0.150 |
| 37 | 8.791 | | 0.0000 | 0.000 | 3461.7 | 0.070 | BB | 0.035 | 1666.91 | 0.085 |
| 38 | 8.871 | | 0.0000 | 0.000 | 17092.6 | 0.345 | BV | 0.036 | 8004.23 | 0.408 |
| 39 | 9.022 | | 0.0000 | 0.000 | 79405.1 | 1.604 | VV | 0.052 | 25634.92 | 1.308 |
| 40 | 9.065 | Dieldrin | 26.4331 | 5.304 | 100043.9 | 2.020 | VV | 0.038 | 44059.58 | 2.249 |
| 41 | 9.152 | | 0.0000 | 0.000 | 63489.8 | 1.282 | VV | 0.048 | 21947.79 | 1.120 |
| 42 | 9.274 | | 0.0000 | 0.000 | 210451.1 | 4.250 | VV | 0.040 | 88426.64 | 4.513 |
| 43 | 9.453 | | 0.0000 | 0.000 | 49934.0 | 1.008 | VV | 0.040 | 20992.13 | 1.071 |
| 44 | 9.531 | o,p-DDT | 88.3833 | 17.736 | 223496.6 | 4.514 | VB | 0.036 | 104012.40 | 5.308 |
| 45 | 9.751 | | 0.0000 | 0.000 | 219831.0 | 4.440 | BB | 0.046 | 79293.70 | 4.047 |
| 46 | 9.902 | | 0.0000 | 0.000 | 18392.9 | 0.371 | BB | 0.040 | 7719.07 | 0.394 |
| 47 | 10.011 | 4,4'-DDT | 80.8515 | 16.224 | 301227.5 | 6.083 | BB | 0.051 | 97745.88 | 4.988 |
| 48 | 10.121 | | 0.0000 | 0.000 | 116601.3 | 2.355 | BB | 0.032 | 60013.39 | 3.063 |
| 49 | 10.194 | Endrin aldehyde | 22.4147 | 4.498 | 61238.6 | 1.237 | BB | 0.031 | 32447.28 | 1.656 |
| 50 | 10.316 | | 0.0000 | 0.000 | 900.1 | 0.018 | BB | 0.039 | 380.03 | 0.019 |
| 51 | 10.354 | | 0.0000 | 0.000 | 20445.4 | 0.413 | BB | 0.032 | 10720.98 | 0.547 |
| 52 | 10.515 | | 0.0000 | 0.000 | 171846.1 | 3.470 | BB | 0.038 | 74565.40 | 3.805 |
| 53 | 10.612 | | 0.0000 | 0.000 | 70239.3 | 1.419 | BB | 0.033 | 35100.92 | 1.791 |
| 54 | 10.686 | | 0.0000 | 0.000 | 25096.8 | 0.507 | BB | 0.027 | 15601.42 | 0.796 |
| 55 | 10.720 | | 0.0000 | 0.000 | 3489.0 | 0.070 | BB | 0.019 | 2998.51 | 0.153 |
| 56 | 10.822 | | 0.0000 | 0.000 | 313987.0 | 6.341 | BB | 0.036 | 145090.30 | 7.405 |
| 57 | 10.918 | | 0.0000 | 0.000 | 3791.8 | 0.077 | BB | 0.028 | 2238.42 | 0.114 |
| 58 | 11.026 | | 0.0000 | 0.000 | 12478.8 | 0.252 | BB | 0.039 | 5290.49 | 0.270 |
| 59 | 11.247 | | 0.0000 | 0.000 | 4359.6 | 0.088 | BB | 0.032 | 2258.00 | 0.115 |
| 60 | 11.348 | Endrin ketone | 49.9216 | 10.018 | 365360.6 | 7.379 | BB | 0.075 | 81587.35 | 4.164 |
| 61 | 11.692 | | 0.0000 | 0.000 | 6470.0 | 0.131 | BB | 0.039 | 2772.56 | 0.141 |
| 62 | 11.791 | | 0.0000 | 0.000 | 7228.3 | 0.146 | BB | 0.041 | 2933.69 | 0.150 |
| 63 | 11.997 | | 0.0000 | 0.000 | 45519.0 | 0.919 | BB | 0.045 | 16991.67 | 0.867 |
| 64 | 12.234 | | 0.0000 | 0.000 | 103721.2 | 2.095 | BB | 0.045 | 38717.40 | 1.976 |

0686

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 12.837 | | 0.0000 | 0.000 | 36276.7 | 0.733 | BB | 0.046 | 13242.40 | 0.676 |
| 66 | 13.371 DCB | | 36.6065 | 7.346 | 181945.8 | 3.674 | BB | 0.049 | 62062.32 | 3.167 |

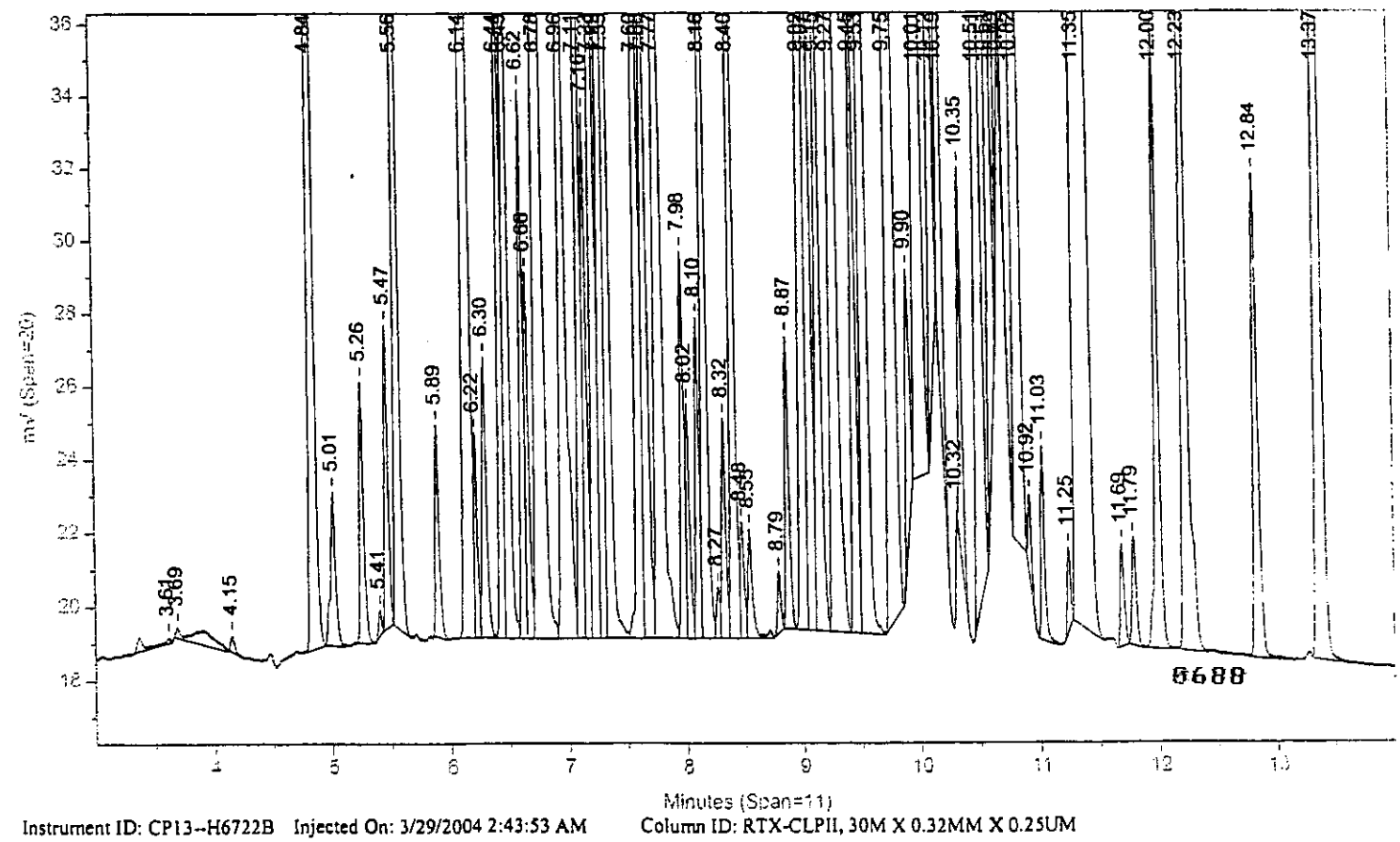
Total Area = 4951651.0, Total Amount = 498.336, Total Height = 1959454.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.22R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 2:43:53 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.22R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 2:43:53 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

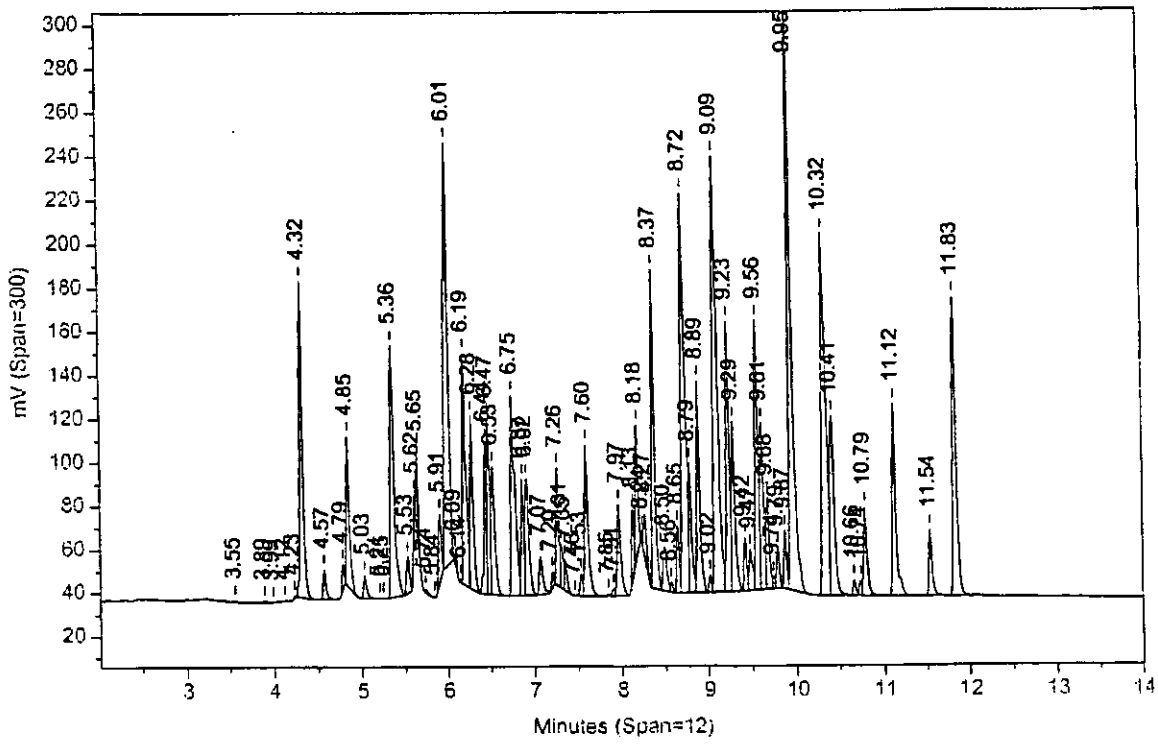
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.32 | 145091 | 38.22678 | TCX | 4.837 | 76778 | 39.24816 | TCX |
| . | 0 | . | HCB | 5.557 | 38866 | 14.00347 | HCB |
| 5.616 | 14394 | 3.10548 | gamma-BHC | 6.299 | 7653 | 4.38213 | gamma-BHC |
| 5.743 | 1288 | .49974 | beta-BHC | 6.438 | 25824 | 22.33598 | beta-BHC |
| 6.008 | 194195 | 44.15966 | delta-BHC | . | 0 | . | delta-BHC |
| 6.282 | 80378 | 16.26696 | Heptachlor | 6.964 | 60993 | 33.0377 | Heptachlor |
| 7.533 | 10072 | 3.94472 | o,p-DDE | 8.403 | 38400 | 30.88352 | o,p-DDE |
| . | 0 | . | Telodrin | 7.601 | 52210 | 28.70046 | Telodrin |
| 7.915 | 3416 | .82652 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.969 | 41934 | 11.91692 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.164 | 38141 | 21.1335 | Hept. epoxide |
| 8.238 | 7105 | 3.29955 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.564 | 4398 | 1.71442 | o,p-DDT | 9.531 | 104012 | 88.38329 | o,p-DDT |
| 8.719 | 183703 | 61.78764 | Endrin | . | 0 | . | Endrin |
| 8.785 | 59771 | 153.6271 | Kepone | . | 0 | . | Kepone |
| 9.021 | 7632 | 2.32858 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.065 | 44060 | 26.43307 | Dieldrin |
| 9.558 | 124214 | 45.01856 | Endrin aldehyde | 10.194 | 32447 | 22.4147 | Endrin aldehyde |
| 9.739 | 5584 | 3.3195 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 10.011 | 97746 | 80.8515 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.348 | 81587 | 49.92157 | Endrin ketone |
| 1.833 | 136807 | 35.92592 | DCB | 13.371 | 62062 | 36.60649 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.22A
Area File: C:\CPWIN\DATA1\1C13088B.22A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:00:10 AM
File Reported On: 3/29/2004 at 10:00:21 AM

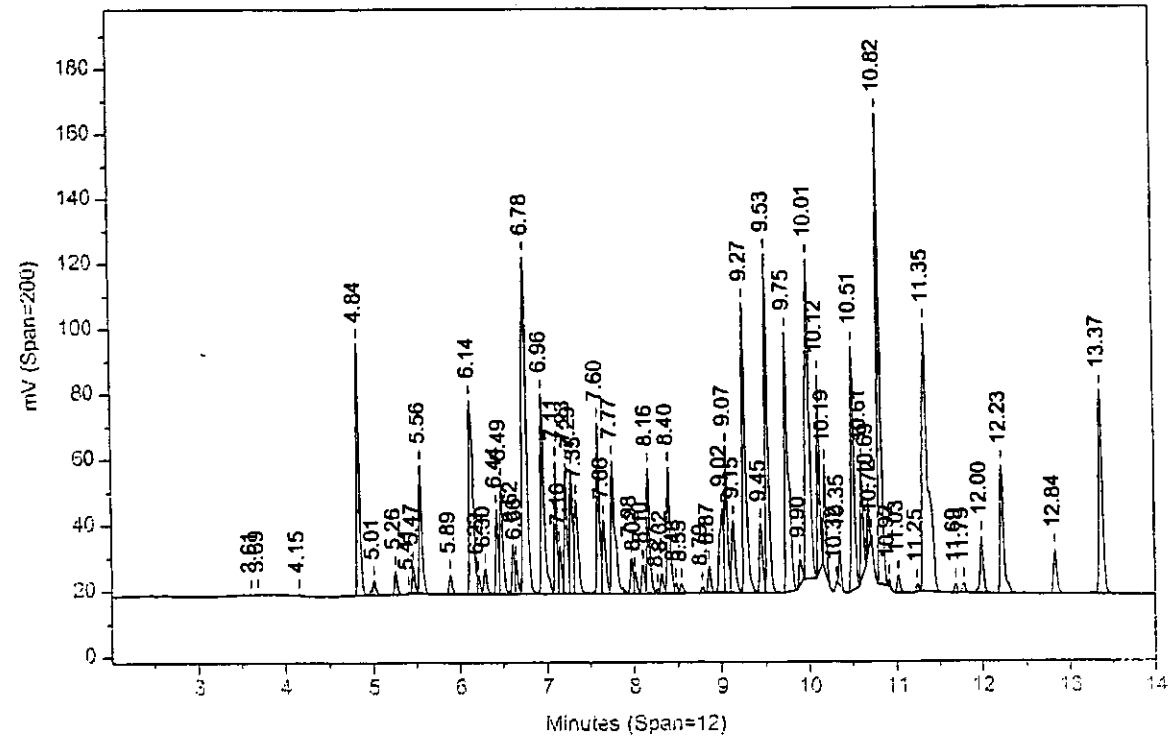
8689

10X REPLOTS

C:\CPWIN\DATA1\1C13088.22R




C:\CPWIN\DATA1\1C13088B.22R



Sample Name: **AR210424A AAAR210AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 03:18:31am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.23R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.549 | | 0.0000 | 0.000 | 17601.2 | 5.120 | BB | 0.044 | 6720.69 | 5.107 |
| 2 | 3.896 | | 0.0000 | 0.000 | 2118.7 | 0.616 | BB | 0.073 | 484.58 | 0.368 |
| 3 | 3.980 | | 0.0000 | 0.000 | 197.9 | 0.058 | BB | 0.029 | 114.22 | 0.087 |
| 4 | 4.120 | | 0.0000 | 0.000 | 5919.0 | 1.722 | BB | 0.047 | 2112.14 | 1.605 |
| 5 | 4.230 | | 0.0000 | 0.000 | 1242.0 | 0.361 | BB | 0.027 | 759.57 | 0.577 |
| 6 | 4.320 | TCX | 8.0253 | 49.616 | 74871.7 | 21.780 | BB | 0.041 | 30460.22 | 23.148 |
| 7 | 4.571 | | 0.0000 | 0.000 | 24695.3 | 7.184 | BB | 0.041 | 9927.25 | 7.544 |
| 8 | 4.787 | | 0.0000 | 0.000 | 9137.8 | 2.658 | BB | 0.030 | 5159.93 | 3.921 |
| 9 | 4.848 | | 0.0000 | 0.000 | 53193.9 | 15.474 | BB | 0.039 | 22867.89 | 17.378 |
| 10 | 5.031 | | 0.0000 | 0.000 | 384.6 | 0.112 | BB | 0.045 | 143.88 | 0.109 |
| 11 | 5.212 | | 0.0000 | 0.000 | 100.4 | 0.029 | BB | 0.033 | 50.06 | 0.038 |
| 12 | 5.364 | | 0.0000 | 0.000 | 4850.7 | 1.411 | BB | 0.047 | 1737.93 | 1.321 |
| 13 | 5.447 | | 0.0000 | 0.000 | 3890.6 | 1.132 | BB | 0.039 | 1647.06 | 1.252 |
| 14 | 5.538 | | 0.0000 | 0.000 | 7579.0 | 2.205 | BB | 0.038 | 3361.31 | 2.554 |
| 15 | 5.614 | gamma-BHC | 0.0333 | 0.206 | 178.6 | 0.052 | BB | 0.019 | 154.34 | 0.117 |
| 16 | 5.651 | | 0.0000 | 0.000 | 1145.4 | 0.333 | BB | 0.029 | 654.63 | 0.497 |
| 17 | 5.744 | beta-BHC | 0.0391 | 0.242 | 200.4 | 0.058 | BB | 0.033 | 100.86 | 0.077 |
| 18 | 5.846 | | 0.0000 | 0.000 | 97.0 | 0.028 | BB | 0.028 | 57.09 | 0.043 |
| 19 | 5.914 | | 0.0000 | 0.000 | 1513.5 | 0.440 | BB | 0.041 | 617.11 | 0.469 |
| 20 | 6.009 | delta-BHC | 0.6484 | 4.009 | 9027.7 | 2.626 | BB | 0.053 | 2851.29 | 2.167 |
| 21 | 6.101 | | 0.0000 | 0.000 | 316.9 | 0.092 | BB | 0.036 | 147.29 | 0.112 |
| 22 | 6.195 | | 0.0000 | 0.000 | 4726.6 | 1.375 | BV | 0.040 | 1972.08 | 1.499 |
| 23 | 6.282 | Heptachlor | 0.2319 | 1.434 | 2577.7 | 0.750 | VB | 0.037 | 1146.02 | 0.871 |
| 24 | 6.443 | | 0.0000 | 0.000 | 531.7 | 0.155 | BB | 0.028 | 316.12 | 0.240 |
| 25 | 6.666 | | 0.0000 | 0.000 | 366.6 | 0.107 | BV | 0.069 | 88.71 | 0.067 |
| 26 | 6.752 | | 0.0000 | 0.000 | 2023.0 | 0.588 | VV | 0.057 | 596.00 | 0.453 |
| 27 | 6.868 | | 0.0000 | 0.000 | 605.2 | 0.176 | VV | 0.036 | 277.37 | 0.211 |
| 28 | 6.919 | | 0.0000 | 0.000 | 2335.3 | 0.679 | VB | 0.051 | 770.14 | 0.585 |
| 29 | 7.084 | | 0.0000 | 0.000 | 473.4 | 0.138 | BB | 0.051 | 154.14 | 0.117 |
| 30 | 7.199 | | 0.0000 | 0.000 | 379.0 | 0.110 | BB | 0.031 | 201.47 | 0.153 |
| 31 | 7.262 | | 0.0000 | 0.000 | 727.4 | 0.212 | BB | 0.029 | 414.18 | 0.315 |
| 32 | 7.314 | | 0.0000 | 0.000 | 339.9 | 0.099 | BB | 0.023 | 245.59 | 0.187 |
| 33 | 7.599 | | 0.0000 | 0.000 | 4664.4 | 1.357 | BB | 0.078 | 1000.81 | 0.761 |
| 34 | 7.858 | | 0.0000 | 0.000 | 2124.7 | 0.618 | BV | 0.056 | 628.25 | 0.477 |
| 35 | 7.909 | a. Chlordane | 0.1580 | 0.977 | 1829.8 | 0.532 | VV | 0.047 | 652.99 | 0.496 |
| 36 | 7.971 | 4,4'-DDE | 0.1734 | 1.072 | 1544.5 | 0.449 | VV | 0.042 | 610.04 | 0.464 |
| 37 | 8.029 | | 0.0000 | 0.000 | 480.0 | 0.140 | VV | 0.046 | 174.58 | 0.133 |
| 38 | 8.133 | | 0.0000 | 0.000 | 2210.3 | 0.643 | VB | 0.044 | 830.33 | 0.631 |
| 39 | 8.294 | | 0.0000 | 0.000 | 487.6 | 0.142 | BV | 0.061 | 132.51 | 0.101 |
| 40 | 8.368 | | 0.0000 | 0.000 | 1191.3 | 0.347 | VV | 0.053 | 375.50 | 0.285 |
| 41 | 8.490 | | 0.0000 | 0.000 | 3278.7 | 0.954 | VV | 0.074 | 733.93 | 0.558 |
| 42 | 8.755 | 4,4'-DDD | 0.3170 | 1.960 | 5547.1 | 1.614 | VV | 0.102 | 902.17 | 0.686 |
| 43 | 8.860 | | 0.0000 | 0.000 | 3698.3 | 1.076 | VB | 0.096 | 644.38 | 0.490 |
| 44 | 9.032 | Endosulfan II | 0.1355 | 0.838 | 1611.7 | 0.469 | BV | 0.060 | 444.06 | 0.337 |
| 45 | 9.094 | | 0.0000 | 0.000 | 3131.5 | 0.911 | VB | 0.068 | 765.34 | 0.582 |
| 46 | 9.339 | | 0.0000 | 0.000 | 353.6 | 0.103 | BV | 0.054 | 109.89 | 0.084 |
| 47 | 9.473 | | 0.0000 | 0.000 | 953.6 | 0.277 | VB | 0.111 | 143.72 | 0.109 |
| 48 | 9.747 | Methoxychlor | 0.0217 | 0.134 | 56.8 | 0.017 | BB | 0.026 | 36.43 | 0.028 |
| 49 | 9.946 | | 0.0000 | 0.000 | 430.7 | 0.125 | BB | 0.044 | 161.44 | 0.123 |
| 50 | 10.246 | | 0.0000 | 0.000 | 228.9 | 0.067 | BB | 0.045 | 84.45 | 0.064 |
| 51 | 10.358 | | 0.0000 | 0.000 | 4736.9 | 1.378 | BB | 0.045 | 1741.46 | 1.323 |
| 52 | 10.660 | | 0.0000 | 0.000 | 1006.8 | 0.293 | BV | 0.116 | 144.51 | 0.110 |
| 53 | 10.879 | | 0.0000 | 0.000 | 1199.4 | 0.349 | VB | 0.039 | 513.93 | 0.391 |
| 54 | 11.531 | | 0.0000 | 0.000 | 310.6 | 0.090 | BB | 0.046 | 111.50 | 0.085 |
| 55 | 11.835 | DCB | 6.3912 | 39.513 | 69334.4 | 20.169 | BB | 0.047 | 24337.78 | 18.495 |

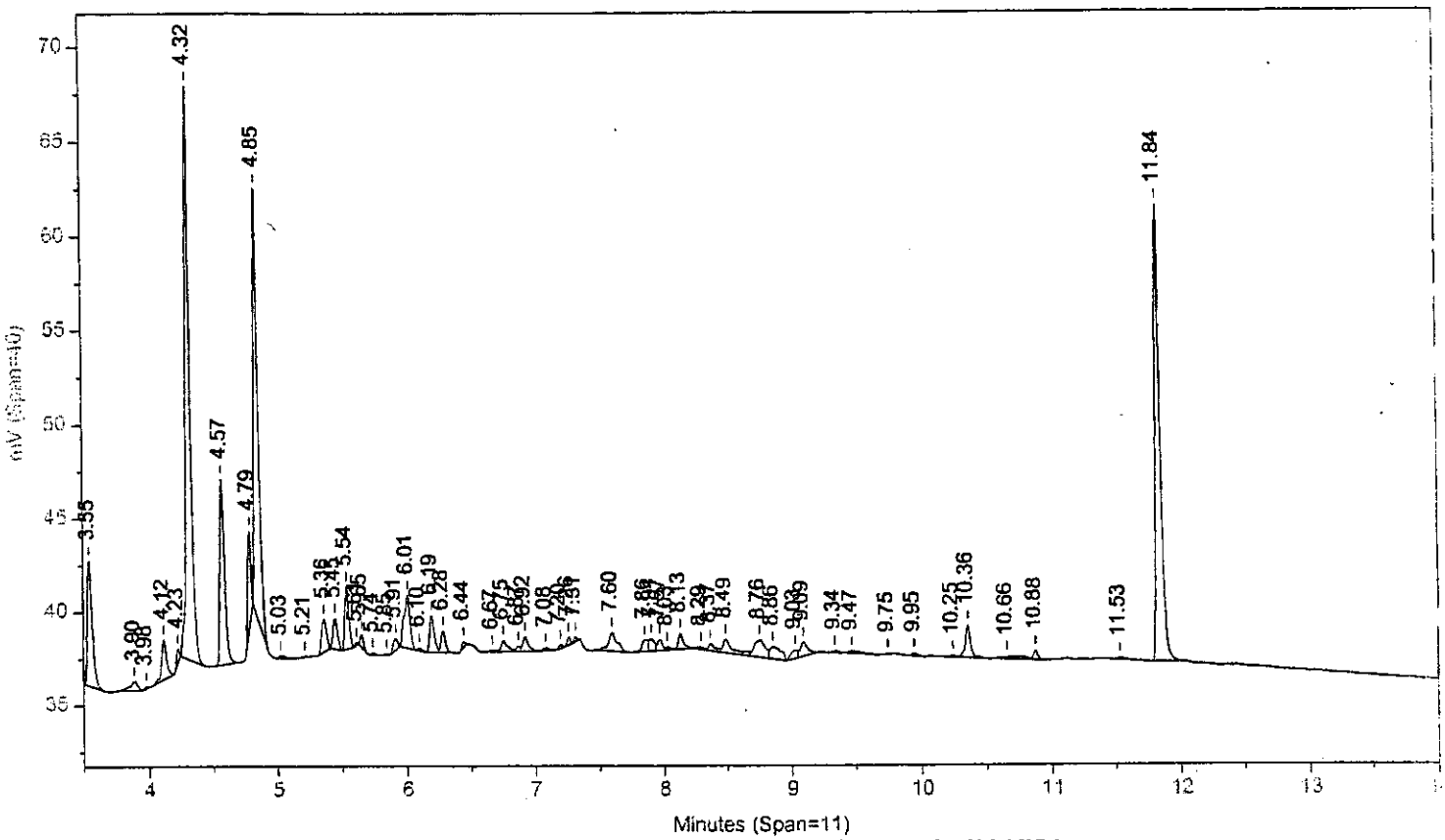
Total Area = 343759.5, Total Amount = 16.175, Total Height = 131591.1, Sample Units = PPB

Sample Name: **AR210424A AAAR210AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 03:18:31am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.23R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.693 | | 0.0000 | 0.000 | 7565.5 | 4.187 | BB | 0.334 | 377.42 | 0.574 |
| 2 | 4.152 | | 0.0000 | 0.000 | 10850.3 | 6.004 | BB | 0.042 | 4354.52 | 6.622 |
| 3 | 4.689 | | 0.0000 | 0.000 | 3133.0 | 1.734 | BB | 0.041 | 1271.01 | 1.933 |
| 4 | 4.837 | TCX | 7.5814 | 38.398 | 32350.9 | 17.902 | BB | 0.036 | 14830.75 | 22.553 |
| 5 | 4.975 | | 0.0000 | 0.000 | 471.7 | 0.261 | BB | 0.027 | 290.23 | 0.441 |
| 6 | 5.011 | | 0.0000 | 0.000 | 1681.5 | 0.931 | BB | 0.032 | 887.13 | 1.349 |
| 7 | 5.261 | | 0.0000 | 0.000 | 11533.1 | 6.382 | BB | 0.038 | 5096.98 | 7.751 |
| 8 | 5.469 | | 0.0000 | 0.000 | 8258.0 | 4.570 | BV | 0.037 | 3731.91 | 5.675 |
| 9 | 5.558 | HCB | 4.3377 | 21.970 | 30650.8 | 16.962 | VV | 0.042 | 12039.25 | 18.308 |
| 10 | 6.129 | | 0.0000 | 0.000 | 5628.9 | 3.115 | VV | 0.061 | 1529.52 | 2.326 |
| 11 | 6.221 | | 0.0000 | 0.000 | 4979.0 | 2.755 | VB | 0.048 | 1726.94 | 2.626 |
| 12 | 6.440 | beta-BHC | 0.3155 | 1.598 | 725.1 | 0.401 | BV | 0.033 | 364.73 | 0.555 |
| 13 | 6.496 | | 0.0000 | 0.000 | 1749.6 | 0.968 | VV | 0.049 | 593.40 | 0.902 |
| 14 | 6.623 | | 0.0000 | 0.000 | 1862.5 | 1.031 | VV | 0.074 | 422.26 | 0.642 |
| 15 | 6.775 | | 0.0000 | 0.000 | 5972.8 | 3.305 | VV | 0.066 | 1506.85 | 2.291 |
| 16 | 6.969 | | 0.0000 | 0.000 | 2649.3 | 1.466 | VV | 0.046 | 957.74 | 1.456 |
| 17 | 7.109 | | 0.0000 | 0.000 | 1179.9 | 0.653 | VV | 0.036 | 544.76 | 0.828 |
| 18 | 7.226 | | 0.0000 | 0.000 | 2641.6 | 1.462 | VV | 0.102 | 432.20 | 0.657 |
| 19 | 7.767 | | 0.0000 | 0.000 | 3067.1 | 1.697 | VV | 0.156 | 327.35 | 0.498 |
| 20 | 8.102 | | 0.0000 | 0.000 | 858.1 | 0.475 | VV | 0.037 | 391.34 | 0.595 |
| 21 | 8.170 | Hept. epoxide | 0.3643 | 1.845 | 1693.6 | 0.937 | VB | 0.043 | 657.45 | 1.000 |
| 22 | 8.403 | o,p-DDE | 0.3012 | 1.525 | 713.4 | 0.395 | BB | 0.032 | 374.45 | 0.569 |
| 23 | 8.876 | | 0.0000 | 0.000 | 1702.0 | 0.942 | BV | 0.092 | 307.86 | 0.468 |
| 24 | 9.026 | | 0.0000 | 0.000 | 2574.6 | 1.425 | VV | 0.059 | 722.46 | 1.099 |
| 25 | 9.096 | Dieldrin | 0.3427 | 1.736 | 1974.8 | 1.093 | VB | 0.058 | 571.31 | 0.869 |
| 26 | 9.280 | | 0.0000 | 0.000 | 226.2 | 0.125 | BB | 0.030 | 127.71 | 0.194 |
| 27 | 9.304 | | 0.0000 | 0.000 | 495.7 | 0.274 | BB | 0.028 | 300.35 | 0.457 |
| 28 | 13.374 | DCB | 6.5013 | 32.928 | 33518.9 | 18.549 | BB | 0.051 | 11022.28 | 16.761 |

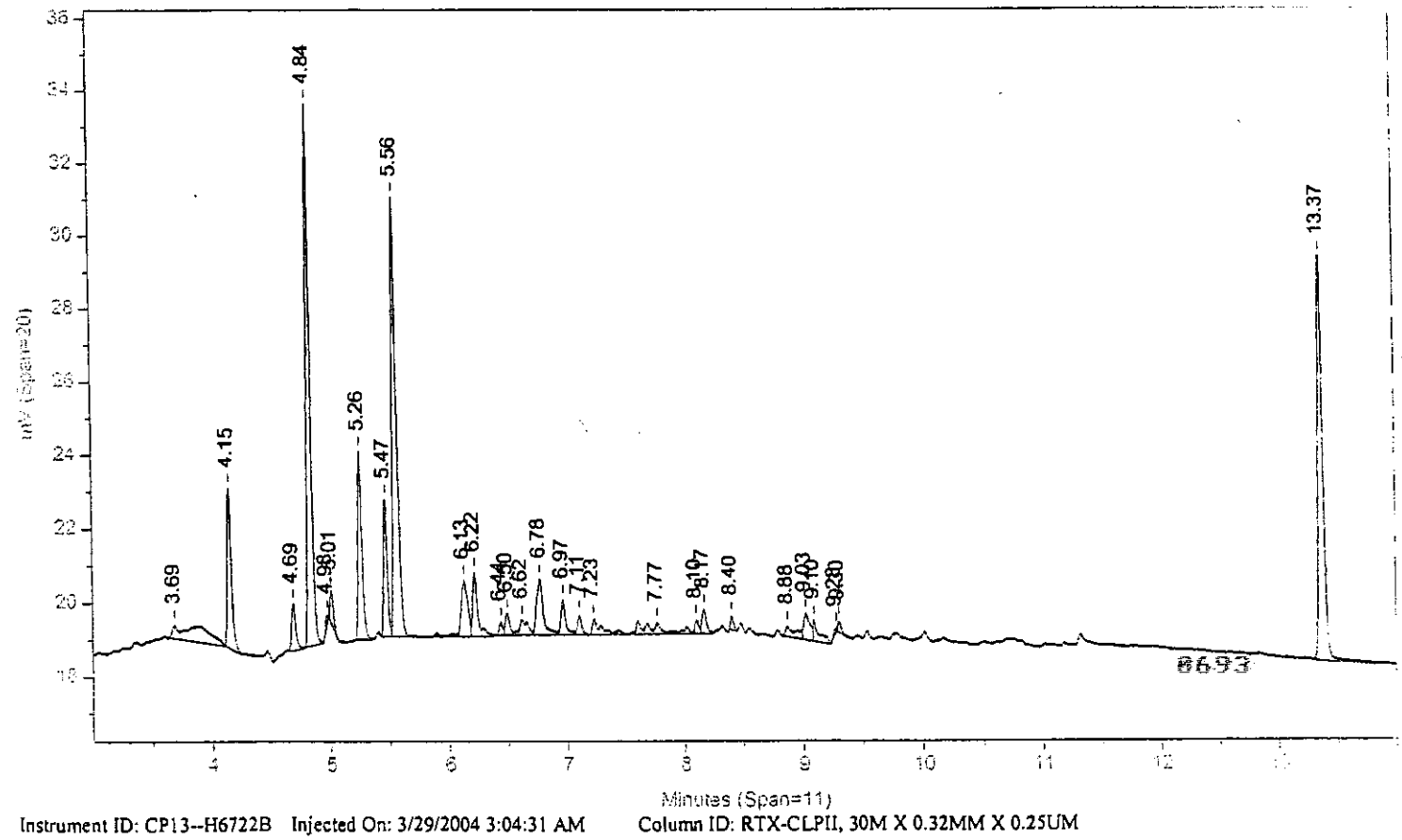
Total Area = 180708.0, Total Amount = 19.744, Total Height = 65760.16, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.23R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 3:04:31 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.23R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 3:04:31 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

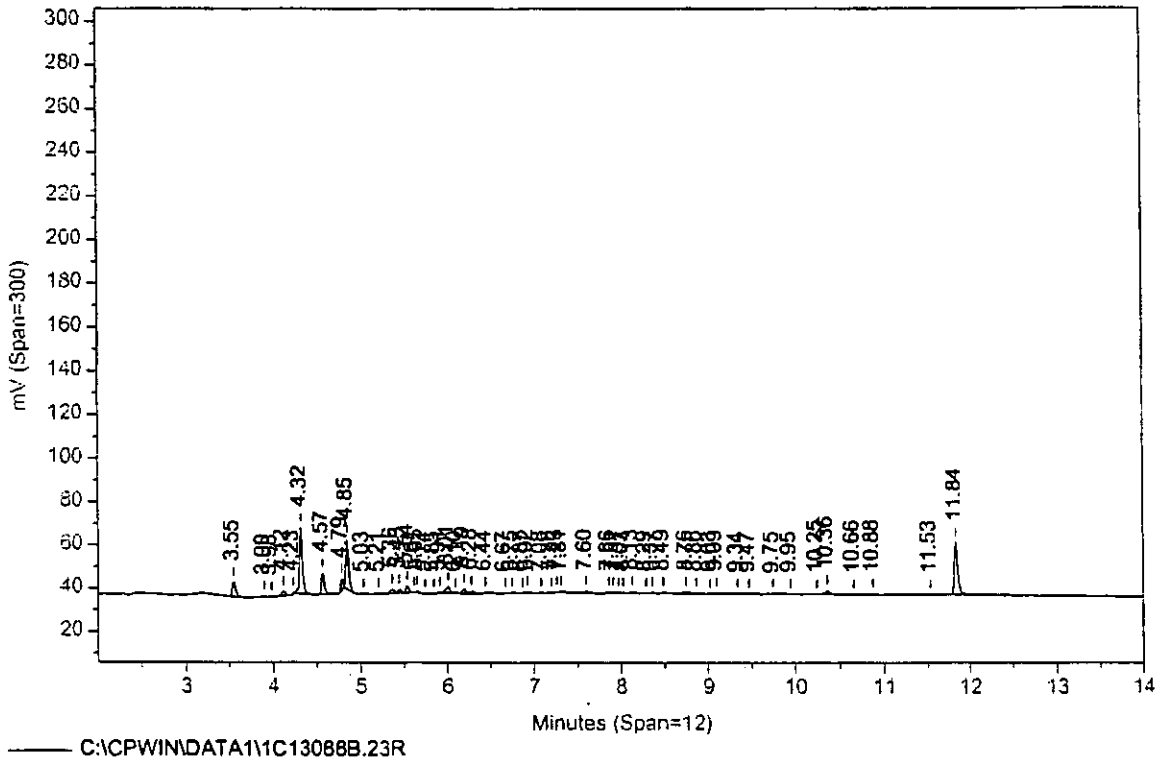
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.32 | 30460 | 8.02528 | TCX | 4.837 | 14831 | 7.58136 | TCX |
| . | 0 | . | HCB | 5.558 | 12039 | 4.33772 | HCB |
| 5.614 | 154 | .0333 | gamma-BHC | . | 0 | . | gamma-BHC |
| 5.744 | 101 | .03914 | beta-BHC | 6.44 | 365 | .31546 | beta-BHC |
| 6.009 | 2851 | .64838 | delta-BHC | . | 0 | . | delta-BHC |
| 6.282 | 1146 | .23193 | Heptachlor | . | 0 | . | Heptachlor |
| 7.909 | 653 | .158 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.971 | 610 | .17336 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.17 | 657 | .36429 | Hept. epoxide |
| . | 0 | . | o,p-DDE | 8.403 | 374 | .30115 | o,p-DDE |
| 8.755 | 902 | .31698 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.032 | 444 | .13548 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.096 | 571 | .34275 | Dieldrin |
| 9.747 | 36 | .02165 | Methoxychlor | . | 0 | . | Methoxychlor |
| 11.835 | 24338 | 6.39118 | DCB | 13.374 | 11022 | 6.50132 | DCB |

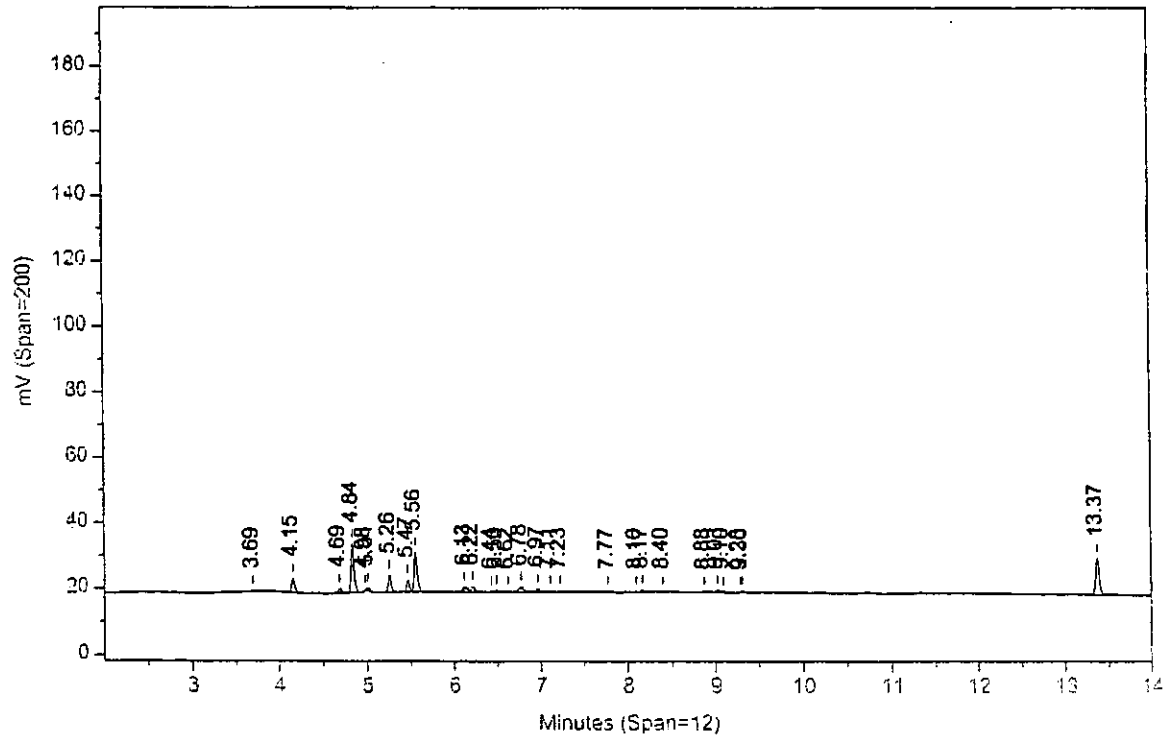
Files:
Area File: C:\CPWIN\DATA1\IC13088.23A
Area File: C:\CPWIN\DATA1\IC13088B.23A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\IC13088.CAL
Calibration File B: C:\CPWIN\DATA1\IC13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:00:34 AM
File Reported On: 3/29/2004 at 10:00:43 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13088.23R




C:\CPWIN\DATA1\1C13088B.23R



Sample Name: **AR32X03C AAAR32XAA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 03:39:04am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.24R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.549 | | 0.0000 | 0.000 | 9128.0 | 1.265 | BB | 0.042 | 3627.10 | 1.384 |
| 2 | 3.897 | | 0.0000 | 0.000 | 1842.9 | 0.255 | BB | 0.071 | 434.31 | 0.166 |
| 3 | 3.981 | | 0.0000 | 0.000 | 229.4 | 0.032 | BB | 0.030 | 128.84 | 0.049 |
| 4 | 4.119 | | 0.0000 | 0.000 | 3859.3 | 0.535 | BB | 0.052 | 1248.92 | 0.477 |
| 5 | 4.230 | | 0.0000 | 0.000 | 579.2 | 0.080 | BB | 0.028 | 350.30 | 0.134 |
| 6 | 4.319 | TCX | 9.8897 | 36.031 | 91945.1 | 12.737 | BB | 0.041 | 37536.74 | 14.324 |
| 7 | 4.570 | | 0.0000 | 0.000 | 14271.3 | 1.977 | BB | 0.042 | 5633.02 | 2.150 |
| 8 | 4.787 | | 0.0000 | 0.000 | 5895.5 | 0.817 | BB | 0.030 | 3306.94 | 1.262 |
| 9 | 4.847 | | 0.0000 | 0.000 | 41783.2 | 5.788 | BB | 0.040 | 17531.33 | 6.690 |
| 10 | 5.032 | | 0.0000 | 0.000 | 2258.5 | 0.313 | BB | 0.042 | 903.72 | 0.345 |
| 11 | 5.208 | | 0.0000 | 0.000 | 112.2 | 0.016 | BB | 0.034 | 55.53 | 0.021 |
| 12 | 5.360 | | 0.0000 | 0.000 | 34247.3 | 4.744 | BB | 0.048 | 11849.12 | 4.522 |
| 13 | 5.439 | | 0.0000 | 0.000 | 611.2 | 0.085 | BB | 0.028 | 362.05 | 0.138 |
| 14 | 5.535 | | 0.0000 | 0.000 | 6749.4 | 0.935 | BB | 0.038 | 2950.98 | 1.126 |
| 15 | 5.615 | gamma-BHC | 0.2809 | 1.023 | 2235.5 | 0.310 | BB | 0.029 | 1302.02 | 0.497 |
| 16 | 5.650 | | 0.0000 | 0.000 | 6537.8 | 0.906 | BB | 0.029 | 3731.26 | 1.424 |
| 17 | 5.741 | beta-BHC | 0.0409 | 0.149 | 189.5 | 0.026 | BB | 0.030 | 105.32 | 0.040 |
| 18 | 5.842 | | 0.0000 | 0.000 | 110.9 | 0.015 | BB | 0.029 | 64.39 | 0.025 |
| 19 | 5.909 | | 0.0000 | 0.000 | 7093.6 | 0.983 | BB | 0.040 | 2974.43 | 1.135 |
| 20 | 6.008 | delta-BHC | 4.6045 | 16.775 | 68199.7 | 9.448 | BB | 0.056 | 20248.67 | 7.727 |
| 21 | 6.089 | | 0.0000 | 0.000 | 859.1 | 0.119 | BB | 0.024 | 587.89 | 0.224 |
| 22 | 6.194 | | 0.0000 | 0.000 | 29755.0 | 4.122 | BV | 0.044 | 11234.08 | 4.287 |
| 23 | 6.281 | Heptachlor | 1.5705 | 5.722 | 18160.6 | 2.516 | VB | 0.039 | 7760.05 | 2.961 |
| 24 | 6.443 | | 0.0000 | 0.000 | 13683.1 | 1.896 | BV | 0.035 | 6536.51 | 2.494 |
| 25 | 6.475 | | 0.0000 | 0.000 | 17003.8 | 2.356 | VV | 0.037 | 7600.94 | 2.901 |
| 26 | 6.526 | | 0.0000 | 0.000 | 13821.0 | 1.915 | VV | 0.046 | 5061.15 | 1.931 |
| 27 | 6.673 | | 0.0000 | 0.000 | 99.1 | 0.014 | VB | 0.040 | 41.79 | 0.016 |
| 28 | 6.751 | | 0.0000 | 0.000 | 30477.0 | 4.222 | BV | 0.056 | 9102.53 | 3.474 |
| 29 | 6.867 | | 0.0000 | 0.000 | 11763.2 | 1.630 | VV | 0.037 | 5281.27 | 2.015 |
| 30 | 6.919 | | 0.0000 | 0.000 | 18954.2 | 2.626 | VB | 0.047 | 6653.82 | 2.539 |
| 31 | 7.069 | | 0.0000 | 0.000 | 5141.1 | 0.712 | BB | 0.041 | 2071.96 | 0.791 |
| 32 | 7.139 | | 0.0000 | 0.000 | 170.0 | 0.024 | BB | 0.018 | 154.00 | 0.059 |
| 33 | 7.200 | | 0.0000 | 0.000 | 8112.6 | 1.124 | BB | 0.033 | 4042.44 | 1.543 |
| 34 | 7.259 | | 0.0000 | 0.000 | 633.3 | 0.088 | BB | 0.020 | 517.95 | 0.198 |
| 35 | 7.314 | | 0.0000 | 0.000 | 14746.0 | 2.043 | BV | 0.031 | 7923.22 | 3.024 |
| 36 | 7.353 | | 0.0000 | 0.000 | 23269.0 | 3.224 | VB | 0.041 | 9362.72 | 3.573 |
| 37 | 7.460 | | 0.0000 | 0.000 | 150.0 | 0.021 | BB | 0.023 | 110.78 | 0.042 |
| 38 | 7.573 | Hept. epoxide | 1.0676 | 3.890 | 10630.0 | 1.473 | BV | 0.042 | 4260.96 | 1.626 |
| 39 | 7.618 | | 0.0000 | 0.000 | 18731.0 | 2.595 | VB | 0.054 | 5818.40 | 2.220 |
| 40 | 7.765 | | 0.0000 | 0.000 | 123.7 | 0.017 | BB | 0.043 | 48.28 | 0.018 |
| 41 | 7.913 | a. Chlordane | 0.3208 | 1.169 | 5792.8 | 0.802 | BV | 0.073 | 1325.63 | 0.506 |
| 42 | 7.972 | 4,4'-DDE | 0.4069 | 1.482 | 3519.0 | 0.487 | VV | 0.041 | 1431.72 | 0.546 |
| 43 | 8.030 | | 0.0000 | 0.000 | 2192.0 | 0.304 | VV | 0.044 | 822.75 | 0.314 |
| 44 | 8.132 | | 0.0000 | 0.000 | 5203.3 | 0.721 | VB | 0.043 | 2007.39 | 0.766 |
| 45 | 8.291 | | 0.0000 | 0.000 | 3018.0 | 0.418 | BV | 0.061 | 818.81 | 0.312 |
| 46 | 8.369 | | 0.0000 | 0.000 | 1502.7 | 0.208 | VV | 0.052 | 482.23 | 0.184 |
| 47 | 8.490 | | 0.0000 | 0.000 | 6984.4 | 0.968 | VV | 0.070 | 1669.89 | 0.637 |
| 48 | 8.756 | 4,4'-DDD | 0.3780 | 1.377 | 7502.4 | 1.039 | VV | 0.116 | 1075.84 | 0.411 |
| 49 | 8.859 | | 0.0000 | 0.000 | 7817.2 | 1.083 | VB | 0.077 | 1694.74 | 0.647 |
| 50 | 9.030 | Endosulfan II | 0.1881 | 0.685 | 2360.8 | 0.327 | BV | 0.064 | 616.49 | 0.235 |
| 51 | 9.095 | | 0.0000 | 0.000 | 3924.5 | 0.544 | VV | 0.075 | 870.24 | 0.332 |
| 52 | 9.226 | | 0.0000 | 0.000 | 1597.4 | 0.221 | VB | 0.057 | 467.25 | 0.178 |
| 53 | 9.473 | | 0.0000 | 0.000 | 332.7 | 0.046 | BB | 0.069 | 80.75 | 0.031 |
| 54 | 9.560 | Endrin aldehyde | 0.0888 | 0.323 | 492.9 | 0.068 | BV | 0.034 | 244.98 | 0.093 |
| 55 | 9.611 | | 0.0000 | 0.000 | 413.5 | 0.057 | VB | 0.032 | 213.79 | 0.082 |
| 56 | 9.679 | | 0.0000 | 0.000 | 128.7 | 0.018 | BB | 0.035 | 60.92 | 0.023 |
| 57 | 9.747 | Methoxychlor | 0.0258 | 0.094 | 76.0 | 0.011 | BB | 0.029 | 43.42 | 0.017 |
| 58 | 9.949 | | 0.0000 | 0.000 | 11755.9 | 1.629 | BB | 0.165 | 1185.88 | 0.453 |
| 59 | 10.129 | Endo. sulfate | 0.5670 | 2.066 | 5602.2 | 0.776 | BV | 0.056 | 1657.12 | 0.632 |
| 60 | 10.243 | | 0.0000 | 0.000 | 5307.3 | 0.735 | VB | 0.182 | 485.43 | 0.185 |
| 61 | 10.357 | | 0.0000 | 0.000 | 5380.6 | 0.745 | BB | 0.055 | 1628.10 | 0.621 |
| 62 | 10.667 | | 0.0000 | 0.000 | 1376.2 | 0.191 | BV | 0.086 | 267.71 | 0.102 |
| 63 | 10.786 | | 0.0000 | 0.000 | 1148.3 | 0.159 | VV | 0.076 | 251.31 | 0.096 |
| 64 | 10.876 | | 0.0000 | 0.000 | 2080.8 | 0.288 | VB | 0.038 | 924.36 | 0.353 |

8696

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.174 | | 0.0000 | 0.000 | 6370.4 | 0.883 | BB | 0.052 | 2057.63 | 0.785 |
| 66 | 11.353 | | 0.0000 | 0.000 | 8434.0 | 1.168 | BB | 0.326 | 431.78 | 0.165 |
| 67 | 11.535 | | 0.0000 | 0.000 | 460.6 | 0.064 | BB | 0.042 | 181.80 | 0.069 |
| 68 | 11.835 DCB | | 8.0186 | 29.214 | 86917.3 | 12.041 | BB | 0.047 | 30534.91 | 11.652 |

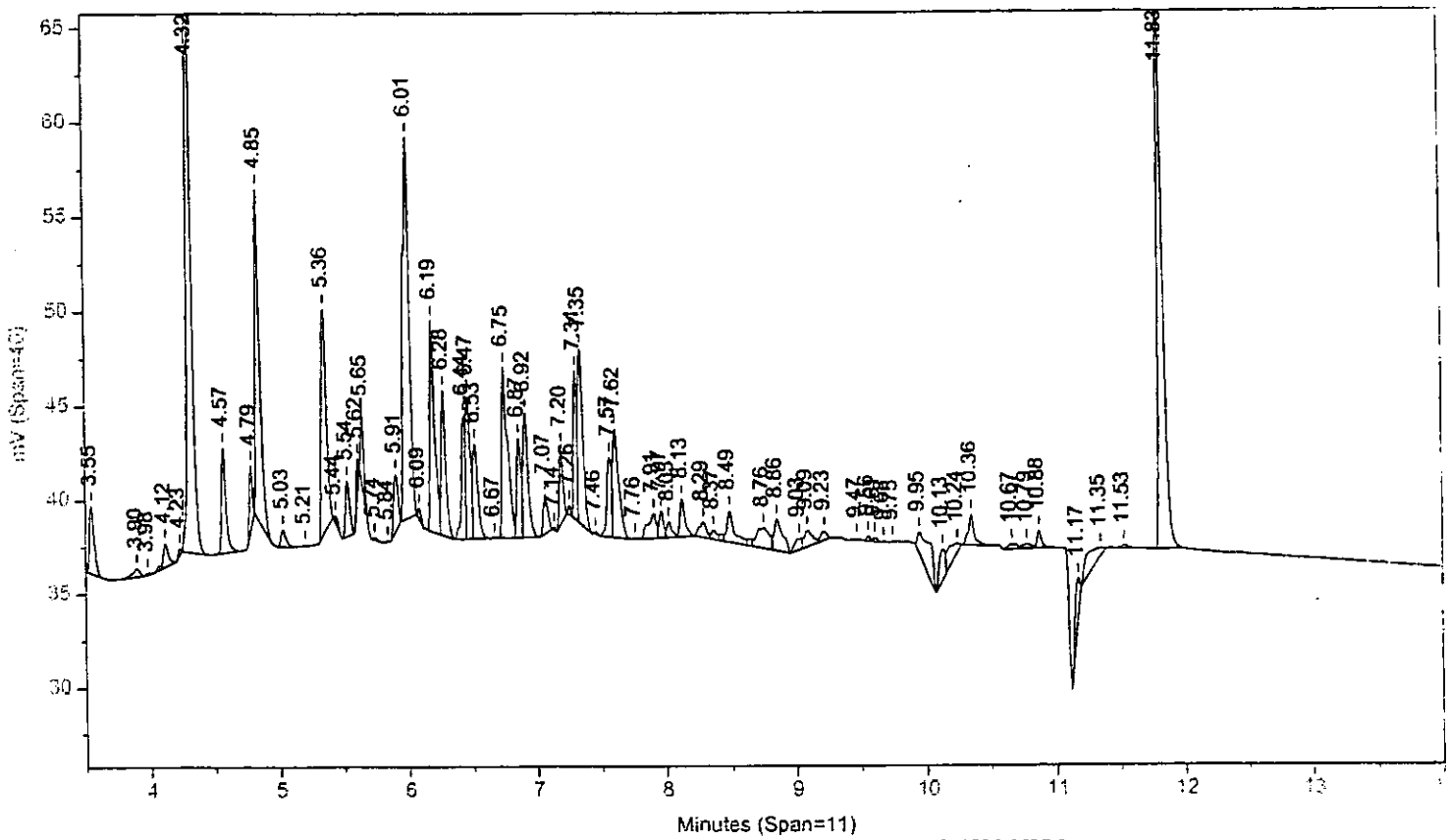
Total Area = 721854.3, Total Amount = 27.448, Total Height = 262048.6, Sample Units = PPB

Sample Name: **AR32X03C AAAR32XAA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 03:39:04am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.24R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.696 | | 0.0000 | 0.000 | 6750.1 | 1.806 | BB | 0.303 | 371.73 | 0.274 |
| 2 | 4.149 | | 0.0000 | 0.000 | 5690.1 | 1.522 | BB | 0.041 | 2290.29 | 1.686 |
| 3 | 4.690 | | 0.0000 | 0.000 | 1773.4 | 0.474 | BB | 0.039 | 765.80 | 0.564 |
| 4 | 4.837 | TCX | 9.3777 | 27.696 | 39923.1 | 10.680 | BB | 0.036 | 18344.73 | 13.502 |
| 5 | 4.979 | | 0.0000 | 0.000 | 264.6 | 0.071 | BB | 0.033 | 134.07 | 0.099 |
| 6 | 5.014 | | 0.0000 | 0.000 | 1506.3 | 0.403 | BB | 0.033 | 751.31 | 0.553 |
| 7 | 5.259 | | 0.0000 | 0.000 | 6382.4 | 1.707 | BB | 0.037 | 2865.39 | 2.109 |
| 8 | 5.407 | | 0.0000 | 0.000 | 312.6 | 0.084 | BB | 0.026 | 198.07 | 0.146 |
| 9 | 5.467 | | 0.0000 | 0.000 | 4965.2 | 1.328 | BB | 0.035 | 2347.16 | 1.728 |
| 10 | 5.557 | HCB | 3.3901 | 10.013 | 22489.6 | 6.016 | BB | 0.040 | 9409.21 | 6.926 |
| 11 | 5.893 | | 0.0000 | 0.000 | 1511.3 | 0.404 | BV | 0.046 | 551.98 | 0.406 |
| 12 | 6.138 | | 0.0000 | 0.000 | 21734.0 | 5.814 | VV | 0.054 | 6697.23 | 4.929 |
| 13 | 6.218 | | 0.0000 | 0.000 | 2930.9 | 0.784 | VV | 0.037 | 1325.18 | 0.975 |
| 14 | 6.297 | gamma-BHC | 0.4185 | 1.236 | 1872.0 | 0.501 | VV | 0.043 | 730.87 | 0.538 |
| 15 | 6.437 | beta-BHC | 2.1002 | 6.203 | 4972.4 | 1.330 | VV | 0.034 | 2428.15 | 1.787 |
| 16 | 6.492 | | 0.0000 | 0.000 | 8495.4 | 2.273 | VV | 0.041 | 3424.44 | 2.521 |
| 17 | 6.621 | | 0.0000 | 0.000 | 3198.4 | 0.856 | VV | 0.036 | 1483.64 | 1.092 |
| 18 | 6.657 | | 0.0000 | 0.000 | 2005.7 | 0.537 | VV | 0.033 | 998.22 | 0.735 |
| 19 | 6.776 | | 0.0000 | 0.000 | 34089.0 | 9.119 | VV | 0.058 | 9806.37 | 7.218 |
| 20 | 6.966 | Heptachlor | 3.3109 | 9.779 | 15666.1 | 4.191 | VV | 0.043 | 6112.50 | 4.499 |
| 21 | 7.108 | | 0.0000 | 0.000 | 7754.5 | 2.074 | VV | 0.036 | 3587.48 | 2.641 |
| 22 | 7.157 | | 0.0000 | 0.000 | 2056.9 | 0.550 | VV | 0.032 | 1088.04 | 0.801 |
| 23 | 7.228 | | 0.0000 | 0.000 | 8404.4 | 2.248 | VV | 0.037 | 3746.76 | 2.758 |
| 24 | 7.291 | | 0.0000 | 0.000 | 8453.9 | 2.262 | VV | 0.041 | 3477.46 | 2.560 |
| 25 | 7.349 | | 0.0000 | 0.000 | 7303.7 | 1.954 | VV | 0.050 | 2415.99 | 1.778 |
| 26 | 7.602 | Telodrin | 2.7612 | 8.155 | 11061.8 | 2.959 | VV | 0.037 | 5022.97 | 3.697 |
| 27 | 7.667 | | 0.0000 | 0.000 | 7155.6 | 1.914 | VV | 0.053 | 2271.05 | 1.672 |
| 28 | 7.770 | | 0.0000 | 0.000 | 12975.4 | 3.471 | VV | 0.052 | 4175.15 | 3.073 |
| 29 | 7.978 | | 0.0000 | 0.000 | 2815.7 | 0.753 | VV | 0.033 | 1406.40 | 1.035 |
| 30 | 8.017 | | 0.0000 | 0.000 | 5501.8 | 1.472 | VV | 0.038 | 2414.94 | 1.777 |
| 31 | 8.103 | | 0.0000 | 0.000 | 9678.4 | 2.589 | VV | 0.037 | 4344.52 | 3.198 |
| 32 | 8.168 | Hept. epoxide | 2.6892 | 7.942 | 11525.8 | 3.083 | VV | 0.040 | 4853.31 | 3.572 |
| 33 | 8.318 | | 0.0000 | 0.000 | 1703.1 | 0.456 | VB | 0.065 | 433.82 | 0.319 |
| 34 | 8.408 | o,p-DDE | 0.6261 | 1.849 | 1646.4 | 0.440 | BV | 0.035 | 778.53 | 0.573 |
| 35 | 8.479 | | 0.0000 | 0.000 | 8265.2 | 2.211 | VB | 0.036 | 3841.86 | 2.828 |
| 36 | 8.793 | | 0.0000 | 0.000 | 1141.5 | 0.305 | BB | 0.036 | 531.67 | 0.391 |
| 37 | 8.873 | | 0.0000 | 0.000 | 1516.4 | 0.406 | BV | 0.039 | 656.20 | 0.483 |
| 38 | 8.955 | | 0.0000 | 0.000 | 1353.9 | 0.362 | VV | 0.044 | 511.05 | 0.376 |
| 39 | 9.025 | | 0.0000 | 0.000 | 5983.5 | 1.601 | VB | 0.075 | 1329.04 | 0.978 |
| 40 | 9.268 | | 0.0000 | 0.000 | 1368.6 | 0.366 | BV | 0.036 | 636.79 | 0.469 |
| 41 | 9.313 | | 0.0000 | 0.000 | 4121.4 | 1.103 | VV | 0.078 | 876.77 | 0.645 |
| 42 | 9.534 | o,p-DDT | 0.3490 | 1.031 | 1627.8 | 0.435 | VB | 0.066 | 410.70 | 0.302 |
| 43 | 9.786 | Endosulfan II | 0.3284 | 0.970 | 1188.8 | 0.318 | BB | 0.038 | 524.15 | 0.386 |
| 44 | 11.320 | Endrin ketone | 0.3436 | 1.015 | 11582.2 | 3.098 | BB | 0.344 | 561.47 | 0.413 |
| 45 | 11.770 | | 0.0000 | 0.000 | 9015.3 | 2.412 | BB | 0.215 | 698.11 | 0.514 |
| 46 | 11.989 | | 0.0000 | 0.000 | 664.7 | 0.178 | BB | 0.028 | 390.41 | 0.287 |
| 47 | 13.374 | DCB | 8.1640 | 24.112 | 41410.6 | 11.078 | BB | 0.050 | 13841.23 | 10.188 |

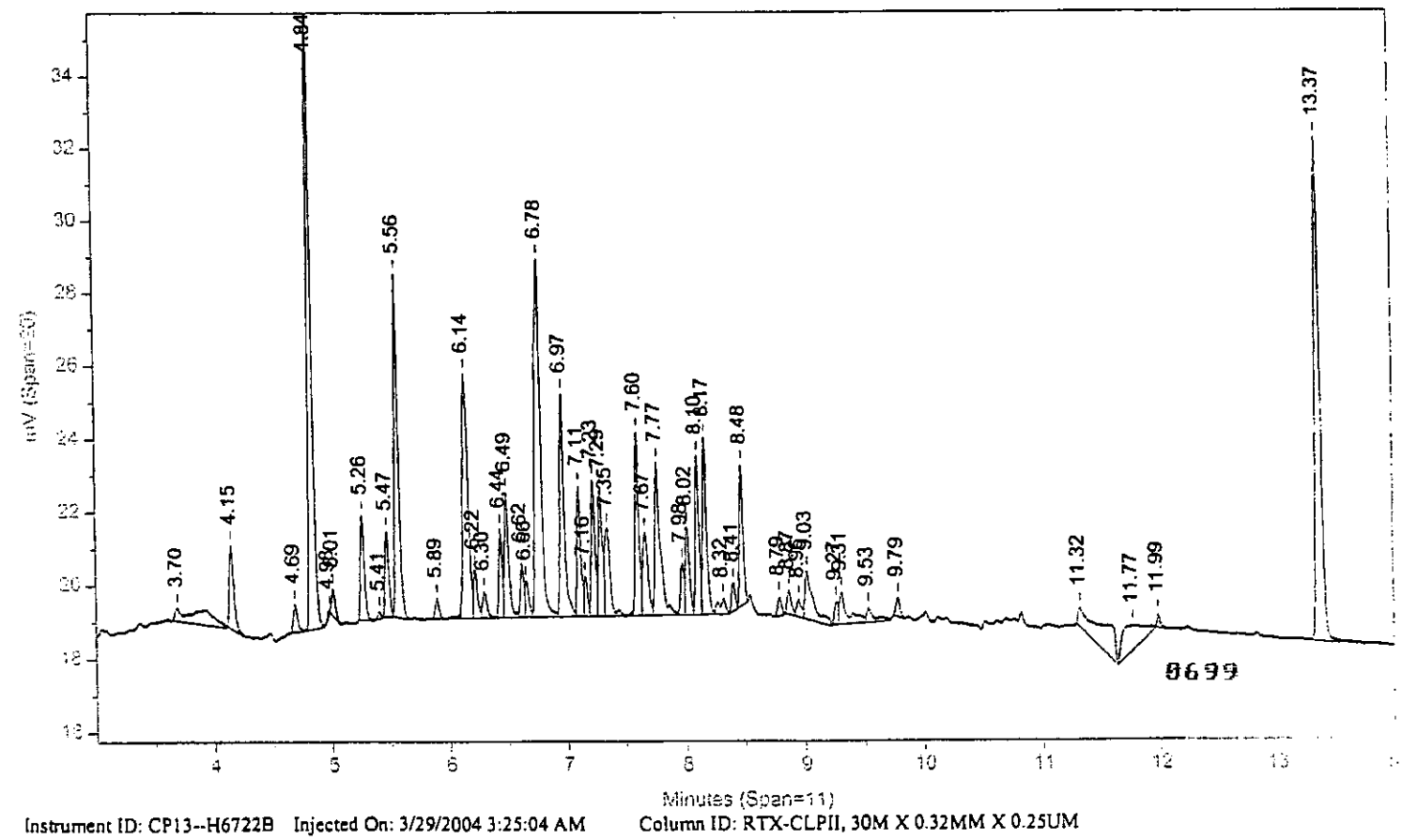
Total Area = 373810.3, Total Amount = 33.859, Total Height = 135862.2, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.24R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 3:25:04 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.24R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 3:25:04 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

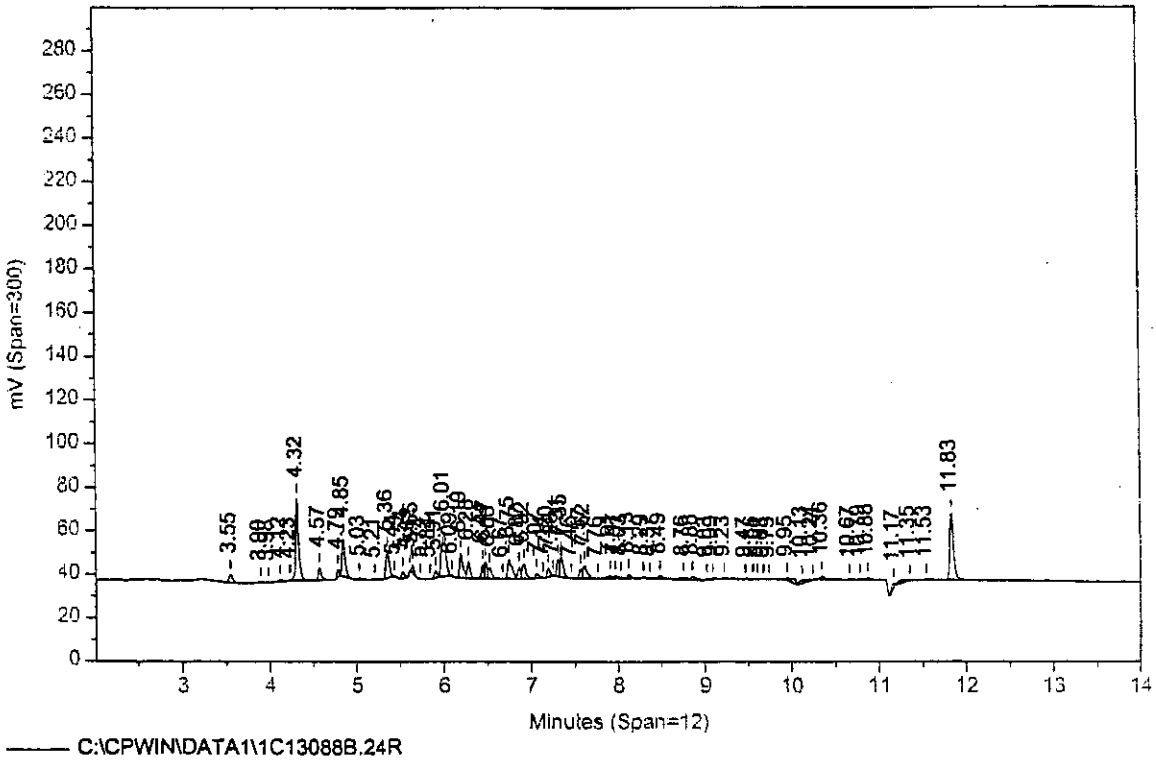
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 37537 | 9.88971 | TCX | 4.837 | 18345 | 9.37768 | TCX |
| . | 0 | . | HCB | 5.557 | 9409 | 3.39012 | HCB |
| 5.615 | 1302 | .28091 | gamma-BHC | 6.297 | 731 | .41848 | gamma-BHC |
| 5.741 | 105 | .04087 | beta-BHC | 6.437 | 2428 | 2.10016 | beta-BHC |
| 6.008 | 20249 | 4.60452 | delta-BHC | . | 0 | . | delta-BHC |
| 6.281 | 7760 | 1.57048 | Heptachlor | 6.966 | 6112 | 3.31094 | Heptachlor |
| 7.573 | 4261 | 1.0676 | Hept. epoxide | 8.168 | 4853 | 2.6892 | Hept. epoxide |
| . | 0 | . | Telodrin | 7.602 | 5023 | 2.76119 | Telodrin |
| 7.913 | 1326 | .32077 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.972 | 1432 | .40687 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | o,p-DDE | 8.408 | 779 | .62613 | o,p-DDE |
| 8.756 | 1076 | .378 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.03 | 616 | .18809 | Endosulfan II | 9.786 | 524 | .32836 | Endosulfan II |
| . | 0 | . | o,p-DDT | 9.534 | 411 | .34899 | o,p-DDT |
| 9.56 | 245 | .08879 | Endrin aldehyde | . | 0 | . | Endrin aldehyde |
| 9.747 | 43 | .02581 | Methoxychlor | . | 0 | . | Methoxychlor |
| 0.129 | 1657 | .567 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.32 | 561 | .34355 | Endrin ketone |
| 1.835 | 30535 | 8.01857 | DCB | 13.374 | 13841 | 8.16403 | DCB |

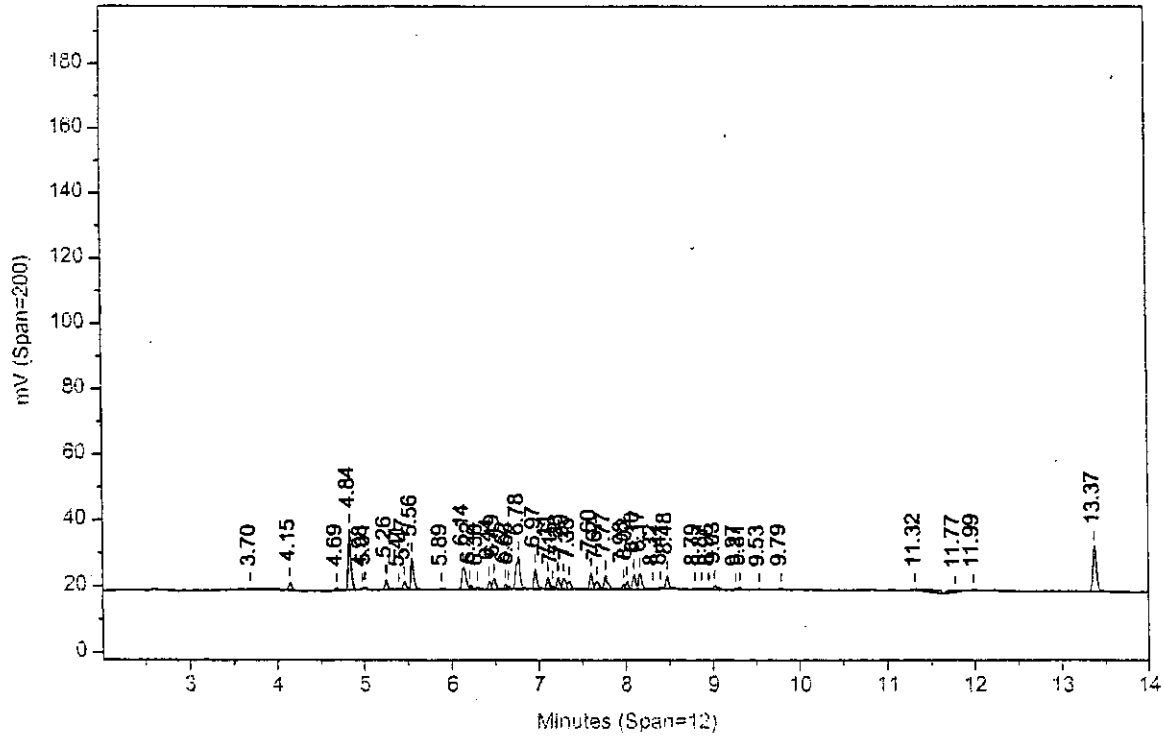
Files:
Area File: C:\CPWIN\DATA1\1C13088.24A
Area File: C:\CPWIN\DATA1\1C13088B.24A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:00:56 AM
File Reported On: 3/29/2004 at 10:01:06 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13088.24R




C:\CPWIN\DATA1\1C13088B.24R



Sample Name: **AR420424A AAAR420AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 03:59:41am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.25R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.552 | | 0.0000 | 0.000 | 557.5 | 0.053 | BB | 0.032 | 286.94 | 0.072 |
| 2 | 3.640 | | 0.0000 | 0.000 | 135.0 | 0.013 | BB | 0.043 | 52.20 | 0.013 |
| 3 | 3.895 | | 0.0000 | 0.000 | 2171.2 | 0.206 | BB | 0.074 | 485.92 | 0.123 |
| 4 | 3.986 | | 0.0000 | 0.000 | 195.2 | 0.019 | BB | 0.037 | 87.60 | 0.022 |
| 5 | 4.124 | | 0.0000 | 0.000 | 779.7 | 0.074 | BB | 0.123 | 105.48 | 0.027 |
| 6 | 4.230 | | 0.0000 | 0.000 | 293.7 | 0.028 | BB | 0.028 | 176.60 | 0.045 |
| 7 | 4.319 | TCX | 8.0603 | 24.821 | 76139.3 | 7.221 | BB | 0.041 | 30593.26 | 7.720 |
| 8 | 4.569 | | 0.0000 | 0.000 | 6705.7 | 0.636 | BB | 0.042 | 2665.08 | 0.673 |
| 9 | 4.786 | | 0.0000 | 0.000 | 4114.5 | 0.390 | BB | 0.030 | 2284.36 | 0.576 |
| 10 | 4.847 | | 0.0000 | 0.000 | 34991.2 | 3.318 | BB | 0.040 | 14655.82 | 3.698 |
| 11 | 5.031 | | 0.0000 | 0.000 | 4772.4 | 0.453 | BB | 0.043 | 1856.87 | 0.469 |
| 12 | 5.249 | | 0.0000 | 0.000 | 117.9 | 0.011 | BB | 0.033 | 58.93 | 0.015 |
| 13 | 5.359 | | 0.0000 | 0.000 | 78015.0 | 7.399 | BB | 0.054 | 23893.21 | 6.029 |
| 14 | 5.531 | | 0.0000 | 0.000 | 7428.2 | 0.704 | BB | 0.039 | 3168.94 | 0.800 |
| 15 | 5.615 | gamma-BHC | 0.6868 | 2.115 | 4604.0 | 0.437 | BB | 0.024 | 3183.30 | 0.803 |
| 16 | 5.650 | | 0.0000 | 0.000 | 12108.6 | 1.148 | BB | 0.029 | 7030.14 | 1.774 |
| 17 | 5.742 | beta-BHC | 0.1029 | 0.317 | 404.7 | 0.038 | BB | 0.025 | 265.18 | 0.067 |
| 18 | 5.908 | | 0.0000 | 0.000 | 13809.1 | 1.310 | BB | 0.039 | 5853.68 | 1.477 |
| 19 | 6.008 | delta-BHC | 8.7623 | 26.983 | 129635.9 | 12.294 | BB | 0.056 | 38532.89 | 9.724 |
| 20 | 6.088 | | 0.0000 | 0.000 | 1929.1 | 0.183 | BB | 0.025 | 1276.64 | 0.322 |
| 21 | 6.140 | | 0.0000 | 0.000 | 201.5 | 0.019 | BV | 0.016 | 210.75 | 0.053 |
| 22 | 6.193 | | 0.0000 | 0.000 | 57597.4 | 5.462 | VV | 0.045 | 21190.87 | 5.347 |
| 23 | 6.281 | Heptachlor | 3.0061 | 9.257 | 34734.1 | 3.294 | VB | 0.039 | 14853.64 | 3.748 |
| 24 | 6.442 | | 0.0000 | 0.000 | 26970.7 | 2.558 | BV | 0.033 | 13713.08 | 3.460 |
| 25 | 6.474 | | 0.0000 | 0.000 | 38940.2 | 3.693 | VV | 0.040 | 16307.84 | 4.115 |
| 26 | 6.525 | | 0.0000 | 0.000 | 30738.7 | 2.915 | VB | 0.045 | 11334.76 | 2.860 |
| 27 | 6.751 | | 0.0000 | 0.000 | 63539.9 | 6.026 | BV | 0.056 | 18780.93 | 4.739 |
| 28 | 6.866 | | 0.0000 | 0.000 | 26678.0 | 2.530 | VV | 0.037 | 11900.17 | 3.003 |
| 29 | 6.917 | | 0.0000 | 0.000 | 38643.2 | 3.665 | VB | 0.047 | 13584.97 | 3.428 |
| 30 | 7.068 | | 0.0000 | 0.000 | 10195.4 | 0.967 | BB | 0.041 | 4182.15 | 1.055 |
| 31 | 7.140 | | 0.0000 | 0.000 | 577.7 | 0.055 | BB | 0.021 | 468.43 | 0.118 |
| 32 | 7.199 | | 0.0000 | 0.000 | 18620.6 | 1.766 | BB | 0.033 | 9320.63 | 2.352 |
| 33 | 7.259 | | 0.0000 | 0.000 | 1618.0 | 0.153 | BB | 0.020 | 1327.81 | 0.335 |
| 34 | 7.314 | | 0.0000 | 0.000 | 32241.7 | 3.058 | BV | 0.032 | 16993.22 | 4.288 |
| 35 | 7.351 | | 0.0000 | 0.000 | 49410.7 | 4.686 | VB | 0.041 | 20172.46 | 5.090 |
| 36 | 7.457 | | 0.0000 | 0.000 | 267.9 | 0.025 | BB | 0.021 | 215.97 | 0.054 |
| 37 | 7.574 | Hept. epoxide | 2.5809 | 7.948 | 24436.5 | 2.317 | BV | 0.040 | 10300.59 | 2.599 |
| 38 | 7.617 | | 0.0000 | 0.000 | 45466.9 | 4.312 | VB | 0.057 | 13265.53 | 3.347 |
| 39 | 7.766 | | 0.0000 | 0.000 | 258.8 | 0.025 | BV | 0.029 | 147.28 | 0.037 |
| 40 | 7.850 | | 0.0000 | 0.000 | 1999.2 | 0.190 | VV | 0.035 | 956.43 | 0.241 |
| 41 | 7.913 | a. Chlordane | 0.8043 | 2.477 | 9216.4 | 0.874 | VV | 0.046 | 3324.12 | 0.839 |
| 42 | 7.971 | 4,4'-DDE | 1.1238 | 3.461 | 9255.8 | 0.878 | VV | 0.039 | 3954.66 | 0.998 |
| 43 | 8.029 | | 0.0000 | 0.000 | 6979.2 | 0.662 | VV | 0.043 | 2688.14 | 0.678 |
| 44 | 8.132 | | 0.0000 | 0.000 | 14756.8 | 1.399 | VB | 0.041 | 5995.43 | 1.513 |
| 45 | 8.292 | | 0.0000 | 0.000 | 7607.5 | 0.721 | BV | 0.056 | 2271.81 | 0.573 |
| 46 | 8.367 | | 0.0000 | 0.000 | 1252.0 | 0.119 | VV | 0.044 | 473.65 | 0.120 |
| 47 | 8.426 | Dieldrin | 0.1967 | 0.606 | 2106.7 | 0.200 | VV | 0.051 | 686.80 | 0.173 |
| 48 | 8.490 | | 0.0000 | 0.000 | 13767.5 | 1.306 | VV | 0.044 | 5237.25 | 1.322 |
| 49 | 8.568 | o,p-DDT | 0.2424 | 0.746 | 1665.9 | 0.158 | VV | 0.045 | 621.73 | 0.157 |
| 50 | 8.748 | 4,4'-DDD | 0.3727 | 1.148 | 5831.8 | 0.553 | VV | 0.092 | 1060.80 | 0.268 |
| 51 | 8.858 | | 0.0000 | 0.000 | 12549.3 | 1.190 | VB | 0.049 | 4280.99 | 1.080 |
| 52 | 9.023 | Endosulfan II | 0.1331 | 0.410 | 1474.5 | 0.140 | BV | 0.056 | 436.40 | 0.110 |
| 53 | 9.095 | | 0.0000 | 0.000 | 5110.2 | 0.485 | VV | 0.059 | 1449.10 | 0.366 |
| 54 | 9.208 | | 0.0000 | 0.000 | 624.8 | 0.059 | VB | 0.047 | 223.65 | 0.056 |
| 55 | 9.342 | | 0.0000 | 0.000 | 414.2 | 0.039 | BV | 0.046 | 150.92 | 0.038 |
| 56 | 9.474 | | 0.0000 | 0.000 | 1901.2 | 0.180 | VB | 0.070 | 451.38 | 0.114 |
| 57 | 9.787 | | 0.0000 | 0.000 | 652.4 | 0.062 | BB | 0.039 | 278.20 | 0.070 |
| 58 | 9.872 | | 0.0000 | 0.000 | 161.5 | 0.015 | BV | 0.038 | 71.38 | 0.018 |
| 59 | 9.945 | | 0.0000 | 0.000 | 383.8 | 0.036 | VB | 0.047 | 135.62 | 0.034 |
| 60 | 10.129 | Endo. sulfate | 0.0114 | 0.035 | 75.8 | 0.007 | BB | 0.038 | 33.24 | 0.008 |
| 61 | 10.199 | | 0.0000 | 0.000 | 76.0 | 0.007 | BB | 0.026 | 48.48 | 0.012 |
| 62 | 10.245 | | 0.0000 | 0.000 | 193.8 | 0.018 | BB | 0.032 | 99.54 | 0.025 |
| 63 | 10.357 | | 0.0000 | 0.000 | 3137.1 | 0.298 | BB | 0.046 | 1129.90 | 0.285 |
| 64 | 10.684 | | 0.0000 | 0.000 | 753.6 | 0.071 | BV | 0.110 | 113.74 | 0.029 |

8782

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.878 | | 0.0000 | 0.000 | 1799.0 | 0.171 | VB | 0.036 | 827.05 | 0.209 |
| 66 | 11.376 | | 0.0000 | 0.000 | 1033.5 | 0.098 | BB | 0.240 | 71.68 | 0.018 |
| 67 | 11.531 | | 0.0000 | 0.000 | 257.5 | 0.024 | BB | 0.045 | 95.29 | 0.024 |
| 68 | 11.834 | DCB | 6.3895 | 19.676 | 69363.2 | 6.578 | BB | 0.048 | 24331.44 | 6.140 |

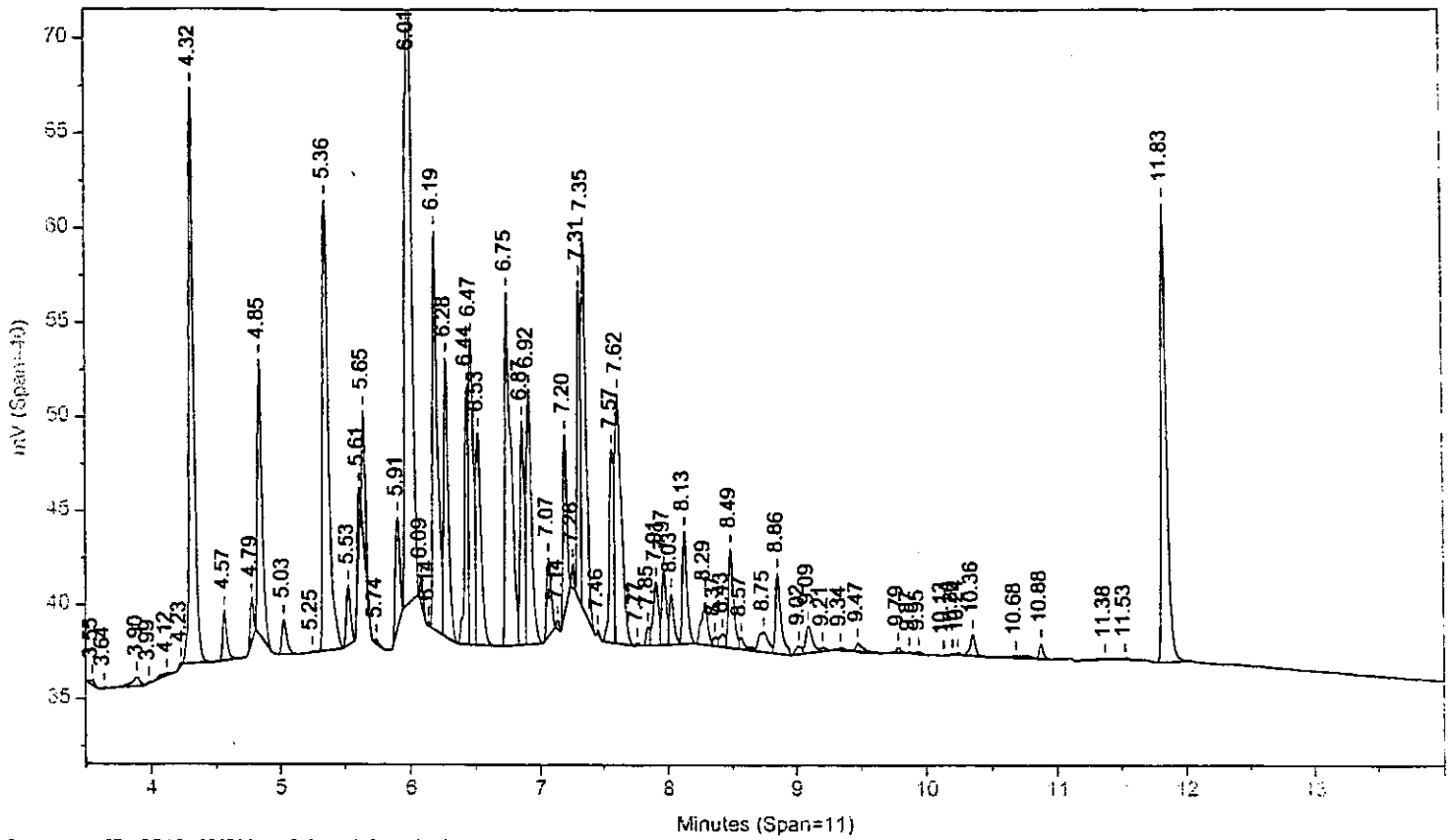
Total Area = 1054446.0, Total Amount = 32.473, Total Height = 396283.0, Sample Units = PPB

Sample Name: **AR420424A AAAR420AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 03:59:41am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.25R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.691 | | 0.0000 | 0.000 | 954.3 | 0.174 | BB | 0.060 | 263.00 | 0.124 |
| 2 | 3.853 | | 0.0000 | 0.000 | 1862.0 | 0.339 | BB | 0.171 | 181.81 | 0.086 |
| 3 | 4.836 | TCX | 7.5489 | 17.275 | 32232.5 | 5.873 | BB | 0.036 | 14767.19 | 6.980 |
| 4 | 5.011 | | 0.0000 | 0.000 | 1710.8 | 0.312 | BB | 0.039 | 731.69 | 0.346 |
| 5 | 5.257 | | 0.0000 | 0.000 | 3219.6 | 0.587 | BB | 0.039 | 1362.93 | 0.644 |
| 6 | 5.465 | | 0.0000 | 0.000 | 3533.9 | 0.644 | BB | 0.036 | 1622.51 | 0.767 |
| 7 | 5.556 | HCB | 2.8780 | 6.586 | 18555.9 | 3.381 | BB | 0.039 | 7987.94 | 3.776 |
| 8 | 5.891 | | 0.0000 | 0.000 | 2686.2 | 0.489 | BV | 0.042 | 1059.48 | 0.501 |
| 9 | 6.138 | | 0.0000 | 0.000 | 41918.2 | 7.638 | VV | 0.057 | 12292.91 | 5.810 |
| 10 | 6.295 | gamma-BHC | 0.7647 | 1.750 | 3536.8 | 0.644 | VV | 0.044 | 1335.58 | 0.631 |
| 11 | 6.437 | beta-BHC | 4.0202 | 9.200 | 9783.5 | 1.783 | VV | 0.035 | 4648.00 | 2.197 |
| 12 | 6.489 | | 0.0000 | 0.000 | 15639.7 | 2.850 | VV | 0.040 | 6570.50 | 3.106 |
| 13 | 6.620 | | 0.0000 | 0.000 | 5637.3 | 1.027 | VV | 0.035 | 2692.60 | 1.273 |
| 14 | 6.660 | | 0.0000 | 0.000 | 3873.5 | 0.706 | VV | 0.036 | 1793.64 | 0.848 |
| 15 | 6.775 | | 0.0000 | 0.000 | 64194.6 | 11.697 | VV | 0.056 | 19091.43 | 9.024 |
| 16 | 6.964 | Heptachlor | 6.3721 | 14.582 | 29867.8 | 5.442 | VV | 0.042 | 11763.93 | 5.560 |
| 17 | 7.108 | | 0.0000 | 0.000 | 14413.1 | 2.626 | VV | 0.035 | 6871.19 | 3.248 |
| 18 | 7.159 | | 0.0000 | 0.000 | 5423.1 | 0.988 | VV | 0.035 | 2556.72 | 1.208 |
| 19 | 7.228 | | 0.0000 | 0.000 | 16892.5 | 3.078 | VV | 0.036 | 7780.97 | 3.678 |
| 20 | 7.289 | | 0.0000 | 0.000 | 17100.9 | 3.116 | VV | 0.038 | 7446.87 | 3.520 |
| 21 | 7.346 | | 0.0000 | 0.000 | 16282.1 | 2.967 | VV | 0.050 | 5406.09 | 2.555 |
| 22 | 7.601 | Telodrin | 5.6915 | 13.025 | 22580.6 | 4.115 | VV | 0.036 | 10353.67 | 4.894 |
| 23 | 7.666 | | 0.0000 | 0.000 | 14262.4 | 2.599 | VV | 0.051 | 4686.95 | 2.215 |
| 24 | 7.769 | | 0.0000 | 0.000 | 27253.1 | 4.966 | VV | 0.051 | 8917.58 | 4.215 |
| 25 | 7.976 | | 0.0000 | 0.000 | 5888.8 | 1.073 | VV | 0.034 | 2907.08 | 1.374 |
| 26 | 8.018 | | 0.0000 | 0.000 | 12451.6 | 2.269 | VV | 0.037 | 5587.20 | 2.641 |
| 27 | 8.102 | | 0.0000 | 0.000 | 21069.5 | 3.839 | VV | 0.037 | 9557.10 | 4.517 |
| 28 | 8.167 | Hept. epoxide | 5.8963 | 13.493 | 24702.5 | 4.501 | VV | 0.039 | 10641.24 | 5.030 |
| 29 | 8.276 | | 0.0000 | 0.000 | 1595.4 | 0.291 | VV | 0.035 | 752.99 | 0.356 |
| 30 | 8.323 | | 0.0000 | 0.000 | 1921.7 | 0.350 | VB | 0.036 | 881.21 | 0.417 |
| 31 | 8.404 | o,p-DDE | 1.9379 | 4.435 | 5334.0 | 0.972 | BV | 0.037 | 2409.59 | 1.139 |
| 32 | 8.478 | | 0.0000 | 0.000 | 22359.6 | 4.074 | VV | 0.040 | 9393.70 | 4.440 |
| 33 | 8.544 | | 0.0000 | 0.000 | 4119.8 | 0.751 | VB | 0.046 | 1478.16 | 0.699 |
| 34 | 8.793 | | 0.0000 | 0.000 | 3051.3 | 0.556 | BB | 0.037 | 1390.51 | 0.657 |
| 35 | 8.870 | | 0.0000 | 0.000 | 3635.6 | 0.662 | BB | 0.035 | 1742.54 | 0.824 |
| 36 | 8.951 | | 0.0000 | 0.000 | 2651.1 | 0.483 | BV | 0.036 | 1234.77 | 0.584 |
| 37 | 9.025 | | 0.0000 | 0.000 | 10007.1 | 1.823 | VB | 0.050 | 3349.25 | 1.583 |
| 38 | 9.258 | | 0.0000 | 0.000 | 2902.7 | 0.529 | BV | 0.038 | 1283.31 | 0.607 |
| 39 | 9.312 | | 0.0000 | 0.000 | 8897.1 | 1.621 | VB | 0.057 | 2587.41 | 1.223 |
| 40 | 9.785 | Endosulfan II | 1.3812 | 3.161 | 5464.7 | 0.996 | BB | 0.041 | 2204.70 | 1.042 |
| 41 | 10.018 | 4,4'-DDT | 0.4444 | 1.017 | 1089.1 | 0.198 | BB | 0.034 | 537.29 | 0.254 |
| 42 | 11.322 | Endrin ketone | 0.2655 | 0.608 | 5028.4 | 0.916 | BB | 0.193 | 433.92 | 0.205 |
| 43 | 13.373 | DCB | 6.4972 | 14.868 | 33207.8 | 6.051 | BB | 0.050 | 11015.28 | 5.206 |

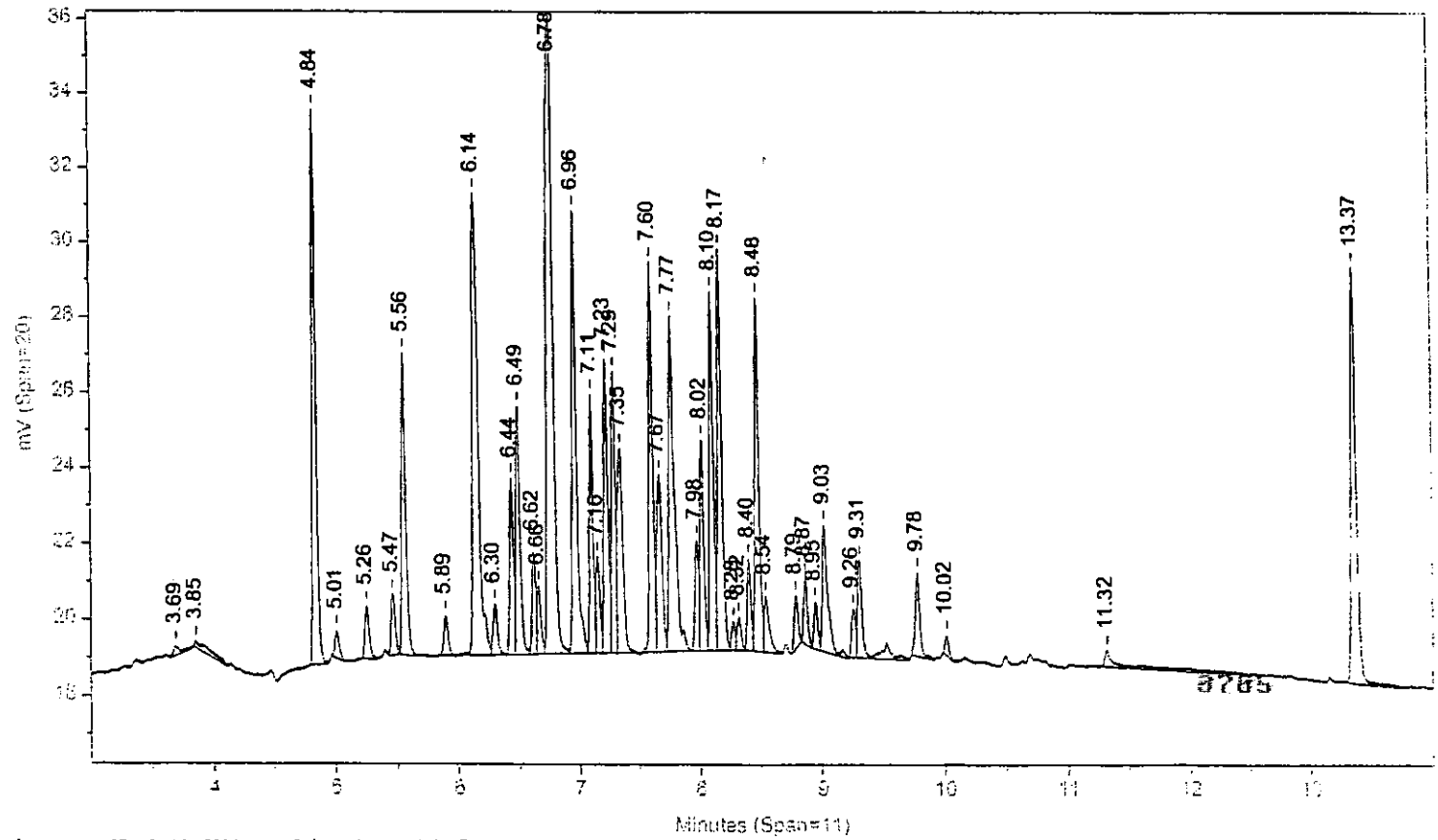
Total Area = 548792.4, Total Amount = 43.698, Total Height = 211572.4, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.25R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 3:45:41 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.25R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 3:45:41 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

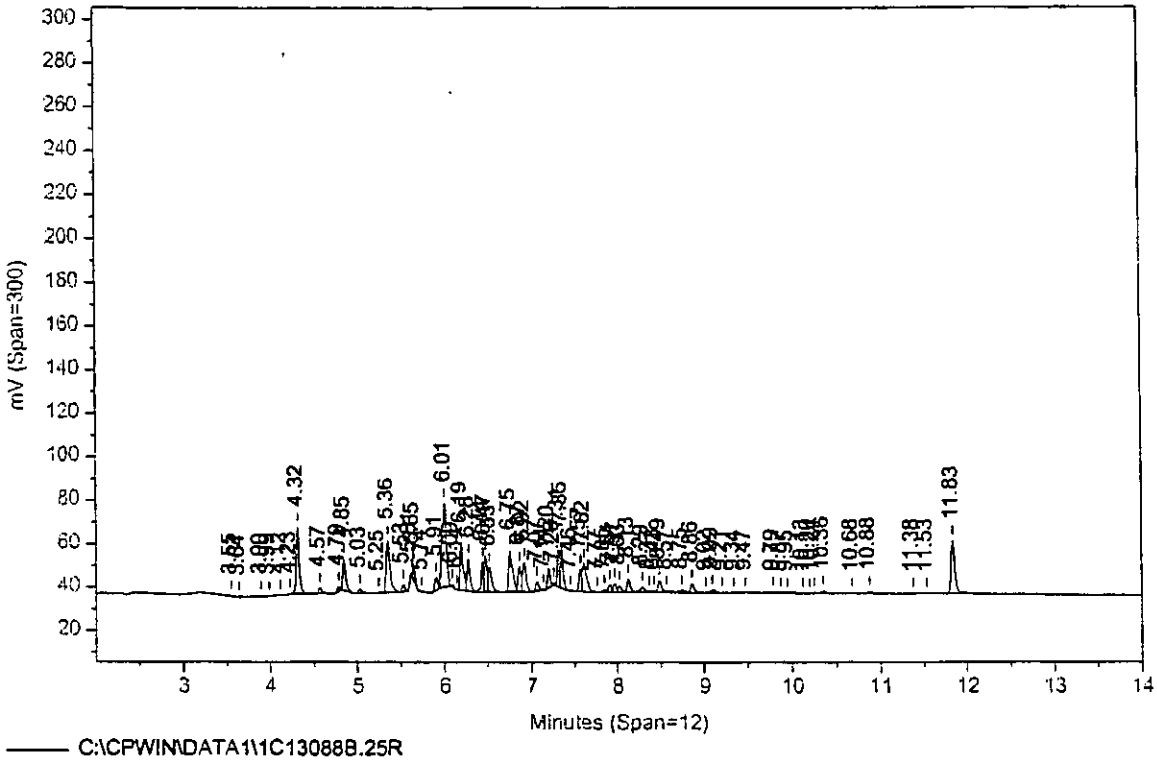
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 30593 | 8.06033 | TCX | 4.836 | 14767 | 7.54887 | TCX |
| . | 0 | . | HCB | 5.556 | 7988 | 2.87804 | HCB |
| 5.615 | 3183 | .68679 | gamma-BHC | 6.295 | 1336 | .76472 | gamma-BHC |
| 5.742 | 265 | .10292 | beta-BHC | 6.437 | 4648 | 4.02016 | beta-BHC |
| 6.008 | 38533 | 8.76232 | delta-BHC | . | 0 | . | delta-BHC |
| 6.281 | 14854 | 3.00609 | Heptachlor | 6.964 | 11764 | 6.37214 | Heptachlor |
| 7.574 | 10301 | 2.58085 | Hept. epoxide | 8.167 | 10641 | 5.89627 | Hept. epoxide |
| . | 0 | . | Telodrin | 7.601 | 10354 | 5.69155 | Telodrin |
| 7.913 | 3324 | .80434 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.971 | 3955 | 1.12384 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | o,p-DDE | 8.404 | 2410 | 1.93792 | o,p-DDE |
| 8.426 | 687 | .1967 | Dieldrin | . | 0 | . | Dieldrin |
| 8.568 | 622 | .24236 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.748 | 1061 | .37272 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.023 | 436 | .13314 | Endosulfan II | 9.785 | 2205 | 1.38116 | Endosulfan II |
| . | 0 | . | 4,4'-DDT | 10.018 | 537 | .44442 | 4,4'-DDT |
| 0.129 | 33 | .01137 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.322 | 434 | .26551 | Endrin ketone |
| 1.834 | 24331 | 6.38952 | DCB | 13.373 | 11015 | 6.49719 | DCB |

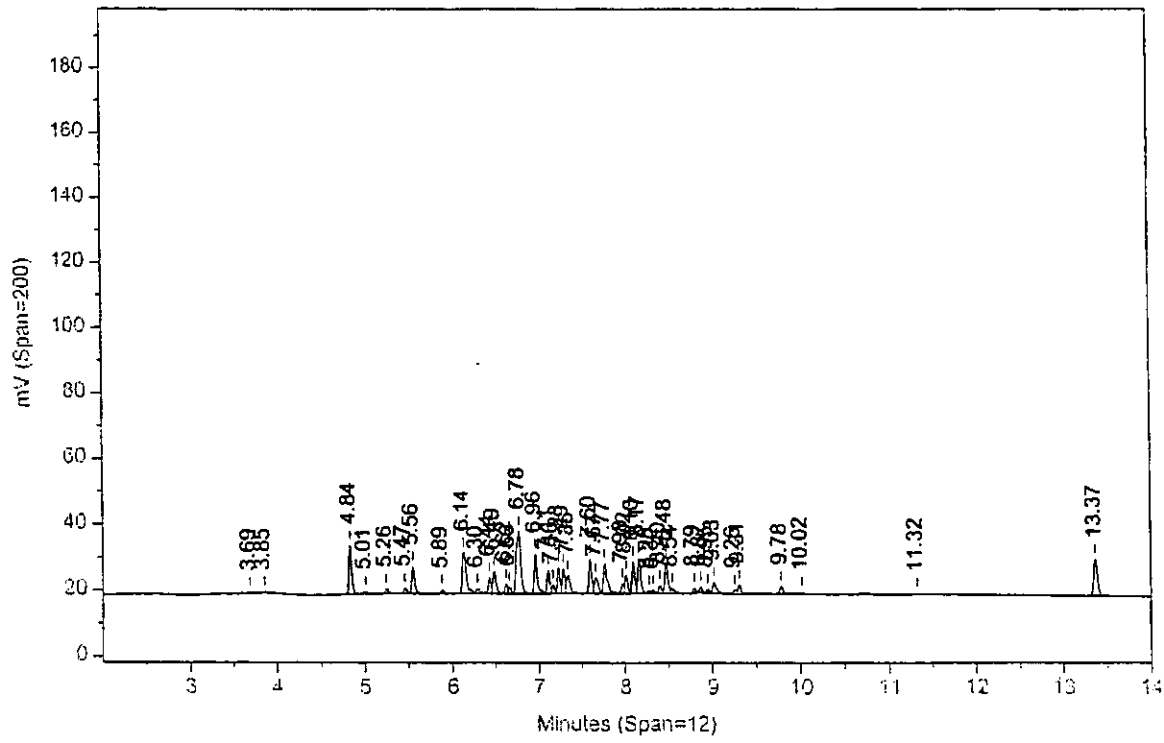
Files:
Area File: C:\CPWIN\DATA1\1C13088.25A
Area File: C:\CPWIN\DATA1\1C13088B.25A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:01:20 AM
File Reported On: 3/29/2004 at 10:01:29 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13088.25R




C:\CPWIN\DATA1\1C13088B.25R



Sample Name: **AR4830424A AAAR483AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 04:20:17am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: C:\CPWIN\DATA1\1C13088.26R
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.558 | | 0.0000 | 0.000 | 1021.0 | 0.092 | BB | 0.031 | 550.44 | 0.130 |
| 2 | 3.894 | | 0.0000 | 0.000 | 2220.0 | 0.201 | BB | 0.073 | 507.53 | 0.120 |
| 3 | 3.988 | | 0.0000 | 0.000 | 215.6 | 0.020 | BB | 0.034 | 106.76 | 0.025 |
| 4 | 4.071 | | 0.0000 | 0.000 | 1450.3 | 0.131 | BB | 0.050 | 487.98 | 0.115 |
| 5 | 4.319 | TCX | 8.0884 | 32.999 | 75202.5 | 6.812 | BB | 0.041 | 30699.98 | 7.264 |
| 6 | 4.569 | | 0.0000 | 0.000 | 438.8 | 0.040 | BB | 0.043 | 169.40 | 0.040 |
| 7 | 4.785 | | 0.0000 | 0.000 | 531.4 | 0.048 | BB | 0.049 | 181.74 | 0.043 |
| 8 | 4.848 | | 0.0000 | 0.000 | 4259.7 | 0.386 | BB | 0.049 | 1455.23 | 0.344 |
| 9 | 5.032 | | 0.0000 | 0.000 | 1196.1 | 0.108 | BB | 0.042 | 477.38 | 0.113 |
| 10 | 5.122 | alpha-BHC | 0.0154 | 0.063 | 159.6 | 0.014 | BB | 0.037 | 71.26 | 0.017 |
| 11 | 5.252 | | 0.0000 | 0.000 | 209.9 | 0.019 | BB | 0.041 | 86.28 | 0.020 |
| 12 | 5.356 | | 0.0000 | 0.000 | 34476.4 | 3.123 | BB | 0.051 | 11279.32 | 2.669 |
| 13 | 5.527 | | 0.0000 | 0.000 | 1327.4 | 0.120 | BB | 0.038 | 585.20 | 0.138 |
| 14 | 5.615 | gamma-BHC | 0.3852 | 1.572 | 2681.0 | 0.243 | BB | 0.025 | 1785.59 | 0.422 |
| 15 | 5.649 | | 0.0000 | 0.000 | 3260.7 | 0.295 | BB | 0.026 | 2098.97 | 0.497 |
| 16 | 5.838 | | 0.0000 | 0.000 | 107.9 | 0.010 | BB | 0.025 | 72.59 | 0.017 |
| 17 | 5.903 | | 0.0000 | 0.000 | 3572.2 | 0.324 | BB | 0.037 | 1598.39 | 0.378 |
| 18 | 5.982 | | 0.0000 | 0.000 | 6487.3 | 0.588 | BB | 0.029 | 3698.85 | 0.875 |
| 19 | 6.007 | delta-BHC | 2.0211 | 8.246 | 13739.6 | 1.245 | BB | 0.026 | 8887.92 | 2.103 |
| 20 | 6.089 | | 0.0000 | 0.000 | 3925.3 | 0.356 | BB | 0.028 | 2313.75 | 0.547 |
| 21 | 6.140 | | 0.0000 | 0.000 | 304.0 | 0.028 | BB | 0.017 | 304.05 | 0.072 |
| 22 | 6.193 | | 0.0000 | 0.000 | 17843.4 | 1.616 | BV | 0.035 | 8524.43 | 2.017 |
| 23 | 6.226 | | 0.0000 | 0.000 | 11008.7 | 0.997 | VV | 0.031 | 5998.81 | 1.419 |
| 24 | 6.280 | Heptachlor | 1.4284 | 5.827 | 16018.0 | 1.451 | VB | 0.038 | 7057.91 | 1.670 |
| 25 | 6.442 | | 0.0000 | 0.000 | 48211.3 | 4.367 | BV | 0.035 | 23098.09 | 5.465 |
| 26 | 6.473 | | 0.0000 | 0.000 | 53920.1 | 4.884 | VV | 0.037 | 24211.09 | 5.729 |
| 27 | 6.524 | | 0.0000 | 0.000 | 42659.6 | 3.864 | VB | 0.046 | 15497.13 | 3.667 |
| 28 | 6.750 | | 0.0000 | 0.000 | 91812.4 | 8.316 | BV | 0.054 | 28126.17 | 6.655 |
| 29 | 6.866 | | 0.0000 | 0.000 | 41967.9 | 3.801 | VV | 0.038 | 18204.45 | 4.307 |
| 30 | 6.918 | | 0.0000 | 0.000 | 40033.7 | 3.626 | VB | 0.047 | 14116.80 | 3.340 |
| 31 | 7.068 | | 0.0000 | 0.000 | 14106.8 | 1.278 | BB | 0.039 | 6043.54 | 1.430 |
| 32 | 7.140 | | 0.0000 | 0.000 | 987.5 | 0.089 | BB | 0.022 | 744.24 | 0.176 |
| 33 | 7.199 | | 0.0000 | 0.000 | 26164.0 | 2.370 | BB | 0.032 | 13467.61 | 3.187 |
| 34 | 7.260 | | 0.0000 | 0.000 | 5817.3 | 0.527 | BB | 0.023 | 4196.53 | 0.993 |
| 35 | 7.314 | | 0.0000 | 0.000 | 50310.0 | 4.557 | BV | 0.031 | 26841.96 | 6.351 |
| 36 | 7.351 | | 0.0000 | 0.000 | 73047.2 | 6.616 | VB | 0.041 | 30013.92 | 7.102 |
| 37 | 7.614 | | 0.0000 | 0.000 | 128382.6 | 11.629 | BV | 0.094 | 22884.43 | 5.415 |
| 38 | 7.767 | | 0.0000 | 0.000 | 730.0 | 0.066 | VB | 0.032 | 379.32 | 0.090 |
| 39 | 7.850 | | 0.0000 | 0.000 | 3433.7 | 0.311 | BV | 0.034 | 1681.49 | 0.398 |
| 40 | 7.913 | a. Chlordane | 1.8466 | 7.534 | 20130.8 | 1.823 | VV | 0.044 | 7631.56 | 1.806 |
| 41 | 7.972 | 4,4'-DDE | 2.7419 | 11.186 | 22632.9 | 2.050 | VV | 0.039 | 9648.48 | 2.283 |
| 42 | 8.030 | | 0.0000 | 0.000 | 16444.7 | 1.490 | VV | 0.042 | 6524.02 | 1.544 |
| 43 | 8.132 | | 0.0000 | 0.000 | 38340.8 | 3.473 | VB | 0.041 | 15491.61 | 3.666 |
| 44 | 8.294 | | 0.0000 | 0.000 | 14686.9 | 1.330 | BV | 0.048 | 5081.89 | 1.202 |
| 45 | 8.368 | | 0.0000 | 0.000 | 3276.2 | 0.297 | VV | 0.046 | 1191.02 | 0.282 |
| 46 | 8.425 | Dieldrin | 0.3922 | 1.600 | 3703.2 | 0.335 | VV | 0.045 | 1369.44 | 0.324 |
| 47 | 8.490 | | 0.0000 | 0.000 | 30031.8 | 2.720 | VV | 0.042 | 11821.37 | 2.797 |
| 48 | 8.569 | o,p-DDT | 0.4429 | 1.807 | 2498.9 | 0.226 | VB | 0.037 | 1136.05 | 0.269 |
| 49 | 8.645 | | 0.0000 | 0.000 | 253.5 | 0.023 | BB | 0.027 | 155.26 | 0.037 |
| 50 | 8.745 | 4,4'-DDD | 0.6086 | 2.483 | 7775.8 | 0.704 | BV | 0.075 | 1732.27 | 0.410 |
| 51 | 8.859 | | 0.0000 | 0.000 | 25745.3 | 2.332 | VB | 0.044 | 9753.70 | 2.308 |
| 52 | 9.022 | Endosulfan II | 0.1085 | 0.443 | 827.4 | 0.075 | BV | 0.039 | 355.71 | 0.084 |
| 53 | 9.095 | | 0.0000 | 0.000 | 8047.8 | 0.729 | VV | 0.051 | 2640.88 | 0.625 |
| 54 | 9.209 | | 0.0000 | 0.000 | 832.4 | 0.075 | VB | 0.047 | 294.56 | 0.070 |
| 55 | 9.289 | | 0.0000 | 0.000 | 59.6 | 0.005 | BB | 0.023 | 42.48 | 0.010 |
| 56 | 9.343 | | 0.0000 | 0.000 | 318.3 | 0.029 | BB | 0.038 | 139.58 | 0.033 |
| 57 | 9.475 | | 0.0000 | 0.000 | 2845.6 | 0.258 | BV | 0.054 | 871.03 | 0.206 |
| 58 | 9.613 | | 0.0000 | 0.000 | 219.5 | 0.020 | VB | 0.031 | 119.30 | 0.028 |
| 59 | 9.681 | | 0.0000 | 0.000 | 89.1 | 0.008 | BB | 0.028 | 52.71 | 0.012 |
| 60 | 9.788 | | 0.0000 | 0.000 | 796.5 | 0.072 | BB | 0.033 | 407.99 | 0.097 |
| 61 | 9.874 | | 0.0000 | 0.000 | 164.5 | 0.015 | BB | 0.030 | 92.16 | 0.022 |
| 62 | 9.947 | | 0.0000 | 0.000 | 1392.1 | 0.126 | BB | 0.046 | 503.32 | 0.119 |
| 63 | 10.133 | Endo. sulfate | 0.0133 | 0.054 | 77.0 | 0.007 | BV | 0.033 | 38.90 | 0.009 |
| 64 | 10.191 | | 0.0000 | 0.000 | 54.9 | 0.005 | VB | 0.025 | 36.62 | 0.009 |

0708

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.240 | | 0.0000 | 0.000 | 163.5 | 0.015 | BB | 0.038 | 71.95 | 0.017 |
| 66 | 10.356 | | 0.0000 | 0.000 | 4526.1 | 0.410 | BB | 0.070 | 1073.05 | 0.254 |
| 67 | 10.597 | | 0.0000 | 0.000 | 84.1 | 0.008 | BB | 0.036 | 39.30 | 0.009 |
| 68 | 10.795 | | 0.0000 | 0.000 | 1734.7 | 0.157 | BV | 0.078 | 372.32 | 0.088 |
| 69 | 10.878 | | 0.0000 | 0.000 | 1858.3 | 0.168 | VB | 0.050 | 617.02 | 0.146 |
| 70 | 11.118 | | 0.0000 | 0.000 | 452.9 | 0.041 | BB | 0.042 | 178.35 | 0.042 |
| 71 | 11.204 | | 0.0000 | 0.000 | 106.5 | 0.010 | BB | 0.037 | 48.01 | 0.011 |
| 72 | 11.536 | | 0.0000 | 0.000 | 350.4 | 0.032 | BB | 0.040 | 144.87 | 0.034 |
| 73 | 11.835 | DCB | 6.4188 | 26.187 | 70252.3 | 6.363 | BB | 0.048 | 24442.93 | 5.784 |

Total Area = 1104016.0, Total Amount = 24.511, Total Height = 422626.3, Sample Units = PPB

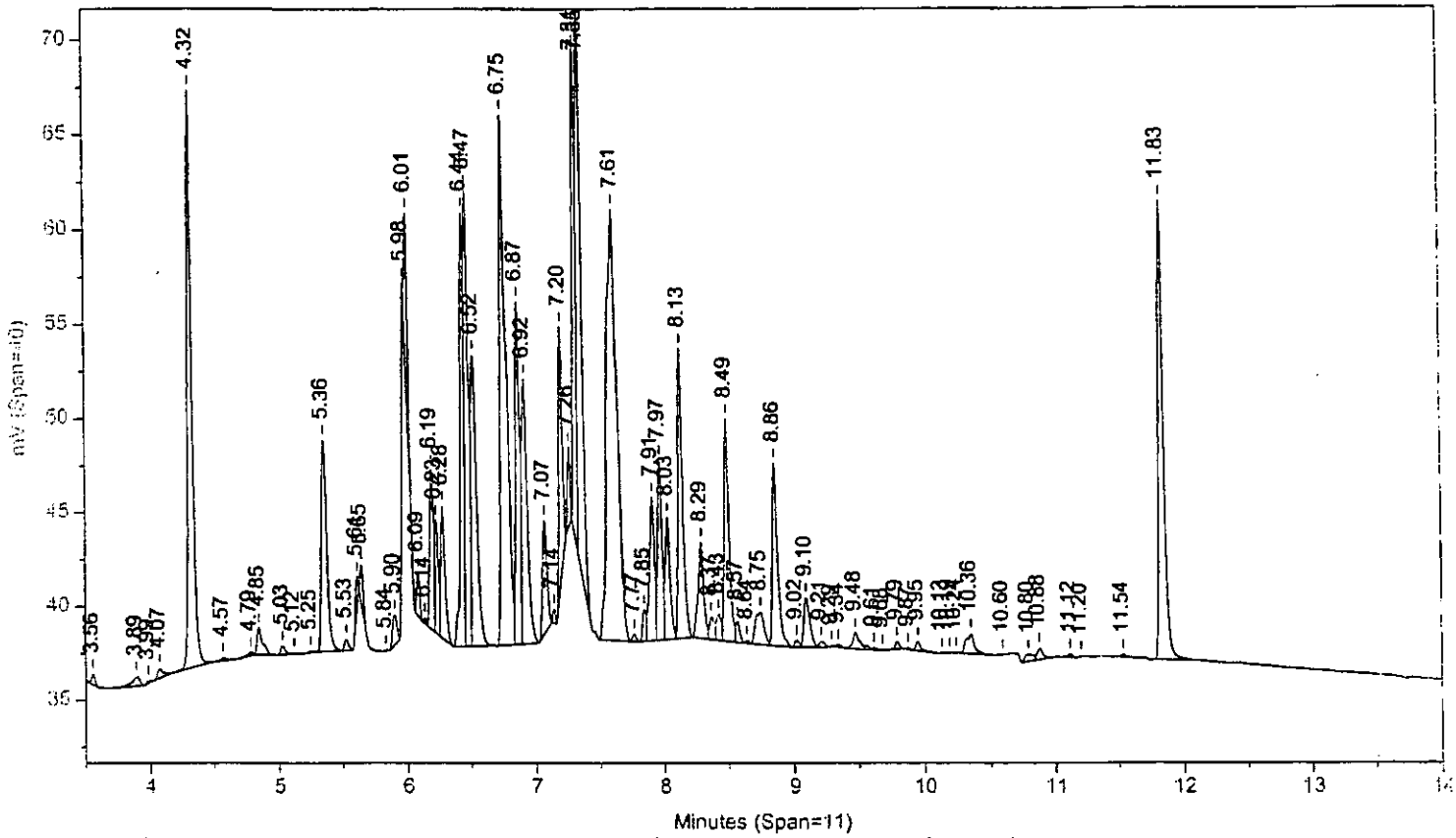
Sample Name: **AR4830424A AAAR483AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 04:20:17am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.26R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.689 | | 0.0000 | 0.000 | 12306.1 | 2.023 | BB | 0.352 | 581.92 | 0.231 |
| 2 | 4.836 | TCX | 7.5383 | 15.576 | 32141.4 | 5.284 | BB | 0.036 | 14746.45 | 5.857 |
| 3 | 5.559 | HCB | 0.2781 | 0.575 | 1734.6 | 0.285 | BB | 0.037 | 771.92 | 0.307 |
| 4 | 5.897 | | 0.0000 | 0.000 | 743.4 | 0.122 | BV | 0.044 | 281.73 | 0.112 |
| 5 | 6.137 | | 0.0000 | 0.000 | 18355.6 | 3.018 | VV | 0.050 | 6138.24 | 2.438 |
| 6 | 6.304 | gamma-BHC | 0.2081 | 0.430 | 984.1 | 0.162 | VB | 0.045 | 363.48 | 0.144 |
| 7 | 6.436 | beta-BHC | 1.8371 | 3.796 | 4422.3 | 0.727 | BV | 0.035 | 2124.05 | 0.844 |
| 8 | 6.490 | | 0.0000 | 0.000 | 5575.9 | 0.917 | VV | 0.041 | 2267.36 | 0.901 |
| 9 | 6.620 | | 0.0000 | 0.000 | 2877.4 | 0.473 | VV | 0.052 | 930.10 | 0.369 |
| 10 | 6.755 | | 0.0000 | 0.000 | 15591.1 | 2.563 | VV | 0.027 | 9795.02 | 3.890 |
| 11 | 6.774 | | 0.0000 | 0.000 | 23189.4 | 3.813 | VV | 0.036 | 10599.52 | 4.210 |
| 12 | 6.962 | Heptachlor | 3.3729 | 6.969 | 15075.1 | 2.478 | VV | 0.040 | 6226.84 | 2.473 |
| 13 | 7.026 | | 0.0000 | 0.000 | 2053.1 | 0.338 | VV | 0.038 | 901.65 | 0.358 |
| 14 | 7.107 | | 0.0000 | 0.000 | 6680.1 | 1.098 | VV | 0.034 | 3251.29 | 1.291 |
| 15 | 7.160 | | 0.0000 | 0.000 | 6116.6 | 1.006 | VV | 0.037 | 2768.44 | 1.100 |
| 16 | 7.227 | | 0.0000 | 0.000 | 28695.3 | 4.718 | VV | 0.037 | 13043.22 | 5.181 |
| 17 | 7.290 | | 0.0000 | 0.000 | 24689.5 | 4.059 | VV | 0.039 | 10635.41 | 4.224 |
| 18 | 7.346 | | 0.0000 | 0.000 | 20911.9 | 3.438 | VV | 0.049 | 7179.16 | 2.851 |
| 19 | 7.601 | Telodrin | 8.6093 | 17.789 | 33779.8 | 5.554 | VV | 0.036 | 15661.41 | 6.221 |
| 20 | 7.661 | | 0.0000 | 0.000 | 14439.0 | 2.374 | VV | 0.043 | 5596.30 | 2.223 |
| 21 | 7.769 | | 0.0000 | 0.000 | 38827.7 | 6.384 | VV | 0.048 | 13515.88 | 5.368 |
| 22 | 7.976 | | 0.0000 | 0.000 | 8603.9 | 1.415 | VV | 0.034 | 4183.96 | 1.662 |
| 23 | 8.017 | | 0.0000 | 0.000 | 19146.9 | 3.148 | VV | 0.037 | 8543.41 | 3.393 |
| 24 | 8.101 | | 0.0000 | 0.000 | 35538.0 | 5.843 | VV | 0.036 | 16232.98 | 6.448 |
| 25 | 8.166 | Hept. epoxide | 10.0405 | 20.746 | 41777.2 | 6.869 | VV | 0.038 | 18120.56 | 7.197 |
| 26 | 8.271 | | 0.0000 | 0.000 | 4479.1 | 0.736 | VV | 0.038 | 1976.16 | 0.785 |
| 27 | 8.321 | | 0.0000 | 0.000 | 3744.5 | 0.616 | VV | 0.040 | 1570.19 | 0.624 |
| 28 | 8.404 | o,p-DDE | 4.7782 | 9.873 | 13576.1 | 2.232 | VV | 0.038 | 5941.12 | 2.360 |
| 29 | 8.479 | | 0.0000 | 0.000 | 36556.0 | 6.010 | VV | 0.040 | 15390.53 | 6.113 |
| 30 | 8.547 | | 0.0000 | 0.000 | 10181.0 | 1.674 | VV | 0.047 | 3584.90 | 1.424 |
| 31 | 8.711 | Endosulfan I | 0.4189 | 0.865 | 1342.0 | 0.221 | VB | 0.032 | 692.67 | 0.275 |
| 32 | 8.792 | | 0.0000 | 0.000 | 7082.1 | 1.164 | BB | 0.035 | 3383.05 | 1.344 |
| 33 | 8.871 | | 0.0000 | 0.000 | 8722.6 | 1.434 | BB | 0.033 | 4343.35 | 1.725 |
| 34 | 8.953 | | 0.0000 | 0.000 | 6127.8 | 1.007 | BV | 0.034 | 3035.36 | 1.206 |
| 35 | 9.025 | | 0.0000 | 0.000 | 21302.6 | 3.502 | VB | 0.041 | 8616.48 | 3.422 |
| 36 | 9.260 | | 0.0000 | 0.000 | 7777.1 | 1.279 | BV | 0.040 | 3267.62 | 1.298 |
| 37 | 9.312 | | 0.0000 | 0.000 | 14503.9 | 2.385 | VV | 0.040 | 6041.47 | 2.400 |
| 38 | 9.490 | Endrin | 0.3895 | 0.805 | 1031.7 | 0.170 | VV | 0.035 | 494.79 | 0.197 |
| 39 | 9.534 | | 0.0000 | 0.000 | 2805.7 | 0.461 | VB | 0.053 | 878.03 | 0.349 |
| 40 | 9.781 | Endosulfan II | 3.1062 | 6.418 | 13022.9 | 2.141 | BB | 0.044 | 4958.27 | 1.969 |
| 41 | 10.013 | 4,4'-DDT | 1.0962 | 2.265 | 3604.1 | 0.593 | BB | 0.045 | 1325.31 | 0.526 |
| 42 | 10.497 | | 0.0000 | 0.000 | 1040.7 | 0.171 | BB | 0.041 | 422.72 | 0.168 |
| 43 | 11.321 | Endrin ketone | 0.1995 | 0.412 | 3620.0 | 0.595 | BB | 0.185 | 326.10 | 0.130 |
| 44 | 13.374 | DCB | 6.5246 | 13.481 | 33465.6 | 5.502 | BB | 0.050 | 11061.75 | 4.394 |

Total Area = 608241.1, Total Amount = 48.397, Total Height = 251770.2, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.26R

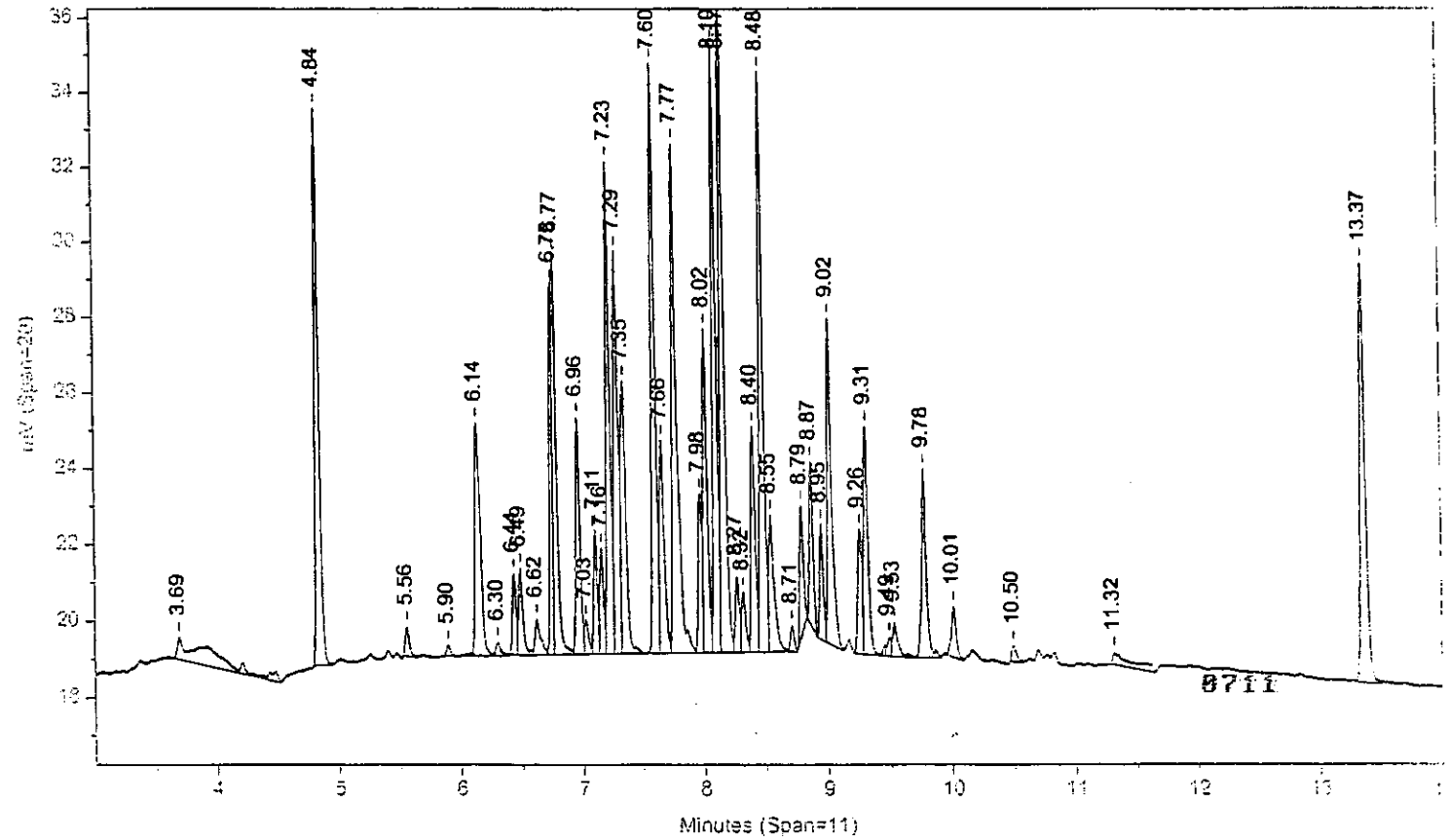
C:\CPWIN\DATA1\1C13088.26R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 4:06:17 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.26R

C:\CPWIN\DATA1\1C13088B.26R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 4:06:17 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

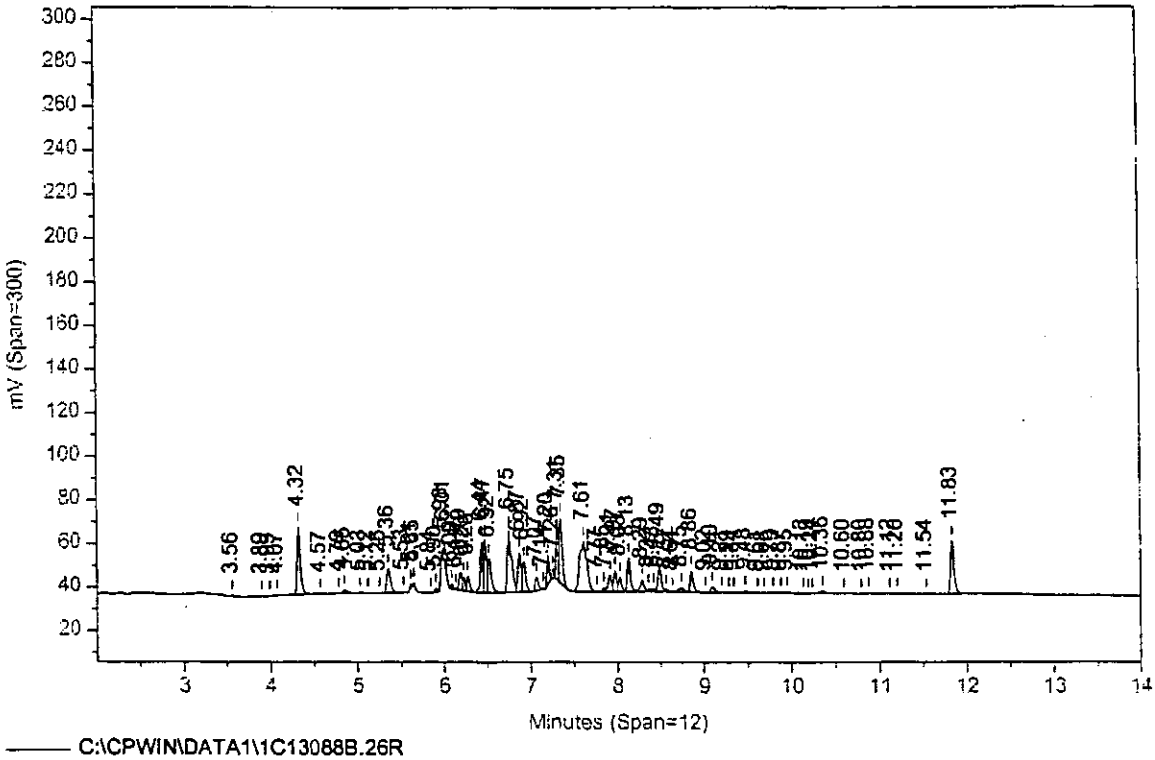
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 30700 | 8.08844 | TCX | 4.836 | 14746 | 7.53826 | TCX |
| 5.122 | 71 | .01539 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | HCB | 5.559 | 772 | .27812 | HCB |
| 5.615 | 1786 | .38523 | gamma-BHC | 6.304 | 363 | .20812 | gamma-BHC |
| 6.007 | 8888 | 2.0211 | delta-BHC | . | 0 | . | delta-BHC |
| 6.28 | 7058 | 1.42838 | Heptachlor | 6.962 | 6227 | 3.37288 | Heptachlor |
| . | 0 | . | beta-BHC | 6.436 | 2124 | 1.83714 | beta-BHC |
| . | 0 | . | Telodrin | 7.601 | 15661 | 8.60929 | Telodrin |
| 7.913 | 7632 | 1.84662 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.972 | 9648 | 2.74191 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.166 | 18121 | 10.04053 | Hept. epoxide |
| . | 0 | . | o,p-DDE | 8.404 | 5941 | 4.77816 | o,p-DDE |
| 8.425 | 1369 | .39222 | Dieldrin | . | 0 | . | Dieldrin |
| 8.569 | 1136 | .44286 | o,p-DDT | . | 0 | . | o,p-DDT |
| . | 0 | . | Endosulfan I | 8.711 | 693 | .41888 | Endosulfan I |
| 8.745 | 1732 | .60864 | 4,4'-DDD | . | 0 | . | 4,4'-DDD |
| 9.022 | 356 | .10852 | Endosulfan II | 9.781 | 4958 | 3.10617 | Endosulfan II |
| . | 0 | . | Endrin | 9.49 | 495 | .38955 | Endrin |
| . | 0 | . | 4,4'-DDT | 10.013 | 1325 | 1.09624 | 4,4'-DDT |
| 0.133 | 39 | .01331 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Endrin ketone | 11.321 | 326 | .19953 | Endrin ketone |
| 11.835 | 24443 | 6.41879 | DCB | 13.374 | 11062 | 6.5246 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.26A
Area File: C:\CPWIN\DATA1\1C13088B.26A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:01:42 AM
File Reported On: 3/29/2004 at 10:01:52 AM

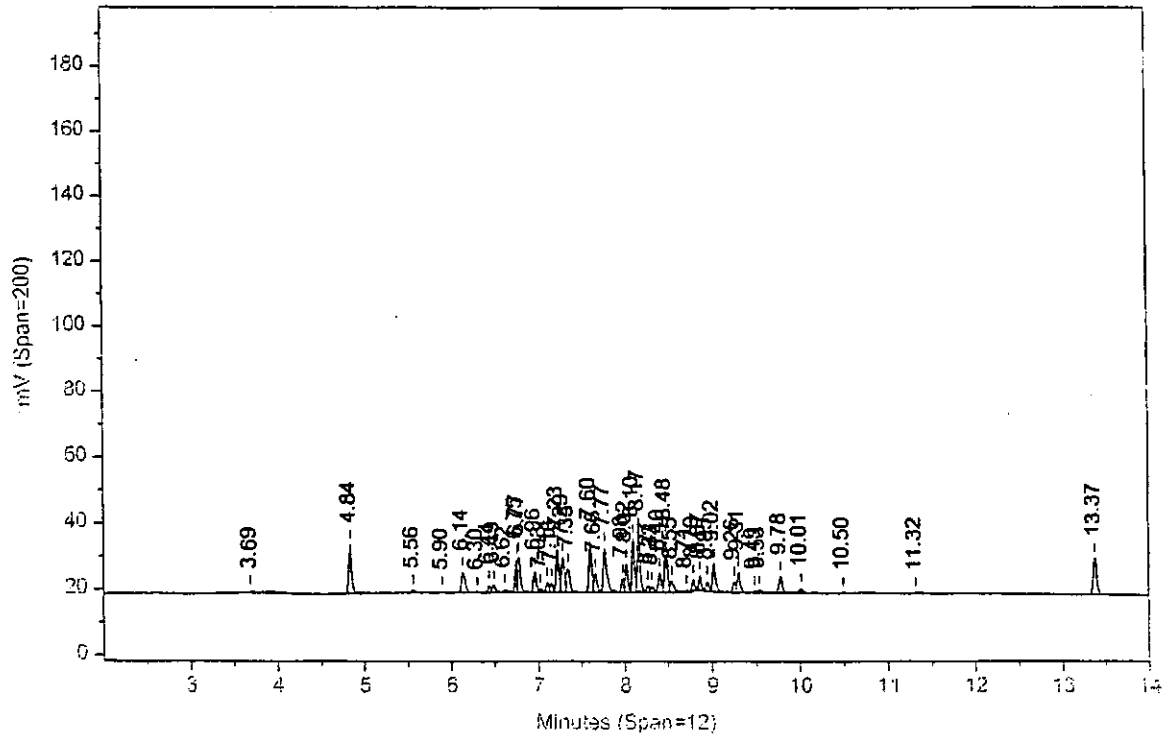
8712

10X REPLOTS

C:\CPWIN\DATA1\1C13088.26R




C:\CPWIN\DATA1\1C13088B.26R



Sample Name: **AR5430424A AAAR543AA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 04:40:55am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.27R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.557 | | 0.0000 | 0.000 | 682.3 | 0.044 | BB | 0.029 | 391.00 | 0.068 |
| 2 | 3.893 | | 0.0000 | 0.000 | 2118.9 | 0.135 | BB | 0.076 | 465.34 | 0.081 |
| 3 | 3.984 | | 0.0000 | 0.000 | 198.3 | 0.013 | BB | 0.033 | 99.72 | 0.017 |
| 4 | 4.319 | TCX | 8.1632 | 19.177 | 78281.1 | 4.992 | BB | 0.042 | 30983.70 | 5.408 |
| 5 | 4.573 | | 0.0000 | 0.000 | 90.5 | 0.006 | BB | 0.035 | 43.11 | 0.008 |
| 6 | 4.783 | | 0.0000 | 0.000 | 323.7 | 0.021 | BB | 0.070 | 77.61 | 0.014 |
| 7 | 4.849 | | 0.0000 | 0.000 | 269.8 | 0.017 | BB | 0.028 | 159.38 | 0.028 |
| 8 | 4.893 | HCB | 0.0378 | 0.089 | 463.8 | 0.030 | BB | 0.029 | 262.76 | 0.046 |
| 9 | 5.361 | | 0.0000 | 0.000 | 1761.4 | 0.112 | BB | 0.056 | 525.83 | 0.092 |
| 10 | 5.526 | | 0.0000 | 0.000 | 133.6 | 0.009 | BB | 0.038 | 58.04 | 0.010 |
| 11 | 5.649 | | 0.0000 | 0.000 | 988.9 | 0.063 | BB | 0.057 | 288.87 | 0.050 |
| 12 | 5.840 | | 0.0000 | 0.000 | 134.6 | 0.009 | BB | 0.031 | 71.53 | 0.012 |
| 13 | 5.919 | | 0.0000 | 0.000 | 206.3 | 0.013 | BB | 0.041 | 82.88 | 0.014 |
| 14 | 5.980 | delta-BHC | 0.0733 | 0.172 | 551.4 | 0.035 | BB | 0.029 | 322.16 | 0.056 |
| 15 | 6.092 | | 0.0000 | 0.000 | 1081.7 | 0.069 | BB | 0.043 | 415.31 | 0.072 |
| 16 | 6.194 | | 0.0000 | 0.000 | 1435.3 | 0.092 | BV | 0.052 | 459.73 | 0.080 |
| 17 | 6.279 | Heptachlor | 0.0611 | 0.144 | 665.4 | 0.042 | VB | 0.037 | 302.13 | 0.053 |
| 18 | 6.441 | | 0.0000 | 0.000 | 73847.9 | 4.710 | BV | 0.056 | 21796.27 | 3.805 |
| 19 | 6.750 | | 0.0000 | 0.000 | 33937.7 | 2.164 | VV | 0.045 | 12686.46 | 2.215 |
| 20 | 6.866 | | 0.0000 | 0.000 | 11117.9 | 0.709 | VV | 0.040 | 4589.08 | 0.801 |
| 21 | 6.917 | | 0.0000 | 0.000 | 4162.3 | 0.265 | VB | 0.042 | 1649.91 | 0.288 |
| 22 | 7.067 | | 0.0000 | 0.000 | 1813.4 | 0.116 | BB | 0.038 | 798.87 | 0.139 |
| 23 | 7.142 | | 0.0000 | 0.000 | 261.7 | 0.017 | BB | 0.024 | 178.26 | 0.031 |
| 24 | 7.199 | | 0.0000 | 0.000 | 5633.0 | 0.359 | BB | 0.029 | 3224.85 | 0.563 |
| 25 | 7.261 | | 0.0000 | 0.000 | 65981.7 | 4.208 | BV | 0.037 | 29804.42 | 5.203 |
| 26 | 7.313 | | 0.0000 | 0.000 | 75833.1 | 4.836 | VB | 0.058 | 21776.38 | 3.801 |
| 27 | 7.532 | o,p-DDE | 3.5045 | 8.233 | 17923.3 | 1.143 | BV | 0.033 | 8948.07 | 1.562 |
| 28 | 7.596 | | 0.0000 | 0.000 | 134828.7 | 8.599 | VV | 0.047 | 48226.97 | 8.418 |
| 29 | 7.648 | | 0.0000 | 0.000 | 59621.7 | 3.802 | VV | 0.043 | 23246.01 | 4.058 |
| 30 | 7.766 | | 0.0000 | 0.000 | 1471.8 | 0.094 | VB | 0.034 | 723.21 | 0.126 |
| 31 | 7.848 | | 0.0000 | 0.000 | 7031.3 | 0.448 | BV | 0.036 | 3243.57 | 0.566 |
| 32 | 7.913 | a. Chlordane | 4.2590 | 10.005 | 42367.5 | 2.702 | VV | 0.040 | 17601.40 | 3.072 |
| 33 | 7.971 | 4,4'-DDE | 9.1586 | 21.515 | 80044.3 | 5.105 | VV | 0.041 | 32228.09 | 5.626 |
| 34 | 8.027 | | 0.0000 | 0.000 | 26188.6 | 1.670 | VB | 0.037 | 11727.17 | 2.047 |
| 35 | 8.131 | | 0.0000 | 0.000 | 137173.9 | 8.748 | BB | 0.043 | 53399.95 | 9.321 |
| 36 | 8.290 | | 0.0000 | 0.000 | 20000.5 | 1.276 | BV | 0.046 | 7217.93 | 1.260 |
| 37 | 8.367 | | 0.0000 | 0.000 | 47184.3 | 3.009 | VB | 0.045 | 17604.82 | 3.073 |
| 38 | 8.490 | | 0.0000 | 0.000 | 91005.5 | 5.804 | BB | 0.039 | 38835.19 | 6.779 |
| 39 | 8.645 | | 0.0000 | 0.000 | 9346.0 | 0.596 | BV | 0.035 | 4453.46 | 0.777 |
| 40 | 8.721 | Endrin | 8.6399 | 20.296 | 102752.1 | 6.553 | VV | 0.067 | 25687.45 | 4.484 |
| 41 | 8.859 | | 0.0000 | 0.000 | 73288.2 | 4.674 | VV | 0.055 | 22222.01 | 3.879 |
| 42 | 8.953 | | 0.0000 | 0.000 | 9683.0 | 0.618 | VV | 0.038 | 4271.95 | 0.746 |
| 43 | 9.020 | Endosulfan II | 1.1375 | 2.672 | 8192.9 | 0.523 | VV | 0.037 | 3728.35 | 0.651 |
| 44 | 9.095 | | 0.0000 | 0.000 | 136798.2 | 8.724 | VV | 0.052 | 44251.09 | 7.724 |
| 45 | 9.210 | | 0.0000 | 0.000 | 16104.4 | 1.027 | VV | 0.057 | 4712.85 | 0.823 |
| 46 | 9.293 | | 0.0000 | 0.000 | 4363.7 | 0.278 | VB | 0.043 | 1678.95 | 0.293 |
| 47 | 9.475 | | 0.0000 | 0.000 | 38714.0 | 2.469 | BV | 0.049 | 13146.51 | 2.295 |
| 48 | 9.557 | Endrin aldehyde | 1.0710 | 2.516 | 6934.3 | 0.442 | VV | 0.039 | 2954.97 | 0.516 |
| 49 | 9.614 | | 0.0000 | 0.000 | 3595.4 | 0.229 | VV | 0.036 | 1665.62 | 0.291 |
| 50 | 9.678 | | 0.0000 | 0.000 | 2498.8 | 0.159 | VB | 0.035 | 1174.03 | 0.205 |
| 51 | 9.788 | | 0.0000 | 0.000 | 17544.0 | 1.119 | BB | 0.037 | 8004.88 | 1.397 |
| 52 | 9.873 | | 0.0000 | 0.000 | 3456.4 | 0.220 | BB | 0.032 | 1827.28 | 0.319 |
| 53 | 9.947 | | 0.0000 | 0.000 | 14269.7 | 0.910 | BB | 0.039 | 6140.54 | 1.072 |
| 54 | 10.199 | | 0.0000 | 0.000 | 118.1 | 0.008 | BB | 0.031 | 64.21 | 0.011 |
| 55 | 10.244 | | 0.0000 | 0.000 | 149.4 | 0.010 | BV | 0.029 | 86.24 | 0.015 |
| 56 | 10.322 | | 0.0000 | 0.000 | 18840.6 | 1.202 | VB | 0.050 | 6333.57 | 1.106 |
| 57 | 10.659 | | 0.0000 | 0.000 | 226.9 | 0.014 | BV | 0.042 | 90.43 | 0.016 |
| 58 | 10.735 | | 0.0000 | 0.000 | 1653.2 | 0.105 | VV | 0.076 | 363.64 | 0.063 |
| 59 | 10.879 | | 0.0000 | 0.000 | 921.0 | 0.059 | VB | 0.034 | 450.10 | 0.079 |
| 60 | 11.007 | | 0.0000 | 0.000 | 72.3 | 0.005 | BB | 0.044 | 27.22 | 0.005 |
| 61 | 11.121 | | 0.0000 | 0.000 | 685.9 | 0.044 | BB | 0.039 | 289.56 | 0.051 |
| 62 | 11.537 | | 0.0000 | 0.000 | 326.0 | 0.021 | BB | 0.042 | 130.26 | 0.023 |
| 63 | 11.835 | DCB | 6.4627 | 15.182 | 70655.8 | 4.506 | BB | 0.048 | 24610.24 | 4.296 |

8714

Total Area = 1568007.0, Total Amount = 42.569, Total Height = 572881.4, Sample Units = PPB

Sample Name: **AR5430424A AAAR543AA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 04:40:55am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.27R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

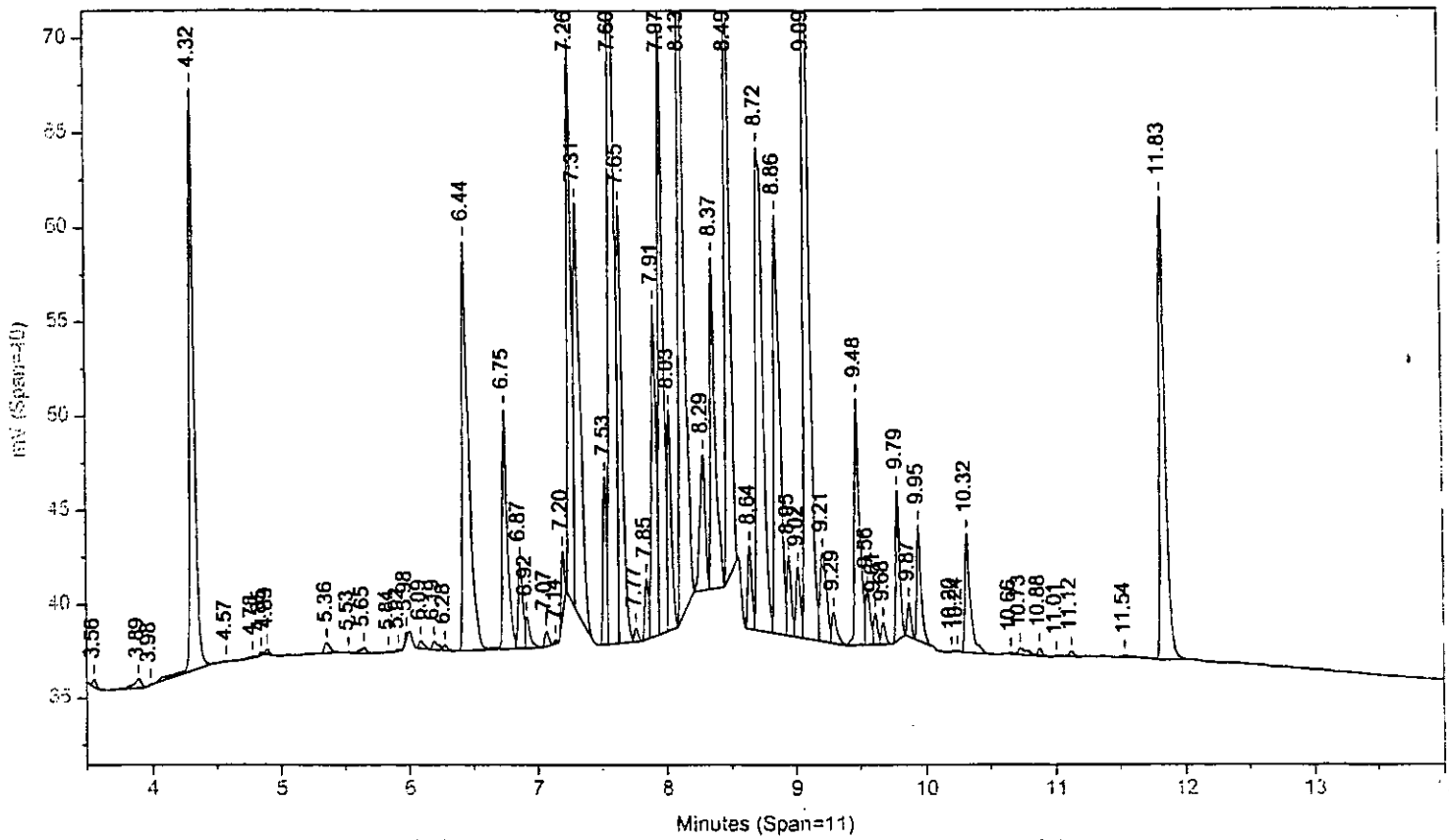
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.686 | | 0.0000 | 0.000 | 9241.9 | 1.129 | BB | 0.351 | 439.36 | 0.131 |
| 2 | 4.836 | TCX | 7.6372 | 8.334 | 45676.8 | 5.578 | BV | 0.051 | 14940.02 | 4.458 |
| 3 | 6.143 | | 0.0000 | 0.000 | 8372.6 | 1.022 | VV | 0.285 | 489.29 | 0.146 |
| 4 | 6.770 | | 0.0000 | 0.000 | 4557.4 | 0.557 | VV | 0.107 | 707.67 | 0.211 |
| 5 | 6.957 | Heptachlor | 0.3161 | 0.345 | 3377.9 | 0.413 | VV | 0.096 | 583.56 | 0.174 |
| 6 | 7.227 | | 0.0000 | 0.000 | 27783.8 | 3.393 | VV | 0.037 | 12492.95 | 3.728 |
| 7 | 7.289 | | 0.0000 | 0.000 | 11880.6 | 1.451 | VV | 0.054 | 3670.43 | 1.095 |
| 8 | 7.601 | Telodrin | 3.8746 | 4.228 | 17862.5 | 2.181 | VV | 0.042 | 7048.40 | 2.103 |
| 9 | 7.769 | | 0.0000 | 0.000 | 8469.1 | 1.034 | VV | 0.048 | 2941.58 | 0.878 |
| 10 | 7.978 | | 0.0000 | 0.000 | 1207.2 | 0.147 | VV | 0.030 | 660.39 | 0.197 |
| 11 | 8.017 | | 0.0000 | 0.000 | 6145.5 | 0.751 | VV | 0.039 | 2610.72 | 0.779 |
| 12 | 8.101 | | 0.0000 | 0.000 | 22188.6 | 2.710 | VV | 0.037 | 10100.67 | 3.014 |
| 13 | 8.163 | Hept. epoxide | 11.4468 | 12.491 | 47602.7 | 5.813 | VV | 0.038 | 20658.58 | 6.164 |
| 14 | 8.271 | | 0.0000 | 0.000 | 7480.7 | 0.914 | VV | 0.036 | 3466.48 | 1.034 |
| 15 | 8.322 | | 0.0000 | 0.000 | 12037.6 | 1.470 | VV | 0.038 | 5304.60 | 1.583 |
| 16 | 8.402 | o,p-DDE | 18.6755 | 20.379 | 52612.7 | 6.425 | VV | 0.038 | 23220.90 | 6.929 |
| 17 | 8.486 | | 0.0000 | 0.000 | 26368.0 | 3.220 | VV | 0.038 | 11597.36 | 3.461 |
| 18 | 8.546 | | 0.0000 | 0.000 | 20565.3 | 2.512 | VB | 0.042 | 8140.58 | 2.429 |
| 19 | 8.711 | Endosulfan I | 0.9597 | 1.047 | 3076.0 | 0.376 | BB | 0.032 | 1587.06 | 0.474 |
| 20 | 8.792 | | 0.0000 | 0.000 | 16749.8 | 2.046 | BB | 0.034 | 8092.92 | 2.415 |
| 21 | 8.870 | | 0.0000 | 0.000 | 29265.9 | 3.574 | BB | 0.033 | 14596.92 | 4.356 |
| 22 | 8.952 | | 0.0000 | 0.000 | 9604.0 | 1.173 | BV | 0.034 | 4687.04 | 1.399 |
| 23 | 9.023 | | 0.0000 | 0.000 | 75154.1 | 9.178 | VB | 0.040 | 30942.99 | 9.233 |
| 24 | 9.160 | | 0.0000 | 0.000 | 8777.3 | 1.072 | BV | 0.052 | 2810.73 | 0.839 |
| 25 | 9.273 | | 0.0000 | 0.000 | 32503.5 | 3.969 | VV | 0.037 | 14481.08 | 4.321 |
| 26 | 9.309 | | 0.0000 | 0.000 | 53181.7 | 6.495 | VB | 0.039 | 22681.78 | 6.768 |
| 27 | 9.454 | | 0.0000 | 0.000 | 10573.4 | 1.291 | BV | 0.045 | 3900.09 | 1.164 |
| 28 | 9.533 | o,p-DDT | 12.2351 | 13.351 | 33908.7 | 4.141 | VB | 0.039 | 14398.63 | 4.296 |
| 29 | 9.754 | | 0.0000 | 0.000 | 24700.4 | 3.017 | BV | 0.029 | 14228.92 | 4.246 |
| 30 | 9.775 | Endosulfan II | 9.0834 | 9.912 | 28708.7 | 3.506 | VB | 0.033 | 14499.47 | 4.327 |
| 31 | 9.869 | | 0.0000 | 0.000 | 3196.2 | 0.390 | BB | 0.030 | 1784.79 | 0.533 |
| 32 | 9.930 | | 0.0000 | 0.000 | 1691.2 | 0.207 | BB | 0.025 | 1144.44 | 0.341 |
| 33 | 10.014 | 4,4'-DDT | 19.2024 | 20.954 | 61736.7 | 7.540 | BB | 0.044 | 23214.88 | 6.927 |
| 34 | 10.155 | | 0.0000 | 0.000 | 8969.6 | 1.095 | BB | 0.066 | 2260.79 | 0.675 |
| 35 | 10.317 | | 0.0000 | 0.000 | 2995.6 | 0.366 | BB | 0.042 | 1175.17 | 0.351 |
| 36 | 10.491 | | 0.0000 | 0.000 | 19049.2 | 2.326 | BB | 0.043 | 7329.36 | 2.187 |
| 37 | 10.616 | | 0.0000 | 0.000 | 1749.9 | 0.214 | BB | 0.034 | 852.45 | 0.254 |
| 38 | 10.691 | | 0.0000 | 0.000 | 9906.4 | 1.210 | BB | 0.039 | 4281.95 | 1.278 |
| 39 | 10.823 | | 0.0000 | 0.000 | 8282.1 | 1.011 | BB | 0.042 | 3284.23 | 0.980 |
| 40 | 11.353 | Endrin ketone | 1.5959 | 1.742 | 8137.7 | 0.994 | BB | 0.052 | 2608.27 | 0.778 |
| 41 | 13.373 | DCB | 6.6127 | 7.216 | 33491.7 | 4.090 | BB | 0.050 | 11211.09 | 3.345 |

Total Area = 818840.8, Total Amount = 91.639, Total Height = 335128.5, Sample Units = PPB

8716

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.27R

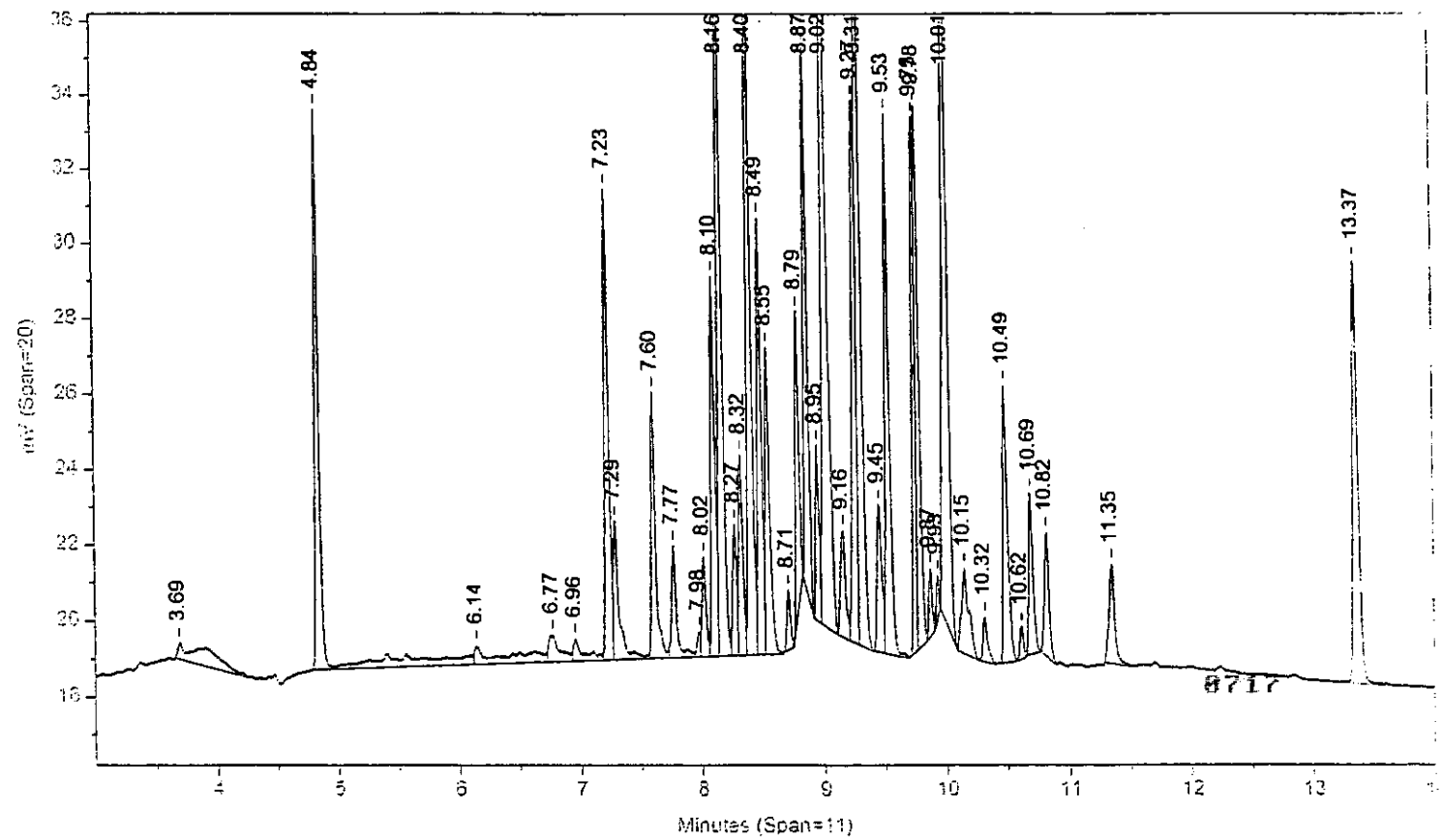
—— C:\CPWIN\DATA1\1C13088.27R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 4:26:55 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.27R

—— C:\CPWIN\DATA1\1C13088B.27R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 4:26:55 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

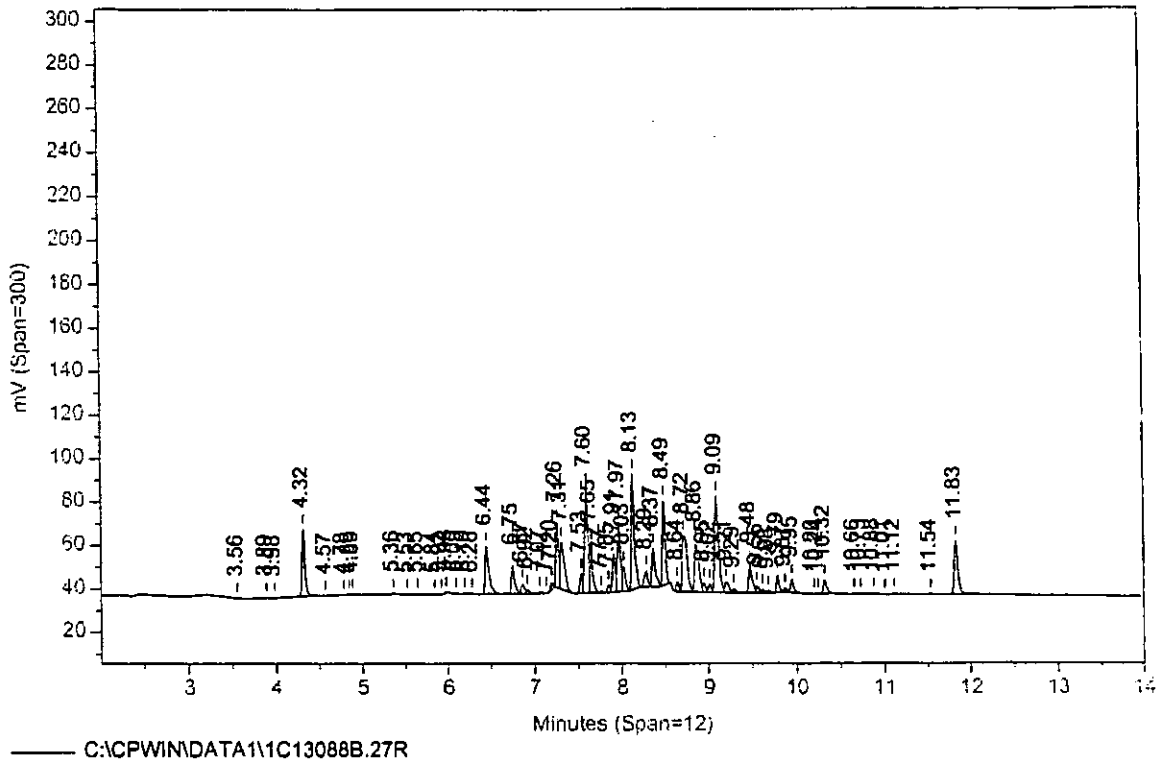
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.319 | 30984 | 8.1632 | TCX | 4.836 | 14940 | 7.63722 | TCX |
| 4.893 | 263 | .03776 | HCB | . | 0 | . | HCB |
| 5.98 | 322 | .07326 | delta-BHC | . | 0 | . | delta-BHC |
| 6.279 | 302 | .06114 | Heptachlor | 6.957 | 584 | .31609 | Heptachlor |
| 7.532 | 8948 | 3.50446 | o,p-DDE | 8.402 | 23221 | 18.67546 | o,p-DDE |
| . | 0 | . | Telodrin | 7.601 | 7048 | 3.8746 | Telodrin |
| 7.913 | 17601 | 4.25904 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.971 | 32228 | 9.15862 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.163 | 20659 | 11.44683 | Hept. epoxide |
| . | 0 | . | Endosulfan I | 8.711 | 1587 | .95973 | Endosulfan I |
| 8.721 | 25687 | 8.63986 | Endrin | . | 0 | . | Endrin |
| 9.02 | 3728 | 1.1375 | Endosulfan II | 9.775 | 14499 | 9.08337 | Endosulfan II |
| . | 0 | . | o,p-DDT | 9.533 | 14399 | 12.23506 | o,p-DDT |
| 9.557 | 2955 | 1.07096 | Endrin aldehyde | . | 0 | . | Endrin aldehyde |
| . | 0 | . | 4,4'-DDT | 10.014 | 23215 | 19.20243 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.353 | 2608 | 1.59594 | Endrin ketone |
| 1.835 | 24610 | 6.46273 | DCB | 13.373 | 11211 | 6.61269 | DCB |

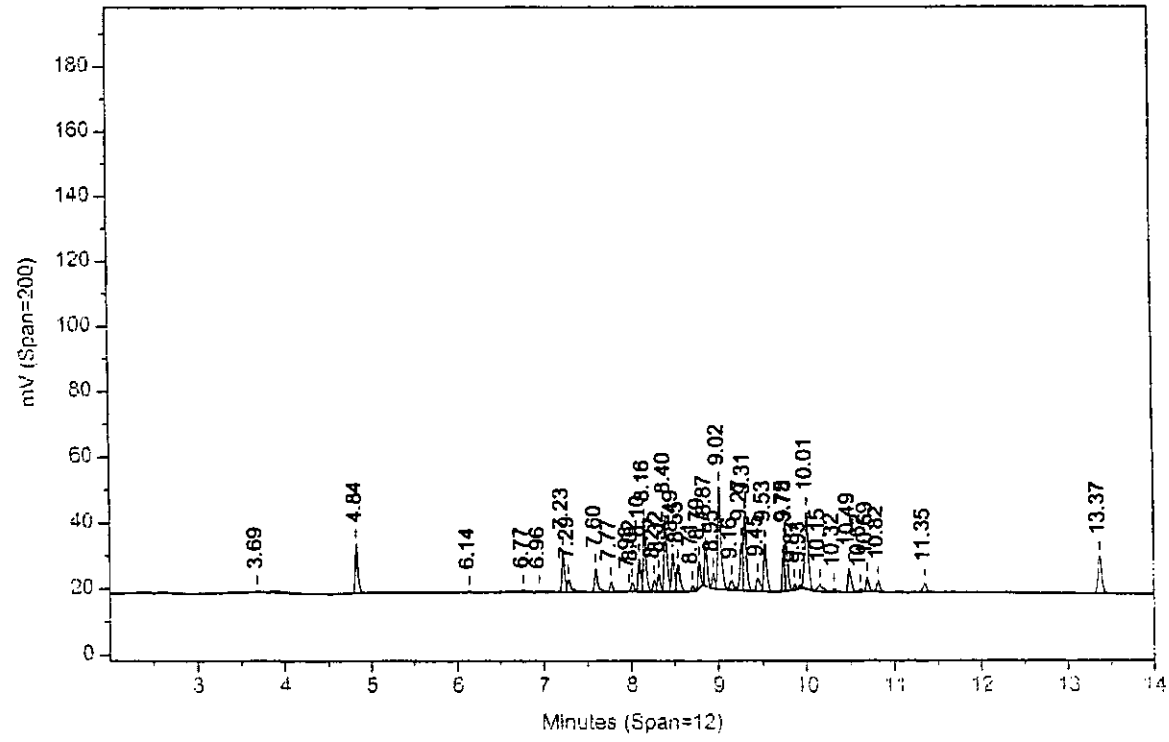
Files:
Area File: C:\CPWIN\DATA1\1C13088.27A
Area File: C:\CPWIN\DATA1\1C13088B.27A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:02:06 AM
File Reported On: 3/29/2004 at 10:02:16 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13088.27R




C:\CPWIN\DATA1\1C13088B.27R




8719

Sample Name: **MDLAX0424B AAMDLAXAA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 05:01:30am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.28R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.558 | | 0.0000 | 0.000 | 1938.8 | 1.709 | BB | 0.033 | 977.51 | 2.439 |
| 2 | 3.889 | | 0.0000 | 0.000 | 3526.3 | 3.108 | BB | 0.066 | 893.89 | 2.230 |
| 3 | 4.317 | TCX | 0.8547 | 7.965 | 11955.8 | 10.537 | BB | 0.061 | 3243.97 | 8.093 |
| 4 | 4.759 | | 0.0000 | 0.000 | 603.1 | 0.532 | BB | 0.066 | 151.22 | 0.377 |
| 5 | 4.919 | HCB | 0.0045 | 0.042 | 179.4 | 0.158 | BB | 0.096 | 31.28 | 0.078 |
| 6 | 5.024 | | 0.0000 | 0.000 | 364.2 | 0.321 | BB | 0.070 | 86.73 | 0.216 |
| 7 | 5.145 | alpha-BHC | 0.1774 | 1.653 | 1619.6 | 1.427 | BB | 0.033 | 821.37 | 2.049 |
| 8 | 5.301 | | 0.0000 | 0.000 | 90.4 | 0.080 | BB | 0.032 | 46.87 | 0.117 |
| 9 | 5.475 | | 0.0000 | 0.000 | 266.9 | 0.235 | BB | 0.042 | 106.10 | 0.265 |
| 10 | 5.607 | gamma-BHC | 0.1910 | 1.780 | 2121.7 | 1.870 | BB | 0.040 | 885.30 | 2.209 |
| 11 | 5.739 | beta-BHC | 0.2116 | 1.972 | 1201.3 | 1.059 | BB | 0.037 | 545.32 | 1.360 |
| 12 | 5.994 | delta-BHC | 0.1891 | 1.763 | 2204.0 | 1.942 | BB | 0.044 | 831.74 | 2.075 |
| 13 | 6.111 | | 0.0000 | 0.000 | 164.1 | 0.145 | BB | 0.042 | 65.70 | 0.164 |
| 14 | 6.202 | | 0.0000 | 0.000 | 212.8 | 0.188 | BV | 0.051 | 69.69 | 0.174 |
| 15 | 6.289 | Heptachlor | 0.2115 | 1.972 | 2376.0 | 2.094 | VB | 0.038 | 1045.28 | 2.608 |
| 16 | 6.513 | | 0.0000 | 0.000 | 385.3 | 0.340 | BV | 0.057 | 112.57 | 0.281 |
| 17 | 6.712 | Aldrin | 0.2229 | 2.078 | 2685.1 | 2.366 | VV | 0.050 | 888.80 | 2.217 |
| 18 | 6.919 | | 0.0000 | 0.000 | 776.5 | 0.684 | VB | 0.086 | 149.64 | 0.373 |
| 19 | 7.088 | | 0.0000 | 0.000 | 560.4 | 0.494 | BB | 0.048 | 195.71 | 0.488 |
| 20 | 7.545 | Hept. epoxide | 0.2186 | 2.037 | 2046.7 | 1.804 | BV | 0.039 | 872.40 | 2.176 |
| 21 | 7.714 | g. Chlordane | 0.2047 | 1.908 | 1981.5 | 1.746 | VB | 0.042 | 792.55 | 1.977 |
| 22 | 7.890 | a. Chlordane | 0.3703 | 3.451 | 6171.7 | 5.439 | BV | 0.067 | 1530.24 | 3.817 |
| 23 | 7.973 | 4,4'-DDE | 0.4337 | 4.042 | 3778.1 | 3.330 | VV | 0.041 | 1526.21 | 3.807 |
| 24 | 8.081 | Endosulfan I | 0.2243 | 2.090 | 2264.0 | 1.995 | VB | 0.046 | 813.57 | 2.030 |
| 25 | 8.398 | Dieldrin | 0.4047 | 3.772 | 4062.3 | 3.580 | BB | 0.048 | 1413.12 | 3.525 |
| 26 | 8.711 | Endrin | 0.4244 | 3.955 | 2912.6 | 2.567 | BV | 0.038 | 1261.82 | 3.148 |
| 27 | 8.764 | 4,4'-DDD | 0.6005 | 5.597 | 4864.4 | 4.287 | VB | 0.047 | 1709.15 | 4.264 |
| 28 | 9.014 | Endosulfan II | 0.4852 | 4.522 | 4253.9 | 3.749 | BV | 0.045 | 1590.44 | 3.968 |
| 29 | 9.127 | 4,4'-DDT | 0.4323 | 4.029 | 2881.6 | 2.540 | VV | 0.038 | 1255.87 | 3.133 |
| 30 | 9.211 | | 0.0000 | 0.000 | 565.1 | 0.498 | VB | 0.039 | 239.81 | 0.598 |
| 31 | 9.343 | | 0.0000 | 0.000 | 372.7 | 0.328 | BB | 0.048 | 130.56 | 0.326 |
| 32 | 9.440 | | 0.0000 | 0.000 | 597.5 | 0.527 | BV | 0.052 | 190.29 | 0.475 |
| 33 | 9.557 | Endrin aldehyde | 0.4544 | 4.235 | 3397.4 | 2.994 | VB | 0.045 | 1253.79 | 3.128 |
| 34 | 9.742 | Methoxychlor | 2.4241 | 22.592 | 8861.6 | 7.810 | BB | 0.036 | 4077.69 | 10.173 |
| 35 | 9.828 | | 0.0000 | 0.000 | 198.9 | 0.175 | BB | 0.033 | 101.20 | 0.252 |
| 36 | 10.124 | Endo. sulfate | 0.5279 | 4.920 | 4035.5 | 3.556 | BB | 0.044 | 1542.98 | 3.849 |
| 37 | 10.357 | | 0.0000 | 0.000 | 3207.6 | 2.827 | BV | 0.052 | 1027.61 | 2.564 |
| 38 | 10.496 | Endrin ketone | 0.4278 | 3.987 | 3642.1 | 3.210 | VB | 0.041 | 1494.66 | 3.729 |
| 39 | 10.660 | | 0.0000 | 0.000 | 496.2 | 0.437 | BV | 0.095 | 87.33 | 0.218 |
| 40 | 10.877 | | 0.0000 | 0.000 | 2576.9 | 2.271 | VB | 0.035 | 1212.28 | 3.024 |
| 41 | 11.178 | | 0.0000 | 0.000 | 2491.5 | 2.196 | BB | 0.055 | 751.79 | 1.875 |
| 42 | 11.400 | | 0.0000 | 0.000 | 3366.0 | 2.966 | BB | 0.455 | 123.18 | 0.307 |
| 43 | 11.834 | DCB | 1.0341 | 9.637 | 11211.8 | 9.881 | BB | 0.047 | 3937.82 | 9.824 |

Total Area = 113469.6, Total Amount = 10.73, Total Height = 40085.05, Sample Units = PPB

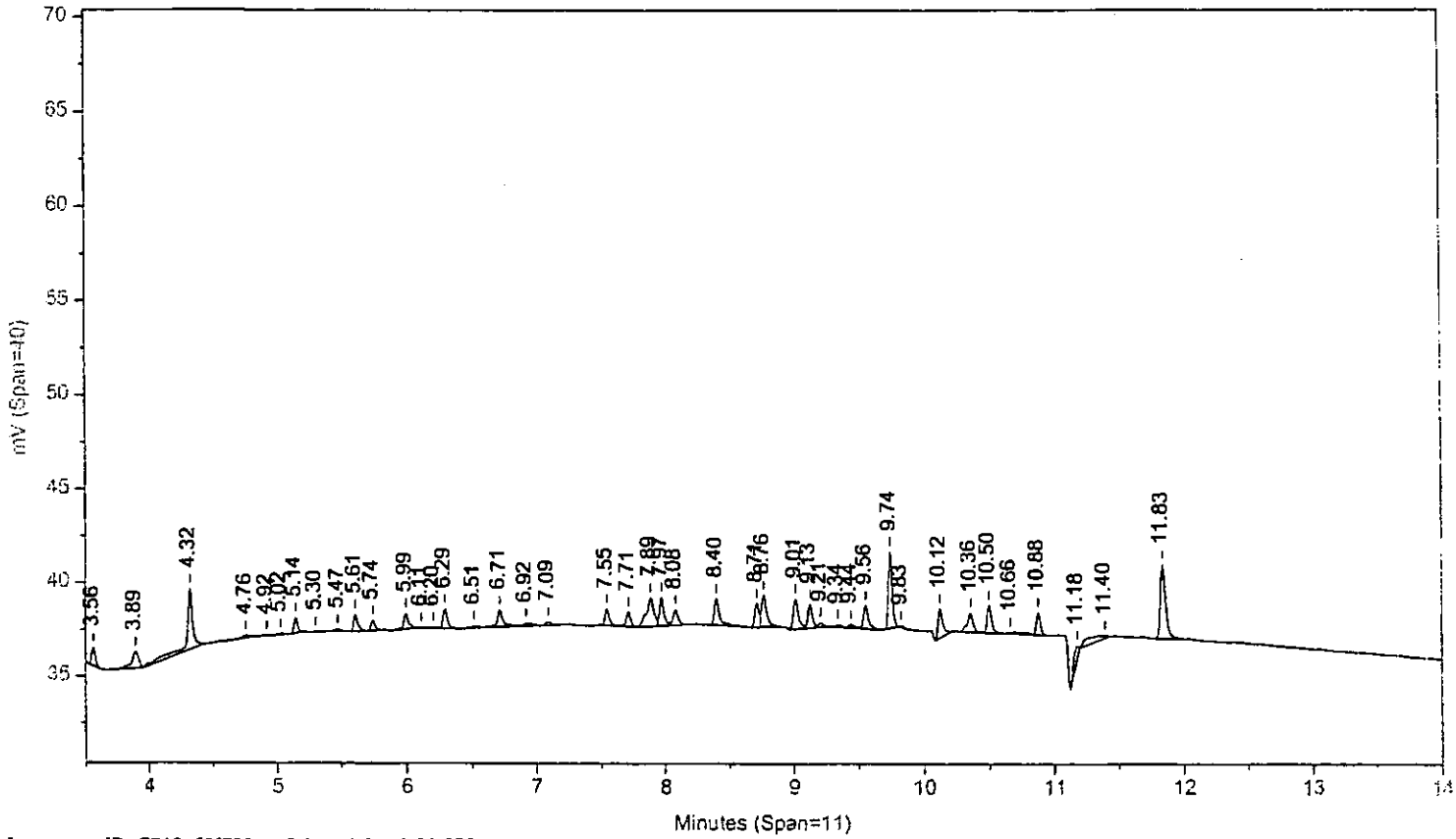
Sample Name: **MDLAX0424B AAMDLAXAA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 05:01:30am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.28R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.686 | | 0.0000 | 0.000 | 14067.4 | 24.657 | BB | 0.279 | 839.69 | 5.441 |
| 2 | 4.833 | TCX | 0.7132 | 6.667 | 8163.7 | 14.309 | BV | 0.098 | 1395.10 | 9.040 |
| 3 | 5.757 | alpha-BHC | 0.2372 | 2.217 | 2658.3 | 4.659 | VV | 0.108 | 408.45 | 2.647 |
| 4 | 6.298 | gamma-BHC | 0.2003 | 1.873 | 744.8 | 1.306 | VB | 0.035 | 349.88 | 2.267 |
| 5 | 6.414 | beta-BHC | 0.2487 | 2.325 | 590.5 | 1.035 | BB | 0.034 | 287.51 | 1.863 |
| 6 | 6.842 | delta-BHC | 0.2264 | 2.116 | 763.6 | 1.338 | BV | 0.033 | 383.40 | 2.484 |
| 7 | 6.933 | Heptachlor | 0.2083 | 1.947 | 229.7 | 0.403 | VV | 0.010 | 384.54 | 2.492 |
| 8 | 7.396 | Aldrin | 0.2349 | 2.196 | 1379.3 | 2.418 | VB | 0.058 | 399.23 | 2.587 |
| 9 | 8.181 | Hept. epoxide | 0.2647 | 2.474 | 1152.5 | 2.020 | BB | 0.040 | 477.70 | 3.095 |
| 10 | 8.436 | g. Chlordane | 0.2651 | 2.479 | 1066.8 | 1.870 | BB | 0.037 | 483.38 | 3.132 |
| 11 | 8.632 | a. Chlordane | 0.2178 | 2.037 | 821.1 | 1.439 | BB | 0.034 | 408.43 | 2.647 |
| 12 | 8.724 | Endosulfan I | 0.1794 | 1.678 | 578.8 | 1.015 | BB | 0.033 | 296.74 | 1.923 |
| 13 | 8.828 | 4,4'-DDE | 0.3317 | 3.101 | 1019.7 | 1.787 | BB | 0.032 | 527.54 | 3.418 |
| 14 | 9.084 | Dieldrin | 0.4327 | 4.045 | 1501.7 | 2.632 | BB | 0.035 | 721.28 | 4.674 |
| 15 | 9.499 | Endrin | 0.3878 | 3.625 | 967.0 | 1.695 | BB | 0.033 | 492.53 | 3.191 |
| 16 | 9.591 | 4,4'-DDD | 0.4174 | 3.902 | 1486.3 | 2.605 | BB | 0.053 | 466.66 | 3.024 |
| 17 | 9.777 | Endosulfan II | 0.4540 | 4.245 | 1899.4 | 3.329 | BB | 0.044 | 724.77 | 4.696 |
| 18 | 9.998 | 4,4'-DDT | 0.4181 | 3.909 | 1052.4 | 1.845 | BB | 0.035 | 505.47 | 3.275 |
| 19 | 10.214 | Endrin aldehyde | 0.4682 | 4.377 | 1351.7 | 2.369 | BB | 0.033 | 677.76 | 4.392 |
| 20 | 10.572 | Endo. sulfate | 0.4306 | 4.025 | 1225.0 | 2.147 | BB | 0.034 | 608.62 | 3.944 |
| 21 | 10.876 | Methoxychlor | 2.6142 | 24.439 | 3594.2 | 6.300 | BB | 0.036 | 1675.05 | 10.854 |
| 22 | 11.323 | Endrin ketone | 0.6817 | 6.373 | 5240.6 | 9.186 | BB | 0.078 | 1114.18 | 7.220 |
| 23 | 13.374 | DCB | 1.0645 | 9.952 | 5497.3 | 9.636 | BB | 0.051 | 1804.83 | 11.695 |

Total Area = 57051.9, Total Amount = 10.697, Total Height = 15432.74, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.28R

C:\CPWIN\DATA1\1C13088.28R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 4:47:30 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

DD 14 3.29.04

File: C:\CPWIN\DATA1\1C13088B.28R

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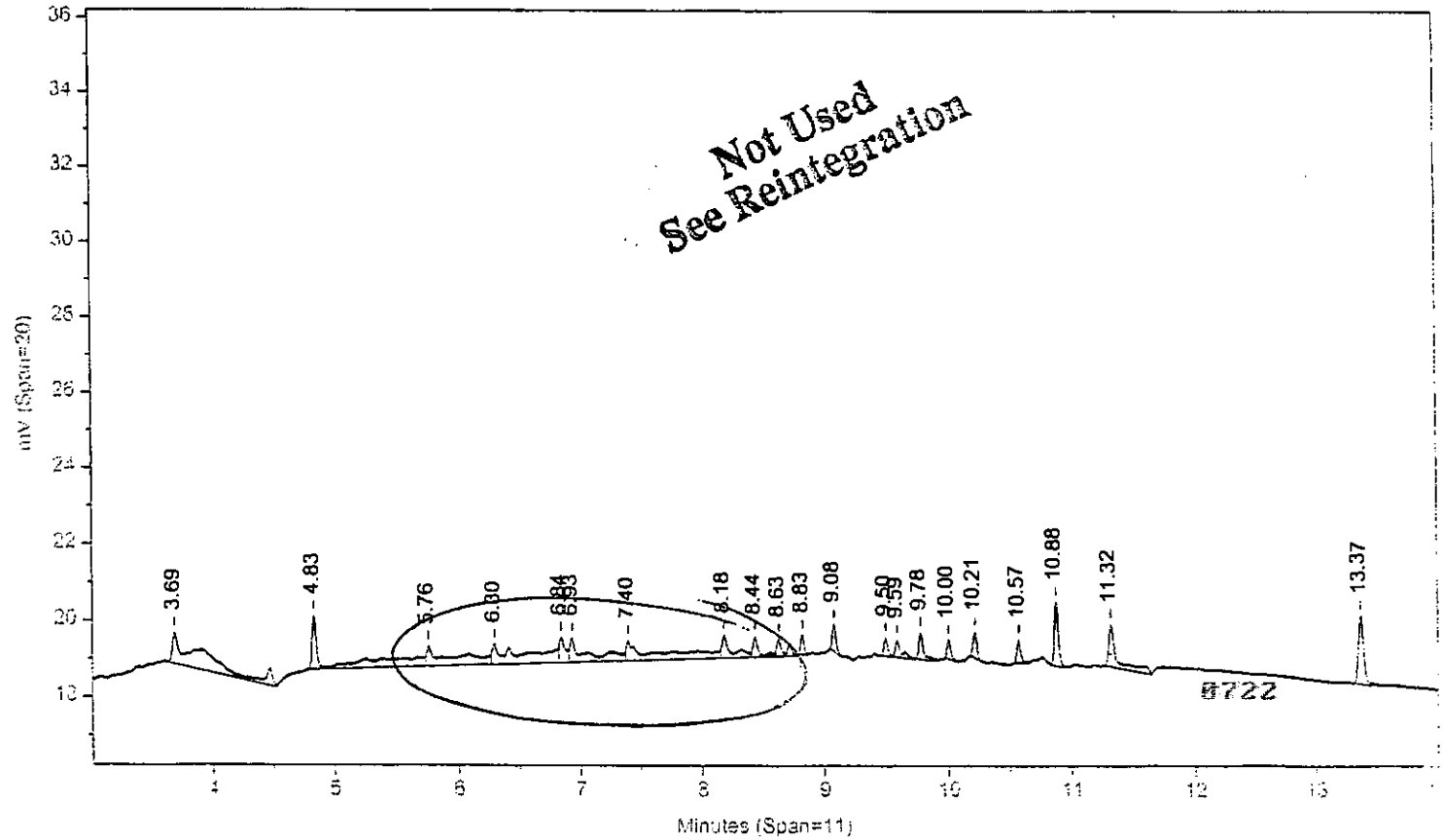
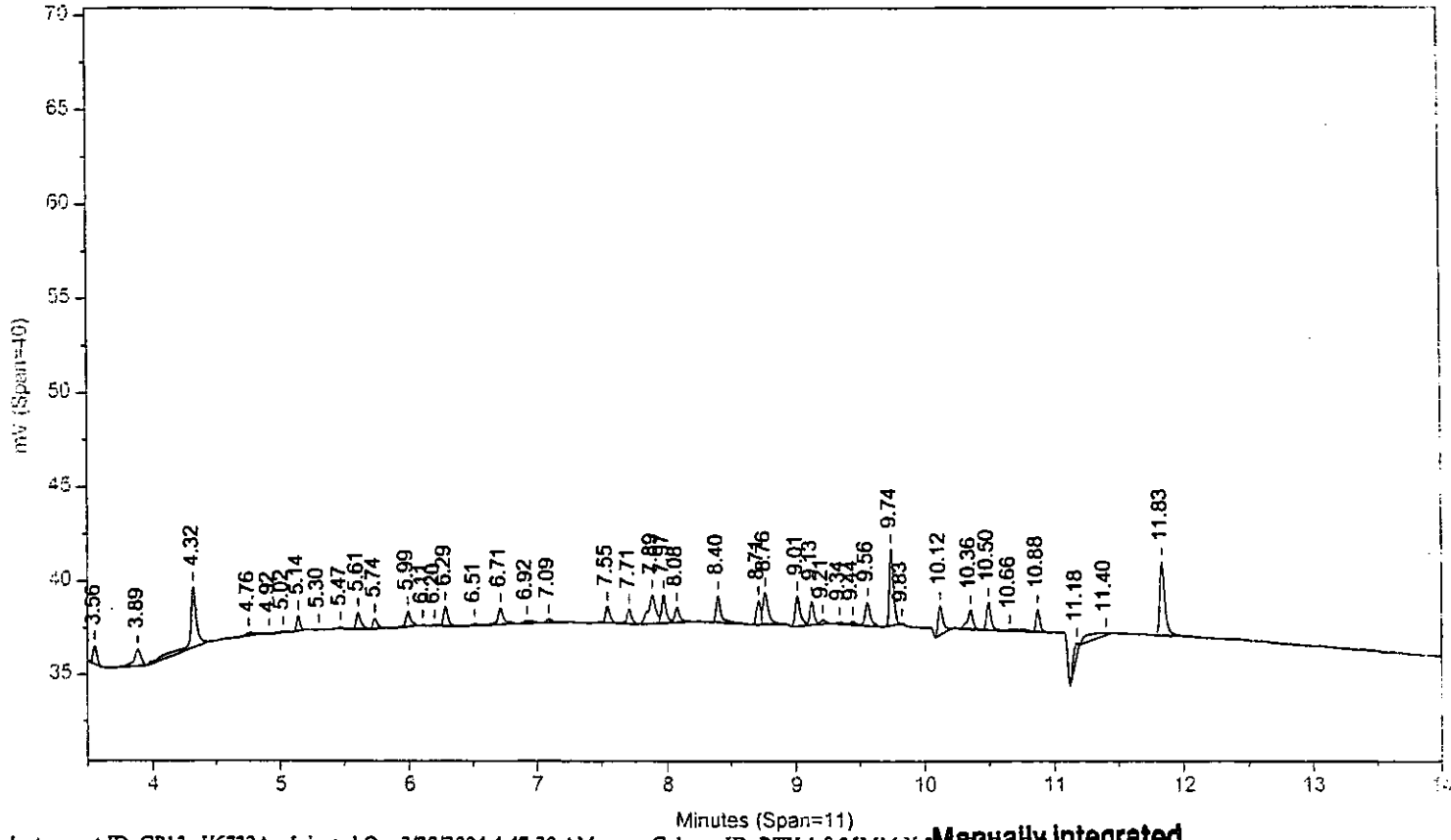



Instrument ID: CP13--H6722B Injected On: 3/29/2004 4:47:30 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.28R

C:\CPWIN\DATA1\1C13088.28R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 4:47:30 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.28R

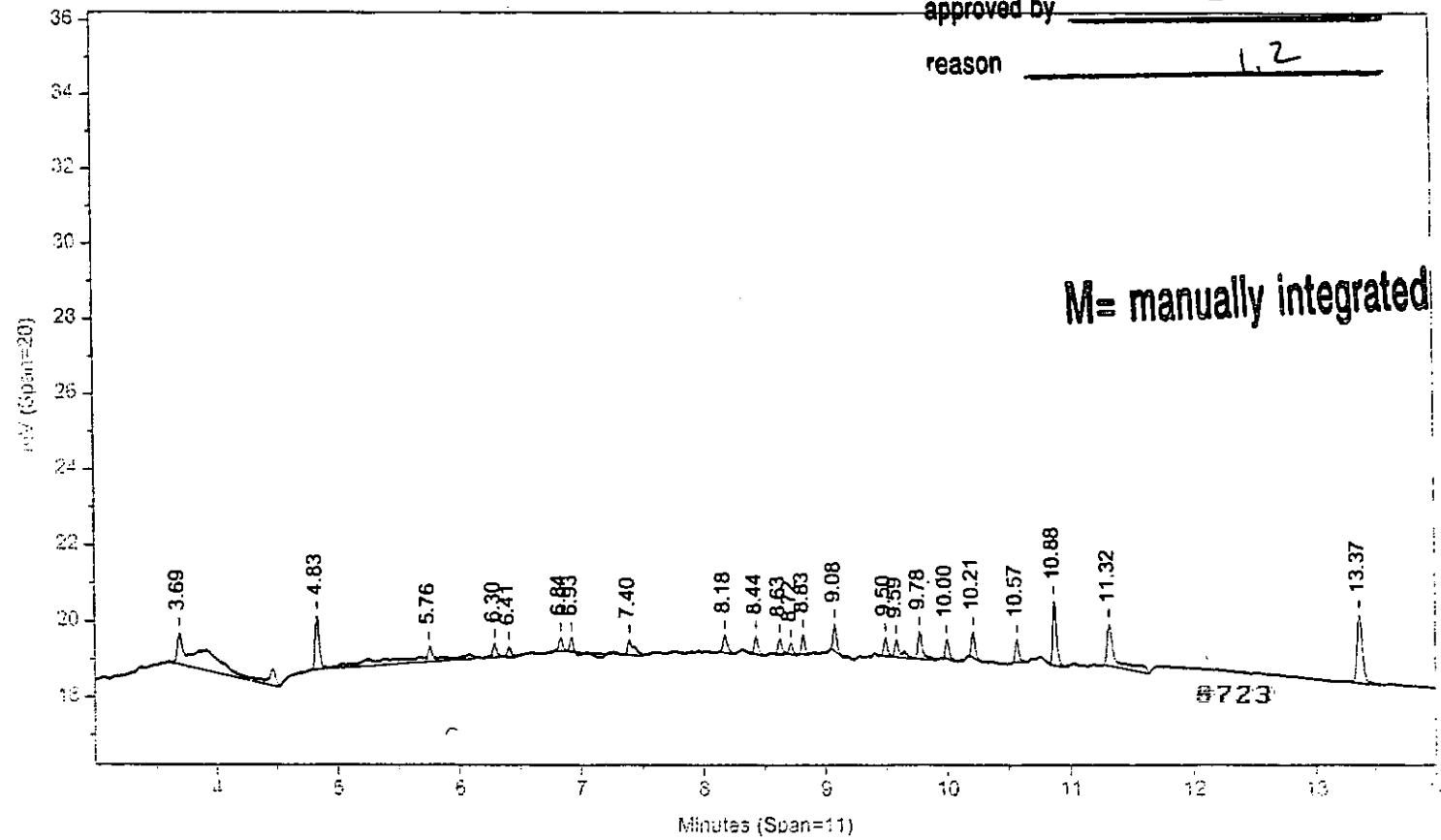
Manually integrated

Analyst

approved by

reason 1,2

C:\CPWIN\DATA1\1C13088B.28R




M= manually integrated

6723

Instrument ID: CP13--H6722B Injected On: 3/29/2004 4:47:30 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

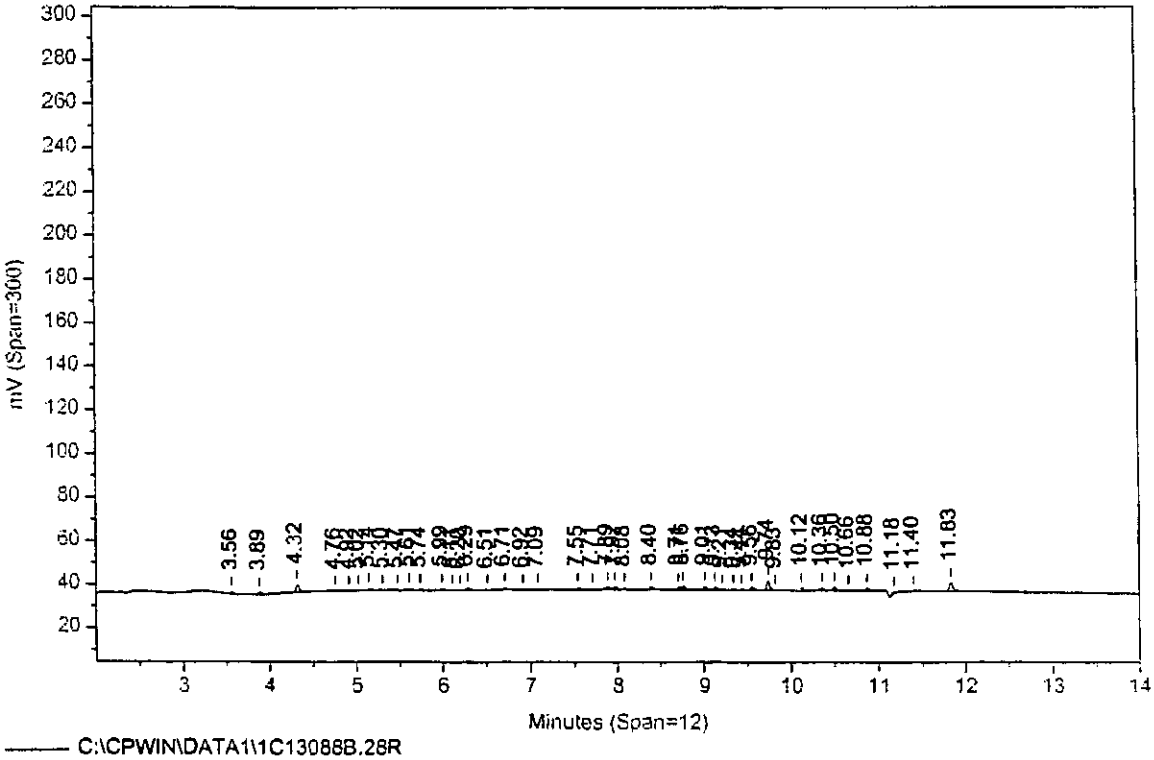
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 3244 | .85468 | TCX | 4.833 | 1395 | .71317 | TCX |
| 4.919 | 31 | .0045 | HCB | . | 0 | . | HCB |
| 5.145 | 821 | .17738 | alpha-BHC | 5.757 | 408 | .23718 | alpha-BHC |
| 5.607 | 885 | .191 | gamma-BHC | 6.298 | 350 | .20034 | gamma-BHC |
| 5.739 | 545 | .21165 | beta-BHC | 6.414 | 288 | .24868 | beta-BHC |
| 5.994 | 832 | .18914 | delta-BHC | 6.842 | 383 | .22637 | delta-BHC |
| 6.289 | 1045 | .21154 | Heptachlor | 6.933 | 385 | .20829 | Heptachlor |
| 6.712 | 889 | .22292 | Aldrin | 7.396 | 399 | .23494 | Aldrin |
| 7.545 | 872 | .21858 | Hept. epoxide | 8.181 | 478 | .26469 | Hept. epoxide |
| 7.714 | 793 | .20468 | g. Chlordane | 8.436 | 483 | .26515 | g. Chlordane |
| 7.89 | 1530 | .37027 | a. Chlordane | 8.632 | 408 | .21785 | a. Chlordane |
| 7.973 | 1526 | .43372 | 4,4'-DDE | 8.828 | 528 | .33175 | 4,4'-DDE |
| 8.081 | 814 | .22429 | Endosulfan I | 8.724 | 297 | .17945 | Endosulfan I |
| 8.398 | 1413 | .40473 | Dieldrin | 9.084 | 721 | .43272 | Dieldrin |
| 8.711 | 1262 | .42441 | Endrin | 9.499 | 493 | .38777 | Endrin |
| 8.764 | 1709 | .60052 | 4,4'-DDD | 9.591 | 467 | .41738 | 4,4'-DDD |
| 9.014 | 1590 | .48523 | Endosulfan II | 9.777 | 725 | .45404 | Endosulfan II |
| 9.127 | 1256 | .43233 | 4,4'-DDT | 9.998 | 505 | .4181 | 4,4'-DDT |
| 9.557 | 1254 | .45441 | Endrin aldehyde | 10.214 | 678 | .4682 | Endrin aldehyde |
| 9.742 | 4078 | 2.42414 | Methoxychlor | 10.876 | 1675 | 2.61422 | Methoxychlor |
| 10.124 | 1543 | .52795 | Endo. sulfate | 10.572 | 609 | .43057 | Endo. sulfate |
| 10.496 | 1495 | .42783 | Endrin ketone | 11.323 | 1114 | .68174 | Endrin ketone |
| 11.834 | 3938 | 1.03409 | DCB | 13.374 | 1805 | 1.06455 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 11:30:54 AM
File Reported On: 3/29/2004 at 11:30:55 AM

8724

10X REPLOTS

C:\CPWIN\DATA1\1C13088.28R

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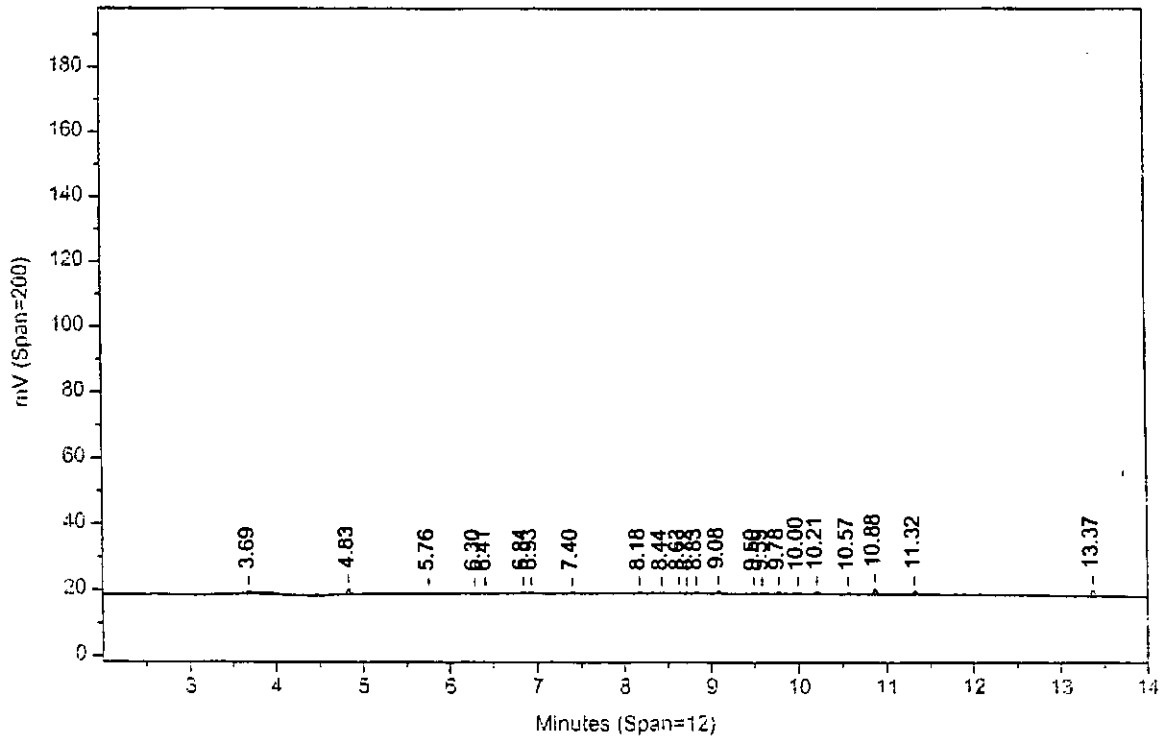



8725

Sample Name: **MD16X0424A AAMD16XAA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 05:42:39am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.30R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.557 | | 0.0000 | 0.000 | 775.6 | 0.454 | BB | 0.029 | 450.50 | 0.786 |
| 2 | 3.698 | | 0.0000 | 0.000 | 76.4 | 0.045 | BB | 0.029 | 44.05 | 0.077 |
| 3 | 3.889 | | 0.0000 | 0.000 | 2864.8 | 1.675 | BB | 0.066 | 718.35 | 1.253 |
| 4 | 3.990 | | 0.0000 | 0.000 | 477.8 | 0.279 | BB | 0.039 | 204.29 | 0.356 |
| 5 | 4.317 | TCX | 0.4449 | 11.092 | 6357.1 | 3.717 | BB | 0.063 | 1688.57 | 2.945 |
| 6 | 4.569 | | 0.0000 | 0.000 | 463.6 | 0.271 | BB | 0.053 | 147.13 | 0.257 |
| 7 | 4.785 | | 0.0000 | 0.000 | 596.7 | 0.349 | BB | 0.054 | 183.69 | 0.320 |
| 8 | 4.847 | | 0.0000 | 0.000 | 2276.5 | 1.331 | BB | 0.040 | 937.24 | 1.634 |
| 9 | 5.030 | | 0.0000 | 0.000 | 435.4 | 0.255 | BB | 0.048 | 149.76 | 0.261 |
| 10 | 5.124 | alpha-BHC | 0.0133 | 0.332 | 130.2 | 0.076 | BB | 0.035 | 61.72 | 0.108 |
| 11 | 5.207 | | 0.0000 | 0.000 | 104.9 | 0.061 | BB | 0.022 | 78.57 | 0.137 |
| 12 | 5.249 | | 0.0000 | 0.000 | 115.4 | 0.067 | BB | 0.027 | 70.87 | 0.124 |
| 13 | 5.358 | | 0.0000 | 0.000 | 4832.2 | 2.825 | BB | 0.050 | 1599.98 | 2.790 |
| 14 | 5.531 | | 0.0000 | 0.000 | 362.5 | 0.212 | BB | 0.035 | 171.93 | 0.300 |
| 15 | 5.648 | | 0.0000 | 0.000 | 3131.5 | 1.831 | BB | 0.058 | 903.76 | 1.576 |
| 16 | 5.820 | | 0.0000 | 0.000 | 223.7 | 0.131 | BB | 0.042 | 89.66 | 0.156 |
| 17 | 5.911 | | 0.0000 | 0.000 | 857.9 | 0.502 | BB | 0.041 | 347.95 | 0.607 |
| 18 | 6.007 | delta-BHC | 0.6162 | 15.362 | 9258.0 | 5.413 | BB | 0.057 | 2709.57 | 4.725 |
| 19 | 6.097 | | 0.0000 | 0.000 | 325.9 | 0.191 | BB | 0.039 | 138.68 | 0.242 |
| 20 | 6.193 | | 0.0000 | 0.000 | 3900.3 | 2.280 | BV | 0.044 | 1465.09 | 2.555 |
| 21 | 6.279 | Heptachlor | 0.1977 | 4.929 | 2369.6 | 1.386 | VB | 0.040 | 976.85 | 1.704 |
| 22 | 6.441 | | 0.0000 | 0.000 | 1837.7 | 1.075 | BV | 0.032 | 947.40 | 1.652 |
| 23 | 6.473 | | 0.0000 | 0.000 | 2529.3 | 1.479 | VV | 0.039 | 1090.55 | 1.902 |
| 24 | 6.525 | | 0.0000 | 0.000 | 2389.9 | 1.397 | VV | 0.049 | 814.50 | 1.420 |
| 25 | 6.750 | | 0.0000 | 0.000 | 5380.6 | 3.146 | VV | 0.067 | 1337.86 | 2.333 |
| 26 | 6.865 | | 0.0000 | 0.000 | 1415.7 | 0.828 | VV | 0.037 | 643.70 | 1.123 |
| 27 | 6.919 | | 0.0000 | 0.000 | 2695.2 | 1.576 | VB | 0.057 | 794.34 | 1.385 |
| 28 | 7.082 | | 0.0000 | 0.000 | 1091.0 | 0.638 | BB | 0.054 | 334.20 | 0.583 |
| 29 | 7.198 | | 0.0000 | 0.000 | 478.3 | 0.280 | BV | 0.045 | 179.03 | 0.312 |
| 30 | 7.261 | | 0.0000 | 0.000 | 3152.9 | 1.844 | VB | 0.062 | 842.17 | 1.469 |
| 31 | 7.527 | o,p-DDE | 0.0535 | 1.333 | 329.3 | 0.193 | BV | 0.040 | 136.48 | 0.238 |
| 32 | 7.597 | | 0.0000 | 0.000 | 2799.7 | 1.637 | VB | 0.047 | 985.83 | 1.719 |
| 33 | 7.852 | | 0.0000 | 0.000 | 3547.7 | 2.074 | BV | 0.093 | 636.47 | 1.110 |
| 34 | 7.967 | 4,4'-DDE | 0.1720 | 4.289 | 1641.5 | 0.960 | VB | 0.045 | 605.37 | 1.056 |
| 35 | 8.131 | | 0.0000 | 0.000 | 733.4 | 0.429 | BV | 0.031 | 389.95 | 0.680 |
| 36 | 8.184 | o,p-DDD | 0.3819 | 9.521 | 1698.3 | 0.993 | VB | 0.034 | 822.31 | 1.434 |
| 37 | 8.265 | | 0.0000 | 0.000 | 533.0 | 0.312 | BB | 0.036 | 247.83 | 0.432 |
| 38 | 8.367 | | 0.0000 | 0.000 | 5572.7 | 3.258 | BV | 0.042 | 2195.25 | 3.828 |
| 39 | 8.496 | | 0.0000 | 0.000 | 834.0 | 0.488 | VB | 0.048 | 290.30 | 0.506 |
| 40 | 8.645 | | 0.0000 | 0.000 | 701.1 | 0.410 | BV | 0.037 | 317.00 | 0.553 |
| 41 | 8.720 | Endrin | 0.9732 | 24.263 | 12483.1 | 7.299 | VV | 0.072 | 2893.40 | 5.046 |
| 42 | 8.889 | | 0.0000 | 0.000 | 3227.1 | 1.887 | VB | 0.043 | 1255.10 | 2.189 |
| 43 | 9.023 | Endosulfan II | 0.0664 | 1.654 | 596.1 | 0.349 | BV | 0.046 | 217.48 | 0.379 |
| 44 | 9.094 | | 0.0000 | 0.000 | 9509.0 | 5.560 | VV | 0.056 | 2827.59 | 4.931 |
| 45 | 9.233 | | 0.0000 | 0.000 | 4297.3 | 2.513 | VV | 0.041 | 1766.61 | 3.081 |
| 46 | 9.293 | | 0.0000 | 0.000 | 2704.2 | 1.581 | VB | 0.047 | 960.60 | 1.675 |
| 47 | 9.418 | | 0.0000 | 0.000 | 793.2 | 0.464 | BV | 0.051 | 260.39 | 0.454 |
| 48 | 9.473 | | 0.0000 | 0.000 | 644.5 | 0.377 | VV | 0.043 | 251.98 | 0.439 |
| 49 | 9.559 | Endrin aldehyde | 0.5908 | 14.728 | 3683.4 | 2.154 | VV | 0.038 | 1630.00 | 2.843 |
| 50 | 9.614 | | 0.0000 | 0.000 | 2170.6 | 1.269 | VV | 0.039 | 915.96 | 1.597 |
| 51 | 9.675 | | 0.0000 | 0.000 | 842.1 | 0.492 | VB | 0.035 | 397.66 | 0.693 |
| 52 | 9.787 | | 0.0000 | 0.000 | 232.7 | 0.136 | BB | 0.029 | 136.00 | 0.237 |
| 53 | 9.867 | | 0.0000 | 0.000 | 519.7 | 0.304 | BB | 0.031 | 280.36 | 0.489 |
| 54 | 9.947 | | 0.0000 | 0.000 | 10800.4 | 6.315 | BB | 0.044 | 4082.03 | 7.119 |
| 55 | 10.194 | | 0.0000 | 0.000 | 41.8 | 0.024 | BB | 0.021 | 33.30 | 0.058 |
| 56 | 10.244 | | 0.0000 | 0.000 | 388.8 | 0.227 | BV | 0.051 | 126.14 | 0.220 |
| 57 | 10.322 | | 0.0000 | 0.000 | 6284.6 | 3.675 | VV | 0.037 | 2848.62 | 4.968 |
| 58 | 10.352 | | 0.0000 | 0.000 | 5989.2 | 3.502 | VV | 0.036 | 2760.81 | 4.815 |
| 59 | 10.412 | | 0.0000 | 0.000 | 7018.9 | 4.104 | VV | 0.089 | 1318.80 | 2.300 |
| 60 | 10.658 | | 0.0000 | 0.000 | 4907.1 | 2.869 | VB | 0.099 | 825.57 | 1.440 |
| 61 | 10.790 | | 0.0000 | 0.000 | 3984.2 | 2.330 | BV | 0.066 | 1006.54 | 1.755 |
| 62 | 10.873 | | 0.0000 | 0.000 | 1052.2 | 0.615 | VB | 0.048 | 365.10 | 0.637 |
| 63 | 11.122 | | 0.0000 | 0.000 | 2394.2 | 1.400 | BB | 0.039 | 1036.40 | 1.807 |
| 64 | 11.378 | | 0.0000 | 0.000 | 439.8 | 0.257 | BB | 0.088 | 83.36 | 0.145 |

8726

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.537 | | 0.0000 | 0.000 | 925.9 | 0.541 | BB | 0.046 | 335.47 | 0.585 |
| 66 | 11.835 DCB | | 0.5013 | 12.497 | 5427.8 | 3.174 | BB | 0.047 | 1908.79 | 3.329 |
| 67 | 13.787 | | 0.0000 | 0.000 | 372.1 | 0.218 | BB | 0.089 | 69.85 | 0.122 |

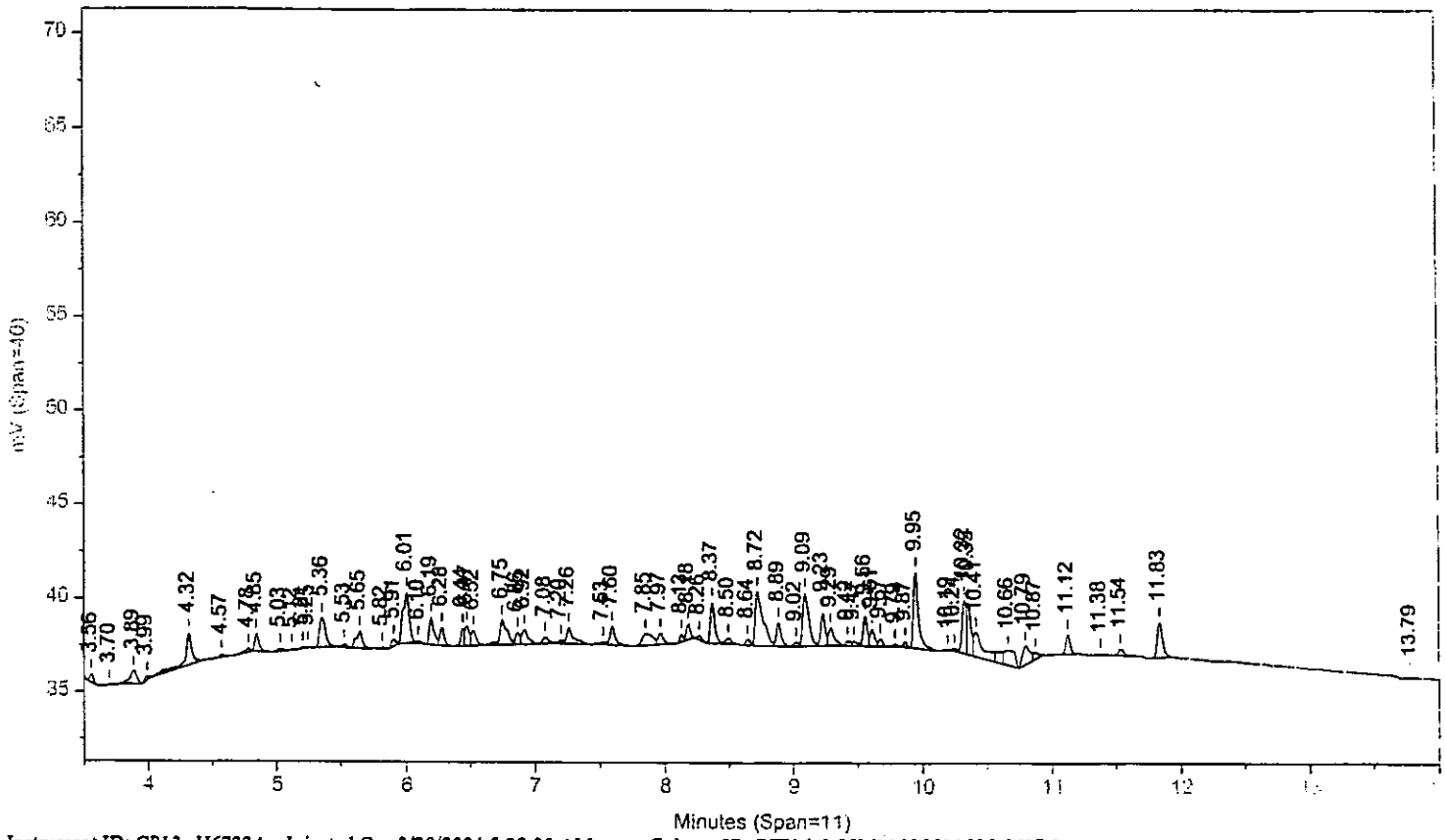
Total Area = 171027.3, Total Amount = 4.011, Total Height = 57342.67, Sample Units = PPB

Sample Name: **MD16X0424A AAMD16XAA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 05:42:39am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.30R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.690 | | 0.0000 | 0.000 | 10179.1 | 8.767 | BB | 0.320 | 530.45 | 2.202 |
| 2 | 4.838 | TCX | 0.3732 | 5.674 | 8525.0 | 7.342 | BV | 0.195 | 730.03 | 3.031 |
| 3 | 5.557 | HCB | 0.2623 | 3.988 | 8446.1 | 7.274 | VV | 0.193 | 727.99 | 3.022 |
| 4 | 6.137 | | 0.0000 | 0.000 | 7543.0 | 6.497 | VV | 0.117 | 1076.16 | 4.468 |
| 5 | 6.486 | | 0.0000 | 0.000 | 5119.4 | 4.409 | VV | 0.140 | 608.30 | 2.526 |
| 6 | 6.774 | | 0.0000 | 0.000 | 7508.9 | 6.467 | VV | 0.080 | 1564.32 | 6.495 |
| 7 | 6.961 | Heptachlor | 0.5007 | 7.614 | 3389.9 | 2.920 | VV | 0.061 | 924.44 | 3.838 |
| 8 | 7.110 | | 0.0000 | 0.000 | 1871.1 | 1.611 | VV | 0.056 | 554.43 | 2.302 |
| 9 | 7.227 | | 0.0000 | 0.000 | 1881.5 | 1.620 | VV | 0.043 | 734.75 | 3.051 |
| 10 | 7.286 | | 0.0000 | 0.000 | 4390.6 | 3.781 | VV | 0.110 | 665.42 | 2.763 |
| 11 | 7.598 | Telodrin | 0.4469 | 6.795 | 3423.3 | 2.948 | VV | 0.070 | 812.93 | 3.375 |
| 12 | 7.770 | | 0.0000 | 0.000 | 4191.9 | 3.610 | VV | 0.110 | 632.49 | 2.626 |
| 13 | 8.166 | Hept. epoxide | 0.3454 | 5.252 | 1666.4 | 1.435 | VB | 0.045 | 623.38 | 2.588 |
| 14 | 8.400 | o,p-DDE | 0.3701 | 5.627 | 1108.5 | 0.955 | BB | 0.040 | 460.12 | 1.910 |
| 15 | 9.062 | Dieldrin | 0.3056 | 4.646 | 1060.9 | 0.914 | BB | 0.035 | 509.35 | 2.115 |
| 16 | 9.274 | | 0.0000 | 0.000 | 3832.0 | 3.300 | BV | 0.047 | 1361.15 | 5.651 |
| 17 | 9.535 | o,p-DDT | 1.3355 | 20.307 | 4123.3 | 3.551 | VB | 0.044 | 1571.68 | 6.525 |
| 18 | 9.749 | | 0.0000 | 0.000 | 3168.2 | 2.729 | BB | 0.054 | 979.31 | 4.066 |
| 19 | 10.013 | 4,4'-DDT | 1.1165 | 16.976 | 4231.7 | 3.645 | BB | 0.052 | 1349.74 | 5.604 |
| 20 | 10.120 | | 0.0000 | 0.000 | 1728.8 | 1.489 | BB | 0.035 | 821.26 | 3.410 |
| 21 | 10.198 | Endrin aldehyde | 0.2940 | 4.470 | 840.4 | 0.724 | BB | 0.033 | 425.60 | 1.767 |
| 22 | 10.514 | | 0.0000 | 0.000 | 2109.1 | 1.817 | BB | 0.037 | 946.25 | 3.929 |
| 23 | 10.616 | | 0.0000 | 0.000 | 1067.2 | 0.919 | BB | 0.035 | 512.59 | 2.128 |
| 24 | 10.686 | | 0.0000 | 0.000 | 843.8 | 0.727 | BB | 0.052 | 269.08 | 1.117 |
| 25 | 10.824 | | 0.0000 | 0.000 | 4265.8 | 3.674 | BB | 0.037 | 1902.99 | 7.901 |
| 26 | 11.347 | Endrin ketone | 0.6994 | 10.634 | 8811.2 | 7.589 | BB | 0.128 | 1143.05 | 4.746 |
| 27 | 11.996 | | 0.0000 | 0.000 | 7169.0 | 6.174 | BB | 0.321 | 371.87 | 1.544 |
| 28 | 12.237 | | 0.0000 | 0.000 | 830.0 | 0.715 | BB | 0.036 | 382.56 | 1.588 |
| 29 | 13.373 | DCB | 0.5273 | 8.017 | 2781.8 | 2.396 | BB | 0.052 | 893.93 | 3.711 |

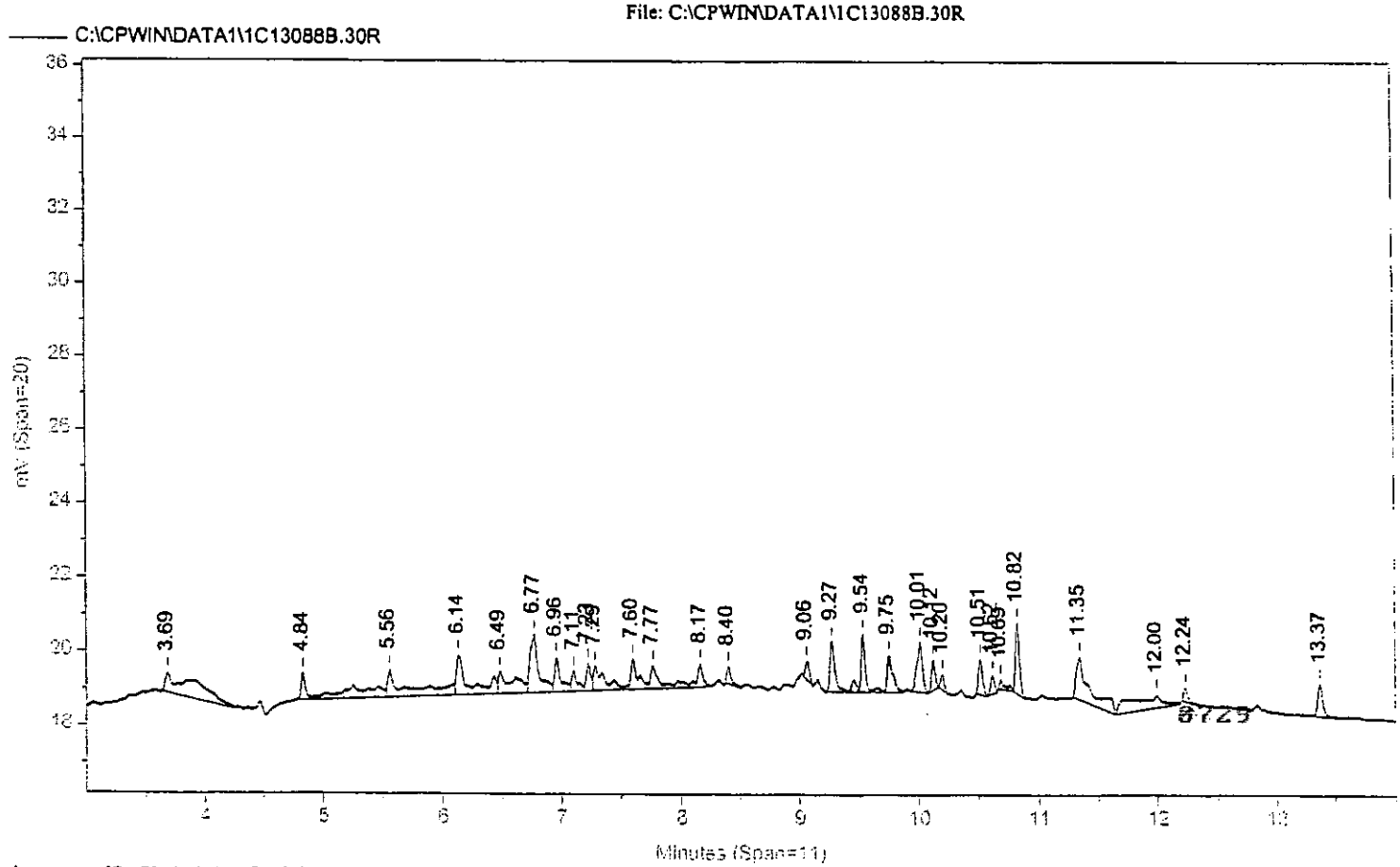
Total Area = 116107.8, Total Amount = 6.577, Total Height = 24085.6, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.30R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 5:28:39 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.30R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 5:28:39 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

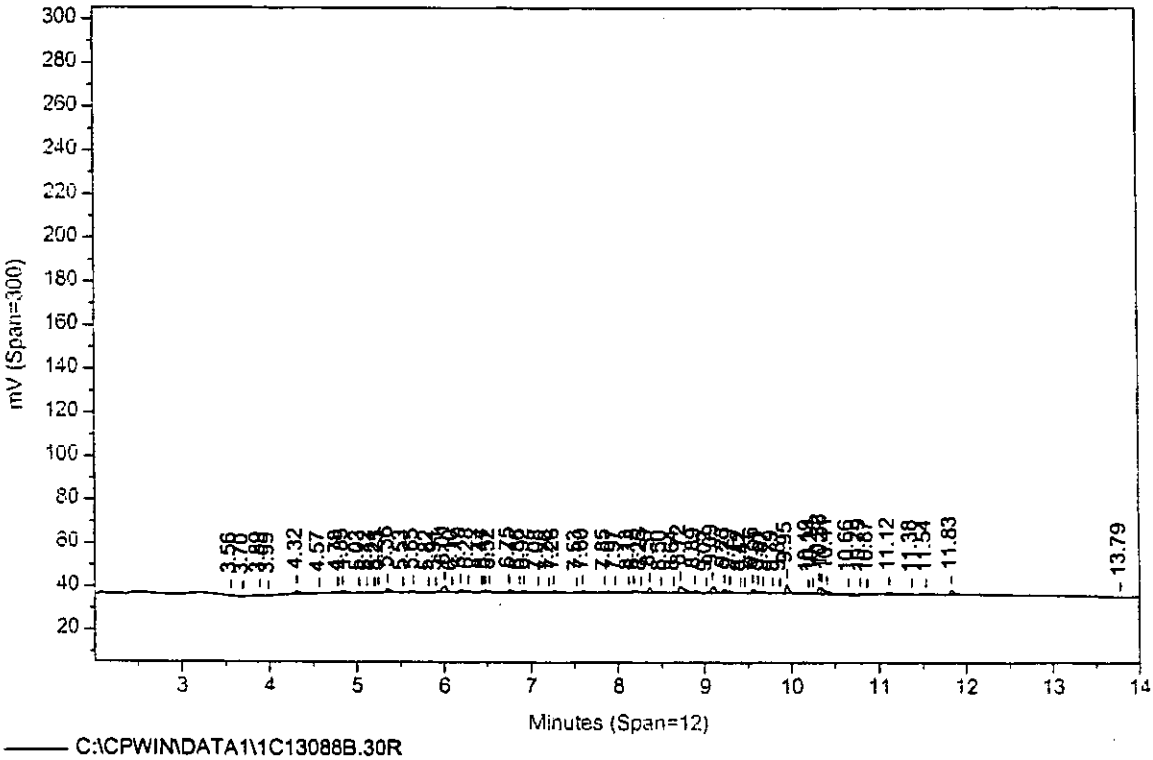
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 1689 | .44488 | TCX | 4.838 | 730 | .37318 | TCX |
| 5.124 | 62 | .01333 | alpha-BHC | . | 0 | . | alpha-BHC |
| . | 0 | . | HCB | 5.557 | 728 | .26229 | HCB |
| 6.007 | 2710 | .61615 | delta-BHC | . | 0 | . | delta-BHC |
| 6.279 | 977 | .1977 | Heptachlor | 6.961 | 924 | .50074 | Heptachlor |
| 7.527 | 136 | .05345 | o,p-DDE | 8.4 | 460 | .37005 | o,p-DDE |
| . | 0 | . | Telodrin | 7.598 | 813 | .44688 | Telodrin |
| 7.967 | 605 | .17203 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.166 | 623 | .34541 | Hept. epoxide |
| 8.184 | 822 | .3819 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.72 | 2893 | .97318 | Endrin | . | 0 | . | Endrin |
| 9.023 | 217 | .06635 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.062 | 509 | .30558 | Dieldrin |
| . | 0 | . | o,p-DDT | 9.535 | 1572 | 1.33552 | o,p-DDT |
| 9.559 | 1630 | .59076 | Endrin aldehyde | 10.198 | 426 | .29401 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDT | 10.013 | 1350 | 1.11645 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.347 | 1143 | .69941 | Endrin ketone |
| 1.835 | 1909 | .50125 | DCB | 13.373 | 894 | .52727 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.30A
Area File: C:\CPWIN\DATA1\1C13088B.30A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:03:14 AM
File Reported On: 3/29/2004 at 10:03:22 AM

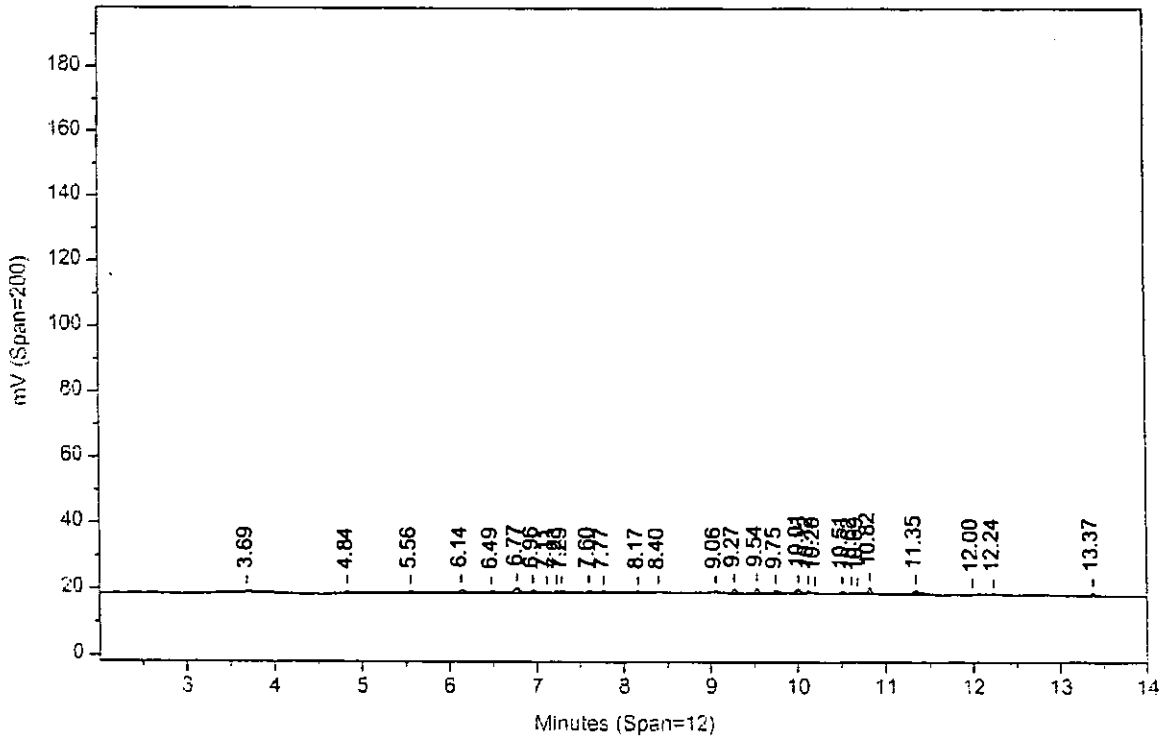
10X REPLOTS

8736

C:\CPWIN\DATA1\1C13088.30R




C:\CPWIN\DATA1\1C13088B.30R




8731

Sample Name: **MDTXX03B AAMDTXXAA ICAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 06:03:15am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.31R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.556 | | 0.0000 | 0.000 | 510.5 | 0.513 | BB | 0.028 | 305.11 | 0.907 |
| 2 | 3.646 | | 0.0000 | 0.000 | 99.9 | 0.100 | BB | 0.030 | 55.28 | 0.164 |
| 3 | 3.893 | | 0.0000 | 0.000 | 2040.0 | 2.049 | BB | 0.072 | 469.44 | 1.395 |
| 4 | 4.318 | TCX | 0.8498 | 18.262 | 11285.5 | 11.334 | BB | 0.058 | 3225.63 | 9.585 |
| 5 | 4.764 | | 0.0000 | 0.000 | 962.5 | 0.967 | BB | 0.119 | 134.25 | 0.399 |
| 6 | 4.891 | HCB | 0.0077 | 0.166 | 152.7 | 0.153 | BB | 0.047 | 53.80 | 0.160 |
| 7 | 5.031 | | 0.0000 | 0.000 | 110.1 | 0.111 | BB | 0.056 | 32.62 | 0.097 |
| 8 | 5.146 | alpha-BHC | 0.0210 | 0.450 | 277.1 | 0.278 | BB | 0.048 | 97.08 | 0.288 |
| 9 | 5.333 | | 0.0000 | 0.000 | 132.0 | 0.133 | BB | 0.047 | 46.77 | 0.139 |
| 10 | 5.648 | | 0.0000 | 0.000 | 103.3 | 0.104 | BB | 0.032 | 53.20 | 0.158 |
| 11 | 5.949 | | 0.0000 | 0.000 | 136.7 | 0.137 | BB | 0.047 | 48.46 | 0.144 |
| 12 | 6.039 | | 0.0000 | 0.000 | 125.3 | 0.126 | BB | 0.031 | 67.20 | 0.200 |
| 13 | 6.102 | | 0.0000 | 0.000 | 160.5 | 0.161 | BB | 0.043 | 61.70 | 0.183 |
| 14 | 6.508 | | 0.0000 | 0.000 | 208.3 | 0.209 | BB | 0.037 | 94.78 | 0.282 |
| 15 | 6.671 | | 0.0000 | 0.000 | 220.1 | 0.221 | BB | 0.067 | 54.99 | 0.163 |
| 16 | 6.959 | | 0.0000 | 0.000 | 917.6 | 0.922 | BB | 0.096 | 159.40 | 0.474 |
| 17 | 7.089 | | 0.0000 | 0.000 | 306.8 | 0.308 | BB | 0.043 | 117.68 | 0.350 |
| 18 | 7.262 | | 0.0000 | 0.000 | 65.9 | 0.066 | BB | 0.036 | 30.73 | 0.091 |
| 19 | 7.413 | | 0.0000 | 0.000 | 160.3 | 0.161 | BB | 0.029 | 91.53 | 0.272 |
| 20 | 7.472 | | 0.0000 | 0.000 | 125.5 | 0.126 | BB | 0.034 | 61.76 | 0.184 |
| 21 | 7.749 | | 0.0000 | 0.000 | 114.4 | 0.115 | BB | 0.035 | 55.04 | 0.164 |
| 22 | 7.875 | a. Chlordane | 0.1839 | 3.953 | 4480.0 | 4.499 | BV | 0.098 | 760.18 | 2.259 |
| 23 | 8.078 | Endosulfan I | 0.0548 | 1.178 | 707.3 | 0.710 | VV | 0.059 | 198.92 | 0.591 |
| 24 | 8.158 | | 0.0000 | 0.000 | 169.9 | 0.171 | VB | 0.038 | 74.90 | 0.223 |
| 25 | 8.252 | | 0.0000 | 0.000 | 183.6 | 0.184 | BV | 0.033 | 92.67 | 0.275 |
| 26 | 8.348 | | 0.0000 | 0.000 | 1149.9 | 1.155 | VV | 0.047 | 403.62 | 1.199 |
| 27 | 8.395 | Dieldrin | 0.0921 | 1.979 | 783.8 | 0.787 | VV | 0.041 | 321.61 | 0.956 |
| 28 | 8.516 | | 0.0000 | 0.000 | 1764.6 | 1.772 | VV | 0.052 | 569.65 | 1.693 |
| 29 | 8.603 | | 0.0000 | 0.000 | 2488.3 | 2.499 | VV | 0.061 | 677.42 | 2.013 |
| 30 | 8.740 | Endrin | 0.2792 | 5.999 | 3258.4 | 3.272 | VV | 0.065 | 830.04 | 2.466 |
| 31 | 8.815 | | 0.0000 | 0.000 | 1649.2 | 1.656 | VV | 0.039 | 696.70 | 2.070 |
| 32 | 8.867 | | 0.0000 | 0.000 | 1051.6 | 1.056 | VV | 0.046 | 383.60 | 1.140 |
| 33 | 8.986 | | 0.0000 | 0.000 | 2387.9 | 2.398 | VV | 0.059 | 672.66 | 1.999 |
| 34 | 9.025 | Endosulfan II | 0.2095 | 4.501 | 1671.8 | 1.679 | VV | 0.041 | 686.56 | 2.040 |
| 35 | 9.103 | | 0.0000 | 0.000 | 2961.5 | 2.974 | VV | 0.062 | 796.35 | 2.366 |
| 36 | 9.147 | 4,4'-DDT | 0.3638 | 7.817 | 2650.5 | 2.662 | VB | 0.042 | 1056.79 | 3.140 |
| 37 | 9.286 | | 0.0000 | 0.000 | 122.3 | 0.123 | BB | 0.029 | 69.91 | 0.208 |
| 38 | 9.348 | | 0.0000 | 0.000 | 1936.7 | 1.945 | BV | 0.048 | 666.82 | 1.981 |
| 39 | 9.427 | | 0.0000 | 0.000 | 3511.6 | 3.527 | VV | 0.048 | 1212.19 | 3.602 |
| 40 | 9.515 | | 0.0000 | 0.000 | 4852.8 | 4.873 | VV | 0.057 | 1407.34 | 4.182 |
| 41 | 9.586 | Endrin aldehyde | 0.1244 | 2.673 | 829.7 | 0.833 | VV | 0.040 | 343.28 | 1.020 |
| 42 | 9.673 | | 0.0000 | 0.000 | 1398.4 | 1.404 | VV | 0.032 | 717.90 | 2.133 |
| 43 | 9.727 | Methoxychlor | 0.5570 | 11.970 | 2396.7 | 2.407 | VV | 0.043 | 936.98 | 2.784 |
| 44 | 9.806 | | 0.0000 | 0.000 | 291.3 | 0.293 | VB | 0.026 | 185.61 | 0.552 |
| 45 | 9.866 | | 0.0000 | 0.000 | 2804.2 | 2.816 | BV | 0.049 | 947.60 | 2.816 |
| 46 | 9.989 | Mirex | 0.5670 | 12.184 | 5465.4 | 5.489 | VV | 0.058 | 1581.09 | 4.698 |
| 47 | 10.045 | | 0.0000 | 0.000 | 2415.7 | 2.426 | VV | 0.036 | 1118.50 | 3.324 |
| 48 | 10.106 | Endo. sulfate | 0.3977 | 8.546 | 3046.8 | 3.060 | VB | 0.044 | 1162.33 | 3.454 |
| 49 | 10.203 | | 0.0000 | 0.000 | 1146.9 | 1.152 | BB | 0.033 | 575.13 | 1.709 |
| 50 | 10.281 | | 0.0000 | 0.000 | 1349.0 | 1.355 | BV | 0.044 | 506.61 | 1.505 |
| 51 | 10.355 | | 0.0000 | 0.000 | 3574.6 | 3.590 | VV | 0.043 | 1391.07 | 4.133 |
| 52 | 10.455 | | 0.0000 | 0.000 | 2893.4 | 2.906 | VV | 0.042 | 1154.88 | 3.432 |
| 53 | 10.539 | | 0.0000 | 0.000 | 145.1 | 0.146 | VV | 0.022 | 111.42 | 0.331 |
| 54 | 10.581 | | 0.0000 | 0.000 | 900.0 | 0.904 | VV | 0.032 | 471.12 | 1.400 |
| 55 | 10.643 | | 0.0000 | 0.000 | 1687.2 | 1.694 | VB | 0.039 | 727.16 | 2.161 |
| 56 | 10.725 | | 0.0000 | 0.000 | 336.8 | 0.338 | BV | 0.028 | 199.57 | 0.593 |
| 57 | 10.761 | | 0.0000 | 0.000 | 512.5 | 0.515 | VB | 0.029 | 293.13 | 0.871 |
| 58 | 10.883 | | 0.0000 | 0.000 | 171.3 | 0.172 | BB | 0.034 | 84.15 | 0.250 |
| 59 | 10.971 | | 0.0000 | 0.000 | 470.6 | 0.473 | BB | 0.059 | 133.81 | 0.398 |
| 60 | 11.135 | | 0.0000 | 0.000 | 261.8 | 0.263 | BB | 0.036 | 119.94 | 0.356 |
| 61 | 11.221 | | 0.0000 | 0.000 | 503.0 | 0.505 | BB | 0.045 | 186.57 | 0.554 |
| 62 | 11.353 | | 0.0000 | 0.000 | 358.8 | 0.360 | BB | 0.069 | 87.04 | 0.259 |
| 63 | 11.606 | | 0.0000 | 0.000 | 395.5 | 0.397 | BB | 0.053 | 123.86 | 0.368 |
| 64 | 11.834 | DCB | 0.9456 | 20.320 | 10223.4 | 10.267 | BB | 0.047 | 3600.95 | 10.700 |

8732

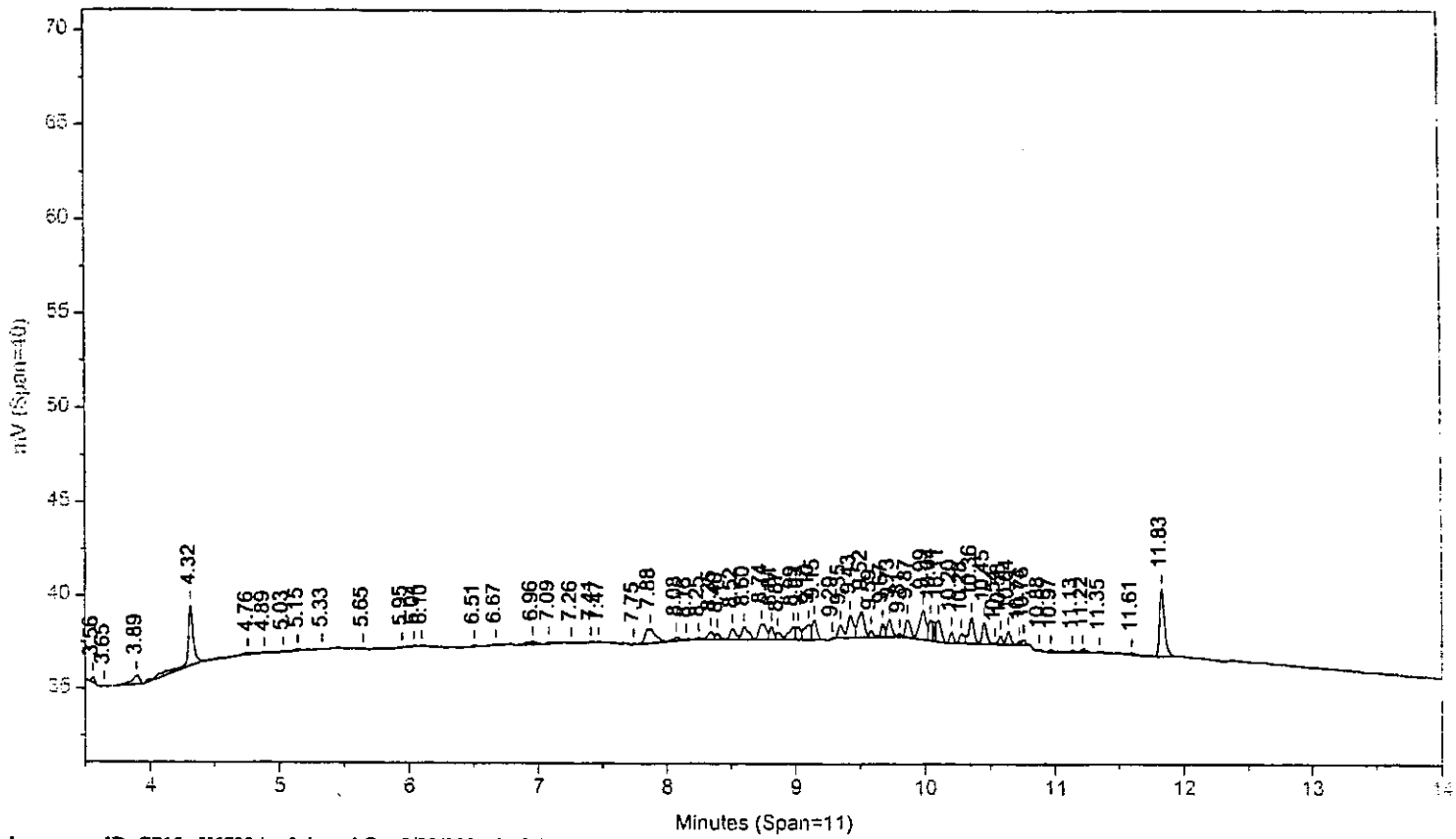
Total Area = 99574.7, Total Amount = 4.654, Total Height = 33654.04, Sample Units = PPB

Sample Name: **MDTXX03B AAMDTXXAA ICAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 06:03:16am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.31R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.686 | | 0.0000 | 0.000 | 9479.5 | 12.251 | BB | 0.401 | 393.53 | 4.594 |
| 2 | 4.836 | TCX | 0.7546 | 20.908 | 49379.9 | 63.815 | BB | 0.558 | 1476.17 | 17.233 |
| 3 | 9.056 | | 0.0000 | 0.000 | 1320.3 | 1.706 | BB | 0.049 | 449.16 | 5.243 |
| 4 | 9.603 | 4,4'-DDD | 0.2955 | 8.188 | 834.1 | 1.078 | BB | 0.042 | 330.41 | 3.857 |
| 5 | 9.880 | | 0.0000 | 0.000 | 1959.8 | 2.533 | BB | 0.045 | 732.89 | 8.556 |
| 6 | 10.126 | | 0.0000 | 0.000 | 548.7 | 0.709 | BB | 0.033 | 280.87 | 3.279 |
| 7 | 10.207 | Endrin aldehyde | 0.3653 | 10.120 | 1384.9 | 1.790 | BB | 0.044 | 528.76 | 6.173 |
| 8 | 10.324 | | 0.0000 | 0.000 | 1210.2 | 1.564 | BB | 0.050 | 407.27 | 4.754 |
| 9 | 10.487 | | 0.0000 | 0.000 | 546.0 | 0.706 | BB | 0.035 | 260.37 | 3.040 |
| 10 | 10.566 | Endo. sulfate | 0.2056 | 5.697 | 482.8 | 0.624 | BB | 0.028 | 290.63 | 3.393 |
| 11 | 10.903 | Methoxychlor | 1.0261 | 28.431 | 1536.3 | 1.985 | BB | 0.039 | 657.49 | 7.675 |
| 12 | 10.963 | | 0.0000 | 0.000 | 2002.3 | 2.588 | BB | 0.089 | 374.80 | 4.375 |
| 13 | 11.461 | | 0.0000 | 0.000 | 1141.4 | 1.475 | BB | 0.043 | 444.33 | 5.187 |
| 14 | 11.728 | | 0.0000 | 0.000 | 733.2 | 0.947 | BB | 0.040 | 308.38 | 3.600 |
| 15 | 13.375 | DCB | 0.9621 | 26.657 | 4820.8 | 6.230 | BB | 0.049 | 1631.14 | 19.042 |

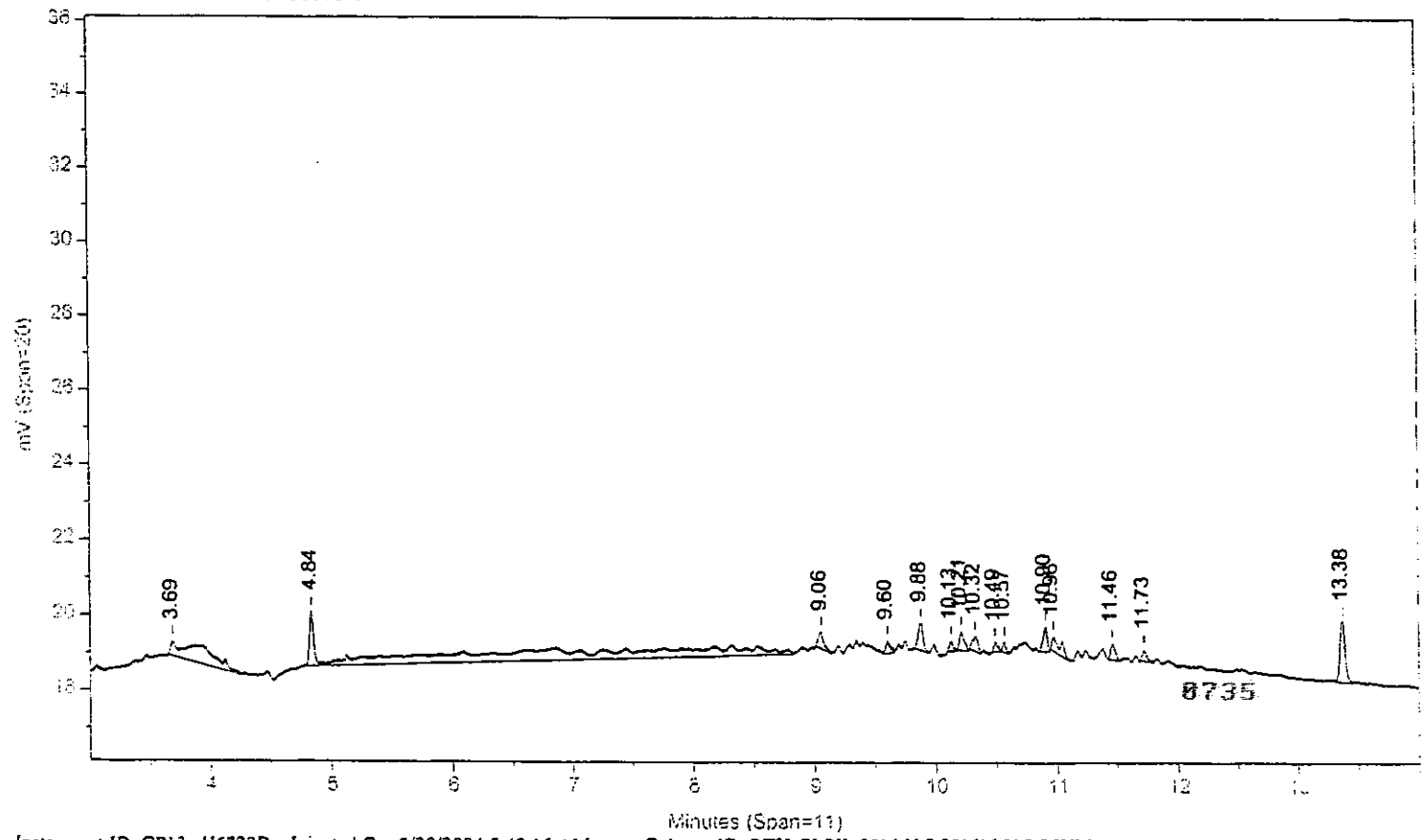
Total Area = 77380.0, Total Amount = 3.609, Total Height = 8566.22, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.31R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 5:49:15 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.31R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 5:49:16 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

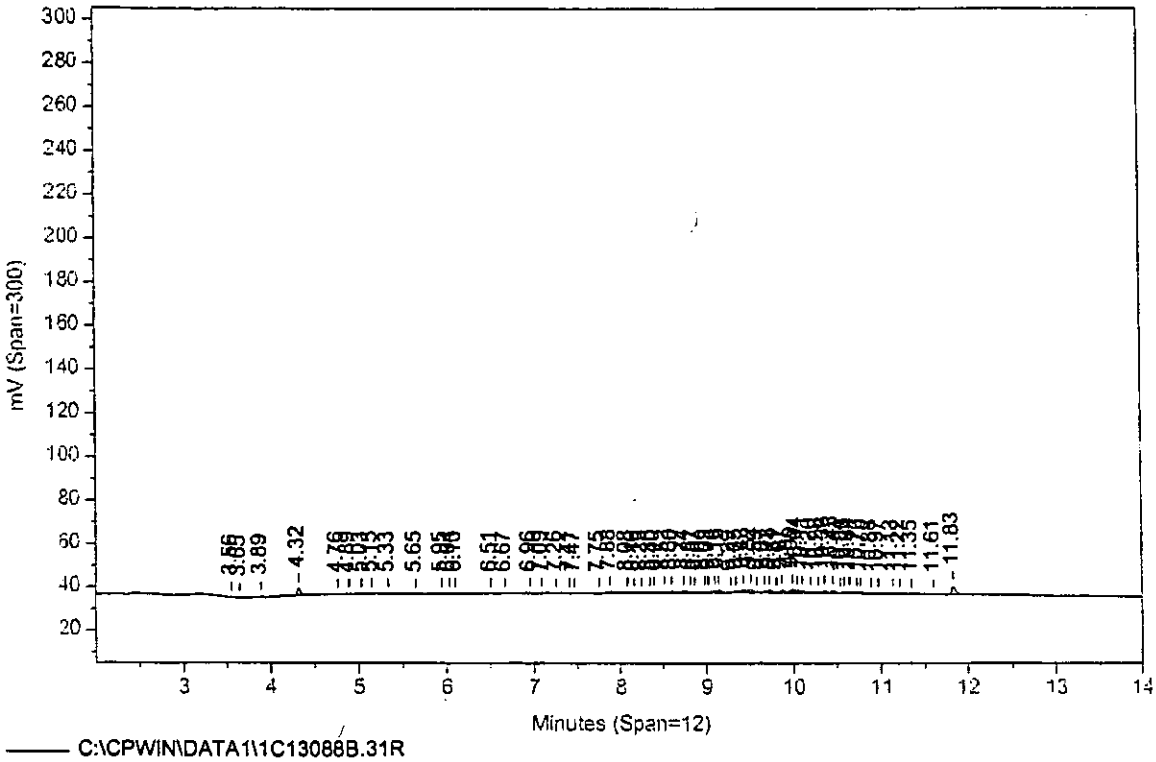
Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.318 | 3226 | .84985 | TCX | 4.836 | 1476 | .75461 | TCX |
| 4.891 | 54 | .00773 | HCB | . | 0 | . | HCB |
| 5.146 | 97 | .02096 | alpha-BHC | . | 0 | . | alpha-BHC |
| 7.875 | 760 | .18394 | a. Chlordane | . | 0 | . | a. Chlordane |
| 8.078 | 199 | .05484 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.395 | 322 | .09211 | Dieldrin | . | 0 | . | Dieldrin |
| 8.74 | 830 | .27918 | Endrin | . | 0 | . | Endrin |
| 9.025 | 687 | .20946 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.147 | 1057 | .36379 | 4,4'-DDT | . | 0 | . | 4,4'-DDT |
| 9.586 | 343 | .12441 | Endrin aldehyde | 10.207 | 529 | .36527 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.603 | 330 | .29551 | 4,4'-DDD |
| 9.727 | 937 | .55702 | Methoxychlor | 10.903 | 657 | 1.02613 | Methoxychlor |
| 9.989 | 1581 | .56702 | Mirex | . | 0 | . | Mirex |
| 0.106 | 1162 | .3977 | Endo. sulfate | 10.566 | 291 | .20561 | Endo. sulfate |
| 1.834 | 3601 | .94562 | DCB | 13.375 | 1631 | .9621 | DCB |

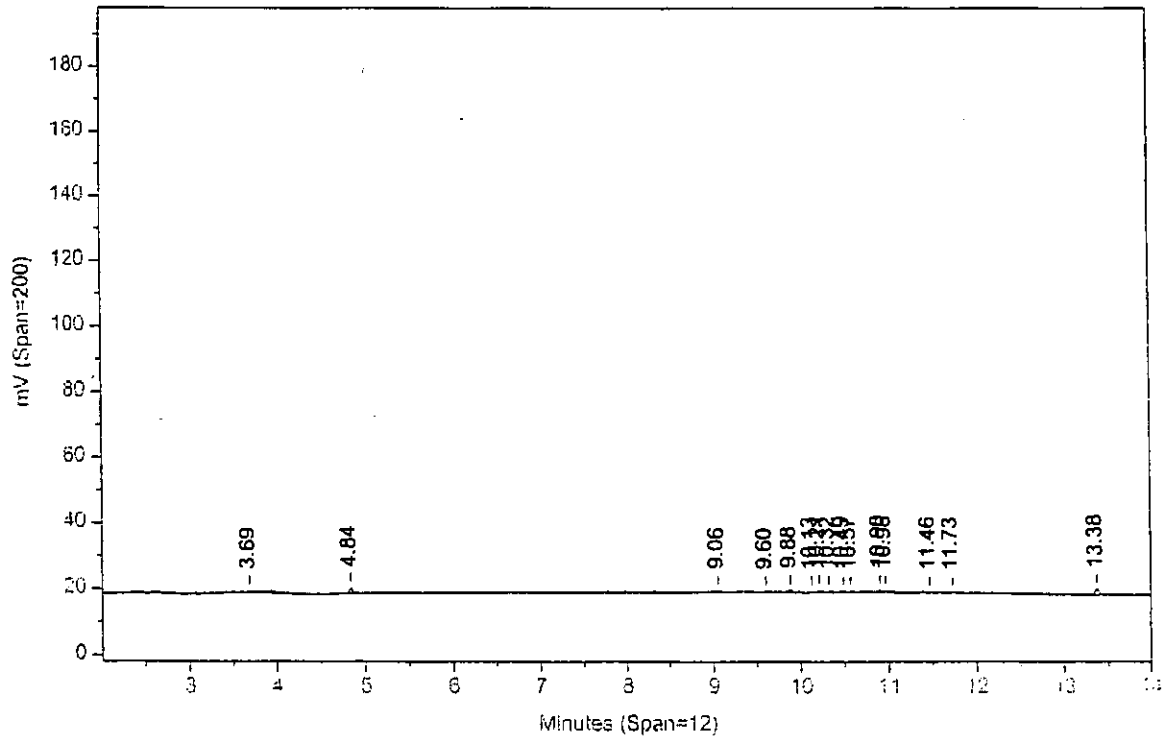
Files:
Area File: C:\CPWIN\DATA1\1C13088.31A
Area File: C:\CPWIN\DATA1\1C13088B.31A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:03:36 AM
File Reported On: 3/29/2004 at 10:03:45 AM

10X REPLOTS

C:\CPWIN\DATA1\1C13088.31R




C:\CPWIN\DATA1\1C13088B.31R



Sample Name: **IC16X0424B AAIC16XAA CCAL 048799999**
Acquired from CP13--H6722A via port 3 on 3/29/04 06:44:23am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.33R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\1C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 964.7 | 0.041 | BB | 0.033 | 490.90 | 0.057 |
| 2 | 3.889 | | 0.0000 | 0.000 | 3176.4 | 0.135 | BB | 0.068 | 780.05 | 0.091 |
| 3 | 4.228 | | 0.0000 | 0.000 | 291.6 | 0.012 | BB | 0.026 | 185.79 | 0.022 |
| 4 | 4.317 | TCX | 9.9239 | 14.862 | 93648.6 | 3.969 | BB | 0.041 | 37666.57 | 4.382 |
| 5 | 4.567 | | 0.0000 | 0.000 | 7205.8 | 0.305 | BB | 0.042 | 2865.80 | 0.333 |
| 6 | 4.784 | | 0.0000 | 0.000 | 4381.7 | 0.186 | BB | 0.029 | 2496.05 | 0.290 |
| 7 | 4.845 | | 0.0000 | 0.000 | 39615.0 | 1.679 | BB | 0.040 | 16415.26 | 1.910 |
| 8 | 5.030 | | 0.0000 | 0.000 | 5624.8 | 0.238 | BB | 0.043 | 2193.71 | 0.255 |
| 9 | 5.212 | | 0.0000 | 0.000 | 77.9 | 0.003 | BB | 0.028 | 45.83 | 0.005 |
| 10 | 5.250 | | 0.0000 | 0.000 | 111.8 | 0.005 | BB | 0.028 | 66.18 | 0.008 |
| 11 | 5.357 | | 0.0000 | 0.000 | 92480.3 | 3.920 | BB | 0.055 | 28227.68 | 3.284 |
| 12 | 5.529 | | 0.0000 | 0.000 | 8605.1 | 0.365 | BB | 0.039 | 3665.80 | 0.426 |
| 13 | 5.613 | gamma-BHC | 0.6760 | 1.012 | 5145.4 | 0.218 | BB | 0.027 | 3133.49 | 0.365 |
| 14 | 5.648 | | 0.0000 | 0.000 | 14489.5 | 0.614 | BB | 0.030 | 8185.63 | 0.952 |
| 15 | 5.739 | beta-BHC | 0.1017 | 0.152 | 422.0 | 0.018 | BB | 0.027 | 261.97 | 0.030 |
| 16 | 5.838 | | 0.0000 | 0.000 | 59.2 | 0.003 | BB | 0.019 | 52.83 | 0.006 |
| 17 | 5.906 | | 0.0000 | 0.000 | 16550.6 | 0.702 | BB | 0.040 | 6933.04 | 0.807 |
| 18 | 6.006 | delta-BHC | 10.4988 | 15.723 | 155172.7 | 6.577 | BB | 0.056 | 46169.33 | 5.371 |
| 19 | 6.086 | | 0.0000 | 0.000 | 2036.7 | 0.086 | BB | 0.023 | 1497.65 | 0.174 |
| 20 | 6.139 | | 0.0000 | 0.000 | 301.1 | 0.013 | BV | 0.017 | 296.23 | 0.034 |
| 21 | 6.191 | | 0.0000 | 0.000 | 68739.2 | 2.914 | VV | 0.046 | 25152.10 | 2.926 |
| 22 | 6.279 | Heptachlor | 3.6044 | 5.398 | 42134.2 | 1.786 | VB | 0.039 | 17810.21 | 2.072 |
| 23 | 6.440 | | 0.0000 | 0.000 | 34928.4 | 1.480 | BV | 0.034 | 16931.50 | 1.970 |
| 24 | 6.472 | | 0.0000 | 0.000 | 46301.1 | 1.963 | VV | 0.039 | 19552.04 | 2.275 |
| 25 | 6.523 | | 0.0000 | 0.000 | 36066.4 | 1.529 | VB | 0.044 | 13622.44 | 1.585 |
| 26 | 6.749 | | 0.0000 | 0.000 | 73330.1 | 3.108 | BV | 0.056 | 21677.78 | 2.522 |
| 27 | 6.864 | | 0.0000 | 0.000 | 26296.1 | 1.115 | VV | 0.037 | 11814.12 | 1.374 |
| 28 | 6.915 | | 0.0000 | 0.000 | 36039.4 | 1.528 | VB | 0.049 | 12142.64 | 1.413 |
| 29 | 7.066 | | 0.0000 | 0.000 | 8717.4 | 0.369 | BB | 0.040 | 3630.61 | 0.422 |
| 30 | 7.197 | | 0.0000 | 0.000 | 2700.3 | 0.114 | BB | 0.029 | 1564.63 | 0.182 |
| 31 | 7.260 | | 0.0000 | 0.000 | 38506.1 | 1.632 | BV | 0.050 | 12961.49 | 1.508 |
| 32 | 7.346 | | 0.0000 | 0.000 | 6506.7 | 0.276 | VB | 0.035 | 3057.95 | 0.356 |
| 33 | 7.531 | o,p-DDE | 0.8452 | 1.266 | 4694.7 | 0.199 | BV | 0.036 | 2158.08 | 0.251 |
| 34 | 7.596 | | 0.0000 | 0.000 | 47587.7 | 2.017 | VB | 0.047 | 16785.71 | 1.953 |
| 35 | 7.851 | | 0.0000 | 0.000 | 1840.2 | 0.078 | BV | 0.050 | 612.86 | 0.071 |
| 36 | 7.911 | a. Chlordane | 0.2341 | 0.351 | 2436.1 | 0.103 | VV | 0.042 | 967.31 | 0.113 |
| 37 | 7.967 | 4,4'-DDE | 2.7674 | 4.145 | 26086.5 | 1.106 | VB | 0.045 | 9738.15 | 1.133 |
| 38 | 8.129 | | 0.0000 | 0.000 | 13640.4 | 0.578 | BV | 0.032 | 7020.75 | 0.817 |
| 39 | 8.182 | | 0.0000 | 0.000 | 28185.0 | 1.195 | VB | 0.033 | 14098.33 | 1.640 |
| 40 | 8.263 | | 0.0000 | 0.000 | 10775.5 | 0.457 | BB | 0.038 | 4726.63 | 0.550 |
| 41 | 8.365 | | 0.0000 | 0.000 | 91898.6 | 3.895 | BV | 0.043 | 35982.57 | 4.186 |
| 42 | 8.496 | | 0.0000 | 0.000 | 12403.4 | 0.526 | VV | 0.046 | 4503.89 | 0.524 |
| 43 | 8.561 | o,p-DDT | 0.3718 | 0.557 | 1946.3 | 0.082 | VB | 0.034 | 953.75 | 0.111 |
| 44 | 8.643 | | 0.0000 | 0.000 | 15787.8 | 0.669 | BV | 0.037 | 7035.90 | 0.818 |
| 45 | 8.718 | Endrin | 15.3726 | 23.023 | 179357.2 | 7.602 | VV | 0.065 | 45704.90 | 5.317 |
| 46 | 8.888 | | 0.0000 | 0.000 | 55197.2 | 2.340 | VB | 0.041 | 22182.98 | 2.581 |
| 47 | 9.019 | Endosulfan II | 0.5206 | 0.780 | 3535.4 | 0.150 | BV | 0.035 | 1706.48 | 0.199 |
| 48 | 9.092 | | 0.0000 | 0.000 | 158308.9 | 6.710 | VV | 0.056 | 47262.08 | 5.498 |
| 49 | 9.231 | | 0.0000 | 0.000 | 75713.8 | 3.209 | VV | 0.042 | 30263.21 | 3.521 |
| 50 | 9.292 | | 0.0000 | 0.000 | 46312.7 | 1.963 | VB | 0.043 | 18015.80 | 2.096 |
| 51 | 9.414 | | 0.0000 | 0.000 | 11014.7 | 0.467 | BV | 0.036 | 5119.00 | 0.595 |
| 52 | 9.473 | | 0.0000 | 0.000 | 11609.4 | 0.492 | VV | 0.049 | 3964.30 | 0.461 |
| 53 | 9.558 | Endrin aldehyde | 10.6828 | 15.999 | 68836.3 | 2.918 | VV | 0.039 | 29475.74 | 3.429 |
| 54 | 9.612 | | 0.0000 | 0.000 | 44394.3 | 1.882 | VV | 0.041 | 17866.09 | 2.078 |
| 55 | 9.674 | | 0.0000 | 0.000 | 23846.3 | 1.011 | VV | 0.042 | 9463.61 | 1.101 |
| 56 | 9.738 | Methoxychlor | 0.6908 | 1.035 | 2108.6 | 0.089 | VV | 0.030 | 1161.99 | 0.135 |
| 57 | 9.786 | | 0.0000 | 0.000 | 8378.8 | 0.355 | VB | 0.036 | 3891.27 | 0.453 |
| 58 | 9.866 | | 0.0000 | 0.000 | 12588.5 | 0.534 | BV | 0.036 | 5868.63 | 0.683 |
| 59 | 9.945 | | 0.0000 | 0.000 | 188234.9 | 7.979 | VB | 0.046 | 68208.33 | 7.935 |
| 60 | 10.321 | | 0.0000 | 0.000 | 99408.5 | 4.214 | BB | 0.049 | 34003.30 | 3.956 |
| 61 | 10.413 | | 0.0000 | 0.000 | 25010.7 | 1.060 | BB | 0.038 | 10851.94 | 1.262 |
| 62 | 10.658 | | 0.0000 | 0.000 | 3496.8 | 0.148 | BV | 0.039 | 1497.80 | 0.174 |
| 63 | 10.733 | | 0.0000 | 0.000 | 2639.5 | 0.112 | VV | 0.033 | 1344.71 | 0.156 |
| 64 | 10.787 | | 0.0000 | 0.000 | 23029.7 | 0.976 | VV | 0.044 | 8762.41 | 1.019 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.876 | | 0.0000 | 0.000 | 1286.9 | 0.055 | VB | 0.038 | 558.18 | 0.065 |
| 66 | 11.120 | | 0.0000 | 0.000 | 54724.9 | 2.320 | BB | 0.046 | 19918.68 | 2.317 |
| 67 | 11.535 | | 0.0000 | 0.000 | 17510.2 | 0.742 | BB | 0.045 | 6478.33 | 0.754 |
| 68 | 11.833 DCB | | 10.4815 | 15.698 | 114803.1 | 4.866 | BB | 0.048 | 39913.87 | 4.643 |

Total Area = 2359256.0, Total Amount = 66.772, Total Height = 859614.8, Sample Units = PPB

Sample Name: **IC16X0424B AAIC16XAA CCAL 048799999**
Acquired from CP13--H6722B via port 4 on 3/29/04 06:44:23am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: C:\CPWIN\DATA1\1C13088B.33R
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\1C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.607 | | 0.0000 | 0.000 | 1843.8 | 0.152 | BB | 0.225 | 136.62 | 0.030 |
| 2 | 3.689 | | 0.0000 | 0.000 | 8788.1 | 0.725 | BB | 0.372 | 393.58 | 0.086 |
| 3 | 4.834 | TCX | 9.3437 | 7.825 | 39811.8 | 3.284 | BB | 0.036 | 18278.20 | 4.009 |
| 4 | 5.010 | | 0.0000 | 0.000 | 1706.5 | 0.141 | BB | 0.036 | 784.13 | 0.172 |
| 5 | 5.255 | | 0.0000 | 0.000 | 3528.4 | 0.291 | BB | 0.038 | 1536.83 | 0.337 |
| 6 | 5.463 | | 0.0000 | 0.000 | 3834.5 | 0.316 | BB | 0.036 | 1794.93 | 0.394 |
| 7 | 5.554 | HCB | 3.2282 | 2.703 | 20571.0 | 1.697 | BV | 0.038 | 8959.92 | 1.965 |
| 8 | 5.890 | | 0.0000 | 0.000 | 2999.8 | 0.247 | VV | 0.040 | 1263.25 | 0.277 |
| 9 | 6.135 | | 0.0000 | 0.000 | 49496.9 | 4.083 | VV | 0.057 | 14595.17 | 3.202 |
| 10 | 6.295 | gamma-BHC | 0.9441 | 0.791 | 4451.3 | 0.367 | VB | 0.045 | 1648.87 | 0.362 |
| 11 | 6.434 | beta-BHC | 4.9149 | 4.116 | 11762.8 | 0.970 | BV | 0.035 | 5682.44 | 1.246 |
| 12 | 6.487 | | 0.0000 | 0.000 | 19054.3 | 1.572 | VV | 0.041 | 7780.87 | 1.707 |
| 13 | 6.619 | | 0.0000 | 0.000 | 6849.4 | 0.565 | VV | 0.034 | 3331.81 | 0.731 |
| 14 | 6.655 | | 0.0000 | 0.000 | 4872.6 | 0.402 | VV | 0.037 | 2202.80 | 0.483 |
| 15 | 6.773 | | 0.0000 | 0.000 | 78031.0 | 6.436 | VV | 0.056 | 23171.05 | 5.083 |
| 16 | 6.962 | Heptachlor | 7.6619 | 6.416 | 36458.4 | 3.007 | VV | 0.043 | 14144.95 | 3.103 |
| 17 | 7.105 | | 0.0000 | 0.000 | 17663.0 | 1.457 | VV | 0.035 | 8433.31 | 1.850 |
| 18 | 7.155 | | 0.0000 | 0.000 | 6955.8 | 0.574 | VV | 0.037 | 3160.91 | 0.693 |
| 19 | 7.225 | | 0.0000 | 0.000 | 21496.9 | 1.773 | VV | 0.037 | 9664.24 | 2.120 |
| 20 | 7.287 | | 0.0000 | 0.000 | 21048.5 | 1.736 | VV | 0.039 | 8975.68 | 1.969 |
| 21 | 7.345 | | 0.0000 | 0.000 | 20301.9 | 1.675 | VV | 0.051 | 6620.14 | 1.452 |
| 22 | 7.599 | Telodrin | 6.6542 | 5.572 | 26572.9 | 2.192 | VV | 0.037 | 12104.82 | 2.655 |
| 23 | 7.659 | | 0.0000 | 0.000 | 14080.4 | 1.161 | VV | 0.047 | 5039.04 | 1.105 |
| 24 | 7.766 | | 0.0000 | 0.000 | 28767.6 | 2.373 | VV | 0.052 | 9169.22 | 2.011 |
| 25 | 7.973 | | 0.0000 | 0.000 | 5331.6 | 0.440 | VV | 0.038 | 2341.03 | 0.514 |
| 26 | 8.010 | | 0.0000 | 0.000 | 3047.9 | 0.251 | VV | 0.036 | 1409.11 | 0.309 |
| 27 | 8.100 | | 0.0000 | 0.000 | 4245.2 | 0.350 | VV | 0.036 | 1953.72 | 0.429 |
| 28 | 8.162 | Hept. epoxide | 5.0145 | 4.199 | 22278.4 | 1.838 | VV | 0.041 | 9049.96 | 1.985 |
| 29 | 8.320 | | 0.0000 | 0.000 | 3391.6 | 0.280 | VV | 0.039 | 1443.40 | 0.317 |
| 30 | 8.400 | o,p-DDE | 7.3937 | 6.192 | 22881.1 | 1.887 | VV | 0.041 | 9193.26 | 2.017 |
| 31 | 8.541 | | 0.0000 | 0.000 | 2241.2 | 0.185 | VV | 0.055 | 677.99 | 0.149 |
| 32 | 8.793 | | 0.0000 | 0.000 | 798.6 | 0.066 | VB | 0.034 | 386.44 | 0.085 |
| 33 | 8.868 | | 0.0000 | 0.000 | 4157.6 | 0.343 | BV | 0.041 | 1707.51 | 0.375 |
| 34 | 9.018 | | 0.0000 | 0.000 | 18584.7 | 1.533 | VV | 0.053 | 5819.27 | 1.277 |
| 35 | 9.063 | Dieldrin | 6.3075 | 5.282 | 24887.9 | 2.053 | VV | 0.039 | 10513.52 | 2.306 |
| 36 | 9.150 | | 0.0000 | 0.000 | 14577.2 | 1.202 | VB | 0.049 | 5000.84 | 1.097 |
| 37 | 9.272 | | 0.0000 | 0.000 | 53571.2 | 4.419 | BV | 0.041 | 21650.46 | 4.749 |
| 38 | 9.451 | | 0.0000 | 0.000 | 11664.2 | 0.962 | VV | 0.041 | 4778.92 | 1.048 |
| 39 | 9.530 | o,p-DDT | 21.6197 | 18.105 | 57806.9 | 4.768 | VB | 0.038 | 25442.76 | 5.581 |
| 40 | 9.749 | | 0.0000 | 0.000 | 52450.1 | 4.326 | BB | 0.049 | 17973.73 | 3.943 |
| 41 | 9.902 | | 0.0000 | 0.000 | 4012.8 | 0.331 | BB | 0.041 | 1612.13 | 0.354 |
| 42 | 10.009 | 4,4'-DDT | 19.0063 | 15.916 | 72277.3 | 5.962 | BB | 0.052 | 22977.76 | 5.040 |
| 43 | 10.120 | | 0.0000 | 0.000 | 29286.7 | 2.416 | BB | 0.034 | 14424.57 | 3.164 |
| 44 | 10.193 | Endrin aldehyde | 5.1237 | 4.291 | 14303.9 | 1.180 | BB | 0.032 | 7417.05 | 1.627 |
| 45 | 10.352 | | 0.0000 | 0.000 | 6802.2 | 0.561 | BB | 0.043 | 2632.53 | 0.577 |
| 46 | 10.514 | | 0.0000 | 0.000 | 40954.9 | 3.378 | BB | 0.039 | 17312.33 | 3.798 |
| 47 | 10.610 | | 0.0000 | 0.000 | 16702.2 | 1.378 | BB | 0.034 | 8185.44 | 1.796 |
| 48 | 10.684 | | 0.0000 | 0.000 | 14932.3 | 1.232 | BB | 0.052 | 4785.14 | 1.050 |
| 49 | 10.821 | | 0.0000 | 0.000 | 75172.9 | 6.201 | BB | 0.038 | 33268.37 | 7.298 |
| 50 | 10.912 | | 0.0000 | 0.000 | 848.1 | 0.070 | BB | 0.031 | 460.26 | 0.101 |
| 51 | 11.025 | | 0.0000 | 0.000 | 2897.3 | 0.239 | BB | 0.042 | 1149.05 | 0.252 |
| 52 | 11.246 | | 0.0000 | 0.000 | 948.3 | 0.078 | BB | 0.031 | 506.03 | 0.111 |
| 53 | 11.347 | Endrin ketone | 11.4502 | 9.589 | 85431.0 | 7.047 | BB | 0.076 | 18713.19 | 4.105 |
| 54 | 11.687 | | 0.0000 | 0.000 | 1469.8 | 0.121 | BB | 0.039 | 627.47 | 0.138 |
| 55 | 11.790 | | 0.0000 | 0.000 | 1374.4 | 0.113 | BB | 0.037 | 623.15 | 0.137 |
| 56 | 11.996 | | 0.0000 | 0.000 | 8024.7 | 0.662 | BB | 0.039 | 3408.03 | 0.748 |
| 57 | 12.231 | | 0.0000 | 0.000 | 22560.7 | 1.861 | BB | 0.044 | 8470.82 | 1.858 |
| 58 | 12.834 | | 0.0000 | 0.000 | 7998.4 | 0.660 | BB | 0.047 | 2856.21 | 0.627 |
| 59 | 13.371 | DCB | 10.7526 | 9.004 | 53468.6 | 4.410 | BB | 0.049 | 18229.78 | 3.999 |

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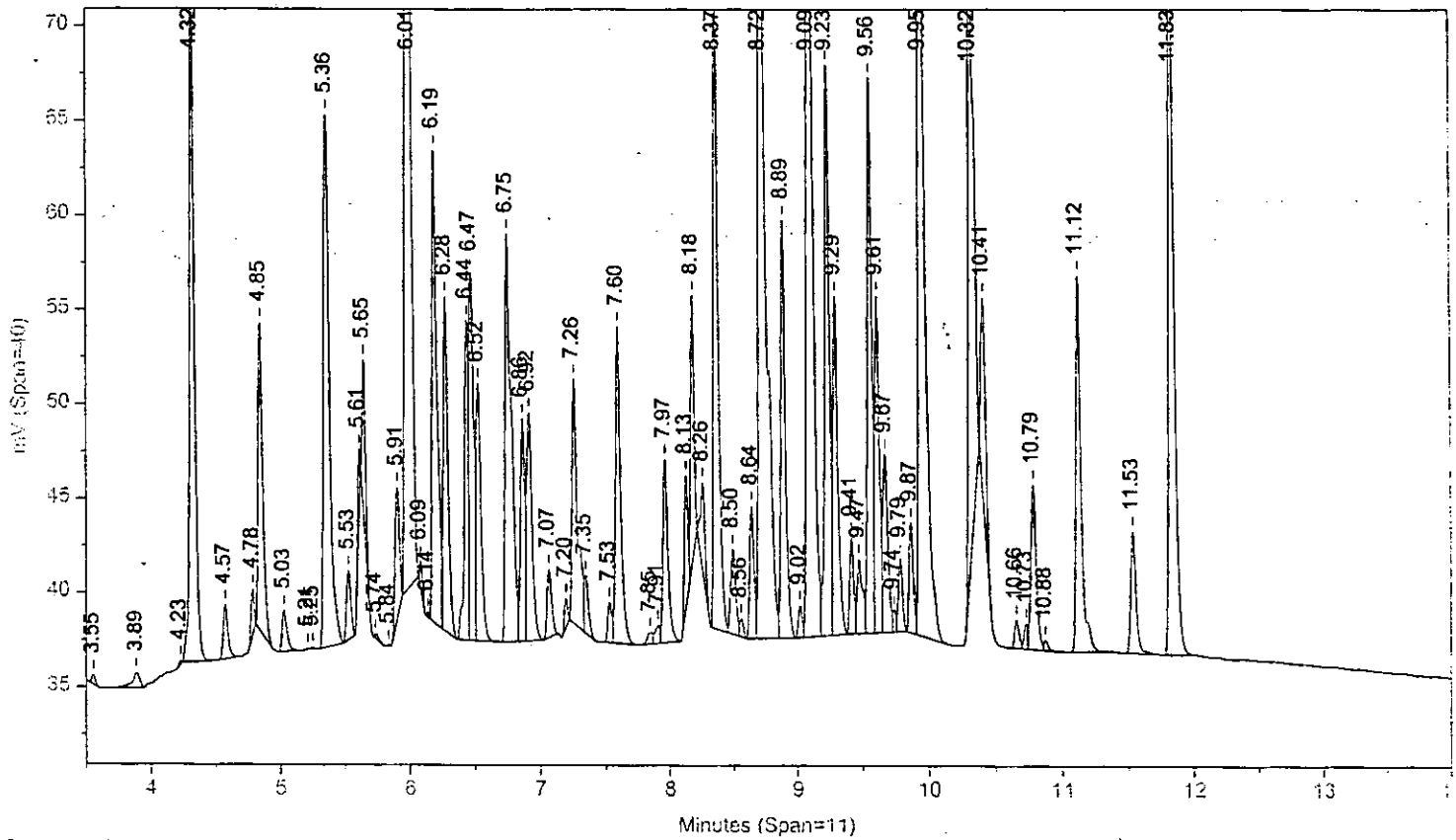
Total Area = 1212330.0, Total Amount = 119.415, Total Height = 455874.0, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.33R

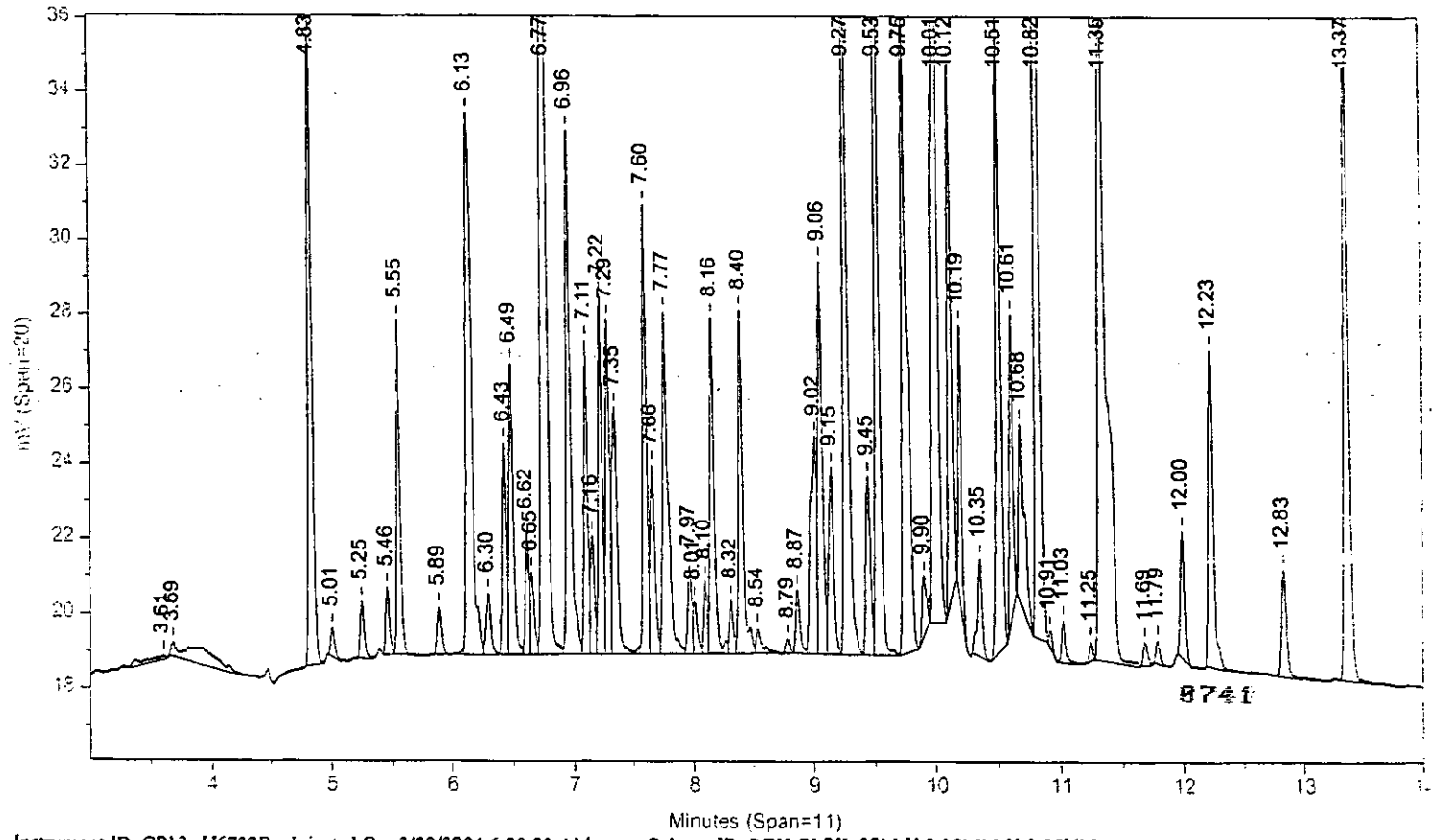
C:\CPWIN\DATA1\1C13088.33R




Instrument ID: CP13--H6722A Injected On: 3/29/2004 6:30:23 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.33R

C:\CPWIN\DATA1\1C13088B.33R




Instrument ID: CP13--H6722B Injected On: 3/29/2004 6:30:23 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

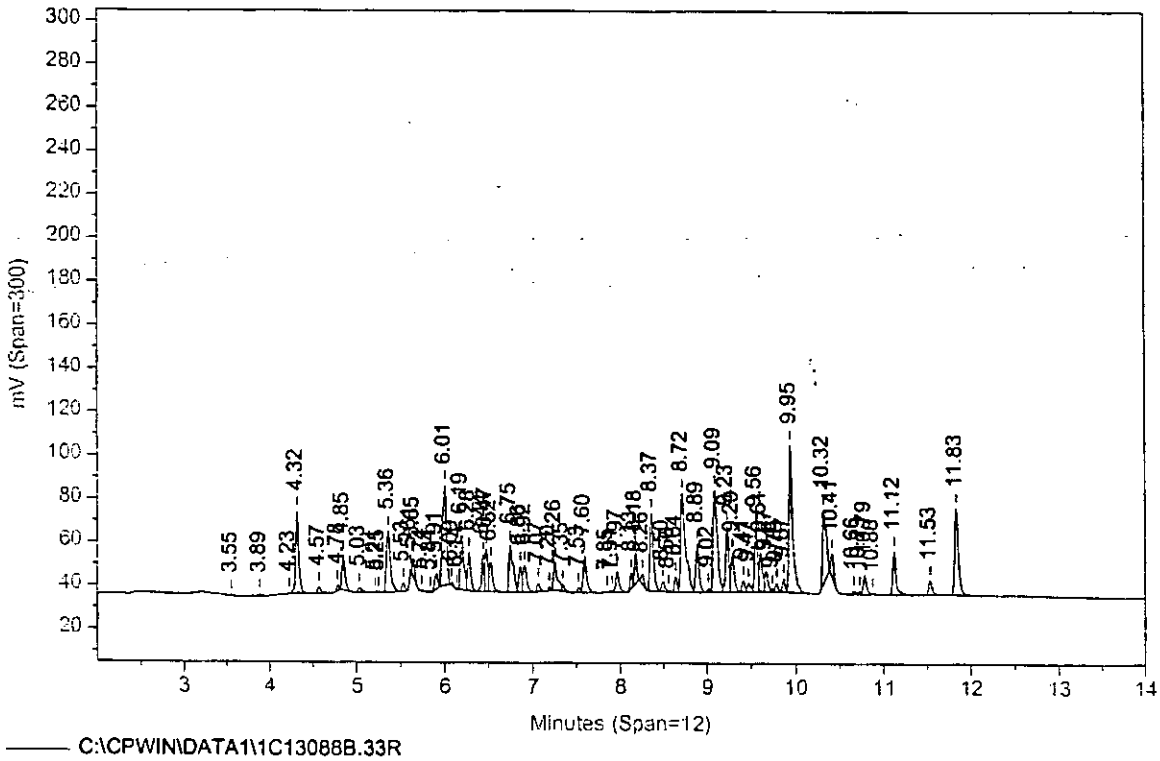
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.317 | 37667 | 9.92391 | TCX | 4.834 | 18278 | 9.34367 | TCX |
| . | 0 | . | HCB | 5.554 | 8960 | 3.22824 | HCB |
| 5.613 | 3133 | .67604 | gamma-BHC | 6.295 | 1649 | .94411 | gamma-BHC |
| 5.739 | 262 | .10167 | beta-BHC | 6.434 | 5682 | 4.91488 | beta-BHC |
| 6.006 | 46169 | 10.49884 | delta-BHC | . | 0 | . | delta-BHC |
| 6.279 | 17810 | 3.60444 | Heptachlor | 6.962 | 14145 | 7.66186 | Heptachlor |
| 7.531 | 2158 | .8452 | o,p-DDE | 8.4 | 9193 | 7.3937 | o,p-DDE |
| . | 0 | . | Telodrin | 7.599 | 12105 | 6.65418 | Telodrin |
| 7.911 | 967 | .23406 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.967 | 9738 | 2.7674 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.162 | 9050 | 5.01454 | Hept. epoxide |
| 8.561 | 954 | .37179 | o,p-DDT | 9.53 | 25443 | 21.61969 | o,p-DDT |
| 8.718 | 45705 | 15.37264 | Endrin | . | 0 | . | Endrin |
| 9.019 | 1706 | .52064 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.063 | 10514 | 6.30747 | Dieldrin |
| 9.558 | 29476 | 10.6828 | Endrin aldehyde | 10.193 | 7417 | 5.12372 | Endrin aldehyde |
| 9.738 | 1162 | .69079 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 10.009 | 22978 | 19.00629 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.347 | 18713 | 11.4502 | Endrin ketone |
| 11.833 | 39914 | 10.48151 | DCB | 13.371 | 18230 | 10.75255 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.33A
Area File: C:\CPWIN\DATA1\1C13088B.33A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\1C13088.CAL
Calibration File B: C:\CPWIN\DATA1\1C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/29/2004 10:04:20 AM
File Reported On: 3/29/2004 at 10:04:30 AM

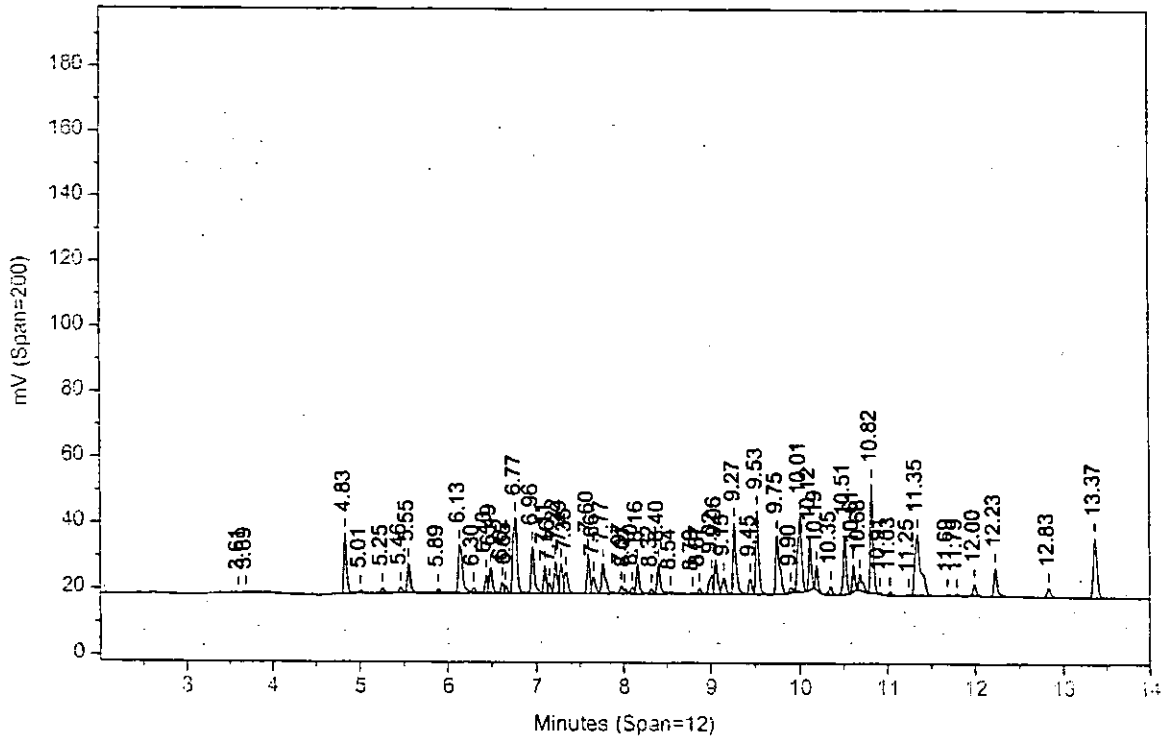
9742

10X REPLOTS

C:\CPWIN\DATA1\1C13088.33R




C:\CPWIN\DATA1\1C13088B.33R



Sample Name: **EVALX03C PMPEMPM PEM 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 11:05:42am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.72R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.549 | | 0.0000 | 0.000 | 862.6 | 0.033 | BB | 0.032 | 454.62 | 0.041 |
| 2 | 3.886 | | 0.0000 | 0.000 | 1781.5 | 0.069 | BB | 0.076 | 388.67 | 0.035 |
| 3 | 4.310 | TCX | 19.8216 | 4.432 | 188349.2 | 7.258 | BB | 0.042 | 75233.75 | 6.782 |
| 4 | 4.751 | | 0.0000 | 0.000 | 886.9 | 0.034 | BB | 0.075 | 197.33 | 0.018 |
| 5 | 4.886 | HCB | 0.1213 | 0.027 | 1837.8 | 0.071 | BB | 0.036 | 844.34 | 0.076 |
| 6 | 5.138 | alpha-BHC | 10.3090 | 2.305 | 101678.6 | 3.918 | BB | 0.035 | 47737.31 | 4.303 |
| 7 | 5.600 | gamma-BHC | 9.7337 | 2.176 | 96373.5 | 3.714 | BB | 0.036 | 45116.51 | 4.067 |
| 8 | 5.730 | beta-BHC | 10.1221 | 2.263 | 59703.6 | 2.301 | BB | 0.038 | 26080.29 | 2.351 |
| 9 | 5.831 | | 0.0000 | 0.000 | 247.9 | 0.010 | BB | 0.025 | 168.26 | 0.015 |
| 10 | 5.982 | delta-BHC | 0.0084 | 0.002 | 112.6 | 0.004 | BB | 0.051 | 36.75 | 0.003 |
| 11 | 6.028 | | 0.0000 | 0.000 | 79.7 | 0.003 | BB | 0.022 | 59.03 | 0.005 |
| 12 | 6.082 | | 0.0000 | 0.000 | 1017.0 | 0.039 | BB | 0.040 | 422.15 | 0.038 |
| 13 | 6.495 | | 0.0000 | 0.000 | 4348.9 | 0.168 | BV | 0.050 | 1448.28 | 0.131 |
| 14 | 6.687 | Aldrin | 0.0447 | 0.010 | 1194.7 | 0.046 | VV | 0.112 | 178.40 | 0.016 |
| 15 | 6.913 | | 0.0000 | 0.000 | 1137.7 | 0.044 | VB | 0.098 | 193.04 | 0.017 |
| 16 | 7.078 | | 0.0000 | 0.000 | 1643.5 | 0.063 | BB | 0.046 | 595.27 | 0.054 |
| 17 | 7.213 | | 0.0000 | 0.000 | 672.7 | 0.026 | BB | 0.038 | 296.15 | 0.027 |
| 18 | 7.522 | Hept. epoxide | 0.0295 | 0.007 | 662.9 | 0.026 | BV | 0.094 | 117.72 | 0.011 |
| 19 | 7.661 | | 0.0000 | 0.000 | 277.8 | 0.011 | VV | 0.039 | 117.53 | 0.011 |
| 20 | 7.720 | g. Chlordane | 0.0369 | 0.008 | 325.2 | 0.013 | VB | 0.038 | 142.94 | 0.013 |
| 21 | 7.849 | | 0.0000 | 0.000 | 2183.0 | 0.084 | BV | 0.086 | 423.76 | 0.038 |
| 22 | 7.966 | 4,4'-DDE | 0.4735 | 0.106 | 3964.5 | 0.153 | VV | 0.040 | 1666.24 | 0.150 |
| 23 | 8.072 | Endosulfan I | 0.0227 | 0.005 | 204.4 | 0.008 | VB | 0.041 | 82.41 | 0.007 |
| 24 | 8.269 | | 0.0000 | 0.000 | 512.3 | 0.020 | BV | 0.054 | 157.55 | 0.014 |
| 25 | 8.427 | | 0.0000 | 0.000 | 317.3 | 0.012 | VV | 0.071 | 74.28 | 0.007 |
| 26 | 8.534 | o,p-DDT | 0.7578 | 0.169 | 4788.9 | 0.185 | VB | 0.041 | 1943.95 | 0.175 |
| 27 | 8.700 | Endrin | 49.2734 | 11.016 | 346173.7 | 13.341 | BV | 0.039 | 146496.30 | 13.205 |
| 28 | 8.829 | | 0.0000 | 0.000 | 648.6 | 0.025 | VB | 0.027 | 397.91 | 0.036 |
| 29 | 8.989 | Endosulfan II | 0.1095 | 0.024 | 938.0 | 0.036 | BV | 0.044 | 358.86 | 0.032 |
| 30 | 9.118 | 4,4'-DDT | 99.0393 | 22.142 | 630597.6 | 24.301 | VB | 0.037 | 287700.00 | 25.934 |
| 31 | 9.332 | | 0.0000 | 0.000 | 399.9 | 0.015 | BB | 0.061 | 108.56 | 0.010 |
| 32 | 9.428 | | 0.0000 | 0.000 | 214.0 | 0.008 | BB | 0.038 | 94.94 | 0.009 |
| 33 | 9.547 | Endrin aldehyde | 1.0304 | 0.230 | 6859.8 | 0.264 | BV | 0.040 | 2842.96 | 0.256 |
| 34 | 9.630 | | 0.0000 | 0.000 | 1297.9 | 0.050 | VV | 0.042 | 511.91 | 0.046 |
| 35 | 9.729 | Methoxychlor | 225.3298 | 50.377 | 870092.3 | 33.531 | VB | 0.038 | 379032.00 | 34.167 |
| 36 | 10.062 | | 0.0000 | 0.000 | 108.8 | 0.004 | BB | 0.036 | 49.88 | 0.004 |
| 37 | 10.181 | | 0.0000 | 0.000 | 376.9 | 0.015 | BB | 0.053 | 118.48 | 0.011 |
| 38 | 10.281 | | 0.0000 | 0.000 | 11181.9 | 0.431 | BV | 0.045 | 4152.30 | 0.374 |
| 39 | 10.344 | | 0.0000 | 0.000 | 3530.7 | 0.136 | VV | 0.040 | 1478.29 | 0.133 |
| 40 | 10.480 | Endrin ketone | 1.7342 | 0.388 | 16727.6 | 0.645 | VV | 0.046 | 6058.46 | 0.546 |
| 41 | 10.651 | | 0.0000 | 0.000 | 1097.0 | 0.042 | VV | 0.064 | 287.52 | 0.026 |
| 42 | 10.766 | | 0.0000 | 0.000 | 2609.3 | 0.101 | VV | 0.123 | 354.62 | 0.032 |
| 43 | 10.866 | | 0.0000 | 0.000 | 1773.9 | 0.068 | VB | 0.047 | 632.62 | 0.057 |
| 44 | 11.088 | | 0.0000 | 0.000 | 661.4 | 0.025 | BB | 0.111 | 99.23 | 0.009 |
| 45 | 11.171 | | 0.0000 | 0.000 | 137.4 | 0.005 | BB | 0.039 | 59.26 | 0.005 |
| 46 | 11.522 | | 0.0000 | 0.000 | 860.7 | 0.033 | BB | 0.041 | 347.18 | 0.031 |
| 47 | 11.672 | | 0.0000 | 0.000 | 452.7 | 0.017 | BB | 0.064 | 117.62 | 0.011 |
| 48 | 11.821 | DCB | 19.2866 | 4.312 | 219346.0 | 8.453 | BB | 0.050 | 73443.95 | 6.620 |
| 49 | 12.484 | | 0.0000 | 0.000 | 1209.8 | 0.047 | BB | 0.122 | 165.51 | 0.015 |
| 50 | 12.770 | | 0.0000 | 0.000 | 2437.3 | 0.094 | BB | 0.147 | 276.59 | 0.025 |

Total Area = 2594898.0, Total Amount = 447.284, Total Height = 1109362.0, Sample Units = PPB

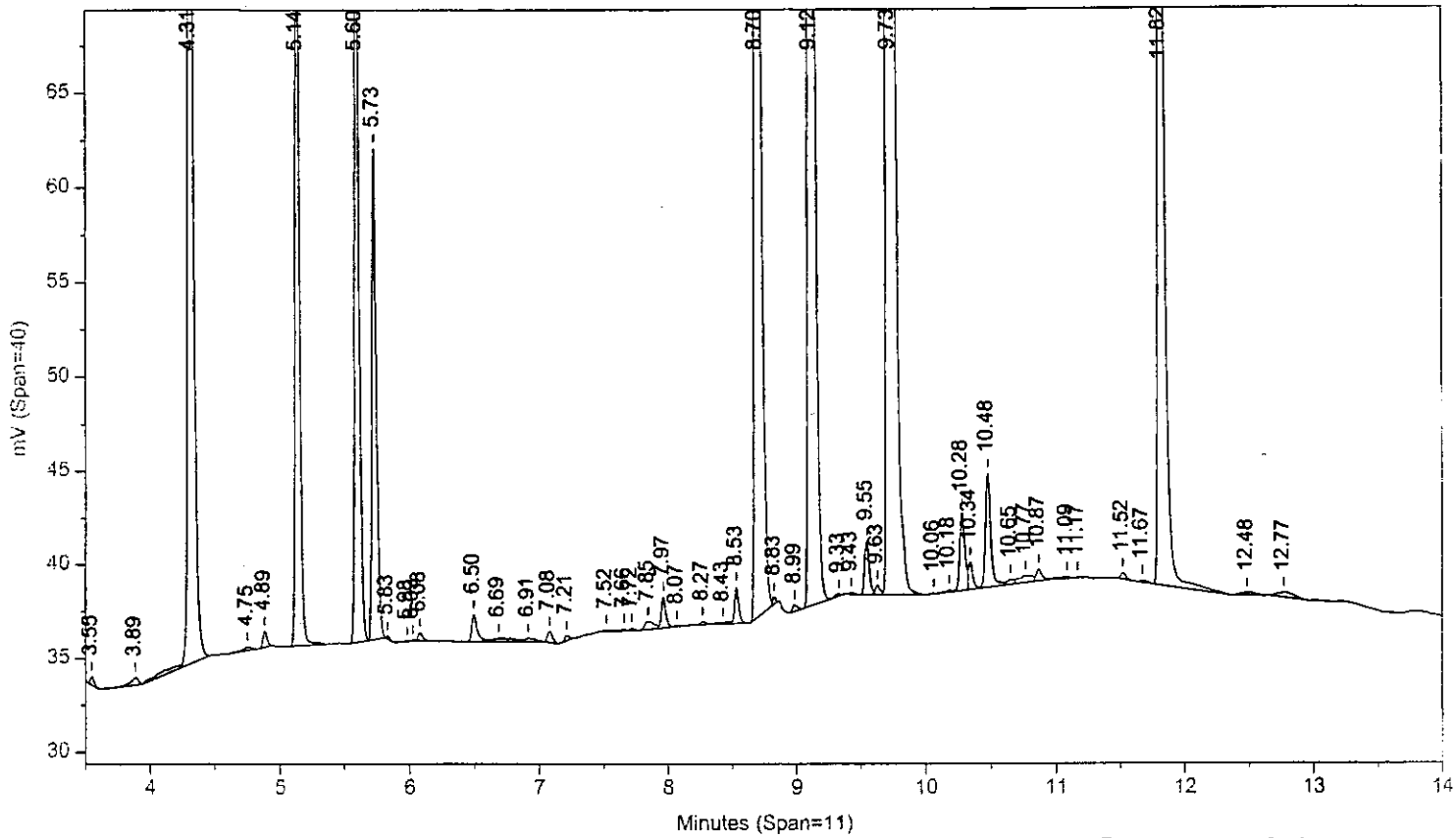
Sample Name: **EVALX03C PMPEMPM PEM 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 11:05:42am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.72R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.599 | | 0.0000 | 0.000 | 1349.2 | 0.122 | BB | 0.176 | 127.67 | 0.026 |
| 2 | 3.680 | | 0.0000 | 0.000 | 5843.6 | 0.530 | BB | 0.256 | 380.22 | 0.078 |
| 3 | 4.825 | TCX | 19.5189 | 4.056 | 81216.5 | 7.371 | BB | 0.035 | 38183.06 | 7.835 |
| 4 | 5.388 | | 0.0000 | 0.000 | 795.8 | 0.072 | BB | 0.032 | 412.20 | 0.085 |
| 5 | 5.752 | alpha-BHC | 10.4283 | 2.167 | 34766.1 | 3.155 | BB | 0.032 | 17958.56 | 3.685 |
| 6 | 6.283 | gamma-BHC | 10.0542 | 2.089 | 34684.2 | 3.148 | BV | 0.033 | 17559.58 | 3.603 |
| 7 | 6.404 | beta-BHC | 10.4722 | 2.176 | 25048.7 | 2.273 | VB | 0.034 | 12107.71 | 2.484 |
| 8 | 7.431 | | 0.0000 | 0.000 | 39037.8 | 3.543 | BB | 1.415 | 459.76 | 0.094 |
| 9 | 8.654 | | 0.0000 | 0.000 | 23657.2 | 2.147 | BV | 0.309 | 1274.08 | 0.261 |
| 10 | 8.816 | 4,4'-DDE | 0.9698 | 0.202 | 21300.5 | 1.933 | VB | 0.230 | 1542.15 | 0.316 |
| 11 | 9.431 | | 0.0000 | 0.000 | 2721.1 | 0.247 | BV | 0.126 | 359.04 | 0.074 |
| 12 | 9.484 | Endrin | 54.9304 | 11.416 | 143295.0 | 13.005 | VV | 0.034 | 69770.33 | 14.317 |
| 13 | 9.574 | 4,4'-DDD | 1.1828 | 0.246 | 5053.4 | 0.459 | VB | 0.064 | 1322.50 | 0.271 |
| 14 | 9.913 | | 0.0000 | 0.000 | 766.2 | 0.070 | BB | 0.034 | 380.43 | 0.078 |
| 15 | 9.988 | 4,4'-DDT | 105.2021 | 21.863 | 244822.6 | 22.219 | BB | 0.032 | 127184.70 | 26.098 |
| 16 | 10.198 | Endrin aldehyde | 1.1356 | 0.236 | 3757.8 | 0.341 | BB | 0.038 | 1643.89 | 0.337 |
| 17 | 10.785 | | 0.0000 | 0.000 | 1687.8 | 0.153 | BB | 0.458 | 61.41 | 0.013 |
| 18 | 10.861 | Methoxychlor | 245.5480 | 51.030 | 316922.3 | 28.763 | BB | 0.034 | 157333.80 | 32.285 |
| 19 | 11.029 | | 0.0000 | 0.000 | 1578.4 | 0.143 | BB | 0.032 | 814.72 | 0.167 |
| 20 | 11.174 | | 0.0000 | 0.000 | 4208.6 | 0.382 | BB | 0.041 | 1707.45 | 0.350 |
| 21 | 11.309 | Endrin ketone | 1.7838 | 0.371 | 7003.0 | 0.636 | BB | 0.040 | 2915.26 | 0.598 |
| 22 | 13.349 | DCB | 19.9553 | 4.147 | 102341.2 | 9.288 | BB | 0.050 | 33832.05 | 6.942 |

Total Area = 1101857.0, Total Amount = 481.182, Total Height = 487330.5, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.72R

C:\CPWIN\DATA1\1C13088.72R

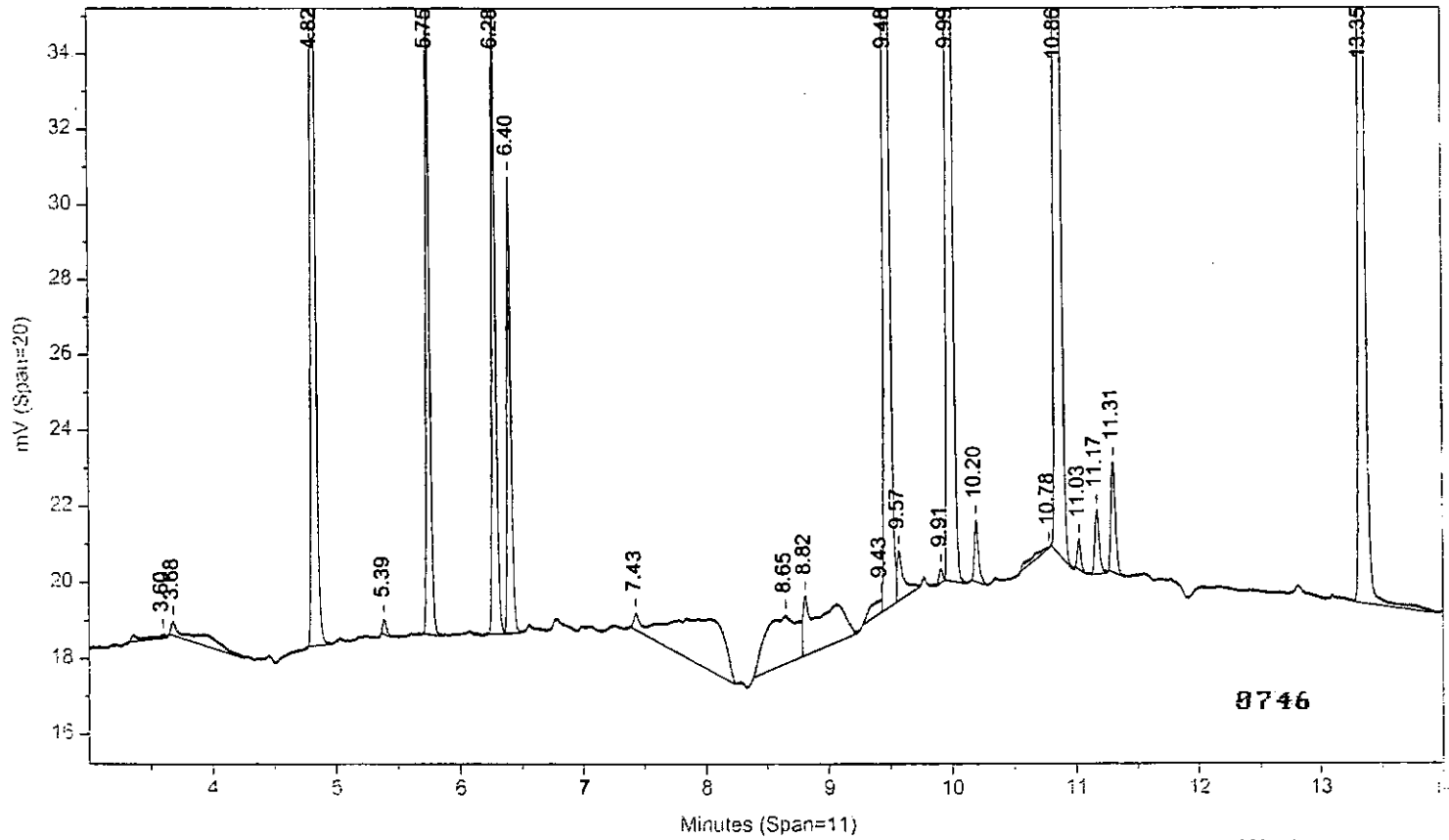



Instrument ID: CP13--H6722A Injected On: 3/30/2004 10:51:42 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.5758252

%ENDRIN BD= 5.728155

File: C:\CPWIN\DATA1\1C13088B.72R

C:\CPWIN\DATA1\1C13088B.72R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 10:51:42 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.50UM %DDT BD= 2.202743

%ENDRIN BD= 6.133716

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 75234 | 19.822 | TCX | 4.825 | 38183 | 19.519 | TCX |
| 4.886 | 844 | .121 | HCB | . | 0 | . | HCB |
| 5.138 | 47737 | 10.309 | alpha-BHC | 5.752 | 17959 | 10.428 | alpha-BHC |
| 5.6 | 45117 | 9.734 | gamma-BHC | 6.283 | 17560 | 10.054 | gamma-BHC |
| 5.73 | 26080 | 10.122 | beta-BHC | 6.404 | 12108 | 10.472 | beta-BHC |
| 5.982 | 37 | .008 | delta-BHC | . | 0 | . | delta-BHC |
| 6.687 | 178 | .045 | Aldrin | . | 0 | . | Aldrin |
| 7.522 | 118 | .029 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.72 | 143 | .037 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.966 | 1666 | .474 | 4,4'-DDE | 8.816 | 1542 | .97 | 4,4'-DDE |
| 8.072 | 82 | .023 | Endosulfan I | . | 0 | . | Endosulfan I |
| 8.534 | 1944 | .758 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.7 | 146496 | 49.273 | Endrin | 9.484 | 69770 | 54.93 | Endrin |
| 8.989 | 359 | .109 | Endosulfan II | . | 0 | . | Endosulfan II |
| 9.118 | 287700 | 99.039 | 4,4'-DDT | 9.988 | 127185 | 105.202 | 4,4'-DDT |
| 9.547 | 2843 | 1.03 | Endrin aldehyde | 10.198 | 1644 | 1.136 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.574 | 1323 | 1.183 | 4,4'-DDD |
| 9.729 | 379032 | 225.33 | Methoxychlor | 10.861 | 157334 | 245.548 | Methoxychlor |
| 10.48 | 6058 | 1.734 | Endrin ketone | 11.309 | 2915 | 1.784 | Endrin ketone |
| 11.821 | 73444 | 19.287 | DCB | 13.349 | 33832 | 19.955 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.72A
Area File: C:\CPWIN\DATA1\1C13088B.72A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/30/2004 8:09:20 PM
File Reported On: 3/30/2004 at 8:09:31 PM

Sample Name: **MIXA30424B RDMIXA3RD CCAL 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 11:26:21am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.73R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.553 | | 0.0000 | 0.000 | 834.8 | 0.024 | BB | 0.030 | 471.28 | 0.032 |
| 2 | 3.694 | | 0.0000 | 0.000 | 65.0 | 0.002 | BB | 0.031 | 35.05 | 0.002 |
| 3 | 3.883 | | 0.0000 | 0.000 | 2674.2 | 0.077 | BB | 0.061 | 733.02 | 0.050 |
| 4 | 3.985 | | 0.0000 | 0.000 | 1812.3 | 0.052 | BB | 0.035 | 854.24 | 0.059 |
| 5 | 4.312 | TCX | 38.4302 | 8.361 | 361762.5 | 10.399 | BB | 0.041 | 145863.30 | 10.016 |
| 6 | 4.761 | | 0.0000 | 0.000 | 749.0 | 0.022 | BB | 0.067 | 187.05 | 0.013 |
| 7 | 4.888 | HCB | 0.2745 | 0.060 | 5663.7 | 0.163 | BB | 0.049 | 1910.25 | 0.131 |
| 8 | 5.140 | alpha-BHC | 10.2231 | 2.224 | 100156.9 | 2.879 | BB | 0.035 | 47339.89 | 3.251 |
| 9 | 5.300 | | 0.0000 | 0.000 | 243.5 | 0.007 | BB | 0.044 | 91.81 | 0.006 |
| 10 | 5.602 | gamma-BHC | 10.2276 | 2.225 | 101631.7 | 2.921 | BB | 0.036 | 47405.65 | 3.255 |
| 11 | 5.732 | beta-BHC | 10.2415 | 2.228 | 59986.0 | 1.724 | BB | 0.038 | 26387.92 | 1.812 |
| 12 | 5.833 | | 0.0000 | 0.000 | 451.3 | 0.013 | BB | 0.026 | 290.95 | 0.020 |
| 13 | 5.989 | delta-BHC | 10.1562 | 2.210 | 92885.7 | 2.670 | BB | 0.035 | 44662.45 | 3.067 |
| 14 | 6.194 | | 0.0000 | 0.000 | 206.9 | 0.006 | BV | 0.034 | 100.20 | 0.007 |
| 15 | 6.283 | Heptachlor | 10.2569 | 2.231 | 113336.3 | 3.258 | VB | 0.037 | 50681.05 | 3.480 |
| 16 | 6.498 | | 0.0000 | 0.000 | 176.8 | 0.005 | BB | 0.036 | 81.04 | 0.006 |
| 17 | 6.706 | Aldrin | 10.0996 | 2.197 | 90495.1 | 2.601 | BV | 0.037 | 40267.05 | 2.765 |
| 18 | 6.911 | | 0.0000 | 0.000 | 994.2 | 0.029 | VB | 0.078 | 213.31 | 0.015 |
| 19 | 7.082 | | 0.0000 | 0.000 | 234.2 | 0.007 | BB | 0.042 | 93.02 | 0.006 |
| 20 | 7.172 | | 0.0000 | 0.000 | 454.4 | 0.013 | BB | 0.038 | 200.39 | 0.014 |
| 21 | 7.538 | Hept. epoxide | 10.1375 | 2.205 | 94673.7 | 2.721 | BV | 0.039 | 40460.46 | 2.778 |
| 22 | 7.706 | g. Chlordane | 10.1422 | 2.207 | 93174.4 | 2.678 | VV | 0.040 | 39271.91 | 2.697 |
| 23 | 7.881 | a. Chlordane | 9.7929 | 2.131 | 94536.6 | 2.717 | VV | 0.039 | 40471.49 | 2.779 |
| 24 | 7.967 | 4,4'-DDE | 20.3869 | 4.435 | 159853.2 | 4.595 | VV | 0.037 | 71738.95 | 4.926 |
| 25 | 8.073 | Endosulfan I | 10.0259 | 2.181 | 88426.2 | 2.542 | VB | 0.041 | 36367.90 | 2.497 |
| 26 | 8.261 | | 0.0000 | 0.000 | 142.1 | 0.004 | BB | 0.043 | 55.41 | 0.004 |
| 27 | 8.389 | Dieldrin | 20.1350 | 4.381 | 164793.9 | 4.737 | BV | 0.039 | 70301.91 | 4.827 |
| 28 | 8.532 | o,p-DDT | 0.1274 | 0.028 | 852.2 | 0.024 | VB | 0.043 | 326.86 | 0.022 |
| 29 | 8.701 | Endrin | 19.9488 | 4.340 | 130240.6 | 3.744 | BV | 0.037 | 59310.35 | 4.073 |
| 30 | 8.755 | 4,4'-DDD | 20.2808 | 4.412 | 134508.9 | 3.866 | VB | 0.039 | 57721.57 | 3.963 |
| 31 | 9.003 | Endosulfan II | 20.1555 | 4.385 | 157710.1 | 4.533 | BV | 0.040 | 66063.32 | 4.536 |
| 32 | 9.119 | 4,4'-DDT | 20.4459 | 4.448 | 131598.3 | 3.783 | VB | 0.037 | 59393.48 | 4.078 |
| 33 | 9.321 | | 0.0000 | 0.000 | 752.6 | 0.022 | BB | 0.063 | 199.21 | 0.014 |
| 34 | 9.412 | | 0.0000 | 0.000 | 2627.7 | 0.076 | BV | 0.044 | 989.69 | 0.068 |
| 35 | 9.546 | Endrin aldehyde | 19.9761 | 4.346 | 141402.1 | 4.064 | VV | 0.043 | 55117.69 | 3.785 |
| 36 | 9.731 | Methoxychlor | 100.2342 | 21.807 | 390162.7 | 11.215 | VB | 0.039 | 168606.10 | 11.577 |
| 37 | 9.989 | Mirex | 0.0173 | 0.004 | 76.4 | 0.002 | BB | 0.026 | 48.31 | 0.003 |
| 38 | 10.113 | Endo. sulfate | 19.9142 | 4.332 | 139057.0 | 3.997 | BB | 0.040 | 58201.32 | 3.996 |
| 39 | 10.287 | | 0.0000 | 0.000 | 6704.7 | 0.193 | BV | 0.043 | 2573.06 | 0.177 |
| 40 | 10.346 | | 0.0000 | 0.000 | 3246.5 | 0.093 | VB | 0.037 | 1443.34 | 0.099 |
| 41 | 10.486 | Endrin ketone | 20.3819 | 4.434 | 172045.5 | 4.945 | BV | 0.040 | 71205.91 | 4.889 |
| 42 | 10.651 | | 0.0000 | 0.000 | 1298.5 | 0.037 | VV | 0.070 | 309.00 | 0.021 |
| 43 | 10.769 | | 0.0000 | 0.000 | 488.6 | 0.014 | VB | 0.067 | 122.35 | 0.008 |
| 44 | 10.867 | | 0.0000 | 0.000 | 8913.3 | 0.256 | BB | 0.035 | 4238.42 | 0.291 |
| 45 | 11.524 | | 0.0000 | 0.000 | 1307.4 | 0.038 | BB | 0.043 | 501.04 | 0.034 |
| 46 | 11.821 | DCB | 37.6376 | 8.188 | 423427.0 | 12.171 | BB | 0.049 | 143325.10 | 9.841 |
| 47 | 13.123 | | 0.0000 | 0.000 | 2151.4 | 0.062 | BB | 0.300 | 119.50 | 0.008 |

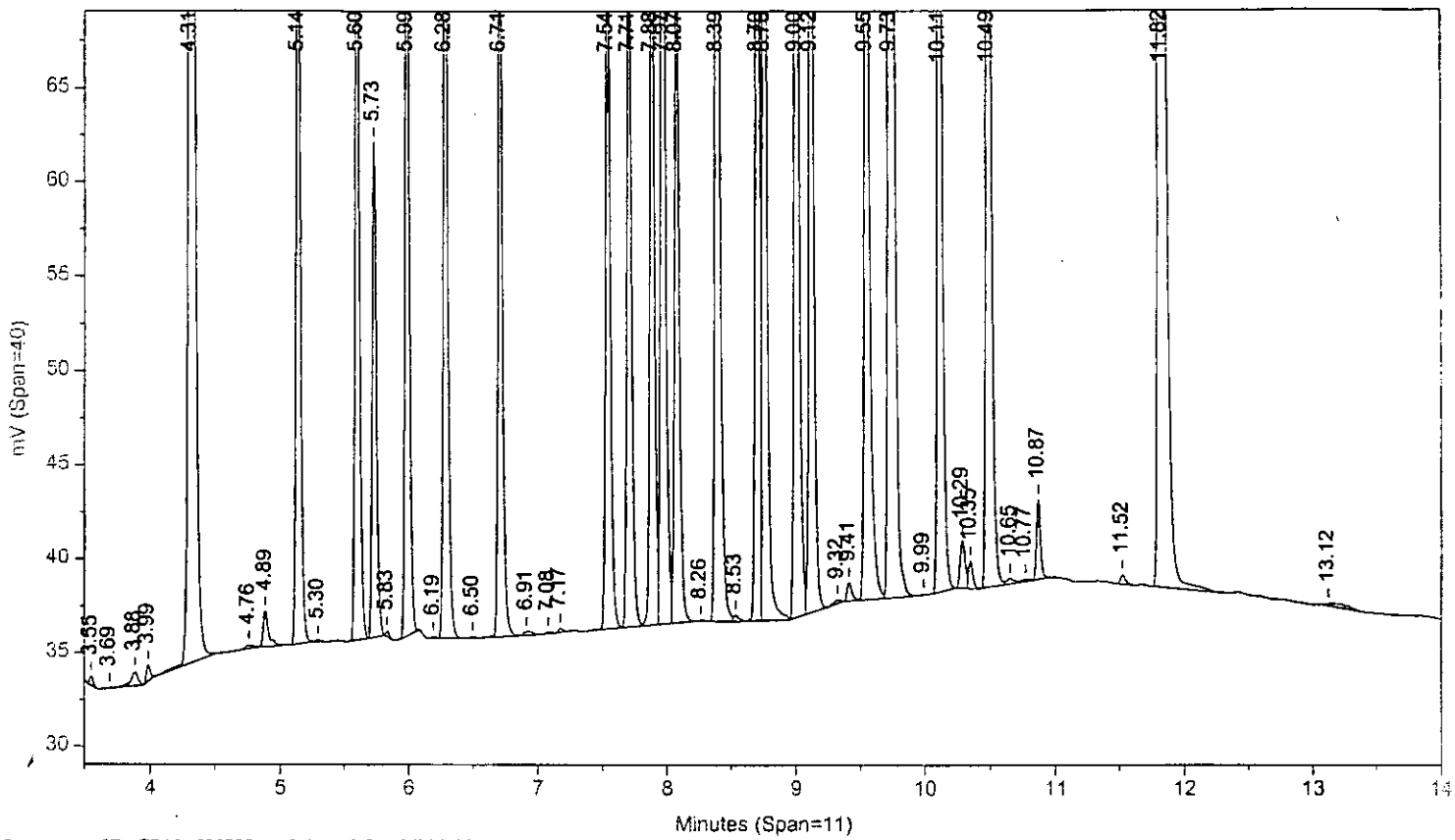
Total Area = 3478986.0, Total Amount = 459.65, Total Height = 1456353.0, Sample Units = PPB

Sample Name: **MIXA30424B RDMIXA3RD CCAL 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 11:26:21am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.73R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.359 | | 0.0000 | 0.000 | 2161.4 | 0.147 | BB | 0.089 | 405.14 | 0.060 |
| 2 | 3.686 | | 0.0000 | 0.000 | 6684.4 | 0.453 | BB | 0.276 | 403.46 | 0.060 |
| 3 | 4.754 | | 0.0000 | 0.000 | 1441.7 | 0.098 | BB | 0.314 | 76.48 | 0.011 |
| 4 | 4.826 | TCX | 39.3743 | 8.070 | 160854.7 | 10.906 | BB | 0.035 | 77024.45 | 11.422 |
| 5 | 5.390 | | 0.0000 | 0.000 | 1998.9 | 0.136 | BB | 0.037 | 892.94 | 0.132 |
| 6 | 5.754 | alpha-BHC | 10.3566 | 2.123 | 34847.2 | 2.363 | BB | 0.033 | 17834.99 | 2.645 |
| 7 | 6.284 | gamma-BHC | 10.5402 | 2.160 | 36396.1 | 2.468 | BV | 0.033 | 18408.20 | 2.730 |
| 8 | 6.405 | beta-BHC | 10.6070 | 2.174 | 27704.5 | 1.878 | VV | 0.038 | 12263.49 | 1.819 |
| 9 | 6.833 | delta-BHC | 10.2688 | 2.105 | 34244.6 | 2.322 | VV | 0.033 | 17392.01 | 2.579 |
| 10 | 6.921 | Heptachlor | 10.7200 | 2.197 | 42682.4 | 2.894 | VB | 0.036 | 19790.76 | 2.935 |
| 11 | 7.384 | Aldrin | 10.2859 | 2.108 | 37508.5 | 2.543 | BV | 0.036 | 17478.93 | 2.592 |
| 12 | 8.169 | Hept. epoxide | 10.3310 | 2.117 | 40075.2 | 2.717 | VV | 0.036 | 18644.82 | 2.765 |
| 13 | 8.424 | g. Chlordane | 10.4304 | 2.138 | 40456.3 | 2.743 | VV | 0.035 | 19015.35 | 2.820 |
| 14 | 8.618 | a. Chlordane | 10.5417 | 2.161 | 41318.8 | 2.801 | VV | 0.035 | 19763.89 | 2.931 |
| 15 | 8.708 | Endosulfan I | 10.5132 | 2.155 | 37480.5 | 2.541 | VV | 0.036 | 17385.09 | 2.578 |
| 16 | 8.814 | 4,4'-DDE | 21.6490 | 4.437 | 67470.6 | 4.574 | VB | 0.033 | 34426.09 | 5.105 |
| 17 | 9.072 | Dieldrin | 20.9083 | 4.285 | 71342.5 | 4.837 | BV | 0.034 | 34850.73 | 5.168 |
| 18 | 9.485 | Endrin | 21.0217 | 4.309 | 55846.0 | 3.786 | VV | 0.035 | 26700.97 | 3.959 |
| 19 | 9.578 | 4,4'-DDD | 22.2757 | 4.566 | 50667.4 | 3.435 | VB | 0.034 | 24905.83 | 3.693 |
| 20 | 9.764 | Endosulfan II | 21.0257 | 4.309 | 70178.2 | 4.758 | BB | 0.035 | 33562.66 | 4.977 |
| 21 | 9.990 | 4,4'-DDT | 22.1396 | 4.538 | 54140.7 | 3.671 | BB | 0.034 | 26765.81 | 3.969 |
| 22 | 10.199 | Endrin aldehyde | 20.9872 | 4.301 | 65370.4 | 4.432 | BB | 0.036 | 30380.85 | 4.505 |
| 23 | 10.360 | | 0.0000 | 0.000 | 2603.5 | 0.177 | BB | 0.046 | 944.01 | 0.140 |
| 24 | 10.556 | Endo. sulfate | 20.9574 | 4.295 | 62836.7 | 4.260 | BB | 0.035 | 29623.38 | 4.393 |
| 25 | 10.863 | Methoxychlor | 111.5628 | 22.865 | 147317.9 | 9.988 | BB | 0.034 | 71483.33 | 10.600 |
| 26 | 11.175 | | 0.0000 | 0.000 | 2801.4 | 0.190 | BB | 0.040 | 1181.06 | 0.175 |
| 27 | 11.313 | Endrin ketone | 22.2110 | 4.552 | 84278.2 | 5.714 | BB | 0.039 | 36299.74 | 5.383 |
| 28 | 13.348 | DCB | 39.2051 | 8.035 | 194269.3 | 13.171 | BB | 0.049 | 66467.94 | 9.856 |

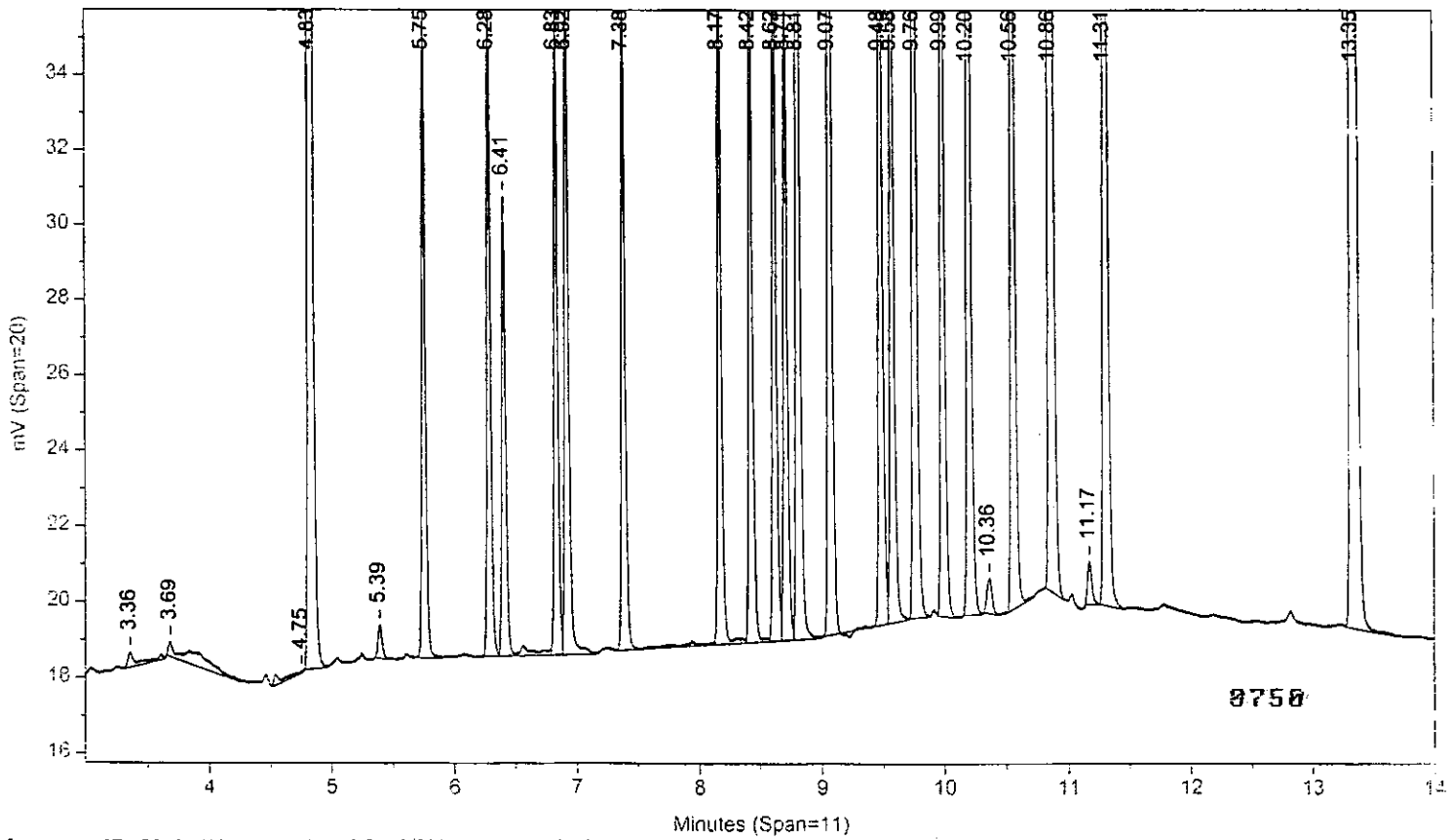
Total Area = 1474978.0, Total Amount = 487.913, Total Height = 674372.4, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.73R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 11:12:21 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.73R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 11:12:21 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

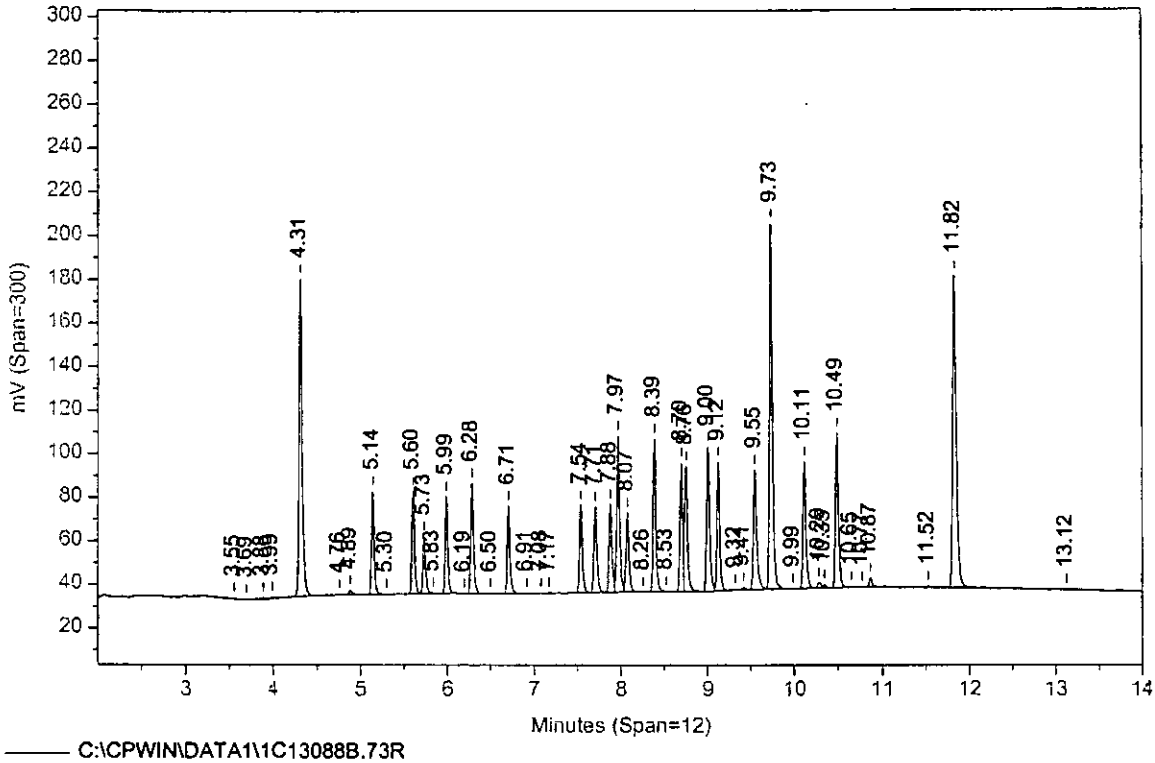
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 145863 | 38.43022 | TCX | 4.826 | 77024 | 39.37428 | TCX |
| 4.888 | 1910 | .27453 | HCB | . | 0 | . | HCB |
| 5.14 | 47340 | 10.22315 | alpha-BHC | 5.754 | 17835 | 10.35657 | alpha-BHC |
| 5.602 | 47406 | 10.22758 | gamma-BHC | 6.284 | 18408 | 10.54015 | gamma-BHC |
| 5.732 | 26388 | 10.24151 | beta-BHC | 6.405 | 12263 | 10.60698 | beta-BHC |
| 5.989 | 44662 | 10.15618 | delta-BHC | 6.833 | 17392 | 10.26882 | delta-BHC |
| 6.283 | 50681 | 10.25686 | Heptachlor | 6.921 | 19791 | 10.72002 | Heptachlor |
| 6.706 | 40267 | 10.09963 | Aldrin | 7.384 | 17479 | 10.28585 | Aldrin |
| 7.538 | 40460 | 10.13752 | Hept. epoxide | 8.169 | 18645 | 10.33102 | Hept. epoxide |
| 7.706 | 39272 | 10.14218 | g. Chlordane | 8.424 | 19015 | 10.43037 | g. Chlordane |
| 7.881 | 40471 | 9.79294 | a. Chlordane | 8.618 | 19764 | 10.54174 | a. Chlordane |
| 7.967 | 71739 | 20.38686 | 4,4'-DDE | 8.814 | 34426 | 21.64895 | 4,4'-DDE |
| 8.073 | 36368 | 10.02594 | Endosulfan I | 8.708 | 17385 | 10.51317 | Endosulfan I |
| 8.389 | 70302 | 20.13497 | Dieldrin | 9.072 | 34851 | 20.90832 | Dieldrin |
| 8.532 | 327 | .12742 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.701 | 59310 | 19.94876 | Endrin | 9.485 | 26701 | 21.02175 | Endrin |
| 8.755 | 57722 | 20.28079 | 4,4'-DDD | 9.578 | 24906 | 22.27569 | 4,4'-DDD |
| 9.003 | 66063 | 20.1555 | Endosulfan II | 9.764 | 33563 | 21.02573 | Endosulfan II |
| 9.119 | 59393 | 20.4459 | 4,4'-DDT | 9.99 | 26766 | 22.13962 | 4,4'-DDT |
| 9.546 | 55118 | 19.97613 | Endrin aldehyde | 10.199 | 30381 | 20.9872 | Endrin aldehyde |
| 9.731 | 168606 | 100.2342 | Methoxychlor | 10.863 | 71483 | 111.5628 | Methoxychlor |
| 9.989 | 48 | .01733 | Mirex | . | 0 | . | Mirex |
| 10.113 | 58201 | 19.91416 | Endo. sulfate | 10.556 | 29623 | 20.95742 | Endo. sulfate |
| 10.486 | 71206 | 20.38195 | Endrin ketone | 11.313 | 36300 | 22.21104 | Endrin ketone |
| 11.821 | 143325 | 37.63763 | DCB | 13.348 | 66468 | 39.20507 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.73A
Area File: C:\CPWIN\DATA1\1C13088B.73A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:09:40 PM
File Reported On: 3/30/2004 at 8:09:51 PM

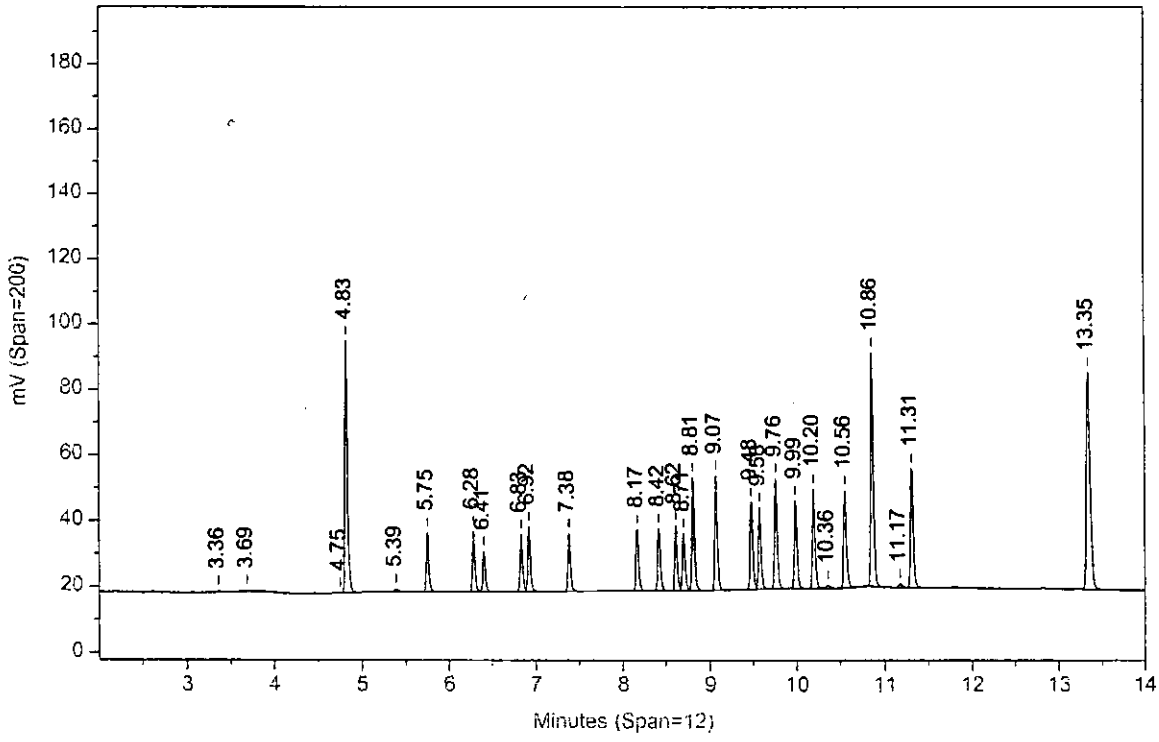
8751

10X REPLOTS

C:\CPWIN\DATA1\1C13088.73R




C:\CPWIN\DATA1\1C13088B.73R




8752

Sample Name: **AR1630424D HBAR163HB CCAL 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 11:46:58am by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.74R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.551 | | 0.0000 | 0.000 | 1063.1 | 0.044 | BB | 0.033 | 535.79 | 0.060 |
| 2 | 3.885 | | 0.0000 | 0.000 | 2075.9 | 0.085 | BB | 0.074 | 468.28 | 0.052 |
| 3 | 4.223 | | 0.0000 | 0.000 | 333.2 | 0.014 | BB | 0.028 | 196.08 | 0.022 |
| 4 | 4.312 | TCX | 8.1887 | 7.633 | 78694.6 | 3.222 | BB | 0.042 | 31080.49 | 3.476 |
| 5 | 4.562 | | 0.0000 | 0.000 | 7497.9 | 0.307 | BB | 0.042 | 2971.82 | 0.332 |
| 6 | 4.779 | | 0.0000 | 0.000 | 4705.1 | 0.193 | BB | 0.030 | 2602.31 | 0.291 |
| 7 | 4.840 | | 0.0000 | 0.000 | 40733.9 | 1.668 | BB | 0.040 | 16841.86 | 1.884 |
| 8 | 5.024 | | 0.0000 | 0.000 | 5620.8 | 0.230 | BB | 0.041 | 2263.55 | 0.253 |
| 9 | 5.256 | | 0.0000 | 0.000 | 145.2 | 0.006 | BB | 0.088 | 27.39 | 0.003 |
| 10 | 5.352 | | 0.0000 | 0.000 | 95585.2 | 3.914 | BB | 0.055 | 29147.43 | 3.260 |
| 11 | 5.524 | | 0.0000 | 0.000 | 9105.3 | 0.373 | BB | 0.039 | 3858.95 | 0.432 |
| 12 | 5.608 | gamma-BHC | 0.8268 | 0.771 | 5779.3 | 0.237 | BB | 0.025 | 3832.42 | 0.429 |
| 13 | 5.642 | | 0.0000 | 0.000 | 14418.1 | 0.590 | BB | 0.028 | 8489.03 | 0.949 |
| 14 | 5.735 | beta-BHC | 0.1043 | 0.097 | 462.7 | 0.019 | BB | 0.029 | 268.64 | 0.030 |
| 15 | 5.833 | | 0.0000 | 0.000 | 53.2 | 0.002 | BB | 0.021 | 41.69 | 0.005 |
| 16 | 5.900 | | 0.0000 | 0.000 | 17277.7 | 0.708 | BB | 0.039 | 7290.34 | 0.815 |
| 17 | 6.000 | delta-BHC | 10.8371 | 10.102 | 160195.6 | 6.560 | BB | 0.056 | 47656.68 | 5.330 |
| 18 | 6.080 | | 0.0000 | 0.000 | 2237.3 | 0.092 | BB | 0.024 | 1554.69 | 0.174 |
| 19 | 6.133 | | 0.0000 | 0.000 | 268.9 | 0.011 | BV | 0.016 | 279.26 | 0.031 |
| 20 | 6.186 | | 0.0000 | 0.000 | 70926.5 | 2.904 | VV | 0.045 | 26028.22 | 2.911 |
| 21 | 6.273 | Heptachlor | 3.7398 | 3.486 | 44153.5 | 1.808 | VB | 0.040 | 18479.23 | 2.067 |
| 22 | 6.435 | | 0.0000 | 0.000 | 35454.9 | 1.452 | BV | 0.034 | 17561.10 | 1.964 |
| 23 | 6.466 | | 0.0000 | 0.000 | 48786.3 | 1.998 | VV | 0.040 | 20359.80 | 2.277 |
| 24 | 6.518 | | 0.0000 | 0.000 | 38392.3 | 1.572 | VB | 0.045 | 14226.60 | 1.591 |
| 25 | 6.743 | | 0.0000 | 0.000 | 76425.9 | 3.130 | BV | 0.057 | 22491.49 | 2.515 |
| 26 | 6.858 | | 0.0000 | 0.000 | 26767.5 | 1.096 | VV | 0.036 | 12354.73 | 1.382 |
| 27 | 6.909 | | 0.0000 | 0.000 | 37834.2 | 1.549 | VB | 0.050 | 12713.93 | 1.422 |
| 28 | 7.059 | | 0.0000 | 0.000 | 10357.6 | 0.424 | BB | 0.044 | 3928.86 | 0.439 |
| 29 | 7.191 | | 0.0000 | 0.000 | 2853.1 | 0.117 | BB | 0.029 | 1667.95 | 0.187 |
| 30 | 7.253 | | 0.0000 | 0.000 | 31305.1 | 1.282 | BV | 0.039 | 13433.65 | 1.502 |
| 31 | 7.340 | | 0.0000 | 0.000 | 6789.0 | 0.278 | VB | 0.036 | 3186.28 | 0.356 |
| 32 | 7.524 | Hept. epoxide | 0.5637 | 0.525 | 4874.0 | 0.200 | BV | 0.036 | 2249.81 | 0.252 |
| 33 | 7.590 | | 0.0000 | 0.000 | 49243.5 | 2.016 | VB | 0.047 | 17314.10 | 1.936 |
| 34 | 7.845 | | 0.0000 | 0.000 | 1389.3 | 0.057 | BV | 0.048 | 479.55 | 0.054 |
| 35 | 7.904 | a. Chlordane | 0.2138 | 0.199 | 2107.4 | 0.086 | VV | 0.040 | 883.74 | 0.099 |
| 36 | 7.960 | 4,4'-DDE | 2.8540 | 2.660 | 26720.9 | 1.094 | VB | 0.044 | 10042.99 | 1.123 |
| 37 | 8.123 | | 0.0000 | 0.000 | 14301.8 | 0.586 | BV | 0.033 | 7328.83 | 0.820 |
| 38 | 8.175 | o,p-DDD | 6.7901 | 6.330 | 29133.9 | 1.193 | VB | 0.033 | 14620.65 | 1.635 |
| 39 | 8.256 | | 0.0000 | 0.000 | 11249.8 | 0.461 | BB | 0.038 | 4938.49 | 0.552 |
| 40 | 8.358 | | 0.0000 | 0.000 | 93747.5 | 3.839 | BV | 0.042 | 37024.61 | 4.141 |
| 41 | 8.488 | | 0.0000 | 0.000 | 12818.8 | 0.525 | VV | 0.046 | 4685.46 | 0.524 |
| 42 | 8.555 | | 0.0000 | 0.000 | 1953.4 | 0.080 | VB | 0.034 | 961.31 | 0.108 |
| 43 | 8.636 | | 0.0000 | 0.000 | 16312.3 | 0.668 | BV | 0.037 | 7263.33 | 0.812 |
| 44 | 8.711 | Endrin | 15.7229 | 14.657 | 149993.5 | 6.142 | VV | 0.053 | 46746.25 | 5.228 |
| 45 | 8.776 | Kepone | 36.5868 | 34.106 | 31457.8 | 1.288 | VV | 0.037 | 14234.71 | 1.592 |
| 46 | 8.881 | | 0.0000 | 0.000 | 56068.8 | 2.296 | VB | 0.041 | 22602.03 | 2.528 |
| 47 | 9.012 | Endosulfan II | 0.5043 | 0.470 | 3347.7 | 0.137 | BV | 0.034 | 1652.83 | 0.185 |
| 48 | 9.085 | | 0.0000 | 0.000 | 160193.0 | 6.560 | VV | 0.055 | 48453.13 | 5.419 |
| 49 | 9.224 | | 0.0000 | 0.000 | 77571.0 | 3.176 | VV | 0.042 | 30775.82 | 3.442 |
| 50 | 9.284 | | 0.0000 | 0.000 | 46481.5 | 1.903 | VB | 0.042 | 18275.45 | 2.044 |
| 51 | 9.406 | | 0.0000 | 0.000 | 11528.0 | 0.472 | BV | 0.036 | 5330.34 | 0.596 |
| 52 | 9.466 | | 0.0000 | 0.000 | 11863.3 | 0.486 | VV | 0.048 | 4108.14 | 0.459 |
| 53 | 9.550 | Endrin aldehyde | 10.8321 | 10.098 | 71007.0 | 2.908 | VV | 0.040 | 29887.67 | 3.343 |
| 54 | 9.604 | | 0.0000 | 0.000 | 44637.2 | 1.828 | VV | 0.041 | 18091.64 | 2.023 |
| 55 | 9.667 | | 0.0000 | 0.000 | 24160.5 | 0.989 | VV | 0.042 | 9650.71 | 1.079 |
| 56 | 9.731 | Methoxychlor | 0.7352 | 0.685 | 2059.0 | 0.084 | VV | 0.028 | 1236.67 | 0.138 |
| 57 | 9.778 | | 0.0000 | 0.000 | 8786.2 | 0.360 | VB | 0.037 | 3993.06 | 0.447 |
| 58 | 9.858 | | 0.0000 | 0.000 | 12610.6 | 0.516 | BV | 0.036 | 5868.58 | 0.656 |
| 59 | 9.938 | | 0.0000 | 0.000 | 189233.3 | 7.749 | VB | 0.045 | 69399.76 | 7.762 |
| 60 | 10.190 | | 0.0000 | 0.000 | 51.0 | 0.002 | BB | 0.027 | 31.00 | 0.003 |
| 61 | 10.237 | | 0.0000 | 0.000 | 46.6 | 0.002 | BB | 0.020 | 38.27 | 0.004 |
| 62 | 10.313 | | 0.0000 | 0.000 | 139101.4 | 5.696 | BV | 0.059 | 39190.29 | 4.383 |
| 63 | 10.405 | | 0.0000 | 0.000 | 58125.8 | 2.380 | VB | 0.052 | 18526.24 | 2.072 |
| 64 | 10.651 | | 0.0000 | 0.000 | 3485.8 | 0.143 | BV | 0.039 | 1487.33 | 0.166 |

8753

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.725 | | 0.0000 | 0.000 | 2871.7 | 0.118 | VV | 0.033 | 1430.06 | 0.160 |
| 66 | 10.779 | | 0.0000 | 0.000 | 23366.1 | 0.957 | VV | 0.044 | 8845.05 | 0.989 |
| 67 | 10.867 | | 0.0000 | 0.000 | 971.2 | 0.040 | VB | 0.036 | 451.41 | 0.050 |
| 68 | 11.112 | | 0.0000 | 0.000 | 57301.5 | 2.346 | BB | 0.047 | 20160.24 | 2.255 |
| 69 | 11.525 | | 0.0000 | 0.000 | 17676.1 | 0.724 | BB | 0.045 | 6508.65 | 0.728 |
| 70 | 11.823 | DCB | 8.7753 | 8.180 | 97280.3 | 3.984 | BB | 0.049 | 33416.41 | 3.737 |
| 71 | 13.597 | | 0.0000 | 0.000 | 642.9 | 0.026 | BB | 0.108 | 98.75 | 0.011 |

Total Area = 2442070.0, Total Amount = 107.275, Total Height = 894121.9, Sample Units = PPB

Sample Name: **AR1630424D HBAR163HB CCAL 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 11:46:58am by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.74R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

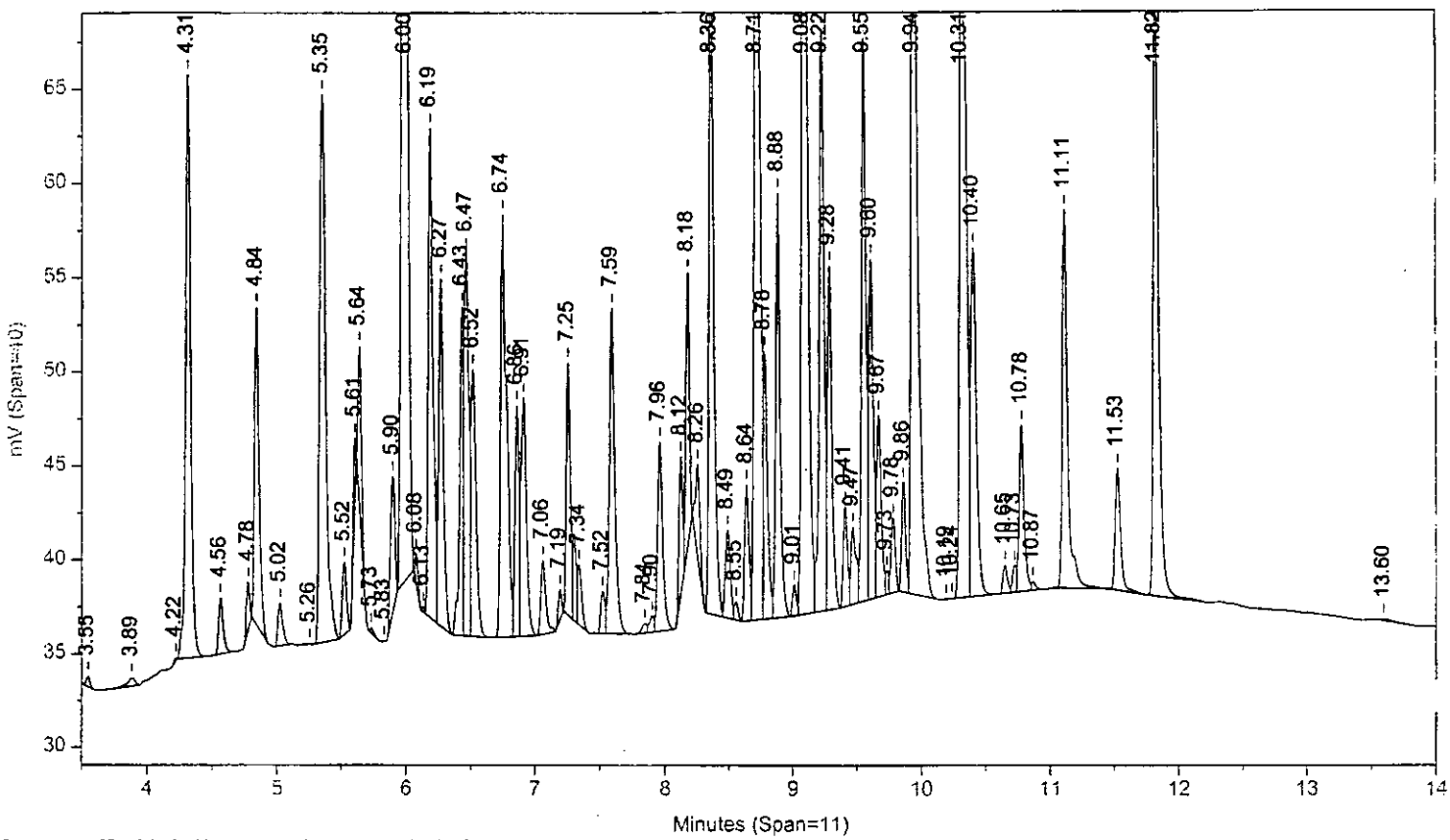
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.603 | | 0.0000 | 0.000 | 1677.1 | 0.138 | BB | 0.209 | 133.68 | 0.029 |
| 2 | 3.685 | | 0.0000 | 0.000 | 7087.1 | 0.584 | BB | 0.313 | 376.90 | 0.082 |
| 3 | 4.826 | TCX | 7.6895 | 6.269 | 33226.5 | 2.740 | BB | 0.037 | 15042.37 | 3.264 |
| 4 | 5.003 | | 0.0000 | 0.000 | 2437.9 | 0.201 | BB | 0.045 | 912.17 | 0.198 |
| 5 | 5.249 | | 0.0000 | 0.000 | 3755.3 | 0.310 | BB | 0.039 | 1595.35 | 0.346 |
| 6 | 5.458 | | 0.0000 | 0.000 | 4090.9 | 0.337 | BB | 0.036 | 1874.76 | 0.407 |
| 7 | 5.546 | HCB | 3.3492 | 2.731 | 21036.2 | 1.735 | BV | 0.038 | 9295.66 | 2.017 |
| 8 | 5.883 | | 0.0000 | 0.000 | 2634.7 | 0.217 | VV | 0.035 | 1268.03 | 0.275 |
| 9 | 6.127 | | 0.0000 | 0.000 | 51038.4 | 4.209 | VV | 0.057 | 14946.95 | 3.243 |
| 10 | 6.286 | gamma-BHC | 0.9720 | 0.792 | 4597.4 | 0.379 | VB | 0.045 | 1697.63 | 0.368 |
| 11 | 6.426 | beta-BHC | 5.0990 | 4.157 | 12016.1 | 0.991 | BV | 0.034 | 5895.34 | 1.279 |
| 12 | 6.478 | | 0.0000 | 0.000 | 19634.3 | 1.619 | VV | 0.041 | 8028.65 | 1.742 |
| 13 | 6.610 | | 0.0000 | 0.000 | 7241.4 | 0.597 | VV | 0.036 | 3369.07 | 0.731 |
| 14 | 6.648 | | 0.0000 | 0.000 | 4654.1 | 0.384 | VV | 0.035 | 2237.44 | 0.486 |
| 15 | 6.764 | | 0.0000 | 0.000 | 80468.7 | 6.636 | VV | 0.056 | 24150.45 | 5.240 |
| 16 | 6.953 | | 0.0000 | 0.000 | 37125.4 | 3.062 | VV | 0.042 | 14632.90 | 3.175 |
| 17 | 7.096 | | 0.0000 | 0.000 | 18005.1 | 1.485 | VV | 0.034 | 8726.03 | 1.893 |
| 18 | 7.146 | | 0.0000 | 0.000 | 7142.6 | 0.589 | VV | 0.037 | 3204.95 | 0.695 |
| 19 | 7.216 | | 0.0000 | 0.000 | 21640.4 | 1.785 | VV | 0.037 | 9870.47 | 2.142 |
| 20 | 7.277 | | 0.0000 | 0.000 | 21447.1 | 1.769 | VV | 0.039 | 9194.12 | 1.995 |
| 21 | 7.334 | | 0.0000 | 0.000 | 20215.2 | 1.667 | VV | 0.050 | 6785.56 | 1.472 |
| 22 | 7.589 | Telodrin | 6.8978 | 5.624 | 26950.5 | 2.223 | VV | 0.036 | 12547.94 | 2.723 |
| 23 | 7.649 | | 0.0000 | 0.000 | 14347.5 | 1.183 | VV | 0.046 | 5180.83 | 1.124 |
| 24 | 7.756 | | 0.0000 | 0.000 | 29030.2 | 2.394 | VV | 0.051 | 9446.85 | 2.050 |
| 25 | 7.964 | | 0.0000 | 0.000 | 5021.1 | 0.414 | VV | 0.036 | 2316.67 | 0.503 |
| 26 | 8.003 | | 0.0000 | 0.000 | 3230.9 | 0.266 | VV | 0.037 | 1472.58 | 0.320 |
| 27 | 8.088 | | 0.0000 | 0.000 | 4358.4 | 0.359 | VV | 0.037 | 1971.94 | 0.428 |
| 28 | 8.152 | Hept. epoxide | 5.1290 | 4.182 | 22443.6 | 1.851 | VV | 0.040 | 9256.53 | 2.009 |
| 29 | 8.309 | | 0.0000 | 0.000 | 3322.5 | 0.274 | VV | 0.039 | 1435.10 | 0.311 |
| 30 | 8.390 | o,p-DDE | 7.6561 | 6.242 | 22000.6 | 1.814 | VV | 0.039 | 9519.54 | 2.066 |
| 31 | 8.533 | | 0.0000 | 0.000 | 2488.6 | 0.205 | VV | 0.057 | 727.82 | 0.158 |
| 32 | 8.779 | | 0.0000 | 0.000 | 890.2 | 0.073 | VB | 0.034 | 432.66 | 0.094 |
| 33 | 8.859 | | 0.0000 | 0.000 | 4340.6 | 0.358 | BV | 0.040 | 1807.56 | 0.392 |
| 34 | 9.008 | | 0.0000 | 0.000 | 19304.8 | 1.592 | VV | 0.054 | 6010.56 | 1.304 |
| 35 | 9.053 | Dieldrin | 6.4549 | 5.263 | 25343.7 | 2.090 | VV | 0.039 | 10759.30 | 2.335 |
| 36 | 9.139 | | 0.0000 | 0.000 | 14701.8 | 1.212 | VB | 0.048 | 5088.34 | 1.104 |
| 37 | 9.262 | | 0.0000 | 0.000 | 54214.4 | 4.471 | BV | 0.041 | 22193.34 | 4.816 |
| 38 | 9.440 | | 0.0000 | 0.000 | 12104.4 | 0.998 | VV | 0.040 | 5005.02 | 1.086 |
| 39 | 9.520 | o,p-DDT | 22.3322 | 18.207 | 59251.3 | 4.886 | VB | 0.038 | 26281.23 | 5.703 |
| 40 | 9.738 | Endosulfan II | 11.6170 | 9.471 | 53220.6 | 4.389 | BB | 0.048 | 18543.80 | 4.024 |
| 41 | 9.889 | | 0.0000 | 0.000 | 3973.7 | 0.328 | BB | 0.040 | 1651.28 | 0.358 |
| 42 | 9.999 | 4,4'-DDT | 19.6235 | 15.999 | 73803.8 | 6.087 | BB | 0.052 | 23723.91 | 5.148 |
| 43 | 10.109 | | 0.0000 | 0.000 | 29796.1 | 2.457 | BB | 0.034 | 14705.59 | 3.191 |
| 44 | 10.182 | Endrin aldehyde | 5.2053 | 4.244 | 14202.4 | 1.171 | BB | 0.031 | 7535.12 | 1.635 |
| 45 | 10.303 | | 0.0000 | 0.000 | 201.8 | 0.017 | BB | 0.028 | 119.27 | 0.026 |
| 46 | 10.339 | | 0.0000 | 0.000 | 4525.3 | 0.373 | BB | 0.033 | 2304.25 | 0.500 |
| 47 | 10.502 | | 0.0000 | 0.000 | 41512.9 | 3.424 | BB | 0.039 | 17712.38 | 3.843 |
| 48 | 10.599 | | 0.0000 | 0.000 | 16858.5 | 1.390 | BB | 0.034 | 8214.81 | 1.783 |
| 49 | 10.673 | | 0.0000 | 0.000 | 15114.5 | 1.246 | BB | 0.051 | 4904.75 | 1.064 |
| 50 | 10.809 | | 0.0000 | 0.000 | 76660.8 | 6.322 | BB | 0.037 | 34102.61 | 7.400 |
| 51 | 10.904 | | 0.0000 | 0.000 | 767.8 | 0.063 | BB | 0.026 | 492.44 | 0.107 |
| 52 | 11.010 | | 0.0000 | 0.000 | 2887.8 | 0.238 | BB | 0.041 | 1160.96 | 0.252 |
| 53 | 11.233 | | 0.0000 | 0.000 | 987.5 | 0.081 | BB | 0.031 | 527.11 | 0.114 |
| 54 | 11.334 | Endrin ketone | 11.5942 | 9.453 | 85731.4 | 7.070 | BB | 0.075 | 18948.53 | 4.112 |
| 55 | 11.680 | | 0.0000 | 0.000 | 1077.5 | 0.089 | BB | 0.034 | 524.58 | 0.114 |
| 56 | 11.776 | | 0.0000 | 0.000 | 1671.6 | 0.138 | BB | 0.043 | 647.83 | 0.141 |
| 57 | 11.979 | | 0.0000 | 0.000 | 8657.8 | 0.714 | BB | 0.041 | 3511.00 | 0.762 |
| 58 | 12.216 | | 0.0000 | 0.000 | 23414.9 | 1.931 | BB | 0.045 | 8632.77 | 1.873 |
| 59 | 12.818 | | 0.0000 | 0.000 | 8268.0 | 0.682 | BB | 0.048 | 2870.48 | 0.623 |
| 60 | 13.351 | DCB | 9.0357 | 7.367 | 44725.0 | 3.688 | BB | 0.049 | 15319.02 | 3.324 |

8755

Total Area = 1212577.0, Total Amount = 122.655, Total Height = 460844.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.74R

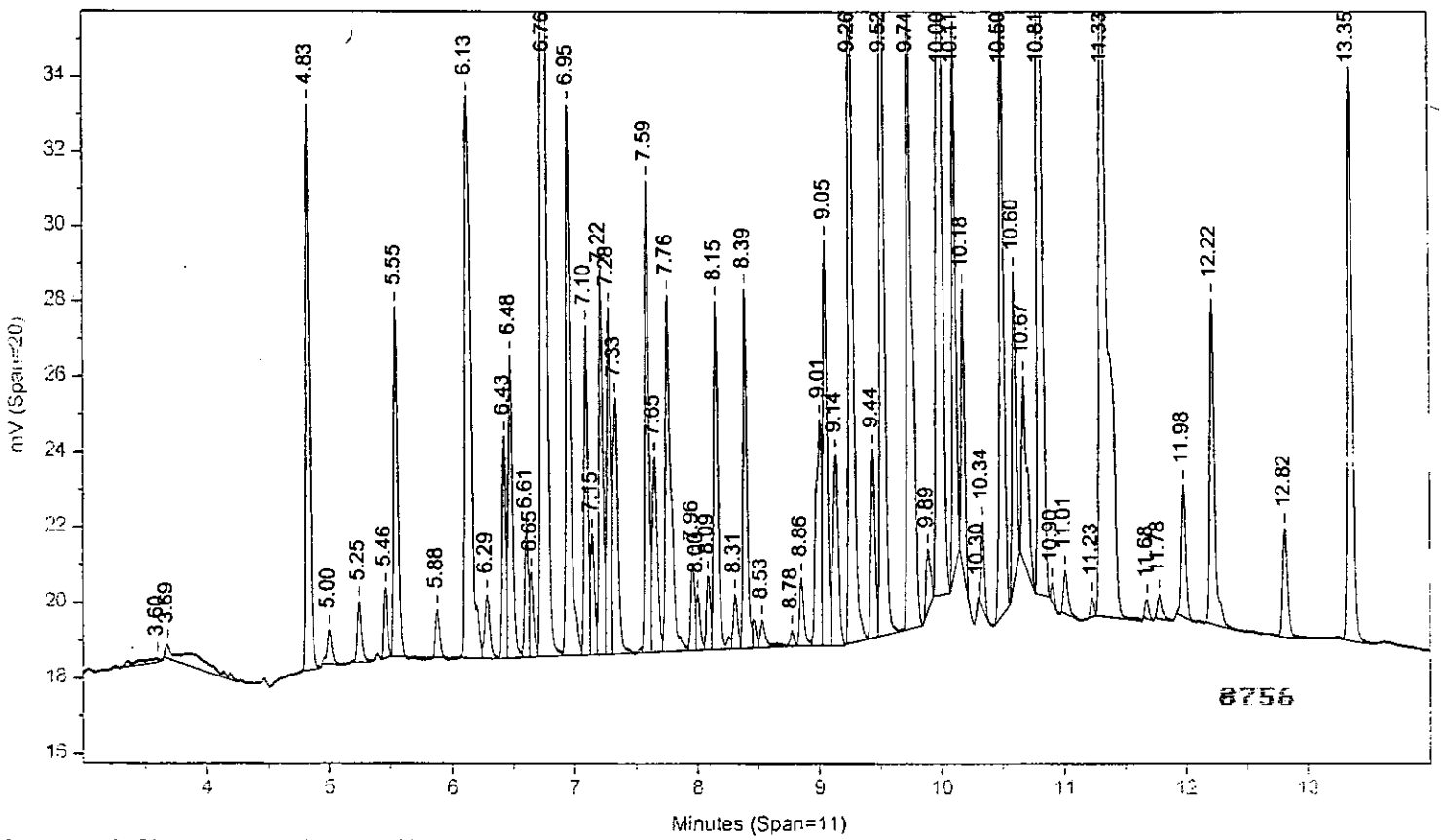
C:\CPWIN\DATA1\1C13088.74R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 11:32:58 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.74R

C:\CPWIN\DATA1\1C13088B.74R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 11:32:58 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

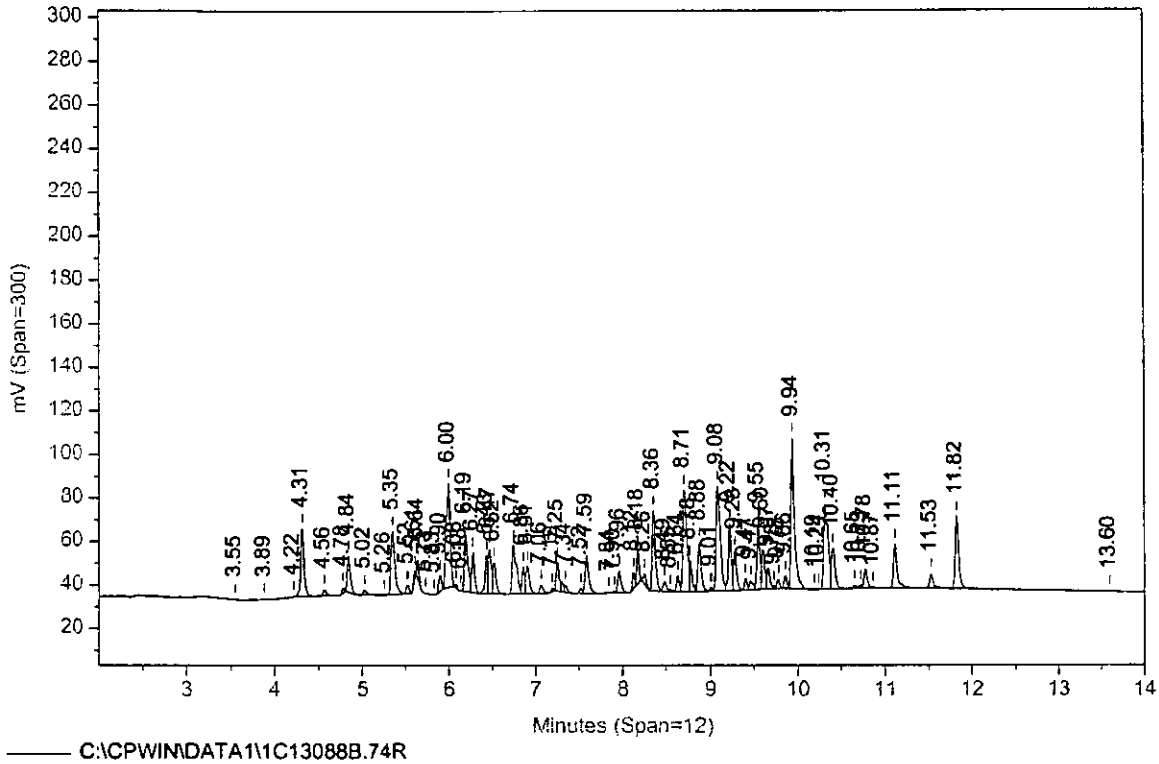
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 31080 | 8.1887 | TCX | 4.826 | 15042 | 7.68954 | TCX |
| . | 0 | . | HCB | 5.546 | 9296 | 3.34921 | HCB |
| 5.608 | 3832 | .82683 | gamma-BHC | 6.286 | 1698 | .97203 | gamma-BHC |
| 5.735 | 269 | .10426 | beta-BHC | 6.426 | 5895 | 5.09902 | beta-BHC |
| 6. | 47657 | 10.83706 | delta-BHC | . | 0 | . | delta-BHC |
| 6.273 | 18479 | 3.73984 | Heptachlor | . | 0 | . | Heptachlor |
| 7.524 | 2250 | .5637 | Hept. epoxide | 8.152 | 9257 | 5.12901 | Hept. epoxide |
| . | 0 | . | Telodrin | 7.589 | 12548 | 6.89777 | Telodrin |
| 7.904 | 884 | .21384 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.96 | 10043 | 2.85403 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.175 | 14621 | 6.79011 | o,p-DDD | . | 0 | . | o,p-DDD |
| . | 0 | . | o,p-DDE | 8.39 | 9520 | 7.65611 | o,p-DDE |
| 8.711 | 46746 | 15.72289 | Endrin | . | 0 | . | Endrin |
| 8.776 | 14235 | 36.58678 | Kepone | . | 0 | . | Kepone |
| 9.012 | 1653 | .50427 | Endosulfan II | 9.738 | 18544 | 11.61699 | Endosulfan II |
| . | 0 | . | Dieldrin | 9.053 | 10759 | 6.45492 | Dieldrin |
| . | 0 | . | o,p-DDT | 9.52 | 26281 | 22.33216 | o,p-DDT |
| 9.55 | 29888 | 10.83209 | Endrin aldehyde | 10.182 | 7535 | 5.20529 | Endrin aldehyde |
| 9.731 | 1237 | .73519 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.999 | 23724 | 19.62347 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.334 | 18949 | 11.5942 | Endrin ketone |
| 11.823 | 33416 | 8.77526 | DCB | 13.351 | 15319 | 9.03568 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.74A
Area File: C:\CPWIN\DATA1\1C13088B.74A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:10:06 PM
File Reported On: 3/30/2004 at 8:10:16 PM

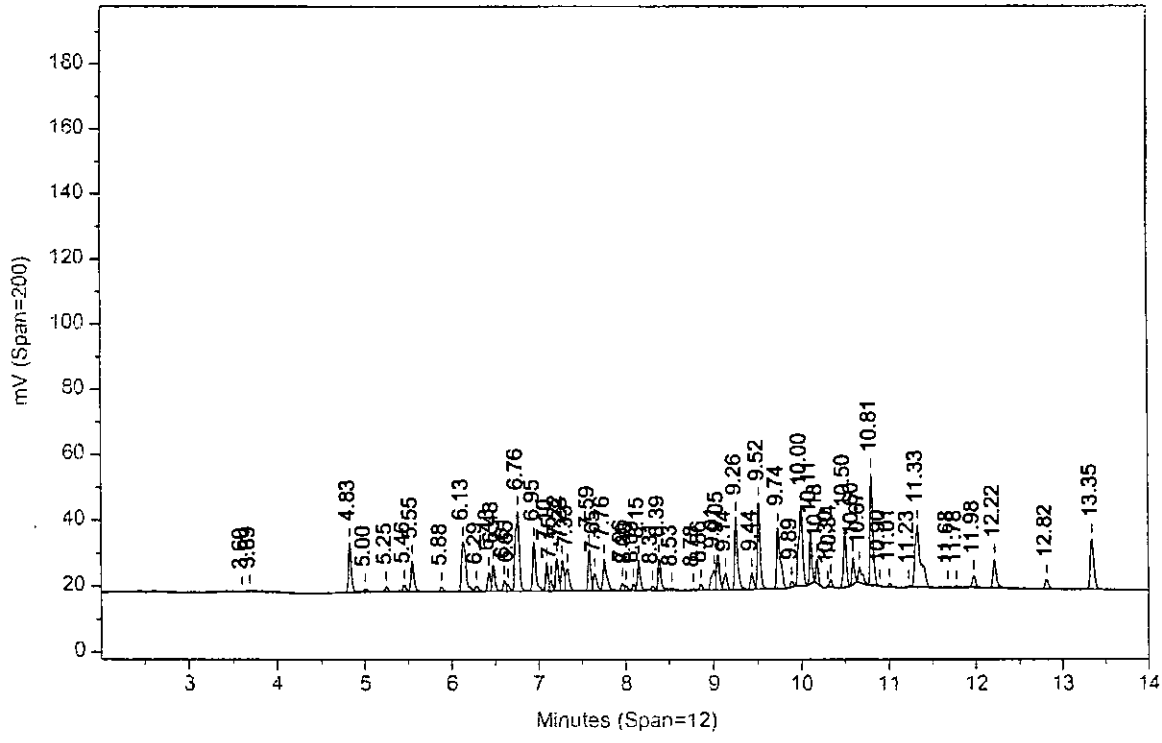
8757

10X REPLOTS

C:\CPWIN\DATA1\1C13088.74R




C:\CPWIN\DATA1\1C13088B.74R




8758

Sample Name: **EVALX03C PNPEMPN PEM 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 06:38:47pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.94R**
Method File: C:\CPWIN\DATA1\EVALD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.551 | | 0.0000 | 0.000 | 649.1 | 0.025 | BB | 0.030 | 362.04 | 0.034 |
| 2 | 3.884 | | 0.0000 | 0.000 | 2838.8 | 0.111 | BB | 0.083 | 570.11 | 0.053 |
| 3 | 4.312 | TCX | 19.5988 | 4.581 | 186489.7 | 7.301 | BB | 0.042 | 74387.92 | 6.948 |
| 4 | 4.751 | | 0.0000 | 0.000 | 872.3 | 0.034 | BB | 0.078 | 185.99 | 0.017 |
| 5 | 4.886 | HCB | 0.1205 | 0.028 | 1773.3 | 0.069 | BB | 0.035 | 838.56 | 0.078 |
| 6 | 5.139 | alpha-BHC | 10.1867 | 2.381 | 99812.0 | 3.908 | BB | 0.035 | 47171.30 | 4.406 |
| 7 | 5.450 | | 0.0000 | 0.000 | 139.7 | 0.005 | BB | 0.046 | 50.44 | 0.005 |
| 8 | 5.601 | gamma-BHC | 9.6209 | 2.249 | 94910.9 | 3.716 | BB | 0.035 | 44593.82 | 4.165 |
| 9 | 5.731 | beta-BHC | 9.9034 | 2.315 | 58391.9 | 2.286 | BB | 0.038 | 25516.63 | 2.383 |
| 10 | 5.831 | | 0.0000 | 0.000 | 216.0 | 0.008 | BB | 0.025 | 142.18 | 0.013 |
| 11 | 5.943 | | 0.0000 | 0.000 | 90.0 | 0.004 | BB | 0.040 | 37.95 | 0.004 |
| 12 | 6.029 | | 0.0000 | 0.000 | 73.3 | 0.003 | BB | 0.029 | 41.91 | 0.004 |
| 13 | 6.084 | | 0.0000 | 0.000 | 867.1 | 0.034 | BB | 0.042 | 341.65 | 0.032 |
| 14 | 6.501 | | 0.0000 | 0.000 | 3613.7 | 0.141 | BV | 0.079 | 764.46 | 0.071 |
| 15 | 6.709 | Aldrin | 0.0729 | 0.017 | 3783.1 | 0.148 | VV | 0.217 | 290.57 | 0.027 |
| 16 | 6.920 | | 0.0000 | 0.000 | 874.8 | 0.034 | VB | 0.090 | 161.86 | 0.015 |
| 17 | 7.079 | | 0.0000 | 0.000 | 1474.9 | 0.058 | BB | 0.047 | 527.53 | 0.049 |
| 18 | 7.212 | | 0.0000 | 0.000 | 1180.3 | 0.046 | BB | 0.051 | 385.85 | 0.036 |
| 19 | 7.426 | | 0.0000 | 0.000 | 228.1 | 0.009 | BB | 0.028 | 134.17 | 0.013 |
| 20 | 7.521 | Hept. epoxide | 0.0227 | 0.005 | 312.0 | 0.012 | BB | 0.057 | 90.54 | 0.008 |
| 21 | 7.661 | | 0.0000 | 0.000 | 199.3 | 0.008 | BV | 0.032 | 102.45 | 0.010 |
| 22 | 7.721 | g. Chlordane | 0.0371 | 0.009 | 292.8 | 0.011 | VB | 0.034 | 143.49 | 0.013 |
| 23 | 7.848 | | 0.0000 | 0.000 | 2074.0 | 0.081 | BV | 0.087 | 398.31 | 0.037 |
| 24 | 7.966 | 4,4'-DDE | 0.4371 | 0.102 | 3778.5 | 0.148 | VV | 0.041 | 1538.17 | 0.144 |
| 25 | 8.073 | Endosulfan I | 0.0329 | 0.008 | 314.0 | 0.012 | VB | 0.044 | 119.41 | 0.011 |
| 26 | 8.268 | | 0.0000 | 0.000 | 319.2 | 0.012 | BB | 0.043 | 122.76 | 0.011 |
| 27 | 8.470 | | 0.0000 | 0.000 | 437.0 | 0.017 | BV | 0.076 | 96.12 | 0.009 |
| 28 | 8.534 | o,p-DDT | 0.7396 | 0.173 | 4328.0 | 0.169 | VB | 0.038 | 1897.40 | 0.177 |
| 29 | 8.700 | Endrin | 48.6217 | 11.365 | 346335.9 | 13.559 | BV | 0.040 | 144558.70 | 13.502 |
| 30 | 8.829 | | 0.0000 | 0.000 | 649.5 | 0.025 | VB | 0.027 | 404.93 | 0.038 |
| 31 | 8.989 | Endosulfan II | 0.0827 | 0.019 | 731.1 | 0.029 | BB | 0.045 | 271.01 | 0.025 |
| 32 | 9.118 | 4,4'-DDT | 94.3415 | 22.051 | 594663.4 | 23.281 | BV | 0.036 | 274053.40 | 25.598 |
| 33 | 9.322 | | 0.0000 | 0.000 | 9282.2 | 0.363 | VB | 0.078 | 1988.07 | 0.186 |
| 34 | 9.547 | Endrin aldehyde | 0.8744 | 0.204 | 5602.6 | 0.219 | BV | 0.039 | 2412.59 | 0.225 |
| 35 | 9.633 | | 0.0000 | 0.000 | 1224.8 | 0.048 | VV | 0.043 | 475.45 | 0.044 |
| 36 | 9.729 | Methoxychlor | 211.9893 | 49.549 | 800667.9 | 31.346 | VB | 0.037 | 356591.80 | 33.307 |
| 37 | 10.182 | | 0.0000 | 0.000 | 753.6 | 0.030 | BB | 0.088 | 142.97 | 0.013 |
| 38 | 10.282 | | 0.0000 | 0.000 | 6236.6 | 0.244 | BB | 0.038 | 2700.86 | 0.252 |
| 39 | 10.345 | | 0.0000 | 0.000 | 559.8 | 0.022 | BB | 0.024 | 384.61 | 0.036 |
| 40 | 10.484 | Endrin ketone | 2.4154 | 0.565 | 59707.1 | 2.337 | BV | 0.118 | 8438.36 | 0.788 |
| 41 | 10.817 | | 0.0000 | 0.000 | 3939.6 | 0.154 | VV | 0.082 | 800.54 | 0.075 |
| 42 | 10.863 | | 0.0000 | 0.000 | 2852.1 | 0.112 | VB | 0.049 | 968.76 | 0.090 |
| 43 | 10.973 | | 0.0000 | 0.000 | 2120.8 | 0.083 | BB | 0.100 | 354.57 | 0.033 |
| 44 | 11.411 | | 0.0000 | 0.000 | 3071.4 | 0.120 | BB | 0.099 | 519.39 | 0.049 |
| 45 | 11.518 | | 0.0000 | 0.000 | 10169.3 | 0.398 | BB | 0.252 | 672.71 | 0.063 |
| 46 | 11.821 | DCB | 18.7381 | 4.380 | 210543.3 | 8.243 | BB | 0.049 | 71355.34 | 6.665 |
| 47 | 12.030 | | 0.0000 | 0.000 | 329.0 | 0.013 | BB | 0.082 | 66.91 | 0.006 |
| 48 | 12.206 | | 0.0000 | 0.000 | 1021.8 | 0.040 | BB | 0.135 | 126.17 | 0.012 |
| 49 | 12.584 | | 0.0000 | 0.000 | 14696.6 | 0.575 | BB | 0.183 | 1337.40 | 0.125 |
| 50 | 13.005 | | 0.0000 | 0.000 | 871.8 | 0.034 | BB | 0.101 | 143.63 | 0.013 |
| 51 | 13.230 | | 0.0000 | 0.000 | 5584.5 | 0.219 | BB | 0.180 | 517.63 | 0.048 |
| 52 | 13.627 | | 0.0000 | 0.000 | 1705.3 | 0.067 | BB | 0.138 | 205.71 | 0.019 |
| 53 | 13.961 | | 0.0000 | 0.000 | 665.1 | 0.026 | BB | 0.105 | 105.08 | 0.010 |

Total Area = 2554320.0, Total Amount = 427.836, Total Height = 1070610.0, Sample Units = PPB

8759

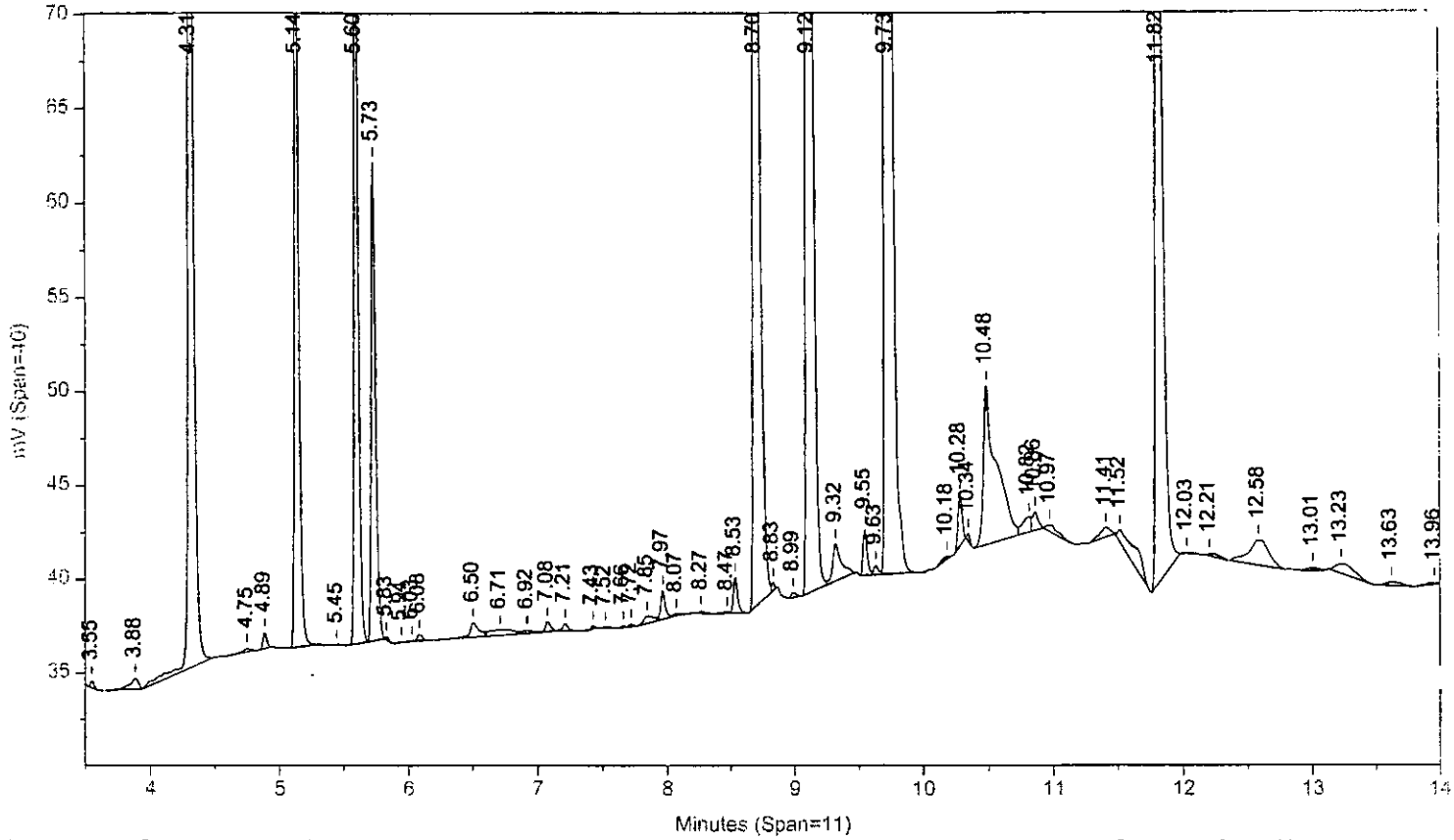
Sample Name: **EVALX03C PNPEMPN PEM 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 06:38:47pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.94R**
Method File: C:\CPWIN\DATA1\EVALDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.602 | | 0.0000 | 0.000 | 1344.2 | 0.120 | BB | 0.180 | 124.54 | 0.026 |
| 2 | 3.684 | | 0.0000 | 0.000 | 5979.3 | 0.532 | BB | 0.297 | 335.32 | 0.070 |
| 3 | 4.824 | TCX | 19.4057 | 4.160 | 81387.9 | 7.246 | BB | 0.036 | 37961.66 | 7.903 |
| 4 | 5.393 | | 0.0000 | 0.000 | 2379.8 | 0.212 | BV | 0.098 | 404.05 | 0.084 |
| 5 | 5.752 | alpha-BHC | 10.6646 | 2.286 | 41888.4 | 3.729 | VB | 0.038 | 18365.37 | 3.823 |
| 6 | 6.282 | gamma-BHC | 10.1455 | 2.175 | 34303.0 | 3.054 | BV | 0.032 | 17718.90 | 3.689 |
| 7 | 6.404 | beta-BHC | 10.8711 | 2.331 | 44512.7 | 3.963 | VB | 0.059 | 12568.90 | 2.617 |
| 8 | 8.217 | | 0.0000 | 0.000 | 4549.7 | 0.405 | BV | 0.114 | 665.03 | 0.138 |
| 9 | 8.650 | | 0.0000 | 0.000 | 31986.6 | 2.848 | VV | 0.418 | 1275.11 | 0.265 |
| 10 | 8.813 | 4,4'-DDE | 0.5745 | 0.123 | 4023.3 | 0.358 | VB | 0.073 | 913.60 | 0.190 |
| 11 | 9.483 | Endrin | 55.2125 | 11.836 | 142284.3 | 12.667 | BV | 0.034 | 70128.63 | 14.599 |
| 12 | 9.577 | 4,4'-DDD | 2.4427 | 0.524 | 14804.1 | 1.318 | VB | 0.090 | 2731.11 | 0.569 |
| 13 | 9.919 | | 0.0000 | 0.000 | 347.2 | 0.031 | BB | 0.038 | 150.78 | 0.031 |
| 14 | 9.987 | 4,4'-DDT | 100.3713 | 21.517 | 235962.6 | 21.007 | BB | 0.032 | 121344.40 | 25.261 |
| 15 | 10.200 | Endrin aldehyde | 1.1423 | 0.245 | 5065.8 | 0.451 | BB | 0.051 | 1653.54 | 0.344 |
| 16 | 10.495 | | 0.0000 | 0.000 | 1174.9 | 0.105 | BB | 0.058 | 337.94 | 0.070 |
| 17 | 10.577 | Endo. sulfate | 0.1942 | 0.042 | 678.0 | 0.060 | BB | 0.041 | 274.52 | 0.057 |
| 18 | 10.860 | Methoxychlor | 233.7926 | 50.120 | 305847.8 | 27.229 | BB | 0.034 | 149801.60 | 31.185 |
| 19 | 11.024 | | 0.0000 | 0.000 | 1568.5 | 0.140 | BB | 0.033 | 790.04 | 0.164 |
| 20 | 11.173 | | 0.0000 | 0.000 | 3770.2 | 0.336 | BB | 0.043 | 1465.72 | 0.305 |
| 21 | 11.308 | Endrin ketone | 1.8111 | 0.388 | 11686.2 | 1.040 | BB | 0.066 | 2959.87 | 0.616 |
| 22 | 11.810 | | 0.0000 | 0.000 | 6115.7 | 0.544 | BB | 0.105 | 970.57 | 0.202 |
| 23 | 12.703 | | 0.0000 | 0.000 | 38335.0 | 3.413 | BB | 0.168 | 3795.33 | 0.790 |
| 24 | 13.346 | DCB | 19.8378 | 4.253 | 103239.0 | 9.191 | BB | 0.051 | 33632.75 | 7.001 |

Total Area = 1123234.0, Total Amount = 466.466, Total Height = 480369.3, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.94R

C:\CPWIN\DATA1\1C13088.94R

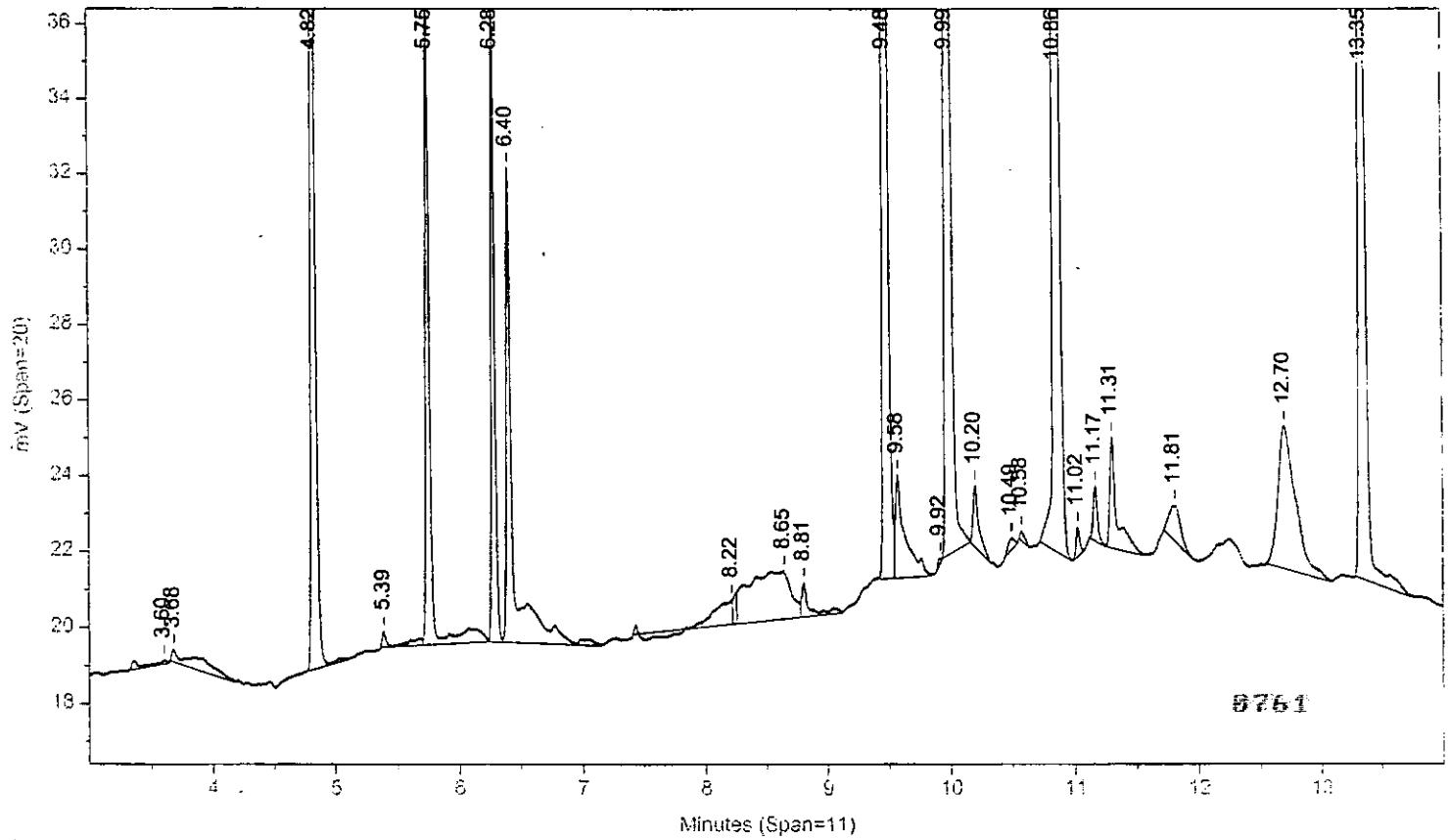



Instrument ID: CP13--H6722A Injected On: 3/30/2004 6:24:47 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM %DDT BD= 0.5581334

%ENDRIN BD= 6.982157

File: C:\CPWIN\DATA1\1C13088B.94R

C:\CPWIN\DATA1\1C13088B.94R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 6:24:47 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM %DDT BD= 2.91602

%ENDRIN BD= 6.172443

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| .312 | 74388 | 19.599 | TCX | 4.824 | 37962 | 19.406 | TCX |
| .886 | 839 | .121 | HCB | . | 0 | . | HCB |
| .139 | 47171 | 10.187 | alpha-BHC | 5.752 | 18365 | 10.665 | alpha-BHC |
| .601 | 44594 | 9.621 | gamma-BHC | 6.282 | 17719 | 10.145 | gamma-BHC |
| .731 | 25517 | 9.903 | beta-BHC | 6.404 | 12569 | 10.871 | beta-BHC |
| .709 | 291 | .073 | Aldrin | . | 0 | . | Aldrin |
| .521 | 91 | .023 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| .721 | 143 | .037 | g. Chlordane | . | 0 | . | g. Chlordane |
| .966 | 1538 | .437 | 4,4'-DDE | 8.813 | 914 | .575 | 4,4'-DDE |
| .073 | 119 | .033 | Endosulfan I | . | 0 | . | Endosulfan I |
| .534 | 1897 | .74 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.7 | 144559 | 48.622 | Endrin | 9.483 | 70129 | 55.212 | Endrin |
| .989 | 271 | .083 | Endosulfan II | . | 0 | . | Endosulfan II |
| .118 | 274053 | 94.341 | 4,4'-DDT | 9.987 | 121344 | 100.371 | 4,4'-DDT |
| .547 | 2413 | .874 | Endrin aldehyde | 10.2 | 1654 | 1.142 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.577 | 2731 | 2.443 | 4,4'-DDD |
| .729 | 356592 | 211.989 | Methoxychlor | 10.86 | 149802 | 233.793 | Methoxychlor |
| .484 | 8438 | 2.415 | Endrin ketone | 11.308 | 2960 | 1.811 | Endrin ketone |
| . | 0 | . | Endo. sulfate | 10.577 | 275 | .194 | Endo. sulfate |
| .821 | 71355 | 18.738 | DCB | 13.346 | 33633 | 19.838 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.94A
Area File: C:\CPWIN\DATA1\1C13088B.94A
Method A: C:\CPWIN\DATA1\EVALD.MET
Method B: C:\CPWIN\DATA1\EVALDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\EVALD.FMTA
Format B: C:\CPWIN\DATA1\EVALD.FMTB
Area File Created On: 3/30/2004 8:18:24 PM
File Reported On: 3/30/2004 at 8:18:33 PM

Sample Name: **MIXA30424B REMIXA3RE CCAL 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 06:59:25pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.95R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.551 | | 0.0000 | 0.000 | 1013.5 | 0.030 | BB | 0.032 | 530.29 | 0.037 |
| 2 | 3.882 | | 0.0000 | 0.000 | 4105.7 | 0.121 | BB | 0.071 | 965.39 | 0.068 |
| 3 | 3.985 | | 0.0000 | 0.000 | 2062.5 | 0.061 | BB | 0.037 | 922.57 | 0.065 |
| 4 | 4.310 | TCX | 38.3426 | 8.518 | 358566.9 | 10.548 | BB | 0.041 | 145530.60 | 10.182 |
| 5 | 4.533 | | 0.0000 | 0.000 | 83.8 | 0.002 | BB | 0.034 | 40.71 | 0.003 |
| 6 | 4.758 | | 0.0000 | 0.000 | 682.1 | 0.020 | BB | 0.075 | 151.66 | 0.011 |
| 7 | 4.886 | HCB | 0.2462 | 0.055 | 3590.7 | 0.106 | BB | 0.035 | 1712.84 | 0.120 |
| 8 | 5.138 | alpha-BHC | 10.1819 | 2.262 | 99931.9 | 2.940 | BB | 0.035 | 47148.91 | 3.299 |
| 9 | 5.468 | | 0.0000 | 0.000 | 407.7 | 0.012 | BB | 0.054 | 124.84 | 0.009 |
| 10 | 5.600 | gamma-BHC | 10.2164 | 2.270 | 101100.8 | 2.974 | BB | 0.036 | 47353.70 | 3.313 |
| 11 | 5.730 | beta-BHC | 10.1409 | 2.253 | 59319.7 | 1.745 | BB | 0.038 | 26128.75 | 1.828 |
| 12 | 5.832 | | 0.0000 | 0.000 | 440.4 | 0.013 | BB | 0.025 | 294.97 | 0.021 |
| 13 | 5.987 | delta-BHC | 10.2121 | 2.269 | 95918.3 | 2.822 | BB | 0.036 | 44908.27 | 3.142 |
| 14 | 6.191 | | 0.0000 | 0.000 | 191.7 | 0.006 | BB | 0.033 | 97.90 | 0.007 |
| 15 | 6.280 | Heptachlor | 9.5149 | 2.114 | 101193.2 | 2.977 | BB | 0.036 | 47014.94 | 3.290 |
| 16 | 6.504 | | 0.0000 | 0.000 | 534.0 | 0.016 | BB | 0.052 | 171.50 | 0.012 |
| 17 | 6.704 | Aldrin | 9.9523 | 2.211 | 88692.4 | 2.609 | BV | 0.037 | 39679.62 | 2.776 |
| 18 | 6.933 | | 0.0000 | 0.000 | 765.2 | 0.023 | VB | 0.081 | 156.59 | 0.011 |
| 19 | 7.077 | | 0.0000 | 0.000 | 733.7 | 0.022 | BB | 0.045 | 272.27 | 0.019 |
| 20 | 7.169 | | 0.0000 | 0.000 | 354.5 | 0.010 | BB | 0.033 | 176.91 | 0.012 |
| 21 | 7.425 | | 0.0000 | 0.000 | 170.0 | 0.005 | BB | 0.033 | 84.90 | 0.006 |
| 22 | 7.536 | Hept. epoxide | 9.8776 | 2.194 | 91166.5 | 2.682 | BV | 0.039 | 39423.21 | 2.758 |
| 23 | 7.704 | g. Chlordane | 10.0377 | 2.230 | 90446.3 | 2.661 | VB | 0.039 | 38867.45 | 2.719 |
| 24 | 7.880 | a. Chlordane | 9.5620 | 2.124 | 91320.2 | 2.686 | BV | 0.039 | 39516.95 | 2.765 |
| 25 | 7.965 | 4,4'-DDE | 20.2241 | 4.493 | 158383.6 | 4.659 | VV | 0.037 | 71166.37 | 4.979 |
| 26 | 8.071 | Endosulfan I | 9.8352 | 2.185 | 86038.5 | 2.531 | VB | 0.040 | 35675.95 | 2.496 |
| 27 | 8.388 | Dieldrin | 19.9634 | 4.435 | 162195.5 | 4.771 | BV | 0.039 | 69702.91 | 4.877 |
| 28 | 8.531 | o,p-DDT | 0.1267 | 0.028 | 898.7 | 0.026 | VV | 0.046 | 325.10 | 0.023 |
| 29 | 8.699 | Endrin | 19.7513 | 4.388 | 126354.6 | 3.717 | VV | 0.036 | 58723.29 | 4.109 |
| 30 | 8.754 | 4,4'-DDD | 20.4295 | 4.538 | 138763.5 | 4.082 | VB | 0.040 | 58144.78 | 4.068 |
| 31 | 9.001 | Endosulfan II | 19.9001 | 4.421 | 154757.3 | 4.553 | BV | 0.040 | 65226.11 | 4.564 |
| 32 | 9.117 | 4,4'-DDT | 19.6798 | 4.372 | 126007.4 | 3.707 | VB | 0.037 | 57168.04 | 4.000 |
| 33 | 9.321 | | 0.0000 | 0.000 | 2762.4 | 0.081 | BB | 0.047 | 987.10 | 0.069 |
| 34 | 9.411 | | 0.0000 | 0.000 | 1833.1 | 0.054 | BB | 0.041 | 746.99 | 0.052 |
| 35 | 9.544 | Endrin aldehyde | 19.6238 | 4.359 | 138192.9 | 4.065 | BV | 0.043 | 54145.67 | 3.788 |
| 36 | 9.730 | Methoxychlor | 95.0700 | 21.120 | 362862.7 | 10.675 | VB | 0.038 | 159919.30 | 11.189 |
| 37 | 10.111 | Endo. sulfate | 19.8346 | 4.406 | 138369.7 | 4.071 | BB | 0.040 | 57968.86 | 4.056 |
| 38 | 10.286 | | 0.0000 | 0.000 | 6879.8 | 0.202 | BV | 0.046 | 2508.92 | 0.176 |
| 39 | 10.343 | | 0.0000 | 0.000 | 3255.0 | 0.096 | VB | 0.040 | 1372.40 | 0.096 |
| 40 | 10.484 | Endrin ketone | 20.2519 | 4.499 | 169383.0 | 4.983 | BV | 0.040 | 70751.54 | 4.950 |
| 41 | 10.649 | | 0.0000 | 0.000 | 1476.0 | 0.043 | VV | 0.079 | 310.04 | 0.022 |
| 42 | 10.757 | | 0.0000 | 0.000 | 1021.0 | 0.030 | VB | 0.075 | 227.68 | 0.016 |
| 43 | 11.012 | | 0.0000 | 0.000 | 1139.4 | 0.034 | BB | 0.117 | 162.43 | 0.011 |
| 44 | 11.251 | | 0.0000 | 0.000 | 304.6 | 0.009 | BB | 0.066 | 76.59 | 0.005 |
| 45 | 11.406 | | 0.0000 | 0.000 | 279.2 | 0.008 | BB | 0.048 | 97.82 | 0.007 |
| 46 | 11.523 | | 0.0000 | 0.000 | 1958.0 | 0.058 | BB | 0.050 | 647.90 | 0.045 |
| 47 | 11.819 | DCB | 37.1657 | 8.256 | 421149.4 | 12.389 | BB | 0.050 | 141528.10 | 9.902 |
| 48 | 12.582 | | 0.0000 | 0.000 | 227.2 | 0.007 | BB | 0.051 | 74.06 | 0.005 |
| 49 | 13.006 | | 0.0000 | 0.000 | 397.1 | 0.012 | BB | 0.094 | 70.57 | 0.005 |
| 50 | 13.546 | | 0.0000 | 0.000 | 1606.2 | 0.047 | BB | 0.123 | 218.28 | 0.015 |

Total Area = 3399288.0, Total Amount = 450.141, Total Height = 1429223.0, Sample Units = PPB

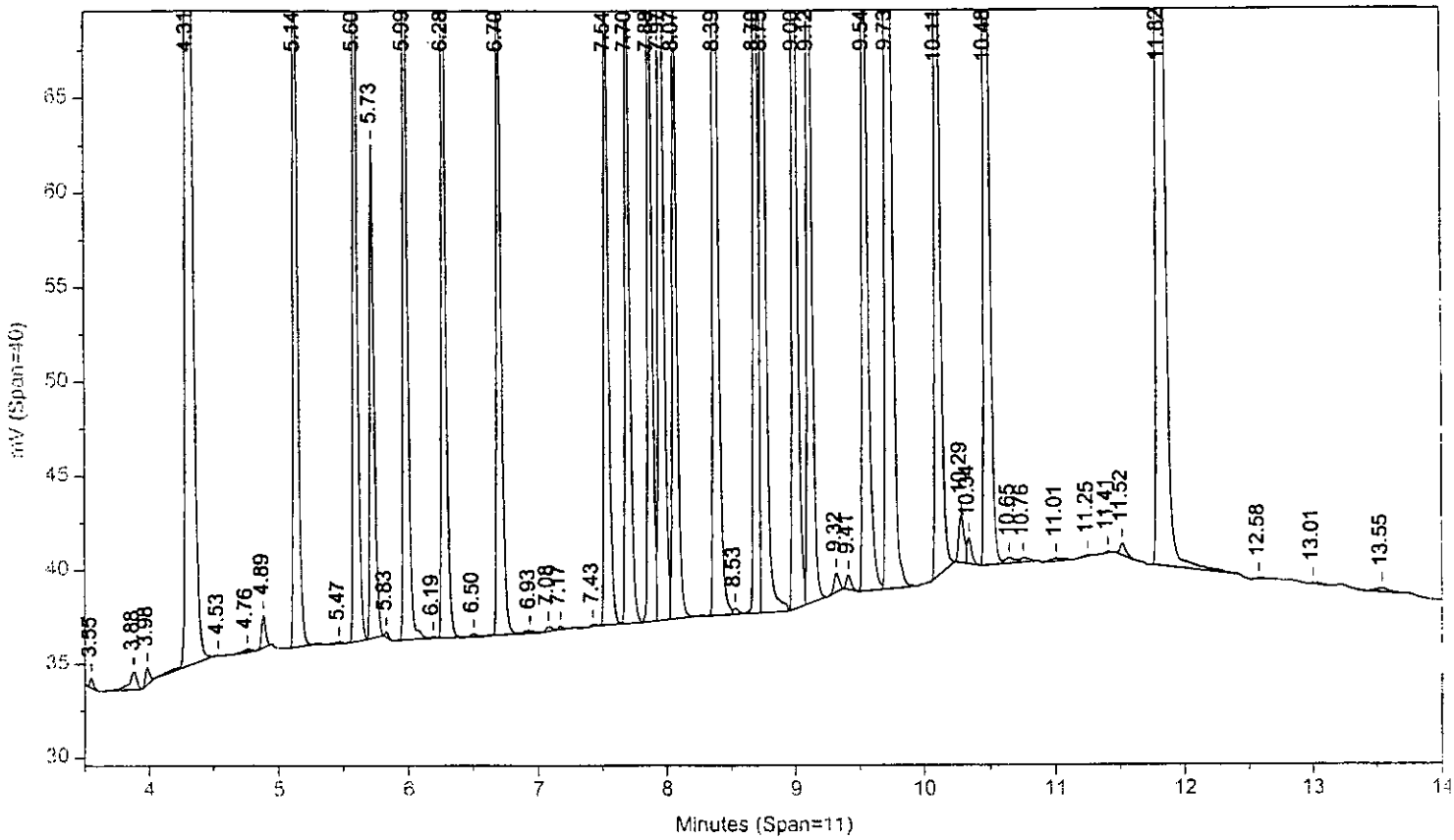
Sample Name: **MIXA30424B REMIXA3RE CCAL 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 06:59:25pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.95R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.354 | | 0.0000 | 0.000 | 2123.6 | 0.146 | BB | 0.085 | 417.61 | 0.063 |
| 2 | 3.674 | | 0.0000 | 0.000 | 5917.8 | 0.408 | BB | 0.237 | 416.05 | 0.062 |
| 3 | 4.714 | | 0.0000 | 0.000 | 1361.5 | 0.094 | BB | 0.325 | 69.80 | 0.010 |
| 4 | 4.823 | TCX | 39.4647 | 8.220 | 160789.5 | 11.082 | BB | 0.035 | 77201.42 | 11.568 |
| 5 | 5.388 | | 0.0000 | 0.000 | 1941.4 | 0.134 | BB | 0.036 | 895.50 | 0.134 |
| 6 | 5.751 | alpha-BHC | 10.5113 | 2.189 | 34749.6 | 2.395 | BV | 0.032 | 18101.42 | 2.712 |
| 7 | 6.061 | | 0.0000 | 0.000 | 924.6 | 0.064 | VB | 0.037 | 415.49 | 0.062 |
| 8 | 6.281 | gamma-BHC | 10.7602 | 2.241 | 36956.9 | 2.547 | BV | 0.033 | 18792.53 | 2.816 |
| 9 | 6.402 | beta-BHC | 10.8024 | 2.250 | 27875.6 | 1.921 | VV | 0.037 | 12489.41 | 1.872 |
| 10 | 6.829 | delta-BHC | 10.4956 | 2.186 | 34439.9 | 2.374 | VV | 0.032 | 17776.12 | 2.664 |
| 11 | 6.917 | Heptachlor | 9.8851 | 2.059 | 37864.3 | 2.610 | VV | 0.035 | 18249.35 | 2.735 |
| 12 | 7.381 | Aldrin | 10.2562 | 2.136 | 39142.3 | 2.698 | VV | 0.037 | 17428.57 | 2.612 |
| 13 | 8.166 | Hept. epoxide | 10.0591 | 2.095 | 38105.3 | 2.626 | VB | 0.035 | 18154.00 | 2.720 |
| 14 | 8.421 | g. Chlordane | 10.1508 | 2.114 | 38311.1 | 2.641 | BB | 0.035 | 18505.58 | 2.773 |
| 15 | 8.615 | a. Chlordane | 10.1810 | 2.121 | 39242.5 | 2.705 | BV | 0.034 | 19087.47 | 2.860 |
| 16 | 8.705 | Endosulfan I | 10.0986 | 2.104 | 35090.8 | 2.419 | VV | 0.035 | 16699.56 | 2.502 |
| 17 | 8.811 | 4,4'-DDE | 21.7294 | 4.526 | 68169.8 | 4.699 | VB | 0.033 | 34554.06 | 5.178 |
| 18 | 9.069 | Dieldrin | 20.8861 | 4.351 | 72441.5 | 4.993 | BB | 0.035 | 34813.67 | 5.217 |
| 19 | 9.482 | Endrin | 20.7765 | 4.328 | 54325.7 | 3.744 | BV | 0.034 | 26389.44 | 3.954 |
| 20 | 9.575 | 4,4'-DDD | 23.3446 | 4.863 | 52446.8 | 3.615 | VB | 0.033 | 26100.93 | 3.911 |
| 21 | 9.761 | Endosulfan II | 20.5443 | 4.279 | 68374.4 | 4.713 | BB | 0.035 | 32794.12 | 4.914 |
| 22 | 9.987 | 4,4'-DDT | 21.2599 | 4.428 | 51751.2 | 3.567 | BB | 0.034 | 25702.32 | 3.851 |
| 23 | 10.196 | Endrin aldehyde | 20.5148 | 4.273 | 63891.5 | 4.404 | BB | 0.036 | 29697.04 | 4.450 |
| 24 | 10.359 | | 0.0000 | 0.000 | 2338.0 | 0.161 | BB | 0.044 | 890.64 | 0.133 |
| 25 | 10.553 | Endo. sulfate | 20.9332 | 4.360 | 62368.0 | 4.299 | BB | 0.035 | 29589.17 | 4.434 |
| 26 | 10.860 | Methoxychlor | 106.1890 | 22.119 | 137627.9 | 9.486 | BB | 0.034 | 68040.12 | 10.196 |
| 27 | 11.030 | | 0.0000 | 0.000 | 788.8 | 0.054 | BB | 0.044 | 299.25 | 0.045 |
| 28 | 11.173 | | 0.0000 | 0.000 | 2140.6 | 0.148 | BB | 0.035 | 1008.40 | 0.151 |
| 29 | 11.311 | Endrin ketone | 21.7359 | 4.528 | 80978.6 | 5.581 | BB | 0.038 | 35523.18 | 5.323 |
| 30 | 12.810 | | 0.0000 | 0.000 | 1219.1 | 0.084 | BB | 0.076 | 266.99 | 0.040 |
| 31 | 13.345 | DCB | 39.5050 | 8.229 | 197173.4 | 13.590 | BB | 0.049 | 66976.37 | 10.036 |

Total Area = 1450872.0, Total Amount = 480.084, Total Height = 667345.5, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.95R

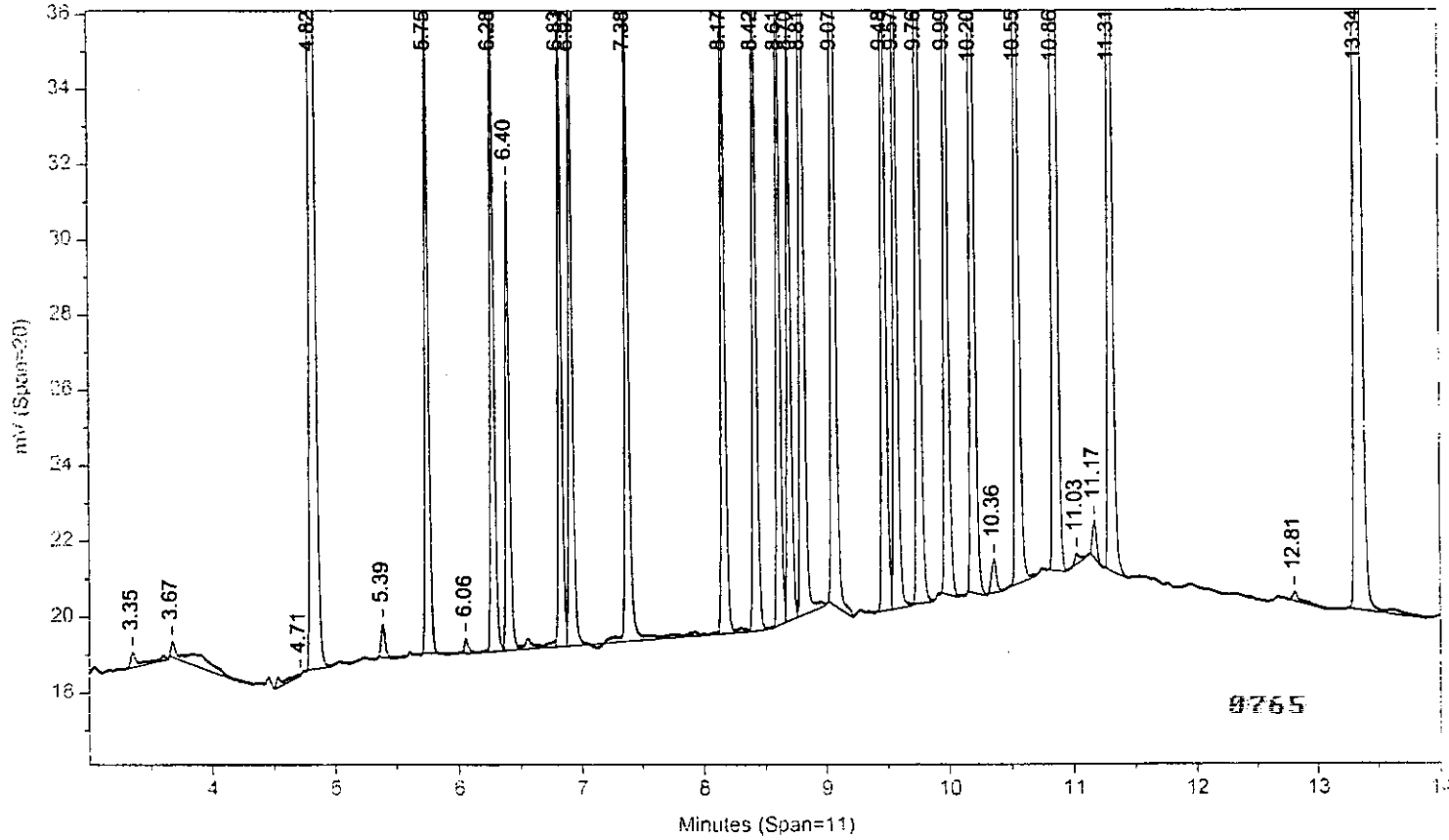
C:\CPWIN\DATA1\1C13088.95R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 6:45:25 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.95R

C:\CPWIN\DATA1\1C13088B.95R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 6:45:25 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

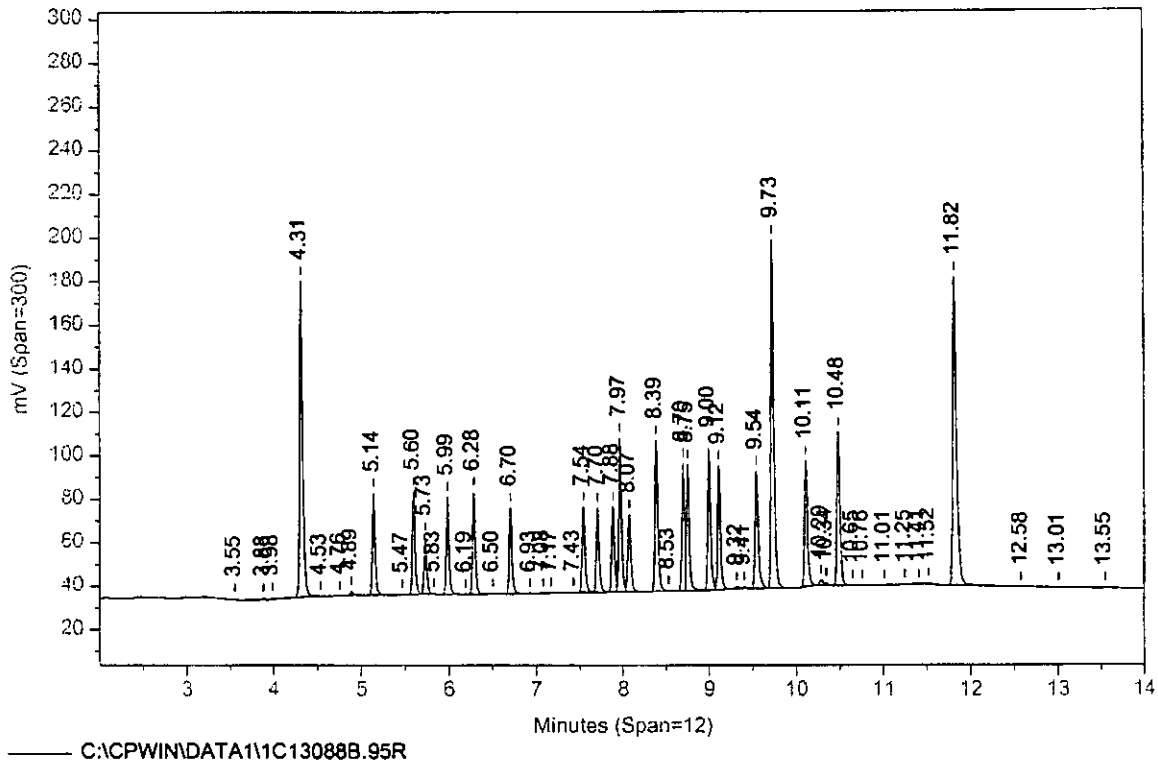
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 145531 | 38.34257 | TCX | 4.823 | 77201 | 39.46474 | TCX |
| 4.886 | 1713 | .24616 | HCB | . | 0 | . | HCB |
| 5.138 | 47149 | 10.18191 | alpha-BHC | 5.751 | 18101 | 10.51128 | alpha-BHC |
| 5.6 | 47354 | 10.21637 | gamma-BHC | 6.281 | 18793 | 10.76021 | gamma-BHC |
| 5.73 | 26129 | 10.14092 | beta-BHC | 6.402 | 12489 | 10.80239 | beta-BHC |
| 5.987 | 44908 | 10.21208 | delta-BHC | 6.829 | 17776 | 10.49562 | delta-BHC |
| 6.28 | 47015 | 9.51491 | Heptachlor | 6.917 | 18249 | 9.88509 | Heptachlor |
| 6.704 | 39680 | 9.9523 | Aldrin | 7.381 | 17429 | 10.25622 | Aldrin |
| 7.536 | 39423 | 9.87763 | Hept. epoxide | 8.166 | 18154 | 10.05906 | Hept. epoxide |
| 7.704 | 38867 | 10.03773 | g. Chlordane | 8.421 | 18506 | 10.15075 | g. Chlordane |
| 7.88 | 39517 | 9.56197 | a. Chlordane | 8.615 | 19087 | 10.18095 | a. Chlordane |
| 7.965 | 71166 | 20.22414 | 4,4'-DDE | 8.811 | 34554 | 21.72943 | 4,4'-DDE |
| 8.071 | 35676 | 9.83518 | Endosulfan I | 8.705 | 16700 | 10.09861 | Endosulfan I |
| 8.388 | 69703 | 19.96342 | Dieldrin | 9.069 | 34814 | 20.88609 | Dieldrin |
| 8.531 | 325 | .12673 | o,p-DDT | . | 0 | . | o,p-DDT |
| 8.699 | 58723 | 19.75131 | Endrin | 9.482 | 26389 | 20.77648 | Endrin |
| 8.754 | 58145 | 20.42948 | 4,4'-DDD | 9.575 | 26101 | 23.34458 | 4,4'-DDD |
| 9.001 | 65226 | 19.90008 | Endosulfan II | 9.761 | 32794 | 20.54427 | Endosulfan II |
| 9.117 | 57168 | 19.6798 | 4,4'-DDT | 9.987 | 25702 | 21.25994 | 4,4'-DDT |
| 9.544 | 54146 | 19.62384 | Endrin aldehyde | 10.196 | 29697 | 20.51483 | Endrin aldehyde |
| 9.73 | 159919 | 95.07005 | Methoxychlor | 10.86 | 68040 | 106.189 | Methoxychlor |
| 10.111 | 57969 | 19.83462 | Endo. sulfate | 10.553 | 29589 | 20.93322 | Endo. sulfate |
| 10.484 | 70752 | 20.25189 | Endrin ketone | 11.311 | 35523 | 21.73588 | Endrin ketone |
| 11.819 | 141528 | 37.16575 | DCB | 13.345 | 66976 | 39.50496 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.95A
Area File: C:\CPWIN\DATA1\1C13088B.95A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:18:44 PM
File Reported On: 3/30/2004 at 8:18:53 PM

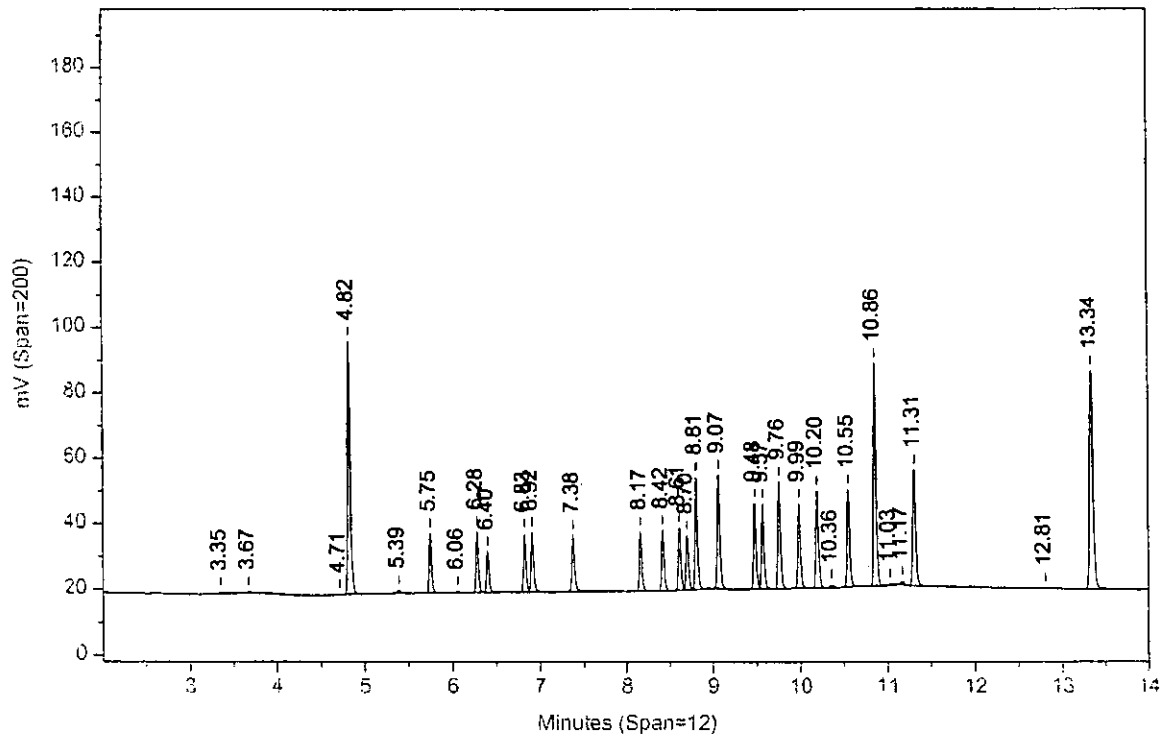
8766

10X REPLOTS

C:\CPWIN\DATA1\1C13088.95R




C:\CPWIN\DATA1\1C13088B.95R



Sample Name: **AR1630424D HCAR163HC CCAL 048999999**
Acquired from CP13--H6722A via port 3 on 3/30/04 07:20:01pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.96R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.549 | | 0.0000 | 0.000 | 908.6 | 0.037 | BB | 0.034 | 449.45 | 0.051 |
| 2 | 3.884 | | 0.0000 | 0.000 | 2762.0 | 0.113 | BB | 0.076 | 606.29 | 0.069 |
| 3 | 4.222 | | 0.0000 | 0.000 | 372.4 | 0.015 | BB | 0.026 | 234.40 | 0.027 |
| 4 | 4.310 | TCX | 8.2864 | 11.493 | 78180.0 | 3.193 | BB | 0.041 | 31451.30 | 3.565 |
| 5 | 4.560 | | 0.0000 | 0.000 | 7445.1 | 0.304 | BB | 0.041 | 2991.35 | 0.339 |
| 6 | 4.777 | | 0.0000 | 0.000 | 4642.0 | 0.190 | BB | 0.029 | 2640.12 | 0.299 |
| 7 | 4.838 | | 0.0000 | 0.000 | 40600.6 | 1.658 | BB | 0.040 | 16928.10 | 1.919 |
| 8 | 5.022 | | 0.0000 | 0.000 | 5935.1 | 0.242 | BB | 0.043 | 2290.25 | 0.260 |
| 9 | 5.240 | | 0.0000 | 0.000 | 448.5 | 0.018 | BB | 0.064 | 116.78 | 0.013 |
| 10 | 5.350 | | 0.0000 | 0.000 | 94972.8 | 3.878 | BB | 0.054 | 29052.00 | 3.293 |
| 11 | 5.522 | | 0.0000 | 0.000 | 9057.8 | 0.370 | BB | 0.039 | 3852.79 | 0.437 |
| 12 | 5.606 | gamma-BHC | 0.6985 | 0.969 | 5526.4 | 0.226 | BB | 0.028 | 3237.38 | 0.367 |
| 13 | 5.640 | | 0.0000 | 0.000 | 14808.2 | 0.605 | BB | 0.029 | 8534.80 | 0.967 |
| 14 | 5.732 | beta-BHC | 0.1183 | 0.164 | 479.4 | 0.020 | BB | 0.026 | 304.83 | 0.035 |
| 15 | 5.898 | | 0.0000 | 0.000 | 17107.6 | 0.699 | BB | 0.039 | 7245.50 | 0.821 |
| 16 | 5.998 | delta-BHC | 10.8320 | 15.024 | 158979.8 | 6.492 | BB | 0.056 | 47634.59 | 5.399 |
| 17 | 6.078 | | 0.0000 | 0.000 | 2343.9 | 0.096 | BB | 0.026 | 1531.65 | 0.174 |
| 18 | 6.131 | | 0.0000 | 0.000 | 297.8 | 0.012 | BV | 0.017 | 287.53 | 0.033 |
| 19 | 6.184 | | 0.0000 | 0.000 | 71027.9 | 2.901 | VV | 0.045 | 26031.14 | 2.951 |
| 20 | 6.271 | Heptachlor | 3.7251 | 5.167 | 43282.6 | 1.768 | VB | 0.039 | 18406.25 | 2.086 |
| 21 | 6.432 | | 0.0000 | 0.000 | 34082.5 | 1.392 | BV | 0.033 | 17467.58 | 1.980 |
| 22 | 6.464 | | 0.0000 | 0.000 | 48347.2 | 1.974 | VV | 0.040 | 20146.86 | 2.284 |
| 23 | 6.515 | | 0.0000 | 0.000 | 38674.5 | 1.579 | VB | 0.046 | 14119.35 | 1.600 |
| 24 | 6.741 | | 0.0000 | 0.000 | 75945.4 | 3.101 | BV | 0.056 | 22485.85 | 2.549 |
| 25 | 6.856 | | 0.0000 | 0.000 | 27734.5 | 1.133 | VV | 0.038 | 12238.93 | 1.387 |
| 26 | 6.907 | | 0.0000 | 0.000 | 36413.7 | 1.487 | VB | 0.048 | 12624.15 | 1.431 |
| 27 | 7.057 | | 0.0000 | 0.000 | 9104.8 | 0.372 | BB | 0.040 | 3796.15 | 0.430 |
| 28 | 7.189 | | 0.0000 | 0.000 | 2766.8 | 0.113 | BB | 0.029 | 1604.61 | 0.182 |
| 29 | 7.251 | | 0.0000 | 0.000 | 30675.8 | 1.253 | BV | 0.038 | 13338.60 | 1.512 |
| 30 | 7.338 | | 0.0000 | 0.000 | 6292.7 | 0.257 | VB | 0.033 | 3144.14 | 0.356 |
| 31 | 7.522 | Hept. epoxide | 0.5550 | 0.770 | 4679.5 | 0.191 | BV | 0.035 | 2215.27 | 0.251 |
| 32 | 7.588 | | 0.0000 | 0.000 | 48640.2 | 1.986 | VB | 0.047 | 17296.46 | 1.960 |
| 33 | 7.842 | | 0.0000 | 0.000 | 1601.7 | 0.065 | BV | 0.054 | 493.60 | 0.056 |
| 34 | 7.902 | a. Chlordane | 0.2103 | 0.292 | 2055.6 | 0.084 | VV | 0.039 | 869.16 | 0.099 |
| 35 | 7.958 | 4,4'-DDE | 2.8372 | 3.935 | 26344.6 | 1.076 | VB | 0.044 | 9983.66 | 1.132 |
| 36 | 8.121 | | 0.0000 | 0.000 | 18737.0 | 0.765 | BV | 0.035 | 8922.54 | 1.011 |
| 37 | 8.173 | o,p-DDD | 8.6056 | 11.936 | 45308.9 | 1.850 | VV | 0.041 | 18529.78 | 2.100 |
| 38 | 8.254 | | 0.0000 | 0.000 | 28026.8 | 1.145 | VB | 0.058 | 8001.84 | 0.907 |
| 39 | 8.356 | | 0.0000 | 0.000 | 92815.2 | 3.790 | BV | 0.042 | 36800.53 | 4.171 |
| 40 | 8.487 | | 0.0000 | 0.000 | 12559.6 | 0.513 | VV | 0.045 | 4614.30 | 0.523 |
| 41 | 8.553 | | 0.0000 | 0.000 | 1983.5 | 0.081 | VB | 0.035 | 949.36 | 0.108 |
| 42 | 8.634 | | 0.0000 | 0.000 | 16265.7 | 0.664 | BV | 0.038 | 7147.14 | 0.810 |
| 43 | 8.708 | Endrin | 15.6597 | 21.719 | 179487.2 | 7.330 | VV | 0.064 | 46558.36 | 5.277 |
| 44 | 8.878 | | 0.0000 | 0.000 | 55873.7 | 2.282 | VB | 0.042 | 22415.27 | 2.541 |
| 45 | 9.010 | Endosulfan II | 0.5051 | 0.701 | 3317.3 | 0.135 | BV | 0.033 | 1655.51 | 0.188 |
| 46 | 9.082 | | 0.0000 | 0.000 | 159003.1 | 6.493 | VV | 0.055 | 47848.33 | 5.423 |
| 47 | 9.221 | | 0.0000 | 0.000 | 74987.4 | 3.062 | VV | 0.041 | 30390.56 | 3.445 |
| 48 | 9.282 | | 0.0000 | 0.000 | 47092.8 | 1.923 | VB | 0.044 | 17920.58 | 2.031 |
| 49 | 9.404 | | 0.0000 | 0.000 | 10816.6 | 0.442 | BV | 0.035 | 5102.65 | 0.578 |
| 50 | 9.463 | | 0.0000 | 0.000 | 11392.0 | 0.465 | VV | 0.048 | 3919.79 | 0.444 |
| 51 | 9.548 | Endrin aldehyde | 10.7288 | 14.880 | 68738.5 | 2.807 | VV | 0.039 | 29602.78 | 3.355 |
| 52 | 9.602 | | 0.0000 | 0.000 | 44048.3 | 1.799 | VV | 0.041 | 17783.27 | 2.016 |
| 53 | 9.664 | | 0.0000 | 0.000 | 23888.3 | 0.976 | VV | 0.042 | 9471.15 | 1.074 |
| 54 | 9.729 | Methoxychlor | 0.6634 | 0.920 | 1838.0 | 0.075 | VV | 0.027 | 1115.87 | 0.126 |
| 55 | 9.776 | | 0.0000 | 0.000 | 8473.7 | 0.346 | VB | 0.036 | 3946.69 | 0.447 |
| 56 | 9.856 | | 0.0000 | 0.000 | 12611.7 | 0.515 | BV | 0.036 | 5883.22 | 0.667 |
| 57 | 9.936 | | 0.0000 | 0.000 | 188286.3 | 7.689 | VB | 0.045 | 69152.53 | 7.838 |
| 58 | 10.194 | | 0.0000 | 0.000 | 139.3 | 0.006 | BB | 0.036 | 64.27 | 0.007 |
| 59 | 10.310 | | 0.0000 | 0.000 | 135653.4 | 5.540 | BV | 0.058 | 38692.36 | 4.386 |
| 60 | 10.403 | | 0.0000 | 0.000 | 58649.7 | 2.395 | VV | 0.053 | 18352.74 | 2.080 |
| 61 | 10.649 | | 0.0000 | 0.000 | 3801.0 | 0.155 | VV | 0.042 | 1525.27 | 0.173 |
| 62 | 10.723 | | 0.0000 | 0.000 | 2953.6 | 0.121 | VV | 0.035 | 1424.13 | 0.161 |
| 63 | 10.777 | | 0.0000 | 0.000 | 23578.7 | 0.963 | VV | 0.044 | 8916.61 | 1.011 |
| 64 | 10.864 | | 0.0000 | 0.000 | 1003.3 | 0.041 | VB | 0.034 | 492.66 | 0.056 |

9768

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.109 | | 0.0000 | 0.000 | 54736.0 | 2.235 | BB | 0.046 | 19998.27 | 2.267 |
| 66 | 11.523 | | 0.0000 | 0.000 | 16832.2 | 0.687 | BB | 0.044 | 6366.05 | 0.722 |
| 67 | 11.820 | DCB | 8.6747 | 12.031 | 93273.1 | 3.809 | BB | 0.047 | 33033.45 | 3.744 |

Total Area = 2448709.0, Total Amount = 72.1, Total Height = 882248.8, Sample Units = PPB

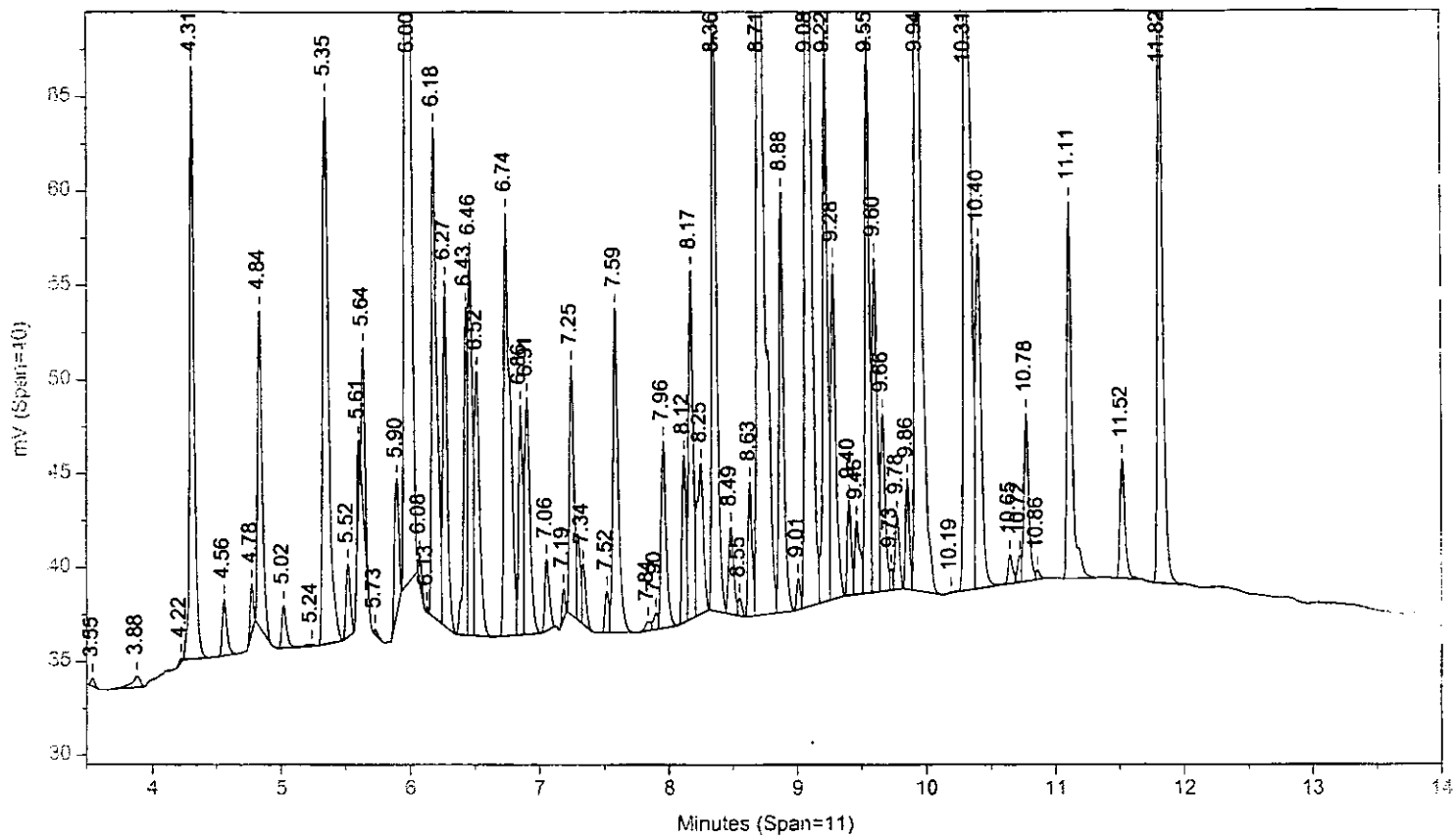
Sample Name: **AR1630424D HCAR163HC CCAL 048999999**
Acquired from CP13--H6722B via port 4 on 3/30/04 07:20:01pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.96R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.675 | | 0.0000 | 0.000 | 7535.1 | 0.620 | BB | 0.339 | 370.64 | 0.080 |
| 2 | 4.823 | TCX | 7.7517 | 5.937 | 33311.9 | 2.741 | BB | 0.037 | 15163.98 | 3.286 |
| 3 | 4.999 | | 0.0000 | 0.000 | 1717.7 | 0.141 | BB | 0.036 | 798.48 | 0.173 |
| 4 | 5.246 | | 0.0000 | 0.000 | 3732.3 | 0.307 | BB | 0.038 | 1621.88 | 0.351 |
| 5 | 5.452 | | 0.0000 | 0.000 | 4021.2 | 0.331 | BB | 0.036 | 1849.69 | 0.401 |
| 6 | 5.543 | HCB | 3.3843 | 2.592 | 21760.6 | 1.791 | BB | 0.039 | 9393.06 | 2.036 |
| 7 | 5.877 | | 0.0000 | 0.000 | 3214.6 | 0.265 | BV | 0.042 | 1262.83 | 0.274 |
| 8 | 6.123 | | 0.0000 | 0.000 | 51094.1 | 4.204 | VV | 0.057 | 14936.07 | 3.237 |
| 9 | 6.285 | gamma-BHC | 0.9628 | 0.737 | 4544.2 | 0.374 | VV | 0.045 | 1681.43 | 0.364 |
| 10 | 6.422 | beta-BHC | 5.0045 | 3.833 | 11901.9 | 0.979 | VV | 0.034 | 5786.03 | 1.254 |
| 11 | 6.475 | | 0.0000 | 0.000 | 19614.4 | 1.614 | VV | 0.041 | 8037.94 | 1.742 |
| 12 | 6.606 | | 0.0000 | 0.000 | 6951.3 | 0.572 | VV | 0.034 | 3454.83 | 0.749 |
| 13 | 6.643 | | 0.0000 | 0.000 | 5084.2 | 0.418 | VV | 0.037 | 2280.15 | 0.494 |
| 14 | 6.760 | | 0.0000 | 0.000 | 81402.8 | 6.698 | VV | 0.055 | 24557.04 | 5.322 |
| 15 | 6.949 | Heptachlor | 7.9798 | 6.112 | 37328.5 | 3.072 | VV | 0.042 | 14731.93 | 3.193 |
| 16 | 7.092 | | 0.0000 | 0.000 | 18291.8 | 1.505 | VV | 0.035 | 8782.86 | 1.903 |
| 17 | 7.142 | | 0.0000 | 0.000 | 7172.5 | 0.590 | VV | 0.038 | 3180.22 | 0.689 |
| 18 | 7.212 | | 0.0000 | 0.000 | 21620.0 | 1.779 | VV | 0.037 | 9843.83 | 2.133 |
| 19 | 7.274 | | 0.0000 | 0.000 | 21386.5 | 1.760 | VV | 0.039 | 9140.42 | 1.981 |
| 20 | 7.330 | | 0.0000 | 0.000 | 19916.7 | 1.639 | VV | 0.049 | 6770.89 | 1.467 |
| 21 | 7.585 | Telodrin | 6.8528 | 5.249 | 26842.0 | 2.209 | VV | 0.036 | 12466.16 | 2.702 |
| 22 | 7.645 | | 0.0000 | 0.000 | 14240.0 | 1.172 | VV | 0.046 | 5133.06 | 1.112 |
| 23 | 7.752 | | 0.0000 | 0.000 | 29281.5 | 2.409 | VV | 0.052 | 9434.42 | 2.045 |
| 24 | 7.960 | | 0.0000 | 0.000 | 5180.6 | 0.426 | VV | 0.037 | 2357.11 | 0.511 |
| 25 | 7.999 | | 0.0000 | 0.000 | 3376.1 | 0.278 | VV | 0.037 | 1511.05 | 0.327 |
| 26 | 8.084 | | 0.0000 | 0.000 | 4523.0 | 0.372 | VV | 0.038 | 1998.45 | 0.433 |
| 27 | 8.148 | Hept. epoxide | 5.1121 | 3.915 | 22440.5 | 1.847 | VV | 0.041 | 9226.07 | 1.999 |
| 28 | 8.306 | | 0.0000 | 0.000 | 3265.0 | 0.269 | VV | 0.038 | 1423.04 | 0.308 |
| 29 | 8.386 | o,p-DDE | 7.6202 | 5.836 | 21890.5 | 1.801 | VV | 0.039 | 9474.89 | 2.053 |
| 30 | 8.530 | | 0.0000 | 0.000 | 2270.9 | 0.187 | VV | 0.053 | 711.17 | 0.154 |
| 31 | 8.776 | | 0.0000 | 0.000 | 902.0 | 0.074 | VB | 0.035 | 432.94 | 0.094 |
| 32 | 8.856 | | 0.0000 | 0.000 | 4212.9 | 0.347 | BV | 0.039 | 1793.84 | 0.389 |
| 33 | 9.004 | | 0.0000 | 0.000 | 19050.0 | 1.568 | VV | 0.053 | 5958.73 | 1.291 |
| 34 | 9.049 | Dieldrin | 6.3922 | 4.896 | 24570.0 | 2.022 | VV | 0.038 | 10654.81 | 2.309 |
| 35 | 9.135 | | 0.0000 | 0.000 | 14629.5 | 1.204 | VB | 0.049 | 5014.60 | 1.087 |
| 36 | 9.258 | | 0.0000 | 0.000 | 54273.1 | 4.466 | BB | 0.041 | 22201.57 | 4.812 |
| 37 | 9.436 | | 0.0000 | 0.000 | 11742.4 | 0.966 | BV | 0.040 | 4909.58 | 1.064 |
| 38 | 9.516 | o,p-DDT | 22.2904 | 17.072 | 58833.3 | 4.841 | VB | 0.037 | 26232.04 | 5.685 |
| 39 | 9.735 | Endosulfan II | 11.5570 | 8.852 | 53204.4 | 4.378 | BB | 0.048 | 18448.07 | 3.998 |
| 40 | 9.884 | | 0.0000 | 0.000 | 3879.4 | 0.319 | BB | 0.039 | 1653.82 | 0.358 |
| 41 | 9.995 | 4,4'-DDT | 19.6625 | 15.060 | 73956.6 | 6.086 | BB | 0.052 | 23771.10 | 5.152 |
| 42 | 10.105 | | 0.0000 | 0.000 | 29401.7 | 2.419 | BB | 0.033 | 14661.97 | 3.178 |
| 43 | 10.178 | Endrin aldehyde | 5.1200 | 3.921 | 14315.6 | 1.178 | BB | 0.032 | 7411.71 | 1.606 |
| 44 | 10.337 | | 0.0000 | 0.000 | 6948.0 | 0.572 | BB | 0.043 | 2662.88 | 0.577 |
| 45 | 10.498 | | 0.0000 | 0.000 | 41507.3 | 3.416 | BB | 0.039 | 17605.84 | 3.816 |
| 46 | 10.595 | | 0.0000 | 0.000 | 17107.8 | 1.408 | BB | 0.035 | 8214.13 | 1.780 |
| 47 | 10.669 | | 0.0000 | 0.000 | 15111.1 | 1.243 | BB | 0.051 | 4944.37 | 1.072 |
| 48 | 10.805 | | 0.0000 | 0.000 | 76892.0 | 6.327 | BB | 0.037 | 34299.90 | 7.433 |
| 49 | 10.897 | | 0.0000 | 0.000 | 854.6 | 0.070 | BB | 0.030 | 473.57 | 0.103 |
| 50 | 11.005 | | 0.0000 | 0.000 | 3083.4 | 0.254 | BB | 0.047 | 1096.48 | 0.238 |
| 51 | 11.227 | | 0.0000 | 0.000 | 892.8 | 0.073 | BB | 0.030 | 487.88 | 0.106 |
| 52 | 11.330 | Endrin ketone | 11.7094 | 8.968 | 85071.5 | 7.000 | BB | 0.074 | 19136.80 | 4.147 |
| 53 | 11.675 | | 0.0000 | 0.000 | 1718.9 | 0.141 | BB | 0.042 | 678.08 | 0.147 |
| 54 | 11.770 | | 0.0000 | 0.000 | 1409.3 | 0.116 | BB | 0.037 | 631.92 | 0.137 |
| 55 | 11.974 | | 0.0000 | 0.000 | 8381.6 | 0.690 | BB | 0.040 | 3504.68 | 0.760 |
| 56 | 12.211 | | 0.0000 | 0.000 | 23271.7 | 1.915 | BB | 0.045 | 8688.31 | 1.883 |
| 57 | 12.811 | | 0.0000 | 0.000 | 8727.1 | 0.718 | BB | 0.050 | 2936.96 | 0.636 |
| 58 | 13.345 | DCB | 9.1646 | 7.019 | 46400.6 | 3.818 | BB | 0.050 | 15537.66 | 3.367 |

8776

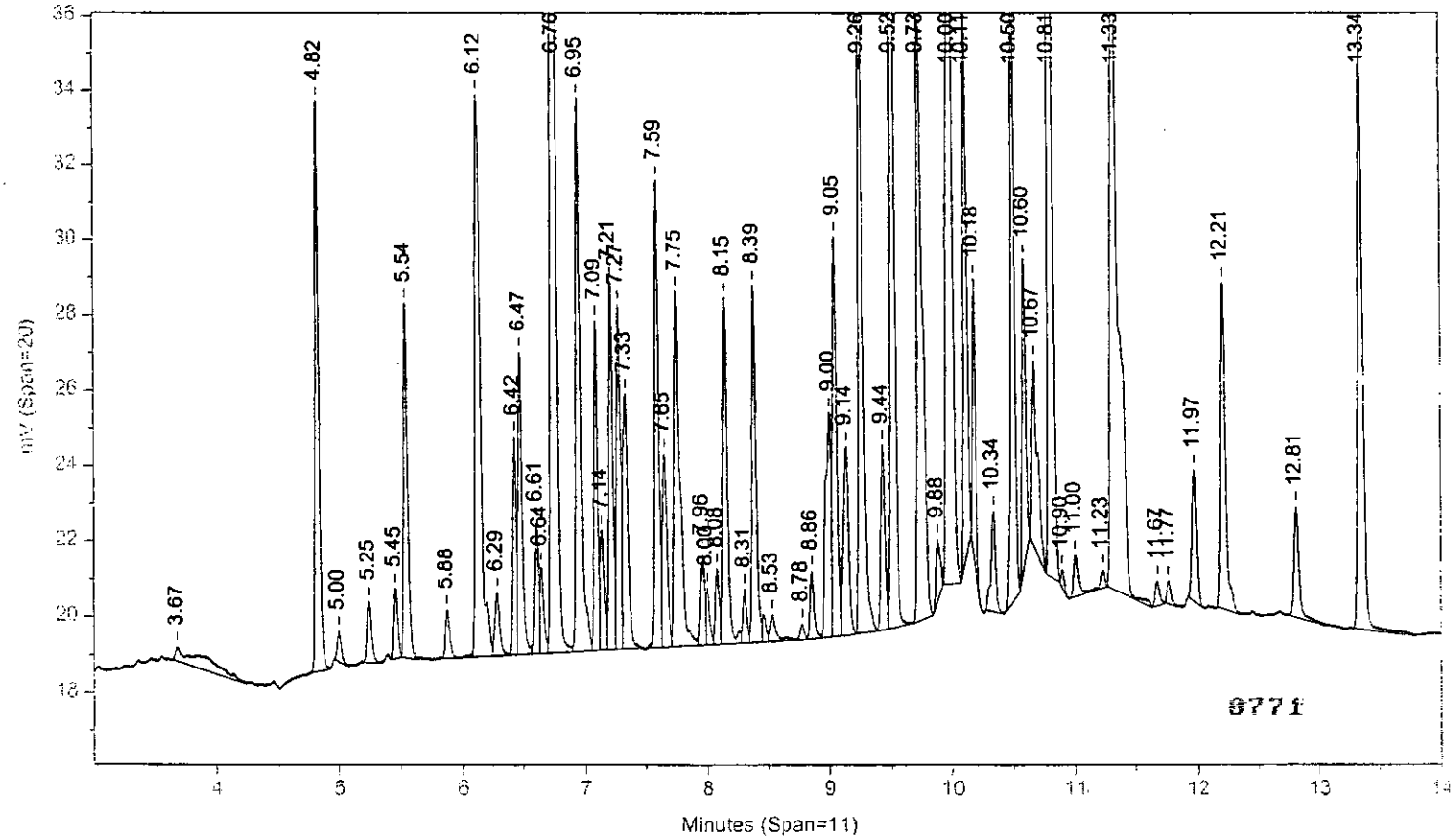
Total Area = 1215261.0, Total Amount = 130.564, Total Height = 461423.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.96R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 7:06:01 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.96R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 7:06:01 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 1 Dilution Factor: 1
Analyst: 120

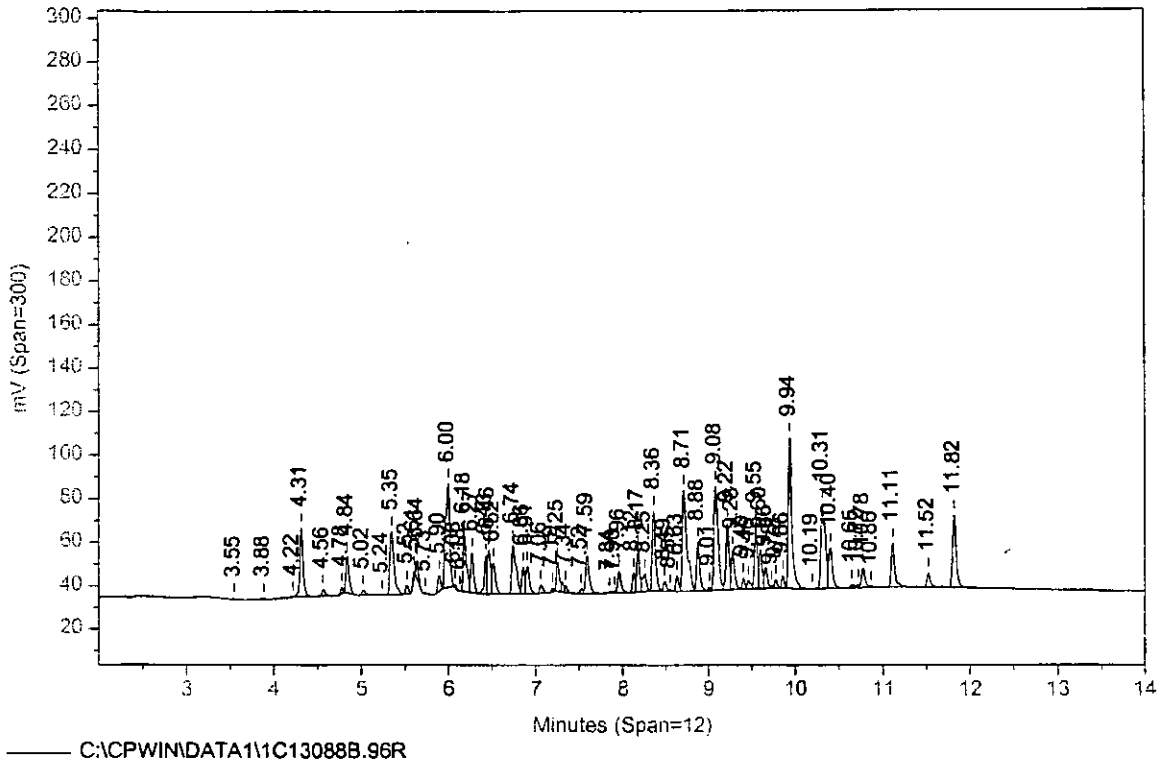
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.31 | 31451 | 8.28639 | TCX | 4.823 | 15164 | 7.7517 | TCX |
| . | 0 | . | HCB | 5.543 | 9393 | 3.3843 | HCB |
| 5.606 | 3237 | .69845 | gamma-BHC | 6.285 | 1681 | .96275 | gamma-BHC |
| 5.732 | 305 | .11831 | beta-BHC | 6.422 | 5786 | 5.00447 | beta-BHC |
| 5.998 | 47635 | 10.83204 | delta-BHC | . | 0 | . | delta-BHC |
| 6.271 | 18406 | 3.72507 | Heptachlor | 6.949 | 14732 | 7.97982 | Heptachlor |
| 7.522 | 2215 | .55504 | Hept. epoxide | 8.148 | 9226 | 5.11213 | Hept. epoxide |
| . | 0 | . | Telodrin | 7.585 | 12466 | 6.85282 | Telodrin |
| 7.902 | 869 | .21031 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.958 | 9984 | 2.83717 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.173 | 18530 | 8.60559 | o,p-DDD | . | 0 | . | o,p-DDD |
| . | 0 | . | o,p-DDE | 8.386 | 9475 | 7.6202 | o,p-DDE |
| 8.708 | 46558 | 15.65969 | Endrin | . | 0 | . | Endrin |
| 9.01 | 1656 | .50509 | Endosulfan II | 9.735 | 18448 | 11.55701 | Endosulfan II |
| . | 0 | . | Dieldrin | 9.049 | 10655 | 6.39224 | Dieldrin |
| . | 0 | . | o,p-DDT | 9.516 | 26232 | 22.29037 | o,p-DDT |
| 9.548 | 29603 | 10.72884 | Endrin aldehyde | 10.178 | 7412 | 5.12004 | Endrin aldehyde |
| 9.729 | 1116 | .66337 | Methoxychlor | . | 0 | . | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.995 | 23771 | 19.66251 | 4,4'-DDT |
| . | 0 | . | Endrin ketone | 11.33 | 19137 | 11.7094 | Endrin ketone |
| 11.82 | 33033 | 8.67469 | DCB | 13.345 | 15538 | 9.16464 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.96A
Area File: C:\CPWIN\DATA1\1C13088B.96A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:19:06 PM
File Reported On: 3/30/2004 at 8:19:15 PM

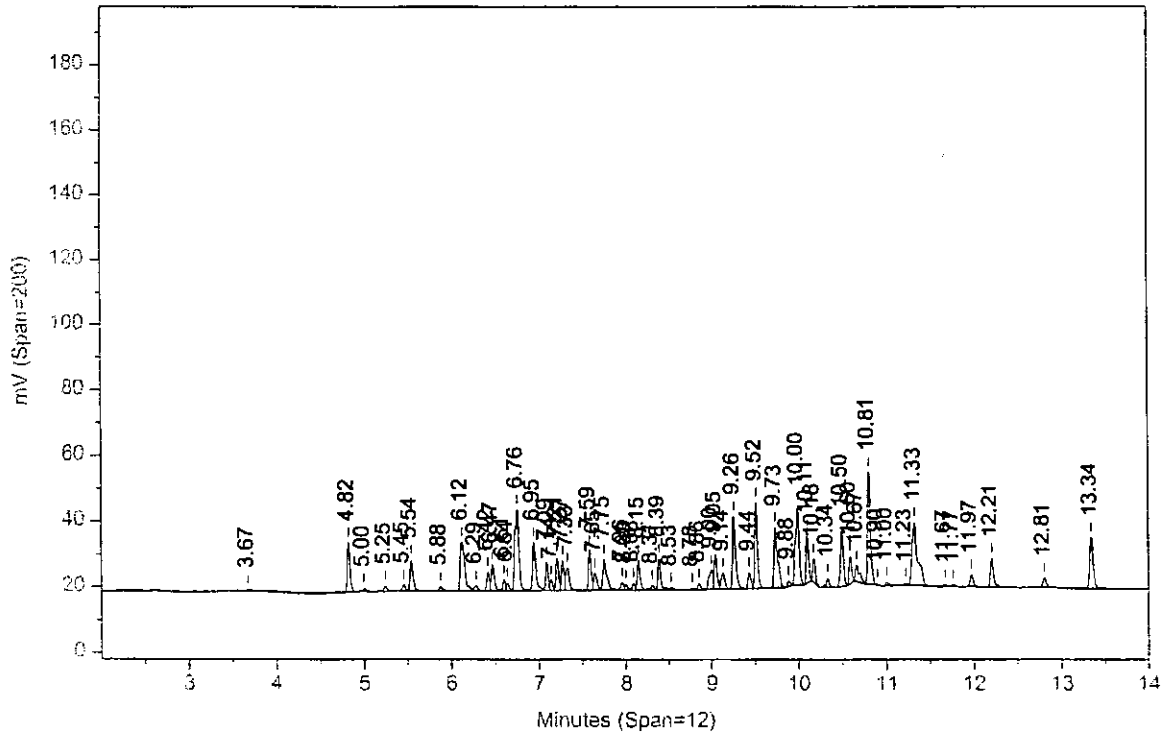
8772

10X REPLOTS

C:\CPWIN\DATA1\1C13088.96R




C:\CPWIN\DATA1\1C13088B.96R



# Raw QC Data

# Lancaster Laboratories Single Component Data Summary

**Sample Name: BLANKA** 3/30/04ACF PBLKVE **Sample ID: AB** **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

all associated samples were extracted within hold time

## Analysis Report (A)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722A
Result file : 1C13088.75R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 91.3% Conc.: 8.785064
%SSR(DCB) : 93.8% Conc.: 9.14096

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 100032 | 8.785064 |
| **HCB** | 4.85 | 4.90 | 4.91 | 1716 | 0.082224 |
| **delta-BHC** | 5.96 | 5.97 | 6.02 | 3617 | 0.274187 |
| **Hept. epoxide** | 7.51 | 7.53 | 7.57 | 568 | 0.047397 |
| **g. Chlordane** | 7.68 | 7.73 | 7.74 | 67095 | 5.775867 |
| **a. Chlordane** | 7.85 | 7.88 | 7.91 | 1124 | 0.090646 |
| **4,4'-DDE** | 7.94 | 7.99 | 8.00 | 1331 | 0.126080 |
| **Endosulfan I** | 8.04 | 8.08 | 8.10 | 1475 | 0.135517 |
| **Kepone** | 8.73 | 8.77 | 8.79 | 620 | 0.531539 |
| **Endosulfan II** | 8.97 | 9.02 | 9.03 | 231 | 0.023468 |
| **Methoxychlor** | 9.70 | 9.72 | 9.76 | 949 | 0.187982 |
| **Endo. sulfate** | 10.08 | 10.09 | 10.14 | 243 | 0.027714 |
| **DCB** | 11.79 | 11.82 | 11.85 | 104427 | 9.140960 |

## Analysis Report (B)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722B
Result file : 1C13088B.75R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 95.1% Conc.: 9.150539
%SSR(DCB) : 95.9% Conc.: 9.34016

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.83 | 4.86 | 53701 | 9.150539 |
| **HCB** | 5.52 | 5.56 | 5.58 | 1317 | 0.158132 |
| **gamma-BHC** | 6.25 | 6.26 | 6.31 | 460 | 0.087868 |
| **Heptachlor** | 6.89 | 6.93 | 6.95 | 647 | 0.116794 |
| **o,p-DDE** | 8.38 | 8.40 | 8.44 | 1099 | 0.294735 |
| **Dieldrin** | 9.04 | 9.05 | 9.10 | 321 | 0.064184 |
| **Mirex** | 11.27 | 11.30 | 11.33 | 197 | 0.048760 |
| **DCB** | 13.32 | 13.35 | 13.38 | 47506 | 9.340160 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 9.150539 | | | | 4.08 | |
| HCB | B | 0.158132 | | | | ** 63.16 | |
| alpha-BHC | | | <0.83 | <0.17 | | | |
| gamma-BHC | | | <0.83 | <0.17 | | | |
| beta-BHC | | | <0.83 | <0.17 | | | |
| delta-BHC | | | <0.83 | <0.17 | | | |
| Heptachlor | | | <0.83 | <0.17 | | | |
| Aldrin | | | <1.5 | <0.51 | | | |
| Telodrin | | | | | | | |
| Hept. epoxide | | | <0.83 | <0.17 | | | |
| o,p-DDE | | | | | | | |
| g. Chlordane | | | <0.9 | <0.3 | | | |
| a. Chlordane | | | <0.83 | <0.17 | | | |
| 4,4'-DDE | | | <1.7 | <0.33 | | | |
| Endosulfan I | | | <1.3 | <0.44 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <1.7 | <0.33 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <1.7 | <0.5 | | | |
| 4,4'-DDD | | | <1.7 | <0.58 | | | |
| Kepone | | | | | | | |
| Endosulfan II | | | <1.7 | <0.33 | | | |
| 4,4'-DDT | | | <1.7 | <0.33 | | | |
| Endrin aldehyde | | | <3 | <1 | | | |
| Methoxychlor | | | <12 | <4 | | | |
| Mirex | | | | | | | 8275 |
| Endo. sulfate | | | <1.7 | <0.33 | | | |
| Endrin ketone | | | <1.7 | <0.33 | | | |

Difference = High - Low Amount divided by the Average times 100
%Difference > 40
ecovery outside QC Limits
ted on: 3/30/04 20:37:23

# Lancaster Laboratories Single Component Data Summary

**Sample Name: BLANKA** 3/30/04ACF PBLKVE Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

**Analysis Report (A)**

| | |
|---|---|
| Injected on | : MAR 30, 2004 11:53:39 |
| Instrument | : CP13-H6722A |
| Result file | : 1C13088.75R |
| Calibration file | : 2C13088.CAL |
| Method file | : PESTD.MET |

**Analysis Report (B)**

| | |
|---|---|
| Injected on | : MAR 30, 2004 11:53:39 |
| Instrument | : CP13-H6722B |
| Result file | : 1C13088B.75R |
| Calibration file | : 2C13088B.CAL |
| Method file | : PESTDB.MET |

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| DCB | B | 9.340160 | | | | 2.16 | |

Units: ug/kg

Reviewed by: _____ Date: 3.31.04
Verified by: _____ Date: 3/31/04

8776

Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 3/30/04 20:37:23

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** BLANKA 3/30/04ACF PBLKVE BLK Sample ID: AB **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 10 ml Analyst: 0120 SDG: State:
**Analyses:** 01225

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 11:53:39 |
| **Instrument** | H6722A |
| **Result file** | 1C13088.75R |
| **Calibration file** | 2C13088 |
| **Method file** | PESTD |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 91.3% | Conc: | 8.785064 |
| %SSR(DCB) | 93.8% | Conc: | 9.14096 |

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 11:53:39 |
| **Instrument** | H6722B |
| **Result file** | 1C13088B.75R |
| **Calibration file** | 2C13088B |
| **Method file** | PESTDB |

| | | | |
|---|---|---|---|
| %SSR(TCX) | 95.1% | Conc: | 9.150539 |
| %SSR(DCB) | 95.9% | Conc: | 9.34016 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1221 | | | <30 | <10 | | | 3 | 5 | |
| Aroclor-1232 | | | <17 | <4.3 | | | 4 | 10 | |
| Aroclor-1242 | | | <17 | <4 | | | 4 | 30 | |
| Aroclor-1248 | | | <18 | <6 | | | 4 | 30 | |
| Aroclor-1254 | | | <17 | <3.3 | | | 4 | 40 | |
| Aroclor-1260 | | | <17 | <3.3 | | | 4 | 40 | |
| Toxaphene | | | <33 | <11 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8777

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: BLANKA** 3/30/04ACF PBLKVE Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722A
Result file : 1C13088.75R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 91.3% Conc.: 8.785064
%SSR(DCB) : 93.8% Conc.: 9.14096

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 4 | 123.53 | |
| 5.32 | 5.35 | 5.38 | 704.828552 | 1.711208 | | | 2 |
| 6.16 | 6.17 | 6.22 | 210.763 | 0.57157 | | | 4 |
| 6.24 | 6.25 | 6.30 | 3685.712891 | 14.060674 | | | 5 |
| 6.71 | 6.76 | 6.77 | 1160.529907 | 3.647715 | | | 6 |
| Height Summation | | | **5761.834350** | | | | |
| Amount Avg CF: | | | **4.997792** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| E 4.75 | 4.76 | 4.81 | 7831.754395 | 101.18683 | | | 2 |
| Height Summation | | | **7831.754395** | | | | |
| Amount Avg CF: | | | **101.18683** | Linear: | | | |
| **Aroclor-1232** | | | | | 4 | 122.28 | |
| 5.32 | 5.35 | 5.38 | 704.828552 | 3.965575 | | | 2 |
| 6.16 | 6.17 | 6.22 | 210.763 | 1.250736 | | | 4 |
| 6.24 | 6.25 | 6.30 | 3685.712891 | 31.663996 | | | 5 |
| 6.71 | 6.76 | 6.77 | 1160.529907 | 8.499688 | | | 6 |
| Height Summation | | | **5761.834350** | | | | |
| Amount Avg CF: | | | **11.344999** | Linear: | | | |
| **Aroclor-1242** | | | | | 4 | 125.14 | |
| 5.32 | 5.35 | 5.38 | 704.828552 | 1.966608 | | | 2 |
| 6.16 | 6.17 | 6.22 | 210.763 | 0.663062 | | | 4 |
| 6.24 | 6.25 | 6.30 | 3685.712891 | 16.542355 | | | 5 |
| 6.71 | 6.76 | 6.77 | 1160.529907 | 4.119533 | | | 6 |
| Height Summation | | | **5761.834350** | | | | |
| Amount Avg CF: | | | **5.82289** | Linear: | | | |
| **Aroclor-1248** | | | | | 4 | 87.96 | |
| 5.32 | 5.35 | 5.38 | 704.828552 | 4.165905 | | | 1 |
| 6.71 | 6.76 | 6.77 | 1160.529907 | 2.750771 | | | 2 |
| *7.28 | 7.33 | 7.34 | 239.461945 | 0.594745 | | | 4 |
| *7.31 | 7.33 | 7.37 | 239.461945 | 0.531891 | | | 5 |
| Height Summation | | | **2344.282349** | | | | |
| Amount Avg CF: | | | **2.010828** | Linear: | | | |
| **Aroclor-1254** | | | | | 3 | 106.99 | |
| 7.22 | 7.24 | 7.28 | 3880.343262 | 10.849463 | | | 1 |
| 8.45 | 8.47 | 8.51 | 447.365265 | 0.959965 | | | 5 |
| 9.05 | 9.08 | 9.11 | 1534.553467 | 2.88986 | | | 6 |
| Height Summation | | | **5862.261994** | | | | |
| Amount Avg CF: | | | **4.899763** | Linear: | | | |
| **Aroclor-1260** | | | | | 5 | 208.14 | |
| 8.33 | 8.36 | 8.39 | 1207.043091 | 2.28013 | | | 1 |
| 9.05 | 9.08 | 9.11 | 1534.553467 | 2.208102 | | | 3 |
| 9.19 | 9.23 | 9.25 | 123.324364 | 0.279432 | | | 4 |
| 9.91 | 9.94 | 9.97 | 367.424103 | 0.36389 | | | 5 |
| 10.28 | 10.30 | 10.34 | 49537.65625 | 87.209319 | | | 6 |
| Height Summation | | | **52770.001275** | | | | |
| Amount Avg CF: | | | **18.468175** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722B
Result file : 1C13088B.75R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 95.1% Conc.: 9.150539
%SSR(DCB) : 95.9% Conc.: 9.34016

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 50.28 | |
| 5.52 | 5.56 | 5.58 | 1316.67627 | 10.063043 | | | 1 |
| 6.74 | 6.77 | 6.80 | 2871.44873 | 8.489507 | | | 3 |
| 6.92 | 6.93 | 6.98 | 646.860107 | 3.130803 | | | 4 |
| Height Summation | | | **4834.985107** | | | | |
| Amount Avg CF: | | | **7.227784** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 5.52 | 5.56 | 5.58 | 1316.67627 | 7.29102 | | | 3 |
| Height Summation | | | **1316.676270** | | | | |
| Amount Avg CF: | | | **7.29102** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 55.47 | |
| 5.52 | 5.56 | 5.58 | 1316.67627 | 9.328989 | | | 1 |
| 6.74 | 6.77 | 6.80 | 2871.44873 | 19.520976 | | | 3 |
| 6.93 | 6.93 | 6.99 | 646.860107 | 7.055052 | | | 4 |
| Height Summation | | | **4834.985107** | | | | |
| Amount Avg CF: | | | **11.968339** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 48.37 | |
| 5.52 | 5.56 | 5.58 | 1316.67627 | 10.988868 | | | 1 |
| 6.73 | 6.77 | 6.79 | 2871.44873 | 10.027008 | | | 3 |
| 6.92 | 6.93 | 6.98 | 646.860107 | 3.665782 | | | 4 |
| Height Summation | | | **4834.985107** | | | | |
| Amount Avg CF: | | | **8.227219** | Linear: | | | |
| **Aroclor-1248** | | | | | 1 | | |
| 7.19 | 7.20 | 7.25 | 729.086853 | 3.726518 | | | 1 |
| Height Summation | | | **729.086853** | | | | |
| Amount Avg CF: | | | **3.726518** | Linear: | | | |
| **Aroclor-1254** | | | | | 1 | | |
| 8.36 | 8.40 | 8.42 | 1099.413086 | 3.945487 | | | 2 |
| Height Summation | | | **1099.413086** | | | | |
| Amount Avg CF: | | | **3.945487** | Linear: | | | |
| **Aroclor-1260** | | | | | 1 | | |
| 11.30 | 11.30 | 11.36 | 197.069214 | 0.721631 | | | 6 |
| Height Summation | | | **197.069214** | | | | |
| Amount Avg CF: | | | **0.721631** | Linear: | | | |
| **Chlordane** | | | | | 3 | 37.11 | |
| +6.68 | 6.69 | 6.74 | 359.840759 | 1.808117 | | | 1 |
| 6.68 | 6.72 | 6.74 | 759.98877 | 3.818768 | | | 1 |
| 6.89 | 6.93 | 6.95 | 646.860107 | 2.760116 | | | 2 |
| 8.40 | 8.40 | 8.46 | 1099.413086 | 1.756915 | | | 4 |
| Height Summation | | | **2506.261963** | | | | |
| Amount Avg CF: | | | **2.7786** | Linear: | | | |
| **Toxaphene** | | | | | 1 | | |
| 9.01 | 9.05 | 9.07 | 320.950165 | 6.344268 | | | 1 |
| Height Summation | | | **320.950165** | | | | |
| Amount Avg CF: | | | **6.344268** | Linear: | | | |

8778

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/30/04 20:38:30

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: BLANKA** 3/30/04ACF PBLKVE Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722A
Result file : 1C13088.75R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 30, 2004 11:53:39
Instrument : CP13--H6722B
Result file : 1C13088B.75R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | **5** | **195.61** | |
| 6.14 | 6.17 | 6.20 | 210.763 | 0.44425 | | | 1 |
| 6.86 | 6.91 | 6.92 | 3103.343506 | 4.920796 | | | 3 |
| 7.68 | 7.73 | 7.74 | 67094.83593 | 56.028082 | | | 4 |
| 7.85 | 7.88 | 7.91 | 1123.845459 | 0.736445 | | | 5 |
| 8.87 | 8.88 | 8.93 | 120.637604 | 0.28744 | | | 6 |
| Height Summation | | | **71653.425507** | | | | |
| Amount Avg CF: | | | **12.483403** | Linear: | | | |
| **Toxaphene** | | | | | 3 | **83.19** | |
| 9.11 | 9.15 | 9.17 | 256.514496 | 1.615927 | | | 2 |
| 9.69 | 9.72 | 9.75 | 948.624878 | 7.175092 | | | 4 |
| 10.41 | 10.44 | 10.47 | 421.292664 | 2.213897 | | | 6 |
| Height Summation | | | **1626.432038** | | | | |
| Amount Avg CF: | | | **3.668305** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 17 | 3.3 | | 36.48 | 4 | 40 | |
| | | | 17 | 4.8 | | | | | |
| Aroclor-1221 | | | 30 | 10 | E | ** 173.12 | 3 | 5 | |
| Aroclor-1232 | | | 17 | 4.3 | | 5.35 | 4 | 10 | |
| Aroclor-1242 | | | 17 | 4 | | 34.23 | 4 | 30 | |
| | | | 17 | 5 | | | | | |
| Aroclor-1248 | | | 17 | 4.9 | | ** 59.81 | 4 | 30 | |
| | | | 18 | 6 | | | | | |
| Aroclor-1254 | | | 17 | 3.3 | | 21.58 | 4 | 40 | |
| | | | 17 | 5.7 | | | | | |
| Aroclor-1260 | | | 17 | 3.3 | | ** 184.96 | 4 | 40 | |
| | | | 17 | 4.4 | | | | | |
| Chlordane | | | 17 | 4 | | ** 127.18 | 2 | 20 | |
| Toxaphene | | | 33 | 11 | | ** 53.45 | 4 | 30 | |

Units: ug/kg

8779

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/30/04 20:38:30

Sample Name: **BLANKA 3/30/04ACF ABPBLKVE BLK 040890035A 08899**
Acquired from CP13--H6722A via port 3 on 3/30/04 12:07:39pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.75R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.556 | | 0.0000 | 0.000 | 188536.4 | 13.244 | BB | 0.042 | 74068.21 | 14.375 |
| 2 | 3.711 | | 0.0000 | 0.000 | 861.5 | 0.061 | BB | 0.057 | 251.83 | 0.049 |
| 3 | 3.894 | | 0.0000 | 0.000 | 3601.3 | 0.253 | BB | 0.067 | 891.80 | 0.173 |
| 4 | 3.985 | | 0.0000 | 0.000 | 5035.7 | 0.354 | BB | 0.044 | 1918.63 | 0.372 |
| 5 | 4.066 | | 0.0000 | 0.000 | 40589.6 | 2.851 | BB | 0.041 | 16689.41 | 3.239 |
| 6 | 4.176 | | 0.0000 | 0.000 | 236.7 | 0.017 | BB | 0.025 | 159.95 | 0.031 |
| 7 | 4.260 | | 0.0000 | 0.000 | 2172.6 | 0.153 | BB | 0.049 | 740.11 | 0.144 |
| 8 | 4.313 | TCX | 263.5519 | 34.822 | 238092.7 | 16.725 | BB | 0.040 | 100032.10 | 19.415 |
| 9 | 4.483 | | 0.0000 | 0.000 | 10323.2 | 0.725 | BB | 0.077 | 2239.53 | 0.435 |
| 10 | 4.635 | | 0.0000 | 0.000 | 27557.7 | 1.936 | BB | 0.040 | 11590.76 | 2.250 |
| 11 | 4.758 | | 0.0000 | 0.000 | 20341.1 | 1.429 | BB | 0.043 | 7831.75 | 1.520 |
| 12 | 4.900 | HCB | 2.4667 | 0.326 | 5651.0 | 0.397 | BB | 0.055 | 1716.42 | 0.333 |
| 13 | 5.017 | | 0.0000 | 0.000 | 1327.9 | 0.093 | BB | 0.039 | 572.88 | 0.111 |
| 14 | 5.194 | | 0.0000 | 0.000 | 1872.9 | 0.132 | BB | 0.057 | 546.60 | 0.106 |
| 15 | 5.250 | | 0.0000 | 0.000 | 2599.9 | 0.183 | BB | 0.040 | 1078.11 | 0.209 |
| 16 | 5.351 | | 0.0000 | 0.000 | 2102.1 | 0.148 | BB | 0.050 | 704.83 | 0.137 |
| 17 | 5.640 | | 0.0000 | 0.000 | 2818.2 | 0.198 | BB | 0.053 | 890.11 | 0.173 |
| 18 | 5.775 | | 0.0000 | 0.000 | 10264.9 | 0.721 | BB | 0.043 | 3941.34 | 0.765 |
| 19 | 5.971 | delta-BHC | 8.2256 | 1.087 | 11580.0 | 0.813 | BB | 0.053 | 3617.26 | 0.702 |
| 20 | 6.086 | | 0.0000 | 0.000 | 2241.5 | 0.157 | BB | 0.040 | 932.62 | 0.181 |
| 21 | 6.169 | | 0.0000 | 0.000 | 281.1 | 0.020 | BB | 0.022 | 210.76 | 0.041 |
| 22 | 6.253 | | 0.0000 | 0.000 | 13659.2 | 0.960 | BV | 0.062 | 3685.71 | 0.715 |
| 23 | 6.349 | | 0.0000 | 0.000 | 879.9 | 0.062 | VV | 0.030 | 482.28 | 0.094 |
| 24 | 6.413 | | 0.0000 | 0.000 | 2401.5 | 0.169 | VV | 0.034 | 1168.64 | 0.227 |
| 25 | 6.509 | | 0.0000 | 0.000 | 15602.2 | 1.096 | VB | 0.057 | 4554.56 | 0.884 |
| 26 | 6.760 | | 0.0000 | 0.000 | 4892.7 | 0.344 | BV | 0.070 | 1160.53 | 0.225 |
| 27 | 6.847 | | 0.0000 | 0.000 | 8242.5 | 0.579 | VV | 0.040 | 3413.31 | 0.662 |
| 28 | 6.915 | | 0.0000 | 0.000 | 8181.6 | 0.575 | VB | 0.044 | 3103.34 | 0.602 |
| 29 | 7.071 | | 0.0000 | 0.000 | 38364.8 | 2.695 | BB | 0.060 | 10743.80 | 2.085 |
| 30 | 7.240 | | 0.0000 | 0.000 | 9720.7 | 0.683 | BV | 0.042 | 3880.34 | 0.753 |
| 31 | 7.331 | | 0.0000 | 0.000 | 553.8 | 0.039 | VB | 0.039 | 239.46 | 0.046 |
| 32 | 7.535 | Hept. epoxide | 1.4219 | 0.188 | 2081.7 | 0.146 | BV | 0.061 | 567.51 | 0.110 |
| 33 | 7.661 | | 0.0000 | 0.000 | 7856.9 | 0.552 | VV | 0.048 | 2756.43 | 0.535 |
| 34 | 7.730 | g. Chlordane | 173.2760 | 22.894 | 150490.5 | 10.572 | VV | 0.037 | 67094.84 | 13.022 |
| 35 | 7.884 | a. Chlordane | 2.7194 | 0.359 | 4672.1 | 0.328 | VV | 0.069 | 1123.85 | 0.218 |
| 36 | 7.992 | 4,4'-DDE | 3.7824 | 0.500 | 4111.0 | 0.289 | VV | 0.051 | 1330.98 | 0.258 |
| 37 | 8.076 | Endosulfan I | 4.0655 | 0.537 | 5525.9 | 0.388 | VV | 0.062 | 1474.72 | 0.286 |
| 38 | 8.170 | | 0.0000 | 0.000 | 734.5 | 0.052 | VB | 0.037 | 328.06 | 0.064 |
| 39 | 8.288 | | 0.0000 | 0.000 | 1345.1 | 0.094 | BV | 0.059 | 382.91 | 0.074 |
| 40 | 8.357 | | 0.0000 | 0.000 | 4180.0 | 0.294 | VB | 0.058 | 1207.04 | 0.234 |
| 41 | 8.474 | | 0.0000 | 0.000 | 1333.3 | 0.094 | BB | 0.050 | 447.37 | 0.087 |
| 42 | 8.567 | | 0.0000 | 0.000 | 1018.0 | 0.072 | BB | 0.036 | 467.12 | 0.091 |
| 43 | 8.627 | | 0.0000 | 0.000 | 176.7 | 0.012 | BB | 0.023 | 129.51 | 0.025 |
| 44 | 8.766 | Kepone | 15.9462 | 2.107 | 2365.5 | 0.166 | BV | 0.064 | 620.41 | 0.120 |
| 45 | 8.879 | | 0.0000 | 0.000 | 188.3 | 0.013 | VB | 0.026 | 120.64 | 0.023 |
| 46 | 9.016 | Endosulfan II | 0.7040 | 0.093 | 898.9 | 0.063 | BV | 0.065 | 230.76 | 0.045 |
| 47 | 9.081 | | 0.0000 | 0.000 | 4579.1 | 0.322 | VV | 0.050 | 1534.55 | 0.298 |
| 48 | 9.152 | | 0.0000 | 0.000 | 549.7 | 0.039 | VV | 0.036 | 256.51 | 0.050 |
| 49 | 9.232 | | 0.0000 | 0.000 | 323.5 | 0.023 | VB | 0.044 | 123.32 | 0.024 |
| 50 | 9.339 | | 0.0000 | 0.000 | 944.8 | 0.066 | BB | 0.057 | 277.86 | 0.054 |
| 51 | 9.428 | | 0.0000 | 0.000 | 15020.6 | 1.055 | BB | 0.049 | 5145.44 | 0.999 |
| 52 | 9.598 | | 0.0000 | 0.000 | 3610.6 | 0.254 | BV | 0.088 | 684.49 | 0.133 |
| 53 | 9.666 | | 0.0000 | 0.000 | 2435.7 | 0.171 | VV | 0.051 | 794.04 | 0.154 |
| 54 | 9.723 | Methoxychlor | 5.6395 | 0.745 | 2901.1 | 0.204 | VV | 0.051 | 948.62 | 0.184 |
| 55 | 9.812 | | 0.0000 | 0.000 | 3484.5 | 0.245 | VB | 0.100 | 579.19 | 0.112 |
| 56 | 9.938 | | 0.0000 | 0.000 | 632.5 | 0.044 | BB | 0.029 | 367.42 | 0.071 |
| 57 | 10.095 | Endo. sulfate | 0.8314 | 0.110 | 676.4 | 0.048 | BV | 0.046 | 243.00 | 0.047 |
| 58 | 10.176 | | 0.0000 | 0.000 | 125.8 | 0.009 | VB | 0.031 | 67.84 | 0.013 |
| 59 | 10.300 | | 0.0000 | 0.000 | 164845.8 | 11.580 | BB | 0.055 | 49537.66 | 9.614 |
| 60 | 10.435 | | 0.0000 | 0.000 | 515.7 | 0.036 | BB | 0.020 | 421.29 | 0.082 |
| 61 | 10.647 | | 0.0000 | 0.000 | 1838.0 | 0.129 | BV | 0.056 | 548.56 | 0.106 |
| 62 | 10.692 | | 0.0000 | 0.000 | 3574.6 | 0.251 | VB | 0.036 | 1634.98 | 0.317 |
| 63 | 10.769 | | 0.0000 | 0.000 | 1319.8 | 0.093 | BV | 0.040 | 543.65 | 0.106 |
| 64 | 10.862 | | 0.0000 | 0.000 | 2974.7 | 0.209 | VV | 0.044 | 1115.61 | 0.217 |

0780

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 10.948 | | 0.0000 | 0.000 | 2826.4 | 0.199 | VB | 0.087 | 544.55 | 0.106 |
| 66 | 11.107 | | 0.0000 | 0.000 | 400.4 | 0.028 | BB | 0.035 | 190.12 | 0.037 |
| 67 | 11.146 | | 0.0000 | 0.000 | 102.9 | 0.007 | BB | 0.019 | 90.94 | 0.018 |
| 68 | 11.186 | | 0.0000 | 0.000 | 224.3 | 0.016 | BB | 0.032 | 115.59 | 0.022 |
| 69 | 11.309 | | 0.0000 | 0.000 | 1078.3 | 0.076 | BB | 0.053 | 341.33 | 0.066 |
| 70 | 11.404 | | 0.0000 | 0.000 | 343.0 | 0.024 | BB | 0.050 | 114.30 | 0.022 |
| 71 | 11.521 | | 0.0000 | 0.000 | 1463.6 | 0.103 | BB | 0.045 | 545.32 | 0.106 |
| 72 | 11.819 | DCB | 274.2288 | 36.232 | 324702.8 | 22.810 | BB | 0.052 | 104427.00 | 20.268 |
| 73 | 12.149 | | 0.0000 | 0.000 | 955.5 | 0.067 | BB | 0.060 | 263.93 | 0.051 |
| 74 | 12.277 | | 0.0000 | 0.000 | 105.4 | 0.007 | BB | 0.029 | 61.44 | 0.012 |
| 75 | 12.465 | | 0.0000 | 0.000 | 4356.4 | 0.306 | BB | 0.137 | 528.21 | 0.103 |
| 76 | 12.578 | | 0.0000 | 0.000 | 1019.9 | 0.072 | BB | 0.047 | 361.93 | 0.070 |
| 77 | 12.787 | | 0.0000 | 0.000 | 1996.1 | 0.140 | BB | 0.098 | 340.59 | 0.066 |
| 78 | 13.009 | | 0.0000 | 0.000 | 2950.6 | 0.207 | BB | 0.077 | 637.76 | 0.124 |
| 79 | 13.518 | | 0.0000 | 0.000 | 1786.2 | 0.125 | BB | 0.148 | 201.48 | 0.039 |
| 80 | 13.757 | | 0.0000 | 0.000 | 679.2 | 0.048 | BB | 0.081 | 140.26 | 0.027 |
| 81 | 13.899 | | 0.0000 | 0.000 | 632.2 | 0.044 | BB | 0.061 | 172.93 | 0.034 |

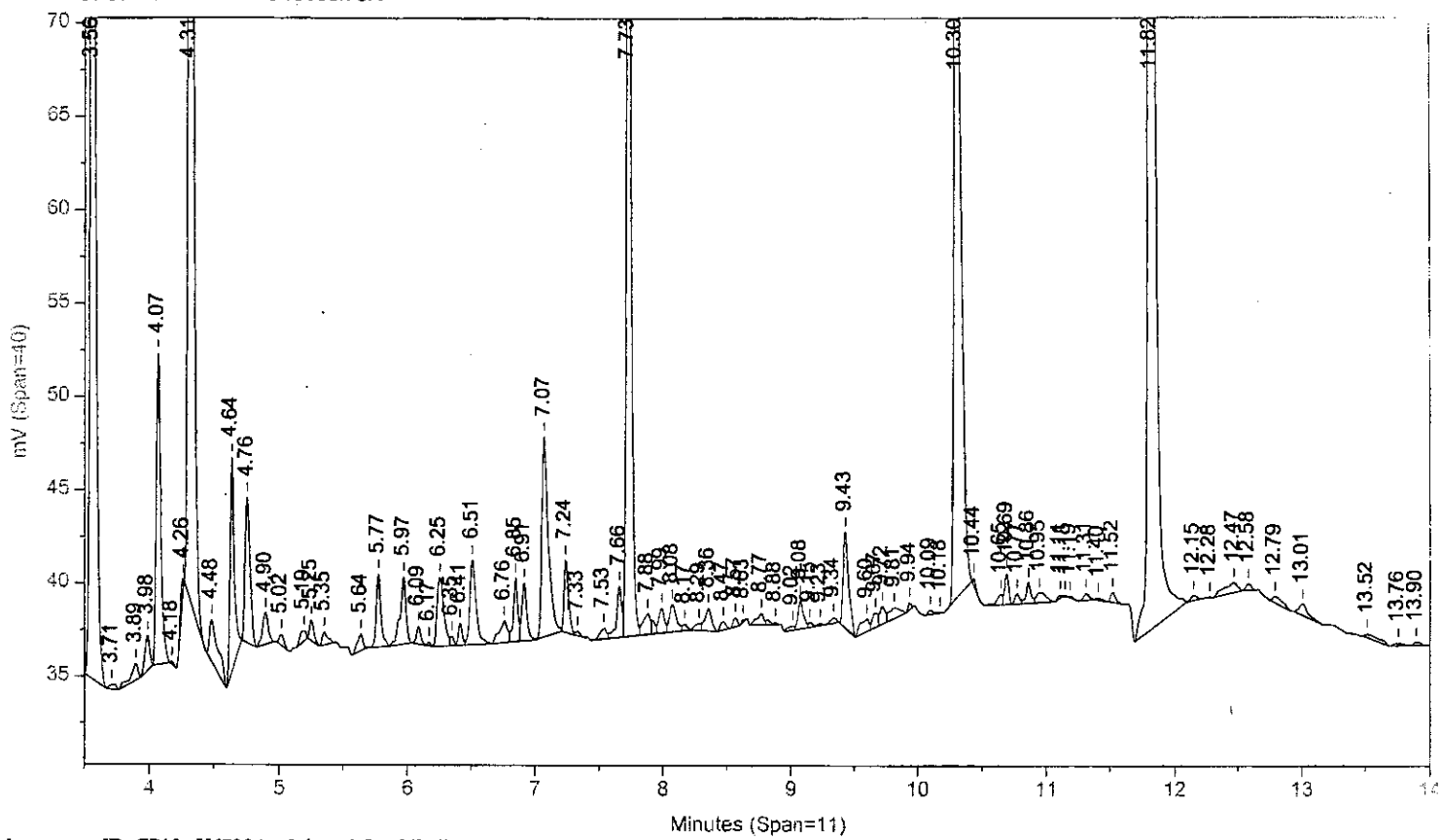
Total Area = 1423542.0, Total Amount = 756.859, Total Height = 515240.8, Sample Units = PPB

Sample Name: **BLANKA 3/30/04ACF ABPBLKVE BLK 040890035A 08899**
Acquired from CP13--H6722B via port 4 on 3/30/04 12:07:39pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.75R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.159 | | 0.0000 | 0.000 | 332.6 | 0.053 | BB | 0.026 | 211.52 | 0.086 |
| 2 | 3.217 | | 0.0000 | 0.000 | 1566.6 | 0.248 | BB | 0.041 | 641.63 | 0.261 |
| 3 | 3.277 | | 0.0000 | 0.000 | 1662.4 | 0.263 | BB | 0.035 | 795.50 | 0.324 |
| 4 | 3.408 | | 0.0000 | 0.000 | 6643.9 | 1.053 | BB | 0.078 | 1411.88 | 0.574 |
| 5 | 3.631 | | 0.0000 | 0.000 | 2074.2 | 0.329 | BB | 0.443 | 78.09 | 0.032 |
| 6 | 3.679 | | 0.0000 | 0.000 | 101536.9 | 16.091 | BB | 0.039 | 42947.58 | 17.465 |
| 7 | 4.068 | | 0.0000 | 0.000 | 560.2 | 0.089 | BB | 0.030 | 314.01 | 0.128 |
| 8 | 4.201 | | 0.0000 | 0.000 | 22021.6 | 3.490 | BB | 0.039 | 9514.77 | 3.869 |
| 9 | 4.374 | | 0.0000 | 0.000 | 2072.4 | 0.328 | BB | 0.104 | 330.94 | 0.135 |
| 10 | 4.527 | | 0.0000 | 0.000 | 469.6 | 0.074 | BB | 0.030 | 258.37 | 0.105 |
| 11 | 4.666 | | 0.0000 | 0.000 | 1066.8 | 0.169 | BB | 0.035 | 506.48 | 0.206 |
| 12 | 4.738 | | 0.0000 | 0.000 | 845.2 | 0.134 | BB | 0.032 | 437.61 | 0.178 |
| 13 | 4.826 | TCX | 274.5162 | 47.508 | 112762.6 | 17.870 | BB | 0.035 | 53701.20 | 21.838 |
| 14 | 5.006 | | 0.0000 | 0.000 | 10702.5 | 1.696 | BB | 0.073 | 2449.37 | 0.996 |
| 15 | 5.175 | | 0.0000 | 0.000 | 1354.1 | 0.215 | BB | 0.057 | 398.56 | 0.162 |
| 16 | 5.409 | | 0.0000 | 0.000 | 7671.5 | 1.216 | BB | 0.036 | 3555.83 | 1.446 |
| 17 | 5.560 | HCB | 4.7440 | 0.821 | 3090.5 | 0.490 | BB | 0.039 | 1316.68 | 0.535 |
| 18 | 5.693 | | 0.0000 | 0.000 | 1047.2 | 0.166 | BB | 0.036 | 479.80 | 0.195 |
| 19 | 5.917 | | 0.0000 | 0.000 | 990.6 | 0.157 | BV | 0.070 | 237.47 | 0.097 |
| 20 | 6.082 | | 0.0000 | 0.000 | 1987.4 | 0.315 | VV | 0.061 | 545.19 | 0.222 |
| 21 | 6.257 | gamma-BHC | 2.6360 | 0.456 | 2680.6 | 0.425 | VV | 0.097 | 460.38 | 0.187 |
| 22 | 6.470 | | 0.0000 | 0.000 | 2611.7 | 0.414 | VV | 0.047 | 926.72 | 0.377 |
| 23 | 6.695 | | 0.0000 | 0.000 | 800.3 | 0.127 | VV | 0.037 | 359.84 | 0.146 |
| 24 | 6.716 | | 0.0000 | 0.000 | 1345.5 | 0.213 | VV | 0.030 | 759.99 | 0.309 |
| 25 | 6.773 | | 0.0000 | 0.000 | 10574.6 | 1.676 | VV | 0.061 | 2871.45 | 1.168 |
| 26 | 6.927 | Heptachlor | 3.5038 | 0.606 | 1428.8 | 0.226 | VV | 0.037 | 646.86 | 0.263 |
| 27 | 7.020 | | 0.0000 | 0.000 | 4294.6 | 0.681 | VV | 0.053 | 1354.67 | 0.551 |
| 28 | 7.197 | | 0.0000 | 0.000 | 3220.9 | 0.510 | VV | 0.074 | 729.09 | 0.296 |
| 29 | 7.324 | | 0.0000 | 0.000 | 4756.7 | 0.754 | VV | 0.041 | 1940.86 | 0.789 |
| 30 | 7.431 | | 0.0000 | 0.000 | 12671.2 | 2.008 | VV | 0.043 | 4908.42 | 1.996 |
| 31 | 7.537 | | 0.0000 | 0.000 | 7715.0 | 1.223 | VV | 0.044 | 2951.52 | 1.200 |
| 32 | 7.671 | | 0.0000 | 0.000 | 2546.6 | 0.404 | VB | 0.041 | 1042.98 | 0.424 |
| 33 | 7.904 | | 0.0000 | 0.000 | 3508.5 | 0.556 | BV | 0.154 | 380.49 | 0.155 |
| 34 | 7.962 | | 0.0000 | 0.000 | 1923.2 | 0.305 | VV | 0.044 | 734.70 | 0.299 |
| 35 | 8.030 | | 0.0000 | 0.000 | 71022.7 | 11.255 | VV | 0.037 | 31958.52 | 12.996 |
| 36 | 8.315 | | 0.0000 | 0.000 | 3432.6 | 0.544 | VV | 0.054 | 1059.63 | 0.431 |
| 37 | 8.400 | o,p-DDE | 8.8421 | 1.530 | 6405.2 | 1.015 | VV | 0.097 | 1099.41 | 0.447 |
| 38 | 9.047 | Dieldrin | 1.9255 | 0.333 | 4177.0 | 0.662 | VB | 0.217 | 320.95 | 0.131 |
| 39 | 9.177 | | 0.0000 | 0.000 | 604.2 | 0.096 | BV | 0.023 | 447.34 | 0.182 |
| 40 | 9.803 | | 0.0000 | 0.000 | 341.4 | 0.054 | VB | 0.021 | 266.39 | 0.108 |
| 41 | 10.147 | | 0.0000 | 0.000 | 10656.2 | 1.689 | BB | 0.055 | 3211.27 | 1.306 |
| 42 | 10.744 | | 0.0000 | 0.000 | 49889.8 | 7.906 | BB | 0.045 | 18412.84 | 7.488 |
| 43 | 11.304 | Mirex | 1.4628 | 0.253 | 405.7 | 0.064 | BB | 0.034 | 197.07 | 0.080 |
| 44 | 11.374 | | 0.0000 | 0.000 | 794.3 | 0.126 | BB | 0.033 | 404.36 | 0.164 |
| 45 | 11.574 | | 0.0000 | 0.000 | 1087.7 | 0.172 | BB | 0.042 | 429.64 | 0.175 |
| 46 | 12.661 | | 0.0000 | 0.000 | 1067.1 | 0.169 | BB | 0.046 | 390.31 | 0.159 |
| 47 | 13.346 | DCB | 280.2048 | 48.492 | 140586.7 | 22.280 | BB | 0.049 | 47505.68 | 19.319 |

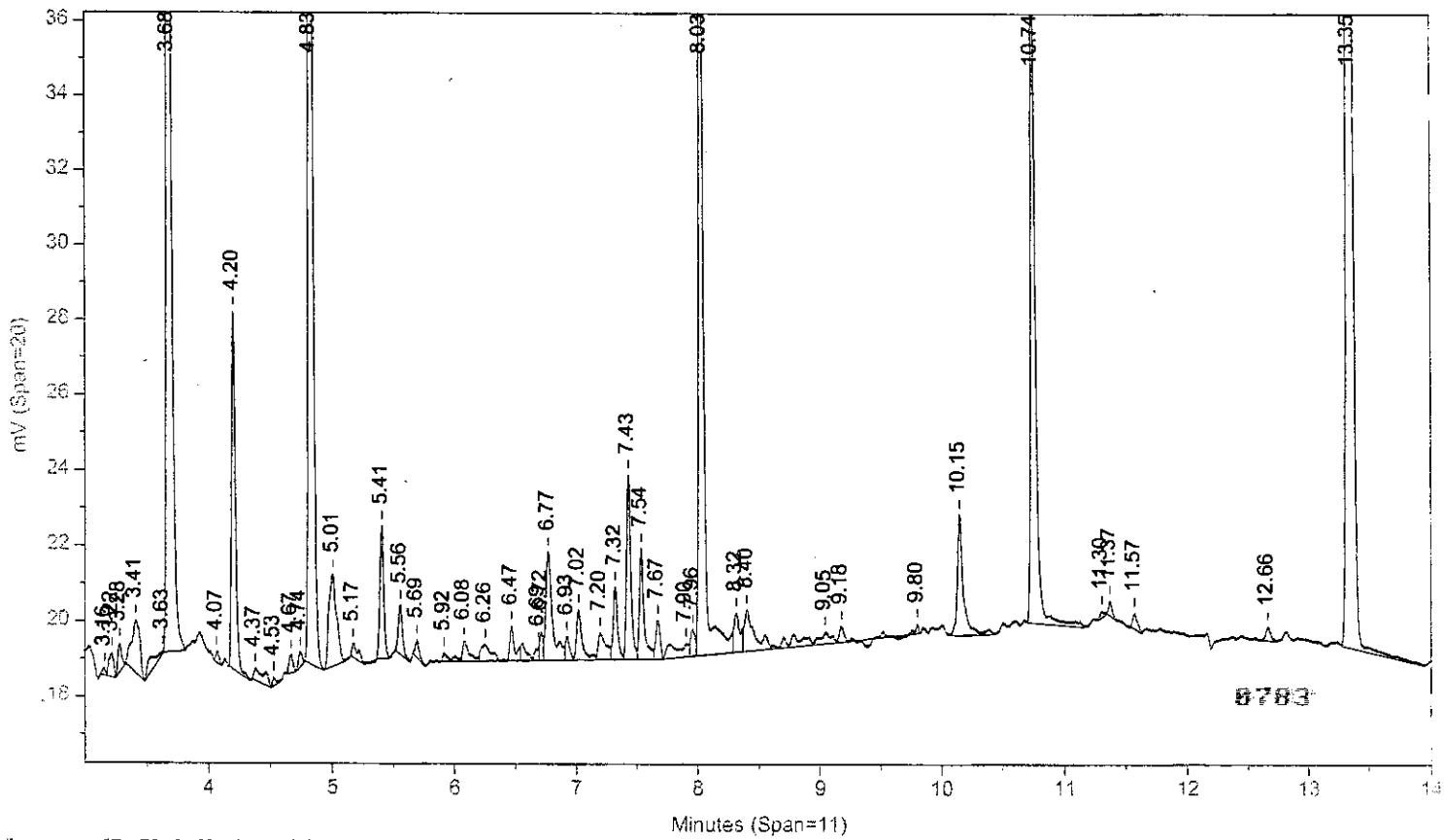
Total Area = 631007.6, Total Amount = 577.835, Total Height = 245903.8, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.75R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 11:53:39 AM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.75R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 11:53:39 AM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

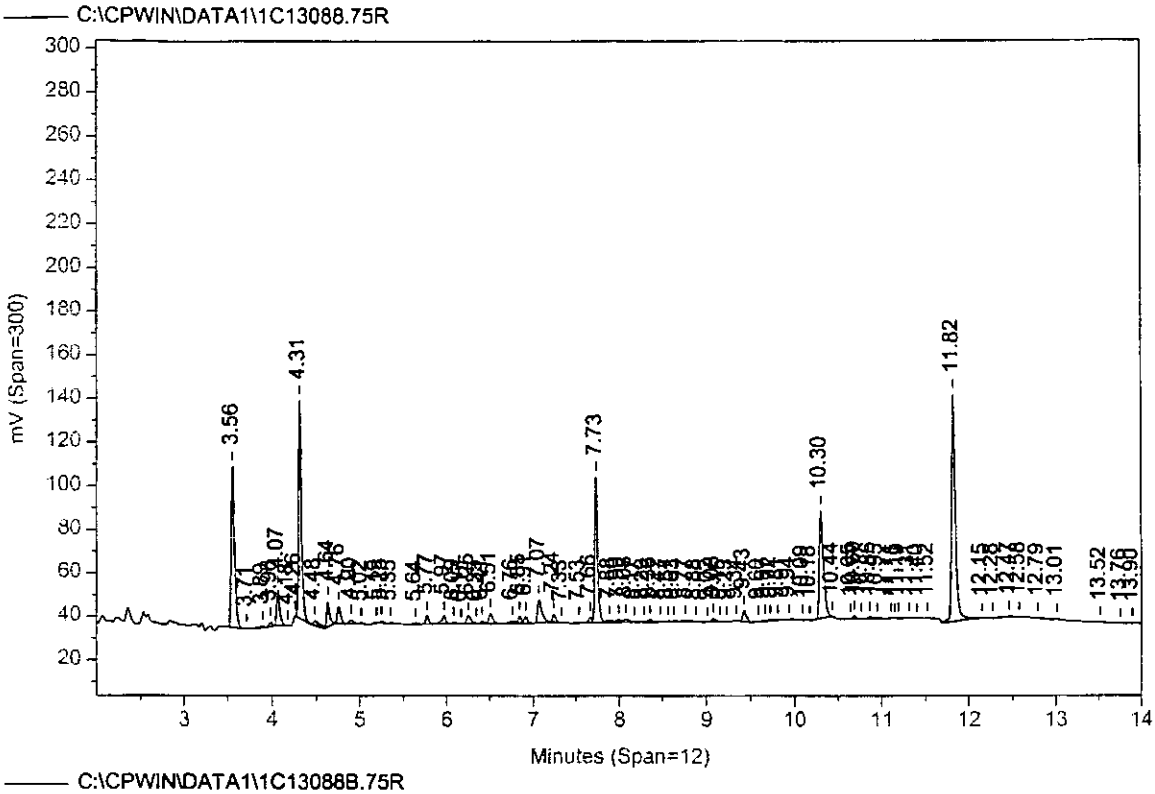
Sample Weight: 30 Dilution Factor: 10
Analyst: 120

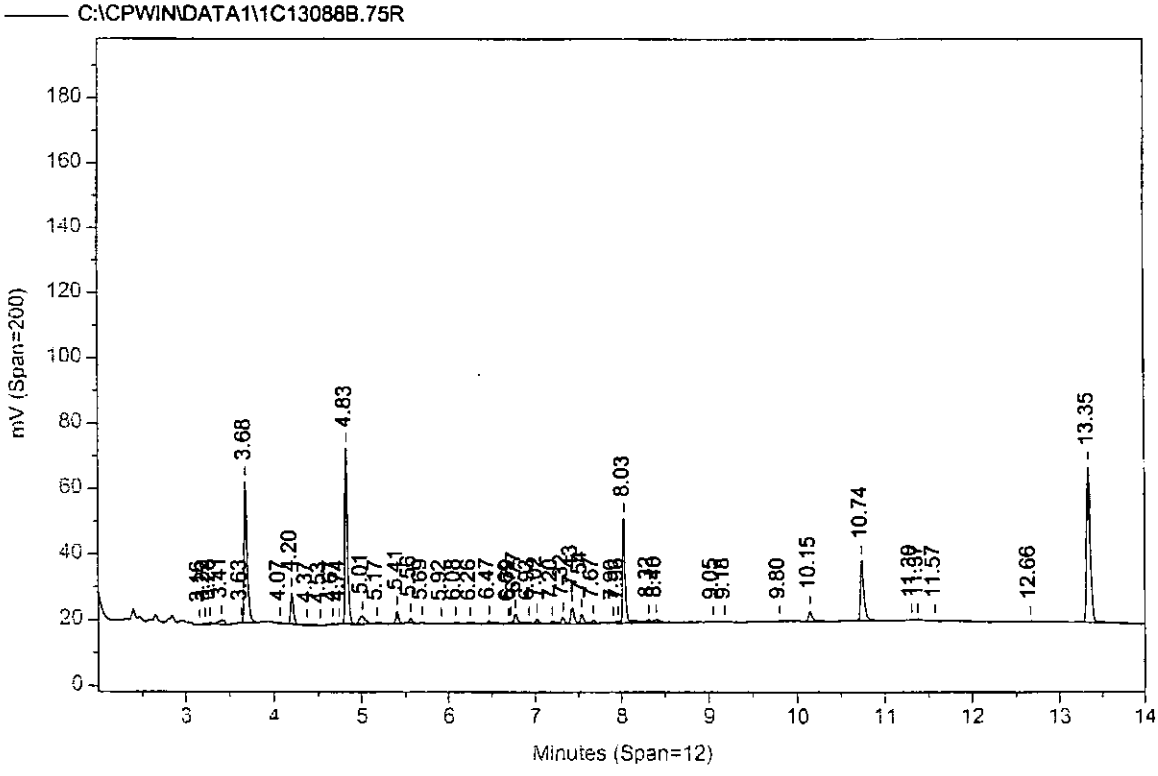
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.313 | 100032 | 8.78506 | TCX | 4.826 | 53701 | 9.15054 | TCX |
| 4.9 | 1716 | .08222 | HCB | 5.56 | 1317 | .15813 | HCB |
| 5.971 | 3617 | .27419 | delta-BHC | . | 0 | . | delta-BHC |
| . | 0 | . | gamma-BHC | 6.257 | 460 | .08787 | gamma-BHC |
| . | 0 | . | Heptachlor | 6.927 | 647 | .11679 | Heptachlor |
| 7.535 | 568 | .0474 | Hept. epoxide | . | 0 | . | Hept. epoxide |
| 7.73 | 67095 | 5.77587 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.884 | 1124 | .09065 | a. Chlordane | . | 0 | . | a. Chlordane |
| 7.992 | 1331 | .12608 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| 8.076 | 1475 | .13552 | Endosulfan I | . | 0 | . | Endosulfan I |
| . | 0 | . | o,p-DDE | 8.4 | 1099 | .29474 | o,p-DDE |
| 8.766 | 620 | .53154 | Kepone | . | 0 | . | Kepone |
| 9.016 | 231 | .02347 | Endosulfan II | . | 0 | . | Endosulfan II |
| . | 0 | . | Dieldrin | 9.047 | 321 | .06418 | Dieldrin |
| 9.723 | 949 | .18798 | Methoxychlor | . | 0 | . | Methoxychlor |
| 10.095 | 243 | .02771 | Endo. sulfate | . | 0 | . | Endo. sulfate |
| . | 0 | . | Mirex | 11.304 | 197 | .04876 | Mirex |
| 11.819 | 104427 | 9.14096 | DCB | 13.346 | 47506 | 9.34016 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.75A
Area File: C:\CPWIN\DATA1\1C13088B.75A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:10:30 PM
File Reported On: 3/30/2004 at 8:10:41 PM

10X REPLOTS

9784


C:\CPWIN\DATA1\1C13088.75R
mV (Span=300)
Minutes (Span=12)
3.56
4.31
7.73
10.30
11.82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mV (Span=200)
Minutes (Span=12)
3.68
4.83
8.03
10.74
13.35

# Lancaster Laboratories Single Component Data Summary

**Sample Name:** LCSA 3/30/04ACF LCSQ8 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

## Analysis Report (A)

Injected on : MAR 30, 2004 12:14:14
Instrument : CP13–H6722A
Result file : 1C13088.76R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

%SSR(TCX) : 97.1% Conc.: 9.338627
%SSR(DCB) : 93.9% Conc.: 9.143453

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.31 | 4.34 | 106335 | 9.338627 |
| HCB | 4.85 | 4.90 | 4.91 | 1806 | 0.086498 |
| alpha-BHC | 5.11 | 5.14 | 5.17 | 44140 | 3.177403 |
| gamma-BHC | 5.57 | 5.60 | 5.63 | 43497 | 3.128115 |
| beta-BHC | 5.70 | 5.73 | 5.76 | 25816 | 3.339827 |
| delta-BHC | 5.96 | 5.99 | 6.02 | 44941 | 3.406530 |
| Heptachlor | 6.25 | 6.28 | 6.31 | 50153 | 3.383339 |
| Aldrin | 6.68 | 6.71 | 6.74 | 38643 | 3.230768 |
| Hept. epoxide | 7.51 | 7.54 | 7.57 | 41231 | 3.443523 |
| g. Chlordane | 7.68 | 7.71 | 7.74 | 38737 | 3.334673 |
| a. Chlordane | 7.85 | 7.88 | 7.91 | 38497 | 3.105052 |
| 4,4'-DDE | 7.94 | 7.97 | 8.00 | 70020 | 6.632834 |
| Endosulfan I | 8.04 | 8.07 | 8.10 | 35504 | 3.262552 |
| o,p-DDD | 8.17 | 8.20 | 8.23 | 610 | 0.094356 |
| Dieldrin | 8.36 | 8.39 | 8.42 | 66502 | 6.348893 |
| Endrin | 8.67 | 8.70 | 8.73 | 61202 | 6.861644 |
| 4,4'-DDD | 8.73 | 8.75 | 8.79 | 54034 | 6.328397 |
| Endosulfan II | 8.97 | 9.00 | 9.03 | 67862 | 6.901398 |
| 4,4'-DDT | 9.09 | 9.12 | 9.15 | 59309 | 6.805593 |
| Endrin aldehyde | 9.52 | 9.55 | 9.58 | 43672 | 5.275958 |
| Methoxychlor | 9.70 | 9.73 | 9.76 | 165029 | 32.702515 |
| Mirex | 9.95 | 9.98 | 10.01 | 335 | 0.040045 |
| Endo. sulfate | 10.08 | 10.11 | 10.14 | 61094 | 6.967984 |
| Endrin ketone | 10.46 | 10.48 | 10.52 | 69613 | 6.642034 |
| DCB | 11.79 | 11.82 | 11.85 | 104456 | 9.143453 |

## Analysis Report (B)

Injected on : MAR 30, 2004 12:14:14
Instrument : CP13–H6722B
Result file : 1C13088B.76R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

%SSR(TCX) : 98.2% Conc.: 9.448112
%SSR(DCB) : 98.4% Conc.: 9.583924

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.83 | 4.86 | 55448 | 9.448112 |
| HCB | 5.52 | 5.56 | 5.58 | 1271 | 0.152655 |
| alpha-BHC | 5.72 | 5.75 | 5.78 | 16287 | 3.152599 |
| gamma-BHC | 6.25 | 6.28 | 6.31 | 17488 | 3.337689 |
| beta-BHC | 6.38 | 6.41 | 6.44 | 12198 | 3.516839 |
| delta-BHC | 6.80 | 6.83 | 6.86 | 17184 | 3.381929 |
| Heptachlor | 6.89 | 6.92 | 6.95 | 19497 | 3.520232 |
| Aldrin | 7.35 | 7.38 | 7.41 | 16572 | 3.250701 |
| Hept. epoxide | 8.14 | 8.17 | 8.20 | 19055 | 3.519407 |
| g. Chlordane | 8.39 | 8.42 | 8.45 | 18111 | 3.311373 |
| a. Chlordane | 8.59 | 8.62 | 8.65 | 18513 | 3.291514 |
| Endosulfan I | 8.68 | 8.71 | 8.74 | 17043 | 3.435432 |
| 4,4'-DDE | 8.78 | 8.81 | 8.84 | 33353 | 6.991318 |
| Dieldrin | 9.04 | 9.07 | 9.10 | 33419 | 6.683121 |
| Endrin | 9.46 | 9.48 | 9.52 | 27440 | 7.201294 |
| 4,4'-DDD | 9.55 | 9.58 | 9.61 | 23238 | 6.928133 |
| Endosulfan II | 9.73 | 9.76 | 9.79 | 34557 | 7.216248 |
| 4,4'-DDT | 9.96 | 9.99 | 10.02 | 26619 | 7.339274 |
| Endrin aldehyde | 10.17 | 10.20 | 10.23 | 22491 | 5.178905 |
| Endo. sulfate | 10.53 | 10.56 | 10.59 | 31080 | 7.329270 |
| Methoxychlor | 10.83 | 10.86 | 10.89 | 70940 | 36.904915 |
| Endrin ketone | 11.28 | 11.31 | 11.34 | 34925 | 7.123301 |
| DCB | 13.32 | 13.35 | 13.38 | 48746 | 9.583924 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 9.448112 | | | | 1.17 | |
| HCB | B | 0.152655 | | | | ** 55.33 | |
| alpha-BHC | A | 3.177403 | 0.83 | 0.17 | | 0.78 | |
| gamma-BHC | B | 3.337689 | 0.83 | 0.17 | | 6.48 | |
| beta-BHC | B | 3.516839 | 0.83 | 0.17 | | 5.16 | |
| delta-BHC | A | 3.406530 | 0.83 | 0.17 | | 0.72 | |
| Heptachlor | B | 3.520232 | 0.83 | 0.17 | | 3.97 | |
| Aldrin | B | 3.250701 | 1.5 | 0.51 | | 0.62 | |
| Telodrin | | | | | | | |
| Hept. epoxide | B | 3.519407 | 0.83 | 0.17 | | 2.18 | |
| o,p-DDE | | | | | | | |
| g. Chlordane | A | 3.334673 | 0.9 | 0.3 | | 0.70 | |
| a. Chlordane | B | 3.291514 | 0.83 | 0.17 | | 5.83 | |
| 4,4'-DDE | B | 6.991318 | 1.7 | 0.33 | | 5.26 | 8786 |
| Endosulfan I | B | 3.435432 | 1.3 | 0.44 | | 5.16 | |
| o,p-DDD | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/30/04 20:39:47

# Lancaster Laboratories-Single Component Data Summary

**Sample Name:** LCSA 3/30/04ACF LCSQ8 Sample ID: AB **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 10 ml Analyst: 120 SDG: State:
Analyses: 01224 01225 02253 06000 06005 08899

Analysis Report (A)

Injected on : MAR 30, 2004 12:14:14
Instrument : CP13–H6722A
Result file : 1C13088.76R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

Analysis Report (B)

Injected on : MAR 30, 2004 12:14:14
Instrument : CP13–H6722B
Result file : 1C13088B.76R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Dieldrin | B | 6.683121 | 1.7 | 0.33 | | 5.13 | |
| o,p-DDT | | | | | | | |
| Endrin | B | 7.201294 | 1.7 | 0.5 | | 4.83 | |
| 4,4'-DDD | B | 6.928133 | 1.7 | 0.58 | | 9.05 | |
| Kepone | | | | | | | |
| Endosulfan II | B | 7.216248 | 1.7 | 0.33 | | 4.46 | |
| 4,4'-DDT | B | 7.339274 | 1.7 | 0.33 | | 7.55 | |
| Endrin aldehyde | A | 5.275958 | 3 | 1 | | 1.86 | |
| Methoxychlor | B | 36.904915 | 12 | 4 | | 12.07 | |
| Mirex | | | | | | | |
| Endo. sulfate | B | 7.329270 | 1.7 | 0.33 | | 5.05 | |
| Endrin ketone | B | 7.123301 | 1.7 | 0.33 | | 6.99 | |
| DCB | B | 9.583924 | | | | 4.70 | |

Units: ug/kg

Reviewed by: Date: 3.31.04
Verified by: Date: 3/31/04

8787

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/30/04 20:39:47

Sample Name: **LCSA 3/30/04ACF ABLCSQ8 LCS 040890035A 08899**
Acquired from CP13--H6722A via port 3 on 3/30/04 12:28:14pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.76R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 259048.9 | 6.664 | BB | 0.043 | 101022.20 | 6.503 |
| 2 | 3.710 | | 0.0000 | 0.000 | 1032.2 | 0.027 | BB | 0.049 | 348.29 | 0.022 |
| 3 | 3.798 | | 0.0000 | 0.000 | 743.2 | 0.019 | BB | 0.038 | 324.34 | 0.021 |
| 4 | 3.888 | | 0.0000 | 0.000 | 1595.4 | 0.041 | BB | 0.045 | 587.69 | 0.038 |
| 5 | 3.984 | | 0.0000 | 0.000 | 7536.8 | 0.194 | BB | 0.041 | 3090.46 | 0.199 |
| 6 | 4.065 | | 0.0000 | 0.000 | 80449.9 | 2.070 | BB | 0.040 | 33337.84 | 2.146 |
| 7 | 4.173 | | 0.0000 | 0.000 | 424.0 | 0.011 | BB | 0.024 | 294.46 | 0.019 |
| 8 | 4.312 | TCX | 280.1588 | 6.531 | 278955.1 | 7.176 | BB | 0.044 | 106335.30 | 6.845 |
| 9 | 4.483 | | 0.0000 | 0.000 | 6078.8 | 0.156 | BB | 0.042 | 2397.88 | 0.154 |
| 10 | 4.634 | | 0.0000 | 0.000 | 22388.5 | 0.576 | BB | 0.040 | 9408.84 | 0.606 |
| 11 | 4.759 | | 0.0000 | 0.000 | 16133.4 | 0.415 | BB | 0.046 | 5878.74 | 0.378 |
| 12 | 4.899 | HCB | 2.5950 | 0.060 | 5405.0 | 0.139 | BB | 0.050 | 1805.66 | 0.116 |
| 13 | 5.017 | | 0.0000 | 0.000 | 2087.4 | 0.054 | BB | 0.049 | 712.49 | 0.046 |
| 14 | 5.140 | alpha-BHC | 95.3221 | 2.222 | 95549.3 | 2.458 | BB | 0.036 | 44140.38 | 2.841 |
| 15 | 5.249 | | 0.0000 | 0.000 | 2812.1 | 0.072 | BB | 0.038 | 1222.74 | 0.079 |
| 16 | 5.348 | | 0.0000 | 0.000 | 1462.2 | 0.038 | BB | 0.033 | 749.44 | 0.048 |
| 17 | 5.437 | | 0.0000 | 0.000 | 394.6 | 0.010 | BB | 0.035 | 188.31 | 0.012 |
| 18 | 5.602 | gamma-BHC | 93.8435 | 2.188 | 94641.7 | 2.435 | BB | 0.036 | 43497.19 | 2.800 |
| 19 | 5.732 | beta-BHC | 100.1948 | 2.336 | 68058.8 | 1.751 | BB | 0.044 | 25815.84 | 1.662 |
| 20 | 5.988 | delta-BHC | 102.1959 | 2.382 | 97740.8 | 2.514 | BB | 0.036 | 44941.31 | 2.893 |
| 21 | 6.085 | | 0.0000 | 0.000 | 1543.4 | 0.040 | BB | 0.032 | 815.48 | 0.052 |
| 22 | 6.283 | Heptachlor | 101.5002 | 2.366 | 125972.9 | 3.241 | BV | 0.042 | 50153.13 | 3.228 |
| 23 | 6.412 | | 0.0000 | 0.000 | 3203.6 | 0.082 | VV | 0.039 | 1371.75 | 0.088 |
| 24 | 6.510 | | 0.0000 | 0.000 | 15390.1 | 0.396 | VV | 0.059 | 4312.98 | 0.278 |
| 25 | 6.706 | Aldrin | 96.9230 | 2.260 | 94537.3 | 2.432 | VV | 0.041 | 38643.04 | 2.487 |
| 26 | 6.843 | | 0.0000 | 0.000 | 2394.4 | 0.062 | VV | 0.041 | 979.94 | 0.063 |
| 27 | 6.915 | | 0.0000 | 0.000 | 9394.7 | 0.242 | VB | 0.045 | 3478.75 | 0.224 |
| 28 | 7.077 | | 0.0000 | 0.000 | 30381.5 | 0.782 | BB | 0.065 | 7803.20 | 0.502 |
| 29 | 7.241 | | 0.0000 | 0.000 | 10716.3 | 0.276 | BV | 0.043 | 4170.29 | 0.268 |
| 30 | 7.331 | | 0.0000 | 0.000 | 1517.1 | 0.039 | VV | 0.052 | 482.78 | 0.031 |
| 31 | 7.406 | | 0.0000 | 0.000 | 695.6 | 0.018 | VB | 0.032 | 361.16 | 0.023 |
| 32 | 7.538 | Hept. epoxide | 103.3057 | 2.408 | 100380.2 | 2.582 | BV | 0.041 | 41230.95 | 2.654 |
| 33 | 7.707 | g. Chlordane | 100.0402 | 2.332 | 110941.3 | 2.854 | VV | 0.048 | 38736.93 | 2.493 |
| 34 | 7.882 | a. Chlordane | 93.1516 | 2.172 | 90270.0 | 2.322 | VV | 0.039 | 38496.93 | 2.478 |
| 35 | 7.967 | 4,4'-DDE | 198.9850 | 4.639 | 157608.2 | 4.055 | VV | 0.038 | 70020.48 | 4.507 |
| 36 | 8.073 | Endosulfan I | 97.8765 | 2.282 | 86349.2 | 2.221 | VV | 0.041 | 35503.56 | 2.285 |
| 37 | 8.199 | o,p-DDD | 2.8307 | 0.066 | 1127.9 | 0.029 | VB | 0.031 | 609.51 | 0.039 |
| 38 | 8.268 | | 0.0000 | 0.000 | 1991.3 | 0.051 | BV | 0.039 | 842.41 | 0.054 |
| 39 | 8.389 | Dieldrin | 190.4668 | 4.440 | 156844.6 | 4.035 | VV | 0.039 | 66502.09 | 4.281 |
| 40 | 8.556 | | 0.0000 | 0.000 | 1672.9 | 0.043 | VB | 0.055 | 504.23 | 0.032 |
| 41 | 8.700 | Endrin | 205.8493 | 4.799 | 133504.5 | 3.435 | BV | 0.036 | 61201.76 | 3.939 |
| 42 | 8.755 | 4,4'-DDD | 189.8519 | 4.426 | 126010.5 | 3.242 | VV | 0.039 | 54034.15 | 3.478 |
| 43 | 8.906 | | 0.0000 | 0.000 | 2022.6 | 0.052 | VB | 0.054 | 628.34 | 0.040 |
| 44 | 9.002 | Endosulfan II | 207.0419 | 4.827 | 164192.4 | 4.224 | BV | 0.040 | 67861.76 | 4.368 |
| 45 | 9.119 | 4,4'-DDT | 204.1678 | 4.760 | 134596.4 | 3.463 | VB | 0.038 | 59308.89 | 3.818 |
| 46 | 9.331 | | 0.0000 | 0.000 | 1168.2 | 0.030 | BB | 0.054 | 363.16 | 0.023 |
| 47 | 9.427 | | 0.0000 | 0.000 | 19321.6 | 0.497 | BB | 0.060 | 5376.54 | 0.346 |
| 48 | 9.545 | Endrin aldehyde | 158.2787 | 3.690 | 131664.1 | 3.387 | BV | 0.050 | 43671.93 | 2.811 |
| 49 | 9.730 | Methoxychlor | 981.0754 | 22.872 | 394076.2 | 10.138 | VB | 0.040 | 165028.80 | 10.622 |
| 50 | 9.938 | | 0.0000 | 0.000 | 723.0 | 0.019 | BV | 0.033 | 366.20 | 0.024 |
| 51 | 9.981 | Mirex | 1.2013 | 0.028 | 799.9 | 0.021 | VB | 0.040 | 334.99 | 0.022 |
| 52 | 10.112 | Endo. sulfate | 209.0395 | 4.873 | 145428.7 | 3.741 | BB | 0.040 | 61094.10 | 3.932 |
| 53 | 10.302 | | 0.0000 | 0.000 | 70567.9 | 1.815 | BV | 0.058 | 20126.55 | 1.295 |
| 54 | 10.485 | Endrin ketone | 199.2610 | 4.645 | 169339.2 | 4.356 | VV | 0.041 | 69613.38 | 4.481 |
| 55 | 10.641 | | 0.0000 | 0.000 | 1155.2 | 0.030 | VV | 0.044 | 439.08 | 0.028 |
| 56 | 10.694 | | 0.0000 | 0.000 | 2041.6 | 0.053 | VV | 0.043 | 790.09 | 0.051 |
| 57 | 10.761 | | 0.0000 | 0.000 | 859.7 | 0.022 | VV | 0.050 | 283.90 | 0.018 |
| 58 | 10.864 | | 0.0000 | 0.000 | 3696.6 | 0.095 | VV | 0.043 | 1431.94 | 0.092 |
| 59 | 10.926 | | 0.0000 | 0.000 | 2764.2 | 0.071 | VB | 0.063 | 728.94 | 0.047 |
| 60 | 11.077 | | 0.0000 | 0.000 | 428.7 | 0.011 | BB | 0.041 | 174.48 | 0.011 |
| 61 | 11.181 | | 0.0000 | 0.000 | 1046.5 | 0.027 | BB | 0.057 | 304.99 | 0.020 |
| 62 | 11.311 | | 0.0000 | 0.000 | 569.3 | 0.015 | BB | 0.061 | 155.68 | 0.010 |
| 63 | 11.406 | | 0.0000 | 0.000 | 183.0 | 0.005 | BB | 0.040 | 75.42 | 0.005 |
| 64 | 11.523 | | 0.0000 | 0.000 | 1510.3 | 0.039 | BB | 0.051 | 494.39 | 0.032 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.736 | | 0.0000 | 0.000 | 1320.1 | 0.034 | BB | 0.042 | 528.96 | 0.034 |
| 66 | 11.821 | DCB | 274.3036 | 6.395 | 315713.6 | 8.122 | BB | 0.050 | 104455.50 | 6.724 |
| 67 | 12.150 | | 0.0000 | 0.000 | 1650.6 | 0.042 | BB | 0.047 | 585.49 | 0.038 |
| 68 | 12.287 | | 0.0000 | 0.000 | 235.6 | 0.006 | BB | 0.050 | 78.94 | 0.005 |
| 69 | 12.390 | | 0.0000 | 0.000 | 1396.4 | 0.036 | BB | 0.060 | 385.33 | 0.025 |
| 70 | 12.466 | | 0.0000 | 0.000 | 870.0 | 0.022 | BB | 0.050 | 290.21 | 0.019 |
| 71 | 12.580 | | 0.0000 | 0.000 | 3757.2 | 0.097 | BB | 0.096 | 649.13 | 0.042 |
| 72 | 12.795 | | 0.0000 | 0.000 | 2133.5 | 0.055 | BB | 0.095 | 374.29 | 0.024 |
| 73 | 12.997 | | 0.0000 | 0.000 | 3554.6 | 0.091 | BB | 0.100 | 592.58 | 0.038 |
| 74 | 13.208 | | 0.0000 | 0.000 | 1125.5 | 0.029 | BB | 0.145 | 128.96 | 0.008 |
| 75 | 13.406 | | 0.0000 | 0.000 | 303.7 | 0.008 | BB | 0.041 | 123.42 | 0.008 |
| 76 | 13.512 | | 0.0000 | 0.000 | 1260.6 | 0.032 | BB | 0.097 | 215.75 | 0.014 |
| 77 | 13.746 | | 0.0000 | 0.000 | 491.9 | 0.013 | BB | 0.073 | 111.95 | 0.007 |
| 78 | 13.891 | | 0.0000 | 0.000 | 172.0 | 0.004 | BB | 0.050 | 57.20 | 0.004 |

Total Area = 3887127.0, Total Amount = 4289.46, Total Height = 1553586.0, Sample Units = PPB

Sample Name: **LCSA 3/30/04ACF ABLCSQ8 LCS 040890035A 08899**
Acquired from CP13--H6722B via port 4 on 3/30/04 12:28:14pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.76R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.219 | | 0.0000 | 0.000 | 755.9 | 0.045 | BB | 0.033 | 386.40 | 0.052 |
| 2 | 3.276 | | 0.0000 | 0.000 | 2016.9 | 0.121 | BB | 0.035 | 964.06 | 0.131 |
| 3 | 3.407 | | 0.0000 | 0.000 | 8421.3 | 0.506 | BB | 0.076 | 1848.01 | 0.250 |
| 4 | 3.634 | | 0.0000 | 0.000 | 2195.2 | 0.132 | BB | 0.906 | 40.38 | 0.005 |
| 5 | 3.678 | | 0.0000 | 0.000 | 138794.7 | 8.345 | BB | 0.039 | 58898.92 | 7.981 |
| 6 | 3.927 | | 0.0000 | 0.000 | 2355.5 | 0.142 | BB | 0.052 | 753.61 | 0.102 |
| 7 | 4.071 | | 0.0000 | 0.000 | 697.3 | 0.042 | BB | 0.028 | 411.28 | 0.056 |
| 8 | 4.200 | | 0.0000 | 0.000 | 44043.6 | 2.648 | BB | 0.038 | 19103.36 | 2.589 |
| 9 | 4.377 | | 0.0000 | 0.000 | 477.9 | 0.029 | BB | 0.032 | 249.85 | 0.034 |
| 10 | 4.530 | | 0.0000 | 0.000 | 1625.7 | 0.098 | BB | 0.035 | 773.23 | 0.105 |
| 11 | 4.661 | | 0.0000 | 0.000 | 1355.8 | 0.082 | BB | 0.036 | 619.58 | 0.084 |
| 12 | 4.826 | TCX | 283.4434 | 6.224 | 116108.3 | 6.981 | BB | 0.035 | 55447.54 | 7.513 |
| 13 | 5.003 | | 0.0000 | 0.000 | 11485.1 | 0.691 | BB | 0.078 | 2463.33 | 0.334 |
| 14 | 5.180 | | 0.0000 | 0.000 | 807.1 | 0.049 | BB | 0.053 | 251.50 | 0.034 |
| 15 | 5.407 | | 0.0000 | 0.000 | 7255.0 | 0.436 | BB | 0.037 | 3229.00 | 0.438 |
| 16 | 5.559 | HCB | 4.5797 | 0.101 | 2738.6 | 0.165 | BB | 0.036 | 1271.07 | 0.172 |
| 17 | 5.691 | | 0.0000 | 0.000 | 770.8 | 0.046 | BB | 0.028 | 461.40 | 0.063 |
| 18 | 5.753 | alpha-BHC | 94.5780 | 2.077 | 30927.3 | 1.859 | BB | 0.032 | 16287.22 | 2.207 |
| 19 | 5.914 | | 0.0000 | 0.000 | 1175.4 | 0.071 | BV | 0.075 | 259.76 | 0.035 |
| 20 | 6.090 | | 0.0000 | 0.000 | 1659.9 | 0.100 | VV | 0.047 | 586.96 | 0.080 |
| 21 | 6.284 | gamma-BHC | 100.1307 | 2.199 | 36837.7 | 2.215 | VV | 0.035 | 17487.66 | 2.370 |
| 22 | 6.405 | beta-BHC | 105.5052 | 2.317 | 26699.8 | 1.605 | VV | 0.036 | 12198.21 | 1.653 |
| 23 | 6.670 | | 0.0000 | 0.000 | 1295.0 | 0.078 | VV | 0.042 | 516.82 | 0.070 |
| 24 | 6.769 | | 0.0000 | 0.000 | 10335.1 | 0.621 | VV | 0.057 | 3002.95 | 0.407 |
| 25 | 6.832 | delta-BHC | 101.4579 | 2.228 | 35210.2 | 2.117 | VV | 0.034 | 17183.62 | 2.328 |
| 26 | 6.921 | Heptachlor | 105.6069 | 2.319 | 41188.4 | 2.476 | VV | 0.035 | 19496.62 | 2.642 |
| 27 | 7.018 | | 0.0000 | 0.000 | 5645.8 | 0.339 | VV | 0.057 | 1656.43 | 0.224 |
| 28 | 7.201 | | 0.0000 | 0.000 | 1772.2 | 0.107 | VV | 0.037 | 797.80 | 0.108 |
| 29 | 7.237 | | 0.0000 | 0.000 | 4235.8 | 0.255 | VV | 0.067 | 1058.84 | 0.143 |
| 30 | 7.384 | Aldrin | 97.5210 | 2.141 | 33619.0 | 2.021 | VV | 0.034 | 16571.91 | 2.246 |
| 31 | 7.427 | | 0.0000 | 0.000 | 13435.2 | 0.808 | VV | 0.040 | 5538.85 | 0.751 |
| 32 | 7.534 | | 0.0000 | 0.000 | 3090.8 | 0.186 | VV | 0.075 | 690.32 | 0.094 |
| 33 | 7.674 | | 0.0000 | 0.000 | 3062.3 | 0.184 | VB | 0.043 | 1176.30 | 0.159 |
| 34 | 7.956 | | 0.0000 | 0.000 | 1532.4 | 0.092 | BV | 0.051 | 497.27 | 0.067 |
| 35 | 8.028 | | 0.0000 | 0.000 | 5969.1 | 0.359 | VV | 0.035 | 2826.99 | 0.383 |
| 36 | 8.169 | Hept. epoxide | 105.5822 | 2.318 | 40676.7 | 2.446 | VV | 0.036 | 19054.86 | 2.582 |
| 37 | 8.286 | | 0.0000 | 0.000 | 1555.3 | 0.094 | VV | 0.049 | 529.57 | 0.072 |
| 38 | 8.346 | | 0.0000 | 0.000 | 3042.9 | 0.183 | VV | 0.048 | 1046.44 | 0.142 |
| 39 | 8.424 | g. Chlordane | 99.3412 | 2.181 | 38808.5 | 2.333 | VB | 0.036 | 18110.65 | 2.454 |
| 40 | 8.617 | a. Chlordane | 98.7454 | 2.168 | 37923.8 | 2.280 | BV | 0.034 | 18513.01 | 2.509 |
| 41 | 8.708 | Endosulfan I | 103.0630 | 2.263 | 37050.2 | 2.228 | VV | 0.036 | 17042.99 | 2.309 |
| 42 | 8.813 | 4,4'-DDE | 209.7395 | 4.606 | 66030.5 | 3.970 | VB | 0.033 | 33352.71 | 4.519 |
| 43 | 9.072 | Dieldrin | 200.4936 | 4.403 | 71188.4 | 4.280 | BB | 0.036 | 33418.99 | 4.528 |
| 44 | 9.484 | Endrin | 216.0388 | 4.744 | 56902.0 | 3.421 | BV | 0.035 | 27440.37 | 3.718 |
| 45 | 9.578 | 4,4'-DDD | 207.8440 | 4.564 | 46484.0 | 2.795 | VV | 0.033 | 23238.46 | 3.149 |
| 46 | 9.763 | Endosulfan II | 216.4874 | 4.754 | 72685.9 | 4.370 | VB | 0.035 | 34557.16 | 4.683 |
| 47 | 9.914 | | 0.0000 | 0.000 | 369.9 | 0.022 | BB | 0.026 | 236.37 | 0.032 |
| 48 | 9.989 | 4,4'-DDT | 220.1782 | 4.835 | 53892.4 | 3.240 | BB | 0.034 | 26618.57 | 3.607 |
| 49 | 10.149 | | 0.0000 | 0.000 | 1291.1 | 0.078 | BB | 0.027 | 785.77 | 0.106 |
| 50 | 10.198 | Endrin aldehyde | 155.3672 | 3.412 | 46129.3 | 2.773 | BB | 0.034 | 22490.78 | 3.048 |
| 51 | 10.364 | | 0.0000 | 0.000 | 5334.3 | 0.321 | BB | 0.041 | 2177.02 | 0.295 |
| 52 | 10.555 | Endo. sulfate | 219.8781 | 4.828 | 65409.1 | 3.933 | BB | 0.035 | 31079.84 | 4.211 |
| 53 | 10.747 | | 0.0000 | 0.000 | 15946.7 | 0.959 | BB | 0.040 | 6625.45 | 0.898 |
| 54 | 10.862 | Methoxychlor | 1107.1480 | 24.312 | 144818.3 | 8.707 | BB | 0.034 | 70939.97 | 9.613 |
| 55 | 11.032 | | 0.0000 | 0.000 | 1315.6 | 0.079 | BB | 0.042 | 520.82 | 0.071 |
| 56 | 11.175 | | 0.0000 | 0.000 | 2154.2 | 0.130 | BB | 0.047 | 768.00 | 0.104 |
| 57 | 11.313 | Endrin ketone | 213.6990 | 4.693 | 106105.8 | 6.379 | BB | 0.051 | 34925.05 | 4.732 |
| 58 | 12.424 | | 0.0000 | 0.000 | 4553.5 | 0.274 | BB | 0.971 | 78.13 | 0.011 |
| 59 | 12.516 | | 0.0000 | 0.000 | 773.1 | 0.046 | BB | 0.035 | 365.71 | 0.050 |
| 60 | 12.670 | | 0.0000 | 0.000 | 772.3 | 0.046 | BB | 0.041 | 317.22 | 0.043 |
| 61 | 13.347 | DCB | 287.5177 | 6.314 | 142435.2 | 8.564 | BB | 0.049 | 48745.50 | 6.605 |

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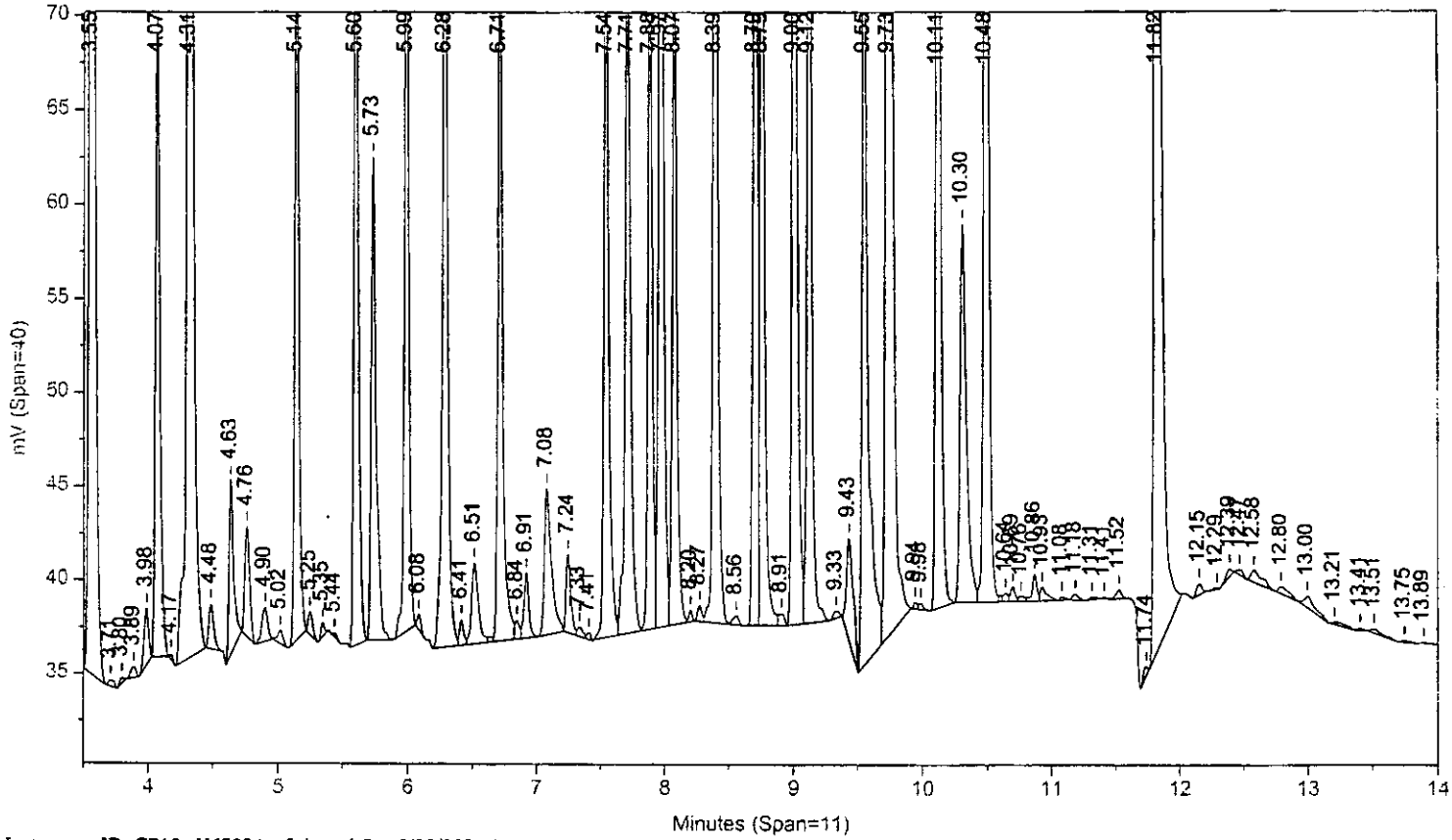
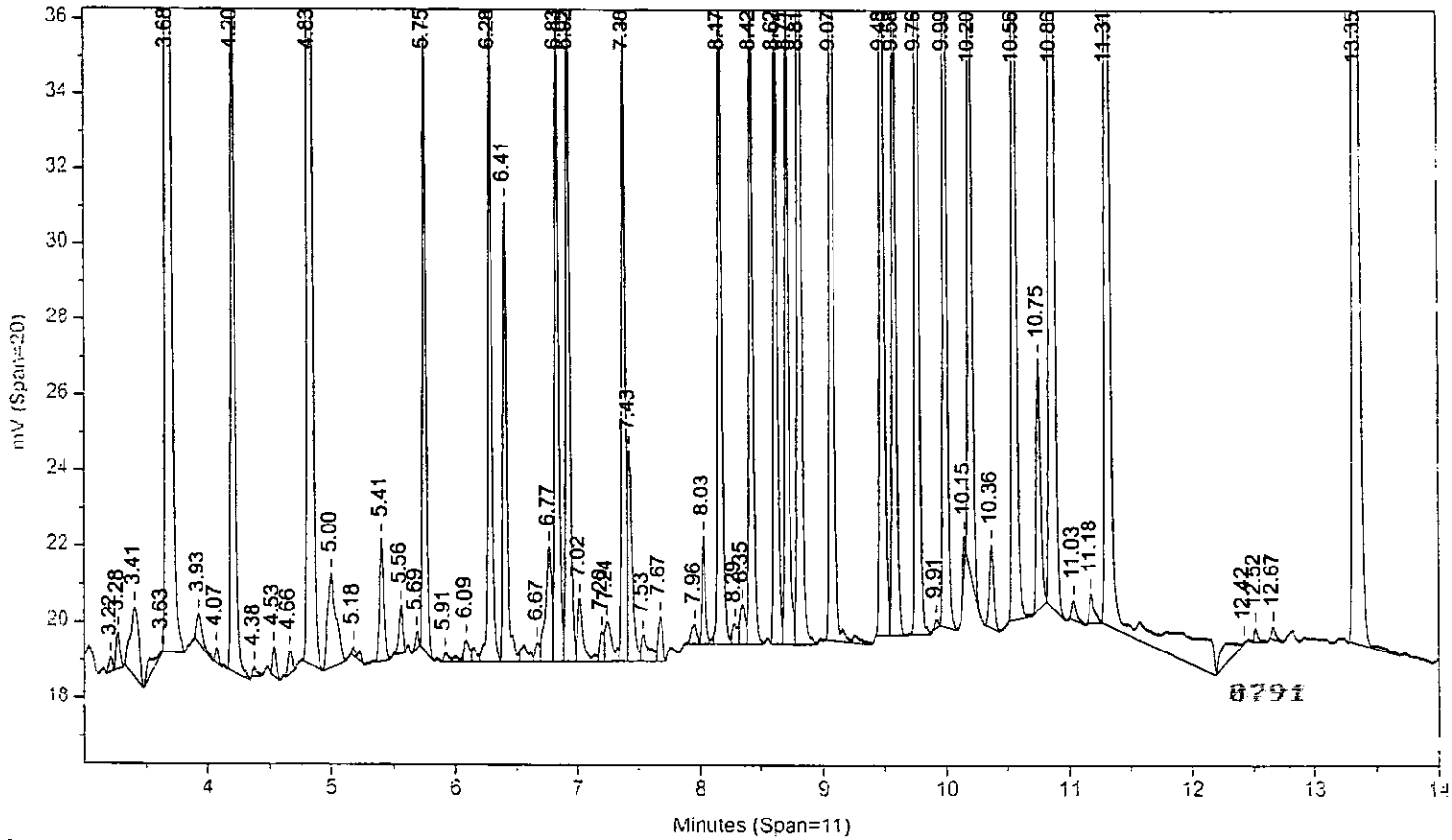
Total Area = 1663245.0, Total Amount = 4553.946, Total Height = 737986.4, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.76R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 12:14:14 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.76R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 12:14:14 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 10
Analyst: 120

| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.312 | 106335 | 9.33863 | TCX | 4.826 | 55448 | 9.44811 | TCX |
| 4.899 | 1806 | .0865 | HCB | 5.559 | 1271 | .15266 | HCB |
| 5.14 | 44140 | 3.1774 | alpha-BHC | 5.753 | 16287 | 3.1526 | alpha-BHC |
| 5.602 | 43497 | 3.12812 | gamma-BHC | 6.284 | 17488 | 3.33769 | gamma-BHC |
| 5.732 | 25816 | 3.33983 | beta-BHC | 6.405 | 12198 | 3.51684 | beta-BHC |
| 5.988 | 44941 | 3.40653 | delta-BHC | 6.832 | 17184 | 3.38193 | delta-BHC |
| 6.283 | 50153 | 3.38334 | Heptachlor | 6.921 | 19497 | 3.52023 | Heptachlor |
| 6.706 | 38643 | 3.23077 | Aldrin | 7.384 | 16572 | 3.2507 | Aldrin |
| 7.538 | 41231 | 3.44352 | Hept. epoxide | 8.169 | 19055 | 3.51941 | Hept. epoxide |
| 7.707 | 38737 | 3.33467 | g. Chlordane | 8.424 | 18111 | 3.31137 | g. Chlordane |
| 7.882 | 38497 | 3.10505 | a. Chlordane | 8.617 | 18513 | 3.29151 | a. Chlordane |
| 7.967 | 70020 | 6.63283 | 4,4'-DDE | 8.813 | 33353 | 6.99132 | 4,4'-DDE |
| 8.073 | 35504 | 3.26255 | Endosulfan I | 8.708 | 17043 | 3.43543 | Endosulfan I |
| 8.199 | 610 | .09436 | o,p-DDD | . | 0 | . | o,p-DDD |
| 8.389 | 66502 | 6.34889 | Dieldrin | 9.072 | 33419 | 6.68312 | Dieldrin |
| 8.7 | 61202 | 6.86164 | Endrin | 9.484 | 27440 | 7.20129 | Endrin |
| 8.755 | 54034 | 6.3284 | 4,4'-DDD | 9.578 | 23238 | 6.92813 | 4,4'-DDD |
| 9.002 | 67862 | 6.9014 | Endosulfan II | 9.763 | 34557 | 7.21625 | Endosulfan II |
| 9.119 | 59309 | 6.80559 | 4,4'-DDT | 9.989 | 26619 | 7.33927 | 4,4'-DDT |
| 9.545 | 43672 | 5.27596 | Endrin aldehyde | 10.198 | 22491 | 5.17891 | Endrin aldehyde |
| 9.73 | 165029 | 32.70251 | Methoxychlor | 10.862 | 70940 | 36.90491 | Methoxychlor |
| 9.981 | 335 | .04004 | Mirex | . | 0 | . | Mirex |
| 10.112 | 61094 | 6.96798 | Endo. sulfate | 10.555 | 31080 | 7.32927 | Endo. sulfate |
| 10.485 | 69613 | 6.64203 | Endrin ketone | 11.313 | 34925 | 7.1233 | Endrin ketone |
| 11.821 | 104456 | 9.14345 | DCB | 13.347 | 48746 | 9.58392 | DCB |

Files:
Area File: C:\CPWIN\DATA1\1C13088.76A
Area File: C:\CPWIN\DATA1\1C13088B.76A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/30/2004 8:10:54 PM
File Reported On: 3/30/2004 at 8:11:06 PM

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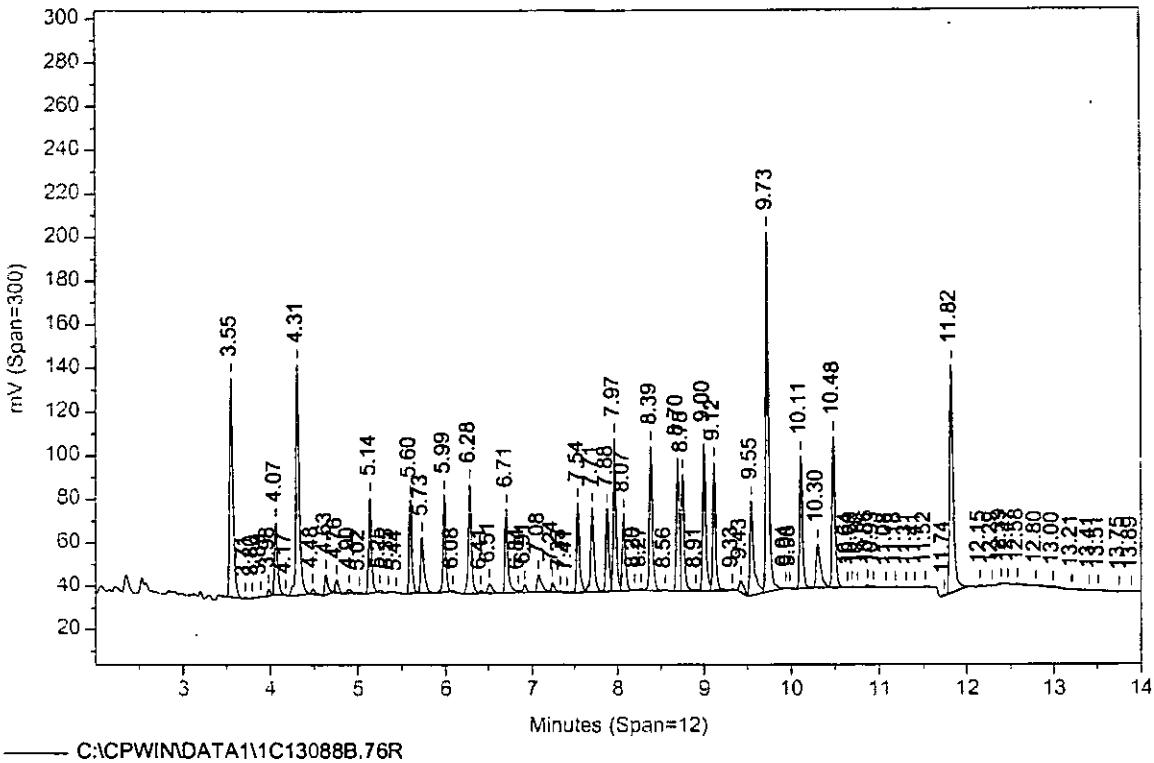
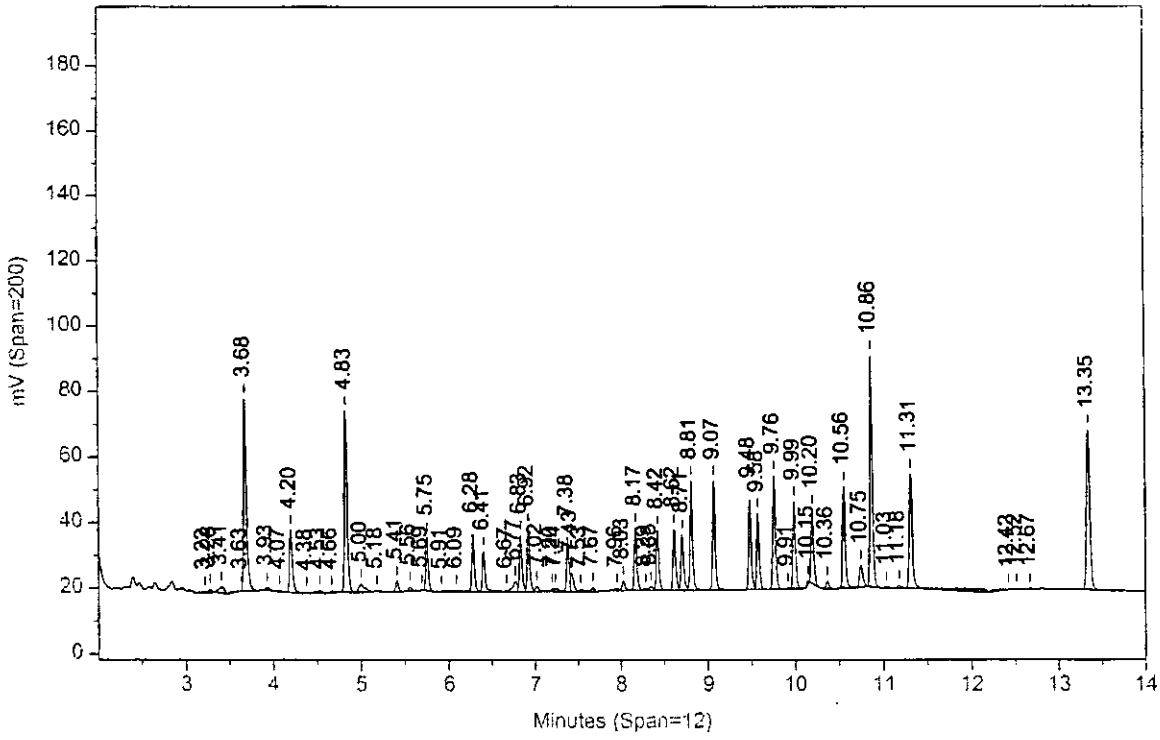
10X REPLOTS

C:\CPWIN\DATA1\1C13088.76R




C:\CPWIN\DATA1\1C13088B.76R

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# Lancaster Laboratories Single Component Data Summary

**Sample Name: 4241646R** MSACF DF20 X5GP45MS Sample ID: AD **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 200 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

AD 4/7/04 (3)

## Analysis Report (A)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722A
Result file : 1C13088.85R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 141.4% Conc.: 13.598291
%SSR(DCB) : 120.1% Conc.: 11.694105

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.28 | 4.31 | 4.34 | 7742 | 13.598291 |
| **HCB** | 4.86 | 4.92 | 4.92 | 77837 | 74.573784 |
| **alpha-BHC** | 5.11 | 5.14 | 5.17 | 2403 | 3.459979 |
| **gamma-BHC** | 5.57 | 5.60 | 5.63 | 1922 | 2.764158 |
| **beta-BHC** | 5.70 | 5.73 | 5.76 | 991 | 2.564465 |
| **delta-BHC** | 5.96 | 5.99 | 6.02 | 2841 | 4.307625 |
| **Heptachlor** | 6.25 | 6.28 | 6.31 | 3167 | 4.273216 |
| **o,p-DDE** | 7.48 | 7.53 | 7.54 | 14282 | 37.289379 |
| **a. Chlordane** | 7.85 | 7.90 | 7.91 | 23463 | 37.848946 |
| **4,4'-DDE** | 7.94 | 7.96 | 8.00 | 47442 | 89.879921 |
| **Endrin** | 8.67 | 8.71 | 8.73 | 46391 | 104.022141 |
| **Endosulfan II** | 8.97 | 9.01 | 9.03 | 9006 | 18.317329 |
| **Endrin aldehyde** | 9.52 | 9.55 | 9.58 | 5400 | 13.046216 |
| **Methoxychlor** | 9.70 | 9.73 | 9.76 | 11009 | 43.631466 |
| **Endo. sulfate** | 10.08 | 10.11 | 10.14 | 2637 | 6.014729 |
| **Endrin ketone** | 10.46 | 10.48 | 10.52 | 4157 | 7.932838 |
| **DCB** | 11.79 | 11.82 | 11.85 | 6680 | 11.694105 |

## Analysis Report (B)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722B
Result file : 1C13088B.85R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.5% Conc.: 9.187534
%SSR(DCB) : 129.1% Conc.: 12.577549

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **TCX** | 4.80 | 4.83 | 4.86 | 2696 | 9.187534 |
| **alpha-BHC** | 5.72 | 5.75 | 5.78 | 781 | 3.021633 |
| **gamma-BHC** | 6.25 | 6.28 | 6.31 | 1046 | 3.991347 |
| **beta-BHC** | 6.38 | 6.40 | 6.44 | 691 | 3.985363 |
| **delta-BHC** | 6.80 | 6.83 | 6.86 | 819 | 3.224512 |
| **Heptachlor** | 6.89 | 6.92 | 6.95 | 3009 | 10.865090 |
| **Aldrin** | 7.35 | 7.38 | 7.41 | 697 | 2.733839 |
| **Telodrin** | 7.58 | 7.59 | 7.64 | 8113 | 29.732876 |
| **Hept. epoxide** | 8.14 | 8.15 | 8.20 | 27038 | 99.876549 |
| **o,p-DDE** | 8.38 | 8.39 | 8.44 | 33033 | 177.110382 |
| **a. Chlordane** | 8.59 | 8.62 | 8.65 | 1047 | 3.722263 |
| **Endosulfan I** | 8.68 | 8.70 | 8.74 | 2806 | 11.313373 |
| **o,p-DDT** | 9.47 | 9.52 | 9.53 | 25489 | 144.392059 |
| **Endosulfan II** | 9.73 | 9.76 | 9.79 | 23615 | 98.626320 |
| **4,4'-DDT** | 9.96 | 10.00 | 10.02 | 42857 | 236.328583 |
| **Endrin aldehyde** | 10.17 | 10.18 | 10.23 | 1031 | 4.749804 |
| **Endo. sulfate** | 10.53 | 10.56 | 10.59 | 569 | 2.684772 |
| **Methoxychlor** | 10.83 | 10.86 | 10.89 | 2154 | 22.414463 |
| **Endrin ketone** | 11.28 | 11.33 | 11.34 | 5934 | 24.205950 |
| **DCB** | 13.32 | 13.35 | 13.38 | 3199 | 12.577549 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | A | 13.598291 | | | | 38.71 | |
| HCB | | | | | | | |
| alpha-BHC | | | <16.6 | <3.4 | | | |
| gamma-BHC | | | <16.6 | <3.4 | | | |
| beta-BHC | | | <16.6 | <3.4 | | | |
| delta-BHC | | | <16.6 | <3.4 | | | |
| Heptachlor | B (A) 4.27 | 10.865090 | <16.6 | ~~3.4~~ J (6) | | ** 87.09 | ~~ntifica~~ due to PCBs |
| Aldrin | | | <30 | <10.2 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | B | 177.110382 | | | | ** 130.43 | |
| Hept. epoxide | | | <16.6 | <3.4 | | | |
| g. Chlordane | | | <18 | <6 | | | |
| a. Chlordane | A (B) 3.72 | 37.848946 | < 16.6 | ~~3.4~~ (6) | | ** 164.18 | |
| 4,4'-DDE | | | <34 | <6.6 | | | |
| Endosulfan I | | | <26 | <8.8 | | | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <34 | <6.6 | | | |
| o,p-DDT | | | | | | | |
| Endrin | | | <34 | <10 | | | ~~8794~~ |
| 4,4'-DDD | | | <34 | <11.6 | | | |
| Kepone | | | | | | | |

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 10:14:55

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241646R** MSACF DF20 ~~1~~ GP45MS Sample ID: AD **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 200 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

197 4/7/04 (3)

## Analysis Report (A)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722A
Result file : 1C13088.85R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

## Analysis Report (B)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722B
Result file : 1C13088B.85R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endosulfan II | B (A) | 18.3 98.626320 | ~~<~~ 34 | ~~6.6~~ (3) | | ** 137.35 | multiple due to PCBs |
| 4,4'-DDT | | | <34 | <6.6 | | | |
| Endrin aldehyde | | | <60 | <20 | | | |
| Methoxychlor | | | <240 | <80 | | | |
| Mirex | | | | | | | |
| Endo. sulfate | | | <34 | <6.6 | | | |
| Endrin ketone | B (A) | 7.93 24.205950 | <34 | ~~6.6~~ | ~~J~~ (3) | ** 101.27 | |
| DCB | B | 12.577549 | | | | 7.28 | |

Units: ug/kg

(3) JDD 14 3.31.04

Reviewed by: [signature] Date: 3.31.04
Verified by: [signature] Date: 3/31/04

8795

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 10:14:55

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name: 4241646R** MSACF DF20 ~~7.5~~GP45MS MS Sample ID: AD **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 200 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

MD 4/7/04 3

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 15:19:29 |
| **Instrument** | H6722A |
| **Result file** | 1C13088.85R |
| **Calibration file** | 2C13088 |
| **Method file** | PESTD |

%SSR(TCX) 141.4% Conc: 13.598291
%SSR(DCB) 120.1% Conc: 11.694105

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.22 | 7.25 | 7.28 | 34931.37109 | 1953.366374 | | | 1 |
| E | 7.56 | 7.59 | 7.62 | 66586.69531 | 2301.156915 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 47441.52734 | 2453.425327 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 74884.875 | 2337.232994 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 56349.57812 | 2418.321207 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 75225.88281 | 2833.296792 | | | 6 |

Height summation: **355419.929689**
Concentration CF: **2382.799935** L:

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Mar 30, 2004 15:19:29 |
| **Instrument** | H6722B |
| **Result file** | 1C13088B.85R |
| **Calibration file** | 2C13088B |
| **Method file** | PESTDB |

%SSR(TCX) 95.5% Conc: 9.187534
%SSR(DCB) 129.1% Conc: 12.577549

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 27037.70507 | 2181.313614 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 33032.62109 | 2370.897273 | | | 2 |
| E | 8.83 | 8.86 | 8.89 | 20313.81835 | 2319.418338 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 44721.49218 | 2408.811182 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 34090.82812 | 2505.008287 | | | 5 |
| E | 9.97 | 10.00 | 10.03 | 42856.61328 | 3076.80629 | | | 6 |

Height summation: **202053.078125**
Concentration CF: **2477.042497** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <340 | <66 | | | 4 | 40 | |
| Aroclor-1221 | | | <600 | <200 | | | 3 | 5 | |
| Aroclor-1232 | | | <340 | <86 | | | 4 | 10 | |
| Aroclor-1242 | | | <340 | <80 | | | 4 | 30 | |
| Aroclor-1248 | | | <360 | <120 | | | 4 | 30 | |
| Aroclor-1254 | B | 2477.042497 | 340 | 66 | E | 3.88 | 4 | 40 | |
| Aroclor-1260 | | | <340 | <66 | | | 4 | 40 | |
| Toxaphene | | | <660 | <220 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04

Verified By: _____ Date: 3/31/04

8796

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241646R** MSACF DF20 7 8GP45MS Sample ID: AD **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 200 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

ND 4/7/04 (1)

## Analysis Report (A)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722A
Result file : 1C13088.85R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : 141.4% Conc.: 13.598291
%SSR(DCB) : 120.1% Conc.: 11.694105

| | Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | | 5 | 148.12 | |
| | 4.81 | 4.84 | 4.87 | 52.530022 | 4.38967 | | | 1 |
| | 5.97 | 5.99 | 6.03 | 2841.459229 | 83.696119 | | | 3 |
| | 6.16 | 6.19 | 6.22 | 240.688171 | 13.054494 | | | 4 |
| | 6.24 | 6.28 | 6.30 | 3167.213135 | 241.652851 | | | 5 |
| | 6.71 | 6.74 | 6.77 | 13350.04003 | 839.222618 | | | 6 |
| Height Summation | | | | **19651.930596** | | | | |
| Amount Avg CF: | | | | **236.40315** | Linear: | | | |
| **Aroclor-1221** | | | | | | 3 | 128.30 | |
| + | 4.54 | 4.54 | 4.60 | 83.238968 | 11.179863 | | | 1 |
| | 4.54 | 4.58 | 4.60 | 139.003494 | 18.669621 | | | 1 |
| | 4.75 | 4.75 | 4.81 | 387.278931 | 100.073433 | | | 2 |
| | 4.81 | 4.84 | 4.87 | 52.530022 | 3.062811 | | | 3 |
| Height Summation | | | | **578.812447** | | | | |
| Amount Avg CF: | | | | **40.601955** | Linear: | | | |
| **Aroclor-1232** | | | | | | 5 | 150.42 | |
| | 4.81 | 4.84 | 4.87 | 52.530022 | 3.995135 | | | 1 |
| | 5.97 | 5.99 | 6.03 | 2841.459229 | 187.104255 | | | 3 |
| | 6.16 | 6.19 | 6.22 | 240.688171 | 28.56643 | | | 4 |
| | 6.24 | 6.28 | 6.30 | 3167.213135 | 544.19119 | | | 5 |
| E | 6.71 | 6.74 | 6.77 | 13350.04003 | 1955.506149 | | | 6 |
| Height Summation | | | | **19651.930596** | | | | |
| Amount Avg CF: | | | | **543.872632** | Linear: | | | |
| **Aroclor-1242** | | | | | | 5 | 146.29 | |
| | 4.81 | 4.84 | 4.87 | 52.530022 | 4.778991 | | | 1 |
| | 5.97 | 5.99 | 6.03 | 2841.459229 | 98.32152 | | | 3 |
| | 6.16 | 6.19 | 6.22 | 240.688171 | 15.144143 | | | 4 |
| | 6.24 | 6.28 | 6.30 | 3167.213135 | 284.304106 | | | 5 |
| | 6.71 | 6.74 | 6.77 | 13350.04003 | 947.772735 | | | 6 |
| Height Summation | | | | **19651.930596** | | | | |
| Amount Avg CF: | | | | **270.064299** | Linear: | | | |
| **Aroclor-1248** | | | | | | 4 | 133.08 | |
| | 6.71 | 6.74 | 6.77 | 13350.04003 | 632.86446 | | | 2 |
| | 7.16 | 7.20 | 7.22 | 5401.444336 | 534.759009 | | | 3 |
| | 7.28 | 7.30 | 7.34 | 20255.76367 | 1006.174098 | | | 4 |
| E | 8.09 | 8.12 | 8.15 | 74884.875 | 6445.198401 | | | 6 |
| Height Summation | | | | **113892.123047** | | | | |
| Amount Avg CF: | | | | **2154.748992** | Linear: | | | |
| **Aroclor-1254** | | | | | | 6 | 11.91 | |
| E | 7.22 | 7.25 | 7.28 | 34931.37109 | ~~1953.366374~~ | | | |
| E | 7.56 | 7.59 | 7.62 | 66586.69531 | 2301.156915 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 47441.52734 | 2453.425327 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 74884.875 | 2337.232994 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 56349.57812 | 2418.321207 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 75225.88281 | 2833.296792 | | | 6 |
| Height Summation | | | | **355419.929689** | | | | |
| Amount Avg CF: | | | | **2382.799935** | Linear: | | | |

w/fit w/ 770

XS = 2382.8
RSD: 12.1

## Analysis Report (B)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722B
Result file : 1C13088B.85R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 95.5% Conc.: 9.187534
%SSR(DCB) : 129.1% Conc.: 12.577549

| | Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | | 3 | 153.56 | |
| | 6.74 | 6.77 | 6.80 | 521.327454 | 30.826341 | | | 3 |
| | 7.07 | 7.12 | 7.13 | 269.684113 | 43.403469 | | | 5 |
| | 7.56 | 7.59 | 7.62 | 8113.196289 | 906.846605 | | | 6 |
| Height Summation | | | | **8904.207856** | | | | |
| Amount Avg CF: | | | | **327.025472** | Linear: | | | |
| **Aroclor-1232** | | | | | | 3 | 154.09 | |
| | 6.74 | 6.77 | 6.80 | 521.327454 | 70.882831 | | | 3 |
| | 7.07 | 7.12 | 7.13 | 269.684113 | 100.231588 | | | 5 |
| E | 7.56 | 7.59 | 7.62 | 8113.196289 | 2153.625256 | | | 6 |
| Height Summation | | | | **8904.207856** | | | | |
| Amount Avg CF: | | | | **774.913225** | Linear: | | | |
| **Aroclor-1242** | | | | | | 3 | 152.88 | |
| | 6.73 | 6.77 | 6.79 | 521.327454 | 36.409178 | | | 3 |
| | 7.07 | 7.12 | 7.13 | 269.684113 | 52.331375 | | | 5 |
| | 7.56 | 7.59 | 7.62 | 8113.196289 | 1044.807788 | | | 6 |
| Height Summation | | | | **8904.207856** | | | | |
| Amount Avg CF: | | | | **377.849447** | Linear: | | | |
| **Aroclor-1248** | | | | | | 6 | 54.67 | |
| E | 7.19 | 7.21 | 7.25 | 14018.85546 | 1433.066934 | | | 1 |
| | 7.56 | 7.59 | 7.62 | 8113.196289 | 690.716548 | | | 2 |
| | 7.73 | 7.76 | 7.79 | 2804.638916 | 276.675922 | | | 3 |
| | 8.06 | 8.09 | 8.12 | 11187.16601 | 918.883739 | | | 4 |
| E | 8.12 | 8.15 | 8.18 | 27037.70507 | 1989.467954 | | | 5 |
| E | 8.44 | 8.47 | 8.50 | 15972.50488 | 1383.751773 | | | 6 |
| Height Summation | | | | **79134.066651** | | | | |
| Amount Avg CF: | | | | **1115.427145** | Linear: | | | |
| **Aroclor-1254** | | | | | | 6 | 12.62 | |
| E | 8.12 | 8.15 | 8.18 | 27037.70507 | 2181.313614 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 33032.62109 | 2370.897273 | | | 2 |
| E | 8.83 | 8.86 | 8.89 | 20313.81835 | 2319.418338 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 44721.49218 | 2408.811182 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 34090.82812 | 2505.008287 | | | 5 |
| E | 9.97 | 10.00 | 10.03 | 42856.61328 | 3076.80629 | | | 6 |
| Height Summation | | | | **202053.078125** | | | | |
| Amount Avg CF: | | | | **2477.042497** | Linear: | | | |
| **Aroclor-1260** | | | | | | 6 | 71.31 | |
| | 9.23 | 9.26 | 9.29 | 22986.30468 | 1442.326376 | | | 1 |
| | 9.49 | 9.52 | 9.55 | 25488.79882 | 1367.129929 | | | 2 |
| | 9.97 | 10.00 | 10.03 | 42856.61328 | 2559.418468 | | | 3 |
| | 10.47 | 10.47 | 10.53 | 12685.31152 | 1004.535592 | | | 4 |
| | 10.78 | 10.81 | 10.84 | 5592.925781 | 229.075184 | | | 5 |
| | 11.30 | 11.33 | 11.36 | 5934.005371 | 434.584529 | | | 6 |
| Height Summation | | | | **115543.959472** | | | | |
| Amount Avg CF: | | | | **1172.845013** | Linear: | | | |
| **Chlordane** | | | | | | 4 | 68.64 | |
| | 6.89 | 6.92 | 6.95 | 3008.787109 | 256.766533 | | | 2 |
| | 7.56 | 7.59 | 7.62 | 8113.196289 | 526.306469 | | | 3 |
| | 8.51 | 8.53 | 8.57 | 10245.90039 | 408.236417 | | | 5 |
| | 8.59 | 8.62 | 8.65 | 1046.786865 | 37.645933 | | | 6 |
| Height Summation | | | | **22414.670654** | | | | |
| Amount Avg CF: | | | | **307.238838** | Linear: | | | |

*Peak found within more than one window
+Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:16:13

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name:** 4241646R MSACF DF20 7 5GP45MS Sample ID: AD **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 200 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

ND 4/7/04

## Analysis Report (A)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722A
Result file : 1C13088.85R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1260** | | | | | 6 | 74.50 | |
| 8.33 | 8.36 | 8.39 | 28558.35546 | 1078.946802 | | | 1 |
| 8.68 | 8.71 | 8.74 | 46390.76171 | 1379.419389 | | | 2 |
| 9.05 | 9.08 | 9.11 | 75225.88281 | 2164.883096 | | | 3 |
| 9.19 | 9.20 | 9.25 | 7302.731445 | 330.93432 | | | 4 |
| 9.91 | 9.94 | 9.97 | 14455.21875 | 286.323521 | | | 5 |
| 10.28 | 10.31 | 10.34 | 16877.58789 | 594.248118 | | | 6 |
| Height Summation | | | **188810.538087** | | | | |
| Amount Avg CF: | | | **972.459208** | Linear: | | | |
| **Chlordane** | | | | | 4 | 107.47 | |
| 6.14 | 6.19 | 6.20 | 240.688171 | 10.146536 | | | 1 |
| 6.25 | 6.28 | 6.31 | 3167.213135 | 101.317407 | | | 2 |
| 6.86 | 6.91 | 6.92 | 2037.485474 | 64.614505 | | | 3 |
| 7.85 | 7.90 | 7.91 | 23462.85937 | 307.499762 | | | 5 |
| Height Summation | | | **28908.246155** | | | | |
| Amount Avg CF: | | | **120.894553** | Linear: | | | |
| **Toxaphene** | | | | | 3 | 120.67 | |
| 8.70 | 8.71 | 8.76 | 46390.76171 | 8661.535873 | | | 1 |
| 9.69 | 9.73 | 9.75 | 11009.01171 | 1665.372025 | | | 4 |
| 10.41 | 10.42 | 10.47 | 5507.288574 | 578.817055 | | | 6 |
| Height Summation | | | **62907.062012** | | | | |
| Amount Avg CF: | | | **3635.241651** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 15:19:29
Instrument : CP13--H6722B
Result file : 1C13088B.85R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Toxaphene** | | | | | 4 | 53.35 | |
| 9.83 | 9.86 | 9.89 | 5153.223145 | 984.801527 | | | 3 |
| 10.17 | 10.18 | 10.23 | 1031.364746 | 288.709905 | | | 4 |
| 10.86 | 10.86 | 10.92 | 2154.294678 | 505.560209 | | | 5 |
| 11.42 | 11.46 | 11.48 | 1318.562744 | 458.720668 | | | 6 |
| Height Summation | | | **9657.445313** | | | | |
| Amount Avg CF: | | | **559.448077** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | 340 | 66 | | 32.17 | 4 | 40 | |
| | | | 340 | 96 | | | | | |
| Aroclor-1221 | | | 600 | 200 | | | 3 | 5 | |
| Aroclor-1232 | | | 340 | 86 | E | 35.04 | 4 | 10 | |
| Aroclor-1242 | | | 340 | 80 | | 33.27 | 4 | 30 | |
| | | | 340 | 100 | | | | | |
| Aroclor-1248 | | | 340 | 98 | E | ** 63.56 | 4 | 30 | |
| | | | 360 | 120 | E | | | | |
| Aroclor-1254 | | | 340 | 66 | E | 3.88 | 4 | 40 | |
| | | | 340 | 114 | E | | | | |
| Aroclor-1260 | | | 340 | 66 | | 18.68 | 4 | 40 | |
| | | | 340 | 88 | | | | | |
| Chlordane | | | 340 | 80 | | ** 87.05 | 2 | 20 | |
| Toxaphene | | | 660 | 220 | | ** 146.65 | 4 | 30 | |

Units: ug/kg

3798

Peak found within more than one window
Duplicate Peak in window - not included in average

Printed on: 3/31/04 10:16:13

Sample Name: **4241646RMSACF DF20 AD5GP45MS MS 040890035A 08899**
Acquired from CP13--H6722A via port 3 on 3/30/04 03:33:29pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.85R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.555 | | 0.0000 | 0.000 | 5733.6 | 0.150 | BB | 0.035 | 2722.06 | 0.168 |
| 2 | 3.718 | | 0.0000 | 0.000 | 298.1 | 0.008 | BB | 0.057 | 87.58 | 0.005 |
| 3 | 3.880 | | 0.0000 | 0.000 | 2243.2 | 0.059 | BB | 0.052 | 718.01 | 0.044 |
| 4 | 3.959 | | 0.0000 | 0.000 | 1793.1 | 0.047 | BB | 0.044 | 683.64 | 0.042 |
| 5 | 4.067 | | 0.0000 | 0.000 | 1401.2 | 0.037 | BB | 0.033 | 709.98 | 0.044 |
| 6 | 4.135 | | 0.0000 | 0.000 | 607.3 | 0.016 | BB | 0.030 | 337.91 | 0.021 |
| 7 | 4.189 | | 0.0000 | 0.000 | 732.0 | 0.019 | BB | 0.033 | 365.78 | 0.023 |
| 8 | 4.309 | TCX | 407.9487 | 2.861 | 19119.0 | 0.499 | BB | 0.041 | 7741.92 | 0.479 |
| 9 | 4.489 | | 0.0000 | 0.000 | 9719.9 | 0.254 | BB | 0.247 | 655.48 | 0.041 |
| 10 | 4.540 | | 0.0000 | 0.000 | 145.7 | 0.004 | BB | 0.029 | 83.24 | 0.005 |
| 11 | 4.583 | | 0.0000 | 0.000 | 201.9 | 0.005 | BB | 0.024 | 139.00 | 0.009 |
| 12 | 4.667 | | 0.0000 | 0.000 | 301.4 | 0.008 | BB | 0.053 | 95.37 | 0.006 |
| 13 | 4.754 | | 0.0000 | 0.000 | 1316.9 | 0.034 | BB | 0.057 | 387.28 | 0.024 |
| 14 | 4.842 | | 0.0000 | 0.000 | 76.4 | 0.002 | BB | 0.024 | 52.53 | 0.003 |
| 15 | 4.916 | HCB | 2237.2140 | 15.693 | 157325.5 | 4.110 | BB | 0.034 | 77836.66 | 4.811 |
| 16 | 5.137 | alpha-BHC | 103.7994 | 0.728 | 6010.3 | 0.157 | BB | 0.042 | 2403.30 | 0.149 |
| 17 | 5.387 | | 0.0000 | 0.000 | 10547.7 | 0.276 | BB | 0.046 | 3783.31 | 0.234 |
| 18 | 5.459 | | 0.0000 | 0.000 | 2286.7 | 0.060 | BB | 0.027 | 1401.22 | 0.087 |
| 19 | 5.553 | | 0.0000 | 0.000 | 750.2 | 0.020 | BB | 0.024 | 523.98 | 0.032 |
| 20 | 5.600 | gamma-BHC | 82.9247 | 0.582 | 3957.6 | 0.103 | BB | 0.034 | 1921.81 | 0.119 |
| 21 | 5.732 | beta-BHC | 76.9340 | 0.540 | 1742.5 | 0.046 | BB | 0.029 | 991.13 | 0.061 |
| 22 | 5.910 | | 0.0000 | 0.000 | 505.3 | 0.013 | BB | 0.035 | 243.27 | 0.015 |
| 23 | 5.987 | delta-BHC | 129.2288 | 0.906 | 7089.4 | 0.185 | BB | 0.042 | 2841.46 | 0.176 |
| 24 | 6.069 | | 0.0000 | 0.000 | 2554.9 | 0.067 | BB | 0.040 | 1067.31 | 0.066 |
| 25 | 6.189 | | 0.0000 | 0.000 | 482.4 | 0.013 | BV | 0.033 | 240.69 | 0.015 |
| 26 | 6.281 | Heptachlor | 128.1965 | 0.899 | 7236.7 | 0.189 | VB | 0.038 | 3167.21 | 0.196 |
| 27 | 6.359 | | 0.0000 | 0.000 | 6506.9 | 0.170 | BB | 0.035 | 3056.97 | 0.189 |
| 28 | 6.437 | | 0.0000 | 0.000 | 34885.5 | 0.911 | BV | 0.031 | 18975.94 | 1.173 |
| 29 | 6.493 | | 0.0000 | 0.000 | 1156481.0 | 30.214 | VB | 0.032 | 604142.40 | 37.343 |
| 30 | 6.741 | | 0.0000 | 0.000 | 37793.2 | 0.987 | BV | 0.047 | 13350.04 | 0.825 |
| 31 | 6.858 | | 0.0000 | 0.000 | 9816.7 | 0.256 | VV | 0.039 | 4201.66 | 0.260 |
| 32 | 6.909 | | 0.0000 | 0.000 | 6214.1 | 0.162 | VB | 0.051 | 2037.49 | 0.126 |
| 33 | 7.076 | | 0.0000 | 0.000 | 20077.2 | 0.525 | BB | 0.045 | 7431.57 | 0.459 |
| 34 | 7.204 | | 0.0000 | 0.000 | 9607.9 | 0.251 | BB | 0.030 | 5401.44 | 0.334 |
| 35 | 7.252 | | 0.0000 | 0.000 | 72645.8 | 1.898 | BV | 0.035 | 34931.37 | 2.159 |
| 36 | 7.304 | | 0.0000 | 0.000 | 64819.5 | 1.693 | VB | 0.053 | 20255.76 | 1.252 |
| 37 | 7.525 | o,p-DDE | 1118.6810 | 7.847 | 29897.2 | 0.781 | BV | 0.035 | 14281.84 | 0.883 |
| 38 | 7.587 | | 0.0000 | 0.000 | 185330.9 | 4.842 | VV | 0.046 | 66586.70 | 4.116 |
| 39 | 7.639 | | 0.0000 | 0.000 | 80346.8 | 2.099 | VV | 0.043 | 31110.69 | 1.923 |
| 40 | 7.755 | | 0.0000 | 0.000 | 2005.6 | 0.052 | VB | 0.031 | 1091.08 | 0.067 |
| 41 | 7.838 | | 0.0000 | 0.000 | 8220.9 | 0.215 | BV | 0.033 | 4133.93 | 0.256 |
| 42 | 7.903 | a. Chlordane | 1135.4680 | 7.965 | 56981.5 | 1.489 | VV | 0.040 | 23462.86 | 1.450 |
| 43 | 7.962 | 4,4'-DDE | 2696.3980 | 18.913 | 112995.9 | 2.952 | VV | 0.040 | 47441.53 | 2.932 |
| 44 | 8.017 | | 0.0000 | 0.000 | 32162.2 | 0.840 | VB | 0.036 | 14906.91 | 0.921 |
| 45 | 8.121 | | 0.0000 | 0.000 | 190625.2 | 4.980 | BV | 0.042 | 74884.88 | 4.629 |
| 46 | 8.279 | | 0.0000 | 0.000 | 31346.7 | 0.819 | VB | 0.052 | 10082.84 | 0.623 |
| 47 | 8.357 | | 0.0000 | 0.000 | 82431.5 | 2.154 | BB | 0.048 | 28558.36 | 1.765 |
| 48 | 8.480 | | 0.0000 | 0.000 | 128871.8 | 3.367 | BB | 0.038 | 56349.58 | 3.483 |
| 49 | 8.634 | | 0.0000 | 0.000 | 16756.6 | 0.438 | BV | 0.035 | 7968.69 | 0.493 |
| 50 | 8.709 | Endrin | 3120.6640 | 21.889 | 188561.6 | 4.926 | VV | 0.068 | 46390.76 | 2.867 |
| 51 | 8.848 | | 0.0000 | 0.000 | 109648.5 | 2.865 | VV | 0.058 | 31517.23 | 1.948 |
| 52 | 8.943 | | 0.0000 | 0.000 | 12845.0 | 0.336 | VV | 0.034 | 6207.15 | 0.384 |
| 53 | 9.006 | Endosulfan II | 549.5199 | 3.855 | 19942.7 | 0.521 | VV | 0.037 | 9005.76 | 0.557 |
| 54 | 9.083 | | 0.0000 | 0.000 | 237090.6 | 6.194 | VV | 0.053 | 75225.88 | 4.650 |
| 55 | 9.202 | | 0.0000 | 0.000 | 23597.2 | 0.616 | VB | 0.054 | 7302.73 | 0.451 |
| 56 | 9.315 | | 0.0000 | 0.000 | 174216.7 | 4.552 | BB | 0.045 | 65147.57 | 4.027 |
| 57 | 9.419 | | 0.0000 | 0.000 | 1517.6 | 0.040 | BV | 0.021 | 1232.93 | 0.076 |
| 58 | 9.463 | | 0.0000 | 0.000 | 50317.6 | 1.315 | VV | 0.043 | 19539.29 | 1.208 |
| 59 | 9.545 | Endrin aldehyde | 391.3865 | 2.745 | 9644.8 | 0.252 | VB | 0.030 | 5399.52 | 0.334 |
| 60 | 9.609 | | 0.0000 | 0.000 | 6333.5 | 0.165 | BV | 0.034 | 3116.90 | 0.193 |
| 61 | 9.667 | | 0.0000 | 0.000 | 2093.6 | 0.055 | VV | 0.028 | 1229.21 | 0.076 |
| 62 | 9.731 | Methoxychlor | 1308.9440 | 9.181 | 24153.7 | 0.631 | VV | 0.037 | 11009.01 | 0.680 |
| 63 | 9.775 | | 0.0000 | 0.000 | 40095.4 | 1.048 | VB | 0.040 | 16787.40 | 1.038 |
| 64 | 9.860 | | 0.0000 | 0.000 | 6740.8 | 0.176 | BB | 0.030 | 3763.42 | 0.233 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.935 | | 0.0000 | 0.000 | 36167.4 | 0.945 | BV | 0.042 | 14455.22 | 0.893 |
| 66 | 10.039 | | 0.0000 | 0.000 | 6407.9 | 0.167 | VV | 0.048 | 2241.96 | 0.139 |
| 67 | 10.108 | Endo. sulfate | 180.4419 | 1.266 | 5294.1 | 0.138 | VB | 0.033 | 2636.81 | 0.163 |
| 68 | 10.179 | | 0.0000 | 0.000 | 7667.0 | 0.200 | BB | 0.030 | 4292.94 | 0.265 |
| 69 | 10.237 | | 0.0000 | 0.000 | 6300.9 | 0.165 | BV | 0.034 | 3049.64 | 0.189 |
| 70 | 10.308 | | 0.0000 | 0.000 | 51985.9 | 1.358 | VV | 0.051 | 16877.59 | 1.043 |
| 71 | 10.417 | | 0.0000 | 0.000 | 13929.8 | 0.364 | VV | 0.042 | 5507.29 | 0.340 |
| 72 | 10.480 | Endrin ketone | 237.9852 | 1.669 | 10125.4 | 0.265 | VV | 0.041 | 4157.10 | 0.257 |
| 73 | 10.532 | | 0.0000 | 0.000 | 5270.7 | 0.138 | VB | 0.033 | 2666.23 | 0.165 |
| 74 | 10.595 | | 0.0000 | 0.000 | 829.6 | 0.022 | BB | 0.024 | 574.87 | 0.036 |
| 75 | 10.687 | | 0.0000 | 0.000 | 12704.2 | 0.332 | BV | 0.037 | 5733.16 | 0.354 |
| 76 | 10.730 | | 0.0000 | 0.000 | 4911.1 | 0.128 | VV | 0.030 | 2717.12 | 0.168 |
| 77 | 10.771 | | 0.0000 | 0.000 | 7125.9 | 0.186 | VV | 0.043 | 2764.46 | 0.171 |
| 78 | 10.858 | | 0.0000 | 0.000 | 5805.1 | 0.152 | VV | 0.042 | 2286.51 | 0.141 |
| 79 | 10.924 | | 0.0000 | 0.000 | 249.0 | 0.007 | VB | 0.021 | 194.89 | 0.012 |
| 80 | 10.975 | | 0.0000 | 0.000 | 1153.7 | 0.030 | BB | 0.030 | 634.19 | 0.039 |
| 81 | 11.131 | | 0.0000 | 0.000 | 10515.8 | 0.275 | BB | 0.104 | 1685.53 | 0.104 |
| 82 | 11.315 | | 0.0000 | 0.000 | 1166.0 | 0.030 | BB | 0.035 | 562.41 | 0.035 |
| 83 | 11.405 | | 0.0000 | 0.000 | 55541.8 | 1.451 | BB | 0.044 | 20924.41 | 1.293 |
| 84 | 11.531 | | 0.0000 | 0.000 | 10555.9 | 0.276 | BB | 0.097 | 1823.02 | 0.113 |
| 85 | 11.738 | | 0.0000 | 0.000 | 807.5 | 0.021 | BB | 0.047 | 283.85 | 0.018 |
| 86 | 11.819 | DCB | 350.8232 | 2.461 | 17812.0 | 0.465 | BB | 0.044 | 6679.72 | 0.413 |
| 87 | 11.913 | | 0.0000 | 0.000 | 940.9 | 0.025 | BB | 0.029 | 549.13 | 0.034 |
| 88 | 11.973 | | 0.0000 | 0.000 | 590.0 | 0.015 | BB | 0.031 | 318.42 | 0.020 |
| 89 | 12.066 | | 0.0000 | 0.000 | 1855.0 | 0.048 | BB | 0.055 | 562.31 | 0.035 |
| 90 | 12.146 | | 0.0000 | 0.000 | 606.1 | 0.016 | BB | 0.032 | 313.85 | 0.019 |
| 91 | 12.282 | | 0.0000 | 0.000 | 1251.9 | 0.033 | BB | 0.046 | 452.75 | 0.028 |
| 92 | 12.333 | | 0.0000 | 0.000 | 557.1 | 0.015 | BB | 0.037 | 248.34 | 0.015 |
| 93 | 12.456 | | 0.0000 | 0.000 | 824.3 | 0.022 | BB | 0.041 | 336.09 | 0.021 |
| 94 | 12.583 | | 0.0000 | 0.000 | 4690.8 | 0.123 | BB | 0.096 | 817.97 | 0.051 |
| 95 | 12.794 | | 0.0000 | 0.000 | 1004.4 | 0.026 | BB | 0.071 | 236.80 | 0.015 |
| 96 | 12.949 | | 0.0000 | 0.000 | 1807.8 | 0.047 | BB | 0.073 | 413.06 | 0.026 |
| 97 | 13.132 | | 0.0000 | 0.000 | 5030.0 | 0.131 | BB | 0.086 | 969.61 | 0.060 |
| 98 | 13.354 | | 0.0000 | 0.000 | 6604.2 | 0.173 | BB | 0.166 | 665.05 | 0.041 |
| 99 | 13.663 | | 0.0000 | 0.000 | 215.4 | 0.006 | BB | 0.043 | 82.93 | 0.005 |
| 100 | 13.744 | | 0.0000 | 0.000 | 1089.8 | 0.028 | BB | 0.084 | 215.81 | 0.013 |
| 101 | 13.885 | | 0.0000 | 0.000 | 469.0 | 0.012 | BB | 0.046 | 170.28 | 0.011 |

Total Area = 3827662.0, Total Amount = 14256.56, Total Height = 1617821.0, Sample Units = PPB

Sample Name: **4241646RMSACF DF20 AD5GP45MS MS 040890035A 08899**
Acquired from CP13--H6722B via port 4 on 3/30/04 03:33:29pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.85R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.042 | | 0.0000 | 0.000 | 650.1 | 0.051 | BB | 0.041 | 266.26 | 0.053 |
| 2 | 3.159 | | 0.0000 | 0.000 | 1255.1 | 0.099 | BB | 0.036 | 583.16 | 0.115 |
| 3 | 3.680 | | 0.0000 | 0.000 | 10360.8 | 0.818 | BB | 0.103 | 1677.78 | 0.331 |
| 4 | 4.202 | | 0.0000 | 0.000 | 533.5 | 0.042 | BB | 0.026 | 338.18 | 0.067 |
| 5 | 4.556 | | 0.0000 | 0.000 | 4155.7 | 0.328 | BB | 0.065 | 1071.96 | 0.211 |
| 6 | 4.825 | TCX | 275.6260 | 1.015 | 6041.5 | 0.477 | BB | 0.037 | 2695.92 | 0.532 |
| 7 | 4.977 | | 0.0000 | 0.000 | 10463.3 | 0.826 | BB | 0.073 | 2396.93 | 0.473 |
| 8 | 5.517 | | 0.0000 | 0.000 | 28482.3 | 2.250 | BB | 9.217 | 51.50 | 0.010 |
| 9 | 5.681 | | 0.0000 | 0.000 | 1180.5 | 0.093 | BB | 0.040 | 487.97 | 0.096 |
| 10 | 5.750 | alpha-BHC | 90.6490 | 0.334 | 1409.8 | 0.111 | BV | 0.030 | 780.53 | 0.154 |
| 11 | 5.798 | | 0.0000 | 0.000 | 1482.7 | 0.117 | VB | 0.060 | 414.44 | 0.082 |
| 12 | 6.282 | gamma-BHC | 119.7404 | 0.441 | 3193.6 | 0.252 | BV | 0.051 | 1045.62 | 0.206 |
| 13 | 6.401 | beta-BHC | 119.5609 | 0.440 | 1576.2 | 0.124 | VV | 0.038 | 691.16 | 0.136 |
| 14 | 6.489 | | 0.0000 | 0.000 | 3725.8 | 0.294 | VV | 0.049 | 1268.32 | 0.250 |
| 15 | 6.623 | | 0.0000 | 0.000 | 921.0 | 0.073 | VV | 0.033 | 465.02 | 0.092 |
| 16 | 6.765 | | 0.0000 | 0.000 | 1844.3 | 0.146 | VV | 0.059 | 521.33 | 0.103 |
| 17 | 6.827 | delta-BHC | 96.7354 | 0.356 | 1711.5 | 0.135 | VB | 0.035 | 819.19 | 0.162 |
| 18 | 6.919 | Heptachlor | 325.9527 | 1.201 | 8082.5 | 0.638 | BB | 0.045 | 3008.79 | 0.593 |
| 19 | 7.120 | | 0.0000 | 0.000 | 560.8 | 0.044 | BB | 0.035 | 269.68 | 0.053 |
| 20 | 7.214 | | 0.0000 | 0.000 | 30842.0 | 2.436 | BV | 0.037 | 14018.86 | 2.765 |
| 21 | 7.275 | | 0.0000 | 0.000 | 9876.3 | 0.780 | VV | 0.044 | 3739.40 | 0.737 |
| 22 | 7.380 | Aldrin | 82.0152 | 0.302 | 1192.4 | 0.094 | VV | 0.029 | 696.85 | 0.137 |
| 23 | 7.427 | | 0.0000 | 0.000 | 2928.8 | 0.231 | VB | 0.042 | 1149.93 | 0.227 |
| 24 | 7.592 | Telodrin | 891.9863 | 3.286 | 25327.4 | 2.000 | BV | 0.052 | 8113.20 | 1.600 |
| 25 | 7.757 | | 0.0000 | 0.000 | 4494.6 | 0.355 | VV | 0.027 | 2804.64 | 0.553 |
| 26 | 7.790 | | 0.0000 | 0.000 | 11513.4 | 0.909 | VB | 0.043 | 4472.70 | 0.882 |
| 27 | 7.958 | | 0.0000 | 0.000 | 1227.4 | 0.097 | BV | 0.031 | 668.40 | 0.132 |
| 28 | 8.005 | | 0.0000 | 0.000 | 6215.0 | 0.491 | VV | 0.040 | 2560.38 | 0.505 |
| 29 | 8.088 | | 0.0000 | 0.000 | 23974.1 | 1.894 | VV | 0.036 | 11187.17 | 2.206 |
| 30 | 8.150 | Hept. epoxide | 2996.2960 | 11.039 | 62782.3 | 4.959 | VV | 0.039 | 27037.71 | 5.332 |
| 31 | 8.257 | | 0.0000 | 0.000 | 8505.9 | 0.672 | VV | 0.034 | 4139.38 | 0.816 |
| 32 | 8.308 | | 0.0000 | 0.000 | 16367.6 | 1.293 | VV | 0.037 | 7369.44 | 1.453 |
| 33 | 8.388 | o,p-DDE | 5313.3120 | 19.576 | 74634.6 | 5.895 | VV | 0.038 | 33032.62 | 6.515 |
| 34 | 8.472 | | 0.0000 | 0.000 | 36192.4 | 2.859 | VV | 0.038 | 15972.50 | 3.150 |
| 35 | 8.532 | | 0.0000 | 0.000 | 25471.7 | 2.012 | VV | 0.041 | 10245.90 | 2.021 |
| 36 | 8.616 | a. Chlordane | 111.6679 | 0.411 | 2042.4 | 0.161 | VB | 0.033 | 1046.79 | 0.206 |
| 37 | 8.700 | Endosulfan I | 339.4012 | 1.250 | 5761.3 | 0.455 | BB | 0.034 | 2806.25 | 0.553 |
| 38 | 8.777 | | 0.0000 | 0.000 | 22612.2 | 1.786 | BB | 0.036 | 10585.64 | 2.088 |
| 39 | 8.856 | | 0.0000 | 0.000 | 39252.1 | 3.100 | BB | 0.032 | 20313.82 | 4.006 |
| 40 | 8.937 | | 0.0000 | 0.000 | 12528.9 | 0.990 | BV | 0.033 | 6264.05 | 1.235 |
| 41 | 9.008 | | 0.0000 | 0.000 | 112726.6 | 8.904 | VV | 0.042 | 44721.49 | 8.820 |
| 42 | 9.143 | | 0.0000 | 0.000 | 15304.2 | 1.209 | VV | 0.055 | 4640.80 | 0.915 |
| 43 | 9.258 | | 0.0000 | 0.000 | 52876.2 | 4.176 | VV | 0.038 | 22986.30 | 4.533 |
| 44 | 9.294 | | 0.0000 | 0.000 | 77423.1 | 6.115 | VB | 0.038 | 34090.83 | 6.723 |
| 45 | 9.440 | | 0.0000 | 0.000 | 18426.4 | 1.455 | BV | 0.047 | 6486.26 | 1.279 |
| 46 | 9.517 | o,p-DDT | 4331.7620 | 15.959 | 64588.6 | 5.101 | VB | 0.042 | 25488.80 | 5.027 |
| 47 | 9.739 | | 0.0000 | 0.000 | 39841.8 | 3.147 | BV | 0.028 | 23380.68 | 4.611 |
| 48 | 9.759 | Endosulfan II | 2958.7900 | 10.901 | 47663.7 | 3.765 | VB | 0.034 | 23615.07 | 4.657 |
| 49 | 9.857 | | 0.0000 | 0.000 | 9696.6 | 0.766 | BB | 0.031 | 5153.22 | 1.016 |
| 50 | 9.997 | 4,4'-DDT | 7089.8570 | 26.121 | 140692.0 | 11.112 | BB | 0.055 | 42856.61 | 8.452 |
| 51 | 10.139 | | 0.0000 | 0.000 | 6942.2 | 0.548 | BB | 0.041 | 2800.67 | 0.552 |
| 52 | 10.184 | Endrin aldehyde | 142.4941 | 0.525 | 1605.7 | 0.127 | BB | 0.026 | 1031.36 | 0.203 |
| 53 | 10.240 | | 0.0000 | 0.000 | 695.8 | 0.055 | BB | 0.022 | 529.40 | 0.104 |
| 54 | 10.303 | | 0.0000 | 0.000 | 6261.3 | 0.495 | BB | 0.045 | 2308.86 | 0.455 |
| 55 | 10.475 | | 0.0000 | 0.000 | 33876.9 | 2.676 | BB | 0.045 | 12685.31 | 2.502 |
| 56 | 10.555 | Endo. sulfate | 80.5432 | 0.297 | 678.1 | 0.054 | BB | 0.020 | 569.24 | 0.112 |
| 57 | 10.603 | | 0.0000 | 0.000 | 2901.1 | 0.229 | BB | 0.030 | 1634.19 | 0.322 |
| 58 | 10.675 | | 0.0000 | 0.000 | 15705.4 | 1.240 | BB | 0.034 | 7588.09 | 1.496 |
| 59 | 10.744 | | 0.0000 | 0.000 | 4474.4 | 0.353 | BB | 0.026 | 2894.54 | 0.571 |
| 60 | 10.807 | | 0.0000 | 0.000 | 11053.3 | 0.873 | BB | 0.033 | 5592.93 | 1.103 |
| 61 | 10.861 | Methoxychlor | 672.4339 | 2.477 | 3023.8 | 0.239 | BB | 0.023 | 2154.29 | 0.425 |
| 62 | 10.932 | | 0.0000 | 0.000 | 922.1 | 0.073 | BB | 0.025 | 607.05 | 0.120 |
| 63 | 10.969 | | 0.0000 | 0.000 | 2002.0 | 0.158 | BB | 0.031 | 1060.45 | 0.209 |
| 64 | 11.104 | | 0.0000 | 0.000 | 3403.6 | 0.269 | BB | 0.032 | 1796.60 | 0.354 |

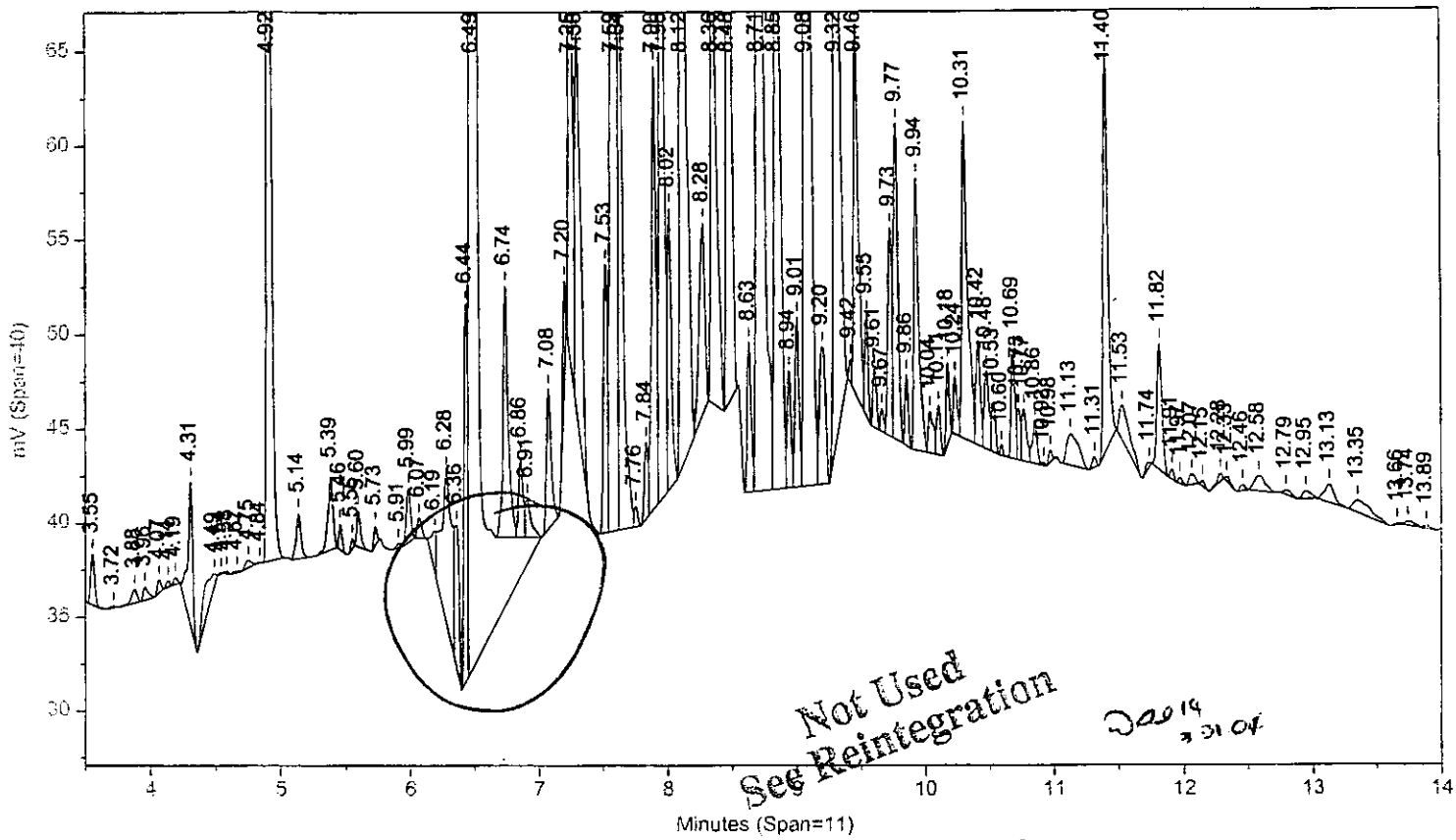
8861

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.217 | | 0.0000 | 0.000 | 11930.7 | 0.942 | BB | 0.069 | 2900.03 | 0.572 |
| 66 | 11.332 | Endrin ketone | 726.1785 | 2.675 | 18145.8 | 1.433 | BB | 0.051 | 5934.01 | 1.170 |
| 67 | 11.460 | | 0.0000 | 0.000 | 4432.1 | 0.350 | BB | 0.056 | 1318.56 | 0.260 |
| 68 | 11.602 | | 0.0000 | 0.000 | 1070.8 | 0.085 | BB | 0.040 | 442.99 | 0.087 |
| 69 | 11.767 | | 0.0000 | 0.000 | 3727.9 | 0.294 | BB | 0.083 | 748.87 | 0.148 |
| 70 | 11.948 | | 0.0000 | 0.000 | 22081.1 | 1.744 | BB | 0.057 | 6413.60 | 1.265 |
| 71 | 12.222 | | 0.0000 | 0.000 | 1218.9 | 0.096 | BB | 0.039 | 516.27 | 0.102 |
| 72 | 12.306 | | 0.0000 | 0.000 | 3262.6 | 0.258 | BB | 0.064 | 845.68 | 0.167 |
| 73 | 12.634 | | 0.0000 | 0.000 | 5257.3 | 0.415 | BB | 0.124 | 709.46 | 0.140 |
| 74 | 13.349 | DCB | 377.3265 | 1.390 | 9830.2 | 0.776 | BB | 0.051 | 3198.58 | 0.631 |
| 75 | 13.901 | | 0.0000 | 0.000 | 968.4 | 0.076 | BB | 0.058 | 278.37 | 0.055 |

Total Area = 1266085.0, Total Amount = 27142.33, Total Height = 507058.9, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.85R

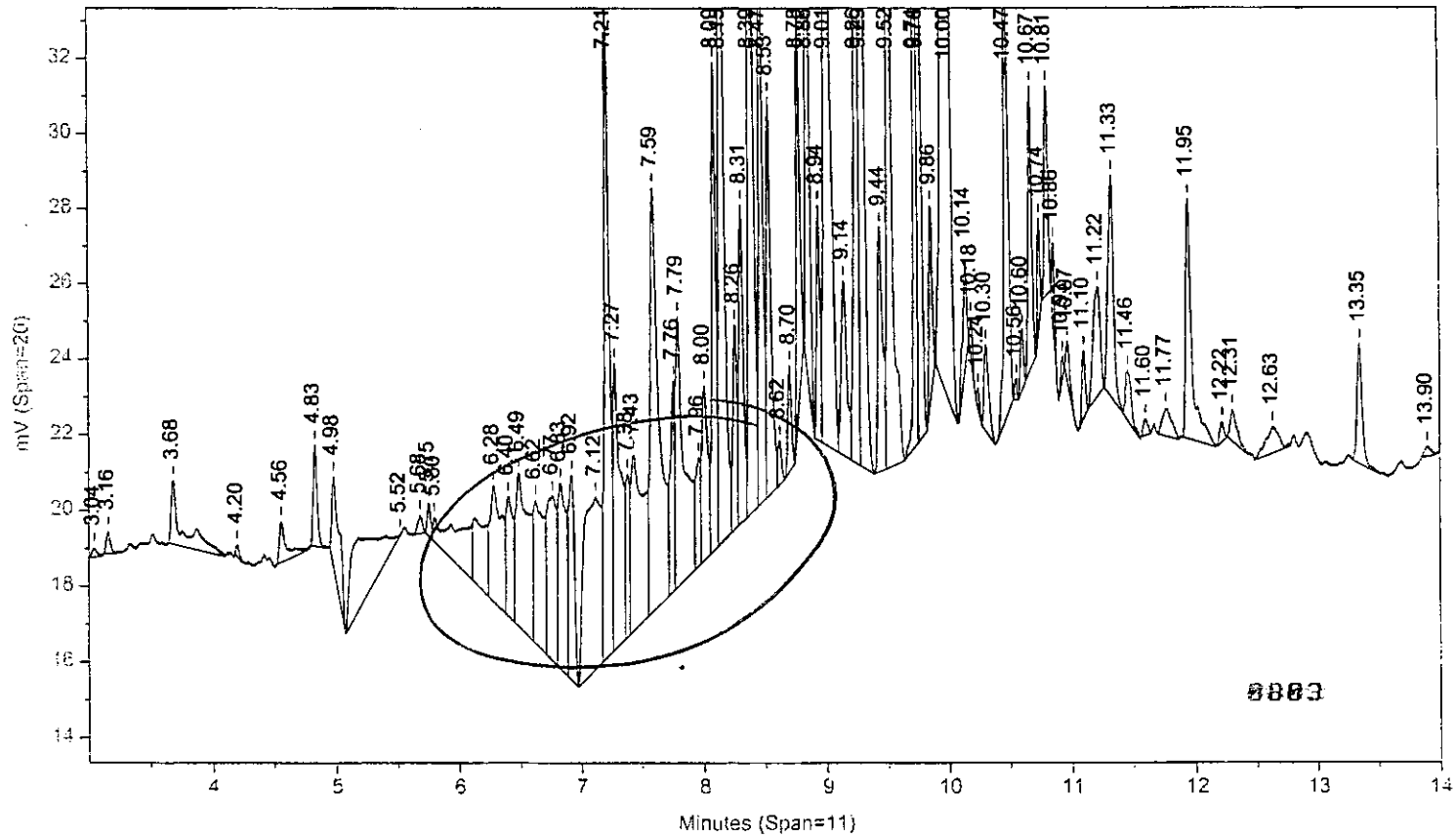
C:\CPWIN\DATA1\1C13088.85R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 3:19:29 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.85R

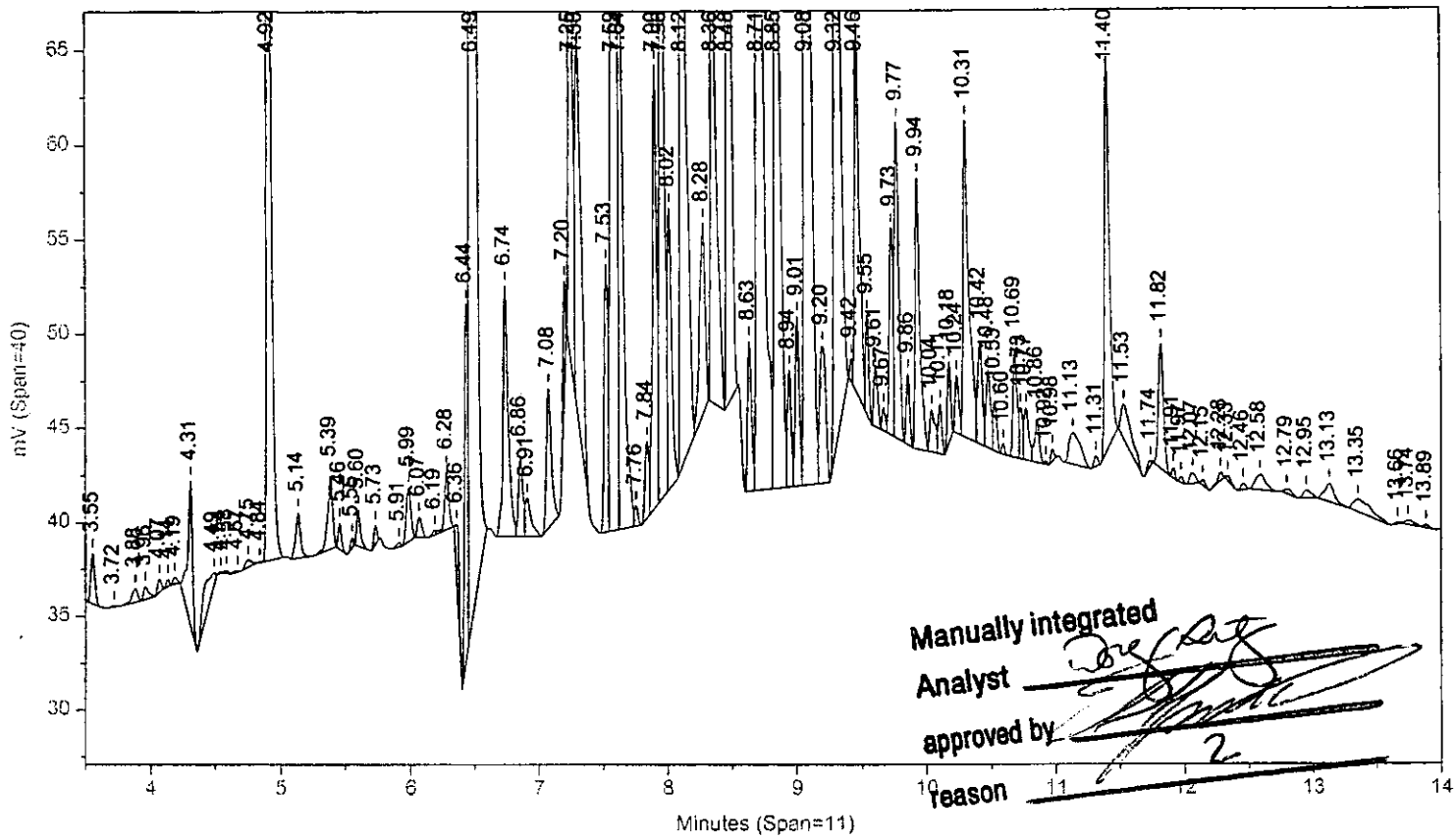
C:\CPWIN\DATA1\1C13088B.85R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 3:19:29 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.85R

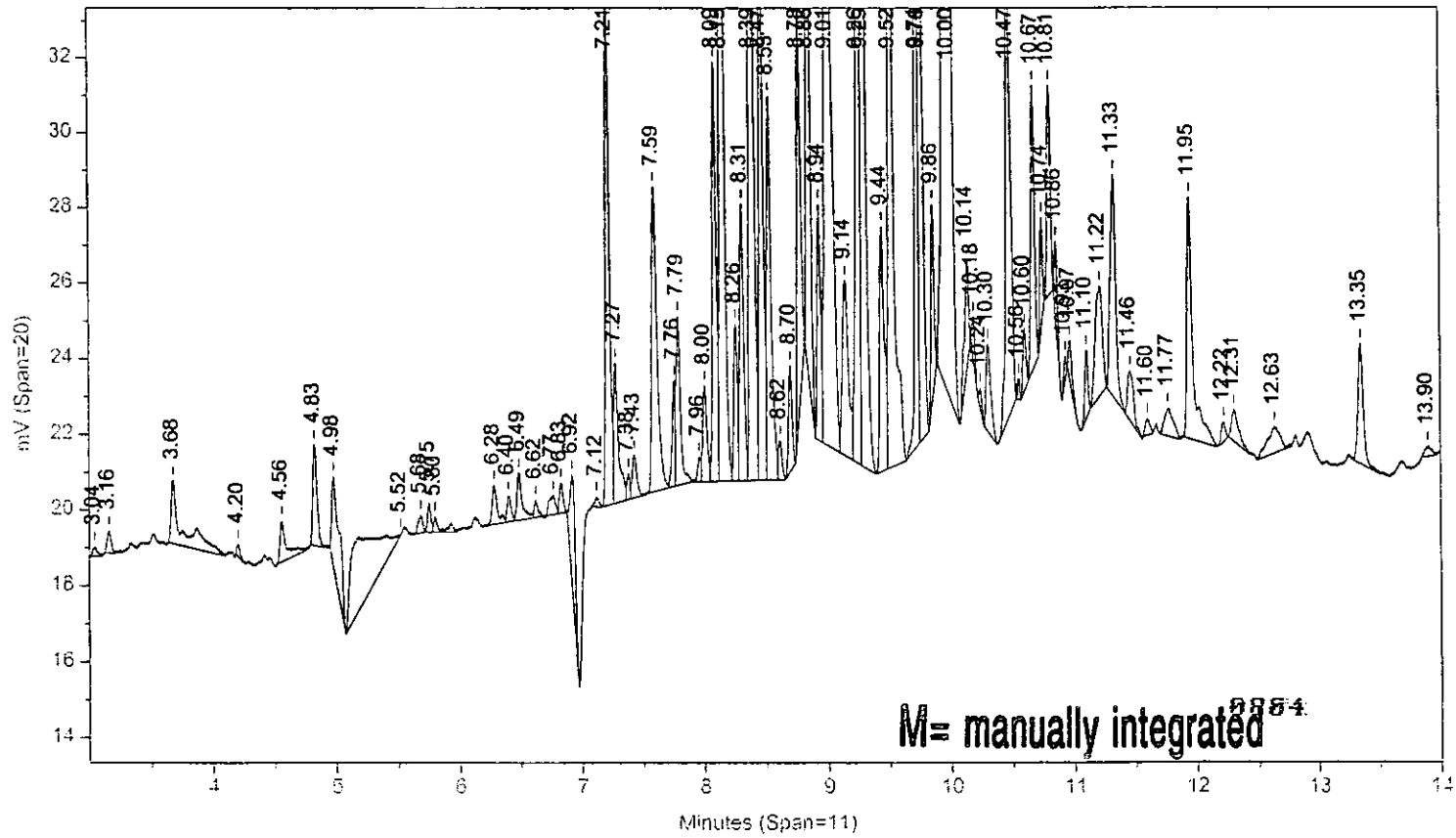
—— C:\CPWIN\DATA1\1C13088.85R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 3:19:29 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

File: C:\CPWIN\DATA1\1C13088B.85R

—— C:\CPWIN\DATA1\1C13088B.85R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 3:19:29 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 200
Analyst: 120

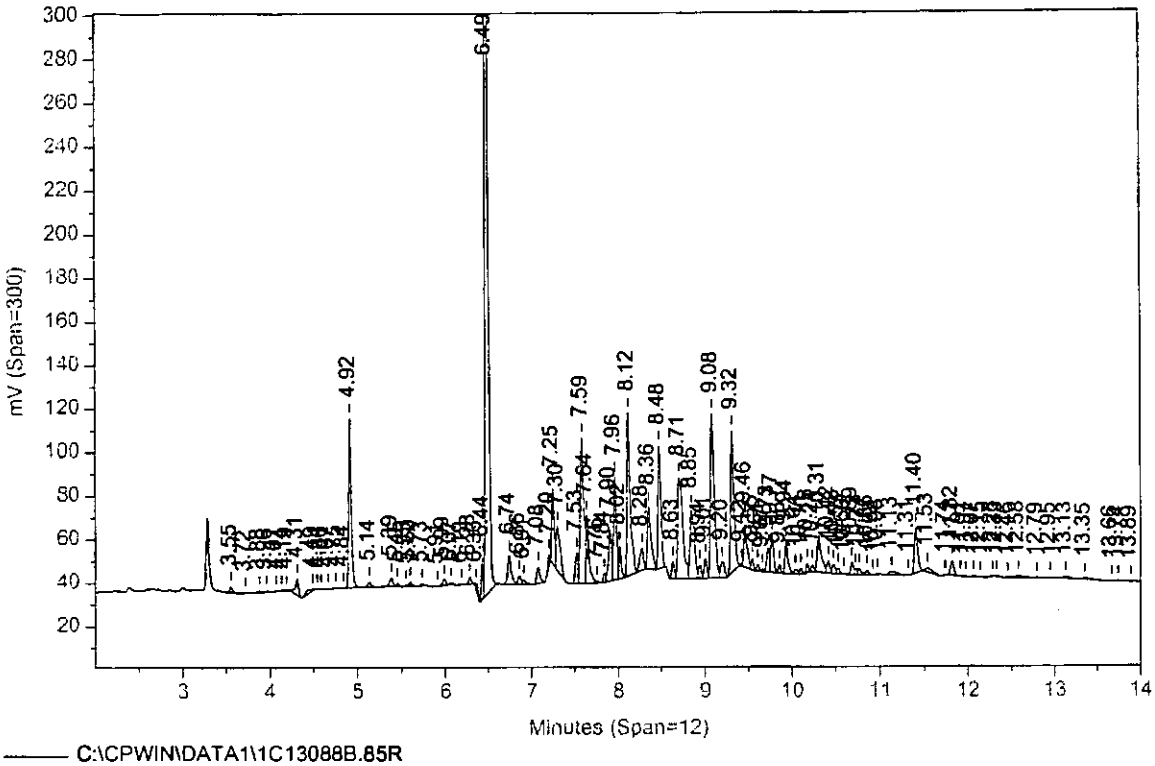
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.309 | 7742 | 13.59829 | TCX | 4.825 | 2696 | 9.18753 | TCX |
| 4.916 | 77837 | 74.57378 | HCB | . | 0 | . | HCB |
| 5.137 | 2403 | 3.45998 | alpha-BHC | 5.75 | 781 | 3.02163 | alpha-BHC |
| 5.6 | 1922 | 2.76416 | gamma-BHC | 6.282 | 1046 | 3.99135 | gamma-BHC |
| 5.732 | 991 | 2.56447 | beta-BHC | 6.401 | 691 | 3.98536 | beta-BHC |
| 5.987 | 2841 | 4.30763 | delta-BHC | 6.827 | 819 | 3.22451 | delta-BHC |
| 6.281 | 3167 | 4.27322 | Heptachlor | 6.919 | 3009 | 10.86509 | Heptachlor |
| . | 0 | . | Aldrin | 7.38 | 697 | 2.73384 | Aldrin |
| 7.525 | 14282 | 37.28938 | o,p-DDE | 8.388 | 33033 | 177.1104 | o,p-DDE |
| . | 0 | . | Telodrin | 7.592 | 8113 | 29.73288 | Telodrin |
| 7.903 | 23463 | 37.84895 | a. Chlordane | 8.616 | 1047 | 3.72226 | a. Chlordane |
| 7.962 | 47442 | 89.87992 | 4,4'-DDE | . | 0 | . | 4,4'-DDE |
| . | 0 | . | Hept. epoxide | 8.15 | 27038 | 99.87655 | Hept. epoxide |
| . | 0 | . | Endosulfan I | 8.7 | 2806 | 11.31337 | Endosulfan I |
| 8.709 | 46391 | 104.0221 | Endrin | . | 0 | . | Endrin |
| 9.006 | 9006 | 18.31733 | Endosulfan II | 9.759 | 23615 | 98.62632 | Endosulfan II |
| . | 0 | . | o,p-DDT | 9.517 | 25489 | 144.3921 | o,p-DDT |
| 9.545 | 5400 | 13.04622 | Endrin aldehyde | 10.184 | 1031 | 4.7498 | Endrin aldehyde |
| 9.731 | 11009 | 43.63147 | Methoxychlor | 10.861 | 2154 | 22.41446 | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.997 | 42857 | 236.3286 | 4,4'-DDT |
| 10.108 | 2637 | 6.01473 | Endo. sulfate | 10.555 | 569 | 2.68477 | Endo. sulfate |
| 10.48 | 4157 | 7.93284 | Endrin ketone | 11.332 | 5934 | 24.20595 | Endrin ketone |
| 11.819 | 6680 | 11.69411 | DCB | 13.349 | 3199 | 12.57755 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 10:11:04 AM
File Reported On: 3/31/2004 at 10:11:07 AM

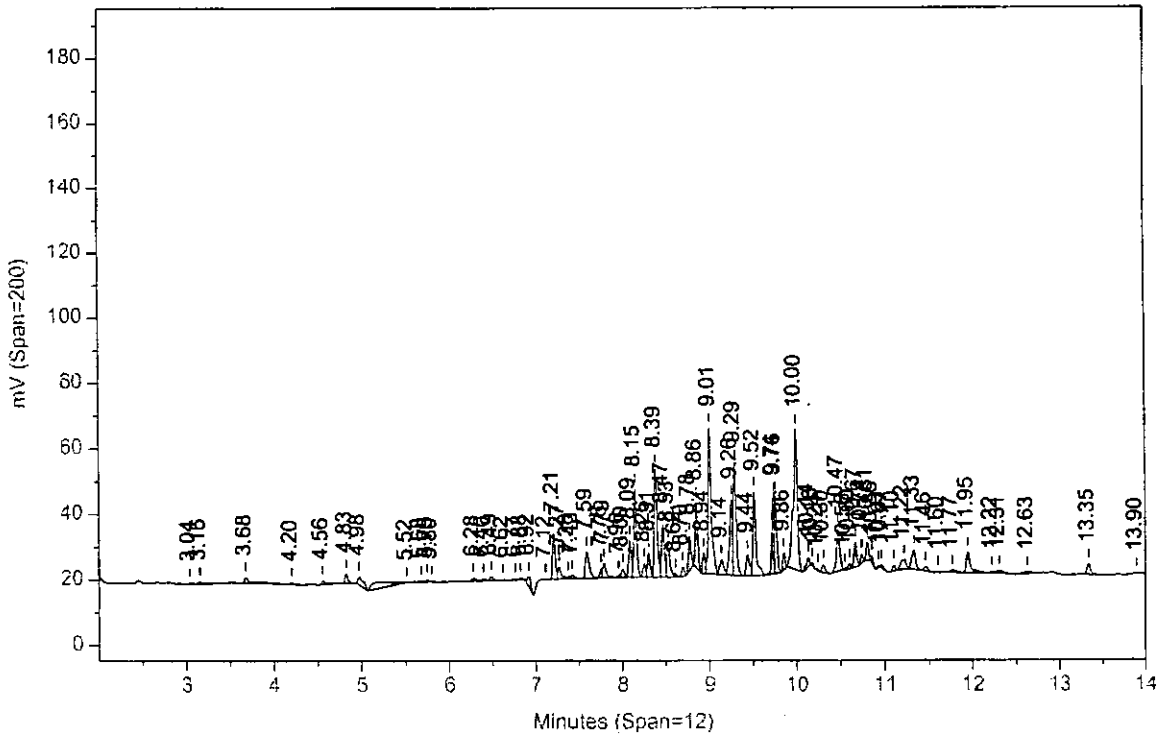


10X REPLOTS

C:\CPWIN\DATA1\1C13088.85R




C:\CPWIN\DATA1\1C13088B.85R



# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241647R** MSDACF DF5 2X GP45MSD Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

10 4176 4 (7)

## Analysis Report (A)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13–H6722A
Result file : 1C13088.86R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : *33.6% Conc.: 3.235968 w/ this a w/ d.25
%SSR(DCB) : 106.7% Conc.: 10.394049

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.28 | 4.30 | 4.34 | 7369 | 3.235968 |
| HCB | 4.86 | 4.91 | 4.92 | 377063 E | 90.314194 |
| alpha-BHC | 5.11 | 5.14 | 5.17 | 9062 | 3.261769 |
| gamma-BHC | 5.57 | 5.60 | 5.63 | 7908 | 2.843644 |
| beta-BHC | 5.70 | 5.73 | 5.76 | 4913 | 3.177985 |
| delta-BHC | 5.96 | 5.98 | 6.02 | 9990 | 3.786042 |
| Heptachlor | 6.25 | 6.28 | 6.31 | 10948 | 3.692870 |
| Aldrin | 6.68 | 6.70 | 6.74 | 5725 | 2.393234 |
| Hept. epoxide | 7.51 | 7.53 | 7.57 | 17301 | 7.224604 |
| g. Chlordane | 7.68 | 7.72 | 7.74 | 28936 | 12.454896 |
| a. Chlordane | 7.85 | 7.90 | 7.91 | 22726 | 9.164969 |
| 4,4'-DDE | 7.94 | 7.96 | 8.00 | 51020 | 24.164806 |
| Endosulfan I | 8.04 | 8.07 | 8.10 | 5479 | 2.517648 |
| o,p-DDT | 8.51 | 8.55 | 8.57 | 5549 | 3.605228 |
| Endrin | 8.67 | 8.70 | 8.73 | 54353 | 30.468891 |
| Kepone | 8.73 | 8.79 | 8.79 | 23296 | 99.795937 |
| Endosulfan II | 8.97 | 9.00 | 9.03 | 17818 | 9.060134 |
| Endrin aldehyde | 9.52 | 9.54 | 9.58 | 12266 | 7.409056 |
| Methoxychlor | 9.70 | 9.72 | 9.76 | 34533 | 34.216171 |
| Endo. sulfate | 10.08 | 10.11 | 10.14 | 11809 | 6.734461 |
| Endrin ketone | 10.46 | 10.48 | 10.52 | 16070 | 7.666545 |
| DCB | 11.79 | 11.82 | 11.85 | 23748 | 10.394049 |

## Analysis Report (B)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13–H6722B
Result file : 1C13088B.86R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 93.9% Conc.: 9.032804
%SSR(DCB) : 112.1% Conc.: 10.921632

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| TCX | 4.80 | 4.83 | 4.86 | 10602 | 9.032804 |
| HCB | 5.52 | 5.56 | 5.58 | 528 | 0.317245 |
| alpha-BHC | 5.72 | 5.75 | 5.78 | 2641 | 2.555795 |
| gamma-BHC | 6.25 | 6.28 | 6.31 | 3876 | 3.699212 |
| beta-BHC | 6.38 | 6.40 | 6.44 | 2801 | 4.037117 |
| delta-BHC | 6.80 | 6.83 | 6.86 | 2997 | 2.948782 |
| Heptachlor | 6.89 | 6.92 | 6.95 | 5997 | 5.413816 |
| Aldrin | 7.35 | 7.38 | 7.41 | 2309 | 2.264285 |
| Telodrin | 7.58 | 7.61 | 7.64 | 12324 | 11.290721 |
| Hept. epoxide | 8.14 | 8.15 | 8.20 | 23234 | 21.456869 |
| o,p-DDE | 8.38 | 8.39 | 8.44 | 27225 | 36.492359 |
| a. Chlordane | 8.59 | 8.61 | 8.65 | 3785 | 3.364896 |
| Endosulfan I | 8.68 | 8.70 | 8.74 | 4434 | 4.468489 |
| 4,4'-DDE | 8.78 | 8.81 | 8.84 | 4306 | 4.512966 |
| o,p-DDT | 9.47 | 9.52 | 9.53 | 26378 | 37.356628 |
| 4,4'-DDD | 9.55 | 9.59 | 9.61 | 9525 | 14.198771 |
| Endosulfan II | 9.73 | 9.76 | 9.79 | 27509 | 28.722378 |
| 4,4'-DDT | 9.96 | 9.99 | 10.02 | 27255 | 37.574139 |
| Endrin aldehyde | 10.17 | 10.19 | 10.23 | 4120 | 4.743578 |
| Endo. sulfate | 10.53 | 10.55 | 10.59 | 3553 | 4.189344 |
| Methoxychlor | 10.83 | 10.86 | 10.89 | 11850 | 30.823473 |
| Endrin ketone | 11.28 | 11.31 | 11.34 | 11804 | 12.037762 |
| DCB | 13.32 | 13.34 | 13.38 | 11110 | 10.921632 |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| TCX | B | 9.032804 | | | | ** 94.50 | |
| HCB | A | 90.314194 | | | E | ** 198.60 | |
| alpha-BHC | A | 3.261769 | <4.15 | 0.85 | J | 24.27 | OC to report before Patten |
| gamma-BHC | B | 3.699212 | <4.15 | 0.85 | J | 26.15 | |
| beta-BHC | B | 4.037117 | <4.15 | 0.85 | J | 23.81 | |
| delta-BHC | A | 3.786042 | <4.15 | 0.85 | J | 24.86 | |
| Heptachlor | B | 5.413816 | ~~<4.15~~ <5.94 | ~~0.85~~ | (6) | 37.80 | |
| Aldrin | | | <7.5 | <2.55 | | | |
| Telodrin | | | | | | | |
| o,p-DDE | | | | | | | |
| Hept. epoxide | B (A) 7.22 | 21.456869 | ~~<4.15~~ <7.34 | ~~0.85~~ | (6) | ** 99.24 | #1 (6) nothing due to PCBs |
| g. Chlordane | | | <4.5 | <1.5 | | | |
| a. Chlordane | A (B) 3.36 | 9.164969 | < 4.15 | ~~0.85~~ | | ** 92.58 | |
| 4,4'-DDE | A (B) 4.52 | 24.164806 | < 8.5 | ~~1.65~~ | | ** 137.05 | |
| Endosulfan I | B (A) 2.52 | 4.468489 | <6.5 | ~~2.2~~ | J(6) | ** 55.85 | |
| o,p-DDD | | | | | | | |
| Dieldrin | | | <8.5 | <1.65 | | | 9887 |
| o,p-DDT | B | 37.356628 | | | | ** 164.79 | |

Difference = High - Low Amount divided by the Average times 100
%Difference > 40
Recovery outside QC Limits
Printed on: 3/31/04 09:46:21

# Lancaster Laboratories-Single Component Data Summary

**Sample Name: 4241647R** MSDACF DF5 1 GP45MSD Sample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

4/17/04 (3)

**Analysis Report (A)**

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13--H6722A
Result file : 1C13088.86R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

**Analysis Report (B)**

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13--H6722B
Result file : 1C13088B.86R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

**Summary Report**

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | Comments |
|---|---|---|---|---|---|---|---|
| Endrin | | | <8.5 | <2.5 | | | |
| 4,4'-DDD | | | <8.5 | <2.9 | | | |
| Kepone | | | 69.1 W | | | | |
| Endosulfan II | B (A) | 906 28.722378 | ~~8.5~~ | ~~1.65~~ | ~~J~~ ② | ** 104.08 | interfd due to PCBs |
| 4,4'-DDT | | | <8.5 | <1.65 | | | |
| Endrin aldehyde | | | <15 | <5 | | | |
| Methoxychlor | A | 34.216171 | <60 | ~~20~~ | ~~J~~ ② | 10.43 | |
| Mirex | | | | | | | |
| Endo. sulfate | A | 6.734461 | <8.5 | ~~1.65~~ | J | ** 46.60 | #1570 |
| Endrin ketone | B (A) | 767 12.037762 | 8.5 | ~~1.65~~ | ② | ** 44.37 | #1569 |
| DCB | B | 10.921632 | | | | 4.95 | |

② JRP 3.31.04

Units: ug/kg

Reviewed by: [signature] Date: 3.31.04
Verified by: [signature] Date: 3/31/04

8888

%Difference = High - Low Amount divided by the Average times 100
** %Difference > 40
* Recovery outside QC Limits
Printed on: 3/31/04 09:46:21

# Lancaster Laboratories — Multiple Component Data Summary

**Sample Name:** 4241647R MSDACF DF5 ~~X~~ GP45MSD MSD Sample ID: AC **Batchnumber:** 040890035A
Sample Amount: 30 g Total Volume: 50 ml Analyst: 0120 SDG: RAV04 State: VA
**Analyses:** 01225

3/31/04 3

## Analysis Report (A)

**Injected on** Mar 30, 2004 15:39:49
**Instrument** H6722A
**Result file** 1C13088.86R
**Calibration file** 2C13088
**Method file** PESTD

%SSR(TCX) * 33.6% Conc: 3.235968
%SSR(DCB) 106.7% Conc: 10.394049

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 7.56 | 7.58 | 7.62 | 54811.81640 | 473.55778 | | | 2 |
| E | 7.93 | 7.96 | 7.99 | 51019.86328 | 659.619492 | | | 3 |
| E | 8.09 | 8.12 | 8.15 | 61790.92578 | 482.139385 | | | 4 |
| E | 8.45 | 8.48 | 8.51 | 51268.09375 | 550.060544 | | | 5 |
| E | 9.05 | 9.08 | 9.11 | 74712.15625 | 703.486967 | | | 6 |

Height summation: **293602.855468**
Concentration CF: **573.772834** L:

## Analysis Report (B)

**Injected on** Mar 30, 2004 15:39:49
**Instrument** H6722B
**Result file** 1C13088B.86R
**Calibration file** 2C13088B
**Method file** PESTDB

%SSR(TCX) 93.9% Conc: 9.032804
%SSR(DCB) 112.1% Conc: 10.921632

| | Min | RT | Max | | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|---|
| **Aroclor-1254** | | | | | | | | |
| E | 8.12 | 8.15 | 8.18 | 23234.46289 | 468.620118 | | | 1 |
| E | 8.36 | 8.39 | 8.42 | 27224.56445 | 488.506842 | | | 2 |
| E | 8.83 | 8.85 | 8.89 | 14847.60644 | 423.82247 | | | 3 |
| E | 8.98 | 9.01 | 9.04 | 36865.62109 | 496.41859 | | | 4 |
| E | 9.26 | 9.29 | 9.32 | 29565.86718 | 543.128067 | | | 5 |
| E | 9.97 | 9.99 | 10.03 | 27255.27539 | 489.184727 | | | 6 |

Height summation: **158993.397462**
Concentration CF: **484.946802** L:

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %Difference | No. of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | <85 | <16.5 | | | 4 | 40 | |
| Aroclor-1221 | | | <150 | <50 | | | 3 | 5 | |
| Aroclor-1232 | | | <85 | <21.5 | | | 4 | 10 | |
| Aroclor-1242 | | | <85 | <20 | | | 4 | 30 | |
| Aroclor-1248 | | | <90 | <30 | | | 4 | 30 | |
| Aroclor-1254 | A | 573.772834 | 85 | 16.5 | E | 16.78 | 4 | 40 | |
| Aroclor-1260 | | | <85 | <16.5 | | | 4 | 40 | |
| Toxaphene | | | <165 | <55 | | | 4 | 30 | |

Units: ug/kg

%Difference = High - Low divided by the Average times 100

Reviewed By: _____ Date: 3.31.04
Verified By: _____ Date: 3/31/04

8889

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241647R** MSDACF DF5 7 8GP45MSDSample ID: AC **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

MD417104 3

## Analysis Report (A)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13--H6722A
Result file : 1C13088.86R
Calibration file : 2C13088.CAL
Method file : PESTD.MET
%SSR(TCX) : *33.6% Conc.: 3.235968
%SSR(DCB) : 106.7% Conc.: 10.394049

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 3 | 46.33 | |
| 5.97 | 5.98 | 6.03 | 9989.621094 | 73.561896 | | | 3 |
| 6.24 | 6.28 | 6.30 | 10948.29394 | 208.833944 | | | 5 |
| 6.71 | 6.74 | 6.77 | 10382.59668 | 163.170109 | | | 6 |
| Height Summation | | | **31320.511719** | | | | |
| Amount Avg CF: | | | **148.521983** | Linear: | | | |
| **Aroclor-1221** | | | | | 2 | 78.02 | |
| 4.54 | 4.57 | 4.60 | 1244.11792 | 41.774507 | | | 1 |
| 4.75 | 4.76 | 4.81 | 2237.981201 | 144.57439 | | | 2 |
| Height Summation | | | **3482.099121** | | | | |
| Amount Avg CF: | | | **93.174449** | Linear: | | | |
| **Aroclor-1232** | | | | | 3 | 46.45 | |
| 5.97 | 5.98 | 6.03 | 9989.621094 | 164.449008 | | | 3 |
| E 6.24 | 6.28 | 6.30 | 10948.29394 | 470.28451 | | | 5 |
| E 6.71 | 6.74 | 6.77 | 10382.59668 | 380.20919 | | | 6 |
| Height Summation | | | **31320.511719** | | | | |
| Amount Avg CF: | | | **338.314236** | Linear: | | | |
| **Aroclor-1242** | | | | | 3 | 46.67 | |
| 5.97 | 5.98 | 6.03 | 9989.621094 | 86.416402 | | | 3 |
| 6.24 | 6.28 | 6.30 | 10948.29394 | 245.692727 | | | 5 |
| 6.71 | 6.74 | 6.77 | 10382.59668 | 184.275516 | | | 6 |
| Height Summation | | | **31320.511719** | | | | |
| Amount Avg CF: | | | **172.128215** | Linear: | | | |
| **Aroclor-1248** | | | | | 4 | 116.91 | |
| 6.71 | 6.74 | 6.77 | 10382.59668 | 123.047879 | | | 2 |
| E 7.16 | 7.20 | 7.22 | 16396.50195 | 405.825581 | | | 3 |
| 7.28 | 7.30 | 7.34 | 8765.104492 | 108.848292 | | | 4 |
| E 8.09 | 8.12 | 8.15 | 61790.92578 | 1329.55679 | | | 6 |
| Height Summation | | | **97335.128906** | | | | |
| Amount Avg CF: | | | **491.819636** | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 29.80 | |
| 7.22 | 7.25 | 7.28 | 19135.32812 | 267.512449 ~~with area 1720~~ | | | |
| E 7.56 | 7.58 | 7.62 | 54811.81640 | 473.55778 | | | 2 |
| E 7.93 | 7.96 | 7.99 | 51019.86328 | 659.619492 | | | 3 |
| E 8.09 | 8.12 | 8.15 | 61790.92578 | 482.139385 | | | 4 |
| E 8.45 | 8.48 | 8.51 | 51268.09375 | 550.060544 | | | |
| E 9.05 | 9.08 | 9.11 | 74712.15625 | 703.486967 | | | |
| Height Summation | | | **312738.183593** | | | | |
| Amount Avg CF: | | | **522.729436** | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 56.33 | |
| 8.33 | 8.36 | 8.39 | 30367.86132 | 286.827676 | | | 1 |
| 8.68 | 8.70 | 8.74 | 54352.85156 | 404.042607 | | | 2 |
| 9.05 | 9.08 | 9.11 | 74712.15625 | 537.524713 | | | 3 |
| 9.19 | 9.21 | 9.25 | 8811.75 | 99.829445 | | | 4 |
| 9.91 | 9.93 | 9.97 | 24624.78906 | 121.939633 | | | 5 |
| 10.28 | 10.30 | 10.34 | 50000.38671 | 440.1197 | | | 6 |
| Height Summation | | | **242869.794923** | | | | |
| Amount Avg CF: | | | **315.047296** | Linear: | | | |

XS = 573.78 RSD:

## Analysis Report (B)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13--H6722B
Result file : 1C13088B.86R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET
%SSR(TCX) : 93.9% Conc.: 9.032804
%SSR(DCB) : 112.1% Conc.: 10.921632

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Aroclor-1016** | | | | | 5 | 152.05 | |
| 5.52 | 5.56 | 5.58 | 528.304077 | 20.188512 | | | 1 |
| 6.10 | 6.12 | 6.16 | 513.151917 | 12.046071 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1570.039185 | 23.209291 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1663.779175 | 66.942938 | | | 5 |
| 7.56 | 7.61 | 7.62 | 12323.57519 | 344.36466 | | | 6 |
| Height Summation | | | **16598.849549** | | | | |
| Amount Avg CF: | | | **93.350294** | Linear: | | | |
| **Aroclor-1221** | | | | | 1 | | |
| 5.52 | 5.56 | 5.58 | 528.304077 | 14.62727 | | | 3 |
| Height Summation | | | **528.304077** | | | | |
| Amount Avg CF: | | | **14.62727** | Linear: | | | |
| **Aroclor-1232** | | | | | 5 | 159.76 | |
| 5.52 | 5.56 | 5.58 | 528.304077 | 18.71585 | | | 1 |
| 6.10 | 6.12 | 6.16 | 513.151917 | 25.540505 | | | 2 |
| 6.74 | 6.77 | 6.80 | 1570.039185 | 53.368004 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1663.779175 | 154.591261 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 12323.57519 | 817.814639 | | | 6 |
| Height Summation | | | **16598.849549** | | | | |
| Amount Avg CF: | | | **214.006052** | Linear: | | | |
| **Aroclor-1242** | | | | | 5 | 151.10 | |
| 5.52 | 5.56 | 5.58 | 528.304077 | 22.045904 | | | 1 |
| 6.10 | 6.12 | 6.16 | 513.151917 | 13.914577 | | | 2 |
| 6.73 | 6.77 | 6.79 | 1570.039185 | 27.412635 | | | 3 |
| 7.07 | 7.12 | 7.13 | 1663.779175 | 80.712811 | | | 5 |
| E 7.56 | 7.61 | 7.62 | 12323.57519 | 396.753847 | | | 6 |
| Height Summation | | | **16598.849549** | | | | |
| Amount Avg CF: | | | **108.167955** | Linear: | | | |
| **Aroclor-1248** | | | | | 5 | 31.77 | |
| 7.19 | 7.21 | 7.25 | 9500.540039 | 242.796386 | | | 1 |
| 7.56 | 7.61 | 7.62 | 12323.57519 | 262.291735 | | | 2 |
| 8.06 | 8.09 | 8.12 | 9090.791992 | 186.673303 | | | 4 |
| E 8.12 | 8.15 | 8.18 | 23234.46289 | 427.405166 | | | 5 |
| 8.44 | 8.47 | 8.50 | 14824.43261 | 321.072604 | | | 6 |
| Height Summation | | | **68973.802734** | | | | |
| Amount Avg CF: | | | **288.047839** | Linear: | | | |
| **Aroclor-1254** | | | | | 6 | 8.01 | |
| E 8.12 | 8.15 | 8.18 | 23234.46289 | 468.620118 | | | 1 |
| E 8.36 | 8.39 | 8.42 | 27224.56445 | 488.506842 | | | 2 |
| E 8.83 | 8.85 | 8.89 | 14847.60644 | 423.82247 | | | 3 |
| E 8.98 | 9.01 | 9.04 | 36865.62109 | 496.41859 | | | 4 |
| E 9.26 | 9.29 | 9.32 | 29565.86718 | 543.128067 | | | 5 |
| E 9.97 | 9.99 | 10.03 | 27255.27539 | 489.184727 | | | 6 |
| Height Summation | | | **158993.397462** | | | | |
| Amount Avg CF: | | | **484.946802** | Linear: | | | |
| **Aroclor-1260** | | | | | 6 | 43.03 | |
| 9.23 | 9.26 | 9.29 | 22442.68945 | 352.05401 | | | 1 |
| 9.49 | 9.52 | 9.55 | 26377.50781 | 353.699292 | | | 2 |
| 9.97 | 9.99 | 10.03 | 27255.27539 | 406.924683 | | | 3 |
| 10.47 | 10.47 | 10.53 | 12862.70507 | 254.645797 | | | 4 |
| 10.78 | 10.80 | 10.84 | 7862.462891 | 80.507734 | | | 5 |
| 11.30 | 11.31 | 11.36 | 11804.06445 | 216.121467 | | | 6 |
| Height Summation | | | **108604.705079** | | | | |
| Amount Avg CF: | | | **277.325497** | Linear: | | | |

*Peak found within more than one window
-Duplicate Peak in window - not included in average

Printed on: 3/31/04 09:47:35

# Lancaster Laboratories Multiple Component Peak Data Report

**Sample Name: 4241647R** MSDACF DF5 1 6GP45MSD **Sample ID: AC** **Batchnumber: 040890035A**
Sample Amount: 30 g Total Volume: 50 ml Analyst: 120 SDG: RAV04 State: VA
Analyses: 01224 01225 02253 06000 06005 08899

MS 4/7/04 (3)

## Analysis Report (A)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13–H6722A
Result file : 1C13088.86R
Calibration file : 2C13088.CAL
Method file : PESTD.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 4 | 51.56 | |
| 6.25 | 6.28 | 6.31 | 10948.29394 | 87.557476 | | | 2 |
| 6.86 | 6.91 | 6.92 | 3170.479492 | 25.136248 | | | 3 |
| 7.68 | 7.72 | 7.74 | 28936.23437 | 120.817176 | | | 4 |
| 7.85 | 7.90 | 7.91 | 22725.74804 | 74.45983 | | | 5 |
| Height Summation | | | **65780.755859** | | | | |
| Amount Avg CF: | | | **76.992683** | Linear: | | | |
| **Toxaphene** | | | | | 2 | 45.30 | |
| 8.70 | 8.70 | 8.76 | 54352.85156 | 2537.030845 | | | 1 |
| 9.69 | 9.72 | 9.75 | 34533.44921 | 1305.999161 | | | 4 |
| Height Summation | | | **88886.300782** | | | | |
| Amount Avg CF: | | | **1921.515003** | Linear: | | | |

## Analysis Report (B)

Injected on : MAR 30, 2004 15:39:49
Instrument : CP13–H6722B
Result file : 1C13088B.86R
Calibration file : 2C13088B.CAL
Method file : PESTDB.MET

| Min | R.T. | Max | Heigh | Amount | Pks | %RSD | Peak |
|---|---|---|---|---|---|---|---|
| **Chlordane** | | | | | 4 | 59.52 | |
| 6.89 | 6.92 | 6.95 | 5996.828613 | 127.940665 | | | 2 |
| 7.56 | 7.61 | 7.62 | 12323.57519 | 199.858881 | | | 3 |
| 8.51 | 8.53 | 8.57 | 10017.59472 | 99.784958 | | | 5 |
| 8.59 | 8.61 | 8.65 | 3785.147461 | 34.031619 | | | 6 |
| Height Summation | | | **32123.145996** | | | | |
| Amount Avg CF: | | | **115.404031** | Linear: | | | |
| **Toxaphene** | | | | | 3 | 74.54 | |
| 9.83 | 9.85 | 9.89 | 3196.132324 | 152.698413 | | | 3 |
| 10.17 | 10.19 | 10.23 | 4120.05127 | 288.33146 | | | 4 |
| 10.86 | 10.86 | 10.92 | 11849.99902 | 695.22615 | | | 5 |
| Height Summation | | | **19166.182617** | | | | |
| Amount Avg CF: | | | **378.752008** | Linear: | | | |

## Summary Report

| Compound Name | Column | Higher Amount Found | LOQ | MDL | Qualifiers | %Difference | No of Hits Required | Max %RSD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| Toclor-1016 | | | 85 | 16.5 | | ** 45.62 | 4 | 40 | |
| | | | 85 | 24 | | | | | |
| Toclor-1221 | | | 150 | 50 | | ** 145.73 | 3 | 5 | |
| Toclor-1232 | | | 85 | 21.5 | E | ** 45.01 | 4 | 10 | |
| Toclor-1242 | | | 85 | 20 | | ** 45.64 | 4 | 30 | |
| | | | 85 | 25 | | | | | |
| Toclor-1248 | | | 85 | 24.5 | E | ** 52.26 | 4 | 30 | |
| | | | 90 | 30 | E | | | | |
| Toclor-1254 | | | 85 | 16.5 | E | 7.50 | 4 | 40 | |
| | | | 85 | 28.5 | E | | | | |
| Toclor-1260 | | | 85 | 16.5 | | 12.74 | 4 | 40 | |
| | | | 85 | 22 | | | | | |
| Chlordane | | | 85 | 20 | | 39.93 | 2 | 20 | |
| Toxaphene | | | 165 | 55 | | ** 134.14 | 4 | 30 | |

Units: ug/kg

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Peak found within more than one window
Duplicate Peak in window - not included in average
Printed on: 3/31/04 09:47:35

Sample Name: **4241647RMSDACF DF5 AC6GP45MSD MSD 040890035A 08899**
Acquired from CP13--H6722A via port 3 on 3/30/04 03:53:49pm by 120
RTX-1 0.25MM X 30M X 0.25UM
140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 280C; hold 9 MIN
Data File: **C:\CPWIN\DATA1\1C13088.86R**
Method File: C:\CPWIN\DATA1\PESTD.MET
Calibration File: C:\CPWIN\DATA1\2C13088.CAL

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.554 | | 0.0000 | 0.000 | 17924.4 | 0.247 | BV | 0.036 | 8295.84 | 0.298 |
| 2 | 3.629 | | 0.0000 | 0.000 | 6350.4 | 0.087 | VB | 0.036 | 2970.53 | 0.107 |
| 3 | 3.743 | | 0.0000 | 0.000 | 1113.4 | 0.015 | BB | 0.034 | 538.57 | 0.019 |
| 4 | 3.838 | | 0.0000 | 0.000 | 13473.5 | 0.185 | BB | 0.047 | 4798.76 | 0.173 |
| 5 | 3.959 | | 0.0000 | 0.000 | 7165.2 | 0.099 | BB | 0.050 | 2398.49 | 0.086 |
| 6 | 4.066 | | 0.0000 | 0.000 | 3633.4 | 0.050 | BB | 0.033 | 1818.93 | 0.065 |
| 7 | 4.131 | | 0.0000 | 0.000 | 2896.8 | 0.040 | BB | 0.029 | 1667.05 | 0.060 |
| 8 | 4.186 | | 0.0000 | 0.000 | 1092.6 | 0.015 | BB | 0.024 | 750.08 | 0.027 |
| 9 | 4.254 | | 0.0000 | 0.000 | 148023.3 | 2.036 | BB | 0.032 | 75931.40 | 2.732 |
| 10 | 4.305 | TCX | 97.0790 | 0.857 | 8739.1 | 0.120 | BB | 0.020 | 7369.34 | 0.265 |
| 11 | 4.487 | | 0.0000 | 0.000 | 10358.9 | 0.143 | BB | 0.115 | 1503.77 | 0.054 |
| 12 | 4.575 | | 0.0000 | 0.000 | 3294.0 | 0.045 | BB | 0.044 | 1244.12 | 0.045 |
| 13 | 4.653 | | 0.0000 | 0.000 | 4245.2 | 0.058 | BB | 0.048 | 1481.36 | 0.053 |
| 14 | 4.756 | | 0.0000 | 0.000 | 7415.9 | 0.102 | BB | 0.055 | 2237.98 | 0.081 |
| 15 | 4.913 | HCB | 2709.4260 | 23.919 | 710829.4 | 9.779 | BB | 0.031 | 377063.10 | 13.567 |
| 16 | 5.039 | | 0.0000 | 0.000 | 995.9 | 0.014 | BB | 0.039 | 429.58 | 0.015 |
| 17 | 5.136 | alpha-BHC | 97.8531 | 0.864 | 20443.9 | 0.281 | BB | 0.038 | 9062.48 | 0.326 |
| 18 | 5.204 | | 0.0000 | 0.000 | 233.1 | 0.003 | BB | 0.019 | 204.52 | 0.007 |
| 19 | 5.306 | | 0.0000 | 0.000 | 1310.6 | 0.018 | BB | 0.036 | 598.79 | 0.022 |
| 20 | 5.387 | | 0.0000 | 0.000 | 30394.7 | 0.418 | BB | 0.036 | 13892.53 | 0.500 |
| 21 | 5.454 | | 0.0000 | 0.000 | 4132.7 | 0.057 | BB | 0.026 | 2633.35 | 0.095 |
| 22 | 5.551 | | 0.0000 | 0.000 | 1412.7 | 0.019 | BB | 0.022 | 1061.75 | 0.038 |
| 23 | 5.599 | gamma-BHC | 85.3093 | 0.753 | 15951.5 | 0.219 | BB | 0.034 | 7908.31 | 0.285 |
| 24 | 5.730 | beta-BHC | 95.3395 | 0.842 | 14830.6 | 0.204 | BB | 0.050 | 4912.97 | 0.177 |
| 25 | 5.911 | | 0.0000 | 0.000 | 435.3 | 0.006 | BB | 0.026 | 276.17 | 0.010 |
| 26 | 5.984 | delta-BHC | 113.5813 | 1.003 | 23521.8 | 0.324 | BB | 0.039 | 9989.62 | 0.359 |
| 27 | 6.063 | | 0.0000 | 0.000 | 10140.6 | 0.140 | BB | 0.038 | 4470.58 | 0.161 |
| 28 | 6.280 | Heptachlor | 110.7861 | 0.978 | 25009.7 | 0.344 | BB | 0.038 | 10948.29 | 0.394 |
| 29 | 6.356 | | 0.0000 | 0.000 | 9563.8 | 0.132 | BB | 0.032 | 4995.63 | 0.180 |
| 30 | 6.482 | | 0.0000 | 0.000 | 2809416.0 | 38.650 | SBB | 0.048 | 977573.90 | 35.174 |
| 31 | 6.623 | | 0.0000 | 0.000 | 1143.9 | 0.016 | TVB | 0.029 | 652.67 | 0.023 |
| 32 | 6.704 | Aldrin | 71.7970 | 0.634 | 8880.0 | 0.122 | TBV | 0.026 | 5725.07 | 0.206 |
| 33 | 6.738 | | 0.0000 | 0.000 | 30824.3 | 0.424 | TVV | 0.049 | 10382.60 | 0.374 |
| 34 | 6.855 | | 0.0000 | 0.000 | 7822.2 | 0.108 | TVV | 0.037 | 3564.09 | 0.128 |
| 35 | 6.908 | | 0.0000 | 0.000 | 12447.0 | 0.171 | TVB | 0.065 | 3170.48 | 0.114 |
| 36 | 7.073 | | 0.0000 | 0.000 | 59351.3 | 0.817 | BB | 0.043 | 23125.27 | 0.832 |
| 37 | 7.203 | | 0.0000 | 0.000 | 27357.2 | 0.376 | BB | 0.028 | 16396.50 | 0.590 |
| 38 | 7.249 | | 0.0000 | 0.000 | 29840.0 | 0.411 | BB | 0.026 | 19135.33 | 0.689 |
| 39 | 7.302 | | 0.0000 | 0.000 | 24864.2 | 0.342 | BB | 0.047 | 8765.10 | 0.315 |
| 40 | 7.529 | Hept. epoxide | 216.7381 | 1.913 | 39733.3 | 0.547 | BV | 0.038 | 17300.73 | 0.622 |
| 41 | 7.585 | | 0.0000 | 0.000 | 151324.5 | 2.082 | VV | 0.046 | 54811.82 | 1.972 |
| 42 | 7.637 | | 0.0000 | 0.000 | 60046.5 | 0.826 | VV | 0.040 | 25203.93 | 0.907 |
| 43 | 7.723 | g. Chlordane | 373.6469 | 3.299 | 71403.9 | 0.982 | VB | 0.041 | 28936.23 | 1.041 |
| 44 | 7.836 | | 0.0000 | 0.000 | 6113.2 | 0.084 | BV | 0.031 | 3329.92 | 0.120 |
| 45 | 7.903 | a. Chlordane | 274.9491 | 2.427 | 70062.9 | 0.964 | VV | 0.051 | 22725.75 | 0.818 |
| 46 | 7.960 | 4,4'-DDE | 724.9442 | 6.400 | 120319.0 | 1.655 | VV | 0.039 | 51019.86 | 1.836 |
| 47 | 8.013 | | 0.0000 | 0.000 | 24464.6 | 0.337 | VV | 0.032 | 12907.24 | 0.464 |
| 48 | 8.067 | Endosulfan I | 75.5295 | 0.667 | 9455.3 | 0.130 | VV | 0.029 | 5479.48 | 0.197 |
| 49 | 8.118 | | 0.0000 | 0.000 | 163717.9 | 2.252 | VV | 0.044 | 61790.93 | 2.223 |
| 50 | 8.275 | | 0.0000 | 0.000 | 29302.2 | 0.403 | VB | 0.055 | 8943.67 | 0.322 |
| 51 | 8.356 | | 0.0000 | 0.000 | 108317.0 | 1.490 | BV | 0.059 | 30367.86 | 1.093 |
| 52 | 8.477 | | 0.0000 | 0.000 | 127092.6 | 1.748 | VV | 0.041 | 51268.09 | 1.845 |
| 53 | 8.553 | o,p-DDT | 108.1568 | 0.955 | 11161.0 | 0.154 | VB | 0.034 | 5549.04 | 0.200 |
| 54 | 8.632 | | 0.0000 | 0.000 | 16360.1 | 0.225 | BV | 0.034 | 7918.26 | 0.285 |
| 55 | 8.705 | Endrin | 914.0667 | 8.069 | 210215.5 | 2.892 | VV | 0.064 | 54352.85 | 1.956 |
| 56 | 8.789 | Kepone | 2993.8780 | 26.430 | 51523.6 | 0.709 | VV | 0.037 | 23296.38 | 0.838 |
| 57 | 8.845 | | 0.0000 | 0.000 | 105459.3 | 1.451 | VV | 0.061 | 28954.41 | 1.042 |
| 58 | 8.941 | | 0.0000 | 0.000 | 10574.2 | 0.145 | VV | 0.033 | 5317.36 | 0.191 |
| 59 | 8.999 | Endosulfan II | 271.8040 | 2.400 | 39964.3 | 0.550 | VV | 0.037 | 17817.74 | 0.641 |
| 60 | 9.081 | | 0.0000 | 0.000 | 247901.0 | 3.410 | VV | 0.055 | 74712.16 | 2.688 |
| 61 | 9.214 | | 0.0000 | 0.000 | 24766.3 | 0.341 | VB | 0.047 | 8811.75 | 0.317 |
| 62 | 9.311 | | 0.0000 | 0.000 | 502516.2 | 6.913 | BB | 0.044 | 189749.70 | 6.827 |
| 63 | 9.460 | | 0.0000 | 0.000 | 41341.9 | 0.569 | BV | 0.038 | 17907.51 | 0.644 |
| 64 | 9.541 | Endrin aldehyde | 222.2717 | 1.962 | 24851.2 | 0.342 | VV | 0.034 | 12265.74 | 0.441 |

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| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.598 | | 0.0000 | 0.000 | 10394.9 | 0.143 | VB | 0.031 | 5505.62 | 0.198 |
| 66 | 9.664 | | 0.0000 | 0.000 | 4557.6 | 0.063 | BV | 0.028 | 2760.79 | 0.099 |
| 67 | 9.725 | Methoxychlor | 1026.4850 | 9.062 | 71538.8 | 0.984 | VV | 0.035 | 34533.45 | 1.243 |
| 68 | 9.771 | | 0.0000 | 0.000 | 34047.8 | 0.468 | VB | 0.036 | 15953.22 | 0.574 |
| 69 | 9.857 | | 0.0000 | 0.000 | 8139.2 | 0.112 | BB | 0.030 | 4455.70 | 0.160 |
| 70 | 9.932 | | 0.0000 | 0.000 | 59109.2 | 0.813 | BB | 0.040 | 24624.79 | 0.886 |
| 71 | 10.105 | Endo. sulfate | 202.0338 | 1.784 | 26260.1 | 0.361 | BV | 0.037 | 11809.32 | 0.425 |
| 72 | 10.175 | | 0.0000 | 0.000 | 1929.3 | 0.027 | VB | 0.029 | 1095.32 | 0.039 |
| 73 | 10.243 | | 0.0000 | 0.000 | 8345.0 | 0.115 | BV | 0.030 | 4640.14 | 0.167 |
| 74 | 10.300 | | 0.0000 | 0.000 | 167032.6 | 2.298 | VV | 0.056 | 50000.39 | 1.799 |
| 75 | 10.408 | | 0.0000 | 0.000 | 17944.1 | 0.247 | VV | 0.050 | 5978.32 | 0.215 |
| 76 | 10.477 | Endrin ketone | 229.9964 | 2.030 | 44294.0 | 0.609 | VV | 0.046 | 16070.20 | 0.578 |
| 77 | 10.586 | | 0.0000 | 0.000 | 5266.5 | 0.072 | VV | 0.051 | 1724.32 | 0.062 |
| 78 | 10.683 | | 0.0000 | 0.000 | 51230.7 | 0.705 | VV | 0.045 | 18797.50 | 0.676 |
| 79 | 10.769 | | 0.0000 | 0.000 | 13294.6 | 0.183 | VV | 0.062 | 3601.00 | 0.130 |
| 80 | 10.854 | | 0.0000 | 0.000 | 11355.6 | 0.156 | VV | 0.056 | 3375.74 | 0.121 |
| 81 | 10.969 | | 0.0000 | 0.000 | 8766.3 | 0.121 | VB | 0.059 | 2461.02 | 0.089 |
| 82 | 11.114 | | 0.0000 | 0.000 | 15399.1 | 0.212 | BB | 0.058 | 4400.23 | 0.158 |
| 83 | 11.215 | | 0.0000 | 0.000 | 1129.5 | 0.016 | BB | 0.030 | 636.97 | 0.023 |
| 84 | 11.311 | | 0.0000 | 0.000 | 984.8 | 0.014 | BB | 0.037 | 440.44 | 0.016 |
| 85 | 11.401 | | 0.0000 | 0.000 | 212279.9 | 2.920 | BB | 0.045 | 79297.34 | 2.853 |
| 86 | 11.514 | | 0.0000 | 0.000 | 1347.1 | 0.019 | BB | 0.031 | 715.21 | 0.026 |
| 87 | 11.736 | | 0.0000 | 0.000 | 977.0 | 0.013 | BB | 0.038 | 433.23 | 0.016 |
| 88 | 11.816 | DCB | 311.8215 | 2.753 | 68816.1 | 0.947 | BB | 0.048 | 23748.48 | 0.854 |
| 89 | 11.969 | | 0.0000 | 0.000 | 173.5 | 0.002 | BB | 0.023 | 124.83 | 0.004 |
| 90 | 12.073 | | 0.0000 | 0.000 | 2212.7 | 0.030 | BB | 0.056 | 660.24 | 0.024 |
| 91 | 12.169 | | 0.0000 | 0.000 | 1227.3 | 0.017 | BB | 0.046 | 446.93 | 0.016 |
| 92 | 12.276 | | 0.0000 | 0.000 | 6917.9 | 0.095 | BB | 0.055 | 2096.72 | 0.075 |
| 93 | 12.384 | | 0.0000 | 0.000 | 107.5 | 0.001 | BB | 0.026 | 69.60 | 0.003 |
| 94 | 12.453 | | 0.0000 | 0.000 | 2225.7 | 0.031 | BB | 0.045 | 817.60 | 0.029 |
| 95 | 12.575 | | 0.0000 | 0.000 | 7772.7 | 0.107 | BB | 0.092 | 1411.18 | 0.051 |
| 96 | 12.794 | | 0.0000 | 0.000 | 3069.9 | 0.042 | BB | 0.094 | 543.11 | 0.020 |
| 97 | 12.936 | | 0.0000 | 0.000 | 2153.6 | 0.030 | BB | 0.059 | 610.25 | 0.022 |
| 98 | 13.066 | | 0.0000 | 0.000 | 263.3 | 0.004 | BB | 0.026 | 169.07 | 0.006 |
| 99 | 13.124 | | 0.0000 | 0.000 | 1127.5 | 0.016 | BB | 0.037 | 501.56 | 0.018 |
| 100 | 13.233 | | 0.0000 | 0.000 | 1778.2 | 0.024 | BB | 0.045 | 655.98 | 0.024 |
| 101 | 13.318 | | 0.0000 | 0.000 | 563.1 | 0.008 | BB | 0.073 | 129.29 | 0.005 |
| 102 | 13.440 | | 0.0000 | 0.000 | 430.5 | 0.006 | BB | 0.033 | 215.25 | 0.008 |
| 103 | 13.496 | | 0.0000 | 0.000 | 3468.3 | 0.048 | BB | 0.054 | 1071.32 | 0.039 |
| 104 | 13.643 | | 0.0000 | 0.000 | 1895.8 | 0.026 | BB | 0.053 | 595.86 | 0.021 |
| 105 | 13.748 | | 0.0000 | 0.000 | 698.1 | 0.010 | BB | 0.041 | 284.08 | 0.010 |
| 106 | 13.805 | | 0.0000 | 0.000 | 115.7 | 0.002 | BB | 0.027 | 72.44 | 0.003 |
| 107 | 13.878 | | 0.0000 | 0.000 | 3338.6 | 0.046 | BB | 0.053 | 1047.34 | 0.038 |

Total Area = 7268845.0, Total Amount = 11327.49, Total Height = 2779264.0, Sample Units = PPB

Sample Name: **4241647RMSDACF DF5 AC5GP45MSD MSD 040890035A 08899**
Acquired from CP13--H6722B via port 4 on 3/30/04 03:53:49pm by 120
RTX-CLPII, 30M X 0.32MM X 0.25UM
140 TO 300 AT 15C/MIN HOLD 6 MIN
Data File: **C:\CPWIN\DATA1\1C13088B.86R**
Method File: C:\CPWIN\DATA1\PESTDB.MET
Calibration File: C:\CPWIN\DATA1\2C13088B.CAL

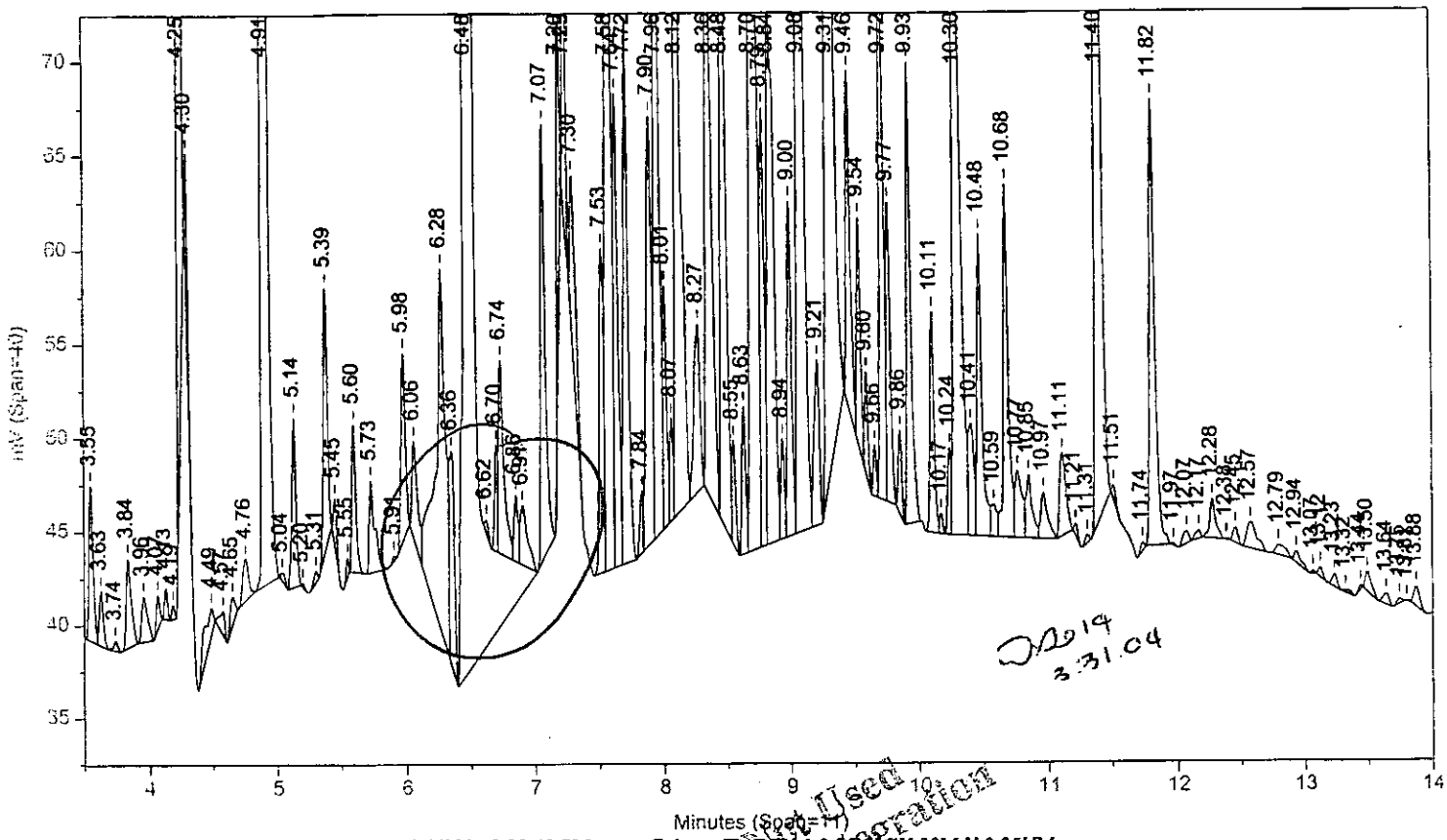
| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.040 | | 0.0000 | 0.000 | 685.4 | 0.044 | BB | 0.034 | 333.25 | 0.052 |
| 2 | 3.157 | | 0.0000 | 0.000 | 5005.6 | 0.320 | BB | 0.053 | 1571.14 | 0.247 |
| 3 | 3.297 | | 0.0000 | 0.000 | 202.3 | 0.013 | BB | 0.023 | 146.43 | 0.023 |
| 4 | 3.426 | | 0.0000 | 0.000 | 7372.3 | 0.471 | BB | 0.053 | 2339.76 | 0.369 |
| 5 | 3.522 | | 0.0000 | 0.000 | 1162.6 | 0.074 | BB | 0.028 | 694.56 | 0.109 |
| 6 | 3.579 | | 0.0000 | 0.000 | 1711.4 | 0.109 | BB | 0.031 | 917.12 | 0.144 |
| 7 | 3.680 | | 0.0000 | 0.000 | 14375.5 | 0.918 | BB | 0.046 | 5225.47 | 0.823 |
| 8 | 3.872 | | 0.0000 | 0.000 | 3758.5 | 0.240 | BB | 0.068 | 923.52 | 0.145 |
| 9 | 4.069 | | 0.0000 | 0.000 | 3317.7 | 0.212 | BB | 0.031 | 1800.34 | 0.284 |
| 10 | 4.140 | | 0.0000 | 0.000 | 2253.9 | 0.144 | BB | 0.032 | 1156.37 | 0.182 |
| 11 | 4.200 | | 0.0000 | 0.000 | 2192.7 | 0.140 | BB | 0.033 | 1121.28 | 0.177 |
| 12 | 4.376 | | 0.0000 | 0.000 | 200.6 | 0.013 | BB | 0.021 | 161.33 | 0.025 |
| 13 | 4.413 | | 0.0000 | 0.000 | 1930.6 | 0.123 | BB | 0.062 | 522.57 | 0.082 |
| 14 | 4.553 | | 0.0000 | 0.000 | 24221.6 | 1.548 | BB | 0.051 | 7905.97 | 1.245 |
| 15 | 4.825 | TCX | 270.9841 | 3.089 | 23928.8 | 1.529 | BB | 0.038 | 10602.05 | 1.670 |
| 16 | 4.975 | | 0.0000 | 0.000 | 94297.2 | 6.025 | BB | 0.037 | 42568.91 | 6.705 |
| 17 | 5.185 | | 0.0000 | 0.000 | 11946.2 | 0.763 | BB | 0.150 | 1325.56 | 0.209 |
| 18 | 5.314 | | 0.0000 | 0.000 | 543.2 | 0.035 | BB | 0.029 | 312.34 | 0.049 |
| 19 | 5.397 | | 0.0000 | 0.000 | 1078.7 | 0.069 | BB | 0.038 | 475.11 | 0.075 |
| 20 | 5.560 | HCB | 9.5173 | 0.108 | 1351.4 | 0.086 | BB | 0.043 | 528.30 | 0.083 |
| 21 | 5.678 | | 0.0000 | 0.000 | 2531.8 | 0.162 | BB | 0.042 | 1005.12 | 0.158 |
| 22 | 5.750 | alpha-BHC | 76.6739 | 0.874 | 4430.9 | 0.283 | BB | 0.028 | 2640.79 | 0.416 |
| 23 | 5.798 | | 0.0000 | 0.000 | 651.3 | 0.042 | BB | 0.022 | 488.84 | 0.077 |
| 24 | 5.938 | | 0.0000 | 0.000 | 3765.4 | 0.241 | BV | 0.052 | 1214.79 | 0.191 |
| 25 | 6.124 | | 0.0000 | 0.000 | 2765.5 | 0.177 | VV | 0.090 | 513.15 | 0.081 |
| 26 | 6.283 | gamma-BHC | 110.9763 | 1.265 | 11762.6 | 0.752 | VV | 0.051 | 3876.37 | 0.611 |
| 27 | 6.404 | beta-BHC | 121.1135 | 1.381 | 6517.3 | 0.416 | VV | 0.039 | 2800.56 | 0.441 |
| 28 | 6.486 | | 0.0000 | 0.000 | 16508.1 | 1.055 | VV | 0.051 | 5353.01 | 0.843 |
| 29 | 6.623 | | 0.0000 | 0.000 | 7470.1 | 0.477 | VV | 0.038 | 3304.50 | 0.520 |
| 30 | 6.766 | | 0.0000 | 0.000 | 4926.7 | 0.315 | VV | 0.052 | 1570.04 | 0.247 |
| 31 | 6.829 | delta-BHC | 88.4635 | 1.008 | 5821.9 | 0.372 | VB | 0.032 | 2996.56 | 0.472 |
| 32 | 6.919 | Heptachlor | 162.4145 | 1.851 | 12878.5 | 0.823 | BB | 0.036 | 5996.83 | 0.944 |
| 33 | 7.120 | | 0.0000 | 0.000 | 18578.3 | 1.187 | BB | 0.186 | 1663.78 | 0.262 |
| 34 | 7.214 | | 0.0000 | 0.000 | 20958.7 | 1.339 | BV | 0.037 | 9500.54 | 1.496 |
| 35 | 7.274 | | 0.0000 | 0.000 | 7977.2 | 0.510 | VV | 0.048 | 2784.90 | 0.439 |
| 36 | 7.380 | Aldrin | 67.9285 | 0.774 | 4490.4 | 0.287 | VV | 0.032 | 2308.64 | 0.364 |
| 37 | 7.426 | | 0.0000 | 0.000 | 8589.6 | 0.549 | VB | 0.040 | 3595.48 | 0.566 |
| 38 | 7.531 | | 0.0000 | 0.000 | 607.5 | 0.039 | BV | 0.030 | 339.65 | 0.053 |
| 39 | 7.605 | Telodrin | 338.7216 | 3.861 | 37358.2 | 2.387 | VV | 0.051 | 12323.58 | 1.941 |
| 40 | 7.790 | | 0.0000 | 0.000 | 29111.5 | 1.860 | VB | 0.045 | 10900.44 | 1.717 |
| 41 | 7.964 | | 0.0000 | 0.000 | 1785.5 | 0.114 | BV | 0.034 | 883.27 | 0.139 |
| 42 | 8.024 | | 0.0000 | 0.000 | 25071.8 | 1.602 | VV | 0.037 | 11353.28 | 1.788 |
| 43 | 8.087 | | 0.0000 | 0.000 | 20690.1 | 1.322 | VV | 0.038 | 9090.79 | 1.432 |
| 44 | 8.151 | Hept. epoxide | 643.7061 | 7.338 | 58582.8 | 3.743 | VV | 0.042 | 23234.46 | 3.659 |
| 45 | 8.257 | | 0.0000 | 0.000 | 8756.6 | 0.559 | VV | 0.038 | 3791.53 | 0.597 |
| 46 | 8.307 | | 0.0000 | 0.000 | 14426.2 | 0.922 | VV | 0.038 | 6340.71 | 0.999 |
| 47 | 8.387 | o,p-DDE | 1094.7710 | 12.479 | 68424.5 | 4.372 | VV | 0.042 | 27224.56 | 4.288 |
| 48 | 8.469 | | 0.0000 | 0.000 | 34628.0 | 2.212 | VV | 0.039 | 14824.43 | 2.335 |
| 49 | 8.534 | | 0.0000 | 0.000 | 25940.2 | 1.657 | VV | 0.043 | 10017.59 | 1.578 |
| 50 | 8.614 | a. Chlordane | 100.9469 | 1.151 | 7754.2 | 0.495 | VB | 0.034 | 3785.15 | 0.596 |
| 51 | 8.703 | Endosulfan I | 134.0547 | 1.528 | 8943.9 | 0.571 | BB | 0.034 | 4433.59 | 0.698 |
| 52 | 8.776 | | 0.0000 | 0.000 | 13469.0 | 0.861 | BV | 0.030 | 7474.85 | 1.177 |
| 53 | 8.808 | 4,4'-DDE | 135.3890 | 1.543 | 6057.9 | 0.387 | VB | 0.023 | 4305.90 | 0.678 |
| 54 | 8.855 | | 0.0000 | 0.000 | 26997.0 | 1.725 | BB | 0.030 | 14847.61 | 2.338 |
| 55 | 8.936 | | 0.0000 | 0.000 | 9633.5 | 0.616 | BV | 0.032 | 5038.77 | 0.794 |
| 56 | 9.008 | | 0.0000 | 0.000 | 106607.7 | 6.811 | VV | 0.048 | 36865.62 | 5.806 |
| 57 | 9.140 | | 0.0000 | 0.000 | 12828.5 | 0.820 | VV | 0.049 | 4343.32 | 0.684 |
| 58 | 9.257 | | 0.0000 | 0.000 | 53284.1 | 3.404 | VV | 0.040 | 22442.69 | 3.535 |
| 59 | 9.293 | | 0.0000 | 0.000 | 65478.9 | 4.184 | VB | 0.037 | 29565.87 | 4.657 |
| 60 | 9.437 | | 0.0000 | 0.000 | 14429.9 | 0.922 | BV | 0.038 | 6303.99 | 0.993 |
| 61 | 9.515 | o,p-DDT | 1120.6990 | 12.775 | 69984.6 | 4.471 | VV | 0.044 | 26377.51 | 4.154 |
| 62 | 9.587 | 4,4'-DDD | 425.9631 | 4.856 | 24183.5 | 1.545 | VB | 0.042 | 9525.15 | 1.500 |
| 63 | 9.756 | Endosulfan II | 861.6713 | 9.822 | 94501.8 | 6.038 | BB | 0.057 | 27509.13 | 4.333 |
| 64 | 9.854 | | 0.0000 | 0.000 | 5765.8 | 0.368 | BB | 0.030 | 3196.13 | 0.503 |

| PK# | Ret Time | Name | Amount | Amount% | Area | Area% | Type | Width | Height | Height% |
|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 9.950 | | 0.0000 | 0.000 | 29563.0 | 1.889 | BB | 0.030 | 16557.12 | 2.608 |
| 66 | 9.994 | 4,4'-DDT | 1127.2240 | 12.849 | 47289.2 | 3.021 | BB | 0.029 | 27255.28 | 4.293 |
| 67 | 10.106 | | 0.0000 | 0.000 | 2612.7 | 0.167 | BB | 0.027 | 1610.33 | 0.254 |
| 68 | 10.136 | | 0.0000 | 0.000 | 1373.7 | 0.088 | BB | 0.018 | 1302.96 | 0.205 |
| 69 | 10.187 | Endrin aldehyde | 142.3073 | 1.622 | 8235.7 | 0.526 | BB | 0.033 | 4120.05 | 0.649 |
| 70 | 10.298 | | 0.0000 | 0.000 | 7759.0 | 0.496 | BB | 0.054 | 2406.35 | 0.379 |
| 71 | 10.474 | | 0.0000 | 0.000 | 34085.7 | 2.178 | BB | 0.044 | 12862.71 | 2.026 |
| 72 | 10.550 | Endo. sulfate | 125.6803 | 1.433 | 5082.8 | 0.325 | BB | 0.024 | 3552.99 | 0.560 |
| 73 | 10.594 | | 0.0000 | 0.000 | 1870.2 | 0.119 | BB | 0.023 | 1357.44 | 0.214 |
| 74 | 10.673 | | 0.0000 | 0.000 | 14130.0 | 0.903 | BB | 0.032 | 7266.29 | 1.144 |
| 75 | 10.740 | | 0.0000 | 0.000 | 19895.6 | 1.271 | BB | 0.031 | 10637.23 | 1.675 |
| 76 | 10.805 | | 0.0000 | 0.000 | 12609.4 | 0.806 | BB | 0.027 | 7862.46 | 1.238 |
| 77 | 10.858 | Methoxychlor | 924.7042 | 10.541 | 19929.8 | 1.273 | BB | 0.028 | 11850.00 | 1.866 |
| 78 | 10.972 | | 0.0000 | 0.000 | 1420.8 | 0.091 | BB | 0.043 | 553.57 | 0.087 |
| 79 | 11.102 | | 0.0000 | 0.000 | 12095.9 | 0.773 | BB | 0.034 | 5849.00 | 0.921 |
| 80 | 11.196 | | 0.0000 | 0.000 | 2214.7 | 0.141 | BB | 0.056 | 659.58 | 0.104 |
| 81 | 11.315 | Endrin ketone | 361.1328 | 4.117 | 48431.1 | 3.094 | BB | 0.068 | 11804.06 | 1.859 |
| 82 | 11.586 | | 0.0000 | 0.000 | 961.2 | 0.061 | BB | 0.045 | 357.89 | 0.056 |
| 83 | 11.668 | | 0.0000 | 0.000 | 808.3 | 0.052 | BB | 0.038 | 354.27 | 0.056 |
| 84 | 11.798 | | 0.0000 | 0.000 | 1553.3 | 0.099 | BB | 0.060 | 431.16 | 0.068 |
| 85 | 11.945 | | 0.0000 | 0.000 | 59300.1 | 3.789 | BB | 0.044 | 22362.71 | 3.522 |
| 86 | 12.105 | | 0.0000 | 0.000 | 1042.2 | 0.067 | BB | 0.036 | 483.11 | 0.076 |
| 87 | 12.213 | | 0.0000 | 0.000 | 7319.3 | 0.468 | BB | 0.057 | 2159.00 | 0.340 |
| 88 | 12.657 | | 0.0000 | 0.000 | 1403.0 | 0.090 | BB | 0.066 | 354.21 | 0.056 |
| 89 | 12.763 | | 0.0000 | 0.000 | 556.6 | 0.036 | BB | 0.027 | 343.57 | 0.054 |
| 90 | 12.810 | | 0.0000 | 0.000 | 543.5 | 0.035 | BB | 0.024 | 373.49 | 0.059 |
| 91 | 13.246 | | 0.0000 | 0.000 | 1199.4 | 0.077 | BB | 0.039 | 506.48 | 0.080 |
| 92 | 13.345 | DCB | 327.6490 | 3.735 | 34390.3 | 2.197 | BB | 0.052 | 11109.86 | 1.750 |

Total Area = 1565140.0, Total Amount = 8772.691, Total Height = 634928.1, Sample Units = PPB

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.86R

C:\CPWIN\DATA1\1C13088.86R




Instrument ID: CP13--H6722A Injected On: 3/30/2004 3:39:49 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

Not Used for Permeation

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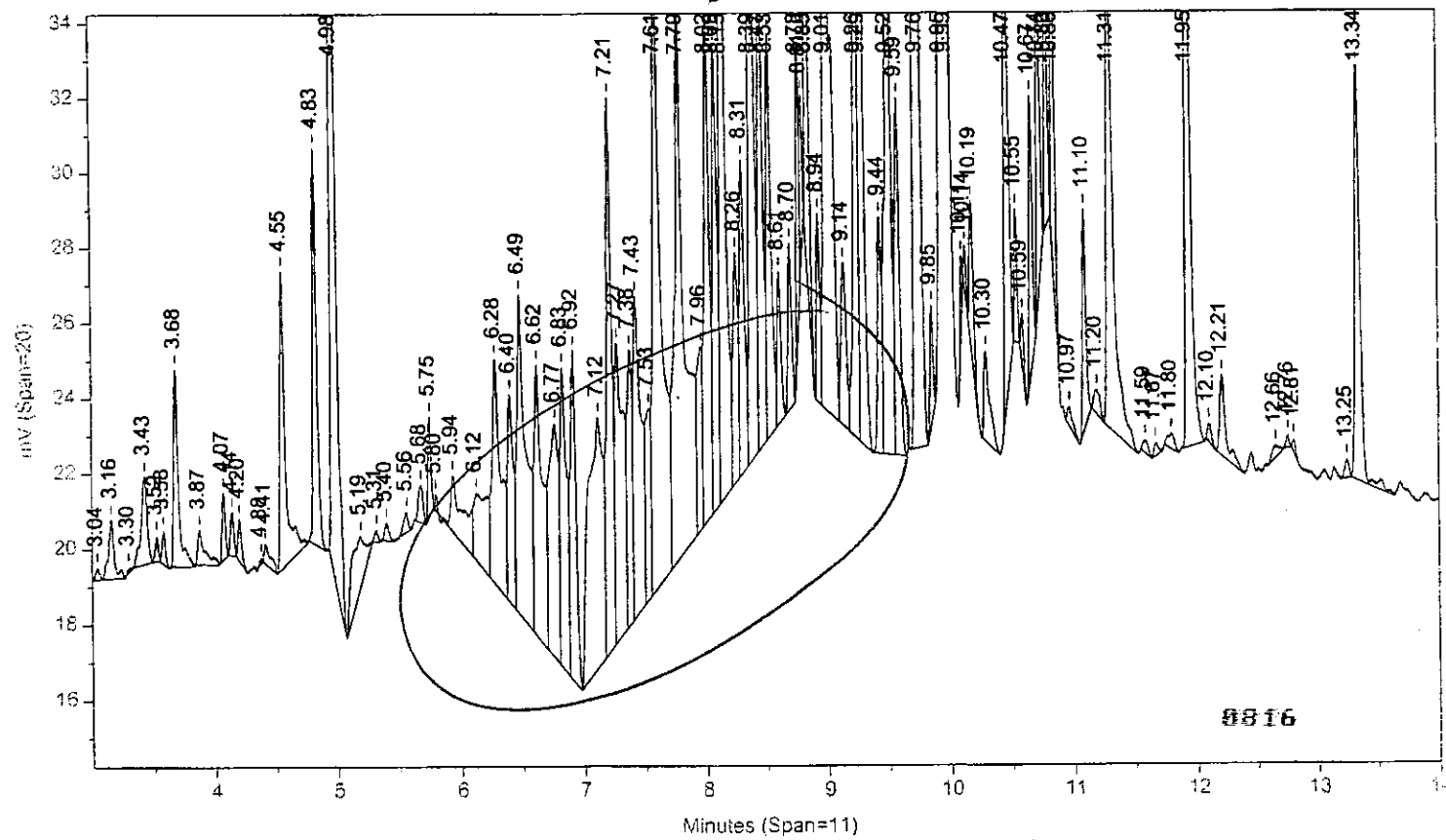


Instrument ID: CP13--H6722B Injected On: 3/30/2004 3:39:49 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

LANCASTER LABORATORIES File: C:\CPWIN\DATA1\1C13088.86R

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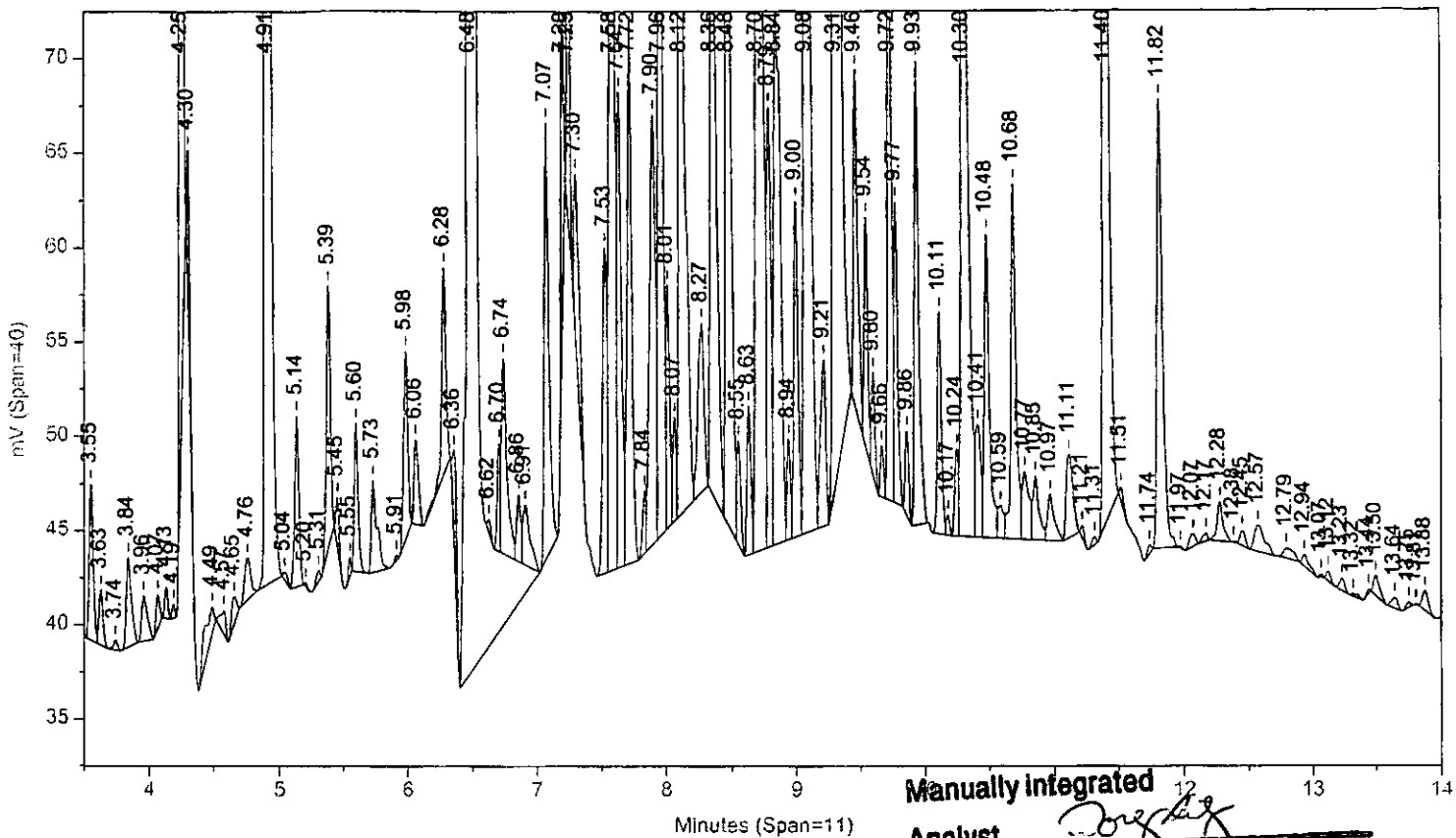



Instrument ID: CP13--H6722A Injected On: 3/30/2004 3:39:49 PM Column ID: RTX-1 0.25MM X 30M X 0.25UM

Manually integrated

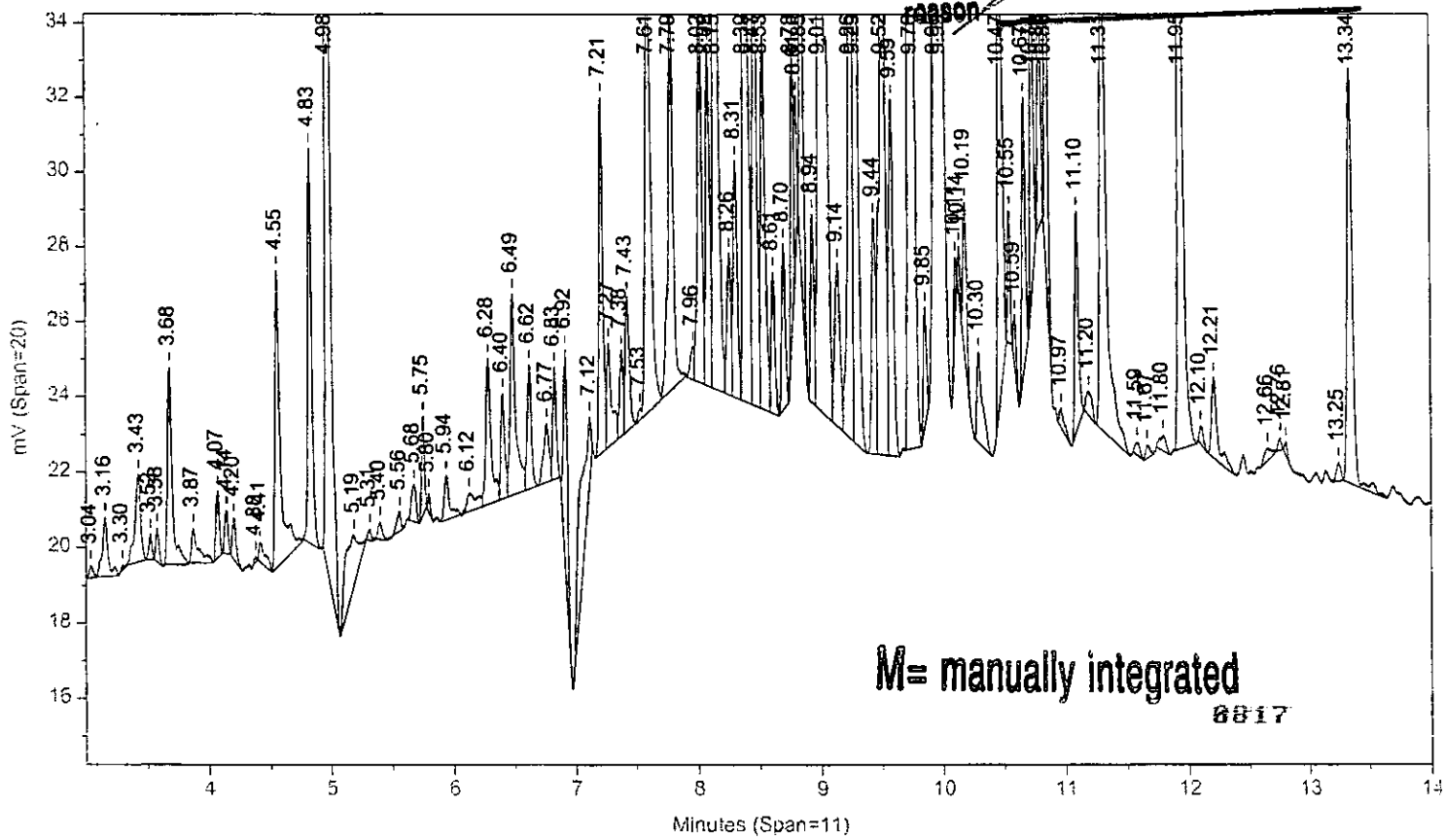
Analyst

approved by

reason

File: C:\CPWIN\DATA1\1C13088B.86R

C:\CPWIN\DATA1\1C13088B.86R




Instrument ID: CP13--H6722B Injected On: 3/30/2004 3:39:49 PM Column ID: RTX-CLPII, 30M X 0.32MM X 0.25UM

Oven Parameters: 140C HOLD 1MIN; 10C/MIN TO 200; 50C/MIN TO 28(Volume Inj: 1N

Detector A Parameters:
Threshold: 2 Width: 0.01 Area Reject: 0
Calibration Type: External Quantitation: Height

Detector B Parameters:
Threshold: 2 Width: 0.02 Area Reject: 0
Calibration Type: External Quantiation: Height

Sample Weight: 30 Dilution Factor: 50
Analyst: 120

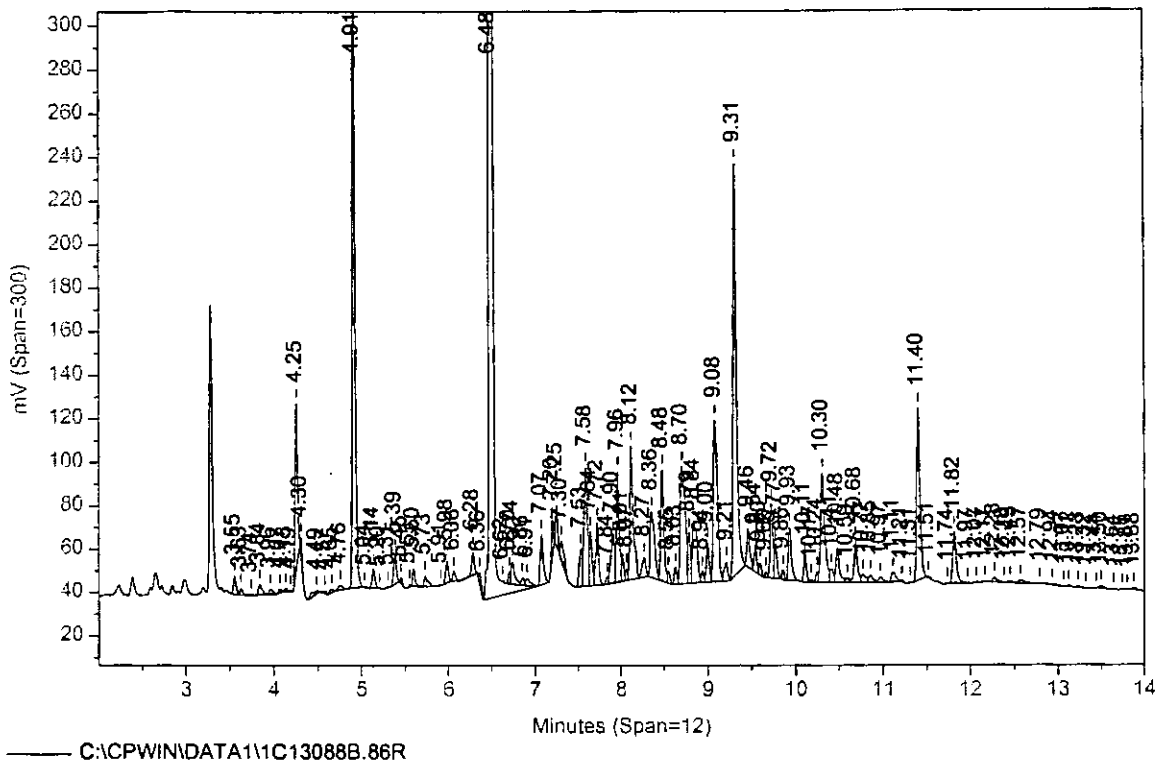
| RT A | Height A | Amount A | Compound A | RT B | Height B | Amount B | Compound B |
|---|---|---|---|---|---|---|---|
| 4.305 | 7369 | 3.23597 | TCX | 4.825 | 10602 | 9.0328 | TCX |
| 4.913 | 377063 | 90.31419 | HCB | 5.56 | 528 | .31724 | HCB |
| 5.136 | 9062 | 3.26177 | alpha-BHC | 5.75 | 2641 | 2.55579 | alpha-BHC |
| 5.599 | 7908 | 2.84364 | gamma-BHC | 6.283 | 3876 | 3.69921 | gamma-BHC |
| 5.73 | 4913 | 3.17798 | beta-BHC | 6.404 | 2801 | 4.03712 | beta-BHC |
| 5.984 | 9990 | 3.78604 | delta-BHC | 6.829 | 2997 | 2.94878 | delta-BHC |
| 6.28 | 10948 | 3.69287 | Heptachlor | 6.919 | 5997 | 5.41382 | Heptachlor |
| 6.704 | 5725 | 2.39323 | Aldrin | 7.38 | 2309 | 2.26428 | Aldrin |
| 7.529 | 17301 | 7.2246 | Hept. epoxide | 8.151 | 23234 | 21.45687 | Hept. epoxide |
| . | 0 | . | Telodrin | 7.605 | 12324 | 11.29072 | Telodrin |
| 7.723 | 28936 | 12.4549 | g. Chlordane | . | 0 | . | g. Chlordane |
| 7.903 | 22726 | 9.16497 | a. Chlordane | 8.614 | 3785 | 3.3649 | a. Chlordane |
| 7.96 | 51020 | 24.16481 | 4,4'-DDE | 8.808 | 4306 | 4.51297 | 4,4'-DDE |
| 8.067 | 5479 | 2.51765 | Endosulfan I | 8.703 | 4434 | 4.46849 | Endosulfan I |
| . | 0 | . | o,p-DDE | 8.387 | 27225 | 36.49236 | o,p-DDE |
| 8.553 | 5549 | 3.60523 | o,p-DDT | 9.515 | 26378 | 37.35663 | o,p-DDT |
| 8.705 | 54353 | 30.46889 | Endrin | . | 0 | . | Endrin |
| 8.789 | 23296 | 99.79594 | Kepone | . | 0 | . | Kepone |
| 8.999 | 17818 | 9.06013 | Endosulfan II | 9.756 | 27509 | 28.72238 | Endosulfan II |
| 9.541 | 12266 | 7.40906 | Endrin aldehyde | 10.187 | 4120 | 4.74358 | Endrin aldehyde |
| . | 0 | . | 4,4'-DDD | 9.587 | 9525 | 14.19877 | 4,4'-DDD |
| 9.725 | 34533 | 34.21617 | Methoxychlor | 10.858 | 11850 | 30.82347 | Methoxychlor |
| . | 0 | . | 4,4'-DDT | 9.994 | 27255 | 37.57414 | 4,4'-DDT |
| 10.105 | 11809 | 6.73446 | Endo. sulfate | 10.55 | 3553 | 4.18934 | Endo. sulfate |
| 10.477 | 16070 | 7.66655 | Endrin ketone | 11.315 | 11804 | 12.03776 | Endrin ketone |
| 11.816 | 23748 | 10.39405 | DCB | 13.345 | 11110 | 10.92163 | DCB |

Files:
Area File: C:\CPWIN\~Dualcha.00A
Area File: C:\CPWIN\~Dualchb.00A
Method A: C:\CPWIN\DATA1\PESTD.MET
Method B: C:\CPWIN\DATA1\PESTDB.MET
Calibration File A: C:\CPWIN\DATA1\2C13088.CAL
Calibration File B: C:\CPWIN\DATA1\2C13088B.CAL
Format A: C:\CPWIN\DATA1\PESTD.FMTA
Format B: C:\CPWIN\DATA1\PESTD.FMTB
Area File Created On: 3/31/2004 8:58:54 AM
File Reported On: 3/31/2004 at 8:58:56 AM

8818

10X REPLOTS

C:\CPWIN\DATA1\1C13088.86R

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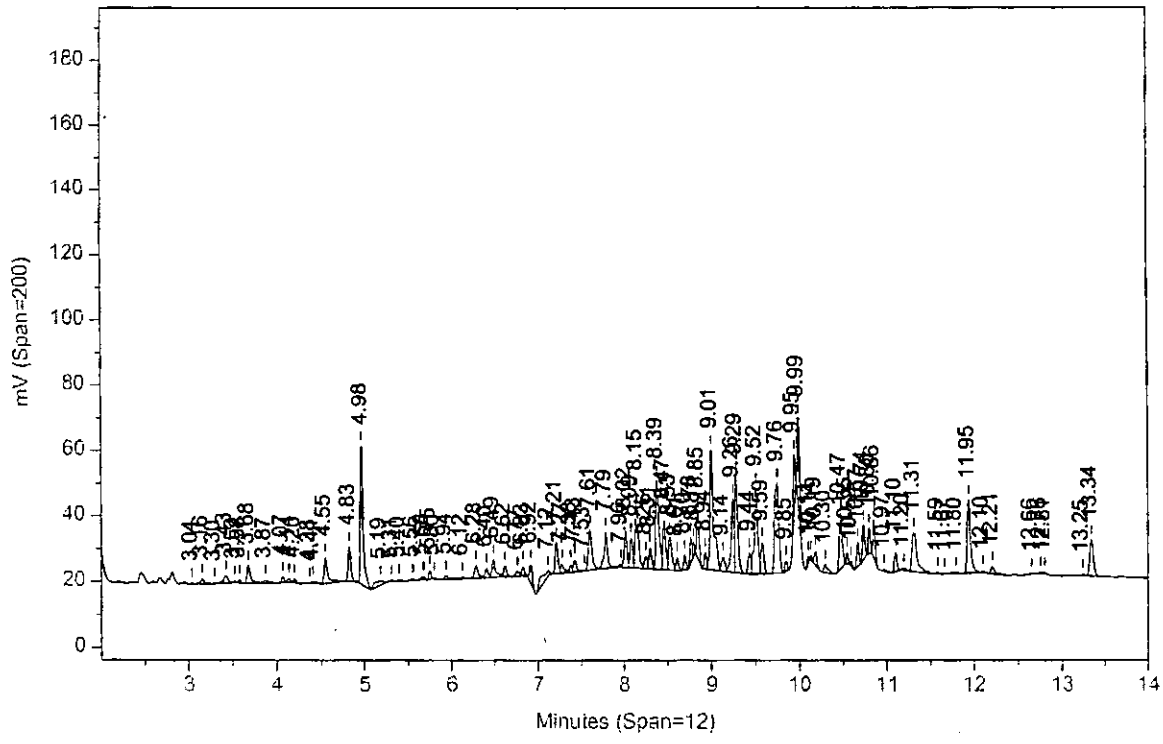


9819

# Extraction/Distillation/Digestion Logs

# Organic Extraction Batchlog

Reviewed: [signature]

Prep Analysis # 06006 PPL Pesticide Solid Extraction

Prep Group # 103 8081 Pesticides - soils Dept: 24

Start Date: 3-30-04

Start Time: 3:00

Tech 1: DHUG

Tech 2:

BATCH NO. 040890035A

| QC | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLANKA | PBLKVE | 30.0 | SS0407124A | 1.0 | — | — | 10.0 | | | 20H | WA, Soil |
| LCSA | LCSQ8 | | SS0407124A | | MS0408224A | 1.0 | | | | 2 | |
| 4241646MS | 6GP45MS | | SS0407124A | | MS0408224A | | | | | 21A | Brown Soil |
| 4241647MSD | 6GP45MSD | | SS0407124A | | MS0408224A | | | | | | |

| | Sample # | | Sample Code | Amt (G) | SS/IS Sol. | Amt (mL) | FV (mL) | pH | pH | BC | Comments | Analyses | Due Date | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4241642 | R | 7GP17 | 30.0 | SS0407124A | 1.0 | 10.0 | | | 21A | Brown Soil | 1225 | 3/30/04 | S |
| 2 | 4241643 | R | 7GP18 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 3 | 4241644 | R | 7GP19 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 4 | 4241645 bkg | R | 7GP45 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 5 | 4241648 | R | UGP21 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 6 | 4241649 | R | 7GP22 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 7 | 4241650 | R | 2222D | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 8 | 4241651 | R | 7GP23 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 9 | 4241652 | R | 7GP24 | | SS0407124A | | | | | | | 1225 | 3/30/04 | S |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |

DHUG 3-30-04

**Additional Comment:**

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 1-1 Acetone/Hexane | 1405336CYA | | |
| Hexane | A10233 | | |
| WA Soil | 026838 | | |
| | | | |
| Rack ID: | | Work Station: | Soxhlet |
| Internal Standard | | Balance # | 15212 |
| S-bath ID 2 | 98 °C | S-bath ID — | — °C |
| N-Evap — | — °C | | |

**Spike Solutions:**

SS0407124A SW846 SURROGATE STANDARD

MS0408224A SW846 SPIKE

8878

8821

Documented temps are NIST corrected: 040890035A

# Prep-Process Worksheet

## Florisil

**Prep Analysis #** 06006 PPL Pesticide Solid Extraction

**Prep Group #** 103 8081 Pesticides - soils

**Verified:** RM

**Start Date:** 3-30-04

**Start Time:** 7:30

**Tech 1:** D.H 1429

**Tech 2:** —

**BATCH NO.** 040890035A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA | 2.0 | 2.0 | | | | |
| 2 | LCSA | | | | | | |
| 3 | 4241646MS | | | | | | 1225 |
| 4 | 4241647MSD | | | | | | 1225 |
| 5 | 4241642 | | | | | | 1225 |
| 6 | 4241643 | | | | | | 1225 |
| 7 | 4241644 | | | | | | 1225 |
| 8 | 4241645 | | | | | | 1225 |
| 9 | 4241648 | | | | | | 1225 |
| 10 | 4241649 | | | | | | 1225 |
| 11 | 4241650 | | | | | | 1225 |
| 12 | 4241651 | | | | | | 1225 |
| 13 | 4241652 | | | | | | 1225 |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

D.H 1429
3-30-04

**Additional Comment:** Chamber - CY

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| 10% Acetone/Hexane | 70103004A | | |
| Hexane | A10033 | | |
| — | | | |
| Florisil | 209040-11 | | |

| S-Evap/bath | — °C | S-Evap/bath | — °C | N-Evap 5 | 35 °C |
|---|---|---|---|---|---|

The documented temperatures are NIST corrected.

8822

# Prep-Process Worksheet

## Copper

**Prep Analysis #** 06006 PPL Pesticide Solid Extraction

**Prep Group #** 103 8081 Pesticides - soils

Verified: D

Start Date: 7-30-04

Start Time: 8:30

Tech 1: D. H 1429

Tech 2: ____

**BATCH NO.** 040890035A

| | Sample # | Aliquot (ml) | Final Volume (ml) | D.F. Aliq. | D.F. F.V. | Comments | Analyses |
|---|---|---|---|---|---|---|---|
| 1 | BLANKA (AB) | 2.0 | 2.0 | | | | |
| 2 | LCSA (AB) | | | | | | |
| 3 | 4241646MS (AB) | | | | | | 1225 |
| 4 | 4241647MSD (AB) | | | | | | 1225 |
| 5 | 4241642 (AB) | | | | | | 1225 |
| 6 | 4241643 (AB) | | | | | | 1225 |
| 7 | 4241644 (AB) | | | | | | 1225 |
| 8 | 4241645 (AB) | | | | | | 1225 |
| 9 | 4241648 (AB) | | | | | | 1225 |
| 10 | 4241649 (AB) | | | | | | 1225 |
| 11 | 4241650 (AB) | | | | | | 1225 |
| 12 | 4241651 (AB) | | | | | | 1225 |
| 13 | 4241652 (AB) | | | | | | 1225 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

D. H 1429
3-30-04

**Additional Comment:** ____

DF = Dilution Factor FV = Final Volume



| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| Copper | 114596 | | |
| | | | |
| | | | |
| | | | |

9823

# Miscellaneous Analysis Data

# Case Narrative
# Conformance/Nonconformance Summary

Lancaster Laboratories

*Where quality is a science.*

**CLIENT:** Draper Aden Associates, Inc.
**SDG:** RAV04

**LANCASTER LABORATORIES**

**MISCELLANEOUS WET CHEMISTRY**

**SAMPLE NUMBERS:**

| Sample # | Sample Code | Comments |
|---|---|---|
| 4241642 | 7GP17 | |
| 4241643 | 7GP18 | |
| 4241644 | 7GP19 | |
| 4241645 | 7GP45 | Background |
| 4241646 | 7GP45 | |
| 4241647 | 7GP45 | Duplicate |
| 4241648 | UGP21 | |
| 4241649 | 7GP22 | |
| 4241650 | 2222D | |
| 4241651 | 7GP23 | |
| 4241652 | 7GP24 | |

**ANALYSIS:**
No problems were encountered during analysis.

**QUALITY CONTROL AND NONCONFORMANCE SUMMARY:**
QC was within specification.

**DATA INTERPRETATION:**
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J Miller Date: 4-2-04

Sandra J. Miller
Specialist/Coordinator

0826

# QC Summary

# Lancaster Laboratories

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: RAV04

| Sample Information | Duplicate Analysis | | | | | | | | | Matrix: SOIL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| 4241642 | 7GP17 | 04086820001 | Moisture | OD | 3/26/04 | 4241645 | 20.15 | 4241647 | 19.67 | % | 2 | 15 |
| 4241643 | 7GP18 | | | | | | | | | | | |
| 4241644 | 7GP19 | | | | | | | | | | | |
| 4241645 | 7GP45 | | | | | | | | | | | |
| 4241646 | 7GP45 | | | | | | | | | | | |
| 4241647 | 7GP45 | | | | | | | | | | | |
| 4241648 | UGP21 | | | | | | | | | | | |
| 4241649 | 7GP22 | | | | | | | | | | | |
| 4241650 | 2222D | | | | | | | | | | | |
| 4241651 | 7GP23 | | | | | | | | | | | |
| 4241652 | 7GP24 | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG: RAV04

| Sample Info. | Laboratory Control Standards | | | | | | | | | Matrix: SOIL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
| 4241642 | 7GP17 | 04086820001 | Moisture | OD | 3/26/04 | 89.5 | 89.43 | 89.44 | % | 88.6 - 90.4 | 0 | 1 |
| 4241643 | 7GP18 | | | | | | | | | | | |
| 4241644 | 7GP19 | | | | | | | | | | | |
| 4241645 | 7GP45 | | | | | | | | | | | |
| 4241646 | 7GP45 | | | | | | | | | | | |
| 4241647 | 7GP45 | | | | | | | | | | | |
| 4241648 | UGP21 | | | | | | | | | | | |
| 4241649 | 7GP22 | | | | | | | | | | | |
| 4241650 | 2222D | | | | | | | | | | | |
| 4241651 | 7GP23 | | | | | | | | | | | |
| 4241652 | 7GP24 | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | ME = Method |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

| ANALYSIS | LL # | MDL | ANALYSIS | LL # | MDL |
|---|---|---|---|---|---|
| Acidity | 476 | 2 mg/l | Oil and Grease | 231 | 2.5 mg/l |
| Acidity | 4530 | 3 mg/l | Oil and Grease | 236 | 430 mg/kg |
| Alkalinity to pH 4.5 | 202 | 0.41 mg/l as CaCO3 | Oil and Grease | 429 | 0.40 mg/l |
| Ammonia Nitrogen | 573 | 4.2 mg/kg | Oil and Grease | 2446 | 233 mg/kg |
| Ammonia Nitrogen | 221 | 0.11 mg/l | Orthophosphate | 226 | 0.01 mg/l |
| Ammonia Nitrogen | 6914 | 0.03 mg/l | | | |
| BOD | 235 | 0.80 mg/l | Petroleum Hydrocarbons | 1126, 8140 | 0.40 mg/l |
| Carbonaceous BOD | 1364 | 0.80 mg/l | Petroleum Hydrocarbons | 1554 | 0.50 mg/l |
| Chemical Oxygen Demand | 1553 | 2.1 mg/l | Petroleum Hydrocarbons | 1562 | 23 mg/kg |
| Chemical Oxygen Demand | 234 | 300 mg/kg | Petroleum Hydrocarbons | 1663 | 21 mg/kg |
| Chemical Oxygen Demand | 4001 | 8.2 mg/l | | | |
| Chloride | 1124 | 0.20 mg/l | Petroleum Hydrocarbons | 8129 | 9 mg/kg |
| Chlorine Residual | 240 | 0.04 mg/l | Petroleum Hydrocarbons | 8141 | 12.6 mg/kg |
| Dissolved Oxygen | 428 | 0.09 mg/l | Silica | 559 | 0.024 mg/l |
| | | | Soluble BOD | 541 | 0.80 mg/l |
| Ferrous Iron | 8344 | 0.008 mg/l | Specific Conductance | 280 | 1.7 umhos/cm |
| Fluoride | 263 | 0.03 mg/l | Specific Gravity | 1443 | 0.005 |
| Fluoride Distillation | 2200 | 0.03 mg/l | Sulfate | 1125 | 1.5 mg/l |
| Hexane Extractable Materials(Silica-Gel Treated) | 8078 | 1.3 mg/l | Sulfate, 10mg/l CCV (non PW) | 1125 | 8.52 - 9.92 mg/l |
| Hexane Extractable Materials | 8079 | 1.4 mg/l | Sulfide | 230 | 0.022 mg/l |
| Hexavalent Chromium | 276 | 0.003 mg/l | Sulfide, Acid Volatile | 1630 | 0.39 micromoles/g |
| Hexavalent Chromium | 425 | 0.50 mg/kg | Sulfide Titration | 1333 | 0.53 mg/l |
| Hexavalent Chromium | 1446 | 0.0007 mg/l | Sulfide Titration | 1122 | 27 mg/kg |
| Hexavalent Chromium | 4858 | 0.38 mg/kg | Sulfide Titration | 487 | 8.4 mg/kg |
| Hexavalent Chromium | 4859 | 0.004 mg/l | Sulfite | 229 | 1.2 mg/l |
| | | | Total Dissolved Solids | 212 | 9.7 mg/l |
| | | | Total Hardness | 216 | 0.49 mg/l as CaCO3 |
| M.B.A.S. | 225 | 0.035 mg/l | Total Solids | 203 | 6.3 mg/l |
| Moisture | 111 | 0.5 % | Total Suspended Solids | 206 | 3.0 mg/l |
| Moisture | 1353 | 0.5 % | Turbidity | 279 | 0.09 NTU |
| | | | UV Absorbance | 7120 | 0.006cm-1 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Revised 3/31/04

# Raw Data

B!
Oven 2
3rd Shelf
Left Side



# Batch#: 04086820001

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1540 Time Out: 3/29/03 JFB 13 0745

Balance ID #: 9001 Std. Ref. (book/pg.): 044338 P15

| # | Sample ID | Date Added | Comments | Analysis# |
|---|---|---|---|---|
| 1) | LCS 89.5% | 03/26/04 12:40 | | |
| 2) | LCD 89.5% | 03/26/04 12:40 | | |
| 3) | 4241467 | 03/26/04 12:39 | soft clay 75A | 00111 |
| 4) | 4241628 | 03/26/04 12:39 | Sandy clay 77A | 00111 |
| 5) | 4241629 | 03/26/04 12:39 | | 00111 |
| 6) | 4241630 | 03/26/04 12:39 | | 00111 |
| 7) | 4241631 | 03/26/04 12:39 | 21A | 00111 |
| 8) | 4241632MS | 03/26/04 12:39 | | 00118 |
| 9) | 4241633MSD | 03/26/04 12:39 | | 00121 |
| 10) | 4241634 | 03/26/04 12:39 | 77A | 00111 |
| 11) | 4241636 | 03/26/04 12:39 | | 00111 |
| 12) | 4241637 | 03/26/04 12:39 | | 00111 |
| 13) | 4241638 | 03/26/04 12:39 | | 00111 |
| 14) | 4241639 | 03/26/04 12:39 | | 00111 |
| 15) | 4241642 | 03/26/04 12:39 | Sandy soil | 00111 |
| 16) | 4241643 | 03/26/04 12:39 | Sandy clay pieces | 00111 |
| 17) | 4241644 | 03/26/04 12:39 | Sandy soil | 00111 |
| 18) | 4241645 | 03/26/04 12:39 | 21A | 00111 |
| 19) | 4241646MS | 03/26/04 12:39 | | 00118 |
| 20) | 4241647MSD | 03/26/04 12:39 | | 00121 |
| 21) | 4241648 | 03/26/04 12:39 | 77A | 00111 |
| 22) | 4241649 | 03/26/04 12:39 | | 00111 |

Signature: Scott Freisler 1201 Date: 3/26/04 #832

Printed by 00943 on 03/26/2004 at 12:42

LLC743 3/29/04

# Batch#: 04086820001

## LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1540 Time Out: ③ 2445 (SF 2001 3rd 13)

Balance ID #: 9001 Std. Ref. (book/pg.): C44338 P15

| # | Sample ID | Date Added | Comments | Analysis# | |
|---|---|---|---|---|---|
| 23) | 4241650 | 03/26/04 12:39 | Sandy soil | 77A | 00111 |
| 24) | 4241651 | 03/26/04 12:39 | ↓ | ↓ | 00111 |
| 25) | 4241652 | 03/26/04 12:39 | ↓ | ↓ | 00111 |
| 26) | 4241694 | 03/26/04 12:39 | Soft clay analysis deleted | 20A | 00111 |

Signature: Scott Freisler 1201 Date: 3/26/04

Printed by 00943 on 03/26/2004 at 12:42

LLC943 3/29/04

9833

# Batch#: 04086820001

## LLENS Batch Chronology Report - Moisture

| # | Operation | Instrument | Date | Time | Analyst |
|---|---|---|---|---|---|
| 1) | Batch Creation | | 03/26/2004 | 12:39 | 00943 |
| 2) | Pre-Drying Wt. | 009001 | 03/26/2004 | 13:45 | 01201 |
| 3) | Pre-Drying Wt. | 009001 | 03/26/2004 | 14:51 | 01201 |
| 4) | Dry Sample Wt. | 009001 | 03/27/2004 | 14:05 | 01201 |
| 5) | Calculate/Transmit | LLENS2 | 03/27/2004 | 14:16 | 01201 |

OIII → TECI

4241634 4241635 JC 943 3/30/04

Comments: JC 943 3/29/04

Printed by 01201 on 03/27/2004 at 14:16

8834

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture |
|---|---|---|---|---|---|---|---|---|---|
| LCS 89.5% | A | | | 1.1456 | 5.0036 | 1.6743 | | | 89.43 |
| LCD 89.5% | A | | | 1.1312 | 5.0272 | 1.6621 | | | 89.44 |
| 4241467 | A | 00111 | | 1.1389 | 7.7169 | 7.3484 | | | 19.53 |
| 4241628 | A | 00111 | | 1.1368 | 6.9839 | 6.9491 | | | 16.78 |
| 4241629 | A | 00111 | | 1.1503 | 8.1523 | 7.9506 | | | 16.58 |
| 4241630 | A | 00111 | | 1.1363 | 7.9718 | 7.7515 | | | 17.02 |
| 4241631 | A | 00111 | | 1.1343 | 8.9009 | 8.3936 | | | 18.44 |
| 4241632MS | A | 00118 | | | | | | | 18.44 |
| 4241633MSD | A | 00118 | | | | | | | 18.44 |
| 4241633MSD | A | 00121 | | 1.1459 | 9.3268 | 8.8334 | 0.87 | 4.81 | 17.58 |
| 4241634 | A | 00111 | | 1.1457 | 8.1066 | 7.9974 | | | 15.48 |
| 4241636 | A | 00111 | | 1.1517 | 8.1287 | 8.0269 | | | 15.42 |
| 4241637 | A | 00111 | | 1.1513 | 7.4584 | 7.4732 | | | 15.24 |
| 4241638 | A | 00111 | | 1.1506 | 8.5933 | 8.3647 | | | 16.05 |
| 4241639 | A | 00111 | | 1.1320 | 8.2774 | 7.8916 | | | 18.34 |
| 4241642 | B | 00111 | | 1.1251 | 6.4497 | 6.3950 | | | 18.29 |
| 4241643 | B | 00111 | | 1.1494 | 8.0280 | 8.0413 | | | 14.15 |
| 4241644 | B | 00111 | | 1.1411 | 6.7279 | 6.5409 | | | 19.74 |
| 4241645 | B | 00111 | | 1.1338 | 7.8143 | 7.3735 | | | 20.15 |
| 4241646MS | B | 00118 | | | | | | | 20.15 |
| 4241647MSD | B | 00118 | | | | | | | 20.15 |
| 4241647MSD | B | 00121 | | 1.1403 | 8.4686 | 7.9428 | | | 19.67 |
| 4241648 | B | 00111 | | 1.1510 | 7.1114 | 6.8133 | | | 20.38 |
| 4241649 | B | 00111 | | 1.1404 | 7.8579 | 7.4597 | | | 19.58 |

Printed by 01201 on 03/27/2004 at 14:16

✓ JC 943 3/29/04

| Sample ID | BI | MAN | Rep # | Tare Wt | Sample Wt | Dry Wt | Dup Diff | %Rel Diff | % Moisture |
|---|---|---|---|---|---|---|---|---|---|
| 4241650 | B | 00111 | | 1.1379 | 7.3135 | 7.0473 | | | 19.20 |
| 4241651 | B | 00111 | | 1.1419 | 7.9223 | 7.6942 | | | 17.29 |
| 4241652 | B | 00111 | | 1.1366 | 9.9609 | 9.5360 | | | 15.68 |
| 4241694 | B | 00111 | | 1.1415 | 8.5007 | 7.8598 | | | 20.97 |

Printed by 01201 on 03/27/2004 at 14:16

Analysis Deleted
LC943 3/29/04

6836

**Alliant Ammunition and Powder Company, L.L.C.**

# FIELD INVESTIGATION REPORT AND RISK ASSESSMENT

## HAZARDOUS WASTE MANAGEMENT UNITS 5 AND 7

**Radford Army Ammunition Plant,**
**Radford, Virginia**

**MARCH 2003**

Draper Aden Associates
2206 South Main Street
Blacksburg, Virginia 24060
DAA Job No. B02271.01

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Appendix E Alternate Source Demonstration for Trichloroethene – HWMU-5

# 1.0 INTRODUCTION/EXECUTIVE SUMMARY

Alliant Ammunition and Powder Company, L.L.C. (AAPC) retained Draper Aden Associates (DAA) to conduct subsurface evaluations to determine the nature and extent of residual material from cleanup activities contained in closed Hazardous Waste Management Units (HWMUs) 5 and 7 at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia. AAPC and the United States Army intended to implement source removal activities in 2003 in support of clean closures for both Units; the results of the field investigation conducted by DAA would be used in the preparation of individual closure plans for both Units. However, the laboratory analytical data collected during the field investigation indicated that the residual material in the Units is not hazardous and does not pose a threat to human health and/or the environment according to VDEQ guidelines and regulations. Therefore, the purpose of the project shifted to compiling a quantitative risk assessment in accordance with the USEPA *Risk Assessment Guidance for Superfund* (RAGS). This document presents the results of the field investigation and the risk assessment.

## 1.1 DESCRIPTION OF HWMU-5

HWMU-5 is a former lined surface impoundment. A Site Plan for HWMU-5 is illustrated in **Figure 1**. HWMU-5 is located approximately 3,000 feet southwest of the New River. The Unit is located on a river terrace that slopes gently downward to the north toward the New River. The Unit was put into operation as an unlined surface impoundment in 1970. In 1981, the Unit was retrofitted with a 60-mil Hypalon Liner; the bottom of the liner was covered with approximately 12 inches of sand, and the sides were covered with approximately 6 inches of sand and six inches of rip-rap. During operation, the Unit received stormwater runoff, spilled liquids, and washdown waters from an acid tank farm. The Unit was taken out of operation in 1986, and was closed in 1989 in accordance with the VDEQ-approved Closure Plan dated May 1988. The basin was drained of all waters, the soil was treated in-place with flyash and cement kiln dust to achieve a target pH of 6.3 and 10.5, and the basin was filled with soil and stone and capped. No waste has been processed through HWMU-5 since it was closed.

## 1.2 DESCRIPTION OF HWMU-7

HWMU-7 is a former unlined holding and neutralization basin located on the floodplain of the New River. A Site Plan for HWMU-7 is illustrated in **Figure 2**. Intermittent drainages are located to the north and south of the Unit, and the New River is located approximately 225 feet to the west of the Unit. The Unit was put into operation in 1972. During operation, influent into HWMU-7 included: spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. The Unit was taken out of operation in 1986, and was closed in 1989 in accordance with the VDEQ-approved Closure Plan dated May 1988. The basin was drained of all waters, the soil was treated in-place with flyash and cement kiln dust to achieve a target pH of 6.3 and 10.5, and the basin was filled with soil and stone and capped. No waste has been processed through HWMU-7 since it was closed.

## 2.0 SUBSURFACE EVALUATIONS

### 2.1 FIELD INVESTIGATION PROCEDURES

On October 31 and November 1, 2002, DAA advanced 16 soil borings at each Unit using a track-mounted Geoprobe® rig. The boring locations for HWMU-5 and for HWMU-7 are illustrated in **Figure 1** and **Figure 2**, respectively. The borings were located in a pattern to best determine the horizontal and vertical extent of the residual material in each Unit. At each Unit, nine borings were advanced within the Unit boundaries, and six borings were advanced around the perimeter just outside of the Unit boundaries. One additional boring was advanced approximately 30 feet topographically upgradient from each Unit for the collection of background soil samples. Soil samples were collected continuously throughout each of the borings. The differentiation between residual material and native soil was based on visual observation. The borings were backfilled with bentonite upon completion.

The nine borings located within HWMU-5 were advanced through the cap system and residual material and were terminated in the base sand layer; the borings did not penetrate the bottom 60-mil Hypalon liner. The nine borings located within HWMU-7 were advanced through the cap system and residual material and into the clay bottom liner; four of the borings were advanced through the clay liner and into native soils. The boring logs for both Units are presented in **Appendix A**.

At each Unit, DAA randomly collected eight soil samples from the 16 borings for laboratory analysis for the USEPA Target Analyte List (TAL) inorganic compounds and for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. The data validation reports and laboratory analytical data are presented in **Appendix B**.

DAA collected composite soil samples Unit-5-TCLP and Unit-7-TCLP from the residual material from the borings advanced within HWMU-5 and HWMU-7, respectively. The composite soil samples were submitted to the laboratory for waste characterization analysis. The waste characterization laboratory analytical results are presented in **Appendix C**. The soil cuttings and waste Geoprobe® sample collection sleeves were containerized (one drum per Unit) and staged at a central location on-site pending proper disposal.

The geosynthetic layers within the caps of both Units were penetrated by the Geoprobe® borings. The caps were repaired in accordance with VDEQ guidance. The results of the cap restoration activities are presented in **Appendix D**.

### 2.2 SUBSURFACE GEOLOGY

According to the *Soil Survey of Montgomery County, Virginia* (USDA, 1985), the areas in which HWMU-5 and HWMU-7 are located are underlain by soils of the Unison-Urban Land Complex (**Figure 3**). The Unison-Urban Land Complex makes up about 40% of the surface area

of Radford AAP, and consists of about 50% deep and well drained Unison soils, 30% Urban Land, and 20% other soils. This complex of soils varies in slope from 2 to 25%. In an undisturbed area, the Unison soils have a 15-inches thick surface layer of dark brown loam and a 43-inches thick subsoil of yellowish-red, sticky plastic clay underlain by a red sandy clay loam to a depth of 58 inches. This clay-rich layer is typically underlain by a brown sand to about 10 feet below ground surface (bgs), which then grades into a brown clay. Permeability is moderate in Unison soils, natural fertility is low, and organic matter content is low to moderate. The soil is medium to strongly acidic. Urban land is covered by pavement or structures; the original soil has been physically altered or obscured so that classification is not practical.

Underlying the soils throughout most of Radford AAP is a series of dolomite, limestone and shale strata known as the Cambrian-aged Elbrook Formation. The Elbrook Formation is the major outcropping formation as well as the predominant karstic formation below the facility. Sinkholes, solution channels, pinnacled surfaces, and springs are common to the Elbrook Formation. The bedrock beneath Units 5 and 7 is generally encountered at depths ranging from approximately 28 feet to over 65 feet below ground level, although the soil/bedrock interface is gradational.

Groundwater at both Units generally is encountered within the weathered bedrock residuum. Groundwater movement beneath HWMU-5 is toward the northeast; the groundwater contours and topography in this area suggest that HWMU-5 is located on a river terrace that contains several karst features and drains north toward the New River. Groundwater movement beneath HWMU-7 is generally to the west toward the New River, and to the northeast and southwest toward intermittent drainages that flow into the New River north and south of the Unit.

### 2.2.1 Material Profile of HWMU-5

According to the 1989 closure documentation, the cover system installed over the neutralized residual material at HWMU-5 consisted of a two-foot clay layer overlain by a 30-mil PVC membrane, which was in turn overlain by a one-foot drainage sand layer. The drainage sand layer was overlain by a one-foot soil cover and a one-foot topsoil and grass cover. Additional elements of the cover system included rip-rap slope protection and a filter cloth underneath the rip-rap to prevent piping of the cover soil along the Unit perimeter.

At HWMU-5, the nine borings located within the Unit boundaries (5GP-1, 5GP-2, 5GP-3, 5GP-5, 5GP-6, 5GP-8, 5GP-9, 5GP-10, and 5GP-11; **Figure 1**) were advanced to depths ranging from 10 to 12 feet below ground surface (bgs). The nine borings encountered a layer of topsoil approximately 0.5 foot thick, which was underlain by red-brown sandy clay ranging in thickness from 1 foot to 2 feet. The red-brown sandy clay in turn was underlain by light gray sand (drainage layer) ranging in thickness from 0.75 foot to 1 foot. The 30-mil PVC liner was encountered beneath the drainage sand layer. The PVC liner was underlain by light gray and yellow-brown mottled clay ranging in thickness from 2.5 feet to 4 feet. The clay layer in turn was underlain by red-brown to yellow-brown silty sand with green, compacted residual material. Borings 5GP-1 and 5GP-6 were terminated in light gray sand beneath the residual material – this

sand corresponds to the sand placed above the Unit's 60-mil Hypalon liner. The thickness of the residual material ranged from 4.5 feet to 6 feet. The remaining seven borings were terminated in residual material. The 60-mil Hypalon liner was not penetrated by any of the borings. A geologic cross-section of HWMU-5 is included as **Figure 4**.

The six borings located around the perimeter of HWMU-5 (5GP-4, 5GP-7, 5GP-12, 5GP-13, 5GP-14, and 5GP-15) were advanced to a depth of 4 feet bgs each. Red-brown to brown clay with gravel was encountered in each of the perimeter borings; no residual material was encountered in these six borings.

Boring 5GP-16 was located approximately 30 feet topographically upgradient from HWMU-5 for the collection of a background soil sample. Boring 5-GP-16 was advanced to a depth of 4 feet. Brown clay and red-brown sandy clay were encountered in boring 5GP-16.

### 2.2.2 Material Profile of HWMU-7

According to the 1989 closure documentation, the cover system installed over the neutralized residual material at HWMU-7 consisted of a two-foot clay layer overlain by a 30-mil PVC membrane, which was in turn overlain by a one-foot drainage sand layer. The drainage sand layer was overlain by a one-foot soil cover and a one-foot topsoil and grass cover. Additional elements of the cover system included rip-rap slope protection and a filter cloth underneath the rip-rap to prevent piping of the cover soil along the Unit perimeter.

At HWMU-7, the nine borings located within the Unit boundaries (7GP-1, 7GP-2, 7GP-3, 7GP-5, 7GP-6, 7GP-8, 7GP-9, 7GP-10, and 7GP-11; **Figure 2**) were advanced to depths ranging from 12 to 20 feet below ground surface (bgs). The nine borings encountered a layer of topsoil approximately 1 foot to 1.5 feet thick, which was underlain by yellow-brown sandy clay ranging in thickness from 1.25 feet to 2 feet. The yellow-brown sandy clay in turn was underlain by light gray sand (drainage layer) ranging in thickness from 0.50 foot to 1.5 feet. The 30-mil PVC liner was encountered beneath the drainage sand layer. The PVC liner was underlain by yellow-brown silty sand with green, compacted residual material. The thickness of the residual material ranged from 5 feet to 8.5 feet. The residual material in turn was underlain by red-brown to yellow-brown sandy clay ranging in thickness from 1.75 feet to 3 feet. Borings 7GP-5, 7GP-6, 7GP-8, 7GP-10, and 7GP-11 were terminated in the sandy clay. Borings 7GP-1, 7GP-2, and 7GP-9 penetrated the sandy clay and encountered dark gray fine sand and silt with round gravel; the dark gray sand and silt exhibited an aquatic odor. The red-brown to yellow-brown sandy clay was not encountered in boring 7GP-3; the dark gray sand and silt was encountered beneath the residual material at a depth of 9.5 feet bgs in boring 7GP-3. A geologic cross-section of HWMU-7 is included as **Figure 5**.

Five of the six borings located around the perimeter of HWMU-7 (7GP-7, 7GP-12, 7GP-13, 7GP-14, and 7GP-15) were advanced to a depth of 4 feet bgs each; boring 7GP-4 was advanced to a depth of 8 feet bgs. Brown sand was encountered in each of the perimeter borings, and dark gray fine sand and silt with round gravel was encountered at a depth of 7.75 feet bgs in boring 7GP-4. No residual material was encountered in the six perimeter borings.

Boring 7GP-16 was located approximately 30 feet topographically upgradient from HWMU-7 for the collection of a background soil sample. Boring 7GP-16 was advanced to a depth of 4 feet. Brown sand was encountered in boring 7GP-16.

## 2.3 SOIL SAMPLE COLLECTION AND ANALYTICAL RESULTS

### 2.3.1 HWMU-5

On October 31, 2002, DAA randomly collected eight soil samples from the 16 borings advanced at HWMU-5. The eight samples and the material from which they were collected are listed below:

- 5GP-1 (1-2') cap material (clay and sand above the PVC membrane);
- 5GP-1 (9-10') residual material;
- 5GP-3 (9-10') residual material;
- 5GP-6 (10-11') base sand (beneath the residual material);
- 5GP-8 (7-8') residual material;
- 5GP-8 (11-12') residual material;
- 5GP-12 (3-4') soil adjacent to the Unit; and
- 5GP-16 (3-4') background soil.

Aliquots of the eight soil samples were submitted to Severn Trent Laboratories of North Canton, Ohio for analysis for the USEPA Target Analyte List (TAL) inorganic compounds. Separate aliquots of the eight soil samples were submitted to Lancaster Laboratories of Lancaster, Pennsylvania for analysis for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. The data validation reports and laboratory analytical data are presented in **Appendix B**. A summary of the TAL inorganic constituents and the TCL organic constituents detected in the eight soil samples from HWMU-5 at concentrations above the respective Limits of Quantitation (LOQs) is presented in **Table 1**.

As shown in **Table 1**, the concentrations of TAL inorganic constituents detected in the samples of residual material are comparable to the TAL inorganic constituent concentrations detected in the samples of the cap material, base sand, adjacent soil, and background soil; the highest concentrations of 10 of the 16 TAL inorganic constituents detected were observed in the samples of the cap material, base sand, or adjacent soil. Cap material sample 5GP-1 (1-2') exhibited the highest concentrations of barium (85.1 mg/kg), lead (12.9 mg/kg), potassium (1,580 mg/kg), vanadium (64.9 mg/kg), and zinc (35.3 mg/kg). Base sand sample 5GP-6 (10-11') exhibited the highest concentration of calcium (9,930 mg/kg). Adjacent soil sample 5GP-12 (3-4') exhibited the highest concentrations of aluminum (19,600 mg/kg), iron (33,400 mg/kg), magnesium (2,200 mg/kg), and manganese (457 mg/kg). Residual material sample 5GP-1 (9-10') exhibited the highest concentrations of chromium (31.7 mg/kg), cobalt (17.6 mg/kg), and copper (19.8 mg/kg). Residual material sample 5GP-8 (7-8') exhibited the highest concentrations of arsenic (4.1 mg/kg) and beryllium (1.3 mg/kg). It should be noted that

background soil sample 5GP-16 (3-4') exhibited an arsenic concentration of 4.0 mg/kg. Residual material sample 5GP-8 (11-12') exhibited an aluminum concentration of 19,600 mg/kg – the same concentration as adjacent soil sample 5GP-12 (3-4').

Only one TCL organic constituent was detected in three of the eight soil samples from HWMU-5. The pesticide 4,4-DDD was detected in residual material samples 5GP-1 (9-10') and 5GP-8 (7-8') at concentrations of 0.019 mg/kg and 0.051 mg/kg, respectively, and in base sand sample 5GP-6 (10-11') at a concentration of 0.0067 mg/kg. No other TCL organic constituents were detected in any of the soil samples from HWMU-5.

### 2.3.2 HWMU-7

On November 1, 2002, DAA randomly collected eight soil samples from the 16 borings advanced at HWMU-5. The eight samples and the material from which they were collected are listed below:

- 7GP-1 (1-3') cap material (clay and sand above the PVC membrane);
- 7GP-2 (8-12') residual material;
- 7GP-2 (13.5-14.5') base clay (beneath the residual material);
- 7GP-3 (10-11') native soil (beneath the Unit);
- 7GP-4 (3-4') soil adjacent to the Unit;
- 7GP-5 (6-11') residual material;
- 7GP-8 (5-8') residual material; and
- 7GP-16 (3-4') background soil.

Aliquots of the eight soil samples were submitted to Severn Trent Laboratories of North Canton, Ohio for analysis for the USEPA Target Analyte List (TAL) inorganic compounds. Separate aliquots of the eight soil samples were submitted to Lancaster Laboratories of Lancaster, Pennsylvania for analysis for the USEPA Target Compound List (TCL) organic compounds. The laboratory analytical results were subjected to Level IV data validation. The data validation reports and laboratory analytical data are presented in **Appendix B**. A summary of the TAL inorganic constituents and the TCL organic constituents detected in the eight soil samples from HWMU-7 is presented in **Table 2**.

As shown in **Table 2**, the concentrations of TAL inorganic constituents detected in the samples of residual material are comparable to the TAL inorganic constituent concentrations detected in the samples of the cap material, base clay, native soil, adjacent soil, and background soil; the highest concentrations of 15 of the 18 TAL inorganic constituents detected were observed in the samples of the cap material, base clay, native soil, and background soil. Cap material sample 7GP-1 (1-3') exhibited the highest concentrations of magnesium (4,290 mg/kg) and manganese (662 mg/kg). Base clay sample 7GP-2 (13.5-14.5') exhibited the highest concentrations of cobalt (16.2 mg/kg) and iron (29,300 mg/kg). Native soil sample 7GP-3 (10-11') exhibited the highest concentrations of arsenic (26.1 mg/kg), barium (229 mg/kg), beryllium (1.5 mg/kg), calcium (28,100 mg/kg), chromium (32.8 mg/kg), copper (23.2 mg/kg), lead (35.1 mg/kg), and potassium (2,970 mg/kg), as well as the only detections of selenium (3.5 mg/kg),

and cyanide (0.69 mg/kg). Background soil sample 7GP-16 (3-4') exhibited the highest concentration of zinc (39.7 mg/kg). Residual material sample 7GP-2 (8-12') exhibited the highest concentration of nickel (21.6 mg/kg). Residual material sample 7GP-8 (5-8') exhibited the highest concentrations of aluminum (22,400 mg/kg) and vanadium (61.8 mg/kg).

Only three TCL organic constituents were detected in two of the eight soil samples from HWMU-7. The pesticide 4,4-DDD was detected in base clay sample 7GP-2 (13.5-14.5') at a concentration of 0.0035 mg/kg. In native soil sample 7GP-3 (10-11'), the pesticide 4,4-DDE and the semi-volatile compound n-nitrosodiphenylamine were detected at concentrations of 0.0035 mg/kg and 0.75 mg/kg, respectively. No other TCL organic constituents were detected in any of the soil samples (including the residual material samples) from HWMU-7.

### 2.3.3 Waste Characterization Analytical Results

DAA collected composite soil samples Unit-5-TCLP and Unit-7-TCLP from the residual material from the borings advanced within HWMU-5 and HWMU-7, respectively. The composite soil samples were submitted to the laboratory for waste characterization analysis. The soil cuttings and waste Geoprobe® sample collection sleeves were containerized (one drum per Unit) and staged at a central location on-site pending proper disposal.

The waste characterization laboratory analytical results are presented in **Appendix C**, and summarized **Table 3**. Based on the results of the waste characterization analyses, the residual material at HWMU-5 and at HWMU-7 cannot be classified as hazardous.

## 3.0 RISK ASSESSMENT

The procedures used to evaluate the data gathered during the field investigations at HWMU-5 and HWMU-7 were derived from the USEPA *Soil Screening Guidance* (July 1996) and the USEPA *Risk Assessment Guidance for Superfund* (RAGS). For the purposes of the risk assessments for each Unit, the detected constituent concentrations were compared to those from background samples collected from nearby areas (boring 5GP-16 at HWMU-5 and boring 7GP-16 at HWMU-7) as well as to facility-wide background concentrations derived from the IT Corporation *Radford Army Ammunition Plant Facility-Wide Background Report* (December 2001). Due to the fact that the planned future use for the capped Units is to leave them in place, the only potential exposure pathway was determined to be through constituent migration from soil to groundwater. Therefore, following the comparison to background concentrations, any constituent concentrations that exceeded their respective background concentrations were then compared to USEPA Region III Soil-to-Groundwater soil screening levels (SSLs). In addition, although expsosure to the residual material through direct ingestion was determined to be improbable, any constituent concentrations that exceeded their respective background concentrations also were compared to USEPA Region III risk-based concentrations (RBCs) for residential soil ingestion.

As specified in the USEPA Region III Soil-to-Groundwater SSLs memo (October 27, 1999), the soil-to-groundwater SSLs used in this risk assessment were the Region III tap water (residential) RBCs multiplied by a dilution attenuation factor (DAF) of 20. The DAF of 20 was chosen because Radford AAP is an industrial facility with no users of groundwater; therefore, this was deemed protective of human health and the environment. The DAF 20's for the constituents presented in this report were derived from the latest USEPA Region III RBC Table (October 9, 2002).

The *Soil Screening Guidance* is a tool developed by the USEPA to help standardize and accelerate the evaluation and cleanup of contaminated soils at sites on the National Priorities List (NPL) where future residential land use is anticipated. The *Soil Screening Guidance* provides a methodology to calculate risk-based, site-specific SSLs for contaminants in soil that may be used to identify areas needing further investigation at NPL sites. SSLs are designed for screening purposes. Exceedances of SSLs typically indicate that more detailed assessment is necessary. Accordingly, no exceedances of SSLs would indicate that no further assessment is necessary. SSLs are not intended as cleanup levels, and are not intended as trigger levels that require remediation.

SSLs developed in accordance with the *Soil Screening Guidance* are based on future residential land use assumptions and related exposure scenarios. The Radford AAP is an industrial site and will never be used for residential purposes; however, SSLs developed in accordance with the *Soil Screening Guidance* can be used for sites with non-residential land use as a tool to conduct a conservative initial screening. As stated in the *Soil Screening Guidance: Fact Sheet* (July, 1996), "Generally, at sites where contaminant concentrations fall below SSLs, no further action or study is warranted..."

## 3.1 FACILITY-WIDE BACKGROUND STUDY (IT CORPORATION)

In August and September 2001, the IT Corporation conducted a Facility-Wide Background Study at the Main Manufacturing Area and the New River Unit of Radford AAP in accordance with a USEPA Region III-approved Work Plan. As stated in the *Radford Army Ammunition Plant Facility-Wide Background Report* (December 2001), the primary objective of the study was to collect soil samples representative of background conditions to establish a baseline for inorganic constituents of concern at Radford AAP. Sampling locations were positioned in tree stands to ensure associated soil samples were representative of areas that had not been affected by previous site activities or releases. Wherever possible, background sample locations were placed in tree stands estimated to predate potential construction activity at each location. The background soil samples were analyzed for the USEPA TAL inorganic compounds and for the USEPA TCL organic compounds. No TCL organic compounds were detected in the background soil samples.

Following the collection and analysis of the background soil samples, IT Corporation initially calculated facility-wide point estimates for the background soil data as confidence limits. As a result of discussions with the USEPA and VDEQ, the final facility-wide point estimates for the background soil data were calculated as tolerance limits. The use of tolerance limits rather than confidence limits evolved from comments questioning the use of the 95% upper confidence limit (UCL) as the point estimate for the background value. The 95% UCL was originally included in the Facility-Wide Background Study as a general point of reference. A confidence interval is used for comparisons within a single population. A compliance data set is then typically compared to a known standard. Using the 95% UCL as a single point comparison or background value, however, is likely to result in classifying many chemicals as greater than background when they are not. These misclassifications would be due to the 95% UCL representing an estimate of the mean. Such misclassifications could occur as often as 50% of the time. A tolerance limit is used for comparisons of similar but distinct populations. A concentration range is defined from a background data set, within which a large proportion of compliance data should fall with high probability. Therefore, it was recommended that a 95% upper tolerance limit (UTL) be developed in the Background Study for use as point-by-point comparisons.

The 95% UTLs calculated by the IT Corporation for the inorganic constituents detected in the background soil samples from the Main Manufacturing Area are summarized in **Table 4**. These facility-wide background values, in conjunction with the Unit-specific background concentrations detected in the samples from borings 5GP-16 and 7GP-16, were used in the initial comparisons to background for the inorganic constituents detected in the soil samples from HWMU-5 and HWMU-7, respectively.

## 3.2 HWMU-5

### 3.2.1 Comparison of Inorganic Constituent Concentrations to Background

The initial comparison of the detected inorganic constituent concentrations to background concentrations for the soils samples collected from HWMU-5 is summarized in **Table 5**. The maximum detected constituent concentrations were compared to those from background sample 5GP-16 (3-4') as well as to the facility-wide background concentrations. All of the maximum detected constituent concentrations exceeded the concentrations detected in background sample 5GP-16 (3-4'). However, with the exception of calcium, magnesium, and potassium, the maximum detected inorganic constituent concentrations did not exceed the facility-wide background concentrations; therefore, the detected inorganic constituents are not considered to be constituents of potential concern. Furthermore, due to the fact that calcium, magnesium, and potassium are not hazardous constituents as listed in Appendix VIII of 40 CFR Part 261, they are not considered to be constituents of potential concern even though their maximum detected concentrations exceeded their respective background concentrations.

### 3.2.2 Comparison to EPA Region III Residential Soil and Soil-to-Groundwater SSLs

Based on the initial comparison to background concentrations, none of the inorganic constituents detected in the soil samples from HWMU-5 were considered to be constituents of potential concern. Therefore, only the detected TCL organic constituent 4,4-DDD was compared to the USEPA Region III residential soil RBC and Soil-to-Groundwater SSL. As shown in **Table 6**, the maximum 4,4-DDD detected concentration of 0.051 mg/kg is below the residential soil RBC of 2.7 mg/kg, and below the soil-to-groundwater DAF 20 SSL of 11 mg/kg. Therefore, 4,4-DDD is not considered to be a constituent of potential concern at HWMU-5.

## 3.3 HWMU-7

### 3.3.1 Comparison of Inorganic Constituent Concentrations to Background

The initial comparison of the detected inorganic constituent concentrations to background concentrations for the soils samples collected from HWMU-7 is summarized in **Table 7**. The maximum detected constituent concentrations were compared to those from background sample 7GP-16 (3-4') as well as to the facility-wide background concentrations. With the exception of zinc, all of the maximum detected constituent concentrations exceeded the concentrations detected in background sample 7GP-16 (3-4'). The maximum detected concentrations of beryllium, calcium, magnesium, potassium, and selenium exceeded their respective facility-wide background concentrations. Due to the fact that calcium, magnesium, and potassium are not hazardous constituents as listed in Appendix VIII of 40 CFR Part 261, these three constituents are not considered to be constituents of potential concern, even though their maximum detected concentrations exceeded their respective background concentrations. However, although the only detected concentrations of beryllium and selenium were observed in native soil sample 7GP-3 (10-11'), these two constituents were retained for further comparison to the USEPA Region III Soil-to-Groundwater SSLs. The maximum detected concentrations for the remaining

inorganic constituents did not exceed their respective facility-wide background concentrations; therefore, these detected inorganic constituents are not considered to be constituents of potential concern.

### 3.3.2 Comparison to EPA Region III Residential Soil and Soil-to-Groundwater SSLs

Based on the initial comparison to background concentrations, the concentrations of inorganic constituents beryllium and selenium detected in native soil sample 7GP-3 (10-11') were retained for comparison to the USEPA Region III residential soil RBCs and Soil-to-Groundwater SSLs. In addition, the cyanide, 4,4-DDE, and n-nitrosodiphenylamine concentrations detected in native soil sample 7GP-3 (10-11') and the 4,4-DDD concentration detected in base clay sample 7GP-2 (13.5-14.5') were compared to the respective USEPA Region III residential soil RBCs and Soil-to-Groundwater SSLs. As shown in **Table 8**, the detected concentrations of beryllium, selenium, cyanide, 4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine are all below their respective residential soil RBCs and below their respective soil-to-groundwater DAF 20 SSLs. Furthermore, organic constituents 4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine have never been detected in the groundwater at HWMU-7 during annual monitoring for the all of the constituents listed in Appendix IX (Groundwater Monitoring List) of 40 CFR Part 264 as required by the Hazardous Waste Post-Closure Care Permit for the Unit. Therefore, beryllium, selenium, cyanide, 4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine are not considered to be constituents of potential concern at HWMU-7.

## 3.4 EXPOSURE ASSESSMENT

HWMU-5 and HWMU-7 are capped using impermeable PVC membranes and 2-3 feet of soil; therefore, there is no risk of exposure to human health and/or the environment through direct ingestion of the residual material or by inhalation of vapors or fugitive dusts. In addition, the constituent concentrations that exceeded their respective background concentrations were below their respective USEPA Region III risk-based concentrations (RBCs) for residential soil ingestion.

The only potential exposure pathway is through constituent migration from soil to groundwater. However, Radford AAP is an industrial facility with no users of groundwater. Furthermore, based on the comparison to the USEPA Region III Soil-to-Groundwater SSLs (derived from the Region III tap water RBCs multiplied by a DAF of 20), none of the constituents detected at HWMU-5 and at HWMU-7 at concentrations exceeding the facility-wide background concentrations are considered to be of concern. Therefore, exposure via constituent migrations from soil to groundwater is not considered to be a potential risk.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the field investigation, the residual material in HWMU-5 and in HWMU-7 is not hazardous and should be left in place. The Units are capped using impermeable PVC membranes and 2-3 feet of soil; therefore, there is no risk of exposure to human health and/or the environment through direct ingestion of the residual material or by inhalation of vapors or fugitive dusts. In addition, the concentrations of the inorganic and organic constituents detected in soil samples collected from both Units do not pose a risk to groundwater via migration from the soil. Therefore, leaving the residual material in place does not pose a threat to human health and/or the environment according to VDEQ guidelines and regulations. Accordingly, Radford AAP requests that certifications for clean closure for soil be issued for both Units.

### 4.1 GENERAL GROUNDWATER MONITORING PROGRAM ISSUES

The groundwater at HWMU-5 and at HWMU-7 currently is monitored in accordance with the requirements of the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7 10, and 16 (October 4, 2002). Due to the fact that the results of this investigation indicate that the residual material at both Units is not hazardous, Radford AAP desires to develop a protocol with which to cease groundwater monitoring at HWMU-5 and HWMU-7 under the Final Hazardous Waste Post-Closure Care Permit. This protocol is similar to the procedures specified in Permit Conditions V.F.1.c and V.F.2.c, wherein corrective action can be terminated if the Permittees demonstrate that the Groundwater Protection Standard has not been exceeded for three (3) consecutive years. In the event that the Groundwater Protection Standard is not exceeded for three (3) consecutive years at HWMU-5 and/or HWMU-7, Radford AAP will submit to the VDEQ a Minor Modification to the Final Hazardous Waste Post-Closure Care Permit petitioning for clean closure for groundwater at HWMU-5 and/or HWMU-7.

#### 4.1.1 HWMU-5

Radford AAP proposes to monitor the groundwater at HWMU-5 for those inorganic constituents detected in the October 31, 2002 soil samples that are also listed in Appendix VIII (Hazardous Constituents) of 40 CFR Part 261, as well as for the one organic constituent (4,4-DDD) detected in the October 31, 2002 soil samples. Radford AAP will monitor for these constituents **in addition to** the constituents listed in the compliance groundwater monitoring list for HWMU-5 specified in the Final Hazardous Waste Post-Closure Care Permit, as appropriate. Due to the fact that no other organic constituents were detected in the soil samples from HWMU-5, any organic constituents other than 4,4-DDD detected in groundwater at HWMU-5 would have to be derived from an alternate source, and would fall under the jurisdiction of Radford AAP's USEPA Region III Corrective Action Program. Radford AAP proposes that groundwater monitoring at HWMU-5 would cease in the event that 4,4-DDD is not detected for three (3) consecutive years, and in the event that the inorganic constituents are not detected at concentrations exceeding their respective USEPA Maximum Contaminant Levels (MCLs) or VDEQ Alternate Concentration Limits (ACLs) for three (3) consecutive years. Radford AAP is

an industrial facility with no users of groundwater; therefore, the USEPA MCLs and VDEQ ACLs, which are residential drinking water standards, provide conservative standards with which to compare the inorganic constituent concentrations detected at the Unit.

Radford AAP will follow this groundwater monitoring protocol as well as the compliance groundwater monitoring protocol specified in the Final Hazardous Waste Post-Closure Care Permit until the VDEQ approves Radford AAP's petition for the cessation of groundwater monitoring and certifications for clean closure of soil and groundwater have been issued for HWMU-5. In accordance with Permit Condition I.J.1, Radford AAP will request a reduction in the post-closure period for HWMU-5 upon receipt of certification of clean closure from the VDEQ. Radford AAP assumes that certifications for clean closure of soil and groundwater will trigger the termination of the post-closure period and signify the completion of post-closure care at HWMU-5.

### 4.1.2 HWMU-7

Radford AAP proposes to monitor the groundwater at HWMU-7 for those inorganic constituents detected in the November 1, 2002 soil samples that are also listed in Appendix VIII (Hazardous Constituents) of 40 CFR Part 261, as well as for the three organic constituents (4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine) detected in the November 1, 2002 soil samples. Radford AAP will monitor for these constituents **in addition to** the constituents listed in the compliance groundwater monitoring list for HWMU-7 specified in the Final Hazardous Waste Post-Closure Care Permit, as appropriate. Due to the fact that no other organic constituents were detected in the soil samples from HWMU-7, any organic constituents other than 4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine detected in groundwater at HWMU-7 would have to be derived from an alternate source, and would fall under the jurisdiction of Radford AAP's USEPA Region III Corrective Action Program. Radford AAP proposes that groundwater monitoring at HWMU-7 would cease in the event that 4,4-DDD, 4,4-DDE, and n-nitrosodiphenylamine are not detected for three (3) consecutive years, and in the event that the inorganic constituents are not detected at concentrations exceeding their respective USEPA MCLs or VDEQ ACLs for three (3) consecutive years. Radford AAP is an industrial facility with no users of groundwater; therefore, the USEPA MCLs and VDEQ ACLs, which are residential drinking water standards, provide conservative standards with which to compare the inorganic constituent concentrations detected at the Unit.

Radford AAP will follow this groundwater monitoring protocol as well as the compliance groundwater monitoring protocol specified in the Final Hazardous Waste Post-Closure Care Permit until the VDEQ approves Radford AAP's petition for the cessation of groundwater monitoring and certifications for clean closure of soil and groundwater have been issued for HWMU-7. In accordance with Permit Condition I.J.1, Radford AAP will request a reduction in the post-closure period for HWMU-7 upon receipt of certification of clean closure from the VDEQ. Radford AAP assumes that certifications for clean closure of soil and groundwater will trigger the termination of the post-closure period and signify the completion of post-closure care at HWMU-7.

## 4.2 TRICHLOROETHENE IN GROUNDWATER AT HWMU-5

Trichloroethene (TCE) has been detected repeatedly at concentrations exceeding the USEPA Maximum Contaminant Level (MCL) of 5 µg/l in four groundwater monitoring wells within the monitoring network for HWMU-5. In correspondence to Radford AAP dated September 27, 2000, the VDEQ requested that Radford AAP implement a Corrective Action Program at HWMU-5 to address the TCE concentrations in groundwater which exceeded the USEPA MCL. During a teleconference between the VDEQ and Radford AAP on October 31, 2000, AAPC stated that, based on historical information for HWMU-5, it was believed that the wastes handled at the Unit prior to closure did not contain TCE or other organic compounds. Furthermore, TCE concentrations below the USEPA MCL had been detected in the upgradient monitoring well for the Unit during previous monitoring events. Therefore, it was believed that HWMU-5 was not the source of the TCE detected in the groundwater. In accordance with VDEQ guidance and pursuant to 40 CFR 264.99(i), AAPC chose to demonstrate that TCE was derived from a source other than HWMU-5. A copy of the Alternate Source Demonstration for Trichloroethene for HWMU-5 is included in **Appendix E**.

Historic information regarding operations at HWMU-5 prior to closure indicated that the wastes processed through the Unit did not contain TCE. A review of Radford AAP cleaning and maintenance practices in the vicinity of HWMU-5 identified areas in which chlorinated solvents had been used. An evaluation of historic waste disposal practices in these areas indicated the potential for groundwater impact from these operations. Hydrogeologic features such as fracture traces and sinkholes in this area would facilitate the transport of impacted groundwater from these potential source areas to certain monitoring wells (5W5B [shallow residuum] and nested wells 5WC21 [shallow residuum], 5WC22 [mid-depth residuum], and 5WC23 [deep residuum]) within the groundwater monitoring network for HWMU-5. Only these certain monitoring wells consistently exhibit TCE concentrations in exceedance of the USEPA MCL of 5 µg/l. In addition, TCE was detected in upgradient monitoring well 5W8B at a concentration exceeding the USEPA MCL during First Quarter 2002.

TCE was not detected in any of the soil samples collected within and around HWMU-5 during the October 31, 2002 field investigation. Based on the findings of the 2001 ASD as well as the October 31, 2002 field investigation and Year 2002 quarterly groundwater monitoring, it is Radford AAP's conclusion that the detected TCE concentrations in groundwater are derived from a source other than HWMU-5. Radford AAP assumes that remediation of TCE in groundwater in this area will fall under the jurisdiction of Radford AAP's USEPA Region III Corrective Action Program, and that TCE concentrations derived from an alternate source will not prevent HWMU-5 from receiving certification for clean closure of groundwater based on the protocol described in Section 4.1.1 of this report.

## 5.0 REFERENCES


Draper Aden Associates, *Alternate Source Demonstration for Trichloroethene – Hazardous Waste Management Unit 5, Radford Army Ammunition Plant, Radford, Virginia*, February 2001.

IT Corporation, *Radford Army Ammunition Plant Facility-Wide Background Study*, December 2001.

USDA, *Soil Survey of Montgomery County, Virginia*, 1985.

USEPA, *Soil Screening Guidance*, July 1996.

# FIGURES

NORTH

## LEGEND

5GP–15 △ GEOPROBE BORING LOCATION

A — A' CROSS SECTION LINE

HWMU 5

5GP–1 5GP–2 5GP–3 5GP–4 5GP–5 5GP–6 5GP–7 5GP–8 5GP–9 5GP–10 5GP–11 5GP–12 5GP–13 5GP–14 5GP–15 5GP–16

M.H.

1782 1780 1778 1776 1784 1786 1772 1770 1774

GRAPHIC SCALE

20 0 10 20 40

( IN FEET )
1 inch = 20 ft.

P:\B02\200\B02271\B02271-01\CAD\271-01.dwg\B02271-01_HWMU5.dwg Dec 12, 2002 4:53pm


**Draper Aden Associates**
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Raleigh-Durham, NC

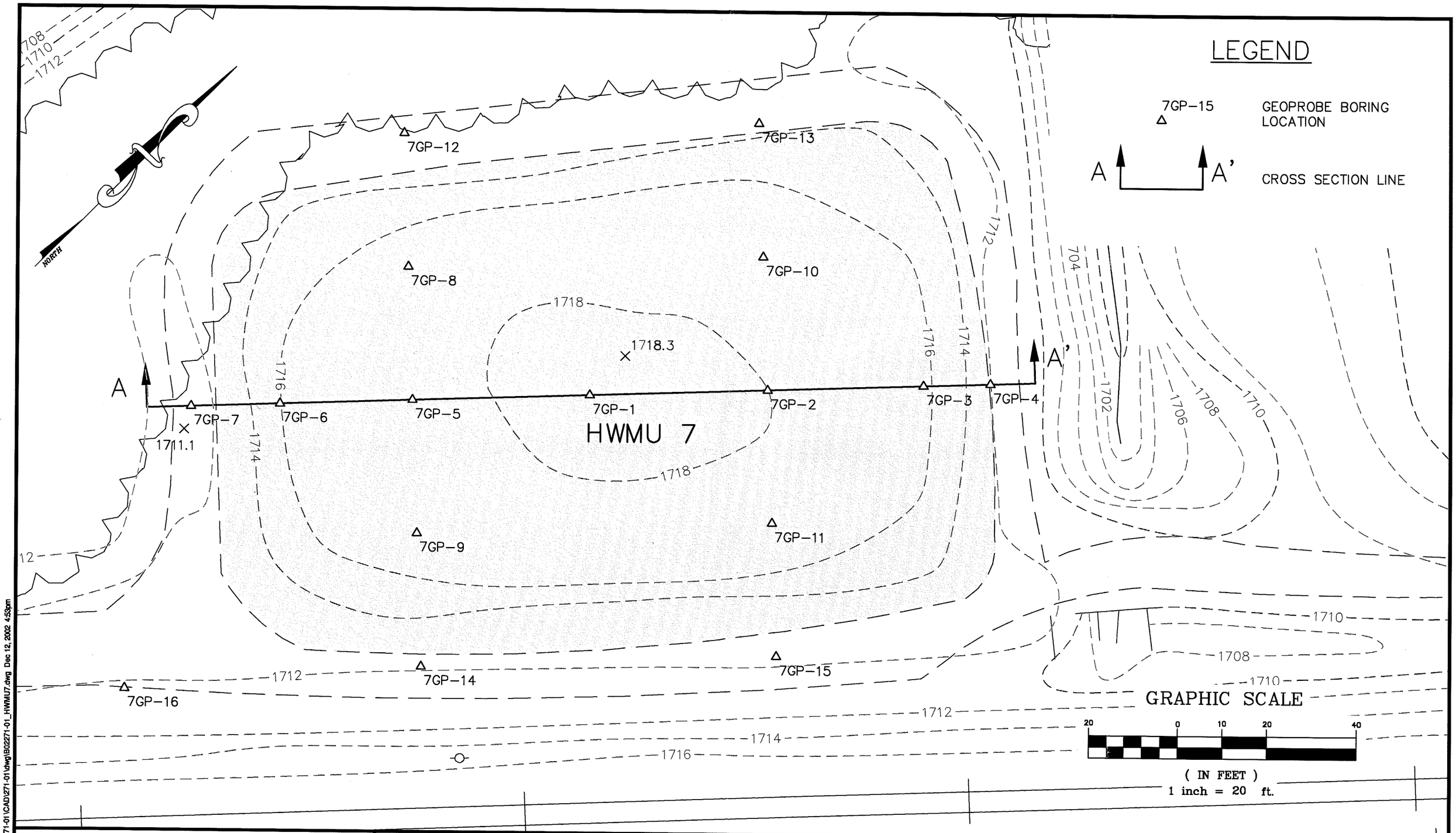

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | MDL |
| DATE | 11/25/02 |

SITE PLAN - HAZARDOUS WASTE MANAGEMENT UNIT-5
# RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B02271-01

FIGURE 1




P:\B02\200\B02271\B02271-01\CAD\C71-01\dwg\B02271-01_HWMU7.dwg Dec 12, 2002 4:53pm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Raleigh-Durham, NC

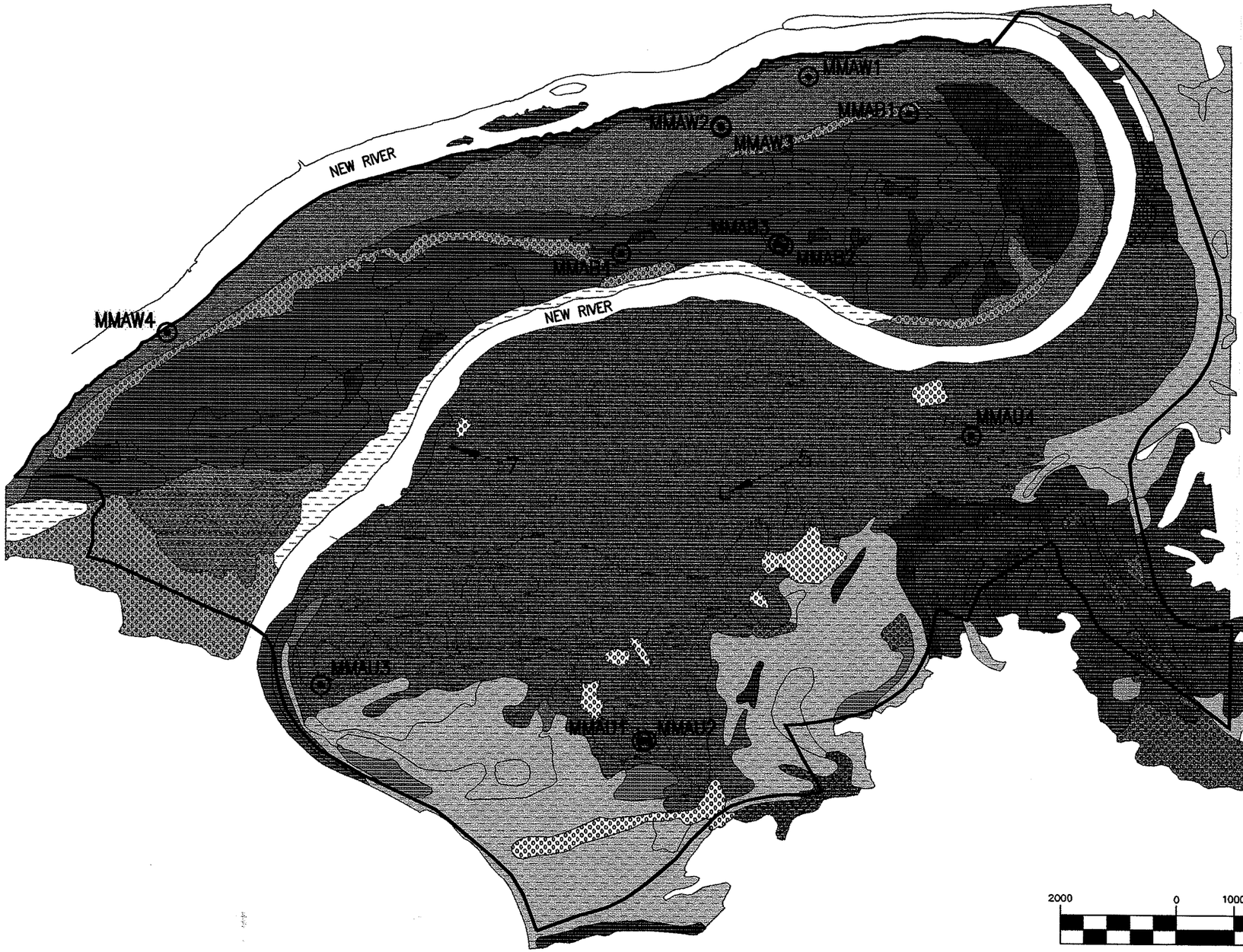

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | MDL |
| DATE | 12/11/02 |

SITE PLAN - HAZARDOUS WASTE MANAGEMENT UNIT-7
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B02271-01

FIGURE 2




**LEGEND**

- BACKGROUND SAMPLE LOCATION
- INSTALLATION BOUNDARY

HORSESHOE AREA

- BRADDOCK LOAM
- CARBO–ROCK OUTCROP COMPLEX
- COTACO LOAM
- FLUVAQUENTS
- LOWELL SILT LOAM
- ROCK OUTCROP–NEWBERN–CARBO COMPLEX
- WHEELING SANDY LOAM
- WURNO–NEWBERN–FAYWOOD SILT LOAMS

MAIN MANUFACTURING AREA

- BERKS–CLYMER COMPLEX
- BERKS–GROSECLOSE COMPLEX
- BERKS–WEIKERT COMPLEX
- BERKS AND WEIKERT SOILS
- BERKS AND WEIKERT, VERY STONY SOILS
- CARBO AND CHILHOWIE SOILS
- CANEYVILLE–OPEQUON–ROCK OUTCROP COMPLEX
- CRAIGSVILLE SOIL
- FREDERICK AND VERTREES SILT LOAMS
- FRENCH SOILS
- GROSECLOSE AND POPLIMENTO
- GUERNSEY SILT LOAM
- HAYTER LOAM
- McGARY AND PURDY SOILS
- ROSS SOILS
- UDORTHENTS AND URBAN LAND
- UNISON–URBAN LAND COMPLEX
- UNISON AND BRADDOCK SOILS
- WEAVER SOILS

GRAPHIC SCALE

2000 0 1000 2000 4000 8000

( IN FEET )
1 inch = 2000 ft.

**Draper Aden Associates**
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| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | JFF |
| CHECKED | AEK |
| DATE | 12-19-02 |

SOILS MAPPING HWMU'S 5 AND 7
RADFORD ARMY AMMUNTION PLANT
RADFORD, VIRGINIA

SCALE: 1" = 2000'

PLAN NO. B02271-01

FIGURE 3

P:\B02\200\B02271\B02271-01\CAD\271-01\dwg\B02271-01_SOILS.dwg Jan 06, 2003 1:14pm

# TABLES

**TABLE 1**

HAZARDOUS WASTE MANAGEMENT UNIT 5
SUMMARY OF TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| Analyte / Sample Location | Date | Concentrations in mg/kg | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminum | Arsenic | Barium | Beryllium | Calcium | Chromium | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Nickel | Potassium | Vanadium | Zinc | 4,4-DDD |
| 5GP-16 (3-4') (background) | 10/31/02 | 17000 | 4 | 51.2 | ~ | 1020 | 24.4 | 8.2 | 10.6 | 28200 | 11.4 | 812 | 393 | 6.3 | ~ | 55.4 | 20.2 | ~ |
| 5GP-1 (1-2') (cap) | 10/31/02 | 19200 | 2.2 | 85.1 | ~ | 1060 | 22.4 | 9 | 13.9 | 30700 | 12.9 | 1530 | 337 | 9.4 | 1580 | 64.9 | 35.3 | ~ |
| 5GP-1 (9-10') (residual material) | 10/31/02 | 12100 | 3.9 | 47.3 | 1.1 | ~ | 31.7 | 17.6 | 19.8 | 26700 | 9.8 | 1730 | 360 | 19 | 851 | 32 | 20.7 | 0.019 |
| 5GP-3 (9-10') (residual material) | 10/31/02 | 14800 | 2.6 | 37.2 | ~ | 866 | 22.8 | ~ | 9.5 | 24400 | 9.7 | ~ | 90.8 | 5.3 | ~ | 54.3 | 18.6 | ~ |
| 5GP-6 (10-11') (base sand) | 10/31/02 | 19400 | 1.6 | 56.9 | ~ | 9930 | 17.9 | ~ | 11.6 | 22400 | 11.3 | 1220 | 154 | 7.9 | 1120 | 57.5 | 26.4 | 0.0067 |
| 5GP-8 (7-8') (residual material) | 10/31/02 | 14200 | 4.1 | 46.1 | 1.3 | ~ | 21.6 | 11.6 | 16.8 | 28400 | 9.6 | 1410 | 242 | 10.7 | 1090 | 26.7 | 23.9 | 0.051 |
| 5GP-8 (11-12') (residual material) | 10/31/02 | 19600 | 3.4 | 61.4 | 0.81 | ~ | 26.9 | 10 | 14.8 | 29000 | 9.6 | 1560 | 372 | 11 | 1420 | 55.2 | 33.8 | ~ |
| 5GP-12 (3-4') (adjacent soil) | 10/31/02 | 19600 | 2.7 | 56.2 | ~ | 3200 | 27 | 9.1 | 13.6 | 33400 | 12.6 | 2200 | 457 | 8.2 | 915 | 61.8 | 32.1 | ~ |

NOTES:
~: Not detected above the Limit of Quantitation (LOQ).

**TABLE 2**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| Analyte / Sample Location | Date | Concentrations in mg/kg | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminum | Arsenic | Barium | Beryllium | Calcium | Chromium | Cobalt | Copper | Iron | Lead | Magnesium | Manganese | Nickel | Potassium | Selenium | Vanadium | Zinc | Cyanide | 4,4-DDD | 4,4-DDE | N-Nitrosodiphenylamine |
| 7GP-16 (3-4') (background) | 11/01/02 | 6650 | ~ | 106 | ~ | 1230 | 11.5 | ~ | 5.1 | 10800 | 5.4 | 1890 | 422 | 7.7 | 809 | ~ | 15.4 | 39.7 | ~ | ~ | ~ | ~ |
| 7GP-1 (1-3') (cap) | 11/01/02 | 11100 | 3.8 | 66.9 | 0.7 | 7490 | 24.1 | 11.5 | 22.8 | 19400 | 8.1 | 4290 | 662 | 13.5 | 774 | ~ | 28 | 17.4 | ~ | ~ | ~ | ~ |
| 7GP-2 (8-12') (residual material) | 11/01/02 | 8790 | 2.7 | 40.9 | 1.2 | ~ | 22 | 12.5 | 22 | 23300 | 2.8 | 3140 | 274 | 21.6 | 1070 | ~ | 21.1 | 15 | ~ | ~ | ~ | ~ |
| 7GP-2 (13.5-14.5') (base clay) | 11/01/02 | 19700 | 3.1 | 70.9 | 0.84 | ~ | 22.5 | 16.2 | 14.2 | 29300 | 13.6 | 2000 | 407 | 11.4 | 1390 | ~ | 57.7 | 32.6 | ~ | 0.0035 | ~ | ~ |
| 7GP-3 (10-11') (native soil) | 11/01/02 | 11700 | 26.1 | 229 | 1.5 | 28100 | 32.8 | 8.1 | 23.2 | 15900 | 35.1 | 2440 | 145 | 15.9 | 2970 | 3.5 | 42.1 | 33.8 | 0.69 | ~ | 0.0025 | 0.75 |
| 7GP-4 (3-4') (adjacent soil) | 11/01/02 | 5290 | ~ | 69.2 | ~ | 749 | 10.1 | ~ | 5.1 | 9860 | 5.8 | 1590 | 292 | 6.3 | 729 | ~ | 14 | 35 | ~ | ~ | ~ | ~ |
| 7GP-5 (6-11') (residual material) | 11/01/02 | 20000 | 3.5 | 55.6 | ~ | ~ | 22.8 | ~ | 10 | 23600 | 11 | 787 | 187 | 7.2 | 732 | ~ | 60.6 | 24.2 | ~ | ~ | ~ | ~ |
| 7GP-8 (5-8') (residual material) | 11/01/02 | 22400 | 2.4 | 55 | ~ | 1570 | 20.1 | ~ | 12.7 | 23200 | 10.3 | 1090 | 280 | 8.5 | 1040 | ~ | 61.8 | 28.1 | ~ | ~ | ~ | ~ |

NOTES:
~: Not detected above the Limit of Quantitation (LOQ).

# TABLE 3

SUMMARY OF WASTE CHARACTERIZATION ANALYTICAL RESULTS
HAZARDOUS WASTE MANAGEMENT UNITS 5 AND 7
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| Analyte | Sample ID | | Regulatory Thresholds | Units |
|---|---|---|---|---|
| | Unit-5-TCLP | Unit-7-TCLP | | |
| 1,1-Dichloroethene | U | U | 0.7 | mg/l |
| 1,2-Dichloroethane | U | U | 0.5 | mg/l |
| 1,4-Dichlorobenzene | U | U | 7.5 | mg/l |
| 2,4,5-TP | U | U | 1 | mg/l |
| 2,4,5-Trichlorophenol | U | U | 400 | mg/l |
| 2,4,6-Trichlorophenol | U | U | 2 | mg/l |
| 2,4-D | U | U | 10 | mg/l |
| 2,4-Dinitrotoluene | U | U | 0.1 | mg/l |
| 2-Butanone (methyl ethyl ketone) | U | U | 200 | mg/l |
| 2-Methylphenol | U | U | 200 | mg/l |
| 4-Methylphenol | U | U | 200 | mg/l |
| Arsenic | U | U | 5 | mg/l |
| Barium | 0.714 | 0.521 | 100 | mg/l |
| Benzene | U | U | 0.5 | mg/l |
| Cadmium | U | U | 1 | mg/l |
| Carbon Tetrachloride | U | U | 0.5 | mg/l |
| Chlordane | U | U | 0.03 | mg/l |
| Chlorobenzene | U | U | 100 | mg/l |
| Chloroform | U | U | 6 | mg/l |
| Chromium | U | U | 5 | mg/l |
| Cyanide (Reactivity) | U | U | 250 | mg/kg |
| Endrin | U | U | 0.02 | mg/l |
| gamma-BHC (lindane) | U | U | 0.4 | mg/l |
| Heptachlor | U | U | 0.008 | mg/l |
| Heptachlor epoxide | U | U | 0.008 | mg/l |
| Hexachlorobenzene | U | U | 0.1 | mg/l |
| Hexachlorobutadiene | U | U | 0.5 | mg/l |
| Hexachloroethane | U | U | 3 | mg/l |
| Lead | U | U | 5 | mg/l |
| Mercury | U | U | 0.2 | mg/l |
| Methoxychlor | U | U | 10 | mg/l |
| Moisture | 15.3 | 15.5 | - | % |
| Nitrobenzene | U | U | 2 | mg/l |
| Pentachlorophenol | U | U | 100 | mg/l |
| pH | 7.38 | 7.15 | <2 or >12.5 | s.u. |
| Pyridine | U | U | 5 | mg/l |
| Selenium | U | U | 1 | mg/l |
| Silver | U | U | 5 | mg/l |
| Sulfide (Reactivity) | U | U | 500 | mg/kg |
| Tetrachloroethene | U | U | 0.7 | mg/l |
| Toxaphene | U | U | 0.5 | mg/l |
| Trichloroethene | U | U | 0.5 | mg/l |
| Vinyl Chloride | U | U | 0.2 | mg/l |

**TABLE 4**

FACILITY-WIDE BACKGROUND CONCENTRATIONS
SUBSURFACE SOIL - MAIN MANUFACTURING AREA
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| CONSTITUENT | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|
| Aluminum | 22/22 | 8,710 | 47,900 | 21,223 | 0.517 | Lognormal | 56,307 |
| Arsenic | 20/22 | 1.2 | 35.9 | 7.73 | 1.16 | Lognormal | 64.5 |
| Barium | 19/22 | 25.2 | 155 | 71.5 | 0.623 | Normal | 176 |
| Beryllium | 11/22 | 0.79 | 5.3 | 1.01 | 1.16 | Neither | 1.3 |
| Cadmium | 12/22 | 0.57 | 2.5 | 0.778 | 0.805 | Lognormal | 3.33 |
| Chromium | 22/22 | 10.8 | 75.8 | 32.3 | 0.427 | Lognormal | 82.8 |
| Cobalt | 16/22 | 6.8 | 94.3 | 18.3 | 1.33 | Lognormal | 118 |
| Copper | 22/22 | 3.3 | 34.4 | 17 | 0.611 | Normal | 41.4 |
| Iron | 22/22 | 14,300 | 67,700 | 32,595 | 0.352 | Normal | 59,560 |
| Lead | 22/22 | 5.6 | 256 | 31.3 | 1.84 | Neither | 256 |
| Manganese | 22/22 | 39.4 | 1,760 | 428 | 0.939 | Lognormal | 3,143 |
| Mercury | 10/22 | 0.038 | 0.27 | 0.0729 | 0.865 | Neither | 0.154 |
| Nickel | 22/22 | 4.8 | 94.2 | 20.4 | 1.01 | Lognormal | 93.2 |
| Thallium | 12/22 | 1.4 | 5 | 1.76 | 0.729 | Neither | 2.61 |
| Vanadium | 22/22 | 27 | 114 | 61.9 | 0.329 | Normal | 110 |
| Zinc | 22/22 | 14.7 | 598 | 112 | 1.28 | Lognormal | 674 |

NOTES:
Source: *Radford Army Ammunition Plant Facility-Wide Background Study*, IT Corporation, December 2001.

# TABLE 5

HAZARDOUS WASTE MANAGEMENT UNIT 5
COMPARISON OF INORGANIC CONSTITUENT CONCENTRATIONS
TO BACKGROUND CONCENTRATIONS
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGNIA

| INORGANIC CONSTITUENTS | Facility-Wide Background Concentration[1] (mg/kg) | Unit-Specific Background Concentration [5GP-16 (3-4')] (mg/kg) | Maximum Unit-Specific Soil Concentration (mg/kg) | Constituent Of Potential Concern? |
|---|---|---|---|---|
| Aluminum | 56307 | 17000 | 19600 | no |
| Antimony | na | ~ | ~ | no |
| Arsenic | 64.5 | 4 | 4.1 | no |
| Barium | 176 | 51.2 | 85.1 | no |
| Beryllium | 1.3 | ~ | 1.3 | no |
| Cadmium | 3.33 | ~ | ~ | no* |
| Calcium | na | 1020 | 9930 | no |
| Chromium | 82.8 | 24.4 | 31.7 | no |
| Cobalt | 118 | 8.2 | 17.6 | no |
| Copper | 41.4 | 10.6 | 19.8 | no |
| Iron | 59560 | 28200 | 33400 | no |
| Lead | 256 | 11.4 | 12.9 | no |
| Magnesium | na | 812 | 2200 | no* |
| Manganese | 3143 | 393 | 457 | no |
| Mercury | 0.154 | ~ | ~ | no |
| Nickel | 93.2 | 6.3 | 19 | no |
| Potassium | na | ~ | 1580 | no* |
| Selenium | na | ~ | ~ | no |
| Silver | na | ~ | ~ | no |
| Sodium | na | ~ | ~ | no |
| Thallium | 2.61 | ~ | ~ | no |
| Vanadium | 110 | 55.4 | 64.9 | no |
| Zinc | 674 | 20.2 | 35.3 | no |

NOTES:

[1] Facility-Wide Background Concentrations obtained from the Radford Army Ammunition Plant Facility-Wide Background Study Report prepared by IT Corporation, December 2001

na: Not applicable. A Facility-Wide Background Concentration was not calculated for this constituent.

~: Not detected above the Limit of Quantitation (LOQ).

* Although the maximum concentrations for calcium, magnesium, and potassium are greater than their respective background concentrations, they are not considered constituents of potential concern because they are not hazardous constituents as listed in Appendix VIII of 40 CFR Part 261.

**TABLE 6**

HAZARDOUS WASTE MANAGEMENT UNIT 5
COMPARISON OF DETECTED ORGANIC CONSTITUENT CONCENTRATIONS TO
USEPA REGION III SOIL-TO-GROUNDWATER SOIL SCREENING LEVELS
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| CONSTITUENTS | CAS No. | Risk-Based Concentration (RBC) Residential[1] (mg/kg) | USEPA Region III Groundwater DAF 20 (mg/kg) | Maximum Unit-Specific Soil Concentration (mg/kg) | Constituent Of Potential Concern? |
|---|---|---|---|---|---|
| Pesticides | | | | | |
| 4,4-DDD | 72-54-8 | 2.7 | 11 | 0.051 | no |

NOTES:
[1] USEPA Region III Risk-Based Concentration Table, October 9, 2002.
DAF 20: Dilution Attenuation Factor of 20 for constituent migration from soil to groundwater.
Obtained from USEPA Region III Risk-Based Concentration Table, October 9, 2002.

# TABLE 7

HAZARDOUS WASTE MANAGEMENT UNIT 7
COMPARISON OF INORGANIC CONSTITUENT CONCENTRATIONS
TO BACKGROUND CONCENTRATIONS
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGNIA

| INORGANIC CONSTITUENTS | Facility-Wide Background Concentration[1] (mg/kg) | Unit-Specific Background Concentration [7GP-16 (3-4')] (mg/kg) | Maximum Unit-Specific Soil Concentration (mg/kg) | Constituent Of Potential Concern? |
|---|---|---|---|---|
| Aluminum | 56307 | 6650 | 22400 | no |
| Antimony | na | ~ | ~ | no |
| Arsenic | 64.5 | ~ | 26.1 | no |
| Barium | 176 | 106 | 229 | no |
| Beryllium | 1.3 | ~ | 1.5 | yes |
| Cadmium | 3.33 | ~ | ~ | no |
| Calcium | na | 1230 | 28100 | no* |
| Chromium | 82.8 | 11.5 | 32.8 | no |
| Cobalt | 118 | ~ | 16.2 | no |
| Copper | 41.4 | 5.1 | 23.2 | no |
| Iron | 59560 | 10800 | 29300 | no |
| Lead | 256 | 5.4 | 35.1 | no |
| Magnesium | na | 1890 | 4290 | no* |
| Manganese | 3143 | 422 | 662 | no |
| Mercury | 0.154 | ~ | ~ | no |
| Nickel | 93.2 | 7.7 | 21.6 | no |
| Potassium | na | 809 | 2970 | no* |
| Selenium | na | ~ | 3.5 | yes |
| Silver | na | ~ | ~ | no |
| Sodium | na | ~ | ~ | no |
| Thallium | 2.61 | ~ | ~ | no |
| Vanadium | 110 | 15.4 | 61.8 | no |
| Zinc | 674 | 39.7 | 33.8 | no |

NOTES:

[1] Facility-Wide Background Concentrations obtained from the Radford Army Ammunition Plant Facility-Wide Background Study Report prepared by IT Corporation, December 2001

na: Not applicable. A Facility-Wide Background Concentration was not calculated for this constituent.

~: Not detected above the Limit of Quantitation (LOQ).

* Although the maximum concentrations for calcium, magnesium, and potassium are greater than their respective background concentrations, they are not considered constituents of potential concern because they are not hazardous constituents as listed in Appendix VIII of 40 CFR Part 261.

**TABLE 8**

HAZARDOUS WASTE MANAGEMENT UNIT 7
COMPARISON OF INORGANIC CONSTITUENTS OF POTENTIAL CONCERN
AND DETECTED ORGANIC CONSTITUENT CONCENTRATIONS TO
USEPA REGION III SOIL-TO-GROUNDWATER SOIL SCREENING LEVELS
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| CONSTITUENTS | CAS No. | Risk-Based Concentration (RBC) Residential[1] (mg/kg) | USEPA Region III Groundwater DAF 20 (mg/kg) | Maximum Unit-Specific Soil Concentration (mg/kg) | Constituent Of Potential Concern? |
|---|---|---|---|---|---|
| Inorganics | | | | | |
| Beryllium | 7440-41-7 | 160 | 1200 | 1.5 | no |
| Cyanide | 57-12-5 | 1600 | 150 | 0.69 | no |
| Selenium | 7782-49-2 | 390 | 19 | 3.5 | no |
| Semivolatile Organic Compounds (SVOCs) | | | | | |
| N-Nitrosodiphenylamine | 86-30-6 | 130 | 0.76 | 0.75 | no |
| Pesticides | | | | | |
| 4,4-DDD | 72-54-8 | 2.7 | 11 | 0.0035 | no |
| 4,4-DDE | 72-55-9 | 1.9 | 35 | 0.0025 | no |

NOTES:
[1] USEPA Region III Risk-Based Concentration Table, October 9, 2002.
DAF 20: Dilution Attenuation Factor of 20 for constituent migration from soil to groundwater.
Obtained from USEPA Region III Risk-Based Concentration Table, October 9, 2002.

# APPENDIX A

## BORING LOGS

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **5-GP-1**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **10.5'** Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | Soil sample 5-GP-1 (1-2) submitted for analysis. |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Red-brown micaceous silty sand, dry. | | | | | Residual material. |
| S-3 | | | | | | 1.8 | | | |
| | | | | SM. Yellow-brown, fine to coarse silty sand with little green gravel (compacted residual material), dry. | | | | | Soil sample 5-GP-1 (9-10) submitted for analysis. |
| | | | 10 | SC. Light gray fine to coarse sand, trace clay, damp. | | | | | |
| | | | | Boring terminated at 10.5 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-2**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **10.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet | | | | | Perched water. |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Red-brown micaceous silty sand, dry. | | | | | Residual material. |
| S-3 | | | | SM. Yellow-brown fine to coarse silty sand with trace green gravel (compacted residual material) and little clay, damp. | | | | | |
| | | | 10 | Boring terminated at 10 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-3** **(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **10.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Red-brown micaceous silty sand, dry. | | | | | Residual material |
| S-3 | | | | 2" granite gravel. | | | | | |
| | | | | SM. Yellow-brown fine to coarse silty sand with trace green gravel (compacted residual material) and little clay, damp. | | | | | Soil sample 5-GP-3 (9-10) submitted for analysis. |
| | | | 10 | Boring terminated at 10 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-4**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **4.0'** / Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). GP. Granite gravel. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown to brown clay with trace gravel, moist. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-5**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **10.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Red-brown micaceous silty sand, dry to damp. | | | | | Residual material. |
| S-3 | | | | SM. Yellow-brown micaceous fine to coarse silty sand, trace gravel, moist. | | | | | |
| | | | 10 | Boring terminated at 10 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-6**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **11.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown, fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | Perched water. |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Yellow-brown micaceous silty sand, moist. | | | | | Residual material. |
| S-3 | | | | | | | | | |
| | | | 10 | SC. Light gray fine to coarse sand and brown clay, damp. | | | | | Soil sample 5-GP-6 (10-11) submitted for analysis. |
| | | | | Boring terminated at 11 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-7**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt. | | | | | Boring backfilled with bentonite |
| | | | | GC. Brown clay with gray gravel, moist. | | | | | |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-8** (1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | Perched water |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SC. Red-brown, micaceous clayey sand, dry. | | | | | Residual material. |
| | | | | SM. Yellow-brown, fine to coarse silty sand with little green gravel (compacted residual material), dry. | | | | | |
| S-3 | | | | | | | | | Soil sample 5-GP-8 (7-8) submitted for analysis. |
| | | | 10 | 2" quartz gravel. | | | | | |
| | | | | CL. Red-brown to dark gray clay, damp. | | | | | Soil sample 5-GP-8 (11-12) submitted for analysis. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-9**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **10.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Yellow-brown, fine to coarse silty sand, trace green gravel (compacted residual material) with little clay, damp. | | | | | Residual material. |
| S-3 | | | | Becoming moist. | | | | | |
| | | | | SC. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | 10 | Boring terminated at 10 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-10**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **10.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay, moist. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Red-brown micaceous silty sand with black mottles, dry. | | | | | Residual material. |
| S-3 | | | | Trace gravel. | | | | | |
| | | | 10 | Boring terminated at 10 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-11**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Red-brown micaceous sandy clay. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | CL. Light gray and yellow-brown mottled clay, dry. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | | | | | | |
| | | | | SC. Red-brown micaceous clayey sand, dry. | | | | | Residual material. |
| S-3 | | | | SM. Yellow-brown fine to coarse silty sand with little gravel and compacted residual material fragments, dry. | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Gray clay, dry. | | | | | |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-12**
(1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Brown clay. | | | | | |
| | | | | GC. Gray gravel and brown clay. | | | | | |
| | | | | CL. Brown clay. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | Soil sample 5-GP-12 (3-4) submitted. |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-13**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **4.0'** / Elev GS: | Reference: **Ground Surface** / Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt.<br>SC. Red-brown fine to coarse clayey sand with brown mottles, damp to moist. | | | | | Boring backfilled with bentonite.<br>Not waste material. |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **5-GP-14**
(1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | CL. Brown sandy clay, moist. | | | | | |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-15**
(1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentonite. |
| | | | | GC. Brown clay with gray gravel, moist. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **5-GP-16**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **October 31, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Dark brown fine silty sand with plant matter, moist (topsoil). | | | | | Boring backfilled with bentinite. |
| | | | | CL. Brown clay with trace gray gravel. | | | | | |
| | | | | CL. Red-brown fine sandy clay, moist. | | | | | Soil sample 5-GP-16 (3-4) submitted for analysis. |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-1**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Soil sample 7-GP-1 (1-3) submitted for analysis. Perched water. |
| | | | | SM. Yellow-brown micaceous fine silty sand, dry. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Yellow-brown micaceous fine sandy clay with little gravel, damp. | | | | | Clay liner. |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-2**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **20.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine micaceous silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | Soil sample 7-GP-2 (8-12) submitted for analysis. |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | | | | | | Soil sample 7-GP-2 (13.5-14.5) submitted for analysis. |
| | | | 15 | SM. Dark gray fine sandy and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| S-5 | | | | | | | | | |
| | | | 20 | Boring terminated at 20 feet. | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-3**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | SM. Yellow-brown, micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| S-2 | | | 5 | SM. Yellow-brown micaceous fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| S-3 | | | 10 | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. Soil sample 7-GP-3 (10-11) submitted for analysis. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-4** (1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | | | | | | Soil sample 7-GP-4 (3-4) submitted for analysis. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Dark gray fine sand and silt, wet. | | | | | Aquatic odor. |
| | | | | Boring terminated at 8 feet. No residual material encountered. | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-5** **(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-5 (6-11) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-6** (1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. 30 mil. PVC. |
| | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | 10 | | | | | | |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-7**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Gravel.<br>SW. Brown fine sand, moist to wet. | | | | | Boring backfilled with bentonite. |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-8**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-8 (5-8) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-9** (1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-10**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | Perched water. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-11**
(1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: / Logged by: **R. Miller** |
| Total Depth **12.0'** Elev GS: | Reference: **Ground Surface** / Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SP-GP. Yellow-brown fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-12**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-13**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-14**
(1 of 1)

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-15**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-16**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | Soil sample 7-GP-16 (3-4) submitted for analysis. |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

# APPENDIX B

## DATA VALIDATION REPORTS AND LABORATORY ANALYTICAL RESULTS

## SW-846 INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Ammunition and Powder Company, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8') and 7 GP-16 (3-4').

DAA performed a limited review of the analytical results for twenty-two metal target analytes analyzed per SW-846 Method 6010B, one metal target analyte analyzed per SW-846 7471A and one metal target analyte analyzed per SW-846 9012A. Inductively coupled plasma (ICP), cold vapor atomic absorption (CVAA) and colorimetric were the techniques on which the individual analytical methods for each of the inorganics were based.

Soil samples were collected and submitted to the laboratory for analysis of the following metals: ICP Method 6010B (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc), Method 7471A (mercury) and Method 9012A (total cyanide).

Severn Trent Laboratories (STL) of North Canton, Ohio performed the inorganic analyses. On behalf of RAAP, STL submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results.

The evaluation of STL's compliance with inorganic analytical methods and validation of results presented here are based upon a limited review of QA/QC information including chain of custody, case narrative, holding time, preservation procedures, standards, spike analysis on sample matrix (S), blank samples analyses (method, calibration and other blanks), and duplicate analyses (SD) results. Review was limited to summary sheets provided by the laboratory, unless a notable discrepancy in the data package required review of the raw data. Additionally, sample results were recalculated and verified for arsenic and cyanide, sample 7GP-3(10-11'). A summary of data review results and any observed deviations is provided below.

STL received the samples on ice and in good condition. All technical holding time criteria were met.

***Method 6010B***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, calibration standards, pre-digestion spikes and duplicates were analyzed as required. All laboratory control samples, pre-digestion spikes and duplicates were recovered within control limits, except where noted below. Duplicate sample results exhibited acceptable precision, where applicable. All LOQ standards exhibited acceptable recovery. Deviations from specific quality control criteria that were identified and noted during the data review process are summarized below.

The associated blanks were not interference free, however, data qualification was necessary for only antimony. Antimony was reported in all samples less than the LOQ, however, all antimony results were attributed to laboratory contamination.

Antimony, chromium, vanadium, recovered low in the matrix spike sample and all results for these target parameters were qualified as estimated and should be considered biased low.

The laboratory presented all results in mg/kg and on a dry weight basis. Except where noted above, all sample results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Methods 7471A (CVAA/ 9012A(Colorimetric)***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation for mercury and cyanide, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, LCS samples, pre-digestion spikes and spike duplicates were analyzed as required. All blank criteria were met, except where noted below. Laboratory duplicate sample results exhibited acceptable precision, where applicable. All laboratory control samples, pre-digestion spikes and duplicates were recovered within control limits. Deviations from specific quality control criteria that were identified and noted during the data review process are summarized below.

The associated blanks were not interference free, however, data qualification was necessary for only cyanide. Cyanide was reported less than the LOQ in 5 GP-1(9-10') and 5-GP-6(10-11') and results were attributed to laboratory contamination. Cyanide reported above the LOQ in 7GP-3(10-11') was not influence by the observed laboratory blank contamination and no data qualification was required.

The laboratory presented all results in mg/kg and on a dry weight basis. Except where noted above, all sample results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

## INORGANIC DATA EVALUATION FOR ICP SW-846 METHOD 6010B-SOILS

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.
- Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? _X_ yes ___ no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 6 month holding time

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and at least 1 standard

### D. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:

☑ 10 sample frequency
☑ Use of calibration blank and check standard
☑ %R within 90-110% range

**E. BLANK SAMPLES ANALYSES CRITERIA:**

- ☑ Method/Other Lab Blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

**F. INTERFERENCE CHECK SAMPLES (ICS) CRITERIA:**

- ☑ ICS (80-120%)

**G. DUPLICATE ANALYSES CRITERIA:**

- ☑ One spike/sample duplicate per batch of samples
- ☑ %RPD ± 20% for spike/ sample values greater than 5 X LOQ
- ☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES /LCS CRITERIA:**

- ☑ %R within 75-125% range/ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within ICP linear concentration ranges

**Revisions:** No revisions were required. Prep method 3050B

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

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## INORGANIC DATA EVALUATION FOR MERCURY- BY COLD VAPOR AA METHOD 7471A

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, LCS, Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? √yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. METHOD INFORMATION DOCUMENTATION

☑ All target parameters analyzed by requested methods?

### C. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 28 Day holding time
☑ Cool 4°C

### D. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and 5 standards
☑ Instrument calibrated for every analytical sequence for every method

**E. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:**

- ☑ 10 sample frequency for CCV
- ☑ %R within 90-110% range

**F. BLANK SAMPLES ANALYSES CRITERIA:**

- NA Trip Blank (check only if analyzed)
- NA Equipment Blank (check only if analyzed)
- ☑ Method/other laboratory blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

**G. DUPLICATE ANALYSES CRITERIA:**

- ☑ One spike/sample duplicate per batch of samples
- ☑ %RPD ± 20% for spike/sample values greater than 5 X LOQ
- ☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES/LCS CRITERIA:**

- ☑ Pre-digestion matrix spikes for all analytes
- ☑ %R within 75-125% range/80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within calibration concentration range

**J. Revisions:** No revisions were required.

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

JCF 12/4/02

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## INORGANIC DATA EVALUATION FOR CYANIDE BY METHOD 9012A

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.
- Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? X yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS CRITERIA:

☑ 14 days holding time
☑ Cool 4° C

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 6 levels plus blank

### D. INITIAL AND CONTINUING CALIBRATION VALIDATION CRITERIA:

☑ 20 sample frequency
☑ Use of check standard with every batch of samples
☑ %R within 85-115% range (± 15%)

### E. BLANK SAMPLES ANALYSES CRITERIA:

☑ Interference free

☑ Verification Blank analysis every 20 samples

**F. DUPLICATE SAMPLE ANALYSES CRITERIA:**

☑ One duplicate for every 20 samples
☑ %RPD ± 20% for sample values greater than 5 times LOQ
☑ (Sample ± LOQ) when values are less than 5 times LOQ

**G. SPIKED SAMPLE ANALYSES CRITERIA:**

☑ One spike for every 20 samples
☑ Spikes fall within 85-115% range

**H. LCS CRITERIA:**

☑ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

☑ Samples fall within calibration concentration range

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA, and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: _____ Date: JCF 12-17-02

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**SW-846 METHODS 8081A**
**VOLATILE DATA REVIEW SUMMARY**

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems. Soils samples were collected from sixteen sample locations (see page 3 for specific sample identifications). All soil samples were analyzed for twenty-eight (28) pesticides and polychlorinated biphenyls (PCBs) per USEPA Methods 8081A.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the analyses. On behalf of RAAP, Lancaster submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of laboratories' compliance with Method 8081A and validation of the results was based on a limited review of the following items: quality control (QC) deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, extraction procedures, instrument calibrations, blank analysis, surrogate spike recoveries, retention time, matrix spike (MS/MSD) analyses, laboratory control samples (LCS), and internal standards requirements, where applicable. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

The laboratory received the samples on ice and in good condition with custody seals intact. All technical holding time criteria were met. All sample extraction and analysis holding time criteria were met. All preservation criteria were met.

***Method 8081A***

The original certificate of analysis for Method 8081A was complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All QC history documentation and QC check sample criteria were met. All initial calibration, calibration verification, breakdown check, blank, surrogate, retention time, MS/MSD and LCS criteria were met.

Sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance and quality control criteria that were identified during the review process are summarized below.

Sample analysis by Method 8081A included PCBs. However, since the LCS and MS/MSD samples were not spiked with PCBs, all PCB results were qualified as estimated due to limited availability of quality control data.

All sample results were reported on a dry-weight basis. All samples were florisil cleaned. To obtain a final result within the instrument calibration range, sample dilutions were required, where appropriate.

Target parameters reported above the LOQ remain as reported by the laboratory. All sample results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U" (i.e., not detected above the LOQ). Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

**SW-846 METHOD 8081A (ORGANOCHLORINE PESTICIDES/PCBs)**
**GC DATA VALIDATION FOR SOILS**

**Sample ID:** 5GP-1(1-2'), 5GP-1(9-10'), 5GP-6(10-11'), 5GP-3(9-10'), 5GP-8(7-8'), 5GP-8(11-12'), 5GP-16(3-4'), 5GP-12(3-4'), 7GP-1(1-3'), 7GP-2(8-12'), 7GP-2(13.5-14.5'), 7GP-3(10-11'), 7GP-8(5-8'), 7GP-5(6-11'), 7GP-16(3-4'), 7GP-4(3-4')

**QC Samples:** 7GP-5(6-11') Matrix spike/Matrix spike duplicate, Extraction Blank, LCS

**Laboratory:** Lancaster Laboratories, Lancaster, PA, SDG RAR01-01

***Comments: Method 8081A involves the extraction of samples usingSW-846 Method 3550B-ultrasonic extraction. Target parameters are separated and quantified by GC using electron capture detection (ECD). All samples were florisil cleaned.***

## A. QC DELIVERABLES PACKAGE:

| | | |
|---|---|---|
| 1. | Was case narrative present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 2. | Was the Chain of Custody present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 3. | Were sample results included for all sample locations? | ☑ YES ☐ NO |
| 4. | Did the laboratory parameter list correspond to project specific parameter list? | ☑ YES ☐ NO |
| 5. | Were the LOQs reported on sample summary sheets supported by the MDL study? | ☑ YES ☐ NO |
| 6. | Did the electronic deliverable list the correct LOQs? | ☑ YES ☐ NO |

**Comments:** All QC deliverables requirements were met.

## B. INSTRUMENT QC HISTORY DOCUMENTATION CRITERIA:

| | | |
|---|---|---|
| 1. | Was the specific extraction method specified? | ☑ YES ☐ NO |
| 2. | Was documentation of DDT/Endrin breakdown study provided? | ☑ YES ☐ NO |
| 3. | Were instrument specific LODs for the target parameters provided? | ☑ YES ☐ NO |
| 4. | Were instrument specific LOQs for the target parameters provided? | ☑ YES ☐ NO |
| 5. | Were instrument specific working ranges for target parameters specified? | ☑ YES ☐ NO |
| 6. | Were sample analysis log sheets provided? | ☑ YES ☐ NO |

7. Were chromatograms and integration reports provided? ☑ YES ☐ NO

**Comments:** All instrument QC history criteria were met.

## C. CHECK SAMPLE CRITERIA:
***(Initial Demonstration of Capability)***

1. Was the check sample data obtained from the instrument that was used for analysis? ☑YES ☐ NO
2. Did the check sample contain all required target parameters? ☑ YES ☐ NO
3. Were the check samples analyzed in quadruplicate? ☑ YES ☐ NO
4. Were the average recoveries of the target parameters in the check samples reported? ☑ YES ☐ NO
5. Were the standard deviations for the recoveries of target parameters quadruplicated and reported? ☑ YES ☐ NO

**Comments:** All check sample criteria were met.

## D. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 7-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** All preservation criteria were met. All sample extraction and analysis holding time criteria were met.

## E. INITIAL GC CALIBRATION CRITERIA:

1. Were all target parameters included in the ICAL? ☑ YES ☐ NO
2. Was a minimum five-point calibration analyzed prior to analysis? ☑YES ☐ NO
3. Calibration type used by laboratory: *External.*
4. Was the % Relative Standard Deviation (%RSD) for all target parameter CFs <20% over the established working range? ☑ YES ☐ NO
5. State the Quantitation Method used by the laboratory: *Calibration Factor.*
6. List target parameters with a % RSD >20% over the established working range: *None.*
   Note: Up to 2 target parameters may exceed the 20% criteria, but must be <30%.

7. Was the lowest concentration calibration standard at or below the LOQ, MCL, regulatory compliance or action limit? ☑ YES ☐ NO
8. Were calibration standards dropped to meet calibration criteria? ☑NA ☐YES ☐ NO

**Comments:** All initial calibration criteria were met. The lowest calibration standard for 4,4-DDD was manually calculated to verify the calibration standard concentration was less than the LOQ.

## F. DDT / ENDRIN BREAKDOWN CHECK CRITERIA:

1. Was a 4,4'-DDT and Endrin standard analyzed every 12-hours? ☑ YES ☐ NO
2. For every 12-hours, was 4,4'-DDE, 4,4'-DDD, Endrin Ketone or Endrin Aldehyde present which indicated breakdown? ☑ YES ☐ NO
3. Was the calculated % breakdown less than 15%? ☐ NA ☑ YES ☐ NO
   If no, corrective action must be taken before proceeding with analysis.

**Comments:** All DDT/Endrin breakdown criteria were met.

## G. CALIBRATION VERIFICATION CRITERIA:

1. Was a calibration verification (CV) standard performed once every 12-hours? ☑ YES ☐ NO
2. Did target parameter responses have a % Difference (%D) within ± 15%? (For chlordane and toxaphene, qualify only 3 peaks). ☑ YES ☐ NO
   If no, was a new calibration curve prepared? *No.*
3. Was a mid-concentration standard analyzed after each group of 20 samples (10 recommended) and at the end of the analytical sequence? ☑YES ☐ NO
4. Were all target parameters and surrogates included in the CV? ☑ YES ☐ NO

**Comments:** All calibration verification criteria were met.

## H. BLANK CRITERIA:

1. Was a blank analyzed prior to the batch samples? ☑ YES ☐ NO
2. Was a blank analyzed after 20 batch samples? ☐ NA ☑ YES ☐ NO
3. Was an extraction blank analyzed with the batch samples? ☑ YES ☐ NO

4 Was a trip blank analyzed per analytical batch? ☑ YES ☐ NO

5. List target parameters identified in the blanks: *None.*

**Comments:** All blank criteria were met.

## I. SURROGATE CRITERIA:

1. Were all samples, standards, blanks, and checks spiked with at least 2 surrogate parameters for dual column analysis? ☑ YES ☐ NO
2. List surrogate used and laboratory's surrogate % recovery range criteria:
   tetrachloro-xylene (TCMX): 40%-130%
   decachlorobiphenyl (DCBP): 40%-130%
   4-chloro-3-nitrobenzotrifluoride (CNBT): 40%-130%
3. List samples whose surrogate % recoveries were not within the laboratory range: *None*

**Comments:** All surrogate recovery criteria were met.

## J. RETENTION TIME CRITERIA:

1. Were the daily Retention Time (RT) windows reported? ☑ YES ☐ NO

**Comments:** All retention time criteria were met.

## K. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:

1. Was a MS/MSD analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD contain required target parameters? See comment section
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List laboratory's matrix spike % recovery range criteria: *40%-130%, select analytes*
5. List matrix spike target parameters not within the recovery range criteria: None
6. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
7. Did the LCS for the failed matrix spike

parameter(s) fall within the recovery range criteria and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO

8. Were any parameters flagged as estimated concentrations? ☐ YES ☑ NO
9. List parameters flagged as estimated concentrations:

**Comments:** The QC samples were not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other matrix spike criteria were met.

## L. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters?*select analytes* ☑ YES ☐ NO
3. List the LCS parameters and the laboratory's recovery range criteria. *See certificate of analysis.*
4. List the LCS parameters not within the recovery range criteria. *None.*

**Comments:** The LCS was not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other LCS data were met.

## M. TARGET PARAMETER IDENTIFICATION:

1. Were the reported parameters within the retention time windows? ☑ NA ☐ YES ☐ NO
2. Were retention time shifts observed when compared with the last calibration verification? ☐ YES ☑ NO
3. Were all reported parameters confirmed? ☑ YES ☐ NO
4. Did the initial analysis of any sample have a concentration of a target parameter which exceeded the instrument calibration range? ☑ NA ☐ YES ☐ NO
5. Were sample dilutions required? ☑ YES ☐ NO
6. Were all parameter concentrations that were recorded on the sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** All target parameter identification criteria were met. The 4,4"-DDD sample result for 7GP-2(8-12") was manually verified and no calculation discrepancy was observed. All results above the LOQ were verified against the instrument data, primary

and confirmation data. For results above the LOQ, the disparity between the results from both columns was acceptable (<40RPD).

## N. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was taken.

## LIMITATIONS AND REFERENCES:

Draper Aden Associates conducted a limited data validation for the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data evaluation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: JCF

Date: 12-17-02

**Draper Aden Associates**
Engineering ♦ Surveying ♦ Environmental Services

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## METHODS 8260B AND 8270C ORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), and 7 GP-16 (3-4'). Soil samples were analyzed for the 33 (thirty-three) volatile parameters by Method 8260B and 64 (sixty-four) semivolatile parameters according to Method 8270C.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the GC/MS analysis. Lancaster Laboratories submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Methods 8260B and 8270C and validation of the results was based on a limited review of the following items: QC deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, instrument performance (tune) check, instrument calibrations, blank analysis, surrogate spike recoveries, matrix spike and matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) data, and internal standard requirements. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were not performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

### *Method 8260B*

The revised certificate of analysis for Method 8260B appeared complete in its presentation and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data and the method detection limit study data. The first calibration level was less than the reported LOQ in all cases.

All sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, blank, and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance/quality control (QA/QC) criteria that were identified during the data review process are discussed below.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice

for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature.

All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameter, where appropriate, were qualified as estimated

All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1 (1-2'). Insufficient sample was available for reanalysis. However, the matrix spike analysis for this sample had compliant surrogate recoveries. As per validation guidelines all results were qualified as estimated for this sample.

A MS, LCS and LCS duplicate were performed. Due to limited sample volume a MSD was not performed. All quality control samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.

All target parameter identification and quantitation requirements were met. No target parameters were reported above the LOQ in any sample.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Method 8270C***

The original certificate of analysis for Method 8270C was complete and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data as well as the method detection limit study data.

QC history documentation were provided. Sample preservation, instrument performance check (tuning), initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. No deviations from specific QA/QC criteria were identified during the data review process.

## METHODS 8260B AND 8270C ORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), and 7 GP-16 (3-4'). Soil samples were analyzed for the 33 (thirty-three) volatile parameters by Method 8260B and 64 (sixty-four) semivolatile parameters according to Method 8270C.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the GC/MS analysis. Lancaster Laboratories submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Methods 8260B and 8270C and validation of the results was based on a limited review of the following items: QC deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, instrument performance (tune) check, instrument calibrations, blank analysis, surrogate spike recoveries, matrix spike and matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) data, and internal standard requirements. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were not performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

### *Method 8260B*

The revised certificate of analysis for Method 8260B appeared complete in its presentation and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data and the method detection limit study data. The first calibration level was less than the reported LOQ in all cases.

All sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, blank, and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance/quality control (QA/QC) criteria that were identified during the data review process are discussed below.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice

for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature. All other sample preservation criteria were met.

All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameters, where appropriate, were qualified as estimated

All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1(1-2'). Insufficient sample was available for reanalysis. However, the matrix spike analysis for this sample had compliant surrogate recoveries. As per validation guidelines, all results were qualified as estimated for this sample.

A MS, LCS and LCS duplicate were performed. Due to limited sample volume a MSD was not performed. All quality control samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.

All target parameter identification and quantitation requirements were met. No target parameters were reported above the LOQ in any sample.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Method 8270C***

The original certificate of analysis for Method 8270C was complete and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data as well as the method detection limit study data.

QC history documentation were provided. Sample preservation, instrument performance check (tuning), initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. No deviations from specific QA/QC criteria were identified during the data review process.

All target parameter identification and quantitation requirements were met. All results were reported on a dry weight basis. All sample results unaffected by the data validation process and greater than their corresponding LOQs remain as reported by Lancaster Laboratories. All sample results less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

## SW-846 METHOD 8260B (GC/MS) VOLATILE ORGANIC DATA VALIDATION

*HWMU-5*

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4')

*HWMU-7*

**Sample ID:** 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** 5GP-1 (1-2')MS, LCS, LCS DUP, Method Blank
7GP-5 (6-11')MS, 7GP-5 (6-11')MSD, LCS, Method Blank

**Laboratory:** Lancaster Laboratories, Lancaster PA; SDG RAR01-01

***Comment:*** *Method 8260B uses a purge and trap system to remove volatile organic target analytes from a 5 gram soil sample (SW-846 5035). Parameters are separated and quantified using a capillary column GC/MS.*

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present and signed by a laboratory representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory parameter list correspond to the project specific parameter list? ☑ YES ☐ NO
5. Did the laboratory parameter list include methylene chloride and vinyl chloride for confirmational analysis? ☑ NA ☐ YES ☐ NO
6. Were all parameter LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑ NA ☐ YES ☐ NO

**Comments:** All QC deliverables package requirements were met. The MDL study does not list the LOQ. However, all LOQs are supported by an acceptable MDL study. A 1 ppb standard was also analyzed and reported to support limit of detection (LOD) values.

## B. QC HISTORY DOCUMENTATION CRITERIA:

1. Was an instrument specific MDL study provided, which included LOD and LOQ values for all target parameters? ☑ YES ☐ NO
2. Was the instrument specific working range for each target parameter specified? ☑ YES ☐ NO
3. Was initial demonstration of capability data provided for each target parameter? ☑ YES ☐ NO

**Comments:** QC history documentation criteria were met. MDL study is laboratory specific.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to analysis holding time met? ☑ YES ☐ NO
2. Were the samples received at 4°C (± 2°C)? ☐ YES ☑ NO
3. Was the pH of each sample adjusted to < 2 with HCl? ☑ NA ☐ YES ☐ NO

**Comments:** All sample holding time criteria were met.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature. All other sample preservation criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE (TUNING) CHECK CRITERIA:

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period during which standards or samples were analyzed? ☑ YES ☐ NO
2. Was there documentation of the injection of 5-50 ng bromofluorobenzene (BFB)? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Were calibration, blank, and sample analyses performed within 12 hours of tuning? ☑ YES ☐ NO

**Comments:** All instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:

***SW-846 Criteria:***

1. Was the internal standard (IS) which was selected for target parameter RF calculation the IS which had the closest retention time? ☑ YES ☐ NO
2. Were all target parameters included in the ICAL? ☑ YES ☐ NO
3. Did all ICALs consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
4. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ NA ☐ YES ☐ NO
4. Was the calibration curve developed using the same purge volume used for sample analysis? ☑ YES ☐ NO
6. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)

7. Were 8260B CCC criteria met? (%RSD ≤ 30%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane
   - toluene
   - ethylbenzene
   - vinyl chloride

8. Was each target parameter %RSD ≤ 15%? ☐ YES ☑ NO

9. Was the correlation coefficient >0.99 for target parameters with ≥15 % RSD? ☐ NA ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target parameters and surrogates have % RSDs ≤ 15% and >0.99 correlation coefficient? ☐NA ☑ YES ☐ NO

   (Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or analyzed independently during another 12-hour analysis period. ☑ YES ☐ NO

2. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)

3. Were 8260B CCC criteria met?
   (%Drift or % Difference (%D) within ± 20%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane
   - toluene
   - ethylbenzene
   - vinyl chloride

***Method Validation Performance Criteria:***

1. Did all target parameters and system monitoring parameters (surrogates) have the % D within ± 25.0%? ☐ YES ☑ NO
   (Evaluate RRFs < 0.05 for potential problems.)

   If "NO", list parameters that exceed these criteria:

*HWMU-5*

*acetone %D = 26%*
*2- butanone %D = 41%*
*2-hexanone %D = 35%*
*1,1,2,2-tetrachloroethane %D = 28%*

*HWMU-7*

*1,1-dichloroethane %D = 26%*

***DAA Contractual Requirements:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? *not applicable for this project*

2. Three parameters may fail to meet maximum % D as long as the % D is within ± 40.0%
   Did the calibration verification meet this criteria? *not applicable for this project*

**Comments:** All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameter, where appropriate, were qualified as estimated.

## G. BLANK CRITERIA:

1. Was a method blank analyzed after the calibration standards, prior to sample analysis, and once for every 12-hour period beginning with the injection of BFB? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☐ YES ☑ NO
3. Were the trip blanks and method blanks interference free? ☑ YES ☐ NO
4. List target parameters detected in the blanks: *none*
5. Was the level of blank contamination less than 5% of the MCL associated with the analyte? ☑ NA ☐ YES ☐ NO
6. Did any samples contain high concentrations of VOCs in excess of the linear range of the calibration curve? ☐ YES ☑ NO
7. Were one or more blanks analyzed following the high concentration sample to prevent cross contamination? ☑ NA ☐ YES ☐ NO

**Comments:** All blank criteria were met.

## H. SURROGATE CRITERIA:

***SW-846 Criteria:***

1. Were the following surrogates used? ☑ YES ☐ NO
   - dibromofluoromethane ( 80%-120%)
   - 4-bromofluorobenzene (74%-121%)
   - toluene-$d_8$ (81%-117%)

- 1,2-dichloroethane-$d_4$ (80%-120%)

2. Were recoveries within the specified ranges? ☐ YES ☑ NO
   If "NO", corrective action is required. Flagging of the data as estimated is not acceptable until corrective action has been attempted.

3. Were samples with surrogates outside the QC window reanalyzed as required? *See comment*

**Comments:** All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1 (1-2'). Insufficient sample was available for reanalysis. However, the matrix spike for this sample had compliant surrogate recoveries. As per validation guidelines, all results were qualified as estimated for this sample. All other surrogate criteria were met.

## I. MATRIX SPIKE, MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| *Parameter* | *% R Water* | *RPD Water* |
|---|---|---|
| 1,1-dichloroethene | 61-145 | 14 |
| trichloroethene | 71-120 | 14 |
| benzene | 76-127 | 11 |
| toluene | 76-125 | 13 |
| chlorobenzene | 75-130 | 13 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? *See comment*
2. Did the MS/MSD contain additional target parameters? *See comment*
3. Was the MS/MSD analyzed on the specific project matrix? *See comment*
4. List matrix spike target parameters not within laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed matrix spike criteria? *See comment*
6. Did the LCS for the failed matrix spike parameter(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference? *NA.*
7. Were any parameters flagged as estimated concentrations? ☐ NA ☐ YES ☑ NO
8. List parameters flagged as estimated concentrations: *none*

**Comments:**
HWMU-5: Due to limited sample volume, a MSD was not performed. A MS, LCS and LCS Duplicate were performed. These QC samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.
HWMU-7: All MS/MSD criteria were met. QC was performed on 7 GP-5(6-11').

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters? ☑ YES ☐ NO
3. List the LCS parameters and the laboratory's acceptable recovery range. *See page 37-38 and 137-138 of the volatile certificate of analysis.*
4. List the LCS parameters that exceeded the acceptable recovery range. *None.*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - fluorobenzene
   - chlorobenzene-$d_5$
   - 1,4-dichlorobenzene-$d_4$
2. Were internal standard areas within - 50% to + 100% of the last calibration verification? ☑ YES ☐ NO
3. Were internal standard retention times within ± 30 seconds of the last calibration verification? ☑ YES ☐ NO
4. Were samples failing items 2. and/or 3. above reanalyzed as required by the method? ☑ NA ☐ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET PARAMETER IDENTIFICATION:

1. Were the RRTs of the reported parameters within ± 0.06 RRT units of the standard RRT? ☐ NA ☑ YES ☐ NO
2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:

- Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑ YES ☐ NO
- Were all characteristic ions present in the standard spectra present in the sample spectra for parameters detected above the LOQ? ☑ NA ☐ YES ☐ NO
- Were the relative intensities of the ions between the standard and sample spectra within ± 30 %? ☐ NA ☑ YES ☐ NO

3. Were all reported parameters confirmed? ☐ NA ☑ YES ☐ NO

**Comments:**
HWMU-5: All target parameter identification criteria were met. Acetone was reported below the LOQ in several samples. No target parameters were reported above the LOQ in any sample.
HWMU-7: All target parameter identification criteria were met. 1,1-Dichloroethene was reported below the LOQ in 7GP-16(3-4'). No target parameters were reported above the LOQ in any sample.

## M. TARGET PARAMETER QUANTITATION:

- If the %RSD of a parameter was 15% or less, then the average relative response factor should have been used for quantitation.

- If the %RSD of a parameter was greater than 15%, then the quantitation should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the detected parameters whose %RSD was >15%: *none*
   a. Was the subsequent quantitation based on a linear regression fit? ☑ NA ☐ YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐ YES ☐ NO
2. Did the initial analysis of any sample have a target parameter concentration that exceeded the initial calibration range? ☐ NA ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO

3. Were the parameter concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** All target parameter quantitation criteria were met.

## N. LIBRARY SEARCHES:

**Comments:** Library searches were not requested with this data set.

## O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** DAA requested, and Lancaster Laboratories provided, method detection limit study and initial demonstration of proficiency documentation.

Sample results for HWMU-5 were originally reported on an "as received" basis without dry weight factors. Lancaster Laboratories provided revised sample results including the dry weight factors.

## SW-846 METHOD 8270C (GC/MS) SEMIVOLATILE ORGANIC DATA VALIDATION

| | | | | |
|---|---|---|---|---|
| **Sample ID:** | 5GP-1 (1-2'), | 5GP-1 (9-10'), | 5GP-3 (9-10'), | 5GP-6 (10-11'), |
| | 5GP-8 (7-8'), | 5GP-8 (11-12'), | 5 GP-12 (3-4'), | 5GP-16 (3-4') |
| | 7GP-1 (1-3'), | 7GP-2 (8-12'), | 7GP-2 (13.5-14.5'), | 7GP-3 (10-11'), |
| | 7GP-4 (3-4'), | 7GP-5 (6-11'), | 7GP-8 (5-8'), | 7 GP-16 (3-4') |

**QC Samples:** 7GP-5 (6-11') MS/MSD, LCS, Extraction Blank

**Laboratory:** Lancaster Laboratories, Lancaster PA, SDG RAR01-01

***Comment: Semivolatile (a.k.a, base/neutral and acid extractables) analysis involves sample preparation using SW-846 Method 3550B-ultrasonic extraction. The semivolatile extracts are concentrated through evaporation. Target analytes are separated and quantified using capillary column GC/MS.***

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present and signed by a laboratory representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory parameter list correspond to the project specific parameter list? ☑ YES ☐ NO
5. Were all parameter LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑NA☐ YES ☐NO

**Comments:** All QC deliverables package criteria were met. All LOQs were supported by an acceptable MDL study. Additionally, Lancaster Laboratories provided a calibration standard at 1 ppm to verify instrument sensitivity at the LOD level.

### B. QC HISTORY DOCUMENTATION CRITERIA:

1. Were the instrument specific LODs for target parameters provided? ☑ YES ☐ NO
2. Were the instrument specific LOQs for target parameters provided? ☑ YES ☐ NO
3. Was the instrument specific calibration range for each target parameter specified? ☑ YES ☐ NO
4. Was initial demonstration of capability data provided for all

target parameters? ☑ YES ☐ NO

**Comments:** All QC history documentation criteria were met.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 7-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** The sample collection to extraction and extraction to analysis holding times were met. All preservation criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE CHECK CRITERIA:
***(Tuning, Injection Port And Column Performance)***

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period of standard and/or sample analysis? ☑ YES ☐ NO
2. Was there documentation of the injection of 50 ng of DFTPP? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Was the injection port inertness verified by analysis of 4,4'-DDT? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was the injection port inertness check acceptable? ☐ NA ☑ YES ☐ NO

5. Was column performance checked through the analysis of peak tailing of pentachlorophenol and benzidine? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was column performance check acceptable? ☐ NA ☑ YES ☐ NO

**Comments:** All GC/MS instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:

***SW-846 Criteria:***

1. Were the initial calibrations (ICAL) and any directly associated

blanks and samples analyzed within 12-hours of the associated instrument performance (tune) check? ☑ YES ☐ NO

2. Were quantitation ions, used and listed on data, randomly checked against primary quantitation ions as required by Method 8270C and the RFP? ☑ YES ☐ NO
3. Were all target parameters included in the ICAL? ☑ YES ☐ NO
4. Did the ICAL consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
5. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ YES ☐ NO
6. Were calibration levels removed from the curve that would negatively impact the data integrity? ☐ YES ☑ NO
7. Were 8270C SPCC criteria met?
   (Relative Response Factor-average(RRF) ≥ 0.050) ☐ NA ☑ YES ☐ NO
   - N-nitroso-di-n-propylamine
   - Hexachlorocyclopentadiene
   - 2,4-Dinitrophenol
   - 4-nitrophenol
   -
8. Were 8270C B/N Fraction parameter criteria met?
   ( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - acenaphthene
   - 1,4-dichlorobenzene
   - hexachlorobutadiene
   - N-nitrosodiphenylamine
   - Di-n-octyl phthalate
   - fluoranthene
   - benzo(a)pyrene
9. Were 8270C Acid Fraction parameter criteria met?
   ( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - 4-chloro-3-methylphenol
   - 2,4-dichlorophenol
   - 2-nitrophenol
   - phenol
   - pentachlorophenol
   - 2,4,6-trichlorophenol
10. Was each target parameter %RSD ≤ 15%?
    (with the exception of SPCC/CCC compounds) ☐ NA ☑ YES ☐ NO
11. Was the correlation coefficient or coefficient of determination >0.99 for target parameters with ≥ 15 % RSD
    (with the exception of SPCC/CCC compounds)? ☑ NA ☐ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target parameters and surrogates (with the exception of SPCC/ CCC compounds)that have % RSDs ≥ 15% have >0.99 correlation coefficient or coefficient of determination? ☐ NA ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.
ICAL performed on October 15, 2002 - Instrument ID HP06754.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or run independently on another 12-hour analysis period. ☑ YES ☐ NO
2. Were 8270C SPCC criteria met?
(Relative Response Factor (RRF) ≥ 0.050) ☑ YES ☐ NO
3. Were all 13 8270C CCC criteria met?
(%D within ± 20%) ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)
If "NO", list parameters that exceed this criterion:

***DAA Contractual Requirements:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? *not applicable for this project*

2. Five parameters, in each standard mix, may fail to meet maximum % D as long the % D is within ± 40.0%
Did calibration verification meet this criteria? *not applicable for this project*
If "NO", explain.

**Comments**: All calibration verification criteria were met.

## G. BLANK CRITERIA:

1. Was a method/extraction blank analyzed on each GC/MS system used for sample analysis? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☐ YES ☑ NO
3. Were the blank samples interference free? ☑ YES ☐ NO
4. Was the level of blank contamination less than 5% of the MCL? ☑ NA ☐ YES ☐ NO
5. List target parameters detected in the blanks:
   *none*

**Comments:** All blank criteria were met.

## H. SURROGATE CRITERIA:

1. Were the following surrogates used? ☑ YES ☐ NO
   - phenol - $d_6$ (24%-113%)
   - 2-fluorophenol (25%-121%)
   - 2,4,6-tribromophenol (19%-122%)
   - nitrobenzene – $d_8$ (23%-120%)
   - 2-fluorobiphenyl (25%-121%)
   - p-terphenyl - $d_{14}$ (18%-137%)
2. Were recoveries within the specified ranges? ☑ YES ☐ NO
3. Were any two base/neutral or acid surrogates out of specification or did any one base/neutral or acid extractable surrogate have a recovery of less than 10%? ☐YES ☑ NO
   If yes, was a reextraction and reanalysis performed to confirm that the non-compliance was due to sample matrix effects rather than laboratory deficiencies? ☑ NA ☐ YES ☐ NO

**Comments:** All surrogate requirements were met. (Lancaster Laboratories used laboratory derived surrogate limits as suggested by SW-846.)

## I. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| Parameter | % R Water | % RPD Water |
|---|---|---|
| Phenol | 12-110 | 42 |
| 2-Chlorophenol | 27-123 | 40 |
| N-Nitroso-di-n-propylamine | 41-116 | 38 |
| 4-Chloro-3-methylphenol | 23-97 | 42 |
| Acenaphthene | 46-118 | 31 |
| 4-Nitrophenol | 10-80 | 50 |
| 2,4-Dinitrotoluene | 24-96 | 38 |
| Pyrene | 26-127 | 31 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD spike contain additional target parameters? ☐ YES ☑ NO
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List MS/MSD target parameters not within acceptable laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
6. Did the LCS for the failed matrix spike parameter(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO
7. Were any parameters flagged as estimated concentrations? ☐ YES ☑ NO
8. List parameters flagged as estimated concentrations: *none*

**Comments:** MS/MSD analyses were performed on sample 7GP-5(6-11') and all method requirements were met.

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters? ☑ YES ☐ NO
3. List the LCS target parameters and laboratory recovery range. *See page 402-403 of the semivolatile certificate of analysis.*
4. List the LCS parameters which exceeded the acceptable recovery range: *none*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - 1,4-Dichlorobenzene-$d_4$
   - Naphthalene-$d_8$
   - Acenapththene-$d_{10}$
   - Phenanthrene-$d_{10}$
   - Chrysene-$d_{12}$
   - Perylene-$d_{12}$

2. Were internal standard areas within ± 50% of last calibration verification? ☑ YES ☐ NO
3. Were internal standard retention times within ± 30 seconds of last calibration verification? ☑ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET PARAMETER IDENTIFICATION:

1. Were the RRTs of the reported parameters within ± 0.06 RRT units of the standard RRT? ☐ NA ☑YES ☐ NO

2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:
   - Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑YES ☐ NO
   - Were all characteristic ions present in the standard spectra present in the sample spectra for parameters detected above the LOQ? ☐ NA ☑YES ☐ NO
   - Were the relative intensities of the ions between the standard and sample spectra within ± 30 %? ☐ NA ☑YES ☐ NO
3. Were all reported parameters confirmed? ☐NA ☑YES ☐ NO

**Comments:** All target parameter identification requirements were met.

## M. TARGET PARAMETER QUANTITATION:

- If the %RSD of a parameter was 15% or less, then the average relative response factor should have been used for quantitation.
- If the %RSD of a parameter was greater than 15%, then the quantitation

should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the parameters detected above the LOQ whose %RSD was >15%: *none*
   a. Was the subsequent quantitation based on a linear regression fit? ☑ NA ☐ YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐ YES ☐ NO

2. Did the initial analysis of any sample have a concentration of a target parameter that exceeded the initial calibration range? ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO
3. Were the parameter concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** Target parameter quantitation criteria were met.

## N. LIBRARY SEARCHES:

**Comments:** Library searches were not requested with this data set.

## O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was required.

**LIMITATIONS AND REFERENCES:**

Draper Aden Associates conducted data validation of the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: Date:

**Draper Aden Associates**
Engineering ♦ Surveying ♦ Environmental Services

JCF for

12-17-02

**Jeanie Flint**
**Environmental Scientist**
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# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **6010B** | | | | | | | |
| 5GP-1(1-2') | Aluminum | 19200 | J | 19200 | | 24.7 | No action taken. |
| 5GP-1(9-10') | Aluminum | 12100 | J | 12100 | | 23.4 | No action taken. |
| 5GP-12(3-4') | Aluminum | 19600 | J | 19600 | | 25 | No action taken. |
| 5GP-16(3-4') | Aluminum | 17000 | J | 17000 | | 24.8 | No action taken. |
| 5GP-3(9-10') | Aluminum | 14800 | J | 14800 | | 24.4 | No action taken. |
| 5GP-6(10-11') | Aluminum | 19400 | J | 19400 | | 24.2 | No action taken. |
| 5GP-8(11-12') | Aluminum | 19600 | J | 19600 | | 24 | No action taken. |
| 5GP-8(7-8') | Aluminum | 14200 | J | 14200 | | 23.7 | No action taken. |
| 7GP-1(1-3') | Aluminum | 11100 | J | 11100 | | 23.5 | No action taken. |
| 7GP-16(3-4') | Aluminum | 6650 | J | 6650 | | 24.1 | No action taken. |
| 7GP-2(13.5-14.5') | Aluminum | 19700 | J | 19700 | | 24.3 | No action taken. |
| 7GP-2(8-12') | Aluminum | 8790 | J | 8790 | | 24.3 | No action taken. |
| 7GP-3(10-11') | Aluminum | 11700 | J | 11700 | | 25.3 | No action taken. |
| 7GP-4(3-4') | Aluminum | 5290 | J | 5290 | | 23.4 | No action taken. |
| 7GP-5(6-11') | Aluminum | 20000 | J | 20000 | | 24.1 | No action taken. |
| 7GP-8(5-8') | Aluminum | 22400 | J | 22400 | | 24.7 | No action taken. |
| 5GP-1(1-2') | Antimony | 1.8 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Antimony | 0.9 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Antimony | 1.6 | B | U | J | 7.5 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Antimony | 1.1 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-3(9-10') | Antimony | 1.4 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Antimony | 1.1 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Antimony | 1.2 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Antimony | 1.1 | B | U | J | 7.1 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Antimony | 0.52 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Antimony | 0.59 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Antimony | 1.3 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-2(8-12') | Antimony | 1.1 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Antimony | 1.1 | B | U | J | 7.6 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Antimony | 0.77 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Antimony | 1 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Antimony | 0.8 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Arsenic | 2.2 | | 2.2 | | 1.2 | No action taken. |
| 5GP-1(9-10') | Arsenic | 3.9 | | 3.9 | | 1.2 | No action taken. |
| 5GP-12(3-4') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 5GP-16(3-4') | Arsenic | 4 | | 4 | | 1.2 | No action taken. |
| 5GP-3(9-10') | Arsenic | 2.6 | | 2.6 | | 1.2 | No action taken. |
| 5GP-6(10-11') | Arsenic | 1.6 | | 1.6 | | 1.2 | No action taken. |
| 5GP-8(11-12') | Arsenic | 3.4 | | 3.4 | | 1.2 | No action taken. |
| 5GP-8(7-8') | Arsenic | 4.1 | | 4.1 | | 1.2 | No action taken. |
| 7GP-1(1-3') | Arsenic | 3.8 | | 3.8 | | 1.2 | No action taken. |
| 7GP-16(3-4') | Arsenic | 1 | B | U | | 1.2 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Arsenic | 3.1 | | 3.1 | | 1.2 | No action taken. |
| 7GP-2(8-12') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 7GP-3(10-11') | Arsenic | 26.1 | | 26.1 | | 1.3 | No action taken. |
| 7GP-4(3-4') | Arsenic | 0.96 | B | U | | 1.2 | Result < LOQ. |
| 7GP-5(6-11') | Arsenic | 3.5 | | 3.5 | | 1.2 | No action taken. |
| 7GP-8(5-8') | Arsenic | 2.4 | | 2.4 | | 1.2 | No action taken. |
| Unit_5_TCLP | Arsenic | 0.0091 | J | U | | 0.1 | Result < LOQ. |
| Unit_7_TCLP | Arsenic | 0.0056 | J | U | | 0.1 | Result < LOQ. |
| 5GP-1(1-2') | Barium | 85.1 | J | 85.1 | | 24.7 | No action taken. |
| 5GP-1(9-10') | Barium | 47.3 | J | 47.3 | | 23.4 | No action taken. |
| 5GP-12(3-4') | Barium | 56.2 | J | 56.2 | | 25 | No action taken. |
| 5GP-16(3-4') | Barium | 51.2 | J | 51.2 | | 24.8 | No action taken. |
| 5GP-3(9-10') | Barium | 37.2 | J | 37.2 | | 24.4 | No action taken. |
| 5GP-6(10-11') | Barium | 56.9 | J | 56.9 | | 24.2 | No action taken. |
| 5GP-8(11-12') | Barium | 61.4 | J | 61.4 | | 24 | No action taken. |
| 5GP-8(7-8') | Barium | 46.1 | J | 46.1 | | 23.7 | No action taken. |

SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 7GP-1(1-3') | Barium | 66.9 | J | 66.9 | 23.5 | No action taken. |
| 7GP-16(3-4') | Barium | 106 | J | 106 | 24.1 | No action taken. |
| 7GP-2(13.5-14.5') | Barium | 70.9 | J | 70.9 | 24.3 | No action taken. |
| 7GP-2(8-12') | Barium | 40.9 | J | 40.9 | 24.3 | No action taken. |
| 7GP-3(10-11') | Barium | 229 | J | 229 | 25.3 | No action taken. |
| 7GP-4(3-4') | Barium | 69.2 | J | 69.2 | 23.4 | No action taken. |
| 7GP-5(6-11') | Barium | 55.6 | J | 55.6 | 24.1 | No action taken. |
| 7GP-8(5-8') | Barium | 55 | J | 55 | 24.7 | No action taken. |
| Unit_5_TCLP | Barium | 0.714 | | 0.714 | 0.1 | No action taken. |
| Unit_7_TCLP | Barium | 0.521 | | 0.521 | 0.1 | No action taken. |
| 5GP-1(1-2') | Beryllium | 0.59 | B | U | 0.62 | Result < LOQ. |
| 5GP-1(9-10') | Beryllium | 1.1 | | 1.1 | 0.59 | No action taken. |
| 5GP-12(3-4') | Beryllium | 0.55 | B | U | 0.62 | Result < LOQ. |
| 5GP-16(3-4') | Beryllium | 0.4 | B | U | 0.62 | Result < LOQ. |
| 5GP-3(9-10') | Beryllium | 0.31 | B | U | 0.61 | Result < LOQ. |
| 5GP-6(10-11') | Beryllium | 0.41 | B | U | 0.6 | Result < LOQ. |
| 5GP-8(11-12') | Beryllium | 0.81 | | 0.81 | 0.6 | No action taken. |
| 5GP-8(7-8') | Beryllium | 1.3 | | 1.3 | 0.59 | No action taken. |
| 7GP-1(1-3') | Beryllium | 0.7 | | 0.7 | 0.59 | No action taken. |
| 7GP-16(3-4') | Beryllium | 0.55 | B | U | 0.6 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Beryllium | 0.84 | | 0.84 | 0.61 | No action taken. |
| 7GP-2(8-12') | Beryllium | 1.2 | | 1.2 | 0.61 | No action taken. |
| 7GP-3(10-11') | Beryllium | 1.5 | | 1.5 | 0.63 | No action taken. |
| 7GP-4(3-4') | Beryllium | 0.44 | B | U | 0.59 | Result < LOQ. |
| 7GP-5(6-11') | Beryllium | 0.35 | B | U | 0.6 | Result < LOQ. |
| 7GP-8(5-8') | Beryllium | 0.41 | B | U | 0.62 | Result < LOQ. |
| 7GP-1(1-3') | Cadmium | 0.027 | B | U | 0.59 | Result < LOQ. |
| 7GP-16(3-4') | Cadmium | 0.061 | B | U | 0.6 | Result < LOQ. |
| 7GP-3(10-11') | Cadmium | 0.16 | B | U | 0.63 | Result < LOQ. |
| 5GP-1(1-2') | Calcium | 1060 | | 1060 | 618 | No action taken. |
| 5GP-1(9-10') | Calcium | 303 | B | U | 586 | Result < LOQ. |
| 5GP-12(3-4') | Calcium | 3200 | | 3200 | 624 | No action taken. |
| 5GP-16(3-4') | Calcium | 1020 | | 1020 | 620 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-3(9-10') | Calcium | 866 | | 866 | 609 | No action taken. |
| 5GP-6(10-11') | Calcium | 9930 | | 9930 | 604 | No action taken. |
| 5GP-8(11-12') | Calcium | 576 | B | U | 599 | Result < LOQ. |
| 5GP-8(7-8') | Calcium | 159 | B | U | 592 | Result < LOQ. |
| 7GP-1(1-3') | Calcium | 7490 | | 7490 | 587 | No action taken. |
| 7GP-16(3-4') | Calcium | 1230 | | 1230 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Calcium | 480 | B | U | 608 | Result < LOQ. |
| 7GP-2(8-12') | Calcium | 283 | B | U | 607 | Result < LOQ. |
| 7GP-3(10-11') | Calcium | 28100 | | 28100 | 631 | No action taken. |
| 7GP-4(3-4') | Calcium | 749 | | 749 | 586 | No action taken. |
| 7GP-5(6-11') | Calcium | 259 | B | U | 602 | Result < LOQ. |
| 7GP-8(5-8') | Calcium | 1570 | | 1570 | 618 | No action taken. |
| 5GP-1(1-2') | Chromium | 22.4 | | 22.4 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Chromium | 31.7 | | 31.7 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Chromium | 27 | | 27 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Chromium | 24.4 | | 24.4 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-3(9-10') | Chromium | 22.8 | | 22.8 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Chromium | 17.9 | | 17.9 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Chromium | 26.9 | | 26.9 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Chromium | 21.6 | | 21.6 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Chromium | 24.1 | | 24.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Chromium | 11.5 | | 11.5 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Chromium | 22.5 | | 22.5 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-2(8-12') | Chromium | 22 | | 22 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Chromium | 32.8 | | 32.8 J | 1.3 | Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Chromium | 10.1 | | 10.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Chromium | 22.8 | | 22.8 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Chromium | 20.1 | | 20.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Cobalt | 9 | | 9 | 6.2 | No action taken. |
| 5GP-1(9-10') | Cobalt | 17.6 | | 17.6 | 5.9 | No action taken. |
| 5GP-12(3-4') | Cobalt | 9.1 | | 9.1 | 6.2 | No action taken. |
| 5GP-16(3-4') | Cobalt | 8.2 | | 8.2 | 6.2 | No action taken. |
| 5GP-3(9-10') | Cobalt | 3.2 | B | U | 6.1 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-6(10-11') | Cobalt | 5.5 | B | U | 6 | Result < LOQ. |
| 5GP-8(11-12') | Cobalt | 10 | | 10 | 6 | No action taken. |
| 5GP-8(7-8') | Cobalt | 11.6 | | 11.6 | 5.9 | No action taken. |
| 7GP-1(1-3') | Cobalt | 11.5 | | 11.5 | 5.9 | No action taken. |
| 7GP-16(3-4') | Cobalt | 5.9 | B | U | 6 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Cobalt | 16.2 | | 16.2 | 6.1 | No action taken. |
| 7GP-2(8-12') | Cobalt | 12.5 | | 12.5 | 6.1 | No action taken. |
| 7GP-3(10-11') | Cobalt | 8.1 | | 8.1 | 6.3 | No action taken. |
| 7GP-4(3-4') | Cobalt | 5.4 | B | U | 5.9 | Result < LOQ. |
| 7GP-5(6-11') | Cobalt | 4.5 | B | U | 6 | Result < LOQ. |
| 7GP-8(5-8') | Cobalt | 5.4 | B | U | 6.2 | Result < LOQ. |
| 5GP-1(1-2') | Copper | 13.9 | | 13.9 | 3.1 | No action taken. |
| 5GP-1(9-10') | Copper | 19.8 | | 19.8 | 2.9 | No action taken. |
| 5GP-12(3-4') | Copper | 13.6 | | 13.6 | 3.1 | No action taken. |
| 5GP-16(3-4') | Copper | 10.6 | | 10.6 | 3.1 | No action taken. |
| 5GP-3(9-10') | Copper | 9.5 | | 9.5 | 3 | No action taken. |
| 5GP-6(10-11') | Copper | 11.6 | | 11.6 | 3 | No action taken. |
| 5GP-8(11-12') | Copper | 14.8 | | 14.8 | 3 | No action taken. |
| 5GP-8(7-8') | Copper | 16.8 | | 16.8 | 3 | No action taken. |
| 7GP-1(1-3') | Copper | 22.8 | | 22.8 | 2.9 | No action taken. |
| 7GP-16(3-4') | Copper | 5.1 | | 5.1 | 3 | No action taken. |
| 7GP-2(13.5-14.5') | Copper | 14.2 | | 14.2 | 3 | No action taken. |
| 7GP-2(8-12') | Copper | 22 | | 22 | 3 | No action taken. |
| 7GP-3(10-11') | Copper | 23.2 | | 23.2 | 3.2 | No action taken. |
| 7GP-4(3-4') | Copper | 5.1 | | 5.1 | 2.9 | No action taken. |
| 7GP-5(6-11') | Copper | 10 | | 10 | 3 | No action taken. |
| 7GP-8(5-8') | Copper | 12.7 | | 12.7 | 3.1 | No action taken. |
| 5GP-1(1-2') | Iron | 30700 | | 30700 | 12.4 | No action taken. |
| 5GP-1(9-10') | Iron | 26700 | | 26700 | 11.7 | No action taken. |
| 5GP-12(3-4') | Iron | 33400 | | 33400 | 12.5 | No action taken. |
| 5GP-16(3-4') | Iron | 28200 | | 28200 | 12.4 | No action taken. |
| 5GP-3(9-10') | Iron | 24400 | | 24400 | 12.2 | No action taken. |
| 5GP-6(10-11') | Iron | 22400 | | 22400 | 12.1 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-8(11-12') | Iron | 29000 | 29000 | 12 | No action taken. |
| 5GP-8(7-8') | Iron | 28400 | 28400 | 11.8 | No action taken. |
| 7GP-1(1-3') | Iron | 19400 | 19400 | 11.7 | No action taken. |
| 7GP-16(3-4') | Iron | 10800 | 10800 | 12.1 | No action taken. |
| 7GP-2(13.5-14.5') | Iron | 29300 | 29300 | 12.2 | No action taken. |
| 7GP-2(8-12') | Iron | 23300 | 23300 | 12.1 | No action taken. |
| 7GP-3(10-11') | Iron | 15900 | 15900 | 12.6 | No action taken. |
| 7GP-4(3-4') | Iron | 9860 | 9860 | 11.7 | No action taken. |
| 7GP-5(6-11') | Iron | 23600 | 23600 | I2 | No action taken. |
| 7GP-8(5-8') | Iron | 23200 | 23200 | 12.4 | No action taken. |
| 5GP-1(1-2') | Lead | 12.9 | 12.9 | 0.37 | No action taken. |
| 5GP-1(9-10') | Lead | 9.8 | 9.8 | 0.35 | No action taken. |
| 5GP-12(3-4') | Lead | 12.6 | 12.6 | 0.37 | No action taken. |
| 5GP-16(3-4') | Lead | 11.4 | 11.4 | 0.37 | No action taken. |
| 5GP-3(9-10') | Lead | 9.7 | 9.7 | 0.37 | No action taken. |
| 5GP-6(10-11') | Lead | 11.3 | 11.3 | 0.36 | No action taken. |
| 5GP-8(11-12') | Lead | 9.6 | 9.6 | 0.36 | No action taken. |
| 5GP-8(7-8') | Lead | 9.6 | 9.6 | 0.36 | No action taken. |
| 7GP-1(1-3') | Lead | 8.1 | 8.1 | 0.35 | No action taken. |
| 7GP-16(3-4') | Lead | 5.4 | 5.4 | 0.36 | No action taken. |
| 7GP-2(13.5-14.5') | Lead | 13.6 | 13.6 | 0.36 | No action taken. |
| 7GP-2(8-12') | Lead | 2.8 | 2.8 | 0.36 | No action taken. |
| 7GP-3(10-11') | Lead | 35.1 | 35.1 | 0.38 | No action taken. |
| 7GP-4(3-4') | Lead | 5.8 | 5.8 | 0.35 | No action taken. |
| 7GP-5(6-11') | Lead | 11 | 11 | 0.36 | No action taken. |
| 7GP-8(5-8') | Lead | 10.3 | 10.3 | 0.37 | No action taken. |
| Unit_5_TCLP | Lead | 0.0116 J | U | 0.1 | Result < LOQ. |
| 5GP-1(1-2') | Magnesium | 1530 | 1530 | 618 | No action taken. |
| 5GP-1(9-10') | Magnesium | 1730 | 1730 | 586 | No action taken. |
| 5GP-12(3-4') | Magnesium | 2200 | 2200 | 624 | No action taken. |
| 5GP-16(3-4') | Magnesium | 812 | 812 | 620 | No action taken. |
| 5GP-3(9-10') | Magnesium | 597 B | U | 609 | Result < LOQ. |
| 5GP-6(10-11') | Magnesium | 1220 | 1220 | 604 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-8(11-12') | Magnesium | 1560 | 1560 | 599 | No action taken. |
| 5GP-8(7-8') | Magnesium | 1410 | 1410 | 592 | No action taken. |
| 7GP-1(1-3') | Magnesium | 4290 | 4290 | 587 | No action taken. |
| 7GP-16(3-4') | Magnesium | 1890 | 1890 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Magnesium | 2000 | 2000 | 608 | No action taken. |
| 7GP-2(8-12') | Magnesium | 3140 | 3140 | 607 | No action taken. |
| 7GP-3(10-11') | Magnesium | 2440 | 2440 | 631 | No action taken. |
| 7GP-4(3-4') | Magnesium | 1590 | 1590 | 586 | No action taken. |
| 7GP-5(6-11') | Magnesium | 787 | 787 | 602 | No action taken. |
| 7GP-8(5-8') | Magnesium | 1090 | 1090 | 618 | No action taken. |
| 5GP-1(1-2') | Manganese | 337 | 337 | 1.9 | No action taken. |
| 5GP-1(9-10') | Manganese | 360 | 360 | 1.8 | No action taken. |
| 5GP-12(3-4') | Manganese | 457 | 457 | 1.9 | No action taken. |
| 5GP-16(3-4') | Manganese | 393 | 393 | 1.9 | No action taken. |
| 5GP-3(9-10') | Manganese | 90.8 | 90.8 | 1.8 | No action taken. |
| 5GP-6(10-11') | Manganese | 154 | 154 | 1.8 | No action taken. |
| 5GP-8(11-12') | Manganese | 372 | 372 | 1.8 | No action taken. |
| 5GP-8(7-8') | Manganese | 242 | 242 | 1.8 | No action taken. |
| 7GP-1(1-3') | Manganese | 662 | 662 | 1.8 | No action taken. |
| 7GP-16(3-4') | Manganese | 422 | 422 | 1.8 | No action taken. |
| 7GP-2(13.5-14.5') | Manganese | 407 | 407 | 1.8 | No action taken. |
| 7GP-2(8-12') | Manganese | 274 | 274 | 1.8 | No action taken. |
| 7GP-3(10-11') | Manganese | 145 | 145 | 1.9 | No action taken. |
| 7GP-4(3-4') | Manganese | 292 | 292 | 1.8 | No action taken. |
| 7GP-5(6-11') | Manganese | 187 | 187 | 1.8 | No action taken. |
| 7GP-8(5-8') | Manganese | 280 | 280 | 1.9 | No action taken. |
| 5GP-1(1-2') | Nickel | 9.4 | 9.4 | 4.9 | No action taken. |
| 5GP-1(9-10') | Nickel | 19 | 19 | 4.7 | No action taken. |
| 5GP-12(3-4') | Nickel | 8.2 | 8.2 | 5 | No action taken. |
| 5GP-16(3-4') | Nickel | 6.3 | 6.3 | 5 | No action taken. |
| 5GP-3(9-10') | Nickel | 5.3 | 5.3 | 4.9 | No action taken. |
| 5GP-6(10-11') | Nickel | 7.9 | 7.9 | 4.8 | No action taken. |
| 5GP-8(11-12') | Nickel | 11 | 11 | 4.8 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-8(7-8') | Nickel | 10.7 | | 10.7 | 4.7 | No action taken. |
| 7GP-1(1-3') | Nickel | 13.5 | | 13.5 | 4.7 | No action taken. |
| 7GP-16(3-4') | Nickel | 7.7 | | 7.7 | 4.8 | No action taken. |
| 7GP-2(13.5-14.5') | Nickel | 11.4 | | 11.4 | 4.9 | No action taken. |
| 7GP-2(8-12') | Nickel | 21.6 | | 21.6 | 4.9 | No action taken. |
| 7GP-3(10-11') | Nickel | 15.9 | | 15.9 | 5.1 | No action taken. |
| 7GP-4(3-4') | Nickel | 6.3 | | 6.3 | 4.7 | No action taken. |
| 7GP-5(6-11') | Nickel | 7.2 | | 7.2 | 4.8 | No action taken. |
| 7GP-8(5-8') | Nickel | 8.5 | | 8.5 | 4.9 | No action taken. |
| 5GP-1(1-2') | Potassium | 1580 | J | 1580 | 618 | No action taken. |
| 5GP-1(9-10') | Potassium | 851 | J | 851 | 586 | No action taken. |
| 5GP-12(3-4') | Potassium | 915 | J | 915 | 624 | No action taken. |
| 5GP-16(3-4') | Potassium | 561 | B J | U | 620 | Result < LOQ. |
| 5GP-3(9-10') | Potassium | 500 | B J | U | 609 | Result < LOQ. |
| 5GP-6(10-11') | Potassium | 1120 | J | 1120 | 604 | No action taken. |
| 5GP-8(11-12') | Potassium | 1420 | J | 1420 | 599 | No action taken. |
| 5GP-8(7-8') | Potassium | 1090 | J | 1090 | 592 | No action taken. |
| 7GP-1(1-3') | Potassium | 774 | J | 774 | 587 | No action taken. |
| 7GP-16(3-4') | Potassium | 809 | J | 809 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Potassium | 1390 | J | 1390 | 608 | No action taken. |
| 7GP-2(8-12') | Potassium | 1070 | J | 1070 | 607 | No action taken. |
| 7GP-3(10-11') | Potassium | 2970 | J | 2970 | 631 | No action taken. |
| 7GP-4(3-4') | Potassium | 729 | J | 729 | 586 | No action taken. |
| 7GP-5(6-11') | Potassium | 732 | J | 732 | 602 | No action taken. |
| 7GP-8(5-8') | Potassium | 1040 | J | 1040 | 618 | No action taken. |
| 7GP-3(10-11') | Selenium | 3.5 | | 3.5 | 0.63 | No action taken. |
| 5GP-6(10-11') | Sodium | 80.8 | B | U | 604 | Result < LOQ. |
| 7GP-3(10-11') | Sodium | 156 | B | U | 631 | Result < LOQ. |
| 7GP-16(3-4') | Thallium | 0.7 | B | U | 1.2 | Result < LOQ. |
| 5GP-1(1-2') | Vanadium | 64.9 | | 64.9 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Vanadium | 32 | | 32 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Vanadium | 61.8 | | 61.8 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Vanadium | 55.4 | | 55.4 J | 6.2 | Low matrix spike recovery. Result biased low. |

SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-3(9-10') | Vanadium | 54.3 | 54.3 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Vanadium | 57.5 | 57.5 J | 6 | Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Vanadium | 55.2 | 55.2 J | 6 | Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Vanadium | 26.7 | 26.7 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Vanadium | 28 | 28 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Vanadium | 15.4 | 15.4 J | 6 | Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Vanadium | 57.7 | 57.7 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 7GP-2(8-12') | Vanadium | 21.1 | 21.1 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Vanadium | 42.1 | 42.1 J | 6.3 | Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Vanadium | 14 | 14 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Vanadium | 60.6 | 60.6 J | 6 | Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Vanadium | 61.8 | 61.8 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Zinc | 35.3 | 35.3 | 2.5 | No action taken. |
| 5GP-1(9-10') | Zinc | 20.7 | 20.7 | 2.3 | No action taken. |
| 5GP-12(3-4') | Zinc | 32.1 | 32.1 | 2.5 | No action taken. |
| 5GP-16(3-4') | Zinc | 20.2 | 20.2 | 2.5 | No action taken. |
| 5GP-3(9-10') | Zinc | 18.6 | 18.6 | 2.4 | No action taken. |
| 5GP-6(10-11') | Zinc | 26.4 | 26.4 | 2.4 | No action taken. |
| 5GP-8(11-12') | Zinc | 33.8 | 33.8 | 2.4 | No action taken. |
| 5GP-8(7-8') | Zinc | 23.9 | 23.9 | 2.4 | No action taken. |
| 7GP-1(1-3') | Zinc | 17.4 | 17.4 | 2.3 | No action taken. |
| 7GP-16(3-4') | Zinc | 39.7 | 39.7 | 2.4 | No action taken. |
| 7GP-2(13.5-14.5') | Zinc | 32.6 | 32.6 | 2.4 | No action taken. |
| 7GP-2(8-12') | Zinc | 15 | 15 | 2.4 | No action taken. |
| 7GP-3(10-11') | Zinc | 33.8 | 33.8 | 2.5 | No action taken. |
| 7GP-4(3-4') | Zinc | 35 | 35 | 2.3 | No action taken. |
| 7GP-5(6-11') | Zinc | 24.2 | 24.2 | 2.4 | No action taken. |
| 7GP-8(5-8') | Zinc | 28.1 | 28.1 | 2.5 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 7471A | | | | | | |
| 5GP-1(1-2') | Mercury | 0.048 | B | U | 0.12 | Result < LOQ. |
| 5GP-1(9-10') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 5GP-12(3-4') | Mercury | 0.049 | B | U | 0.12 | Result < LOQ. |
| 5GP-16(3-4') | Mercury | 0.07 | B | U | 0.12 | Result < LOQ. |
| 5GP-3(9-10') | Mercury | 0.057 | B | U | 0.12 | Result < LOQ. |
| 5GP-6(10-11') | Mercury | 0.043 | B | U | 0.12 | Result < LOQ. |
| 5GP-8(11-12') | Mercury | 0.057 | B | U | 0.12 | Result < LOQ. |
| 5GP-8(7-8') | Mercury | 0.023 | B | U | 0.12 | Result < LOQ. |
| 7GP-1(1-3') | Mercury | 0.026 | B | U | 0.12 | Result < LOQ. |
| 7GP-16(3-4') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Mercury | 0.05 | B | U | 0.12 | Result < LOQ. |
| 7GP-2(8-12') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-3(10-11') | Mercury | 0.04 | B | U | 0.13 | Result < LOQ. |
| 7GP-4(3-4') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-5(6-11') | Mercury | 0.1 | B | U | 0.12 | Result < LOQ. |
| 7GP-8(5-8') | Mercury | 0.061 | B | U | 0.12 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| **8081A/8082** | | | | | |
| 5GP-1(1-2') | Aroclor-1016 | 0.0055 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1016 | 0.0055 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1016 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1221 | 0.011 U | U J | 0.034 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1221 | 0.012 U | U J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1221 | 0.012 U | U J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1221 | 0.012 U | U J | 0.037 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1221 | 0.012 U | U J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1221 | 0.011 U | U J | 0.034 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-8(11-12') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1221 | 0.013 | U | U | J | 0.038 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1232 | 0.0049 | U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1232 | 0.0049 | U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-3(10-11') | Aroclor-1232 | 0.0054 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1232 | 0.005 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1232 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1232 | 0.0052 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1242 | 0.0057 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1242 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1242 | 0.006 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1242 | 0.0057 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1242 | 0.0058 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1242 | 0.0058 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1242 | 0.006 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1242 | 0.0063 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1242 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1248 | 0.0056 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1248 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-12(3-4') | Aroclor-1248 | 0.0059 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1248 | 0.006 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1248 | 0.0059 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1248 | 0.0056 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1248 | 0.0059 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1248 | 0.0059 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1248 | 0.0058 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1248 | 0.0062 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1248 | 0.0058 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1248 | 0.006 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1254 | 0.0065 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1254 | 0.0068 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1254 | 0.0069 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1254 | 0.0069 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1254 | 0.0065 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-1(1-3') | Aroclor-1254 | 0.0066 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1254 | 0.0069 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1254 | 0.0072 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1254 | 0.0067 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1254 | 0.0069 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1260 | 0.005 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1260 | 0.0053 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1260 | 0.0054 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1260 | 0.005 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1260 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1260 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1260 | 0.0053 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1260 | 0.0056 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-5(6-11') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | delta-BHC | 0.00022 J | U | 0.001 | Result < LOQ. |
| 5GP-1(1-2') | Chlordane-gamma | 0.00048 J | U | 0.0019 | Result < LOQ. |
| 7GP-1(1-3') | Chlordane-gamma | 0.00027 J | U | 0.002 | Result < LOQ. |
| 7GP-16(3-4') | Chlordane-gamma | 0.00026 J | U | 0.002 | Result < LOQ. |
| 7GP-5(6-11') | Chlordane-gamma | 0.00023 J | U | 0.002 | Result < LOQ. |
| 7GP-8(5-8') | Chlordane-gamma | 0.00028 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | 4,4-DDD | 0.019 | 0.019 | 0.004 | No action taken. |
| 5GP-6(10-11') | 4,4-DDD | 0.0067 | 0.0067 | 0.0019 | No action taken. |
| 5GP-8(11-12') | 4,4-DDD | 0.00097 J | U | 0.002 | Result < LOQ. |
| 5GP-8(7-8') | 4,4-DDD | 0.051 | 0.051 | 0.01 | No action taken. |
| 7GP-2(13.5-14.5') | 4,4-DDD | 0.0035 | 0.0035 | 0.0021 | No action taken. |
| 7GP-2(8-12') | 4,4-DDD | 0.00075 J | U | 0.002 | Result < LOQ. |
| 7GP-5(6-11') | 4,4-DDD | 0.0006 J | U | 0.002 | Result < LOQ. |
| 7GP-8(5-8') | 4,4-DDD | 0.00049 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | 4,4-DDE | 0.00049 J | U | 0.002 | Result < LOQ. |
| 5GP-6(10-11') | 4,4-DDE | 0.0017 J | U | 0.0019 | Result < LOQ. |
| 5GP-8(11-12') | 4,4-DDE | 0.0012 J | U | 0.002 | Result < LOQ. |
| 5GP-8(7-8') | 4,4-DDE | 0.0011 J | U | 0.002 | Result < LOQ. |
| 7GP-3(10-11') | 4,4-DDE | 0.0025 | 0.0025 | 0.0021 | No action taken. |
| 7GP-2(13.5-14.5') | 4,4-DDT | 0.00067 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | Endrin Aldehyde | 0.0023 J | U | 0.0035 | Result < LOQ. |
| 5GP-12(3-4') | Endrin Aldehyde | 0.0017 J | U | 0.0036 | Result < LOQ. |
| 5GP-16(3-4') | Endrin Aldehyde | 0.0022 J | U | 0.0037 | Result < LOQ. |
| 5GP-8(11-12') | Endrin Aldehyde | 0.0017 J | U | 0.0035 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Endrin Aldehyde | 0.0031 J | U | 0.0036 | Result < LOQ. |
| 7GP-2(8-12') | Endrin Aldehyde | 0.0019 J | U | 0.0036 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **8260B** | | | | | | | |
| 5GP-1(1-2') | Acetone | 0.007 | U | U | J | 0.01 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | Acetone | 0.007 | U | U | J | 0.017 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | Acetone | 0.011 | J | U | J | 0.016 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-16(3-4') | Acetone | 0.009 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | Acetone | 0.008 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | Acetone | 0.013 | J | U | J | 0.018 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-8(11-12') | Acetone | 0.016 | J | U | J | 0.017 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-8(7-8') | Acetone | 0.008 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Benzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromodichloromethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromoform | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromomethane | 0.002 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.008 | Estimated due to %D> 25%. |
| 5GP-16(3-4') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Carbon Disulfide | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Carbon Tetrachloride | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chlorobenzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloroethane | 0.002 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloroform | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloromethane | 0.002 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | Dibromochloromethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-1(1-3') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-16(3-4') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-2(13.5-14.5') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-2(8-12') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-3(10-11') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-4(3-4') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-5(6-11') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-8(5-8') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 5GP-1(1-2') | 1,2-Dichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 7GP-16(3-4') | 1,1-Dichloroethene | 0.001 | J | U | | 0.005 | Result < LOQ. |
| 5GP-1(1-2') | cis-1,2-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | trans-1,2-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,2-Dichloropropane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | cis-1,3-Dichloropropene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | trans-1,3-Dichloropropene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Ethylbenzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 2-Hexanone | 0.003 | U | U | J | 0.009 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 2-Hexanone | 0.002 | U | U | J | 0.008 | Estimated due to %D> 25%. |
| 5GP-16(3-4') | 2-Hexanone | 0.004 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 2-Hexanone | 0.004 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 2-Hexanone | 0.003 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | 4-Methyl-2-pentanone (methyl isobutyl ketone) | 0.003 | U | U | J | 0.009 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Methylene Chloride | 0.002 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Styrene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.007 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-16(3-4') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Tetrachloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Toluene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,1-Trichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,2-Trichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Trichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Vinyl Chloride | 0.001 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | Total Xylenes | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| **8270C** | | | | | | | |
| 5GP-8(7-8') | bis-(2-Ethylhexyl)phthalate | 0.092 | J | U | | 0.39 | Result < LOQ. |
| 7GP-3(10-11') | bis-(2-Ethylhexyl)phthalate | 0.09 | J | U | | 0.42 | Result < LOQ. |
| 5GP-6(10-11') | N-Nitrosodiphenylamine | 0.063 | J | U | | 0.38 | Result < LOQ. |
| 5GP-8(11-12') | N-Nitrosodiphenylamine | 0.082 | J | U | | 0.39 | Result < LOQ. |
| 7GP-3(10-11') | N-Nitrosodiphenylamine | 0.75 | | 0.75 | | 0.42 | No action taken. |
| **9012A** | | | | | | | |
| 5GP-1(9-10') | Cyanide | 0.13 | B | U | | 0.59 | Result < LOQ. Result attributed to blank contamination (<5Xpreparation blank concentration). |
| 5GP-6(10-11') | Cyanide | 0.11 | B | U | | 0.6 | Result < LOQ. Result attributed to blank contamination (<5Xpreparation blank concentration). |
| 7GP-3(10-11') | Cyanide | 0.69 | | 0.69 | | 0.63 | No action taken. |

**Data Validation Qualifier Definitions:**

**U-** Denotes the analyte was analyzed for, but was not detected above the laboratory limit of quantitation (LOQ).

**J-** Denotes an estimated value. See sample specific note presented on data validation report table for further explanation.

**UJ-** The LOQ should be considered estimated. See sample specific note presented on data validation report table for further explanation.

**R-** Denotes sample result was rejected. See sample specific note presented on data validation report table for further explanation.

NOTE: The table summaries all detected results and results which required qualification based on data validation. All Results reported on a dryweight basis.
See laboratory report for definition of laboratory result qualifiers, if needed.

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B
**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO
**Carrier:** FED EX
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Box 4: Sample Type**
G Grab; C Composite

**Invoice**
**Copy to Consultant:** ☑YES ☐NO
**Bill:** ☑Client ☐Consultant
**Preserved and shipped on ice:** ☑YES Bo ☐NO

| Box 4 - Sample Type | G | G | C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | | | | | | | |
| Required pH of Sample | - | - | - | | | | | | | |
| Box 2 - Preservative | D | H | H | | | | | | | |
| Box 5 - Sample Container Type | VOA | 1-500ml G | 500ml G | | | | | | | |

| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Volatiles (8260B) | Semivolatiles/Pests/PCB | Full Characterization TCLP Corrosivity Reactivity Ignitability | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1-2') 5GP-1 | 10/31 | 13:10 | S | 1 | X | X | | | | | | 5GP-1 (1-2') |
| (9-10') 5GP-1 | 10/31 | 13:10 | S | 1 | X | X | | | | | | 5GP-1 (9-10) |
| (10-11') 5GP-6 | 10/31 | 13:50 | S | 1 | X | X | | | | | | 5GP-6 (10-11') |
| (9-10') 5GP-3 | | 14:30 | S | 1 | X | X | | | | | | 5GP-3 (9-10') |
| (7-8') 5GP-8 | | 15:50 | S | 1 | X | X | | | | | | 5GP-8 (7-8') |
| (11-12') 5GP-8 | | 16:05 | S | 1 | X | X | | | | | | 5GP-8 (11-12') |
| (3-4') 5GP-12 | | 16:40 | S | 1 | X | X | | | | | | 5GP-12 (3-4') |
| (3-4') 5GP-16 | 10/31 | 17:00 | S | 1 | X | X | | | | | | 5GP-16 (3-4') |
| FULL TCLP | 11/1 | 13:55 | S | 1 | | | X | | | | | FULL CHARACTERIZATION TCLP |
| ↳ HWMU-5 | | | | | | | | | | | | IGNITABILITY, CORROSIVITY, REACTIVITY |

**GENERAL NOTES:** See attached target analyte list. **Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)**

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN FLOWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Flowell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Flowell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B

**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO

**Carrier:** FED EX

**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on ice: ☑YES Bo ☐NO

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | G | C | | | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | U | U | | | | | | |
| **Required pH of Sample** | | | | | - | - | | | | | | | |
| **Box 2 - Preservative** | | | | | D | H | 2 H | | | | | | |
| **Box 5 - Sample Container Type** | | | | | VOA | 1-500ml G | 500mL G | | | | | | |
| **Sample ID** | **Date: 2002** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **Volatiles 8260B/ 5035** | **Semivolatiles/Pests/PCB** | **FULL CHARACTERIZATION TCLP** | | | | | | |
| (1-3') 7GP- 1 ✓ | 11/1 | 10:00 | S | 4 | X | X | | | | | | | |
| (8-12') 7GP- 2 ✓ | | 10:40 | S | | X | X | | | | | | | |
| (3.5-14.5') 7GP- 2 ✓ | | 11:05 | S | | X | X | | | | | | | |
| (10-11') 7GP- 3 ✓ | | 11:25 | S | | X | X | | | | | | | |
| (5-8') 7GP- 8 ✓ | | 12:15 | S | | X | X | | | | | | | |
| (6-11') 7GP- 5 ✓ | | 12:50 | S | 12 | X | X | | | | | | | + MS/MSD |
| (3-4') 7GP- 16 ✓ | | 13:30 | S | | X | X | | | | | | | |
| (3-4') 7GP- 4 ✓ | | 13:45 | S | 4 | X | X | | | | | | | |
| UNIT 7 TCLP | 11/1 | 14:00 | S | 1 | | | X ✓ | | | | | | FULL CHARACTERIZATION TCLP, IGNITABILITY, CORROSIVITY, REACTIVITY |

**GENERAL NOTES: See attached target analyte list. Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)**

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | 30 DYS ORG/6 MTHS INORG |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
*Where quality is a science.*

For Lancaster Laboratories use only
Acct. #_____ Group#_____ Sample #_____

**COC #** 0004027

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: DRAPER ADEN ASSOC. Acct. #:
Project Name/#: RAAP - UNIT 5 CLOSURE PWSID #:
Project Manager: ROSS MILLER P.O.#:
Sampler: DARREN KIDWELL Quote #:
Name of state where samples were collected: VA.

| (2) Sample Identification | Date Collected | Time Collected | (3) Grab | Composite | (4) Matrix: Soil | Water | Other | Total # of Containers | (5) Analyses Requested: VOLATILES 8260B/5035 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| SGP-1 (1-2') ✓ | 10/31/02 | 13:10 | X | | X | | | 3 | | SEE ATTACHED ANALYTE LIST FOR TCL VOLATILES |
| SGP-1 (9-10') ✓ | | 13:10 | | | | | | | | |
| SGP-6 (10-11') ✓ | | 13:50 | | | | | | | | |
| SGP-3 (9-10') ✓ | | 14:30 | | | | | | | | |
| SGP-8 (7-8') ✓ | | 15:50 | | | | | | | | |
| SGP-8 (11-12') ✓ | | 16:05 | | | | | | | | |
| SGP-12 (3-4') ✓ | | 16:40 | | | | | | | | |
| SGP-16 (3-4') ✓ | 10/31/02 | 17:00 | X | | X | | | 3 | | |

Matrix: ☐ Potable ☐ NPDES (Check if Applicable)

For Lab Use Only
FSC:
SCR #:

(6) Temperature of samples upon receipt (if requested)

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: STD
Rush results requested by (please circle): Phone Fax E-mail
Phone #:_____ Fax #:_____
E-mail address:_____

(8) **Data Package Options** (please circle if required)

| | | |
|---|---|---|
| QC Summary | Type VI (Raw Data) | SDG Complete? Yes No |
| Type I (Tier I) | GLP | State-specific QC required? Yes No |
| Type II (Tier II) | Other | (If yes, indicate QC sample and submit triplicate volume.) |
| Type III (NJ Red. Del.) | | Internal Chain of Custody required? Yes No |
| Type IV (CLP) | | |

(9)

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Darren Kidwell | 10/31/02 | 19:00 | | | |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |

Lancaster Laboratories

REPRINT

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

## SAMPLE GROUP

The sample group for this submittal is 829085. Samples arrived at the laboratory on Friday, November 01, 2002. The PO# for this group is B02271-01.

| Client Description | Lancaster Labs Number |
|---|---|
| 5GP-1 (1-2') Grab Soil Sample | 3931702 |
| 5GP-1 (9-10') Grab Soil Sample | 3931703 |
| 5GP-6 (10-11') Grab Soil Sample | 3931704 |
| 5GP-3 (9-10') Grab Soil Sample | 3931705 |
| 5GP-8 (7-8') Grab Soil Sample | 3931706 |
| 5GP-8 (11-12') Grab Soil Sample | 3931707 |
| 5GP-12 (3-4') Grab Soil Sample | 3931708 |
| 5GP-16 (3-4') Grab Soil Sample | 3931709 |

## METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

| | | |
|---|---|---|
| 1 COPY TO | Draper Aden Associates, Inc. | Attn: Ms. Janet Frazier |
| 1 COPY TO | Data Package Group | |

Lancaster Laboratories

REPRINT

Questions? Contact your Client Services Representative
Michael E McAdams at (717) 656-2300.

Respectfully Submitted,

Robert E. Mellinger
Sr. Chemist/Coordinator

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931702**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:00
Discard: 03/31/2003
5GP-1 (1-2') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP11 SDG#: RAR02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 12.2 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.88 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.88 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.88 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.88 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.88 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.88 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.88 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.88 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.88 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.88 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.88 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.88 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.88 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.88 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.88 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.88 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.88 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.88 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.88 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.88 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.88 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.88 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.88 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.88 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.88 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.88 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.88 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.88 |

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931702**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:00
Discard: 03/31/2003
5GP-1 (1-2') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP11 SDG#: RAR02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.88 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.88 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.88 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.88 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.88 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.88 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Poor surrogate recovery was observed for 1,2-dichloroethane-d4 in the GC/MS volatile fraction. The percent recovery was 79%. The sample was reanalyzed as a matrix spike, and 1,2-dichloroethane-d4 was 86% recovery which was within the QC limits. Another vial of the sample was not available for further analysis.

Paired with 5GP-1 (1-2') for % MOS result. See SW3933074

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 14:18 | Roy R Mellott Jr | 0.88 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:18 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:05 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:06 | Medina A Long | n.a. |

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931703**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-1 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAR02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.6 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.86 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931703**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-1 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAR02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-1 (9-10') for % MOS result. See SW3933075

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 15:24 | Roy R Mellott Jr | 0.86 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:16 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:07 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:08 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931704**

Collected:10/31/2002 13:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-6 (10-11') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP6- SDG#: RAR02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 12.7 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.91 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.91 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.91 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.91 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.91 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.91 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.91 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.91 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.91 |
| 06293 | Acetone | 67-64-1 | 13. | J | 7. | ug/kg | 0.91 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.91 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931704**

Collected:10/31/2002 13:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-6 (10-11') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP6- SDG#: RAR02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.91 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.91 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.91 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.91 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.91 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.91 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-6 (10-11') for % MOS result. See SW3933076

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 15:56 | Roy R Mellott Jr | 0.91 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:14 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:09 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:10 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931705**

Collected:10/31/2002 14:30 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-3 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP39 SDG#: RAR02-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 17.2 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931705**

Collected:10/31/2002 14:30 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-3 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP39 SDG#: RAR02-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-3 (9-10') for % MOS result. See SW3933077

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 16:29 | Roy R Mellott Jr | 0.97 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:08 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:11 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:12 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931706**

Collected:10/31/2002 15:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (7-8') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP87 SDG#: RAR02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.6 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.94 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.94 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.94 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.94 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.94 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.94 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.94 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.94 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.94 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.94 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.94 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.94 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.94 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.94 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.94 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.94 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.94 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.94 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.94 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.94 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.94 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.94 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.94 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.94 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.94 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.94 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.94 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.94 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931706**

Collected:10/31/2002 15:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (7-8') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP87 SDG#: RAR02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.94 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.94 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.94 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.94 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.94 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.94 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-8 (7-8') for % MOS result. See SW3933078

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 17:02 | Roy R Mellott Jr | 0.94 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:10 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:13 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:14 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931707**

Collected:10/31/2002 16:05 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (11-12') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP8- SDG#: RAR02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.5 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | 16. | J | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.86 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931707**

Collected:10/31/2002 16:05 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (11-12') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP8- SDG#: RAR02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-8 (11-12') for % MOS result. See SW3933079

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 17:34 | Roy R Mellott Jr | 0.86 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:12 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:15 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:16 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931708**

Collected:10/31/2002 16:40 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-12 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP12 SDG#: RAR02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 16.3 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.81 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.81 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.81 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.81 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.81 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.81 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.81 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.81 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.81 |
| 06293 | Acetone | 67-64-1 | 11. | J | 7. | ug/kg | 0.81 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.81 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931708**

Collected:10/31/2002 16:40 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-12 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP12 SDG#: RAR02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.81 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.81 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.81 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 2. | ug/kg | 0.81 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 2. | ug/kg | 0.81 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.81 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-12 (3-4') for % MOS result. See SW3933080

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 18:07 | Roy R Mellott Jr | 0.81 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:04 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:17 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:18 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931709**

Collected:10/31/2002 17:00 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-16 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP16 SDG#: RAR02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 17.9 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 9. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931709**

Collected:10/31/2002 17:00 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-16 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP16 SDG#: RAR02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-16 (3-4') for % MOS result. See SW3933081

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 18:40 | Roy R Mellott Jr | 0.97 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:06 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:19 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:20 | Medina A Long | n.a. |

Lancaster Laboratories

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: K023081AA | Sample number(s): 3931702-3931709 | | | | | | | |
| Chloromethane | N.D. | 2. | ug/kg | 111 | 106 | 47-133 | 4 | 30 |
| Vinyl Chloride | N.D. | 1. | ug/kg | 105 | 99 | 57-132 | 5 | 30 |
| Bromomethane | N.D. | 2. | ug/kg | 88 | 82 | 54-129 | 7 | 30 |
| Chloroethane | N.D. | 2. | ug/kg | 101 | 94 | 66-130 | 7 | 30 |
| 1,1-Dichloroethene | N.D. | 1. | ug/kg | 98 | 91 | 77-139 | 7 | 30 |
| Methylene Chloride | N.D. | 2. | ug/kg | 92 | 92 | 76-129 | 0 | 30 |
| trans-1,2-Dichloroethene | N.D. | 1. | ug/kg | 95 | 91 | 78-131 | 5 | 30 |
| 1,1-Dichloroethane | N.D. | 1. | ug/kg | 107 | 104 | 82-130 | 2 | 30 |
| cis-1,2-Dichloroethene | N.D. | 1. | ug/kg | 97 | 96 | 85-127 | 2 | 30 |
| Chloroform | N.D. | 1. | ug/kg | 98 | 97 | 79-126 | 2 | 30 |
| 1,1,1-Trichloroethane | N.D. | 1. | ug/kg | 101 | 98 | 69-133 | 3 | 30 |
| Carbon Tetrachloride | N.D. | 1. | ug/kg | 97 | 93 | 68-137 | 4 | 30 |
| Benzene | N.D. | 1. | ug/kg | 100 | 99 | 85-125 | 2 | 30 |
| 1,2-Dichloroethane | N.D. | 1. | ug/kg | 105 | 113 | 75-132 | 7 | 30 |
| Trichloroethene | N.D. | 1. | ug/kg | 99 | 95 | 81-124 | 4 | 30 |
| 1,2-Dichloropropane | N.D. | 1. | ug/kg | 102 | 104 | 81-126 | 2 | 30 |
| Bromodichloromethane | N.D. | 1. | ug/kg | 95 | 97 | 80-123 | 1 | 30 |
| Toluene | N.D. | 1. | ug/kg | 100 | 95 | 81-116 | 6 | 30 |
| 1,1,2-Trichloroethane | N.D. | 1. | ug/kg | 89 | 94 | 77-116 | 6 | 30 |
| Tetrachloroethene | N.D. | 1. | ug/kg | 99 | 94 | 79-128 | 6 | 30 |
| Dibromochloromethane | N.D. | 1. | ug/kg | 86 | 89 | 73-116 | 4 | 30 |
| Chlorobenzene | N.D. | 1. | ug/kg | 95 | 91 | 81-112 | 4 | 30 |
| Ethylbenzene | N.D. | 1. | ug/kg | 98 | 95 | 82-115 | 3 | 30 |
| Styrene | N.D. | 1. | ug/kg | 90 | 88 | 79-116 | 1 | 30 |
| Bromoform | N.D. | 1. | ug/kg | 77 | 86 | 64-121 | 11 | 30 |
| 1,1,2,2-Tetrachloroethane | N.D. | 1. | ug/kg | 71 | 80 | 64-121 | 13 | 30 |
| Acetone | N.D. | 7. | ug/kg | 57 | 70 | 51-178 | 20 | 30 |
| Carbon Disulfide | N.D. | 1. | ug/kg | 105 | 100 | 72-144 | 5 | 30 |
| 2-Butanone | N.D. | 4. | ug/kg | 71 | 77 | 58-155 | 9 | 30 |
| trans-1,3-Dichloropropene | N.D. | 1. | ug/kg | 92 | 96 | 75-113 | 4 | 30 |
| cis-1,3-Dichloropropene | N.D. | 1. | ug/kg | 97 | 97 | 82-122 | 1 | 30 |
| 4-Methyl-2-pentanone | N.D. | 3. | ug/kg | 69 | 86 | 56-144 | 21 | 30 |
| 2-Hexanone | N.D. | 3. | ug/kg | 65 | 80 | 51-142 | 21 | 30 |
| Xylene (Total) | N.D. | 1. | ug/kg | 96 | 94 | 82-117 | 3 | 30 |

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: K023081AA | Sample number(s): 3931702-3931709 | | | | | | | | |
| Chloromethane | 114 | | 14-144 | | | | | | |
| Vinyl Chloride | 111 | | 20-146 | | | | | | |
| Bromomethane | 88 | | 24-140 | | | | | | |
| Chloroethane | 104 | | 33-147 | | | | | | |
| 1,1-Dichloroethene | 91 | | 43-153 | | | | | | |
| Methylene Chloride | 80 | | 49-145 | | | | | | |
| trans-1,2-Dichloroethene | 85 | | 49-143 | | | | | | |
| 1,1-Dichloroethane | 96 | | 51-147 | | | | | | |
| cis-1,2-Dichloroethene | 87 | | 54-139 | | | | | | |
| Chloroform | 88 | | 57-135 | | | | | | |
| 1,1,1-Trichloroethane | 96 | | 47-143 | | | | | | |
| Carbon Tetrachloride | 91 | | 43-144 | | | | | | |
| Benzene | 89 | | 52-141 | | | | | | |
| 1,2-Dichloroethane | 92 | | 57-137 | | | | | | |
| Trichloroethene | 87 | | 47-140 | | | | | | |
| 1,2-Dichloropropane | 93 | | 55-138 | | | | | | |
| Bromodichloromethane | 83 | | 55-131 | | | | | | |
| Toluene | 88 | | 41-147 | | | | | | |
| 1,1,2-Trichloroethane | 75 | | 45-150 | | | | | | |
| Tetrachloroethene | 95 | | 42-157 | | | | | | |
| Dibromochloromethane | 72 | | 46-137 | | | | | | |
| Chlorobenzene | 84 | | 48-132 | | | | | | |
| Ethylbenzene | 89 | | 44-142 | | | | | | |
| Styrene | 80 | | 30-144 | | | | | | |
| Bromoform | 63 | | 32-139 | | | | | | |
| 1,1,2,2-Tetrachloroethane | 60 | | 23-180 | | | | | | |
| Acetone | 141 | | 6-214 | | | | | | |
| Carbon Disulfide | 97 | | 29-162 | | | | | | |
| 2-Butanone | 107 | | 22-181 | | | | | | |
| trans-1,3-Dichloropropene | 80 | | 46-130 | | | | | | |
| cis-1,3-Dichloropropene | 83 | | 50-129 | | | | | | |
| 4-Methyl-2-pentanone | 60 | | 40-154 | | | | | | |
| 2-Hexanone | 86 | | 28-170 | | | | | | |
| Xylene (Total) | 87 | | 47-139 | | | | | | |

## Surrogate Quality Control

Analysis Name: TCL by 8260 (soil)
Batch number: K023081AA

| Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| 3931702 | 92 | 79* | 107 | 100 |
| 3931703 | 95 | 83 | 104 | 104 |
| 3931704 | 95 | 83 | 106 | 103 |
| 3931705 | 96 | 82 | 104 | 102 |
| 3931706 | 98 | 84 | 105 | 104 |
| 3931707 | 94 | 81 | 110 | 99 |
| 3931708 | 97 | 80 | 106 | 102 |
| 3931709 | 95 | 80 | 105 | 102 |
| Blank | 98 | 92 | 102 | 105 |
| LCS | 98 | 91 | 106 | 110 |
| LCSD | 100 | 96 | 105 | 111 |
| MS | 96 | 86 | 109 | 107 |
| Limits: | 80-120 | 80-120 | 81-117 | 74-121 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Where quality is a science.

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ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

## SAMPLE GROUP

The sample group for this submittal is 829270. Samples arrived at the laboratory on Saturday, November 02, 2002. The PO# for this group is B02271-01.

| Client Description | Lancaster Labs Number |
|---|---|
| (1-3')7GP-1 Grab Soil Sample | 3933061 |
| (8-12')7GP-2 Grab Soil Sample | 3933062 |
| (13.5-14.5')7GP-2 Grab Soil Sample | 3933063 |
| (10-11')7GP-3 Grab Soil Sample | 3933064 |
| (5-8')7GP-8 Grab Soil Sample | 3933065 |
| (6-11')7GP-5 Unspiked Grab Soil Sample | 3933066 |
| (6-11')7GP-5 Matrix Spike Grab Soil Sample | 3933067 |
| (6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample | 3933068 |
| (3-4')7GP-16 Grab Soil Sample | 3933069 |
| (3-4')7GP-4 Grab Soil Sample | 3933070 |
| Unit 7 TCLP Composite Soil Sample | 3933071 |
| Unit 7 TCLP Composite Soil Sample | 3933072 |
| Unit 7 TCLP Composite Soil Sample | 3933073 |
| (1-2')5GP-1 Grab Soil Sample | 3933074 |
| (9-10')5GP-1 Grab Soil Sample | 3933075 |
| (10-11')5GP-6 Grab Soil Sample | 3933076 |
| (9-10')5GP-3 Grab Soil Sample | 3933077 |
| (7-8')5GP-8 Grab Soil Sample | 3933078 |
| (11-12')5GP-8 Grab Soil Sample | 3933079 |
| (3-4')5GP-12 Grab Soil Sample | 3933080 |
| (3-4')5GP-16 Grab Soil Sample | 3933081 |
| HWMU-5 Composite Soil Sample | 3933082 |
| HWMU-5 Composite Soil Sample | 3933083 |
| HWMU-5 Composite Soil Sample | 3933084 |

## METHODOLOGY

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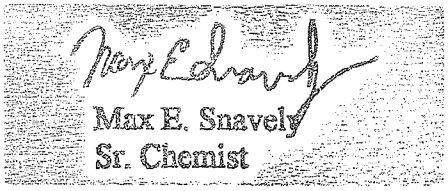
The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

| | | |
|---|---|---|
| 1 COPY TO | Draper Aden Associates, Inc. | Attn: Ms. Janet Frazier |
| 1 COPY TO | Data Package Group | |

Questions? Contact your Client Services Representative
Michael E McAdams at (717) 656-2300.

Respectfully Submitted,




MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

REPRINT



**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 13.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.8 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.6 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.1 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.27 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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REPRINT



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Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

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Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.88 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.88 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.88 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.88 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.88 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.88 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.88 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.88 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.88 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.88 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.88 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.88 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.88 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.88 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.88 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.88 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.88 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.88 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.88 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.88 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.88 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.88 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.88 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.88 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.88 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.88 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.88 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.88 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.88 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.88 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.88 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.88 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.88 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.88 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:06 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 04:33 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 04:33 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 02:11 | Ryan V Nolt | 0.88 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:30 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:42 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:43 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.9 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.75 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.9 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.98 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.98 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.98 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.98 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.98 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.98 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.98 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.98 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.98 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.98 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.98 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.98 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.98 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.98 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.98 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.98 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.98 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.98 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.98 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.98 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.98 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.98 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.98 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.98 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.98 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.98 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.98 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.98 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.98 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.98 |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.98 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.98 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.98 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.98 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:26 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 05:31 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 05:31 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 23:58 | Ryan V Nolt | 0.98 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:29 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:44 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:45 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.2 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 0.67 | J | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 3.5 | | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 3.1 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

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Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.95 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.95 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.95 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.95 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.95 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.95 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.95 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.95 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.95 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.95 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.95 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.95 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.95 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.95 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.95 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.95 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.95 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.95 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.95 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.95 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.95 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.95 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.95 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.95 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.95 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.95 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.95 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.95 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.95 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.95 |

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**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.95 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.95 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.95 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.95 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:47 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 06:30 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 06:30 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 00:31 | Ryan V Nolt | 0.95 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:28 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:40 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 20:41 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 20.8 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.45 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.42 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.44 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 5.1 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 2.5 | 0.42 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.42 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 14. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.42 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.42 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.3 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 6.1 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 13. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.4 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.3 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 6.2 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 7.2 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.6 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.42 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 42. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 42. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 42. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 42. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 42. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 85. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 42. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 42. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 42. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 42. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 42. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 42. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 42. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 42. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 42. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 42. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 42. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 42. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 85. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 42. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 42. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 85. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 42. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 42. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 85. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 42. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 42. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 42. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 42. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 42. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 85. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 42. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 850. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 42. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 42. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 42. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 85. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 750. | | 42. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 42. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 42. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 42. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 42. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 85. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 42. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 85. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 42. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 42. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 85. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 90. | J | 85. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 85. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 42. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 42. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 42. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 42. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 42. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 42. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 85. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 42. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 85. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 42. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 3. | ug/kg | 0.95 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.95 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 3. | ug/kg | 0.95 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 3. | ug/kg | 0.95 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.95 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 3. | ug/kg | 0.95 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.95 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.95 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.95 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.95 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.95 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.95 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.95 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.95 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.95 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.95 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.95 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.95 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.95 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.95 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.95 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.95 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.95 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.95 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.95 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.95 |
| 06293 | Acetone | 67-64-1 | N.D. | 9. | ug/kg | 0.95 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.95 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.95 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.95 |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.95 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.95 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.95 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.95 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:08 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 08:44 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 08:44 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 01:04 | Ryan V Nolt | 0.95 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:26 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:38 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:39 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.44 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.43 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.49 | J | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.1 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 6.0 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.28 | J | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.81 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.81 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.81 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.81 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.81 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.81 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.81 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.81 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.81 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.81 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.81 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.81 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.81 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.81 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.81 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.81 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.81 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.81 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.81 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.81 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.81 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.81 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.81 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.81 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.81 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.81 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.81 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.81 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.81 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.81 |

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**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.81 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 2. | ug/kg | 0.81 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 2. | ug/kg | 0.81 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.81 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:29 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 09:37 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 09:37 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 01:37 | Ryan V Nolt | 0.81 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:25 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:36 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:37 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.0 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.60 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.23 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

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Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

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Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:04 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 01:37 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 01:37 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 20:40 | Ryan V Nolt | 0.97 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 18:24 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:34 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:35 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

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Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.0 | 0.50 | % | 1 |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 4.0 | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 4.0 | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 3.9 | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 9.2 | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 8.1 | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 8.3 | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 43. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 3.8 | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 4.0 | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 4.4 | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.0 | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 8.8 | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 8.9 | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 3.9 | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 8.0 | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 7.0 | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 6.2 | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 7.9 | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 4.2 | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 4.2 | 0.20 | ug/kg | 1 |

Heptachlor was detected in the method blank above the method detection limit. No heptachlor was detected in the sample, therefore the data is reported.

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REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

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(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | 3,400. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,500. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,200. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,500. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,400. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,800. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,800. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,700. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,600. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,500. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,300. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,300. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,200. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,300. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,800. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,800. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,500. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,700. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 7,900. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,600. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 3,400. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,800. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,400. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,100. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,300. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 2,800. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,700. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,700. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 3,800. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | 4,000. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,700. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,100. | | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 3,900. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,600. | J | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 2,500. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,600. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,700. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,800. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,900. | | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,400. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,900. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,900. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,900. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 3,800. | | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,600. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,800. | | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 3,800. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,600. | | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,700. | | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 3,700. | | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 3,800. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,900. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,000. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,800. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,100. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,800. | | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,500. | | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,700. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,200. | | 80. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | 3,700. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | 22. | 2. | ug/kg | 0.83 |
| 05445 | Vinyl Chloride | 75-01-4 | 21. | 1. | ug/kg | 0.83 |
| 05446 | Bromomethane | 74-83-9 | 16. | 2. | ug/kg | 0.83 |
| 05447 | Chloroethane | 75-00-3 | 19. | 2. | ug/kg | 0.83 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 20. | 1. | ug/kg | 0.83 |
| 05450 | Methylene Chloride | 75-09-2 | 18. | 2. | ug/kg | 0.83 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 19. | 1. | ug/kg | 0.83 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 22. | 1. | ug/kg | 0.83 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 19. | 1. | ug/kg | 0.83 |
| 05455 | Chloroform | 67-66-3 | 20. | 1. | ug/kg | 0.83 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | ug/kg | 0.83 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 20. | 1. | ug/kg | 0.83 |
| 05460 | Benzene | 71-43-2 | 20. | 1. | ug/kg | 0.83 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 22. | 1. | ug/kg | 0.83 |
| 05462 | Trichloroethene | 79-01-6 | 19. | 1. | ug/kg | 0.83 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 21. | 1. | ug/kg | 0.83 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | ug/kg | 0.83 |
| 05466 | Toluene | 108-88-3 | 21. | 1. | ug/kg | 0.83 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 18. | 1. | ug/kg | 0.83 |
| 05468 | Tetrachloroethene | 127-18-4 | 21. | 1. | ug/kg | 0.83 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | ug/kg | 0.83 |
| 05472 | Chlorobenzene | 108-90-7 | 19. | 1. | ug/kg | 0.83 |
| 05474 | Ethylbenzene | 100-41-4 | 20. | 1. | ug/kg | 0.83 |
| 05477 | Styrene | 100-42-5 | 18. | 1. | ug/kg | 0.83 |
| 05478 | Bromoform | 75-25-2 | 15. | 1. | ug/kg | 0.83 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 15. | 1. | ug/kg | 0.83 |
| 06293 | Acetone | 67-64-1 | 110. | 7. | ug/kg | 0.83 |
| 06294 | Carbon Disulfide | 75-15-0 | 21. | 1. | ug/kg | 0.83 |
| 06296 | 2-Butanone | 78-93-3 | 100. | 4. | ug/kg | 0.83 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 20. | 1. | ug/kg | 0.83 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 18. | 1. | ug/kg | 0.83 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 69. | 2. | ug/kg | 0.83 |
| 06300 | 2-Hexanone | 591-78-6 | 67. | 2. | ug/kg | 0.83 |

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**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06301 | Xylene (Total) | 1330-20-7 | 59. | 1. | ug/kg | 0.83 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:24 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 02:35 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 02:35 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 21:13 | Ryan V Nolt | 0.83 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:23 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:32 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:33 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.0 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 16.2 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 3.9 | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 4.0 | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 3.8 | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 9.4 | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 8.1 | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 8.3 | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 44. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 3.6 | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 4.0 | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 4.3 | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.0 | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 8.8 | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 8.9 | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 3.8 | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 8.1 | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 6.9 | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 7.5 | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 7.9 | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 4.2 | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 4.3 | 0.20 | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

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Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | Heptachlor was detected in the method blank above the method detection limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | 3,400. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,600. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,200. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,400. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,400. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,800. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,700. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,600. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,500. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,400. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,200. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,300. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,300. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,300. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,600. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,800. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,400. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,700. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 7,600. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,600. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 3,300. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,700. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,400. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,200. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,300. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,000. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,600. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

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Submitted: 11/02/2002 10:20
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Discard: 12/26/2002

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,600. | | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 3,900. | | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | 3,900. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,600. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,000. | | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 3,900. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,500. | J | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 2,500. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,700. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,600. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,600. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,900. | | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,400. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,900. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,700. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,700. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 3,700. | | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,400. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,900. | | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 3,900. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,900. | | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,800. | | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 3,600. | | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 4,000. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,900. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,000. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,900. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,100. | | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

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Reported: 11/25/2002 at 14:35
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(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,800. | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,500. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,600. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,400. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | 3,600. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | 21. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | 20. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | 15. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | 18. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 21. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | 19. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 19. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 22. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 20. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | 20. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 20. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | 20. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 23. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | 20. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 21. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | 21. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 18. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | 22. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | 20. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | 21. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | 19. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | 15. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 15. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | 100. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | 21. | 1. | ug/kg | 0.86 |
| 06296 | 2-Butanone | 78-93-3 | 97. | 4. | ug/kg | 0.86 |

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**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 19. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 19. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 66. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | 67. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | 61. | 1. | ug/kg | 0.86 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:45 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 03:34 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 03:34 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 21:46 | Ryan V Nolt | 0.86 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:22 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:30 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:31 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.4 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.26 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.84 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.84 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.84 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 1. | J | 1. | ug/kg | 0.84 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.84 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.84 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.84 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.84 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.84 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.84 |
| 06293 | Acetone | 67-64-1 | N.D. | | 7. | ug/kg | 0.84 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.84 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | ug/kg | 0.84 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | ug/kg | 0.84 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.84 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.84 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.84 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.84 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:49 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 10:31 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 10:31 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 22:19 | Ryan V Nolt | 0.84 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:21 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:28 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:29 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.7 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 79. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.86 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:10 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 11:25 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 11:25 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 22:52 | Ryan V Nolt | 0.86 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:20 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:26 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:27 | Medina A Long | n.a. |

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**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 12.2 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.19 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.19 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.41 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.19 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.19 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.19 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.1 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.5 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 11. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.7 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.6 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.5 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.0 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.19 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.48 | J | 0.19 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 76. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 76. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 190. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 76. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 76. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 190. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 76. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 190. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 760. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 190. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 76. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 76. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 76. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 76. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 76. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 76. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 76. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 76. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:31 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 12:18 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 12:18 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.6 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 0.49 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 19. | | 0.77 | ug/kg | 2 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 2.3 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:52 | Douglas D Seitz | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/07/2002 20:21 | Douglas D Seitz | 2 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 13:11 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 13:11 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 12.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.19 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.19 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.41 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.19 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.19 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 0.22 | J | 0.19 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.19 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.7 | J | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 6.7 | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.1 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.5 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 11. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.7 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.6 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.5 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.0 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.19 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.19 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 77. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 77. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 190. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 77. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 77. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 190. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 77. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 190. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 770. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 190. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 77. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 63. | J | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 77. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 77. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 77. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 77. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 77. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 77. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 77. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:13 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 14:05 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 14:05 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.2 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:34 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 14:58 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 14:58 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.6 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.1 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 51. | | 1.9 | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 92. | J | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 78. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:55 | Douglas D Seitz | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/07/2002 20:42 | Douglas D Seitz | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 15:52 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 15:52 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.5 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.2 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.97 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.7 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.8 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.1 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 82. | J | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

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Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:15 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 16:45 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 16:45 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.3 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.7 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:36 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 17:39 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 17:39 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.9 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.44 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.43 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 2.2 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.1 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 6.0 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.4 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 82. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 82. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 82. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 82. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 82. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 820. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 82. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 82. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 82. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 82. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 82. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 82. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 82. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 82. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:57 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 18:33 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 18:33 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: 023080021A | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | |
| Gamma BHC - Lindane | N.D. | .17 | ug/kg | 103 | | 58-149 | | |
| Heptachlor | 0.18 J | .17 | ug/kg | 106 | | 57-156 | | |
| Aldrin | N.D. | .17 | ug/kg | 100 | | 54-151 | | |
| p,p-DDT | N.D. | .36 | ug/kg | 115 | | 53-187 | | |
| Dieldrin | N.D. | .33 | ug/kg | 100 | | 58-157 | | |
| Endrin | N.D. | .35 | ug/kg | 103 | | 65-183 | | |
| Methoxychlor | N.D. | 4. | ug/kg | 109 | | 53-197 | | |
| Alpha BHC | N.D. | .17 | ug/kg | 97 | | 47-149 | | |
| Beta BHC | N.D. | .17 | ug/kg | 106 | | 61-148 | | |
| Delta BHC | N.D. | .17 | ug/kg | 109 | | 49-171 | | |
| Heptachlor Epoxide | N.D. | .17 | ug/kg | 103 | | 63-149 | | |
| p,p-DDE | N.D. | .33 | ug/kg | 104 | | 50-177 | | |
| p,p-DDD | N.D. | .33 | ug/kg | 106 | | 49-182 | | |
| Toxaphene | N.D. | 11. | ug/kg | | | | | |
| Endosulfan I | N.D. | .17 | ug/kg | 100 | | 56-150 | | |
| Endosulfan II | N.D. | .33 | ug/kg | 101 | | 58-158 | | |
| Endosulfan Sulfate | N.D. | .33 | ug/kg | 91 | | 57-170 | | |
| Endrin Aldehyde | N.D. | 1. | ug/kg | 104 | | 47-145 | | |
| PCB-1016 | N.D. | 4.8 | ug/kg | | | | | |
| PCB-1221 | N.D. | 10. | ug/kg | | | | | |
| PCB-1232 | N.D. | 4.3 | ug/kg | | | | | |
| PCB-1242 | N.D. | 5. | ug/kg | | | | | |
| PCB-1248 | N.D. | 4.9 | ug/kg | | | | | |
| PCB-1254 | N.D. | 5.7 | ug/kg | | | | | |
| PCB-1260 | N.D. | 4.4 | ug/kg | | | | | |
| Endrin Ketone | N.D. | .33 | ug/kg | 103 | | 70-143 | | |
| Alpha Chlordane | N.D. | .17 | ug/kg | 106 | | 69-138 | | |
| Gamma Chlordane | N.D. | .17 | ug/kg | 103 | | 63-145 | | |
| Batch number: 02308SLA026 | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | |
| Phenol | N.D. | 33. | ug/kg | 87 | | 59-121 | | |
| 2-Chlorophenol | N.D. | 33. | ug/kg | 91 | | 71-114 | | |
| 1,4-Dichlorobenzene | N.D. | 33. | ug/kg | 83 | | 61-110 | | |
| N-Nitroso-di-n-propylamine | N.D. | 33. | ug/kg | 88 | | 62-118 | | |
| 1,2,4-Trichlorobenzene | N.D. | 33. | ug/kg | 90 | | 63-116 | | |
| 4-Chloro-3-methylphenol | N.D. | 67. | ug/kg | 98 | | 72-123 | | |
| Acenaphthene | N.D. | 33. | ug/kg | 102 | | 70-115 | | |
| 4-Nitrophenol | N.D. | 170. | ug/kg | 99 | | 63-138 | | |
| 2,4-Dinitrotoluene | N.D. | 67. | ug/kg | 103 | | 70-130 | | |
| Pentachlorophenol | N.D. | 170. | ug/kg | 72 | | 52-112 | | |
| Pyrene | N.D. | 33. | ug/kg | 98 | | 67-123 | | |
| 2-Nitrophenol | N.D. | 33. | ug/kg | 99 | | 76-114 | | |
| 2,4-Dimethylphenol | N.D. | 33. | ug/kg | 91 | | 60-110 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | N.D. | 33. | ug/kg | 92 | | 71-118 | | |
| 2,4,6-Trichlorophenol | N.D. | 33. | ug/kg | 91 | | 72-118 | | |
| 2,4-Dinitrophenol | N.D. | 670. | ug/kg | 59 | | 32-125 | | |
| 4,6-Dinitro-2-methylphenol | N.D. | 170. | ug/kg | 71 | | 52-125 | | |
| bis(2-Chloroethyl)ether | N.D. | 33. | ug/kg | 82 | | 66-114 | | |
| 1,3-Dichlorobenzene | N.D. | 33. | ug/kg | 87 | | 60-110 | | |
| 1,2-Dichlorobenzene | N.D. | 33. | ug/kg | 83 | | 64-107 | | |
| Hexachloroethane | N.D. | 33. | ug/kg | 87 | | 48-121 | | |
| Nitrobenzene | N.D. | 33. | ug/kg | 99 | | 65-116 | | |
| Isophorone | N.D. | 33. | ug/kg | 92 | | 64-108 | | |
| bis(2-Chloroethoxy)methane | N.D. | 33. | ug/kg | 99 | | 68-122 | | |
| Naphthalene | N.D. | 33. | ug/kg | 87 | | 65-113 | | |
| Hexachlorobutadiene | N.D. | 67. | ug/kg | 98 | | 61-121 | | |
| Hexachlorocyclopentadiene | N.D. | 170. | ug/kg | 109 | | 5-226 | | |
| 2-Chloronaphthalene | N.D. | 33. | ug/kg | 93 | | 69-114 | | |
| Acenaphthylene | N.D. | 33. | ug/kg | 89 | | 72-117 | | |
| Dimethylphthalate | N.D. | 67. | ug/kg | 99 | | 72-119 | | |
| 2,6-Dinitrotoluene | N.D. | 33. | ug/kg | 97 | | 74-115 | | |
| Fluorene | N.D. | 33. | ug/kg | 94 | | 65-119 | | |
| 4-Chlorophenyl-phenylether | N.D. | 33. | ug/kg | 95 | | 64-119 | | |
| Diethylphthalate | N.D. | 67. | ug/kg | 103 | | 71-121 | | |
| N-Nitrosodiphenylamine | N.D. | 33. | ug/kg | 86 | | 60-120 | | |
| 4-Bromophenyl-phenylether | N.D. | 33. | ug/kg | 99 | | 71-115 | | |
| Hexachlorobenzene | N.D. | 33. | ug/kg | 101 | | 62-128 | | |
| Phenanthrene | N.D. | 33. | ug/kg | 99 | | 64-116 | | |
| Anthracene | N.D. | 33. | ug/kg | 98 | | 64-116 | | |
| Di-n-butylphthalate | N.D. | 67. | ug/kg | 95 | | 72-119 | | |
| Fluoranthene | N.D. | 33. | ug/kg | 91 | | 65-115 | | |
| Butylbenzylphthalate | N.D. | 67. | ug/kg | 103 | | 59-150 | | |
| Benzo(a)anthracene | N.D. | 33. | ug/kg | 97 | | 69-115 | | |
| Chrysene | N.D. | 33. | ug/kg | 100 | | 67-119 | | |
| 3,3'-Dichlorobenzidine | N.D. | 67. | ug/kg | 40 | | 21-104 | | |
| bis(2-Ethylhexyl)phthalate | N.D. | 67. | ug/kg | 99 | | 56-138 | | |
| Di-n-octylphthalate | N.D. | 67. | ug/kg | 96 | | 69-131 | | |
| Benzo(b)fluoranthene | N.D. | 33. | ug/kg | 103 | | 66-122 | | |
| Benzo(k)fluoranthene | N.D. | 33. | ug/kg | 105 | | 66-122 | | |
| Benzo(a)pyrene | N.D. | 33. | ug/kg | 98 | | 72-118 | | |
| Indeno(1,2,3-cd)pyrene | N.D. | 33. | ug/kg | 103 | | 73-118 | | |
| Dibenz(a,h)anthracene | N.D. | 33. | ug/kg | 107 | | 78-126 | | |
| Benzo(g,h,i)perylene | N.D. | 33. | ug/kg | 99 | | 73-119 | | |
| 2-Methylphenol | N.D. | 33. | ug/kg | 84 | | 66-111 | | |
| 2,2'-oxybis(1-Chloropropane) | N.D. | 33. | ug/kg | 104 | | 65-139 | | |
| 4-Methylphenol | N.D. | 67. | ug/kg | 85 | | 22-171 | | |
| 4-Chloroaniline | N.D. | 33. | ug/kg | 35 | | 1-103 | | |
| 2-Methylnaphthalene | N.D. | 33. | ug/kg | 94 | | 65-108 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-Trichlorophenol | N.D. | 33. | ug/kg | 98 | | 74-117 | | |
| 2-Nitroaniline | N.D. | 33. | ug/kg | 102 | | 78-122 | | |
| 3-Nitroaniline | N.D. | 67. | ug/kg | 71 | | 17-107 | | |
| Dibenzofuran | N.D. | 33. | ug/kg | 93 | | 66-111 | | |
| 4-Nitroaniline | N.D. | 67. | ug/kg | 76 | | 48-116 | | |
| Carbazole | N.D. | 33. | ug/kg | 94 | | 71-114 | | |
| Batch number: 02309039401A | Sample number(s): 3933071,3933082 | | | | | | | |
| pH | | | | 100 | | 99-101 | | |
| Corrosivity | | | | 100 | | 98-102 | | |
| Batch number: 02309820003A | Sample number(s): 3933061-3933065,3933081 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |
| Batch number: 02309820003B | Sample number(s): 3933066-3933070,3933074-3933080 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |
| Batch number: 023110015A | Sample number(s): 3933072,3933083 | | | | | | | |
| Gamma BHC - Lindane | N.D. | .012 | ug/l | 120 | | 65-144 | | |
| Heptachlor | N.D. | .01 | ug/l | 86 | | 45-130 | | |
| Heptachlor Epoxide | N.D. | .016 | ug/l | 114 | | 73-141 | | |
| Methoxychlor | N.D. | .1 | ug/l | 105 | | 72-160 | | |
| Endrin | N.D. | .024 | ug/l | 120 | | 74-159 | | |
| Chlordane | N.D. | .25 | ug/l | | | | | |
| Toxaphene | N.D. | 1.5 | ug/l | | | | | |
| Batch number: 023110027A | Sample number(s): 3933072,3933083 | | | | | | | |
| 2,4-D | N.D. | 2. | ug/l | 66 | | 53-145 | | |
| 2,4,5-TP | N.D. | .2 | ug/l | 82 | | 55-128 | | |
| Batch number: 023115705005 | Sample number(s): 3933072,3933083 | | | | | | | |
| Arsenic | N.D. | .0049 | mg/l | 95 | | 90-110 | | |
| Selenium | N.D. | .0048 | mg/l | 93 | | 90-110 | | |
| Barium | N.D. | .00044 | mg/l | 101 | | 93-109 | | |
| Cadmium | N.D. | .00094 | mg/l | 101 | | 94-110 | | |
| Chromium | N.D. | .002 | mg/l | 98 | | 95-110 | | |
| Lead | N.D. | .0089 | mg/l | 99 | | 94-110 | | |
| Silver | 0.0020 J | .0014 | mg/l | 101 | | 94-110 | | |
| Batch number: 023115713001 | Sample number(s): 3933072,3933083 | | | | | | | |
| Mercury | N.D. | .000079 | mg/l | 92 | | 84-124 | | |
| Batch number: 02311820003A | Sample number(s): 3933071,3933082 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: 02311WAG026 | Sample number(s): 3933072,3933083 | | | | | | | |
| Pyridine | N.D. | .004 | mg/l | 65 | | 35-92 | | |
| 1,4-Dichlorobenzene | N.D. | .002 | mg/l | 66 | | 38-99 | | |
| 2-Methylphenol | N.D. | .002 | mg/l | 79 | | 64-102 | | |
| 4-Methylphenol | N.D. | .004 | mg/l | 75 | | 35-124 | | |
| Hexachloroethane | N.D. | .002 | mg/l | 57 | | 20-97 | | |
| Nitrobenzene | N.D. | .002 | mg/l | 90 | | 74-116 | | |
| Hexachlorobutadiene | N.D. | .002 | mg/l | 62 | | 18-103 | | |
| 2,4,6-Trichlorophenol | N.D. | .002 | mg/l | 92 | | 66-125 | | |
| 2,4,5-Trichlorophenol | N.D. | .002 | mg/l | 91 | | 70-122 | | |
| 2,4-Dinitrotoluene | N.D. | .002 | mg/l | 103 | | 75-129 | | |
| Hexachlorobenzene | N.D. | .002 | mg/l | 87 | | 65-128 | | |
| Pentachlorophenol | N.D. | .006 | mg/l | 76 | | 43-127 | | |
| Batch number: 02319104201A | Sample number(s): 3933071,3933082 | | | | | | | |
| Cyanide (Reactivity) | N.D. | 100. | mg/kg | 96 | | 88-114 | | |
| Batch number: 02319112101A | Sample number(s): 3933071,3933082 | | | | | | | |
| Sulfide (Reactivity) | N.D. | 27. | mg/kg | 95 | | 77-103 | | |
| Batch number: K023091AA | Sample number(s): 3933061-3933070 | | | | | | | |
| Chloromethane | N.D. | 2. | ug/kg | 107 | | 47-133 | | |
| Vinyl Chloride | N.D. | 1. | ug/kg | 99 | | 57-132 | | |
| Bromomethane | N.D. | 2. | ug/kg | 74 | | 54-129 | | |
| Chloroethane | N.D. | 2. | ug/kg | 95 | | 66-130 | | |
| 1,1-Dichloroethene | N.D. | 1. | ug/kg | 93 | | 77-139 | | |
| Methylene Chloride | N.D. | 2. | ug/kg | 90 | | 76-129 | | |
| trans-1,2-Dichloroethene | N.D. | 1. | ug/kg | 94 | | 78-131 | | |
| 1,1-Dichloroethane | N.D. | 1. | ug/kg | 110 | | 82-130 | | |
| cis-1,2-Dichloroethene | N.D. | 1. | ug/kg | 98 | | 85-127 | | |
| Chloroform | N.D. | 1. | ug/kg | 101 | | 79-126 | | |
| 1,1,1-Trichloroethane | N.D. | 1. | ug/kg | 106 | | 69-133 | | |
| Carbon Tetrachloride | N.D. | 1. | ug/kg | 100 | | 68-137 | | |
| Benzene | N.D. | 1. | ug/kg | 102 | | 85-125 | | |
| 1,2-Dichloroethane | N.D. | 1. | ug/kg | 112 | | 75-132 | | |
| Trichloroethene | N.D. | 1. | ug/kg | 100 | | 81-124 | | |
| 1,2-Dichloropropane | N.D. | 1. | ug/kg | 108 | | 81-126 | | |
| Bromodichloromethane | N.D. | 1. | ug/kg | 97 | | 80-123 | | |
| Toluene | N.D. | 1. | ug/kg | 100 | | 81-116 | | |
| 1,1,2-Trichloroethane | N.D. | 1. | ug/kg | 91 | | 77-116 | | |
| Tetrachloroethene | N.D. | 1. | ug/kg | 101 | | 79-128 | | |
| Dibromochloromethane | N.D. | 1. | ug/kg | 88 | | 73-116 | | |
| Chlorobenzene | N.D. | 1. | ug/kg | 97 | | 81-112 | | |
| Ethylbenzene | N.D. | 1. | ug/kg | 100 | | 82-115 | | |
| Styrene | N.D. | 1. | ug/kg | 93 | | 79-116 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Bromoform | N.D. | 1. | ug/kg | 81 | | 64-121 | | |
| 1,1,2,2-Tetrachloroethane | N.D. | 1. | ug/kg | 82 | | 64-121 | | |
| Acetone | N.D. | 7. | ug/kg | 68 | | 51-178 | | |
| Carbon Disulfide | N.D. | 1. | ug/kg | 105 | | 72-144 | | |
| 2-Butanone | N.D. | 4. | ug/kg | 74 | | 58-155 | | |
| trans-1,3-Dichloropropene | N.D. | 1. | ug/kg | 96 | | 75-113 | | |
| cis-1,3-Dichloropropene | N.D. | 1. | ug/kg | 99 | | 82-122 | | |
| 4-Methyl-2-pentanone | N.D. | 3. | ug/kg | 83 | | 56-144 | | |
| 2-Hexanone | N.D. | 3. | ug/kg | 77 | | 51-142 | | |
| Xylene (Total) | N.D. | 1. | ug/kg | 97 | | 82-117 | | |
| Batch number: N023141AB | Sample number(s): 3933073,3933084 | | | | | | | |
| Vinyl Chloride | N.D. | 20. | ug/l | 79 | | 59-129 | | |
| 1,1-Dichloroethene | N.D. | 16. | ug/l | 104 | | 67-140 | | |
| Chloroform | N.D. | 16. | ug/l | 105 | | 86-124 | | |
| Carbon Tetrachloride | N.D. | 20. | ug/l | 98 | | 77-130 | | |
| Benzene | N.D. | 10. | ug/l | 104 | | 85-117 | | |
| 1,2-Dichloroethane | N.D. | 20. | ug/l | 102 | | 77-132 | | |
| Trichloroethene | N.D. | 20. | ug/l | 96 | | 87-117 | | |
| Tetrachloroethene | N.D. | 16. | ug/l | 104 | | 79-136 | | |
| Chlorobenzene | N.D. | 16. | ug/l | 100 | | 85-115 | | |
| 2-Butanone | N.D. | 60. | ug/l | 84 | | 58-141 | | |

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 023080021A | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | | |
| Gamma BHC - Lindane | 103 | 100 | 43-154 | 3 | 35 | | | | |
| Heptachlor | 103 | 103 | 70-138 | 0 | 35 | | | | |
| Aldrin | 100 | 97 | 65-134 | 3 | 35 | | | | |
| p,p-DDT | 115 | 118 | 62-166 | 3 | 35 | | | | |
| Dieldrin | 101 | 101 | 68-139 | 0 | 35 | | | | |
| Endrin | 104 | 104 | 48-188 | 0 | 35 | | | | |
| Methoxychlor | 109 | 112 | 74-162 | 3 | 35 | | | | |
| Alpha BHC | 97 | 91 | 64-134 | 6 | 35 | | | | |
| Beta BHC | 103 | 103 | 31-176 | 0 | 35 | | | | |
| Delta BHC | 112 | 109 | 29-191 | 3 | 35 | | | | |
| Heptachlor Epoxide | 103 | 103 | 69-133 | 0 | 35 | | | | |
| p,p-DDE | 110 | 110 | 48-175 | 0 | 35 | | | | |
| p,p-DDD | 104 | 104 | 52-181 | 0 | 35 | | | | |

*- Outside of specification
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Endosulfan I | 100 | 97 | 62-133 | 3 | 35 | | | | |
| Endosulfan II | 100 | 101 | 65-144 | 1 | 35 | | | | |
| Endosulfan Sulfate | 88 | 87 | 65-154 | 2 | 35 | | | | |
| Endrin Aldehyde | 78 | 94 | 63-125 | 19 | 35 | | | | |
| Endrin Ketone | 99 | 99 | 33-173 | 0 | 50 | | | | |
| Alpha Chlordane | 106 | 106 | 65-147 | 0 | 50 | | | | |
| Gamma Chlordane | 100 | 103 | 30-157 | 3 | 50 | | | | |
| Batch number: 02308SLA026 | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | | |
| Phenol | 85 | 85 | 29-139 | 0 | 30 | | | | |
| 2-Chlorophenol | 88 | 91 | 38-136 | 3 | 30 | | | | |
| 1,4-Dichlorobenzene | 81 | 81 | 22-131 | 0 | 30 | | | | |
| N-Nitroso-di-n-propylamine | 88 | 87 | 36-137 | 2 | 30 | | | | |
| 1,2,4-Trichlorobenzene | 86 | 86 | 50-124 | 0 | 30 | | | | |
| 4-Chloro-3-methylphenol | 97 | 95 | 33-150 | 1 | 30 | | | | |
| Acenaphthene | 100 | 99 | 36-140 | 1 | 30 | | | | |
| 4-Nitrophenol | 93 | 92 | 5-170 | 1 | 30 | | | | |
| 2,4-Dinitrotoluene | 103 | 101 | 34-150 | 2 | 30 | | | | |
| Pentachlorophenol | 71 | 70 | 5-144 | 2 | 30 | | | | |
| Pyrene | 98 | 99 | 19-152 | 1 | 30 | | | | |
| 2-Nitrophenol | 96 | 94 | 29-145 | 3 | 30 | | | | |
| 2,4-Dimethylphenol | 93 | 90 | 21-143 | 3 | 30 | | | | |
| 2,4-Dichlorophenol | 92 | 88 | 29-145 | 4 | 30 | | | | |
| 2,4,6-Trichlorophenol | 89 | 86 | 27-150 | 3 | 30 | | | | |
| 2,4-Dinitrophenol | 41 | 38 | 20-150 | 6 | 30 | | | | |
| 4,6-Dinitro-2-methylphenol | 63 | 63 | 5-160 | 1 | 30 | | | | |
| bis(2-Chloroethyl)ether | 84 | 81 | 34-139 | 3 | 30 | | | | |
| 1,3-Dichlorobenzene | 84 | 83 | 39-122 | 2 | 30 | | | | |
| 1,2-Dichlorobenzene | 82 | 82 | 22-134 | 1 | 30 | | | | |
| Hexachloroethane | 82 | 84 | 11-140 | 2 | 30 | | | | |
| Nitrobenzene | 95 | 91 | 35-138 | 3 | 30 | | | | |
| Isophorone | 88 | 89 | 38-133 | 1 | 30 | | | | |
| bis(2-Chloroethoxy)methane | 95 | 97 | 58-132 | 2 | 30 | | | | |
| Naphthalene | 87 | 87 | 24-144 | 1 | 30 | | | | |
| Hexachlorobutadiene | 93 | 92 | 32-136 | 1 | 30 | | | | |
| Hexachlorocyclopentadiene | 99 | 95 | 5-176 | 4 | 30 | | | | |
| 2-Chloronaphthalene | 92 | 91 | 32-141 | 1 | 30 | | | | |
| Acenaphthylene | 86 | 83 | 37-142 | 3 | 30 | | | | |
| Dimethylphthalate | 95 | 92 | 35-144 | 3 | 30 | | | | |
| 2,6-Dinitrotoluene | 91 | 94 | 39-138 | 3 | 30 | | | | |
| Fluorene | 92 | 90 | 28-151 | 3 | 30 | | | | |
| 4-Chlorophenyl-phenylether | 95 | 92 | 36-140 | 4 | 30 | | | | |
| Diethylphthalate | 98 | 97 | 37-145 | 1 | 30 | | | | |
| N-Nitrosodiphenylamine | 86 | 86 | 48-136 | 0 | 30 | | | | |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| 4-Bromophenyl-phenylether | 95 | 96 | 36-144 | 1 | 30 | | | | |
| Hexachlorobenzene | 98 | 97 | 32-146 | 1 | 30 | | | | |
| Phenanthrene | 98 | 94 | 20-147 | 4 | 30 | | | | |
| Anthracene | 98 | 93 | 29-141 | 5 | 30 | | | | |
| Di-n-butylphthalate | 96 | 93 | 30-147 | 3 | 30 | | | | |
| Fluoranthene | 92 | 87 | 21-141 | 5 | 30 | | | | |
| Butylbenzylphthalate | 96 | 97 | 28-160 | 1 | 30 | | | | |
| Benzo(a)anthracene | 95 | 96 | 22-151 | 1 | 30 | | | | |
| Chrysene | 95 | 98 | 22-149 | 4 | 30 | | | | |
| 3,3'-Dichlorobenzidine | 65 | 74 | 3-123 | 12 | 30 | | | | |
| bis(2-Ethylhexyl)phthalate | 94 | 95 | 26-160 | 1 | 30 | | | | |
| Di-n-octylphthalate | 93 | 91 | 24-164 | 2 | 30 | | | | |
| Benzo(b)fluoranthene | 96 | 100 | 23-146 | 4 | 30 | | | | |
| Benzo(k)fluoranthene | 99 | 98 | 27-149 | 1 | 30 | | | | |
| Benzo(a)pyrene | 100 | 100 | 25-149 | 0 | 30 | | | | |
| Indeno(1,2,3-cd)pyrene | 96 | 98 | 13-157 | 2 | 30 | | | | |
| Dibenz(a,h)anthracene | 104 | 102 | 14-170 | 2 | 30 | | | | |
| Benzo(g,h,i)perylene | 97 | 97 | 11-158 | 0 | 30 | | | | |
| 2-Methylphenol | 84 | 86 | 26-139 | 1 | 30 | | | | |
| 2,2'-oxybis(1-Chloropropane) | 104 | 105 | 50-145 | 2 | 30 | | | | |
| 4-Methylphenol | 83 | 83 | 9-170 | 1 | 30 | | | | |
| 4-Chloroaniline | 71 | 76 | 1-127 | 7 | 30 | | | | |
| 2-Methylnaphthalene | 94 | 90 | 22-145 | 4 | 30 | | | | |
| 2,4,5-Trichlorophenol | 93 | 91 | 33-147 | 2 | 30 | | | | |
| 2-Nitroaniline | 97 | 98 | 31-156 | 1 | 30 | | | | |
| 3-Nitroaniline | 89 | 88 | 2-135 | 2 | 30 | | | | |
| Dibenzofuran | 93 | 91 | 27-144 | 2 | 30 | | | | |
| 4-Nitroaniline | 81 | 85 | 11-141 | 6 | 30 | | | | |
| Carbazole | 93 | 92 | 32-144 | 2 | 30 | | | | |
| Batch number: 02309039401A | Sample number(s): 3933071,3933082 | | | | | | | | |
| pH | | | | | | 7.33 | 7.33 | 0 | 1 |
| Corrosivity | | | | | | 7.3 | 7.3 | 0 | 2 |
| Batch number: 02309820003A | Sample number(s): 3933061-3933065,3933081 | | | | | | | | |
| Moisture | | | | | | 19.2 | 18.0 | 6 | 15 |
| Batch number: 02309820003B | Sample number(s): 3933066-3933070,3933074-3933080 | | | | | | | | |
| Moisture | | | | | | 16.0 | 16.2 | 1 | 15 |
| Batch number: 023110015A | Sample number(s): 3933072,3933083 | | | | | | | | |
| Gamma BHC - Lindane | 120 | 116 | 67-151 | 3 | 30 | | | | |
| Heptachlor | 98 | 98 | 37-145 | 0 | 30 | | | | |
| Heptachlor Epoxide | 113 | 112 | 62-150 | 1 | 30 | | | | |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Methoxychlor | 100 | 100 | 63-185 | 0 | 30 | | | | |
| Endrin | 120 | 120 | 61-179 | 0 | 30 | | | | |
| Batch number: 023110027A | Sample number(s): 3933072,3933083 | | | | | | | | |
| 2,4-D | 73 | 75 | 38-176 | 3 | 30 | | | | |
| 2,4,5-TP | 78 | 81 | 50-134 | 4 | 30 | | | | |
| Batch number: 023115705005 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Arsenic | 87 | 88 | 86-119 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Selenium | 86 | 88 | 75-125 | 3 | 20 | 0.0074 J | 0.0088 J | 17 (1) | 20 |
| Barium | 81* | 83 | 82-113 | 3 | 20 | 0.690 | 0.669 | 3 | 20 |
| Cadmium | 84 | 84 | 78-121 | 1 | 20 | 0.0077 J | 0.0078 J | 0 (1) | 20 |
| Chromium | 84 | 82 | 80-119 | 1 | 20 | 1.85 | 1.86 | 1 | 20 |
| Lead | (2) | (2) | 75-125 | 1 | 20 | 260. | 257. | 1 | 20 |
| Silver | 48* | 50* | 75-125 | 3 | 20 | 0.0024 J | N.D. | 200* (1) | 20 |
| Batch number: 023115713001 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Mercury | 79* | 79* | 80-120 | 0 | 20 | N.D. | N.D. | 76* (1) | 20 |
| Batch number: 02311820003A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Moisture | | | | | | 20.2 | 19.6 | 3 | 15 |
| Batch number: 02311WAG026 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Pyridine | 65 | 61 | 22-100 | 7 | 30 | | | | |
| 1,4-Dichlorobenzene | 69 | 70 | 44-104 | 1 | 30 | | | | |
| 2-Methylphenol | 80 | 80 | 27-130 | 0 | 30 | | | | |
| 4-Methylphenol | 76 | 76 | 19-132 | 1 | 30 | | | | |
| Hexachloroethane | 58 | 56 | 25-110 | 3 | 30 | | | | |
| Nitrobenzene | 95 | 91 | 30-153 | 5 | 30 | | | | |
| Hexachlorobutadiene | 63 | 64 | 21-124 | 2 | 30 | | | | |
| 2,4,6-Trichlorophenol | 92 | 95 | 40-144 | 3 | 30 | | | | |
| 2,4,5-Trichlorophenol | 91 | 92 | 53-134 | 1 | 30 | | | | |
| 2,4-Dinitrotoluene | 100 | 101 | 47-148 | 1 | 30 | | | | |
| Hexachlorobenzene | 88 | 92 | 46-139 | 4 | 30 | | | | |
| Pentachlorophenol | 86 | 87 | 3-150 | 2 | 30 | | | | |
| Batch number: 02319104201A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Cyanide (Reactivity) | 3 | 2 | 0-5 | 40* | 19 | | | | |
| Batch number: 02319112101A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Sulfide (Reactivity) | 63 | 64 | 26-99 | 3 | 26 | | | | |
| Batch number: K023091AA | Sample number(s): 3933061-3933070 | | | | | | | | |
| Chloromethane | 109 | 102 | 14-144 | 4 | 30 | | | | |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 105 | 97 | 20-146 | 6 | 30 | | | | |
| Bromomethane | 79 | 75 | 24-140 | 3 | 30 | | | | |
| Chloroethane | 97 | 90 | 33-147 | 5 | 30 | | | | |
| 1,1-Dichloroethene | 100 | 101 | 43-153 | 4 | 30 | | | | |
| Methylene Chloride | 92 | 91 | 49-145 | 2 | 30 | | | | |
| trans-1,2-Dichloroethene | 96 | 94 | 49-143 | 1 | 30 | | | | |
| 1,1-Dichloroethane | 109 | 108 | 51-147 | 1 | 30 | | | | |
| cis-1,2-Dichloroethene | 96 | 98 | 54-139 | 5 | 30 | | | | |
| Chloroform | 100 | 100 | 57-135 | 2 | 30 | | | | |
| 1,1,1-Trichloroethane | 106 | 105 | 47-143 | 1 | 30 | | | | |
| Carbon Tetrachloride | 102 | 99 | 43-144 | 0 | 30 | | | | |
| Benzene | 101 | 100 | 52-141 | 2 | 30 | | | | |
| 1,2-Dichloroethane | 112 | 111 | 57-137 | 2 | 30 | | | | |
| Trichloroethene | 97 | 99 | 47-140 | 4 | 30 | | | | |
| 1,2-Dichloropropane | 104 | 103 | 55-138 | 1 | 30 | | | | |
| Bromodichloromethane | 95 | 95 | 55-131 | 2 | 30 | | | | |
| Toluene | 104 | 105 | 41-147 | 3 | 30 | | | | |
| 1,1,2-Trichloroethane | 90 | 88 | 45-150 | 0 | 30 | | | | |
| Tetrachloroethene | 105 | 107 | 42-157 | 5 | 30 | | | | |
| Dibromochloromethane | 89 | 87 | 46-137 | 1 | 30 | | | | |
| Chlorobenzene | 97 | 98 | 48-132 | 4 | 30 | | | | |
| Ethylbenzene | 102 | 104 | 44-142 | 4 | 30 | | | | |
| Styrene | 90 | 93 | 30-144 | 6 | 30 | | | | |
| Bromoform | 74 | 74 | 32-139 | 1 | 30 | | | | |
| 1,1,2,2-Tetrachloroethane | 76 | 75 | 23-180 | 1 | 30 | | | | |
| Acetone | 71 | 68 | 6-214 | 2 | 30 | | | | |
| Carbon Disulfide | 106 | 104 | 29-162 | 1 | 30 | | | | |
| 2-Butanone | 68 | 64 | 22-181 | 4 | 30 | | | | |
| trans-1,3-Dichloropropene | 98 | 95 | 46-130 | 1 | 30 | | | | |
| cis-1,3-Dichloropropene | 92 | 96 | 50-129 | 6 | 30 | | | | |
| 4-Methyl-2-pentanone | 69 | 65 | 40-154 | 3 | 30 | | | | |
| 2-Hexanone | 67 | 66 | 28-170 | 1 | 30 | | | | |
| Xylene (Total) | 98 | 100 | 47-139 | 5 | 30 | | | | |
| Batch number: N023141AB | Sample number(s): 3933073,3933084 | | | | | | | | |
| Vinyl Chloride | 83 | 83 | 54-144 | 1 | 30 | | | | |
| 1,1-Dichloroethene | 90 | 91 | 69-151 | 1 | 30 | | | | |
| Chloroform | 98 | 95 | 77-133 | 3 | 30 | | | | |
| Carbon Tetrachloride | 87 | 86 | 73-144 | 1 | 30 | | | | |
| Benzene | 95 | 94 | 78-134 | 1 | 30 | | | | |
| 1,2-Dichloroethane | 99 | 98 | 73-136 | 1 | 30 | | | | |
| Trichloroethene | 88 | 87 | 75-135 | 1 | 30 | | | | |
| Tetrachloroethene | 86 | 86 | 74-149 | 1 | 30 | | | | |
| Chlorobenzene | 91 | 90 | 81-125 | 2 | 30 | | | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | 80 | 78 | 47-143 | 3 | 30 | | | | |

## Surrogate Quality Control

Analysis Name: TCL Pesticides in Solids
Batch number: 023080021A

| | Tetrachloro-m-xylene | Decachlorobiphenyl |
|---|---|---|
| 3933061 | 91 | 105 |
| 3933062 | 91 | 105 |
| 3933063 | 97 | 112 |
| 3933064 | 89 | 105 |
| 3933065 | 97 | 113 |
| 3933066 | 98 | 110 |
| 3933067 | 91 | 106 |
| 3933068 | 96 | 109 |
| 3933069 | 99 | 110 |
| 3933070 | 98 | 108 |
| 3933074 | 98 | 108 |
| 3933075 | 95 | 109 |
| 3933076 | 98 | 108 |
| 3933077 | 92 | 105 |
| 3933078 | 96 | 110 |
| 3933079 | 92 | 108 |
| 3933080 | 95 | 112 |
| 3933081 | 94 | 111 |
| Blank | 94 | 105 |
| LCS | 92 | 106 |
| MS | 91 | 106 |
| MSD | 96 | 109 |
| Limits: | 58-149 | 62-159 |

Analysis Name: TCL SW846 Semivolatiles Soil
Batch number: 02308SLA026

| | Phenol-d6 | 2-Fluorophenol | 2,4,6-Tribromophenol | Nitrobenzene-d5 |
|---|---|---|---|---|
| 3933061 | 83 | 80 | 98 | 94 |
| 3933062 | 87 | 84 | 103 | 99 |
| 3933063 | 86 | 82 | 104 | 95 |
| 3933064 | 83 | 77 | 88 | 95 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| 3933065 | 88 | 83 | 101 | 95 |
| 3933066 | 86 | 84 | 111 | 100 |
| 3933067 | 88 | 87 | 108 | 101 |
| 3933068 | 88 | 87 | 108 | 96 |
| 3933069 | 88 | 81 | 106 | 97 |
| 3933070 | 88 | 84 | 104 | 92 |
| 3933074 | 86 | 83 | 97 | 98 |
| 3933075 | 88 | 88 | 107 | 98 |
| 3933076 | 88 | 86 | 100 | 99 |
| 3933077 | 83 | 78 | 104 | 96 |
| 3933078 | 87 | 84 | 102 | 93 |
| 3933079 | 87 | 84 | 101 | 93 |
| 3933080 | 84 | 81 | 95 | 90 |
| 3933081 | 85 | 82 | 98 | 95 |
| Blank | 89 | 87 | 105 | 100 |
| LCS | 90 | 89 | 113 | 103 |
| MS | 88 | 87 | 108 | 101 |
| MSD | 88 | 87 | 108 | 96 |
| Limits: | 46-120 | 46-122 | 37-139 | 50-132 |

| | 2-Fluorobiphenyl | Terphenyl-d14 |
|---|---|---|
| 3933061 | 92 | 93 |
| 3933062 | 100 | 104 |
| 3933063 | 97 | 103 |
| 3933064 | 90 | 97 |
| 3933065 | 92 | 100 |
| 3933066 | 98 | 100 |
| 3933067 | 97 | 98 |
| 3933068 | 97 | 99 |
| 3933069 | 97 | 95 |
| 3933070 | 95 | 100 |
| 3933074 | 91 | 94 |
| 3933075 | 103 | 97 |
| 3933076 | 103 | 96 |
| 3933077 | 95 | 88 |
| 3933078 | 99 | 96 |
| 3933079 | 96 | 96 |
| 3933080 | 89 | 89 |
| 3933081 | 92 | 95 |
| Blank | 100 | 92 |
| LCS | 98 | 101 |
| MS | 97 | 98 |
| MSD | 97 | 99 |
| Limits: | 57-123 | 48-141 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

Analysis Name: TCLP Pesticides
Batch number: 023110015A

| | Tetrachloro-m-xylene | Decachlorobiphenyl |
|---|---|---|
| 3933072 | 85 | 116 |
| 3933083 | 78 | 107 |
| Blank | 75 | 103 |
| LCS | 77 | 117 |
| MS | 76 | 96 |
| MSD | 77 | 99 |
| Limits: | 40-135 | 36-156 |

Analysis Name: TCLP Herbicides
Batch number: 023110027A

| | 2,4-Dichlorophenylacetic acid |
|---|---|
| 3933072 | 82 |
| 3933083 | 80 |
| Blank | 85 |
| LCS | 79 |
| MS | 79 |
| MSD | 82 |
| Limits: | 40-154 |

Analysis Name: TCLP Acid Base/Neutrals
Batch number: 02311WAG026

| | Nitrobenzene-d5 | 2-Fluorobiphenyl | Terphenyl-d14 | Phenol-d6 |
|---|---|---|---|---|
| 3933072 | 90 | 89 | 84 | 41 |
| 3933083 | 91 | 87 | 84 | 41 |
| Blank | 95 | 87 | 92 | 41 |
| LCS | 93 | 93 | 93 | 44 |
| MS | 97 | 87 | 72 | 45 |
| MSD | 93 | 87 | 83 | 44 |
| Limits: | 45-139 | 61-119 | 46-136 | 10-87 |

| | 2-Fluorophenol | 2,4,6-Tribromophenol |
|---|---|---|
| 3933072 | 62 | 105 |
| 3933083 | 61 | 106 |
| Blank | 63 | 107 |
| LCS | 65 | 108 |
| MS | 66 | 111 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| MSD | 64 | 111 | | |
| Limits: | 22-96 | 36-147 | | |

Analysis Name: TCL by 8260 (soil)
Batch number: K023091AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 3933061 | 97 | 80 | 107 | 99 |
| 3933062 | 96 | 81 | 106 | 103 |
| 3933063 | 97 | 81 | 104 | 100 |
| 3933064 | 92 | 83 | 106 | 92 |
| 3933065 | 98 | 82 | 103 | 99 |
| 3933066 | 97 | 81 | 103 | 99 |
| 3933067 | 99 | 85 | 112 | 111 |
| 3933068 | 96 | 86 | 113 | 103 |
| 3933069 | 96 | 83 | 111 | 89 |
| 3933070 | 96 | 82 | 109 | 97 |
| Blank | 94 | 88 | 101 | 102 |
| LCS | 100 | 97 | 105 | 107 |
| MS | 99 | 85 | 112 | 111 |
| MSD | 96 | 86 | 113 | 103 |
| Limits: | 80-120 | 80-120 | 81-117 | 74-121 |

Analysis Name: TCLP by 8260
Batch number: N023141AB

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 3933073 | 98 | 100 | 95 | 90 |
| 3933084 | 98 | 99 | 94 | 89 |
| Blank | 98 | 98 | 96 | 93 |
| LCS | 95 | 99 | 103 | 106 |
| MS | 94 | 98 | 100 | 104 |
| MSD | 95 | 98 | 101 | 105 |
| Limits: | 86-118 | 80-120 | 88-110 | 86-115 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

# CHAIN OF CUSTODY RECORD

**Laboratory:** Severn Trent Laboratories, 4101 Shuffel Drive, NW, North Canton, OH 44720 (303) 497-9396

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** Andy Kassoff/ Ross Miller<br>**Address:** 2206 South Main Street, Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291<br>**Fax:** (540) 552-0291 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street, Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RFAAP<br>**Location:** Montgomery County, Virginia<br>**Event:** HWMU-5 and HWMU-7 Investigation<br>**DAA JN:** 802271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑ PS ☐ B<br>**Sample Collection for Project Complete? (See Note 1)** ☑ YES ☐ NO<br>**Carrier:** FED EX<br>**Tracking Number:** | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑ YES ☐ NO
Bill: ☑ Client ☐ Consultant
Preserved and shipped on ice: ☑ YES ☐ NO

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | |
| Required pH of Sample | | | | | - | | | | | | | | |
| Box 2 - Preservative | | | | | H | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 4oz. G | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Metals | | | | | | | | |
| (1-3') 7GP-1 | 11/1 | 10:00 | S | 1 | X | | | | | | | | |
| (8-12') 7GP-2 | | 10:40 | S | 1 | X | | | | | | | | |
| (13.5-14.5') 7GP-2 | | 11:05 | S | 1 | X | | | | | | | | |
| (10-11') 7GP-3 | | 11:25 | S | 1 | X | | | | | | | | |
| (5-8') 7GP-8 | | 12:15 | S | 1 | X | | | | | | | | |
| (6-11') 7GP-5 | | 12:50 | S | 1 | X | | | | | | | | |
| (3-4') 7GP-16 | | 13:20 | S | 1 | X | | | | | | | | |
| (3-4') 7GP-4 | 11/1 | 13:45 | S | 1 | X | | | | | | | | |
| (6-11') 76P-5MS | 11/1 | 12:50 | S | 1 | X | | | | | | | | |
| (6-11') 76P SMSD | 11/1 | 12:50 | S | 1 | X | | | | | | | | |

**GENERAL NOTES: See attached target analyte list. Full TAL List for all analytes, using SW846 Test Methods**

76P-1 (1-3')
76P-2 (8-12')
76P-2 (13.5-14.5')
76P-3 (10-11')
76P-8 (5-8')
76P-5 (6-11')
76P-16 (3-4')
76P-4 (3-4')
76P-5 (6-11') MS
76P-5 (6-11') MSD

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: 11-2-02 | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: STL | Time: 1000 | Company Name: | Time: | |

STL North Canton

# CHAIN OF CUSTODY RECORD

Laboratory: Severn Trent Laboratories, 4101 Shuffel Drive, NW, North Canton, OH 44720 (303) 497-9396

| | | | | | |
|---|---|---|---|---|---|
| Client: | Draper Aden Associates | Consultant: | Draper Aden Associates | Sample Site: | RFAAP |
| Attn: | Andy Kassoff/ Ross Miller | Attn: | Janet C. Frazier | Location: | Montgomery County, Virginia |
| Address: | 2206 South Main Street, Blacksburg, Virginia 24060 | Address: | 2206 South Main Street, Blacksburg, Virginia 24060 | Event: | HWMU-5 and HWMU-7 Investigation |
| Phone: | (540) 552-0444 | Phone: | (540) 552-0444 | DAA JN: | B02271-01 |
| Fax: | (540) 552-0291 | Fax: | (540) 552-0291 | Lab JN: | |
| Fax: | (540) 552-0291 | | | | |

Project Specific (PS) or Batch (B) QC: ☑PS ☐B
Sample Collection for Project Complete? (See Note 1) ☑Yes ☐No
Carrier: FED EX
Tracking Number:

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

Invoice
Copy to Consultant: ☑Yes ☐No
Bill: ☑Client ☐Consultant
Preserved and shipped on Ice: ☑Yes ☐No

GENERAL NOTES: See attached target analyte list. Full TAL List for all analytes, using SW846 Test Methods

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | | |
| Required pH of Sample | | | | | - | | | | | | | | | |
| Box 2 - Preservative | | | | | H | | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 4oz. G | | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Metals | | | | | | | | | |
| 1-2' SGP-1 | 10/31 | 13:10 | S | 1 | X | | | | | | | | | SGP-1 (1-2') |
| 9-10' SGP-1 | 10/31 | 13:10 | S | 1 | X | | | | | | | | | SGP-1 (9-10') |
| 10-11' SGP-6 | 10/31 | 13:30 | S | 1 | X | | | | | | | | | SGP-6 (10-11') |
| 9-10' SGP-3 | 10/31 | 14:30 | S | 1 | X | | | | | | | | | SGP-3 (9-10') |
| 7-8' SGP-8 | 10/31 | 15:50 | S | 1 | X | | | | | | | | | SGP-8 (7-8') |
| 11-12' SGP-8 | 10/31 | 16:05 | S | 1 | X | | | | | | | | | SGP-8 (11-12') |
| 3-4' SGP-11 | 10/31 | 17:00 | S | 1 | X | | | | | | | | | SGP-11 (3-4') |
| 3-4' SGP-12 | 10/31 | 16:40 | S | 1 | X | | | | | | | | | SGP-12 (3-4') |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Clients Special Instructions:

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 1730 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: STL | Time: 1000 | Company Name: | Time: | |

STL North Canton

12

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

Lot-Sample #...: A2K040189-001 Matrix.....: SO
Date Sampled...: 11/01/02 10:00 Date Received..: 11/02/02
% Moisture.....: 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 2311117 | | | | | | |
| Aluminum | 11100 J | 23.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AG |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Arsenic | 3.8 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AC |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Lead | 8.1 | 0.35 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AD |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Antimony | 0.52 B | 7.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AH |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Barium | 66.9 J | 23.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AJ |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Beryllium | 0.70 | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AF |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | 0.027 B | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Calcium | 7490 | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AM |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

Lot-Sample #...: A2K040189-001 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Chromium | 24.1 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AN |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cobalt | 11.5 | 5.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AP |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Copper | 22.8 | 2.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Iron | 19400 | 11.7 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Magnesium | 4290 | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AT |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Manganese | 662 | 1.8 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AU |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Nickel | 13.5 | 4.7 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AV |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Potassium | 774 J | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AW |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AX |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1A0 |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

**Lot-Sample #...:** A2K040189-001 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **28.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDAQ1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **17.4** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDAQ1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.026 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDAQ1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:10 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:40 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **8790 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **2.8** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **40.9 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.2** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51A5 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51CM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **283 B** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **12.5** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **22.0** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **23300** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **3140** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **274** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **21.6** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1070 J** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51DM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 607 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

**TOTAL Metals**

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **21.1** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **15.0** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDA51AL |
| | | Dilution Factor: 1 | | Analysis Time..: 11:13 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:05 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19700 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **13.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.3 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **70.9 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.84** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **480 B** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **16.2** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **14.2** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **29300** | **12.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2000** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **407** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **11.4** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1390 J** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 608 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 57.7 | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 32.6 | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.050 B | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDA71AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:14 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:25 **Date Received..:** 11/02/02
**% Moisture.....:** 21

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **11700 J** | **25.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **26.1** | **1.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **35.1** | **0.38** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.6** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **229 J** | **25.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Selenium** | **3.5** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.5** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.3 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cadmium** | **0.16 B** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **28100** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **32.8** | **1.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **8.1** | **6.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **23.2** | **3.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **15900** | **12.6** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2440** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **145** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **15.9** | **5.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **2970 J** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.3 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Sodium** | **156 B** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **42.1** | **6.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Zinc | 33.8 | 2.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1AD |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.040 B** | **0.13** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCC1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:18 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-005 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:15 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **22400 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **10.3** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.80 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **55.0 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.41 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1570** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

Lot-Sample #...: A2K040189-005 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Chromium | 20.1 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AU |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cobalt | 5.4 B | 6.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AV |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Copper | 12.7 | 3.1 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AW |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Iron | 23200 | 12.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AX |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Magnesium | 1090 | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A0 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Manganese | 280 | 1.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A1 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Nickel | 8.5 | 4.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Potassium | 1040 J | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A3 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-005 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **61.8** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **28.1** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.061 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCE1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:19 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-006 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **20000 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.0** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.0 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **55.6 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.35 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1A5 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1CM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **259 B** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-006 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.8** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **4.5 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **10** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **23600** | **12.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **787** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **187** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.2** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **732 J** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1DM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 602 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

Lot-Sample #...: A2K040189-006 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Vanadium | 60.6 | 6.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Zinc | 24.2 | 2.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AH |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | 0.10 B | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCG1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 11:20 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:30 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **6650 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **1.0 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **5.4** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.59 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **106 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.55 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Thallium** | **0.70 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cadmium** | **0.061 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1230** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **11.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.9 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **5.1** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **10800** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1890** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **422** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.7** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **809 J** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 603 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **15.4** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **39.7** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCL1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:24 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:45 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **5290 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **0.96 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **5.8** | **0.35** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.77 B** | **7.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **69.2 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.44 B** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **749** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **10.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.4 B** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **5.1** | **2.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **9860** | **11.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1590** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **292** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **6.3** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **729 J** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 586 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **14.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **35.0** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCP1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:27 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19200 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.2** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **12.9** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.8 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **85.1 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.59 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1060** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **9.0** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **13.9** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **30700** | **12.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1530** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **337** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **9.4** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1580 J** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **64.9** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 35.3 | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.048 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCQ1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:26 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **12100 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.8** | **0.35** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.90 B** | **7.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **47.3 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.1** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **303 B** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **31.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **17.6** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **19.8** | **2.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **26700** | **11.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1730** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **360** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **19.0** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **851 J** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 586 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **32.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **20.7** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCT1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:29 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19400 J** | **24.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **1.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.3** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **56.9 J** | **24.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.41 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **9930** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **17.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.5 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **11.6** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **22400** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1220** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **154** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.9** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1120 J** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Sodium** | **80.8 B** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 57.5 | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 26.4 | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.043 B | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCW1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:28 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 14:30 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **14800 J** | **24.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.7** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.4 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **37.2 J** | **24.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.31 B** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **866** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.8** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **3.2 B** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **9.5** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **24400** | **12.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **597 B** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **90.8** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **5.3** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **500 B,J** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 609 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **54.3** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **18.6** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.057 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCX1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:35 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 15:50 **Date Received..:** 11/02/02
**% Moisture.....:** 16

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **14200 J** | **23.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **4.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **46.1 J** | **23.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.3** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **159 B** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **21.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **11.6** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **16.8** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **28400** | **11.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1410** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **242** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **10.7** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1090 J** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 592 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **26.7** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **23.9** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.023 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC01AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:33 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:05 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19600 J** | **24.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.2 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **61.4 J** | **24.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.81** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **576 B** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

**TOTAL Metals**

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **26.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **10.0** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **14.8** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **29000** | **12.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1560** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **372** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **11.0** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1420 J** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 599 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 55.2 | 6.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AC |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 33.8 | 2.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AD |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.057 B | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDC11AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:36 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-015 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 17:00 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **17000 J** | **24.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **4.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.4** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **51.2 J** | **24.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.40 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1020** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-015 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **24.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **8.2** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **10.6** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **28200** | **12.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **812** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **393** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **6.3** | **5.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **561 B,J** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 620 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

Lot-Sample #...: A2K040189-015 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **55.4** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **20.2** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.070 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC21AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:37 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:40 **Date Received..:** 11/02/02
**% Moisture.....:** 20

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19600 J** | **25.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **12.6** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.6 B** | **7.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **56.2 J** | **25.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.55 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **3200** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **27.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **9.1** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **13.6** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **33400** | **12.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2200** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **457** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **8.2** | **5.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **915 J** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 624 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **61.8** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **32.1** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.049 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC41AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:38 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

General Chemistry

**Lot-Sample #...:** A2K040189-001 **Work Order #...:** FCDAQ **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:00 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **85.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

General Chemistry

**Lot-Sample #...:** A2K040189-002 **Work Order #...:** FCDA5 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:40 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

General Chemistry

**Lot-Sample #...:** A2K040189-003 **Work Order #...:** FCDA7 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:05 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

General Chemistry

**Lot-Sample #...:** A2K040189-004 **Work Order #...:** FCDCC **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:25 **Date Received..:** 11/02/02
**% Moisture.....:** 21

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.69 | 0.63 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | | Dilution Factor: 1 | | | | |
| Percent Solids | 79.2 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

General Chemistry

**Lot-Sample #...:** A2K040189-005 **Work Order #...:** FCDCE **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:15 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.9 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

General Chemistry

**Lot-Sample #...:** A2K040189-006 **Work Order #...:** FCDCG **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.0 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-007 **Work Order #...:** FCDCL **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:30 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **83.0 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-008 **Work Order #...:** FCDCP **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:45 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **85.4 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

General Chemistry

**Lot-Sample #...:** A2K040189-009 **Work Order #...:** FCDCQ **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **80.9 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

General Chemistry

Lot-Sample #...: A2K040189-010 Work Order #...: FCDCT Matrix.....: SO
Date Sampled...: 10/31/02 13:10 Date Received..: 11/02/02
% Moisture.....: 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.13 B | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| Percent Solids | 85.4 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | Dilution Factor: 1 | | | | | |

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

General Chemistry

Lot-Sample #...: A2K040189-011 Work Order #...: FCDCW Matrix.....: SO
Date Sampled...: 10/31/02 13:50 Date Received..: 11/02/02
% Moisture.....: 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.11 B | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| Percent Solids | 82.8 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | Dilution Factor: 1 | | | | | |

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

General Chemistry

**Lot-Sample #...:** A2K040189-012 **Work Order #...:** FCDCX **Matrix.....:** SO
**Date Sampled...:** 10/31/02 14:30 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.1 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

General Chemistry

**Lot-Sample #...:** A2K040189-013 **Work Order #...:** FCDC0 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 15:50 **Date Received..:** 11/02/02
**% Moisture.....:** 16

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **84.5 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

General Chemistry

**Lot-Sample #...:** A2K040189-014 **Work Order #...:** FCDC1 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:05 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **83.5 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-015 **Work Order #...:** FCDC2 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 17:00 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.7 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-016 **Work Order #...:** FCDC4 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:40 **Date Received..:** 11/02/02
**% Moisture.....:** 20

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.1 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

# APPENDIX C

## WASTE CHARACTERIZATION LABORATORY ANALYTICAL RESULTS

# CHAIN OF CUSTODY RECORD

Laboratory: Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| Client: | Draper Aden Associates | Consultant: | Draper Aden Associates | Sample Site: | RFAAP |
| Attn: | Andy Kassoff/ Ross Miller | Attn: | Janet C. Frazier | Location: | Montgomery County, Virginia |
| Address: | 2206 South Main Street<br>Blacksburg, Virginia 24060 | Address: | 2206 South Main Street<br>Blacksburg, Virginia 24060 | Event: | HWMU-5 and HWMU-7 Investigation |
| Phone: | (540) 552-0444 | Phone: | (540) 552-0444 | DAA JN: | B02271-01 |
| Fax: | (540) 552-0291 | Fax: | (540) 552-0291 | Lab JN: | |
| Fax: | (540) 552-0291 | | | | |

Project Specific (PS) or Batch (B) QC: ☑PS ☐B
Sample Collection for Project Complete? (See Note 1) ☑YES ☐NO
Carrier: FED EX
Tracking Number: _____

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B $HNO_3$, C $H_2SO_4$, D NaHSO4, E NaOH, F ZnAc, G Other (Specify), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 4: Sample Type
G Grab, C Composite

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Invoice
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on Ice: ☑YES Bo ☐NO

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | G | C | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | U | U | | | | | | | | |
| Required pH of Sample | | | | | - | - | - | | | | | | | | |
| Box 2 - Preservative | | | | | D | H | H | | | | | | | | |
| Box 5 - Sample Container Type | | | | | VOA | 1-500ml G | 500ml G | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Dissolved Metals (Dissolved) | Semivolatiles/Pests/PCB | FULL CHARACTERIZATION TCLP CORROSIVITY, REACTIVITY, IGNITABILITY | | | | | | | | |
| 5GP-1 (1-2') | 10/31 | 13:10 | S | 1 | | X | | | | | | | | | 5GP-1 (1-2') |
| 5GP-1 (9-10') | 10/31 | 13:10 | S | 1 | | X | | | | | | | | | 5GP-1 (9-10') |
| 5GP-6 (10-11') | 10/31 | 13:50 | S | 1 | | X | | | | | | | | | 5GP-6 (10-11') |
| 5GP-3 (9-10') | | 14:30 | S | 1 | | X | | | | | | | | | 5GP-3 (9-10') |
| 5GP-8 (7-8') | | 15:50 | S | 1 | | X | | | | | | | | | 5GP-8 (7-8') |
| 5GP-8 (11-12') | | 16:05 | S | 1 | | X | | | | | | | | | 5GP-8 (11-12') |
| 5GP-12 (3-4') | | 16:40 | S | 1 | | X | | | | | | | | | 5GP-12 (3-4') |
| 5GP-16 (3-4') | 10/31 | 17:00 | S | 1 | | X | | | | | | | | | 5GP-16 (3-4') |
| FULL TCLP | 11/1 | 13:55 | S | 1 | | | X | | | | | | | | FULL CHARACTERIZATION TCLP |
| ↳ HWMU-5 | | | | | | | | | | | | | | | IGNITABILITY, CORROSIVITY, REACTIVITY |

GENERAL NOTES: See attached target analyte list. Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)

Clients Special Instructions:

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): | DARREN FIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): | Darren Fidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: |
| Sampler Signature: | Darren Fidwell | Time: 16:30 | Company Name: | DAA | Time: 17:30 | Company Name: | Time: |
| Sampler Name (Print): | | Date: | #1 Received by (Signature): | | Date: | #2 Received by (Signature): | Date: |
| Sampler Signature: | | Time: | Company Name: | | Time: | Company Name: | Time: |

Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B
**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO
**Carrier:** FED EX
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Box 4: Sample Type**
G Grab; C Composite

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on ice: ☑YES ☐NO

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | G | C | | | | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | U | U | | | | | | | |
| **Required pH of Sample** | | | | | - | - | | | | | | | | |
| **Box 2 - Preservative** | | | | | D | H | 2 H | | | | | | | |
| **Box 5 - Sample Container Type** | | | | | VOA | 1-500ml G | 500mL G | | | | | | | |
| **Sample ID** | **Date: 2002** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **Volatiles 8260B/ 5035** | **Semivolatiles/Pests/PCB** | **Full Characterization TCLP** | | | | | | | |
| (1-3') 7GP-1 ✓ | 11/1 | 10:00 | S | 4 | X | X | | | | | | | | GENERAL NOTES: See attached target analyte list. **Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)** |
| (8-12') 7GP-2 ✓ | | 10:40 | S | | X | X | | | | | | | | |
| (13.5-14.5') 7GP-2 ✓ | | 11:05 | S | | X | X | | | | | | | | |
| (10-11') 7GP-3 ✓ | | 11:25 | S | | X | X | | | | | | | | |
| (5-8') 7GP-8 ✓ | | 12:15 | S | | X | X | | | | | | | | |
| (10-11') 7GP-5 ✓ | | 12:50 | S | 12 | X | X | | | | | | | | + MS/MSD |
| (3-4') 7GP-16 ✓ | | 13:30 | S | | X | X | | | | | | | | |
| (3-4') 7GP-4 ✓ | | 13:45 | S | 4 | X | X | | | | | | | | |
| UNIT 7 TCLP | 11/1 | 14:00 | S | 1 | | | X ✓ | | | | | | | FULL CHARACTERIZATION TCLP, IGNITABILITY, CORROSIVITY, REACTIVITY |

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | 30 DYS ORG/6 MTHS INORG |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933082**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

MWMU5 SDG#: RAR01-20

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.3 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 00394 | pH | n.a. | 7.38 | 0.010 | | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | See Below | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 7.38 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | |
| 00542 | Ignitability | n.a. | See Below | | See Below | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | |
| 01121 | Reactivity | n.a. | See Below | | See Below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 98. | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

REPRINT



**Lancaster Laboratories Sample No. SW 3933082**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

MWMU5 SDG#: RAR01-20

| | | | | | | |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/07/2002 09:55 | Nadine Fegley | 1 |
| 00394 | pH | SW-846 9045C (modified) | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 11/15/2002 18:50 | Justin M Bowers | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 11/15/2002 21:03 | Venia B McFadden | 1 |

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REPRINT



**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000079 | mg/l | 1 |
| | The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards): | | | | | |
| | Arsenic 5.0 Cadmium 1.0 Lead 5.0 Selenium 1.0<br>Barium 100.0 Chromium 5.0 Mercury 0.2 Silver 5.0 | | | | | |
| 01335 | Arsenic | 7440-38-2 | 0.0091 J | 0.0049 | mg/l | 1 |
| 01336 | Selenium | 7782-49-2 | N.D. | 0.0048 | mg/l | 1 |
| 01746 | Barium | 7440-39-3 | 0.714 | 0.00044 | mg/l | 1 |
| 01749 | Cadmium | 7440-43-9 | N.D. | 0.00094 | mg/l | 1 |
| 01751 | Chromium | 7440-47-3 | N.D. | 0.0020 | mg/l | 1 |
| 01755 | Lead | 7439-92-1 | 0.0116 J | 0.0089 | mg/l | 1 |
| 01766 | Silver | 7440-22-4 | N.D. | 0.0014 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000012 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000016 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000024 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | mg/l | 1 |
| 00952 | TCLP Herbicides | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | mg/l | 1 |
| 00949 | TCLP Acid Base/Neutrals | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.0040 | mg/l | 1 |

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REPRINT



**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.0020 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.0020 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.0040 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.0020 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.0020 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.0020 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.0020 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.0020 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.0020 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.0020 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.0060 | mg/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 11/08/2002 06:52 | Deborah A Krady | 1 |
| 01335 | Arsenic | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 01336 | Selenium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01746 | Barium | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 01749 | Cadmium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01751 | Chromium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01755 | Lead | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01766 | Silver | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 11/08/2002 13:04 | Douglas D Seitz | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 11/09/2002 02:40 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 11/08/2002 15:54 | Chad A Moline | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 11/08/2002 08:25 | Amanda W Herr | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 11/07/2002 23:00 | Sharon L Jones | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 11/06/2002 13:40 | Carlene A Landis | n.a. |

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**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| | | | | | | |
|---|---|---|---|---|---|---|
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 11/07/2002 17:25 | JoElla L Rice | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 11/07/2002 22:10 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 11/07/2002 20:21 | Nelli S Markaryan | 1 |

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**Lancaster Laboratories Sample No. TL 3933084**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5ZHE SDG#: RAR01-22*

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | mg/l | 20 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 11/10/2002 19:54 | Susan McMahon-Luu | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 11/04/2002 12:45 | David G Splain Jr | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 11/10/2002 19:54 | Susan McMahon-Luu | n.a. |

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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**Lancaster Laboratories Sample No. SW 3933071**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAR01-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.5 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 00394 | pH | n.a. | 7.15 | 0.010 | | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | See Below | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 7.15 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | |
| 00542 | Ignitability | n.a. | See Below | | See Below | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | |
| 01121 | Reactivity | n.a. | See Below | | See Below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 100. | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|

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**Lancaster Laboratories Sample No. SW 3933071**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAR01-09

| | | | | | | |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/07/2002 09:55 | Nadine Fegley | 1 |
| 00394 | pH | SW-846 9045C (modified) | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 11/15/2002 18:50 | Justin M Bowers | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 11/15/2002 21:01 | Venia B McFadden | 1 |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000079 | mg/l | 1 |
| | The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards): | | | | | |
| | Arsenic 5.0 Cadmium 1.0 Lead 5.0 Selenium 1.0 Barium 100.0 Chromium 5.0 Mercury 0.2 Silver 5.0 | | | | | |
| 01335 | Arsenic | 7440-38-2 | 0.0056 J | 0.0049 | mg/l | 1 |
| 01336 | Selenium | 7782-49-2 | N.D. | 0.0048 | mg/l | 1 |
| 01746 | Barium | 7440-39-3 | 0.521 | 0.00044 | mg/l | 1 |
| 01749 | Cadmium | 7440-43-9 | N.D. | 0.00094 | mg/l | 1 |
| 01751 | Chromium | 7440-47-3 | N.D. | 0.0020 | mg/l | 1 |
| 01755 | Lead | 7439-92-1 | N.D. | 0.0089 | mg/l | 1 |
| 01766 | Silver | 7440-22-4 | N.D. | 0.0014 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000012 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000016 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000024 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | mg/l | 1 |
| 00952 | TCLP Herbicides | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | mg/l | 1 |
| 00949 | TCLP Acid Base/Neutrals | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.0040 | mg/l | 1 |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.0020 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.0020 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.0040 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.0020 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.0020 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.0020 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.0020 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.0020 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.0020 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.0020 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.0060 | mg/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 11/08/2002 06:46 | Deborah A Krady | 1 |
| 01335 | Arsenic | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 01336 | Selenium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01746 | Barium | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 01749 | Cadmium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01751 | Chromium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01755 | Lead | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01766 | Silver | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 11/08/2002 12:23 | Douglas D Seitz | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 11/08/2002 23:24 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 11/08/2002 13:59 | Chad A Moline | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 11/08/2002 08:25 | Amanda W Herr | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 11/07/2002 23:00 | Sharon L Jones | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 11/06/2002 13:40 | Carlene A Landis | n.a. |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| | | | | | | |
|---|---|---|---|---|---|---|
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 11/07/2002 17:25 | JoElla L Rice | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 11/07/2002 22:10 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 11/07/2002 20:21 | Nelli S Markaryan | 1 |

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**Lancaster Laboratories Sample No. TL 3933073**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7ZHE SDG#: RAR01-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | mg/l | 20 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 11/10/2002 19:28 | Susan McMahon-Luu | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 11/04/2002 12:45 | David G Splain Jr | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 11/10/2002 19:28 | Susan McMahon-Luu | n.a. |

# APPENDIX D

## HAZARDOUS WASTE MANAGEMENT UNIT CAP REPAIR DOCUMENTATION

**Draper Aden Associates**
**Engineering ♦ Surveying ♦ Environmental Services**

8090 Villa Park Drive
Richmond, Virginia 23228
(804) 264-2228 • Fax: (804) 264-8773
daa@daa.com • www.daa.com

January 3, 2003

Mr. Jerome Redder
Alliant Ammunition and Powder Company, LLC
P.O. Box 1
RAAP
Radford, Virginia 24141

**RE: Radford Army Ammunitions Plant PVC Cap Repair – HWMU 7**
**DAA No. R02564-01**

Dear Mr. Redder:

From December 19, to December 20, 2002 Draper Aden Associates (DAA) conducted PVC liner repair inspection for the above noted project. Site visit reports, photographs, and repair location sketches are attached for work performed during this period. The work was performed by Landsaver Environmental (Landsaver). The work performed at each repair location was in accordance with the approved VDEQ closure plan dated May 27, 1988 and the attached VDEQ comments. Each repair was conducted as follows:

- Excavated the topsoil and cover soil (3' thick); no filter fabric was encountered
- Excavated the sand drainage layer (1' thick)
- The existing 30 mil PVC liner was wiped free of dirt and dust
- Applied a bonding adhesive to the existing 30 mil PVC Liner
- Installed a new 30 mil PVC patch with a minimum 6" overlap in all directions
- Applied a bonding adhesive to the overlap (minimum 2" perimeter bonding area) and applied pressure to the two bonding surfaces
- After allowing the adhesive to cure, the patch was Air Lance Tested in accordance with ASTM D4437-99
- The repair location was backfilled and compacted with a 1 foot layer of sand drainage layer and 3' of topsoil/cover soil material. Topsoil/cover soil material was compacted in 1 foot lifts with use of a hand tamper and the excavator bucket. The compaction of each lift was verified with the use of a probe rod.

Based on our field observations and documentation, laboratory test results and geotechnical engineering experience, we conclude that the liner installation and repairs

on the above referenced project site has been completed in accordance with industry standard and acceptable engineering practices.

If you should have any further questions, please feel free to contact Ken Piazza or myself at (804) 264-2228.

Sincerely,
**DRAPER ADEN ASSOCIATES**

Robert H. Vester, Jr., P.E.
Project Manager

Attachments:

DAA Site visit Reports
Construction Photos
Repair Location Sketch
Landsaver Environmental Repair Log
VDEQ Comments

cc: Mr. Andrew Kassoff
File

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

# Site Visit Report

**Project:** Radford Ammunition Plant

**Job No.:** R02564-01 **Date:** 19-Dec-02

**Location:** Radford, VA

**Visit by:** RLS **Page:** 1 **of** 2

## Personnel - Construction

Contractor / Subcontractor:

Andrew - Landsaver

## Personnel - Inspection / Other

Engineer (QA / QC):

Ryan Sadler DAA

Ross Miller DAA

Owner Representatives:

Jerry Redder Alliant

Visitors:

## Equipment

| Description | No. on Site | No. in Use |
|---|---|---|
| Trackhoe | | |
| Bobcat Backhoe | 1 | 1 |
| Dozer | | |
| Front End Loader | | |
| Track Loader | | |
| Pan / Scraper | | |
| Grader | | |
| Sheepsfoot Roller | | |
| Smooth Drum Roller | | |
| Dump Truck | | |
| Hand Tamp | 1 | 1 |
| | | |
| | | |
| | | |
| | | |
| | | |

## Materials Delivered

| Description | Quantity |
|---|---|
| | |
| | |
| | |
| | |
| | |

## Weather Conditions

Morning: Cool

Temp: 42

Noon: Cool

Temp: 56

Evening: Cool

Temp: 52

**Draper Aden Associates**
**Blacksburg • Richmond, Virginia**
Engineering • Surveying • Environmental Services

# Site Visit Report

Project No.: R02564-01



Date: 19-Dec-02

Arrived on-site @ 8:00 am and proceeded to get a visitor's pass at the gate. Landsaver was late and arrived around 10:30. Ross, myself, and the two Landsaver guys proceeded to the Administration building where we waited for Mr. Redder for approximately 30 minutes. Another half-hour was spent getting a camera pass for the site. Next we went to Shipping and Receiving to pick up the hand tamper and the Bobcat. The Bobcat had to be driven from S & R to the project site. We started with HWMU 7 by the river. The holes were marked by flagging so we proceeded to dig with the Bobcat down to the liner. Approx. 3 feet of soil covered the liner on top of a 1 foot drainage layer of a fine stone. The holes were cleared enough to make room for the patches and air lance testing. Four holes were dug and patched today. No air testing was performed. Holes 2,3,10 & 11 were patched today. Patching consisted of cleaning the area - cutting a round patch to cover the hole - then a pvc cement was applied beneath the patch - pressure was applied to the patch to assure a good bond.

Signature:

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

# Site Visit Report

**Project:** Radford Ammunition Plant

**Job No.:** R02564-01 **Date:** 20-Dec-02

**Location:** Radford, VA

**Visit by:** RLS **Page:** 1 **of** 2

## Personnel - Construction

Contractor / Subcontractor:

Andrew - Landsaver

## Personnel - Inspection / Other

Engineer (QA / QC):

Ryan Sadler DAA

Ross Miller DAA

Owner Representatives:

Jerry Redder Alliant

Visitors:

## Equipment

| Description | No. on Site | No. in Use |
|---|---|---|
| Trackhoe | | |
| Bobcat Backhoe | 1 | 1 |
| Dozer | | |
| Front End Loader | | |
| Track Loader | | |
| Pan / Scraper | | |
| Grader | | |
| Sheepsfoot Roller | | |
| Smooth Drum Roller | | |
| Dump Truck | | |
| Hand Tamp | 1 | 1 |
| | | |
| | | |
| | | |
| | | |
| | | |

## Materials Delivered

| Description | Quantity |
|---|---|
| | |
| | |
| | |
| | |
| | |

## Weather Conditions

Morning: Cool

Temp: 42

Noon: Cool

Temp: 56

Evening: Cool

Temp: 52

**Draper Aden Associates**
**Blacksburg • Richmond, Virginia**
Engineering • Surveying • Environmental Services

# Site Visit Report

Project No.: R02564-01



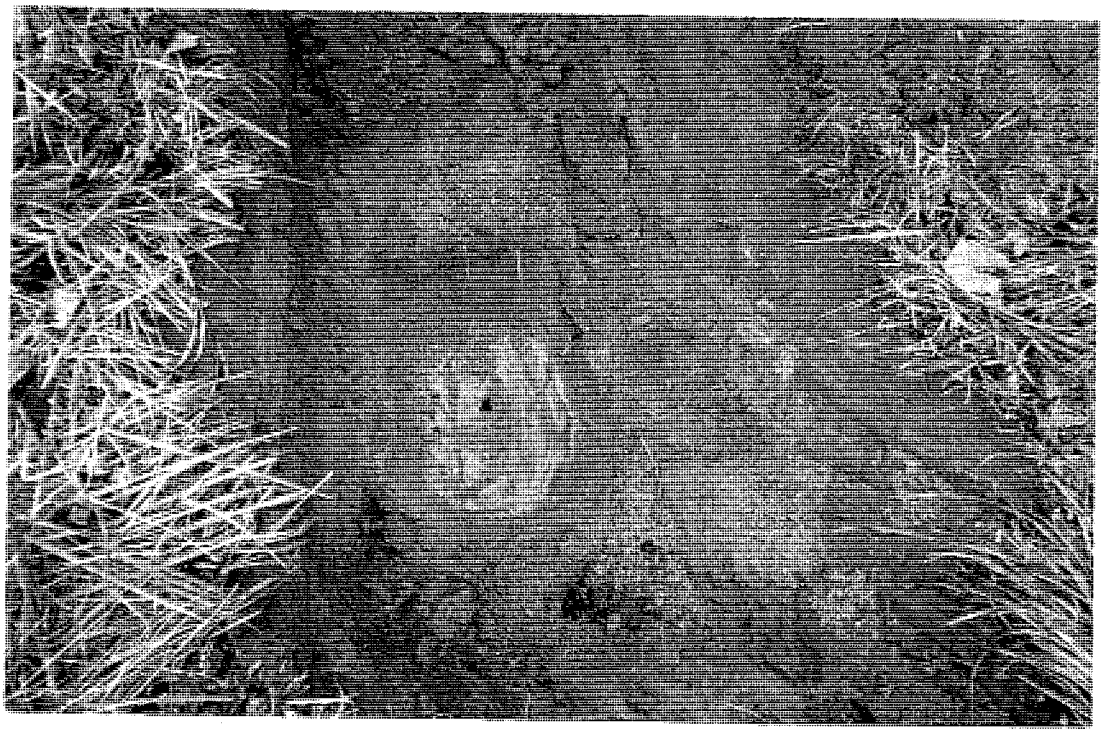
Date: 20-Dec-02

Arrived on-site @ 8:00 am. Ross, Landsaver, and myself proceeded through the security check points and over to HWMU 7. We finished uncovering and patching the remaining holes in the morning. After a lunch break the patches were air lance tested to assure a good bond. All testing passed and the holes were backfilled and compacted. The equipment was then loaded up and we headed over to HWMU 5. Upon leaving today four of the holes were patched and all of the holes were excavated. No air testing was attempted today on HWMU 5. Patching consisted on cleaning the repair area - cutting a rounded patch to cover the area - placing a pvc cement down under the patch - applying pressure to assure a good bond. Air testing consisted of shooting a concentrated stream of compressed air around the edge of the patch and visually observing for the patch to bubble up as a result of an unsuitable bond. Failing air tests were repaired accordingly before backfilling.

Signature:

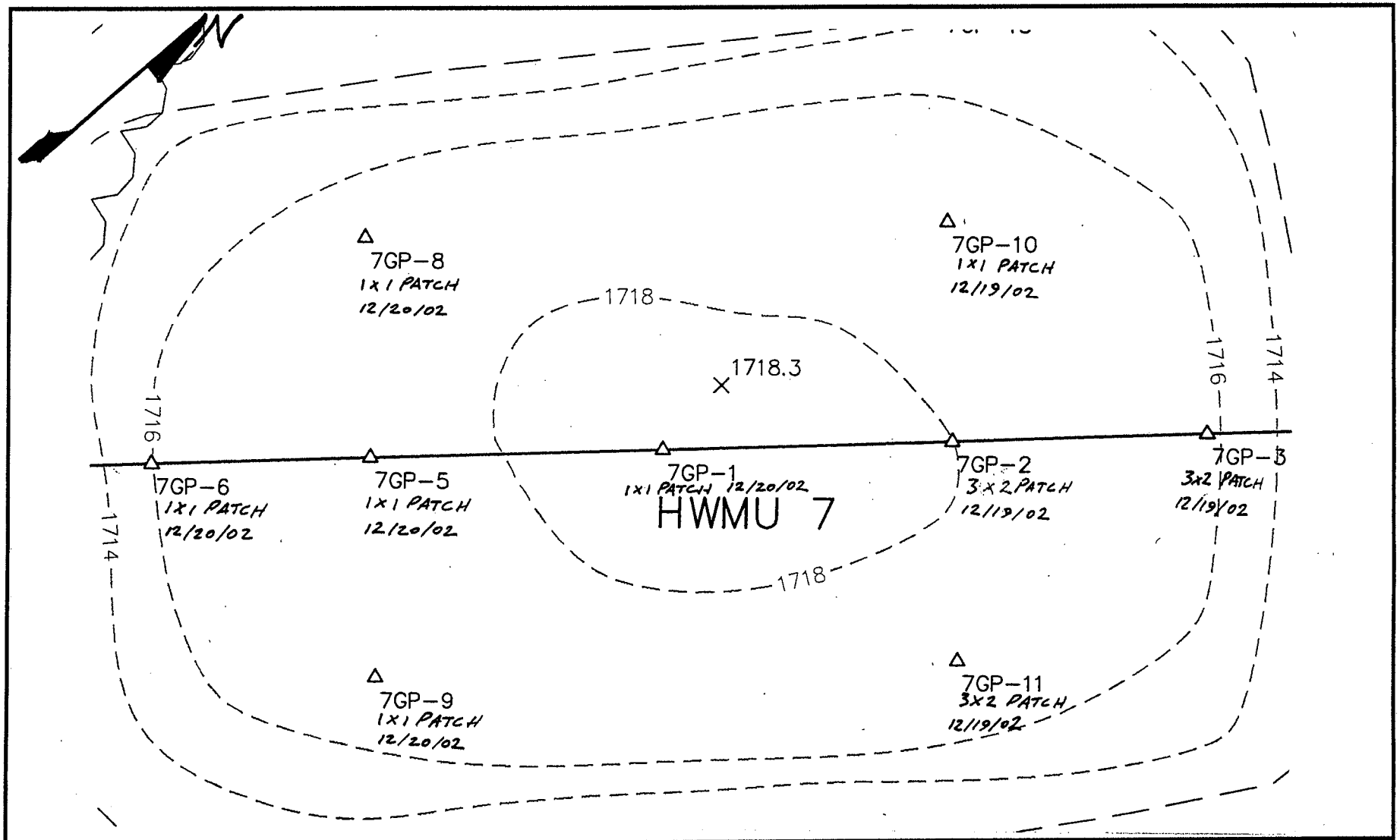
EXCAVATION OF SOIL CAP AT REPAIR LOCATON (ABOVE)
EXCAVATION OF SOIL CAP AT REPAIR LOCATION (BELOW)

HAND EXCAVATION OF SOIL CAP NEAR MEMBRANE INTERFACE (ABOVE)
EXCAVATED REPAIR AREA PRIOR TO PATCHING (BELOW)



INSTALLATION OF 30 MIL PVC PATCH AND APPLICATION OF ADHESIVE (ABOVE)
APPLICATION OF PRESSURE TO ENSURE STRONG BOND (BELOW)

AIR LANCE SEAM TESTING (ABOVE)
BACKFILLING OF REPAIR LOCATION WITH A HAND TAMPER (BELOW)




| | | |
|---|---|---|
| Cap Repair Locations<br>HWMU 7 | Radford Army Ammunitions Plant<br>PVC Cap Repair<br>Radford, Virginia<br>DAA# R02564-01 | **Draper Aden Associates**<br>Blacksburg • Richmond, Virginia<br>Engineering • Surveying • Environmental Services |

**LANDSAVER ENVIRONMENTAL**
2831 Cardwell Rd.
Richmond, VA 23234
**(800) 588-9223 Fax: (804) 271-8044**

**Job Name:** Radford Army Ammunition Plant Cap Repair **Contractor:** Draper Aden

**Job Location:** Radford VA **Engineer:**

**Date:** 12-19-02 12-20-02 **QA/QC:**

# GEOMEMBRANE REPAIR LOG

| Repair ID No. | Repair Location: Seam, Panel or Repair No. | Repair Location: Repair Location Description | Repair type | Log Date | Recorded by | Comments | Repair Date | Test Date | Airlance Pass/ Failed |
|---|---|---|---|---|---|---|---|---|---|
| R- 10 | 7GP-2 | 3'X2' | P | 12/19 | AR | | 12/19 | 12/19 | P |
| - 11 | 7GP-3 | 3'X2' | P | 12/19 | AR | | 12/19 | 12/19 | P |
| - 12 | 7GP-10 | 1'X1' | P | 12/19 | AR | | 12/19 | 12/19 | P |
| R- 13 | 7GP-11 | 3'X2' | P | 12/19 | AR | | 12/19 | 12/19 | P |
| R- 14 | 7GP-1 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| - 15 | 7GP-5 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| - 16 | 7GP-6 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| R- 17 | 7GP-8 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| - 18 | 7GP-9 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| - | | | | | | | | | |
| R- | | | | | | | | | |
| R- | | | | | | | | | |
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| R- | | | | | | | | | |
| R- | | | | | | | | | |

DEQ CRITERIA



The Department's Office of Waste Permitting (the Department) would like to provide the following comments concerning the development of the removal activities for Units 5 and 7:

1. Task 1, Subsurface Evaluation, paragraph 1 – In addition to the subsurface evaluations, the Department also recommends reviewing the plans and drawings provided in the approved post-closure reports to assist in determining the nature of wastes closed in place and the approximate limits and final grades of the closed units.

2. During the telephone conference, it was indicated that the sample locations would be backfilled with bentonite to the level of the existing geomembrane liner. This method of restoring the low permeability layer beneath the geomembrane liner is acceptable.

3. Task 1, Subsurface Evaluation, paragraph 2 – Any penetrations of or damage to the existing liner must be repaired as soon as practicable after the sample is collected. The repairs shall be made using new liner material that is, at least, of equivalent grade as and compatible with the existing liner. The method of repair (e.g., weld, glue, etc.) shall be such that the integrity of the existing liner or patch will not be compromised over the anticipated life of the cover (at minimum, the current remaining post-closure care period of that unit). All of the manufacturer's QA/QC procedures (e.g., test seams/patches, destructive testing, non-destructive testing, certified/trained installers, etc.) shall be followed in making the repairs. Also, RFAAP shall comply with the most up-to-date versions of the QA/QC procedures specified in the approved closure plan (e.g., ASTM D4437-99 as opposed to D4437) for field seaming of the geomembrane.

4. Task 1, Subsurface Evaluation, paragraph 2 – The soil cover overlying the geomembrane liner shall be restored with like materials (i.e., one foot drainage sand layer, filter fabric, one foot cover soil, and one foot of topsoil with grass cover), placed and compacted, and revegetated to the requirements of the approved closure plan. The filter fabric shall be repaired in accordance with manufacturer recommendations and the approved closure plan.

5. Since the final covers will be disturbed and then repaired, RFAAP must provide for each unit a certification that the unit has been repaired to meet the design standards specified in the approved closure plan. Pursuant to 40 CFR 264.115, the certification must be signed by an independent P.E. registered in the Commonwealth of Virginia and the owner or operator.

6. Task 1, Subsurface Evaluation, paragraph 3 – Although the Department is aware that RFAAP must analyze for CERCLA TAL/TCL constituents, we recommend that the following constituents be included in the initial study/investigation phase:
   a. all hazardous waste constituents that were handled at the unit (this list may be found in the approved closure plan); and
   b. all groundwater monitoring constituents that have been detected above background levels.

**Draper Aden Associates**
**Engineering ♦ Surveying ♦ Environmental Services**

8090 Villa Park Drive
Richmond, Virginia 23228
(804) 264-2228 • Fax: (804) 264-8773
daa@daa.com • www.daa.com

January 3, 2002

Mr. Jerome Redder
Alliant Ammunition and Powder Company, LLC
P.O. Box 1
RAAP
Radford, Virginia 24141

**RE: Radford Army Ammunitions Plant PVC Cap Repair – HWMU 5**
**DAA No. R02564-01**

Dear Mr. Redder:

From December 20, to December 22, 2002 Draper Aden Associates (DAA) conducted PVC liner repair inspection for the above noted project. Site visit reports, photographs, and repair location sketches are attached for work performed during this period. The work was performed by Landsaver Environmental (Landsaver). The work performed at each repair location was in accordance with the approved VDEQ closure plan dated May 27, 1988 and the attached VDEQ comments. The each repair was conducted as follows:

- Excavated the topsoil and cover soil (3' thick); no filter fabric was encountered
- Excavated the sand drainage layer (1' thick)
- The existing 30 mil PVC liner was wiped free of dirt and dust
- Applied a bonding adhesive to the existing 30 mil PVC Liner
- Installed a new 30 mil PVC patch with a minimum 6" overlap in all directions
- Applied a bonding adhesive to the overlap (minimum 2" perimeter bonding area) and applied pressure to the two bonding surfaces
- After allowing the adhesive to cure, the patch was Air Lance Tested in accordance with ASTM D4437-99
- The repair location was backfilled and compacted with a 1 foot layer of sand drainage layer and 3' of topsoil/cover soil material. Topsoil/cover soil material was compacted in 1 foot lifts with use of a hand tamper and the excavator bucket. The compaction of each lift was verified with the use of a probe rod.

Based on our field observations and documentation, laboratory test results and geotechnical engineering experience, we conclude that the liner installation and repairs

on the above referenced project site has been completed in accordance with industry standard and acceptable engineering practices.

If you should have any further questions, please feel free to contact Ken Piazza or myself at (804) 264-2228.

Sincerely,
**DRAPER ADEN ASSOCIATES**

Robert H. Vester, Jr., P.E.
Project Manager

Attachments:

DAA Site visit Reports
Construction Photos
Repair Location Sketch
Landsaver Environmental Repair Log
VDEQ Comments

cc: Mr. Andrew Kassoff
File

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

# Site Visit Report

**Project:** Radford Ammunition Plant

**Job No.:** R02564-01 | **Date:** 20-Dec-02

**Location:** Radford, VA

**Visit by:** RLS | **Page:** 1 **of** 2

## Personnel - Construction

Contractor / Subcontractor:

Andrew - Landsaver

## Personnel - Inspection / Other

Engineer (QA / QC):

Ryan Sadler DAA

Ross Miller DAA

Owner Representatives:

Jerry Redder Alliant

Visitors:

## Equipment

| Description | No. on Site | No. in Use |
|---|---|---|
| Trackhoe | | |
| Bobcat Backhoe | 1 | 1 |
| Dozer | | |
| Front End Loader | | |
| Track Loader | | |
| Pan / Scraper | | |
| Grader | | |
| Sheepsfoot Roller | | |
| Smooth Drum Roller | | |
| Dump Truck | | |
| Hand Tamp | 1 | 1 |
| | | |
| | | |
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| | | |
| | | |

## Materials Delivered

| Description | Quantity |
|---|---|
| | |
| | |
| | |
| | |
| | |

## Weather Conditions

Morning: Cool

Temp: 42

Noon: Cool

Temp: 56

Evening: Cool

Temp: 52

**Draper Aden Associates**
**Blacksburg • Richmond, Virginia**
Engineering • Surveying • Environmental Services

# Site Visit Report

Project No.: R02564-01

Page 2 of 2

Date: 20-Dec-02

Arrived on-site @ 8:00 am. Ross, Landsaver, and myself proceeded through the security check points and over to HWMU 7. We finished uncovering and patching the remaining holes in the morning. After a lunch break the patches were air lance tested to assure a good bond. All testing passed and the holes were backfilled and compacted. The equipment was then loaded up and we headed over to HWMU 5. Upon leaving today four of the holes were patched and all of the holes were excavated. No air testing was attempted today on HWMU 5. Patching consisted on cleaning the repair area - cutting a rounded patch to cover the area - placing a pvc cement down under the patch - applying pressure to assure a good bond. Air testing consisted of shooting a concentrated stream of compressed air around the edge of the patch and visually observing for the patch to bubble up as a result of an unsuitable bond. Failing air tests were repaired accordingly before backfilling.

Signature:

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

# Site Visit Report

**Project:** Radford Army Ammunition Plant Cap Repair

**Job No.:** R02564-01 **Date:** 12/22/02

**Location:** Radford Ammunition, Blacksburg VA

**Visit by:** Darren Spier **Page:** 1 **of** 2

## Personnel - Construction

Contractor / Subcontractor:

~~DAA~~ Landsaver

## Personnel - Inspection / Other

Engineer (QA / QC):

Darren Spier DAA

Owner Representatives:

Jerry Radder

Visitors:

## Equipment

| Description | No. on Site | No. in Use |
|---|---|---|
| Trackhoe | \ | |
| Rubber Tired Backhoe | | |
| Dozer | | |
| Front End Loader | | |
| Track Loader | | |
| Pan / Scraper | | |
| Grader | | |
| Sheepsfoot Roller | | |
| Smooth Drum Roller | | |
| Dump Truck | | |
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| | | |

## Materials Delivered

| Description | Quantity |
|---|---|
| | |
| | |
| | |
| | |
| | |

## Weather Conditions

Morning: PC

Temp: 45

Noon: wind

Temp:

Evening:

Temp:

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

# Site Visit Report

Project No.: R02564-01



Date: 12/22/02

The nine boring holes for the second closure had been excavated the previous workday. Excavations where the liner puncture had not been located were hand dug near the liner to avoid further damage.

The boring punctures were then cleaned with solvent roughly 8 inches in radius. Any errant tears due to shovel excavation were treated the same as bore punctures and dressed in the same fashion. Glue was then applied and a patch of 30 mil PVC was cut to a size and shape so as to cover damaged liner. At least one foot diameter patches were used. The patches were then set with a hand roller.

After 30 minutes of curing the patches were air lanced around their entire perimeters. No bubbling indicating failure was found.

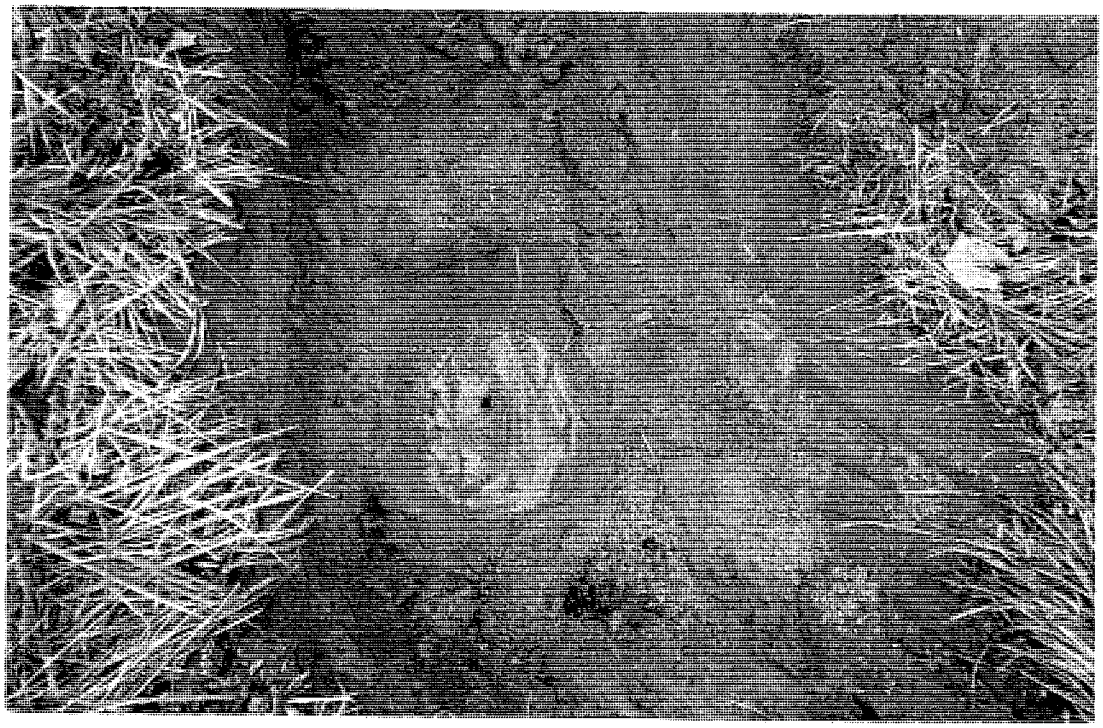
The cuts were then backfilled in roughly one foot lifts and compacted with the bucket of the backhoe. I probed each lift with a rod to ensure compaction. The final lift was tracked with the backhoe to compact.

Signature: Darren Beer

EXCAVATION OF SOIL CAP AT REPAIR LOCATON (ABOVE)
EXCAVATION OF SOIL CAP AT REPAIR LOCATION (BELOW)

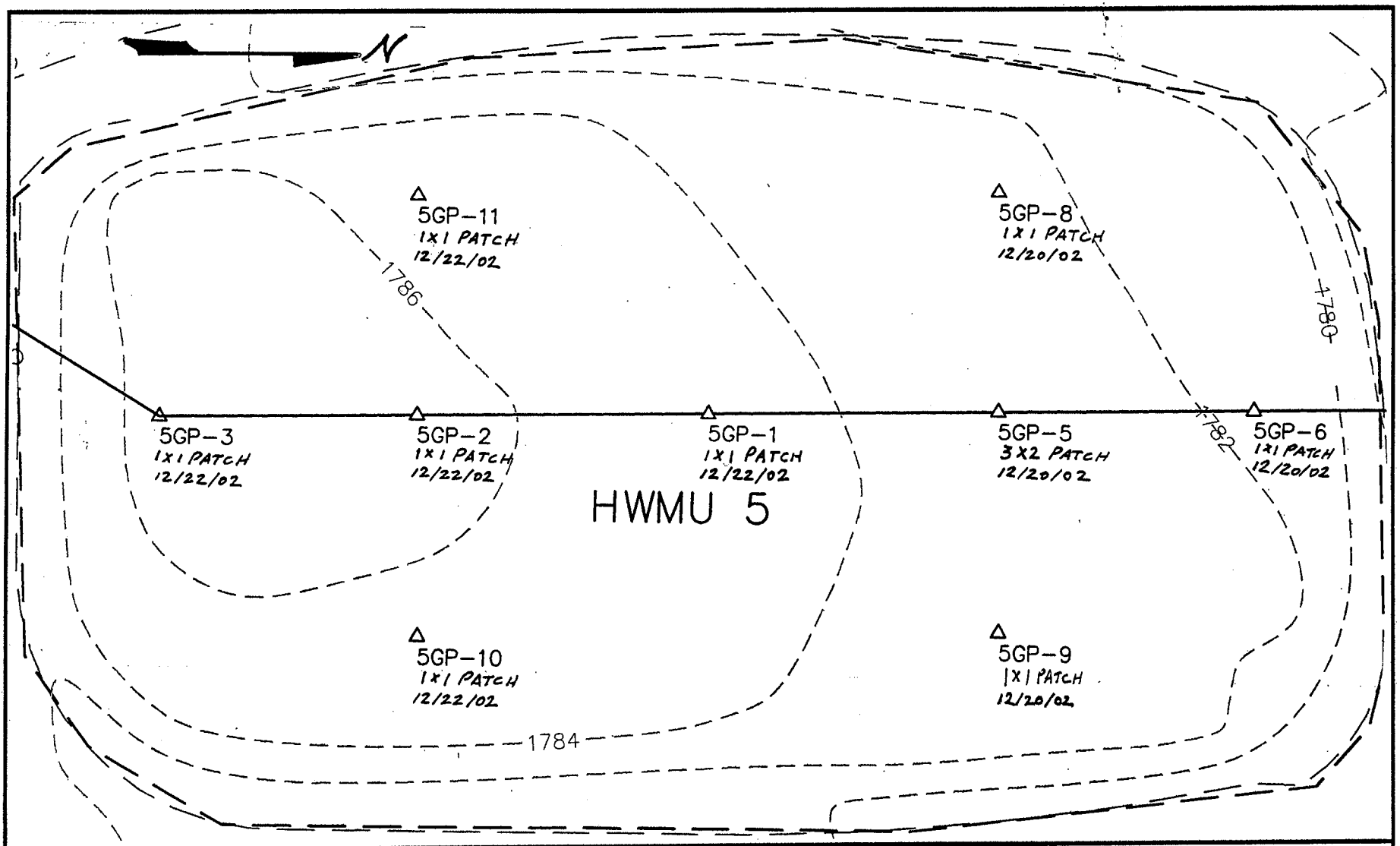
**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

HAND EXCAVATION OF SOIL CAP NEAR MEMBRANE INTERFACE (ABOVE)
EXCAVATED REPAIR AREA PRIOR TO PATCHING (BELOW)



INSTALLATION OF 30 MIL PVC PATCH AND APPLICATION OF ADHESIVE (ABOVE)
APPLICATION OF PRESSURE TO ENSURE STRONG BOND (BELOW)

AIR LANCE SEAM TESTING (ABOVE)
BACKFILLING OF REPAIR LOCATION WITH A HAND TAMPER (BELOW)




Cap Repair Locations

HWMU 5

Radford Army Ammunitions Plant
PVC Cap Repair
Radford, Virginia
DAA# R02564-01

**Draper Aden Associates**
Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

**LANDSAVER ENVIRONMENTAL**
2831 Cardwell Rd.
Richmond, VA 23234
**(800) 588-9223 Fax: (804) 271-8044**

**Job Name:** Radford Army Ammunition Plant Cap Repair **Contractor:** Draper Aden

**Job Location:** Radford VA **Engineer:**

**Date:** 12-20-02 12-22-02 **QA/QC:**

# GEOMEMBRANE REPAIR LOG

| Repair ID No. | Repair Location: Seam, Panel or Repair No. | Repair Location: Repair Location Description | Repair type | Log Date | Recorded by | Comments | Repair Date | Airlance Test Date | Airlance Pass/ Failed |
|---|---|---|---|---|---|---|---|---|---|
| R- 1 | 5GP-5 | 3'X2' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| R- 2 | 5GP-6 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| R- 3 | 5GP-8 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| R- 4 | 5GP-9 | 1'X1' | P | 12/20 | AR | | 12/20 | 12/20 | P |
| R- 5 | 5GP-1 | 1'X1' | P | 12/22 | AR | | 12/22 | 12/22 | P |
| R- 6 | 5GP-2 | 1'X1' | P | 12/22 | AR | | 12/22 | 12/22 | P |
| R- 7 | 5GP-3 | 1'X1' | P | 12/22 | AR | | 12/22 | 12/22 | P |
| R- 8 | 5GP-10 | 1'X1' | P | 12/22 | AR | | 12/22 | 12/22 | P |
| R- 9 | 5GP-11 | 1'X1' | P | 12/22 | AR | | 12/22 | 12/22 | P |
| R- | | | | | | | | | |
| R- | | | | | | | | | |
| R- | | | | | | | | |

DEQ CRITERIA



The Department's Office of Waste Permitting (the Department) would like to provide the following comments concerning the development of the removal activities for Units 5 and 7:

1. Task 1, Subsurface Evaluation, paragraph 1 – In addition to the subsurface evaluations, the Department also recommends reviewing the plans and drawings provided in the approved post-closure reports to assist in determining the nature of wastes closed in place and the approximate limits and final grades of the closed units.

2. During the telephone conference, it was indicated that the sample locations would be backfilled with bentonite to the level of the existing geomembrane liner. This method of restoring the low permeability layer beneath the geomembrane liner is acceptable.

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   a. all hazardous waste constituents that were handled at the unit (this list may be found in the approved closure plan); and
   b. all groundwater monitoring constituents that have been detected above background levels.

# APPENDIX E

## ALTERNATE SOURCE DEMONSTRATION FOR TRICHLOROETHENE HAZARDOUS WASTE MANAGEMENT UNIT 5

**Delivery Order No. 0008**
**Environmental Services**
**Program Support**
**DACA31-94-D-0064**

# RADFORD ARMY AMMUNITION PLANT, VIRGINIA

---

## Facility-Wide Background Study Report

**Prepared for:**

USACE Baltimore District
10 S. Howard St.
Baltimore, MD 21201

**Prepared by:**

IT Corporation
2113 Emmorton Park Rd.
Edgewood, MD 21040

**Final Document**

**December 2001**

INSTALLATIONS LIBRARY \
RADFORD LIBRARY 1024905 \ 010406 \
RADFAAP010

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

*Street address:* 629 East Main Street, Richmond, Virginia 23219
*Mailing address:* P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

May 29, 2002

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Final Facility-Wide Background Study Report (Report)

Dear Mr. McKenna:

This office has reviewed the referenced final document and concurs with the Report. No revisions to the document are required.

If you have any questions, please call me at 804.698.4308.

Sincerely,

Mark S. Leeper
Remedial Project Manager

cc: Norman L. Auldridge - WCRO, DEQ
Durwood Willis - DEQ
Robert Thompson, Region III, U.S.EPA, 3HS13

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
***REGION III***
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

**Date:** February 14, 2002

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
*Facility-Wide Background Study Report*
Document submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's December, 2001 *Facility-Wide Background Study Report* for use at the Radford Army Ammunition Plant (RFAAP) and the New River Ammunition Storage Depot (NRASD). Based upon our review, the *Facility-Wide Background Study Report* is approved. In accordance with Part II. (E)(5) of RFAAP's Corrective Action Permit, the *Facility-Wide Background Study Report* is now final. EPA expects that future site-specific *Work Plans* and *Reports* for the investigation of areas at the RFAAP and NRASD will reference the final *Facility-Wide Background Study Report*.

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA
Sharon Wilcox, VDEQ-CERCLA
Mark Leeper, VDEQ-CERCLA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

January 29, 2002

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Final Facility-Wide Background Study Report (Report)

Dear Mr. McKenna:

This office has reviewed the referenced final document and concurs with the Report. No revisions to the document are required.

If you have any questions, please call me at 804.698.4308.

Sincerely,

Mark S. Leeper
Remedial Project Manager

cc: Norman L. Auldridge - WCRO, DEQ
Durwood Willis - DEQ
Robert Thompson, Region III, U.S.EPA, 3HS13

## McKenna, Jim

**From:** msleeper@deq.state.va.us
**Sent:** Monday, January 28, 2002 12:25 PM
**To:** McKenna, Jim
**Cc:** dhwillis@deq.state.va.us
**Subject:** ...no subject...

Hey Jim,

Sorry I couldn't make the RAB. Someday soon I hope. I would like to kill
two birds with this email.

First, in regards to the January 17th 2002 conference call regarding WPA 009,
we discussed all the areas in which I had concerns and through the call this
office concurs with WPA 009 and no revisions are needed.

Secondly, the Final Facility Wide Background Study Report (Study), dated

December 2001, has been reviewed and this office concurs with the Study and
no revisions are needed.

Hard copy letters will follow shortly documenting the concurrence for both
documents.

anks,

Mark S. Leeper
Federal Facilities Program
Remedial Project Manager
VA Department of Environmental Quality
phone: 804.698.4308 fax: 804.698.4383

## McKenna, Jim

**rm:** Thomson.Bob@epamail.epa.gov
**nt:** Wednesday, January 09, 2002 11:58 AM
**To:** Jim_McKenna@atk.com
**Cc:** Jerome_Redder@atk.com; msleeper@deq.state.va.us; sswilcox@deq.state.va.us; dhwillis@deq.state.va.us
**Subject:** Radford documents

Based upon the Army's draft revised Site Screening Process document submittal on 10/26/01, the draft revised document is acceptable to EPA. Therefore, at this time the Region requests that a formal final version be submitted to EPA and VaDEQ for approval. The final version should include a cover page. EPA requires 3 copies of the final document.

With respect to the Background Report, EPA has received the final December, 2001 version of the Background Report. The final Report is being circulated for tox review to insure that all comments were addressed. EPA expects to have an approval letter out the second week in February, barring any unforeseen problems with the Report (I do not anticipate any).

Rob Thomson

Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24141
USA

December 20, 2001

Mr. Robert Thomson
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Facility-Wide background Study Report
Final Document December 2001
Radford Army Ammunition Plant
EPA ID# VA1 210020730

Dear Mr. Thomson:

Enclosed are three certified copies of the subject report. We are submitting this as a final report.

This report has been revised to address draft EPA March 2001comments and Virginia Department of Quality (VDEQ) September 10, 2001 comments. Responses to these comments are attached. Please note the VDEQ September 10, 2001 comments overcame the VDEQ April 2, 2001 comments as well as the minutes of the meeting held July 17, 2001. Responses to the VDEQ April 2, 2001 comments and the minutes of the July 17, 2001 meeting are also attached for completeness of the record.

Please coordinate with and provide any questions or comments to myself at (540) 639-8266, Jerry Redder of my staff (540) 639-7536 or Jim McKenna, ACO Staff (540) 639-8641.

Sincerely,

C. A. Jake

C. A. Jake, Environmental Manager
Alliant Ammunition and Powder Company LLC

Enclosure

c: w/enclosure
Mark Leeper, DEQ Central
Sharon Wilcox, DEQ-Central
E. A. Lohman, DEQ-WCRO

w/o enclosure
Russell Fish, P.E., EPA Region III

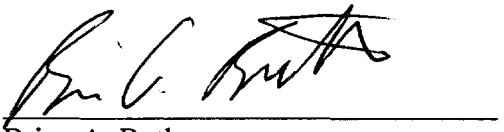
01-815-222
JJRedder

Copy in 439 & report

Concerning the following:

*Facility-Wide Background Study Report*
*Radford Army Ammunition Plan*
*December 2001*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE: 
PRINTED NAME: Brian A. Butler
TITLE: LTC, CM, Commanding
Radford AAP

SIGNATURE:
PRINTED NAME: Ken Dolph
TITLE: Vice President Operations
Alliant Ammunition and Powder Company LLC

01-815-222
JJRedder

**Response to Draft Comments from USEPA Region III**
**Dated March, 2001**
**Draft Facility-Wide Background Study Report**
**Radford Army Ammunition Plant**

1. **Comment: Section 2.4, Field Sampling, Page 2-2:** This section does not contain a subsection discussing field observations and air monitoring (PID) readings. Please revise this section to include a discussion of significant field observations and air monitoring readings obtained during the sampling events.
**Response:** Section 2.4 was revised to include a discussion of field observations and air monitoring data. Please see the third paragraph of Section 2.4.1 on page 2-12.

2. **Section 4.1.1, Analytical Methodology, page 4-1:** The third paragraph states that PID screening was used to monitor organic compounds and relocate borings as necessary. Section 2, Background Sampling, did not contain a discussion of field activities or air monitoring readings. Please revise the text to indicate what levels detected on the PID would have necessitated a relocation of the boring and which, if any, boring location(s) were relocated as a result of PID readings.
**Response:** Section 4.1.1 was revised to evaluate the revised Sec.2 (Comment #1) and clarify whether borings were relocated and why. Please see the third paragraph of Section 4.1.1 on page 4-1.

3. **Section 4.1.1, Analytical Methodology, page 4-1:** The second paragraph of 4.1.1 states that "Results demonstrated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases." If this is true, then any location on either facility having non-detect for explosives would be non-impacted by DoD operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Results indicated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases."
**Response:** Sentence was revised as proposed. Please see the second paragraph of Section 4.1.1 on page 4-1.

4. **Section 4.1.2, Data Validation and Qualifiers, pages 4-1 and 4-9:** The discussions of this section are focused upon target analyte list (TAL) metals, and omit TCL considerations. Since samples were analyzed for TCL VOC and SVOC, their data quality evaluation criteria should be included within this section. Please revise the text to include a discussion of the VOC and SVOC data validation and qualifiers.
**Response:** Section 4.1.2 was revised to include a discussion of VOC and SVOC data validation including qualifiers. The qualifiers are defined in Section 4.1.2 on page 4-1. The validation criteria are described for metals (Section 4.1.2.1 on page 4-1), VOCs (Section 4.1.2.2 on page 4-9), and SVOCs (Section 4.1.2.3 on page 4-10).

5. **Section 4.2, Statistical Approach, pages 4-10 through 4-20:** This section details the statistical methodology utilized for this background study. Table 4-8, Statistical Test, describes the equations utilized for the necessary calculations; and Tables 4-9, Surface Soil Statistical Summary and 4-10 Subsurface Soil Statistical Summary, describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.
**Response:** The output for each of the statistical analyses is provided in Appendix G.

6. **Section 4.3, Confidence Limits, pages 4-20 through 4-24:** This section details the statistical methodology utilized to calculate the 95% upper confidence limit (UCL) for the combined data sets. Table 4-8, Statistical Tests, describes the equations utilized for the necessary calculations and Tables 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU) and 4-12 Occurrence and Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.
**Response:** The output for the 95% UCL calculations is provided in Appendix G.

7. **Section 4.1.3, Data Grouping, page 4-20:** The last paragraph of this section states that the coefficient of variation (CV) was used to evaluate the data variability for element distribution across soil type, with elements having CVs of less than one being grouped together, and elements with CVs greater than one further evaluated to address the causes of variability. This step is not depicted in Figures 4-1 and 4-2. Please include this step in the appropriate figures, and elaborate on the use of CVs and the resulting groups formed based on the outcome of these calculations.
**Response:** Text was added to explain that CVs were used to identify chemicals that exhibited high variability (i.e., the CV was greater than 1) for further evaluation. (Please see fourth paragraph of Section 4.1.3 on page 4-11). After further review, the flow chart (Figure 4-1) was not expanded to include the CV because this value was not used in the screening or decision-making process. Due to subsequent discussions with the USEPA and VaDEQ regarding the data groups for the background study, it was agreed that the background data sets (surface and subsurface soil, MMA and NRU soil) would be combined. Therefore, none of the data groups resulted from the evaluation of CV values.

8. **Table 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in surface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual area calculations in addition to the combined 95% UCL calculation. Please revise

the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.
**Response:** Table was revised to include MMA and NRU 95% UCL numbers as well as the combined 95% UCL. The values for the individual areas are shown in Tables 4-13 and 4-14 on pages 30 and 31.

9. **Table 4-12, Occurrence and Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in subsurface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual area calculations in addition to the combined 95% UCL calculation. Please revise the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.
**Response:** Table was revised to include MMA and NRU 95% UCL numbers as well as the combined 95% UCL. The values for the individual areas are shown in Tables 4-15 and 4-16 on pages 32 and 33.

10. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Additionally, semivolatile and volatile organic compounds were evaluated as secondary markers to substantiate the selection of true background locations. Analytical results demonstrated that organic contaminants had not impacted the selected locations, indicating that sample locations represented background conditions." The organic results were not provided in this report. Please revise the report to include the organic results obtained or delete those two sentences from the report.
**Response:** Organic results are provided in Appendix B.

11. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Explosive results were negative, proving background sampling locations had not been impacted by RFAAP operations." If this is true, then any location on the Site having non-detect for explosives would be non-impacted by RFAAP operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Explosive results were negative, indicating background sampling locations had not been impacted by RFAAP operations."
**Response:** The sentence was revised as suggested. Please see Section 5.1 on page 5-1.

12. **Section 5:** The 95 % UCL was used as a point estimate of the background data. However, when we compare on-site contamination at RFI sites to background, we need to answer two questions: (1) Are there any hot spots on-site? (2) Is the average concentration on-site the same or higher than the average concentration of background? Given the data in the draft *Background Report*, we should be able to answer these questions for RFI type sites using hypothesis testing. Therefore, EPA is requesting that, for RFI sites, the Army propose a methodology (ies) in the draft revised *Background Report* for accomplishing this end.

**Response:** The 95% UCL was included in the report as a general point of reference, at the request of the Installation, for site prioritization purposes. At the time the Background Workplan was developed there was intent for point-to-point comparisons. As described in the Background Study Workplan, the intent was to use hypothesis testing for RFI sites. Such hypothesis testing would include tests for similarities in shape and location between the site and background data sets. Depending on these initial tests other tests (e.g., t-test or Mann-Whitney U, or Kolmogorov-Smirnov) would be used to assess whether there is a difference between the means. Likewise, statistical procedures also would be used for assessing outliers.

Although not contemplated during the development of the Site-Screening Process for Site Screening Areas (SSA), the 95% UCLs could be used for point-to-point comparisons. However, using the 95% UCL as a single point comparison or background is very likely to result in classifying many chemicals as greater than background when they are not. This is due to the fact that the 95% UCL is an estimate of the mean, which would likely result in misclassification as much as 50 percent of the time. Therefore, the Army suggests that a 95% upper tolerance limit (95% UTL) approach be included in the Background Study report and used for point-to-point comparisons in the SSP.

The following discussion further explains the Army's position regarding UTL versus UCL:

*Three types of statistical intervals are often constructed from environmental data: Confidence, Tolerance and Prediction. They are mathematically similar, but have very different purposes:*

| ***Appropriate Use*** | ***Interval Type*** | ***Purpose*** |
|---|---|---|
| *Comparison Within A Single Population.* | *Confidence Interval:* | *To compare a compliance data set to a known standard (i.e., USEPA, 1989; 1992).* |
| *Comparison of Similar But Distinct Populations.* | *Tolerance Interval:* | *To define a concentration range from background data, within which a large proportion of compliance data should fall with high probability (i.e., USEPA, 1989; 1992).* |
| | *Prediction Interval:* | *To define a concentration range from background data, within which the next K compliance values should fall with high probability (i.e., USEPA, 1989; 1992).* |

*A Confidence Interval contains a specified population parameter (generally the mean) with a specified level of confidence (USEPA, 1989). " It offers little information about the highest or most extreme sample concentrations one is likely to observe over time" (USEPA, 1989). For these reasons, Confidence Limits are generally constructed on*

*compliance data, not on background data. The limits for compliance data can then be compared to a known standard (e.g., RBCs, MCLs, GWPSs) to assess if the mean value of the compliance data might be statistically above the standard (cf., VDEQ, 1998; 2000).*

*If a statistically robust data set, and thus good information about the population mean, is available (implying a tightly constrained confidence interval and low UCL), then a large portion of the population of individual values used to construct the UCL will actually be above the UCL. Therefore, an exceedance of the UCL by an individual sample result in a separate compliance population is not indicative of the site being above background.*

*The appropriate Interval to be constructed on background data for comparison to individual compliance points is a Tolerance Interval (USEPA, 1989; 1992). The UTL approach compares individual compliance point sample values to individual values in the background population, e.g. the 95th percentile of the population. If the compliance population is within background, we expect no more than 5% individual values to be above the 95th percentile of the background population. Tolerance intervals are robust for normally distributed data. For lognormal data sets, lognormal tolerance intervals can be constructed; however, caution must be used to discern spurious results. In the event that a data set is lognormally distributed and the results of a lognormal tolerance interval calculation appear erroneous (based on a UTL that is an outlier as compared to the known spread of the background data set), one should use a prediction interval approach on the lognormal data.*

As a result of subsequent discussions with USEPA and Virginia Department of Quality (VaDEQ), it was agreed that the point estimates for background soil would be calculated as 95% UTL values and based on a single data set consisting of surface and subsurface soil data for the MMA and NRU areas (VaDEQ comments dated September 10, 2001). The rationale for using the 95% UTLs as point estimates for constituents from the combined data sets is described in Section 4.5 on page 4-29 and Section 5.2 on page 5-1. The calculated 95% UTLs are presented in Table 5-1 on page 5-2.

Hot spots need to be defined by two parameters: aerial extent and concentration. The size of a hot spot is best examined through adequate sampling design. The concentration that defines a hot spot can be addressed through a risk-based comparison or through a background-based comparison. Both of the extent and the concentration parameters require proper sampling plan development. The number of samples at the SSAs is unlikely to be adequate for statistical hot-spot evaluation. Hot-spots are best addressed with purposeful sampling at suspected release points for the SSP. The hot-spot issue at RFI sites will be addressed during the development of the RFI Work Plans. This approach was explained in Section 4.5 on page 4-28 and Section 5-2 on page 5-1.

13. **Section 5:** Please include language in Section 5 stating that the Facility-Wide inorganic point estimates for surface soil "background" and subsurface soil "background" can be used in the evaluation of Site-Screening Areas.

**Response:** The suggested language was added to Section 5.2 on page 5-1.

14. **Appendix A, Drilling Log MMAU1:** This drilling log does not show PID screening readings. Please clarify why readings were omitted on this boring or revise the log to indicate the PID readings obtained.
**Response:** Log in Appendix A was revised to indicate PID readings.

15. **Appendix B, Data Validation Reports:** This appendix does not contain the VOC and SVOC data validation and summary sheets. Please revise this appendix to include the VOC and SVOC data validation package and sample summary sheets.
**Response:** Appendix B was revised to include VOC and SVOC data validation data and sample summary sheets.

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References:

United States Environmental Protection Agency, 1989, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Interim Final Guidance: Office of Solid Waste, Waste Management Division: EPA / 530-SW-89-026.

United States Environmental Protection Agency, 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance: Office of Solid Waste, Waste Management Division.

Virginia Department of Environmental Quality, 1998, Data Analysis Plan for Solid Waste Facilities: Office of Technical Services: Memorandum to Solid Waste Facilities/Consultants from Charlotte Carroll and Sanjay Thirunagari., June 15, 1998.

Virginia Department of Environmental Quality, 2000, Data Analysis Guidelines for Solid Waste Facilities Operating in Virginia: Office of Waste Programs, Technical Support: Revised November 14, 2000.

**Response to Comments from VDEQ (September 10, 2001)**
**Draft Facility-Wide Background Study Report**
**Radford Army Ammunition Plant**

**General:** Comments from VDEQ dated April 2, 2001 were superseded by comments from September 10, 2001. These comments from VDEQ are considered to be **Final** and have been reconciled with USEPA Region III.

**Comment:** Having reviewed the revised surface soil and subsurface soil data, the statistical analysis of that data, including the soil type groupings and the 95% Upper Tolerance Limits, and having compared it with much of the currently existing site data, additional consideration was given to the practical application of this background data to the site screening process. Each potentially contaminated site at the facility is located in an area where excavation of surface soils has occurred at some point in the facility operations; therefore, the technical rationale behind a statistical comparison of surface soil, natural area, background data to subsurface soil, excavated area, site data is questioned.

Given the conditions of mixed surface and subsurface soils at the potentially contaminated sites, it is recommended that the background data for both surface and subsurface soils be combined for each element to determine the 95% UTL to be used in conjunction with the USEPA Region III RBCs for human health risk screening, and with various ecological screening data for ecological screening purposes. This will not only simplify the screening process, but will add power to the statistical comparison and prevent the unnecessary, and costly, carrying forward of naturally occurring elements into the full-fledged risk assessment process.

This recommendation has been made following consultation with Mr. Robert Thomson, USEPA Region III.

**Response:** The rationale for combining background soil data sets and calculating 95% UTLs as point estimates for background soil is described in Section 4.5 on page 4-29 and Section 5.2 on page 5-1. The 95% UTL values are provided in Table 5-1 on page 5-2.

**Response to Comments from VDEQ (April 2, 2001)**
**Draft Facility-Wide Background Study Report**
**Radford Army Ammunition Plant**

**General:** Following discussions with VDEQ and USEPA regarding the soil data groupings and the point estimates, these comments were superseded by comments from VDEQ dated September 10, 2001.

**Comment:**
Based upon their statistical evaluation of the analytical data provided in the report, surface and subsurface soils should be evaluated separately. Within each stratum (surface and subsurface) data for each chemical constituent (aluminum, antimony, arsenic, etc.) can be grouped into either one or two groups by soil type (Braddock, Unison, Wheeling, etc.).

The Department used the Tukey method[1] to conduct simultaneous comparison of the constituent mean concentrations, by chemical constituent, for the seven different soil types at a 95% confidence limit. The resulting groups observed for each surface soil chemical constituent are marked with a code 1 or 2. Surface soil types with code "1" may be combined into one data set and those with code "2" may be combined into second data set for each chemical constituent. Data sets marked with an asterisk (*) contain outliers that should not be included in the data set for the background comparison. See Table 1 below.

For example, the cobalt data for the Braddock Loam and Groseclose and Poplimento Silt Loam in the surface soil types can be combined into one statistical data set; and the cobalt data for the Unison-Urban Land Complex, Wheeling Sandy Loam, Cabro Silty Clay Loam, Lowell Silt Loam, and Wurno-Newberg-Faywood Silt Loam surface soil types can be combined into a second statistical data set. Statistical comparisons from future potentially contaminated sites would compare aluminum data from a surface soil sample in Braddock Loam to aluminum data from the Braddock Loam and Groseclose and Poplimento Silt Loam data set.

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1 Robert V. Hogg and Johannes Ledolter, Applied Statistics for Engineers and Physical Scientists, - 2nd ed. New York: Macmilllan Publishing Company, 1992

**Table 1 Surface Soil Groupings**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 2 | 1 | 1 | 2 | 2 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 1 | 2 | 2 |
| Copper | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 1* | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1* | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Similarly, subsurface soil has been marked with code 1or 2. Soil types with code "1" may be combined as one background data set and those with code "2" may be combined as a second background data set for each constituent.

**Table 2 Subsurface Soil**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Copper | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Notes for tables 1 and 2 on prior page:

* Indicates that soil type has outlier(s)

The detection limits for some of the constituents varied between soil types.

Based on the above information, the facility may develop two background data sets for surface and

subsurface soils.

The facility must conduct an outlier test on grouped background data sets as part of the revisions to this document and prior to developing the statistical limits for comparing on-site against background levels. Outliers from the background data set are to be excluded prior to establishing the 95% upper confidence limit (UCL) on the mean of the background data.

When performing statistical comparisons of the potentially contaminated area sample results to the background results, the facility may use a Student's t-test, provided the data sets follow normal distributions and other test specific assumptions (eg. variance). The facility also has the option to calculate the 95% upper confidence limit on background data (excluding outliers) and compare the individual on-site sample concentrations to the established UCL.

**Response**:
It is emphasized that the approach and methods used in the Background Study report had been accepted by both EPA Region III and VDEQ in the Workplan prior to its implementation. The Tukey method presented by VDEQ is no more valid a statistical approach than the methods employed per the Workplan. Further, during presentation of the Workplan, the possibility of certain elements not "passing" the 95% confidence interval was discussed. This possibility was not considered to invalidate the data, rather that data would simply have to be evaluated within the appropriate context. It should be noted that the elements, identified by the Army, as failing the statistical tests were still relatively high in confidence interval albeit not 95%. Finally, these elements (aluminum, barium, iron, lead, vanadium, zinc) are rarely risk drivers in a risk assessment. A comparison of RBC values for these elements indicate that the calculated UCL is either below the residential RBC for that element or between the residential and industrial RBC values.

The approach recommended in VDEQ's comments represents a significant change. The implementation of the Commonwealth of Virginia's approach would be difficult since there would have to be at least four different background data sets for each element. This would inevitably lead to data sets that would not be statistically significant. The selection of the background data set would also have to change based on the soil type and element.

Another difficulty with the implementation of the Commonwealth's approach would occur when samples are collected that involve multiple soil types or where soil types are not clearly distinguishable. For example, which background data set would be used if the samples collected from the site are from multiple soil types and the background analysis indicated that there are differences between the data for some or all of the elements?

The Army proposes the following course of action. Evaluation of outlier will proceed using an appropriate statistical method (eg., Box and Whisker diagram). P-values will be evaluated using another statistical package to assess whether differences will result from the values already calculated. Finally, a meeting to discuss finalization of the Background Study report may prove to be more successful than multiple response and comment rounds.

# Memorandum

**To:** Sharon Wilcox, Virginia Department of Environmental Quality

Rob Thomson, Environmental Protection Agency

**From:** Jim McKenna, Radford Army Ammunition Plant, RFAAP

Jerry Redder, Alliant Ammunition and Powder Company, LLC

**Date:** July 23, 2001

**Re:** Summary of Minutes for July 17, 2001 Meeting at the Virginia Department of Environmental Quality (VDEQ) Concerning Background Studies at Radford Army Ammunition Plant (RFAAP)

**ATTENDEES:**

| | | |
|---|---|---|
| Jim McKenna, RFAAP | Sharon Wilcox, VDEQ | Cindy Hassan, IT Group |
| Jerry Redder, AAPC | Sanjay Thirunagari, VDEQ | Rick Cole, URS Corp. |
| John Tesner, USACE | Hassan Kaceli, VDEQ | |
| Drew Rak, USACE | Jeffrey Parks, IT Group | |

**TELECONFERENCE PARTICIPANTS:**

| | | |
|---|---|---|
| Rob Thomson, US EPA | Bob Goodman, IT Group | Alvaro Alvarado, US EPA |

**NOTE TAKER:**

Rick Cole, URS Corp.

SUMMARY OF MEETING MINUTES

Jim McKenna began the meeting at 9:15 with a brief history of the Background Study, providing an overview of the project to date, followed by introductions of the participants and their respective roles in the project.

Sharon Wilcox asked why the Parson's background data from 1996 data was not incorporated. John Tesner indicated that there were issues that related to sample locations (i.e., some of the sample locations did not have coordinates) and collection that compromised the quality of the data; therefore, the Army withdrew this report with EPA consent.

After completion of project overview, John Tesner explained the meeting objective, which was to discuss the technical concerns of Virginia Department of Environmental Quality (VDEQ) relative to the method used by the Army to calculate inorganic background concentrations.

John Tesner then asked Cindy Hassan to briefly outline of background study process and the statistical procedures used to develop the calculated background concentrations. Ms. Hassan then proceeded to describe the technical approach used by IT and acknowledge that there are other methods, such as the Tukey statistical method used by VDEQ, to arrive at similar results.

Sanjay Thirunagari asked Cindy Hassan if before she proceeded further into the explanation of the statistical approach to explain what the ultimate use of the background data would be. Sanjay Thirunagari discussed that VDEQ had grouped data by soil type, while IT had relied more heavily on the physical description and chemistry and had grouped the data sets as surface and subsurface). He commented that we can still make this data work so that a background data set can be achieved for use on the project.

Cindy Hassan explained that there were three points to consider when looking at soil types and ultimate use of the data. The first point being that there was significant consideration given in the field to selection of samples by soil type, and data from the different sets had been combined by individual elemental comparisons across different soil types. The second point is that the Chemicals of Potential Concern (COPCs) will be selected by comparison to U.S. Environmental Protection Agency (USEPA) Region III risk based concentrations (RBCs). Those chemicals with detected concentrations less than the respective RBC will be dropped from further consideration as a COPC. Once COPCs are selected then the data will be compared to background levels. At that point, it will be appropriate to consider soil type and look at elemental composition of site samples relative to background comparison samples. The third point is that the existing background samples were selected from representative soil types to provide a data set that could be developed into a quick reference set of background comparison values.

Cindy Hassan then went on to address VDEQ's first concern regarding combination of background data sets and explained that the soil characteristics were considered during the combination of different data sets among the similar soil types. This combination was based upon a physical and chemical properties of each soil type; similar soil types were grouped together. The study identified four soil groups in the New River Unit (NRU) and three major groups in the Main Manufacturing Unit (MMA).

John Tesner and Jim McKenna commented that the soil types encountered were based on the selection of background locations that would be representative of areas that contained Solid Waste Management Units (SWMUs).

Cindy Hassan explained that for each soil type a qualitative evaluation between soil types was performed in which the physical and chemical composition of each type was compared. The

conclusion of this evaluation was that the soil types were similar enough that data sets could be combined into one data set for the surface soil and one data set for the subsurface soil.

Cindy Hassan then began a brief discussion of the outlier issues explaining that the data sets were reviewed for possible extraneous data values, but their analyses did not result in the rejection of data. Since these locations were specifically selected to represent background, there was a reluctance to eliminate a data point unless there was a Quality Control concern. IT's review of the data did not reveal a justification to remove data points from the background population. Cindy Hassan then explained that the background data set was used to derive point estimate values using the 95 percent Upper Confidence Level (UCL) on the mean and 95 percent Upper Tolerance Level (UTL) approaches. Previous discussion and comments from EPA indicated that EPA had agreed to a preference to use the 95 percent UTL approach.

Sanjay Thirunagari then expressed that it will be key for VDEQ to know how the background data will be used. After which the group can then look at methodology derivation of background estimates.

Drew Rak then explained that the primary use would be as background comparison criteria for use in the following:

1. Site screening process (SSP) (95% UTL approach).
2. Background comparison in RFI (mean-to-mean comparison e.g., t-test).

The different soil types in the MMU and the NRU were being combined in order to achieve the power and confidence necessary for a meaningful means comparison. Drew Rak noted that the low number of samples per soil type in the VDEQ analysis would not allow for a meaningful mean-to-mean comparison.

Drew Rak reviewed the flowchart for statistical evaluation as depicted in the meeting handout. He then explained that the previous 1996 soil data was used to estimate the number of sampling locations for this background study. The minimum relative detectable difference and coefficient of variation were used to predict the number of samples to collect. This approach and number of sample locations was discussed and agreed to by Dr. Lynn Flowers of EPA, as well as EPA's subsequent approval of Work Plan Addendum 10. Drew Rak then proceeded to describe the screen out of macronutrients.

Drew Rak explained that elements with a low number of detections (greater than 80 percent below detection limit) were dropped from the statistical process. As a result, there were smaller, but focused data sets containing 14 elements for surface and 16 for subsurface. During the comparison between data sets, there was generally good agreement between NRU and MMA data and also between surface and subsurface data. The surface and subsurface data sets were kept separate due to separate pathways evaluations that are completed during risk assessment.

Hassan Kaceli explained that VDEQ is looking at the differences in the seven different soil types in the two areas; certain soil types could be combined then compared statistically.

Sanjay Thirunagari referenced his previous question that the ultimate use of the data should be determined. For onsite detections, they should be below the 95 percent UTL. The mean of onsite data could be compared to the mean of background data set with an appropriate statistical test. He expressed concern that combination of soil types could mask differences between soil types.

Sanjay Thirunagari indicated that he had no problem with 95 percent UTL, or mean-to-mean comparison if background data are normally distributed and random sampling was conducted. The 95 percent UTL approach should be used if a grid sampling approach is used.

Rob Thomson/Alvaro Alvarado commented that USEPA has experience with many Federal facilities that have many AOCs; for areas with low risk it is difficult to prove there is no risk. It is important that we focus on sites where we have an obvious risk.

John Tesner re-iterated that sites will be screened by a comparison with RBCs. Sharon Wilcox and Sanjay Thirunagari commented that values below the RBCs will not be a concern.

Hassan Kaceli commented that the data NRU & MMA can be combined; any sample with the same soil type can be grouped by each element. Sanjay Thirunagari elaborated that, for example, the Unison soil type with similar elemental compositions could be combined in one background data set. For risk assessment, surface data would be combined to evaluate risk. Then samples within same soil type would be combined and the risk from each background soil type would be compared to the constituents contained in the site surface soil.

Sharon Wilcox clarified the VDEQ proposed grouping of the different soil types by each element into two groupings for surface soil and two grouping for subsurface soil. She used the example of Subsurface Group 1 would contain soil types except Unison. Group 2 would contain the other soil types. Alvaro Alvarado indicated that VDEQ's approach made sense. John Tesner asked for additional clarification of the element by element basis, with each element having either one or two soil groups. There were several minutes of discussion relative to soil types and the low number of samples that may be available in a particular group, for example Arsenic, which could have a data set with only 4 data points.

John Tesner pointed out that the statistical evaluation performed by the Army resulted in seven elements that did not pass the statistical evaluation. These seven elements are different than the seven elements VDEQ indicated are statistically different. John Tesner indicated that soil type comparison was done on a qualitative basis. Drew Rak pointed out that the VDEQ approach requires that the 95%UTL approach be used for derivation of background values. Sanjay Thirunagari questioned whether the UTL could be used with four data points. Alvaro Alvarado indicated that for arsenic in Unison Soil, the arsenic concentration is less than 10 ppm, and at

that concentration, this level will not drive a risk that will result in cleanup. Sanjay pointed out that it is a mute point (there was a general comment regarding 20 ppm); do not have to worry over arsenic risk. John Tesner emphasized the point that for many of the elements the derived background concentration is less than the RBC.

Bob Goodman provided the following calculated background values (in milligrams per kilogram) using the Army combined data set and the VDEQ Groups 1 and 2.

| | rmy ombined ata Set | VDEQ Group 1 | VDEQ Group 2 |
|---|---|---|---|
| Al | 20 | 16 | 23 |
| Ba | 67 | 51 | 140 |
| Pb | 13 | 11 | 520 |

← *Small data set*

Drew Rak commented that with small data sets; the approach will capture variability by using the 95 percent UTL to calculate background values. Sanjay Thirunagari commented that to use the 95 percent UTL approach the data set must have a normal distribution; otherwise, the maximum value will be used for a non-normal distribution.

John Tesner commented that the SSP currently includes a surface and a sub-surface table of background point values that were derived using UTL calculations. Using the VDEQ approach including soil types for each element, what will those tables look like now? There is an expectation that comparison to these values will provide a decision point. Rob Thomson commented that background numbers that are too low will result in remediation of too many sites; if a higher number is selected, then too few are remediated. Sharon Wilcox indicated that the RBC would be the driving number.

There were several minutes of discussion as the group worked through two examples using aluminum and beryllium to illustrate the VDEQ methodology of looking at each element and whether it has a single soil group or two groups. If there is more than one group for the particular element, then the data set should be selected that matches the soil type of the environmental sample. Once the data set is selected (Group 1 or Group 2), then if the data set distribution is normal, then the 95 percent UTL calculated value will be used for background point comparison. If the Group 1 or 2 data set distribution is non-normal, then the maximum value of the background data set is used as point comparison value. Sanjay Thirunagari indicated that he was comfortable with the point to point comparison and use of the 95 percent UTL; however, all site sample points must pass the comparison. There was general discussion that the Army will apply the VDEQ approach to the data sets and generate a new set of background numbers for comparison. Sanjay Thirunagari indicates that if the numbers

calculated by the VDEQ approach is similar to the numbers calculated by the Army, then VDEQ may accept the Army approach.

Jim McKenna and John Tesner indicated that the Army would create a new background point-values table using the VDEQ approach and compare with existing Army background point values. If the values are close, then the group will proceed with finalization of the report using the current statistical approach utilized by the Army. Sharon Wilcox indicated that VDEQ will be satisfied with that approach if VDEQ values are close to the Army values. The Army will prepare the table and submit in a letter to VDEQ for review.

Jim McKenna requested a discussion of the outliers in the letter to make sure that VDEQ outstanding comments are addressed. Cindy Hassan indicated that based on the box and whisker plots that were completed as part of the outlier evaluation, the outlier do not have a significant impact on the data. Alvaro Alvarado expressed caution in deleting a data point. Sharon Wilcox wants notification of outliers that are used as maximum values. Cindy Hassan indicated that typically outliers are discussed in the uncertainties section of the Risk Assessment. Sanjay Thirunagari indicated that if the outliers made a significant difference in the calculated background values, then resampling may be required. Jerry Redder recommended that in the new table, outliers that have a significant impact for resampling to be identified. Sharon Wilcox expressed that the number of samples should be added to the table.

John Tesner then summarized saying that the Army would put a new table together, which would contain the background point values using the 95 percent UTL (for SSP and RFI application) and UCL (for informational) approaches for the soil types as defined in the VADEQ analyses. This table will also contain the sample size that was used for these UTL/UCL calculations and the residential and industrial RBC's for the compounds. This table ~~and letter~~ will be distributed to the group. A time frame of Mid-August was suggested for the table completion and a conference call. The meeting adjourned at 12:45 p.m.

## McKenna, Jim

**om:** McKenna, Jim
**nt:** Wednesday, October 10, 2001 11:35 AM
**o:** 'sswilcox@deq.state.va.us'; McKenna, Jim
**Cc:** 'john e tesner'; 'rob thomson'; Redder, Jerome; dmharris@deq.state.va.us; dhwillis@deq.state.va.us; msleeper@deq.state.va.us
**Subject:** RE: Background Study table

All:

Will revise table and background study report and send out shortly. Rob is this ok with you?

-----Original Message-----
From: sswilcox@deq.state.va.us [mailto:sswilcox@deq.state.va.us]
Sent: Wednesday, October 10, 2001 11:40 AM
To: Jim_McKenna@ATK.COM
Cc: 'john e tesner'; 'rob thomson'; Redder, Jerome; THOMSON.BOB@epamail.epa.gov; dmharris@deq.state.va.us; dhwillis@deq.state.va.us; msleeper@deq.state.va.us
Subject: re: Background Study table

The revised table is acceptable. I suggest, for ease of reading in the future, that the final column include the to-be-screened -against value so
one isn't hunting back and forth between the two central columns.

ıron Skutle Wilcox
medial Project Manager
Department of Environmental Quality
629 East Main Street, 4th Floor P.O. Box 10009
Richmond, VA 23219 Richmond, VA 23240
sswilcox@deq.state.va.us
804-698-4143 phone
804-698-4383 fax
---------- Original Text ----------

From: "McKenna, Jim" <Jim_McKenna@ATK.COM>, on 10/10/2001 9:40 AM:

Sharon,

As I recall you were going to handle finishing up the background study report. Attached table has been revised per your 10 Sept 2001 letter. Sent
this table out earlier with the 9/20-21/2001 conference call minutes but I
don't think I cc'd you. In any case all that is needed is to review this table and if it is ok then we can revise the background study report and submit it as final.

Let us know.

Jim

<<Final Combined UTL SUM.xls>>



Copy in 435

**DRAFT Summary of Total Soil Data at Radford**
**Upper Tolerance Limits (UTLs)**

| Chemical | MMA/NRU and Surface/Subsurface Soil Data | | | | Residential Screening RBC [c], mg/kg | Industrial Screening RBC [c], mg/kg | Background Basis |
|---|---|---|---|---|---|---|---|
| | Frequency of Detection | Range of data, mg/kg | Statistical Distribution [a] | 95% UTL mg/kg [b] | | | |
| ALUMINUM | 79/79(100) | 3,620 - 47,900 | L | 40,041 | 7,800 | 200,000 | 95% UTL |
| ARSENIC | 76/79(96) | 1.2 - 35.9 | L | 15.8 | 0.43 | 3.8 | 95% UTL |
| BARIUM | 63/79(80) | 23.4 - 174 | L | 209 | 550 | 14,000 | RBC |
| BERYLLIUM | 40/79(51) | 0.61 - 5.4 | U | 1.02 | 16 | 410 | RBC |
| CADMIUM | 13/79(16) | 0.62 - 2.5 | NP | 0.69 | 3.9 | 100 | RBC |
| CHROMIUM | 79/79(100) | 6.3 - 75.8 | L | 65.3 | 23 | 610 | 95% UTL |
| COBALT | 57/79(72) | 5.9 - 130 | L | 72.3 | 160 | 4,100 | RBC |
| COPPER | 77/79(97) | 1.6 - 38.7 | L | 53.5 | 310 | 8,200 | RBC |
| IRON | 79/79(100) | 7,250 - 67,700 | N | 50,962 | 2,300 | 61,000 | 95% UTL |
| LEAD | 79/79(100) | 2.1 - 256 | U | 26.8 | 400 | 1,000 | RBC |
| MANGANESE | 79/79(100) | 16.7 - 2,040 | L | 2,543 | 160 | 4,100 | 95% UTL |
| MERCURY | 19/79(24) | 0.038 - 1.2 | NP | 0.130 | 0.78 | 20 | RBC |
| NICKEL | 63/79(80) | 4.6 - 94.2 | L | 62.8 | 160 | 4,100 | RBC |
| THALLIUM | 16/79(20) | 1.3 - 5.0 | NP | 2.11 | 0.55 | 14 | 95% UTL |
| VANADIUM | 79/79(100) | 12.2 - 114 | L | 108 | 55 | 1,400 | 95% UTL |
| ZINC | 79/79(100) | 4.7 - 598 | L | 202 | 2,300 | 61,000 | RBC |

[a] Statistical Distribution: N = Normal distribution; L = Lognormal distribution; U = Undetermined distribution; NP = Nonparametric distribution for data sets with greater than 50% nondetects.

[b] 95% Upper Tolerance Limit calculated for the indicated distribution.

[c] RBC = Region III risk-based concentration adjusted for a Hazard Quotient = 0.1 to account for potential cumulative effects (dated May 8, 2001).

Note: Highlighted values are below the residential screening RBC.

## McKenna, Jim

**From:** McKenna, Jim
**Sent:** Friday, September 28, 2001 7:42 AM
**To:** 'rob thomson'; 'mark leeper'
**Cc:** 'john e tesner'; 'Andrew Rak'; 'Barnes, Kenneth G'; 'peter rissell'; 'Parks, Jeffrey N'; Redder, Jerome; Davie, Robert
**Subject:** Sept 20-21 teleconference notes & background study numbers

All:

Please see the attached files for the subject as above (SAB). Note your action items.

Status of Radford AAP/ATK action items: Jerry has located the SWMU 76 UST paperwork and is sending under separate cover to Rob Thomson, Mark Leeper and John Tesner. I have contacted our command and we have relooked at the Radford AAP situation and pesticide screening samples are in. We will propose 1 to 2 samples per site for screening purposes. That does it for Radford AAP/ATK direct action items. Of course I will be working with John Tesner and Jeff Parks on their direct action items as well as scheduling, programming, budgeting, etc, etc.

Thanks,
Jim

PS Rob, Mark: Also please look over the background numbers and provide comments or concurrence so we can get moving on finalizing the Background Study report.

WRA12Sept20-21 nference ...

inal Combined UTL SUM.xls



copy in Binder 13

MEETING MINUTES FOR RADFORD AAP
WORK PLAN ADDENDUM 12
20-21 SEPTEMBER 2001

**Day 1:**
20 September 2001
Time: 1300-1600

Participants:

USEPA, Region III: Rob Thomson
VDEQ: Mark Leeper, Sharon Wilcox
RFAAP: Jim McKenna
ATK: Jerry Redder
USAEC: Pete Rissell
OSC: Ken Barnes
USACE, Baltimore District: John Tesner, Andrew Rak
IT Group: Jeff Parks, Mark Thomas, Tim Leahy

GENERAL ISSUES

**1. Pesticide sampling:**
Jim McKenna stated the Army's positions; that pesticides were not manufactured at RFAAP, that there has been no identified location were pesticides were regularly mixed or stored, and the Army's uncertainty regarding the end use of data especially as it relates to BTAG screening values.

Rob Thomson of EPA stated that EPA wants sampling, but in a rational way. There would be no need to collect pesticide samples from former sampling locations nor is 100 percent sampling required for all new sampling. Further, Mr. Thomson stated that EPA needs to be able to document that pesticide releases didn't occur in conjunction with other releases at a site. In addition, if a site were seeking a No Further Action (NFA) status then it would be incumbent upon EPA and VDEQ to be able to show that pesticides were not an issue at the site. Sharon Wilcox of VDEQ concurred with this assessment from EPA adding that she thought that the number of samples per site would vary based on site conditions (e.g., the presence of a single runoff area from a site may require only one sample) and/or site size.

The Army and EPA agreed that pesticides receive analysis in laboratories when PCB's are being analyzed. This could possibly reduce the financial impact of adding pesticide sampling given that some sites will already be performing PCB sampling.

The Army advanced the idea that Tentatively Identified Compound (TIC) analyses that has already been included in the Site Screening Process (SSP) document, would provide indication as to the presence or absence of pesticide compounds. EPA did not agree with this assertion stating that their opinion is that TIC analyses identifies classes of compounds not specific compounds.

The discussion concluded with the Army agreeing to take this issue back to Command, but this may yet be an issue that requires Tier II involvement to resolve. The Army will continue to apprise the team as to the results of these discussions.

**2. COPC Residential/Industrial**

VDEQ stated that there is room to make risk management decisions on COPC's that fall between residential and industrial RBC's. This represents a clarification to their comments on WPA 12.

In the ensuing conversation relative to the role of BTAG and BTAG screening values, Rob Thomson indicated that a pre-remedial site screening process was now available from BTAG.

**3. Groundwater**

In order to respond to VDEQ comments regarding the inclusion of groundwater data in WPA 12, Jim McKenna restated its intent for the study of groundwater at RFAAP. The goals of WPA 9 and the Current Conditions report were discussed. Also, the plans for an expanded investigation of groundwater to include the balance of the Main Manufacturing Area were reiterated. VDEQ concurred with this discussion stating that this was "... a good game plan."

It was established that removing the label DNE (Does Not Exceed) from tables in the Current Conditions report will satisfy VDEQ comments.

**4. Air Pathway**

Both VDEQ and EPA stated that air sampling would not be required at this time. Air sampling would become necessary should a completed air pathway be established. VDEQ clarified their comment regarding the air pathway stating that they took exception with the assertion made in WPA 12 that air was not considered a complete pathway prior to the investigation. It was agreed that presumptive language relative to the completeness of risk pathways would be removed from the WPA.

**5. BTAG Issues**

The group quickly agreed on the need for another meeting that would include the BTAG in order to clarify their issues. It was also agreed that this meeting needed to occur ASAP. Drew Rak from USACE was tasked with contacting Bruce Pluta from EPA Region III BTAG to set up this meeting.

**6. Surface soil sampling depth, end use of data**

After some discussion on this issue, the group agreed on the following regarding surface soil sampling at RFAAP:

- Future surface soil sampling, including that proposed in WPA's 9 and 12, would be defined as soil in the first six inches below the root mat.
- Sampling for VOC compounds (where proposed) would occur from the interval between 6 and 12 inches in realization that the volatile nature of VOC compounds makes their detection in the 0-6 inch interval unlikely.

- Previous surface soil sampling, that until now had been 0 to 2 feet at Radford AAP, is considered valid for evaluation of surface soil. Additional sampling from previous sampling locations is not required.

SITE SPECIFIC ISSUES

**SWMU 39**

Based on review of the additional figures and tables provided to meeting attendee's in preparation for this conference, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites.

It was agreed that the vertical sampling profile would be adjusted to capture subsurface soil in the intervals from 1 to 3 feet and the interval from 3 to 5 feet in order to better capture intervals were COPC's may be present. This did not result in an addition of samples, rather it was an adjustment to proposed sampling depths.

**SWMU 48, 49, 50, 59**

Upon discussion of VDEQ comments regarding inclusion of dioxin/furan sampling, it was agreed that these analyte suites were not required for SWMU's 48 and 50. The attendee's agreed that dioxin/furan analyte suites would be included at sites where burning activities had taken place; or where ash, burned material, or burn residue was suspected of being deposited. SWMU's 48 and 50 did not appear to meet this criteria. VDEQ requested and the attendee's agreed that they be given time to double check why the comment was made initially to ensure that there was no other rationale for the inclusion of dioxins/furans.

With regards to SWMU 48, the Army agreed that some additional sampling for explosives was justified. Additional characterization samples for explosives will be proposed by the Army. The use of immunoassay test kits for this purpose was discussed and approved by EPA and VDEQ.

Additionally, at the request of VDEQ, proposed boring 49SB02 will be advanced to a depth of 17-19 feet in order to assess the interval where relatively high TPH detection's had previously occurred. This will be an additional sample at this location and will receive the same analytical analyses as other sample intervals proposed at this location.
A discussion ensued as to the final disposition of SWMU 50 in light of the recent delisting of calcium sulfate sludge as a listed hazardous waste for explosive manufacture. Depending on analytical results (i.e., no COPC's), and review of Commonwealth regulations, no further action may be an appropriate remedy.

Based on review of the additional figures and tables related to SWMU 59, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites.

**SWMU 58**

The Army agreed with VDEQ that given the sites reported history, the inclusion of dioxin/furan analyte suites was appropriate for SWMU 58. Otherwise, based on review of the additional figures and tables provided, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites.

It was agreed that the vertical sampling profile would be adjusted to capture subsurface soil in the intervals from 0-2', 2-4', and 4-6' below ground surface where it begins beneath the rubble pile that is the primary feature of SWMU 58. This will not result in additional samples, rather it is an adjustment to the previously proposed sampling depths.

**Day 2:**
21 September 2001
Time: 0900-1200

Participants:

USEPA Region III: Rob Thomson
VDEQ: Mark Leeper
RFAAP: Jim McKenna
ATK: Jerry Redder
USAEC: Pete Rissell
USACE, Baltimore District: John Tesner, Andrew Rak
IT Group: Jeff Parks, Mark Thomas, Tim Leahy

GENERAL ISSUES

**1. ER, A Program Definitions (i.e., Active vs. Inactive sites)**
Jim McKenna provided definition of the program regarding the eligibility of SWMU's at Radford AAP. The Army's policy is that sites that were active beyond 17 October 1986 are considered active, therefore, ineligible for ER, A funding. This includes SWMU 17. The Army understands that it has an obligation to investigate SWMU's as named in the Installation's RCRA permit (October 2000), and will continue to pursue actions at active sites via separate funding mechanisms, programs, and documentation.

**2. VDEQ review status**
Jim McKenna recommended that VDEQ contact USACE's hydrogeologist, Mr. Drew Clemens (617-480-7732) for Radford AAP as they perform their review of WPA 9. VDEQ stated that WPA 9 comments will be made available the first week of October.

VDEQ agreed in the future to send out "draft" comments initially in order to allow the Army to address the issues more expeditiously and allow for the removal of comments when they become finalized.

USEPA agreed to accept these meeting minutes as the Army's response to draft USEPA comments.

The Army will submit formal responses to VDEQ's comments on WPA 12, since those comments were submitted as final.

**3. Project schedule**

The Army stated that adjusted project schedules will be provided for WPA 9 and 12 once WPA 9 comments are received/resolved and BTAG issue are resolved. At this time it is estimated that IT could be in the field in the November/December 2001 timeframe.

**4. Background Study**
Verified with EPA and VDEQ that the intent of the most recent comments from VDEQ was to have a single value for background that represented the 95% UTL calculated from a single combined data set. This was confirmed. IT will calculate these values and have them ready for distribution by COB 28 September.

**5. SSP Issues**
The group agreed that the remaining issues related to the SSP are to be resolved at the proposed BTAG meeting.

SITE SPECIFIC ISSUES

**Former Lead Furnace Area (FLFA)**
Jerry Redder from ATK provided a description and status of the non-ER, A funded project currently being executed at SWMU 17. He also discussed the solid waste permit being pursued at SWMU 17 as requested by VDEQ.

Based on review of the additional figures and tables provided for FLFA, and explanation provided by the Army, EPA and VDEQ tentatively approved the proposed sampling locations and analyte suites with the following issues pending resolution:

- The Army/ATK is to look for existing data/information regarding SWMU 76.
- Mark Leeper (VDEQ) will look into the Commonwealth's specific concerns at SWMU 17 that may relate to FLFA.
- The appropriate lead screening level may be an open issue relative to BTAG. This will need to be discussed a the upcoming BTAG meeting.
- The Army needs to screen the site data again versus recalculated background lead levels.

**Building 4343**
Based on review of the additional figures and tables provided for Building 4343, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites. Also, cyanide will be added to the analyte list for this site based on its general use in metal finishing operations.

The Army agreed to look at ways of moving forward more quickly with this site. The Army noted that the IAP workshop, scheduled for Spring 2002, will provide the best opportunity to discuss moving project phases and funding.

**New River**

**Building Debris Disposal Trench (BDDT)**

The Army addressed or received clarification regarding several of VDEQ's comments. EPA believes that BTAG will want to discuss BDDT at the upcoming meeting.

Based on review of the additional figures and tables provided for BDDT, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites. The Army agreed to modify the figure presented to show the extent of rip-rap at BDDT. This rip-rap extends to Avenue A though this is not evident on the figure.

**Igniter Assembly Area (IAA)**

Based on review of the additional figures and tables provided for IAA, the Army agreed to increase the number of samples collected as follows:

- Three additional subsurface soil samples will be collected and analyzed for TAL metals in the vicinity of IASB05 at a depth interval of 4-6 feet bgs (depth of elevated mercury detection).
- Three surface soil samples will be collected and analyzed in the vicinity of both SS11 and SS-12 (six additional samples).
- One subsurface soil sample from the 2-4 foot interval will be collected in the vicinity of both SS-11 and SS-12 (two additional samples).
- TAL metals analyses will be included at the other proposed sampling locations contained in WPA 12 for IAA.

**Northern Burning Ground (NBG)**

Based on review of the additional figures and tables provided for NBG, and explanation provided by the Army, EPA and VDEQ approved the proposed sampling locations and analyte suites.

**Western Burning Ground (WBG)**

Based on review of the additional figures and tables provided for WBG, and explanation provided by the Army, EPA and VDEQ tentatively approved the proposed sampling locations and analyte suites pending the outcome of the forthcoming BTAG meeting. Drew Rak recommended that surface water data be compared to Ambient Water Quality Criteria instead of MCL's in preparation for the BTAG meeting.

**Rail Yard**

Based on review of the additional figures and tables provided for the Rail Yard, and explanation provided by the Army, EPA and VDEQ tentatively approved the proposed sampling locations and analyte suites pending verification of site drainage and topography in the southeast portion of the site in the area near the unnamed creek.

**DRAFT Summary of Total Soil Data at Radford**
**Upper Tolerance Limits (UTLs)**

| Chemical | MMA/NRU and Surface/Subsurface Soil Data | | | | Residential Screening RBC [c], mg/kg | Industrial Screening RBC [c], mg/kg | Background Basis |
|---|---|---|---|---|---|---|---|
| | Frequency of Detection | Range of data, mg/kg | Statistical Distribution [a] | 95% UTL mg/kg [b] | | | |
| ALUMINUM | 79/79(100) | 3,620 - 47,900 | L | 40,041 | 7,800 | 200,000 | 95% UTL |
| ARSENIC | 76/79(96) | 1.2 - 35.9 | L | 15.8 | 0.43 | 3.8 | 95% UTL |
| BARIUM | 63/79(80) | 23.4 - 174 | L | 209 | 550 | 14,000 | RBC |
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[a] Statistical Distribution: N = Normal distribution; L = Lognormal distribution; U = Undetermined distribution; NP = Nonparametric distribution for data sets with greater than 50% nondetects.

[b] 95% Upper Tolerance Limit calculated for the indicated distribution.

[c] RBC = Region III risk-based concentration adjusted for a Hazard Quotient = 0.1 to account for potential cumulative effects (dated May 8, 2001).

Note: Highlighted values are below the residential screening RBC.

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

*Street address:* 629 East Main Street, Richmond, Virginia 23219
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Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482


September 10, 2001

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Facility Wide Background Study Report
Main Manufacturing Area, Horseshoe Area, and New River Unit
Surface & Subsurface Soils
Radford Army Ammunition Plant

Dear Mr. McKenna:

Having reviewed the revised surface soil and subsurface soil data, the statistical analysis of that data, including the soil type groupings and the 95% Upper Tolerance Limits, and having compared it with much of the currently existing site data, additional consideration was given to the practical application of this background data to the site screening process. Each potentially contaminated site at the facility is located in an area where excavation of surface soils has occurred at some point in the facility operations; therefore, the technical rationale behind a statistical comparison of surface soil, natural area, background data to surface soil, excavated area, site data is questioned.

Given the conditions of mixed surface and subsurface soils at the potentially contaminated sites, it is recommended that the background data for both surface and subsurface soils be combined for each element to determine the 95% UTL to be used, in conjunction with the US EPA Region III RBCs for human health risk screening, and with various ecological screening data for ecological risk screening purposes. This will not only simplify the screening process, but will add power to the statistical comparison and prevent the unnecessary, and costly, carrying forward of naturally occurring elements into the full fledged risk assessment process.

This recommendation has been made following consultation with Mr. Robert Thomson, US EPA Region III. If you have any questions regarding this matter, please contact Mr. Mark Leeper at (804) 698-4308.

Very truly,

Sharon Skutle Wilcox
Office Of Remediation Programs

cc: Robert Thompson, Region III, U.S.EPA
J. J. Redder, Alliant Techsystems
John Tesner, U.S. ACE, Baltimore District
Sanjay Thirungari, VDEQ CO
Garwin Eng, VDEQ, CO
Durwood Willis, VDEQ, CO
Mark Leeper, VDEQ, CO
Elizabeth Lohman, VDEQ, WCRO

## McKenna, Jim

**From:** McKenna, Jim
**Sent:** Wednesday, August 22, 2001 7:00 AM
**To:** sharon wilcox (E-mail); rob thomson (E-mail); Mark Leeper (E-mail)
**Cc:** john e tesner (E-mail); Andrew Rak (E-mail); Redder, Jerome
**Subject:** Background Study, Tables

All:

Attached file contains the table of concentrations for surface and subsurface soil per the 17 July 2001 meeting. From the 17 July meeting we agreed to hold a conference call to wrap up VDEQ's comments on the background study. Also attached the meeting minutes I sent out on 8/1/2001. Don't know what everyone's schedule is but I'd like to get this done this Friday or early next week. John Tesner will send out a separate email to coordinate this call.

Thanks,

Jim

VDEQ Summary Table.xls

eeting minutes: 7/ 17/2001 Radford ...



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## DRAFT Summary of Background Surface Soil Data at Radford

| Chemical | Combined MMA and NRU | | | VaDEQ Group 1 | | | VaDEQ Group 2 | | | Residential Screening RBC [c], mg/kg | Industrial Screening RBC [c], mg/kg | Recommend. Conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max. Conc., mg/kg (Sample Size) | 95% UTL mg/kg [a] | 95% UCL mg/kg [b] | Max. Conc., mg/kg (Sample Size) | 95% UTL mg/kg [a] | 95% UCL mg/kg [b] | Max. Conc., mg/kg (Sample Size) | 95% UTL mg/kg [a] | 95% UCL mg/kg [b] | | | |
| ALUMINUM | 20100 (28) | 21,623 [d] | 9,896 | 20100 (28) | 21,263 [d] | 9,896 | | | | 7,800 | 200,000 | 21,623 [1] |
| ARSENIC | 10.2 (28) | 10.6 [d] | 4.5 | 9.3 (24) | 8.8 | 4 | 10.2 (4) | 24.5 [d] | 10.2 | 0.43 | 3.8 | 10.6 [3] |
| BARIUM | 174 (28) | 321 [d] | 101 | 119 (24) | 130 [d] | 65 | 174 (4) | 249 [d] | 170 | 550 | 14,000 | RBC [2] |
| BERYLLIUM | 1.5 (28) | 0.72 | 0.71 | 1.1 (16) | 1.1 | 1.1 | 1.5 (12) | 1.8 [d] | 1.0 | 16 | 410 | RBC [2] |
| CHROMIUM | 53.3 (28) | 61.1 [d] | 26.1 | 53.3 (28) | 61.1 [d] | 26.1 | | | | 23 | 610 | 61.1 [1] |
| COBALT | 45.4 (28) | 59.2 [d] | 18.3 | 11.8 (8) | 11.8 | 11.8 | 45.4 (20) | 74.2 [d] | 23.6 | 160 | 4,100 | RBC [2] |
| COPPER | 13.6 (28) | 15.3 [d] | 7.7 | 13.6 (28) | 15.3 [d] | 7.7 | | | | 310 | 8,200 | RBC [2] |
| IRON | 63000 (28) | 62,093 | 25,258 | 63000 (28) | 62,093 | 25,258 | | | | 2,300 | 61,000 | 62,043 [1] |
| LEAD | 225 (28) | 219 | 35.5 | 225 (28) | 219 | 35.5 | | | | 400 | 1,000 | RBC [2] |
| MANGANESE | 2040 (28) | 4,202 [d] | 1,193 | 2040 (28) | 4,202 [d] | 1,193 | | | | 160 | 4,100 | 4,202 [1] |
| NICKEL | 18.1 (28) | 10.8 | 8.3 | ND (4) | ND | ND | 18.1 (24) | 19.3 [d] | 9.5 | 160 | 4,100 | RBC [2] |
| VANADIUM | 101 (28) | 92.1 | 41 | 101 (28) | 92.1 | 41 | | | | 55 | 1,400 | 92.1 [1] |
| ZINC | 216 (28) | 169 | 56 | 216 (24) | 161 | 52 | 65.9 (4) | 84.1 [d] | 65.5 | 2,300 | 61,000 | RBC [2] |

[a] 95% Upper Tolerance Limit (UTL) calculated for the indicated distribution. For sample sizes with 4 data points, the normal UTL was calculated.

[b] Upper Confidence Limit calculated for the indicated distribution
ND = there were no detected samples for this chemical and the UCL was not calculated.

[c] RBC = Region III risk-based concentration adjusted for a Hazard Quotient = 0.1 to account for potential cumulative effects (dated May 8, 2001).

[d] Calculated UTL exceeds maximum value.

Note: Highlighted values are below the residential screening RBC.

**Recommended Concentrations**

(1) Per VaDEQ comment letter of 2 April and meeting of 17 July, this element is to be considered as a single data group. The calculated UTL is recommended for the background concentration.

(2) Calculated values are below the Residential Screening RBC. It was agreed during the meeting of 17 July that the residential RBC would be the appropriate background concentration.

(3) The UTL for the combined data set falls between the UTLs for the Group 1 and Group 2 data sets. Arsenic is the only metal in this group. Therefore, it is recommended that a single value (calculated UTL from the combined data set) be used for the background concentration.

## DRAFT Summary of Background Subsurface Soil Data at Radford

| Chemical | Combined MMA and NRU | | | VaDEQ Group 1 | | | VaDEQ Group2 | | | Residential Screening RBC [c], mg/kg | Industrial Screening RBC [c], mg/kg | Recommend. Conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max. Conc., mg/kg (sample size) | 95% UTL mg/kg [a] | 95% UCL mg/kg [b] | Max. Conc., mg/kg (sample size) | 95% UTL mg/kg [a] | 95%UCL mg/kg [b] | Max. Conc., mg/kg (sample size) | 95% UTL mg/kg [a] | 95% UCL mg/kg [b] | | | |
| ALUMINUM | 47900 (51) | 44,557 | 20,413 | 21100 (11) | 25,205 [d] | 15,631 | 47900 (40) | 53,207 [d] | 22,720 | 7,800 | 200,000 | 44,557 [3] |
| ARSENIC | 35.9 (51) | 22.1 | 7.02 | 35.9 (51) | 22.1 | 7.02 | | | | 0.43 | 3.8 | 22.1 [1] |
| BARIUM | 164 (51) | 199 [d] | 67.4 | 164 (43) | 137 | 51.2 | 155 (8) | 252 [d] | 142 | 550 | 14,000 | RBC [2] |
| BERYLLIUM | 5.4 (51) | 1.30 | 1.25 | 5.4 (51) | 1.30 | 1.25 | | | | 16 | 410 | RBC [2] |
| CADMIUM | 2.5 (51) | 0.886 | 0.616 | 2.5 (51) | 0.886 | 0.616 | | | | 3.9 | 100 | RBC [2] |
| CHROMIUM | 75.8 (51) | 66.2 | 34.6 | 75.8 (51) | 66.2 | 34.6 | | | | 23 | 610 | 66.2 [1] |
| COBALT | 130 (51) | 99.5 | 28.1 | 10 (6) | 10.2 [d] | 10.2 [d] | 130 (45) | 111 | 31.7 | 160 | 4,100 | RBC [2] |
| COPPER | 38.7 (51) | 36.3 | 17.7 | 21.5 (11) | 39.1 [d] | 13.6 | 38.7 (40) | 39.3 [d] | 19.9 | 310 | 8,200 | RBC [2] |
| IRON | 67700 (51) | 58,378 | 34,466 | 67700 (51) | 58,378 | 34,466 | | | | 2,300 | 61,000 | 58,378 [1] |
| LEAD | 256 (51) | 34.0 | 25.5 | 36 (43) | 29.5 | 13.3 | 256 (8) | 1,823 [d] | 521 [d] | 400 | 1,000 | RBC [2] |
| MANGANESE | 1760 (51) | 2,084 [d] | 579 | 1760 (51) | 2,084 [d] | 579 | | | | 160 | 4,100 | 2,084 [1] |
| MERCURY | 0.27 (51) | 0.124 | 0.0874 | 0.27 (51) | 0.124 | 0.0874 | | | | 0.78 | 20 | RBC [2] |
| NICKEL | 94.2 (51) | 85.1 | 26.4 | 10.3 (6) | 17.7 [d] | 8.6 | 94.2 (45) | 98.6 [d] | 30.1 | 160 | 4,100 | RBC [2] |
| THALLIUM | 5 (51) | 2.60 | 1.31 | 5 (51) | 2.60 | 1.31 | | | | 0.55 | 14 | 2.6 [1] |
| VANADIUM | 114 (51) | 105 | 59.2 | 79.5 (38) | 82.0 [d] | 55.1 | 114 (13) | 132 [d] | 75.0 | 55 | 1,400 | 105 [3] |
| ZINC | 598 (51) | 271 | 78.4 | 598 (43) | 265 | 74.7 | 93.4 (8) | 124 [d] | 82.5 | 2,300 | 61,000 | RBC [2] |

[a] 95% Upper Tolerance Limit calculated for the indicated distribution.

[b] 95% Upper Confidence Limit calculated for the indicated distribution

[c] RBC = Region III risk-based concentration adjusted for a Hazard Quotient = 0.1 to account for potential cumulative effects (dated May 8, 2001).

[d] Calculated UTL exceeds maximum value.

Note: Highlighted values are below the residential screening RBC.

**Recommended Concentrations**

(1) Per VaDEQ comment letter of 2 April and meeting of 17 July, this element is to be considered as a single data group. The calculated UTL is recommended for the background concentration.

(2) Calculated values are below the Residential Screening RBC. It was agreed during the meeting of 17 July that the residential RBC would be the appropriate background concentration.

(3) The UTL for the combined data set falls between the UTLs for the Group 1 and Group 2 data sets. Aluminum and vanadium are the only metals in this group. Therefore, it is recommended that a single value (calculated UTL from the combined data set) be used for the background concentration.

## McKenna, Jim

**From:** McKenna, Jim
**Sent:** Wednesday, August 01, 2001 9:47 AM
**To:** sharon wilcox (E-mail); rob thomson (E-mail); john e tesner (E-mail); Andrew Rak (E-mail); Parks Jeffrey N (E-mail); rick cole (E-mail); Redder, Jerome
**Subject:** Meeting minutes: 7/17/2001 Radford AAP Facility Wide Background Study

All:

Subject meeting minutes attached.

Jim

July 17 2001
eeting Minutes.doc



copy in 43g

# Memorandum

**To:** Sharon Wilcox, Virginia Department of Environmental Quality

Rob Thomson, Environmental Protection Agency

**From:** Jim McKenna, Radford Army Ammunition Plant, RFAAP

Jerry Redder, Alliant Ammunition and Powder Company, LLC

**Date:** July 23, 2001

**Re:** Summary of Minutes for July 17, 2001 Meeting at the Virginia Department of Environmental Quality (VDEQ) Concerning Background Studies at Radford Army Ammunition Plant (RFAAP)

**ATTENDEES:**

| | | |
|---|---|---|
| Jim McKenna, RFAAP | Sharon Wilcox, VDEQ | Cindy Hassan, IT Group |
| Jerry Redder, AAPC | Sanjay Thirunagari, VDEQ | Rick Cole, URS Corp. |
| John Tesner, USACE | Hassan Kaceli, VDEQ | |
| Drew Rak, USACE | Jeffrey Parks, IT Group | |

**TELECONFERENCE PARTICIPANTS:**

| | | |
|---|---|---|
| Rob Thomson, US EPA | Bob Goodman, IT Group | Alvaro Alvarado, US EPA |

**NOTE TAKER:**

Rick Cole, URS Corp.

SUMMARY OF MEETING MINUTES

Jim McKenna began the meeting at 9:15 with a brief history of the Background Study, providing an overview of the project to date, followed by introductions of the participants and their respective roles in the project.

Sharon Wilcox asked why the Parson's background data from 1996 data was not incorporated. John Tesner indicated that there were issues that related to sample locations (i.e., some of the sample locations did not have coordinates) and collection that compromised the quality of the data; therefore, the Army withdrew this report with EPA consent.

After completion of project overview, John Tesner explained the meeting objective, which was to discuss the technical concerns of Virginia Department of Environmental Quality (VDEQ) relative to the method used by the Army to calculate inorganic background concentrations.

John Tesner then asked Cindy Hassan to briefly outline of background study process and the statistical procedures used to develop the calculated background concentrations. Ms. Hassan then proceeded to describe the technical approach used by IT and acknowledge that there are other methods, such as the Tukey statistical method used by VDEQ, to arrive at similar results.

Sanjay Thirunagari asked Cindy Hassan if before she proceeded further into the explanation of the statistical approach to explain what the ultimate use of the background data would be. Sanjay Thirunagari discussed that VDEQ had grouped data by soil type, while IT had relied more heavily on the physical description and chemistry and had grouped the data sets as surface and subsurface). He commented that we can still make this data work so that a background data set can be achieved for use on the project.

Cindy Hassan explained that there were three points to consider when looking at soil types and ultimate use of the data. The first point being that there was significant consideration given in the field to selection of samples by soil type, and data from the different sets had been combined by individual elemental comparisons across different soil types. The second point is that the Chemicals of Potential Concern (COPCs) will be selected by comparison to U.S. Environmental Protection Agency (USEPA) Region III risk based concentrations (RBCs). Those chemicals with detected concentrations less than the respective RBC will be dropped from further consideration as a COPC. Once COPCs are selected then the data will be compared to background levels. At that point, it will be appropriate to consider soil type and look at elemental composition of site samples relative to background comparison samples. The third point is that the existing background samples were selected from representative soil types to provide a data set that could be developed into a quick reference set of background comparison values.

Cindy Hassan then went on to address VDEQ's first concern regarding combination of background data sets and explained that the soil characteristics were considered during the combination of different data sets among the similar soil types. This combination was based upon a physical and chemical properties of each soil type; similar soil types were grouped together. The study identified four soil groups in the New River Unit (NRU) and three major groups in the Main Manufacturing Unit (MMA).

John Tesner and Jim McKenna commented that the soil types encountered were based on the selection of background locations that would be representative of areas that contained Solid Waste Management Units (SWMUs).

Cindy Hassan explained that for each soil type a qualitative evaluation between soil types was performed in which the physical and chemical composition of each type was compared. The

conclusion of this evaluation was that the soil types were similar enough that data sets could be combined into one data set for the surface soil and one data set for the subsurface soil.

Cindy Hassan then began a brief discussion of the outlier issues explaining that the data sets were reviewed for possible extraneous data values, but their analyses did not result in the rejection of data. Since these locations were specifically selected to represent background, there was a reluctance to eliminate a data point unless there was a Quality Control concern. IT's review of the data did not reveal a justification to remove data points from the background population. Cindy Hassan then explained that the background data set was used to derive point estimate values using the 95 percent Upper Confidence Level (UCL) on the mean and 95 percent Upper Tolerance Level (UTL) approaches. Previous discussion and comments from EPA indicated that EPA had agreed to a preference to use the 95 percent UTL approach.

Sanjay Thirunagari then expressed that it will be key for VDEQ to know how the background data will be used. After which the group can then look at methodology derivation of background estimates.

Drew Rak then explained that the primary use would be as background comparison criteria for use in the following:

1. Site screening process (SSP) (95% UTL approach).
2. Background comparison in RFI (mean-to-mean comparison e.g., t-test).

The different soil types in the MMU and the NRU were being combined in order to achieve the power and confidence necessary for a meaningful means comparison. Drew Rak noted that the low number of samples per soil type in the VDEQ analysis would not allow for a meaningful mean-to-mean comparison.

Drew Rak reviewed the flowchart for statistical evaluation as depicted in the meeting handout. He then explained that the previous 1996 soil data was used to estimate the number of sampling locations for this background study. The minimum relative detectable difference and coefficient of variation were used to predict the number of samples to collect. This approach and number of sample locations was discussed and agreed to by Dr. Lynn Flowers of EPA, as well as EPA's subsequent approval of Work Plan Addendum 10. Drew Rak then proceeded to describe the screen out of macronutrients.

Drew Rak explained that elements with a low number of detections (greater than 80 percent below detection limit) were dropped from the statistical process. As a result, there were smaller, but focused data sets containing 14 elements for surface and 16 for subsurface. During the comparison between data sets, there was generally good agreement between NRU and MMA data and also between surface and subsurface data. The surface and subsurface data sets were kept separate due to separate pathways evaluations that are completed during risk assessment.

Hassan Kaceli explained that VDEQ is looking at the differences in the seven different soil types in the two areas; certain soil types could be combined then compared statistically.

Sanjay Thirunagari referenced his previous question that the ultimate use of the data should be determined. For onsite detections, they should be below the 95 percent UTL. The mean of onsite data could be compared to the mean of background data set with an appropriate statistical test. He expressed concern that combination of soil types could mask differences between soil types.

Sanjay Thirunagari indicated that he had no problem with 95 percent UTL, or mean-to-mean comparison if background data are normally distributed and random sampling was conducted. The 95 percent UTL approach should be used if a grid sampling approach is used.

Rob Thomson/Alvaro Alvarado commented that USEPA has experience with many Federal facilities that have many AOCs; for areas with low risk it is difficult to prove there is no risk. It is important that we focus on sites where we have an obvious risk.

John Tesner re-iterated that sites will be screened by a comparison with RBCs. Sharon Wilcox and Sanjay Thirunagari commented that values below the RBCs will not be a concern.

Hassan Kaceli commented that the data NRU & MMA can be combined; any sample with the same soil type can be grouped by each element. Sanjay Thirunagari elaborated that, for example, the Unison soil type with similar elemental compositions could be combined in one background data set. For risk assessment, surface data would be combined to evaluate risk. Then samples within same soil type would be combined and the risk from each background soil type would be compared to the constituents contained in the site surface soil.

Sharon Wilcox clarified the VDEQ proposed grouping of the different soil types by each element into two groupings for surface soil and two grouping for subsurface soil. She used the example of Subsurface Group 1 would contain soil types except Unison. Group 2 would contain the other soil types. Alvaro Alvarado indicated that VDEQ's approach made sense. John Tesner asked for additional clarification of the element by element basis, with each element having either one or two soil groups. There were several minutes of discussion relative to soil types and the low number of samples that may be available in a particular group, for example Arsenic, which could have a data set with only 4 data points.

John Tesner pointed out that the statistical evaluation performed by the Army resulted in seven elements that did not pass the statistical evaluation. These seven elements are different than the seven elements VDEQ indicated are statistically different. John Tesner indicated that soil type comparison was done on a qualitative basis. Drew Rak pointed out that the VDEQ approach requires that the 95%UTL approach be used for derivation of background values. Sanjay Thirunagari questioned whether the UTL could be used with four data points. Alvaro Alvarado indicated that for arsenic in Unison Soil, the arsenic concentration is less than 10 ppm, and at

that concentration, this level will not drive a risk that will result in cleanup. Sanjay pointed out that it is a mute point (there was a general comment regarding 20 ppm); do not have to worry over arsenic risk. John Tesner emphasized the point that for many of the elements the derived background concentration is less than the RBC.

Bob Goodman provided the following calculated background values (in milligrams per kilogram) using the Army combined data set and the VDEQ Groups 1 and 2.

| | rmy ombined ata Set | VDEQ Group 1 | VDEQ Group 2 |
|---|---|---|---|
| Al | 20 | 16 | 23 |
| Ba | 67 | 51 | 140 |
| Pb | 13 | 11 | 520 |

*Small data set*

Drew Rak commented that with small data sets; the approach will capture variability by using the 95 percent UTL to calculate background values. Sanjay Thirunagari commented that to use the 95 percent UTL approach the data set must have a normal distribution; otherwise, the maximum value will be used for a non-normal distribution.

John Tesner commented that the SSP currently includes a surface and a sub-surface table of background point values that were derived using UTL calculations. Using the VDEQ approach including soil types for each element, what will those tables look like now? There is an expectation that comparison to these values will provide a decision point. Rob Thomson commented that background numbers that are too low will result in remediation of too many sites; if a higher number is selected, then too few are remediated. Sharon Wilcox indicated that the RBC would be the driving number.

There were several minutes of discussion as the group worked through two examples using aluminum and beryllium to illustrate the VDEQ methodology of looking at each element and whether it has a single soil group or two groups. If there is more than one group for the particular element, then the data set should be selected that matches the soil type of the environmental sample. Once the data set is selected (Group 1 or Group 2), then if the data set distribution is normal, then the 95 percent UTL calculated value will be used for background point comparison. If the Group 1 or 2 data set distribution is non-normal, then the maximum value of the background data set is used as point comparison value. Sanjay Thirunagari indicated that he was comfortable with the point to point comparison and use of the 95 percent UTL; however, all site sample points must pass the comparison. There was general discussion that the Army will apply the VDEQ approach to the data sets and generate a new set of background numbers for comparison. Sanjay Thirunagari indicates that if the numbers

calculated by the VDEQ approach is similar to the numbers calculated by the Army, then VDEQ may accept the Army approach.

Jim McKenna and John Tesner indicated that the Army would create a new background point-values table using the VDEQ approach and compare with existing Army background point values. If the values are close, then the group will proceed with finalization of the report using the current statistical approach utilized by the Army. Sharon Wilcox indicated that VDEQ will be satisfied with that approach if VDEQ values are close to the Army values. The Army will prepare the table and submit in a letter to VDEQ for review.

Jim McKenna requested a discussion of the outliers in the letter to make sure that VDEQ outstanding comments are addressed. Cindy Hassan indicated that based on the box and whisker plots that were completed as part of the outlier evaluation, the outlier do not have a significant impact on the data. Alvaro Alvarado expressed caution in deleting a data point. Sharon Wilcox wants notification of outliers that are used as maximum values. Cindy Hassan indicated that typically outliers are discussed in the uncertainties section of the Risk Assessment. Sanjay Thirunagari indicated that if the outliers made a significant difference in the calculated background values, then resampling may be required. Jerry Redder recommended that in the new table, outliers that have a significant impact for resampling to be identified. Sharon Wilcox expressed that the number of samples should be added to the table.

John Tesner then summarized saying that the Army would put a new table together, which would contain the background point values using the 95 percent UTL (for SSP and RFI application) and UCL (for informational) approaches for the soil types as defined in the VADEQ analyses. This table will also contain the sample size that was used for these UTL/UCL calculations and the residential and industrial RBC's for the compounds. This table will be distributed to the group. A time frame of Mid-August was suggested for the table completion and a conference call. The meeting adjourned at 12:45 p.m.

## McKenna, Jim

From: McKenna, Jim
Sent: Friday, May 04, 2001 9:59 AM
To: 'rob thomson'
Cc: Redder, Jerome; 'john e tesner'
Subject: FW: Background Study Response to Comments

Rob,

Per my email about two weeks, I promised we would send our detailed response to the VADEQ's review comments on the Facility Wide Background Study Report. It is in the attached file below. Also we have provided a response to EPA's draft comments received via 4/16/2001 email and it is attached as separate file below.

I have reviewed what John Tesner has prepared in these files and concur. I would re-iterate I do not like the direction VADEQ is taking and perhaps a Richmond, VA meeting would be in order.

John, I'm officially off today and I don't have time to convert these files into WP so please follow up with Rob ASAP/today to ensure that he has readable/workable electronic files.

Thanks,
Jim

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**From:** Tesner, John E NAB02[SMTP:John.E.Tesner@nab02.usace.army.mil]
**Sent:** Thursday, May 03, 2001 5:49 PM
**To:** Jim McKenna (E-mail)
**Subject:** Background Study Response to Comments

Response to comments EPA.doc

Response to comments VADEQ.do

Jim-
As discussed. Let me just say a couple things. After riding the fence a bit regarding level of detail, I made the decision to go with the format you see. I didn't think the other info provided by the others, could be explained or presented easily. That leads into why you'll see a suggestion for a meeting at the end of the VADEQ comments. At this point I recommend it. We could even do it in Richmond if its more palatable, but I think face to face will help.

Also, if you find stupid spelling/grammatical errors, target me first. I was the author of the re-write, but had a lot of input from Drew, IT, and to some extent URS.

JT
<<Response to comments EPA.doc>> <<Response to Comments VADEQ.doc>>

Response to Draft Comments from USEPA Region III (transmitted via e-mail 16 April 2001)
Draft Facility-Wide Background Study Report
Radford Army Ammunition Plant

General: Comments from USEPA are considered to be in **Draft** until VADEQ comments are reconciled and incorporated.

1. **Comment: Section 2.4, Field Sampling, Page 2-2:** This section does not contain a subsection discussing field observations and air monitoring (PID) readings. Please revise this section to include a discussion of significant field observations and air monitoring readings obtained during the sampling events.
**Response:** Section 2.4 will be revised to include a discussion of field observations and air monitoring data.

2. **Section 4.1.1, Analytical Methodology, page 4-1:** The third paragraph states that PID screening was used to monitor organic compounds and relocate borings as necessary. Section 2, Background Sampling, did not contain a discussion of field activities or air monitoring readings. Please revise the text to indicate what levels detected on the PID would have necessitated a relocation of the boring and which, if any, boring location(s) were relocated as a result of PID readings.
**Response:** Section 4.1.1 will be revised to evaluate the revised Sec.2 (Comment #1) and clarify whether borings were relocated and why.

3. **Section 4.1.1, Analytical Methodology, page 4-1:** The second paragraph of 4.1.1 states that "Results demonstrated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases." If this is true, then any location on either facility having non-detect for explosives would be non-impacted by DoD operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Results indicated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases."
**Response:** Sentence will be revised as proposed.

4. **Section 4.1.2, Data Validation and Qualifiers, pages 4-1 and 4-9:** The discussions of this section are focused upon target analyte list (TAL) metals, and omit TCL considerations. Since samples were analyzed for TCL VOC and SVOC, their data quality evaluation criteria should be included within this section. Please revise the text to include a discussion of the VOC and SVOC data validation and qualifiers.
**Response:** Section 4.1.2 will be revised to include a discussion of VOC and SVOC data validation including qualifiers.

5. **Section 4.2, Statistical Approach, pages 4-10 through 4-20:** This section details the statistical methodology utilized for this background study. Table 4-8,

Statistical Test, describes the equations utilized for the necessary calculations; and Tables 4-9, Surface Soil Statistical Summary and 4-10 Subsurface Soil Statistical Summary, describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.
**Response:** The output for each of the statistical analyses will be provided in an appendix.

6. **Section 4.3, Confidence Limits, pages 4-20 through 4-24:** This section details the statistical methodology utilized to calculate the 95% upper confidence limit (UCL) for the combined data sets. Table 4-8, Statistical Tests, describes the equations utilized for the necessary calculations and Tables 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU) and 4-12 Occurrence and Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.
**Response:** The output for the 95% UCL calculations will be provided in an appendix.

7. **Section 4.1.3, Data Grouping, page 4-20:** The last paragraph of this section states that the coefficient of variation (CV) was used to evaluate the data variability for element distribution across soil type, with elements having CVs of less than one being grouped together, and elements with CVs greater than one further evaluated to address the causes of variability. This step is not depicted in Figures 4-1 and 4-2. Please include this step in the appropriate figures, and elaborate on the use of CVs and the resulting groups formed based on the outcome of these calculations.
**Response:** The flow chart will be expanded and language will be added to the text to elaborate on the use of the CV in the decision-making process.

8. **Table 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in surface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual area calculations in addition to the combined 95% UCL calculation. Please revise the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.
**Response:** Table will be revised to include MMA and NRU 95% UCL numbers as well as the combined 95% UCL.

9. **Table 4-12, Occurrence and Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in subsurface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual

area calculations in addition to the combined 95% UCL calculation. Please revise the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.
**Response:** Table will be revised to include MMA and NRU 95% UCL numbers as well as the combined 95% UCL.

10. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Additionally, semivolatile and volatile organic compounds were evaluated as secondary markers to substantiate the selection of true background locations. Analytical results demonstrated that organic contaminants had not impacted the selected locations, indicating that sample locations represented background conditions." The organic results were not provided in this report. Please revise the report to include the organic results obtained or delete those two sentences from the report.
**Response:** Organic results will be provided as an appendix.

11. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Explosive results were negative, proving background sampling locations had not been impacted by RFAAP operations." If this is true, then any location on the Site having non-detect for explosives would be non-impacted by RFAAP operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Explosive results were negative, indicating background sampling locations had not been impacted by RFAAP operations."
**Response:** The sentence will be revised as suggested.

12. **Section 5:** The 95 % UCL was used as a point estimate of the background data. However, when we compare on-site contamination at RFI sites to background, we need to answer two questions: (1) Are there any hot spots on-site? (2) Is the average concentration on-site the same or higher than the average concentration of background? Given the data in the draft *Background Report*, we should be able to answer these questions for RFI type sites using hypothesis testing. Therefore, EPA is requesting that, for RFI sites, the Army propose a methodology (ies) in the draft revised *Background Report* for accomplishing this end.
**Response:** The 95% UCL was included in the report as a general point of reference, at the request of the Installation, for site prioritization purposes. At the time the Background Workplan was developed there was intent for point-to-point comparisons. As described in the Background Study Workplan, the intent was to use hypothesis testing for RFI sites. Such hypothesis testing would include tests for similarities in shape and location between the site and background data sets. Depending on these initial tests other tests (e.g., t-test or Mann-Whitney U, or Kolmogorov-Smirnov) would be used to assess whether there is a difference between the means. Likewise, statistical procedures also would be used for assessing outliers.

Although not contemplated during the development of the Site-Screening Process for Site Screening Areas (SSA), the 95% UCLs could be used for point-to-point

comparisons. However, using the 95% UCL as a single point comparison or background is very likely to result in classifying many chemicals as greater than background when they are not. This is due to the fact that the 95% UCL is an estimate of the mean, which would likely result in misclassification as much as 50 percent of the time. Therefore, the Army suggests that a 95% upper tolerance limit (95% UTL) approach be included in the Background Study report and used for point-to-point comparisons in the SSP.

The following discussion further explains the Army's position regarding UTL versus UCL:

*Three types of statistical intervals are often constructed from environmental data: Confidence, Tolerance and Prediction. They are mathematically similar, but have very different purposes:*

| ***Appropriate Use*** | ***Interval Type*** | ***Purpose*** |
|---|---|---|
| *Comparison Within A Single Population.* | *Confidence Interval:* | *To compare a compliance data set to a known standard (i.e., USEPA, 1989; 1992).* |
| *Comparison of Similar But Distinct Populations.* | *Tolerance Interval:* | *To define a concentration range from background data, within which a large proportion of compliance data should fall with high probability (i.e., USEPA, 1989; 1992).* |
| | *Prediction Interval:* | *To define a concentration range from background data, within which the next K compliance values should fall with high probability (i.e., USEPA, 1989; 1992).* |

*A Confidence Interval contains a specified population parameter (generally the mean) with a specified level of confidence (USEPA, 1989). " It offers little information about the highest or most extreme sample concentrations one is likely to observe over time" (USEPA, 1989). For these reasons, Confidence Limits are generally constructed on compliance data, not on background data. The limits for compliance data can then be compared to a known standard (e.g., an RBCs, MCLs, GWPSs) to assess if the mean value of the compliance data might be statistically above the standard (cf., VDEQ, 1998; 2000).*

*If a statistically robust data set, and thus good information about the population mean, is available (implying a tightly constrained confidence interval and low UCL), then a large portion of the population of individual values used to construct the UCL will actually be above the UCL. Therefore, an exceedance of the UCL by an individual sample result in a separate compliance population is not indicative of the site being above background.*

*The appropriate Interval to be constructed on background data for comparison to individual compliance points is a Tolerance Interval (USEPA, 1989; 1992). The UTL*

*approach compares individual compliance point sample values to individual values in the background population, e.g the 95th percentile of the population. If the compliance population is within background, we expect no more than 5% individual values to be above the 95th percentile of the background population. Tolerance intervals are robust for normally distributed data. For lognormal data sets, lognormal tolerance intervals can be constructed; however, caution must be used to discern spurious results. In the event that a data set is lognormally distributed and the results of a lognormal tolerance interval calculation appear erroneous (based on a UTL that is an outlier as compared to the known spread of the background data set), one should use a prediction interval approach on the lognormal data.*

Hot spots need to be defined by two parameters: aerial extent and concentration. The size of a hot spot is best examined through adequate sampling design. The concentration that defines a hot spot can be addressed through a risk-based comparison or through a background-based comparison. Both of the extent and the concentration parameters require proper sampling plan development. The number of samples at the SSAs is unlikely to be adequate for statistical hot-spot evaluation. Hot-spots are best addressed with purposeful sampling at suspected release points for the SSP. The hot-spot issue at RFI sites will be addressed during the development of the RFI Work Plans.

13. **Section 5:** Please include language in Section 5 stating that the Facility-Wide inorganic point estimates for surface soil "background" and subsurface soil "background" can be used in the evaluation of Site-Screening Areas.
**Response:** The suggested language will be added to Section 5.

14. **Appendix A, Drilling Log MMAU1:** This drilling log does not show PID screening readings. Please clarify why readings were omitted on this boring or revise the log to indicate the PID readings obtained.
**Response:** Log will be revised to indicate PID readings.

15. **Appendix B, Data Validation Reports:** This appendix does not contain the VOC and SVOC data validation and summary sheets. Please revise this appendix to include the VOC and SVOC data validation package and sample summary sheets.
**Response:** Appendix B will be revised to include VOC and SVOC data validation data and sample summary sheets.

---

References:

United States Environmental Protection Agency, 1989, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Interim Final Guidance: Office of Solid Waste, Waste Management Division: EPA / 530-SW-89-026.

United States Environmental Protection Agency, 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance: Office of Solid Waste, Waste Management Division.

Virginia Department of Environmental Quality. 1998. Data Analysis Plan for Solid Waste Facilities: Office of Technical Services: Memorandum to Solid Waste Facilities/Consultants from Charlotte Carroll and Sanjay Thirunagari., June 15, 1998.

Virginia Department of Environmental Quality. 2000. Data Analysis Guidelines for Solid Waste Facilities Operating in Virginia: Office of Waste Programs. Technical Support: Revised November 14, 2000.

Response to Comments from VADEQ (April 2, 2001)
Draft Facility-Wide Background Study Report
Radford Army Ammunition Plant

General: Comments from VADEQ are considered to be **Final** and will need to be reconciled and incorporated with USEPA, Region III comments.

**Comment:**
Based upon their statistical evaluation of the analytical data provided in the report, surface and subsurface soils should be evaluated separately. Within each stratum (surface and subsurface) data for each chemical constituent (aluminum, antimony, arsenic, etc.) can be grouped into either one or two groups by soil type (Braddock, Unison, Wheeling, etc.).

The Department used the Tukey method[1] to conduct simultaneous comparison of the constituent mean concentrations, by chemical constituent, for the seven different soil types at a 95% confidence limit. The resulting groups observed for each surface soil chemical constituent are marked with a code 1 or 2. Surface soil types with code "1" may be combined into one data set and those with code "2" may be combined into second data set for each chemical constituent. Data sets marked with an asterisk (*) contain outliers that should not be included in the data set for the background comparison. See Table 1 below.

For example, the cobalt data for the Braddock Loam and Groseclose and Poplimento Silt Loam in the surface soil types can be combined into one statistical data set; and the cobalt data for the Unison-Urban Land Complex, Wheeling Sandy Loam, Cabro Silty Clay Loam, Lowell Silt Loam, and Wurno-Newberg-Faywood Silt Loam surface soil types can be combined into a second statistical data set. Statistical comparisons from future potentially contaminated sites would compare aluminum data from a surface soil sample in Braddock Loam to aluminum data from the Braddock Loam and Groseclose and Poplimento Silt Loam data set.

1 Robert V. Hogg and Johannes Ledolter, Applied Statistics for Engineers and Physical Scientists, - 2nd ed. New York: Macmilllan Publishing Company, 1992

**Table 1 Surface Soil Groupings**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 2 | 1 | 1 | 2 | 2 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 1 | 2 | 2 |
| Copper | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 1* | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1* | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Similarly, subsurface soil has been marked with code 1or 2. Soil types with code "1" may be combined as one background data set and those with code "2" may be combined as a second background data set for each constituent.

**Table 2 Subsurface Soil**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Copper | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Notes for tables 1 and 2 on prior page:

* Indicates that soil type has outlier(s)

The detection limits for some of the constituents varied between soil types.

Based on the above information, the facility may develop two background data sets for surface and

subsurface soils.

The facility must conduct an outlier test on grouped background data sets as part of the revisions to this document and prior to developing the statistical limits for comparing on-site against background levels. Outliers from the background data set are to be excluded prior to establishing the 95% upper confidence limit (UCL) on the mean of the background data.

When performing statistical comparisons of the potentially contaminated area sample results to the background results, the facility may use a Student's t-test, provided the data sets follow normal distributions and other test specific assumptions (eg. variance). The facility also has the option to calculate the 95% upper confidence limit on background data (excluding outliers) and compare the individual on-site sample concentrations to the established UCL.

**Response**:
It is emphasized that the approach and methods used in the Background Study report had been accepted by both EPA Region III and VADEQ in the Workplan prior to its implementation. The Tukey method presented by VADEQ is no more valid a statistical approach than the Mann-Whitney, Student-t, and Levene's methods employed per the Workplan. Further, during presentation of the Workplan, the possibility of certain elements not "passing" the 95% confidence interval was discussed. This possibility was not considered to invalidate the data, rather that data would simply have to be evaluated within the appropriate context. It should be noted that the elements, identified by the Army, as failing the statistical tests were still relatively high in confidence interval albeit not 95%. Finally, these elements (aluminum, barium, iron, lead, vanadium, zinc) are rarely risk drivers in a risk assessment. A comparison of RBC values for these elements indicate that the calculated UCL is either below the residential RBC for that element or between the residential and industrial RBC values.

The approach recommended in VADEQ's comments represents a significant change. The implementation of the Commonwealth of Virginia's approach would be difficult since there would have to be at least four different background data sets for each element. This would inevitably lead to data sets that would not be statistically significant. The selection of the background data set would also have to change based on the soil type and element.

Another difficulty with the implementation of the Commonwealth's approach would occur when samples are collected that involve multiple soil types or where soil types are not clearly distinguishable. For example, which background data set would be used if the samples collected from the site are from multiple soil types and the background analysis indicated that there are differences between the data for some or all of the elements?

The Army proposes the following course of action. Evaluation of outlier will proceed using an appropriate statistical method (eg., Box and Whisker diagram). P-values will be evaluated using another statistical package to assess whether differences will result from the values already calculated. Finally, a meeting to discuss finalization of the Background Study report may prove to be more successful than multiple response and comment rounds.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

March xx, 2001

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
Draft Report submittals and reviews

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's draft *Facility-Wide Background Study Report*, dated January, 2001 for the New River Storage Depot (NRU), and the Radford Army Ammunition Plant (RAAP). Based upon our review, EPA has the following comments:

1. **Section 2.4, Field Sampling, Page 2-2:** This section does not contain a subsection discussing field observations and air monitoring (PID) readings. Please revise this section to

include a discussion of significant field observations and air monitoring readings obtained during the sampling events.

2. **Section 4.1.1, Analytical Methodology, page 4-1:** The third paragraph states that PID screening was used to monitor organic compounds and relocate borings as necessary. Section 2, Background Sampling, did not contain a discussion of field activities or air monitoring readings. Please revise the text to indicate what levels detected on the PID would have necessitated a relocation of the boring and which, if any, boring location(s) were relocated as a result of PID readings.

3. **Section 4.1.1, Analytical Methodology, page 4-1:** The second paragraph of 4.1.1 states that "Results demonstrated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases." If this is true, then any location on either facility having non-detect for explosives would be non-impacted by DoD operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Results indicated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases."

4. **Section 4.1.2, Data Validation and Qualifiers, pages 4-1 and 4-9:** The discussions of this section are focused upon target analyte list (TAL) metals, and omit TCL considerations. Since samples were analyzed for TCL VOC and SVOC, their data quality evaluation criteria should be included within this section. Please revise the text to include a discussion of the VOC and SVOC data validation and qualifiers.

5. **Section 4.2, Statistical Approach, pages 4-10 through 4-20:** This section details the statistical methodology utilized for this background study. Table 4-8, Statistical Test, describes the equations utilized for the necessary calculations; and Tables 4-9, Surface Soil Statistical Summary and 4-10 Subsurface Soil Statistical Summary, describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.

6. **Section 4.3, Confidence Limits, pages 4-20 through 4-24:** This section details the statistical methodology utilized to calculate the 95% upper confidence limit (UCL) for the combined data sets. Table 4-8, Statistical Tests, describes the equations utilized for the necessary calculations and Tables 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU) and 4-12 Occurrence and

Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), describe the results of the individual statistical tests conducted. The actual calculations and variables utilized are not provided in the report for verification. Please include an additional table or appendix which details the individual calculations conducted in this section.

7. **Section 4.1.3, Data Grouping, page 4-20:** The last paragraph of this section states that the coefficient of variation (CV) was used to evaluate the data variability for element distribution across soil type, with elements having CVs of less than one being grouped together, and elements with CVs greater than one further evaluated to address the causes of variability. This step is not depicted in Figures 4-1 and 4-2. Please include this step in the appropriate figures, and elaborate on the use of CVs and the resulting groups formed based on the outcome of these calculations.

8. **Table 4-11, Occurrence and Distribution of Chemicals Combined Surface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in surface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual area calculations in addition to the combined 95% UCL calculation. Please revise the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.

9. **Table 4-12, Occurrence and Distribution of Chemicals Combined Subsurface Soil (MMA and NRU), page 4-22:** This table lists the 95% UCL in subsurface soils for the combined data sets (MMA and NRU). As it may be necessary in the future to view each area independently, the table should include the individual area calculations in addition to the combined 95% UCL calculation. Please revise the table to include the individual area (MMA and NRU) 95% UCL calculations in addition to the combined 95% UCL calculation.

10. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Additionally, semivolatile and volatile organic compounds were evaluated as secondary markers to substantiate the selection of true background locations. Analytical results demonstrated that organic contaminants had not impacted the selected locations, indicating that sample locations represented background conditions.". The organic results were not provided in this report. Please revise the report to include the organic results obtained or delete those two sentences from the report.

11. **Section 5.1, Background Sample Locations, page 5-1:** This section reads that "Explosive results were negative, proving

background sampling locations had not been impacted by RFAAP operations." If this is true, then any location on the Site having non-detect for explosives would be non-impacted by RFAAP operations regardless of other TCL or TAL findings at these future sampling locations. Please amend this sentence to read "Explosive results were negative, indicating background sampling locations had not been impacted by RFAAP operations.".

12. **Section 5:** The 95 % UCL was used as a point estimate of the background data. However, when we compare on-site contamination at RFI sites to background, we need to answer two questions: (1) Are there any hot spots on-site? (2) Is the average concentration on-site the same or higher than the average concentration of background? Given the data in the draft *Background Report*, we should be able to answer these questions for RFI type sites using hypothesis testing. Therefore, EPA is requesting that, for RFI sites, the Army propose a methodology(ies) in the draft revised *Background Report* for accomplishing this end.

13. **Section 5:** Please include language in Section 5 stating that the Facility-Wide inorganic point estimates for surface soil "background" and subsurface soil "background" can be used in the evaluation of Site-Screening Areas.

14. **Appendix A, Drilling Log MMAU1:** This drilling log does not show PID screening readings. Please clarify why readings were omitted on this boring or revise the log to indicate the PID readings obtained.

15. **Appendix B, Data Validation Reports:** This appendix does not contain the VOC and SVOC data validation and summary sheets. Please revise this appendix to include the VOC and SVOC data validation package and sample summary sheets.

This concludes EPA's review of the Army's draft *Facility-Wide Background Study Report*, dated January, 2001 for the NRU and the RAAP. The referenced draft *Report* is disapproved by EPA in its current form, and must be revised to reflect the comments above. **As it exists, the data presented in the current background *Report* cannot be used to eliminate contaminants of concern until the Report is finalized.** Per Part II, Section E.4.e. of the EPA RCRA Corrective Action Permit, the Army is required to revise the draft document and submit a revised draft copy to EPA for review within 60 days of the receipt of EPA comments on the draft document. Part II, Section E.4.f. of the Permit allows for an additional 20 days

for issuing the revised draft document to EPA, provided that timely notice is given, i.e. within 10 days. Additional time extensions can be requested under Part II, Section F. of the permit.

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Lynn Flowers, EPA
Leslie Romanchik, VDEQ-RCRA
Sharon Wilcox, VDEQ-CERCLA

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
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April 2, 2001

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Draft Facility-Wide Background Study Report
Radford Army Ammunition Plant, January 2001

Dear Mr. McKenna:

Thank you for the opportunity to review the above referenced document. I have had Mr. Sanjay Thirunagari and Mr. Hasan Keceli, of our Office of Technical Support review the Draft Facility-Wide Background Study Report, dated January 2001, for the appropriate application and interpretation of the statistical methods utilized.

Based upon their statistical evaluation of the analytical data provided in the report, surface and subsurface soils should be evaluated separately. Within each stratum (surface and subsurface) data for each chemical constituent (aluminum, antimony, arsenic, etc.) can be grouped into either one or two groups by soil type (Braddock, Unison, Wheeling, etc.).

The Department used the Tukey method[1] to conduct simultaneous comparison of the constituent mean concentrations, by chemical constituent, for the seven different soil types at a 95% confidence limit. The resulting groups observed for each surface soil chemical constituent are marked with a code 1 or 2. Surface soil types with code "1" may be combined into one data set and those with code "2" may be combined into second data set for each chemical constituent. Data sets marked with an asterisk (*) contain outliers which should not be included in the data set for the background comparison. See Table 1 below.

For example, the cobalt data for the Braddock Loam and Groseclose and Poplimento Silt Loam in the surface soil types can be combined into one statistical data set; and the cobalt data for the Unison-Urban Land Complex, Wheeling Sandy Loam, Cabro Silty Clay Loam, Lowell Silt Loam, and Wurno-Newberg-Faywood Silt Loam surface soil types can be combined into a second statistical data set. Statistical comparisons from future potentially contaminated sites would compare

1 Robert V. Hogg and Johannes Ledolter, Applied Statistics for Engineers and Physical Scientists, - 2nd ed. New York: Macmilllan Publishing Company, 1992

aluminum data from a surface soil sample in Braddock Loam to aluminum data from the Braddock Loam and Groseclose and Poplimento Silt Loam data set.

**Table 1 Surface Soil Groupings**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 2 | 1 | 1 | 2 | 2 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 1 | 2 | 2 |
| Copper | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 1* | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1* | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Similarly, subsurface soil has been marked with code 1or 2. Soil types with code "1" may be combined as one background data set and those with code "2" may be combined as a second background data set for each constituent.

**Table 2 Subsurface Soil**

| Constituents | Braddock | Unison | Wheeling | Cabro | Groseclose | Lowell | Wurno |
|---|---|---|---|---|---|---|---|
| Aluminum | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Antimony | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Arsenic | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Barium | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Beryllium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cadmium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chromium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cobalt | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Copper | 1 | 2 | 2 | 1 | 2 | 2 | 2 |
| Iron | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Maganese | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mercury | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Selenium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thallium | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vanadium | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Zinc | 1 | 1* | 2 | 1 | 1 | 1 | 1 |

Notes for tables 1 and 2 on prior page:

* Indicates that soil type has outlier(s)

The detection limits for some of the constituents varied between soil types.

Based on the above information, the facility may develop two background data sets for surface and subsurface soils.

The facility must conduct an outlier test on grouped background data sets as part of the revisions to this document and prior to developing the statistical limits for comparing on-site against background levels. Outliers from the background data set are to be excluded prior to establishing the 95% upper confidence limit (UCL) on the mean of the background data.

When performing statistical comparisons of the potentially contaminated area sample results to the background results, the facility may use a Student's t-test, provided the data sets follow normal distributions and other test specific assumptions (eg., variance). The facility also has the option to calculate the 95% upper confidence limit on background data (excluding outliers) and compare the individual on-site sample concentrations to the established UCL.

If you have any questions regarding this information, I can be reached at (804) 698-4143.

Very truly,

Sharon Skutle Wilcox
Office Of Remediation Programs

cc: Robert Thompson, Region III, U.S.EPA
Robert Weld, VDEQ
Sanjay Thirunagari, VDEQ

Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24141
USA

February 9, 2001

Mr. Robert Thomson
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Facility-Wide Background Study Report
Radford Army Ammunition Plant
EPA ID# VA1 210020730

Dear Mr. Thomson:

Enclosed is one certified copy of the subject report. Your five additional copies and Mr. Willis' and Ms. Wilcox's copies will be sent under separate cover.

The contents of this report are based on the field work executed in accordance with Work Plan Addendum 10: Facility-Wide Background Study as approved by EPA on December 12, 2000.

Please coordinate with and provide any questions or comments to myself at (540) 639-8266, Jerry Redder of my staff (540) 639-7536 or Jim McKenna, ACO Staff (540) 639-8641.

Sincerely,

C. A. Jake

C. A. Jake, Environmental Manager
Alliant Ammunition and Powder Company LLC

Enclosure

c: w/ enclosure under separate cover
Durwood Willis
Virginia Department of Environmental Quality
P. O. Box 10009
Richmond, VA 23240-0009

Sharon Wilcox
Virginia Department of Environmental Quality
P. O. Box 10009
Richmond, VA 23240-0009

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Facility-Wide Background Study Report
Radford Army Ammunition Plant
January 2001

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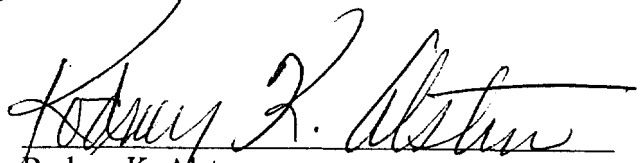
SIGNATURE: 
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# RADFORD ARMY AMMUNITION PLANT, VIRGINIA

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## Facility-Wide Background Study Report

**Prepared for:**

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**Prepared by:**

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The IT Corporation was tasked to conduct a Facility-Wide Background Study at the Main Manufacturing Area and New River Unit of Radford Army Ammunition Plant (RFAAP). Task objectives were to characterize naturally occurring background soil inorganic concentrations to establish a baseline for inorganic compounds of concern at RFAAP. Data was statistically evaluated across soil types, soil horizons, and study areas to assess the potential for expanding the effective data into one set. Statistical tests demonstrated that the data was statistically similar across soil types and study areas, resulting in one set of background values for both surface and subsurface soils.

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# LIST OF ACRONYMS AND ABBREVIATIONS

%D—Percent Difference
%R—Percent Recovery
%RSD—Percent Relative Standard Deviation
ATK—Alliant Techsystems, Inc.
BFB—Bromofluorobenzene
bgs—below ground surface
COC—Chain-of-Custody
COPC—Chemical of Potential Concern
CRQL—Contract Required Quantitation Limit
CVAA—Cold Vapor Atomic Absorption
CV—Coefficient Of Variation
DFTPP—Decafluorotriphenylphosphine
EPIC—Environmental Photographic Interpretation Center
ERIS—Environmental Restoration Information System
GC/MS—Gas Chromatography/Mass Spectroscopy
GFAA—Graphite Furnace Atomic Absorption
GPS—Global Positioning System
HWMUs—Hazardous Waste Management Units
ICP—Inductively Coupled Plasma Emission Spectroscopy
IDM—Investigative-Derived Material
LCS—Laboratory Control Samples
MMA—Main Manufacturing Area
MDL—Method Detection Limit
MQL—Minimum Quantitation Limit
MRL—Method Reporting Limit
MS/MSD—Matrix Spike/Matrix Spike Duplicate
msl—mean sea level
ND—Not Detected
NRU—New River Unit
PID—Photoionization Detector
QAPA—Quality Assurance Plan Addendum
QA—Quality Assurance
QC—Quality Control
RBC—Risk-Based Concentration
RDX—hexahydro-1,3,5-trinitro-1,3,5-triazine
RFAAP—Radford Army Ammunition Plant
RPD—Relative Percent Difference
RRF—Relative Response Factor
SSA—Site-Screening Area
SSP—Site-Screening Process
SVOCs—Semivolatile Organic Compounds
SWMUs—Solid Waste Management Units
TCLP—Toxicity Characteristic Leachate Procedure
TCL—Target Compound List
TIC—Tentatively Identified Compound
TNT—Trinitrotoluene
UCL—Upper Confidence Limit
USEPA—U.S. Environmental Protection Agency
UTL—Upper Tolerance Limit
VDEQ—Virginia Department of Environmental Quality
VOCs—Volatile Organic Compounds

# EXECUTIVE SUMMARY

A Facility-Wide Background Study was conducted at the Main Manufacturing Area and the New River Unit of RFAAP in accordance with Work Plan Addendum No. 10. Task objectives were to characterize naturally occurring background soil inorganic concentrations within the MMA and the NRU. Scope of work activities included the collection of background soil samples to establish a baseline for inorganic compounds of concern at RFAAP. Background sample locations were selected based on soil types and collected in areas not impacted by installation activities. Associated soils were evaluated based on formation properties and chemical and physical characteristics.

Explosives were selected as primary background markers, and semivolatile and volatile organic compounds were selected as secondary markers to discern potential contamination associated with selected background sample locations. Explosives and organic compound results confirmed the selected background locations had not been impacted by facility operations and were indicative of natural background conditions.

Statistical performance objectives designated for the background study were designed to ensure study data were scientifically based and statistically valid. Data were evaluated across soil types, soil horizons, and study areas to assess the potential for developing a universal background data set. Statistical tests demonstrated that surface soil data for both the MMA and NRU could be combined into one facility-wide data set. Similarly, subsurface soil data were also combined from both areas to obtain a facility-wide subsurface data set.

Point estimate values were subsequently developed to represent background concentrations for future site comparisons. The 95% upper confidence limit was selected as the statistic to assess background point estimates for surface and subsurface soil samples. Results from the previously attempted background study (Parsons 1996) were evaluated, and it was demonstrated that inclusion of the prior data set would compromise the statistical validity of the current background study.

Further work was performed in response to review comments from the USEPA and VDEQ. As a result of subsequent discussions with the agencies, this Final Facility-Wide Background Study reflects two major revisions: 1) facility-wide point estimates for background soil data are calculated as tolerance limits rather than confidence limits, and 2) background data for soil (surface and subsurface, MMA and NRU) are combined into a single data set. The final set of point estimates for the background data set, therefore, are based on calculated 95% UTLs for a single facility-wide data set that represents surface and subsurface soil from the MMA and NRU areas. These values are included in the Facility-Wide Background Study as a point of reference for point-by-point comparisons for site screening.

# 1.0 Installation Description

Radford Army Ammunition Plant (RFAAP) is a government-owned, contractor-operated industrial complex located in Radford, Virginia. It is owned by the U.S. Department of the Army and was operated under contract with Hercules, Inc., from 1941 until 1995 when Alliant Techsystems, Inc. (ATK), became the operating contractor. The installation consists of two noncontiguous areas: the Main Manufacturing Area (MMA) and the New River Unit (NRU).

The MMA contains numerous buildings and facilities. The NRU was constructed in 1940 and operated as a bag-manufacturing and loading plant for artillery, cannon, and mortar projectiles.

## 1.1 LOCATION

The MMA is located approximately 10 mi west of Blacksburg and 37 mi southwest of Roanoke (Figure 1-1). It lies in one of a series of narrow valleys typical of the Appalachian Mountain region. The valley is oriented in a northeast-southwest direction and is approximately 25 mi long and 8 mi wide at the southwest end, narrowing to 2 mi at its northeast end. The facility is situated along the New River in the relatively narrow northeast region of the valley and is divided into northern and southern areas. The northern half, or "Horseshoe Area," is located within the meander of the New River; the southern area contains the MMA.

The NRU is located approximately 6 mi southwest of the MMA of RFAAP and 43 mi southwest of Roanoke. It is located east of the town of Dublin in Pulaski County, VA, in the southern portion of the Appalachian Mountain region. The facility is approximately 1.5 mi north of Claytor Lake and approximately 2 mi northwest of Claytor Lake Dam.

## 1.2 ENVIRONMENTAL SETTING

### 1.2.1 Climate

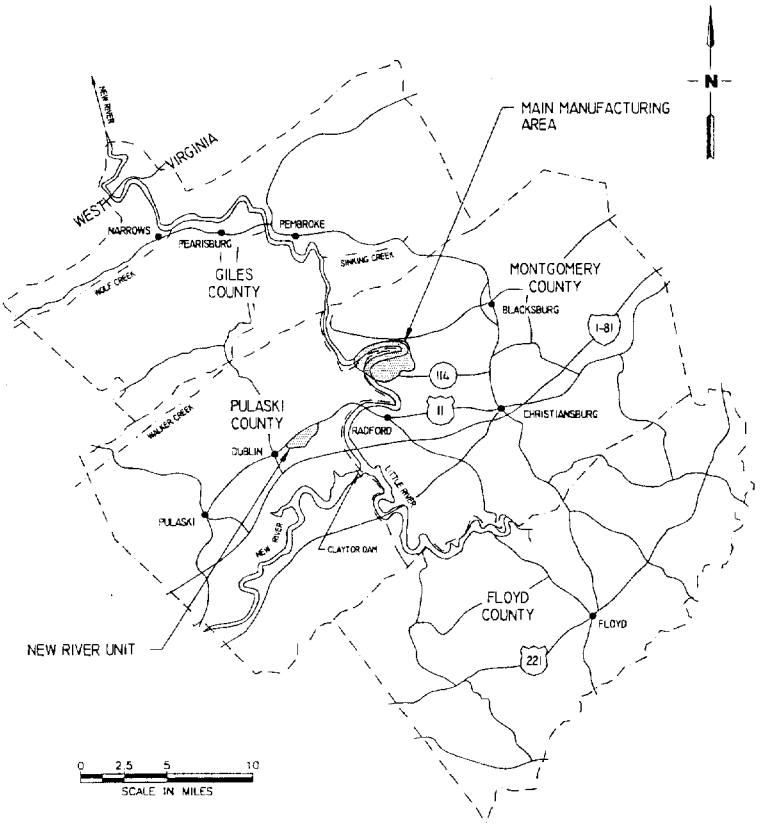
The climate of the area encompassing RFAAP is classified as "moderate continental," and is characterized by moderately mild winters and warm summers. Prevailing winds are from the southwest, with an average yearly wind speed between 8 and 10 mi/hr (SCS 1985). Average monthly temperature ranges from 29.6°F in January to 72°F in July, with an annual average temperature of about 52°F. Average monthly precipitation ranges from about 2.5 in. to 4.1 in. with an annual total precipitation between 36.9 in. and 41.5 in. (NCDC 1999). Lake evaporation was measured at 32 in./yr in the same area. Potential evapotranspiration has been calculated at 30 in./yr using the Thornthwaite method (Parsons 1996). Based on these data, the net precipitation in the vicinity of RFAAP ranges between 6.9 in. and 11.5 in. annually. Snowfall in the vicinity of RFAAP averages 17 in. annually. Montgomery and Pulaski Counties lie in one of the areas of highest occurrence of dense fog in the United States. Dense fog can be expected to occur between 20 and 45 days/yr.

### 1.2.2 Physiography

RFAAP lies within the Valley and Ridge Province of the Appalachian physiographic division. The Valley and Ridge Province is characterized by a series of long, narrow, flat-topped mountain ridges separated by valleys of varying widths. Either of these landforms may predominate; the mountains may be widely spaced and isolated or so closely spaced that the lowlands are disconnected or absent.

RFAAP exhibits prominent karstic features including sinkhole, caves, and caverns. Karst landforms occur in carbonate rock formations as the result of the dissolution of rock by naturally occurring carbonic acid in rainwater. As the rock is dissolved, cavities or caverns are formed beneath the earth's surface. Occasionally, large caverns collapse producing a depression or sinkhole on the surface. Numerous sinkholes are apparent along the western and southern boundaries of the facility.

**Figure 1–1**
**RFAAP and Vicinity Map**




Topography within the MMA of the installation varies from a relatively flat floodplain to elevated uplands in the extreme southeast section. The New River forms the RFAAP boundary on the north, with an elevation approximately 1,675 ft above mean sea level (msl). The eastern boundary represents a transition from a floodplain elevation of 1,680 ft msl to an upland elevation of 1,900 ft msl. The southern boundary traverses terrain consisting of creek bottoms and sharply rising summits. The western boundary follows the bluff line overlooking the New River to a point where the Norfolk and Western Railroad crosses the western portion of the Horseshoe Area.

The topography at the NRU contains some relatively flat areas but is dominated by undulating terrain and occasional sinkholes. The highest elevation is approximately 2,160 ft msl in the western portion of the site, and the lowest elevation is approximately 1,860 ft msl at Hazel Hollow located in the northeastern section of the site. One stream flows to the southeast corner of the NRU. Several intermittent streams merge into Hazel Hollow to carry surface runoff to the northeast corner of the NRU.

## 1.3 LAND USE/DEMOGRAPHICS

The area around MMA has not been highly developed because of the steep terrain surrounding the area. Land use in the vicinity of the facility has been mostly rural; less rugged areas have been primarily used for agriculture. The majority of counties situated in the New River Valley, which includes Montgomery, Pulaski, Giles, and Floyd are forested. The Jefferson National Forest is located approximately 2 mi north of the facility. 38% of the area of the New River Valley is classified as nonforest land, including agricultural land, developed land, and water acreage (NRVPDC 1994). The Blacksburg, Christiansburg VPI Water Authority owns four parcels of land adjacent to the facility. There are approximately 200 private residences located adjacent to the facility (Dames & Moore 1992). The largest substantial development, Fairlawn, is located about 2 mi southwest of the MMA boundary.

In 1990, the city of Radford, located about 4 mi southwest of the MMA, had a population of 15,940, which is equivalent to 1,626 people/mi$^2$ and the adjacent city of Dublin had 1,156 people/mi$^2$. Population densities for Montgomery and Pulaski Counties included 190 and 108 persons/mi$^2$, respectively (NRVPDC 1994). According to the U.S. Census Bureau, the town of Dublin in 1999 had an estimated population of 2,009 people, which is equivalent to approximately 1,155 people/mi$^2$. The estimated population in 1999, for Montgomery and Pulaski Counties was 76,997 and 34,407 people, respectively (U.S. Census Bureau 2000). The current estimated population densities are 198 and 108 persons/mi$^2$, respectively.

## 1.4 GEOLOGY

RFAAP is located in the New River Valley, at the northwest terminus of the southern Valley and Ridge Province. The New River crosses the Valley and Ridge Province approximately perpendicular to the regional strike of bedrock and it chiefly cuts Cambrian and Ordovician limestone and dolomite. The valley is covered by river flood plain and terrace deposits; karst topography is dominant. Deep clay-rich residuum is prevalent in areas underlain by carbonate rocks. Karst features include sinkholes, caverns, and springs caused by the dissolution of calcium carbonate by naturally occurring carbonic acid in rainwater. The greatest areas of karst features are controlled by bedrock stratigraphy and structure, and by the presence of major drainages. Late Cambrian and Mid-Ordovician limestones are more soluble than Cambrian and Lower Ordovician dolomite and shaley dolomite; therefore, they have the greatest number of sinkholes and caverns. However, both rock types show increased karst development in areas of low bedrock dip, where bedding is intensely folded, cleaved or jointed, and near major drainages.

The Elbrook and McCrady/Price Formations are the rock outcrops at the Installation. The Elbrook Formation is composed of thickly bedded, blue-gray dolomite interspersed with blue-gray to white limestone; brown, green, and red shale; argillaceous limestone; and brecciated limestone (colors range from mottled light- to dark-gray and yellow-brown). Sinkholes, solution channels, pinnacled surfaces, and springs are common to the Elbrook, which ranges from 1,400 to 2,000 ft thick. The strike of bedding in the Elbrook Formation is variable throughout the region. The general orientation of bedding is seen in the nearly east-west alignment of sinkholes at the installation and the surrounding area. Most sinkholes in the area are oval shaped and elongated with respect to the strike of the bedding; they most likely represent fractured or faulted zones within the underlying Elbrook Formation. The McCrady/Price Formations outcrop in a fenster (window) east of the main plant area along Stroubles Creek. This Formation may be up to 1,500 ft thick and consists of mottled red and green shale and mudstone interspersed with brownish-green siltstone and sandstone.

Max Meadows tectonic breccia, which is evidence of the close proximity of the Pulaski fault surface, is observed within and in the vicinity of the facility. This tectonic breccia consists of poorly sorted, angular to subrounded clasts of massive dolomite, laminated dolomites, and finely-laminated greenish gray calcareous mudstones in a fine- to very fine-grained matrix of crushed dolomite. Clasts range from less than 1 in. to more than 3 ft in length. The breccias are massive to crudely layered and are well to poorly indurated. The breccia, which is most fine-grained along the fault contact (Schultz 1986), is an integral part of the highly deformed rocks along the base of the Pulaski thrust sheet. Tectonic breccia has been described along the entire strike (310 mi) of the Pulaski thrust sheet.

The installation is also underlain by unconsolidated sedimentary deposits, including: alluvial plain sediments deposited by the New River prior to entrenchment, residual deposits from in-place weathering of parent bedrock, and colluvial deposits developed by residual slope wash. Alluvial plain deposits commonly line the New River and Stroubles Creek; as either recent floodplain material or as geologically older terraces. For example, three alluvial terraces are evident on the horseshoe loop that exhibit an upward textural fining. Gravels and silty, clayey sands form the basal unit, which are overlain by finer micaceous silts and clays. Sporadic cobbles and boulders (known as river jack) occur as lenses throughout the alluvial strata. Thickness of the alluvial deposits varies from a few to 50 ft, with an average of 20 ft.

Residual deposits (clays and silts) are a result of chemical and physical weathering of the parent bedrock, which is composed primarily of Elbrook dolomite. Residual deposits generally underlie the alluvium along the New River and in the Horseshoe Area. The exception is where the residuum has been eroded to bedrock and replaced by alluvium. Overburden depths vary from a few to 70 ft.

Colluvial deposits are generally formed from mass-wasting of slopes and escarpments. In general, these deposits are a heterogeneous mixture of alluvium, residuum, and rock debris that has moved from its original position. These deposits are generally interbedded between the strata of alluvium and residuum; thickness is variable.

Photo. 1 Northerly view of sample location MMAB1 within the Braddock Loam soil type at the MMA

The NRU is located within the middle section of the Ridge and Valley province (Thornbury 1965). The rocks, which underlie this site, are Middle Cambrian limestones, dolomites and shales of the Elbrook formation. The thickness of the Elbrook formation in this area is approximately 1,500 ft. The uppermost portion of the Elbrook is characterized by interbedded sandy, commonly cross-bedded, fine-grained dolomite containing thin lenses of fine to medium-grained sandstone. This is followed by cyclic sequences of medium-gray, finely laminated; fine-grained dolomite with crossbedding, bioturbated fine-grained dolomite with burrowed areas filled with slightly coarser-grained dolomite. The percentage of limestone diminishes with depth. The basal unit is 25–50 ft of fine-grained finely laminated, light greenish-gray, phyllitic, dolomitic mudstone and interbedded dolomite. This formation is thought to be part of the Pulaski overthrust sheet. Most of the rock units trend northeast-southwest. Southeastward dipping thrust faults and asymmetric folds overturned to the northwest are common (Dietrich 1990).

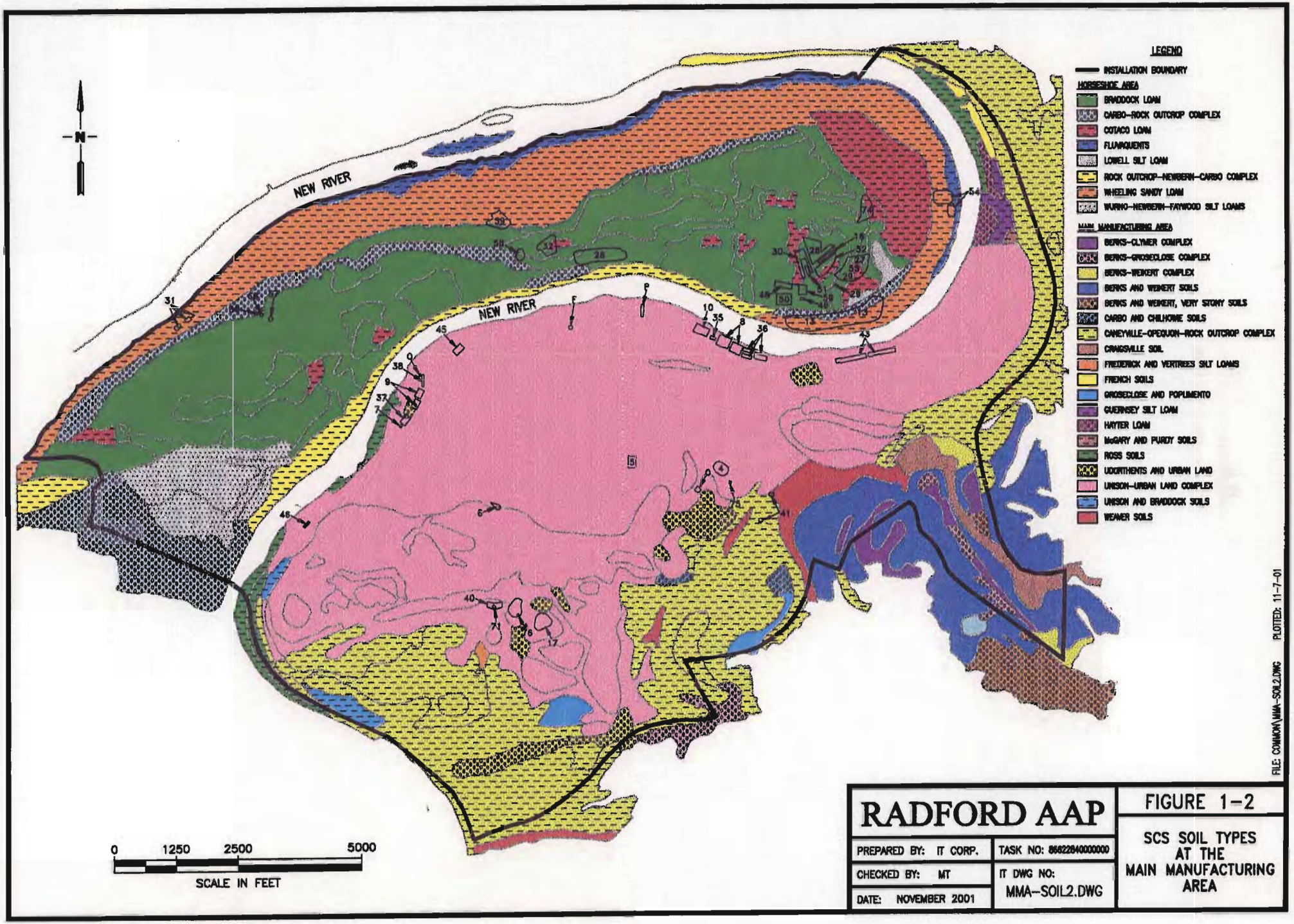
## 1.5 SOIL TYPES

Soil Conservation Service (1985) map units were employed to identify soil types within the current facility boundaries of the MMA and the NRU. Soil types associated within the MMA and NRU were assessed, and background sampling locations were selected to include the major soil types.

### 1.5.1 Main Manufacturing Area

The MMA is underlain by 27 soil types, as depicted graphically on Figure 1-2. The Braddock Loam, Unison-Urban Land Complex, and Wheeling Sandy Loam were identified as the most prevalent soil types that underlay the solid waste management units (SWMUs) and areas of concern identified in the MMA. These three soil types account for approximately 72% of the soils (excluding rock outcrop) at the MMA. The focus of this background investigation was these three soil types because they account for approximately 72% of the soils at the MMA.

Photo. 2 Braddock Loam soil profile for sample location MMAB1: surface (A horizon) and subsurface (B and C horizons) collected from the MMA

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| PREPARED BY: IT CORP. | TASK NO: 8622840000000 |
| CHECKED BY: MT | IT DWG NO: MMA-SOIL2.DWG |
| DATE: NOVEMBER 2001 | |

FIGURE 1-2

SCS SOIL TYPES AT THE MAIN MANUFACTURING AREA

***Braddock Loam.*** The Braddock Loam comprises about 21% of the MMA. This soil type has a variable slope between 2% and 30% and does not have a seasonal high water table within 6 ft of the surface. Photo 1 shows an example of the landscape surrounding a Braddock Loam sample location at the MMA. Typically, the surface layer is dark yellowish-brown, 7 in. thick. The subsoil, which is a yellowish-red and red clay, extends to a depth of 60 in. or more. Photo 2 shows a Braddock Loam soil profile collected from the MMA (A horizon: 0-10 in.; B horizon: 10-48 in.; C horizon: 48-84 in.). Depth to bedrock is more than 60 in. deep. Permeability of the Braddock Loam soil is moderate, natural fertility is low, and organic matter content is moderately low. This soil type is acidic or very strongly acidic.

Photo. 3 Northwest view of sample location MMAU3 within the Unison-Urban Land Complex soil type at the MMA

***Unison-Urban Land Complex.*** This complex makes up about 40% of the surface area of RFAAP, and consists of about 50% deep and well drained Unison soils, 30% Urban Land, and 20% other soils. This complex of soils varies in slope from 2 to 25%. Photo 3 shows an example of the landscape surrounding a Unison-Urban Land Complex sample location at the MMA. In an undisturbed area, the Unison soils have a 15-in.-thick surface layer of dark

Photo. 4 Unison-Urban Land Complex soil profile for sample location MMAU3: surface (A horizon) and subsurface (B and C horizons) collected from the MMA

brown loam and a 43-in.-thick subsoil of yellowish-red, sticky plastic clay underlain by a red sandy clay loam to a depth of 58 in. This clay-rich layer is typically underlain by a brown sand to about 10 ft below ground surface (bgs), which then grades into a brown clay. Photo 4 shows a Unison-Urban Land Complex soil profile collected from the MMA (A horizon: 0-9 in.; B horizon: 9-42 in.; C horizon: 42-72 in.). Urban land is covered by pavement or structures; the original soil has been physically altered or obscured so that classification is not practical.

Permeability is moderate in Unison soils, natural fertility is low, and organic matter content is low to moderate. The soil is medium to strongly acidic.

***Wheeling Sandy Loam.*** The Wheeling Sandy Loam comprises approximately 11% of the MMA soils and is level to nearly level (slopes ranging from 0 to 2%). Photo 5 shows an example of the landscape surrounding a Wheeling Sandy Loam sample location at the MMA. The seasonal high water table is not within 6 ft of the surface.

Photo. 5 Southwest view of co-located sample location MMAW2/W3 within the Wheeling Sandy Loam soil type at the MMA

Typically, the surface layer is a 10-in.-thick, dark

brown sandy loam underlain by a 42-in.-thick subsoil. The upper part of the subsoil is dark brown gravely sandy loam to a depth of 60 in. or more. At greater than 60 in. in depth, the soil is predominantly a mixture of silt and sand, with minor amounts of clay. Photo 6 shows a Wheeling Sandy Loam soil profile collected from the MMA (A horizon: 0-7 in.; B horizon: 7-48 in.; C horizon: 48-60 in.). Depth to bedrock is at least 60 in.

Photo. 6 Wheeling Sandy Loam soil profile for sample location MMAW2: surface (A horizon) and subsurface (B and C horizons) collected from the MMA

Permeability and available water capacity of Wheeling soils is moderate; surface runoff is slow. Natural fertility is medium, organic matter content is moderately low, and soil is moderately to strongly acidic. Hazard of erosion in this soil type is slight.

### 1.5.2 New River Unit

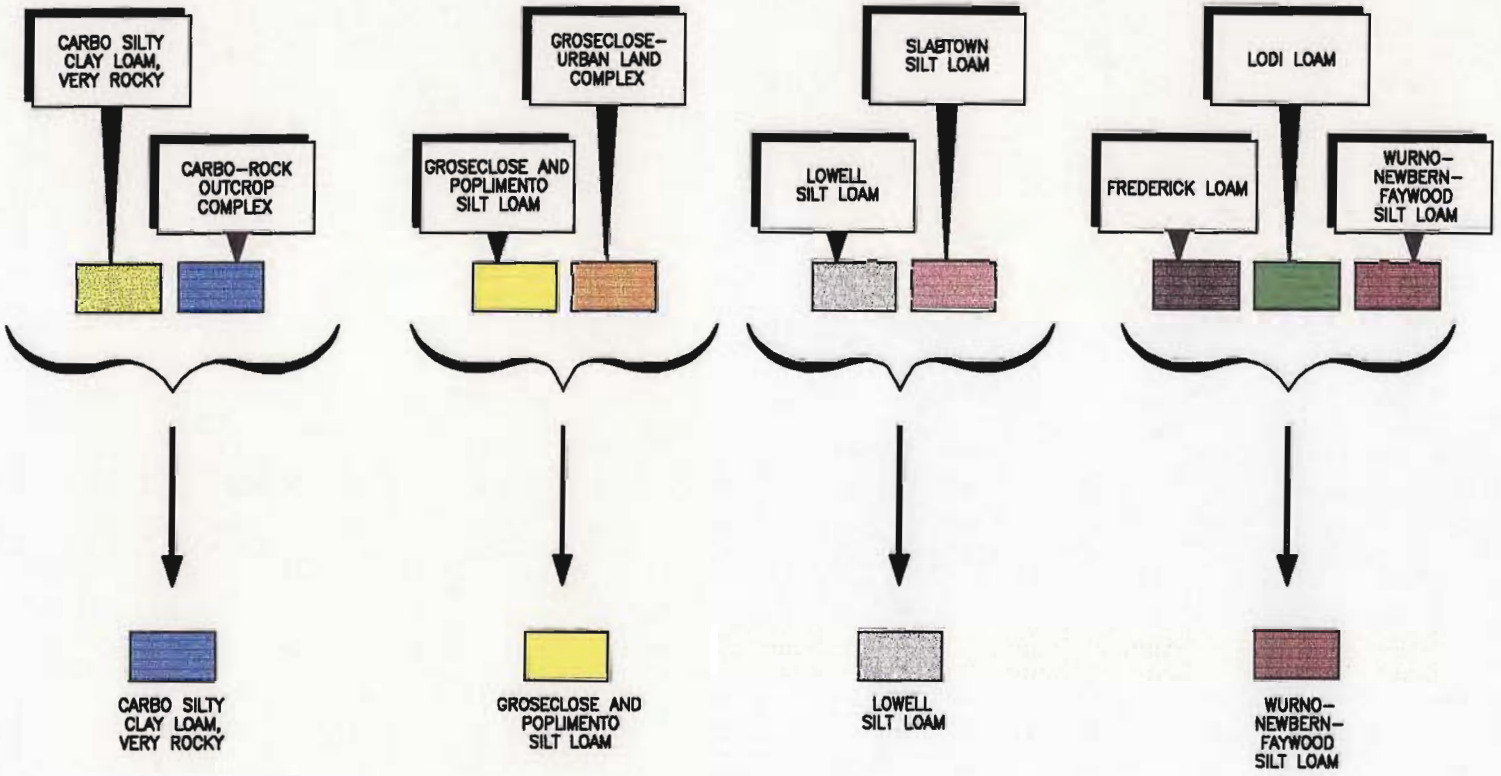
The NRU is underlain by 11 soil types as depicted graphically on Figure 1-3. A soil grouping approach was adopted that included the evaluation of soil formation properties, physical and chemical soil characteristics associated with each soil series, and delineation of associated family groups. Four soil groupings were selected for background sampling at the NRU including, Carbo Silty Clay Loam (very rocky), Groseclose and Poplimento Silt Loam, Lowell Silt Loam, and the Wurno-Newbern-Faywood Silt Loam. These four soil groupings account for 78% of the soils at the NRU. Figure 1-4 depicts the grouping of these soil types.

Photo. 7 Northwest view of sample location NRUC1 within the Carbo Silty Clay Loam soil type of the MMA

The Carbo series are formed in material weathered from limestone bedrock. Members of this family include Carbo Silty Clay Loam, Carbo Silty Clay Loam (very rocky), and the Carbo-Rock Outcrop Complex. The grouping of these soils was based on the Carbo family designation.

The Urban Land Complex represents disturbed Groseclose soils. Background samples collected from the Groseclose and Poplimento series will take Urban Land Complex soil characteristics into account.

The Lowell series consists of deep and very deep well-drained soils formed in residuum of limestone interbedded with thin layers of shale on upland ridgetops and sideslopes. Soils of the Slabtown series are deep, moderately well drained and have moderately slow permeability. Slabtown soils were formed in weathered material of mixed colluvium and underlying limestone residuum and are geographically associated with the Carbo, Faywood, Federick, Lodi, Lowell, Poplimento, and Wurno series. This soil series was grouped with the Lowell series based on its chemical and physical properties.

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| RADFORD AAP | | FIGURE 1-4 |
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| PREPARED BY: IT CORP. | TASK NO: 5862240000000 | NEW RIVER UNIT SOIL GROUPINGS |
| CHECKED BY: MT | IT DWG NO: FLOWCHART.DWG | |
| DATE: NOVEMBER 2001 | | |

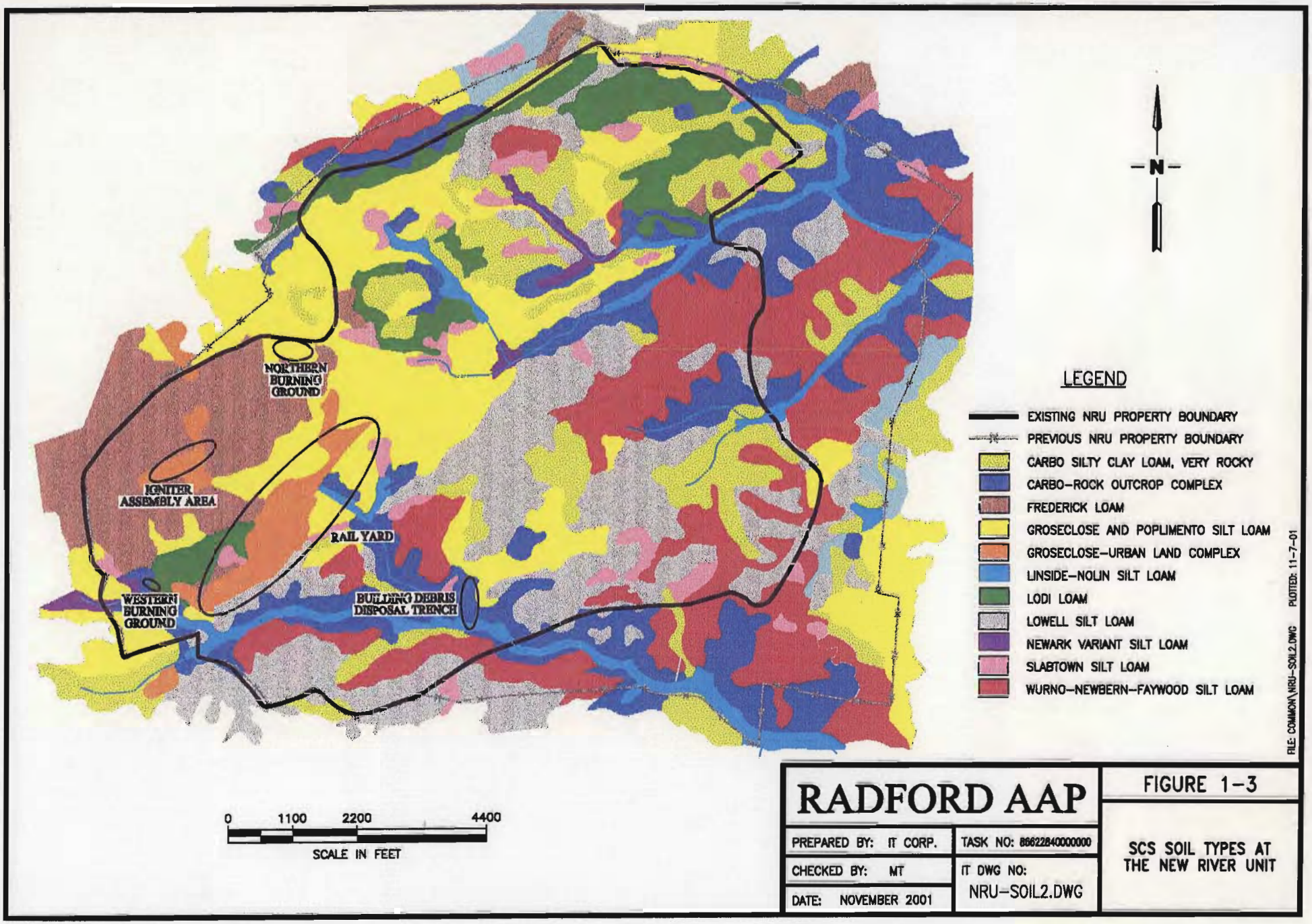


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FIGURE 1-3

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| CHECKED BY: MT | IT DWG NO: NRU-SOIL2.DWG |
| DATE: NOVEMBER 2001 | |

SCS SOIL TYPES AT THE NEW RIVER UNIT

The Lodi and Federick series are from the same family and are formed in residuum weathered from limestone rocks with interbedded sandstone and shale. These soils are consistent with the Wurno-Newbern-Faywood series in that permeability ranges from moderately slow to moderate, and soil pH ranges from strongly acidic to mildly alkaline.

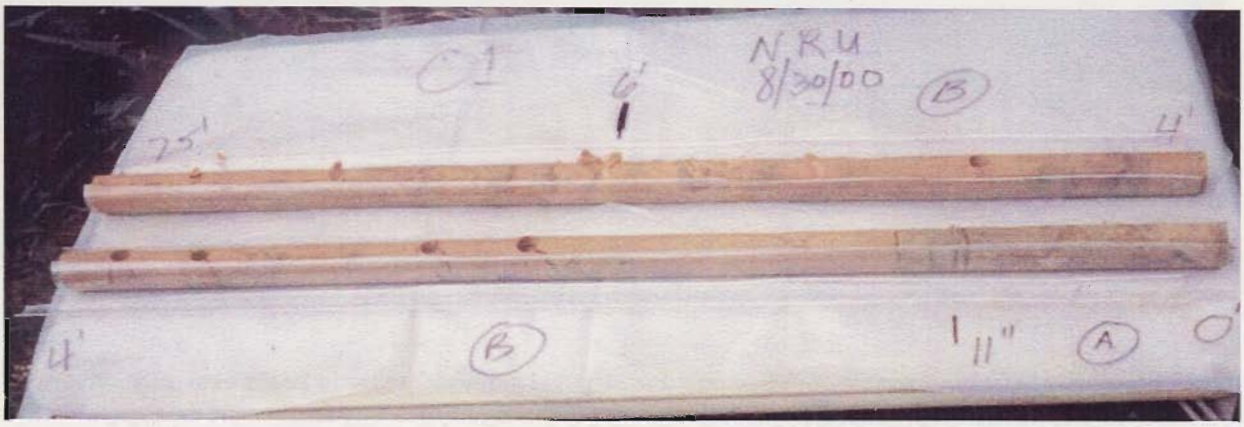



Photo. 8 Carbo Silty Clay Loam (very rocky) soil profile for sample location NRUC1: surface (A horizon) and subsurface (B and C horizons) collected from the NRU

***Carbo Silty Clay Loam (very rocky).*** The Carbo silty clay loam comprises 12% of the NRU and consists of strongly sloping to steep soils (7%–30% slopes) that are 20 to 40 in. deep to bedrock and do not have a seasonal high water table. This soil is located on ridgetops and convex side slopes along drainageways. Rock outcrops cover 1%–10% of the surface area. Photo 7 shows an example of the landscape surrounding a Carbo Silty Clay Loam sample location at the NRU. The surface layer of this soil is a 5-in.-thick layer of dark yellowish strong brown silty clay loam that is underlain by a 26-in.-thick subsoil of strong brown clay. Photo 8 shows a Carbo Silty Clay Loam soil profile collected from the NRU (A horizon: 0-11 in.; B horizon: 11-72 in.). Bedrock is at a depth of 31 in. Permeability of this soil is slow, and runoff is medium to rapid; available water capacity is low. Natural fertility is high, and the organic matter content is moderately low. Reaction is slightly acid to mildly alkaline in these soils.

***Groseclose and Poplimento Silt Loams.*** The Groseclose and Poplimento silt loams comprise 19% of the NRU and are grouped together because they have no major differences in use and management. These soils consist of moderately steep and steep soils (slopes ranging from 2% to 30%) that are at least 48 in. deep to bedrock and do not have a seasonal high water table. These soils exist on side slopes and ridgetops in irregularly shaped areas. Photo 9 shows an example of the landscape surrounding a Groseclose and Poplimento Silt Loam sample location at the NRU.

Photo. 9 Northerly view of co-located sample location NRUG2/G3 within the Groseclose and Poplimento soil type at the NRU

Groseclose soils typically have an 8-in.-thick surface layer of dark yellowish brown silt loam that is underlain by a 54-in.-thick subsoil. The upper portion of the subsoil consists of strong brown silty clay, the middle part is yellowish red and strong brown clay, while the lower portion consists of brownish yellow silty clay loam. At depths greater than 54 in., the substratum is a yellowish brown silty clay loam to a depth of at least 67 in.

Poplimento soils generally consist of a 7-in.-thick surface layer of dark yellowish brown silt loam that is underlain by a 37-in.-thick subsoil. The upper portion is strong brown silt loam, the middle portion is yellowish brown and strong brown clay, while the lower part consists of reddish yellow clay. The substratum extends to a depth of at least 60 in. and consists of reddish yellow and strong brown silty clay loam. Photo 10 shows a Groseclose and Poplimento Silt Loam soil profile collected from the NRU (A horizon: 0-7 in.; B horizon: 7-34 in.; C horizon: 34-57 in.).

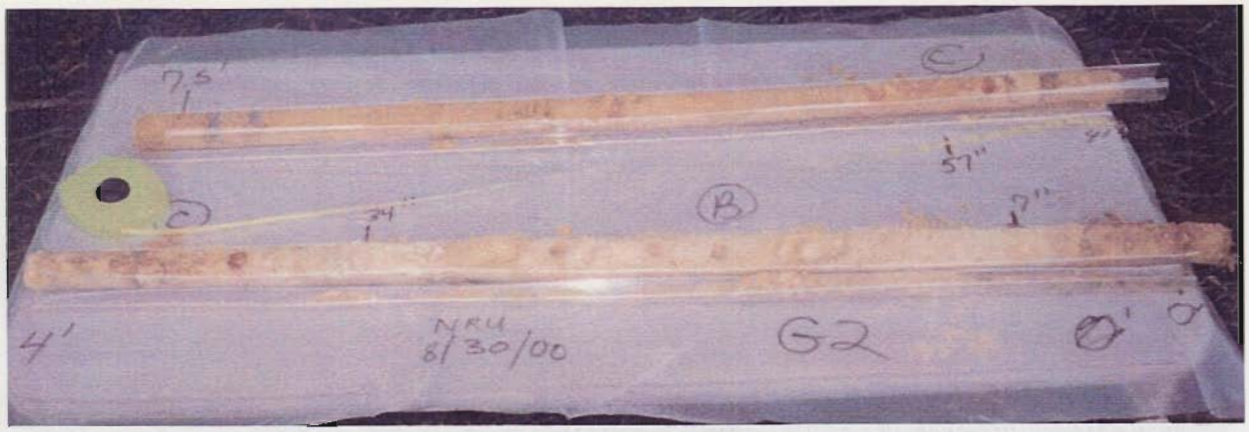



Photo. 10 Groseclose and Poplimento Silt Loam soil profile for sample location NRUG2: surface (A horizon) and subsurface (B and C horizons) collected from the NRU

Permeability in Groseclose soils is characterized as slow and moderately slow in Poplimento soils. Water capacity is moderate and surface runoff is rapid. Groseclose soils are low in natural fertility and medium in Poplimento soils. Both soil types contain a moderately low organic matter content. Groseclose soils are strongly acidic, while Poplimento soils have a medium acid content. Both soil types pose a severe erosion hazard.

***Lowell Silt Loam.*** The Lowell silt loam comprises about 18% of the NRU and consists of gently to steeply sloping (2 to 30%) soils located on ridgetops, side slopes, and on convex side slopes. Photo 11 shows an example of the landscape surrounding a Lowell Silt Loam sample location at the NRU. These soils do not have a seasonal high water table within 6 ft of the surface.

Photo. 11 Northerly view of co-located sample location NRUL1/L2 within the Lowell Silt Loam soil type at the NRU

The surface layer is typically dark yellowish brown silt loam 11 in. thick and is underlain by a 27-in.-thick subsoil consisting of dominantly strong brown and reddish yellow silty clay and clay. The substratum is yellowish brown shaly silt loam to a depth of 60 in. or more. Photo 12 shows a Lowell Silt Loam soil profile collected from the NRU (A horizon: 0-12 in.; B horizon: 12-42 in.; C horizon: 42-55 in.). Bedrock is at a depth of at least 40 in. Permeability of this soil is moderately slow and runoff is rapid; available water capacity is moderate. Reaction in these soils ranges from very strongly acidic to mildly alkaline.

Photo. 12 Lowell Silt Loam soil profile for sample location NRUL1: surface (A horizon) and subsurface (B and C horizons) collected at the NRU

Natural fertility is high and organic matter content is moderately low.

***Wurno-Newbern-Faywood Silt Loams.*** The Wurno-Newbern-Faywood silt loams comprise approximately 12% of the soils at the NRU and consist of moderately steep to steep soils (7%–30%) that do not have a seasonal high water table. Photo 13 shows an example of the landscape surrounding a Wurno-Newbern-Faywood Silt Loam sample location at the NRU. Bedrock is at a depth of 20 to 40 in. in the Wurno and Faywood soils and 10 to 20 in. in the Newbern soils. This unit is very intermingled and consists of approximately 35% Wurno, 30% Newbern, 25% Faywood, and 10% other soils.

Wurno soils typically have a surface layer of yellowish brown silt loam 8-in. thick underlain by a 6-in.-thick subsoil of brownish yellow very shaly silty clay loam. The substratum is partially weathered shale 13 in. thick. Bedrock is at a depth of 27 in. Permeability is moderate, and runoff is rapid; available water capacity is very low. Reaction ranges from slightly acid to mildly alkaline.

Newbern soils generally have a 5-in.-thick surface layer of yellowish brown silt loam underlain by an 8-in.-thick subsoil of brownish yellow shaly silt loam. The substratum is 5-in. thick and consists of brownish yellow shale and silt loam. Bedrock is at a depth of 18 in. Permeability of the Newbern soils is moderate, and runoff is medium to rapid; available water capacity is very low. Reaction ranges from slightly acid to mildly alkaline.

Photo. 13 Easterly view of sample location NRUW3 in the Wurno-Newbern-Faywood Silt Loam soil type at the NRU

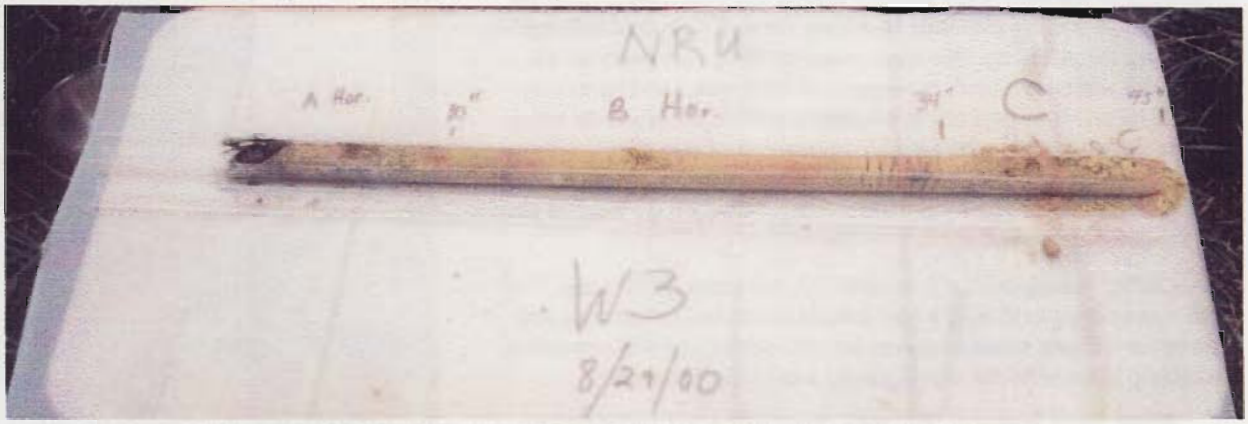



Photo. 14 Wurno-Newbern-Faywood soil profile for sample location NRUW3: surface (A horizon) and subsurface (B and C horizons) collected at the NRU

Typically, the Faywood soils have a 10-in.-thick surface layer of yellowish brown silt loam and an 18-in.-thick subsoil. The upper part of the subsoil consists of yellowish brown silty clay. Photo 14 shows a Wurno-Newbern-Faywood Silt Loam soil profile collected from the NRU (A horizon: 0-10 in.; B horizon: 10-34 in.; C horizon: 34-45 in.). Depth to bedrock is 18 in. Permeability of the Faywood soils is moderately slow, and runoff is medium to rapid; available water capacity is low. Natural fertility is high, and organic matter content is moderate. Reaction of the soil ranges from neutral to strongly acidic throughout.

### 1.5.3 Chemical and Physical Properties

Soil chemical and physical properties are often evaluated to adjust land uses to the limitations and potentials of natural resources and the environment. Soil scientists, conservationists, engineers, and others collect field data to predict soil behavior that can potentially affect various soil uses and management. A brief description of select chemical and physical soil properties follows below. Tables 1-1 (MMA) and 1-2 (NRU) present the SCS physical and chemical characteristics associated with soil types sampled during background sampling activities. Values for properties listed in these tables represent averages for the entire soil column.

**Table 1-1**
**Physical and Chemical Properties of Soil Types**
**Sampled at the Main Manufacturing Area**

| Soil Name | Depth (in.) | Clay (%) | Moist Bulk Density ($g/cm^3$) | Permeability (in./hr) | Soil pH | Organic Matter (%) |
|---|---|---|---|---|---|---|
| Braddock | A: 0–7<br>B: 7–60 | 10–55 | 1.20–1.50 | 0.6–6.0 | 4.5–5.5 | 1–2 |
| Unison | A: 0–10<br>B: 10–52<br>C: 52–60 | 10–70 | 1.30–1.65 | 0.6–2.0 | 4.5–6.0 | 1–3 |
| Wheeling | A: 0–10<br>B: 10–52<br>C: 52–60 | 8–30 | 1.20–1.50 | 0.6–20 | 5.1–6.0 | 1–3 |

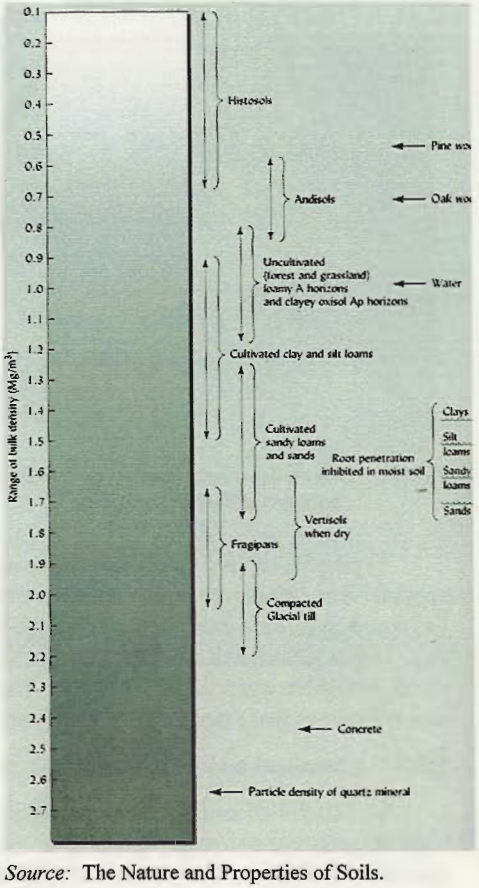
Source: SCS 1985.

**Clay.** Soil particles less than 0.002 mm are classified as clay and have a very large specific surface area, allowing them a significant capacity to adsorb water and other substances. Clay composition percentages greatly influences soil fertility and the physical conditions of the soil. Clay directly affects the permeability and the plasticity of a soil by generally lowering the soil's permeability and increasing the plasticity. Because pores between clay particles are very small and convoluted, movement of both water and air is very slow. Fate and transport of chemical compounds are hindered when passing through a soil with a high composition of clay due to clay's ability to adsorb cations and to retain soil moisture. Soil properties and behavior can be greatly influenced depending on the kind of clay and the amount present.

During hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) and TNT field screening activities, if a soil sample contained a high composition of clay, eluant separation was delayed during the soil extraction procedure because of the clay's strong adsorption properties.

**Moist Bulk Density.** The bulk density of a soil is defined as the wet weight per unit volume of dry soil. The volume includes both the solids and the pore space. It is assessed by obtaining a known volume of soil, drying it to remove the water, and weighing the dry mass. Bulk density is important because it reflects the porosity of a soil. Loose, porous soils have lower bulk densities than tight, compacted soil. The bulk density of a soil increases with compaction. Typical soil bulk densities for fine sands, silt loams, and silty clay loams are 1.5, 1.35, and 1.25 $g/cm^3$, respectively. Figure 1-5 presents a range of typical bulk densities for a variety of soils and soil materials.

**Figure 1–5**
**Typical Bulk Densities for a Variety of Soils and Soil Materials**




*Source:* The Nature and Properties of Soils.

**Permeability.** Permeability is a physical and chemical property that estimates the ability of a soil to transmit water or air. In saturated soil conditions permeability is taken into account because it estimates the rate of the downward movement of water. Soil conditions in the field that may affect permeability include particular structure, porosity, and texture. Sandy soil permits fast movement of percolating water, and lowers the opportunity for dissolved chemicals to be adsorbed.

Clay and organic soils tend to hold water and dissolved chemicals longer. Also, these soils have more surface area on which chemical compounds can be adsorbed, in comparison with sandy soils. The sandier the soil, the greater the chance of a compound of concern reaching groundwater.

**Table 1-2**
**Physical and Chemical Properties of Soil Groupings Sampled at the New River Unit**

| Soil Group | Soil Type | Depth (in.) | Clay (%) | Moist Bulk Density ($g/cm^3$) | Permeability (in./hr) | Soil pH | Organic Matter (%) |
|---|---|---|---|---|---|---|---|
| Carbo Silty Clay Loam, Very Rocky | Carbo Silty Clay Loam, Very Rocky | A: 0–5<br>B: 5–31 | 20–80 | 1.20–1.50 | 0.06–2.0 | 4.5–7.8 | 0.5–3 |
| | Carbo-Rock Outcrop Complex | | | | | | |
| Groseclose and Poplimento Silt Loam | Groseclose Silt Loam | A: 0–8<br>B: 8–62<br>C: 62–67 | 7–60 | 1.25–1.60 | 0.06–6.0 | 4.5–5.5 | 1–2 |
| | Groseclose Urban Land Complex | | | | | | |
| | Poplimento Silt Loam | A: 0–7<br>B: 7–44<br>C: 44–70 | 17–60 | 1.20–1.60 | 0.2–2.0 | 4.5–6.0 | 0.5–2 |
| Lowell Silt Loam | Lowell Silt Loam | A: 0–11<br>B: 11–38<br>C: 38–60 | 12–60 | 1.20–1.70 | 0.2–2.0 | 4.5–7.8 | 1–4 |
| | Slabtown Silt Loam | A: 0–18<br>B: 18–76 | 10–60 | 1.25–1.55 | 0.6–2.0 | 5.1–7.8 | 1–3 |
| Wurno-Newbern-Faywood Silt Loam | Frederick Loam | A: 0–7<br>B: 7–50 | 13–80 | 1.25–1.65 | 0.6–6.0 | 4.5–6.0 | 1–3 |
| | Lodi Loam | A: 0–8<br>B: 8–65 | 10–60 | 1.20–1.65 | 0.6–6.0 | 4.5–5.5 | 0.5–2 |
| | Wurno Silt Loam | A: 0–8<br>B: 8–14<br>C: 14–27 | 10–55 | 1.20–1.60 | 0.6–2.0 | 6.1–7.8 | 1–2 |
| | Newbern Silt Loam | A: 0–5<br>B: 5–13<br>C: 13–18 | 10–27 | 1.20–1.60 | 0.6–2.0 | 5.6–7.8 | 1–2 |
| | Faywood Silt Loam | A: 0–10<br>B: 10–28 | 15–60 | 1.30–1.45 | 0.06–6.0 | 5.1–7.3 | 1–4 |

Source: SCS 1985.

**Soil pH.** Soil pH is a measure of acidity or alkalinity and is an important physical and chemical property because it is an indication of soil reaction potential. Soil reaction influences the fate of many pollutants, affecting their breakdown and potential movement from the soil into groundwater and streams.

Most soils range in pH from slightly less than 2.0 to slightly more than 11.0, although sulfuric acid forms and pH may decrease to below 2.0 when some naturally wet soils that contain sulfides are drained. The descriptive terms to use for ranges in pH are as follows:

| | |
|---|---|
| Ultra acid | <3.5 |
| Extremely acid | 3.5-4.4 |
| Very strongly acid | 4.5-5.0 |
| Strongly acid | 5.1-5.5 |
| Moderately acid | 5.6-6.0 |
| Slightly acid | 6.1-6.5 |
| Neutral | 6.6-7.3 |
| Slightly alkaline | 7.4-7.8 |
| Moderately alkaline | 7.9-8.4 |
| Strongly alkaline | 8.5-9.0 |
| Very strongly alkaline | >9.0 |

The pH of forest soils is important, because it influences the microbial population of the soil, the availability of phosphorus, calcium, magnesium, and trace elements, and the rate of nitrification. Because tree litter is commonly acidic and releases hydrogen ions upon decomposition, forest soils are often more acidic than grassland or agricultural soils. In addition, trees may naturally acidify the soil by taking up calcium, magnesium, and other elements that form bases in the soil (Bockheim 1990). A review of pH results across soil types did not yield outstanding trends. High soil pH results were generally associated with limestone and shale parent material.

**Organic Matter Content.** Organic matter content is expressed as a percentage, by weight, of the soil material that is a composition of plant and animal residues in the soil at various stages of decomposition. Available water capacity and infiltration rate are affected by organic matter content.

Raw plant residues, on the surface, help reduce surface wind speed and water runoff. Removal, incorporation, or burning of residues predisposes the soil to serious erosion. The resistant or stable fraction of soil organic matter contributes mainly to nutrient holding capacity (cation exchange capacity) and soil color. This fraction of organic matter decomposes very slowly and therefore, has less influence on soil fertility than the "active" organic fraction (Alberta 1985).

# 2.0 Background Sampling

## 2.1 PREVIOUS INVESTIGATION REVIEW

A previous attempt was made to identify site-specific background concentrations within the MMA (Parsons 1996). Accuracy issues associated with sampling location and data variability precluded the quantitative use of this information. Shortcomings identified from the previous attempt were incorporated into the design of this background study to ensure the production of defensible and statistically significant data.

## 2.2 SAMPLE LOCATION SELECTION

Aerial photographs, facility base maps, and topographic maps were evaluated to ensure background sampling locations were representative of areas that were impacted minimally by facility operations. Aerial photographs dating from 1949 to 1986 were reviewed to evaluate facility activities. Topographic and facility base maps were evaluated to provide additional information, including ground elevation, land features, water bodies, and associated physical features of the study area.

### 2.2.1 Aerial Photographs

Aerial photographs (EPIC 1992) were used to evaluate construction and SWMU activities occurring between 1949 and 1986 and to identify physical features potentially affecting environmental conditions at the MMA and NRU.

Environmental Photographic Interpretation Center (EPIC) interpretive results indicated specific signature features and environmental conditions. The certainty associated with these signatures were further qualified by the terms "possible" and "probable" when definite feature identification was not discernible. Because these interpretations were performed on the full-size original aerial photographs, the level of resolution associated with the photographic prints presented in the report, in some instances, does not provide the same level of detail necessary to verify the annotation. Aerial photograph interpretations were used to locate tree stands that predated construction activities to ensure background sampling locations were positioned in areas that had not been impacted by previous installation activities.

### 2.2.2 Facility Base and Topographic Maps

Facility base and topographic maps were evaluated to further refine the understanding of construction activity, land use, and associated physical features of the study area. The topographic maps used to provide information on ground elevation, land features, water bodies, and minimally impacted areas included the Radford North (MMA) and Dublin (NRU) quadrangles. This information was used to position sample locations upgradient and upslope of SWMUs, hazardous waste management units (HWMUs), and areas of concern.

### 2.2.3 Accessibility

Sampling locations were positioned in tree stands to ensure associated soil samples were representative of areas that had not been affected by previous site activities or SWMU releases. Wherever possible, background sample locations were placed in tree stands estimated to predate potential construction activity at each location. Potential issues affecting or limiting accessibility to sampling locations included, the density or thickness of tree stands, drainage ditches, and slope grade. Grubbing and clearing activities were required at both the MMA and NRU to provide access of direct push sampling equipment to sample locations positioned within dense growth tree stands. Activities consisted of tree, ground cover, and debris removal to clear paths for direct push equipment access and maneuverability (Photo. 15).

Photo. 15 Grubbing and clearing activities within the MMA

Soil borings were advanced using a truck-mounted or Bobcat-mounted direct push (Geoprobe) rig, depending on accessibility of the equipment at a particular sample location. The truck-mounted rig was employed in more open and spacious areas where the terrain was relatively flat. The Bobcat-mounted rig was utilized in areas of dense woods, rugged terrain, and where maneuverability restricted the use of the truck-mounted equipment. Hand auger sampling methods were employed at two background sample locations at the MMA. This soil sampling method was used at these two locations because steep slope conditions prevented safe access of direct push sampling equipment.

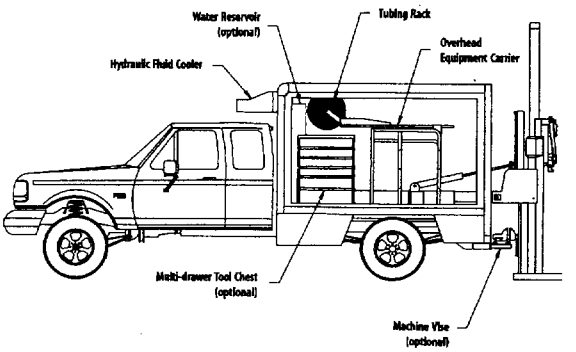
## 2.3 SAMPLE LOCATIONS

Background Study field investigation activities were conducted during the months of August and September of 2000 in accordance with the Addendum No. 10, as approved by USEPA Region III. Field activities were performed at both the MMA and the NRU and consisted of soil sampling, IDM management, and Global Positioning System (GPS) activities. The primary objective of the study was to collect samples representative of background conditions to establish a baseline for inorganic compounds of concern at RFAAP.

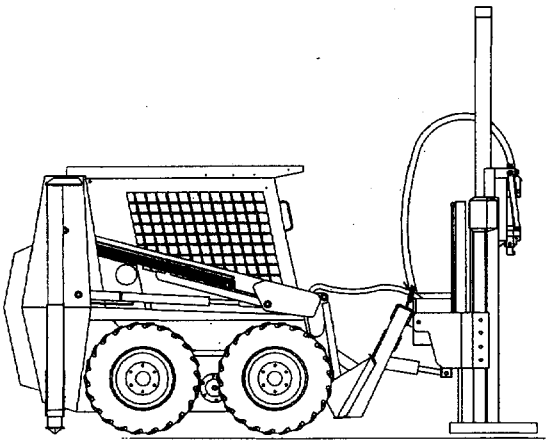
Thirty-four environmental samples were collected from three of the proposed soil types (Braddock Loam, Wheeling Sandy Loam, and the Unison-Urban Land Complex) at the MMA. Twelve of the 34 samples were collected from the surface (A horizon) and 22 of the 34 samples were collected from the subsurface soil (B and, when available, C horizon).

Forty-five environmental samples were collected from four soil groupings, including Carbo Silty Clay Loam (very rocky), Groseclose and Poplimento Silt Loam, Lowell Silt Loam, and the Wurno-Newbern-Faywood Silt Loam. Sixteen soil samples were collected from the surface (A horizon), and 29 soil samples were collected from the subsurface (B and, when available, C horizon).

Sampling locations at the MMA and NRU are presented on Figures 2-1 and 2-2, respectively. A complete list of samples collected, including sample matrices, depths dates, and analyses is presented in Table 2-1. Specific sample location descriptions and associated photographs are included in Appendix C.




Sketch of truck-mounted Geoprobe



Sketch of Bobcat-mounted Geoprobe

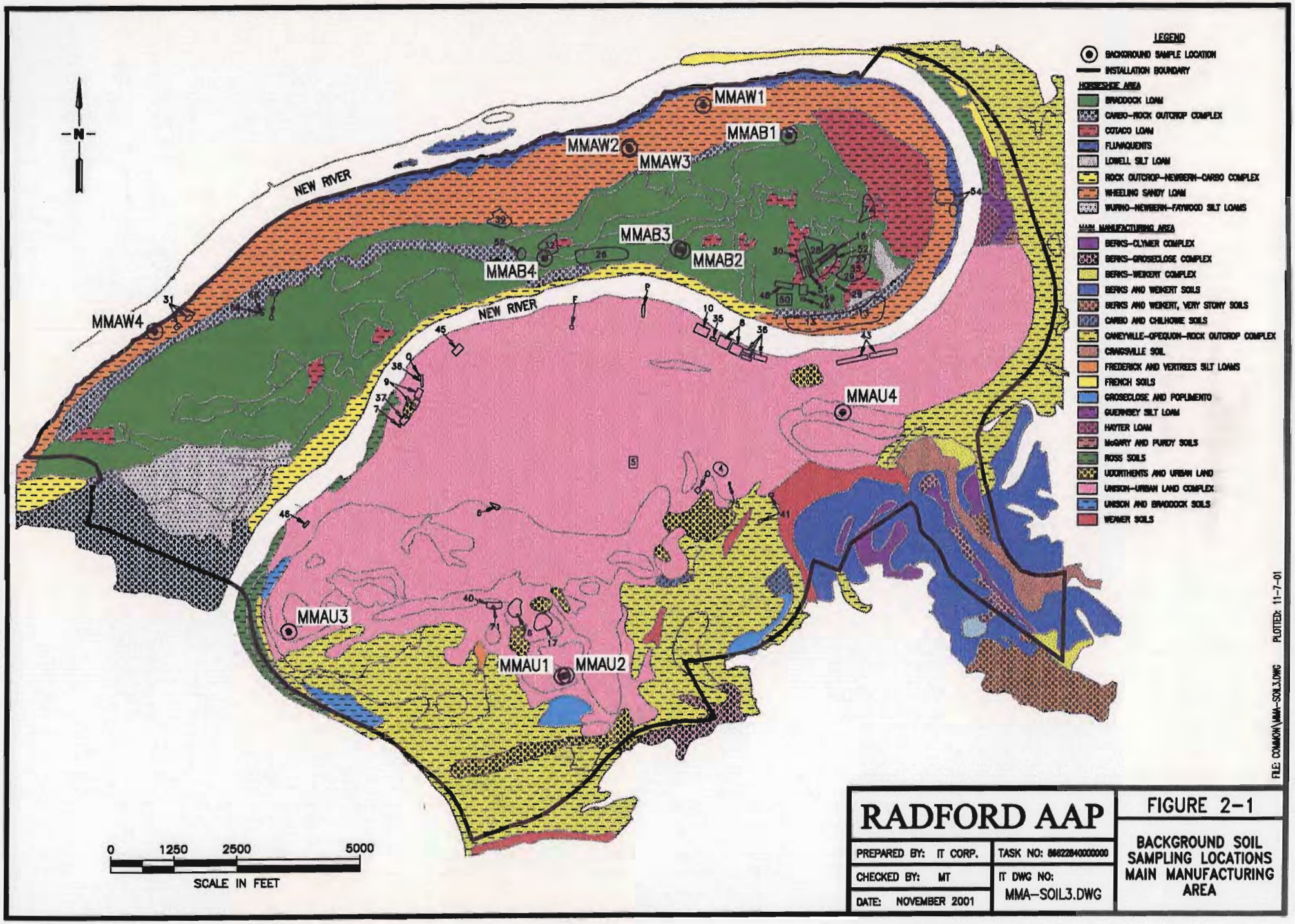
## 2.4 FIELD SAMPLING

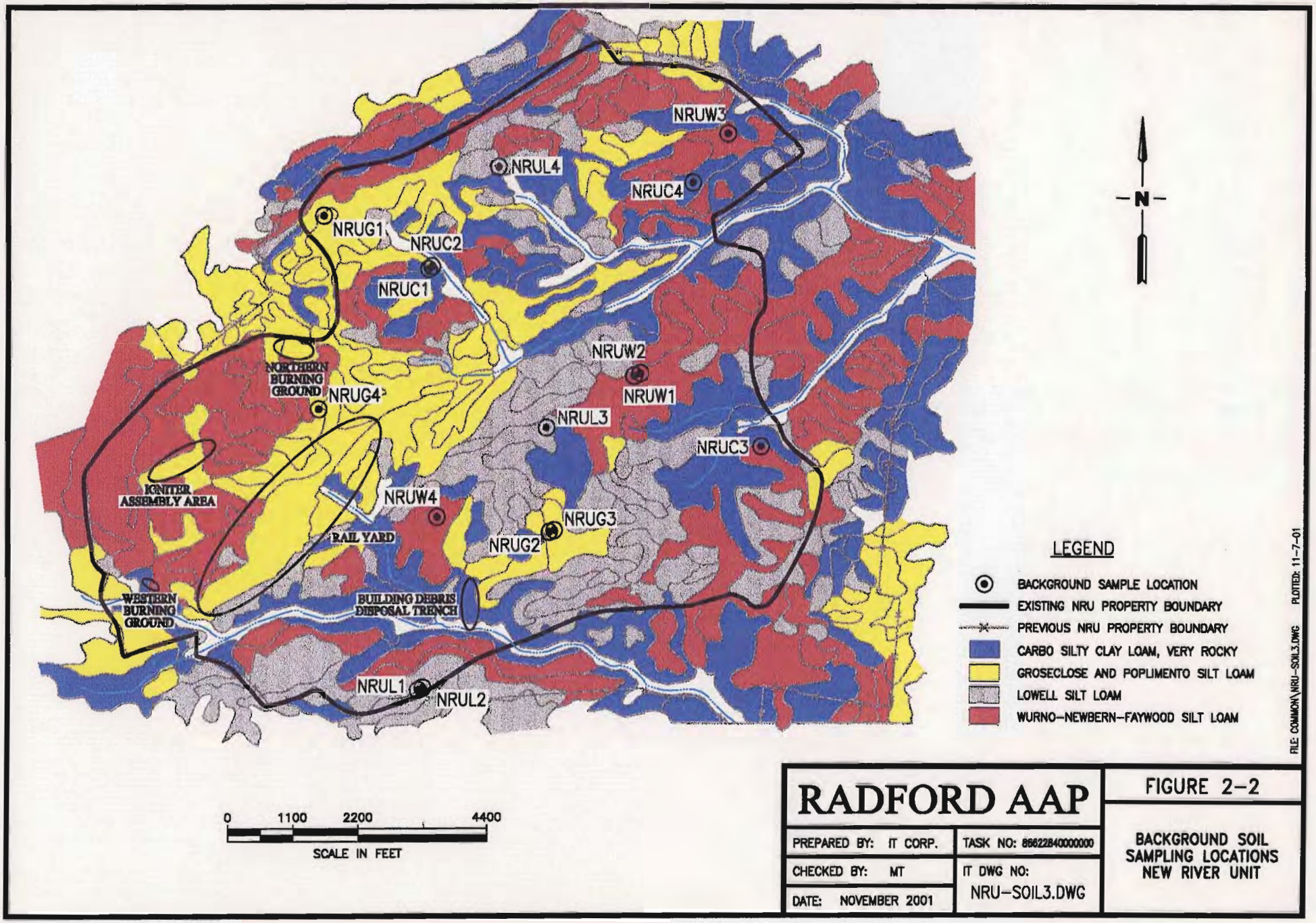
Twenty-eight soil borings were advanced and sampled during background study field investigation activities. Twelve of the borings were completed at the MMA, and 16 of the locations were advanced at the NRU. Soil borings were advanced using a truck-mounted direct push Geoprobe, Bobcat-mounted direct push Geoprobe, or hand auger, depending upon accessibility of the soil sampling location.

Seventy-nine environmental samples were collected during the study: 34 were collected at the MMA, and 45 samples were collected from the NRU. A complete listing of samples collected in support of the field investigation effort is presented in Table 2-1.

### 2.4.1 Soil Sampling

Three soil types at the MMA (Braddock Loam, Wheeling Sandy Loam, Unison-Urban Land Complex) and four soil groupings at the NRU (Carbo Silty Clay Loam [very rocky], Groseclose and Poplimento Silt Loam, Lowell Silt Loam, Wurno-Newbern-Faywood Silt Loam) were sampled and analyzed as part of the background study. One surface (A horizon) and up to two subsurface soil samples (one each from the B horizon and, when available, C horizon) were collected at each boring location and analyzed for metals and pH.


LEGEND
BACKGROUND SAMPLE LOCATION
INSTALLATION BOUNDARY
HORSESHOE AREA
BRADDOCK LOAM
CAREO–ROCK OUTCROP COMPLEX
COTACO LOAM
FLUVAQUENTS
LOWELL SILT LOAM
ROCK OUTCROP–NEWBERN–CARBO COMPLEX
WHEELING SANDY LOAM
WURNO–NEWBERN–FAYWOOD SILT LOAMS
MAIN MANUFACTURING AREA
BERKS–CLYMER COMPLEX
BERKS–GROSECLOSE COMPLEX
BERKS–WEIKERT COMPLEX
BERKS AND WEIKERT SOILS
BERKS AND WEIKERT, VERY STONY SOILS
CARBO AND CHILHOWIE SOILS
CANEYVILLE–OPEQUON–ROCK OUTCROP COMPLEX
CRAIGSVILLE SOIL
FREDERICK AND VERTREES SILT LOAMS
FRENCH SOILS
GROSECLOSE AND POPLIMENTO
GUERNSEY SILT LOAM
HAYTER LOAM
McGARY AND PURDY SOILS
ROSS SOILS
UDORTHENTS AND URBAN LAND
UNISON–URBAN LAND COMPLEX
UNISON AND BRADDOCK SOILS
WEIKER SOILS
MMAW1
MMAW2
MMAW3
MMAW4
MMAB1
MMAB2
MMAB3
MMAB4
MMAU1
MMAU2
MMAU3
MMAU4
NEW RIVER
NEW RIVER
N
0 1250 2500 5000
SCALE IN FEET
FILE: COMMON\MMA–SOIL3.DWG PLOTTED: 11–7–01
RADFORD AAP
FIGURE 2–1
BACKGROUND SOIL SAMPLING LOCATIONS MAIN MANUFACTURING AREA
PREPARED BY: IT CORP.
TASK NO: 8622840000000
CHECKED BY: MT
IT DWG NO: MMA–SOIL3.DWG
DATE: NOVEMBER 2001




# RADFORD AAP

| | |
|---|---|
| PREPARED BY: IT CORP. | TASK NO: 86622840000000 |
| CHECKED BY: MT | IT DWG NO: NRU–SOIL3.DWG |
| DATE: NOVEMBER 2001 | |

FIGURE 2–2

BACKGROUND SOIL SAMPLING LOCATIONS NEW RIVER UNIT

## Table 2-1
## Facility-Wide Background Study Sampling Program (Continued)

| Soil Type/ Grouping | Sample ID | Matrix | Depth Top (in. bgs) | Depth Bottom (in. bgs) | Date Collected | TAL Metals 3050B/6010B (solid) 7471A (Hg solid) 3010A/6010B (aqueous) 7470A (Hg aqueous) | pH 9045C (solid) | VOCs 5035/8260B (solid) 5030B/8260B (aqueous) | SVOCs 3540C/8270C (solid) 3520C/8270C (aqueous) | TCLP Metals 1311/3010A/ 6010B 1311/7470A (Hg) | RDX Immunoassay Field Test Kit 4051 | TNT Immunoassay Field Test Kit 4050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wheeling Sandy Loam | MMAW1A | Soil | 0 | 12 | 9/5/00 | ● | ● | | | | | |
| | MMAW1B | Soil | 12 | 48 | 9/5/00 | ● | ● | | | | | |
| | MMAW1C | Soil | 48 | 72 | 9/5/00 | ● | ● | | | | | |
| | MMAW2A | Soil | 0 | 7 | 9/6/00 | ● | ● | | ● | | ● | ● |
| | MMAW2B | Soil | 7 | 48 | 9/6/00 | ● | ● | ● | ● | | ● | ● |
| | MMAW2C | Soil | 48 | 60 | 9/6/00 | ● | ● | ● | ● | | ● | ● |
| | MMAW3A | Soil | 0 | 12 | 9/6/00 | ● | ● | | | | | |
| | MMAW3B | Soil | 12 | 48 | 9/6/00 | ● | ● | | | | | |
| | MMAW3C | Soil | 48 | 60 | 9/6/00 | ● | ● | | | | | |
| | MMAW4A | Soil | 0 | 9 | 9/5/00 | ● | ● | | | | | |
| | MMAW4B | Soil | 9 | 42 | 9/5/00 | ● | ● | | | | | |
| | MMAW4C | Soil | 42 | 72 | 9/5/00 | ● | ● | | | | | |
| **Main Manufacturing Area QA/QC Samples** | | | | | | | | | | | | |
| | MMAW3CD | Soil | 48 | 60 | 9/6/00 | ● | ● | | | | | |
| | MMAU3BD | Soil | 9 | 42 | 8/31/00 | ● | ● | | | | | |
| | MMAB2BD | Soil | 12 | 60 | 9/6/00 | ● | ● | | | | | |
| | MMAW2CD | Soil | 48 | 60 | 9/6/00 | ● | ● | ● | ● | | ● | ● |
| | 083100R4 | Water | N/A | N/A | 8/31/00 | ● | | ● | ● | | ● | ● |
| | 090700RB | Water | N/A | N/A | 9/7/00 | ● | | | | | | |
| | 083100T2 | Water | N/A | N/A | 8/31/00 | | | ● | | | | |

**Table 2-1**
**Facility-Wide Background Study Sampling Program (Continued)**

| Soil Type/ Grouping | Sample ID | Matrix | Depth Top (in. bgs) | Depth Bottom (in. bgs) | Date Collected | TAL Metals 3050B/6010B (solid) 7471A (Hg solid) 3010A/6010B (aqueous) 7470A (Hg aqueous) | pH 9045C (solid) | VOCs 5035/8260B (solid) 5030B/8260B (aqueous) | SVOCs 3540C/8270C (solid) 3520C/8270C (aqueous) | TCLP Metals 1311/3010A/ 6010B 1311/7470A (Hg) | RDX Immunoassay Field Test Kit 4051 | TNT Immunoassay Field Test Kit 4050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New River Unit Environmental/Field Screening Samples** | | | | | | | | | | | | |
| Lowell Silt Loam | NRUL1A | Soil | 0 | 12 | 8/29/00 | ● | ● | | ● | | ● | ● |
| | NRUL1B | Soil | 12 | 42 | 8/29/00 | ● | ● | ● | ● | | ● | ● |
| | NRUL1C | Soil | 42 | 55 | 8/29/00 | ● | ● | ● | ● | | ● | ● |
| | NRUL2A | Soil | 0 | 12 | 8/30/00 | ● | ● | | | | | |
| | NRUL2B | Soil | 12 | 33 | 8/30/00 | ● | ● | | | | | |
| | NRUL2C | Soil | 33 | 60 | 8/30/00 | ● | ● | | | | | |
| | NRUL3A | Soil | 0 | 9 | 8/29/00 | ● | ● | | | | | |
| | NRUL3B | Soil | 9 | 75 | 8/29/00 | ● | ● | | | | | |
| | NRUL3C | Soil | 75 | 90 | 8/29/00 | ● | ● | | | | | |
| | NRUL4A | Soil | 0 | 10 | 8/29/00 | ● | ● | | | | | |
| | NRUL4B | Soil | 10 | 38 | 8/29/00 | ● | ● | | | | | |
| | NRUL4C | Soil | 38 | 60 | 8/29/00 | ● | ● | | | | | |
| Wurno-Newbern-Faywood Silt Loam | NRUW1A | Soil | 0 | 7 | 8/30/00 | ● | ● | | ● | | ● | ● |
| | NRUW1B | Soil | 7 | 38 | 8/30/00 | ● | ● | ● | ● | | ● | ● |
| | NRUW1C | Soil | 38 | 48 | 8/30/00 | ● | ● | ● | ● | | ● | ● |
| | NRUW2A | Soil | 0 | 9 | 8/30/00 | ● | ● | | | | | |
| | NRUW2B | Soil | 9 | 28 | 8/30/00 | ● | ● | | | | | |
| | NRUW2C | Soil | 28 | 48 | 8/30/00 | ● | ● | | | | | |
| | NRUW3A | Soil | 0 | 10 | 8/29/00 | ● | ● | | | | | |
| | NRUW3B | Soil | 10 | 34 | 8/29/00 | ● | ● | | | | | |
| | NRUW3C | Soil | 34 | 45 | 8/29/00 | ● | ● | | | | | |
| | NRUW4A | Soil | 0 | 10 | 8/29/00 | ● | ● | | | | | |
| | NRUW4B | Soil | 10 | 31 | 8/29/00 | ● | ● | | | | | |
| | NRUW4C | Soil | 31 | 46 | 8/29/00 | ● | ● | | | | | |

**Table 2-1**
**Facility-Wide Background Study Sampling Program (Continued)**

| Soil Type/ Grouping | Sample ID | Matrix | Depth Top (in. bgs) | Depth Bottom (in. bgs) | Date Collected | TAL Metals 3050B/6010B (solid) 7471A (Hg solid) 3010A/6010B (aqueous) 7470A (Hg aqueous) | pH 9045C (solid) | VOCs 5035/8260B (solid) 5030B/8260B (aqueous) | SVOCs 3540C/8270C (solid) 3520C/8270C (aqueous) | TCLP Metals 1311/3010A/ 6010B 1311/7470A (Hg) | RDX Immunoassay Field Test Kit 4051 | TNT Immunoassay Field Test Kit 4050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbo Silty Clay Loam | NRUC1A | Soil | 0 | 11 | 8/30/00 | ● | ● | | ● | | ● | ● |
| | NRUC1B | Soil | 11 | 72 | 8/30/00 | ● | ● | ● | ● | | ● | ● |
| | NRUC2A | Soil | 0 | 11 | 8/30/00 | ● | ● | | | | | |
| | NRUC2B | Soil | 11 | 72 | 8/30/00 | ● | ● | | | | | |
| | NRUC3A | Soil | 0 | 10 | 8/29/00 | ● | ● | | | | | |
| | NRUC3B | Soil | 10 | 18 | 8/29/00 | ● | ● | | | | | |
| | NRUC4A | Soil | 0 | 7 | 8/29/00 | ● | ● | | | | | |
| | NRUC4B | Soil | 7 | 30 | 8/29/00 | ● | ● | | | | | |
| | NRUC4C | Soil | 30 | 48 | 8/29/00 | ● | ● | | | | | |
| Groseclose and Poplimento Silt Loam | NRUG1A | Soil | 0 | 12 | 8/29/00 | ● | ● | | | | | |
| | NRUG1B | Soil | 12 | 53 | 8/29/00 | ● | ● | | | | | |
| | NRUG1C | Soil | 53 | 70 | 8/29/00 | ● | ● | | | | | |
| | NRUG2A | Soil | 0 | 7 | 8/30/00 | ● | ● | | ● | | ● | ● |
| | NRUG2B | Soil | 7 | 34 | 8/30/00 | ● | ● | ● | ● | | ● | ● |
| | NRUG2C | Soil | 34 | 57 | 8/30/00 | ● | ● | ● | ● | | ● | ● |
| | NRUG3A | Soil | 0 | 12 | 8/30/00 | ● | ● | | | | | |
| | NRUG3B | Soil | 12 | 35 | 8/30/00 | ● | ● | | | | | |
| | NRUG3C | Soil | 35 | 67 | 8/30/00 | ● | ● | | | | | |
| | NRUG4A | Soil | 0 | 6 | 8/30/00 | ● | ● | | | | | |
| | NRUG4B | Soil | 6 | 39 | 8/30/00 | ● | ● | | | | | |
| | NRUG4C | Soil | 39 | 72 | 8/30/00 | ● | ● | | | | | |

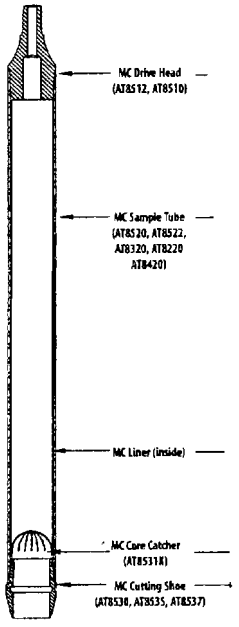
## Table 2-1
## Facility-Wide Background Study Sampling Program (Continued)

| Soil Type/ Grouping | Sample ID | Matrix | Depth Top (in. bgs) | Depth Bottom (in. bgs) | Date Collected | TAL Metals 3050B/6010B (solid) 7471A (Hg solid) 3010A/6010B (aqueous) 7470A (Hg aqueous) | pH 9045C (solid) | VOCs 5035/8260B (solid) 5030B/8260B (aqueous) | SVOCs 3540C/8270C (solid) 3520C/8270C (aqueous) | TCLP Metals 1311/3010A/ 6010B 1311/7470A (Hg) | RDX Immunoassay Field Test Kit 4051 | TNT Immunoassay Field Test Kit 4050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New River Unit QA/QC Samples** | | | | | | | | | | | | |
| | NRUL4BD | Soil | 10 | 38 | 8/29/00 | ● | ● | | | | | |
| | NRUG2BD | Soil | 7 | 34 | 8/30/00 | ● | ● | ● | ● | | | |
| | NRUG2CD | Soil | 34 | 57 | 8/30/00 | ● | ● | | ● | | | |
| | NRUW4CD | Soil | 31 | 46 | 8/29/00 | ● | ● | | | | | |
| | NRUL2BD | Soil | 12 | 33 | 8/30/00 | ● | ● | | | | | |
| | 082800R1 | Water | N/A | N/A | 8/28/00 | ● | ● | ● | ● | | | |
| | 083000R2 | Water | N/A | N/A | 8/30/00 | ● | | | | | | |
| | 083000R3 | Water | N/A | N/A | 8/30/00 | ● | ● | | | | | |
| | 082800T1 | Water | N/A | N/A | 8/28/00 | | | ● | ● | | | |
| **Investigative-Derived Material Samples** | | | | | | | | | | | | |
| | MMADW1 | Soil | N/A | N/A | 9/7/00 | | | | | ● | | |
| | MMADW2 | Water | N/A | N/A | 9/7/00 | | | | | ● | | |
| | NRUDW1 | Soil | N/A | N/A | 9/5/00 | | | | | ● | | |
| | NRUDW2 | Water | N/A | N/A | 9/5/00 | | | | | ● | | |

bgs = below ground surface.

Two sample locations from each soil type were clustered within a ½-acre radius of each other to evaluate organic concentrations and demonstrate that sample locations were representative of background conditions. One sample was collected from each soil horizon of the cluster and screened for the presence/absence of explosive constituents (RDX and TNT). Once field screening results indicated the absence of explosive constituents, a surface soil sample was collected from the A soil horizon and analyzed for semivolatile organic compounds (SVOCs), TAL metals, and pH. Subsurface soil samples from the B and C horizons (as applicable) were then collected and analyzed for volatile organic compounds (VOCs), SVOCs, TAL metals, and pH.

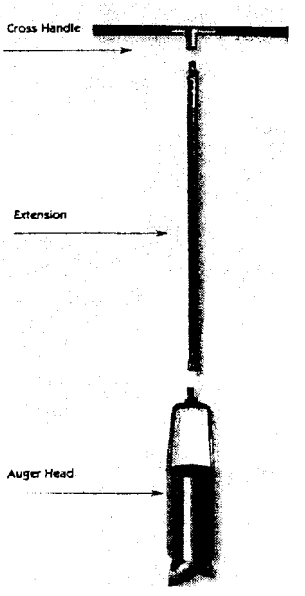
Borings were field screened using a MiniRae 2000 photoionization detector (PID) for the presence of organic vapors. PID field screening levels were not observed above background levels in the borings. No other significant field observations were noted during sampling activities.



Sketch of open-tube Macro-Corer

Stratigraphic characterization of the soils was completed by the project geologist using the Unified Soil Classification System following the procedures outlined in SOP 20.6 of the MWP. Soil characterization information was then transferred to electronic lithologic boring logs and are presented in Appendix A.

**2.4.1.1 Direct Push Sampling Equipment.** Twenty-six of the 28 soil borings were advanced with a truck- or Bobcat-mounted Geoprobe equipped with 1.25-in.-diam. push rods; 4-ft-long, 2-in.-diam. stainless steel open-tube Macro-Core samplers; and stainless steel cutting shoes. The Macro-Core samplers were lined with a dedicated 4-ft-long, 1.5-in.-diam. Teflon sample tube. Using a hydraulic percussion hammer, the Geoprobe drove the open-tube Macro-Core sampler to the proposed sampling depth. Following the withdrawal of the Macro-Core and the removal of the Teflon tube, a cutting device was used to remove a 1-3/8-in. section along the length of the tube for soil stratigraphic characterization and sample processing. Once adequate sample volume was achieved, the boring hole was backfilled with bentonite chips. Excess soil cuttings remaining after sample processing were temporarily stored in a 55-gal drum.



Sketch of hand auger sampling equipment

**2.4.1.2 Hand Auger Sampling Equipment.** Soil samples were collected from two locations using a stainless steel hand auger. Hand auger equipment consisted of either a 2- or 4-in. stainless steel auger head, 4-ft stainless steel extension rods, and a plastic-coated cross handle. The auger head was slowly advanced to the desired sampling depth by manually applying pressure and turning the cross handle in a clockwise direction. This process was used to stratigraphically characterize the soil cuttings for an accurate assessment of the soil horizons. Once the desired depth was achieved, the auger head was extracted from the borehole. The soil sample was then recovered from the auger head using a decontaminated stainless steel trowel. Soil cuttings were staged on plastic in 6-inch depth intervals to assist in the assessment and positive identification of each soil horizon (Photo. 16). Once adequate sample volume was achieved, the boring hole was backfilled with bentonite chips. Excess soil cuttings remaining after sample processing were transferred and temporarily stored in a 55-gal drum.

### 2.4.2 RDX/TNT Field Screening

One sample was collected from each soil horizon of a clustered boring from each soil type and screened for the presence/absence of explosive constituents (RDX and TNT). Samples were field screened using RDX and TNT immunoassay test kits following the procedures outlined in SOP 30.13 of Work Plan Addendum 10 (IT Corp 2000). Sample results were below 0.5 mg/kg, indicating neither RDX or TNT were present. Table 2-1 presents a complete list of samples screened for explosive constituents.

Photo. 16 View of MMAB4 hand auger soil cuttings

Samples were analyzed for RDX for field screening using immunoassay method U.S. Environmental Protection Agency (USEPA) SW-846 4051. This method is a test kit procedure for screening soils to assess when RDX is present at concentrations above 0.5 mg/kg and provides an estimate of the concentration of RDX by comparison with a reference. The method is performed using an extract of a soil sample. Samples and an enzyme conjugate reagent are added to immobilized RDX antibody. The enzyme-RDX conjugate "competes" with RDX present in the sample for binding to an immobilized RDX antibody. The enzyme-RDX conjugate bound to the antibody then catalyzes a colorless substrate to a colored product. The test was interpreted by comparing the color produced by a sample to the response produced by a reference reaction.

Samples were analyzed for TNT for field screening using immunoassay method USEPA SW-846 4050. This method involved a test kit procedure for screening soils to assess when TNT was present at concentrations above 0.5 mg/kg and provide an estimate for the concentration of TNT by comparison with a reference. The method was performed using an extract of a soil sample. Samples and an enzyme-TNT conjugate reagent were added to an immobilized TNT antibody. The enzyme-TNT conjugate "competed" with TNT present in the sample for binding to the immobilized TNT antibody. The enzyme-TNT conjugate bound to the TNT antibody then catalyzed a colorless substrate to a colored product. The test was interpreted by comparing the color produced by a sample to the response produced by a reference reaction.

### 2.4.3 Investigative Derived Material

Activities were performed in accordance with Work Plan Addendum No. 10, as approved by USEPA Region III, regarding the identification, handling, and disposal of nonhazardous investigative-derived materials (IDM). Material disposal was documented in the field logbook. Specific compliance issues that were confronted during investigative activities included the following:

- **Accumulation and storage.** IDM accumulated during field sampling activities included soil cuttings, decontamination water, direct push acetate liners, and PPE. Soil cuttings and decontamination water were stored in separate appropriately labeled 55-gallon steel drums. Direct push acetate liners and used PPE were stored together in 55-gallon drums. Containerized materials were stored at ATK-approved areas.
- **Material characterization.** Soil cuttings and decontamination water were sampled before disposal to assess waste characteristics, in accordance with 40 Code of Federal Regulations (CFR) 264 and Virginia Hazardous Waste Management Regulations. Based on analytical results, soil and decontamination water sampled were classified as nonhazardous materials.
- **Transporter, storage, and disposal facility.** Soil cuttings, acetate liners, and PPE were disposed of at Tazewell County Landfill in Tazewell, VA. Before disposal, waste profile results were provided to the installation, IDM management subcontractor, and the disposal facility for review and approval. An alternate straight bill of lading was obtained before transport of IDM from the accumulation and storage areas to the disposal facility. Disposal records were provided to the Installation and are also kept on file by the IT Corporation.
- **Decontamination water.** Following analysis, the Installation and RFAAP Wastewater Treatment Plant engineer were provided with a copy of the decontamination water sample results for review.

After receiving approval, decontamination water from both the MMA and the NRU was disposed into the collection system of the Wastewater Treatment Plant.

### 2.4.4 Global Positioning System Activities

Sample location coordinates and elevations were obtained using a Trimble Pathfinder Pro XRS GPS. The Pathfinder Pro XRS system was used to obtain real-time position information with submeter accuracy and elevations at 1.5 to 2 times the horizontal accuracy. Position information was recorded in the U.S. State [Virginia (South)] Plane Coordinate System (measured in U.S. survey feet) using the North American Datum 1927. Position information will be entered into the Environmental Restoration Information System (ERIS) database when available.

Because of the significant thickness of the tree canopy at three of the sample locations, coordinates were recorded from offset locations outside of the tree stands. The offsets were accurately measured with a measuring tape in the field and subsequently corrected. GPS coordinates and offset measurements were logged in the field logbook. Sample location coordinates and elevations presented in Table 2-2 have been entered into the project coordinate system and placed on the appropriate maps.

**Table 2-2**
**Facility-Wide Background Study Soil Sampling Location Coordinates**

| Sample ID | Northing[1] | Easting[1] | Elevation[2] |
|---|---|---|---|
| MMAB1 | 322754.74 | 1409440.92 | 1775.79 |
| MMAB2 | 320488.18 | 1407197.33 | 1864.67 |
| MMAB3 | 320455.40 | 1407283.00 | 1873.21 |
| MMAB4 | 320307.27 | 1404474.28 | 1810.97 |
| MMAU1 | 311874.44 | 1404852.06 | 1981.12 |
| MMAU2 | 311894.11 | 1404927.43 | 1984.71 |
| MMAU3 | 312818.61 | 1399297.22 | 1865.59 |
| MMAU4 | 317114.33 | 1410570.69 | 1739.69 |
| MMAW1 | 323380.27 | 1407708.13 | 1701.63 |
| MMAW2 | 322524.87 | 1406195.59 | 1721.48 |
| MMAW3 | 322490.09 | 1406208.06 | 1713.45 |
| MMAW4 | 318887.05 | 1396623.75 | 1706.53 |
| NRUC1 | 290201.32 | 1371017.04 | 2097.89 |
| NRUC2 | 290249.23 | 1371073.44 | 2095.13 |
| NRUC3 | 287199.88 | 1376699.21 | 2065.71 |
| NRUC4 | 291651.58 | 1375527.09 | 1994.78 |
| NRUG1 | 291100.64 | 1369289.30 | 2127.55 |
| NRUG2 | 285754.38 | 1373142.44 | 2048.85 |
| NRUG3 | 285805.98 | 1373194.73 | 2055.94 |
| NRUG4 | 287847.94 | 1369157.99 | 2081.28 |
| NRUL1 | 283098.57 | 1370857.28 | 2079.74 |
| NRUL2 | 283137.30 | 1370938.17 | 2083.87 |
| NRUL3 | 287529.94 | 1373041.77 | 2070.23 |
| NRUL4 | 291929.19 | 1372212.65 | 2066.71 |
| NRUW1 | 288400.94 | 1374521.86 | 2094.89 |
| NRUW2 | 288406.80 | 1374603.18 | 2090.78 |
| NRUW3 | 292482.85 | 1376121.87 | 2059.68 |
| NRUW4 | 286025.86 | 1371167.20 | 2086.39 |

[1]Virginia State Planar Coordinate System (NAD 27) measured in U.S. survey feet
[2]Feet above mean sea level.

# 3.0 Quality Assurance

Quality Assurance (QA) is defined as the overall system for assuring the reliability of data produced. The system integrates the quality planning, assessment, and improvement efforts of various groups in the organization to provide the independent QA program necessary to establish and maintain an effective system for collection and analysis of environmental samples and related activities. The program also encompasses the generation of usable and complete data as well as its subsequent review, validation, and documentation.

The accuracy and integrity of background data were ensured through the implementation of internal quality control measures in accordance with Work Plan Addendum No. 10, as approved by USEPA Region III. QA and quality control activities, including field quality control, laboratory quality control, and data management, were integrated into the background study program.

The analytical services for the background study were provided by the following USACE-validated laboratories:

- Envirosystems, Inc., Columbia, MD. Envirosystems, Inc., used USEPA-SW846, 3rd ed., Test Methods for Evaluating Solid Waste, Update III (USEPA 1996) methodologies in providing analytical support for pH and USEPA CLP SOW OLMO 4.2 (USEPA 1999) for VOCs and SVOCs. Metals analyses were subcontracted to Severn Trent Laboratories.
- Severn Trent Laboratories (STL), Sparks, MD. STL used USEPA-SW846, 3rd ed., Test Methods for Evaluating Solid Waste, Update III (USEPA 1996) methodologies in providing analytical support for TAL metals and Toxicity Characteristic Leachate Procedure (TCLP) metals.

## 3.1 ANALYTICAL METHODS

Analytical protocols used were in accordance with USEPA-approved methods for the analysis to include USEPA TAL metals, Target Compound List (TCL) VOCs, SVOCs, and pH. Samples collected to characterize investigative-derived materials were analyzed for hazardous waste characteristics. The methodologies are included below.

- **Inorganics.** Samples were analyzed for USEPA TAL metals using a combination of inductively coupled plasma emission spectroscopy (ICP) and cold vapor atomic absorption (CVAA). Trace metals were analyzed using USEPA SW-846 Method 3010A/6010B (USEPA 1996) for aqueous samples and Method 3050B/6010B (USEPA 1996) for solid samples. The pH was analyzed using USEPA SW-846 Method 9045C (USEPA 1996) for solid samples.
- **Organics.** Samples were analyzed for TCL VOCs using USEPA CLP SOW OLMO 4.2 (USEPA 1999) for aqueous and solid matrices using purge and trap technology. The EnCore sampling technique was used for the soil samples.

  Samples were analyzed for TCL semivolatiles using USEPA CLP SOW OLMO 4.2 (USEPA 1999).
- **TCLP Extraction.** Soil samples collected for material characterization were extracted using the TCLP SW-846 Method 1311 (USEPA 1996).

## 3.2 FIELD QUALITY CONTROL

### 3.2.1 Field Samples

Table 3-1 presents a summary of field quality control samples collected during background sampling activities, including the purpose of each quality control element and the required collection frequency that was adhered to during field sampling activities.

**Sample Management.** Sample management quality control consisted of the following field QA items. The number and types of environmental and quality control samples collected during the background sampling event are included in Table 3-2.

**Table 3-1**
**Field Quality Control Samples Collected During Background Study Sampling Activities**

| Control | Purpose of Sample | Frequency | Number of Samples Collected | | | | Total |
|---|---|---|---|---|---|---|---|
| | | | MMA | | NRU | | |
| | | | Aqueous | Solid | Aqueous | Solid | |
| Duplicate sample | Ensure precision in sample homogeneity | 10% | NA | 4 | NA | 6 | 10 |
| Rinse blank | Ensure the decontamination of sampling equipment has been adequately performed to assess cross-contamination and/or incidental contamination to the sample container | 5% | NA | 2 | NA | 3 | 5 |
| Temperature blank | Verify sample cooler temperature during transport | Per cooler | NA | 2 | NA | 2 | 4 |
| Trip blank | Assess if cross-contamination occurs during shipment or storage with aqueous VOC samples | Per cooler | 1 | NA | 1 | NA | 2 |

NA = not applicable.

**Table 3-2**
**Number and Type of Samples Collected During Background Study Sampling Activities**

| Sample | Area | | Total Samples |
|---|---|---|---|
| | MMA | NRU | |
| Surface Soil | 12 | 16 | 28 |
| Subsurface Soil | 22 | 29 | 51 |
| **Total Environmental** | **34** | **45** | **79** |
| Trip Blank | 1 | 1 | 2 |
| Rinse Blank | 2 | 3 | 5 |
| MS | 2 | 3 | 5 |
| MSD | 2 | 3 | 5 |
| Field Duplicate | 4 | 6 | 10 |
| **Total QC** | **11** | **16** | **27** |
| Investigative Derived Material (aqueous) | 1 | 1 | 2 |
| (solid) | 1 | 1 | 2 |
| **Total IDM** | **2** | **2** | **4** |
| **Total Samples** | **47** | **63** | **110** |

- **Sample identification.** The sample identification number was consistent with past nomenclature at RFAAP. The sample identification consisted of an alphanumeric designation related to the site location, soil group type, sampling location number, and sampled depth.
- **Site location code.** The first two characters were identified by the site location abbreviation. The identification included the following:

| | |
|---|---|
| MMA = | Main Manufacturing Area |
| NRU = | New River Unit |

- **Sample/media type.** The second two characters were the sample/media type. Sample types were designated by the following codes:
  - B = Braddock Loam
  - C = Carbo Silty Clay, Very Rocky
  - DW = IDM
  - G = Groseclose and Poplimento Silt Loam
  - L = Lowell Silt Loam
  - U = Unison-Urban Land Complex
  - W = Wheeling Sandy Loam or Wurno-Newbern-Faywood Silt Loam
- **Sampling location number.** The next one or two characters were the number of the sampling location (e.g., 1, 2, 3, . . . , 9, 10, 11, . . . ).
- **Sampled depth.** At sites where there were several samples to be collected at different horizons, the sequential collection order was followed by a letter in alphabetic order indicating shallow to deep depths (e.g., A, B, C), where A was the surface soil sample or A horizon.

| Envirosystems, Inc. | |
|---|---|
| Site Name: RFAAP | Date: 08/31/00 |
| Sample I.D.: MMAB1A | Time: 0940 |
| Analysis Required: TAL Metals & pH | Preservative: ICE |
| | Sampled by: MT/GZ |

Example sample container label

- **Duplicate.** Duplicate samples were identified with a "D" designation. A record of the samples that correspond to the duplicates was kept in the field logbook.
- **Quality control samples.** QC samples were identified by date (mo,day,yr), followed by QC sample type, and sequential order number at one digit. The QC sample types included:
  - R = Rinse Blank
  - T = Trip Blank

**Documentation.** Information pertinent to the sampling effort was recorded in a field logbook and the associated samples were traced by a Chain-of-Custody (COC) Form. Entries were made in indelible ink on consecutively numbered pages, and corrections consisted of line-out deletions that were initialed and dated.

Each sample container was labeled in waterproof ink with the sample identification, sampling date, required laboratory analyses, and preservatives. The sample labels were permanently affixed to the sample container using polyethylene tape.

**Chain-of-custody procedures.** Sampling was evidenced through the completion of a COC Form, which accompanied the samples in the field, during transit to the laboratory, and upon receipt by the laboratory. The COC form was filled out using indelible ink and annotated to indicate time and date that samples were relinquished to the shipping facility (Federal Express). In addition, shipping coolers were affixed with custody seals.

**Field Parameter Form procedures.** Documentation of collected samples was provided to the laboratory on electronic Field Parameter Forms. Field Parameter Forms were filled out based on information recorded in field logbooks and were completed at the end of each sampling week for every sample, including QC samples. The completed forms contained the following information fields for encoding chemical data into the ERIS database:

the i group

CHAIN OF CUSTODY RECORD

Nº MD- 0447

| Project No. | Project Name | Preservative | | | | | | | | | | Lab: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ICF Kaiser Contact (Name and Phone Number) | | Analysis | | | | | | | | | Subtotal | Cooler No.: |
| | | | | | | | | | | | | Air Bill No.: |
| Samplers: (Printed Names and Signatures) | | | | | | | | | | | | Carrier: ☐ DHL ☐ Fed Ex ☐ Airborne ☐ Other |
| Field Sample ID | Date (DD-MM-YY) | Time | Lab # | Lab # | Matrix | No. of Sample Containers | | | | | | Remarks |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Other COC with this shipment: Total

| RELINQUISHED BY: (Printed Name, Signature and Affiliation) | RECEIVED BY: (Printed Name, Signature and Affiliation) | DATE (DD-MM-YY) | TIME | REMARKS |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

FOR LAB USE ONLY: Cooler Temperature: ____ °C Custody Seals (circle): Intact Broken Absent

GENERAL COMMENTS:

ORIGINAL - Ship with Samples COPY - Retain with Sampling Records CS2040-3

**3.2.1.1 Field Performance Audit.** A field audit of site activities was conducted on September 7, 2000, by the QA/QC Manager and Project Chemist. During this audit current field practices were compared to the operating procedures outlined in the project work plans (i.e., Work Plan, QAP).

Two minor deficiencies were identified that were associated with project documentation. Field activities associated with the audited work phase were compliant and found satisfactory with work plan specifications. The matrix spike/matrix spike duplicate (MS/MSD) QC sample and soil horizons were not clearly identified in the logbook. This information was captured in other documentation associated with the project. Following audit completion, deficiencies were discussed with the field staff and corrective action was taken.

### 3.2.2 Laboratory Quality Control

**3.2.2.1 Data Review and Validation.** Data obtained from the laboratory was reviewed by the IT QA Manager to assess whether the project-specific data quality objectives, as defined in the Quality Assurance Plan Addendum (QAPA), were met. An in-depth discussion of the validation process and copies of the validation reports are presented in Appendix B.

**3.2.2.2 Data Reduction.** Data reduction procedures address the reliability of computations and the overall accuracy of the data reduction. Data reduction included computation of analytical results from raw instrument data and summary statistics, including standard errors, confidence intervals, test of hypotheses relative to the parameters, and model validation. The numerical transformation algorithms used for data reduction were verified against a known problem set to ensure that the reduction methods are correct.

**3.2.2.3 Data Quality Measurements.** Data quality objectives were developed concurrently with the work plan to ensure (1) the reliability of field sampling, chemical analyses, and physical analyses; (2) the collection of sufficient data; (3) the quality of data generated was acceptable for its intended use; and (4) valid assumptions could

be inferred from the data. Attainment of data quality objectives was assessed through evaluation of data collected using data quality indicators.

Table 3-3 outlines the data quality indicators as to their definitions, project goals, sampling and analytical assessments. Data quality was assessed through the evaluation of sampling activities and field measurements associated with the chemical analytical data in order to assess the reliability of the chemical analyses and the accuracy and precision of information acquired from the laboratory.

***Precision.*** Method or laboratory precision by the laboratory was evaluated during the validation process. Overall sampling or field precision was evaluated during the data review process. Precision is measured by calculating and evaluating the relative percent difference (RPD) between the results of field or laboratory duplicates. The RPD is calculated by the following equation:

$$\text{RPD}\ (\%) = \frac{/\text{XA} - \text{XB}/}{\text{XM} * 100} \qquad (1)$$

where

XA and XB = duplicate analyses, and
XM = the mean value of duplicate analyses (XA + XB)/2.

the igroup

Contact: Eric Malarek
410-612-6322

No.: 57

FIELD PARAMETER FORM AND CHAIN OF CUSTODY
Soil Samples

| | | | |
|---|---|---|---|
| High Concentration Expected? No | | | High Hazard? No |
| Installation/Site: RFAAP | | | Area: MMA |
| Inst. Code: RD | File Name: CSO | | Site Type: BORE |
| Site ID: MMAB1A | | | Field Sample No.: MMAB1A |
| Date (MM/DD/YY): 08/31/00 | Time: 940 | | Sampl. Prog.: PR2 |
| Depth (top): 0 | Depth Interval: 10 | | Units: Other: |
| SAMPLING TECHNIQUE: Split spoon--S | | | |

| No. | Sample Container | Analysis | Preservative | Remarks |
|---|---|---|---|---|
| 1 | 8-oz CG | Metals | | |
| | | pH | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 1 | TOTAL NO. OF CONTAINERS PER SAMPLE | | | |

| | |
|---|---|
| Weather/Temperature: OVERCAST, HUMID 70s | Sampler: MT/OZ |
| Temperature blank: Yes | |
| Other COC with this shipment: | |

| RELINQUISHED BY | | | | |
|---|---|---|---|---|
| Name | Signature | Affiliation | Date | Time |
| 1. | | | | |
| 2. | | | | |
| **RECEIVED BY** | | | | |
| 1. | | | | |
| 2. | | | | |

Cooler temp:

| | |
|---|---|
| Lab: | Enviro-systems, Inc. |
| Cooler No.: | 2 of 2 |
| Air Bill No.: | 821568503963 |

Field duplicates were collected on a 10% frequency per matrix to identify the cumulative precision of the sampling and analytical process, which includes the homogenization of soil and sediment samples. Precision was checked by regularly obtaining duplicate samples for each parameter and each media. Precision of field duplicates was assessed through calculation of the RPD between the positive results detected in the original sample and the field duplicate. The advisory limits were established by the USEPA Region III guidelines.

In instances where either the sample or the duplicate was non-detect "U," rejected "R," or blank contaminated "B" for a particular compound, a duplicate assessment was not performed. Sample results exceeding guidance values should be considered as estimated. Table 3-4 presents a summary of non-conformance field duplicate values. Sample values noted should be considered usable and estimated for the samples and compounds listed.

***Accuracy.*** Accuracy is the measure of bias in a system. The accuracy of the results are measured by percent recovery (%R):

$$\%\text{R} = \frac{\text{test value}}{\text{true value}} * 100 \qquad (2)$$

or

$$\%\text{R} = \frac{\text{spiked value - unspiked sample}}{\text{amount spiked}} * 100 \qquad (3)$$

**Table 3-3**
**Background Study Data Quality Indicators**

| Data Quality Indicator | Definition | Goal | Sampling Assessment | Analytical Assessment |
|---|---|---|---|---|
| Precision | Quantitative measure of the variability of a group of measurements in comparison to the average value | Low relative percent difference | Duplicate samples | MS/MSD |
| Accuracy | Bias in a measurement system | Low bias | Blank contamination | Analysis spike results |
| Representativeness | Degree to which the measured results accurately reflect the medium being sampled | 100% | Holding times, blanks, associated documentation | Inferred from accuracy, precision, and completeness evaluation |
| Completeness | Percentage of measurements which are judged to be usable | 98±2% | Records review | Data validation |
| Comparability | Qualitative parameter expressing the confidence with which one data set can be compared with another | High | Work plans, quality documents | Analytical methods |
| Sensitivity | Quantitative measure of the level of detection and quantitation. | High | Review of analytical method or procedures and instrumentation | Analysis of MDL studies and practical quantitation limits per analytical method |

Laboratory analytical accuracy was assessed through the use of laboratory blanks (method and instrument), laboratory control samples (LCS), and MSs. Laboratory analytical accuracy was reviewed during the validation of data. Sampling accuracy was assessed by evaluating the results of the rinse water. The data validation qualifiers would be applied for analytical non-conformances as outlined in the USEPA validation guidance.

- ***Method blanks.*** A method blank is a volume of analyte-free water or soil that is processed through the entire analytical scheme (i.e., extraction, digestion, concentration, and analysis) as with the actual samples. Method blanks monitor potential laboratory-induced contamination. Method blanks were found to be less than the method reporting limit (MRL).
- ***Laboratory control sample.*** The LCS was analyzed to assess general method performance by the ability of the laboratory to successfully recover the target analytes from a control matrix. LCS recoveries were found to be within acceptable limits during the validation process.
- ***Matrix Spikes.*** The MS was used to assess the performance of the method as applied to a particular project matrix. MS non-conformances were found in every sample delivery group. Antimony was found to produce low recoveries and was qualified bias low. In some cases, antimony was excessively low in recovery, and non-detects were rejected. Other bias low recoveries included the elements arsenic, selenium, chromium, potassium, vanadium, beryllium, cobalt, lead, and manganese for select spiked samples. Data were qualified "L" or "UL" in accordance with USEPA Region III guidance and were found to be estimated and usable.
- ***Rinse blanks.*** The blank contamination assessment was performed to assess the impact of contaminant contributions originating from non-point sources, such as field sampling equipment decontamination procedures. Rinse blank contamination assessment was completed through identifying appropriate sources of water and completing rinse blanks as required by the QAPA. In accordance with the USEPA data validation guidelines (USEPA 1995), the detected concentration in the sample was considered "B-qualified" if the sample concentration was within five times (10 times for common labo-

ratory contaminants such as acetone, 2-butanone, methylene chloride, phthalate esters) the concentration of the associated rinse blank.

**Table 3-4**
**Field Duplicate Summary Greater than 35%**

[Units in mg/kg]

| FIELD ID | ANALYTE | RESULT | LAB QUALIF | VAL QUALIF | DUP ID | DUP RESULT | LAB QUALIF | VAL QUALIF | RPD |
|---|---|---|---|---|---|---|---|---|---|
| MMAW2C | Aluminum | 4430 | N | | MMAW2CD | 19900 | N | | 127% |
| MMAW2C | Arsenic | 4.7 | | | MMAW2CD | 15.3 | | | 106% |
| MMAW2C | Chromium | 11 | | | MMAW2CD | 35.4 | | | 105% |
| MMAW2C | Copper | 5 | | | MMAW2CD | 21.3 | | | 124% |
| MMAW2C | Iron | 10100 | N | | MMAW2CD | 35500 | N | | 111% |
| MMAW2C | Lead | 10.8 | | | MMAW2CD | 23.6 | | | 74.4% |
| MMAW2C | Vanadium | 23.1 | | | MMAW2CD | 75.2 | | | 106% |
| MMAW2C | Zinc | 14.4 | E | J | MMAW2CD | 37.7 | E | J | 89.4% |
| MMAW3C | Thallium | 3.2 | | | MMAW3CD | 1.2 | | | 90.9% |
| NRUG2B | Arsenic | 2.5 | N | J | NRUG2BD | 3.6 | | J | 36.1% |
| NRUG2B | Iron | 10500 | | | NRUG2BD | 24600 | | | 80.3% |
| NRUG2C | Arsenic | 4.3 | N | J | NRUG2CD | 2.4 | | J | 56.7% |
| NRUG2C | Cobalt | 70.1 | | J | NRUG2CD | 41.1 | | | 52.2% |
| NRUG2C | Manganese | 523 | * | J | NRUG2CD | 364 | N | L | 35.9% |
| NRUL2B | Copper | 19.7 | | J | NRUL2BD | 4.2 | | J | 130% |
| NRUL2B | Magnesium | 2310 | E | J | NRUL2BD | 1240 | E | J | 60.3% |
| NRUL2B | Nickel | 8.9 | | L | NRUL2BD | 5.7 | | L | 43.8% |
| NRUL2B | Potassium | 1700 | N | L | NRUL2BD | 956 | N | L | 56.0% |
| NRUW4C | Calcium | 149 | | | NRUW4CD | 243 | | | 48.0% |
| NRUW4C | Cobalt | 7.6 | N | J | NRUW4CD | 27.4 | N | J | 113% |
| NRUW4C | Manganese | 68.3 | * | | NRUW4CD | 187 | * | | 93.0% |

*= duplicate analysis not within control limits.
E = reported value is estimated because of the presence of interferences.
J = analyte present. Reported value may not be accurate or precise (estimated).
L = analyte present. Reported value may be biased low (estimated).
N = laboratory spike sample recovery not within control limits.

Rinse blank 0083000R3 contained trace levels of arsenic and selenium. Associated samples within the five times action level were qualified "B" in accordance with USEPA Region III guidance (Appendix D). These samples were evaluated at one-half of each sample MRL.

A discussion of the blank results is provided within each validation report in Appendix B. Table 3-5 indicates those data that are "B" flagged due to blank contamination. The table summarizes samples qualified for the background study field investigation due to rinse blank contamination. Those compounds that were detected in both the blanks and the associated samples below the USEPA guidance blank action levels are listed.

***Completeness.*** Completeness is a measure of the amount of information that must be collected during the field investigation to allow for successful achievement of the objectives. An adequate amount and type of data must be collected for conclusions to be valid. Missing data may reduce the precision of estimates or introduce bias, thus lowering the confidence level of the conclusions. While completeness has been historically presented as a percentage of the data that is considered usable, this does not take into account critical sample locations or critical analytical parameters.

The amount and type of data that may be lost due to sampling or analytical error cannot be predicted or evaluated in advance. The importance of lost or suspect data will be evaluated in terms of the sample location, analytical parameter, nature of the problem, decision to be made, and the consequence of an erroneous decision. Critical locations or parameters for which data is found to be inadequate will either be re-sampled and re-analyzed or the data

will be appropriately qualified based on the decision of the project QA manager. The completeness goal percentage of usable data is set at 98±2%. Completeness was calculated using the following equation:

$$\% \text{ Completeness} = \frac{\text{No. of usable data}}{\text{No. of requested analyses}} \quad (4)$$

**Table 3-5**
**B-Qualified Data Summary**

[Units in mg/kg]

| FIELD ID | ANALYTE | RESULT | LAB QUALIF |
|---|---|---|---|
| NRUC2A | Arsenic | 2.6 | N |
| NRUC2B | Arsenic | 4.8 | N |
| NRUG3A | Arsenic | 3.6 | |
| NRUG3B | Arsenic | 3.8 | N |
| NRUG3C | Arsenic | 2.7 | N |
| NRUG4A | Arsenic | 2.8 | N* |
| NRUG4B | Arsenic | 3.2 | N* |
| NRUL2A | Arsenic | 5.1 | |
| NRUL2A | Selenium | 0.77 | N |
| NRUL2BD | Arsenic | 4.7 | |
| NRUL2C | Arsenic | 4.2 | |
| NRUW2B | Arsenic | 2.8 | |

* = duplicate analysis not within control limits.
B = the analyte or compound has been detected in the sample and laboratory method blank and/or associated field sample.
N = laboratory spike sample recovery not within control limits.

The number of samples actually collected with acceptable results were compared to the number of samples proposed in the QAPA. The percent completeness was with the acceptable range relative to the number of samples planned.

***Representativeness.*** Representativeness is a measure of the degree to which the measured results accurately reflect the medium being sampled. It is a qualitative parameter that is addressed through the proper design of the sampling program in terms of sample location, number of samples, and actual material collected as a "sample" of the whole.

Sampling protocols were developed to assure that samples collected are representative of the media. Field handling protocols (e.g., storage, handling in the field, and shipping) were designed to protect the representativeness of the collected samples. Proper field documentation and QC inspections were used to establish that protocols were followed and that sample identification and integrity was maintained.

***Comparability.*** Comparability is the confidence with which one data set can be compared to another. Comparability was controlled through the use of SOPs that have been developed to standardize the collection of measurements and samples and approved analytical technique with defined QC criteria. USEPA-SW846, 3rd ed., *Test Methods for Evaluating Solid Waste,* Update III (USEPA 1996) methodologies for inorganics and USEPA CLP SOW OLMO 4.2 (USEPA 1999) for organics were used in providing laboratory analytical support for this project. Laboratory SOPs were developed from these methods. Consistent and proper calibration of equipment throughout the field exercises, as described in the Master Quality Assurance Plan and QAPA, will assist in the comparability of measurements. Field documentation and QA audits were used to establish that protocols for sampling and measurement follow appropriate SOPs.

***Sensitivity (quantitation and detection limits).*** The term sensitivity is used broadly to describe the method detection, quantitation, and reporting limits established to meet project-specific data quality objectives; and not limited to the definition which describes the capability of a method or instrument to discriminate between measurement responses. The method detection limits (MDLs) and the minimum quantitation limits (MQLs)

published within USEPA methods are based upon a reagent water matrix, and are not necessarily reflective of typical sample matrices; therefore, care will be taken in establishing limits for laboratory analysis. Methods were selected based upon their sensitivity, technological, and economical considerations while keeping the screening values and available methodology in mind. The published limits may not be achievable for environmental samples, but they should compare reasonably with control samples. This compliance is verified during data validation process. Each target compound for every sample was reported at a specific MRL or Contract Required Quantitation Limit (CRQL). The target analytes detected above the MDL but less than the MRL (inorganics) or CRQL (organics) were reported as estimated values. Target analytes detected above the upper calibration standard were diluted and analyzed within established calibration windows.

The MQLs and MDLs were compared at the onset of the project. The MDL is the minimum concentration of an analyte that can be measured and reported with a 99% confidence that the analyte is above zero and is identified from the analysis of a sample in a given matrix containing the analyte. The MDLs are derived by the method based upon 40 CFR (Code of Federal Regulations) Chapter 136 Appendix B. The MDL established using this procedure was used to assess the importance of the measurement of a future sample. The laboratory MDLs derived were less than the MQLs. The laboratory has statistically derived MDLs below the MQLs. The MDL values are different and change periodically because each MDL is laboratory, instrument, analyst, matrix, and method specific.

The MQL and the CRQL are the values at which the laboratory has demonstrated the ability to reliably quantitate the target value of an analyte for the method performed. The MQL and the CRQL are based upon the lowest calibration standard used for the initial calibration curve or the lowest verification standard performed. Data is calculated over a linear range. The highest concentration of the standards is truncated until linearity is achieved (minimum of three concentration levels must remain). The resulting highest concentration within the linear range represents the upper quantitation limit.

The laboratory used a MRL for each sample. The MRL is the USACE term for sample quantitation limit (USACE 1998). The reporting limit is the threshold value below which the laboratory reports non-detected values as "U," "ND," or "<" and will vary for each sample based upon dilution, sample volumes, percent moistures (for solids), and the method performed. Positive values found in blanks (method, rinse, trip) above the MDL were reported. Positive results below the MRL and above the MDL are to be reported as estimated for organics. For inorganics, results below the Contract Required Detection Limit and above the MDL are reported as estimated. Non-detects were reported at the reporting limit for organics and the MDL for inorganics. The units for aqueous samples were µg/L and for solid samples were µg/g.

**3.2.2.4 Laboratory Systems Audit.** Laboratory activities performed under contract to IT are required to meet applicable contractual and project requirements. Before the submittal of project samples to the laboratory, the QA/QC Manager and the Project Chemist verified that technical requirements were planned and work pre-requisites were identified and met. Within the scope of laboratory system audits, definable features of work included analytical support for soil analysis and verification of the following:

- The requisite validations were achieved;
- The Laboratory Quality Assurance Plan was reviewed and accepted by IT;
- Laboratory equipment was of appropriate type, sensitivity, and quantity for its intended use;
- Facilities were appropriate for the expected sample load;
- Responsibilities were assigned and communicated;
- Laboratory staff were qualified to perform their jobs;
- Subcontracting restrictions were not been violated; and
- Approved procedures and controls were in place.

Discrepancies between actual conditions and approved plans or procedures were resolved, and corrective actions for unsatisfactory and nonconforming conditions were verified by the Project QA/QC Manager before granting approval to begin work.

The laboratory was evaluated by the Project QA Manager and Chemist to evaluate each definable feature of work including, but not limited to, the following:

- Size and appearance of the facility;
- Quantity, age, availability, scheduled maintenance, and performance of instrumentation;
- Availability, appropriateness, utilization, and adherence to the SOPs and methods;

- Staff qualifications, experience, and personnel training programs;
- Reagents, standards, and sample storage facilities;
- Standard preparation logbooks and raw data;
- Bench sheets and analytical logbook maintenance and review; and
- Review of the laboratory's sample analysis/data package inspection procedures.

A formal audit report was provided to the IT Project Manager and support staff. Results of the onsite audit were documented and maintained as part of the QA documentation. Discrepancies between actual practices and approved plans/procedures were resolved and corrective actions for unsatisfactory and non-conforming conditions or practices were verified by the Project QA/QC Manager before granting approval to continue work.

# 4.0 Data Analysis

## 4.1 DATA EVALUATION

### 4.1.1 Analytical Methodology

Environmental samples collected in support of the background study were analyzed using a suite of USEPA-approved methodologies to attain project DQOs, as specified in Work Plan Addendum 10. Site reconnaissance, field screening, and analytical methodologies for background markers were used to demonstrate the selected background locations did not exhibit contamination from previous facility operations.

Explosives were selected as background markers because of past practices and chemicals of concern were likely to be explosives. A review of potential explosives associated with the installation identified TNT and RDX as viable indicator compounds for explosives screening. Explosive immunoassay analyses were conducted for surface and subsurface soil samples using USEPA SW-846 methods 4050 and 4051. Results indicated that selected locations did not exhibit explosive contamination or were not impacted by previous facility operations associated with releases. Specific details associated with field screening activities are presented in Section 3.1.2.

PID screening was used to monitor organic compounds and relocate the borings as necessary. A PID reading above background levels would have necessitated that a boring be relocated. PID readings were not observed above background levels in the borings; therefore, no borings were relocated as a result of PID readings. Borings were also clustered in ¼- to ½-acre groupings to discern potential organic compound contamination.

USEPA SW-846, 3rd ed., *Test Methods for Evaluation Solid Waste,* Update III (USEPA 1996) were used to assess the inorganic soil composition. Trace metals were analyzed using a combination of ICP, graphite furnace atomic absorption (GFAA), and CVAA for mercury. Tables 4-1 through 4-7 presents the metals data results, reporting limits for non-detects, and associated validation qualifiers.

USEPA *Contract Lab Program Statement of Work OLM 4.2* (USEPA 1999) methodologies were employed to assess the semivolatile and volatile organic characterization of soil locations. Volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) were analyzed using gas chromatography mass spectrometry. The data results and associated validation qualifiers can be found within the validation reports in Appendix B.

### 4.1.2 Data Validation and Qualifiers

Data were validated using the SW–846 method-specific criteria and laboratory SOPs. The *Innovative Approaches to Data Validation for USEPA Region III* (USEPA 1995) was used to provide validation qualification scheme. Validation reports include a tabular listing of sample IDs, parameters qualified, and specific information on why the qualification was performed. Reports are categorized in accordance with sample delivery groups and are located in Appendix B. Data qualifiers are included in the data tables as appropriate. Qualifiers that resulted in the use of data included the following:

J — results estimated analyte is present and reported values may not be accurate or precise
K — results estimated biased high analyte is present and reported values may be biased high
L — results estimated biased low analyte is present and reported values may be biased low
B — not detected substantially above the level reported in laboratory or field blanks
U — results not detected, presented as < reporting limits in data tables
UJ — results estimated not detected and quantitation limit may be inaccurate or imprecise
UL — results estimated biased low not detected and quantitation limit is probably higher
R — results rejected due to quality control issues

**4.1.2.1 Metals Validation Criteria.** Laboratory performance criteria were evaluated for inorganics included the following. Further discussion may be found in the validation reports in Appendix B.

- **Holding times.** 180 days for metals and 28 days for mercury. Preservation: Cool, 4°C ± 2°C for soil samples and cool, 4°C ± 2°C and $HNO_3$ pH<2 for aqueous samples.

## Table 4-1
## Background Metals Concentration,
## Braddock Loam

[Units in mg/kg]

| Sample ID | MMAB1A | | MMAB2A | | MMAB3A | | MMAB4A | | MMAB1B | | MMAB2B | | MMAB2BD | | MMAB3B | | MMAB4B | | MMAB1C | | MMAB4C | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 8/31/00 | | 9/6/00 | | 9/6/00 | | 8/31/00 | | 8/31/00 | | 9/6/00 | | 9/6/00 | | 9/6/00 | | 8/31/00 | | 8/31/00 | | 8/31/00 | |
| Depth (Inches) | 0-10 | | 0-12 | | 0-9 | | 0-6 | | 10-48 | | 12-60 | | 12-60 | | 9-42 | | 6-51 | | 48-84 | | 51-53 | |
| Aluminum | 5370 | | 6660 | | 5630 | | 3700 | | 11800 | | 16000 | | 12900 | | 10100 | | 12500 | | 15300 | | 12500 | |
| Antimony | 0.68R | | <7.3L | ND | <6.8L | ND | 0.67R | | 0.68R | | <7.6L | ND | <7L | ND | <7L | ND | 0.69R | | 0.67R | | 0.69R | |
| Arsenic | 1.9J | | 2.4 | | 2.3 | | 1.5J | | 1.2J | | 3.8 | | 3.2 | | 3.3 | | 1.9J | | <1.1 | ND | 1.8J | |
| Barium | 114 | | 62.9 | | 99.1 | | 39.9 | | 47.1 | | 58 | | 59.1 | | 63.9 | | 38.4 | | 42.6 | | 27.4 | |
| Beryllium | <0.57 | ND | <0.61 | ND | <0.56 | ND | <0.56 | ND | <0.57 | ND | <0.63 | ND | <0.58 | ND | <0.59 | ND | <0.57 | ND | <0.56 | ND | <0.57 | ND |
| Cadmium | <0.57 | ND | <0.61 | ND | <0.56 | ND | <0.56 | ND | <0.57 | ND | <0.63 | ND | <0.58 | ND | <0.59 | ND | <0.57 | ND | <0.56 | ND | <0.57 | ND |
| Calcium | 395J | | <609 | ND | <563 | ND | 116J | | 398J | | <629 | ND | <581 | ND | 586 | | 120J | | <110 | ND | <120 | ND |
| Chromium | 9L | | 15.8 | | 10.5 | | 8.7L | | 17.4L | | 26.2 | | 22.7 | | 22.4 | | 20.9L | | 12.6L | | 33.6L | |
| Cobalt | <5.7 | ND | <6.1 | ND | <5.6 | ND | <5.6 | ND | <5.7 | ND | <6.3 | ND | <5.8 | ND | <5.9 | ND | <5.7 | ND | 10.2 | | <5.7 | ND |
| Copper | 2.2J | | 13.2 | | 4 | | <1.1L | ND | 3.3J | | 7.5 | | 5.7 | | 6 | | 5.5J | | 4.3J | | 4.5J | |
| Iron | 7490 | | 9230 | | 7300 | | 7250 | | 24700 | | 22600 | | 18000 | | 14900 | | 28900 | | 22900 | | 24000 | |
| Lead | 9.4J | | 52 | | 10.2 | | 17.1J | | 8.2J | | 8.6 | | 8.5 | | 10.7 | | 9.8J | | 6.9J | | 10.2J | |
| Magnesium | 247J | | <609 | ND | <563 | ND | 158J | | 490J | | <629 | ND | <581 | ND | <586 | ND | 522J | | 971J | | 350J | |
| Manganese | 924L | | 396 | | 567 | | 506L | | 125L | | 136 | | 155 | | 464 | | 130L | | 189L | | 170L | |
| Mercury | <0.11 | ND | 1.2 | | 0.07 | | <0.11 | ND | <0.11 | ND | 0.18 | | 0.13 | | 0.1 | | <0.11 | ND | <0.11 | ND | <0.11 | ND |
| Nickel | <4.6L | ND | <4.9 | ND | <4.5 | ND | <4.4L | ND | 4.9L | | 5.9 | | 4.9 | | 4.8 | | 6.3L | | 6.8L | | 10.3 | |
| Potassium | 242L | | <609 | ND | <563 | ND | 174L | | 579L | | <629 | ND | <581 | ND | <586 | ND | 694L | | 1010L | | 474L | |
| Selenium | <0.57L | ND | <0.61 | ND | <0.56 | ND | <0.56L | ND | <0.57L | ND | <0.63 | ND | <0.58 | ND | <0.59 | ND | <0.57L | ND | <0.56L | ND | <0.57L | ND |
| Silver | <1.1 | ND | 4.3 | | <0.56 | ND | <1.1 | ND | <1.1 | ND | <0.63 | ND | <0.58 | ND | <0.59 | ND | <1.1 | ND | <1.1 | ND | <1.1 | ND |
| Sodium | <120 | ND | <609 | ND | <563 | ND | 124 | ND | 114 | ND | <629 | ND | <581 | ND | <586 | ND | <120 | ND | <110 | ND | <120 | ND |
| Thallium | <1.1 | ND | <1.2 | ND | <1.1 | ND | <1.1 | ND | <1.1 | ND | 2.3 | | <1.2 | ND | 1.4 | | <1.1 | ND | <1.1 | ND | <1.1 | ND |
| Vanadium | 14.7L | | 20.3 | | 15.7 | | 15L | | 42.2L | | 47.1 | | 38.6 | | 31 | | 56.4L | | 51.4L | | 39.6L | |
| Zinc | 16.9J | | 30.2J | | 12.8J | | 10J | | 25J | | 18.9J | | 16.9J | | 14.7J | | 31.1J | | 36IJ | | 26.1J | |



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## Table 4-2
## Background Metals Concentration,
## Unison Urban Land Complex

[Units in mg/kg]

| Sample ID | MMAU1A | MMAU2A | MMAU3A | MMAU4A | MMAU1B | MMAU2B | MMAU3B | MMAU3BD | MMAU4B | MMAU1C | MMAU2C | MMAU3C | MMAU4C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 9/7/00 | 9/7/00 | 8/31/00 | 9/6/00 | 9/7/00 | 9/7/00 | 8/31/00 | 8/31/00 | 9/6/00 | 9/7/00 | 9/7/00 | 8/31/00 | 9/6/00 |
| Depth (Inches) | 0-10 | 0-10 | 0-9 | 0-10 | 10-52 | 10-52 | 9-42 | 9-42 | 10-58 | 52-60 | 52-60 | 42-72 | 58-76 |
| Aluminum | 5710 | 4730 | 6800 | 9950 | 42900 | 21500 | 14000 | 12100 | 18200 | 47900 | 26200 | 8710 | 45100 |
| Antimony | <6.7L ND | <7L ND | 0.69R | <9L ND | <7.5L ND | <8.2L ND | 0.69R | 0.69R | <7.5L ND | <7.4L ND | <8.1L ND | 0.66R | <9LND |
| Arsenic | 7.2 | 4.5 | 1.8J | 10.2 | 19.8 | 16.8 | 1.7J | 1.2J | 14 | 35.9 | 12.6 | <1.1 ND | 18.4 |
| Barium | <22.3 ND | <23.4 ND | 57.9 | 119 | 53.1 | <27.3 ND | 48.5 | 46.5 | 85.4 | 82.6 | <27 ND | 25.2 | 72.4 |
| Beryllium | <0.56 ND | <0.59 ND | <0.58 ND | 1.1 | 2.3 | <0.68 ND | <0.58 ND | <0.58 ND | 1.3 | 5.3 | <0.68 ND | <0.55 ND | 2.6 |
| Cadmium | <0.56 ND | <0.59 ND | <0.58 ND | 0.82 | 0.92 | <0.68 ND | <0.58 ND | <0.58 ND | 1.2 | 1.3 | 0.78 | <0.55 ND | 2.2 |
| Calcium | <557 ND | <585 ND | 389J ND | 1690 | <624 ND | <682 ND | 314J | 290J | 1210 | 954 | <675 ND | <110 ND | 2020 |
| Chromium | 13.6 | 10.9 | 18.3L | 23.2 | 36.1 | 39.1 | 22.1L | 19L | 35.3 | 39.7 | 49.8 | 10.8L | 75.8 |
| Cobalt | 6.5 | <5.9 ND | 10.1 | 16.1 | 86.8 | 7.1 | <5.8 ND | <5.8 ND | 19 | 94.3 | 10.4 | 12.3 | 13.2 |
| Copper | 5.7 | 5.3 | 5.4J | 11.4 | 34.4 | 23 | 10.7J | 8.6J | 16.9 | 31.7 | 26 | 3.4J | 31.9 |
| Iron | 15100 | 9990 | 17800 | 22900 | 31400 | 38900 | 33300 | 29300 | 36900 | 35100 | 41900 | 14300 | 67700 |
| Lead | 13.7 | 10.9 | 10.5J | 225 | 26.8 | 23.7 | 9.5J | 9.1J | 256 | 18.7 | 33.4 | 5.6J | 144 |
| Magnesium | 1140 | <585 ND | 669J | 1430 | 37700 | 689 | 972J | 902J | 2820 | 58100 | 784 | 555J | 16200 |
| Manganese | 99.4 | 43 | 404L | 1910 | 282 | 39.4 | 121L | 99.4L | 1760 | 366 | 52.8 | 169L | 815 |
| Mercury | <0.037 ND | <0.039 ND | <0.12 ND | <0.05 ND | 0.12 | 0.16 | <0.12 ND | <0.12 ND | 0.05 | 0.11 | 0.27 | <0.11 ND | 0.08 |
| Nickel | 4.6 | <4.7 ND | 5.2L | 11 | 59.6 | 17.7 | 9L | 7.5L | 17.6 | 94.2 | 23.7 | 5.8L | 35.9 |
| Potassium | <557 ND | <585 ND | 654L | <752 ND | 6220 | <682 ND | 1050L | 961L | <623 ND | 10900 | <675 ND | 591L | 861 |
| Selenium | <0.56 ND | <0.59 ND | <0.58L ND | <0.75 ND | <0.62 ND | <0.68 ND | <0.58L ND | <0.58L ND | <0.62 ND | <0.62 ND | <0.68 ND | <0.55L ND | <0.75ND |
| Silver | <0.56 ND | <0.59 ND | <1.2 ND | <0.75 ND | <0.62 ND | <0.68 ND | <1.2 ND | <1.2 ND | <0.62 ND | <0.62 ND | <0.68 ND | <1.1 ND | <0.75ND |
| Sodium | <557 ND | <585 ND | <120 ND | <752 ND | <624 ND | <682 ND | <120 ND | <120 ND | <623 ND | <620 ND | <675 ND | <110 ND | <750ND |
| Thallium | <1.1 ND | <1.2 ND | <1.2 ND | 2.1 | 1.8 | <1.4 ND | <1.2 ND | <1.2 | 3.2 | 2.9 | <1.4 ND | <1.1 ND | 5 |
| Vanadium | 31.3 | 22.5 | 35L | 37.8 | 68.8 | 84.4 | 64.2L | 57.9L | 57.5 | 75 | 85.2 | 27L | 114 |
| Zinc | 35J | 14.4J | 94.1J | 216J | 96J | 44.7J | 46.2J | 34.2J | 341J | 218J | 60.3J | 19.8J | 598J |

## Table 4-3
## Background Metals Concentration,
## Wheeling Sandy Loam

[Units in mg/kg]

| Sample ID | MMAW1A | MMAW2A | MMAW3A | MMAW4A | MMAW1B | MMAW2B | MMAW3B | MMAW4B | MMAW1C | MMAW2C | MMAW2CD | MMAW3C | MMAW4C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 9/5/00 | 9/6/00 | 9/6/00 | 9/5/00 | 9/5/00 | 9/6/00 | 9/6/00 | 9/5/00 | 9/5/00 | 9/6/00 | 9/6/00 | 9/6/00 | 9/5/00 |
| Depth (Inches) | 0-12 | 0-7 | 0-12 | 0-9 | 12-48 | 7-48 | 12-48 | 9-42 | 48-72 | 48-60 | 48-60 | 48-60 | 42-72 |
| Aluminum | 11100 | 12800 | 15400 | 10300 | 13600 | 21600 | 24000 | 16800 | 20000 | 4430 | 19900 | 25600 | 22700 |
| Antimony | <7.7L ND | <7.4L ND | <7L ND | <7.1L ND | <7.4L ND | <6.8L ND | <7.3L ND | <7.9L ND | <6.7L ND | <6.9L ND | <7.4L ND | <7.2L ND | <7.9L ND |
| Arsenic | 2.6 | 2.5 | 2.7 | 1.9 | 2.3 | 3.2 | 3.9 | 2.2 | 3.1 | 4.7 | 15.3 | 4 | 3.6 |
| Barium | 130 | 174 | 150 | 135 | 134 | 116 | 155 | 100 | 119 | <23 ND | <24.5 ND | 123 | 141 |
| Beryllium | 0.79 | 0.93 | 0.99 | 0.72 | 0.87 | 1.1 | 1.1 | 0.79 | 1 | <0.58 ND | <0.61 ND | 1.3 | 1.2 |
| Cadmium | <0.64 ND | <0.62 ND | 0.67 | <0.59 ND | 0.62 | <0.57 ND | 1.1 | <0.66 ND | 2.5 | <0.58 ND | 0.65 | 1.2 | 1.1 |
| Calcium | 920 | 7340 | 2200 | 1300 | 906 | 952 | 1250 | 1030 | 1210 | <576 ND | <613 ND | 1060 | 1200 |
| Chromium | 25.2 | 27 | 26.1 | 19.1 | 26 | 33.6 | 40.7 | 27.7 | 29.8 | 11 | 35.4 | 40.2 | 34.3 |
| Cobalt | 11.9 | 12.3 | 13.1 | 8.1 | 12.9 | 17.4 | 20.9 | 14.1 | 15.7 | <5.8 ND | 6.8 | 20 | 21.2 |
| Copper | 11.7 | 13.2 | 13.6 | 7.6 | 12.3 | 22 | 25.8 | 12.2 | 20 | 5 | 21.3 | 27.5 | 23.7 |
| Iron | 20100 | 20500 | 23800 | 15600 | 22800 | 35900 | 40700 | 27200 | 34100 | 10100 | 35500 | 43900 | 39500 |
| Lead | 12 | 15 | 13.6 | 14.7 | 10.6 | 13.3 | 16.6 | 10 | 11.5 | 10.8 | 23.6 | 16 | 14.3 |
| Magnesium | 2460 | 5930 | 3020 | 2370 | 3220 | 4750 | 5850 | 4440 | 5570 | <576 ND | 637 | 5690 | 6270 |
| Manganese | 650 | 822 | 776 | 287 | 694 | 627 | 771 | 389 | 546 | 47.4 | 37.6 | 735 | 674 |
| Mercury | <0.043 ND | <0.041 ND | <0.039 ND | <0.04 ND | <0.04 ND | 0.038 | <0.041 ND | <0.044 ND | <0.037 ND | 0.038 | <0.041 ND | <0.04 ND | <0.044 ND |
| Nickel | 11.5 | 13.2 | 13.5 | 9.8 | 13.4 | 18.9 | 21.7 | 14.8 | 18 | <4.6 ND | 17.2 | 21.6 | 20.8 |
| Potassium | 1110 | 1430 | 1360 | <592 ND | 1560 | 2650 | 2980 | 1300 | 2720 | <576 ND | <613 ND | 2920 | 2120 |
| Selenium | <0.64 ND | <0.62 ND | <0.58 ND | <0.59 ND | <0.62 ND | <0.57 ND | <0.61 ND | <0.66 ND | <0.56 ND | <0.58 ND | <0.61 ND | <0.6 ND | <0.65 ND |
| Silver | <0.64 ND | <0.62 ND | <0.58 ND | <0.59 ND | <0.62 ND | <0.57 ND | <0.61 ND | <0.66 ND | <0.56 ND | <0.58 ND | <0.61 ND | <0.6 ND | <0.65 ND |
| Sodium | <638 ND | <616 ND | <579 ND | <592 ND | <615 ND | <566 ND | <608 ND | <655 ND | <559 ND | <576 ND | <613 ND | <597 ND | <655 ND |
| Thallium | 2 | <1.2 ND | 2 | 1.3 | 2.1 | <1.1 ND | 3.1 | 2.2 | 2.5 | <1.2 ND | <1.2 ND | 3.2 | 3.1 |
| Vanadium | 36.4 | 37.9 | 43.6 | 29.2 | 41.4 | 67 | 74 | 50.1 | 61 | 23.1 | 75.2 | 79.5 | 69.7 |
| Zinc | 54.9J | 65.9J | 61.1J | 58.1J | 64J | 70.3J | 93.4J | 76.1J | 68.8J | 14.4J | 37.7J | 84.8J | 76.5J |

## Table 4-4
## Background Metals Concentration,
## Groseclose and Poplimento Silt Loam

[Units in mg/kg]

| Sample ID | NRUG1A | NRUG2A | NRUG3A | NRUG4A | NRUG1B | NRUG2B | NRUG2BD | NRUG3B | NRUG4B | NRUG1C | NRUG2C | NRUG3C | NRUG4C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 8/29/00 | 8/30/00 | 8/30/00 | 8/30/00 | 8/29/00 | 8/30/00 | 8/30/00 | 8/30/00 | 8/30/00 | 8/29/00 | 8/30/00 | 8/30/00 | 8/30/00 |
| Depth (Inches) | 0-12 | 0-7 | 0-12 | 0-6 | 12-53 | 7-34 | 7-34 | 12-35 | 6-39 | 53-70 | 34-57 | 35-67 | 39-72 |
| Aluminum | 5010 | 10700 | 7260 | 3770J | 6850 | 7050 | 8160 | 8860 | 6130J | 6280 | 17600 | 10500 | 7420J |
| Antimony | <0.69L ND | 0.69R | 0.67R | 0.69R | <0.7L ND | 0.68R | 0.68R | 0.69R | 0.71R | <0.69L ND | 0.74R | 0.73R | 0.72R |
| Arsenic | 2J | 4.1J | 3.6B | 2.8B | 3.4J | 2.5J | 3.6J | 3.8B | 3.2B | 5.1J | 4.3J | 2.7B | 7.4J |
| Barium | 26.8 | 40.7 | 45.7 | 23.4J | <23 ND | 30.4 | 32.5 | <23 ND | <24 ND | <23 ND | 38.7 | <24 ND | <24 ND |
| Beryllium | <0.57L ND | 0.64 | 0.62J | <0.58J ND | <0.59L ND | <0.56 ND | <0.57 ND | <0.58 ND | <0.59J ND | <0.57L ND | 1.6 | <0.61 ND | <0.6J ND |
| Cadmium | <0.57 ND | <0.57 ND | <0.56 ND | <0.58 ND | <0.59 ND | <0.56 ND | <0.57 ND | <0.58 ND | <0.59 ND | <0.57 ND | <0.61 ND | <0.61 ND | <0.6 ND |
| Calcium | 534 | 434J | 571J | 825 | <120 ND | 237J | 239J | 304J | 622 | <110 ND | 388J | 223J | 227 |
| Chromium | 8.8J | 25.9L | 29.8L | 9.8J | 15.5J | 18.6L | 24.3L | 30.1L | 13.6J | 14.2J | 33.1L | 25.6L | 23.7J |
| Cobalt | <5.7L ND | 8.3J | 11.8 | 5.9L | <5.9L ND | 17.4J | 18 | 31.1J | <5.9L ND | <5.7L ND | 70.1J | 36.6J | 23.9 |
| Copper | <1.1 ND | 11J | 4.6J | 3.9J | 1.6J | 4.2J | 4.6J | 2.3J | 4J | 1.6J | 21.3J | 13.4J | 6.1J |
| Iron | 8790 | 30900 | 27000 | 9490J | 18900 | 10500 | 24600 | 31000 | 17400J | 24300 | 34200 | 31100 | 38100J |
| Lead | 8.9L | 12.5 | 18J | 23.6 | 7.5L | 9.6 | 12J | 13.8 | 13.8 | 7.4 | 14.5 | 7.2 | 35.5 |
| Magnesium | 261L | 1230 | 913J | 311J | 139L | 1050 | 1400J | 416 | 333J | <110L ND | 2010 | 624 | 227J |
| Manganese | 141 | 301J | 458L | 306 | 35.8 | 368J | 399L | 512J | 69 | 16.7 | 523J | 931J | 664 |
| Mercury | <0.11 ND | <0.11 ND | <0.11 ND | <0.12 ND | 0.13 | <0.11 ND | <0.11 ND | <0.12 ND | <0.12 ND | 0.11 | <0.12 ND | <0.12 ND | 0.14 |
| Nickel | <4.6 ND | 9.2 | 5.9L | <4.6 ND | <4.7 ND | 6.6L | 7.9L | <4.6L ND | <4.8 ND | <4.6 ND | 35.3 | 29.6 | 6.6 |
| Potassium | 191 | 671 | 438L | 220J | 156 | 613 | 705L | 408 | 207J | 123 | 1360 | 618 | 211J |
| Selenium | <0.57 ND | <0.57L ND | <0.56L ND | <0.58L ND | <0.59 ND | <0.56L ND | <0.57L ND | <0.58L ND | <0.59L ND | <0.57 ND | <0.61L ND | <0.61L ND | <0.6L ND |
| Silver | <1.1 ND | <1.1 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.2 ND |
| Sodium | <110 ND | <110 ND | <110 ND | <120 ND | <120 ND | <110 ND | <110 ND | <120 ND | <120 ND | <110 ND | <120 ND | <120 ND | <120 ND |
| Thallium | <1.1 ND | <1.1 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.2 ND |
| Vanadium | 15.1J | 47.2L | 41L | 15J | 29.7J | 29.9L | 41.3L | 47.6L | 26.5J | 31.5J | 56.1L | 47.2L | 40.9J |
| Zinc | 7.1 | 26.7J | 28.5J | 24.6J | 4.7 | 15.4J | 19.7J | 11.1J | 10J | 6 | 28J | 33J | 14.4J |

## Table 4-5
## Background Metals Concentration,
## Carbo Silty Clay Loam

[Units in mg/kg]

| Sample ID<br>Date<br>Depth (Inches) | NRUC1A<br>8/30/00<br>0-11 | NRUC2A<br>8/30/00<br>0-11 | NRUC3A<br>8/29/00<br>0-10 | NRUC4A<br>8/29/00<br>0-7 | NRUC1B<br>8/30/00<br>11-72 | NRUC2B<br>8/30/00<br>11-72 | NRUC3B<br>8/29/00<br>10-18 | NRUC4B<br>8/29/00<br>7-30 | NRUC4C<br>8/29/00<br>30-48 |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 6260 | 4440 | 20100J | 5650J | 11900 | 16600 | 21100J | 10000J | 12200J |
| Antimony | 0.7R | 0.72R | 0.73R | 0.7R | 0.79R | 0.76R | 0.73R | 0.73R | 0.76R |
| Arsenic | 3.4J | 2.6B | 1.6J | 6.1J | 4.9J | 4.8B | 1.2J | 2.6J | 3.9J |
| Barium | 24.5 | 30 | 56.7J | <23 ND | <26 ND | 48.1 | 45.5J | <24 ND | <25 ND |
| Beryllium | <0.58 ND | 0.61 | 0.87J | <0.58J ND | <0.66 ND | 3.4 | 0.91J | <0.61J ND | <0.64J ND |
| Cadmium | <0.58 ND | <0.6 ND | <0.61 ND | <0.58 ND | <0.66 ND | <1.3 ND | <0.61 ND | <0.61 ND | <0.64 ND |
| Calcium | 238J | 715J | 1810 | <120 ND | 280J | 1860J | 25700 | 244 | 140 |
| Chromium | 14.5L | 11.3L | 32.2J | 22.3J | 27.2L | 47.6L | 31.2J | 14.5J | 19.2J |
| Cobalt | 8.6J | 33.6J | 11.4L | <5.8L ND | <6.6J ND | 89.1J | 10.3L | <6.1L ND | <6.4L ND |
| Copper | 6.3J | 4.1J | 9J | 2.9J | 16.8J | 21.5J | 11.8J | 5.9J | 9.7J |
| Iron | 19400 | 10100 | 31900J | 20400J | 35800 | 39400 | 28400J | 17300J | 25200J |
| Lead | 15.4 | 24.7 | 11.5 | 13 | 11 | 28 | 3.5 | 6.6 | 8 |
| Magnesium | 280 | 448 | 20400J | 259J | 219 | 2150 | 48100J | 279J | 326J |
| Manganese | 231J | 482J | 498 | 186 | 58.2J | 205J | 308 | 33 | 36.4 |
| Mercury | <0.12 ND | <0.12 ND | <0.12 ND | <0.12 ND | <0.13 ND | <0.13 ND | <0.12 ND | 0.12 | <0.13 ND |
| Nickel | 5.9L | <4.8L | 18.1 | <4.7 ND | 12.7 | 44.8 | 21.5 | <4.8 ND | 7.8 |
| Potassium | 166 | 233 | 2350J | 291J | 180 | 618 | 5390J | 402J | 473J |
| Selenium | <0.58L ND | <0.6L ND | <0.61L ND | <0.58L ND | <0.66L ND | <1.3L ND | <3.1L ND | <0.61L ND | <0.64L ND |
| Silver | <1.2 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.3 ND | <2.6 ND | <1.2 ND | <1.2 ND | <1.3 ND |
| Sodium | <120 ND | <120 ND | <120 ND | <120 ND | <130 ND | <130 ND | 148 | <120 ND | <130 ND |
| Thallium | <1.2 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.3 ND | <1.3 ND | <1.2 ND | <1.2 ND | <1.3 ND |
| Vanadium | 32.6L | 19.7L | 42.5J | 26.6J | 66.8L | 68.9L | 38.3J | 22J | 34.3J |
| Zinc | 17.2J | 15.9J | 56.3J | 10.9J | 29.8J | 28.4J | 40.8J | 7.4J | 9.8J |

## Table 4-6
## Background Metals Concentration,
## Lowell Silt Loam

[Units in mg/kg]

| Sample ID | NRUL1A | NRUL2A | NRUL3A | NRUL4A | NRUL1B | NRUL2B | NRUL2BD | NRUL3B | NRUL4B | NRUL4BD | NRUL1C | NRUL2C | NRUL3C | NRUL4C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 8/29/00 | 8/30/00 | 8/29/00 | 8/29/00 | 8/29/00 | 8/30/00 | 8/30/00 | 8/29/00 | 8/29/00 | 8/29/00 | 8/29/00 | 8/30/00 | 8/29/00 | 8/29/00 |
| Depth (Inches) | 0-12 | 0-12 | 0-9 | 0-10 | 12-42 | 12-33 | 12-33 | 9-75 | 10-38 | 10-38 | 42-55 | 33-60 | 75-90 | 38-60 |
| Aluminum | 5740 | 10800 | 16000 | 6750 | 12500 | 13200 | 10300 | 24800 | 6580 | 7380 | 26600 | 20500 | 32800 | 12100 |
| Antimony | 0.66R | 0.69R | <0.72L ND | <0.69L ND | 0.71R | 0.71R | 0.71R | <0.86L ND | <0.67L ND | <0.67L ND | 0.74R | 0.75R | <0.84L ND | <0.7L ND |
| Arsenic | 3.8J | 5.1B | 3.7J | 9.3J | 2.7J | 6.9J | 4.7B | 3.1J | 5.7J | 7.1J | 2.5J | 4.2B | 3.7J | 4.2J |
| Barium | 63.6 | 79 | 59.4 | 109 | 30.4 | 32.6 | 27.9 | 57.2 | 38.7 | 39.2 | 47.5 | 34 | 63.4 | 42.7 |
| Beryllium | 0.72 | 0.89J | 0.72J | 1J | <0.59 ND | <0.59 ND | <0.59 ND | 1.2J | <0.56L ND | <0.56L ND | 2 | 0.96J | 2.3J | 1.6J |
| Cadmium | <0.55 ND | <0.58 ND | <0.6 ND | <0.57 ND | <0.59 ND | <0.59 ND | <0.59 ND | <0.72 ND | <0.56 ND | <0.56 ND | <1.2 ND | <0.62 ND | <0.7 ND | <0.59 ND |
| Calcium | 885J | 1380J | 918 | 1310 | 536J | 618J | 585J | 527 | 520 | 517 | 619J | 844J | 532 | 744 |
| Chromium | 27L | 28.2L | 34.4J | 31.2J | 24.8L | 35.2L | 40L | 39J | 25.1J | 35.5J | 33.9L | 49.5L | 36.4J | 30.9J |
| Cobalt | 15.3J | 25.9 | 16.3J | 21.8J | 12J | 29.4 | 34.6 | 11.4J | 18.5J | 19.3J | 8.9J | 7 | 12.5J | 20J |
| Copper | 3.2J | 5.1J | 11.6J | 5.1J | 5.6J | 19.7J | 4.2J | 27.6J | 1.6J | 1.2J | 29.5J | 16.6J | 23.8J | 11.1J |
| Iron | 19400 | 25200 | 32000 | 24300 | 24400 | 32500 | 26100 | 41000 | 21300 | 29800 | 44200 | 33100 | 36500 | 29200 |
| Lead | 21.4 | 26.8J | 15.3L | 76.7L | 8.7 | 17.7J | 16J | 9.7L | 16.6L | 17.7L | 10 | 7.9J | 8.9L | 13.4L |
| Magnesium | 792 | 2010J | 7480L | 420L | 2010 | 2310J | 1240J | 4890L | 295L | 374L | 9200 | 3610J | 42800L | 712L |
| Manganese | 1110J | 1530L | 711 | 1710 | 245J | 654L | 785L | 305 | 735 | 717 | 156J | 62.8L | 262 | 501 |
| Mercury | <0.11 ND | <0.12 ND | <0.12 ND | 0.13 | <0.12 ND | <0.12 ND | <0.12 ND | 0.19 | <0.11 ND | <0.11 ND | <0.12 ND | <0.12 ND | <0.14 ND | <0.12 ND |
| Nickel | 4.6L | 9.4 | 15.3 | 7 | 8.5L | 8.9L | 5.7L | 27.1 | <4.5 ND | 4.8 | 26 | 18.5 | 31 | 13.2 |
| Potassium | 344 | 960L | 1530 | 581 | 1390 | 1700L | 956L | 1710 | 418 | 468 | 6340 | 3020L | 10000 | 624 |
| Selenium | 0.64L | 0.77B | <0.6 ND | <0.57 ND | <0.59L ND | <0.59L ND | <0.59L ND | <3.6 ND | <0.56 ND | <0.56 ND | <1.2L ND | <0.62L ND | <3.5 ND | <2.9 ND |
| Silver | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.4 ND | <1.1 ND | <1.1 ND | <2.4 ND | <1.2 ND | <1.4 ND | <1.2 ND |
| Sodium | <110 ND | <120 ND | <120 ND | <110 ND | <120 ND | <120 ND | <120 ND | <140 ND | <110 ND | <110 ND | <120 ND | <120 ND | <140 ND | <120 ND |
| Thallium | <1.1 ND | <1.2 ND | <1.2 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.4 ND | <1.1 ND | <1.1 ND | <1.2 ND | <1.2 ND | <1.4 ND | <1.2 ND |
| Vanadium | 31.9L | 45.9L | 52.9J | 38.7J | 36.7L | 52.3L | 40.4L | 63.5J | 34.1J | 47.3J | 64.6L | 48.6L | 60.6J | 41.4J |
| Zinc | 29.2J | 39.6J | 39 | 55.1 | 12.6J | 20.7J | 14.8J | 29.4 | 9 | 10.6 | 30.9J | 30.4J | 56.5 | 17.8 |

## Table 4-7
## Background Metals Concentration, Wurno-Newbern-Faywood Silt Loam

[Units in mg/kg]

| Sample ID | NRUW1A | NRUW2A | NRUW3A | NRUW4A | NRUW1B | NRUW2B | NRUW3B | NRUW4B | NRUW1C | NRUW2C | NRUW3C | NRUW4C | NRUW4CD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | 8/30/00 | 8/30/00 | 8/29/00 | 8/29/00 | 8/30/00 | 8/30/00 | 8/29/00 | 8/29/00 | 8/30/00 | 8/30/00 | 8/29/00 | 8/29/00 | 8/29/00 |
| Depth (Inches) | 0-7 | 0-9 | 0-10 | 0-10 | 7-38 | 9-28 | 10-34 | 10-31 | 38-48 | 28-48 | 34-45 | 31-46 | 31-46 |
| Aluminum | 5450 | 14600 | 3620 | 8100 | 14900 | 17300 | 10800J | 14500 | 33900 | 29700 | 10200J | 16700 | 18500 |
| Antimony | 0.7R | 0.72R | <0.7L ND | <0.73L ND | 0.75R | 0.74R | 0.74R | <0.74L ND | 0.79R | 0.79R | 0.73R | <0.8L ND | <0.8L ND |
| Arsenic | 2J | 7.6J | 2.3J | 3J | 1.6J | 2.8B | 3 | 2.8J | 1.9J | <1.3 ND | 10.7J | 2.2J | 2.3J |
| Barium | 36.4 | 60.8 | <23 ND | 75.3 | 43.1 | 40.1 | 28.5J | 36.2 | 164 | 63.2 | 46.6J | 35.4 | 32.6 |
| Beryllium | <0.58 ND | 1.2 | <0.59L ND | 1.5J | 0.93 | <0.62 ND | <0.61J ND | 0.78J | 2.1 | 1.3J | 5.4J | 1.4J | 1.4J |
| Cadmium | <0.58 ND | <1.2 ND | <0.59 ND | <0.61 ND | <0.63 ND | <0.62 ND | <0.61 ND | <0.62 ND | <1.3 ND | <0.66 ND | <0.61 ND | <0.66 ND | <0.66 ND |
| Calcium | 808J | 1180J | 426 | 1140 | 717J | 1050J | 330 | 412 | 3540J | 5430J | 709 | 149 | 243 |
| Chromium | 22.5L | 53.3L | 6.3J | 25.7J | 30L | 30L | 14.4J | 30.3J | 48.9L | 50.9L | 26J | 27.2J | 28.3J |
| Cobalt | 10.2J | 45.4J | <5.9L ND | 26.3J | 8.7J | <6.2 ND | <6.1L ND | 6.2J | 13.4J | 12.2 | 130 | 7.6J | 27.4J |
| Copper | 2.9J | 8.5J | 3.3J | 5.1J | 9.1J | 8.1J | 9J | 15.7J | 29.3J | 38.7J | 12.3J | 26.3J | 27.9J |
| Iron | 22900 | 63000 | 7470 | 33700 | 32300 | 31600 | 17300J | 35300 | 44100 | 42800 | 18500J | 40600 | 42200 |
| Lead | 17.1 | 26.8 | 10.3L | 28.8L | 6.5 | 5.7J | 8.4 | 6.7L | 2.1 | 4.5J | 12.6 | 6.8L | 8.2L |
| Magnesium | 690 | 8080 | 363L | 1080L | 1300 | 5570J | 860J | 1780L | 51300 | 42700J | 10600J | 7070L | 8270L |
| Manganese | 445J | 1860J | 91.7 | 2040 | 240J | 188L | 33.2 | 121 | 359J | 284L | 419 | 68.3 | 187 |
| Mercury | <0.12 ND | <0.12 ND | <0.12 ND | <0.12 ND | <0.13 ND | <0.12 ND | <0.12 ND | <0.12 ND | <0.13 ND | <0.13 ND | <0.12 ND | 0.19 | 0.16 |
| Nickel | <4.7L ND | 16.8 | <4.7 ND | 7.9 | 11.6 | 11.7 | 7 | 17.3 | 43.1 | 33.6 | 51.1 | 29.2 | 29.6 |
| Potassium | 291 | 1990 | 366 | 587 | 469 | 1600L | 676J | 1260 | 5670 | 6120L | 1870J | 4630 | 5600 |
| Selenium | <0.58L ND | <1.2L ND | <0.59 ND | <0.61 ND | <0.63L ND | <0.62L ND | <0.61L ND | <1.2 ND | <1.3L ND | <0.66L ND | <0.61L ND | <3.3 ND | <3.3 ND |
| Silver | <1.2 ND | <2.4 ND | <1.2 ND | <1.2J ND | <1.3 ND | <1.2 ND | <1.2 ND | <1.2 ND | <2.6 ND | <1.3 ND | <1.2 ND | <1.3 ND | <1.3 ND |
| Sodium | <120 ND | <120 ND | <120 ND | <120 ND | <130 ND | 123 | <120 ND | <120 ND | <130 ND | 130 | <120 ND | <130 ND | 151 |
| Thallium | <1.2 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.3 ND | <1.2 ND | <1.2 ND | <1.2 ND | <1.3 ND | <1.3 ND | <1.2 ND | <1.3 ND | <1.3 ND |
| Vanadium | 39.1L | 101L | 12.2J | 48.1J | 51.3L | 53.6L | 29.1J | 53J | 77.6L | 61.2L | 32.3J | 62.8J | 65.3J |
| Zinc | 27.9J | 56.2J | 14.9 | 35.4 | 16.9J | 20.7J | 11.8J | 27.8 | 69.8J | 57J | 33.7J | 34.2 | 35.8 |

- **Initial and continuing calibration.** Performed at the beginning of sample analysis and at a frequency of 10% or every 2 hours to assess calibration frequency and accuracy. MRL standards were evaluated for ICP and for CVAA. Concentration was evaluated at 2 times the greater of MRL or MDL for analytes (except Al, Ba, Ca, Fe, Mg, Na, and K) at the beginning and at the end (for ICP) of a sample run or a minimum of twice per 8 hours. For GFAA/CVAA, concentration was evaluated at the MRL at the beginning of the run. Recovery range was evaluated between 90% and 110%.
- **Blanks assessment.** Evaluated to assess the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Sample values < five times (5×) the maximum concentration detected in the QC blanks and > the MRL were qualified "B."
- **ICP Interference Check Sample.** Verified interelement and background correction factors. Interference check samples run at the beginning and end of each sample analysis run with control limits between 80% and 120%.
- **Matrix spike sample analysis.** Designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike recoveries must be within 75%–125% or established recoveries, with the exception of samples that have concentrations exceeding the spike concentration by a factor of four or more. When MS recovery limits are not met, a post-digestion spike addition should produce a minimum level of 10 to 100 times the MDL.
- **Duplicate sample analysis.** Demonstrated acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data in order to assess the long-term precision of the analytical method on various matrices. A control limit of 20% RPD was used.
- **Laboratory Control Samples.** Monitored overall performance of each step during the analysis, including the sample preparation. Solid LCS results must fall within the established limits, depending upon the LCS lot standard used.
- **ICP serial dilution.** Assessed whether or not significant physical or chemical interferences exist due to sample matrix during ICP analysis. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.
- **Calculation verification.** The percent difference (%D) between calculated and reported results should be <10%. Samples below the MRL and above the MDL were qualified "J," estimated.

**4.1.2.2 VOC Validation Criteria.** Laboratory performance criteria evaluated for VOCs included the following. Further discussion may be found in the validation reports in Appendix B.

- **Holding times.** 14 days for VOCs. Preservation: Cool, 4°C ± 2°C for soil samples and cool, 4°C ± 2°C and HCl pH<2 for aqueous samples.
- **Initial calibration.** Performed at the beginning of sample analysis to assess calibration frequency and accuracy. Compliance requirements for satisfactory instrument calibration were established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. Initial calibration demonstrates that the instrument was capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum relative response factor (RRF) must be ≤ 0.05. Percent relative standard deviation (%RSD) must be ≤ 15% for each target compound and must be ≤ 30% for each calibration check compound.
- **Continuing calibration.** Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis. The %D between the initial calibration RRF and the continuing calibration RRF must be within 20% for target compounds.

- **Blanks assessment.** The purpose of blank analyses was to identify the presence and magnitude of contamination problems resulting from field (rinse blanks) and laboratory activities. A method blank analysis must be performed after the calibration standards and once every 12-hour time period beginning with the injection of bromofluorobenzene (BFB). No contaminants should be detected in the associated blanks > MRL. Positive sample results were reported and qualified "B" if the concentration of the compound in the sample was ≤ 10 times (10x) the maximum amount in a blank for the common laboratory contaminants methylene chloride, acetone and 2-butanone, or 5 times (5x) the maximum amount for other volatile target compounds.
- **Instrument performance check.** The analysis of the instrument performance check solution was performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check solution, BFB, must meet the specified ion abundance criteria.
- **Matrix spike and spike duplicate sample analysis.** Designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology as well as acceptable method precision by the laboratory at the time of analysis. The spike recoveries must be within established limits, with the exception of samples that have concentrations exceeding the spike concentration by a factor of four or more. Matrix spike duplicate analyses are also performed to generate data in order to assess the long-term precision of the analytical method on various matrices using RPD. RPD recoveries must be within established limits.
- **Laboratory control samples.** Monitored overall performance of each step during the analysis, including the sample preparation. LCS results must fall within the established recovery limits.
- **System monitoring compounds (Surrogates).** Laboratory performance on individual samples is established by means of spiking activities. The system monitoring compounds were added to the samples and blanks to measure their recovery. %Rs must be within the specified control limits.
- **Internal standards.** Internal standards performance check ensures that gas chromatography/mass spectroscopy (GC/MS) sensitivity and response are stable during each analytical run. Specific criteria include area count of –50% to +100% and retention time of ± 30 seconds from the associated calibration standards.
- **Calculation verification.** The %D between calculated and reported results should be < 10%. Samples below the MRL and above the MDL were qualified "J," estimated. Tentatively identified compounds (TICs) were qualified as estimated "J".

**4.1.2.3 SVOC Validation Criteria.** Laboratory performance criteria evaluated for SVOCs included the following. Further discussion may be found in the validation reports in Appendix B.

- **Holding times.** 7 days to extract/40 days analysis for aqueous and 14 days to extract/40 days analysis for soils for SVOCs. Preservation: Cool, 4°C ± 2°C for soil and aqueous samples.
- **Initial calibration.** Performed at the beginning of sample analysis to assess calibration frequency and accuracy. Compliance requirements for satisfactory instrument calibration were established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for compounds on the semivolatile TCL. Initial calibration demonstrates that the instrument was capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum RRF criteria must be ≤ 0.05. Initial calibration %RSD must be ≤ 15% on the average for compounds (≤ 30% for continuing calibration checks).
- **Continuing calibration.** Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. Continuing calibration standards containing both target and surrogates compounds are analyzed at the beginning of each 12-hour analysis period following the analysis of the instrument performance check and prior to the analysis of blanks and samples. The minimum RRFs for semivolatile target compounds and surrogates must be ≤ 0.05. The %D between the initial calibration RRF and the continuing calibration RRF must be within ≤ 20% for target compounds.

- **Blanks assessment.** The purpose of blank analyses was to identify the presence and magnitude of contamination problems resulting from field (rinse blanks) and laboratory activities. A method/extraction blank analysis must be performed after the calibration standards and once every 12-hour time period beginning with the injection of decafluorotriphenylphosphine (DFTPP). No contaminants should be detected in associated blanks > MRL. Positive sample results were reported and qualified "B" if the concentration of the compound in the sample was ≤ 10 times (10x) the maximum amount in a blank for the common laboratory contaminants phthalate esters, or 5 times (5x) the maximum amount for other semivolatile target compounds.
- **Instrument performance check.** The analysis of the instrument performance check solution was performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check solution, DFTPP, must meet the specified ion abundance criteria.
- **Matrix spike and spike duplicate sample analysis.** Designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology as well as acceptable method precision by the laboratory at the time of analysis. The spike recoveries must be within established limits, with the exception of samples that have concentrations exceeding the spike concentration by a factor of four or more. Matrix spike duplicate analyses are also performed to generate data in order to assess the long-term precision of the analytical method on various matrices using RPD. RPD recoveries must be within established limits.
- **Laboratory Control Samples.** Monitored overall performance of each step during the analysis, including the sample preparation. LCS results must fall within the established recovery limits.
- **System Monitoring Compounds (Surrogates).** Laboratory performance on individual samples is established by means of spiking activities. The system monitoring compounds were added to the samples and blanks to measure their recovery. %Rs must be within the specified control limits.
- **Internal Standards.** Internal standards performance check ensures that GC/MS sensitivity and response are stable during each analytical run. Specific criteria include area count of –50% to +100% and retention time of ± 30 seconds from the associated calibration standards.
- **Calculation verification.** The %D between calculated and reported results should be < 10%. Samples below the MRL and above the MDL were qualified "J," estimated. TICs were qualified as estimated "J".

### 4.1.3 Data Grouping

An iterative screening approach was used to identify inorganic elements that would be included in the statistical evaluation. This preliminary screening was designed to ensure the adequacy of data grouping within both the MMA and NRU.

Macronutrients were eliminated because these elements generally are not risk drivers and have associated average daily intakes. Elements classified as macronutrients included calcium, magnesium, potassium, and sodium. Data were then reviewed from each area to discern elements that were not detected above the MRL. A target value of 80% was used to eliminate analytes that were not detected in the samples.

Further refinement of the data screening process yielded additional elements that were eliminated. These elements were detected either once or twice across the respective soil type. Additional rationale was integrated into the decisionmaking process to validate initial assumptions. For example, mercury was detected twice (0.07, 1.2 mg/kg) within the MMA Braddock Loam surface soil type. Because the mercury concentration for the Braddock Loam soil in the Eastern United States is in the range 0–1.2 mg/kg, the decision to eliminate mercury from the background evaluation was verified. A comparison of surface and subsurface soil concentrations within the MMA and NRU against the Eastern U.S. is presented in Appendix E. Additionally, graphical presentations for the distribution of mean soil concentrations within MMA and NRU soil types are included in Appendix E.

The coefficient of variation (CV), defined as the standard deviation divided by the mean, was used to evaluate the data variability for element distribution across soil types. Although CVs were not applied in the screening process, these values were used for comparison purposes. Elements with CVs less than 1.00 were combined into one data grouping. Elements with CVs greater than 1.00 were further evaluated to address the causes of variability.

## 4.2 STATISTICAL APPROACH

The statistical approach designed for RFAAP is depicted graphically in Figure 4-1. Equations associated with specific tests are presented in Table 4-8. Frequency of detects were calculated by element grouped within the MMA and NRU in accordance with Figure 4-2. Statistical criteria were established in conjunction with the percentage of calculated non-detects.

Elements that contained non-detects at a frequency greater than 80 percent were eliminated from further processing. These elements were not evaluated because no meaningful statistic can be generated from data sets that contain a large percentage of non-detected values. Additionally, one-half the reporting level was used as the concentration for non-detects.

Elements that contained non-detects at a frequency less than 50% were first evaluated using the Shapiro-Wilk test. Data sets from the MMA and NRU were individually tested to assess whether they were normally distributed. When the data sets did not follow a normal distribution, data points were log transformed and the Shapiro-Wilk test was used to assess whether the data were lognormally distributed. When data from both the MMA and NRU were both normally distributed, the F-test was applied to assess whether there was a statistical difference between the variances of the two groups. When data from both the MMA and NRU were both lognormally distributed, then the F-test was applied to the log transformed data. When the elements from the MMA and NRU had different distributions or did not pass either the normal and lognormal distribution test, the Mann-Whitney U test was used to assess the statistical significance between the data sets.

Results from the F-test were used to assess the appropriate Student's t-test. For example, when the variances were found to be similar, the Student's t-test was calculated using equal variances. Conversely, t-tests were calculated using unequal variances when the F-test demonstrated that the variances between the data sets were not similar.

The Student's t-test was used to assess statistical differences between the means of the data groups. No statistical differences between the means of the two groups demonstrated that the data could be combined into one set. Statistical differences between the group means would necessitate the use of separate background comparison values for each area.

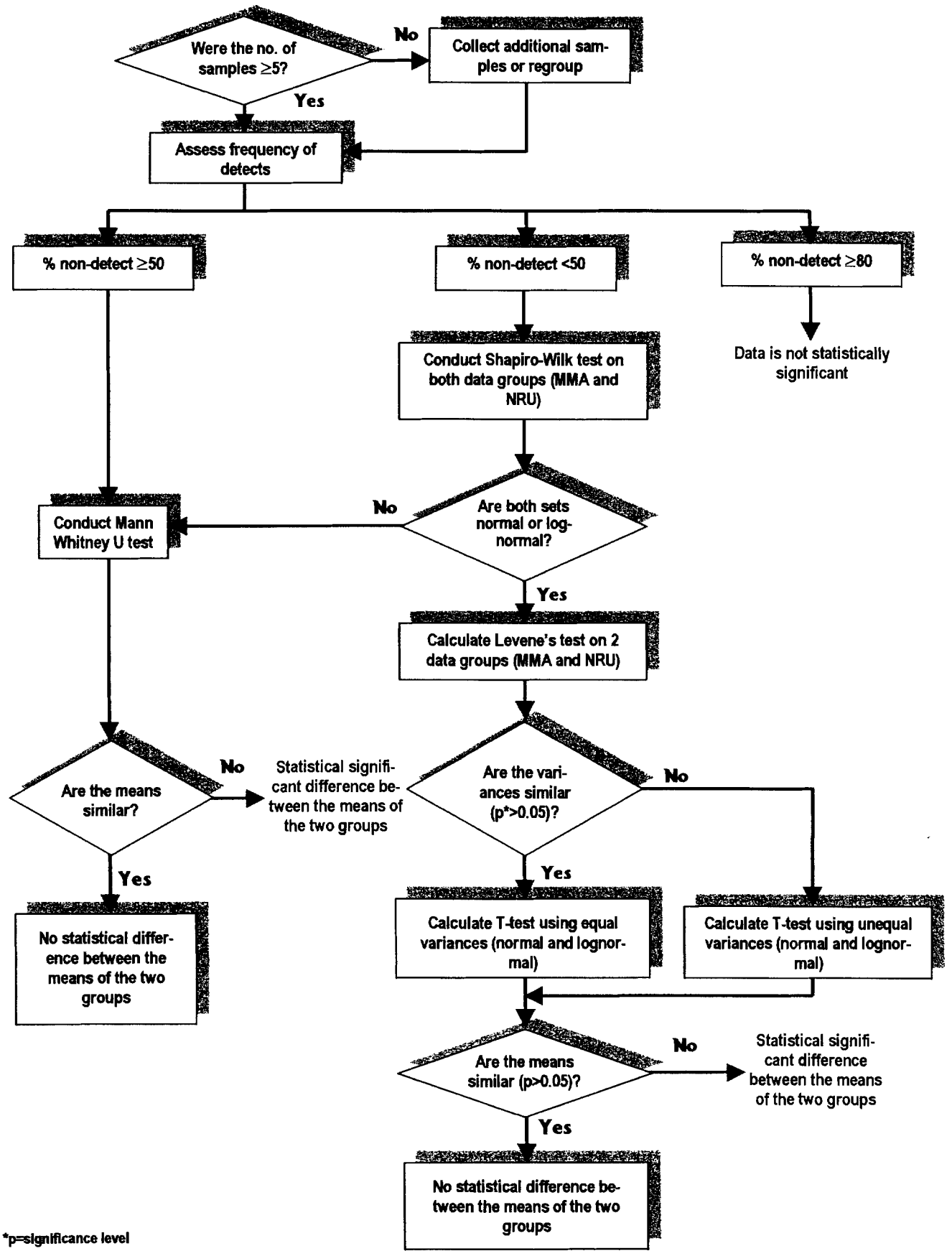
Statistical comparisons were performed separately for surface and subsurface soil samples within the MMA and NRU in accordance with Work Plan Addendum No. 10. The decision to segregate the data by surface versus subsurface soil took into account the treatment of background concentrations during risk assessment activities. For example, surface soil samples directly impact ecological risk management decisions, whereas subsurface soils are factored heavily into human health risk decisions.

Table 4-9 presents the statistical summary for elements evaluated in the surface soil. The output from the statistical comparisons is included as Appendix F. Thallium results were reassessed and eliminated because there were not enough detected results to demonstrate statistical significance. Although thallium was detected in 4 of 12 samples in the MMA, there were no detections of thallium in the 16 samples for the NRU. Therefore, the statistical comparison between the groups could not be performed. The Shapiro-Wilk test was used to assess the distribution of elements. Seven of the remaining thirteen inorganic surface soil elements (Figure 4-2) passed the test for normality or lognormality, including:

- Aluminum
- Chromium
- Copper
- Iron
- Manganese
- Vanadium
- Zinc

Figure 4–1

# Statistical Approach for Radford Backgound Study




*p=significance level

Figure 4–2

# Element Screening Process

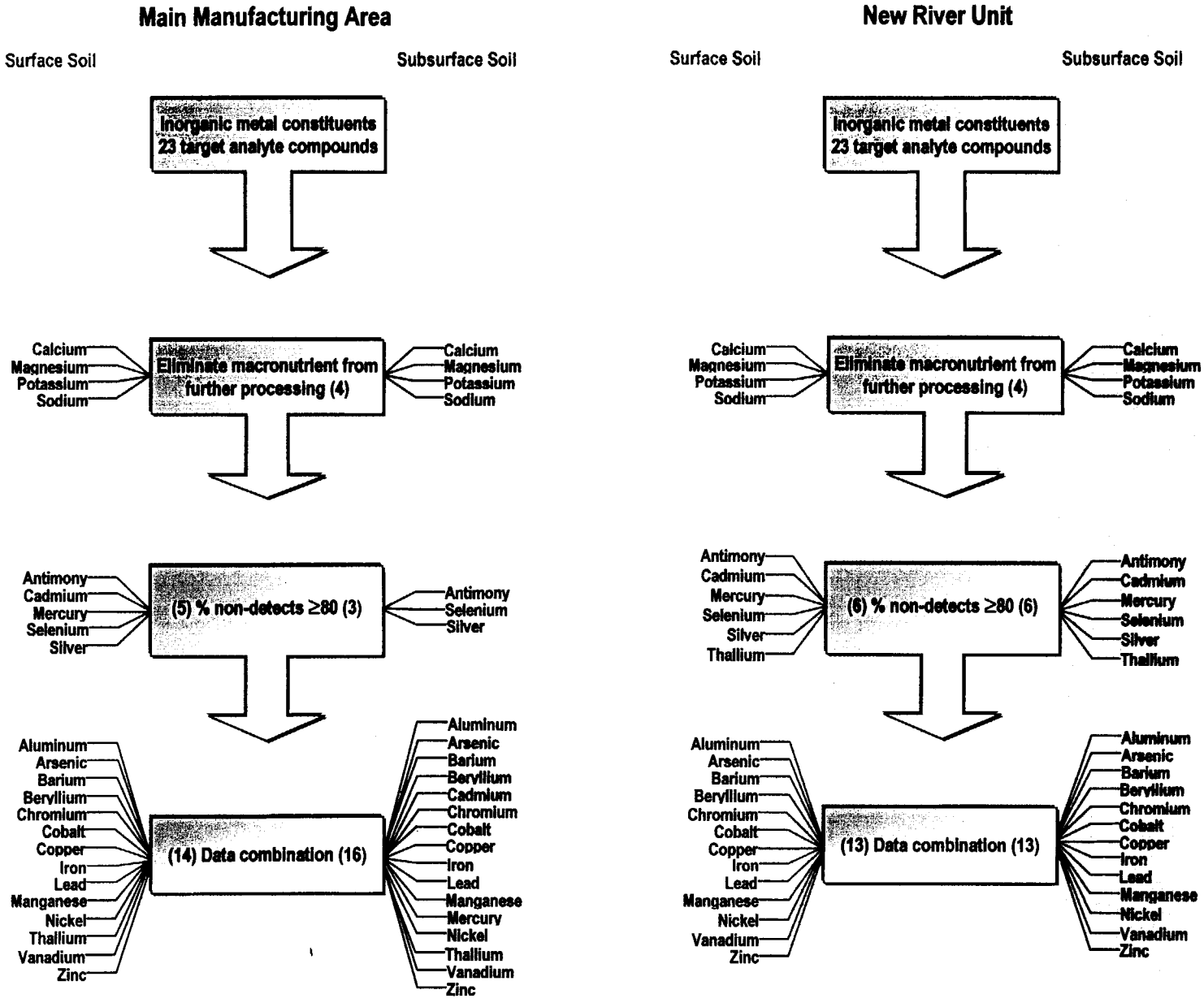


**Table 4-8**
**Statistical Test**

| Test Name | Test | Equation | Hypothesis |
|---|---|---|---|
| Shapiro-Wilk | Normality | $W = \frac{1}{d}\left[\sum_{i=1}^{k} a_i \left(x_{n-i+1} - x_i\right)\right]^2 \quad d = \sum_{i=1}^{n} x_i^2 - \frac{1}{n}\left(\sum_{i=1}^{n} x_i\right)^2$<br><br>$W < W_{0.05}$ reject $H_0$ and accept $H_a$<br>$W >= W_{0.05}$ accept $H_0$ and reject $H_a$<br><br>where<br>$a_i$ = Shapiro-Wilk coefficient<br>$k$ = number of pairs of measurements<br>$x_i$ = $i^{th}$ data value in the ordered data set<br>$x_i^2$ = square of the $i^{th}$ data value in the ordered data set<br>$n$ = number of data points<br>$W$ = Shapiro-Wilk test statistic<br>$W_{0.05}$ = Shapiro-Wilk quantile at the 0.05 significant level | $H_0$: Population has a normal (lognormal) distribution<br><br>$H_a$: Population does not have a normal (lognormal) distribution |
| F-test | Equality of Variances | $F_{test} = s_1^2 / s_2^2$<br><br>$s^2 = \frac{1}{n-1} \sum_{i=1}^{n} (x_i - \bar{x})^2$<br><br>$F_{test} < F_{critical,\ 0.05}$ *reject* $H_o$ *and accept* $H_a$<br>$F_{test} \geq F_{critical,\ 0.05}$ *accept* $H_o$ *and reject* $H_a$<br><br>where<br>$s_1^2$ = sample variance from Population 1<br><br>$s_2^2$ = sample variance from Population 2<br><br>n = number of data points in Population "i"<br><br>$x_i$ = individual data value in Population "i"<br><br>$\bar{x}$ = arithmetic mean for data in Population "i"<br><br>$F_{critical,\ 0.05}$ = F statistic at the 0.05 significance level | $H_0$: Populations have equal variances<br><br>$H_a$: Populations have unequal variances |

**Table 4-8 (Continued)**

| Test Name | Test | Equation | Hypothesis |
|---|---|---|---|
| Student's t-test | Equality of Means | $T_{test} = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$<br>$s = \left[\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}\right]^{0.5}$<br>$T_{test} < T_{n1+n2-2,0.95}$ reject $H_0$ and accept $H_a$<br>$T_{test} >= T_{n1+n2-2,0.95}$ accept $H_0$ and reject $H_a$<br>where<br>$s$ = estimated pooled standard deviation<br>$n_1$ = number of data points in group 1<br>$n_2$ = number of data points in group 2<br>$x_1$ = arithmetic mean from group 1<br>$x_2$ = arithmetic mean from group 2<br>$s_1$ = standard deviation from group 1<br>$s_2$ = standard deviation from group 2<br>$T_{test}$ = T-test Test statistic<br>$T_{n1+n2-2,0.95}$ = T-test at the 0.05 significant level | $H_0$: Populations have equal means<br>$H_a$: Populations have unequal means |
| Mann Whitney | Equality of Medians | $U = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R_1$<br>$U_{0.05} = Z_{0.95}\sigma_U + 0.5 + \mu_U$<br>$\sigma_U = \sqrt{\frac{n_1 n_2 (N+1)}{12}}$ no ties<br>$\sigma_U = \sqrt{\frac{n_1 n_2}{N^2 - N} x \frac{N^3 - N - \sum T}{12}}$ ties<br>$\sum T = \sum (t_i^3 - t_i)$<br>$N = n_1 + n_2$<br>$\mu_U = \frac{n_1 n_2}{2}$<br>$U < U_{0.05}$ reject $H_0$ and accept $H_a$<br>$U >= U_{0.05}$ accept $H_0$ and reject $H_a$<br>where<br>$n_1$ = number of data points in group 1<br>$n_2$ = number of data points in group 2<br>$R_1$ = sum of the ranks of the data points in group 1*<br>$\sigma_U$ = standard error of the U distribution<br>$\mu_U$ = mean of the U distribution<br>$t_i$ = number of ties in a group of tied values<br>U = Mann Whitney test statistic<br>$U_{0.05}$ = Mann Whitney one-tailed value at the 0.05 significant level | $H_0$: Populations have equal medians<br>$H_a$: Populations have unequal medians<br>*When two or more observations have exactly the same value, the rank assigned to each of the tied ranks is the mean of the ranks that would have been assigned to these ranks had they not been tied. For example, if the 2 values tied on the third rank, then each value would be assigned a rank of 3.5 [(3+4)/2]. |

**Table 4-8 (Continued)**

| Test Name | Test | Equation | Hypothesis |
|---|---|---|---|
| 95% Upper confidence limit on the mean – normal distribution | 95 % Upper confidence limit | $95\%UCL_N = \bar{x} + t_{0.95,n-1}\frac{s}{\sqrt{n}}$<br>where<br>$\bar{x}$ = arithmetic mean<br>$t_{0.95,n-1}$ = student t distribution value<br>s = arithmetic standard deviation<br>n = number of data points<br>$95\%UCL_N$ = one-sided upper 95% confidence limit for a normal distribution | Not applicable |
| 95% Upper confidence limit on the mean – lognormal distribution | 95% Upper confidence limit on the mean – lognormal distribution | $95\%UCL_L = \exp\left(\bar{y} + 0.5s_y^2 + \frac{s_y H_{0.95}}{\sqrt{n-1}}\right)$<br>where<br>$\bar{y}$ = arithmetic mean of the ln transformed data<br>$s_y^2$ = arithmetic variance of the ln transformed data<br>$s_y$ = arithmetic standard deviation of the ln transformed data<br>$H_{0.95}$ = value used to compute one-sided confidence limit on a log-normal mean<br>n = number of data points<br>$95\%UCL_L$ = one-sided upper 95% confidence limit for a lognormal distribution | Not applicable |
| Coefficient of Variation | Coefficient of Variation | $CV = \frac{s}{\bar{x}}$<br>where<br>$\bar{x}$ = arithmetic mean of the background concentration<br>s = arithmetic standard deviation | Not applicable |

**Table 4-8 (Continued)**

| Test Name | Test | Equation | Hypothesis |
|---|---|---|---|
| 95% Upper tolerance limit – normal distribution | 95% Upper tolerance limit | $UTL_{0.95} = \bar{x} + sK_{0.95,0.95}$<br>where<br>$\bar{x}$ = arithmetic mean of the background concentration<br>s = arithmetic standard deviation<br>$K_{0.95,0.95}$ = factor for estimating the 95 percent confidence limit for the 95th quantile (Gilbert, 1987; Table A-3) | Not applicable |
| 95% Upper tolerance limit – lognormal distribution | 95% Upper tolerance limit – lognormal distribution | $UTL_{0.95} = \exp\left[\bar{y} + s_y K_{0.95,0.95}\right]$<br>where<br>$\bar{y}$ = arithmetic mean of the log-transformed data, y = ln(x)<br>$s_y$ = standard deviation of the log-transformed data<br>$K_{0.95,0.95}$ = factor for estimating the 95 percent confidence limit for the 95th quantile (Gilbert, 1987; Table A-3) | Not applicable |
| 95% Upper confidence limit – nonparametric distribution | 95% Upper confidence limit – nonparametric distribution | $95\%UCL_{np} = x_{[f(U)]}$<br>where<br>$U = (n + 1 + Z_{0.95}\sqrt{n})/2$<br>n = number of data points<br>$Z_{0.95}$ = upper 95% limit from a standard normal curve for a Z distribution [1.645]<br>U = rank in an ascending order data set that corresponds to the one-sided 95% confidence limit on the median<br>F(U) = U rounded up to an integer (e.g., 24.2 is 25) | Not applicable |

**Table 4–8 (Continued)**

| Test Name | Test | Equation | Hypothesis |
|---|---|---|---|
| 95% Upper tolerance limit – nonparametric distribution | 95% Upper tolerance limit – nonparametric distribution | $95\%UTL_{np} = x_{[f(U)]}$<br>where<br>$U = p\,(n+1) + Z_{0.95}\,[np\,(1-p)]^{1/2}$<br>p = arithmetic mean<br>n = number of data points<br>$Z_{0.95}$ = upper 95% limit from a standard normal curve for a Z distribution [1.645]<br>U = rank in an ascending order data set that corresponds to the one-sided 95% confidence limit on the median<br>F(U) = U rounded up to an integer (e.g., 24.2 is 25) | Not applicable |

**Table 4-9**
**Surface Soil Statistical Summary**

| Compound | Distribution | | Detected compounds | | Test Type | F-test Variances | | T-test Means | | Mann Whitney Means | | Final result MMA = NRU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MMA (a) | NRU (b) | MMA (12) | NRU (16) | (c) | Similar | p-Value | Similar | p-Value | Similar | p-Value | (d) |
| Aluminum | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.30 | Yes | 0.46 | ==== | ===> | Same |
| Arsenic | Neither | Lognormal | 12 | 16 | MMU | ==== | ==== | ==== | ===> | Yes | 0.086 | Same |
| Barium | Normal | Lognormal | 10 | 14 | MMU | ==== | ==== | ==== | ===> | No | 0.017 | **Different** |
| Beryllium | Neither | Neither | 5 | 10 | MMU | ==== | ==== | ==== | ===> | Yes | 0.18 | Same |
| Chromium | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.14 | Yes | 0.098 | ==== | ===> | Same |
| Cobalt | Normal | Lognormal | 7 | 13 | MMU | ==== | ==== | ==== | ===> | No | 0.037 | **Different** |
| Copper | Normal | Normal | 11 | 15 | T-Test - Normal | Yes | 0.074 | Yes | 0.058 | ==== | ===> | Same |
| Iron | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.23 | No | 0.021 | ==== | ===> | **Different** |
| Lead | Neither | Lognormal | 12 | 16 | MMU | ==== | ==== | ==== | ===> | Yes | 0.097 | Same |
| Manganese | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.40 | Yes | 0.33 | ==== | ===> | Same |
| Nickel | Neither | Neither | 7 | 10 | MMU | ==== | ==== | ==== | ===> | Yes | 0.38 | Same |
| Vanadium | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.087 | Yes | 0.051 | ==== | ===> | Same |
| Zinc | Lognormal | Lognormal | 12 | 16 | T-Test - Lognormal | Yes | 0.062 | Yes | 0.10 | ==== | ===> | Same |

(a) MMA = Main Manufacturing Area
(b) NRU = New River Unit
(c) T-Test - Normal = F and T-test using the data
T-Test - Lognormal = F and T-test using the log transformed data
MMU = Mann Whitney U test using the data
(d) Same = Indicates that there is not a statistically significant difference between the MMA and NRU groups based on a 5% significance level.
Different = Indicates that there is a statistically significant difference between the MMA and NRU groups based on a 5% significance level.

The F-test was used to assess that the Student's t-test for elements with similar variances could be used for the elements with the exception of copper. The Student's t-test for unequal variances was used for copper. T-test results indicated that the following elements were similar as indicated by the test result being greater than the 0.05 significance level (p):

- Aluminum
- Chromium
- Copper
- Iron
- Manganese
- Vanadium
- Zinc

The Mann Whitney U test was used to assess whether there was a statistically significant difference between the means for elements with distributions that were neither normal nor lognormal or in cases where each data set exhibited a different distribution (e.g., one set normal, the second set lognormal). Elements that were evaluated included:

- Arsenic
- Barium
- Beryllium
- Cobalt
- Lead
- Nickel

Barium, cobalt, and iron were the three elements that were demonstrated to be statistically significantly different. The significance levels for barium and iron were both 0.02. The significance level for cobalt was 0.04. An evaluation of the test results indicated that there was no statistical difference between the means for 77% (10 out of 13 elements) at a 0.05 significance level. The elements were further evaluated at the 0.02 significance level, and the 13 elements indicated that there was no statistically significant difference between the means. Because 85% of the elements were statistically similar at the 0.05 significance level and the remaining elements were statistically similar at the 0.02 significance level, MMA and NRU results will be combined to obtain one background surface soil data set.

Table 4-10 presents the statistical summary for elements evaluated in the subsurface soil. The output from the statistical comparisons is included as Appendix F. The Shapiro-Wilk test was used to assess the distribution of elements. Ten of the 13 subsurface elements (Figure 4-2) passed the test for normality or lognormality and included:

- Aluminum
- Arsenic
- Chromium
- Cobalt
- Copper
- Iron
- Manganese
- Nickel
- Vanadium
- Zinc

The F-test was used to assess whether there was a statistical significance between the variances for each element. The F-test indicated that the variances were similar for aluminum, chromium, cobalt, copper, iron, manganese, and nickel while the variances were different for arsenic, vanadium, and zinc. The Student's t-test for equal variances was used for the elements that were similar using the results from the F-test while the Student's t-test for unequal variances was used for the elements that were different. The Student's t-test (equal and unequal variances) results indicated that the following elements did not have a statistically significant difference between the means:

**Table 4-10**
**Subsurface Soil Statistical Summary**

| Compound | Distribution | | Detected compounds | | Test Type | F-test Variances | | T-test Means | | Mann Whitney Means | | Final result MMA = NRU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MMA (a) | NRU (b) | MMA (22) | NRU (29) | (c) | Similar | p-Value | Similar | p-Value | Similar | p-Value | (d) |
| Aluminum | Lognormal | Lognormal | 22 | 29 | T-Test - Lognormal | Yes | 0.37 | No | 0.008 | ==== | ===> | **Different** |
| Arsenic | Lognormal | Lognormal | 20 | 28 | T-Test - Lognormal | No | < 0.001 | Yes | 0.2 | ==== | ===> | Same |
| Barium | Normal | Neither | 19 | 20 | MMU | ==== | ==== | ==== | ===> | No | < 0.001 | **Different** |
| Beryllium | Neither | Neither | 11 | 14 | MMU | ==== | ==== | ==== | ===> | Yes | 0.37 | Same |
| Chromium | Lognormal | Lognormal | 22 | 29 | T-Test - Lognormal | Yes | 0.26 | Yes | 0.32 | ==== | ===> | Same |
| Cobalt | Lognormal | Lognormal | 16 | 21 | T-Test - Lognormal | Yes | 0.37 | Yes | 0.37 | ==== | ===> | Same |
| Copper | Normal | Normal | 22 | 29 | T-Test - Normal | Yes | 0.43 | Yes | 0.15 | ==== | ===> | Same |
| Iron | Normal | Normal | 22 | 29 | T-Test - Normal | Yes | 0.059 | Yes | 0.29 | ==== | ===> | Same |
| Lead | Neither | Lognormal | 22 | 29 | MMU | ==== | ==== | ==== | ===> | No | 0.007 | **Different** |
| Manganese | Lognormal | Lognormal | 22 | 29 | T-Test - Lognormal | Yes | 0.37 | Yes | 0.11 | ==== | ===> | Same |
| Nickel | Lognormal | Lognormal | 22 | 24 | T-Test - Lognormal | Yes | 0.13 | Yes | 0.22 | ==== | ===> | Same |
| Vanadium | Normal | Normal | 22 | 29 | T-Test - Normal | No | 0.046 | No | 0.005 | ==== | ===> | **Different** |
| Zinc | Lognormal | Lognormal | 22 | 29 | T-Test - Lognormal | No | 0.034 | No | < 0.001 | ==== | ===> | **Different** |

(a) MMA = Main Manufacturing Area
(b) NRU = New River Unit
(c) T-Test - Normal = F and T-test using the data
T-Test - Lognormal = F and T-test using the log transformed data
MMU = Mann Whitney U test using the data
(d) Same = Indicates that there is not a statistically significant difference between the MMA and NRU groups based on a 5% significance level.
Different = Indicates that there is a statistically significant difference between the MMA and NRU groups based on a 5% significance level.



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- Arsenic
- Chromium
- Cobalt
- Copper
- Iron
- Manganese
- Nickel

Aluminum, vanadium, and zinc results from the Student's t-test indicated there was a statistically significant difference between the means at a 0.05 significance level. The significance levels for aluminum, vanadium, and zinc were 0.008, 0.005, and <0.001, respectively.

The Mann Whitney U test was used to assess whether there was a statistical significance difference between the means for elements:

- Barium
- Beryllium
- Lead

Beryllium was the one element from this group that exhibited no statistically significant difference between the groups based on the Mann Whitney U test results with a 0.05 significance level. The significance levels for barium and lead were <0.001 and 0.007, respectively.

Test evaluation results indicated that there was no statistically significant difference between the means for 62% of the elements (8 out of 13) at a 0.05 significance level. For the remaining five elements, the means were higher for the MMA as compared to the NRU. Because the majority of the elements were statistically similar at the 0.05 significance level, MMA and NRU results will be combined to obtain one background subsurface soil data set.

Beryllium was found to be the sole element from this group that was statistically similar based on Mann Whitney U test results.

Test evaluation results suggested that there was no statistical difference between the means for 62% of the elements. Since the majority of these elements are statistically similar, the MMA and NRU results will be combined to obtain one background subsurface soil data set at the site. Cadmium, mercury, and thallium were the elements that were non-detected in the data combination for NRU subsurface soils. Although these three elements were not statistically tested, 95%UCLs were calculated based on available data.

Point estimate values were used to represent the background concentration for future comparisons between site and background data. The 95 percent upper confidence limit (UCL) was selected as the statistic to assess background point estimate values. The requisite equation for determining the point estimate for the background value is based on distribution of the combined data set.

Point estimates were established for the 13 elements from the analysis of the surface and subsurface soil data sets. Cadmium, mercury, and thallium were not detected in the NRU subsurface soil data set; however, the combined data set contains greater than 20 percent detects. Since the subsurface soil data sets were combined, point estimates were also established for these three elements.

## 4.3 CONFIDENCE LIMITS

The Shapiro-Wilk test was used to assess the distribution of the combined data. When the combined data set (MMA and NRU) passed the test for normality, the equation for 95% UCL for normal distributions was used. When the combined data set was lognormal, the 95% UCL for lognormal distributions was used. When the combined data set did not pass either test or the initial distributions were not normally or lognormally distributed, the 95% UCL based on a nonparametric distribution was calculated. (Refer to Table 4-8 for 95% UCL equations.) Background 95% UCLs for surface soil values are presented in Table 4-11 and subsurface soil samples are presented in Table 4-12, including the associated distribution for combined data. The output for the summary statistics for Tables 4-11 and 4-12 is included in Appendix G.

**Table 4-11**
**Occurrence and Distribution of Chemicals**
**Combined Surface Soil (MMA and NRU)**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean |
|---|---|---|---|---|---|---|---|
| Aluminum | 28 / 28 | 3,620 | 20,100 | 8,300 | 0.515 | Lognormal | 9,896 |
| Arsenic | 28 / 28 | 1.50 | 10.2 | 3.73 | 0.624 | Lognormal | 4.53 |
| Barium | 24 / 28 | 23.4 | 174 | 66.4 | 0.692 | Lognormal | 101 |
| Beryllium | 15 / 28 | 0.610 | 1.50 | 0.609 | 0.577 | Neither | 0.72 |
| Chromium | 28 / 28 | 6.30 | 53.3 | 21.1 | 0.498 | Lognormal | 26.1 |
| Cobalt | 20 / 28 | 5.90 | 45.4 | 12.2 | 0.848 | Lognormal | 18.3 |
| Copper | 26 / 28 | 2.20 | 13.6 | 6.46 | 0.608 | Normal | 7.73 |
| Iron | 28 / 28 | 7,250 | 63,000 | 20,108 | 0.590 | Lognormal | 25,258 |
| Lead | 28 / 28 | 8.90 | 225 | 27.0 | 1.53 | Neither | 17.9 |
| Manganese | 28 / 28 | 43.00 | 2,040 | 695.9 | 0.85 | Lognormal | 1,193 |
| Nickel | 17 / 28 | 4.60 | 18.1 | 6.95 | 0.723 | Neither | 9.0 |
| Vanadium | 28 / 28 | 12.2 | 101 | 33.9 | 0.525 | Lognormal | 41.0 |
| Zinc | 28 / 28 | 7.10 | 216 | 41.2 | 0.977 | Lognormal | 56.3 |

**Table 4-12**
**Occurrence and Distribution of Chemicals**
**Combined Subsurface Soil (MMA and NRU)**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean |
|---|---|---|---|---|---|---|---|
| Aluminum | 51 / 51 | 6,130 | 47,900 | 17,847 | 0.545 | Lognormal | 20,413 |
| Arsenic | 48 / 51 | 1.20 | 35.9 | 5.51 | 1.15 | Lognormal | 7.02 |
| Barium | 39 / 51 | 25.2 | 164 | 51.9 | 0.773 | Lognormal | 67.5 |
| Beryllium | 25 / 51 | 0.780 | 5.40 | 1.03 | 1.12 | Neither | 0.96 |
| Cadmium | 12 / 51 | 0.570 | 2.50 | 0.529 | 0.883 | Neither | 0.66 |
| Chromium | 51 / 51 | 10.8 | 75.8 | 30.9 | 0.390 | Lognormal | 34.6 |
| Cobalt | 37 / 51 | 6.20 | 130 | 20.2 | 1.33 | Lognormal | 28.1 |
| Copper | 51 / 51 | 1.60 | 38.7 | 15.3 | 0.666 | Normal | 17.7 |
| Iron | 51 / 51 | 14,300 | 67,700 | 31,718 | 0.307 | Lognormal | 34,466 |
| Lead | 51 / 51 | 2.10 | 256 | 19.7 | 1.98 | Neither | 12.5 |
| Manganese | 51 / 51 | 16.7 | 1,760 | 355 | 0.922 | Lognormal | 579 |
| Mercury | 16 / 51 | 0.0380 | 0.270 | 0.0763 | 0.655 | Neither | 0.129 |
| Nickel | 46 / 51 | 4.80 | 94.2 | 19.0 | 0.901 | Lognormal | 26.4 |
| Thallium | 12 / 51 | 1.40 | 5.0 | 1.13 | 0.912 | Neither | 1.31 |
| Vanadium | 51/ 51 | 22.0 | 114 | 53.9 | 0.342 | Lognormal | 59.2 |
| Zinc | 51/ 51 | 4.70 | 598 | 62.7 | 1.66 | Lognormal | 78.4 |

## 4.4 COMPARISON TO PREVIOUS STUDY ATTEMPT

Data from the previously attempted background study were reviewed to evaluate accuracy and precision and evaluate the use of this data in the new data set. Several shortcomings were identified in the previous data set, including the following:

- The previous background attempt focused on the collection of site-specific background concentrations
- Background samples were collected at the MMA and were not collected at the NRU
- Surface soil samples had not been included in the background study design
- Data were not statistically evaluated to assess the potential for combining data sets
- Point estimates were developed for the Wheeling Sandy Loam and Unison-Urban Complex for each soil horizon resulting in four estimates
- Tolerance limits were used to develop point estimates as opposed to the 95% UCL
- Copper, iron, and manganese were eliminated from the data set without supporting rationale
- Uncertainty associated with the actual position of sampling locations
- High data variability

The uncertainty inherent in the previous background data set demonstrated that data results could not be incorporated into the study without compromising the current data set.

## 4.5 COMBINED DATA SET AND TOLERANCE LIMITS

As a result of subsequent discussions with USEPA and VDEQ, this Final Facility-Wide Background Study reflects two major revisions: 1) facility-wide point estimates for background soil data are calculated as tolerance limits rather than confidence limits, and 2) background data for soil (surface and subsurface, MMA and NRU) are combined into a single data set. The rationale for these changes is summarized in the following text.

The use of tolerance limits rather than confidence limits evolved from comments questioning the use of the 95% UCL as the point estimate for the background value. The 95% UCL was originally included in the Facility-Wide Background Study as a general point of reference. At the time the Work Plan for this Facility-Wide Background Study was developed, the intent was to use hypothesis testing for RFI sites. An additional use of the data set would include the use of point-by-point comparisons.

A confidence interval is used for comparisons within a single population. A compliance data set is then typically compared to a known standard (USEPA, 1989, 1992). Using the 95% UCL as a single point comparison or background value, however, is likely to result in classifying many chemicals as greater than background when they are not. These misclassifications would be due to the 95% UCL representing an estimate of the mean. Such misclassifications could occur as often as 50% of the time.

A tolerance limit is used for comparisons of similar but distinct populations. A concentration range is defined from a background data set, within which a large proportion of compliance data should fall with high probability (USEPA 1989, 1992). Therefore, it was recommended that a 95% upper tolerance limit (UTL) be developed in the Background Study for use as point-by-point comparisons. For reference, the 95% UTL values for each stratum (surface and subsurface soil) and each area of the study (MMA and NRU) are presented in Tables 4-13 through 4-16. The output for the summary statistics is provided in Appendix G. For comparison, the 95% UCLs calculated for this study are also presented in the table. For those constituents with CVs greater than 1, the use of the UTL will better accommodate the variability in the data set.

Background soil data sets were combined after evaluating various data groups. During discussions there were concerns about combining the MMA and NRU surface soil data because barium and iron demonstrated a statistically significant difference in the original statistical evaluation (see Section 4.2 and Table 4-9). Similarly, aluminum, barium, lead, vanadium, and zinc demonstrated statistically significant difference for the MMA and NRU subsurface soil data sets (see Section 4.2 and Table 4-10). The hypothesis that within each stratum (surface and subsurface), data for each chemical constituent could be grouped into either one or two groups by soil type was investigated.

A new set of background numbers was generated to assess whether the numbers calculated using this approach were similar to those calculated using the original approach. These comparisons demonstrated that the calculated UTLs were similar between the data groups and generally within the same order of magnitude. In addition, there was no particular trend in the UTLs for a given group, e.g., the highest UTL values are not consistently from the same group.

After further discussion and analysis of these comparisons it was agreed that combining the data sets would be appropriate because each potentially contaminated site at the facility is located in an area where excavation of surface soils has occurred at some point during facility operations. The combined surface and subsurface soil data set would most likely represent the conditions of mixed surface and subsurface soil at these sites. The final set of point estimates for the background data set was based on calculated 95% UTLs for a single data set that represented surface and subsurface soil from the MMA and NRU areas. These values are provided in Table 4-17. The output for the summary statistics is provided in Appendix G. For several constituents, the 95% UTLs are below the RBCs, which will be used to screen chemicals of potential concern (COPCs) at the sites. Those chemicals detected at concentrations below RBCs would be "screened out" of the risk assessment process and would not be carried forward for further quantitative evaluation. Thus, the potential for carrying naturally occurring elements through the quantitative risk assessment would be minimized. In addition, combining the data sets will result in greater statistical power for the comparisons due to the increased sample size and will better accommodate variability in the data set.

**Table 4-13**
**Occurrence and Distribution of Chemicals**
**Surface Soil – Main Manufacturing Area**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 12 / 12 | 3,700 | 15,400 | 8,179 | 0.446 | Lognormal | 10,863 | 25,012 |
| Arsenic | 12 / 12 | 1.50 | 10.2 | 3.46 | 0.763 | Lognormal | 5.06 | 14.2 |
| Barium | 10 / 12 | 39.9 | 174 | 92.1 | 0.589 | Normal | 120 | 240 |
| Beryllium | 5 / 12 | 0.72 | 1.10 | 0.545 | 0.608 | Neither | 1.1 | 1.1 |
| Chromium | 12 / 12 | 8.70 | 27 | 17.3 | 0.397 | Lognormal | 22.7 | 50.7 |
| Cobalt | 7 / 12 | 6.50 | 16.1 | 7.71 | 0.632 | Normal | 10.2 | 21.1 |
| Copper | 11 / 12 | 2.20 | 13.6 | 7.82 | 0.591 | Normal | 10.2 | 20.5 |
| Iron | 12 / 12 | 7,250 | 23,800 | 14,755 | 0.428 | Lognormal | 20,116 | 48,077 |
| Lead | 12 / 12 | 9.40 | 225 | 33.7 | 1.82 | Neither | 225 | 225 |
| Manganese | 12 / 12 | 43.0 | 1,910 | 615 | 0.798 | Lognormal | 1,804 | 7,047 |
| Nickel | 7 / 12 | 4.60 | 13.5 | 6.70 | 0.701 | Neither | 13.5 | 13.5 |
| Vanadium | 12 / 12 | 14.7 | 43.6 | 28.3 | 0.362 | Lognormal | 36.5 | 78.9 |
| Zinc | 12 / 12 | 10.0 | 216 | 55.8 | 1.02 | Lognormal | 125 | 469 |

**Table 4-14**
**Occurrence and Distribution of Chemicals**
**Surface Soil – New River Unit**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 16 / 16 | 3,620 | 20,100 | 8,391 | 0.574 | Lognormal | 11,053 | 26,989 |
| Arsenic | 16 / 16 | 1.60 | 9.30 | 3.94 | 0.542 | Lognormal | 5.11 | 12.1 |
| Barium | 14 / 16 | 23.4 | 109 | 47.1 | 0.570 | Lognormal | 71.3 | 206 |
| Beryllium | 10 / 16 | 0.610 | 1.50 | 0.657 | 0.562 | Normal | 0.819 | 1.59 |
| Chromium | 16 / 16 | 6.30 | 53.3 | 24.0 | 0.500 | Lognormal | 34.1 | 90.9 |
| Cobalt | 13 / 16 | 5.90 | 45.4 | 15.6 | 0.779 | Lognormal | 29.2 | 102 |
| Copper | 15 / 16 | 2.90 | 11.6 | 5.45 | 0.567 | Normal | 6.80 | 13.2 |
| Iron | 16 / 16 | 7,470 | 63,000 | 24,122 | 0.563 | Lognormal | 33,935 | 90,071 |
| Lead | 16 / 16 | 8.90 | 76.7 | 21.9 | 0.727 | Lognormal | 28.6 | 70.5 |
| Manganese | 16 / 16 | 91.7 | 2,040 | 756 | 0.881 | Lognormal | 1,548 | 5,710 |
| Nickel | 10 / 16 | 4.60 | 18.1 | 7.13 | 0.757 | Lognormal | 11.7 | 37.9 |
| Vanadium | 16 / 16 | 12.2 | 101 | 38.1 | 0.556 | Lognormal | 52.2 | 133 |
| Zinc | 16 / 16 | 7.10 | 56.3 | 30.3 | 0.521 | Lognormal | 43.6 | 118 |

**Table 4-15**
**Occurrence and Distribution of Chemicals**
**Subsurface Soil – Main Manufacturing Area**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 22 / 22 | 8,710 | 47,900 | 21,223 | 0.517 | Lognormal | 25,783 | 56,307 |
| Arsenic | 20 / 22 | 1.2 | 35.9 | 7.73 | 1.16 | Lognormal | 16.7 | 64.5 |
| Barium | 19 / 22 | 25.2 | 155 | 71.5 | 0.623 | Normal | 87.8 | 176 |
| Beryllium | 11 / 22 | 0.790 | 5.30 | 1.01 | 1.16 | Neither | 1.1 | 1.3 |
| Cadmium | 12 / 22 | 0.570 | 2.50 | 0.778 | 0.805 | Lognormal | 1.11 | 3.33 |
| Chromium | 22 / 22 | 10.8 | 75.8 | 32.3 | 0.427 | Lognormal | 39.2 | 82.8 |
| Cobalt | 16 / 22 | 6.80 | 94.3 | 18.3 | 1.33 | Lognormal | 31.9 | 118 |
| Copper | 22 / 22 | 3.30 | 34.4 | 17.0 | 0.611 | Normal | 20.8 | 41.4 |
| Iron | 22 / 22 | 14,300 | 67,700 | 32,595 | 0.352 | Normal | 36,805 | 59,560 |
| Lead | 22 / 22 | 5.6 | 256 | 31.3 | 1.84 | Neither | 17.7 | 256 |
| Manganese | 22 / 22 | 39.4 | 1,760 | 428 | 0.939 | Lognormal | 847 | 3,143 |
| Mercury | 10 / 22 | 0.0380 | 0.270 | 0.0729 | 0.865 | Neither | 0.106 | 0.154 |
| Nickel | 22 / 22 | 4.80 | 94.2 | 20.4 | 1.01 | Lognormal | 29.6 | 93.2 |
| Thallium | 12 / 22 | 1.40 | 5.0 | 1.76 | 0.729 | Neither | 2.37 | 2.61 |
| Vanadium | 22/ 22 | 27.0 | 114 | 61.9 | 0.329 | Normal | 69.4 | 110 |
| Zinc | 22/ 22 | 14.7 | 598 | 112 | 1.28 | Lognormal | 186 | 674 |

**Table 4-16**
**Occurrence and Distribution of Chemicals**
**Subsurface Soil – New River Unit**

[Units in mg/kg]

| Chemical | Frequency of Detection | Minimum Concentration | Maximum Concentration | Arithmetic Mean Concentration | Coefficient of Variation | Distribution | 95% UCL of the Mean | 95% UTL of the Mean |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 29 / 29 | 6,130 | 33,900 | 15,286 | 0.518 | Lognormal | 18,373 | 41,070 |
| Arsenic | 28 / 29 | 1.20 | 10.7 | 3.83 | 0.545 | Lognormal | 4.81 | 11.7 |
| Barium | 20 / 29 | 28.5 | 164 | 37.1 | 0.792 | Neither | 41.2 | 43.9 |
| Beryllium | 14 / 29 | 0.780 | 5.40 | 1.05 | 1.10 | Neither | 1.06 | 1.68 |
| Cadmium | 0 / 29 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 29 / 29 | 13.6 | 50.9 | 30.0 | 0.359 | Lognormal | 34.5 | 66.3 |
| Cobalt | 21 / 29 | 6.20 | 130 | 21.6 | 1.33 | Lognormal | 36.7 | 137 |
| Copper | 29 / 29 | 1.60 | 38.7 | 14.0 | 0.717 | Normal | 17.2 | 36.4 |
| Iron | 29 / 29 | 17,300 | 44,200 | 31,052 | 0.269 | Normal | 33,694 | 49,744 |
| Lead | 29 / 29 | 2.10 | 35.5 | 10.9 | 0.638 | Lognormal | 13.7 | 33.6 |
| Manganese | 29 / 29 | 16.7 | 931 | 299 | 0.834 | Lognormal | 605 | 2,271 |
| Mercury | 6 / 29 | 0.11 | 0.19 | 0.079 | 0.485 | Neither | 0.11 | 0.17 |
| Nickel | 24 / 29 | 4.80 | 51.1 | 18.0 | 0.797 | Lognormal | 31.2 | 111 |
| Thallium | 0 / 29 | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 29/ 29 | 22.0 | 77.6 | 47.9 | 0.302 | Normal | 52.5 | 80.3 |
| Zinc | 29/ 29 | 4.70 | 69.8 | 25.0 | 0.642 | Lognormal | 33.6 | 93.4 |

**Table 4-17**
**Summary of Total Soil Data at Radford**
**Upper Tolerance Limits (UTLs)**

| Chemical | MMA/NRU and Surface/Subsurface Soil Data | | | | Residential Screening RBC [c], mg/kg | Industrial Screening RBC [c], mg/kg | Background Concentration |
|---|---|---|---|---|---|---|---|
| | Frequency of Detection | Range of data, mg/kg | Statistical Distribution [a] | 95% UTL mg/kg [b] | | | |
| Aluminum | 79/79(100) | 3,620 - 47,900 | L | 40,041 | 7,800 | 200,000 | 40,041 |
| Arsenic | 76/79(96) | 1.2 - 35.9 | L | 15.8 | 0.43 | 3.8 | 15.8 |
| Barium | 63/79(80) | 23.4 - 174 | L | 209 | 550 | 14,000 | 209 |
| Beryllium | 40/79(51) | 0.61 - 5.4 | U | 1.02 | 16 | 410 | 1.02 |
| Cadmium | 13/79(16) | 0.62 - 2.5 | NP | 0.69 | 3.9 | 100 | 0.69 |
| Chromium | 79/79(100) | 6.3 - 75.8 | L | 65.3 | 23 | 610 | 65.3 |
| Cobalt | 57/79(72) | 5.9 - 130 | L | 72.3 | 160 | 4,100 | 72.3 |
| Copper | 77/79(97) | 1.6 - 38.7 | L | 53.5 | 310 | 8,200 | 53.5 |
| Iron | 79/79(100) | 7,250 - 67,700 | N | 50,962 | 2,300 | 61,000 | 50,962 |
| Lead | 79/79(100) | 2.1 - 256 | U | 26.8 | 400 | 1,000 | 26.8 |
| Manganese | 79/79(100) | 16.7 - 2,040 | L | 2,543 | 160 | 4,100 | 2,543 |
| Mercury | 19/79(24) | 0.038 - 1.2 | NP | 0.130 | 0.78 | 20 | 0.13 |
| Nickel | 63/79(80) | 4.6 - 94.2 | L | 62.8 | 160 | 4,100 | 62.8 |
| Thallium | 16/79(20) | 1.3 - 5.0 | NP | 2.11 | 0.55 | 14 | 2.11 |
| Vanadium | 79/79(100) | 12.2 - 114 | L | 108 | 55 | 1,400 | 108 |
| Zinc | 79/79(100) | 4.7 - 598 | L | 202 | 2,300 | 61,000 | 202 |

[a] Statistical Distribution: N = Normal distribution; L = Lognormal distribution; U = Undetermined distribution; NP = Nonparametric distribution for data sets with greater than 50% nondetects.

[b] 95% Upper Tolerance Limit calculated for the indicated distribution.

[c] RBC = Region III risk-based concentration adjusted for a Hazard Quotient = 0.1 to account for potential cumulative effects (dated May 8, 2001).

Note: Highlighted values are below the residential screening RBC.

## Table 2-1
## Facility-Wide Background Study Sampling Program

| Soil Type/ Grouping | Sample ID | Matrix | Depth Top (in. bgs) | Depth Bottom (in. bgs) | Date Collected | TAL Metals 3050B/6010B (solid) 7471A (Hg solid) 3010A/6010B (aqueous) 7470A (Hg aqueous) | pH 9045C (solid) | VOCs 5035/8260B (solid) 5030B/8260B (aqueous) | SVOCs 3540C/8270C (solid) 3520C/8270C (aqueous) | TCLP Metals 1311/3010A/ 6010B 1311/7470A (Hg) | RDX Immunoassay Field Test Kit 4051 | TNT Immunoassay Field Test Kit 4050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Main Manufacturing Area Environmental/ Field Screening Samples** | | | | | | | | | | | | |
| Braddock Loam | MMAB1A | Soil | 0 | 10 | 8/31/00 | ● | ● | | | | | |
| | MMAB1B | Soil | 10 | 48 | 8/31/00 | ● | ● | | | | | |
| | MMAB1C | Soil | 48 | 84 | 8/31/00 | ● | ● | | | | | |
| | MMAB2A | Soil | 0 | 12 | 9/6/00 | ● | ● | | | | | |
| | MMAB2B | Soil | 12 | 60 | 9/6/00 | ● | ● | | | | | |
| | MMAB3A | Soil | 0 | 9 | 9/6/00 | ● | ● | | ● | | ● | ● |
| | MMAB3B | Soil | 9 | 42 | 9/6/00 | ● | ● | ● | ● | | ● | ● |
| | MMAB4A | Soil | 0 | 6 | 8/31/00 | ● | ● | | | | | |
| | MMAB4B | Soil | 6 | 51 | 8/31/00 | ● | ● | | | | | |
| | MMAB4C | Soil | 51 | 53 | 8/31/00 | ● | ● | | | | | |
| Unison Urban Land Complex | MMAU1A | Soil | 0 | 10 | 9/7/00 | ● | ● | | ● | | ● | ● |
| | MMAU1B | Soil | 10 | 52 | 9/7/00 | ● | ● | ● | ● | | ● | ● |
| | MMAU1C | Soil | 52 | 60 | 9/7/00 | ● | ● | ● | ● | | ● | ● |
| | MMAU2A | Soil | 0 | 10 | 9/7/00 | ● | ● | | | | | |
| | MMAU2B | Soil | 10 | 52 | 9/7/00 | ● | ● | | | | | |
| | MMAU2C | Soil | 52 | 60 | 9/7/00 | ● | ● | | | | | |
| | MMAU3A | Soil | 0 | 9 | 8/31/00 | ● | ● | | | | | |
| | MMAU3B | Soil | 9 | 42 | 8/31/00 | ● | ● | | | | | |
| | MMAU3C | Soil | 42 | 72 | 8/31/00 | ● | ● | | | | | |
| | MMAU4A | Soil | 0 | 10 | 9/6/00 | ● | ● | | | | | |
| | MMAU4B | Soil | 10 | 58 | 9/6/00 | ● | ● | | | | | |
| | MMAU4C | Soil | 58 | 76 | 9/6/00 | ● | ● | | | | | |

# 5.0 Conclusions

## 5.1 BACKGROUND SAMPLE LOCATIONS

Pre-selected background sample locations were positioned in the MMA and NRU in areas that had not been impacted by previous site operations. Explosives were selected as primary background markers given the history of installation propellant manufacturing activities. Field screening immunoassays were processed for RDX and TNT to evaluate potential explosive contamination. Explosives results were negative, indicating background sampling locations had not been impacted by RFAAP operations. Additionally, semivolatile and volatile organic compounds were evaluated as secondary markers to substantiate the selection of true background locations. Analytical results demonstrated that organic contaminants had not impacted the selected locations, indicating that sample locations represented background conditions.

## 5.2 STATISTICAL EVALUATION

Background sample results were validated in accordance with Work Plan Addendum No. 10, to assess analytical data limitations and report scientifically based and statistically valid data. Elements were eliminated from statistical testing that did not result in significant contributions to background evaluation. For example, macronutrients (calcium, potassium, magnesium, and sodium) were not evaluated statistically because they are not chemicals that drive remedial decisions. Non-detects greater than 80% were also eliminated because there was not enough data to perform statistical analysis.

Statistical testing was performed on the remaining elements to assess data distributions and evaluate the potential for combining the data into one data set. Testing results indicated that surface soils from both the MMA and NRU could be combined into one data set and subsurface soils from both areas could be combined into one data set.

Point estimates were then evaluated against the previously attempted background study (Parsons 1996) to assess the integration of prior data into the existing data set. Shortcomings identified in the previous data set, as specified in Section 4.4, precluded its use because of the high potential for compromising the current (year 2000) data.

As a result of subsequent discussions with USEPA and VDEQ, this Final Facility-Wide Background Study reflects two major revisions: 1) facility-wide point estimates for background soil data are calculated as tolerance limits rather than confidence limits, and 2) background data for soil (surface and subsurface, MMA and NRU) are combined into a single data set. The final set of point estimates for the background data set, therefore, are based on calculated 95% UTLs for a single facility-wide data set that represents surface and subsurface soil from the MMA and NRU areas. These values are included as a point of reference for point-by-point comparisons for site screening. These point estimates are summarized in Table 5-1.

**Table 5-1**
**Facility-Wide Point Estimates for Radford AAP Soil**

[Units in mg/kg]

| Chemical Name | Range of data (mg/kg) | Background Concentration 95 % UTL (mg/kg) |
|---|---|---|
| Aluminum | 3,620 - 47,900 | 40,041 |
| Arsenic | 1.2 - 35.9 | 15.8 |
| Barium | 23.4 - 174 | 209 |
| Beryllium | 0.61 - 5.4 | 1.02 |
| Cadmium | 0.62 - 2.5 | 0.69 |
| Chromium | 6.3 - 75.8 | 65.3 |
| Cobalt | 5.9 - 130 | 72.3 |
| Copper | 1.6 - 38.7 | 53.5 |
| Iron | 7,250 - 67,700 | 50,962 |
| Lead | 2.1 - 256 | 26.8 |
| Manganese | 16.7 - 2,040 | 2,543 |
| Mercury | 0.038 - 1.2 | 0.13 |
| Nickel | 4.6 - 94.2 | 62.8 |
| Thallium | 1.3 - 5.0 | 2.11 |
| Vanadium | 12.2 - 114 | 108 |
| Zinc | 4.7 - 598 | 202 |

# 6.0 References


Alberta Agriculture, Food and Rural Development (Alberta). July 1985. *Soil Organic Matter.* Available [Online]: <http://www.agric.gov.ab.ca/agdex/500/536-1.html> [November 8, 2000].

Bockheim, J.G. 1990. Forest soils. In Young, R.A., *Introduction to Forest Science.* 2nd ed. John Wiley & Sons, New York. 608 pp. Chap. 4.

Dames & Moore. 1992. Final Draft Verification Investigation. Prepared for U.S. Army Toxic and Hazardous Materials Agency, Radford Army Ammunition Plant. October.

Dietrich, R.V. 1990. Geology and Virginia. Commonweath of Virginia Department of Mines, Minerals and Energy, Division of Mineral Resources. The University Press of Virginia.

Environmental Photographic Interpretation Center (EPIC). 1992. Installation Assessment, Radford Army Ammunition Plant, Radford, VA. Prepared for the U.S. Environmental Protection Agency.

Gilbert, R.O. 1987. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold. New York.

IT Corporation (IT Corp). 2000. *Radford Army Ammunition Plant, Work Plan Addendum 010: Facility-Wide Background Study.* Final document. September 2000. Delivery Order No. 0008, Environmental Services Program Support DACA31-94-D-0064.

National Climatic Data Center (NCDC). 1999. Monthly Precipitation Data for U.S. Cooperative and NWS Sites.

New River Valley Planning District Commission (NRVPC). 1994. Virginia's New River Valley Regional Databook.

Parsons Engineering-Science, Inc. (Parsons). 1996. RCRA Facility Investigation Work Plan for Solid Waste Management Units 17, 31, and 48 and Corrective Measures Study Work Plan for Unit 54 at Radford Army Ammunition Plant. Prepared for the U.S. Army Environmental Center.

Schultz, A.P. 1986. Max Meadows Tectonic Breccia at Pepper, Virginia. Geological Society of America Centennial Field Guide, Southeastern Section.

Soil Conservation Service (SCS). 1985. Soil Surveys of Montgomery and Pulaski Counties, Virginia. U.S. Department of Agriculture.

Thornbury, W.D. 1965. Regional Geomorphology of the United States. John Wiley & Sons, Inc.

U.S. Army Corps of Engineers (USACE). 1988. *Shell for Analytical Chemistry Requirements.* November.

U.S. Environmental Protection Agency (USEPA). 1989. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Interim Final Guidance. Office of Solid Waste, Waste Management Division. EPA/530-SW-89-026.

U.S. Environmental Protection Agency (USEPA). 1992. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance. Office of Solid Waste, Waste Management Division. April.

U.S. Environmental Protection Agency (USEPA). 1995. *Innovative Approaches To Data Validation.* Region III. June.

U.S. Environmental Protection Agency (USEPA). 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Update III.* December.

U.S. Environmental Protection Agency (USEPA). 1999. *USEPA Contract Laboratory Program—Statement of Work for Organic Analysis.* May.

U.S. Environmental Protection Agency (USEPA). 2001a. Correspondence from Robert Thomson (USEPA Region III, Federal Facilities Branch) to Jim McKenna (Radford Army Ammunition Plant) and C.A. Jake (Alliant Techsystems, Inc.) regarding Radford Army Ammunition Plant Draft Report submittals and reviews. March xx.

U.S. Environmental Protection Agency (USEPA). 2001b. USEPA Region III Risk-Based Concentration (RBC) Table. USEPA Region III, Superfund Technical Support Section. 8 May.

Virginia Department of Environmental Quality (VDEQ). 2001a. Correspondence from Sharon Skutle Wilcox (VDEQ, Office of Remediation Programs) to Jim McKenna (Radford Army Ammunition Plant) regarding Draft Facility-Wide Background Study Report, Radford Army Ammunition Plant, January 2001. 2 April.

Virginia Department of Environmental Quality (VDEQ). 2001b. Correspondence from Sharon Skutle Wilcox (VDEQ, Office of Remediation Programs) to Jim McKenna (Radford Army Ammunition Plant) regarding Facility Wide Background Study Report, Main Manufacturing Area, Horseshoe Area, and New River Unit, Surface & Subsurface Soils, Radford Army Ammunition Plant. 10 September.

# Appendix A

# Lithologic Boring Logs

## Appendix A
## Lithologic Boring Logs Summary

| Main Manufacturing Area | |
|---|---|
| **Soil Type** | **Sample ID** |
| Braddock Loam | MMAB1 |
| | MMAB2 |
| | MMAB3 |
| | MMAB4 |
| Unison Urban Land Complex | MMAU1 |
| | MMAU2 |
| | MMAU3 |
| | MMAU4 |
| Wheeling Sandy Loam | MMAW1 |
| | MMAW2 |
| | MMAW3 |
| | MMAW4 |
| **New River Unit** | |
| **Soil Type** | **Sample ID** |
| Carbo Silty Clay Loam | NRUC1 |
| | NRUC2 |
| | NRUC3 |
| | NRUC4 |
| Groseclose and Poplimento Silt Loam | NRUG1 |
| | NRUG2 |
| | NRUG3 |
| | NRUG4 |
| Lowell Silt Loam | NRUL1 |
| | NRUL2 |
| | NRUL3 |
| | NRUL4 |
| Wurno-Newbern-Faywood Silt Loam | NRUW1 |
| | NRUW2 |
| | NRUW3 |
| | NRUW4 |

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# Drilling Log

## Soil Boring **MMAB1**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1775.8 ft.* Total Hole Depth *7.5 ft.* North *322754.735 ft.* East *1409440.915 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *8/31/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*MMAB1A (0-10")*
*MMAB1B (10"-4')*
*MMAB1C (4'-7')*

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | SM | A Horizon - Slightly moist, silty fine SAND, 60-80% fine sand, organics on surface, Dark Yellowish Brown 10YR 4/4. |
| 1 | | | | | | B Horizon - Strong brown, 7.5YR 5/6, fine SANDY CLAY, medium dense. Grades from sandy clay to clayey sand (10-15%) at 4', 5-25% sandstone gravel. |
| 2 | 0.0 | 95% | | | CL | |
| 3 | | | | | | |
| 4 | | | | | | C Horizon - Fine to medium SAND, with 5% silt. Very loose, brownish-yellow, slightly moist. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | SP | |
| 7 | | | | | | Dark Brown 7.5YR 3/2<br>Black 7.5YR<br>Red 5YR 5/8 at bottom fine sands, very loose. |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAB2**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1864.7 ft.* Total Hole Depth *7.5 ft.* North *320488.181 ft.* East *1407197.334 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*MMAB2A (0-12")*
*MMAB2B (12"-60")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 0 | | | | | ML | A Horizon - Fine sandy SILT (40% silt), pine needles on surface, 10YR5/6 |
| 1 | | | | | SC | B Horizon - Clayey fine SAND, 15% clay, slightly plastic, 10YR 5/6, slightly moist. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | CL | 2.5YR 4/8 red, slightly moist CLAY with 5-10% fine sand. |
| 4 | | | | | | |
| 5 | | | | | CL | Sandy red CLAY, slightly moist, 50% fine to medium sand, low to medium density, slightly plastic. |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring **MMAB3**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1873.2 ft.* Total Hole Depth *7.5 ft.* North *320455.402 ft.* East *1407282.997 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*MMAB3A (0-12")*
*MMAB3B (12"-48")*

| Depth (ft) | PID (ppm) | Sample ID / % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | SM | A Horizon - Silty fine SAND, pine needles on surface. Dark yellowish brown 10YR 4/4, slightly moist, low density |
| 2 | 0.0 | 95% | | | SM | B Horizon - Yellowish brown 10YR 5/6 silty fine SAND, trace medium sand (>5%), trace clay (5-10%). Slightly moist, low to medium density, slightly plastic. |
| 3 | | | | | | |
| 4 | | | | | | C Horizon - Yellowish red 5YR 4/6 CLAY, plastic (moderate). Moderate to very dense, 30-40% mottled (5YR 5/8), slightly moist. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | CL | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAB4**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1811.0 ft.* Total Hole Depth *4.5 ft.* North *320307.266 ft.* East *1404474.277 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *3 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core _____

Drill Co. *Marshall, Miller & Associates* Method *Hand Auger*

Driller *S. Denson* Log By *Greg Zynda* Date *8/31/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAB4A (0-6")*
*MMAB4B (6"-51")*
*MMAB4C (51"-53")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery / Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|
| 0 | | | | SM | A Horizon - SILTY FINE SAND (30% silt), loose to low density. pine needles on surface. Yellowish brown 10YR5/6. Slightly moist. |
| | | | | SM | B Horizon - SILTY FINE SAND 30% sand. Strong brown 7.5YR 5/8. |
| 1 | 0.0 | | | ML S | Fine sandy SILT, slightly moist, mod. density, 40% fine sand. |
| | | | | | Same as above 20-30% SAND |
| 2 | | | | CL S | Fine SANDY CLAY, with silt (20-30% sand and 20-30% silt). Yellowish red 5YR 5/6. Slightly plastic to plastic, mod. density. |
| 3 | 0.0 | | | | Slightly moist fine to medium SANDY CLAY (40-50% clay), plastic. Red 2.5YR 5/8. Mod. density. |
| 4 | | | | SC SM | CLAYEY fine to medium SAND (10-20% clay), trace sand and gravel, slightly moist. |
| | | | | GC | C Horizon - Gravelly pieces of sandstone, (10-25% gravel). Gravelly, medium to coarse sand with 20-30% clay and silt. Yellowish red 5YR 5/8. Refusal at 53", sandstone rocks (river jack). |
| 5 | | | | | |

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# Drilling Log

## Soil Boring **MMAU1**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1981.1 ft.* Total Hole Depth *7.5 ft.* North *311874.444 ft.* East *1404852.06 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/7/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAU1A (0-10")*
*MMAU1B (10"-52")*
*MMAU1C (52"-60")*

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | SM | A Horizon - Pale yellow, silty fine SAND, low density, slightly moist. (2.5YR 7/4) |
| 1 | | | | | | B Horizon - Slightly moist, yellowish red CLAY (5YR 5/8), dense, plastic. 10-30% mottling very pale brown 10YR 8/4."Mottled" material is silty. Alternative layers of silty material and red clay. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | | |
| 4 | | | | | CL | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAU2**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1984.7 ft.* Total Hole Depth *11.0 ft.* North *311894.106 ft.* East *1404927.432 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/7/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAU2A (0-10")*
*MMAU2B (10"-52")*
*MMAU2C (52"-60")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | A Horizon - Leaves, dead tree branches on sandy angular gravel. (pinkish, yellowish from bedrock) |
| | | | | | SM | Slightly moist silty fine SAND, <5%clay, slightly plastic, low density. Olive yellow 2.5Y 6/6. |
| | | | | | | B Horizon - Slightly moist 5YR 5/8, CLAY very dense, plastic, 10-20% mottling, occasional gravel pieces, angular pinkish and yellowish (5%). Mottling pink (5-15%) 7.5YR 8/4. Occasional tree roots. |
| 2 | 0.0 | 100% | | | | |
| 4 | | | | | | C Horizon |
| 6 | | 100% | | | CL | |
| 8 | | | | | | |
| | 0.0 | 100% | | | | |
| 10 | | | | | | |

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# Drilling Log

Soil Boring **MMAU3**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1865.6 ft.* Total Hole Depth *7.5 ft.* North *312818.613 ft.* East *1399297.218 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *8/31/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAU3A (0-9")*
*MMAU3B (9"-42")*
*MMAU3C (42"-6')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | SP | A Horizon - Slightly moist, dark yellowish brown 10YR 4/6. SILTY FINE - MEDIUM SANDY loam. Roots and leaves on surface, loose to low density, crumbles easily, 20-30% silt. |
| 2 | 0.0 | 90% | | | CL | B Horizon - Slightly moist yellowish red CLAY to clayey fine to medium sand. Dense to medium dense. |
| 3 | | | | | | |
| 4 | | | | | GP | C Horizon - Strong brown SILTY FINE AND COURSE SANDY GRAVEL, 50% gravel. slightly moist, loose gravel subangular up to 1.5" diameter. |
| 5 | | | | | | |
| 6 | 0.0 | 60% | | | | Same as above, very loose, sandstone at bottom of core. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAU4**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1739.7 ft.* Total Hole Depth *7.5 ft.* North *317114.333 ft.* East *1410570.692 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *3 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core _____

Drill Co. *Marshall, Miller & Associates* Method *Hand Auger*

Driller *S. Denson* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAU4A (0-10")*
*MMAU4B (10"-58")*
*MMAU4C (58"-76")*

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | A Horizon - Fine sandy loam, 1/2" angular stones, tree roots near surface (0-4"), 5% gravel. Dark yellowish brown 10YR 4/4. Slightly moist, mod. density, slightly plastic, 2-3% organics. |
| 1 | | | | | | B Horizon - Same as above with more subangular gravel and stone. 10% gravel. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | CL ML | Silty CLAY, mod. plasticity, mod. density to dense, 5% subangular gravel. slightly moist. Trace brownish yellow 10YR 6/6 staining from weathered stone. |
| 4 | | | | | CL ML | Silty CLAY, plastic, slightly dense, moist, slightly sticky, trace tree roots. |
| 5 | | | | | CL ML | C Horizon - Brownish yellow, slightly moist, silty CLAY, dense brownish yellow slightly moist silty CLAY, dense, plastic, 10YR6/6 and reddish brown 5YR 4/6. |
| 6 | 0.0 | 100% | | | CL | Reddish Brown CLAY with sand at 73-76" (20%fine sand), slightly moist. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAW1**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1701.6 ft.* Total Hole Depth *7.5 ft.* North *323380.27 ft.* East *1407708.13 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAW1A (0-12")*
*MMAW1B (12"-48")*
*MMAW1C (48"-6')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | SM | A Horizon - Slightly moist, silty fine SAND, organics, roots from 0-6". 20-30% silt, Dark yellowish brown 10YR 3/4. |
| 2 | 0.0 | 90% | | | SM | B Horizon - Dark yellowish brown 10YR 3/4 silty fine SAND, 20-30% silt, slightly moist, trace clay (5%). |
| 3 | | | | | SC | Slightly moist, strong brown 7.5YR 4/6, clayey, silty fine to medium SAND (5-10% clay and 5-10% silt). Slightly plastic. |
| 4 | | | | | SP | C Horizon - Fine to medium SAND with little silt and clay (5% clay and 5% silt). Slightly moist. Strong brown 7.5YR 4/6. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | SP | Same as above, Strong brown 10YR 5/6. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAW2**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1721.5 ft.* Total Hole Depth *7.5 ft.* North *322524.867 ft.* East *1406195.587 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAW2A (0-7")*
*MMAW2B (7"-48")*
*MMAW2C (48"-60")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | SM | A Horizon - Dark brown 10YR 3/3, pine needles on surface. Slightly moist silty fine SAND |
| 2 | 0.0 | 100% | | | | B Horizon - Silty fine SAND, slightly moist, dark yellowish brown 10YR 4/6 (5-15% silt) |
| 3 | | | | | SM | |
| 4 | | | | | | |
| 5 | | | | | | C Horizon - Silty fine SAND, with trace of medium sand (5-10%), slightly moist, yellowish brown 10YR 5/6 |
| 6 | 0.0 | 100% | | | SM | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **MMAW3**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1713.4 ft.* Total Hole Depth *7.5 ft.* North *322490.086 ft.* East *1406208.064 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/6/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*MMAW3A (0-12")*
*MMAW3B (12"-43")*
*MMAW3C (48"-60")*

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | SM | A Horizon - Dark brown silty fine SAND, top soil, 2-3% organics, pine needles on surface. |
| 2 | 0.0 | 100% | | | | B Horizon - Slightly moist, silty fine SAND 5-15% silt, yellowish brown 10YR 5/4 |
| 3 | | | | | SM | |
| 4 | | | | | | C Horizon - Slightly moist, yellowish brown silty, clayey fine SAND (5-10% silt and 5% clay). Slightly plastic and trace of medium sand. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | SM | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring **MMAW4**



Project *RFAAP Background Study* Owner *US Army*

Location *MMA* Proj. No. *866228*

Surface Elev. *1706.5 ft.* Total Hole Depth *7.5 ft.* North *318887.053 ft.* East *1396623.751 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson* Log By *Greg Zynda* Date *9/5/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*MMAW4A (0-9")*
*MMAW4B (9"-3.5')*
*MMAW4C (3.5'-6')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | SM | A Horizon - Silty fine SAND (20% silt), shrub and grass roots to 9". Dark yellowish brown 10YR 3/4, slightly moist. |
| 1 | | | | | | B Horizon - Yellowish brown 10YR 5/8 fine SAND with 5-10% silt. Slightly moist. |
| 2 | 0.0 | 90% | | | SP | |
| 3 | | | | | | |
| | | | | | SM | C Horizon - Slightly moist silty fine SAND with large gravel (10%) angular. Yellowish brown 10YR 5/8, 5% clay. |
| 4 | | | | | | Slightly moist silty clayey fine to medium SAND with occasional gravel pieces. Dark yellowish brown 10YR 4/6. |
| 5 | | | | | | |
| | 0.0 | 90% | | | SC | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUC1**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2097.9 ft.* Total Hole Depth *7.5 ft.* North *290201.324 ft.* East *1371017.041 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUC1A (0-11")*
*NRUC1B (11"-6')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | ML | A Horizon - SILTY loam, trace fine sand. Grass roots 0-3". Trace of clay, slightly moist. Olive yellow 2.5Y 6/6. |
| 1 | | | | | | B Horizon - Yellowish brown 10YR 5/8 mod. dense to dense CLAY with 5% fine sand, 50-70% silt, plastic. 1-3% black specks, slightly moist. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | | |
| 4 | | | | | CL | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUC2**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2095.1 ft.* Total Hole Depth *7.5 ft.* North *290249.225 ft.* East *1371073.443 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUC2A (0-11")*
*NRUC2B (11"-6')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | ML | A Horizon - Light olive brown 2.5YR 5/6. SILTY loam, trace fine sand (5%), low density, trace clay. Grass roots 0-3", slightly moist. |
| 2 | 0.0 | 100% | | | CL | B Horizon - Yellowish brown 10YR 5/8 mod. dense to dense CLAY with 5% fine sand, 50-70% silt, plastic. 1-3% black specks. |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | Weathered bedrock (limestone or dolomite). Slightly moist, dense SILTY CLAY, 2-3% black specks. |
| 7 | | | | | CL ML | |
| 8 | | | | | SP | Low density fine to medium SAND, silt (20-40% silt), mottled 20-30% yellowish red and dark red. |

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# Drilling Log

## Soil Boring NRUC3



Project RFAAP Background Study  Owner US Army
Location NRU  Proj. No. 866228
Surface Elev. 2065.7 ft.  Total Hole Depth 1.5 ft.  North 287199.883 ft.  East 1376699.21 ft.
Top of Casing NA  Water Level Initial NA  Static NA  Diameter 2 in.
Screen: Dia NA  Length NA  Type/Size NA
Casing: Dia NA  Length NA  Type NA
Fill Material  Rig/Core Geoprobe
Drill Co. Marshall, Miller & Associates  Method Direct Push
Driller S. Denson and K. Carr  Log By Greg Zynda  Date 8/29/00  Permit # NA
Checked By  License No.

COMMENTS
Sample ID's:
NRUC3A (0-10")
NRUC3B (10"-18")

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | 0.0 | 100% | | | ML | Pine needles<br>A Horizon - 10Y 5/4 yellowish brown slightly moist, crumbly SILT with 10% fine sand, trace of clay (5%), pine tree roots. |
| 1 | | | | | CL ML | B Horizon - Yellow 2.5 Y 7/6, slightly moist, SILTY CLAY, crumbly, plastic. |
| 2 | | | | | | |
| 3 | | | | | | |

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# Drilling Log

## Soil Boring NRUC4



Project RFAAP Background Study Owner US Army

Location NRU Proj. No. 866228

Surface Elev. 1994.8 ft. Total Hole Depth 7.5 ft. North 291651.576 ft. East 1375527.088 ft.

Top of Casing NA Water Level Initial NA Static NA Diameter 2 in.

Screen: Dia NA Length NA Type/Size NA

Casing: Dia NA Length NA Type NA

Fill Material Rig/Core Geoprobe

Drill Co. Marshall, Miller & Associates Method Direct Push

Driller S. Denson and K. Carr Log By Greg Zynda Date 8/29/00 Permit # NA

Checked By License No.

COMMENTS
Sample ID's:
NRUC4A (0-7")
NRUC4B (7"-30")
NRUC4C (30"-48")

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | A Horizon - Moist, fine SANDY SILT, 50% fine sand, pale brown 10YR 6/3, mod-density. |
| 1 | | | | | | Slight moist, very mottled fine SANDY SILT, 20-40% fine sand. Strong brown 7.5YR 5/8. |
| 2 | 0.0 | 100% | | | SM | Strong brown SILTY FINE SAND, silty,clayey fine sand (10% clay, 20%silt), slightly moist to moist, dense, mottled |
| 3 | | | | | | |
| 4 | | | | | | Strong brown 7.5YR 5/8, SILTY CLAY 20-30% clay, with trace of fine sand (5%), slightly moist to moist, 20-30% mottled gray and strong brown. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | CL | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring NRUG1



Project RFAAP Background Study  Owner US Army
Location NRU  Proj. No. 866228
Surface Elev. 2127.5 ft.  Total Hole Depth 8.0 ft.  North 291100.639 ft.  East 1369289.298 ft.
Top of Casing NA  Water Level Initial NA  Static NA  Diameter 2 in.
Screen: Dia NA  Length NA  Type/Size NA
Casing: Dia NA  Length NA  Type NA
Fill Material  Rig/Core Geoprobe
Drill Co. Marshall, Miller & Associates  Method Direct Push
Driller S. Denson and K. Carr  Log By Greg Zynda  Date 8/29/00  Permit # NA
Checked By  License No.

COMMENTS
Sample ID's:
NRUG1A (0-12")
NRUG1B (12"-53")
NRUG1C (53"-70")

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | OL | Pine needles, organic SILT with 5% clay. A Horizon - Olive yellow 2.5Y 6/6, slightly moist. |
| 1 | | | | | | B Horizon - Slightly moist CLAYEY SILT (10% clay). No odors. Slightly stiff to stiff, slightly crumbly, 2-15% rusty mottling. Trace of rusty gravel pieces (iron stained). Reddish-yellow 7.5YR 6/6. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | | |
| 4 | | | | | CL ML | C Horizon - Slightly moist CLAYEY SILT (10% clay). No odors. Slightly stiff to stiff, slightly crumbly, 20-30% rusty mottling. Trace of rusty gravel pieces (iron stained). Reddish-yellow 7.5YR 6/6. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | Slightly moist, very mottled SILTY CLAY with 10% gravel-limestone. Yellowish brown 10YR 5/8. |
| 8 | | | | | | |

IT_COMMERCIAL Rev: 2/23/00 RFAAP.GPJ IT_CORP.GDT 11/1/01

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# Drilling Log

Soil Boring **NRUG2**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2048.8 ft.* Total Hole Depth *7.5 ft.* North *285754.381 ft.* East *1373142.435 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUG2A (0-7")*
*NRUG2B (7"-34")*
*NRUG2C (34"-57")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | ML | A Horizon - Yellowish brown 10YR 5/6, CLAYEY SILT loam, slightly moist, mod. dense, 10% clay, slightly plastic. |
| 1 | | | | | ML | B Horizon - Dry to slightly moist SILT, trace fine sand (5%), very loose and crumbly, trace clay (5%). 10YR 7/4 very pale brown. 2-5% gravel angular |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | CL | C Horizon - Slightly moist SILTY CLAY (10-30% clay). Strong brown 7.5YR 5/8. Mod. dense to dense, 5-10% angular gravel, 1-2% black specks. |
| 4 | | | | | | |
| 5 | | | | | CL | Slightly moist, SILTY CLAY with 30% angular gravel, weathered bedrock, mod. dense, brownish yellow 10YR 6/6. |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring NRUG3



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2055.9 ft.* Total Hole Depth *7.5 ft.* North *285805.982 ft.* East *1373194.726 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*NRUG3A (0-12")*
*NRUG3B (12"-35")*
*NRUG3C (35"-67")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | ML | A Horizon - Olive yellow 2.5Y 6/6, dry to very slightly moist SILT with trace clay (5%). Pine needles on surface. Crumbly to slightly loose. |
| 1 | | | | | | B Horizon - Olive yellow 2.5Y 6/6, slightly moist SILT loam, trace fine sand (5%), 5-15% clay, slightly plastic, mod. dense. |
| 2 | 0.0 | 100% | | | ML | |
| 3 | | | | | | C Horizon - Reddish yellow 7.5YR 6/6, CLAYEY SILT (10-20% clay). Mottled rusty color (5-15%). |
| 4 | | | | | ML | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | CL ML | Strong brown SILTY CLAY (20-40% clay). Slightly moist, mod. plastic. 10% rusty mottling. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUG4**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2081.3 ft.* Total Hole Depth *7.5 ft.* North *287847.944 ft.* East *1369157.992 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUG4A (0-6")*
*NRUG4B (6"-39")*
*NRUG4C (39"-72")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | ML | A Horizon - Slighlty moist SILT loam, yellowish brown 10YR 5/6, 5-10% clay, 10-20% fine sand, dense, pine needles on the surface. |
| 1 | | | | | | B Horizon - Slightly moist, strong brown 7.5YR 5/6, SILTY CLAY loam, mod-dense, mod-plastic. Trace black specks (1%), 2-5% gravel angular with black staining on surface, with 5% fine sand. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | | C Horizon - Slightly moist, SILTY CLAY loam, 5-25% gravel (angular maroon and gray), trace fine sand, dense, plastic, 1-2% black specks. |
| 4 | | | | | CL ML | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | Same as above, slighlty moist with 5-10% gravel. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring NRUL1



Project RFAAP Background Study  Owner US Army

Location NRU  Proj. No. 866228

Surface Elev. NA  Total Hole Depth 7.5 ft.  North 283098.573 ft.  East 1370857.281 ft.

Top of Casing NA  Water Level Initial NA  Static NA  Diameter 2 in.

Screen: Dia NA  Length NA  Type/Size NA

Casing: Dia NA  Length NA  Type NA

Fill Material  Rig/Core Geoprobe

Drill Co. Marshall, Miller & Associates  Method Direct Push

Driller S. Denson and K. Carr  Log By Greg Zynda  Date 8/30/00  Permit # NA

Checked By  License No.

*COMMENTS*
*Sample ID's:*
*NRUL1A (0-12")*
*NRUL1B (12"-42")*
*NRUL1C (42"-5.5')*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| 1 | | | | | ML | A Horizon - SILT, olive yellow 2.5YR 6/6, slightly moist, crumbly, trace of clay (5%). Pine needles on surface. |
| 2 | 0.0 | 100% | | | | B Horizon - CLAYEY SILT (10-20% clay), 10-20%mottling, slightly plastic, yellowish brown 10YR 5/6 |
| 3 | | | | | CL ML | |
| 4 | | | | | | C Horizon - 30-40% mottled red CLAYEY SILT and silt (max 15% clay), slightly moist, reddish yellow 7.5YR 6/6. |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | CL | Strong brown CLAY and silty clay. Very dense, slightly moist, very plastic, piece of weathered bedrock at 7'.1% black flakes, trace (1-2%) grayish mottling. |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUL2**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *NA* Total Hole Depth *7.5 ft.* North *283137.296 ft.* East *1370938.166 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUL2A (0-12")*
*NRUL2B (12"-33")*
*NRUL2C (33"-60")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | ML | A Horizon - Slightly moist SILT, pine needles on the surface, light yellowish brown 2.5YR 6/4. |
| 1 | | | | | | B Horizon - Slightly moist CLAYEY SILT loam, 5-10% clay, slightly plastic, slightly dense to crumbly. Light yellowish brown 10YR 6/4. |
| 2 | 0.0 | 100% | | | CL ML | |
| 3 | | | | | | Slightly moist SILT grading to SILTY CLAY. Dense, slightly plastic to plastic. Reddish brown 5YR 5/4. |
| 4 | | | | | | |
| 5 | | | | | ML | Slightly moist SILT and CLAYEY SILT (15-40% clay). Dense to mod-dense. reddish yellow 7.5YR 6/8, 20-30% Mottled. |
| | 0.0 | 100% | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

## Soil Boring NRUL3



Project RFAAP Background Study  Owner US Army
Location NRU  Proj. No. 866228
Surface Elev. 2070.2 ft.  Total Hole Depth 7.5 ft.  North 287529.935 ft.  East 1373041.768 ft.
Top of Casing NA  Water Level Initial NA  Static NA  Diameter 2 in.
Screen: Dia NA  Length NA  Type/Size NA
Casing: Dia NA  Length NA  Type NA
Fill Material  Rig/Core Geoprobe
Drill Co. Marshall, Miller & Associates  Method Direct Push
Driller S. Denson and K. Carr  Log By Greg Zynda  Date 8/29/00  Permit # NA
Checked By  License No.

*COMMENTS*
*Sample ID's:*
*NRUL3A (0-9")*
*NRUL3B (9"-75")*
*NRUL3C (75"-90")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | Brown organics, silt, and grass roots. A Horizon - Brownish yellow 10YR 6/6, slightly moist SILT. |
| 1 | | | | | | B Horizon - Moist to slightly moist SILT, silty clay, clayey silt, trace of weathered bedrock pieces, blacked stained. Reddish yellow 7.5YR 6/6, dense to mod. dense, slightly plastic. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | ML | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | 0.0 | 100% | | | | C Horizon - Moist to slightly moist brownish yellow 10YR 6/6, CLAYEY SILTY and silt, dense slightly plastic with 30% weathered bedrock, laminated, stained black |
| 7 | | | | | CL | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUL4**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2066.7 ft.* Total Hole Depth *7.5 ft.* North *291929.194 ft.* East *1372212.647 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/29/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUL4A (0-10")*
*NRUL4B (10"-38")*
*NRUL4C (38"-60")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | A Horizon - Slightly moist, few fine tree roots. Crumbly SILT, 5-10% clay, dark grayish brown 10YR 4/2. |
| | | | | | | Same as above. Light yellowish brown 2.5YR 6/4. |
| 1 | | | | | | B Horizon - Olive yellow 2.5YR 6/4. Slightly moist, crumbly to moderate loose SILT with 5-10% clay. 2-5% rusty mottling, with 1-2% black specks. |
| 2 | 0.0 | 95% | | | ML | |
| 3 | | | | | | C Horizon - Slightly moist SILT 5-15% clay, crumbly 5-15% mottling. Brownish-yellow 10YR 6/6. |
| 4 | | | | | | |
| 5 | | | | | | Stiff, slightly moist, SILTY CLAY, dense, 30-60% clay, strong brown 7.5YR 5/6. |
| 6 | 0.0 | 95% | | | CL ML | |
| 7 | | | | | | |
| 8 | | | | | | |

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# Drilling Log

Soil Boring **NRUW1**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2094.9 ft.* Total Hole Depth *4.0 ft.* North *288400.943 ft.* East *1374521.864 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUW1A (0-7")*
*NRUW1B (7"-38")*
*NRUW1C (38"-48")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | ML | A Horizon - Grayish brown 10YR 5/2, slightly moist, loose to low density, SILT loam, with grass roots from 0-2". |
| 1 | | | | | CL | B Horizon - Strong brown 7.5YR 5/8. Slightly moist, SILTY CLAY (15-40% clay), mod. dense to dense, slightly to mod. plastic. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | CL ML | C Horizon - Slightly moist, brownish yellow 10YR 6/6 CLAYEY SILT, 15-30% clay), mod. density, plastic, 20-30% weathered bedrock (limestone). Refusal at 4'. |
| 4 | | | | | | |
| 5 | | | | | | |

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# Drilling Log

Soil Boring **NRUW2**



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2090.8 ft.* Total Hole Depth *4.0 ft.* North *288406.798 ft.* East *1374603.182 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/30/00* Permit # *NA*

Checked By License No.

*COMMENTS*
*Sample ID's:*
*NRUW2A (0-9")*
*NRUW2B (9"-28")*
*NRUW2C (28"-48")*

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | ML | A Horizon - Grayish brown 10YR 5/2, slightly moist, loose to low density, SILT loam, with grass roots from 0-2". |
| 1 | | | | | CL ML | B Horizon - Slightly moist to moist, CLAYEY SILT, 10-30% clay, mod. density, yellowish brown 10YR 5/8, mod plastic. |
| 2 | 0.0 | 100% | | | | |
| | | | | | CL ML | C Horizon - CLAYEY SILT (10% clay). Light olive brown 2.5Y 5/6. Slightly moist to moist, mod. plastic, 20% weathered bedrock (limestone). Refusal at 4'. |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |

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# Drilling Log

## Soil Boring NRUW3



Project *RFAAP Background Study* Owner *US Army*

Location *NRU* Proj. No. *866228*

Surface Elev. *2059.7 ft.* Total Hole Depth *3.8 ft.* North *292482.845 ft.* East *1376121.867 ft.*

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material _____ Rig/Core *Geoprobe*

Drill Co. *Marshall, Miller & Associates* Method *Direct Push*

Driller *S. Denson and K. Carr* Log By *Greg Zynda* Date *8/29/00* Permit # *NA*

Checked By _____ License No. _____

*COMMENTS*
*Sample ID's:*
*NRUW3A (0-10")*
*NRUW3B (10"-34")*
*NRUW3C (34"-45")*

| Depth (ft.) | PID (ppm) | Sample ID / % Recovery | Blow Count / Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | ML | A Horizon - Light yellowish-brown 2.5Y 6/4, slightly moist SILT with organics. |
| 1 | | | | | CL ML | B Horizon - SILTY CLAY, slightly moist, 30-50% clay. Slightly plastic, reddish-yellow 7.5YR 6/6, dense. |
| 2 | 0.0 | 100% | | | | |
| 3 | | | | | ML | C Horizon - Yellow, slightly moist to dry, SILT, crumbly, trace of clay 5-10%. 15% Pieces of bedrock (limestone or dolomite) thinly laminated with black layers. |
| 4 | | | | | | |
| 5 | | | | | | |

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# Drilling Log

## Soil Boring NRUW4



Project RFAAP Background Study  Owner US Army

Location NRU  Proj. No. 866228

Surface Elev. 2086.4 ft.  Total Hole Depth 8.0 ft.  North 286025.858 ft.  East 1371167.197 ft.

Top of Casing NA  Water Level Initial NA  Static NA  Diameter 2 in.

Screen: Dia NA  Length NA  Type/Size NA

Casing: Dia NA  Length NA  Type NA

Fill Material  Rig/Core Geoprobe

Drill Co. Marshall, Miller & Associates  Method Direct Push

Driller S. Denson and K. Carr  Log By Greg Zynda  Date 8/29/00  Permit # NA

Checked By  License No.

COMMENTS
Sample ID's:
NRUW4A (0-10")
NRUW4B (10"-31")
NRUW4C (31"-46")

| Depth (ft.) | PID (ppm) | Sample ID % Recovery | Blow Count Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | ML | A Horizon - Organics and grass roots. Slightly moist, light olive brown 2.5Y 5/3, SILT Loam, with trace of fine sand and gravel (5%) |
| 1 | | | | | | Slightly moist, light yellowish brown SILT, trace of fine sand and clay. |
| | | | | | CL ML | B Horizon - Reddish yellow 7.5YR 6/6, slightly moist, SILTY CLAY (20-30% clay), dense, 10-15% mottled. |
| 2 | 0.0 | 95% | | | | |
| 3 | | | | | ML | C Horizon - Reddish yellow 7.5YR 6/8, slightly moist, slightly loose SILT, crumbly, 5% clay. |
| 4 | | | | | | Slight moist, 50% weathered bedrock (laminated with black staining), clay and silt, slightly loose. |
| 5 | | | | | SM | Moist SILTY FINE SAND, reddish yellow 7.5YR 6/6, 5% clay, mod-density, 5-10% weathered bedrock. |
| 6 | 0.0 | 100% | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

# Appendix B

# Data Validation Reports

## Appendix B
## Data Validation Reports

Data packages were validated to ensure compliance with specified analytical, QA/QC requirements, data reduction procedures, data reporting requirements, and required accuracy, precision, and completeness criteria.

Please note the following about the Form 1's in Appendix B.

- Laboratory software limitations resulted in select compounds being manually calculated and changed during the data validation process to reflect the correct reporting limits. Since this was only done for non-detects, these changes had no affect on the contamination assessment. Changes by the analytical laboratory were initialed on the forms while un-initialed changes were made by the IT data validation team.
- Also, the line noted on the metals Form 1's through aluminum or barium is an artifact from laboratory reproduction. Aluminum and/or barium were not rejected during the validation process.

## Appendix B
## Data Validation Report Summary

| Data Validation Report Number | Sample ID | | |
|---|---|---|---|
| **Inorganics** | | | |
| SDG F0I130290 (001166) | MMAB2BD | MMAU1A | MMAW4B |
| | MMAB3A | MMAU1B | MMAW4C |
| | MMAB3B | MMAU1C | MMAW1A |
| | MMAW2A | MMAW3A | MMAW1B |
| | MMAW2B | MMAW3B | MMAW1C |
| | MMAW2C | MMAW3C | MMAU4A |
| | MMAW2CD | MMAW3CD | MMAU4B |
| | MMAU2A | MMAB2A | MMAU4C |
| | MMAU2B | MMAB2B | MMAU2C |
| | MMAW4A | | |
| SDG 001139 (T09852) | NRUW4A | NRUG1B | NRUW4B |
| | NRUG1C | NRUW4C | NRUL4A |
| | NRUW4CD | NRUL4B | NRUL3A |
| | NRUL4BD | NRUL3B | NRUL4C |
| | NRUL3C | NRUW3A | NRUG1A |
| SDG 001139 (T09869) | NRUW3B | NRUC3A | NRUW3C |
| | NRUC3B | NRUC4A | NRUG4A |
| | NRUC4B | NRUG4B | NRUC4C |
| | NRUG4C | | |
| SDG 001145 (T09934) | NRUC1A | NRUC2A | NRUC1B |
| | NRUC2B | NRUL1C | NRUG3B |
| | NRUL1A | NRUW1B | NRUL1B |
| | NRUW1C | NRUW1A | NRUG3C |
| | NRUG2B | NRUG2C | NRUG2A |
| | NRUW2A | | |
| SDG 001145 (T09950) | NRUW2B | NRUL2C | MMAU3BD |
| | NRUW2C | NRUL2BD | MMAB4A |
| | NRUG2BD | NRUG2CD | MMAB4B |
| | NRUL2A | NRUG3A | MMAB4C |
| | NRUL2B | MMAB1C | MMAU3A |
| | MMAU3B | MMAU3C | MMAB1A |
| | MMAB1B | | |
| **Volatiles** | | | |
| SDG IT2 | NRUC1B | NRUL1C | NRUL1B |
| | NRUG2B | | |
| SDG IT3 | NRUW1B | NRUW1C | NRUG2C |
| | NRUG2B | | |
| SDG IT5 | MMAB3B | MMAW2B | MMAW2C |
| | MMAW2CD | MMAU1B | MMAU1C |
| **Semivolatiles** | | | |
| SDG IT2 | NRUC1A | NRUC1B | NRUL1C |
| | NRUL1A | NRUL1B | NRUW1A |
| | NRUG2B | NRUG2A | |
| SDG IT3 | NRUW1B | NRUW1C | NRUG2C |
| | NRUG2BD | NRUG2CD | |
| SDG IT5 | MMAB3A | MMAB3B | MMAW2A |
| | MMAW2B | MMAW2C | MMAW2CD |
| | MMAU1A | MMAU1B | MMAU1C |

# Appendix B
# Data Validation Reports

Data validation assesses the acceptability or unacceptability of the data quality based on a set of pre-defined criteria. Data validation is defined as the systematic process for reviewing a data package against a set of criteria to provide assurance that the data is adequate for its intended uses. These criteria depend upon the type(s) of data involved and the purpose for which data are collected. The intended use of the data and the associated acceptance criteria for data quality is assessed before the data collection effort begins.

Data packages were validated to ensure compliance with specified analytical, QA/QC requirements, data reduction procedures, data reporting requirements, and required accuracy, precision, and completeness criteria.

The data obtained using USEPA performance based methods were validated by the project chemist. Samples analyzed for physical characterization and disposal characterization following TCLP and pH procedures do not require validation. Results were assessed for accuracy and precision of laboratory analysis to identify the limitations and quantity of data. The quality of the data collected in support of the sampling activity was considered acceptable, unless qualified rejected "R" or blank qualified "B" during the validation process. Samples qualified "J," "UJ," "L," "UL," or "K" were considered acceptable as estimated. These qualifiers and common laboratory are defined in Tables B-1 and B-2, respectively.

**Table B-1**
**USEPA Region III Validation Qualifiers**

| Qualifier | Definition |
|---|---|
| No Code | Confirmed identification. |
| J | Analyte present, bias estimated. Reported value may not be accurate or precise. |
| K | Analyte present, bias high estimated. Reported value may be biased high. |
| L | Analyte present, bias low estimated. Reported value may be biased low. |
| UJ | Not detected, bias estimated. Reporting limit may be inaccurate or imprecise. |
| UL | Not detected, bias low estimated. Reporting limit is probably higher. |
| B | The compound has been detected in the associated sample and laboratory method blank and/or associated field sample. The compound reported is considered not detected substantially above the level reported in the laboratory and/or field blanks. |
| R | Unreliable result. Analyte may or may not be present in the sample. |

**Table B–2**
**Common Laboratory Qualifiers**

| Qualifier | Parameter Group | Definition |
|---|---|---|
| No Code | All | Confirmed identification. |
| U | All | Not detected. The associated number indicates the reporting limit for the sample. |
| B | Inorganics | The reported value was obtained from a reading <CRDL and ≥ MDL or IDL and is considered estimated. |
| B | Organics | The analyte or compound has been detected in the sample and laboratory method blank and indicates probable blank contamination. |
| J | Organics | Indicates an estimated value for (1) estimating a concentration as a tentatively identified compound as indicated by the mass spectral and retention time data, or (2) estimating a concentration <CRQL or MRL and ≥ MDL. |
| S | Dioxins | The response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range. The corresponding signal is saturated and the reported analyte concentration is a "minimum estimate." |
| S | Inorganics | The reported value was identified by the Method of Standard Additions. |
| Q | Mass Spec | Presence of QC ion instabilities caused by quantitative interferences. |
| P | Gas Chromatography | Target analyte confirmation >40% difference for detected compound between the two GC columns. The lower of the two values was reported. |
| N | Organics | Indicates presumptive evidence of a compound for tentatively identified compounds using a library search. |
| N | Inorganics | Laboratory spike sample recovery not within control limits. |
| * | Inorganics | Duplicate analysis not within control limits. |
| + | Inorganics | Correlation coefficient for MSA is less than 0.995. |
| E | Organics | Identifies compounds whose concentrations exceed the upper level of the calibration range. |
| E | Inorganics | Reported value is estimated because of the presence of interferences. |
| D | Organics | Indicates sample was analyzed at a dilution. |
| W | Inorganics | Post-digestion spike for furnace AA analysis is outside of control limits with the sample absorbance less than 50% of spike absorbance. |
| EMPC | Dioxins | The ion-abundance ratio between the two characteristic PCDD/F ions is outside accepted ranges. The detected PCDD/F is reported as an estimated maximum possible concentration (EMPC). |
| R | Dioxins | To reject data for analytes whose extraction standard recoveries are considered unacceptable, or when other circumstances require its use. |
| V | Dioxins | To validate the data for analytes whose extraction standard recoveries are lower than the method's minimum requirement. |

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation – TAL Metals
STL St. Louis, SDG F0I130290 (001166)

**DATE:** November 24, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the September 5-7, 2000 sampling events. Samples were analyzed for metals using methods SW-846 7471A (CVAA) for Mercury and SW-846 6010B (ICP) for all other metals. A total of twenty-eight soil samples were validated. The sample IDs are:

| Field ID | Field ID | Field ID |
|---|---|---|
| MMAB2BD | MMAU1A | MMAW4B |
| MMAB3A | MMAU1B | MMAW4C |
| MMAB3B | MMAU1C | MMAW1A |
| MMAW2A | MMAW3A | MMAW1B |
| MMAW2B | MMAW3B | MMAW1C |
| MMAW2C | MMAW3C | MMAU4A |
| MMAW2CD | MMAW3CD | MMAU4B |
| MMAU2A | MMAB2A | MMAU4C |
| MMAU2B | MMAB2B | |
| MMAU2C | MMAW4A | |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP, and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995). Parameters were validated at USEPA Region III Level IM2 and are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| | X | Initial and Continuing Calibration |
| | X | Blank Analysis |
| | X | ICP Interference Check Sample (ICS) |
| X | | Matrix Spike/Matrix Spike Duplicate |
| | X | Laboratory Control Sample (LCS) |
| X | | ICP Serial Dilution |
| | X | Quantitation Verification |

The quality data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**TAL METALS REVIEW**
**SDG 001166 (F0I130290)**

**I-Holding Times**
*Form I, shipping and run logs.*
The primary objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: Cool @4 °C ± 2 °C, the maximum holding time is 180 days for metals and 28 days for mercury.

- All criteria were met. No qualifiers were applied.

**II-Initial and Continuing Calibration**
*Form II*
Requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analysis run, and continuing calibration verification documents that the initial calibration is still valid.

| | | | |
|---|---|---|---|
| ICP: | 1- blank | Hg: | 1 – blank |
| | 3 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) |
| | %R – 90-110% | | %R – 80-120% |

- ICP analysis for metals was run on 09/18-21/00. Mercury was analyzed on 09/19/00 with a correlation coefficient of 0.9999. All criteria were met. No qualifiers were applied.

**III-Blank Analysis**
Blanks are assessed to determine the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Any sample value < five times (5X) the maximum concentration detected in the QC blanks and > the MRL is qualified "B". Soil sample results and action levels were appropriately adjusted for moisture content during the blank analysis study. The associated rinse blanks are samples 083100R4 and 090700RB.

- There was no contaminant detected in any of the blanks >MRL. No qualifiers were applied.

**IV-ICP Interference Check Sample (ICS)**
*Form IV*
The ICP Interference Check Sample (ICS) verifies interelement and background correction factors. ICP Interference Check is performed at the beginning and end of each sample analysis run. Control limits are 80-120%.

- All criteria were met. No qualifiers were applied.

**V-Matrix Spike/Matrix Spike Duplicate Analysis**
The matrix spike sample analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. Spike recovery (%R) must be within the specified control limits of 75-125%. However, spike recovery limits do not apply when sample concentration exceeds the spike added concentration by a factor of four or more. If the spike recovery is < 75% but > 30%, positive sample results are qualified as biased low, "L" and non-detects as biased low, "UL".

**V-Matrix Spike/Matrix Spike Duplicate Analysis, Continued**

- Samples MMAW2BS (DKA7E), MMAB3AS (DKA76) and MMAW2BD (DKA7E) were used for the MS/MSD analysis. %R for Aluminum (126.4%, 565.8%, -682.2%, 475.2%), Iron (619.0%, -28.0%, 383.5%, -124.1%) and Manganese (-4.6%, -115.7%, -64.2%) were outside the control limits. Since the sample concentrations for these elements exceeded the spike added concentration by a factor of four or more, no qualifiers were applied based on these outliers.

- %R for Antimony (56.3%, 66.2%, 57.1%, 63.2%) were below the control limits. Positive samples for this element were qualified as biased low, "L" and non-detects "UL".

**VI-Laboratory Control Samples (LCS)**
*Forms VII, XIII*
The laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All LCS results must fall within the specified control limits.

- All criteria were met. No qualifiers were applied.

**VII-ICP Serial Dilution**
*Forms I, IX*
The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.

- Percent difference (%D) for Zinc (23.2%, 14.7%) was above the control limit. Positive values for this element was qualified as estimated, "J" and non-detects had no qualifiers applied.

**VIII-Quantitation Verification**
*Raw Data.*
The accuracy of analytical results is verified through the calculation of several parameters. The percent difference (%D) between the calculated and the reported values should be within 10%. The following calculations were performed for verification:

**ICP Sample: MMAB2BD (DKA5M), Lead**

Conc. mg/kg = (conc. μg/mL) * (Final Volume mL)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (0.07301 μg/mL)*(100 mL)/(1 g* 0.861) = 8.50 μg/g = 8.5 mg/kg

Reported concentration = 8.5 mg/kg
%D =0%.
Values were within 10% difference

**VIII-Quantitation Verification, Continued**

**CVAA Sample: MMAB2BD (DKA5M), Hg**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (0.630 μg/L)*(0.03 L)/(0.18 g* 0.861) = 0.122 μg/g = 0.122 mg/kg

Reported concentration = 0.13 mg/kg
%D = 6.15%.
Values were within 10% difference

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA5M **Client ID:** MMAB2BD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 13.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 23.2 | 12900 | N | 1 | ICPST | 9/21/2000 | 9:05 | |
| Antimony | 206.84 | 0.28 | 7.0 | 7.0 ~~0.28~~ | UN | 1 | ICPST | 9/21/2000 | 9:05 | UL |
| Arsenic | 189.04 | 0.16 | 1.2 | 3.2 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.37~~ | ~~23.2~~ | ~~59.1~~ | | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:05~~ | |
| Beryllium | 313.04 | 0.023 | 0.58 | 0.5 ~~0.30~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Cadmium | 226.50 | 0.035 | 0.58 | 0.5 ~~0.30~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Calcium | 317.93 | 4.8 | 581 | 581 ~~439~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Chromium | 267.76 | 0.13 | 0.58 | 22.7 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| Cobalt | 228.62 | 0.12 | 5.8 | 5.8 ~~3.1~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Copper | 324.75 | 0.19 | 2.9 | 5.7 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| Iron | 217.44 | 2.1 | 11.6 | 18000 | N | 1 | ICPST | 9/21/2000 | 9:05 | |
| Lead | 220.35 | 0.22 | 0.35 | 8.5 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| Magnesium | 279.08 | 4.8 | 581 | 581 ~~446~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Manganese | 257.61 | 0.035 | 0.58 | 155 | N | 1 | ICPST | 9/21/2000 | 9:05 | |
| Nickel | 231.60 | 0.22 | 4.7 | 4.9 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| Potassium | 766.49 | 209 | 581 | 581 ~~386~~ | BU | 1 | ICP | 9/20/2000 | 13:34 | |
| Selenium | 196.03 | 0.28 | 0.58 | 0.5 ~~0.28~~ | U | 1 | ICPST | 9/21/2000 | 9:05 | |
| Silver | 328.07 | 0.16 | 0.58 | 0.5 ~~0.16~~ | U | 1 | ICPST | 9/21/2000 | 9:05 | |
| Sodium | 589 | 20.8 | 581 | 581 ~~53.3~~ | BU | 1 | ICP | 9/20/2000 | 13:34 | |
| Thallium | 190.86 | 0.38 | 1.2 | 1.2 ~~0.40~~ | BU | 1 | ICPST | 9/21/2000 | 9:05 | |
| Vanadium | 292.40 | 0.14 | 5.8 | 38.6 | | 1 | ICPST | 9/21/2000 | 9:05 | |
| Zinc | 213.86 | 0.093 | 2.3 | 16.9 | E | 1 | ICPST | 9/21/2000 | 9:05 | J |

Comments: Lot #: F0I130290 Sample #: 1

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA5M **Client ID:** MMAB2BD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 13.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.039 | 0.13 | | 1 | CVAA | 9/20/2000 | 10:23 |

Comments: Lot #: F0I130290 Sample #: 1

Version 4.10.4

U Result is less than the IDL.
B Result is between IDL and RL.

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA76 **Client ID:** MMAB3A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 11.2

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 22.5 | 5630 | N | 1 | ICPST | 9/23/2000 | 16:37 | |
| Antimony | 206.84 | 0.27 | 6.8 | 6.8 ~~0.27~~ | UN | 1 | ICPST | 9/23/2000 | 16:37 | VL |
| Arsenic | 189.04 | 0.16 | 1.1 | 2.3 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Barium | 493.41 | 0.36 | 22.5 | 99.1 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Beryllium | 313.04 | 0.023 | 0.56 | 0.56 ~~0.40~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Cadmium | 226.50 | 0.034 | 0.56 | 0.56 ~~0.17~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Calcium | 317.93 | 4.6 | 563 | 563 ~~479~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Chromium | 267.76 | 0.12 | 0.56 | 10.5 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Cobalt | 228.62 | 0.11 | 5.6 | 5.6 ~~3.2~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Copper | 324.75 | 0.18 | 2.8 | 4.0 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Iron | 217.44 | 2.8 | 11.3 | 7300 | N | 1 | ICPST | 9/23/2000 | 16:37 | |
| Lead | 220.35 | 0.21 | 0.34 | 10.2 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Magnesium | 279.08 | 4.7 | 563 | 563 ~~255~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Manganese | 257.61 | 0.034 | 0.56 | 567 | N | 1 | ICPST | 9/23/2000 | 16:37 | |
| Nickel | 231.60 | 0.21 | 4.5 | 4.5 ~~3.1~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Potassium | 766.49 | 203 | 563 | 563 ~~237~~ | BU | 1 | ICP | 9/21/2000 | 8:25 | |
| Selenium | 196.03 | 0.27 | 0.56 | 0.56 ~~0.22~~ | U | 1 | ICPST | 9/23/2000 | 16:37 | |
| Silver | 328.07 | 0.16 | 0.56 | 0.56 ~~0.16~~ | U | 1 | ICPST | 9/23/2000 | 16:37 | |
| Sodium | 589 | 19.4 | 563 | 563 ~~81.6~~ | BU | 1 | ICP | 9/21/2000 | 8:25 | |
| Thallium | 190.86 | 0.37 | 1.1 | ~~0.56~~ | BU | 1 | ICPST | 9/23/2000 | 16:37 | |
| Vanadium | 292.40 | 0.14 | 5.6 | 15.7 | | 1 | ICPST | 9/23/2000 | 16:37 | |
| Zinc | 213.86 | 0.090 | 2.3 | 12.8 | E | 1 | ICPST | 9/23/2000 | 16:37 | J |

Comments: Lot #: F0I130290 Sample #: 2

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Corp

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA76 **Client ID:** MMAB3A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 11.2

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.038 | 0.077 | | 1 | CVAA | 9/20/2000 | 10:25 |

Comments: Lot #: F0I130290 Sample #: 2

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA78 **Client ID:** MMAB3B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 14.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.6 | 23.5 | 10100 | N | 1 | ICPST | 9/23/2000 | 16:56 | |
| Antimony | 206.84 | 0.28 | 7.0 | 7.0 ~~0.33~~ | BNU | 1 | ICPST | 9/23/2000 | 16:56 | UL |
| Arsenic | 189.94 | 0.16 | 1.2 | 3.3 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Barium | 493.41 | 0.38 | 23.5 | 63.9 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Beryllium | 313.04 | 0.023 | 0.59 | 0.59 ~~0.36~~ | BU | 1 | ICPST | 9/23/2000 | 16:56 | |
| Cadmium | 226.50 | 0.035 | 0.59 | 0.59 ~~0.37~~ | BU | 1 | ICPST | 9/23/2000 | 16:56 | |
| Calcium | 317.93 | 4.8 | 586 | 586 ~~459~~ | BU | 1 | ICPST | 9/23/2000 | 16:56 | |
| Chromium | 267.76 | 0.13 | 0.59 | 22.4 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Cobalt | 228.62 | 0.12 | 5.9 | 5.9 ~~4.4~~ | BV | 1 | ICPST | 9/23/2000 | 16:56 | |
| Copper | 324.75 | 0.19 | 2.9 | 6.0 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Iron | 217.44 | 2.1 | 11.7 | 14900 | N | 1 | ICPST | 9/23/2000 | 16:56 | |
| Lead | 220.35 | 0.22 | 0.35 | 10.7 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Magnesium | 279.08 | 4.9 | 586 | 586 ~~418~~ | BU | 1 | ICPST | 9/23/2000 | 16:56 | |
| Manganese | 257.61 | 0.035 | 0.59 | 464 | N | 1 | ICPST | 9/23/2000 | 16:56 | |
| Nickel | 231.60 | 0.22 | 4.7 | 4.8 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Potassium | 766.49 | 211 | 586 | 586 ~~370~~ | BV | 1 | ICP | 9/21/2000 | 8:41 | |
| Selenium | 196.03 | 0.28 | 0.59 | 0.59 ~~0.28~~ | U | 1 | ICPST | 9/23/2000 | 16:56 | |
| Silver | 328.07 | 0.16 | 0.59 | 0.59 ~~0.16~~ | U | 1 | ICPST | 9/23/2000 | 16:56 | |
| Sodium | 589 | 20.2 | 586 | 586 ~~90.0~~ | BU | 1 | ICP | 9/21/2000 | 8:41 | |
| Thallium | 190.86 | 0.39 | 1.2 | 1.4 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Vanadium | 292.40 | 0.14 | 5.9 | 31.0 | | 1 | ICPST | 9/23/2000 | 16:56 | |
| Zinc | 213.86 | 0.094 | 2.3 | 14.7 | E | 1 | ICPST | 9/23/2000 | 16:56 | J |

Comments: Lot #: F0I130290 Sample #: 3

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Only

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA78 **Client ID:** MMAB3B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 14.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.039 | 0.10 | | 1 | CVAA | 9/20/2000 | 10:28 |

Comments: Lot #: FOI130290 Sample #: 3

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7D **Client ID:** MMAW2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 18.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.6 | 12800 | N | 1 | ICPST | 9/21/2000 | 9:09 | |
| Antimony | 206.84 | 0.30 | 7.4 | ~~7.4~~ 0.60 | BNU | 1 | ICPST | 9/21/2000 | 9:09 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 2.5 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.39~~ | ~~24.6~~ | ~~174~~ | | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:09~~ | |
| Beryllium | 313.04 | 0.025 | 0.62 | 0.93 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Cadmium | 226.50 | 0.037 | 0.62 | ~~0.62~~ 0.36 | BU | 1 | ICPST | 9/21/2000 | 9:09 | |
| Calcium | 317.93 | 5.1 | 616 | 7340 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Chromium | 267.76 | 0.14 | 0.62 | 27.0 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Cobalt | 228.62 | 0.12 | 6.2 | 12.3 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Copper | 324.75 | 0.20 | 3.1 | 13.2 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Iron | 217.44 | 2.2 | 12.3 | 20500 | N | 1 | ICPST | 9/21/2000 | 9:09 | |
| Lead | 220.35 | 0.23 | 0.37 | 15.0 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Magnesium | 279.08 | 5.1 | 616 | 5930 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Manganese | 257.61 | 0.037 | 0.62 | 822 | N | 1 | ICPST | 9/21/2000 | 9:09 | |
| Nickel | 231.60 | 0.23 | 4.9 | 13.2 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Potassium | 766.49 | 222 | 616 | 1430 | | 1 | ICP | 9/20/2000 | 13:38 | |
| Selenium | 196.03 | 0.30 | 0.62 | ~~0.62~~ 0.30 | U | 1 | ICPST | 9/21/2000 | 9:09 | |
| Silver | 328.07 | 0.17 | 0.62 | ~~0.62~~ 0.17 | U | 1 | ICPST | 9/21/2000 | 9:09 | |
| Sodium | 589 | 21.2 | 616 | ~~616~~ 80.4 | BU | 1 | ICP | 9/20/2000 | 13:38 | |
| Thallium | 190.86 | 0.41 | 1.2 | ~~1.2~~ 0.41 | U | 1 | ICPST | 9/21/2000 | 9:09 | |
| Vanadium | 292.40 | 0.15 | 6.2 | 37.9 | | 1 | ICPST | 9/21/2000 | 9:09 | |
| Zinc | 213.86 | 0.099 | 2.5 | 65.9 | E | 1 | ICPST | 9/21/2000 | 9:09 | J |

Comments: Lot #: F0I130290 Sample #: 4

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7D **Client ID:** MMAW2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 18.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.041 | 0.041 ~~0.022~~ | BU | 1 | CVAA | 9/20/2000 | 10:30 |

Comments: Lot #: F0I130290 Sample #: 4

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7E **Client ID:** MMAW2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 11.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 22.7 | 21600 | N | 1 | ICPST | 9/21/2000 | 9:14 | |
| Antimony | 206.84 | 0.27 | 6.8 | 6.9 ~~1.1~~ | BNU | 1 | ICPST | 9/21/2000 | 9:14 | VL |
| Arsenic | 189.04 | 0.16 | 1.1 | 3.2 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.36~~ | ~~22.7~~ | ~~116~~ | | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:14~~ | |
| Beryllium | 313.04 | 0.023 | 0.57 | 1.1 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Cadmium | 226.50 | 0.034 | 0.57 | ~~0.57~~ 0.49 | BU | 1 | ICPST | 9/21/2000 | 9:14 | |
| Calcium | 317.93 | 4.7 | 566 | 952 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Chromium | 267.76 | 0.13 | 0.57 | 33.6 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Cobalt | 228.62 | 0.11 | 5.7 | 17.4 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Copper | 324.75 | 0.18 | 2.8 | 22.8 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Iron | 217.44 | 2.1 | 11.3 | 35900 | N | 1 | ICPST | 9/21/2000 | 9:14 | |
| Lead | 220.35 | 0.22 | 0.34 | 13.3 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Magnesium | 279.08 | 4.7 | 566 | 4750 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Manganese | 257.61 | 0.034 | 0.57 | 627 | N | 1 | ICPST | 9/21/2000 | 9:14 | |
| Nickel | 231.60 | 0.22 | 4.5 | 18.9 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Potassium | 766.49 | 204 | 566 | 2650 | | 1 | ICP | 9/20/2000 | 13:42 | |
| Selenium | 196.03 | 0.27 | 0.57 | ~~0.57~~ 0.27 | U | 1 | ICPST | 9/21/2000 | 9:14 | |
| Silver | 328.07 | 0.16 | 0.57 | ~~0.57~~ 0.16 | U | 1 | ICPST | 9/21/2000 | 9:14 | |
| Sodium | 589 | 19.5 | 566 | ~~566~~ 81.9 | BU | 1 | ICP | 9/20/2000 | 13:42 | |
| Thallium | 190.86 | 0.37 | 1.1 | ~~1.1~~ 0.37 | U | 1 | ICPST | 9/21/2000 | 9:14 | |
| Vanadium | 292.40 | 0.14 | 5.7 | 67.0 | | 1 | ICPST | 9/21/2000 | 9:14 | |
| Zinc | 213.86 | 0.091 | 2.3 | 70.3 | E | 1 | ICPST | 9/21/2000 | 9:14 | J |

Comments: Lot #: F0I130290 Sample #: 5

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I COPY

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7E **Client ID:** MMAW2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 11.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.038 | 0.039 | | 1 | CVAA | 9/20/2000 | 10:38 |

Comments: Lot #: F0I130290 Sample #: 5

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7H **Client ID:** MMAW2C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 13.2

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 23.8 | 4430 | N | 1 | ICPST | 9/21/2000 | 9:42 | |
| Antimony | 206.84 | 0.28 | 6.9 | 6.9 ~~0.28~~ | UN | 1 | ICPST | 9/21/2000 | 9:42 | VL |
| Arsenic | 189.84 | 0.16 | 1.2 | 4.7 | | 1 | ICPST | 9/21/2000 | 9:42 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.37~~ | ~~23.0~~ | ~~23.0 11.5~~ | ~~B~~ | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:42~~ | |
| Beryllium | 313.04 | 0.023 | 0.58 | 0.57 ~~0.21~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Cadmium | 226.50 | 0.035 | 0.58 | 0.57 ~~0.19~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Calcium | 317.93 | 4.8 | 576 | 576 ~~130~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Chromium | 267.76 | 0.13 | 0.58 | 11.8 | | 1 | ICPST | 9/21/2000 | 9:42 | |
| Cobalt | 228.62 | 0.12 | 5.8 | 5.8 ~~2.2~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Copper | 324.75 | 0.18 | 2.9 | 5.0 | | 1 | ICPST | 9/21/2000 | 9:42 | |
| Iron | 217.44 | 2.1 | 11.5 | 10100 | N | 1 | ICPST | 9/21/2000 | 9:42 | |
| Lead | 220.35 | 0.22 | 0.35 | 10.8 | | 1 | ICPST | 9/21/2000 | 9:42 | |
| Magnesium | 279.08 | 4.8 | 576 | 576 ~~177~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Manganese | 257.61 | 0.035 | 0.58 | 47.4 | N | 1 | ICPST | 9/21/2000 | 9:42 | |
| Nickel | 231.60 | 0.22 | 4.6 | 4.6 ~~3.0~~ | BU | 1 | ICPST | 9/21/2000 | 9:42 | |
| Potassium | 766.49 | 207 | 576 | 576 ~~272~~ | BU | 1 | ICP | 9/20/2000 | 14:05 | |
| Selenium | 196.03 | 0.28 | 0.58 | 0.57 ~~0.28~~ | U | 1 | ICPST | 9/21/2000 | 9:42 | |
| Silver | 328.07 | 0.16 | 0.58 | 0.57 ~~0.16~~ | U | 1 | ICPST | 9/21/2000 | 9:42 | |
| Sodium | 589 | 19.8 | 576 | 576 ~~54.4~~ | BU | 1 | ICP | 9/20/2000 | 14:05 | |
| Thallium | 190.86 | 0.38 | 1.2 | 1.2 ~~0.38~~ | U | 1 | ICPST | 9/21/2000 | 9:42 | |
| Vanadium | 292.40 | 0.14 | 5.8 | 23.1 | | 1 | ICPST | 9/21/2000 | 9:42 | |
| Zinc | 213.86 | 0.092 | 2.3 | 14.4 | E | 1 | ICPST | 9/21/2000 | 9:42 | J |

Comments: Lot #: F0I130290 Sample #: 6

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

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# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7H **Client ID:** MMAW2C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 13.2

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.038 | 0.038 | | 1 | CVAA | 9/20/2000 | 10:46 |

Comments: Lot #: F0I130290 Sample #: 6

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

from E copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7M **Client ID:** MMAW2CD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 18.4

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.5 | 19900 | N | 1 | ICPST | 9/21/2000 | 9:47 | |
| Antimony | 206.84 | 0.29 | 7.4 | 7.4 ~~0.44~~ | BNU | 1 | ICPST | 9/21/2000 | 9:47 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 15.3 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.39~~ | ~~24.5~~ | ~~24.5 16.3~~ | ~~BU~~ | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:47~~ | |
| Beryllium | 313.04 | 0.025 | 0.61 | 0.61 ~~0.50~~ | BU | 1 | ICPST | 9/21/2000 | 9:47 | |
| Cadmium | 226.50 | 0.037 | 0.61 | 0.65 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Calcium | 317.93 | 5.1 | 613 | 613 ~~111~~ | BU | 1 | ICPST | 9/21/2000 | 9:47 | |
| Chromium | 267.76 | 0.14 | 0.61 | 35.4 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Cobalt | 228.62 | 0.12 | 6.1 | 6.8 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Copper | 324.75 | 0.20 | 3.1 | 21.3 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Iron | 217.44 | 2.2 | 12.3 | 35500 | N | 1 | ICPST | 9/21/2000 | 9:47 | |
| Lead | 220.35 | 0.23 | 0.37 | 23.6 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Magnesium | 279.08 | 5.1 | 613 | 637 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Manganese | 257.61 | 0.037 | 0.61 | 37.6 | N | 1 | ICPST | 9/21/2000 | 9:47 | |
| Nickel | 231.60 | 0.23 | 4.9 | 17.2 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Potassium | 766.49 | 221 | 613 | 613 ~~402~~ | BU | 1 | ICP | 9/20/2000 | 14:08 | |
| Selenium | 196.03 | 0.29 | 0.61 | 0.61 ~~0.29~~ | U | 1 | ICPST | 9/21/2000 | 9:47 | |
| Silver | 328.07 | 0.17 | 0.61 | 0.61 ~~0.17~~ | U | 1 | ICPST | 9/21/2000 | 9:47 | |
| Sodium | 589 | 21.1 | 613 | 53.0 ~~53.0~~ | BU | 1 | ICP | 9/20/2000 | 14:08 | |
| Thallium | 190.86 | 0.40 | 1.2 | 1.2 ~~0.83~~ | BU | 1 | ICPST | 9/21/2000 | 9:47 | |
| Vanadium | 292.40 | 0.15 | 6.1 | 75.2 | | 1 | ICPST | 9/21/2000 | 9:47 | |
| Zinc | 213.86 | 0.098 | 2.5 | 37.7 | E | 1 | ICPST | 9/21/2000 | 9:47 | J |

Comments: Lot #: F0I130290 Sample #: 7

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7M **Client ID:** MMAW2CD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 18.4

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.041 | 0.041 ~~0.039~~ | BU | 1 | CVAA | 9/20/2000 | 10:48 |

Comments: Lot #: F0I130290 Sample #: 7

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7N **Client ID:** MMAU2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 14.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal. Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.6 | 23.4 | 4730 | N | 1 | ICPST | 9/21/2000 | 9:52 | |
| Antimony | 206.84 | 0.28 | 7.0 | 7.0 ~~0.28~~ | UN | 1 | ICPST | 9/21/2000 | 9:52 | UL |
| Arsenic | 189.04 | 0.16 | 1.2 | 4.5 | | 1 | ICPST | 9/21/2000 | 9:52 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.37~~ | ~~23.4~~ | ~~23.4 11.5~~ | ~~BV~~ | ~~1~~ | ~~ICPST~~ | ~~9/21/2000~~ | ~~9:52~~ | |
| Beryllium | 313.04 | 0.023 | 0.59 | 0.59 ~~0.30~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Cadmium | 226.50 | 0.035 | 0.59 | 0.59 ~~0.18~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Calcium | 317.93 | 4.8 | 585 | 585 ~~109~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Chromium | 267.76 | 0.13 | 0.59 | 10.9 | | 1 | ICPST | 9/21/2000 | 9:52 | |
| Cobalt | 228.62 | 0.12 | 5.9 | 5.9 ~~2.3~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Copper | 324.75 | 0.19 | 2.9 | 5.3 | | 1 | ICPST | 9/21/2000 | 9:52 | |
| Iron | 217.44 | 2.1 | 11.7 | 9990 | N | 1 | ICPST | 9/21/2000 | 9:52 | |
| Lead | 220.35 | 0.22 | 0.35 | 10.9 | | 1 | ICPST | 9/21/2000 | 9:52 | |
| Magnesium | 279.08 | 4.8 | 585 | 585 ~~182~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Manganese | 257.61 | 0.035 | 0.59 | 43.0 | N | 1 | ICPST | 9/21/2000 | 9:52 | |
| Nickel | 231.60 | 0.22 | 4.7 | 4.7 ~~3.2~~ | BV | 1 | ICPST | 9/21/2000 | 9:52 | |
| Potassium | 766.49 | 211 | 585 | 585 ~~211~~ | U | 1 | ICP | 9/20/2000 | 14:12 | |
| Selenium | 196.03 | 0.28 | 0.59 | 0.59 ~~0.28~~ | U | 1 | ICPST | 9/21/2000 | 9:52 | |
| Silver | 328.07 | 0.16 | 0.59 | 0.59 ~~0.16~~ | U | 1 | ICPST | 9/21/2000 | 9:52 | |
| Sodium | 589 | 20.1 | 585 | 585 ~~49.6~~ | BV | 1 | ICP | 9/20/2000 | 14:12 | |
| Thallium | 190.86 | 0.39 | 1.2 | 1.2 ~~0.39~~ | U | 1 | ICPST | 9/21/2000 | 9:52 | |
| Vanadium | 292.40 | 0.14 | 5.9 | 22.5 | | 1 | ICPST | 9/21/2000 | 9:52 | |
| Zinc | 213.86 | 0.094 | 2.3 | 14.4 | E | 1 | ICPST | 9/21/2000 | 9:52 | J |

Comments: Lot #: F01130290 Sample #: 8

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7N **Client ID:** MMAU2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 14.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.039 | ~~0.020~~ 0.039 | U | 1 | CVAA | 9/20/2000 | 10:51 |

Comments: Lot #: F0I130290 Sample #: 8

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7T **Client ID:** MMAU2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 26.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 3.0 | 27.3 | 21500 | N | 1 | ICPST | 9/21/2000 | 9:56 | |
| Antimony | 206.84 | 0.33 | 8.2 | 8.2 ~~0.55~~ | BNV | 1 | ICPST | 9/21/2000 | 9:56 | VL |
| Arsenic | 189.04 | 0.19 | 1.4 | 16.8 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Barium | 493.41 | 0.44 | 27.3 | 27.3 ~~19.4~~ | BV | 1 | ICPST | 9/21/2000 | 9:56 | |
| Beryllium | 313.04 | 0.027 | 0.68 | 0.67 ~~0.57~~ | BV | 1 | ICPST | 9/21/2000 | 9:56 | |
| Cadmium | 226.50 | 0.041 | 0.68 | 0.67 ~~0.67~~ | BV | 1 | ICPST | 9/21/2000 | 9:56 | |
| Calcium | 317.93 | 5.6 | 682 | 682 ~~429~~ | BV | 1 | ICPST | 9/21/2000 | 9:56 | |
| Chromium | 267.76 | 0.15 | 0.68 | 39.1 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Cobalt | 228.62 | 0.14 | 6.8 | 7.1 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Copper | 324.75 | 0.22 | 3.4 | 23.0 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Iron | 217.44 | 2.5 | 13.6 | 38900 | N | 1 | ICPST | 9/21/2000 | 9:56 | |
| Lead | 220.35 | 0.26 | 0.41 | 23.7 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Magnesium | 279.08 | 5.7 | 682 | 689 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Manganese | 257.61 | 0.041 | 0.68 | 39.4 | N | 1 | ICPST | 9/21/2000 | 9:56 | |
| Nickel | 231.60 | 0.26 | 5.5 | 17.7 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Potassium | 766.49 | 246 | 682 | 682 ~~529~~ | BV | 1 | ICP | 9/20/2000 | 14:16 | |
| Selenium | 196.03 | 0.33 | 0.68 | 0.67 ~~0.33~~ | U | 1 | ICPST | 9/21/2000 | 9:56 | |
| Silver | 328.07 | 0.19 | 0.68 | 0.67 ~~0.19~~ | U | 1 | ICPST | 9/21/2000 | 9:56 | |
| Sodium | 589 | 23.5 | 682 | 682 ~~623~~ | BV | 1 | ICP | 9/20/2000 | 14:16 | |
| Thallium | 190.86 | 0.45 | 1.4 | 1.4 ~~0.80~~ | BV | 1 | ICPST | 9/21/2000 | 9:56 | |
| Vanadium | 292.40 | 0.16 | 6.8 | 84.4 | | 1 | ICPST | 9/21/2000 | 9:56 | |
| Zinc | 213.86 | 0.11 | 2.7 | 44.7 | E | 1 | ICPST | 9/21/2000 | 9:56 | J |

Comments: Lot #: F0I130290 Sample #: 9

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7T **Client ID:** MMAU2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 26.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.023 | 0.046 | 0.16 | | 1 | CVAA | 9/20/2000 | 10:53 |

Comments: Lot #: F0I130290 Sample #: 9

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7V **Client ID:** MMAU2C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 25.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.9 | 27.0 | 26200 | N | 1 | ICPST | 9/21/2000 | 10:01 | |
| Antimony | 206.84 | 0.32 | 8.1 | 8.1 ~~0.65~~ | BNV | 1 | ICPST | 9/21/2000 | 10:01 | VL |
| Arsenic | 189.04 | 0.19 | 1.4 | 12.6 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Barium | 493.41 | 0.43 | 27.0 | 27.0 18.1 | BV | 1 | ICPST | 9/21/2000 | 10:01 | |
| Beryllium | 313.04 | 0.027 | 0.68 | 0.62 ~~0.62~~ | BV | 1 | ICPST | 9/21/2000 | 10:01 | |
| Cadmium | 226.50 | 0.041 | 0.68 | 0.78 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Calcium | 317.93 | 5.6 | 675 | 675 124 | BV | 1 | ICPST | 9/21/2000 | 10:01 | |
| Chromium | 267.76 | 0.15 | 0.68 | 49.8 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Cobalt | 228.62 | 0.14 | 6.8 | 10.4 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Copper | 324.75 | 0.22 | 3.4 | 26.0 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Iron | 217.44 | 2.4 | 13.5 | 41900 | N | 1 | ICPST | 9/21/2000 | 10:01 | |
| Lead | 220.35 | 0.26 | 0.41 | 33.4 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Magnesium | 279.08 | 5.6 | 675 | 784 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Manganese | 257.61 | 0.041 | 0.68 | 52.8 | N | 1 | ICPST | 9/21/2000 | 10:01 | |
| Nickel | 231.60 | 0.26 | 5.4 | 23.7 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Potassium | 766.49 | 243 | 675 | 675 ~~346~~ | BV | 1 | ICP | 9/20/2000 | 14:20 | |
| Selenium | 196.03 | 0.32 | 0.68 | 0.68 ~~0.32~~ | U | 1 | ICPST | 9/21/2000 | 10:01 | |
| Silver | 328.07 | 0.19 | 0.68 | 0.68 ~~0.19~~ | U | 1 | ICPST | 9/21/2000 | 10:01 | |
| Sodium | 589 | 23.2 | 675 | 675 ~~60.3~~ | BV | 1 | ICP | 9/20/2000 | 14:20 | |
| Thallium | 190.86 | 0.45 | 1.4 | 1.4 ~~0.87~~ | BU | 1 | ICPST | 9/21/2000 | 10:01 | |
| Vanadium | 292.40 | 0.16 | 6.8 | 85.2 | | 1 | ICPST | 9/21/2000 | 10:01 | |
| Zinc | 213.86 | 0.11 | 2.7 | 60.3 | E | 1 | ICPST | 9/21/2000 | 10:01 | J |

Comments: Lot #: F0I130290 Sample #: 10

Version 4.10.4

U Result is less than the IDL.

B Result is between IDL and RL

*Form I Equivalent*

Form I CLP

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7V **Client ID:** MMAU2C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 25.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.023 | 0.045 | 0.27 | | 1 | CVAA | 9/20/2000 | 10:56 |

Comments: Lot #: F0I130290 Sample #: 10

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Only

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7X **Client ID:** MMAU1A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259340

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 10.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.4 | 22.3 | 5710 | N | 1 | ICPST | 9/21/2000 | 10:06 | |
| Antimony | 206.84 | 0.27 | 6.7 | 6.7 ~~0.27~~ | UN | 1 | ICPST | 9/21/2000 | 10:06 | VL |
| Arsenic | 189.84 | 0.16 | 1.1 | 7.2 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Barium | 493.41 | 0.36 | 22.3 | 22.3 ~~16.3~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Beryllium | 313.04 | 0.022 | 0.56 | 0.56 ~~0.39~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Cadmium | 226.50 | 0.033 | 0.56 | 0.56 ~~0.27~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Calcium | 317.93 | 4.6 | 557 | 557 ~~108~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Chromium | 267.76 | 0.12 | 0.56 | 13.6 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Cobalt | 228.62 | 0.11 | 5.6 | 6.5 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Copper | 324.75 | 0.18 | 2.8 | 5.7 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Iron | 217.44 | 2.0 | 11.2 | 15100 | N | 1 | ICPST | 9/21/2000 | 10:06 | |
| Lead | 220.35 | 0.21 | 0.33 | 13.7 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Magnesium | 279.08 | 4.6 | 557 | 1140 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Manganese | 257.61 | 0.033 | 0.56 | 99.4 | N | 1 | ICPST | 9/21/2000 | 10:06 | |
| Nickel | 231.60 | 0.21 | 4.5 | 4.6 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Potassium | 766.49 | 201 | 557 | 557 ~~201~~ | U | 1 | ICP | 9/20/2000 | 14:24 | |
| Selenium | 196.03 | 0.27 | 0.56 | 0.56 ~~0.27~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Silver | 328.07 | 0.16 | 0.56 | 0.56 ~~0.16~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Sodium | 589 | 19.2 | 557 | 557 ~~43.0~~ | U | 1 | ICP | 9/20/2000 | 14:24 | |
| Thallium | 190.86 | 0.37 | 1.1 | 1.1 ~~0.39~~ | U | 1 | ICPST | 9/21/2000 | 10:06 | |
| Vanadium | 292.40 | 0.13 | 5.6 | 31.3 | | 1 | ICPST | 9/21/2000 | 10:06 | |
| Zinc | 213.86 | 0.089 | 2.2 | 35.0 | E | 1 | ICPST | 9/21/2000 | 10:06 | J |

Comments: Lot #: F0I130290 Sample #: 11

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Org

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA7X **Client ID:** MMAU1A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 10.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.037 | ~~0.028~~ 0.037 | BV | 1 | CVAA | 9/20/2000 | 10:58 |

Comments: Lot #: F0I130290 Sample #: 11

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form 2 copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA81 **Client ID:** MMAU1B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 19.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 25.0 | 42900 | N | 1 | ICPST | 9/23/2000 | 17:10 | |
| Antimony | 206.84 | 0.30 | 7.5 | 7.5 ~~0.30~~ | UN | 1 | ICPST | 9/23/2000 | 17:10 | VL |
| Arsenic | 189.04 | 0.18 | 1.3 | 19.8 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Barium | 493.41 | 0.40 | 25.0 | 53.1 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Beryllium | 313.04 | 0.025 | 0.62 | 2.3 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Cadmium | 226.50 | 0.038 | 0.62 | 0.92 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Calcium | 317.93 | 5.1 | 624 | 624 ~~533~~ | BU | 1 | ICPST | 9/23/2000 | 17:10 | |
| Chromium | 267.76 | 0.14 | 0.62 | 36.1 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Cobalt | 228.62 | 0.13 | 6.2 | 86.8 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Copper | 324.75 | 0.20 | 3.1 | 34.4 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Iron | 217.44 | 2.3 | 12.5 | 31400 | N | 1 | ICPST | 9/23/2000 | 17:10 | |
| Lead | 220.35 | 0.24 | 0.38 | 26.8 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Magnesium | 279.08 | 5.2 | 624 | 37700 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Manganese | 257.61 | 0.038 | 0.62 | 282 | N | 1 | ICPST | 9/23/2000 | 17:10 | |
| Nickel | 231.60 | 0.24 | 5.0 | 59.6 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Potassium | 766.49 | 225 | 624 | 6220 | | 1 | ICP | 9/21/2000 | 8:52 | |
| Selenium | 196.03 | 0.30 | 0.62 | 0.62 ~~0.30~~ | U | 1 | ICPST | 9/23/2000 | 17:10 | |
| Silver | 328.07 | 0.18 | 0.62 | 0.62 ~~0.18~~ | U | 1 | ICPST | 9/23/2000 | 17:10 | |
| Sodium | 589 | 21.5 | 624 | 624 ~~104~~ | BU | 1 | ICP | 9/21/2000 | 8:52 | |
| Thallium | 190.86 | 0.41 | 1.3 | 1.8 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Vanadium | 292.40 | 0.15 | 6.2 | 68.8 | | 1 | ICPST | 9/23/2000 | 17:10 | |
| Zinc | 213.86 | 0.10 | 2.5 | 96.0 | E | 1 | ICPST | 9/23/2000 | 17:10 | J |

Comments: Lot #: F0I130290 Sample #: 12

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA81 **Client ID:** MMAU1B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 19.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.042 | 0.12 | | 1 | CVAA | 9/20/2000 | 11:01 |

Comments: Lot #: F0I130290 Sample #: 12

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA82 **Client ID:** MMAU1C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 19.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.8 | 47900 | N | 1 | ICPST | 9/23/2000 | 17:14 | |
| Antimony | 206.84 | 0.30 | 7.4 | 7.4 ~~0.30~~ | UN | 1 | ICPST | 9/23/2000 | 17:14 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 35.9 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.49~~ | ~~24.8~~ | ~~82.6~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:14~~ | |
| Beryllium | 313.04 | 0.025 | 0.62 | 5.3 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Cadmium | 226.50 | 0.037 | 0.62 | 1.3 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Calcium | 317.93 | 5.1 | 620 | 954 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Chromium | 267.76 | 0.14 | 0.62 | 39.7 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Cobalt | 228.62 | 0.12 | 6.2 | 94.3 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Copper | 324.75 | 0.20 | 3.1 | 31.7 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Iron | 217.44 | 2.2 | 12.4 | 35100 | N | 1 | ICPST | 9/23/2000 | 17:14 | |
| Lead | 220.35 | 0.24 | 0.37 | 18.7 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Magnesium | 279.08 | 5.1 | 620 | 58100 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Manganese | 257.61 | 0.037 | 0.62 | 366 | N | 1 | ICPST | 9/23/2000 | 17:14 | |
| Nickel | 231.60 | 0.24 | 5.0 | 94.2 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Potassium | 766.49 | 223 | 620 | 10900 | | 1 | ICP | 9/21/2000 | 8:56 | |
| Selenium | 196.03 | 0.30 | 0.62 | 0.41 ~~0.30~~ | U | 1 | ICPST | 9/23/2000 | 17:14 | |
| Silver | 328.07 | 0.17 | 0.62 | 0.41 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 17:14 | |
| Sodium | 589 | 21.3 | 620 | 610 ~~110~~ | BU | 1 | ICP | 9/21/2000 | 8:56 | |
| Thallium | 190.86 | 0.41 | 1.2 | 2.9 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Vanadium | 292.40 | 0.15 | 6.2 | 75.8 | | 1 | ICPST | 9/23/2000 | 17:14 | |
| Zinc | 213.86 | 0.099 | 2.5 | 218 | E | 1 | ICPST | 9/23/2000 | 17:14 | J |

Comments: Lot #: F0I130290 Sample #: 13

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form 1 Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA82 **Client ID:** MMAU1C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 19.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.041 | 0.11 | | 1 | CVAA | 9/20/2000 | 11:08 |

Comments: Lot #: F0I130290 Sample #: 13

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA84 **Client ID:** MMAW3A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 13.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 23.2 | 15400 | N | 1 | ICPST | 9/23/2000 | 17:19 | |
| Antimony | 206.84 | 0.28 | 7.0 | 7.0 ~~0.53~~ | JNU | 1 | ICPST | 9/23/2000 | 17:19 | UL |
| Arsenic | 189.04 | 0.16 | 1.2 | 2.7 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Barium | 493.41 | 0.37 | 23.2 | 150 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Beryllium | 313.04 | 0.023 | 0.58 | 0.99 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Cadmium | 226.50 | 0.035 | 0.58 | 0.67 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Calcium | 317.93 | 4.8 | 579 | 2200 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Chromium | 267.76 | 0.13 | 0.58 | 26.1 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Cobalt | 228.62 | 0.12 | 5.8 | 13.1 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Copper | 324.75 | 0.19 | 2.9 | 13.6 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Iron | 217.44 | 2.1 | 11.6 | 23800 | N | 1 | ICPST | 9/23/2000 | 17:19 | |
| Lead | 220.35 | 0.22 | 0.35 | 13.6 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Magnesium | 279.08 | 4.8 | 579 | 3020 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Manganese | 257.61 | 0.035 | 0.58 | 776 | N | 1 | ICPST | 9/23/2000 | 17:19 | |
| Nickel | 231.60 | 0.22 | 4.6 | 13.5 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Potassium | 766.49 | 209 | 579 | 1360 | | 1 | ICP | 9/21/2000 | 9:00 | |
| Selenium | 196.03 | 0.28 | 0.58 | 0.58 ~~0.28~~ | U | 1 | ICPST | 9/23/2000 | 17:19 | |
| Silver | 328.07 | 0.16 | 0.58 | 0.58 ~~0.16~~ | U | 1 | ICPST | 9/23/2000 | 17:19 | |
| Sodium | 589 | 19.9 | 579 | 579 ~~110~~ | JU | 1 | ICP | 9/21/2000 | 9:00 | |
| Thallium | 190.86 | 0.38 | 1.2 | 2.8 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Vanadium | 292.40 | 0.14 | 5.8 | 43.6 | | 1 | ICPST | 9/23/2000 | 17:19 | |
| Zinc | 213.86 | 0.093 | 2.3 | 61.1 | E | 1 | ICPST | 9/23/2000 | 17:19 | J |

Comments: Lot #: F0I130290 Sample #: 14

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Forms I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKA84 **Client ID:** MMAW3A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 13.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.039 | ~~0.031~~ 0.039 | BU | 1 | CVAA | 9/20/2000 | 11:11 |

Comments: Lot #: F0I130290 Sample #: 14

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT2 **Client ID:** MMAW3B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 17.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.3 | 24000 | N | 1 | ICPST | 9/23/2000 | 17:23 | |
| Antimony | 206.84 | 0.29 | 7.3 | 7.3 ~~1.3~~ | BNU | 1 | ICPST | 9/23/2000 | 17:23 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 3.9 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.39~~ | ~~24.3~~ | ~~155~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:23~~ | |
| Beryllium | 313.04 | 0.024 | 0.61 | 1.1 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Cadmium | 226.50 | 0.037 | 0.61 | 1.1 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Calcium | 317.93 | 5.0 | 608 | 1250 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Chromium | 267.76 | 0.13 | 0.61 | 40.7 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Cobalt | 228.62 | 0.12 | 6.1 | 20.9 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Copper | 324.75 | 0.20 | 3.0 | 25.8 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Iron | 217.44 | 2.2 | 12.2 | 40700 | N | 1 | ICPST | 9/23/2000 | 17:23 | |
| Lead | 220.35 | 0.23 | 0.37 | 16.6 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Magnesium | 279.08 | 5.0 | 608 | 5850 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Manganese | 257.61 | 0.037 | 0.61 | 771 | N | 1 | ICPST | 9/23/2000 | 17:23 | |
| Nickel | 231.60 | 0.23 | 4.9 | 21.7 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Potassium | 766.49 | 219 | 608 | 2980 | | 1 | ICP | 9/21/2000 | 9:03 | |
| Selenium | 196.03 | 0.29 | 0.61 | 0.61 ~~0.29~~ | U | 1 | ICPST | 9/23/2000 | 17:23 | |
| Silver | 328.07 | 0.17 | 0.61 | 0.61 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 17:23 | |
| Sodium | 589 | 20.9 | 608 | 610 ~~136~~ | BU | 1 | ICP | 9/21/2000 | 9:03 | |
| Thallium | 190.86 | 0.40 | 1.2 | 3.1 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Vanadium | 292.40 | 0.15 | 6.1 | 74.8 | | 1 | ICPST | 9/23/2000 | 17:23 | |
| Zinc | 213.86 | 0.097 | 2.4 | 93.4 | E | 1 | ICPST | 9/23/2000 | 17:23 | J |

Comments: Lot #: F0I130290 Sample #: 16

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT2 **Client ID:** MMAW3B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 17.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.041 | ~~0.030~~ 0.041 | BU | 1 | CVAA | 9/19/2000 | 17:47 |

Comments: Lot #: F0I130290 Sample #: 16

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT3 **Client ID:** MMAW3C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 16.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.6 | 23.9 | 25600 | N | 1 | ICPST | 9/23/2000 | 17:28 | |
| Antimony | 206.84 | 0.29 | 7.2 | 7.2 ~~1.2~~ | BNU | 1 | ICPST | 9/23/2000 | 17:28 | vL |
| Arsenic | 189.04 | 0.17 | 1.2 | 4.8 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.38~~ | ~~23.9~~ | ~~123~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:28~~ | |
| Beryllium | 313.04 | 0.024 | 0.60 | 1.3 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Cadmium | 226.50 | 0.036 | 0.60 | 1.2 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Calcium | 317.93 | 4.9 | 597 | 1060 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Chromium | 267.76 | 0.13 | 0.60 | 40.2 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Cobalt | 228.62 | 0.12 | 6.0 | 20.0 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Copper | 324.75 | 0.19 | 3.0 | 27.5 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Iron | 217.44 | 2.2 | 12.0 | 43900 | N | 1 | ICPST | 9/23/2000 | 17:28 | |
| Lead | 220.35 | 0.23 | 0.36 | 16.0 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Magnesium | 279.08 | 5.0 | 597 | 5690 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Manganese | 257.61 | 0.036 | 0.60 | 735 | N | 1 | ICPST | 9/23/2000 | 17:28 | |
| Nickel | 231.60 | 0.23 | 4.8 | 21.6 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Potassium | 766.49 | 215 | 597 | 2920 | | 1 | ICP | 9/21/2000 | 9:07 | |
| Selenium | 196.03 | 0.29 | 0.60 | 0.60 ~~0.29~~ | U | 1 | ICPST | 9/23/2000 | 17:28 | |
| Silver | 328.07 | 0.17 | 0.60 | 0.60 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 17:28 | |
| Sodium | 589 | 20.5 | 597 | ~~597 118~~ | BU | 1 | ICP | 9/21/2000 | 9:07 | |
| Thallium | 190.86 | 0.39 | 1.2 | 3.2 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Vanadium | 292.40 | 0.14 | 6.0 | 79.5 | | 1 | ICPST | 9/23/2000 | 17:28 | |
| Zinc | 213.86 | 0.096 | 2.4 | 84.8 | E | 1 | ICPST | 9/23/2000 | 17:28 | J |

Comments: Lot #: F0I130290 Sample #: 17

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT3 **Client ID:** MMAW3C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 16.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.040 | ~~0.037~~ 0.040 | U | 1 | CVAA | 9/19/2000 | 17:58 |

Comments: Lot #: F0I130290 Sample #: 17

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT4 **Client ID:** MMAW3CD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 13.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.5 | 23.2 | 25500 | N | 1 | ICPST | 9/23/2000 | 17:32 | |
| Antimony | 206.84 | 0.28 | 7.0 | 7.0 0.78 | BNU | 1 | ICPST | 9/23/2000 | 17:32 | VL |
| Arsenic | 189.04 | 0.16 | 1.2 | 4.2 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.37~~ | ~~23.2~~ | ~~123~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:32~~ | |
| Beryllium | 313.04 | 0.023 | 0.58 | 1.2 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Cadmium | 226.50 | 0.035 | 0.58 | 1.2 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Calcium | 317.93 | 4.8 | 580 | 1050 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Chromium | 267.76 | 0.13 | 0.58 | 40.5 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Cobalt | 228.62 | 0.12 | 5.8 | 22.5 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Copper | 324.75 | 0.19 | 2.9 | 27.2 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Iron | 217.44 | 2.1 | 11.6 | 43600 | N | 1 | ICPST | 9/23/2000 | 17:32 | |
| Lead | 220.35 | 0.22 | 0.35 | 17.2 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Magnesium | 279.08 | 4.8 | 580 | 5560 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Manganese | 257.61 | 0.035 | 0.58 | 835 | N | 1 | ICPST | 9/23/2000 | 17:32 | |
| Nickel | 231.60 | 0.22 | 4.6 | 21.5 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Potassium | 766.49 | 209 | 580 | 2930 | | 1 | ICP | 9/21/2000 | 9:11 | |
| Selenium | 196.03 | 0.28 | 0.58 | 0.57 ~~0.28~~ | U | 1 | ICPST | 9/23/2000 | 17:32 | |
| Silver | 328.07 | 0.16 | 0.58 | 0.57 ~~0.16~~ | U | 1 | ICPST | 9/23/2000 | 17:32 | |
| Sodium | 589 | 19.9 | 580 | 590 ~~127~~ | BV | 1 | ICP | 9/21/2000 | 9:11 | |
| Thallium | 190.86 | 0.38 | 1.2 | 3.5 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Vanadium | 292.40 | 0.14 | 5.8 | 79.1 | | 1 | ICPST | 9/23/2000 | 17:32 | |
| Zinc | 213.86 | 0.093 | 2.3 | 83.1 | E | 1 | ICPST | 9/23/2000 | 17:32 | J |

Comments: Lot #: F0I130290 Sample #: 18

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT4 **Client ID:** MMAW3CD

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 13.8

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.039 | ~~0.037~~ 0.039 | BU | 1 | CVAA | 9/19/2000 | 17:52 |

Comments: Lot #: F0I130290 Sample #: 18

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT6 **Client ID:** MMAB2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 17.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.4 | 6660 | N | 1 | ICPST | 9/23/2000 | 17:37 | |
| Antimony | 206.84 | 0.29 | 7.3 | 7.3 ~~0.29~~ | UN | 1 | ICPST | 9/23/2000 | 17:37 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 2.4 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.39~~ | ~~24.4~~ | ~~62.9~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:37~~ | |
| Beryllium | 313.04 | 0.024 | 0.61 | 0.61 ~~0.34~~ | BV | 1 | ICPST | 9/23/2000 | 17:37 | |
| Cadmium | 226.50 | 0.037 | 0.61 | 0.61 ~~0.36~~ | BU | 1 | ICPST | 9/23/2000 | 17:37 | |
| Calcium | 317.93 | 5.0 | 609 | 609 ~~339~~ | BV | 1 | ICPST | 9/23/2000 | 17:37 | |
| Chromium | 267.76 | 0.13 | 0.61 | 15.8 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| Cobalt | 228.62 | 0.12 | 6.1 | 6.1 ~~3.9~~ | BV | 1 | ICPST | 9/23/2000 | 17:37 | |
| Copper | 324.75 | 0.20 | 3.1 | 13.2 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| Iron | 217.44 | 2.2 | 12.2 | 9230 | N | 1 | ICPST | 9/23/2000 | 17:37 | |
| Lead | 220.35 | 0.23 | 0.37 | 52.0 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| Magnesium | 279.08 | 5.0 | 609 | 609 ~~366~~ | BV | 1 | ICPST | 9/23/2000 | 17:37 | |
| Manganese | 257.61 | 0.037 | 0.61 | 396 | N | 1 | ICPST | 9/23/2000 | 17:37 | |
| Nickel | 231.60 | 0.23 | 4.9 | 4.9 ~~3.7~~ | BV | 1 | ICPST | 9/23/2000 | 17:37 | |
| Potassium | 766.49 | 219 | 609 | 609 ~~219~~ | U | 1 | ICP | 9/21/2000 | 9:15 | |
| Selenium | 196.03 | 0.29 | 0.61 | 0.61 ~~0.29~~ | U | 1 | ICPST | 9/23/2000 | 17:37 | |
| Silver | 328.07 | 0.17 | 0.61 | 4.3 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| Sodium | 589 | 20.9 | 609 | 609 ~~96.0~~ | BV | 1 | ICP | 9/21/2000 | 9:15 | |
| Thallium | 190.86 | 0.40 | 1.2 | 1.2 ~~0.93~~ | BJ | 1 | ICPST | 9/23/2000 | 17:37 | |
| Vanadium | 292.40 | 0.15 | 6.1 | 20.3 | | 1 | ICPST | 9/23/2000 | 17:37 | |
| Zinc | 213.86 | 0.097 | 2.4 | 30.2 | E | 1 | ICPST | 9/23/2000 | 17:37 | J |

Comments: Lot #: F01130290 Sample #: 19

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT6 **Client ID:** MMAB2A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 17.9

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.028 | 0.041 | 1.2 | | 1 | CVAA | 9/19/2000 | 17:54 |

Comments: Lot #: F0I130290 Sample #: 19

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT9 **Client ID:** MMAB2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 20.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 25.2 | 16000 | N | 1 | ICPST | 9/23/2000 | 17:41 | |
| Antimony | 206.84 | 0.30 | 7.6 | 7.6 ~~0.30~~ | UN | 1 | ICPST | 9/23/2000 | 17:41 | VL |
| Arsenic | 189.04 | 0.18 | 1.3 | 3.8 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.40~~ | ~~25.2~~ | ~~58.0~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:41~~ | |
| Beryllium | 313.04 | 0.025 | 0.63 | 0.63 ~~0.30~~ | BU | 1 | ICPST | 9/23/2000 | 17:41 | |
| Cadmium | 226.50 | 0.038 | 0.63 | 0.63 ~~0.61~~ | BU | 1 | ICPST | 9/23/2000 | 17:41 | |
| Calcium | 317.93 | 5.2 | 629 | 629 ~~500~~ | BU | 1 | ICPST | 9/23/2000 | 17:41 | |
| Chromium | 267.76 | 0.14 | 0.63 | 26.2 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Cobalt | 228.62 | 0.13 | 6.3 | 6.3 ~~3.2~~ | BU | 1 | ICPST | 9/23/2000 | 17:41 | |
| Copper | 324.75 | 0.20 | 3.1 | 7.5 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Iron | 217.44 | 2.3 | 12.6 | 22600 | N | 1 | ICPST | 9/23/2000 | 17:41 | |
| Lead | 220.35 | 0.24 | 0.38 | 8.6 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Magnesium | 279.08 | 5.2 | 629 | 629 ~~502~~ | BU | 1 | ICPST | 9/23/2000 | 17:41 | |
| Manganese | 257.61 | 0.038 | 0.63 | 136 | N | 1 | ICPST | 9/23/2000 | 17:41 | |
| Nickel | 231.60 | 0.24 | 5.0 | 5.9 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Potassium | 766.49 | 226 | 629 | 629 ~~467~~ | BU | 1 | ICP | 9/21/2000 | 9:19 | |
| Selenium | 196.03 | 0.30 | 0.63 | 0.63 ~~0.30~~ | U | 1 | ICPST | 9/23/2000 | 17:41 | |
| Silver | 328.07 | 0.18 | 0.63 | 0.63 ~~0.18~~ | U | 1 | ICPST | 9/23/2000 | 17:41 | |
| Sodium | 589 | 21.6 | 629 | 629 ~~188~~ | BU | 1 | ICP | 9/21/2000 | 9:19 | |
| Thallium | 190.86 | 0.42 | 1.3 | 2.3 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Vanadium | 292.40 | 0.15 | 6.3 | 47.1 | | 1 | ICPST | 9/23/2000 | 17:41 | |
| Zinc | 213.86 | 0.10 | 2.5 | 18.9 | E | 1 | ICPST | 9/23/2000 | 17:41 | J |

Comments: Lot #: F0I130290 Sample #: 20

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDT9 **Client ID:** MMAB2B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 20.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.042 | 0.18 | | 1 | CVAA | 9/19/2000 | 17:57 |

Comments: Lot #: F0I130290 Sample #: 20

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTA **Client ID:** MMAW4A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 15.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.6 | 23.7 | 10300 | N | 1 | ICPST | 9/23/2000 | 17:46 | |
| Antimony | 206.84 | 0.28 | 7.1 | 7.1 ~~0.28~~ | UN | 1 | ICPST | 9/23/2000 | 17:46 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 1.9 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.38~~ | ~~23.7~~ | ~~135~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:46~~ | |
| Beryllium | 313.04 | 0.024 | 0.59 | 0.72 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Cadmium | 226.50 | 0.036 | 0.59 | 0.59 ~~0.47~~ | BU | 1 | ICPST | 9/23/2000 | 17:46 | |
| Calcium | 317.93 | 4.9 | 592 | 1300 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Chromium | 267.76 | 0.13 | 0.59 | 19.1 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Cobalt | 228.62 | 0.12 | 5.9 | 8.1 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Copper | 324.75 | 0.19 | 3.0 | 7.6 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Iron | 217.44 | 2.1 | 11.9 | 15600 | N | 1 | ICPST | 9/23/2000 | 17:46 | |
| Lead | 220.35 | 0.23 | 0.36 | 14.7 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Magnesium | 279.08 | 4.9 | 592 | 2370 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Manganese | 257.61 | 0.036 | 0.59 | 287 | N | 1 | ICPST | 9/23/2000 | 17:46 | |
| Nickel | 231.60 | 0.23 | 4.7 | 9.8 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Potassium | 766.49 | 213 | 592 | 592 ~~356~~ | BU | 1 | ICP | 9/21/2000 | 9:23 | |
| Selenium | 196.03 | 0.28 | 0.59 | 0.59 ~~0.28~~ | U | 1 | ICPST | 9/23/2000 | 17:46 | |
| Silver | 328.07 | 0.17 | 0.59 | 0.59 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 17:46 | |
| Sodium | 589 | 20.4 | 592 | 592 ~~119~~ | BU | 1 | ICP | 9/21/2000 | 9:23 | |
| Thallium | 190.86 | 0.39 | 1.2 | 1.3 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Vanadium | 292.40 | 0.14 | 5.9 | 29.2 | | 1 | ICPST | 9/23/2000 | 17:46 | |
| Zinc | 213.86 | 0.095 | 2.4 | 58.1 | E | 1 | ICPST | 9/23/2000 | 17:46 | J |

Comments: Lot #: F0I130290 Sample #: 21

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I - Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTA **Client ID:** MMAW4A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 15.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.020 | 0.040 | ~~0.032~~ 0.0% | BU | 1 | CVAA | 9/20/2000 | 11:13 |

Comments: Lot #: F0I130290 Sample #: 21

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTF **Client ID:** MMAW4B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 23.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.9 | 26.2 | 16800 | N | 1 | ICPST | 9/23/2000 | 17:50 | |
| Antimony | 206.84 | 0.32 | 7.9 | 7.9 ~~0.99~~ | BNV | 1 | ICPST | 9/23/2000 | 17:50 | VL |
| Arsenic | 189.04 | 0.18 | 1.3 | 2.2 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.42~~ | ~~26.2~~ | ~~100~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~17:50~~ | |
| Beryllium | 313.04 | 0.026 | 0.66 | 0.79 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Cadmium | 226.50 | 0.039 | 0.66 | 0.66 ~~0.65~~ | BV | 1 | ICPST | 9/23/2000 | 17:50 | |
| Calcium | 317.93 | 5.4 | 655 | 1030 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Chromium | 267.76 | 0.14 | 0.66 | 27.7 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Cobalt | 228.62 | 0.13 | 6.6 | 14.1 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Copper | 324.75 | 0.21 | 3.3 | 12.2 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Iron | 217.44 | 2.4 | 13.1 | 27200 | N | 1 | ICPST | 9/23/2000 | 17:50 | |
| Lead | 220.35 | 0.25 | 0.39 | 10.8 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Magnesium | 279.08 | 5.4 | 655 | 4440 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Manganese | 257.61 | 0.039 | 0.66 | 389 | N | 1 | ICPST | 9/23/2000 | 17:50 | |
| Nickel | 231.60 | 0.25 | 5.2 | 14.8 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Potassium | 766.49 | 236 | 655 | 1300 | | 1 | ICP | 9/21/2000 | 9:26 | |
| Selenium | 196.03 | 0.32 | 0.66 | 0.66 ~~0.32~~ | U | 1 | ICPST | 9/23/2000 | 17:50 | |
| Silver | 328.07 | 0.18 | 0.66 | 0.66 ~~0.18~~ | U | 1 | ICPST | 9/23/2000 | 17:50 | |
| Sodium | 589 | 22.5 | 655 | 655 152 | BN | 1 | ICP | 9/21/2000 | 9:26 | |
| Thallium | 190.86 | 0.43 | 1.3 | 2.2 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Vanadium | 292.40 | 0.16 | 6.6 | 50.1 | | 1 | ICPST | 9/23/2000 | 17:50 | |
| Zinc | 213.86 | 0.11 | 2.6 | 76.1 | E | 1 | ICPST | 9/23/2000 | 17:50 | J |

Comments: Lot #: F0I130290 Sample #: 22

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTF **Client ID:** MMAW4B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 23.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.022 | 0.044 | ~~0.026~~ 0.044 | BV | 1 | CVAA | 9/20/2000 | 11:16 |

Comments: Lot #: F0I130290 Sample #: 22

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTG **Client ID:** MMAW4C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 23.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.9 | 26.2 | 22700 | N | 1 | ICPST | 9/23/2000 | 18:04 | |
| Antimony | 206.84 | 0.31 | 7.9 | 7.9 ~~1.3~~ | BNJ | 1 | ICPST | 9/23/2000 | 18:04 | VL |
| Arsenic | 189.04 | 0.18 | 1.3 | 3.6 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.42~~ | ~~26.2~~ | ~~141~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:04~~ | |
| Beryllium | 313.04 | 0.026 | 0.65 | 1.2 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Cadmium | 226.50 | 0.039 | 0.65 | 1.1 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Calcium | 317.93 | 5.4 | 655 | 1200 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Chromium | 267.76 | 0.14 | 0.65 | 34.3 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Cobalt | 228.62 | 0.13 | 6.5 | 21.2 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Copper | 324.75 | 0.21 | 3.3 | 23.7 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Iron | 217.44 | 2.4 | 13.1 | 39500 | N | 1 | ICPST | 9/23/2000 | 18:04 | |
| Lead | 220.35 | 0.25 | 0.39 | 14.3 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Magnesium | 279.08 | 5.4 | 655 | 6270 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Manganese | 257.61 | 0.039 | 0.65 | 674 | N | 1 | ICPST | 9/23/2000 | 18:04 | |
| Nickel | 231.60 | 0.25 | 5.2 | 20.8 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Potassium | 766.49 | 236 | 655 | 2120 | | 1 | ICP | 9/21/2000 | 9:38 | |
| Selenium | 196.03 | 0.31 | 0.65 | 0.65 ~~0.31~~ | U | 1 | ICPST | 9/23/2000 | 18:04 | |
| Silver | 328.07 | 0.18 | 0.65 | 0.65 ~~0.18~~ | U | 1 | ICPST | 9/23/2000 | 18:04 | |
| Sodium | 589 | 22.5 | 655 | 655 ~~145~~ | BU | 1 | ICP | 9/21/2000 | 9:38 | |
| Thallium | 190.86 | 0.43 | 1.3 | 3.1 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Vanadium | 292.40 | 0.16 | 6.5 | 69.7 | | 1 | ICPST | 9/23/2000 | 18:04 | |
| Zinc | 213.86 | 0.11 | 2.6 | 76.5 | E | 1 | ICPST | 9/23/2000 | 18:04 | J |

Comments: Lot #: F0I130290 Sample #: 23

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTG **Client ID:** MMAW4C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0258412

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 23.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.022 | 0.044 | ~~0.032~~ 0.044 | B U | 1 | CVAA | 9/20/2000 | 11:18 |

Comments: Lot #: F0I130290 Sample #: 23

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTH **Client ID:** MMAW1A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 21.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.8 | 25.5 | 11100 | N | 1 | ICPST | 9/23/2000 | 18:09 | |
| Antimony | 206.84 | 0.31 | 7.7 | 7.7 ~~0.51~~ | BNV | 1 | ICPST | 9/23/2000 | 18:09 | VL |
| Arsenic | 189.04 | 0.18 | 1.3 | 2.6 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.41~~ | ~~25.5~~ | ~~130~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:09~~ | |
| Beryllium | 313.04 | 0.026 | 0.64 | 0.79 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Cadmium | 226.50 | 0.038 | 0.64 | 0.64 ~~0.61~~ | BU | 1 | ICPST | 9/23/2000 | 18:09 | |
| Calcium | 317.93 | 5.3 | 638 | 920 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Chromium | 267.76 | 0.14 | 0.64 | 25.2 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Cobalt | 228.62 | 0.13 | 6.4 | 11.9 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Copper | 324.75 | 0.20 | 3.2 | 11.7 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Iron | 217.44 | 2.3 | 12.8 | 20100 | N | 1 | ICPST | 9/23/2000 | 18:09 | |
| Lead | 220.35 | 0.24 | 0.38 | 12.0 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Magnesium | 279.08 | 5.3 | 638 | 2460 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Manganese | 257.61 | 0.038 | 0.64 | 650 | N | 1 | ICPST | 9/23/2000 | 18:09 | |
| Nickel | 231.60 | 0.24 | 5.1 | 11.5 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Potassium | 766.49 | 230 | 638 | 1110 | | 1 | ICP | 9/21/2000 | 9:42 | |
| Selenium | 196.03 | 0.31 | 0.64 | 0.64 ~~0.31~~ | U | 1 | ICPST | 9/23/2000 | 18:09 | |
| Silver | 328.07 | 0.18 | 0.64 | 0.64 ~~0.18~~ | U | 1 | ICPST | 9/23/2000 | 18:09 | |
| Sodium | 589 | 21.9 | 638 | 63 P ~~121~~ | BU | 1 | ICP | 9/21/2000 | 9:42 | |
| Thallium | 190.86 | 0.42 | 1.3 | 2.0 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Vanadium | 292.40 | 0.15 | 6.4 | 36.4 | | 1 | ICPST | 9/23/2000 | 18:09 | |
| Zinc | 213.86 | 0.18 | 2.6 | 54.9 | E | 1 | ICPST | 9/23/2000 | 18:09 | J |

Comments: Lot #: F0I130290 Sample #: 24

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTH **Client ID:** MMAW1A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 21.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.043 | ~~0.023~~ 0.043 | BV | 1 | CVAA | 9/19/2000 | 18:00 |

Comments: Lot #: F0I130290 Sample #: 24

Version 4:10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTJ **Client ID:** MMAW1B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 18.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.6 | 13600 | N | 1 | ICPST | 9/23/2000 | 18:13 | |
| Antimony | 206.84 | 0.30 | 7.4 | 7.4 ~~0.79~~ | BN | 1 | ICPST | 9/23/2000 | 18:13 | VL |
| Arsenic | 189.04 | 0.17 | 1.2 | 2.3 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.39~~ | ~~24.6~~ | ~~134~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:13~~ | |
| Beryllium | 313.04 | 0.025 | 0.62 | 0.87 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Cadmium | 226.50 | 0.037 | 0.62 | 0.62 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Calcium | 317.93 | 5.1 | 615 | 906 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Chromium | 267.76 | 0.14 | 0.62 | 26.8 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Cobalt | 228.62 | 0.12 | 6.2 | 12.9 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Copper | 324.75 | 0.20 | 3.1 | 12.3 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Iron | 217.44 | 2.2 | 12.3 | 22800 | N | 1 | ICPST | 9/23/2000 | 18:13 | |
| Lead | 220.35 | 0.23 | 0.37 | 10.6 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Magnesium | 279.08 | 5.1 | 615 | 3220 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Manganese | 257.61 | 0.037 | 0.62 | 694 | N | 1 | ICPST | 9/23/2000 | 18:13 | |
| Nickel | 231.60 | 0.23 | 4.9 | 13.4 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Potassium | 766.49 | 221 | 615 | 1560 | | 1 | ICP | 9/21/2000 | 9:45 | |
| Selenium | 196.03 | 0.30 | 0.62 | 0.62 ~~0.30~~ | U | 1 | ICPST | 9/23/2000 | 18:13 | |
| Silver | 328.07 | 0.17 | 0.62 | 0.62 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 18:13 | |
| Sodium | 589 | 21.1 | 615 | 615 ~~128~~ | BV | 1 | ICP | 9/21/2000 | 9:45 | |
| Thallium | 190.86 | 0.41 | 1.2 | 2.1 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Vanadium | 292.40 | 0.15 | 6.2 | 41.4 | | 1 | ICPST | 9/23/2000 | 18:13 | |
| Zinc | 213.86 | 0.098 | 2.5 | 64.0 | E | 1 | ICPST | 9/23/2000 | 18:13 | J |

Comments: Lot #: F0I130290 Sample #: 25

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I Copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTJ **Client ID:** MMAW1B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 18.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.041 | ~~0.021~~ 0.041 | U | 1 | CVAA | 9/19/2000 | 18:02 |

Comments: Lot #: F0I130290 Sample #: 25

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTK **Client ID:** MMAW1C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 10.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.4 | 22.4 | 20000 | N | 1 | ICPST | 9/23/2000 | 18:18 | |
| Antimony | 206.84 | 0.27 | 6.7 | 6.7 1.2 | BNU | 1 | ICPST | 9/23/2000 | 18:18 | VL |
| Arsenic | 189.04 | 0.16 | 1.1 | 3.1 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.36~~ | ~~22.4~~ | ~~119~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:18~~ | |
| Beryllium | 313.04 | 0.022 | 0.56 | 1.0 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Cadmium | 226.50 | 0.034 | 0.56 | 0.91 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Calcium | 317.93 | 4.6 | 559 | 1210 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Chromium | 267.76 | 0.12 | 0.56 | 29.8 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Cobalt | 228.62 | 0.11 | 5.6 | 15.7 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Copper | 324.75 | 0.18 | 2.8 | 20.0 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Iron | 217.44 | 2.8 | 11.2 | 34100 | N | 1 | ICPST | 9/23/2000 | 18:18 | |
| Lead | 220.35 | 0.21 | 0.34 | 11.5 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Magnesium | 279.08 | 4.6 | 559 | 5570 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Manganese | 257.61 | 0.034 | 0.56 | 546 | N | 1 | ICPST | 9/23/2000 | 18:18 | |
| Nickel | 231.60 | 0.21 | 4.5 | 18.0 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Potassium | 766.49 | 201 | 559 | 2720 | | 1 | ICP | 9/21/2000 | 9:49 | |
| Selenium | 196.03 | 0.27 | 0.56 | 0.56 ~~0.27~~ | U | 1 | ICPST | 9/23/2000 | 18:18 | |
| Silver | 328.07 | 0.16 | 0.56 | 0.56 ~~0.16~~ | U | 1 | ICPST | 9/23/2000 | 18:18 | |
| Sodium | 589 | 19.2 | 559 | 559 ~~127~~ | BV | 1 | ICP | 9/21/2000 | 9:49 | |
| Thallium | 190.86 | 0.37 | 1.1 | 2.5 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Vanadium | 292.40 | 0.13 | 5.6 | 61.0 | | 1 | ICPST | 9/23/2000 | 18:18 | |
| Zinc | 213.86 | 0.090 | 2.2 | 68.8 | E | 1 | ICPST | 9/23/2000 | 18:18 | J |

Comments: Lot #: F01130290 Sample #: 26

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I CLP

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTK **Client ID:** MMAW1C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 10.6

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.019 | 0.037 | ~~0.021~~ 0.037 | BU | 1 | CVAA | 9/19/2000 | 18:10 |

Comments: Lot #: F0I130290 Sample #: 26

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

L ST. LOUIS

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTL **Client ID:** MMAU4A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 33.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 3.3 | 30.1 | 9950 | N | 1 | ICPST | 9/23/2000 | 18:23 | |
| Antimony | 206.84 | 0.36 | 9.0 | 9.0 ~~0.36~~ | UN | 1 | ICPST | 9/23/2000 | 18:23 | UL |
| Arsenic | 189.04 | 0.21 | 1.5 | 10.2 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.48~~ | ~~30.1~~ | ~~119~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:23~~ | |
| Beryllium | 313.04 | 0.030 | 0.75 | 1.1 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Cadmium | 226.50 | 0.045 | 0.75 | 0.82 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Calcium | 317.93 | 6.2 | 752 | 1690 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Chromium | 267.76 | 0.17 | 0.75 | 23.2 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Cobalt | 228.62 | 0.15 | 7.5 | 16.1 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Copper | 324.75 | 0.24 | 3.8 | 11.4 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Iron | 217.44 | 2.7 | 15.0 | 22900 | N | 1 | ICPST | 9/23/2000 | 18:23 | |
| Lead | 220.35 | 0.29 | 0.45 | 225 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Magnesium | 279.08 | 6.2 | 752 | 1430 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Manganese | 257.61 | 0.045 | 0.75 | 1910 | N | 1 | ICPST | 9/23/2000 | 18:23 | |
| Nickel | 231.60 | 0.29 | 6.0 | 11.0 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Potassium | 766.49 | 271 | 752 | 752 ~~516~~ | B | 1 | ICP | 9/21/2000 | 9:53 | |
| Selenium | 196.03 | 0.36 | 0.75 | 0.75 ~~0.36~~ | U | 1 | ICPST | 9/23/2000 | 18:23 | |
| Silver | 328.07 | 0.21 | 0.75 | 0.75 ~~0.21~~ | U | 1 | ICPST | 9/23/2000 | 18:23 | |
| Sodium | 589 | 25.9 | 752 | 752 ~~173~~ | B | 1 | ICP | 9/21/2000 | 9:53 | |
| Thallium | 190.86 | 0.50 | 1.5 | 2.1 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Vanadium | 292.40 | 0.18 | 7.5 | 37.8 | | 1 | ICPST | 9/23/2000 | 18:23 | |
| Zinc | 213.86 | 0.12 | 3.0 | 216 | E | 1 | ICPST | 9/23/2000 | 18:23 | J |

Comments: Lot #: F0I130290 Sample #: 27

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTL **Client ID:** MMAU4A

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 33.5

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.025 | 0.050 | ~~-0.049~~ 0.050 | BU | 1 | CVAA | 9/19/2000 | 18:12 |

Comments: Lot #: F01130290 Sample #: 27

Version 4.10.4

U Result is less than the IDL
B Result is between IDL and RL

*Form I Equivalent*

Form I only

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTM **Client ID:** MMAU4B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 19.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 2.7 | 24.9 | 18200 | N | 1 | ICPST | 9/23/2000 | 18:27 | |
| Antimony | 206.84 | 0.30 | 7.5 | 7.5 ~~0.44~~ | BNV | 1 | ICPST | 9/23/2000 | 18:27 | VL |
| Arsenic | 189.04 | 0.17 | 1.3 | 14.0 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| ~~Barium~~ | ~~493.41~~ | ~~0.40~~ | ~~24.9~~ | ~~85.4~~ | | ~~1~~ | ~~ICPST~~ | ~~9/23/2000~~ | ~~18:27~~ | |
| Beryllium | 313.04 | 0.025 | 0.62 | 1.3 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Cadmium | 226.50 | 0.037 | 0.62 | 1.2 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Calcium | 317.93 | 5.1 | 623 | 1210 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Chromium | 267.76 | 0.14 | 0.62 | 35.3 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Cobalt | 228.62 | 0.13 | 6.2 | 19.0 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Copper | 324.75 | 0.28 | 3.1 | 16.9 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Iron | 217.44 | 2.3 | 12.5 | 36900 | N | 1 | ICPST | 9/23/2000 | 18:27 | |
| Lead | 220.35 | 0.24 | 0.37 | 256 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Magnesium | 279.08 | 5.2 | 623 | 2820 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Manganese | 257.61 | 0.037 | 0.62 | 1760 | N | 1 | ICPST | 9/23/2000 | 18:27 | |
| Nickel | 231.60 | 0.24 | 5.0 | 17.6 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Potassium | 766.49 | 224 | 623 | 623 ~~564~~ | BV | 1 | ICP | 9/21/2000 | 9:57 | |
| Selenium | 196.03 | 0.30 | 0.62 | 0.62 ~~0.30~~ | U | 1 | ICPST | 9/23/2000 | 18:27 | |
| Silver | 328.07 | 0.17 | 0.62 | 0.62 ~~0.17~~ | U | 1 | ICPST | 9/23/2000 | 18:27 | |
| Sodium | 589 | 21.4 | 623 | 623 ~~130~~ | BV | 1 | ICP | 9/21/2000 | 9:57 | |
| Thallium | 190.86 | 0.41 | 1.3 | 3.2 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Vanadium | 292.40 | 0.15 | 6.2 | 57.5 | | 1 | ICPST | 9/23/2000 | 18:27 | |
| Zinc | 213.86 | 0.18 | 2.5 | 341 | E | 1 | ICPST | 9/23/2000 | 18:27 | J |

Comments: Lot #: F01130290 Sample #: 28

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTM **Client ID:** MMAU4B

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 19.7

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.021 | 0.042 | 0.057 | | 1 | CVAA | 9/19/2000 | 18:14 |

Comments: Lot #: F01130290 Sample #: 28

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

Form I clay

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTN **Client ID:** MMAU4C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/15/2000 **Prep Batch:** 0259344

**Weight:** 1.00 **Volume:** 100 **Percent Moisture:** 33.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 308.22 | 3.3 | 30.0 | 45100 | N | 1 | ICPST | 9/23/2000 | 18:32 | |
| Antimony | 206.84 | 0.36 | 9.0 | 9.0 ~~0.54~~ | BN | 1 | ICPST | 9/23/2000 | 18:32 | VL |
| Arsenic | 189.04 | 0.21 | 1.5 | 18.4 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Barium | 493.41 | 0.48 | 30.0 | 72.4 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Beryllium | 313.04 | 0.030 | 0.75 | 2.6 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Cadmium | 226.50 | 0.045 | 0.75 | 2.2 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Calcium | 317.93 | 6.2 | 750 | 2020 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Chromium | 267.76 | 0.17 | 0.75 | 75.8 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Cobalt | 228.62 | 0.15 | 7.5 | 13.2 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Copper | 324.75 | 0.24 | 3.8 | 31.9 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Iron | 217.44 | 2.7 | 15.0 | 67700 | N | 1 | ICPST | 9/23/2000 | 18:32 | |
| Lead | 220.35 | 0.29 | 0.45 | 144 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Magnesium | 279.08 | 6.2 | 750 | 16200 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Manganese | 257.61 | 0.045 | 0.75 | 815 | N | 1 | ICPST | 9/23/2000 | 18:32 | |
| Nickel | 231.60 | 0.29 | 6.0 | 35.9 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Potassium | 766.49 | 270 | 750 | 861 | | 1 | ICP | 9/21/2000 | 10:01 | |
| Selenium | 196.03 | 0.36 | 0.75 | 0.75 ~~0.36~~ | U | 1 | ICPST | 9/23/2000 | 18:32 | |
| Silver | 328.07 | 0.21 | 0.75 | 0.75 ~~0.21~~ | U | 1 | ICPST | 9/23/2000 | 18:32 | |
| Sodium | 589 | 25.8 | 750 | 750 ~~174~~ | BU | 1 | ICP | 9/21/2000 | 10:01 | |
| Thallium | 190.86 | 0.50 | 1.5 | 5.0 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Vanadium | 292.40 | 0.18 | 7.5 | 114 | | 1 | ICPST | 9/23/2000 | 18:32 | |
| Zinc | 213.86 | 0.12 | 3.0 | 598 | E | 1 | ICPST | 9/23/2000 | 18:32 | J |

Comments: Lot #: F0I130290 Sample #: 29

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form 1 Equivalent*

Form I copy

# STL-ST. LOUIS

## Metals Data Reporting Form

### Sample Results

**Lab Sample ID:** DKDTN **Client ID:** MMAU4C

**Matrix:** Soil **Units:** mg/kg **Prep Date:** 9/19/2000 **Prep Batch:** 0259183

**Weight:** 0.18 **Volume:** 30 **Percent Moisture:** 33.3

| Element | WL/ Mass | IDL | Report Limit | Conc | Q | DF | Instr | Anal Date | Anal Time |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 253.7 | 0.025 | 0.050 | 0.082 | | 1 | CVAA | 9/19/2000 | 18:17 |

Comments: Lot #: F0I130290 Sample #: 29

Version 4.10.4

U Result is less than the IDL

B Result is between IDL and RL

*Form I Equivalent*

**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation – TAL Metals
STL Baltimore, SDG 001139 (T09852)

**DATE:** November 24, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 29, 2000 sampling event. Samples were analyzed for metals using methods SW-846 7841(GFAA) for Thallium, SW-846 7471A (CVAA) for Mercury, and SW-846 6010B (ICP) for all other metals. A total of fifteen soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID |
|---|---|
| NRUW4A | NRUG1B |
| NRUW4B | NRUG1C |
| NRUW4C | NRUL4A |
| NRUW4CD | NRUL4B |
| NRUL3A | NRUL4BD |
| NRUL3B | NRUL4C |
| NRUL3C | NRUW3A |
| NRUG1A | |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP, and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters were validated at USEPA Region III Level IM2 and are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| **Yes** | **No** | |
| | **X** | Holding Times |
| | **X** | Initial and Continuing Calibration |
| | **X** | Blank Analysis |
| | **X** | ICP Interference Check Sample (ICS) |
| **X** | | Matrix Spike/Matrix Spike Duplicate |
| **X** | | Duplicate Sample Analysis |
| | **X** | Laboratory Control Sample (LCS) |
| **X** | | ICP Serial Dilution |
| | **X** | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**TAL METALS REVIEW**
**SDG 001139 (T09852)**

**I-Holding Times**

*Form I, shipping and run logs.*

The primary objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: Cool @4 °C ± 2 °C, the maximum holding time is 180 days for metals and 28 days for mercury.

- All criteria were met for all the samples. No qualifiers were applied.

**II-Initial and Continuing Calibration**

*Form II*

Requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analysis run, and continuing calibration verification documents that the initial calibration is still valid.

| | | | | | |
|---|---|---|---|---|---|
| ICP: | 1- blank | Hg: | 1 – blank | AA: | 1 - blank |
| | 3 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) |
| | %R – 90-110% | | %R – 80-120% | | %R – 90-110% |

- ICP analysis for metals was run on 09/26-27/00. Thallium was analyzed on 09/26/00 with a correlation coefficient of 0.9964. Mercury was analyzed on 09/21/00 with a correlation coefficient of 0.9999. All criteria were met. No qualifiers were applied.

**Continuing Calibration for MRL**

The instrument calibration near the method reporting limit (MRL) must be verified for each analyte MRL standards are evaluated using the following criteria:

CRI –MRL criteria for ICP:

A CRI must be run at a concentration of 2X MRL, or 2X the MDL, whichever is greater, for each ICP analyte (except Al, Ba, Ca, Fe, Mg, Na and K) at the beginning and end of each sample run or a minimum of twice per 8 hours.

CRA –MRL criteria for GFAA/CVAA:

The linearity of the analytical curve must be verified near the MRL for Graphite Furnace AA (GFAA). A CRA must be run at a concentration equal to the MRL, or the MDL, whichever is greater, at the beginning of each sample run.

The MRL standard recoveries should be between 90-110% of the true values. If the recovery for the CRI or CRA is > 110% and the reported sample result is > MDL or MRL, but < 2X MRL, the result is qualified as biased high, "K" and no qualifiers for non-detects. Table 2 summarizes the MRL standards study.

**TABLE 2. MRL STANDARDS STUDY.**

| Elements | Samples Affected |
|---|---|
| Antimony (114.8%) | None |
| Chromium (148.7%) | None |
| Mercury (1025%) | None |

**III-Blank Analysis**

*Form III*

Blanks are assessed to determine the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Any sample value < five times (5X) the maximum concentration detected in the QC blanks and > the MRL is qualified "B". Soil sample results and action levels were appropriately adjusted for moisture content during the blank analysis study. The associated rinse blank is sample 083000R2.

- There was no contaminant detected in any of the blanks >MRL. No qualifiers were applied.

**IV-ICP Interference Check Sample (ICS)**

*Form IV*

The ICP Interference Check Sample (ICS) verifies interelement and background correction factors. ICP Interference Check is performed at the beginning and end of each sample analysis run. Control limits are 80-120%.

- All criteria were met. No qualifiers were applied.

**V-Matrix Spike/Matrix Spike Duplicate Analysis**

The matrix spike sample analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. Spike recovery (%R) must be within the specified control limits of 75-125%. However, spike recovery limits do not apply when sample concentration exceeds the spike added concentration by a factor of four or more. If the spike recovery is < 75% and the sample results are > MDL, the data for these samples are qualified as biased low, "L". If the spike recovery falls within the range of 30-74% and the sample results are < MRL, the data for these samples are qualified as detection limits biased low, "UL".

- Sample NRUW4A (T09852) was used for the MS/MSD analysis. %R for Aluminum (-577.2%, -597.9%), Iron (-1474.8%, -4757.9%) and Manganese (-2562.5%, -2325.6%) were grossly below the control limits. Since the sample concentrations for these elements exceeded the spike added concentration by a factor of four or more, no qualifiers were applied based on these outliers.

- %R for Antimony (28.2%, 32.4%), Beryllium (73.5%), Chromium (31.1%, 65.0%), Cobalt (57.7%, 57.6%), Lead (61.2%, 68.8%), Magnesium (70.6%, 71.5%) and Vanadium (60.44%) were below the control limits. Positive sample results for these elements were qualified as biased low, "L" and non-detects "UL".

**VI-Duplicate Sample Analysis**

Duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. The relative percent difference (RPD) should be ±20% for sample values > 5X MRL. A control limit of ± 2X MRL is used for sample values < five times MRL

- Sample NRUW4A (T09852) was used for the duplicate analysis. Relative percent difference (RPD) for Chromium (117.9%) and Vanadium (49.7%) were grossly above the control limit of 20%. Positive values for these elements were qualified as estimated, "J" and non-detects "UJ".

**VII-Laboratory Control Samples (LCS)**
*Forms VII, XIII*
The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All LCS results must fall within the specified control limits.

- All criteria were met. No qualifiers were applied.

**VIII-ICP Serial Dilution**
*Forms I, IX*
The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.

- Percent difference (%D) for elements Arsenic (15.4%), Beryllium (32.0%), Copper (49.3%) and Cobalt (14.3%) were above the control limit. Positive values for these elements were qualified as estimated, "J" and non-detects had no qualifiers applied.

- Percent difference (%D) for elements Nickel (100.0%), Selenium (170.3%) and Silver (100.0%) were grossly above the control limit. Since the initial sample results for these elements were < a factor of 10 above their corresponding MDLs, no qualifiers were applied based on these outliers.

**IX-Quantitation Verification**
*Raw Data.*
The accuracy of analytical results is verified through the calculation of several parameters. The percent Difference (%D) between the calculated and the reported values should be within 10%. The following calculations were performed for verification:

**ICP Sample: NRUW4CD (T09855), Aluminum**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (140070 μg/L)*(0.1 L)/(1.0079 g* 0.753 )= 18,455 μg/g = 18,455 mg/kg

Reported concentration = 18,500 mg/kg
%D =0.24%.
Values were within 10% difference

**AA Sample : NRUW4CD (T09855), Thallium**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (1.539 μg/L)*(0.1 L)/(1.0077 g* 0.753) = 0.20 μg/g = 0.20 mg/kg

Reported concentration = 0.20 mg/kg
%D = 0%.
Values were within 10% difference.

**IX-Quantitation Verification (Cont.)**

**CVAA Sample: NRUW4CD (T09855), Hg**

Conc. mg/kg = (conc. µg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (0.256 µg/L)*(0.1 L)/(0.2083 g* 0.753) = 0.16 µg/g = 0.16 mg/kg

Reported concentration = 0.16 mg/kg
%D = 0%.
Values were within 10% difference

Form I Corr

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09852

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUW4A

Percent Solids: 82.4 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~8100~~ | | | P | |
| 7440-36-0 | Antimony | 0.73 ~~0.25~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 3.0 | | * | P | J |
| 7440-39-3 | Barium | 75.3 | | | P | |
| 7440-41-7 | Beryllium | 1.5 | | N | P | K J |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 1140 | | | P | |
| 7440-47-3 | Chromium | 25.7 | | N* | P | K J |
| 7440-48-4 | Cobalt | 26.3 | | N | P | K J |
| 7440-50-8 | Copper | 5.1 | | | P | J |
| 7439-89-6 | Iron | 33700 | | | P | |
| 7439-92-1 | Lead | 28.8 | | N | P | L |
| 7439-95-4 | Magnesium | 1080 | | N | P | L |
| 7439-96-5 | Manganese | 2040 | | * | P | |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 7.9 | | | P | |
| 7440-09-7 | Potassium | 587 | | | P | |
| 7782-49-2 | Selenium | 0.61 ~~0.42~~ | B | V | P | |
| 7440-22-4 | Silver | 1.2 ~~0.38~~ | B | V | P | |
| 7440-23-5 | Sodium | 120 ~~84.0~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 48.1 | | N* | P | K J |
| 7440-66-6 | Zinc | 35.4 | | | P | |

Corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09853

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL

Client ID: NRUW4B

Percent Solids: 81.2

Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~14500~~ | | | P | |
| 7440-36-0 | Antimony | 0.74 ~~0.30~~ | B | N VN | P | UL |
| 7440-38-2 | Arsenic | 2.8 | | * | P | J |
| 7440-39-3 | Barium | 36.2 | | | P | |
| 7440-41-7 | Beryllium | 0.78 | | N | P | KJ |
| 7440-43-9 | Cadmium | 0.62 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 412 | | | P | |
| 7440-47-3 | Chromium | 30.3 | | N* | P | KJ |
| 7440-48-4 | Cobalt | 6.1 | | N | P | KJ |
| 7440-50-8 | Copper | 15.7 | | | P | J |
| 7439-89-6 | Iron | 35300 | | | P | |
| 7439-92-1 | Lead | 6.7 | | N | P | L |
| 7439-95-4 | Magnesium | 1780 | | N | P | L |
| 7439-96-5 | Manganese | 121 | | * | P | |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 17.3 | | | P | |
| 7440-09-7 | Potassium | 1260 | | | P | |
| 7782-49-2 | Selenium | 1.2 ~~0.32~~ | U | | P | |
| 7440-22-4 | Silver | 1.2 ~~0.20~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~96.2~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.15~~ | U | | P | |
| 7440-62-2 | Vanadium | 53.0 | | N* | P | KJ |
| 7440-66-6 | Zinc | 27.8 | | | P | |

Corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09854

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUW4C

Percent Solids: 75.2 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~16700~~ | | | ~~P~~ | |
| 7440-36-0 | Antimony | 0.8 ~~0.28~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 2.2 | | * | P | J |
| 7440-39-3 | Barium | 35.4 | | | P | |
| 7440-41-7 | Beryllium | 1.4 | | N | P | J |
| 7440-43-9 | Cadmium | 0.66 ~~0.03~~ | U | | P | |
| 7440-70-2 | Calcium | 149 | | | P | |
| 7440-47-3 | Chromium | 27.2 | | N* | P | J |
| 7440-48-4 | Cobalt | 7.6 | | N | P | J |
| 7440-50-8 | Copper | 26.3 | | | P | J |
| 7439-89-6 | Iron | 40600 | | | P | |
| 7439-92-1 | Lead | 6.8 | | N | P | L |
| 7439-95-4 | Magnesium | 7070 | | N | P | L |
| 7439-96-5 | Manganese | 68.3 | | * | P | |
| 7439-97-6 | Mercury | 0.19 | | | CV | |
| 7440-02-0 | Nickel | 29.2 | | | P | |
| 7440-09-7 | Potassium | 4630 | | | P | |
| 7782-49-2 | Selenium | 3.3 ~~0.86~~ | U | | P | |
| 7440-22-4 | Silver | 1.3 ~~0.21~~ | U | | P | |
| 7440-23-5 | Sodium | 130 ~~103~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.3 ~~0.16~~ | U | | F | |
| 7440-62-2 | Vanadium | 62.8 | | N* | P | J |
| 7440-66-6 | Zinc | 34.2 | | | P | |

Corrections 9/25/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09855

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUW4CD

Percent Solids: 75.3 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 18500 | | | P | |
| 7440-36-0 | Antimony | 0.8 ~~0.28~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 2.3 | | * | P | J |
| 7440-39-3 | Barium | 32.6 | | | P | |
| 7440-41-7 | Beryllium | 1.4 | | N | P | KJ |
| 7440-43-9 | Cadmium | 0.66 ~~0.03~~ | U | | P | |
| 7440-70-2 | Calcium | 243 | | | P | |
| 7440-47-3 | Chromium | 28.3 | | N* | P | KJ |
| 7440-48-4 | Cobalt | 27.4 | | N | P | KJ |
| 7440-50-8 | Copper | 27.9 | | | P | J |
| 7439-89-6 | Iron | 42200 | | | P | |
| 7439-92-1 | Lead | 8.2 | | N | P | L |
| 7439-95-4 | Magnesium | 8270 | | N* | P | L |
| 7439-96-5 | Manganese | 187 | | * | P | |
| 7439-97-6 | Mercury | 0.16 | | | CV | |
| 7440-02-0 | Nickel | 29.6 | | | P | |
| 7440-09-7 | Potassium | 5600 | | | P | |
| 7782-49-2 | Selenium | 3.3 ~~0.86~~ | U | | P | |
| 7440-22-4 | Silver | 1.3 ~~0.21~~ | U | | P | |
| 7440-23-5 | Sodium | 151 | | | P | |
| 7440-28-0 | Thallium | 1.3 ~~0.20~~ | B | U | F | |
| 7440-62-2 | Vanadium | 65.3 | | N* | P | KJ |
| 7440-66-6 | Zinc | 35.8 | | | P | |

Corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471



030006

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09856

boratory: STL BALTIMORE

G No.: T09852

trix: SOIL Client ID: NRUL3A

rcent Solids: 83.8 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 16000 | | | P | |
| 7440-36-0 | Antimony | 0.72 ~~0.31~~ | B | N U | P | UL |
| 7440-38-2 | Arsenic | 3.7 | | * | P | J |
| 7440-39-3 | Barium | 59.4 | | | P | |
| 7440-41-7 | Beryllium | 0.72 | | N | P | UJ |
| 7440-43-9 | Cadmium | 0.6 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 918 | | | P | |
| 7440-47-3 | Chromium | 34.4 | | N* | P | UJ |
| 7440-48-4 | Cobalt | 16.3 | | N | P | UJ |
| 7440-50-8 | Copper | 11.6 | | | P | J |
| 7439-89-6 | Iron | 32000 | | | P | |
| 7439-92-1 | Lead | 15.3 | | N | P | L |
| 7439-95-4 | Magnesium | 7480 | | N | P | L |
| 7439-96-5 | Manganese | 711 | | * | P | |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | B | U | CV | |
| 7440-02-0 | Nickel | 15.3 | | | P | |
| 7440-09-7 | Potassium | 1530 | | | P | |
| 7782-49-2 | Selenium | 0.6 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 94.5 | B | | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | P | |
| 7440-62-2 | Vanadium | 52.9 | | N* | P | UJ |
| 7440-66-6 | Zinc | 39.0 | | | P | |

correction 9/28/10 JH

= "P" ICP SW6010
= "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030007

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09857

aboratory: STL BALTIMORE

DG No.: T09852

atrix: SOIL Client ID: NRUL3B

ercent Solids: 69.5 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 24800 | | | P | |
| 7440-36-0 | Antimony | 0.86 ~~0.30~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 3.1 | | * | P | J |
| 7440-39-3 | Barium | 57.2 | | | P | |
| 7440-41-7 | Beryllium | 1.2 | | N | P | KJ |
| 7440-43-9 | Cadmium | 0.72 ~~0.03~~ | U | | P | |
| 7440-70-2 | Calcium | 527 | | | P | |
| 7440-47-3 | Chromium | 39.0 | | N* | P | KJ |
| 7440-48-4 | Cobalt | 11.4 | | N | P | KJ |
| 7440-50-8 | Copper | 27.6 | | | P | J |
| 7439-89-6 | Iron | 41000 | | | P | |
| 7439-92-1 | Lead | 9.7 | | N | P | L |
| 7439-95-4 | Magnesium | 4890 | | N | P | L |
| 7439-96-5 | Manganese | 305 | | * | P | |
| 7439-97-6 | Mercury | 0.19 | | | CV | |
| 7440-02-0 | Nickel | 27.1 | | | P | |
| 7440-09-7 | Potassium | 1710 | | | P | |
| 7782-49-2 | Selenium | 3.6 ~~0.92~~ | U | | P | |
| 7440-22-4 | Silver | 1.4 ~~0.23~~ | U | | P | |
| 7440-23-5 | Sodium | 140 ~~113~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.4 ~~0.17~~ | B | V | F | |
| 7440-62-2 | Vanadium | 63.5 | | N* | P | ← Correction W 9/28/00 |
| 7440-66-6 | Zinc | 29.4 | | | P | |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030008

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09858

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUL3C

Percent Solids: 71.2 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~32800~~ | | | P | |
| 7440-36-0 | Antimony | 0.84 ~~0.29~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 3.7 | | * | P | J |
| 7440-39-3 | Barium | 63.4 | | | P | |
| 7440-41-7 | Beryllium | 2.3 | | N | P | UJ |
| 7440-43-9 | Cadmium | 0.70 ~~0.03~~ | U | | P | |
| 7440-70-2 | Calcium | 532 | | | P | |
| 7440-47-3 | Chromium | 36.4 | | N* | P | UJ |
| 7440-48-4 | Cobalt | 12.5 | | N | P | UJ |
| 7440-50-8 | Copper | 23.8 | | | P | J |
| 7439-89-6 | Iron | 36500 | | | P | |
| 7439-92-1 | Lead | 8.9 | | N | P | L |
| 7439-95-4 | Magnesium | 42800 | | N | P | L |
| 7439-96-5 | Manganese | 262 | | * | P | |
| 7439-97-6 | Mercury | 0.14 ~~0.08~~ | B | U | CV | |
| 7440-02-0 | Nickel | 31.0 | | | P | |
| 7440-09-7 | Potassium | 10000 | | | P | |
| 7782-49-2 | Selenium | 3.5 ~~0.91~~ | U | | P | |
| 7440-22-4 | Silver | 1.4 ~~0.22~~ | U | | P | |
| 7440-23-5 | Sodium | 140 ~~127~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.4 ~~0.17~~ | U | | F | |
| 7440-62-2 | Vanadium | 60.6 | | N* | P | UJ |
| 7440-66-6 | Zinc | 56.5 | | | P | |

Corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09861

aboratory: STL BALTIMORE

DG No.: T09852

atrix: SOIL Client ID: NRUG1A

ercent Solids: 87.4 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5010 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 2.0 | | * | P | J |
| 7440-39-3 | Barium | 26.8 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.08~~ | B | N U | P | UL |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 534 | | | P | |
| 7440-47-3 | Chromium | 8.8 | | N* | P | ← J |
| 7440-48-4 | Cobalt | 5.7 ~~0.73~~ | U | N | P | UL |
| 7440-50-8 | Copper | 1.1 ~~0.64~~ | B | U | P | |
| 7439-89-6 | Iron | 8790 | | | P | |
| 7439-92-1 | Lead | 8.9 | | N | P | L |
| 7439-95-4 | Magnesium | 261 | | N | P | L |
| 7439-96-5 | Manganese | 141 | | * | P | |
| 7439-97-6 | Mercury | 0.11 ~~0.08~~ | B | U | CV | |
| 7440-02-0 | Nickel | 4.6 ~~1.5~~ | B | U | P | |
| 7440-09-7 | Potassium | 191 | | | P | |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~87.3~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | P | |
| 7440-62-2 | Vanadium | 15.1 | | N* | P | ← J |
| 7440-66-6 | Zinc | 7.1 | | | P | |

corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form 2 Copy
EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09862

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUG1B

Percent Solids: 85.4 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6850 | | | P | |
| 7440-36-0 | Antimony | 0.70 ~~0.25~~ | B | N U | P | UL |
| 7440-38-2 | Arsenic | 3.4 | | * | P | J |
| 7440-39-3 | Barium | 23 ~~12.5~~ | B | U | P | |
| 7440-41-7 | Beryllium | 0.59 ~~0.05~~ | B | N U | P | UL |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 120 ~~103~~ | B | U | P | |
| 7440-47-3 | Chromium | 15.5 | | N* | P | LJ |
| 7440-48-4 | Cobalt | 5.9 ~~0.74~~ | U | N | P | UL |
| 7440-50-8 | Copper | 1.6 | | | P | J |
| 7439-89-6 | Iron | 18900 | | | P | |
| 7439-92-1 | Lead | 7.5 | | N | P | L |
| 7439-95-4 | Magnesium | 139 | | N | P | L |
| 7439-96-5 | Manganese | 35.8 | | * | P | |
| 7439-97-6 | Mercury | 0.13 | | | CV | |
| 7440-02-0 | Nickel | 4.7 ~~1.3~~ | B | U | P | |
| 7440-09-7 | Potassium | 156 | | | P | |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~90.9~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 29.7 | | N* | P | LJ |
| 7440-66-6 | Zinc | 4.7 | | | P | |

corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I. copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09863

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUG1C

Percent Solids: 87.3 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | Aluminum | 6280 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 5.1 | | * | P | J |
| 7440-39-3 | Barium | 23 ~~11.7~~ | B | U | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.03~~ | U | N | P | UL |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 110 ~~17.1~~ | B | U | P | |
| 7440-47-3 | Chromium | 14.2 | | N* | P | ± J |
| 7440-48-4 | Cobalt | 5.7 ~~0.73~~ | U | N | P | UL |
| 7440-50-8 | Copper | 1.6 | | | P | J |
| 7439-89-6 | Iron | 24300 | | | P | |
| 7439-92-1 | Lead | 7.4 | | N | P | |
| 7439-95-4 | Magnesium | 110 ~~94.4~~ | B | N/U | P | UL |
| 7439-96-5 | Manganese | 16.7 | | * | P | |
| 7439-97-6 | Mercury | 0.11 | | | CV | |
| 7440-02-0 | Nickel | 4.6 ~~1.4~~ | B | U | P | |
| 7440-09-7 | Potassium | 123 | | | P | |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.1 ~~0.28~~ | B | U | P | |
| 7440-23-5 | Sodium | 110 ~~90.1~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | P | |
| 7440-62-2 | Vanadium | 31.5 | | N* | P | ± J |
| 7440-66-6 | Zinc | 6.0 | | | P | |

cancelled 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09864

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUL4A

Percent Solids: 87.2 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~6750~~ | | | ~~P~~ | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | B | NU | P | UL |
| 7440-38-2 | Arsenic | 9.3 | | * | P | J |
| 7440-39-3 | Barium | 109 | | | P | |
| 7440-41-7 | Beryllium | 1.0 | | N | P | KJ |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 1310 | | | P | |
| 7440-47-3 | Chromium | 31.2 | | N* | P | KJ |
| 7440-48-4 | Cobalt | 21.8 | | N | P | KJ |
| 7440-50-8 | Copper | 5.1 | | | P | J |
| 7439-89-6 | Iron | 24300 | | | P | |
| 7439-92-1 | Lead | 76.7 | | N | P | L |
| 7439-95-4 | Magnesium | 420 | | N | P | L |
| 7439-96-5 | Manganese | 1710 | | * | P | |
| 7439-97-6 | Mercury | 0.13 | | | CV | |
| 7440-02-0 | Nickel | 7.0 | | | P | |
| 7440-09-7 | Potassium | 581 | | | P | |
| 7782-49-2 | Selenium | 0.57 ~~0.49~~ | B | U | P | |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~95.4~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | W | P | |
| 7440-62-2 | Vanadium | 38.7 | | N* | P | KJ |
| 7440-66-6 | Zinc | 55.1 | | | P | |

Corrected 9/28/00 MV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09865

aboratory: STL BALTIMORE

DG No.: T09852

atrix: SOIL Client ID: NRUL4B

ercent Solids: 89.3 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~6580~~ | | | P | |
| 7440-36-0 | Antimony | 0.67 ~~0.23~~ | U | N | P | UL J |
| 7440-38-2 | Arsenic | 5.7 | | * | P | |
| 7440-39-3 | Barium | 38.7 | | | P | |
| 7440-41-7 | Beryllium | 0.56 ~~0.38~~ | B | N U | P | UL |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 520 | | | P | |
| 7440-47-3 | Chromium | 25.1 | | N* | P | KJ |
| 7440-48-4 | Cobalt | 18.5 | | N | P | KJ |
| 7440-50-8 | Copper | 1.6 | | | P | J |
| 7439-89-6 | Iron | 21300 | | | P | |
| 7439-92-1 | Lead | 16.6 | | N | P | L |
| 7439-95-4 | Magnesium | 295 | | N | P | L |
| 7439-96-5 | Manganese | 735 | | * | P | |
| 7439-97-6 | Mercury | 0.11 0.08 | B | U | CV | |
| 7440-02-0 | Nickel | 4.5 ~~4.2~~ | B | U | P | |
| 7440-09-7 | Potassium | 418 | | | P | |
| 7782-49-2 | Selenium | 0.56 ~~0.14~~ | U | | P | |
| 7440-22-4 | Silver | 1.1 ~~0.10~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~90.2~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F | |
| 7440-62-2 | Vanadium | 34.1 | | N* | P | KJ |
| 7440-66-6 | Zinc | 9.0 | | | P | |

Corrections 9/28/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09866

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUL4BD

Percent Solids: 89.4 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~7380~~ | | | P | |
| 7440-36-0 | Antimony | 0.67 ~~0.33~~ | B | N V | P | UL |
| 7440-38-2 | Arsenic | 7.1 | | * | P | J |
| 7440-39-3 | Barium | 39.2 | | | P | |
| 7440-41-7 | Beryllium | 0.56 ~~0.42~~ | B | N V | P | UL |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 517 | | | P | |
| 7440-47-3 | Chromium | 35.5 | | N* | P | K J |
| 7440-48-4 | Cobalt | 19.3 | | N | P | K J |
| 7440-50-8 | Copper | 1.2 | | | P | J |
| 7439-89-6 | Iron | 29800 | | | P | |
| 7439-92-1 | Lead | 17.7 | | N | P | L |
| 7439-95-4 | Magnesium | 374 | | N | P | L |
| 7439-96-5 | Manganese | 717 | | * | P | |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | B | V | CV | |
| 7440-02-0 | Nickel | 4.8 | | | P | |
| 7440-09-7 | Potassium | 468 | | | P | |
| 7782-49-2 | Selenium | 0.56 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.1 ~~0.25~~ | B | V | P | |
| 7440-23-5 | Sodium | 110 ~~83.4~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F | |
| 7440-62-2 | Vanadium | 47.3 | | N* | P | K J |
| 7440-66-6 | Zinc | 10.6 | | | P | |

correction 9/28/00 JV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Corp

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09867

Laboratory: STL BALTIMORE

SDG No.: T09852

Matrix: SOIL Client ID: NRUL4C

Percent Solids: 85.2 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~12100~~ | | | P | |
| 7440-36-0 | Antimony | 0.70 ~~0.25~~ | U | N | P | UL |
| 7440-38-2 | Arsenic | 4.2 | | * | P | J |
| 7440-39-3 | Barium | 42.7 | | | P | |
| 7440-41-7 | Beryllium | 1.6 | | N | P | UJ |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 744 | | | P | |
| 7440-47-3 | Chromium | 30.9 | | N* | P | UJ |
| 7440-48-4 | Cobalt | 20.0 | | N | P | UJ |
| 7440-50-8 | Copper | 11.1 | | | P | J |
| 7439-89-6 | Iron | 29200 | | | P | |
| 7439-92-1 | Lead | 13.4 | | N | P | L |
| 7439-95-4 | Magnesium | 712 | | N | P | L |
| 7439-96-5 | Manganese | 501 | | * | P | |
| 7439-97-6 | Mercury | 0.12 ~~0.09~~ | B | V | CV | |
| 7440-02-0 | Nickel | 13.2 | | | P | |
| 7440-09-7 | Potassium | 624 | | | P | |
| 7782-49-2 | Selenium | 2.9 ~~0.76~~ | U | | P | |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~93.3~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | W | F | |
| 7440-62-2 | Vanadium | 41.4 | | N* | P | UJ |
| 7440-66-6 | Zinc | 17.8 | | | P | |

corrections 9/20/02

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09868

oratory: STL BALTIMORE

; No.: T09852

rix: SOIL Client ID: NRUW3A

rcent Solids: 85.2 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~3620~~ | | | ~~P~~ | |
| 7440-36-0 | Antimony | 0.70 ~~0.25~~ | B | N V | P | UL |
| 7440-38-2 | Arsenic | 2.3 | | * | P | J |
| 7440-39-3 | Barium | 23 ~~22.6~~ | B | V | P | |
| 7440-41-7 | Beryllium | 0.59 ~~0.12~~ | B | N U | P | UL |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 426 | | | P | |
| 7440-47-3 | Chromium | 6.3 | | N* | P | ~~L~~ J |
| 7440-48-4 | Cobalt | 5.9 ~~2.3~~ | B | N V | P | UL |
| 7440-50-8 | Copper | 3.3 | | | P | J |
| 7439-89-6 | Iron | 7470 | | | P | |
| 7439-92-1 | Lead | 10.3 | | N | P | L |
| 7439-95-4 | Magnesium | 363 | | N* | P | L |
| 7439-96-5 | Manganese | 91.7 | | * | P | |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 4.7 ~~2.7~~ | B | U | P | |
| 7440-09-7 | Potassium | 366 | | | P | |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | | P | |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~92.1~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | P | |
| 7440-62-2 | Vanadium | 12.2 | | N* | P | ~~L~~ J |
| 7440-66-6 | Zinc | 14.9 | | | P | |

corrections 9/28/00 JW

= "P" ICP SW6010
= "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation – TAL Metals
STL Baltimore, SDG 001139 (T09869)

**DATE:** November 25, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 29, 2000 sampling event. Samples were analyzed for metals using methods SW-846 7841(GFAA) for Thallium, SW-846 7471A (CVAA) for Mercury, and SW-846 6010B (ICP) for all other metals. A total of ten soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID |
|---|---|
| NRUW3B | NRUC3A |
| NRUW3C | NRUC3B |
| NRUC4A | NRUG4A |
| NRUC4B | NRUG4B |
| NRUC4C | NRUG4C |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP, and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters were validated at USEPA Region III Level IM2 and are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| X | | Initial and Continuing Calibration |
| X | | Blank Analysis |
| | X | ICP Interference Check Sample |
| X | | Matrix Spike/Matrix Spike Duplicate |
| X | | Duplicate Sample Analysis |
| | X | Laboratory Control Sample |
| X | | ICP Serial Dilution |
| | X | Quantitation Verification |

All of the data collected in support of this sampling activity is acceptable with the noted qualifications, except for antimony non-detects. Antimony non-detects were rejected due to extremely low spike recoveries in accordance with USEPA Region III guidance.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**

**VALIDATION REPORT**
**TAL METALS REVIEW**
**SDG 001139 (TO9869)**

**I-Holding Times**

*Form I, shipping and run logs.*

The primary objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: Cool @4 °C ± 2 °C, the maximum holding time is 180 days for metals and 28 days for mercury.

- All criteria were met for all the samples. No qualifiers were applied.

**II-Initial and Continuing Calibration**

*Form II*

Requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analysis run, and continuing calibration verification documents that the initial calibration is still valid.

| | | | | | |
|---|---|---|---|---|---|
| ICP: | 1- blank | Hg: | 1 – blank | AA: | 1 - blank |
| | 3 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) |
| | %R – 90-110% | | %R – 80-120% | | %R – 90-110% |

- ICP analysis for metals was run on 09/26-27/00. Thallium was analyzed on 09/26/00 with a correlation coefficient of 0.9964. Mercury was analyzed on 09/21/00 with a correlation coefficient of 0.9999. All criteria were met. No qualifiers were applied.

**Continuing Calibration for MRL**

The instrument calibration near the method reporting limit (MRL) must be verified for each analyte MRL standards are evaluated using the following criteria:

CRI –MRL criteria for ICP:

A CRI must be run at a concentration of 2X MRL, or 2X the MDL, whichever is greater, for each ICP analyte (except Al, Ba, Ca, Fe, Mg, Na and K) at the beginning and end of each sample run or a minimum of twice per 8 hours.

The MRL standard recoveries should be between 90-110% of the true values. If the recovery for the CRI is > 110% and the reported sample result is > MDL or >MRL, but < 2X MRL, the result is qualified as biased high "K" and no qualifiers for non-detects. If the recovery for the CRI is between 50-89%, results > MDL or > MRL, but < 2X MRL are qualified as biased low, "L" and result < MDL or <MRL are qualified "UL". If the recovery for an element is < 50%, sample results > MDL or > MRL, but < 2X MRL are qualified as biased extremely low, "L" and results < MDL or < MRL are qualified as unusable, "R". Table 2 summarizes the MRL standards study.

**TABLE 2. MRL STANDARDS STUDY.**

| Elements | Samples Affected |
|---|---|
| Antimony (114.8%) | None |
| Chromium (286.6%) | None |
| Cobalt (86.6%) | NRUW3B, NRUC4A, NRUC4B, NRUC4C, NRUC3A, NRUC3B, NRUG4A, NRUG4B |
| Copper (86.8%) | None |
| Manganese (49.3%) | None |
| Selenium (82.0, 70.0%) | All Samples |

**III-Blank Analysis**

*Form III*

Blanks are assessed to determine the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Any sample value < five times (5X) the maximum concentration detected in the QC blanks and > the MRL is qualified "B". Table 3 summarizes the blank analysis study. Soil action levels cited are unadjusted for moisture content. Sample results and action levels are appropriately adjusted for moisture content during the blank analysis study. The associated rinse blanks are sample numbers 083000R2 and 083000R3.

**Table 3. Blank Contamination Summary.**

| Element | Blank Source | Max. Equivalent Conc. mg/kg | 5X Max Equivalent Conc. mg/kg | Affected Qualified B Samples |
|---|---|---|---|---|
| Arsenic | 083000R3 | 1.05 | 5.25 | NRUG4A, NRUG4B |

**IV-ICP Interference Check Sample (ICS)**

*Form IV*

The ICP Interference Check Sample (ICS) verifies interelement and background correction factors. ICP Interference Check is performed at the beginning and end of each sample analysis run. Control limits are 80-120%.

- All criteria were met. No qualifiers were applied.

**V-Matrix Spike/Matrix Spike Duplicate**

The matrix spike sample analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. Spike recovery (%R) must be within the specified control limits of 75-125%. However, spike recovery limits do not apply when sample concentration exceeds the spike concentration by a factor of four or more. If the spike recovery is < 75% and the sample results are > MRL, the data for these samples are qualified as biased low, "L". If the spike recovery falls within the range of 30-74% and the sample results are < MRL, the data for these samples are qualified as detection limits biased low, "UL". If spike recovery results fall < 30% and the sample results are < MRL, data for these samples are qualified as unusable, "R" and results > MRL are qualified as biased extremely low, "L".

- Sample NRUW3B (T09869) was used for the MS/MSD analysis. MS/MSD %R for Aluminum (283.4%, 720%) and Iron (-398.5%, 2415.3%) were grossly outside the control criteria. Since sample concentration for these elements exceeded the spike added concentration by a factor of four or more, no qualifiers were applied based on these outliers.

- %R for Arsenic (72.0%) and Selenium (59.0%, 61.7%) were below the control limits. Positive values for these elements were qualified as biased low, "L" and non-detects "UL".

- %R for Antimony (25.0%, 24.7%) was < 30%. Positive sample values for this element were qualified as biased extremely low, "L" and non-detects as unusable, "R".

**VI-Duplicate Sample Analysis**
Duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. The relative percent difference (RPD) should be ±20%.

- Sample NRUW3B (T09869) was used for the duplicate analysis. Relative percent difference (RPD) for Aluminum (29.5%), Beryllium (37.7%), Chromium (37.3%), Copper (44.6%), Iron (42.5%), Magnesium (39.1%), Potassium (28.5%), Vanadium (37.1%), and Zinc (43.1%) were above the control limit. Positive values for these elements were qualified as estimated, "J" and non-detects "UJ".

**VII-Laboratory Control Samples (LCS)**
*Forms VII, XIII*
The laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All LCS results must fall within the specified control limits.

- All criteria were met. No qualifiers were applied.

**VIII-ICP Serial Dilution**
*Forms I, IX*
The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.

- Percent difference (%D) for elements Arsenic (40.0%), Barium (10.7%) and Copper (39.2%) were either above or grossly above the control limit. Positive values for these elements were qualified as estimated, "J".

- Percent difference (%D) for elements Beryllium (46.4%), Cobalt (100.0%) and Nickel (100.0%) were also grossly above the control limit. Since the initial sample results for these elements were < a factor of 10 above their corresponding MDLs, no qualifiers were applied based on these outliers.

**IX-Quantitation Verification**
*Raw Data.*
The accuracy of analytical results is verified through the calculation of several parameters. The percent Difference (%D) between the calculated and the reported values should be within 10%. The following calculations were performed for verification:

**ICP Sample: NRUW3C (T09870), Iron**

Conc. mg/kg = (conc. μg/L) * (Final Volume L) / (Weight g * % Solids as a fraction)

Conc. mg/kg = (139330 μg/L) * (0.1 L) / (1.0059 g* 0.82) = 16,891 μg/g = 16,891 mg/kg

Reported concentration = 18,500 mg/kg
%D = 8.70%.
Values were within 10% difference

**IX-Quantitation Verification (Cont.)**

**AA Sample: NRUW3C (T09870), Thallium**

Conc. mg/kg = (conc. µg/L) * (Final Volume L) / (Weight g * % Solids as a fraction)

Conc. mg/kg = (1.433 µg/L) * (0.1 L) / (1.0059 g * 0.82) = 0.17 µg/g = 0.17 mg/kg

Reported concentration = 0.18 mg/kg
%D = 5.56%.
Values were within 10% difference.

**CVAA Sample: NRUW3B (T09869), Hg**

Conc. mg/kg = (conc. µg/L) * (Final Volume L) / (Weight g* % Solids as a fraction)

Conc. mg/kg = (0.108 µg/L) * (0.1 L) / (0.2084 g * 0.815) = 0.06 µg/g = 0.06 mg/kg

Reported concentration = 0.06 mg/kg
%D = 0%.
Values were within 10% difference

Form I OLM

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09869

aboratory: STL BALTIMORE

DG No.: T09869

atrix: SOIL Client ID: NRUW3B

ercent Solids: 81.5 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10800 | | * | P |
| 7440-36-0 | Antimony | 0.74 ~~0.26~~ | U | N | P |
| 7440-38-2 | Arsenic | 3.0 | | N* | P |
| 7440-39-3 | Barium | 28.5 | | | P |
| 7440-41-7 | Beryllium | 0.61 ~~0.34~~ | B | V | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 330 | | | P |
| 7440-47-3 | Chromium | 14.4 | | * | P |
| 7440-48-4 | Cobalt | 6.1 ~~4.5~~ | B | V | P |
| 7440-50-8 | Copper | 9.0 | | * | P |
| 7439-89-6 | Iron | 17300 | | * | P |
| 7439-92-1 | Lead | 8.4 | | | P |
| 7439-95-4 | Magnesium | 860 | | * | P |
| 7439-96-5 | Manganese | 33.2 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | B | V | CV |
| 7440-02-0 | Nickel | 7.0 | | | P |
| 7440-09-7 | Potassium | 676 | | * | P |
| 7782-49-2 | Selenium | 0.61 ~~0.16~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.20~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~93.7~~ | B | V | P |
| 7440-28-0 | Thallium | 1.2 ~~0.18~~ | U | | F |
| 7440-62-2 | Vanadium | 29.1 | | * | P |
| 7440-66-6 | Zinc | 11.8 | | * | P |

Corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09870

Laboratory: STL BALTIMORE

SDG No.: T09869

Matrix: SOIL Client ID: NRUW3C

Percent Solids: 82.0 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10200 | | * | P |
| 7440-36-0 | Antimony | 0.73 ~~0.25~~ | U | N | P |
| 7440-38-2 | Arsenic | 10.7 | | N* | P |
| 7440-39-3 | Barium | 46.6 | | | P |
| 7440-41-7 | Beryllium | 5.4 | | | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 709 | | | P |
| 7440-47-3 | Chromium | 26.0 | | * | P |
| 7440-48-4 | Cobalt | 130 | | | P |
| 7440-50-8 | Copper | 12.3 | | * | P |
| 7439-89-6 | Iron | 18500 | | * | P |
| 7439-92-1 | Lead | 12.6 | | | P |
| 7439-95-4 | Magnesium | 10600 | | * | P |
| 7439-96-5 | Manganese | 419 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 51.1 | | | P |
| 7440-09-7 | Potassium | 1870 | | * | P |
| 7782-49-2 | Selenium | 0.61 ~~0.16~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~95.9~~ | B | V | P |
| 7440-28-0 | Thallium | 1.2 ~~0.18~~ | U | W | P |
| 7440-62-2 | Vanadium | 32.3 | | * | P |
| 7440-66-6 | Zinc | 33.7 | | * | P |

Corrections 9/29/00 JW

M = "P" ICP SW6010
M = "P" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09871

aboratory: STL BALTIMORE

DG No.: T09869

latrix: SOIL Client ID: NRUC4A

ercent Solids: 85.9 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5650 | | * | P |
| 7440-36-0 | Antimony | 0.70 ~~0.34~~ | B | NU | P |
| 7440-38-2 | Arsenic | 6.1 | | N* | P |
| 7440-39-3 | Barium | 23 ~~20.8~~ | B | U | P |
| 7440-41-7 | Beryllium | 0.58 ~~0.28~~ | B | U | P |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 120 ~~104~~ | B | U | P |
| 7440-47-3 | Chromium | 22.3 | | * | P |
| 7440-48-4 | Cobalt | 5.8 ~~5.5~~ | B | U | P |
| 7440-50-8 | Copper | 2.9 | | * | P |
| 7439-89-6 | Iron | 20400 | | * | P |
| 7439-92-1 | Lead | 13.0 | | | P |
| 7439-95-4 | Magnesium | 259 | | * | P |
| 7439-96-5 | Manganese | 186 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 4.7 ~~3.5~~ | B | U | P |
| 7440-09-7 | Potassium | 291 | | * | P |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~92.6~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.17~~ | U | | F |
| 7440-62-2 | Vanadium | 26.6 | | * | P |
| 7440-66-6 | Zinc | 10.9 | | * | P |

corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09872

Laboratory: STL BALTIMORE

SDG No.: T09869

Matrix: SOIL Client ID: NRUC4B

Percent Solids: 82.5 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10000 | | * | P |
| 7440-36-0 | Antimony | 0.73 ~~0.37~~ | B | N U | P |
| 7440-38-2 | Arsenic | 2.6 | | N* | P |
| 7440-39-3 | Barium | 24 ~~21.0~~ | B | U | P |
| 7440-41-7 | Beryllium | 0.61 ~~0.15~~ | B | U | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 244 | | | P |
| 7440-47-3 | Chromium | 14.5 | | * | P |
| 7440-48-4 | Cobalt | 6.1 ~~2.0~~ | B | U | P |
| 7440-50-8 | Copper | 5.9 | | * | P |
| 7439-89-6 | Iron | 17300 | | * | P |
| 7439-92-1 | Lead | 6.6 | | | P |
| 7439-95-4 | Magnesium | 279 | | * | P |
| 7439-96-5 | Manganese | 33.0 | | | P |
| 7439-97-6 | Mercury | 0.12 | | | CV |
| 7440-02-0 | Nickel | 4.8 ~~4.5~~ | B | U | P |
| 7440-09-7 | Potassium | 402 | | * | P |
| 7782-49-2 | Selenium | 0.61 ~~0.16~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~92.2~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.18~~ | U | | F |
| 7440-62-2 | Vanadium | 22.0 | | * | P |
| 7440-66-6 | Zinc | 7.4 | | * | P |

Corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09873

aboratory: STL BALTIMORE

DG No.: T09869

latrix: SOIL Client ID: NRUC4C

ercent Solids: 78.5 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 12200 | | ✓ | P |
| 7440-36-0 | Antimony | 0.76 ~~0.27~~ | U | N | P |
| 7440-38-2 | Arsenic | 3.9 | | N* | P |
| 7440-39-3 | Barium | 24 ~~23.4~~ | B | V | P |
| 7440-41-7 | Beryllium | 0.64 ~~0.28~~ | B | V | P |
| 7440-43-9 | Cadmium | 0.64 ~~0.03~~ | U | | P |
| 7440-70-2 | Calcium | 140 | | | P |
| 7440-47-3 | Chromium | 19.2 | | * | P |
| 7440-48-4 | Cobalt | 6.4 ~~2.5~~ | B | V | P |
| 7440-50-8 | Copper | 9.7 | | * | P |
| 7439-89-6 | Iron | 25200 | | * | P |
| 7439-92-1 | Lead | 8.0 | | | P |
| 7439-95-4 | Magnesium | 326 | | * | P |
| 7439-96-5 | Manganese | 36.4 | | | P |
| 7439-97-6 | Mercury | 0.13 ~~0.11~~ | B | V | CV |
| 7440-02-0 | Nickel | 7.8 | | ✓ | P |
| 7440-09-7 | Potassium | 473 | | | P |
| 7782-49-2 | Selenium | 0.64 ~~0.17~~ | U | N | P |
| 7440-22-4 | Silver | 1.3 ~~0.20~~ | U | | P |
| 7440-23-5 | Sodium | 130 ~~98.6~~ | B | V | P |
| 7440-28-0 | Thallium | 1.3 ~~0.19~~ | U | | P |
| 7440-62-2 | Vanadium | 34.3 | | * | P |
| 7440-66-6 | Zinc | 9.8 | | * | P |

corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09874

Laboratory: STL BALTIMORE

SDG No.: T09869

Matrix: SOIL Client ID: NRUC3A

Percent Solids: 82.0 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 20100 | | | P |
| 7440-36-0 | Antimony | 0.73 ~~0.36~~ | B | N V | P |
| 7440-38-2 | Arsenic | 1.6 | | N* | P |
| 7440-39-3 | Barium | 56.7 | | | P |
| 7440-41-7 | Beryllium | 0.87 | | | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 1810 | | | P |
| 7440-47-3 | Chromium | 32.2 | | * | P |
| 7440-48-4 | Cobalt | 11.4 | | | P |
| 7440-50-8 | Copper | 9.0 | | * | P |
| 7439-89-6 | Iron | 31900 | | * | P |
| 7439-92-1 | Lead | 11.5 | | | P |
| 7439-95-4 | Magnesium | 20400 | | * | P |
| 7439-96-5 | Manganese | 498 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.07~~ | B | U | CV |
| 7440-02-0 | Nickel | 18.1 | | | P |
| 7440-09-7 | Potassium | 2350 | | | P |
| 7782-49-2 | Selenium | 0.61 ~~0.32~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~95.9~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.18~~ | U | | P |
| 7440-62-2 | Vanadium | 42.5 | | * | P |
| 7440-66-6 | Zinc | 56.3 | | * | P |

corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy
EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09875

aboratory: STL BALTIMORE

DG No.: T09869

atrix: SOIL Client ID: NRUC3B

ercent Solids: 82.7 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 21100 | | | P |
| 7440-36-0 | Antimony | 0.73 ~~0.36~~ | B | N V | P |
| 7440-38-2 | Arsenic | 1.2 | | N* | P |
| 7440-39-3 | Barium | 45.5 | | | P |
| 7440-41-7 | Beryllium | 0.91 | | | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 25700 | | | P |
| 7440-47-3 | Chromium | 31.2 | | * | P |
| 7440-48-4 | Cobalt | 10.3 | | | P |
| 7440-50-8 | Copper | 11.8 | | * | P |
| 7439-89-6 | Iron | 28400 | | * | P |
| 7439-92-1 | Lead | 3.5 | | | P |
| 7439-95-4 | Magnesium | 48100 | | * | P |
| 7439-96-5 | Manganese | 308 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.07~~ | B | U | CV |
| 7440-02-0 | Nickel | 21.5 | | | P |
| 7440-09-7 | Potassium | 5390 | | | P |
| 7782-49-2 | Selenium | 3.1 ~~0.79~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 148 | | | P |
| 7440-28-0 | Thallium | 1.2 ~~0.29~~ | B | W U | F |
| 7440-62-2 | Vanadium | 38.3 | | * | P |
| 7440-66-6 | Zinc | 40.8 | | * | P |

corrections 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09877

boratory: STL BALTIMORE

G No.: T09869

atrix: SOIL Client ID: NRUG4A

ercent Solids: 86.4 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 3770 | | ~~*~~ | P |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.8 | | N* | P |
| 7440-39-3 | Barium | 23.4 | | | P |
| 7440-41-7 | Beryllium | 0.58 ~~0.09~~ | ~~B~~ | U | P |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 825 | | | P |
| 7440-47-3 | Chromium | 9.8 | | * | P |
| 7440-48-4 | Cobalt | 5.9 | | | P |
| 7440-50-8 | Copper | 3.9 | | * | P |
| 7439-89-6 | Iron | 9490 | | * | P |
| 7439-92-1 | Lead | 23.6 | | | P |
| 7439-95-4 | Magnesium | 311 | | * | P |
| 7439-96-5 | Manganese | 306 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 4.6 ~~1.9~~ | ~~B~~ | U | P |
| 7440-09-7 | Potassium | 220 | | ~~*~~ | P |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.18~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~90.6~~ | ~~B~~ | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.17~~ | ~~B~~ | U | P |
| 7440-62-2 | Vanadium | 15.0 | | * | P |
| 7440-66-6 | Zinc | 24.6 | | * | P |

Corrected 9/29/00 JW

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030551

Form I CoA
EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09878

oratory: STL BALTIMORE

No.: T09869

rix: SOIL Client ID: NRUG4B

rcent Solids: 84.1 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6130 | | * | P |
| 7440-36-0 | Antimony | 0.71 ~~0.25~~ | U | N | P |
| 7440-38-2 | Arsenic | 3.2 | | N* | P |
| 7440-39-3 | Barium | 24 ~~10.7~~ | B | U | P |
| 7440-41-7 | Beryllium | 0.59 ~~0.06~~ | B | U | P |
| 7440-43-9 | Cadmium | 0.59 ~~0.08~~ | U | | P |
| 7440-70-2 | Calcium | 622 | | | P |
| 7440-47-3 | Chromium | 13.6 | | * | P |
| 7440-48-4 | Cobalt | 5.9 ~~3.4~~ | B | U | P |
| 7440-50-8 | Copper | 4.0 | | * | P |
| 7439-89-6 | Iron | 17400 | | * | P |
| 7439-92-1 | Lead | 13.8 | | | P |
| 7439-95-4 | Magnesium | 333 | | * | P |
| 7439-96-5 | Manganese | 69.0 | | | P |
| 7439-97-6 | Mercury | 0.12 ~~0.07~~ | B | U | CV |
| 7440-02-0 | Nickel | 4.8 ~~2.8~~ | B | U | P |
| 7440-09-7 | Potassium | 207 | | * | P |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~91.9~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.10~~ | U | | P |
| 7440-62-2 | Vanadium | 26.5 | | * | P |
| 7440-66-6 | Zinc | 10.0 | | * | P |

Corrected 9/29/00 JH

= "P" ICP SW6010
= "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030552

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09879

Laboratory: STL BALTIMORE

SDG No.: T09869

Matrix: SOIL Client ID: NRUG4C

Percent Solids: 83.7 Date Received: 08/31/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 7420 | | * | P |
| 7440-36-0 | Antimony | 0.72 ~~0.36~~ | B | N U | P |
| 7440-38-2 | Arsenic | 7.4 | | N* | P |
| 7440-39-3 | Barium | 24 ~~11.4~~ | B | U | P |
| 7440-41-7 | Beryllium | 0.60 ~~0.18~~ | B | U | P |
| 7440-43-9 | Cadmium | 0.60 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 227 | | | P |
| 7440-47-3 | Chromium | 23.7 | | * | P |
| 7440-48-4 | Cobalt | 23.9 | | | P |
| 7440-50-8 | Copper | 6.1 | | * | P |
| 7439-89-6 | Iron | 38100 | | * | P |
| 7439-92-1 | Lead | 35.5 | | | P |
| 7439-95-4 | Magnesium | 227 | | * | P |
| 7439-96-5 | Manganese | 664 | | | P |
| 7439-97-6 | Mercury | 0.14 | | | CV |
| 7440-02-0 | Nickel | 6.6 | | | P |
| 7440-09-7 | Potassium | 211 | | * | P |
| 7782-49-2 | Selenium | 0.60 ~~0.31~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.29~~ | B | U | P |
| 7440-23-5 | Sodium | 120 ~~89.5~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.18~~ | B | U | F |
| 7440-62-2 | Vanadium | 40.9 | | * | P |
| 7440-66-6 | Zinc | 14.4 | | * | P |

corrected 9/29/00 JH

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030553

**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation – TAL Metals
STL Baltimore, SDG 001145 (T09934)

**DATE:** November 24, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 29-30, 2000 sampling events. Samples were analyzed for metals using methods SW-846 7841(GFAA) for Thallium, SW-846 7471A (CVAA) for Mercury, and SW-846 6010B (ICP) for all other metals. A total of sixteen soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID |
|---|---|
| NRUC1A | NRUC2A |
| NRUC1B | NRUC2B |
| NRUL1C | NRUG3B |
| NRUL1A | NRUW1B |
| NRUL1B | NRUW1C |
| NRUW1A | NRUG3C |
| NRUG2B | NRUG2C |
| NRUG2A | NRUW2A |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP, and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters evaluated under data validation procedure Level IM2 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| **Yes** | **No** | |
| | X | Holding Times |
| X | | Initial and Continuing Calibration |
| X | | Blank Analysis |
| | X | ICP Interference Check Sample (ICS) |
| X | | Matrix Spike/Matrix Spike Duplicate |
| X | | Duplicate Sample Analysis |
| | X | Laboratory Control Sample (LCS) |
| X | | ICP Serial Dilution |
| | X | Quantitation Verification |

All of the data collected in support of this sampling activity is acceptable with the noted qualifications, except for antimony non-detects. Antimony non-detects were rejected due to extremely low spike recoveries in accordance with USEPA Region III guidance.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**TAL METALS REVIEW**
**SDG 0001145 (T09934)**

**I-Holding Times**

*Form I, shipping and run logs.*

The primary objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: Cool @4 °C ± 2 °C, the maximum holding time is 180 days for metals and 28 days for mercury.

- All criteria were met. No qualifiers were applied.

**II-Initial and Continuing Calibration**

*Form II*

Requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analysis run, and continuing calibration verification documents that the initial calibration is still valid.

| | | | | | |
|---|---|---|---|---|---|
| ICP: | 1- blank | Hg: | 1 – blank | AA: | 1 - blank |
| | 3 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) |
| | %R – 90-110% | | %R – 80-120% | | %R – 90-110% |

- ICP analysis for metals was run on 10/05/00. Thallium was analyzed on 10/03/00 with a correlation coefficient of 0.9993. Mercury was analyzed on 09/25/00 with a correlation coefficient of 0.9999. All criteria were met. No qualifiers were applied.

**Continuing Calibration for MRL**

The instrument calibration near the method reporting limit (MRL) must be verified for each analyte MRL standards are evaluated using the following criteria:

CRI –MRL criteria for ICP:

A CRI must be run at a concentration of 2X MRL, or 2X the MDL, whichever is greater, for each ICP analyte (except Al, Ba, Ca, Fe, Mg, Na and K) at the beginning and end of each sample run or a minimum of twice per 8 hours.

CRA –MRL criteria for GFAA/CVAA:

The linearity of the analytical curve must be verified near the MRL for Graphite Furnace AA (GFAA).A CRA must be run at a concentration equal to the MRL, or the MDL, whichever is greater, at the beginning of each sample run.

The MRL standard recoveries should be between 90-110% of the true values. If the recovery for the CRI or CRA is > 110% and the reported sample result is > MDL or >MRL, but < 2X MRL, the result is qualified as biased high "K" and no qualifiers for non-detects. If the recovery for the CRI or CRA is between 50-89%, results > MDL or > MRL, but < 2X MRL is qualified as biased low "L" and result < MDL or <MRL is qualified "UL". If the recovery for an element is < 50%, results > MDL or > MRL but < 2X MRL are qualified as biased extremely low, "L". Results < MDL or < MRL are qualified as unusable, "R". Table 2 summarizes the MRL standards study.

**Continuing Calibration for MRL (Cont.)**

**TABLE 2. MRL STANDARDS STUDY.**

| Elements | Samples Affected |
|---|---|
| Copper (82.8%) | None |
| Lead (85.3%) | None |
| Manganese (30.0%) | None |
| Nickel (73.8%) | NRUC1A, NRUL1A, NRUW1A, NRUG2B, NRUC2A, NRUG3B, NRUL1B |
| Selenium (71.4%, 80.0%) | All Samples |
| Vanadium (85.0%) | None |

**III-Blank Analysis**

*Form III*

Blanks are assessed to determine the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Any sample value < five times (5X) the maximum concentration detected in the QC blanks and > the MRL is qualified "B". Table 3 summarizes the blank analysis study. Soil action levels cited are unadjusted for moisture content. Sample results and action levels are appropriately adjusted for moisture content during the blank analysis study. The associated rinse blanks are sample numbers 082800R1 and 083000R3.

**TABLE 3. BLANK ANALYSIS STUDY.**
**SDG 001145 (T09934)**

| Element | Blank Source | Max. Equivalent Conc. mg/kg | 5X Max Equivalent Conc. mg/kg | Affected Qualified B Samples |
|---|---|---|---|---|
| Arsenic | 083000R3 | 1.05 | 5.25 | NRUC2A, NRUC2B, NRUG3B, NRUG3C |

**IV-ICP Interference Check Sample (ICS)**

*Form IV*

The ICP Interference Check Sample (ICS) verifies interelement and background correction factors. ICP Interference Check is performed at the beginning and end of each sample analysis run. Control limits are 80-120%.

- All criteria were met. No qualifiers were applied.

**V-Matrix Spike/Matrix Spike Duplicate Analysis**

The matrix spike sample analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. Spike recovery (%R) must be within the specified control limits of 75-125%. However, spike recovery limits do not apply when sample concentration exceeds the spike added concentration by a factor of four or more. If the spike recovery is < 75% and the sample results are > MRL, the data for these samples are qualified as biased low, "L". If the spike recovery falls within the range of 30-74% and the sample results are < MRL, the data for these samples are qualified as detection limits biased low, "UJ". If spike recovery results fall < 30% and the sample results are < MRL, data for these samples are qualified as unusable, "R" and results > MRL are qualified as biased extremely low, "L".

**V-Matrix Spike/Matrix Spike Duplicate Analysis, Continued**

- Sample NRUC1B (T09935) was used for the MS/MSD analysis. %R for Aluminum (-213.4%, -692.7%) and Iron (309.7%, -4207.8%) were outside the control limits. Since the sample concentrations for these elements exceeded the spike added concentration by a factor of four or more, no qualifiers were applied based on these outliers.

- %R for Arsenic (73.5%), Chromium (63.0%), Selenium (73.8%, 62.7%), and Vanadium (73.9%) were below the control limits. Positive sample results for these elements were qualified as biased low, "L" and non-detects "UL".

- %R for Antimony (24.2%, 10.2%) was < 30%. Positive sample results were qualified as biased extremely low, "L" and non-detects as unusable, "R".

**VI-Duplicate Sample Analysis**

Duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. The relative percent difference (RPD) should be ±20%.

- Sample NRUC1B (T09935) was used for the duplicate analysis. Relative percent difference (RPD) for Cobalt (58.8%) was grossly above the control limit. Positive values for this element was qualified as estimated, "J" and non-detects "UJ".

- RPD for Copper (24.9%), Manganese (21.1%), Mercury (23.3%), and Zinc (23.3%) were above the control limit. Positive values for these elements were qualified as estimated, "J" and non-detects had no qualifiers applied.

**VII-Laboratory Control Samples (LCS)**

*Forms VII, XIII*

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All LCS results must fall within the specified control limits.

- All criteria were met. No qualifiers were applied.

**VIII-ICP Serial Dilution**

*Forms I, IX*

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.

- Percent difference (%D) for elements Arsenic (42.1%), Calcium (15.2%), and Copper (15.9%) were above the control limit. Positive values for these elements were qualified as estimated, "J" and non-detects had no qualifiers applied.

- Percent difference (%D) for elements Beryllium (20.0%), Cobalt (100.0%), Nickel (22.3%), and Potassium (100.0%) above the control limit. Since the initial sample results for these elements were < a factor of 10 above their corresponding MDLs, no qualifiers were applied based on these outliers.

**IX-Quantitation Verification**

*Raw Data.*

The accuracy of analytical results is verified through the calculation of several parameters. The percent difference (%D) between the calculated and the reported values should be within 10%. The following calculations were performed for verification:

**ICP Sample: NRUC1A (T09934), Lead**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (133.05 μg/L)*(0.1 L)/(1.0049 g* 0.858) = 15.4 μg/g = 15.4 mg/kg

Reported concentration = 15.4 mg/kg
%D =0%.
Values were within 10% difference

**AA Sample : MS (T09935S), Thallium**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (24.52 μg/L)*(0.1 L)/(1.0026 g* 0.7602) = 3.21 μg/g = 3.217 mg/kg

Reported concentration = 3.174 mg/kg
%D = 1.35%.
Values were within 10% difference.

**CVAA Sample: NRUC1A (T09934), Hg**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (0.116 μg/L)*(0.1 L)/(0.2072 g* 0.858) = 0.065 μg/g = 0.065 mg/kg

Reported concentration = 0.07 mg/kg
%D = 0.7%.
Values were within 10% difference

Form I Corr

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09934

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUC1A

Percent Solids: 85.8

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | | C | Q | M |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | | 6260 | | | P |
| 7440-36-0 | Antimony | 0.70 | ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | | 3.4 | | N | P |
| 7440-39-3 | Barium | | 24.5 | | | P |
| 7440-41-7 | Beryllium | 0.58 | 0.37 | B | U | P |
| 7440-43-9 | Cadmium | 0.58 | ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | | 238 | | | P |
| 7440-47-3 | Chromium | | 14.5 | | N | P |
| 7440-48-4 | Cobalt | | 8.6 | | | P |
| 7440-50-8 | Copper | | 6.3 | | E* | P |
| 7439-89-6 | Iron | | 19400 | | | P |
| 7439-92-1 | Lead | | 15.4 | | | P |
| 7439-95-4 | Magnesium | | 280 | | | P |
| 7439-96-5 | Manganese | | 231 | | * | P |
| 7439-97-6 | Mercury | 0.12 | ~~0.07~~ | B | U | CV |
| 7440-02-0 | Nickel | | 5.9 | | | P |
| 7440-09-7 | Potassium | | 166 | | | P |
| 7782-49-2 | Selenium | 0.58 | ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 | ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 | ~~88.2~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 | ~~0.14~~ | U | | P |
| 7440-62-2 | Vanadium | | 32.6 | | N | P |
| 7440-66-6 | Zinc | | 17.2 | | * | P |

WEM 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09935

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUC1B

Percent Solids: 76.0

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 11900 | | | P |
| 7440-36-0 | Antimony | 0.79 ~~0.28~~ | U | N | P |
| 7440-38-2 | Arsenic | 4.9 | | N | P |
| 7440-39-3 | Barium | 26 ~~12.4~~ | ~~B~~ | ~~U~~ | P |
| 7440-41-7 | Beryllium | 0.66 ~~0.33~~ | ~~B~~ | ~~U~~ | P |
| 7440-43-9 | Cadmium | 0.66 ~~0.03~~ | U | | P |
| 7440-70-2 | Calcium | 280 | | | P |
| 7440-47-3 | Chromium | 27.2 | | N | P |
| 7440-48-4 | Cobalt | 6.6 ~~1.7~~ | ~~B~~ | ~~U~~ | P |
| 7440-50-8 | Copper | 16.8 | | E* | P |
| 7439-89-6 | Iron | 35800 | | | P |
| 7439-92-1 | Lead | 11.0 | | | P |
| 7439-95-4 | Magnesium | 219 | | | P |
| 7439-96-5 | Manganese | 58.2 | | * | P |
| 7439-97-6 | Mercury | 0.13 ~~0.10~~ | ~~B~~ | ~~U~~ | CV |
| 7440-02-0 | Nickel | 12.7 | | | P |
| 7440-09-7 | Potassium | 180 | | | P |
| 7782-49-2 | Selenium | 0.66 ~~0.17~~ | U | N | P |
| 7440-22-4 | Silver | 1.3 ~~0.21~~ | U | | P |
| 7440-23-5 | Sodium | 130 ~~103~~ | ~~B~~ | ~~U~~ | P |
| 7440-28-0 | Thallium | 1.3 ~~0.16~~ | U | | F |
| 7440-62-2 | Vanadium | 66.8 | | N | P |
| 7440-66-6 | Zinc | 29.8 | | * | P |

WEM 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

form 2 copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09936

ab ,tory: STL BALTIMORE

)G No.: T09934

atrix: SOIL Client ID: NRUL1C

ercent Solids: 81.6 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 26600 | | | P |
| 7440-36-0 | Antimony | 0.74 ~~0.26~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.5 | | N | P |
| 7440-39-3 | Barium | 47.5 | | | P |
| 7440-41-7 | Beryllium | 2.0 | | | P |
| 7440-43-9 | Cadmium | 1.2 ~~0.05~~ | U | | P |
| 7440-70-2 | Calcium | 619 | | | P |
| 7440-47-3 | Chromium | 33.9 | | N | P |
| 7440-48-4 | Cobalt | 8.9 | | | P |
| 7440-50-8 | Copper | 29.5 | | E* | P |
| 7439-89-6 | Iron | 44200 | | | P |
| 7439-92-1 | Lead | 10.0 | | | P |
| 7439-95-4 | Magnesium | 9200 | | | P |
| 7439-96-5 | Manganese | 156 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.09~~ | B | U | CV |
| 7440-02-0 | Nickel | 26.0 | | | P |
| 7440-09-7 | Potassium | 6340 | | | P |
| 7782-49-2 | Selenium | 1.2 ~~0.32~~ | U | N | P |
| 7440-22-4 | Silver | 2.4 ~~0.39~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~109~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.15~~ | U | | P |
| 7440-62-2 | Vanadium | 64.6 | | N | P |
| 7440-66-6 | Zinc | 30.9 | | * | P |

WEW 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09937

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL Client ID: NRUL1A

Percent Solids: 90.8 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5740 | | | P |
| 7440-36-0 | Antimony | 0.66 ~~0.26~~ | B | N U | P |
| 7440-38-2 | Arsenic | 3.8 | | N | P |
| 7440-39-3 | Barium | 63.6 | | | P |
| 7440-41-7 | Beryllium | 0.72 | | | P |
| 7440-43-9 | Cadmium | 0.55 ~~0.03~~ | U | | P |
| 7440-70-2 | Calcium | 885 | | | P |
| 7440-47-3 | Chromium | 27.0 | | N | P |
| 7440-48-4 | Cobalt | 15.3 | | | P |
| 7440-50-8 | Copper | 3.2 | | E* | P |
| 7439-89-6 | Iron | 19400 | | | P |
| 7439-92-1 | Lead | 21.4 | | | P |
| 7439-95-4 | Magnesium | 792 | | | P |
| 7439-96-5 | Manganese | 1110 | | * | P |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | U | | CV |
| 7440-02-0 | Nickel | 4.6 | | | P |
| 7440-09-7 | Potassium | 344 | | | P |
| 7782-49-2 | Selenium | 0.64 | | N | P |
| 7440-22-4 | Silver | 1.1 ~~0.17~~ | U | | P |
| 7440-23-5 | Sodium | 110 ~~83.5~~ | B | U | P |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F |
| 7440-62-2 | Vanadium | 31.9 | | N | P |
| 7440-66-6 | Zinc | 29.2 | | * | P |

Wer 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form 1 dry

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09938

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUL1B

Percent Solids: 84.1

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 12500 | | | P |
| 7440-36-0 | Antimony | 0.71 ~~0.25~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.7 | | N | P |
| 7440-39-3 | Barium | 30.4 | | | P |
| 7440-41-7 | Beryllium | 0.59 ~~0.41~~ | B | V | P |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 536 | | | P |
| 7440-47-3 | Chromium | 24.8 | | N | P |
| 7440-48-4 | Cobalt | 12.0 | | | P |
| 7440-50-8 | Copper | 5.6 | | E* | P |
| 7439-89-6 | Iron | 24400 | | | P |
| 7439-92-1 | Lead | 8.7 | | | P |
| 7439-95-4 | Magnesium | 2010 | | | P |
| 7439-96-5 | Manganese | 245 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.08~~ | B | V | CV |
| 7440-02-0 | Nickel | 8.5 | | | P |
| 7440-09-7 | Potassium | 1390 | | | P |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~93.8~~ | B | V | P |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | P |
| 7440-62-2 | Vanadium | 36.7 | | N | P |
| 7440-66-6 | Zinc | 12.6 | | * | P |

WEW 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy
EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09939

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUW1A

Percent Solids: 85.5

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5450 | | | P |
| 7440-36-0 | Antimony | 0.70 ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.0 | | N | P |
| 7440-39-3 | Barium | 36.4 | | | P |
| 7440-41-7 | Beryllium | 0.58 ~~0.36~~ | B | U | P |
| 7440-43-9 | Cadmium | .58 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 808 | | | P |
| 7440-47-3 | Chromium | 22.5 | | N | P |
| 7440-48-4 | Cobalt | 10.2 | | | P |
| 7440-50-8 | Copper | 2.9 | | E* | P |
| 7439-89-6 | Iron | 22900 | | | P |
| 7439-92-1 | Lead | 17.1 | | | P |
| 7439-95-4 | Magnesium | 690 | | | P |
| 7439-96-5 | Manganese | 445 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 4.7 ~~3.4~~ | B | U | P |
| 7440-09-7 | Potassium | 291 | | | P |
| 7782-49-2 | Selenium | 0.58 ~~0.18~~ | B | NU | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~88.0~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | P |
| 7440-62-2 | Vanadium | 39.1 | | N | P |
| 7440-66-6 | Zinc | 27.9 | | * | P |

wen 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09940

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUG2B

Percent Solids: 88.6

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 7050 | | | P |
| 7440-36-0 | Antimony | 0.68 ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.5 | | N | P |
| 7440-39-3 | Barium | 30.4 | | | P |
| 7440-41-7 | Beryllium | 0.56 ~~0.35~~ | B | V | P |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 237 | | | P |
| 7440-47-3 | Chromium | 18.6 | | N | P |
| 7440-48-4 | Cobalt | 17.4 | | | P |
| 7440-50-8 | Copper | 4.2 | | E* | P |
| 7439-89-6 | Iron | 10500 | | | P |
| 7439-92-1 | Lead | 9.6 | | | P |
| 7439-95-4 | Magnesium | 1050 | | | P |
| 7439-96-5 | Manganese | 368 | | * | P |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | U | | CV |
| 7440-02-0 | Nickel | 6.6 | | | P |
| 7440-09-7 | Potassium | 613 | | | P |
| 7782-49-2 | Selenium | 0.56 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P |
| 7440-23-5 | Sodium | 110 ~~100~~ | B | V | P |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | P |
| 7440-62-2 | Vanadium | 29.9 | | N | P |
| 7440-66-6 | Zinc | 15.4 | | * | P |

WRF 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

# FORM 1
## METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09941

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUG2A

Percent Solids: 87.4

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10700 | | | P |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | 4.1 | | N | P |
| 7440-39-3 | Barium | 40.7 | | | P |
| 7440-41-7 | Beryllium | 0.64 | | | P |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 434 | | | P |
| 7440-47-3 | Chromium | 25.9 | | N | P |
| 7440-48-4 | Cobalt | 8.3 | | | P |
| 7440-50-8 | Copper | 11.0 | | E* | P |
| 7439-89-6 | Iron | 30900 | | | P |
| 7439-92-1 | Lead | 12.5 | | | P |
| 7439-95-4 | Magnesium | 1230 | | | P |
| 7439-96-5 | Manganese | 301 | | * | P |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 9.2 | | | P |
| 7440-09-7 | Potassium | 671 | | | P |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P |
| 7440-23-5 | Sodium | 110 ~~91.4~~ | B | U | P |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | F |
| 7440-62-2 | Vanadium | 47.2 | | N | P |
| 7440-66-6 | Zinc | 26.7 | | * | P |

WEW 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09942

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL Client ID: NRUC2A

Percent Solids: 83.7 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 4440 | | | P |
| 7440-36-0 | Antimony | 0.72 ~~0.25~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.6 | | N | P |
| 7440-39-3 | Barium | 30.0 | | | P |
| 7440-41-7 | Beryllium | 0.61 | | | P |
| 7440-43-9 | Cadmium | 0.60 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 715 | | | P |
| 7440-47-3 | Chromium | 11.3 | | N | P |
| 7440-48-4 | Cobalt | 33.6 | | | P |
| 7440-50-8 | Copper | 4.1 | | E* | P |
| 7439-89-6 | Iron | 10100 | | | P |
| 7439-92-1 | Lead | 24.7 | | | P |
| 7439-95-4 | Magnesium | 448 | | | P |
| 7439-96-5 | Manganese | 482 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 4.8 ~~4.6~~ | B | U | P |
| 7440-09-7 | Potassium | 233 | | | P |
| 7782-49-2 | Selenium | 0.6 ~~0.17~~ | B | N U | P |
| 7440-22-4 | Silver | 1.2 0.19 | U | | P |
| 7440-23-5 | Sodium | 120 ~~90.6~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 0.14 | U | | F |
| 7440-62-2 | Vanadium | 19.7 | | N | P |
| 7440-66-6 | Zinc | 15.9 | | * | P |

use 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form 1 copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09943

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL Client ID: NRUC2B

Percent Solids: 79.1 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 16600 | | | P |
| 7440-36-0 | Antimony | 0.76 ~~0.26~~ | U | N | P |
| 7440-38-2 | Arsenic | 4.8 | | J | P |
| 7440-39-3 | Barium | 48.1 | | | P |
| 7440-41-7 | Beryllium | 3.4 | | | P |
| 7440-43-9 | Cadmium | 1.3 ~~0.05~~ | U | | P |
| 7440-70-2 | Calcium | 1860 | | | P |
| 7440-47-3 | Chromium | 47.6 | | J | P |
| 7440-48-4 | Cobalt | 89.1 | | | P |
| 7440-50-8 | Copper | 21.5 | | E* | P |
| 7439-89-6 | Iron | 39400 | | | P |
| 7439-92-1 | Lead | 28.0 | | | P |
| 7439-95-4 | Magnesium | 2150 | | | P |
| 7439-96-5 | Manganese | 205 | | * | P |
| 7439-97-6 | Mercury | 0.13 ~~0.11~~ | B | V | CV |
| 7440-02-0 | Nickel | 44.8 | | | P |
| 7440-09-7 | Potassium | 618 | | | P |
| 7782-49-2 | Selenium | 1.3 ~~0.33~~ | U | N | P |
| 7440-22-4 | Silver | 2.6 ~~0.40~~ | U | | P |
| 7440-23-5 | Sodium | 130 ~~108~~ | B | V | P |
| 7440-28-0 | Thallium | 1.3 ~~0.15~~ | U | | F |
| 7440-62-2 | Vanadium | 68.9 | | N | P |
| 7440-66-6 | Zinc | 28.4 | | * | P |

WEW 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Cover

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09944

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL Client ID: NRUG3B

Percent Solids: 86.9 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 8860 | | | P |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P |
| 7440-38-2 | Arsenic | 3.8 | | N | P |
| 7440-39-3 | Barium | 23 ~~22.6~~ | B | U | P |
| 7440-41-7 | Beryllium | 0.58 ~~0.26~~ | B | U | P |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 304 | | | P |
| 7440-47-3 | Chromium | 30.1 | | N | P |
| 7440-48-4 | Cobalt | 31.1 | | | P |
| 7440-50-8 | Copper | 2.3 | | E* | P |
| 7439-89-6 | Iron | 31000 | | | P |
| 7439-92-1 | Lead | 13.8 | | | P |
| 7439-95-4 | Magnesium | 416 | | | P |
| 7439-96-5 | Manganese | 512 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | B | U | CV |
| 7440-02-0 | Nickel | 4.6 ~~4.3~~ | B | U | P |
| 7440-09-7 | Potassium | 408 | | | P |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.18~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~95.4~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F |
| 7440-62-2 | Vanadium | 47.6 | | N | P |
| 7440-66-6 | Zinc | 11.1 | | * | P |

WEW 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09945

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUW1B

Percent Solids: 79.9

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14900 | | | P |
| 7440-36-0 | Antimony | 0.75 ~~0.26~~ | U | N | P |
| 7440-38-2 | Arsenic | 1.6 | | N | P |
| 7440-39-3 | Barium | 43.1 | | | P |
| 7440-41-7 | Beryllium | 0.93 | | | P |
| 7440-43-9 | Cadmium | 0.63 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 717 | | | P |
| 7440-47-3 | Chromium | 30.0 | | N | P |
| 7440-48-4 | Cobalt | 8.7 | | | P |
| 7440-50-8 | Copper | 9.1 | | E* | P |
| 7439-89-6 | Iron | 32300 | | | P |
| 7439-92-1 | Lead | 6.5 | | | P |
| 7439-95-4 | Magnesium | 1300 | | | P |
| 7439-96-5 | Manganese | 240 | | * | P |
| 7439-97-6 | Mercury | 0.13 ~~0.08~~ | B | U | CV |
| 7440-02-0 | Nickel | 11.6 | | | P |
| 7440-09-7 | Potassium | 469 | | | P |
| 7782-49-2 | Selenium | 0.63 ~~0.18~~ | U | N | P |
| 7440-22-4 | Silver | 1.3 ~~0.20~~ | U | | P |
| 7440-23-5 | Sodium | 130 ~~96.3~~ | B | U | P |
| 7440-28-0 | Thallium | 1.3 ~~0.15~~ | U | | P |
| 7440-62-2 | Vanadium | 51.3 | | N | P |
| 7440-66-6 | Zinc | 16.9 | | * | P |

WSM 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09946

aboratory: STL BALTIMORE

DG No.: T09934

latrix: SOIL Client ID: NRUW1C

ercent Solids: 76.3 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 33900 | | | P |
| 7440-36-0 | Antimony | 0.79 ~~0.27~~ | U | N | P |
| 7440-38-2 | Arsenic | 1.9 | | J | P |
| 7440-39-3 | Barium | 164 | | | P |
| 7440-41-7 | Beryllium | 2.1 | | | P |
| 7440-43-9 | Cadmium | 1.3 ~~0.03~~ | U | | P |
| 7440-70-2 | Calcium | 3540 | | | P |
| 7440-47-3 | Chromium | 48.9 | | J | P |
| 7440-48-4 | Cobalt | 13.4 | | | P |
| 7440-50-8 | Copper | 29.3 | | E* | P |
| 7439-89-6 | Iron | 44100 | | | P |
| 7439-92-1 | Lead | 2.1 | | | P |
| 7439-95-4 | Magnesium | 51300 | | | P |
| 7439-96-5 | Manganese | 359 | | * | P |
| 7439-97-6 | Mercury | 0.13 ~~0.06~~ | U | | CV |
| 7440-02-0 | Nickel | 43.1 | | | P |
| 7440-09-7 | Potassium | 5670 | | | P |
| 7782-49-2 | Selenium | 1.3 ~~0.34~~ | U | N | P |
| 7440-22-4 | Silver | 2.6 ~~0.42~~ | U | | P |
| 7440-23-5 | Sodium | 130 ~~119~~ | B | V | P |
| 7440-28-0 | Thallium | 1.3 ~~0.16~~ | U | | F |
| 7440-62-2 | Vanadium | 77.6 | | N | P |
| 7440-66-6 | Zinc | 69.8 | | * | P |

ccw 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09947

Laboratory: STL BALTIMORE

SDG No.: T09934

Matrix: SOIL

Client ID: NRUG3C

Percent Solids: 82.2

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10500 | | | P |
| 7440-36-0 | Antimony | 0.73 ~~0.25~~ | U | N | P |
| 7440-38-2 | Arsenic | 2.7 | | J | P |
| 7440-39-3 | Barium | 24 ~~21.3~~ | B | V | P |
| 7440-41-7 | Beryllium | 0.61 ~~0.52~~ | B | V | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 223 | | | P |
| 7440-47-3 | Chromium | 25.6 | | J | P |
| 7440-48-4 | Cobalt | 36.6 | | | P |
| 7440-50-8 | Copper | 13.4 | | E* | P |
| 7439-89-6 | Iron | 31100 | | | P |
| 7439-92-1 | Lead | 7.2 | | | P |
| 7439-95-4 | Magnesium | 624 | | | P |
| 7439-96-5 | Manganese | 931 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | B | V | CV |
| 7440-02-0 | Nickel | 29.6 | | | P |
| 7440-09-7 | Potassium | 618 | | | P |
| 7782-49-2 | Selenium | 0.61 ~~0.16~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~100~~ | B | V | P |
| 7440-28-0 | Thallium | 1.2 ~~0.15~~ | U | | F |
| 7440-62-2 | Vanadium | 47.2 | | J | P |
| 7440-66-6 | Zinc | 33.0 | | * | P |

SEM 10/20/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Clay

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09948

boratory: STL BALTIMORE

G No.: T09934

trix: SOIL Client ID: NRUG2C

rcent Solids: 81.4 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 17600 | | | P |
| 7440-36-0 | Antimony | 0.74 ~~0.26~~ | U | N | P |
| 7440-38-2 | Arsenic | 4.3 | | N | P |
| 7440-39-3 | Barium | 38.7 | | | P |
| 7440-41-7 | Beryllium | 1.6 | | | P |
| 7440-43-9 | Cadmium | 0.61 ~~0.02~~ | U | | P |
| 7440-70-2 | Calcium | 388 | | | P |
| 7440-47-3 | Chromium | 33.1 | | N | P |
| 7440-48-4 | Cobalt | 70.1 | | | P |
| 7440-50-8 | Copper | 21.3 | | E* | P |
| 7439-89-6 | Iron | 34200 | | | P |
| 7439-92-1 | Lead | 14.5 | | | P |
| 7439-95-4 | Magnesium | 2010 | | | P |
| 7439-96-5 | Manganese | 523 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | E | V | CV |
| 7440-02-0 | Nickel | 35.3 | | | P |
| 7440-09-7 | Potassium | 1360 | | | P |
| 7782-49-2 | Selenium | 0.61 ~~0.16~~ | U | N | P |
| 7440-22-4 | Silver | 1.2 ~~0.20~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~101~~ | E | V | P |
| 7440-28-0 | Thallium | 1.2 ~~0.15~~ | U | | F |
| 7440-62-2 | Vanadium | 56.1 | | N | P |
| 7440-66-6 | Zinc | 28.0 | | * | P |

WEW 10/10/00

= "P" ICP SW6010
= "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09949

aboratory: STL BALTIMORE

DG No.: T09934

atrix: SOIL Client ID: NRUW2A

ercent Solids: 83.4 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14600 | | | P |
| 7440-36-0 | Antimony | 0.72 ~~0.25~~ | B | N V | P |
| 7440-38-2 | Arsenic | 7.6 | | N | P |
| 7440-39-3 | Barium | 60.8 | | | P |
| 7440-41-7 | Beryllium | 1.2 | | | P |
| 7440-43-9 | Cadmium | 1.2 ~~0.05~~ | U | | P |
| 7440-70-2 | Calcium | 1180 | | | P |
| 7440-47-3 | Chromium | 53.3 | | N | P |
| 7440-48-4 | Cobalt | 45.4 | | | P |
| 7440-50-8 | Copper | 8.5 | | E* | P |
| 7439-89-6 | Iron | 63000 | | | P |
| 7439-92-1 | Lead | 26.8 | | | P |
| 7439-95-4 | Magnesium | 8080 | | | P |
| 7439-96-5 | Manganese | 1860 | | * | P |
| 7439-97-6 | Mercury | 0.12 ~~0.08~~ | U | | CV |
| 7440-02-0 | Nickel | 16.8 | | | P |
| 7440-09-7 | Potassium | 1990 | | | P |
| 7782-49-2 | Selenium | 1.2 ~~0.31~~ | U | N | P |
| 7440-22-4 | Silver | 2.4 ~~0.38~~ | U | | P |
| 7440-23-5 | Sodium | 120 ~~93.9~~ | B | U | P |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | P |
| 7440-62-2 | Vanadium | 101 | | N | P |
| 7440-66-6 | Zinc | 56.2 | | * | P |

wer 10/10/00

= "P" ICP SW6010
= "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
= "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation – TAL Metals
STL Baltimore, SDG 001145 (T09950)

**DATE:** November 24, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 30, 2000 sampling event. Samples were analyzed for metals using methods SW-846 7841(GFAA) for Thallium, SW-846 7471A (CVAA) for Mercury, and SW-846 6010B (ICP) for all other metals. A total of nineteen soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID | Field Sample ID | Field Sample ID |
|---|---|---|---|
| NRUW2B | NRUL2C | MMAU3BD | MMAU3B |
| NRUW2C | NRUL2BD | MMAB4A | MMAU3C |
| NRUG2BD | NRUG2CD | MMAB4B | MMAB1A |
| NRUL2A | NRUG3A | MMAB4C | MMAB1B |
| NRUL2B | MMAB1C | MMAU3A | |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP, and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters were validated at USEPA Region III Level IM2 and are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| X | | Initial and Continuing Calibration |
| X | | Blank Analysis |
| | X | ICP Interference Check Sample (ICS) |
| X | | Matrix Spike/Matrix Spike Duplicate |
| | X | Duplicate Sample Analysis |
| | X | Laboratory Control Sample (LCS) |
| X | | ICP Serial Dilution |
| | X | Quantitation Verification |

All of the data collected in support of this sampling activity is acceptable with the noted qualifications, except for antimony non-detects. Antimony non-detects were rejected due to extremely low spike recoveries in accordance with USEPA Region III guidance.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**TAL METALS REVIEW**
**SDG 001145 (T09950)**

**I-Holding Times**

*Form I, shipping and run logs.*

The primary objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: Cool @4 °C ± 2 °C, the maximum holding time is 180 days for metals and 28 days for mercury.

- All criteria were met for all the samples. No qualifiers were applied.

**II-Initial and Continuing Calibration**

*Form II*

Requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analysis run, and continuing calibration verification documents that the initial calibration is still valid.

| | | | | | |
|---|---|---|---|---|---|
| ICP: | 1- blank | Hg: | 1 – blank | AA: | 1 - blank |
| | 3 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) | | 5 – standards ($r \geq 0.995$) |
| | %R – 90-110% | | %R – 80-120% | | %R – 90-110% |

- ICP analysis for metals was run on 10/05/00. Thallium was analyzed on 10/05/00 with a correlation coefficient of 0.9973. Mercury was analyzed on 09/25/00 with a correlation coefficient of 0.9999. All criteria were met. No qualifiers were applied.

**Continuing Calibration for MRL**

The instrument calibration near the method reporting limit (MRL) must be verified for each analyte MRL standards are evaluated using the following criteria:

CRI –MRL criteria for ICP:

A CRI must be run at a concentration of 2X MRL, or 2X the MDL, whichever is greater, for each ICP analyte (except Al, Ba, Ca, Fe, Mg, Na and K) at the beginning and end of each sample run or a minimum of twice per 8 hours.

CRA –MRL criteria for GFAA/CVAA:

The linearity of the analytical curve must be verified near the MRL for Graphite Furnace AA (GFAA). A CRA must be run at a concentration equal to the MRL, or the MDL, whichever is greater, at the beginning of each sample run. The MRL standard recoveries should be between 90-110% of the true values.

If the recovery for the CRI or CRA is > 110% and the reported sample result is > MDL or MRL, but < 2X MRL, the result is qualified as biased high, "K" and no qualifiers for non-detects. If the recovery for the CRI or CRA is between 50-89%, results > MDL or MRL, but < 2X MRL is qualified as biased low "L" and result < MDL or MRL is qualified "UL". If the recovery for an element is < 50%, results > MDL or MRL but < 2X MRL are qualified as biased extremely low, "L". Results < MDL or MRL are qualified as unusable, "R". Table 2 summarizes the MRL standards study.

**Continuing Calibration for MRL (Cont.)**

**TABLE 2. MRL STANDARDS STUDY.**

| Elements | Samples Affected |
|---|---|
| Copper (82.8%) | MMAB4A, MMAB1A |
| Lead (85.3%) | None |
| Manganese (30.0%) | None |
| Nickel (73.8%) | NRUG2BD, NRUL2B, NRUL2BD, NRUG3A, MMAB1C, MAU3BD, MMAU3B, MMAB4A, MMAB4B, MMAU3A, MMAU3C, MMAB1A, MMAB1B |
| Selenium (71.4%, 80.0%) | All Samples |
| Vanadium (85.0%) | None |

**III-Blank Analysis**

*Form III*

Blanks are assessed to determine the existence and magnitude of contamination problems. No contaminant should be detected in the blank > the MRL. Any sample value < five times (5X) the maximum concentration detected in the QC blanks and > the MRL is qualified "B". Table 3 summarizes the blank analysis study. Soil action levels cited are unadjusted for moisture content. Sample results and action levels are appropriately adjusted for moisture content during the blank analysis study. The associated rinse blanks are sample numbers 082800R1, 083000R3 and 090700RB.

**TABLE 3. BLANK ANALYSIS STUDY.**
**SDG 001145 (T09950)**

| Element | Blank Source | Max. Equivalent Conc. mg/kg | 5X Max Equivalent Conc. mg/kg | Affected Qualified B Samples |
|---|---|---|---|---|
| Arsenic | 083000R3 | 1.05 | 5.25 | NRUW2B, NRUL2A, NRUL2C, NRUL2BD, NRUG3A |
| Selenium | 083000R3 | 0.91 | 4.55 | NRUL2A |

**IV-ICP Interference Check Sample (ICS)**

*Form IV*

The ICP Interference Check Sample (ICS) verifies interelement and background correction factors. ICP Interference Check is performed at the beginning and end of each sample analysis run. Control limits are 80-120%.

- All criteria were met. No qualifiers were applied.

**V-Matrix Spike/Matrix Spike Duplicate Analysis**

The matrix spike sample analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. Spike recovery (%R) must be within the specified control limits of 75-125%. However, spike recovery limits do not apply when sample concentration exceeds the spike added concentration by a factor of four or more. If the spike recovery is > 125%, positive sample results are qualified as biased high, "K" and non-detects are not qualified. If the spike recovery is < 75% and the sample results are > MDL, the data for these samples are qualified as biased low, "L". If the spike recovery falls within the range of 30-74% and the sample results are < MDL, the data for these samples are qualified as detection limits biased low, "UL". If spike recovery results fall < 30% and the sample results are < MDL, data for these samples are qualified as unusable, "R" and results > MDL are qualified as biased extremely low, "L".

**V-Matrix Spike/Matrix Spike Duplicate Analysis, Continued**

- Sample NRUW2B (T09950) was used for the MS/MSD analysis. %R for Aluminum (239.3%, -850.3%), Iron (-983.0%, -5409.5%) and Magnesium (195.5%, 73.2%) were outside of the control limits. Since the sample concentrations for these elements exceeded the spike added concentration by a factor of four or more, no qualifiers were applied based on these outliers.

- For Manganese, MS %R (204.4%) was above the control limit and MSD %R (0.4%) was grossly below the control limit. All sample results for this element were positive and were qualified as biased low, "L".

- %R for Chromium (71.8%), Potassium (71.9%), Selenium (39.7%) and Vanadium (70.5%) were < lower control limit of 75%. Positive sample values for these elements were qualified as biased low, "L" and non-detects "UL".

- %R for Antimony (24.9%, 26.7%) was < 30%. Positive sample results for this element were qualified as biased extremely low, "L" and non-detects as unusable, "R".

**VI-Duplicate Sample Analysis**

Duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. The relative percent difference (RPD) should be ±20%.

- Sample NRUW2B (T09950) was used for the duplicate analysis. All criteria were met. No qualifiers were applied.

**VII-Laboratory Control Samples (LCS)**

*Forms VII, XIII*

The laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All LCS results must fall within the control established control limits.

- All criteria were met. No qualifiers were applied.

**VIII-ICP Serial Dilution**

*Forms I, IX*

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration in the original sample is a factor of 10 above MDL, then an analysis of a 5-fold dilution should agree within 10% difference of the original result.

- Percent difference (%D) for elements Antimony (100.0%), Cobalt (100.0%), and Nickel (16.5%) were above the control limit. Since the analyte concentrations in the original sample were < a factor of ten above their corresponding MDLs, no qualifiers were applied based on these outliers.

- Percent difference (%D) for elements Arsenic (18.2%), Beryllium (100.0%), Calcium (12.1%), Copper (37.7%), Lead (14.8%), Magnesium (14.7%), and Zinc (11.4%) were above the control limit. Positive values for these elements were qualified as estimated, "J" and non-detects had no qualifiers applied.

**IX-Quantitation Verification**

*Raw Data.*

The accuracy of analytical results is verified through the calculation of several parameters. The percent difference (%D) between the calculated and the reported values should be within 10%. The following calculations were performed for verification:

**ICP Sample: NRUL2C (T09955), Aluminum**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight (g)*% Solids as a fraction)

Conc. mg/kg = (164090 μg/L)*(0.1 L)/(1.0007 g* 0.801) = 20,471 μg/g = 20,471 mg/kg

Reported concentration = 20,500 mg/kg
%D =0.14%.
Values were within 10% difference

**AA Sample: NRUL2C (T09955), Thallium**

Conc. mg/kg = (conc. μg/L) * (Final Volume mL)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (2.206 μg/L)*(0.1 L)/(1.0012 g* 0.801) = 0.28 μg/g = 0.28 mg/kg

Reported concentration = 0.28 mg/kg
%D = 0%.
Values were within 10% difference.

**CVAA Sample: NRUL2C (T09955), Hg**

Conc. mg/kg = (conc. μg/L) * (Final Volume L)/(Weight g* % Solids as a fraction)

Conc. mg/kg = (0.107 μg/L)*(0.1 L)/(0.2088 g* 0.801) = 0.06 μg/g = 0.06 mg/kg

Reported concentration = 0.06 mg/kg
%D = 0%.
Values were within 10% difference

Form I GM

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09950

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUW2B

Percent Solids: 81.2

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | 17300 | | | P | |
| 7440-36-0 | Antimony | 0.74 ~~0.28~~ | B | N U | P | R |
| 7440-38-2 | Arsenic | 2.8 | | | P | B |
| 7440-39-3 | Barium | 40.1 | | | P | |
| 7440-41-7 | Beryllium | 0.62 ~~0.55~~ | B | U | P | |
| 7440-43-9 | Cadmium | 0.62 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 1050 | | E | P | J |
| 7440-47-3 | Chromium | 30.0 | | N | P | L |
| 7440-48-4 | Cobalt | 6.2 ~~5.1~~ | B | U | P | |
| 7440-50-8 | Copper | 8.1 | | | P | J |
| 7439-89-6 | Iron | 31600 | | | P | |
| 7439-92-1 | Lead | 5.7 | | E | P | J |
| 7439-95-4 | Magnesium | 5570 | | E | P | J |
| 7439-96-5 | Manganese | 188 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 11.7 | | | P | |
| 7440-09-7 | Potassium | 1600 | | N | P | L |
| 7782-49-2 | Selenium | 0.62 ~~0.16~~ | U | N | P | VL |
| 7440-22-4 | Silver | 1.2 ~~0.20~~ | U | | P | |
| 7440-23-5 | Sodium | 123 | | | P | |
| 7440-28-0 | Thallium | 1.2 0.15 | U | | F | |
| 7440-62-2 | Vanadium | 53.6 | | N | P | & L |
| 7440-66-6 | Zinc | 20.7 | | | P | J |

LWEN 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09951

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUW2C

Percent Solids: 75.8

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | Aluminum | 29700 | | | P | |
| 7440-36-0 | Antimony | 0.79 ~~0.37~~ | ~~B~~ | N U | P | R |
| 7440-38-2 | Arsenic | 1.3 ~~1.0~~ | ~~B~~ | U | P | |
| 7440-39-3 | Barium | 63.2 | | | P | |
| 7440-41-7 | Beryllium | 1.3 | | | P | J |
| 7440-43-9 | Cadmium | 0.66 ~~0.03~~ | U | | P | |
| 7440-70-2 | Calcium | 5430 | | ~~E~~ | P | J |
| 7440-47-3 | Chromium | 50.9 | | N | P | L |
| 7440-48-4 | Cobalt | 12.2 | | | P | |
| 7440-50-8 | Copper | 38.7 | | | P | J |
| 7439-89-6 | Iron | 42800 | | | P | |
| 7439-92-1 | Lead | 4.5 | | E | P | J |
| 7439-95-4 | Magnesium | 42700 | | E | P | J |
| 7439-96-5 | Manganese | 284 | | N | P | L |
| 7439-97-6 | Mercury | 0.13 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 33.6 | | | P | |
| 7440-09-7 | Potassium | 6120 | | N | P | L |
| 7782-49-2 | Selenium | 0.66 ~~0.17~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.3 ~~0.21~~ | U | | P | |
| 7440-23-5 | Sodium | 130 | B | | P | |
| 7440-28-0 | Thallium | 1.3 ~~0.23~~ | ~~B~~ | U | F | |
| 7440-62-2 | Vanadium | 61.2 | | N | P | L |
| 7440-66-6 | Zinc | 57.0 | | | P | J |

Wen 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09952

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUG2BD

Percent Solids: 88.4

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 8160 | | | P | |
| 7440-36-0 | Antimony | 0.68 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 3.6 | | | P | J |
| 7440-39-3 | Barium | 32.5 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.49~~ | B | U | P | |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 239 | | E | P | J |
| 7440-47-3 | Chromium | 24.3 | | N | P | L |
| 7440-48-4 | Cobalt | 18.0 | | | P | |
| 7440-50-8 | Copper | 4.6 | | | P | J |
| 7439-89-6 | Iron | 24600 | | | P | |
| 7439-92-1 | Lead | 12.0 | | E | P | J Wer 10/10/00 |
| 7439-95-4 | Magnesium | 1400 | | E | P | J |
| 7439-96-5 | Manganese | 399 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 7.9 | | | P | L |
| 7440-09-7 | Potassium | 705 | | N | P | L |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.1 ~~0.10~~ | U | | P | |
| 7440-23-5 | Sodium | 110 98.7 | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 41.3 | | N | P | L |
| 7440-66-6 | Zinc | 19.7 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Corg

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09953

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL Client ID: NRUL2A

Percent Solids: 86.7 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10800 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 5.1 | | | P | B |
| 7440-39-3 | Barium | 79.0 | | | P | |
| 7440-41-7 | Beryllium | 0.89 | | | P | J |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 1380 | | E | P | J |
| 7440-47-3 | Chromium | 28.2 | | N | P | L |
| 7440-48-4 | Cobalt | 25.9 | | | P | |
| 7440-50-8 | Copper | 5.1 | | | P | J |
| 7439-89-6 | Iron | 25200 | | | P | WEN 10/10/00 |
| 7439-92-1 | Lead | 26.8 | | E | P | J |
| 7439-95-4 | Magnesium | 2010 | | E | P | J |
| 7439-96-5 | Manganese | 1530 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 9.4 | | | P | |
| 7440-09-7 | Potassium | 960 | | N | P | L |
| 7782-49-2 | Selenium | 0.77 | | N | P | B |
| 7440-22-4 | Silver | 1.2 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~97.5~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 45.9 | | N | P | & L |
| 7440-66-6 | Zinc | 39.6 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09954

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUL2B

Percent Solids: 84.8

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 13200 | | | P | |
| 7440-36-0 | Antimony | 0.71 ~~0.45~~ | B | N V | P | R |
| 7440-38-2 | Arsenic | 6.9 | | | P | J |
| 7440-39-3 | Barium | 32.6 | | | P | |
| 7440-41-7 | Beryllium | 0.59 ~~0.41~~ | B | V | P | |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 618 | | E | P | J |
| 7440-47-3 | Chromium | 35.2 | | N | P | L |
| 7440-48-4 | Cobalt | 29.4 | | | P | |
| 7440-50-8 | Copper | 19.7 | | | P | J |
| 7439-89-6 | Iron | 32500 | | | P | |
| 7439-92-1 | Lead | 17.7 | | E | P | J Wer 10/10/00 |
| 7439-95-4 | Magnesium | 2310 | | E | P | J |
| 7439-96-5 | Manganese | 654 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 8.9 | | | P | L |
| 7440-09-7 | Potassium | 1700 | | N | P | L |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~115~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 52.3 | | N | P | L |
| 7440-66-6 | Zinc | 20.7 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09955

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUL2C

Percent Solids: 80.1

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | Aluminum | 20500 | | | P | |
| 7440-36-0 | Antimony | 0.75 ~~0.42~~ | B | N U | P | R |
| 7440-38-2 | Arsenic | 4.2 | | | P | B |
| 7440-39-3 | Barium | 34.0 | | | P | |
| 7440-41-7 | Beryllium | 0.96 | | | P | J |
| 7440-43-9 | Cadmium | 0.62 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 844 | | E | P | J |
| 7440-47-3 | Chromium | 49.5 | | N | P | L |
| 7440-48-4 | Cobalt | 7.0 | | | P | |
| 7440-50-8 | Copper | 16.6 | | | P | J |
| 7439-89-6 | Iron | 33100 | | | P | |
| 7439-92-1 | Lead | 7.9 | | E | P | J |
| 7439-95-4 | Magnesium | 3610 | | E | P | J |
| 7439-96-5 | Manganese | 62.8 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | B | U | CV | |
| 7440-02-0 | Nickel | 18.5 | | | P | |
| 7440-09-7 | Potassium | 3020 | | N | P | L |
| 7782-49-2 | Selenium | 0.62 ~~0.16~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.20~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~118~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.28~~ | B | U | F | |
| 7440-62-2 | Vanadium | 48.6 | | N | P | L |
| 7440-66-6 | Zinc | 30.4 | | | P | J |

WCM 10/10/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09956

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL Client ID: NRUL2BD

Percent Solids: 84.6 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10300 | | | P | |
| 7440-36-0 | Antimony | 0.71 ~~0.43~~ | B | NU | P | R |
| 7440-38-2 | Arsenic | ~~4.7~~ | | | P | B |
| 7440-39-3 | Barium | 27.9 | | | P | |
| 7440-41-7 | Beryllium | 0.59 ~~0.26~~ | B | U | P | |
| 7440-43-9 | Cadmium | 0.59 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 585 | | E | P | J |
| 7440-47-3 | Chromium | 40.0 | | N | P | L |
| 7440-48-4 | Cobalt | 34.6 | | | P | |
| 7440-50-8 | Copper | 4.2 | | | P | J |
| 7439-89-6 | Iron | 26100 | | | P | wen 10/10/00 |
| 7439-92-1 | Lead | 16.0 | | E | P | J |
| 7439-95-4 | Magnesium | 1240 | | E | P | J |
| 7439-96-5 | Manganese | 785 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.08~~ | U | | CV | |
| 7440-02-0 | Nickel | 5.7 | | | P | L |
| 7440-09-7 | Potassium | 956 | | N | P | L |
| 7782-49-2 | Selenium | 0.59 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~106~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 40.4 | | N | P | L |
| 7440-66-6 | Zinc | 14.8 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09957

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL Client ID: NRUG2CD

Percent Solids: 82.8 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 14500 | | | P | |
| 7440-36-0 | Antimony | 0.72 ~~0.25~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 2.4 | | | P | J |
| 7440-39-3 | Barium | 37.1 | | | P | |
| 7440-41-7 | Beryllium | 1.5 | | | P | J |
| 7440-43-9 | Cadmium | 0.60 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 390 | | E | P | J |
| 7440-47-3 | Chromium | 31.8 | | N | P | L |
| 7440-48-4 | Cobalt | 41.1 | | | P | |
| 7440-50-8 | Copper | 17.7 | | | P | J WEM 10/10/00 |
| 7439-89-6 | Iron | 29600 | | | P | |
| 7439-92-1 | Lead | 12.2 | | E | P | J |
| 7439-95-4 | Magnesium | 1590 | | E | P | J |
| 7439-96-5 | Manganese | 364 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 31.1 | | | P | |
| 7440-09-7 | Potassium | 1120 | | N | P | L |
| 7782-49-2 | Selenium | 0.60 ~~0.16~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~112~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.29~~ | B | U | F | |
| 7440-62-2 | Vanadium | 48.4 | | N | P | & L |
| 7440-66-6 | Zinc | 23.7 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09958

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: NRUG3A

Percent Solids: 89.9

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | 7260 | | | P | |
| 7440-36-0 | Antimony | 0.67 ~~0.24~~ | B | N V | P | R |
| 7440-38-2 | Arsenic | 3.6 | | | P | B |
| 7440-39-3 | Barium | 45.7 | | | P | |
| 7440-41-7 | Beryllium | 0.62 | | | P | J |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 571 | | E | P | J |
| 7440-47-3 | Chromium | 29.8 | | N | P | L |
| 7440-48-4 | Cobalt | 11.8 | | | P | |
| 7440-50-8 | Copper | 4.6 | | | P | J |
| 7439-89-6 | Iron | 27000 | | | P | WEV 10/10/00 |
| 7439-92-1 | Lead | 18.0 | | E | P | J |
| 7439-95-4 | Magnesium | 913 | | E | P | J |
| 7439-96-5 | Manganese | 458 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | U | | CV | |
| 7440-02-0 | Nickel | 5.9 | | | P | L |
| 7440-09-7 | Potassium | 438 | | N | P | L |
| 7782-49-2 | Selenium | 0.56 ~~0.14~~ | U | N | P | VL |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~107~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F | |
| 7440-62-2 | Vanadium | 41.0 | | N | P | L |
| 7440-66-6 | Zinc | 28.5 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09959

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: MMAB1C

Percent Solids: 90.0

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15300 | | | P | |
| 7440-36-0 | Antimony | 0.67 ~~0.23~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.1 ~~0.60~~ | ~~B~~ | U | P | |
| 7440-39-3 | Barium | 42.6 | | | P | |
| 7440-41-7 | Beryllium | 0.56 ~~0.37~~ | ~~B~~ | U | P | |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 110 ~~74.7~~ | ~~B~~ | ~~B~~ U | P | |
| 7440-47-3 | Chromium | 12.6 | | N | P | L |
| 7440-48-4 | Cobalt | 10.2 | | | P | |
| 7440-50-8 | Copper | 4.3 | | | P | J wgw 10/10/00 |
| 7439-89-6 | Iron | 22900 | | | P | |
| 7439-92-1 | Lead | 6.9 | | E | P | J |
| 7439-95-4 | Magnesium | 971 | | E | P | J |
| 7439-96-5 | Manganese | 189 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 6.8 | | | P | L |
| 7440-09-7 | Potassium | 1010 | | N | P | L |
| 7782-49-2 | Selenium | 0.56 ~~0.14~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~93.8~~ | ~~B~~ | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.15~~ | ~~B~~ | U | F | |
| 7440-62-2 | Vanadium | 51.4 | | N | P | L |
| 7440-66-6 | Zinc | 361 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09960

aboratory: STL BALTIMORE

DG No.: T09950

latrix: SOIL

Client ID: MMAU3BD WER 10/10/00

ercent Solids: 86.9

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 12100 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.1 | | | P | J |
| 7440-39-3 | Barium | 46.5 | | | P | |
| 7440-41-7 | Beryllium | 0.58 ~~0.46~~ | B | U | P | |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 290 | | E | P | J |
| 7440-47-3 | Chromium | 19.0 | | J | P | L |
| 7440-48-4 | Cobalt | 5.8 ~~4.2~~ | B | U | P | |
| 7440-50-8 | Copper | 8.6 | | | P | J WER 10/10/00 |
| 7439-89-6 | Iron | 29300 | | | P | |
| 7439-92-1 | Lead | 9.1 | | E | P | J |
| 7439-95-4 | Magnesium | 902 | | E | P | J |
| 7439-96-5 | Manganese | 99.4 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 7.5 | | | P | L |
| 7440-09-7 | Potassium | 961 | | N | P | L |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~98.2~~ | B | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 57.9 | | N | P | L |
| 7440-66-6 | Zinc | 34.2 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09961

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: MMAB4A

Percent Solids: 90.0

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | ~~3700~~ | | | P | |
| 7440-36-0 | Antimony | 0.67 ~~0.23~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.5 | | | P | SJ |
| 7440-39-3 | Barium | 39.9 | | | P | |
| 7440-41-7 | Beryllium | 0.56 ~~0.20~~ | B | U | P | |
| 7440-43-9 | Cadmium | 0.56 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 116 | | E | P | J |
| 7440-47-3 | Chromium | 8.7 | | N | P | L |
| 7440-48-4 | Cobalt | 5.6 ~~3.9~~ | B | U | P | |
| 7440-50-8 | Copper | 1.1 ~~0.73~~ | B | U | P | VL user 10/10/00 |
| 7439-89-6 | Iron | 7250 | | | P | |
| 7439-92-1 | Lead | 17.1 | | E | P | J |
| 7439-95-4 | Magnesium | 158 | | E | P | J |
| 7439-96-5 | Manganese | 506 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | U | | CV | |
| 7440-02-0 | Nickel | 4.4 ~~3.9~~ | B | U | P | VL |
| 7440-09-7 | Potassium | 174 | | N | P | L |
| 7782-49-2 | Selenium | 0.56 ~~0.30~~ | B | NU | P | VL |
| 7440-22-4 | Silver | 1.1 ~~0.10~~ | U | | P | |
| 7440-23-5 | Sodium | 124 | | | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F | |
| 7440-62-2 | Vanadium | 15.0 | | N | P | L |
| 7440-66-6 | Zinc | 10.0 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09962

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL Client ID: MMAB4B

Percent Solids: 87.3 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | 12500 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.9 | | | P | J |
| 7440-39-3 | Barium | 38.4 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.25~~ | ~~B~~ | ~~U~~ | P | |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 114 | | ~~E~~ | P | J |
| 7440-47-3 | Chromium | 20.9 | | N | P | L |
| 7440-48-4 | Cobalt | 5.7 ~~2.2~~ | ~~B~~ | U | P | |
| 7440-50-8 | Copper | 5.5 | | | P | J WEW 10/10/00 |
| 7439-89-6 | Iron | 28900 | | | P | |
| 7439-92-1 | Lead | 9.8 | | E | P | J |
| 7439-95-4 | Magnesium | 522 | | E | P | J |
| 7439-96-5 | Manganese | 130 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 6.3 | | | P | L |
| 7440-09-7 | Potassium | 694 | | N | P | L |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.1 ~~0.10~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~103~~ | ~~B~~ | U | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 56.4 | | N | P | L |
| 7440-66-6 | Zinc | 31.1 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09963

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: MMAB4C

Percent Solids: 87.4

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~12500~~ | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.38~~ | B | N V | P | R |
| 7440-38-2 | Arsenic | 1.8 | | | P | J |
| 7440-39-3 | Barium | 27.4 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.24~~ | B | V | P | |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 120 ~~70.0~~ | B | E V | P | |
| 7440-47-3 | Chromium | 33.6 | | N | P | L |
| 7440-48-4 | Cobalt | 5.7 ~~4.4~~ | B | V | P | |
| 7440-50-8 | Copper | 4.5 | | | P | J 10/10/00 |
| 7439-89-6 | Iron | 24000 | | | P | |
| 7439-92-1 | Lead | 10.2 | | E | P | J |
| 7439-95-4 | Magnesium | 350 | | E | P | J |
| 7439-96-5 | Manganese | 170 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 10.3 | | | P | |
| 7440-09-7 | Potassium | 474 | | N | P | L |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | N | P | VL |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~93.3~~ | B | V | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 39.6 | | N | P | L |
| 7440-66-6 | Zinc | 26.1 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
"CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Cont

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09964

aboratory: STL BALTIMORE

DG No.: T09950

latrix: SOIL Client ID: MMAU3A

ercent Solids: 86.4 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6800 | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.8 | | | P | J |
| 7440-39-3 | Barium | 57.9 | | | P | |
| 7440-41-7 | Beryllium | 0.58 ~~0.46~~ | ~~B~~ | U | P | |
| 7440-43-9 | Cadmium | 0.02 | U | | P | |
| 7440-70-2 | Calcium | 389 | | ~~B~~ | P | J |
| 7440-47-3 | Chromium | 18.3 | | N | P | L |
| 7440-48-4 | Cobalt | 10.1 | | | P | |
| 7440-50-8 | Copper | 5.4 | | | P | J wcw 10/10/00 |
| 7439-89-6 | Iron | 17800 | | | P | |
| 7439-92-1 | Lead | 10.5 | | E | P | J |
| 7439-95-4 | Magnesium | 669 | | E | P | J |
| 7439-96-5 | Manganese | 404 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 5.2 | | | P | L |
| 7440-09-7 | Potassium | 654 | | N | P | L |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.19~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~104~~ | ~~B~~ | U | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 35.0 | | N | P | L |
| 7440-66-6 | Zinc | 94.1 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09965

aboratory: STL BALTIMORE

DG No.: T09950

latrix: SOIL Client ID: MMAU3B

ercent Solids: 86.6 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~14000~~ | | | P | |
| 7440-36-0 | Antimony | 0.69 ~~0.24~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.7 | | | P | J |
| 7440-39-3 | Barium | 48.5 | | | P | |
| 7440-41-7 | Beryllium | 0.58 ~~0.53~~ | ~~B~~ U | | P | |
| 7440-43-9 | Cadmium | 0.58 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 314 | | ~~E~~ | P | J |
| 7440-47-3 | Chromium | 22.1 | | ~~N~~ | P | L over 10/10/00 |
| 7440-48-4 | Cobalt | 5.8 ~~5.4~~ | ~~B~~ | ~~J~~ | P | |
| 7440-50-8 | Copper | 10.7 | | | P | J |
| 7439-89-6 | Iron | 33300 | | | P | |
| 7439-92-1 | Lead | 9.5 | | E | P | J |
| 7439-95-4 | Magnesium | 972 | | E | P | J |
| 7439-96-5 | Manganese | 121 | | N | P | L |
| 7439-97-6 | Mercury | 0.12 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 9.0 | | | P | L |
| 7440-09-7 | Potassium | 1050 | | N | P | L |
| 7782-49-2 | Selenium | 0.58 ~~0.15~~ | U | N | P | UL |
| 7440-22-4 | Silver | 1.2 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 120 ~~111~~ | ~~B~~ | V | P | |
| 7440-28-0 | Thallium | 1.2 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 64.2 | | N | P | L |
| 7440-66-6 | Zinc | 46.2 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T09966

aboratory: STL BALTIMORE

DG No.: T09950

atrix: SOIL Client ID: MMAU3C

ercent Solids: 91.4 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| ~~7429-90-5~~ | ~~Aluminum~~ | ~~8710~~ | | | ~~P~~ | |
| 7440-36-0 | Antimony | 0.66 ~~0.23~~ | U | N | P | R |
| 7440-38-2 | Arsenic | 1.1 ~~0.37~~ | ~~B~~ U | | P | |
| 7440-39-3 | Barium | 25.2 | | | P | |
| 7440-41-7 | Beryllium | 0.55 ~~0.24~~ | ~~B~~ U | | P | |
| 7440-43-9 | Cadmium | 0.55 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 110 ~~75.8~~ | ~~B~~ E U | | P | |
| 7440-47-3 | Chromium | 10.8 | | N | P | L WEV 10/10/00 |
| 7440-48-4 | Cobalt | 12.3 | | | P | |
| 7440-50-8 | Copper | 3.4 | | | P | J |
| 7439-89-6 | Iron | 14300 | | | P | |
| 7439-92-1 | Lead | 5.6 | | E | P | J |
| 7439-95-4 | Magnesium | 555 | | E | P | J |
| 7439-96-5 | Manganese | 169 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.05~~ | U | | CV | |
| 7440-02-0 | Nickel | 5.8 | | | P | L |
| 7440-09-7 | Potassium | 591 | | N | P | L |
| 7782-49-2 | Selenium | 0.55 ~~0.14~~ | U | N | P | VL |
| 7440-22-4 | Silver | 1.1 ~~0.17~~ | U | | P | |
| 7440-23-5 | Sodium | 110 ~~90.7~~ | ~~B~~ U | | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.13~~ | U | | F | |
| 7440-62-2 | Vanadium | 27.0 | | N | P | L |
| 7440-66-6 | Zinc | 19.8 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09967

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL Client ID: MMAB1A

Percent Solids: 87.8 Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5370 | | | P | |
| 7440-36-0 | Antimony | 0.68 ~~0.24~~ | U | N | P | K |
| 7440-38-2 | Arsenic | 1.9 | | | P | SJ |
| 7440-39-3 | Barium | 114 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.51~~ | ~~B~~ | U | P | |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 395 | | ~~E~~ | P | J |
| 7440-47-3 | Chromium | 9.0 | | N | P | L |
| 7440-48-4 | Cobalt | 5.7 ~~3.3~~ | ~~B~~ | U | P | WCM 10/10/00 |
| 7440-50-8 | Copper | 2.2 | | | P | |
| 7439-89-6 | Iron | 7490 | | | P | |
| 7439-92-1 | Lead | 9.4 | | E | P | J |
| 7439-95-4 | Magnesium | 247 | | E | P | J |
| 7439-96-5 | Manganese | 924 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 4.6 ~~2.8~~ | ~~B~~ | U | P | UL |
| 7440-09-7 | Potassium | 242 | | N | P | L |
| 7782-49-2 | Selenium | 0.57 ~~0.40~~ | ~~B~~ | NU | P | UL |
| 7440-22-4 | Silver | 1.1 0.18 | U | | P | |
| 7440-23-5 | Sodium | 120 ~~95.0~~ | ~~B~~ | U | P | |
| 7440-28-0 | Thallium | 1.1 0.14 | U | | F | |
| 7440-62-2 | Vanadium | 14.7 | | N | P | L |
| 7440-66-6 | Zinc | 16.9 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Form I Copy

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T09968

Laboratory: STL BALTIMORE

SDG No.: T09950

Matrix: SOIL

Client ID: MMAB1B

Percent Solids: 88.4

Date Received: 09/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 11800 | | | P | |
| 7440-36-0 | Antimony | 0.68 ~~0.24~~ | U | N | P | R #J |
| 7440-38-2 | Arsenic | 1.2 | | | P | |
| 7440-39-3 | Barium | 47.1 | | | P | |
| 7440-41-7 | Beryllium | 0.57 ~~0.17~~ | ~~B~~ | ~~U~~ | P | |
| 7440-43-9 | Cadmium | 0.57 ~~0.02~~ | U | | P | |
| 7440-70-2 | Calcium | 398 | | ~~E~~ | P | J |
| 7440-47-3 | Chromium | 17.4 | | N | P | L |
| 7440-48-4 | Cobalt | 5.7 ~~4.2~~ | ~~B~~ | ~~U~~ | P | |
| 7440-50-8 | Copper | 3.3 | | | P | J |
| 7439-89-6 | Iron | 24700 | | | P | |
| 7439-92-1 | Lead | 8.2 | | E | P | J WEW 10/10/00 |
| 7439-95-4 | Magnesium | 490 | | E | P | J |
| 7439-96-5 | Manganese | 125 | | N | P | L |
| 7439-97-6 | Mercury | 0.11 ~~0.06~~ | U | | CV | |
| 7440-02-0 | Nickel | 4.9 | | | P | L |
| 7440-09-7 | Potassium | 579 | | N | P | L |
| 7782-49-2 | Selenium | 0.57 ~~0.15~~ | U | N | P | VL |
| 7440-22-4 | Silver | 1.1 ~~0.18~~ | U | | P | |
| 7440-23-5 | Sodium | 114 | | | P | |
| 7440-28-0 | Thallium | 1.1 ~~0.14~~ | U | | F | |
| 7440-62-2 | Vanadium | 42.2 | | N | P | L |
| 7440-66-6 | Zinc | 25.0 | | | P | J |

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Volatiles
Envirosystems Lab, SDG IT2

**DATE:** November 28, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 29-30, 2000 sampling events. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of four soil samples were validated. The sample IDs are:

| Field Sample ID |
|---|
| NRUC1B |
| NRUL1C |
| NRUL1B |
| NRUG2B |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| | X | Instrument Performance Check |
| X | | Initial Calibration |
| X | | Continuing Calibration |
| X | | Blank Analysis |
| | X | System Monitoring Compounds |
| | X | Laboratory Control Sample |
| | X | Matrix Spike/Matrix Spike Duplicate |
| | X | Internal Standards |
| | X | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**VOLATILES REVIEW**
**SDG IT2**

## I-Holding Times

*Form I.*

The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of analysis. Holding time criteria: For soil samples preserved and cooled @ 4°C ± 2°C, the maximum holding time is 14 days from sample collection to analysis.

- Holding time criteria were met. No qualifiers were applied.

## II-Instrument Performance Check

*Form V*

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check solution, bromofluorobenzene (BFB), must meet the specified ion abundance criteria.

- All criteria were met. No qualifiers were applied.

## III-Initial Calibration

*Form VI and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. Minimum Relative Response Factor (RRF) must be ≥0.05. Percent Relative Standard Deviation (%RSD) must be ≤15% for each target compound and must be ≤30% for each calibration check compound.

- For initial calibration performed on 09/12/00 on instrument HP73F, compounds Bromomethane (22.2%), Chloroethane (27.2%), 1,1-Dichloroethene (16.2%), Methylene Chloride (25.4%), 2-Butanone (21.9%) and 2-Hexanone (16.8%) were above the control limit. Positive values were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For initial calibration performed on 09/12/00 on instrument HP73F, compounds Chloromethane (36.6%) and Acetone (33.3%) grossly exceeded the control limit (i.e > 30%). Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

## IV-Continuing Calibration

*Form VII and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis. The percent Difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within 20% for all target compounds.

- For continuing calibration performed on 09/12/00 @15:30 on instrument HP73F, compound Chloromethane (21.6%) exceeded the control limit. Since this compound had already been qualified "UJ" from the initial calibration and since it was a non-detect in all the samples, no further qualifiers were necessary.

**IV-Continuing Calibration (Cont.)**

- For continuing calibration performed on 09/12/00 @10:14 on instrument HP73F, compounds Chloromethane (21.7%) and 4-Methyl-2-Pentanone (26.6%) were above the control limit. Chloromethane had already been qualified from the initial calibration and no further qualification was necessary. Positive values for 4-Methyl-2-Pentanone were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/12/00 @10:14 on instrument HP73F, compounds Chloromethane (50.2%), Vinyl Chloride (50.5%), Acetone (49%) and 2-Butanone (39.7%) were grossly outside the control criteria. Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. A method blank analysis must be performed after the calibration standards and once every 12-hour time period beginning with the injection of BFB. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10x) the maximum amount in any blank for the common laboratory contaminants methylene chloride, acetone and 2-butnone, or 5 times (5X) the maximum amount for other volatile target compounds. The associated rinse blank is sample number 082800R1. Table 2 summarizes the blank contamination analysis.

**TABLE 2. BLANK CONTAMINATION SUMMARY.**

| Compound / Blank Sample # | 10X Max. conc. µg/kg | Sample Affected |
|---|---|---|
| Acetone / 082800R1 | 440 | NRUC1B |

**VI-System Monitoring Compounds (Surrogates)**

*Form II and chromatograms.*

Laboratory performance on individual samples is established by means of spiking activities. The system monitoring compounds are added to all samples and blanks to measure their recovery. Percent Recoveries (%Rs) must be within the specified control limits.

Control Limits: Toluene-d8 (84-138%)
4-Bromofluorobenzene (59-113%)
1,2-Dichloroethane-d4 (70-121%)

- All criteria were met. No qualifiers were applied.

**VII-Laboratory Control Samples**

*Form III and chromatograms.*

Data for laboratory control samples are generated to determine long-term precision and accuracy of the analytical method. Laboratory control samples should be analyzed at a frequency of 1 per 20 samples or analytical batch for each matrix. Percent Recoveries (%Rs) must be within the specified control limits of 60-140%.

- All criteria were met. No qualifiers were applied.

**VIII-Matrix Spike/Matrix Spike Duplicate**
*Form III and chromatograms.*
Data for Matrix Spike/Matrix Spike Duplicates are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. The percent recoveries (%Rs) and the relative percent difference (RPD) must be within the specified control limits.

- Sample NRUC1B (00092519) was used for the MS/MSD analysis. %RPD for Chlorobenzene (22%) was above the control limit of 21%. Since this compound was a non-detect for all the samples, no qualifiers were applied based on these outliers.

**IX-Internal Standards**
*Form VII and chromatograms.*
Internal Standards performance check ensures that GC/MS sensitivity and response are stable during each analytical run. Specific criteria include area count of –50% to +100% and retention time of ±30 seconds from the associated calibration standards.

- All criteria were met. No qualifiers were applied.

**X-Quantitation Verification**
*Form 1 and chromatograms.*
The accuracy of analytical results is verified through the calculation of several parameters. Any positive value < RL and > MDL is reported as estimated "J." The percent difference (%D) between the calculated and the reported value should be within 10%.

**Sample: NRUC1B (00092519)), 2-Butanone**

Conc. µg/kg = (Ax * Is ng * Vt mL * DF) / (Ais * RRF * Va * Ws gm * Fs)

where:
Ax is the compound area
Is is the amount of internal standard injected (ng)
Vt is the total volume of the methanol extract (mL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the continuing calibration average relative response factor
Va is the volume of the aliquot of the methanol extract (µL)
Ws is the weight of the sample (g)
Fs is the fraction of solid [(100-%moisure)/100]

Conc. = (28323 * 50 ng * 5 mL ) / (250673 *0.894 *1 mL* 4.6 gm * 0.77) = 9 µg/kg

Reported conc. = 9 µg/kg
%D = %
Values were within 10% difference.

form I, COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUC1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092519

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC883

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 23 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U UJ |
| 75-01-4 | Vinyl Chloride | 7 | U UJ |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 27 | B JB |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 7 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 9 | J |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 7 | U |
| 108-88-3 | Toluene | 7 | U |

form I, copy

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUC1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092519

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC883

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 23 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |

Form I, Copy

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

NRUL1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 3.7(g/mL) G Lab File ID: H73FC881

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 19 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 8 | U UJ |
| 75-01-4 | Vinyl Chloride | 8 | U UJ |
| 74-83-9 | Bromomethane | 8 | U |
| 75-00-3 | Chloroethane | 8 | U |
| 75-35-4 | 1,1-Dichloroethene | 8 | U |
| 67-64-1 | Acetone | 35 | B J |
| 75-15-0 | Carbon Disulfide | 8 | U |
| 75-09-2 | Methylene Chloride | 8 | J J |
| 156-60-5 | trans-1,2-Dichloroethene | 8 | U |
| 75-34-3 | 1,1-Dichloroethane | 8 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 8 | U |
| 78-93-3 | 2-Butanone | 8 | U UJ |
| 67-66-3 | Chloroform | 8 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 8 | U |
| 56-23-5 | Carbon Tetrachloride | 8 | U |
| 71-43-2 | Benzene | 8 | U |
| 107-06-2 | 1,2-Dichloroethane | 8 | U |
| 79-01-6 | Trichloroethene | 8 | U |
| 78-87-5 | 1,2-Dichloropropane | 8 | U |
| 75-27-4 | Bromodichloromethane | 8 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 8 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | J J |
| 108-88-3 | Toluene | 8 | U |

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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

NRUL1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 3.7(g/mL) G Lab File ID: H73FC881

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 19 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 8 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 8 | U |
| 127-18-4 | Tetrachloroethene | 8 | U |
| 591-78-6 | 2-Hexanone | 8 | U |
| 124-48-1 | Dibromochloromethane | 8 | U |
| 108-90-7 | Chlorobenzene | 8 | U |
| 100-41-4 | Ethylbenzene | 8 | U |
| 1330-20-7 | Xylene (Total) | 8 | U |
| 100-42-5 | Styrene | 8 | U |
| 75-25-2 | Bromoform | 8 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 8 | U |

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EPA SAMPLE NO.

NRUL1C

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 3.7 (g/mL) G Lab File ID: H73FC881

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 19 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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EPA SAMPLE NO.

# VOLATILE ORGANICS ANALYSIS DATA SHEET

NRUL1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 4.7(g/mL) G Lab File ID: H73FC880

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 16 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 6 | U UJ |
| 75-01-4 | Vinyl Chloride | 6 | U UJ |
| 74-83-9 | Bromomethane | 6 | U |
| 75-00-3 | Chloroethane | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 67-64-1 | Acetone | 54 | B JB |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-09-2 | Methylene Chloride | 5 | J J |
| 156-60-5 | trans-1,2-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 6 | U |
| 78-93-3 | 2-Butanone | 6 | U UJ |
| 67-66-3 | Chloroform | 6 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | U |
| 108-88-3 | Toluene | 6 | U |



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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUL1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 4.7(g/mL) G Lab File ID: H73FC880

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 16 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 591-78-6 | 2-Hexanone | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 1330-20-7 | Xylene (Total) | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |

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EPA SAMPLE NO.

NRUL1B

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 4.7 (g/mL) G Lab File ID: H73FC880

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 16 Date Analyzed: 09/12/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM I, COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 4.2(g/mL) G Lab File ID: H73FC894

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U uJ |
| 75-01-4 | Vinyl Chloride | 7 | U uJ |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 120 | B JB |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 4 | J |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 14 | J |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 7 | U |
| 108-88-3 | Toluene | 7 | U |

FORM I, COPY

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 4.2(g/mL) G Lab File ID: H73FC894

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |



NRUG99

Form I, copy.

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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NRUG2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 4.2 (g/mL) G Lab File ID: H73FC894

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Volatiles
Envirosystems Lab, SDG IT3

**DATE:** November 28, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 30, 2000 sampling event. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of four soil samples were validated. The sample IDs are:

**Field Sample ID:** NRUW1B NRUW1C NRUG2C NRUG2BD

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995). Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| **Yes** | **No** | |
| | X | Holding Times |
| | X | Instrument Performance Check |
| X | | Initial Calibration |
| X | | Continuing Calibration |
| X | | Blank Analysis |
| | X | System Monitoring Compounds |
| | X | Laboratory Control Sample |
| | X | Internal Standards |
| X | | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc:
Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**VOLATILES REVIEW**
**SDG IT3**

**I-Holding Times**
*Form I.*
The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of analysis. Holding time criteria: For soil samples preserved and cooled @ 4°C ± 2°C, the maximum holding time is 14 days from sample collection to analysis.

- Holding time criteria were met. No qualifiers were applied.

**II-Instrument Performance Check**
*Form V*
The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check solution, bromofluorobenzene (BFB), must meet the specified ion abundance criteria.

- All criteria were met. No qualifiers were applied.

**III-Initial Calibration**
*Form VI and chromatograms.*
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum relative response factor (RRF) must be ≥ 0.05. Percent relative standard deviation (%RSD) must be ≤ 15% for each target compound and must be ≤ 30% for each calibration check compound.

- For initial calibration performed on 09/12/00 on instrument HP73F, %RSD for compounds Bromomethane (22.2%), Chloroethane (27.2%), 1,1-Dichloroethene (16.2%), Methylene Chloride (25.4%), 2-Butanone (21.9%) and 2-Hexanone (16.8%) were above the control limit. Positive values for these compounds were qualified as estimated, "J", and non-detects had no qualifiers applied.

- For initial calibration performed on 09/12/00 on instrument HP73F, %RSD for compounds Chloromethane (36.6%) and Acetone (33.3%), were grossly above the control limit (i.e > 30%). Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

**IV-Continuing Calibration**
*Form VII and chromatograms.*
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis. The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within 20% for all target compounds.

**IV-Continuing Calibration (Cont.)**

- For continuing calibration performed on 09/12/00 @15:30 on instrument HP73F, %D for Chloromethane (21.6%) was above the control limit. Since this compound was a non-detect in all the samples and had been qualified "UJ" owing to an initial calibration criteria failure, no qualifiers were applied based on this outlier.

- For continuing calibration performed on 09/13/00 @10:14 on instrument HP73F, %D for compounds Chloroethane (21.7%), 2-Butanone (39.7%), 4-Methyl-2-Pentanone (26.6%), 2-Hexanone (37.1%) and 1,1,2,2-Tetrachloroethane (29.0%) were outside of the control criteria. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/13/00 @10:14 on instrument HP73F, %D for compounds Chloromethane (50.2%), Vinyl Chloride (50.5%), and Acetone (49.0%) were grossly above the control limit (i.e >40%). Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. A method blank analysis must be performed after the calibration standards and once every 12-hour time period beginning with the injection of BFB. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10x) the maximum amount in any blank for the common laboratory contaminants methylene chloride, acetone and 2-butanone, or 5 times (5X) the maximum amount for other volatile target compounds. The associated rinse blank is sample number 082800R1. Table 2 summarizes the blank contamination analysis.

**TABLE 2. BLANK CONTAMINATION SUMMARY.**

| Compound / Blank Sample # | 5X Max. conc. µg/kg | 10X Max. conc. µg/kg | Samples Affected |
|---|---|---|---|
| Acetone / 082800R1 | N/A | 440 | All |

**VI-System Monitoring Compounds (Surrogates)**

*Form II and chromatograms.*

Laboratory performance on individual samples is established by means of spiking activities. The system monitoring compounds are added to all samples and blanks to measure their recovery. Percent Recoveries (%Rs) must be within the specified control limits.

Control Limits: Toluene-d8 (84-138%)
4-Bromofluorobenzene (59-113%)
1,2-Dichloroethane-d4 (70-121%)

- All criteria were met. No qualifiers were applied.

**VII-Laboratory Control Samples**
*Form III and chromatograms.*
Data for laboratory control samples are generated to determine long-term precision and accuracy of the analytical method. Laboratory control samples should be analyzed at a frequency of 1 per 20 samples or analytical batch for each matrix. Percent Recoveries (%Rs) must be within the specified control limits of 60-140%.

- All criteria were met. No qualifiers were applied.

**VIII-Internal Standards**
*Form VII and chromatograms.*
Internal Standards performance check ensures that GC/MS sensitivity and response are stable during each analytical run. Specific criteria include area count of –50% to +100% and retention time of ±30 seconds from the associated calibration standards.

- All criteria were met. No qualifiers were applied.

**IX-Quantitation Verification**
*Form 1 and chromatograms.*
The accuracy of analytical results is verified through the calculation of several parameters. Any positive value < RL and > MDL is reported as estimated "J." The percent difference (%D) between the calculated and the reported value should be within 10%.

**Sample: NRUW1B (00092529), 2-Butanone**

Conc. µg/kg = (Ax * Is ng * Vt mL * DF) / (Ais * RRF * Va * Ws gm * Fs)

where:

Ax is the compound area
Is is the amount of internal standard injected (ng)
Vt is the total volume of the methanol extract (mL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the continuing calibration average relative response factor
Va is the volume of the aliquot of the methanol extract (mL)
Ws is the weight of the sample (g)
Fs is the fraction of solid [(100-%moisure)/100]

Conc. = 23995*50 ng*5 mL*1/258455*0.617*1 mL*4.56 g*0.79 = 10 µg/kg

Reported conc. = 10 µg/kg
%D = 0%
Values were within 10% difference.

Form I, copy

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# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC895

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 21 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U UJ |
| 75-01-4 | Vinyl Chloride | 7 | U UJ |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 110 | B JB |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 5 | J J |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 10 | J |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 7 | U |
| 108-88-3 | Toluene | 7 | U |

FORM I, COPY

1B

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC895

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 21 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |

Form I, copy

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EPA SAMPLE NO.

NRUW1B

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 4.6 (g/mL) G Lab File ID: H73FC895

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 21 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 4.3(g/mL) G Lab File ID: H73FC896

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 25 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 8 | U UJ |
| 75-01-4 | Vinyl Chloride | 8 | U UJ |
| 74-83-9 | Bromomethane | 8 | U |
| 75-00-3 | Chloroethane | 8 | U |
| 75-35-4 | 1,1-Dichloroethene | 8 | U |
| 67-64-1 | Acetone | 31 | B JB |
| 75-15-0 | Carbon Disulfide | 8 | U |
| 75-09-2 | Methylene Chloride | 7 | J J |
| 156-60-5 | trans-1,2-Dichloroethene | 8 | U |
| 75-34-3 | 1,1-Dichloroethane | 8 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 8 | U |
| 78-93-3 | 2-Butanone | 8 | J |
| 67-66-3 | Chloroform | 8 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 8 | U |
| 56-23-5 | Carbon Tetrachloride | 8 | U |
| 71-43-2 | Benzene | 8 | U |
| 107-06-2 | 1,2-Dichloroethane | 8 | U |
| 79-01-6 | Trichloroethene | 8 | U |
| 78-87-5 | 1,2-Dichloropropane | 8 | U |
| 75-27-4 | Bromodichloromethane | 8 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 8 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 8 | U |
| 108-88-3 | Toluene | 8 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 4.3(g/mL) G Lab File ID: H73FC896

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 25 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 8 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 8 | U |
| 127-18-4 | Tetrachloroethene | 8 | U |
| 591-78-6 | 2-Hexanone | 8 | U |
| 124-48-1 | Dibromochloromethane | 8 | U |
| 108-90-7 | Chlorobenzene | 8 | U |
| 100-41-4 | Ethylbenzene | 8 | U |
| 1330-20-7 | Xylene (Total) | 8 | U |
| 100-42-5 | Styrene | 8 | U |
| 75-25-2 | Bromoform | 8 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 8 | U |

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EPA SAMPLE NO.

NRUW1C

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 4.3 (g/mL) G Lab File ID: H73FC896

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 25 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM I, COPY

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# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 5.0(g/mL) G Lab File ID: H73FC897

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 28 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U UJ |
| 75-01-4 | Vinyl Chloride | 7 | U UJ |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 130 | B JB |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 7 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 17 | J |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 7 | U |
| 108-88-3 | Toluene | 7 | U |

Form I, copy

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 5.0(g/mL) G Lab File ID: H73FC897

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 28 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |

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EPA SAMPLE NO.

NRUG2C

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 5.0 (g/mL) G Lab File ID: H73FC897

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 28 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM I COPY

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EPA SAMPLE NO.

# VOLATILE ORGANICS ANALYSIS DATA SHEET

NRUG2BD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC898

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 6 | U UJ |
| 75-01-4 | Vinyl Chloride | 6 | U UJ |
| 74-83-9 | Bromomethane | 6 | U |
| 75-00-3 | Chloroethane | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 67-64-1 | Acetone | 140 | B JB |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-09-2 | Methylene Chloride | 4 | J J |
| 156-60-5 | trans-1,2-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 6 | U |
| 78-93-3 | 2-Butanone | 16 | J |
| 67-66-3 | Chloroform | 6 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | U |
| 108-88-3 | Toluene | 6 | U |

Form I, copy

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2BD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC898

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 591-78-6 | 2-Hexanone | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 1330-20-7 | Xylene (Total) | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |

Form I, copy

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EPA SAMPLE NO.

NRUG2BD

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 4.6 (g/mL) G Lab File ID: H73FC898

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: not dec. 11 Date Analyzed: 09/13/00

GC Column: HP-VOC ID: 0.20 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Volatiles
Envirosystems Lab, SDG IT5

**DATE:** November 28, 2000

---

The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the September 6-7, 2000 sampling events. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of six soil samples were validated. The sample IDs are:

| Field Sample ID |
|---|
| MMAB3B |
| MMAW2B |
| MMAW2C |
| MMAW2CD |
| MMAU1B |
| MMAU1C |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.) Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| **Yes** | **No** | |
| | **X** | Holding Times |
| | **X** | Instrument Performance Check |
| | **X** | Initial Calibration |
| | **X** | Continuing Calibration |
| | **X** | Blank Analysis |
| | **X** | System Monitoring Compounds |
| | **X** | Matrix Spike/Matrix Spike Duplicate |
| | **X** | Internal Standards |
| **X** | | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualification.

cc: Eric Malarek
Project File

RADFORD ARMY AMMUNITION PLANT
VALIDATION REPORT
VOLATILES REVIEW
SDG IT5

**I-Holding Times**

*Form I.*

The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of analysis. Holding time criteria: For soil samples preserved and cooled @ 4°C ± 2°C, the maximum holding time is 14 days from sample collection to analysis.

- Holding time criteria were met. No qualifiers were applied.

**II-Instrument Performance Check**

*Form V*

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check solution, bromofluorobenzene (BFB), must meet the specified ion abundance criteria.

- All criteria were met. No qualifiers were applied.

**III-Initial Calibration**

*Form VI and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum relative response factor (RRF) must be ≥ 0.05. Percent relative standard deviation (%RSD) must be ≤ 15% for each target compound and must be ≤ 30% for each calibration check compound.

- For initial calibration performed on 09/19/00 on instrument HP73F, Acetone (18.3%) was above the control limit. Since this compound was a non-detect in all the samples, no qualifiers were applied based on this outlier.

**IV-Continuing Calibration**

*Form VII and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for volatile target compounds. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis. The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within 20% for all target compounds.

- For continuing calibration performed on 09/19/00 @15:39 on instrument HP73F, all criteria were met. No qualifiers were applied.

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. A method blank analysis must be performed after the calibration standards and once every 12-hour time period beginning with the injection of BFB. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10x) the maximum amount in any blank for the common laboratory contaminants methylene chloride, acetone and 2-butnone, or 5 times (5X) the maximum amount for other volatile target compounds. The associated rinse blank is sample number 083100R4.

- There was a blank contamination of 4 µg/kg for compound 2-Hexanone (VBLKFF). Since this compound was a non-detect in all the samples, no qualifiers were applied based on this outlier.

**VI-System Monitoring Compounds (Surrogates)**

*Form II and chromatograms.*

Laboratory performance on individual samples is established by means of spiking activities. The system monitoring compounds are added to all samples and blanks to measure their recovery. Percent Recoveries (%Rs) must be within the specified control limits.

Control Limits: Toluene-d8 (84-138%)
4-Bromofluorobenzene (59-113%)
1,2-Dichloroethane-d4 (70-121%)

- All criteria were met. No qualifiers were applied.

**VII-Matrix Spike/Matrix Spike Duplicate**

*Form III and chromatograms.*

Data for Matrix Spike/Matrix Spike Duplicates are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. The percent recoveries (%Rs) and the relative percent difference (RPD) must be within the specified control limits.

- Sample MMAW2BD (00092621) was used for the MS/MSD analysis. All criteria were met. No qualifiers were applied.

**VIII-Internal Standards**

*Form VII and chromatograms.*

Internal Standards performance check ensures that GC/MS sensitivity and response are stable during each analytical run. Specific criteria include area count of –50% to +100% and retention time of ±30 seconds from the associated calibration standards.

- All criteria were met. No qualifiers were applied.

**IX-Quantitation Verification**

*Form 1 and chromatograms.*

The accuracy of analytical results is verified through the calculation of several parameters. Any positive value <RL and >MDL is reported as estimated "J." The percent Difference (%D) between the calculated and the reported value should be within 10%.

**IX-Quantitation Verification (Cont.)**

**Sample: MMAW2BMS (00092621)), Chlorobenzene**

Conc. µg/kg = (Ax * Is ng * Vt mL * DF) / (Ais * RRF * Va * Ws gm * Fs)

where:

Ax is the compound area
Is is the amount of internal standard injected (ng)
Vt is the total volume of the methanol extract (mL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the continuing calibration average relative response factor
Va is the volume of the aliquot of the methanol extract (µL)
Ws is the weight of the sample (g)
Fs is the fraction of solid [(100-%moisure)/100]

Conc. = (555436 * 50*5 * 1 ) / (585556 * 1.092 *1 * 5.10 *0.89) = 48 µg/kg

Reported conc. = 48 µg/kg
%D = 0%
Values were within 10% difference.

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAB3B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 5.3(g/mL) G Lab File ID: H73FC943

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 9 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 5 | U |
| 75-01-4 | Vinyl Chloride | 5 | U |
| 74-83-9 | Bromomethane | 5 | U |
| 75-00-3 | Chloroethane | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 67-64-1 | Acetone | 5 | U |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-09-2 | Methylene Chloride | 5 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 5 | U |
| 78-93-3 | 2-Butanone | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 108-88-3 | Toluene | 5 | U |

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1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAB3B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 5.3 (g/mL) G Lab File ID: H73FC943

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 9 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |

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EPA SAMPLE NO.

MMAB3B

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 5.3 (g/mL) G Lab File ID: H73FC943

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 9 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 4.8 (g/mL) G Lab File ID: H73FC944

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 6 | U |
| 75-01-4 | Vinyl Chloride | 6 | U |
| 74-83-9 | Bromomethane | 6 | U |
| 75-00-3 | Chloroethane | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 67-64-1 | Acetone | 6 | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 6 | U |
| 78-93-3 | 2-Butanone | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | U |
| 108-88-3 | Toluene | 6 | U |

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1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 4.8(g/mL) G Lab File ID: H73FC944

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 591-78-6 | 2-Hexanone | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 1330-20-7 | Xylene (Total) | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |

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EPA SAMPLE NO.

MMAW2B

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 4.8 (g/mL) G Lab File ID: H73FC944

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MMAW2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 4.3 (g/mL) G Lab File ID: H73FC945

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U |
| 75-01-4 | Vinyl Chloride | 7 | U |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 7 | U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 7 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | J J |
| 108-88-3 | Toluene | 7 | U |

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1B

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MMAW2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 4.3(g/mL) G Lab File ID: H73FC945

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |

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EPA SAMPLE NO.

MMAW2C

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 4.3 (g/mL) G Lab File ID: H73FC945

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092623

Sample wt/vol: 4.6(g/mL) G Lab File ID: H73FC946

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 11 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 6 | U |
| 75-01-4 | Vinyl Chloride | 6 | U |
| 74-83-9 | Bromomethane | 6 | U |
| 75-00-3 | Chloroethane | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 67-64-1 | Acetone | 6 | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 6 | U |
| 78-93-3 | 2-Butanone | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | U |
| 108-88-3 | Toluene | 6 | U |

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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MMAU1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 5.0(g/mL) G Lab File ID: H73FC947

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 17 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 6 | U |
| 75-01-4 | Vinyl Chloride | 6 | U |
| 74-83-9 | Bromomethane | 6 | U |
| 75-00-3 | Chloroethane | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 67-64-1 | Acetone | 6 | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 6 | U |
| 78-93-3 | 2-Butanone | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 71-43-2 | Benzene | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 79-01-6 | Trichloroethene | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 6 | U |
| 108-88-3 | Toluene | 6 | U |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 5.0(g/mL) G Lab File ID: H73FC947

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 17 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 6 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 127-18-4 | Tetrachloroethene | 6 | U |
| 591-78-6 | 2-Hexanone | 6 | U |
| 124-48-1 | Dibromochloromethane | 6 | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 1330-20-7 | Xylene (Total) | 6 | U |
| 100-42-5 | Styrene | 6 | U |
| 75-25-2 | Bromoform | 6 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |

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EPA SAMPLE NO.

MMAU1B

# VOLATILE ORGANICS ANALYSIS DATA SHEET
# TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 5.0 (g/mL) G Lab File ID: H73FC947

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 17 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM I, COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 4.0(g/mL) G Lab File ID: H73FC948

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 16 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 7 | U |
| 75-01-4 | Vinyl Chloride | 7 | U |
| 74-83-9 | Bromomethane | 7 | U |
| 75-00-3 | Chloroethane | 7 | U |
| 75-35-4 | 1,1-Dichloroethene | 7 | U |
| 67-64-1 | Acetone | 7 | U |
| 75-15-0 | Carbon Disulfide | 7 | U |
| 75-09-2 | Methylene Chloride | 7 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 7 | U |
| 75-34-3 | 1,1-Dichloroethane | 7 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 7 | U |
| 78-93-3 | 2-Butanone | 7 | U |
| 67-66-3 | Chloroform | 7 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 7 | U |
| 56-23-5 | Carbon Tetrachloride | 7 | U |
| 71-43-2 | Benzene | 7 | U |
| 107-06-2 | 1,2-Dichloroethane | 7 | U |
| 79-01-6 | Trichloroethene | 7 | U |
| 78-87-5 | 1,2-Dichloropropane | 7 | U |
| 75-27-4 | Bromodichloromethane | 7 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 7 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 7 | U |
| 108-88-3 | Toluene | 7 | U |

FORM I, COPY

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 4.0(g/mL) G Lab File ID: H73FC948

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 16 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 10061-02-6 | trans-1,3-Dichloropropene | 7 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 7 | U |
| 127-18-4 | Tetrachloroethene | 7 | U |
| 591-78-6 | 2-Hexanone | 7 | U |
| 124-48-1 | Dibromochloromethane | 7 | U |
| 108-90-7 | Chlorobenzene | 7 | U |
| 100-41-4 | Ethylbenzene | 7 | U |
| 1330-20-7 | Xylene (Total) | 7 | U |
| 100-42-5 | Styrene | 7 | U |
| 75-25-2 | Bromoform | 7 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 7 | U |

FORM I, COPY

1F

EPA SAMPLE NO.

MMAU1C

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 4.0 (g/mL) G Lab File ID: H73FC948

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: not dec. 16 Date Analyzed: 09/19/00

GC Column: HP-VOC ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Semivolatiles
Envirosystems Lab, SDG IT2

**DATE:** November 27, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 29-30, 2000 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of eight soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID |
|---|---|
| NRUC1A | NRUL1B |
| NRUC1B | NRUW1A |
| NRUL1C | NRUG2B |
| NRUL1A | NRUG2A |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.). Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| **Yes** | **No** | |
| | **X** | Holding Times |
| | **X** | Instrument Performance Check |
| | **X** | Initial Calibration |
| **X** | | Continuing Calibration |
| **X** | | Blank Analysis |
| | **X** | Surrogate Spikes |
| | **X** | Matrix Spike/Matrix Spike Duplicate |
| | **X** | Internal Standards |
| **X** | | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**SEMIVOLATILES REVIEW**
**SDG IT2**

## I-Holding Times

*Form I*

The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: For semivolatile compounds in cooled (@4°C ± 2°C) soil samples, the maximum holding time is 14 days from sample collection to extraction and 40 days from extraction to analysis.

- All criteria were met and no qualifiers were applied.

## II-Instrument Performance Check

*Form V and chromatograms.*

GC/MS instrument performance checks are performed to ensure mass resolution, identification and, to some degree, sensitivity. The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

## III-Initial Calibration

*Form VI and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for compounds on the semivolatile target compound list (TCL). Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. Minimum relative response factor (RRF) criteria must be ≥ 0.05. Initial calibration percent relative standard deviation (%RSD) must be ≤ 15% on the average for all compounds (< 30% for CCCs).

- For initial calibration performed on 09/01/00 on instrument HP73G, 2,4-Dinitrophenol (26.0%) and 4,6-Dinitro-2-methylphenol (21.0%) were above the control limit. Since these compounds were non-detects in all the samples, no qualifiers were applied based on these outliers.

## IV-Continuing Calibration

*Form VII and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. Continuing calibration standards containing both target and surrogates compounds are analyzed at the beginning of each 12-hour analysis period following the analysis of the instrument performance check and prior to the analysis of blanks and samples. The minimum relative response factors (RRF) for semivolatile target compounds and surrogates must be ≥ 0.05. The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within ± 20% for all target compounds.

**IV-Continuing Calibration (Cont.)**

- For continuing calibration performed on 09/12/00 @09:17 on instrument HP73G, compounds 2,2'-oxybis [1-Chloropropane] (22.6%), 2-nitroaniline (24.1%), 2,6-Dinitrotlouene (24.6%), 4,6-Dinitro-2-methylphenol (39.3%), Carbazole (20.5%), Butylbenzylphthalate (28.3%), bis(2-Ethylhexyl)phthalate (36.0%) and Di-n-octylphthalate (43.3%) were outside of the control limits. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/12/00 @09:17 on instrument HP73G, compound 2,4-Dinitrophenol (53.0%) was grossly above the control limit. Positive values for this compound were qualified as estimated, "J" and non-detects "UJ".

- For continuing calibration performed on 09/13/00 @14:37 on instrument HP73G, compounds 2-Nitrophenol (22.2%), 2,6-Dinitrotoluene (24.1%), Di-n-butylphthalate (27.4%) and Butylbenzylphthalate (37.3%) were above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/13/00 @14:37 on instrument HP73G, compounds bis(2-Ethylhexyl)phthalate (50.1%) and Di-n-octylphthalate (62.4%) were grossly above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

- For continuing calibration performed on 09/14/00 @17:06 on instrument HP73G, compounds 2, 2' – oxybis (1-Chloropropane) (27.9%), N-Nitroso-di-n-propylamine (21.1%), 2-Nitrophenol (23.1%), 2-Methylnaphthalene (25.3%), 2,6-Dinitrotoluene (25.0%), 2,4-Dinitrophenol (35.1%) and 4-Nitrophenol (25.2%), Di-n-butylphthalate (29.6%), Butylbenzylphthalate (39.2%), bis(2-Ethylhexyl)phthalate (57.1%) and Di-n-octylphthalate (73.8%) were outside of the control limits. Since the samples were quantitated off a previous continuing calibration, no qualifiers were applied based on these outliers.

- For continuing calibration performed on 09/15/00 @07:59 on instrument HP73G, compounds 2-Methylnaphthalene (21.3%), Hexachlorocyclopentadiene (25.2%), 2,6-Dinitrotoluene (27.2%), 2,4-Dinitrophenol (50.0%), 4,6-Dinitro-2-methylphenol (23.1%), Di-n-butylphthalate (30.3%), Butylbenzylphthalate (37.9%), bis (2-Ethylhexyl)phthalate (52.7%), and Di-n-octylphthalate (77.8%) were above the control limit. Since the samples were quantitated off a previous continuing calibration, no qualifiers were applied based on these outliers.

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. The criteria for evaluation of blanks apply to any blank associated with the samples. The method blank must be analyzed on each GC/MS system used to analyze that specific group or set of samples. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10X) the maximum amount in any blank for the common phthalate contaminants, or 5 times the maximum amount for the other compounds. The associated rinse blank is sample number 082800R1. Table 2 summarizes the blank contamination analysis.

**TABLE 2. BLANK CONTAMINATION SUMMARY.**

| Compound / Blank Sample # | 10X Max. conc. µg/kg | Samples Affected |
|---|---|---|
| Di-n-butylphthalate / 082800R1 | 660 | All except NRUW1A |
| Diethylphthalate / SBLK02 | 780 | NRUC1A, NRUW1A |
| Bis(2-Ethylhexyl)phthalate / SBLK02 | 5700 | NRUC1A, NRUL1C, NRUL1A, NRUW1A, |

**VI-Surrogate Spikes**

*Form II and chromatograms.*

Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. Surrogate spikes are added to all samples and blanks to measure their recovery in sample and blank matrices.

- All criteria were met. No qualifiers were applied.

**VII-Matrix Spike/Spike Duplicate**

*Form III and chromatograms.*

MS/MSD are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. Specific criteria include the analyses of matrix spike and matrix spike duplicate samples at a frequency of one MS and MSD per 20 samples of similar matrix. MS and MSD recoveries and Relative Percent Differences between MS and MSD recoveries should be within the specified limits.

- Sample NRUC1B (00092519) was used for the MS/MSD analyses. All criteria were met and no qualifiers were applied.

**VIII-Internal Standards**

*Form VIII and chromatograms.*

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Internal standard area counts for samples and blanks must not vary by more than a factor of two (- 50% to + 100%) from the associated calibration standard. The retention time of the internal standards in samples and blanks must not vary by more than ± 30 seconds from the retention time of the associated calibration standard. Positive results for compounds quantitated using internal standards outside of control criteria should be qualified as estimated "J" and non-detects as "UJ".

- All criteria were met for all target compounds. No qualifiers were applied.

**IX-Quantitation Verification**

*Form 1, and chromatograms*

The accuracy of analytical results was verified through the calculation of several parameters. Any target compound below the RL and above the MDL is reported as estimated "J". Any value in excess of the upper level of the calibration range was qualified as estimated "J". Tentatively Identified Compounds were also qualified as estimated, "J".

**IX-Quantitation Verification (Cont.)**

**Sample: NRUC1A (00092518), Diethylphthalate .**

Conc. (µg/kg) =Ax * Is * Vt * DF / Ais * RRF * Ws * Fs * Vi

where:

Ax is the compound area
Is is the amount of standard injected (ng)
Vt is the volume of total extract (µL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the Relative Response Factor from the continuing calibration std.
Vi is the volume of extract injected (µL)
Ws is the initial weight (gm)
Fs is the fraction of solid

Conc. µg/kg = 41690*40 ng*1000 µL*1/296008*1.196*30 gm*0.86*2 µL = 91 ng/g = 91 µg/kg

Reported Value = 91 µg/kg
% Difference = %
Values were within 10% difference.

FORM I COPY

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUC1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092518

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC155

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 380 | U |
| 95-57-8 | 2-Chlorophenol | 380 | U |
| 95-48-7 | 2-Methylphenol | 380 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 380 | U |
| 106-44-5 | 4-Methylphenol | 380 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 380 | U |
| 67-72-1 | Hexachloroethane | 380 | U |
| 98-95-3 | Nitrobenzene | 380 | U |
| 78-59-1 | Isophorone | 380 | U |
| 88-75-5 | 2-Nitrophenol | 380 | U |
| 105-67-9 | 2,4-Dimethylphenol | 380 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1900 | U |
| 91-20-3 | Naphthalene | 380 | U |
| 106-47-8 | 4-Chloroaniline | 770 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 380 | U |
| 87-68-3 | Hexachlorobutadiene | 380 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 770 | U |
| 91-57-6 | 2-Methylnaphthalene | 380 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 380 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 380 | U |
| 91-58-7 | 2-Chloronaphthalene | 380 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethylphthalate | 380 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380 | U |
| 208-96-8 | Acenaphthylene | 380 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 380 | U |
| 51-28-5 | 2,4-Dinitrophenol | 380 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 380 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380 | U |

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUC1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092518

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC155

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 91 | J JB |
| 86-73-7 | Fluorene | 380 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 190 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 380 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380 | U |
| 118-74-1 | Hexachlorobenzene | 380 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 380 | U |
| 120-12-7 | Anthracene | 380 | U |
| 86-74-8 | Carbazole | 380 | U |
| 84-74-2 | Di-n-butylphthalate | 61 | J JB |
| 206-44-0 | Fluoranthene | 380 | U |
| 129-00-0 | Pyrene | 380 | U |
| 85-68-7 | Butylbenzylphthalate | 380 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 770 | U |
| 56-55-3 | Benzo(a)anthracene | 380 | U |
| 218-01-9 | Chrysene | 380 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 62 | J JB |
| 117-84-0 | Di-n-octylphthalate | 380 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 380 | U |
| 207-08-9 | Benzo(k)fluoranthene | 380 | U |
| 50-32-8 | Benzo(a)pyrene | 380 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 380 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 380 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 380 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 380 | U |

FORM I, COPY

1G

EPA SAMPLE NO.

NRUC1A

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092518

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC155

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0 Extraction: (Type) SONC

Number TICs found: 29

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 14.47 | 140 | J J |
| 2. | 3650-28-0 | 1,4-METHANO-1H-INDENE, OCTAH | 14.63 | 140 | NJ J |
| 3. | | UNKNOWN | 14.93 | 500 | J J |
| 4. | | UNKNOWN | 15.04 | 110 | J J |
| 5. | 470-40-6 | THUJOPSENE | 15.17 | 290 | NJ |
| 6. | | UNKNOWN | 15.68 | 210 | J J |
| 7. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 16.03 | 96 | NJ J |
| 8. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 16.10 | 280 | NJ J |
| 9. | | UNKNOWN | 16.38 | 97 | J J |
| 10. | 1000210-28-9 | 7-ISOPROPYL-1,1,4A-TRIMETHYL | 21.98 | 260 | NJ J |
| 11. | | UNKNOWN | 22.64 | 950 | J J |
| 12. | 57-11-4 | OCTADECANOIC ACID | 22.82 | 220 | NJ J |
| 13. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 23.91 | 160 | NJ J |
| 14. | 511-15-9 | 2-PHENANTHRENOL, 4B,5,6,7,8, | 23.97 | 480 | NJ J |
| 15. | 511-15-9 | 2-PHENANTHRENOL, 4B,5,6,7,8, | 24.22 | 1700 | NJ J |
| 16. | | UNKNOWN | 24.30 | 560 | J J |
| 17. | | UNKNOWN | 24.35 | 330 | J J |
| 18. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.56 | 310 | NJ J |
| 19. | | UNKNOWN | 25.75 | 160 | J J |
| 20. | 511-05-7 | 9(1H)-PHENANTHRENONE, 2,3,4, | 26.70 | 270 | NJ J |
| 21. | | UNKNOWN | 26.82 | 170 | J J |
| 22. | | UNKNOWN | 27.10 | 240 | J J |
| 23. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 330 | J J |
| 24. | | UNKNOWN | 29.83 | 160 | J J |
| 25. | 474-62-4 | CAMPESTEROL | 30.77 | 230 | NJ J |
| 26. | | UNKNOWN | 30.89 | 2200 | J J |
| 27. | 66088-17-3 | OLEAN-12-EN-1-ONE, 3-HYDROXY | 30.99 | 270 | NJ J |
| 28. | | UNKNOWN | 31.16 | 650 | J J |
| 29. | 83-47-6 | .GAMMA.-SITOSTEROL | 31.34 | 680 | NJ J |
| 30. | | | | | |

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUC1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092519

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC156

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 23 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 430 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 430 | U |
| 95-57-8 | 2-Chlorophenol | 430 | U |
| 95-48-7 | 2-Methylphenol | 430 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 430 | U |
| 106-44-5 | 4-Methylphenol | 430 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 430 | U |
| 67-72-1 | Hexachloroethane | 430 | U |
| 98-95-3 | Nitrobenzene | 430 | U |
| 78-59-1 | Isophorone | 430 | U |
| 88-75-5 | 2-Nitrophenol | 430 | U |
| 105-67-9 | 2,4-Dimethylphenol | 430 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2100 | U |
| 91-20-3 | Naphthalene | 430 | U |
| 106-47-8 | 4-Chloroaniline | 860 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 430 | U |
| 87-68-3 | Hexachlorobutadiene | 430 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 860 | U |
| 91-57-6 | 2-Methylnaphthalene | 430 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 430 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 430 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 430 | U |
| 91-58-7 | 2-Chloronaphthalene | 430 | U |
| 88-74-4 | 2-Nitroaniline | 2100 | U |
| 131-11-3 | Dimethylphthalate | 430 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 430 | U |
| 208-96-8 | Acenaphthylene | 430 | U |
| 99-09-2 | 3-Nitroaniline | 2100 | U |
| 83-32-9 | Acenaphthene | 430 | U |
| 51-28-5 | 2,4-Dinitrophenol | 430 | U UJ |
| 100-02-7 | 4-Nitrophenol | 2100 | U |
| 132-64-9 | Dibenzofuran | 430 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 430 | U |

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUC1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092519

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC156

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 23 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 430 | U |
| 86-73-7 | Fluorene | 430 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 430 | U |
| 100-01-6 | 4-Nitroaniline | 2100 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 210 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 430 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 430 | U |
| 118-74-1 | Hexachlorobenzene | 430 | U |
| 87-86-5 | Pentachlorophenol | 2100 | U |
| 85-01-8 | Phenanthrene | 430 | U |
| 120-12-7 | Anthracene | 430 | U |
| 86-74-8 | Carbazole | 430 | U |
| 84-74-2 | Di-n-butylphthalate | 67 | J JB |
| 206-44-0 | Fluoranthene | 430 | U |
| 129-00-0 | Pyrene | 430 | U |
| 85-68-7 | Butylbenzylphthalate | 430 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 860 | U |
| 56-55-3 | Benzo(a)anthracene | 430 | U |
| 218-01-9 | Chrysene | 430 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 430 | U uJ |
| 117-84-0 | Di-n-octylphthalate | 430 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 430 | U |
| 207-08-9 | Benzo(k)fluoranthene | 430 | U |
| 50-32-8 | Benzo(a)pyrene | 430 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 430 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 430 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 430 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 430 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 430 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 430 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 430 | U |

Form I, Copy

1G

EPA SAMPLE NO.

NRUC1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092519

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC156

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 23 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2 Extraction: (Type) SONC

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 20.95 | 270 | J J |
| 2. | | UNKNOWN | 22.60 | 140 | J J |
| 3. | 74685-29-3 | 9-EICOSENE, (E)- | 25.56 | 210 | NJ J |
| 4. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.71 | 250 | NJ J |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
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FORM I, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUL1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC160

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 19 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.4 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 410 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 410 | U |
| 95-57-8 | 2-Chlorophenol | 410 | U |
| 95-48-7 | 2-Methylphenol | 410 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 410 | U |
| 106-44-5 | 4-Methylphenol | 410 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 410 | U |
| 67-72-1 | Hexachloroethane | 410 | U |
| 98-95-3 | Nitrobenzene | 410 | U |
| 78-59-1 | Isophorone | 410 | U |
| 88-75-5 | 2-Nitrophenol | 410 | U |
| 105-67-9 | 2,4-Dimethylphenol | 410 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2000 | U |
| 91-20-3 | Naphthalene | 410 | U |
| 106-47-8 | 4-Chloroaniline | 810 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 410 | U |
| 87-68-3 | Hexachlorobutadiene | 410 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 810 | U |
| 91-57-6 | 2-Methylnaphthalene | 410 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 410 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 410 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 410 | U |
| 91-58-7 | 2-Chloronaphthalene | 410 | U |
| 88-74-4 | 2-Nitroaniline | 2000 | U |
| 131-11-3 | Dimethylphthalate | 410 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 410 | U |
| 208-96-8 | Acenaphthylene | 410 | U |
| 99-09-2 | 3-Nitroaniline | 2000 | U |
| 83-32-9 | Acenaphthene | 410 | U |
| 51-28-5 | 2,4-Dinitrophenol | 410 | U uJ |
| 100-02-7 | 4-Nitrophenol | 2000 | U |
| 132-64-9 | Dibenzofuran | 410 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 410 | U |

FORM 1, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUL1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC160

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 19 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.4 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 410 | U |
| 86-73-7 | Fluorene | 410 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 410 | U |
| 100-01-6 | 4-Nitroaniline | 2000 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 200 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 410 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 410 | U |
| 118-74-1 | Hexachlorobenzene | 410 | U |
| 87-86-5 | Pentachlorophenol | 2000 | U |
| 85-01-8 | Phenanthrene | 410 | U |
| 120-12-7 | Anthracene | 410 | U |
| 86-74-8 | Carbazole | 410 | U |
| 84-74-2 | Di-n-butylphthalate | 66 | J J B |
| 206-44-0 | Fluoranthene | 410 | U |
| 129-00-0 | Pyrene | 410 | U |
| 85-68-7 | Butylbenzylphthalate | 410 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 810 | U |
| 56-55-3 | Benzo(a)anthracene | 410 | U |
| 218-01-9 | Chrysene | 410 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 46 | J J B |
| 117-84-0 | Di-n-octylphthalate | 410 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 410 | U |
| 207-08-9 | Benzo(k)fluoranthene | 410 | U |
| 50-32-8 | Benzo(a)pyrene | 410 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 410 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 410 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 410 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 410 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 410 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 410 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 410 | U |

Form 1, COPY

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EPA SAMPLE NO.

NRUL1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092520

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC160

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 19 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.4 Extraction: (Type) SONC

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 57-10-3 | N-HEXADECANOIC ACID | 20.95 | 220 | NJ J |
| 2. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.56 | 220 | NJ J |
| 3. | | UNKNOWN | 27.71 | 250 | J J |
| 4. | | UNKNOWN | 29.87 | 120 | J J |
| 5. | | | | | |
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FORM I, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUL1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092521

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC161

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 9 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 360 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 360 | U |
| 95-57-8 | 2-Chlorophenol | 360 | U |
| 95-48-7 | 2-Methylphenol | 360 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 360 | U |
| 106-44-5 | 4-Methylphenol | 360 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 360 | U |
| 67-72-1 | Hexachloroethane | 360 | U |
| 98-95-3 | Nitrobenzene | 360 | U |
| 78-59-1 | Isophorone | 360 | U |
| 88-75-5 | 2-Nitrophenol | 360 | U |
| 105-67-9 | 2,4-Dimethylphenol | 360 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 360 | U |
| 106-47-8 | 4-Chloroaniline | 730 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 360 | U |
| 87-68-3 | Hexachlorobutadiene | 360 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 730 | U |
| 91-57-6 | 2-Methylnaphthalene | 360 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 360 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 360 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 360 | U |
| 91-58-7 | 2-Chloronaphthalene | 360 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 360 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 360 | U |
| 208-96-8 | Acenaphthylene | 360 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 360 | U |
| 51-28-5 | 2,4-Dinitrophenol | 360 | U uJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 360 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 360 | U |

FORM I, COPY

1D

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUL1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092521

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC161

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 9 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 360 | U |
| 86-73-7 | Fluorene | 360 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 360 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 360 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 360 | U |
| 118-74-1 | Hexachlorobenzene | 360 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 360 | U |
| 120-12-7 | Anthracene | 360 | U |
| 86-74-8 | Carbazole | 360 | U |
| 84-74-2 | Di-n-butylphthalate | 69 | J FB |
| 206-44-0 | Fluoranthene | 360 | U |
| 129-00-0 | Pyrene | 360 | U |
| 85-68-7 | Butylbenzylphthalate | 360 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 730 | U |
| 56-55-3 | Benzo(a)anthracene | 360 | U |
| 218-01-9 | Chrysene | 360 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1700 | F B |
| 117-84-0 | Di-n-octylphthalate | 360 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 360 | U |
| 207-08-9 | Benzo(k)fluoranthene | 360 | U |
| 50-32-8 | Benzo(a)pyrene | 360 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 360 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 360 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 360 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 360 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 360 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 360 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 360 | U |

Form 1, COPY

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EPA SAMPLE NO.

NRUL1A

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092521

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC161

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 9 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

Number TICs found: 28

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 7785-70-8 | 1R-.ALPHA.-PINENE | 7.12 | 210 | NJ J |
| 2. | | UNKNOWN | 13.86 | 150 | J J |
| 3. | | UNKNOWN | 15.01 | 110 | J J |
| 4. | | UNKNOWN | 19.20 | 240 | J J |
| 5. | | UNKNOWN | 21.39 | 90 | J J |
| 6. | 60-33-3 | 9,12-OCTADECADIENOIC ACID (Z | 22.56 | 97 | NJ J |
| 7. | | UNKNOWN | 22.60 | 160 | J J |
| 8. | 57-11-4 | OCTADECANOIC ACID | 22.81 | 250 | NJ J |
| 9. | | UNKNOWN | 23.23 | 110 | J J |
| 10. | | UNKNOWN | 23.49 | 98 | J J |
| 11. | | UNKNOWN | 23.57 | 180 | J J |
| 12. | | UNKNOWN | 23.88 | 95 | J J |
| 13. | | UNKNOWN | 24.22 | 200 | J J |
| 14. | | UNKNOWN | 24.55 | 130 | J J |
| 15. | | UNKNOWN | 24.94 | 150 | J J |
| 16. | 7390-81-0 | OXIRANE, HEXADECYL- | 25.07 | 110 | NJ J |
| 17. | | UNKNOWN | 25.48 | 84 | J J |
| 18. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.56 | 370 | NJ J |
| 19. | | UNKNOWN | 27.10 | 370 | J J |
| 20. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.73 | 210 | NJ J |
| 21. | 7098-21-7 | TRITETRACONTANE | 27.82 | 100 | NJ J |
| 22. | | UNKNOWN | 28.07 | 94 | J J |
| 23. | | UNKNOWN | 28.10 | 160 | J J |
| 24. | | UNKNOWN | 29.80 | 110 | J J |
| 25. | | UNKNOWN | 29.89 | 1300 | J J |
| 26. | | UNKNOWN | 31.13 | 100 | J J |
| 27. | | UNKNOWN | 31.22 | 160 | J J |
| 28. | 83-47-6 | .GAMMA.-SITOSTEROL | 31.35 | 760 | NJ J |
| 29. | | | | | |
| 30. | | | | | |

FORM I, COPY

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUL1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC174

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 16 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 390 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 390 | U |
| 95-57-8 | 2-Chlorophenol | 390 | U |
| 95-48-7 | 2-Methylphenol | 390 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 390 | U |
| 106-44-5 | 4-Methylphenol | 390 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 390 | U |
| 67-72-1 | Hexachloroethane | 390 | U |
| 98-95-3 | Nitrobenzene | 390 | U |
| 78-59-1 | Isophorone | 390 | U |
| 88-75-5 | 2-Nitrophenol | 390 | U |
| 105-67-9 | 2,4-Dimethylphenol | 390 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1900 | U |
| 91-20-3 | Naphthalene | 390 | U |
| 106-47-8 | 4-Chloroaniline | 790 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 390 | U |
| 87-68-3 | Hexachlorobutadiene | 390 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 790 | U |
| 91-57-6 | 2-Methylnaphthalene | 390 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 390 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 390 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 390 | U |
| 91-58-7 | 2-Chloronaphthalene | 390 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethylphthalate | 390 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 390 | U |
| 208-96-8 | Acenaphthylene | 390 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 390 | U |
| 51-28-5 | 2,4-Dinitrophenol | 390 | U uJ |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 390 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 390 | U |

FORM I, Copy

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUL1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC174

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 16 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 390 | U |
| 86-73-7 | Fluorene | 390 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 390 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 190 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 390 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 390 | U |
| 118-74-1 | Hexachlorobenzene | 390 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 390 | U |
| 120-12-7 | Anthracene | 390 | U |
| 86-74-8 | Carbazole | 390 | U |
| 84-74-2 | Di-n-butylphthalate | 70 | J ZB |
| 206-44-0 | Fluoranthene | 390 | U |
| 129-00-0 | Pyrene | 390 | U |
| 85-68-7 | Butylbenzylphthalate | 390 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 790 | U |
| 56-55-3 | Benzo(a)anthracene | 390 | U |
| 218-01-9 | Chrysene | 390 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 390 | U uJ |
| 117-84-0 | Di-n-octylphthalate | 390 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 390 | U |
| 207-08-9 | Benzo(k)fluoranthene | 390 | U |
| 50-32-8 | Benzo(a)pyrene | 390 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 390 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 390 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 390 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 390 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 390 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 390 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 390 | U |

FORM I, COPY

1G

EPA SAMPLE NO.

NRUL1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092522

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC174

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 16 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 20.94 | 120 | J J |
| 2. | | UNKNOWN | 25.48 | 89 | J J |
| 3. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.57 | 190 | NJ J |
| 4. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 270 | NJ J |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
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| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
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| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

Form I, Copy

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUW1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092523

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC196

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N)N Date Extracted: 09/14/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 380 | U |
| 95-57-8 | 2-Chlorophenol | 380 | U |
| 95-48-7 | 2-Methylphenol | 380 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 380 | U |
| 106-44-5 | 4-Methylphenol | 380 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 380 | U |
| 67-72-1 | Hexachloroethane | 380 | U |
| 98-95-3 | Nitrobenzene | 380 | U |
| 78-59-1 | Isophorone | 380 | U |
| 88-75-5 | 2-Nitrophenol | 380 | U |
| 105-67-9 | 2,4-Dimethylphenol | 380 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1900 | U |
| 91-20-3 | Naphthalene | 380 | U |
| 106-47-8 | 4-Chloroaniline | 770 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 380 | U |
| 87-68-3 | Hexachlorobutadiene | 380 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 770 | U |
| 91-57-6 | 2-Methylnaphthalene | 380 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 380 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 380 | U |
| 91-58-7 | 2-Chloronaphthalene | 380 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethylphthalate | 380 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380 | U |
| 208-96-8 | Acenaphthylene | 380 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 380 | U |
| 51-28-5 | 2,4-Dinitrophenol | 380 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 380 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380 | U |

FORM I, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092523

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC196

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N)N Date Extracted: 09/14/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 130 | J J B |
| 86-73-7 | Fluorene | 380 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 190 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 380 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380 | U |
| 118-74-1 | Hexachlorobenzene | 380 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 380 | U |
| 120-12-7 | Anthracene | 380 | U |
| 86-74-8 | Carbazole | 380 | U |
| 84-74-2 | Di-n-butylphthalate | 810 | J |
| 206-44-0 | Fluoranthene | 380 | U |
| 129-00-0 | Pyrene | 380 | U |
| 85-68-7 | Butylbenzylphthalate | 380 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 770 | U |
| 56-55-3 | Benzo(a)anthracene | 380 | U |
| 218-01-9 | Chrysene | 380 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 100 | J J B |
| 117-84-0 | Di-n-octylphthalate | 380 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 380 | U |
| 207-08-9 | Benzo(k)fluoranthene | 380 | U |
| 50-32-8 | Benzo(a)pyrene | 380 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 380 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 380 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 380 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 380 | U |

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EPA SAMPLE NO.

NRUW1A

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092523

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC196

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 14 Decanted: (Y/N) N Date Extracted:09/14/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Extraction: (Type) SONC

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 6.79 | 220 | JB J |
| 2. | 1000154-28-6 | CYCLOPENTENE, 1,2,3,4,5-PENT | 6.83 | 120 | NJB J |
| 3. | | UNKNOWN | 7.39 | 99 | J J |
| 4. | | UNKNOWN | 7.44 | 170 | JB J |
| 5. | | UNKNOWN | 7.54 | 450 | JB J |
| 6. | | UNKNOWN | 20.06 | 120 | J J |
| 7. | 57-10-3 | N-HEXADECANOIC ACID | 20.95 | 330 | NJ J |
| 8. | | UNKNOWN | 22.45 | 88 | J J |
| 9. | 629-96-9 | 1-EICOSANOL | 25.60 | 240 | NJ J |
| 10. | | UNKNOWN | 27.13 | 200 | J J |
| 11. | 7683-64-9 | SQUALENE | 28.07 | 110 | NJ J |
| 12. | | UNKNOWN | 28.10 | 230 | J J |
| 13. | | UNKNOWN | 28.56 | 300 | J J |
| 14. | | UNKNOWN | 29.83 | 200 | J J |
| 15. | | UNKNOWN | 29.90 | 360 | J J |
| 16. | 57-87-4 | ERGOSTEROL | 30.67 | 150 | NJ J |
| 17. | 474-62-4 | CAMPESTEROL | 30.79 | 89 | NJ J |
| 18. | | UNKNOWN | 30.87 | 630 | J J |
| 19. | | UNKNOWN | 30.99 | 180 | J J |
| 20. | | UNKNOWN | 31.15 | 110 | J J |
| 21. | 83-47-6 | .GAMMA.-SITOSTEROL | 31.36 | 350 | NJ J |
| 22. | | UNKNOWN | 31.60 | 140 | J J |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
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FORM I, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC176

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U uJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

Form I, Copy

1D

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUG2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC176

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 63 | J ZB |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 370 | U uJ |
| 117-84-0 | Di-n-octylphthalate | 370 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

Form I, Copy

1G

EPA SAMPLE NO.

NRUG2B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092524

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC176

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.50 | 120 | J J |
| 2. | | UNKNOWN | 5.67 | 170 | J J |
| 3. | | UNKNOWN | 6.79 | 300 | J J |
| 4. | | UNKNOWN | 7.01 | 94 | J J |
| 5. | | UNKNOWN | 7.39 | 110 | J J |
| 6. | | UNKNOWN | 7.44 | 340 | J J |
| 7. | | UNKNOWN | 7.54 | 200 | J J |
| 8. | | UNKNOWN | 8.70 | 81 | J J |
| 9. | 57-10-3 | N-HEXADECANOIC ACID | 20.94 | 190 | NJ J |
| 10. | | UNKNOWN | 25.47 | 78 | J J |
| 11. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.57 | 260 | NJ J |
| 12. | 295-17-0 | CYCLOTETRADECANE | 27.11 | 160 | NJ J |
| 13. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 270 | NJ J |
| 14. | 13287-23-5 | HEPTADECANE, 8-METHYL- | 29.82 | 80 | NJ J |
| 15. | 1119-87-5 | 1,2-DODECANEDIOL | 29.88 | 92 | NJ J |
| 16. | | | | | |
| 17. | | | | | |
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| 20. | | | | | |
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Form I, copy

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092525

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC177

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 13 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 380 | U |
| 95-57-8 | 2-Chlorophenol | 380 | U |
| 95-48-7 | 2-Methylphenol | 380 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 380 | U |
| 106-44-5 | 4-Methylphenol | 380 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 380 | U |
| 67-72-1 | Hexachloroethane | 380 | U |
| 98-95-3 | Nitrobenzene | 380 | U |
| 78-59-1 | Isophorone | 380 | U |
| 88-75-5 | 2-Nitrophenol | 380 | U |
| 105-67-9 | 2,4-Dimethylphenol | 380 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 380 | U |
| 106-47-8 | 4-Chloroaniline | 760 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 380 | U |
| 87-68-3 | Hexachlorobutadiene | 380 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 760 | U |
| 91-57-6 | 2-Methylnaphthalene | 380 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 380 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 380 | U |
| 91-58-7 | 2-Chloronaphthalene | 380 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 380 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380 | U |
| 208-96-8 | Acenaphthylene | 380 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 380 | U |
| 51-28-5 | 2,4-Dinitrophenol | 380 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 380 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092525

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC177

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 13 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 380 | U |
| 86-73-7 | Fluorene | 380 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 380 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380 | U |
| 118-74-1 | Hexachlorobenzene | 380 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 380 | U |
| 120-12-7 | Anthracene | 380 | U |
| 86-74-8 | Carbazole | 380 | U |
| 84-74-2 | Di-n-butylphthalate | 55 | J JB |
| 206-44-0 | Fluoranthene | 380 | U |
| 129-00-0 | Pyrene | 380 | U |
| 85-68-7 | Butylbenzylphthalate | 380 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 760 | U |
| 56-55-3 | Benzo(a)anthracene | 380 | U |
| 218-01-9 | Chrysene | 380 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 39 | J JB |
| 117-84-0 | Di-n-octylphthalate | 380 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 380 | U |
| 207-08-9 | Benzo(k)fluoranthene | 380 | U |
| 50-32-8 | Benzo(a)pyrene | 380 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 380 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 380 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 380 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 380 | U |

Form I, Copy

1G

EPA SAMPLE NO.

NRUG2A

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT2

Lab Code: ENVSYS Case No.: IT2 SAS No.: SDG No.: IT2

Matrix: (soil/water) SOIL Lab Sample ID: 00092525

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC177

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 13 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.67 | 160 | J J |
| 2. | | UNKNOWN | 6.79 | 270 | J J |
| 3. | | UNKNOWN | 7.39 | 99 | J J |
| 4. | | UNKNOWN | 7.44 | 300 | J J |
| 5. | | UNKNOWN | 7.54 | 170 | J J |
| 6. | | UNKNOWN | 22.61 | 230 | J J |
| 7. | 57-11-4 | OCTADECANOIC ACID | 22.81 | 110 | NJ J |
| 8. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.57 | 190 | NJ J |
| 9. | | UNKNOWN | 27.11 | 230 | J J |
| 10. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 180 | NJ J |
| 11. | 111-02-4 | 2,6,10,14,18,22-TETRACOSAHEX | 28.07 | 93 | NJ J |
| 12. | | UNKNOWN HYDROCARBON | 29.83 | 210 | J J |
| 13. | | UNKNOWN | 29.88 | 280 | J J |
| 14. | | UNKNOWN | 30.76 | 79 | J J |
| 15. | 14021-23-9 | D-FRIEDOOLEAN-14-ENE, 3-METH | 30.86 | 250 | J J |
| 16. | | UNKNOWN HYDROCARBON | 31.05 | 100 | J J |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
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**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Semivolatiles
Envirosystems Lab, SDG IT3

**DATE:** November 27, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the August 30, 2000 sampling event. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of five soil samples were validated. The sample IDs are:

| Field Sample ID |
|---|
| NRUW1B |
| NRUW1C |
| NRUG2C |
| NRUG2BD |
| NRUG2CD |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and the *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.). Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| | X | Instrument Performance Check |
| | X | Initial Calibration |
| X | | Continuing Calibration |
| X | | Blank Analysis |
| | X | Surrogate Spikes |
| | X | Internal Standards |
| X | | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**SEMIVOLATILES REVIEW**
**SDG IT3**

## I-Holding Times

*Form I*

The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: For semivolatile compounds in cooled (@4°C ± 2°C) water samples, the maximum holding time is 14 days from sample collection to extraction and 40 days from extraction to analysis.

- All criteria were met and no qualifiers were applied.

## II-Instrument Performance Check

*Form V and chromatograms.*

GC/MS instrument performance checks are performed to ensure mass resolution, identification and, to some degree, sensitivity. The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

## III-Initial Calibration

*Form VI and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for compounds on the semivolatile target compound list (TCL). Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum relative response factor (RRF) criteria must be ≥ 0.05. Initial calibration percent relative standard deviation (%RSD) must be ≤ 15% on the average for all compounds (< 30% for CCCs).

- For initial calibration performed on 09/01/00 on instrument HP73G, %RSD for compounds 2,4-Dinitrophenol (26.0%) and 4,6-Dinitro-2-methylphenol (21.0%) were above the control limit. Since these compounds were non-detects in all the samples, no qualifiers were applied based on these outliers.

## IV-Continuing Calibration

*Form VII and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. Continuing calibration standards containing both target and surrogates compounds are analyzed at the beginning of each 12-hour analysis period following the analysis of the instrument performance check and prior to the analysis of blanks and samples. The minimum Relative Response Factors (RRF) for semivolatile target compounds and surrogates must be ≥ 0.05. The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within ± 20% for all target compounds.

**IV-Continuing Calibration (Cont.)**

- For continuing calibration performed on 09/13/00 @14:37 on instrument HP73G, %D for compounds 2-Nitrophenol (22.2%), 2,6-Dinitrotoluene (24.1%), Di-n-butylphthalate (27.4%) and Butylbenzylphthalate (37.3%) were above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/13/00 @14:37 on instrument HP73G, %D for compounds bis (2-Ethylhexyl) phthalate (50.1%) and Di-n-octylphthalate (62.4%) were grossly above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

- For continuing calibration performed on 09/14/00 @17:06 on instrument HP73G, %D for compounds 2,2'-oxybis (1-Chloropropane) (27.9%), N-Nitroso-di-n-propylamine (21.1%), 2-Nitrophenol (23.1%), 2-Methylnaphthalene (25.3%), 2,6-Dinitrotoluene (25.0%), 2,4-Dinitrophenol (35.1%), 4-Nitrophenol(25.2%), Di-n-butylphthalate (29.6%), Butylbenzylphthalate (39.2%) were above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/14/00 @17:06 on instrument HP73G, %D for compounds bis (2-Ethylhexyl) phthalate (57.1%) and Di-n-octylphthalate (73.8%) were grossly above the control limit. Since these compounds had already been qualified "UJ" in all the samples owing to a previous continuing calibration criteria failure, no further qualification was necessary.

- For continuing calibration performed on 09/15/00 @07:59 on instrument HP73G, %D for compounds Hexachlorocyclopentadiene (25.2%), 2,6-Dinitrotoluene (27.2%), 2,4-Dinitrophenol (50.0%), 4,6-Dinitro-2-methylphenol (23.1%), Di-n-butylphthalate (30.3%), Butylbenzylphthalate (37.9%), bis (2-Ethylhexyl) phthalate (52.7%) and Di-n-octylphthalate (77.8%) were either above or grossly above the control limits. Since the samples were quantitated off a previous continuing calibration, no qualifiers were applied based on these outliers.

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. The criteria for evaluation of blanks apply to any blank associated with the samples. The method blank must be analyzed on each GC/MS system used to analyze that specific group or set of samples. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10X) the maximum amount in any blank for the common phthalate contaminants, or 5 times the maximum amount for the other compounds. Table 2 summarizes the blank contamination analysis. The associated rinse blank was sample number 082800R1.

**TABLE 2. BLANK CONTAMINATION SUMMARY.**

| Compound / Blank Sample # | 10X Max. conc. µg/kg | Samples Affected |
|---|---|---|
| Di-n-butylphthalate / 082800R1 | 660 | All |
| Bis(2-Ethylhexyl)phthalate / SBLK02 | 5700 | NRUG2BD, NRUG2CD |

**VI-Surrogate Spikes**
*Form II and chromatograms.*
Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. Surrogate spikes are added to all samples and blanks to measure their recovery in sample and blank matrices.

- All criteria were met and no qualifiers were applied.

**VII-Internal Standards**
*Form VIII and chromatograms.*
Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Internal standard area counts for samples and blanks must not vary by more than a factor of two (- 50% to + 100%) from the associated calibration standard. The retention time of the internal standards in samples and blanks must not vary by more than ± 30 seconds from the retention time of the associated calibration standard. Positive results for compounds quantitated using internal standards outside of control criteria should be qualified as estimated "J" and non-detects as "UJ".

- All criteria were met. No qualifiers were applied.

**VIII-Quantitation Verification**
*Form 1, and chromatograms*
The accuracy of analytical results was verified through the calculation of several parameters. Any target compound below the RL and above the MDL is reported as estimated "J". Any value in excess of the upper level of the calibration range was qualified as estimated "J". Tentatively Identified Compounds were also qualified as estimated, "J".

**Sample: NRUW1C (00092530), Di-n-butylphthalate**

Conc. (µg/kg) = (Ax * Is * Vt * DF) / (Ais * RRF * Ws * Fs * Vi)

where:
Ax is the compound area
Is is the amount of standard injected (ng)
Vt is the volume of total extract (µL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the Relative Response Factor from the continuing calibration std.
Vi is the volume of extract injected (µL)
Ws is the initial weight (gm)
Fs is the fraction of solid

Conc. µg/kg = (52169*40 ng*1000 µL*1) / (506961*1.367*30 gm*0.75*2 µL) = 67 µg/kg

Reported Value = 67 µg/kg
% Difference = 0%
Values were within 10% difference.

FORM I, COPY

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC178

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 21 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 420 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 420 | U |
| 95-57-8 | 2-Chlorophenol | 420 | U |
| 95-48-7 | 2-Methylphenol | 420 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 420 | U |
| 106-44-5 | 4-Methylphenol | 420 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 420 | U |
| 67-72-1 | Hexachloroethane | 420 | U |
| 98-95-3 | Nitrobenzene | 420 | U |
| 78-59-1 | Isophorone | 420 | U |
| 88-75-5 | 2-Nitrophenol | 420 | U |
| 105-67-9 | 2,4-Dimethylphenol | 420 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2000 | U |
| 91-20-3 | Naphthalene | 420 | U |
| 106-47-8 | 4-Chloroaniline | 840 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 420 | U |
| 87-68-3 | Hexachlorobutadiene | 420 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 840 | U |
| 91-57-6 | 2-Methylnaphthalene | 420 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 420 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 420 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 420 | U |
| 91-58-7 | 2-Chloronaphthalene | 420 | U |
| 88-74-4 | 2-Nitroaniline | 2000 | U |
| 131-11-3 | Dimethylphthalate | 420 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 420 | U |
| 208-96-8 | Acenaphthylene | 420 | U |
| 99-09-2 | 3-Nitroaniline | 2000 | U |
| 83-32-9 | Acenaphthene | 420 | U |
| 51-28-5 | 2,4-Dinitrophenol | 420 | U |
| 100-02-7 | 4-Nitrophenol | 2000 | U |
| 132-64-9 | Dibenzofuran | 420 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 420 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC178

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 21 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 420 | U |
| 86-73-7 | Fluorene | 420 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 420 | U |
| 100-01-6 | 4-Nitroaniline | 2000 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 200 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 420 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 420 | U |
| 118-74-1 | Hexachlorobenzene | 420 | U |
| 87-86-5 | Pentachlorophenol | 2000 | U |
| 85-01-8 | Phenanthrene | 420 | U |
| 120-12-7 | Anthracene | 420 | U |
| 86-74-8 | Carbazole | 420 | U |
| 84-74-2 | Di-n-butylphthalate | 48 | J PB |
| 206-44-0 | Fluoranthene | 420 | U |
| 129-00-0 | Pyrene | 420 | U |
| 85-68-7 | Butylbenzylphthalate | 420 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 840 | U |
| 56-55-3 | Benzo(a)anthracene | 420 | U |
| 218-01-9 | Chrysene | 420 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 420 | U UJ |
| 117-84-0 | Di-n-octylphthalate | 420 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 420 | U |
| 207-08-9 | Benzo(k)fluoranthene | 420 | U |
| 50-32-8 | Benzo(a)pyrene | 420 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 420 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 420 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 420 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 420 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 420 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 420 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 420 | U |

FORM I, COPY

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EPA SAMPLE NO.

NRUW1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092529

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC178

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 21 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.66 | 150 | JJ |
| 2. | | UNKNOWN | 6.79 | 300 | JJ |
| 3. | | UNKNOWN | 7.01 | 88 | JJ |
| 4. | | UNKNOWN | 7.39 | 110 | JJ |
| 5. | | UNKNOWN | 7.44 | 350 | JJ |
| 6. | | UNKNOWN | 7.54 | 180 | JJ |
| 7. | 74685-33-9 | 3-EICOSENE, (E)- | 25.58 | 85 | NJJ |
| 8. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 150 | NJJ |
| 9. | | UNKNOWN | 29.52 | 150 | JJ |
| 10. | | UNKNOWN | 30.87 | 98 | JJ |
| 11. | | | | | |
| 12. | | | | | |
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FORM I, COPY

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC179

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 25 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 440 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 440 | U |
| 95-57-8 | 2-Chlorophenol | 440 | U |
| 95-48-7 | 2-Methylphenol | 440 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 440 | U |
| 106-44-5 | 4-Methylphenol | 440 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 440 | U |
| 67-72-1 | Hexachloroethane | 440 | U |
| 98-95-3 | Nitrobenzene | 440 | U |
| 78-59-1 | Isophorone | 440 | U |
| 88-75-5 | 2-Nitrophenol | 440 | U |
| 105-67-9 | 2,4-Dimethylphenol | 440 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2100 | U |
| 91-20-3 | Naphthalene | 440 | U |
| 106-47-8 | 4-Chloroaniline | 880 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 440 | U |
| 87-68-3 | Hexachlorobutadiene | 440 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 880 | U |
| 91-57-6 | 2-Methylnaphthalene | 440 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 440 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 440 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 440 | U |
| 91-58-7 | 2-Chloronaphthalene | 440 | U |
| 88-74-4 | 2-Nitroaniline | 2100 | U |
| 131-11-3 | Dimethylphthalate | 440 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 440 | U |
| 208-96-8 | Acenaphthylene | 440 | U |
| 99-09-2 | 3-Nitroaniline | 2100 | U |
| 83-32-9 | Acenaphthene | 440 | U |
| 51-28-5 | 2,4-Dinitrophenol | 440 | U |
| 100-02-7 | 4-Nitrophenol | 2100 | U |
| 132-64-9 | Dibenzofuran | 440 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 440 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUW1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC179

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 25 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 440 | U |
| 86-73-7 | Fluorene | 440 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 440 | U |
| 100-01-6 | 4-Nitroaniline | 2100 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 210 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 440 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 440 | U |
| 118-74-1 | Hexachlorobenzene | 440 | U |
| 87-86-5 | Pentachlorophenol | 2100 | U |
| 85-01-8 | Phenanthrene | 440 | U |
| 120-12-7 | Anthracene | 440 | U |
| 86-74-8 | Carbazole | 440 | U |
| 84-74-2 | Di-n-butylphthalate | 67 | J FB |
| 206-44-0 | Fluoranthene | 440 | U |
| 129-00-0 | Pyrene | 440 | U |
| 85-68-7 | Butylbenzylphthalate | 440 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 880 | U |
| 56-55-3 | Benzo(a)anthracene | 440 | U |
| 218-01-9 | Chrysene | 440 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 440 | U uJ |
| 117-84-0 | Di-n-octylphthalate | 440 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 440 | U |
| 207-08-9 | Benzo(k)fluoranthene | 440 | U |
| 50-32-8 | Benzo(a)pyrene | 440 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 440 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 440 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 440 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 440 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 440 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 440 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 440 | U |

form 1, copy

1G

EPA SAMPLE NO.

NRUW1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092530

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC179

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 25 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Extraction: (Type) SONC

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.66 | 210 | J J |
| 2. | | UNKNOWN | 6.79 | 340 | J J |
| 3. | | UNKNOWN | 7.01 | 97 | J J |
| 4. | | UNKNOWN | 7.39 | 130 | J J |
| 5. | | UNKNOWN | 7.44 | 390 | J J |
| 6. | | UNKNOWN | 7.53 | 210 | J J |
| 7. | 57-10-3 | N-HEXADECANOIC ACID | 20.94 | 110 | NJ J |
| 8. | | UNKNOWN | 25.58 | 290 | J J |
| 9. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 180 | NJ J |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC180

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 28 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 460 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 460 | U |
| 95-57-8 | 2-Chlorophenol | 460 | U |
| 95-48-7 | 2-Methylphenol | 460 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 460 | U |
| 106-44-5 | 4-Methylphenol | 460 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 460 | U |
| 67-72-1 | Hexachloroethane | 460 | U |
| 98-95-3 | Nitrobenzene | 460 | U |
| 78-59-1 | Isophorone | 460 | U |
| 88-75-5 | 2-Nitrophenol | 460 | U |
| 105-67-9 | 2,4-Dimethylphenol | 460 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2200 | U |
| 91-20-3 | Naphthalene | 460 | U |
| 106-47-8 | 4-Chloroaniline | 920 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 460 | U |
| 87-68-3 | Hexachlorobutadiene | 460 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 920 | U |
| 91-57-6 | 2-Methylnaphthalene | 460 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 460 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 460 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 460 | U |
| 91-58-7 | 2-Chloronaphthalene | 460 | U |
| 88-74-4 | 2-Nitroaniline | 2200 | U |
| 131-11-3 | Dimethylphthalate | 460 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 460 | U |
| 208-96-8 | Acenaphthylene | 460 | U |
| 99-09-2 | 3-Nitroaniline | 2200 | U |
| 83-32-9 | Acenaphthene | 460 | U |
| 51-28-5 | 2,4-Dinitrophenol | 460 | U |
| 100-02-7 | 4-Nitrophenol | 2200 | U |
| 132-64-9 | Dibenzofuran | 460 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 460 | U |

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Form I, copy

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUG2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC180

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 28 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 460 | U |
| 86-73-7 | Fluorene | 460 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 460 | U |
| 100-01-6 | 4-Nitroaniline | 2200 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 220 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 460 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 460 | U |
| 118-74-1 | Hexachlorobenzene | 460 | U |
| 87-86-5 | Pentachlorophenol | 2200 | U |
| 85-01-8 | Phenanthrene | 460 | U |
| 120-12-7 | Anthracene | 460 | U |
| 86-74-8 | Carbazole | 460 | U |
| 84-74-2 | Di-n-butylphthalate | 65 | J FB |
| 206-44-0 | Fluoranthene | 460 | U |
| 129-00-0 | Pyrene | 460 | U |
| 85-68-7 | Butylbenzylphthalate | 460 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 920 | U |
| 56-55-3 | Benzo(a)anthracene | 460 | U |
| 218-01-9 | Chrysene | 460 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 460 | U uJ |
| 117-84-0 | Di-n-octylphthalate | 460 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 460 | U |
| 207-08-9 | Benzo(k)fluoranthene | 460 | U |
| 50-32-8 | Benzo(a)pyrene | 460 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 460 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 460 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 460 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 460 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 460 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 460 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 460 | U |

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FORM I, COPY

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EPA SAMPLE NO.

NRUG2C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092532

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC180

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 28 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/13/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.7 Extraction: (Type) SONC

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.66 | 230 | J J |
| 2. | | UNKNOWN | 6.78 | 290 | J J |
| 3. | | UNKNOWN | 7.39 | 120 | J J |
| 4. | | UNKNOWN | 7.44 | 360 | J J |
| 5. | | UNKNOWN | 7.54 | 250 | J J |
| 6. | | UNKNOWN | 20.95 | 94 | J J |
| 7. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.59 | 160 | NJ J |
| 8. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.71 | 210 | NJ J |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
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FORM I, COPY

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

NRUG2BD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC181

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

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FORM I, COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2BD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC181

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 63 | J B |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 43 | J B |
| 117-84-0 | Di-n-octylphthalate | 370 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

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Form I, Copy

1G

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NRUG2BD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092536

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC181

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6 Extraction: (Type) SONC

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.66 | 200 | J J |
| 2. | | UNKNOWN | 6.79 | 330 | J J |
| 3. | | UNKNOWN | 7.01 | 88 | J J |
| 4. | | UNKNOWN | 7.39 | 120 | J J |
| 5. | | UNKNOWN | 7.44 | 390 | J J |
| 6. | | UNKNOWN | 7.54 | 210 | J J |
| 7. | | UNKNOWN | 20.94 | 110 | J J |
| 8. | | UNKNOWN | 25.47 | 84 | J J |
| 9. | 1454-85-9 | 1-HEPTADECANOL | 25.59 | 140 | NJ J |
| 10. | | UNKNOWN | 27.13 | 98 | J J |
| 11. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 230 | NJ J |
| 12. | | UNKNOWN | 29.89 | 290 | J J |
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Form I, Cary

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092541

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC182

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 18 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 400 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 400 | U |
| 95-57-8 | 2-Chlorophenol | 400 | U |
| 95-48-7 | 2-Methylphenol | 400 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 400 | U |
| 106-44-5 | 4-Methylphenol | 400 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 400 | U |
| 67-72-1 | Hexachloroethane | 400 | U |
| 98-95-3 | Nitrobenzene | 400 | U |
| 78-59-1 | Isophorone | 400 | U |
| 88-75-5 | 2-Nitrophenol | 400 | U |
| 105-67-9 | 2,4-Dimethylphenol | 400 | U |
| 120-83-2 | 2,4-Dichlorophenol | 2000 | U |
| 91-20-3 | Naphthalene | 400 | U |
| 106-47-8 | 4-Chloroaniline | 800 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 400 | U |
| 87-68-3 | Hexachlorobutadiene | 400 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 800 | U |
| 91-57-6 | 2-Methylnaphthalene | 400 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 400 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 400 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 400 | U |
| 91-58-7 | 2-Chloronaphthalene | 400 | U |
| 88-74-4 | 2-Nitroaniline | 2000 | U |
| 131-11-3 | Dimethylphthalate | 400 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 400 | U |
| 208-96-8 | Acenaphthylene | 400 | U |
| 99-09-2 | 3-Nitroaniline | 2000 | U |
| 83-32-9 | Acenaphthene | 400 | U |
| 51-28-5 | 2,4-Dinitrophenol | 400 | U |
| 100-02-7 | 4-Nitrophenol | 2000 | U |
| 132-64-9 | Dibenzofuran | 400 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 400 | U |

FORM 1, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NRUG2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092541

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC182

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 18 Decanted: (Y/N)N Date Extracted: 09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 400 | U |
| 86-73-7 | Fluorene | 400 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 400 | U |
| 100-01-6 | 4-Nitroaniline | 2000 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 200 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 400 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 400 | U |
| 118-74-1 | Hexachlorobenzene | 400 | U |
| 87-86-5 | Pentachlorophenol | 2000 | U |
| 85-01-8 | Phenanthrene | 400 | U |
| 120-12-7 | Anthracene | 400 | U |
| 86-74-8 | Carbazole | 400 | U |
| 84-74-2 | Di-n-butylphthalate | 63 | J PB |
| 206-44-0 | Fluoranthene | 400 | U |
| 129-00-0 | Pyrene | 400 | U |
| 85-68-7 | Butylbenzylphthalate | 400 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 800 | U |
| 56-55-3 | Benzo(a)anthracene | 400 | U |
| 218-01-9 | Chrysene | 400 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 62 | J PB |
| 117-84-0 | Di-n-octylphthalate | 400 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 400 | U |
| 207-08-9 | Benzo(k)fluoranthene | 400 | U |
| 50-32-8 | Benzo(a)pyrene | 400 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 400 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 400 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 400 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 400 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 400 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 400 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 400 | U |

01298

FORM I, COPY

1G

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NRUG2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT3

Lab Code: ENVSYS Case No.: IT3 SAS No.: SDG No.: IT3

Matrix: (soil/water) SOIL Lab Sample ID: 00092541

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC182

Level: (low/med) LOW Date Received: 09/01/00

% Moisture: 18 Decanted: (Y/N) N Date Extracted:09/08/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/14/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.6 Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 5.64 | 260 | J J |
| 2. | | UNKNOWN | 6.78 | 460 | J J |
| 3. | | UNKNOWN | 7.01 | 150 | J J |
| 4. | | UNKNOWN | 7.06 | 110 | J J |
| 5. | | UNKNOWN | 7.39 | 190 | J J |
| 6. | | UNKNOWN | 7.44 | 540 | J J |
| 7. | | UNKNOWN | 7.53 | 280 | J J |
| 8. | | UNKNOWN | 25.47 | 82 | J J |
| 9. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.59 | 90 | NJ J |
| 10. | 301-02-0 | 9-OCTADECENAMIDE, (Z)- | 27.72 | 200 | NJ J |
| 11. | | | | | |
| 12. | | | | | |
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**MEMORANDUM**

**TO:** Davida Trumbo

**FROM:** Kweku Acquah

**SUBJECT:** Radford Army Ammunition Plant Data Validation - Semivolatiles
Envirosystems Lab, SDG IT5

**DATE:** November 27, 2000

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The purpose of this memorandum is to present the data validation report for the samples collected at the Radford Army Ammunition Plant during the September 6-7, 2000 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SOW method OLM 04.2 (May 1999). A total of eight soil samples were validated. The sample IDs are:

| Field Sample ID | Field Sample ID |
|---|---|
| MMAB3A | MMAW2CD |
| MMAB3B | MMAU1A |
| MMAW2A | MMAU1B |
| MMAW2B | MMAU1C |
| MMAW2C | |

Data were reviewed by Kweku Acquah and validated using a combination of method-specific criteria, laboratory SOP and *Innovative Approaches to Data Validation for USEPA Region III* (June 1995.). Parameters evaluated under data validation procedure Level M3 are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region III specifications.

**Table 1. Laboratory Performance Criteria**

| Qualified | | Parameter |
|---|---|---|
| Yes | No | |
| | X | Holding Times |
| | X | Instrument Performance Check |
| | X | Initial Calibration |
| X | | Continuing Calibration |
| X | | Blank Analysis |
| | X | Surrogate Spikes |
| | X | Matrix Spike/Matrix Spike Duplicate |
| | X | Internal Standards |
| X | | Quantitation Verification |

The quality of data collected in support of this sampling activity is considered acceptable with the noted qualifications.

cc: Eric Malarek
Project File

**RADFORD ARMY AMMUNITION PLANT**
**VALIDATION REPORT**
**SEMIVOLATILES REVIEW**
**SDG IT5**

## I-Holding Times

*Form I*

The objective is to ascertain the validity of results based on the holding time of the sample from time of collection to time of sample extraction and analysis. Holding time criteria: For semivolatile compounds in cooled (@4°C ± 2°C) soil samples, the maximum holding time is 14 days from sample collection to extraction and 40 days from extraction to analysis.

- The samples were analyzed 09/17-22/00. All criteria were met and no qualifiers were applied.

## II-Instrument Performance Check

*Form V and chromatograms.*

GC/MS instrument performance checks are performed to ensure mass resolution, identification and, to some degree, sensitivity. The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

## III-Initial Calibration

*Form VI and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used is capable of producing acceptable qualitative and quantitative data for compounds on the semivolatile target compound list (TCL). Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. The minimum relative response factor (RRF) criteria must be ≥ 0.05. Initial calibration percent relative standard deviation (%RSD) must be ≤ 15% on the average for all compounds (< 30% for CCCs).

- For initial calibration performed on 09/01/00 on instrument HP73G, 2,4-Dinitrophenol (26.0%) and 4,6-Dinitro-2-methylphenol (21.0%) were above the control limit. Since these compounds were non-detects in all the samples, no qualifiers were applied based on these outliers.

## IV-Continuing Calibration

*Form VII and chromatograms.*

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. Continuing calibration standards containing both target and surrogates compounds are analyzed at the beginning of each 12-hour analysis period following the analysis of the instrument performance check and prior to the analysis of blanks and samples. The minimum relative response factors (RRF) for semivolatile target compounds and surrogates must be ≥ 0.05. The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF must be within ± 20% for all target compounds.

**IV-Continuing Calibration (Cont.)**

- For continuing calibration performed on 09/17/00 @15:19 on instrument HP73G, compounds Nitrobenzene (21.4%), 2-Methylnaphthalene (24.1%), 2-Nitroaniline (26.8%), 2,6-Dinitrotoluene (27.2%), 2,4-Dinitrophenol (31.3%), Di-n-butylphthalate (27.0%), Pyrene (21.5%), Butylbenzylphthalate (38.1%), bis(2-Ethylhexyl)phthalate (49.9%) and Di-n-octylphthalate (61.5%)%) were above the control limits. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

- For continuing calibration performed on 09/22/00 @09:31 on instrument HP73G, %D for compounds 2,4-Dinitrophenol (58.2%), 4,6-Dinitro-2-methylphenol (45.3%) and Di-n-octylphthalate (44.0%) were grossly above the control limit (i.e > 2X CL). Positive values for these compounds were qualified as estimated, "J" and non-detects "UJ".

- For continuing calibration performed on 09/22/00 @09:31 on instrument HP73G, %D for compounds N-Nitroso-di-n-propylamine (21.6%), Hexachloroethane (21.0%), 2-Nitroaniline (31.8%), 2,6-Dinitrotoluene (24.1%), 3-Nitroaniline (21.8%), Carbazole (33.4%), Butylbenzylphthalate (28.7%) and bis(2-Ethylhexyl)phthalate (35.1%) were above the control limit. Positive values for these compounds were qualified as estimated, "J" and non-detects had no qualifiers applied.

**V-Blank Analysis**

*Form I, IV and chromatograms*

The purpose of blank analyses is to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. The criteria for evaluation of blanks apply to any blank associated with the samples. The method blank must be analyzed on each GC/MS system used to analyze that specific group or set of samples. No contaminants should be detected in any of the associated blanks. Positive sample results are reported and qualified "B", if the concentration of the compound in the sample is ≤ 10 times (10X) the maximum amount in any blank for the common phthalate contaminants, or 5 times the maximum amount for the other compounds. Table 2 summarizes the blank contamination analysis. The associated rinse blank is sample number 083100R4.

**TABLE 2. BLANK CONTAMINATION SUMMARY.**

| Compound/Blank Sample # | 10X Max. conc. µg/kg | Samples Affected |
|---|---|---|
| Di-n-butylphthalate / SBLK14 | 9500 | All |
| Bis(2-Ethylhexyl)phthalate / SBLK14 | 850 | All except MMAB3B, MMAU1B |

**VI-Surrogate Spikes**

*Form II and chromatograms.*

Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. Surrogate spikes are added to all samples and blanks to measure their recovery in sample and blank matrices.

- All criteria were met. No qualifiers were applied.

**VII-Matrix Spike/Spike Duplicate**

*Form III and chromatograms.*

MS/MSD are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. Specific criteria include the analyses of matrix spike and matrix spike duplicate samples at a frequency of one MS and MSD per 20 samples of similar matrix. MS and MSD recoveries and Relative Percent Differences between MS and MSD recoveries should be within the specified limits.

- Sample MMAW2B (00092621) was used for the MS/MSD analyses. All criteria were met and no qualifiers were applied.

**VIII-Internal Standards**

*Form VIII and chromatograms.*

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Internal standard area counts for samples and blanks must not vary by more than a factor of two (- 50% to + 100%) from the associated calibration standard. The retention time of the internal standards in samples and blanks must not vary by more than ± 30 seconds from the retention time of the associated calibration standard. Positive results for compounds quantitated using internal standards outside of control criteria should be qualified as estimated "J" and non-detects as "UJ".

- All criteria were met for all target compounds. No qualifiers were applied.

**IX-Quantitation Verification**

*Form 1, and chromatograms*

The accuracy of analytical results was verified through the calculation of several parameters. Any target compound below the RL and above the MDL is reported as estimated "J". Any value in excess of the upper level of the calibration range was qualified as estimated "J". Tentatively Identified Compounds were also qualified as estimated, "J".

**Sample: MMAW2BMS (00092621MS), Phenol.**

Conc. (µg/kg) =(Ax * Is * Vt * DF) / (Ais * RRF * Ws * Fs * Vi)

where:

Ax is the compound area
Is is the amount of standard injected (ng)
Vt is the volume of total extract (µL)
DF is the dilution factor
Ais is the corresponding internal standard area
RRF is the Relative Response Factor from the continuing calibration std.
Ws is the initial weight (g)
Fs is the fraction of solid
Vi is the volume of extract injected (µL)

Conc. µg/kg = (902023*40 ng*1000 µL*1) / 185144*3.035*30 gm*0.89*2 µL = 1202 µg/kg

Reported Value = 1200 µg/kg
% Difference = 0.16%
Values were within 10% difference.

FORM I, copy

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MMAB3A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092618

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC233

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAB3A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092618

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC233

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U uJ |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 650 | B B |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 150 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 370 | U uJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

Form I, copy

1G

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MMAB3A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092618

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC233

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9 Extraction: (Type) SONC

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.60 | 170 | JB J |
| 2. | | UNKNOWN | 6.79 | 120 | J J |
| 3. | 7785-70-8 | 1R-.ALPHA.-PINENE | 7.12 | 1200 | NJ J |
| 4. | | UNKNOWN | 7.44 | 110 | JB J |
| 5. | | UNKNOWN | 7.53 | 430 | JB J |
| 6. | | UNKNOWN | 8.42 | 290 | J J |
| 7. | | UNKNOWN | 9.43 | 120 | J J |
| 8. | | UNKNOWN | 15.01 | 180 | J J |
| 9. | | UNKNOWN | 17.13 | 370 | J J |
| 10. | | UNKNOWN PHTHALATE | 20.06 | 160 | JB J |
| 11. | 57-10-3 | N-HEXADECANOIC ACID | 20.95 | 390 | NJ J |
| 12. | | UNKNOWN | 22.50 | 140 | J J |
| 13. | | UNKNOWN | 22.80 | 270 | J J |
| 14. | | UNKNOWN | 23.02 | 190 | J J |
| 15. | | UNKNOWN | 23.48 | 200 | J J |
| 16. | | UNKNOWN | 23.64 | 220 | J J |
| 17. | | UNKNOWN | 23.86 | 250 | J J |
| 18. | | UNKNOWN | 24.12 | 180 | J J |
| 19. | | UNKNOWN | 24.21 | 170 | J J |
| 20. | | UNKNOWN | 24.51 | 1200 | J J |
| 21. | 20316-84-1 | KAUR-16-EN-18-OIC ACID, (4.B | 24.96 | 350 | NJ J |
| 22. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.64 | 390 | NJ J |
| 23. | 1599-67-3 | 1-DOCOSENE | 27.18 | 270 | NJ J |
| 24. | | UNKNOWN | 28.61 | 150 | J J |
| 25. | | UNKNOWN HYDROCARBON | 29.82 | 350 | J J |
| 26. | | UNKNOWN | 29.91 | 1600 | J J |
| 27. | | UNKNOWN | 30.12 | 370 | J J |
| 28. | | UNKNOWN | 30.52 | 170 | J J |
| 29. | | UNKNOWN HYDROCARBON | 31.05 | 190 | J J |
| 30. | | UNKNOWN | 31.36 | 520 | J J |

FORM 1, COPY

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAB3B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC234

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 9 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 360 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 360 | U |
| 95-57-8 | 2-Chlorophenol | 360 | U |
| 95-48-7 | 2-Methylphenol | 360 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 360 | U |
| 106-44-5 | 4-Methylphenol | 360 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 360 | U |
| 67-72-1 | Hexachloroethane | 360 | U |
| 98-95-3 | Nitrobenzene | 360 | U |
| 78-59-1 | Isophorone | 360 | U |
| 88-75-5 | 2-Nitrophenol | 360 | U |
| 105-67-9 | 2,4-Dimethylphenol | 360 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 360 | U |
| 106-47-8 | 4-Chloroaniline | 730 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 360 | U |
| 87-68-3 | Hexachlorobutadiene | 360 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 730 | U |
| 91-57-6 | 2-Methylnaphthalene | 360 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 360 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 360 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 360 | U |
| 91-58-7 | 2-Chloronaphthalene | 360 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 360 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 360 | U |
| 208-96-8 | Acenaphthylene | 360 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 360 | U |
| 51-28-5 | 2,4-Dinitrophenol | 360 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 360 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 360 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAB3B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC234

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 9 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q | |
|---|---|---|---|---|
| 84-66-2 | Diethylphthalate | 360 | U | |
| 86-73-7 | Fluorene | 360 | U | |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 360 | U | |
| 100-01-6 | 4-Nitroaniline | 1800 | U | |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U | uJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 360 | U | |
| 101-55-3 | 4-Bromophenyl-phenylether | 360 | U | |
| 118-74-1 | Hexachlorobenzene | 360 | U | |
| 87-86-5 | Pentachlorophenol | 1800 | U | |
| 85-01-8 | Phenanthrene | 360 | U | |
| 120-12-7 | Anthracene | 360 | U | |
| 86-74-8 | Carbazole | 360 | U | |
| 84-74-2 | Di-n-butylphthalate | 570 | B | B |
| 206-44-0 | Fluoranthene | 360 | U | |
| 129-00-0 | Pyrene | 360 | U | |
| 85-68-7 | Butylbenzylphthalate | 360 | U | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 730 | U | |
| 56-55-3 | Benzo(a)anthracene | 360 | U | |
| 218-01-9 | Chrysene | 360 | U | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 2600 | B | |
| 117-84-0 | Di-n-octylphthalate | 360 | U | uJ |
| 205-99-2 | Benzo(b)fluoranthene | 360 | U | |
| 207-08-9 | Benzo(k)fluoranthene | 360 | U | |
| 50-32-8 | Benzo(a)pyrene | 360 | U | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 360 | U | |
| 53-70-3 | Dibenzo(a,h)anthracene | 360 | U | |
| 191-24-2 | Benzo(g,h,i)perylene | 360 | U | |
| 541-73-1 | 1,3-Dichlorobenzene | 360 | U | |
| 106-46-7 | 1,4-Dichlorobenzene | 360 | U | |
| 95-50-1 | 1,2-Dichlorobenzene | 360 | U | |
| 120-82-1 | 1,2,4-Trichlorbenzene | 360 | U | |

FORM I, copy

1G

EPA SAMPLE NO.

MMAB3B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092619

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC234

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 9 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.60 | 180 | JJ |
| 2. | | UNKNOWN | 6.79 | 130 | JBJ |
| 3. | 1000152-27-1 | CYCLOPENTENE, 1,2,3,3,4-PENT | 6.83 | 79 | NJJ |
| 4. | | UNKNOWN | 7.44 | 100 | JBJ |
| 5. | | UNKNOWN | 7.53 | 360 | JBJ |
| 6. | | UNKNOWN | 8.42 | 190 | J J |
| 7. | | UNKNOWN | 9.43 | 120 | J J |
| 8. | 74381-40-1 | PROPANOIC ACID, 2-METHYL-, 1 | 17.13 | 250 | NJJ |
| 9. | | UNKNOWN PHTHALATE | 20.06 | 120 | JBJ |
| 10. | 1454-85-9 | 1-HEPTADECANOL | 25.65 | 110 | NJJ |
| 11. | 629-96-9 | 1-EICOSANOL | 27.19 | 81 | NJJ |
| 12. | | UNKNOWN | 29.50 | 170 | J J |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1C FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092620

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC235

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 6 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 350 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 350 | U |
| 95-57-8 | 2-Chlorophenol | 350 | U |
| 95-48-7 | 2-Methylphenol | 350 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 350 | U |
| 106-44-5 | 4-Methylphenol | 350 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 350 | U |
| 67-72-1 | Hexachloroethane | 350 | U |
| 98-95-3 | Nitrobenzene | 350 | U |
| 78-59-1 | Isophorone | 350 | U |
| 88-75-5 | 2-Nitrophenol | 350 | U |
| 105-67-9 | 2,4-Dimethylphenol | 350 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1700 | U |
| 91-20-3 | Naphthalene | 350 | U |
| 106-47-8 | 4-Chloroaniline | 700 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 350 | U |
| 87-68-3 | Hexachlorobutadiene | 350 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 700 | U |
| 91-57-6 | 2-Methylnaphthalene | 350 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 350 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 350 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 350 | U |
| 91-58-7 | 2-Chloronaphthalene | 350 | U |
| 88-74-4 | 2-Nitroaniline | 1700 | U |
| 131-11-3 | Dimethylphthalate | 350 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 350 | U |
| 208-96-8 | Acenaphthylene | 350 | U |
| 99-09-2 | 3-Nitroaniline | 1700 | U |
| 83-32-9 | Acenaphthene | 350 | U |
| 51-28-5 | 2,4-Dinitrophenol | 350 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1700 | U |
| 132-64-9 | Dibenzofuran | 350 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 350 | U |

1D FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092620

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC235

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 6 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 350 | U |
| 86-73-7 | Fluorene | 350 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 350 | U |
| 100-01-6 | 4-Nitroaniline | 1700 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 170 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 350 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 350 | U |
| 118-74-1 | Hexachlorobenzene | 350 | U |
| 87-86-5 | Pentachlorophenol | 1700 | U |
| 85-01-8 | Phenanthrene | 350 | U |
| 120-12-7 | Anthracene | 350 | U |
| 86-74-8 | Carbazole | 350 | U |
| 84-74-2 | Di-n-butylphthalate | 370 | B JB |
| 206-44-0 | Fluoranthene | 350 | U |
| 129-00-0 | Pyrene | 350 | U |
| 85-68-7 | Butylbenzylphthalate | 350 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 700 | U |
| 56-55-3 | Benzo(a)anthracene | 350 | U |
| 218-01-9 | Chrysene | 350 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 110 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 350 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 350 | U |
| 207-08-9 | Benzo(k)fluoranthene | 350 | U |
| 50-32-8 | Benzo(a)pyrene | 350 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 350 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 350 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 350 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 350 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 350 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 350 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 350 | U |



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Form I, copy

1G

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MMAW2A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092620

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC235

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 6 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7 Extraction: (Type) SONC

Number TICs found: 28 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.61 | 160 | JB J |
| 2. | | UNKNOWN | 6.79 | 110 | JB J |
| 3. | | UNKNOWN | 7.11 | 170 | J J |
| 4. | | UNKNOWN | 7.44 | 97 | JB J |
| 5. | | UNKNOWN | 7.54 | 560 | JB J |
| 6. | | UNKNOWN | 8.43 | 350 | J J |
| 7. | | UNKNOWN | 17.13 | 180 | J J |
| 8. | | UNKNOWN | 19.79 | 75 | J J |
| 9. | | UNKNOWN PHTHALATE | 20.06 | 85 | JB J |
| 10. | | UNKNOWN | 20.84 | 120 | J J |
| 11. | 57-10-3 | N-HEXADECANOIC ACID | 20.96 | 420 | NJB J |
| 12. | 56554-86-0 | 17-OCTADECENAL | 25.06 | 96 | NJ J |
| 13. | 6624-79-9 | 1-DOTRIACONTANOL | 25.61 | 280 | NJ J |
| 14. | | UNKNOWN | 27.11 | 120 | J J |
| 15. | | UNKNOWN | 27.15 | 310 | J J |
| 16. | | UNKNOWN | 28.06 | 230 | J J |
| 17. | | UNKNOWN | 28.58 | 230 | J J |
| 18. | | UNKNOWN HYDROCARBON | 29.82 | 520 | J J |
| 19. | | UNKNOWN | 29.90 | 800 | J J |
| 20. | 1000210-38-4 | 17-(1,5-DIMETHYLHEXYL)-10,13 | 30.11 | 120 | NJ J |
| 21. | | UNKNOWN | 30.87 | 110 | J J |
| 22. | 630-06-8 | HEXATRIACONTANE | 31.06 | 410 | NJ J |
| 23. | | UNKNOWN | 31.31 | 170 | J J |
| 24. | 83-47-6 | .GAMMA.-SITOSTEROL | 31.37 | 600 | NJ J |
| 25. | | UNKNOWN | 31.51 | 370 | J J |
| 26. | | UNKNOWN | 31.99 | 130 | J J |
| 27. | | UNKNOWN | 32.17 | 110 | J J |
| 28. | 1058-61-3 | STIGMAST-4-EN-3-ONE | 32.30 | 430 | NJ J |
| 29. | | | | | |
| 30. | | | | | |

FORM I, COPY

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC236

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

FORM I, COPY

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC236

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 510 | B JB |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 130 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 370 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

FORM I, COPY

1G

EPA SAMPLE NO.

MMAW2B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092621

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC236

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/17/00

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5 Extraction: (Type) SONC

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.62 | 160 | JB J |
| 2. | | UNKNOWN | 6.80 | 130 | JB J |
| 3. | | UNKNOWN | 6.84 | 83 | JB J |
| 4. | | UNKNOWN | 7.45 | 110 | JB J |
| 5. | | UNKNOWN | 7.53 | 310 | JB J |
| 6. | | UNKNOWN | 8.43 | 130 | J J |
| 7. | 74381-40-1 | PROPANOIC ACID, 2-METHYL-, 1 | 17.13 | 270 | NJ J |
| 8. | | UNKNOWN PHTHALATE | 20.06 | 120 | JB J |
| 9. | | UNKNOWN | 29.51 | 83 | J J |
| 10. | | | | | |
| 11. | | | | | |
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1C FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC239

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

1D FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC239

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 290 | JB JB |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 110 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 370 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

1G FORM I, COPY

EPA SAMPLE NO.

MMAW2C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092622

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC239

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.60 | 190 | JB J |
| 2. | | UNKNOWN HYDROCARBON | 5.76 | 76 | JB J |
| 3. | | UNKNOWN | 6.79 | 140 | JB J |
| 4 | 1000154-28-6 | CYCLOPENTENE, 1,2,3,4,5-PENT | 6.83 | 96 | JB J |
| 5. | | UNKNOWN | 7.39 | 81 | JB J |
| 6. | | UNKNOWN | 7.44 | 120 | JB J |
| 7. | | UNKNOWN | 7.52 | 280 | JB J |
| 8. | | UNKNOWN | 17.13 | 190 | J J |
| 9. | | UNKNOWN PHTHALATE | 20.06 | 82 | JB J |
| 10. | 74685-29-3 | 9-EICOSENE, (E)- | 25.64 | 83 | NJ J |
| 11. | | | | | |
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1C FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092623

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC240

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 740 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

1D FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAW2CD

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092623

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC240

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 330 | JB JB |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 120 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 370 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

1G FORM I, COPY

EPA SAMPLE NO.

MMAW2CD

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC240

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 11 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Extraction: (Type) SONC

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.62 | 190 | JB J |
| 2. | | UNKNOWN | 6.79 | 140 | JB J |
| 3. | 1000154-28-6 | CYCLOPENTENE, 1,2,3,4,5-PENT | 6.84 | 89 | NJB J |
| 4. | | UNKNOWN | 7.45 | 110 | JB J |
| 5. | | UNKNOWN | 7.53 | 300 | JB J |
| 6. | 74381-40-1 | PROPANOIC ACID, 2-METHYL-, 1 | 17.13 | 280 | NJ J |
| 7. | | UNKNOWN PHTHALATE | 20.06 | 110 | JB J |
| 8. | | | | | |
| 9. | | | | | |
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1C FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092627

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC241

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 10 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1800 | U |
| 91-20-3 | Naphthalene | 370 | U |
| 106-47-8 | 4-Chloroaniline | 730 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 730 | U |
| 91-57-6 | 2-Methylnaphthalene | 370 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 370 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 1800 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 1800 | U |
| 83-32-9 | Acenaphthene | 370 | U |
| 51-28-5 | 2,4-Dinitrophenol | 370 | U uJ |
| 100-02-7 | 4-Nitrophenol | 1800 | U |
| 132-64-9 | Dibenzofuran | 370 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |

1D FORM I, Copy

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1A

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092627

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC241

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 10 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 370 | U |
| 86-73-7 | Fluorene | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 100-01-6 | 4-Nitroaniline | 1800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 180 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 1800 | U |
| 85-01-8 | Phenanthrene | 370 | U |
| 120-12-7 | Anthracene | 370 | U |
| 86-74-8 | Carbazole | 370 | U |
| 84-74-2 | Di-n-butylphthalate | 230 | JB JB |
| 206-44-0 | Fluoranthene | 370 | U |
| 129-00-0 | Pyrene | 370 | U |
| 85-68-7 | Butylbenzylphthalate | 370 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 730 | U |
| 56-55-3 | Benzo(a)anthracene | 370 | U |
| 218-01-9 | Chrysene | 370 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 69 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 370 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 370 | U |
| 207-08-9 | Benzo(k)fluoranthene | 370 | U |
| 50-32-8 | Benzo(a)pyrene | 370 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 370 | U |

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EPA SAMPLE NO.

MMAU1A

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092627

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC241

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 10 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/17/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.1 Extraction: (Type) SONC

Number TICs found: 26

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN | 7.54 | 640 | JB J |
| 2. | | UNKNOWN | 8.42 | 230 | J J |
| 3. | 103-82-2 | BENZENEACETIC ACID | 12.72 | 150 | NJ J |
| 4. | | UNKNOWN | 13.92 | 300 | J J |
| 5. | 74381-40-1 | PROPANOIC ACID, 2-METHYL-, 1 | 17.13 | 180 | NJ J |
| 6. | 6627-88-9 | PHENOL, 2,6-DIMETHOXY-4-(2-P | 18.31 | 320 | NJ J |
| 7. | 124-25-4 | TETRADECANAL | 18.41 | 190 | NJ J |
| 8. | | UNKNOWN | 19.24 | 450 | J J |
| 9. | 1002-84-2 | PENTADECANOIC ACID | 19.95 | 200 | NJ J |
| 10. | | UNKNOWN | 20.48 | 420 | J J |
| 11. | 506-12-7 | HEPTADECANOIC ACID | 21.90 | 380 | NJ J |
| 12. | | UNKNOWN | 22.62 | 490 | J J |
| 13. | 57-11-4 | OCTADECANOIC ACID | 22.83 | 620 | NJ J |
| 14. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 23.93 | 410 | NJ J |
| 15. | 19047-85-9 | PHOSPHONIC ACID, DIOCTADECYL | 25.58 | 1400 | NJ J |
| 16. | | UNKNOWN HYDROCARBON | 26.37 | 310 | J J |
| 17. | 74685-33-9 | 3-EICOSENE, (E)- | 27.12 | 1400 | NJ J |
| 18. | | UNKNOWN | 29.07 | 200 | J J |
| 19. | | UNKNOWN | 29.90 | 180 | J J |
| 20. | | UNKNOWN | 29.98 | 140 | J J |
| 21. | | UNKNOWN | 30.75 | 160 | J J |
| 22. | | UNKNOWN | 30.99 | 270 | J J |
| 23. | 1599-67-3 | 1-DOCOSENE | 31.16 | 250 | NJ J |
| 24. | 1000214-20-7 | STIGMASTEROL, 22,23-DIHYDRO- | 31.36 | 370 | NJ J |
| 25. | | UNKNOWN | 31.63 | 190 | J J |
| 26. | | UNKNOWN | 31.95 | 340 | J J |
| 27. | | | | | |
| 28. | | | | | |
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1C FORM I, COPY

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC272

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 17 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/22/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 4.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 400 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 400 | U |
| 95-57-8 | 2-Chlorophenol | 400 | U |
| 95-48-7 | 2-Methylphenol | 400 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 400 | U |
| 106-44-5 | 4-Methylphenol | 400 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 400 | U |
| 67-72-1 | Hexachloroethane | 400 | U |
| 98-95-3 | Nitrobenzene | 400 | U |
| 78-59-1 | Isophorone | 400 | U |
| 88-75-5 | 2-Nitrophenol | 400 | U |
| 105-67-9 | 2,4-Dimethylphenol | 400 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1900 | U |
| 91-20-3 | Naphthalene | 400 | U |
| 106-47-8 | 4-Chloroaniline | 800 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 400 | U |
| 87-68-3 | Hexachlorobutadiene | 400 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 800 | U |
| 91-57-6 | 2-Methylnaphthalene | 400 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 400 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 400 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 400 | U |
| 91-58-7 | 2-Chloronaphthalene | 400 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethylphthalate | 400 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 400 | U |
| 208-96-8 | Acenaphthylene | 400 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 400 | U |
| 51-28-5 | 2,4-Dinitrophenol | 400 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 400 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 400 | U |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1B

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC272

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 17 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/22/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 4.6 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 400 | U |
| 86-73-7 | Fluorene | 400 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 400 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 190 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine_(1) | 400 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 400 | U |
| 118-74-1 | Hexachlorobenzene | 400 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 400 | U |
| 120-12-7 | Anthracene | 400 | U |
| 86-74-8 | Carbazole | 400 | U |
| 84-74-2 | Di-n-butylphthalate | 320 | JB JB |
| 206-44-0 | Fluoranthene | 400 | U |
| 129-00-0 | Pyrene | 400 | U |
| 85-68-7 | Butylbenzylphthalate | 400 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 800 | U |
| 56-55-3 | Benzo(a)anthracene | 400 | U |
| 218-01-9 | Chrysene | 400 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 3100 | B J |
| 117-84-0 | Di-n-octylphthalate | 400 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 400 | U |
| 207-08-9 | Benzo(k)fluoranthene | 400 | U |
| 50-32-8 | Benzo(a)pyrene | 400 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 400 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 400 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 400 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 400 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 400 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 400 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 400 | U |



041343

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EPA SAMPLE NO.

MMAU1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092628

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC272

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 17 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/22/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 4.6 Extraction: (Type) SONC

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.46 | 120 | J J |
| 2. | | UNKNOWN | 6.64 | 96 | J J |
| 3. | | UNKNOWN | 7.30 | 100 | J J |
| 4. | | UNKNOWN | 7.41 | 620 | J J |
| 5. | | UNKNOWN | 8.28 | 170 | J J |
| 6. | | UNKNOWN | 10.82 | 120 | J J |
| 7. | | UNKNOWN | 12.57 | 100 | J J |
| 8. | | UNKNOWN | 16.99 | 270 | J J |
| 9. | | UNKNOWN PHTHALATE | 19.91 | 96 | J J |
| 10. | 57-10-3 | N-HEXADECANOIC ACID | 20.79 | 140 | NJ J |
| 11. | | UNKNOWN | 30.68 | 120 | J J |
| 12. | | | | | |
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC243

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 16 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.4 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 390 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 390 | U |
| 95-57-8 | 2-Chlorophenol | 390 | U |
| 95-48-7 | 2-Methylphenol | 390 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 390 | U |
| 106-44-5 | 4-Methylphenol | 390 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 390 | U |
| 67-72-1 | Hexachloroethane | 390 | U |
| 98-95-3 | Nitrobenzene | 390 | U |
| 78-59-1 | Isophorone | 390 | U |
| 88-75-5 | 2-Nitrophenol | 390 | U |
| 105-67-9 | 2,4-Dimethylphenol | 390 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1900 | U |
| 91-20-3 | Naphthalene | 390 | U |
| 106-47-8 | 4-Chloroaniline | 790 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 390 | U |
| 87-68-3 | Hexachlorobutadiene | 390 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 790 | U |
| 91-57-6 | 2-Methylnaphthalene | 390 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 390 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 390 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 390 | U |
| 91-58-7 | 2-Chloronaphthalene | 390 | U |
| 88-74-4 | 2-Nitroaniline | 1900 | U |
| 131-11-3 | Dimethylphthalate | 390 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 390 | U |
| 208-96-8 | Acenaphthylene | 390 | U |
| 99-09-2 | 3-Nitroaniline | 1900 | U |
| 83-32-9 | Acenaphthene | 390 | U |
| 51-28-5 | 2,4-Dinitrophenol | 390 | U UJ |
| 100-02-7 | 4-Nitrophenol | 1900 | U |
| 132-64-9 | Dibenzofuran | 390 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 390 | U |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MMAU1C

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 30.0(g/mL) G Lab File ID: H73GC243

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 16 Decanted: (Y/N)N Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.4 Extraction: (Type) SONC

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 84-66-2 | Diethylphthalate | 390 | U |
| 86-73-7 | Fluorene | 390 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 390 | U |
| 100-01-6 | 4-Nitroaniline | 1900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 190 | U UJ |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 390 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 390 | U |
| 118-74-1 | Hexachlorobenzene | 390 | U |
| 87-86-5 | Pentachlorophenol | 1900 | U |
| 85-01-8 | Phenanthrene | 390 | U |
| 120-12-7 | Anthracene | 390 | U |
| 86-74-8 | Carbazole | 390 | U |
| 84-74-2 | Di-n-butylphthalate | 220 | JB JB |
| 206-44-0 | Fluoranthene | 390 | U |
| 129-00-0 | Pyrene | 390 | U |
| 85-68-7 | Butylbenzylphthalate | 390 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 790 | U |
| 56-55-3 | Benzo(a)anthracene | 390 | U |
| 218-01-9 | Chrysene | 390 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 58 | JB JB |
| 117-84-0 | Di-n-octylphthalate | 390 | U UJ |
| 205-99-2 | Benzo(b)fluoranthene | 390 | U |
| 207-08-9 | Benzo(k)fluoranthene | 390 | U |
| 50-32-8 | Benzo(a)pyrene | 390 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 390 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 390 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 390 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 390 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 390 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 390 | U |
| 120-82-1 | 1,2,4-Trichlorbenzene | 390 | U |

1G FORM I, copy

EPA SAMPLE NO.

MMAU1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENVIROSYSTEMS, INC. Contract: IT5

Lab Code: ENVSYS Case No.: IT5 SAS No.: SDG No.: IT5

Matrix: (soil/water) SOIL Lab Sample ID: 00092629

Sample wt/vol: 30.0 (g/mL) G Lab File ID: H73GC243

Level: (low/med) LOW Date Received: 09/08/00

% Moisture: 16 Decanted: (Y/N) N Date Extracted:09/15/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/18/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.4 Extraction: (Type) SONC

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | UNKNOWN HYDROCARBON | 5.61 | 87 | JB J |
| 2. | | UNKNOWN | 5.65 | 150 | J J |
| 3. | | UNKNOWN | 7.44 | 140 | JB J |
| 4. | | UNKNOWN | 7.53 | 320 | JB J |
| 5. | | UNKNOWN | 17.13 | 250 | J J |
| 6. | | UNKNOWN PHTHALATE | 20.06 | 81 | JB J |
| 7. | | UNKNOWN | 25.60 | 140 | J J |
| 8. | | | | | |
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# Appendix C

# Sample Location Descriptions and Photographs

# Appendix C
# Field Sampling Photographs


Photo. C–1 View of sample location MMAB2 within the Braddock Loam soil type ..... C–8
Photo. C–2 Braddock Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location MMAB2 ..... C–8
Photo. C–3 Braddock Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location MMAB3 ..... C–8
Photo. C–4 View of sample location MMAB4 within the Braddock Loam soil type ..... C–8
Photo. C–5 View from sample location MMAB4 within the Braddock Loam soil type ..... C–9
Photo. C–6 View of sample location MMAU1 within the Unison-Urban Land Complex soil type ..... C–9
Photo. C–7 View of sample location MMAU2 within the Unison-Urban Land Complex soil type ..... C–9
Photo. C–8 Unison-Urban Complex soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAU2 ..... C–9
Photo. C–9 View of sample location MMAU4 within the Unison-Urban Land Complex soil type ..... C–10
Photo. C–10 View of sample location MMAU4 hand auger soil cuttings ..... C–10
Photo. C–11 View of sample location MMAW1 within the Wheeling Sandy Loam soil type ..... C–10
Photo. C–12 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW1 ..... C–10
Photo. C–13 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW3 ..... C–11
Photo. C–14 View of sample location MMAW4 within the Wheeling Sandy Loam soil type ..... C–11
Photo. C–15 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW4 ..... C–11
Photo. C–16 View of sample location NRUC2 within the Carbo Silty Clay Loam soil type ..... C–11
Photo. C–17 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location NRUC2 ..... C–12
Photo. C–18 View of sample location NRUC3 within the Carbo Silty Clay Loam soil type ..... C–12
Photo. C–19 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location NRUC3 ..... C–12
Photo. C–20 View of sample location NRUC4 within the Carbo Silty Clay Loam soil type ..... C–12
Photo. C–21 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUC4 ..... C–13
Photo. C–22 View of sample location NRUG1 within the Groseclose and Poplimento Silt Loam soil type ..... C–13
Photo. C–23 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG1 ..... C–13
Photo. C–24 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG3 ..... C–13
Photo. C–25 View of sample location NRUG4 within the Groseclose and Poplimento Silt Loam soil type ..... C–14
Photo. C–26 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG4 ..... C–14
Photo. C–27 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL2 ..... C–14
Photo. C–28 View of sample location NRUL3 within the Lowell Silt Loam soil type ..... C–14
Photo. C–29 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL3 ..... C–15
Photo. C–30 View of sample location NRUL4 within the Lowell Silt Loam soil type ..... C–15
Photo. C–31 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL4 ..... C–15
Photo. C–32 View of sample location NRUW1 within the Wurno-Newbern-Faywood Silt Loam soil type ..... C–15
Photo. C–33 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW1 ..... C–16
Photo. C–34 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW2 ..... C–16

**Appendix C**
**Field Sampling Photographs (Continued)**

Photo. C–35 View of sample location NRUW4 within the Wurno-Newbern-Faywood Silt Loam soil type..... C–16
Photo. C–36 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW4..... C–16

**Main Manufacturing Area**

**MMAB1.** Sample location MMAB1 was in the eastern portion of the Horseshoe Area, west of Magazine Storage Area 1932. It is situated on level ground, approximately 8 ft upgradient and 50 ft from a service road. The boring was positioned approximately 2 to 3 ft inside a tree stand of loblolly pines (*Pinus taeda* L.) approximately 30–40 ft tall. The circumference of a representative loblolly pine measured 3 ft 9 in. (14 in. diameter ), indicating the tree was at least 40–50 years old. A drainage ditch was located along the road that carries precipitation runoff away from the sample location.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAB1A (0–10 in. bgs), MMAB1B (10–48 in. bgs), and MMAB1C (48–84 in. bgs).

**MMAB2.** Sample location MMAB2 was in the south-central portion of the Horseshoe Area, east of SWMU 26, approximately 100 ft from the road and 75 ft inside a white pine tree stand. The white pines (*Pinus strobus*) were approximately 50–60 ft tall with tree circumferences ranging from 4 to 6 ft (15–28 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. A and B horizons were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAB2A (0–12 in. bgs), and MMAB2B (12–60 in. bgs). Additionally, one duplicate soil sample was collected from the B horizon and analyzed for metals and pH: MMAB2BD (12–60 in. bgs).

**MMAB3.** Sample location MMAB3 was in the south-central portion of the Horseshoe Area, east of SWMU 26; co-located within a ½-acre radius and 60 ft east of boring MMAB2. The boring was positioned approximately 75 ft inside the same white pine tree stand as MMAB2.

The boring was advanced to a depth of 7.5 ft bgs. Both the A and B soil horizons were identified and sampled. Both soil horizons were field screened for RDX and TNT. Results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B horizon), metals, and pH: MMAB3A (0–9 in. bgs), and MMAB3B (9–42 in. bgs).

**MMAB4.** Sample location MMAB4 was in the central portion of the Horseshoe Area, on top of a steep slope above SWMU 32. It was positioned approximately 50 ft south and 30 ft above Magazine 4601–2, along the downslope edge of a pine tree stand. Trees were approximately 40 ft tall, with a representative tree circumference of 3 ft 8 in. (14 in. diameter).

The boring was advanced with a hand auger to a depth of 4.42 ft bgs. Hand auger refusal occurred at 4.42 ft due to large stones and small boulders (river jack). Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAB4A (0–6 in. bgs), MMAB4B (6–51 in. bgs), and MMAB4C (51–53 in. bgs).

**MMAU1.** Sample location MMAU1 was south of the MMA, west of the main gate, on the right side of the road before Shipping and Receiving (Building 534). The boring was positioned approximately 30 ft inside a deciduous tree stand (e.g., oak, cherry, and maple) upgradient and approximately 40 ft from road. Trees were approximately 40–50 ft tall, with an average circumference of 6 ft 8 in. (26 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified, sampled, and field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B horizon), metals, and pH: MMAU1A (0–10 in. bgs), MMAU1B (10–52 in. bgs), MMAU1C (52–60 in. bgs).

**MMAU2.** Sample location MMAU2 was south of the MMA, west of the main gate, on the right side of the road before Shipping and Receiving (Building 534). The boring was co-located within a ½-acre radius 80 ft east of boring MMAU1.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAU2A (0–10 in. bgs), MMAU2B (10–52 in. bgs), and MMAU2C (52–60 in. bgs).

**MMAU3.** Sample location MMAU3 was southwest of Building 7801, outside and approximately 100 ft from the MMA fence, on the western edge of the facility. The boring was positioned on top of a ridge above a dirt road in

a deciduous tree forest (e.g., tulip poplar, oak, and maple). Trees were approximately 40–50 ft tall, with a representative tree circumference of 5 ft 5 in. (21 in. diameter), indicating that the trees were approximately 65–75 years old.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAU3A (0–9 in. bgs), MMAU3B (9–42 in. bgs), and MMAU3C (42–72). Additionally, one duplicate soil sample was collected from the B horizon and analyzed for metals and pH: MMAU3BD (9–42 in. bgs).

**MMAU4.** Sample location MMAU4 was in the eastern portion of the MMA, 70 ft south and outside of the fence surrounding Building 3904. The boring was positioned approximately 15 ft upslope of a former railroad track and 40 ft up a steep incline into a deciduous tree forest (e.g., oak and maple), where trees averaged 40–50 ft tall.

The boring was advanced with a hand auger to a depth of 6.5 ft bgs. Hand auger refusal occurred at a depth of 6.5 ft bgs due to large stones and highly compacted soil. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAU4A (0–10 in. bgs), MMAU4B (10–58 in. bgs), and MMAU4C (58–76 in. bgs).

**MMAW1.** Sample location MMAW1 was in the northeastern portion of Horseshoe Area, approximately 65 ft north of Gate 19–C. The boring was positioned approximately 45 ft inside a pine tree forest, where trees were estimated to be 40 ft tall.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAW1A (0–12 in. bgs), MMAW1B (12–48 in. bgs), and MMAW1C (48–72).

**MMAW2.** Sample location MMAW2 was in the north central portion of Horseshoe Area. The boring was positioned approximately 115 ft south of the road and 60 ft inside a pine and deciduous tree stand (e.g., oak and maple). Trees were approximately 40–50 ft tall with a representative pine tree circumference of 3.6 ft (14 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified, sampled, and field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B and C horizons), metals, and pH: MMAW2A (0–7 in. bgs), MMAW2B (7–48 in. bgs), MMAW2C (48–60 in. bgs).

A matrix spike and matrix spike duplicate (MS/MSD) sample was collected from the B horizon and analyzed for VOCs, SVOCs, metals and pH: MMAW2B (7–48 in. bgs). Additionally, a duplicate sample was collected from the C horizon and analyzed for VOCs, SVOCs, metals, and pH: MMAW2CD (48–60 in. bgs).

**MMAW3.** Sample location MMAW3 was in the north central portion of the Horseshoe Area within a ½-acre radius of boring MMAW2. The boring was positioned 51 ft south of MMAW2 and approximately 111 ft. inside a loblolly pine tree stand, 166 ft south from the roadway.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAW3A (0–12 in. bgs), MMAW3B (12–48 in. bgs), and MMAW3C (48–60 in. bgs). Additionally, one duplicate soil sample was collected from the C horizon and analyzed for metals and pH: MMAW3CD (48–60 in. bgs).

**MMAW4.** Sample location MMAW4 was in the northwestern portion of Horseshoe Area, 50 ft north of Gate 19–1, outside the fence, and approximately 50 ft south of the New River. The boring was positioned upgradient and approximately 65 ft north of the road, along a grassy area, approximately 20 ft inside the deciduous tree (e.g., locust and maple) and brush line.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: MMAW4A (0–9 in. bgs), MMAW4B (9–42 in. bgs), and MMAW4C (42–72).

**New River Unit**

**NRUC1.** Sample location NRUC1 was east of Magazine 1125, on a moderate slope, upgradient and approximately 100 ft north of 12th Street. The boring was positioned in a tree stand containing pine, cedar, and deciduous (e.g., cherry) trees interspersed with grassy areas. Trees were approximately 15–30 ft tall, with a representative deciduous tree circumference of 3 ft (12 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Both the A and B soil horizons were identified and sampled. Each soil horizon was field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B horizon), metals and pH: NRUC1A (0–11 in. bgs) and NRUC1B (11–72 in. bgs). Additionally, one MS and MSD sample was collected from the B horizon and analyzed for VOCs, SVOCs, metals, and pH: NRUC1B (11–72 in. bgs).

**NRUC2.** Sample location NRUC2 was east of Magazine 1125, on a moderate slope, upgradient and co-located within a ½-acre radius of NRUC1. The boring was positioned approximately 120 ft from the road in a tree stand containing pine, cedar, and deciduous (e.g., cherry) trees interspersed with grassy areas. Trees were approximately 15–30 ft tall, with a representative deciduous tree circumference of 3 ft (12 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Both the A and B soil horizons were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUC2A (0–11 in. bgs), NRUC2B (11–72 in. bgs).

**NRUC3.** Sample location NRUC3 was in the eastern portion of the NRU, adjacent to a grassy field approximately 100 ft northeast of Magazine 4603–15. The boring was positioned upgradient of Guard Road on a slight to moderate slope approximately 15 ft inside a pine tree stand. Trees were estimated to be 30–40 ft tall with a representative circumference of 3 ft 7 in. (14 in. diameter).

The boring was advanced to a depth of 1.5 ft bgs where refusal was caused by an outcrop of bedrock located near the surface. Both the A and B soil horizons were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUC3A (0–10 in. bgs), NRUC3B (10–18 in. bgs).

**NRUC4.** Sample location NRUC4 was in the northeastern portion of the NRU, on the north side of access road near Magazine 4603–53. The boring was positioned upgradient (10°–20° slope) and approximately 100 ft from the road in a cedar tree stand interspersed with a grass. Cedar trees were estimated to range from 3 ft to 20 ft tall.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUC4A (0–7 in. bgs), NRUC4B (7–30 in. bgs), NRUC4C (30–48 in. bgs).

**NRUG1.** Sample location NRUG1 was in the northwestern portion of the NRU between Magazines 4603–33 and 4603–34. The boring was positioned upgradient and approximately 100 ft from the road in a loblolly pine tree stand. Trees were estimated to be approximately 40 ft tall with a representative tree circumference of 4 ft 7 in. (18 in. diameter).

The boring was advanced to a depth of 8 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUG1A (0–12 in. bgs), NRUG1B (12–53 in. bgs), NRUG1C (53–70 in. bgs).

**NRUG2.** Sample location NRUG2 was in the south-central portion of the NRU, west of 16th Street and north of Magazine 1604. The boring was positioned upgradient and approximately 100 ft from the road and 75 ft inside a pine tree stand. Trees were estimated to be approximately 50 ft tall with a representative tree circumference of 4 ft 7 in. (18 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified, sampled, and field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B and C horizon), metals, and pH: NRUG2A (0–7 in. bgs), NRUG2B (7–34 in. bgs), NRUG2C (34–57 in. bgs). Additionally, two duplicate soil samples were collected from the B and C horizon and analyzed for SVOCs, VOCs (B horizon), metals and pH: NRUG2BD (7–34 in. bgs) and NRUG2CD (34–57 in. bgs).

**NRUG3.** Sample location NRUG3 was in the south-central portion of the NRU, west of 16th Street and north of Magazine 1604. The boring was co-located within a ½-acre radius and 65 ft north of NRUG2. The boring was situated approximately 5–10 ft upgradient and 100 ft from the road and 75 ft. inside a pine tree stand. Trees were estimated to be 50 ft tall with a representative tree circumference of 4 ft 7 in. (18 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUG3A (0–12 in. bgs), NRUG3B (12–35 in. bgs), NRUG3C (35–67 in. bgs).

**NRUG4.** Sample location NRUG4 was in the west-central portion of the NRU, upgradient and approximately 150 ft northeast of Truck Loading Yard No. 2. The boring was positioned 100 ft inside a pine tree stand.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUG4A (0–6 in. bgs), NRUG4B (6–39 in. bgs), NRUG4C (39–72 in. bgs).

**NRUL1.** Sample location NRUL1 was in the southern portion of the NRU, on level ground, east of a former bagging plant. The boring was positioned approximately 100 ft north of Guard Road in a thick white pine tree stand. Trees were estimated to be 30–35 ft tall with a representative tree circumference of 2 ft 7 in. (10 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified, sampled, and field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B and C horizon), metals, and pH: NRUL1A (0–12 in. bgs), NRUL1B (12–42 in. bgs), NRUL1C (42–55 in. bgs).

**NRUL2.** Sample location NRUL2 was in the southern portion of the NRU, on level ground, east of a former bagging plant. The boring was co-located within a ½-acre radius and 64 ft east of NRUL1 in a thick white pine tree stand. Trees were estimated to be 30–35 ft tall with a representative tree circumference of 2 ft 7 in. (10 in. diameter).

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUL2A (0–12 in. bgs), NRUL2B (12–33 in. bgs), NRUL2C (33–60 in. bgs). Additionally, one duplicate soil sample was collected from the B horizon and analyzed for metals and pH: NRUL2BD (12–33 in. bgs).

**NRUL3.** Sample location NRUL3 was in the central portion of the NRU, approximately 200 ft southwest of Magazine 1614. The boring was positioned approximately 150 ft north and 15 ft upgradient of 14½ Street in a grassy uncut area interspersed with 15–20-ft-tall cedar trees. Average tree circumference was 10–12 in. (diameter ranging from 3 to 4 in.), indicating that trees were approximately 10–15 years old.

Macro-Core refusal occurred at 16 in. bgs after two direct push attempts within 5 ft of the initially proposed sample location because of near-surface bedrock. The sample location was moved to a new location downslope approximately 40 ft. and was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUL3A (0-9 in. bgs), NRUL3B (9–75 in. bgs), NRUL3C (75–90 in. bgs).

**NRUL4.** Sample location NRUL4 was in the northern portion of the NRU, approximately 150 ft south of Old Rock Road. The boring was positioned on a gradual slope between two deciduous trees (oak and poplar) in a predominantly grassy field. Trees were estimated to be about 35–40 ft tall.

The boring was advanced to a depth of 7.5 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUL4A (0–10 in. bgs), NRUL4B (10–38 in. bgs), NRUL4C (38–60 in. bgs). Additionally, one duplicate soil sample was collected from the B horizon and analyzed for metals and pH: NRUL4BD (10–38 in. bgs).

**NRUW1.** Sample location NRUW1 was in the east-central portion of the NRU, approximately 100 ft north of 14½ Street, northwest of Magazine 1817. The boring was positioned in a flat grassy area interspersed with loblolly pine trees. Trees were estimated to be 30–40 ft tall with a representative circumference of 4 ft 3 in. (16 in. diameter).

The boring was advanced to a depth of 4.0 ft bgs. Three soil horizons (A, B, and C) were identified, sampled, and field-screened for RDX and TNT. Screening results indicated the absence of these explosive constituents. Following screening analysis, one soil sample was collected from each horizon and analyzed for SVOCs, VOCs (B and C horizon), metals, and pH: NRUW1A (0–7 in. bgs), NRUW1B (7–38 in. bgs), NRUW1C (38–48 in. bgs).

**NRUW2.** Sample location NRUW2 was in the east-central portion of the NRU, approximately 100 ft north of 14½ Street, northwest of Magazine 1817. The boring was co-located within a ½-acre radius and 60 ft east from NRUW1.

The boring was advanced to a depth of 4.5 ft bgs, where auger refusal occurred when white-gray, limestone bedrock was encountered. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUW2A (0–9 in. bgs), NRUW2B (9–28 in. bgs), NRUW2C (28–48 in. bgs).

**NRUW3.** Sample location NRUW3 was in the northeastern portion of the NRU, approximately 40–50 ft and 10° upgradient from the road and Magazine 4603–52. The boring was positioned in a stand of several locust trees (surrounded by uncut hay fields) estimated to range from 25 to 50 ft tall, with a representative circumference of 2 ft 2 in. (8 in. diameter).

The boring was advanced to a depth of 3.8 ft bgs, where Macro-Core refusal was caused by limestone/dolomite bedrock. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUW3A (0–10 in. bgs), NRUW3B (10–34 in. bgs), NRUW3C (34–45 in. bgs).

**NRUW4.** Sample location NRUW4 was in the south-central portion of the NRU, north of the intersection of A Avenue and 13th Street. The boring was positioned across the road, 15 ft upgradient and northeast from Magazine 1206. The boring was situated beneath an approximately 20-ft-tall black walnut tree near a stand of cedar trees estimated to be 15 ft tall, with representative tree circumferences of 2 ft 2 in. (8 in. diameter).

The boring was advanced to a depth of 8 ft bgs. Three soil horizons (A, B, and C) were identified and sampled. One soil sample was collected from each horizon and analyzed for metals and pH: NRUW4A (0–10 in. bgs), NRUW4B (10–31 in. bgs), NRUW4C (31–46 in. bgs). Additionally, one duplicate soil sample was collected from the C horizon and analyzed for metals and pH: NRUW4CD (31–46 in. bgs).

Photo. C–1 View of sample location MMAB2 within the Braddock Loam soil type

Photo. C–2 Braddock Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location MMAB2

Photo. C–3 Braddock Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location MMAB3

Photo. C–4 View of sample location MMAB4 within the Braddock Loam soil type

Photo. C–5 View from sample location MMAB4 within the Braddock Loam soil type

Photo. C–6 View of sample location MMAU1 within the Unison-Urban Land Complex soil type

Photo. C–7 View of sample location MMAU2 within the Unison-Urban Land Complex soil type

Photo. C–8 Unison-Urban Complex soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAU2

Photo. C–9 View of sample location MMAU4 within the Unison-Urban Land Complex soil type

Photo. C–10 View of sample location MMAU4 hand auger soil cuttings

Photo. C–11 View of sample location MMAW1 within the Wheeling Sandy Loam soil type

Photo. C–12 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW1

Photo. C–13 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW3

Photo. C–14 View of sample location MMAW4 within the Wheeling Sandy Loam soil type

Photo. C–15 Wheeling Sandy Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location MMAW4

Photo. C–16 View of sample location NRUC2 within the Carbo Silty Clay Loam soil type

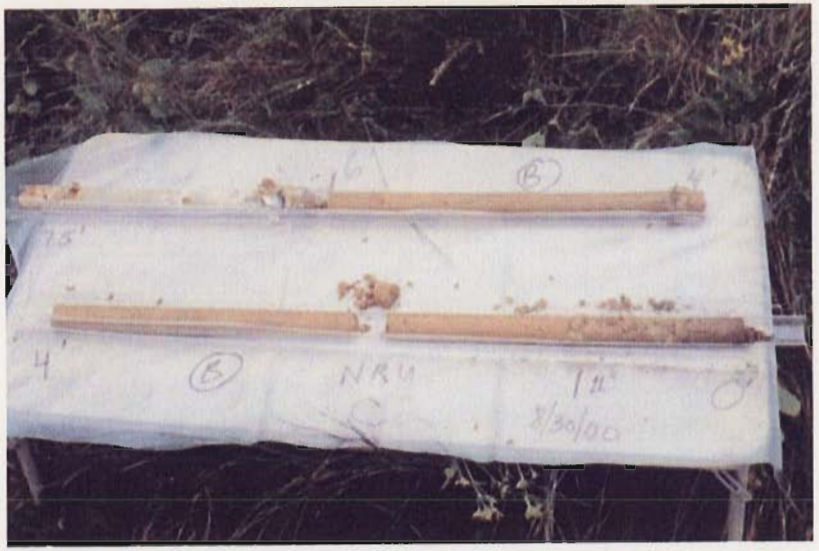


Photo. C–17 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location NRUC2

Photo. C–18 View of sample location NRUC3 within the Carbo Silty Clay Loam soil type

Photo. C–19 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B horizon) for sample location NRUC3

Photo. C–20 View of sample location NRUC4 within the Carbo Silty Clay Loam soil type

Photo. C–21 Carbo Silty Clay Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUC4

Photo. C–22 View of sample location NRUG1 within the Groseclose and Poplimento Silt Loam soil type

Photo. C–23 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG1

Photo. C–24 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG3

Photo. C–25 View of sample location NRUG4 within the Groseclose and Poplimento Silt Loam soil type

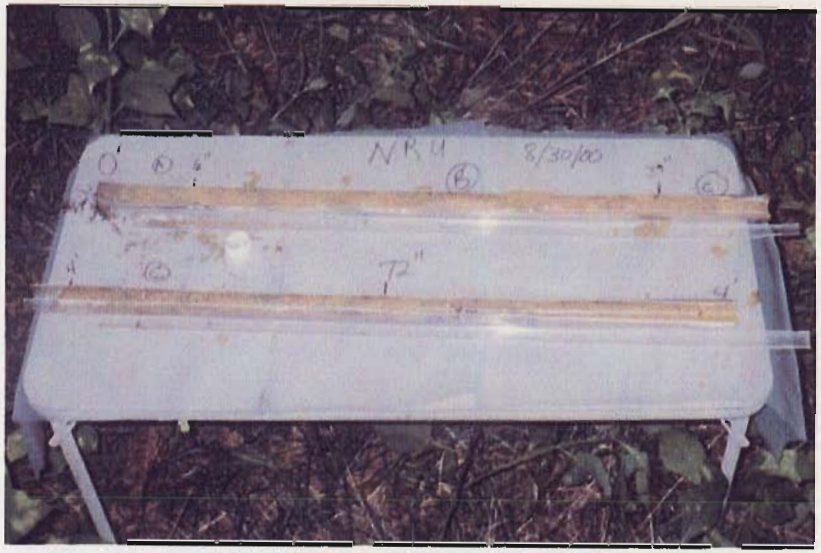



Photo. C–26 Groseclose and Poplimento Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUG4

Photo. C–27 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL2

Photo. C–28 View of sample location NRUL3 within the Lowell Silt Loam soil type

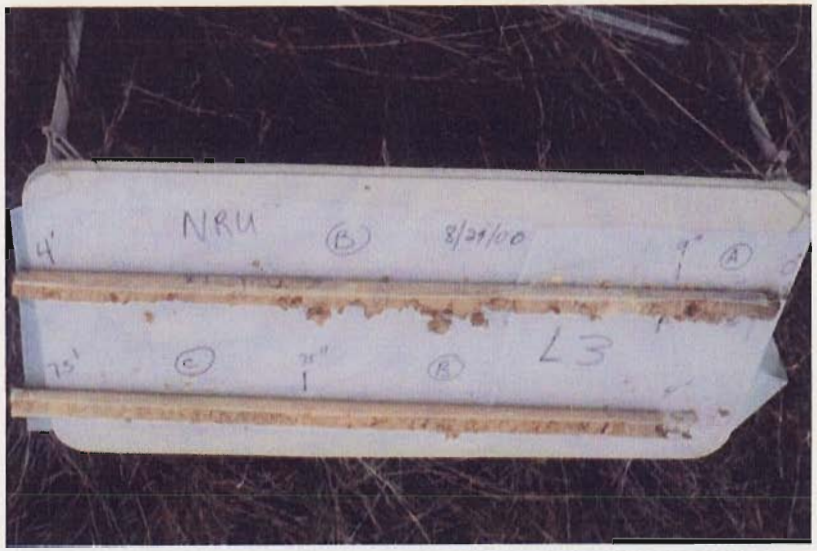



Photo. C–29 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL3

Photo. C–30 View of sample location NRUL4 within the Lowell Silt Loam soil type

Photo. C–31 Lowell Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUL4

Photo. C–32 View of sample location NRUW1 within the Wurno-Newbern-Faywood Silt Loam soil type

Photo. C–33 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW1

Photo. C–34 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW2

Photo. C–35 View of sample location NRUW4 within the Wurno-Newbern-Faywood Silt Loam soil type

Photo. C–36 Wurno-Newbern-Faywood Silt Loam soil profile: surface (A horizon) and subsurface (B and C horizons) for sample location NRUW4

# Appendix D

# USEPA Region III Guidance Memorandum

# Appendix D
## USEPA Region III Guidance Memorandum

From: Flowers.Lynn@epamail.epa.gov
Sent: Friday, September 08, 2000 16:05
To: Mervine@theitgroup.com
Cc: Rak, Andrew; Chassan@theitgroup.com; Evans, Christopher L;
Cooke.Maryt@epamail.epa.gov

Subject: RE: FW: Ft. Ritchie OU3 - Fish Tissue Risk Assessment

Mike et al,

Sorry for the very long delay in getting back to you guys. As I see it we have three issues: (1) the use of B-qualified INORGANIC data; (2) B-qualified data and mercury in the fish tissue study; and (3) dioxin TEQ calculations and B-qualified dioxin data in the fish tissue study

Here is my take (or the Region's stance) on these issues:

(1) The issue of B-qualified data is a complicated one. Note that there are two steps during data analysis where a qualifier is added.

First, the laboratory doing the analysis puts a qualifier on the data point, then a validator puts a second qualifier on the data point. These two qualifiers mean different things and the second one ends up being the only one we are concerned with. Across all EPA regions, an inorganic chemical that is given a B-qualifier in the first round (laboratory stage) means that chemical was detected at a concentration less than the CRDL (contract-required detection limit) but more than the instrument detection limit. Blank contamination is not considered until the next stage (validation). If an inorganic chemical then gets a B-qualifier at the second, validation stage, it means that the result is not detected substantially above the level reported in the laboratory field blank. And this is where Region III differs from the REST OF THE UNITED STATES (because we have our own guidelines from OASQA...Office of Analytical Services and Quality Assurance). In Region III, we give that data point a "B", but the rest of EPA gives the data point a "U." This means that the rest of EPA automatically uses the data point in risk calculations, etc. but at 1/2 the detection limit. We, in Region III, don't generally use the data point at all, but ask for sampling to be re-done if the data set is compromised by the exclusion or "rejection" of the data point(s). In some instances, we use the data but input 1/2 the detection limit. A lot of times it won't make much difference which way you do it (as long as you don't have a LOT OF B-QUALIFIED DATA THAT YOU ARE GOING TO REJECT). There is a push by OASQA to harmonize Region III with the rest of EPA on thisone...but it is difficult. The other regions, in essence, don't know that their "U" qualified data was really "B" qualified unless they look at the original data (which is difficult to do given time contraints). And we, in Region III are really faced with whether or not to use the data, re-sample because of a compromised data set, or reject the data and use a smaller data set. You just don't know whether or not the chemical is there. In a perfect world you would always re-sample. IT decided to eliminate the B-qualified data, i.e., it was "rejected", from the background soil survey. In this instance, it is probably OK because we still have a lot of data, and only a few chemicals were "victims" of B-qualification. It should be noted though, that the OU data sets should also have their "B" qualified data "rejected" for fairness/consistency when making comparisons with the background data sets.

(2) Re: B-qualified mercury and dioxin data from the fish tissue study

Unfortunately, every mercury data point in Lake Royer fish is "B-qualified" by the validator. If these data were to be rejected, it doesn't mean that mercury isn't a COPC, it would mean that you have no mercury data. You would have to re-sample or make a management decision to not re-sample. Perhaps a good alternative would be to use the data (you could go with using 1/2 the detection limit). Note that nickel and chromium data points are also ALL B-qualified, as well as all the data points for HPCDD and TCDF. Note

also that a similar situation exists with Lake Wastler fish data. This situation is not like the one we were faced with in regards to the background soil study where there wasn't a huge compromise in choosing to reject the data. It would seem here that you would either want to use the data or re-sample

(3) Re: Dioxin TEQ calculations.

Thanks for re-checking the calculations. As stated above.you might not want to eliminate (reject) B-qualified data from this study because of mercury and the fact that all of the data for several dioxin congeners is B-qualified. I would suggest that all data be included in the risk assessment for fish at Ft. Ritchie (or re-sample).

Thanks-
Lynn Flowers

# Appendix E

# Comparison Tables and Histograms

**Table E–1**
**Inorganic Soil Concentrations, Braddock Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Braddock Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 5,340 | 1,227 | 0.230 | 3,700-6,660 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 2.0 | 0.4 | 0.202 | 1.5-2.4 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 4/4 | 79.0 | 33.7 | 0.427 | 39.9-114 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 0/4 | | | | | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/4 | | | | | 0.34 | 3.08 | 9.06E+00 |
| Chromium | 4/4 | 11.0 | 3.3 | 0.300 | 8.7-15.8 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 0/4 | | | | | 5.9 | 2.57 | 4.36E-01 |
| Copper | 3/4 | 6.5 | 5.9 | 0.912 | 0-13.2 | 13 | 2.8 | 2.15E-01 |
| Iron | 4/4 | 7,818 | 947 | 0.121 | 7,250-9,230 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 22.2 | 20.2 | 0.910 | 10.2-52.0 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 598 | 228 | 0.381 | 396-924 | 260 | 3.82 | 1.47E-02 |
| Mercury | 2/4 | 0.64 | 0.80 | 1.26 | 0-1.20 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 0/4 | | | | | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | N/A | N/A | N/A |
| Silver | 1/4 | 4.3 | | | 0-4.3 | N/A | N/A | N/A |
| Thallium | 0/4 | | | | | 7.7 | 1.58 | 2.05E-01 |
| Vanadium | 4/4 | 16.4 | 2.6 | 0.160 | 14.7-20.3 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 17.5 | 8.9 | 0.511 | 10.0-30.2 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–2**
**Inorganic Soil Concentrations, Unison Urban Land Complex Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Unison Urban Land Complex Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 6,798 | 2,265 | 0.333 | 4,730-9950 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 5.9 | 3.6 | 0.608 | 1.8-10.2 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 2/4 | 88.5 | 43.2 | 0.488 | 0-119 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 1/4 | 1.10 | | | 0-1.1 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 1/4 | 0.82 | | | 0-0.82 | 0.34 | 3.08 | 9.06E+00 |
| Chromium | 4/4 | 16.5 | 5.4 | 0.328 | 10.9-23.2 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 3/4 | 10.9 | 4.8 | 0.445 | 6.5-16.1 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 4/4 | 7.0 | 3.0 | 0.428 | 5.3-11.4 | 13 | 2.8 | 2.15E-01 |
| Iron | 4/4 | 16,448 | 5,385 | 0.327 | 9,990-22,900 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 65.0 | 107 | 1.64 | 10.5-225 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 614 | 878 | 1.43 | 43.0-1910 | 260 | 3.82 | 1.47E-02 |
| Mercury | 0/4 | | | | | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 3/4 | 6.9 | 3.5 | 0.510 | 0-11.0 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | N/A | N/A | N/A |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 1/4 | 2.1 | | | 0-2.1 | 7.7 | 1.58 | 2.05E-01 |
| Vanadium | 4/4 | 31.7 | 6.7 | 0.210 | 22.5-37.8 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 89.9 | 90.6 | 1.01 | 14.4-216 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–3**
**Inorganic Soil Concentrations, Wheeling Sandy Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Wheeling Sandy Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 12,400 | 2,255 | 0.182 | 10,300-15,400 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 2.4 | 0.4 | 0.148 | 1.9-2.7 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 4/4 | 147 | 19.8 | 0.134 | 130-174 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 4/4 | 0.86 | 0.12 | 0.145 | 0.72-0.99 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 1/4 | 0.67 | | | 0-0.67 | 0.34 | 3.08 | 9.06E+00 |
| Chromium | 4/4 | 24.4 | 3.6 | 0.147 | 19.1-27 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 4/4 | 11.4 | 2.2 | 0.196 | 8.1-13.1 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 4/4 | 11.5 | 2.7 | 0.238 | 7.6-13.6 | 13 | 2.8 | 2.15E-01 |
| Iron | 4/4 | 20,000 | 3,369 | 0.168 | 15,600-23,800 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 13.8 | 1.4 | 0.098 | 12.0-15.0 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 634 | 242 | 0.382 | 287-822 | 260 | 3.82 | 1.47E-02 |
| Mercury | 0/4 | | | | | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 4/4 | 12.0 | 1.7 | 0.143 | 9.8-13.5 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | N/A | N/A | N/A |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 3/4 | 1.8 | 0.4 | 0.229 | 0-2.0 | 7.7 | 1.58 | 2.05E-01 |
| Vanadium | 4/4 | 36.8 | 5.9 | 0.161 | 29.2-43.6 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 60.0 | 4.7 | 0.078 | 54.9-61.1 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–4**
**Inorganic Soil Concentrations, Carbo Silty Clay Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Carbo Silty Clay Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 9,113 | 7,364 | 0.808 | 4,440-20,100 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 3.4 | 1.9 | 0.563 | 1.6-6.1 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 3/4 | 37.1 | 17.2 | 0.465 | 0-56.7 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 2/4 | 0.74 | 0.18 | 0.248 | 0-0.87 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/4 | | | | | N/A | N/A | N/A |
| Chromium | 4/4 | 20.1 | 9.3 | 0.464 | 11.3-32.2 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 3/4 | 17.9 | 13.7 | 0.767 | 0-33.6 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 4/4 | 5.6 | 2.7 | 0.481 | 2.9-9 | 13 | 2.80 | 2.15E-01 |
| Iron | 4/4 | 20,450 | 8,932 | 0.437 | 10,100-31,900 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 16.2 | 5.9 | 0.367 | 11.5-24.7 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 349 | 164 | 0.469 | 186-498 | 260 | 3.82 | 1.47E-02 |
| Mercury | 0/4 | | | | | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 2/4 | 12.0 | 8.6 | 0.719 | 0-18.1 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 0/4 | | | | | N/A | N/A | N/A |
| Vanadium | 4/4 | 30.4 | 9.7 | 0.318 | 19.7-42.5 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 25.1 | 21.0 | 0.837 | 10.9-56.3 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–5**
**Inorganic Soil Concentrations, Groseclose and Poplimento Silt Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Groseclose and Poplimento Silt Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 6,685 | 3,042 | 0.455 | 3,770-10,700 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 3.1 | 0.9 | 0.295 | 2-4.1 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 4/4 | 34.2 | 10.7 | 0.314 | 23.4-45.7 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 2/4 | 0.63 | 0.01 | 0.022 | 0-0.64 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/4 | | | | | N/A | N/A | N/A |
| Chromium | 4/4 | 18.6 | 10.8 | 0.583 | 8.8-29.8 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 3/4 | 8.7 | 3.0 | 0.342 | 0-11.8 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 3/4 | 6.5 | 3.9 | 0.602 | 0-11 | 13 | 2.80 | 2.15E-01 |
| Iron | 4/4 | 19,045 | 11,551 | 0.607 | 8,790-30,900 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 15.8 | 6.43 | 0.408 | 8.9-23.6 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 302 | 129 | 0.429 | 141-458 | 260 | 3.82 | 1.47E-02 |
| Mercury | 0/4 | | | | | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 2/4 | 7.6 | 2.3 | 0.309 | 0-9.2 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 0/4 | | | | | N/A | N/A | N/A |
| Vanadium | 4/4 | 29.6 | 17.0 | 0.574 | 15-47.2 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 21.7 | 9.9 | 0.455 | 7.1-28.5 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–6**
**Inorganic Soil Concentrations, Lowell Silt Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Lowell Silt Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 9,823 | 4,663 | 0.475 | 5,740-16,000 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 5.5 | 2.6 | 0.480 | 3.7-9.3 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 4/4 | 77.8 | 22.5 | 0.289 | 59.4-109 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 4/4 | 0.83 | 0.14 | 0.165 | 0.72-1 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/4 | | | | | N/A | N/A | N/A |
| Chromium | 4/4 | 30.2 | 3.31 | 0.110 | 27-34.4 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 4/4 | 19.8 | 5.0 | 0.250 | 15.3-25.9 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 4/4 | 6.3 | 3.7 | 0.588 | 3.2-11.6 | 13 | 2.80 | 2.15E-01 |
| Iron | 4/4 | 25,225 | 5,186 | 0.206 | 19,400-32,000 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 35.1 | 28.2 | 0.803 | 15.3-76.7 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 1,265 | 447 | 0.353 | 711-1,710 | 260 | 3.82 | 1.47E-02 |
| Mercury | 1/4 | 0.13 | | | 0-0.13 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 4/4 | 9.1 | 4.6 | 0.506 | 4.6-15.3 | 11 | 2.64 | 2.40E-01 |
| Selenium | 2/4 | 0.71 | 0.09 | | 0-0.77 | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 0/4 | | | | | N/A | N/A | N/A |
| Vanadium | 4/4 | 42.4 | 9.1 | 0.214 | 31.9-52.9 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 40.7 | 10.7 | 0.263 | 29.2-55.1 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–7**
**Inorganic Soil Concentrations, Wurno-Newbern-Faywood Loam Surface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Wurno-Newbern-Faywood Silt Loam Surface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 4/4 | 7,943 | 4,804 | 0.605 | 3,620-14,600 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/4 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 4/4 | 3.7 | 2.6 | 0.703 | 2-7.6 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 3/4 | 57.5 | 19.7 | 0.342 | 0-75.3 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 2/4 | 1.35 | 0.21 | 0.157 | 0-1.5 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/4 | | | | | N/A | N/A | N/A |
| Chromium | 4/4 | 27.0 | 19.5 | 0.724 | 6.3-53.3 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 3/4 | 27.3 | 17.6 | 0.645 | 0-45.4 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 4/4 | 5.0 | 2.6 | 0.516 | 2.9-8.5 | 13 | 2.80 | 2.15E-01 |
| Iron | 4/4 | 31,768 | 23,439 | 0.738 | 7,470-63,000 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 4/4 | 20.8 | 8.6 | 0.416 | 10.3-28.8 | 14 | 1.95 | 1.39E-01 |
| Manganese | 4/4 | 1,109 | 984 | 0.887 | 91.7-2,040 | 260 | 3.82 | 1.47E-02 |
| Mercury | 0/4 | | | | | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 2/4 | 12.4 | 6.3 | 0.510 | 0-16.8 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/4 | | | | | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/4 | | | | | N/A | N/A | N/A |
| Thallium | 0/4 | | | | | N/A | N/A | N/A |
| Vanadium | 4/4 | 50.1 | 37.2 | 0.743 | 12.2-101 | 43 | 2.51 | 5.84E-02 |
| Zinc | 4/4 | 33.6 | 17.3 | 0.514 | 14.9-56.2 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–8**
**Inorganic Soil Concentrations, Braddock Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Braddock Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 6/6 | 13,033 | 2,220 | 0.170 | 10,100-16,000 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/6 | 7.30 | 0.42 | 0.058 | 7.00-7.60 | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 5/6 | 2.1 | 1.2 | 0.592 | 0.6-3.8 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 6/6 | 46.4 | 13.5 | 0.290 | 27.4-63.9 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 0/6 | 0.29 | 0.01 | 0.044 | 0.28-0.32 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 1/6 | 0.34 | 0.11 | 0.337 | 0.28-0.57 | N/A | N/A | N/A |
| Chromium | 6/6 | 22.2 | 7.3 | 0.327 | 12.6-33.6 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 1/6 | 4.1 | 3.0 | 0.717 | 2.5-10.2 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 6/6 | 5.2 | 1.5 | 0.285 | 3.3-7.5 | 13 | 2.8 | 2.15E-01 |
| Iron | 6/6 | 23,000 | 4,571 | 0.199 | 14,900-28,900 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 6/6 | 9.1 | 1.4 | 0.157 | 6.9-10.7 | 14 | 1.95 | 1.39E-01 |
| Manganese | 6/6 | 206 | 129 | 0.627 | 125-464 | 260 | 3.82 | 1.47E-02 |
| Mercury | 2/6 | 0.08 | 0.05 | 0.608 | 0.06-0.18 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 6/6 | 6.5 | 2.0 | 0.311 | 4.8-10.3 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/6 | 0.29 | 0.01 | 0.044 | 0.28-0.32 | 0.3 | 2.44 | 8.13E+00 |
| Silver | 0/6 | 0.47 | 0.13 | 0.270 | 0.30-0.55 | N/A | N/A | N/A |
| Thallium | 2/6 | 0.98 | 0.73 | 0.742 | 1.4-2.3 | N/A | N/A | N/A |
| Vanadium | 6/6 | 44.6 | 9.0 | 0.202 | 31.0-56.4 | 43 | 2.51 | 5.84E-02 |
| Zinc | 6/6 | 79.5 | 138 | 1.74 | 14.7-361 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–9**
**Inorganic Soil Concentrations, Unison Urban Land Complex Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Unison Urban Land Complex Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 8/8 | 28,064 | 15,213 | 0.542 | 8,710-47,900 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/8 | 3.98 | 0.31 | 0.077 | 3.7-4.1 | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 7/8 | 15.0 | 11.1 | 0.744 | 0.55-35.9 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 6/8 | 49.3 | 29.5 | 0.599 | 13.5-85.4 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 4/8 | 1.59 | 1.77 | 1.11 | 0.28-5.30 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 5/8 | 0.91 | 0.66 | 0.720 | 0.28-2.20 | N/A | N/A | N/A |
| Chromium | 8/8 | 38.6 | 19.2 | 0.497 | 10.8-75.8 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 7/8 | 30.8 | 37.3 | 1.21 | 2.9-94.3 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 8/8 | 22.3 | 11.1 | 0.499 | 3.4-34.4 | 13 | 2.8 | 2.15E-01 |
| Iron | 8/8 | 37,438 | 14,796 | 0.395 | 14,300-67,700 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 8/8 | 64.7 | 89.2 | 1.38 | 5.6-256 | 14 | 1.95 | 1.39E-01 |
| Manganese | 8/8 | 451 | 585 | 1.30 | 39.4-1,760 | 260 | 3.82 | 1.47E-02 |
| Mercury | 6/8 | 0.11 | 0.07 | 0.653 | 0.05-0.27 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 8/8 | 32.8 | 30.3 | 0.924 | 5.8-94.2 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/8 | 0.32 | 0.03 | 0.099 | 0.28-0.38 | 0.3 | 2.44 | 8.13E+00 |
| Silver | 0/8 | 0.39 | 0.12 | 0.296 | 0.31-0.60 | N/A | N/A | N/A |
| Thallium | 4/8 | 1.9 | 1.6 | 0.846 | 0.6-5.0 | N/A | N/A | N/A |
| Vanadium | 8/8 | 72.0 | 25.1 | 0.348 | 27.0-114 | 43 | 2.51 | 5.84E-02 |
| Zinc | 8/8 | 178 | 202 | 1.13 | 19.8-598 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–10**
**Inorganic Soil Concentrations, Wheeling Sandy Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Wheeling Sandy Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 8/8 | 20,525 | 3,895 | 0.190 | 13,600-25,600 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/8 | 3.64 | 0.213 | 0.058 | 3.35-3.95 | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 8/8 | 4.7 | 4.3 | 0.917 | 2.2-15.3 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 7/8 | 113 | 43.8 | 0.390 | 12.3-155 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 7/8 | 0.96 | 0.31 | 0.325 | 0.31-1.30 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 6/8 | 0.97 | 0.71 | 0.730 | 0.29-2.50 | N/A | N/A | N/A |
| Chromium | 8/8 | 33.5 | 5.5 | 0.163 | 26.0-40.7 | 33 | 2.6 | 7.88E-02 |
| Cobalt | 8/8 | 16.4 | 5.2 | 0.318 | 6.8-22.5 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 8/8 | 20.6 | 5.7 | 0.276 | 12.2-27.5 | 13 | 2.8 | 2.15E-01 |
| Iron | 8/8 | 34,950 | 7,005 | 0.200 | 22,800-43,900 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 8/8 | 14.6 | 4.5 | 0.306 | 10.0-23.6 | 14 | 1.95 | 1.39E-01 |
| Manganese | 8/8 | 573 | 253 | 0.441 | 47.4-835 | 260 | 3.82 | 1.47E-02 |
| Mercury | 2/8 | 0.02 | 0.01 | 0.329 | 0.02-0.04 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 8/8 | 18.3 | 3.1 | 0.169 | 13.4-21.7 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/8 | 0.30 | 0.02 | 0.060 | 0.28-0.33 | 0.3 | 2.44 | 8.13E+00 |
| Silver | 0/8 | 0.31 | 0.02 | 0.057 | 0.28-0.33 | N/A | N/A | N/A |
| Thallium | 6/8 | 2.2 | 1.1 | 0.493 | 0.6-3.2 | N/A | N/A | N/A |
| Vanadium | 8/8 | 58.2 | 18.9 | 0.325 | 23.1-79.5 | 43 | 2.51 | 5.84E-02 |
| Zinc | 8/8 | 71.5 | 16.5 | 0.231 | 37.7-93.4 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–11**
**Inorganic Soil Concentrations, Carbo Silty Clay Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Carbo Silty Clay Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 5/5 | 14,360 | 4,477 | 0.312 | 10,000-21,100 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/5 | | | | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 5/5 | 3.5 | 1.6 | 0.452 | 1.2-4.9 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 2/5 | 26.2 | 18.8 | 0.717 | 12.0-48.1 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 2/5 | 1.05 | 1.34 | 1.27 | 0.31-3.40 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/5 | 0.38 | 0.15 | 0.39 | 0.31-0.65 | N/A | N/A | N/A |
| Chromium | 5/5 | 27.9 | 12.8 | 0.458 | 14.5-47.6 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 2/5 | 21.8 | 37.8 | 1.73 | 3.1-89.1 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 5/5 | 13.1 | 6.1 | 0.465 | 5.9-21.5 | 13 | 2.80 | 2.15E-01 |
| Iron | 5/5 | 29,220 | 8,744 | 0.299 | 17,300-39,400 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 5/5 | 11.4 | 9.7 | 0.845 | 3.5-28.0 | 14 | 1.95 | 1.39E-01 |
| Manganese | 5/5 | 128 | 123 | 0.961 | 33.0-205 | 260 | 3.82 | 1.47E-02 |
| Mercury | 1/5 | 0.08 | 0.03 | 0.337 | 0.06-0.12 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 4/5 | 17.8 | 16.6 | 0.932 | 2.4-44.8 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/5 | 0.63 | 0.53 | 0.845 | 0.31-1.55 | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/5 | 0.76 | 0.30 | 0.399 | 0.60-1.30 | N/A | N/A | N/A |
| Thallium | 0/5 | 0.6 | 0.03 | 0.043 | 0.6-0.7 | N/A | N/A | N/A |
| Vanadium | 5/5 | 46.1 | 20.8 | 0.451 | 22.0-68.9 | 43 | 2.51 | 5.84E-02 |
| Zinc | 5/5 | 23.2 | 14.2 | 0.612 | 7.4-40.8 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–12**
**Inorganic Soil Concentrations, Carbo Silty Clay Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Groseclose and Poplimento Silt Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 8/8 | 8,975 | 3,774 | 0.420 | 6,130-17,600 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/8 | 0.35 | 0.004 | 0.010 | | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 8/8 | 4.2 | 1.5 | 0.355 | 2.7-7.4 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 2/8 | 17.7 | 11.2 | 0.630 | 32.5-38.7 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 1/8 | 0.46 | 0.46 | 1.01 | 0.29-1.60 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/8 | 0.30 | 0.01 | 0.027 | 0.29-0.31 | N/A | N/A | N/A |
| Chromium | 8/8 | 22.5 | 7.4 | 0.328 | 13.6-33.1 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 5/8 | 23.6 | 23.0 | 0.976 | 18.0-70.1 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 8/8 | 6.9 | 7.0 | 1.02 | 1.6-21.3 | 13 | 2.80 | 2.15E-01 |
| Iron | 8/8 | 27,450 | 7,339 | 0.267 | 17,400-38,100 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 8/8 | 14.0 | 9.2 | 0.662 | 7.2-35.5 | 14 | 1.95 | 1.39E-01 |
| Manganese | 8/8 | 394 | 331 | 0.841 | 16.7-931 | 260 | 3.82 | 1.47E-02 |
| Mercury | 3/8 | 0.08 | 0.04 | 0.427 | 0.06-0.14 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 4/8 | 11.1 | 13.4 | 1.21 | 2.3-35.3 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/8 | 0.30 | 0.01 | 0.027 | 0.29-0.31 | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/8 | 0.59 | 0.02 | 0.039 | 0.55-0.60 | N/A | N/A | N/A |
| Thallium | 0/8 | 0.6 | 0.02 | 0.039 | | N/A | N/A | N/A |
| Vanadium | 8/8 | 40.1 | 10.2 | 0.255 | 26.5-56.1 | 43 | 2.51 | 5.84E-02 |
| Zinc | 8/8 | 15.9 | 10.3 | 0.647 | 4.7-33.0 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

**Table E–13**
**Inorganic Soil Concentrations, Lowell Silt Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Lowell Silt Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 8/8 | 18,735 | 8,800 | 0.470 | 7,380-32,800 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/8 | 0.38 | 0.05 | 0.126 | 0.34-0.43 | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 8/8 | 4.3 | 1.8 | 0.414 | 2.5-7.1 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 8/8 | 43.4 | 11.9 | 0.275 | 30.4-63.4 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 5/8 | 1.12 | 0.80 | 0.718 | 0.28-2.30 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/8 | 0.35 | 0.11 | 0.304 | 0.28-0.60 | N/A | N/A | N/A |
| Chromium | 8/8 | 36.3 | 7.2 | 0.199 | 24.8-49.5 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 8/8 | 15.7 | 8.9 | 0.566 | 7.0-34.6 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 8/8 | 16.9 | 10.2 | 0.601 | 3.2-11.6 | 13 | 2.80 | 2.15E-01 |
| Iron | 8/8 | 33,838 | 6,492 | 0.192 | 24,400-44,200 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 8/8 | 11.8 | 4.0 | 0.342 | 7.9-17.7 | 14 | 1.95 | 1.39E-01 |
| Manganese | 8/8 | 381 | 265 | 0.696 | 62.8-785 | 260 | 3.82 | 1.47E-02 |
| Mercury | 1/8 | 0.08 | 0.05 | 0.597 | 0.06-0.19 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 8/8 | 17.3 | 9.9 | 0.572 | 4.8-31.0 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/8 | 0.85 | 0.69 | 0.818 | 0.30-1.80 | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/8 | 0.69 | 0.21 | 0.304 | 0.55-1.20 | N/A | N/A | N/A |
| Thallium | 0/8 | 0.6 | 0.1 | 0.086 | 0.6-0.7 | N/A | N/A | N/A |
| Vanadium | 8/8 | 51.9 | 10.3 | 0.199 | 36.7-64.6 | 43 | 2.51 | 5.84E-02 |
| Zinc | 8/8 | 26.1 | 14.6 | 0.560 | 10.6-56.5 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

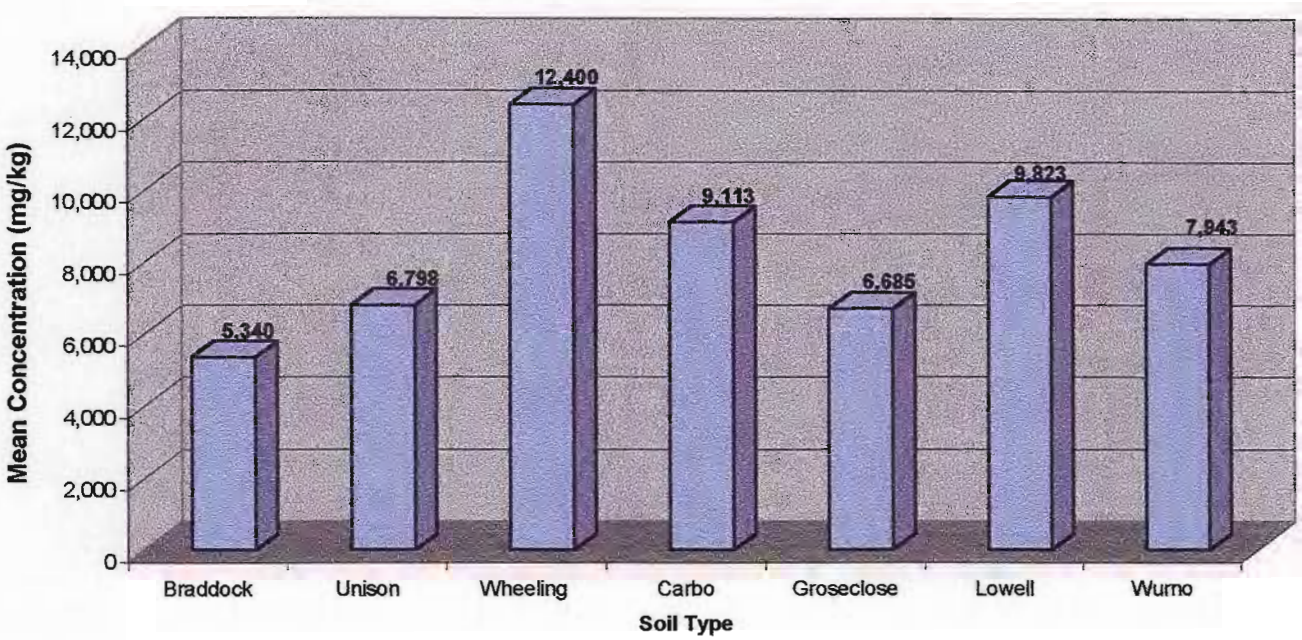
**Table E-14**
**Inorganic Soil Concentrations, Wurno-Newbern-Faywood Silt Loam Subsurface vs. Eastern U.S.**

[Units in mg/kg]

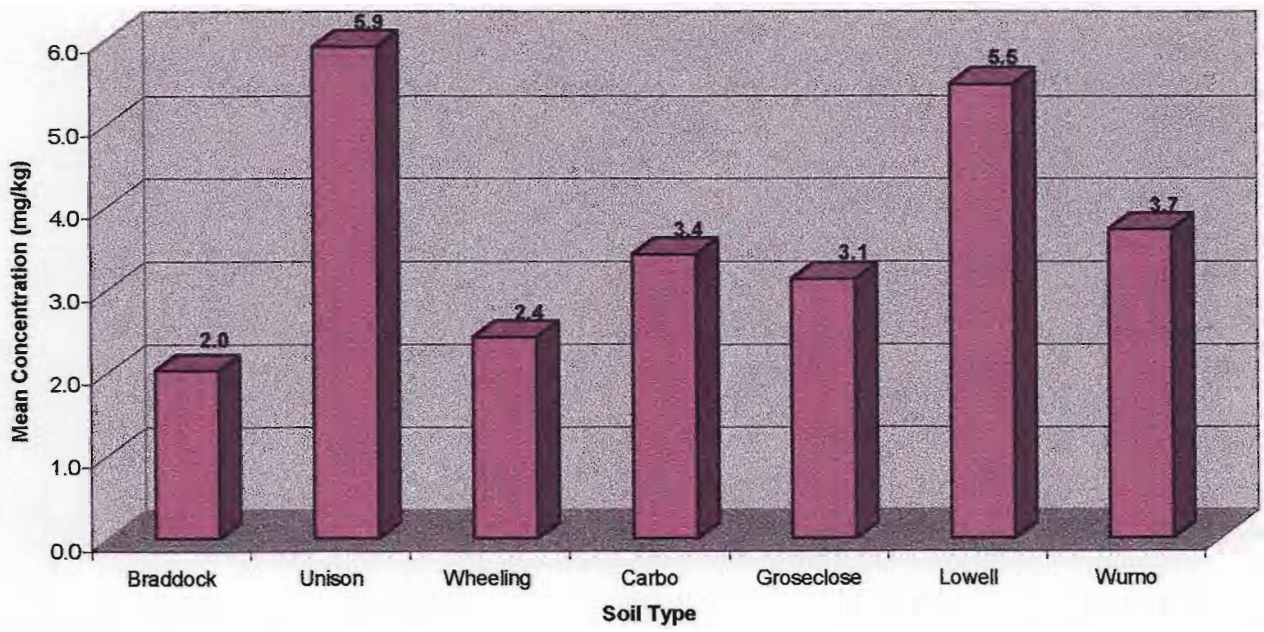
| Analyte | Frequency of Detection | Mean | STD Dev | CV | Range of Concentrations | Arithmetic Mean in Eastern U.S.* | STD Dev in Eastern U.S.* | CV in Eastern U.S.* |
|---|---|---|---|---|---|---|---|---|
| **Wurno-Newbern-Faywood Silt Loam Subsurface Soil** | | | | | | | | |
| **Inorganics** | | | | | | | | |
| Aluminum | 8/8 | 18,725 | 8,625 | 0.461 | 10,200-33,900 | 33,000 | 2.87 | 8.70E-05 |
| Antimony | 0/8 | 0.39 | 0.02 | 0.055 | 0.37-0.40 | 0.52 | 2.38 | 4.58E+00 |
| Arsenic | 7/8 | 3.6 | 3.2 | 0.887 | 1.6-10.7 | 4.8 | 2.56 | 5.33E-01 |
| Barium | 8/8 | 57.1 | 44.4 | 0.777 | 28.5-164 | 290 | 2.35 | 8.10E-03 |
| Beryllium | 6/8 | 1.99 | 1.74 | 0.874 | 0.78-5.40 | 0.55 | 2.53 | 4.60E+00 |
| Cadmium | 0/8 | 0.36 | 0.12 | 0.333 | 0.31-0.65 | N/A | N/A | N/A |
| Chromium | 8/8 | 32.4 | 12.0 | 0.372 | 14.4-50.9 | 33 | 2.60 | 7.88E-02 |
| Cobalt | 6/8 | 25.5 | 42.9 | 1.68 | 3.1-130 | 5.9 | 2.57 | 4.36E-01 |
| Copper | 8/8 | 18.8 | 11.6 | 0.619 | 8.1-38.7 | 13 | 2.80 | 2.15E-01 |
| Iron | 8/8 | 33,013 | 10,477 | 0.317 | 17,300-44,100 | 14,000 | 2.87 | 2.05E-04 |
| Lead | 8/8 | 6.8 | 2.9 | 0.423 | 2.1-12.6 | 14 | 1.95 | 1.39E-01 |
| Manganese | 8/8 | 211 | 129 | 0.610 | 33.2-419 | 260 | 3.82 | 1.47E-02 |
| Mercury | 1/8 | 0.08 | 0.05 | 0.579 | 0.06-0.19 | 0.081 | 2.52 | 3.11E+01 |
| Nickel | 8/8 | 25.6 | 16.2 | 0.633 | 7.6-51.1 | 11 | 2.64 | 2.40E-01 |
| Selenium | 0/8 | 0.56 | 0.46 | 0.830 | 0.31-1.65 | 0.30 | 2.44 | 8.13E+00 |
| Silver | 0/8 | 0.71 | 0.24 | 0.341 | 0.60-1.30 | N/A | N/A | N/A |
| Thallium | 0/8 | 0.6 | 0.03 | 0.043 | 0.6-0.7 | N/A | N/A | N/A |
| Vanadium | 8/8 | 52.9 | 16.2 | 0.305 | 29.1-77.6 | 43 | 2.51 | 5.84E-02 |
| Zinc | 8/8 | 34.2 | 20.1 | 0.586 | 11.8-69.8 | 40 | 2.11 | 5.28E-02 |

*Source: Shacklette, H.T., and Boerngen, J.G. 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States.* U.S. Government Printing Office, Washington, DC. U.S.G.S. Professional Paper 1270.

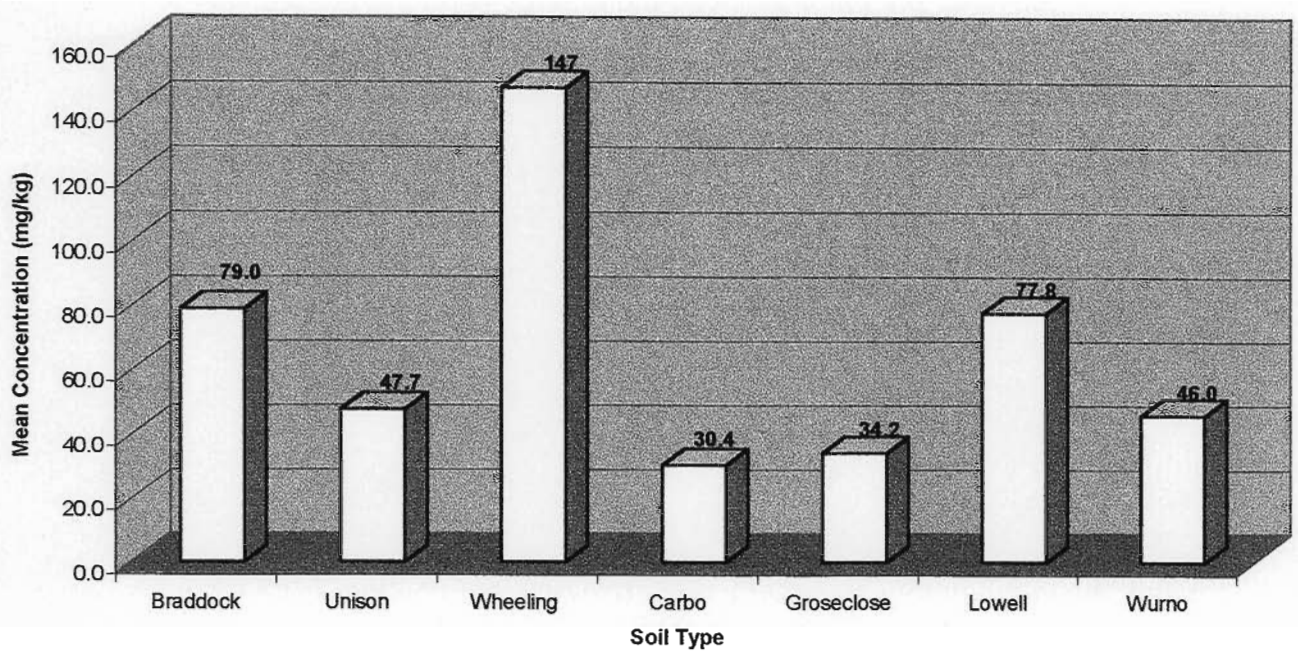
**Average Aluminum Concentrations Detected in Surface Soil at RFAAP**



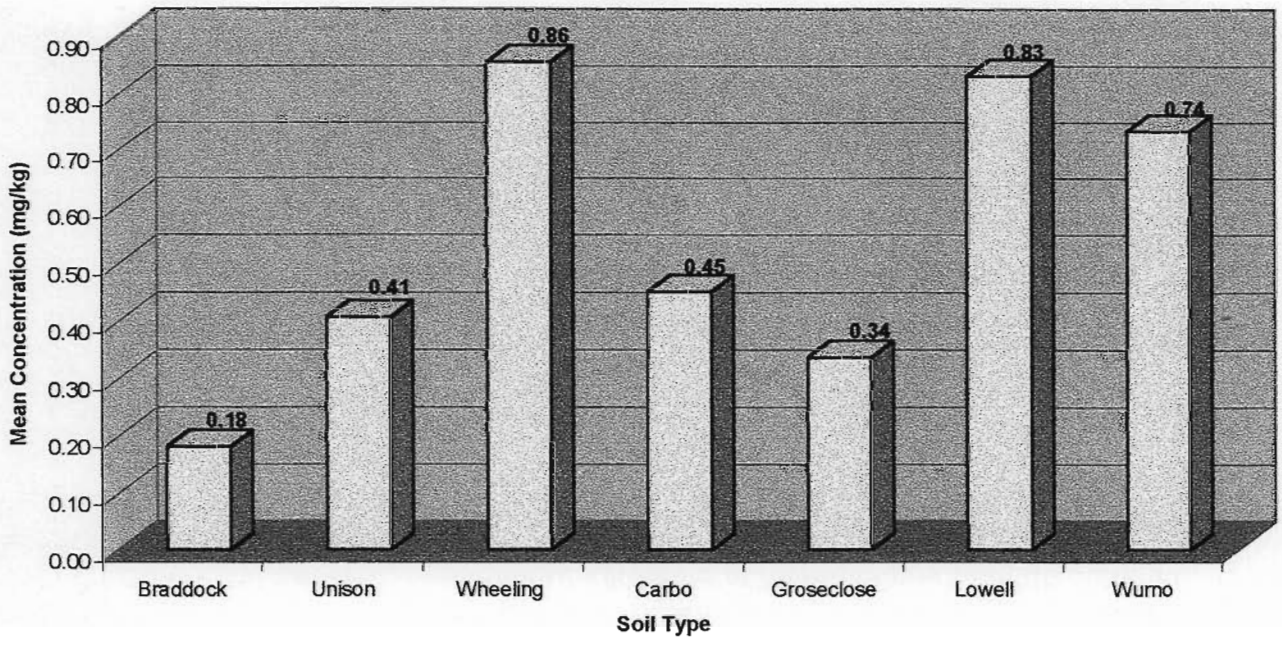

**Average Arsenic Concentrations Detected in Surface Soil at RFAAP**



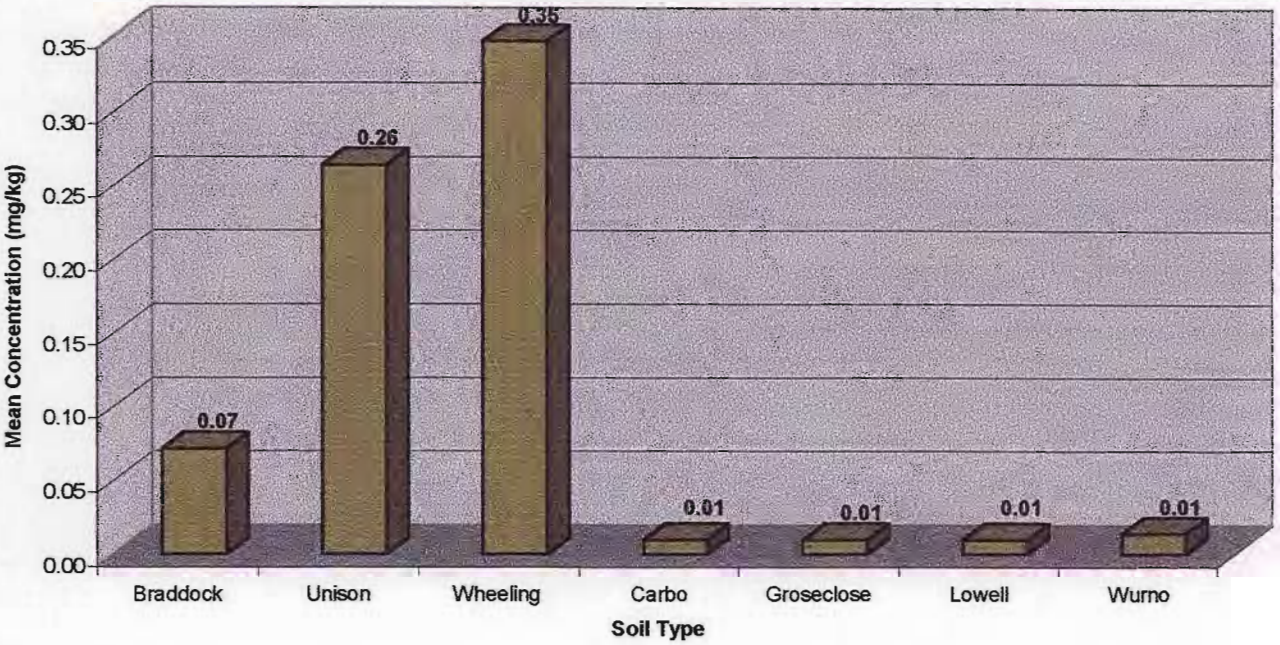
**Average Barium Concentrations Detected in Surface Soil at RFAAP**



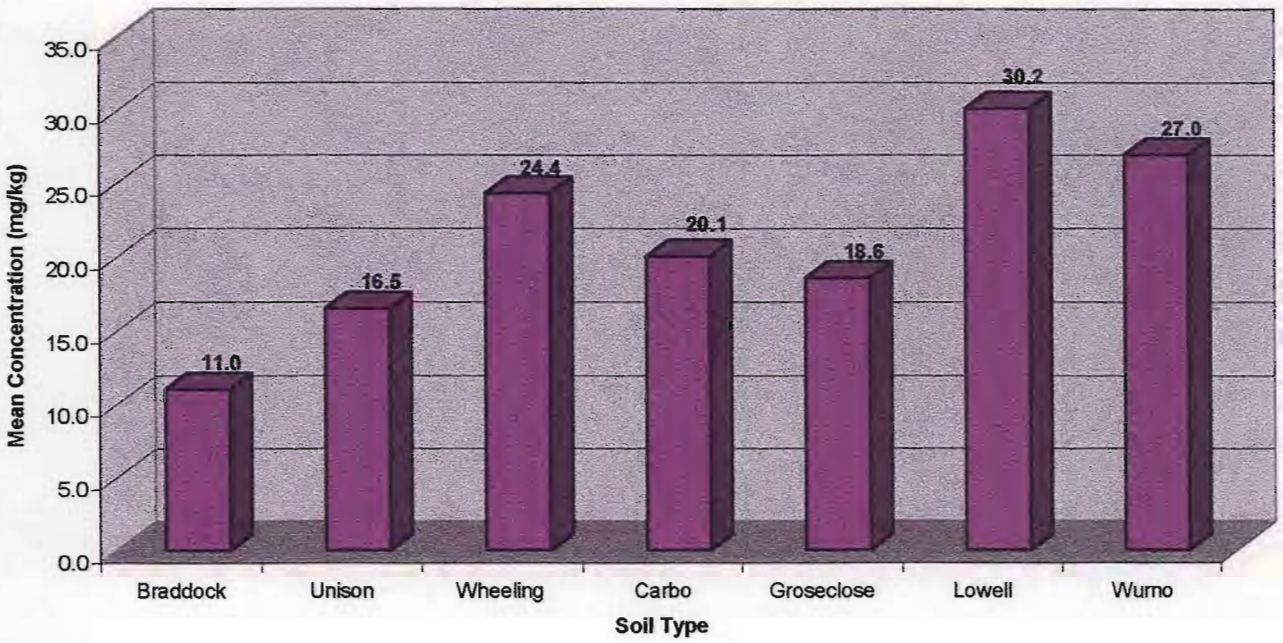

**Average Beryllium Concentrations Detected in Surface Soil at RFAAP**



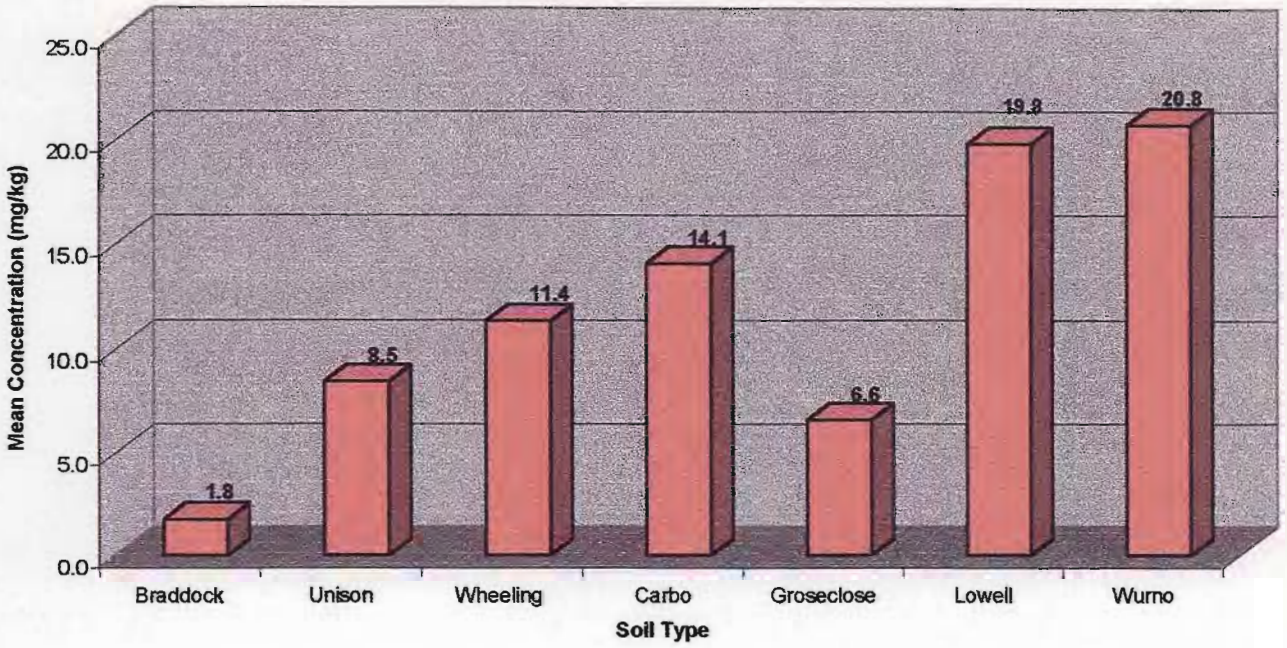
**Average Cadmium Concentrations Detected in Surface Soil at RFAAP**



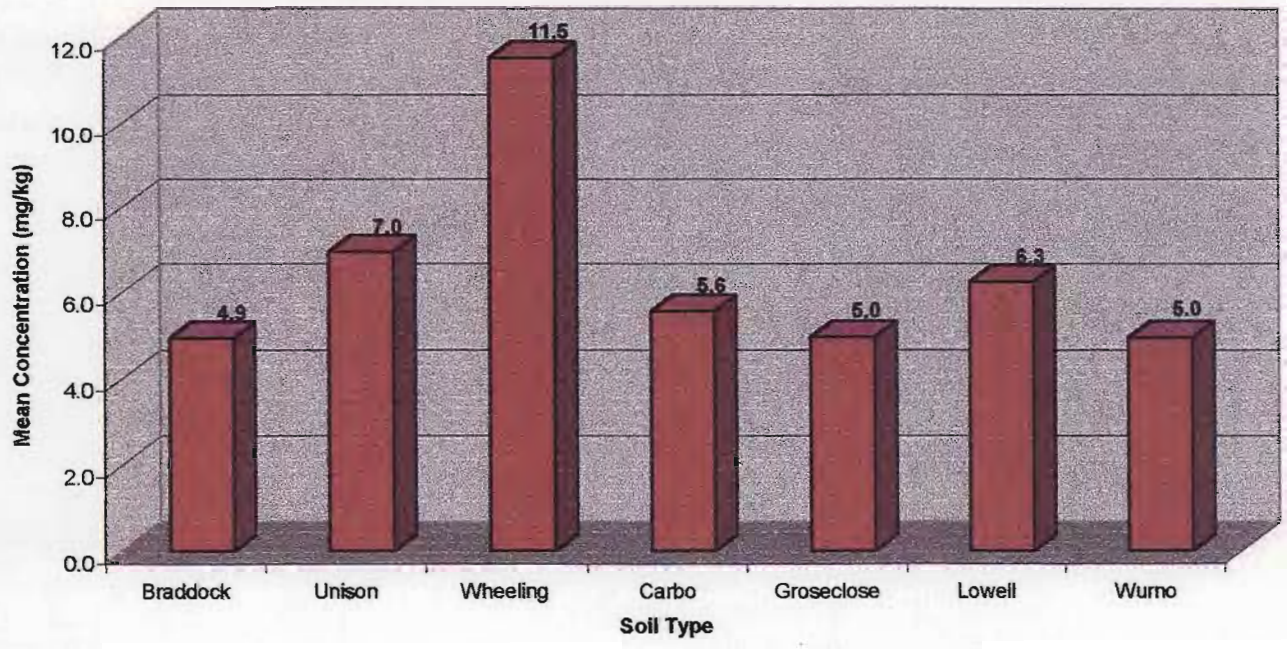

**Average Chromium Concentrations Detected in Surface Soil at RFAAP**



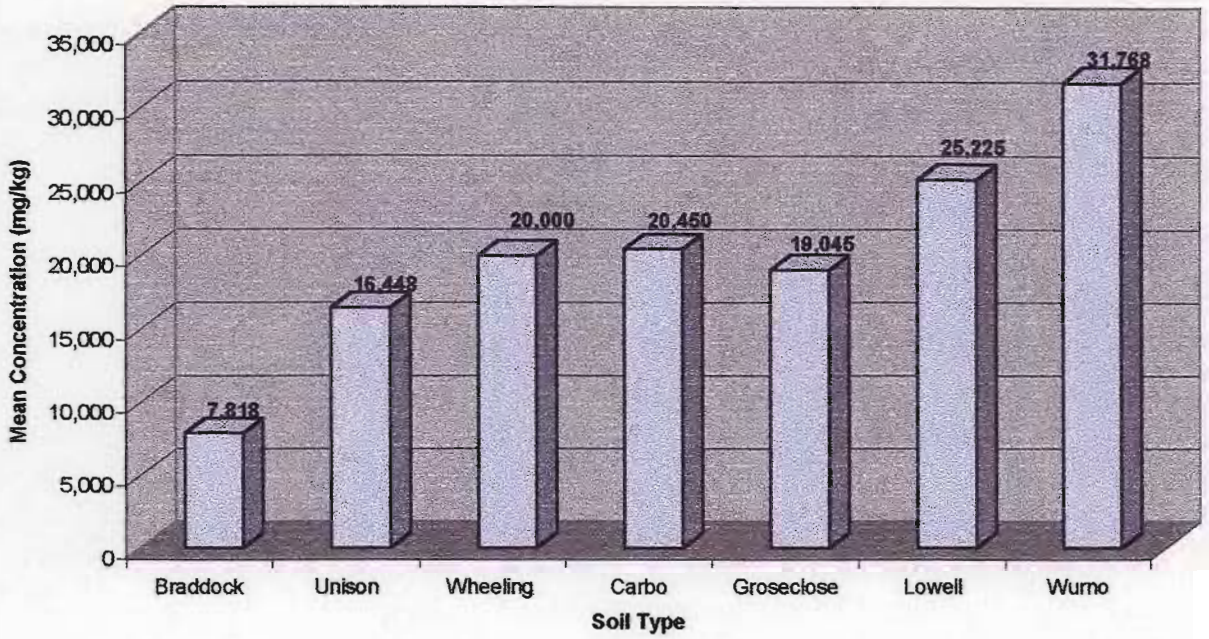
**Average Cobalt Concentrations Detected in Surface Soil at RFAAP**



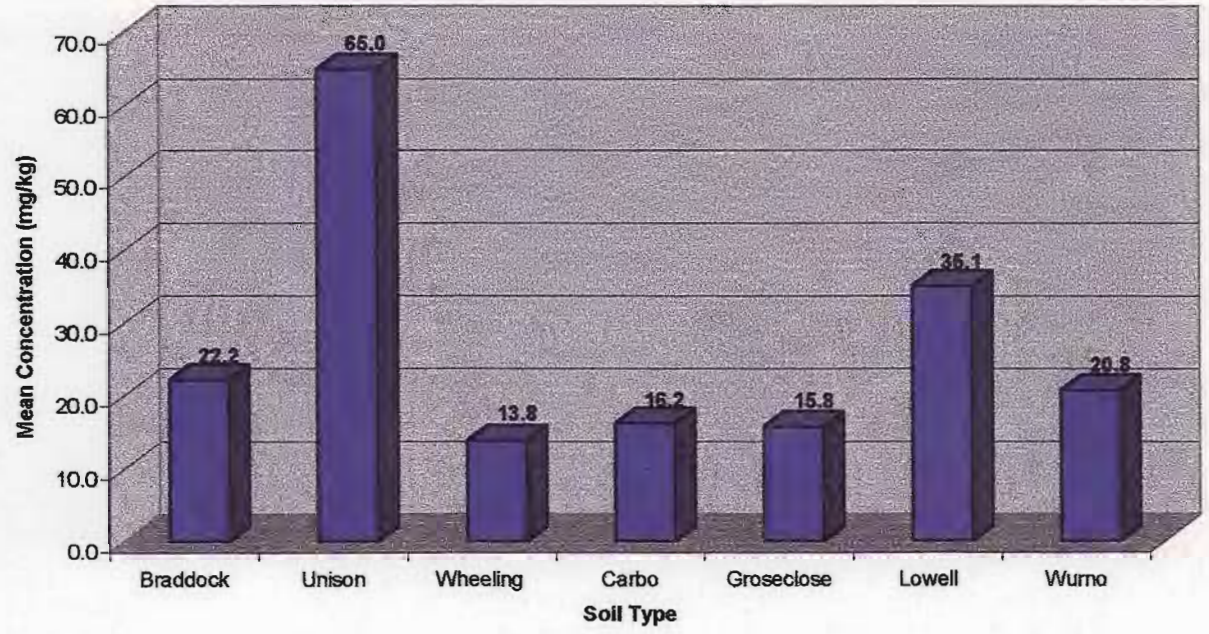

**Average Copper Concentrations Detected in Surface Soil at RFAAP**



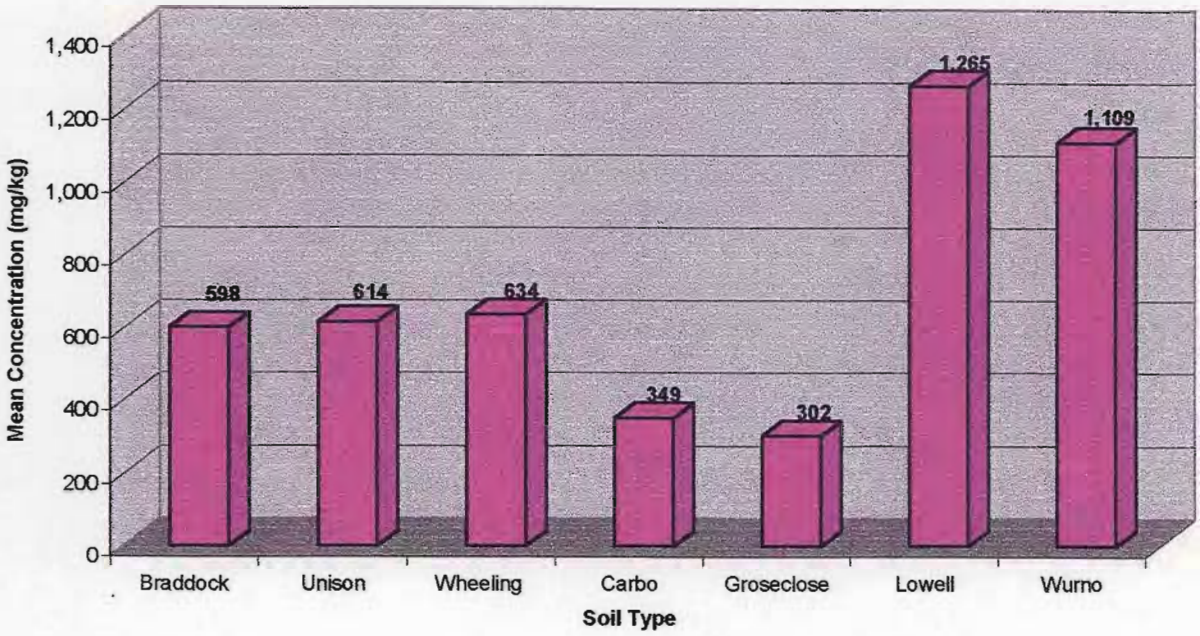
**Average Iron Concentrations Detected in Surface Soil at RFAAP**



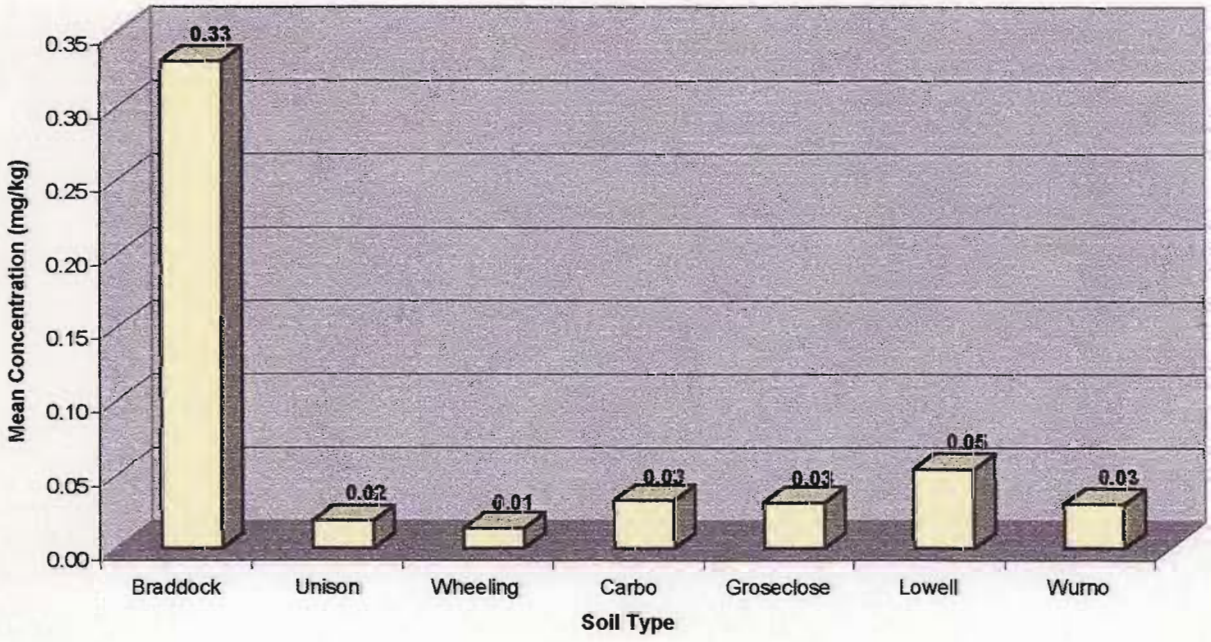

**Average Lead Concentrations Detected in Surface Soil at RFAAP**



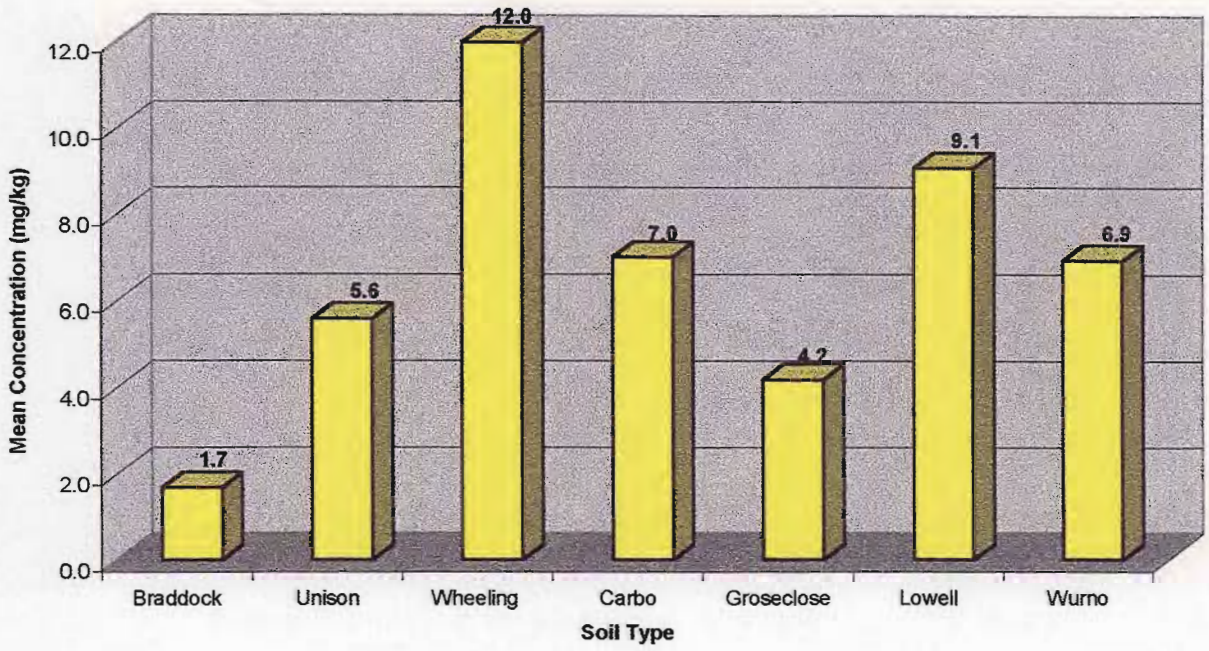
**Average Manganese Concentrations in Surface Soil at RFAAP**



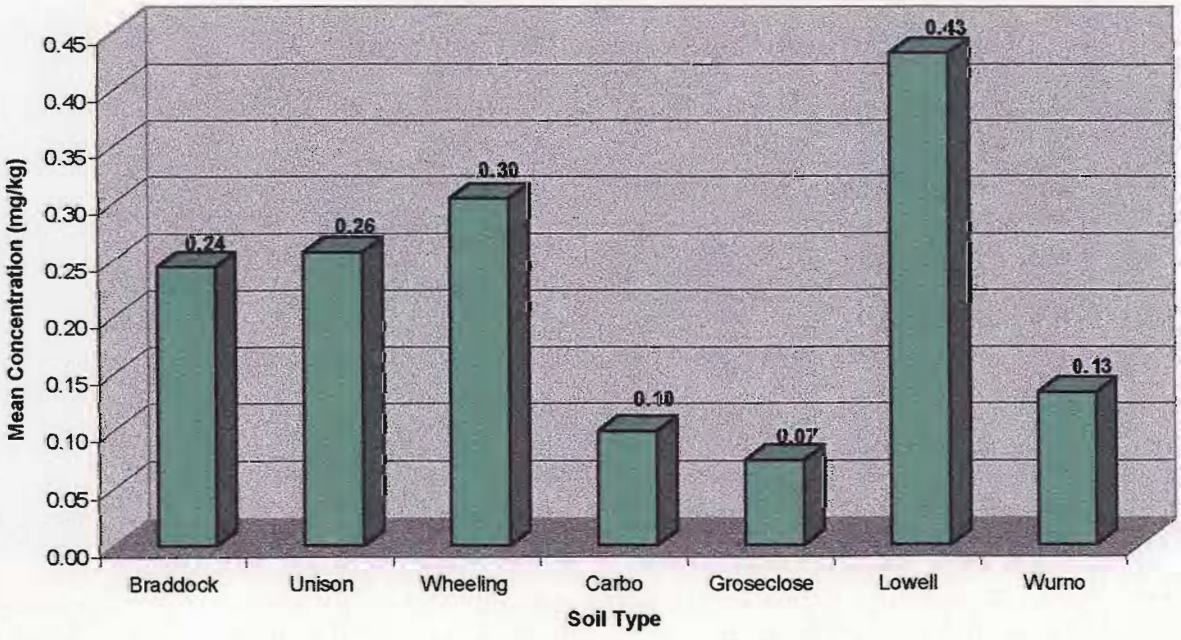

**Average Mercury Concentrations Detected in Surface Soil at RFAAP**



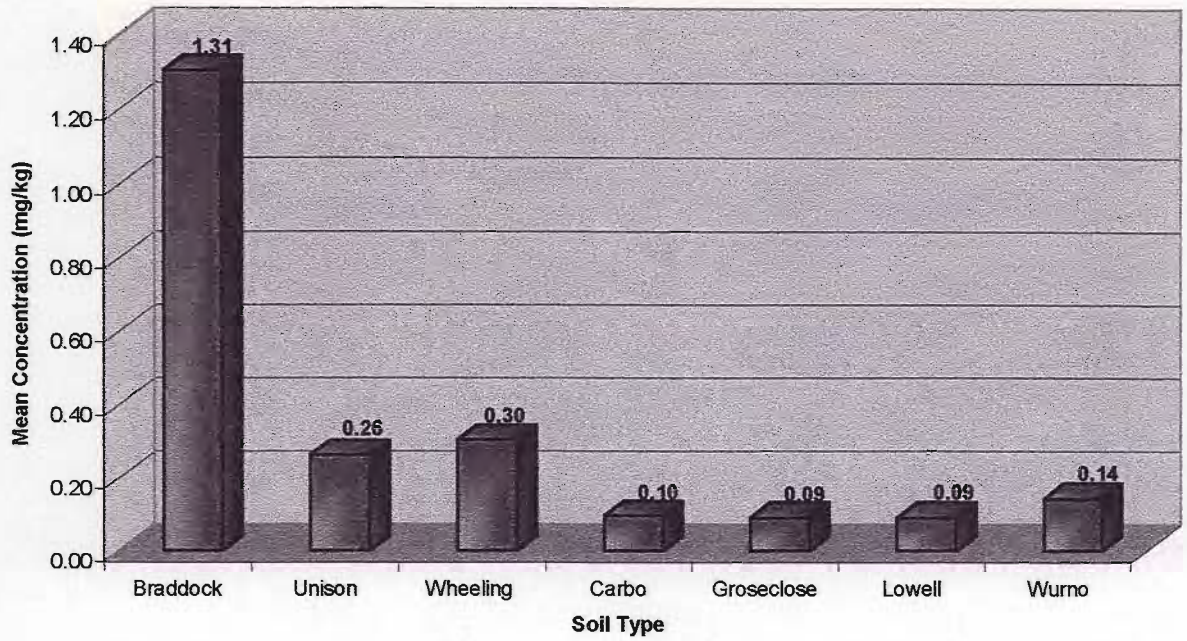
**Average Nickel Concentrations Detected in Surface Soil at RFAAP**



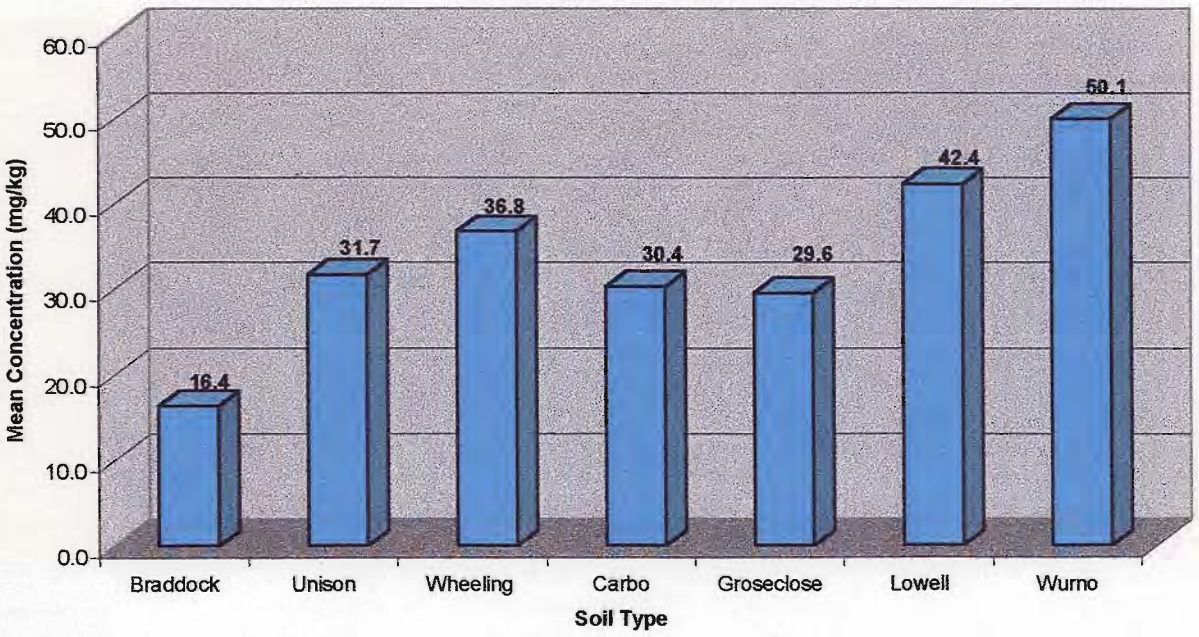

**Average Selenium Concentrations in Surface Soil at RFAAP**

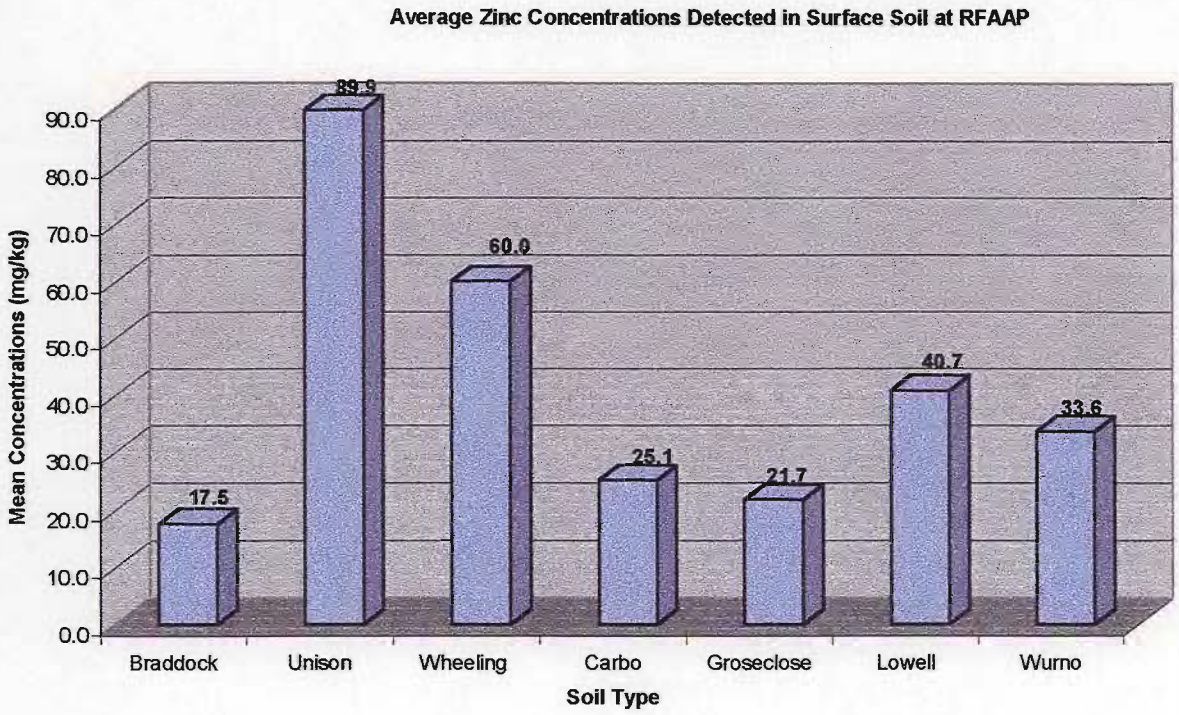


**Average Silver Concentrations in Surface Soil at RFAAP**




**Average Vanadium Concentrations in Surface Soil at RFAAP**




Average Zinc Concentrations Detected in Surface Soil at RFAAP
Mean Concentrations (mg/kg)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
17.5
89.9
60.0
25.1
21.7
40.7
33.6
Braddock
Unison
Wheeling
Carbo
Groseclose
Lowell
Wurno
Soil Type

# Appendix F

# Statistical Comparisons Output

Surface Soil F-test and T-Test - Normal

F-Test Two-Sample for Variances

| | *MMA - COPPER* | *NRU - COPPER* |
|---|---|---|
| Mean | 7.820833333 | 5.446875 |
| Variance | 21.3588447 | 9.55115625 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 2.236257489 | |
| P(F<=f) one-tail | 0.074149998 | |
| F Critical one-tail | 2.506808983 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - COPPER* | *NRU - COPPER* |
|---|---|---|
| Mean | 7.820833333 | 5.446875 |
| Variance | 21.3588447 | 9.55115625 |
| Observations | 12 | 16 |
| Pooled Variance | 14.54671675 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | 1.629904653 | |
| P(T<=t) one-tail | 0.057589378 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.115178757 | |
| t Critical two-tail | 2.055530786 | |

Surface Soil F-test and T-Test - Lognormal

F-Test Two-Sample for Variances

| | *MMA - ALUMINUM* | *NRU - ALUMINUM* |
|---|---|---|
| Mean | 8.919999506 | 8.902283792 |
| Variance | 0.194653223 | 0.265867106 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 0.732144814 | |
| P(F<=f) one-tail | 0.304918267 | |
| F Critical one-tail | 0.367831099 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - ALUMINUM* | *NRU - ALUMINUM* |
|---|---|---|
| Mean | 8.919999506 | 8.902283792 |
| Variance | 0.194653223 | 0.265867106 |
| Observations | 12 | 16 |
| Pooled Variance | 0.235738155 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | 0.095546621 | |
| P(T<=t) one-tail | 0.462306643 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.924613286 | |
| t Critical two-tail | 2.055530786 | |

F-Test Two-Sample for Variances

| | *MMA - CHROMIUM* | *NRU - CHROMIUM* |
|---|---|---|
| Mean | 2.771343603 | 3.035719734 |
| Variance | 0.178236714 | 0.341543045 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 0.52185725 | |
| P(F<=f) one-tail | 0.140098705 | |
| F Critical one-tail | 0.367831099 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - CHROMIUM* | *NRU - CHROMIUM* |
|---|---|---|
| Mean | 2.771343603 | 3.035719734 |
| Variance | 0.178236714 | 0.341543045 |
| Observations | 12 | 16 |
| Pooled Variance | 0.272451905 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | -1.32632183 | |
| P(T<=t) one-tail | 0.098133335 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.19626667 | |
| t Critical two-tail | 2.055530786 | |

F-Test Two-Sample for Variances

| | *MMA - IRON* | *NRU - IRON* |
|---|---|---|
| Mean | 9.505223576 | 9.942592127 |
| Variance | 0.217277044 | 0.337513901 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 0.643757317 | |
| P(F<=f) one-tail | 0.232987627 | |
| F Critical one-tail | 0.367831099 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - IRON* | *NRU - IRON* |
|---|---|---|
| Mean | 9.505223576 | 9.942592127 |
| Variance | 0.217277044 | 0.337513901 |
| Observations | 12 | 16 |
| Pooled Variance | 0.286644462 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | -2.139180213 | |
| P(T<=t) one-tail | 0.020990188 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.041980376 | |
| t Critical two-tail | 2.055530786 | |

F-Test Two-Sample for Variances

| | *MMA - MANGANES* | *RU - MANGANESE* |
|---|---|---|
| Mean | 6.066332948 | 6.23029537 |
| Variance | 1.042873034 | 0.919758371 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 1.133855443 | |
| P(F<=f) one-tail | 0.401603383 | |
| F Critical one-tail | 2.506808983 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - MANGANES* | *RU - MANGANESE* |
|---|---|---|
| Mean | 6.066332948 | 6.23029537 |
| Variance | 1.042873034 | 0.919758371 |
| Observations | 12 | 16 |
| Pooled Variance | 0.971845344 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | -0.435529267 | |
| P(T<=t) one-tail | 0.333386362 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.666772723 | |
| t Critical two-tail | 2.055530786 | |

F-Test Two-Sample for Variances

| | *MMA - VANADIUM* | *NRU - VANADIUM* |
|---|---|---|
| Mean | 3.078896381 | 3.503458269 |
| Variance | 0.639724678 | 0.303625764 |
| Observations | 13 | 16 |
| df | 12 | 15 |
| F | 2.106951235 | |
| P(F<=f) one-tail | 0.087030147 | |
| F Critical one-tail | 2.475310623 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - VANADIUM* | *NRU - VANADIUM* |
|---|---|---|
| Mean | 3.078896381 | 3.503458269 |
| Variance | 0.639724678 | 0.303625764 |
| Observations | 13 | 16 |
| Pooled Variance | 0.453003059 | |
| Hypothesized Mean Difference | 0 | |
| df | 27 | |
| t Stat | -1.6893635 | |
| P(T<=t) one-tail | 0.05133339 | |
| t Critical one-tail | 1.703288035 | |
| P(T<=t) two-tail | 0.102666781 | |
| t Critical two-tail | 2.051829142 | |

F-Test Two-Sample for Variances

| | *MMA - ZINC* | *NRU - ZINC* |
|---|---|---|
| Mean | 3.633143988 | 3.261213773 |
| Variance | 0.846348504 | 0.35902507 |
| Observations | 12 | 16 |
| df | 11 | 15 |
| F | 2.357352103 | |
| P(F<=f) one-tail | 0.062056864 | |
| F Critical one-tail | 2.506808983 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - ZINC* | *NRU - ZINC* |
|---|---|---|
| Mean | 3.633143988 | 3.261213773 |
| Variance | 0.846348504 | 0.35902507 |
| Observations | 12 | 16 |
| Pooled Variance | 0.565200369 | |
| Hypothesized Mean Difference | 0 | |
| df | 26 | |
| t Stat | 1.295483367 | |
| P(T<=t) one-tail | 0.103269009 | |
| t Critical one-tail | 1.705616341 | |
| P(T<=t) two-tail | 0.206538018 | |
| t Critical two-tail | 2.055530786 | |

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SSDATA.MMA_SS_AS

Sample 2: SSDATA.NRU_SS_AS

Test: Unpaired

Average rank of first group = 12 based on 12 values.
Average rank of second group = 16.375 based on 16 values.
Large sample test statistic Z = 1.37025
Two-tailed probability of equaling or exceeding Z = 0.170607
One-tailed probability of equaling or exceeding Z = 0.085304

NOTE: 28 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SSDATA.MMA_SS_BA

Sample 2: SSDATA.NRU_SS_BA

Test: Unpaired

Average rank of first group = 18.3333 based on 12 values.
Average rank of second group = 11.625 based on 16 values.
Large sample test statistic Z = -2.11257
Two-tailed probability of equaling or exceeding Z = 0.0346371
One-tailed probability of equaling or exceeding Z = 0.0173186

NOTE: 28 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SSDATA.MMA_SS_BE

Sample 2: SSDATA.NRU_SS_BE

Test: Unpaired

Average rank of first group = 12.8333 based on 12 values.
Average rank of second group = 15.75 based on 16 values.
Large sample test statistic Z = 0.909004
Two-tailed probability of equaling or exceeding Z = 0.363346
One-tailed probability of equaling or exceeding Z = 0.181673

NOTE: 28 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

Sample 1: SSDATA.MMA_SS_CO

Sample 2: SSDATA.NRU_SS_CO

Test: Unpaired

Average rank of first group = 11.25 based on 12 values.
Average rank of second group = 16.9375 based on 16 values.
Large sample test statistic Z = 1.78805
Two-tailed probability of equaling or exceeding Z = 0.0737673
One-tailed probability of equaling or exceeding Z = 0.0368837

NOTE: 28 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

Sample 1: SSDATA.MMA_SS_PB

Sample 2: SSDATA.NRU_SS_PB

Test: Unpaired

Average rank of first group = 12.125 based on 12 values.
Average rank of second group = 16.2813 based on 16 values.
Large sample test statistic Z = 1.30022
Two-tailed probability of equaling or exceeding Z = 0.193524
One-tailed probability of equaling or exceeding Z = 0.096762

NOTE: 28 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

Sample 1: SSDATA.MMA_SS_NI

Sample 2: SSDATA.NRU_SS_NI

Test: Unpaired

Average rank of first group = 13.9167 based on 12 values.
Average rank of second group = 14.9375 based on 16 values.
Large sample test statistic Z = 0.302418
Two-tailed probability of equaling or exceeding Z = 0.76233
One-tailed probability of equaling or exceeding Z = 0.38117

NOTE: 28 total observations.

Subsurface Soil F-test and T-Test - Normal

F-Test Two-Sample for Variances

| | *MMA - COPPER* | *NRU - COPPER* |
|---|---|---|
| Mean | 16.99545455 | 14.00689655 |
| Variance | 107.6880736 | 100.7885222 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 1.068455726 | |
| P(F<=f) one-tail | 0.428449417 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - COPPER* | *NRU - COPPER* |
|---|---|---|
| Mean | 16.99545455 | 14.00689655 |
| Variance | 107.6880736 | 100.7885222 |
| Observations | 22 | 29 |
| Pooled Variance | 103.7454728 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 1.037772987 | |
| P(T<=t) one-tail | 0.152234971 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.304469943 | |
| t Critical two-tail | 2.009574018 | |

F-Test Two-Sample for Variances

| | *MMA - IRON* | *NRU - IRON* |
|---|---|---|
| Mean | 32595.45455 | 31051.72414 |
| Variance | 131659502.2 | 69987586.21 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 1.88118364 | |
| P(F<=f) one-tail | 0.059138964 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - IRON* | *NRU - IRON* |
|---|---|---|
| Mean | 32595.45455 | 31051.72414 |
| Variance | 131659502.2 | 69987586.21 |
| Observations | 22 | 29 |
| Pooled Variance | 96418407.33 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 0.556053698 | |
| P(T<=t) one-tail | 0.290352288 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.580704576 | |
| t Critical two-tail | 2.009574018 | |

F-Test Two-Sample for Variances

| | *MMA - VANADIUM* | *NRU - VANADIUM* |
|---|---|---|
| Mean | 61.89545455 | 47.9137931 |
| Variance | 414.5414069 | 209.4540887 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 1.979151658 | |
| P(F<=f) one-tail | 0.045927057 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Unequal Variances

| | *MMA - VANADIUM* | *NRU - VANADIUM* |
|---|---|---|
| Mean | 61.89545455 | 47.9137931 |
| Variance | 414.5414069 | 209.4540887 |
| Observations | 22 | 29 |
| Hypothesized Mean Difference | 0 | |
| df | 36 | |
| t Stat | 2.738590104 | |
| P(T<=t) one-tail | 0.00476649 | |
| t Critical one-tail | 1.688297289 | |
| P(T<=t) two-tail | 0.00953298 | |
| t Critical two-tail | 2.02809133 | |

F-Test Two-Sample for Variances

| | *MMA - ALUMINUM* | *NRU - ALUMINUM* |
|---|---|---|
| Mean | 9.855045455 | 9.513896552 |
| Variance | 0.212695093 | 0.246416596 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 0.863152468 | |
| P(F<=f) one-tail | 0.368497093 | |
| F Critical one-tail | 0.49432991 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - ALUMINUM* | *NRU - ALUMINUM* |
|---|---|---|
| Mean | 9.855045455 | 9.513896552 |
| Variance | 0.212695093 | 0.246416596 |
| Observations | 22 | 29 |
| Pooled Variance | 0.231964523 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 2.505292543 | |
| P(T<=t) one-tail | 0.007804057 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.015608113 | |
| t Critical two-tail | 2.009574018 | |

F-Test Two-Sample for Variances

| | *MMA - ARSENIC* | *NRU - ARSENIC* |
|---|---|---|
| Mean | 1.430409091 | 1.203275862 |
| Variance | 1.356504348 | 0.314681207 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 4.310725645 | |
| P(F<=f) one-tail | 0.000204895 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Unequal Variances

| | *MMA - ARSENIC* | *NRU - ARSENIC* |
|---|---|---|
| Mean | 1.430409091 | 1.203275862 |
| Variance | 1.356504348 | 0.314681207 |
| Observations | 22 | 29 |
| Hypothesized Mean Difference | 0 | |
| df | 28 | |
| t Stat | 0.843491344 | |
| P(T<=t) one-tail | 0.203051142 | |
| t Critical one-tail | 1.701130259 | |
| P(T<=t) two-tail | 0.406102284 | |
| t Critical two-tail | 2.048409442 | |

F-Test Two-Sample for Variances

| | *MMA - CHROMIUM* | *NRU - CHROMIUM* |
|---|---|---|
| Mean | 3.387590909 | 3.332 |
| Variance | 0.191487872 | 0.149019786 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 1.284982872 | |
| P(F<=f) one-tail | 0.264245413 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - CHROMIUM* | *NRU - CHROMIUM* |
|---|---|---|
| Mean | 3.387590909 | 3.332 |
| Variance | 0.191487872 | 0.149019786 |
| Observations | 22 | 29 |
| Pooled Variance | 0.167220394 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 0.480822084 | |
| P(T<=t) one-tail | 0.316391488 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.632782975 | |
| t Critical two-tail | 2.009574018 | |

Subsurface Soil F-test and T-Test - Lognormal

F-Test Two-Sample for Variances

| | *MMA - COBALT* | *NRU - COBALT* |
|---|---|---|
| Mean | 2.3655 | 2.463517241 |
| Variance | 1.0458435 | 1.20874033 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 0.865234223 | |
| P(F<=f) one-tail | 0.370683392 | |
| F Critical one-tail | 0.49432991 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - COBALT* | *NRU - COBALT* |
|---|---|---|
| Mean | 2.3655 | 2.463517241 |
| Variance | 1.0458435 | 1.20874033 |
| Observations | 22 | 29 |
| *Pooled Variance* | 1.138927403 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | -0.324847632 | |
| P(T<=t) one-tail | 0.373339641 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.746679281 | |
| t Critical two-tail | 2.009574018 | |

F-Test Two-Sample for Variances

| | *MMA - MANGANESE* | *NRU - MANGANESE* |
|---|---|---|
| Mean | 5.615545455 | 5.239172414 |
| Variance | 1.07562026 | 1.240569148 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 0.867037732 | |
| P(F<=f) one-tail | 0.372576871 | |
| F Critical one-tail | 0.49432991 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - MANGANES* | *RU - MANGANESE* |
|---|---|---|
| Mean | 5.615545455 | 5.239172414 |
| Variance | 1.07562026 | 1.240569148 |
| Observations | 22 | 29 |
| Pooled Variance | 1.169876767 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 1.230760929 | |
| P(T<=t) one-tail | 0.112143834 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.224287669 | |
| t Critical two-tail | 2.009574018 | |

F-Test Two-Sample for Variances

| | *MMA - NICKEL* | *NRU - NICKEL* |
|---|---|---|
| Mean | 2.693090909 | 2.494344828 |
| Variance | 0.614050372 | 0.982848663 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 0.624765944 | |
| P(F<=f) one-tail | 0.134919433 | |
| F Critical one-tail | 0.49432991 | |

t-Test: Two-Sample Assuming Equal Variances

| | *MMA - NICKEL* | *NRU - NICKEL* |
|---|---|---|
| Mean | 2.693090909 | 2.494344828 |
| Variance | 0.614050372 | 0.982848663 |
| Observations | 22 | 29 |
| Pooled Variance | 0.824792252 | |
| Hypothesized Mean Difference | 0 | |
| df | 49 | |
| t Stat | 0.774018854 | |
| P(T<=t) one-tail | 0.221319139 | |
| t Critical one-tail | 1.676551165 | |
| P(T<=t) two-tail | 0.442638277 | |
| t Critical two-tail | 2.009574018 | |

Subsurface Soil F-test and T-Test - Lognormal

F-Test Two-Sample for Variances

| | *MMA - ZINC* | *NRU - ZINC* |
|---|---|---|
| Mean | 4.192954545 | 3.012344828 |
| Variance | 0.975241855 | 0.465526591 |
| Observations | 22 | 29 |
| df | 21 | 28 |
| F | 2.094921909 | |
| P(F<=f) one-tail | 0.034084067 | |
| F Critical one-tail | 1.946222739 | |

t-Test: Two-Sample Assuming Unequal Variances

| | *MMA - ZINC* | *NRU - ZINC* |
|---|---|---|
| Mean | 4.192954545 | 3.012344828 |
| Variance | 0.975241855 | 0.465526591 |
| Observations | 22 | 29 |
| Hypothesized Mean Difference | 0 | |
| df | 35 | |
| t Stat | 4.804556085 | |
| P(T<=t) one-tail | 1.4456E-05 | |
| t Critical one-tail | 1.689572855 | |
| P(T<=t) two-tail | 2.89119E-05 | |
| t Critical two-tail | 2.030110409 | |

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SBDATA.MMA_BA_SB

Sample 2: SBDATA.NRU_BA_SB

Test: Unpaired

Average rank of first group = 33.5455 based on 22 values.
Average rank of second group = 20.2759 based on 29 values.
Large sample test statistic Z = -3.14858
Two-tailed probability of equaling or exceeding Z = 1.64081E-3
One-tailed probability of equaling or exceeding Z = 0.82041E-4

NOTE: 51 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SBDATA.MMA_BE_SB

Sample 2: SBDATA.NRU_BE_SB

Test: Unpaired

Average rank of first group = 25.1591 based on 22 values.
Average rank of second group = 26.6379 based on 29 values.
Large sample test statistic Z = 0.342808
Two-tailed probability of equaling or exceeding Z = 0.731739
One-tailed probability of equaling or exceeding Z = 0.365870

NOTE: 51 total observations.

Comparison of Two Samples (Mann-Whitney U Test)

---

Sample 1: SBDATA.MMA_PB_SB

Sample 2: SBDATA.NRU_PB_SB

Test: Unpaired

Average rank of first group = 31.9091 based on 22 values.
Average rank of second group = 21.5172 based on 29 values.
Large sample test statistic Z = -2.46313
Two-tailed probability of equaling or exceeding Z = 0.0137729
One-tailed probability of equaling or exceeding Z = 0.0068865

NOTE: 51 total observations.

# Appendix G

# Summary Statistics Output

**Statistical Output for Surface Soil Data (Table 4-11)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 28 | 14 | 28 | 28 | 28 | 28 | 28 | 28 |
| No. of detects | 28 | 0 | 28 | 24 | 15 | 2 | 23 | 28 |
| Frequency of detects | 100.00% | 0.00% | 100.00% | 85.71% | 53.57% | 7.14% | 82.14% | 100.00% |
| Minimum of detects | 3620 | N/A | 1.5 | 23.4 | 0.61 | 0.67 | 116 | 6.3 |
| Maximum of detects | 20100 | N/A | 10.2 | 174 | 1.5 | 0.82 | 7340 | 53.3 |
| Minimum of nondetects | N/A | < 0.69 | N/A | < 22.3 | < 0.56 | < 0.55 | < 120 | N/A |
| Maximum of nondetects | N/A | < 9 | N/A | < 23.4 | < 0.61 | < 1.2 | < 609 | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 8300 | 2.483214 | 3.732143 | 66.391071 | 0.609107 | 0.335536 | 1026.464286 | 21.092857 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 4278.500083 | 1.670201 | 2.329847 | 45.947071 | 0.351521 | 0.131419 | 1352.13013 | 10.503718 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.515482 | 0.672596 | 0.624265 | 0.692067 | 0.577108 | 0.39167 | 1.31727 | 0.497975 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 7404.744637 | 1.585508 | 3.212641 | 50.157606 | 0.517535 | 0.320229 | 649.175324 | 18.586131 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.610486 | 3.203761 | 1.702027 | 2.281994 | 1.793476 | 1.318916 | 2.626603 | 1.697669 |
| Shapiro-Wilk Coefficient (95%) | 0.924 | N/A | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.871 | N/A | 0.803 | 0.919 | 0.846 | 0.45 | 0.554 | 0.92 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.948 | N/A | 0.932 | 0.932 | 0.822 | 0.494 | 0.977 | 0.946 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N/A | L | L | U | U | L | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 6705 | < 6.9 | 2.75 | 58.65 | 0.615 | < 0.58 | 761.5 | 22.4 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 9677.21145 | 3.273723 | 4.4821 | 81.181028 | 0.722259 | 0.377838 | 1461.703052 | 24.473911 |
| Std. Dev. - ln transformed data | 0.476536 | 1.164326 | 0.53182 | 0.825049 | 0.584156 | 0.27681 | 0.965691 | 0.529256 |
| H value | 1.924402 | 3.077269 | 1.969047 | 2.253055 | 2.013532 | 1.789709 | 2.415173 | 1.966868 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 9896.193979 | 8.435604 | 4.526908 | 100.812811 | 0.769745 | 0.366021 | 1621.060927 | 26.122783 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 9676.682677 | < 9 | 3.685226 | 73.571453 | 0.72 | < 0.598522 | 919.704522 | 25.870452 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 17921.49099 | 6.84912 | 8.971503 | 169.716845 | 1.399607 | 0.631071 | 4067.134521 | 44.713619 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 21622.96043 | 33.2632 | 10.623304 | 320.711285 | 1.925088 | 0.596767 | 5695.031082 | 61.105816 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 11074.6484 | < 9 | 6.140788 | 114.18967 | 0.72 | 0.82 | 1437.117778 | 25.791995 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data (Table 4-11)**
**Radford Army Ammunition Plant**

| Statistics | COBALT | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| No. of detects | 20 | 26 | 28 | 28 | 25 | 28 | 3 | 17 |
| Frequency of detects | 71.43% | 92.86% | 100.00% | 100.00% | 89.29% | 100.00% | 10.71% | 60.71% |
| Minimum of detects | 5.9 | 2.2 | 7250 | 8.9 | 158 | 43 | 0.07 | 4.6 |
| Maximum of detects | 45.4 | 13.6 | 63000 | 225 | 20400 | 2040 | 1.2 | 18.1 |
| Minimum of nondetects | < 5.6 | < 1.1 | N/A | N/A | < 563 | N/A | < 0.037 | < 4.4 |
| Maximum of nondetects | < 6.1 | < 1.1 | N/A | N/A | < 609 | N/A | < 0.12 | < 4.9 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 12.216071 | 6.464286 | 20107.5 | 26.960714 | 2261.410714 | 695.896429 | 0.092661 | 6.946429 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 10.364943 | 3.929279 | 11869.04958 | 41.344195 | 4144.475511 | 591.504727 | 0.218221 | 5.024586 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.848468 | 0.607844 | 0.59028 | 1.533498 | 1.832695 | 0.84999 | 2.355055 | 0.723334 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 8.781135 | 5.071981 | 17242.77445 | 18.415464 | 911.018645 | 473.440271 | 0.051831 | 5.312428 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.336781 | 2.264459 | 1.767817 | 2.018244 | 3.541902 | 2.640363 | 2.217937 | 2.137508 |
| Shapiro-Wilk Coefficient (95%) | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.827 | 0.913 | 0.846 | 0.416 | 0.533 | 0.84 | 0.267 | 0.854 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.916 | 0.869 | 0.932 | 0.798 | 0.921 | 0.962 | 0.695 | 0.86 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | LQ | NQ | L | U | LQ | L | U | U |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 10.15 | 5.2 | 19750 | 15.15 | 741 | 490 | < 0.12 | 5.55 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 15.552455 | 7.729086 | 23928.0424 | 40.269046 | 3595.480836 | 886.296585 | 0.162904 | 8.563799 |
| Std. Dev. - ln transformed data | 0.848774 | 0.817336 | 0.569745 | 0.702228 | 1.264664 | 0.970916 | 0.796578 | 0.759641 |
| H value | 2.279627 | 2.244416 | 2.001284 | 2.124294 | 2.799588 | 2.421391 | 2.221475 | 2.18343 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 18.268603 | 10.082374 | 25257.77476 | 31.400935 | 4006.315655 | 1192.50219 | 0.100065 | 9.754979 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 12.240904 | 7.407939 | 22900 | 17.867035 | 1216.703482 | 701.987915 | < 0.12 | 9.007939 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 35.524756 | 15.300448 | 46798.6187 | 119.93554 | 11581.50724 | 2026.07226 | 0.583396 | 18.245718 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 59.224125 | 31.872899 | 62093.21998 | 89.332031 | 15654.89962 | 4202.44837 | 0.31086 | 29.321726 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 19.329561 | 11.373066 | 23711.96884 | 219.158595 | 7545.096508 | 1326.702899 | 1.2 | 10.773389 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data (Table 4-11)**
**Radford Army Ammunition Plant**

| Statistics | POTASSIUM | SELENIUM | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|
| No. of data points | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| No. of detects | 22 | 2 | 1 | 1 | 4 | 28 | 28 |
| Frequency of detects | 78.57% | 7.14% | 3.57% | 3.57% | 14.29% | 100.00% | 100.00% |
| Minimum of detects | 166 | 0.64 | N/A | N/A | 1.3 | 12.2 | 7.1 |
| Maximum of detects | 2350 | 0.77 | 4.3 | 124 | 2.1 | 101 | 216 |
| Minimum of nondetects | < 557 | < 0.56 | < 0.56 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 752 | < 1.2 | < 2.4 | < 752 | < 1.2 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 643.142857 | 0.33625 | 0.656964 | 140.160714 | 0.7625 | 33.889286 | 41.210714 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 586.363793 | 0.121576 | 0.73728 | 117.339098 | 0.469165 | 17.780729 | 40.242297 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.911716 | 0.361565 | 1.122253 | 0.837175 | 0.615298 | 0.524671 | 0.976501 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 467.015515 | 0.322541 | 0.531835 | 102.124914 | 0.683561 | 30.113272 | 30.588143 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.17177 | 1.302809 | 1.709065 | 2.179983 | 1.514938 | 1.644242 | 2.140806 |
| Shapiro-Wilk Coefficient (95%) | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.759 | 0.484 | 0.373 | 0.673 | 0.466 | 0.832 | 0.665 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.908 | 0.532 | 0.717 | 0.674 | 0.506 | 0.939 | 0.975 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | LQ | U | U | U | U | L | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 355 | < 0.585 | < 1.1 | < 120 | < 1.2 | 33.8 | 29.7 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 831.888192 | 0.375384 | 0.894288 | 177.931135 | 0.91352 | 39.612746 | 54.164355 |
| Std. Dev. - ln transformed data | 0.775543 | 0.264523 | 0.535946 | 0.779317 | 0.415374 | 0.49728 | 0.761183 |
| H value | 2.199809 | 1.783197 | 1.972554 | 2.203697 | 1.878531 | 1.93996 | 2.185018 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 876.051028 | 0.365766 | 0.752505 | 192.553456 | 0.865884 | 41.028487 | 56.28311 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 586.113565 | < 0.6 | < 1.2 | 123.409044 | < 1.2 | 38.581809 | 39.511357 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 1961.757754 | 0.609651 | 2.31496 | 404.032878 | 1.817558 | 73.874589 | 131.707592 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 2671.519868 | 0.584694 | 1.775024 | 589.175923 | 1.739597 | 92.134412 | 169.416454 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 1395.157939 | 0.77 | 4.3 | < 590.876868 | 2.1 | 38.862178 | 57.812306 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Subsurface Soil Data (Table 4-12)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 51 | 24 | 51 | 51 | 51 | 51 | 51 | 51 |
| No. of detects | 51 | 0 | 48 | 39 | 25 | 12 | 40 | 51 |
| Frequency of detects | 100.00% | 0.00% | 94.12% | 76.47% | 49.02% | 23.53% | 78.43% | 100.00% |
| Minimum of detects | 6130 | N/A | 1.2 | 25.2 | 0.78 | 0.57 | 120 | 10.8 |
| Maximum of detects | 47900 | N/A | 35.9 | 164 | 5.4 | 2.5 | 25700 | 75.8 |
| Minimum of nondetects | N/A | < 0.67 | < 1.1 | < 23 | < 0.55 | < 0.55 | < 110 | N/A |
| Maximum of nondetects | N/A | < 9 | < 1.3 | < 27.3 | < 0.68 | < 1.3 | < 682 | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 17846.86275 | 2.64375 | 5.512745 | 51.960784 | 1.03 | 0.53 | 1223.794118 | 30.94902 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 9724.188293 | 1.655111 | 6.325977 | 40.154506 | 1.147605 | 0.46723 | 3610.720907 | 12.075585 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.544868 | 0.626047 | 1.147518 | 0.772785 | 1.11418 | 0.881566 | 2.950432 | 0.390177 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 15695.19339 | 1.743857 | 3.673959 | 38.910123 | 0.663042 | 0.426633 | 485.029926 | 28.672735 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.659203 | 3.052581 | 2.389528 | 2.20864 | 2.467649 | 1.793104 | 3.209802 | 1.500442 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.954 | N/A | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.874 | N/A | 0.618 | 0.85 | 0.669 | 0.568 | 0.231 | 0.929 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.992 | N/A | 0.947 | 0.949 | 0.85 | 0.717 | 0.933 | 0.962 |
| Distribution [a] | L | N/A | LQ | LQ | U | U | LQ | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 15300 | < 7.25 | 3.4 | 42.6 | < 0.68 | < 0.62 | 520 | 30.1 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 20128.87398 | 3.222778 | 6.997286 | 61.383991 | 1.299313 | 0.639647 | 2071.135348 | 33.782842 |
| Std. Dev. - ln transformed data | 0.506337 | 1.115987 | 0.871096 | 0.792377 | 0.903266 | 0.583948 | 1.166209 | 0.405759 |
| H value | 1.880436 | 2.668707 | 2.17883 | 2.105368 | 2.209266 | 1.934764 | 2.488165 | 1.816628 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 20413.48241 | 6.048558 | 7.022274 | 67.431392 | 1.322128 | 0.593597 | 1443.170719 | 34.553564 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 18124.29493 | < 7.452942 | 3.887382 | 47.44953 | 0.956215 | < 0.66 | 621.621475 | 33.6 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 37885.49756 | 6.465401 | 18.548686 | 134.707174 | 3.39487 | 1.492821 | 8664.406692 | 55.833177 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 44556.76996 | 22.940738 | 22.116783 | 199.159467 | 4.265007 | 1.421214 | 5363.745774 | 66.16126 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 21396.46447 | < 7.300264 | 13.738132 | 71.612067 | 1.3 | 0.886181 | 5283.736478 | 34.85732 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data (Table 4-12)**
**Radford Army Ammunition Plant**

| Statistics | COBALT | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| No. of detects | 37 | 51 | 51 | 51 | 48 | 51 | 16 | 46 |
| Frequency of detects | 72.55% | 100.00% | 100.00% | 100.00% | 94.12% | 100.00% | 31.37% | 90.20% |
| Minimum of detects | 6.2 | 1.6 | 14300 | 2.1 | 139 | 16.7 | 0.038 | 4.8 |
| Maximum of detects | 130 | 38.7 | 67700 | 256 | 58100 | 1760 | 0.27 | 94.2 |
| Minimum of nondetects | < 5.7 | N/A | N/A | N/A | < 110 | N/A | < 0.037 | < 4.6 |
| Maximum of nondetects | < 6.6 | N/A | N/A | N/A | < 629 | N/A | < 0.14 | < 4.8 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 20.186275 | 15.296078 | 31717.64706 | 19.739216 | 7877.480392 | 354.817647 | 0.076353 | 19.016667 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 26.779035 | 10.193389 | 9751.219532 | 39.106644 | 14871.18642 | 327.070423 | 0.050005 | 17.142718 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.326596 | 0.666405 | 0.307438 | 1.981165 | 1.88781 | 0.921799 | 0.654919 | 0.901458 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 11.259934 | 11.321729 | 30236.37374 | 11.943455 | 1904.726254 | 221.734789 | 0.064113 | 13.197511 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.879291 | 2.398796 | 1.376103 | 2.197441 | 5.587546 | 2.966064 | 1.814514 | 2.47063 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.618 | 0.953 | 0.933 | 0.301 | 0.542 | 0.823 | 0.762 | 0.79 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.939 | 0.94 | 0.954 | 0.839 | 0.969 | 0.962 | 0.898 | 0.981 |
| Distribution [a] | LQ | NQ | L | U | L | L | U | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 12.2 | 12.3 | 32300 | 10.2 | 1780 | 262 | < 0.12 | 14.8 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 26.47061 | 17.688199 | 34006.00181 | 28.916517 | 11367.35671 | 431.572473 | 0.088088 | 23.039612 |
| Std. Dev. - ln transformed data | 1.057544 | 0.874967 | 0.319256 | 0.787293 | 1.72054 | 1.087236 | 0.595818 | 0.904473 |
| H value | 2.369068 | 2.182469 | 1.771013 | 2.100945 | 3.162409 | 2.401611 | 1.943073 | 2.210473 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 28.071829 | 21.748912 | 34465.8257 | 20.573797 | 18064.50043 | 579.282807 | 0.090186 | 26.359 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 14.011677 | 19.34671 | 34986.44239 | 12.524295 | 3169.529953 | 365.116774 | < 0.128738 | 18.436912 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 75.369832 | 36.301596 | 51811.98515 | 100.326278 | 38522.53424 | 1028.811667 | 0.179398 | 54.342665 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 99.537215 | 68.701286 | 58377.82271 | 60.494885 | 66013.25737 | 2083.801516 | 0.218864 | 85.104176 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 31.270517 | 21.3 | 34681.39737 | 33.998575 | 42713.9838 | 503.903331 | 0.124274 | 26.351247 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data (Table 4-12)**
**Radford Army Ammunition Plant**

| Statistics | POTASSIUM | SELENIUM | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|
| No. of data points | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| No. of detects | 45 | 0 | 0 | 5 | 12 | 51 | 51 |
| Frequency of detects | 88.24% | 0.00% | 0.00% | 9.80% | 23.53% | 100.00% | 100.00% |
| Minimum of detects | 123 | N/A | N/A | 114 | 1.4 | 22 | 4.7 |
| Maximum of detects | 10900 | N/A | N/A | 151 | 5 | 114 | 598 |
| Minimum of nondetects | < 586 | < 0.55 | < 0.56 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 682 | < 3.6 | < 2.6 | < 750 | < 1.4 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 1959.039216 | 0.460686 | 0.550686 | 147.343137 | 1.107843 | 53.945098 | 62.703922 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 2477.751605 | 0.40461 | 0.227119 | 116.803788 | 1.00982 | 18.44754 | 103.880678 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.264779 | 0.878276 | 0.412429 | 0.792733 | 0.911519 | 0.341969 | 1.656685 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 1016.588222 | 0.379368 | 0.511751 | 109.511753 | 0.853795 | 50.856251 | 33.839535 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 3.178316 | 1.695118 | 1.466104 | 2.132231 | 1.907791 | 1.423729 | 2.744177 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 | 0.954 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.699 | 0.462 | 0.755 | 0.728 | 0.589 | 0.964 | 0.47 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.979 | 0.563 | 0.851 | 0.755 | 0.659 | 0.983 | 0.957 |
| Distribution [a] | L | U | U | U | U | L* | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 861 | < 0.61 | < 1.2 | < 130 | < 1.2 | 52.3 | 30.4 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 2540.502349 | 0.555638 | 0.603985 | 174.753914 | 1.344821 | 58.27425 | 87.081984 |
| Std. Dev. - ln transformed data | 1.156351 | 0.527753 | 0.382609 | 0.757169 | 0.645946 | 0.353279 | 1.009481 |
| H value | 2.477361 | 1.895427 | 1.803957 | 2.074737 | 1.982298 | 1.788705 | 2.316391 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 2974.739032 | 0.502319 | 0.60707 | 182.152951 | 1.260669 | 59.191148 | 78.401974 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 1386.214746 | < 0.62 | < 1.2 | 121.864424 | < 1.3 | 60.208857 | 37.460267 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 7064.941949 | 1.294466 | 1.01871 | 388.040703 | 3.18878 | 91.959943 | 276.770834 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 11015.96553 | 1.125572 | 1.125835 | 521.302111 | 3.231792 | 105.320215 | 270.931967 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 3704.818414 | < 3.022863 | < 1.2 | < 608.851594 | 2.602242 | 62.42377 | 80.153223 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Surface Soil Data - MMA (Table 4-13)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM | COBALT |
|---|---|---|---|---|---|---|---|---|---|
| No. of data points | 12 | 9 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| No. of detects | 12 | 0 | 12 | 10 | 5 | 2 | 8 | 12 | 7 |
| Frequency of detects | 100.00% | 0.00% | 100.00% | 83.33% | 41.67% | 16.67% | 66.67% | 100.00% | 58.33% |
| Minimum of detects | 3700 | N/A | 1.5 | 39.9 | 0.72 | 0.67 | 116 | 8.7 | 6.5 |
| Maximum of detects | 15400 | N/A | 10.2 | 174 | 1.1 | 0.82 | 7340 | 27 | 16.1 |
| Minimum of nondetects | N/A | < 6.7 | N/A | < 22.3 | < 0.56 | < 0.56 | < 557 | N/A | < 5.6 |
| Maximum of nondetects | N/A | < 9 | N/A | < 23.4 | < 0.61 | < 0.64 | < 609 | N/A | < 6.1 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 8179.166667 | 3.666667 | 3.458333 | 92.054167 | 0.545417 | 0.369167 | 1292.25 | 17.283333 | 7.7125 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 3647.087152 | 0.34821 | 2.640061 | 54.232846 | 0.331433 | 0.178883 | 2016.411354 | 6.868748 | 4.876713 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.4459 | 0.094966 | 0.763391 | 0.589141 | 0.607669 | 0.48456 | 1.560388 | 0.39742 | 0.632313 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 7480.085537 | 3.653195 | 2.869807 | 69.013464 | 0.461788 | 0.342706 | 632.018571 | 15.98009 | 6.211731 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.554564 | 1.093209 | 1.792792 | 2.570031 | 1.811573 | 1.441014 | 3.212319 | 1.525284 | 2.041035 |
| Estimated Mean - Lognormal (Eq 13.7) | 8244.702219 | 3.667731 | 3.402944 | 107.747667 | 0.550948 | 0.366358 | 1248.696376 | 17.469595 | 8.012078 |
| Estimated Std. Dev. - Lognormal (Eq 13.8) | 3821.929669 | 0.327509 | 2.168456 | 129.18579 | 0.358509 | 0.138441 | 2127.735592 | 7.716504 | 6.527075 |
| Shapiro-Wilk Coefficient (95%) | 0.859 | N/A | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.915 | N/A | 0.7 | 0.941 | 0.759 | 0.55 | 0.591 | 0.906 | 0.865 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.955 | N/A | 0.846 | 0.817 | 0.742 | 0.586 | 0.923 | 0.909 | 0.827 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L* | N/A | LQ | N | U | U | L | L* | N |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 6730 | < 7.1 | 2.45 | 106.55 | < 0.6 | < 0.59 | 392 | 17.05 | 7.3 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 10069.91499 | 3.882504 | 4.827012 | 120.169936 | 0.71724 | 0.461905 | 2337.612021 | 20.844277 | 10.24072 |
| Std. Dev. - ln transformed data | 0.441195 | 0.089117 | 0.583774 | 0.943918 | 0.594196 | 0.365347 | 1.166993 | 0.422181 | 0.713457 |
| H value | 2.073375 | 1.822 | 2.249906 | 2.815735 | 2.263454 | 1.991693 | 3.231619 | 2.051508 | 2.434993 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 10863.2142 | 3.884446 | 5.056412 | 240.124038 | 0.826461 | 0.456236 | 3893.011903 | 22.682715 | 13.527907 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 15400 | < 9 | 10.2 | 174 | 1.1 | 0.82 | 7340 | 27 | 16.1 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 18157.59712 | 4.722438 | 10.681541 | 240.435233 | 1.452216 | 0.858591 | 6809.151466 | 36.076227 | 21.055187 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 25011.96603 | 4.786532 | 14.174591 | 913.114123 | 2.34684 | 0.931188 | 15395.21886 | 50.725592 | 43.748547 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 15400 | < 9 | 10.2 | 174 | 1.1 | 0.82 | 7340 | 27 | 16.1 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data - MMA (Table 4-13)**
**Radford Army Ammunition Plant**

| Statistics | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|
| No. of data points | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| No. of detects | 11 | 12 | 12 | 9 | 12 | 2 | 7 | 6 | 0 |
| Frequency of detects | 91.67% | 100.00% | 100.00% | 75.00% | 100.00% | 16.67% | 58.33% | 50.00% | 0.00% |
| Minimum of detects | 2.2 | 7250 | 9.4 | 158 | 43 | 0.07 | 4.6 | 174 | N/A |
| Maximum of detects | 13.6 | 23800 | 225 | 5930 | 1910 | 1.2 | 13.5 | 1430 | N/A |
| Minimum of nondetects | N/A | N/A | N/A | < 563 | N/A | < 0.037 | < 4.4 | < 557 | < 0.56 |
| Maximum of nondetects | < 1.1 | N/A | N/A | < 609 | N/A | < 0.12 | < 4.9 | < 752 | < 0.75 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 7.820833 | 14755 | 33.675 | 1525.208333 | 615.366667 | 0.132042 | 6.695833 | 566.583333 | 0.300417 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 4.621563 | 6308.329991 | 61.342957 | 1710.242599 | 490.804326 | 0.336876 | 4.697072 | 462.702429 | 0.026668 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.59093 | 0.427538 | 1.821617 | 1.121317 | 0.79758 | 2.551286 | 0.701492 | 0.816654 | 0.08877 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 5.931507 | 13429.69496 | 17.900477 | 832.874966 | 431.096925 | 0.041159 | 5.147891 | 435.230896 | 0.299433 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.561955 | 1.593814 | 2.493808 | 3.307836 | 2.776557 | 3.264777 | 2.181048 | 2.065184 | 1.0861 |
| Estimated Mean - Lognormal (Eq 13.7) | 9.233175 | 14970.87757 | 27.1765 | 1703.50518 | 726.159339 | 0.082881 | 6.977114 | 566.143961 | 0.300456 |
| Estimated Std. Dev. - Lognormal (Eq 13.8) | 11.014615 | 7375.164448 | 31.044683 | 3039.398816 | 984.302793 | 0.144864 | 6.382939 | 470.974071 | 0.024858 |
| Shapiro-Wilk Coefficient (95%) | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.906 | 0.892 | 0.436 | 0.79 | 0.857 | 0.373 | 0.814 | 0.742 | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.826 | 0.874 | 0.661 | 0.925 | 0.903 | 0.677 | 0.816 | 0.844 | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | N | N* | U | L | L | U | U | LQ | N/A |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 6.65 | 15350 | 13.65 | 904.5 | 536.5 | < 0.0465 | 4.9 | < 600.5 | < 0.585 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 10.216776 | 18025.40838 | 65.476843 | 2411.844215 | 869.812864 | 0.306687 | 9.130922 | 806.46075 | 0.314242 |
| Std. Dev. - ln transformed data | 0.940771 | 0.46613 | 0.913811 | 1.196294 | 1.021212 | 1.183191 | 0.779805 | 0.72522 | 0.082593 |
| H value | 2.810164 | 2.102049 | 2.762445 | 3.287174 | 2.955217 | 3.262331 | 2.538496 | 2.453343 | 1.775 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 20.489537 | 20116.41329 | 58.176048 | 5575.372414 | 1803.890695 | 0.265398 | 12.673168 | 968.066703 | 0.314035 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 13.6 | 23800 | 225 | 5930 | 1910 | 1.2 | 13.5 | 1430 | < 0.75 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 20.46543 | 32014.59086 | 201.509331 | 6204.432085 | 1958.207302 | 1.053735 | 19.547021 | 1832.537179 | 0.37338 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 77.806626 | 48076.79296 | 218.113217 | 21981.22807 | 7047.073865 | 1.048012 | 43.472762 | 3165.535173 | 0.375353 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 13.6 | 23800 | 225 | 5930 | 1910 | 1.2 | 13.5 | 1430 | < 0.75 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data - MMA (Table 4-13)**
**Radford Army Ammunition Plant**

| Statistics | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|
| No. of data points | 12 | 12 | 12 | 12 | 12 |
| No. of detects | 1 | 1 | 4 | 12 | 12 |
| Frequency of detects | 8.33% | 8.33% | 33.33% | 100.00% | 100.00% |
| Minimum of detects | N/A | N/A | 1.3 | 14.7 | 10 |
| Maximum of detects | 4.3 | 124 | 2.1 | 43.6 | 216 |
| Minimum of nondetects | < 0.56 | < 120 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 1.2 | < 752 | < 1.2 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 0.70375 | 249.125 | 1 | 28.283333 | 55.783333 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 1.138815 | 105.453593 | 0.657129 | 10.247202 | 56.832239 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.61821 | 0.423296 | 0.657129 | 0.362305 | 1.018803 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 0.443204 | 215.204264 | 0.84338 | 26.407366 | 37.831572 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.162503 | 1.923136 | 1.786744 | 1.491859 | 2.50922 |
| Estimated Mean - Lognormal (Eq 13.7) | 0.596725 | 266.511561 | 0.998093 | 28.607023 | 57.761256 |
| Estimated Std. Dev. - Lognormal (Eq 13.8) | 0.537968 | 194.692941 | 0.631676 | 11.916898 | 66.641552 |
| Shapiro-Wilk Coefficient (95%) | 0.859 | 0.859 | 0.859 | 0.859 | 0.859 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.409 | 0.775 | 0.675 | 0.908 | 0.739 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.624 | 0.683 | 0.693 | 0.881 | 0.954 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | U | U | U | N* | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | < 0.63 | < 582 | < 1.2 | 30.25 | 44.95 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 1.294143 | 303.794986 | 1.340673 | 33.595759 | 85.246698 |
| Std. Dev. - ln transformed data | 0.771267 | 0.653957 | 0.580395 | 0.400023 | 0.919972 |
| H value | 2.525176 | 2.348159 | 2.245513 | 2.026027 | 2.77335 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 1.073495 | 423.442191 | 1.478527 | 36.525636 | 124.660711 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 4.3 | 124 | 2.1 | 43.6 | 216 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 3.819549 | 537.64603 | 2.797904 | 56.319678 | 211.276338 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 3.656332 | 1287.95945 | 4.127296 | 78.894091 | 468.805239 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 4.3 | < 752 | 2.1 | 43.6 | 216 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Surface Soil Data - NRU (Table 4-14)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM | COBALT | COPPER |
|---|---|---|---|---|---|---|---|---|---|---|
| No. of data points | 16 | 5 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| No. of detects | 16 | 0 | 16 | 14 | 10 | 0 | 15 | 16 | 13 | 15 |
| Frequency of detects | 100.00% | 0.00% | 100.00% | 87.50% | 62.50% | 0.00% | 93.75% | 100.00% | 81.25% | 93.75% |
| Minimum of detects | 3620 | N/A | 1.6 | 23.4 | 0.61 | N/A | 238 | 6.3 | 5.9 | 2.9 |
| Maximum of detects | 20100 | N/A | 9.3 | 109 | 1.5 | N/A | 1810 | 53.3 | 45.4 | 11.6 |
| Minimum of nondetects | N/A | < 0.69 | N/A | < 23 | < 0.57 | < 0.55 | N/A | N/A | < 5.7 | N/A |
| Maximum of nondetects | N/A | < 0.73 | N/A | < 23 | < 0.59 | < 1.2 | < 120 | N/A | < 5.9 | < 1.1 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 8390.625 | 0.353 | 3.9375 | 47.1438 | 0.656875 | 0.310313 | 827.125 | 23.95 | 15.5938 | 5.446875 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 4814.07585 | 0.009083 | 2.134127 | 26.8538 | 0.369034 | 0.077706 | 458.5749 | 11.986437 | 12.1467 | 3.090494 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.573745 | 0.025731 | 0.542001 | 0.56962 | 0.561803 | 0.250412 | 0.55442 | 0.500478 | 0.77895 | 0.567389 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 7348.73738 | 0.352907 | 3.496385 | 39.4811 | 0.563719 | 0.304344 | 662.3478 | 20.815954 | 11.3842 | 4.510109 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.674682 | 1.025956 | 1.634406 | 1.92555 | 1.787156 | 1.201167 | 2.279489 | 1.793945 | 2.38527 | 2.055463 |
| Shapiro-Wilk Coefficient (95%) | 0.887 | N/A | 0.887 | 0.887 | 0.887 | N/A | 0.887 | 0.887 | 0.887 | 0.887 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.846 | N/A | 0.862 | 0.95 | 0.882 | N/A | 0.983 | 0.93 | 0.891 | 0.914 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.944 | N/A | 0.971 | 0.945 | 0.868 | N/A | 0.854 | 0.914 | 0.945 | 0.862 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N/A | L | N* | NQ | N/A | N | N* | L* | N |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 6505 | < 0.7 | 3.5 | 43.2 | 0.63 | < 0.58 | 816.5 | 25.8 | 11.6 | 4.85 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 10500.4552 | 0.36166 | 4.872809 | 58.9128 | 0.818609 | 0.344368 | 1028.101 | 29.203209 | 20.9172 | 6.801324 |
| Std. Dev. - ln transformed data | 0.515623 | 0.025625 | 0.491279 | 0.65521 | 0.580625 | 0.183293 | 0.823951 | 0.584417 | 0.86931 | 0.720501 |
| H value | 2.067185 | 2.035 | 2.041628 | 2.22626 | 2.138688 | 1.790477 | 2.446011 | 2.142859 | 2.51043 | 2.307062 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 11052.6836 | 0.362349 | 5.11094 | 71.3145 | 0.919421 | 0.336868 | 1564.953 | 34.118493 | 29.1823 | 8.980639 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 20100 | < 0.73 | 9.3 | 109 | 1.5 | < 1.2 | 1810 | 53.3 | 45.4 | 11.6 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 20536.5384 | 0.391239 | 9.321904 | 114.896 | 1.587948 | 0.506365 | 1984.109 | 54.19178 | 46.2399 | 13.24419 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 26989.4327 | 0.393109 | 12.07609 | 206.216 | 2.439319 | 0.483285 | 5295.54 | 90.940316 | 102.055 | 27.77527 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 20100 | < 0.73 | 9.3 | 109 | 1.5 | < 1.2 | 1810 | 53.3 | 45.4 | 11.6 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data - NRU (Table 4-14)**
**Radford Army Ammunition Plant**

| Statistics | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| No. of detects | 16 | 16 | 16 | 16 | 1 | 10 | 16 | 2 |
| Frequency of detects | 100.00% | 100.00% | 100.00% | 100.00% | 6.25% | 62.50% | 100.00% | 12.50% |
| Minimum of detects | 7470 | 8.9 | 259 | 91.7 | N/A | 4.6 | 166 | 0.64 |
| Maximum of detects | 63000 | 76.7 | 20400 | 2040 | 0.13 | 18.1 | 2350 | 0.77 |
| Minimum of nondetects | N/A | N/A | N/A | N/A | < 0.11 | < 4.6 | N/A | < 0.56 |
| Maximum of nondetects | N/A | N/A | N/A | N/A | < 0.12 | < 4.8 | N/A | < 1.2 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 24121.875 | 21.925 | 2813.5625 | 756.29375 | 0.063125 | 7.1344 | 700.5625 | 0.363125 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 13575.04437 | 15.94363 | 5292.851695 | 666.370173 | 0.01797 | 5.4015 | 673.552272 | 0.15584 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.562769 | 0.72719 | 1.881192 | 0.8811 | 0.284671 | 0.7571 | 0.961445 | 0.429165 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 20797.58445 | 18.811404 | 974.401306 | 507.905481 | 0.061616 | 5.4393 | 492.368207 | 0.341034 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.787753 | 1.688044 | 3.851179 | 2.609191 | 1.224806 | 2.1576 | 2.294828 | 1.399994 |
| Shapiro-Wilk Coefficient (95%) | 0.887 | 0.887 | 0.887 | 0.887 | 0.887 | 0.887 | 0.887 | 0.887 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.866 | 0.653 | 0.544 | 0.828 | 0.361 | 0.832 | 0.756 | 0.56 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.925 | 0.92 | 0.86 | 0.952 | 0.409 | 0.872 | 0.929 | 0.579 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | L | LQ | L | U | LQ | L | U |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 23600 | 17.55 | 741 | 470 | < 0.12 | 5.9 | 402 | < 0.585 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 30071.3114 | 28.912499 | 5133.222289 | 1048.338981 | 0.071001 | 9.5017 | 995.755377 | 0.431424 |
| Std. Dev. - ln transformed data | 0.580959 | 0.52357 | 1.348379 | 0.95904 | 0.202782 | 0.769 | 0.830658 | 0.336468 |
| H value | 2.139055 | 2.075927 | 3.28018 | 2.642561 | 1.801975 | 2.3711 | 2.455534 | 1.901269 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 33935.40003 | 28.564391 | 7577.067463 | 1547.71312 | 0.069119 | 11.706 | 1177.175597 | 0.425712 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 63000 | 76.7 | 20400 | 2040 | 0.13 | 18.1 | 2350 | 0.77 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 58371.71194 | 62.150778 | 16167.42733 | 2437.545696 | 0.108463 | 20.762 | 2399.934881 | 0.75631 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 90070.9399 | 70.487181 | 29254.37259 | 5709.884893 | 0.102774 | 37.858 | 4003.707793 | 0.79703 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 63000 | 76.7 | 20400 | 2040 | 0.13 | 18.1 | 2350 | 0.77 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Surface Soil Data - NRU (Table 4-14)**
**Radford Army Ammunition Plant**

| Statistics | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|
| No. of data points | 16 | 16 | 16 | 16 | 16 |
| No. of detects | 0 | 0 | 0 | 16 | 16 |
| Frequency of detects | 0.00% | 0.00% | 0.00% | 100.00% | 100.00% |
| Minimum of detects | N/A | N/A | N/A | 12.2 | 7.1 |
| Maximum of detects | N/A | N/A | N/A | 101 | 56.3 |
| Minimum of nondetects | < 1.1 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 2.4 | < 120 | < 1.2 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 0.621875 | 58.4375 | 0.584375 | 38.09375 | 30.28125 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 0.155958 | 2.393568 | 0.023936 | 21.167821 | 15.782742 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.250787 | 0.040959 | 0.040959 | 0.555677 | 0.521205 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 0.609757 | 58.39052 | 0.583905 | 33.230172 | 26.081175 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.203385 | 1.042533 | 1.042533 | 1.735026 | 1.820638 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | 0.887 | 0.887 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | 0.845 | 0.929 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | 0.938 | 0.943 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | N/A | N/A | N/A | L | L* |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | < 1.2 | < 120 | < 1.2 | 38.9 | 28.2 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 0.690226 | 59.48651 | 0.594865 | 47.370817 | 37.198238 |
| Std. Dev. - ln transformed data | 0.185139 | 0.041654 | 0.041654 | 0.551022 | 0.599187 |
| H value | 1.791529 | 1.743 | 1.743 | 2.106125 | 2.159106 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 0.67576 | 59.54705 | 0.595471 | 52.191344 | 43.587059 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | < 2.4 | < 120 | < 1.2 | 101 | 56.3 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 1.015357 | 64.47647 | 0.644765 | 91.500161 | 70.101109 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 0.972787 | 64.86092 | 0.648609 | 133.444807 | 118.269107 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | < 2.4 | < 120 | < 1.2 | 101 | 56.3 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Subsurface Soil Data - MMA (Table 4-15)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM | COBALT |
|---|---|---|---|---|---|---|---|---|---|
| No. of data points | 22 | 16 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| No. of detects | 22 | 0 | 20 | 19 | 11 | 12 | 13 | 22 | 16 |
| Frequency of detects | 100.00% | 0.00% | 90.91% | 86.36% | 50.00% | 54.55% | 59.09% | 100.00% | 72.73% |
| Minimum of detects | 8710 | N/A | 1.2 | 25.2 | 0.79 | 0.57 | 120 | 10.8 | 6.8 |
| Maximum of detects | 47900 | N/A | 35.9 | 155 | 5.3 | 2.5 | 2020 | 75.8 | 94.3 |
| Minimum of nondetects | N/A | < 6.7 | < 1.1 | < 24.5 | < 0.55 | < 0.55 | < 110 | N/A | < 5.7 |
| Maximum of nondetects | N/A | < 9 | < 1.1 | < 27.3 | < 0.68 | < 0.68 | < 682 | N/A | < 6.3 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 21223.18182 | 3.778125 | 7.731818 | 71.504545 | 1.007045 | 0.778182 | 668.113636 | 32.263636 | 18.288636 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 10979.56604 | 0.286338 | 8.966134 | 44.530313 | 1.163782 | 0.626277 | 530.043595 | 13.777779 | 24.321311 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.517338 | 0.075788 | 1.159641 | 0.622762 | 1.15564 | 0.804795 | 0.793343 | 0.427037 | 1.329859 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 19055.45194 | 3.768276 | 4.180506 | 56.070645 | 0.654964 | 0.595292 | 434.757785 | 29.593359 | 10.649957 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.585743 | 1.076906 | 3.204765 | 2.187386 | 2.447319 | 2.079657 | 2.962452 | 1.549133 | 2.780464 |
| Shapiro-Wilk Coefficient (95%) | 0.911 | N/A | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.828 | N/A | 0.747 | 0.939 | 0.654 | 0.788 | 0.878 | 0.899 | 0.584 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.955 | N/A | 0.942 | 0.922 | 0.847 | 0.87 | 0.882 | 0.951 | 0.902 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N/A | L | N* | U | LQ | LQ | L | LQ |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 19050 | < 7.45 | 3.45 | 61.5 | 0.565 | 0.595 | 369.5 | 33.6 | 12.6 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 25251.18658 | 3.903616 | 11.021168 | 87.841103 | 1.433995 | 1.00794 | 862.567417 | 37.318204 | 27.211244 |
| Std. Dev. - ln transformed data | 0.461053 | 0.074092 | 1.164639 | 0.782707 | 0.894993 | 0.732203 | 1.086017 | 0.437695 | 1.022618 |
| H value | 1.948869 | 1.743 | 2.77747 | 2.273286 | 2.409367 | 2.215711 | 2.666457 | 1.929598 | 2.576936 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 25782.9594 | 3.906754 | 16.684896 | 112.303693 | 1.565006 | 1.108917 | 1475.017924 | 39.159383 | 31.92794 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 21993.65366 | < 9 | 7.206082 | 90.624858 | 1.1 | 0.984416 | 981.197889 | 35.650507 | 16.308374 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 47025.162 | 4.500556 | 28.802233 | 176.150781 | 3.741934 | 2.249932 | 1913.716085 | 64.641416 | 75.443717 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 56307.4886 | 4.542834 | 64.543091 | 352.82584 | 5.365876 | 3.326678 | 5579.922077 | 82.775614 | 117.76691 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 25703.6745 | < 9 | 17.846461 | 116.84295 | 1.3 | 1.2 | 1057.648769 | 35.398824 | 63.499852 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data - MMA (Table 4-15)**
**Radford Army Ammunition Plant**

| Statistics | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL | POTASSIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| No. of detects | 22 | 22 | 22 | 20 | 22 | 10 | 22 | 16 |
| Frequency of detects | 100.00% | 100.00% | 100.00% | 90.91% | 100.00% | 45.45% | 100.00% | 72.73% |
| Minimum of detects | 3.3 | 14300 | 5.6 | 350 | 39.4 | 0.038 | 4.8 | 474 |
| Maximum of detects | 34.4 | 67700 | 256 | 58100 | 1760 | 0.27 | 94.2 | 10900 |
| Minimum of nondetects | N/A | N/A | N/A | < 586 | N/A | < 0.037 | N/A | < 586 |
| Maximum of nondetects | N/A | N/A | N/A | < 629 | N/A | < 0.12 | N/A | < 682 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 16.995455 | 32595.45455 | 31.327273 | 7144.886364 | 428.254545 | 0.072909 | 20.404545 | 1842.863636 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 10.377286 | 11474.29746 | 57.696151 | 14037.86905 | 402.188178 | 0.063056 | 20.556553 | 2470.281029 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.610592 | 0.352021 | 1.841723 | 1.964744 | 0.939133 | 0.864858 | 1.00745 | 1.340458 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 13.237078 | 30741.55688 | 16.528432 | 2095.840498 | 274.638891 | 0.054034 | 14.77697 | 1029.830014 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.211357 | 1.427979 | 2.504491 | 4.719954 | 2.821435 | 2.185348 | 2.189487 | 2.873051 |
| Shapiro-Wilk Coefficient (95%) | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 | 0.911 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.92 | 0.913 | 0.439 | 0.524 | 0.817 | 0.791 | 0.671 | 0.641 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.887 | 0.949 | 0.8 | 0.918 | 0.954 | 0.938 | 0.939 | 0.927 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | N | L* | U | L | L | L | L | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 18.45 | 33700 | 12.4 | 1896 | 324 | < 0.11 | 17.4 | 935.5 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 20.802505 | 36804.95833 | 52.493899 | 12294.87164 | 575.802808 | 0.096042 | 27.946 | 2749.120197 |
| Std. Dev. - ln transformed data | 0.793607 | 0.35626 | 0.918086 | 1.551799 | 1.037245 | 0.781775 | 0.783667 | 1.055375 |
| H value | 2.285711 | 1.867445 | 2.438921 | 3.362689 | 2.597591 | 2.272224 | 2.274381 | 2.623189 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 26.94412 | 37873.65352 | 41.064441 | 21817.29621 | 846.702347 | 0.108077 | 29.638657 | 3288.48198 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 23.250507 | 36257.86696 | 17.7368 | 5043.450909 | 574.987224 | 0.105685 | 19.579947 | 1760.405499 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 41.382078 | 59560.05357 | 166.913229 | 40133.87862 | 1373.396763 | 0.221091 | 68.712446 | 7648.024054 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 85.455626 | 71010.46112 | 142.962606 | 80373.31362 | 3143.160179 | 0.339269 | 93.194442 | 12299.07316 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 23.27303 | 35887.20231 | 256 | 58100 | 691.861609 | 0.154143 | 35.683507 | 2966.468299 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data - MMA (Table 4-15)**
**Radford Army Ammunition Plant**

| Statistics | SELENIUM | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|
| No. of data points | 22 | 22 | 22 | 22 | 22 | 22 |
| No. of detects | 0 | 0 | 1 | 12 | 22 | 22 |
| Frequency of detects | 0.00% | 0.00% | 4.55% | 54.55% | 100.00% | 100.00% |
| Minimum of detects | N/A | N/A | N/A | 1.4 | 27 | 14.7 |
| Maximum of detects | N/A | N/A | 114 | 5 | 114 | 598 |
| Minimum of nondetects | < 0.55 | < 0.56 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 0.75 | < 1.2 | < 750 | < 1.4 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 0.306136 | 0.381136 | 246.931818 | 1.759091 | 61.895455 | 112.381818 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 0.02454 | 0.113252 | 114.886103 | 1.282449 | 20.36029 | 144.230545 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.080161 | 0.297143 | 0.465254 | 0.729041 | 0.328946 | 1.283398 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 0.30524 | 0.367231 | 203.98776 | 1.322233 | 58.588227 | 66.218853 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.080636 | 1.309796 | 2.082576 | 2.220132 | 1.416857 | 2.684646 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | 0.911 | 0.911 | 0.911 | 0.911 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | 0.728 | 0.847 | 0.973 | 0.646 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | 0.661 | 0.831 | 0.97 | 0.942 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | N/A | N/A | U | U | N* | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | < 0.61 | < 0.64 | < 610.5 | 1.6 | 62.6 | 66.4 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 0.315139 | 0.422684 | 289.079365 | 2.229575 | 69.364907 | 165.294777 |
| Std. Dev. - ln transformed data | 0.07755 | 0.269871 | 0.733606 | 0.797567 | 0.348441 | 0.987549 |
| H value | 1.719 | 1.809272 | 2.217311 | 2.290226 | 1.861893 | 2.528876 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 0.315196 | 0.42367 | 380.73702 | 2.707368 | 71.722931 | 185.966462 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | < 0.62 | < 0.70505 | < 623.357866 | 2.371573 | 71.238828 | 79.470296 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 0.363806 | 0.647279 | 516.914159 | 4.772846 | 109.742136 | 451.323599 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 0.366259 | 0.692416 | 1143.711096 | 8.615853 | 132.869915 | 674.320115 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | < 0.626168 | < 1.1 | < 604.46351 | 2.613412 | 72.49142 | 573.113852 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Subsurface Soil Data - NRU (Table 4-16)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 29 | 8 | 29 | 29 | 29 | 29 | 29 | 29 |
| No. of detects | 29 | 0 | 28 | 20 | 14 | 0 | 27 | 29 |
| Frequency of detects | 100.00% | 0.00% | 96.55% | 68.97% | 48.28% | 0.00% | 93.10% | 100.00% |
| Minimum of detects | 6130 | N/A | 1.2 | 28.5 | 0.78 | N/A | 140 | 13.6 |
| Maximum of detects | 33900 | N/A | 10.7 | 164 | 5.4 | N/A | 25700 | 50.9 |
| Minimum of nondetects | N/A | < 0.67 | N/A | < 23 | < 0.56 | < 0.56 | < 110 | N/A |
| Maximum of nondetects | N/A | < 0.86 | < 1.3 | < 26 | < 0.66 | < 1.3 | < 120 | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 15285.51724 | 0.375 | 3.82931 | 37.134483 | 1.047414 | 0.341724 | 1645.344828 | 29.951724 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 7917.836369 | 0.036742 | 2.088725 | 29.3984 | 1.155535 | 0.102724 | 4758.521606 | 10.753326 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.517996 | 0.09798 | 0.545457 | 0.791674 | 1.103227 | 0.300606 | 2.892112 | 0.359022 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 13547.24294 | 0.373463 | 3.33104 | 29.491036 | 0.669237 | 0.33136 | 527.010267 | 27.993483 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.642752 | 1.101141 | 1.752351 | 1.995391 | 2.52235 | 1.260207 | 3.441588 | 1.470975 |
| Shapiro-Wilk Coefficient (95%) | 0.926 | N/A | 0.926 | 0.926 | 0.926 | N/A | 0.926 | 0.926 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.889 | N/A | 0.887 | 0.699 | 0.704 | N/A | 0.322 | 0.941 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.963 | N/A | 0.96 | 0.875 | 0.823 | N/A | 0.909 | 0.928 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N/A | L | U | U | N/A | LQ | N* |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 12500 | < 0.72 | 3.4 | 35.4 | < 0.66 | < 0.61 | 527 | 30 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 17786.69808 | 0.399611 | 4.489122 | 46.421201 | 1.412438 | 0.374174 | 3148.523538 | 33.348613 |
| Std. Dev. - ln transformed data | 0.496373 | 0.096347 | 0.560958 | 0.69084 | 0.925191 | 0.231276 | 1.235933 | 0.385925 |
| H value | 1.934649 | 1.849 | 1.988538 | 2.106723 | 2.357473 | 1.763034 | 2.746994 | 1.854279 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 18372.5404 | 0.401334 | 4.813522 | 49.292047 | 1.550478 | 0.367604 | 2148.658203 | 34.524843 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 16900.50864 | < 0.86 | 4.028789 | 41.216175 | 1.063032 | < 0.624292 | 620.287894 | 32.015666 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 32977.13082 | 0.492135 | 8.496357 | 102.822267 | 3.629342 | 0.571251 | 12277.78551 | 53.978955 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 41070.03453 | 0.507742 | 11.666134 | 138.061525 | 5.288999 | 0.555556 | 8339.750504 | 66.306205 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 20581.47169 | < 0.86 | 4.819896 | 43.893356 | 1.681836 | < 1.3 | 25700 | 31.163921 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data - NRU (Table 4-16)**
**Radford Army Ammunition Plant**

| Statistics | COBALT | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| No. of detects | 21 | 29 | 29 | 29 | 28 | 29 | 6 | 24 |
| Frequency of detects | 72.41% | 100.00% | 100.00% | 100.00% | 96.55% | 100.00% | 20.69% | 82.76% |
| Minimum of detects | 6.2 | 1.6 | 17300 | 2.1 | 139 | 16.7 | 0.11 | 4.8 |
| Maximum of detects | 130 | 38.7 | 44200 | 35.5 | 51300 | 931 | 0.19 | 51.1 |
| Minimum of nondetects | < 5.7 | N/A | N/A | N/A | N/A | N/A | < 0.11 | < 4.6 |
| Maximum of nondetects | < 6.6 | N/A | N/A | N/A | < 110 | N/A | < 0.14 | < 4.8 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 21.625862 | 14.006897 | 31051.72414 | 10.948276 | 8433.241379 | 299.106897 | 0.078966 | 17.963793 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 28.843459 | 10.039349 | 8365.858366 | 6.983021 | 15696.39136 | 249.516581 | 0.038298 | 14.324186 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.333748 | 0.716743 | 0.269417 | 0.637819 | 1.861252 | 0.834205 | 0.484998 | 0.797392 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 11.745875 | 10.055833 | 29858.67654 | 9.334419 | 1771.455892 | 188.510951 | 0.072995 | 12.112919 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 3.002179 | 2.529153 | 1.341787 | 1.774341 | 6.437357 | 3.046098 | 1.444263 | 2.694612 |
| Shapiro-Wilk Coefficient (95%) | 0.926 | 0.926 | 0.926 | 0.926 | 0.926 | 0.926 | 0.926 | 0.926 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.656 | 0.929 | 0.944 | 0.803 | 0.557 | 0.902 | 0.592 | 0.895 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.931 | 0.923 | 0.911 | 0.971 | 0.956 | 0.928 | 0.645 | 0.918 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N | N | L | L | L | U | LQ |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 12 | 11.8 | 31600 | 8.7 | 1780 | 245 | < 0.12 | 12.7 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 30.737279 | 17.178246 | 33694.43152 | 13.154156 | 13391.60519 | 377.927178 | 0.091064 | 22.488688 |
| Std. Dev. - ln transformed data | 1.099338 | 0.927885 | 0.294002 | 0.573429 | 1.862118 | 1.113861 | 0.367599 | 0.991254 |
| H value | 2.572153 | 2.360625 | 1.795861 | 1.999014 | 3.650834 | 2.590743 | 1.842489 | 2.434767 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 36.677135 | 23.396399 | 34448.80014 | 13.663775 | 36244.88219 | 604.771686 | 0.088762 | 31.239033 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 18.558087 | 16.68586 | 34672.22786 | 11.429298 | 2868.08747 | 329.894201 | < 0.13 | 23.431841 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 86.073686 | 36.438817 | 49744.39807 | 26.551139 | 43505.25824 | 856.626745 | 0.164539 | 49.969754 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 136.983989 | 79.951341 | 57592.56759 | 33.615221 | 113581.2271 | 2270.982725 | 0.165962 | 110.955656 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 38.216759 | 21.341453 | 33542.71279 | 13.8 | 45575.70089 | 472.229081 | 0.168143 | 29.6 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Subsurface Soil Data - NRU (Table 4-16)**
**Radford Army Ammunition Plant**

| Statistics | POTASSIUM | SELENIUM | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|
| No. of data points | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| No. of detects | 29 | 0 | 0 | 4 | 0 | 29 | 29 |
| Frequency of detects | 100.00% | 0.00% | 0.00% | 13.79% | 0.00% | 100.00% | 100.00% |
| Minimum of detects | 123 | N/A | N/A | 123 | N/A | 22 | 4.7 |
| Maximum of detects | 10000 | N/A | N/A | 151 | N/A | 77.6 | 69.8 |
| Minimum of nondetects | N/A | < 0.56 | < 1.1 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | N/A | < 3.6 | < 2.6 | < 140 | < 1.4 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 2047.172414 | 0.577931 | 0.67931 | 71.793103 | 0.613793 | 47.913793 | 25.017241 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 2523.407632 | 0.508804 | 0.206811 | 27.555631 | 0.037551 | 14.472529 | 16.065003 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.232631 | 0.880388 | 0.304443 | 0.38382 | 0.061179 | 0.302053 | 0.642157 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 1006.656421 | 0.447393 | 0.65825 | 68.316306 | 0.612703 | 45.678828 | 20.334945 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 3.47593 | 1.922959 | 1.263281 | 1.339623 | 1.062327 | 1.380843 | 1.978438 |
| Shapiro-Wilk Coefficient (95%) | 0.926 | N/A | N/A | 0.926 | N/A | 0.926 | 0.926 |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | 0.733 | N/A | N/A | 0.539 | N/A | 0.974 | 0.9 |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | 0.95 | N/A | N/A | 0.592 | N/A | 0.964 | 0.969 |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Normal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Distribution [a] | L | N/A | N/A | U | N/A | N* | L |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 705 | < 0.62 | < 1.2 | < 120 | < 1.2 | 47.6 | 20.7 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 2844.296593 | 0.738658 | 0.74464 | 80.497706 | 0.625655 | 52.485549 | 30.092047 |
| Std. Dev. - ln transformed data | 1.245862 | 0.653865 | 0.233713 | 0.292388 | 0.060462 | 0.322694 | 0.682308 |
| H value | 2.759704 | 2.071967 | 1.76431 | 1.795017 | 1.704333 | 1.8136 | 2.098702 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 4189.080999 | 0.715684 | 0.731298 | 78.734364 | 0.625895 | 53.747663 | 33.640401 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 1642.929805 | < 0.66 | < 1.24293 | < 130 | < 1.2 | 53.257579 | 29.571719 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 7685.474426 | 1.714802 | 1.14141 | 133.363406 | 0.697698 | 80.251211 | 60.912885 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 16287.35228 | 1.928378 | 1.109642 | 131.296861 | 0.701328 | 93.940585 | 93.399769 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 5975.964191 | < 3.022267 | < 2.6 | 150.822603 | < 1.3 | 54.260429 | 30.13757 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

**Statistical Output for Total Soil Data (Table 4-19)**
**Radford Army Ammunition Plant**

| Statistics | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | CHROMIUM |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 79 | 38 | 79 | 79 | 79 | 79 | 79 | 79 |
| No. of detects | 79 | 0 | 76 | 63 | 40 | 13 | 63 | 79 |
| Frequency of detects | 100.00% | 0.00% | 96.20% | 79.75% | 50.63% | 16.46% | 79.75% | 100.00% |
| Minimum of detects | 3620 | N/A | 1.2 | 23.4 | 0.61 | 0.62 | 116 | 6.3 |
| Maximum of detects | 47900 | N/A | 35.9 | 174 | 5.4 | 2.5 | 25700 | 75.8 |
| Minimum of nondetects | N/A | < 0.67 | < 1.1 | < 22.3 | < 0.55 | < 0.55 | < 110 | N/A |
| Maximum of nondetects | N/A | < 9 | < 1.3 | < 27.3 | < 0.68 | < 1.3 | < 682 | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 14463.16456 | 2.584605 | 4.881646 | 57.075316 | 0.880823 | 0.457468 | 1153.85443 | 27.455696 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 9384.746837 | 1.639861 | 5.316605 | 42.574795 | 0.963357 | 0.39359 | 2999.854789 | 12.416808 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 0.648872 | 0.634472 | 1.089101 | 0.745941 | 1.093701 | 0.860365 | 2.599856 | 0.452249 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 12026.28318 | 1.683757 | 3.503329 | 42.574262 | 0.607301 | 0.382018 | 537.820195 | 24.588777 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 1.842899 | 3.062475 | 2.15358 | 2.243669 | 2.246871 | 1.670524 | 3.010069 | 1.642207 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.97 | N/A | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.858 | N/A | 0.594 | 0.884 | 0.625 | 0.482 | 0.251 | 0.945 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.993 | N/A | 0.949 | 0.954 | 0.853 | 0.628 | 0.95 | 0.958 |
| Distribution [a] | L | N/A | LQ | LQ | U | U | LQ | LQ |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 12200 | < 7 | 3.2 | 45.5 | 0.61 | < 0.61 | 534 | 27 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 16220.78679 | 3.033407 | 5.877366 | 65.048937 | 1.061245 | 0.531182 | 1715.682209 | 29.781178 |
| Std. Dev. - ln transformed data | 0.61134 | 1.119223 | 0.767132 | 0.808112 | 0.809538 | 0.513137 | 1.101963 | 0.496041 |
| H value | 1.916097 | 2.511284 | 2.032703 | 2.065728 | 2.066946 | 1.852234 | 2.338579 | 1.841607 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 16553.47282 | 4.999974 | 5.609831 | 71.292298 | 1.018577 | 0.485287 | 1321.439026 | 30.838175 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 14155.26995 | < 7.357024 | 3.7 | 54.217944 | 0.79 | < 0.613106 | 715.62108 | 29.862108 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 32927.65396 | 6.097187 | 15.342067 | 140.841226 | 2.776227 | 1.231856 | 7056.068728 | 51.885765 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 40041.0536 | 18.511729 | 15.848027 | 208.765379 | 2.986303 | 1.048447 | 4701.499409 | 65.251616 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 16735.05051 | < 7 | 7.348184 | 63.494993 | 1.020004 | 0.686705 | 1316.944691 | 30.167755 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Total Soil Data (Table 4-19)**
**Radford Army Ammunition Plant**

| Statistics | COBALT | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL |
|---|---|---|---|---|---|---|---|---|
| No. of data points | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| No. of detects | 57 | 77 | 79 | 79 | 73 | 79 | 19 | 63 |
| Frequency of detects | 72.15% | 97.47% | 100.00% | 100.00% | 92.41% | 100.00% | 24.05% | 79.75% |
| Minimum of detects | 5.9 | 1.6 | 7250 | 2.1 | 139 | 16.7 | 0.038 | 4.6 |
| Maximum of detects | 130 | 38.7 | 67700 | 256 | 58100 | 2040 | 1.2 | 94.2 |
| Minimum of nondetects | < 5.6 | < 1.1 | N/A | N/A | < 110 | N/A | < 0.037 | < 4.4 |
| Maximum of nondetects | < 6.6 | < 1.1 | N/A | N/A | < 629 | N/A | < 0.14 | < 4.9 |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 17.361392 | 12.165823 | 27602.65823 | 22.298734 | 5886.974684 | 475.706329 | 0.082133 | 14.738608 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 22.618565 | 9.48822 | 11872.44069 | 39.80101 | 12450.67155 | 465.451471 | 0.134716 | 15.194799 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.302808 | 0.779908 | 0.430119 | 1.7849 | 2.114952 | 0.978443 | 1.640225 | 1.030952 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 10.310094 | 8.517466 | 24778.56435 | 13.924562 | 1466.582971 | 290.131123 | 0.059459 | 9.559199 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.691948 | 2.543391 | 1.650048 | 2.185771 | 4.979819 | 3.014271 | 1.967036 | 2.604149 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.597 | 0.9 | 0.958 | 0.349 | 0.479 | 0.799 | 0.264 | 0.733 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.938 | 0.961 | 0.928 | 0.862 | 0.956 | 0.971 | 0.823 | 0.965 |
| Distribution [a] | LQ | LQ | NQ | U | LQ | L | U | LQ |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 11.4 | 9.1 | 27200 | 12.5 | 1080 | 359 | < 0.12 | 9.8 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 21.59751 | 13.942824 | 29826.18818 | 29.752866 | 8218.798597 | 562.878404 | 0.107363 | 17.584365 |
| Std. Dev. - ln transformed data | 0.990265 | 0.933498 | 0.500805 | 0.781969 | 1.605393 | 1.103358 | 0.676528 | 0.957106 |
| H value | 2.226883 | 2.174884 | 1.844316 | 2.044483 | 2.888649 | 2.339985 | 1.962641 | 2.196509 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 21.609354 | 16.571909 | 31185.81607 | 22.655696 | 8994.950703 | 714.346691 | 0.086875 | 19.174239 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 12.624216 | 11.731054 | 31193.16197 | 13.8 | 2010 | 449.037019 | < 0.12 | 13.2 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 61.863419 | 30.833895 | 50961.68529 | 100.607221 | 30383.67095 | 1391.482098 | 0.347187 | 44.634375 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 72.34673 | 53.451606 | 66374.42405 | 64.856521 | 34520.27386 | 2543.229288 | 0.225056 | 62.841148 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 21.970172 | 16.270227 | 31431.00585 | 26.836532 | 10521.42082 | 587.632964 | 0.13 | 18.059425 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

**Statistical Output for Total Soil Data (Table 4-19)**
**Radford Army Ammunition Plant**

| Statistics | POTASSIUM | SELENIUM | SILVER | SODIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|
| No. of data points | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| No. of detects | 67 | 2 | 1 | 6 | 16 | 79 | 79 |
| Frequency of detects | 84.81% | 2.53% | 1.27% | 7.59% | 20.25% | 100.00% | 100.00% |
| Minimum of detects | 123 | 0.64 | N/A | 114 | 1.3 | 12.2 | 4.7 |
| Maximum of detects | 10900 | 0.77 | 4.3 | 151 | 5 | 114 | 598 |
| Minimum of nondetects | < 557 | < 0.55 | < 0.56 | < 110 | < 1.1 | N/A | N/A |
| Maximum of nondetects | < 752 | < 3.6 | < 2.6 | < 752 | < 1.4 | N/A | N/A |
| Arithmetic Mean (Gilbert 1987, Eq 4.3) | 1492.64557 | 0.416582 | 0.588354 | 144.797468 | 0.985443 | 46.836709 | 55.086076 |
| Arithmetic Std. Dev (Gilbert 1987, Eq 4.4) | 2110.856762 | 0.337115 | 0.473124 | 116.290819 | 0.87035 | 20.513455 | 87.092276 |
| CV - Normal (Gilbert 1987, Sec 4.4.4) | 1.414171 | 0.80924 | 0.804148 | 0.803127 | 0.883207 | 0.437978 | 1.581022 |
| Geometric Mean (Gilbert 1987, Eq 13.1) | 771.638011 | 0.358164 | 0.518781 | 106.834421 | 0.789085 | 42.235808 | 32.64939 |
| Geometric Std. Dev. (Gilbert 1987, Eq 13.2) | 2.998105 | 1.579355 | 1.552728 | 2.140055 | 1.7895 | 1.614126 | 2.522604 |
| Shapiro-Wilk Coefficient (95%) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Normal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Wilk calc. - Lognormal (Gilbert 1987, Eq 12.3 & 12.4) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Shapiro-Francia Coefficient (EPA April 1992, 95%) | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shapiro-Francia calc. - Normal (EPA April 1992) | 0.618 | 0.417 | 0.369 | 0.713 | 0.539 | 0.967 | 0.455 |
| Shapiro-Francia calc. - Lognormal (EPA April 1992) | 0.959 | 0.536 | 0.778 | 0.732 | 0.616 | 0.969 | 0.961 |
| Distribution [a] | LQ | U | U | U | U | LQ | LQ |
| Median (Gilbert 1987, Eq 13.15 & 13.16) | 618 | < 0.61 | < 1.2 | < 120 | < 1.2 | 43.6 | 30.2 |
| UCL (95%) - Normal (Gilbert 1987, Eq 11.6) | 1887.97736 | 0.479719 | 0.676964 | 166.576993 | 1.148447 | 50.678571 | 71.397152 |
| Std. Dev. - ln transformed data | 1.09798 | 0.457016 | 0.440013 | 0.760831 | 0.581936 | 0.478794 | 0.925292 |
| H value | 2.334564 | 1.819987 | 1.810567 | 2.0277 | 1.896403 | 1.832052 | 2.167367 |
| UCL (95%) - Lognormal (Gilbert 1987, Eq 13.13) | 1884.717518 | 0.436855 | 0.625464 | 169.931114 | 1.059079 | 52.311203 | 62.864439 |
| UCL (95%) - Nonparametric (Gilbert 1987, Eq 13.22) | 891.743451 | < 0.61 | < 1.2 | < 140 | < 1.2 | 48.25527 | 35.524216 |
| UTL (95%) - Normal (Gilbert 1987, Eq 11.2) | 5645.756249 | 1.079856 | 1.519227 | 373.599655 | 2.697857 | 87.196932 | 226.440129 |
| UTL (95%) - Lognormal (Gilbert 1987, ln Eq 11.2) | 6692.82915 | 0.880219 | 1.233003 | 477.33384 | 2.479552 | 108.342218 | 201.610485 |
| UTL (95%) - Nonparametric (Gilbert 1987, Eq 11.13,p=am) | 2100.661192 | 1.16766 | < 1.2 | < 585.372922 | 2.108904 | 50.829365 | 61.930684 |
| Units | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |

[a] Key for distribution type
L = Passed lognormal distribution test.
L* = Passed both normal and lognormal distribution tests, but lognormal distribution was a better fit.
LQ = Lognormal distribution assumed since it was close to passing lognormal distribution test.
N = Passed normal distribution test.
N* = Passed both normal and lognormal distribution tests, but normal distribution was a better fit.
NQ = Normal distribution assumed since it was close to passing normal distribution test.
U = Distribution undefined (nonparametric).

EPA April 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance.
Gilbert 1987, Statistical Methods for Environmental Pollution Monitoring, Van Nostrand Reinhold, New York.

# GROUP A

# PROJECT MANAGEMENT

## A1. Title and Approval Sheet

Laboratory Quality Assurance Project Plan

Lancaster Laboratories, Inc.

Approving Official:

Kathleen M. Loewen

Kathleen Loewen, B.S., Quality Assurance Officer

5/16/02

Date

## A2. Table of Contents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| | Section | Pages | Revision | Date |
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| | Appendix A – Example Report Forms | 113 | | |

## A3. Distribution List

This is a generic QA Project Plan; therefore, a distribution list will not be included. A list of organizations and persons that receive the generic QA Project Plan is maintained at Lancaster Laboratories.

## A4. Project/Task Organization

The objectives of the laboratory Quality Assurance Program are to establish procedures which will ensure that data generated in the laboratory are within acceptable limits of accuracy and precision, to ensure that quality control measures are being carried out, and to ensure accountability of the data through sample and data management procedures. To this end, a Quality Assurance Department has been established. The Quality Assurance Officer reports directly to the President of Lancaster Laboratories and has no direct responsibilities for data production, thus avoiding any conflict of interest. The Quality Assurance Officer is the responsible party for maintaining the official, approved QA project plan.

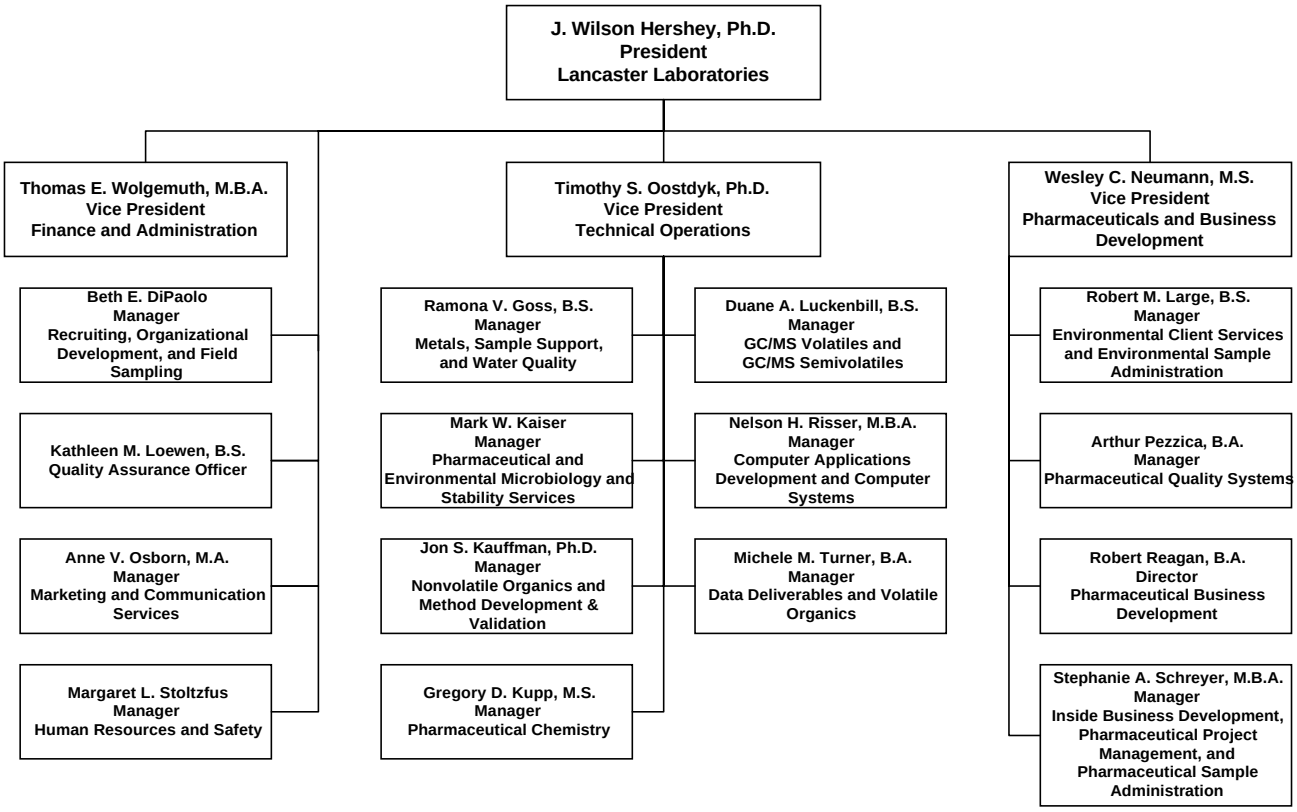
The attached organizational charts show key managerial personnel. Resumes of key individuals may be found in the *Qualifications Manual*.

The Sample Administration Group will be responsible for receiving samples, signing the external chain of custody, checking sample condition, assigning unique laboratory sample identification numbers, and initiating internal chain-of-custody forms. Sample Support personnel will be responsible for assigning storage locations, checking and adjusting preservation, homogenizing the sample as needed, and sample discard. The Bottles Group is responsible for pre-preserving bottles as required by the method, preparing trip blanks and field blanks when required, and packing the bottle kits, then sending them to the client‘s requested location.

Group leaders listed in each technical area are responsible for performing laboratory analyses, quality control as specified in the methods, instrument calibration, and technical data review. Data is reported using a computerized sample management system, which tracks sample progress through the laboratory and generates client reports when all analyses are complete. Quality control data is entered onto the same system for purposes of charting and monitoring data quality.

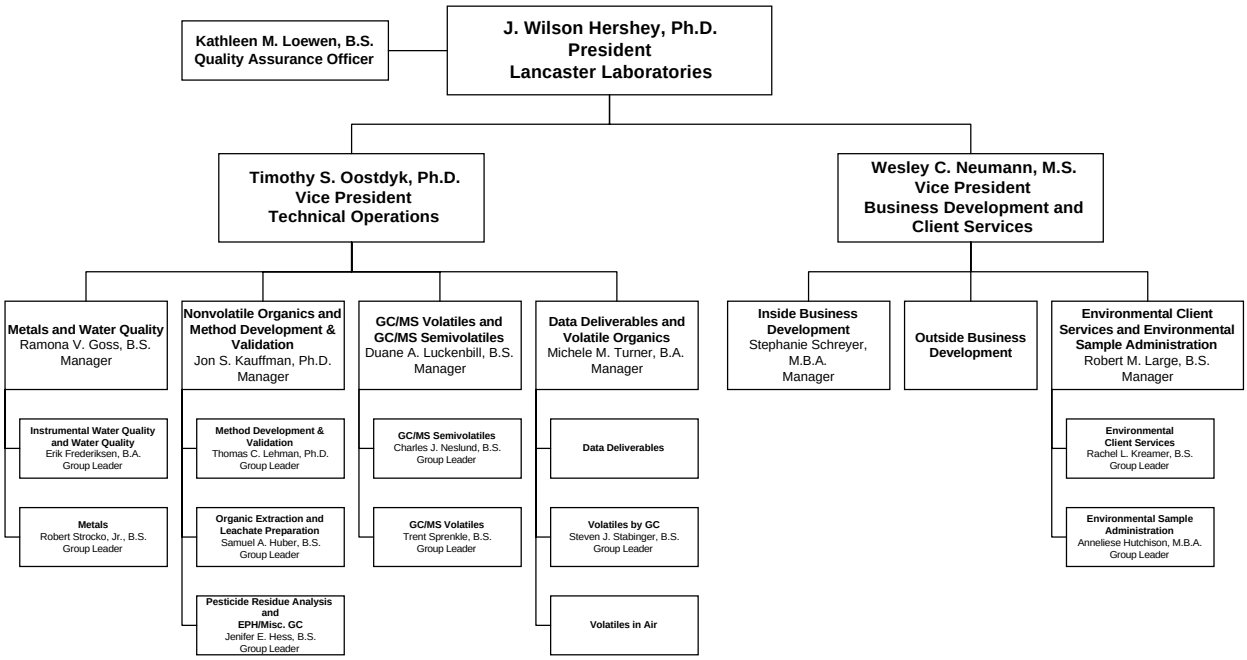
The Quality Assurance Department is responsible for reviewing quality control data, conducting audits in the laboratory and reporting findings to management, maintaining current copies of all analytical methods, reviewing and approving SOPs, maintaining copies of computer code used to calculate and report results, submitting blind samples to the laboratory, and ensuring that appropriate corrective action is taken when quality problems are observed.

Data package deliverables are available upon request. The Quality Assurance Department reviews a representative sampling of the deliverables for completeness and to be sure that all quality control checks were performed and met specifications. This step includes review of holding times, calibrations, instrument tuning, blank results, duplicate results, matrix spike results, surrogate results, and laboratory control samples (where applicable). Every attempt to meet specifications will be made, and any item outside of the specifications will be noted in the narrative. The laboratory will not validate data with regard to usability since this generally requires specific knowledge about the site. All data is archived according to corporate procedures.



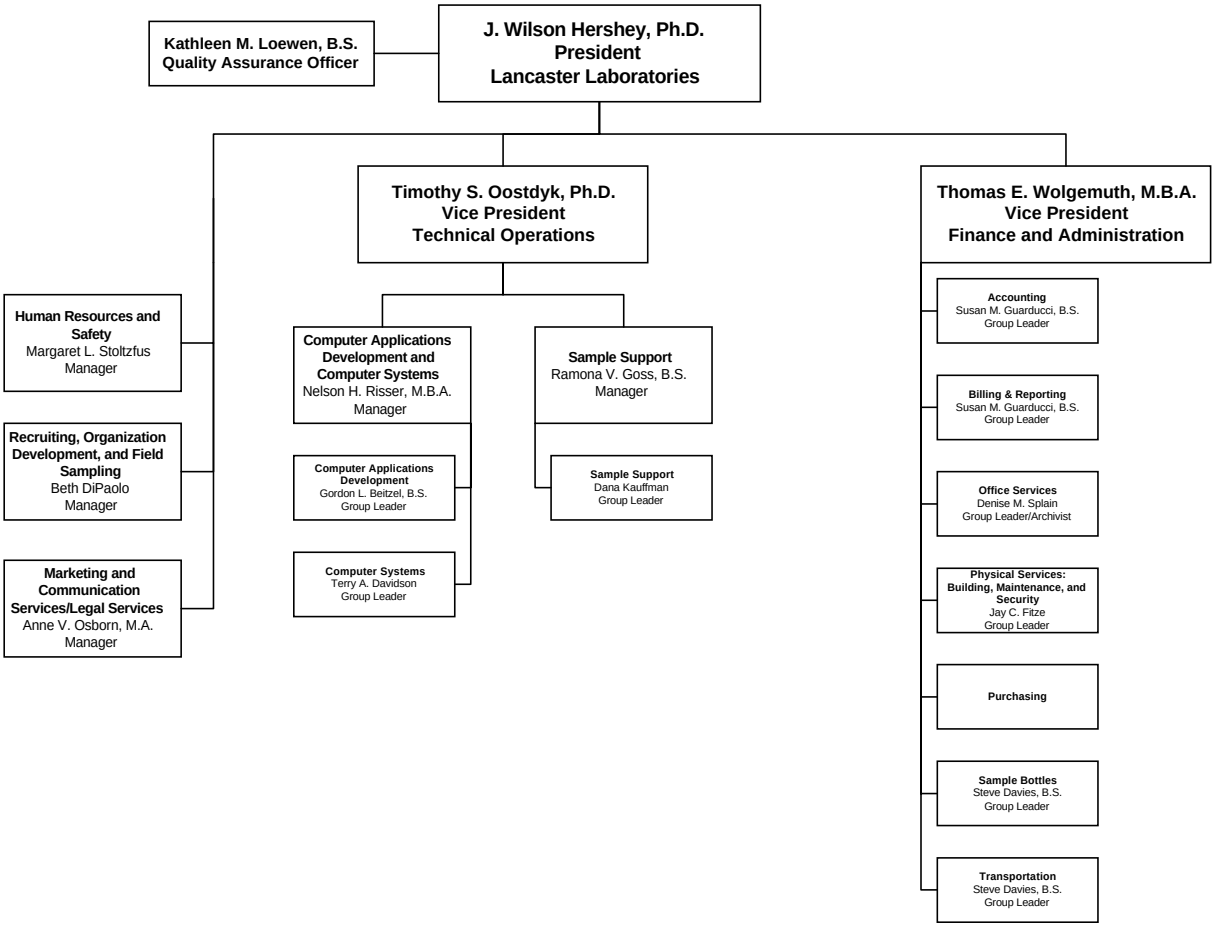

04/09/02
President to Manager

**Environmental Sciences**




04/04/02

## Support Services




04/04/02

## A5. Problem Definition/Background

The purpose of this generic QA Project Plan is to provide specific quality assurance and quality control procedures involved in the generation of data of acceptable quality and completeness. This QA Project Plan provides the laboratory requirements to meet *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5, March 2001 and EPA's *Guidance for Quality Assurance Project Plans*, EPA QA/G-5, February 1998.

The procedures in this QA Project Plan have been standardized to make them applicable to all types of environmental monitoring and measurement projects. However, under certain site-specific conditions, not all of the procedures discussed in this document may be appropriate. In such cases, it will be necessary to adapt the procedures to the specific conditions of the investigation.

The analyses in this document are representative of what the laboratory performs but are not all encompassing. It is intended to provide a client with an overview of systems and procedures at Lancaster Laboratories. It is not project or site-specific and may not address all analyses required for a particular project. If additional analytical information is necessary, arrangements can be made with Lancaster Laboratories to generate a project specific or site specific QAPP.

## A6. Project/Task Description

Tests will be performed according to the analytical methodology set forth in the *USEPA Test Methods for Evaluating Solid Waste—Physical/Chemical Methods*, *SW-846*, *3rd edition, Update III, December 1996* and *Methods for Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020.* SW-846 provides specific analytical procedures to be used and defines the specific application of these procedures. Proven instruments and techniques will be used to identify and measure the concentrations of volatiles, semivolatiles, and pesticide compounds and/or the inorganic elements. The laboratory will employ state-of-the-art GC/MS and/or GC procedures to perform all organic analysis. Inorganic analyses will be performed using graphite furnace atomic absorption spectophotometry (GFAA), inductively coupled plasma (ICP), cold vapor AA, and flame AA. Instrumental wet chemistry will be using an auto-analyzer spectrophotometer, TOC analyzer, TOX analyzer, and Ion Chromatography. Classic wet chemistry will use appropriate instrumentation. The client is responsible for providing specifics on the project site.

## A7. Quality Objectives and Criteria

Quality assurance is the overall program for assuring reliability of monitoring and measurement data. Quality control is the routine application of procedures for obtaining set standards of performance in the monitoring and measurement process. Data quality requirements are based on the intended use of the data, the measurement process, and the availability of resources. The quality of all data generated and processed during this investigation will be assessed for precision, accuracy, representativeness, comparability, and completeness. These specifications will be met through precision and accuracy criteria as specified in Element B5. Detection limits are presented in Element B4.

To ensure attainment of the quality assurance objectives and criteria, SOPs are in place detailing the requirements for the correct performance of laboratory procedures. The laboratory SOPs fall under five general categories:

1. Corporate policy

2. Quality assurance

3. Sample administration

4. General laboratory procedures

5. Analytical (i.e., methods, standard preps., instrumentation)

All SOPs are approved by the QA Department prior to implementation. The distribution of current SOPs and archiving of outdated ones are controlled by the Office Services Group through a master file. Table A7-1 provides an index of QA SOPs in place in support of the Quality Assurance objectives. These requirements are supplemented by the procedures in the laboratory and analytical SOPs.

**Table A7-1**

| Document # | Document Title |
|---|---|
| SOP-QA-101 | Sample Collection |
| SOP-QA-102 | Sample Log-In |
| SOP-QA-103 | Sample Storage and Discard |
| SOP-QA-104 | Internal Chain-of-Custody Documentation |
| SOP-QA-105 | Analytical Methods Manual |
| SOP-QA-106 | Validation and Authorization of Analytical Methods |
| SOP-QA-107 | Analytical Methods for Nonstandard Analyses |
| SOP-QA-108 | Subcontracting to Other Laboratories |
| SOP-QA-109 | Laboratory Notebooks, Logbooks, and Documentation |
| SOP-QA-110 | Reagents and Standards |
| SOP-QA-111 | Instrument and Equipment Calibration |
| SOP-QA-112 | Instrument and Equipment Maintenance |
| SOP-QA-113 | Data Entry, Verification and Reporting of Results from the Computerized Sample Management System (CSMS) |
| SOP-QA-114 | Data Storage, Security, and Archiving |
| SOP-QA-115 | Quality Control Records |
| SOP-QA-116 | Investigation and Corrective Action of Noncompliant Data |
| SOP-QA-117 | Personnel Training Records and Curriculum Vitaes |
| SOP-QA-118 | Quality Assurance Audits |
| SOP-QA-119 | Proficiency Test Samples |
| SOP-QA-120 | Documentation for the Computerized Sample Management System (CSMS) |
| SOP-QA-121 | Quality Assurance Guidelines for Computers and Computerized Systems |
| SOP-QA-122 | Investigation and Corrective Action Reporting for Laboratory Problems |
| SOP-QA-123 | Missed Holding Time Reports |
| SOP-QA-124 | External Audits |

**Table A7-1 (continued)**

| Document # | Document Title |
|---|---|
| SOP-QA-125 | Document Control |
| SOP-QA-127 | Handling of Client Technical Complaints (Investigations and Response) |
| SOP-QA-128 | Compliance with Good Laboratory Practice (GLP) Regulations |
| SOP-QA-129 | Writing Standard Operating Procedures |
| SOP-QA-130 | Change Control |
| SOP-QA-132 | Good Manufacturing Practice Training |
| SOP-QA-133 | Guidelines for Analytical Decision Making |
| SOP-QA-134 | Good Laboratory Practice Training |
| SOP-QA-135 | Disposal of Hard Copies |
| SOP-QA-136 | Archive Guidelines |

## A8. Specialized Training/Certification

Lancaster Laboratories has a core curriculum of training that contains the basic courses relevant to all the employees. This in part, includes teaching the quality policy, quality assurance/quality control, ethics training, chemical hygiene training, health and safety classes, and any function specific training (i.e. GC, Statistics). Much of this training is performed at Lancaster Laboratories through the Human Resources Group. The following list shows examples of course offerings:

- Laboratory Technician Program: Designed for new employees who need to develop laboratory skills or who need a refresher on laboratory basics.
- Making Quality A Science: This course introduces why quality is important, explains Lancaster Laboratories quality philosophy and processes, and shows how to apply quality thinking and techniques on the job.
- Putting Our Values to Work: This seminar is designed to introduce new employees to the Statement of Values by examining how it translates to everyday jobs and includes ethical decision making.
- Chemical Hygiene Plan: Introduces the new employee to LLI's Chemical Hygiene Plan and the OSHA Lab Standard regulation and requirements.
- CPR: This course includes CPR history, relevance of CPR, cardiovascular disease, adult one-rescuer CPR, airway obstruction, pediatric CPR, safety in CPR.
- 24-hour HAZWOPER Emergency Response: Part of a proactive safety and emergency preparedness effort, this training is provided to a core group of people and volunteers who may respond to emergencies.
- Statistical Analysis: Topics include: rounding, mean standard deviation, normal distribution, z-scores, estimate, confidence intervals, hypothesis testing, one sample t-test, F-test, two sample t-test, paired t-test, ANOVA, outlier, calibration, etc.
- Gas Chromatography: Principles in GC, separation, qualitative/quantitative analysis, hardware, software, troubleshooting techniques, and the applications for GC use at Lancaster Laboratories.
- GC/MS Basics: Review of the fundamentals for GC/MS analysis.
- HPLC: Principles and practices on HPLC and the applications at Lancaster Laboratories.

If the training can not be accomplished at Lancaster Laboratories, then the employee may have off-site training. Within each technical or support group, the employee also receives on-the-job training before performing work independently. The details of this training are noted in each departmental group's SOPs.

The analysts must perform an initial demonstration of capability before using any test method; this is reviewed and signed by the technical department's management and Quality Assurance. The analyst must also complete an annual demonstration of capability for each test method per matrix.

All training and proficiencies are documented in each employee's training records as described in SOP-QA-117, "Personnel Training Records and Curriculum Vitaes."

## A9. Documents and Records

The group leaders in each technical area are responsible for overseeing the performance of analysis, quality control as specified in the method, instrument calibration, and technical data review. There is a secondary review on 100% of all data by a supervisor or experienced analyst prior to reporting the results. The Laboratory Information Management System (LIMS) tracks sample progress through the laboratory and generates client reports. During analysis, raw data must be recorded in indelible ink in bound notebooks or on printouts from instruments and is then entered into the LIMS against sample number and analytical method. Many instruments are connected directly to the LIMS, eliminating the manual transcription. Quality control data is entered into the same system for purposes of charting and monitoring data quality. When all analyses are completed and have been verified by a supervisor or designee, the computer generates a report. The client receives a copy of the report containing the results of the analysis plus comments entered by the analyst where necessary. Copies of the reports and associated raw data are retained in secured archives.

Currently Lancaster Laboratories has over fifteen different reporting formats. Table A9-1 shows some of the formats available. Unless a specific report format is requested, the standard laboratory procedure is to report results to the limit of quantitation (LOQ) using report type 0 (see Table A9-1). However, it is possible to estimate to a value below the LOQ, if lower values are needed. Estimates are made to the reported method detection limit (MDL) which is based on annual MDL studies performed per method/matrix and instrument. An example analysis report is included in Appendix A.

The data packages are consistent with EPA CLP, NJDEP, and other state or agency formats. Custom formats are also accommodated. The data package types differ in the level of raw data and QC that would be submitted. Table A9-2 shows the formats offered and the information that can be included in a data package. Appendix A shows examples of the data package forms used for various types of methodology (i.e. GC/MS Volatiles, pesticides, etc.) The data packages are available as hard copy deliverables or a *.pdf* file on CDROM.

After the data package has been compiled, a content review and QA/QC compliance review on 100% of the data packages is performed by the Data Deliverable department or by other fully-trained staff. During the content review, the field chain of custody is compared to the reports to check the analysis performed, dates/times of collection, and sample designation. In addition to making sure data from all the appropriate departments is present, the following are also checked: method summary/reference, title page, table of contents, sample reference list, sample administration receipt documentation logs, and internal chains of custody (if required). In addition to making sure the data for all analyses are included, the following are also checked during the QA/QC compliance review: spot check results on the report against the raw data, ensure analyses performed within holding time, check quality control summary forms for compliance issues, and read the case narrative to make sure all nonconformances and anomalies are addressed.

In addition, the Quality Assurance Department reviews a representative sampling of the deliverables for completeness and to be sure that all batch quality control checks were performed and met specifications. This step includes review of holding times, calibrations, instrument tuning, blank results, duplicate results, matrix spike results, surrogate results, and laboratory control samples (where applicable). Every attempt to meet specifications will be made, and any item outside of the specifications will be noted in the case narrative. The laboratory will not validate data with regard to usability since this generally requires specific knowledge about the site.

Analytical results can be submitted to the client in various electronic formats. LLI supports more than 8 standard and over 100 custom file structures using an Oracle based data system. LLI provides electronic data deliverables (EDD) formatted in Microsoft Access (.mdb), Excel (.xls), and ASCII: “Comma Delimited,” “Tab Delimited,” and “Fixed Length.” LLI uses several industry standard formats for the electronic data, such as:

- NJDEP SRP HazSite (HZRESULT data)
- GIS/Key
- CA EDF (COELT)
- EquIS
- ERPIMS
- EPA Region 5 (EDMAN)
- TerraBase (Integrate Level 2)
- ITEMS
- Client- or Project-Specific Formats

We ensure the quality of our electronic data by providing 100 percent manual quality assurance review of all data fields for new formats and a 10 percent review thereafter. We also have an extensive EDD review.

*LLabWeb.com* allows a client to access their verified analytical results round-the-clock through Lancaster Laboratories computer system using a secure Internet browser. Only analytical results on samples that are completed and verified can be accessed by this system.

A corporate procedure is in place for documentation, error correction, and control of logbooks (SOP-QA-109, ”Laboratory Notebooks, Logbooks, and Documentation”). The Office Services Group is responsible for maintaining the document and version control of the QA project plan and SOPs. All documents are assigned a revision number and date by the Office Services Group. They record all individuals or departments that have been issued a copy of a document and track that old versions are returned when the new one is issued. They are also responsible for maintaining the archive system to securely store records from all areas of the laboratory. SOP-QA-114, ”Data Storage, Security and Archiving,” describes procedures for transferring data from the laboratories to the archives. The procedures for maintaining the archives, including record retention schedule and disposal are described in SOP-QA-136, “Archive Guidelines.” The length of time for retention of data is 10 years. The disposal of records is explained in procedure SOP-QA-135, “Disposal of Hard Copies.” All copies that are disposed of are incinerated. The Data Deliverables Group archives copies of the data packages using microfilm or equivalent. Electronic data diskette files are saved on a backup tape and stored off site for a minimum of 10 years.

**Table A9-1**
**Data Reporting Formats**

| | Negative | Exactly Zero | MDL | LOQ | Above LOQ | Limit Shown on Report |
|---|---|---|---|---|---|---|
| 0 | <LOQ | | | | Rounded result | LOQ |
| 1 | N.D. | | <LOQ | | Rounded result | LOQ |
| 2 | N.D. | | BMQL | | Rounded result | LOQ |
| 3 | N.D. | | Result with "J" Qualifier | | Rounded result | LOQ |
| 4 | N.D. | | Result with "J" Qualifier | | Rounded result | LOQ |
| 5 | Result with "J" | N.D. | Rounded result to 6 decimal places | | | LOQ |
| 6 | Result with "J" | N.D. | Rounded result to 6 decimal places | | | MDL |
| 7 | LOQ with "U" Qualifier | | Result with "J" Qualifier | | Rounded Result | LOQ |
| 8 | N.D. | | Rounded Result (no "J" Qualifier) | | | MDL |

Key:

MDL = Method Detection Limit
LOQ = Limit of Quantitation
BMQL = Below Minimum Quantitation Limit
J = Estimated Value

# Table A9-2
## Data Package Formats

**Type I, NJ Regulatory (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/references
- Analysis reports/laboratory chronicles
- Case narrative
- Quality control summary; duplicates, matrix spike, matrix spike duplicate, blank, and LCS, and surrogate recovery summary forms, GC/MS tuning summary
- Sample data; all raw sample data including instrument printouts and MDL summary form
- Standard Data; initial and continuing calibration summary forms, all raw initial and continuing calibrations and standardization data including instrument printouts
- Quality control raw data; all raw quality control sample data including printouts, preparation logs, run logs

**Type II (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/reference
- Analysis reports/laboratory chronicles
- Case narrative
- Quality control summary; duplicate, matrix spike, matrix spike duplicate, blank, LCS, and surrogate recovery forms, GC/MS tuning, initial and continuing calibration summary forms
- Sample data; all raw sample data including instrument printouts
- Quality control raw data; blank raw data, preparation logs, run logs

**Type III, NJ Reduced Deliverables (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/reference
- Analysis reports/laboratory chronicles
- Case narrative and conformance/nonconformance summary
- Quality control summary; duplicate, matrix spike, matrix spike duplicate, blank, LCS, and surrogate recovery forms, GC/MS tuning, summaries for calibration and standardization
- Sample data; MDLs, all raw sample data including instrument printouts for GC, GC/MS, and TPH only
- Quality control raw data; blank raw data for GC, GC/MS, and TPH only, preparation logs

**Type IV, Full CLP Deliverables**

- Title page
- Case narrative
- Analysis request form, field chain of custody
- Internal chain of custody (if required)
- All CLP reporting forms; QC analytical results and calibration summaries
- Sample data; all raw data including instrument printouts
- Standard Data; all raw initial and continuing calibrations and standardization data including instrument printouts
- Quality control raw data; all raw quality control sample data including printouts, preparation logs, run logs

## Table A9-2 – Continued
Data Package Formats

**Type V, Reduced CLP Deliverables**

- Title page
- Case narrative
- Analysis request form, field chain of custody
- Internal chain of custody (if required)
- All CLP reporting forms; QC analytical results and calibration summaries
- Sample raw data; all raw sample data including instrument printouts for organics only
- Quality control raw data; blank raw data for organics only, preparation logs

**Type VI, Raw Data Only**

- Title page
- Sample raw data; all raw sample data including instrument printouts
- Quality control summary; blank raw data
- Standard raw data; LCS raw data

# GROUP B

# MEASUREMENT/DATA ACQUISITION

## B1. Sampling Process Design

In order for meaningful analytical data to be produced, the samples analyzed must be representative of the system from which they are drawn. It is the responsibility of the client to ensure that the samples are collected according to accepted or standard sampling methods. The client should evaluate the number, location, and type of samples to be collected. The appropriate number and frequency of field QC samples should also be determined by the client.

For non-standard matrices such as fish, worms, biota, large concrete or wood chunks, or other assorted waste, a discussion should take place with the laboratory to identify special handling requirements and confirm method performance for the particular matrix.

## B2. Sampling Methods

The sampling methods should be selected by the client with regard to the intended application of the data.

The laboratory will provide the appropriate sample containers, required preservative, chain-of-custody forms, shipping containers, labels, and seals for the sampling. Trip blanks will be prepared by the laboratory and accompany sample containers at the project required frequency. Analyte free water will also be provided for field blanks. Temperature blanks will be included for monitoring cooler temperature upon receipt of the samples back at the laboratory. Pre-cleaned containers, with vendor supplied traceability documentation are available upon request. Because the laboratory does not stock this type of traceable container, 2 weeks prior notice is required.

Before use each lot of preservative used with sample containers is documented and checked for contaminants. The appropriate bottle will be preserved with the new preservative and filled with deionized water to represent a sample. A similar container (that does not contain preservative) will be filled with deionized water to be used as a blank check. Analysis results are documented and reviewed for each preservative lot number.

A list of containers, preservatives, and holding times follows in Table B2-1.

**Table B2-1**
Sample Containers, Preservatives, and
Holding Times for Aqueous and Solid Samples

| Fraction | Vol. Req. (mL)<br>Wt. Req. (g) | Container<br>P=Plastic<br>G=Glass | Preservation[a] | Holding Time[d] From Date of Collection<br>Water | Soil |
|---|---|---|---|---|---|
| Volatiles | 3 × 40 mL<br>100 g[f] | G | Cool, 4°C[b] pH <2 w/HCl | 14 Days | 14 |
| Pesticides | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| Herbicides | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| Halocarbons<br>(Volatiles by GC) | 3 × 40 mL<br>100 g[f] | G | Cool, 4° C[b] pH <2 w/ HCl[c] | 14 Days | 14 |
| Aromatics<br>(Volatiles by GC) | 3 × 40 mL<br>100 g[f] | G | Cool, 4° C[b] pH <2 w/ HCl | 14 Days | 14 |
| Semivolatiles<br>(Acid/Base Neutrals) | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| PAHs (HPLC) | 2 × 1000 mL<br>100 g | G | Cool, 4°C $Na_2S_2O_3$ | 7 Days to extraction[e] | 14 |
| Metals | 100 mL<br>100 g | P,G | $HNO_3$ to pH <2 | 6 Months<br>Hg 28 days | 6 |
| Cyanide | 500 mL<br>100 g | P,G | Cool, 4°C NaOH to pH >12<br>ascorbic acid | 14 Days | 14 |
| Sulfide | 500 mL<br>100 g | G | Cool, 4°C (NaOH, ZnAC<br>Waters Only) | 7 Days | 7 |
| Phenol | 1000 mL<br>100 g | G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days | 28 |
| TPH | 2 × 1000 mL<br>100 g | G | Cool, 4°C pH <2 w/ HCl | 7 Days | 14 |
| TPH-GRO | 3 × 40 mL<br>100 g | G | Cool, 4°C pH <2 w/ HCl | 7 Days | 14 |
| TPH-DRO | 2 × 1000 mL<br>200 g | G | Cool, 4°C <2 with HCl | 14 Days to extraction[e] | 14 |
| TOX | 4 × 250 mL<br>50 g | G | Cool, 4°C $H_2SO_4$ to pH <2<br>$Na_2SO_3$ | 28 Days | N/A |
| TOC | 125 mL<br>20 g | G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days | 28 |
| Total Nitrite/Nitrate | 120 mL | P,G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days[g] | N/A |

[a]pH Adjustment with acid/base is performed on water samples only.

[b]Sodium thiosulfate needed for chlorinated water samples

[c]Due to the inaccurate recovery of 2-chloroethyl vinyl ether in the presence of HCl, Halocarbon samples analyzed for this compound should not be preserved.

[d]Samples will be analyzed as soon as possible after collection. The times listed are the maximum times that samples will be held before analysis and still be considered valid.

[e]Analysis 40 days from extraction.

[f]This is for soils not sampled by Method 5035. For Method 5035, see below.

[g]Holding time is 48 hours from time of collection for unpreserved samples.

NOTE: For volatiles analysis, the container should be filled completely, with no headspace. All sample containers, preservatives, and mailers will be supplied at no additional charge upon request, except for the special containers with traceability documentation. There is an additional charge for this type of container.

Method 5035
Containers for sampling soils for volatile organic compounds

| Analysis Level | Option # | EnCore™ Sampler | Methanol Preserved 40-mL Vial | Unpreserved Container for Moisture | Travel Blank |
|---|---|---|---|---|---|
| Low | A | 3 (7*) | — | 1 | Water |
| High | B | 1 (3*) | — | 1 | Water |
| | C | — | 1 (3*) | 1 | Methanol |

*Total number of sampled containers needed for background/MS/MSD analyses. Because only one analysis will come from each container, additional samples must be collected for matrix spikes/matrix spike duplicate analyses or other quality control analyses. The number of containers for MS/MSD samples is listed above. The holding time from collection to preservation is 48 hours. The holding time for analysis is 14 days from preservation.

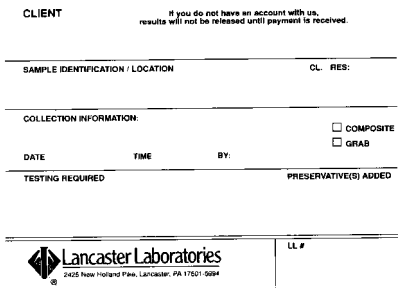
## B3. Sampling Handling and Custody Requirements

Samples are unpacked and inspected in the sample receipt area. At this time, the samples are examined for breakage and agreement with the associated client paperwork. The cooler temperatures will be checked upon receipt and recorded. As the samples are unpacked, the sample label information will be compared to the chain-of-custody record and any discrepancies or missing information will be documented. If necessary, the cooler will be closed and placed in cold storage until instructions and resolution of any discrepancies are received from the client.

A member of our Sample Administration Group will act as sample custodian for the project. To ensure accountability of our results, a unique identification number is assigned to each sample as soon as possible after receipt at the laboratory. Upon entry into our LIMS and assignment of the seven digit sample number, labels are generated, along with an Acknowledgement summarizing samples entered and the analyses scheduled. When samples requiring preservation by either acid or base are received at the laboratory, the pH will be measured and documented, with the exception of samples designated for volatile analysis, which are checked at the time of analysis. Samples requiring refrigeration will be stored at 2° to 4°C. The use of our computer system in tracking samples (by the Lancaster Labs sample number assignment) will control custody of the sample from receipt until the time of its disposal. The security system on our laboratory building allows us to designate the entire facility as a secure area since all exterior doors are either locked or attended. Therefore, hand-to-hand chain of custody is not part of our routine procedure, but is available upon request. If requested, hand-to-hand chain of custody will be provided as per attached SOP-QA-104, "Chain-of-Custody Documentation." The laboratory chain of custody will begin with the preparation of bottles. The procedures for sample log-in, storage, and chain-of-custody documentation are detailed in the QA standard operating procedures included in Element B3 (SOP-QA-102, SOP-QA-103, and SOP-QA-104). Examples of sample labels and a custody seal are shown in Figure B3-1.

## Figure B3-1

Sample Label (Field)


CLIENT

If you do not have an account with us, results will not be released until payment is received.

SAMPLE IDENTIFICATION / LOCATION CL. RES:

COLLECTION INFORMATION:

☐ COMPOSITE
☐ GRAB

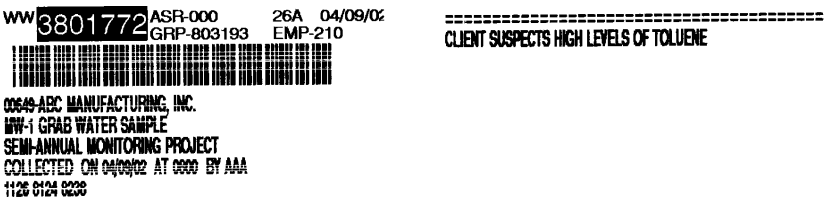
DATE TIME BY:

TESTING REQUIRED PRESERVATIVE(S) ADDED

Lancaster Laboratories
2425 New Holland Pike, Lancaster, PA 17601-5994

LL #

Sample Label (Laboratory)


WW 3801772 ASR-000 26A 04/09/02
GRP-803193 EMP-210

CLIENT SUSPECTS HIGH LEVELS OF TOLUENE

00649-ABC MANUFACTURING, INC.
MW-1 GRAB WATER SAMPLE
SEMI-ANNUAL MONITORING PROJECT
COLLECTED ON 04/09/02 AT 0000 BY AAA

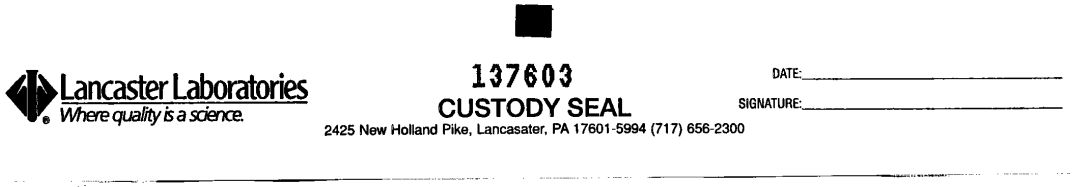
Outgoing on Cooler or Kit

Lancaster Laboratories
Where quality is a science.

CUSTODY SEAL
2425 New Holland Pike, Lancasater, PA 17601-5994 (717) 656-2300

DATE:_____
SIGNATURE:_____

Incoming on Cooler Containing Samples


Lancaster Laboratories
Where quality is a science.

137603
CUSTODY SEAL
2425 New Holland Pike, Lancasater, PA 17601-5994 (717) 656-2300

DATE:_____
SIGNATURE:_____

**QUALITY ASSURANCE OPERATIONS MANUAL**
**Sample Log-In**

**Purpose:**

In order to provide accountability of our results, protect client confidentiality, and to prevent sample loss/mix-up, a continuous and unique Lancaster Laboratories (LL) identification number is assigned to each sample upon laboratory receipt.

**Scope:**

This SOP will cover the procedure used to log client samples into the computerized sample management system (CSMS) after receipt. The Sample Administration Group is responsible for laboratory sample log-in. Sample Administration has procedures to define this sample entry process.

This procedure applies only to samples, which are logged into and tracked by the CSMS. There are only a few cases where samples may not be tracked using the CSMS. These include samples which will be stored for a long period of time prior to analysis, (e.g., stability storage) or for special project samples that could be reported in a narrative research and development style report instead of our usual analytical reports. Written procedures for tracking samples not entered into the CSMS need to be developed by the technical department responsible for the project or analysis of those samples.

**Personnel Training and Qualifications:**

Training in sample log-in is performed in accordance with Sample Administration training procedures.

**Procedure:**

1. All samples received for testing shall be delivered to the Sample Administration Department immediately upon arrival at the laboratory.

2. The Sample Administration Department will be responsible for unpacking and organizing the samples.

3. Client correspondence relating to the samples shall also be transferred to the Sample Administration Department. This may include purchase orders, quotations, letters, phone logs, and Incoming Sample Activity Records (ISARs).

4. Personnel of the Sample Administration Group shall log the samples into the CSMS as soon as practical after receipt. Samples awaiting log-in are stored in temporary holding areas, at required temperature, to maintain the sample integrity. At the time of entry the computer will assign a unique Lancaster Laboratories' identification number to each sample. Samples can be received at the laboratory 7 days a week, 24 hours a day, 365 days of the year. Samples should be logged in on the same day as they are received, but there could be the following exceptions:

    a. Samples received on a holiday will not be logged-in until the next normal workday. Samples received from 6 p.m. on Saturday through 11 p.m. on Sunday will be logged-in Sunday evening by third shift Sample Administration personnel.

    b. Samples submitted by clients, which do not identify the type of testing to be performed, or with unclear or incomplete paperwork documentation. Every effort will be made to contact the client on the same day of sample receipt. In this situation, the samples will be tracked in a hold database. The group of samples will be assigned a hold number. This database is maintained by the Sample Administration Group.

If same day sample log-in is not possible, all specified and appropriate storage requirements will be observed (e.g., refrigeration).

5. Upon assignment of a sample number, the CSMS will generate a label, which shall be attached to the sample container. Every effort will be made as to not obscure the client label. The information on the sample label will include the LL sample number, the client name, the storage location, the analyses requested, a bottle code indicating container and preservative type, if applicable, a unique bar code (used for samples stored in Automated Sample Retrieval and Storage System locations [ASRS]), and any applicable notes to laboratory personnel.

6. Preservation, homogenization, and subsampling, if necessary, will be the responsibility of the Sample Support Group, or the testing laboratory. SOPs are in place within the group to define these procedures. A list of preservatives required for routine environmental analyses may be found in the *Environmental Schedule of Services*. A preservation, sulfate, and chlorine check shall be performed immediately after sample log-in for all applicable environmental samples.

7. After all above steps are performed, as required, samples shall be stored in an assigned storage location, taken to the laboratory for testing, or may temporarily be stored in SA until technical center picks up samples.

8. The next working morning, after sample log-in, a copy of an entry acknowledgment will print from the CSMS. The acknowledgment is a hard copy record of the sample entry. It will summarize the LL sample number, the sample(s) submitted in an entry group, the test(s) to be performed, the client requesting the work, the account to be billed for the work, and the unique sample identifications assigned by the client. This acknowledgment is mailed to the client to confirm sample receipt and entry.

9. Another copy of the sample acknowledgment will print and be designated as the laboratory copy. This acknowledgment, in addition to client paperwork, will be audited by three levels of personnel after the entry process:

   a. **Sample Administration** will audit to assure that the entry corresponds to all entry documentation including client supplied paperwork and/or quotations.

   b. **Client Services** will audit to assure the entry is reflective of client documentation and that additional client/project requirements were communicated and taken into consideration. They will also verify that account and billing information is accurate.

   c. **Technical centers** will assure appropriate preparation and analysis set-up steps have been added to the entry. They will also verify that project and technical requirements have been taken into consideration from a technical point of view.

      Some technical groups may choose to audit incoming client sample requirements using alternative means such as an internal scheduling program or a database that cross-checks the analyses entered against established technical criteria. Any system used to perform technical review of incoming client requirements must be documented

   Each reviewer will initial the top of the SA file copy of the acknowledgment to document their review. Additional copies of this acknowledgment can be made for laboratory personnel.

10. The LL sample number assigned to each sample shall be used to identify the sample in all laboratory records, including laboratory notebooks, instrument printouts, and laboratory final reports. The sample number will also be used to identify all additional containers of the sample, which may be created during sample preparation and analysis. This will include subsamples, extracts, and digests.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 02/15/96 | Previous issue |
| 01 | 03/14/97 | Major changes are as follows:<br>• Expanded upon the scope of the procedure<br>• Added section about printing and auditing of the sample entry acknowledgment<br>• Added Personnel Training and Qualification section<br>• Removed specifics on how to document preservation checks |
| 02 | 04/01/98 | Major changes are as follows:<br>• Corrected typo<br>• Wording changes in Procedure section to clarify current operations |
| 03 | MAY 15 2000 | Major changes are as follows:<br>• Procedure: Section 4. b. – Corrected Typo,<br>• Procedure: Section 9. c. – Incorporated Procedural Amendment #1 (Technical Centers) |

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Prepared by: Daneys R. Clark Date: 4-11-00

Approved by: Kathleen M. Loewen Date: 4/19/00

Approved by: John Hershey Date: 4/20/00

**QUALITY ASSURANCE OPERATIONS MANUAL**
**Sample Storage and Discard**

**Cross References:**

The following procedures are cross-referenced in this document:

1. SOP-PS-014," Controlled Substance Handling and Recordkeeping Procedures."
2. SOP-QA-104, "Internal Chain-of-Custody Documentation."
3. SOP-QA-109, "Laboratory Notebooks, Logbooks, and Documentation."

**Purpose:**

Sample integrity can be compromised by improper storage conditions. The objective of this procedure is to prevent sample deterioration and mix-up prior to analysis. The computerized sample management system (CSMS) is used to assign storage locations to assist in the orderly storage of samples. Systems are also in place to ensure organized retrieval of samples for analysis and discard/return to client at an appropriate date.

**Scope:**

This procedure applies to all Lancaster Laboratories business units. The content of this procedure will describe general systems that are in place for sample storage, retrieval, return, and discard. Additional procedures within each division describe the specific storage operations and requirements of each business unit. This procedure does not address the storage and monitoring of samples stored in stability chambers. These procedures are described in the PS series of SOPs. Handling of controlled substance samples is described in SOP-PS-014.

**Safety Precautions:**

Refer to the corporate *Chemical Hygiene Plan* which provides safety information. Contact your supervisor if you have questions or concerns about a sample.

**Personnel Training and Qualifications:**

Personnel who handle client samples must be familiar with the requirements of this procedure, as well as any applicable division specific procedures.

**Procedure:**

A. Sample storage and transfer

1. Sample Administration will gather information into the CSMS at the time of sample entry about the approximate size of samples to be received in a group and the type of storage they require (e.g., refrigerator, freezer, or room temperature).

2. The CSMS will assign the storage location and record the length of time the samples must be retained after the analysis report has been issued.

3. Samples will be stored in the assigned storage location, when not in the laboratory area.

4. In the event that a sample location change is needed, a sample custodian or sample administrator will access the appropriate CSMS program and choose a new location. After a successful change in location has occurred, the new location will be written on each Lancaster Laboratories sample label, or a new label will be reprinted and adhered to the sample. The sample will then be transferred to the new storage location.

5. Analysts requiring the use of a sample may determine its location by referring to a departmental sample status sheet, CSMS, or SA entry paperwork.

6. To prevent unnecessary deterioration of the samples, the contents needed for analysis shall be removed and the sample returned to storage with a minimum of delay.

B. Security of storage areas

There are varying degrees of additional security requirements for storage areas, which are in addition to the building security. This additional security may be driven by various regulatory agencies or client requirements. The following are different levels of security which are in place at the laboratory.

1. Samples may be located in an individual laboratory area which is not locked. No additional security is required, in addition to the existing building security. Samples may only be removed from and returned to these locations by an analyst working in that area. Care shall be exercised in returning the samples to their appropriate location.

2. Locked storage areas are also available. Access to these storage areas is limited to analysts who are responsible for testing the samples that are stored there. These areas are locked when the laboratories are unattended; access is available only to members of the department where they are located. Again, care shall be exercised in returning the sample to its appropriate location.

3. Controlled access areas are attended by a sample custodian and are large areas used by more than one group. Samples stored in controlled access areas are coordinated by the sample custodian assigned to the area. Only appropriate personnel may access this controlled area. After analysis, samples are returned to this storage center and placed in their designated storage location.

Pharmaceutical samples are stored in a controlled access area, which is maintained by the Pharmaceutical Division. Environmental samples are stored in a separate controlled access area and are tracked by an automated sample retrieval storage system (ASRS). Samples are barcoded in and out of this system to track retrieval, return, and disposal.

4. Forensic storage areas are locked and admission to these areas is permitted only to sample custodians. Most of the samples stored in these areas require chain-of-custody documentation as outlined in SOP-QA-104. Samples may not be removed from this area without signing a chain-of-custody form. A chain-of-custody record may also be kept for samples, at the request of the client, even if the samples are not for forensic purposes.

C. Sample discard

1. When the retention time for sample storage has expired, a discard list will be generated from the CSMS. The retention dates are based upon client requirements or defaulted to a given number of days past the date when the final analysis report is generated, if no client requirement is given.

2. These samples will be removed from their assigned storage area by a sample custodian or analyst, and either disposed of or returned to the client.

3. Hazardous samples shall either be returned to clients, decontaminated, or disposed of at the direction of supervisory and/or Health and Safety personnel.

D. Storage conditions

1. The temperature of each sample storage location requiring a temperature control should be checked during each normal working day by an assigned person responsible for the sample storage area. This information shall be recorded.

2. Temperature documentation can be recorded on logs posted on the outside of the unit or by computerized recording devices or chart recorders.

3. The following temperature ranges need to be maintained within storage units, unless otherwise specified.

| | Refrigerator Storage | Freezer Storage | Room Temperature |
|---|---|---|---|
| Environmental Division | 2° to 4°C | -10° to -20°C | NA |
| Pharmaceutical Division | 2° to 8°C | -10° to -20°C | 15° to 30°C |

**NOTE:** Storage conditions of -40° ± 10°C and -80° ± 10°C are also available.

4. If the temperature recorded does not fall within these ranges, corrective action must be taken, as per divisional policy.

5. Temperature monitoring documentation shall be recorded in ink and changes shall be made in accordance with the error correction procedure outlined in SOP-QA-109.

6. Temperature records must be reviewed by a second qualified person and this information must be permanently archived.

7. In the event that additional storage areas are needed as "overflow" storage, systems must be put into place before samples can be stored. These areas must also be monitored for acceptable storage conditions.

8. If a client requests storage conditions which are outside the temperature ranges defined above, arrangements will be made to accommodate the request, if possible.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 10/01/96 | Previous Issue |
| 01 | 09/02/97 | Major changes are as follows:<br>• Expanded upon Scope, Purpose, and Procedure to include Pharmaceutical Sciences and Animal Health<br>• Added Personnel Training and Qualifications section<br>• Broke Procedure section down into sample storage and transfer, security of storage areas, sample discard, and storage conditions<br>• Incorporated Procedural Amendment #1<br>• Clarified the scope of this procedure does not apply to the storage of samples in our stability chambers or the storage of controlled substances |
| 02 | 04/01/99 | Major changes are as follows:<br>• Scope – deleted specific SBUs; reworded for clarity<br>• Procedure – deleted animal health; added clarification; deleted step 5; updated chart<br>• Added signature lines for SBU Directors |
| 03 | JUN 15 2001 | Major changes are as follows:<br>• Incorporated Procedural Amendment #1<br>• Added Cross Reference section<br>• Procedure – C.3. Added reference to Safety Personnel in sample discard |

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Prepared by: Dorothy M Love Date: 4/30/01

Approved by: Kathleen M. Loewen Date: 5/08/01

Approved by: Date: 5/21/01

Approved by: Date: 5/25/01

Approved by: Date: 5/29/01

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**QUALITY ASSURANCE OPERATIONS MANUAL**

**Internal Chain-of-Custody Documentation**

**Cross References:**

The following procedures/forms are cross-referenced in this document:

1. SOP-QA-102, "Sample Log-In."
2. SOP-QA-109, "Laboratory Notebooks, Logbooks and Documentation."
3. Form 2016, "Secure Storage Chain of Custody Original Sample."
4. Form 2102, "Analysis Request/Environmental Services Chain of Custody."
5. Form 2174, "Sample Administration Receipt Documentation Log."
6. Form 2231, "Secure Storage Chain of Custody, Metals."
7. Form 2365, "Master List of Chain of Custodies."
8. Form 2667, "Sample Storage, Off-Shift Entry Logbook."

**Purpose:**

In order to demonstrate reliability of data which may be used as evidence in a legal case, required by a regulatory agency, or required by a client, an accurate written record tracing the possession of samples must be maintained from the time they are received at the laboratory until the last requested analysis is verified. The purpose of a chain of custody (COC) is to ensure traceability of samples while they are in the possession of the laboratory.

**Scope:**

This procedure describes the initiating and maintaining of COC documentation for samples that require this level of traceability. It applies to all business units of Lancaster Laboratories when a client or regulatory agency requests an accurate written record tracing the possession of samples from the time they are received at the laboratory until the last requested analysis is verified. This procedure also applies to samples, especially environmental samples, which may be used as evidence in a legal case.

The first section of this procedure summarizes the COC requirements for pharmaceutical samples. The second section summarizes the requirements for environmental COC samples.

**Definition:**

A sample is in custody if it is in any one of the following states:

1. In actual physical possession.
2. In view after being in physical possession.
3. Locked up so no one can tamper with it.
4. In a secured area, restricted to authorized personnel (e.g., in the ASRS system, pharmaceutical samples storage area).

**Personnel Training & Qualifications:**

Training for this procedure consists of reading this SOP. Supervisory review of all COC documentation should be done until the trainer is satisfied that proficiency has been achieved. Training of all laboratory personnel is the responsibility of the group leader. Documentation that this training has been completed must be kept in the training records.

**Procedure:**

A. Pharmaceutical procedure

1. General overview

a. Chain-of-custody documentation shall be kept upon the request of a client or regulatory agency. As with all analytical data, it is **extremely** important that this documentation be filled out completely and accurately with every sample transfer. **Everyone who handles the COC has the responsibility to check for documentation compliance to the point of their acquisition**. If changes need to be made to the form, they shall be made in accordance with the error correction procedure addressed in SOP-QA-109. It is the responsibility of the person who made an error in documentation to correct the error.

b. For pharmaceutical samples, internal COC documentation will begin when samples are received at the laboratory.

c. A member of the Sample Administration Group will receive and unpack the samples. They will sign the client paperwork that accompanies the samples, if provided. If the samples were picked up by our Transportation Department, the driver must also sign applicable paperwork to relinquish the samples to Sample Administration.

d. The Sample Administration Group will track the custody of samples between receipt and entry into the computerized sample management system (CSMS) on Form 2174 (Figure 2). The client's sample designation will be used for identification purposes until a unique Lancaster Laboratories number is assigned.

e. Samples will be entered into the CSMS as described in SOP-QA-102.

f. After entry, samples are released by the Sample Administration Group to be stored in other areas of the laboratory (e.g., pharmaceutical specific storage areas). During this time, they may be accessed by several people in that area. Each of these people must note the specific sample numbers in their custody in addition to date, time, and reason for removal from storage. Chain-of-custody transfer documentation is recorded on Form 2016, which is given as Figure 3 of this procedure.

2. Documentation of custody changes

a. An example of how to document changes in sample custody is shown in Figure 3, (Form 2016) of this procedure. Each change of sample custody must be accurately documented in a consistent format. Entries documenting change of custody will use the following format:

Signature: First initial, full last name, employee number
Date: Month/day/year
Time: Documented as military time
Ink: Black ink is preferred, red ink and pencil are not acceptable

b. When sample(s) are released from storage, they must be signed out by the analyst receiving them. The analyst must note the sample number(s) taken, the date and time received, and a note as to the reason why they were removed from storage (reason for change of custody).

c. When an analyst returns sample(s) to storage, they must note the sample number(s) being returned in addition to time of return.

d. If the custody of sample(s) is passed from one analyst to another, the following must be noted: the sample number(s) transferred, the reason for the transfer, in addition to the time and date of transfer. It is the responsibility of the analyst now in possession of the samples to ensure they are returned to the storage area.

e. Each specific test that an analyst performs, in conjunction with the associated sample number(s), must be accurately documented by the analysts in the Reason for Change of Custody column before the samples are returned to the sample storage area.

3. Additional COC issues

a. Chain-of-custody paperwork will remain with and accompany sample containers at all times. **Note:** COC paperwork may be kept in a nearby location when samples are stored in a location not conducive to paper storage (i.e., refrigerator or freezer).

b. When sample analysis is complete, samples shall be returned to the storage area, in conjunction with the COC form.

c. Original COC documentation will be maintained at the laboratory and filed in the sample storage area. COC documentation will be overchecked in conjunction with the sample data before a copy is sent to the client. The copy could either accompany the samples as they are returned to the client or it could be included within a client data package.

d. All personnel who handle sample containers shall make every attempt to ensure that all changes of custody are accurately and completely documented. **Disciplinary action may be taken for employees who fail to comply with these important requirements**.

B. Environmental procedure

1. Initiation of COC documentation

a. Chain-of-custody documentation shall be kept upon the request of the client or for any samples which are known to be involved in a legal dispute. As with all analytical data, it is **extremely** important that this documentation is filled out completely and accurately with every sample transfer. **Everyone who handles the COC has the responsibility to check for documentation compliance to the point of their acquisition.** If changes need to be made to the form, they shall be made in accordance to the error correction procedure addressed in SOP-QA-109. It will be the responsibility of the person who made an error in documentation to correct the error.

b. If requested by the client, the COC documentation will begin with the preparation of sampling containers. Form 2102 (Figure 1) will be initiated by the person packing the bottle order for shipment to the client. If the delivery of containers is via Lancaster Laboratories Transportation Department, the driver shall sign the form when they relinquish the bottles to the client. Drivers must also sign COC forms when they pick up samples for analysis.

c. When samples arrive at the laboratory for analysis, a member of the Sample Administration group will receive them and sign the external COC form that accompanies the samples, if provided. If the samples were picked up by our Transportation Department, the driver must sign the COC to relinquish the samples to Sample Administration.

d. The Sample Administration group will track the custody of samples between receipt and entry into the CSMS on Form 2174 (Figure 2). The client's sample designation will be used for identification purposes until a unique Lancaster Laboratories number is assigned.

e. Samples will be entered into the Sample Management System as described in SOP-QA-102. Sample Administration will enter an analysis number for "Laboratory Chain of Custody" if requested. A lab note will print to inform analysts of the need for COC documentation. This note will also be automatically added to the sample labels.

2. Creating the internal COC

a. Sample Administration personnel shall initiate an internal Laboratory Chain of Custody form (Figure 3) at the time of sample entry for each type of container in the sample group. Form 2365 will be initiated for each sample group at the time of entry (Figure 4). The samples will then be relinquished to a sample custodian who will store the samples in an assigned secure location. This change of custody from sample entry to storage shall be documented on the chain, as well as any interim exchanges for rush analysis, preservation, homogenization, or temporary storage in the SA HOLD. The internal COC forms will then accompany the samples from storage to the laboratory for analysis.

b. If samples need to be checked out from the Sample Administration Group before Lancaster Laboratories numbers have been assigned to them, SA will be responsible for starting a COC form. They will note the available header information, the samples being relinquished (documented by the client sample designation), and the reason for transfer.

c. After sample entry, the original copy of the external client COC/analysis request form will be filed with Accounts Receivable, to be returned to the client with their invoice. Other copies of the external form will stay within SA to be filed within the client's paperwork file.

3. Documentation of custody changes

   a. An example of how to document changes in sample custody is shown in Figures 3 and 5. Each change of sample custody must be accurately documented in a consistent format. All signatures documenting changes of custody will use the following format:

      Signatures: First initial, full last name, employee number
      Date: Month/day/year
      Time: Documented as military time
      Ink: Black ink is preferred, red ink and pencil are not acceptable

      (1) When Sample Support releases samples to an analyst they must:

      Note the sample number(s) released and sign the "Released By" column of the chain.

      (2) When an analyst receives samples from Sample Support they must:

      Sign the "Received By" column, note the date and time samples are received, and note the reason why they are taking the samples (reason for change of custody).

      (3) When an analyst returns samples to Sample Support they must:

      Note all sample numbers being returned, sign the Released By column, and note time and date of return.

(4) When Sample Support receives samples from an analyst they must:

Sign the Received By column and note the reason for sample transfer.

b. Sample handling should be kept to a minimum. Analysts requiring use of a sample will requisition it through the computer requisition program. During the hours when Sample Support is manned by sample custodians, a custodian will receive the computerized requisition and remove the sample from storage. The custodian will ensure that the bottle type listed on the COC form matches the bottle type being distributed. **It will be the shared responsibility of the analyst and sample custodian to ensure that forms are signed, dated, and reason for sample transfer are recorded with each change of custody, as directed by Item (3)a. above.**

c. Each specific test that an analyst performed in conjunction with the associated sample number(s) must be accurately documented by the analyst before the samples are returned to a sample custodian in the sample storage area.

d. When an analyst requires the use of samples when a sample custodian will not be on duty, they must requisition samples earlier in the day or on the previous day. These samples and associated COCs will be pulled by a sample custodian and placed in the locked Main Storage area. The sample custodian will note on the COC the change in transfer to the Main Storage in addition to the time, date, and the sample numbers. When an analyst picks up the sample from Main Storage, they will need to contact the security person on duty to unlock the Main Storage unit. The analyst will need to fill out Form 2667 (Figure 6) which will be located by the entrance to the Main Storage unit to document entry into the storage unit (security will co-sign as a witness). Once the notebook

is signed, the analyst may enter and retrieve their samples. The analyst picking up the samples will document the specific samples being checked out. The security person will sign in the Released By column. The analyst will sign the Received By column, note the time, date, and reason for transfer. When the analyst returns the samples to the Main Storage, security must be contacted. The logbook must be signed by the analyst and security, the analyst must sign the Released By column, and security must sign the Received By column indicating the time, date, and reason for transfer (e.g., Main Storage).

e. The following changes of custody will be handled in the following manner:

(1) Documentation is required for all shift changes. Signatures involving transfers from one shift to another shall be the responsibility of the analyst who originally acquired the samples from Sample Support.

(2) Occasionally, a sample container will be needed for analysis by an analyst in a department while it is in the custody of an analyst in another department. It will be the responsibility of the first person who received the sample to note on the COC the specific sample numbers requested by the second person and to sign the Released By column. The second person will sign the Received By column and note the time, date, and reason for sample transfer. After the second person is finished with the sample, the sample will be returned back to the first person or to the Sample Storage area.

(3) In situations where a sample group must be split between departments working on different analyses, a supplemental COC must be initiated by the Sample Support Group. The supplemental chain will be used to accompany that portion of the

sample group which is needed by a second department, when another department has part of the sample group and the COC for the entire group. This supplemental COC will be created only when absolutely necessary to minimize paperwork and confusion. This chain must also be documented on the master list of chains initiated for the sample group.

(4) If COC samples are stored in other areas of the laboratory or in a specific department, they must be stored in a secured area. When samples are taken from a departmental storage area, the Released By column of the COC is documented as "department XX storage." If samples are returned to this area when complete, the Received By column will be noted as department XX storage.

4. Additional COC issues

a. Analysts in possession of samples shall remove the aliquot required for their analysis and return the samples to the Sample Support Group with a minimum of delay. During this time of possession, samples must fall under the definition of sample custody.

b. If additional containers of the sample are created (e.g., subsamples, extracts, distillates, leachates, digests, etc.), then additional COC form must be created by the department if they do not document this information on the original COC form. This form will be marked with the container type and will be initiated to accompany the new sample container. Each department in the lab has specifically designed COC forms that will be used if new containers are created, (see Figure 5 for an example). All changes of custody involving handling of new containers in the department (e.g., analysis, storage, vials on

instruments, etc.) will be documented on the departmental specific COC form or on the original COC form. Any specific handling or documentation requirements for departmental chains can be described in a departmental SOP.

5. Completion of the process

   a. After sample analysis, samples shall be returned to the Sample Support Group as soon as possible. Original COC forms shall also be returned with the samples and this change of custody noted. At this time, it will be the responsibility of the Sample Support Group to review the COC forms to ensure that all documentation on the forms is complete before they file the forms in their area. Sample custodians will not return a sample to its assigned storage location without signing the accompanying chain and performing this completeness check. All chains should either end with a note of "All Sample Consumed," "Discard," or "Storage" for the final reason of transfer.

   b. All completed COC forms for the original sample containers will be retained in files within Sample Support. The Data Package Group will retrieve these forms so a copy can be included in the data package. (**Note**: For those employees who collect COC forms for data packages; if you find a completed COC form in your area that does not get a data package, please send that COC form to the project manager for that account. The project manager will determine whether copies of the COCs get sent to the client with the reports or whether the originals will be archived at Lancaster Laboratories. The project manager will then forward the original COC forms to the Data Package Department for archiving). All departmental created COC forms will be collected by the department's data package group so a copy can be included in the data package. These forms will not be returned to the Sample Support

Group since these sample containers will not be returned to the Sample Support Group. The original copy of all COC forms will be retained on file by the laboratory.

c. All personnel who handle sample containers shall make every attempt to ensure that all changes of custody are accurately and completely documented. **Disciplinary action may be taken for employees who fail to comply with these important requirements.**

d. In the event that a signature or other information is inadvertently not recorded on a COC form, then Sample Support, Data Package Groups, in conjunction with the technical groups, shall determine what information is missing. This can be performed by checking computer requisition records, raw data, or the Sample Support work schedule. The responsible party shall add the missing information or make the necessary correction at the bottom of the COC form, in addition to noting the situation that caused the error in documentation. The person making this note needs to sign and date the information using the current date. Any errors in COC documentation that cause noncompliances must be noted in the case narrative of the sample data package. Examples of specific cases are on file in the Data Package Department.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 12/01/95 | Previous Issue |
| 01 | 03/14/97 | Major changes are as follows:<br>• Training section added.<br>• Examples of SA Receipt Documentation Log and Metals Locked Storage COC updated.<br>• Section E.1., Option to end chain with "All Sample Consumed" added. |
| 02 | 09/02/97 | Major changes are as follows:<br>• Incorporated specific Procedure section for Food, Animal Health, and Pharmaceutical procedures.<br>• Expanded upon the scope of the procedure. |
| 03 | 06/01/99 | Major changes are as follows:<br>• Deleted Figure 6 - no longer being used.<br>• Added "sign-out" logbook to procedure for weekend and off hours sample retrieval.<br>• COC forms revised to state "Secure" storage.<br>• Added example of weekend and off-hours sign-out logbook page.<br>• Added instructions on how to handle COCs that don't get a data package. |
| 04 | 08/02/99 | Major changes are as follows:<br>• Clarify that paperwork may be filed separately if samples are stored under conditions not conducive to paper storage.<br>• Change SA HOLD to Main Storage<br>• Updated Figure 3 to replace SA HOLD to Main Storage |

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| Ver. # | Effective Date | Change |
|---|---|---|
| 05 | NOV 15 2001 | Major changes are as follows:<br>• Added Cross Reference section<br>• Reworded for clarity |

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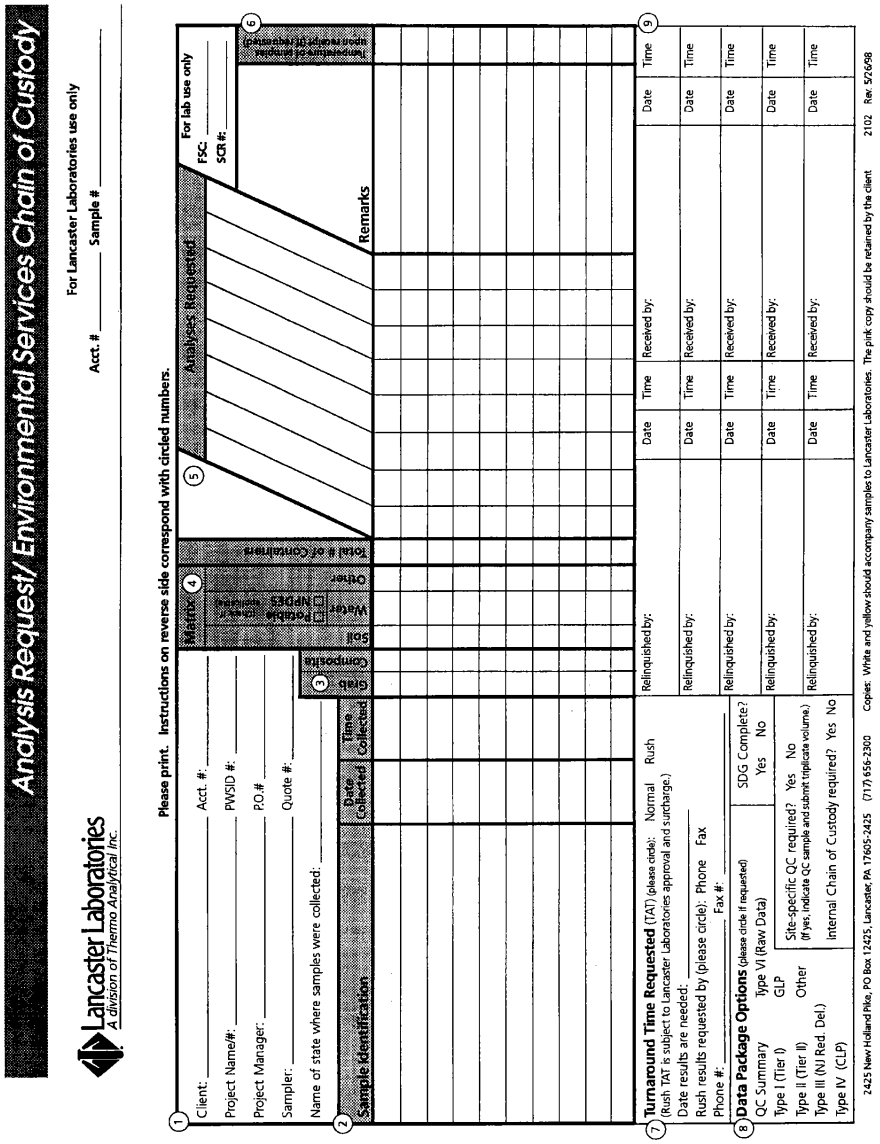
Prepared by: Diana Lee Muller Date: 10/9/01

Approved by: Kathleen N. Lorewen Date: 10/16/01
Quality Assurance

Approved by: [signature] Date: 10/16/01
Executive Management

**Figure 1**



Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories
A division of Thermo Analytical Inc.

For Lancaster Laboratories use only
Acct. # _____ Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: _____ Acct. #: _____
Project Name/#: _____ PWSID #: _____
Project Manager: _____ P.O.# _____
Sampler: _____ Quote #: _____
Name of state where samples were collected: _____

(2) Sample Identification | Date Collected | Time Collected | (3) Grab | Composite | (4) Matrix: Soil | Water | Other | Potable | NPDES | Waste water | Total # of Containers | (5) Analyses Requested | Remarks | For lab use only FSC: _____ SCR #: _____ | (6) Preservation (if other than ice, please specify)

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: _____
Rush results requested by (please circle): Phone Fax
Phone #: _____ Fax #: _____

(8) **Data Package Options** (please circle if requested)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)
SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time

(9) Time

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client 2102 Rev. 5/2698

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**Figure 1 - Continued**

## DIRECTIONS FOR COMPLETING THIS FORM

**(1) Client:** Your company's name
**Acct. #:** Your account number with Lancaster Laboratories
**Project Name/#:** The way your company refers to the work involved with these samples. You may want to include project location as part of the description.
**PWSID:** Potable Water Source ID#
**Project Manager:** The person at your company responsible for overseeing the project
**P.O.#:** Your company's purchase order number
**Sampler:** The name of the person who collected the samples
**Quote #:** The reference number that appears on your quote (if Lancaster Laboratories gave you a number)
**State where sample was collected:** Please indicate where the sample was taken, e.g., PA, NJ, etc.

**(2) Sample Identification:** The unique sample description you want to appear on the analytical report
**Date Collected/Time Collected:** When the sample was collected

**(3) Grab:** Check here if sample was taken at one time from a single spot.
**Composite:** Check here if samples were taken from more than one spot, or periodically, and combined to make one sample.

**(4) Matrix:** Check the type of sample you are submitting. If it is a water sample, please indicate if it is a potable water or if it is an NPDES sample.
**Number of Containers:** Indicate the total number of containers for each sampling point.

**(5) Analyses Requested:** Write the name of each analysis (or an abbreviation of it) here, and use the **catalog number** that appears at the beginning of each line in the *Schedule of Services*. Be sure to indicate which analyses are to be performed on which samples.

**(6) Remarks:** List special instructions about the sample here (e.g., hazardous elements, high levels of analyte, etc.). The space can also be used (if needed) for listing additional analyses.

**(7) Turnaround Time Requested:** Circle **Normal** if you want routine TAT, which is usually within 10-15 days. If you need your results faster, call ahead to schedule **Rush** work.

**Rush Results Requested by:** Circle **Fax** or **Phone** and include the number.

**(8) Data Package Options:** Call our Client Services Group (717-656-2300) if you have questions about these choices.
**SDG Complete?** Indicate **Yes** if this is a complete sample delivery group or **No** if you will be submitting additional samples to be included in the same data package.
**Note:** We need to have one quality control (QC) sample for every 20 samples you send, if you are requesting site-specific QC. Please give us this sample in triplicate volume and identify it by writing "QC" in the **Remarks** column.
The internal chain of custody is a hand-to-hand documentation recording a sample's movement throughout the company. We routinely start a chain of custody for data package samples unless we are told otherwise. There is a **$25 per sample** charge for the chain-of-custody documentation.

**(9) Relinquished by/Received by:** The form must be signed each time the sample changes hands. We can supply chain-of-custody seals for the outside of your packages if you require them.

Thank you for using Lancaster Laboratories.
Please call our Client Services Group (717-656-2300) if you have any questions about completing this form.

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**Figure 2**

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**Sample Administration**
**Receipt Documentation Log**

**Client/Project:** _____ **Shipping Container Sealed:** Y / N

**Date of Receipt:** _____ **COC Seal Present:** Y / N

**Time of Receipt:** _____ **COC Seal Intact:** Y / N

**Source Code:** _____ **Package:** Chilled / Not Chilled

**Unpacker Emp. No.:** _____

| Temperature of Shipping Containers | |
|---|---|
| #1 | #2 |
| Thermometer ID: _____ | Thermometer ID: _____ |
| Temp.: _____ | Temp.: _____ |
| Temp. Bottle / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet Ice / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? Y / N Loose / Bagged | Ice Present? Y / N Loose / Bagged |
| #3 | #4 |
| Thermometer ID: _____ | Thermometer ID: _____ |
| Temp.: _____ | Temp.: _____ |
| Temp. Bottle / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet Ice / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? Y / N Loose / Bagged | Ice Present? Y / N Loose / Bagged |

**Paperwork Discrepancy/Unpacking Problems:** _____

_____

_____

_____

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| | | | Unpacking |
| | | | Place in Storage or Entry |
| | | | Remove from Storage |
| | | | Place in Storage or Entry |
| | | | Entry |

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**Figure 3**

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**Secure Storage Chain of Custody**
**Original Sample**

Client/Project: _____

Preservative: _____ Matrix: _____ SDG: _____

Sample # Range of Entry Group: _____ Bottle Type: _____

| Sample Number(s) in Custody | Released By | Received By | Date of Transfer | Time of Transfer | Reason for Change of Custody | Dist., Extr., or Digest Chain Created (X) |
|---|---|---|---|---|---|---|
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**Figure 4**

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**Master List of Chain of Custodies**

Client/Project: _____

Sample # Range of Entry Group: _____

SDG: _____ Matrix: Liquid Solid Mixed Other _____

| Original Sample Chains | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
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| Supplemental Chains | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
| | | |
| | | |
| | | |

| Extraction, Digestion, Distillates, Etc. | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
| | | |
| | | |
| | | |
| | | |

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**Figure 5**

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**Secure Storage Chain of Custody**
**Metals**

Client/Project: _____

Sample #: _____ SDG: _____

Digest Type (circle one): Hg Metals GF Hydrides Trial No: _____ (If not 1, fill in)

Batch No: ☐☐☐☐☐ ☐☐☐☐ ☐☐☐

| Sample Number(s) in Custody | Released By | Received By | Date of Transfer | Time of Transfer | Reason for Change of Custody |
|---|---|---|---|---|---|
| | | | | | |
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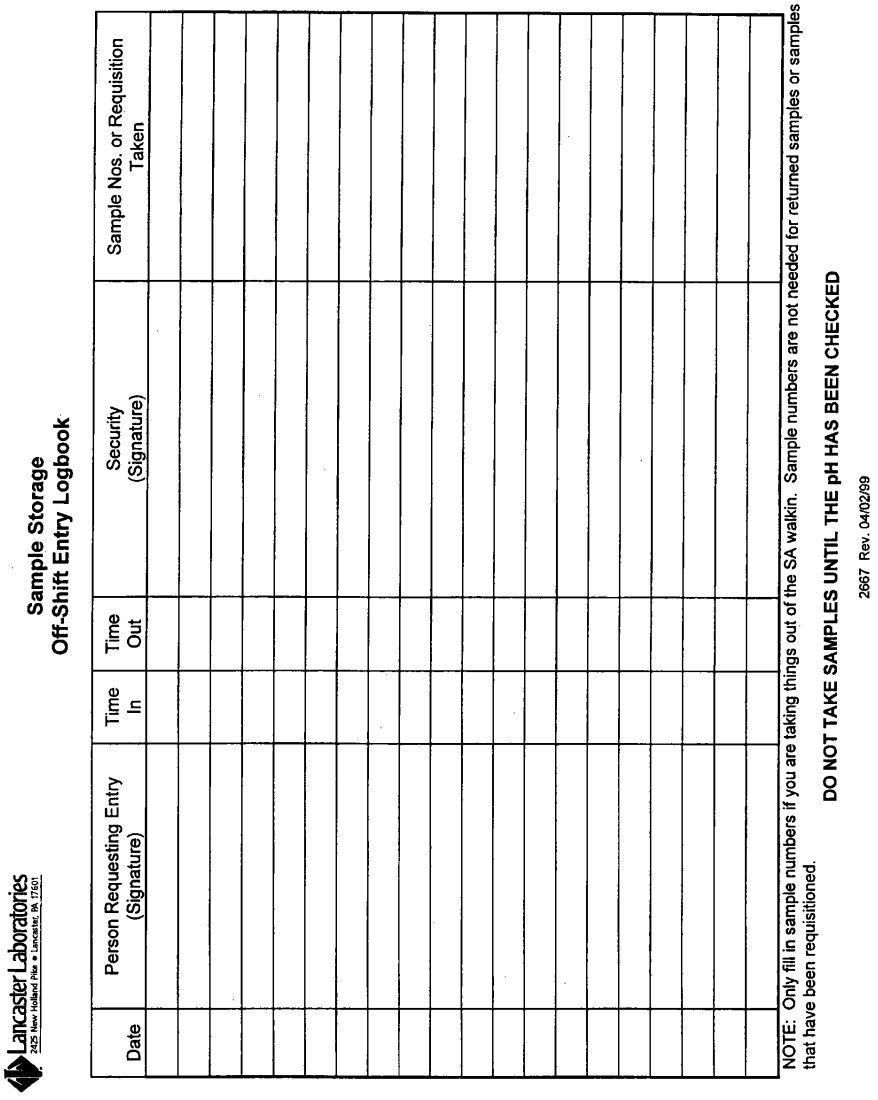
**Figure 6**



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**Sample Storage**
**Off-Shift Entry Logbook**

| Date | Person Requesting Entry (Signature) | Time In | Time Out | Security (Signature) | Sample Nos. or Requisition Taken |
|---|---|---|---|---|---|
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NOTE: Only fill in sample numbers if you are taking things out of the SA walkin. Sample numbers are not needed for returned samples or samples that have been requisitioned.

**DO NOT TAKE SAMPLES UNTIL THE pH HAS BEEN CHECKED**

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## B4. Analytical Methods Requirements

The analytical procedures to be used for organics and inorganics are those described in the *USEPA SW-846 3rd Edition, Update III, 1996,* and *Methods for the Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020* for the preparation and analysis of water, sediment, and soil for the client specified compounds. Copies of the analytical procedures are located in the laboratory and available for use by analysts. Copies of analytical methods are available upon request. Quantitation and detection limits for the following methods are noted in Tables B4-2 through B4-22. These are evaluated annually and are subject to change, as per the guidelines given in 40 CFR Part 136 Appendix C.

### Inorganic Analysis

Metals by Inductively Coupled Plasma (ICP) – This is a technique for the simultaneous determination of elements in solution after acid digestion. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. Characteristic atomic line emission spectra are produced by excitation of the sample in a radio frequency inductively coupled plasma. Method 6010B, See Table B4-1 for list of elements and prep methods.

Metals by Graphite Furnace Atomic Absorption (GFAA) – This is a method of analysis designed to detect trace amounts of the analyte through electrothermal atomization. Samples are digested before analysis. The graphite furnace AA spectrophotometer heats the sample within a graphite tube using an electrical current (i.e. flameless furnace) and measures the absorption of specific metallic elements at discrete wavelengths. Methods listed in Table B4-1.

Mercury by Cold Vapor Atomic Absorption – Organic mercury compounds are oxidized and the mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of a spectrophotometer and absorbance (peak height) is measured. Method 7470A/7471A.

Metals by Flame Atomic Absorption – This method is also suited to metals analysis. A solution of the sample to be analyzed is sprayed into a flame which generates sufficient heat to decompose the sample into its constituent atoms directly in the optical path. The difference in light intensity is measured at specific wavelengths using a spectrophotometer. Methods listed in Table B4-1

**Micellaneous Wet Chemistry**

Moisture – A known sample weight is placed in a drying oven maintained at 103° to 105°C for 8 to 24 hours. The sample is reweighed after drying and this value is divided by the original weight. The result is used to calculate analytical concentration on a dry-weight basis. Method 160.3 (modified).

Cyanide, total – Distillation of the sample releases the cyanide from cyanide complexes as HCN. The liberated HCN and simple cyanides are converted to cyanogen chloride by reaction with chloramine T. This reacts with pyridine and barbituric acid reagent to give a red colored complex. The absorbance is read at 570 nm and is compared to a standard curve using an automated spectrophotometer. Method 9012A.

Phenolics, total – This method is based on automated distillation of phenol and the subsequent reaction with 4-aminoantipyrine in basic buffer to produce a red colored complex. The absorbance is read at 505 nm and is compared to a standard curve using an autotomated spectrophotometer. Method 9066.

Sulfide, total – The sample is acidified and a known excess of iodine is added. The iodine reacts with sulfide in acid solution, oxidizing sulfide to sulfur. The excess iodine is back-titrated with sodium thiosulfate. Method 9034 (modified).

Total Petroleum Hydrocarbons – Samples are extracted with freon and the resulting solution is treated with silica gel to remove fatty acids and other polar compounds. The remaining nonpolar compounds are designated as petroleum hydrocarbons and are quantitatively measured using Fourier transform infrared spectroscopy (FTIR). Method 418.1 (modified for soils).

Oil and Grease – For HEM a one liter sample is serially extracted with n-hexane in a separatory funnel. The solvent is evaporated from the extract, and the residual HEM is weighed. For SGT-HEM a one liter sample is serially extracted with n-hexane in a separatory funnel. The extract is mixed with silica gel, filtered through sodium sulfate, the solvent evaporated from the extract, and the residual SGT-HEM is weighed. Method 1664A.

Total Organic Carbon (TOC) – Following acidification, the sample is purged with nitrogen to remove inorganic carbon. Persulfate is injected to oxidize organic carbon to carbon dioxide which is detected by IR. Method 9060.

Total Organic Halogen (TOX) – Organic halogen is adsorbed onto an activated carbon column and combusted in an oxygen furnace. The resulting hydrogen halide gases are collected in an acetic acid buffer. The halides are titrated microcoulometrically through the generation of Ag+ ions. Method 9020B.

Total Nitrite/Nitrate – Using an autoanalyzer, the sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite ion reacts with sulfanilamide to yield a diazo compound which couples with N-1-naphylethylenediamine dihydrochloride to form a soluble, highly colored dye. The absorbance is read at 520 nm and compared to a standard curve. Method 353.2.

**Organic Analysis**

Volatiles by GC/MS – This method determines the concentration of volatile (purgeable) organics. The analysis is based on purging the volatiles onto a Tenax/silica gel trap, desorbing the volatiles onto a gas chromatographic column which separates them and identifying the separated components with a mass spectrometer. Method 8260B/5030B/5035.

Semivolatiles by GC/MS – This method determines the concentration of semivolatile organic compounds that are separated into an organic solvent and are amenable to gas chromatography. The method involves solvent extraction of the sample to isolate analytes and GC/MS analysis to determine semivolatile compounds present in the sample. Method 8270C/3550B/3510C.

Volatiles by GC – This method determines the concentration of volatile (purgeable) organic compounds. The analysis is based on purging the volatiles from the sample onto an appropriate sorbent trap and desorbing the volatiles onto a gas chromatographic column. Using an appropriate temperature program, the compounds are separated by the column and both qualitative and quantitative detection is achieved with a photoionization and/or electrolytic conductivity detector. Method 8021B/5030B/5035. Non-halogenated organics are analyzed by flame ionization detectors. Method 8015B/5030B/5035.

TPH-GRO – This method determines the concentration of gasoline range organics (2-methylpentane to 1,2,4-trimethylbenzene). The analysis is based on purging the volatiles from the sample onto an appropriate sorbent trap and desorbing the volatiles onto a gas chromatographic column. Using an appropriate temperature program, the compounds are separated by the column and both qualitative and quantitative detection is achieved with a flame ionization detector. BTEX may be determined simultaneously on systems equipped with a photoionization detector in tandem with the FID. Method 8015B/5030B/5035.

TPH-DRO – This method determines the concentration of diesel range organics (C-10 to C-28 hydrocarbons). The procedure includes solvent extraction of the sample and analysis of the extract on a gas chromatograph/flame ionization detector (GC/FID) using a megabore capillary column. Method API "Method for Determination of Diesel Range Organics," Revision 2, 02/05/95; or California Department of Health Services LUFT Task Force TPH Analysis-Diesel Method, 10/18/89, Method 8015B/5030B/5035.

Pesticides, PCBs, & Herbicides – These methods determine the concentration of organochloride pesticides, polychlorinated biphenyls, herbicides, and organophosphate pesticides. The procedures include solvent extraction of the sample, analysis of the extract on a gas chromatograph/electron capture detector (GC/EC) using a capillary column, and confirmation on a GC/EC using a second capillary column. A nitrogen-phosphorus detector is used for organophosphates. If the compound concentration is sufficient, confirmation may be performed on GC/MS upon request. Pesticides methods 8081A/3550B/3510C and 8141A/3550B/3510C. PCBs Method 8082/3550B/3510C. Herbicides Method 8151A/3550B.

PAHs by HPLC – The sample aliquot is extracted with methylene chloride. The extract is filtered (soils), dried, concentrated by evaporation and exchanged into acetonitrile. The extract is analyzed by reverse-phase HPLC with both UV and fluorescence detectors. Methods 8310/3550B/3510C.

**Table B4-1**
Inorganic Analytical Method Numbers

| | ICP | GFAA | Flame AA | Cold Vapor |
|---|---|---|---|---|
| Aluminum | 6010B/3005A/3010/3050B | | 7020/3005A/3010/3050B | |
| Antimony | 6010B/3005A/3010/3050B | 7041/3005A/3050B | | |
| Arsenic | 6010B/3005A/3010/3050B | 7060A | | |
| Barium | 6010B/3005A/3010/3050B | | 7080A/3005A/3010/3050B | |
| Beryllium | 6010B/3005A/3010/3050B | 7091/3020A/3050B | | |
| Cadmium | 6010B/3005A/3010/3050B | 7131A/3020A/3050B | 7130/3005A/3010/3050B | |
| Calcium | 6010B/3005A/3010/3050B | | 7140/3005A/3010/3050B | |
| Chromium | 6010B/3005A/3010/3050B | 7191/3020A/3050B | 7190/3005A/3010/3050B | |
| Cobalt | 6010B/3005A/3010/3050B | | | |
| Copper | 6010B/3005A/3010/3050B | 7211/3020A/3050B | 7210/3005A/3010/3050B | |
| Iron | 6010B/3005A/3010/3050B | | 7380/3005A/3010/3050B | |
| Lead | 6010B/3005A/3010/3050B | 7421/3020A/3050B | 7420/3005A/3010/3050B | |
| Magnesium | 6010B/3005A/3010/3050B | | 7450/3005A/3010/3050B | |
| Manganese | 6010B/3005A/3010/3050B | | 7460/3005A/3010/3050B | |
| Mercury | | | | 7470A/7471A |
| Molybdenum | 6010B/3005A/3010/3050B | | | |
| Nickel | 6010B/3005A/3010/3050B | 7521/3020A/3050B | 7520/3005A/3010/3050B | |
| Potassium | 6010B/3005A/3010/3050B | | 7610/3005A/3010/3050B | |
| Selenium | 6010B/3005A/3010/3050B | 7740 | | |
| Silver | 6010B/3005A/3010/3050B | 7761/3020A/3050B | 7760A/3005A/3010/3050B | |
| Sodium | 6010B/3005A/3010/3050B | | 7710/3005A/3010/3050B | |
| Thallium | 6010B/3005A/3010/3050B | 7841/3020A/3050B | | |
| Tin | 6010B/3005A/3010/3050B | | | |
| Vanadium | 6010B/3005A/3010/3050B | | | |
| Zinc | 6010B/3005A/3010/3050B | | 7950/3005A/3010/3050B | |

The number of parameters analyzed and the method used will be determined by the site-specific requirements.

**Table B4-2**
Metals Compound List (TAL)

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Aluminum | 0.2 | 0.019 | 30. | 3.9 |
| Antimony[1] | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic[1] | 0.01 | 0.0037 | 1. | 0.38 |
| Barium[1] | 0.001 | 0.00042 | 0.4 | 0.026 |
| Beryllium[1] | 0.002 | 0.00064 | 0.3 | 0.019 |
| Cadmium[1] | 0.0015 | 0.00064 | 0.2 | 0.055 |
| Calcium | 0.2 | 0.035 | 30. | 2 |
| Chromium[1] | 0.003 | 0.0017 | 0.5 | 0.14 |
| Cobalt[1] | 0.004 | 0.0018 | 0.4 | 0.18 |
| Copper[1] | 0.004 | 0.0024 | 0.5 | 0.15 |
| Iron[1] | 0.1 | 0.0376 | 20. | 3.64 |
| Lead[3] | 0.003 | 0.0018 | 1.0 | 0.11 |
| Magnesium | 0.1 | 0.018 | 25. | 3.3 |
| Manganese[1] | 0.002 | 0.00062 | 0.2 | 0.026 |
| Mercury[2] | 0.0002 | 0.000026 | 0.1 | 0.0025 |
| Nickel[1] | 0.005 | 0.0016 | 0.6 | 0.20 |
| Potassium | 0.5 | 0.224 | 50. | 25. |
| Selenium[1] | 0.01 | 0.0043 | 1. | 0.48 |
| Silver[1] | 0.004 | 0.0013 | 0.4 | 0.14 |
| Sodium | 0.6 | 0.292 | 100. | 28. |
| Thallium[3] | 0.01 | 0.0031 | 2. | 0.38 |
| Vanadium[1] | 0.04 | 0.0016 | 0.4 | 0.19 |
| Zinc[1] | 0.02 | 0.0032 | 3 | 0.33 |
| Cyanide, total[4] | 0.005 | 0.004 | 0.5 | 0.18 |

[1]Analyzed by Trace ICP

[2]Analyzed by Cold Vapor

[3]Analyzed by GFAA

[4]Analyzed by automated spectrophotometer

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis, will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQs and MDLs are evaluated annually and subject to change.

**Table B4-3**
Inorganic Priority Pollutants List

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Antimony | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic | 0.01 | 0.0037 | 1. | 0.38 |
| Beryllium | 0.002 | 0.00064 | 0.3 | 0.019 |
| Cadmium | 0.0015 | 0.00064 | 0.055 | 0.2 |
| Chromium | 0.003 | 0.0017 | 0.14 | 0.5 |
| Copper | 0.004 | 0.0024 | 0.15 | 0.5 |
| Lead | 0.02 | 0.0088 | 2. | 0.82 |
| Mercury | 0.0002 | 0.000026 | 0.1 | 0.025 |
| Nickel | 0.005 | 0.0016 | 0.6. | 0.2 |
| Selenium | 0.01 | 0.0043 | 1. | 0.48 |
| Silver | 0.004 | 0.0013 | 0.04 | 0.14 |
| Thallium | 0.01 | 0.0012 | 2. | 0.85 |
| Zinc | 0.02 | 0.0032 | 3. | 0.33 |
| Cyanide, total | 0.005 | 0.004 | 0.50 | 0.18 |
| Phenolics, total | 0.03 | 0.009 | 0.7 | 0.2 |

Mercury is analyzed by Cold Vapor.

Except for cyanide and Mercury, all other elements analyzed by ICP.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-4**
Inorganic Appendix IX Analyte List

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Antimony | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic | 0.01 | 0.0037 | 1. | 0.38 |
| Barium | 0.00042 | 0.001 | 0.4 | 0.026 |
| Beryllium | 0.00064 | 0.002 | 0.3 | 0.019 |
| Cadmium | 0.00064 | 0.0015 | 0.2 | 0.2 |
| Chromium | 0.0017 | 0.003 | 0.5 | 0.14 |
| Cobalt | 0.0018 | 0.004 | 0.4 | 0.18 |
| Copper | 0.0024 | 0.004 | 0.5 | 0.15 |
| Lead | 0.0088 | 0.02 | 2. | 0.82 |
| Mercury | 0.0002 | 0.000043 | 0.1 | 0.0025 |
| Nickel | 0.0016 | 0.005 | 0.6 | 0.2 |
| Selenium | 0.0042 | 0.01 | 1. | 0.48 |
| Silver | 0.0013 | 0.004 | 0.4 | 0.14 |
| Thallium | 0.0088 | 0.02 | 2. | 0.85 |
| Tin | 0.0044 | 0.015 | 1.5 | 0.42 |
| Vanadium | 0.0016 | 0.004 | 0.4 | 0.19 |
| Zinc | 0.0032 | 0.02 | 3. | 0.33 |
| Cyanide, total | 0.005 | 0.004 | 0.5 | 0.18 |
| Sulfide, total | 2. | 0.53 | 20. | 4. |

Mercury is analyzed by Cold Vapor

Except for cyanide, sulfide, and mercury, all other elements analyzed by ICP.

Cyanide is analyzed by method 9021A, using the automated spectrophotometer.

Sulfide is analyzed by 9034 (modified) , titrimetric analysis.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-5**

Miscellaneous Chemistry Analyte List

| Parameter | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Moisture | .5 %wt | .5 % wt | .5% wt | .5 %wt |
| Cyanide, total | 0.005 | 0.004 | 0.5 | 0.18 |
| Phenolics, total | 0.03 | 0.009 | 0.7 | 0.2 |
| Sulfide, total | 2. | 0.53 | 20. | 4. |
| TPH (418.1) | 0.9 | 0.3 | 50 | 15.5 |
| Oil and Grease (1664A) | 5. | 1.4 | N/A | N/A |
| TOC | 2. | 0.6 | 170. | 60. |
| TOX | 7. µg/L | 2.4 µg/L | 50. | 14. |
| Total Nitrite/Nitrate | .1 | .04 | N/A | N/A |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-6**
Volatile Full Compound List by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Dichlorodifluoromethane | 5. | 2. | 5. | 2. |
| Chloromethane | 10. | 2. | 5. | 2. |
| Vinyl Chloride | 10. | 1. | 5. | 1. |
| Bromomethane | 5. | 2. | 5. | 2. |
| Chloroethane | 5. | 2. | 5. | 2. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| Methylene Chloride | 5. | 2. | 5. | 2. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| 2,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| Bromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| Carbon Tetrachloride | 5. | 1. | 5. | 1. |
| 1,1-Dichloropropene | 5. | 1. | 5. | 1. |
| Benzene | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| Dibromomethane | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,3-Dichloropropane | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,2-Dibromoethane | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| 1,1,1,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 2. | 5. | 1. |

**Table B4-6 – Continued**
Volatile Full Compound List by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| *m*+*p*-Xylene | 5. | 1. | 5. | 1. |
| *o*-Xylene | 5. | 1. | 5. | 1. |
| Styrene | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| Isopropylbenzene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Bromobenzene | 5. | 1. | 5. | 1. |
| 1,2,3-Trichloropropane | 5. | 1. | 5. | 1. |
| *n*-Propylbenzene | 5. | 1. | 5. | 1. |
| 2-Chlorotoluene | 5. | 1. | 5. | 1. |
| 1,3,5-Trimethylbenzene | 5. | 1. | 5. | 1. |
| 4-Chlorotoluene | 5. | 1. | 5. | 1. |
| *tert*-Butylbenzene | 5. | 1. | 5. | 1. |
| 1,2,4-Trimethylbenzene | 5. | 1. | 5. | 1. |
| sec-Butylbenzene | 5. | 1. | 5. | 1. |
| *p*-Isopropyltoluene | 5. | 1. | 5. | 1. |
| 1,3-Dichlorobenzene | 5. | 1. | 5. | 1. |
| 1,4-Dichlorobenzene | 5. | 1. | 5. | 1. |
| *n*-Butylbenzene | 5. | 1. | 5. | 1. |
| 1,2-Dichlorobenzene | 5 | 1. | 5. | 1. |
| 1,2-Dibromo-3-chloropropane | 5. | 2. | 5. | 2. |
| 1,2,4-Trichlorobenzene | 5. | 1. | 5. | 1. |
| Hexachlorobutadiene | 5. | 2. | 5. | 2. |
| Naphthalene | 5. | 1. | 5. | 1. |
| 1,2,3-Trichlorobenzene | 5. | 1. | 5. | 1. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-7**
Volatile Priority Pollutant Compound List by GC/MS (8260B)

| Compounds | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| 2-Chloroethylvinyl ether | 10. | 2. | 10. | 2. |
| Acrolein | 100. | 40. | 100. | 20. |
| Acrylonitrile | 100. | 25. | 100. | 25. |
| Benzene | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| Bromomethane | 5. | 2. | 5. | 2. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Chloroethane | 5. | 2. | 5. | 2. |
| Chloroform | 5. | 1. | 5. | 1. |
| Chloromethane | 5. | 2. | 5. | 2. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 2. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| Vinyl chloride | 5. | 1. | 5. | 1. |
| Xylene (total) | 5. | 1. | 5. | 1. |

**Table B4-7 – Continued**

Volatile Priority Pollutant Compound List by GC/MS (8260B)

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-8**
Appendix IX Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Chloromethane | 10. | 2. | 10. | 2. |
| Bromomethane | 10. | 2. | 10. | 3. |
| Vinyl chloride | 10. | 1. | 10. | 1. |
| Dichlorodifluoromethane | 5. | 2. | 5. | 2. |
| Chloroethane | 10. | 2. | 5. | 2. |
| Methyl iodide | 5. | 1. | 5. | 1. |
| Acrolein | 100. | 40. | 100. | 20. |
| Acrylonitrile | 100. | 4. | 100. | 4. |
| Acetonitrile | 100. | 25. | 100. | 25. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Acetone | 20. | 6. | 100. | 7. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| Carbon disulfide | 5. | 1. | 10. | 1. |
| Propionitrile | 100. | 30. | 100. | 30. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| Allyl chloride | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| Methacrylonitrile | 100. | 10. | 100. | 5. |
| 2-Butanone | 10. | 3. | 100. | 4. |
| Dibromomethane | 5. | 1. | 5. | 1. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,4-Dioxane | 250. | 70. | 250. | 70. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Isobutyl alcohol | 250. | 100. | 250. | 100. |
| Vinyl acetate | 10. | 2. | 50. | 2. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| 2-Chloro-1,3-butadiene | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |

**Table B4-8 – Continued**
Appendix IX Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,2-Dibromoethane | 5. | 1. | 5. | 1. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 2. |
| Benzene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Methyl methacrylate | 5. | 1. | 5. | 1. |
| 1,1,1,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| *trans*-1,4-Dichloro-2-butene | 100. | 15. | 100. | 10. |
| 1,2,3-Trichloropropane | 5. | 1. | 5. | 1. |
| 2-Hexanone | 10. | 3. | 50. | 3. |
| 4-Methyl-2-pentanone | 10. | 3. | 50. | 3. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| Ethyl methacrylate | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Pentachloroethane | 10. | 1. | 10. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| 1,2-Dibromo-3-chloropropane | 100. | 2. | 100. | 2. |
| Styrene | 5. | 1. | 5. | 1. |
| Xylenes (total) | 5. | 1. | 5. | 1. |

For samples preserved with 1 + 1 HCl to pH <2, low recovery of acid labile compounds is likely to occur.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDL are evaluated annually and subject to change.

**Table B4-9**
TCL Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Chloromethane | 10. | 2. | 10. | 2. |
| Bromomethane | 10. | 2. | 10. | 3. |
| Vinyl chloride | 10. | 1. | 10. | 1. |
| Chloroethane | 10. | 2. | 5. | 2. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Acetone | 20. | 6. | 100. | 7. |
| Carbon disulfide | 5. | 1. | 10. | 1. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| 2-Butanone | 10. | 3. | 100. | 4. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| Benzene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| 2-Hexanone | 10. | 3. | 50. | 3. |
| 4-Methyl-2-pentanone | 10. | 3. | 50. | 3. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| Styrene | 5. | 1. | 5. | 1. |
| Xylenes (total) | 5. | 1. | 5. | 1. |

For samples preserved with 1 + 1 HCl to pH <2, low recovery of acid labile compounds is likely to occur.

**Table B4-9 – Continued**
TCL Volatile Compounds by GC/MS (8260B)

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDL are evaluated annually and subject to change.

**Table B4-10**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Acenaphthene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Acetophenone | 10. | 1. | 330. | 33. |
| Aramite[2] | 50 | 1 | 1650 | 33 |
| 2-Acetylaminofluorene | 10. | 2. | 330. | 33. |
| 4-Aminobiphenyl | 10. | 2. | 830. | 170. |
| Aniline | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Benzidine | 100. | 20. | 3300. | 670. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Benzyl alcohol | 20. | 5. | 830. | 170. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl)ether | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl)ether | 10 | 1 | 330 | 33 |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| 4-Chloroaniline | 10. | 1. | 330. | 67. |
| Carbazole | 10. | 2. | 330. | 670. |
| Chlorobenzilate | 20. | 3. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 2-Methyl phenol | 10. | 1. | 330. | 33. |
| 3 or 4-methyl phenol[3] | 10. | 3. | 330. | 67. |
| Diallate (trans/cis) | 10. | 1. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Di-*n*-butyl phthalate | 10. | 2. | 330. | 67. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 2,6-Dichlorophenol | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| Dimethoate | 20. | 3. | 330. | 33. |
| *p*-(Dimethylamino)azobenzene | 10. | 2. | 330. | 33. |
| 7,12-Dimethylbenz(a)anthracene | 10. | 2. | 330. | 33. |
| 3,3'-Dimethylbenzidine | 25. | 5. | 830. | 170. |
| a,a-Dimethyl-1-phenethylamine[2] | 20. | 1. | 670. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 1,3-Dinitrobenzene | 10. | 1. | 330. | 33. |
| 4,6,Dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Di-*n*-octyl phthalate | 10. | 2. | 330. | 67. |
| 1,2-Diphenylhydrazine[4] | 10. | 1. | 330. | 33. |
| Ethyl methanesulfonate | 10. | 1. | 330. | 33. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Fluorene | 10. | 1. | 330. | 33. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 660. | 165. |
| Hexachloroethane | 10. | 1. | 330. | 67. |
| Hexachloropropene | 10. | 2. | 330. | 67. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 67. |
| Isodrin | 25. | 5. | 330. | 67. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Isophorone | 10. | 1. | 330. | 33. |
| Isosafrole | 10. | 1. | 330. | 33. |
| Methapyrilene | 10. | 1. | 330. | 33. |
| 3-Methylchloranthene | 10. | 2. | 330. | 67. |
| Methyl methanesulfonate | 10. | 1. | 330. | 33. |
| 2-methylnaphthalene | 10. | 1. | 330. | 33. |
| 1-methylnaphthalene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| 1,4-Naphthoquinone | 100. | 10. | 3300. | 830. |
| 1-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Nitroaniline | 10. | 2. | 330. | 33. |
| 3-Nitroaniline | 10. | 2. | 330. | 67. |
| 4-Nitroaniline | 10. | 2. | 330. | 67. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4-Nitroquinoline-1-oxide | 100. | 20. | 1700. | 330. |
| *n*-Nitrosodi-*n*-butylamine | 10. | 1. | 330. | 67. |
| *n*-Nitrosodiethylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosodimethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| *n*-Nitrosodi-*n*-propylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosomethylethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosomorpholine | 10. | 1. | 330. | 67. |
| *n*-Nitrosopiperidine | 10. | 1. | 330. | 67. |
| *n*-Nitrospyrrolidine | 10. | 2. | 330. | 67. |
| 5-Nitro-*o*-toluidine | 10. | 2. | 830. | 170. |
| 2,2'-Oxylas(1-chloropropane) | 10. | 1. | 330. | 33. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Pentachlorobenzene | 10. | 1. | 330. | 66. |
| Pentachloronitrobenzene | 10. | 2. | 330. | 33. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| Phenacetin | 10. | 1. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 1,4-Phenylenediamine | 200. | 60. | 6700. | 5500. |
| 2-Picoline | 10. | 2. | 330. | 67. |
| Pronamide | 10. | 2. | 830. | 170. |
| Pyrene | 10. | 1. | 330. | 33. |
| Pyridine | 10. | 2. | 330. | 67. |
| Safrole | 10. | 1. | 330. | 33. |
| 1,2,4,5-Tetrachlorobenzene | 10. | 1. | 330. | 33. |
| 2,3,4,6-Tetrachlorphenol | 10. | 2. | 330. | 67. |
| Tetraethyl dithiopyrophosphate | 10. | 1. | 330. | 67. |
| Thionazin | 10. | 2. | 660. | 67. |
| *o*-Toluidine | 10. | 1. | 330. | 67. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| *o*,*o*,*o*-Triethyl phosphorothioate | 10. | 2. | 330. | 67. |
| 1,3,5-Trinitrobenzene | 20. | 3. | 670. | 170. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]N-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-Nitrosodiphenylamine represents the combined total of both compounds.

[2]Aramite and a,a-dimethyl-1-phenethylamine can be determined upon request.

[3]3-methylphenol and 4-methylphenol cannot be resolved under this analysis. The combined total of both compounds is reported as 4-methylphenol.

[4]1,2-Diphenylhydrazine cannot be distinguished from azobenzene, therefore, the value reported represents the combined total of both.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-11**

Semivolatile Priority Pollutant Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4,6,dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| n-nitrosodimethylamine | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl) ether | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl) ether | 10. | 1. | 330. | 33. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| n-nitrosodi-n-propylamine | 10. | 1. | 330. | 33. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| Isophorone | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy) methane | 10. | 1. | 330. | 67. |
| 1,2,4-trichlorobenzene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Acenaphthene | 10. | 1. | 330. | 33. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |

**Table B4-11 – Continued**

Semivolatile Priority Pollutant Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Fluorene | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| 1,2-Diphenylhydrazine | 10. | 1. | 330. | 33. |
| n-nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Di-n-butyl phthalate | 10. | 2. | 330. | 67. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Pyrene | 10. | 1. | 330. | 33. |
| Benzidine | 100. | 20. | 3300. | 670. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 670. | 67. |
| bis (2-Ethylhexyl) phthalate | 10. | 2. | 330. | 67. |
| Di-n-octyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]n-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for n-Nitrosodiphenylamine represents the combined total of both compounds.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-12**
Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Acenaphthene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Acetophenone | 10. | 1. | 330. | 33. |
| Aramite[2] | 50 | 1 | 1650 | 33 |
| 2-Acetylaminofluorene | 10. | 2. | 330. | 33. |
| 4-Aminobiphenyl | 10. | 2. | 830. | 170. |
| Aniline | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Benzyl alcohol | 20. | 5. | 830. | 170. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl)ether | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl)ether | 10 | 1 | 330 | 33 |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| 4-Chloroaniline | 10. | 1. | 330. | 67. |
| Chlorobenzilate | 20. | 3. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 2-Methyl phenol | 10. | 1. | 330. | 33. |
| 3 or 4-methyl phenol[3] | 10. | 3. | 330. | 67. |
| Diallate (*trans*/*cis*) | 10. | 1. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |

**Table B4-12 – Continued**
Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Di-*n*-butyl phthalate | 10. | 2. | 330. | 67. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 2,6-Dichlorophenol | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| Dimethoate | 20. | 3. | 330. | 33. |
| *p*-(Dimethylamino)azobenzene | 10. | 2. | 330. | 33. |
| 7,12-Dimethylbenz(a)anthracene | 10. | 2. | 330. | 33. |
| 3,3'-Dimethylbenzidine | 25. | 5. | 830. | 170. |
| a,a-dimethyl-1-phenethylamine[2] | 20. | 1. | 670. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 1,3-Dinitrobenzene | 10. | 1. | 330. | 33. |
| 4,6,dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Di-*n*-octyl phthalate | 10. | 2. | 330. | 67. |
| Ethyl methanesulfonate | 10. | 1. | 330. | 33. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Fluorene | 10. | 1. | 330. | 33. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| Hexachloropropene | 10. | 2. | 330. | 67. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Isodrin | 25. | 5. | 330. | 67. |

**Table B4-12 – Continued**
Appendix IX Semivolatile Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Isophorone | 10. | 1. | 330. | 33. |
| Isosafrole | 10. | 1. | 330. | 33. |
| Methapyrilene | 10. | 1. | 330. | 33. |
| 3-Methylchloranthene | 10. | 2. | 330. | 67. |
| Methyl methanesulfonate | 10. | 1. | 330. | 33. |
| 2-methylnaphthalene | 10. | 1. | 330. | 33. |
| 1-methylnaphthalene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| 1,4-Naphthoquinone | 100. | 10. | 3300. | 830. |
| 1-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Nitroaniline | 10. | 2. | 330. | 33. |
| 3-Nitroaniline | 10. | 2. | 330. | 67. |
| 4-Nitroaniline | 10. | 2. | 330. | 67. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4-Nitroquinoline-1-oxide | 100. | 20. | 1700. | 330. |
| *n*-Nitrosodi-n-butylamine | 10. | 1. | 330. | 67. |
| *n*-Nitrosodiethylamine | 10. | 2. | 330. | 33. |
| *n*-Nitrosodimethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| *n*-Nitrosodipropylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosomethylethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosomorpholine | 10. | 1. | 330. | 67. |
| *n*-Nitrosopiperidine | 10. | 1. | 330. | 67. |
| *n*-Nitrospyrrolidine | 10. | 2. | 330. | 67. |
| 5-Nitro-*o*-toluidine | 10. | 2. | 830. | 170. |
| Pentachlorobenzene | 10. | 1. | 330. | 66. |
| Pentachloronitrobenzene | 10. | 2. | 330. | 33. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| Phenacetin | 10. | 1. | 330. | 33. |

**Table B4-12 – Continued**

Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 66. |
| 1,4-Phenylenediamine | 200. | 60. | 6600. | 4950. |
| 2-Picoline | 10. | 2. | 330. | 67. |
| Pronamide | 10. | 2. | 825. | 165. |
| Pyrene | 10. | 1. | 330. | 67. |
| Pyridine | 10. | 2. | 330. | 67. |
| Safrole | 10. | 1. | 330. | 33. |
| 1,2,4,5-Tetrachlorobenzene | 10. | 1. | 330. | 33. |
| 2,3,4,6-Tetrachlorphenol | 10. | 3. | 330. | 67. |
| Tetraethyl dithiopyrophosphate | 10. | 1. | 330. | 67. |
| Thionazin | 10. | 2. | 660. | 67. |
| *o*-Toluidine | 10. | 2. | 330. | 67. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| o,o,o-Triethylphosphorothioate | 10. | 2. | 330. | 67. |
| 1,3,5-Trinitrobenzene | 20. | 3. | 660. | 170. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]N-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-Nitrosodiphenylamine represents the combined total of both compounds.

[2]Aramite and a,a-dimethyl-1-phenethylamine can be determined upon request.

[3]3-methylphenol and 4-methylphenol cannot be resolved under this analysis. The combined total of both compounds is reported as 4-methylphenol.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-13**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 1. | 330. | 67. |
| 2,4-Dinitrophenol | 25. | 5. | 2000. | 670. |
| 4-Nitrophenol | 25. | 1. | 830. | 170. |
| 4,6,dinitro-2-methylphenol | 25. | 1. | 830. | 170. |
| Pentachlorophenol | 25. | 5. | 830. | 170. |
| bis(2-Chloroethyl) ether | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| n-nitrosodi-n-propylamine | 10. | 1. | 330. | 33. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| Isophorone | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy) methane | 10. | 1. | 330. | 67. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Dimethyl phthalate | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 1. | 330. | 33. |
| Acenaphthene | 10. | 1. | 330. | 33. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |

**Table B4-13 – Continued**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Fluorene | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| n-nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Di-n-butyl phthalate | 10. | 1. | 330. | 67. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Pyrene | 10. | 1. | 330. | 33. |
| Butylebenzyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 670. | 67. |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| Di-*n*-octyl phthalate | 10. | 1. | 330. | 67. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 33. |
| bis(2-Chloroethyl)ether | 10. | 1. | 330. | 33. |
| 4-Chloroaniline | 10. | 2. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |
| 2-Methylnapthalene | 10. | 1. | 330. | 33. |

**Table B4-13 – Continued**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| 2-Nitroaniline | 25. | 1. | 830. | 33. |
| 3-Nitroaniline | 25. | 1. | 830. | 33. |
| 4-Nitroaniline | 25. | 1. | 830. | 33. |
| 2,2'-Oxybis(1-chloropropane) | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 25. | 1. | 380. | 33. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]n-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for n-Nitrosodiphenylamine represents the combined total of both compounds.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-14**

Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Chloromethane | 5. | .5 | 100. | 10. |
| Bromomethane | 5. | .5 | 100. | 10. |
| Dichlorodifluoromethane | 2. | .2 | 40. | 4. |
| Vinyl chloride | 1. | .2 | 20. | 4. |
| Chloroethane | 1. | .2 | 20. | 4. |
| Methylene chloride | 1. | .2 | 20. | 4. |
| Trichlorofluoromethane | 1. | .2 | 20. | 4. |
| 1,1-Dichloroethene | 1. | .2 | 20. | 4. |
| 1,1-Dichloroethane | 1. | .2 | 20. | 4. |
| cis-1,2-Dichloroethene | 1. | .2 | 20. | 4. |
| trans-1,2-Dichloroethene | 1. | .2 | 20. | 4. |
| Chloroform | 1. | .2 | 20. | 4. |
| 1,2-Dichloroethane | 0.5 | .2 | 20. | 4. |
| 1,1,1-Trichloroethane | 1. | .2 | 20. | 4. |
| Carbon tetrachloride | 1. | .2 | 20. | 4. |
| Bromodichloromethane | 1. | .2 | 20. | 4. |
| 1,2-Dichlorpropane | 1. | .2 | 20. | 4. |
| trans-1,3-Dichloropropene | 1. | .2 | 20. | 4. |
| Trichloroethene | 1. | .2 | 20. | 4. |
| Dibromochloromethane | 1. | .2 | 20. | 4. |
| 1,1,2-Trichloroethane | 1. | .2 | 20. | 4. |
| cis-1,3-Dichloropropene | 1. | .2 | 20. | 4. |
| 2-Chloroethylvinyl-ether | 10. | 1. | 200. | 20. |
| Bromoform | 1. | .2 | 20. | 4. |
| 1,1,2,2-Tetrachloroethane | 1. | .2 | 20. | 4. |
| Tetrachloroethene | 1. | .2 | 20. | 4. |
| Chlorobenzene | 1. | .2 | 20. | 4. |
| Benzene | 1. | .2 | 20. | 4. |
| Toluene | 1. | .2 | 20. | 4. |
| Ethylbenzene | 1. | .2 | 20. | 4. |

**Table B4-14 – Continued**

Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| o-Xylene | 1. | .2 | 20. | 4. |
| m,p-Xylene | 2. | .4 | 40. | 8. |
| Total Xylene | 3. | 0.6 | 60. | 12. |
| Methyl Teritary Butyl Ether | 1. | 0.2 | 20. | 4. |
| Napthalene | 1. | 0.2 | 20. | 4. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-15**
Petroleum Analysis by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Benzene | 1. | 0.2 | 5. | 2. |
| Toluene | 1. | 0.2 | 5. | 2. |
| Ethylbenzene | 1. | 0.2 | 5. | 2. |
| Total Xylene | 3. | 0.6 | 15. | 5. |
| Methyl t-butyl ether | 1. | 0.3 | 20. | 5. |
| Napthalene | 5. | 1. | 20. | 5. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and my not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the alboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-16**
TPH GRO/DRO by GC (8015B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| TPH-GRO | 0.05 | 0.02 | 1. | 0.2 |
| TPH-DRO | 0.1 | 0.1 | 7. | 4. |

NOTE: MDLs listed are higher than determined MDLs. This is because the method sums the total detectable area under the chromatographic plot in region of interest, instead of actual fuel peak area as the respective fuel.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-17**

Pesticide/PCB Priority Pollutant Compound List by GC (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| alpha-BHC | 0.01 | 0.0021 | 0.83 | .17 |
| beta-BHC | 0.01 | 0.0033 | 0.83 | .17 |
| gamma-BHC (Lindane) | 0.01 | 0.0024 | 0.83 | .17 |
| delta-BHC | 0.01 | 0.002 | 0.83 | .17 |
| Heptachlor | 0.01 | 0.002 | 0.83 | .17 |
| Aldrin | 0.025 | 0.0084 | 0.83 | .17 |
| Heptachlor epoxide | 0.01 | 0.0032 | 0.83 | .17 |
| 4,4-DDE | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDD | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDT | 0.02 | 0.004 | 1.7 | .36 |
| Dieldrin | 0.02 | 0.005 | 1.7 | .33 |
| Endrin | 0.02 | 0.0048 | 1.7 | .35 |
| Chlordane | 0.5 | 0.05 | 17. | 4. |
| Toxaphene | 1. | 0.3 | 33. | 11. |
| Endosulfan I | 0.01 | 0.0026 | 0.83 | .17 |
| Endosulfan II | 0.02 | 0.0045 | 1.7 | .33 |
| Endosulfan sulfate | 0.02 | 0.0043 | 1.7 | .33 |
| Endrin aldehyde | 0.1 | 0.022 | 3. | 1. |
| Methoxychlor | 0.1 | 0.02 | 12. | 4. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-18**

Appendix IX Organochlorine Pesticides/PCBs by GC (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Aldrin | 0.025 | 0.0084 | 0.33 | .067 |
| alpha-BHC | 0.01 | 0.0021 | 0.83 | .17 |
| beta-BHC | 0.01 | 0.0033 | 0.83 | .17 |
| delta-BHC | 0.01 | 0.002 | 0.83 | .17 |
| gamma-BHC (Lindane) | 0.01 | 0.0024 | 0.83 | .17 |
| Chlordane | 0.5 | 0.05 | 17. | 4. |
| 4,4-DDT | 0.02 | 0.004 | 1.7 | .36 |
| 4,4-DDE | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDD | 0.02 | 0.004 | 1.77 | .33 |
| Dieldrin | 0.02 | 0.005 | 1.7 | .33 |
| Endosulfan I | 0.01 | 0.0026 | 0.83 | .17 |
| Endosulfan II | 0.02 | 0.0045 | 1.7 | .33 |
| Endosulfan sulfate | 0.02 | 0.0043 | 1.7 | .33 |
| Endrin | 0.02 | 0.0048 | 1.7 | .35 |
| Endrin aldehyde | 0.1 | 0.022 | 3. | 1. |
| Heptachlor | 0.01 | 0.002 | 0.83 | .17 |
| Heptachlor epoxide | 0.01 | 0.0032 | 0.83 | .17 |
| Kepone | 0.2 | 0.07 | 7. | 2.3 |
| Methoxychlor | 0.1 | 0.02 | 12. | 4. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |
| Toxaphene | 1. | 0.3 | 33. | 11. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-19**

Appendix IX Organophosphate Pesticides/PCBs by GC (8141A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Bolstar | 2 | .4 | 67 | 13.3 |
| Coumaphos | 3 | .6 | 67 | 13.3 |
| Demeton-O | 2 | .4 | 67 | 13.3 |
| Demeton-S | 2 | .4 | 67 | 13.3 |
| Diazinon | 2 | .4 | 67 | 13.3 |
| Dichlorvos | 2 | .4 | 67 | 13.3 |
| Disulfoton | 2 | .4 | 13. | 6.5 |
| Dursban (Chlorpyrifos) | 2 | .4 | 67 | 13.3 |
| EPN | 2 | .4 | 67 | 13.3 |
| Ethion | 2 | .4 | 67 | 13.3 |
| Ethoprop | 2 | .4 | 67 | 13.3 |
| Ethyl parathion | 2 | .4 | 67 | 13.3 |
| Famphur | 2 | .4 | 67 | 13.3 |
| Fensulfothion | 4 | .8 | 67 | 13.3 |
| Fenthion | 2 | .4 | 67 | 13.3 |
| Guthion (Azinphos-methyl) | 4 | .8 | 67 | 13.3 |
| Malathion | 3 | .6 | 67 | 13.3 |
| Merphos | 2 | .4 | 67 | 13.3 |
| Methyl parathion | 2 | .4 | 67 | 13.3 |
| Mevinphos | 3 | .6 | 67 | 13.3 |
| Naled | 2 | .4 | 67 | 13.3 |
| Phorate | 2 | .4 | 67 | 13.3 |
| Ronnel | 2 | .4 | 67 | 13.3 |
| Stirophos | 4 | .8 | 67 | 13.3 |
| Tokuthion | 2 | .4 | 67 | 13.3 |
| Trichloronate | 3 | .6 | 67 | 13.3 |
| Trithion | 3 | .6 | 67 | 13.3 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-20**

# TCL Pesticides/PCBs by GC

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Aldrin | .025 | .0084 | .83 | .17 |
| alpha-BHC | .01 | .0021 | .83 | .17 |
| beta-BHC | .01 | .0033 | .83 | .17 |
| gamma-BHC/Lindane | .01 | .0024 | .83 | .17 |
| delta-BHC | .01 | .002 | .83 | .17 |
| alpha-Chlordane | .01 | .0031 | 1.7 | .17 |
| gamma-Chlordane | .01 | .0032 | 1.7 | .17 |
| 4,4'-DDD | .02 | .004 | 1.7 | .33 |
| 4,4'-DDE | .02 | .004 | 1.7 | .33 |
| 4,4'-DDT | .02 | .004 | 1.7 | .33 |
| Dieldrin | .02 | .005 | 1.7 | .33 |
| Endosulfan I | .01 | .0032 | .83 | .17 |
| Endosulfan II | .02 | .0045 | 1.7 | .33 |
| Endosulfan sulfate | .02 | .0043 | 1.7 | .33 |
| Endrin | .02 | .0048 | 1.7 | .35 |
| Endrin aldehyde | .1 | .022 | 3. | 1. |
| Endrin ketone | .02 | .0048 | 1.7 | .33 |
| Heptachlor | .01 | .002 | .83 | .17 |
| Heptachlor epoxide | .01 | .0032 | .83 | .17 |
| Methoxychlor | .1 | .02 | 12. | 4. |
| Toxaphene | 1. | 0.3 | 33. | 11. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |

**Table B4-20 – Continued**
TCL Pesticides/PCBs by GC

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-21**
Herbicides by GC (8151A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| 2,4,5-T | .05 | .01 | 1.7 | 0.33 |
| 2,4,5-TP | .05 | .01 | 1.7 | 0.33 |
| 2,4-D | .5 | .1 | 17. | 3.3 |
| 2,4-DB | .5 | .1 | 17. | 3.3 |
| 2,4-DP (Dichlorprop) | .5 | .1 | 17. | 3.3 |
| Dalapon | 1.25 | .25 | 42 | 8.3 |
| Dicamba | .3 | .06 | 1.7 | .33 |
| Dinoseb | .25 | .05 | 8.3 | 1.7 |
| MCPA | 400 | 130 | 15000 | 3000 |
| MCPP | 200 | 50 | 2500 | 500 |
| Pentachlorophenol | .05 | .01 | 1.7 | .33 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-22**
PAHs by HPLC (8310)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Acenaphthene | 8. | .8 | 270. | 27. |
| Acenapthylene | 8. | .8 | 270. | 27. |
| Anthracene | .2 | .03 | 5. | 1. |
| Benzo(a)anthracene | .08 | .02 | 3. | 0.25 |
| Benzo(a)pyrene | .08 | .02 | 3. | 0.25 |
| Benzo(b)fluoranthene | .06 | .038 | 2. | 0.2 |
| Benzo(g,h,i)perylene | .5 | .1 | 16. | 1.5 |
| Benzo(k)fluoranthene | .06 | .01 | 2. | 0.2 |
| Chrysene | .3 | .06 | 11. | 1. |
| Dibenzo(a,h)anthracene | .2 | .03 | 5. | 0.5 |
| Fluoranthene | .2 | .03 | 5. | 0.5 |
| Fluorene | .8 | .17 | 27. | 2.5 |
| Indeno(1,2,3-cd)pyrene | .3 | .067 | 11. | 1. |
| Naphthalene | 8. | .8 | 270. | 27. |
| Phenanthrene | .3 | .07 | 11. | 1. |
| Pyrene | .8 | .17 | 27. | 2.5 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

## B5. Quality Control

The particular types and frequencies of quality control checks analyzed with each sample are defined in *USEPA SW-846 3rd Edition, Update III, 1996*, and *Methods for the Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020*. The quality control checks routinely performed during sample analysis include blanks, laboratory control samples, surrogates, duplicates, internal standards, and matrix spikes. In addition to these checks, some inorganic analyses employ serial dilutions and interference check samples.

Blanks (method, preparation) – Blanks are an analytical control consisting of a volume of deionized, distilled laboratory water for water samples, or a purified solid matrix for soil/sediment samples. (Metals use a digested reagent blank with soils.) They are treated with the same reagents, internal standards, and surrogate standards and carried through the entire analytical procedure. The blank is used to define the level of laboratory background contamination.

Laboratory Control Samples or Reference materials – Aqueous and solid control samples of known composition are analyzed using the same sample preparation, reagents, and analytical methods employed for the sample. These materials may be purchased from NIST or commercial supply houses either as neat compounds or as solutions with certified concentrations, or prepared in the technical department. The accuracy and quality of the purchased standards are documented on certificates provided by the supply houses. Certificates are maintained on file in the laboratory. The accuracy information determined from reference materials and laboratory control samples is valuable because variables specific to sample matrix are eliminated. The acceptance criteria for this type of quality control is either dictated by the agency from whom the material is obtained or by statistical analysis of past information generated in the technical department. A LCS is analyzed with every batch to demonstrate accuracy of the procedure and process control.

Surrogates (used for organic analysis only) – Each sample, matrix spike, matrix spike duplicate, and blank are spiked with surrogate compounds prior to purging and extraction in order to monitor preparation and analysis. Surrogates are used to evaluate analytical efficiency by measuring recovery. The recovery data is compared to method stipulated or statistically generated limits.

Duplicates (matrix spike duplicate - organics and inorganics; duplicate-inorganics) – A second aliquot of a matrix/sample is analyzed at the same time as the original sample in order to determine the precision of the method. The relative percent difference (RPD) between the two determinations is calculated and compared to values prescribed by EPA or determined statistical analysis of the past information generated in the technical department.

Internal Standards (used for GC/MS and some GC analysis) – Internal standards are compounds added to every standard, blank, matrix spike, matrix spike duplicate, and sample at a known concentration, prior to analysis. Comparison of the peak areas of the internal standards are used for internal standard quantitation as well as to determine when changes in the instrument response will adversely affect quantification of target compounds.

Matrix Spikes – Matrix spiked samples are samples fortified with a target analyte and subjected to the entire analytical procedure. The recovery of the analyte(s) is calculated and indicates the appropriateness of the method for the matrix. Matrix spike duplicates is the analysis of a pair of fortified samples from the same source. The matrix spike duplicates yields precision and accuracy information. The acceptance criteria for percent recovery on spike samples in prescribed by EPA or determined statistical analysis of the past information generated in the technical department.

Serial Dilutions (used for inorganics GFAA and ICP only) – If the analyte concentration is sufficiently high, an analysis of a five-fold dilution must agree within 10% of the original determination. If the dilution analysis is not within 10%, a chemical or physical interference effect should be suspected.

Interference Check Sample (ICP) – To verify interelement and background correction factors a solution containing both interfering and analyte elements of known concentration is analyzed at the beginning and end of each analysis run or a minimum of twice per 8 hours.

Second Source Check – A second source check is analyzed using either the LCS or an ICV (Initial Calibration Verification). The second source is a standard that is made from a solution or neat purchased from a different vendor than that used for the calibration standards. For some organic custom mixes, the same vendor but a different lot and preparation is used. This ensures that potential problems with a vendor supply would be evident in the analysis. Some areas of the lab may use the continuing calibration verification standards as a second source from the initial calibration.

The results of all quality control samples are entered into the LIMS in the same way as the results of client samples. The computer is programmed to compare the individual values with the acceptance limits (statistically determined or method specified) and inform the analyst if the results of the quality control tests are in or out of specification. If the results are not within the acceptance criteria, corrective action suitable to the situation must be taken. This may include, but is not limited to, checking calculations, examining other quality control analyzed with the same batch of samples, qualifying results with a comment stating the observed deviation, and reanalysis of the samples in the batch. In addition, computerized reports on the results for all quality control analyses including mean and standard deviation are generated monthly. These are used by the Quality Assurance Department to check for trends that may indicate method bias. Control charts are plotted via computer and may be accessed at any time by all analysts.

The following tables list the specific QC used for each method and the applicable QC windows. These windows are generated statistically and are subject to change. Statistical limits are determined for recovery and RPD data using historical data (minimum of 20 data points) and applying a 99% confidence interval around the mean. The limits are generated every 6 months for SW-846 methods and annually for other methods, and updated as needed. The tables list the full list of analytes for a method. Sublists (TCL, PPL, etc.) may be reported based on the clients requirements. See Element B4 for the particular analytes associated with a regulatory list.

**Table B5-1**
Quality Control
Metals

| Type | Acceptance Limits (%) WATERS SOILS | Frequency | Corrective Action |
|---|---|---|---|
| **Matrix Spikes:** | See Table B5-2 | Each group of samples of similar matrix/level (≤20) each method | Analyze post-digestion spike sample |
| **Matrix Spike Duplicate (RPD):** | ±20% RPD | Each group of samples of similar matrix/level (≤20) each method | Analyze post-digestion spike sample if not already run for MS, flag the data |
| **Duplicates (RPD):** | ±20% RPD for sample values ≥5× LOQ | Each group of samples of similar matrix/level (≤20) each method | Flag the data |
| **Blanks:**<br>Initial Calibration (ICB)<br>Continuing Calibration (CCB) | ***ICP:***<br><3× IDL or blank <1/10 conc. of action level and samples not ±10% of action level<br>***AA:***<br><LOQ | Each wavelength immediately after calibration verification at 10% frequency or every 2 hours (beginning and end of run min.) | Correct problem, recalibrate, and rerun |
| Preparation Blank | ≤LOQ<br>>LOQ then lowest conc. in sample must be 20× blank concentration | Each SDG or batch (≤20 samples) | Redigest and reanalyze blank and associated samples if sample result <20× blank result |
| **Serial Dilutions (ICP & GFAA only):** | Within ±10% of the original determination | Each group (≤20) of similar matrix/level | Flag the data |
| **Interference Check Sample (ICP only):** | ±20% of the true value for the analytes | Each wavelength after Initial Calibration Verification at beginning and end of the run or min. of 2× per 8 hour | Recalibrate the instrument |
| **Laboratory Control Sample:** | See Table B5-2 | Each SDG or batch (≤20 samples), each method | Redigest and reanalyze LCS and associated samples |

**Table B5-1 – Continued**
Quality Control
Metals

| Type | Acceptance Limits (%) WATERS SOILS | Frequency | Corrective Action |
|---|---|---|---|
| **Post Digestion Spike:** | **ICP:** 75% to 125% **AA:** 85% to 115% | When matrix spikes are outside 80% to 120% range | Flag the data |
| **Analytical Spike** | 85-115% | one per 20 field samples | See Table B5-3 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for TAL, PPL, and Appendix IX metals

**Table B5-2**
Statistical Acceptance Limits for Metals

| Element | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Aluminum | 93-112 | 75-125 | 62-160 | 75-125 |
| Antimony | 94-112 | 75-125 | 22-123 | 75-125 |
| Arsenic | 92-109 | 82-122 | 90-108 | 76-109 |
| Barium | 93-109 | 75-125 | 91-120 | 75-125 |
| Beryllium | 92-109 | 85-115 | 89-110 | 89-113 |
| Cadmium | 93-111 | 75-125 | 88-115 | 75-125 |
| Calcium | 93-113 | 75-125 | 88-122 | 75-125 |
| Chromium | 95-112 | 75-125 | 89-114 | 75-125 |
| Cobalt | 95-109 | 88-113 | 88-111 | 81-111 |
| Copper | 92-110 | 75-125 | 91-114 | 75-125 |
| Iron | 91-114 | 75-125 | 39-194 | 75-125 |
| Lead[1] | 80-117 | 80-120 | 45-74 | 80-120 |
| Magnesium | 93-110 | 75-125 | 85-121 | 75-125 |
| Mercury[2] | 84-120 | 80-120 | 73-117 | 80-120 |
| Nickel | 93-110 | 83-115 | 87-112 | 75-125 |
| Potassium | 80-120 | 75-125 | 76-140 | 75-125 |
| Selenium | 91-111 | 75-125 | 90-111 | 74-112 |
| Silver | 93-110 | 75-125 | 93-115 | 76-124 |
| Sodium | 87-117 | 75-125 | 35-132 | 75-125 |
| Thallium | 92-107 | 80-114 | 77-165 | 72-109 |
| Vanadium | 96-109 | 89-114 | 86-120 | 75-125 |
| Zinc | 94-112 | 75-125 | 86-111 | 75-125 |
| Cyanide, total | 90-110 | 90-110 | 61-122 | 75-125 |

[1] Analyzed by GFAA
[2] Analyzed by Cold Vapor
Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
The acceptance limits above pertain to the TAL, PPL and Appendix IX lists.

**Figure B5-1**

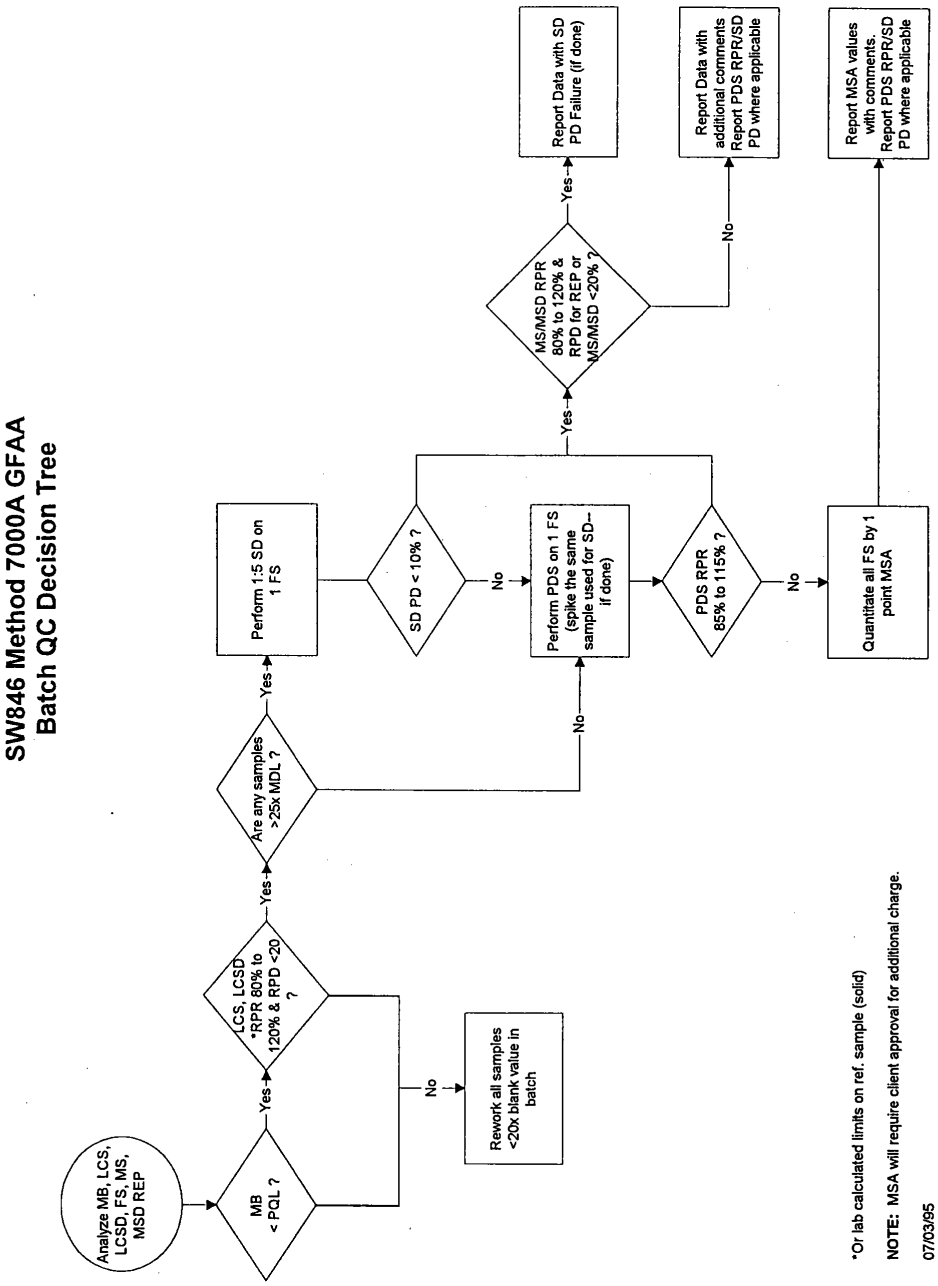
SW846 Method 7000A GFAA
Batch QC Decision Tree
Analyze MB, LCS, LCSD, FS, MS, MSD REP
MB < PQL ?
Yes
No
Rework all samples <20x blank value in batch
LCS, LCSD *RPR 80% to 120% & RPD <20 ?
Yes
Are any samples >25x MDL ?
Yes
No
Perform 1:5 SD on 1 FS
SD PD < 10% ?
No
Perform PDS on 1 FS (spike the same sample used for SD– if done)
PDS RPR 85% to 115% ?
No
Quantitate all FS by 1 point MSA
Report MSA values with comments. Report PDS RPR/SD PD where applicable
Yes
MS/MSD RPR 80% to 120% & RPD for REP or MS/MSD <20% ?
Yes
Report Data with SD PD Failure (if done)
No
Report Data with additional comments Report PDS RPR/SD PD where applicable
*Or lab calculated limits on ref. sample (solid)
NOTE: MSA will require client approval for additional charge.
07/03/95

**Table B5-3**
Quality Control
Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **Moisture:** | | | |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| Duplicate: | ≤11% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Cyanide, total:** | | | |
| Blanks: | | | |
| CCB: | ≤LOQ | after initial calibration | Repeat calibration |
| PB: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD | See Table B5-4 | Each group (≤20) of samples, ≤20% | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% | Post digestion spike is performed, Flag the data |
| Duplicates: | ≤20% | every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Phenolics, total:** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% RPD | Batch is repeated |
| MS/MSD: | See Table B5-4 | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤20% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |

**Table B5-3 – Continued**
Quality Control
Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **Sulfide, total:** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicate: | ≤10% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **TPH (418.1)** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates | ≤34% wastewater<br>≤21% solid waste | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Oil and Grease (1664A)** | | | |
| Blanks: | ≤LOQ | 1 per batch of 20 | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | 1 per batch of 20 | Batch is repeated |
| MS/MSD: | See Table B5-4 | 1 per batch of 20 | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates**:** | ≤24% | 1 per batch of 20 | Ensure that LCS meets acceptance criteria, Flag the data |

**Table B5-3 – Continued**

Quality Control

Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **TOC:** | | | |
| Blanks: | | | |
| ICB: | ≤LOQ | after every calibration | Re-calibrate |
| CCB: | ≤LOQ | after every 10 injections | reanalyze bracketed sample |
| Batch blank: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% RPD | Batch is repeated |
| MS/MSD: | See Table B5-4 | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤1% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **TOX** | | | |
| Blanks | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤ 20% solids | every 10 samples for solids | Ensure that LCS meets acceptance criteria, Flag the data |
| **Total Nitrite/Nitrate:** | | | |
| Blanks: | | | |
| ICB | ≤LOQ | after initial calibration | Repeat calibration |
| PBW | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4, ≤20% | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4, ≤20% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates**:** | ≤6% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-4**
Quality Control
Statistical Acceptance Limits for Miscellaneous Chemistry

| Parameter | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| | WATERS | SOILS | WATERS | SOILS |
| Moisture | N/A | 88-90 | N/A | N/A |
| Cyanide, total | 90-110 | 90-110 | 61-122 | 75-125 |
| Phenolics, total | 83-114 | 87-105 | 81-110 | 75-125 |
| Sulfide, total | 83-110 | N/A | 48-130 | N/A |
| TPH (418.1) | 61-110 | 70-110 | 39-132 | 18-141 |
| Oil and Grease (1664A) | 79-114 | N/A | 78-114 | N/A |
| TOC | commercial certified standard | 84-121 | 73-129 | 60-138 |
| TOX | 90-110 | 75-101 | 58-134 | 51-128 |
| Total Nitrite/Nitrate | 90-110 | N/A | 90-110 | N/A |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-5**
Quality Control
Volatiles by GC/MS (8260B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogates:** | | | Each sample, MS, MSD, LCS, and blank | Reanalyze sample if outside limits; if reanalysis confirms original, document on report and/or case narrative |
| Toluene-d8 | 88 - 110 | 81 - 117 | | |
| Bromofluorobenzene | 86 - 115 | 74 - 121 | | |
| 1,2-Dichloroethane-d4 | 80 - 120 | 80 - 120 | | |
| Dibromofluoromethane | 86 - 118 | 80 - 120 | | |
| **Matrix Spikes:** Spike all compounds of interest | See Table B5-6 | | Each group (≤20) of samples per matrix/level | LCS run for compounds outside acceptance limits |
| **Laboratory Control Samples:** Spike all compounds of interest | See Table B5-6 | | Each group (≤20) of samples per matrix/level | Reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):** Spike all compounds of interest | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | Once for each 12-hour time period | Reanalyze blank and associated samples if blank outside limits |
| **Internal Standards:** Bromochloromethane 1,4-Difluorobenzene Chlorobenzene-d5 | -50% to +100% of internal standard area of 12-hour STD<br>RT Change ≤30 sec. | | Each sample, MS, MSD, LCS, and blank | Reanalyze samples; if reanalysis confirms original, document on report or case narrative |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for PPL, Appendix IX, and TCL lists.

**Table B5-6**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 1,1,1,2-Tetrachloroethane | 90-117 | 86-121 | 87-122 | 85-126 |
| 1,1,1-Trichloroethane | 83-127 | 78-141 | 79-133 | 49-157 |
| 1,1,2,2-Tetrachloroethane | 78-120 | 70-129 | 69-125 | 23-180 |
| 1,1,2-Trichloroethane | 86-120 | 82-127 | 82-121 | 49-157 |
| 1,1-Dichloroethane | 84-128 | 77-142 | 82-130 | 60-146 |
| 1,1-Dichloroethene | 79-136 | 75-152 | 70-140 | 47-158 |
| 1,1-Dichloropropene | 86-121 | 82-128 | 82-130 | 82-128 |
| 1,2,3-Trichlorobenzene | 64-130 | 56-137 | 66-129 | 42-132 |
| 1,2,3-Trichloropropane | 84-120 | 74-131 | 72-122 | 66-134 |
| 1,2,4-Trichlorobenzene | 70-124 | 58-133 | 72-130 | 51-132 |
| 1,2,4-Trimethylbenzene | 80-130 | 79-133 | 77-138 | 61-151 |
| 1,2-Dibromo-3-chloropropane | 63-137 | 48-152 | 53-133 | 46-141 |
| 1,2-Dibromoethane | 84-131 | 75-141 | 81-128 | 59-144 |
| 1,2-Dichlorobenzene | 85-117 | 84-120 | 83-125 | 61-142 |
| 1,2-Dichloroethane | 84-131 | 75-141 | 81-128 | 59-144 |
| 1,2-Dichloropropane | 83-123 | 83-128 | 81-126 | 56-145 |
| 1,3,5-Trimethylbenzene | 72-129 | 70-136 | 78-134 | 67-150 |
| 1,3-Dichlorobenzene | 83-118 | 81-121 | 81-125 | 82-121 |
| 1,3-Dichloropropane | 89-122 | 86-124 | 79-128 | 78-125 |
| 1,4-Dichlorobenzene | 82-113 | 81-116 | 79-122 | 78-120 |
| 2,2-Dichloropropane | 79-130 | 75-142 | 79-132 | 76-138 |
| 2-Butanone | 47-153 | 51-148 | 61-130 | 47-147 |
| 2-Chloroethyl vinyl ether | 49-138 | 1-150 | 54-143 | 37-151 |
| 2-Chlorotoluene | 81-124 | 78-130 | 78-129 | 62-151 |
| 2-Hexanone | 68-139 | 62-138 | 60-128 | 40-154 |
| 4-Chlorotoluene | 82-122 | 79-129 | 78-130 | 75-134 |
| 4-Methyl-2-pentanone | 70-133 | 58-140 | 63-123 | 47-140 |
| Acetone | 64-134 | 50-142 | 46-133 | 29-163 |
| Acrolein | 53-142 | 36-149 | 49-155 | 11-172 |
| Acrylonitrile | 70-133 | 58-134 | 58-138 | 34-147 |
| Benzene | 85-125 | 78-134 | 85-125 | 53-150 |
| Bromobenzene | 86-115 | 84-119 | 85-122 | 78-132 |

**Table B5-6 – Continued**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Bromochloromethane | 73-117 | 48-137 | 69-134 | 59-138 |
| Bromodichloromethane | 83-121 | 81-127 | 80-123 | 53-139 |
| Bromoform | 69-121 | 62-127 | 66-128 | 39-142 |
| Bromomethane | 34-117 | 37-127 | 49-129 | 24-140 |
| Carbon Disulfide | 62-173 | 74-157 | 52-165 | 56-171 |
| Carbon Tetrachloride | 77-130 | 66-148 | 72-137 | 49-154 |
| Chlorobenzene | 87-121 | 81-125 | 86-122 | 50-146 |
| Chloroethane | 53-117 | 55-129 | 52-136 | 33-147 |
| Chloroform | 86-124 | 76-138 | 84-123 | 60-143 |
| Chloromethane | 51-121 | 48-132 | 47-135 | 18-145 |
| *cis*-1,2-Dichloroethene | 85-126 | 76-140 | 85-127 | 61-146 |
| *cis*-1,3-Dichloropropene | 81-121 | 70-123 | 82-122 | 56-137 |
| Dibromochloromethane | 78-119 | 74-125 | 75-123 | 52-141 |
| Dibromomethane | 89-113 | 84-120 | 82-119 | 79-119 |
| Dichlorodifluoromethane | 44-117 | 35-130 | 36-136 | 31-143 |
| Ethylbenzene | 88-124 | 82-134 | 86-127 | 38-163 |
| Hexachlorobutadiene | 35-160 | 34-166 | 65-156 | 24-170 |
| Isopropylbenzene | 85-120 | 77-130 | 84-127 | 77-130 |
| *m*+*p*-Xylene | 88-123 | 83-129 | 86-128 | 83-130 |
| Methylene Chloride | 84-128 | 81-134 | 76-129 | 47-161 |
| Naphthalene | 55-140 | 43-147 | 57-126 | 27-137 |
| *n*-Butylbenzene | 53-138 | 54-146 | 68-147 | 50-157 |
| *n*-Propylbenzene | 74-127 | 69-138 | 76-135 | 66-145 |
| *o*-Xylene | 88-123 | 86-124 | 86-127 | 56-159 |
| *p*-Isopropyltoluene | 78-127 | 75-133 | 80-139 | 71-143 |
| *sec*-Butylbenzene | 76-128 | 71-135 | 75-136 | 57-150 |
| Styrene | 88-121 | 86-123 | 84-127 | 84-124 |
| *tert*-Butylbenzene | 84-123 | 79-129 | 81-134 | 73-140 |
| Tetrachloroethene | 79-136 | 72-150 | 76-141 | 44-175 |
| Toluene | 86-123 | 78-133 | 84-125 | 40-162 |
| *trans*-1,2-Dichloroethene | 83-129 | 78-140 | 78-131 | 55-147 |
| *trans*-1,3-Dichloropropene | 79-120 | 76-124 | 79-121 | 52-142 |

**Table B5-6 – Continued**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Trichloroethene | 86-126 | 76-137 | 78-129 | 41-161 |
| Trichlorofluoromethane | 50-135 | 46-151 | 34-146 | 22-154 |
| Vinyl Chloride | 61-117 | 54-133 | 52-125 | 25-142 |
| Xylene (Total) | 89-124 | 81-136 | 87-127 | 46-158 |
| Allychloride | 42-145 | 35-154 | 47-140 | 23-151 |
| 2-Chloro-1,3-butadiene | 74-124 | 74-143 | 66-128 | 40-140 |
| *trans*-1,4-Dichloro-2-butene | 39-129 | 23-135 | 48-124 | 3-157 |
| 1,2-Dichbroethene(total) | 85-126 | 78-140 | 85-127 | 61-146 |
| 1,4-Dioxane | 58-125 | 55-129 | 51-150 | 13-213 |
| Ethylmethacrylate | 47-122 | 40-126 | 56-125 | 18-149 |
| Isobutylalcohol | 55-134 | 51-140 | 52-145 | 16-151 |
| Methocrylonitrile | 79-124 | 68-129 | 77-131 | 45-151 |
| Methyliodide | 74-133 | 72-143 | 71-134 | 49-148 |
| Methacrylate | 66-131 | 49-141 | 70-135 | 31-176 |
| Propionitrile | 73-128 | 70-131 | 70-137 | 34-167 |
| Vinyl acetate | 44-147 | 27-154 | 40-152 | 1-166 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-7**
Quality Control
Semivolatiles by GC/MS (8270C)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:**<br><br>Nitrobenzene-d5<br>2-Fluorobiphenyl<br>Terphenyl-d14<br>Phenol-d6<br>2-Fluorophenol<br>2,4,6-Tribromophenol | <br><br>52 - 136<br>15 - 105<br>41 - 139<br>10 - 89<br>15 - 105<br>35 - 147 | <br><br>53 - 126<br>48 - 121<br>52 - 133<br>48 - 119<br>48 - 121<br>42 - 134 | Each sample, MS, MSD, LCS, and blank | Repeat extraction and analysis; if reanalysis confirms originals, document on report and/or case narrative. For the blank; if the surrogate is out high then re-extraction is not performed. |
| **Matrix Spikes:**<br>Spike all compounds of interest | See Table B5-8 for acceptance limits | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| **Laboratory Control Sample:**<br>Spike all compounds of interest | See Table B5-8 for acceptance limits | | Each group (≤20) of samples per matrix/level | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):**<br><br>Same as for matrix spikes | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | Once per case or group (≤20) of samples, each matrix, level, instrument | Re-extract and reanalyze blank and associated samples |
| **Internal Standards:**<br><br>1,4-Dichlorobenzene-d4<br>Naphthalene-d8<br>Acenaphthene-d10<br>Phenanthrene-d10<br>Chrysene-d12<br>Perylene-d12 | -50 to +100 of internal standard area of 12-hour STD<br><br>RT change ≤30 sec. | | Each sample, MS, MSD, LCS, and blank | Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for PPL, Appendix IX, and TCL lists.

**Table B5-8**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 1,2,4,5-Tetrachlorobenzene | 58-112 | 60-111 | 61-113 | 30-141 |
| 1,2,4-Trichlorobenzene | 33-110 | 59-107 | 57-104 | 44-125 |
| 1,2-Dichlorobenzene | 33-107 | 53-108 | 56-107 | 44-113 |
| 1,2-Diphenylhydrazine | 68-128 | 46-133 | 52-129 | 31-149 |
| 1,3,5-trinitrobenzene | 70-130 | 70-130 | 70-130 | 70-130 |
| 1,3-Dichlorobenzene | 45-91 | 44-99 | 53-103 | 31-123 |
| 1,3-dinitrobenzene | 62-111 | 26-142 | 61-109 | 1-150 |
| 1,4-Dichlorobenzene | 45-94 | 34-108 | 52-103 | 20-124 |
| 1,4-naphthoquinone | 70-130 | 70-130 | 70-130 | 70-130 |
| 1,4-phenylenediamine | 70-130 | 70-130 | 70-130 | 70-130 |
| 1-naphthylamine | 1-179 | 1-140 | 1-99 | 1-147 |
| 2,3,4,6-tetrachlorophenol | 21-137 | 19-109 | 62-103 | 1-134 |
| 2,4,5-trichlorophenol | 67-103 | 40-122 | 63-107 | 18-139 |
| 2,4,6-Trichlorophenol | 66-105 | 43-121 | 62-106 | 37-127 |
| 2,4-Dichlorophenol | 65-98 | 61-101 | 59-100 | 39-135 |
| 2,4-Dimethylphenol | 52-99 | 33-107 | 39-108 | 32-119 |
| 2,4-Dinitrophenol | 25-124 | 6-120 | 29-117 | 1-126 |
| 2,4-Dinitrotoluene | 64-112 | 45-128 | 58-113 | 39-136 |
| 2,6-dichlorophenol | 64-107 | 58-110 | 62-109 | 1-156 |
| 2,6-Dinitrotoluene | 64-112 | 45-128 | 58-113 | 39-136 |
| 2-acetylaminofluorene | 70-130 | 70-130 | 70-130 | 70-130 |
| 2-Chloronaphthalene | 61-103 | 60-106 | 60-106 | 60-118 |
| 2-Chlorophenol | 62-107 | 56-112 | 55-107 | 36-124 |
| 2-chlorophenol | 62-107 | 56-112 | 55-107 | 36-124 |
| 2-methylnaphthalene | 62-98 | 57-103 | 60-102 | 45-112 |
| 2-methylphenol | 55-96 | 25-122 | 57-101 | 20-130 |
| 2-naphthylamine | 2-162 | 1-173 | 1-100 | 1-93 |
| 2-nitroaniline | 58-112 | 60-111 | 54-111 | 8-154 |
| 2-Nitrophenol | 67-104 | 64-108 | 59-107 | 40-125 |
| 2-picoline | 26-135 | 28-127 | 29-129 | 1-142 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 3- or 4-methylphenol | 48-99 | 15-130 | 48-116 | 22-138 |
| 3-methylcholanthrene | 71-135 | 66-132 | 58-169 | 1-206 |
| 3-nitroaniline | 40-108 | 43-105 | 9-110 | 8-114 |
| 4,6-Dinitro-2-methylphenol | 43-120 | 38-116 | 42-107 | 5-128 |
| 4-aminobiphenyl | 1-174 | 28-130 | 1-46 | 1-112 |
| 4-Chloro-3-methylphenol | 60-111 | 54-115 | 56-108 | 22-142 |
| 4-chloroaniline | 34-101 | 9-119 | 1-102 | 1-123 |
| 4-Chlorophenyl-phenylether | 62-104 | 58-106 | 52-110 | 41-115 |
| 4-nitroaniline | 37-120 | 1-170 | 55-116 | 55-116 |
| 4-Nitrophenol | 3-83 | 1-93 | 44-110 | 5-132 |
| 4-nitroquinoline-1-oxide | 70-130 | 70-130 | 70-130 | 70-130 |
| 5-nitro-*o*-toluidine | 70-130 | 70-130 | 70-130 | 70-130 |
| 7,12-dimethylbenz(a) anthracene | 87-184 | 83-184 | 99-213 | 1-286 |
| a,a-dimethylphenethylamine | 4-100 | 4-100 | 4-100 | 4-100 |
| Acenaphthene | 61-100 | 60-101 | 61-100 | 47-114 |
| Acenaphthylene | 64-100 | 61-103 | 62-101 | 42-119 |
| Acetophenone | 68-136 | 64-137 | 59-134 | 31-161 |
| Aniline | 53-99 | 33-113 | 30-97 | 1-126 |
| Anthracene | 66-101 | 62-103 | 62-105 | 42-119 |
| Benzidine | 1-116 | 1-125 | 1-74 | 1-70 |
| Benzo(a)anthracene | 69-101 | 64-103 | 63-106 | 33-135 |
| Benzo(a)pyrene | 65-101 | 60-102 | 61-107 | 21-139 |
| Benzo(b)fluoranthene | 64-101 | 54-108 | 59-105 | 24-148 |
| Benzo(g,h,i)perylene | 52-113 | 12-133 | 55-115 | 49-121 |
| Benzo(k)fluoranthene | 67-105 | 59-112 | 63-108 | 41-126 |
| Benzyl Alcohol | 59-108 | 44-117 | 62-115 | 9-146 |
| bis (2-Chloroethoxy) methane | 64-103 | 57-108 | 56-103 | 40-121 |
| bis (2-Chloroethyl) ether | 66-106 | 40-128 | 53-109 | 12-158 |
| bis (2-Chloroisopropyl) ether | 43-118 | 38-118 | 38-117 | 36-121 |
| bis(2-Ethylhexyl)phthalate | 64-113 | 39-131 | 8-158 | 8-158 |
| Butylbenzylphthalate | 48-105 | 53-110 | 58-119 | 45-133 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Chlorobenzilate | 1-132 | 24-144 | 9-223 | 6-198 |
| Chrysene | 67-101 | 63-104 | 60-107 | 9-153 |
| Diallate (trans/cis) | 48-128 | 69-113 | 23-79 | 1-123 |
| Dibenz(a,h)anthracene | 66-117 | 57-124 | 60-117 | 11-152 |
| Dibenzofuran | 67-99 | 64-100 | 62-102 | 38-120 |
| Diethylphthalate | 30-99 | 46-106 | 59-104 | 43-114 |
| Dimethoate | 1-59 | 1-83 | 23-79 | 1-123 |
| Dimethylphthalate | 1-90 | 11-107 | 61-104 | 44-112 |
| Di-*n*-butylphthalate | 61-105 | 60-110 | 59-114 | 35-118 |
| Di-*n*-octylphthalate | 59-118 | 52-121 | 54-127 | 41-146 |
| Diphenylamine | 64-103 | 44-124 | 60-106 | 28-144 |
| Ethyl methanesulfonate | 50-123 | 57-115 | 65-117 | 38-142 |
| Fluoranthene | 66-106 | 61-109 | 58-110 | 26-137 |
| Fluorene | 61-108 | 59-110 | 59-109 | 59-121 |
| Hexachlorobenzene | 62-109 | 48-118 | 52-123 | 31-135 |
| Hexachlorobutadiene | 24-86 | 24-98 | 56-115 | 35-116 |
| Hexachlorocyclopentadiene | 17-80 | 15-83 | 27-113 | 1-127 |
| Hexachloroethane | 40-84 | 40-113 | 52-108 | 40-113 |
| Hexachloropropene | 70-130 | 70-130 | 70-130 | 70-130 |
| Indeno(1,2,3-cd)pyrene | 59-111 | 55-114 | 55-111 | 28-127 |
| Isodrin | 51-110 | 52-109 | 66-117 | 1-145 |
| Isophorone | 66-113 | 42-134 | 57-114 | 46-127 |
| Isosafrole | 9-76 | 10-76 | 14-72 | 1-100 |
| Methapyrilene | 25-151 | 24-154 | 35-138 | 1-142 |
| Methyl methanesulfonate | 43-114 | 54-106 | 66-122 | 1-164 |
| Naphthalane | 58-99 | 50-106 | 60-97 | 41-115 |
| Nitrobenzene | 61-113 | 43-127 | 56-110 | 40-125 |
| N-nitrosodiethyalmine | 37-135 | 37-135 | 37-135 | 37-135 |
| N-Nitrosodimethylamine | 46-81 | 42-84 | 47-109 | 48-113 |
| N-nitrosodi-*n*-butylamine | 48-120 | 72-101 | 75-103 | 1-168 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| N-Nitroso-di-*n*-propylamine | 62-118 | 58-120 | 50-124 | 38-140 |
| N-Nitrosodiphenylamine | 64-103 | 44-124 | 60-106 | 28-144 |
| N-nitrosomethylethylamine | 58-140 | 73-132 | 78-128 | 1-187 |
| N-nitrosomorpholine | 49-120 | 50-118 | 78-109 | 1-158 |
| N-nitrosopiperidine | 52-123 | 73-108 | 78-105 | 1-158 |
| N-nitrosopyrrolidine | 1-152 | 60-121 | 77-113 | 1-160 |
| O,O,O-triethylphosphorothioate | 46-118 | 53-119 | 67-103 | 52-126 |
| *o*-Toluidine | 60-94 | 1-145 | 12-89 | 1-128 |
| *p*-(dimethylamino) azobenzene | 14-184 | 2-187 | 1-186 | 1-247 |
| Pentachlorobenzene | 8-162 | 34-137 | 69-100 | 1-148 |
| Pentachloronitrobenzene | 68-108 | 58-112 | 68-115 | 10-146 |
| Pentachlorophenol | 46-114 | 14-130 | 42-108 | 14-131 |
| Phenacetin | 7-180 | 10-177 | 69-105 | 1-152 |
| Phenanthrene | 68-102 | 64-105 | 62-107 | 54-120 |
| Phenol | 5-83 | 5-112 | 49-105 | 29-112 |
| Pronamide | 1-138 | 3-123 | 1-132 | 1-153 |
| Pyrene | 58-112 | 55-114 | 52-115 | 52-115 |
| Pyridine | 38-82 | 31-85 | 34-92 | 21-96 |
| Safrole | 4-122 | 18-109 | 30-109 | 1-136 |
| Tetraethyl dithiopyrophosphate | 41-125 | 44-132 | 62-111 | 1-193 |
| Thionazin | 60-114 | 61-114 | 63-110 | 3-147 |
| 3,3'-Dichlorobenzidine | 37-104 | 37-106 | 15-94 | 1-125 |
| 3,3'-dimethylbenzidine | 1-149 | 1-153 | 1-137 | 1-110 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-9**
Quality Control
Volatiles Halocarbons and Aromatics by GC (8021B)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogates:**<br><br>BrClBenz-Hall<br>BrClBenz-PID<br>2-hexanone | <br><br>59-132<br>69-121<br>89-120 | <br><br>71-109<br>71-115 | Each sample, MS, MSD, and blank | Results would not be reported if the surrogate recovery is outside the limits unless matrix related problems are evident |
| **Matrix Spikes:**<br><br>Spike all compounds of interest except :<br>Dichlorodifluoromethane<br>*trans*-1,2-Dichloroethene<br>*trans*-1,3-Dichloropropene<br>1,1,2-Trichloroethane<br>*cis*-1,3-Dichloropropene<br>1,1,2,2-Tetrachloroethane | See Table B5-10 for acceptance limits | | Each group (≤20) of samples of similar matrix/level | Analyze LCS for compounds outside of acceptance limits |
| **Laboratory Control Sample/Check Standard:**<br><br>Spike all compounds of interest except:<br>Dichlorodifluoromethane<br>*trans*-1,2-Dichloroethene<br>*trans*-1,3-Dichloropropene<br>1,1,2-Trichloroethane<br>*cis*-1,3-Dichloropropene<br>1,1,2,2-Tetrachloroethane | See Table B5-10 for acceptance limits | | Each group (≤20) of samples of similar matrix/level. | Reanalyze LCS and associated samples for compounds outside of acceptance limits |
| **Internal Standard:**<br>Fluorobenzene | 80 - 120 | 80 – 120 | Each sample, MS, MSD, blank, LCS | Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative |
| **Matrix Spike Duplicate (RPD):**<br>Same compounds as matrix spikes | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks:** | ≤LOQ for all compounds | | Every 12 hours | Reanalyze blank and associated samples if blank is outside limits |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-10**
Statistical Acceptance Limits for
Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound Name | Water | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD% | MS/MSD% | LCS/LCSD% | MS/MSD% |
| 1,1,1-Trichloroethane | 77-121 | 72-130 | 69-115 | 64-92 |
| 1,1,2,2-Tetrachloroethane | 84-129 | 80-132 | 80-115 | 75-102 |
| 1,1,2-Trichloroethane | 83-122 | 81-123 | 75-116 | 71-107 |
| 1,1-Dichloroethane | 80-122 | 75-130 | 70-115 | 66-99 |
| 1,1-Dichloroethene | 44-147 | 42-154 | 68-115 | 52-95 |
| 1,2- Dichlorobenzene (o) | 82-127 | 78-131 | 80-118 | 74-109 |
| 1,2-Dichloroethane | 80-127 | 79-130 | 73-120 | 70-107 |
| 1,2-Dichloroethene (cis/trans) | 83-122 | 72-135 | 69-115 | 66-94 |
| 1,2-Dichloropropane | 81-126 | 80-128 | 75-115 | 71-105 |
| 1,3-Dichlorobenzene (m) | 84-128 | 81-132 | 81-118 | 76-108 |
| 1,4-Dichlorobenzene (p) | 86-112 | 84-115 | 85-115 | 75-105 |
| Benzene (PID) | 85-111 | 79-119 | 79-115 | 74-94 |
| Bromodichloromethane | 82-127 | 81-131 | 78-109 | 73-101 |
| Bromoform | 75-141 | 72-143 | 85-134 | 85-124 |
| Bromomethane | 27-153 | 13-163 | 66-115 | 51-105 |
| Carbon Tetrachloride | 75-122 | 72-130 | 62-115 | 62-91 |
| Chlorobenzene (PID) | 85-114 | 83-117 | 85-115 | 74-108 |
| Chloroethane | 31-137 | 26-143 | 1-134 | 0-126 |
| Chloroform | 78-122 | 76-127 | 72-115 | 67-98 |
| Chloromethane | 17-149 | 0-159 | 1-134 | 0-126 |
| *cis*-1,3-Dichloropropene | 74-118 | 62-128 | 69-115 | 65-100 |
| Dibromochloromethane | 79-132 | 78-134 | 85-123 | 81-114 |
| Dibromochloromethane | 79-132 | 78-134 | 85-123 | 81-114 |
| Dichlorodifluoromethane | 29-208 | 18-211 | 12-134 | 4-124 |
| Ethylbenzene (PID) | 84-114 | 79-121 | 79-115 | 68-107 |
| *m* +*p*-Xylene | 84-116 | 76-124 | 82-115 | 71-107 |
| *m*-Dichlorobenzene (Hall) | 84-128 | 81-132 | 81-118 | 76-108 |
| Methylene Chloride | 68-121 | 61-128 | 77-115 | 54-103 |
| *o*-Dichlorobenzene (Hall) | 82-127 | 78-131 | 80-118 | 74-109 |
| *o*-Xylene | 85-116 | 82-120 | 84-115 | 75-103 |
| *p*-Dichlorobenzene (PID) | 86-112 | 84-115 | 85-115 | 75-105 |

**Table B5-10 – Continued**
Statistical Acceptance Limits for
Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound Name | Water | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD% | MS/MSD% | LCS/LCSD% | MS/MSD% |
| Tetrachloroethene | 76-123 | 72-129 | 69-103 | 66-94 |
| Toluene (PID) | 84-112 | 76-120 | 81-115 | 72-99 |
| *trans*-1,3-Dichloropropene | 83-122 | 81-123 | 77-117 | 73-108 |
| Trichloroethene (PID) | 82-110 | 65-130 | 72-115 | 66-95 |
| Trichlorofluoromethane | 51-125 | 52-127 | 42-115 | 40-95 |
| Vinyl Chloride | 53-137 | 49-142 | 48-115 | 47-95 |
| Xylene (total) | 85-115 | 80-121 | 83-115 | 73-105 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-11**
Quality Control
Petroleum Analysis by GC (8021B)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** ααα-Trifluorotoluene | 72 –134 | 68-122 | Each sample, MS, MSD, LCS, and blank | Reanalyze sample if outside limits; if reanalysis confirms original, document on report and/or case narrative |
| **Matrix Spike:** Spike all compounds of interest | See Table B5-12 | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside of acceptance limits |
| **Laboratory Control Sample:** Spike all compounds of interest | See Table B5-12 | | Each group (≤20) of samples per matrix/level | Reanalyze LCS and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits |
| **Matrix Spike Duplicates (RPD):** | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by an analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | At least one per 20 samples | Reanalyze blank and associated samples if blank is outside limits |
| **Internal Standards:** 1-Chloro-3-fluorobenzene | -50% to +100% if internal standard area | | Each sample, MS, MSD, LCS, and blank analyzed on the PID | Reanalyze samples; if reanalysis confirms original, document on report or case narrative |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-12**

Statistical Acceptance Limits for
Petroleum Analysis by GC (8021B)

| | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| Compound Name | WATERS | SOILS | WATERS | SOILS |
| Benzene | 80-118 | 73-133 | 66-140 | 48-140 |
| Toluene | 82-119 | 88-116 | 72-138 | 66-120 |
| Ethylbenzene | 81-119 | 87-127 | 71-138 | 66-131 |
| Total Xylenes | 82-120 | 88-120 | 69-140 | 67-122 |
| MTBE | 79-127 | 54-164 | 60-145 | 42-163 |
| Naphthalene | 68-121 | 68-128 | 49-137 | 52-125 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-13**
Quality Control
TPH-GRO by GC (8015B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** Trifluorotoluene (FID) | 65-137 | 48-132 | Each sample, MS/MSD, blank and LCS | Results would not be reported if the surrogate recovery is outside the limits unless matrix related problems are evident |
| **Matrix Spike:** Gasoline standard | 74-132 | 54-100 | Each group of (≤20) samples of similar matrix/level | Analyze LCS |
| **Laboratory Control Sample** Gasoline standard | 76 - 132 | 72 - 112 | Each group (≤20) of samples per matrix/level | Reanalyze LCS and associated samples |
| **Matrix Spike Duplicate (RPD):** Gasoline standard | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relation to other QC results |
| **Blanks:** | ≤LOQ | | At least one per 20 samples | Reanalyze blank and associated samples if blank is outside limits |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-14**
Quality Control
TPH-DRO by GC (8015B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** *o*-Terphenyl | 55 - 158 | 46 - 154 | Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase | Surrogate must be in spec unless matrix related problems are evident. If matrix related problems are evident, report results and comments in case narrative. |
| **Matrix Spike:** #2 Fuel Oil | 41-145 | 35-174 | Each group (≤20) of samples per matrix/level | Reinject , if still out of spec, evaluate for matrix effect. If matrix effect, accept based on LCS data. If no matrix effect, repeat batch. |
| **Laboratory Control Sample:** #2 Fuel Oil | 53-126 | 72-138 | Each group ≤20 of samples per matrix/level | Reinject , if still out of spec, repeat batch. |
| **Laboratory Control Duplicates (RPD):** #2 Fuel Oil | ≤20% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks:** | ≤LOQ | | Once per case or extraction group (≤20) of samples, each matrix, level, instrument | Inject a solvent blank first, to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected, if they contain the analyte, which was present in the blank. If the reinjected blank is unacceptable, any affected samples must be re-extracted. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-15**
Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** | | | Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase | All surrogates must be within the limits unless matrix related problems are evident; if matrix related problems are evident, comment on the report and/or case narrative |
| *Organochlorine Pesticides:* | | | | |
| DCB | 36 - 156 | 58 - 149 | | |
| TCX | 40 - 135 | 58 - 149 | | |
| *Herbicides:* | | | | |
| DCAA | 41 - 173 | 39 - 193 | | |
| *Organophosphate Pesticides:* | | | | |
| 2NMX | 48 - 128 | 55 - 137 | | |
| **Matrix Spikes:** Spike all compounds of interest, except PCBs, chlordane, toxaphene, and kepone | See Table B5-16 through B5-18 for acceptance limits | | Each extraction group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| **Laboratory Control Sample:** Spike all compounds of interest, except PCBs, chlordane, toxaphene, and kepone. | See Table B5-16 through B5-18 for acceptance limits | | Each group (≤20) of samples per matrix/level | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. |
| **Matrix Spike Duplicates (RPD):** Organochlorine Pesticides; Spike all compounds of interest, except PCBs, chlordane, and toxaphene | ≤30% | ≤50% | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relation to other QC results |

**Table B5-15 – Continued**

Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Blanks:** | ≤LOQ | | Once per extraction group (≤20) of samples, each matrix. | Inject a hexane or solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected if they contain the analyte, which was present in the blank. If the reinjected blank is unacceptable, any affected samples must be reextracted. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for PPL, Appendix IX, and TCL lists.

**Table B5-16**
Statistical Acceptance Limits for
Organochlorine Pesticides/PCBs (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| Aldrin | 47-122 | 40-150 | 75-145 | 65-134 |
| alpha-BHC | 59-147 | 49-164 | 66-141 | 64-134 |
| Alpha-Chlordane | 80-134 | 88-132 | 84-142 | 38-169 |
| beta-BHC | 72-149 | 69-158 | 79-147 | 31-176 |
| delta-BHC | 66-157 | 62-185 | 67-170 | 68-158 |
| gamma-BHC (Lindane) | 45-130 | 37-145 | 73-141 | 70-138 |
| Chlordane | N/A | N/A | N/A | N/A |
| 4,4-DDT | 59-137 | 56-145 | 78-155 | 62-166 |
| 4,4-DDE | 57-131 | 32-177 | 68-151 | 48-175 |
| 4,4-DDD | 66-141 | 69-155 | 77-150 | 52-181 |
| Dieldrin | 71-129 | 53-145 | 76-135 | 68-139 |
| Endosulfan I | 58-135 | 46-142 | 60-146 | 62-133 |
| Endosulfan II | 73-133 | 56-150 | 73-144 | 65-144 |
| Endosulfan sulfate | 68-157 | 65-167 | 80-151 | 65-154 |
| Endrin | 74-159 | 61-179 | 80-155 | 48-188 |
| Endrin aldehyde | 25-163 | 45-156 | 77-125 | 63-125 |
| Endrin Ketone | 80-132 | 87-126 | 82-137 | 33-173 |
| Gamma-Chlordane | 68-132 | 68-143 | 73-144 | 30-157 |
| Heptachlor | 45-130 | 37-145 | 73-141 | 70-138 |
| Heptachlor epoxide | 73-141 | 62-150 | 81-140 | 69-133 |
| Kepone | N/A | N/A | N/A | N/A |
| Lindane | 65-144 | 67-151 | 74-138 | 43-154 |
| Methoxychlor | 72-160 | 63-185 | 52-174 | 74-162 |
| PCB-1016 | 52-123 | 49-123 | 72-170 | 61-128 |
| PCB-1221 | N/A | N/A | N/A | N/A |
| PCB-1232 | N/A | N/A | N/A | N/A |
| PCB-1242 | N/A | N/A | N/A | N/A |
| PCB-1248 | N/A | N/A | N/A | N/A |
| PCB-1254 | N/A | N/A | N/A | N/A |
| PCB-1260 | 70-125 | 47-136 | 76-122 | 47-139 |
| Toxaphene | N/A | N/A | N/A | N/A |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-17**

Statistical Acceptance Limits for
Organophosphate Pesticides (8141A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| Bolstar | 73-130 | 52-144 | 68-122 | 59-140 |
| Coumaphos | 60-141 | 45-141 | 44-167 | 18-210 |
| Demeton-O | 29-91 | 50-138 | 34-94 | 22-122 |
| Demeton-S | 53-176 | 8-146 | 63-170 | 41-214 |
| Diazinon | 68-142 | 59-176 | 68-146 | 60-148 |
| Dichlorvos | 65-132 | 54-154 | 82-203 | 45-181 |
| Disulfoton | 57-125 | 10-181 | 51-127 | 54-130 |
| Dursban (Chlorpyrifos) | 72-127 | 87-123 | 35-154 | 74-149 |
| EPN | 65-129 | 45-155 | 54-140 | 48-162 |
| Ethion | 66-133 | 35-146 | 57-153 | 57-157 |
| Ethoprop | 63-134 | 56-147 | 65-141 | 76-134 |
| Ethyl parathion | 59-139 | 62-120 | 58-145 | 34-181 |
| Famphur | 49-139 | 61-155 | 60-153 | 45-199 |
| Fensulfothion | 13-124 | 9-152 | 61-200 | 74-143 |
| Fenthion | 59-138 | 68-133 | 68-149 | 66-137 |
| Guthion (Azinphos-methyl) | 43-159 | 28-159 | 47-130 | 36-174 |
| Malathion | 78-130 | 46-150 | 64-157 | 39-176 |
| Merphos | 30-170 | 54-152 | 38-190 | 1-238 |
| Methyl parathion | 53-142 | 51-152 | 56-141 | 63-147 |
| Mevinphos | 30-133 | 35-151 | 55-176 | 25-231 |
| Naled | 42-190 | 1-191 | 19-175 | 19-170 |
| Phorate | 55-148 | 20-193 | 61-134 | 65-130 |
| Ronnel | 77-124 | 21-137 | 62-133 | 67-135 |
| Stirophos | 43-151 | 46-175 | 49-164 | 31-228 |
| Tokuthion | 63-137 | 53-133 | 66-142 | 51-168 |
| Trichloronate | 71-125 | 80-120 | 56-131 | 63-129 |
| Trithion | 66-139 | 63-136 | 57-160 | 55-173 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-18**
Statistical Acceptance Limits for
Herbicides (8151A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| 2,4,5-T | 49-158 | 48-180 | 50-159 | 13-189 |
| 2,4,5-TP | 55-128 | 50-134 | 57-135 | 30-151 |
| 2,4-D | 53-145 | 38-176 | 63-132 | 41-158 |
| 2,4-DB | 41-163 | 59-123 | 40-183 | 38-230 |
| 2,4-DP (Dichlorprop) | 76-127 | 74-123 | 68-126 | 59-136 |
| Dalapon | 31-113 | 32-98 | 18-82 | 12-86 |
| Dicamba | 59-134 | 61-144 | 56-125 | 52-126 |
| Dinoseb | 2-90 | 1-119 | 1-36 | 1-48 |
| MCPA | 61-127 | 48-157 | 67-122 | 48-145 |
| MCPP | 67-119 | 43-159 | 59-123 | 14-168 |
| Pentachlorophenol | 51-123 | 41-105 | 47-109 | 20-117 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-19**
Quality Control
PAHs by HPLC (8310)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:**<br><br>Nitrobenzene or<br>Triphenylene | <br><br>62 - 106<br>71 - 130 | <br><br>32-102<br>69-142 | Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase | Surrogate must be within the limits unless matrix related problems are evident. If matrix related problems are evident, comment on report and in case narrative. |
| **Matrix Spike:**<br>Spike all compounds of interest | See Table B5-20 | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| **Laboratory Control Sample:**<br>Spike all compounds of interest | See Table B5-20 | | Each group (≤20) of samples per matrix/level | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):**<br>Spike all compounds of interest | ≤30% | ≤50% | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relation to other QC results |
| **Blanks:** | ≤LOQ | | Once per extraction group (≤20) of samples, each matrix/level | Inject a hexane or solvent blank first, to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected, if they contain the analyte, which was present in the blank. If the reinjected blank is unacceptable, any affected samples must be re-extracted. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-20**
Statistical Acceptance Limits for
PAHs by HPLC (8310)

| Compound Name | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| | WATERS | SOILS | WATERS | SOILS |
| Acenapthene | 41-111 | 83-118 | 71-104 | 79-111 |
| Acenapthylene | 44-115 | 83-118 | 69-112 | 82-119 |
| Anthracene | 62-121 | 67-128 | 40-134 | 71-121 |
| Benzo(a)anthracene | 79-121 | 83-124 | 59-134 | 88-124 |
| Benzo(a)pyrene | 76-121 | 72-124 | 51-140 | 82-116 |
| Benzo(b)fluoranthene | 82-121 | 85-125 | 67-132 | 87-122 |
| Benzo(g,h,i)perylene | 79-116 | 79-118 | 68-124 | 83-114 |
| Benzo(k)fluoranthene | 80-116 | 82-119 | 63-129 | 83-118 |
| Chrysene | 80-119 | 82-125 | 69-126 | 86-121 |
| Dibenzo(a,h)anthracene | 84-121 | 85-122 | 72-129 | 86-121 |
| Fluoranthene | 85-126 | 80-132 | 44-156 | 90-135 |
| Fluorene | 54-116 | 83-120 | 72-115 | 84-121 |
| Indeno(1,2,3-cd)pyrene | 80-119 | 83-122 | 71-127 | 84-120 |
| Naphthalene | 27-112 | 80-118 | 59-110 | 78-117 |
| Phenanthrene | 71-117 | 82-123 | 72-121 | 82-128 |
| Pyrene | 75-119 | 80-123 | 64-124 | 79-121 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

## B6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Conditions of the laboratory equipment and instrumentation can have a marked effect on the accuracy and precision of analysis. In order to ensure timely production of data and prevent/address potential malfunctions, Lancaster Laboratories schedules routine preventive maintenance of instruments based on manufacturer's recommendations. Maintenance of the laboratory instruments is the responsibility of the technical group using the equipment in conjunction with our in-house Equipment Maintenance Group. A schedule of routinely performed instrument maintenance tasks is attached as Table B6-1. All preventive maintenance, as well as maintenance performed as corrective action, is recorded in instrument logs. Equipment/Instrumentation is assigned unique designations to allow tracking of the piece of equipment within laboratory documentation. This allows the laboratory to substantiate the instrument condition during the time it was used for testing.

Critical spare parts are kept in supply at the laboratory by the Equipment Maintenance Group. Most items not kept in stock at the laboratory are available through overnight delivery from the manufacturer. In addition, Lancaster Labs maintains multiple numbers of most of the critical instruments used in our laboratory operations. A recent equipment inventory may be found in the *Quality Manual*. Because we are a large laboratory with redundant capacity, the problems of instrument downtime are minimized.

**Table B6-1**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| GC/MS | Change septum | Weekly or AN* |
| | Check fans | Monthly |
| | Check cool flow | Monthly |
| | Clean source | Bimonthly or AN |
| | Change oil in vacuum pump | Semiannually |
| | Change oil in turbo pump | Semiannually |
| GC Volatiles | Check propanol level | Semiweekly or AN |
| | Check all flows | Prior to calib. or AN |
| | Conductivity detector maintenance: | AN |
| | Clean cell | AN |
| | Change reaction tube | AN |
| | Change Teflon line | AN |
| | Change resin | AN |
| | Replace trap | AN |
| | Column maintenance | AN |
| | Change PID lamp | AN |
| | Precalibration instrument settings check | Prior to each calibration |
| GC | Septum change | Each run |
| | Column maintenance | AN |
| | Clean detector | AN |
| | Vacuum filters | Semiannually |
| | Leak check ECDs | Semiannually |
| Flame AA | Rinse burner head, chamber and trap | AN: Min. Weekly |
| | Clean nebulizer | Weekly |
| | Inspect tubing and O-rings | Monthly |
| | Replace lamp | AN |
| GFAA | Inspect/clean furnace head and lenses | Daily |
| | Check rinse bottle & drain | Daily |
| | Clean windows | Weekly |
| | Clean air intakes | Monthly |
| | Check Cool-Flow water level | Monthly |
| | Inspect sample introduction capillary | AN |
| | Inspect graphite tube | AN |
| | Adjust/replace electrodes/shroud | AN |
| | Clean Cool-Flow | AN |

**Table B6-1 – Continued**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| Cold Vapor AA | Replace pump tubing | AN: Min. weekly |
| | Lubricate pump head | Monthly |
| | Lubricate autosampler | Weekly |
| | Inspect optical cell and windows | Monthly |
| | Clean | AN |
| ICP | Replace pump winding | Daily |
| | Lubricate autosampler | Daily |
| | Check tubing to torch | Daily |
| | Vacuum instrument airfilters and air intakes | Monthly |
| | Check water filter, replace if needed | Quarterly |
| | Examine vacuum pump | Quarterly |
| | Change vacuum pump oil | Quarterly |
| | Clean optics and lenses | Semiannually |
| | Examine, clean, lubricate moving parts on autosampler | Semiannually |
| | Clean Torch and injector tip | AN |
| | Clean nebulizer and spray chamber | AN |
| | Check fan filters, clean if needed | AN |
| | Check cool flow, clean if needed | AN |
| Infrared Spectrometer (FTIR) | Check on-demand diagnostics | Weekly |
| | Change dessicant | AN |
| HPLC | Pump lubrication | Annually |
| | Check pump seals | Annually |
| | Check valves cleaned or rebuilt | AN |
| | Detector maintenance: | AN |
| | Bulb replacement and adjustment | |
| | Flow cell cleaning | |
| | Routine column maintenance | AN |
| | Replace Teflon lines | AN |
| | Autosampler septa replacement | AN |
| | In-line filter sonication/cleaning | AN |
| | System passivation | AN |
| | PCRS pump lubrication | AN |

**Table B6-1 – Continued**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| Total Organic Carbon Analyzer | Check IR zero | AN |
| | Check for leaks | AN |
| | Check acid pump calib. | Bimonthly |
| | Check persulfate pump calibration | Bimonthly |
| | Inspect 6-port rotary valve | AN |
| | Inspect sample pump head | AN |
| | Wash molecular sieve | AN |
| | Check sample loop calibration | Monthly |
| | Clean gas permeation tube | AN |
| | Inspect digestion vessel O-rings | AN |
| | Check activated carbon scrubber | AN |
| | Dust back and clean circuit boards | AN |
| | Check IR cell | AN |
| Total Organic Halogen Analyzer | Polish counter electrode | Daily |
| | Polish sensor electrode | Daily |
| | Clean loaders and pistons | Weekly |
| Autoanalyzer spectrophotometer | Clean sample probe | AN |
| | Clean proportioning pump | AN |
| | Inspect pump tubing, replace if worn | AN |
| | Clean wash receptacles | Monthly |

* AN means as needed. Any of these items may be performed more frequently if response during operation indicates this is necessary.

## B7. Instrument Calibration and Frequency

All measuring and testing equipment having an effect on the accuracy or validity of calibrations and tests will be calibrated and/or verified on an on-going and routine basis. Procedures for initial calibration and continuing calibration verification are in place for all instruments within the laboratory. The calibrations generally involve checking instrument response to standards (standardization) for each target compound to be analyzed. The source and accuracy of standards used for this purpose are integral to obtaining the best quality data. Standards used at Lancaster Laboratories are purchased from commercial supply houses either as neat compounds or as solutions with certified concentrations. The accuracy and quality of these purchased standards is verified through documentation provided by these commercial sources. Most solutions and all neat materials require subsequent dilution to an appropriate working range. All dilutions performed are documented and the resulting solution is checked by obtaining the instrument response of the new solution and comparing with the response to the solution currently in use. Any discrepancies between the responses are investigated and resolved before the new solution is used. Each standard is assigned a code that allows traceability to the original components. The standard container is marked with the code, name of solution, concentration, date prepared, expiration date, and the initials of the preparer. Shelf life and storage conditions for standards are included in the standard operating procedures and old standards are replaced before their expiration date.

Each instrument is calibrated with a given frequency using one or more concentrations of the standard solution. As analysis proceeds, the calibration is checked for any unacceptable change in instrument response. If the calibration check verifies the initial response, the analysis proceeds. If the calibration check indicates that a significant change in instrument response has occurred, then a new calibration is initiated. If necessary, maintenance may be performed before the recalibration.

Some instrumentation calibration involves the comparison of an instrument reading to a physical standard with a known certified value such as balance/weights or comparison against other instrumentation/apparatus such as NIST thermometer.

Calibration records are usually kept in the form of raw data with the other instrument printouts. In cases where no data system is used, calibration data is manually recorded in notebooks. Any maintenance or repair is also recorded in a notebook. The information that is recorded either in the notebooks or on the instrument printout includes the date, instrument ID, employee name and/or identification number, and concentration or code number of standard.

The frequency of calibration and calibration verification, number of concentrations analyzed, and acceptance criteria for each of the instruments to be used are listed in Table B7-1. In addition to checking the instrument response to target compounds, the GC/MS units are checked to ensure that standard mass spectral abundance criteria are met. Before each calibration, instruments used for volatile compound analysis are tuned using bromofluorobenzene (BFB) and instruments used for semivolatile analysis are tuned using decafluorotriphenylphosphine (DFTPP). The key ions and their abundance criteria are listed in Table B7-2.

**Table B7-1**
Instrument Calibration and Frequency

| | *Initial Calibration* | | | *Continuing Calibration Verification* | | |
|---|---|---|---|---|---|---|
| Instrument | Frequency | # Std Conc. | Acceptance Criteria | Frequency | # Std Conc. | Acceptance Criteria |
| GC/MS Volatiles* | After C-cal fails | 6 | RF for SPCCs >0.300 for chlorobenzene, and 1,1,2,2-tetrachloroethane, and >0.100 for 1,1-dichloroethene, bromoform, and chloromethane<br>CCCs ≤30% | Every 12 hours | 1 | RF for SPCCs >0.300 for chlorobenzene, and 1,1,2,2-tetrachloroethane , and >0.100 for 1,1-dichloroethene, bromoform, and chloromethane<br>%Drift for CCCs ≤20 |
| GC/MS Semivolatiles* | After C-cal fails | 6 | RF for SPCC's ≥0.050<br>%RSD for CCC's ≤30% | Every 12 hours | 1 | RF for SPCCs ≥0.050<br>%Drift for CCCs ≤20 |
| GC VOA Halocarbons and/or Aromatics | After C-cal fails | At least 5 | %RSD of <20% for individual compounds or for average of all compounds | Every 12 hours, or every 10 samples | 1 | %Drift ± 15% for individual compounds or average of all compounds |
| GC Pesticides and Herbicides (DDT/Endrin degradation applies to method 8081A only) | Each new run<br>After C-cal fails | 5 | ≤20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Degradation for DDT, endrin 15%<br>Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds. | Every 20 samples or 12 hours | 1 | ≤15% difference for individual analytes, from initial response for quantitation or<br>A CCV is also compliant if the average RPD for all compounds in the CCV standard is ≤15%.<br>DDT/Endrin degradation check every 12 hours or 20 injections |
| HPLC PAHs | Each new run or after C-cal fails | 5 | ≤20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit<br>Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds. | Every 10 samples | 1 | ≤15% difference for individual anlaytes, from initial response for quantitation or<br>A CCV is also compliant if the average RPD for all compounds in the CCV standard is ≤15%. |
| GC TPH-GRO | After C-cal fails | At least 5 | %RSD of <20% otherwise use calibration curve | Every 12 hours or every 10 samples | 1 | %Drift ±15% |
| GC TPH-DRO | After C-cal fails | 5 | % RSD of <20% for average RF otherwise use calibration curve | Every 10 samples | 1 | %Drift ±15% |
| ICP | Each new run | 1 | Independent calibration verification within ±10%, standards <5%RSD | Every 10 samples | 1 | Same as initial |

## Table B7-1 – Continued

Instrument Calibration and Frequency

| | *Initial Calibration* | | | *Continuing Calibration Verification* | | |
|---|---|---|---|---|---|---|
| Instrument | Frequency | # Std Conc. | Acceptance Criteria | Frequency | # Std Conc. | Acceptance Criteria |
| CVAA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | 80-120% recovery |
| GFAA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | 80-120% recovery |
| Flame AA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | 80-120% recovery |
| Autoanalyzer | Daily | 6 | Correlation coefficient >0.995 | Every 10 samples | 1 | 90-110% recovery |
| Infrared Spectrophotometer (FTIR) | Monthly | 7 | Correlation coefficient >0.995 | Every 10 samples | 1 | 90-110% recovery |
| TOC Analyzer | Weekly | 5 | ±50% recovery for MDL standard and, ±10% recovery for check standards | Every 10 samples | 1 | 90-110% recovery |
| TOX Analyzer | Daily | 1 | ±5% recovery for standards | Every 8 samples | 1 | 95-105% recovery |
| Balance | Daily | 4 | Top-loading balance ±.5%<br>Analytical balances ± .1% for weights >.1 g<br>.05 g ± .5%<br>.02 g ± 1.0%<br>.01 g ± 2.0%<br>.005 g ± 2.0% | N/A | N/A | N/A |

*All compounds with %RSD >15 must use first or second order regression fit of the six calibration points. Alternatively, if average of the %RSD of all compounds in calibration standard is ≤15%, the AVG RF can be used for all compounds.

Abbreviations

# Std Conc. – The number of standard concentrations used

SPCCs – System performance check compounds

CCCs – Calibration check compounds

RF – Response factor

%RSD – Percent relative standard deviation

CCV – Continuing calibration verification

CVAA – Cold vapor atomic absorption spectrophotometer

HPLC – High Performance Liquid Chromatography

ICP – Inductively coupled plasma spectrophotometer; ICP run also includes interelement correction check standard (beginning and end of run)

GFAA – Graphite furnace atomic absorption spectrophotometer

**Table B7-2**
Mass and Ion Abundance Criteria

| *BFB Key Ions* | *Abundance Criteria* |
|---|---|
| 50 | 15% to 40% of mass 95 |
| 75 | 30% to 60% of mass 95 |
| 95 | Base peak, 100% relative abundance |
| 96 | 5% to 9% of mass 95 |
| 173 | Less than 2% of mass 174 |
| 174 | Greater than 50% of mass 95 |
| 175 | 5% to 9% of mass 174 |
| 176 | Greater than 95% but less than 101% of mass 174 |
| 177 | 5% to 9% of mass 176 |
| *DFTPP Key Ions* | *Abundance Criteria* |
| 51 | 30% to 60% of mass 198 |
| 68 | Less than 2% of mass 69 |
| 70 | Less than 2% of mass 69 |
| 127 | 40% to 60% of mass 198 |
| 197 | Less than 1% of mass 198 |
| 198 | Base peak, 100% relative abundance |
| 199 | 5% to 9% of mass 198 |
| 275 | 10% to 30% of mass 198 |
| 365 | Greater than 1% of mass 198 |
| 441 | Present but less than mass 443 |
| 442 | Greater than 40% of mass 198 |
| 443 | 17% to 23% of mass 442 |

## B8. Inspection/Acceptance Requirements for Supplies and Consumables

Analytical results can be affected by the type and quality of reagents, standards, and equipment. Time and effort could be lost if the reagents, standards, and equipment do not meet the specifications required for the method. Therefore, the specifications and/or requirements for reagents, standards, and equipment necessary to perform the testing methods are included in the analytical SOPs. Each technical department evaluates the reagents, standards and equipment they receive for acceptance and use in specific procedures. There are SOPs in place for procurement of supplies, and acceptance/evaluation of reagents and standards.

Sample bottles and vials provided to clients are purchased pre-cleaned to meet EPA specifications and guidelines for sample containers. Each lot of preservative purchased is analyzed for quality (signs of contamination) before being added to a sample container.

The deionized water system utilized by Lancaster Laboratories generates water meeting ASTM D1193-91, Type II water criteria and the USEPA Manual for the Certification of Laboratories Analyzing Drinking Water requirements. Appropriate testing is performed to monitor the system. The requirements for the DI system are documented in a laboratory SOP.

## B9. Data Acquisition Requirements (Non-Direct Measurements)

The data acquired from the analytical procedures will be assessed for precision, accuracy, representativeness, comparability, and completeness (PARCCs). These specifications will be met through precision and accuracy criteria as specified in Element B5 and MDLs in Element B4.

Precision – Precision is determined by measuring the agreement among individual measurements of the same property, under similar conditions. The laboratory objective is to equal or exceed the precision demonstrated for the applied analytical method on comparable samples. The degree of agreement is expressed as the relative percent difference (RPD%). Evaluation of the RPD% is based on statistical evaluation of past lab data or guidelines within the methods for organic and inorganic analyses. External evaluation of precision is accomplished by analysis of standard reference material and interlaboratory performance data.

Accuracy – Accuracy is a measure of the closeness of an individual measurement to the true or expected value. Analyzing a reference material of known concentration or reanalyzing a sample which has been spiked with a known concentration/amount is a way to determine accuracy. Accuracy is expressed as a percent recovery (%R). Evaluation of the %R is based on statistical evaluation of past lab data or guidelines within the methods for organic and inorganic analyses.

Representativeness – Representativeness expresses the degree to which data accurately represents the media and conditions being measured. The representativeness of the data from the sampling site will depend on the sampling procedure. Sample collection is the responsibility of the client. Samples will be homogenized, if required, as part of the laboratory sample preparation. By comparing the quality control data for the samples against other data for similar samples analyzed at the same time, representativeness can be determined for this objective.

Comparability – Comparability conveys the confidence with which one set of data can be compared to another. The analytical results can be compared to other laboratories by using traceable standards, standard methodology, and consistent

reporting units. The Laboratory Quality Assurance Program documents internal performance, and the interlaboratory studies document performance compared to other laboratories.

Completeness – Completeness is a measure of the quantity of valid data acquired from a measurement process compared to the amount that was expected to be acquired under the measurement conditions. The completeness of an analysis can be documented by including in the data deliverables sufficient information to allow the data user to assess the quality of the results. Additional information will be stored in the laboratory's archives, both hard copy and magnetic tape. SOPs are in place to provide traceability of all reported results.

Uncertainty – (ISO 17025) "All uncertainty components which are of importance in a given situation shall be taken into account using appropriate methods of analysis." (5.4.6.3) This means the laboratory must determine the uncertainty contribution of all steps in the testing process such as equipment, calibration, standards, reagents, preparation, cleanups, etc. Since, in most methods, the laboratory control sample (LCS) goes through the entire process of preparation to analysis; all factors that would contribute to uncertainty will be evident through the LCS results. LCS are performed with every batch of samples where appropriate for the method.

## B10. Data Management

At a minimum data management is initiated when Lancaster Laboratories receives the samples from the client. In many instances, client-communicated requirements for bottleware and analyses are documented on an Incoming Sample Activity Report (ISAR) prior to sample receipt. This communication helps ensure that analysis and reporting meet the client needs. Sample information and requested analyses are entered into the Laboratory Information Management System (LIMS) where it can be accessed by all laboratory personnel. The entry is based on the ISAR and the client's COC. After entry, labels are printed for each container and an Acknowledgement is printed for the client. This will show exactly what was entered for the client's samples.

The flow of data from the time the samples enter the laboratory until the data is reported is summarized in Table B10-1. Raw analytical data generated in the laboratories is collected on printouts from the instruments and associated data system or manually in bound notebooks. All data is tracked by a unique seven-digit sample number assignment. Analysts review data as it is generated to determine that the instruments and methods are performing within specifications. This review includes calibration checks, surrogate recoveries, blank checks, retention time reproducibility, and other QC checks described in Elements B4, B5, and B7. If any problems are noted during the analytical run and/or at completion, corrective action is taken and documented.

Any data recorded manually is collected in bound notebooks and recorded in indelible ink, as described in Element A9. Procedures are in place for handling erroneous entries and all changes are dated, initialed, and explained. All data is uploaded automatically or manually entered into the LIMS. The LIMS is programmed to accept and track the results of quality control samples including blanks, surrogates, recoveries, duplicates, controls, and reference materials. The LIMS is programmed with the acceptance criteria for each QC type and if results are outside specifications, then a message is displayed to the analyst. Data

obtained from instrument printouts are dated and contain the signature and/or identification of the analyst responsible for the generation. The LIMS also produces control charts and statistics, which are reviewed by QA staff for trends that may indicate problems with the analytical data.

Computer technology is an integral part of laboratory operations including analytical instrumentation and central corporate functions. The laboratory makes extensive use of computers for business applications, technical operations, and the QA program. The Information Technology (IT) group support hardware and software applications at all levels as their primary function. Although some commercial software has been adapted to the laboratory operation, a larger portion is custom programmed by the IT group. The System Development Life Cycle (SDLC) approach is utilized and hardware and software are evaluated for appropriate functionality, accuracy, and security. Changes to systems and testing are documented. As part of QA's routine traceability audits, the electronic records are reviewed.

The principle criteria used to validate data will be the acceptance criteria described in Elements B4, B5, and B7 and protocols specified in laboratory SOPs. Following review, interpretation, and data reduction by the analyst, data is transferred to the LIMS by direct data upload from the analytical data system or manually. This system stores client information, sample results, and QC results. Element D1 describes the data deliverables validation performed by the laboratory.

Project files are created per client/project and contain chain-of-custody records, analysis requirements, and laboratory acknowledgments that document samples received, laboratory sample number assignment, and analyses requested. Raw data is filed per batch number assignment and laboratory sample number that correlates to the sample receipt documents. When the project is complete, all documentation is archived for 10 years in a locked storage area.

**Table B10-1**
Sample and Data Flow

| Action | Personnel Involved |
|---|---|
| Sample received at Lancaster Labs<br>• Unpacked and reconciled against the client paper work or Chain of Custody<br>• SA Documentation log completed | Sample Administration |
| Sample is entered into sample management system<br>• Lab ID number assigned<br>• Analyses entered<br>• Chain of custody started<br>• Storage location assigned<br>• Electronic record of sample number<br>• Labels generated<br>• Acknowledgement printed (record of samples received and analysis entered) | Sample Administration |
| Sample stored in assigned location (refrigerator, freezer, etc)<br>• Electronic record of sample #, bottle code, and location | Sample Support |
| Acknowledgment sent to client | Sample Administration |
| Sample removed from storage for analysis<br>• Electronic requisition of sample number by bottle code<br>• Necessary aliquot taken<br>• Sample returned to storage | Technical Personnel |
| Analysis is performed according to selected analytical method<br>• Raw data recorded<br>• Reviewed<br>• Transferred to computer by chemist or technician* (This is tracked by the unique sample number and batch number.) | Technical Personnel |
| Computer performs calculations as programmed according to methods | Data Processing |
| Second chemist or supervisor verifies raw data | Technical Personnel |
| Data package deliverables are assembled | Data Package Group |
| Data packages are reviewed prior to sending to client | QA, Data Package Personnel, and Laboratory Management |
| Data packages are microfilmed or scanned onto CDROM<br>Hard copy of batch raw data is archived<br>Electronic files are backed up and archived | Data Package Personnel, Office Services |

* Analyses requiring the chemist's interpretation may involve manual data reduction before entry into the computer.

Each analytical run is reviewed by a chemist for completeness and accuracy before interpretation and data reduction. The following calculations are used to reduce raw data to reportable results.

***Semivolatiles and Volatiles by GC/MS Calculations:***

GC/MS calculation used by the data system to determine concentration in extract for semivolatiles or in the sample itself for volatiles:

$$Q = (Ax)(Is) / (Als)(RRF)(Vi)$$

Where:

| | | |
|---|---|---|
| Ax | = | Peak area |
| Ais | = | Internal standard peak area |
| Is | = | Amount of internal standard injected (ng) |
| RRF | = | Relative response factor |
| Vi | = | Volume of extract injected (L) or volume sample purged (mL) |

The extract concentration is further reduced by considering the initial sample weight or volume and the final extract volume:

$$Concentration = (Q)(D)(F)(1000) / IV \ (or \ IW)$$

Where:

| | | |
|---|---|---|
| Q | = | Concentration determined by the data system (mg/L) |
| D | = | Dilution factor if needed |
| F | = | Final extract volume (mL) |
| IW | = | Initial sample weight (g) |
| IV | = | Initial sample volument (mL) |

Results are reported in µg/L for water samples and µg/kg for solid samples. Soil samples are reported on a dry-weight basis. The results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Volatiles by GC and Petroleum Analysis Calculations:***

For volatiles by GC and petroleum analysis, a calibration is performed with a minimum of five levels using either an internal standard calibration or external calibration.

A. Internal standard calibration

$$CF = \frac{(Ax)(Cis)}{(Ais)(Cx)} \quad or \quad CF = \frac{(Hx)(Cis)}{(His)(Cx)}$$

Where:

Ax = Peak area of the compound to be measured in that level of the initial calibration

Hx = Height area of the compound to be measured in that level of the initial calibration

Ais = Peak area of the internal standard

His = Height are of the internal standard

Cis = Concentration of the internal standard.

Cx = Concentration of the compound spiked into that level

$$\overline{CF} = \frac{\sum all\ CF\ in\ the\ initial\ calibration}{n}$$

Where:

n = Number of levels in the initial calibration

$$Concentration = \frac{(Ax)(Cis)}{(Ais)(\overline{CF})} \times DF \quad or \quad \frac{(Hx)(Cis)}{(His)(\overline{CF})} \times DF$$

Where:

Ax = Peak area of the compound to be measured
Hx = Height area of the compound to be measured
Ais = Peak area of the internal standard
His = Height area of the internal standard
Cis = Concentration of the internal standard.
$\overline{CF}$ = Average calibration factor
DF = Dilution factor or preparation factor

B. External calibration

$$CF = \frac{Ax}{CF} \times DF \quad or \quad \frac{Hx}{\overline{CF}} \times DF$$

$$Concentration = \frac{Ax}{\overline{CF}} \times DF \quad or \quad \frac{Hx}{\overline{CF}} \times DF$$

Where all parameters are defined in A above.

Results are reported in µg/L for water samples and mg/kg for solid samples. Soil samples are reported on a dry-weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Herbicides and Organophosphate Pesticides***

For herbicides and organophosphate pesticides, an internal standard calibration is used. The results are calculated from the curve when the individual analyte %RSD is >20% and the average of all analyte %RSDs is also >20%. Otherwise, the results are calculated using the average response factor.

A. Curve

$$Sample\ Concentration, \mu g\ /\ kg\ or\ \mu g\ /\ L = Extract\ Concentration \times \frac{DF \times FV}{IW\ (or\ IV)}$$

Where:

Extract Concentration =(peak ht. - y-intercept)/slope

FV = Final volume
IW = Initial weight (g)
IV = Initial volume (mL)
DF = Dilution Factor
AF = Additional preparation factors

B. Average response factor

$$Extract\ Conc., mg/L = \frac{Pk\ Ht\ in\ sample}{ARF} \times \frac{Int\ std\ ht\ in\ L3\ std}{Int\ std\ ht\ in\ sample}$$

Where:

ARF = Average Response Factor [(RF Calib1 + ... + RF Calib 5)/5]
RF = Peak height/conc. in standard

Results are reported as µg/L for water samples and µg/kg for solid samples. Soil samples are reported on a dry weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***PAHs by HPLC and Pesticide/PCB Calculations:***

The results for the PAHs by HPLC and pesticide/PCBs analyses are calculated using external standard. The pesticides/PCBs results are calculated from the curve when the individual analyte %RSD is >20% and the average of all analyte %RSDs is also >20%. Otherwise, the results are calculated using the average response factor.

$$\frac{Pk\ Ht \times FV \times DF \times AF}{ARF \times IV\ (or\ IW)} = Concentration\ (mg/L\ or\ \mu g/kg)$$

Where:

| | | |
|---|---|---|
| Pk Ht | = | Peak height found in sample |
| ARF | = | Average response factor [(RFCalib1 + …+ RFCalib5)/5] |
| FV | = | Final volume of sample extract (mL) |
| DF | = | Dilution factor (where applicable) |
| IV | = | Initial volume of sample extracted (mL) |
| IW | = | Initial weight of the sample extracted (g) |
| AF | = | Additional factor |

If a curve is used, then $\frac{\text{Pk Ht}}{\text{ARF}}$ is replaced by the following in the preceding equation:

$$\frac{Pk\ Ht \quad - \quad y - intercept}{slope}$$

Results are reported as μg/L for water samples and μg/kg for solid samples. Soil samples are reported on dry weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***TPH-GRO and TPH-DRO Calculations:***

For TPH-GRO and TPH-DRO, an external calibration procedure of at least five levels of standards is used. The resulting point-to-point calibration curve is used by the data system to calculate analyte concentrations. The equations that the data system uses for calculating analyte concentrations are shown below:

$$Concentration = (Ax/ARF) \times (DF)$$

Where:

Ax = Total peak area in region defined as analyte
DF = Dilution factor
ARF = Average response factor from the calibration curve, calculated as shown below:

$$ARF = \frac{[(As1/Qs1) + (As2/Qs2) + (As3/Qs3) + (As4/Qs4) + (As5/Qs5) + ... (Asn/Qsn)]}{n}$$

Where:

As# = Analyte peak sum area for all components of calibration level #
Qs# = Analyte concentration sum for all components of calibration level #
n = Number of calibration levels

For DRO, the concentration determined is then multiplied by F/IV (or IW) to account for the sample preparation.

Where:

F = Final extract volume (mL)
IV = Initial sample volume (mL)
IW = Initial sample weight (g)

Results are reported in mg/L for water samples and in mg/kg for solid samples. Soil samples are reported on a dry-weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Inorganic Calculations:***

The results for inorganic analyses are calculated using the following equation:

$$Concentration = (A)\ (D)\ (E)\ /\ IV\ (or\ IW)$$

Where:

| | | |
|---|---|---|
| A | = | The concentration determined by AA, ICP, or FTIR using calibration data programmed into the instrument (mg/L) |
| D | = | Dilution factor if needed |
| E | = | Final extract volume (mL) |
| IW | = | Initial sample weight (g) |
| IV | = | Initial sample volume (mL) |

Results are usually reported in mg/L for water samples and in mg/kg for solid samples. Alternate units are available upon request. Soil samples are reported on a dry weight basis. The results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

# GROUP C

# ASSESSMENT AND OVERSIGHT

## C1. Assessments and Response Actions

Whenever any of the data generated falls outside of the established acceptance criteria outlined for instrument tune and calibration (Element B7) and internal QC (Element B5), the cause of this irregularity must be investigated, corrected, and documented. The documentation will be used to prevent a recurrence of the problem and to inform management of the situation.

If the results are not within acceptance criteria, the appropriate corrective action will be initiated. This may include, but is not limited to, checking calculations and instrument performance, reanalysis of the associated samples, examining other QC analyzed with the same batch of samples, and qualifying results with a comment stating the observed deviation.

A standard operating procedure is in place, which outlines the procedures to be followed when quality control data for an analysis falls outside of previously established acceptance limits. All batch QC data is entered into the computerized QC system promptly after its generation and evaluated for compliance. When the QC (blanks, check standards, continuing calibration verification, LCS/LCSD, etc) is noncompliant then corrective action is needed.

The Quality Assurance Department reviews monthly summaries of the quality control data entered onto the computerized sample management system by analysts. Control charts and statistics are reviewed for trends that may indicate problems with the analytical data. In this way, small problems are identified before they have any significant impact on laboratory results.

System audits are conducted on each department at Lancaster Laboratories by members of the Quality Assurance Department to ensure compliance with laboratory procedures and assist in identifying and correcting deficiencies. The audits include checks on methodology, reagent preparation, equipment calibration and maintenance, quality control results, and training of personnel. These audits may entail observation of procedures in process or a review of records to demonstrate traceability and compliance with all documented record keeping procedures. The QA Department will then issue a written report to management and the department that summarizes the audit. The department must respond in

writing to the audit report within 30 days of report receipt. The response must address the corrective action that needs to be taken along with an expected completion date. Audit results and the corresponding response are communicated to laboratory personnel and management. Follow-up audits verify that proper corrective action has been implemented.

Audits by outside organizations including clients, regulatory personnel, and the USEPA are permitted by arrangement with the Quality Assurance Department.

Performance audits consist of both intralaboratory and interlaboratory check samples. QC samples from commercial suppliers are analyzed quarterly to assess laboratory accuracy including a double blind program. The Laboratory also participates in a number of interlaboratory performance evaluation studies, which involve analysis of samples with concentrations of analytes that are known to the sponsoring organization, but unknown to the laboratory. Inorganics, pesticide/herbicides, trihalomethanes, volatile organic compounds, semivolatile organic compounds, and traditional wet chemistry analyses are analyzed by Lancaster Labs for studies conducted by the New York Department of Health and private vendors (WS, WP, solid and hazardous waste). Lancaster Labs has participated in the USEPA Contract Laboratory Program, which provides laboratory analysis in support of the Superfund program. Part of maintaining this contract includes analysis of quarterly blind samples. Representative results from some of these studies are in Figure C1-2.

When performance evaluation studies are identified as out of specification or when a nonconformance is due to a repetitive laboratory error, system failures, or observable trend, an Investigation and Corrective Action Report (ICAR) is issued. An example of an ICAR form is in Figure C1-1. The QA Department will circulate all completed Investigation and Corrective Action forms to the appropriate management.

Annually the QA Department itself is audited for compliance with corporate and departmental procedures, and meeting regulatory requirements. In a separate event, the laboratory Executive Group reviews the previous year’s activities and documentation to evaluate the effectiveness of the quality system and its implementation/adequacy for the operation.

# Figure C1-1

No. _____

**Investigation and Corrective Action Report (ICAR)**

**Part I** – Description of the Problem (Attach additional pages, if needed, in addition to supporting documentation.)

1. Date of issue:
2. LL sample number(s) involved:
3. Nature of the problem (describe in detail):

Initiated by: _____

**Part II** - The Investigation (Attach additional pages, if needed, in addition to supporting documentation.)

1. Steps taken to investigate the problem:

2. Explanation of probable cause(s):

3. Steps taken to prevent future occurrence (describe in detail and use corrective action check boxes below):

Corrective action(s): Check the appropriate box and attach supporting documentation

- ☐ Employee(s) retrained. (Attach proof of training)
- ☐ Employee(s) reread SOP, OMC, EQV, etc. (Attach copy of updated training record form)
- ☐ Other measures taken (Attach memo or equivalent proof)
- ☐ Further investigation needed from additional areas. (Include proof of the transfer of information)
- ☐ Additional information added to method reference – Pharm. option only (Attach proof)

4. Must investigation be complete before reporting further data to clients? Yes No

5. In addition to the samples listed above, would any additional data already reported to clients be affected by this problem? Yes No If yes, please explain:

Investigator(s): ..... Date: _____

Departmental Review*: ..... Date: _____
(*Group Leader or above, must be someone other than the investigator)

Quality Assurance: ..... Date: _____

Return to QA by: ..... Date: _____

# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitrate and Sulfate** | | | | | | | |
| Approval Category : **Air and Emissions** | | | | | | | |
| **Nitrate (as N)** | ug/strip | 4420 | 794. | SM15,p.S28 | 770 | 662 - 878 | Satisfactory |
| *9 passed out of 12 reported results.* | | | | | | | |
| **Sulfate (as SO4)** | ug/strip | 4420 | 920. | SM15,p.S28 | 1000 | 217 - 1780 | Satisfactory |
| *9 passed out of 12 reported results.* | | | | | | | |
| Sample: **Purgeable Aromatics** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,2-Dichlorobenzene** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *134 passed out of 136 reported results.* | | | | | | | |
| **1,3-Dichlorobenzene** | ug/L | 4413 | 35.6 | EPA 624 | 36.9 | 26 - 46.1 | Satisfactory |
| *128 passed out of 134 reported results.* | | | | | | | |
| **1,4-Dichlorobenzene** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *133 passed out of 136 reported results.* | | | | | | | |

** indicates NVLAP accredited analyte. Lab Code 200387-0. ELAP has applied to A2LA for PT Provider accreditation.

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Aromatics** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Benzene** | ug/L | 4413 | 28.2 | EPA 624 | 27.6 | 19.7 - 35.8 | Satisfactory |
| *132 passed out of 135 reported results.* | | | | | | | |
| **Chlorobenzene** | ug/L | 4413 | 19.1 | EPA 624 | 20 | 14.6 - 25.3 | Satisfactory |
| *128 passed out of 135 reported results.* | | | | | | | |
| **Ethyl benzene** | ug/L | 4413 | 54.2 | EPA 624 | 53.7 | 35.8 - 70.2 | Satisfactory |
| *127 passed out of 133 reported results.* | | | | | | | |
| **Toluene** | ug/L | 4413 | 39.9 | EPA 624 | 40.8 | 29.2 - 51.1 | Satisfactory |
| *134 passed out of 138 reported results.* | | | | | | | |
| **Total Xylenes** | ug/L | 4413 | 82.5 | EPA 624 | 83.6 | 47.5 - 114 | Satisfactory |
| *129 passed out of 136 reported results.* | | | | | | | |

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EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|---|
| Sample: **Benzidines** | | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | | |
| **3,3 -dichlorobenzidine** | ug/L | 4415 | 39.8 | | EPA 625 | 45.8 | 5.84 - 75.6 | Satisfactory |
| *92 passed out of 99 reported results.* | | | | | | | | |
| **Benzidine** | ug/L | 4415 | 26.9 | | EPA 625 | 30.6 | D.L. - 75.7 | Satisfactory |
| *80 passed out of 94 reported results.* | | | | | | | | |
| Sample: **Chlorinated Hydrocarbons** | | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | | |
| **1,2,4-Trichlorobenzene** | ug/L | 4415 | 44.4 | | EPA 625 | 73.8 | 21.4 - 89.2 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | | |
| **2-Chloronaphthalene** | ug/L | 4415 | 41.7 | | EPA 625 | 52 | 20.3 - 62.4 | Satisfactory |
| *113 passed out of 117 reported results.* | | | | | | | | |
| **Hexachlorobenzene** | ug/L | 4415 | 54.2 | | EPA 625 | 55.6 | 24.3 - 72 | Satisfactory |
| *115 passed out of 119 reported results.* | | | | | | | | |

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## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hexachlorobutadiene** | ug/L | 4415 | 23.4 | EPA 625 | 56.8 | 8.5 - 69.6 | Satisfactory |
| *116 passed out of 118 reported results.* | | | | | | | |
| **Hexachloroethane** | ug/L | 4415 | 33.4 | EPA 625 | 72.3 | 7.69 - 90.7 | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **Hexachlorocyclopentadiene** | ug/L | 4415 | 16.9 | EPA 625 | 81.4 | D.L. - 105 | Satisfactory |
| *105 passed out of 117 reported results.* | | | | | | | |
| Sample: **Demand** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Biochemical Oxygen Demand **** | mg/L | 4401 | 86.2 | EPA 405.1 | 80.6 | 25.6 - 76.5 | Unsatisfactory <=== |
| *239 passed out of 266 reported results.* | | | | | | | |
| **Chemical Oxygen Demand **** | mg/L | 4401 | 111. | EPA 410.2 | 82.4 | 59.9 - 97.9 | Unsatisfactory <=== |
| *106 passed out of 125 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Demand** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Organic Carbon, Total **** | mg/L | 4401 | 50.1 | EPA 415.1 | 32.6 | 27.1 - 37.8 | Unsatisfactory <=== |
| *76 passed out of 91 reported results.* | | | | | | | |
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bis(2-ethylhexyl) phthalate** | ug/L | 4415 | 52.7 | EPA 625 | 55 | 16.8 - 79.6 | Satisfactory |
| *114 passed out of 115 reported results.* | | | | | | | |
| **Benzyl butyl phthalate** | ug/L | 4415 | 60.4 | EPA 625 | 64.2 | D.L. - 103 | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **Di-n-butyl phthalate** | ug/L | 4415 | 89.8 | EPA 625 | 97.7 | 15.3 - 137 | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **Diethyl phthalate** | ug/L | 4415 | 92.1 | EPA 625 | 106 | D.L. - 162 | Satisfactory |
| *115 passed out of 116 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Dimethyl phthalate** | ug/L | 4415 | 24.8 | EPA 625 | 47.3 | 5.55 - 72.1 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Di-n-octyl phthalate** | ug/L | 4415 | 54.2 | EPA 625 | 53.3 | 10.9 - 79.2 | Satisfactory |
| *114 passed out of 114 reported results.* | | | | | | | |
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4-Chlorophenylphenyl ether** | ug/L | 4415 | 63.3 | EPA 625 | 75.7 | 30.4 - 96.1 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **4-Bromophenylphenyl ether** | ug/L | 4415 | 40.9 | EPA 625 | 44.6 | 20.8 - 57.2 | Satisfactory |
| *107 passed out of 111 reported results.* | | | | | | | |
| **Bis(2-chloroethyl)ether** | ug/L | 4415 | 84.7 | EPA 625 | 86.5 | 23.9 - 107 | Satisfactory |
| *112 passed out of 114 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bis(2-chloroethoxy)methane** | ug/L | 4415 | 64.9 | EPA 625 | 60 | 23.5 - 72.2 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **Bis (2-chloroisopropyl) ether** | ug/L | 4415 | 77.7 | EPA 625 | 67.5 | 17 - 95.4 | Satisfactory |
| *111 passed out of 113 reported results.* | | | | | | | |
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,1,1-Trichloroethane** | ug/L | 4413 | 54.7 | EPA 624 | 51.8 | 33.5 - 68.4 | Satisfactory |
| *129 passed out of 133 reported results.* | | | | | | | |
| **1,1,2,2-Tetrachloroethane** | ug/L | 4413 | 40.7 | EPA 624 | 40.6 | 23.4 - 56.9 | Satisfactory |
| *120 passed out of 128 reported results.* | | | | | | | |
| **1,1,2-Trichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 126 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,1-Dichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *127 passed out of 128 reported results.* | | | | | | | |
| **1,1-Dichloroethene** | ug/L | 4413 | 97.8 | EPA 624 | 91.7 | 51.1 - 139 | Satisfactory |
| *126 passed out of 129 reported results.* | | | | | | | |
| **1,2-Dichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *128 passed out of 128 reported results.* | | | | | | | |
| **1,2-Dichloroethene (total)** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 127 reported results.* | | | | | | | |
| **1,2-Dichloropropane** | ug/L | 4413 | 94.0 | EPA 624 | 91.3 | 61.6 - 116 | Satisfactory |
| *122 passed out of 127 reported results.* | | | | | | | |
| **2-Chloroethylvinyl ether** | ug/L | 4413 | < 2.00 | EPA 624 | < 50 | | Satisfactory |
| *115 passed out of 115 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bromodichloromethane** | ug/L | 4413 | 46.3 | EPA 624 | 44 | 31.1 - 57.3 | Satisfactory |
| *124 passed out of 129 reported results.* | | | | | | | |
| **Bromoform** | ug/L | 4413 | 48.1 | EPA 624 | 50.7 | 33 - 69.4 | Satisfactory |
| *125 passed out of 130 reported results.* | | | | | | | |
| **cis-1,3-Dichloropropene** | ug/L | 4413 | < 1.00 | EPA 624 | < 10 | | Satisfactory |
| *124 passed out of 125 reported results.* | | | | | | | |
| **Carbon tetrachloride** | ug/L | 4413 | < 1.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 131 reported results.* | | | | | | | |
| **Bromomethane** | ug/L | 4413 | 29.7 | EPA 624 | 40.5 | 10.7 - 70.9 | Satisfactory |
| *121 passed out of 126 reported results.* | | | | | | | |
| **Chloromethane** | ug/L | 4413 | < 3.00 | EPA 624 | < 10 | | Satisfactory |
| *95 passed out of 126 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Trichlorofluoromethane** | ug/L | 4413 | 81.5 | EPA 624 | 81.7 | 15.8 - 143 | Satisfactory |
| *124 passed out of 128 reported results.* | | | | | | | |
| **Dibromochloromethane** | ug/L | 4413 | 82.1 | EPA 624 | 81.1 | 53.7 - 108 | Satisfactory |
| *126 passed out of 130 reported results.* | | | | | | | |
| **Chloroethane** | ug/L | 4413 | 22.7 | EPA 624 | 23.2 | 12.8 - 41.7 | Satisfactory |
| *123 passed out of 128 reported results.* | | | | | | | |
| **Chloroform** | ug/L | 4413 | 72.0 | EPA 624 | 66.2 | 45.8 - 84.8 | Satisfactory |
| *123 passed out of 130 reported results.* | | | | | | | |
| **Dichlorodifluoromethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *123 passed out of 123 reported results.* | | | | | | | |
| **Methylene chloride** | ug/L | 4413 | 32.3 | EPA 624 | 29.6 | 18.7 - 41.2 | Satisfactory |
| *124 passed out of 133 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **trans-1,3-Dichloropropene** | ug/L | 4413 | < 0.600 | EPA 624 | < 10 | | Satisfactory |
| *124 passed out of 125 reported results.* | | | | | | | |
| **Tetrachloroethene** | ug/L | 4413 | 66.7 | EPA 624 | 72.1 | 47.7 - 92.1 | Satisfactory |
| *126 passed out of 133 reported results.* | | | | | | | |
| **Trichloroethene** | ug/L | 4413 | 17.2 | EPA 624 | 17.4 | 11.4 - 22.7 | Satisfactory |
| *121 passed out of 132 reported results.* | | | | | | | |
| **Vinyl chloride** | ug/L | 4413 | 16.3 | EPA 624 | 18.4 | 4.29 - 30.9 | Satisfactory |
| *123 passed out of 129 reported results.* | | | | | | | |
| Sample: **Chlorophenoxy Acid Pesticides (Herbicides)** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4,5-T** | ug/L | 4418 | 6.06 | SW846 8151-A | 5.53 | 0.44 - 8.21 | Satisfactory |
| *74 passed out of 74 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorophenoxy Acid Pesticides (Herbicides)** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-D** | ug/L | 4418 | 2.52 | SW846 8151-A | 2.47 | D.L. - 4.45 | Satisfactory |
| *80 passed out of 82 reported results.* | | | | | | | |
| **Dicamba** | ug/L | 4418 | 1.55 | SW846 8151-A | 1.53 | D.L. - 2.49 | Satisfactory |
| *66 passed out of 68 reported results.* | | | | | | | |
| **2,4,5-TP (Silvex)** | ug/L | 4418 | 5.07 | SW846 8151-A | 4.94 | 0.215 - 6.81 | Satisfactory |
| *80 passed out of 82 reported results.* | | | | | | | |
| Sample: **Inorganic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Ammonia (as N) **** | mg/L | 4407 | 11.8 | EPA 350.2 | 12 | 9.31 - 14.6 | Satisfactory |
| *159 passed out of 167 reported results.* | | | | | | | |
| **Nitrate (as N) **** | mg/L | 4407 | 26.1 | EPA 353.2 | 29.4 | 23.3 - 34.9 | Satisfactory |
| *125 passed out of 131 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Inorganic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Orthophosphate (as P) **** | mg/L | 4407 | 1.64 | EPA 365.3 | 1.71 | 1.45 - 1.99 | Satisfactory |
| *106 passed out of 123 reported results.* | | | | | | | |
| Sample: **Mercury** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Mercury, Total **** | ug/L | 4411 | 7.95 | EPA 245.1 | 9.91 | 7.38 - 12.4 | Satisfactory |
| *142 passed out of 159 reported results.* | | | | | | | |
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Silver, Total **** | ug/L | 4411 | 306. | EPA 200.7 | 555 | 476 - 636 | Unsatisfactory <=== |
| *155 passed out of 174 reported results.* | | | | | | | |
| **Aluminum, Total **** | ug/L | 4411 | 361. | EPA 200.7 | 349 | 287 - 413 | Satisfactory |
| *121 passed out of 145 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Arsenic, Total **** | ug/L | 4411 | 92.9 | EPA 200.7 | 97.9 | 78 - 118 | Satisfactory |
| *140 passed out of 162 reported results.* | | | | | | | |
| **Barium, Total** | ug/L | 4411 | 2100. | EPA 200.7 | 2120 | 1800 - 2400 | Satisfactory |
| *148 passed out of 158 reported results.* | | | | | | | |
| **Beryllium, Total **** | ug/L | 4411 | 188. | EPA 200.7 | 202 | 171 - 228 | Satisfactory |
| *127 passed out of 133 reported results.* | | | | | | | |
| **Calcium, Total **** | mg/L | 4411 | 31.7 | EPA 200.7 | 31.81 | 28.2 - 36.2 | Satisfactory |
| *130 passed out of 138 reported results.* | | | | | | | |
| **Cadmium, Total **** | ug/L | 4411 | 680. | EPA 200.7 | 661 | 564 - 750 | Satisfactory |
| *176 passed out of 181 reported results.* | | | | | | | |
| **Cobalt, Total **** | ug/L | 4411 | 87.7 | EPA 200.7 | 93 | 80.2 - 105 | Satisfactory |
| *105 passed out of 113 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chromium, Total **** | ug/L | 4411 | 211. | EPA 200.7 | 221 | 191 - 251 | Satisfactory |
| *167 passed out of 183 reported results.* | | | | | | | |
| **Copper, Total **** | ug/L | 4411 | 137. | EPA 200.7 | 144 | 128 - 161 | Satisfactory |
| *165 passed out of 182 reported results.* | | | | | | | |
| **Iron, Total **** | ug/L | 4411 | 322. | EPA 200.7 | 314 | 274 - 360 | Satisfactory |
| *147 passed out of 170 reported results.* | | | | | | | |
| **Potassium, Total **** | mg/L | 4411 | 1.87 | EPA 200.7 | 1.88 | 1.33 - 2.45 | Satisfactory |
| *123 passed out of 132 reported results.* | | | | | | | |
| **Magnesium, Total **** | mg/L | 4411 | 23.6 | EPA 200.7 | 23.2 | 20.3 - 26 | Satisfactory |
| *134 passed out of 138 reported results.* | | | | | | | |
| **Manganese, Total **** | ug/L | 4411 | 119. | EPA 200.7 | 116 | 102 - 129 | Satisfactory |
| *144 passed out of 156 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Sodium, Total **** | mg/L | 4411 | 8.21 | EPA 200.7 | 8.73 | 7.56 - 10.5 | Satisfactory |
| *127 passed out of 140 reported results.* | | | | | | | |
| **Nickel, Total **** | ug/L | 4411 | 699. | EPA 200.7 | 685 | 617 - 766 | Satisfactory |
| *167 passed out of 182 reported results.* | | | | | | | |
| **Lead, Total **** | ug/L | 4411 | 232. | EPA 200.7 | 222 | 189 - 254 | Satisfactory |
| *183 passed out of 196 reported results.* | | | | | | | |
| **Antimony, Total **** | ug/L | 4411 | 783. | EPA 200.7 | 825 | 585 - 990 | Satisfactory |
| *131 passed out of 142 reported results.* | | | | | | | |
| **Selenium, Total **** | ug/L | 4411 | 717. | EPA 200.7 | 763 | 605 - 884 | Satisfactory |
| *145 passed out of 159 reported results.* | | | | | | | |
| **Thallium, Total **** | ug/L | 4411 | 764. | EPA 200.7 | 782 | 631 - 907 | Satisfactory |
| *114 passed out of 123 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Vanadium, Total **** | ug/L | 4411 | 571. | EPA 200.7 | 600 | 539 - 658 | Satisfactory |
| *112 passed out of 117 reported results.* | | | | | | | |
| **Zinc, Total **** | ug/L | 4411 | 1610. | EPA 200.7 | 1600 | 1420 - 1790 | Satisfactory |
| *169 passed out of 179 reported results.* | | | | | | | |
| Sample: **Metals III** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Molybdenum, Total **** | ug/L | 4411 | 214. | EPA 200.7 | 203 | 173 - 233 | Satisfactory |
| *99 passed out of 109 reported results.* | | | | | | | |
| **Tin, Total** | ug/L | 4411 | 1170. | EPA 200.7 | 1180 | 933 - 1420 | Satisfactory |
| *67 passed out of 79 reported results.* | | | | | | | |
| **Titanium, Total **** | ug/L | 4411 | 72.4 | EPA 200.7 | 73.3 | 61.9 - 83.8 | Satisfactory |
| *57 passed out of 63 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670

LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Minerals** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chloride **** | mg/L | 4408 | 62.7 | EPA 325.3 | 63.3 | 56.8 - 69.4 | Satisfactory |
| *125 passed out of 138 reported results.* | | | | | | | |
| **Fluoride, Total **** | mg/L | 4408 | 0.767 | EPA 340.2 | 0.727 | 0.608 - 0.841 | Satisfactory |
| *84 passed out of 99 reported results.* | | | | | | | |
| **Sulfate (as SO4)** | mg/L | 4408 | 91.0 | EPA 375.4 | 94.6 | 78.5 - 108 | Satisfactory |
| *107 passed out of 118 reported results.* | | | | | | | |
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-Dinitrotoluene** | ug/L | 4415 | 70.8 | EPA 625 | 69.4 | 26.6 - 91.9 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **2,6-Dinitrotoluene** | ug/L | 4415 | 84.0 | EPA 625 | 86 | 32.9 - 112 | Satisfactory |
| *109 passed out of 113 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Isophorone** | ug/L | 4415 | 88.4 | EPA 625 | 85.4 | 30.3 - 113 | Satisfactory |
| *108 passed out of 112 reported results.* | | | | | | | |
| **Nitrobenzene** | ug/L | 4415 | 43.2 | EPA 625 | 43.9 | 15.7 - 56.9 | Satisfactory |
| *112 passed out of 113 reported results.* | | | | | | | |
| Sample: **Nitrosamines** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **N-Nitrosodimethylamine** | ug/L | 4414 | 17.1 | EPA 625 | 32.6 | D.L. - 42.2 | Satisfactory |
| *92 passed out of 99 reported results.* | | | | | | | |
| **N-Nitrosodiphenylamine** | ug/L | 4414 | 39.0 | EPA 625 | 47.3 | 10.6 - 66.7 | Satisfactory |
| *102 passed out of 107 reported results.* | | | | | | | |
| **N-Nitrosodi-n-propylamine** | ug/L | 4414 | 27.7 | EPA 625 | 29.8 | 8.04 - 39.9 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Total Alkalinity** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Alkalinity **** | mg/L | 4406 | 36.8 | EPA 310.1 | 35.3 | 30.5 - 40.8 | Satisfactory |
| *130 passed out of 137 reported results.* | | | | | | | |
| Sample: **Chlordane** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chlordane Total** | ug/L | 4416 | 10.6 | SW-846 8081A | 9.19 | 4.01 - 13.1 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |
| Sample: **Total Cyanide** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Cyanide, Total **** | mg/L | 4411 | 0.368 | EPA 335.2 | 0.41 | 0.281 - 0.53 | Satisfactory |
| *121 passed out of 130 reported results.* | | | | | | | |
| Sample: **Hydrogen Ion** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hydrogen Ion (pH) **** | | 4403 | 4.53 | EPA 150.1 | 4.48 | 4.41 - 4.56 | Satisfactory |
| *322 passed out of 372 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Oil and Grease** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Oil & Grease Total Recoverable **** | mg/L | 4410 | 9.40 | EPA 413.1 | 9.7 | 3.9 - 14.1 | Satisfactory |
| *131 passed out of 149 reported results.* | | | | | | | |
| Sample: **Organic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Kjeldahl Nitrogen, Total **** | mg/L | 4404 | 5.88 | EPA 351.4 | 6.21 | 4.29 - 8.03 | Satisfactory |
| *124 passed out of 133 reported results.* | | | | | | | |
| **Phosphorus, Total **** | mg/L | 4404 | 9.02 | EPA 365.1 | 9.01 | 6.85 - 10.5 | Satisfactory |
| *144 passed out of 156 reported results.* | | | | | | | |
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Azinphos methyl** | ug/L | 4412 | 1.66 | SW846 8141A | 3.14 | 2.38 - 3.9 | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Diazinon** | ug/L | 4412 | 4.03 | SW846 8141A | 4.3 | 1.9 - 6.7 | Satisfactory |
| *11 passed out of 12 reported results.* | | | | | | | |
| **Disulfoton** | ug/L | 4412 | 6.18 | SW846 8141A | 5.72 | D.L. - 13.3 | Satisfactory |
| *10 passed out of 11 reported results.* | | | | | | | |
| **Demeton-O** | ug/L | 4412 | < 0.400 | SW846 8141A | < 1 | | Satisfactory |
| *10 passed out of 10 reported results.* | | | | | | | |
| **Demeton-S** | ug/L | 4412 | < 0.400 | SW846 8141A | < 1 | | Satisfactory |
| *10 passed out of 10 reported results.* | | | | | | | |
| **Malathion** | ug/L | 4412 | 2.27 | SW846 8141A | 3.53 | 1.01 - 6.72 | Satisfactory |
| *12 passed out of 13 reported results.* | | | | | | | |
| **Parathion ethyl** | ug/L | 4412 | 2.05 | SW846 8141A | 3.5 | 0.518 - 6.48 | Satisfactory |
| *13 passed out of 13 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Parathion methyl** | ug/L | 4412 | 0.798 | SW846 8141A | 1.64 | 0.131 - 3.15 | Satisfactory |
| *12 passed out of 13 reported results.* | | | | | | | |
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Acenaphthene** | ug/L | 4415 | 30.5 | EPA 625 | 33.7 | 13.7 - 43.1 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Anthracene** | ug/L | 4415 | 69.7 | EPA 625 | 78.9 | 29.6 - 102 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Acenaphthylene** | ug/L | 4415 | 101. | EPA 625 | 110 | 43.9 - 133 | Satisfactory |
| *117 passed out of 119 reported results.* | | | | | | | |
| **Benzo(a)anthracene** | ug/L | 4415 | 53.6 | EPA 625 | 53 | 28.7 - 63.5 | Satisfactory |
| *116 passed out of 120 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Benzo(a)pyrene** | ug/L | 4415 | 69.5 | EPA 625 | 80.7 | 20.5 - 105 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(b)fluoranthene** | ug/L | 4415 | 73.9 | EPA 625 | 75.2 | 19.1 - 107 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(ghi)perylene** | ug/L | 4415 | 103. | EPA 625 | 100 | 26.8 - 149 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(k)fluoranthene** | ug/L | 4415 | 64.4 | EPA 625 | 63.5 | 15.4 - 93.1 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Chrysene** | ug/L | 4415 | 144. | EPA 625 | 140 | 51 - 185 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Dibenzo(a,h)anthracene** | ug/L | 4415 | 29.6 | EPA 625 | 25.1 | 6.09 - 35.2 | Satisfactory |
| *102 passed out of 117 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Fluoranthene** | ug/L | 4415 | 79.4 | EPA 625 | 87.9 | 38.4 - 113 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Fluorene** | ug/L | 4415 | 108. | EPA 625 | 122 | 51.1 - 156 | Satisfactory |
| *118 passed out of 119 reported results.* | | | | | | | |
| **Indeno(1,2,3-cd)pyrene** | ug/L | 4415 | 125. | EPA 625 | 125 | 4.78 - 221 | Satisfactory |
| *120 passed out of 120 reported results.* | | | | | | | |
| **Naphthalene** | ug/L | 4415 | 74.0 | EPA 625 | 90.4 | 23.5 - 118 | Satisfactory |
| *119 passed out of 119 reported results.* | | | | | | | |
| **Phenanthrene** | ug/L | 4415 | 80.4 | EPA 625 | 86.2 | 33.8 - 112 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Pyrene** | ug/L | 4415 | 95.5 | EPA 625 | 98.5 | 32.7 - 134 | Satisfactory |
| *120 passed out of 120 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **PCB-1016** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 127 reported results.* | | | | | | | |
| **PCB-1221** | ug/L | 4417 | 5.85 | SW-846 8082 | 5.7 | 1 - 8.47 | Satisfactory |
| *107 passed out of 128 reported results.* | | | | | | | |
| **PCB-1232** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *126 passed out of 126 reported results.* | | | | | | | |
| **PCB-1242** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 127 reported results.* | | | | | | | |
| **PCB-1248** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *128 passed out of 129 reported results.* | | | | | | | |
| **PCB-1254** | ug/L | 4417 | 7.26 | SW-846 8082 | 7.22 | 3.53 - 9.15 | Satisfactory |
| *121 passed out of 130 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **PCB-1260** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 128 reported results.* | | | | | | | |
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4,4-DDD** | ug/L | 4417 | 1.28 | SW-846 8081A | 1.4 | 0.677 - 1.96 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **4,4-DDE** | ug/L | 4417 | < 0.04 | SW-846 8081A | < 5 | | Satisfactory |
| *101 passed out of 105 reported results.* | | | | | | | |
| **4,4-DDT** | ug/L | 4417 | 0.771 | SW-846 8081A | 0.93 | 0.409 - 1.28 | Satisfactory |
| *94 passed out of 104 reported results.* | | | | | | | |
| **alpha-BHC** | ug/L | 4417 | 7.15 | SW-846 8081A | 9.11 | 3.26 - 12.7 | Satisfactory |
| *106 passed out of 108 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Aldrin** | ug/L | 4417 | 11.0 | SW-846 8081A | 14.7 | 3.78 - 19.8 | Satisfactory |
| *103 passed out of 106 reported results.* | | | | | | | |
| **beta-BHC** | ug/L | 4417 | 9.92 | SW-846 8081A | 11.7 | 4.4 - 16.8 | Satisfactory |
| *103 passed out of 108 reported results.* | | | | | | | |
| **delta-BHC** | ug/L | 4417 | < 0.58 | SW-846 8081A | < 5 | | Satisfactory |
| *102 passed out of 106 reported results.* | | | | | | | |
| **Dieldrin** | ug/L | 4417 | 0.647 | SW-846 8081A | 0.85 | 0.436 - 1.18 | Satisfactory |
| *98 passed out of 105 reported results.* | | | | | | | |
| **Endrin aldehyde** | ug/L | 4417 | 5.97 | SW-846 8081A | 6.44 | 2.12 - 9.45 | Satisfactory |
| *97 passed out of 105 reported results.* | | | | | | | |
| **Endrin** | ug/L | 4417 | 6.31 | SW-846 8081A | 7.3 | 2.8 - 10.4 | Satisfactory |
| *103 passed out of 108 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Endosulfan I** | ug/L | 4417 | 4.00 | SW-846 8081A | 4.41 | 1.81 - 6.23 | Satisfactory |
| *101 passed out of 107 reported results.* | | | | | | | |
| **Endosulfan II** | ug/L | 4417 | < 0.05 | SW-846 8081A | < 2 | | Satisfactory |
| *82 passed out of 103 reported results.* | | | | | | | |
| **Endosulfan sulfate** | ug/L | 4417 | 11.4 | SW-846 8081A | 12.6 | 2.54 - 20.4 | Satisfactory |
| *101 passed out of 104 reported results.* | | | | | | | |
| **Heptachlor** | ug/L | 4417 | 1.08 | SW-846 8081A | 1.4 | 0.373 - 1.95 | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |
| **Heptachlor epoxide** | ug/L | 4417 | 0.842 | SW-846 8081A | 1.07 | 0.543 - 1.38 | Satisfactory |
| *104 passed out of 108 reported results.* | | | | | | | |
| **Lindane** | ug/L | 4417 | 9.64 | SW-846 8081A | 12 | 3.86 - 17.4 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Methoxychlor** | ug/L | 4417 | 7.43 | SW-846 8081A | 9.36 | 3.74 - 13.6 | Satisfactory |
| *90 passed out of 93 reported results.* | | | | | | | |
| Sample: **Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Phenols **** | mg/L | 4409 | 0.467 | EPA 420.2 | 0.866 | 0.311 - 0.836 | Satisfactory |
| *100 passed out of 107 reported results.* | | | | | | | |
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4,5-Trichlorophenol** | ug/L | 4415 | 70.5 | EPA 625 | 66.9 | 28.8 - 84.6 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |
| **2,4,6-Trichlorophenol** | ug/L | 4415 | 152. | EPA 625 | 148 | 48 - 196 | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-Dichlorophenol** | ug/L | 4415 | 41.4 | EPA 625 | 42.6 | 15.5 - 53.6 | Satisfactory |
| *115 passed out of 117 reported results.* | | | | | | | |
| **2,4-Dimethylphenol** | ug/L | 4415 | 78.2 | EPA 625 | 90.2 | 18.5 - 119 | Satisfactory |
| *114 passed out of 117 reported results.* | | | | | | | |
| **2,4-Dinitrophenol** | ug/L | 4415 | < 10.0 | EPA 625 | < 50 | | Satisfactory |
| *110 passed out of 114 reported results.* | | | | | | | |
| **2-Chlorophenol** | ug/L | 4415 | 39.2 | EPA 625 | 40.9 | 13.6 - 52.5 | Satisfactory |
| *115 passed out of 117 reported results.* | | | | | | | |
| **2-Methyl-4,6-dinitrophenol** | ug/L | 4415 | 60.7 | EPA 625 | 80.1 | 16.5 - 107 | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **2-Nitrophenol** | ug/L | 4415 | < 0.30 | EPA 625 | < 50 | | Satisfactory |
| *110 passed out of 115 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4-Chloro-3-methylphenol** | ug/L | 4415 | 35.1 | EPA 625 | 36.3 | 12.7 - 46.8 | Satisfactory |
| *114 passed out of 117 reported results.* | | | | | | | |
| **4-Nitrophenol** | ug/L | 4415 | 19.9 | EPA 625 | 64.3 | D.L. - 92.3 | Satisfactory |
| *112 passed out of 117 reported results.* | | | | | | | |
| **Phenol** | ug/L | 4415 | 33.5 | EPA 625 | 73.7 | D.L. - 101 | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **Pentachlorophenol** | ug/L | 4415 | 40.1 | EPA 625 | 54.3 | 10.9 - 75 | Satisfactory |
| *113 passed out of 116 reported results.* | | | | | | | |
| Sample: **Residue** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Solids, Total Dissolved **** | mg/L | 4402 | 481. | EPA 160.1 | 475 | 364 - 586 | Satisfactory |
| *140 passed out of 142 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Residue** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Solids, Total Suspended **** | mg/L | 4402 | 76.4 | EPA 160.2 | 77.5 | 59.8 - 83.6 | Satisfactory |
| *322 passed out of 333 reported results.* | | | | | | | |
| **Solids, Total** | mg/L | 4402 | 549. | EPA 160.3 | 555 | 503 - 596 | Satisfactory |
| *135 passed out of 143 reported results.* | | | | | | | |
| Sample: **Specific Conductance** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Specific Conductance **** | umhos/cm | 4430 | 143. | EPA 120.1 | 139 | 131 - 147 | Satisfactory |
| *110 passed out of 139 reported results.* | | | | | | | |
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,2,4-Trichlorobenzene** | ug/kg | 4424 | 468. | SW-846 8270C | 372 | D.L. - 786 | Satisfactory |
| *100 passed out of 107 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2-Chloronaphthalene** | ug/kg | 4424 | 498. | SW-846 8270C | 424 | D.L. - 874 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **Hexachlorobenzene** | ug/kg | 4424 | 1300. | SW-846 8270C | 1260 | 327 - 2190 | Satisfactory |
| *102 passed out of 107 reported results.* | | | | | | | |
| **Hexachlorobutadiene** | ug/kg | 4424 | 2990. | SW-846 8270C | 2110 | 46 - 4170 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |
| **Hexachloroethane** | ug/kg | 4424 | 2300. | SW-846 8270C | 1560 | D.L. - 3290 | Satisfactory |
| *105 passed out of 106 reported results.* | | | | | | | |
| **Hexachlorocyclopentadiene** | ug/kg | 4424 | < 170. | SW-846 8270C | < 7000 | | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlordane** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Chlordane Total** | ug/kg | 4429 | 182. | SW-846 8081A | 132 | 8.4 - 256 | Satisfactory |
| *81 passed out of 87 reported results.* | | | | | | | |
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bis(2-ethylhexyl) phthalate** | ug/kg | 4424 | 1640. | SW-846 8270C | 1440 | 276 - 2600 | Satisfactory |
| *101 passed out of 106 reported results.* | | | | | | | |
| **Benzyl butyl phthalate** | ug/kg | 4424 | 1750. | SW-846 8270C | 1470 | 294 - 2650 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **Di-n-butyl phthalate** | ug/kg | 4424 | 772. | SW-846 8270C | 683 | 131 - 1240 | Satisfactory |
| *98 passed out of 105 reported results.* | | | | | | | |
| **Diethyl phthalate** | ug/kg | 4424 | 2760. | SW-846 8270C | 2250 | 417 - 4080 | Satisfactory |
| *102 passed out of 106 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Dimethyl phthalate** | ug/kg | 4424 | 1820. | SW-846 8270C | 1470 | 246 - 2690 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **Di-n-octyl phthalate** | ug/kg | 4424 | 615. | SW-846 8270C | 495 | D.L. - 1040 | Satisfactory |
| *101 passed out of 106 reported results.* | | | | | | | |
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bis(2-chloroethoxy)methane** | ug/kg | 4424 | 580. | SW-846 8270C | 387 | 3 - 771 | Satisfactory |
| *91 passed out of 101 reported results.* | | | | | | | |
| **Bis (2-chloroisopropyl) ether** | ug/kg | 4424 | 2160. | SW-846 8270C | 1330 | D.L. - 2780 | Satisfactory |
| *99 passed out of 101 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorophenoxy Acid Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4,5-T** | ug/kg | 4428 | 188. | SW846 8151-A | 171 | D.L. - 438 | Satisfactory |
| *58 passed out of 59 reported results.* | | | | | | | |
| **2,4-D** | ug/kg | 4428 | 93.0 | SW846 8151-A | 61.8 | D.L. - 169 | Satisfactory |
| *51 passed out of 59 reported results.* | | | | | | | |
| **Dicamba** | ug/kg | 4428 | 157. | SW846 8151-A | 129 | D.L. - 330 | Satisfactory |
| *57 passed out of 58 reported results.* | | | | | | | |
| **2,4,5-TP (Silvex)** | ug/kg | 4428 | 74.0 | SW846 8151-A | 69.7 | D.L. - 176 | Satisfactory |
| *54 passed out of 59 reported results.* | | | | | | | |
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Silver, Total** | mg/kg | 4422 | 57.5 | SW-846 6010B | 55 | 39.8 - 70.2 | Satisfactory |
| *121 passed out of 133 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Arsenic, Total** | mg/kg | 4422 | 74.5 | SW-846 6010B | 70.2 | 49.1 - 91.3 | Satisfactory |
| *120 passed out of 127 reported results.* | | | | | | | |
| **Barium, Total** | mg/kg | 4422 | 499. | SW-846 6010B | 473 | 360 - 586 | Satisfactory |
| *122 passed out of 130 reported results.* | | | | | | | |
| **Cadmium, Total** | mg/kg | 4422 | 71.0 | SW-846 6010B | 67.5 | 52.7 - 82.4 | Satisfactory |
| *134 passed out of 139 reported results.* | | | | | | | |
| **Chromium, Total** | mg/kg | 4422 | 104. | SW-846 6010B | 98.7 | 70.5 - 127 | Satisfactory |
| *129 passed out of 138 reported results.* | | | | | | | |
| **Nickel, Total** | mg/kg | 4422 | 106. | SW-846 6010B | 98.8 | 74.9 - 123 | Satisfactory |
| *132 passed out of 138 reported results.* | | | | | | | |
| **Lead, Total** | mg/kg | 4422 | 101. | SW-846 6010B | 95.3 | 67.6 - 123 | Satisfactory |
| *135 passed out of 145 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Antimony, Total** | mg/kg | 4422 | 62.2 | SW-846 6010B | 76.8 | D.L. - 186 | Satisfactory |
| *110 passed out of 116 reported results.* | | | | | | | |
| **Selenium, Total** | mg/kg | 4422 | 63.8 | SW-846 6010B | 57.7 | 35.3 - 80.1 | Satisfactory |
| *115 passed out of 124 reported results.* | | | | | | | |
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4-Dinitrotoluene** | ug/kg | 4424 | 631. | SW-846 8270C | 472 | D.L. - 994 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **2,6-Dinitrotoluene** | ug/kg | 4424 | 1290. | SW-846 8270C | 1120 | 4 - 2240 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **Isophorone** | ug/kg | 4424 | 1180. | SW-846 8270C | 841 | D.L. - 1740 | Satisfactory |
| *102 passed out of 104 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Nitrobenzene** | ug/kg | 4424 | 311. | SW-846 8270C | 252 | D.L. - 579 | Satisfactory |
| *94 passed out of 105 reported results.* | | | | | | | |
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Azinphos methyl** | ug/kg | 4423 | 1230. | SW846 8141A | 349 | D.L. - 796 | Unsatisfactory <=== |
| *10 passed out of 11 reported results.* | | | | | | | |
| **Diazinon** | ug/kg | 4423 | 249. | SW846 8141A | 152 | 17 - 287 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Disulfoton** | ug/kg | 4423 | 70.5 | SW846 8141A | 56.1 | 18.6 - 93.6 | Satisfactory |
| *9 passed out of 11 reported results.* | | | | | | | |
| **Demeton-O** | ug/kg | 4423 | < 67.0 | SW846 8141A | < 33 | | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Demeton-S** | ug/kg | 4423 | < 67.0 | SW846 8141A | < 33 | | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |
| **Malathion** | ug/kg | 4423 | 188. | SW846 8141A | 138 | 27.9 - 248 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Parathion ethyl** | ug/kg | 4423 | 564. | SW846 8141A | 329 | D.L. - 698 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Parathion methyl** | ug/kg | 4423 | 236. | SW846 8141A | 91.6 | 0.4 - 183 | Unsatisfactory <=== |
| *10 passed out of 11 reported results.* | | | | | | | |
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Acenaphthene** | ug/kg | 4424 | 1210. | SW-846 8270C | 999 | 60 - 1940 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Anthracene** | ug/kg | 4424 | 1910. | SW-846 8270C | 1820 | 185 - 3460 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Acenaphthylene** | ug/kg | 4424 | 1410. | SW-846 8270C | 1200 | D.L. - 2450 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |
| **Benzo(a)anthracene** | ug/kg | 4424 | 1570. | SW-846 8270C | 1420 | 361 - 2480 | Satisfactory |
| *101 passed out of 108 reported results.* | | | | | | | |
| **Benzo(a)pyrene** | ug/kg | 4424 | 594. | SW-846 8270C | 517 | 85 - 949 | Satisfactory |
| *99 passed out of 109 reported results.* | | | | | | | |
| **Benzo(b)fluoranthene** | ug/kg | 4424 | 4140. | SW-846 8270C | 3680 | 80 - 7280 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Benzo(ghi)perylene** | ug/kg | 4424 | 543. | SW-846 8270C | 457 | 46 - 868 | Satisfactory |
| *98 passed out of 110 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Benzo(k)fluoranthene** | ug/kg | 4424 | 1520. | SW-846 8270C | 1260 | 78 - 2440 | Satisfactory |
| *28 passed out of 31 reported results.* | | | | | | | |
| **Chrysene** | ug/kg | 4424 | 2290. | SW-846 8270C | 2140 | 610 - 3670 | Satisfactory |
| *100 passed out of 110 reported results.* | | | | | | | |
| **Dibenzo(a,h)anthracene** | ug/kg | 4424 | 2220. | SW-846 8270C | 1990 | 238 - 3740 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |
| **Fluoranthene** | ug/kg | 4424 | 3310. | SW-846 8270C | 3380 | 584 - 6180 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Fluorene** | ug/kg | 4424 | 861. | SW-846 8270C | 744 | 81 - 1410 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |
| **Indeno(1,2,3-cd)pyrene** | ug/kg | 4424 | 1480. | SW-846 8270C | 1460 | 152 - 2770 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670

LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Naphthalene** | ug/kg | 4424 | 1380. | SW-846 8270C | 1060 | D.L. - 2160 | Satisfactory |
| *103 passed out of 109 reported results.* | | | | | | | |
| **Phenanthrene** | ug/kg | 4424 | 1680. | SW-846 8270C | 1640 | 305 - 2980 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |
| **Pyrene** | ug/kg | 4424 | 585. | SW-846 8270C | 519 | 84 - 954 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **PCB-1016** | ug/kg | 4425 | < 340. | SW-846 8082 | < 1700 | | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **PCB-1221** | ug/kg | 4425 | < 340. | SW-846 8082 | < 3300 | | Satisfactory |
| *115 passed out of 116 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **PCB-1232** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **PCB-1242** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **PCB-1248** | ug/kg | 4425 | < 340. | SW-846 8082 | < 1700 | | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **PCB-1254** | ug/kg | 4425 | 3860. | SW-846 8082 | 3690 | D.L. - 8550 | Satisfactory |
| *117 passed out of 120 reported results.* | | | | | | | |
| **PCB-1260** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *117 passed out of 118 reported results.* | | | | | | | |

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LANCASTER, PA-17601-5994

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **4,4-DDD** | ug/kg | 4427 | 67.0 | SW-846 8081A | 41.3 | D.L. - 88.4 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **4,4 -DDE** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *81 passed out of 88 reported results.* | | | | | | | |
| **4,4 -DDT** | ug/kg | 4427 | 80.3 | SW-846 8081A | 56.4 | D.L. - 122 | Satisfactory |
| *88 passed out of 88 reported results.* | | | | | | | |
| **alpha-BHC** | ug/kg | 4427 | 95.7 | SW-846 8081A | 60.9 | D.L. - 126 | Satisfactory |
| *88 passed out of 89 reported results.* | | | | | | | |
| **Aldrin** | ug/kg | 4427 | 52.4 | SW-846 8081A | 30.7 | 5.02 - 56.4 | Satisfactory |
| *82 passed out of 89 reported results.* | | | | | | | |
| **beta-BHC** | ug/kg | 4427 | 62.0 | SW-846 8081A | 37.2 | D.L. - 75.3 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **delta-BHC** | ug/kg | 4427 | 64.4 | SW-846 8081A | 38.2 | D.L. - 82.3 | Satisfactory |
| *85 passed out of 89 reported results.* | | | | | | | |
| **Dieldrin** | ug/kg | 4427 | 138. | SW-846 8081A | 88.6 | 9.4 - 168 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Endrin aldehyde** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *76 passed out of 88 reported results.* | | | | | | | |
| **Endrin** | ug/kg | 4427 | 108. | SW-846 8081A | 70.4 | 0.5 - 140 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **Endosulfan I** | ug/kg | 4427 | 65.2 | SW-846 8081A | 37.2 | D.L. - 76.5 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Endosulfan II** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *79 passed out of 87 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Endosulfan sulfate** | ug/kg | 4427 | 148. | SW-846 8081A | 80.4 | D.L. - 165 | Satisfactory |
| *86 passed out of 88 reported results.* | | | | | | | |
| **Heptachlor** | ug/kg | 4427 | 273. | SW-846 8081A | 171 | 0.3 - 342 | Satisfactory |
| *88 passed out of 89 reported results.* | | | | | | | |
| **Heptachlor epoxide** | ug/kg | 4427 | 146. | SW-846 8081A | 96.7 | 10 - 183 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Lindane** | ug/kg | 4427 | 65.2 | SW-846 8081A | 40.4 | D.L. - 82.4 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **Methoxychlor** | ug/kg | 4427 | 222. | SW-846 8081A | 126 | D.L. - 279 | Satisfactory |
| *84 passed out of 87 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4,6-Trichlorophenol** | ug/kg | 4424 | 475. | SW-846 8270C | 397 | D.L. - 883 | Satisfactory |
| *96 passed out of 107 reported results.* | | | | | | | |
| **2,4-Dichlorophenol** | ug/kg | 4424 | 954. | SW-846 8270C | 767 | D.L. - 1730 | Satisfactory |
| *102 passed out of 108 reported results.* | | | | | | | |
| **2,4-Dimethylphenol** | ug/kg | 4424 | 346. | SW-846 8270C | 256 | D.L. - 619 | Satisfactory |
| *91 passed out of 107 reported results.* | | | | | | | |
| **2,4-Dinitrophenol** | ug/kg | 4424 | < 670. | SW-846 8270C | 487 | D.L. - 1800 | Unsatisfactory <=== |
| *84 passed out of 108 reported results.* | | | | | | | |
| **2-Chlorophenol** | ug/kg | 4424 | 269. | SW-846 8270C | 219 | D.L. - 488 | Satisfactory |
| *93 passed out of 108 reported results.* | | | | | | | |
| **2-Methyl-4,6-dinitrophenol** | ug/kg | 4424 | 1510. | SW-846 8270C | 1310 | D.L. - 3730 | Satisfactory |
| *97 passed out of 108 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2-Nitrophenol** | ug/kg | 4424 | 447. | SW-846 8270C | 334 | D.L. - 799 | Satisfactory |
| *95 passed out of 108 reported results.* | | | | | | | |
| **4-Chloro-3-methylphenol** | ug/kg | 4424 | 240. | SW-846 8270C | 186 | D.L. - 417 | Satisfactory |
| *93 passed out of 108 reported results.* | | | | | | | |
| **4-Nitrophenol** | ug/kg | 4424 | 399. | SW-846 8270C | 319 | D.L. - 853 | Satisfactory |
| *86 passed out of 108 reported results.* | | | | | | | |
| **Phenol** | ug/kg | 4424 | 264. | SW-846 8270C | 242 | D.L. - 548 | Satisfactory |
| *90 passed out of 108 reported results.* | | | | | | | |
| **Pentachlorophenol** | ug/kg | 4424 | 1130. | SW-846 8270C | 2040 | D.L. - 4750 | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,1,1-trichloroethane** | ug/kg | 4431 | 47.8 | SW-846 8260B | 47.8 | 23.3 - 72.3 | Satisfactory |
| *98 passed out of 108 reported results.* | | | | | | | |
| **1,1,2,2-tetrachloroethane** | ug/kg | 4431 | 42.7 | SW-846 8260B | 38.5 | 8.98 - 68 | Satisfactory |
| *96 passed out of 106 reported results.* | | | | | | | |
| **1,1,2-trichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 105 reported results.* | | | | | | | |
| **1,1-dichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *102 passed out of 103 reported results.* | | | | | | | |
| **1,1-dichloroethene** | ug/kg | 4431 | 91.7 | SW-846 8260B | 85.7 | 41.9 - 130 | Satisfactory |
| *95 passed out of 105 reported results.* | | | | | | | |
| **1,2-dichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *102 passed out of 105 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,2-dichloropropane** | ug/kg | 4431 | 169. | SW-846 8260B | 169 | 99.7 - 238 | Satisfactory |
| *96 passed out of 106 reported results.* | | | | | | | |
| **2-chloroethylvinyl ether** | ug/kg | 4431 | < 2.0 | SW-846 8260B | < 50 | | Satisfactory |
| *101 passed out of 102 reported results.* | | | | | | | |
| **Benzene** | ug/kg | 4431 | 53.4 | SW-846 8260B | 52.2 | 27.9 - 76.5 | Satisfactory |
| *105 passed out of 114 reported results.* | | | | | | | |
| **Bromodichloromethane** | ug/kg | 4431 | 84.3 | SW-846 8260B | 83.5 | 45.1 - 122 | Satisfactory |
| *96 passed out of 107 reported results.* | | | | | | | |
| **Bromoform** | ug/kg | 4431 | 86.3 | SW-846 8260B | 93.7 | 31.6 - 156 | Satisfactory |
| *99 passed out of 107 reported results.* | | | | | | | |
| **Carbon tetrachloride** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bromomethane** | ug/kg | 4431 | 63.1 | SW-846 8260B | 57.2 | D.L. - 127 | Satisfactory |
| *98 passed out of 104 reported results.* | | | | | | | |
| **Chloromethane** | ug/kg | 4431 | < 2.00 | SW-846 8260B | < 30 | | Satisfactory |
| *71 passed out of 106 reported results.* | | | | | | | |
| **Trichlorofluoromethane** | ug/kg | 4431 | 73.2 | SW-846 8260B | 76.5 | 25.8 - 127 | Satisfactory |
| *98 passed out of 107 reported results.* | | | | | | | |
| **Chlorobenzene** | ug/kg | 4431 | 34.0 | SW-846 8260B | 34.7 | 11.3 - 58.1 | Satisfactory |
| *107 passed out of 114 reported results.* | | | | | | | |
| **Dibromochloromethane** | ug/kg | 4431 | 147. | SW-846 8260B | 153 | 67.2 - 239 | Satisfactory |
| *97 passed out of 107 reported results.* | | | | | | | |
| **Chloroethane** | ug/kg | 4431 | 42.4 | SW-846 8260B | 46.3 | 10.3 - 82.3 | Satisfactory |
| *95 passed out of 106 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Chloroform** | ug/kg | 4431 | 122. | SW-846 8260B | 123 | 66.3 - 180 | Satisfactory |
| *97 passed out of 107 reported results.* | | | | | | | |
| **Dichlorodifluoromethane** | ug/kg | 4431 | < 2.00 | SW-846 8260B | < 15 | | Satisfactory |
| *102 passed out of 103 reported results.* | | | | | | | |
| **Ethylbenzene** | ug/kg | 4431 | 90.6 | SW-846 8260B | 91.7 | 27.8 - 156 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Methylene chloride** | ug/kg | 4431 | 54.3 | SW-846 8260B | 59.4 | 18.6 - 100 | Satisfactory |
| *98 passed out of 107 reported results.* | | | | | | | |
| **trans-1,3-dichloropropene** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 105 reported results.* | | | | | | | |
| **Tetrachloroethene** | ug/kg | 4431 | 59.3 | SW-846 8260B | 57.7 | 13 - 102 | Satisfactory |
| *99 passed out of 107 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Toluene** | ug/kg | 4431 | 73.9 | SW-846 8260B | 73.8 | 29.4 - 118 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Trichloroethene** | ug/kg | 4431 | 15.4 | SW-846 8260B | 15.7 | 7.42 - 24 | Satisfactory |
| *95 passed out of 107 reported results.* | | | | | | | |
| **Total Xylenes** | ug/kg | 4431 | 138. | SW-846 8260B | 138 | 38.4 - 238 | Satisfactory |
| *103 passed out of 112 reported results.* | | | | | | | |
| **Vinyl chloride** | ug/kg | 4431 | 29.6 | SW-846 8260B | 31.5 | 4.68 - 58.3 | Satisfactory |
| *95 passed out of 106 reported results.* | | | | | | | |
| **1,2-dichlorobenzene** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **1,3-dichlorobenzene** | ug/kg | 4431 | 68.7 | SW-846 8260B | 54.5 | D.L. - 118 | Satisfactory |
| *108 passed out of 114 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,4-dichlorobenzene** | ug/kg | 4431 | 9.95 | SW-846 8260B | 5.63 | D.L. - 14.7 | Satisfactory |

*49 passed out of 114 reported results.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample: **Total Hardness** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hardness, Total **** | mg/L | 4405 | 264. | EPA 130.2 | 270 | 247 - 294 | Satisfactory |

*118 passed out of 123 reported results.*

** indicates NVLAP accredited analyte. Lab Code 200387-0. ELAP has applied to A2LA for PT Provider accreditation.

## C2. Reports To Management

Reports of quality status from the Quality Assurance Department to management are made frequently and in various forms. All results from internal or external performance evaluation samples are circulated to management along with corrective action responses. A report of each audit performed is prepared and copied to management. Monthly summaries of data obtained from analysis of quality control check samples are generated via the computerized sample management system. These summaries include mean and standard deviation to aid in assessment of data accuracy and precision. Documentation summarizing problems that require investigation and corrective action are completed by group leaders and circulated to management. Through these channels, laboratory management is kept apprised of QA/QC activities.

Any problems or unusual observations that occur during the analysis of samples for a specific project will be listed on the laboratory report and/or in the case narrative delivered with the data package. The items often discussed in this manner include samples with surrogate recovery outside of the acceptance criteria and samples with matrix problems requiring dilution and causing increased detection limits. Where applicable, any corrective action attempted or performed to address the problem will also be presented.

Monthly and quarterly reports are sent to management which provide them with the quality status on each technical and support department. The reports detail areas of improvement, observable trends, ICAR summaries, MDL/statistical window status, and a summary of client/agency issues.

The laboratory will contact the client for direction regarding major problems. Such as, but not limited to: samples listed on the chain of custody but missing from the shipping container, samples which arrive broken or are accidentally broken in the laboratory, and samples with severe matrix problems. The client will be contacted if it is necessary to change any item in the original approved project plan.

# GROUP D

# DATA VALIDATION AND USABILITY

## D1. Data Review, Verification, and Validation

As stated in Element B10, following review, interpretation, and data reduction by the analyst, the data is transferred into the Laboratory Sample Management System by direct upload from the analytical data system or manually. This system stores the client information, sample results, and QC results. A security system is in place to control access of laboratory personnel and to provide an audit trail for information changes.

The data is again reviewed by the group leader or another analyst whose function is to provide an independent review before data is verified on the sample management system. The person performing the verification step reviews all data including quality control information before verifying the data. Any errors identified and corrected during the review process are documented and addressed with appropriate personnel to ensure generation of quality data.

If data package deliverables have been requested, the laboratory will complete the appropriate forms (see Appendix A) summarizing the quality control information, and transfer copies of all raw data (instrument printouts, spectra, chromatograms, laboratory notebooks, etc.) to the Data Packages Group. This group will combine the information from the various analytical groups and the analytical reports from the Laboratory Sample Management System into one package in the client requested format. This package is reviewed for quality, compliance, and conformance to SOPs and QC requirements. Any analytical problems are discussed in the case narrative, which is also included with the data package deliverables.

The validation of the data for quality assurance includes spot checking raw data versus the final report, checking that all pertinent raw data is included and does refer to the samples analyzed, review of all QC results for conformance with the method, and review of the case narrative for description of any unusual occurrences during analysis. This validation is performed using techniques similar to those used by the Sample Management Office for the USEPA's Contract Laboratory Program.

The validation performed by the laboratory does not address usability of the data, which usually requires some knowledge of the site. The laboratory will make every attempt to meet requirements of the project, thus reducing the need to assess usability of the data.

## D2. Verification and Validation Methods

Lancaster Laboratories has procedures in place to verify that instrumental computers and the computerized sample management system perform at the required accuracy, traceability and security for reporting verified data. Element D1 describes this process in more detail. Knowledge of the site and sampling methods are necessary to assess usability. Therefore, overall data validation and assessment of data usability is the responsibility of the client. Lancaster Laboratories will evaluate the analytical data to verify that method and/or project requirements have been met.

## D3. Reconciliation with User Requirements

Data quality requirements are based on the measurement process and the intended use of the data. Lancaster Laboratories evaluates the QC data generated by the following data quality objectives.

Precision – Precision refers to the reproducibility of a method when it is repeated on a second aliquot of the same sample. The degree of agreement is expressed as the relative percent difference (RPD). The RPD will be calculated according to the following equation:

$$RPD = \frac{\left| D_2 - D_1 \right|}{(D_1 + D_2) / 2} \times 100$$

Where:

$D_1$ = First sample value
$D_2$ = Second sample value (Duplicate)

Duplicates will be run on at least 5% of the samples and matrix spike duplicates are used for organics analyses. Acceptance criteria are detailed in Element B5. All quality control sample results are entered into the computer and compared with acceptance limits. In addition, there is a monthly review of values on the computer QC system. Data obtained from quality control samples is entered onto our computer system that charts the data and calculates a mean and standard deviation on a monthly basis. The Quality Assurance Department then reviews this data for trends, which may indicate analytical problems. The control charts are graphical methods for monitoring precision and bias over time.

Accuracy – Accuracy refers to the agreement between the amount of a compound measured by the test method and the amount present. Accuracy is usually expressed as a percent recovery (R). Recoveries will be calculated according to the following equations:

$$Surrogate\ \%\ Recovery\ = Qd/Qa\ \times 100$$

Where:

Qd = Quantity determined by analysis
Qa = Quantity added to sample

$$Matrix\ Spike\ \%\ Recovery = \left(SSR\ -\ SR\right) / SA \times 100$$

Where:

SSR = Spiked sample results
SR = Sample results
SA = Spike added

$$Laboratory\ Control\ Sample\ \%\ Recovery = LCS\ found\ /\ LCS\ true \times 100$$

Surrogate standards are added to each sample analyzed for organics. Spikes and laboratory control samples will be run on at least 5% of the samples (each batch or SDG, ≤20 samples). Refer to Element B5 for acceptance criteria for accuracy. The computer is programmed to compare the individual values with the acceptance limits and inform the analyst if the results meet specifications. If the results are not within the acceptance criteria, corrective action suitable to the situation will be taken. This may include, but is not limited to, checking calculations and instrument performance, reanalysis of the associated samples, examining other QC analyzed with the same batch of samples, and qualifying results with documentation of any QC problems in the case narrative.

Commercial quality control materials are run at least quarterly to ensure accuracy of the analytical procedure. Repetitive analysis of a reference material will also yield precision data. Accuracy information determined from reference materials is valuable because variables specific to sample matrix are eliminated.
The QC program is capable of charting data for surrogates, spikes, control materials, and reference materials. The Quality Assurance Department reviews these charts in association with the monthly trend report for any indication of possible problems (i.e., shift in the mean and standard deviation).

Completeness – Completeness is the percentage of valid data acquired from a measurement system compared to the amount of valid measurements that were planned to be collected. The objective is analysis of all samples submitted intact, and to ensure that sufficient sample weight/volume is available should the initial analysis not meet acceptance criteria. The laboratory's sample management system will assign a unique identification number to the sample which tracks and controls movement of samples from the time of receipt until disposal. All data generated will be recorded referencing the corresponding sample identification number. The completeness of an analysis can be documented by including in the data deliverables sufficient information to allow the data user to assess the quality of the results. This information will include, but is not limited to, summaries of QC data and sample results, chromatograms, spectra, and instrument tune and calibration data. Additional information will be stored in the laboratory's archives, both hard copy and electronic.

$$Completeness = \frac{Number\ of\ valid\ measurements}{Total\ measurements\ needed} \times 100$$

Method Detection Limit – It is important to ascertain the limit of quantitation that can be achieved by a given method, particularly when the method is commonly used to determine trace levels of analyte. The Environmental Protection Agency has set forth one method for determining method detection limits (MDLs) from which limits of quantitation (LOQs) can be extrapolated. MDLs are evaluated on an annual basis. MDL is defined as follows for all measurements:

$$MDL = t_{(n-1,\ 1-a\ =\ 0.99)} x s$$

Where:

MDL = Method detection limit

s = Standard deviation of the replicate analyses

$t_{(n-1,1-a = 0.99)}$ = Students' t-value for a one-sided 99% confidence level and a standard deviation estimate with n-1 degrees of freedom

**Definitions:**

Calculated Method Detection Limit – The calculated method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. It is determined from analysis, on a given instrument, of a sample in a given matrix containing the analyte.

Reported Method detection limit (MDL) – The reported MDL is defined as the highest of all calculated MDLs obtained from all instruments used for a particular method/matrix. This can be the actual value or a default value set above the calculated values.

Limit of quantitation (LOQ) – The limit of quantitation is defined as the level above which quantitative results may be obtained with a specified degree of confidence. The Lancaster Laboratories' policy is to set quantitation limits at a value at least 3x the MDL.

# APPENDIX A

# EXAMPLE REPORTING FORMS

Lancaster Laboratories
Where quality is a science.

ANALYTICAL RESULTS

Prepared for:

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 753099. Samples arrived at the laboratory on Monday, March 05, 2001.

| Client Description | Lancaster Labs Number |
|---|---|
| Volatiles - Lot 606 | 3563711 |

1 COPY TO Lancaster Laboratories Attn: Ms. Amy Doupe

Questions? Contact your Client Services Representative
Kathy Klinefelter at (717) 656-2300.

Respectfully Submitted,

Robert E. Mellinger
Sr. Chemist/Coordinator

Lancaster Laboratories
Where quality is a science.



**Lancaster Laboratories Sample No. WW 3563711**

Collected: n.a.

Account Number: 00649

Submitted: 03/05/2001 15:20
Reported: 03/10/01 at 09:21 PM
Discard: 4/10/01
Volatiles - Lot 606

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 09108 | 1,2-Dichlorobenzene | 95-50-1 | 37. | 5. | ug/l | 1 |
| 09759 | 1,4-Dichlorobenzene | 106-46-7 | 17. | 5. | ug/l | 1 |
| 09775 | 1,3-Dichlorobenzene | 541-73-1 | 33. | 5. | ug/l | 1 |
| 00520 | PPL by 624 | | | | | |
| 00790 | Trichlorofluoromethane | 75-69-4 | < 5. | 5. | ug/l | 1 |
| 00824 | Acrolein | 107-02-8 | < 100. | 100. | ug/l | 1 |
| 00825 | Acrylonitrile | 107-13-1 | < 50. | 50. | ug/l | 1 |
| 00826 | 2-Chloroethyl Vinyl Ether | 110-75-8 | < 10. | 10. | ug/l | 1 |
| 00827 | Chloromethane | 74-87-3 | < 5. | 5. | ug/l | 1 |
| 00828 | Bromomethane | 74-83-9 | < 5. | 5. | ug/l | 1 |
| 00829 | Vinyl Chloride | 75-01-4 | < 5. | 5. | ug/l | 1 |
| 00830 | Chloroethane | 75-00-3 | < 5. | 5. | ug/l | 1 |
| 00831 | Methylene Chloride | 75-09-2 | 24. | 5. | ug/l | 1 |
| 00832 | 1,1-Dichloroethene | 75-35-4 | < 5. | 5. | ug/l | 1 |
| 00833 | 1,1-Dichloroethane | 75-34-3 | < 5. | 5. | ug/l | 1 |
| 00835 | Chloroform | 67-66-3 | 38. | 5. | ug/l | 1 |
| 00836 | 1,2-Dichloroethane | 107-06-2 | 53. | 5. | ug/l | 1 |
| 00837 | 1,1,1-Trichloroethane | 71-55-6 | 33. | 5. | ug/l | 1 |
| 00838 | Carbon Tetrachloride | 56-23-5 | 33. | 5. | ug/l | 1 |
| 00839 | Bromodichloromethane | 75-27-4 | 68. | 5. | ug/l | 1 |
| 00840 | 1,2-Dichloropropane | 78-87-5 | < 5. | 5. | ug/l | 1 |
| 00841 | trans-1,3-Dichloropropene | 10061-02-6 | < 5. | 5. | ug/l | 1 |
| 00842 | Trichloroethene | 79-01-6 | 20. | 5. | ug/l | 1 |
| 00843 | Benzene | 71-43-2 | 16. | 5. | ug/l | 1 |
| 00844 | cis-1,3-Dichloropropene | 10061-01-5 | < 5. | 5. | ug/l | 1 |
| 00845 | 1,1,2-Trichloroethane | 79-00-5 | < 5. | 5. | ug/l | 1 |
| 00846 | Dibromochloromethane | 124-48-1 | 25. | 5. | ug/l | 1 |
| 00847 | Bromoform | 75-25-2 | 38. | 5. | ug/l | 1 |
| 00848 | Tetrachloroethene | 127-18-4 | 74. | 5. | ug/l | 1 |
| 00849 | 1,1,2,2-Tetrachloroethane | 79-34-5 | < 5. | 5. | ug/l | 1 |
| 00850 | Toluene | 108-88-3 | 34. | 5. | ug/l | 1 |
| 00851 | Chlorobenzene | 108-90-7 | 30. | 5. | ug/l | 1 |
| 00852 | Ethylbenzene | 100-41-4 | 65. | 5. | ug/l | 1 |
| 03535 | trans-1,2-Dichloroethene | 156-60-5 | 29. | 5. | ug/l | 1 |

Lancaster Laboratories
Where quality is a science.



**Lancaster Laboratories Sample No. WW 3563711**

Collected: n.a.

Account Number: 00649

Submitted: 03/05/2001 15:20
Reported: 03/10/01 at 09:21 PM
Discard: 4/10/01
Volatiles - Lot 606

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

WVVOA

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03549 | cis-1,2-Dichloroethene | 156-59-2 | < 5. | 5. | ug/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 09108 | 1,2-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 09759 | 1,4-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 09775 | 1,3-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 00520 | PPL by 624 | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |

Lancaster Laboratories
*Where quality is a science.*

WATER VOLATILE SURROGATE RECOVERY

2A

SDG:

| | CLIENT DESIGNATION | S1 (DBFM) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | OTHER | TOTAL OUT |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

| | | QC LIMITS |
|---|---|---|
| S1 (DBFM) | Dibromofluoromethane | 86- 118 |
| S2 (DCA) | 1,2-Dichloroethane-d4 | 80- 120 |
| S3 (TOL) | Toluene-d8 | 88- 110 |
| S4 (BFB) | 4-Bromofluorobenzene | 86- 115 |

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

Lancaster Laboratories
Where quality is a science.

SOIL VOLATILE SURROGATE RECOVERY

2B

LEVEL: SDG:

| | CLIENT DESIGNATION | S1 (DBFM) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | OTHER | TOTAL OUT |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

| | | QC LIMITS |
|---|---|---|
| S1 (DBFM) | Dibromofluoromethane | 80- 120 |
| S2 (DCA) | 1,2-Dichloroethane-d4 | 80- 120 |
| S3 (TOL) | Toluene-d8 | 81- 117 |
| S4 (BFB) | 4-Bromofluorobenzene | 74- 121 |

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: pl19t01.d  BFB Injection Date: 07/19/01

Instrument ID: HP07163  BFB Injection Time: 08:25

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 19.9 |
| 75 | 30.0 - 60.0% of mass 95 | 52.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 8.1 |
| 173 | Less than 2.0% of mass 174 | 0.3 ( 0.4)1 |
| 174 | Greater than 50.0% of mass 95 | 72.5 |
| 175 | 5.0 - 9.0% of mass 174 | 5.4 ( 7.4)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 72.3 ( 99.6)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.2 ( 7.2)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | pl19i01.d | 07/19/01 | 08:47 |
| 02 | VSTD100 | VSTD100 | pl19i02.d | 07/19/01 | 09:13 |
| 03 | VSTD050 | VSTD050 | pl19i03.d | 07/19/01 | 09:40 |
| 04 | VSTD020 | VSTD020 | pl19i04.d | 07/19/01 | 10:05 |
| 05 | VSTD010 | VSTD010 | pl19i05.d | 07/19/01 | 10:31 |
| 06 | VSTD004 | VSTD004 | pl19i06.d | 07/19/01 | 10:57 |
| 07 | VSTD001 | 1PPBMDL | pl19m01.d | 07/19/01 | 11:22 |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 60-29-7 | Ethyl Ether | | 2 | U |
| 107-02-8 | Acrolein | | 40 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 6 | U |
| 74-88-4 | Methyl Iodide | | 1 | U |
| 67-63-0 | 2-Propanol | | 50 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 10 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 1 | U |
| 110-54-3 | n-Hexane | | 2 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 78-93-3 | 2-Butanone | | 3 | U |
| 107-12-0 | Propionitrile | | 30 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 126-98-7 | Methacrylonitrile | | 10 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 3 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 2 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 2 | U |
| 71-36-3 | n-Butanol | | 100 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 2 | U |
| 110-75-8 | 2-Chloroethyl Vinyl Ether | | 2 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | | 3 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 15 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: pl25b01.d Lab Sample ID: VBLKP62

Date Analyzed: 07/25/01 Time Analyzed: 09:35

Matrix (soil/water) WATER Level: (low/med) LOW

Instrument ID: HP07163

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSWP62 | LCSWP62 | pl25l01.d | 18:14 |
| 02 | 7631- | 3653721 | pl25s20.d | 18:56 |
| 03 | 7631-MS | 3653722 | pl25s21.d | 19:22 |
| 04 | 7631-MSD | 3653723 | pl25s22.d | 19:48 |
| 05 | TBW7- | 3652468 | pl25s23.d | 20:13 |

COMMENTS:

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: pl25s20.d
7631- 3653721
Method: SW-846 8260B
Instrument: HP07163

Matrix Spike: pl25s21.d
7631-MS 3653722
Matrix/Level: WL
Dilution Factor: 1.00

Spike Duplicate: pl25s22.d
7631-MSD 3653723
Batch: P012061AA

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.0 | 20.0 | ND | 17.8 | 17.3 | 89 | 86 | 41-132 | YES | 3 | 30 |
| Chloromethane | 20.0 | 20.0 | ND | 18.6 | 18.9 | 93 | 95 | 48-132 | YES | 2 | 30 |
| Vinyl Chloride | 20.0 | 20.0 | ND | 19.5 | 20.3 | 97 | 102 | 54-133 | YES | 4 | 30 |
| Bromomethane | 20.0 | 20.0 | ND | 19.1 | 19.0 | 96 | 95 | 37-127 | YES | 1 | 30 |
| Chloroethane | 20.0 | 20.0 | ND | 18.0 | 18.3 | 90 | 91 | 55-129 | YES | 1 | 30 |
| Trichlorofluoromethane | 20.0 | 20.0 | ND | 25.5 | 25.6 | 127 | 128 | 46-151 | YES | 1 | 30 |
| Ethyl Ether | 20.0 | 20.0 | ND | 21.2 | 21.7 | 106 | 108 | 72-138 | YES | 2 | 30 |
| Acrolein | 150.0 | 150.0 | ND | 128 | 125 | 86 | 84 | 36-149 | YES | 2 | 30 |
| 1,1-Dichloroethene | 20.0 | 20.0 | 26.5 | 46.9 | 48.2 | 102 | 108 | 75-152 | YES | 3 | 30 |
| Freon 113 | 20.0 | 20.0 | ND | 27.2 | 26.4 | 136 | 132 | 70-157 | YES | 3 | 30 |
| Acetone | 150.0 | 150.0 | ND | 160 | 164 | 107 | 110 | 49-143 | YES | 2 | 30 |
| Methyl Iodide | 20.0 | 20.0 | ND | 22.9 | 23.1 | 115 | 115 | 72-143 | YES | 0 | 30 |
| Carbon Disulfide | 20.0 | 20.0 | ND | 24.9 | 24.8 | 125 | 124 | 58-158 | YES | 0 | 30 |
| 2-Propanol | 150.0 | 150.0 | ND | 152 | 151 | 102 | 101 | 52-152 | YES | 1 | 30 |
| Allyl Chloride | 20.0 | 20.0 | ND | 22.2 | 22.3 | 111 | 111 | 35-154 | YES | 0 | 30 |
| Methylene Chloride | 20.0 | 20.0 | ND | 21.4 | 20.5 | 107 | 103 | 81-134 | YES | 4 | 30 |
| t-Butyl Alcohol | 200.0 | 200.0 | ND | 221 | 218 | 111 | 109 | 50-157 | YES | 1 | 30 |
| Acrylonitrile | 100.0 | 100.0 | ND | 101 | 101 | 101 | 101 | 58-134 | YES | 0 | 30 |
| trans-1,2-Dichloroethene | 20.0 | 20.0 | ND | 21.7 | 22.2 | 108 | 111 | 78-140 | YES | 2 | 30 |
| Methyl Tertiary Butyl Ether | 20.0 | 20.0 | ND | 21.2 | 21.4 | 106 | 107 | 69-134 | YES | 1 | 30 |
| n-Hexane | 20.0 | 20.0 | ND | 24.2 | 25.6 | 121 | 128 | 64-167 | YES | 6 | 30 |
| 1,1-Dichloroethane | 20.0 | 20.0 | ND | 23.5 | 23.4 | 117 | 117 | 77-142 | YES | 0 | 30 |
| 2-Chloro-1,3-Butadiene | 20.0 | 20.0 | ND | 22.6 | 22.6 | 113 | 113 | 74-143 | YES | 0 | 30 |
| di-Isopropyl Ether | 20.0 | 20.0 | ND | 20.0 | 20.4 | 100 | 102 | 75-128 | YES | 2 | 30 |
| Ethyl t-Butyl Ether | 20.0 | 20.0 | ND | 17.7 | 18.3 | 88 | 91 | 73-123 | YES | 4 | 30 |
| cis-1,2-Dichloroethene | 20.0 | 20.0 | ND | 20.3 | 20.4 | 102 | 102 | 76-140 | YES | 0 | 30 |
| 1,2-Dichloroethene (total) | 40.0 | 40.0 | ND | 42.0 | 42.6 | 105 | 106 | 78-140 | YES | 1 | 30 |
| 2,2-Dichloropropane | 20.0 | 20.0 | ND | 23.5 | 22.8 | 118 | 114 | 76-140 | YES | 3 | 30 |
| 2-Butanone | 150.0 | 150.0 | ND | 157 | 158 | 105 | 106 | 56-141 | YES | 1 | 30 |
| Propionitrile | 150.0 | 150.0 | ND | 166 | 161 | 110 | 107 | 70-131 | YES | 3 | 30 |
| Methacrylonitrile | 150.0 | 150.0 | ND | 158 | 160 | 106 | 107 | 76-126 | YES | 1 | 30 |
| Bromochloromethane | 20.0 | 20.0 | ND | 21.1 | 21.1 | 106 | 106 | 57-145 | YES | 0 | 30 |
| Tetrahydrofuran | 100.0 | 100.0 | ND | 103 | 99.3 | 103 | 99 | 68-132 | YES | 4 | 30 |
| Chloroform | 20.0 | 20.0 | ND | 23.1 | 22.9 | 115 | 115 | 76-138 | YES | 0 | 30 |
| 1,1,1-Trichloroethane | 20.0 | 20.0 | ND | 24.9 | 24.8 | 125 | 124 | 78-141 | YES | 1 | 30 |
| Cyclohexane | 20.0 | 20.0 | ND | 22.9 | 23.0 | 114 | 115 | 69-156 | YES | 1 | 30 |
| 1,1-Dichloropropene | 20.0 | 20.0 | ND | 21.5 | 22.0 | 107 | 110 | 80-138 | YES | 2 | 30 |
| Carbon Tetrachloride | 20.0 | 20.0 | ND | 25.2 | 25.0 | 126 | 125 | 66-148 | YES | 1 | 30 |
| Benzene | 20.0 | 20.0 | ND | 21.9 | 21.9 | 110 | 109 | 78-134 | YES | 0 | 30 |
| Isobutyl Alcohol | 500.0 | 500.0 | ND | 554 | 547 | 111 | 109 | 49-146 | YES | 1 | 30 |
| 1,2-Dichloroethane | 20.0 | 20.0 | ND | 24.2 | 23.4 | 121 | 117 | 75-141 | YES | 3 | 30 |
| t-Amyl Methyl Ether | 20.0 | 20.0 | ND | 18.1 | 18.1 | 91 | 91 | 69-126 | YES | 0 | 30 |
| n-Heptane | 20.0 | 20.0 | ND | 19.4 | 19.0 | 97 | 95 | 51-160 | YES | 2 | 30 |
| Trichloroethene | 20.0 | 20.0 | ND | 22.5 | 21.7 | 112 | 108 | 76-137 | YES | 4 | 30 |
| n-Butanol | 1000.0 | 1000.0 | ND | 949 | 922 | 95 | 92 | 48-137 | YES | 3 | 30 |
| 1,2-Dichloropropane | 20.0 | 20.0 | ND | 19.5 | 19.4 | 97 | 97 | 82-128 | YES | 0 | 30 |
| Dibromomethane | 20.0 | 20.0 | ND | 22.0 | 21.6 | 110 | 108 | 82-126 | YES | 2 | 30 |
| 1,4-Dioxane | 500.0 | 500.0 | ND | 489 | 510 | 98 | 102 | 50-138 | YES | 4 | 30 |
| Methyl Methacrylate | 20.0 | 20.0 | ND | 18.9 | 18.7 | 95 | 93 | 64-130 | YES | 1 | 30 |
| Bromodichloromethane | 20.0 | 20.0 | ND | 21.9 | 21.6 | 110 | 108 | 81-127 | YES | 1 | 30 |
| 2-Nitropropane | 20.0 | 20.0 | ND | 20.0 | 19.8 | 100 | 99 | 70-130 | YES | 1 | 30 |
| 2-Chloroethyl Vinyl Ether | 20.0 | 20.0 | ND | ND | ND | 0 | 0 | 1 -150 | NO | 0 | 30 |
| cis-1,3-Dichloropropene | 20.0 | 20.0 | ND | 17.3 | 17.9 | 87 | 89 | 70-123 | YES | 3 | 30 |
| 4-Methyl-2-Pentanone | 100.0 | 100.0 | ND | 115 | 116 | 115 | 116 | 61-141 | YES | 0 | 30 |
| Toluene | 20.0 | 20.0 | ND | 23.1 | 22.6 | 115 | 113 | 78-133 | YES | 2 | 30 |
| trans-1,3-Dichloropropene | 20.0 | 20.0 | ND | 19.8 | 20.0 | 99 | 100 | 76-124 | YES | 1 | 30 |
| Ethyl Methacrylate | 20.0 | 20.0 | ND | 16.4 | 16.4 | 82 | 82 | 65-126 | YES | 0 | 30 |
| 1,1,2-Trichloroethane | 20.0 | 20.0 | ND | 22.3 | 22.1 | 111 | 111 | 82-127 | YES | 0 | 30 |

N/C = Could not calculte

Ent. by _____

Lab Chronicle: _____

Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: pl25s20.d
7631- 3653721
Method: SW-846 8260B
Instrument: HP07163

Matrix Spike: pl25s21.d
7631-MS 3653722
Matrix/Level: WL
Dilution Factor: 1.00

Spike Duplicate: pl25s22.d
7631-MSD 3653723
Batch: P012061AA

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 20.0 | 20.0 | 2.76 | 28.8 | 28.3 | 130 | 128 | 72-150 | YES | 2 | 30 |
| 1,3-Dichloropropane | 20.0 | 20.0 | ND | 21.7 | 21.4 | 109 | 107 | 77-126 | YES | 2 | 30 |
| 2-Hexanone | 100.0 | 100.0 | ND | 118 | 116 | 118 | 116 | 56-143 | YES | 1 | 30 |
| Dibromochloromethane | 20.0 | 20.0 | ND | 21.7 | 20.6 | 109 | 103 | 74-125 | YES | 5 | 30 |
| 1,2-Dibromoethane | 20.0 | 20.0 | ND | 21.3 | 20.6 | 106 | 103 | 78-120 | YES | 3 | 30 |
| Chlorobenzene | 20.0 | 20.0 | ND | 22.4 | 22.0 | 112 | 110 | 81-125 | YES | 2 | 30 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.0 | ND | 22.8 | 22.4 | 114 | 112 | 82-125 | YES | 2 | 30 |
| Ethylbenzene | 20.0 | 20.0 | ND | 23.8 | 23.7 | 119 | 119 | 82-134 | YES | 0 | 30 |
| m+p-Xylene | 40.0 | 40.0 | ND | 48.0 | 48.3 | 120 | 121 | 78-139 | YES | 1 | 30 |
| Xylene (Total) | 60.0 | 60.0 | ND | 70.2 | 70.7 | 117 | 118 | 81-136 | YES | 1 | 30 |
| o-Xylene | 20.0 | 20.0 | ND | 22.2 | 22.4 | 111 | 112 | 81-136 | YES | 1 | 30 |
| Styrene | 20.0 | 20.0 | ND | 22.7 | 22.8 | 114 | 114 | 67-145 | YES | 0 | 30 |
| Bromoform | 20.0 | 20.0 | ND | 21.2 | 21.0 | 106 | 105 | 62-127 | YES | 1 | 30 |
| Isopropylbenzene | 20.0 | 20.0 | ND | 23.5 | 23.3 | 118 | 116 | 77-141 | YES | 1 | 30 |
| Bromobenzene | 20.0 | 20.0 | ND | 21.6 | 21.8 | 108 | 109 | 77-123 | YES | 1 | 30 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.0 | ND | 19.5 | 20.0 | 97 | 100 | 70-129 | YES | 3 | 30 |
| 1,2,3-Trichloropropane | 20.0 | 20.0 | ND | 22.2 | 22.7 | 111 | 113 | 73-125 | YES | 2 | 30 |
| trans-1,4-Dichloro-2-Butene | 100.0 | 100.0 | ND | 88.6 | 88.9 | 89 | 89 | 37-135 | YES | 0 | 30 |
| n-Propylbenzene | 20.0 | 20.0 | ND | 22.8 | 23.3 | 114 | 117 | 65-146 | YES | 2 | 30 |
| 2-Chlorotoluene | 20.0 | 20.0 | ND | 21.4 | 21.8 | 107 | 109 | 71-137 | YES | 2 | 30 |
| 4-Chlorotoluene | 20.0 | 20.0 | ND | 22.0 | 22.7 | 110 | 113 | 79-134 | YES | 3 | 30 |
| 1,3,5-Trimethylbenzene | 20.0 | 20.0 | ND | 22.6 | 23.1 | 113 | 116 | 77-137 | YES | 2 | 30 |
| Pentachloroethane | 20.0 | 20.0 | ND | 19.8 | 19.7 | 99 | 99 | 55-128 | YES | 0 | 30 |
| tert-Butylbenzene | 20.0 | 20.0 | ND | 20.6 | 21.9 | 103 | 109 | 74-136 | YES | 6 | 30 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.0 | ND | 23.0 | 23.1 | 115 | 115 | 81-133 | YES | 0 | 30 |
| sec-Butylbenzene | 20.0 | 20.0 | ND | 22.2 | 22.5 | 111 | 112 | 75-138 | YES | 1 | 30 |
| 1,3-Dichlorobenzene | 20.0 | 20.0 | ND | 21.7 | 22.3 | 109 | 112 | 82-128 | YES | 3 | 30 |
| p-Isopropyltoluene | 20.0 | 20.0 | ND | 22.6 | 23.4 | 113 | 117 | 78-138 | YES | 3 | 30 |
| 1,4-Dichlorobenzene | 20.0 | 20.0 | ND | 21.0 | 21.3 | 105 | 106 | 78-131 | YES | 2 | 30 |
| 1,2-Dichlorobenzene | 20.0 | 20.0 | ND | 21.1 | 21.7 | 106 | 108 | 82-125 | YES | 2 | 30 |
| n-Butylbenzene | 20.0 | 20.0 | ND | 21.6 | 22.5 | 108 | 113 | 62-147 | YES | 4 | 30 |
| 1,2-Dibromo-3-Chloropropane | 20.0 | 20.0 | ND | 19.1 | 19.8 | 96 | 99 | 54-130 | YES | 4 | 30 |
| 1,2,4-Trichlorobenzene | 20.0 | 20.0 | ND | 17.6 | 18.3 | 88 | 92 | 60-132 | YES | 4 | 30 |
| Hexachlorobutadiene | 20.0 | 20.0 | ND | 17.1 | 17.8 | 86 | 89 | 45-150 | YES | 4 | 30 |
| Naphthalene | 20.0 | 20.0 | ND | 17.8 | 18.2 | 89 | 91 | 51-134 | YES | 3 | 30 |
| 1,2,3-Trichlorobenzene | 20.0 | 20.0 | ND | 18.6 | 18.9 | 93 | 95 | 60-131 | YES | 2 | 30 |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: pl25l01.d
Inst: HP07163
Dilution Factor: 1.0

Injected: 07/25/01 at 18:14
Sample: LCSWP62

Method: SW-846 8260B
Matrix/Level: WL
Batch: P012061AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.00 | 17.19 | 86 | 40-121 | YES |
| Chloromethane | 20.00 | 18.64 | 93 | 51-121 | YES |
| Vinyl Chloride | 20.00 | 19.23 | 96 | 61-117 | YES |
| Bromomethane | 20.00 | 19.27 | 96 | 34-117 | YES |
| Chloroethane | 20.00 | 18.45 | 92 | 53-117 | YES |
| Trichlorofluoromethane | 20.00 | 23.81 | 119 | 50-135 | YES |
| Ethyl Ether | 20.00 | 21.94 | 110 | 78-130 | YES |
| Acrolein | 150.00 | 145.66 | 97 | 53-142 | YES |
| 1,1-Dichloroethene | 20.00 | 22.00 | 110 | 79-136 | YES |
| Freon 113 | 20.00 | 24.99 | 125 | 73-139 | YES |
| Acetone | 150.00 | 166.93 | 111 | 59-140 | YES |
| Methyl Iodide | 20.00 | 21.85 | 109 | 74-133 | YES |
| Carbon Disulfide | 20.00 | 23.19 | 116 | 73-138 | YES |
| 2-Propanol | 150.00 | 157.30 | 105 | 59-143 | YES |
| Allyl Chloride | 20.00 | 16.55 | 83 | 42-145 | YES |
| Methylene Chloride | 20.00 | 21.21 | 106 | 84-128 | YES |
| t-Butyl Alcohol | 200.00 | 245.55 | 123 | 58-147 | YES |
| Acrylonitrile | 100.00 | 102.48 | 102 | 70-133 | YES |
| trans-1,2-Dichloroethene | 20.00 | 21.69 | 108 | 83-129 | YES |
| Methyl Tertiary Butyl Ether | 20.00 | 21.04 | 105 | 77-127 | YES |
| n-Hexane | 20.00 | 21.55 | 108 | 65-152 | YES |
| 1,1-Dichloroethane | 20.00 | 22.36 | 112 | 84-128 | YES |
| 2-Chloro-1,3-Butadiene | 20.00 | 21.04 | 105 | 80-125 | YES |
| di-Isopropyl Ether | 20.00 | 19.62 | 98 | 74-125 | YES |
| Ethyl t-Butyl Ether | 20.00 | 17.18 | 86 | 74-120 | YES |
| cis-1,2-Dichloroethene | 20.00 | 20.05 | 100 | 85-126 | YES |
| 1,2-Dichloroethene (total) | 40.00 | 41.73 | 104 | 85-126 | YES |
| 2,2-Dichloropropane | 20.00 | 21.65 | 108 | 70-135 | YES |
| 2-Butanone | 150.00 | 159.16 | 106 | 69-131 | YES |
| Propionitrile | 150.00 | 165.50 | 110 | 73-128 | YES |
| Methacrylonitrile | 150.00 | 163.01 | 109 | 79-124 | YES |
| Bromochloromethane | 20.00 | 17.11 | 86 | 58-138 | YES |
| Tetrahydrofuran | 100.00 | 101.84 | 102 | 69-131 | YES |
| Chloroform | 20.00 | 22.79 | 114 | 86-124 | YES |
| 1,1,1-Trichloroethane | 20.00 | 23.07 | 115 | 83-127 | YES |
| Cyclohexane | 20.00 | 19.14 | 96 | 70-140 | YES |
| 1,1-Dichloropropene | 20.00 | 19.82 | 99 | 76-131 | YES |
| Carbon Tetrachloride | 20.00 | 23.24 | 116 | 77-130 | YES |
| Benzene | 20.00 | 20.94 | 105 | 85-125 | YES |
| Isobutyl Alcohol | 500.00 | 582.01 | 116 | 55-141 | YES |
| 1,2-Dichloroethane | 20.00 | 23.74 | 119 | 84-131 | YES |
| t-Amyl Methyl Ether | 20.00 | 17.26 | 86 | 77-118 | YES |
| n-Heptane | 20.00 | 16.87 | 84 | 57-146 | YES |
| Trichloroethene | 20.00 | 20.72 | 104 | 86-126 | YES |
| n-Butanol | 1000.00 | 978.11 | 98 | 54-133 | YES |
| 1,2-Dichloropropane | 20.00 | 18.94 | 95 | 83-123 | YES |
| Dibromomethane | 20.00 | 22.15 | 111 | 84-123 | YES |
| 1,4-Dioxane | 500.00 | 491.42 | 98 | 55-136 | YES |
| Methyl Methacrylate | 20.00 | 17.95 | 90 | 74-122 | YES |
| Bromodichloromethane | 20.00 | 21.18 | 106 | 83-121 | YES |
| 2-Nitropropane | 20.00 | 20.15 | 101 | 35-157 | YES |
| 2-Chloroethyl Vinyl Ether | 20.00 | 16.32 | 82 | 49-138 | YES |
| cis-1,3-Dichloropropene | 20.00 | 18.86 | 94 | 81-121 | YES |
| 4-Methyl-2-Pentanone | 100.00 | 119.59 | 120 | 70-132 | YES |
| Toluene | 20.00 | 21.84 | 109 | 86-123 | YES |
| trans-1,3-Dichloropropene | 20.00 | 19.43 | 97 | 79-120 | YES |
| Ethyl Methacrylate | 20.00 | 15.61 | 78 | 69-123 | YES |
| 1,1,2-Trichloroethane | 20.00 | 21.91 | 110 | 86-120 | YES |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: pl25l01.d
Inst: HP07163
Dilution Factor: 1.0

Injected: 07/25/01 at 18:14
Sample: LCSWP62

Method: SW-846 8260B
Matrix/Level: WL
Batch: P012061AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Tetrachloroethene | 20.00 | 24.36 | 122 | 79-136 | YES |
| 1,3-Dichloropropane | 20.00 | 21.21 | 106 | 77-127 | YES |
| 2-Hexanone | 100.00 | 119.76 | 120 | 67-131 | YES |
| Dibromochloromethane | 20.00 | 21.01 | 105 | 78-119 | YES |
| 1,2-Dibromoethane | 20.00 | 20.57 | 103 | 84-119 | YES |
| Chlorobenzene | 20.00 | 21.57 | 108 | 87-121 | YES |
| 1,1,1,2-Tetrachloroethane | 20.00 | 22.68 | 113 | 83-121 | YES |
| Ethylbenzene | 20.00 | 22.72 | 114 | 88-124 | YES |
| m+p-Xylene | 40.00 | 46.62 | 117 | 89-124 | YES |
| Xylene (Total) | 60.00 | 67.91 | 113 | 89-124 | YES |
| o-Xylene | 20.00 | 21.29 | 106 | 79-128 | YES |
| Styrene | 20.00 | 22.66 | 113 | 87-122 | YES |
| Bromoform | 20.00 | 20.86 | 104 | 69-121 | YES |
| Isopropylbenzene | 20.00 | 22.13 | 111 | 77-132 | YES |
| Bromobenzene | 20.00 | 20.55 | 103 | 75-125 | YES |
| 1,1,2,2-Tetrachloroethane | 20.00 | 19.76 | 99 | 78-120 | YES |
| 1,2,3-Trichloropropane | 20.00 | 22.51 | 113 | 82-122 | YES |
| trans-1,4-Dichloro-2-Butene | 100.00 | 81.96 | 82 | 51-132 | YES |
| n-Propylbenzene | 20.00 | 21.07 | 105 | 74-132 | YES |
| 2-Chlorotoluene | 20.00 | 20.13 | 101 | 74-128 | YES |
| 4-Chlorotoluene | 20.00 | 21.09 | 105 | 75-130 | YES |
| 1,3,5-Trimethylbenzene | 20.00 | 21.05 | 105 | 75-133 | YES |
| Pentachloroethane | 20.00 | 18.40 | 92 | 57-121 | YES |
| tert-Butylbenzene | 20.00 | 18.61 | 93 | 71-133 | YES |
| 1,2,4-Trimethylbenzene | 20.00 | 21.84 | 109 | 75-131 | YES |
| sec-Butylbenzene | 20.00 | 20.06 | 100 | 68-138 | YES |
| 1,3-Dichlorobenzene | 20.00 | 21.32 | 107 | 77-126 | YES |
| p-Isopropyltoluene | 20.00 | 20.83 | 104 | 71-136 | YES |
| 1,4-Dichlorobenzene | 20.00 | 20.20 | 101 | 78-125 | YES |
| 1,2-Dichlorobenzene | 20.00 | 20.57 | 103 | 77-124 | YES |
| n-Butylbenzene | 20.00 | 19.62 | 98 | 63-139 | YES |
| 1,2-Dibromo-3-Chloropropane | 20.00 | 19.89 | 99 | 66-122 | YES |
| 1,2,4-Trichlorobenzene | 20.00 | 16.72 | 84 | 61-132 | YES |
| Hexachlorobutadiene | 20.00 | 15.50 | 77 | 45-148 | YES |
| Naphthalene | 20.00 | 17.46 | 87 | 59-129 | YES |
| 1,2,3-Trichlorobenzene | 20.00 | 18.06 | 90 | 64-131 | YES |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): pl25c01.d Date Analyzed: 07/25/01

Instrument ID: HP07163 Time Analyzed: 09:04

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | | IS1(FBZ) | | IS2(CBZ) | | IS3(DCB) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 382723 | 7.986 | 247631 | 11.454 | 138543 | 13.466 |
| | UPPER LIMIT | 765446 | 8.486 | 495262 | 11.954 | 277086 | 13.966 |
| | LOWER LIMIT | 191362 | 7.486 | 123816 | 10.954 | 69272 | 12.966 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | VBLKP62 | 356251 | 7.992 | 229334 | 11.457 | 120942 | 13.466 |
| 02 | LCSWP62 | 346390 | 7.986 | 227973 | 11.458 | 135726 | 13.463 |
| 03 | 7631- | 333164 | 7.992 | 219186 | 11.457 | 117315 | 13.466 |
| 04 | 7631-MS | 350983 | 7.985 | 229856 | 11.457 | 133858 | 13.469 |
| 05 | 7631-MSD | 356764 | 7.989 | 233990 | 11.457 | 131912 | 13.463 |
| 06 | TBW7- | 347703 | 7.986 | 225759 | 11.455 | 117028 | 13.467 |

IS1 (FBZ)=Fluorobenzene
IS2 (CBZ)=Chlorobenzene-d5
IS3 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

6A
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.4512 | 0.4126 | 0.4340 | 0.5290 | 0.5377 | 0.4814 | | 0.4743 | 11 | AVG | |
| Chloromethane | #0.4497 | 0.4306 | 0.4308 | 0.4261 | 0.4213 | 0.3626 | | 0.4202 | 7 | AVG | # |
| Vinyl Chloride | *0.3304 | 0.3318 | 0.3181 | 0.3416 | 0.3286 | 0.2852 | | 0.3226 | 6 | AVG | * |
| Bromomethane | 0.1658 | 0.1781 | 0.1794 | 0.1748 | 0.1695 | 0.1407 | | 0.1681 | 9 | AVG | |
| Chloroethane | 0.1901 | 0.1978 | 0.1963 | 0.1967 | 0.1911 | 0.1600 | | 0.1887 | 8 | AVG | |
| Trichlorofluoromethane | 0.4103 | 0.3923 | 0.3878 | 0.4509 | 0.4643 | 0.4100 | | 0.4193 | 7 | AVG | |
| Ethyl Ether | 0.1940 | 0.2003 | 0.2120 | 0.2144 | 0.2085 | 0.1911 | | 0.2034 | 5 | AVG | |
| Acrolein | 0.0550 | 0.0564 | 0.0603 | 0.0568 | 0.0581 | 0.0483 | | 0.0558 | 7 | AVG | |
| 1,1-Dichloroethene | *0.1570 | 0.1657 | 0.1682 | 0.1685 | 0.1646 | 0.1575 | | 0.1636 | 3 | AVG | * |
| Freon 113 | 0.1584 | 0.1504 | 0.1423 | 0.1700 | 0.1549 | 0.1690 | | 0.1575 | 7 | AVG | |
| Acetone | 0.0224 | 0.0222 | 0.0233 | 0.0237 | 0.0232 | 0.0197 | | 0.0224 | 6 | AVG | |
| Methyl Iodide | 0.2323 | 0.2369 | 0.2512 | 0.2413 | 0.2362 | 0.2269 | | 0.2375 | 3 | AVG | |
| Carbon Disulfide | 0.5506 | 0.5479 | 0.5506 | 0.5340 | 0.5160 | 0.5034 | | 0.5337 | 4 | AVG | |
| 2-Propanol | 0.0197 | 0.0199 | 0.0197 | 0.0184 | 0.0171 | 0.0173 | | 0.0187 | 7 | AVG | |
| Allyl Chloride | 0.3092 | 0.3686 | 0.3797 | 0.3770 | 0.3559 | 0.3523 | | 0.3571 | 7 | AVG | |
| Methylene Chloride | 0.2252 | 0.2258 | 0.2175 | 0.2086 | 0.2031 | 0.1949 | | 0.2125 | 6 | AVG | |
| t-Butyl Alcohol | 0.0265 | 0.0279 | 0.0285 | 0.0275 | 0.0264 | 0.0277 | | 0.0274 | 3 | AVG | |
| Acrylonitrile | 0.0914 | 0.0999 | 0.1057 | 0.1040 | 0.1041 | 0.0940 | | 0.0998 | 6 | AVG | |
| trans-1,2-Dichloroethene | 0.1706 | 0.1903 | 0.2011 | 0.1930 | 0.1901 | 0.1813 | | 0.1877 | 6 | AVG | |
| Methyl Tertiary Butyl Ether | 0.6844 | 0.6958 | 0.7327 | 0.7213 | 0.7139 | 0.6602 | | 0.7014 | 4 | AVG | |
| n-Hexane | 0.2614 | 0.2359 | 0.2229 | 0.2742 | 0.2648 | 0.2843 | | 0.2573 | 9 | AVG | |
| 1,1-Dichloroethane | #0.4065 | 0.4166 | 0.4290 | 0.4138 | 0.4086 | 0.3988 | | 0.4122 | 2 | AVG | # |
| 2-Chloro-1,3-Butadiene | 0.4227 | 0.4060 | 0.3970 | 0.4122 | 0.4000 | 0.4057 | | 0.4073 | 2 | AVG | |
| di-Isopropyl Ether | 0.7381 | 0.7256 | 0.7433 | 0.7267 | 0.7032 | 0.6502 | | 0.7145 | 5 | AVG | |
| Ethyl t-Butyl Ether | 0.7993 | 0.8894 | 0.9362 | 0.9506 | 0.9362 | 0.9041 | | 0.9026 | 6 | AVG | |
| cis-1,2-Dichloroethene | 0.2928 | 0.3083 | 0.3131 | 0.3064 | 0.2943 | 0.2712 | | 0.2977 | 5 | AVG | |
| 1,2-Dichloroethene (total) | 0.2317 | 0.2493 | 0.2571 | 0.2497 | 0.2422 | 0.2262 | | 0.2427 | 5 | AVG | |
| 2,2-Dichloropropane | 0.4250 | 0.4248 | 0.4149 | 0.4233 | 0.4094 | 0.4219 | | 0.4199 | 2 | AVG | |
| 2-Butanone | 0.0300 | 0.0355 | 0.0341 | 0.0347 | 0.0345 | 0.0308 | | 0.0333 | 7 | AVG | |
| Propionitrile | 0.0504 | 0.0508 | 0.0504 | 0.0504 | 0.0483 | 0.0493 | | 0.0499 | 2 | AVG | |
| Methacrylonitrile | 0.1152 | 0.1185 | 0.1229 | 0.1244 | 0.1218 | 0.1144 | | 0.1195 | 3 | AVG | |
| Bromochloromethane | 0.1381 | 0.1435 | 0.1404 | 0.1365 | 0.1344 | 0.1253 | | 0.1364 | 5 | AVG | |
| Tetrahydrofuran | 0.0292 | 0.0295 | 0.0310 | 0.0315 | 0.0326 | 0.0309 | | 0.0308 | 4 | AVG | |
| Chloroform | *0.4943 | 0.5130 | 0.5203 | 0.4984 | 0.4850 | 0.4821 | | 0.4989 | 3 | AVG | * |
| 1,1,1-Trichloroethane | 0.4245 | 0.4174 | 0.4014 | 0.4207 | 0.4063 | 0.4383 | | 0.4181 | 3 | AVG | |
| Cyclohexane | 0.4066 | 0.3833 | 0.3682 | 0.4655 | 0.4376 | 0.5041 | | 0.4275 | 12 | AVG | |
| 1,1-Dichloropropene | 0.3031 | 0.3014 | 0.3007 | 0.3135 | 0.3068 | 0.3265 | | 0.3087 | 3 | AVG | |
| Carbon Tetrachloride | 0.3512 | 0.3363 | 0.3139 | 0.3387 | 0.3286 | 0.3652 | | 0.3390 | 5 | AVG | |
| Benzene | 1.1153 | 1.1273 | 1.1200 | 1.0670 | 1.0148 | 0.9136 | | 1.0597 | 8 | AVG | |
| Isobutyl Alcohol | 0.0099 | 0.0108 | 0.0108 | 0.0100 | 0.0097 | 0.0109 | | 0.0104 | 5 | AVG | |
| 1,2-Dichloroethane (mz 98) | 0.0364 | 0.0365 | 0.0391 | 0.0375 | 0.0361 | 0.0338 | | 0.0366 | 5 | AVG | |
| 1,2-Dichloroethane | 0.4172 | 0.4247 | 0.4359 | 0.4248 | 0.4163 | 0.4215 | | 0.4234 | 2 | AVG | |
| t-Amyl Methyl Ether | 0.5830 | 0.6964 | 0.7604 | 0.7748 | 0.7715 | 0.7660 | | 0.7253 | 10 | AVG | |
| n-Heptane | 0.2865 | 0.2189 | 0.2085 | 0.2313 | 0.2214 | 0.2287 | | 0.2326 | 12 | AVG | |
| Trichloroethene | 0.2796 | 0.2758 | 0.2631 | 0.2645 | 0.2608 | 0.2736 | | 0.2696 | 3 | AVG | |
| n-Butanol | 0.0076 | 0.0092 | 0.0094 | 0.0093 | 0.0093 | 0.0108 | | 0.0093 | 11 | AVG | |
| 1,2-Dichloropropane | *0.2645 | 0.2862 | 0.2911 | 0.2928 | 0.2874 | 0.2943 | | 0.2860 | 4 | AVG | * |
| Dibromomethane | 0.1625 | 0.1611 | 0.1668 | 0.1660 | 0.1612 | 0.1594 | | 0.1628 | 2 | AVG | |
| 1,4-Dioxane | 0.0025 | 0.0028 | 0.0030 | 0.0032 | 0.0031 | 0.0033 | | 0.0030 | 10 | AVG | |
| Methyl Methacrylate | 0.1337 | 0.1724 | 0.1964 | 0.2130 | 0.2145 | 0.2168 | | 0.1911 | 17 | 1STDEG | |
| Bromodichloromethane | 0.3428 | 0.3533 | 0.3701 | 0.3711 | 0.3668 | 0.3839 | | 0.3647 | 4 | AVG | |
| 2-Nitropropane | 0.0588 | 0.0614 | 0.0649 | 0.0695 | 0.0714 | 0.0749 | | 0.0668 | 9 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chloroethyl Vinyl Ether | 0.0903 | 0.1330 | 0.1530 | 0.1703 | 0.1723 | 0.1831 | | 0.1503 | 23 | 2NDDEG | |
| cis-1,3-Dichloropropene | 0.3357 | 0.3699 | 0.4126 | 0.4269 | 0.4244 | 0.4256 | | 0.3992 | 9 | AVG | |
| 4-Methyl-2-Pentanone | 0.2088 | 0.2461 | 0.2874 | 0.2856 | 0.2850 | 0.2671 | | 0.2633 | 12 | AVG | |
| Toluene | *0.9656 | 1.0442 | 1.0270 | 1.0175 | 0.9408 | 0.8642 | | 0.9766 | 7 | AVG | * |
| trans-1,3-Dichloropropene | 0.5062 | 0.5802 | 0.6263 | 0.6326 | 0.6258 | 0.6166 | | 0.5979 | 8 | AVG | |
| Ethyl Methacrylate | 0.3010 | 0.4088 | 0.4660 | 0.5035 | 0.5016 | 0.5008 | | 0.4470 | 18 | 1STDEG | |
| 1,1,2-Trichloroethane | 0.3545 | 0.3677 | 0.3603 | 0.3565 | 0.3368 | 0.3200 | | 0.3493 | 5 | AVG | |
| Tetrachloroethene | 0.4130 | 0.3986 | 0.3703 | 0.3864 | 0.3430 | 0.3211 | | 0.3721 | 9 | AVG | |
| 1,3-Dichloropropane | 0.6264 | 0.6782 | 0.7028 | 0.6676 | 0.6315 | 0.5605 | | 0.6445 | 8 | AVG | |
| 2-Hexanone | 0.2145 | 0.2588 | 0.3131 | 0.2931 | 0.2973 | 0.2783 | | 0.2758 | 13 | AVG | |
| Dibromochloromethane | 0.3417 | 0.3647 | 0.3696 | 0.3748 | 0.3697 | 0.3700 | | 0.3651 | 3 | AVG | |
| 1,2-Dibromoethane | 0.3294 | 0.3610 | 0.3694 | 0.3630 | 0.3552 | 0.3467 | | 0.3541 | 4 | AVG | |
| Chlorobenzene | #1.1081 | 1.1385 | 1.0927 | 1.0516 | 0.9807 | 0.8665 | | 1.0397 | 10 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.3758 | 0.3955 | 0.3783 | 0.3739 | 0.3465 | 0.3267 | | 0.3661 | 7 | AVG | |
| Ethylbenzene | *1.8122 | 1.8629 | 1.7975 | 1.8322 | 1.6529 | 1.3495 | | 1.7179 | 11 | AVG | * |
| m+p-Xylene | 0.6764 | 0.7437 | 0.6976 | 0.6785 | 0.5992 | 0.5026 | | 0.6497 | 13 | AVG | |
| Xylene (Total) | 0.6569 | 0.7171 | 0.6925 | 0.6779 | 0.6027 | 0.5137 | | 0.6435 | 12 | AVG | |
| o-Xylene | 0.6180 | 0.6641 | 0.6822 | 0.6767 | 0.6098 | 0.5358 | | 0.6311 | 9 | AVG | |
| Styrene | 0.9329 | 1.0922 | 1.1361 | 1.1350 | 1.0388 | 0.8654 | | 1.0334 | 11 | AVG | |
| Bromoform | #0.2173 | 0.2353 | 0.2449 | 0.2571 | 0.2586 | 0.2762 | | 0.2482 | 8 | AVG | # |
| Isopropylbenzene | 1.4545 | 1.6392 | 1.6102 | 1.7515 | 1.5838 | 1.3632 | | 1.5671 | 9 | AVG | |
| Cyclohexanone | 0.0125 | 0.0142 | 0.0154 | 0.0165 | 0.0168 | 0.0163 | | 0.0153 | 11 | AVG | |
| Bromobenzene | 0.8554 | 0.8439 | 0.8411 | 0.7907 | 0.7303 | 0.6442 | | 0.7843 | 11 | AVG | |
| 1,1,2,2-Tetrachloroethane | #0.9082 | 0.9641 | 0.9210 | 0.8892 | 0.8629 | 0.8921 | | 0.9063 | 4 | AVG | # |
| 1,2,3-Trichloropropane | 0.2793 | 0.2921 | 0.2816 | 0.2659 | 0.2494 | 0.2395 | | 0.2680 | 8 | AVG | |
| trans-1,4-Dichloro-2-Butene | 0.2895 | 0.3223 | 0.3154 | 0.3131 | 0.3158 | 0.3083 | | 0.3107 | 4 | AVG | |
| n-Propylbenzene | 4.0008 | 3.9853 | 3.7998 | 3.8464 | 3.5034 | 3.0096 | | 3.6909 | 10 | AVG | |
| 2-Chlorotoluene | 2.4532 | 2.5255 | 2.4478 | 2.4098 | 2.3218 | 2.1803 | | 2.3897 | 5 | AVG | |
| 4-Chlorotoluene | 2.9227 | 2.9651 | 2.9313 | 2.8567 | 2.7031 | 2.5039 | | 2.8138 | 6 | AVG | |
| 1,3,5-Trimethylbenzene | 2.5958 | 2.7719 | 2.7158 | 2.7480 | 2.5749 | 2.2957 | | 2.6170 | 7 | AVG | |
| Pentachloroethane | 0.4234 | 0.4782 | 0.5063 | 0.4832 | 0.4677 | 0.4103 | | 0.4615 | 8 | AVG | |
| tert-Butylbenzene | 0.5300 | 0.5839 | 0.6001 | 0.6371 | 0.5969 | 0.5716 | | 0.5866 | 6 | AVG | |
| 1,2,4-Trimethylbenzene | 2.6163 | 2.9350 | 2.8504 | 2.8192 | 2.5586 | 2.1619 | | 2.6569 | 11 | AVG | |
| sec-Butylbenzene | 2.9905 | 3.2431 | 3.1319 | 3.4009 | 3.1722 | 2.7113 | | 3.1083 | 8 | AVG | |
| 1,3-Dichlorobenzene | 1.6439 | 1.6852 | 1.5963 | 1.4878 | 1.3475 | 1.1232 | | 1.4807 | 14 | AVG | |
| p-Isopropyltoluene | 2.4777 | 2.7076 | 2.6903 | 2.7624 | 2.5069 | 2.0961 | | 2.5402 | 10 | AVG | |
| 1,4-Dichlorobenzene | 1.7477 | 1.7358 | 1.6640 | 1.5740 | 1.5239 | 1.3401 | | 1.5976 | 10 | AVG | |
| 1,2-Dichlorobenzene | 1.5453 | 1.6073 | 1.5524 | 1.5045 | 1.4380 | 1.2835 | | 1.4885 | 8 | AVG | |
| n-Butylbenzene | 2.2457 | 2.5645 | 2.6888 | 2.9084 | 2.7601 | 2.4005 | | 2.5947 | 9 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.1419 | 0.1787 | 0.1753 | 0.1800 | 0.1909 | 0.2226 | | 0.1816 | 14 | AVG | |
| 1,2,4-Trichlorobenzene | 0.8982 | 1.0277 | 1.0999 | 1.1412 | 1.1199 | 1.0751 | | 1.0603 | 8 | AVG | |
| Hexachlorobutadiene | 0.4231 | 0.5125 | 0.5111 | 0.5697 | 0.5511 | 0.5373 | | 0.5175 | 10 | AVG | |
| Naphthalene | 1.9731 | 2.4816 | 2.8678 | 2.7522 | 2.6894 | 2.3770 | | 2.5235 | 13 | AVG | |
| 1,2,3-Trichlorobenzene | 0.8719 | 0.9969 | 1.0697 | 1.0497 | 1.0478 | 1.0158 | | 1.0086 | 7 | AVG | |
| Dibromofluoromethane | 0.2572 | 0.2692 | 0.2592 | 0.2498 | 0.2588 | 0.2481 | | 0.2571 | 3 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0642 | 0.0747 | 0.0719 | 0.0688 | 0.0688 | 0.0657 | | 0.0690 | 6 | AVG | |
| Dibromofluoromethane(mz111) | 0.2624 | 0.2817 | 0.2619 | 0.2571 | 0.2667 | 0.2544 | | 0.2640 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0377 | 0.0469 | 0.0464 | 0.0439 | 0.0463 | 0.0422 | | 0.0439 | 8 | AVG | |
| Toluene-d8(mz100) | 0.8964 | 1.0493 | 0.9971 | 0.9856 | 0.9715 | 0.8027 | | 0.9504 | 9 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4330 | 0.4849 | 0.4432 | 0.4396 | 0.4387 | 0.3765 | | 0.4360 | 8 | AVG | |
| Toluene-d8 | 1.3848 | 1.5860 | 1.5047 | 1.4913 | 1.4604 | 1.1667 | | 1.4323 | 10 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 0.5656 | 0.6324 | 0.5828 | 0.5817 | 0.5823 | 0.5161 | | 0.5768 | 6 | AVG |

Average %RSD 7

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%



FORM VI VOA

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: pl25c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.4743 | 0.5294 | 55.80 | 50 | -12 | |
| # | Chloromethane | 0.4202 | 0.4135 | 49.21 | 50 | 2 | # |
| * | Vinyl Chloride | 0.3226 | 0.3119 | 48.34 | 50 | 3 | * |
| | Bromomethane | 0.1681 | 0.1627 | 48.40 | 50 | 3 | |
| | Chloroethane | 0.1887 | 0.1839 | 48.73 | 50 | 3 | |
| | Trichlorofluoromethane | 0.4193 | 0.4887 | 58.28 | 50 | -17 | |
| | Ethyl Ether | 0.2034 | 0.2132 | 52.42 | 50 | -5 | |
| | Acrolein | 0.0558 | 0.0639 | 572.53 | 500 | -15 | |
| * | 1,1-Dichloroethene | 0.1636 | 0.1681 | 51.38 | 50 | -3 | * |
| | Freon 113 | 0.1575 | 0.1672 | 53.08 | 50 | -6 | |
| | Acetone | 0.0224 | 0.0263 | 117.19 | 100 | -17 | |
| | Methyl Iodide | 0.2375 | 0.2402 | 50.58 | 50 | -1 | |
| | Carbon Disulfide | 0.5337 | 0.5379 | 50.39 | 50 | -1 | |
| | 2-Propanol | 0.0187 | 0.0221 | 295.20 | 250 | -18 | |
| | Allyl Chloride | 0.3571 | 0.3166 | 44.33 | 50 | 11 | |
| | Methylene Chloride | 0.2125 | 0.2128 | 50.05 | 50 | 0 | |
| | t-Butyl Alcohol | 0.0274 | 0.0360 | 328.24 | 250 | -31 | |
| | Acrylonitrile | 0.0998 | 0.1132 | 56.71 | 50 | -13 | |
| | trans-1,2-Dichloroethene | 0.1877 | 0.1920 | 51.14 | 50 | -2 | |
| | Methyl Tertiary Butyl Ether | 0.7014 | 0.7394 | 52.71 | 50 | -5 | |
| | n-Hexane | 0.2573 | 0.2300 | 44.69 | 50 | 11 | |
| # | 1,1-Dichloroethane | 0.4122 | 0.4271 | 51.80 | 50 | -4 | # |
| | 2-Chloro-1,3-Butadiene | 0.4073 | 0.4311 | 52.93 | 50 | -6 | |
| | di-Isopropyl Ether | 0.7145 | 0.7032 | 49.21 | 50 | 2 | |
| | Ethyl t-Butyl Ether | 0.9026 | 0.9000 | 49.85 | 50 | 0 | |
| | cis-1,2-Dichloroethene | 0.2977 | 0.2939 | 49.37 | 50 | 1 | |
| | 1,2-Dichloroethene (total) | 0.2427 | 0.2430 | 100.51 | 100 | -1 | |
| | 2,2-Dichloropropane | 0.4199 | 0.4352 | 51.83 | 50 | -4 | |
| | 2-Butanone | 0.0333 | 0.0396 | 119.01 | 100 | -19 | |
| | Propionitrile | 0.0499 | 0.0568 | 284.49 | 250 | -14 | |
| | Methacrylonitrile | 0.1195 | 0.1298 | 135.74 | 125 | -9 | |
| | Bromochloromethane | 0.1364 | 0.1259 | 46.18 | 50 | 8 | |
| | Tetrahydrofuran | 0.0308 | 0.0342 | 110.99 | 100 | -11 | |
| * | Chloroform | 0.4989 | 0.5285 | 52.97 | 50 | -6 | * |
| | 1,1,1-Trichloroethane | 0.4181 | 0.4393 | 52.54 | 50 | -5 | |
| | Cyclohexane | 0.4275 | 0.4077 | 47.68 | 50 | 5 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: pl25c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3087 | 0.3059 | 49.55 | 50 | 1 | |
| | Carbon Tetrachloride | 0.3390 | 0.3590 | 52.95 | 50 | -6 | |
| | Benzene | 1.0597 | 1.0534 | 49.70 | 50 | 1 | |
| | Isobutyl Alcohol | 0.0104 | 0.0138 | 833.31 | 625 | -33 | |
| | 1,2-Dichloroethane | 0.4234 | 0.4749 | 56.07 | 50 | -12 | |
| | t-Amyl Methyl Ether | 0.7253 | 0.7482 | 51.57 | 50 | -3 | |
| | n-Heptane | 0.2326 | 0.1758 | 37.81 | 50 | 24 | |
| | Trichloroethene | 0.2696 | 0.2652 | 49.19 | 50 | 2 | |
| | n-Butanol | 0.0093 | 0.0114 | 1534.98 | 1250 | -23 | |
| * | 1,2-Dichloropropane | 0.2860 | 0.2769 | 48.40 | 50 | 3 | * |
| | Dibromomethane | 0.1628 | 0.1742 | 53.50 | 50 | -7 | |
| | 1,4-Dioxane | 0.0030 | 0.0035 | 739.36 | 625 | -18 | |
| | Methyl Methacrylate | 0.1911 | 0.2218 | 52.57 | 50 | -5 | |
| | Bromodichloromethane | 0.3647 | 0.3882 | 53.24 | 50 | -6 | |
| | 2-Nitropropane | 0.0668 | 0.0861 | 128.91 | 100 | -29 | |
| | 2-Chloroethyl Vinyl Ether | 0.1503 | 0.1636 | 48.87 | 50 | 2 | |
| | cis-1,3-Dichloropropene | 0.3992 | 0.4155 | 52.05 | 50 | -4 | |
| | 4-Methyl-2-Pentanone | 0.2633 | 0.3448 | 130.92 | 100 | -31 | |
| * | Toluene | 0.9766 | 1.0222 | 52.34 | 50 | -5 | * |
| | trans-1,3-Dichloropropene | 0.5979 | 0.6674 | 55.81 | 50 | -12 | |
| | Ethyl Methacrylate | 0.4470 | 0.5497 | 55.75 | 50 | -11 | |
| | 1,1,2-Trichloroethane | 0.3493 | 0.3793 | 54.29 | 50 | -9 | |
| | Tetrachloroethene | 0.3721 | 0.3695 | 49.65 | 50 | 1 | |
| | 1,3-Dichloropropane | 0.6445 | 0.7071 | 54.85 | 50 | -10 | |
| | 2-Hexanone | 0.2758 | 0.3866 | 140.14 | 100 | -40 | |
| | Dibromochloromethane | 0.3651 | 0.4003 | 54.82 | 50 | -10 | |
| | 1,2-Dibromoethane | 0.3541 | 0.3805 | 53.73 | 50 | -7 | |
| # | Chlorobenzene | 1.0397 | 1.0586 | 50.91 | 50 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3661 | 0.3826 | 52.25 | 50 | -4 | |
| * | Ethylbenzene | 1.7179 | 1.7952 | 52.25 | 50 | -5 | * |
| | m+p-Xylene | 0.6497 | 0.6576 | 101.22 | 100 | -1 | |
| | Xylene (Total) | 0.6435 | 0.6540 | 152.47 | 150 | -2 | |
| | o-Xylene | 0.6311 | 0.6469 | 51.25 | 50 | -3 | |
| | Styrene | 1.0334 | 1.1263 | 54.49 | 50 | -9 | |
| # | Bromoform | 0.2482 | 0.2887 | 58.15 | 50 | -16 | # |
| | Isopropylbenzene | 1.5671 | 1.6250 | 51.85 | 50 | -4 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: p125c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Bromobenzene | 0.7843 | 0.7940 | 50.62 | 50 | -1 | |
| # | 1,1,2,2-Tetrachloroethane | 0.9063 | 0.9919 | 54.73 | 50 | -9 | # |
| | 1,2,3-Trichloropropane | 0.2680 | 0.3148 | 58.74 | 50 | -17 | |
| | trans-1,4-Dichloro-2-Butene | 0.3107 | 0.3815 | 153.46 | 125 | -23 | |
| | n-Propylbenzene | 3.6909 | 3.5258 | 47.76 | 50 | 4 | |
| | 2-Chlorotoluene | 2.3897 | 2.3773 | 49.74 | 50 | 1 | |
| | 4-Chlorotoluene | 2.8138 | 2.8371 | 50.41 | 50 | -1 | |
| | 1,3,5-Trimethylbenzene | 2.6170 | 2.5723 | 49.15 | 50 | 2 | |
| | Pentachloroethane | 0.4615 | 0.4571 | 49.53 | 50 | 1 | |
| | tert-Butylbenzene | 0.5866 | 0.5384 | 45.89 | 50 | 8 | |
| | 1,2,4-Trimethylbenzene | 2.6569 | 2.6828 | 50.49 | 50 | -1 | |
| | sec-Butylbenzene | 3.1083 | 2.9521 | 47.49 | 50 | 5 | |
| | 1,3-Dichlorobenzene | 1.4807 | 1.4577 | 49.22 | 50 | 2 | |
| | p-Isopropyltoluene | 2.5402 | 2.4172 | 47.58 | 50 | 5 | |
| | 1,4-Dichlorobenzene | 1.5976 | 1.5378 | 48.13 | 50 | 4 | |
| | 1,2-Dichlorobenzene | 1.4885 | 1.4945 | 50.20 | 50 | 0 | |
| | n-Butylbenzene | 2.5947 | 2.4913 | 48.01 | 50 | 4 | |
| | 1,2-Dibromo-3-Chloropropane | 0.1816 | 0.2230 | 61.41 | 50 | -23 | |
| | 1,2,4-Trichlorobenzene | 1.0603 | 1.0234 | 48.26 | 50 | 3 | |
| | Hexachlorobutadiene | 0.5175 | 0.4422 | 42.73 | 50 | 15 | |
| | Naphthalene | 2.5235 | 2.6942 | 53.38 | 50 | -7 | |
| | 1,2,3-Trichlorobenzene | 1.0086 | 0.9844 | 48.80 | 50 | 2 | |
| | Dibromofluoromethane | 0.2571 | 0.2459 | 47.83 | 50 | 4 | |
| | 1,2-Dichloroethane-d4 | 0.0690 | 0.0638 | 46.23 | 50 | 8 | |
| | Toluene-d8 | 1.4323 | 1.4762 | 51.53 | 50 | -3 | |
| | 4-Bromofluorobenzene | 0.5768 | 0.5760 | 49.93 | 50 | 0 | |

Average %Drift 8

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd25z.d DFTPP Injection Date: 04/15/02

Instrument ID: HP05525 DFTPP Injection Time: 17:22

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 57.1 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 64.5 |
| 70 | Less than 2.0% of mass 69 | 0.13 ( 0.2)1 |
| 127 | 40.0 - 60.0% of mass 198 | 47.7 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.12 |
| 275 | 10.0 - 30.0% of mass 198 | 17.8 |
| 365 | Greater than 1.00% of mass 198 | 1.8 |
| 441 | Present, and less than mass 443 | 4.76 |
| 442 | Greater than 40.0 % of mass 198 | 68.0 |
| 443 | 17.0 - 23.0% of mass 442 | 13.0 ( 19.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd251.d | 04/15/02 | 17:52 |
| 02 | SSTD120 | STD0982 | jd252.d | 04/15/02 | 18:53 |
| 03 | SSTD080 | STD0982 | jd253.d | 04/15/02 | 19:54 |
| 04 | SSTD030 | STD0982 | jd254.d | 04/15/02 | 20:57 |
| 05 | SSTD015 | STD0982 | jd255.d | 04/15/02 | 21:58 |
| 06 | SSTD005 | STD0982 | jd256.d | 04/15/02 | 22:59 |
| 07 | SSTD001 | 8270MDL0982 | jd257.d | 04/16/02 | 00:00 |
| 08 | 102LBLCSJ | 102LBLCS | jd258.d | 04/16/02 | 01:01 |
| 09 | APRTR | 3801695 | jd259.d | 04/16/02 | 02:02 |
| 10 | APRTRMS | 3801695 | jd260.d | 04/16/02 | 03:04 |
| 11 | APRTRMSD | 3801695 | jd261.d | 04/16/02 | 04:05 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd35y.d DFTPP Injection Date: 04/19/02

Instrument ID: HP05525 DFTPP Injection Time: 08:38

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 58.6 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 69.1 |
| 70 | Less than 2.0% of mass 69 | 0.18 ( 0.26)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.3 |
| 275 | 10.0 - 30.0% of mass 198 | 17.2 |
| 365 | Greater than 1.00% of mass 198 | 1.52 |
| 441 | Present, and less than mass 443 | 9.07 |
| 442 | Greater than 40.0 % of mass 198 | 63.9 |
| 443 | 17.0 - 23.0% of mass 442 | 13.4 ( 20.9)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd35a.d | 04/19/02 | 10:45 |
| 02 | SBLKWA108J | SBLKWA108 | jd352.d | 04/19/02 | 12:35 |
| 03 | 108WALCSJ | 108WALCS | jd353.d | 04/19/02 | 13:37 |
| 04 | 108WALCSD | 108WALCSD | jd354.d | 04/19/02 | 14:38 |
| 05 | SS111 | 3806001 | jd355.d | 04/19/02 | 15:39 |
| 06 | 417FB | 3806673 | jd356.d | 04/19/02 | 16:40 |
| 07 | 417PD | 3806674 | jd357.d | 04/19/02 | 17:41 |
| 08 | 417PI | 3806675 | jd358.d | 04/19/02 | 18:43 |

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd370.d DFTPP Injection Date: 04/22/02

Instrument ID: HP05525 DFTPP Injection Time: 08:29

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 49.3 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 58.2 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 43.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.12 |
| 275 | 10.0 - 30.0% of mass 198 | 18.1 |
| 365 | Greater than 1.00% of mass 198 | 1.38 |
| 441 | Present, and less than mass 443 | 9.21 |
| 442 | Greater than 40.0 % of mass 198 | 72.4 |
| 443 | 17.0 - 23.0% of mass 442 | 13.2 ( 18.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd371.d | 04/22/02 | 09:00 |
| 02 | SS111DL | 3806001DL | jd372.d | 04/22/02 | 10:44 |
| 03 | 41720 | 3806676 | jd373.d | 04/22/02 | 11:46 |
| 04 | 41708 | 3806677 | jd374.d | 04/22/02 | 13:20 |
| 05 | RI-07 | 3806698 | jd375.d | 04/22/02 | 14:22 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd470.d DFTPP Injection Date: 04/26/02

Instrument ID: HP05525 DFTPP Injection Time: 06:59

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 54.4 |
| 68 | Less than 2.0% of mass 69 | 0.48 ( 0.75)1 |
| 69 | Mass 69 relative abundance | 64.2 |
| 70 | Less than 2.0% of mass 69 | 0.35 ( 0.55)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.0 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.53 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 1.78 |
| 441 | Present, and less than mass 443 | 11.6 |
| 442 | Greater than 40.0 % of mass 198 | 78.4 |
| 443 | 17.0 - 23.0% of mass 442 | 14.6 ( 18.7)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd471.d | 04/26/02 | 07:40 |
| 02 | MJ26- | 3809676 | jd472.d | 04/26/02 | 08:51 |
| 03 | MJ36- | 3809677 | jd473.d | 04/26/02 | 09:49 |
| 04 | MJ362 | 3809678 | jd474.d | 04/26/02 | 10:46 |
| 05 | MJ46- | 3809679 | jd475.d | 04/26/02 | 11:43 |
| 06 | MJ56- | 3809680 | jd476.d | 04/26/02 | 12:40 |
| 07 | MJ66- | 3809681 | jd477.d | 04/26/02 | 13:37 |
| 08 | MJ76- | 3809682 | jd478.d | 04/26/02 | 14:35 |
| 09 | SBLKWE112J | SBLKWE112 | jd479.d | 04/26/02 | 15:32 |
| 10 | 112WELCSJ | 112WELCS | jd480.d | 04/26/02 | 16:32 |
| 11 | 112WELCSDJ | 112WELCSD | jd481.d | 04/26/02 | 17:29 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd490.d DFTPP Injection Date: 04/26/02

Instrument ID: HP05525 DFTPP Injection Time: 18:29

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 55.0 |
| 68 | Less than 2.0% of mass 69 | 0.5 ( 0.76)1 |
| 69 | Mass 69 relative abundance | 65.4 |
| 70 | Less than 2.0% of mass 69 | 0.22 ( 0.33)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.5 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.1 |
| 275 | 10.0 - 30.0% of mass 198 | 18.8 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, and less than mass 443 | 12.0 |
| 442 | Greater than 40.0 % of mass 198 | 77.5 |
| 443 | 17.0 - 23.0% of mass 442 | 14.4 ( 18.5)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd491.d | 04/26/02 | 18:55 |
| 02 | SWM24 | 3807884 | jd492.d | 04/26/02 | 20:01 |
| 03 | SWM24MS | 3807884 | jd493.d | 04/26/02 | 20:59 |
| 04 | SWM24MSD | 3807884 | jd494.d | 04/26/02 | 21:56 |
| 05 | CHAN1 | 3807880 | jd495.d | 04/26/02 | 22:53 |
| 06 | CHAN2 | 3807881 | jd496.d | 04/26/02 | 23:51 |
| 07 | CHAN3 | 3807882 | jd497.d | 04/27/02 | 00:48 |
| 08 | CHAN7 | 3807883 | jd498.d | 04/27/02 | 01:45 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd51z.d DFTPP Injection Date: 04/28/02

Instrument ID: HP05525 DFTPP Injection Time: 15:04

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 53.8 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 71.3 |
| 70 | Less than 2.0% of mass 69 | 0.36 ( 0.5)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.4 |
| 197 | Less than 1.0% of mass 198 | 0.63 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.36 |
| 275 | 10.0 - 30.0% of mass 198 | 19.0 |
| 365 | Greater than 1.00% of mass 198 | 1.58 |
| 441 | Present, and less than mass 443 | 8.88 |
| 442 | Greater than 40.0 % of mass 198 | 59.3 |
| 443 | 17.0 - 23.0% of mass 442 | 11.6 ( 19.6)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd51a.d | 04/28/02 | 15:31 |
| 02 | SSTD120 | STD1132 | jd512.d | 04/28/02 | 16:34 |
| 03 | SSTD080 | STD1132 | jd513.d | 04/28/02 | 17:28 |
| 04 | SSTD030 | STD1132 | jd514.d | 04/28/02 | 18:23 |
| 05 | SSTD015 | STD1132 | jd515.d | 04/28/02 | 19:19 |
| 06 | SSTD005 | STD1132 | jd516.d | 04/28/02 | 20:14 |
| 07 | SSTD001 | 8270MDL1132 | jd517.d | 04/28/02 | 21:09 |
| 08 | CHN7D | 3807885 | jd520.d | 04/28/02 | 22:04 |
| 09 | 41802 | 3807661 | jd521.d | 04/28/02 | 23:00 |
| 10 | 41817 | 3807662 | jd522.d | 04/28/02 | 23:55 |
| 11 | 41826 | 3807664 | jd524.d | 04/29/02 | 01:45 |
| 12 | 418-7 | 3807665 | jd525.d | 04/29/02 | 02:40 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd530.d DFTPP Injection Date: 04/29/02

Instrument ID: HP05525 DFTPP Injection Time: 07:45

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 58.2 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 76.9 |
| 70 | Less than 2.0% of mass 69 | 0.33 ( 0.43)1 |
| 127 | 40.0 - 60.0% of mass 198 | 50.2 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.59 |
| 275 | 10.0 - 30.0% of mass 198 | 18.7 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, and less than mass 443 | 7.86 |
| 442 | Greater than 40.0 % of mass 198 | 56.7 |
| 443 | 17.0 - 23.0% of mass 442 | 10.4 ( 18.4)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd531.d | 04/29/02 | 08:20 |
| 02 | 41811 | 3807667 | jd533.d | 04/29/02 | 10:39 |
| 03 | SBLKLC114J | SBLKLC114 | jd534.d | 04/29/02 | 12:33 |
| 04 | 41823 | 3807663 | jd53a.d | 04/29/02 | 13:29 |
| 05 | 114LCLCSJ | 114LCLCS | jd535.d | 04/29/02 | 14:24 |
| 06 | KM033 | 3809515 | jd536.d | 04/29/02 | 15:19 |
| 07 | KM033MS | 3809515 | jd537.d | 04/29/02 | 16:14 |
| 08 | KM033MSD | 3809515 | jd538.d | 04/29/02 | 17:10 |
| 09 | KM034 | 3809514 | jd539.d | 04/29/02 | 18:05 |
| 10 | 96041 | 3808958 | jd540.d | 04/29/02 | 19:00 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md310.d DFTPP Injection Date: 04/15/02

Instrument ID: HP06755 DFTPP Injection Time: 08:30

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 33.0 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 46.2 |
| 70 | Less than 2.0% of mass 69 | 0.1 ( 0.22)1 |
| 127 | 40.0 - 60.0% of mass 198 | 42.2 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.57 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, and less than mass 443 | 7.58 |
| 442 | Greater than 40.0 % of mass 198 | 49.7 |
| 443 | 17.0 - 23.0% of mass 442 | 9.35 ( 18.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0842 | md31a.d | 04/15/02 | 10:33 |
| 02 | SSTD120 | STD0842 | md312.d | 04/15/02 | 11:44 |
| 03 | SSTD080 | STD0842 | md313.d | 04/15/02 | 12:43 |
| 04 | SSTD030 | STD0842 | md314.d | 04/15/02 | 13:42 |
| 05 | SSTD005 | STD0842 | md315.d | 04/15/02 | 14:41 |
| 06 | SSTD015 | STD0842 | md316.d | 04/15/02 | 15:40 |
| 07 | SSTD001 | 8270MDL0842 | md317.d | 04/15/02 | 16:39 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md390.d DFTPP Injection Date: 04/17/02

Instrument ID: HP06755 DFTPP Injection Time: 15:17

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 36.6 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 49.3 |
| 70 | Less than 2.0% of mass 69 | 0.15 ( 0.31)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.0 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.71 |
| 275 | 10.0 - 30.0% of mass 198 | 19.4 |
| 365 | Greater than 1.00% of mass 198 | 1.78 |
| 441 | Present, and less than mass 443 | 6.17 |
| 442 | Greater than 40.0 % of mass 198 | 50.0 |
| 443 | 17.0 - 23.0% of mass 442 | 9.41 ( 18.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | md391.d | 04/17/02 | 15:54 |
| 02 | SBLKWB107M | SBLKWB107 | md392.d | 04/17/02 | 17:41 |
| 03 | 107WBLCSM | 107WBLCS | md393.d | 04/17/02 | 18:39 |
| 04 | 107WBLCSDM | 107WBLCSD | md394.d | 04/17/02 | 19:37 |
| 05 | SS401 | 3805998 | md395.d | 04/17/02 | 20:36 |
| 06 | SS402 | 3805999 | md396.d | 04/17/02 | 21:34 |
| 07 | SS701 | 3806000 | md397.d | 04/17/02 | 22:32 |
| 08 | SS101 | 3806002 | md399.d | 04/18/02 | 00:29 |
| 09 | SS601 | 3806003 | md400.d | 04/18/02 | 01:27 |
| 10 | SSRI6 | 3806005 | md401.d | 04/18/02 | 02:26 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md410.d DFTPP Injection Date: 04/18/02

Instrument ID: HP06755 DFTPP Injection Time: 06:56

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 32.5 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 46.5 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 42.8 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.66 |
| 275 | 10.0 - 30.0% of mass 198 | 19.5 |
| 365 | Greater than 1.00% of mass 198 | 2.12 |
| 441 | Present, and less than mass 443 | 7.71 |
| 442 | Greater than 40.0 % of mass 198 | 54.1 |
| 443 | 17.0 - 23.0% of mass 442 | 10.4 ( 19.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | md411.d | 04/18/02 | 07:22 |
| 02 | SSRS6 | 3806006 | md413.d | 04/18/02 | 09:26 |
| 03 | PSTT1 | 3806034 | md414.d | 04/18/02 | 10:24 |
| 04 | DCHGE | 3806036 | md415.d | 04/18/02 | 11:23 |
| 05 | SBLKLF107M | SBLKLF107 | md416.d | 04/18/02 | 12:21 |
| 06 | 107LFLCSM | 107LFLCS | md417.d | 04/18/02 | 13:19 |
| 07 | CL131 | 3805045 | md418.d | 04/18/02 | 14:18 |
| 08 | CL131MS | 3805045 | md419.d | 04/18/02 | 15:16 |
| 09 | CL131MSD | 3805045 | md420.d | 04/18/02 | 16:15 |

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SSW02

| | LL #'s | EPA SAMPLE NO. | S1 (2FP)# | S2 (PHL)# | S3 (TBP)# | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | 3805998 | SS401 | 44 | 32 | 68 | 0 |
| 02 | 3805999 | SS402 | 32 | 24 | 55 | 0 |
| 03 | 3806000 | SS701 | 44 | 32 | 67 | 0 |
| 04 | 3806001 | SS111 | 60 | 39 | 92 | 0 |
| 05 | 3806001DL | SS111DL | 57 | 43 | 60 | 0 |
| 06 | 3806002 | SS101 | 50 | 37 | 73 | 0 |
| 07 | 3806003 | SS601 | 49 | 35 | 69 | 0 |
| 08 | 3806005 | SSRI6 | 49 | 36 | 72 | 0 |
| 09 | 3806006 | SSRS6 | 48 | 34 | 72 | 0 |
| 10 | 3806673 | 417FB | 59 | 40 | 82 | 0 |
| 11 | 3806674 | 417PD | 63 | 46 | 80 | 0 |
| 12 | 3806675 | 417PI | 56 | 40 | 82 | 0 |
| 13 | 3806676 | 41720 | 64 | 47 | 79 | 0 |
| 14 | 3806677 | 41708 | 61 | 45 | 74 | 0 |
| 15 | 3806698 | RI-07 | 66 | 49 | 82 | 0 |
| 16 | 3807661 | 41802 | 73 | 53 | 91 | 0 |
| 17 | 3807662 | 41817 | 76 | 57 | 97 | 0 |
| 18 | 3807663 | 41823 | 76 | 60 | 96 | 0 |
| 19 | 3807664 | 41826 | 80 | 61 | 95 | 0 |
| 20 | 3807665 | 418-7 | 77 | 56 | 93 | 0 |
| 21 | 3807667 | 41811 | 75 | 56 | 95 | 0 |
| 22 | SBLKWB107 | SBLKWB107M | 47 | 34 | 68 | 0 |
| 23 | SBLKWA108 | SBLKWA108J | 58 | 42 | 79 | 0 |
| 24 | SBLKWE112 | SBLKWE112J | 70 | 58 | 88 | 0 |
| 25 | 107WBLCS | 107WBLCSM | 52 | 38 | 73 | 0 |
| 26 | 107WBLCSD | 107WBLCSDM | 51 | 37 | 75 | 0 |
| 27 | 108WALCS | 108WALCSJ | 66 | 47 | 89 | 0 |
| 28 | 108WALCSD | 108WALCSD | 67 | 48 | 87 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (22-96) |
| S2 (PHL) = Phenol-d6 | (12-66) |
| S3 (TBP) = 2,4,6-Tribromophenol | (36-147) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SSW02

| | LL #'s | EPA SAMPLE NO. | S1 (2FP)# | S2 (PHL)# | S3 (TBP)# | TOT OUT |
|---|---|---|---|---|---|---|
| 29 | 112WELCS | 112WELCSJ | 72 | 56 | 90 | 0 |
| 30 | 112WELCSD | 112WELCSDJ | 72 | 57 | 86 | 0 |
| 31 | 3807884 | SWM24 | 68 | 51 | 90 | 0 |
| 32 | 3807884 | SWM24MS | 70 | 53 | 90 | 0 |
| 33 | 3807884 | SWM24MSD | 69 | 54 | 92 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (22-96) |
| S2 (PHL) = Phenol-d6 | (12-66) |
| S3 (TBP) = 2,4,6-Tribromophenol | (36-147) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLKWB107M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md392.d Lab Sample ID: SBLKWB107

Date Extracted: 04/17/02 Extraction: Sepf

Date Analyzed: 04/17/02 Time Analyzed: 17:41

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP06755

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 107WBLCSM | 107WBLCS | md393.d | 04/17/02 |
| 02 | 107WBLCSDM | 107WBLCSD | md394.d | 04/17/02 |
| 03 | SS401 | 3805998 | md395.d | 04/17/02 |
| 04 | SS402 | 3805999 | md396.d | 04/17/02 |
| 05 | SS701 | 3806000 | md397.d | 04/17/02 |
| 06 | SS101 | 3806002 | md399.d | 04/18/02 |
| 07 | SS601 | 3806003 | md400.d | 04/18/02 |
| 08 | SSRI6 | 3806005 | md401.d | 04/18/02 |
| 09 | SSRS6 | 3806006 | md413.d | 04/18/02 |
| 10 | PSTT1 | 3806034 | md414.d | 04/18/02 |
| 11 | DCHGE | 3806036 | md415.d | 04/18/02 |

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWA108J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd352.d Lab Sample ID: SBLKWA108

Date Extracted: 04/18/02 Extraction: Sepf

Date Analyzed: 04/19/02 Time Analyzed: 12:35

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP05525

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 108WALCSJ | 108WALCS | jd353.d | 04/19/02 |
| 02 | 108WALCSD | 108WALCSD | jd354.d | 04/19/02 |
| 03 | SS111 | 3806001 | jd355.d | 04/19/02 |
| 04 | 417FB | 3806673 | jd356.d | 04/19/02 |
| 05 | 417PD | 3806674 | jd357.d | 04/19/02 |
| 06 | 417PI | 3806675 | jd358.d | 04/19/02 |
| 07 | SS111DL | 3806001DL | jd372.d | 04/22/02 |
| 08 | 41720 | 3806676 | jd373.d | 04/22/02 |
| 09 | 41708 | 3806677 | jd374.d | 04/22/02 |
| 10 | RI-07 | 3806698 | jd375.d | 04/22/02 |

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWE112J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd479.d Lab Sample ID: SBLKWE112

Date Extracted: 04/22/02 Extraction: Sepf

Date Analyzed: 04/26/02 Time Analyzed: 15:32

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP05525

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 112WELCSJ | 112WELCS | jd480.d | 04/26/02 |
| 02 | 112WELCSDJ | 112WELCSD | jd481.d | 04/26/02 |
| 03 | SWM24 | 3807884 | jd492.d | 04/26/02 |
| 04 | SWM24MS | 3807884 | jd493.d | 04/26/02 |
| 05 | SWM24MSD | 3807884 | jd494.d | 04/26/02 |
| 06 | CHAN1 | 3807880 | jd495.d | 04/26/02 |
| 07 | CHAN2 | 3807881 | jd496.d | 04/26/02 |
| 08 | CHAN3 | 3807882 | jd497.d | 04/27/02 |
| 09 | CHAN7 | 3807883 | jd498.d | 04/27/02 |
| 10 | CHN7D | 3807885 | jd520.d | 04/28/02 |
| 11 | 41802 | 3807661 | jd521.d | 04/28/02 |
| 12 | 41817 | 3807662 | jd522.d | 04/28/02 |
| 13 | 41826 | 3807664 | jd524.d | 04/29/02 |
| 14 | 418-7 | 3807665 | jd525.d | 04/29/02 |
| 15 | 41811 | 3807667 | jd533.d | 04/29/02 |
| 16 | 41823 | 3807663 | jd53a.d | 04/29/02 |

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWB107M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWB107

Sample wt/vol: 1000 (g/mL)ML Lab File ID: md392.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/17/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/17/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 91-20-3 | Naphthalene | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 86-30-6 | N-Nitrosodiphenylamine | | | 1 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |
| 129-00-0 | Pyrene | | | 1 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWA108J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWA108

Sample wt/vol: 1000 (g/mL)ML Lab File ID: jd352.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/18/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKWE112J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWE112

Sample wt/vol: 1000 (g/mL) ML Lab File ID: jd479.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/22/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | | | 1 | U |
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: md393.d | LCS Duplicate: md394.d | Batch: 02107WAB026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP06755 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 100.00 | 38.32 | 37.93 | 38 | 38 | 31-59 | YES | 1 | 30 | YES |
| 2-Chlorophenol | 100.00 | 81.70 | 83.63 | 82 | 84 | 73-114 | YES | 2 | 30 | YES |
| 2-Nitrophenol | 100.00 | 85.17 | 88.57 | 85 | 89 | 73-123 | YES | 4 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 76.54 | 79.35 | 77 | 79 | 67-105 | YES | 4 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 81.82 | 84.36 | 82 | 84 | 71-120 | YES | 3 | 30 | YES |
| Naphthalene | 100.00 | 67.88 | 71.66 | 68 | 72 | 58-108 | YES | 5 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 84.89 | 86.20 | 85 | 86 | 74-119 | YES | 2 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 85.04 | 86.13 | 85 | 86 | 66-125 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 97.81 | 97.85 | 98 | 98 | 26-145 | YES | 0 | 30 | YES |
| 4-Nitrophenol | 100.00 | 38.60 | 37.41 | 39 | 37 | 17-75 | YES | 3 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 94.42 | 98.14 | 94 | 98 | 35-152 | YES | 4 | 30 | YES |
| N-Nitrosodiphenylamine | 100.00 | 81.84 | 83.67 | 82 | 84 | 64-118 | YES | 2 | 30 | YES |
| Pentachlorophenol | 100.00 | 88.53 | 89.89 | 89 | 90 | 43-127 | YES | 2 | 30 | YES |
| Pyrene | 100.00 | 77.96 | 79.91 | 78 | 80 | 68-125 | YES | 2 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: jd353.d | LCS Duplicate: jd354.d | Batch: 02108WAA026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP05525 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 100.00 | 46.47 | 47.38 | 46 | 47 | 31-59 | YES | 2 | 30 | YES |
| 2-Chlorophenol | 100.00 | 95.39 | 96.89 | 95 | 97 | 73-114 | YES | 2 | 30 | YES |
| 2-Nitrophenol | 100.00 | 100.02 | 103.63 | 100 | 104 | 73-123 | YES | 4 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 86.06 | 89.08 | 86 | 89 | 67-105 | YES | 3 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 91.72 | 96.59 | 92 | 97 | 71-120 | YES | 5 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 93.53 | 99.19 | 94 | 99 | 74-119 | YES | 6 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 94.57 | 95.55 | 95 | 96 | 66-125 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 94.29 | 94.05 | 94 | 94 | 26-145 | YES | 0 | 30 | YES |
| 4-Nitrophenol | 100.00 | 41.73 | 42.02 | 42 | 42 | 17-75 | YES | 1 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 115.73 | 116.76 | 116 | 117 | 35-152 | YES | 1 | 30 | YES |
| Pentachlorophenol | 100.00 | 93.64 | 93.58 | 94 | 94 | 43-127 | YES | 0 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: jd480.d | LCS Duplicate: jd481.d | Batch: 02112WAE026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP05525 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 100.00 | 65.44 | 65.09 | 65 | 65 | 49-79 | YES | 1 | 30 | YES |
| Phenol | 100.00 | 52.22 | 54.88 | 52 | 55 | 31-59 | YES | 5 | 30 | YES |
| 2-Chlorophenol | 100.00 | 89.36 | 88.93 | 89 | 89 | 73-114 | YES | 0 | 30 | YES |
| 2-Nitrophenol | 100.00 | 100.62 | 99.64 | 101 | 100 | 73-123 | YES | 1 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 84.35 | 83.23 | 84 | 83 | 67-105 | YES | 1 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 85.71 | 85.47 | 86 | 85 | 71-120 | YES | 0 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 83.61 | 79.73 | 84 | 80 | 74-119 | YES | 5 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 83.99 | 84.24 | 84 | 84 | 66-125 | YES | 0 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 74.52 | 73.69 | 75 | 74 | 26-145 | YES | 1 | 30 | YES |
| 4-Nitrophenol | 100.00 | 43.20 | 48.05 | 43 | 48 | 17-75 | YES | 11 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 113.67 | 110.88 | 114 | 111 | 35-152 | YES | 2 | 30 | YES |
| Pentachlorophenol | 100.00 | 92.02 | 83.54 | 92 | 84 | 43-127 | YES | 10 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd35a.d Date Analyzed: 04/19/02

Instrument ID: HP05525 Time Analyzed: 10:45

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 131080 | 12.863 | 500484 | 16.425 | 236965 | 21.524 |
| | UPPER LIMIT | 262160 | 13.363 | 1000968 | 16.925 | 473930 | 22.024 |
| | LOWER LIMIT | 65540 | 12.363 | 250242 | 15.925 | 118483 | 21.024 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWA108J | 116733 | 12.858 | 448837 | 16.430 | 212175 | 21.524 |
| 02 | 108WALCSJ | 110255 | 12.863 | 418390 | 16.433 | 200023 | 21.529 |
| 03 | 108WALCSD | 104156 | 12.863 | 390399 | 16.433 | 188225 | 21.528 |
| 04 | SS111 | 107252 | 12.893 | 398901 | 16.441 | 207830 | 21.528 |
| 05 | 417FB | 119075 | 12.858 | 464797 | 16.430 | 219187 | 21.525 |
| 06 | 417PD | 121149 | 12.858 | 468575 | 16.421 | 222852 | 21.516 |
| 07 | 417PI | 116891 | 12.858 | 462871 | 16.430 | 217750 | 21.515 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd35a.d Date Analyzed: 04/19/02

Instrument ID: HP05525 Time Analyzed: 10:45

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 378781 | 25.836 | 297702 | 32.760 | 298166 | 38.789 |
| UPPER LIMIT | 757562 | 26.336 | 595404 | 33.260 | 596332 | 39.289 |
| LOWER LIMIT | 189391 | 25.336 | 148851 | 32.260 | 149083 | 38.289 |
| EPA SAMPLE NO. | | | | | | |
| 01 SBLKWA108J | 350280 | 25.829 | 292152 | 32.739 | 275461 | 38.782 |
| 02 108WALCSJ | 323302 | 25.833 | 243263 | 32.756 | 245317 | 38.795 |
| 03 108WALCSD | 307606 | 25.833 | 229031 | 32.759 | 232820 | 38.798 |
| 04 SS111 | 338023 | 25.828 | 280382 | 32.740 | 275910 | 38.779 |
| 05 417FB | 368007 | 25.829 | 299098 | 32.750 | 287778 | 38.784 |
| 06 417PD | 358688 | 25.830 | 293360 | 32.741 | 278353 | 38.776 |
| 07 417PI | 354859 | 25.829 | 296313 | 32.740 | 276431 | 38.783 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd371.d Date Analyzed: 04/22/02

Instrument ID: HP05525 Time Analyzed: 09:00

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 130968 | 12.787 | 510651 | 16.349 | 239215 | 21.439 |
| | UPPER LIMIT | 261936 | 13.287 | 1021302 | 16.849 | 478430 | 21.939 |
| | LOWER LIMIT | 65484 | 12.287 | 255326 | 15.849 | 119608 | 20.939 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SS111DL | 111097 | 12.790 | 429402 | 16.344 | 204343 | 21.439 |
| 02 | 41720 | 111805 | 12.790 | 444369 | 16.343 | 210647 | 21.438 |
| 03 | 41708 | 120738 | 12.790 | 470111 | 16.352 | 221943 | 21.439 |
| 04 | RI-07 | 121409 | 12.790 | 476864 | 16.353 | 217583 | 21.441 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd371.d Date Analyzed: 04/22/02

Instrument ID: HP05525 Time Analyzed: 09:00

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 378888 | 25.751 | 288759 | 32.654 | 290829 | 38.593 |
| UPPER LIMIT | 757776 | 26.251 | 577518 | 33.154 | 581658 | 39.093 |
| LOWER LIMIT | 189444 | 25.251 | 144380 | 32.154 | 145415 | 38.093 |
| EPA SAMPLE NO. | | | | | | |
| 01 SS111DL | 334967 | 25.743 | 276195 | 32.643 | 263417 | 38.577 |
| 02 41720 | 340462 | 25.742 | 280382 | 32.642 | 270663 | 38.586 |
| 03 41708 | 360369 | 25.743 | 296432 | 32.644 | 282581 | 38.588 |
| 04 RI-07 | 366920 | 25.747 | 293839 | 32.645 | 289628 | 38.580 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd471.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 07:40

| | IS1(DCB) AREA # | IS1(DCB) RT # | IS2(NPT) AREA # | IS2(NPT) RT # | IS3(ANT) AREA # | IS3(ANT) RT # |
|---|---|---|---|---|---|---|
| | 12 HOUR STD | 260179 | 12.576 | 957287 | 16.132 | 450803 | 21.218 |
| | UPPER LIMIT | 520358 | 13.076 | 1914574 | 16.632 | 901606 | 21.718 |
| | LOWER LIMIT | 130090 | 12.076 | 478644 | 15.632 | 225402 | 20.718 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | MJ26- | 255772 | 12.577 | 955014 | 16.125 | 446469 | 21.211 |
| 02 | MJ36- | 238972 | 12.572 | 862339 | 16.130 | 397217 | 21.212 |
| 03 | MJ362 | 263740 | 12.570 | 988460 | 16.125 | 456932 | 21.205 |
| 04 | MJ46- | 240362 | 12.574 | 868205 | 16.125 | 393644 | 21.214 |
| 05 | MJ56- | 232749 | 12.574 | 836637 | 16.125 | 373808 | 21.213 |
| 06 | MJ66- | 243797 | 12.571 | 940828 | 16.126 | 444040 | 21.205 |
| 07 | MJ76- | 247254 | 12.571 | 923487 | 16.126 | 430727 | 21.206 |
| 08 | SBLKWE112J | 251723 | 12.572 | 937186 | 16.126 | 449661 | 21.214 |
| 09 | 112WELCSJ | 247440 | 12.580 | 881481 | 16.139 | 414166 | 21.226 |
| 10 | 112WELCSDJ | 233146 | 12.581 | 829571 | 16.140 | 380716 | 21.217 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd471.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 07:40

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 606856 | 25.528 | 435917 | 32.399 | 411682 | 38.068 |
| | UPPER LIMIT | 1213712 | 26.028 | 871834 | 32.899 | 823364 | 38.568 |
| | LOWER LIMIT | 303428 | 25.028 | 217959 | 31.899 | 205841 | 37.568 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | MJ26- | 648898 | 25.522 | 479223 | 32.383 | 402841 | 38.068 |
| 02 | MJ36- | 581379 | 25.520 | 435252 | 32.389 | 399404 | 38.066 |
| 03 | MJ362 | 677264 | 25.523 | 473760 | 32.384 | 410226 | 38.062 |
| 04 | MJ46- | 538416 | 25.517 | 411991 | 32.386 | 369670 | 38.060 |
| 05 | MJ56- | 511194 | 25.518 | 389390 | 32.390 | 348222 | 38.070 |
| 06 | MJ66- | 632106 | 25.524 | 455845 | 32.390 | 388623 | 38.061 |
| 07 | MJ76- | 604307 | 25.529 | 443811 | 32.388 | 390181 | 38.065 |
| 08 | SBLKWE112J | 669411 | 25.520 | 475630 | 32.394 | 402452 | 38.069 |
| 09 | 112WELCSJ | 555937 | 25.540 | 384750 | 32.405 | 350273 | 38.088 |
| 10 | 112WELCSDJ | 519130 | 25.530 | 362986 | 32.405 | 338299 | 38.089 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd491.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 18:55

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 244795 | 12.576 | 904764 | 16.131 | 422949 | 21.218 |
| | UPPER LIMIT | 489590 | 13.076 | 1809528 | 16.631 | 845898 | 21.718 |
| | LOWER LIMIT | 122398 | 12.076 | 452382 | 15.631 | 211475 | 20.718 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SWM24 | 266149 | 12.572 | 975135 | 16.129 | 432121 | 21.214 |
| 02 | SWM24S | 237663 | 12.571 | 832019 | 16.131 | 375054 | 21.214 |
| 03 | SWM24SD | 254197 | 12.572 | 871893 | 16.132 | 391797 | 21.216 |
| 04 | CHAN1 | 268019 | 12.572 | 1005608 | 16.127 | 453921 | 21.206 |
| 05 | CHAN2 | 258610 | 12.562 | 980685 | 16.117 | 462055 | 21.206 |
| 06 | CHAN3 | 264757 | 12.562 | 981590 | 16.117 | 456594 | 21.207 |
| 07 | CHAN7 | 239551 | 12.564 | 901469 | 16.120 | 456826 | 21.198 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd491.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 18:55

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 609829 | 25.528 | 431656 | 32.402 | 395914 | 38.073 |
| | UPPER LIMIT | 1219658 | 26.028 | 863312 | 32.902 | 791828 | 38.573 |
| | LOWER LIMIT | 304915 | 25.028 | 215828 | 31.902 | 197957 | 37.573 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SWM24 | 631635 | 25.524 | 443598 | 32.392 | 393354 | 38.058 |
| 02 | SWM24S | 517297 | 25.534 | 359293 | 32.406 | 329935 | 38.062 |
| 03 | SWM24SD | 545500 | 25.526 | 377650 | 32.399 | 354305 | 38.068 |
| 04 | CHAN1 | 645673 | 25.513 | 454215 | 32.389 | 398985 | 38.056 |
| 05 | CHAN2 | 656716 | 25.515 | 462450 | 32.382 | 397656 | 38.059 |
| 06 | CHAN3 | 642050 | 25.514 | 446881 | 32.381 | 383176 | 38.047 |
| 07 | CHAN7 | 664700 | 25.510 | 463053 | 32.381 | 383022 | 38.049 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd51a.d Date Analyzed: 04/28/02

Instrument ID: HP05525 Time Analyzed: 15:31

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 157314 | 12.233 | 519095 | 15.769 | 278360 | 20.832 |
| | UPPER LIMIT | 314628 | 12.733 | 1038190 | 16.269 | 556720 | 21.332 |
| | LOWER LIMIT | 78657 | 11.733 | 259548 | 15.269 | 139180 | 20.332 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | CHN7D | 137772 | 12.230 | 511493 | 15.768 | 290271 | 20.828 |
| 02 | 41802 | 142287 | 12.227 | 501921 | 15.764 | 261120 | 20.827 |
| 03 | 41817 | 146803 | 12.227 | 505735 | 15.765 | 263322 | 20.827 |
| 04 | 41826 | 144920 | 12.226 | 512760 | 15.764 | 269524 | 20.826 |
| 05 | 418-7 | 145032 | 12.226 | 517235 | 15.763 | 261466 | 20.825 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd51a.d Date Analyzed: 04/28/02

Instrument ID: HP05525 Time Analyzed: 15:31

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 429792 | 25.142 | 306010 | 31.969 | 288066 | 37.205 |
| UPPER LIMIT | 859584 | 25.642 | 612020 | 32.469 | 576132 | 37.705 |
| LOWER LIMIT | 214896 | 24.642 | 153005 | 31.469 | 144033 | 36.705 |
| EPA SAMPLE NO. | | | | | | |
| 01 CHN7D | 485916 | 25.135 | 354407 | 31.963 | 287790 | 37.203 |
| 02 41802 | 421149 | 25.136 | 308655 | 31.968 | 270281 | 37.197 |
| 03 41817 | 420387 | 25.137 | 315602 | 31.959 | 282404 | 37.198 |
| 04 41826 | 433128 | 25.135 | 331072 | 31.957 | 286965 | 37.195 |
| 05 418-7 | 416235 | 25.134 | 308143 | 31.964 | 273619 | 37.192 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd531.d Date Analyzed: 04/29/02

Instrument ID: HP05525 Time Analyzed: 08:20

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 146435 | 12.150 | 506615 | 15.685 | 273546 | 20.739 |
| | UPPER LIMIT | 292870 | 12.650 | 1013230 | 16.185 | 547092 | 21.239 |
| | LOWER LIMIT | 73218 | 11.650 | 253308 | 15.185 | 136773 | 20.239 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 41811 | 133625 | 12.147 | 468204 | 15.674 | 253103 | 20.726 |
| 02 | SBLKLC114J | 135201 | 12.148 | 470137 | 15.675 | 252159 | 20.726 |
| 03 | 41823 | 133518 | 12.147 | 464857 | 15.674 | 248128 | 20.725 |
| 04 | 114LCLCSJ | 132249 | 12.152 | 458328 | 15.687 | 247737 | 20.730 |
| 05 | KM033 | 133176 | 12.150 | 482304 | 15.678 | 254718 | 20.722 |
| 06 | KM033MS | 132154 | 12.153 | 470356 | 15.679 | 240149 | 20.734 |
| 07 | KM033MSD | 135232 | 12.153 | 467246 | 15.679 | 248740 | 20.724 |
| 08 | KM034 | 142014 | 12.141 | 512279 | 15.669 | 272604 | 20.723 |
| 09 | 96041 | 126174 | 12.144 | 411097 | 15.671 | 215114 | 20.717 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd531.d Date Analyzed: 04/29/02

Instrument ID: HP05525 Time Analyzed: 08:20

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 451172 | 25.037 | 361333 | 31.860 | 356620 | 36.984 |
| | UPPER LIMIT | 902344 | 25.537 | 722666 | 32.360 | 713240 | 37.484 |
| | LOWER LIMIT | 225586 | 24.537 | 180667 | 31.360 | 178310 | 36.484 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 41811 | 413769 | 25.025 | 342665 | 31.846 | 318400 | 36.976 |
| 02 | SBLKLC114J | 415495 | 25.034 | 353191 | 31.844 | 318356 | 36.973 |
| 03 | 41823 | 422431 | 25.024 | 344908 | 31.845 | 318984 | 36.975 |
| 04 | 114LCLCSJ | 420756 | 25.031 | 317735 | 31.861 | 292541 | 36.991 |
| 05 | KM033 | 421990 | 25.032 | 334502 | 31.839 | 280942 | 36.965 |
| 06 | KM033MS | 404439 | 25.037 | 284723 | 31.856 | 257482 | 36.980 |
| 07 | KM033MSD | 409794 | 25.028 | 282587 | 31.858 | 261374 | 36.973 |
| 08 | KM034 | 441419 | 25.024 | 320804 | 31.836 | 278041 | 36.966 |
| 09 | 96041 | 328830 | 25.031 | 246001 | 31.852 | 239708 | 37.005 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md391.d Date Analyzed: 04/17/02

Instrument ID: HP06755 Time Analyzed: 15:54

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 204492 | 12.835 | 683917 | 16.592 | 362192 | 21.996 |
| | UPPER LIMIT | 408984 | 13.335 | 1367834 | 17.092 | 724384 | 22.496 |
| | LOWER LIMIT | 102246 | 12.335 | 341959 | 16.092 | 181096 | 21.496 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWB107M | 198946 | 12.827 | 666263 | 16.584 | 358488 | 21.998 |
| 02 | 107WBLCSM | 204724 | 12.835 | 677511 | 16.591 | 361460 | 21.995 |
| 03 | 107WBLCSDM | 186676 | 12.835 | 616817 | 16.592 | 334130 | 21.995 |
| 04 | SS401 | 206567 | 12.824 | 682613 | 16.581 | 369669 | 21.985 |
| 05 | SS402 | 197149 | 12.824 | 650485 | 16.580 | 352804 | 21.984 |
| 06 | SS701 | 216156 | 12.824 | 714772 | 16.581 | 387094 | 21.984 |
| 07 | SS101 | 188500 | 12.828 | 648213 | 16.574 | 346412 | 21.989 |
| 08 | SS601 | 199318 | 12.824 | 676168 | 16.581 | 377111 | 21.984 |
| 09 | SSRI6 | 197338 | 12.828 | 663383 | 16.574 | 358759 | 21.988 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md391.d Date Analyzed: 04/17/02

Instrument ID: HP06755 Time Analyzed: 15:54

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 593432 | 26.571 | 506292 | 33.525 | 508666 | 39.704 |
| | UPPER LIMIT | 1186864 | 27.071 | 1012584 | 34.025 | 1017332 | 40.204 |
| | LOWER LIMIT | 296716 | 26.071 | 253146 | 33.025 | 254333 | 39.204 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWB107M | 601148 | 26.563 | 531549 | 33.517 | 508600 | 39.695 |
| 02 | 107WBLCSM | 610249 | 26.559 | 498715 | 33.535 | 518586 | 39.703 |
| 03 | 107WBLCSDM | 558441 | 26.560 | 456046 | 33.535 | 468614 | 39.703 |
| 04 | SS401 | 632780 | 26.560 | 575945 | 33.514 | 561462 | 39.682 |
| 05 | SS402 | 610619 | 26.548 | 548864 | 33.502 | 516296 | 39.681 |
| 06 | SS701 | 638702 | 26.559 | 591114 | 33.513 | 573483 | 39.681 |
| 07 | SS101 | 590292 | 26.553 | 515857 | 33.507 | 504534 | 39.675 |
| 08 | SS601 | 629734 | 26.549 | 556498 | 33.502 | 538463 | 39.671 |
| 09 | SSRI6 | 601507 | 26.553 | 545707 | 33.506 | 528482 | 39.675 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md411.d Date Analyzed: 04/18/02

Instrument ID: HP06755 Time Analyzed: 07:22

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 132031 | 12.752 | 438458 | 16.498 | 219863 | 21.891 |
| | UPPER LIMIT | 264062 | 13.252 | 876916 | 16.998 | 439726 | 22.391 |
| | LOWER LIMIT | 66016 | 12.252 | 219229 | 15.998 | 109932 | 21.391 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SSRS6 | 124940 | 12.748 | 407551 | 16.494 | 218499 | 21.888 |
| 02 | PSTT1 | 119161 | 12.751 | 394305 | 16.497 | 210358 | 21.890 |
| 03 | DCHGE | 126438 | 12.749 | 415663 | 16.495 | 220185 | 21.888 |
| 04 | SBLKLF107M | 123680 | 12.748 | 408550 | 16.495 | 211428 | 21.888 |
| 05 | 107LFLCSM | 118917 | 12.752 | 371127 | 16.499 | 184438 | 21.892 |
| 06 | CL131 | 103456 | 12.752 | 352089 | 16.498 | 177360 | 21.891 |
| 07 | CL131MS | 95082 | 12.752 | 306410 | 16.498 | 159554 | 21.891 |
| 08 | CL131MSD | 92125 | 12.759 | 308772 | 16.505 | 159453 | 21.898 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md411.d Date Analyzed: 04/18/02

Instrument ID: HP06755 Time Analyzed: 07:22

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 356082 | 26.455 | 296639 | 33.377 | 284720 | 39.384 |
| | UPPER LIMIT | 712164 | 26.955 | 593278 | 33.877 | 569440 | 39.884 |
| | LOWER LIMIT | 178041 | 25.955 | 148320 | 32.877 | 142360 | 38.884 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SSRS6 | 360897 | 26.452 | 313442 | 33.363 | 291128 | 39.380 |
| 02 | PSTT1 | 350174 | 26.444 | 297205 | 33.365 | 279043 | 39.383 |
| 03 | DCHGE | 366605 | 26.452 | 316864 | 33.363 | 292127 | 39.380 |
| 04 | SBLKLF107M | 353687 | 26.452 | 289570 | 33.363 | 239408 | 39.380 |
| 05 | 107LFLCSM | 289729 | 26.456 | 236478 | 33.377 | 228529 | 39.395 |
| 06 | CL131 | 239971 | 26.456 | 163779 | 33.399 | 197727 | 39.438 |
| 07 | CL131MS | 237015 | 26.455 | 171159 | 33.387 | 190519 | 39.426 |
| 08 | CL131MSD | 230445 | 26.463 | 171290 | 33.395 | 187968 | 39.434 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Quality Control Summary
SDG# GEV59

Surrogate Recovery
Volatiles by GC - Water

| LL Sample# | Sample Code | Dilution Factor | TFT-F Water-FID % Recovery | TFT-P Water-PID % Recovery | TOT OUT |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

* = Values outside quality control limits.
D = Surrogates diluted - not counted towards total out.
TOT OUT = Total # of surrogates with recovery outside control limits.

| | | Control Limits Lower | Upper |
|---|---|---|---|
| TFT-F | = Trifluorotoluene (Water - FID) | 65 | 137 |
| TFT-P | = Trifluorotoluene (Water - PID) | 72 | 134 |

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Quality Control Summary
SDG# GEV59

Method Blank
Volatiles by GC - Water

Blank ID.....: BLK1753
Date.....: 07/24/01
Instrument.....: 5359

Batch Number.....: 01205A17
Time.....: 18:03
Matrix.....: Water

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Time |
| | | | |

| Method Blank Results | | | | |
|---|---|---|---|---|
| CAS Number | Compound | Blank Conc. (UG/L) | LOQ (UG/L) | MDL (UG/L) |
| 75-65-0 | TERT-BUTYL ALCOHOL | ND | 100 | 20 |
| 1634-04-4 | METHYL T-BUTYL ETHER | ND | 1 | .3 |
| 71-43-2 | BENZENE | ND | 1 | .2 |
| 108-88-3 | TOLUENE | ND | 1 | .2 |
| 100-41-4 | ETHYLBENZENE | ND | 1 | .2 |
| 1330-20-7 | TOTAL XYLENES | ND | 3 | .6 |

LOQ = Limit of Quantitation; MDL = Method Detection Limit
ND = None Detected; * = Above Limit of Quantitation

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Quality Control Summary
SDG# GEV59

Matrix Spike
Volatiles by GC - Water

Unspiked Sample Number....: 3651037
Spiked Sample Number.....: 3651037MS

This MS applies to the following samples:

Batch Number.....: 01205A17
Date.....: 07/24/01 - 07/25/01
Matrix.....: Water

Instrument.....: 5359

| Compound | Spike Added (UG/L) | Sample Conc (UG/L) | MS Conc (UG/L) | MS % Recov | QC Limits Recov |
|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | 500 | 0.00 | 488 | 98 | 67-123 |
| METHYL T-BUTYL ETHER | 20.0 | 0.97 | 22.8 | 109 | 60-145 |
| BENZENE | 20.0 | 0.00 | 22.0 | 110 | 66-140 |
| TOLUENE | 20.0 | 0.00 | 22.3 | 112 | 72-138 |
| ETHYLBENZENE | 20.0 | 0.00 | 22.0 | 110 | 71-138 |
| TOTAL XYLENES | 60.0 | 0.00 | 65.4 | 109 | 69-140 |

MS=Matrix Spike; ND=None Detected

* = Recovery outside quality control limits.

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Quality Control Summary
SDG# GEV59

Lab Control/Lab Control Duplicate
Volatiles by GC - Water

Batch Number.....: 01205A17
Date.....: 07/24/01
Matrix.....: Water

This LCS/LDS applies to the following samples:

Instrument.....: 5359
Calibration Date.....: 06/22/01 - 06/23/01(FID)
Calibration Date.....: 06/22/01 - 06/23/01(PID)

| Compound | Spike Added (UG/L) | LCS Conc (UG/L) | LDS Conc (UG/L) | LCS % Recov | LDS % Recov | LCS Limits Recov | RPD | LCS Limits RPD |
|---|---|---|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | 500 | 503 | 523 | 101 | 105 | 72-124 | 4 | 30 |
| METHYL T-BUTYL ETHER | 20.0 | 21.9 | 21.8 | 110 | 109 | 79-127 | 1 | 30 |
| BENZENE | 20.0 | 20.4 | 20.4 | 102 | 102 | 80-118 | 0 | 30 |
| TOLUENE | 20.0 | 20.3 | 20.6 | 102 | 103 | 82-119 | 1 | 30 |
| ETHYLBENZENE | 20.0 | 20.0 | 20.3 | 100 | 102 | 81-119 | 1 | 30 |
| TOTAL XYLENES | 60.0 | 59.9 | 60.8 | 100 | 101 | 82-120 | 1 | 30 |

LCS=Lab Control Sample; LDS=Lab Control Sample Duplicate; RPD=Relative Percent Difference

* = Value outside quality control limits.

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Quality Control Summary
SDG# GEV59

Surrogate Retention Time Summary
Volatiles by GC

Initial Calibration Date(s): 06/22/01 - 06/23/01(FID)
Initial Calibration Date(s): 06/22/01 - 06/23/01(PID)
Instrument.....: 5359

| SURROGATE RT FROM INITIAL CALIBRATION (Level 3) | |
|---|---|
| Trifluorotoluene (FID) | 7.275 |
| Trifluorotoluene (PID) | 7.269 |

| Sample Information | | | | RT Summary | |
|---|---|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time | R.T. TFT-F | R.T. TFT-P |
| | | | | | |

TFT-F = Trifluorotoluene (FID)
TFT-P = Trifluorotoluene (PID)

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2425 New Holland Pike • Lancaster, PA 17601

# Quality Control Summary
SDG# GEV59
Instrument ID: 5359
Initial Calibration Summary

Calibration Batch: 01173A17
Initial Calibration Date(s): 06/22/01-06/23/01(FID)
Initial Calibration Date(s): 06/22/01-06/23/01(PID)

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time |
| | | | |
| | | | |
| | | | |

| STANDARD | | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | LEVEL 7 | LEVEL 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE INJECTED | | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/23/01 | | |
| TIME INJECTED | | 18:58 | 19:34 | 20:10 | 20:46 | 21:22 | 21:58 | 23:10 | 00:22 | | |
| COMPOUND (DETECTOR) | | Retention Time LEVEL 3 | Window | Relative Response Factor (RRF) LEVEL1 | LEVEL2 | LEVEL3 | LEVEL4 | LEVEL5 | LEVEL6 | LEVEL7 | LEVEL8 | MEAN | % RSD |
| TERT-BUTYL ALCOHOL | (FID) | 4.885 | 0.03 | | | 24.4364 | 24.7996 | 28.5216 | 23.9382 | 25.9081 | 25.2229 | 25.4712 | 6 |
| METHYL T-BUTYL ETHER | (PID) | 5.423 | 0.03 | | 0.0223 | 0.0212 | 0.0204 | 0.0202 | 0.0202 | 0.0203 | 0.0201 | 0.0207 | 4 |
| BENZENE | (PID) | 6.724 | 0.03 | 0.0562 | 0.0549 | 0.0533 | 0.0531 | 0.0532 | 0.0527 | 0.0490 | 0.0449 | 0.0522 | 7 |
| SURR-TFT-P | (PID) | 7.269 | 0.03 | 0.0179 | 0.0177 | 0.0177 | 0.0178 | 0.0178 | 0.0177 | 0.0174 | 0.0171 | 0.0176 | 1 |
| SURR-TFT-F | (FID) | 7.275 | 0.03 | | | 635.560 | 634.458 | 637.602 | 644.023 | 634.704 | 636.610 | 637.160 | 1 |
| TOLUENE | (PID) | 8.194 | 0.03 | | 0.0500 | 0.0487 | 0.0478 | 0.0478 | 0.0473 | 0.0435 | 0.0399 | 0.0464 | 8 |
| ETHYLBENZENE | (PID) | 9.506 | 0.03 | | 0.0441 | 0.0423 | 0.0415 | 0.0415 | 0.0411 | 0.0379 | 0.0347 | 0.0404 | 8 |
| M,P-XYLENE | (PID) | 9.655 | 0.03 | | 0.0506 | 0.0482 | 0.0475 | 0.0474 | 0.0455 | 0.0335 | 0.0297 | 0.0432 | 19* |
| O-XYLENE | (PID) | 9.978 | 0.03 | | 0.0444 | 0.0414 | 0.0403 | 0.0400 | 0.0392 | 0.0356 | 0.0324 | 0.0390 | 10 |

* = RSD > 10% - The quadratic fit type was used.

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Quality Control Summary
SDG# GEV59

Check Std. Retention Time Summary
Volatiles by GC - Water

Instrument.....: 5359
Initial Calibration Date(s): 06/22/01 - 06/23/01(FID)
Initial Calibration Date(s): 06/22/01 - 06/23/01(PID)
Analysis Date.....: 07/25/01
Analysis Time.....: 18:16

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time |
| | | | |
| | | | |
| | | | |

Check Standard Retention Time Summary

| Compound | Retention Time | ID Window |
|---|---|---|
| TERT-BUTYL ALCOHOL | 5.023 | +/-0.03 |
| METHYL T-BUTYL ETHER | 5.562 | +/-0.03 |
| BENZENE | 6.847 | +/-0.03 |
| TOLUENE | 8.307 | +/-0.03 |
| ETHYLBENZENE | 9.603 | +/-0.03 |
| M,P-XYLENE | 9.751 | +/-0.03 |
| O-XYLENE | 10.070 | +/-0.03 |

Retention Time and ID Window units are minutes.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Quality Control Summary
SDG# GEV59
Instrument ID: 5359
Beginning Calibration Verification Summary

CCV Batch: 01205A17
Data File: C:\CP\DATA1\17205.47R
Date Injected: 07/25/01 Time Injected: 18:16
Initial Calibration Date(s): 06/22/01-06/23/01(FID)
Initial Calibration Date(s): 06/22/01-06/23/01(PID)

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Time |
| | | | |
| | | | |
| | | | |

| COMPOUND (DETECTOR) | | THEORETICAL CONCENTRATION (UG/L ) | ACTUAL CONCENTRATION (UG/L ) | % DRIFT | %DRIFT LIMITS |
|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | (FID) | 200.0 | 226.2 | 13 | -25 to +25 |
| METHYL T-BUTYL ETHER | (PID) | 20.0 | 22.1 | 10 | -15 to +15 |
| BENZENE | (PID) | 20.0 | 21.3 | 6 | -15 to +15 |
| SURR-TFT-P | (PID) | 30.0 | 30.5 | 2 | -28 to +34 |
| SURR-TFT-F | (FID) | 30.0 | 28.0 | -7 | -35 to +37 |
| TOLUENE | (PID) | 20.0 | 21.6 | 8 | -15 to +15 |
| ETHYLBENZENE | (PID) | 20.0 | 21.1 | 6 | -15 to +15 |
| M,P-XYLENE | (PID) | 40.0 | 41.4 | 4 | -15 to +15 |
| O-XYLENE | (PID) | 20.0 | 21.6 | 8 | -15 to +15 |

* = %DRIFT outside control limits.

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKRE

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

Matrix: (soil/water) SOIL  Lab Sample ID: BLANKA

Sample wt/vol: 30.0 (g/ml) g  Lab File ID:

% Moisture:  Date Received:

Extraction: (SepF/Cont/Sonc) SONC  Date Extracted: 07/24/01

Concentrated Extract Volume 10000 (uL)  Date Analyzed: 07/25/01

Injection Volume: 1 (uL)  Dilution Factor: 1

GPC Cleanup: (Y/N) N  pH:  Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (UG/L or UG/KG) UG/KG | Q |
|---|---|---|---|
| 11104-28-2 | Aroclor-1221 | 4.4 | U |
| 53469-21-9 | Aroclor-1242 | 3.3 | U |
| 11141-16-5 | Aroclor-1232 | 3.3 | U |
| 12674-11-2 | Aroclor-1016 | 3.3 | U |
| 12672-29-6 | Aroclor-1248 | 3.6 | U |
| 11097-69-1 | Aroclor-1254 | 3.3 | U |
| 11096-82-5 | Aroclor-1260 | 3.3 | U |

# 2F
# SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

GC Column(1): RTX-CLP ID: 0.32 (mm)  GC Column(2): RTXCLPII ID: 0.32 (mm)

| | SAMPLE | SAMPLE CODE NO. | TCX 1 %REC | # | TCX 2 %REC | # | DCB 1 %REC | # | DCB 2 %REC | # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 3653451 | -BBS1 | 84 | | 0 | D | 160 | D | 357 | D | 0 |
| 02 | 3653451 MS | -BBS1MS | 91 | | 0 | D | 161 | D | 352 | D | 0 |
| 03 | 3653451 MSD | -BBS1MSD | 92 | | 0 | D | 194 | D | 341 | D | 0 |
| 04 | 3653452 | -BBS2 | 87 | | 89 | | 113 | | 115 | | 0 |
| 05 | 3653453 | -BBS3 | 0 | D | 0 | D | 7500 | D | 0 | D | 0 |
| 06 | 3653454 | -BBS4 | 0 | D | 0 | D | 8600 | D | 0 | D | 0 |
| 07 | LCSA | LCS2X | 92 | | 83 | | 84 | | 84 | | 0 |
| 08 | BLANKA | PBLKRE | 97 | | 88 | | 87 | | 87 | | 0 |

| | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|
| TCX = Tetrachloro-m-xylene | (53-139) | 9.72 | ug/Kg |
| DCB = Decachlorobiphenyl | (41-132) | 9.81 | ug/Kg |

# Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

3F

# SOIL LAB CONTROL SPIKE/LAB CONTROL SPIKE DUPLICATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Lab Control Spike - Sample Code No.: LCS2X

| Compound | Spike Added (ug/Kg) | LCS Concen (ug/Kg) | LCSD Concen (ug/Kg) | LCS % REC# | LCSD % REC# | LCS-LCSD % REC Limits | % RPD # | % RPD LIM |
|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 170 | 130 | | 78 | | (72-120) | | 50 |
| Aroclor-1260 | 170 | 140 | | 84 | | (76-122) | | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

Sample No.: LCSA Batch: 012050021A

# 3F
# SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: -BBS1

| Compound | Spike Added (ug/Kg) | Sample Concen (ug/Kg) | MS Concen (ug/Kg) | MSD Concen (ug/Kg) | MS % REC# | MSD % REC# | MS-MSD % REC Limits | % RPD # | % RPD LIM |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 170 | 0 | 0 | 0 | 0* | 0* | (61-128) | | 50 |
| Aroclor-1260 | 170 | 58000 | 68000 | 83000 | 5880* | 4700* | (47-139) | 20 | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 4 out of 4 outside limits

COMMENTS: Results calculated on as-received basis.

Sample No.: 3653451 Batch: 012050021A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKRE

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

Lab Sample ID: BLANKA  Lab File ID:

Matrix: (soil/water) SOIL  Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N  Date Extracted: 07/24/01

Date Analyzed (1): 07/25/01  Date Analyzed (2): 07/25/01

Time Analyzed (1): 22:50  Time Analyzed (2): 22:50

Instrument ID (1): H4783A  Instrument ID (2): H4783B

GC Column (1): RTX-CLP ID: 0.32 (mm)  GC Column (2): RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | -BBS1 | 3653451 | 07/25/01 | 07/25/01 |
| 02 | -BBS1MS | 3653451 | 07/25/01 | 07/25/01 |
| 03 | -BBS1MSD | 3653451 | 07/26/01 | 07/26/01 |
| 04 | -BBS2 | 3653452 | 07/26/01 | 07/26/01 |
| 05 | -BBS3 | 3653453 | 07/26/01 | 07/26/01 |
| 06 | -BBS4 | 3653454 | 07/26/01 | 07/26/01 |
| 07 | PBLKRE | BLANKA | 07/25/01 | 07/25/01 |
| 08 | LCS2X | LCSA | 07/25/01 | 07/25/01 |

COMMENTS: _____

6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Calibration File: 1P3169

GC Column(1): RTX-CLP ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 06/18/01  06/18/01

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.43 | 2.57 |
| Decachlorobiphenyl | 9.05 | 9.05 | 9.05 | 9.05 | 9.04 | 9.04 | 8.79 | 9.29 |

# 6E
# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Calibration File: 1P3169

GC Column(1): RTX-CLP ID: 0.32 (mm)  Date(s) Analyzed: 06/18/01  06/18/01

| COMPOUND | CALIBRATION FACTORS | | | | | | % RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 2.50E+03 | 2.62E+03 | 2.67E+03 | 2.70E+03 | 2.71E+03 | 2.64E+03 | 3.3 |
| Decachlorobiphenyl | 4.29E+03 | 4.32E+03 | 4.03E+03 | 3.70E+03 | 3.17E+03 | 3.90E+03 | 12.2 |

Average % RSD: 7.8

#Name?

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Init. Calib. Date(s): 07/25/01  07/25/01

GC Column(1): RTX-CLP  ID: 0.32 (mm)  Date Analyzed: 07/25/01

Lab File ID: HP3169.88R  Time Analyzed: 22:12

Lab Standard ID: AR1630I  Initial Calibration: 2P3169

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 2.49 | 2.42 | 2.56 | 7.36 | 7.78 | -5.4 |
| Aroclor-1016 | 2.85 | 2.82 | 2.89 | 178.17 | 200.00 | -10.9 |
| | 3.23 | 3.20 | 3.27 | | | |
| | 3.75 | 3.72 | 3.79 | | | |
| | 3.90 | 3.88 | 3.95 | | | |
| | 3.97 | 3.95 | 4.02 | | | |
| | 4.37 | 4.35 | 4.42 | | | |
| Aroclor-1260 | 5.82 | 5.79 | 5.86 | 185.48 | 200.00 | -7.3 |
| | 6.16 | 6.13 | 6.20 | | | |
| | 6.51 | 6.47 | 6.54 | | | |
| | 6.64 | 6.61 | 6.68 | | | |
| | 6.94 | 6.91 | 6.98 | | | |
| | 7.32 | 7.29 | 7.36 | | | |
| Decachlorobiphenyl | 9.01 | 8.77 | 9.27 | 7.76 | 7.85 | -1.2 |

Average of %D: 6.2

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1P3169 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H4783A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX01A | 06/18/2001 | 11:06:57 | 1P3169 | 2.50 | 9.05 |
| 002 | AR161AA | AR16101A | 06/18/2001 | 11:25:33 | 1P3169 | 2.50 | 9.05 |
| 003 | AR162AA | AR16201A | 06/18/2001 | 11:44:27 | 1P3169 | 2.50 | 9.05 |
| 004 | AR163AA | AR16301B | 06/18/2001 | 12:03:01 | 1P3169 | 2.50 | 9.05 |
| 005 | AR164AA | AR16401A | 06/18/2001 | 12:21:36 | 1P3169 | 2.50 | 9.05 |
| 006 | AR165AA | AR16501A | 06/18/2001 | 12:40:11 | 1P3169 | 2.50 | 9.04 |
| 007 | AR481AA | AR48101A | 06/18/2001 | 12:58:47 | 1P3169 | 2.50 | 9.05 |
| 008 | AR482AA | AR48201A | 06/18/2001 | 13:17:22 | 1P3169 | 2.50 | 9.04 |
| 009 | AR483AA | AR48301A | 06/18/2001 | 13:35:57 | 1P3169 | 2.50 | 9.04 |
| 010 | AR484AA | AR48401A | 06/18/2001 | 13:54:30 | 1P3169 | 2.50 | 9.04 |
| 011 | AR485AA | AR48501A | 06/18/2001 | 14:13:04 | 1P3169 | 2.50 | 9.04 |
| 012 | AR541AA | AR54101B | 06/18/2001 | 14:31:38 | 1P3169 | 2.50 | 9.04 |
| 013 | AR542AA | AR54201B | 06/18/2001 | 14:50:15 | 1P3169 | 2.50 | 9.04 |
| 014 | AR543AA | AR54301B | 06/18/2001 | 15:08:48 | 1P3169 | 2.50 | 9.04 |
| 015 | AR544AA | AR54401B | 06/18/2001 | 15:27:23 | 1P3169 | 2.50 | 9.04 |
| 016 | AR545AA | AR54501B | 06/18/2001 | 15:46:27 | 1P3169 | 2.50 | 9.04 |
| 017 | AR21XAA | AR21X01A | 06/18/2001 | 16:05:03 | 1P3169 | 2.50 | 9.04 |
| 018 | AR32XAA | AR32X01A | 06/18/2001 | 16:23:38 | 1P3169 | 2.50 | 9.04 |
| 019 | AR42XAA | AR42X01A | 06/18/2001 | 16:42:13 | 1P3169 | 2.50 | 9.04 |
| 020 | MD16XAA | MD16X01A | 06/18/2001 | 17:00:46 | 1P3169 | 2.50 | 9.04 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1P3169 | 06/18/2001 - 07/23/2001 | TCX = Tetrachloro-m-xylene | 2.5 | (2.43 - 2.57 Minutes) |
| | | DCB = Decachlorobiphenyl | 9.04 | (8.79 - 9.29 Minutes) |

10A

# IDENTIFICATION SUMMARY

SAMPLE CODE NO.: LCSW0

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Lab Sample ID:** LCSA **Date(s) Analyzed:** 7/20/01 7/20/01

**Instrument ID (1):** H6722A **Instrument ID (2):** H6722B

**GC Column (1):** RTX-CLP **ID:** 0.32 (mm) **GC Column (2):** RTXCLPII **ID:** 0.32 (mm)

| ANALYTE | COL | RT | FROM | TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| alpha-BHC | 1 | 5.12 | 5.10 | 5.16 | 0.11 | |
| | 2 | 5.10 | 5.07 | 5.13 | 0.11 | 0.0 |
| gamma-BHC (Lindane) | 1 | 5.59 | 5.56 | 5.62 | 0.11 | |
| | 2 | 5.62 | 5.59 | 5.65 | 0.11 | 0.0 |
| beta-BHC | 1 | 5.71 | 5.68 | 5.74 | 0.12 | |
| | 2 | 5.74 | 5.70 | 5.76 | 0.12 | 0.0 |
| delta-BHC | 1 | 5.97 | 5.94 | 6.00 | 0.12 | |
| | 2 | 6.15 | 6.12 | 6.18 | 0.12 | 0.0 |
| Heptachlor | 1 | 6.26 | 6.24 | 6.30 | 0.085 | |
| | 2 | 6.24 | 6.21 | 6.27 | 0.082 | 3.6 |
| Aldrin | 1 | 6.68 | 6.66 | 6.72 | 0.075 | |
| | 2 | 6.69 | 6.66 | 6.72 | 0.076 | 1.3 |
| Heptachlor epoxide | 1 | 7.51 | 7.49 | 7.55 | 0.11 | |
| | 2 | 7.46 | 7.43 | 7.49 | 0.10 | 9.5 |
| 4,4'-DDE | 1 | 7.94 | 7.91 | 7.97 | 0.20 | |
| | 2 | 8.12 | 8.09 | 8.15 | 0.21 | 4.9 |
| Endosulfan I | 1 | 8.05 | 8.02 | 8.08 | 0.10 | |
| | 2 | 7.98 | 7.95 | 8.01 | 0.087 | 13.9 |
| Dieldrin | 1 | 8.36 | 8.33 | 8.39 | 0.22 | |
| | 2 | 8.34 | 8.31 | 8.37 | 0.22 | 0.0 |
| Endrin | 1 | 8.67 | 8.64 | 8.70 | 0.25 | |
| | 2 | 8.74 | 8.71 | 8.77 | 0.25 | 0.0 |
| 4,4'-DDD | 1 | 8.72 | 8.70 | 8.76 | 0.22 | |
| | 2 | 8.87 | 8.83 | 8.89 | 0.23 | 4.4 |
| Endosulfan II | 1 | 8.96 | 8.94 | 9.00 | 0.22 | |
| | 2 | 9.01 | 8.98 | 9.04 | 0.22 | 0.0 |
| 4,4'-DDT | 1 | 9.09 | 9.06 | 9.12 | 0.23 | |
| | 2 | 9.27 | 9.24 | 9.30 | 0.23 | 0.0 |
| Endrin aldehyde | 1 | 9.51 | 9.48 | 9.54 | 0.23 | |
| | 2 | 9.45 | 9.42 | 9.48 | 0.23 | 0.0 |
| Methoxychlor | 1 | 9.69 | 9.66 | 9.72 | 1.1 | |
| | 2 | 10.14 | 10.11 | 10.17 | 1.1 | 0.0 |
| Endosulfan sulfate | 1 | 10.07 | 10.05 | 10.11 | 0.24 | |
| | 2 | 9.80 | 9.77 | 9.83 | 0.24 | 0.0 |

QUALITY ASSURANCE SUMMARY

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

| Client Sample ID. | Lab Sample ID. |
|---|---|
| | |

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

LEGEND:

U = Below MDL B = Below LOQ

FLAGS: (indicate matrix interference)
- N = Matrix Spike OOS
- * = Duplicate OOS
- W = Method F Analytical Spike Recovery <85% or > 115% when the sample conc. is <50% of the spike conc.
- S = Analysis Determined by MSA
- + = MSA Correlation Coefficient < 0.995
- E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution
- M = Duplicate Injection Precision not met

Presence of FLAGS does not invalidate data

METHODS:
- A = Flame Atomic Absorption
- P = Inductively Coupled Plasma
- F = Graphite Furnace
- AS = Hydride Generation
- CV = Cold Vapor
- NR = Not Required

TERMS:
- MDL = Method Detection Limit
- LOQ = Limit Of Quantitation
- OOS = Out of Specification
- MSA = Method of Standard Addition

I certify that this data package is technically accurate and complete. Release of the data contained in this data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

QUALITY ASSURANCE SUMMARY

INORGANIC ANALYSIS DATA SHEET
FORM I

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___
SDG No.:
Matrix (soil/water): WATER
Level (low/med): LOW
% Solids: ___

Lab Sample ID:
Date Received:

Concentration Units (ug/L or mg/kg dry weight): UG/L___

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-36-0 | Antimony | | | | |
| 7440-38-2 | Arsenic | | | | |
| 7440-39-3 | Barium | | | | |
| 7440-41-7 | Beryllium | | | | |
| 7440-43-9 | Cadmium | | | | |
| 7440-47-3 | Chromium | | | | |
| 7440-50-8 | Copper | | | | |
| 7439-92-1 | Lead | | | | |
| 7439-97-6 | Mercury | | | | |
| 7440-02-0 | Nickel | | | | |
| 7782-49-2 | Selenium | | | | |
| 7440-22-4 | Silver | | | | |
| 7440-28-0 | Thallium | | | | |
| 7440-62-2 | Vanadium | | | | |
| 7440-66-6 | Zinc | | | | |
| | | | | | |

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury, Flame AA, Graphite Furnace AA 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

CRDL STANDARD FOR AA AND ICP

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

AA CRDL Standard Source: LLI_____

ICP CRDL Standard Source: LLI_____

Concentration Units: ug/L

| Analyte | CRDL Standard for AA | | | CRDL Standard for ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | True | Found | %R | True | Initial Found | %R | Final Found | %R |
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Lead | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | |
| Barium | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | |
| Chromium | | | | | | | | | | | |
| Copper | | | | | | | | | | | |
| Lead | | | | | | | | | | | |
| Mercury | | | | | | | | | | | |
| Nickel | | | | | | | | | | | |
| Selenium | | | | | | | | | | | |
| Silver | | | | | | | | | | | |
| Thallium | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | |
| Zinc | | | | | | | | | | | |
| | | | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

ICP INTERFERENCE CHECK SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

ICP ID Number: _____ ICS Source: LLI_____

Concentration Units: ug/L

| Analyte | True Sol. A | True Sol. AB | Initial Found Sol. A | Initial Found Sol. AB | Initial Found %R(1) | Final Found Sol. A | Final Found Sol. AB | Final Found %R(1) |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | |
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Calcium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Iron | | | | | | | | |
| Lead | | | | | | | | |
| Magnesium | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

(1) Control Limits: All Metals 80-120

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (Soil/Water): _____

% Solids for sample: ___ Concentration Units (ug/l or mg/kg dry weight): _____ Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limits %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Note: An (N) in column "Q" indicates a spike recovery that is not within the control limits. An asterisk (*) in column "Q" indicates poor duplicate precision between the matrix spike and the matrix spike duplicate. The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____
Matrix (soil/water): _____ Level (low/med): LOW

Concentration Units:

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

DUPLICATES

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (soil/water): _____ Level (low/med): LOW

% Solids for Sample: ___ % Solids for Duplicate: ___

Concentration Units (ug/L or mg/kg dry weight): _____

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Lead | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

NOTE: An asterisk(*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ). The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

LABORATORY CONTROL SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Solid LCS Source: _____

Aqueous LCS Source: LLI_____

| Analyte | Aqueous (ug/L) True | Found | %R(1) | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

(1) Control Limits: Statistically determined

QUALITY ASSURANCE SUMMARY

STANDARD ADDITION RESULTS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Concentration Units: _____

| Client Sample No. | An | 0 ADD FOUND CON | C | 1 ADD SPIKE CON | FOUND CON | C | Corrected Final Conc. | C |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

QUALITY ASSURANCE SUMMARY

SERIAL DILUTIONS

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (soil/water): _____ Level (low/med): LOW__

Concentration Units:

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | |
| Arsenic | | | | | | | |
| Barium | | | | | | | |
| Beryllium | | | | | | | |
| Cadmium | | | | | | | |
| Chromium | | | | | | | |
| Copper | | | | | | | |
| Lead | | | | | | | |
| Mercury | | | | | | | |
| Nickel | | | | | | | |
| Selenium | | | | | | | |
| Silver | | | | | | | |
| Thallium | | | | | | | |
| Vanadium | | | | | | | |
| Zinc | | | | | | | |
| | | | | | | | |

NOTE: An (E) in column "Q" indicates the presence of a chemical or physical interference in the matrix during analysis (% Difference > 10% when (I) > or = 50x MDL for ICP or (I) > or = 25x MDL for GFAA).

QUALITY ASSURANCE SUMMARY

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES
SDG No.: _____

ICP ID Number: _____ Date: _____

Flame AA ID Number: _____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Beryllium | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| Copper | | | | |
| Lead | | | | |
| Mercury | | | | |
| Nickel | | | | |
| Selenium | | | | |
| Silver | | | | |
| Thallium | | | | |
| Vanadium | | | | |
| Zinc | | | | |
| | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___
SDG No.: _____

Method: ___ Matrix (soil/water): Date: _____

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Antimony_ | | | | |
| Arsenic__ | | | | |
| Barium___ | | | | |
| Beryllium | | | | |
| Cadmium__ | | | | |
| Chromium_ | | | | |
| Copper___ | | | | |
| Lead____ | | | | |
| Mercury__ | | | | |
| Nickel___ | | | | |
| Selenium_ | | | | |
| Silver___ | | | | |
| Thallium_ | | | | |
| Vanadium_ | | | | |
| Zinc_____ | | | | |
| _____ | | | | |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/Kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Wave-length (nm) | Interelement Correction Factors for: Al | Ca | Fe | Mg | CO |
|---|---|---|---|---|---|---|
| Antimony1 | | | | | | |
| Antimony2 | | | | | | |
| Arsenic | | | | | | |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Chromium | | | | | | |
| Copper | | | | | | |
| Lead1 | | | | | | |
| Lead2 | | | | | | |
| Mercury | | | | | | |
| Nickel | | | | | | |
| Selenium1 | | | | | | |
| Selenium2 | | | | | | |
| Silver | | | | | | |
| Thallium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |
| | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Wave-length (nm) | Interelement Correction Factors for: CR | CU | MN | MO | NI |
|---|---|---|---|---|---|---|
| Antimony1 | | | | | | |
| Antimony2 | | | | | | |
| Arsenic | | | | | | |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Chromium | | | | | | |
| Copper | | | | | | |
| Lead1 | | | | | | |
| Lead2 | | | | | | |
| Mercury | | | | | | |
| Nickel | | | | | | |
| Selenium1 | | | | | | |
| Selenium2 | | | | | | |
| Silver | | | | | | |
| Thallium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |
| | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

ICP LINEAR RANGES (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Integ. Time (Sec.) | Concentration (ug/L) | M |
|---|---|---|---|
| Antimony_ | | | |
| Arsenic__ | | | |
| Barium___ | | | |
| Beryllium | | | |
| Cadmium__ | | | |
| Chromium_ | | | |
| Copper___ | | | |
| Lead____ | | | |
| Mercury__ | | | |
| Nickel___ | | | |
| Selenium_ | | | |
| Silver___ | | | |
| Thallium_ | | | |
| Vanadium_ | | | |
| Zinc_____ | | | |
| _____ | | | |

Comments:

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Method: __

| Client Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Instrument ID Number: _____ Method: __

Start Date: _____ End Date: _____

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SB | AS | BA | BE | CD | CR | CU | PB | HG | NI | SE | AG | TL | V | ZN | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Method Blank
Instrumental Water Quality
SDG:

Method Blank Analysis — Matrix:

| Parameter | Sample Number | Sample Code | Method | Analysis Date | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | J = Estimated Value < LOQ |
| TKN = Total Kjeldahl Nitrogen | MDL = Method Detection Limit |
| AK = Alpkem | LOQ = Limit of Quantitation |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| B = Background | * = Out of Specification |
| S = Spike | D = Duplicate |
| M = Matrix Spike Duplicate | U = Under |
| P = Post Distillation Spike | |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike
Instrumental Water Quality
SDG:

| Sample Information | Matrix Spike Analysis | | | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | SPK Sample | SPK Added | SPK Results | Units | Rec (%) | Acceptance Window (%) |
| | | | | | | | | | | | | | |

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike/Matrix Spike Duplicate
Instrumental Water Quality
SDG:

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | Matrix: | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| | | | | | | | | | | | | | | | | | | | |

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Instrumental Water Quality
SDG:

| Sample Information | Duplicate Analysis | | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| | | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Instrumental Water Quality
SDG:

| Sample Information | Laboratory Control Standards | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
| | | | | | | | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Initial and Continuing Calibration
Instrumental Analysis/Anion Scan

Instrument Identification: 5166
Calibration Date:
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Analysis/ Parameter | 10 PPB STD | 50 PPB STD | 100 PPB STD | 200 PPB STD | 300PPB STD | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Calibration Dates:

Concentration units: ug/l

| Parameter | Initial / Continuing Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | Found | %R(1) | Found | %R(1) | Found | %R(1) |
| ICV | 50 | | | | | | | | |
| CCV | 200 | | | | | | | | |

Control Limits: 90-110%

# *Lancaster Laboratories*

Quality Control Summary
Initial Calibration & Linearity Check
Instrument Analysis
TOTAL ORGANIC CARBON
Instrument Identification:
Calibration Date:
MATRIX: WATER
SDG:

| | | | | | |
|---|---|---|---|---|---|
| Std mass: | | ug C | | | |
| Calib. Const: | | ug C/mV | | | |
| Blank: | mv | Standard: | mv | | |
| Blank: | mv | Standard: | mv | | |
| Blank: | mv | Standard: | mv | | |
| Average: | #DIV/0! mv | Average: | #DIV/0! mv | | |

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | Method Blank | ICV/ 1 | ICV/ 7.5 | ICV/ 10 | ICV/ 25 | ICV/ 50 | ICV/ 75 | Units= mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

Continuing Calibration Dates:
Concentration Units: mg/L

| Parameter TOC | Reference Concentration | Result Cont. Cal | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| | | | | | |

# *Lancaster Laboratories*

QUALITY CONTROL SUMMARY
INSTRUMENTAL ANALYSIS
Continuing Calibration for TOX

The TOX analysis uses a single point calibration (ICV).
Standards are run to verify the absorbtion effciency of the instrument.
There is no daily initial calibration curve.

Instrument ID: 5803, 5804
SDG:

| Batch Number | This CC applies to samples: | Sample Code | This CC applies to samples: | Sample Code | This CC applies to samples: | Sample Code |
|---|---|---|---|---|---|---|
| | | | | | | |

Calibration Dates:

Concentration Units: ug/l

| Parameter TOX | Reference Conc. | Result Cont. Cal | Percent Recovery | ICV Accept. Range - 10%<br>CCV Accept. Range - 10% | Out of Specification |
|---|---|---|---|---|---|
| | | | | | |

Any out of specification calibrations are immediately followed by two acceptable calibrations, following the requirements of the TOX method.

# *Lancaster Laboratories*

| | | | |
|---|---|---|---|
| | | Cts | Quality Control Summary |
| | | R2: | Initial Calibration & Linearity Check |
| | | | Instrument Analysis |
| Blank: | 0 cts | | TOTAL ORGANIC CARBON |
| Blank: | 0 cts | | Instrument Identification: |
| Blank: | 0 cts | | Calibration Date: |
| Average: | 0 cts | | MATRIX: |
| | | | SDG: |

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | STD. 0.30 | STD. 6.00 | STD. 18.00 | STD. 30.00 | UNITS= CTS |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Continuing Calibration Dates:
Concentration Units: mg/kg

| Parameter TOC | Reference Concentration | Result Cont. Cal | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |

OUT OF SPECIFICATION CCV's are immediately followed by two acceptable calibrations.
CONTROL LIMITS: 90% - 110%

# Lancaster Laboratories

Instrument Identification:
Calibration Date:
SDG:

Quality Control Summary
Initial and Continuing Calibration
Instrumental Analysis/Anion Scan

| Batch Number | This IC applies to samples: | Sample Code | Analysis/ Parameter | AUTO CAL/1 | AUTO CAL/2 | AUTO CAL/3 | AUTO CAL/4 | AUTO CAL/5 | R2 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fluoride | 0 | | | | | | 0.00000 |
| | | | Chloride | 0 | | | | | | 0.00000 |
| | | | Nitrite-N | 0 | | | | | | 0.00000 |
| | | | Bromide | 0 | | | | | | 0.00000 |
| | | | Nitrate-N | 0 | | | | | | 0.00000 |
| | | | Orthophosphate | 0 | | | | | | 0.00000 |
| | | | Sulfate | 0 | | | | | | 0.00000 |
| | | | | | | | | | | 0.00000 |

Calibration Dates:

Concentration units: mg/l

| Parameter | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | Found | %R(1) | Found | %R(1) | Found | %R(1) |
| Fluoride | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Chloride | 3.0 | | 0 | | 0 | | 0 | | 0 |
| Nitrite-N | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Bromide | 7.5 | | 0 | | 0 | | 0 | | 0 |
| Nitrate-N | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Orthophosphate | 7.5 | | 0 | | 0 | | 0 | | 0 |
| Sulfate | 7.5 | | 0 | | 0 | | 0 | | 0 |

**Lancaster Laboratories**

Quality Control Summary
Initial Calibration
Instrumental Analysis

Instrument Identification: 4758
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | Blank | STD 1 | STD 2 | STD 3 | STD 4 | STD 5 | STD 6 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NA* | | | | | | | |

Calibration Dates:
Concentration Units: mg/L
NA* - The blank is not used in the calculation of the calibration curve.

| Parameter | Reference Concentration | Result | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Method Blank
Miscellaneous Wet Chemistry
SDG:

Method Blank Analysis — Matrix:

| Parameter | Sample Number | Sample Code | Method | Analysis Date | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | < = Less Than |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |
| B = Background | D = Duplicate |
| S = Spike | LS = Low Spike |
| HS = High Spike | PDS = Post Digestion Spike |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike Analysis/Matrix Spike Duplicate
Miscellaneous Wet Chemistry
SDG:

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | Matrix: | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| | | | | | | | | | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | ND = Not Detected |
| DI = Distillaton | ME = Method |
| G = Gravimetric | < = Less Than |
| IR = Infrared Spectrophotometry | NA = Not Applicable |
| M = Meter | LOQ = Limit of Quantitation |
| OD = Oven Dried | * = Out of Specification |
| TI = Titration | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Duplicate Analysis | | | | | | | | | Matrix: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| | | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | < = Less Than |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Laboratory Control Standards | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |

# *Lancaster Laboratories*

Quality Control Summary
Initial Calibration
Miscellaneous Wet Chemistry
Total Petroleum Hydrocarbons
Instrument Identification: 009402
Calibration Date:
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Blank 0.0000 | STD 1 0.1000 | STD 2 0.2000 | STD 3 0.6000 | STD 4 1.0000 | STD 5 2.0000 | STD 6 4.0000 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|
| | Blank<br>LCS/LCSD | | | | | | | | | |

Calibration Date:

| Parameter | Reference Concentration | Result | % Recovery | Acceptance Range -/+ 10% |
|---|---|---|---|---|
| | 1.0 | | | 0.9 - 1.1 |

ABBREVIATION KEY
IC = Initial Calibration
ICV = Initial Calibration Verification
CCV = Conti. Calibration Verification
STD = Standard

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike Analysis
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Matrix Spike Analysis | | | | | | | | | | | | Matrix: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | SPK Sample | SPK Added | SPK Results | Units | REC (%) | Acceptance Range |
| | | | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | * = Out of Specification |
| DI = Distillation | LOQ = Limit of quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | < = Less Than |
| M = Meter | J = Estimated Value < LOQ |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | PDS = Post Digestion Spike |
| LS = Low Spike | HS = High Spike |

# LABORATORY QUALITY ASSURANCE PROJECT PLAN

**May 16, 2002**
**(Revised October 4, 2002)**

**WARNING:** The information contained herein is of a highly confidential and proprietary nature. Lancaster Laboratories, Inc. specifically prohibits the dissemination or transfer of this information to any person or organization not directly affiliated with the project for which it was prepared.

# GROUP A

# PROJECT MANAGEMENT

## A1. Title and Approval Sheet

Laboratory Quality Assurance Project Plan

Lancaster Laboratories, Inc.

Approving Official:

Kathleen M. Loewen

Kathleen Loewen, B.S., Quality Assurance Officer

10/20/02

Date

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| B3 | Sample Handling and Custody Requirements | 38 | 0 | |
| B4 | Analytical Methods Requirements | 42 | 1 | |
| B5 | Quality Control Requirements | 37 | 1 | |
| B6 | Instrument/Equipment Testing, Inspection, and Maintenance Requirements | 4 | 1 | |
| B7 | Instrument Calibration and Frequency | 5 | 1 | |
| B8 | Inspection/Acceptance Requirements for Supplies and Consumables | 1 | 0 | |
| B9 | Data Acquisition Requirements | 2 | 0 | |
| B10 | Data Management | 10 | 0 | |

| | Section | Pages | Revision | Date |
|---|---|---|---|---|
| | ***Assessment and Oversight*** | | | |
| C1 | Assessments and Response Actions | 59 | 0 | |
| C2 | Reports to Management | 1 | 0 | |
| | ***Data Validation and Usability*** | | | |
| D1 | Data Review, Validation, and Verification Requirements | 2 | 0 | |
| D2 | Validation and Verification Methods | 1 | 0 | |
| D3 | Reconciliation with User Requirements | 4 | 0 | |
| | Appendix A – Example Report Forms | 113 | | |

## A3. Distribution List

This is a generic QA Project Plan; therefore, a distribution list will not be included. A list of organizations and persons that receive the generic QA Project Plan is maintained at Lancaster Laboratories.

## A4. Project/Task Organization

The objectives of the laboratory Quality Assurance Program are to establish procedures which will ensure that data generated in the laboratory are within acceptable limits of accuracy and precision, to ensure that quality control measures are being carried out, and to ensure accountability of the data through sample and data management procedures. To this end, a Quality Assurance Department has been established. The Quality Assurance Officer reports directly to the President of Lancaster Laboratories and has no direct responsibilities for data production, thus avoiding any conflict of interest. The Quality Assurance Officer is the responsible party for maintaining the official, approved QA project plan.

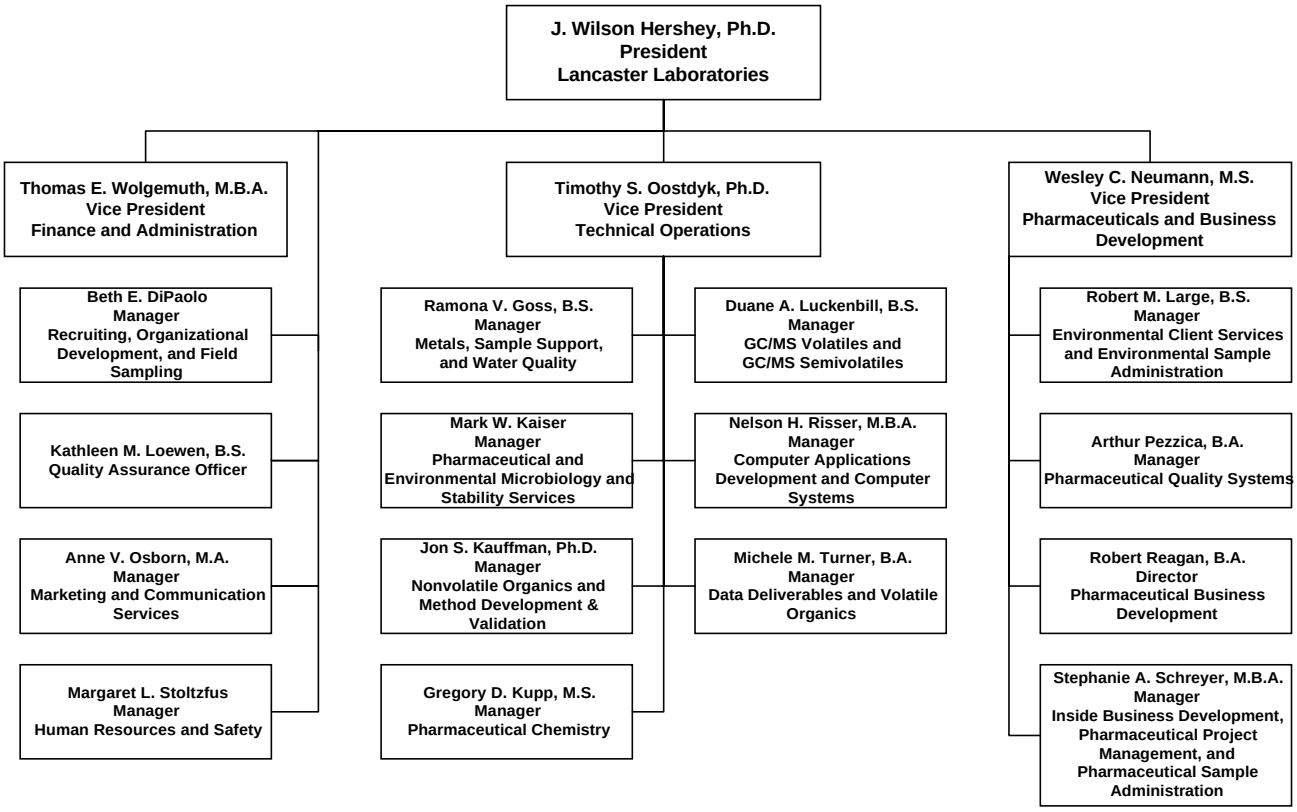
The attached organizational charts show key managerial personnel. Resumes of key individuals may be found in the *Qualifications Manual*.

The Sample Administration Group will be responsible for receiving samples, signing the external chain of custody, checking sample condition, assigning unique laboratory sample identification numbers, and initiating internal chain-of-custody forms. Sample Support personnel will be responsible for assigning storage locations, checking and adjusting preservation, homogenizing the sample as needed, and sample discard. The Bottles Group is responsible for pre-preserving bottles as required by the method, preparing trip blanks and field blanks when required, and packing the bottle kits, then sending them to the client‘s requested location.

Group leaders listed in each technical area are responsible for performing laboratory analyses, quality control as specified in the methods, instrument calibration, and technical data review. Data is reported using a computerized sample management system, which tracks sample progress through the laboratory and generates client reports when all analyses are complete. Quality control data is entered onto the same system for purposes of charting and monitoring data quality.

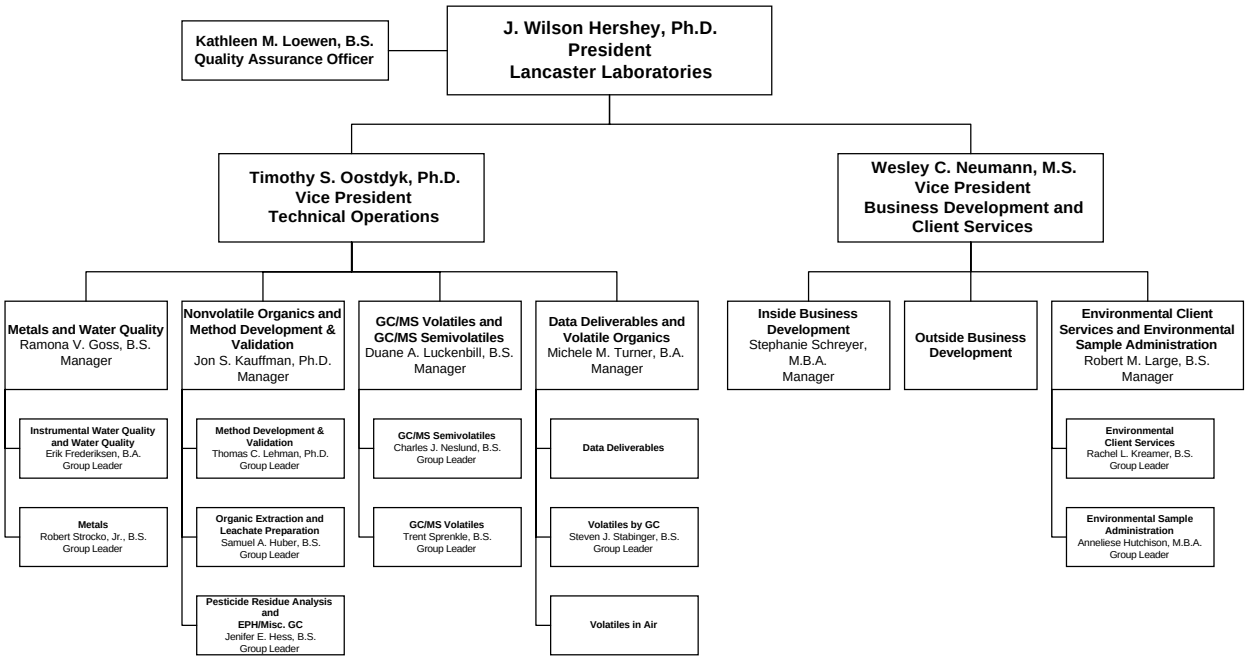
The Quality Assurance Department is responsible for reviewing quality control data, conducting audits in the laboratory and reporting findings to management, maintaining current copies of all analytical methods, reviewing and approving SOPs, maintaining copies of computer code used to calculate and report results, submitting blind samples to the laboratory, and ensuring that appropriate corrective action is taken when quality problems are observed.

Data package deliverables are available upon request. The Quality Assurance Department reviews a representative sampling of the deliverables for completeness and to be sure that all quality control checks were performed and met specifications. This step includes review of holding times, calibrations, instrument tuning, blank results, duplicate results, matrix spike results, surrogate results, and laboratory control samples (where applicable). Every attempt to meet specifications will be made, and any item outside of the specifications will be noted in the narrative. The laboratory will not validate data with regard to usability since this generally requires specific knowledge about the site. All data is archived according to corporate procedures.



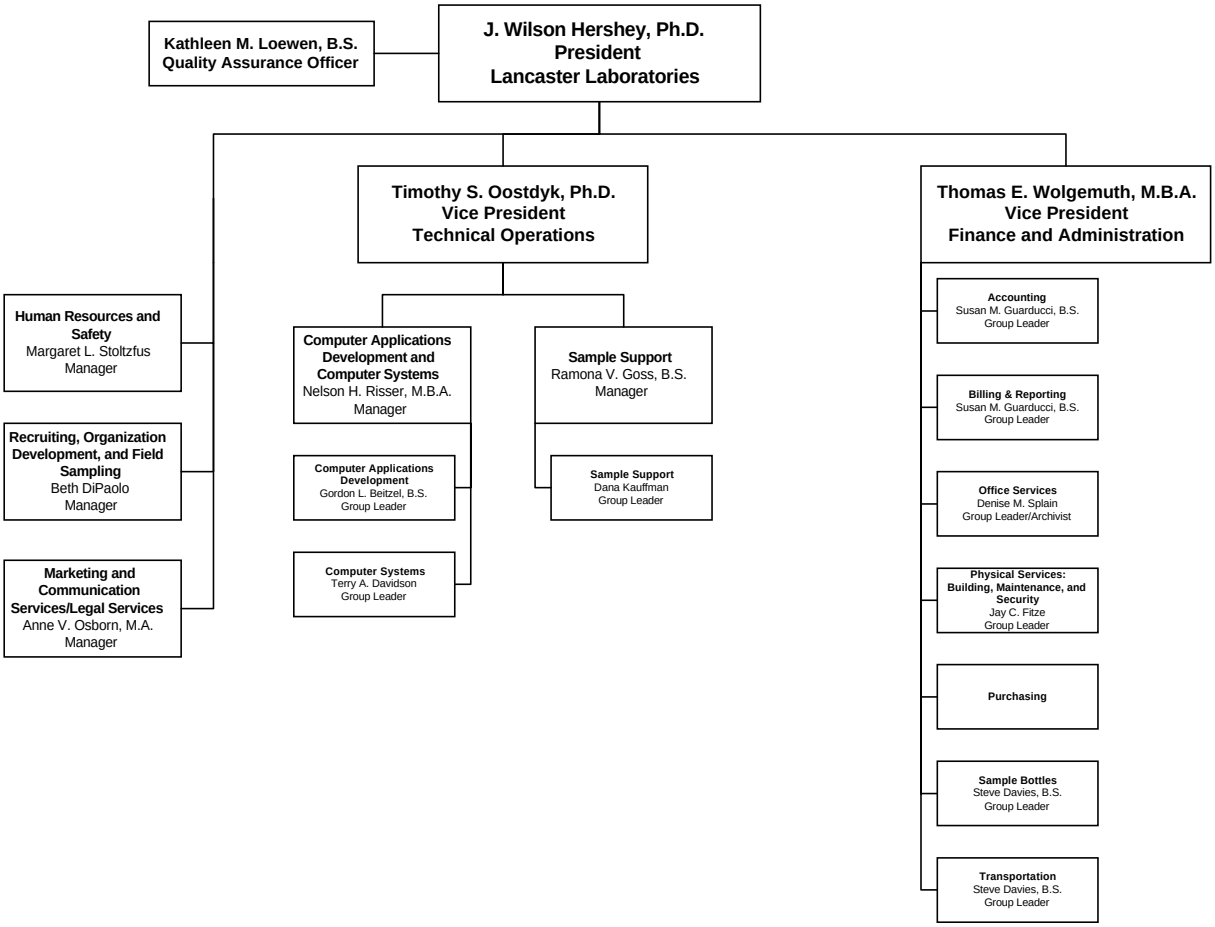

04/09/02
President to Manager

**Environmental Sciences**




04/04/02

## Support Services

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## A5. Problem Definition/Background

The purpose of this generic QA Project Plan is to provide specific quality assurance and quality control procedures involved in the generation of data of acceptable quality and completeness. This QA Project Plan provides the laboratory requirements to meet *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5, March 2001 and EPA's *Guidance for Quality Assurance Project Plans*, EPA QA/G-5, February 1998.

The procedures in this QA Project Plan have been standardized to make them applicable to all types of environmental monitoring and measurement projects. However, under certain site-specific conditions, not all of the procedures discussed in this document may be appropriate. In such cases, it will be necessary to adapt the procedures to the specific conditions of the investigation.

The analyses in this document are representative of what the laboratory performs but are not all encompassing. It is intended to provide a client with an overview of systems and procedures at Lancaster Laboratories. It is not project or site-specific and may not address all analyses required for a particular project. If additional analytical information is necessary, arrangements can be made with Lancaster Laboratories to generate a project specific or site specific QAPP.

## A6. Project/Task Description

Tests will be performed according to the analytical methodology set forth in the *USEPA Test Methods for Evaluating Solid Waste—Physical/Chemical Methods*, *SW-846*, *3rd edition, Update III, December 1996* and *Methods for Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020.* SW-846 provides specific analytical procedures to be used and defines the specific application of these procedures. Proven instruments and techniques will be used to identify and measure the concentrations of volatiles, semivolatiles, and pesticide compounds and/or the inorganic elements. The laboratory will employ state-of-the-art GC/MS and/or GC procedures to perform all organic analysis. Inorganic analyses will be performed using graphite furnace atomic absorption spectophotometry (GFAA), inductively coupled plasma (ICP), cold vapor AA, and flame AA. Instrumental wet chemistry will be using an auto-analyzer spectrophotometer, TOC analyzer, TOX analyzer, and Ion Chromatography. Classic wet chemistry will use appropriate instrumentation. The client is responsible for providing specifics on the project site.

## A7. Quality Objectives and Criteria

Quality assurance is the overall program for assuring reliability of monitoring and measurement data. Quality control is the routine application of procedures for obtaining set standards of performance in the monitoring and measurement process. Data quality requirements are based on the intended use of the data, the measurement process, and the availability of resources. The quality of all data generated and processed during this investigation will be assessed for precision, accuracy, representativeness, comparability, and completeness. These specifications will be met through precision and accuracy criteria as specified in Element B5. Detection limits are presented in Element B4.

To ensure attainment of the quality assurance objectives and criteria, SOPs are in place detailing the requirements for the correct performance of laboratory procedures. The laboratory SOPs fall under five general categories:

1. Corporate policy

2. Quality assurance

3. Sample administration

4. General laboratory procedures

5. Analytical (i.e., methods, standard preps., instrumentation)

All SOPs are approved by the QA Department prior to implementation. The distribution of current SOPs and archiving of outdated ones are controlled by the Office Services Group through a master file. Table A7-1 provides an index of QA SOPs in place in support of the Quality Assurance objectives. These requirements are supplemented by the procedures in the laboratory and analytical SOPs.

**Table A7-1**

| Document # | Document Title |
|---|---|
| SOP-QA-101 | Sample Collection |
| SOP-QA-102 | Sample Log-In |
| SOP-QA-103 | Sample Storage and Discard |
| SOP-QA-104 | Internal Chain-of-Custody Documentation |
| SOP-QA-105 | Analytical Methods Manual |
| SOP-QA-106 | Validation and Authorization of Analytical Methods |
| SOP-QA-107 | Analytical Methods for Nonstandard Analyses |
| SOP-QA-108 | Subcontracting to Other Laboratories |
| SOP-QA-109 | Laboratory Notebooks, Logbooks, and Documentation |
| SOP-QA-110 | Reagents and Standards |
| SOP-QA-111 | Instrument and Equipment Calibration |
| SOP-QA-112 | Instrument and Equipment Maintenance |
| SOP-QA-113 | Data Entry, Verification and Reporting of Results from the Computerized Sample Management System (CSMS) |
| SOP-QA-114 | Data Storage, Security, and Archiving |
| SOP-QA-115 | Quality Control Records |
| SOP-QA-116 | Investigation and Corrective Action of Noncompliant Data |
| SOP-QA-117 | Personnel Training Records and Curriculum Vitae |
| SOP-QA-118 | Quality Assurance Audits |
| SOP-QA-119 | Proficiency Test Samples |
| SOP-QA-120 | Documentation for the Computerized Sample Management System (CSMS) |
| SOP-QA-121 | Quality Assurance Guidelines for Computers and Computerized Systems |
| SOP-QA-122 | Investigation and Corrective Action Reporting for Laboratory Problems |
| SOP-QA-123 | Missed Holding Time Reports |
| SOP-QA-124 | External Audits |

**Table A7-1 (continued)**

| Document # | Document Title |
|---|---|
| SOP-QA-125 | Document Control |
| SOP-QA-127 | Handling of Client Technical Complaints (Investigations and Response) |
| SOP-QA-128 | Compliance with Good Laboratory Practice (GLP) Regulations |
| SOP-QA-129 | Writing Standard Operating Procedures |
| SOP-QA-130 | Change Control |
| SOP-QA-132 | Good Manufacturing Practice Training |
| SOP-QA-133 | Guidelines for Analytical Decision Making |
| SOP-QA-134 | Good Laboratory Practice Training |
| SOP-QA-135 | Disposal of Hard Copies |
| SOP-QA-136 | Archive Guidelines |

## A8. Specialized Training/Certification

Lancaster Laboratories has a core curriculum of training that contains the basic courses relevant to all the employees. This in part, includes teaching the quality policy, quality assurance/quality control, ethics training, chemical hygiene training, health and safety classes, and any function specific training (i.e. GC, Statistics). Much of this training is performed at Lancaster Laboratories through the Human Resources Group. The following list shows examples of course offerings:

- Laboratory Technician Program: Designed for new employees who need to develop laboratory skills or who need a refresher on laboratory basics.
- Making Quality A Science: This course introduces why quality is important, explains Lancaster Laboratories quality philosophy and processes, and shows how to apply quality thinking and techniques on the job.
- Putting Our Values to Work: This seminar is designed to introduce new employees to the Statement of Values by examining how it translates to everyday jobs and includes ethical decision making.
- Chemical Hygiene Plan: Introduces the new employee to LLI's Chemical Hygiene Plan and the OSHA Lab Standard regulation and requirements.
- CPR: This course includes CPR history, relevance of CPR, cardiovascular disease, adult one-rescuer CPR, airway obstruction, pediatric CPR, safety in CPR.
- 24-hour HAZWOPER Emergency Response: Part of a proactive safety and emergency preparedness effort, this training is provided to a core group of people and volunteers who may respond to emergencies.
- Statistical Analysis: Topics include: rounding, mean standard deviation, normal distribution, z-scores, estimate, confidence intervals, hypothesis testing, one sample t-test, F-test, two sample t-test, paired t-test, ANOVA, outlier, calibration, etc.
- Gas Chromatography: Principles in GC, separation, qualitative/quantitative analysis, hardware, software, troubleshooting techniques, and the applications for GC use at Lancaster Laboratories.
- GC/MS Basics: Review of the fundamentals for GC/MS analysis.
- HPLC: Principles and practices on HPLC and the applications at Lancaster Laboratories.

If the training can not be accomplished at Lancaster Laboratories, then the employee may have off-site training. Within each technical or support group, the employee also receives on-the-job training before performing work independently. The details of this training are noted in each departmental group's SOPs.

The analysts must perform an initial demonstration of capability before using any test method; this is reviewed and signed by the technical department's management and Quality Assurance. The analyst must also complete an annual demonstration of capability for each test method per matrix.

All training and proficiencies are documented in each employee's training records as described in SOP-QA-117, "Personnel Training Records and Curriculum Vitae."

## A9. Documents and Records

The group leaders in each technical area are responsible for overseeing the performance of analysis, quality control as specified in the method, instrument calibration, and technical data review. There is a secondary review on 100% of all data by a supervisor or experienced analyst prior to reporting the results. The Laboratory Information Management System (LIMS) tracks sample progress through the laboratory and generates client reports. During analysis, raw data must be recorded in indelible ink in bound notebooks or on printouts from instruments and is then entered into the LIMS against sample number and analytical method. Many instruments are connected directly to the LIMS, eliminating the manual transcription. Quality control data is entered into the same system for purposes of charting and monitoring data quality. When all analyses are completed and have been verified by a supervisor or designee, the computer generates a report. The client receives a copy of the report containing the results of the analysis plus comments entered by the analyst where necessary. Copies of the reports and associated raw data are retained in secured archives.

Currently Lancaster Laboratories has over fifteen different reporting formats. Table A9-1 shows some of the formats available. Unless a specific report format is requested, the standard laboratory procedure is to report results to the limit of quantitation (LOQ) using report type 0 (see Table A9-1). However, it is possible to estimate to a value below the LOQ, if lower values are needed. Estimates are made to the reported method detection limit (MDL) which is based on annual MDL studies performed per method/matrix and instrument. An example analysis report is included in Appendix A.

The data packages are consistent with EPA CLP, NJDEP, and other state or agency formats. Custom formats are also accommodated. The data package types differ in the level of raw data and QC that would be submitted. Table A9-2 shows the formats offered and the information that can be included in a data package. Appendix A shows examples of the data package forms used for various types of methodology (i.e. GC/MS Volatiles, pesticides, etc.) The data packages are available as hard copy deliverables or a *.pdf* file on CDROM.

After the data package has been compiled, a content review and QA/QC compliance review on 100% of the data packages is performed by the Data Deliverable department or by other fully-trained staff. During the content review, the field chain of custody is compared to the reports to check the analysis performed, dates/times of collection, and sample designation. In addition to making sure data from all the appropriate departments is present, the following are also checked: method summary/reference, title page, table of contents, sample reference list, sample administration receipt documentation logs, and internal chains of custody (if required). In addition to making sure the data for all analyses are included, the following are also checked during the QA/QC compliance review: spot check results on the report against the raw data, ensure analyses performed within holding time, check quality control summary forms for compliance issues, and read the case narrative to make sure all nonconformances and anomalies are addressed.

In addition, the Quality Assurance Department reviews a representative sampling of the deliverables for completeness and to be sure that all batch quality control checks were performed and met specifications. This step includes review of holding times, calibrations, instrument tuning, blank results, duplicate results, matrix spike results, surrogate results, and laboratory control samples (where applicable). Every attempt to meet specifications will be made, and any item outside of the specifications will be noted in the case narrative. The laboratory will not validate data with regard to usability since this generally requires specific knowledge about the site.

Analytical results can be submitted to the client in various electronic formats. LLI supports more than 8 standard and over 100 custom file structures using an Oracle based data system. LLI provides electronic data deliverables (EDD) formatted in Microsoft Access (.mdb), Excel (.xls), and ASCII: “Comma Delimited,” “Tab Delimited,” and “Fixed Length.” LLI uses several industry standard formats for the electronic data, such as:

- NJDEP SRP HazSite (HZRESULT data)
- GIS/Key
- CA EDF (COELT)
- EquIS
- ERPIMS
- EPA Region 5 (EDMAN)
- TerraBase (Integrate Level 2)
- ITEMS
- Client- or Project-Specific Formats

We ensure the quality of our electronic data by providing 100 percent manual quality assurance review of all data fields for new formats and a 10 percent review thereafter. We also have an extensive EDD review.

*LLabWeb.com* allows a client to access their verified analytical results round-the-clock through Lancaster Laboratories computer system using a secure Internet browser. Only analytical results on samples that are completed and verified can be accessed by this system.

A corporate procedure is in place for documentation, error correction, and control of logbooks (SOP-QA-109, ”Laboratory Notebooks, Logbooks, and Documentation”). The Office Services Group is responsible for maintaining the document and version control of the QA project plan and SOPs. All documents are assigned a revision number and date by the Office Services Group. They record all individuals or departments that have been issued a copy of a document and track that old versions are returned when the new one is issued. They are also responsible for maintaining the archive system to securely store records from all areas of the laboratory. SOP-QA-114, ”Data Storage, Security and Archiving,” describes procedures for transferring data from the laboratories to the archives. The procedures for maintaining the archives, including record retention schedule and disposal are described in SOP-QA-136, “Archive Guidelines.” The length of time for retention of data is 10 years. The disposal of records is explained in procedure SOP-QA-135, “Disposal of Hard Copies.” All copies that are disposed of are incinerated. The Data Deliverables Group archives copies of the data packages using microfilm or equivalent. Electronic data diskette files are saved on a backup tape and stored off site for a minimum of 10 years.

**Table A9-1**
**Data Reporting Formats**

| | Negative | Exactly Zero | MDL | LOQ | Above LOQ | Limit Shown on Report |
|---|---|---|---|---|---|---|
| 0 | <LOQ | | | | Rounded result | LOQ |
| 1 | N.D. | | <LOQ | | Rounded result | LOQ |
| 2 | N.D. | | BMQL | | Rounded result | LOQ |
| 3 | N.D. | | Result with "J" Qualifier | | Rounded result | LOQ |
| 4 | N.D. | | Result with "J" Qualifier | | Rounded result | LOQ |
| 5 | Result with "J" | N.D. | Rounded result to 6 decimal places | | | LOQ |
| 6 | Result with "J" | N.D. | Rounded result to 6 decimal places | | | MDL |
| 7 | LOQ with "U" Qualifier | | Result with "J" Qualifier | | Rounded Result | LOQ |
| 8 | N.D. | | Rounded Result (no "J" Qualifier) | | | MDL |

Key:

MDL = Method Detection Limit
LOQ = Limit of Quantitation
BMQL = Below Minimum Quantitation Limit
J = Estimated Value

# Table A9-2
## Data Package Formats

**Type I, NJ Regulatory (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/references
- Analysis reports/laboratory chronicles
- Case narrative
- Quality control summary; duplicates, matrix spike, matrix spike duplicate, blank, and LCS, and surrogate recovery summary forms, GC/MS tuning summary
- Sample data; all raw sample data including instrument printouts and MDL summary form
- Standard Data; initial and continuing calibration summary forms, all raw initial and continuing calibrations and standardization data including instrument printouts
- Quality control raw data; all raw quality control sample data including printouts, preparation logs, run logs

**Type II (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/reference
- Analysis reports/laboratory chronicles
- Case narrative
- Quality control summary; duplicate, matrix spike, matrix spike duplicate, blank, LCS, and surrogate recovery forms, GC/MS tuning, initial and continuing calibration summary forms
- Sample data; all raw sample data including instrument printouts
- Quality control raw data; blank raw data, preparation logs, run logs

**Type III, NJ Reduced Deliverables (non-CLP)**

- Title page
- Sample reference list
- Analysis request form, field chain of custody
- Sample administration receipt documentation log
- Internal chain of custody (if required)
- Method summary/reference
- Analysis reports/laboratory chronicles
- Case narrative and conformance/nonconformance summary
- Quality control summary; duplicate, matrix spike, matrix spike duplicate, blank, LCS, and surrogate recovery forms, GC/MS tuning, summaries for calibration and standardization
- Sample data; MDLs, all raw sample data including instrument printouts for GC, GC/MS, and TPH only
- Quality control raw data; blank raw data for GC, GC/MS, and TPH only, preparation logs

**Type IV, Full CLP Deliverables**

- Title page
- Case narrative
- Analysis request form, field chain of custody
- Internal chain of custody (if required)
- All CLP reporting forms; QC analytical results and calibration summaries
- Sample data; all raw data including instrument printouts
- Standard Data; all raw initial and continuing calibrations and standardization data including instrument printouts
- Quality control raw data; all raw quality control sample data including printouts, preparation logs, run logs

## Table A9-2 – Continued
Data Package Formats

**Type V, Reduced CLP Deliverables**

- Title page
- Case narrative
- Analysis request form, field chain of custody
- Internal chain of custody (if required)
- All CLP reporting forms; QC analytical results and calibration summaries
- Sample raw data; all raw sample data including instrument printouts for organics only
- Quality control raw data; blank raw data for organics only, preparation logs

**Type VI, Raw Data Only**

- Title page
- Sample raw data; all raw sample data including instrument printouts
- Quality control summary; blank raw data
- Standard raw data; LCS raw data

# GROUP B

# MEASUREMENT/DATA ACQUISITION

## B1. Sampling Process Design

In order for meaningful analytical data to be produced, the samples analyzed must be representative of the system from which they are drawn. It is the responsibility of the client to ensure that the samples are collected according to accepted or standard sampling methods. The client should evaluate the number, location, and type of samples to be collected. The appropriate number and frequency of field QC samples should also be determined by the client.

For non-standard matrices such as fish, worms, biota, large concrete or wood chunks, or other assorted waste, a discussion should take place with the laboratory to identify special handling requirements and confirm method performance for the particular matrix.

## B2. Sampling Methods

The sampling methods should be selected by the client with regard to the intended application of the data.

The laboratory will provide the appropriate sample containers, required preservative, chain-of-custody forms, shipping containers, labels, and seals for the sampling. Trip blanks will be prepared by the laboratory and accompany sample containers at the project required frequency. Analyte free water will also be provided for field blanks. Temperature blanks will be included for monitoring cooler temperature upon receipt of the samples back at the laboratory. Pre-cleaned containers, with vendor supplied traceability documentation are available upon request. Because the laboratory does not stock this type of traceable container, 2 weeks prior notice is required.

Before use each lot of preservative used with sample containers is documented and checked for contaminants. The appropriate bottle will be preserved with the new preservative and filled with deionized water to represent a sample. A similar container (that does not contain preservative) will be filled with deionized water to be used as a blank check. Analysis results are documented and reviewed for each preservative lot number.

A list of containers, preservatives, and holding times follows in Table B2-1.

**Table B2-1**
Sample Containers, Preservatives, and
Holding Times for Aqueous and Solid Samples

| Fraction | Vol. Req. (mL)<br>Wt. Req. (g) | Container<br>P=Plastic<br>G=Glass | Preservation[a] | Holding Time[d] From Date of Collection<br>Water | Soil |
|---|---|---|---|---|---|
| Volatiles | 3 × 40 mL<br>100 g[f] | G | Cool, 4°C[b] pH <2 w/HCl | 14 Days | 14 |
| Pesticides | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| Herbicides | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| Halocarbons<br>(Volatiles by GC) | 3 × 40 mL<br>100 g[f] | G | Cool, 4° C[b] pH <2 w/ HCl[c] | 14 Days | 14 |
| Aromatics<br>(Volatiles by GC) | 3 × 40 mL<br>100 g[f] | G | Cool, 4° C[b] pH <2 w/ HCl | 14 Days | 14 |
| Semivolatiles<br>(Acid/Base Neutrals) | 2 × 1000 mL<br>100 g | G | Cool, 4° C[b] | 7 Days to extraction[e] | 14 |
| PAHs (HPLC) | 2 × 1000 mL<br>100 g | G | Cool, 4°C $Na_2S_2O_3$ | 7 Days to extraction[e] | 14 |
| Metals | 100 mL<br>100 g | P,G | $HNO_3$ to pH <2 | 6 Months<br>Hg 28 days | 6 |
| Cyanide | 500 mL<br>100 g | P,G | Cool, 4°C NaOH to pH >12<br>ascorbic acid | 14 Days | 14 |
| Sulfide | 500 mL<br>100 g | G | Cool, 4°C (NaOH, ZnAC<br>Waters Only) | 7 Days | 7 |
| Phenol | 1000 mL<br>100 g | G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days | 28 |
| TPH | 2 × 1000 mL<br>100 g | G | Cool, 4°C pH <2 w/ HCl | 7 Days | 14 |
| TPH-GRO | 3 × 40 mL<br>100 g | G | Cool, 4°C pH <2 w/ HCl | 7 Days | 14 |
| TPH-DRO | 2 × 1000 mL<br>200 g | G | Cool, 4°C <2 with HCl | 14 Days to extraction[e] | 14 |
| TOX | 4 × 250 mL<br>50 g | G | Cool, 4°C $H_2SO_4$ to pH <2<br>$Na_2SO_3$ | 28 Days | N/A |
| TOC | 125 mL<br>20 g | G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days | 28 |
| Total Nitrite/Nitrate | 120 mL | P,G | Cool, 4°C $H_2SO_4$ to pH <2 | 28 Days[g] | N/A |

[a]pH Adjustment with acid/base is performed on water samples only.

[b]Sodium thiosulfate needed for chlorinated water samples

[c]Due to the inaccurate recovery of 2-chloroethyl vinyl ether in the presence of HCl, Halocarbon samples analyzed for this compound should not be preserved.

[d]Samples will be analyzed as soon as possible after collection. The times listed are the maximum times that samples will be held before analysis and still be considered valid.

[e]Analysis 40 days from extraction.

[f]This is for soils not sampled by Method 5035. For Method 5035, see below.

[g]Holding time is 48 hours from time of collection for unpreserved samples.

NOTE: For volatiles analysis, the container should be filled completely, with no headspace. All sample containers, preservatives, and mailers will be supplied at no additional charge upon request, except for the special containers with traceability documentation. There is an additional charge for this type of container.

Method 5035
Containers for sampling soils for volatile organic compounds

| Analysis Level | Option # | EnCore™ Sampler | Methanol Preserved 40-mL Vial | Unpreserved Container for Moisture | Travel Blank |
|---|---|---|---|---|---|
| Low | A | 3 (7*) | — | 1 | Water |
| High | B | 1 (3*) | — | 1 | Water |
| | C | — | 1 (3*) | 1 | Methanol |

*Total number of sampled containers needed for background/MS/MSD analyses. Because only one analysis will come from each container, additional samples must be collected for matrix spikes/matrix spike duplicate analyses or other quality control analyses. The number of containers for MS/MSD samples is listed above. The holding time from collection to preservation is 48 hours. The holding time for analysis is 14 days from preservation.

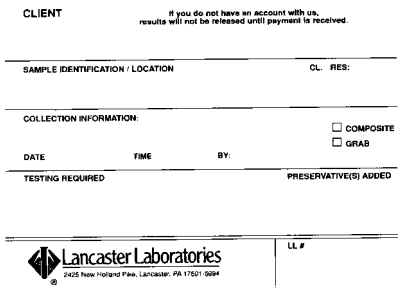
## B3. Sampling Handling and Custody Requirements

Samples are unpacked and inspected in the sample receipt area. At this time, the samples are examined for breakage and agreement with the associated client paperwork. The cooler temperatures will be checked upon receipt and recorded. As the samples are unpacked, the sample label information will be compared to the chain-of-custody record and any discrepancies or missing information will be documented. If necessary, the cooler will be closed and placed in cold storage until instructions and resolution of any discrepancies are received from the client.

A member of our Sample Administration Group will act as sample custodian for the project. To ensure accountability of our results, a unique identification number is assigned to each sample as soon as possible after receipt at the laboratory. Upon entry into our LIMS and assignment of the seven digit sample number, labels are generated, along with an Acknowledgement summarizing samples entered and the analyses scheduled. When samples requiring preservation by either acid or base are received at the laboratory, the pH will be measured and documented, with the exception of samples designated for volatile analysis, which are checked at the time of analysis. Samples requiring refrigeration will be stored at 2° to 4°C. The use of our computer system in tracking samples (by the Lancaster Labs sample number assignment) will control custody of the sample from receipt until the time of its disposal. The security system on our laboratory building allows us to designate the entire facility as a secure area since all exterior doors are either locked or attended. Therefore, hand-to-hand chain of custody is not part of our routine procedure, but is available upon request. If requested, hand-to-hand chain of custody will be provided as per attached SOP-QA-104, "Chain-of-Custody Documentation." The laboratory chain of custody will begin with the preparation of bottles. The procedures for sample log-in, storage, and chain-of-custody documentation are detailed in the QA standard operating procedures included in Element B3 (SOP-QA-102, SOP-QA-103, and SOP-QA-104). Examples of sample labels and a custody seal are shown in Figure B3-1.

## Figure B3-1

Sample Label (Field)


CLIENT

If you do not have an account with us, results will not be released until payment is received.

SAMPLE IDENTIFICATION / LOCATION CL. RES:

COLLECTION INFORMATION:

☐ COMPOSITE
☐ GRAB

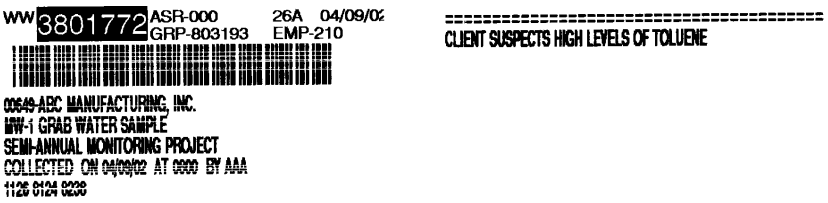
DATE TIME BY:

TESTING REQUIRED PRESERVATIVE(S) ADDED

Lancaster Laboratories
2425 New Holland Pike, Lancaster, PA 17601-5994

LL #

Sample Label (Laboratory)


WW 3801772 ASR-000 26A 04/09/02
GRP-803193 EMP-210

CLIENT SUSPECTS HIGH LEVELS OF TOLUENE

00649-ABC MANUFACTURING, INC.
MW-1 GRAB WATER SAMPLE
SEMI-ANNUAL MONITORING PROJECT
COLLECTED ON 04/09/02 AT 0000 BY AAA

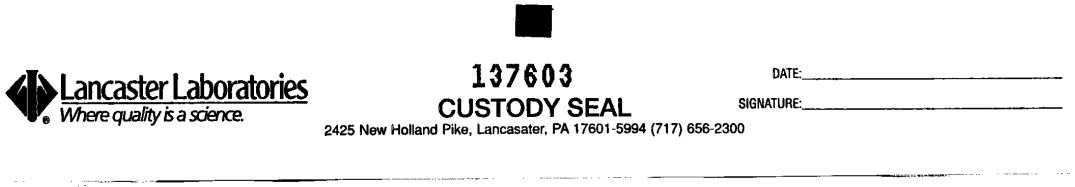
Outgoing on Cooler or Kit

Lancaster Laboratories
Where quality is a science.

CUSTODY SEAL
2425 New Holland Pike, Lancasater, PA 17601-5994 (717) 656-2300

DATE:_____
SIGNATURE:_____

Incoming on Cooler Containing Samples


Lancaster Laboratories
Where quality is a science.

137603
CUSTODY SEAL
2425 New Holland Pike, Lancasater, PA 17601-5994 (717) 656-2300

DATE:_____
SIGNATURE:_____

**QUALITY ASSURANCE OPERATIONS MANUAL**
**Sample Log-In**

**Purpose:**

In order to provide accountability of our results, protect client confidentiality, and to prevent sample loss/mix-up, a continuous and unique Lancaster Laboratories (LL) identification number is assigned to each sample upon laboratory receipt.

**Scope:**

This SOP will cover the procedure used to log client samples into the computerized sample management system (CSMS) after receipt. The Sample Administration Group is responsible for laboratory sample log-in. Sample Administration has procedures to define this sample entry process.

This procedure applies only to samples, which are logged into and tracked by the CSMS. There are only a few cases where samples may not be tracked using the CSMS. These include samples which will be stored for a long period of time prior to analysis, (e.g., stability storage) or for special project samples that could be reported in a narrative research and development style report instead of our usual analytical reports. Written procedures for tracking samples not entered into the CSMS need to be developed by the technical department responsible for the project or analysis of those samples.

**Personnel Training and Qualifications:**

Training in sample log-in is performed in accordance with Sample Administration training procedures.

**Procedure:**

1. All samples received for testing shall be delivered to the Sample Administration Department immediately upon arrival at the laboratory.

2. The Sample Administration Department will be responsible for unpacking and organizing the samples.

3. Client correspondence relating to the samples shall also be transferred to the Sample Administration Department. This may include purchase orders, quotations, letters, phone logs, and Incoming Sample Activity Records (ISARs).

4. Personnel of the Sample Administration Group shall log the samples into the CSMS as soon as practical after receipt. Samples awaiting log-in are stored in temporary holding areas, at required temperature, to maintain the sample integrity. At the time of entry the computer will assign a unique Lancaster Laboratories' identification number to each sample. Samples can be received at the laboratory 7 days a week, 24 hours a day, 365 days of the year. Samples should be logged in on the same day as they are received, but there could be the following exceptions:

    a. Samples received on a holiday will not be logged-in until the next normal workday. Samples received from 6 p.m. on Saturday through 11 p.m. on Sunday will be logged-in Sunday evening by third shift Sample Administration personnel.

    b. Samples submitted by clients, which do not identify the type of testing to be performed, or with unclear or incomplete paperwork documentation. Every effort will be made to contact the client on the same day of sample receipt. In this situation, the samples will be tracked in a hold database. The group of samples will be assigned a hold number. This database is maintained by the Sample Administration Group.

If same day sample log-in is not possible, all specified and appropriate storage requirements will be observed (e.g., refrigeration).

5. Upon assignment of a sample number, the CSMS will generate a label, which shall be attached to the sample container. Every effort will be made as to not obscure the client label. The information on the sample label will include the LL sample number, the client name, the storage location, the analyses requested, a bottle code indicating container and preservative type, if applicable, a unique bar code (used for samples stored in Automated Sample Retrieval and Storage System locations [ASRS]), and any applicable notes to laboratory personnel.

6. Preservation, homogenization, and subsampling, if necessary, will be the responsibility of the Sample Support Group, or the testing laboratory. SOPs are in place within the group to define these procedures. A list of preservatives required for routine environmental analyses may be found in the *Environmental Schedule of Services*. A preservation, sulfate, and chlorine check shall be performed immediately after sample log-in for all applicable environmental samples.

7. After all above steps are performed, as required, samples shall be stored in an assigned storage location, taken to the laboratory for testing, or may temporarily be stored in SA until technical center picks up samples.

8. The next working morning, after sample log-in, a copy of an entry acknowledgment will print from the CSMS. The acknowledgment is a hard copy record of the sample entry. It will summarize the LL sample number, the sample(s) submitted in an entry group, the test(s) to be performed, the client requesting the work, the account to be billed for the work, and the unique sample identifications assigned by the client. This acknowledgment is mailed to the client to confirm sample receipt and entry.

9. Another copy of the sample acknowledgment will print and be designated as the laboratory copy. This acknowledgment, in addition to client paperwork, will be audited by three levels of personnel after the entry process:

   a. **Sample Administration** will audit to assure that the entry corresponds to all entry documentation including client supplied paperwork and/or quotations.

   b. **Client Services** will audit to assure the entry is reflective of client documentation and that additional client/project requirements were communicated and taken into consideration. They will also verify that account and billing information is accurate.

   c. **Technical centers** will assure appropriate preparation and analysis set-up steps have been added to the entry. They will also verify that project and technical requirements have been taken into consideration from a technical point of view.

      Some technical groups may choose to audit incoming client sample requirements using alternative means such as an internal scheduling program or a database that cross-checks the analyses entered against established technical criteria. Any system used to perform technical review of incoming client requirements must be documented

   Each reviewer will initial the top of the SA file copy of the acknowledgment to document their review. Additional copies of this acknowledgment can be made for laboratory personnel.

10. The LL sample number assigned to each sample shall be used to identify the sample in all laboratory records, including laboratory notebooks, instrument printouts, and laboratory final reports. The sample number will also be used to identify all additional containers of the sample, which may be created during sample preparation and analysis. This will include subsamples, extracts, and digests.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 02/15/96 | Previous issue |
| 01 | 03/14/97 | Major changes are as follows:<br>• Expanded upon the scope of the procedure<br>• Added section about printing and auditing of the sample entry acknowledgment<br>• Added Personnel Training and Qualification section<br>• Removed specifics on how to document preservation checks |
| 02 | 04/01/98 | Major changes are as follows:<br>• Corrected typo<br>• Wording changes in Procedure section to clarify current operations |
| 03 | MAY 15 2000 | Major changes are as follows:<br>• Procedure: Section 4. b. – Corrected Typo,<br>• Procedure: Section 9. c. – Incorporated Procedural Amendment #1 (Technical Centers) |

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041000

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

SOP-QA-102.03
Supersedes Date: 04/01/98
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Page 6 of 6

Prepared by: Daneys R. Clark Date: 4-11-00

Approved by: Kathleen M. Loewen Date: 4/19/00

Approved by: John Hershey Date: 4/20/00

**QUALITY ASSURANCE OPERATIONS MANUAL**
**Sample Storage and Discard**

**Cross References:**

The following procedures are cross-referenced in this document:

1. SOP-PS-014," Controlled Substance Handling and Recordkeeping Procedures."
2. SOP-QA-104, "Internal Chain-of-Custody Documentation."
3. SOP-QA-109, "Laboratory Notebooks, Logbooks, and Documentation."

**Purpose:**

Sample integrity can be compromised by improper storage conditions. The objective of this procedure is to prevent sample deterioration and mix-up prior to analysis. The computerized sample management system (CSMS) is used to assign storage locations to assist in the orderly storage of samples. Systems are also in place to ensure organized retrieval of samples for analysis and discard/return to client at an appropriate date.

**Scope:**

This procedure applies to all Lancaster Laboratories business units. The content of this procedure will describe general systems that are in place for sample storage, retrieval, return, and discard. Additional procedures within each division describe the specific storage operations and requirements of each business unit. This procedure does not address the storage and monitoring of samples stored in stability chambers. These procedures are described in the PS series of SOPs. Handling of controlled substance samples is described in SOP-PS-014.

**Safety Precautions:**

Refer to the corporate *Chemical Hygiene Plan* which provides safety information. Contact your supervisor if you have questions or concerns about a sample.

**Personnel Training and Qualifications:**

Personnel who handle client samples must be familiar with the requirements of this procedure, as well as any applicable division specific procedures.

**Procedure:**

A. Sample storage and transfer

1. Sample Administration will gather information into the CSMS at the time of sample entry about the approximate size of samples to be received in a group and the type of storage they require (e.g., refrigerator, freezer, or room temperature).

2. The CSMS will assign the storage location and record the length of time the samples must be retained after the analysis report has been issued.

3. Samples will be stored in the assigned storage location, when not in the laboratory area.

4. In the event that a sample location change is needed, a sample custodian or sample administrator will access the appropriate CSMS program and choose a new location. After a successful change in location has occurred, the new location will be written on each Lancaster Laboratories sample label, or a new label will be reprinted and adhered to the sample. The sample will then be transferred to the new storage location.

5. Analysts requiring the use of a sample may determine its location by referring to a departmental sample status sheet, CSMS, or SA entry paperwork.

6. To prevent unnecessary deterioration of the samples, the contents needed for analysis shall be removed and the sample returned to storage with a minimum of delay.

B. Security of storage areas

There are varying degrees of additional security requirements for storage areas, which are in addition to the building security. This additional security may be driven by various regulatory agencies or client requirements. The following are different levels of security which are in place at the laboratory.

1. Samples may be located in an individual laboratory area which is not locked. No additional security is required, in addition to the existing building security. Samples may only be removed from and returned to these locations by an analyst working in that area. Care shall be exercised in returning the samples to their appropriate location.

2. Locked storage areas are also available. Access to these storage areas is limited to analysts who are responsible for testing the samples that are stored there. These areas are locked when the laboratories are unattended; access is available only to members of the department where they are located. Again, care shall be exercised in returning the sample to its appropriate location.

3. Controlled access areas are attended by a sample custodian and are large areas used by more than one group. Samples stored in controlled access areas are coordinated by the sample custodian assigned to the area. Only appropriate personnel may access this controlled area. After analysis, samples are returned to this storage center and placed in their designated storage location.

Pharmaceutical samples are stored in a controlled access area, which is maintained by the Pharmaceutical Division. Environmental samples are stored in a separate controlled access area and are tracked by an automated sample retrieval storage system (ASRS). Samples are barcoded in and out of this system to track retrieval, return, and disposal.

4. Forensic storage areas are locked and admission to these areas is permitted only to sample custodians. Most of the samples stored in these areas require chain-of-custody documentation as outlined in SOP-QA-104. Samples may not be removed from this area without signing a chain-of-custody form. A chain-of-custody record may also be kept for samples, at the request of the client, even if the samples are not for forensic purposes.

C. Sample discard

1. When the retention time for sample storage has expired, a discard list will be generated from the CSMS. The retention dates are based upon client requirements or defaulted to a given number of days past the date when the final analysis report is generated, if no client requirement is given.

2. These samples will be removed from their assigned storage area by a sample custodian or analyst, and either disposed of or returned to the client.

3. Hazardous samples shall either be returned to clients, decontaminated, or disposed of at the direction of supervisory and/or Health and Safety personnel.

D. Storage conditions

1. The temperature of each sample storage location requiring a temperature control should be checked during each normal working day by an assigned person responsible for the sample storage area. This information shall be recorded.

2. Temperature documentation can be recorded on logs posted on the outside of the unit or by computerized recording devices or chart recorders.

3. The following temperature ranges need to be maintained within storage units, unless otherwise specified.

| | Refrigerator Storage | Freezer Storage | Room Temperature |
|---|---|---|---|
| Environmental Division | 2° to 4°C | -10° to -20°C | NA |
| Pharmaceutical Division | 2° to 8°C | -10° to -20°C | 15° to 30°C |

**NOTE:** Storage conditions of -40° ± 10°C and -80° ± 10°C are also available.

4. If the temperature recorded does not fall within these ranges, corrective action must be taken, as per divisional policy.

5. Temperature monitoring documentation shall be recorded in ink and changes shall be made in accordance with the error correction procedure outlined in SOP-QA-109.

6. Temperature records must be reviewed by a second qualified person and this information must be permanently archived.

7. In the event that additional storage areas are needed as "overflow" storage, systems must be put into place before samples can be stored. These areas must also be monitored for acceptable storage conditions.

8. If a client requests storage conditions which are outside the temperature ranges defined above, arrangements will be made to accommodate the request, if possible.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 10/01/96 | Previous Issue |
| 01 | 09/02/97 | Major changes are as follows:<br>• Expanded upon Scope, Purpose, and Procedure to include Pharmaceutical Sciences and Animal Health<br>• Added Personnel Training and Qualifications section<br>• Broke Procedure section down into sample storage and transfer, security of storage areas, sample discard, and storage conditions<br>• Incorporated Procedural Amendment #1<br>• Clarified the scope of this procedure does not apply to the storage of samples in our stability chambers or the storage of controlled substances |
| 02 | 04/01/99 | Major changes are as follows:<br>• Scope – deleted specific SBUs; reworded for clarity<br>• Procedure – deleted animal health; added clarification; deleted step 5; updated chart<br>• Added signature lines for SBU Directors |
| 03 | JUN 15 2001 | Major changes are as follows:<br>• Incorporated Procedural Amendment #1<br>• Added Cross Reference section<br>• Procedure – C.3. Added reference to Safety Personnel in sample discard |

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Page 7 of 7

Prepared by: Dorothy M Love Date: 4/30/01

Approved by: Kathleen M. Loewen Date: 5/08/01

Approved by: Date: 5/21/01

Approved by: Date: 5/25/01

Approved by: Date: 5/29/01

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**QUALITY ASSURANCE OPERATIONS MANUAL**

**Internal Chain-of-Custody Documentation**

**Cross References:**

The following procedures/forms are cross-referenced in this document:

1. SOP-QA-102, "Sample Log-In."
2. SOP-QA-109, "Laboratory Notebooks, Logbooks and Documentation."
3. Form 2016, "Secure Storage Chain of Custody Original Sample."
4. Form 2102, "Analysis Request/Environmental Services Chain of Custody."
5. Form 2174, "Sample Administration Receipt Documentation Log."
6. Form 2231, "Secure Storage Chain of Custody, Metals."
7. Form 2365, "Master List of Chain of Custodies."
8. Form 2667, "Sample Storage, Off-Shift Entry Logbook."

**Purpose:**

In order to demonstrate reliability of data which may be used as evidence in a legal case, required by a regulatory agency, or required by a client, an accurate written record tracing the possession of samples must be maintained from the time they are received at the laboratory until the last requested analysis is verified. The purpose of a chain of custody (COC) is to ensure traceability of samples while they are in the possession of the laboratory.

**Scope:**

This procedure describes the initiating and maintaining of COC documentation for samples that require this level of traceability. It applies to all business units of Lancaster Laboratories when a client or regulatory agency requests an accurate written record tracing the possession of samples from the time they are received at the laboratory until the last requested analysis is verified. This procedure also applies to samples, especially environmental samples, which may be used as evidence in a legal case.

The first section of this procedure summarizes the COC requirements for pharmaceutical samples. The second section summarizes the requirements for environmental COC samples.

**Definition:**

A sample is in custody if it is in any one of the following states:

1. In actual physical possession.
2. In view after being in physical possession.
3. Locked up so no one can tamper with it.
4. In a secured area, restricted to authorized personnel (e.g., in the ASRS system, pharmaceutical samples storage area).

**Personnel Training & Qualifications:**

Training for this procedure consists of reading this SOP. Supervisory review of all COC documentation should be done until the trainer is satisfied that proficiency has been achieved. Training of all laboratory personnel is the responsibility of the group leader. Documentation that this training has been completed must be kept in the training records.

**Procedure:**

A. Pharmaceutical procedure

1. General overview

a. Chain-of-custody documentation shall be kept upon the request of a client or regulatory agency. As with all analytical data, it is **extremely** important that this documentation be filled out completely and accurately with every sample transfer. **Everyone who handles the COC has the responsibility to check for documentation compliance to the point of their acquisition**. If changes need to be made to the form, they shall be made in accordance with the error correction procedure addressed in SOP-QA-109. It is the responsibility of the person who made an error in documentation to correct the error.

b. For pharmaceutical samples, internal COC documentation will begin when samples are received at the laboratory.

c. A member of the Sample Administration Group will receive and unpack the samples. They will sign the client paperwork that accompanies the samples, if provided. If the samples were picked up by our Transportation Department, the driver must also sign applicable paperwork to relinquish the samples to Sample Administration.

d. The Sample Administration Group will track the custody of samples between receipt and entry into the computerized sample management system (CSMS) on Form 2174 (Figure 2). The client's sample designation will be used for identification purposes until a unique Lancaster Laboratories number is assigned.

e. Samples will be entered into the CSMS as described in SOP-QA-102.

f. After entry, samples are released by the Sample Administration Group to be stored in other areas of the laboratory (e.g., pharmaceutical specific storage areas). During this time, they may be accessed by several people in that area. Each of these people must note the specific sample numbers in their custody in addition to date, time, and reason for removal from storage. Chain-of-custody transfer documentation is recorded on Form 2016, which is given as Figure 3 of this procedure.

2. Documentation of custody changes

a. An example of how to document changes in sample custody is shown in Figure 3, (Form 2016) of this procedure. Each change of sample custody must be accurately documented in a consistent format. Entries documenting change of custody will use the following format:

Signature: First initial, full last name, employee number
Date: Month/day/year
Time: Documented as military time
Ink: Black ink is preferred, red ink and pencil are not acceptable

b. When sample(s) are released from storage, they must be signed out by the analyst receiving them. The analyst must note the sample number(s) taken, the date and time received, and a note as to the reason why they were removed from storage (reason for change of custody).

c. When an analyst returns sample(s) to storage, they must note the sample number(s) being returned in addition to time of return.

d. If the custody of sample(s) is passed from one analyst to another, the following must be noted: the sample number(s) transferred, the reason for the transfer, in addition to the time and date of transfer. It is the responsibility of the analyst now in possession of the samples to ensure they are returned to the storage area.

e. Each specific test that an analyst performs, in conjunction with the associated sample number(s), must be accurately documented by the analysts in the Reason for Change of Custody column before the samples are returned to the sample storage area.

3. Additional COC issues

a. Chain-of-custody paperwork will remain with and accompany sample containers at all times. **Note:** COC paperwork may be kept in a nearby location when samples are stored in a location not conducive to paper storage (i.e., refrigerator or freezer).

b. When sample analysis is complete, samples shall be returned to the storage area, in conjunction with the COC form.

c. Original COC documentation will be maintained at the laboratory and filed in the sample storage area. COC documentation will be overchecked in conjunction with the sample data before a copy is sent to the client. The copy could either accompany the samples as they are returned to the client or it could be included within a client data package.

d. All personnel who handle sample containers shall make every attempt to ensure that all changes of custody are accurately and completely documented. **Disciplinary action may be taken for employees who fail to comply with these important requirements**.

B. Environmental procedure

1. Initiation of COC documentation

a. Chain-of-custody documentation shall be kept upon the request of the client or for any samples which are known to be involved in a legal dispute. As with all analytical data, it is **extremely** important that this documentation is filled out completely and accurately with every sample transfer. **Everyone who handles the COC has the responsibility to check for documentation compliance to the point of their acquisition.** If changes need to be made to the form, they shall be made in accordance to the error correction procedure addressed in SOP-QA-109. It will be the responsibility of the person who made an error in documentation to correct the error.

b. If requested by the client, the COC documentation will begin with the preparation of sampling containers. Form 2102 (Figure 1) will be initiated by the person packing the bottle order for shipment to the client. If the delivery of containers is via Lancaster Laboratories Transportation Department, the driver shall sign the form when they relinquish the bottles to the client. Drivers must also sign COC forms when they pick up samples for analysis.

c. When samples arrive at the laboratory for analysis, a member of the Sample Administration group will receive them and sign the external COC form that accompanies the samples, if provided. If the samples were picked up by our Transportation Department, the driver must sign the COC to relinquish the samples to Sample Administration.

d. The Sample Administration group will track the custody of samples between receipt and entry into the CSMS on Form 2174 (Figure 2). The client's sample designation will be used for identification purposes until a unique Lancaster Laboratories number is assigned.

e. Samples will be entered into the Sample Management System as described in SOP-QA-102. Sample Administration will enter an analysis number for "Laboratory Chain of Custody" if requested. A lab note will print to inform analysts of the need for COC documentation. This note will also be automatically added to the sample labels.

2. Creating the internal COC

a. Sample Administration personnel shall initiate an internal Laboratory Chain of Custody form (Figure 3) at the time of sample entry for each type of container in the sample group. Form 2365 will be initiated for each sample group at the time of entry (Figure 4). The samples will then be relinquished to a sample custodian who will store the samples in an assigned secure location. This change of custody from sample entry to storage shall be documented on the chain, as well as any interim exchanges for rush analysis, preservation, homogenization, or temporary storage in the SA HOLD. The internal COC forms will then accompany the samples from storage to the laboratory for analysis.

b. If samples need to be checked out from the Sample Administration Group before Lancaster Laboratories numbers have been assigned to them, SA will be responsible for starting a COC form. They will note the available header information, the samples being relinquished (documented by the client sample designation), and the reason for transfer.

c. After sample entry, the original copy of the external client COC/analysis request form will be filed with Accounts Receivable, to be returned to the client with their invoice. Other copies of the external form will stay within SA to be filed within the client's paperwork file.

3. Documentation of custody changes

   a. An example of how to document changes in sample custody is shown in Figures 3 and 5. Each change of sample custody must be accurately documented in a consistent format. All signatures documenting changes of custody will use the following format:

      Signatures: First initial, full last name, employee number
      Date: Month/day/year
      Time: Documented as military time
      Ink: Black ink is preferred, red ink and pencil are not acceptable

      (1) When Sample Support releases samples to an analyst they must:

      Note the sample number(s) released and sign the "Released By" column of the chain.

      (2) When an analyst receives samples from Sample Support they must:

      Sign the "Received By" column, note the date and time samples are received, and note the reason why they are taking the samples (reason for change of custody).

      (3) When an analyst returns samples to Sample Support they must:

      Note all sample numbers being returned, sign the Released By column, and note time and date of return.

(4) When Sample Support receives samples from an analyst they must:

Sign the Received By column and note the reason for sample transfer.

b. Sample handling should be kept to a minimum. Analysts requiring use of a sample will requisition it through the computer requisition program. During the hours when Sample Support is manned by sample custodians, a custodian will receive the computerized requisition and remove the sample from storage. The custodian will ensure that the bottle type listed on the COC form matches the bottle type being distributed. **It will be the shared responsibility of the analyst and sample custodian to ensure that forms are signed, dated, and reason for sample transfer are recorded with each change of custody, as directed by Item (3)a. above.**

c. Each specific test that an analyst performed in conjunction with the associated sample number(s) must be accurately documented by the analyst before the samples are returned to a sample custodian in the sample storage area.

d. When an analyst requires the use of samples when a sample custodian will not be on duty, they must requisition samples earlier in the day or on the previous day. These samples and associated COCs will be pulled by a sample custodian and placed in the locked Main Storage area. The sample custodian will note on the COC the change in transfer to the Main Storage in addition to the time, date, and the sample numbers. When an analyst picks up the sample from Main Storage, they will need to contact the security person on duty to unlock the Main Storage unit. The analyst will need to fill out Form 2667 (Figure 6) which will be located by the entrance to the Main Storage unit to document entry into the storage unit (security will co-sign as a witness). Once the notebook

is signed, the analyst may enter and retrieve their samples. The analyst picking up the samples will document the specific samples being checked out. The security person will sign in the Released By column. The analyst will sign the Received By column, note the time, date, and reason for transfer. When the analyst returns the samples to the Main Storage, security must be contacted. The logbook must be signed by the analyst and security, the analyst must sign the Released By column, and security must sign the Received By column indicating the time, date, and reason for transfer (e.g., Main Storage).

e. The following changes of custody will be handled in the following manner:

(1) Documentation is required for all shift changes. Signatures involving transfers from one shift to another shall be the responsibility of the analyst who originally acquired the samples from Sample Support.

(2) Occasionally, a sample container will be needed for analysis by an analyst in a department while it is in the custody of an analyst in another department. It will be the responsibility of the first person who received the sample to note on the COC the specific sample numbers requested by the second person and to sign the Released By column. The second person will sign the Received By column and note the time, date, and reason for sample transfer. After the second person is finished with the sample, the sample will be returned back to the first person or to the Sample Storage area.

(3) In situations where a sample group must be split between departments working on different analyses, a supplemental COC must be initiated by the Sample Support Group. The supplemental chain will be used to accompany that portion of the

sample group which is needed by a second department, when another department has part of the sample group and the COC for the entire group. This supplemental COC will be created only when absolutely necessary to minimize paperwork and confusion. This chain must also be documented on the master list of chains initiated for the sample group.

(4) If COC samples are stored in other areas of the laboratory or in a specific department, they must be stored in a secured area. When samples are taken from a departmental storage area, the Released By column of the COC is documented as "department XX storage." If samples are returned to this area when complete, the Received By column will be noted as department XX storage.

4. Additional COC issues

a. Analysts in possession of samples shall remove the aliquot required for their analysis and return the samples to the Sample Support Group with a minimum of delay. During this time of possession, samples must fall under the definition of sample custody.

b. If additional containers of the sample are created (e.g., subsamples, extracts, distillates, leachates, digests, etc.), then additional COC form must be created by the department if they do not document this information on the original COC form. This form will be marked with the container type and will be initiated to accompany the new sample container. Each department in the lab has specifically designed COC forms that will be used if new containers are created, (see Figure 5 for an example). All changes of custody involving handling of new containers in the department (e.g., analysis, storage, vials on

instruments, etc.) will be documented on the departmental specific COC form or on the original COC form. Any specific handling or documentation requirements for departmental chains can be described in a departmental SOP.

5. Completion of the process

   a. After sample analysis, samples shall be returned to the Sample Support Group as soon as possible. Original COC forms shall also be returned with the samples and this change of custody noted. At this time, it will be the responsibility of the Sample Support Group to review the COC forms to ensure that all documentation on the forms is complete before they file the forms in their area. Sample custodians will not return a sample to its assigned storage location without signing the accompanying chain and performing this completeness check. All chains should either end with a note of "All Sample Consumed," "Discard," or "Storage" for the final reason of transfer.

   b. All completed COC forms for the original sample containers will be retained in files within Sample Support. The Data Package Group will retrieve these forms so a copy can be included in the data package. (**Note**: For those employees who collect COC forms for data packages; if you find a completed COC form in your area that does not get a data package, please send that COC form to the project manager for that account. The project manager will determine whether copies of the COCs get sent to the client with the reports or whether the originals will be archived at Lancaster Laboratories. The project manager will then forward the original COC forms to the Data Package Department for archiving). All departmental created COC forms will be collected by the department's data package group so a copy can be included in the data package. These forms will not be returned to the Sample Support

Group since these sample containers will not be returned to the Sample Support Group. The original copy of all COC forms will be retained on file by the laboratory.

c. All personnel who handle sample containers shall make every attempt to ensure that all changes of custody are accurately and completely documented. **Disciplinary action may be taken for employees who fail to comply with these important requirements.**

d. In the event that a signature or other information is inadvertently not recorded on a COC form, then Sample Support, Data Package Groups, in conjunction with the technical groups, shall determine what information is missing. This can be performed by checking computer requisition records, raw data, or the Sample Support work schedule. The responsible party shall add the missing information or make the necessary correction at the bottom of the COC form, in addition to noting the situation that caused the error in documentation. The person making this note needs to sign and date the information using the current date. Any errors in COC documentation that cause noncompliances must be noted in the case narrative of the sample data package. Examples of specific cases are on file in the Data Package Department.

**Revision Log:**

Initiated Date: 03/87

| Ver. # | Effective Date | Change |
|---|---|---|
| 00 | 12/01/95 | Previous Issue |
| 01 | 03/14/97 | Major changes are as follows:<br>• Training section added.<br>• Examples of SA Receipt Documentation Log and Metals Locked Storage COC updated.<br>• Section E.1., Option to end chain with "All Sample Consumed" added. |
| 02 | 09/02/97 | Major changes are as follows:<br>• Incorporated specific Procedure section for Food, Animal Health, and Pharmaceutical procedures.<br>• Expanded upon the scope of the procedure. |
| 03 | 06/01/99 | Major changes are as follows:<br>• Deleted Figure 6 - no longer being used.<br>• Added "sign-out" logbook to procedure for weekend and off hours sample retrieval.<br>• COC forms revised to state "Secure" storage.<br>• Added example of weekend and off-hours sign-out logbook page.<br>• Added instructions on how to handle COCs that don't get a data package. |
| 04 | 08/02/99 | Major changes are as follows:<br>• Clarify that paperwork may be filed separately if samples are stored under conditions not conducive to paper storage.<br>• Change SA HOLD to Main Storage<br>• Updated Figure 3 to replace SA HOLD to Main Storage |

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| Ver. # | Effective Date | Change |
|---|---|---|
| 05 | NOV 15 2001 | Major changes are as follows:<br>• Added Cross Reference section<br>• Reworded for clarity |

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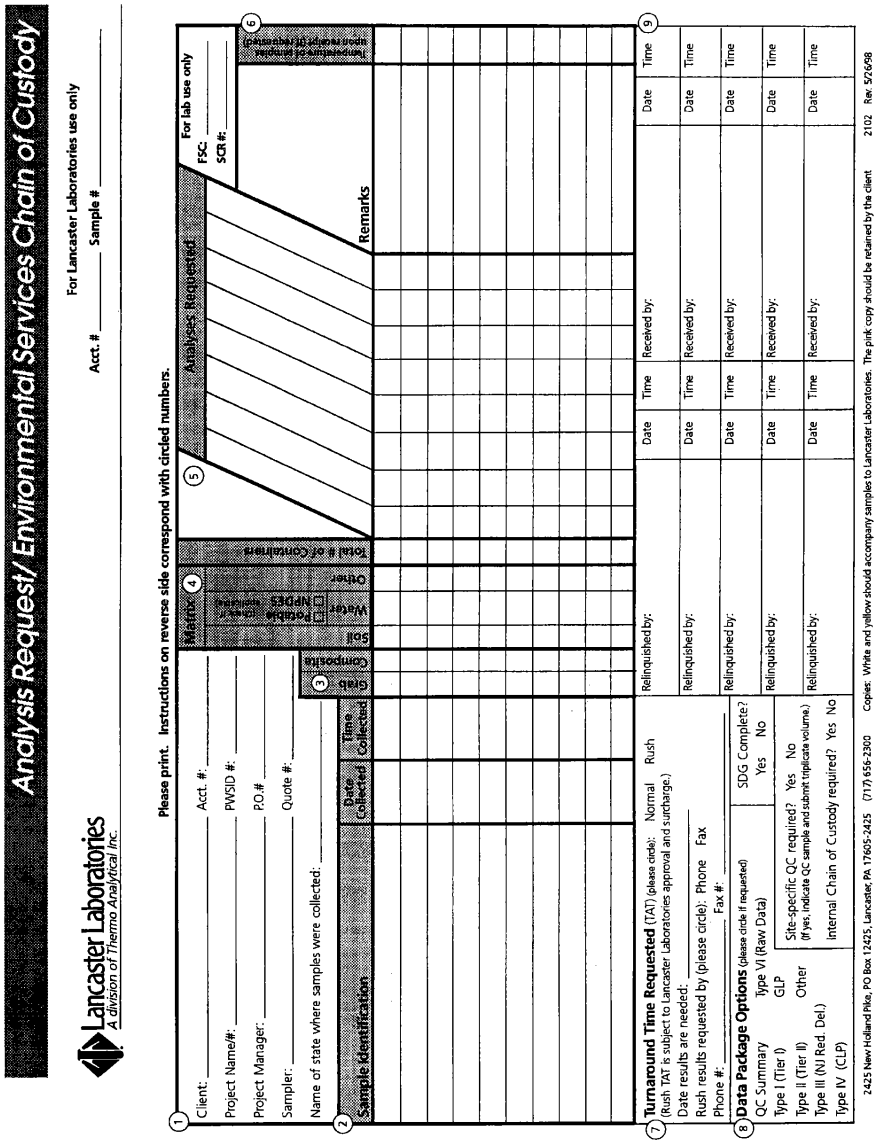
Prepared by: Diana Lee Muller Date: 10/9/01

Approved by: Kathleen N. Lorewen Date: 10/16/01
Quality Assurance

Approved by: [signature] Date: 10/16/01
Executive Management

**Figure 1**



Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories
A division of Thermo Analytical Inc.

For Lancaster Laboratories use only
Acct. # _____ Sample # _____

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: _____ Acct. #: _____
Project Name/#: _____ PWSID #: _____
Project Manager: _____ P.O.# _____
Sampler: _____ Quote #: _____
Name of state where samples were collected: _____

(2) Sample Identification | Date Collected | Time Collected | (3) Grab | Composite | (4) Matrix: Soil | Water | Other | Potable | NPDES | Waste water | Total # of Containers | (5) Analyses Requested | Remarks | For lab use only FSC: _____ SCR #: _____ | (6) Preservation (if other than ice, please specify)

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: _____
Rush results requested by (please circle): Phone Fax
Phone #: _____ Fax #: _____

(8) **Data Package Options** (please circle if requested)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)
SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time
Relinquished by: | Date | Time | Received by: | Date | Time

(9) Time

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client 2102 Rev. 5/2698

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**Figure 1 - Continued**

## DIRECTIONS FOR COMPLETING THIS FORM

**(1) Client:** Your company's name
**Acct. #:** Your account number with Lancaster Laboratories
**Project Name/#:** The way your company refers to the work involved with these samples. You may want to include project location as part of the description.
**PWSID:** Potable Water Source ID#
**Project Manager:** The person at your company responsible for overseeing the project
**P.O.#:** Your company's purchase order number
**Sampler:** The name of the person who collected the samples
**Quote #:** The reference number that appears on your quote (if Lancaster Laboratories gave you a number)
**State where sample was collected:** Please indicate where the sample was taken, e.g., PA, NJ, etc.

**(2) Sample Identification:** The unique sample description you want to appear on the analytical report
**Date Collected/Time Collected:** When the sample was collected

**(3) Grab:** Check here if sample was taken at one time from a single spot.
**Composite:** Check here if samples were taken from more than one spot, or periodically, and combined to make one sample.

**(4) Matrix:** Check the type of sample you are submitting. If it is a water sample, please indicate if it is a potable water or if it is an NPDES sample.
**Number of Containers:** Indicate the total number of containers for each sampling point.

**(5) Analyses Requested:** Write the name of each analysis (or an abbreviation of it) here, and use the **catalog number** that appears at the beginning of each line in the *Schedule of Services*. Be sure to indicate which analyses are to be performed on which samples.

**(6) Remarks:** List special instructions about the sample here (e.g., hazardous elements, high levels of analyte, etc.). The space can also be used (if needed) for listing additional analyses.

**(7) Turnaround Time Requested:** Circle **Normal** if you want routine TAT, which is usually within 10-15 days. If you need your results faster, call ahead to schedule **Rush** work.

**Rush Results Requested by:** Circle **Fax** or **Phone** and include the number.

**(8) Data Package Options:** Call our Client Services Group (717-656-2300) if you have questions about these choices.
**SDG Complete?** Indicate **Yes** if this is a complete sample delivery group or **No** if you will be submitting additional samples to be included in the same data package.
**Note:** We need to have one quality control (QC) sample for every 20 samples you send, if you are requesting site-specific QC. Please give us this sample in triplicate volume and identify it by writing "QC" in the **Remarks** column.
The internal chain of custody is a hand-to-hand documentation recording a sample's movement throughout the company. We routinely start a chain of custody for data package samples unless we are told otherwise. There is a **$25 per sample** charge for the chain-of-custody documentation.

**(9) Relinquished by/Received by:** The form must be signed each time the sample changes hands. We can supply chain-of-custody seals for the outside of your packages if you require them.

Thank you for using Lancaster Laboratories.
Please call our Client Services Group (717-656-2300) if you have any questions about completing this form.

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**Figure 2**

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**Sample Administration**
**Receipt Documentation Log**

**Client/Project:** _____ **Shipping Container Sealed:** Y / N

**Date of Receipt:** _____ **COC Seal Present:** Y / N

**Time of Receipt:** _____ **COC Seal Intact:** Y / N

**Source Code:** _____ **Package:** Chilled / Not Chilled

**Unpacker Emp. No.:** _____

| Temperature of Shipping Containers | |
|---|---|
| #1 | #2 |
| Thermometer ID: _____ | Thermometer ID: _____ |
| Temp.: _____ | Temp.: _____ |
| Temp. Bottle / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet Ice / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? Y / N Loose / Bagged | Ice Present? Y / N Loose / Bagged |
| #3 | #4 |
| Thermometer ID: _____ | Thermometer ID: _____ |
| Temp.: _____ | Temp.: _____ |
| Temp. Bottle / Surface Temp. | Temp. Bottle / Surface Temp. |
| Wet Ice / Dry Ice / Ice Packs | Wet Ice / Dry Ice / Ice Packs |
| Ice Present? Y / N Loose / Bagged | Ice Present? Y / N Loose / Bagged |

**Paperwork Discrepancy/Unpacking Problems:** _____

_____

_____

_____

| Sample Administration Internal Chain of Custody | | | |
|---|---|---|---|
| Name | Date | Time | Reason for Transfer |
| | | | Unpacking |
| | | | Place in Storage or Entry |
| | | | Remove from Storage |
| | | | Place in Storage or Entry |
| | | | Entry |

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**Figure 3**

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**Secure Storage Chain of Custody**
**Original Sample**

Client/Project: _____

Preservative: _____ Matrix: _____ SDG: _____

Sample # Range of Entry Group: _____ Bottle Type: _____

| Sample Number(s) in Custody | Released By | Received By | Date of Transfer | Time of Transfer | Reason for Change of Custody | Dist., Extr., or Digest Chain Created (X) |
|---|---|---|---|---|---|---|
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**Figure 4**

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**Master List of Chain of Custodies**

Client/Project: _____

Sample # Range of Entry Group: _____

SDG: _____ Matrix: Liquid Solid Mixed Other _____

| Original Sample Chains | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
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| Supplemental Chains | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
| | | |
| | | |
| | | |

| Extraction, Digestion, Distillates, Etc. | | |
|---|---|---|
| **Bottle Type** | **Started By** | **Date Started** |
| | | |
| | | |
| | | |
| | | |

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**Figure 5**

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**Secure Storage Chain of Custody**
**Metals**

Client/Project: _____

Sample #: _____ SDG: _____

Digest Type (circle one): Hg Metals GF Hydrides Trial No: _____ (If not 1, fill in)

Batch No: ☐☐☐☐☐ ☐☐☐☐ ☐☐☐

| Sample Number(s) in Custody | Released By | Received By | Date of Transfer | Time of Transfer | Reason for Change of Custody |
|---|---|---|---|---|---|
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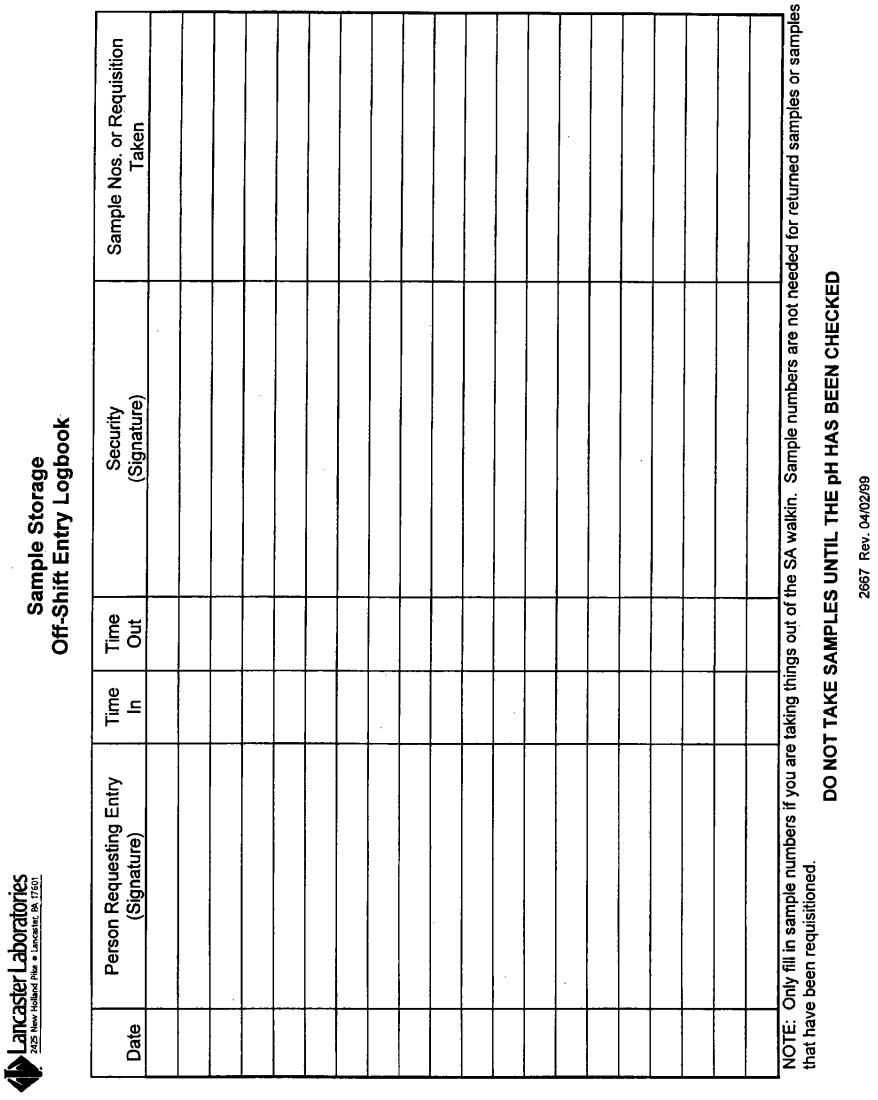
**Figure 6**



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**Sample Storage**
**Off-Shift Entry Logbook**

| Date | Person Requesting Entry (Signature) | Time In | Time Out | Security (Signature) | Sample Nos. or Requisition Taken |
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NOTE: Only fill in sample numbers if you are taking things out of the SA walkin. Sample numbers are not needed for returned samples or samples that have been requisitioned.

**DO NOT TAKE SAMPLES UNTIL THE pH HAS BEEN CHECKED**

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## B4. Analytical Methods Requirements

The analytical procedures to be used for organics and inorganics are those described in the *USEPA SW-846 3rd Edition, Update III, 1996,* and *Methods for the Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020* for the preparation and analysis of water, sediment, and soil for the client specified compounds. Copies of the analytical procedures are located in the laboratory and available for use by analysts. Copies of analytical methods are available upon request. Quantitation and detection limits for the following methods are noted in Tables B4-2 through B4-22. These are evaluated annually and are subject to change, as per the guidelines given in 40 CFR Part 136 Appendix C.

### Inorganic Analysis

Metals by Inductively Coupled Plasma (ICP) – This is a technique for the simultaneous determination of elements in solution after acid digestion. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. Characteristic atomic line emission spectra are produced by excitation of the sample in a radio frequency inductively coupled plasma. Method 6010B, See Table B4-1 for list of elements and prep methods.

Metals by Graphite Furnace Atomic Absorption (GFAA) – This is a method of analysis designed to detect trace amounts of the analyte through electrothermal atomization. Samples are digested before analysis. The graphite furnace AA spectrophotometer heats the sample within a graphite tube using an electrical current (i.e. flameless furnace) and measures the absorption of specific metallic elements at discrete wavelengths. Methods listed in Table B4-1.

Mercury by Cold Vapor Atomic Absorption – Organic mercury compounds are oxidized and the mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of a spectrophotometer and absorbance (peak height) is measured. Method 7470A/7471A.

Metals by Flame Atomic Absorption – This method is also suited to metals analysis. A solution of the sample to be analyzed is sprayed into a flame which generates sufficient heat to decompose the sample into its constituent atoms directly in the optical path. The difference in light intensity is measured at specific wavelengths using a spectrophotometer. Methods listed in Table B4-1

**Micellaneous Wet Chemistry**

Moisture – A known sample weight is placed in a drying oven maintained at 103° to 105°C for 8 to 24 hours. The sample is reweighed after drying and this value is divided by the original weight. The result is used to calculate analytical concentration on a dry-weight basis. Method 160.3 (modified).

Cyanide, total – Distillation of the sample releases the cyanide from cyanide complexes as HCN. The liberated HCN and simple cyanides are converted to cyanogen chloride by reaction with chloramine T. This reacts with pyridine and barbituric acid reagent to give a red colored complex. The absorbance is read at 570 nm and is compared to a standard curve using an automated spectrophotometer. Method 9012A.

Phenolics, total – This method is based on automated distillation of phenol and the subsequent reaction with 4-aminoantipyrine in basic buffer to produce a red colored complex. The absorbance is read at 505 nm and is compared to a standard curve using an autotomated spectrophotometer. Method 9066.

Sulfide, total – The sample is acidified and a known excess of iodine is added. The iodine reacts with sulfide in acid solution, oxidizing sulfide to sulfur. The excess iodine is back-titrated with sodium thiosulfate. Method 9034 (modified).

Total Petroleum Hydrocarbons – Samples are extracted with freon and the resulting solution is treated with silica gel to remove fatty acids and other polar compounds. The remaining nonpolar compounds are designated as petroleum hydrocarbons and are quantitatively measured using Fourier transform infrared spectroscopy (FTIR). Method 418.1 (modified for soils).

Oil and Grease – For HEM a one liter sample is serially extracted with n-hexane in a separatory funnel. The solvent is evaporated from the extract, and the residual HEM is weighed. For SGT-HEM a one liter sample is serially extracted with n-hexane in a separatory funnel. The extract is mixed with silica gel, filtered through sodium sulfate, the solvent evaporated from the extract, and the residual SGT-HEM is weighed. Method 1664A.

Total Organic Carbon (TOC) – Following acidification, the sample is purged with nitrogen to remove inorganic carbon. Persulfate is injected to oxidize organic carbon to carbon dioxide which is detected by IR. Method 9060.

Total Organic Halogen (TOX) – Organic halogen is adsorbed onto an activated carbon column and combusted in an oxygen furnace. The resulting hydrogen halide gases are collected in an acetic acid buffer. The halides are titrated microcoulometrically through the generation of Ag+ ions. Method 9020B.

Total Nitrite/Nitrate – Using an autoanalyzer, the sample is passed through a column containing granulated copper-cadmium to reduce nitrate to nitrite. The nitrite ion reacts with sulfanilamide to yield a diazo compound which couples with N-1-naphylethylenediamine dihydrochloride to form a soluble, highly colored dye. The absorbance is read at 520 nm and compared to a standard curve. Method 353.2.

**Organic Analysis**

Volatiles by GC/MS – This method determines the concentration of volatile (purgeable) organics. The analysis is based on purging the volatiles onto a Tenax/silica gel trap, desorbing the volatiles onto a gas chromatographic column which separates them and identifying the separated components with a mass spectrometer. Method 8260B/5030B/5035.

Semivolatiles by GC/MS – This method determines the concentration of semivolatile organic compounds that are separated into an organic solvent and are amenable to gas chromatography. The method involves solvent extraction of the sample to isolate analytes and GC/MS analysis to determine semivolatile compounds present in the sample. Method 8270C/3550B/3510C.

Volatiles by GC – This method determines the concentration of volatile (purgeable) organic compounds. The analysis is based on purging the volatiles from the sample onto an appropriate sorbent trap and desorbing the volatiles onto a gas chromatographic column. Using an appropriate temperature program, the compounds are separated by the column and both qualitative and quantitative detection is achieved with a photoionization and/or electrolytic conductivity detector. Method 8021B/5030B/5035. Non-halogenated organics are analyzed by flame ionization detectors. Method 8015B/5030B/5035.

TPH-GRO – This method determines the concentration of gasoline range organics (2-methylpentane to 1,2,4-trimethylbenzene). The analysis is based on purging the volatiles from the sample onto an appropriate sorbent trap and desorbing the volatiles onto a gas chromatographic column. Using an appropriate temperature program, the compounds are separated by the column and both qualitative and quantitative detection is achieved with a flame ionization detector. BTEX may be determined simultaneously on systems equipped with a photoionization detector in tandem with the FID. Method 8015B/5030B/5035.

TPH-DRO – This method determines the concentration of diesel range organics (C-10 to C-28 hydrocarbons). The procedure includes solvent extraction of the sample and analysis of the extract on a gas chromatograph/flame ionization detector (GC/FID) using a megabore capillary column. Method API "Method for Determination of Diesel Range Organics," Revision 2, 02/05/95; or California Department of Health Services LUFT Task Force TPH Analysis-Diesel Method, 10/18/89, Method 8015B/5030B/5035.

Pesticides, PCBs, & Herbicides – These methods determine the concentration of organochloride pesticides, polychlorinated biphenyls, herbicides, and organophosphate pesticides. The procedures include solvent extraction of the sample, analysis of the extract on a gas chromatograph/electron capture detector (GC/EC) using a capillary column, and confirmation on a GC/EC using a second capillary column. A nitrogen-phosphorus detector is used for organophosphates. If the compound concentration is sufficient, confirmation may be performed on GC/MS upon request. Pesticides methods 8081A/3550B/3510C and 8141A/3550B/3510C. PCBs Method 8082/3550B/3510C. Herbicides Method 8151A/3550B.

PAHs by HPLC – The sample aliquot is extracted with methylene chloride. The extract is filtered (soils), dried, concentrated by evaporation and exchanged into acetonitrile. The extract is analyzed by reverse-phase HPLC with both UV and fluorescence detectors. Methods 8310/3550B/3510C.

**Table B4-1**
Inorganic Analytical Method Numbers

| | ICP | GFAA | Flame AA | Cold Vapor |
|---|---|---|---|---|
| Aluminum | 6010B/3005A/3010/3050B | | 7020/3005A/3010/3050B | |
| Antimony | 6010B/3005A/3010/3050B | 7041/3005A/3050B | | |
| Arsenic | 6010B/3005A/3010/3050B | 7060A | | |
| Barium | 6010B/3005A/3010/3050B | | 7080A/3005A/3010/3050B | |
| Beryllium | 6010B/3005A/3010/3050B | 7091/3020A/3050B | | |
| Cadmium | 6010B/3005A/3010/3050B | 7131A/3020A/3050B | 7130/3005A/3010/3050B | |
| Calcium | 6010B/3005A/3010/3050B | | 7140/3005A/3010/3050B | |
| Chromium | 6010B/3005A/3010/3050B | 7191/3020A/3050B | 7190/3005A/3010/3050B | |
| Cobalt | 6010B/3005A/3010/3050B | | | |
| Copper | 6010B/3005A/3010/3050B | 7211/3020A/3050B | 7210/3005A/3010/3050B | |
| Iron | 6010B/3005A/3010/3050B | | 7380/3005A/3010/3050B | |
| Lead | 6010B/3005A/3010/3050B | 7421/3020A/3050B | 7420/3005A/3010/3050B | |
| Magnesium | 6010B/3005A/3010/3050B | | 7450/3005A/3010/3050B | |
| Manganese | 6010B/3005A/3010/3050B | | 7460/3005A/3010/3050B | |
| Mercury | | | | 7470A/7471A |
| Molybdenum | 6010B/3005A/3010/3050B | | | |
| Nickel | 6010B/3005A/3010/3050B | 7521/3020A/3050B | 7520/3005A/3010/3050B | |
| Potassium | 6010B/3005A/3010/3050B | | 7610/3005A/3010/3050B | |
| Selenium | 6010B/3005A/3010/3050B | 7740 | | |
| Silver | 6010B/3005A/3010/3050B | 7761/3020A/3050B | 7760A/3005A/3010/3050B | |
| Sodium | 6010B/3005A/3010/3050B | | 7710/3005A/3010/3050B | |
| Thallium | 6010B/3005A/3010/3050B | 7841/3020A/3050B | | |
| Tin | 6010B/3005A/3010/3050B | | | |
| Vanadium | 6010B/3005A/3010/3050B | | | |
| Zinc | 6010B/3005A/3010/3050B | | 7950/3005A/3010/3050B | |

The number of parameters analyzed and the method used will be determined by the site-specific requirements.

**Table B4-2**
Metals Compound List (TAL)

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Aluminum | 0.2 | 0.019 | 30. | 3.9 |
| Antimony[1] | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic[1] | 0.01 | 0.0037 | 1. | 0.38 |
| Barium[1] | 0.001 | 0.00042 | 0.4 | 0.026 |
| Beryllium[1] | 0.002 | 0.00064 | 0.3 | 0.019 |
| Cadmium[1] | 0.0015 | 0.00064 | 0.2 | 0.055 |
| Calcium | 0.2 | 0.035 | 30. | 2 |
| Chromium[1] | 0.003 | 0.0017 | 0.5 | 0.14 |
| Cobalt[1] | 0.004 | 0.0018 | 0.4 | 0.18 |
| Copper[1] | 0.004 | 0.0024 | 0.5 | 0.15 |
| Iron[1] | 0.1 | 0.0376 | 20. | 3.64 |
| Lead[3] | 0.003 | 0.0018 | 1.0 | 0.11 |
| Magnesium | 0.1 | 0.018 | 25. | 3.3 |
| Manganese[1] | 0.002 | 0.00062 | 0.2 | 0.026 |
| Mercury[2] | 0.0002 | 0.000026 | 0.1 | 0.0025 |
| Nickel[1] | 0.005 | 0.0016 | 0.6 | 0.20 |
| Potassium | 0.5 | 0.224 | 50. | 25. |
| Selenium[1] | 0.01 | 0.0043 | 1. | 0.48 |
| Silver[1] | 0.004 | 0.0013 | 0.4 | 0.14 |
| Sodium | 0.6 | 0.292 | 100. | 28. |
| Thallium[3] | 0.01 | 0.0031 | 2. | 0.38 |
| Vanadium[1] | 0.04 | 0.0016 | 0.4 | 0.19 |
| Zinc[1] | 0.02 | 0.0032 | 3 | 0.33 |
| Cyanide, total[4] | 0.005 | 0.004 | 0.5 | 0.18 |

[1]Analyzed by Trace ICP

[2]Analyzed by Cold Vapor

[3]Analyzed by GFAA

[4]Analyzed by automated spectrophotometer

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis, will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQs and MDLs are evaluated annually and subject to change.

**Table B4-3**
Inorganic Priority Pollutants List

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Antimony | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic | 0.01 | 0.0037 | 1. | 0.38 |
| Beryllium | 0.002 | 0.00064 | 0.3 | 0.019 |
| Cadmium | 0.0015 | 0.00064 | 0.055 | 0.2 |
| Chromium | 0.003 | 0.0017 | 0.14 | 0.5 |
| Copper | 0.004 | 0.0024 | 0.15 | 0.5 |
| Lead | 0.02 | 0.0088 | 2. | 0.82 |
| Mercury | 0.0002 | 0.000026 | 0.1 | 0.025 |
| Nickel | 0.005 | 0.0016 | 0.6. | 0.2 |
| Selenium | 0.01 | 0.0043 | 1. | 0.48 |
| Silver | 0.004 | 0.0013 | 0.04 | 0.14 |
| Thallium | 0.01 | 0.0012 | 2. | 0.85 |
| Zinc | 0.02 | 0.0032 | 3. | 0.33 |
| Cyanide, total | 0.005 | 0.004 | 0.50 | 0.18 |
| Phenolics, total | 0.03 | 0.009 | 0.7 | 0.2 |

Mercury is analyzed by Cold Vapor.

Except for cyanide and Mercury, all other elements analyzed by ICP.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-4**
Inorganic Appendix IX Analyte List

| Analyte | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Antimony | 0.02 | 0.0059 | 2. | 0.65 |
| Arsenic | 0.01 | 0.0037 | 1. | 0.38 |
| Barium | 0.00042 | 0.001 | 0.4 | 0.026 |
| Beryllium | 0.00064 | 0.002 | 0.3 | 0.019 |
| Cadmium | 0.00064 | 0.0015 | 0.2 | 0.2 |
| Chromium | 0.0017 | 0.003 | 0.5 | 0.14 |
| Cobalt | 0.0018 | 0.004 | 0.4 | 0.18 |
| Copper | 0.0024 | 0.004 | 0.5 | 0.15 |
| Lead | 0.0088 | 0.02 | 2. | 0.82 |
| Mercury | 0.0002 | 0.000043 | 0.1 | 0.0025 |
| Nickel | 0.0016 | 0.005 | 0.6 | 0.2 |
| Selenium | 0.0042 | 0.01 | 1. | 0.48 |
| Silver | 0.0013 | 0.004 | 0.4 | 0.14 |
| Thallium | 0.0088 | 0.02 | 2. | 0.85 |
| Tin | 0.0044 | 0.015 | 1.5 | 0.42 |
| Vanadium | 0.0016 | 0.004 | 0.4 | 0.19 |
| Zinc | 0.0032 | 0.02 | 3. | 0.33 |
| Cyanide, total | 0.005 | 0.004 | 0.5 | 0.18 |
| Sulfide, total | 2. | 0.53 | 20. | 4. |

Mercury is analyzed by Cold Vapor

Except for cyanide, sulfide, and mercury, all other elements analyzed by ICP.

Cyanide is analyzed by method 9021A, using the automated spectrophotometer.

Sulfide is analyzed by 9034 (modified) , titrimetric analysis.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-5**
Miscellaneous Chemistry Analyte List

| Parameter | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Moisture | .5 %wt | .5 % wt | .5% wt | .5 %wt |
| Cyanide, total | 0.005 | 0.004 | 0.5 | 0.18 |
| Phenolics, total | 0.03 | 0.009 | 0.7 | 0.2 |
| Sulfide, total | 2. | 0.53 | 20. | 4. |
| TPH (418.1) | 0.9 | 0.3 | 50 | 15.5 |
| Oil and Grease (1664A) | 5. | 1.4 | N/A | N/A |
| TOC | 2. | 0.6 | 170. | 60. |
| TOX | 7. μg/L | 2.4 μg/L | 50. | 14. |
| Total Nitrite/Nitrate | .1 | .04 | N/A | N/A |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-6**
Volatile Full Compound List by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Dichlorodifluoromethane | 5. | 2. | 5. | 2. |
| Chloromethane | 10. | 2. | 5. | 2. |
| Vinyl Chloride | 10. | 1. | 5. | 1. |
| Bromomethane | 5. | 2. | 5. | 2. |
| Chloroethane | 5. | 2. | 5. | 2. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| Methylene Chloride | 5. | 2. | 5. | 2. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| 2,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| Bromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| Carbon Tetrachloride | 5. | 1. | 5. | 1. |
| 1,1-Dichloropropene | 5. | 1. | 5. | 1. |
| Benzene | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| Dibromomethane | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,3-Dichloropropane | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,2-Dibromoethane | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| 1,1,1,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 2. | 5. | 1. |

**Table B4-6 – Continued**
Volatile Full Compound List by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| *m*+*p*-Xylene | 5. | 1. | 5. | 1. |
| *o*-Xylene | 5. | 1. | 5. | 1. |
| Styrene | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| Isopropylbenzene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Bromobenzene | 5. | 1. | 5. | 1. |
| 1,2,3-Trichloropropane | 5. | 1. | 5. | 1. |
| *n*-Propylbenzene | 5. | 1. | 5. | 1. |
| 2-Chlorotoluene | 5. | 1. | 5. | 1. |
| 1,3,5-Trimethylbenzene | 5. | 1. | 5. | 1. |
| 4-Chlorotoluene | 5. | 1. | 5. | 1. |
| *tert*-Butylbenzene | 5. | 1. | 5. | 1. |
| 1,2,4-Trimethylbenzene | 5. | 1. | 5. | 1. |
| sec-Butylbenzene | 5. | 1. | 5. | 1. |
| *p*-Isopropyltoluene | 5. | 1. | 5. | 1. |
| 1,3-Dichlorobenzene | 5. | 1. | 5. | 1. |
| 1,4-Dichlorobenzene | 5. | 1. | 5. | 1. |
| *n*-Butylbenzene | 5. | 1. | 5. | 1. |
| 1,2-Dichlorobenzene | 5 | 1. | 5. | 1. |
| 1,2-Dibromo-3-chloropropane | 5. | 2. | 5. | 2. |
| 1,2,4-Trichlorobenzene | 5. | 1. | 5. | 1. |
| Hexachlorobutadiene | 5. | 2. | 5. | 2. |
| Naphthalene | 5. | 1. | 5. | 1. |
| 1,2,3-Trichlorobenzene | 5. | 1. | 5. | 1. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-7**
Volatile Priority Pollutant Compound List by GC/MS (8260B)

| Compounds | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| 2-Chloroethylvinyl ether | 10. | 2. | 10. | 2. |
| Acrolein | 100. | 40. | 100. | 20. |
| Acrylonitrile | 100. | 25. | 100. | 25. |
| Benzene | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| Bromomethane | 5. | 2. | 5. | 2. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Chloroethane | 5. | 2. | 5. | 2. |
| Chloroform | 5. | 1. | 5. | 1. |
| Chloromethane | 5. | 2. | 5. | 2. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 2. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| Vinyl chloride | 5. | 1. | 5. | 1. |
| Xylene (total) | 5. | 1. | 5. | 1. |

**Table B4-7 – Continued**

Volatile Priority Pollutant Compound List by GC/MS (8260B)

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-8**
Appendix IX Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Chloromethane | 10. | 2. | 10. | 2. |
| Bromomethane | 10. | 2. | 10. | 3. |
| Vinyl chloride | 10. | 1. | 10. | 1. |
| Dichlorodifluoromethane | 5. | 2. | 5. | 2. |
| Chloroethane | 10. | 2. | 5. | 2. |
| Methyl iodide | 5. | 1. | 5. | 1. |
| Acrolein | 100. | 40. | 100. | 20. |
| Acrylonitrile | 100. | 4. | 100. | 4. |
| Acetonitrile | 100. | 25. | 100. | 25. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Acetone | 20. | 6. | 100. | 7. |
| Trichlorofluoromethane | 5. | 2. | 5. | 2. |
| Carbon disulfide | 5. | 1. | 10. | 1. |
| Propionitrile | 100. | 30. | 100. | 30. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| Allyl chloride | 5. | 1. | 5. | 1. |
| 1,1-Dichloroethane | 5. | 1. | 5. | 1. |
| *trans*-1,2-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| Methacrylonitrile | 100. | 10. | 100. | 5. |
| 2-Butanone | 10. | 3. | 100. | 4. |
| Dibromomethane | 5. | 1. | 5. | 1. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,4-Dioxane | 250. | 70. | 250. | 70. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Isobutyl alcohol | 250. | 100. | 250. | 100. |
| Vinyl acetate | 10. | 2. | 50. | 2. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| 2-Chloro-1,3-butadiene | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |

**Table B4-8 – Continued**
Appendix IX Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| 1,2-Dibromoethane | 5. | 1. | 5. | 1. |
| *cis*-1,2-Dichloroethene | 5. | 1. | 5. | 2. |
| Benzene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Methyl methacrylate | 5. | 1. | 5. | 1. |
| 1,1,1,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| *trans*-1,4-Dichloro-2-butene | 100. | 15. | 100. | 10. |
| 1,2,3-Trichloropropane | 5. | 1. | 5. | 1. |
| 2-Hexanone | 10. | 3. | 50. | 3. |
| 4-Methyl-2-pentanone | 10. | 3. | 50. | 3. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| Ethyl methacrylate | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Pentachloroethane | 10. | 1. | 10. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| 1,2-Dibromo-3-chloropropane | 100. | 2. | 100. | 2. |
| Styrene | 5. | 1. | 5. | 1. |
| Xylenes (total) | 5. | 1. | 5. | 1. |

For samples preserved with 1 + 1 HCl to pH <2, low recovery of acid labile compounds is likely to occur.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDL are evaluated annually and subject to change.

**Table B4-9**
TCL Volatile Compounds by GC/MS (8260B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Chloromethane | 10. | 2. | 10. | 2. |
| Bromomethane | 10. | 2. | 10. | 3. |
| Vinyl chloride | 10. | 1. | 10. | 1. |
| Chloroethane | 10. | 2. | 5. | 2. |
| Methylene chloride | 5. | 2. | 5. | 2. |
| Acetone | 20. | 6. | 100. | 7. |
| Carbon disulfide | 5. | 1. | 10. | 1. |
| 1,1-Dichloroethene | 5. | 1. | 5. | 1. |
| Chloroform | 5. | 1. | 5. | 1. |
| 1,2-Dichloroethane | 5. | 1. | 5. | 1. |
| 2-Butanone | 10. | 3. | 100. | 4. |
| 1,1,1-Trichloroethane | 5. | 1. | 5. | 1. |
| Carbon tetrachloride | 5. | 1. | 5. | 1. |
| Bromodichloromethane | 5. | 1. | 5. | 1. |
| 1,2-Dichloropropane | 5. | 1. | 5. | 1. |
| *trans*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Trichloroethene | 5. | 1. | 5. | 1. |
| Dibromochloromethane | 5. | 1. | 5. | 1. |
| 1,1,2-Trichloroethane | 5. | 1. | 5. | 1. |
| Benzene | 5. | 1. | 5. | 1. |
| *cis*-1,3-Dichloropropene | 5. | 1. | 5. | 1. |
| Bromoform | 5. | 1. | 5. | 1. |
| 2-Hexanone | 10. | 3. | 50. | 3. |
| 4-Methyl-2-pentanone | 10. | 3. | 50. | 3. |
| Tetrachloroethene | 5. | 1. | 5. | 1. |
| 1,1,2,2-Tetrachloroethane | 5. | 1. | 5. | 1. |
| Toluene | 5. | 1. | 5. | 1. |
| Chlorobenzene | 5. | 1. | 5. | 1. |
| Ethylbenzene | 5. | 1. | 5. | 1. |
| Styrene | 5. | 1. | 5. | 1. |
| Xylenes (total) | 5. | 1. | 5. | 1. |

For samples preserved with 1 + 1 HCl to pH <2, low recovery of acid labile compounds is likely to occur.

**Table B4-9 – Continued**

TCL Volatile Compounds by GC/MS (8260B)

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDL are evaluated annually and subject to change.

**Table B4-10**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Acenaphthene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Acetophenone | 10. | 1. | 330. | 33. |
| Aramite[2] | 50 | 1 | 1650 | 33 |
| 2-Acetylaminofluorene | 10. | 2. | 330. | 33. |
| 4-Aminobiphenyl | 10. | 2. | 830. | 170. |
| Aniline | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Benzidine | 100. | 20. | 3300. | 670. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Benzyl alcohol | 20. | 5. | 830. | 170. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl)ether | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl)ether | 10 | 1 | 330 | 33 |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| 4-Chloroaniline | 10. | 1. | 330. | 67. |
| Carbazole | 10. | 2. | 330. | 670. |
| Chlorobenzilate | 20. | 3. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 2-Methyl phenol | 10. | 1. | 330. | 33. |
| 3 or 4-methyl phenol[3] | 10. | 3. | 330. | 67. |
| Diallate (trans/cis) | 10. | 1. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Di-*n*-butyl phthalate | 10. | 2. | 330. | 67. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 2,6-Dichlorophenol | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| Dimethoate | 20. | 3. | 330. | 33. |
| *p*-(Dimethylamino)azobenzene | 10. | 2. | 330. | 33. |
| 7,12-Dimethylbenz(a)anthracene | 10. | 2. | 330. | 33. |
| 3,3'-Dimethylbenzidine | 25. | 5. | 830. | 170. |
| a,a-Dimethyl-1-phenethylamine[2] | 20. | 1. | 670. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 1,3-Dinitrobenzene | 10. | 1. | 330. | 33. |
| 4,6,Dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Di-*n*-octyl phthalate | 10. | 2. | 330. | 67. |
| 1,2-Diphenylhydrazine[4] | 10. | 1. | 330. | 33. |
| Ethyl methanesulfonate | 10. | 1. | 330. | 33. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Fluorene | 10. | 1. | 330. | 33. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 660. | 165. |
| Hexachloroethane | 10. | 1. | 330. | 67. |
| Hexachloropropene | 10. | 2. | 330. | 67. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 67. |
| Isodrin | 25. | 5. | 330. | 67. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Isophorone | 10. | 1. | 330. | 33. |
| Isosafrole | 10. | 1. | 330. | 33. |
| Methapyrilene | 10. | 1. | 330. | 33. |
| 3-Methylchloranthene | 10. | 2. | 330. | 67. |
| Methyl methanesulfonate | 10. | 1. | 330. | 33. |
| 2-methylnaphthalene | 10. | 1. | 330. | 33. |
| 1-methylnaphthalene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| 1,4-Naphthoquinone | 100. | 10. | 3300. | 830. |
| 1-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Nitroaniline | 10. | 2. | 330. | 33. |
| 3-Nitroaniline | 10. | 2. | 330. | 67. |
| 4-Nitroaniline | 10. | 2. | 330. | 67. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4-Nitroquinoline-1-oxide | 100. | 20. | 1700. | 330. |
| *n*-Nitrosodi-*n*-butylamine | 10. | 1. | 330. | 67. |
| *n*-Nitrosodiethylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosodimethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| *n*-Nitrosodi-*n*-propylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosomethylethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosomorpholine | 10. | 1. | 330. | 67. |
| *n*-Nitrosopiperidine | 10. | 1. | 330. | 67. |
| *n*-Nitrospyrrolidine | 10. | 2. | 330. | 67. |
| 5-Nitro-*o*-toluidine | 10. | 2. | 830. | 170. |
| 2,2-Oxybis(1-chloropropane) | 10. | 1. | 330. | 33. |

**Table B4-10 – Continued**
Semivolatile Full Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Pentachlorobenzene | 10. | 1. | 330. | 66. |
| Pentachloronitrobenzene | 10. | 2. | 330. | 33. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| Phenacetin | 10. | 1. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 1,4-Phenylenediamine | 200. | 60. | 6700. | 5500. |
| 2-Picoline | 10. | 2. | 330. | 67. |
| Pronamide | 10. | 2. | 830. | 170. |
| Pyrene | 10. | 1. | 330. | 33. |
| Pyridine | 10. | 2. | 330. | 67. |
| Safrole | 10. | 1. | 330. | 33. |
| 1,2,4,5-Tetrachlorobenzene | 10. | 1. | 330. | 33. |
| 2,3,4,6-Tetrachlorphenol | 10. | 2. | 330. | 67. |
| Tetraethyl dithiopyrophosphate | 10. | 1. | 330. | 67. |
| Thionazin | 10. | 2. | 660. | 67. |
| *o*-Toluidine | 10. | 1. | 330. | 67. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| *o*,*o*,*o*-Triethyl phosphorothioate | 10. | 2. | 330. | 67. |
| 1,3,5-Trinitrobenzene | 20. | 3. | 670. | 170. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]N-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-Nitrosodiphenylamine represents the combined total of both compounds.

[2]Aramite and a,a-dimethyl-1-phenethylamine can be determined upon request.

[3]3-methylphenol and 4-methylphenol cannot be resolved under this analysis. The combined total of both compounds is reported as 4-methylphenol.

[4]1,2-Diphenylhydrazine cannot be distinguished from azobenzene, therefore, the value reported represents the combined total of both.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-11**
Semivolatile Priority Pollutant Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4,6,dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| n-nitrosodimethylamine | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl) ether | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl) ether | 10. | 1. | 330. | 33. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| n-nitrosodi-n-propylamine | 10. | 1. | 330. | 33. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| Isophorone | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy) methane | 10. | 1. | 330. | 67. |
| 1,2,4-trichlorobenzene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Acenaphthene | 10. | 1. | 330. | 33. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |

**Table B4-11 – Continued**

Semivolatile Priority Pollutant Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Fluorene | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| 1,2-Diphenylhydrazine | 10. | 1. | 330. | 33. |
| n-nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Di-n-butyl phthalate | 10. | 2. | 330. | 67. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Pyrene | 10. | 1. | 330. | 33. |
| Benzidine | 100. | 20. | 3300. | 670. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 670. | 67. |
| bis (2-Ethylhexyl) phthalate | 10. | 2. | 330. | 67. |
| Di-n-octyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]n-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for n-Nitrosodiphenylamine represents the combined total of both compounds.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-12**
Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Acenaphthene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Acetophenone | 10. | 1. | 330. | 33. |
| Aramite[2] | 50 | 1 | 1650 | 33 |
| 2-Acetylaminofluorene | 10. | 2. | 330. | 33. |
| 4-Aminobiphenyl | 10. | 2. | 830. | 170. |
| Aniline | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Benzyl alcohol | 20. | 5. | 830. | 170. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 67. |
| bis(2-Chloroethyl)ether | 10. | 1. | 330. | 33. |
| bis(2-Chloroisopropyl)ether | 10 | 1 | 330 | 33 |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| 4-Chloroaniline | 10. | 1. | 330. | 67. |
| Chlorobenzilate | 20. | 3. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 2-Methyl phenol | 10. | 1. | 330. | 33. |
| 3 or 4-methyl phenol[3] | 10. | 3. | 330. | 67. |
| Diallate (*trans*/*cis*) | 10. | 1. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |

**Table B4-12 – Continued**
Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Di-*n*-butyl phthalate | 10. | 2. | 330. | 67. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 2,6-Dichlorophenol | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| Dimethoate | 20. | 3. | 330. | 33. |
| *p*-(Dimethylamino)azobenzene | 10. | 2. | 330. | 33. |
| 7,12-Dimethylbenz(a)anthracene | 10. | 2. | 330. | 33. |
| 3,3'-Dimethylbenzidine | 25. | 5. | 830. | 170. |
| a,a-dimethyl-1-phenethylamine[2] | 20. | 1. | 670. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| Dimethyl phthalate | 10. | 2. | 330. | 67. |
| 1,3-Dinitrobenzene | 10. | 1. | 330. | 33. |
| 4,6,dinitro-2-methylphenol | 25. | 5. | 830. | 170. |
| 2,4-Dinitrophenol | 60. | 20. | 2000. | 670. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 2. | 330. | 33. |
| Di-*n*-octyl phthalate | 10. | 2. | 330. | 67. |
| Ethyl methanesulfonate | 10. | 1. | 330. | 33. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Fluorene | 10. | 1. | 330. | 33. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| Hexachloropropene | 10. | 2. | 330. | 67. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Isodrin | 25. | 5. | 330. | 67. |

**Table B4-12 – Continued**
Appendix IX Semivolatile Compound List by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Isophorone | 10. | 1. | 330. | 33. |
| Isosafrole | 10. | 1. | 330. | 33. |
| Methapyrilene | 10. | 1. | 330. | 33. |
| 3-Methylchloranthene | 10. | 2. | 330. | 67. |
| Methyl methanesulfonate | 10. | 1. | 330. | 33. |
| 2-methylnaphthalene | 10. | 1. | 330. | 33. |
| 1-methylnaphthalene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| 1,4-Naphthoquinone | 100. | 10. | 3300. | 830. |
| 1-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Naphthylamine | 25. | 5. | 830. | 170. |
| 2-Nitroaniline | 10. | 2. | 330. | 33. |
| 3-Nitroaniline | 10. | 2. | 330. | 67. |
| 4-Nitroaniline | 10. | 2. | 330. | 67. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 4-Nitrophenol | 50. | 10. | 830. | 170. |
| 4-Nitroquinoline-1-oxide | 100. | 20. | 1700. | 330. |
| *n*-Nitrosodi-n-butylamine | 10. | 1. | 330. | 67. |
| *n*-Nitrosodiethylamine | 10. | 2. | 330. | 33. |
| *n*-Nitrosodimethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| *n*-Nitrosodipropylamine | 10. | 1. | 330. | 33. |
| *n*-Nitrosomethylethylamine | 10. | 2. | 330. | 67. |
| *n*-Nitrosomorpholine | 10. | 1. | 330. | 67. |
| *n*-Nitrosopiperidine | 10. | 1. | 330. | 67. |
| *n*-Nitrospyrrolidine | 10. | 2. | 330. | 67. |
| 5-Nitro-*o*-toluidine | 10. | 2. | 830. | 170. |
| Pentachlorobenzene | 10. | 1. | 330. | 66. |
| Pentachloronitrobenzene | 10. | 2. | 330. | 33. |
| Pentachlorophenol | 25. | 3. | 830. | 170. |
| Phenacetin | 10. | 1. | 330. | 33. |

**Table B4-12 – Continued**

Appendix IX Semivolatile Compounds by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 66. |
| 1,4-Phenylenediamine | 200. | 60. | 6600. | 4950. |
| 2-Picoline | 10. | 2. | 330. | 67. |
| Pronamide | 10. | 2. | 825. | 165. |
| Pyrene | 10. | 1. | 330. | 67. |
| Pyridine | 10. | 2. | 330. | 67. |
| Safrole | 10. | 1. | 330. | 33. |
| 1,2,4,5-Tetrachlorobenzene | 10. | 1. | 330. | 33. |
| 2,3,4,6-Tetrachlorphenol | 10. | 3. | 330. | 67. |
| Tetraethyl dithiopyrophosphate | 10. | 1. | 330. | 67. |
| Thionazin | 10. | 2. | 660. | 67. |
| *o*-Toluidine | 10. | 2. | 330. | 67. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 10. | 2. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 2. | 330. | 67. |
| o,o,o-Triethylphosphorothioate | 10. | 2. | 330. | 67. |
| 1,3,5-Trinitrobenzene | 20. | 3. | 660. | 170. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]N-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-Nitrosodiphenylamine represents the combined total of both compounds.

[2]Aramite and a,a-dimethyl-1-phenethylamine can be determined upon request.

[3]3-methylphenol and 4-methylphenol cannot be resolved under this analysis. The combined total of both compounds is reported as 4-methylphenol.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-13**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| 2-Chlorophenol | 10. | 1. | 330. | 33. |
| Phenol | 10. | 1. | 330. | 67. |
| 2-Nitrophenol | 10. | 1. | 330. | 67. |
| 2,4-Dimethylphenol | 10. | 1. | 330. | 67. |
| 2,4-Dichlorophenol | 10. | 1. | 330. | 67. |
| 4-Chloro-3-methylphenol | 10. | 1. | 330. | 67. |
| 2,4,6-Trichlorophenol | 10. | 1. | 330. | 67. |
| 2,4-Dinitrophenol | 25. | 5. | 2000. | 670. |
| 4-Nitrophenol | 25. | 1. | 830. | 170. |
| 4,6,dinitro-2-methylphenol | 25. | 1. | 830. | 170. |
| Pentachlorophenol | 25. | 5. | 830. | 170. |
| 1,3-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,4-Dichlorobenzene | 10. | 1. | 330. | 33. |
| 1,2-Dichlorobenzene | 10. | 1. | 330. | 33. |
| Hexachloroethane | 10. | 1. | 330. | 33. |
| n-nitrosodi-n-propylamine | 10. | 1. | 330. | 33. |
| Nitrobenzene | 10. | 1. | 330. | 33. |
| Isophorone | 10. | 1. | 330. | 33. |
| 1,2,4-Trichlorobenzene | 10. | 1. | 330. | 33. |
| Naphthalene | 10. | 1. | 330. | 33. |
| Hexachlorobutadiene | 10. | 2. | 330. | 67. |
| Hexachlorocyclopentadiene | 25. | 5. | 670. | 170. |
| 2-Chloronaphthalene | 10. | 1. | 330. | 33. |
| Acenaphthylene | 10. | 1. | 330. | 33. |
| Dimethyl phthalate | 10. | 1. | 330. | 67. |
| 2,6-Dinitrotoluene | 10. | 1. | 330. | 33. |
| Acenaphthene | 10. | 1. | 330. | 33. |
| 2,4-Dinitrotoluene | 10. | 1. | 330. | 67. |

**Table B4-13 – Continued**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (µg/L) | MDL (µg/L) | LOQ* (µg/kg) | MDL (µg/kg) |
| Fluorene | 10. | 1. | 330. | 33. |
| 4-Chlorophenyl phenyl ether | 10. | 1. | 330. | 33. |
| Diethyl phthalate | 10. | 2. | 330. | 67. |
| n-nitrosodiphenylamine[1] | 10. | 1. | 330. | 33. |
| 4-Bromophenyl phenyl ether | 10. | 2. | 330. | 67. |
| Hexachlorobenzene | 10. | 2. | 330. | 33. |
| Phenanthrene | 10. | 1. | 330. | 33. |
| Anthracene | 10. | 1. | 330. | 33. |
| Di-n-butyl phthalate | 10. | 1. | 330. | 67. |
| Fluoranthene | 10. | 1. | 330. | 33. |
| Pyrene | 10. | 1. | 330. | 33. |
| Butyl benzyl phthalate | 10. | 2. | 330. | 67. |
| Benzo(a)anthracene | 10. | 1. | 330. | 33. |
| Chrysene | 10. | 1. | 330. | 33. |
| 3,3'-Dichlorobenzidine | 10. | 3. | 670. | 67. |
| bis(2-Ethylhexyl)phthalate | 10. | 2. | 330. | 67. |
| Di-*n*-octyl phthalate | 10. | 1. | 330. | 67. |
| Benzo(b)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(k)fluoranthene | 10. | 1. | 330. | 33. |
| Benzo(a)pyrene | 10. | 1. | 330. | 33. |
| Indeno(1,2,3-cd)pyrene | 10. | 1. | 330. | 33. |
| Dibenz(a,h)anthracene | 10. | 1. | 330. | 33. |
| Benzo(g,h,i)perylene | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy)methane | 10. | 1. | 330. | 33. |
| bis(2-Chloroethoxy)ether | 10. | 1. | 330. | 33. |
| 4-Chloroaniline | 10. | 2. | 330. | 67. |
| Dibenzofuran | 10. | 1. | 330. | 33. |
| 2-Methylnapthalene | 10. | 1. | 330. | 33. |

**Table B4-13 – Continued**
TCL Semivolatiles by GC/MS (8270C)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| 2-Nitroaniline | 25. | 1. | 830. | 33. |
| 3-Nitroaniline | 25. | 1. | 830. | 33. |
| 4-Nitroaniline | 25. | 1. | 830. | 33. |
| 2,2'-Oxybis(1-chloropropane) | 10. | 1. | 330. | 33. |
| 2,4,5-Trichlorophenol | 25. | 1. | 830. | 33. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

[1]n-Nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for n-Nitrosodiphenylamine represents the combined total of both compounds.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-14**

Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Chloromethane | 5. | .5 | 100. | 10. |
| Bromomethane | 5. | .5 | 100. | 10. |
| Dichlorodifluoromethane | 2. | .2 | 40. | 4. |
| Vinyl chloride | 1. | .2 | 20. | 4. |
| Chloroethane | 1. | .2 | 20. | 4. |
| Methylene chloride | 1. | .2 | 20. | 4. |
| Trichlorofluoromethane | 1. | .2 | 20. | 4. |
| 1,1-Dichloroethene | 1. | .2 | 20. | 4. |
| 1,1-Dichloroethane | 1. | .2 | 20. | 4. |
| cis-1,2-Dichloroethene | 1. | .2 | 20. | 4. |
| trans-1,2-Dichloroethene | 1. | .2 | 20. | 4. |
| Chloroform | 1. | .2 | 20. | 4. |
| 1,2-Dichloroethane | 0.5 | .2 | 20. | 4. |
| 1,1,1-Trichloroethane | 1. | .2 | 20. | 4. |
| Carbon tetrachloride | 1. | .2 | 20. | 4. |
| Bromodichloromethane | 1. | .2 | 20. | 4. |
| 1,2-Dichlorpropane | 1. | .2 | 20. | 4. |
| trans-1,3-Dichloropropene | 1. | .2 | 20. | 4. |
| Trichloroethene | 1. | .2 | 20. | 4. |
| Dibromochloromethane | 1. | .2 | 20. | 4. |
| 1,1,2-Trichloroethane | 1. | .2 | 20. | 4. |
| cis-1,3-Dichloropropene | 1. | .2 | 20. | 4. |
| 2-Chloroethylvinyl-ether | 10. | 1. | 200. | 20. |
| Bromoform | 1. | .2 | 20. | 4. |
| 1,1,2,2-Tetrachloroethane | 1. | .2 | 20. | 4. |
| Tetrachloroethene | 1. | .2 | 20. | 4. |
| Chlorobenzene | 1. | .2 | 20. | 4. |
| Benzene | 1. | .2 | 20. | 4. |
| Toluene | 1. | .2 | 20. | 4. |
| Ethylbenzene | 1. | .2 | 20. | 4. |

**Table B4-14 – Continued**

Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| o-Xylene | 1. | .2 | 20. | 4. |
| m,p-Xylene | 2. | .4 | 40. | 8. |
| Total Xylene | 3. | 0.6 | 60. | 12. |
| Methyl Teritary Butyl Ether | 1. | 0.2 | 20. | 4. |
| Napthalene | 1. | 0.2 | 20. | 4. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-15**
Petroleum Analysis by GC (8021B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| Benzene | 1. | 0.2 | 5. | 2. |
| Toluene | 1. | 0.2 | 5. | 2. |
| Ethylbenzene | 1. | 0.2 | 5. | 2. |
| Total Xylene | 3. | 0.6 | 15. | 5. |
| Methyl t-butyl ether | 1. | 0.3 | 20. | 5. |
| Napthalene | 5. | 1. | 20. | 5. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and my not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the alboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-16**
TPH GRO/DRO by GC (8015B)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (mg/L) | MDL (mg/L) | LOQ* (mg/kg) | MDL (mg/kg) |
| TPH-GRO | 0.05 | 0.02 | 1. | 0.2 |
| TPH-DRO | 0.1 | 0.1 | 7. | 4. |

NOTE: MDLs listed are higher than determined MDLs. This is because the method sums the total detectable area under the chromatographic plot in region of interest, instead of actual fuel peak area as the respective fuel.

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-17**

Pesticide/PCB Priority Pollutant Compound List by GC (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| alpha-BHC | 0.01 | 0.0021 | 0.83 | .17 |
| beta-BHC | 0.01 | 0.0033 | 0.83 | .17 |
| gamma-BHC (Lindane) | 0.01 | 0.0024 | 0.83 | .17 |
| delta-BHC | 0.01 | 0.002 | 0.83 | .17 |
| Heptachlor | 0.01 | 0.002 | 0.83 | .17 |
| Aldrin | 0.025 | 0.0084 | 0.83 | .17 |
| Heptachlor epoxide | 0.01 | 0.0032 | 0.83 | .17 |
| 4,4-DDE | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDD | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDT | 0.02 | 0.004 | 1.7 | .36 |
| Dieldrin | 0.02 | 0.005 | 1.7 | .33 |
| Endrin | 0.02 | 0.0048 | 1.7 | .35 |
| Chlordane | 0.5 | 0.05 | 17. | 4. |
| Toxaphene | 1. | 0.3 | 33. | 11. |
| Endosulfan I | 0.01 | 0.0026 | 0.83 | .17 |
| Endosulfan II | 0.02 | 0.0045 | 1.7 | .33 |
| Endosulfan sulfate | 0.02 | 0.0043 | 1.7 | .33 |
| Endrin aldehyde | 0.1 | 0.022 | 3. | 1. |
| Methoxychlor | 0.1 | 0.02 | 12. | 4. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-18**

Appendix IX Organochlorine Pesticides/PCBs by GC (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Aldrin | 0.025 | 0.0084 | 0.33 | .067 |
| alpha-BHC | 0.01 | 0.0021 | 0.83 | .17 |
| beta-BHC | 0.01 | 0.0033 | 0.83 | .17 |
| delta-BHC | 0.01 | 0.002 | 0.83 | .17 |
| gamma-BHC (Lindane) | 0.01 | 0.0024 | 0.83 | .17 |
| Chlordane | 0.5 | 0.05 | 17. | 4. |
| 4,4-DDT | 0.02 | 0.004 | 1.7 | .36 |
| 4,4-DDE | 0.02 | 0.004 | 1.7 | .33 |
| 4,4-DDD | 0.02 | 0.004 | 1.77 | .33 |
| Dieldrin | 0.02 | 0.005 | 1.7 | .33 |
| Endosulfan I | 0.01 | 0.0026 | 0.83 | .17 |
| Endosulfan II | 0.02 | 0.0045 | 1.7 | .33 |
| Endosulfan sulfate | 0.02 | 0.0043 | 1.7 | .33 |
| Endrin | 0.02 | 0.0048 | 1.7 | .35 |
| Endrin aldehyde | 0.1 | 0.022 | 3. | 1. |
| Heptachlor | 0.01 | 0.002 | 0.83 | .17 |
| Heptachlor epoxide | 0.01 | 0.0032 | 0.83 | .17 |
| Kepone | 0.2 | 0.07 | 7. | 2.3 |
| Methoxychlor | 0.1 | 0.02 | 12. | 4. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |
| Toxaphene | 1. | 0.3 | 33. | 11. |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-19**

Appendix IX Organophosphate Pesticides/PCBs by GC (8141A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Bolstar | 2 | .4 | 67. | 13.3 |
| Coumaphos | 3 | .6 | 67. | 13.3 |
| Demeton-O | 2 | .4 | 67. | 13.3 |
| Demeton-S | 2 | .4 | 67. | 13.3 |
| Diazinon | 2 | .4 | 67. | 13.3 |
| Dichlorvos | 2 | .4 | 67. | 13.3 |
| Disulfoton | 2 | .4 | 13. | 6.5 |
| Dursban (Chlorpyrifos) | 2 | .4 | 67. | 13.3 |
| EPN | 2 | .4 | 67. | 13.3 |
| Ethion | 2 | .4 | 67. | 13.3 |
| Ethoprop | 2 | .4 | 67. | 13.3 |
| Ethyl parathion | 2 | .4 | 67. | 13.3 |
| Famphur | 2 | .4 | 67. | 13.3 |
| Fensulfothion | 4 | .8 | 67. | 13.3 |
| Fenthion | 2 | .4 | 67. | 13.3 |
| Guthion (Azinphos-methyl) | 4 | .8 | 67. | 13.3 |
| Malathion | 3 | .6 | 67. | 13.3 |
| Merphos | 2 | .4 | 67. | 13.3 |
| Methyl parathion | 2 | .4 | 67. | 13.3 |
| Mevinphos | 3 | .6 | 67. | 13.3 |
| Naled | 2 | .4 | 67. | 13.3 |
| Phorate | 2 | .4 | 67. | 13.3 |
| Ronnel | 2 | .4 | 67. | 13.3 |
| Stirophos | 4 | .8 | 67. | 13.3 |
| Tokuthion | 2 | .4 | 67. | 13.3 |
| Trichloronate | 3 | .6 | 67. | 13.3 |
| Trithion | 3 | .6 | 67. | 13.3 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-20**
TCL Pesticides/PCBs by GC

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Aldrin | .025 | .0084 | .83 | .17 |
| alpha-BHC | .01 | .0021 | .83 | .17 |
| beta-BHC | .01 | .0033 | .83 | .17 |
| gamma-BHC/Lindane | .01 | .0024 | .83 | .17 |
| delta-BHC | .01 | .002 | .83 | .17 |
| alpha-Chlordane | .01 | .0031 | 1.7 | .17 |
| gamma-Chlordane | .01 | .0032 | 1.7 | .17 |
| 4,4'-DDD | .02 | .004 | 1.7 | .33 |
| 4,4'-DDE | .02 | .004 | 1.7 | .33 |
| 4,4'-DDT | .02 | .004 | 1.7 | .33 |
| Dieldrin | .02 | .005 | 1.7 | .33 |
| Endosulfan I | .01 | .0032 | .83 | .17 |
| Endosulfan II | .02 | .0045 | 1.7 | .33 |
| Endosulfan sulfate | .02 | .0043 | 1.7 | .33 |
| Endrin | .02 | .0048 | 1.7 | .35 |
| Endrin aldehyde | .1 | .022 | 3. | 1. |
| Endrin ketone | .02 | .0048 | 1.7 | .33 |
| Heptachlor | .01 | .002 | .83 | .17 |
| Heptachlor epoxide | .01 | .0032 | .83 | .17 |
| Methoxychlor | .1 | .02 | 12. | 4. |
| Toxaphene | 1. | 0.3 | 33. | 11. |
| PCB-1016 | 0.5 | 0.1 | 17. | 4.8 |
| PCB-1221 | 0.5 | 0.1 | 30. | 10. |
| PCB-1232 | 0.5 | 0.1 | 17. | 4.3 |
| PCB-1242 | 0.5 | 0.1 | 17. | 5. |
| PCB-1248 | 0.5 | 0.1 | 17. | 4.9 |
| PCB-1254 | 0.5 | 0.1 | 17. | 5.7 |
| PCB-1260 | 0.5 | 0.1 | 17. | 4.4 |

**Table B4-20 – Continued**
TCL Pesticides/PCBs by GC

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client if a valid mass spectrum is obtained. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-21**
Herbicides by GC (8151A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| 2,4,5-T | .05 | .01 | 1.7 | 0.33 |
| 2,4,5-TP | .05 | .01 | 1.7 | 0.33 |
| 2,4-D | .5 | .1 | 17. | 3.3 |
| 2,4-DB | .5 | .1 | 17. | 3.3 |
| 2,4-DP (Dichlorprop) | .5 | .1 | 17. | 3.3 |
| Dalapon | 1.25 | .25 | 42 | 8.3 |
| Dicamba | .3 | .06 | 1.7 | .33 |
| Dinoseb | .25 | .05 | 8.3 | 1.7 |
| MCPA | 400. | 130. | 15000. | 3000. |
| MCPP | 200. | 50. | 2500. | 500. |
| Pentachlorophenol | .05 | .01 | 1.7 | .33 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

**Table B4-22**
PAHs by HPLC (8310)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LOQ* (μg/L) | MDL (μg/L) | LOQ* (μg/kg) | MDL (μg/kg) |
| Acenaphthene | 8. | .8 | 270. | 27. |
| Acenapthylene | 8. | .8 | 270. | 27. |
| Anthracene | .2 | .03 | 5. | 1. |
| Benzo(a)anthracene | .08 | .02 | 3. | 0.25 |
| Benzo(a)pyrene | .08 | .02 | 3. | 0.25 |
| Benzo(b)fluoranthene | .06 | .038 | 2. | 0.2 |
| Benzo(g,h,i)perylene | .5 | .1 | 16. | 1.5 |
| Benzo(k)fluoranthene | .06 | .01 | 2. | 0.2 |
| Chrysene | .3 | .06 | 11. | 1. |
| Dibenzo(a,h)anthracene | .2 | .03 | 5. | 0.5 |
| Fluoranthene | .2 | .03 | 5. | 0.5 |
| Fluorene | .8 | .17 | 27. | 2.5 |
| Indeno(1,2,3-cd)pyrene | .3 | .067 | 11. | 1. |
| Naphthalene | 8. | .8 | 270. | 27. |
| Phenanthrene | .3 | .07 | 11. | 1. |
| Pyrene | .8 | .17 | 27. | 2.5 |

*Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

**Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on a dry-weight basis will be higher.

The laboratory routinely reports at the limit of quantitation (LOQ) but can estimate down to the MDL when requested by the client. Values reported below the LOQ are reported with a J-flag and are defined as estimated values.

LOQ and MDLs are evaluated annually and subject to change.

## B5. Quality Control

The particular types and frequencies of quality control checks analyzed with each sample are defined in *USEPA SW-846 3rd Edition, Update III, 1996*, and *Methods for the Chemical Analysis of Waters and Wastes, USEPA, 600/4-79-020*. The quality control checks routinely performed during sample analysis include blanks, laboratory control samples, surrogates, duplicates, internal standards, and matrix spikes. In addition to these checks, some inorganic analyses employ serial dilutions and interference check samples.

Blanks (method, preparation) – Blanks are an analytical control consisting of a volume of deionized, distilled laboratory water for water samples, or a purified solid matrix for soil/sediment samples. (Metals use a digested reagent blank with soils.) They are treated with the same reagents, internal standards, and surrogate standards and carried through the entire analytical procedure. The blank is used to define the level of laboratory background contamination.

Laboratory Control Samples or Reference materials – Aqueous and solid control samples of known composition are analyzed using the same sample preparation, reagents, and analytical methods employed for the sample. These materials may be purchased from NIST or commercial supply houses either as neat compounds or as solutions with certified concentrations, or prepared in the technical department. The accuracy and quality of the purchased standards are documented on certificates provided by the supply houses. Certificates are maintained on file in the laboratory. The accuracy information determined from reference materials and laboratory control samples is valuable because variables specific to sample matrix are eliminated. The acceptance criteria for this type of quality control is either dictated by the agency from whom the material is obtained or by statistical analysis of past information generated in the technical department. A LCS is analyzed with every batch to demonstrate accuracy of the procedure and process control.

Surrogates (used for organic analysis only) – Each sample, matrix spike, matrix spike duplicate, and blank are spiked with surrogate compounds prior to purging and extraction in order to monitor preparation and analysis. Surrogates are used to evaluate analytical efficiency by measuring recovery. The recovery data is compared to method stipulated or statistically generated limits.

Duplicates (matrix spike duplicate - organics and inorganics; duplicate-inorganics) – A second aliquot of a matrix/sample is analyzed at the same time as the original sample in order to determine the precision of the method. The relative percent difference (RPD) between the two determinations is calculated and compared to values prescribed by EPA or determined statistical analysis of the past information generated in the technical department.

Internal Standards (used for GC/MS and some GC analysis) – Internal standards are compounds added to every standard, blank, matrix spike, matrix spike duplicate, and sample at a known concentration, prior to analysis. Comparison of the peak areas of the internal standards are used for internal standard quantitation as well as to determine when changes in the instrument response will adversely affect quantification of target compounds.

Matrix Spikes – Matrix spiked samples are samples fortified with a target analyte and subjected to the entire analytical procedure. The recovery of the analyte(s) is calculated and indicates the appropriateness of the method for the matrix. Matrix spike duplicates is the analysis of a pair of fortified samples from the same source. The matrix spike duplicates yields precision and accuracy information. The acceptance criteria for percent recovery on spike samples in prescribed by EPA or determined statistical analysis of the past information generated in the technical department.

Serial Dilutions (used for inorganics GFAA and ICP only) – If the analyte concentration is sufficiently high, an analysis of a five-fold dilution must agree within 10% of the original determination. If the dilution analysis is not within 10%, a chemical or physical interference effect should be suspected.

Interference Check Sample (ICP) – To verify interelement and background correction factors a solution containing both interfering and analyte elements of known concentration is analyzed at the beginning and end of each analysis run or a minimum of twice per 8 hours.

Second Source Check – A second source check is analyzed using either the LCS or an ICV (Initial Calibration Verification). The second source is a standard that is made from a solution or neat purchased from a different vendor than that used for the calibration standards. For some organic custom mixes, the same vendor but a different lot and preparation is used. This ensures that potential problems with a vendor supply would be evident in the analysis. Some areas of the lab may use the continuing calibration verification standards as a second source from the initial calibration.

The results of all quality control samples are entered into the LIMS in the same way as the results of client samples. The computer is programmed to compare the individual values with the acceptance limits (statistically determined or method specified) and inform the analyst if the results of the quality control tests are in or out of specification. If the results are not within the acceptance criteria, corrective action suitable to the situation must be taken. This may include, but is not limited to, checking calculations, examining other quality control analyzed with the same batch of samples, qualifying results with a comment stating the observed deviation, and reanalysis of the samples in the batch. In addition, computerized reports on the results for all quality control analyses including mean and standard deviation are generated monthly. These are used by the Quality Assurance Department to check for trends that may indicate method bias. Control charts are plotted via computer and may be accessed at any time by all analysts.

The following tables list the specific QC used for each method and the applicable QC windows. These windows are generated statistically and are subject to change. Statistical limits are determined for recovery and RPD data using historical data (minimum of 20 data points) and applying a 99% confidence interval around the mean. The limits are generated every 6 months for SW-846 methods and annually for other methods, and updated as needed. The tables list the full list of analytes for a method. Sublists (TCL, PPL, etc.) may be reported based on the clients requirements. See Element B4 for the particular analytes associated with a regulatory list.

**Table B5-1**
Quality Control
Inorganics

| Type | Acceptance Limits (%) WATERS SOILS | Frequency | Corrective Action |
|---|---|---|---|
| **Matrix Spikes:** | See Table B5-2 | Each group of samples of similar matrix/level (≤20) each method | Analyze post-digestion spike sample |
| **Matrix Spike Duplicate (RPD):** | ±20% RPD | Each group of samples of similar matrix/level (≤20) each method | Analyze post-digestion spike sample if not already run for MS, flag the data |
| **Duplicates (RPD):** | ±20% RPD for sample values ≥5× LOQ | Each group of samples of similar matrix/level (≤20) each method | Flag the data |
| **Blanks:**<br>Initial Calibration (ICB)<br>Continuing Calibration (CCB) | ***ICP:***<br><3× IDL or blank <1/10 conc. of action level and samples not ±10% of action level<br>***AA:***<br><LOQ | Each wavelength immediately after calibration verification at 10% frequency or every 2 hours (beginning and end of run min.) | Correct problem, recalibrate, and rerun |
| Preparation Blank | ≤LOQ<br>>LOQ then lowest conc. in sample must be 20× blank concentration | Each SDG or batch (≤20 samples) | Redigest and reanalyze blank and associated samples if sample result <20× blank result |
| **Serial Dilutions (ICP & GFAA only):** | Within ±10% of the original determination | Each group (≤20) of similar matrix/level | Flag the data |
| **Interference Check Sample (ICP only):** | ±20% of the true value for the analytes | Each wavelength after Initial Calibration Verification at beginning and end of the run or min. of 2× per 8 hour | Recalibrate the instrument |
| **Laboratory Control Sample:** | See Table B5-2 | Each SDG or batch (≤20 samples), each method | Redigest and reanalyze LCS and associated samples |

**Table B5-1 – Continued**
Quality Control
Metals

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Post Digestion Spike:** | **ICP:** 75% to 125% **AA:** 85% to 115% | | When matrix spikes are outside 80% to 120% range | Flag the data |
| **Analytical Spike** | 85-115% | | one per 20 field samples | See Table B5-3 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for TAL, PPL, and Appendix IX metals

**Table B5-2**
Statistical Acceptance Limits for Metals

| Element | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Aluminum | 93-112 | 75-125 | 62-160 | 75-125 |
| Antimony | 94-112 | 75-125 | 22-123 | 75-125 |
| Arsenic | 92-109 | 82-122 | 90-108 | 76-109 |
| Barium | 93-109 | 75-125 | 91-120 | 75-125 |
| Beryllium | 92-109 | 85-115 | 89-110 | 89-113 |
| Cadmium | 93-111 | 75-125 | 88-115 | 75-125 |
| Calcium | 93-113 | 75-125 | 88-122 | 75-125 |
| Chromium | 95-112 | 75-125 | 89-114 | 75-125 |
| Cobalt | 95-109 | 88-113 | 88-111 | 81-111 |
| Copper | 92-110 | 75-125 | 91-114 | 75-125 |
| Iron | 91-114 | 75-125 | 39-194 | 75-125 |
| Lead[1] | 80-117 | 80-120 | 45-74 | 80-120 |
| Magnesium | 93-110 | 75-125 | 85-121 | 75-125 |
| Mercury[2] | 84-120 | 80-120 | 73-117 | 80-120 |
| Nickel | 93-110 | 83-115 | 87-112 | 75-125 |
| Potassium | 80-120 | 75-125 | 76-140 | 75-125 |
| Selenium | 91-111 | 75-125 | 90-111 | 74-112 |
| Silver | 93-110 | 75-125 | 93-115 | 76-124 |
| Sodium | 87-117 | 75-125 | 35-132 | 75-125 |
| Thallium | 92-107 | 80-114 | 77-165 | 72-109 |
| Vanadium | 96-109 | 89-114 | 86-120 | 75-125 |
| Zinc | 94-112 | 75-125 | 86-111 | 75-125 |
| Cyanide, total | 90-110 | 61-122 | 90-110 | 75-125 |

[1] Analyzed by GFAA
[2] Analyzed by Cold Vapor
Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
The acceptance limits above pertain to the TAL, PPL and Appendix IX lists.

**Figure B5-1**

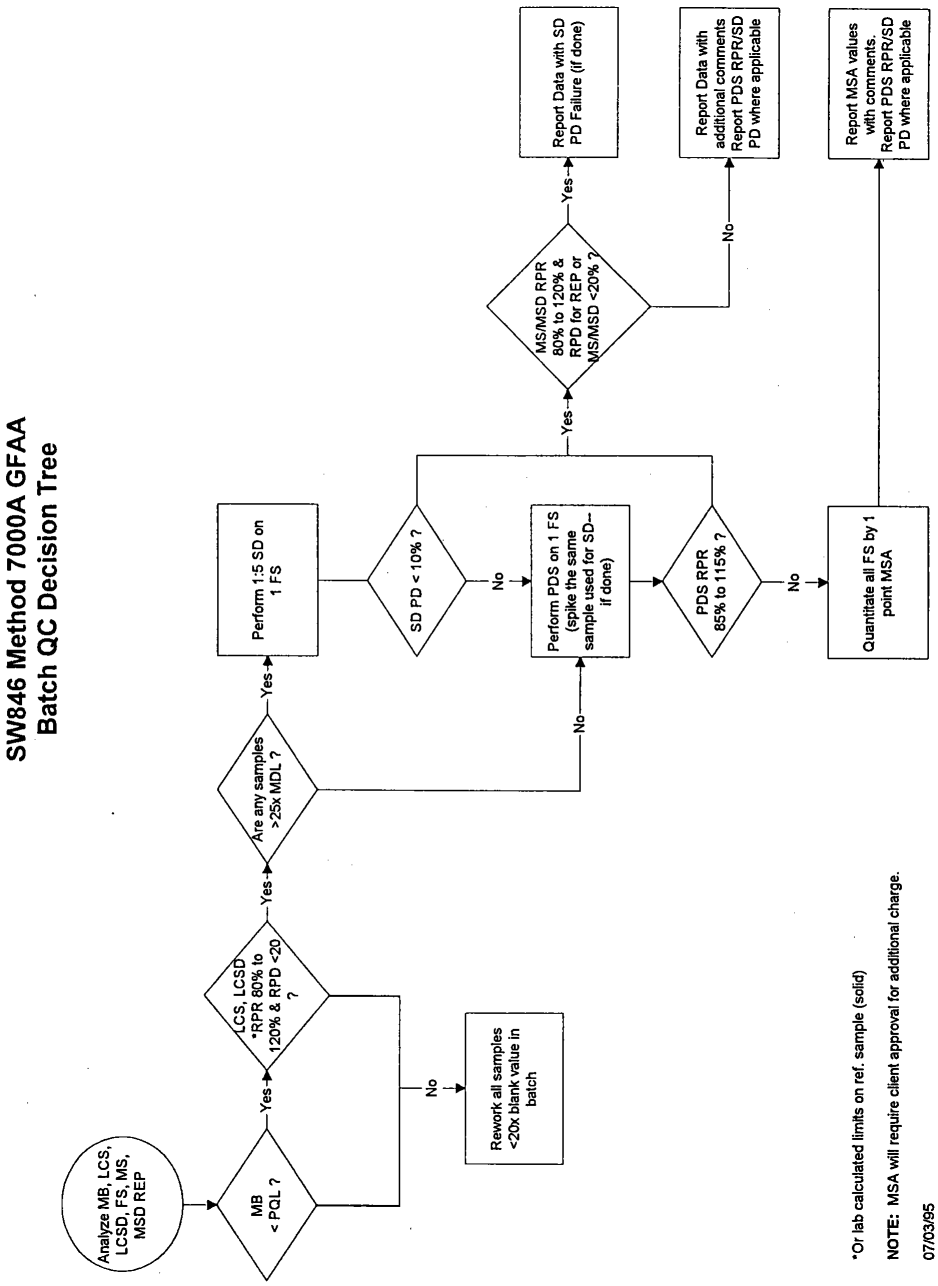
SW846 Method 7000A GFAA
Batch QC Decision Tree
Analyze MB, LCS, LCSD, FS, MS, MSD REP
MB < PQL ?
Yes
No
Rework all samples <20x blank value in batch
LCS, LCSD *RPR 80% to 120% & RPD <20 ?
Yes
Are any samples >25x MDL ?
Yes
No
Perform 1:5 SD on 1 FS
SD PD < 10% ?
No
Perform PDS on 1 FS (spike the same sample used for SD-- if done)
PDS RPR 85% to 115% ?
No
Quantitate all FS by 1 point MSA
Report MSA values with comments. Report PDS RPR/SD PD where applicable
Yes
MS/MSD RPR 80% to 120% & RPD for REP or MS/MSD <20% ?
No
Report Data with additional comments Report PDS RPR/SD PD where applicable
Yes
Report Data with SD PD Failure (if done)
*Or lab calculated limits on ref. sample (solid)
NOTE: MSA will require client approval for additional charge.
07/03/95

**Table B5-3**
Quality Control
Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **Moisture:** | | | |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| Duplicate: | ≤11% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Cyanide, total:** | | | |
| Blanks: | | | |
| CCB: | ≤LOQ | after initial calibration | Repeat calibration |
| PB: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD | See Table B5-4 | Each group (≤20) of samples, ≤20% | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% | Post digestion spike is performed, Flag the data |
| Duplicates: | ≤20% | every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Phenolics, total:** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% RPD | Batch is repeated |
| MS/MSD: | See Table B5-4 | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤20% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |

**Table B5-3 – Continued**
Quality Control
Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **Sulfide, total:** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicate: | ≤10% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **TPH (418.1)** | | | |
| Blanks: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates | ≤34% wastewater<br>≤21% solid waste | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **Oil and Grease (1664A)** | | | |
| Blanks: | ≤LOQ | 1 per batch of 20 | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | 1 per batch of 20 | Batch is repeated |
| MS/MSD: | See Table B5-4 | 1 per batch of 20 | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates**:** | ≤24% | 1 per batch of 20 | Ensure that LCS meets acceptance criteria, Flag the data |

**Table B5-3 – Continued**

Quality Control

Miscellaneous Chemistry

| Parameter | Acceptance Limits | Frequency | Corrective Action |
|---|---|---|---|
| **TOC:** | | | |
| Blanks: | | | |
| ICB: | ≤LOQ | after every calibration | Re-calibrate |
| CCB: | ≤LOQ | after every 10 injections | reanalyze bracketed sample |
| Batch blank: | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples, ≤20% RPD | Batch is repeated |
| MS/MSD: | See Table B5-4 | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤1% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| **TOX** | | | |
| Blanks | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4 | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4 | every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates: | ≤ 20% solids | every 10 samples for solids | Ensure that LCS meets acceptance criteria, Flag the data |
| **Total Nitrite/Nitrate:** | | | |
| Blanks: | | | |
| ICB | ≤LOQ | after initial calibration | Repeat calibration |
| PBW | ≤LOQ | Each group (≤20) of samples | Batch is repeated |
| LCS/LCSD: | See Table B5-4, ≤20% | Each group (≤20) of samples | Batch is repeated |
| MS/MSD: | See Table B5-4, ≤20% | Each group (≤20) of samples | Ensure that LCS meets acceptance criteria, Flag the data |
| Duplicates**:** | ≤6% | Every 10 samples | Ensure that LCS meets acceptance criteria, Flag the data |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-4**

Quality Control

Statistical Acceptance Limits for Miscellaneous Chemistry

| Parameter | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| | WATERS | SOILS | WATERS | SOILS |
| Moisture | N/A | 88-90 | N/A | N/A |
| Cyanide, total | 90-110 | 90-110 | 61-122 | 75-125 |
| Phenolics, total | 83-114 | 87-105 | 81-110 | 75-125 |
| Sulfide, total | 83-110 | N/A | 48-130 | N/A |
| TPH (418.1) | 61-110 | 70-110 | 39-132 | 18-141 |
| Oil and Grease (1664A) | 79-114 | N/A | 78-114 | N/A |
| TOC | commercial certified standard | 84-121 | 73-129 | 60-138 |
| TOX | 90-110 | 75-101 | 58-134 | 51-128 |
| Total Nitrite/Nitrate | 90-110 | N/A | 90-110 | N/A |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-5**
Quality Control
Volatiles by GC/MS (8260B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogates:** | | | Each sample, MS, MSD, LCS, and blank | Reanalyze sample if outside limits; if reanalysis confirms original, document on report and/or case narrative |
| Toluene-d8 | 88 - 110 | 81 - 117 | | |
| Bromofluorobenzene | 86 - 115 | 74 - 121 | | |
| 1,2-Dichloroethane-d4 | 80 - 120 | 80 - 120 | | |
| Dibromofluoromethane | 86 - 118 | 80 - 120 | | |
| **Matrix Spikes:** Spike all compounds of interest | See Table B5-6 | | Each group (≤20) of samples per matrix/level | Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD. |
| **Laboratory Control Samples:** Spike all compounds of interest | See Table B5-6 | | Each group (≤20) of samples per matrix/level | Reanalyze LCS and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits |
| **Matrix Spike Duplicates (RPD):** Spike all compounds of interest | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | Once for each 12-hour time period | Reanalyze blank and associated samples if blank outside limits |
| **Internal Standards:** Bromochloromethane 1,4-Difluorobenzene Chlorobenzene-d5 | -50% to +100% of internal standard area of 12-hour STD<br>RT Change ≤30 sec. | | Each sample, MS, MSD, LCS, and blank | Reanalyze samples; if reanalysis confirms original, document on report or case narrative |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for PPL, Appendix IX, and TCL lists.

**Table B5-6**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 1,1,1,2-Tetrachloroethane | 90-117 | 86-121 | 87-122 | 85-126 |
| 1,1,1-Trichloroethane | 83-127 | 78-141 | 79-133 | 49-157 |
| 1,1,2,2-Tetrachloroethane | 78-120 | 70-129 | 69-125 | 23-180 |
| 1,1,2-Trichloroethane | 86-120 | 82-127 | 82-121 | 49-157 |
| 1,1-Dichloroethane | 84-128 | 77-142 | 82-130 | 60-146 |
| 1,1-Dichloroethene | 79-136 | 75-152 | 70-140 | 47-158 |
| 1,1-Dichloropropene | 86-121 | 82-128 | 82-130 | 82-128 |
| 1,2,3-Trichlorobenzene | 64-130 | 56-137 | 66-129 | 42-132 |
| 1,2,3-Trichloropropane | 84-120 | 74-131 | 72-122 | 66-134 |
| 1,2,4-Trichlorobenzene | 70-124 | 58-133 | 72-130 | 51-132 |
| 1,2,4-Trimethylbenzene | 80-130 | 79-133 | 77-138 | 61-151 |
| 1,2-Dibromo-3-chloropropane | 63-137 | 48-152 | 53-133 | 46-141 |
| 1,2-Dibromoethane | 84-131 | 75-141 | 81-128 | 59-144 |
| 1,2-Dichlorobenzene | 85-117 | 84-120 | 83-125 | 61-142 |
| 1,2-Dichloroethane | 84-131 | 75-141 | 81-128 | 59-144 |
| 1,2-Dichloropropane | 83-123 | 83-128 | 81-126 | 56-145 |
| 1,3,5-Trimethylbenzene | 72-129 | 70-136 | 78-134 | 67-150 |
| 1,3-Dichlorobenzene | 83-118 | 81-121 | 81-125 | 82-121 |
| 1,3-Dichloropropane | 89-122 | 86-124 | 79-128 | 78-125 |
| 1,4-Dichlorobenzene | 82-113 | 81-116 | 79-122 | 78-120 |
| 2,2-Dichloropropane | 79-130 | 75-142 | 79-132 | 76-138 |
| 2-Butanone | 47-153 | 51-148 | 61-130 | 47-147 |
| 2-Chloroethyl vinyl ether | 49-138 | 1-150 | 54-143 | 37-151 |
| 2-Chlorotoluene | 81-124 | 78-130 | 78-129 | 62-151 |
| 2-Hexanone | 68-139 | 62-138 | 60-128 | 40-154 |
| 4-Chlorotoluene | 82-122 | 79-129 | 78-130 | 75-134 |
| 4-Methyl-2-pentanone | 70-133 | 58-140 | 63-123 | 47-140 |
| Acetone | 64-134 | 50-142 | 46-133 | 29-163 |
| Acrolein | 53-142 | 36-149 | 49-155 | 11-172 |
| Acrylonitrile | 70-133 | 58-134 | 58-138 | 34-147 |
| Benzene | 85-125 | 78-134 | 85-125 | 53-150 |
| Bromobenzene | 86-115 | 84-119 | 85-122 | 78-132 |

**Table B5-6 – Continued**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Bromochloromethane | 73-117 | 48-137 | 69-134 | 59-138 |
| Bromodichloromethane | 83-121 | 81-127 | 80-123 | 53-139 |
| Bromoform | 69-121 | 62-127 | 66-128 | 39-142 |
| Bromomethane | 34-117 | 37-127 | 49-129 | 24-140 |
| Carbon Disulfide | 62-173 | 74-157 | 52-165 | 56-171 |
| Carbon Tetrachloride | 77-130 | 66-148 | 72-137 | 49-154 |
| Chlorobenzene | 87-121 | 81-125 | 86-122 | 50-146 |
| Chloroethane | 53-117 | 55-129 | 52-136 | 33-147 |
| Chloroform | 86-124 | 76-138 | 84-123 | 60-143 |
| Chloromethane | 51-121 | 48-132 | 47-135 | 18-145 |
| *cis*-1,2-Dichloroethene | 85-126 | 76-140 | 85-127 | 61-146 |
| *cis*-1,3-Dichloropropene | 81-121 | 70-123 | 82-122 | 56-137 |
| Dibromochloromethane | 78-119 | 74-125 | 75-123 | 52-141 |
| Dibromomethane | 89-113 | 84-120 | 82-119 | 79-119 |
| Dichlorodifluoromethane | 44-117 | 35-130 | 36-136 | 31-143 |
| Ethylbenzene | 88-124 | 82-134 | 86-127 | 38-163 |
| Hexachlorobutadiene | 35-160 | 34-166 | 65-156 | 24-170 |
| Isopropylbenzene | 85-120 | 77-130 | 84-127 | 77-130 |
| *m+p*-Xylene | 88-123 | 83-129 | 86-128 | 83-130 |
| Methylene Chloride | 84-128 | 81-134 | 76-129 | 47-161 |
| Naphthalene | 55-140 | 43-147 | 57-126 | 27-137 |
| *n*-Butylbenzene | 53-138 | 54-146 | 68-147 | 50-157 |
| *n*-Propylbenzene | 74-127 | 69-138 | 76-135 | 66-145 |
| *o*-Xylene | 88-123 | 86-124 | 86-127 | 56-159 |
| *p*-Isopropyltoluene | 78-127 | 75-133 | 80-139 | 71-143 |
| *sec*-Butylbenzene | 76-128 | 71-135 | 75-136 | 57-150 |
| Styrene | 88-121 | 86-123 | 84-127 | 84-124 |
| *tert*-Butylbenzene | 84-123 | 79-129 | 81-134 | 73-140 |
| Tetrachloroethene | 79-136 | 72-150 | 76-141 | 44-175 |
| Toluene | 86-123 | 78-133 | 84-125 | 40-162 |
| *trans*-1,2-Dichloroethene | 83-129 | 78-140 | 78-131 | 55-147 |
| *trans*-1,3-Dichloropropene | 79-120 | 76-124 | 79-121 | 52-142 |

**Table B5-6 – Continued**
Statistical Acceptance Limits for
Volatiles by GC/MS (8260B)

| Compound Name | Waters | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Trichloroethene | 86-126 | 76-137 | 78-129 | 41-161 |
| Trichlorofluoromethane | 50-135 | 46-151 | 34-146 | 22-154 |
| Vinyl Chloride | 61-117 | 54-133 | 52-125 | 25-142 |
| Xylene (Total) | 89-124 | 81-136 | 87-127 | 46-158 |
| Allychloride | 42-145 | 35-154 | 47-140 | 23-151 |
| 2-Chloro-1,3-butadiene | 74-124 | 74-143 | 66-128 | 40-140 |
| *trans*-1,4-Dichloro-2-butene | 39-129 | 23-135 | 48-124 | 3-157 |
| 1,2-Dichbroethene(total) | 85-126 | 78-140 | 85-127 | 61-146 |
| 1,4-Dioxane | 58-125 | 55-129 | 51-150 | 13-213 |
| Ethylmethacrylate | 47-122 | 40-126 | 56-125 | 18-149 |
| Isobutylalcohol | 55-134 | 51-140 | 52-145 | 16-151 |
| Methocrylonitrile | 79-124 | 68-129 | 77-131 | 45-151 |
| Methyliodide | 74-133 | 72-143 | 71-134 | 49-148 |
| Methacrylate | 66-131 | 49-141 | 70-135 | 31-176 |
| Propionitrile | 73-128 | 70-131 | 70-137 | 34-167 |
| Vinyl acetate | 44-147 | 27-154 | 40-152 | 1-166 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-7**
Quality Control
Semivolatiles by GC/MS (8270C)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:**<br><br>Nitrobenzene-d5<br>2-Fluorobiphenyl<br>Terphenyl-d14<br>Phenol-d6<br>2-Fluorophenol<br>2,4,6-Tribromophenol | <br><br>52 - 136<br>15 - 105<br>41 - 139<br>10 - 89<br>15 - 105<br>35 - 147 | <br><br>53 - 126<br>48 - 121<br>52 - 133<br>48 - 119<br>48 - 121<br>42 - 134 | Each sample, MS, MSD, LCS, and blank | Repeat extraction and analysis; if reanalysis confirms originals, document on report and/or case narrative |
| **Matrix Spikes:**<br>Spike all compounds of interest | See Table B5-8 for acceptance limits | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| **Laboratory Control Sample:**<br>Spike all compounds of interest | See Table B5-8 for acceptance limits | | Each group (≤20) of samples per matrix/level | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):**<br><br>Same as for matrix spikes | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | Once per case or group (≤20) of samples, each matrix, level, instrument | Re-extract and reanalyze blank and associated samples |
| **Internal Standards:**<br><br>1,4-Dichlorobenzene-d4<br>Naphthalene-d8<br>Acenaphthene-d10<br>Phenanthrene-d10<br>Chrysene-d12<br>Perylene-d12 | -50 to +100 of internal standard area of 12-hour STD<br><br>RT change ≤30 sec. | | Each sample, MS, MSD, LCS, and blank | Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.
This criteria is for PPL, Appendix IX, and TCL lists.

**Table B5-8**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 1,2,4,5-Tetrachlorobenzene | 58-112 | 60-111 | 61-113 | 30-141 |
| 1,2,4-Trichlorobenzene | 33-110 | 59-107 | 57-104 | 44-125 |
| 1,2-Dichlorobenzene | 33-107 | 53-108 | 56-107 | 44-113 |
| 1,2-Diphenylhydrazine | 68-128 | 46-133 | 52-129 | 31-149 |
| 1,3,5-trinitrobenzene | 70-130 | 70-130 | 70-130 | 70-130 |
| 1,3-Dichlorobenzene | 45-91 | 44-99 | 53-103 | 31-123 |
| 1,3-dinitrobenzene | 62-111 | 26-142 | 61-109 | 1-150 |
| 1,4-Dichlorobenzene | 45-94 | 34-108 | 52-103 | 20-124 |
| 1,4-naphthoquinone | 70-130 | 70-130 | 70-130 | 70-130 |
| 1,4-phenylenediamine | 70-130 | 70-130 | 70-130 | 70-130 |
| 1-naphthylamine | 1-179 | 1-140 | 1-99 | 1-147 |
| 2,3,4,6-tetrachlorophenol | 21-137 | 19-109 | 62-103 | 1-134 |
| 2,4,5-trichlorophenol | 67-103 | 40-122 | 63-107 | 18-139 |
| 2,4,6-Trichlorophenol | 66-105 | 43-121 | 62-106 | 37-127 |
| 2,4-Dichlorophenol | 65-98 | 61-101 | 59-100 | 39-135 |
| 2,4-Dimethylphenol | 52-99 | 33-107 | 39-108 | 32-119 |
| 2,4-Dinitrophenol | 25-124 | 6-120 | 29-117 | 1-126 |
| 2,4-Dinitrotoluene | 64-112 | 45-128 | 58-113 | 39-136 |
| 2,6-dichlorophenol | 64-107 | 58-110 | 62-109 | 1-156 |
| 2,6-Dinitrotoluene | 64-112 | 45-128 | 58-113 | 39-136 |
| 2-acetylaminofluorene | 70-130 | 70-130 | 70-130 | 70-130 |
| 2-Chloronaphthalene | 61-103 | 60-106 | 60-106 | 60-118 |
| 2-Chlorophenol | 62-107 | 56-112 | 55-107 | 36-124 |
| 2-chlorophenol | 62-107 | 56-112 | 55-107 | 36-124 |
| 2-methylnaphthalene | 62-98 | 57-103 | 60-102 | 45-112 |
| 2-methylphenol | 55-96 | 25-122 | 57-101 | 20-130 |
| 2-naphthylamine | 2-162 | 1-173 | 1-100 | 1-93 |
| 2-nitroaniline | 58-112 | 60-111 | 54-111 | 8-154 |
| 2-Nitrophenol | 67-104 | 64-108 | 59-107 | 40-125 |
| 2-picoline | 26-135 | 28-127 | 29-129 | 1-142 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| 3- or 4-methylphenol | 48-99 | 15-130 | 48-116 | 22-138 |
| 3-methylcholanthrene | 71-135 | 66-132 | 58-169 | 1-206 |
| 3-nitroaniline | 40-108 | 43-105 | 9-110 | 8-114 |
| 4,6-Dinitro-2-methylphenol | 43-120 | 38-116 | 42-107 | 5-128 |
| 4-aminobiphenyl | 1-174 | 28-130 | 1-46 | 1-112 |
| 4-Chloro-3-methylphenol | 60-111 | 54-115 | 56-108 | 22-142 |
| 4-chloroaniline | 34-101 | 9-119 | 1-102 | 1-123 |
| 4-Chlorophenyl-phenylether | 62-104 | 58-106 | 52-110 | 41-115 |
| 4-nitroaniline | 37-120 | 1-170 | 55-116 | 55-116 |
| 4-Nitrophenol | 3-83 | 1-93 | 44-110 | 5-132 |
| 4-nitroquinoline-1-oxide | 70-130 | 70-130 | 70-130 | 70-130 |
| 5-nitro-*o*-toluidine | 70-130 | 70-130 | 70-130 | 70-130 |
| 7,12-dimethylbenz(a) anthracene | 87-184 | 83-184 | 99-213 | 1-286 |
| a,a-dimethylphenethylamine | 4-100 | 4-100 | 4-100 | 4-100 |
| Acenaphthene | 61-100 | 60-101 | 61-100 | 47-114 |
| Acenaphthylene | 64-100 | 61-103 | 62-101 | 42-119 |
| Acetophenone | 68-136 | 64-137 | 59-134 | 31-161 |
| Aniline | 53-99 | 33-113 | 30-97 | 1-126 |
| Anthracene | 66-101 | 62-103 | 62-105 | 42-119 |
| Benzidine | 1-116 | 1-125 | 1-74 | 1-70 |
| Benzo(a)anthracene | 69-101 | 64-103 | 63-106 | 33-135 |
| Benzo(a)pyrene | 65-101 | 60-102 | 61-107 | 21-139 |
| Benzo(b)fluoranthene | 64-101 | 54-108 | 59-105 | 24-148 |
| Benzo(g,h,i)perylene | 52-113 | 12-133 | 55-115 | 49-121 |
| Benzo(k)fluoranthene | 67-105 | 59-112 | 63-108 | 41-126 |
| Benzyl Alcohol | 59-108 | 44-117 | 62-115 | 9-146 |
| bis (2-Chloroethoxy) methane | 64-103 | 57-108 | 56-103 | 40-121 |
| bis (2-Chloroethyl) ether | 66-106 | 40-128 | 53-109 | 12-158 |
| bis (2-Chloroisopropyl) ether | 43-118 | 38-118 | 38-117 | 36-121 |
| bis(2-Ethylhexyl)phthalate | 64-113 | 39-131 | 8-158 | 8-158 |
| Butylbenzylphthalate | 48-105 | 53-110 | 58-119 | 45-133 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| Chlorobenzilate | 1-132 | 24-144 | 9-223 | 6-198 |
| Chrysene | 67-101 | 63-104 | 60-107 | 9-153 |
| Diallate (trans/cis) | 48-128 | 69-113 | 23-79 | 1-123 |
| Dibenz(a,h)anthracene | 66-117 | 57-124 | 60-117 | 11-152 |
| Dibenzofuran | 67-99 | 64-100 | 62-102 | 38-120 |
| Diethylphthalate | 30-99 | 46-106 | 59-104 | 43-114 |
| Dimethoate | 1-59 | 1-83 | 23-79 | 1-123 |
| Dimethylphthalate | 1-90 | 11-107 | 61-104 | 44-112 |
| Di-*n*-butylphthalate | 61-105 | 60-110 | 59-114 | 35-118 |
| Di-*n*-octylphthalate | 59-118 | 52-121 | 54-127 | 41-146 |
| Diphenylamine | 64-103 | 44-124 | 60-106 | 28-144 |
| Ethyl methanesulfonate | 50-123 | 57-115 | 65-117 | 38-142 |
| Fluoranthene | 66-106 | 61-109 | 58-110 | 26-137 |
| Fluorene | 61-108 | 59-110 | 59-109 | 59-121 |
| Hexachlorobenzene | 62-109 | 48-118 | 52-123 | 31-135 |
| Hexachlorobutadiene | 24-86 | 24-98 | 56-115 | 35-116 |
| Hexachlorocyclopentadiene | 17-80 | 15-83 | 27-113 | 1-127 |
| Hexachloroethane | 40-84 | 40-113 | 52-108 | 40-113 |
| Hexachloropropene | 70-130 | 70-130 | 70-130 | 70-130 |
| Indeno(1,2,3-cd)pyrene | 59-111 | 55-114 | 55-111 | 28-127 |
| Isodrin | 51-110 | 52-109 | 66-117 | 1-145 |
| Isophorone | 66-113 | 42-134 | 57-114 | 46-127 |
| Isosafrole | 9-76 | 10-76 | 14-72 | 1-100 |
| Methapyrilene | 25-151 | 24-154 | 35-138 | 1-142 |
| Methyl methanesulfonate | 43-114 | 54-106 | 66-122 | 1-164 |
| Naphthalane | 58-99 | 50-106 | 60-97 | 41-115 |
| Nitrobenzene | 61-113 | 43-127 | 56-110 | 40-125 |
| N-nitrosodiethyalmine | 37-135 | 37-135 | 37-135 | 37-135 |
| N-Nitrosodimethylamine | 46-81 | 42-84 | 47-109 | 48-113 |
| N-nitrosodi-*n*-butylamine | 48-120 | 72-101 | 75-103 | 1-168 |

**Table B5-8 – Continued**
Statistical Acceptance Limits for
Semivolatiles by GC/MS (8270C)

| Compound Name | Water | | Soil | |
|---|---|---|---|---|
| | LCS/LCSD (%) | MS/MSD (%) | LCS/LCSD (%) | MS/MSD (%) |
| N-Nitroso-di-*n*-propylamine | 62-118 | 58-120 | 50-124 | 38-140 |
| N-Nitrosodiphenylamine | 64-103 | 44-124 | 60-106 | 28-144 |
| N-nitrosomethylethylamine | 58-140 | 73-132 | 78-128 | 1-187 |
| N-nitrosomorpholine | 49-120 | 50-118 | 78-109 | 1-158 |
| N-nitrosopiperidine | 52-123 | 73-108 | 78-105 | 1-158 |
| N-nitrosopyrrolidine | 1-152 | 60-121 | 77-113 | 1-160 |
| O,O,O-triethylphosphorothioate | 46-118 | 53-119 | 67-103 | 52-126 |
| *o*-Toluidine | 60-94 | 1-145 | 12-89 | 1-128 |
| *p*-(dimethylamino) azobenzene | 14-184 | 2-187 | 1-186 | 1-247 |
| Pentachlorobenzene | 8-162 | 34-137 | 69-100 | 1-148 |
| Pentachloronitrobenzene | 68-108 | 58-112 | 68-115 | 10-146 |
| Pentachlorophenol | 46-114 | 14-130 | 42-108 | 14-131 |
| Phenacetin | 7-180 | 10-177 | 69-105 | 1-152 |
| Phenanthrene | 68-102 | 64-105 | 62-107 | 54-120 |
| Phenol | 5-83 | 5-112 | 49-105 | 29-112 |
| Pronamide | 1-138 | 3-123 | 1-132 | 1-153 |
| Pyrene | 58-112 | 55-114 | 52-115 | 52-115 |
| Pyridine | 38-82 | 31-85 | 34-92 | 21-96 |
| Safrole | 4-122 | 18-109 | 30-109 | 1-136 |
| Tetraethyl dithiopyrophosphate | 41-125 | 44-132 | 62-111 | 1-193 |
| Thionazin | 60-114 | 61-114 | 63-110 | 3-147 |
| 3,3'-Dichlorobenzidine | 37-104 | 37-106 | 15-94 | 1-125 |
| 3,3'-dimethylbenzidine | 1-149 | 1-153 | 1-137 | 1-110 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-9**
Quality Control
Volatiles Halocarbons and Aromatics by GC (8021B)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogates:**<br><br>Halocarbons;<br>1-Bromo-4-chlorobenzene (Hall)<br><br>Aromatics;<br>1-Bromo-4-chlorobenzene (PID)<br><br>halocarbons/Aromatics;<br>1-Bromo-4-chlorobenzene (Hall/PID)<br><br>Non-halogenated;<br>2-hexanone (FID) | <br><br>59-132<br>69-121<br>89-120 | <br><br>71-109<br>71-115 | Each sample, MS, MSD, blank, and standard | Results would not be reported if the surrogate recovery is outside the limits unless matrix related problems are evident |
| **Matrix Spikes:**<br><br>Spike all compounds of interest | See Table B5-10 for acceptance limits | | Each group of samples of similar matrix/level (≤20) each method | Analyze LCS for compounds outside of acceptance limits |
| **Laboratory Control Sample/Check Standard:**<br><br>Spike all compounds of interest | See Table B5-10 for acceptance limits | | Each group (≤20); LCSD is analyzed if sufficient volume is not available for MS/MSD | Reanalyze LCS and associated samples for compounds outside of acceptance limits |
| **Internal Standard:** Fluorobenzene | 80 - 120 | 80 – 120 | Each sample, MS, MSD, blank, and standard | Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative |
| **Matrix Spike Duplicate (RPD):** Same compounds as matrix spikes | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks:** | ≤LOQ for all compounds | | Every 12 hours | Reanalyze blank and associated samples if blank is outside limits |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-10**
Statistical Acceptance Limits for
Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound Name | Water | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD% | MS/MSD% | LCS/LCSD% | MS/MSD% |
| 1,1,1-Trichloroethane | 77-121 | 72-130 | 69-115 | 64-92 |
| 1,1,2,2-Tetrachloroethane | 84-129 | 80-132 | 80-115 | 75-102 |
| 1,1,2-Trichloroethane | 83-122 | 81-123 | 75-116 | 71-107 |
| 1,1-Dichloroethane | 80-122 | 75-130 | 70-115 | 66-99 |
| 1,1-Dichloroethene | 44-147 | 42-154 | 68-115 | 52-95 |
| 1,2- Dichlorobenzene (o) | 82-127 | 78-131 | 80-118 | 74-109 |
| 1,2-Dichloroethane | 80-127 | 79-130 | 73-120 | 70-107 |
| 1,2-Dichloroethene (cis/trans) | 83-122 | 72-135 | 69-115 | 66-94 |
| 1,2-Dichloropropane | 81-126 | 80-128 | 75-115 | 71-105 |
| 1,3-Dichlorobenzene (m) | 84-128 | 81-132 | 81-118 | 76-108 |
| 1,4-Dichlorobenzene (p) | 86-112 | 84-115 | 85-115 | 75-105 |
| Benzene (PID) | 85-111 | 79-119 | 79-115 | 74-94 |
| Bromodichloromethane | 82-127 | 81-131 | 78-109 | 73-101 |
| Bromoform | 75-141 | 72-143 | 85-134 | 85-124 |
| Bromomethane | 27-153 | 13-163 | 66-115 | 51-105 |
| Carbon Tetrachloride | 75-122 | 72-130 | 62-115 | 62-91 |
| Chlorobenzene (PID) | 85-114 | 83-117 | 85-115 | 74-108 |
| Chloroethane | 31-137 | 26-143 | 1-134 | 0-126 |
| Chloroform | 78-122 | 76-127 | 72-115 | 67-98 |
| Chloromethane | 17-149 | 0-159 | 1-134 | 0-126 |
| *cis*-1,3-Dichloropropene | 74-118 | 62-128 | 69-115 | 65-100 |
| Dibromochloromethane | 79-132 | 78-134 | 85-123 | 81-114 |
| Dibromochloromethane | 79-132 | 78-134 | 85-123 | 81-114 |
| Dichlorodifluoromethane | 29-208 | 18-211 | 12-134 | 4-124 |
| Ethylbenzene (PID) | 84-114 | 79-121 | 79-115 | 68-107 |
| *m* +*p*-Xylene | 84-116 | 76-124 | 82-115 | 71-107 |
| *m*-Dichlorobenzene (Hall) | 84-128 | 81-132 | 81-118 | 76-108 |
| Methylene Chloride | 68-121 | 61-128 | 77-115 | 54-103 |
| *o*-Dichlorobenzene (Hall) | 82-127 | 78-131 | 80-118 | 74-109 |
| *o*-Xylene | 85-116 | 82-120 | 84-115 | 75-103 |
| *p*-Dichlorobenzene (PID) | 86-112 | 84-115 | 85-115 | 75-105 |

**Table B5-10 – Continued**
Statistical Acceptance Limits for
Volatiles Halocarbons and Aromatics by GC (8021B)

| Compound Name | Water | | Soils | |
|---|---|---|---|---|
| | LCS/LCSD% | MS/MSD% | LCS/LCSD% | MS/MSD% |
| Tetrachloroethene | 76-123 | 72-129 | 69-103 | 66-94 |
| Toluene (PID) | 84-112 | 76-120 | 81-115 | 72-99 |
| *trans*-1,3-Dichloropropene | 83-122 | 81-123 | 77-117 | 73-108 |
| Trichloroethene (PID) | 82-110 | 65-130 | 72-115 | 66-95 |
| Trichlorofluoromethane | 51-125 | 52-127 | 42-115 | 40-95 |
| Vinyl Chloride | 53-137 | 49-142 | 48-115 | 47-95 |
| Xylene (total) | 85-115 | 80-121 | 83-115 | 73-105 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-11**
Quality Control
Petroleum Analysis by GC (8021B)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** <br> ααα-Trifluorotoluene | 72 –134 | 68-122 | Each sample, MS, MSD, LCS, and blank | Reanalyze sample if outside limits; if reanalysis confirms original, document on report and/or case narrative |
| **Matrix Spike:** <br> Spike all compounds of interest | See Table B5-12 | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside of acceptance limits |
| **Laboratory Control Sample:** <br> Spike all compounds of interest | See Table B5-12 | | Each group (≤20) of samples per matrix/level | Reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):** | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by an analyst in relationship to other QC results |
| **Blanks** | ≤LOQ for all compounds | | At least one per 20 samples | Reanalyze blank and associated samples if blank is outside limits |
| **Internal Standards:** <br> 1-Chloro-3-fluorobenzene | -50% to +100% if internal standard area | | Each sample, MS, MSD, LCS, and blank analyzed on the PID | Reanalyze samples; if reanalysis confirms original, document on report or case narrative. In cases where matrix is elevating the ISTD recover, a dilution is performed to bring ISTD within specifications. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-12**

Statistical Acceptance Limits for
Petroleum Analysis by GC (8021B)

| | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| Compound Name | WATERS | SOILS | WATERS | SOILS |
| Benzene | 80-118 | 73-133 | 66-140 | 48-140 |
| Toluene | 82-119 | 88-116 | 72-138 | 66-120 |
| Ethylbenzene | 81-119 | 87-127 | 71-138 | 66-131 |
| Total Xylenes | 82-120 | 88-120 | 69-140 | 67-122 |
| MTBE | 79-127 | 54-164 | 60-145 | 42-163 |
| Naphthalene | 68-121 | 68-128 | 49-137 | 52-125 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-13**
Quality Control
TPH-GRO by GC (8015B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** Trifluorotoluene (FID) | 65-137 | 48-132 | Each sample, MS/MSD, and blank | Results would not be reported if the surrogate recovery is outside the limits unless matrix related problems are evident |
| **Matrix Spike:** Gasoline standard 8015B | 74-132 | 54-100 | Each group of samples of similar matrix/level (≤20) each method | Analyze LCS |
| **Laboratory Control Sample** Gasoline standard | 76 - 132 | 72 - 112 | Each group (≤20) of samples. LCSD analyzed if sufficient volume is not available for MS/MSD. | Reanalyze LCS and associated samples |
| **Matrix Spike Duplicate (RPD):** Same compounds as matrix spikes | ≤30% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks:** | ≤LOQ | | At least 1 per 20 samples and at least once per 24 hours | Reanalyze blank and associated samples if blank is outside limits |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-14**
Quality Control
TPH-DRO by GC (8015B)

| Type | Acceptance Limits(%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:**<br>*o*-Terphenyl | 55 - 158 | 46 - 154 | Added to each sample, MS/MSD, blank, and LCS/LCSD during the extraction phase | Repeat extraction and analysis. If reanalysis confirms original result, report results and comment in case narrative. |
| **Matrix Spike:**<br>#2 Fuel Oil<br>8015B<br>API<br>California | 41-145 | 35 - 174 | Each group (≤20) of samples per matrix/level | Reinject if surrogates appear low. If still out of spec, evaluate for matrix effect. If matrix effect, accept based on LCS data. If no matrix effect, repeat batch. |
| **Laboratory Control Sample:**<br>No. 2 Fuel | 53-126 | 72 - 138 | Each group ≤20 | Reinject if surrogates appear low. If still out of spec, repeat batch. |
| **Laboratory Control Duplicates (RPD):**<br>**No.** 2 Fuel | ≤20% for waters and soils | | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |
| **Blanks:** | ≤LOQ | | Once per case or extraction group (≤20) of samples, each matrix, level, instrument | Inject a solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected, if they, too, contain the analyte which was contaminating the blank. If the reinjected blank is unacceptable, any affected samples must be re-extracted. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-15**
Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:** | | | Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase | Repeat extraction and analysis. If reanalysis confirms original result, report results and comment in case narrative. |
| *Organochlorine Pesticides:* | | | | |
| DCB | 36 - 156 | 58 - 149 | | |
| TCX | 40 - 135 | 58 - 149 | | |
| *Herbicides:* | | | | |
| DCAA | 41 - 173 | 39 - 193 | | |
| *Organophosphate Pesticides:* | | | | |
| 2NMX | 48 - 128 | 55 - 137 | | |
| **Matrix Spikes:** | | | Each extraction group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| Organochlorine pesticides; Spike all compounds of interest, except PCBs, chlordane, and toxaphene | See Table B5-16 through B5-18 for acceptance limits | | | |
| Herbicides (all compounds of interest);<br>2,4-D<br>2,4,5-TP<br>2,4,5-T<br>Dinoseb | | | | |
| Organophosphate Pesticides (all compunds of interest);<br>Phorate<br>Disulfoton<br>Famphur<br>Methyl Parathion<br>Ethyl Parathion | | | | |
| PCBs;<br>1016<br>1260 | | | | |

**Table B5-15 – Continued**

Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS SOILS | Frequency | Corrective Action |
|---|---|---|---|
| **Laboratory Control Sample:**<br>Organochlorine Pesticides; Spike all compunds of interest, except PCBs, chlordane, and toxaphene<br><br>Herbicides (all compunds of interest);<br>2,4-D<br>2,4,5-TP<br>2,4,5-T<br>Dinoseb<br><br>Organophosphate Pesticides (all comounds of interest);<br>Phorate<br>Disulfoton<br>Famphur<br>Methyl Parathion<br>Ethyl Parathion<br><br>PCBs<br>1016<br>1260 | See Table B5-16 through B5-18 for acceptance limits | Each group (≤20) when MS/MSD falls outside established limits | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. |

**Table B5-15 – Continued**

Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Matrix Spike Duplicates (RPD):**<br>Organochlorine Pesticides; Spike all compounds of interest, except PCBs, chlordane, and toxaphene<br><br>Herbicides;<br>2,4-D<br>2,4,5-TP<br>2,4,5-T<br>Dinoseb<br><br>Organophosphate Pesticides;<br>Phorate<br>Disulfoton<br>Famphur<br>Methyl Parathion<br>Ethyl Parathion<br><br>PCBs<br>1016<br>1260 | ≤30% | ≤50% | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relationship to other QC results |

**Table B5-15 – Continued**
Quality Control
Organochlorine Pesticides/PCBs (8081A/8082)
Herbicides (8151A)
Organophosphate Pesticides (8141A)

| Type | Acceptance Limits (%) WATERS SOILS | Frequency | Corrective Action |
|---|---|---|---|
| **Blanks:** | ≤LOQ | Once per extraction group (≤20) of samples, each matrix, level, instrument | Inject a hexane or solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected if they too, contain the analyte which was contaminating the blank. If the reinjected blank is unacceptable, any affected samples must be reextracted. |

Acceptance limits are based on statistical evaluation of compiled laboratory data and are subject to change.

**Table B5-16**
Statistical Acceptance Limits for
Organochlorine Pesticides/PCBs (8081A/8082)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| Aldrin | 47-122 | 40-150 | 75-145 | 65-134 |
| alpha-BHC | 59-147 | 49-164 | 66-141 | 64-134 |
| Alpha-Chlordane | 80-134 | 88-132 | 84-142 | 38-169 |
| beta-BHC | 72-149 | 69-158 | 79-147 | 31-176 |
| delta-BHC | 66-157 | 62-185 | 67-170 | 68-158 |
| gamma-BHC (Lindane) | 45-130 | 37-145 | 73-141 | 70-138 |
| Chlordane | N/A | N/A | N/A | N/A |
| 4,4-DDT | 59-137 | 56-145 | 78-155 | 62-166 |
| 4,4-DDE | 57-131 | 32-177 | 68-151 | 48-175 |
| 4,4-DDD | 66-141 | 69-155 | 77-150 | 52-181 |
| Dieldrin | 71-129 | 53-145 | 76-135 | 68-139 |
| Endosulfan I | 58-135 | 46-142 | 60-146 | 62-133 |
| Endosulfan II | 73-133 | 56-150 | 73-144 | 65-144 |
| Endosulfan sulfate | 68-157 | 65-167 | 80-151 | 65-154 |
| Endrin | 74-159 | 61-179 | 80-155 | 48-188 |
| Endrin aldehyde | 25-163 | 45-156 | 77-125 | 63-125 |
| Endrin Ketone | 80-132 | 87-126 | 82-137 | 33-173 |
| Gamma-Chlordane | 68-132 | 68-143 | 73-144 | 30-157 |
| Heptachlor | 45-130 | 37-145 | 73-141 | 70-138 |
| Heptachlor epoxide | 73-141 | 62-150 | 81-140 | 69-133 |
| Kepone | N/A | N/A | N/A | N/A |
| Lindane | 65-144 | 67-151 | 74-138 | 43-154 |
| Methoxychlor | 72-160 | 63-185 | 52-174 | 74-162 |
| PCB-1016 | 52-123 | 49-123 | 72-170 | 61-128 |
| PCB-1221 | N/A | N/A | N/A | N/A |
| PCB-1232 | N/A | N/A | N/A | N/A |
| PCB-1242 | N/A | N/A | N/A | N/A |
| PCB-1248 | N/A | N/A | N/A | N/A |
| PCB-1254 | N/A | N/A | N/A | N/A |
| PCB-1260 | 70-125 | 47-136 | 76-122 | 47-139 |
| Toxaphene | N/A | N/A | N/A | N/A |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-17**

Statistical Acceptance Limits for
Organophosphate Pesticides (8141A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| Bolstar | 73-130 | 52-144 | 68-122 | 59-140 |
| Coumaphos | 60-141 | 45-141 | 44-167 | 18-210 |
| Demeton-O | 29-91 | 50-138 | 34-94 | 22-122 |
| Demeton-S | 53-176 | 8-146 | 63-170 | 41-214 |
| Diazinon | 68-142 | 59-176 | 68-146 | 60-148 |
| Dichlorvos | 65-132 | 54-154 | 82-203 | 45-181 |
| Disulfoton | 57-125 | 10-181 | 51-127 | 54-130 |
| Dursban (Chlorpyrifos) | 72-127 | 87-123 | 35-154 | 74-149 |
| EPN | 65-129 | 45-155 | 54-140 | 48-162 |
| Ethion | 66-133 | 35-146 | 57-153 | 57-157 |
| Ethoprop | 63-134 | 56-147 | 65-141 | 76-134 |
| Ethyl parathion | 59-139 | 62-120 | 58-145 | 34-181 |
| Famphur | 49-139 | 61-155 | 60-153 | 45-199 |
| Fensulfothion | 13-124 | 9-152 | 61-200 | 74-143 |
| Fenthion | 59-138 | 68-133 | 68-149 | 66-137 |
| Guthion (Azinphos-methyl) | 43-159 | 28-159 | 47-130 | 36-174 |
| Malathion | 78-130 | 46-150 | 64-157 | 39-176 |
| Merphos | 30-170 | 54-152 | 38-190 | 1-238 |
| Methyl parathion | 53-142 | 51-152 | 56-141 | 63-147 |
| Mevinphos | 30-133 | 35-151 | 55-176 | 25-231 |
| Naled | 42-190 | 1-191 | 19-175 | 19-170 |
| Phorate | 55-148 | 20-193 | 61-134 | 65-130 |
| Ronnel | 77-124 | 21-137 | 62-133 | 67-135 |
| Stirophos | 43-151 | 46-175 | 49-164 | 31-228 |
| Tokuthion | 63-137 | 53-133 | 66-142 | 51-168 |
| Trichloronate | 71-125 | 80-120 | 56-131 | 63-129 |
| Trithion | 66-139 | 63-136 | 57-160 | 55-173 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-18**
Statistical Acceptance Limits for
Herbicides (8151A)

| Compound | Waters | | Soils** | |
|---|---|---|---|---|
| | LCS/LCSD | MS/MSD | LCS/LCSD | MS/MSD |
| 2,4,5-T | 49-158 | 48-180 | 50-159 | 13-189 |
| 2,4,5-TP | 55-128 | 50-134 | 57-135 | 30-151 |
| 2,4-D | 53-145 | 38-176 | 63-132 | 41-158 |
| 2,4-DB | 41-163 | 59-123 | 40-183 | 38-230 |
| 2,4-DP (Dichlorprop) | 76-127 | 74-123 | 68-126 | 59-136 |
| Dalapon | 31-113 | 32-98 | 18-82 | 12-86 |
| Dicamba | 59-134 | 61-144 | 56-125 | 52-126 |
| Dinoseb | 2-90 | 1-119 | 1-36 | 1-48 |
| MCPA | 61-127 | 48-157 | 67-122 | 48-145 |
| MCPP | 67-119 | 43-159 | 59-123 | 14-168 |
| Pentachlorophenol | 51-123 | 41-105 | 47-109 | 20-117 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-19**
Quality Control
PAHs by HPLC (8310)

| Type | Acceptance Limits (%) WATERS | SOILS | Frequency | Corrective Action |
|---|---|---|---|---|
| **Surrogate:**<br><br>Nitrobenzene or<br>Triphenylene | <br><br>62 - 106<br>71 - 130 | <br><br>32-102<br>69-142 | Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase | Surrogate must be within the limits unless matrix related problems are evident. If matrix related problems are evident, comment on report and in case narrative. |
| **Matrix Spike:**<br>Spike all compounds of interest | See Table B5-20 | | Each group (≤20) of samples per matrix/level | Run LCS for compounds outside acceptance limits |
| **Laboratory Control Sample:**<br>Spike all compounds of interest | See Table B5-20 | | Each group (≤20) of samples per matrix/level | Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits |
| **Matrix Spike Duplicates (RPD):**<br>Spike all compounds of interest | ≤30% | ≤50% | Each group (≤20) of samples per matrix/level | Evaluated by analyst in relation to other QC results |
| **Blanks:** | ≤LOQ | | Once per extraction group (≤20) of samples, each matrix/level | Inject a hexane or solvent blank first, to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected, if they contain the analyte, which was present in the blank. If the reinjected blank is unacceptable, any affected samples must be re-extracted. |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

**Table B5-20**
Statistical Acceptance Limits for
PAHs by HPLC (8310)

| Compound Name | LCS/LCSD% | | MS/MSD% | |
|---|---|---|---|---|
| | WATERS | SOILS | WATERS | SOILS |
| Acenapthene | 41-111 | 83-118 | 71-104 | 79-111 |
| Acenapthylene | 44-115 | 83-118 | 69-112 | 82-119 |
| Anthracene | 62-121 | 67-128 | 40-134 | 71-121 |
| Benzo(a)anthracene | 79-121 | 83-124 | 59-134 | 88-124 |
| Benzo(a)pyrene | 76-121 | 72-124 | 51-140 | 82-116 |
| Benzo(b)fluoranthene | 82-121 | 85-125 | 67-132 | 87-122 |
| Benzo(g,h,i)perylene | 79-116 | 79-118 | 68-124 | 83-114 |
| Benzo(k)fluoranthene | 80-116 | 82-119 | 63-129 | 83-118 |
| Chrysene | 80-119 | 82-125 | 69-126 | 86-121 |
| Dibenzo(a,h)anthracene | 84-121 | 85-122 | 72-129 | 86-121 |
| Fluoranthene | 85-126 | 80-132 | 44-156 | 90-135 |
| Fluorene | 54-116 | 83-120 | 72-115 | 84-121 |
| Indeno(1,2,3-cd)pyrene | 80-119 | 83-122 | 71-127 | 84-120 |
| Naphthalene | 27-112 | 80-118 | 59-110 | 78-117 |
| Phenanthrene | 71-117 | 82-123 | 72-121 | 82-128 |
| Pyrene | 75-119 | 80-123 | 64-124 | 79-121 |

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

## B6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Conditions of the laboratory equipment and instrumentation can have a marked effect on the accuracy and precision of analysis. In order to ensure timely production of data and prevent/address potential malfunctions, Lancaster Laboratories schedules routine preventive maintenance of instruments based on manufacturer's recommendations. Maintenance of the laboratory instruments is the responsibility of the technical group using the equipment in conjunction with our in-house Equipment Maintenance Group. A schedule of routinely performed instrument maintenance tasks is attached as Table B6-1. All preventive maintenance, as well as maintenance performed as corrective action, is recorded in instrument logs. Equipment/Instrumentation is assigned unique designations to allow tracking of the piece of equipment within laboratory documentation. This allows the laboratory to substantiate the instrument condition during the time it was used for testing.

Critical spare parts are kept in supply at the laboratory by the Equipment Maintenance Group. Most items not kept in stock at the laboratory are available through overnight delivery from the manufacturer. In addition, Lancaster Labs maintains multiple numbers of most of the critical instruments used in our laboratory operations. A recent equipment inventory may be found in the *Quality Manual*. Because we are a large laboratory with redundant capacity, the problems of instrument downtime are minimized.

**Table B6-1**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| GC/MS | Change septum | AN*: Min. weekly |
| | Check fans | Monthly |
| | Check cool flow | Monthly |
| | Clean source | Bimonthly or AN |
| | Change oil in diffusion pump | Annually |
| | Change oil in rough pump | Annually |
| GC Volatiles | Check propanol level | AN: Min. semiweekly |
| | Check all flows | Prior to calib. or AN |
| | Conductivity detector maintenance: | AN |
| | Clean cell | AN |
| | Change reaction tube | AN |
| | Change Teflon line | AN |
| | Change resin | AN |
| | Replace trap | AN |
| | Column maintenance | AN |
| | Change PID lamp | AN |
| | Precalibration instrument settings check | Prior to each calibration |
| GC | Septum change | Each run |
| | Column maintenance | AN |
| | Clean detector | AN |
| | Vacuum filters | Semiannually |
| | Leak check ECDs | Semiannually |
| Flame AA | Rinse burner head, chamber and trap | AN: Min. Weekly |
| | Clean nebulizer | Weekly |
| | Inspect tubing and O-rings | Monthly |
| | Replace lamp | AN |
| GFAA | Inspect/clean furnace head and lenses | Daily |
| | Check rinse bottle & drain | Daily |
| | Clean windows | Weekly |
| | Clean air intakes | Monthly |
| | Check Cool-Flow water level | Monthly |
| | Inspect sample introduction capillary | AN |
| | Inspect graphite tube | AN |
| | Adjust/replace electrodes/shroud | AN |
| | Clean Cool-Flow | AN |

**Table B6-1 – Continued**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| Cold Vapor AA | Replace pump tubing | AN: Min. weekly |
| | Lubricate pump head | Monthly |
| | Lubricate autosampler | Weekly |
| | Inspect optical cell and windows | Monthly |
| | Clean | AN |
| ICP | Replace pump winding | Daily |
| | Lubricate autosampler | Daily |
| | Check tubing to torch | Daily |
| | Vacuum instrument airfilters and air intakes | Monthly |
| | Check water filter, replace if needed | Quarterly |
| | Examine vacuum pump | Quarterly |
| | Change vacuum pump oil | Quarterly |
| | Clean optics and lenses | Semiannually |
| | Examine, clean, lubricate moving parts on autosampler | Semiannually |
| | Clean Torch and injector tip | AN |
| | Clean nebulizer and spray chamber | AN |
| | Check fan filters, clean if needed | AN |
| | Check cool flow, clean if needed | AN |
| Infrared Spectrometer (FTIR) | Check on-demand diagnostics | Weekly |
| | Change dessicant | AN |
| HPLC | Pump lubrication | Annually |
| | Check pump seals | Annually |
| | Check valves cleaned or rebuilt | AN |
| | Detector maintenance: | AN |
| | Bulb replacement and adjustment | |
| | Flow cell cleaning | |
| | Routine column maintenance | AN |
| | Replace Teflon lines | AN |
| | Autosampler septa replacement | AN |
| | In-line filter sonication/cleaning | AN |
| | System passivation | AN |
| | PCRS pump lubrication | AN |

**Table B6-1 – Continued**
Preventive Maintenance Schedule

| Instrument | Preventive Maintenance | Frequency |
|---|---|---|
| Total Organic Carbon Analyzer | Check IR zero | AN |
| | Check for leaks | AN |
| | Check acid pump calib. | Bimonthly |
| | Check persulfate pump calibration | Bimonthly |
| | Inspect 6-port rotary valve | AN |
| | Inspect sample pump head | AN |
| | Wash molecular sieve | AN |
| | Check sample loop calibration | Monthly |
| | Clean gas permeation tube | AN |
| | Inspect digestion vessel O-rings | AN |
| | Check activated carbon scrubber | AN |
| | Dust back and clean circuit boards | AN |
| | Check IR cell | AN |
| Total Organic Halogen Analyzer | Polish counter electrode | Daily |
| | Polish sensor electrode | Daily |
| | Clean loaders and pistons | Weekly |
| Autoanalyzer spectrophotometer | Clean sample probe | AN |
| | Clean proportioning pump | AN |
| | Inspect pump tubing, replace if worn | AN |
| | Clean wash receptacles | Monthly |

* AN means as needed. Any of these items may be performed more frequently if response during operation indicates this is necessary.

## B7. Instrument Calibration and Frequency

All measuring and testing equipment having an effect on the accuracy or validity of calibrations and tests will be calibrated and/or verified on an on-going and routine basis. Procedures for initial calibration and continuing calibration verification are in place for all instruments within the laboratory. The calibrations generally involve checking instrument response to standards (standardization) for each target compound to be analyzed. The source and accuracy of standards used for this purpose are integral to obtaining the best quality data. Standards used at Lancaster Laboratories are purchased from commercial supply houses either as neat compounds or as solutions with certified concentrations. The accuracy and quality of these purchased standards is verified through documentation provided by these commercial sources. Most solutions and all neat materials require subsequent dilution to an appropriate working range. All dilutions performed are documented and the resulting solution is checked by obtaining the instrument response of the new solution and comparing with the response to the solution currently in use. Any discrepancies between the responses are investigated and resolved before the new solution is used. Each standard is assigned a code that allows traceability to the original components. The standard container is marked with the code, name of solution, concentration, date prepared, expiration date, and the initials of the preparer. Shelf life and storage conditions for standards are included in the standard operating procedures and old standards are replaced before their expiration date.

Each instrument is calibrated with a given frequency using one or more concentrations of the standard solution. As analysis proceeds, the calibration is checked for any unacceptable change in instrument response. If the calibration check verifies the initial response, the analysis proceeds. If the calibration check indicates that a significant change in instrument response has occurred, then a new calibration is initiated. If necessary, maintenance may be performed before the recalibration.

Some instrumentation calibration involves the comparison of an instrument reading to a physical standard with a known certified value such as balance/weights or comparison against other instrumentation/apparatus such as NIST thermometer.

Calibration records are usually kept in the form of raw data with the other instrument printouts. In cases where no data system is used, calibration data is manually recorded in notebooks. Any maintenance or repair is also recorded in a notebook. The information that is recorded either in the notebooks or on the instrument printout includes the date, instrument ID, employee name and/or identification number, and concentration or code number of standard.

The frequency of calibration and calibration verification, number of concentrations analyzed, and acceptance criteria for each of the instruments to be used are listed in Table B7-1. In addition to checking the instrument response to target compounds, the GC/MS units are checked to ensure that standard mass spectral abundance criteria are met. Before each calibration, instruments used for volatile compound analysis are tuned using bromofluorobenzene (BFB) and instruments used for semivolatile analysis are tuned using decafluorotriphenylphosphine (DFTPP). The key ions and their abundance criteria are listed in Table B7-2.

**Table B7-1**
Instrument Calibration and Frequency

| | *Initial Calibration* | | | *Continuing Calibration Verification* | | |
|---|---|---|---|---|---|---|
| Instrument | Frequency | # Std Conc. | Acceptance Criteria | Frequency | # Std Conc. | Acceptance Criteria |
| GC/MS Volatiles* | After C-cal fails | 6 | RF for SPCCs >0.300 for chlorobenzene, and 1,1,2,2-tetrachloroethane, and >0.100 for 1,1-dichloroethene, bromoform, and chloromethane<br>CCCs ≤30% | Every 12 hours | 1 | RF for SPCCs >0.300 for chlorobenzene, and 1,1,2,2-tetrachloroethane , and >0.100 for 1,1-dichloroethene, bromoform, and chloromethane<br>%Drift for CCCs ≤20 |
| GC/MS Semivolatiles* | After C-cal fails | 6 | RF for SPCC's ≥0.050<br>%RSD for CCC's ≤30% | Every 12 hours | 1 | RF for SPCCs ≥0.050<br>%Drift for CCCs ≤20 |
| GC VOA Halocarbons and/or Aromatics | After C-cal fails | At least 5 | %RSD of <20% for individual compounds or for average of all compounds | Every 12 hours, or every 10 samples | 1 | %Drift ± 15% for individual compounds or average of all compounds |
| GC Pesticides and Herbicides (DDT/Endrin degradation applies to method 8081A only) | Each new run<br>After C-cal fails | 5 | ≤20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Degradation for DDT, endrin 15%<br>Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds. | Every 20 samples or 12 hours | 1 | ≤15% difference for individual analytes, from initial response for quantitation or<br>A CCV is also compliant if the average RPD for all compounds in the CCV standard is ≤15%.<br>DDT/Endrin degradation check every 12 hours or 20 injections |
| HPLC PAHs | Each new run or after C-cal fails | 5 | ≤20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit<br>Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds. | Every 10 samples | 1 | ≤15% difference for individual anlaytes, from initial response for quantitation or<br>A CCV is also compliant if the average RPD for all compounds in the CCV standard is ≤15%. |
| GC TPH-GRO | After C-cal fails | At least 5 | %RSD of <20% otherwise use calibration curve | Every 12 hours or every 10 samples | 1 | %Drift ±15% |
| GC TPH-DRO | After C-cal fails | 5 | % RSD of <20% for average RF otherwise use calibration curve | Every 10 samples | 1 | %Drift ±15% |
| ICP | Each new run | 1 | Independent calibration verification within ±10%, standards <5%RSD | Every 10 samples | 1 | Same as initial |

## Table B7-1 – Continued

Instrument Calibration and Frequency

| | *Initial Calibration* | | | *Continuing Calibration Verification* | | |
|---|---|---|---|---|---|---|
| Instrument | Frequency | # Std Conc. | Acceptance Criteria | Frequency | # Std Conc. | Acceptance Criteria |
| CVAA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | ± 20% of true value |
| GFAA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | ± 20% of true value |
| Flame AA | Each new run | 5 | Independent calibration verification within ±10%<br>Correlation coefficient >0.995 | Every 10 samples | 1 | ± 20% of true value |
| Autoanalyzer | Daily | 6 | Correlation coefficient >0.995 | Every 10 samples | 1 | ± 10% of true value |
| Infrared Spectrophotometer (FTIR) | Monthly | 7 | Correlation coefficient >0.995 | Every 10 samples | 1 | ± 10% of true value |
| TOC Analyzer | Weekly | 5 | ±10% @ STD | Every 10 samples | 1 | ± 10% of true value |
| TOX Analyzer | Each batch | 4 | ±5% @ STD | Every 8 samples | 1 | ± 10% of true value |
| Balance | Daily | 4 | Top-loading balance ±.5%<br>Analytical balances ± .1% for weights >.1 g<br>.05 g ± .5%<br>.02 g ± 1.0%<br>.01 g ± 2.0%<br>.005 g ± 2.0% | N/A | N/A | N/A |

*All compounds with %RSD >15 must use first or second order regression fit of the six calibration points. Alternatively, if average of the %RSD of all compounds in calibration standard is ≤15%, the AVG RF can be used for all compounds.

Abbreviations

# Std Conc. – The number of standard concentrations used

SPCCs – System performance check compounds

CCCs – Calibration check compounds

RF – Response factor

%RSD – Percent relative standard deviation

CCV – Continuing calibration verification

CVAA – Cold vapor atomic absorption spectrophotometer

HPLC – High Performance Liquid Chromatography

ICP – Inductively coupled plasma spectrophotometer; ICP run also includes interelement correction check standard (beginning and end of run)

GFAA – Graphite furnace atomic absorption spectrophotometer

**Table B7-2**
Mass and Ion Abundance Criteria

| *BFB Key Ions* | *Abundance Criteria* |
|---|---|
| 50 | 15% to 40% of mass 95 |
| 75 | 30% to 60% of mass 95 |
| 95 | Base peak, 100% relative abundance |
| 96 | 5% to 9% of mass 95 |
| 173 | Less than 2% of mass 174 |
| 174 | Greater than 50% of mass 95 |
| 175 | 5% to 9% of mass 174 |
| 176 | Greater than 95% but less than 101% of mass 174 |
| 177 | 5% to 9% of mass 176 |
| *DFTPP Key Ions* | *Abundance Criteria* |
| 51 | 30% to 60% of mass 198 |
| 68 | Less than 2% of mass 69 |
| 70 | Less than 2% of mass 69 |
| 127 | 40% to 60% of mass 198 |
| 197 | Less than 1% of mass 198 |
| 198 | Base peak, 100% relative abundance |
| 199 | 5% to 9% of mass 198 |
| 275 | 10% to 30% of mass 198 |
| 365 | Greater than 1% of mass 198 |
| 441 | Present but less than mass 443 |
| 442 | Greater than 40% of mass 198 |
| 443 | 17% to 23% of mass 442 |

## B8. Inspection/Acceptance Requirements for Supplies and Consumables

Analytical results can be affected by the type and quality of reagents, standards, and equipment. Time and effort could be lost if the reagents, standards, and equipment do not meet the specifications required for the method. Therefore, the specifications and/or requirements for reagents, standards, and equipment necessary to perform the testing methods are included in the analytical SOPs. Each technical department evaluates the reagents, standards and equipment they receive for acceptance and use in specific procedures. There are SOPs in place for procurement of supplies, and acceptance/evaluation of reagents and standards.

Sample bottles and vials provided to clients are purchased pre-cleaned to meet EPA specifications and guidelines for sample containers. Each lot of preservative purchased is analyzed for quality (signs of contamination) before being added to a sample container.

The deionized water system utilized by Lancaster Laboratories generates water meeting ASTM D1193-91, Type II water criteria and the USEPA Manual for the Certification of Laboratories Analyzing Drinking Water requirements. Appropriate testing is performed to monitor the system. The requirements for the DI system are documented in a laboratory SOP.

## B9. Data Acquisition Requirements (Non-Direct Measurements)

The data acquired from the analytical procedures will be assessed for precision, accuracy, representativeness, comparability, and completeness (PARCCs). These specifications will be met through precision and accuracy criteria as specified in Element B5 and MDLs in Element B4.

Precision – Precision is determined by measuring the agreement among individual measurements of the same property, under similar conditions. The laboratory objective is to equal or exceed the precision demonstrated for the applied analytical method on comparable samples. The degree of agreement is expressed as the relative percent difference (RPD%). Evaluation of the RPD% is based on statistical evaluation of past lab data or guidelines within the methods for organic and inorganic analyses. External evaluation of precision is accomplished by analysis of standard reference material and interlaboratory performance data.

Accuracy – Accuracy is a measure of the closeness of an individual measurement to the true or expected value. Analyzing a reference material of known concentration or reanalyzing a sample which has been spiked with a known concentration/amount is a way to determine accuracy. Accuracy is expressed as a percent recovery (%R). Evaluation of the %R is based on statistical evaluation of past lab data or guidelines within the methods for organic and inorganic analyses.

Representativeness – Representativeness expresses the degree to which data accurately represents the media and conditions being measured. The representativeness of the data from the sampling site will depend on the sampling procedure. Sample collection is the responsibility of the client. Samples will be homogenized, if required, as part of the laboratory sample preparation. By comparing the quality control data for the samples against other data for similar samples analyzed at the same time, representativeness can be determined for this objective.

Comparability – Comparability conveys the confidence with which one set of data can be compared to another. The analytical results can be compared to other laboratories by using traceable standards, standard methodology, and consistent

reporting units. The Laboratory Quality Assurance Program documents internal performance, and the interlaboratory studies document performance compared to other laboratories.

Completeness – Completeness is a measure of the quantity of valid data acquired from a measurement process compared to the amount that was expected to be acquired under the measurement conditions. The completeness of an analysis can be documented by including in the data deliverables sufficient information to allow the data user to assess the quality of the results. Additional information will be stored in the laboratory's archives, both hard copy and magnetic tape. SOPs are in place to provide traceability of all reported results.

Uncertainty – (ISO 17025) "All uncertainty components which are of importance in a given situation shall be taken into account using appropriate methods of analysis." (5.4.6.3) This means the laboratory must determine the uncertainty contribution of all steps in the testing process such as equipment, calibration, standards, reagents, preparation, cleanups, etc. Since, in most methods, the laboratory control sample (LCS) goes through the entire process of preparation to analysis; all factors that would contribute to uncertainty will be evident through the LCS results. LCS are performed with every batch of samples where appropriate for the method.

## B10. Data Management

At a minimum data management is initiated when Lancaster Laboratories receives the samples from the client. In many instances, client-communicated requirements for bottleware and analyses are documented on an Incoming Sample Activity Report (ISAR) prior to sample receipt. This communication helps ensure that analysis and reporting meet the client needs. Sample information and requested analyses are entered into the Laboratory Information Management System (LIMS) where it can be accessed by all laboratory personnel. The entry is based on the ISAR and the client's COC. After entry, labels are printed for each container and an Acknowledgement is printed for the client. This will show exactly what was entered for the client's samples.

The flow of data from the time the samples enter the laboratory until the data is reported is summarized in Table B10-1. Raw analytical data generated in the laboratories is collected on printouts from the instruments and associated data system or manually in bound notebooks. All data is tracked by a unique seven-digit sample number assignment. Analysts review data as it is generated to determine that the instruments and methods are performing within specifications. This review includes calibration checks, surrogate recoveries, blank checks, retention time reproducibility, and other QC checks described in Elements B4, B5, and B7. If any problems are noted during the analytical run and/or at completion, corrective action is taken and documented.

Any data recorded manually is collected in bound notebooks and recorded in indelible ink, as described in Element A9. Procedures are in place for handling erroneous entries and all changes are dated, initialed, and explained. All data is uploaded automatically or manually entered into the LIMS. The LIMS is programmed to accept and track the results of quality control samples including blanks, surrogates, recoveries, duplicates, controls, and reference materials. The LIMS is programmed with the acceptance criteria for each QC type and if results are outside specifications, then a message is displayed to the analyst. Data

obtained from instrument printouts are dated and contain the signature and/or identification of the analyst responsible for the generation. The LIMS also produces control charts and statistics, which are reviewed by QA staff for trends that may indicate problems with the analytical data.

Computer technology is an integral part of laboratory operations including analytical instrumentation and central corporate functions. The laboratory makes extensive use of computers for business applications, technical operations, and the QA program. The Information Technology (IT) group support hardware and software applications at all levels as their primary function. Although some commercial software has been adapted to the laboratory operation, a larger portion is custom programmed by the IT group. The System Development Life Cycle (SDLC) approach is utilized and hardware and software are evaluated for appropriate functionality, accuracy, and security. Changes to systems and testing are documented. As part of QA's routine traceability audits, the electronic records are reviewed.

The principle criteria used to validate data will be the acceptance criteria described in Elements B4, B5, and B7 and protocols specified in laboratory SOPs. Following review, interpretation, and data reduction by the analyst, data is transferred to the LIMS by direct data upload from the analytical data system or manually. This system stores client information, sample results, and QC results. Element D1 describes the data deliverables validation performed by the laboratory.

Project files are created per client/project and contain chain-of-custody records, analysis requirements, and laboratory acknowledgments that document samples received, laboratory sample number assignment, and analyses requested. Raw data is filed per batch number assignment and laboratory sample number that correlates to the sample receipt documents. When the project is complete, all documentation is archived for 10 years in a locked storage area.

**Table B10-1**
Sample and Data Flow

| Action | Personnel Involved |
|---|---|
| Sample received at Lancaster Labs<br>• Unpacked and reconciled against the client paper work or Chain of Custody<br>• SA Documentation log completed | Sample Administration |
| Sample is entered into sample management system<br>• Lab ID number assigned<br>• Analyses entered<br>• Chain of custody started<br>• Storage location assigned<br>• Electronic record of sample number<br>• Labels generated<br>• Acknowledgement printed (record of samples received and analysis entered) | Sample Administration |
| Sample stored in assigned location (refrigerator, freezer, etc)<br>• Electronic record of sample #, bottle code, and location | Sample Support |
| Acknowledgment sent to client | Sample Administration |
| Sample removed from storage for analysis<br>• Electronic requisition of sample number by bottle code<br>• Necessary aliquot taken<br>• Sample returned to storage | Technical Personnel |
| Analysis is performed according to selected analytical method<br>• Raw data recorded<br>• Reviewed<br>• Transferred to computer by chemist or technician* (This is tracked by the unique sample number and batch number.) | Technical Personnel |
| Computer performs calculations as programmed according to methods | Data Processing |
| Second chemist or supervisor verifies raw data | Technical Personnel |
| Data package deliverables are assembled | Data Package Group |
| Data packages are reviewed prior to sending to client | QA, Data Package Personnel, and Laboratory Management |
| Data packages are microfilmed or scanned onto CDROM<br>Hard copy of batch raw data is archived<br>Electronic files are backed up and archived | Data Package Personnel, Office Services |

* Analyses requiring the chemist's interpretation may involve manual data reduction before entry into the computer.

Each analytical run is reviewed by a chemist for completeness and accuracy before interpretation and data reduction. The following calculations are used to reduce raw data to reportable results.

***Semivolatiles and Volatiles by GC/MS Calculations:***

GC/MS calculation used by the data system to determine concentration in extract for semivolatiles or in the sample itself for volatiles:

$$Q = (Ax)(Is) / (Als)(RRF)(Vi)$$

Where:

| | | |
|---|---|---|
| Ax | = | Peak area |
| Ais | = | Internal standard peak area |
| Is | = | Amount of internal standard injected (ng) |
| RRF | = | Relative response factor |
| Vi | = | Volume of extract injected (L) or volume sample purged (mL) |

The extract concentration is further reduced by considering the initial sample weight or volume and the final extract volume:

$$Concentration = (Q)(D)(F)(1000) / IV \ (or \ IW)$$

Where:

| | | |
|---|---|---|
| Q | = | Concentration determined by the data system (mg/L) |
| D | = | Dilution factor if needed |
| F | = | Final extract volume (mL) |
| IW | = | Initial sample weight (g) |
| IV | = | Initial sample volument (mL) |

Results are reported in µg/L for water samples and µg/kg for solid samples. Soil samples are reported on a dry-weight basis. The results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Volatiles by GC and Petroleum Analysis Calculations:***

For volatiles by GC and petroleum analysis, a calibration is performed with a minimum of five levels using either an internal standard calibration or external calibration.

A. Internal standard calibration

$$CF = \frac{(Ax)(Cis)}{(Ais)(Cx)} \quad or \quad CF = \frac{(Hx)(Cis)}{(His)(Cx)}$$

Where:

Ax = Peak area of the compound to be measured in that level of the initial calibration

Hx = Height area of the compound to be measured in that level of the initial calibration

Ais = Peak area of the internal standard

His = Height are of the internal standard

Cis = Concentration of the internal standard.

Cx = Concentration of the compound spiked into that level

$$\overline{CF} = \frac{\sum all\ CF\ in\ the\ initial\ calibration}{n}$$

Where:

n = Number of levels in the initial calibration

$$Concentration = \frac{(Ax)(Cis)}{(Ais)(\overline{CF})} \times DF \quad or \quad \frac{(Hx)(Cis)}{(His)(\overline{CF})} \times DF$$

Where:

Ax = Peak area of the compound to be measured
Hx = Height area of the compound to be measured
Ais = Peak area of the internal standard
His = Height area of the internal standard
Cis = Concentration of the internal standard.
$\overline{CF}$ = Average calibration factor
DF = Dilution factor or preparation factor

B. External calibration

$$CF = \frac{Ax}{CF} \times DF \quad or \quad \frac{Hx}{\overline{CF}} \times DF$$

$$Concentration = \frac{Ax}{\overline{CF}} \times DF \quad or \quad \frac{Hx}{\overline{CF}} \times DF$$

Where all parameters are defined in A above.

Results are reported in µg/L for water samples and mg/kg for solid samples. Soil samples are reported on a dry-weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Herbicides and Organophosphate Pesticides***

For herbicides and organophosphate pesticides, an internal standard calibration is used. The results are calculated from the curve when the individual analyte %RSD is >20% and the average of all analyte %RSDs is also >20%. Otherwise, the results are calculated using the average response factor.

A. Curve

$$Sample\ Concentration, \mu g\ /\ kg\ or\ \mu g\ /\ L = Extract\ Concentration \times \frac{DF \times FV}{IW\ (or\ IV)}$$

Where:

Extract Concentration =(peak ht. - y-intercept)/slope

FV = Final volume
IW = Initial weight (g)
IV = Initial volume (mL)
DF = Dilution Factor
AF = Additional preparation factors

B. Average response factor

$$Extract\ Conc., mg/L = \frac{Pk\ Ht\ in\ sample}{ARF} \times \frac{Int\ std\ ht\ in\ L3\ std}{Int\ std\ ht\ in\ sample}$$

Where:

ARF = Average Response Factor [(RF Calib1 + ... + RF Calib 5)/5]
RF = Peak height/conc. in standard

Results are reported as µg/L for water samples and µg/kg for solid samples. Soil samples are reported on a dry weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***PAHs by HPLC and Pesticide/PCB Calculations:***

The results for the PAHs by HPLC and pesticide/PCBs analyses are calculated using external standard. The pesticides/PCBs results are calculated from the curve when the individual analyte %RSD is >20% and the average of all analyte %RSDs is also >20%. Otherwise, the results are calculated using the average response factor.

$$\frac{Pk\ Ht \times FV \times DF \times AF}{ARF \times IV\ (or\ IW)} = Concentration\ (mg/L\ or\ \mu g/kg)$$

Where:

| | | |
|---|---|---|
| Pk Ht | = | Peak height found in sample |
| ARF | = | Average response factor [(RFCalib1 + …+ RFCalib5)/5] |
| FV | = | Final volume of sample extract (mL) |
| DF | = | Dilution factor (where applicable) |
| IV | = | Initial volume of sample extracted (mL) |
| IW | = | Initial weight of the sample extracted (g) |
| AF | = | Additional factor |

If a curve is used, then $\frac{\text{Pk Ht}}{\text{ARF}}$ is replaced by the following in the preceding equation:

$$\frac{Pk\ Ht \quad - \quad y - intercept}{slope}$$

Results are reported as μg/L for water samples and μg/kg for solid samples. Soil samples are reported on dry weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***TPH-GRO and TPH-DRO Calculations:***

For TPH-GRO and TPH-DRO, an external calibration procedure of at least five levels of standards is used. The resulting point-to-point calibration curve is used by the data system to calculate analyte concentrations. The equations that the data system uses for calculating analyte concentrations are shown below:

$$Concentration = (Ax/ARF) \times (DF)$$

Where:

Ax = Total peak area in region defined as analyte
DF = Dilution factor
ARF = Average response factor from the calibration curve, calculated as shown below:

$$ARF = \frac{[(As1/Qs1) + (As2/Qs2) + (As3/Qs3) + (As4/Qs4) + (As5/Qs5) + ... (Asn/Qsn)]}{n}$$

Where:

As# = Analyte peak sum area for all components of calibration level #
Qs# = Analyte concentration sum for all components of calibration level #
n = Number of calibration levels

For DRO, the concentration determined is then multiplied by F/IV (or IW) to account for the sample preparation.

Where:

F = Final extract volume (mL)
IV = Initial sample volume (mL)
IW = Initial sample weight (g)

Results are reported in mg/L for water samples and in mg/kg for solid samples. Soil samples are reported on a dry-weight basis. Results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

***Inorganic Calculations:***

The results for inorganic analyses are calculated using the following equation:

$$Concentration = (A)\ (D)\ (E)\ /\ IV\ (or\ IW)$$

Where:

| | | |
|---|---|---|
| A | = | The concentration determined by AA, ICP, or FTIR using calibration data programmed into the instrument (mg/L) |
| D | = | Dilution factor if needed |
| E | = | Final extract volume (mL) |
| IW | = | Initial sample weight (g) |
| IV | = | Initial sample volume (mL) |

Results are usually reported in mg/L for water samples and in mg/kg for solid samples. Alternate units are available upon request. Soil samples are reported on a dry weight basis. The results are reported on Lancaster Labs Analysis Report Forms shown in Appendix A.

# GROUP C

# ASSESSMENT AND OVERSIGHT

## C1. Assessments and Response Actions

Whenever any of the data generated falls outside of the established acceptance criteria outlined for instrument tune and calibration (Element B7) and internal QC (Element B5), the cause of this irregularity must be investigated, corrected, and documented. The documentation will be used to prevent a recurrence of the problem and to inform management of the situation.

If the results are not within acceptance criteria, the appropriate corrective action will be initiated. This may include, but is not limited to, checking calculations and instrument performance, reanalysis of the associated samples, examining other QC analyzed with the same batch of samples, and qualifying results with a comment stating the observed deviation.

A standard operating procedure is in place, which outlines the procedures to be followed when quality control data for an analysis falls outside of previously established acceptance limits. All batch QC data is entered into the computerized QC system promptly after its generation and evaluated for compliance. When the QC (blanks, check standards, continuing calibration verification, LCS/LCSD, etc) is noncompliant then corrective action is needed.

The Quality Assurance Department reviews monthly summaries of the quality control data entered onto the computerized sample management system by analysts. Control charts and statistics are reviewed for trends that may indicate problems with the analytical data. In this way, small problems are identified before they have any significant impact on laboratory results.

System audits are conducted on each department at Lancaster Laboratories by members of the Quality Assurance Department to ensure compliance with laboratory procedures and assist in identifying and correcting deficiencies. The audits include checks on methodology, reagent preparation, equipment calibration and maintenance, quality control results, and training of personnel. These audits may entail observation of procedures in process or a review of records to demonstrate traceability and compliance with all documented record keeping procedures. The QA Department will then issue a written report to management and the department that summarizes the audit. The department must respond in

writing to the audit report within 30 days of report receipt. The response must address the corrective action that needs to be taken along with an expected completion date. Audit results and the corresponding response are communicated to laboratory personnel and management. Follow-up audits verify that proper corrective action has been implemented.

Audits by outside organizations including clients, regulatory personnel, and the USEPA are permitted by arrangement with the Quality Assurance Department.

Performance audits consist of both intralaboratory and interlaboratory check samples. QC samples from commercial suppliers are analyzed quarterly to assess laboratory accuracy including a double blind program. The Laboratory also participates in a number of interlaboratory performance evaluation studies, which involve analysis of samples with concentrations of analytes that are known to the sponsoring organization, but unknown to the laboratory. Inorganics, pesticide/herbicides, trihalomethanes, volatile organic compounds, semivolatile organic compounds, and traditional wet chemistry analyses are analyzed by Lancaster Labs for studies conducted by the New York Department of Health and private vendors (WS, WP, solid and hazardous waste). Lancaster Labs has participated in the USEPA Contract Laboratory Program, which provides laboratory analysis in support of the Superfund program. Part of maintaining this contract includes analysis of quarterly blind samples. Representative results from some of these studies are in Figure C1-2.

When performance evaluation studies are identified as out of specification or when a nonconformance is due to a repetitive laboratory error, system failures, or observable trend, an Investigation and Corrective Action Report (ICAR) is issued. An example of an ICAR form is in Figure C1-1. The QA Department will circulate all completed Investigation and Corrective Action forms to the appropriate management.

Annually the QA Department itself is audited for compliance with corporate and departmental procedures, and meeting regulatory requirements. In a separate event, the laboratory Executive Group reviews the previous year’s activities and documentation to evaluate the effectiveness of the quality system and its implementation/adequacy for the operation.

# Figure C1-1

No. _____

**Investigation and Corrective Action Report (ICAR)**

**Part I** – Description of the Problem (Attach additional pages, if needed, in addition to supporting documentation.)

1. Date of issue:
2. LL sample number(s) involved:
3. Nature of the problem (describe in detail):

Initiated by: _____

**Part II** - The Investigation (Attach additional pages, if needed, in addition to supporting documentation.)

1. Steps taken to investigate the problem:

2. Explanation of probable cause(s):

3. Steps taken to prevent future occurrence (describe in detail and use corrective action check boxes below):

Corrective action(s): Check the appropriate box and attach supporting documentation

- ☐ Employee(s) retrained. (Attach proof of training)
- ☐ Employee(s) reread SOP, OMC, EQV, etc. (Attach copy of updated training record form)
- ☐ Other measures taken (Attach memo or equivalent proof)
- ☐ Further investigation needed from additional areas. (Include proof of the transfer of information)
- ☐ Additional information added to method reference – Pharm. option only (Attach proof)

4. Must investigation be complete before reporting further data to clients? Yes No

5. In addition to the samples listed above, would any additional data already reported to clients be affected by this problem? Yes No If yes, please explain:

Investigator(s): ..... Date: _____

Departmental Review*: ..... Date: _____
(*Group Leader or above, must be someone other than the investigator)

Quality Assurance: ..... Date: _____

Return to QA by: ..... Date: _____

# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
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## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitrate and Sulfate** | | | | | | | |
| Approval Category : **Air and Emissions** | | | | | | | |
| **Nitrate (as N)** | ug/strip | 4420 | 794. | SM15,p.S28 | 770 | 662 - 878 | Satisfactory |
| *9 passed out of 12 reported results.* | | | | | | | |
| **Sulfate (as SO4)** | ug/strip | 4420 | 920. | SM15,p.S28 | 1000 | 217 - 1780 | Satisfactory |
| *9 passed out of 12 reported results.* | | | | | | | |
| Sample: **Purgeable Aromatics** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,2-Dichlorobenzene** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *134 passed out of 136 reported results.* | | | | | | | |
| **1,3-Dichlorobenzene** | ug/L | 4413 | 35.6 | EPA 624 | 36.9 | 26 - 46.1 | Satisfactory |
| *128 passed out of 134 reported results.* | | | | | | | |
| **1,4-Dichlorobenzene** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *133 passed out of 136 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Aromatics** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Benzene** | ug/L | 4413 | 28.2 | EPA 624 | 27.6 | 19.7 - 35.8 | Satisfactory |
| *132 passed out of 135 reported results.* | | | | | | | |
| **Chlorobenzene** | ug/L | 4413 | 19.1 | EPA 624 | 20 | 14.6 - 25.3 | Satisfactory |
| *128 passed out of 135 reported results.* | | | | | | | |
| **Ethyl benzene** | ug/L | 4413 | 54.2 | EPA 624 | 53.7 | 35.8 - 70.2 | Satisfactory |
| *127 passed out of 133 reported results.* | | | | | | | |
| **Toluene** | ug/L | 4413 | 39.9 | EPA 624 | 40.8 | 29.2 - 51.1 | Satisfactory |
| *134 passed out of 138 reported results.* | | | | | | | |
| **Total Xylenes** | ug/L | 4413 | 82.5 | EPA 624 | 83.6 | 47.5 - 114 | Satisfactory |
| *129 passed out of 136 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|---|
| Sample: **Benzidines** | | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | | |
| **3,3 -dichlorobenzidine** | ug/L | 4415 | 39.8 | | EPA 625 | 45.8 | 5.84 - 75.6 | Satisfactory |
| *92 passed out of 99 reported results.* | | | | | | | | |
| **Benzidine** | ug/L | 4415 | 26.9 | | EPA 625 | 30.6 | D.L. - 75.7 | Satisfactory |
| *80 passed out of 94 reported results.* | | | | | | | | |
| Sample: **Chlorinated Hydrocarbons** | | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | | |
| **1,2,4-Trichlorobenzene** | ug/L | 4415 | 44.4 | | EPA 625 | 73.8 | 21.4 - 89.2 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | | |
| **2-Chloronaphthalene** | ug/L | 4415 | 41.7 | | EPA 625 | 52 | 20.3 - 62.4 | Satisfactory |
| *113 passed out of 117 reported results.* | | | | | | | | |
| **Hexachlorobenzene** | ug/L | 4415 | 54.2 | | EPA 625 | 55.6 | 24.3 - 72 | Satisfactory |
| *115 passed out of 119 reported results.* | | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hexachlorobutadiene** | ug/L | 4415 | 23.4 | EPA 625 | 56.8 | 8.5 - 69.6 | Satisfactory |
| *116 passed out of 118 reported results.* | | | | | | | |
| **Hexachloroethane** | ug/L | 4415 | 33.4 | EPA 625 | 72.3 | 7.69 - 90.7 | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **Hexachlorocyclopentadiene** | ug/L | 4415 | 16.9 | EPA 625 | 81.4 | D.L. - 105 | Satisfactory |
| *105 passed out of 117 reported results.* | | | | | | | |
| Sample: **Demand** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Biochemical Oxygen Demand **** | mg/L | 4401 | 86.2 | EPA 405.1 | 80.6 | 25.6 - 76.5 | Unsatisfactory <=== |
| *239 passed out of 266 reported results.* | | | | | | | |
| **Chemical Oxygen Demand **** | mg/L | 4401 | 111. | EPA 410.2 | 82.4 | 59.9 - 97.9 | Unsatisfactory <=== |
| *106 passed out of 125 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Demand** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Organic Carbon, Total **** | mg/L | 4401 | 50.1 | EPA 415.1 | 32.6 | 27.1 - 37.8 | Unsatisfactory <=== |
| *76 passed out of 91 reported results.* | | | | | | | |
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bis(2-ethylhexyl) phthalate** | ug/L | 4415 | 52.7 | EPA 625 | 55 | 16.8 - 79.6 | Satisfactory |
| *114 passed out of 115 reported results.* | | | | | | | |
| **Benzyl butyl phthalate** | ug/L | 4415 | 60.4 | EPA 625 | 64.2 | D.L. - 103 | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **Di-n-butyl phthalate** | ug/L | 4415 | 89.8 | EPA 625 | 97.7 | 15.3 - 137 | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **Diethyl phthalate** | ug/L | 4415 | 92.1 | EPA 625 | 106 | D.L. - 162 | Satisfactory |
| *115 passed out of 116 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Dimethyl phthalate** | ug/L | 4415 | 24.8 | EPA 625 | 47.3 | 5.55 - 72.1 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Di-n-octyl phthalate** | ug/L | 4415 | 54.2 | EPA 625 | 53.3 | 10.9 - 79.2 | Satisfactory |
| *114 passed out of 114 reported results.* | | | | | | | |
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4-Chlorophenylphenyl ether** | ug/L | 4415 | 63.3 | EPA 625 | 75.7 | 30.4 - 96.1 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **4-Bromophenylphenyl ether** | ug/L | 4415 | 40.9 | EPA 625 | 44.6 | 20.8 - 57.2 | Satisfactory |
| *107 passed out of 111 reported results.* | | | | | | | |
| **Bis(2-chloroethyl)ether** | ug/L | 4415 | 84.7 | EPA 625 | 86.5 | 23.9 - 107 | Satisfactory |
| *112 passed out of 114 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bis(2-chloroethoxy)methane** | ug/L | 4415 | 64.9 | EPA 625 | 60 | 23.5 - 72.2 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **Bis (2-chloroisopropyl) ether** | ug/L | 4415 | 77.7 | EPA 625 | 67.5 | 17 - 95.4 | Satisfactory |
| *111 passed out of 113 reported results.* | | | | | | | |
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,1,1-Trichloroethane** | ug/L | 4413 | 54.7 | EPA 624 | 51.8 | 33.5 - 68.4 | Satisfactory |
| *129 passed out of 133 reported results.* | | | | | | | |
| **1,1,2,2-Tetrachloroethane** | ug/L | 4413 | 40.7 | EPA 624 | 40.6 | 23.4 - 56.9 | Satisfactory |
| *120 passed out of 128 reported results.* | | | | | | | |
| **1,1,2-Trichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 126 reported results.* | | | | | | | |

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Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **1,1-Dichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *127 passed out of 128 reported results.* | | | | | | | |
| **1,1-Dichloroethene** | ug/L | 4413 | 97.8 | EPA 624 | 91.7 | 51.1 - 139 | Satisfactory |
| *126 passed out of 129 reported results.* | | | | | | | |
| **1,2-Dichloroethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *128 passed out of 128 reported results.* | | | | | | | |
| **1,2-Dichloroethene (total)** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 127 reported results.* | | | | | | | |
| **1,2-Dichloropropane** | ug/L | 4413 | 94.0 | EPA 624 | 91.3 | 61.6 - 116 | Satisfactory |
| *122 passed out of 127 reported results.* | | | | | | | |
| **2-Chloroethylvinyl ether** | ug/L | 4413 | < 2.00 | EPA 624 | < 50 | | Satisfactory |
| *115 passed out of 115 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Bromodichloromethane** | ug/L | 4413 | 46.3 | EPA 624 | 44 | 31.1 - 57.3 | Satisfactory |
| *124 passed out of 129 reported results.* | | | | | | | |
| **Bromoform** | ug/L | 4413 | 48.1 | EPA 624 | 50.7 | 33 - 69.4 | Satisfactory |
| *125 passed out of 130 reported results.* | | | | | | | |
| **cis-1,3-Dichloropropene** | ug/L | 4413 | < 1.00 | EPA 624 | < 10 | | Satisfactory |
| *124 passed out of 125 reported results.* | | | | | | | |
| **Carbon tetrachloride** | ug/L | 4413 | < 1.00 | EPA 624 | < 10 | | Satisfactory |
| *126 passed out of 131 reported results.* | | | | | | | |
| **Bromomethane** | ug/L | 4413 | 29.7 | EPA 624 | 40.5 | 10.7 - 70.9 | Satisfactory |
| *121 passed out of 126 reported results.* | | | | | | | |
| **Chloromethane** | ug/L | 4413 | < 3.00 | EPA 624 | < 10 | | Satisfactory |
| *95 passed out of 126 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Trichlorofluoromethane** | ug/L | 4413 | 81.5 | EPA 624 | 81.7 | 15.8 - 143 | Satisfactory |
| *124 passed out of 128 reported results.* | | | | | | | |
| **Dibromochloromethane** | ug/L | 4413 | 82.1 | EPA 624 | 81.1 | 53.7 - 108 | Satisfactory |
| *126 passed out of 130 reported results.* | | | | | | | |
| **Chloroethane** | ug/L | 4413 | 22.7 | EPA 624 | 23.2 | 12.8 - 41.7 | Satisfactory |
| *123 passed out of 128 reported results.* | | | | | | | |
| **Chloroform** | ug/L | 4413 | 72.0 | EPA 624 | 66.2 | 45.8 - 84.8 | Satisfactory |
| *123 passed out of 130 reported results.* | | | | | | | |
| **Dichlorodifluoromethane** | ug/L | 4413 | < 2.00 | EPA 624 | < 10 | | Satisfactory |
| *123 passed out of 123 reported results.* | | | | | | | |
| **Methylene chloride** | ug/L | 4413 | 32.3 | EPA 624 | 29.6 | 18.7 - 41.2 | Satisfactory |
| *124 passed out of 133 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeable Halocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **trans-1,3-Dichloropropene** | ug/L | 4413 | < 0.600 | EPA 624 | < 10 | | Satisfactory |
| *124 passed out of 125 reported results.* | | | | | | | |
| **Tetrachloroethene** | ug/L | 4413 | 66.7 | EPA 624 | 72.1 | 47.7 - 92.1 | Satisfactory |
| *126 passed out of 133 reported results.* | | | | | | | |
| **Trichloroethene** | ug/L | 4413 | 17.2 | EPA 624 | 17.4 | 11.4 - 22.7 | Satisfactory |
| *121 passed out of 132 reported results.* | | | | | | | |
| **Vinyl chloride** | ug/L | 4413 | 16.3 | EPA 624 | 18.4 | 4.29 - 30.9 | Satisfactory |
| *123 passed out of 129 reported results.* | | | | | | | |
| Sample: **Chlorophenoxy Acid Pesticides (Herbicides)** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4,5-T** | ug/L | 4418 | 6.06 | SW846 8151-A | 5.53 | 0.44 - 8.21 | Satisfactory |
| *74 passed out of 74 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorophenoxy Acid Pesticides (Herbicides)** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-D** | ug/L | 4418 | 2.52 | SW846 8151-A | 2.47 | D.L. - 4.45 | Satisfactory |
| *80 passed out of 82 reported results.* | | | | | | | |
| **Dicamba** | ug/L | 4418 | 1.55 | SW846 8151-A | 1.53 | D.L. - 2.49 | Satisfactory |
| *66 passed out of 68 reported results.* | | | | | | | |
| **2,4,5-TP (Silvex)** | ug/L | 4418 | 5.07 | SW846 8151-A | 4.94 | 0.215 - 6.81 | Satisfactory |
| *80 passed out of 82 reported results.* | | | | | | | |
| Sample: **Inorganic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Ammonia (as N) **** | mg/L | 4407 | 11.8 | EPA 350.2 | 12 | 9.31 - 14.6 | Satisfactory |
| *159 passed out of 167 reported results.* | | | | | | | |
| **Nitrate (as N) **** | mg/L | 4407 | 26.1 | EPA 353.2 | 29.4 | 23.3 - 34.9 | Satisfactory |
| *125 passed out of 131 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Inorganic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Orthophosphate (as P) **** | mg/L | 4407 | 1.64 | EPA 365.3 | 1.71 | 1.45 - 1.99 | Satisfactory |
| *106 passed out of 123 reported results.* | | | | | | | |
| Sample: **Mercury** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Mercury, Total **** | ug/L | 4411 | 7.95 | EPA 245.1 | 9.91 | 7.38 - 12.4 | Satisfactory |
| *142 passed out of 159 reported results.* | | | | | | | |
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Silver, Total **** | ug/L | 4411 | 306. | EPA 200.7 | 555 | 476 - 636 | Unsatisfactory <=== |
| *155 passed out of 174 reported results.* | | | | | | | |
| **Aluminum, Total **** | ug/L | 4411 | 361. | EPA 200.7 | 349 | 287 - 413 | Satisfactory |
| *121 passed out of 145 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Arsenic, Total **** | ug/L | 4411 | 92.9 | EPA 200.7 | 97.9 | 78 - 118 | Satisfactory |
| *140 passed out of 162 reported results.* | | | | | | | |
| **Barium, Total** | ug/L | 4411 | 2100. | EPA 200.7 | 2120 | 1800 - 2400 | Satisfactory |
| *148 passed out of 158 reported results.* | | | | | | | |
| **Beryllium, Total **** | ug/L | 4411 | 188. | EPA 200.7 | 202 | 171 - 228 | Satisfactory |
| *127 passed out of 133 reported results.* | | | | | | | |
| **Calcium, Total **** | mg/L | 4411 | 31.7 | EPA 200.7 | 31.81 | 28.2 - 36.2 | Satisfactory |
| *130 passed out of 138 reported results.* | | | | | | | |
| **Cadmium, Total **** | ug/L | 4411 | 680. | EPA 200.7 | 661 | 564 - 750 | Satisfactory |
| *176 passed out of 181 reported results.* | | | | | | | |
| **Cobalt, Total **** | ug/L | 4411 | 87.7 | EPA 200.7 | 93 | 80.2 - 105 | Satisfactory |
| *105 passed out of 113 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chromium, Total **** | ug/L | 4411 | 211. | EPA 200.7 | 221 | 191 - 251 | Satisfactory |
| *167 passed out of 183 reported results.* | | | | | | | |
| **Copper, Total **** | ug/L | 4411 | 137. | EPA 200.7 | 144 | 128 - 161 | Satisfactory |
| *165 passed out of 182 reported results.* | | | | | | | |
| **Iron, Total **** | ug/L | 4411 | 322. | EPA 200.7 | 314 | 274 - 360 | Satisfactory |
| *147 passed out of 170 reported results.* | | | | | | | |
| **Potassium, Total **** | mg/L | 4411 | 1.87 | EPA 200.7 | 1.88 | 1.33 - 2.45 | Satisfactory |
| *123 passed out of 132 reported results.* | | | | | | | |
| **Magnesium, Total **** | mg/L | 4411 | 23.6 | EPA 200.7 | 23.2 | 20.3 - 26 | Satisfactory |
| *134 passed out of 138 reported results.* | | | | | | | |
| **Manganese, Total **** | ug/L | 4411 | 119. | EPA 200.7 | 116 | 102 - 129 | Satisfactory |
| *144 passed out of 156 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Sodium, Total **** | mg/L | 4411 | 8.21 | EPA 200.7 | 8.73 | 7.56 - 10.5 | Satisfactory |
| *127 passed out of 140 reported results.* | | | | | | | |
| **Nickel, Total **** | ug/L | 4411 | 699. | EPA 200.7 | 685 | 617 - 766 | Satisfactory |
| *167 passed out of 182 reported results.* | | | | | | | |
| **Lead, Total **** | ug/L | 4411 | 232. | EPA 200.7 | 222 | 189 - 254 | Satisfactory |
| *183 passed out of 196 reported results.* | | | | | | | |
| **Antimony, Total **** | ug/L | 4411 | 783. | EPA 200.7 | 825 | 585 - 990 | Satisfactory |
| *131 passed out of 142 reported results.* | | | | | | | |
| **Selenium, Total **** | ug/L | 4411 | 717. | EPA 200.7 | 763 | 605 - 884 | Satisfactory |
| *145 passed out of 159 reported results.* | | | | | | | |
| **Thallium, Total **** | ug/L | 4411 | 764. | EPA 200.7 | 782 | 631 - 907 | Satisfactory |
| *114 passed out of 123 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals I and II** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Vanadium, Total **** | ug/L | 4411 | 571. | EPA 200.7 | 600 | 539 - 658 | Satisfactory |
| *112 passed out of 117 reported results.* | | | | | | | |
| **Zinc, Total **** | ug/L | 4411 | 1610. | EPA 200.7 | 1600 | 1420 - 1790 | Satisfactory |
| *169 passed out of 179 reported results.* | | | | | | | |
| Sample: **Metals III** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Molybdenum, Total **** | ug/L | 4411 | 214. | EPA 200.7 | 203 | 173 - 233 | Satisfactory |
| *99 passed out of 109 reported results.* | | | | | | | |
| **Tin, Total** | ug/L | 4411 | 1170. | EPA 200.7 | 1180 | 933 - 1420 | Satisfactory |
| *67 passed out of 79 reported results.* | | | | | | | |
| **Titanium, Total **** | ug/L | 4411 | 72.4 | EPA 200.7 | 73.3 | 61.9 - 83.8 | Satisfactory |
| *57 passed out of 63 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Minerals** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chloride **** | mg/L | 4408 | 62.7 | EPA 325.3 | 63.3 | 56.8 - 69.4 | Satisfactory |
| *125 passed out of 138 reported results.* | | | | | | | |
| **Fluoride, Total **** | mg/L | 4408 | 0.767 | EPA 340.2 | 0.727 | 0.608 - 0.841 | Satisfactory |
| *84 passed out of 99 reported results.* | | | | | | | |
| **Sulfate (as SO4)** | mg/L | 4408 | 91.0 | EPA 375.4 | 94.6 | 78.5 - 108 | Satisfactory |
| *107 passed out of 118 reported results.* | | | | | | | |
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-Dinitrotoluene** | ug/L | 4415 | 70.8 | EPA 625 | 69.4 | 26.6 - 91.9 | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **2,6-Dinitrotoluene** | ug/L | 4415 | 84.0 | EPA 625 | 86 | 32.9 - 112 | Satisfactory |
| *109 passed out of 113 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Isophorone** | ug/L | 4415 | 88.4 | EPA 625 | 85.4 | 30.3 - 113 | Satisfactory |
| *108 passed out of 112 reported results.* | | | | | | | |
| **Nitrobenzene** | ug/L | 4415 | 43.2 | EPA 625 | 43.9 | 15.7 - 56.9 | Satisfactory |
| *112 passed out of 113 reported results.* | | | | | | | |
| Sample: **Nitrosamines** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **N-Nitrosodimethylamine** | ug/L | 4414 | 17.1 | EPA 625 | 32.6 | D.L. - 42.2 | Satisfactory |
| *92 passed out of 99 reported results.* | | | | | | | |
| **N-Nitrosodiphenylamine** | ug/L | 4414 | 39.0 | EPA 625 | 47.3 | 10.6 - 66.7 | Satisfactory |
| *102 passed out of 107 reported results.* | | | | | | | |
| **N-Nitrosodi-n-propylamine** | ug/L | 4414 | 27.7 | EPA 625 | 29.8 | 8.04 - 39.9 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Total Alkalinity** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Alkalinity **** | mg/L | 4406 | 36.8 | EPA 310.1 | 35.3 | 30.5 - 40.8 | Satisfactory |
| *130 passed out of 137 reported results.* | | | | | | | |
| Sample: **Chlordane** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Chlordane Total** | ug/L | 4416 | 10.6 | SW-846 8081A | 9.19 | 4.01 - 13.1 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |
| Sample: **Total Cyanide** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Cyanide, Total **** | mg/L | 4411 | 0.368 | EPA 335.2 | 0.41 | 0.281 - 0.53 | Satisfactory |
| *121 passed out of 130 reported results.* | | | | | | | |
| Sample: **Hydrogen Ion** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hydrogen Ion (pH) **** | | 4403 | 4.53 | EPA 150.1 | 4.48 | 4.41 - 4.56 | Satisfactory |
| *322 passed out of 372 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Oil and Grease** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Oil & Grease Total Recoverable **** | mg/L | 4410 | 9.40 | EPA 413.1 | 9.7 | 3.9 - 14.1 | Satisfactory |
| *131 passed out of 149 reported results.* | | | | | | | |
| Sample: **Organic Nutrients** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Kjeldahl Nitrogen, Total **** | mg/L | 4404 | 5.88 | EPA 351.4 | 6.21 | 4.29 - 8.03 | Satisfactory |
| *124 passed out of 133 reported results.* | | | | | | | |
| **Phosphorus, Total **** | mg/L | 4404 | 9.02 | EPA 365.1 | 9.01 | 6.85 - 10.5 | Satisfactory |
| *144 passed out of 156 reported results.* | | | | | | | |
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Azinphos methyl** | ug/L | 4412 | 1.66 | SW846 8141A | 3.14 | 2.38 - 3.9 | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Diazinon** | ug/L | 4412 | 4.03 | SW846 8141A | 4.3 | 1.9 - 6.7 | Satisfactory |
| *11 passed out of 12 reported results.* | | | | | | | |
| **Disulfoton** | ug/L | 4412 | 6.18 | SW846 8141A | 5.72 | D.L. - 13.3 | Satisfactory |
| *10 passed out of 11 reported results.* | | | | | | | |
| **Demeton-O** | ug/L | 4412 | < 0.400 | SW846 8141A | < 1 | | Satisfactory |
| *10 passed out of 10 reported results.* | | | | | | | |
| **Demeton-S** | ug/L | 4412 | < 0.400 | SW846 8141A | < 1 | | Satisfactory |
| *10 passed out of 10 reported results.* | | | | | | | |
| **Malathion** | ug/L | 4412 | 2.27 | SW846 8141A | 3.53 | 1.01 - 6.72 | Satisfactory |
| *12 passed out of 13 reported results.* | | | | | | | |
| **Parathion ethyl** | ug/L | 4412 | 2.05 | SW846 8141A | 3.5 | 0.518 - 6.48 | Satisfactory |
| *13 passed out of 13 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Parathion methyl** | ug/L | 4412 | 0.798 | SW846 8141A | 1.64 | 0.131 - 3.15 | Satisfactory |
| *12 passed out of 13 reported results.* | | | | | | | |
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Acenaphthene** | ug/L | 4415 | 30.5 | EPA 625 | 33.7 | 13.7 - 43.1 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Anthracene** | ug/L | 4415 | 69.7 | EPA 625 | 78.9 | 29.6 - 102 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Acenaphthylene** | ug/L | 4415 | 101. | EPA 625 | 110 | 43.9 - 133 | Satisfactory |
| *117 passed out of 119 reported results.* | | | | | | | |
| **Benzo(a)anthracene** | ug/L | 4415 | 53.6 | EPA 625 | 53 | 28.7 - 63.5 | Satisfactory |
| *116 passed out of 120 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Benzo(a)pyrene** | ug/L | 4415 | 69.5 | EPA 625 | 80.7 | 20.5 - 105 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(b)fluoranthene** | ug/L | 4415 | 73.9 | EPA 625 | 75.2 | 19.1 - 107 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(ghi)perylene** | ug/L | 4415 | 103. | EPA 625 | 100 | 26.8 - 149 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Benzo(k)fluoranthene** | ug/L | 4415 | 64.4 | EPA 625 | 63.5 | 15.4 - 93.1 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Chrysene** | ug/L | 4415 | 144. | EPA 625 | 140 | 51 - 185 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Dibenzo(a,h)anthracene** | ug/L | 4415 | 29.6 | EPA 625 | 25.1 | 6.09 - 35.2 | Satisfactory |
| *102 passed out of 117 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Fluoranthene** | ug/L | 4415 | 79.4 | EPA 625 | 87.9 | 38.4 - 113 | Satisfactory |
| *118 passed out of 120 reported results.* | | | | | | | |
| **Fluorene** | ug/L | 4415 | 108. | EPA 625 | 122 | 51.1 - 156 | Satisfactory |
| *118 passed out of 119 reported results.* | | | | | | | |
| **Indeno(1,2,3-cd)pyrene** | ug/L | 4415 | 125. | EPA 625 | 125 | 4.78 - 221 | Satisfactory |
| *120 passed out of 120 reported results.* | | | | | | | |
| **Naphthalene** | ug/L | 4415 | 74.0 | EPA 625 | 90.4 | 23.5 - 118 | Satisfactory |
| *119 passed out of 119 reported results.* | | | | | | | |
| **Phenanthrene** | ug/L | 4415 | 80.4 | EPA 625 | 86.2 | 33.8 - 112 | Satisfactory |
| *119 passed out of 120 reported results.* | | | | | | | |
| **Pyrene** | ug/L | 4415 | 95.5 | EPA 625 | 98.5 | 32.7 - 134 | Satisfactory |
| *120 passed out of 120 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **PCB-1016** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 127 reported results.* | | | | | | | |
| **PCB-1221** | ug/L | 4417 | 5.85 | SW-846 8082 | 5.7 | 1 - 8.47 | Satisfactory |
| *107 passed out of 128 reported results.* | | | | | | | |
| **PCB-1232** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *126 passed out of 126 reported results.* | | | | | | | |
| **PCB-1242** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 127 reported results.* | | | | | | | |
| **PCB-1248** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *128 passed out of 129 reported results.* | | | | | | | |
| **PCB-1254** | ug/L | 4417 | 7.26 | SW-846 8082 | 7.22 | 3.53 - 9.15 | Satisfactory |
| *121 passed out of 130 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **PCB-1260** | ug/L | 4417 | < 0.20 | SW-846 8082 | < 10 | | Satisfactory |
| *127 passed out of 128 reported results.* | | | | | | | |
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4,4-DDD** | ug/L | 4417 | 1.28 | SW-846 8081A | 1.4 | 0.677 - 1.96 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **4,4-DDE** | ug/L | 4417 | < 0.04 | SW-846 8081A | < 5 | | Satisfactory |
| *101 passed out of 105 reported results.* | | | | | | | |
| **4,4-DDT** | ug/L | 4417 | 0.771 | SW-846 8081A | 0.93 | 0.409 - 1.28 | Satisfactory |
| *94 passed out of 104 reported results.* | | | | | | | |
| **alpha-BHC** | ug/L | 4417 | 7.15 | SW-846 8081A | 9.11 | 3.26 - 12.7 | Satisfactory |
| *106 passed out of 108 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Aldrin** | ug/L | 4417 | 11.0 | SW-846 8081A | 14.7 | 3.78 - 19.8 | Satisfactory |
| *103 passed out of 106 reported results.* | | | | | | | |
| **beta-BHC** | ug/L | 4417 | 9.92 | SW-846 8081A | 11.7 | 4.4 - 16.8 | Satisfactory |
| *103 passed out of 108 reported results.* | | | | | | | |
| **delta-BHC** | ug/L | 4417 | < 0.58 | SW-846 8081A | < 5 | | Satisfactory |
| *102 passed out of 106 reported results.* | | | | | | | |
| **Dieldrin** | ug/L | 4417 | 0.647 | SW-846 8081A | 0.85 | 0.436 - 1.18 | Satisfactory |
| *98 passed out of 105 reported results.* | | | | | | | |
| **Endrin aldehyde** | ug/L | 4417 | 5.97 | SW-846 8081A | 6.44 | 2.12 - 9.45 | Satisfactory |
| *97 passed out of 105 reported results.* | | | | | | | |
| **Endrin** | ug/L | 4417 | 6.31 | SW-846 8081A | 7.3 | 2.8 - 10.4 | Satisfactory |
| *103 passed out of 108 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Endosulfan I** | ug/L | 4417 | 4.00 | SW-846 8081A | 4.41 | 1.81 - 6.23 | Satisfactory |
| *101 passed out of 107 reported results.* | | | | | | | |
| **Endosulfan II** | ug/L | 4417 | < 0.05 | SW-846 8081A | < 2 | | Satisfactory |
| *82 passed out of 103 reported results.* | | | | | | | |
| **Endosulfan sulfate** | ug/L | 4417 | 11.4 | SW-846 8081A | 12.6 | 2.54 - 20.4 | Satisfactory |
| *101 passed out of 104 reported results.* | | | | | | | |
| **Heptachlor** | ug/L | 4417 | 1.08 | SW-846 8081A | 1.4 | 0.373 - 1.95 | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |
| **Heptachlor epoxide** | ug/L | 4417 | 0.842 | SW-846 8081A | 1.07 | 0.543 - 1.38 | Satisfactory |
| *104 passed out of 108 reported results.* | | | | | | | |
| **Lindane** | ug/L | 4417 | 9.64 | SW-846 8081A | 12 | 3.86 - 17.4 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Methoxychlor** | ug/L | 4417 | 7.43 | SW-846 8081A | 9.36 | 3.74 - 13.6 | Satisfactory |
| *90 passed out of 93 reported results.* | | | | | | | |
| Sample: **Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Phenols **** | mg/L | 4409 | 0.467 | EPA 420.2 | 0.866 | 0.311 - 0.836 | Satisfactory |
| *100 passed out of 107 reported results.* | | | | | | | |
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4,5-Trichlorophenol** | ug/L | 4415 | 70.5 | EPA 625 | 66.9 | 28.8 - 84.6 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |
| **2,4,6-Trichlorophenol** | ug/L | 4415 | 152. | EPA 625 | 148 | 48 - 196 | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **2,4-Dichlorophenol** | ug/L | 4415 | 41.4 | EPA 625 | 42.6 | 15.5 - 53.6 | Satisfactory |
| *115 passed out of 117 reported results.* | | | | | | | |
| **2,4-Dimethylphenol** | ug/L | 4415 | 78.2 | EPA 625 | 90.2 | 18.5 - 119 | Satisfactory |
| *114 passed out of 117 reported results.* | | | | | | | |
| **2,4-Dinitrophenol** | ug/L | 4415 | < 10.0 | EPA 625 | < 50 | | Satisfactory |
| *110 passed out of 114 reported results.* | | | | | | | |
| **2-Chlorophenol** | ug/L | 4415 | 39.2 | EPA 625 | 40.9 | 13.6 - 52.5 | Satisfactory |
| *115 passed out of 117 reported results.* | | | | | | | |
| **2-Methyl-4,6-dinitrophenol** | ug/L | 4415 | 60.7 | EPA 625 | 80.1 | 16.5 - 107 | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **2-Nitrophenol** | ug/L | 4415 | < 0.30 | EPA 625 | < 50 | | Satisfactory |
| *110 passed out of 115 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **4-Chloro-3-methylphenol** | ug/L | 4415 | 35.1 | EPA 625 | 36.3 | 12.7 - 46.8 | Satisfactory |
| *114 passed out of 117 reported results.* | | | | | | | |
| **4-Nitrophenol** | ug/L | 4415 | 19.9 | EPA 625 | 64.3 | D.L. - 92.3 | Satisfactory |
| *112 passed out of 117 reported results.* | | | | | | | |
| **Phenol** | ug/L | 4415 | 33.5 | EPA 625 | 73.7 | D.L. - 101 | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **Pentachlorophenol** | ug/L | 4415 | 40.1 | EPA 625 | 54.3 | 10.9 - 75 | Satisfactory |
| *113 passed out of 116 reported results.* | | | | | | | |
| Sample: **Residue** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Solids, Total Dissolved **** | mg/L | 4402 | 481. | EPA 160.1 | 475 | 364 - 586 | Satisfactory |
| *140 passed out of 142 reported results.* | | | | | | | |

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Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Residue** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Solids, Total Suspended **** | mg/L | 4402 | 76.4 | EPA 160.2 | 77.5 | 59.8 - 83.6 | Satisfactory |
| *322 passed out of 333 reported results.* | | | | | | | |
| **Solids, Total** | mg/L | 4402 | 549. | EPA 160.3 | 555 | 503 - 596 | Satisfactory |
| *135 passed out of 143 reported results.* | | | | | | | |
| Sample: **Specific Conductance** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Specific Conductance **** | umhos/cm | 4430 | 143. | EPA 120.1 | 139 | 131 - 147 | Satisfactory |
| *110 passed out of 139 reported results.* | | | | | | | |
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,2,4-Trichlorobenzene** | ug/kg | 4424 | 468. | SW-846 8270C | 372 | D.L. - 786 | Satisfactory |
| *100 passed out of 107 reported results.* | | | | | | | |

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| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2-Chloronaphthalene** | ug/kg | 4424 | 498. | SW-846 8270C | 424 | D.L. - 874 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **Hexachlorobenzene** | ug/kg | 4424 | 1300. | SW-846 8270C | 1260 | 327 - 2190 | Satisfactory |
| *102 passed out of 107 reported results.* | | | | | | | |
| **Hexachlorobutadiene** | ug/kg | 4424 | 2990. | SW-846 8270C | 2110 | 46 - 4170 | Satisfactory |
| *100 passed out of 105 reported results.* | | | | | | | |
| **Hexachloroethane** | ug/kg | 4424 | 2300. | SW-846 8270C | 1560 | D.L. - 3290 | Satisfactory |
| *105 passed out of 106 reported results.* | | | | | | | |
| **Hexachlorocyclopentadiene** | ug/kg | 4424 | < 170. | SW-846 8270C | < 7000 | | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |

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# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlordane** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Chlordane Total** | ug/kg | 4429 | 182. | SW-846 8081A | 132 | 8.4 - 256 | Satisfactory |
| *81 passed out of 87 reported results.* | | | | | | | |
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bis(2-ethylhexyl) phthalate** | ug/kg | 4424 | 1640. | SW-846 8270C | 1440 | 276 - 2600 | Satisfactory |
| *101 passed out of 106 reported results.* | | | | | | | |
| **Benzyl butyl phthalate** | ug/kg | 4424 | 1750. | SW-846 8270C | 1470 | 294 - 2650 | Satisfactory |
| *100 passed out of 106 reported results.* | | | | | | | |
| **Di-n-butyl phthalate** | ug/kg | 4424 | 772. | SW-846 8270C | 683 | 131 - 1240 | Satisfactory |
| *98 passed out of 105 reported results.* | | | | | | | |
| **Diethyl phthalate** | ug/kg | 4424 | 2760. | SW-846 8270C | 2250 | 417 - 4080 | Satisfactory |
| *102 passed out of 106 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Phthalate Esters** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Dimethyl phthalate** | ug/kg | 4424 | 1820. | SW-846 8270C | 1470 | 246 - 2690 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **Di-n-octyl phthalate** | ug/kg | 4424 | 615. | SW-846 8270C | 495 | D.L. - 1040 | Satisfactory |
| *101 passed out of 106 reported results.* | | | | | | | |
| Sample: **Haloethers** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bis(2-chloroethoxy)methane** | ug/kg | 4424 | 580. | SW-846 8270C | 387 | 3 - 771 | Satisfactory |
| *91 passed out of 101 reported results.* | | | | | | | |
| **Bis (2-chloroisopropyl) ether** | ug/kg | 4424 | 2160. | SW-846 8270C | 1330 | D.L. - 2780 | Satisfactory |
| *99 passed out of 101 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorophenoxy Acid Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4,5-T** | ug/kg | 4428 | 188. | SW846 8151-A | 171 | D.L. - 438 | Satisfactory |
| *58 passed out of 59 reported results.* | | | | | | | |
| **2,4-D** | ug/kg | 4428 | 93.0 | SW846 8151-A | 61.8 | D.L. - 169 | Satisfactory |
| *51 passed out of 59 reported results.* | | | | | | | |
| **Dicamba** | ug/kg | 4428 | 157. | SW846 8151-A | 129 | D.L. - 330 | Satisfactory |
| *57 passed out of 58 reported results.* | | | | | | | |
| **2,4,5-TP (Silvex)** | ug/kg | 4428 | 74.0 | SW846 8151-A | 69.7 | D.L. - 176 | Satisfactory |
| *54 passed out of 59 reported results.* | | | | | | | |
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Silver, Total** | mg/kg | 4422 | 57.5 | SW-846 6010B | 55 | 39.8 - 70.2 | Satisfactory |
| *121 passed out of 133 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Arsenic, Total** | mg/kg | 4422 | 74.5 | SW-846 6010B | 70.2 | 49.1 - 91.3 | Satisfactory |
| *120 passed out of 127 reported results.* | | | | | | | |
| **Barium, Total** | mg/kg | 4422 | 499. | SW-846 6010B | 473 | 360 - 586 | Satisfactory |
| *122 passed out of 130 reported results.* | | | | | | | |
| **Cadmium, Total** | mg/kg | 4422 | 71.0 | SW-846 6010B | 67.5 | 52.7 - 82.4 | Satisfactory |
| *134 passed out of 139 reported results.* | | | | | | | |
| **Chromium, Total** | mg/kg | 4422 | 104. | SW-846 6010B | 98.7 | 70.5 - 127 | Satisfactory |
| *129 passed out of 138 reported results.* | | | | | | | |
| **Nickel, Total** | mg/kg | 4422 | 106. | SW-846 6010B | 98.8 | 74.9 - 123 | Satisfactory |
| *132 passed out of 138 reported results.* | | | | | | | |
| **Lead, Total** | mg/kg | 4422 | 101. | SW-846 6010B | 95.3 | 67.6 - 123 | Satisfactory |
| *135 passed out of 145 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Metals** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Antimony, Total** | mg/kg | 4422 | 62.2 | SW-846 6010B | 76.8 | D.L. - 186 | Satisfactory |
| *110 passed out of 116 reported results.* | | | | | | | |
| **Selenium, Total** | mg/kg | 4422 | 63.8 | SW-846 6010B | 57.7 | 35.3 - 80.1 | Satisfactory |
| *115 passed out of 124 reported results.* | | | | | | | |
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4-Dinitrotoluene** | ug/kg | 4424 | 631. | SW-846 8270C | 472 | D.L. - 994 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **2,6-Dinitrotoluene** | ug/kg | 4424 | 1290. | SW-846 8270C | 1120 | 4 - 2240 | Satisfactory |
| *99 passed out of 105 reported results.* | | | | | | | |
| **Isophorone** | ug/kg | 4424 | 1180. | SW-846 8270C | 841 | D.L. - 1740 | Satisfactory |
| *102 passed out of 104 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Nitroaromatics and Isophorone** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Nitrobenzene** | ug/kg | 4424 | 311. | SW-846 8270C | 252 | D.L. - 579 | Satisfactory |
| *94 passed out of 105 reported results.* | | | | | | | |
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Azinphos methyl** | ug/kg | 4423 | 1230. | SW846 8141A | 349 | D.L. - 796 | Unsatisfactory <=== |
| *10 passed out of 11 reported results.* | | | | | | | |
| **Diazinon** | ug/kg | 4423 | 249. | SW846 8141A | 152 | 17 - 287 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Disulfoton** | ug/kg | 4423 | 70.5 | SW846 8141A | 56.1 | 18.6 - 93.6 | Satisfactory |
| *9 passed out of 11 reported results.* | | | | | | | |
| **Demeton-O** | ug/kg | 4423 | < 67.0 | SW846 8141A | < 33 | | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Organophosphate Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Demeton-S** | ug/kg | 4423 | < 67.0 | SW846 8141A | < 33 | | Unsatisfactory <=== |
| *8 passed out of 11 reported results.* | | | | | | | |
| **Malathion** | ug/kg | 4423 | 188. | SW846 8141A | 138 | 27.9 - 248 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Parathion ethyl** | ug/kg | 4423 | 564. | SW846 8141A | 329 | D.L. - 698 | Satisfactory |
| *11 passed out of 11 reported results.* | | | | | | | |
| **Parathion methyl** | ug/kg | 4423 | 236. | SW846 8141A | 91.6 | 0.4 - 183 | Unsatisfactory <=== |
| *10 passed out of 11 reported results.* | | | | | | | |
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Acenaphthene** | ug/kg | 4424 | 1210. | SW-846 8270C | 999 | 60 - 1940 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Anthracene** | ug/kg | 4424 | 1910. | SW-846 8270C | 1820 | 185 - 3460 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Acenaphthylene** | ug/kg | 4424 | 1410. | SW-846 8270C | 1200 | D.L. - 2450 | Satisfactory |
| *106 passed out of 110 reported results.* | | | | | | | |
| **Benzo(a)anthracene** | ug/kg | 4424 | 1570. | SW-846 8270C | 1420 | 361 - 2480 | Satisfactory |
| *101 passed out of 108 reported results.* | | | | | | | |
| **Benzo(a)pyrene** | ug/kg | 4424 | 594. | SW-846 8270C | 517 | 85 - 949 | Satisfactory |
| *99 passed out of 109 reported results.* | | | | | | | |
| **Benzo(b)fluoranthene** | ug/kg | 4424 | 4140. | SW-846 8270C | 3680 | 80 - 7280 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Benzo(ghi)perylene** | ug/kg | 4424 | 543. | SW-846 8270C | 457 | 46 - 868 | Satisfactory |
| *98 passed out of 110 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Benzo(k)fluoranthene** | ug/kg | 4424 | 1520. | SW-846 8270C | 1260 | 78 - 2440 | Satisfactory |
| *28 passed out of 31 reported results.* | | | | | | | |
| **Chrysene** | ug/kg | 4424 | 2290. | SW-846 8270C | 2140 | 610 - 3670 | Satisfactory |
| *100 passed out of 110 reported results.* | | | | | | | |
| **Dibenzo(a,h)anthracene** | ug/kg | 4424 | 2220. | SW-846 8270C | 1990 | 238 - 3740 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |
| **Fluoranthene** | ug/kg | 4424 | 3310. | SW-846 8270C | 3380 | 584 - 6180 | Satisfactory |
| *103 passed out of 110 reported results.* | | | | | | | |
| **Fluorene** | ug/kg | 4424 | 861. | SW-846 8270C | 744 | 81 - 1410 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |
| **Indeno(1,2,3-cd)pyrene** | ug/kg | 4424 | 1480. | SW-846 8270C | 1460 | 152 - 2770 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Naphthalene** | ug/kg | 4424 | 1380. | SW-846 8270C | 1060 | D.L. - 2160 | Satisfactory |
| *103 passed out of 109 reported results.* | | | | | | | |
| **Phenanthrene** | ug/kg | 4424 | 1680. | SW-846 8270C | 1640 | 305 - 2980 | Satisfactory |
| *104 passed out of 110 reported results.* | | | | | | | |
| **Pyrene** | ug/kg | 4424 | 585. | SW-846 8270C | 519 | 84 - 954 | Satisfactory |
| *101 passed out of 110 reported results.* | | | | | | | |
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **PCB-1016** | ug/kg | 4425 | < 340. | SW-846 8082 | < 1700 | | Satisfactory |
| *117 passed out of 117 reported results.* | | | | | | | |
| **PCB-1221** | ug/kg | 4425 | < 340. | SW-846 8082 | < 3300 | | Satisfactory |
| *115 passed out of 116 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Polychlorinated Biphenyls** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **PCB-1232** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **PCB-1242** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *116 passed out of 116 reported results.* | | | | | | | |
| **PCB-1248** | ug/kg | 4425 | < 340. | SW-846 8082 | < 1700 | | Satisfactory |
| *116 passed out of 117 reported results.* | | | | | | | |
| **PCB-1254** | ug/kg | 4425 | 3860. | SW-846 8082 | 3690 | D.L. - 8550 | Satisfactory |
| *117 passed out of 120 reported results.* | | | | | | | |
| **PCB-1260** | ug/kg | 4425 | < 340. | SW-846 8082 | < 2000 | | Satisfactory |
| *117 passed out of 118 reported results.* | | | | | | | |

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Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **4,4-DDD** | ug/kg | 4427 | 67.0 | SW-846 8081A | 41.3 | D.L. - 88.4 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **4,4 -DDE** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *81 passed out of 88 reported results.* | | | | | | | |
| **4,4 -DDT** | ug/kg | 4427 | 80.3 | SW-846 8081A | 56.4 | D.L. - 122 | Satisfactory |
| *88 passed out of 88 reported results.* | | | | | | | |
| **alpha-BHC** | ug/kg | 4427 | 95.7 | SW-846 8081A | 60.9 | D.L. - 126 | Satisfactory |
| *88 passed out of 89 reported results.* | | | | | | | |
| **Aldrin** | ug/kg | 4427 | 52.4 | SW-846 8081A | 30.7 | 5.02 - 56.4 | Satisfactory |
| *82 passed out of 89 reported results.* | | | | | | | |
| **beta-BHC** | ug/kg | 4427 | 62.0 | SW-846 8081A | 37.2 | D.L. - 75.3 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |

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Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **delta-BHC** | ug/kg | 4427 | 64.4 | SW-846 8081A | 38.2 | D.L. - 82.3 | Satisfactory |
| *85 passed out of 89 reported results.* | | | | | | | |
| **Dieldrin** | ug/kg | 4427 | 138. | SW-846 8081A | 88.6 | 9.4 - 168 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Endrin aldehyde** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *76 passed out of 88 reported results.* | | | | | | | |
| **Endrin** | ug/kg | 4427 | 108. | SW-846 8081A | 70.4 | 0.5 - 140 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **Endosulfan I** | ug/kg | 4427 | 65.2 | SW-846 8081A | 37.2 | D.L. - 76.5 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Endosulfan II** | ug/kg | 4427 | < 6.50 | SW-846 8081A | < 50 | | Satisfactory |
| *79 passed out of 87 reported results.* | | | | | | | |

** indicates NVLAP accredited analyte. Lab Code 200387-0. ELAP has applied to A2LA for PT Provider accreditation.

# WADSWORTH CENTER
# NEW YORK STATE DEPARTMENT OF HEALTH
# ENVIRONMENTAL LABORATORY APPROVAL PROGRAM

## Proficiency Test Report



Lab : 10670 LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Chlorinated Hydrocarbon Pesticides** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Endosulfan sulfate** | ug/kg | 4427 | 148. | SW-846 8081A | 80.4 | D.L. - 165 | Satisfactory |
| *86 passed out of 88 reported results.* | | | | | | | |
| **Heptachlor** | ug/kg | 4427 | 273. | SW-846 8081A | 171 | 0.3 - 342 | Satisfactory |
| *88 passed out of 89 reported results.* | | | | | | | |
| **Heptachlor epoxide** | ug/kg | 4427 | 146. | SW-846 8081A | 96.7 | 10 - 183 | Satisfactory |
| *87 passed out of 89 reported results.* | | | | | | | |
| **Lindane** | ug/kg | 4427 | 65.2 | SW-846 8081A | 40.4 | D.L. - 82.4 | Satisfactory |
| *86 passed out of 89 reported results.* | | | | | | | |
| **Methoxychlor** | ug/kg | 4427 | 222. | SW-846 8081A | 126 | D.L. - 279 | Satisfactory |
| *84 passed out of 87 reported results.* | | | | | | | |

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EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2,4,6-Trichlorophenol** | ug/kg | 4424 | 475. | SW-846 8270C | 397 | D.L. - 883 | Satisfactory |
| *96 passed out of 107 reported results.* | | | | | | | |
| **2,4-Dichlorophenol** | ug/kg | 4424 | 954. | SW-846 8270C | 767 | D.L. - 1730 | Satisfactory |
| *102 passed out of 108 reported results.* | | | | | | | |
| **2,4-Dimethylphenol** | ug/kg | 4424 | 346. | SW-846 8270C | 256 | D.L. - 619 | Satisfactory |
| *91 passed out of 107 reported results.* | | | | | | | |
| **2,4-Dinitrophenol** | ug/kg | 4424 | < 670. | SW-846 8270C | 487 | D.L. - 1800 | Unsatisfactory <=== |
| *84 passed out of 108 reported results.* | | | | | | | |
| **2-Chlorophenol** | ug/kg | 4424 | 269. | SW-846 8270C | 219 | D.L. - 488 | Satisfactory |
| *93 passed out of 108 reported results.* | | | | | | | |
| **2-Methyl-4,6-dinitrophenol** | ug/kg | 4424 | 1510. | SW-846 8270C | 1310 | D.L. - 3730 | Satisfactory |
| *97 passed out of 108 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Priority Pollutant Phenols** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **2-Nitrophenol** | ug/kg | 4424 | 447. | SW-846 8270C | 334 | D.L. - 799 | Satisfactory |
| *95 passed out of 108 reported results.* | | | | | | | |
| **4-Chloro-3-methylphenol** | ug/kg | 4424 | 240. | SW-846 8270C | 186 | D.L. - 417 | Satisfactory |
| *93 passed out of 108 reported results.* | | | | | | | |
| **4-Nitrophenol** | ug/kg | 4424 | 399. | SW-846 8270C | 319 | D.L. - 853 | Satisfactory |
| *86 passed out of 108 reported results.* | | | | | | | |
| **Phenol** | ug/kg | 4424 | 264. | SW-846 8270C | 242 | D.L. - 548 | Satisfactory |
| *90 passed out of 108 reported results.* | | | | | | | |
| **Pentachlorophenol** | ug/kg | 4424 | 1130. | SW-846 8270C | 2040 | D.L. - 4750 | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |

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LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,1,1-trichloroethane** | ug/kg | 4431 | 47.8 | SW-846 8260B | 47.8 | 23.3 - 72.3 | Satisfactory |
| *98 passed out of 108 reported results.* | | | | | | | |
| **1,1,2,2-tetrachloroethane** | ug/kg | 4431 | 42.7 | SW-846 8260B | 38.5 | 8.98 - 68 | Satisfactory |
| *96 passed out of 106 reported results.* | | | | | | | |
| **1,1,2-trichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 105 reported results.* | | | | | | | |
| **1,1-dichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *102 passed out of 103 reported results.* | | | | | | | |
| **1,1-dichloroethene** | ug/kg | 4431 | 91.7 | SW-846 8260B | 85.7 | 41.9 - 130 | Satisfactory |
| *95 passed out of 105 reported results.* | | | | | | | |
| **1,2-dichloroethane** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *102 passed out of 105 reported results.* | | | | | | | |

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EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,2-dichloropropane** | ug/kg | 4431 | 169. | SW-846 8260B | 169 | 99.7 - 238 | Satisfactory |
| *96 passed out of 106 reported results.* | | | | | | | |
| **2-chloroethylvinyl ether** | ug/kg | 4431 | < 2.0 | SW-846 8260B | < 50 | | Satisfactory |
| *101 passed out of 102 reported results.* | | | | | | | |
| **Benzene** | ug/kg | 4431 | 53.4 | SW-846 8260B | 52.2 | 27.9 - 76.5 | Satisfactory |
| *105 passed out of 114 reported results.* | | | | | | | |
| **Bromodichloromethane** | ug/kg | 4431 | 84.3 | SW-846 8260B | 83.5 | 45.1 - 122 | Satisfactory |
| *96 passed out of 107 reported results.* | | | | | | | |
| **Bromoform** | ug/kg | 4431 | 86.3 | SW-846 8260B | 93.7 | 31.6 - 156 | Satisfactory |
| *99 passed out of 107 reported results.* | | | | | | | |
| **Carbon tetrachloride** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 107 reported results.* | | | | | | | |

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LANCASTER, PA-17601-5994

EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Bromomethane** | ug/kg | 4431 | 63.1 | SW-846 8260B | 57.2 | D.L. - 127 | Satisfactory |
| *98 passed out of 104 reported results.* | | | | | | | |
| **Chloromethane** | ug/kg | 4431 | < 2.00 | SW-846 8260B | < 30 | | Satisfactory |
| *71 passed out of 106 reported results.* | | | | | | | |
| **Trichlorofluoromethane** | ug/kg | 4431 | 73.2 | SW-846 8260B | 76.5 | 25.8 - 127 | Satisfactory |
| *98 passed out of 107 reported results.* | | | | | | | |
| **Chlorobenzene** | ug/kg | 4431 | 34.0 | SW-846 8260B | 34.7 | 11.3 - 58.1 | Satisfactory |
| *107 passed out of 114 reported results.* | | | | | | | |
| **Dibromochloromethane** | ug/kg | 4431 | 147. | SW-846 8260B | 153 | 67.2 - 239 | Satisfactory |
| *97 passed out of 107 reported results.* | | | | | | | |
| **Chloroethane** | ug/kg | 4431 | 42.4 | SW-846 8260B | 46.3 | 10.3 - 82.3 | Satisfactory |
| *95 passed out of 106 reported results.* | | | | | | | |

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Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Chloroform** | ug/kg | 4431 | 122. | SW-846 8260B | 123 | 66.3 - 180 | Satisfactory |
| *97 passed out of 107 reported results.* | | | | | | | |
| **Dichlorodifluoromethane** | ug/kg | 4431 | < 2.00 | SW-846 8260B | < 15 | | Satisfactory |
| *102 passed out of 103 reported results.* | | | | | | | |
| **Ethylbenzene** | ug/kg | 4431 | 90.6 | SW-846 8260B | 91.7 | 27.8 - 156 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Methylene chloride** | ug/kg | 4431 | 54.3 | SW-846 8260B | 59.4 | 18.6 - 100 | Satisfactory |
| *98 passed out of 107 reported results.* | | | | | | | |
| **trans-1,3-dichloropropene** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *103 passed out of 105 reported results.* | | | | | | | |
| **Tetrachloroethene** | ug/kg | 4431 | 59.3 | SW-846 8260B | 57.7 | 13 - 102 | Satisfactory |
| *99 passed out of 107 reported results.* | | | | | | | |

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EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **Toluene** | ug/kg | 4431 | 73.9 | SW-846 8260B | 73.8 | 29.4 - 118 | Satisfactory |
| *103 passed out of 114 reported results.* | | | | | | | |
| **Trichloroethene** | ug/kg | 4431 | 15.4 | SW-846 8260B | 15.7 | 7.42 - 24 | Satisfactory |
| *95 passed out of 107 reported results.* | | | | | | | |
| **Total Xylenes** | ug/kg | 4431 | 138. | SW-846 8260B | 138 | 38.4 - 238 | Satisfactory |
| *103 passed out of 112 reported results.* | | | | | | | |
| **Vinyl chloride** | ug/kg | 4431 | 29.6 | SW-846 8260B | 31.5 | 4.68 - 58.3 | Satisfactory |
| *95 passed out of 106 reported results.* | | | | | | | |
| **1,2-dichlorobenzene** | ug/kg | 4431 | < 1.00 | SW-846 8260B | < 20 | | Satisfactory |
| *110 passed out of 113 reported results.* | | | | | | | |
| **1,3-dichlorobenzene** | ug/kg | 4431 | 68.7 | SW-846 8260B | 54.5 | D.L. - 118 | Satisfactory |
| *108 passed out of 114 reported results.* | | | | | | | |

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EPA Lab Code : PA00009

Shipment Date : 23-Jul-2001
Closing Date : 07-Sep-2001
Score Date : 28-Sep-2001
Report Date : 02-Oct-2001

Shipment : 245 Non Potable Water Chemistry

| Analyte | Unit | Sample ID | Result | Method | Mean/Target | Satisfactory Limits | Score |
|---|---|---|---|---|---|---|---|
| Sample: **Purgeables** | | | | | | | |
| Approval Category : **Solid and Hazardous Waste** | | | | | | | |
| **1,4-dichlorobenzene** | ug/kg | 4431 | 9.95 | SW-846 8260B | 5.63 | D.L. - 14.7 | Satisfactory |

*49 passed out of 114 reported results.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample: **Total Hardness** | | | | | | | |
| Approval Category : **Non Potable Water** | | | | | | | |
| **Hardness, Total **** | mg/L | 4405 | 264. | EPA 130.2 | 270 | 247 - 294 | Satisfactory |

*118 passed out of 123 reported results.*

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## C2. Reports To Management

Reports of quality status from the Quality Assurance Department to management are made frequently and in various forms. All results from internal or external performance evaluation samples are circulated to management along with corrective action responses. A report of each audit performed is prepared and copied to management. Monthly summaries of data obtained from analysis of quality control check samples are generated via the computerized sample management system. These summaries include mean and standard deviation to aid in assessment of data accuracy and precision. Documentation summarizing problems that require investigation and corrective action are completed by group leaders and circulated to management. Through these channels, laboratory management is kept apprised of QA/QC activities.

Any problems or unusual observations that occur during the analysis of samples for a specific project will be listed on the laboratory report and/or in the case narrative delivered with the data package. The items often discussed in this manner include samples with surrogate recovery outside of the acceptance criteria and samples with matrix problems requiring dilution and causing increased detection limits. Where applicable, any corrective action attempted or performed to address the problem will also be presented.

Monthly and quarterly reports are sent to management which provide them with the quality status on each technical and support department. The reports detail areas of improvement, observable trends, ICAR summaries, MDL/statistical window status, and a summary of client/agency issues.

The laboratory will contact the client for direction regarding major problems. Such as, but not limited to: samples listed on the chain of custody but missing from the shipping container, samples which arrive broken or are accidentally broken in the laboratory, and samples with severe matrix problems. The client will be contacted if it is necessary to change any item in the original approved project plan.

# GROUP D

# DATA VALIDATION AND USABILITY

## D1. Data Review, Verification, and Validation

As stated in Element B10, following review, interpretation, and data reduction by the analyst, the data is transferred into the Laboratory Sample Management System by direct upload from the analytical data system or manually. This system stores the client information, sample results, and QC results. A security system is in place to control access of laboratory personnel and to provide an audit trail for information changes.

The data is again reviewed by the group leader or another analyst whose function is to provide an independent review before data is verified on the sample management system. The person performing the verification step reviews all data including quality control information before verifying the data. Any errors identified and corrected during the review process are documented and addressed with appropriate personnel to ensure generation of quality data.

If data package deliverables have been requested, the laboratory will complete the appropriate forms (see Appendix A) summarizing the quality control information, and transfer copies of all raw data (instrument printouts, spectra, chromatograms, laboratory notebooks, etc.) to the Data Packages Group. This group will combine the information from the various analytical groups and the analytical reports from the Laboratory Sample Management System into one package in the client requested format. This package is reviewed for quality, compliance, and conformance to SOPs and QC requirements. Any analytical problems are discussed in the case narrative, which is also included with the data package deliverables.

The validation of the data for quality assurance includes spot checking raw data versus the final report, checking that all pertinent raw data is included and does refer to the samples analyzed, review of all QC results for conformance with the method, and review of the case narrative for description of any unusual occurrences during analysis. This validation is performed using techniques similar to those used by the Sample Management Office for the USEPA's Contract Laboratory Program.

The validation performed by the laboratory does not address usability of the data, which usually requires some knowledge of the site. The laboratory will make every attempt to meet requirements of the project, thus reducing the need to assess usability of the data.

## D2. Verification and Validation Methods

Lancaster Laboratories has procedures in place to verify that instrumental computers and the computerized sample management system perform at the required accuracy, traceability and security for reporting verified data. Element D1 describes this process in more detail. Knowledge of the site and sampling methods are necessary to assess usability. Therefore, overall data validation and assessment of data usability is the responsibility of the client. Lancaster Laboratories will evaluate the analytical data to verify that method and/or project requirements have been met.

## D3. Reconciliation with User Requirements

Data quality requirements are based on the measurement process and the intended use of the data. Lancaster Laboratories evaluates the QC data generated by the following data quality objectives.

Precision – Precision refers to the reproducibility of a method when it is repeated on a second aliquot of the same sample. The degree of agreement is expressed as the relative percent difference (RPD). The RPD will be calculated according to the following equation:

$$RPD = \frac{\left| D_2 - D_1 \right|}{(D_1 + D_2) / 2} \times 100$$

Where:

$D_1$ = First sample value
$D_2$ = Second sample value (Duplicate)

Duplicates will be run on at least 5% of the samples and matrix spike duplicates are used for organics analyses. Acceptance criteria are detailed in Element B5. All quality control sample results are entered into the computer and compared with acceptance limits. In addition, there is a monthly review of values on the computer QC system. Data obtained from quality control samples is entered onto our computer system that charts the data and calculates a mean and standard deviation on a monthly basis. The Quality Assurance Department then reviews this data for trends, which may indicate analytical problems. The control charts are graphical methods for monitoring precision and bias over time.

Accuracy – Accuracy refers to the agreement between the amount of a compound measured by the test method and the amount present. Accuracy is usually expressed as a percent recovery (R). Recoveries will be calculated according to the following equations:

$$Surrogate\ \%\ Recovery\ = Qd/Qa\ \times 100$$

Where:

Qd = Quantity determined by analysis
Qa = Quantity added to sample

$$Matrix\ Spike\ \%\ Recovery = \left(SSR\ -\ SR\right) / SA \times 100$$

Where:

SSR = Spiked sample results
SR = Sample results
SA = Spike added

$$Laboratory\ Control\ Sample\ \%\ Recovery = LCS\ found\ /\ LCS\ true \times 100$$

Surrogate standards are added to each sample analyzed for organics. Spikes and laboratory control samples will be run on at least 5% of the samples (each batch or SDG, ≤20 samples). Refer to Element B5 for acceptance criteria for accuracy. The computer is programmed to compare the individual values with the acceptance limits and inform the analyst if the results meet specifications. If the results are not within the acceptance criteria, corrective action suitable to the situation will be taken. This may include, but is not limited to, checking calculations and instrument performance, reanalysis of the associated samples, examining other QC analyzed with the same batch of samples, and qualifying results with documentation of any QC problems in the case narrative.

Commercial quality control materials are run at least quarterly to ensure accuracy of the analytical procedure. Repetitive analysis of a reference material will also yield precision data. Accuracy information determined from reference materials is valuable because variables specific to sample matrix are eliminated.
The QC program is capable of charting data for surrogates, spikes, control materials, and reference materials. The Quality Assurance Department reviews these charts in association with the monthly trend report for any indication of possible problems (i.e., shift in the mean and standard deviation).

Completeness – Completeness is the percentage of valid data acquired from a measurement system compared to the amount of valid measurements that were planned to be collected. The objective is analysis of all samples submitted intact, and to ensure that sufficient sample weight/volume is available should the initial analysis not meet acceptance criteria. The laboratory's sample management system will assign a unique identification number to the sample which tracks and controls movement of samples from the time of receipt until disposal. All data generated will be recorded referencing the corresponding sample identification number. The completeness of an analysis can be documented by including in the data deliverables sufficient information to allow the data user to assess the quality of the results. This information will include, but is not limited to, summaries of QC data and sample results, chromatograms, spectra, and instrument tune and calibration data. Additional information will be stored in the laboratory's archives, both hard copy and electronic.

$$Completeness = \frac{Number\ of\ valid\ measurements}{Total\ measurements\ needed} \times 100$$

Method Detection Limit – It is important to ascertain the limit of quantitation that can be achieved by a given method, particularly when the method is commonly used to determine trace levels of analyte. The Environmental Protection Agency has set forth one method for determining method detection limits (MDLs) from which limits of quantitation (LOQs) can be extrapolated. MDLs are evaluated on an annual basis. MDL is defined as follows for all measurements:

$$MDL = t_{(n-1,\ 1-a\ =\ 0.99)} x s$$

Where:

MDL = Method detection limit

s = Standard deviation of the replicate analyses

$t_{(n-1,1-a = 0.99)}$ = Students' t-value for a one-sided 99% confidence level and a standard deviation estimate with n-1 degrees of freedom

**Definitions:**

Calculated Method Detection Limit – The calculated method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. It is determined from analysis, on a given instrument, of a sample in a given matrix containing the analyte.

Reported Method detection limit (MDL) – The reported MDL is defined as the highest of all calculated MDLs obtained from all instruments used for a particular method/matrix. This can be the actual value or a default value set above the calculated values.

Limit of quantitation (LOQ) – The limit of quantitation is defined as the level above which quantitative results may be obtained with a specified degree of confidence. The Lancaster Laboratories' policy is to set quantitation limits at a value at least 3x the MDL.

# APPENDIX A

# EXAMPLE REPORTING FORMS

Lancaster Laboratories
Where quality is a science.

ANALYTICAL RESULTS

Prepared for:

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 753099. Samples arrived at the laboratory on Monday, March 05, 2001.

| Client Description | Lancaster Labs Number |
|---|---|
| Volatiles - Lot 606 | 3563711 |

1 COPY TO Lancaster Laboratories Attn: Ms. Amy Doupe

Questions? Contact your Client Services Representative
Kathy Klinefelter at (717) 656-2300.

Respectfully Submitted,

Robert E. Mellinger
Sr. Chemist/Coordinator

Lancaster Laboratories
Where quality is a science.



**Lancaster Laboratories Sample No. WW 3563711**

Collected: n.a.

Account Number: 00649

Submitted: 03/05/2001 15:20
Reported: 03/10/01 at 09:21 PM
Discard: 4/10/01
Volatiles - Lot 606

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 09108 | 1,2-Dichlorobenzene | 95-50-1 | 37. | 5. | ug/l | 1 |
| 09759 | 1,4-Dichlorobenzene | 106-46-7 | 17. | 5. | ug/l | 1 |
| 09775 | 1,3-Dichlorobenzene | 541-73-1 | 33. | 5. | ug/l | 1 |
| 00520 | PPL by 624 | | | | | |
| 00790 | Trichlorofluoromethane | 75-69-4 | < 5. | 5. | ug/l | 1 |
| 00824 | Acrolein | 107-02-8 | < 100. | 100. | ug/l | 1 |
| 00825 | Acrylonitrile | 107-13-1 | < 50. | 50. | ug/l | 1 |
| 00826 | 2-Chloroethyl Vinyl Ether | 110-75-8 | < 10. | 10. | ug/l | 1 |
| 00827 | Chloromethane | 74-87-3 | < 5. | 5. | ug/l | 1 |
| 00828 | Bromomethane | 74-83-9 | < 5. | 5. | ug/l | 1 |
| 00829 | Vinyl Chloride | 75-01-4 | < 5. | 5. | ug/l | 1 |
| 00830 | Chloroethane | 75-00-3 | < 5. | 5. | ug/l | 1 |
| 00831 | Methylene Chloride | 75-09-2 | 24. | 5. | ug/l | 1 |
| 00832 | 1,1-Dichloroethene | 75-35-4 | < 5. | 5. | ug/l | 1 |
| 00833 | 1,1-Dichloroethane | 75-34-3 | < 5. | 5. | ug/l | 1 |
| 00835 | Chloroform | 67-66-3 | 38. | 5. | ug/l | 1 |
| 00836 | 1,2-Dichloroethane | 107-06-2 | 53. | 5. | ug/l | 1 |
| 00837 | 1,1,1-Trichloroethane | 71-55-6 | 33. | 5. | ug/l | 1 |
| 00838 | Carbon Tetrachloride | 56-23-5 | 33. | 5. | ug/l | 1 |
| 00839 | Bromodichloromethane | 75-27-4 | 68. | 5. | ug/l | 1 |
| 00840 | 1,2-Dichloropropane | 78-87-5 | < 5. | 5. | ug/l | 1 |
| 00841 | trans-1,3-Dichloropropene | 10061-02-6 | < 5. | 5. | ug/l | 1 |
| 00842 | Trichloroethene | 79-01-6 | 20. | 5. | ug/l | 1 |
| 00843 | Benzene | 71-43-2 | 16. | 5. | ug/l | 1 |
| 00844 | cis-1,3-Dichloropropene | 10061-01-5 | < 5. | 5. | ug/l | 1 |
| 00845 | 1,1,2-Trichloroethane | 79-00-5 | < 5. | 5. | ug/l | 1 |
| 00846 | Dibromochloromethane | 124-48-1 | 25. | 5. | ug/l | 1 |
| 00847 | Bromoform | 75-25-2 | 38. | 5. | ug/l | 1 |
| 00848 | Tetrachloroethene | 127-18-4 | 74. | 5. | ug/l | 1 |
| 00849 | 1,1,2,2-Tetrachloroethane | 79-34-5 | < 5. | 5. | ug/l | 1 |
| 00850 | Toluene | 108-88-3 | 34. | 5. | ug/l | 1 |
| 00851 | Chlorobenzene | 108-90-7 | 30. | 5. | ug/l | 1 |
| 00852 | Ethylbenzene | 100-41-4 | 65. | 5. | ug/l | 1 |
| 03535 | trans-1,2-Dichloroethene | 156-60-5 | 29. | 5. | ug/l | 1 |

Lancaster Laboratories
Where quality is a science.



**Lancaster Laboratories Sample No. WW 3563711**

Collected: n.a.

Account Number: 00649

Submitted: 03/05/2001 15:20
Reported: 03/10/01 at 09:21 PM
Discard: 4/10/01
Volatiles - Lot 606

Lancaster Laboratories
2425 New Holland Pike
Lancaster PA 17601-5994

WVVOA

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Limit of Quantitation | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03549 | cis-1,2-Dichloroethene | 156-59-2 | < 5. | 5. | ug/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 09108 | 1,2-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 09759 | 1,4-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 09775 | 1,3-Dichlorobenzene | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |
| 00520 | PPL by 624 | EPA 624 | 1 | 03/06/2001 21:03 | Ryan V. Nolt | 1 |

Lancaster Laboratories
*Where quality is a science.*

WATER VOLATILE SURROGATE RECOVERY

2A

SDG:

| | CLIENT DESIGNATION | S1 (DBFM) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | OTHER | TOTAL OUT |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

| | | QC LIMITS |
|---|---|---|
| S1 (DBFM) | Dibromofluoromethane | 86- 118 |
| S2 (DCA) | 1,2-Dichloroethane-d4 | 80- 120 |
| S3 (TOL) | Toluene-d8 | 88- 110 |
| S4 (BFB) | 4-Bromofluorobenzene | 86- 115 |

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

Lancaster Laboratories
Where quality is a science.

SOIL VOLATILE SURROGATE RECOVERY

2B

LEVEL: SDG:

| | CLIENT DESIGNATION | S1 (DBFM) # | S2 (DCA) # | S3 (TOL) # | S4 (BFB) # | OTHER | TOTAL OUT |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

| | | QC LIMITS |
|---|---|---|
| S1 (DBFM) | Dibromofluoromethane | 80- 120 |
| S2 (DCA) | 1,2-Dichloroethane-d4 | 80- 120 |
| S3 (TOL) | Toluene-d8 | 81- 117 |
| S4 (BFB) | 4-Bromofluorobenzene | 74- 121 |

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Lab File ID: pl19t01.d  BFB Injection Date: 07/19/01

Instrument ID: HP07163  BFB Injection Time: 08:25

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 19.9 |
| 75 | 30.0 - 60.0% of mass 95 | 52.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 8.1 |
| 173 | Less than 2.0% of mass 174 | 0.3 ( 0.4)1 |
| 174 | Greater than 50.0% of mass 95 | 72.5 |
| 175 | 5.0 - 9.0% of mass 174 | 5.4 ( 7.4)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 72.3 ( 99.6)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.2 ( 7.2)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD300 | VSTD300 | pl19i01.d | 07/19/01 | 08:47 |
| 02 | VSTD100 | VSTD100 | pl19i02.d | 07/19/01 | 09:13 |
| 03 | VSTD050 | VSTD050 | pl19i03.d | 07/19/01 | 09:40 |
| 04 | VSTD020 | VSTD020 | pl19i04.d | 07/19/01 | 10:05 |
| 05 | VSTD010 | VSTD010 | pl19i05.d | 07/19/01 | 10:31 |
| 06 | VSTD004 | VSTD004 | pl19i06.d | 07/19/01 | 10:57 |
| 07 | VSTD001 | 1PPBMDL | pl19m01.d | 07/19/01 | 11:22 |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 75-71-8 | Dichlorodifluoromethane | | 2 | U |
| 74-87-3 | Chloromethane | | 2 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 74-83-9 | Bromomethane | | 2 | U |
| 75-00-3 | Chloroethane | | 2 | U |
| 75-69-4 | Trichlorofluoromethane | | 2 | U |
| 60-29-7 | Ethyl Ether | | 2 | U |
| 107-02-8 | Acrolein | | 40 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 76-13-1 | Freon 113 | | 2 | U |
| 67-64-1 | Acetone | | 6 | U |
| 74-88-4 | Methyl Iodide | | 1 | U |
| 67-63-0 | 2-Propanol | | 50 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 107-05-1 | Allyl Chloride | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 75-65-0 | t-Butyl Alcohol | | 10 | U |
| 107-13-1 | Acrylonitrile | | 4 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 1634-04-4 | Methyl Tertiary Butyl Ether | | 1 | U |
| 110-54-3 | n-Hexane | | 2 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 108-20-3 | di-Isopropyl Ether | | 1 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | | 1 | U |
| 126-99-8 | 2-Chloro-1,3-Butadiene | | 1 | U |
| 637-92-3 | Ethyl t-Butyl Ether | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 594-20-7 | 2,2-Dichloropropane | | 1 | U |
| 78-93-3 | 2-Butanone | | 3 | U |
| 107-12-0 | Propionitrile | | 30 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 126-98-7 | Methacrylonitrile | | 10 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 109-99-9 | Tetrahydrofuran | | 3 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 110-82-7 | Cyclohexane | | 2 | U |
| 563-58-6 | 1,1-Dichloropropene | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 78-83-1 | Isobutyl Alcohol | | 100 | U |
| 71-43-2 | Benzene | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 994-05-8 | t-Amyl Methyl Ether | | 1 | U |
| 142-82-5 | n-Heptane | | 2 | U |
| 71-36-3 | n-Butanol | | 100 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 80-62-6 | Methyl Methacrylate | | 1 | U |
| 74-95-3 | Dibromomethane | | 1 | U |
| 123-91-1 | 1,4-Dioxane | | 70 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 79-46-9 | 2-Nitropropane | | 2 | U |
| 110-75-8 | 2-Chloroethyl Vinyl Ether | | 2 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | | 3 | U |
| 108-88-3 | Toluene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 97-63-2 | Ethyl Methacrylate | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 142-28-9 | 1,3-Dichloropropane | | 1 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | | 3 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 1330-20-7 | Xylene (Total) | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 1330-20-7 | m+p-Xylene | | 1 | U |
| 95-47-6 | o-Xylene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 98-82-8 | Isopropylbenzene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 108-86-1 | Bromobenzene | | 1 | U |
| 110-57-6 | trans-1,4-Dichloro-2-Butene | | 15 | U |
| 96-18-4 | 1,2,3-Trichloropropane | | 1 | U |
| 103-65-1 | n-Propylbenzene | | 1 | U |
| 95-49-8 | 2-Chlorotoluene | | 1 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | | 1 | U |
| 106-43-4 | 4-Chlorotoluene | | 1 | U |
| 98-06-6 | tert-Butylbenzene | | 1 | U |
| 76-01-7 | Pentachloroethane | | 1 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | | 1 | U |
| 135-98-8 | sec-Butylbenzene | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 99-87-6 | p-Isopropyltoluene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 104-51-8 | n-Butylbenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | | 2 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKP62

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: VBLKP62

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: HP07163.i/01jul25a.b/pl25b01.d

Level: (low/med) LOW Date Received:

Moisture: not dec. _____ Date Analyzed: 07/25/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL ug/L | Q |
|---|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | | 1 | U |
| 87-68-3 | Hexachlorobutadiene | | 2 | U |
| 91-20-3 | Naphthalene | | 1 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | | 1 | U |

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: pl25b01.d Lab Sample ID: VBLKP62

Date Analyzed: 07/25/01 Time Analyzed: 09:35

Matrix (soil/water) WATER Level: (low/med) LOW

Instrument ID: HP07163

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | LCSWP62 | LCSWP62 | pl25l01.d | 18:14 |
| 02 | 7631- | 3653721 | pl25s20.d | 18:56 |
| 03 | 7631-MS | 3653722 | pl25s21.d | 19:22 |
| 04 | 7631-MSD | 3653723 | pl25s22.d | 19:48 |
| 05 | TBW7- | 3652468 | pl25s23.d | 20:13 |

COMMENTS:

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: pl25s20.d
7631- 3653721
Method: SW-846 8260B
Instrument: HP07163

Matrix Spike: pl25s21.d
7631-MS 3653722
Matrix/Level: WL
Dilution Factor: 1.00

Spike Duplicate: pl25s22.d
7631-MSD 3653723
Batch: P012061AA

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.0 | 20.0 | ND | 17.8 | 17.3 | 89 | 86 | 41-132 | YES | 3 | 30 |
| Chloromethane | 20.0 | 20.0 | ND | 18.6 | 18.9 | 93 | 95 | 48-132 | YES | 2 | 30 |
| Vinyl Chloride | 20.0 | 20.0 | ND | 19.5 | 20.3 | 97 | 102 | 54-133 | YES | 4 | 30 |
| Bromomethane | 20.0 | 20.0 | ND | 19.1 | 19.0 | 96 | 95 | 37-127 | YES | 1 | 30 |
| Chloroethane | 20.0 | 20.0 | ND | 18.0 | 18.3 | 90 | 91 | 55-129 | YES | 1 | 30 |
| Trichlorofluoromethane | 20.0 | 20.0 | ND | 25.5 | 25.6 | 127 | 128 | 46-151 | YES | 1 | 30 |
| Ethyl Ether | 20.0 | 20.0 | ND | 21.2 | 21.7 | 106 | 108 | 72-138 | YES | 2 | 30 |
| Acrolein | 150.0 | 150.0 | ND | 128 | 125 | 86 | 84 | 36-149 | YES | 2 | 30 |
| 1,1-Dichloroethene | 20.0 | 20.0 | 26.5 | 46.9 | 48.2 | 102 | 108 | 75-152 | YES | 3 | 30 |
| Freon 113 | 20.0 | 20.0 | ND | 27.2 | 26.4 | 136 | 132 | 70-157 | YES | 3 | 30 |
| Acetone | 150.0 | 150.0 | ND | 160 | 164 | 107 | 110 | 49-143 | YES | 2 | 30 |
| Methyl Iodide | 20.0 | 20.0 | ND | 22.9 | 23.1 | 115 | 115 | 72-143 | YES | 0 | 30 |
| Carbon Disulfide | 20.0 | 20.0 | ND | 24.9 | 24.8 | 125 | 124 | 58-158 | YES | 0 | 30 |
| 2-Propanol | 150.0 | 150.0 | ND | 152 | 151 | 102 | 101 | 52-152 | YES | 1 | 30 |
| Allyl Chloride | 20.0 | 20.0 | ND | 22.2 | 22.3 | 111 | 111 | 35-154 | YES | 0 | 30 |
| Methylene Chloride | 20.0 | 20.0 | ND | 21.4 | 20.5 | 107 | 103 | 81-134 | YES | 4 | 30 |
| t-Butyl Alcohol | 200.0 | 200.0 | ND | 221 | 218 | 111 | 109 | 50-157 | YES | 1 | 30 |
| Acrylonitrile | 100.0 | 100.0 | ND | 101 | 101 | 101 | 101 | 58-134 | YES | 0 | 30 |
| trans-1,2-Dichloroethene | 20.0 | 20.0 | ND | 21.7 | 22.2 | 108 | 111 | 78-140 | YES | 2 | 30 |
| Methyl Tertiary Butyl Ether | 20.0 | 20.0 | ND | 21.2 | 21.4 | 106 | 107 | 69-134 | YES | 1 | 30 |
| n-Hexane | 20.0 | 20.0 | ND | 24.2 | 25.6 | 121 | 128 | 64-167 | YES | 6 | 30 |
| 1,1-Dichloroethane | 20.0 | 20.0 | ND | 23.5 | 23.4 | 117 | 117 | 77-142 | YES | 0 | 30 |
| 2-Chloro-1,3-Butadiene | 20.0 | 20.0 | ND | 22.6 | 22.6 | 113 | 113 | 74-143 | YES | 0 | 30 |
| di-Isopropyl Ether | 20.0 | 20.0 | ND | 20.0 | 20.4 | 100 | 102 | 75-128 | YES | 2 | 30 |
| Ethyl t-Butyl Ether | 20.0 | 20.0 | ND | 17.7 | 18.3 | 88 | 91 | 73-123 | YES | 4 | 30 |
| cis-1,2-Dichloroethene | 20.0 | 20.0 | ND | 20.3 | 20.4 | 102 | 102 | 76-140 | YES | 0 | 30 |
| 1,2-Dichloroethene (total) | 40.0 | 40.0 | ND | 42.0 | 42.6 | 105 | 106 | 78-140 | YES | 1 | 30 |
| 2,2-Dichloropropane | 20.0 | 20.0 | ND | 23.5 | 22.8 | 118 | 114 | 76-140 | YES | 3 | 30 |
| 2-Butanone | 150.0 | 150.0 | ND | 157 | 158 | 105 | 106 | 56-141 | YES | 1 | 30 |
| Propionitrile | 150.0 | 150.0 | ND | 166 | 161 | 110 | 107 | 70-131 | YES | 3 | 30 |
| Methacrylonitrile | 150.0 | 150.0 | ND | 158 | 160 | 106 | 107 | 76-126 | YES | 1 | 30 |
| Bromochloromethane | 20.0 | 20.0 | ND | 21.1 | 21.1 | 106 | 106 | 57-145 | YES | 0 | 30 |
| Tetrahydrofuran | 100.0 | 100.0 | ND | 103 | 99.3 | 103 | 99 | 68-132 | YES | 4 | 30 |
| Chloroform | 20.0 | 20.0 | ND | 23.1 | 22.9 | 115 | 115 | 76-138 | YES | 0 | 30 |
| 1,1,1-Trichloroethane | 20.0 | 20.0 | ND | 24.9 | 24.8 | 125 | 124 | 78-141 | YES | 1 | 30 |
| Cyclohexane | 20.0 | 20.0 | ND | 22.9 | 23.0 | 114 | 115 | 69-156 | YES | 1 | 30 |
| 1,1-Dichloropropene | 20.0 | 20.0 | ND | 21.5 | 22.0 | 107 | 110 | 80-138 | YES | 2 | 30 |
| Carbon Tetrachloride | 20.0 | 20.0 | ND | 25.2 | 25.0 | 126 | 125 | 66-148 | YES | 1 | 30 |
| Benzene | 20.0 | 20.0 | ND | 21.9 | 21.9 | 110 | 109 | 78-134 | YES | 0 | 30 |
| Isobutyl Alcohol | 500.0 | 500.0 | ND | 554 | 547 | 111 | 109 | 49-146 | YES | 1 | 30 |
| 1,2-Dichloroethane | 20.0 | 20.0 | ND | 24.2 | 23.4 | 121 | 117 | 75-141 | YES | 3 | 30 |
| t-Amyl Methyl Ether | 20.0 | 20.0 | ND | 18.1 | 18.1 | 91 | 91 | 69-126 | YES | 0 | 30 |
| n-Heptane | 20.0 | 20.0 | ND | 19.4 | 19.0 | 97 | 95 | 51-160 | YES | 2 | 30 |
| Trichloroethene | 20.0 | 20.0 | ND | 22.5 | 21.7 | 112 | 108 | 76-137 | YES | 4 | 30 |
| n-Butanol | 1000.0 | 1000.0 | ND | 949 | 922 | 95 | 92 | 48-137 | YES | 3 | 30 |
| 1,2-Dichloropropane | 20.0 | 20.0 | ND | 19.5 | 19.4 | 97 | 97 | 82-128 | YES | 0 | 30 |
| Dibromomethane | 20.0 | 20.0 | ND | 22.0 | 21.6 | 110 | 108 | 82-126 | YES | 2 | 30 |
| 1,4-Dioxane | 500.0 | 500.0 | ND | 489 | 510 | 98 | 102 | 50-138 | YES | 4 | 30 |
| Methyl Methacrylate | 20.0 | 20.0 | ND | 18.9 | 18.7 | 95 | 93 | 64-130 | YES | 1 | 30 |
| Bromodichloromethane | 20.0 | 20.0 | ND | 21.9 | 21.6 | 110 | 108 | 81-127 | YES | 1 | 30 |
| 2-Nitropropane | 20.0 | 20.0 | ND | 20.0 | 19.8 | 100 | 99 | 70-130 | YES | 1 | 30 |
| 2-Chloroethyl Vinyl Ether | 20.0 | 20.0 | ND | ND | ND | 0 | 0 | 1 -150 | NO | 0 | 30 |
| cis-1,3-Dichloropropene | 20.0 | 20.0 | ND | 17.3 | 17.9 | 87 | 89 | 70-123 | YES | 3 | 30 |
| 4-Methyl-2-Pentanone | 100.0 | 100.0 | ND | 115 | 116 | 115 | 116 | 61-141 | YES | 0 | 30 |
| Toluene | 20.0 | 20.0 | ND | 23.1 | 22.6 | 115 | 113 | 78-133 | YES | 2 | 30 |
| trans-1,3-Dichloropropene | 20.0 | 20.0 | ND | 19.8 | 20.0 | 99 | 100 | 76-124 | YES | 1 | 30 |
| Ethyl Methacrylate | 20.0 | 20.0 | ND | 16.4 | 16.4 | 82 | 82 | 65-126 | YES | 0 | 30 |
| 1,1,2-Trichloroethane | 20.0 | 20.0 | ND | 22.3 | 22.1 | 111 | 111 | 82-127 | YES | 0 | 30 |

N/C = Could not calculte

Ent. by _____

Lab Chronicle: _____

Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Matrix Spike/Spike Duplicate Recoveries

Unspiked: pl25s20.d
7631- 3653721
Method: SW-846 8260B
Instrument: HP07163

Matrix Spike: pl25s21.d
7631-MS 3653722
Matrix/Level: WL
Dilution Factor: 1.00

Spike Duplicate: pl25s22.d
7631-MSD 3653723
Batch: P012061AA

| COMPOUND NAME | MS SPIKE | MSD SPIKE | US CONC UG/L | MS CONC UG/L | MSD CONC UG/L | MS REC % | MSD REC % | Range LOWER-UPPER | INSPEC | RPD % | RPD MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 20.0 | 20.0 | 2.76 | 28.8 | 28.3 | 130 | 128 | 72-150 | YES | 2 | 30 |
| 1,3-Dichloropropane | 20.0 | 20.0 | ND | 21.7 | 21.4 | 109 | 107 | 77-126 | YES | 2 | 30 |
| 2-Hexanone | 100.0 | 100.0 | ND | 118 | 116 | 118 | 116 | 56-143 | YES | 1 | 30 |
| Dibromochloromethane | 20.0 | 20.0 | ND | 21.7 | 20.6 | 109 | 103 | 74-125 | YES | 5 | 30 |
| 1,2-Dibromoethane | 20.0 | 20.0 | ND | 21.3 | 20.6 | 106 | 103 | 78-120 | YES | 3 | 30 |
| Chlorobenzene | 20.0 | 20.0 | ND | 22.4 | 22.0 | 112 | 110 | 81-125 | YES | 2 | 30 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.0 | ND | 22.8 | 22.4 | 114 | 112 | 82-125 | YES | 2 | 30 |
| Ethylbenzene | 20.0 | 20.0 | ND | 23.8 | 23.7 | 119 | 119 | 82-134 | YES | 0 | 30 |
| m+p-Xylene | 40.0 | 40.0 | ND | 48.0 | 48.3 | 120 | 121 | 78-139 | YES | 1 | 30 |
| Xylene (Total) | 60.0 | 60.0 | ND | 70.2 | 70.7 | 117 | 118 | 81-136 | YES | 1 | 30 |
| o-Xylene | 20.0 | 20.0 | ND | 22.2 | 22.4 | 111 | 112 | 81-136 | YES | 1 | 30 |
| Styrene | 20.0 | 20.0 | ND | 22.7 | 22.8 | 114 | 114 | 67-145 | YES | 0 | 30 |
| Bromoform | 20.0 | 20.0 | ND | 21.2 | 21.0 | 106 | 105 | 62-127 | YES | 1 | 30 |
| Isopropylbenzene | 20.0 | 20.0 | ND | 23.5 | 23.3 | 118 | 116 | 77-141 | YES | 1 | 30 |
| Bromobenzene | 20.0 | 20.0 | ND | 21.6 | 21.8 | 108 | 109 | 77-123 | YES | 1 | 30 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.0 | ND | 19.5 | 20.0 | 97 | 100 | 70-129 | YES | 3 | 30 |
| 1,2,3-Trichloropropane | 20.0 | 20.0 | ND | 22.2 | 22.7 | 111 | 113 | 73-125 | YES | 2 | 30 |
| trans-1,4-Dichloro-2-Butene | 100.0 | 100.0 | ND | 88.6 | 88.9 | 89 | 89 | 37-135 | YES | 0 | 30 |
| n-Propylbenzene | 20.0 | 20.0 | ND | 22.8 | 23.3 | 114 | 117 | 65-146 | YES | 2 | 30 |
| 2-Chlorotoluene | 20.0 | 20.0 | ND | 21.4 | 21.8 | 107 | 109 | 71-137 | YES | 2 | 30 |
| 4-Chlorotoluene | 20.0 | 20.0 | ND | 22.0 | 22.7 | 110 | 113 | 79-134 | YES | 3 | 30 |
| 1,3,5-Trimethylbenzene | 20.0 | 20.0 | ND | 22.6 | 23.1 | 113 | 116 | 77-137 | YES | 2 | 30 |
| Pentachloroethane | 20.0 | 20.0 | ND | 19.8 | 19.7 | 99 | 99 | 55-128 | YES | 0 | 30 |
| tert-Butylbenzene | 20.0 | 20.0 | ND | 20.6 | 21.9 | 103 | 109 | 74-136 | YES | 6 | 30 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.0 | ND | 23.0 | 23.1 | 115 | 115 | 81-133 | YES | 0 | 30 |
| sec-Butylbenzene | 20.0 | 20.0 | ND | 22.2 | 22.5 | 111 | 112 | 75-138 | YES | 1 | 30 |
| 1,3-Dichlorobenzene | 20.0 | 20.0 | ND | 21.7 | 22.3 | 109 | 112 | 82-128 | YES | 3 | 30 |
| p-Isopropyltoluene | 20.0 | 20.0 | ND | 22.6 | 23.4 | 113 | 117 | 78-138 | YES | 3 | 30 |
| 1,4-Dichlorobenzene | 20.0 | 20.0 | ND | 21.0 | 21.3 | 105 | 106 | 78-131 | YES | 2 | 30 |
| 1,2-Dichlorobenzene | 20.0 | 20.0 | ND | 21.1 | 21.7 | 106 | 108 | 82-125 | YES | 2 | 30 |
| n-Butylbenzene | 20.0 | 20.0 | ND | 21.6 | 22.5 | 108 | 113 | 62-147 | YES | 4 | 30 |
| 1,2-Dibromo-3-Chloropropane | 20.0 | 20.0 | ND | 19.1 | 19.8 | 96 | 99 | 54-130 | YES | 4 | 30 |
| 1,2,4-Trichlorobenzene | 20.0 | 20.0 | ND | 17.6 | 18.3 | 88 | 92 | 60-132 | YES | 4 | 30 |
| Hexachlorobutadiene | 20.0 | 20.0 | ND | 17.1 | 17.8 | 86 | 89 | 45-150 | YES | 4 | 30 |
| Naphthalene | 20.0 | 20.0 | ND | 17.8 | 18.2 | 89 | 91 | 51-134 | YES | 3 | 30 |
| 1,2,3-Trichlorobenzene | 20.0 | 20.0 | ND | 18.6 | 18.9 | 93 | 95 | 60-131 | YES | 2 | 30 |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: pl25l01.d
Inst: HP07163
Dilution Factor: 1.0

Injected: 07/25/01 at 18:14
Sample: LCSWP62

Method: SW-846 8260B
Matrix/Level: WL
Batch: P012061AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 20.00 | 17.19 | 86 | 40-121 | YES |
| Chloromethane | 20.00 | 18.64 | 93 | 51-121 | YES |
| Vinyl Chloride | 20.00 | 19.23 | 96 | 61-117 | YES |
| Bromomethane | 20.00 | 19.27 | 96 | 34-117 | YES |
| Chloroethane | 20.00 | 18.45 | 92 | 53-117 | YES |
| Trichlorofluoromethane | 20.00 | 23.81 | 119 | 50-135 | YES |
| Ethyl Ether | 20.00 | 21.94 | 110 | 78-130 | YES |
| Acrolein | 150.00 | 145.66 | 97 | 53-142 | YES |
| 1,1-Dichloroethene | 20.00 | 22.00 | 110 | 79-136 | YES |
| Freon 113 | 20.00 | 24.99 | 125 | 73-139 | YES |
| Acetone | 150.00 | 166.93 | 111 | 59-140 | YES |
| Methyl Iodide | 20.00 | 21.85 | 109 | 74-133 | YES |
| Carbon Disulfide | 20.00 | 23.19 | 116 | 73-138 | YES |
| 2-Propanol | 150.00 | 157.30 | 105 | 59-143 | YES |
| Allyl Chloride | 20.00 | 16.55 | 83 | 42-145 | YES |
| Methylene Chloride | 20.00 | 21.21 | 106 | 84-128 | YES |
| t-Butyl Alcohol | 200.00 | 245.55 | 123 | 58-147 | YES |
| Acrylonitrile | 100.00 | 102.48 | 102 | 70-133 | YES |
| trans-1,2-Dichloroethene | 20.00 | 21.69 | 108 | 83-129 | YES |
| Methyl Tertiary Butyl Ether | 20.00 | 21.04 | 105 | 77-127 | YES |
| n-Hexane | 20.00 | 21.55 | 108 | 65-152 | YES |
| 1,1-Dichloroethane | 20.00 | 22.36 | 112 | 84-128 | YES |
| 2-Chloro-1,3-Butadiene | 20.00 | 21.04 | 105 | 80-125 | YES |
| di-Isopropyl Ether | 20.00 | 19.62 | 98 | 74-125 | YES |
| Ethyl t-Butyl Ether | 20.00 | 17.18 | 86 | 74-120 | YES |
| cis-1,2-Dichloroethene | 20.00 | 20.05 | 100 | 85-126 | YES |
| 1,2-Dichloroethene (total) | 40.00 | 41.73 | 104 | 85-126 | YES |
| 2,2-Dichloropropane | 20.00 | 21.65 | 108 | 70-135 | YES |
| 2-Butanone | 150.00 | 159.16 | 106 | 69-131 | YES |
| Propionitrile | 150.00 | 165.50 | 110 | 73-128 | YES |
| Methacrylonitrile | 150.00 | 163.01 | 109 | 79-124 | YES |
| Bromochloromethane | 20.00 | 17.11 | 86 | 58-138 | YES |
| Tetrahydrofuran | 100.00 | 101.84 | 102 | 69-131 | YES |
| Chloroform | 20.00 | 22.79 | 114 | 86-124 | YES |
| 1,1,1-Trichloroethane | 20.00 | 23.07 | 115 | 83-127 | YES |
| Cyclohexane | 20.00 | 19.14 | 96 | 70-140 | YES |
| 1,1-Dichloropropene | 20.00 | 19.82 | 99 | 76-131 | YES |
| Carbon Tetrachloride | 20.00 | 23.24 | 116 | 77-130 | YES |
| Benzene | 20.00 | 20.94 | 105 | 85-125 | YES |
| Isobutyl Alcohol | 500.00 | 582.01 | 116 | 55-141 | YES |
| 1,2-Dichloroethane | 20.00 | 23.74 | 119 | 84-131 | YES |
| t-Amyl Methyl Ether | 20.00 | 17.26 | 86 | 77-118 | YES |
| n-Heptane | 20.00 | 16.87 | 84 | 57-146 | YES |
| Trichloroethene | 20.00 | 20.72 | 104 | 86-126 | YES |
| n-Butanol | 1000.00 | 978.11 | 98 | 54-133 | YES |
| 1,2-Dichloropropane | 20.00 | 18.94 | 95 | 83-123 | YES |
| Dibromomethane | 20.00 | 22.15 | 111 | 84-123 | YES |
| 1,4-Dioxane | 500.00 | 491.42 | 98 | 55-136 | YES |
| Methyl Methacrylate | 20.00 | 17.95 | 90 | 74-122 | YES |
| Bromodichloromethane | 20.00 | 21.18 | 106 | 83-121 | YES |
| 2-Nitropropane | 20.00 | 20.15 | 101 | 35-157 | YES |
| 2-Chloroethyl Vinyl Ether | 20.00 | 16.32 | 82 | 49-138 | YES |
| cis-1,3-Dichloropropene | 20.00 | 18.86 | 94 | 81-121 | YES |
| 4-Methyl-2-Pentanone | 100.00 | 119.59 | 120 | 70-132 | YES |
| Toluene | 20.00 | 21.84 | 109 | 86-123 | YES |
| trans-1,3-Dichloropropene | 20.00 | 19.43 | 97 | 79-120 | YES |
| Ethyl Methacrylate | 20.00 | 15.61 | 78 | 69-123 | YES |
| 1,1,2-Trichloroethane | 20.00 | 21.91 | 110 | 86-120 | YES |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
GC/MS Volatiles Laboratory Control Sample Recovery

File: pl25l01.d
Inst: HP07163
Dilution Factor: 1.0

Injected: 07/25/01 at 18:14
Sample: LCSWP62

Method: SW-846 8260B
Matrix/Level: WL
Batch: P012061AA

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCS REC % | Range LOWER-UPPER | INSPEC |
|---|---|---|---|---|---|
| Tetrachloroethene | 20.00 | 24.36 | 122 | 79-136 | YES |
| 1,3-Dichloropropane | 20.00 | 21.21 | 106 | 77-127 | YES |
| 2-Hexanone | 100.00 | 119.76 | 120 | 67-131 | YES |
| Dibromochloromethane | 20.00 | 21.01 | 105 | 78-119 | YES |
| 1,2-Dibromoethane | 20.00 | 20.57 | 103 | 84-119 | YES |
| Chlorobenzene | 20.00 | 21.57 | 108 | 87-121 | YES |
| 1,1,1,2-Tetrachloroethane | 20.00 | 22.68 | 113 | 83-121 | YES |
| Ethylbenzene | 20.00 | 22.72 | 114 | 88-124 | YES |
| m+p-Xylene | 40.00 | 46.62 | 117 | 89-124 | YES |
| Xylene (Total) | 60.00 | 67.91 | 113 | 89-124 | YES |
| o-Xylene | 20.00 | 21.29 | 106 | 79-128 | YES |
| Styrene | 20.00 | 22.66 | 113 | 87-122 | YES |
| Bromoform | 20.00 | 20.86 | 104 | 69-121 | YES |
| Isopropylbenzene | 20.00 | 22.13 | 111 | 77-132 | YES |
| Bromobenzene | 20.00 | 20.55 | 103 | 75-125 | YES |
| 1,1,2,2-Tetrachloroethane | 20.00 | 19.76 | 99 | 78-120 | YES |
| 1,2,3-Trichloropropane | 20.00 | 22.51 | 113 | 82-122 | YES |
| trans-1,4-Dichloro-2-Butene | 100.00 | 81.96 | 82 | 51-132 | YES |
| n-Propylbenzene | 20.00 | 21.07 | 105 | 74-132 | YES |
| 2-Chlorotoluene | 20.00 | 20.13 | 101 | 74-128 | YES |
| 4-Chlorotoluene | 20.00 | 21.09 | 105 | 75-130 | YES |
| 1,3,5-Trimethylbenzene | 20.00 | 21.05 | 105 | 75-133 | YES |
| Pentachloroethane | 20.00 | 18.40 | 92 | 57-121 | YES |
| tert-Butylbenzene | 20.00 | 18.61 | 93 | 71-133 | YES |
| 1,2,4-Trimethylbenzene | 20.00 | 21.84 | 109 | 75-131 | YES |
| sec-Butylbenzene | 20.00 | 20.06 | 100 | 68-138 | YES |
| 1,3-Dichlorobenzene | 20.00 | 21.32 | 107 | 77-126 | YES |
| p-Isopropyltoluene | 20.00 | 20.83 | 104 | 71-136 | YES |
| 1,4-Dichlorobenzene | 20.00 | 20.20 | 101 | 78-125 | YES |
| 1,2-Dichlorobenzene | 20.00 | 20.57 | 103 | 77-124 | YES |
| n-Butylbenzene | 20.00 | 19.62 | 98 | 63-139 | YES |
| 1,2-Dibromo-3-Chloropropane | 20.00 | 19.89 | 99 | 66-122 | YES |
| 1,2,4-Trichlorobenzene | 20.00 | 16.72 | 84 | 61-132 | YES |
| Hexachlorobutadiene | 20.00 | 15.50 | 77 | 45-148 | YES |
| Naphthalene | 20.00 | 17.46 | 87 | 59-129 | YES |
| 1,2,3-Trichlorobenzene | 20.00 | 18.06 | 90 | 64-131 | YES |

N/C = Could not calculte

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): pl25c01.d Date Analyzed: 07/25/01

Instrument ID: HP07163 Time Analyzed: 09:04

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | | IS1(FBZ) | | | IS2(CBZ) | | | IS3(DCB) | |
|---|---|---|---|---|---|---|---|---|---|
| | | AREA | # | RT | # | AREA | # | RT | # |
| | 12 HOUR STD | 382723 | | 7.986 | | 247631 | | 11.454 | | 138543 | | 13.466 | |
| | UPPER LIMIT | 765446 | | 8.486 | | 495262 | | 11.954 | | 277086 | | 13.966 | |
| | LOWER LIMIT | 191362 | | 7.486 | | 123816 | | 10.954 | | 69272 | | 12.966 | |
| | EPA SAMPLE NO. | | | | | | | | | | | | |
| 01 | VBLKP62 | 356251 | | 7.992 | | 229334 | | 11.457 | | 120942 | | 13.466 | |
| 02 | LCSWP62 | 346390 | | 7.986 | | 227973 | | 11.458 | | 135726 | | 13.463 | |
| 03 | 7631- | 333164 | | 7.992 | | 219186 | | 11.457 | | 117315 | | 13.466 | |
| 04 | 7631-MS | 350983 | | 7.985 | | 229856 | | 11.457 | | 133858 | | 13.469 | |
| 05 | 7631-MSD | 356764 | | 7.989 | | 233990 | | 11.457 | | 131912 | | 13.463 | |
| 06 | TBW7- | 347703 | | 7.986 | | 225759 | | 11.455 | | 117028 | | 13.467 | |

IS1 (FBZ)=Fluorobenzene
IS2 (CBZ)=Chlorobenzene-d5
IS3 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

6A
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.4512 | 0.4126 | 0.4340 | 0.5290 | 0.5377 | 0.4814 | | 0.4743 | 11 | AVG | |
| Chloromethane | #0.4497 | 0.4306 | 0.4308 | 0.4261 | 0.4213 | 0.3626 | | 0.4202 | 7 | AVG | # |
| Vinyl Chloride | *0.3304 | 0.3318 | 0.3181 | 0.3416 | 0.3286 | 0.2852 | | 0.3226 | 6 | AVG | * |
| Bromomethane | 0.1658 | 0.1781 | 0.1794 | 0.1748 | 0.1695 | 0.1407 | | 0.1681 | 9 | AVG | |
| Chloroethane | 0.1901 | 0.1978 | 0.1963 | 0.1967 | 0.1911 | 0.1600 | | 0.1887 | 8 | AVG | |
| Trichlorofluoromethane | 0.4103 | 0.3923 | 0.3878 | 0.4509 | 0.4643 | 0.4100 | | 0.4193 | 7 | AVG | |
| Ethyl Ether | 0.1940 | 0.2003 | 0.2120 | 0.2144 | 0.2085 | 0.1911 | | 0.2034 | 5 | AVG | |
| Acrolein | 0.0550 | 0.0564 | 0.0603 | 0.0568 | 0.0581 | 0.0483 | | 0.0558 | 7 | AVG | |
| 1,1-Dichloroethene | *0.1570 | 0.1657 | 0.1682 | 0.1685 | 0.1646 | 0.1575 | | 0.1636 | 3 | AVG | * |
| Freon 113 | 0.1584 | 0.1504 | 0.1423 | 0.1700 | 0.1549 | 0.1690 | | 0.1575 | 7 | AVG | |
| Acetone | 0.0224 | 0.0222 | 0.0233 | 0.0237 | 0.0232 | 0.0197 | | 0.0224 | 6 | AVG | |
| Methyl Iodide | 0.2323 | 0.2369 | 0.2512 | 0.2413 | 0.2362 | 0.2269 | | 0.2375 | 3 | AVG | |
| Carbon Disulfide | 0.5506 | 0.5479 | 0.5506 | 0.5340 | 0.5160 | 0.5034 | | 0.5337 | 4 | AVG | |
| 2-Propanol | 0.0197 | 0.0199 | 0.0197 | 0.0184 | 0.0171 | 0.0173 | | 0.0187 | 7 | AVG | |
| Allyl Chloride | 0.3092 | 0.3686 | 0.3797 | 0.3770 | 0.3559 | 0.3523 | | 0.3571 | 7 | AVG | |
| Methylene Chloride | 0.2252 | 0.2258 | 0.2175 | 0.2086 | 0.2031 | 0.1949 | | 0.2125 | 6 | AVG | |
| t-Butyl Alcohol | 0.0265 | 0.0279 | 0.0285 | 0.0275 | 0.0264 | 0.0277 | | 0.0274 | 3 | AVG | |
| Acrylonitrile | 0.0914 | 0.0999 | 0.1057 | 0.1040 | 0.1041 | 0.0940 | | 0.0998 | 6 | AVG | |
| trans-1,2-Dichloroethene | 0.1706 | 0.1903 | 0.2011 | 0.1930 | 0.1901 | 0.1813 | | 0.1877 | 6 | AVG | |
| Methyl Tertiary Butyl Ether | 0.6844 | 0.6958 | 0.7327 | 0.7213 | 0.7139 | 0.6602 | | 0.7014 | 4 | AVG | |
| n-Hexane | 0.2614 | 0.2359 | 0.2229 | 0.2742 | 0.2648 | 0.2843 | | 0.2573 | 9 | AVG | |
| 1,1-Dichloroethane | #0.4065 | 0.4166 | 0.4290 | 0.4138 | 0.4086 | 0.3988 | | 0.4122 | 2 | AVG | # |
| 2-Chloro-1,3-Butadiene | 0.4227 | 0.4060 | 0.3970 | 0.4122 | 0.4000 | 0.4057 | | 0.4073 | 2 | AVG | |
| di-Isopropyl Ether | 0.7381 | 0.7256 | 0.7433 | 0.7267 | 0.7032 | 0.6502 | | 0.7145 | 5 | AVG | |
| Ethyl t-Butyl Ether | 0.7993 | 0.8894 | 0.9362 | 0.9506 | 0.9362 | 0.9041 | | 0.9026 | 6 | AVG | |
| cis-1,2-Dichloroethene | 0.2928 | 0.3083 | 0.3131 | 0.3064 | 0.2943 | 0.2712 | | 0.2977 | 5 | AVG | |
| 1,2-Dichloroethene (total) | 0.2317 | 0.2493 | 0.2571 | 0.2497 | 0.2422 | 0.2262 | | 0.2427 | 5 | AVG | |
| 2,2-Dichloropropane | 0.4250 | 0.4248 | 0.4149 | 0.4233 | 0.4094 | 0.4219 | | 0.4199 | 2 | AVG | |
| 2-Butanone | 0.0300 | 0.0355 | 0.0341 | 0.0347 | 0.0345 | 0.0308 | | 0.0333 | 7 | AVG | |
| Propionitrile | 0.0504 | 0.0508 | 0.0504 | 0.0504 | 0.0483 | 0.0493 | | 0.0499 | 2 | AVG | |
| Methacrylonitrile | 0.1152 | 0.1185 | 0.1229 | 0.1244 | 0.1218 | 0.1144 | | 0.1195 | 3 | AVG | |
| Bromochloromethane | 0.1381 | 0.1435 | 0.1404 | 0.1365 | 0.1344 | 0.1253 | | 0.1364 | 5 | AVG | |
| Tetrahydrofuran | 0.0292 | 0.0295 | 0.0310 | 0.0315 | 0.0326 | 0.0309 | | 0.0308 | 4 | AVG | |
| Chloroform | *0.4943 | 0.5130 | 0.5203 | 0.4984 | 0.4850 | 0.4821 | | 0.4989 | 3 | AVG | * |
| 1,1,1-Trichloroethane | 0.4245 | 0.4174 | 0.4014 | 0.4207 | 0.4063 | 0.4383 | | 0.4181 | 3 | AVG | |
| Cyclohexane | 0.4066 | 0.3833 | 0.3682 | 0.4655 | 0.4376 | 0.5041 | | 0.4275 | 12 | AVG | |
| 1,1-Dichloropropene | 0.3031 | 0.3014 | 0.3007 | 0.3135 | 0.3068 | 0.3265 | | 0.3087 | 3 | AVG | |
| Carbon Tetrachloride | 0.3512 | 0.3363 | 0.3139 | 0.3387 | 0.3286 | 0.3652 | | 0.3390 | 5 | AVG | |
| Benzene | 1.1153 | 1.1273 | 1.1200 | 1.0670 | 1.0148 | 0.9136 | | 1.0597 | 8 | AVG | |
| Isobutyl Alcohol | 0.0099 | 0.0108 | 0.0108 | 0.0100 | 0.0097 | 0.0109 | | 0.0104 | 5 | AVG | |
| 1,2-Dichloroethane (mz 98) | 0.0364 | 0.0365 | 0.0391 | 0.0375 | 0.0361 | 0.0338 | | 0.0366 | 5 | AVG | |
| 1,2-Dichloroethane | 0.4172 | 0.4247 | 0.4359 | 0.4248 | 0.4163 | 0.4215 | | 0.4234 | 2 | AVG | |
| t-Amyl Methyl Ether | 0.5830 | 0.6964 | 0.7604 | 0.7748 | 0.7715 | 0.7660 | | 0.7253 | 10 | AVG | |
| n-Heptane | 0.2865 | 0.2189 | 0.2085 | 0.2313 | 0.2214 | 0.2287 | | 0.2326 | 12 | AVG | |
| Trichloroethene | 0.2796 | 0.2758 | 0.2631 | 0.2645 | 0.2608 | 0.2736 | | 0.2696 | 3 | AVG | |
| n-Butanol | 0.0076 | 0.0092 | 0.0094 | 0.0093 | 0.0093 | 0.0108 | | 0.0093 | 11 | AVG | |
| 1,2-Dichloropropane | *0.2645 | 0.2862 | 0.2911 | 0.2928 | 0.2874 | 0.2943 | | 0.2860 | 4 | AVG | * |
| Dibromomethane | 0.1625 | 0.1611 | 0.1668 | 0.1660 | 0.1612 | 0.1594 | | 0.1628 | 2 | AVG | |
| 1,4-Dioxane | 0.0025 | 0.0028 | 0.0030 | 0.0032 | 0.0031 | 0.0033 | | 0.0030 | 10 | AVG | |
| Methyl Methacrylate | 0.1337 | 0.1724 | 0.1964 | 0.2130 | 0.2145 | 0.2168 | | 0.1911 | 17 | 1STDEG | |
| Bromodichloromethane | 0.3428 | 0.3533 | 0.3701 | 0.3711 | 0.3668 | 0.3839 | | 0.3647 | 4 | AVG | |
| 2-Nitropropane | 0.0588 | 0.0614 | 0.0649 | 0.0695 | 0.0714 | 0.0749 | | 0.0668 | 9 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chloroethyl Vinyl Ether | 0.0903 | 0.1330 | 0.1530 | 0.1703 | 0.1723 | 0.1831 | | 0.1503 | 23 | 2NDDEG | |
| cis-1,3-Dichloropropene | 0.3357 | 0.3699 | 0.4126 | 0.4269 | 0.4244 | 0.4256 | | 0.3992 | 9 | AVG | |
| 4-Methyl-2-Pentanone | 0.2088 | 0.2461 | 0.2874 | 0.2856 | 0.2850 | 0.2671 | | 0.2633 | 12 | AVG | |
| Toluene | *0.9656 | 1.0442 | 1.0270 | 1.0175 | 0.9408 | 0.8642 | | 0.9766 | 7 | AVG | * |
| trans-1,3-Dichloropropene | 0.5062 | 0.5802 | 0.6263 | 0.6326 | 0.6258 | 0.6166 | | 0.5979 | 8 | AVG | |
| Ethyl Methacrylate | 0.3010 | 0.4088 | 0.4660 | 0.5035 | 0.5016 | 0.5008 | | 0.4470 | 18 | 1STDEG | |
| 1,1,2-Trichloroethane | 0.3545 | 0.3677 | 0.3603 | 0.3565 | 0.3368 | 0.3200 | | 0.3493 | 5 | AVG | |
| Tetrachloroethene | 0.4130 | 0.3986 | 0.3703 | 0.3864 | 0.3430 | 0.3211 | | 0.3721 | 9 | AVG | |
| 1,3-Dichloropropane | 0.6264 | 0.6782 | 0.7028 | 0.6676 | 0.6315 | 0.5605 | | 0.6445 | 8 | AVG | |
| 2-Hexanone | 0.2145 | 0.2588 | 0.3131 | 0.2931 | 0.2973 | 0.2783 | | 0.2758 | 13 | AVG | |
| Dibromochloromethane | 0.3417 | 0.3647 | 0.3696 | 0.3748 | 0.3697 | 0.3700 | | 0.3651 | 3 | AVG | |
| 1,2-Dibromoethane | 0.3294 | 0.3610 | 0.3694 | 0.3630 | 0.3552 | 0.3467 | | 0.3541 | 4 | AVG | |
| Chlorobenzene | #1.1081 | 1.1385 | 1.0927 | 1.0516 | 0.9807 | 0.8665 | | 1.0397 | 10 | AVG | # |
| 1,1,1,2-Tetrachloroethane | 0.3758 | 0.3955 | 0.3783 | 0.3739 | 0.3465 | 0.3267 | | 0.3661 | 7 | AVG | |
| Ethylbenzene | *1.8122 | 1.8629 | 1.7975 | 1.8322 | 1.6529 | 1.3495 | | 1.7179 | 11 | AVG | * |
| m+p-Xylene | 0.6764 | 0.7437 | 0.6976 | 0.6785 | 0.5992 | 0.5026 | | 0.6497 | 13 | AVG | |
| Xylene (Total) | 0.6569 | 0.7171 | 0.6925 | 0.6779 | 0.6027 | 0.5137 | | 0.6435 | 12 | AVG | |
| o-Xylene | 0.6180 | 0.6641 | 0.6822 | 0.6767 | 0.6098 | 0.5358 | | 0.6311 | 9 | AVG | |
| Styrene | 0.9329 | 1.0922 | 1.1361 | 1.1350 | 1.0388 | 0.8654 | | 1.0334 | 11 | AVG | |
| Bromoform | #0.2173 | 0.2353 | 0.2449 | 0.2571 | 0.2586 | 0.2762 | | 0.2482 | 8 | AVG | # |
| Isopropylbenzene | 1.4545 | 1.6392 | 1.6102 | 1.7515 | 1.5838 | 1.3632 | | 1.5671 | 9 | AVG | |
| Cyclohexanone | 0.0125 | 0.0142 | 0.0154 | 0.0165 | 0.0168 | 0.0163 | | 0.0153 | 11 | AVG | |
| Bromobenzene | 0.8554 | 0.8439 | 0.8411 | 0.7907 | 0.7303 | 0.6442 | | 0.7843 | 11 | AVG | |
| 1,1,2,2-Tetrachloroethane | #0.9082 | 0.9641 | 0.9210 | 0.8892 | 0.8629 | 0.8921 | | 0.9063 | 4 | AVG | # |
| 1,2,3-Trichloropropane | 0.2793 | 0.2921 | 0.2816 | 0.2659 | 0.2494 | 0.2395 | | 0.2680 | 8 | AVG | |
| trans-1,4-Dichloro-2-Butene | 0.2895 | 0.3223 | 0.3154 | 0.3131 | 0.3158 | 0.3083 | | 0.3107 | 4 | AVG | |
| n-Propylbenzene | 4.0008 | 3.9853 | 3.7998 | 3.8464 | 3.5034 | 3.0096 | | 3.6909 | 10 | AVG | |
| 2-Chlorotoluene | 2.4532 | 2.5255 | 2.4478 | 2.4098 | 2.3218 | 2.1803 | | 2.3897 | 5 | AVG | |
| 4-Chlorotoluene | 2.9227 | 2.9651 | 2.9313 | 2.8567 | 2.7031 | 2.5039 | | 2.8138 | 6 | AVG | |
| 1,3,5-Trimethylbenzene | 2.5958 | 2.7719 | 2.7158 | 2.7480 | 2.5749 | 2.2957 | | 2.6170 | 7 | AVG | |
| Pentachloroethane | 0.4234 | 0.4782 | 0.5063 | 0.4832 | 0.4677 | 0.4103 | | 0.4615 | 8 | AVG | |
| tert-Butylbenzene | 0.5300 | 0.5839 | 0.6001 | 0.6371 | 0.5969 | 0.5716 | | 0.5866 | 6 | AVG | |
| 1,2,4-Trimethylbenzene | 2.6163 | 2.9350 | 2.8504 | 2.8192 | 2.5586 | 2.1619 | | 2.6569 | 11 | AVG | |
| sec-Butylbenzene | 2.9905 | 3.2431 | 3.1319 | 3.4009 | 3.1722 | 2.7113 | | 3.1083 | 8 | AVG | |
| 1,3-Dichlorobenzene | 1.6439 | 1.6852 | 1.5963 | 1.4878 | 1.3475 | 1.1232 | | 1.4807 | 14 | AVG | |
| p-Isopropyltoluene | 2.4777 | 2.7076 | 2.6903 | 2.7624 | 2.5069 | 2.0961 | | 2.5402 | 10 | AVG | |
| 1,4-Dichlorobenzene | 1.7477 | 1.7358 | 1.6640 | 1.5740 | 1.5239 | 1.3401 | | 1.5976 | 10 | AVG | |
| 1,2-Dichlorobenzene | 1.5453 | 1.6073 | 1.5524 | 1.5045 | 1.4380 | 1.2835 | | 1.4885 | 8 | AVG | |
| n-Butylbenzene | 2.2457 | 2.5645 | 2.6888 | 2.9084 | 2.7601 | 2.4005 | | 2.5947 | 9 | AVG | |
| 1,2-Dibromo-3-Chloropropane | 0.1419 | 0.1787 | 0.1753 | 0.1800 | 0.1909 | 0.2226 | | 0.1816 | 14 | AVG | |
| 1,2,4-Trichlorobenzene | 0.8982 | 1.0277 | 1.0999 | 1.1412 | 1.1199 | 1.0751 | | 1.0603 | 8 | AVG | |
| Hexachlorobutadiene | 0.4231 | 0.5125 | 0.5111 | 0.5697 | 0.5511 | 0.5373 | | 0.5175 | 10 | AVG | |
| Naphthalene | 1.9731 | 2.4816 | 2.8678 | 2.7522 | 2.6894 | 2.3770 | | 2.5235 | 13 | AVG | |
| 1,2,3-Trichlorobenzene | 0.8719 | 0.9969 | 1.0697 | 1.0497 | 1.0478 | 1.0158 | | 1.0086 | 7 | AVG | |
| Dibromofluoromethane | 0.2572 | 0.2692 | 0.2592 | 0.2498 | 0.2588 | 0.2481 | | 0.2571 | 3 | AVG | |
| 1,2-Dichloroethane-d4 | 0.0642 | 0.0747 | 0.0719 | 0.0688 | 0.0688 | 0.0657 | | 0.0690 | 6 | AVG | |
| Dibromofluoromethane(mz111) | 0.2624 | 0.2817 | 0.2619 | 0.2571 | 0.2667 | 0.2544 | | 0.2640 | 4 | AVG | |
| 1,2-Dichloroethane-d4(mz104) | 0.0377 | 0.0469 | 0.0464 | 0.0439 | 0.0463 | 0.0422 | | 0.0439 | 8 | AVG | |
| Toluene-d8(mz100) | 0.8964 | 1.0493 | 0.9971 | 0.9856 | 0.9715 | 0.8027 | | 0.9504 | 9 | AVG | |
| 4-Bromofluorobenzene(mz174) | 0.4330 | 0.4849 | 0.4432 | 0.4396 | 0.4387 | 0.3765 | | 0.4360 | 8 | AVG | |
| Toluene-d8 | 1.3848 | 1.5860 | 1.5047 | 1.4913 | 1.4604 | 1.1667 | | 1.4323 | 10 | AVG | |

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date(s): 07/19/01 07/19/01

Heated Purge: (Y/N) N Calibration Times: 08:47 10:57

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

LAB FILE ID: RRF 4 = pl19i06.d RRF 10= pl19i05.d RRF 20= pl19i04.d
RRF 50= pl19i03.d RRF100= pl19i02.d RRF300= pl19i01.d RRF =

| COMPOUND | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 0.5656 | 0.6324 | 0.5828 | 0.5817 | 0.5823 | 0.5161 | | 0.5768 | 6 | AVG |

Average %RSD 7

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%



FORM VI VOA

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: pl25c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Dichlorodifluoromethane | 0.4743 | 0.5294 | 55.80 | 50 | -12 | |
| # | Chloromethane | 0.4202 | 0.4135 | 49.21 | 50 | 2 | # |
| * | Vinyl Chloride | 0.3226 | 0.3119 | 48.34 | 50 | 3 | * |
| | Bromomethane | 0.1681 | 0.1627 | 48.40 | 50 | 3 | |
| | Chloroethane | 0.1887 | 0.1839 | 48.73 | 50 | 3 | |
| | Trichlorofluoromethane | 0.4193 | 0.4887 | 58.28 | 50 | -17 | |
| | Ethyl Ether | 0.2034 | 0.2132 | 52.42 | 50 | -5 | |
| | Acrolein | 0.0558 | 0.0639 | 572.53 | 500 | -15 | |
| * | 1,1-Dichloroethene | 0.1636 | 0.1681 | 51.38 | 50 | -3 | * |
| | Freon 113 | 0.1575 | 0.1672 | 53.08 | 50 | -6 | |
| | Acetone | 0.0224 | 0.0263 | 117.19 | 100 | -17 | |
| | Methyl Iodide | 0.2375 | 0.2402 | 50.58 | 50 | -1 | |
| | Carbon Disulfide | 0.5337 | 0.5379 | 50.39 | 50 | -1 | |
| | 2-Propanol | 0.0187 | 0.0221 | 295.20 | 250 | -18 | |
| | Allyl Chloride | 0.3571 | 0.3166 | 44.33 | 50 | 11 | |
| | Methylene Chloride | 0.2125 | 0.2128 | 50.05 | 50 | 0 | |
| | t-Butyl Alcohol | 0.0274 | 0.0360 | 328.24 | 250 | -31 | |
| | Acrylonitrile | 0.0998 | 0.1132 | 56.71 | 50 | -13 | |
| | trans-1,2-Dichloroethene | 0.1877 | 0.1920 | 51.14 | 50 | -2 | |
| | Methyl Tertiary Butyl Ether | 0.7014 | 0.7394 | 52.71 | 50 | -5 | |
| | n-Hexane | 0.2573 | 0.2300 | 44.69 | 50 | 11 | |
| # | 1,1-Dichloroethane | 0.4122 | 0.4271 | 51.80 | 50 | -4 | # |
| | 2-Chloro-1,3-Butadiene | 0.4073 | 0.4311 | 52.93 | 50 | -6 | |
| | di-Isopropyl Ether | 0.7145 | 0.7032 | 49.21 | 50 | 2 | |
| | Ethyl t-Butyl Ether | 0.9026 | 0.9000 | 49.85 | 50 | 0 | |
| | cis-1,2-Dichloroethene | 0.2977 | 0.2939 | 49.37 | 50 | 1 | |
| | 1,2-Dichloroethene (total) | 0.2427 | 0.2430 | 100.51 | 100 | -1 | |
| | 2,2-Dichloropropane | 0.4199 | 0.4352 | 51.83 | 50 | -4 | |
| | 2-Butanone | 0.0333 | 0.0396 | 119.01 | 100 | -19 | |
| | Propionitrile | 0.0499 | 0.0568 | 284.49 | 250 | -14 | |
| | Methacrylonitrile | 0.1195 | 0.1298 | 135.74 | 125 | -9 | |
| | Bromochloromethane | 0.1364 | 0.1259 | 46.18 | 50 | 8 | |
| | Tetrahydrofuran | 0.0308 | 0.0342 | 110.99 | 100 | -11 | |
| * | Chloroform | 0.4989 | 0.5285 | 52.97 | 50 | -6 | * |
| | 1,1,1-Trichloroethane | 0.4181 | 0.4393 | 52.54 | 50 | -5 | |
| | Cyclohexane | 0.4275 | 0.4077 | 47.68 | 50 | 5 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: pl25c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1,1-Dichloropropene | 0.3087 | 0.3059 | 49.55 | 50 | 1 | |
| | Carbon Tetrachloride | 0.3390 | 0.3590 | 52.95 | 50 | -6 | |
| | Benzene | 1.0597 | 1.0534 | 49.70 | 50 | 1 | |
| | Isobutyl Alcohol | 0.0104 | 0.0138 | 833.31 | 625 | -33 | |
| | 1,2-Dichloroethane | 0.4234 | 0.4749 | 56.07 | 50 | -12 | |
| | t-Amyl Methyl Ether | 0.7253 | 0.7482 | 51.57 | 50 | -3 | |
| | n-Heptane | 0.2326 | 0.1758 | 37.81 | 50 | 24 | |
| | Trichloroethene | 0.2696 | 0.2652 | 49.19 | 50 | 2 | |
| | n-Butanol | 0.0093 | 0.0114 | 1534.98 | 1250 | -23 | |
| * | 1,2-Dichloropropane | 0.2860 | 0.2769 | 48.40 | 50 | 3 | * |
| | Dibromomethane | 0.1628 | 0.1742 | 53.50 | 50 | -7 | |
| | 1,4-Dioxane | 0.0030 | 0.0035 | 739.36 | 625 | -18 | |
| | Methyl Methacrylate | 0.1911 | 0.2218 | 52.57 | 50 | -5 | |
| | Bromodichloromethane | 0.3647 | 0.3882 | 53.24 | 50 | -6 | |
| | 2-Nitropropane | 0.0668 | 0.0861 | 128.91 | 100 | -29 | |
| | 2-Chloroethyl Vinyl Ether | 0.1503 | 0.1636 | 48.87 | 50 | 2 | |
| | cis-1,3-Dichloropropene | 0.3992 | 0.4155 | 52.05 | 50 | -4 | |
| | 4-Methyl-2-Pentanone | 0.2633 | 0.3448 | 130.92 | 100 | -31 | |
| * | Toluene | 0.9766 | 1.0222 | 52.34 | 50 | -5 | * |
| | trans-1,3-Dichloropropene | 0.5979 | 0.6674 | 55.81 | 50 | -12 | |
| | Ethyl Methacrylate | 0.4470 | 0.5497 | 55.75 | 50 | -11 | |
| | 1,1,2-Trichloroethane | 0.3493 | 0.3793 | 54.29 | 50 | -9 | |
| | Tetrachloroethene | 0.3721 | 0.3695 | 49.65 | 50 | 1 | |
| | 1,3-Dichloropropane | 0.6445 | 0.7071 | 54.85 | 50 | -10 | |
| | 2-Hexanone | 0.2758 | 0.3866 | 140.14 | 100 | -40 | |
| | Dibromochloromethane | 0.3651 | 0.4003 | 54.82 | 50 | -10 | |
| | 1,2-Dibromoethane | 0.3541 | 0.3805 | 53.73 | 50 | -7 | |
| # | Chlorobenzene | 1.0397 | 1.0586 | 50.91 | 50 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3661 | 0.3826 | 52.25 | 50 | -4 | |
| * | Ethylbenzene | 1.7179 | 1.7952 | 52.25 | 50 | -5 | * |
| | m+p-Xylene | 0.6497 | 0.6576 | 101.22 | 100 | -1 | |
| | Xylene (Total) | 0.6435 | 0.6540 | 152.47 | 150 | -2 | |
| | o-Xylene | 0.6311 | 0.6469 | 51.25 | 50 | -3 | |
| | Styrene | 1.0334 | 1.1263 | 54.49 | 50 | -9 | |
| # | Bromoform | 0.2482 | 0.2887 | 58.15 | 50 | -16 | # |
| | Isopropylbenzene | 1.5671 | 1.6250 | 51.85 | 50 | -4 | |

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP07163 Calibration Date: 07/25/01 Time: 09:04

Lab File ID: p125c01.d Init. Calib. Date(s): 07/19/2001 07/19/2001

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: DB-624 ID: .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Bromobenzene | 0.7843 | 0.7940 | 50.62 | 50 | -1 | |
| # | 1,1,2,2-Tetrachloroethane | 0.9063 | 0.9919 | 54.73 | 50 | -9 | # |
| | 1,2,3-Trichloropropane | 0.2680 | 0.3148 | 58.74 | 50 | -17 | |
| | trans-1,4-Dichloro-2-Butene | 0.3107 | 0.3815 | 153.46 | 125 | -23 | |
| | n-Propylbenzene | 3.6909 | 3.5258 | 47.76 | 50 | 4 | |
| | 2-Chlorotoluene | 2.3897 | 2.3773 | 49.74 | 50 | 1 | |
| | 4-Chlorotoluene | 2.8138 | 2.8371 | 50.41 | 50 | -1 | |
| | 1,3,5-Trimethylbenzene | 2.6170 | 2.5723 | 49.15 | 50 | 2 | |
| | Pentachloroethane | 0.4615 | 0.4571 | 49.53 | 50 | 1 | |
| | tert-Butylbenzene | 0.5866 | 0.5384 | 45.89 | 50 | 8 | |
| | 1,2,4-Trimethylbenzene | 2.6569 | 2.6828 | 50.49 | 50 | -1 | |
| | sec-Butylbenzene | 3.1083 | 2.9521 | 47.49 | 50 | 5 | |
| | 1,3-Dichlorobenzene | 1.4807 | 1.4577 | 49.22 | 50 | 2 | |
| | p-Isopropyltoluene | 2.5402 | 2.4172 | 47.58 | 50 | 5 | |
| | 1,4-Dichlorobenzene | 1.5976 | 1.5378 | 48.13 | 50 | 4 | |
| | 1,2-Dichlorobenzene | 1.4885 | 1.4945 | 50.20 | 50 | 0 | |
| | n-Butylbenzene | 2.5947 | 2.4913 | 48.01 | 50 | 4 | |
| | 1,2-Dibromo-3-Chloropropane | 0.1816 | 0.2230 | 61.41 | 50 | -23 | |
| | 1,2,4-Trichlorobenzene | 1.0603 | 1.0234 | 48.26 | 50 | 3 | |
| | Hexachlorobutadiene | 0.5175 | 0.4422 | 42.73 | 50 | 15 | |
| | Naphthalene | 2.5235 | 2.6942 | 53.38 | 50 | -7 | |
| | 1,2,3-Trichlorobenzene | 1.0086 | 0.9844 | 48.80 | 50 | 2 | |
| | Dibromofluoromethane | 0.2571 | 0.2459 | 47.83 | 50 | 4 | |
| | 1,2-Dichloroethane-d4 | 0.0690 | 0.0638 | 46.23 | 50 | 8 | |
| | Toluene-d8 | 1.4323 | 1.4762 | 51.53 | 50 | -3 | |
| | 4-Bromofluorobenzene | 0.5768 | 0.5760 | 49.93 | 50 | 0 | |

Average %Drift 8

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd25z.d DFTPP Injection Date: 04/15/02

Instrument ID: HP05525 DFTPP Injection Time: 17:22

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 57.1 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 64.5 |
| 70 | Less than 2.0% of mass 69 | 0.13 ( 0.2)1 |
| 127 | 40.0 - 60.0% of mass 198 | 47.7 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.12 |
| 275 | 10.0 - 30.0% of mass 198 | 17.8 |
| 365 | Greater than 1.00% of mass 198 | 1.8 |
| 441 | Present, and less than mass 443 | 4.76 |
| 442 | Greater than 40.0 % of mass 198 | 68.0 |
| 443 | 17.0 - 23.0% of mass 442 | 13.0 ( 19.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd251.d | 04/15/02 | 17:52 |
| 02 | SSTD120 | STD0982 | jd252.d | 04/15/02 | 18:53 |
| 03 | SSTD080 | STD0982 | jd253.d | 04/15/02 | 19:54 |
| 04 | SSTD030 | STD0982 | jd254.d | 04/15/02 | 20:57 |
| 05 | SSTD015 | STD0982 | jd255.d | 04/15/02 | 21:58 |
| 06 | SSTD005 | STD0982 | jd256.d | 04/15/02 | 22:59 |
| 07 | SSTD001 | 8270MDL0982 | jd257.d | 04/16/02 | 00:00 |
| 08 | 102LBLCSJ | 102LBLCS | jd258.d | 04/16/02 | 01:01 |
| 09 | APRTR | 3801695 | jd259.d | 04/16/02 | 02:02 |
| 10 | APRTRMS | 3801695 | jd260.d | 04/16/02 | 03:04 |
| 11 | APRTRMSD | 3801695 | jd261.d | 04/16/02 | 04:05 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd35y.d DFTPP Injection Date: 04/19/02

Instrument ID: HP05525 DFTPP Injection Time: 08:38

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 58.6 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 69.1 |
| 70 | Less than 2.0% of mass 69 | 0.18 ( 0.26)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.3 |
| 275 | 10.0 - 30.0% of mass 198 | 17.2 |
| 365 | Greater than 1.00% of mass 198 | 1.52 |
| 441 | Present, and less than mass 443 | 9.07 |
| 442 | Greater than 40.0 % of mass 198 | 63.9 |
| 443 | 17.0 - 23.0% of mass 442 | 13.4 ( 20.9)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd35a.d | 04/19/02 | 10:45 |
| 02 | SBLKWA108J | SBLKWA108 | jd352.d | 04/19/02 | 12:35 |
| 03 | 108WALCSJ | 108WALCS | jd353.d | 04/19/02 | 13:37 |
| 04 | 108WALCSD | 108WALCSD | jd354.d | 04/19/02 | 14:38 |
| 05 | SS111 | 3806001 | jd355.d | 04/19/02 | 15:39 |
| 06 | 417FB | 3806673 | jd356.d | 04/19/02 | 16:40 |
| 07 | 417PD | 3806674 | jd357.d | 04/19/02 | 17:41 |
| 08 | 417PI | 3806675 | jd358.d | 04/19/02 | 18:43 |

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd370.d DFTPP Injection Date: 04/22/02

Instrument ID: HP05525 DFTPP Injection Time: 08:29

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 49.3 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 58.2 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 43.1 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.12 |
| 275 | 10.0 - 30.0% of mass 198 | 18.1 |
| 365 | Greater than 1.00% of mass 198 | 1.38 |
| 441 | Present, and less than mass 443 | 9.21 |
| 442 | Greater than 40.0 % of mass 198 | 72.4 |
| 443 | 17.0 - 23.0% of mass 442 | 13.2 ( 18.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | jd371.d | 04/22/02 | 09:00 |
| 02 | SS111DL | 3806001DL | jd372.d | 04/22/02 | 10:44 |
| 03 | 41720 | 3806676 | jd373.d | 04/22/02 | 11:46 |
| 04 | 41708 | 3806677 | jd374.d | 04/22/02 | 13:20 |
| 05 | RI-07 | 3806698 | jd375.d | 04/22/02 | 14:22 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd470.d DFTPP Injection Date: 04/26/02

Instrument ID: HP05525 DFTPP Injection Time: 06:59

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 54.4 |
| 68 | Less than 2.0% of mass 69 | 0.48 ( 0.75)1 |
| 69 | Mass 69 relative abundance | 64.2 |
| 70 | Less than 2.0% of mass 69 | 0.35 ( 0.55)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.0 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.53 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 1.78 |
| 441 | Present, and less than mass 443 | 11.6 |
| 442 | Greater than 40.0 % of mass 198 | 78.4 |
| 443 | 17.0 - 23.0% of mass 442 | 14.6 ( 18.7)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd471.d | 04/26/02 | 07:40 |
| 02 | MJ26- | 3809676 | jd472.d | 04/26/02 | 08:51 |
| 03 | MJ36- | 3809677 | jd473.d | 04/26/02 | 09:49 |
| 04 | MJ362 | 3809678 | jd474.d | 04/26/02 | 10:46 |
| 05 | MJ46- | 3809679 | jd475.d | 04/26/02 | 11:43 |
| 06 | MJ56- | 3809680 | jd476.d | 04/26/02 | 12:40 |
| 07 | MJ66- | 3809681 | jd477.d | 04/26/02 | 13:37 |
| 08 | MJ76- | 3809682 | jd478.d | 04/26/02 | 14:35 |
| 09 | SBLKWE112J | SBLKWE112 | jd479.d | 04/26/02 | 15:32 |
| 10 | 112WELCSJ | 112WELCS | jd480.d | 04/26/02 | 16:32 |
| 11 | 112WELCSDJ | 112WELCSD | jd481.d | 04/26/02 | 17:29 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd490.d DFTPP Injection Date: 04/26/02

Instrument ID: HP05525 DFTPP Injection Time: 18:29

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 55.0 |
| 68 | Less than 2.0% of mass 69 | 0.5 ( 0.76)1 |
| 69 | Mass 69 relative abundance | 65.4 |
| 70 | Less than 2.0% of mass 69 | 0.22 ( 0.33)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.5 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.1 |
| 275 | 10.0 - 30.0% of mass 198 | 18.8 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, and less than mass 443 | 12.0 |
| 442 | Greater than 40.0 % of mass 198 | 77.5 |
| 443 | 17.0 - 23.0% of mass 442 | 14.4 ( 18.5)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd491.d | 04/26/02 | 18:55 |
| 02 | SWM24 | 3807884 | jd492.d | 04/26/02 | 20:01 |
| 03 | SWM24MS | 3807884 | jd493.d | 04/26/02 | 20:59 |
| 04 | SWM24MSD | 3807884 | jd494.d | 04/26/02 | 21:56 |
| 05 | CHAN1 | 3807880 | jd495.d | 04/26/02 | 22:53 |
| 06 | CHAN2 | 3807881 | jd496.d | 04/26/02 | 23:51 |
| 07 | CHAN3 | 3807882 | jd497.d | 04/27/02 | 00:48 |
| 08 | CHAN7 | 3807883 | jd498.d | 04/27/02 | 01:45 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd51z.d DFTPP Injection Date: 04/28/02

Instrument ID: HP05525 DFTPP Injection Time: 15:04

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 53.8 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 71.3 |
| 70 | Less than 2.0% of mass 69 | 0.36 ( 0.5)1 |
| 127 | 40.0 - 60.0% of mass 198 | 48.4 |
| 197 | Less than 1.0% of mass 198 | 0.63 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.36 |
| 275 | 10.0 - 30.0% of mass 198 | 19.0 |
| 365 | Greater than 1.00% of mass 198 | 1.58 |
| 441 | Present, and less than mass 443 | 8.88 |
| 442 | Greater than 40.0 % of mass 198 | 59.3 |
| 443 | 17.0 - 23.0% of mass 442 | 11.6 ( 19.6)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd51a.d | 04/28/02 | 15:31 |
| 02 | SSTD120 | STD1132 | jd512.d | 04/28/02 | 16:34 |
| 03 | SSTD080 | STD1132 | jd513.d | 04/28/02 | 17:28 |
| 04 | SSTD030 | STD1132 | jd514.d | 04/28/02 | 18:23 |
| 05 | SSTD015 | STD1132 | jd515.d | 04/28/02 | 19:19 |
| 06 | SSTD005 | STD1132 | jd516.d | 04/28/02 | 20:14 |
| 07 | SSTD001 | 8270MDL1132 | jd517.d | 04/28/02 | 21:09 |
| 08 | CHN7D | 3807885 | jd520.d | 04/28/02 | 22:04 |
| 09 | 41802 | 3807661 | jd521.d | 04/28/02 | 23:00 |
| 10 | 41817 | 3807662 | jd522.d | 04/28/02 | 23:55 |
| 11 | 41826 | 3807664 | jd524.d | 04/29/02 | 01:45 |
| 12 | 418-7 | 3807665 | jd525.d | 04/29/02 | 02:40 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd530.d DFTPP Injection Date: 04/29/02

Instrument ID: HP05525 DFTPP Injection Time: 07:45

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 58.2 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 76.9 |
| 70 | Less than 2.0% of mass 69 | 0.33 ( 0.43)1 |
| 127 | 40.0 - 60.0% of mass 198 | 50.2 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 7.59 |
| 275 | 10.0 - 30.0% of mass 198 | 18.7 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, and less than mass 443 | 7.86 |
| 442 | Greater than 40.0 % of mass 198 | 56.7 |
| 443 | 17.0 - 23.0% of mass 442 | 10.4 ( 18.4)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD1132 | jd531.d | 04/29/02 | 08:20 |
| 02 | 41811 | 3807667 | jd533.d | 04/29/02 | 10:39 |
| 03 | SBLKLC114J | SBLKLC114 | jd534.d | 04/29/02 | 12:33 |
| 04 | 41823 | 3807663 | jd53a.d | 04/29/02 | 13:29 |
| 05 | 114LCLCSJ | 114LCLCS | jd535.d | 04/29/02 | 14:24 |
| 06 | KM033 | 3809515 | jd536.d | 04/29/02 | 15:19 |
| 07 | KM033MS | 3809515 | jd537.d | 04/29/02 | 16:14 |
| 08 | KM033MSD | 3809515 | jd538.d | 04/29/02 | 17:10 |
| 09 | KM034 | 3809514 | jd539.d | 04/29/02 | 18:05 |
| 10 | 96041 | 3808958 | jd540.d | 04/29/02 | 19:00 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md310.d DFTPP Injection Date: 04/15/02

Instrument ID: HP06755 DFTPP Injection Time: 08:30

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 33.0 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 46.2 |
| 70 | Less than 2.0% of mass 69 | 0.1 ( 0.22)1 |
| 127 | 40.0 - 60.0% of mass 198 | 42.2 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.57 |
| 275 | 10.0 - 30.0% of mass 198 | 19.2 |
| 365 | Greater than 1.00% of mass 198 | 2.17 |
| 441 | Present, and less than mass 443 | 7.58 |
| 442 | Greater than 40.0 % of mass 198 | 49.7 |
| 443 | 17.0 - 23.0% of mass 442 | 9.35 ( 18.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0842 | md31a.d | 04/15/02 | 10:33 |
| 02 | SSTD120 | STD0842 | md312.d | 04/15/02 | 11:44 |
| 03 | SSTD080 | STD0842 | md313.d | 04/15/02 | 12:43 |
| 04 | SSTD030 | STD0842 | md314.d | 04/15/02 | 13:42 |
| 05 | SSTD005 | STD0842 | md315.d | 04/15/02 | 14:41 |
| 06 | SSTD015 | STD0842 | md316.d | 04/15/02 | 15:40 |
| 07 | SSTD001 | 8270MDL0842 | md317.d | 04/15/02 | 16:39 |

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# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md390.d DFTPP Injection Date: 04/17/02

Instrument ID: HP06755 DFTPP Injection Time: 15:17

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 36.6 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 49.3 |
| 70 | Less than 2.0% of mass 69 | 0.15 ( 0.31)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.0 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.71 |
| 275 | 10.0 - 30.0% of mass 198 | 19.4 |
| 365 | Greater than 1.00% of mass 198 | 1.78 |
| 441 | Present, and less than mass 443 | 6.17 |
| 442 | Greater than 40.0 % of mass 198 | 50.0 |
| 443 | 17.0 - 23.0% of mass 442 | 9.41 ( 18.8)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | md391.d | 04/17/02 | 15:54 |
| 02 | SBLKWB107M | SBLKWB107 | md392.d | 04/17/02 | 17:41 |
| 03 | 107WBLCSM | 107WBLCS | md393.d | 04/17/02 | 18:39 |
| 04 | 107WBLCSDM | 107WBLCSD | md394.d | 04/17/02 | 19:37 |
| 05 | SS401 | 3805998 | md395.d | 04/17/02 | 20:36 |
| 06 | SS402 | 3805999 | md396.d | 04/17/02 | 21:34 |
| 07 | SS701 | 3806000 | md397.d | 04/17/02 | 22:32 |
| 08 | SS101 | 3806002 | md399.d | 04/18/02 | 00:29 |
| 09 | SS601 | 3806003 | md400.d | 04/18/02 | 01:27 |
| 10 | SSRI6 | 3806005 | md401.d | 04/18/02 | 02:26 |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md410.d DFTPP Injection Date: 04/18/02

Instrument ID: HP06755 DFTPP Injection Time: 06:56

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 32.5 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 46.5 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 42.8 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.66 |
| 275 | 10.0 - 30.0% of mass 198 | 19.5 |
| 365 | Greater than 1.00% of mass 198 | 2.12 |
| 441 | Present, and less than mass 443 | 7.71 |
| 442 | Greater than 40.0 % of mass 198 | 54.1 |
| 443 | 17.0 - 23.0% of mass 442 | 10.4 ( 19.2)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | SSTD050 | STD0982 | md411.d | 04/18/02 | 07:22 |
| 02 | SSRS6 | 3806006 | md413.d | 04/18/02 | 09:26 |
| 03 | PSTT1 | 3806034 | md414.d | 04/18/02 | 10:24 |
| 04 | DCHGE | 3806036 | md415.d | 04/18/02 | 11:23 |
| 05 | SBLKLF107M | SBLKLF107 | md416.d | 04/18/02 | 12:21 |
| 06 | 107LFLCSM | 107LFLCS | md417.d | 04/18/02 | 13:19 |
| 07 | CL131 | 3805045 | md418.d | 04/18/02 | 14:18 |
| 08 | CL131MS | 3805045 | md419.d | 04/18/02 | 15:16 |
| 09 | CL131MSD | 3805045 | md420.d | 04/18/02 | 16:15 |

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SSW02

| | LL #'s | EPA SAMPLE NO. | S1 (2FP)# | S2 (PHL)# | S3 (TBP)# | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | 3805998 | SS401 | 44 | 32 | 68 | 0 |
| 02 | 3805999 | SS402 | 32 | 24 | 55 | 0 |
| 03 | 3806000 | SS701 | 44 | 32 | 67 | 0 |
| 04 | 3806001 | SS111 | 60 | 39 | 92 | 0 |
| 05 | 3806001DL | SS111DL | 57 | 43 | 60 | 0 |
| 06 | 3806002 | SS101 | 50 | 37 | 73 | 0 |
| 07 | 3806003 | SS601 | 49 | 35 | 69 | 0 |
| 08 | 3806005 | SSRI6 | 49 | 36 | 72 | 0 |
| 09 | 3806006 | SSRS6 | 48 | 34 | 72 | 0 |
| 10 | 3806673 | 417FB | 59 | 40 | 82 | 0 |
| 11 | 3806674 | 417PD | 63 | 46 | 80 | 0 |
| 12 | 3806675 | 417PI | 56 | 40 | 82 | 0 |
| 13 | 3806676 | 41720 | 64 | 47 | 79 | 0 |
| 14 | 3806677 | 41708 | 61 | 45 | 74 | 0 |
| 15 | 3806698 | RI-07 | 66 | 49 | 82 | 0 |
| 16 | 3807661 | 41802 | 73 | 53 | 91 | 0 |
| 17 | 3807662 | 41817 | 76 | 57 | 97 | 0 |
| 18 | 3807663 | 41823 | 76 | 60 | 96 | 0 |
| 19 | 3807664 | 41826 | 80 | 61 | 95 | 0 |
| 20 | 3807665 | 418-7 | 77 | 56 | 93 | 0 |
| 21 | 3807667 | 41811 | 75 | 56 | 95 | 0 |
| 22 | SBLKWB107 | SBLKWB107M | 47 | 34 | 68 | 0 |
| 23 | SBLKWA108 | SBLKWA108J | 58 | 42 | 79 | 0 |
| 24 | SBLKWE112 | SBLKWE112J | 70 | 58 | 88 | 0 |
| 25 | 107WBLCS | 107WBLCSM | 52 | 38 | 73 | 0 |
| 26 | 107WBLCSD | 107WBLCSDM | 51 | 37 | 75 | 0 |
| 27 | 108WALCS | 108WALCSJ | 66 | 47 | 89 | 0 |
| 28 | 108WALCSD | 108WALCSD | 67 | 48 | 87 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (22-96) |
| S2 (PHL) = Phenol-d6 | (12-66) |
| S3 (TBP) = 2,4,6-Tribromophenol | (36-147) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SSW02

| | LL #'s | EPA SAMPLE NO. | S1 (2FP)# | S2 (PHL)# | S3 (TBP)# | TOT OUT |
|---|---|---|---|---|---|---|
| 29 | 112WELCS | 112WELCSJ | 72 | 56 | 90 | 0 |
| 30 | 112WELCSD | 112WELCSDJ | 72 | 57 | 86 | 0 |
| 31 | 3807884 | SWM24 | 68 | 51 | 90 | 0 |
| 32 | 3807884 | SWM24MS | 70 | 53 | 90 | 0 |
| 33 | 3807884 | SWM24MSD | 69 | 54 | 92 | 0 |

| | QC LIMITS |
|---|---|
| S1 (2FP) = 2-Fluorophenol | (22-96) |
| S2 (PHL) = Phenol-d6 | (12-66) |
| S3 (TBP) = 2,4,6-Tribromophenol | (36-147) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLKWB107M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: md392.d Lab Sample ID: SBLKWB107

Date Extracted: 04/17/02 Extraction: Sepf

Date Analyzed: 04/17/02 Time Analyzed: 17:41

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP06755

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 107WBLCSM | 107WBLCS | md393.d | 04/17/02 |
| 02 | 107WBLCSDM | 107WBLCSD | md394.d | 04/17/02 |
| 03 | SS401 | 3805998 | md395.d | 04/17/02 |
| 04 | SS402 | 3805999 | md396.d | 04/17/02 |
| 05 | SS701 | 3806000 | md397.d | 04/17/02 |
| 06 | SS101 | 3806002 | md399.d | 04/18/02 |
| 07 | SS601 | 3806003 | md400.d | 04/18/02 |
| 08 | SSRI6 | 3806005 | md401.d | 04/18/02 |
| 09 | SSRS6 | 3806006 | md413.d | 04/18/02 |
| 10 | PSTT1 | 3806034 | md414.d | 04/18/02 |
| 11 | DCHGE | 3806036 | md415.d | 04/18/02 |

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWA108J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd352.d Lab Sample ID: SBLKWA108

Date Extracted: 04/18/02 Extraction: Sepf

Date Analyzed: 04/19/02 Time Analyzed: 12:35

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP05525

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 108WALCSJ | 108WALCS | jd353.d | 04/19/02 |
| 02 | 108WALCSD | 108WALCSD | jd354.d | 04/19/02 |
| 03 | SS111 | 3806001 | jd355.d | 04/19/02 |
| 04 | 417FB | 3806673 | jd356.d | 04/19/02 |
| 05 | 417PD | 3806674 | jd357.d | 04/19/02 |
| 06 | 417PI | 3806675 | jd358.d | 04/19/02 |
| 07 | SS111DL | 3806001DL | jd372.d | 04/22/02 |
| 08 | 41720 | 3806676 | jd373.d | 04/22/02 |
| 09 | 41708 | 3806677 | jd374.d | 04/22/02 |
| 10 | RI-07 | 3806698 | jd375.d | 04/22/02 |

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWE112J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: jd479.d Lab Sample ID: SBLKWE112

Date Extracted: 04/22/02 Extraction: Sepf

Date Analyzed: 04/26/02 Time Analyzed: 15:32

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP05525

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | 112WELCSJ | 112WELCS | jd480.d | 04/26/02 |
| 02 | 112WELCSDJ | 112WELCSD | jd481.d | 04/26/02 |
| 03 | SWM24 | 3807884 | jd492.d | 04/26/02 |
| 04 | SWM24MS | 3807884 | jd493.d | 04/26/02 |
| 05 | SWM24MSD | 3807884 | jd494.d | 04/26/02 |
| 06 | CHAN1 | 3807880 | jd495.d | 04/26/02 |
| 07 | CHAN2 | 3807881 | jd496.d | 04/26/02 |
| 08 | CHAN3 | 3807882 | jd497.d | 04/27/02 |
| 09 | CHAN7 | 3807883 | jd498.d | 04/27/02 |
| 10 | CHN7D | 3807885 | jd520.d | 04/28/02 |
| 11 | 41802 | 3807661 | jd521.d | 04/28/02 |
| 12 | 41817 | 3807662 | jd522.d | 04/28/02 |
| 13 | 41826 | 3807664 | jd524.d | 04/29/02 |
| 14 | 418-7 | 3807665 | jd525.d | 04/29/02 |
| 15 | 41811 | 3807667 | jd533.d | 04/29/02 |
| 16 | 41823 | 3807663 | jd53a.d | 04/29/02 |

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWB107M

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWB107

Sample wt/vol: 1000 (g/mL)ML Lab File ID: md392.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/17/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/17/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 91-20-3 | Naphthalene | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 86-30-6 | N-Nitrosodiphenylamine | | | 1 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |
| 129-00-0 | Pyrene | | | 1 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKWA108J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWA108

Sample wt/vol: 1000 (g/mL)ML Lab File ID: jd352.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/18/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKWE112J

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Matrix: (soil/water) WATER Lab Sample ID: SBLKWE112

Sample wt/vol: 1000 (g/mL) ML Lab File ID: jd479.d

Level: (low/med) LOW Date Received:

% Moisture: not dec: dec: Date Extracted: 04/22/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/02

Injection Volume: 1 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Extraction: Sepf

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) | MDL | UG/L | Q |
|---|---|---|---|---|---|
| 123-91-1 | 1,4-Dioxane | | | 1 | U |
| 108-95-2 | Phenol | | | 1 | U |
| 95-57-8 | 2-Chlorophenol | | | 1 | U |
| 88-75-5 | 2-Nitrophenol | | | 1 | U |
| 105-67-9 | 2,4-Dimethylphenol | | | 1 | U |
| 120-83-2 | 2,4-Dichlorophenol | | | 1 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | | | 1 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | | 2 | U |
| 51-28-5 | 2,4-Dinitrophenol | | | 20 | U |
| 100-02-7 | 4-Nitrophenol | | | 10 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | | | 5 | U |
| 87-86-5 | Pentachlorophenol | | | 3 | U |

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: md393.d | LCS Duplicate: md394.d | Batch: 02107WAB026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP06755 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 100.00 | 38.32 | 37.93 | 38 | 38 | 31-59 | YES | 1 | 30 | YES |
| 2-Chlorophenol | 100.00 | 81.70 | 83.63 | 82 | 84 | 73-114 | YES | 2 | 30 | YES |
| 2-Nitrophenol | 100.00 | 85.17 | 88.57 | 85 | 89 | 73-123 | YES | 4 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 76.54 | 79.35 | 77 | 79 | 67-105 | YES | 4 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 81.82 | 84.36 | 82 | 84 | 71-120 | YES | 3 | 30 | YES |
| Naphthalene | 100.00 | 67.88 | 71.66 | 68 | 72 | 58-108 | YES | 5 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 84.89 | 86.20 | 85 | 86 | 74-119 | YES | 2 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 85.04 | 86.13 | 85 | 86 | 66-125 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 97.81 | 97.85 | 98 | 98 | 26-145 | YES | 0 | 30 | YES |
| 4-Nitrophenol | 100.00 | 38.60 | 37.41 | 39 | 37 | 17-75 | YES | 3 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 94.42 | 98.14 | 94 | 98 | 35-152 | YES | 4 | 30 | YES |
| N-Nitrosodiphenylamine | 100.00 | 81.84 | 83.67 | 82 | 84 | 64-118 | YES | 2 | 30 | YES |
| Pentachlorophenol | 100.00 | 88.53 | 89.89 | 89 | 90 | 43-127 | YES | 2 | 30 | YES |
| Pyrene | 100.00 | 77.96 | 79.91 | 78 | 80 | 68-125 | YES | 2 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: jd353.d | LCS Duplicate: jd354.d | Batch: 02108WAA026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP05525 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 100.00 | 46.47 | 47.38 | 46 | 47 | 31-59 | YES | 2 | 30 | YES |
| 2-Chlorophenol | 100.00 | 95.39 | 96.89 | 95 | 97 | 73-114 | YES | 2 | 30 | YES |
| 2-Nitrophenol | 100.00 | 100.02 | 103.63 | 100 | 104 | 73-123 | YES | 4 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 86.06 | 89.08 | 86 | 89 | 67-105 | YES | 3 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 91.72 | 96.59 | 92 | 97 | 71-120 | YES | 5 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 93.53 | 99.19 | 94 | 99 | 74-119 | YES | 6 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 94.57 | 95.55 | 95 | 96 | 66-125 | YES | 1 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 94.29 | 94.05 | 94 | 94 | 26-145 | YES | 0 | 30 | YES |
| 4-Nitrophenol | 100.00 | 41.73 | 42.02 | 42 | 42 | 17-75 | YES | 1 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 115.73 | 116.76 | 116 | 117 | 35-152 | YES | 1 | 30 | YES |
| Pentachlorophenol | 100.00 | 93.64 | 93.58 | 94 | 94 | 43-127 | YES | 0 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: jd480.d | LCS Duplicate: jd481.d | Batch: 02112WAE026

Method: SW-846 8270C | Matrix/Level: W/L
Instrument: HP05525 | Dilution Factor: 1.0

| COMPOUND NAME | SPIKE LEVEL | LCS CONC UG/L | LCSD CONC UG/L | LCS REC % | LCSD REC % | Range LOWER-UPPER | REC INSPEC | RPD % | RPD MAX | RPD INSPEC |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | 100.00 | 65.44 | 65.09 | 65 | 65 | 49-79 | YES | 1 | 30 | YES |
| Phenol | 100.00 | 52.22 | 54.88 | 52 | 55 | 31-59 | YES | 5 | 30 | YES |
| 2-Chlorophenol | 100.00 | 89.36 | 88.93 | 89 | 89 | 73-114 | YES | 0 | 30 | YES |
| 2-Nitrophenol | 100.00 | 100.62 | 99.64 | 101 | 100 | 73-123 | YES | 1 | 30 | YES |
| 2,4-Dimethylphenol | 100.00 | 84.35 | 83.23 | 84 | 83 | 67-105 | YES | 1 | 30 | YES |
| 2,4-Dichlorophenol | 100.00 | 85.71 | 85.47 | 86 | 85 | 71-120 | YES | 0 | 30 | YES |
| 4-Chloro-3-methylphenol | 100.00 | 83.61 | 79.73 | 84 | 80 | 74-119 | YES | 5 | 30 | YES |
| 2,4,6-Trichlorophenol | 100.00 | 83.99 | 84.24 | 84 | 84 | 66-125 | YES | 0 | 30 | YES |
| 2,4-Dinitrophenol | 100.00 | 74.52 | 73.69 | 75 | 74 | 26-145 | YES | 1 | 30 | YES |
| 4-Nitrophenol | 100.00 | 43.20 | 48.05 | 43 | 48 | 17-75 | YES | 11 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 100.00 | 113.67 | 110.88 | 114 | 111 | 35-152 | YES | 2 | 30 | YES |
| Pentachlorophenol | 100.00 | 92.02 | 83.54 | 92 | 84 | 43-127 | YES | 10 | 30 | YES |

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

_____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd35a.d Date Analyzed: 04/19/02

Instrument ID: HP05525 Time Analyzed: 10:45

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 131080 | 12.863 | 500484 | 16.425 | 236965 | 21.524 |
| | UPPER LIMIT | 262160 | 13.363 | 1000968 | 16.925 | 473930 | 22.024 |
| | LOWER LIMIT | 65540 | 12.363 | 250242 | 15.925 | 118483 | 21.024 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWA108J | 116733 | 12.858 | 448837 | 16.430 | 212175 | 21.524 |
| 02 | 108WALCSJ | 110255 | 12.863 | 418390 | 16.433 | 200023 | 21.529 |
| 03 | 108WALCSD | 104156 | 12.863 | 390399 | 16.433 | 188225 | 21.528 |
| 04 | SS111 | 107252 | 12.893 | 398901 | 16.441 | 207830 | 21.528 |
| 05 | 417FB | 119075 | 12.858 | 464797 | 16.430 | 219187 | 21.525 |
| 06 | 417PD | 121149 | 12.858 | 468575 | 16.421 | 222852 | 21.516 |
| 07 | 417PI | 116891 | 12.858 | 462871 | 16.430 | 217750 | 21.515 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd35a.d Date Analyzed: 04/19/02

Instrument ID: HP05525 Time Analyzed: 10:45

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 378781 | 25.836 | 297702 | 32.760 | 298166 | 38.789 |
| UPPER LIMIT | 757562 | 26.336 | 595404 | 33.260 | 596332 | 39.289 |
| LOWER LIMIT | 189391 | 25.336 | 148851 | 32.260 | 149083 | 38.289 |
| EPA SAMPLE NO. | | | | | | |
| 01 SBLKWA108J | 350280 | 25.829 | 292152 | 32.739 | 275461 | 38.782 |
| 02 108WALCSJ | 323302 | 25.833 | 243263 | 32.756 | 245317 | 38.795 |
| 03 108WALCSD | 307606 | 25.833 | 229031 | 32.759 | 232820 | 38.798 |
| 04 SS111 | 338023 | 25.828 | 280382 | 32.740 | 275910 | 38.779 |
| 05 417FB | 368007 | 25.829 | 299098 | 32.750 | 287778 | 38.784 |
| 06 417PD | 358688 | 25.830 | 293360 | 32.741 | 278353 | 38.776 |
| 07 417PI | 354859 | 25.829 | 296313 | 32.740 | 276431 | 38.783 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd371.d Date Analyzed: 04/22/02

Instrument ID: HP05525 Time Analyzed: 09:00

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 130968 | 12.787 | 510651 | 16.349 | 239215 | 21.439 |
| | UPPER LIMIT | 261936 | 13.287 | 1021302 | 16.849 | 478430 | 21.939 |
| | LOWER LIMIT | 65484 | 12.287 | 255326 | 15.849 | 119608 | 20.939 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SS111DL | 111097 | 12.790 | 429402 | 16.344 | 204343 | 21.439 |
| 02 | 41720 | 111805 | 12.790 | 444369 | 16.343 | 210647 | 21.438 |
| 03 | 41708 | 120738 | 12.790 | 470111 | 16.352 | 221943 | 21.439 |
| 04 | RI-07 | 121409 | 12.790 | 476864 | 16.353 | 217583 | 21.441 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd371.d Date Analyzed: 04/22/02

Instrument ID: HP05525 Time Analyzed: 09:00

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 378888 | 25.751 | 288759 | 32.654 | 290829 | 38.593 |
| UPPER LIMIT | 757776 | 26.251 | 577518 | 33.154 | 581658 | 39.093 |
| LOWER LIMIT | 189444 | 25.251 | 144380 | 32.154 | 145415 | 38.093 |
| EPA SAMPLE NO. | | | | | | |
| 01 SS111DL | 334967 | 25.743 | 276195 | 32.643 | 263417 | 38.577 |
| 02 41720 | 340462 | 25.742 | 280382 | 32.642 | 270663 | 38.586 |
| 03 41708 | 360369 | 25.743 | 296432 | 32.644 | 282581 | 38.588 |
| 04 RI-07 | 366920 | 25.747 | 293839 | 32.645 | 289628 | 38.580 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd471.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 07:40

| | IS1(DCB) AREA # | IS1(DCB) RT # | IS2(NPT) AREA # | IS2(NPT) RT # | IS3(ANT) AREA # | IS3(ANT) RT # |
|---|---|---|---|---|---|---|
| | 12 HOUR STD | 260179 | 12.576 | 957287 | 16.132 | 450803 | 21.218 |
| | UPPER LIMIT | 520358 | 13.076 | 1914574 | 16.632 | 901606 | 21.718 |
| | LOWER LIMIT | 130090 | 12.076 | 478644 | 15.632 | 225402 | 20.718 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | MJ26- | 255772 | 12.577 | 955014 | 16.125 | 446469 | 21.211 |
| 02 | MJ36- | 238972 | 12.572 | 862339 | 16.130 | 397217 | 21.212 |
| 03 | MJ362 | 263740 | 12.570 | 988460 | 16.125 | 456932 | 21.205 |
| 04 | MJ46- | 240362 | 12.574 | 868205 | 16.125 | 393644 | 21.214 |
| 05 | MJ56- | 232749 | 12.574 | 836637 | 16.125 | 373808 | 21.213 |
| 06 | MJ66- | 243797 | 12.571 | 940828 | 16.126 | 444040 | 21.205 |
| 07 | MJ76- | 247254 | 12.571 | 923487 | 16.126 | 430727 | 21.206 |
| 08 | SBLKWE112J | 251723 | 12.572 | 937186 | 16.126 | 449661 | 21.214 |
| 09 | 112WELCSJ | 247440 | 12.580 | 881481 | 16.139 | 414166 | 21.226 |
| 10 | 112WELCSDJ | 233146 | 12.581 | 829571 | 16.140 | 380716 | 21.217 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd471.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 07:40

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 606856 | 25.528 | 435917 | 32.399 | 411682 | 38.068 |
| | UPPER LIMIT | 1213712 | 26.028 | 871834 | 32.899 | 823364 | 38.568 |
| | LOWER LIMIT | 303428 | 25.028 | 217959 | 31.899 | 205841 | 37.568 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | MJ26- | 648898 | 25.522 | 479223 | 32.383 | 402841 | 38.068 |
| 02 | MJ36- | 581379 | 25.520 | 435252 | 32.389 | 399404 | 38.066 |
| 03 | MJ362 | 677264 | 25.523 | 473760 | 32.384 | 410226 | 38.062 |
| 04 | MJ46- | 538416 | 25.517 | 411991 | 32.386 | 369670 | 38.060 |
| 05 | MJ56- | 511194 | 25.518 | 389390 | 32.390 | 348222 | 38.070 |
| 06 | MJ66- | 632106 | 25.524 | 455845 | 32.390 | 388623 | 38.061 |
| 07 | MJ76- | 604307 | 25.529 | 443811 | 32.388 | 390181 | 38.065 |
| 08 | SBLKWE112J | 669411 | 25.520 | 475630 | 32.394 | 402452 | 38.069 |
| 09 | 112WELCSJ | 555937 | 25.540 | 384750 | 32.405 | 350273 | 38.088 |
| 10 | 112WELCSDJ | 519130 | 25.530 | 362986 | 32.405 | 338299 | 38.089 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd491.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 18:55

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 244795 | 12.576 | 904764 | 16.131 | 422949 | 21.218 |
| | UPPER LIMIT | 489590 | 13.076 | 1809528 | 16.631 | 845898 | 21.718 |
| | LOWER LIMIT | 122398 | 12.076 | 452382 | 15.631 | 211475 | 20.718 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SWM24 | 266149 | 12.572 | 975135 | 16.129 | 432121 | 21.214 |
| 02 | SWM24S | 237663 | 12.571 | 832019 | 16.131 | 375054 | 21.214 |
| 03 | SWM24SD | 254197 | 12.572 | 871893 | 16.132 | 391797 | 21.216 |
| 04 | CHAN1 | 268019 | 12.572 | 1005608 | 16.127 | 453921 | 21.206 |
| 05 | CHAN2 | 258610 | 12.562 | 980685 | 16.117 | 462055 | 21.206 |
| 06 | CHAN3 | 264757 | 12.562 | 981590 | 16.117 | 456594 | 21.207 |
| 07 | CHAN7 | 239551 | 12.564 | 901469 | 16.120 | 456826 | 21.198 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd491.d Date Analyzed: 04/26/02

Instrument ID: HP05525 Time Analyzed: 18:55

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 609829 | 25.528 | 431656 | 32.402 | 395914 | 38.073 |
| | UPPER LIMIT | 1219658 | 26.028 | 863312 | 32.902 | 791828 | 38.573 |
| | LOWER LIMIT | 304915 | 25.028 | 215828 | 31.902 | 197957 | 37.573 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SWM24 | 631635 | 25.524 | 443598 | 32.392 | 393354 | 38.058 |
| 02 | SWM24S | 517297 | 25.534 | 359293 | 32.406 | 329935 | 38.062 |
| 03 | SWM24SD | 545500 | 25.526 | 377650 | 32.399 | 354305 | 38.068 |
| 04 | CHAN1 | 645673 | 25.513 | 454215 | 32.389 | 398985 | 38.056 |
| 05 | CHAN2 | 656716 | 25.515 | 462450 | 32.382 | 397656 | 38.059 |
| 06 | CHAN3 | 642050 | 25.514 | 446881 | 32.381 | 383176 | 38.047 |
| 07 | CHAN7 | 664700 | 25.510 | 463053 | 32.381 | 383022 | 38.049 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd51a.d Date Analyzed: 04/28/02

Instrument ID: HP05525 Time Analyzed: 15:31

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 157314 | 12.233 | 519095 | 15.769 | 278360 | 20.832 |
| | UPPER LIMIT | 314628 | 12.733 | 1038190 | 16.269 | 556720 | 21.332 |
| | LOWER LIMIT | 78657 | 11.733 | 259548 | 15.269 | 139180 | 20.332 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | CHN7D | 137772 | 12.230 | 511493 | 15.768 | 290271 | 20.828 |
| 02 | 41802 | 142287 | 12.227 | 501921 | 15.764 | 261120 | 20.827 |
| 03 | 41817 | 146803 | 12.227 | 505735 | 15.765 | 263322 | 20.827 |
| 04 | 41826 | 144920 | 12.226 | 512760 | 15.764 | 269524 | 20.826 |
| 05 | 418-7 | 145032 | 12.226 | 517235 | 15.763 | 261466 | 20.825 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd51a.d Date Analyzed: 04/28/02

Instrument ID: HP05525 Time Analyzed: 15:31

| | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 429792 | 25.142 | 306010 | 31.969 | 288066 | 37.205 |
| UPPER LIMIT | 859584 | 25.642 | 612020 | 32.469 | 576132 | 37.705 |
| LOWER LIMIT | 214896 | 24.642 | 153005 | 31.469 | 144033 | 36.705 |
| EPA SAMPLE NO. | | | | | | |
| 01 CHN7D | 485916 | 25.135 | 354407 | 31.963 | 287790 | 37.203 |
| 02 41802 | 421149 | 25.136 | 308655 | 31.968 | 270281 | 37.197 |
| 03 41817 | 420387 | 25.137 | 315602 | 31.959 | 282404 | 37.198 |
| 04 41826 | 433128 | 25.135 | 331072 | 31.957 | 286965 | 37.195 |
| 05 418-7 | 416235 | 25.134 | 308143 | 31.964 | 273619 | 37.192 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd531.d Date Analyzed: 04/29/02

Instrument ID: HP05525 Time Analyzed: 08:20

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 146435 | 12.150 | 506615 | 15.685 | 273546 | 20.739 |
| | UPPER LIMIT | 292870 | 12.650 | 1013230 | 16.185 | 547092 | 21.239 |
| | LOWER LIMIT | 73218 | 11.650 | 253308 | 15.185 | 136773 | 20.239 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 41811 | 133625 | 12.147 | 468204 | 15.674 | 253103 | 20.726 |
| 02 | SBLKLC114J | 135201 | 12.148 | 470137 | 15.675 | 252159 | 20.726 |
| 03 | 41823 | 133518 | 12.147 | 464857 | 15.674 | 248128 | 20.725 |
| 04 | 114LCLCSJ | 132249 | 12.152 | 458328 | 15.687 | 247737 | 20.730 |
| 05 | KM033 | 133176 | 12.150 | 482304 | 15.678 | 254718 | 20.722 |
| 06 | KM033MS | 132154 | 12.153 | 470356 | 15.679 | 240149 | 20.734 |
| 07 | KM033MSD | 135232 | 12.153 | 467246 | 15.679 | 248740 | 20.724 |
| 08 | KM034 | 142014 | 12.141 | 512279 | 15.669 | 272604 | 20.723 |
| 09 | 96041 | 126174 | 12.144 | 411097 | 15.671 | 215114 | 20.717 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): jd531.d Date Analyzed: 04/29/02

Instrument ID: HP05525 Time Analyzed: 08:20

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 451172 | 25.037 | 361333 | 31.860 | 356620 | 36.984 |
| | UPPER LIMIT | 902344 | 25.537 | 722666 | 32.360 | 713240 | 37.484 |
| | LOWER LIMIT | 225586 | 24.537 | 180667 | 31.360 | 178310 | 36.484 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | 41811 | 413769 | 25.025 | 342665 | 31.846 | 318400 | 36.976 |
| 02 | SBLKLC114J | 415495 | 25.034 | 353191 | 31.844 | 318356 | 36.973 |
| 03 | 41823 | 422431 | 25.024 | 344908 | 31.845 | 318984 | 36.975 |
| 04 | 114LCLCSJ | 420756 | 25.031 | 317735 | 31.861 | 292541 | 36.991 |
| 05 | KM033 | 421990 | 25.032 | 334502 | 31.839 | 280942 | 36.965 |
| 06 | KM033MS | 404439 | 25.037 | 284723 | 31.856 | 257482 | 36.980 |
| 07 | KM033MSD | 409794 | 25.028 | 282587 | 31.858 | 261374 | 36.973 |
| 08 | KM034 | 441419 | 25.024 | 320804 | 31.836 | 278041 | 36.966 |
| 09 | 96041 | 328830 | 25.031 | 246001 | 31.852 | 239708 | 37.005 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md391.d Date Analyzed: 04/17/02

Instrument ID: HP06755 Time Analyzed: 15:54

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 204492 | 12.835 | 683917 | 16.592 | 362192 | 21.996 |
| | UPPER LIMIT | 408984 | 13.335 | 1367834 | 17.092 | 724384 | 22.496 |
| | LOWER LIMIT | 102246 | 12.335 | 341959 | 16.092 | 181096 | 21.496 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWB107M | 198946 | 12.827 | 666263 | 16.584 | 358488 | 21.998 |
| 02 | 107WBLCSM | 204724 | 12.835 | 677511 | 16.591 | 361460 | 21.995 |
| 03 | 107WBLCSDM | 186676 | 12.835 | 616817 | 16.592 | 334130 | 21.995 |
| 04 | SS401 | 206567 | 12.824 | 682613 | 16.581 | 369669 | 21.985 |
| 05 | SS402 | 197149 | 12.824 | 650485 | 16.580 | 352804 | 21.984 |
| 06 | SS701 | 216156 | 12.824 | 714772 | 16.581 | 387094 | 21.984 |
| 07 | SS101 | 188500 | 12.828 | 648213 | 16.574 | 346412 | 21.989 |
| 08 | SS601 | 199318 | 12.824 | 676168 | 16.581 | 377111 | 21.984 |
| 09 | SSRI6 | 197338 | 12.828 | 663383 | 16.574 | 358759 | 21.988 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md391.d Date Analyzed: 04/17/02

Instrument ID: HP06755 Time Analyzed: 15:54

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 593432 | 26.571 | 506292 | 33.525 | 508666 | 39.704 |
| | UPPER LIMIT | 1186864 | 27.071 | 1012584 | 34.025 | 1017332 | 40.204 |
| | LOWER LIMIT | 296716 | 26.071 | 253146 | 33.025 | 254333 | 39.204 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SBLKWB107M | 601148 | 26.563 | 531549 | 33.517 | 508600 | 39.695 |
| 02 | 107WBLCSM | 610249 | 26.559 | 498715 | 33.535 | 518586 | 39.703 |
| 03 | 107WBLCSDM | 558441 | 26.560 | 456046 | 33.535 | 468614 | 39.703 |
| 04 | SS401 | 632780 | 26.560 | 575945 | 33.514 | 561462 | 39.682 |
| 05 | SS402 | 610619 | 26.548 | 548864 | 33.502 | 516296 | 39.681 |
| 06 | SS701 | 638702 | 26.559 | 591114 | 33.513 | 573483 | 39.681 |
| 07 | SS101 | 590292 | 26.553 | 515857 | 33.507 | 504534 | 39.675 |
| 08 | SS601 | 629734 | 26.549 | 556498 | 33.502 | 538463 | 39.671 |
| 09 | SSRI6 | 601507 | 26.553 | 545707 | 33.506 | 528482 | 39.675 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md411.d Date Analyzed: 04/18/02

Instrument ID: HP06755 Time Analyzed: 07:22

| | | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 132031 | 12.752 | 438458 | 16.498 | 219863 | 21.891 |
| | UPPER LIMIT | 264062 | 13.252 | 876916 | 16.998 | 439726 | 22.391 |
| | LOWER LIMIT | 66016 | 12.252 | 219229 | 15.998 | 109932 | 21.391 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SSRS6 | 124940 | 12.748 | 407551 | 16.494 | 218499 | 21.888 |
| 02 | PSTT1 | 119161 | 12.751 | 394305 | 16.497 | 210358 | 21.890 |
| 03 | DCHGE | 126438 | 12.749 | 415663 | 16.495 | 220185 | 21.888 |
| 04 | SBLKLF107M | 123680 | 12.748 | 408550 | 16.495 | 211428 | 21.888 |
| 05 | 107LFLCSM | 118917 | 12.752 | 371127 | 16.499 | 184438 | 21.892 |
| 06 | CL131 | 103456 | 12.752 | 352089 | 16.498 | 177360 | 21.891 |
| 07 | CL131MS | 95082 | 12.752 | 306410 | 16.498 | 159554 | 21.891 |
| 08 | CL131MSD | 92125 | 12.759 | 308772 | 16.505 | 159453 | 21.898 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): md411.d Date Analyzed: 04/18/02

Instrument ID: HP06755 Time Analyzed: 07:22

| | | IS4(PHN) | | IS5(CRY) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 356082 | 26.455 | 296639 | 33.377 | 284720 | 39.384 |
| | UPPER LIMIT | 712164 | 26.955 | 593278 | 33.877 | 569440 | 39.884 |
| | LOWER LIMIT | 178041 | 25.955 | 148320 | 32.877 | 142360 | 38.884 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | SSRS6 | 360897 | 26.452 | 313442 | 33.363 | 291128 | 39.380 |
| 02 | PSTT1 | 350174 | 26.444 | 297205 | 33.365 | 279043 | 39.383 |
| 03 | DCHGE | 366605 | 26.452 | 316864 | 33.363 | 292127 | 39.380 |
| 04 | SBLKLF107M | 353687 | 26.452 | 289570 | 33.363 | 239408 | 39.380 |
| 05 | 107LFLCSM | 289729 | 26.456 | 236478 | 33.377 | 228529 | 39.395 |
| 06 | CL131 | 239971 | 26.456 | 163779 | 33.399 | 197727 | 39.438 |
| 07 | CL131MS | 237015 | 26.455 | 171159 | 33.387 | 190519 | 39.426 |
| 08 | CL131MSD | 230445 | 26.463 | 171290 | 33.395 | 187968 | 39.434 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Quality Control Summary
SDG# GEV59

Surrogate Recovery
Volatiles by GC - Water

| LL Sample# | Sample Code | Dilution Factor | TFT-F Water-FID % Recovery | TFT-P Water-PID % Recovery | TOT OUT |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

* = Values outside quality control limits.
D = Surrogates diluted - not counted towards total out.
TOT OUT = Total # of surrogates with recovery outside control limits.

| | | Control Limits Lower | Upper |
|---|---|---|---|
| TFT-F | = Trifluorotoluene (Water - FID) | 65 | 137 |
| TFT-P | = Trifluorotoluene (Water - PID) | 72 | 134 |

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Quality Control Summary
SDG# GEV59

Method Blank
Volatiles by GC - Water

Blank ID.....: BLK1753
Date.....: 07/24/01
Instrument.....: 5359

Batch Number.....: 01205A17
Time.....: 18:03
Matrix.....: Water

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Time |
| | | | |

| Method Blank Results | | | | |
|---|---|---|---|---|
| CAS Number | Compound | Blank Conc. (UG/L) | LOQ (UG/L) | MDL (UG/L) |
| 75-65-0 | TERT-BUTYL ALCOHOL | ND | 100 | 20 |
| 1634-04-4 | METHYL T-BUTYL ETHER | ND | 1 | .3 |
| 71-43-2 | BENZENE | ND | 1 | .2 |
| 108-88-3 | TOLUENE | ND | 1 | .2 |
| 100-41-4 | ETHYLBENZENE | ND | 1 | .2 |
| 1330-20-7 | TOTAL XYLENES | ND | 3 | .6 |

LOQ = Limit of Quantitation; MDL = Method Detection Limit
ND = None Detected; * = Above Limit of Quantitation

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Quality Control Summary
SDG# GEV59

Matrix Spike
Volatiles by GC - Water

Unspiked Sample Number....: 3651037
Spiked Sample Number.....: 3651037MS

This MS applies to the following samples:

Batch Number.....: 01205A17
Date.....: 07/24/01 - 07/25/01
Matrix.....: Water

Instrument.....: 5359

| Compound | Spike Added (UG/L) | Sample Conc (UG/L) | MS Conc (UG/L) | MS % Recov | QC Limits Recov |
|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | 500 | 0.00 | 488 | 98 | 67-123 |
| METHYL T-BUTYL ETHER | 20.0 | 0.97 | 22.8 | 109 | 60-145 |
| BENZENE | 20.0 | 0.00 | 22.0 | 110 | 66-140 |
| TOLUENE | 20.0 | 0.00 | 22.3 | 112 | 72-138 |
| ETHYLBENZENE | 20.0 | 0.00 | 22.0 | 110 | 71-138 |
| TOTAL XYLENES | 60.0 | 0.00 | 65.4 | 109 | 69-140 |

MS=Matrix Spike; ND=None Detected

* = Recovery outside quality control limits.

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Quality Control Summary
SDG# GEV59

Lab Control/Lab Control Duplicate
Volatiles by GC - Water

Batch Number.....: 01205A17
Date.....: 07/24/01
Matrix.....: Water

This LCS/LDS applies to the following samples:

Instrument.....: 5359
Calibration Date.....: 06/22/01 - 06/23/01(FID)
Calibration Date.....: 06/22/01 - 06/23/01(PID)

| Compound | Spike Added (UG/L) | LCS Conc (UG/L) | LDS Conc (UG/L) | LCS % Recov | LDS % Recov | LCS Limits Recov | RPD | LCS Limits RPD |
|---|---|---|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | 500 | 503 | 523 | 101 | 105 | 72-124 | 4 | 30 |
| METHYL T-BUTYL ETHER | 20.0 | 21.9 | 21.8 | 110 | 109 | 79-127 | 1 | 30 |
| BENZENE | 20.0 | 20.4 | 20.4 | 102 | 102 | 80-118 | 0 | 30 |
| TOLUENE | 20.0 | 20.3 | 20.6 | 102 | 103 | 82-119 | 1 | 30 |
| ETHYLBENZENE | 20.0 | 20.0 | 20.3 | 100 | 102 | 81-119 | 1 | 30 |
| TOTAL XYLENES | 60.0 | 59.9 | 60.8 | 100 | 101 | 82-120 | 1 | 30 |

LCS=Lab Control Sample; LDS=Lab Control Sample Duplicate; RPD=Relative Percent Difference

* = Value outside quality control limits.

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Quality Control Summary
SDG# GEV59

Surrogate Retention Time Summary
Volatiles by GC

Initial Calibration Date(s): 06/22/01 - 06/23/01(FID)
Initial Calibration Date(s): 06/22/01 - 06/23/01(PID)
Instrument.....: 5359

| SURROGATE RT FROM INITIAL CALIBRATION (Level 3) | |
|---|---|
| Trifluorotoluene (FID) | 7.275 |
| Trifluorotoluene (PID) | 7.269 |

| Sample Information | | | | RT Summary | |
|---|---|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time | R.T. TFT-F | R.T. TFT-P |
| | | | | | |

TFT-F = Trifluorotoluene (FID)
TFT-P = Trifluorotoluene (PID)

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# Quality Control Summary
SDG# GEV59
Instrument ID: 5359
Initial Calibration Summary

Calibration Batch: 01173A17
Initial Calibration Date(s): 06/22/01-06/23/01(FID)
Initial Calibration Date(s): 06/22/01-06/23/01(PID)

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time |
| | | | |
| | | | |
| | | | |

| STANDARD | | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | LEVEL 7 | LEVEL 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE INJECTED | | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/22/01 | 06/23/01 | | |
| TIME INJECTED | | 18:58 | 19:34 | 20:10 | 20:46 | 21:22 | 21:58 | 23:10 | 00:22 | | |
| COMPOUND (DETECTOR) | | Retention Time LEVEL 3 | Window | Relative Response Factor (RRF) LEVEL1 | LEVEL2 | LEVEL3 | LEVEL4 | LEVEL5 | LEVEL6 | LEVEL7 | LEVEL8 | MEAN | % RSD |
| TERT-BUTYL ALCOHOL | (FID) | 4.885 | 0.03 | | | 24.4364 | 24.7996 | 28.5216 | 23.9382 | 25.9081 | 25.2229 | 25.4712 | 6 |
| METHYL T-BUTYL ETHER | (PID) | 5.423 | 0.03 | | 0.0223 | 0.0212 | 0.0204 | 0.0202 | 0.0202 | 0.0203 | 0.0201 | 0.0207 | 4 |
| BENZENE | (PID) | 6.724 | 0.03 | 0.0562 | 0.0549 | 0.0533 | 0.0531 | 0.0532 | 0.0527 | 0.0490 | 0.0449 | 0.0522 | 7 |
| SURR-TFT-P | (PID) | 7.269 | 0.03 | 0.0179 | 0.0177 | 0.0177 | 0.0178 | 0.0178 | 0.0177 | 0.0174 | 0.0171 | 0.0176 | 1 |
| SURR-TFT-F | (FID) | 7.275 | 0.03 | | | 635.560 | 634.458 | 637.602 | 644.023 | 634.704 | 636.610 | 637.160 | 1 |
| TOLUENE | (PID) | 8.194 | 0.03 | | 0.0500 | 0.0487 | 0.0478 | 0.0478 | 0.0473 | 0.0435 | 0.0399 | 0.0464 | 8 |
| ETHYLBENZENE | (PID) | 9.506 | 0.03 | | 0.0441 | 0.0423 | 0.0415 | 0.0415 | 0.0411 | 0.0379 | 0.0347 | 0.0404 | 8 |
| M,P-XYLENE | (PID) | 9.655 | 0.03 | | 0.0506 | 0.0482 | 0.0475 | 0.0474 | 0.0455 | 0.0335 | 0.0297 | 0.0432 | 19* |
| O-XYLENE | (PID) | 9.978 | 0.03 | | 0.0444 | 0.0414 | 0.0403 | 0.0400 | 0.0392 | 0.0356 | 0.0324 | 0.0390 | 10 |

* = RSD > 10% - The quadratic fit type was used.

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Quality Control Summary
SDG# GEV59

Check Std. Retention Time Summary
Volatiles by GC - Water

Instrument.....: 5359
Initial Calibration Date(s): 06/22/01 - 06/23/01(FID)
Initial Calibration Date(s): 06/22/01 - 06/23/01(PID)
Analysis Date.....: 07/25/01
Analysis Time.....: 18:16

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Analysis Time |
| | | | |
| | | | |
| | | | |

Check Standard Retention Time Summary

| Compound | Retention Time | ID Window |
|---|---|---|
| TERT-BUTYL ALCOHOL | 5.023 | +/-0.03 |
| METHYL T-BUTYL ETHER | 5.562 | +/-0.03 |
| BENZENE | 6.847 | +/-0.03 |
| TOLUENE | 8.307 | +/-0.03 |
| ETHYLBENZENE | 9.603 | +/-0.03 |
| M,P-XYLENE | 9.751 | +/-0.03 |
| O-XYLENE | 10.070 | +/-0.03 |

Retention Time and ID Window units are minutes.

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Quality Control Summary
SDG# GEV59
Instrument ID: 5359
Beginning Calibration Verification Summary

CCV Batch: 01205A17
Data File: C:\CP\DATA1\17205.47R
Date Injected: 07/25/01 Time Injected: 18:16
Initial Calibration Date(s): 06/22/01-06/23/01(FID)
Initial Calibration Date(s): 06/22/01-06/23/01(PID)

| Sample Information | | | |
|---|---|---|---|
| LL Sample# | Sample Code | Analysis Date | Time |
| | | | |
| | | | |
| | | | |

| COMPOUND (DETECTOR) | | THEORETICAL CONCENTRATION (UG/L ) | ACTUAL CONCENTRATION (UG/L ) | % DRIFT | %DRIFT LIMITS |
|---|---|---|---|---|---|
| TERT-BUTYL ALCOHOL | (FID) | 200.0 | 226.2 | 13 | -25 to +25 |
| METHYL T-BUTYL ETHER | (PID) | 20.0 | 22.1 | 10 | -15 to +15 |
| BENZENE | (PID) | 20.0 | 21.3 | 6 | -15 to +15 |
| SURR-TFT-P | (PID) | 30.0 | 30.5 | 2 | -28 to +34 |
| SURR-TFT-F | (FID) | 30.0 | 28.0 | -7 | -35 to +37 |
| TOLUENE | (PID) | 20.0 | 21.6 | 8 | -15 to +15 |
| ETHYLBENZENE | (PID) | 20.0 | 21.1 | 6 | -15 to +15 |
| M,P-XYLENE | (PID) | 40.0 | 41.4 | 4 | -15 to +15 |
| O-XYLENE | (PID) | 20.0 | 21.6 | 8 | -15 to +15 |

* = %DRIFT outside control limits.

1D

# ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKRE

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

Matrix: (soil/water) SOIL  Lab Sample ID: BLANKA

Sample wt/vol: 30.0 (g/ml) g  Lab File ID:

% Moisture:  Date Received:

Extraction: (SepF/Cont/Sonc) SONC  Date Extracted: 07/24/01

Concentrated Extract Volume 10000 (uL)  Date Analyzed: 07/25/01

Injection Volume: 1 (uL)  Dilution Factor: 1

GPC Cleanup: (Y/N) N  pH:  Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (UG/L or UG/KG) UG/KG | Q |
|---|---|---|---|
| 11104-28-2 | Aroclor-1221 | 4.4 | U |
| 53469-21-9 | Aroclor-1242 | 3.3 | U |
| 11141-16-5 | Aroclor-1232 | 3.3 | U |
| 12674-11-2 | Aroclor-1016 | 3.3 | U |
| 12672-29-6 | Aroclor-1248 | 3.6 | U |
| 11097-69-1 | Aroclor-1254 | 3.3 | U |
| 11096-82-5 | Aroclor-1260 | 3.3 | U |

# 2F
# SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

GC Column(1): RTX-CLP ID: 0.32 (mm)  GC Column(2): RTXCLPII ID: 0.32 (mm)

| | SAMPLE | SAMPLE CODE NO. | TCX 1 %REC | # | TCX 2 %REC | # | DCB 1 %REC | # | DCB 2 %REC | # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 3653451 | -BBS1 | 84 | | 0 | D | 160 | D | 357 | D | 0 |
| 02 | 3653451 MS | -BBS1MS | 91 | | 0 | D | 161 | D | 352 | D | 0 |
| 03 | 3653451 MSD | -BBS1MSD | 92 | | 0 | D | 194 | D | 341 | D | 0 |
| 04 | 3653452 | -BBS2 | 87 | | 89 | | 113 | | 115 | | 0 |
| 05 | 3653453 | -BBS3 | 0 | D | 0 | D | 7500 | D | 0 | D | 0 |
| 06 | 3653454 | -BBS4 | 0 | D | 0 | D | 8600 | D | 0 | D | 0 |
| 07 | LCSA | LCS2X | 92 | | 83 | | 84 | | 84 | | 0 |
| 08 | BLANKA | PBLKRE | 97 | | 88 | | 87 | | 87 | | 0 |

| | ADVISORY QC LIMITS | NOMINAL CONCENTRATION | |
|---|---|---|---|
| TCX = Tetrachloro-m-xylene | (53-139) | 9.72 | ug/Kg |
| DCB = Decachlorobiphenyl | (41-132) | 9.81 | ug/Kg |

# Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

3F

# SOIL LAB CONTROL SPIKE/LAB CONTROL SPIKE DUPLICATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Lab Control Spike - Sample Code No.: LCS2X

| Compound | Spike Added (ug/Kg) | LCS Concen (ug/Kg) | LCSD Concen (ug/Kg) | LCS % REC# | LCSD % REC# | LCS-LCSD % REC Limits | % RPD # | % RPD LIM |
|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 170 | 130 | | 78 | | (72-120) | | 50 |
| Aroclor-1260 | 170 | 140 | | 84 | | (76-122) | | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

Sample No.: LCSA Batch: 012050021A

# 3F
# SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: -BBS1

| Compound | Spike Added (ug/Kg) | Sample Concen (ug/Kg) | MS Concen (ug/Kg) | MSD Concen (ug/Kg) | MS % REC# | MSD % REC# | MS-MSD % REC Limits | % RPD # | % RPD LIM |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | 170 | 0 | 0 | 0 | 0* | 0* | (61-128) | | 50 |
| Aroclor-1260 | 170 | 58000 | 68000 | 83000 | 5880* | 4700* | (47-139) | 20 | 50 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 4 out of 4 outside limits

COMMENTS: Results calculated on as-received basis.

Sample No.: 3653451 Batch: 012050021A

4C

# METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKRE

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.: PRY43

Lab Sample ID: BLANKA  Lab File ID:

Matrix: (soil/water) SOIL  Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N  Date Extracted: 07/24/01

Date Analyzed (1): 07/25/01  Date Analyzed (2): 07/25/01

Time Analyzed (1): 22:50  Time Analyzed (2): 22:50

Instrument ID (1): H4783A  Instrument ID (2): H4783B

GC Column (1): RTX-CLP ID: 0.32 (mm)  GC Column (2): RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

| | SAMPLE CODE NO. | LAB SAMPLEID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | -BBS1 | 3653451 | 07/25/01 | 07/25/01 |
| 02 | -BBS1MS | 3653451 | 07/25/01 | 07/25/01 |
| 03 | -BBS1MSD | 3653451 | 07/26/01 | 07/26/01 |
| 04 | -BBS2 | 3653452 | 07/26/01 | 07/26/01 |
| 05 | -BBS3 | 3653453 | 07/26/01 | 07/26/01 |
| 06 | -BBS4 | 3653454 | 07/26/01 | 07/26/01 |
| 07 | PBLKRE | BLANKA | 07/25/01 | 07/25/01 |
| 08 | LCS2X | LCSA | 07/25/01 | 07/25/01 |

COMMENTS: _____

6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Calibration File: 1P3169

GC Column(1): RTX-CLP ID: 0.32 (mm)  Update File:

Date(s) Analyzed: 06/18/01  06/18/01

| COMPOUND | RT OF STANDARDS | | | | | MIDPOINT RT | RT WINDOW | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | | FROM | TO |
| Tetrachloro-m-xylene | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.43 | 2.57 |
| Decachlorobiphenyl | 9.05 | 9.05 | 9.05 | 9.05 | 9.04 | 9.04 | 8.79 | 9.29 |

# 6E
# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Calibration File: 1P3169

GC Column(1): RTX-CLP ID: 0.32 (mm)  Date(s) Analyzed: 06/18/01  06/18/01

| COMPOUND | CALIBRATION FACTORS | | | | | | % RSD |
|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | MEAN | |
| Tetrachloro-m-xylene | 2.50E+03 | 2.62E+03 | 2.67E+03 | 2.70E+03 | 2.71E+03 | 2.64E+03 | 3.3 |
| Decachlorobiphenyl | 4.29E+03 | 4.32E+03 | 4.03E+03 | 3.70E+03 | 3.17E+03 | 3.90E+03 | 12.2 |

Average % RSD: 7.8

#Name?

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: H4783A  Init. Calib. Date(s): 07/25/01  07/25/01

GC Column(1): RTX-CLP  ID: 0.32 (mm)  Date Analyzed: 07/25/01

Lab File ID: HP3169.88R  Time Analyzed: 22:12

Lab Standard ID: AR1630I  Initial Calibration: 2P3169

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT (ng/ml) | NOM AMOUNT (ng/ml) | %D |
|---|---|---|---|---|---|---|
| Tetrachloro-m-xylene | 2.49 | 2.42 | 2.56 | 7.36 | 7.78 | -5.4 |
| Aroclor-1016 | 2.85 | 2.82 | 2.89 | 178.17 | 200.00 | -10.9 |
| | 3.23 | 3.20 | 3.27 | | | |
| | 3.75 | 3.72 | 3.79 | | | |
| | 3.90 | 3.88 | 3.95 | | | |
| | 3.97 | 3.95 | 4.02 | | | |
| | 4.37 | 4.35 | 4.42 | | | |
| Aroclor-1260 | 5.82 | 5.79 | 5.86 | 185.48 | 200.00 | -7.3 |
| | 6.16 | 6.13 | 6.20 | | | |
| | 6.51 | 6.47 | 6.54 | | | |
| | 6.64 | 6.61 | 6.68 | | | |
| | 6.94 | 6.91 | 6.98 | | | |
| | 7.32 | 7.29 | 7.36 | | | |
| Decachlorobiphenyl | 9.01 | 8.77 | 9.27 | 7.76 | 7.85 | -1.2 |

Average of %D: 6.2

# 8D
# ANALYTICAL SEQUENCE

Sequence: 1P3169 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: RTX-CLP ID: 0.32

Instrument: H4783A

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

| | Sample Code No. | Lab Sample ID | Date Analyzed | Time Analyzed | Calibration File | TCX | DCB |
|---|---|---|---|---|---|---|---|
| 001 | PIBLKAA | IBLKX01A | 06/18/2001 | 11:06:57 | 1P3169 | 2.50 | 9.05 |
| 002 | AR161AA | AR16101A | 06/18/2001 | 11:25:33 | 1P3169 | 2.50 | 9.05 |
| 003 | AR162AA | AR16201A | 06/18/2001 | 11:44:27 | 1P3169 | 2.50 | 9.05 |
| 004 | AR163AA | AR16301B | 06/18/2001 | 12:03:01 | 1P3169 | 2.50 | 9.05 |
| 005 | AR164AA | AR16401A | 06/18/2001 | 12:21:36 | 1P3169 | 2.50 | 9.05 |
| 006 | AR165AA | AR16501A | 06/18/2001 | 12:40:11 | 1P3169 | 2.50 | 9.04 |
| 007 | AR481AA | AR48101A | 06/18/2001 | 12:58:47 | 1P3169 | 2.50 | 9.05 |
| 008 | AR482AA | AR48201A | 06/18/2001 | 13:17:22 | 1P3169 | 2.50 | 9.04 |
| 009 | AR483AA | AR48301A | 06/18/2001 | 13:35:57 | 1P3169 | 2.50 | 9.04 |
| 010 | AR484AA | AR48401A | 06/18/2001 | 13:54:30 | 1P3169 | 2.50 | 9.04 |
| 011 | AR485AA | AR48501A | 06/18/2001 | 14:13:04 | 1P3169 | 2.50 | 9.04 |
| 012 | AR541AA | AR54101B | 06/18/2001 | 14:31:38 | 1P3169 | 2.50 | 9.04 |
| 013 | AR542AA | AR54201B | 06/18/2001 | 14:50:15 | 1P3169 | 2.50 | 9.04 |
| 014 | AR543AA | AR54301B | 06/18/2001 | 15:08:48 | 1P3169 | 2.50 | 9.04 |
| 015 | AR544AA | AR54401B | 06/18/2001 | 15:27:23 | 1P3169 | 2.50 | 9.04 |
| 016 | AR545AA | AR54501B | 06/18/2001 | 15:46:27 | 1P3169 | 2.50 | 9.04 |
| 017 | AR21XAA | AR21X01A | 06/18/2001 | 16:05:03 | 1P3169 | 2.50 | 9.04 |
| 018 | AR32XAA | AR32X01A | 06/18/2001 | 16:23:38 | 1P3169 | 2.50 | 9.04 |
| 019 | AR42XAA | AR42X01A | 06/18/2001 | 16:42:13 | 1P3169 | 2.50 | 9.04 |
| 020 | MD16XAA | MD16X01A | 06/18/2001 | 17:00:46 | 1P3169 | 2.50 | 9.04 |

| | ICAL Dates | | ICAL RT | QC Limits |
|---|---|---|---|---|
| 1P3169 | 06/18/2001 - 07/23/2001 | TCX = Tetrachloro-m-xylene | 2.5 | (2.43 - 2.57 Minutes) |
| | | DCB = Decachlorobiphenyl | 9.04 | (8.79 - 9.29 Minutes) |

10A

# IDENTIFICATION SUMMARY

SAMPLE CODE NO.: LCSW0

**Lab Name:** Lancaster Laboratories **Contract:**

**Lab Code:** **Case No.:** **SAS No.:** **SDG No.:**

**Lab Sample ID:** LCSA **Date(s) Analyzed:** 7/20/01 7/20/01

**Instrument ID (1):** H6722A **Instrument ID (2):** H6722B

**GC Column (1):** RTX-CLP **ID:** 0.32 (mm) **GC Column (2):** RTXCLPII **ID:** 0.32 (mm)

| ANALYTE | COL | RT | FROM | TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| alpha-BHC | 1 | 5.12 | 5.10 | 5.16 | 0.11 | |
| | 2 | 5.10 | 5.07 | 5.13 | 0.11 | 0.0 |
| gamma-BHC (Lindane) | 1 | 5.59 | 5.56 | 5.62 | 0.11 | |
| | 2 | 5.62 | 5.59 | 5.65 | 0.11 | 0.0 |
| beta-BHC | 1 | 5.71 | 5.68 | 5.74 | 0.12 | |
| | 2 | 5.74 | 5.70 | 5.76 | 0.12 | 0.0 |
| delta-BHC | 1 | 5.97 | 5.94 | 6.00 | 0.12 | |
| | 2 | 6.15 | 6.12 | 6.18 | 0.12 | 0.0 |
| Heptachlor | 1 | 6.26 | 6.24 | 6.30 | 0.085 | |
| | 2 | 6.24 | 6.21 | 6.27 | 0.082 | 3.6 |
| Aldrin | 1 | 6.68 | 6.66 | 6.72 | 0.075 | |
| | 2 | 6.69 | 6.66 | 6.72 | 0.076 | 1.3 |
| Heptachlor epoxide | 1 | 7.51 | 7.49 | 7.55 | 0.11 | |
| | 2 | 7.46 | 7.43 | 7.49 | 0.10 | 9.5 |
| 4,4'-DDE | 1 | 7.94 | 7.91 | 7.97 | 0.20 | |
| | 2 | 8.12 | 8.09 | 8.15 | 0.21 | 4.9 |
| Endosulfan I | 1 | 8.05 | 8.02 | 8.08 | 0.10 | |
| | 2 | 7.98 | 7.95 | 8.01 | 0.087 | 13.9 |
| Dieldrin | 1 | 8.36 | 8.33 | 8.39 | 0.22 | |
| | 2 | 8.34 | 8.31 | 8.37 | 0.22 | 0.0 |
| Endrin | 1 | 8.67 | 8.64 | 8.70 | 0.25 | |
| | 2 | 8.74 | 8.71 | 8.77 | 0.25 | 0.0 |
| 4,4'-DDD | 1 | 8.72 | 8.70 | 8.76 | 0.22 | |
| | 2 | 8.87 | 8.83 | 8.89 | 0.23 | 4.4 |
| Endosulfan II | 1 | 8.96 | 8.94 | 9.00 | 0.22 | |
| | 2 | 9.01 | 8.98 | 9.04 | 0.22 | 0.0 |
| 4,4'-DDT | 1 | 9.09 | 9.06 | 9.12 | 0.23 | |
| | 2 | 9.27 | 9.24 | 9.30 | 0.23 | 0.0 |
| Endrin aldehyde | 1 | 9.51 | 9.48 | 9.54 | 0.23 | |
| | 2 | 9.45 | 9.42 | 9.48 | 0.23 | 0.0 |
| Methoxychlor | 1 | 9.69 | 9.66 | 9.72 | 1.1 | |
| | 2 | 10.14 | 10.11 | 10.17 | 1.1 | 0.0 |
| Endosulfan sulfate | 1 | 10.07 | 10.05 | 10.11 | 0.24 | |
| | 2 | 9.80 | 9.77 | 9.83 | 0.24 | 0.0 |

QUALITY ASSURANCE SUMMARY

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

| Client Sample ID. | Lab Sample ID. |
|---|---|
| | |

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

LEGEND:

U = Below MDL B = Below LOQ

FLAGS: (indicate matrix interference)
- N = Matrix Spike OOS
- * = Duplicate OOS
- W = Method F Analytical Spike Recovery <85% or > 115% when the sample conc. is <50% of the spike conc.
- S = Analysis Determined by MSA
- + = MSA Correlation Coefficient < 0.995
- E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution
- M = Duplicate Injection Precision not met

Presence of FLAGS does not invalidate data

METHODS:
- A = Flame Atomic Absorption
- P = Inductively Coupled Plasma
- F = Graphite Furnace
- AS = Hydride Generation
- CV = Cold Vapor
- NR = Not Required

TERMS:
- MDL = Method Detection Limit
- LOQ = Limit Of Quantitation
- OOS = Out of Specification
- MSA = Method of Standard Addition

I certify that this data package is technically accurate and complete. Release of the data contained in this data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

QUALITY ASSURANCE SUMMARY

INORGANIC ANALYSIS DATA SHEET
FORM I

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___
SDG No.:
Matrix (soil/water): WATER
Level (low/med): LOW
% Solids: ___

Lab Sample ID:
Date Received:

Concentration Units (ug/L or mg/kg dry weight): UG/L___

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-36-0 | Antimony | | | | |
| 7440-38-2 | Arsenic | | | | |
| 7440-39-3 | Barium | | | | |
| 7440-41-7 | Beryllium | | | | |
| 7440-43-9 | Cadmium | | | | |
| 7440-47-3 | Chromium | | | | |
| 7440-50-8 | Copper | | | | |
| 7439-92-1 | Lead | | | | |
| 7439-97-6 | Mercury | | | | |
| 7440-02-0 | Nickel | | | | |
| 7782-49-2 | Selenium | | | | |
| 7440-22-4 | Silver | | | | |
| 7440-28-0 | Thallium | | | | |
| 7440-62-2 | Vanadium | | | | |
| 7440-66-6 | Zinc | | | | |
| | | | | | |

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

QUALITY ASSURANCE SUMMARY

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Initial Calibration Source: LLI_____

Continuing Calibration Source: LLI_____

Concentration Units: ug/L

| Analyte | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | Found | %R(2) | M |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

(1) Control Limits: All Metals 90-110
(2) Control Limits: Mercury, Flame AA, Graphite Furnace AA 80-120; ICP 90-110

QUALITY ASSURANCE SUMMARY

CRDL STANDARD FOR AA AND ICP

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

AA CRDL Standard Source: LLI_____

ICP CRDL Standard Source: LLI_____

Concentration Units: ug/L

| Analyte | CRDL Standard for AA | | | CRDL Standard for ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | True | Found | %R | True | Initial Found | %R | Final Found | %R |
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Lead | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

QUALITY ASSURANCE SUMMARY

BLANKS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | |
| Barium | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | |
| Chromium | | | | | | | | | | | |
| Copper | | | | | | | | | | | |
| Lead | | | | | | | | | | | |
| Mercury | | | | | | | | | | | |
| Nickel | | | | | | | | | | | |
| Selenium | | | | | | | | | | | |
| Silver | | | | | | | | | | | |
| Thallium | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | |
| Zinc | | | | | | | | | | | |
| | | | | | | | | | | | |

QUALITY ASSURANCE SUMMARY

ICP INTERFERENCE CHECK SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

ICP ID Number: _____ ICS Source: LLI_____

Concentration Units: ug/L

| Analyte | True Sol. A | True Sol. AB | Initial Found Sol. A | Initial Found Sol. AB | Initial Found %R(1) | Final Found Sol. A | Final Found Sol. AB | Final Found %R(1) |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | |
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Calcium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Iron | | | | | | | | |
| Lead | | | | | | | | |
| Magnesium | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

(1) Control Limits: All Metals 80-120

QUALITY ASSURANCE SUMMARY

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (Soil/Water): _____

% Solids for sample: ___ Concentration Units (ug/l or mg/kg dry weight): _____ Level (low/med): LOW

| Analyte | M | Sample Result | C | MS Sample Result | C | MSD Sample Result | C | MS Spike Added | MSD Spike Added | MS %R | Q | MSD %R | Q | Control Limits %R | RPD | Q | Ctl Lim RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Note: An (N) in column "Q" indicates a spike recovery that is not within the control limits. An asterisk (*) in column "Q" indicates poor duplicate precision between the matrix spike and the matrix spike duplicate. The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____
Matrix (soil/water): _____ Level (low/med): LOW

Concentration Units:

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

DUPLICATES

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (soil/water): _____ Level (low/med): LOW

% Solids for Sample: ___ % Solids for Duplicate: ___

Concentration Units (ug/L or mg/kg dry weight): _____

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | |
| Arsenic | | | | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Chromium | | | | | | | | |
| Copper | | | | | | | | |
| Lead | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Selenium | | | | | | | | |
| Silver | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |
| | | | | | | | | |

NOTE: An asterisk(*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ). The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample page of the Quality Assurance Summary.

QUALITY ASSURANCE SUMMARY

LABORATORY CONTROL SAMPLE

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Solid LCS Source: _____

Aqueous LCS Source: LLI_____

| Analyte | Aqueous (ug/L) True | Found | %R(1) | Solid (mg/kg) True | Found | C | Limits | | %R |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | |
| Arsenic | | | | | | | | | |
| Barium | | | | | | | | | |
| Beryllium | | | | | | | | | |
| Cadmium | | | | | | | | | |
| Chromium | | | | | | | | | |
| Copper | | | | | | | | | |
| Lead | | | | | | | | | |
| Mercury | | | | | | | | | |
| Nickel | | | | | | | | | |
| Selenium | | | | | | | | | |
| Silver | | | | | | | | | |
| Thallium | | | | | | | | | |
| Vanadium | | | | | | | | | |
| Zinc | | | | | | | | | |
| | | | | | | | | | |

(1) Control Limits: Statistically determined

QUALITY ASSURANCE SUMMARY

STANDARD ADDITION RESULTS

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Concentration Units: _____

| Client Sample No. | An | 0 ADD FOUND CON | C | 1 ADD SPIKE CON | FOUND CON | C | Corrected Final Conc. | C |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

QUALITY ASSURANCE SUMMARY

SERIAL DILUTIONS

CLIENT SAMPLE NO.

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Matrix (soil/water): _____ Level (low/med): LOW__

Concentration Units:

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | |
| Arsenic | | | | | | | |
| Barium | | | | | | | |
| Beryllium | | | | | | | |
| Cadmium | | | | | | | |
| Chromium | | | | | | | |
| Copper | | | | | | | |
| Lead | | | | | | | |
| Mercury | | | | | | | |
| Nickel | | | | | | | |
| Selenium | | | | | | | |
| Silver | | | | | | | |
| Thallium | | | | | | | |
| Vanadium | | | | | | | |
| Zinc | | | | | | | |
| | | | | | | | |

NOTE: An (E) in column "Q" indicates the presence of a chemical or physical interference in the matrix during analysis (% Difference > 10% when (I) > or = 50x MDL for ICP or (I) > or = 25x MDL for GFAA).

QUALITY ASSURANCE SUMMARY

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES
SDG No.: _____

ICP ID Number: _____ Date: _____

Flame AA ID Number: _____

Furnace AA ID Number: _____

| Analyte | Wave-length (nm) | Back-ground | IDL (ug/L) | M |
|---|---|---|---|---|
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Beryllium | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| Copper | | | | |
| Lead | | | | |
| Mercury | | | | |
| Nickel | | | | |
| Selenium | | | | |
| Silver | | | | |
| Thallium | | | | |
| Vanadium | | | | |
| Zinc | | | | |
| | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___
SDG No.: _____

Method: ___ Matrix (soil/water): Date: _____

| Analyte | Wave-length (nm) | Back-ground | LOQ (ug/L) | MDL (ug/L) |
|---|---|---|---|---|
| Antimony_ | | | | |
| Arsenic__ | | | | |
| Barium___ | | | | |
| Beryllium | | | | |
| Cadmium__ | | | | |
| Chromium_ | | | | |
| Copper___ | | | | |
| Lead____ | | | | |
| Mercury__ | | | | |
| Nickel___ | | | | |
| Selenium_ | | | | |
| Silver___ | | | | |
| Thallium_ | | | | |
| Vanadium_ | | | | |
| Zinc_____ | | | | |
| _____ | | | | |

** The LOQ must be adjusted for % Solids and Sample Weight for samples reporting in mg/Kg and ug.

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Wave-length (nm) | Interelement Correction Factors for: Al | Ca | Fe | Mg | CO |
|---|---|---|---|---|---|---|
| Antimony1 | | | | | | |
| Antimony2 | | | | | | |
| Arsenic | | | | | | |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Chromium | | | | | | |
| Copper | | | | | | |
| Lead1 | | | | | | |
| Lead2 | | | | | | |
| Mercury | | | | | | |
| Nickel | | | | | | |
| Selenium1 | | | | | | |
| Selenium2 | | | | | | |
| Silver | | | | | | |
| Thallium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |
| | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: LANCASTER_LABORATORIES___ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Wave-length (nm) | Interelement Correction Factors for: CR | CU | MN | MO | NI |
|---|---|---|---|---|---|---|
| Antimony1 | | | | | | |
| Antimony2 | | | | | | |
| Arsenic | | | | | | |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Chromium | | | | | | |
| Copper | | | | | | |
| Lead1 | | | | | | |
| Lead2 | | | | | | |
| Mercury | | | | | | |
| Nickel | | | | | | |
| Selenium1 | | | | | | |
| Selenium2 | | | | | | |
| Silver | | | | | | |
| Thallium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |
| | | | | | | |

Comments:

QUALITY ASSURANCE SUMMARY

ICP LINEAR RANGES (QUARTERLY)

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

ICP ID Number: _____ Date: _____

| Analyte | Integ. Time (Sec.) | Concentration (ug/L) | M |
|---|---|---|---|
| Antimony_ | | | |
| Arsenic__ | | | |
| Barium___ | | | |
| Beryllium | | | |
| Cadmium__ | | | |
| Chromium_ | | | |
| Copper___ | | | |
| Lead____ | | | |
| Mercury__ | | | |
| Nickel___ | | | |
| Selenium_ | | | |
| Silver___ | | | |
| Thallium_ | | | |
| Vanadium_ | | | |
| Zinc_____ | | | |
| _____ | | | |

Comments:

QUALITY ASSURANCE SUMMARY

PREPARATION LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Method: __

| Client Sample No. | Preparation Date | Weight (gram) | Volume (ml) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

QUALITY ASSURANCE SUMMARY

ANALYSIS RUN LOG

Lab Name: LANCASTER_LABORATORIES___

SDG No.: _____

Instrument ID Number: _____ Method: __

Start Date: _____ End Date: _____

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SB | AS | BA | BE | CD | CR | CU | PB | HG | NI | SE | AG | TL | V | ZN | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Method Blank
Instrumental Water Quality
SDG:

Method Blank Analysis — Matrix:

| Parameter | Sample Number | Sample Code | Method | Analysis Date | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | J = Estimated Value < LOQ |
| TKN = Total Kjeldahl Nitrogen | MDL = Method Detection Limit |
| AK = Alpkem | LOQ = Limit of Quantitation |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| B = Background | * = Out of Specification |
| S = Spike | D = Duplicate |
| M = Matrix Spike Duplicate | U = Under |
| P = Post Distillation Spike | |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike
Instrumental Water Quality
SDG:

| Sample Information | Matrix Spike Analysis | | | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | SPK Sample | SPK Added | SPK Results | Units | Rec (%) | Acceptance Window (%) |
| | | | | | | | | | | | | | |

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike/Matrix Spike Duplicate
Instrumental Water Quality
SDG:

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | Matrix: | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| | | | | | | | | | | | | | | | | | | | |

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Instrumental Water Quality
SDG:

| Sample Information | Duplicate Analysis | | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| | | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| IC = Ion Chromatography | < = Less Than |
| TOC = Total Organic Carbon | ND = Not Detected |
| TOX = Total Organic Halogen | ME = Method |
| TKN = Total Kjeldahl Nitrogen | LOQ = Limit of Quantitation |
| AK = Alpkem | * = Out of Specification |
| DOC = Dissolved Organic Carbon | NA = Not Applicable |
| RA = Rapid Analyzer | U = Under |
| B = Background | P = Post Distillation Spike (PDS) |
| S = Spike | D = Duplicate |
| MSD = Matrix Spike Duplicate | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Instrumental Water Quality
SDG:

| Sample Information | Laboratory Control Standards | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |
| | | | | | | | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Initial and Continuing Calibration
Instrumental Analysis/Anion Scan

Instrument Identification: 5166
Calibration Date:
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Analysis/ Parameter | 10 PPB STD | 50 PPB STD | 100 PPB STD | 200 PPB STD | 300PPB STD | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Calibration Dates:

Concentration units: ug/l

| Parameter | Initial / Continuing Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | Found | %R(1) | Found | %R(1) | Found | %R(1) |
| ICV | 50 | | | | | | | | |
| CCV | 200 | | | | | | | | |

Control Limits: 90-110%

# *Lancaster Laboratories*

Quality Control Summary
Initial Calibration & Linearity Check
Instrument Analysis
TOTAL ORGANIC CARBON
Instrument Identification:
Calibration Date:
MATRIX: WATER
SDG:

| | | | | | |
|---|---|---|---|---|---|
| Std mass: | | ug C | | | |
| Calib. Const: | | ug C/mV | | | |
| Blank: | mv | Standard: | mv | | |
| Blank: | mv | Standard: | mv | | |
| Blank: | mv | Standard: | mv | | |
| Average: | #DIV/0! mv | Average: | #DIV/0! mv | | |

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | Method Blank | ICV/ 1 | ICV/ 7.5 | ICV/ 10 | ICV/ 25 | ICV/ 50 | ICV/ 75 | Units= mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

Continuing Calibration Dates:
Concentration Units: mg/L

| Parameter TOC | Reference Concentration | Result Cont. Cal | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| | | | | | |

# *Lancaster Laboratories*

QUALITY CONTROL SUMMARY
INSTRUMENTAL ANALYSIS
Continuing Calibration for TOX

The TOX analysis uses a single point calibration (ICV).
Standards are run to verify the absorbtion effciency of the instrument.
There is no daily initial calibration curve.

Instrument ID: 5803, 5804
SDG:

| Batch Number | This CC applies to samples: | Sample Code | This CC applies to samples: | Sample Code | This CC applies to samples: | Sample Code |
|---|---|---|---|---|---|---|
| | | | | | | |

Calibration Dates:

Concentration Units: ug/l

| Parameter TOX | Reference Conc. | Result Cont. Cal | Percent Recovery | ICV Accept. Range - 10%<br>CCV Accept. Range - 10% | Out of Specification |
|---|---|---|---|---|---|
| | | | | | |

Any out of specification calibrations are immediately followed by two acceptable calibrations, following the requirements of the TOX method.

# *Lancaster Laboratories*

| | | | |
|---|---|---|---|
| | | Cts | Quality Control Summary |
| | | R2: | Initial Calibration & Linearity Check |
| | | | Instrument Analysis |
| Blank: | 0 cts | | TOTAL ORGANIC CARBON |
| Blank: | 0 cts | | Instrument Identification: |
| Blank: | 0 cts | | Calibration Date: |
| Average: | 0 cts | | MATRIX: |
| | | | SDG: |

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | STD. 0.30 | STD. 6.00 | STD. 18.00 | STD. 30.00 | UNITS= CTS |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Continuing Calibration Dates:
Concentration Units: mg/kg

| Parameter TOC | Reference Concentration | Result Cont. Cal | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |
| CCV | | | | | |

OUT OF SPECIFICATION CCV's are immediately followed by two acceptable calibrations.
CONTROL LIMITS: 90% - 110%

# Lancaster Laboratories

Instrument Identification:
Calibration Date:
SDG:

Quality Control Summary
Initial and Continuing Calibration
Instrumental Analysis/Anion Scan

| Batch Number | This IC applies to samples: | Sample Code | Analysis/ Parameter | AUTO CAL/1 | AUTO CAL/2 | AUTO CAL/3 | AUTO CAL/4 | AUTO CAL/5 | R2 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fluoride | 0 | | | | | | 0.00000 |
| | | | Chloride | 0 | | | | | | 0.00000 |
| | | | Nitrite-N | 0 | | | | | | 0.00000 |
| | | | Bromide | 0 | | | | | | 0.00000 |
| | | | Nitrate-N | 0 | | | | | | 0.00000 |
| | | | Orthophosphate | 0 | | | | | | 0.00000 |
| | | | Sulfate | 0 | | | | | | 0.00000 |
| | | | | | | | | | | 0.00000 |

Calibration Dates:

Concentration units: mg/l

| Parameter | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %R(1) | Found | %R(1) | Found | %R(1) | Found | %R(1) |
| Fluoride | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Chloride | 3.0 | | 0 | | 0 | | 0 | | 0 |
| Nitrite-N | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Bromide | 7.5 | | 0 | | 0 | | 0 | | 0 |
| Nitrate-N | 1.5 | | 0 | | 0 | | 0 | | 0 |
| Orthophosphate | 7.5 | | 0 | | 0 | | 0 | | 0 |
| Sulfate | 7.5 | | 0 | | 0 | | 0 | | 0 |

**Lancaster Laboratories**

Quality Control Summary
Initial Calibration
Instrumental Analysis

Instrument Identification: 4758
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Analysis # | Blank | STD 1 | STD 2 | STD 3 | STD 4 | STD 5 | STD 6 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NA* | | | | | | | |

Calibration Dates:
Concentration Units: mg/L
NA* - The blank is not used in the calculation of the calibration curve.

| Parameter | Reference Concentration | Result | % Recovery | Acceptance Range -/+ 10% | Out of Specifications |
|---|---|---|---|---|---|
| | | | | | |

# *Lancaster Laboratories*

Quality Control Summary
Method Blank
Miscellaneous Wet Chemistry
SDG:

Method Blank Analysis — Matrix:

| Parameter | Sample Number | Sample Code | Method | Analysis Date | Batch Number | Blank Results | Units | MDL | LOQ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | < = Less Than |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |
| B = Background | D = Duplicate |
| S = Spike | LS = Low Spike |
| HS = High Spike | PDS = Post Digestion Spike |

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike Analysis/Matrix Spike Duplicate
Miscellaneous Wet Chemistry
SDG:

| Sample Info. | Matrix Spike Analysis | | | | | | | | | | | | | | Matrix: | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Result | MS Sample | MS Spike Added | MS Result | MSD Sample | MSD Spike Added | MSD Result | Units | MS Rec (%) | MSD Rec (%) | Acceptance Window (%) | RPD (%) | % RPD Limits </= |
| | | | | | | | | | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | ND = Not Detected |
| DI = Distillaton | ME = Method |
| G = Gravimetric | < = Less Than |
| IR = Infrared Spectrophotometry | NA = Not Applicable |
| M = Meter | LOQ = Limit of Quantitation |
| OD = Oven Dried | * = Out of Specification |
| TI = Titration | J = Estimated Value < LOQ |

# *Lancaster Laboratories*

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Duplicate Analysis | | | | | | | | | Matrix: | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | DUP Sample | DUP Results | Units | RPD (%) | Control Limits % </= |
| | | | | | | | | | | | | |

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

| ABBREVIATION KEY | |
|---|---|
| CO = Colorimetric | MDL = Method Detection Limit |
| DI = Distillation | LOQ = Limit of Quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | J = Estimated Value < LOQ |
| M = Meter | < = Less Than |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | * = Out of Specification |

# *Lancaster Laboratories*

Quality Control Summary
Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Laboratory Control Standards | | | | | | | Matrix: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | Analysis Date | TRUE LCS/LCSD Value | LCS Results | LCSD Results | Units | Acceptance Range | % RPD Results | % RPD Acceptance </= |

# *Lancaster Laboratories*

Quality Control Summary
Initial Calibration
Miscellaneous Wet Chemistry
Total Petroleum Hydrocarbons
Instrument Identification: 009402
Calibration Date:
SDG:

| Batch Number | This IC applies to samples: | Sample Code | Blank 0.0000 | STD 1 0.1000 | STD 2 0.2000 | STD 3 0.6000 | STD 4 1.0000 | STD 5 2.0000 | STD 6 4.0000 | Correlation Coefficient |
|---|---|---|---|---|---|---|---|---|---|---|
| | Blank<br>LCS/LCSD | | | | | | | | | |

Calibration Date:

| Parameter | Reference Concentration | Result | % Recovery | Acceptance Range -/+ 10% |
|---|---|---|---|---|
| | 1.0 | | | 0.9 - 1.1 |

ABBREVIATION KEY
IC = Initial Calibration
ICV = Initial Calibration Verification
CCV = Conti. Calibration Verification
STD = Standard

# *Lancaster Laboratories*

Quality Control Summary
Matrix Spike Analysis
Miscellaneous Wet Chemistry
SDG:

| Sample Information | Matrix Spike Analysis | | | | | | | | | | | | Matrix: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Sample Code | Batch Number | Parameter | ME | Analysis Date | BKG Sample | BKG Results | SPK Sample | SPK Added | SPK Results | Units | REC (%) | Acceptance Range |
| | | | | | | | | | | | | | |

ABBREVIATION KEY

| | |
|---|---|
| CO = Colorimetric | * = Out of Specification |
| DI = Distillation | LOQ = Limit of quantitation |
| G = Gravimetric | NA = Not Applicable |
| IR = Infrared Spectrophotometry | < = Less Than |
| M = Meter | J = Estimated Value < LOQ |
| OD = Oven Dried | ND = Not Detected |
| TI = Titration | PDS = Post Digestion Spike |
| LS = Low Spike | HS = High Spike |

SEVERN TRENT STL

# Laboratory Quality Manual
# for

## *STL North Canton*

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Controlled Copy Number: _____

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# Purpose and Scope

The purpose of this Laboratory Quality Manual (LQM) is to describe the implementation the Severn Trent Laboratories (STL) Quality System at the STL North Canton laboratory. The LQM is written within the guidelines of the STL Quality Management Plan (QMP), which applies to all STL laboratories. The organization of this LQM is based on the "EPA Requirements for Quality Management Plans" (EPA QA/R-2, August 1994). This LQM outlines specific policies, organization, responsibilities, and activities required to assure high quality laboratory services. The LQM also fulfills the requirements of our clients, government agencies, and NELAC to document the laboratory Quality System.

This LQM contains references to other essential STL quality documents. The company-wide QMP, STL North Canton LQM, and referenced policies and SOPs are interrelated. Together they provide an integrated quality foundation that meets the objectives of the STL Quality Assurance Policy, as stated in Section 1.2.

The requirements set forth in this document are applicable to all employees at the STL North Canton laboratory. The policies and practices described here are presented as minimum guidelines only. Based on good scientific judgment, more rigorous requirements may be applied by laboratory employees. Specific requirements delineated in project plans may supersede general quality requirements described in this manual. One such project requirement, OhioVAP, is listed below:

- Quality Manual Sections 3.3, 3.4, 3.5, and Table 3.4-1: Per OhioVAP OAC rule 374-300-4(B) – STL North Canton will retain project records for all samples performed under the OhioVAP program for a period of ten years. After 10 years, STL North Canton must notify the director of intent to destroy records.

- Quality Manual Section 8.2.1: Per OhioVAP OAC rule 3745-300-04(1)(6) – STL North Canton will not update SOPs and Quality Manuals associated with OhioVAP projects unless they have been reviewed and approved by the agency.

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# 1.0 Management Commitment and Organization

## 1.1 STL Mission Statement

We enable our customers to create safe and environmentally favorable polices and practices by leading the market in scientific and consultancy services. We provide this support within a customer service framework that sets the standard to which others aspire. This is achieved by people whose professionalism and development is valued as the key to success and through continued investments in science and technology.

## 1.2 STL Quality Assurance Policy

It is STL's policy to:

- provide high quality, consistent, and objective environmental testing services that meet all relevant federal, state, and municipal regulatory requirements;
- generate data that are scientifically sound, legally defensible, meet project objectives, and are appropriate for their intended use;
- provide STL clients with the highest level of professionalism and the best service practices in the industry;
- build continuous improvement mechanisms into all laboratory administration, and managerial activities; and
- maintain a working environment that fosters open communication with both clients and staff.

## 1.3 STL Management Statement of Commitment to Quality Assurance

STL management is committed to providing the highest quality data and the best service in the environmental testing industry. To ensure that the data produced and reported by STL meet the requirements of its clients and comply with the letter and spirit of municipal, state and federal regulations, STL maintains a Quality System that is clear, effective, well communicated, and supported at all levels in the company.

## 1.4 Ethics, Waste, Fraud and Abuse

Establishing and maintaining a high ethical standard is an important element of a Quality System. In order to ensure that all personnel understand the importance the company places on maintaining high ethical standards at all times, STL has established an Ethics Agreement (see Figure I.4-1). Ethics is also a major component of the STL QA training program (see Section 4 for details). A central tenant is that management must

consistently convey the message to analysts that financial pressures can never be allowed to compromise the quality of work. See the following policies for further details on specific policies related to this section:

LQM Section 6 – Computer Hardware and Software
QA-008 – Data Recording Requirements
QA-010 – Maintaining Time Integrity
QA-011 – Acceptable Manual Integration Practices
P-T-001 – Selection of Calibration Points

## *1.5 Organizational Structure and Relationships*

STL North Canton is a local operating unit of Severn Trent Laboratories, Inc., a Delaware corporation. Date of incorporation was August 27, 1997.

The organizational structure for Severn Trent Laboratories, Inc. is presented in Figure-1.5-1. The responsibilities and authorities of the members of the STL corporate staff employees are described in the STL QMP

STL North Canton has day-to-day independent operational authority that is overseen by corporate officers (e.g., President, Commercial Director, Chief Operating Officer, Corporate Quality Assurance, etc.). The STL North Canton laboratory operational and support staff work under the direction of the Laboratory Manager. The organizational structure for STL North Canton is presented in Figure 1.5-2. A list of key STL North Canton personnel is provided in Figure 1.5-3. The lab maintains Job Descriptions which contain general job responsibilities for all laboratory employees. The following section outlines responsibilities and authorities for all employees of the STL North Canton laboratory, as they relate to quality management.

The STL North Canton QA Manager (QAM) is <u>independent</u> from day-to-day laboratory operations, has no direct analytical testing responsibilities, and is free from financial and other undue pressures which might adversely affect the quality of work. The QAM, a key member of the laboratory's management team, has direct access to the Corporate Quality Assurance Manager on all matters involving quality. The QAM is available to any lab employee to resolve quality or ethical issues. The QAM, if required, has the authority to cease operations adversely affecting the validity or integrity of the analytical data.

## Figure 1.4-1 STL Ethics Agreement

It is the policy of STL to incorporate the highest standard of quality with all analytical programs by adhering to the following practices:

STL will only offer environmental analyses for which it can consistently demonstrate compliance with high quality, traceable and legally defensible performance standards.
All STL staff is committed to the practice of complete honesty in the production and reporting of data.
Staff who are aware of misrepresentation of facts or data manipulation to bypass established QA/QC requirements, are required to immediately inform their supervisor or any member of the upper management.

All employees are asked to sign a copy of the statement below upon their first day of employment.

*I, _____(print name) understand that high standards of integrity are required of me with regard to the duties I perform and the data I report in connection with my employment at the Company. I agree that in the performance of my duties at the Company:*
*I will not intentionally report data values that are not the actual values obtained;*
*I will not intentionally report the dates, times, sample or QC identifications, or method citations of data analyses that are not the actual dates, times, sample or QC identifications, or method citations;*
*I will not intentionally misrepresent another individual's work; and*
*If a supervisor or a member of STL management requests me to engage in or perform an activity that I feel is compromising data validity or quality, I will not comply with the request and report this action immediately to a member of the upper management, up to and including the president of Severn Trent Laboratories Inc.*
*I will not intentionally report data values that do not meet established quality control criteria as set forth in the Method and/or Standard Operation Procedures, or as defined by Company Policy.*

I agree to inform my Supervisor of any accidental reporting of non-authentic data by me in a timely manner. I agree to inform my Supervisor of any accidental or intentional reporting of non-authentic data by other employees. I have read this Ethics Agreement and understand that failure to comply with the conditions stated above will result in disciplinary action, up to and including termination from the Company.

Compliance with this policy of business ethics and conduct is the responsibility of every STL employee. Disregard or failing to comply with this standard of business ethics and conduct could lead to disciplinary action, up to and including possible termination of employment.

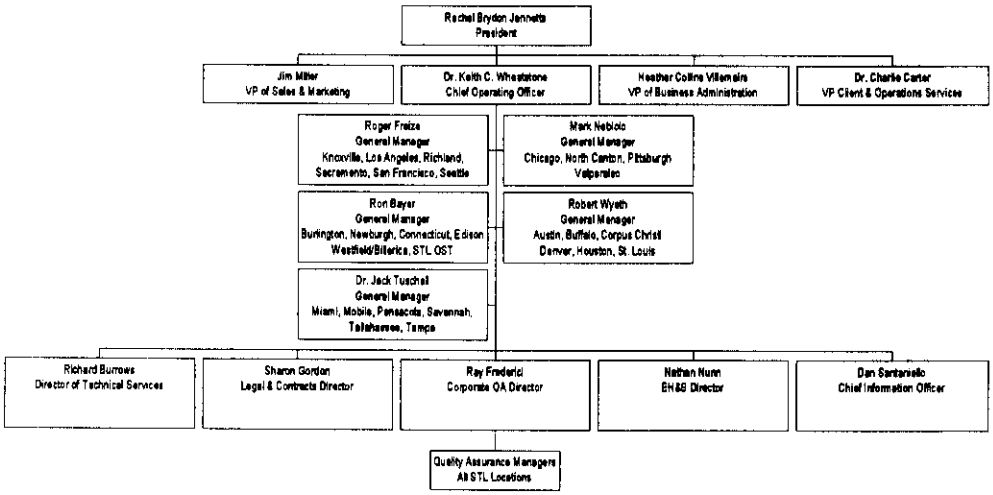
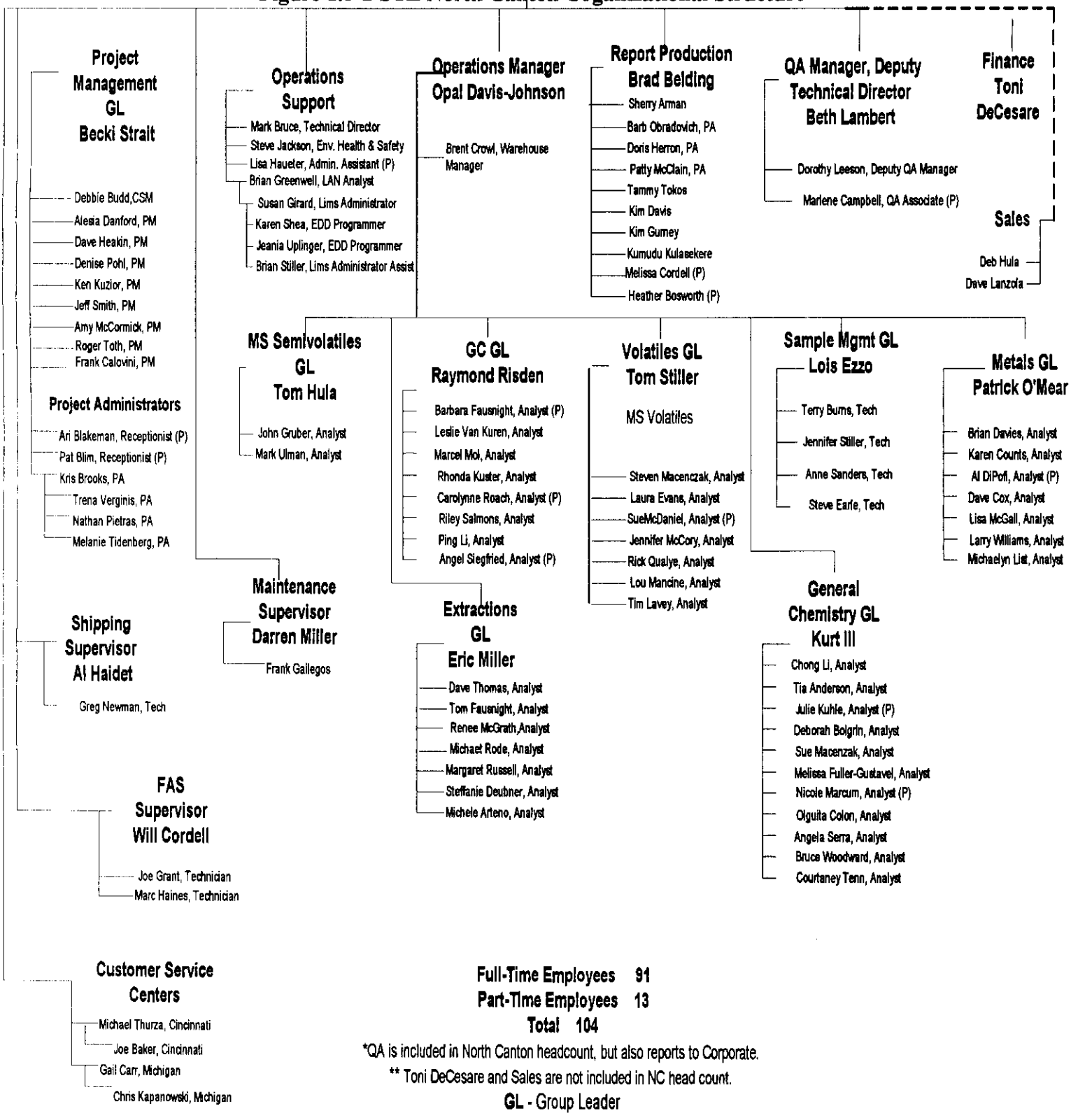



**Figure 1.5-1 STL Organizational Structure**

# STL NORTH CANTON

## Figure 1.5-2 STL North Canton Organizational Structure




**Full-Time Employees 91**
**Part-Time Employees 13**
**Total 104**

*QA is included in North Canton headcount, but also reports to Corporate.
** Toni DeCesare and Sales are not included in NC head count.
GL - Group Leader

**Figure 1.5-3 STL North Canton Key Personnel**

| Name | Position | Education | Hire Date |
|---|---|---|---|
| Mark Nebiolo | General Manager, NE Reg | MS Biology | 09/21/89 |
| Christopher Oprandi | Laboratory Director | BS Chemistry | 02/01/88 |
| Opal Davis-Johnson | Operations Manager | BA Chemistry | 06/30/86 |
| Beth Lambert | Quality Assurance Manager | BA Chemistry, Physics | 10/02/01 |
| Rebecca Strait | Manager of Project Management | MBA Intl Bus | 02/10/92 |
| Stephen Jackson | Env. Health & Safety Coord | AS Environmental Science | 09/30/91 |
| Brad Belding | Report Production Supervisor | BS Chemistry | 11/14/88 |
| Mark Bruce | Technical Advisor | PhD Analytical Chemistry | 12/07/87 |
| Raymond Risden | GC & GCV Supervisor | BS Biology (Chem Minor) | 05/04/92 |
| Tom Hula | MS Semivoc. Supervisor | BA Chemistry | 07/20/87 |
| Tom Stiller | MS Volatiles Supervisor | BS Biology | 02/01/88 |
| Al Haidet | Shipping Supervisor | Work Experience | 10/20/78 |
| Lois Ezzo | Sample Control Supervisor | BA Biology | 06/26/89 |
| Darren Miller | Maintenance Supervisor | Work Experience | 08/02/99 |
| Will Cordell | Field Analytical Supervisor | BS Env Sci & Nat Res | 08/03/92 |
| Patrick O'Meara | Metals Supervisor | BA Biology | 04/02/90 |
| Kurt III | General Chemistry Supervisor | BS Chemistry | 01/07/85 |
| Eric Miller | Extractions Supervisor | Work Experience | 11/21/94 |
| Deborah Budd | Customer Service Manager | BA Biology | 01/12/01 |
| Alesia Danford | Project Management | Work Experience | 01/04/84 |
| David Heakin | Project Management | BS Chemistry | 11/15/88 |
| Ken Kuzior | Project Management | BS Chemistry | 08/25/97 |
| Amy McCormick | Project Management | Work Experience | 04/09/90 |
| Denise Pohl | Project Management | BA Biology | 10/01/79 |
| Jeff Smith | Project Management | AAS Fire Science | 10/21/85 |
| Roger Toth | Project Management | BS Environmental Sciences | 12/11/89 |
| Frank Calovini | Project Management | BS Microbiology | 04/29/02 |

## *1.6 Quality Organization*

All personnel are responsible for quality, which includes complying with all QA/QC requirements that pertain to their organizational/technical function.

### 1.6.1 Quality Assurance Manager

- Reports directly to the Laboratory Manager and, for all QA matters, to the Corporate QA Director to maintain independence of QA oversight
- Responsible for the implementing and communicating the QMP
- Maintains, approves, and implements the LQM

- Has joint signature authority, with the Laboratory Manager and Technical Manager for approval of quality documents, e.g., LQM, policies, and SOPs
- Directs controlled distribution of laboratory quality documents
- Provides Quality System training to all new personnel
- Reviews and approves documentation of analyst training records
- Serves as a focal point for QA and QC issues, reviews corrective actions and recommends resolution for recurring nonconformances within the laboratory
- Assists in maintaining regulatory analytical compliance, including maintaining certifications, and in this regard has signature authority for laboratory quality documents
- Monitors data quality measures via statistical methods to verify that the laboratory routinely meets stated quality goals
- Performs systems, data, contract compliance, and surveillance audits.
- Hosts external audits conducted by outside agencies
- Responsible for approving quality control reference data changes in the LIMS
- Oversees the selection, review, and approval of analytical subcontractors
- Prepares monthly QA Reports to management describing significant quality events
- Has the final authority to accept or reject data and to stop work in progress in the event that procedures or practices compromise the validity and integrity of analytical data

### *1.6.2 Laboratory Manager*

- Reports directly to the Regional General Manager
- Responsible for implementation and adherence by lab staff to the STL QMP, STL North Canton LQM and all policies and procedures within the laboratory.
- Has signature authority for LQM, policies, SOPs, and contracts (as detailed in STL policy)
- Annually assesses the effectiveness of the QMP and LQM within the operation
- Maintains adequate trained staffing documented on organization charts
- Responsible for implementing internal/external audit findings corrective actions.

### *1.6.3 Operations Manager/Laboratory Supervisor*

- Reports directly to the Laboratory Manager
- Supervises daily activities of the Operational Groups
- Schedules analytical operations
- Supervises QC activities performed as a part of routine analytical operations
- Implements data review procedures
- Supervises the preparation and maintenance of laboratory records
- Supervises maintenance of instruments and scheduling of repairs

- Works with the Project Managers and Group/Team Leaders to assure the requirements of projects are met in a timely manner
- Supervises daily activities of the Sample Control Group.

### 1.6.4 *Laboratory Technical Director*

- Reports directly to Laboratory Manager
- Responsible for the technical operation of the laboratory
- Responsible for coordinating the development and implementation of SOPs
- Has joint signature authority for LQM, policies, SOPs, and training records
- Performs technical training in area(s) of expertise
- Interfaces with management on technical needs and solving day-to-day technical issues
- Investigates technical issues related to projects as directed by QA
- Evaluates new methods, technical proposals, and statements of work
- Certifies technical laboratory personnel based on education and background to ensure that staff have demonstrated capability in the activities for which they are responsible by reviewing and signing analyst demonstrations.
- Performs other tasks as required by NELAC.

The Technical Director meets the requirements specified in the Section 4.1.1.1 of the NELAC standards.

### 1.6.5 *Project Manager Group Leader*

- Reports directly to the Laboratory Manager
- Supervises daily activities of the Project Management and Administrative Groups
- Works with the Operations Manager and/or Group/Team Leaders to ensure the requirements of projects are met in a timely manner

### 1.6.6 *Customer Service Managers (CSMs)*

- Reports directly to the Project Manager Group Leader
- Has signature authority for contracts for laboratory services, as detailed in STL policy, and for laboratory reports.
- Defines customer requirements through project definition
- Assesses and assures customer satisfaction
- Provides feedback to management on changing customer needs
- Brings together resources necessary to ensure customer satisfaction.

### 1.6.7 *Project Manager*

- Reports directly to the Project Manager Group Leader
- Monitors analytical and QA project requirements for a specified project
- Acts as a liaison between the client and the laboratory staff

- Prepares Quality Assurance Summary (QAS) or equivalent summary form and communicates project-specific requirements to all parties involved
- Assists the laboratory staff with interpretation of work plans, contracts, and QAPP requirements
- Oversees project data packages for completeness and compliance to client needs
- Has signature authority for final reports
- Keeps the laboratory and client informed of project status
- Together with the QA Manager, approves customer requested variances to methods and to standard laboratory protocols
- Monitors, reviews, and evaluates the progress and performance of projects
- Reports client inquiries involving data quality issues or data acceptability to the facility QA Manager and to the operations staff
- Conducts project reviews to assess the laboratory's performance in meeting customer requirements
- Prepares reissue requests for project data
- Responsible for meeting quality requirements.

### 1.6.8 *Group (Area) Leader, Team Leader or Supervisor*

- Reports directly to the Operations Manager
- Supervises daily activities of analyses within the group
- Supervises QC activities performed as a part of routine analytical operations
- Implements data review procedures
- Supervises the preparation and maintenance of laboratory records
- Evaluates instrument performance and supervises the calibration, preventive maintenance, and scheduling of repairs
- Oversees or performs review and approval of all analytical data
- Reports nonconformances to the appropriate managers
- Responsible for generation of SOPs for their section
- Responsible for meeting quality requirements.

### 1.6.9 *Analyst*

- Performs analytical methods and data recording in accordance with documented procedures
- Performs and documents calibration and preventive maintenance
- Performs data processing and data review procedures
- Reports nonconformances to the Supervisor/Manager and QA Manager
- Ensures sample and data integrity by adhering to internal chain-of-custody procedures
- Responsible for meeting quality requirements defined in this LQM and other supporting QA procedures.

### 1.6.10 Sample Custodian

- Ensures implementation of proper sample receipt procedures, including maintenance of chain-of-custody
- Reports nonconformances associated with condition-upon-receipt of samples
- Logs samples into the LIMS
- Ensures that all samples are stored in the proper environment
- Assists Environmental Health and Safety staff with sample disposal
- Responsible for meeting quality requirements.

### 1.6.11 Report Production Staff

- Accurately generates and compiles analytical reports and associated deliverables for delivery to the client
- Responsible for meeting quality requirements
- Produce as needed reports that meet the NELAC requirements.

# 2.0 Quality System and Description

## 2.1 Objectives of the STL Quality System

The Quality System is a set of management principles, objectives, policies, responsibilities, and implementation plans at the organizational and project-specific levels. The goal of the STL Quality system is to ensure that business operations are conducted with the highest level of professionalism in the industry. To achieve this goal, it is necessary to provide STL clients with not only scientifically sound, well documented, and regulatory compliant data, but also to ensure that STL provides the highest quality service available in the industry. A well-structured and well-communicated Quality System is essential in meeting this goal. STL's Quality System is designed to minimize systematic error, encourage constructive, documented problem solving, and provide a framework for continuous improvement within the organization.

## 2.2 Structure of the STL Quality System

At the highest level, the STL Quality Management Plan (QMP) is the basis for STL's Quality System. The QMP provides the guidance under which all STL facilities conduct their operations. This Laboratory Quality Manual (LQM) describes the implementation of the Quality System at the STL North Canton laboratory. This LQM and the series of associated quality documents described in Section 2.3 define the organization, project-specific principles, goals, controls, and tools of the Quality System as it is applied at this laboratory. The Quality System as described in this LQM demonstrates the commitment to accepted laboratory practices by STL North Canton.

## 2.3 Quality Assurance and Quality Controls

Quality Assurance (QA) is defined as the system of activities which ensures the quality of a process, product, or service. Quality controls (QC) are the tools used to monitor and regulate the the desired type and quality of product. The QA activities and QC controls employed in STL North Canton are defined in the following quality documents.

## 2.4 Quality Documents

The STL Quality System is developed from the reference documents shown in Table 2.4-1. The review and control of the STL North Canton documents described in the following subsections is described in Section 3 of this LQM. A cross-reference of the LQM to NELAC requirements quality manuals is presented in Table 2.4-2.

### 2.4.1 STL Quality Management Plan (QMP)

The requirements set forth in the QMP are applicable to all STL facilities. The policies and practices outlined in the QMP are minimum guidelines only. Requirements that are more rigorous may be applied for specific client or regulatory programs.

### 2.4.2 STL Company-Wide Policies

Severn Trent Laboratories has certain policies that apply company-wide. These policies are consistent with the QMP, and set forth requirements that all STL facilities are to follow.

### 2.4.3 Laboratory Quality Manual (LQM)

This STL North Canton LQM along with the associated policies and SOPs, provides the criteria and specifications for the generation of environmental analytical data. The LQM provides QC criteria for standard procedures, facility-specific instrumentation, and reporting.

### 2.4.4 STL North Canton Quality Policy Documents

Quality policies are referenced throughout the LQM that provide further detail to specific requirements of the QMP and LQM. These policies describe general quality objectives and guidelines in effect for this facility, rather than the details of specific practices. Refer to Table 2.4-3 for a list of the STL North Canton quality policies and required approvals. Table 2.4-4 lists the frequency of review for the documents.

### 2.4.5 Standard Operating Procedures

Standard Operating Procedures (SOPs) describe step-by-step instructions for performing a method or activity. In addition, there are SOPs which relate to other support services performed in the laboratory. Details of SOP format and document control are described in Policy QA-001, "Standard Operating Procedures" and Policy S-Q-001, "Official Document Control and Archive." SOPs that are actively used in this laboratory are listed in Table 8.2-2. SOPs are living documents and may supersede some requirements in this document until the LQM is updated annually.

### 2.4.6 Quality Assurance Project or Program Plans (QAPPs)

Regulations and contracts may contain QA requirements which are different from those described in this LQM. To address unique project requirements, Quality Assurance Project Plans (QAPjPs) may be prepared and implemented. The requirements documented in a

QAPjP, as agreed to by STL North Canton, take precedence over the LQM for that project. Typical specifications contained in a QAPjP or similar documentation include:

- New or modified testing methods
- Unique QC logic
- Special requirements for equipment use and maintenance
- Special handling due to safety considerations
- Project-specific detection and reporting limits
- Project-specific accuracy and precision limits or the statistical treatment of data
- Additional or unique documentation or records management requirements.

#### *2.4.6.1 Quality Assurance Summary*

Quality Assurance Summaries (QAS) or equivalent (e.g., Client Requirement Checklist in LIMS) are used to distill client-specific requirements typically documented in project QA plans onto a concise format, highlighting the requirements that are different than the laboratory standard practice. The summary describes for each project the required quality control samples, batching schemes, flagging conventions, deliverables, or other special client requests that may differ from routine laboratory operations. The QAS or equivalent is disseminated to laboratory operations by the Project Manager or Quality Assurance Manager to document client or program specific requirements. The QAS may be used alone or in conjunction with the project-specific QA plans.

### *2.4.7 Other Documents*

Other documents which can affect the quality program may include the Chemical Hygiene Plan (CHP), memos, guidance documents, work instructions, and periodic management assessment reports. These documents may further define or guide the implementation of quality standards at STL but shall not conflict with the LQM or diminish the effectiveness of the Quality System.

# 3.0 Document Control and Records Management

## 3.1 Objectives for Control of Quality Documents and Records

Quality Documents - The quality documents discussed in Section 2 of the LQM define the framework of the STL Quality System. Control and security of these documents are necessary to ensure that all staff have access to current policies and procedures at all times, to ensure that all changes to the policies and procedures are properly reviewed, to ensure that the history of use of documents can be reconstructed, and to ensure that confidential information is not improperly distributed. The system described in this section is designed to accomplish these objectives.

Vital Records – Vital records are the documents that provide objective evidence of the performance of a process or observations of an item. Records management ensures that results produced by the laboratory are scientifically and legally defensible, and ensures that project events can be reconstructed. Confidentially of the records and records retention requirements are discussed in this section.

## 3.2 Document Control Procedures

Unambiguous identification of a controlled document is maintained by identification of the following items in the document header:

- document title,
- unique document number,
- revision number,
- revision date,
- effective or implementation date, and number of pages

Controlled documents are marked as such, and the QA department keeps records of document distribution. Controlled distribution may be achieved by either electronic or hardcopy means. The effective date is the date when controlled copies are distributed. Controlled documents must be available in the immediate areas where the related work is performed. Details of the numbering system, required format, and restrictions for uncontrolled distribution of documents are in Policy # QA-001, "Standard Operating Procedures" and STL Corporate SOP # S-Q-001, "Official Document Control and Archive".

## 3.3 Document Review, Approval, and Revision

Controlled quality documents are authorized by the Laboratory Director, the Technical Manager, and the QA Manager. They indicate their authorization by signing the cover page of the document. STL North Canton quality documents, the individuals responsible for reviewing the documents, and the required frequency of review are listed in Table 3.3-1 and Table 3.3-2. In addition to periodic review and revision, quality documents must be

revised when a procedure or activity changes in a significant manner. Amendments to documents must be reviewed and approved by the same parties approving the original document, distributed in a controlled manner, and clearly indicated in the document. Obsolete versions of documents are removed from service when new revisions are issued. The QA Department maintains a record of history of use of all documents based on the effective date. For further details see Policy # QA-001, "Standard Operating Procedures".

### *3.4 Records Management*

Records may be either hardcopy or electronic copies. It is not required to maintain both if they are properly secured and are complete and true copies. The record keeping system allows for reconstruction of all laboratory activities that produced the analytical results. The history of the sample is readily understood through the documentation. This includes

- chain-of-custody records, including intra-laboratory and inter-laboratory transfers of samples;
- records identifying the personnel involved in sampling, preparation, calibration, and testing;
- observations, calculations, and derived data;
- information relating to laboratory facilities, equipment, analytical test methods, and related laboratory activities (e.g., sample preparation, standards preparation, and data verification);
- original records clearly identifying all subcontracted test data, and
- a copy of the final test report.

Requirements for data recording are described in Policy # QA-008, "Data Recording Requirements". Details concerning control of electronic records are given in Policy # QA-017, "Electronic Reporting". The types of vital records maintained are listed in Table 3.4-1.

STL North Canton utilizes a controlled access public drive to post controlled electronic QA records such as MDLs, SOPs, Laboratory or QA forms, Certifications, etc. Only QA personnel have write access to the QA public drives labeled, "QAQC" and "QA". The records are maintained and backed-up according to the record retention policy. The processes for producing these electronic (or hardcopy) records are described in their specific QA Policy, SOP, and/or the STL QMP.

### *3.5 Document and Record Storage, Retention, and Disposal*

It is the policy of STL North Canton that company records will be available to meet business needs and comply with all applicable legal records retention and disposition requirements. STL North Canton retains copies of records in a manner that allows prompt retrieval of documents and records for inspection purposes. In accordance with NELAC, all quality

documents and records are stored for at least five years. Other types of records have different retention requirement, refer to Table 3.4-1 for details.

STL North Canton retains copies of all vital records in a manner that allows prompt retrieval of documents and records for inspection purposes. In accordance with NELAC, all quality documents and records are stored for at least five years.

Specific projects and regulatory programs have longer record retention requirements than the standard STL record retention time. Refer to QMP Table 5 for a listing of examples of special program requirements. The inventory sheet accompanying the stored records must include disposal instructions, which take into account any special requirements, and who to contact for authorization prior to destroying the data.

When records, as contained in files, are transferred to a records storage area or off-site storage area, they shall be placed in suitable containers and include an inventory sheet (hard copy or electronic) prepared by the person submitting the records. The contents of each container shall be compared to the inventory sheet and labeled. If there are any discrepancies, the container and inventory sheet shall be returned to the person who prepared the box for correction. Archives are indexed such that records are accessible on a project or temporal basis. Archives are protected against fire, theft, loss, deterioration, and vermin. Backup copies of electronic media are stored in off-site archive facilities and are protected against deterioration caused by magnetic fields and/or electronic deterioration. Access to archives is controlled and documented. Further details of the laboratory's document and records archiving process are described in SOP # NC-QA-0019, "Records Information Management".

If the laboratory transfers ownership, vital records will be transferred to the new owner. If the laboratory goes out of business, vital records will be transferred to another operating STL laboratory or to our clients.

### *3.6 Data Confidentiality*

Data and sample materials provided by the client or at the client's request, and the results obtained by STL, shall be held in confidence (unless such information is generally available to the public or is in the public domain or client has failed to pay STL for all services rendered or is otherwise in breach of the terms and conditions set forth in the STL and client contract) subject to any disclosure required by law or legal process. STL's reports, and the data and information provided therein, are for the exclusive use and benefit of client, and are not released to a third party without written consent from the client.

In some cases the client may identify projects requiring confidentiality due to national security. Information concerning these projects will be limited only to those STL North Canton associates with a need to know.

The audit reports supplied by federal, state, and local regulatory agencies are public information and can be released without written consent of those agencies. However, specific client audits are confidential and must be approved by the client before releasing them to a third party.

# 4.0 Staff Qualification, Orientation and Training

All activities performed by STL North Canton shall be accomplished by qualified personnel. Each staff member must have the combination of experience and education needed to demonstrate the required knowledge for his or her position. Each must also have an appropriate general knowledge of laboratory operations, test methods, quality assurance and quality control procedures, and records management. Minimum training requirements are shown in Table 4.0-1. SOP # CORP-QA-0013 describes details of the training process and documentation. The Chemical Hygiene Plan (CHP) describes details for health and safety training.

## 4.1 Qualifications

STL North Canton maintains job descriptions for all positions. These job descriptions specify the minimum qualifications for education and experience, knowledge and skills, which are necessary to perform at a satisfactory level. Qualifications of professional staff are documented by resumes that include academic credentials, employment history, experience, and professional registrations. A copy of each person's resume is maintained in an electronic file, and is readily available for inspection.

## 4.2 Orientation and Technical Training

Each new staff member shall receive orientation in quality and in health and safety. Each new staff member shall be supervised in their assigned duties by their supervisor or a knowledgeable individual designated by the supervisor. The ability and authorization to perform independently shall be documented in the training files, as described below, with technical duties approved by the Technical Director or designee.

### 4.2.1 Quality Assurance (QA) Orientation

Each new staff member will receive a QA orientation. The QA Manager or designee will conduct this orientation within two weeks of the new employee's first day on the job. The orientation will, at a minimum, include the following topics:

- STL Quality System and hierarchy of quality documents (QMP, LQM, policies, and SOPs);
- key elements of the LQM and the Quality Control Policy (QA-003);
- introduction to the nonconformance memo (NCM) system and corrective action procedures;
- proper data recording practices;
- STL ethics agreement, including the potential consequences of unethical behavior; and
- the role of the QA department.

The QA orientation will be documented on a checklist, which is signed by the trainee. The documentation will be placed in the employee's training file.

### *4.2.2 Quality Training*

Continued training in the mission and goals of the QMP and LQM shall be provided at least annually. These may be done in a single session or divided into separate sessions conducted at different times throughout the year. Formal training sessions are conducted and documented by the QA Manager or designee. In addition, each lab staff member shall read and document their awareness of the quality documents related to his or her position.

### *4.2.3 Health and Safety, Orientation and Training*

Each new employee, contract worker, or working visitor is required to go through health and safety orientation and training as described in the CHP. The Health and Safety Coordinator must conduct the orientation as soon as possible after the individual reports to work and before chemicals are handled. More comprehensive health and training, both initial and on going, must be completed at the frequency given in the CHP.

## *4.3 Training Files*

Each active STL North Canton staff member has an individual training file maintained by the QA Manager or designee. This file can be documented on paper forms or in a database. The following sections shall be included in the training files at a minimum:

- Resume - containing hardcopy or a reference to the electronic file
- Quality Assurance - containing documentation of QA/QC orientation and training completed
- Health and Safety - orientation and training documents
- Technical Proficiency - initial and on-going demonstrations of proficiency, one-on-one training, training courses or workshops on specific equipment or analytical methods is documented in this file. Note that documentation of awareness of technical SOPs is document on the demonstration of capability forms (see next section).

Other types of records to be included in the training file include work place regulatory compliance training, and professional development courses. The exact contents will vary depending upon a person's job function and tenure with the company. Details of requirements for training records and the approval process are given in SOP CORP-QA-0013.

## *4.4 Technical Proficiency Training*

All new personnel are required to demonstrate competency in performing a particular method by successfully completing a Demonstration of Capability (DOC) before conducting analysis independently on client samples. On-going proficiency must be demonstrated annually.

DOCs are most commonly performed by analysis of four replicate QC check samples. Results of successive LCS analyses can be used to fulfill the DOC requirement. As required by the referenced method, the accuracy and precision, measured as average recovery and standard deviation (using n-1 population), of the four replicates are calculated and compared to the method limits or against current laboratory limits if multi-laboratory method acceptance limits are not specified. Single-blind proficiency samples and other NELAC acceptable proficiency samples are described in SOP # CORP-QA-0013. The DOC Certification documentation must be signed by the Technical Director and the Quality Assurance Manager and filed in the employee's training file (see example in CORP-QA-0013). The DOC Certification documentation must include a statement that the individual has read, understood, and agreed to perform the most recent version of the test procedure. In procedures such as %Solids, Color, Dissolved oxygen, Ignitability etc., where spiking is not an option and for which quality control samples are not readily available, the proficiency can be demonstrated by analyzing a duplicate sample provided the RPD≤10%.

**Figure 4-1 Employee Minimum Training Requirements**

| Required Training | Time Frame | Employee Type |
|---|---|---|
| Environmental Health & Safety | Initial training before start of production work. | All |
| | Additional training as specified in the CHP | As required |
| Quality Assurance | Orientation within 2 weeks of hire date | All |
| | Annual QA program training | All |
| Technical Proficiency | Initial demonstration prior to unsupervised method performance | Technical staff |
| | Annual on-going demonstration | Technical staff |

# 5.0 Procurement of Supplies and Services

Controlling the quality of supplies and services is necessary to ensure that STL North Canton provides high quality analytical services to our clients. The STL procurement program requires:

- assurance that purchased items and services meet requirements set by STL North Canton and perform as expected
- definitions and descriptions of the levels of documentation required for applicable technical and administrative procurement functions
- maintenance of records of all suppliers from whom we obtain services or supplies required for our analytical testing

Additional information is contained in QA Policies # QA-018, "Vendor Approval" and # QA-019, "Vendor Review and Oversight".

## 5.1 Selection of Vendors

Materials and supplies are purchased from approved vendors. Prospective vendors are selected based upon criteria appropriate to the materials or supplies provided. Policy # STL /PG-001 "Procurement and Contracts" details the process used. For national vendors and contracts, the vendor is selected by the STL Procurement Director through a competitive bidding process, strategic business alliance or negotiated vendor partnership. Potential vendors are required to complete a vendor acceptance application and are evaluated on the following criteria, as appropriate:

- the vendor's history of providing identical or similar products that perform satisfactorily in actual use
- the vendor's service record and ability to provide a complete product line and commensurate service
- the vendor's ability to administer inventory at the STL North Canton facility through an inventory management system that will ensure correct stocking levels as well as shelf-life tracking
- objective evaluation of the vendor's current quality records, supported by documentation
- results of audits by STL of the vendor's technical and quality capabilities

Vendors that provide measuring equipment, solvents, chemical standards, instrument service contracts, or subcontracted laboratory services shall be subject to more rigorous controls than vendors that provide off-the-shelf items.

## 5.2 Controlling Quality of Purchased Items

The quality of equipment, reagents, solvents, chemical standards, gases, and laboratory containers used in analyses must be of known quality so that their effect upon analytical results can be defined. These quality specifications are derived from analytical method

requirements, project-specific requirements, and defined national standards for analytical testing. Quality specifications of materials are described in analytical SOPs. These quality specifications shall be included or referenced in the purchasing documents for the items being purchased. This includes specifications for the purity of standards, reagents, or chemicals, and technical specifications for accuracy and precision (e.g., Class A volumetric glassware). Reference to a catalogue number, model, lot number, or chemical grade is sufficient.

The Laboratory Director or designee has the responsibility for approving purchase orders. The section supervisors or designees are responsible for ensuring that the requested quality of materials ordered matches those received, for verifying that material storage is properly maintained and for removing materials from use when shelf life has expired

### *5.2.1 Evaluation of Off-the-Shelf Items*

For items that are used regularly by STL North Canton where no unique requirements or specifications exist, the items may be purchased off-the-shelf. These items are ordered from the supplier on the basis of specifications set forth in the supplier's published product description. These include items such as glassware, filter paper, pipettes, and chromatography columns. The items are evaluated as a function of the standard analytical process.

### *5.2.2 Evaluation of Instruments*

Evaluation of instruments purchased shall be conducted according to an acceptance-testing plan . The acceptance testing plan may be defined by the vendor or the method demonstration requirements specified in the laboratory analytical SOPs. Acceptance criteria may include instrument reliability, sensitivity, stability, selectivity, accuracy, precision, and ability to interface with existing computer systems.

### *5.2.3 Evaluation of Critical Solvents and Acids*

STL North Canton is part of a group of STL laboratories that conducts additional evaluations for certain solvents and chemical reagents where our criteria for purity are more stringent than the vendor's. These QRIs are subject to chemical analysis on a lot-by-lot basis before they are put into use. They are tested at one of the STL laboratories, and the chemical test results are evaluated by a designated quality representative. If the solvents or reagents meet the specifications given in SOP # CORP-QA-0001, "Quality Testing of Solvents, Acids, and Reagents (QRI Program)" an approval memorandum is issued to all participating laboratories. All laboratories then use the same lot, and reject any lots received at the facility that have not been tested.

### *5.2.4 Evaluation of Chemical Standards or Standard Reference Materials*

Where available chemical standards will be traceable to the National Institute of Standards Technology (NIST) or an equivalent source. This is largely limited to physical and inorganic chemical standards. If NIST traceability is not commercially available, commercially certified materials shall be used, which are then tested for accuracy before reporting data. Details of the testing procedures and documentation are described in the laboratory SOP. Standards must be received with a certification report from the vendor with information such as purity/concentration, traceability, lot number, expiration date, preparation date, unique identification number, formula weight, density, radionucleide half-life, mass and/or volume of standards, and suggested storage requirements. Further details about labeling and handling of standards is described in Section 8 of this LQM.

### 5.2.5 Corrective Action for Failure to Meet Required Specifications

Corrective actions for failure of an item to meet required specifications are as follows:

- review of current supplies to eliminate the problem item
- notification to the STL Procurement Director to avoid additional problems at other STL labs
- return of the problem item to the vendor
- evaluate the impact on product or process

The QA Manager shall be notified of any significant or systematic quality problems. The STL Procurement Director and the STL Quality Assurance Director shall be notified of any quality problems with national vendors.

## 5.3 Procurement of Subcontract Laboratory Services

Whether external to STL or not, all subcontracting from the STL North Canton laboratory to another laboratory is arranged with the documented consent of the client, in a timely response that shall not be unreasonably refused. All QC guidelines specific to the client's analytical program are transmitted to the subcontractor and agreed upon before sending the samples to the subcontract facility. Documentation of required certifications from the subcontract facility are maintained in STL project records. Where applicable, specific QC guidelines, QAPjPs, and similar project documents are transmitted to the subcontract laboratory. Samples are subcontracted under formal Chain of Custody (COC).

Subcontract laboratories may receive an on-site audit by a representative of STL's QA staff if it is deemed appropriate by the QA Manager. The audit involves an assessment of compliance with the required test method, QC requirements, documentation, as well as any special client requirements.

Project reports received from external laboratories are not altered and are included in original form in the final report provided by STL. Intracompany subcontracting may also occur between STL facilities. The originating laboratory is responsible for communicating QA/QC, reporting, and other project requirements.

The final report from STL North Canton clearly identifies what testing was performed by other laboratories, and, per NELAC, the certification status of the lab performing the work.

# 6.0 Computer Hardware and Software

The primary purpose of quality assurance systems for computer hardware and software is to protect the integrity of computer-resident data. Procedures are in place at STL-North Canton to assure that computer-resident data are accurate, traceable to a known source, protected against loss, and secure.

STL's computer and hardware controls are based on the guidance in EPA's "Good Automated Laboratory Practices" (GALP), August, 1995. This includes both corporate level Information Technology (IT) functions and STL-North Canton IT functions. Some GALP requirements, such as management responsibilities and the training program, are addressed in other sections of the LQM. Some corporate level IT functions, such as the system change management procedures, is described in more detail in corporate IT documents. Table 6-1 provides a cross reference of practices outlined in Section 8 of the GALP manual to corresponding sections of STL's QA and IT documents. STL North Canton's listing of hardware and software are in Tables 6-2 and 6-3.

## 6.1 Computer Hardware

Computer hardware used in the generation, measurement, or assessment of client data shall be of appropriate design and adequate capacity to function according to specifications. Computer equipment must be installed in accordance with the manufacturer's recommendations, and undergo documented acceptance testing.

### 6.1.1 Wide-Area Systems

STL-North Canton's LIMs (QuantIMs) and the Office Network run on a wide-area network (WAN) serving multiple laboratories. The central node for the network is located at the Denver facility. The central processor is an IBM AS-400 with multiple servers and Cisco routers. Records for the system architecture, testing and maintenance, such as Initial Program Loads (IPLs), are documented in the AS-400 System Log, which is also in Denver. The central System Administrator maintains records for installation of the network hardware.

### 6.1.2 Local Systems

The local systems consist of computer equipment for analytical instruments, data evaluation, and upload to the LIMS. A local-area network (LAN) supports the local office software. Testing, maintenance, and repair of the local computer hardware are the responsibility of the STL-North Canton LAN Analyst. The LAN Analyst maintains documentation for the local systems.

## 6.2 Facilities and Security

### 6.2.1 Central Computer Facilities

The environmental conditions of the facility housing the LIMS are controlled to protect against data loss. Access to the central computer facility in Denver is restricted by keypad entry used by IT staff. The central computer room is temperature controlled, and has an Uninterrupted Power Supply (UPS) plus a power generator to ensure that the WAN functions are not disrupted by power failures. Backup media, such as tapes and disks, are maintained daily. In addition, full volume backup copies of the raw data are shipped offsite to a commercial facility specially designed to store electronic data.

### 6.2.2 Local Computer Facilities

Facilities for housing local computer hardware must meet manufacturer's recommendations. Electronic data must be protected against environmental hazards such as fire, water damage, and strong electromagnetic fields. Data files will have backup copies made at regular intervals to protect against accidental loss through hardware or software failure.

### 6.2.3 Controlled Software Access

The integrity of data is also assured by maintaining limited access to administrative functions through a hierarchy of operating system shells controlled by passwords. Access is granted by the LAN Administrator depending on a persons experience, training, and assigned duties (see SOP# CORP-IT-0005 for more details).

Protection against unauthorized Internet access is provided by firewalls.

### 6.2.4 Virus Protection

Commercial virus protection programs are installed on all computers to detect and remove computer viruses. LAN Analysts are to be notified whenever a virus is detected so that they can isolate any portions of the systems that may be at risk.

## 6.3 LIMS Raw Data

QuantIMs raw data and instrument raw data from instrument data systems such as Target, IDB, and Chemstation are stored on the Office Automation servers (e.g., QARVCO01). The Systems Administrator and the LAN Analyst are responsible for maintaining the servers.

The individuals responsible for entering and recording raw data must be uniquely identified in the data, together with the date and time the data were entered. The instrument transmitting raw data must be uniquely identified, together with the date and time of the transmission. Further data recording requirements exist to document manual integrations (see Policy # QA-011 for details).

Procedures for verifying raw data are discussed in LQM Sections 8.8-8.8.3.

## 6.4 Software

If computer software is used to acquire, process, or report client data, that software is tested to ensure that it correctly performs its intended function. Software is validated or verified, depending upon its complexity, size, and whether it was purchased or developed by STL. The following definitions are used by STL:

- Validation - the process of establishing documented evidence, which provides a high degree of assurance that a specific process will consistently produce a product meeting, predetermined specifications and quality attributes. This process demonstrates and documents that the software performs correctly and meets all specified requirements.

- Verification - the process of checking the accuracy of automatically (electronically) calculated information.

### 6.4.1 Industry Standard Software

Industry standard software programs are defined as those, which are purchased and widely used without modification to the program itself. The program is initially verified for use by using test problems with known solutions to demonstrate that the program is operational for the desired application.

All purchased software must be used in accordance with the terms of its software license. Any use of software contrary to its license terms is expressly prohibited by STL.

### 6.4.2 Testing of STL-Developed Software

For programs used to process client data and developed within STL, and externally prepared programs, which are modified by STL, validation or verification must be performed. The process used is dependent upon the function of the software as follows:

- Large complex systems consisting of several programs operating in unison to produce an intended result must be validated.

- For smaller software which only performs numerical manipulation, sample sets of numbers for which results are known should be processed and the results verified. In this case, known results are usually generated by performing hand calculations using the same equations and procedures as the software to verify that the software produces identical results.

- Software that performs as part of instrument operation should be verified as previously described and by processing reference materials through the instrument system. Processed instrument response should be evaluated against expected instrument response and performance.

IT SOPs governing software development and testing include CORP-IT-0001, "Software and Hardware Change Management", CORP-IT-0007, "Software Testing, Validation and Verification", and CORP-IT-0013, "Software Quality Assurance".

### *6.4.3 Control of Software Changes*

STL has a well established process for prioritizing and managing changes to LIMS and LIMS-related software (see CORP-IT-001 and CORP-IT-007). Proposals to modify software are written in a Software Enhancement Request, which includes a description of the task to be accomplished, the software to be modified, its functional requirements, and necessary algorithms. The Software Enhancement Request is submitted to the Change Management Committee for approval. The Committee includes representatives from each lab on the QuantIMs network. The Committee establishes a develop schedule and approves the resources needed. Documentation of changes, version control, and historical records of changes is the responsibility of the IT Manager of "Change Management and QA". Because these are modern networked systems, the documentation is kept on the network, rather than keeping redundant records at each facility as GALP suggests. All system software changes are developed in a test area and must pass the designed tests before it is installed in the working area.

The same principles of documenting software changes apply to spreadsheets, small databases, or other small programs that are used solely at the STL-North Canton lab. The verification/validation records must explain the functional requirements, the algorithms and formulas used, the testing performed, and are maintained by the lab QA Manager or designee.

### *6.4.4 Software Maintenance*

Software problems are presented to the local LIMS Administrator (LAS) in a Software Problem Report. The LAS presents the issue to a group of the network LASs. The problem is discussed to make sure it is understood, and then a solution is determined and prioritized. Changes to LIMS software for maintenance purposes are announced to each of the QuantIMs locations after revalidating the software.

### *6.4.5 Software Revalidation*

Whenever a program is changed, the change is evaluated to determine if it is significant enough to make revalidation necessary. If features have been added, previous test

problems are rerun to demonstrate that their function has not been affected. New test problems are processed, as previously discussed, to verify added performance. If software revision changes the basic operation of the program, complete revalidation of the program may be required.

Spreadsheets and unprotected software used to acquire, process, or report client data must be documented and reverified when changes are made. The test problems used to provide initial verification is reprocessed and the results compared to demonstrate that performance of the software is unchanged.

Laboratory operations are responsible for the generation of the validation and verification data for instrument level software. QA will maintain the necessary documentation. STL Information Technology is responsible for generation and maintenance of documentation relating to verification and validation of the STL QuantIMs system. This is described in Policy Attachment Number IT-013, Software Quality Assurance.

### *6.5 Comprehensive System Testing*

Comprehensive system testing is performed periodically. Independent auditors, such as Price Waterhouse, include computer systems in their audits, which are commissioned by the laboratory executive management. Extensive testing of all software was performed for the lab's Y2K readiness exercises.

As described in LQM Section 9.2.2.1, the STL-North Canton QA Manager is responsible for ensuring an annual internal audit of all lab areas is performed, including the local IT functions.

### *6.6 Records Retention*

As required by NELAC, electronic raw data and computer documentation are stored for a minimum of five years. See LQM Section 3.0 for further records retention details.

# 7.0 Contract Review and Project Planning

The generation of environmental analytical data is an intricate process. Success is dependent upon the timely execution of interrelated steps. For many environmental sampling and analysis programs, testing design is site or project specific and is not necessarily the same as the laboratory's standard service. It is STL's intent to provide both standard and customized laboratory services to our clients, provided that any special requirements are documented in writing, and provided performing the work in this manner does not cause the laboratory to violate relevant regulatory requirements. STL North Canton has an organizational system in place to ensure that projects are properly planned prior to project initiation. This means that laboratory personnel understand project requirements, that the client clearly understands the lab's capabilities, that the laboratory has the facilities and resources needed to perform the required tests, that samples will be properly handled, that contingency plans are in place, and that analytical data will be reported in accordance with project needs.

## 7.1 Contract Review

The process of client request for proposal (RFP) and the laboratory's tender of a written response is a process of communication between both parties to understand project requirements and the laboratory's capabilities. All contracts for new work entered into by STL North Canton are reviewed by the Customer Service Manager (CSM) or designee. Agreements for continuing work are the responsibility of laboratory Project Managers (PMs) or the CSM. Depending on the size and scope of the proposed project, the Laboratory Director and other STL management staff can also be involved. Technical staff (Operations Manager, QA Manager, and IT staff) can be called upon to perform a review of the technical and QA/QC requirements. The CSM or PM, with this internal support, will work with clients to align project requirements with laboratory capabilities. Any contract requirement or contract modification communicated to STL verbally is documented and communicated to the client in writing. Any discrepancy between client requirements and STL's capability to meet those requirements is resolved in writing before acceptance of the contract

All contracts, Quality Assurance Project Plans (QAPP), Sampling and Analysis Plans (SAPs), contract amendments and documented communications become part of the permanent project record as detailed in Section 3.5.

## 7.2 Certifications and Approvals

A necessary part of the review and work acceptance procedure is the evaluation of project needs for laboratory certification. The persons reviewing the prospective project must determine if project work plans or regulatory permits are tied to specific laboratory certifications or approvals. Where such requirements exist, the laboratory must have the certifications or approvals in place before the work begins. QA personnel coordinate with

the state certification agencies to maintain or add additional parameters. Copies of current laboratory certifications are maintained by the QA office, and are available upon request.

### 7.3 Data Collection Process

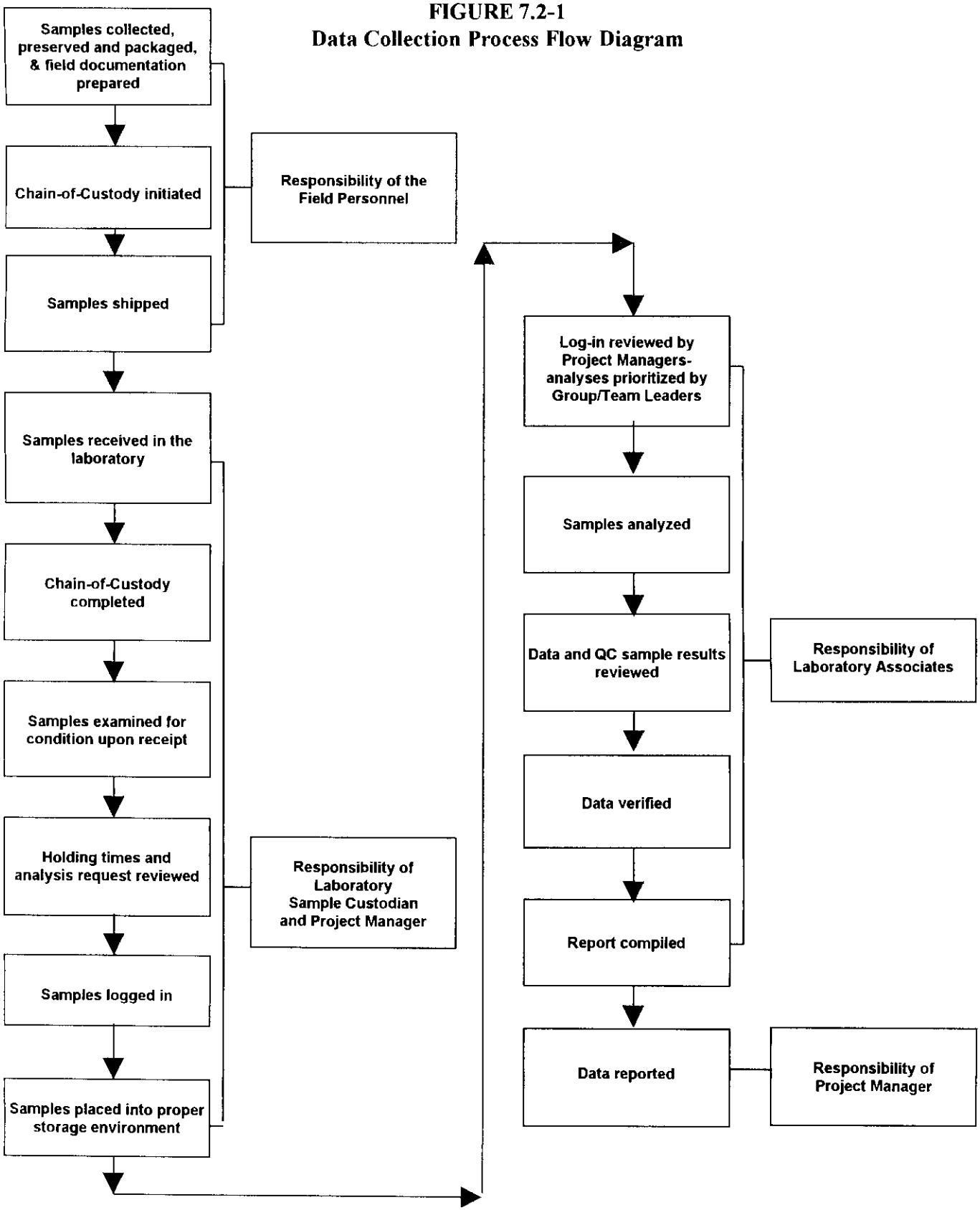
The sample collection and data generation processes are shown in Figure 7.2-1. These processes are designed to produce analytical data that accurately reflect the nature of the site or sampling point.

### 7.4 Project Organizational Responsibilities

Each laboratory client is assigned a single point of contact, usually a PM, to ensure that there is a strong line of communication between the client and STL North Canton. As a matter of policy, CSMs or designee, PMs, and Operations Managers work together to accomplish the following prior to receipt of samples at the laboratory:

- Samples are scheduled for arrival at the laboratory
- All unique project requirements have been identified and communicated to all appropriate personnel
- Standardized client, state, federal, or STL® programs are appropriately selected
- Fully-qualified and client approved subcontract laboratories have been selected if needed
- A review has been performed on all pre-project documents such as proposals, contracts, and/or QAPPs to identify the type of tests required and to ensure project requirements are within the scope of the laboratory being used
- All appropriate and required preparations have been made at the laboratory to accommodate or meet project requirements as described in proposals, contracts, and/or QAPPs
- It has been determined that the laboratory has the capability and the capacity to analyze the samples including equipment, staff, space and workload
- The laboratory is capable of meeting the required sample holding times and is able to report the resulting data within the time line specified by the client
- All known safety hazards associated with the samples have been communicated to all appropriate personnel.

**FIGURE 7.2-1**
**Data Collection Process Flow Diagram**



Approval and issuance of a quote, bid or contract document is documentation that this process has occurred. For particularly large or involved projects, STL North Canton encourages our clients to visit the laboratory and/or participate in kickoff meetings with the laboratory staff. STL has found it very effective to invite the client into the laboratory's project preparations.

## 7.5 Communicating Project Requirements Internally

STL North Canton PMs shall document all project-specific requirements prior to receipt of samples. The LIMS system, QuantIMS, requires the PM to enter a "quote" before any samples can be logged in. In addition to price information, the "quote" is a detailed technical specification of the work to be performed. The quote includes identification of project personnel, numbers and types of samples, tests to be performed, reporting limits, QC to be performed, control limits, data qualifier flags to be used, significant figures to be used, and the types of deliverables required. This is the primary means of communicating routine project requirements to laboratory personnel.

Brief non-routine project requirements are entered into the comments section of the Client Requirements Checklist portion of the quote. The Checklist is reviewed by analysts as analyses are being scheduled and before testing has started. If the special requirements are too lengthy for the Client Requirements Checklist, the PM must prepare a Quality Assurance Summary (QAS) or equivalent, which is a written document describing all requirements that are different than routine work. The QAS is referenced in the Client Requirements Checklist, and is distributed by the PM to each of the operational groups involved. For complex projects, project kickoff meetings are conducted by the PM with each of the operational groups involved.

## 7.6 Contingency Planning

An effective QA program must emphasize contingency planning, actions to prevent problems from reoccurring, and to ensure timely and effective completion of a measurement effort. The following are considered relative to contingency planning.

### 7.6.1 Staffing

A primary objective is to ensure that qualified staff are available to perform the necessary analytical work, regardless of employee turnover, vacation, illness, or other absences. STL North Canton is a relatively large laboratory with multiple staff capabilities for the majority of tests performed. However, other sources of trained personnel are potentially available to assist in the event of unforeseen absences. Given sufficient time for necessary orientation, temporary agency staff can be used. More significantly, STL is a large laboratory network and a large pool of qualified staff can be made available from other STL laboratories.

### 7.6.2 Backup Instrumentation

Within STL North Canton, duplicate instrumentation is available for most methods to allow uninterrupted work flow if one piece of equipment fails. The laboratory may also choose to lease equipment. However, in circumstances where a catastrophic instrument failure occurs, alternative, but equivalent, methods may be recommended to the client for approval.

- Preventive Maintenance - STL's preventive maintenance program is designed to minimize analytical instrument malfunctions, permit simple adjustments, and to ensure fewer and shorter breakdowns of critical analytical equipment. (See Section 8.11, "Preventive Maintenance and Service".)

- STL Laboratories & Subcontractor Laboratories - To support the laboratory during peak periods or in the event of a critical instrument malfunction, STL has the capability to arrange for the use of other STL laboratories or other qualified analytical laboratories as subcontractors for short-term backup analytical support. **However, use of a subcontractor laboratory must be approved by the client in writing.** For projects requiring NELAC approval, the subcontractor must also be NELAC approved. See Section 5.3 for other procedures related to the control of subcontract laboratory services.

- Uninterruptable Power Supply - An Uninterruptable Power Supply (UPS) system which provides line conditioning and backup power to the LIMS computer system/server and laboratory instruments. This contingency allows sufficient time for the main computer system to be shut down and for data archival. All electronically generated data that are stored on the main or instrument computer systems and on individual personal computer (PC) hard drives are backed up at regular intervals. In the event that the main or instrument laboratory computer systems fail, the analytical data can be retrieved.

# 8.0 Work Processes and Operations

Many activities related to environmental projects activities are planned and designed externally to the laboratory or field operation, and are presented to the laboratory in the form of a contract, work plan, sampling and analysis plan (SAP) or QA Project Plan (QAPP). Laboratory and field activities are in turn planned, implemented, and assessed by STL to meet client requirements according to approved procedures and methodologies. The LQM provides the systems to document and implement these activities. The execution and assessment of the implemented operational systems are detailed in STL SOPs. The entire process is assessed on a regular basis for conformance to prescribed requirements.

Standard practices for STL North Canton operations are detailed in this section. Specific project or program requirements that differ from those described here can be met, but they must be explicitly stated in approved contracts, work plans, QAPPs or other project documents. Special project requirements can generally be accommodated provided that they are properly documented, communicated, and they do not cause the laboratory to violate relevant regulatory requirements.

Table 8.2-3 lists the test methods performed by STL North Canton. Table 8.2-2 lists the SOPs associated with those methods. Table 8.0-1 provides a list of the major equipment in place at the laboratory, and Figure 8.11 (at the end of this Section) shows the laboratory floor plan.

## 8.1 Traceability of Measurements

STL documents all laboratory activities in sufficient detail to allow their reconstruction. To this end, documentation is generated to trace a sample from its point of origin, through receipt in the laboratory, analysis, reporting and disposal.

The required documentation includes, but is not limited, to:

- Chain of custody documenting movement and possession of samples
- Sample preparation
- Sample analysis
- Calibration and QC data associated with the samples
- Instrument maintenance
- Control of ancillary equipment and materials (e.g., DI water and glassware)
- Sample disposal
- Final reports

These topics are described in this section. Traceability of chemical standards is also discussed in Section 5.2.4.

## 8.2 Analytical Methods

Whenever possible, STL operations use industry- and regulatory agency-recognized analytical methods from source documents published by agencies such as the Environmental Protection Agency (EPA), Department of Energy (DOE), and the American Society for Testing and Materials (ASTM) as described in STL's SOPs. Analytical methods performed

by STL Laboratories are given in Table 8.2-3 lists the methods routinely performed at the laboratory. The methods pending or approved by a NELAC Accrediting Authority are indicated in the table.

Method performance data, as described in Section 8.2.2 below, are developed by the laboratory operations staff to demonstrate method proficiency. The operations staff and the QA staff evaluate and approve the performance data before a methodology is performed routinely. The method must also be described and documented in an SOP.

### *8.2.1 Standard Operating Procedures*

SOPs are required for all repetitive analytical and administrative activities ranging from the receipt of samples in the laboratory through their analysis, reporting, and subsequent disposal. Training, health and safety procedures, QC, method procedures, and instrument and equipment calibrations are included in SOPs. SOP requirements are discussed in the Policy # QA-001, "Standard Operating Procedures". The specifications in the policy meet NELAC requirements. Table 8.2-2 lists laboratory standard operating procedures.

New SOPs and proposed SOP revisions are reviewed by technically qualified lab personnel. SOPs are controlled documents and are distributed and maintained as described in Policy QA-001. Requirements for SOP approval and frequency of review are listed in Tables 2.4-3 and 2.4-4. All significant modifications to the published method are described in a section of the SOP. All operations must be performed as described in these SOPs.

Planned changes in procedure which may occur due to expected sample matrix effects or project requirements are documented in the project files. These planned changes may be documented using nonconformance memos, NCMs (see discussion of NCMs in section 9.1), project-specific case narratives, or as modifications or additions to associated QAPPs. Every effort is made to obtain client written approval prior to implementing the change.

Unplanned deviations in the SOPs, which may occur due to sample matrix or other events, are documented in NCMs and in the project-specific case narratives.

### *8.2.2 Method Validation and Verification*

Before analyzing samples by a new method or method modification, the method must be verified or validated. After which, analyst capability must be demonstrated (see Section 4.4).

#### *8.2.2.1 Method Verification*

Method verification is required for methods developed by authoritative agencies, such as EPA or ASTM. The level of verification can vary

depending on the type of method or level of modification, but generally should include:

- Determination of method sensitivity,
- Determination of working range,
- An initial demonstration of capability (as specified by NELAC), and
- A written SOP or project-specific written protocol.

Each of these are described in the next section.

### *8.2.2.2 Method Validation*

A complete validation is required for methods developed by STL North Canton. While method validation can take a variety of courses, the following are the key concerns:

Determination of Method Selectivity

Method selectivity is the demonstrated ability to discriminate the analyte(s) of interest from other compounds in the specific matrix or matrices. In some cases, to achieve the required selectivity for an analyte, a confirmation analysis is required as part of the method

Determination of Method Sensitivity

Method sensitivity is normally demonstrated using the 40CFR 136B method detection limit protocol (see MDLs, section 8.2.3, below), but can also be based on variance of blank results, and signal-to-noise ratios.

Determination of Interferences

This is demonstrated by analyzing samples of the matrix of interest that is known to be free of the analyte(s) of interest.

Determination of Range

In most cases, analytical range is determined and demonstrated by comparison of the response of an analyte at different concentrations to targeted criteria. Often the targeted criteria are represented by the goodness of fit or linearity of the experimental data to a continuous mathematical function or curve. The curve is used to establish the range of quantitation, with the lower and upper values representing the upper and lower quantitation limits. Curves are not limited to linear relationships.

Determination of Accuracy and Precision

Accuracy and precision studies are generally performed using replicate analysis of samples of known concentration. The resulting percent recovery and relative standard deviation, or other precision measure, is calculated and compared to a set of target criteria.

Documentation of Method

The method is formally documented in an SOP (see policy QA-001 for details). If a method modification is being performed for a specific short-

term project, the modification should be described in a written protocol that is approved by the lab's client, in addition to the in-house approvals required by QA-001.

Continued Demonstration of Method Performance
Continued ability of the lab to perform the method is addressed in the SOP. Generally this is accomplished with the specified calibration and batch QC requirements.

### 8.2.3 Method Detection Limits

It is STL North Canton's policy to follow the specification in the U.S. EPA 40 CFR Part 136 Appendix B in determining MDLs for chemical tests. The STL requirement for this procedure is further detailed in Policy QA-005 entitled "Determination of Method Detection Limits for Chemical Tests." This policy requires that the MDLs be determined for each analyte of interest representing the aqueous and solid matrices within the capability of the primary analytical methods. STL North Canton has performed MDLs per instrument. Ongoing MDL verification is performed via MDL checks or MDL studies. The laboratory's MDLs are given in Table 8.2-4 .

### 8.2.4 Instrument Detection Limits

Instrument Detection Limits (IDLs) are required to be performed quarterly for metals constituents and cyanide when analyses are performed in support of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) activities or when the USEPA CLP SOW protocol is required. IDLs are not required by the SW-846 methods, with the exception of method 6020.

When required, IDLs will be performed in accordance with the procedures defined in the applicable USEPA SOW, ILMO3.0 or subsequent versions, and Policy QA-014, "Determination of Instrument Detection Limits".

Prior to acceptance and use for reporting purposes, all data from detection limit studies and reporting limits must undergo technical review and approval by the laboratory management and QA staff.

### 8.2.5 Reporting Limits

Reporting limits are established and modified within STL according to the STL Policy QA-009, "Reporting Limits." Two reporting limit conventions are discussed in the policy: the standard Reporting Limit (RL) and the Project-Specific Reporting Limit (PSRL). The standard STL Reporting Limit (RL) is the lowest level at which measurements become quantitatively meaningful. The RL is always greater than the statistically determined MDLs. PSRLs are used when project data quality objectives (DQO) require a reporting limit other than the RL. PSRLs tailor STL's product to meet customer requirements. Higher PSRLs may be established based on maximum contaminant level (MCLs), applicable or relevant and appropriate requirements (ARARs), or project-specific data quality objectives

(DQOs). PSRLs below the lab's standard RL may be used, but they must be supported MDL and the instrument calibration. The STL RLs and PSRLs are maintained by the LIMS.

## 8.3 Data Quality Objectives

Data quality objectives (DQOs) are qualitative and quantitative statements used to ensure the generation of the type, quantity, and quality of environmental data that will be appropriate for the intended application (EPA 1994)[1]. Typically, DQOs are identified during project scope and the development of sampling and analysis plans. In this LQM, however, we refer to only the analytical DQOs because laboratories generally do not have any authority over sample collection, shipment, or other field-related activities that may affect the data quality of the environmental sample before the sample is received in the laboratory. The EPA has established six primary analytical DQOs for environmental studies. These DQOs are precision, accuracy, representativeness, completeness, comparability, and detectability.

The components of analytical variability (uncertainty) can be estimated when QA and QC samples of the right types and quantities are incorporated into measurement procedures at the analytical laboratory. STL® incorporates numerous QA and QC samples to obtain data for comparison with the analytical DQOs and to ensure that the measurement system is functioning properly. The QA/QC samples and their applications, described in Section 8.4, are selected on the basis of method- or client-specific requirements. Field blanks, field duplicates, and performance evaluation (PE) samples are received from the client as unknown samples. Analytical laboratory QC samples for inorganic and organic analyses may include calibration or instrument blanks, method blanks, background, duplicates, replicates, laboratory control samples (LCSs), calibration standards, matrix spikes (MSs), matrix spike duplicates (MSDs), and surrogate spikes.

### 8.3.1 Precision And Accuracy

Precision is an estimate of variability, that is, it is an estimate of agreement among individual measurements of the same physical or chemical property, under prescribed similar conditions. The precision of a measurement system is affected by random errors. Precision is expressed either as relative standard deviation (RSD) for replicate measurements greater than two or as relative percent difference (RPD) for duplicate measurements. Table 8.6-1 illustrates the formulae used to calculate units of precision (i.e., RSD and RPD).

Accuracy is the degree of agreement between a measurement and the true or expected value, or between the average of a number of measurements and the true or expected value. Systematic errors affect accuracy. For chemical properties, accuracy is expressed either as a percent recovery (R) or as a percent bias (R - 100).

[1] "Guidance for the Data Quality Objectives Process", EPA 600/R-96/005, September 1994.

The precision and accuracy measures that are to be used in evaluating inorganic, organic, and radionuclide constituents at STL are provided in Tables 8.4-5 through 8.4-7, in method-specific SOPs, and in the documentation for the analytical method of interest.

Precision and accuracy are determined, in part, by analyzing data from matrix spike and matrix spike duplicates, unspiked duplicates, LCSs, and single blind audit samples. For radiochemical determinations, counting statistics can also provide an estimate of uncertainty. A description of these QC samples is provided in Section 8.4.

### *8.3.2 Completeness*

Completeness is a measure of the percentage of measurements that are judged to be valid measurements. At a minimum, the objective for completeness of data is 90% for each constituent analyzed.

### *8.3.3 Representativeness*

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, a variation in a physical or chemical property at a sampling point, or an environmental condition. Data representativeness is primarily a function of sampling strategy; therefore, the sampling scheme must be designed to maximize representativeness. Representativeness also relates to ensuring that, through sample homogeneity, the sample analysis result (concentration) is representative of the constituent concentration in the sample matrix. At STL every effort must be made to analyze an aliquot that is representative of the original sample, and to ensure the homogeneity of the sample before subsampling.

### *8.3.4 Comparability*

Comparability is a measure of the confidence with which one data set can be compared to another. To ensure comparability, all laboratory analysts are required to use uniform procedures (i.e., SOPs) and a uniform set of units and calculations for analyzing and reporting environmental data.

## *8.4 Quality Control Samples*

Two types of Quality Control (QC) samples are field QC samples and laboratory QC samples. Field QC samples are collected during the sampling event and are useful in determining sampling precision and accuracy and monitoring for contamination that may occur during collection, transport or storage of environmental samples. Laboratory QC samples are routinely added at the laboratory to the normal sample stream. Successful analysis of these samples demonstrates that the laboratory is operating within prescribed requirements for accuracy and precision. In addition, utilizing matrix-specific laboratory QC samples, information regarding the effect of the matrix or field conditions on the

analytical results can be obtained. The following sections describe common field and laboratory QC samples.

### 8.4.1 Field QC Samples

When field QC sample collection and analysis are required for a project, it is the responsibility of the project sampling supervisor to ensure that this sampling is performed correctly and at the project-required frequencies. Field QC samples may or may not be identified as such to the laboratory and are considered by the laboratory as field samples for the purpose of QC batching, sample preparation and analysis. Field QC sample results are reported in the same manner as actual field samples, unless a specific deliverable is requested by the client. No correction of the analytical data is done in the laboratory based on the analysis of field QC samples. Field QC sample types, applicability to organic and inorganic analyses, precision and accuracy applications and by whom they are introduced are summarized in Table 8.4-1.

### 8.4.2 Laboratory QC Samples

Laboratory performance QC is required to ensure the laboratory systems (instrumentation, sample preparation, analysis, data reduction, etc.) are operating within acceptable QC guidelines during data generation as required to meet the client's objectives. Laboratory QC samples consist of method blanks (MB), instrument blanks, laboratory control samples (LCS) and calibration verification samples. In addition to laboratory performance QC, matrix-specific QC is utilized to determine the effect of the sample matrix on the data being generated. Typically, this includes matrix spikes (MS), matrix spike duplicates (MSD), sample duplicates, and the use of surrogate compounds.

Laboratory and matrix-spike QC sample types are summarized in Tables 8.4-2 through 8.4-4. In addition, Tables 8.4-5 through 8.4-7 list laboratory QC samples, acceptance criteria and corrective actions by reference method for inorganic methods, organic methods, and the USEPA CLP Statements of Work respectively. The following sections provide descriptions of laboratory QC samples and their frequency of use. Policy QA-003, "Quality Control Program", describes in detail the QC data evaluation process.

#### 8.4.2.1 Quality Control (QC) Batch

The QC batch consists of a set of up to 20 field samples that behave similarly (i.e., same matrix) and are processed using the same procedures, reagents, and standards within the same time period. This definition of a QC batch is utilized by STL unless there is clear regulatory guidance, contract specifications, or differing client requirements that are explicitly documented. Environmental samples are associated to QC samples in the LIMs via the analytical batch, which is clearly indicated on each analytical

report as a cross-reference between the samples and associated QC. Further details and requirements for the application of the definition of QC batch are described in Policy QA-003.

#### *8.4.2.2 Method Blank*

The method blank (MB) is a QC sample that consists of all reagents specific to the method and is carried through every aspect of the procedure, including preparation, cleanup, and analysis. The method blank is used to identify any interferences or contamination of the analytical system that may lead to the reporting of elevated analyte concentrations or false positive data. Potential sources of contamination include solvent, reagents, glassware, other sample processing hardware, or the laboratory environment. In general, the method blank is a volume of deionized laboratory water for water samples, or a purified solid matrix for soil/sediment samples, that is processed as a sample. In the event that no appropriate solid matrix exists, deionized water may be used. The volume or weight of the method blank must be approximately equal to the sample volume or sample weight processed. A method blank shall be prepared with each group of samples processed.

#### *8.4.2.3 Instrument/ Calibration Blank*

The instrument blank is an unprocessed aliquot of reagent used to monitor the contamination of the analytical system at the instrument. System contamination may lead to the reporting of elevated analyte concentrations or false positive data. The instrument blank does not undergo the entire analytical process and generally consists of an aliquot of the same reagent(s) used for a sample dilution. Instrument blanks are also referred to as continuing calibration blanks (CCBs).

#### *8.4.2.4 Laboratory Control Sample*

A laboratory control sample (LCS) is a laboratory-prepared suitable clean matrix sample that is fortified with target analytes or a solid reference material purchased from an approved vendor. The LCS contains all target analytes specified in the method, and must contain the same analytes as the matrix spike and matrix spike duplicate. For certain regulatory or client programs, an LCS may contain a full list of analytes. However, in these cases, a subset of analytes, as defined by the program, is used to determine the acceptability of a batch of sample data. The LCS recovery data are used to monitor the analytical method performance in terms of analytical accuracy. On-going evaluation of the LCS recoveries demonstrates that the laboratory is performing the method within statistical control (i.e., accuracy and precision) in the absence of matrix interference. The LCS results, coupled with MS data, help determine

whether the laboratory performed the method correctly or the sample matrix affected the analytical results. When a laboratory control sample duplicate (LCSD) is required, a percent recovery for each target analyte is calculated, as well as a relative percent difference (RPD) between the LCS and the LCSD.

#### *8.4.2.5 Matrix Spike*

A matrix spike (MS) is an environmental sample to which known concentrations of target analytes have been added. MS samples are analyzed to evaluate the effect of the sample matrix on the analytical methodology. MS samples are generated by taking a separate aliquot of an actual field sample and spiking it with the selected target analyte(s) prior to sample extraction. The MS sample then undergoes the same extraction and analytical procedures as the unfortified client sample. Due to the potential variability of the matrix of each sample, these results may have immediate bearing only on the specific sample spiked and not on samples collected at other locations that are included in the QC batch.

#### *8.4.2.6 Matrix Spike Duplicate*

A matrix spike duplicate (MSD) is a second aliquot of a sample that is spiked with the selected target analyte(s) and analyzed with the associated sample and MS sample. The results of the MS and MSD are used together to determine the effect of a matrix on the accuracy and precision of the analytical process. Due to the potential variability of the matrix of each sample, the MS/MSD results may have immediate bearing only on the specific sample spiked and not all samples in the QC batch.

#### *8.4.2.7 Sample Duplicate*

A sample duplicate is a second aliquot of an environmental sample taken from the same sample container that is processed identically with the first aliquot of that sample. That is, sample duplicates are processed as independent samples within the same QC batch. The results are compared to determine the sample homogeneity and the precision of the analytical process.

#### *8.4.2.8 Surrogates*

Surrogates are organic compounds that are similar in chemical composition and behavior to the target analytes but that are not normally found in environmental samples. Surrogates are added to all appropriate samples and QC samples being tested for organic analytes to monitor the effect of the sample matrix and the procedure on the accuracy of the process.

#### 8.4.2.9 Analytical Spike

An analytical spike is created by spiking target analytes into a prepared portion (i.e., post digestion) of a sample just prior to analysis. It provides information on matrix effects encountered during analysis such as suppression or enhancement of instrument signal levels. It is most often used in elemental analysis involving various forms of atomic emission or atomic absorption spectroscopy. A single analytical spike serves as a single point application of the "method of standard additions" or MSA.

#### 8.4.2.10 Interference Check Sample

An interference check sample (ICS) is a solution containing known concentrations of both interfering and analyte elements. Analysis of this sample can be used to verify background and interelement correction factors.

#### 8.4.2.11 Internal Standards

An internal standard (IS) is a compound or element with similar chemical characteristics and behavior in the analysis process to the target analytes, but is not normally found in environmental samples. The internal standard is usually added after sample preparation. The primary function of the internal standard is quantitation, however, it also provides a short-term indication of instrument performance.

### 8.5 Data Collection Operations

Laboratory analyses are designed to produce data that are representative of existing conditions present at the time the sample was obtained. The data collection design includes field sampling events, sample handling and custody, analytical operations, data recording procedures, data assessments, data verification, and data reporting requirements and techniques to assess limitations of data use. These operations are discussed in this section through section 8.10.

#### 8.5.1 Field Collection and Shipment

In order to provide a sample that most accurately represents the test matrix, field sample collection personnel must abide by the sample collection guidelines and procedures established by involved regulatory agencies. A significant part of the efforts of regulatory agencies include the use of "approved" sample containers, chemical and physical preservation techniques, and observance of specified holding times. It is imperative that all samples be collected and preserved according to the appropriate analytical method specified in the QAPP (if one exists). Although the sampling may be performed by non-STL personnel, the importance of sampling and transportation of the sample to the laboratory is understood and must be considered

during data validation.

Sampling requirements must be communicated to the sampling team prior to field collection.

Field personnel are responsible for labeling each individual sample collected with the following information:

- Project name
- Unique client sample number
- Sample location (including as appropriate: borehole and depth or grid coordinates)
- Sampling date and time
- Sample preservation
- Analysis required.

An overriding consideration for the resulting analytical data is the ability to demonstrate that the samples have been obtained from the locations stated and that they have reached the laboratory without alteration. Evidence of collection, shipment, laboratory receipt, laboratory custody, and disposal must be documented to accomplish this. Figure 8.5-1 shows an example Chain-of-Custody (COC) form that is used by the STL laboratory to document this evidence. Field personnel are responsible for initiating the COC form.

The prompt shipment of samples to the laboratory is necessary to ensure that required holding times are met. Samples should be shipped by an overnight carrier, be hand-delivered, or transported in a manner that assures prompt delivery to the laboratory. Some sites require an extensive radioactive screening process before a sample may be shipped. In these cases, it is imperative for the Project Manager to maintain good communications with the client to assure proper staffing of the laboratory in response to a decreased holding time.

### 8.5.2 Sample Containers, Shipping Containers, Preservatives, and Holding Times

#### 8.5.2.1 Sample Containers

A sample container is defined as the sealed enclosure, usually made of plastic or borosilicate glass that the sample is collected in and stored in until analysis. All sample containers provided by STL operations for environmental sampling are new, with the exception of some air sampling canisters, which must be recertified before reuse, and demonstrated to be clean for their appropriate use. All documentation certifying sample container cleanliness must be maintained by the laboratory or the vendor and can be provided to the client upon request.

**FIGURE 8.5-1**
**Example STL Chain-of-Custody Form**

**Reference Document No.** _____
**Page 1 of** _____

Project Name/No.: _____
Sample Team Members: _____
Profit Center No.: _____
Project Manager: _____
Purchase Order No.: _____
Required Report Date: _____

Sample Shipment Date: _____
Lab Destination: _____
Lab Contact: _____
Project Contact/Phone: _____
Carrier/Waybill No.: _____

Bill To: _____

Report To: _____

**ONE CONTAINER PER LINE**

| Sample Number | Sample Description/Type | Date/Time Collected | Container Type | Sample Volume | Preservative | Requested Testing Program | Condition on Receipt | Disposal Record No. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Special Instructions:

Possible Hazard Identification:
Non-hazard ❑ Flammable ❑ Skin Irritant ❑ Poison B ❑ Unknown ❑

Sample Disposal:
Return to Client ❑ Disposal by Lab ❑ Archive _____ (mos.)

Turnaround Time Required:
Normal ❑ Rush ❑

QC Level:

| | | | |
|---|---|---|---|
| 1. Relinquished by: *(Signature/Affiliation)* | Date: _____ Time: | 1. Received by: *(Signature/Affiliation)* | Date: _____ Time: |
| 2. Relinquished by: *(Signature/Affiliation)* | Date: _____ Time: | 2. Received by: *(Signature/Affiliation)* | Date: _____ Time: |
| 3. Relinquished by: *(Signature/Affiliation)* | Date: _____ Time: | 3. Received by: *(Signature/Affiliation)* | Date: _____ Time: |

**Comments:**

The sample containers to be supplied are listed in Tables 8.5-1 through 8.5-5. Container volumes listed in these tables may be decreased with the approval of the laboratory QA Manager or Technical Director to accommodate reduced sample volumes required by the facility SOP or increased as applicable to accommodate duplicates and matrix spikes.

### *8.5.2.2 Shipping Containers*

Shipping containers are defined as the sealed enclosure in which the sample containers are stored during shipment from the sample collection site to the analytical laboratory. Shipping containers must be of sufficient number and size to accommodate the samples in an upright condition. Shipping containers must also meet all requirements for the shipment of environmental samples.

Packaged samples must be shipped to the analytical laboratory in a safe manner that preserves the integrity of the samples. The most common method of sample shipment employs coolers or ice chests that are sealed with custody tape and shipping tape. These coolers must be durable and resistant to crushing during shipment. All coolers must be well maintained and cleaned to prevent cross-contamination of the samples. All coolers contain a plastic liner to limit contamination. It is the ultimate responsibility of the person collecting and packaging the sample for shipment to ensure that the shipping containers are clean and functional.

To help prevent sample breakage during shipment, additional consideration must be given to providing shock absorbency to all samples packaged inside the shipping container. Use of bubble-wrap around each sample container is the best way to provide this protection. Foam packing materials and vermiculite are also successfully used.

### *8.5.2.3 Sample Preservatives*

Most analytes have a finite holding time in a given sample matrix. Sample preservation is the chemical or physical means by which samples are treated during and/or following sample collection to aid in the stability of the analytes of interest in that matrix. Sample holding times are also adversely affected when samples are improperly preserved, or shipped unpreserved. The preservation of samples at the time of sample collection will follow the requirements of the analytical methods used. This preservation includes the addition of reagents to deter chemical and biochemical degradation and the maintenance of refrigeration during transit and ultimate storage in the laboratory. The required preservatives for the analysis to be performed on each matrix are included in Tables 8.5-1 through 8.5-5.

#### 8.5.2.4 Sample Holding Times

Holding time is defined as the maximum allowable time a sample can be stored after sample collection and preservation (or laboratory receipt for CLP) until appropriate processing occurs (preparation or analysis). The holding time may vary according to method or client requirements and is tracked and controlled via the LIMs. Tests designated with holding times as "analyze immediately or ASAP" are considered parameters that should be tested by field personnel or on-site. Each operation has a system in place to ensure that holding times are monitored by each group within the operating unit. It is the responsibility of each STL associate processing the sample to assure that holding times are met. STL is responsible for meeting all holding times for properly preserved samples received within 48 hours of collection or if less than half the holding time has passed. If these conditions are not met, STL will attempt to expedite sample analysis as soon as possible. When holding times are exceeded, the laboratory uses a Nonconformance Memo (NCM) to identify and document the root cause of the holding time violation.

Sample holding times are listed in Tables 8.5-1 through 8.5-5.

### 8.5.3 Sample Handling

STL North Canton's SOP, Sample Receiving - NC-SC-0005, describes the sample receipt and log-in process in detail. The following sections describe the general policies followed by STL.

#### 8.5.3.1 Sample Receipt

Samples shall be received and logged in at STL by a designated sample custodian or other properly trained associate. Upon sample receipt, the sample custodian shall, as appropriate:

- Wear appropriate personal protective equipment. At a minimum, this consists of gloves, a lab coat, and safety glasses
- Examine the shipping containers to verify that the custody tape is intact
- Examine all sample containers for damage
- Open shipping containers in adequately ventilated areas to assure worker safety
- Determine if the temperature required by the requested testing program has been maintained during shipment. Document the shipping container temperature on the COC
- Compare samples received against those listed on the COC
- Verify that sample holding times have not been exceeded

- Examine all shipping records for accuracy and completeness
- Determine sample pH (if required for the scheduled analysis) (except VOA and TOX samples) and record on the cooler receipt form
- Sign and date the COC immediately (only after shipment is accepted) and attach the waybill
- Note any problems associated with the coolers and samples on the cooler receipt form and notify the PM who in turn notifies the client
- Attach durable (water-resistant) laboratory sample container labels with unique laboratory identification number and test
- Place the samples in proper laboratory storage.

A CUR or an equivalent form/system is generated by sample control during the sample log-in process to document anomalies identified upon the receipt of samples in the laboratory. These anomalies are outside of laboratory control and do not require corrective actions to be taken within the laboratory. The affected client shall be notified by the PM or designee of all CURs generated for their samples. The PM is responsible for resolving with the client how to proceed with the samples and documenting the decision to proceed with the analysis of compromised samples. CURs must be resolved prior to sample preparation and analysis. The completed CUR form shall be stored in the project file. An example CUR is shown in Figure 8.5-2. The report narrative will include an explanation of sample receiving related anomalies.

### *8.5.3.2 Exceptions or Discrepancies*

STL reserves the right to reject samples for any of the following reasons:

- No custody seals as required by project
- No chain of custody documentation provided
- Preservation inappropriate for analysis requested
- Sample container inappropriate for analysis requested
- Sample received out of holding time for analysis requested
- Incomplete sample information provided
- Discrepancies between COC and sample labels
- Samples have high levels of polychlorinated dibenzo-p-dioxins/ dibenzo furans (PCDD/PCDFs)
- Samples have a high level gross alpha or beta radiation
- Samples are from a site known to contain chemical warfare agents (CWAs) and the samples have not been screened for them.

These or any other project exceptions or discrepancies are discussed with the client and agreed upon action taken.

**Figure 8.5-2**
**Example STL Cooler Receipt Form/Narrative**

Client:_____ Project:_____ Quote#:_____
Cooler Received on:_____ Opened on:_____ by: _____
(Signature)

Fedx ☐ Client Drop Off ☐ UPS ☐ Airborne ☐ Other:_____
Cooler ☐ Safe ☐ Foam Box ☐ Client Cooler ☐ Other:_____
STL Shipper No#:_____

1. Were custody seals on the outside of the cooler and intact? Yes ☐ No ☐
   If YES, Quantity_____ Location_____
   Were the custody seals signed and dated? Yes ☐ No ☐ NA ☐
2. Shipper's packing slip attached to this form? Yes ☐ No ☐
3. Were custody papers included inside the cooler and relinquished? Yes ☐ No ☐
4. Did you sign the custody papers in the appropriate place? Yes ☐ No ☐
5. Packing material used:

Peanuts ☐ Bubble Wrap ☐ Vermiculite ☐ Foam ☐ None ☐ Other :_____

6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)

METHOD: Temperature Vial ☐ Coolant ☐ Against Bottles ☐
COOLANT: Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Were all the bottles sealed in separate plastic bags? Yes ☐ No ☐
8. Did all bottles arrive in good condition (Unbroken)? Yes ☐ No ☐
9. Did all bottle labels and tags agree with the custody papers? Yes ☐ No ☐
10. Were samples at the correct pH? Yes ☐ No ☐ NA ☐
11. Were correct bottles used for the tests indicated? Yes ☐ No ☐
12. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☐
13. Was a sufficient amount of sample sent in each bottle? Yes ☐ No ☐

Contacted PM _____ Date:_____ by:_____ via Voice Mail ☐ Verbal ☐ Other ☐
Concerning:_____

| √ | MACRO | MACRO |
|---|---|---|
| ***1. CHAIN OF CUSTODY*** | | |
| | SR1A | Samples were received under proper custody procedures and without discrepancies. |
| | SR1B | The chain of custody and sample bottles did not agree. The following discrepancies occurred_____ |
| ***2. SAMPLE CONDITION*** | | |
| | SR2A | Sample(s)_____ were received or requested after the recommended holding time had expired. |
| | SR2B | Sample(s)_____ were received with insufficient volume |
| | SR2C | Sample(s)_____ were received in a broken container. |
| ***3. SAMPLE PRESERVATION*** | | |
| | SR3A | Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). |
| | SR3B | Sample(s)_____ were received with bubble > 6 mm in diameter (cc: PM) |
| ***4. NCM*** | | |
| | SR4A | NCM has been generated. Refer to Clouseau for details |
| ***5. Other Anomalies (see below or back)*** | | |
| | | |

**Figure 8.5-2 - Continued**
**Example STL Cooler Receipt Form/Narrative**

| Client ID | pH | Date | Initials |
|---|---|---|---|
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| Cooler | Temp | Method | Comments |
|---|---|---|---|
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| | | | |
| | | | |
| | | | |

**Discrepancies Cont.**

*Macro Name:*

*Macro Name:*

*Macro Name:*

*Macro Name:*

*Other Anomalies:*

### 8.5.3.3 Sample Log-in

Sample log-in activities at STL are fully documented in Sample Receiving SOP, NC-SC-0005. The following is a general description of the log-in process:

- Enter the samples in the laboratory sample log-in book, and/or the LIMS which contains the following information at a minimum:
- Project name or identification number
- Unique sample numbers (both client and internal laboratory)
- Type of samples
- Required tests
- Date and time of laboratory receipt of samples
- Field ID supplied by field personnel
- Notify the PM and appropriate Group/Team Leader(s) of sample arrival
- Place the completed COCs, waybills, and any additional documentation in the project file.

### 8.5.3.4 Sample Storage

The primary considerations for sample storage are:

- Maintenance at the method prescribed temperature, if required
- Maintenance of sample integrity through adequate protection from contamination from outside sources or from cross-contamination of samples. Low-level and high-level samples, when known, must be stored separately. Samples and standards must be stored in separate refrigerators or freezers. Storage areas for volatile organic test requests should be monitored weekly by the analysis of a holding (refrigerator) blank (an aliquot of contaminant-free water stored in a VOA vial)
- Security of samples within the laboratory.

The requirements listed in Tables 8.5-1 through 8.5-5 for temperatures and holding times shall be used. Placing of samples in the proper storage environment is the responsibility of sample control personnel. STL will assign individuals the responsibility of notifying the Group/Team Leaders or their designees if there are any samples which must be analyzed immediately because of holding time requirements.

### 8.5.3.5 Internal Sample Chain-of-Custody and Interlaboratory Transfers

Sample custody within STL laboratories is described in Sample Receiving SOP, NC-SC-0005. Internal COC may be required for programs defined

by state or federal agency. The sample custody documentation shall include the following minimum requirements:

- Name of associate taking custody of the sample from the sample storage area for preparation or analysis
- Dates sample removed from and returned to the sample storage area
- Identification of tests to be performed on the sample aliquot(s) selected by the associate
- Sample matrix
- Laboratory sample numbers
- Sample storage location.

Additional custody records can be provided by the laboratory at the specific request of the client. Access to STL is restricted to prevent any unauthorized contact with samples, extracts, or documentation.

Samples transferred to a different laboratory than the original receiving facility are transferred under chain-of-custody (COC). The COC is maintained whether the laboratory is another STL facility or a subcontracted laboratory. If the entire sample volume is transmitted, the original copy of the client's COC form will be used to document the relinquishing of the sample and will accompany the sample to its destination. A copy of the completed COC form shall be retained in the laboratory project file. In the case where an aliquot of a sample is shipped from the laboratory, a new COC will be generated by the laboratory and shipped with the sample aliquot. The original COC will be retained in the project file at the site holding the original sample container.

Samples are not transferred to other STL facilities or to subcontractor laboratories without prior approval of the client.

### *8.5.3.6 Subsampling*

Sample preparation procedures are referenced and defined in the method SOPs.

### *8.5.3.7 Sample Disposal and Return Chain-of-Custody*

After the requested analyses on the samples have been completed, any remaining portions of the samples will be maintained by the sample custodian until the samples are disposed of or returned to the client. The

disposal of each sample is recorded on the client's COC form, in LIMS, or referenced in the project file. Sample disposal procedures and documentation are described in operation-specific SOPs. STL's routine sample retention period is at least thirty days after the analytical report is issued to the client, unless otherwise specified by the client.

If samples are returned to the client rather than disposed of by the laboratory, the original COC or a new COC is used to document custody transfer back to the client from the laboratory. A copy of the completed COC is retained in the laboratory project file.

### 8.5.4 Calibration Procedures and Criteria

All equipment and instruments used at STL operations for quantitative measurements are controlled by a formal calibration program. Table 8.0-1 lists the lab's major analytical instrumentation , and Tables 8.5-6 through 8.5-9 outline calibration requirements. Calibrations may be periodic or operational. These are described in the lab's method SOPs. The Policy P-T-001, "Selection of Data Points Required for an Initial Calibration Curve," is applicable when the number of data points is not described in the method. At a minimum, these calibration procedures shall include:

- Instrument to be calibrated
- Reference standards used for calibration
- Calibration technique (e.g., linear, quadratic)
- Acceptable performance tolerances and corrective actions required if specifications are not met
- Frequency of calibration
- Calibration documentation requirements.

Whenever possible, recognized procedures such as those published by ASTM or the USEPA or procedures provided by manufacturers shall be adopted. If established procedures are not available, a procedure shall be developed considering the type of equipment, stability characteristics of the equipment, required accuracy, and the effect of operation error on the quantities measured.

#### 8.5.4.1 Physical Reference Standards

Physical reference standards associated with periodic calibrations include weights for calibrating balances and certified thermometers for calibrating working thermometers. Whenever possible, physical reference standards shall be calibrated by a body that can provide traceability to nationally or internationally recognized standards. If these standards are not available, the basis for the reference standard shall be documented.

Physical reference standards shall be used only for calibration procedures and shall be stored separately from equipment used for analysis.

### *8.5.4.2 Chemical Reference Standards and Reagents*

Chemical reference standards are generally associated with operational calibration. These standards include reference materials traceable to recognized standards suppliers. This may include vendor-certified materials traceable to national or international standard reference materials (e.g., NIST). This topic is also discussed in the Section on "Procurement of Supplies and Services" (see 5.2.4).

All chemical reference standards maintained in the laboratory for use in calibrations (or as QC spiking solutions) and reagents prepared in the laboratory shall be labeled or referenced to appropriate documentation (hard copy or electronic) with the following information at a minimum:

- A unique identification including concentration (solutions containing several analytes can be identified such that the solution constituents and concentrations can be referenced to a logbook)
- Medium prepared in
- Preparation date
- Expiration date
- Initials of preparer.

Vials containing standard solutions that are not large enough to accommodate labels listing the above information may be referenced to a laboratory logbook/ notebook entry or standards software. The expiration date of the working standard and reagent must not exceed the expiration date of the original material. These records should provide sufficient detail to allow one to reproduce the standard or reagent.

Records for all purchased standards and reagents shall include the date of receipt, the date opened, and, where applicable, the expiration date.

### *8.5.4.3 Standard Verification*

When possible, reference standards are purchased from a STL preapproved vendor. Standards are verified by quantitation against a second known standard before reporting data. The standard for verification must meet the laboratory's criteria for the independent/second source ICV verification. Therefore, the verification of a new standard initial calibration with a second source ICV meets this verification requirement, some "bad acting" analytes may not meet these criteria and must be approved by the QAM before use. Standard spiking solutions and

surrogates shall be verified by analyzing an LCS with the new standards and verifying against historical criteria limits. Special standards that are obtained from another source must also be independently verified at the lab. Verification by the laboratory of a reference standard from neat materials is also necessary.

To extend the use of an expired standard, which may not be allowed by all programs, reverification is necessary provided that new analysis produces acceptable data. The verification of an expired standard is performed against a current, independent standard reference material by analyzing within a valid calibration and QC.

Stock and working standards and reagents are checked regularly for signs of deterioration, such as discoloration, formation of precipitates, or change in concentration. Care is exercised in the proper storage and handling of standard and reagent solutions. Standards and reagents are always stored separately from samples.

An independent or second source standard is used to verify initial calibrations. An independent/second source standard is defined as a standard composed of the same target constituents as, but from a different source than those used in the standards for the initial calibration. An independent standard may be a laboratory-prepared or a certified independent standard solution(s). Independence of reference material can be achieved by: (1) purchasing reference materials from two separate vendors, (2) using a different lot from the same vendor that is certified by the vendor as an independent standard or (3) having two separate individuals prepare the calibration and verification standard solutions if independent sources are not available.

#### *8.5.4.4 Periodic Calibration*

Periodic calibration is performed at prescribed intervals. In general, equipment that can be calibrated periodically is a distinct, singular purpose unit and is relatively stable in performance. These include balances, micropipettors, counters, thermometers, refrigerators, freezers, and ovens. Equipment employed at STL requiring periodic calibration are listed along with their respective calibration requirements in Tables 8.5-6. NELAC requires mechanical volumetric dispensing devices (except Class A glassware) to be checked for accuracy or at least a quarterly basis if in use. The laboratory unit has an SOP in place for the calibration of this equipment if in use at their location.

### *8.5.4.5 Operational and Continuing Calibration*

Operational calibration is routinely performed as part of instrument usage, such as the development of a standard calibration curve (see Tables 8.5-7 to 8.5-9). The accuracy of initial calibrations are to be verified prior to sample analysis through the use of an independent standard in situations where the source method requires calibration verification.

Detailed requirements for operational and continuing calibration are contained in method-specific SOPs.

When an initial calibration is not performed on the day of analysis, the validity of the initial calibration verification must be verified prior to sample analyses by a continuing instrument calibration verification with each analytical batch.

- A continuing instrument calibration verification must be performed as outlined in Tables 8.5-7 (inorganics) and 8.5-8 (organics).

- Sufficient raw data records must be retained to permit reconstruction of the continuing instrument calibration verification, e.g., test method, instrument, analysis date, each analyte name, concentration and response, and calibration curve or response factor.

- When the acceptance criteria for the continuing calibration verification is exceeded high, i.e., high bias, and there are associated samples that are non-detects, then those non-detects may be reported. Otherwise the samples affected by the unacceptable calibration verification shall be reanalyzed after a new calibration curve has been established, evaluated and accepted.

- When the acceptance criteria for the continuing calibration verification is exceeded low, i.e., low bias, those sample results may be reported if they exceed a maximum regulatory limit. Otherwise the samples affected by the unacceptable verification shall be reanalyzed after a new calibration curve has been established, evaluated and accepted.

### *8.5.4.6 Calibration Failure*

Equipment or instruments that fail calibration or become inoperable during use shall be tagged out (NCM created) to indicate they are out of calibration. Such instruments or equipment shall be repaired and successfully recalibrated before reuse. Following recalibration or verification, back to control will be documented in the injection/run

log and/or maintenance logbook through the routine identification of the required calibration runs specified by the standard operating procedure.

#### 8.5.4.7 Calibration Records

Calibration shall be documented for each piece of equipment subject to calibration. All calibration records (periodic and operational) directly affect data and may not be limited to one project. These records shall be stored in either the quality records or the associated project files. Project files that include sample data shall either include the calibration records or include reference to them

### 8.6 Quality Assessment

The effectiveness of the QA practices is measured by the quality of data generated by the laboratory. Procedures are in place to detect, prevent, and correct quality problems and to ensure quality improvement. Items and processes that do not meet established requirements must be investigated to determine their cause. Improvements must be implemented in the operations that will prevent a recurrence of these quality problems and provide overall quality performance. All phases of laboratory work should be designed with the objective of preventing problems and improving quality on a continuous basis.

#### 8.6.1 Data Quality Assessment

Data quality is judged in terms of precision, accuracy, representativeness, completeness and comparability. The areas of representativeness, comparability, and completeness for an overall project, inclusive of sampling issues, may be beyond the control of the laboratory. The elements over which the laboratory has direct control are precision, accuracy, and completeness relative to analytical testing results.

Precision and accuracy assessments are made as part of the evaluation of laboratory QC data generated during sample preparation and analysis. The QC samples employed at STL North Canton as part of routine sample analysis are summarized in Section 8.4 of this document. Table 8.6-1 shows the precision and accuracy measurements employed. Analytical method SOPs and STL Policy Number QA-003 include information on requirements for the type of QC samples, frequencies, and acceptance criteria. Additionally, the SOPs and Policy describe the appropriate actions to be taken when a QC sample result does not meet acceptance criteria.

#### 8.6.2 Statistical Evaluation of Data

In-house limits for all QC data must be evaluated at least annually and compared to the limits published in the methods for applicable matrices. Method limits will

be employed until sufficient QC data are acquired. A minimum of 20 to 30 data points are recommended to establish the in-house QC limits. Calculated results of the QC (LCS) samples are evaluated by comparing against control limits (3-sigma).

Control charts are used to develop control limits, trouble-shoot analytical problems, and, in conjunction with the non-conformance system, to monitor for trends. Program-specific data analysis requirements for control charts are followed as required for data generated under those programs. These additional requirements shall be documented in a QAPP or QAS.

Precision and accuracy measurements employed by STL North Canton are shown in Table 8.4-3 through 8.4-7. Calculated results of these QC samples are evaluated using statistical tables or control charts.

## 8.7 Data Recording Procedures

To ensure data integrity, all documentation of data and records generated or used during the process of data generation must be performed in compliance with Policy Number QA-008, "Data Recording Requirements".

## 8.8 Data Reduction and Verification Procedures

Data review procedures comprise a set of computerized and manual checks applied at appropriate levels of the measurement process. Data review begins with the reduction or processing of data and continues through verification of the data and the reporting of analytical results. Calculations are checked from the raw data to the final value prior to reporting results for each group of samples. Data reduction can be performed by the analyst who obtained the data or by another analyst. Data verification starts with the analyst who performs a 100 percent review of the data to ensure the work was done correctly the first time. Data verification continues with review by a second reviewer who verifies that data reduction has been correctly performed and that the analytical results correspond to the data acquired and processed. This procedure is outlined in Figure 8.8-1.

### 8.8.1 Data Reduction and Initial Verification

Data reduction and initial verification may be performed by more than one analyst depending upon the analytical method employed. The preparation and analytical data may be reviewed independently by different analysts. In these instances, each item may not be applicable to the subset of the data verified or an item may be applicable in both instances. It is the responsibility of the analyst to ensure that the verification of data in his or her area is complete. The data reduction and initial verification process must ensure that:

- Sample preparation information is correct and complete including documentation of standard identification, solvent lot numbers, sample

amounts, etc.

- Analysis information is correct and complete including proper identification of analysis output (charts, chromatograms, mass spectra, etc.)
- Analytical results are correct and complete including calculation or verification of instrument calibration, QC results, and qualitative and quantitative sample results with appropriate qualifiers
- The appropriate SOPs have been followed and are identified in the project and/or laboratory records
- Proper documentation procedures have been followed
- All nonconformances have been documented
- Special sample preparation and analytical requirements have been met.
- The data generated have been reported with the appropriate number of significant figures as defined by the analytical method in the LIMS or otherwise specified by the client.

In general, data will be processed by an analyst in one of the following ways:

- Manual computation of results directly on the data sheet or on calculation pages attached to the data sheets
- Input of raw data for computer processing
- Direct acquisition and processing of raw data by a computer.

If data are manually processed by an analyst, all steps in the computation shall be provided including equations used and the source of input parameters such as response factors (RFs), dilution factors, and calibration constants. If calculations are not performed directly on the data sheet, they may be attached to the data sheets.

Manual integrations are sometimes necessary to correct misintegrations by an automatic data system software program, but must only be performed when necessary. Further discussion of manual integrations and the required documentation is given in Policy Number QA-011, "Acceptable Manual Integration Practices".

For data that are input by an analyst and processed using a computer, a copy of the input shall be kept and uniquely identified with the project number and other information as needed. The samples analyzed must be clearly identified.

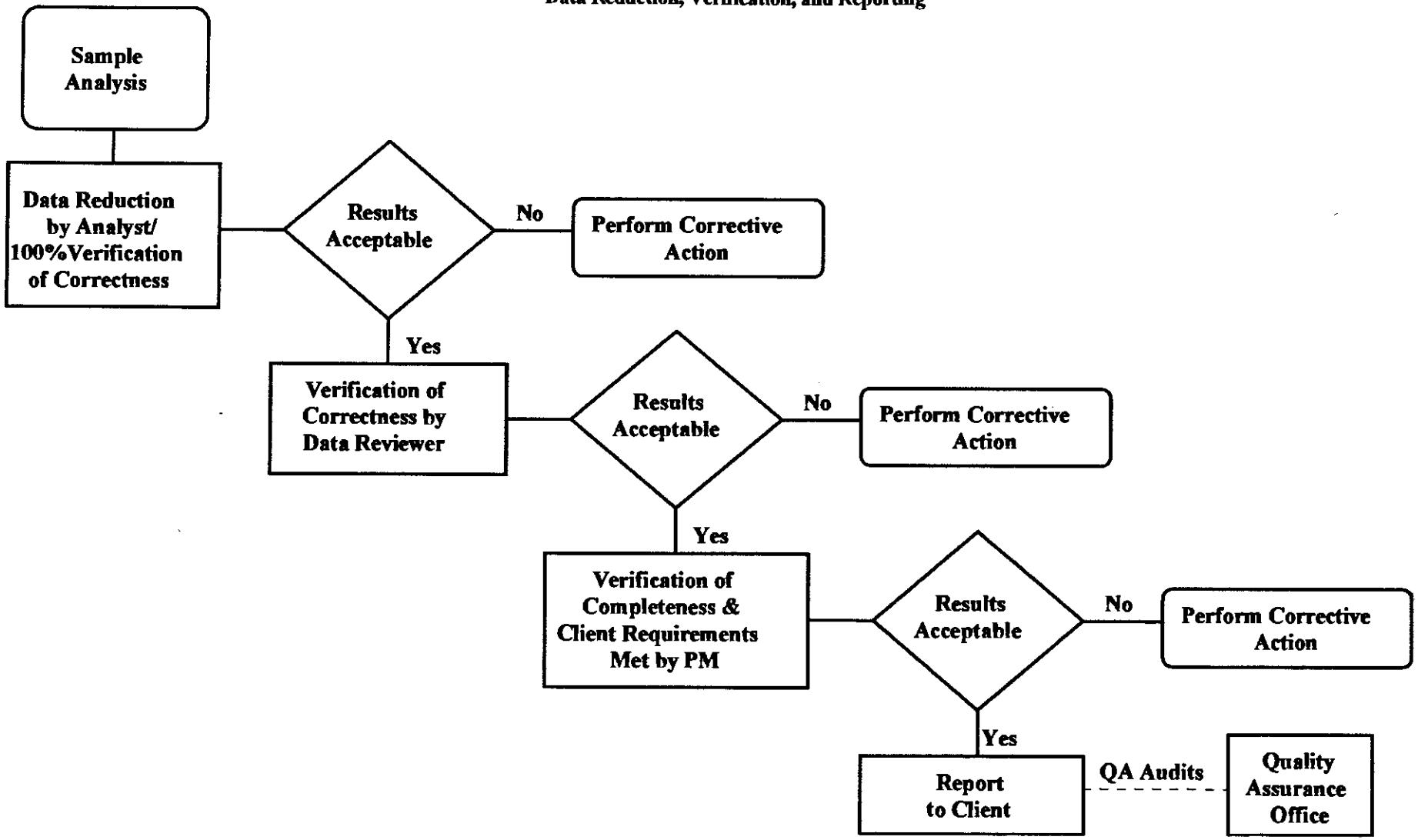
If data are directly acquired from instrumentation and processed, the analyst must verify that the following are correct:

- Project and sample numbers
- Calibration constants and RFs
- Units
- Numerical values used for reporting limits.

Analysis-specific calculations for methods are provided in SOPs. In cases where computers perform the calculations, software must be validated or verified, as described in Section 6.0 of this document, before it is used to process data.

The data reduction is documented, signed and dated by the analyst completing the process. Initial verification of the data reduction by the same analyst is documented on a data review checklist, signed and dated by the analyst. Data review requirements are described in Section 5.3.6 of the QMP.

**FIGURE 8.8-1**
**Data Reduction, Verification, and Reporting**



### *8.8.2 Data Verification*

Following the completion of the initial verification by the analyst performing the data reduction, a systematic check of the data that has been fully reduced and checked through Level 1 review is performed by an experienced peer, supervisor, or designee. This check is performed to ensure that level 1 review has been completed correctly and thoroughly. The second level reviewer examines the data signed by the analyst. This review includes an evaluation of all items required in the raw data package. Any exceptions noted by the analyst must be reviewed. Included in this review is an assessment of the acceptability of the data with respect to:

- Adherence of the procedure used to the requested analytical method SOP
- Correct interpretation of chromatograms, mass spectra, etc.
- Correctness of numerical input when computer programs are used (checked randomly)
- Correct identification and quantitation of constituents with appropriate qualifiers
- Numerical correctness of calculations and formulas (checked randomly)
- Acceptability of QC data
- Documentation that instruments were operating according to method specifications (calibrations, performance checks, etc.)
- Documentation of dilution factors, standard concentrations, etc.
- Sample holding time assessment.

This review also serves as verification that the process the analyst has followed is correct in regard to the following:

- The analytical procedure follows the methods and specific instructions given on the project QAS or equivalent summary form
- Nonconforming events have been addressed by corrective action as defined on a nonconformance memo
- Valid interpretations have been made during the examination of the data and the review comments of the initial reviewer are correct
- The package contains all of the necessary documentation for data review and report production and results are reported in a manner consistent with the method used for preparation of data reports.

The specific items covered in the second stage of data verification may vary according to the analytical method, but this review of the data must be documented by signing the same checklist. Data review requirements are described in Section 5.3.6 of the QMP.

### 8.8.3 Completeness Verification

A third-level review is performed by the reporting and project management staff. This review is required before results are submitted to clients. This review serves to verify the completeness of the data report and to ensure that project requirements are met for the analyses performed. The items to be reviewed are:

- Analysis results are present for every sample in the analytical batch, reporting group, or sample delivery group (SDG)
- Every parameter or target compound requested is reported with either a value or reporting limit
- The correct units and correct number of significant figures are utilized
- All nonconformances, including holding time violations, and data evaluation statements that impact the data quality are accompanied by clearly expressed comments from the laboratory
- The final report is legible, contains all the supporting documentation required by the project, and is in either the standard STL format or in the client-required format.
- Implement checks to monitor the quality of laboratory results using correlation of results for different parameters of a sample (for example, does the TOC results justify the concentration of organic compounds found by GC/MS.)
- A narrative to accompany the final report will be finalized by the PM. This narrative will include relevant comments collected during the earlier reviews.

## 8.9 Data Reporting

### 8.9.1 Data Reports

STL North Canton is capable of developing a variety of data deliverable reports. Standard reports will contain:

- Cover Letter/Narrative - Information on sample types, tests performed, any problems encountered, and general comments are provided.
- Analytical Data - Data are reported by sample or by test with the appropriate significant figures and reporting limits, and have been adjusted for dilution, if appropriate. Pertinent information including dates sampled, received, prepared, extracted, and analyzed are provided.
- Laboratory Performance QC Information - The results of LCSs and method blanks analyzed with the project are listed. Any data or QC anomalies are discussed in the narrative.
- Matrix-Specific QC Information - Results of any sample duplicates and MS/MSDs analyzed with the samples as batch QC are reported. Other project-specific QC requested by the client are also reported. The results

include supporting information such as amount spiked, percent recovery, or percent difference/RPD.

- Methodology - Reference for analytical methodology used is cited.
- Other Deliverables - Other deliverables available include disk deliverables, CDROM, sample raw data packages, complete deliverable packages, and custom report formats. Requirements for electronic reporting are defined in Policy CORP-QA-017, "Electronic Reporting".

### *8.9.2 Final Report Details*

STL North Canton will provide paginated reports or a uniquely defined, identifiable certificate/report (i.e. electronic file, CD). The report will include:

a) Report title, name, address and phone number of the laboratory.
b) Name and address of client/project name/client identification number.
c) Description (lab ID of sample).
d) Dates and Time of sample collections (if known), receipt, preparation and analysis.
e) If the required holding time is 48 or less, time of sample preparation and analysis.
f) Method identifiers traceable to all procedures used.
g) Reporting limit.
h) Test result with appropriate units and how reported (wet weight/dry weight). Also identify any results outside of quantitation limits. When required, a statement of the estimated uncertainty of the test result should be added.
i) If appropriate, description of any QC failures or deviations from SOPs.
j) Signature and title of the individual responsible for the report. Electronic signature is acceptable.
k) Date of issue.
l) All subcontract work must be clearly identified, and name and address of outside subcontractor noted.
m) Where relevant, a statement to the effect that the results relate only to the items tested or to the sample as received by the laboratory
n ) Where relevant, a statement that the certificate or report shall not be reproduced except in full, without the written approval of the laboratory.

After final report any correction, addition, or deletion must clearly identify its purpose and meet the above reporting requirements as appropriate.

All applicable elements from above should be available for review if not issued in a formal report by an in-house or captive laboratory.

### 8.9.3 Verbal Results

STL North Canton, as a policy, discourages the release of data verbally or without full data review. If however, the client requests analytical results to be communicated verbally or by facsimile prior to final review, they must be clearly identified as "Preliminary" results. The client must understand that the data have not undergone the required levels of review and may potentially change.

### 8.9.4 Reporting Analytical Results

Sample results are reported according to analytical method SOPs or client specifications. Normally, the laboratory uses the STL North Canton Reporting Limit (RL) at which any analyte of interest detected at or above that level is reported as a positive value and any analyte of interest not detectable or detected below that level is reported as "not detected" at the RL. The laboratory will normally report results within the calibration, however, any reported results outside of the calibration range will be documented in the final report.

If a QC measurement is out of control and the data is to be reported, data qualifiers are reported with samples associated with failed QC measurements.

The laboratory must certify that the test results meet all NELAC requirements or provide reasons and/or justification if they do not.

In some cases a contract, QAPP, or documented client request may require the laboratory to report sample results in a specified manner. Some examples are given below:

- The laboratory may be requested to report all analytes of interest that are less than the laboratory's RL but are greater than the MDL. This data will be flagged with an appropriate qualifier or noted in the report case narrative. (See precautions in "Establishing Reporting Limits", Policy Number QA-009).
- The laboratory may be requested to report any tentatively identified compounds (TICs). These data will be flagged with an appropriate qualifier.
- The laboratory may be requested to report sample results using an RL that is higher than their normal level. In this case, only the analytes of interest found at or above that level would be reported as positive values. In this case, the laboratory will state the PSRL rather than the RL. All analytes of interest not detected or detectable below that level would be reported as "not detected" at the PSRL.

  In this situation, the laboratory must include documentation in the project file that supports the reporting procedure employed.

It is the responsibility of the laboratory to provide for a reporting system that assures that any problems associated with an analysis are properly documented on a nonconformance memo, communicated to the appropriate STL North Canton staff, and addressed appropriately in the data report.

#### *8.9.5 Reissued Deliverables*

If, after issuance of a report, STL North Canton observes any mistake that affects the results reported or the QC interpretation of those results, the client will be notified. After issuance of the report, the laboratory report remains unchanged. Any material amendments to a report after issue made only in the form of a further document, or data transfer must include the statement "Supplement to Test Report" or otherwise identified.

#### *8.9.6 Client Confidentiality*

Data and sample materials provided by the client or at the client's request, and the results obtained by STL, shall be held in confidence, unless such information is generally available to the public or is in the public domain. STL's reports, and the data and information provided therein, are for the exclusive use and benefit of our clients, and are not released to a third party without written consent from the client. Data confidentiality is also discussed Section 3.6.

### *8.10 Data Validation*

Data validation for STL refers to data reviews conducted in accordance with the USEPA CLP "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses" and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", or modifications thereof, for non-CLP type analyses.

This form of data validation provides an impartial evaluation of the laboratory's results. Data validation may be requested by the client for a percentage of data and is usually performed by a third party, one which was not involved with the sample analysis. Qualifiers are assigned to data, when required, according to the requirements of the data validation protocol being used.

### *8.11 Preventive Maintenance and Service*

Facilities, instruments, equipment, and parts are subject to wear, deterioration, or change in operational characteristics. Within STL, preventive maintenance, coupled with vendor service agreements, is an organized program of actions taken to maintain facilities and equipment in control.

#### *8.11.1 Analytical Instrumentation and Equipment*

The primary purpose of the maintenance program is to prevent instrument and equipment failure and to minimize down time. A properly implemented maintenance program increases the reliability of a measurement system.

Each instrument or piece of equipment shall be uniquely identified. The laboratory maintains the following:

- Instrument/equipment inventory list
- Instrument/equipment major spare parts list or inventory
- External service agreement documents (if applicable)
- Instrument-specific preventive maintenance logbook or file for each functional unit.

The records of routine maintenance and non-routine maintenance shall include at a minimum:

- Name and serial number and/or unique ID of the item or equipment
- Details of maintenance performed
- Dates and results of recalibrations/ reverifications indicating return to control
- Analyst initials and the date maintenance was performed whether by the analyst or a contracted service representative.

Any item or equipment that does not perform to specifications or defective shall be taken out of service, and tagged as out of service until it has been repaired and shown by calibration/ verification to perform satisfactorily.

### *8.11.2 Frequency of Equipment Maintenance*

The frequency of maintenance must consider manufacturer's recommendations and previous experience. Frequency of preventive maintenance along with the recommended preventive maintenance schedules are given in Tables 8.11-1 through 8.11-25 for analytical instrumentation and equipment or defined in operation specific routine maintenance SOPs. Frequency of maintenance for the facility systems is documented in the CHP.

### *8.11.3 Facilities*

Another important aspect of the laboratory operation is the existence and maintenance of adequate, safe, and clean facilities including appropriate engineering controls such as proper ventilation, lighting, dust control, hoods, air flow, protection from extreme temperatures, waste disposal, and a source of stable power. The facility floor plan is provided in Figure 8.11.

The maintenance and use of these facilities and proper operations are described in the Chemical Hygiene Plan (CHP). The Laboratory Manager has

responsibility for ensuring a properly maintained facility. The Laboratory Director also has the responsibility for ensuring that facilities are available to store samples properly without contamination, work areas are equipped with adequate bench, hood and operational space, and that procedures are in place to ensure the areas are free from chemical contamination that may affect analytical results. The volatile laboratories are in a separate laboratory building from the semivolatile laboratories. The volatile laboratories utilize a separate air handling system with positive pressure to reduce possible contamination (refer to Floor Plan 8.11-1).

### *8.11.4 Facility Security*

The laboratory building is a limited access, secure facility. To ensure that only authorized personnel are able to enter the building from an entrance that is not monitored, entry into each building is limited by use of electronic locks activated by magnetic keys which are issued only to authorized personnel.

During business hours, guest entry is possible only through the main entrance. This entrance is monitored at all times, by a receptionist. All guests are required to sign in by using a visitor logbook and wear a visitor's badge. Clients may drop off samples through a sample receiving door after calling for entry.

## *8.12 Requirements for Ancillary Equipment and Materials*

### *8.12.1 Water*

High purity water (e.g., ASTM reagent grade or equivalent water) will be used in all metals, wet chemistry, and organic analyses. Demonstration of contaminant-free water is shown through the analysis of method blanks consisting of the reagent water on a each working day for the analyte of interest. This water is obtained by the use of either a commercial ion-exchange deionizing, distillation, or reverse osmosis unit plus an appropriate polishing unit. The resulting water has a maximum conductivity of 1.0 umho-cm at 25°C or a minimum resistivity of 1.0 Mohm at 25°C. Conductivity or resistivity will be monitored and documented daily or on each day that water is dispensed for analytical use.

For volatile analyses the laboratory purchases bottled water that is further purified by purging with an inert gas before use to remove potential traces of organic solvents. This is described further in the Reagent Water SOP, NC-QA-0023.

### 8.12.2 Compressed Air and Gases

Ultra high-purity compressed gases from preapproved vendors or in-house gas generators will be used when required for instrumentation. These air and gases must meet the requirements and specifications of the analytical methods performed. In-line filters will be used when appropriate to minimize contamination and moisture from the gases.

### 8.12.3 Glassware Preparation

Glassware preparation procedures implemented at operating units are designed to ensure that contaminants are not introduced during sample analysis. Procedures describing glassware preparation are detailed in operation-specific Glassware Washing SOP, NC-QA-0014.

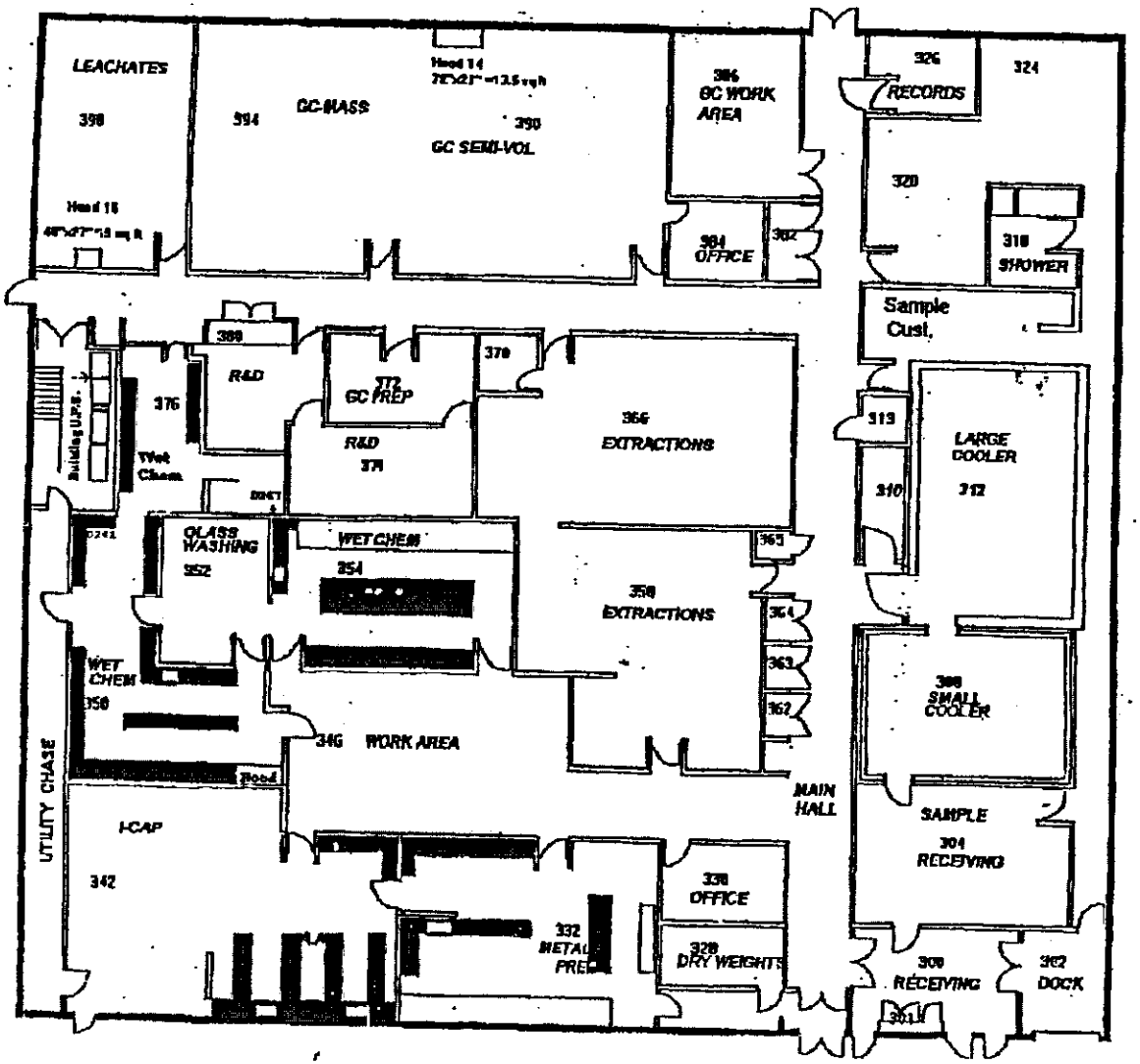
### 8.12.4 Chemical Storage

Storage of chemicals shall be conducted in a manner to minimize the potential for fire or release of hazardous material resulting from an unplanned chemical reaction. Refrigerators used for storing flammable liquids must have spark-free interior construction. Flammable solvents shall be stored in appropriate cabinets meeting all necessary codes. All chemicals are stored according to chemical compatibility. Further details regarding chemical storage are provided in the CHP.

### 8.12.5 Waste Management

The goal of STL's policy for waste management is to ensure that laboratory wastes are disposed of safely and in a manner consistent with applicable federal, state and local regulations. The waste disposal program is designed to assure that minimal harm to people and the environment shall result from the disposal of laboratory chemicals and samples. This goal is accomplished by requiring that the laboratory comply with the procedures presented in the CHP.

**Figure 8.11 -1 Floor Plan**



# 9.0 Quality Assessment and Response

## 9.1 Nonconformances

A nonconformance is an unplanned deviation from an established protocol or plan and in some cases may be exceptionally permitted departures from the documented policies and procedures or from standard specifications. The deviation may be the result of STL's actions as a systematic error, then termed a deficiency. A single isolated event or event beyond the control of STL is termed an anomaly.

Nonconformances can be identified on the basis of internal or external systems or performance audits, sample processing, routine calibration and monitoring of analytical and support equipment, or QC sample analyses. The Technical Director, Operations Manager, Project Manager, QA Manager, Group Leader, and Analyst may be involved in identifying the most appropriate corrective action. If previously reported data are affected, the issue is immediately brought to the attention of QA and Laboratory Management.

### 9.1.1 Nonconformance Memo (NCM)

All nonconformances, deficiencies and anomalies, are documented via an electronic process or on a paper form that meets NCM requirements as approved by QA. An allowed exception is log-in conformance problems, which are documented on a Condition Upon Receipt Form or equivalent (see Section 8.5). A detailed description of the procedure and responsibilities associated with nonconformance documentation, communication, and resolution is described in SOP # CORP-QA-0010, "Nonconformance and Corrective Action".

The Clouseau NCM program, available on the local-area network throughout the laboratory, is the main vehicle for documenting and communicating NCMs. The program allows anyone in the laboratory to document a nonconformance, explain the cause of the problem, and link to the LIMS system to identify the samples and clients involved. The program uses the local e-mail to automatically notify the person's supervisor, the Project Managers associated with the samples, and the QA department. The program is used to document approval and completion of the immediate corrective actions for the samples involved, and can be used to document long-term corrective actions. It provides a place to document resolution of problems with the clients and to query the associated database to examine trends and prepare management reports. A copy (paper or electronic) of the nonconformance memo will be kept in the project files along with the data it refers to. A copy, paper or electronic, shall also be kept in the quality files.

## 9.2 Client Complaints

Client inquiries and complaints are generally received through the PM or Customer Services Manager (CSM). Typically, the PM or CSM communicates with the client to determine the details of the inquiries, including technical data problems, deliverable issues, turn-around-time problems, etc. Technical and deliverable issues are coordinated by the PM and usually involve input from operations, QA, and management staff. A formal written response to the client is coordinated by the PM, but may on occasion be delivered by the CSM or the Account Manager. Details of the types and levels of complaints and required documentation are provided in Corporate Policy No. QA-013, "Procedures to Address Customer Complaints". Client complaints are recorded as a type of NCM in the Clouseau database, which are summarized in the monthly QA Reports to Management (see Section 9.6 for more about the monthly QA reports).

## 9.3 Corrective Actions

Corrective actions are measures taken to rectify conditions adverse to quality and, where possible, to prevent their reoccurrence. Investigations of potential problems and corrective actions should be timely, determine the root cause, and evaluate any propagation of the error or problem. Whenever a systematic error is discovered that affects the accuracy or defensibility of results reported to STL's clients, Corporate QA involvement followed by client notification would be part of the corrective action.

Corrective actions should be implemented with an understanding of the technology and work activities associated with the quality element, with appropriate training of STL associates and vendors, and should be monitored for progress and success. Depending on the nature of the problem, the corrective action employed may be formal or informal. In either case, occurrence of the problem, the corrective action employed, and verification that the problem has been eliminated must be documented properly. On-the-spot actions are used to correct minor problems, such as recalibration, retuning, or a minor repair (e.g., replacement of a minor part) of a malfunctioning instrument or the correction of poor analytical technique being used by an analyst. These occurrences are documented in the appropriate injection, run, or analysis logbooks. Similarly, routine instrument maintenance, malfunctions, and power failures are also documented in the appropriate instrument maintenance logbooks. These events do not require a formal NCM process, provided reported analytical results are not affected. Corrective actions specific to quality controls for analytical methods are discussed in the operational-specific SOPs.

### 9.3.1 Monitoring Corrective Actions

The QA department, either in the Clouseau database or in paper files maintains all formal corrective action documentation. The QA department reviews all corrective actions and selects one or more of the significant corrective actions for inclusion in the annual systems audit. The QA department may also implement a spot assessment audit. The purpose of these audits is to monitor the

implementation of the corrective action and to determine whether the action taken has been effective in overcoming the issue identified.

### *9.4 Internal Audits*

Internal audits are performed to assess the degree of adherence to established policies, procedures and standards. STL personnel who are independent of the area being evaluated conduct these assessments. Audits can identify areas for improvement with regard to compliance with policies, procedures and standards. Audits also provide a means for correction prior to system failure.

Audits and assessments are generally conducted through the use of checklists and relevant reference documents. The findings of all audits and assessments are documented as is the laboratory response and any corrective actions. Follow-up checks are performed and the status of implementation of corrective actions is documented for all categories of audits and assessments. This cycle continues until all issues are closed.

#### *9.4.1 Audit Types and Frequency*

The following types of audits are performed at STL North Canton:

**Figure 9.4.1-1 Audit Types and Frequency**

| Audit Type | Performed By | Frequency |
|---|---|---|
| Systems Audits | QA Department or designee | Annual per lab section |
| Data Audits | QA Department | Target of 5% of all report packages |
| Spot Assessment | QA Department or designee | As needed to monitor specific issues |
| Proficiency Testing | QA Department or designee | Two samples per year per program as required by NELAC |

#### *9.4.2 Systems Audits*

Facility systems audits are comprehensive technical and systems evaluations covering each operational and support area at least once per year. Generally, a rotating schedule is established throughout the year to ensure adequate coverage of all areas. This schedule can change as situations in the lab warrant. The objectives and schedule of the audit are communicated to the lab groups being assessed in advance of the audit. At the completion of the audit, a debriefing is held to outline the findings, including identification of positive performance, to discuss areas of deficiencies, and to answer questions. The audit report issued by the QA Manager within 21 calendar days of the audit. The audit report is addressed to the area supervisor and/or manager, and copied to the General

Manager and Laboratory Director. Written audit responses are required within 21 calendar days of the date of the audit report. The audit response from the lab areas must follow the format of the original audit report, and is sent from the respondents to all individuals copied on the audit report. Where a corrective action requires longer than 21 days to complete, the target date for the corrective action is stated and evidence of corrective action is submitted to the QA department in the agreed upon time frame.

### *9.4.3 Data Audits*

Data audits are routinely performed and documented to ensure that project records meet project requirements as described in method SOPs, project plans, or other documented requirements. The data audit is used to identify any lab errors that may have occurred. Significant issues found in the course of the audit are brought to the attention of appropriate personnel for clarification, and overseeing correction of final reports if necessary. The target frequency of QA data audits is 5% of reports. Data audits include spot-checking manual integrations to determine if they are appropriate and documented according to policy QA-011. Errors found in client project reports are revised and the revision sent to the client (also see Section 8.9.5).

### *9.4.4 Spot Assessments*

Spot assessments, equivalent to special audits in the STL QMP, are conducted on as needed basis, generally as a follow up to specific issues such as client complaints, validator concerns, corrective actions, control chart or NCM trends, proficiency testing results, data audits, or external audit issues. Spot assessments are focused on a specific issue. The frequency, report format, distribution, and timeframes are tailored to address the nature of the issue.

### *9.4.5 Proficiency Testing*

Proficiency testing samples (PTs) are analyzed to verify the ability of the laboratory to correctly identify and quantitate compounds in PT samples. PT samples may be supplied internally or externally as single-blind or double-blind samples. They can be used to assess if a deficiency has been corrected, they can be used to document the proficiency of the analyst performing the analysis, or they can be used to assess the overall performance of an analytical method.

PT samples are handled and tested in the same manner as environmental samples - it is not acceptable to run multiple replicates that would not otherwise be performed, it is not acceptable to average multiple results, and PT results cannot be shared among labs in advance of the close of the study. PT test sample data is archived using the same requirements as for project and raw data record retention.

#### *9.4.5.1 External PT Samples*

STL North Canton participates in a number of PT studies, as shown in Table 9.4-1. The primary one being the NELAC PT program, which involves a minimum of two PT rounds each year for NELAC field of testing for which the lab is maintaining certification. In addition, under the 12/99 SDWA requirements, the laboratory also analyzes annually a PT sample for each drinking water method, where more than one method is used for a given analyte.

#### *9.4.5.2 Internal PT Samples*

Each STL facility performing chemical analyses also participates in a double-blind performance evaluation annually. An external vendor is contracted to submit double blind samples to the STL labs. Both the level of customer service and the accuracy of the test results are assessed objectively by the external contractor. The PT contractor provides a detailed report to the Corporate QA Manager and to each of the STL facilities.

### *9.5 External Audits*

Clients and external regulatory authorities regularly audit STL North Canton. STL is available for these audits, and makes every effort to provide the auditors with the personnel, documentation and assistance they require. STL recommends that all audits be scheduled with the QA department so that all necessary personnel are available on the day of the audit. All deficiencies reported to the laboratory must be responded to within the time frame specified by the auditors. It is the responsibility of the QA Manager to coordinate the response to the audit report. The development and implementation of the corrective actions is the responsibility of the operations management of the affected areas and must be approved by the laboratory operations and management prior to submitting the final response. It is the responsibility of the QA Manager or designee to verify implementation of the corrective actions and inform the responsible manager of the closure of all deficiencies from the audit.

### *9.6 Management Reviews*

#### *9.6.1 Quality Reports to Management*

A monthly QA report is prepared by the QA Manager and forwarded to the Laboratory Director, the General Manager, and the Corporate QA Manager. The reports include metrics (i.e., frequency and number of revised reports, frequency and number of client complaints) to assess the effectiveness of the Quality System. The contents of the monthly report include:

- Audits
  Results of internal systems audits performed

Results of external systems audits hosted
Data audits performed, percent of total packages per month plus any issues

- Revised Reports / Client Complaints
  Frequency of revised reports
  Total number of client complaints, issues, and resolution
- Certification / Parameter Changes
- Proficiency Testing
  Score for each PT as a percentage of maximum score
  Note repeat failures and/or significant problems
- Miscellaneous QA and Operational Issues
  Narrative outlying improvements, regulatory compliance issues, general concerns, and assistance required from management

This information is compiled by the Corporate QA Manager together with similar information from and about other STL laboratories, which is then presented in a report to the STL Chief Operating Officer.

### *9.6.2 Management Systems Review*

Annually at a minimum, the laboratory management will evaluate the status of the quality systems in the laboratory to ensure the procedures and policies are in place and they are adhered to. The Laboratory Director, Operations Manager, Customer Service Manager, and Quality Assurance Manager regularly meet to evaluate quality system(s). Management systems reviews are accomplished by the QA Manager based on monthly quality assurance reporting, goal setting and an annual LQM review. The evaluation(s) shall consider:

- The suitability of policies and procedures
- Reports from managerial and supervisory personnel
- The outcome of recent internal audits
- Corrective and preventative actions
- Assessments by external bodies
- The results of interlaboratory comparisons and proficiency tests
- Status of QA documents
- Reviews of QA related requirements in RFPs, SOWs, SAPs, and QAPjPs
- Changes in the volume and type of work and the effects on QA systems
- Client feedback
- Complaints
- Quality control activities
- Resources and staff training

# STL North Canton
# Laboratory Quality Manual

# Table Section

# TABLE 2.4-1
## LQM Source Documents Requirements Matrix

| STL LQM | EPA QA/R-2 | ANSI/ASQC E4-1994 | NQA-1[1] | 5700.6C[2] | ANSI N 13.30 | ANSI/ASQC Q2-1991[3] |
|---|---|---|---|---|---|---|
| 1.0 Management Commitment and Organization | 1 Management and Organization | 2.1 Management and Organization | 1 Organization | 9.a. General | 1.1 Introduction<br>1.2 Purpose<br>1.3 Scope | 5.0 Management Responsibility |
| 2.0 Quality System and Description | 2 Quality System and Description | 2.2 Quality System and Description | 2 Quality Assurance Program | 1 Program | 2.1 Special Word Usage<br>2.2 Specific Terms<br>5.1 Quality Assurance<br>5.2 Quality Control | 5.2 Quality System |
| 3.0 Document Control and Records Maagement | 5 Documentation and Records | 2.5 Documents and Records | 6 Document Control<br>17 Quality Assurance Records | 4 Documents and Records | 3.6 Direct Bioassay-Record Retention<br>4.5 Indirect Bioassay Record Retention | 8.4 Quality Documentation and Records |
| 4.0 Staff Qualification, Orientation and Training | 3 Personnel Qualification and Training | 2.3 Personnel Training and Qualification | | 2 Personnel Training and Qualification | 3.2 Personnel Preparation | 14.0 Personnel |
| 5.0 Procurement of Supplies and Services | 4 Procurement of Items and Services | 2.4 Procurement of Items and Services | 4 Procurement Document Control<br>7 Control of Purchased Items and Services | 7 Procurement | N/A | 7.0 Quality in Procurement<br>13.0 Subcontracting |
| 6.0 Computer Hardware and Software | 6 Computer Hardware and Software | 2.6 Computer Hardware and Software | 3 Design Control<br>11 Test Control | N/A | N/A | ISO 9000-3[4] |

# TABLE 2.4-1
## LQM Source Documents Requirements Matrix (cont.)

| LQM | EPA QA/R-2 | ANSI/ASQC E4-1994 | NQA-1[1] | 5700.6C[2] | ANSI N 13.30 | ANSI/ASQC Q2-1991[3] |
|---|---|---|---|---|---|---|
| 7.0 Contract Review and Project Planning | 7 Planning | 2.7 Planning<br>3.1 Planning and Scoping<br>3.3 Implementation of Planned Operations | 2 Quality Assurance Program<br>3 Design Control<br>5 Instructions, Procedures, and Drawings<br>8 Identification and Control of Items<br>9 Control of Processes<br>11 Test Control<br>13 Handling, Storage, and Shipping | 1 Program<br>6 Design<br>N/A | 3.1 Facility Criteria<br>3.4 Direct Bioassay-Performance Criteria for Service Laboratories<br>3.5 Direct Bioassay-Reporting Results<br>4.1 Indirect Bioassay-Responsibilities of the Service Laboratory Customer<br>4.2 Indirect Bioassay-Analytical Methodology<br>4.3 Indirect Bioassay-Performance Criteria for Service Laboratories<br>5.2 Quality Control | 6.3.3 Quality Plans |
| 8.0 Work Processes and Operations | 8 Implementation of Work Processes | 2.8 Implementation of Work Processes | 1 Organization<br>5 Instructions, Procedures, and Drawings | 5 Work Processes<br>6 Design | 3.1 Facility Criteria | 8.0 Laboratory Operations Quality Assurance<br>9.0 Control of Measuring and Test Equipment<br>10.0 Data Validation<br>15.0 Use of Statistical Methods |

# TABLE 2.4-1
## LQM Source Documents Requirements Matrix (Cont.)

| LQM | EPA QA/R-2 | ANSI/ASQC E4-1994 | NQA-1[1] | 5700.6C[2] | ANSI N 13.30 | ANSI/ASQC Q2-1991[3] |
|---|---|---|---|---|---|---|
| | 8 Implementation of Work Processes (Continued) | 3.2 Design of Data Collection Operations | 10 Inspection<br>12 Control of Measuring and Test Equipment<br>14 Inspection, Test, and Operating Status | 8 Inspection and Acceptance Testing | | |
| 9.0 Quality Assessment and Response | 9 Assessment and Response[5] | 2.9 Assessment and Response<br>3.4 Assessment and Response<br>3.5 Assessment and Verification of Data Usability | 2 Quality Assurance Program<br>13 Handling, Storage, and Shipping<br>15 Control of Non-conforming Items<br>16 Corrective Action<br>18 Audits | 9 Management Assessment<br>10 Independent Assessment | 3.3 Direct Bioassay-Interpretation of Measurements<br>3.5 Direct Bioassay-Reporting Results<br>4.4 Indirect Bioassay-Reporting Results<br>6.1 Direct Bioassay Measurements<br>6.2 Indirect Bioassay Measurements | 16.0 Nonconformity<br>17.0 Corrective Action<br>18.0 Auditing the Quality System |
| N/A | 9 Quality Improvement[5] | 2.10 Quality Improvement | N/A | 3 Quality Improvement | N/A | N/A |

***Footnotes***

[1] Section II, "Basic Requirements."
[2] Criterion from Section 9, "Requirements."
[3] Technically equivalent to ISO 9001.
[4] Quality Management and Quality Assurance Standards, ISO 9000, Part 3, "Guidelines for the Application of ISO 9001 to the Development, Supply and Maintenance of Software."
[5] This document has two sections numbered "9."

# TABLE 2.4-2
## Cross-Reference of LQM to NELAC Requirements for Quality Manuals

| NELAC QUALITY MANUAL: REQUIRED ELEMENTS* | LQM, QA POLICY, AND/OR QA SOP REFERENCE |
|---|---|
| a) A quality policy statement, including objectives and commitments, by top management | LQM Chapter 1 |
| b) The organization and management structure of the laboratory, its place in any parent organization and relevant organizational charts | LQM Chapter 1 |
| c) The relationship between management, technical operations, support services and the quality system | LQM Chapter 1<br>LQM Chapter 7 |
| d) Procedures to ensure that all records required under this chapter are retained as well as procedures for control and maintenance of documentation through a document control system which ensures that all standard operating procedures, manuals, or documents clearly indicate the time period during which the procedure or document was in force | LQM Chapter 2<br>LQM Chapter 3 |
| e) Job descriptions of key staff and reference to the job descriptions of other staff | LQM Chapter 1 and Chapter 4<br>Separate document (hardcopy and/or electronic) provides job descriptions |
| f) Identification of the laboratory's approved signatories; at a minimum, the title page of the Quality Manual must have the signed concurrence, (with appropriate titles) of all responsible parties including the QA officer, technical director, and the agent who is in charge of all laboratory activities such as the laboratory director or laboratory manager | LQM Title/Approval Page |
| g) The laboratory's procedures for achieving traceability of measurements | LQM Chapter 8 |

*National Environmental Laboratory Accreditation Conference Standard, Quality Systems, July 1, 1999

## TABLE 2.4-2
## Cross-Reference of LQM to NELAC Requirements for Quality Manuals (cont.)

| NELAC QUALITY MANUAL: REQUIRED ELEMENTS* | LQM, QA POLICY, AND/OR QA SOP REFERENCE |
|---|---|
| h) A list of all test methods under which the laboratory performs its accredited testing | LQM Table 8.2-1 |
| i) Mechanisms for ensuring that the laboratory reviews all new work to ensure that it has the appropriate facilities and resources before commencing such work | LQM Chapter 7 |
| j) Reference to the calibration and/or verification test procedures used | LQM Chapter 8<br>Tables 8.5-6 through 8.5-7 |
| k) Procedures for handling submitted samples | LQM Sections 8.5.2 and 8.5.3 |
| l) Reference to the major equipment and reference measurement standards used as well as the facilities and services used by the laboratory in conducting tests | Equipment list is Table 8.0-1<br>LQM Sections 5.2.4, 8.1, 8.5.4, 8.11 to 8.12 |
| m) Reference to procedures for calibration, verification and maintenance of equipment | Calibrations in Tables 8.5-6 through 8.11-30<br>LQM Sections 8.5.4, 8.11 to 8.12 |
| n) Reference to verification practices including interlaboratory comparisons, proficiency testing programs, use of reference materials and internal quality control schemes | LQM Section 9.4.5 |
| o) Procedures to be followed for feedback and corrective action whenever testing discrepancies are detected, or departures from documented policies and procedures occur | LQM Chapter 9<br>SOP CORP-QA-0010, "Nonconformance and Corrective Action" |

*National Environmental Laboratory Accreditation Conference Standard, Quality Systems, July 1, 1999

# TABLE 2.4-2
## Cross-Reference of LQM to NELAC Requirements for Quality Manuals (cont.)

| NELAC QUALITY MANUAL: REQUIRED ELEMENTS* | LQM, QA POLICY, AND/OR QA SOP REFERENCE |
|---|---|
| p) The laboratory management arrangements for exceptionally permitting departures from documented policies and procedures or from standard specifications | LQM Section 7.4 and 9.1 |
| q) Procedures for dealing with complaints | LQM Section 9.2 |
| r) Procedures for protecting confidentiality and proprietary rights (including national security concerns) | LQM Section 8.9.6 |
| s) Procedures for audits and data reviews | LQM Section 5.3.6, 8.8 and 9.4<br>SOP CORP-QA-0004 "Independent QA Data Review" |
| t) Processes/procedures for establishing that personnel are adequately experienced in the duties they are expected to carry out and/or receive any needed training | LQM Chapter 4<br>SOP CORP-QA-0013, "Employee Orientation and Training" |
| u) Process/procedures for educating and training pesonnel in their ethical and legal responsibilities including the potential punishments and penalties for improper, unethical or illegal actions | LQM Section 1.4<br>Policy QA-008 – Data Recording Requirements<br>QA-010 – Maintaining Time Integrity<br>QA-011 – Acceptable Manual Integration Practices<br>P-T-001 – Selection of Data Points Required for Initial Calib. |
| v) Reference to procedures for reporting analytical results | LQM Section 8.9<br>Policy QA-004 "Rounding and Significant Figures"<br>Policy QA-009 "Reporting Limits" |

## TABLE 2.4-2
## Cross-Reference of LQM to NELAC Requirements for Quality Manuals (cont.)

| NELAC QUALITY MANUAL: REQUIRED ELEMENTS* | LQM, QA POLICY, AND/OR QA SOP REFERENCE |
|---|---|
| w) A table of contents and applicable list of references, glossaries, and appendices | LQM Table of Contents<br>List of Policies and SOPs<br>Table 2.3-2 |

*National Environmental Laboratory Accreditation Conference Standard, Quality Systems, July 1, 1999

## TABLE 2.4-3
## STL North Canton Quality Documents and Required Approval

| Quality Document | Required Approvals |
|---|---|
| Laboratory Quality Manual (LQM) | • Laboratory Director<br>• Technical Director<br>• Quality Assurance Manager |
| STL North Canton Policies | • Laboratory Director<br>• Quality Assurance Manager |
| STL North Canton Standard Operating Procedures (SOPs) | • Laboratory Director<br>• Technical Specialist<br>• Laboratory Health and Safety Coordinator(1)<br>• Quality Assurance Manager |

(1) Required only if procedure encompasses more than standard office safety requirements.

## TABLE 2.4-4
## STL Quality Document Review Frequency[1]

| Document Type | Frequency of Review | Responsible Party |
|---|---|---|
| Laboratory Quality Manual (LQM) | Every Two Years | Quality Assurance Manager |
| Standard Operating Procedures (SOP) | Every Two Years[2] | Quality Assurance Manger & Operations Manager |

[1] SOP reviewed sheets can be utilized in lieu of changing an entire document to indicate that an SOP has been reviewed and no changes were necessary (QA-001).

[2] DOD/DOE requires an annual review of all "major" SOPs (NC-QA-0016).

# TABLE 3.4-1

## STL North Canton Records & Retention Schedule

| Type of Record | Retention | Disposition |
|---|---|---|
| **General Laboratory Documents** | | |
| Instrument output | 5 yrs from project completion | Shred or burn |
| Quality control data | 5 yrs from project completion | Shred or burn |
| Field sample data | 5 yrs from project completion | Shred or burn |
| Final analytical reports | 5 yrs from project completion | Shred or burn |
| Instrument logbooks | 5 yrs from last entry | Shred or burn |
| Equipment monitoring & maintenance records | 5 yrs from last entry | Shred or burn |
| Instrument calibration records | 5 yrs from last entry | Shred or burn |
| Standard preparation logs | 5 yrs from last entry | Shred or burn |
| Standards certificates | 5 yrs from last entry | Shred or burn |
| Measurement & test equipment logs (e.g., refrig., balances, etc.) | 5 yrs from last entry | Shred or burn |
| Method & instrument validation records | 5 yrs from last entry | Shred or burn |
| Instrument manuals | Retain until superseded | Trash |
| Project management files | 5 yrs from date of archival | Shred or burn |
| Quotes & proposals | 2 yrs from date of expiration | Shred or burn |
| LQM, policies, & SOPs | 5 yrs from date of archiving | Shred or burn |
| Analyst demonstrations of proficiency | 5 yrs from date of archival | Shred or burn |
| Quality assurance audits | 5 yrs from last entry | Shred or burn |
| Certifications & approvals | 5 yrs from last entry | Shred or burn |
| Employee signature list | 5 yrs from date of archival | Shred or burn |
| MDL Studies | 5 yrs from last entry | Shred or burn |
| Performance testing studies | 5 yrs from last entry | Shred or burn |
| QA reports to management | 5 yrs from last entry | Shred or burn |
| Quality control charts | 5 yrs from last entry | Shred or burn |

# TABLE 3.4-1

## STL North Canton Records & Retention Schedule

| Type of Record | Retention | Disposition |
|---|---|---|
| **Environment, Health and Safety Records** | | |
| Medical records | Retain while active & 30 yrs from last entry | Shred or burn |
| Employee exposure & monitoring records | Retain while active & 30 yrs from last entry | Shred or burn |
| Workers compensation files & first report of injury | Retain while active & 30 yrs from last entry | Shred or burn |
| Accident logs (OSHA Form 200) | 5 yrs from last entry | Shred or burn |
| Accident reports | 5 yrs from last entry | Shred or burn |
| Environmental permits | 5 yrs from last entry | Shred or burn |
| Environmental management, e.g., discharge reports | 5 yrs from last entry | Shred or burn |
| Health & safety audits | 5 yrs from last entry | Shred or burn |
| Chemical Hygiene Plan | 5yrs from archival | |
| Safety Inspections | 5 yrs from last entry | Shred or burn |
| Radioactive materials records | 5 yrs from last entry | Shred or burn |
| NRC or state radioactive materials handling inspections | 5 yrs from last entry | Shred or burn |
| TLD exposure records | 5 yrs from last entry | Shred or burn |
| EH&S training | 5 yrs from last entry | Shred or burn |
| | | |
| **Accounting** | See Accounting and Controls Procedures Manual | |
| | | |
| **Administrative** | | |
| Personnel records (not including medical or disability records) | 7 years from last entry | Shred or burn |

# TABLE 5.2-1
## List of STL Quality-Related Items that Require Evaluation Prior to Use

| Quality-Related Item | Standard Operating Procedure for Quality Testing |
|---|---|
| Acetone | CORP-QA-0001 |
| Dichloromethane | CORP-QA-0001 |
| Hexane | CORP-QA-0001 |
| Hydrochloric acid | CORP-QA-0001 |
| Freon | CORP-QA-0001 |
| Methanol | CORP-QA-0001 |
| Nitric acid | CORP-QA-0001 |
| Hydrogen Peroxide | CORP-QA-0001 |
| Sulfuric acid | CORP-QA-0001 |
| Toluene | CORP-QA-0001 |

# TABLE 6-1
# GALP Cross Reference To LQM

| GALP Section | GALP Guidance | STL Document |
|---|---|---|
| **8.1 Laboratory Management** | 8.1.1 ensure that personnel clearly understand the functions they are to perform | LQM 1.6.2, 1.6.4, and 4.0 |
| | 8.1.2 ensure that QAU monitors computer activities | LQM 9.2.2.1 |
| | 8.1.3 ensure that personnel, resources, and facilities are adequate and available as scheduled | CORP-IT-0002; LQM 1.6.1-1.6.4 |
| | 8.1.4 receive reports of QAU inspection and audit reports, and ensure corrective actions are promptly taken in response to any deficiencie | LQM 9.2.2.1 |
| | 8.1.5 approve SOPs related to the computer activities, and ensure that devations to the SOPs are documented | LQM 3.3 and 9.1.4 |
| | 8.1.6 assure that GALP provisions are followed | CORP-IT-013; LQM 6.0 |
| **8.2 Personnel** | 8.2.1 must have adequate education, training, and experience to perform assigned IT functions | CORP-IT-013; LQM 4.0 |
| | 8.2.2 a summary of training, experience, and job description must be maintained | LQM 4.1 |
| | 8.2.3 personnel must be of sufficient number for timely and proper operation of the computer systems | CORP-IT-0002; LQM 1.6.2 |
| **8.3 Quality Assurance Personnel** | 8.3.1 shall be separate and independent of IT personnel, and shall report directly to laboratory management | LQM 1.6.1 |
| | 8.3.2 shall have immediate access to the computer data, SOPs, and other records | LQM 1.61 and will be added to 9.2 |
| | 8.3.3 inspect the LIMS at intervals to ensure the integrity of LIMS raw data, and shall present inspection reports to management | LQM 9.2 |
| | 8.3.4 determine that no deviations from approved SOPs were made without proper authorization and documentation | LQM 9.1.1 |
| | 8.3.5 periodically audit raw data to ensure their integrity | 9.2 |
| | 8.3.6 maintain adequate records of the QAU operations | 9.2 |
| **8.4 LIMS Raw Data** | 8.4.1 LIMS raw data and the storage media on which they reside must be identified and documented. The documentation shall be included in the lab's SOPs. | System map is with IS Director |
| | 8.4.2 the individual(s) responsible for entering and recording LIMS raw data must be uniquely identified, together with the date and time the data were entered | QA-008 |
| | 8.4.3 the instrument transmitting raw data must be uniquely identified in the record, together with the date and time of transmission | QA-008 |

## TABLE 6-1
## GALP Cross Reference To LQM (cont.)

| | | |
|---|---|---|
| | 8.4.4 procedures and practices used to verify LIMS raw data must be documented in controlled SOPs | CORP-IT-0007; LQM 8.8-8.8.3 |
| **8.5 Software** | 8.5.1 SOPs shall be established for:<br>a. software development<br>b. software testing<br>c. change control<br>d. version control<br>e. maintaining historical file | CORP-IT-013; CORP-IT-0001; CORP-IT-0007 |
| | 8.5.2 documentation shall be maintained for:<br>a. software description & functional requirements<br>b. algorithms and formulas<br>c. testing and quality assurance | CORP-IT-013 |
| | 8.5.3 all documentation is readily available in the facility where the software is used and SOPs are readily available where procedures are performed | CORP-IT-013 includes this statement, but we are on a WAN and documentation is not duplicated at each lab |
| | 8.5.4 a historical file of software and documentaiton shall be retained | CORP-IT-0001, Sect 4.14.1 |
| **8.6 Security** | Laboratory management shall ensure that security practices are adequate to assure the integrity of data | LQM 6.2 [more detail can be added to this section]; CORP-IT-0005; CORP-IT-013 |
| **8.7 Hardware** | 8.7.1 must be of adequate design and capacity, and a documented description maintained | LQM 6.1; CORP-IT-013 |
| | 8.7.2 must be installed in accordance with manufacturer's recommendations, and undergo documented acceptance testing as described in a laboratory SOP | CORP-IT-0001; CORP-IT-013; LQM 6.1 |
| | 8.7.3 testing, maintenance, and repair must be described in a laboratory SOP | CORP-IT-013 includes this statement |
| **8.8 Comprehensive Testing** | Management shall ensure that comprehensive testing shall be documented at least every 24 months or more frequently as a result of software changes. | CORP-IT-0001; LQM 6.3.4 |
| **8.9 Records Retention** | Procedures must be in place for the retention of LIMS raw data and documentation and records pertaining to LIMS | QMP; LQM 3.4-3.5 |
| **8.10 Facilities** | 8.10.1 the environmental conditions of the facility housing the LIMS must be controlled to protect against data loss | LQM 6.2 |
| | 8.10.2 environmental conditions for storing LIMS raw data and records must be adequate | LQM 6.2 |

TABLE 6-1
GALP Cross Reference To LQM (cont.)

| | | |
|---|---|---|
| **8.11 SOPs** | 8.11.1 SOPs, as described above, must be maintained and readily available where the procedure is performed | LQM 3.1-3.2; SOP Index |
| | 8.11.2 SOPs must be reviewed periodically to ensure that they are accurate | LQM 3.3 |
| | 8.11.3 SOPs must be authorized and controlled, with all changes subject to the same approvals and control | LQM 3.3 |
| | 8.11.4 an historical file of SOPs must be maintained | LQM 3.5 |

**Table 6-2**
**Computer Software Listing**

| Producer | Software |
|---|---|
| | |
| **Microsoft** | Windows NT 4.0 |
| | Windows 95 |
| | Windows for Workgroups 3.1.1 |
| | Exchange 5.0 |
| | Outlook 98 |
| | Office 97 SR2 |
| | Internet Explorer 4.01 |
| | |
| **IBM** | Client Access v.3 SF51967 |
| | |
| **WRQ** | Reflection X 7.1 |
| | Target 3.4 |
| | Envision 3.4 |
| | |
| **Adobe** | Acrobat |
| | |
| **McAffee** | VirusScan 4.0.2 |

**Table 6-3**
**Computer Hardware Listing**

| Model: | Gateway E-3110 | | | | |
|---|---|---|---|---|---|
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| | | | | | |
| CANP3160 | 0009864777 | | 146 | 120 | 3B9 |
| CANP3009 | 0009864773 | LeesonD | 272 | 154 | 3A7 |
| CANP4031 | 0009864776 | RichmanJ | 262 | 152 | 41C10 |
| CANP3165 | 0009863565 | WetChem | 346 | 335 | 3B3 |
| CANP3166 | 0009864786 | KravetzB | 272 | 322 | 3B2 |
| CANP1026 | 0009864772 | MSVOA | 148 | 121 | 1B2 |
| CANP3170 | 0009864782 | HerronD | 252 | 170 | 3B4 |
| CANP4213 | 0009863562 | TothR | 346 | 269 | 41D5 |
| CANP4042 | 0009893049 | HaueterL | 298 | 382 | 43B1 |
| CANP3180 | 0009863563 | Extractions | 338 | 270 | 3A6 |
| CANP3182 | 0009893048 | SiegfriedA | 132 | 317 | 3A10 |
| CANP4012 | 0009893047 | BlakemanC | 258 | 375 | 43B4 |
| CANP4035 | 0009893052 | MingerT | 120 | 140 | 42C9 |
| CANP4014 | 0009864787 | DiamentS | 268 | 203 | 42A9 |
| CANP4015 | 0009864774 | BruceM | 380 | 239 | 42B8 |
| CANP4017 | 0007986916 | UplingerJ | 104 | 112 | 42D6 |
| CANP4004 | 0007986920 | BotimerB | 110 | 145 | 42C3 |
| CANP4066 | 0007986917 | SheaK | 108 | 144 | 42C5 |
| CANP4046 | 0007986919 | | 122 | 103 | 42D1 |
| CANP4216 | 0007986918 | | 106 | 115 | 42B3 |
| CANP4199 | 0009059960 | | 118 | 116 | 42D1 |
| CANP4021 | 0009864771 | CampbellS | 136 | 129 | 42A12 |
| CANP4022 | 0009863561 | JacksonS | 134 | 132 | 41C5 |
| CANP4023 | 0009864775 | | 258 | 151 | 41C9 |
| CANP4024 | 0009863054 | HeakinT | 112 | 119 | 41A3 |
| CANP4068 | 0009893462 | EzzoL | 300 | 126 | 41D3 |
| CANP4029 | 0009864781 | OmearaP | 330 | 256 | 41B5 |
| CANP4032 | 0009893050 | HemmerichM | 266 | 202 | 41C2 |
| CANP4034 | 0009893053 | HustonS | 114 | 329 | 43A5 |
| CANP4040 | 0009864770 | GirardB | 252 | 172 | 3A11 |
| CANP4041 | 0009864785 | DaleyM | 252 | 163 | 42C9 |

**Table 6-3**
**Computer Hardware Listing**

| Model: | Gateway E-3110 | | | | |
|---|---|---|---|---|---|
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP4050 | 0009864783 | FrankL | 258 | 150 | 42B4 |
| CANP2022 | 0009864780 | | 390 | 247 | 2B12 |
| CANP4117 | 0009864779 | StillerT | 126 | 130 | 41C3 |
| CANP4221 | 0009864778 | BuzashK | 252 | 185 | 42A3 |
| CANP3169 | 0009864784 | | 338 | 388 | 3B5 |
| CANP4114 | 0009893051 | HulaT | 394 | 246 | 41D7 |
| CANP2025 | 0009863564 | GC_Semi | 390 | 342 | 2B8 |
| CANP1035 | 0013397604 | | 146 | 215 | 1A10 |
| CANP1036 | 0013397601 | QuayleR | 146 | 217 | 1B3 |
| CANP1037 | 0013397603 | | | | |
| CANP4055 | 0012929095 | | 106 | | |
| CANP4056 | 0012929097 | MeansR | 116 | 143 | 42C7 |
| CANP4177 | 0013224794 | McCormickA | 216 | 303 | 43A11 |
| CANP4178 | 0013224796 | WoodG | 212 | 305 | 43A10 |
| CANP4187 | 0013224795 | DanfordA | 212 | 156 | 41A10 |
| CANP4188 | 0013224793 | PohlD | 230 | 306 | 43A8 |
| CANP4189 | 0013224792 | KuziorK | 216 | 186 | 43B2 |
| CANP4203 | 0013279039 | | 276 | 379 | 41A2 |
| CANP4204 | 0013279041 | BeldingB | 276 | 173 | 41B12 |
| CANP4205 | 0013279040 | | 276 | 206 | 41B11 |
| CANP1034 | 0013397602 | MillerE | 372 | 244 | 1B1 |
| CANP4058 | 0012929100 | BotimerB | 112 | | |
| **Model:** | **Gateway E-4200** | | | | |
| | | RisdenR | 384 | | |
| CANP2006 | 0013750359 | | 390 | | |
| 3 | 0013750358 | | | | |
| 1 | 0013750357 | | | | |
| 4 | 0013750356 | | | | |
| 5 | 0013750355 | | | | |
| | | | | | |
| **Model:** | **IBM ThinkPads, 2635-HGU** | | | | |

**Table 6-3**
**Computer Hardware Listing**

| **Model:** | **Gateway E-3110** | | | | |
|---|---|---|---|---|---|
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP4182 | 8671445666 | HulaD | 226 | 196 | 3D11 |
| CANP4183 | 8671445670 | HeakinD | 230 | 182 | 42C11 |
| CANP4184 | 8671445668 | McGregorR | 224 | 195 | 42D4 |
| CANP4185 | 8671445669 | SmithJ | 220 | 189 | 41A5 |
| CANP4186 | 8671445667 | StraitB | 220 | 304 | 43A9 |
| **Model:** | **HP Chemstations** | | | | |
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP1029 | US64757194 | | | | |
| CANP1031 | US74651733 | | | | |
| CANP1030 | US73351217 | | | | |
| CANP1032 | | | | | |
| CANP3006 | U563253596 | | 390 | | |
| CANP2010 | U571355728 | | 394 | | |
| CANP4071 | | | 390 | | |
| CANP4013 | | | | | |
| CANP4079 | | | 346 | | |
| CANP4176 | | | | | |
| CANP4179 | | | 350 | | |
| CANP4020 | | | 346 | | |
| CANP1033 | | | | | |
| CANP2021 | | | | | |
| CANP3030 | | | 354 | 263 | |
| **Model:** | **Compaq 4/66** | | | | |
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP4081 | | | | | |
| CANP4175 | | | | | |
| CANP4130 | | | | | |
| CANP4201 | | | | | |
| CANP4038 | | | | | |

**Table 6-3**
**Computer Hardware Listing**

| Model: | Gateway E-3110 | | | | |
|---|---|---|---|---|---|
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP4039 | | | | | |
| CANP3007 | | | | | |
| CANP4133 | | | 304 | | |
| CANP4131 | | | 304 | | |
| CANP4180 | | HaueterB | | | |
| **Model:** | **Dell Laptops** | | | | |
| **Computer Name** | **Serial Number** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| CANP4011 | | OprandiC | 204 | 157 | |
| CANP4044 | | GirardS | 280 | 207 | |
| CANP4037 | | GreenwellB | 284 | | |
| CANP4047 | | JohnsonO | 270 | 177 | |
| **Model:** | **XTRA-PC's** | | | | |
| **Computer Name** | **Model type** | **Current User** | **Location** | **Jack Number** | **Subnet Port** |
| NCA34 | Caliber | | | | |
| NCA35 | Cumulus | | | | |
| | Cumulus | StillerM | | | |
| NCA40 | Hyundai | | | | |
| CANP4080 | LEK | | | | |
| CANP4053 | LEK | | | | |
| CANP4120 | LEK | | | | |
| CANP3082 | Digital | | | | |
| CANP4057 | Digital | | | | |
| CANP4010 | MicroXperts | | | | |
| CANP4170 | ASI | | | | |
| CANP4155 | Digital | | | | |
| HP-UX 10.20 | HP-Apollo 735 | Unix | | | |
| HP-UX 10.20 | HP-Apollo 735 | Unix | | | |

**Table 8.0 –1**
**STL North Canton**
**Instrument List**

| Instrument Type | Manufacturer | Model | Instrument ID # | Date Purchased |
|---|---|---|---|---|
| **GC/MS** | Finnigan | Incos XL | 503 | 11/27/92 |
| | Hewlett Packard | 5971A | UX2 | 09/96 |
| | Hewlett Packard | 5971A | UX3 | 09/96 |
| | Agilent (formerly HP) | 5973 | UX11 | 10/00 |
| | Hewlett Packard | 5973 | UX10 | Leased |
| | Hewlett Packard | 5973 | UX8 | Leased |
| | Hewlett Packard | 5973 | UX9 | Leased |
| | Hewlett Packard | 5973 | UX7 | Leased |
| **AUTOSAMPLER** | OI Analytical | 4552 | UX10 (MSV) | Leased |
| | OI Analytical | 4552 | UX8 (MSV) | Leased |
| | OI Analytical | 4552 | UX9 (MSV) | Leased |
| | Tekmar | ACS 2016 | UX3 (MSV) | |
| | OI Analytical | 4552 | UX7 (MSV) | Leased |
| | OI Analytical | 4552 | 503 (MSV) | |
| | OI Analytical | 4552 | UX11 (MSV) | 11/3/00 |
| | OI Analytical | 4552 | UX2 (MSV) | |
| | OI Analytical | 4552 | O (GCV) | |
| | Varian | Archon | A (GCV) | |
| | OI Analytical | 4552 | Z (GCV) | |
| | Varian | Archon | P (GCV) | |
| | Tekmar | 2016 | Spare - not in service. | |
| **GC/MS (Semivolatiles)** | Hewlett Packard | 5973/6890 | | Leased |
| | Hewlett Packard | 5973/6890 | | Leased |
| | Hewlett Packard | 5973/6890 | | Leased |
| | Hewlett Packard | 5973/6890 | | Leased |
| **HPLC** | Hewlett Packard | HPLC 1100 | | 12/14/98 |
| | Waters | 600E - UV Fluorescence | | 09/15/92 |
| **Purge & Trap** | OI Analytical | 4560 | UX10 (MSV) | Leased |
| | OI Analytical | 4560 | UX8 (MSV) | Leased |
| | OI Analytical | 4560 | UX9 (MSV) | Leased |
| | Tekmar | LSC2000 | UX3 (MSV) | |
| | OI Analytical | 4560 | UX7 (MSV) | Leased |
| | OI Analytical | 4560 | 503 (MSV) | |
| | OI Analytical | 4560 | UX11 (MSV) | 11/3/00 |
| **Purge & Trap** | OI Analytical | 4560 | UX2 (MSV) | |
| | Tekmar | 3000 | O (GCV) | |

**Table 8.0 –1**
**STL North Canton**
**Instrument List**

| Instrument Type | Manufacturer | Model | Instrument ID # | Date Purchased |
|---|---|---|---|---|
| | OI Analytical | 4560 | A (GCV) | |
| | Tekmar | LSC2000 | Z (GCV) | |
| | Tekmar | 3000 | Spare – not in service | |
| | Tekmar | 3000 | P (GCV) | Leased |
| Gas Chromatograph | Tracor | 540 PID/FID | A (GCV) | 04/01/89 |
| | Tracor | 540 PID/FID | Z (GCV) | 01/26/89 |
| | Tracor | 540 HALL/PID | | 10/22/93 |
| | Tracor | 540 HALL/PID | | 04/08/89 |
| | Hewlett Packard | 6890w/Dual PID/HALL | O (GCV) | 08/97 |
| | Hewlett Packard | 6890 PID/HALL | P (GCV) | |
| | Hewlett Packard | 5890A Dual FPD | PO-1 (GCS) | 04/01/89 |
| | Hewlett Packard | 5890A Dual FID Y-splitter Series II | R (GCS) | 10/31/90 |
| | Hewlett Packard | 5890A Dual ECD | K (GCS) | 01/26/89 |
| | Hewlett Packard | 6890 EPC & Dual ECD Y-splitter | 1 (GCS) | 12/98 |
| | Hewlett Packard | 6890 EPC & Dual ECD Y-splitter | 2 (GCS) | 12/98 |
| | Hewlett Packard | 6890 EPC & Dual ECD Y-splitter | 3 (GCS) | 12/98 |
| | Hewlett Packard | 6890 EPC & Dual ECD Y-splitter | 4 (GCS) | 12/99 |
| | Hewlett Packard | 6890 EPC & Dual ECD Y-splitter | 5 (GCS) | 12/99 |
| | Hewlett Packard | 6890 FID | (GCS) | 2000 |
| ICP | Thermal Jarrell Ash | Trace Analyzer | | 02/01/94 |
| | Thermal Jarrell Ash | Trace Analyzer | | 02/01/94 |
| ICP-MS | Perkin Elmer | Elan 6100 | I7 | 04/01 |
| Metals/Mercury | Leeman | PS200 II | | 10/20/99 |
| | Leeman | Hydra AF gold plus | | 12/2000 |
| | Leeman | Hydra AF Gold+, Model#112-00067-1 | H3 | 09/19/01 |
| Metals/GFAA | Varian | SpectrAA-400 | | 02/08/90 |
| TRAACS | Bran & Luebbe | 800 | | 05/07/93 |
| | Bran & Luebbe | 800 | | 04/01/89 |
| TOX | Mitsubishi | TOX-10E | | 11/06/89 |
| TOX | EuroGlass | 1200 ThermoGlas w/ Autosampler | | |

**Table 8.0 –1**
**STL North Canton**
**Instrument List**

| Instrument Type | Manufacturer | Model | Instrument ID # | Date Purchased |
|---|---|---|---|---|
| Turbidimeter | HF Scientific | Micro 100 | | 2001 |
| BOD | Labtronics, Inc. | BOD Magic | | 1999 |
| Block Digester | Andrews | 2210 Phenol | | 04/20/99 |
| | Andrews | 2205 Ammonia | | 04/20/99 |
| | Lachat | BD46 TKN | | 1992 |
| Autotitrator | Mantech | PC-Titrate | | 2001 |
| Conductivity | Mantech | 4310 | | 11/13/89 |
| Cyanide | Midi Serial # 1000-99-01 | PRG-2520-BL | | 04/20/99 |
| D.O. Meter | YSI | 52C E | | 01/01/93 |
| Flashpoint | Petrolab | Petrotest | 199443 | 04/20/99 |
| GPC Extractions | ABC (O.I. Analytical) | Model # 1002B | | 06/99 |
| Oil-In-Water | Buck Scientific | HC404 | | 02/20/90 |
| pH Meter | Orion | 250A | | 12/01/85 |
| | Orion | 520A | | |
| TOC | OI | 1010 | | 4/98 |
| UV/VIS Spectrophotometers | Milton Roy | Spectronic 401 | | 08/13/93 |
| | Spectronic 20 | Genesys | | 8/98 |
| Discrete Analyzer | Kone | Konelab | | 2001 |
| Ion Chromatography | Dionex | DX-320 | | 2001 |
| | Dionex | DX-120 | | 1/99 |
| Residual Chlorine Meter | Hanna | HI 93701 | | 06/00 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| | **WET CHEMISTRY** | | | |
| NC-WC-0006 | Alkalinity (Total)<br>*(Also select NC-WC-0003)* | EPA310.1<br>SM2320B | 4 | 02/06/01 |
| NC-WC-0003 | Alkalinity - Carbonate, Bicarbonate, and Hydroxide<br>*(Also select NC-WC-0006)* | SM2320B<br>SM4500-$CO_2$ D | 2.1 | 02/08/01 |
| NC-WC-0012 | Alkalinity, Phenolphthalein | EPA310.1<br>SM2320B | 2.1 | 08/17/00 |
| NC-WC-0018 | Carbon, Total Organic (TOC - Analysis for Non-Waters) | Walkley-Black | 2.1 | 03/30/01 |
| NC-WC-0017 | Carbon, Total Organic (TOC) | EPA415.1<br>SW9060<br>SM5310D | 2 | 06/01/99 |
| NC-WC-0023 | Cation-Exchange Capacity - ***Scheduled Test* requires LD approval** | SW9081 | 2.1 | 03/30/01 |
| NC-WC-0013 | Chloride (Automated Ferricyanide) | EPA325.2<br>SW9251 | 2 | 06/09/98 |
| NC-WC-0020 | Chloride (Titrimetric) - ***Scheduled Test*** | EPA325.3<br>SW9252A | 2 | 04/18/96 |
| NC-WC-0021 | Chlorine Total (Residual) and Free | EPA330.5<br>SM4500-CIG | 1.1 | 12/05/00 |
| NC-WC-0024 | Chromium, Hexavalent (Colorimetric) | SW7196A<br>SM3500-CR | 3.1 | 10/24/01 |
| NC-WC-0079 | Conductivity (Specific Conductance) | EPA120.1<br>SM2510B<br>SW9050 | 1 | 01/16/97 |
| NC-WC-0031 | Cyanide, Automated Pyridine-Barbituric Acid<br>*(analysis - also select NC-WC-0032)* | SW9012A<br>EPA335.1, 335.2<br>SM4500CN-I<br>CLP ILM03.0 | 7 | 05/31/01 |
| NC-WC-0032 | Cyanide, Distillation<br>*(prep - also select NC-WC-0031)* | SW9012A<br>EPA335.1, 335.2<br>SM4500CN-I<br>SM4500CN-E<br>CLP ILM03.0 | 8.2 | 05/31/01 |
| NC-WC-0033 | Cyanide, Reactive **Requires LD Approval** | SW846 7.3.3.2 | 2 | 10/11/00 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| NC-WC-0070 | Decanting Procedure for Aqueous Sample | N/A | 0 | 06/13/95 |
| NC-WC-0008 | Demand, Biochemical Oxygen (BOD), Carbonaceous (CBOD) | SM5210B<br>EPA405.1 | 3.1 | 04/28/00 |
| NC-WC-0083 | Demand, Chemical Oxygen (COD - Low Level) **Requires LD approval** | SM5220D<br>EPA410.4 | 1.1 | 03/19/01 |
| NC-WC-0005 | Demand, Chemical Oxygen (COD - Titrimetric) **Requires LD approval** | SM5220C | 2 | 06/09/98 |
| NC-WC-0019 | Demand, Chemical Oxygen (COD) (Colorimetric) | SM5220D<br>EPA410.4 | 5 | 03/16/00 |
| NC-WC-0034 | Flashpoint (Closed Cup) | ASTM D93-85<br>SW846 Method 1010 | 0 | 10/24/97 |
| NC-WC-0035 | Fluoride (ISE) --- *(analysis, all matrices)* - ***Scheduled Test*** | EPA 340.2 | 2 | 07/19/01 |
| NC-WC-0071 | Gravity, Specific | SM2710F | 1 | 04/09/99 |
| NC-WC-0067 | Halogens, Total Organic (TOX) | SW9020A<br>EPA450.1 | 2 | 03/09/99 |
| NC-WC-0036 | Hardness, Total (mg/L as $CaCO_3$) | EPA130.2 | 3 | 04/19/99 |
| CORP-WC-0003 | HEM/SGT-HEM by Method 1664 | EPA1664A | 1 | 11/15/99<br>Change form 01/24/00 |
| NC-WC-0045 | Hydrocarbons - TRPH and O&G by IR (Analysis Procedure - All Matrices) | EPA418.1; 413.2<br>SW9071A<br>SM5520C | 1.1 | 08/28/01 |
| NC-WC-0047 | Hydrocarbons, TRPH and O&G by IR (Solid Soxhlet Extraction) | SW9071A | 1 | 06/09/98 |
| NC-WC-0048 | Hydrocarbons, TRPH and O&G by IR (Water Extraction) | EPA418.1<br>EPA413.2<br>SW9070 | 3.1 | 03/30/01 |
| NC-WC-0049 | Hydrocarbons, TRPH by IR (Solid Sonication) | SW3550A<br>SW9071A | 1 | 06/09/98 |
| NC-WC-0084 | Ion Chromatography, Determination of Inorganic anions by | EPA300.0 | 3 | 10/03/00 |
| NC-WC-0025 | Iron, Ferrous | SM3500-Fe D | 2 | 05/18/99 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| NC-WC-0001 | Nitrite, Nitrate/Nitrite, Nitrate Automated | EPA353.2 | 2 | 12/28/98 |
| NC-WC-0038 | Nitrogen, Ammonia (ISE) ----- *(water)* | EPA350.3 | 4 | 03/13/00 |
| NC-WC-0039 | Nitrogen, Ammonia Distillation/ Titration *(solid)* - ***Scheduled Test*** | EPA350.2 | 2.1 | 03/19/01 |
| NC-WC-0040 | Nitrogen, Total Kjeldahl(TKN) | EPA351.3 | 1.1 | 03/30/01 |
| NC-WC-0041 | Nitrogen, Total Organic (TON) | EPA350.2; 351.3 | 0 | 06/04/98 |
| NC-WC-0043 | Oil&Grease & TRPH, Gravimetric Solid *(prep and analysis)* | SW9071A<br>SM5520B | 1 | 02/12/99 |
| NC-WC-0044 | Oil&Grease & TRPH, Gravimetric Water *(prep and analysis)*<br>*(Also see TRPH and O&G by IR)* | EPA413.1<br>SM5520B<br>SM5520F<br>SW9070 | 1.1 | 03/19/01 |
| NC-WC-0046 | Paint Filter | SW9095 | 0 | 06/08/95 |
| NC-WC-0010 | pH Electrometric Method | SW9040B<br>SW9045C<br>EPA150.1 | 4.1 | 11/28/00 |
| NC-WC-0009 | pH Paper Method | SW9041A | 1.1 | 02/07/01 |
| NC-WC-0007 | Phenolics (Manual Spectrophotometer) - ***Scheduled Test*** | EPA420.1<br>SW9065 | 2.1 | 03/12/01 |
| NC-WC-0050 | Phosphorous: Total, Ortho, and Organic - ***Scheduled Test*** | EPA365.2/365.3<br>SM4500-P | 2.4 | 05/15/01 |
| NC-WC-0054 | Solids, Total & Volatile Suspended (TSS & VSS) | EPA160.2<br>SM2540D | 0.1 | 10/24/97 |
| NC-WC-0055 | Solids, Total Dissolved (TDS) | EPA160.1<br>SM2540C | 1 | 02/17/99 |
| NC-WC-0004 | Solids, Total, Percent Moisture, Ash and Total Volatile Solids | EPA160.3/160.4<br>SM2540E<br>ASTMD2216-90<br>ASTMD1553-83<br>ILM0 3.0 & 4.0<br>OLM01.9 & 3.1 | 3 | 08/04/00 |
| NC-WC-0086 | Alkaline Digestion for Hexavalent Chromium | SW846 3060A,ASTM Method D1498 | 1 | 09/07/01 |
| NC-WC-0087 | Spreadsheet Upload SOP, Wet Chemistry | NA | 1 | 03/09/99 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| NC-WC-0060 | Sulfide - *Scheduled Test* | SW846 9030A<br>EPA 376.1 | 1.0 | 11/20/00 |
| NC-WC-0061 | Sulfide, Reactive | SW846 7.3.4.2 | 1 | 10/11/00 |
| NC-WC-0068 | Turbidity | EPA180.1 | 3 | 05/02/01 |
| | **METALS** | | | |
| NC-MT-0001 | Mercury, Prep and Analysis of Hg in $H_20$ by cold vapor Atomic Fluororescence | 1631B MCAWW 245.7 | 1 | 04/05/01 |
| NC-MT-0002 | Inductively Coupled Plasma-Mass Spectrometry | EPA 6020 and 200.8 | 2.0 | 10/01/01 |
| NC-MT-0010 | Hardness by Calculation | SM2340B, SW846 Method 6010B | 1.0 | 07/12/01 |
| CORP-MT-0003NC | Graphite Furnace Atomic Absorption Spectroscopy (Thallium Only) | SW846 7000A MCAWW 200 | 2.2 | 10/04/00 |
| CORP-MT-0001NC | Inductively Coupled Plasma –Atomic Emission Spectroscopy, Spectrometric Method for Trace Elements **Update II** | 6010A<br>200.7<br>EPA 40CFR 136 | 2 | 10/27/97 |
| CORP-MT-0001NC | Inductively Coupled Plasma-Atomic Emission Spectroscopy, Spectrometirc Method for Trace Element Analyses - **UPDATE III** | 6010B<br>200.7 | 3.2 | 01/19/01 |
| CORP-MT-0002NC | Inductively Coupled Plasma –Atomic Emission Spectroscopy | 200.7 CLP-M SOW ILMO3.0, SOW ILM04.0 | 1.1 | 04/09/98 |
| CORP-MT-0005NC | Mercury in Aqueous Samples by Cold Vapor Atomic Absorption (Prep and Analysis) | SW846 7470A MCAWW 245.1 | 2.3 | 05/15/01 |
| CORP-MT-0006NC | Mercury in Aqueous Samples by Cold Vapor Atomic Absorption (Prep and Analysis) | 245.1 CLP-M SOW ILMO3.0, SOW ILM04.0 | 1.1 | 12/05/00 |
| CORP-MT-0007NC | Mercury in Solid Samples by Cold Vapor Atomic Absorption Spectroscopy (Prep and Analysis) | SW846 7471A MCAWW 245.5 | 2.3 | 05./15/01 |
| CORP-MT-0008NC | Mercury in Solid Samples by Cold Vapor Atomic Absorption Spectroscopy (Prep and Analysis) | 245.5 CLP-M SOW ILMO3.0, SOW ILM04.0 | 1.1 | 08/27/01 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| **INORGANIC PREP** | | | | |
| CORP-IP-0003NC | Acid Digestion for Aqueous Samples by SW846 and MCAWW 200 Series Methods | SW846 and MCAWW 200 Series Methods | 1.3 | 09/25/01 |
| CORP-IP-0004NC | Toxicity Characteristic Leaching Procedure and Synthetic Precipitation Leaching Procedure | SW-846 Method 1311, SW-846 Method 1312 | 1.1 | 10/10/00 |
| CORP-IP-0001 | Acid Digestion of Waters and Soils, CLP SOW ILM03.0 | SOW ILM03.0 | 1 | 06/28/99 |
| CORP-IP-0002NC | Acid Digestion for Soil Samples by SW846 Method 3050B | SW846 and 3050B | 2.2 | 09/25/01 |
| NC-IP-0009 | DI Leachate Procedure for Solids | Internal (RAS) ASTM D3987-85 | 0 | 08/12/98 |
| NC-IP-0007 | GFAA Prep for Total Metals (Aqueous) | SW3020A; 7040; 7060;7211;7740; 7761; & EPA | 0 | 03/12/96 |
| NC-IP-0001 | Grinding & Sieving of Solid Matrices | N/A | 1 | 05/19/99 |
| NC-IP-0003 | ICP & FLAA Prep for Total Metals (Aqueous) | EPA200.7;3005A SW3010A | 2 | 05/21/99 |
| **ORGANIC PREP** | | | | |
| CORP-OP-0001NC | Extraction and Cleanup of Organic Compounds From Waters and Soils **UPDATE III** | SW846 3500-ser; 3600-ser, 8151A, and 600 - series | 3.8 | 05/23/01 |
| CORP-OP-0001NC | Extraction and Cleanup of Organic Compounds from Waters and Soils - **UPDATE II** | SW846 3500-ser; 3600-ser; 8150;8151; and 600-series | 2.5 | 01/09/01 |
| NC-OP-0022 | Extractable residue (lipids) from fish tissue | | 1 | 02/21/01 |
| NC-OP-0021 | Wipe Extraction Method for PCBs | Internal | 1 | 02/21/01 |
| **GC/MS** | | | | |
| NC-MS-0014 | Extraction and Analysis of Semivolatiles (BNA) Operation-Specific Standard Operating Procedure | EPA CLP OLM04.2 | 0 | 05/15/00 |
| CORP-MS-0001NC | GC/MS Semivolatiles Analysis – **Update II** | 8270B | 1.3 | 05/09/97 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| NC-MS-0009 | Analysis of Semivolatile Organics by USEPA CLP Statement of Work OLM03.1and OLM03.2 | OLM03.1/OLM03.2 | 1 | 08/10/00 |
| CORP-MS-0002NC | GC/MS Volatile Organics Analysis – **UPDATE II** | 8240B, 8260A | 1.3 | 09/12/97 |
| CORP-MS-0001NC | GC/MS Analysis Based on Method 8270C and 625 - **UPDATE III** | 8270C and 625 | 2.4 | 05/29/01 |
| CORP-MS-0002NC | Determination of Volatile Organics by GC/MS – **(Note: Update II and Update III are in one SOP)** | 8260B, 8260A, and 624 | 2.3 | 05/23/01 |
| NC-MS-0013 | Analysis of Semivolatile Organics by USEPA CLP Statement of Work OLC02.1 | OLC02.1 | 0 | 11/29/99 |
| NC-MS-0015 | Analysis of Polynuclear Aromatic Hydrocarbons by Selective Ion Monitoring | 8270C | 0 | 10/16/00 |
| NC-MS-0016 | GCMS Volatile Organic Analysis by EPA CLP SOW OLM04.2 | OLM04.2 | 0 | 09/21/00 |
| NC-MS-0011 | Analysis of Volatile Organics by USEPA CLP Statement of Work OLM02.1 | OLM02.1 | 0 | 11/17/99 |
| NC-MS-0010 | Analysis of Volatile Organics by USEPA CLP Statement of Work OLM03.1 and OLM03.2. | OLM03.1/OLM03.2 | 0 | 04/07/98 |
| **GC** | | | | |
| CORP-GC-0001 | Gas Chromatographic Analysis – **UPDATE II** | 8000A, 8010B, 8020A, 8021A, 8080A, 8081, 8150B, 8151, SW846 | 2 | 01/31/96 |
| CORP-GC-0001NC | Gas Chromatographic Analysis - **UPDATE III** | 8000B, 8021B, 8081A, 8082, 608, 8151A, 8310, 610, 8141A and SW846 and Wisconsin DRO | 5.6 | 05/25/01 |
| NC-GC-0019 | Azeotropic Distillation and Analysis of Water-Soluble VOCs in Waters and | SW5031-Proposed 8015A-Modified | 0 | 05/22/97 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| | **Solids - Requires LD Approval** | | | |
| NC-GC-0003 | GC Halogenated/Aromatic VOCs | EPA601<br>EPA602 | 2 | 05/02/01 |
| NC-GC-0018 | GC VOC in Water, Purge & Trap - **Requires LD Approval** | 465D/465E | 0 | 06/15/95 |
| NC-GC-0027 | Analysis of Chlorinated Pesticides and PCBs by USEPA CLP Statement of Work OLM03.1 and OLM03.2 | OLM03.1/OLM03.2 | 2 | 08/10/00 |
| NC-GC-0025 | TPH as Gasoline | 8015B-Modified | 4 | 05/23/01 |
| | **SAMPLE CONTROL** | | | |
| NC-SC-0002 | Evidentiary SOP | N/A | 0 | 06/16/95 |
| NC-SC-0007 | Sample Identification SOP | N/A | 1 | 10/03/95 |
| NC-SC-0006 | Sample Procurement Protocol | N/A | 1 | 05/20/98 |
| NC-SC-0005 | Sample Receiving and Sample Control | N/A | 6.1 | 06/14/01 |
| NC-SC-0010 | Sample Shipment for Dioxin Analysis | N/A | 2 | 03/10/99 |
| | **QUALITY ASSURANCE** | | | |
| NC-QA-0024 | Control Chart Generation SOP | N/A | 0 | 07/06/98 |
| QA-008 | Data Recording Requirements | N/A | 2 | 10/05/98 |
| QA-017 | Data Recording Requirements | N/A | 0 | 07/07/99 |
| CORP-QA-0013 | Employee Orientation and Training | N/A | 1 | 12/15/98 |
| NC-QA-0022 | Equipment Maintenance | N/A | 1.0 | 06/15/01 |
| NC-QA-0015 | Equipment Monitoring and Thermometer Calibration | N/A | 5 | 02/13/01 |
| QA-009 | Establishment of Reporting Limits | N/A | 3 | 01/01/99 |
| NC-QA-0014 | Glassware Washing | N/A | 4 | 06/22/01 |
| NC-QA-0013 | Inventory/Warehouse Control | N/A | 1 | 03/19/01 |
| NC-QA-0020 | Laboratory Holding Blanks | N/A | 1.0 | 06/15/01 |
| CORP-QA-0014 | Laboratory Internal Systems Evaluation | N/A | 1 | 08/01/99 |
| NC-QA-0009 | Laboratory and Sample Security | N/A | 2 | 02/13/01 |
| QA-005 | Method Detection Limits | N/A | 3 | 05/01/99 |
| NC-QA-0021 | Method Detection Limits and Instrument Detection Limits, Evaluation | N/A | 3 | 10/04/00 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| | of (Navy) | | | |
| NC-QA-0004 | Micropipet Calibration | N/A | 3 | 07/27/01 |
| CORP-QA-0010 | Nonconformance and Corrective Action | N/A | 2 | 06/15/99 |
| CORP-QA-0004 | Independent QA Data Review | N/A | 2 | 10/12/98 |
| QA-014 | Instrument Detection Limit, Determination of | N/A | 1 | 12/30/99 |
| QA-003 | STL® Quality Control Program<br>Change form 11/22/99 | N/A | 3 | 10/11/01 |
| CORP-QA-0001 | Quality Testing of Solvents, Acids and Reagents (QRI Program) | N/A | 3 | 12/15/98 |
| NC-QA-0025 | Performance Checks on Spectronic Model21 and Model1001 Spectrophotometers | N/A | 1 | 05/21/99 |
| NC-QA-0027 | Preparation and Mangement of Standard Operating Procedures | N/A | 1 | 01/10/01 |
| QA-013 | Procedures to Address Customer Complaints | N/A | 0 | 06/30/97 |
| NC-QA-0023 | Reagent Water | N/A | 0 | 06/04/97 |
| NC-QA-0019 | Records Information Management | N/A | 3 | 03/19/01 |
| CORP-QA-0012 | Selection and Evaluation of Subcontractor Laboratories | N/A | 1 | 02/05/98 |
| CORP-QA-0015 | Selection of Data Points Required for an Initial Calibration Curve | N/A | 0 | 09/01/99 |
| NC-QA-0012 | Shipping Department SOP | N/A | 2 | 04/27/99 |
| QA-001 | Standard Operating Procedures, Preparation and Management of SOPs<br>Change form 01/01/00 | N/A | 2 | 06/01/98 |
| NC-QA-0017 | Standards and Reagents | N/A | 3 | 02/14/01 |
| NC-QA-0018 | Statistical Evaluation of Data and Development of Control Charts | N/A | 6 | 07/30/01 |
| NC-QA-0016 | Supplemental Practices for Navy Project Work | N/A | 8 | 02/14/01 |
| QA-018 | Vendor Approval | N/A | 0 | 08/13/99 |
| QA-019 | Vendor Review and Oversight | N/A | 0 | 08/13/99 |

## Table 8.2-2 Standard Operating Procedures

| SOP Number | SOP Title | Method | Rev# | Revision Date |
|---|---|---|---|---|
| INFORMATION TECHNOLOGY | | | | |
| CORP-IT-0002 | Information Technology Service Request | N/A | 0 | 10/03/97 |
| CORP-IT-0005 | LIMS User Profile Setup and Maintenance | N/A | 0 | 07/22/97 |
| CORP-IT-0001 | Software and Hardware Change Management | N/A | 0 | 07/21/97 |
| CORP-IT-014 | Software and Hardware Licensing, Security and Backup | N/A | 0 | 07/21/97 |
| CORP-IT-013 (POLICY) | Software Quality Assurance | N/A | 0 | 06/02/97 |
| CORP-IT-0007 | Software Testing, Validation and Verification | N/A | 0 | 06/13/97 |
| CORP-IT-0008 | Tracking and Management of Client Deliverables | N/A | 0 | 01/17/00 |
| HEALTH AND SAFETY | | | | |
| NC-HS-0001 | Hazardous Waste Management | N/A | 2 | 07/03/98 |

**TABLE 8.2-3**
**Wet Chemistry Methods**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Alkalinity | Water | SM 2320B | EPA 310.1 | --- | --- |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | 310.1 (M) | --- | --- |
| Biochemical Oxygen Demand | Water | --- | EPA 405.1 | --- | --- |
| | Waste | --- | --- | --- | --- |
| Bromide | Water | EPA 300.0 | EPA 300.0 | EPA 9056 | --- |
| | Waste | --- | EPA 300.0 | EPA 9056 | --- |
| | Solid | --- | EPA 300.0 (M) | EPA 9056 | --- |
| Chemical Oxygen Demand | Water | --- | EPA 410.4 | --- | --- |
| | Waste | --- | EPA 410.4 | --- | --- |
| Chloride | Water | EPA 300.0<br>EPA 325.2 | EPA 300.0<br>EPA 325.2 | EPA 9056<br>EPA 9252 | EPA 325.2 |
| | Waste | --- | EPA 300.0 | EPA 9056 | --- |
| | Solid | --- | EPA 300.0 (M) | EPA 9056<br>EPA 9252(M) | --- |
| Chromium, Hexavalent | Water | --- | EPA 3500-Cr-D | EPA 7196A | --- |
| | Waste | --- | EPA 3500-Cr-D | EPA 7196A | --- |
| | Solid | --- | --- | --- | --- |
| Specific Conductance | Water | SM 2510B | EPA 120.1 | EPA 9050A | --- |
| | Waste | --- | EPA 120.1 | EPA 9050A | --- |
| | Solid | --- | --- | EPA 9050A | --- |
| Chlorine, Residual | Water | --- | EPA 330.5 | --- | --- |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | --- | --- | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Cyanide (Amenable) | Water | --- | EPA 335.1 | EPA 9012A | --- |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | --- | EPA 9012A | --- |
| Cyanide (Reactive) | Water | --- | --- | Section 7.3[1] | --- |
| | Waste | --- | --- | Section 7.3[1] | --- |
| | Solid | --- | --- | Section 7.3[1] | --- |
| Cyanide (Total) | Water | EPA 335.4 | SM 4500-CN C & E<br>EPA 335.3, EPA 335.2, and EPA 335.4 | EPA 9012A | --- |
| | Waste | --- | --- | EPA 9012A | --- |
| | Solid | --- | --- | EPA 9012A | --- |
| Cyanide (Weak and Dissociable) | Water | --- | SM 4500-CN I | --- | ASTM D-2036-81 |
| | Waste | --- | --- | --- | ASTM D-2036-81 (M) |
| | Solid | --- | --- | --- | ASTM D-2036-81 |
| Fluoride | Water | EPA 300.0 | EPA 300.0<br>EPA 340.2 | EPA 9056 | --- |
| | Waste | --- | EPA 340.2 (M)<br>EPA 300.0 (M) | EPA 9056 | --- |
| | Solid | --- | EPA 340.2 (M)<br>EPA 300.0 (M) | EPA 9056 | --- |
| Ignitability | Waste | --- | --- | EPA 1010 | --- |
| | Solid | --- | --- | EPA 1010 | --- |
| Iron, Ferrous & Ferric | Water | --- | SM 3500 FE D | --- | --- |
| | Waste | --- | ---- | --- | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Solid | --- | --- | --- | --- |
| Hardness | Water | EPA 130.2 | EPA 130.2 | --- | SM 2345B |
| | Waste | --- | --- | --- | --- |
| Moisture | Solid | --- | --- | EPA 160.2 (M)<br>ASTM D2216 | --- |
| Nitrogen, Ammonia | Water | --- | EPA 350.1 | --- | EPA 350.2 |
| | Waste | --- | EPA 350.1 | --- | EPA 350.2 |
| | Solid | --- | EPA 350.1 | --- | EPA 350.2 |
| Nitrite ($NO_2$) | Water | EPA 300.0<br>EPA 353.2 | EPA 300.0<br>EPA 353.2 | EPA 9056 | --- |
| | Waste | --- | EPA 300.0 (M) | EPA 9056 | --- |
| | Solid | --- | EPA 300.0 (M) | EPA 9056 | --- |
| Nitrate ($NO_3$) | Water | EPA 300.0<br>EPA 353.2 | EPA 300.0<br>EPA 353.2 | EPA 9056 | --- |
| | Waste | --- | EPA 300.0 (M) | EPA 9056 | --- |
| | Solid | --- | EPA 300.0 (M)<br>EPA 353.2 (M) | --- | --- |
| Nitrate plus Nitrite | Water | EPA 300.0<br>EPA 353.2 | EPA 300.0<br>EPA 353.2 | EPA 9056 | --- |
| | Waste | --- | EPA 300.0<br>EPA 353.2 | EPA 9056 | --- |
| Total Kjeldahl Nitrogen (TKN) | Water | --- | EPA 351.3<br>EPA 351.2 | --- | --- |
| | Waste | --- | EPA 351.3<br>EPA 351.2 | --- | --- |
| | Solid | --- | EPA 351.3<br>EPA 351.2 | EPA 9071B | EPA 413.1 |
| Oil and Grease | Water | --- | EPA 1664A | EPA 9071B | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| (Hexane Extractable Material) | Waste | --- | EPA 1664A | EPA 9071B | --- |
| | Solid | --- | --- | EPA 9071B | --- |
| Ortho-phosphate $o\text{-}PO_4$ | Water | EPA 300.0 | EPA 300.0<br>EPA 365.3<br>EPA 365.2 | EPA 9056 | --- |
| | Waste | --- | EPA 300.0 (M) | EPA 9056 | |
| | Solid | --- | EPA 300.0 (M)<br>EPA 365.3(M)<br>EPA 365.2 (M) | EPA 9056 | --- |
| pH | Water | EPA 150.1 | EPA 150.1 | EPA 9040B | --- |
| | Waste | --- | --- | EPA 9045C | --- |
| | Solid | --- | --- | EPA 9045C | --- |
| Phenolics | Water | --- | EPA 420.1 | --- | --- |
| | Waste | --- | --- | EPA 9065<br>EPA 9066 | --- |
| | Solid | --- | --- | EPA 9065<br>EPA 9066 | --- |
| Phosphorus (Total) | Water | EPA 365.3 | EPA 365.3<br>EPA 365.2 | --- | --- |
| | Waste | --- | EPA 365.3<br>EPA 365.2 | --- | --- |
| | Solid | --- | EPA 365.3<br>EPA 365.2 | --- | --- |
| Sulfate ($SO_4$) | Water | EPA 300.0<br>EPA 375.2 | EPA 300.0<br>EPA 375.4 | EPA 9056<br>EPA 9038 | --- |
| | Waste | --- | EPA 300.0 (M)<br>EPA 375.4 | EPA 9056<br>EPA 9038 | --- |
| | Solid | --- | EPA 300.0 (M) | EPA 9056<br>EPA 9038 (M) | --- |
| Sulfide | Water | --- | EPA 376.1 | EPA 9030A | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Sulfide (Reactive) | Water | --- | --- | Section 7.3[1] | --- |
| Sulfide (Reactive) | Waste | --- | --- | Section 7.3[1] | --- |
| | Solid | --- | --- | Section 7.3[1] | --- |
| Total Organic Carbon (TOC) | Water | --- | EPA 415.1 | EPA 9060 | --- |
| | Waste | --- | --- | EPA 9060 | --- |
| | Solid | --- | EPA 415.1 (M) | EPA 9060 (M) | Walkley-Black |
| Total Organic Halides (TOX) | Water | --- | --- | EPA 9020B | EPA 450.1 |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | --- | EPA 9020B | --- |
| Total Petroleum Hydro-carbons | Water | --- | EPA 1664A (SGT-HEM) | EPA 9071A<br>EPA 9071B | EPA 413.1<br>EPA 418.1 |
| | Waste | --- | EPA 1664A (SGT-HEM) | EPA 9071A<br>EPA 9071B | EPA 413.1<br>EPA 418.1 |
| | Solid | --- | --- | EPA 9071A<br>EPA 9071B | EPA 413.2<br>EPA 418.1 |
| Total Solids | Water | --- | EPA 160.3 | --- | 2540B |
| | Waste | --- | EPA 160.3 | --- | --- |
| | Solid | --- | EPA 160.3 (M) | --- | --- |
| Total Dissolved Solids | Water | SM 2540C | EPA 160.1 | --- | 2540C |
| Total Suspended Solids | Water | EPA 160.2 | EPA 160.2 | --- | 2540C |
| Volatile and Volatile Suspended Solids | Water | --- | EPA 160.4 | --- | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Settleable Solids | Water | --- | EPA 160.5 | --- | EPA 2540 F |
| Turbidity | Water | EPA 180.1 | EPA 180.1 | --- | --- |

*Footnotes*

*[1] The EPA released a memo to discontinue the use of reactive cyanide and sulfide.*

**TABLE 8.2-3 (cont.)**
**Methods for Mercury by Cold Vapor Atomic Absorption**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Mercury (CVAA) | Water | EPA 245.1 | EPA 245.1 | EPA 7470A | --- |
| | TCLP Leachate | --- | --- | EPA 7470A | --- |
| | Waste | --- | --- | EPA 7471A | --- |
| | Solid | --- | EPA 254.5 | EPA 7471A | --- |

**TABLE 8.2-3 (cont.)**
**Methods for Mercury by Cold Vapor Atomic Fluororescence**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Mercury, Low Level (CVAFS) | Water | EPA 245.7 | EPA 245.7 | --- | EPA 1631B |
| | TCLP Leachate | --- | --- | --- | --- |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | --- | --- | --- |

**TABLE 8.2-3 (cont.)**
**Methods for Metals by Graphite Furnace Atomic Absorption**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Thallium | Water | SM 3113B | EPA 279.2 | EPA 7841 | --- |
| | Waste | --- | --- | EPA 7841 | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Solid | --- | EPA 279.2 | EPA 7841 | --- |

**TABLE 8.2-3 (cont.)**
**Methods for Metals by ICP**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Aluminum | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Antimony [1] | Water | --- | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Arsenic [1] | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Barium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Beryllium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Boron | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Calcium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Cadmium [1] | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Cobalt | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Chromium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Copper | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Iron | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Lead [1] | Water | --- | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Lithium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Magnesium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Manganese | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Molybdenum | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Nickel | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Potassium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | --- | EPA 6010B | --- |
| Selenium [1] | Water | --- | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Silver | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Sodium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | --- | EPA 6010B | --- |
| Tin | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Thallium [1] | Water | --- | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7 | EPA 6010B | --- |
| Titanium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | --- | EPA 6010B | --- |
| Vanadium | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | --- | EPA 6010B | --- |
| Zinc | Water | EPA 200.7 | EPA 200.7 | EPA 6010B | --- |
| | Waste | --- | --- | EPA 6010B | --- |
| | Solid | --- | EPA 200.7--- | EPA 6010B | --- |

*Footnotes*

[1] These metals are usually analyzed by Trace ICP.

**TABLE 8.2-3 (cont.)**
**Metals Sample Preparation Methods**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Toxicity Characteristic Leaching Procedure (TCLP) | Water | --- | --- | EPA 1311 | --- |
| | Waste | --- | --- | EPA 1311 | --- |
| | Solid | --- | --- | EPA 1311 | --- |
| ICP Metals | Water | EPA 200.7 | EPA 200.7 | EPA 3005A<br>EPA 3010A | --- |
| | TCLP Leachate | --- | --- | EPA 3010A | --- |
| | Waste | --- | --- | EPA 3050B | --- |
| | Solid | --- | --- | EPA 3050B | --- |
| ICPMS Metals | Water | EPA 200.8 | EPA 200.8 | EPA 3010A | --- |
| | TCLP | --- | --- | EPA 3010A | --- |
| | Waste | --- | --- | EPA 3050B | --- |
| | Solid | --- | --- | EPA 3050B | --- |
| CVAA Mercury | Water | EPA 245.1 | EPA 245.1 | EPA 7470A | --- |
| | TCLP Leachate | --- | --- | EPA 7470A | --- |
| | Waste | --- | --- | EPA 7471A | --- |
| | Solid | --- | --- | EPA 7471A | |
| CVAFS Mercury Low Level | Water | EPA 245.7 | EPA 245.7 | --- | EPA 1631B |
| | TCLP | --- | --- | --- | --- |
| | Waste | --- | --- | --- | --- |
| | Solid | --- | --- | --- | --- |
| GFAA Metals | Water | Sample preparation procedures are detailed in the determinative EPA for each element. | Sample preparation procedures are detailed in the determinative EPA for each element. | EPA 3020A | --- |
| | TCLP Leachate | --- | --- | EPA 3020A | --- |
| | Waste | --- | --- | EPA 3020A | --- |
| | Solid | --- | --- | EPA 3050B | --- |

**TABLE 8.2-3 (cont.)**

## Organic Sample Preparation Methods

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Volatiles by GC/MS | Water | --- | EPA 624 | EPA 5030B | --- |
| | Waste | --- | --- | EPA 5030B<br>EPA 5035 | --- |
| | Solid | --- | --- | EPA 5035 | --- |
| Halogenated Volatiles by GC | Water | --- | EPA 601 | EPA 5030B | --- |
| | Waste | --- | --- | EPA 5030B<br>EPA 5035 | --- |
| | Solid | --- | --- | EPA 5035 | --- |
| Aromatic Volatiles by GC | Water | --- | EPA 602 | EPA 5030B | --- |
| | Waste | --- | --- | EPA 5030B<br>EPA 5035 | --- |
| | Solid | --- | --- | EPA 5035 | --- |
| Semivolatiles by GC/MS | Water | --- | EPA 625 | EPA 3510C<br>EPA 3520C | --- |
| | TCLP Leachate | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Waste | --- | --- | EPA 3550B<br>EPA 3580A | --- |
| | Solid | --- | --- | EPA 3550B<br>EPA 3580A | --- |
| Pesticides/ PCBs by GC | Water | --- | EPA 608 | EPA 3510C<br>EPA 3520C | --- |
| | TCLP Leachate | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Waste | --- | --- | EPA 3550B<br>EPA 3580A | --- |
| | Solid | --- | --- | EPA 3550B | --- |
| Pesticides (Organophos-phorus) by GC | Water | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | TCLP Leachate | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Waste | --- | --- | EPA 3540C | --- |
| | Solid | --- | --- | EPA 3540B | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| PAHs by GC | Water | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Solid | --- | --- | EPA 3550B | --- |
| PAHs by HPLC | Water | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Solid | --- | --- | EPA 3550B | --- |
| Herbicides by GC | Water | --- | EPA 615 | EPA 8151A | --- |
| | Waste | --- | --- | EPA 8151A | --- |
| | Solid | --- | --- | EPA 8151A | --- |
| Total Petroleum Hydrocarbons (gasoline range) by GC | Water | --- | --- | EPA 5030B | --- |
| | Waste | --- | --- | EPA 5030B<br>EPA 5035 | --- |
| | Solid | --- | --- | EPA 5035<br>EPA 5035 | --- |
| Total Petroleum Hydrocarbons (diesel range) by GC | Water | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | TCLP Leachate | --- | --- | EPA 3510C<br>EPA 3520C | --- |
| | Waste | --- | --- | EPA 3550B<br>EPA 3580A | --- |
| | Solid | --- | --- | EPA 3550B | --- |

**TABLE 8.2-3 (cont.)**
**Organic Methods**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Volatiles by GC/MS | Water | --- | EPA 624 | EPA 8260B | --- |
| | Waste | --- | --- | EPA 8260B | --- |
| | Solid | --- | --- | EPA 8260B | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Halogenated Volatiles by GC | Water | --- | EPA 601 | EPA 8021B | --- |
| | Waste | --- | --- | EPA 8021B | --- |
| | Solid | --- | --- | EPA 8021B | --- |
| Aromatic Volatiles by GC | Water | --- | EPA 602 | EPA 8021B | --- |
| | Waste | --- | --- | EPA 8021B | --- |
| | Solid | --- | --- | EPA 8021B | --- |
| Semivolatiles by GC/MS | Water | --- | EPA 625 | EPA 8270C | |
| | Waste | --- | --- | EPA 8270C | --- |
| | Solid | --- | --- | EPA 8270C | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Pesticides/ PCBs by GC | Water | --- | EPA 608 | Pesticides 8081A PCBs 8082 | --- |
| | TCLP Leachate | --- | --- | Pesticides 8081A PCBs 8082 | --- |
| | Waste | --- | --- | Pesticides 8081A PCBs 8082 | --- |
| | Solid | --- | --- | Pesticides 8081A PCBs 8082 | --- |
| Pesticides (Organophos-phorus) by GC | Water | --- | --- | EPA 8141A | --- |
| | Waste | --- | --- | EPA 8141A | --- |
| | Solid | --- | --- | EPA 8141A | --- |
| PAHs by GC | Water | --- | --- | EPA 8310 | --- |
| | Waste | --- | --- | EPA 8310 | --- |
| | Solid | --- | --- | EPA 8310 | --- |
| Phenoxyacid Herbicides by GC | Water | --- | EPA 615 | EPA 8151A | --- |
| | TCLP Leachate | --- | --- | EPA 8151A | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Waste | --- | --- | EPA 8151A | --- |
| | Solid | --- | --- | EPA 8151A | --- |
| Gasoline Range Organics by GC | Water | --- | --- | EPA 8015B (M) | API Method<br>CA LUFT<br>WV GRO<br>WI GRO |
| | Waste | --- | --- | EPA 8015B (M) | --- |
| | Solid | --- | --- | EPA 8015B (M) | API Method<br>CA LUFT<br>WV GRO<br>WI GRO |
| Total Petroleum Hydrocarbons (diesel range) by GC/FID | Water | --- | --- | EPA 8015B (M) | EPA API<br>WI DRO<br>WV DRO |
| | Waste | --- | --- | EPA 8015B (M) | --- |
| Total Petroleum Hydrocarbons (diesel range) by GC/FID (con't.) | Solid | --- | --- | EPA 8015B (M) | API Method<br>CA LUFT<br>WI DRO<br>WV DRO |
| Hydrocarbons by GC/FID | Water | --- | --- | EPA 8015B | --- |
| | Solid | --- | --- | EPA 8015B | --- |

**TABLE 8.2-3 (cont.)**
**Methods for Metals by ICP/MS**

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| Aluminum | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Antimony [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Arsenic [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Barium | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Beryllium | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Cadmium [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Cobalt | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Chromium | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Copper | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Lead [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |

| Analytical Parameters | Matrix | Fields of Testing | | | |
|---|---|---|---|---|---|
| | | SDWA | CWA | RCRA (SW846) | Other |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Manganese | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Molybdenum | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Nickel | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Selenium [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Silver | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Tin | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Thallium [1] | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |
| Vandium | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | |
| | Solid | --- | --- | EPA 6020 | |
| | Waste | --- | --- | EPA 6020 | |
| Zinc | Water | EPA 200.8 | EPA 200.8 | EPA 6020 | --- |
| | Waste | --- | --- | EPA 6020 | --- |
| | Solid | --- | --- | EPA 6020 | --- |

*Footnotes*

**TABLE 8.2-4-1**
**General Chemistry**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | 310.1 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3041 | Total Alkalinity | 5 | mg/L | 4.5 | mg/L | C | 80 | 120 | 20 | C | 80 | 120 | 20 |

| | 300.0/9056 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 315 | Bromide | 0.5 | mg/L | 0.086 | mg/L | C | 90 | 110 | 20 | C | 90 | 110 | 20 |
| 512 | Chloride | 1 | mg/L | 0.13 | mg/L | C | 90 | 110 | 20 | C | 59 | 132 | 20 |
| 2680 | Nitrate | 0.1 | mg/L | 0.015 | mg/L | C | 90 | 110 | 20 | C | 74 | 129 | 21 |
| 1422 | Fluoride | 1 | mg/L | 0.017 | mg/L | C | 89 | 110 | 20 | C | 82 | 111 | 20 |
| 2363 | Sulfate | 1 | mg/L | 0.15 | mg/L | C | 90 | 110 | 20 | C | 56 | 135 | 83 |
| 3624 | ortho-Phosphate | 0.5 | mg/L | 0.017 | mg/L | C | 83 | 118 | 24 | C | 22 | 177 | 48 |
| 2682 | Nitrite | 0.1 | mg/L | 0.022 | mg/L | C | 89 | 110 | 20 | C | 52 | 152 | 27 |

| | 405.1 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3137 | Biochemical Oxygen Demand | 2 | mg/L | 2 | mg/L | C | 64 | 124 | 28 | C | 70 | 130 | 20 |

| | 410.4 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 472 | Chemical Oxygen Demand (COD) | 10 | mg/L | 7 | mg/L | C | 86 | 117 | 30 | C | 76 | 112 | 20 |

| | 9252 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 512 | Chloride | 3 | mg/L | 1.5 | mg/L | C | 90 | 110 | 20 | C | 90 | 110 | 20 |

| | 325.2 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3089 | Chloride - Automated | 1 | mg/L | 0.38 | mg/L | C | 90 | 115 | 21 | C | 42 | 152 | 28 |

| | 325.2 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 512 | Chloride | 3 | mg/L | 1.5 | mg/L | C | 90 | 110 | 20 | C | 90 | 110 | 20 |

| | 330.5 | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 517 | Total Residual Chlorine | 0.2 | mg/L | | | | 75 | 125 | 20 | | 75 | 125 | 20 |

**TABLE 8.2-4-1**
**General Chemistry**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | 9012A | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 667 | Total Cyanide | 0.01 | mg/L | 0.0033 | mg/L | C | 61 | 115 | 32 | C | 25 | 134 | 99 |

| | 335.2 | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 667 | Total Cyanide | 0.01 | mg/L | 0.0033 | mg/L | C | 61 | 115 | 32 | C | 25 | 134 | 99 |

| | 340.2 | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1422 | Fluoride | 0.1 | mg/L | | | C | 81 | 110 | 20 | C | 72 | 120 | 20 |

| | 130.2 | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1469 | Hardness, as CaCO3 | 5 | mg/L | 1.3 | mg/L | C | 90 | 110 | 20 | C | 18 | 153 | 20 |

| | 1664A | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3506 | n-Hexane Extractable Material | 5 | mg/L | 1.3 | mg/L | | 79 | 114 | 20 | | 79 | 114 | 18 |
| 3507 | n-Hexane Extractable Material, SGT | 10 | mg/L | 3.3 | mg/L | | 66 | 114 | 20 | | 66 | 114 | 24 |

| | 7196A | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 630 | Hexavalent Chromium | 0.02 | mg/L | 0.002 | mg/L | C | 89 | 119 | 20 | C | 57 | 138 | 27 |

| | 3500 Cr D | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 630 | Hexavalent Chromium | 0.02 | mg/L | 0.002 | mg/L | C | 89 | 119 | 20 | C | 57 | 138 | 27 |

| | 353.2 | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2682 | Nitrite | 0.1 | mg/L | 0.03 | mg/L | C | 85 | 115 | 20 | C | 85 | 115 | 20 |
| 2680 | Nitrate | 0.1 | mg/L | 0.03 | mg/L | C | 85 | 115 | 20 | C | 85 | 115 | 20 |
| 2681 | Nitrate/Nitrite | 0.1 | mg/L | 0.03 | mg/L | C | 85 | 115 | 20 | C | 85 | 115 | 20 |

**TABLE 8.2-4-1**
**General Chemistry**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | 350.2 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1986 | Nitrogen, as Ammonia | 1 | mg/L | 0.48 | mg/L | C | 80 | 120 | 20 | C | 80 | 120 | 20 |

| | 9065 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2163 | Total Phenols | 0.02 | mg/L | 0.011 | mg/L | C | 57 | 142 | 64 | C | 10 | 153 | 99 |

| | 9045B, C | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2204 | pH (solid) | | No Units | | | | 90 | 110 | 20 | | 90 | 110 | 20 |

| | 4500 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2196 | Phosphorus as Orthophosphate | 0.1 | mg/L | 0.031 | mg/L | C | 89 | 115 | 20 | C | 90 | 110 | 20 |

| | 365.2 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3624 | ortho-Phosphate | 0.1 | mg/L | 0.031 | mg/L | C | 89 | 115 | 20 | C | 90 | 110 | 20 |
| 2196 | Phosphorus as Orthophosphate | 0.1 | mg/L | 0.031 | mg/L | C | 89 | 115 | 20 | C | 90 | 110 | 20 |
| 3651 | Dissolved ortho-Phosphate | 0.1 | mg/L | 0.031 | mg/L | C | 89 | 115 | 20 | C | 90 | 110 | 20 |

| | 120.1 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2667 | Specific Conductance | 1 | umhos/cm | | | | 75 | 125 | 20 | | 75 | 125 | 20 |

| | 9050A | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2667 | Specific Conductance | 1 | umhos/cm | | | | 75 | 125 | 20 | | 75 | 125 | 20 |

| | 160.1 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3639 | Dissolved Filterable Solids (Residue) | 10 | mg/L | 8.3 | mg/L | C | 80 | 120 | 20 | | 80 | 120 | 20 |
| 2687 | Total Dissolved Solids | 10 | mg/L | 8.3 | mg/L | | 72 | 131 | 20 | | 90 | 110 | 20 |

**TABLE 8.2-4-1**
**General Chemistry**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | 375.4 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2363 | Sulfate | 5 | mg/L | 1.4 | mg/L | C | 90 | 110 | 20 | C | 90 | 110 | 20 |

| | 9038 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2363 | Sulfate | 5 | mg/L | 1.4 | mg/L | C | 90 | 110 | 20 | C | 90 | 110 | 20 |

| | 351.3 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1992 | Total Kjeldahl Nitrogen | 1 | mg/L | 0.621 | mg/L | C | 69 | 130 | 37 | C | 80 | 120 | 20 |

| | 376.1 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2366 | Total Sulfide | 1 | mg/L | 0.92 | mg/L | C | 72 | 110 | 20 | C | 80 | 120 | 20 |

| | 9030A | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2366 | Total Sulfide | 1 | mg/L | 0.92 | mg/L | C | 72 | 110 | 20 | C | 80 | 120 | 20 |

| | 9030A | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3658 | Acid-insoluble Sulfide | 1 | mg/L | 0.92 | mg/L | C | 75 | 110 | 20 | C | 80 | 120 | 20 |

| | 415.1 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 470 | Total Organic Carbon | 1 | mg/L | 0.18 | mg/L | C | 88 | 110 | 20 | C | 80 | 110 | 20 |

| | 9060 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 470 | Total Organic Carbon | 1 | mg/L | 0.18 | mg/L | C | 88 | 110 | 20 | C | 80 | 110 | 20 |

| | 9020B | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1468 | Total Organic Halogens | 30 | ug/L | 13 | ug/L | C | 67 | 124 | 53 | C | 10 | 178 | 99 |

| | 180.1 | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2604 | Turbidity | 0.5 | NTU | | | | 90 | 110 | 20 | | 90 | 110 | 20 |

**TABLE 8.2-4-2**
**Metals – ICP,CVAA, GFAA (6000, 7000, 200 Series)**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Trace | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 128 | Antimony | 0.01 | mg/L | 2.2 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 140 | Arsenic | 0.01 | mg/L | 4.1 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 411 | Cadmium | 0.002 | mg/L | 0.28 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2952 | Chromium | 0.005 | mg/L | 1.4 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 637 | Cobalt | 0.007 | mg/L | 1.3 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1605 | Lead | 0.003 | mg/L | 2.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1906 | Molybdenum | 0.01 | mg/L | 2.6 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2281 | Selenium | 0.005 | mg/L | 4.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2285 | Silver | 0.005 | mg/L | 1.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2477 | Thallium | 0.01 | mg/L | 5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2607 | Vanadium | 0.007 | mg/L | 0.82 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| Trace | Solid | | | | | LCS | | | MS | | |
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 128 | Antimony | 1 | mg/kg | 0.49 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 140 | Arsenic | 1 | mg/kg | 0.3 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 411 | Cadmium | 0.2 | mg/kg | 0.043 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2952 | Chromium | 0.5 | mg/kg | 0.38 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 637 | Cobalt | 5 | mg/kg | 0.15 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1605 | Lead | 0.3 | mg/kg | 0.24 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1906 | Molybdenum | 1 | mg/kg | 0.18 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2281 | Selenium | 0.5 | mg/kg | 0.31 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2285 | Silver | 0.5 | mg/kg | 0.15 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2477 | Thallium | 1 | mg/kg | 0.5 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2607 | Vanadium | 5 | mg/kg | 0.13 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |

**TABLE 8.2-4-2**
**Metals – ICP,CVAA, GFAA (6000, 7000, 200 Series)**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| ICP | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 88 | Aluminum | 0.2 | mg/L | 28 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 128 | Antimony | 0.06 | mg/L | 2.2 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 140 | Arsenic | 0.3 | mg/L | 4.1 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 194 | Barium | 0.2 | mg/L | 3 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 222 | Beryllium | 0.005 | mg/L | 0.54 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 313 | Boron | 0.2 | mg/L | 21 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 411 | Cadmium | 0.005 | mg/L | 0.28 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 413 | Calcium | 5 | mg/L | 250 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2952 | Chromium | 0.01 | mg/L | 1.4 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 637 | Cobalt | 0.05 | mg/L | 1.3 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 643 | Copper | 0.025 | mg/L | 4.2 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1539 | Iron | 0.1 | mg/L | 88 | ug/L | 77 | 127 | 20 | 75 | 125 | 20 |
| 1605 | Lead | 0.1 | mg/L | 2.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1618 | Magnesium | 5 | mg/L | 30 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1659 | Manganese | 0.015 | mg/L | 0.9 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1906 | Molybdenum | 0.04 | mg/L | 2.6 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 1956 | Nickel | 0.04 | mg/L | 2.2 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2214 | Potassium | 5 | mg/L | 41 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2281 | Selenium | 0.25 | mg/L | 4.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2285 | Silver | 0.01 | mg/L | 1.5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2315 | Sodium | 5 | mg/L | 630 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2477 | Thallium | 2 | mg/L | 5 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2479 | Tin | 0.1 | mg/L | 8 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2482 | Titanium | 0.05 | mg/L | 6.3 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2607 | Vanadium | 0.05 | mg/L | 0.82 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |
| 2649 | Zinc | 0.02 | mg/L | 12 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |

**TABLE 8.2-4-2**
**Metals – ICP,CVAA, GFAA (6000, 7000, 200 Series)**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| ICP | Solid | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 88 | Aluminum | 20 | mg/kg | 1.1 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 128 | Antimony | 6 | mg/kg | 0.49 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 140 | Arsenic | 30 | mg/kg | 0.3 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 194 | Barium | 20 | mg/kg | 0.13 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 222 | Beryllium | 0.5 | mg/kg | 0.046 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 313 | Boron | 20 | mg/kg | 1.2 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 411 | Cadmium | 0.5 | mg/kg | 0.043 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 413 | Calcium | 500 | mg/kg | 37 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2952 | Chromium | 1 | mg/kg | 0.38 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 637 | Cobalt | 5 | mg/kg | 0.15 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 643 | Copper | 2.5 | mg/kg | 0.27 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1539 | Iron | 10 | mg/kg | 6.6 | mg/kg | 73 | 137 | 20 | 75 | 125 | 20 |
| 1605 | Lead | 10 | mg/kg | 0.24 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1618 | Magnesium | 500 | mg/kg | 12 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1659 | Manganese | 1.5 | mg/kg | 0.15 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1906 | Molybdenum | 4 | mg/kg | 0.18 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 1956 | Nickel | 4 | mg/kg | 0.27 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2214 | Potassium | 500 | mg/kg | 5.1 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2281 | Selenium | 25 | mg/kg | 0.31 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2285 | Silver | 1 | mg/kg | 0.15 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2315 | Sodium | 500 | mg/kg | 50 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2477 | Thallium | 200 | mg/kg | 0.5 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2479 | Tin | 10 | mg/kg | 0.66 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2482 | Titanium | 5 | mg/kg | 0.53 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2607 | Vanadium | 5 | mg/kg | 0.13 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| 2649 | Zinc | 2 | mg/kg | 1.2 | mg/kg | 80 | 120 | 20 | 75 | 125 | 20 |
| | Water | | | | | LCS | | | MS | | |
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 1701 | Mercury | 0.0002 | mg/L | 0.13 | ug/L | 70 | 118 | 20 | 53 | 135 | 20 |
| | Solid | | | | | LCS | | | MS | | |
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 1701 | Mercury | 0.1 | mg/kg | 0.0084 | mg/kg | 52 | 127 | 20 | 10 | 209 | 20 |

**TABLE 8.2-4-2**
**Metals – ICP,CVAA, GFAA (6000, 7000, 200 Series)**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 2477 | Thallium | 0.01 | mg/L | 1.7 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |

| | Solid | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 2477 | Thallium | 1 | mg/kg | 0.12 | ug/L | 80 | 120 | 20 | 75 | 125 | 20 |

**Table 8.2-4-2**
**Metals – ICPMS, 6020**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)**

| | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 88 | Aluminum | 50 | ug/L | 11 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 128 | Antimony | 2 | ug/L | 0.066 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 140 | Arsenic | 5 | ug/L | 0.35 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 194 | Barium | 1 | ug/L | 0.16 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 222 | Beryllium | 1 | ug/L | 0.21 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 411 | Cadmium | 1 | ug/L | 0.05 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2952 | Chromium | 2 | ug/L | 0.18 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 637 | Cobalt | 1 | ug/L | 0.025 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 643 | Copper | 2 | ug/L | 0.6 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 1539 | Iron | 20 | ug/L | 9 | ug/L | 80 | 120 | 20 | 80 | 120 | 20 |
| 1605 | Lead | 1 | ug/L | 0.15 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 1659 | Manganese | 1 | ug/L | 0.23 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 1906 | Molybdenum* | 2 | ug/L | 0.046 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 1956 | Nickel | 2 | ug/L | 0.13 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2281 | Selenium* | 5 | ug/L | 1.2 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2285 | Silver | 1 | ug/L | 0.054 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2477 | Thallium | 1 | ug/L | 0.018 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2479 | Tin* | 10 | ug/L | 1.1 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2607 | Vanadium* | 5 | ug/L | 0.15 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |
| 2649 | Zinc | 10 | ug/L | 5 | ug/L | 80 | 120 | 20 | 70 | 130 | 20 |

* Molybdenum, Selenium, Tin, and Vanadium are not on the 6020 method list

**Table 8.2-4-2**
**Metals – ICPMS, 6020**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)**

| Solid | | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 128 | Antimony | 0.2 | mg/kg | 0.0053 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 140 | Arsenic | 0.5 | mg/kg | 0.01 | mg/kg | 74 | 110 | 20 | 70 | 130 | 20 |
| 194 | Barium | 0.1 | mg/kg | 0.038 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 222 | Beryllium | 0.1 | mg/kg | 0.015 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 411 | Cadmium | 0.1 | mg/kg | 0.012 | mg/kg | 75 | 110 | 20 | 70 | 130 | 20 |
| 2952 | Chromium | 0.2 | mg/kg | 0.025 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 637 | Cobalt | 0.1 | mg/kg | 0.0046 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 643 | Copper | 0.2 | mg/kg | 0.026 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 1605 | Lead | 0.1 | mg/kg | 0.014 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 1659 | Manganese | 0.1 | mg/kg | 0.079 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 1906 | Molybdenum* | 0.2 | mg/kg | 0.012 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 1956 | Nickel | 0.1 | mg/kg | 0.034 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 2281 | Selenium* | 0.5 | mg/kg | 0.056 | mg/kg | 74 | 110 | 20 | 70 | 130 | 20 |
| 2285 | Silver | 0.1 | mg/kg | 0.022 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 2477 | Thallium | 0.1 | mg/kg | 0.0032 | mg/kg | 76 | 110 | 20 | 70 | 130 | 20 |
| 2479 | Tin* | 1 | mg/kg | 0.4 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 2607 | Vanadium* | 0.5 | mg/kg | 0.021 | mg/kg | 80 | 120 | 20 | 70 | 130 | 20 |
| 2649 | Zinc | 1 | mg/kg | 0.31 | mg/kg | 70 | 110 | 20 | 70 | 130 | 20 |

* Molybdenum, Selenium, Tin, and Vanadium are not on the 6020 method list

**Table 8.2-4-2**
**Metals – ICPMS, 200.8**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)**

| | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 88 | Aluminum | 50 | ug/L | 11 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 128 | Antimony | 2 | ug/L | 0.066 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 140 | Arsenic | 5 | ug/L | 0.35 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 194 | Barium | 1 | ug/L | 0.16 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 222 | Beryllium | 1 | ug/L | 0.21 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 411 | Cadmium | 1 | ug/L | 0.05 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2952 | Chromium | 2 | ug/L | 0.18 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 637 | Cobalt | 1 | ug/L | 0.025 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 643 | Copper | 2 | ug/L | 0.6 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 1539 | Iron | 20 | ug/L | 9 | ug/L | 0 | 0 | 0 | 0 | 0 | 0 |
| 1605 | Lead | 1 | ug/L | 0.15 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 1659 | Manganese | 1 | ug/L | 0.23 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 1906 | Molybdenum | 2 | ug/L | 0.046 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 1956 | Nickel | 2 | ug/L | 0.13 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2281 | Selenium | 5 | ug/L | 1.2 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2285 | Silver | 1 | ug/L | 0.054 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2477 | Thallium | 1 | ug/L | 0.018 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2479 | Tin* | 10 | ug/L | 1.1 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2607 | Vanadium | 5 | ug/L | 0.15 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |
| 2649 | Zinc | 10 | ug/L | 5 | ug/L | 85 | 115 | 20 | 70 | 130 | 20 |

*Tin is not on the 200.8 method list.

**Table 8.2-4-2**
**Metals – Low-Level Mercury, 1631B & 245.7**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)**

| 1631B | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 1701 | Mercury | 0.5 | ng/L | 0.12 | ng/L | 77 | 125 | 18 | 71 | 125 | 24 |

| 245.7 | Water | | | | | LCS | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | LCL | UCL | RPD | LCL | UCL | RPD |
| 1701 | Mercury | 5 | ng/L | 0.906 | ng/L | 76 | 111 | 18 | 76 | 111 | 18 |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1 | Acenaphthene | 10 | ug/L | 2.7 | ug/L | C | 39 | 118 | 35 | C | 26 | 118 | 35 |
| 5 | Acenaphthylene | 10 | ug/L | 2.7 | ug/L | | 48 | 101 | 21 | | 48 | 96 | 21 |
| 122 | Anthracene | 10 | ug/L | 0.89 | ug/L | | 56 | 105 | 18 | | 52 | 101 | 18 |
| 202 | Benzo(a)anthracene | 10 | ug/L | 2.8 | ug/L | | 56 | 109 | 16 | | 52 | 110 | 16 |
| 205 | Benzo(b)fluoranthene | 10 | ug/L | 2.6 | ug/L | | 52 | 108 | 20 | | 48 | 107 | 20 |
| 208 | Benzo(k)fluoranthene | 10 | ug/L | 1.2 | ug/L | | 53 | 112 | 20 | | 53 | 109 | 20 |
| 210 | Benzo(ghi)perylene | 10 | ug/L | 3.3 | ug/L | | 45 | 115 | 17 | | 48 | 109 | 17 |
| 211 | Benzo(a)pyrene | 10 | ug/L | 3 | ug/L | | 50 | 100 | 18 | | 47 | 98 | 18 |
| 289 | bis(2-chloro ethoxy)methane | 10 | ug/L | 2.6 | ug/L | | 39 | 109 | 26 | | 40 | 101 | 40 |
| 293 | bis(2-Chloroethyl) ether | 10 | ug/L | 2.1 | ug/L | | 45 | 103 | 26 | | 36 | 104 | 26 |
| 302 | bis(2-Ethylhexyl) phthalate | 10 | ug/L | 2.1 | ug/L | | 56 | 127 | 23 | | 44 | 133 | 23 |
| 348 | 4-Bromophenyl phenyl ether | 10 | ug/L | 1 | ug/L | | 57 | 114 | 17 | | 56 | 110 | 17 |
| 403 | Butyl benzyl phthalate | 10 | ug/L | 1.9 | ug/L | | 53 | 113 | 18 | | 46 | 115 | 18 |
| 2751 | Carbazole | 10 | ug/L | 1.1 | ug/L | | 37 | 114 | 21 | | 42 | 115 | 21 |
| 518 | 4-Chloroaniline | 10 | ug/L | 2.8 | ug/L | | 19 | 82 | 41 | | 13 | 71 | 41 |
| 578 | 4-Chloro-3-methylphenol | 10 | ug/L | 1.2 | ug/L | C | 29 | 124 | 55 | C | 21 | 124 | 55 |
| 589 | 2-Chloronaphthalene | 10 | ug/L | 2.5 | ug/L | | 51 | 106 | 25 | | 46 | 104 | 25 |
| 600 | 2-Chlorophenol | 10 | ug/L | 1.6 | ug/L | C | 19 | 124 | 43 | C | 19 | 124 | 43 |
| 602 | 4-Chlorophenyl phenyl ether | 10 | ug/L | 1.3 | ug/L | | 57 | 114 | 19 | | 55 | 110 | 19 |
| 633 | Chrysene | 10 | ug/L | 0.88 | ug/L | | 59 | 112 | 16 | | 54 | 115 | 16 |
| 860 | Dibenz(a,h)anthracene | 10 | ug/L | 1.2 | ug/L | | 50 | 112 | 18 | | 49 | 110 | 18 |
| 863 | Dibenzofuran | 10 | ug/L | 2.8 | ug/L | | 55 | 107 | 20 | | 53 | 104 | 20 |
| 891 | Di-n-butyl phthalate | 10 | ug/L | 1.1 | ug/L | | 59 | 108 | 17 | | 53 | 109 | 17 |
| 904 | 1,2-Dichlorobenzene | 10 | ug/L | 0.86 | ug/L | | 39 | 90 | 31 | | 33 | 91 | 29 |
| 907 | 1,3-Dichlorobenzene | 10 | ug/L | 1 | ug/L | | 34 | 85 | 31 | | 30 | 86 | 31 |
| 910 | 1,4-Dichlorobenzene | 10 | ug/L | 0.89 | ug/L | C | 28 | 110 | 36 | C | 18 | 110 | 36 |
| 918 | 3,3'-Dichlorobenzidine | 50 | ug/L | 1.1 | ug/L | | 20 | 76 | 36 | | 10 | 71 | 36 |
| 971 | 2,4-Dichlorophenol | 10 | ug/L | 1 | ug/L | | 48 | 101 | 26 | | 43 | 103 | 26 |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Water Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1082 | Diethyl phthalate | 10 | ug/L | 3.2 | ug/L | | 48 | 112 | 20 | | 36 | 117 | 20 |
| 1145 | 2,4-Dimethylphenol | 10 | ug/L | 1.1 | ug/L | | 10 | 88 | 28 | | 10 | 88 | 28 |
| 1149 | Dimethyl phthalate | 10 | ug/L | 3.7 | ug/L | | 46 | 117 | 22 | | 32 | 124 | 22 |
| 1167 | 4,6-Dinitro-2-methylphenol | 50 | ug/L | 7.5 | ug/L | | 37 | 137 | 24 | | 46 | 123 | 24 |
| 1187 | 2,4-Dinitrophenol | 50 | ug/L | 13 | ug/L | | 21 | 143 | 32 | | 30 | 133 | 32 |
| 1191 | 2,4-Dinitrotoluene | 10 | ug/L | 0.8 | ug/L | C | 47 | 131 | 32 | C | 31 | 131 | 32 |
| 1193 | 2,6-Dinitrotoluene | 10 | ug/L | 2.8 | ug/L | | 62 | 114 | 16 | | 58 | 109 | 16 |
| 1162 | Di-n-octyl phthalate | 10 | ug/L | 2 | ug/L | | 49 | 127 | 22 | | 46 | 124 | 22 |
| 1414 | Fluoranthene | 10 | ug/L | 0.94 | ug/L | | 53 | 116 | 19 | | 51 | 113 | 19 |
| 1417 | Fluorene | 10 | ug/L | 2.9 | ug/L | | 57 | 107 | 18 | | 54 | 105 | 19 |
| 1482 | Hexachlorobenzene | 10 | ug/L | 1.8 | ug/L | | 57 | 128 | 22 | | 36 | 132 | 22 |
| 1489 | Hexachlorobutadiene | 10 | ug/L | 1.2 | ug/L | | 36 | 116 | 32 | | 18 | 116 | 32 |
| 1492 | Hexachloro-cyclopentadiene | 50 | ug/L | 3.4 | ug/L | | 10 | 81 | 59 | | 10 | 45 | 59 |
| 1497 | Hexachloroethane | 10 | ug/L | 2.3 | ug/L | | 30 | 110 | 33 | | 18 | 110 | 33 |
| 1535 | Indeno(1,2,3-cd)pyrene | 10 | ug/L | 1.2 | ug/L | | 49 | 114 | 19 | | 48 | 113 | 19 |
| 1566 | Isophorone | 10 | ug/L | 2.7 | ug/L | | 48 | 103 | 25 | | 42 | 102 | 25 |
| 1829 | 2-Methylnaphthalene | 10 | ug/L | 0.92 | ug/L | | 49 | 98 | 28 | | 39 | 102 | 28 |
| 1851 | 2-Methylphenol | 10 | ug/L | 1.1 | ug/L | | 33 | 115 | 31 | | 29 | 115 | 31 |
| 1857 | 4-Methylphenol | 10 | ug/L | 1.7 | ug/L | | 29 | 144 | 33 | | 25 | 144 | 33 |
| 1932 | Naphthalene | 10 | ug/L | 0.72 | ug/L | | 46 | 95 | 26 | | 39 | 96 | 26 |
| 1960 | 2-Nitroaniline | 50 | ug/L | 1.4 | ug/L | | 55 | 119 | 17 | | 44 | 116 | 17 |
| 1964 | 3-Nitroaniline | 50 | ug/L | 2 | ug/L | | 33 | 107 | 23 | | 20 | 102 | 23 |
| 1968 | 4-Nitroaniline | 50 | ug/L | 1.2 | ug/L | | 32 | 106 | 26 | | 25 | 95 | 26 |
| 1972 | Nitrobenzene | 10 | ug/L | 2.6 | ug/L | | 45 | 130 | 50 | | 10 | 211 | 50 |
| 1998 | 2-Nitrophenol | 10 | ug/L | 0.99 | ug/L | | 43 | 104 | 26 | | 35 | 104 | 26 |
| 2001 | 4-Nitrophenol | 50 | ug/L | 4.8 | ug/L | C | 19 | 144 | 34 | C | 10 | 145 | 34 |
| 2028 | N-Nitrosodiphenylamine | 10 | ug/L | 0.91 | ug/L | | 47 | 112 | 18 | | 53 | 99 | 18 |
| 2024 | N-Nitrosodi-n-propylamine | 10 | ug/L | 1 | ug/L | C | 30 | 115 | 36 | C | 18 | 115 | 36 |
| 2118 | Pentachlorophenol | 10 | ug/L | 0.58 | ug/L | C | 10 | 140 | 56 | C | 10 | 140 | 56 |
| 2154 | Phenanthrene | 10 | ug/L | 2.4 | ug/L | | 58 | 110 | 18 | | 55 | 109 | 18 |
| 2155 | Phenol | 10 | ug/L | 1.3 | ug/L | C | 10 | 131 | 43 | C | 10 | 131 | 43 |
| 301 | 2,2'-Oxybis(1-Chloropropane) | 10 | ug/L | 1.3 | ug/L | | | | | | | | |
| 2252 | Pyrene | 10 | ug/L | 1.4 | ug/L | C | 46 | 130 | 31 | C | 27 | 138 | 31 |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2515 | 1,2,4-Trichlorobenzene | 10 | ug/L | 2.5 | ug/L | C | 31 | 110 | 37 | C | 22 | 110 | 37 |
| 2555 | 2,4,5-Trichlorophenol | 10 | ug/L | 1.1 | ug/L | | 41 | 125 | 22 | | 24 | 143 | 22 |
| 2559 | 2,4,6-Trichlorophenol | 10 | ug/L | 1.3 | ug/L | | 46 | 135 | 27 | | 36 | 135 | 27 |
| 1425 | 2-Fluorobiphenyl | | | | | X | 30 | 110 | | X | 30 | 110 | |
| 1426 | 2-Fluorophenol | | | | | X | 13 | 110 | | X | 13 | 110 | |
| 2512 | 2,4,6-Tribromophenol | | | | | X | 21 | 122 | | X | 21 | 122 | |
| 2736 | Nitrobenzene-d5 | | | | | X | 32 | 112 | | X | 32 | 112 | |
| 2737 | Phenol-d5 | | | | | X | 10 | 113 | | X | 10 | 113 | |
| 2738 | Terphenyl-d14 | | | | | X | 10 | 144 | | X | 10 | 144 | |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid | | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1 | Acenaphthene | 330 | ug/kg | 35 | ug/kg | C | 44 | 108 | 44 | C | 13 | 133 | 44 |
| 5 | Acenaphthylene | 330 | ug/kg | 35 | ug/kg | | 48 | 107 | 36 | | 35 | 111 | 36 |
| 122 | Anthracene | 330 | ug/kg | 37 | ug/kg | | 49 | 114 | 38 | | 35 | 115 | 38 |
| 202 | Benzo(a)anthracene | 330 | ug/kg | 35 | ug/kg | | 49 | 116 | 35 | | 30 | 122 | 35 |
| 205 | Benzo(b)fluoranthene | 330 | ug/kg | 35 | ug/kg | | 44 | 117 | 38 | | 28 | 121 | 38 |
| 208 | Benzo(k)fluoranthene | 330 | ug/kg | 41 | ug/kg | | 43 | 116 | 36 | | 28 | 121 | 36 |
| 210 | Benzo(ghi)perylene | 330 | ug/kg | 45 | ug/kg | | 44 | 121 | 38 | | 17 | 126 | 38 |
| 211 | Benzo(a)pyrene | 330 | ug/kg | 33 | ug/kg | | 46 | 109 | 36 | | 26 | 114 | 36 |
| 289 | bis(2-Chloroethoxy)-methane | 330 | ug/kg | 35 | ug/kg | | 42 | 109 | 40 | | 34 | 109 | 40 |
| 293 | bis(2-Chloroethyl) ether | 330 | ug/kg | 33 | ug/kg | | 45 | 100 | 52 | | 29 | 104 | 52 |
| 302 | bis(2-Ethylhexyl) phthalate | 330 | ug/kg | 65 | ug/kg | | 44 | 125 | 38 | | 21 | 130 | 38 |
| 348 | 4-Bromophenyl phenyl ether | 330 | ug/kg | 35 | ug/kg | | 45 | 120 | 38 | | 33 | 124 | 38 |
| 403 | Butyl benzyl phthalate | 330 | ug/kg | 44 | ug/kg | | 46 | 111 | 37 | | 26 | 119 | 37 |
| 2751 | Carbazole | 330 | ug/kg | 42 | ug/kg | | 48 | 133 | 37 | | 38 | 126 | 37 |
| 518 | 4-Chloroaniline | 330 | ug/kg | 33 | ug/kg | | 14 | 70 | 67 | | 10 | 73 | 67 |
| 578 | 4-Chloro-3-methylphenol | 330 | ug/kg | 31 | ug/kg | C | 43 | 110 | 55 | C | 17 | 128 | 55 |
| 589 | 2-Chloronaphthalene | 330 | ug/kg | 32 | ug/kg | | 49 | 111 | 36 | | 37 | 114 | 36 |
| 600 | 2-Chlorophenol | 330 | ug/kg | 28 | ug/kg | C | 43 | 110 | 54 | C | 17 | 116 | 54 |
| 602 | 4-Chlorophenyl phenyl ether | 330 | ug/kg | 36 | ug/kg | | 47 | 120 | 36 | | 33 | 128 | 36 |
| 633 | Chrysene | 330 | ug/kg | 50 | ug/kg | | 53 | 115 | 36 | | 28 | 126 | 36 |
| 860 | Dibenz(a,h)anthracene | 330 | ug/kg | 38 | ug/kg | | 49 | 119 | 37 | | 26 | 123 | 37 |
| 863 | Dibenzofuran | 330 | ug/kg | 36 | ug/kg | | 48 | 113 | 36 | | 36 | 119 | 36 |
| 891 | Di-n-butyl phthalate | 330 | ug/kg | 59 | ug/kg | | 48 | 115 | 36 | | 33 | 117 | 36 |
| 904 | 1,2-Dichlorobenzene | 330 | ug/kg | 29 | ug/kg | | 49 | 100 | 40 | | 32 | 104 | 40 |
| 907 | 1,3-Dichlorobenzene | 330 | ug/kg | 32 | ug/kg | | 47 | 96 | 44 | | 29 | 99 | 44 |
| 910 | 1,4-Dichlorobenzene | 330 | ug/kg | 36 | ug/kg | C | 38 | 100 | 59 | C | 18 | 110 | 59 |
| 918 | 3,3'-Dichlorobenzidine | 1600 | ug/kg | 140 | ug/kg | | 15 | 80 | 79 | | 10 | 76 | 79 |
| 971 | 2,4-Dichlorophenol | 330 | ug/kg | 45 | ug/kg | | 46 | 111 | 42 | | 31 | 120 | 42 |
| 1082 | Diethyl phthalate | 330 | ug/kg | 38 | ug/kg | | 47 | 116 | 36 | | 32 | 118 | 36 |
| 1145 | 2,4-Dimethylphenol | 330 | ug/kg | 57 | ug/kg | | 34 | 108 | 56 | | 18 | 118 | 56 |
| 1149 | Dimethyl phthalate | 330 | ug/kg | 36 | ug/kg | | 48 | 118 | 38 | | 34 | 120 | 38 |
| 1167 | 4,6-Dinitro-2- | 1600 | ug/kg | 180 | ug/kg | | 25 | 137 | 45 | | 13 | 126 | 45 |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Solid Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | methylphenol | | | | | | | | | | | | |
| 1187 | 2,4-Dinitrophenol | 1600 | ug/kg | 150 | ug/kg | | 10 | 143 | 50 | | 10 | 141 | 50 |
| 1191 | 2,4-Dinitrotoluene | 330 | ug/kg | 41 | ug/kg | C | 48 | 111 | 45 | C | 10 | 171 | 45 |
| 1193 | 2,6-Dinitrotoluene | 330 | ug/kg | 30 | ug/kg | | 50 | 122 | 38 | | 36 | 123 | 38 |
| 1162 | Di-n-octyl phthalate | 330 | ug/kg | 50 | ug/kg | | 40 | 121 | 39 | | 21 | 130 | 39 |
| 1414 | Fluoranthene | 330 | ug/kg | 38 | ug/kg | | 46 | 124 | 42 | | 24 | 138 | 42 |
| 1417 | Fluorene | 330 | ug/kg | 29 | ug/kg | | 48 | 114 | 37 | | 32 | 123 | 37 |
| 1482 | Hexachlorobenzene | 330 | ug/kg | 41 | ug/kg | | 44 | 126 | 29 | | 39 | 127 | 29 |
| 1489 | Hexachlorobutadiene | 330 | ug/kg | 31 | ug/kg | | 36 | 110 | 41 | | 31 | 110 | 41 |
| 1492 | Hexachloro-cyclopentadiene | 1600 | ug/kg | 150 | ug/kg | | 10 | 126 | 90 | | 10 | 102 | 90 |
| 1497 | Hexachloroethane | 330 | ug/kg | 40 | ug/kg | | 30 | 110 | 40 | | 23 | 110 | 40 |
| 1535 | Indeno(1,2,3-cd)pyrene | 330 | ug/kg | 42 | ug/kg | | 47 | 125 | 41 | | 27 | 123 | 41 |
| 1566 | Isophorone | 330 | ug/kg | 32 | ug/kg | | 41 | 102 | 37 | | 27 | 107 | 37 |
| 1829 | 2-Methylnaphthalene | 330 | ug/kg | 33 | ug/kg | | 46 | 105 | 43 | | 33 | 112 | 43 |
| 1851 | 2-Methylphenol | 330 | ug/kg | 37 | ug/kg | | 41 | 102 | 39 | | 33 | 113 | 39 |
| 1857 | 4-Methylphenol | 330 | ug/kg | 27 | ug/kg | | 40 | 110 | 34 | | 33 | 118 | 34 |
| 1932 | Naphthalene | 330 | ug/kg | 35 | ug/kg | | 48 | 101 | 38 | | 34 | 107 | 38 |
| 1960 | 2-Nitroaniline | 1600 | ug/kg | 33 | ug/kg | | 45 | 123 | 33 | | 30 | 124 | 33 |
| 1964 | 3-Nitroaniline | 1600 | ug/kg | 33 | ug/kg | | 26 | 119 | 53 | | 10 | 105 | 53 |
| 1968 | 4-Nitroaniline | 1600 | ug/kg | 47 | ug/kg | | 34 | 122 | 69 | | 10 | 105 | 69 |
| 1972 | Nitrobenzene | 330 | ug/kg | 32 | ug/kg | | 35 | 112 | 36 | | 33 | 112 | 36 |
| 1998 | 2-Nitrophenol | 330 | ug/kg | 44 | ug/kg | | 43 | 110 | 39 | | 29 | 112 | 39 |
| 2001 | 4-Nitrophenol | 1600 | ug/kg | 350 | ug/kg | C | 22 | 128 | 64 | C | 10 | 148 | 64 |
| 2028 | N-Nitrosodiphenylamine | 330 | ug/kg | 37 | ug/kg | | 50 | 118 | 42 | | 35 | 118 | 42 |
| 2024 | N-Nitrosodi-n-propylamine | 330 | ug/kg | 31 | ug/kg | C | 38 | 110 | 50 | C | 12 | 128 | 50 |
| 2118 | Pentachlorophenol | 330 | ug/kg | 34 | ug/kg | C | 10 | 123 | 87 | C | 10 | 144 | 87 |
| 2154 | Phenanthrene | 330 | ug/kg | 43 | ug/kg | | 50 | 117 | 39 | | 32 | 126 | 39 |
| 2155 | Phenol | 330 | ug/kg | 35 | ug/kg | C | 35 | 110 | 50 | C | 10 | 148 | 50 |
| 301 | 2,2'-Oxybis(1-Chloropropane) | 330 | ug/kg | 93 | ug/kg | | | | | | | | |
| 2252 | Pyrene | 330 | ug/kg | 57 | ug/kg | C | 42 | 122 | 66 | C | 10 | 218 | 66 |
| 2515 | 1,2,4-Trichlorobenzene | 330 | ug/kg | 38 | ug/kg | C | 45 | 110 | 54 | C | 16 | 121 | 54 |
| 2555 | 2,4,5-Trichlorophenol | 330 | ug/kg | 69 | ug/kg | | 39 | 117 | 29 | | 29 | 125 | 29 |
| 2559 | 2,4,6-Trichlorophenol | 330 | ug/kg | 57 | ug/kg | | 40 | 110 | 60 | | 21 | 126 | 60 |
| 1425 | 2-Fluorobiphenyl | | | | | X | 43 | 110 | | X | 43 | 110 | |
| 1426 | 2-Fluorophenol | | | | | X | 11 | 116 | | X | 11 | 116 | |

**TABLE 8.2-4-3**
**MS Semivolatiles – Method 8270C**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Solid Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2512 | 2,4,6-Tribromophenol | | | | | X | 35 | 116 | | X | 35 | 116 | |
| 2736 | Nitrobenzene-d5 | | | | | X | 42 | 110 | | X | 42 | 110 | |
| 2737 | Phenol-d5 | | | | | X | 25 | 115 | | X | 25 | 115 | |
| 2738 | Terphenyl-d14 | | | | | X | 37 | 137 | | X | 37 | 137 | |

**TABLE 8.2-4-4**
**MS Semivolatiles – Method 625**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1 | Acenaphthene | 10 | ug/L | 2.7 | ug/L | C | 48 | 113 | | C | 45 | 112 | |
| 5 | Acenaphthylene | 10 | ug/L | 2.7 | ug/L | C | 47 | 111 | | C | 30 | 122 | |
| 122 | Anthracene | 10 | ug/L | 0.89 | ug/L | C | 53 | 107 | | C | 18 | 133 | |
| 202 | Benzo(a)anthracene | 10 | ug/L | 2.8 | ug/L | C | 53 | 110 | | C | 17 | 130 | |
| 205 | Benzo(b)fluoranthene | 10 | ug/L | 2.6 | ug/L | C | 43 | 110 | | C | 29 | 108 | |
| 208 | Benzo(k)fluoranthene | 10 | ug/L | 1.2 | ug/L | C | 36 | 136 | | C | 23 | 127 | |
| 210 | Benzo(ghi)perylene | 10 | ug/L | 3.3 | ug/L | C | 17 | 120 | | C | 10 | 128 | |
| 211 | Benzo(a)pyrene | 10 | ug/L | 3 | ug/L | C | 28 | 114 | | C | 13 | 126 | |
| 289 | bis(2-Chloroethoxy)-methane | 10 | ug/L | 2.6 | ug/L | C | 50 | 106 | | C | 29 | 130 | |
| 293 | bis(2-Chloroethyl) ether | 10 | ug/L | 2.1 | ug/L | C | 44 | 95 | | C | 29 | 103 | |
| 298 | bis(2-Chloroisopropyl) ether | 10 | ug/L | 1.3 | ug/L | C | 21 | 122 | | C | 19 | 150 | |
| 302 | bis(2-Ethylhexyl) phthalate | 10 | ug/L | 2.1 | ug/L | C | 30 | 123 | | C | 12 | 145 | |
| 348 | 4-Bromophenyl phenyl ether | 10 | ug/L | 1 | ug/L | C | 52 | 114 | | C | 32 | 128 | |
| 403 | Butyl benzyl phthalate | 10 | ug/L | 1.9 | ug/L | | | | | | | | |
| 578 | 4-Chloro-3-methylphenol | 10 | ug/L | 1.2 | ug/L | C | 30 | 117 | | C | 21 | 120 | |
| 589 | 2-Chloronaphthalene | 10 | ug/L | 2.5 | ug/L | C | 43 | 111 | | C | 27 | 125 | |
| 600 | 2-Chlorophenol | 10 | ug/L | 1.6 | ug/L | C | 35 | 111 | | C | 10 | 134 | |
| 602 | 4-Chlorophenyl phenyl ether | 10 | ug/L | 1.3 | ug/L | C | 48 | 124 | | C | 33 | 131 | |
| 633 | Chrysene | 10 | ug/L | 0.88 | ug/L | C | 54 | 120 | | C | 20 | 138 | |
| 860 | Dibenz(a,h)anthracene | 10 | ug/L | 1.2 | ug/L | | | | | | | | |
| 891 | Di-n-butyl phthalate | 10 | ug/L | 1.1 | ug/L | C | 44 | 115 | | C | 24 | 126 | |
| 904 | 1,2-Dichlorobenzene | 10 | ug/L | 0.86 | ug/L | C | 43 | 95 | | C | 28 | 103 | |
| 907 | 1,3-Dichlorobenzene | 10 | ug/L | 1 | ug/L | C | 41 | 92 | | C | 31 | 97 | |
| 910 | 1,4-Dichlorobenzene | 10 | ug/L | 0.89 | ug/L | C | 37 | 92 | | C | 33 | 90 | |
| 918 | 3,3'-Dichlorobenzidine | 10 | ug/L | 1.1 | ug/L | C | 19 | 137 | | C | 10 | 139 | |
| 971 | 2,4-Dichlorophenol | 10 | ug/L | 1 | ug/L | C | 33 | 93 | | C | 34 | 100 | |
| 1082 | Diethyl phthalate | 10 | ug/L | 3.2 | ug/L | C | 16 | 129 | | C | 27 | 110 | |
| 1145 | 2,4-Dimethylphenol | 10 | ug/L | 1.1 | ug/L | C | 23 | 74 | | C | 11 | 78 | |
| 1149 | Dimethyl phthalate | 10 | ug/L | 3.7 | ug/L | C | 10 | 115 | | C | 10 | 101 | |

**TABLE 8.2-4-4**
**MS Semivolatiles – Method 625**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2942 | 2-Methyl-4,6-dinitrophenol | 50 | ug/L | 7.5 | ug/L | | | | | | | | |
| 1187 | 2,4-Dinitrophenol | 50 | ug/L | 13 | ug/L | C | 10 | 96 | | C | 10 | 114 | |
| 1191 | 2,4-Dinitrotoluene | 10 | ug/L | 0.8 | ug/L | C | 37 | 131 | | C | 37 | 124 | |
| 1193 | 2,6-Dinitrotoluene | 10 | ug/L | 2.8 | ug/L | C | 40 | 121 | | C | 23 | 130 | |
| 1162 | Di-n-octyl phthalate | 10 | ug/L | 2 | ug/L | C | 25 | 123 | | C | 31 | 110 | |
| 1414 | Fluoranthene | 10 | ug/L | 0.94 | ug/L | C | 35 | 131 | | C | 26 | 123 | |
| 1417 | Fluorene | 10 | ug/L | 2.9 | ug/L | C | 45 | 124 | | C | 32 | 122 | |
| 1482 | Hexachlorobenzene | 10 | ug/L | 1.8 | ug/L | C | 53 | 110 | | C | 34 | 129 | |
| 1489 | Hexachlorobutadiene | 10 | ug/L | 1.2 | ug/L | C | 45 | 96 | | C | 31 | 109 | |
| 1497 | Hexachloroethane | 10 | ug/L | 2.3 | ug/L | C | 38 | 90 | | C | 32 | 95 | |
| 1535 | Indeno(1,2,3-cd)pyrene | 10 | ug/L | 1.2 | ug/L | C | 28 | 112 | | C | 13 | 127 | |
| 1566 | Isophorone | 10 | ug/L | 2.7 | ug/L | C | 44 | 105 | | C | 19 | 133 | |
| 1932 | Naphthalene | 10 | ug/L | 0.72 | ug/L | C | 44 | 99 | | C | 32 | 111 | |
| 1972 | Nitrobenzene | 10 | ug/L | 2.6 | ug/L | C | 44 | 102 | | C | 34 | 114 | |
| 1998 | 2-Nitrophenol | 10 | ug/L | 0.99 | ug/L | C | 10 | 99 | | C | 19 | 107 | |
| 2001 | 4-Nitrophenol | 50 | ug/L | 4.8 | ug/L | C | 10 | 128 | | C | 10 | 144 | |
| 2024 | N-Nitrosodi-n-propylamine | 10 | ug/L | 1 | ug/L | C | 31 | 113 | | C | 10 | 230 | |
| 2118 | Pentachlorophenol | 10 | ug/L | 0.58 | ug/L | C | 10 | 113 | | C | 10 | 122 | |
| 2154 | Phenanthrene | 10 | ug/L | 2.4 | ug/L | C | 50 | 109 | | C | 30 | 120 | |
| 2155 | Phenol | 10 | ug/L | 1.3 | ug/L | C | 12 | 116 | | C | 10 | 107 | |
| 2252 | Pyrene | 10 | ug/L | 1.4 | ug/L | C | 39 | 159 | | C | 15 | 185 | |
| 2515 | 1,2,4-Trichlorobenzene | 10 | ug/L | 2.5 | ug/L | C | 39 | 136 | | C | 40 | 133 | |
| 2559 | 2,4,6-Trichlorophenol | 10 | ug/L | 1.3 | ug/L | C | 22 | 102 | | C | 18 | 118 | |
| 1425 | 2-Fluorobiphenyl | | | | | X | 38 | 106 | | X | 38 | 106 | |
| 1426 | 2-Fluorophenol | | | | | X | 17 | 106 | | X | 17 | 106 | |
| 2512 | 2,4,6-Tribromophenol | | | | | X | 13 | 145 | | X | 13 | 145 | |
| 2736 | Nitrobenzene-d5 | | | | | X | 36 | 148 | | X | 36 | 148 | |
| 2737 | Phenol-d5 | | | | | X | 15 | 126 | | X | 15 | 126 | |
| 2738 | Terphenyl-d14 | | | | | X | 10 | 169 | | X | 10 | 169 | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS MS/MSD, and RPD)[1]**

| Water - 25 mL | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/L | 0.63 | ug/L | C | 80 | 116 | 20 | C | 76 | 118 | 20 |
| 318 | Bromobenzene | 1 | ug/L | 0.75 | ug/L | | | | | | | | |
| 321 | Bromochloromethane | 1 | ug/L | 0.59 | ug/L | | | | | | | | |
| 323 | Bromodichloromethane | 1 | ug/L | 0.52 | ug/L | | | | | | | | |
| 340 | Bromoform | 1 | ug/L | 0.24 | ug/L | | | | | | | | |
| 343 | Bromomethane | 2 | ug/L | 1.2 | ug/L | | | | | | | | |
| 393 | n-Butylbenzene | 1 | ug/L | 0.75 | ug/L | | | | | | | | |
| 395 | sec-Butylbenzene | 1 | ug/L | 0.76 | ug/L | | | | | | | | |
| 398 | tert-Butylbenzene | 1 | ug/L | 0.81 | ug/L | | | | | | | | |
| 463 | Carbon tetrachloride | 1 | ug/L | 0.55 | ug/L | | | | | | | | |
| 521 | Chlorobenzene | 1 | ug/L | 0.72 | ug/L | C | 76 | 117 | 20 | C | 76 | 117 | 20 |
| 534 | Chlorodibromomethane | 1 | ug/L | 0.2 | ug/L | | | | | | | | |
| 550 | Chloroethane | 2 | ug/L | 0.82 | ug/L | | | | | | | | |
| 569 | Chloroform | 1 | ug/L | 0.71 | ug/L | | | | | | | | |
| 574 | Chloromethane | 2 | ug/L | 0.73 | ug/L | | | | | | | | |
| 614 | 2-Chlorotoluene | 1 | ug/L | 0.77 | ug/L | | | | | | | | |
| 617 | 4-Chlorotoluene | 1 | ug/L | 0.8 | ug/L | | | | | | | | |
| 539 | 1,2-Dibromo-3-chloropropane | 2 | ug/L | 0.26 | ug/L | | | | | | | | |
| 870 | 1,2-Dibromoethane | 1 | ug/L | 0.41 | ug/L | | | | | | | | |
| 888 | Dibromomethane | 1 | ug/L | 0.46 | ug/L | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/L | 0.68 | ug/L | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/L | 0.8 | ug/L | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/L | 0.64 | ug/L | | | | | | | | |
| 924 | Dichlorodifluoro-methane | 2 | ug/L | 0.55 | ug/L | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/L | 0.63 | ug/L | | | | | | | | |
| 936 | 1,2-Dichloroethane | 1 | ug/L | 0.57 | ug/L | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 0.5 | ug/L | 0.21 | ug/L | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 0.5 | ug/L | 0.27 | ug/L | | | | | | | | |
| 943 | 1,1-Dichloroethene | 1 | ug/L | 0.67 | ug/L | C | 63 | 130 | 20 | C | 62 | 130 | 20 |
| 986 | 1,2-Dichloropropane | 1 | ug/L | 0.65 | ug/L | | | | | | | | |
| 989 | 1,3-Dichloropropane | 1 | ug/L | 0.4 | ug/L | | | | | | | | |
| 990 | 2,2-Dichloropropane | 1 | ug/L | 0.27 | ug/L | | | | | | | | |
| 996 | 1,1-Dichloropropene | 1 | ug/L | 0.51 | ug/L | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/L | 0.64 | ug/L | | | | | | | | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS MS/MSD, and RPD)[1]**

| Water - 25 mL | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 1 | ug/L | 0.75 | ug/L | | | | | | | | |
| 1578 | Isopropylbenzene | 1 | ug/L | 0.67 | ug/L | | | | | | | | |
| 1590 | p-Isopropyltoluene | 1 | ug/L | 0.75 | ug/L | | | | | | | | |
| 1811 | Methylene chloride | 1 | ug/L | 0.19 | ug/L | | | | | | | | |
| 1932 | Naphthalene | 1 | ug/L | 0.79 | ug/L | | | | | | | | |
| 2247 | n-Propylbenzene | 1 | ug/L | 0.86 | ug/L | | | | | | | | |
| 2355 | Styrene | 1 | ug/L | 0.65 | ug/L | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 1 | ug/L | 0.89 | ug/L | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/L | 0.39 | ug/L | | | | | | | | |
| 2445 | Tetrachloroethene | 1 | ug/L | 0.74 | ug/L | | | | | | | | |
| 2489 | Toluene | 1 | ug/L | 0.75 | ug/L | C | 74 | 119 | 20 | C | 70 | 119 | 20 |
| 2514 | 1,2,3-Trichlorobenzene | 1 | ug/L | 0.81 | ug/L | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 1 | ug/L | 0.66 | ug/L | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/L | 0.71 | ug/L | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/L | 0.42 | ug/L | | | | | | | | |
| 2525 | Trichloroethene | 1 | ug/L | 0.62 | ug/L | C | 75 | 122 | 20 | C | 62 | 130 | 20 |
| 1428 | Trichlorofluoromethane | 2 | ug/L | 1.8 | ug/L | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 1 | ug/L | 0.49 | ug/L | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 1 | ug/L | 0.69 | ug/L | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 1 | ug/L | 0.76 | ug/L | | | | | | | | |
| 2613 | Vinyl chloride | 2 | ug/L | 0.66 | ug/L | | | | | | | | |
| 2940 | m-Xylene & p-Xylene | 1 | ug/L | 0.53 | ug/L | | | | | | | | |
| 2623 | o-Xylene | 0.5 | ug/L | 0.34 | ug/L | | | | | | | | |
| 337 | 4-Bromofluorobenzene | | | | | X | 74 | 116 | | X | 74 | 116 | |
| 2735 | 1,2-Dichloroethane-d4 | | | | | X | 61 | 128 | | X | 61 | 128 | |
| 2740 | Toluene-d8 | | | | | X | 76 | 110 | | X | 76 | 110 | |
| 2863 | Dibromofluoromethane | | | | | X | 73 | 122 | | X | 73 | 122 | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water - 5 mL | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 5 | ug/L | 0.63 | ug/L | C | 79 | 116 | 20 | C | 73 | 123 | 11 |
| 318 | Bromobenzene | 5 | ug/L | 0.63 | ug/L | | | | | | | | |
| 321 | Bromochloromethane | 5 | ug/L | 0.63 | ug/L | | | | | | | | |
| 323 | Bromodichloromethane | 5 | ug/L | 0.63 | ug/L | | 90 | 114 | 18 | | 90 | 114 | 18 |
| 340 | Bromoform | 5 | ug/L | 0.5 | ug/L | | 71 | 118 | 34 | | 71 | 118 | 34 |
| 343 | Bromomethane | 10 | ug/L | 1.2 | ug/L | | 47 | 160 | 22 | | 47 | 160 | 22 |
| 393 | n-Butylbenzene | 5 | ug/L | 0.75 | ug/L | | | | | | | | |
| 395 | sec-Butylbenzene | 5 | ug/L | 0.76 | ug/L | | | | | | | | |
| 398 | tert-Butylbenzene | 5 | ug/L | 0.81 | ug/L | | | | | | | | |
| 463 | Carbon tetrachloride | 5 | ug/L | 0.62 | ug/L | | 72 | 133 | 20 | | 61 | 143 | 14 |
| 521 | Chlorobenzene | 5 | ug/L | 0.72 | ug/L | C | 81 | 115 | 20 | C | 70 | 122 | 14 |
| 534 | Chlorodibromomethane | 5 | ug/L | 0.57 | ug/L | | | | | | | | |
| 550 | Chloroethane | 10 | ug/L | 0.92 | ug/L | | 80 | 118 | 17 | | 80 | 118 | 17 |
| 569 | Chloroform | 5 | ug/L | 0.71 | ug/L | | 81 | 122 | 20 | | 65 | 131 | 20 |
| 574 | Chloromethane | 10 | ug/L | 0.73 | ug/L | | 61 | 129 | 20 | | 61 | 129 | 20 |
| 614 | 2-Chlorotoluene | 5 | ug/L | 0.77 | ug/L | | | | | | | | |
| 617 | 4-Chlorotoluene | 5 | ug/L | 0.8 | ug/L | | | | | | | | |
| 539 | 1,2-Dibromo-3-chloropropane | 10 | ug/L | 3.1 | ug/L | | | | | | | | |
| 870 | 1,2-Dibromoethane | 5 | ug/L | 0.63 | ug/L | | | | | | | | |
| 888 | Dibromomethane | 5 | ug/L | 0.84 | ug/L | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 5 | ug/L | 0.68 | ug/L | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 5 | ug/L | 0.8 | ug/L | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 5 | ug/L | 0.64 | ug/L | | | | | | | | |
| 924 | Dichlorodifluoro-methane | 10 | ug/L | 0.88 | ug/L | | | | | | | | |
| 933 | 1,1-Dichloroethane | 5 | ug/L | 0.63 | ug/L | | 87 | 120 | 22 | | 87 | 120 | 22 |
| 936 | 1,2-Dichloroethane | 5 | ug/L | 0.57 | ug/L | | 73 | 127 | 20 | | 67 | 132 | 18 |
| 948 | cis-1,2-Dichloroethene | 2.5 | ug/L | 0.27 | ug/L | | 50 | 150 | 50 | | 50 | 150 | 50 |
| 950 | trans-1,2-Dichloroethene | 2.5 | ug/L | 0.8 | ug/L | | 70 | 130 | 50 | | 70 | 130 | 50 |
| 943 | 1,1-Dichloroethene | 5 | ug/L | 0.67 | ug/L | C | 65 | 119 | 20 | C | 57 | 138 | 15 |
| 986 | 1,2-Dichloropropane | 5 | ug/L | 0.65 | ug/L | | 91 | 113 | 18 | | 91 | 113 | 18 |
| 989 | 1,3-Dichloropropane | 5 | ug/L | 0.69 | ug/L | | | | | | | | |
| 990 | 2,2-Dichloropropane | 5 | ug/L | 1.1 | ug/L | | | | | | | | |
| 996 | 1,1-Dichloropropene | 5 | ug/L | 0.64 | ug/L | | | | | | | | |
| 1332 | Ethylbenzene | 5 | ug/L | 0.84 | ug/L | | 90 | 116 | 18 | | 90 | 116 | 18 |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Water - 5 mL Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1489 | Hexachlorobutadiene | 5 | ug/L | 0.75 | ug/L | | | | | | | | |
| 1578 | Isopropylbenzene | 5 | ug/L | 0.67 | ug/L | | | | | | | | |
| 1590 | p-Isopropyltoluene | 5 | ug/L | 0.75 | ug/L | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/L | 1.4 | ug/L | | 81 | 134 | 27 | | 81 | 134 | 27 |
| 1932 | Naphthalene | 5 | ug/L | 0.98 | ug/L | | | | | | | | |
| 2247 | n-Propylbenzene | 5 | ug/L | 0.86 | ug/L | | | | | | | | |
| 2355 | Styrene | 5 | ug/L | 0.65 | ug/L | | 81 | 113 | 18 | | 81 | 113 | 18 |
| 2437 | 1,1,1,2-Tetrachloroethane | 5 | ug/L | 0.89 | ug/L | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 5 | ug/L | 0.7 | ug/L | | 80 | 127 | 24 | | 80 | 127 | 24 |
| 2445 | Tetrachloroethene | 5 | ug/L | 0.74 | ug/L | | 78 | 131 | 20 | | 70 | 130 | 14 |
| 2489 | Toluene | 5 | ug/L | 0.75 | ug/L | C | 76 | 119 | 20 | C | 67 | 129 | 14 |
| 2514 | 1,2,3-Trichlorobenzene | 5 | ug/L | 0.81 | ug/L | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 5 | ug/L | 0.87 | ug/L | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 5 | ug/L | 0.71 | ug/L | | 91 | 113 | 17 | | 91 | 113 | 17 |
| 2522 | 1,1,2-Trichloroethane | 5 | ug/L | 0.54 | ug/L | | 81 | 117 | 20 | | 81 | 117 | 20 |
| 2525 | Trichloroethene | 5 | ug/L | 0.74 | ug/L | C | 80 | 122 | 20 | C | 58 | 141 | 17 |
| 1428 | Trichlorofluoromethane | 10 | ug/L | 1.8 | ug/L | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 5 | ug/L | 0.68 | ug/L | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 5 | ug/L | 0.69 | ug/L | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 5 | ug/L | 0.76 | ug/L | | | | | | | | |
| 2613 | Vinyl chloride | 10 | ug/L | 0.66 | ug/L | | 53 | 134 | 20 | | 51 | 133 | 18 |
| 2940 | m-Xylene & p-Xylene | 5 | ug/L | 1.4 | ug/L | | | | | | | | |
| 2623 | o-Xylene | 2.5 | ug/L | 0.56 | ug/L | | | | | | | | |
| 337 | 4-Bromofluorobenzene | | | | | X | 80 | 114 | | X | 80 | 114 | |
| 2735 | 1,2-Dichloroethane-d4 | | | | | X | 77 | 120 | | X | 77 | 120 | |
| 2740 | Toluene-d8 | | | | | X | 78 | 111 | | X | 78 | 111 | |
| 2863 | Dibromofluoromethane | | | | | X | 78 | 110 | | X | 78 | 110 | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Encore # | Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 196 | Benzene | 250 | ug/kg | 25 | ug/kg | C | 75 | 129 | 20 | C | 55 | 138 | 20 |
| 318 | Bromobenzene | 250 | ug/kg | 26 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 250 | ug/kg | 29 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 250 | ug/kg | 27 | ug/kg | | 35 | 155 | 21 | | 35 | 155 | 21 |
| 340 | Bromoform | 250 | ug/kg | 49 | ug/kg | | 45 | 169 | 22 | | 45 | 169 | 22 |
| 343 | Bromomethane | 500 | ug/kg | 34 | ug/kg | | 10 | 242 | 11 | | 10 | 242 | 11 |
| 393 | n-Butylbenzene | 250 | ug/kg | 27 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 250 | ug/kg | 35 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 250 | ug/kg | 26 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 250 | ug/kg | 22 | ug/kg | | 66 | 141 | 55 | | 39 | 149 | 55 |
| 521 | Chlorobenzene | 250 | ug/kg | 25 | ug/kg | C | 75 | 127 | 22 | C | 49 | 139 | 22 |
| 534 | Chlorodibromomethane | 250 | ug/kg | 24 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 500 | ug/kg | 39 | ug/kg | | 82 | 114 | 11 | | 82 | 114 | 11 |
| 569 | Chloroform | 250 | ug/kg | 19 | ug/kg | | 77 | 126 | 17 | | 52 | 140 | 17 |
| 574 | Chloromethane | 500 | ug/kg | 36 | ug/kg | | 10 | 273 | 18 | | 10 | 273 | 18 |
| 614 | 2-Chlorotoluene | 250 | ug/kg | 26 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 250 | ug/kg | 29 | ug/kg | | | | | | | | |
| 539 | 1,2-Dibromo-3-chloropropane | 500 | ug/kg | 29 | ug/kg | | | | | | | | |
| 870 | 1,2-Dibromoethane | 250 | ug/kg | 28 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 250 | ug/kg | 33 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 250 | ug/kg | 28 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 250 | ug/kg | 28 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 250 | ug/kg | 27 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoro-methane | 500 | ug/kg | 34 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 250 | ug/kg | 26 | ug/kg | | 59 | 155 | 12 | | 33 | 137 | 14 |
| 936 | 1,2-Dichloroethane | 250 | ug/kg | 25 | ug/kg | | 76 | 127 | 41 | | 44 | 145 | 41 |
| 948 | cis-1,2-Dichloroethene | 125 | ug/kg | 26 | ug/kg | | 50 | 150 | 50 | | 50 | 150 | 50 |
| 950 | trans-1,2-Dichloroethene | 125 | ug/kg | 17 | ug/kg | | 54 | 156 | 10 | | 54 | 156 | 10 |
| 943 | 1,1-Dichloroethene | 250 | ug/kg | 52 | ug/kg | C | 55 | 142 | 27 | C | 43 | 147 | 27 |
| 986 | 1,2-Dichloropropane | 250 | ug/kg | 31 | ug/kg | | 10 | 210 | 13 | | 10 | 210 | 13 |
| 989 | 1,3-Dichloropropane | 250 | ug/kg | 25 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 250 | ug/kg | 21 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 250 | ug/kg | 24 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 250 | ug/kg | 41 | ug/kg | | 37 | 162 | 14 | | 37 | 162 | 14 |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Encore | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 250 | ug/kg | 46 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 250 | ug/kg | 55 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 250 | ug/kg | 26 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 250 | ug/kg | 64 | ug/kg | | 10 | 221 | 22 | | 10 | 221 | 22 |
| 1932 | Naphthalene | 250 | ug/kg | 28 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 250 | ug/kg | 39 | ug/kg | | | | | | | | |
| 2355 | Styrene | 250 | ug/kg | 47 | ug/kg | | 79 | 100 | 10 | | 79 | 110 | 10 |
| 2437 | 1,1,1,2-Tetrachloroethane | 250 | ug/kg | 30 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 250 | ug/kg | 29 | ug/kg | | 46 | 157 | 24 | | 46 | 157 | 24 |
| 2445 | Tetrachloroethene | 250 | ug/kg | 20 | ug/kg | | 68 | 136 | 22 | | 39 | 154 | 22 |
| 2489 | Toluene | 250 | ug/kg | 23 | ug/kg | C | 71 | 130 | 24 | C | 46 | 147 | 24 |
| 2514 | 1,2,3-Trichlorobenzene | 250 | ug/kg | 34 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 250 | ug/kg | 39 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 250 | ug/kg | 23 | ug/kg | | 52 | 162 | 12 | | 52 | 162 | 12 |
| 2522 | 1,1,2-Trichloroethane | 250 | ug/kg | 27 | ug/kg | | 52 | 150 | 19 | | 52 | 150 | 19 |
| 2525 | Trichloroethene | 250 | ug/kg | 27 | ug/kg | C | 70 | 131 | 23 | C | 46 | 143 | 23 |
| 1428 | Trichlorofluoromethane | 500 | ug/kg | 38 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 250 | ug/kg | 30 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 250 | ug/kg | 13 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 250 | ug/kg | 26 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 500 | ug/kg | 66 | ug/kg | | 41 | 138 | 43 | | 29 | 150 | 43 |
| 2940 | m-Xylene & p-Xylene | 250 | ug/kg | 42 | ug/kg | | | | | | | | |
| 2623 | o-Xylene | 125 | ug/kg | 29 | ug/kg | | | | | | | | |
| 337 | 4-Bromofluorobenzene | | | | | X | 47 | 158 | | X | 47 | 158 | |
| 2735 | 1,2-Dichloroethane-d4 | | | | | X | 61 | 130 | | X | 61 | 130 | |
| 2740 | Toluene-d8 | | | | | X | 60 | 143 | | X | 60 | 143 | |
| 2863 | Dibromofluoromethane | | | | | X | 59 | 138 | | X | 59 | 138 | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Low Level Encore | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 5 | ug/kg | 0.1 | ug/kg | C | 75 | 129 | 20 | C | 55 | 138 | 20 |
| 318 | Bromobenzene | 5 | ug/kg | 0.94 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 5 | ug/kg | 0.51 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 5 | ug/kg | 0.079 | ug/kg | | 35 | 155 | 21 | | 35 | 155 | 21 |
| 340 | Bromoform | 5 | ug/kg | 0.51 | ug/kg | | 45 | 169 | 22 | | 45 | 169 | 22 |
| 343 | Bromomethane | 10 | ug/kg | 0.13 | ug/kg | | 10 | 242 | 11 | | 10 | 242 | 11 |
| 393 | n-Butylbenzene | 5 | ug/kg | 1.3 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 5 | ug/kg | 1.3 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 5 | ug/kg | 1.1 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 5 | ug/kg | 0.1 | ug/kg | | 66 | 141 | 55 | | 39 | 149 | 55 |
| 521 | Chlorobenzene | 5 | ug/kg | 0.87 | ug/kg | C | 75 | 127 | 22 | C | 49 | 139 | 22 |
| 534 | Chlorodibromomethane | 5 | ug/kg | 0.24 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 10 | ug/kg | 0.19 | ug/kg | | 82 | 114 | 11 | | 82 | 114 | 11 |
| 569 | Chloroform | 5 | ug/kg | 0.062 | ug/kg | | 77 | 126 | 17 | | 52 | 140 | 17 |
| 574 | Chloromethane | 10 | ug/kg | 0.66 | ug/kg | | 10 | 273 | 18 | | 10 | 273 | 18 |
| 614 | 2-Chlorotoluene | 5 | ug/kg | 1.2 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 5 | ug/kg | 1.2 | ug/kg | | | | | | | | |
| 539 | 1,2-Dibromo-3-chloropropane | 10 | ug/kg | 0.38 | ug/kg | | | | | | | | |
| 870 | 1,2-Dibromoethane | 5 | ug/kg | 1.8 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 5 | ug/kg | 0.065 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 5 | ug/kg | 0.99 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 5 | ug/kg | 1 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 5 | ug/kg | 1.1 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoro-methane | 10 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 5 | ug/kg | 0.1 | ug/kg | | 59 | 155 | 12 | | 33 | 137 | 14 |
| 936 | 1,2-Dichloroethane | 5 | ug/kg | 0.088 | ug/kg | | 76 | 127 | 41 | | 44 | 145 | 41 |
| 948 | cis-1,2-Dichloroethene | 2.5 | ug/kg | 0.24 | ug/kg | | 50 | 150 | 50 | | 50 | 150 | 50 |
| 950 | trans-1,2-Dichloroethene | 2.5 | ug/kg | 0.21 | ug/kg | | 54 | 156 | 10 | | 54 | 156 | 10 |
| 943 | 1,1-Dichloroethene | 5 | ug/kg | 0.2 | ug/kg | C | 55 | 142 | 27 | C | 43 | 147 | 27 |
| 986 | 1,2-Dichloropropane | 5 | ug/kg | 0.13 | ug/kg | | 10 | 210 | 13 | | 10 | 210 | 13 |
| 989 | 1,3-Dichloropropane | 5 | ug/kg | 0.097 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 5 | ug/kg | 0.5 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 5 | ug/kg | 0.1 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 5 | ug/kg | 0.99 | ug/kg | | 37 | 162 | 14 | | 37 | 162 | 14 |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Low Level Encore Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1489 | Hexachlorobutadiene | 5 | ug/kg | 1.3 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 5 | ug/kg | 0.99 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 5 | ug/kg | 1.3 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/kg | 0.3 | ug/kg | | 10 | 221 | 22 | | 10 | 221 | 22 |
| 1932 | Naphthalene | 5 | ug/kg | 0.86 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 5 | ug/kg | 1.4 | ug/kg | | | | | | | | |
| 2355 | Styrene | 5 | ug/kg | 1 | ug/kg | | 79 | 100 | 10 | | 79 | 110 | 10 |
| 2437 | 1,1,1,2-Tetrachloroethane | 5 | ug/kg | 0.23 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 5 | ug/kg | 0.61 | ug/kg | | 46 | 157 | 24 | | 46 | 157 | 24 |
| 2445 | Tetrachloroethene | 5 | ug/kg | 0.7 | ug/kg | | 68 | 136 | 22 | | 39 | 154 | 22 |
| 2489 | Toluene | 5 | ug/kg | 0.67 | ug/kg | C | 71 | 130 | 24 | C | 46 | 147 | 24 |
| 2514 | 1,2,3-Trichlorobenzene | 5 | ug/kg | 0.79 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 5 | ug/kg | 0.69 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 5 | ug/kg | 0.062 | ug/kg | | 52 | 162 | 12 | | 52 | 162 | 12 |
| 2522 | 1,1,2-Trichloroethane | 5 | ug/kg | 1.2 | ug/kg | | 52 | 150 | 19 | | 52 | 150 | 19 |
| 2525 | Trichloroethene | 5 | ug/kg | 0.1 | ug/kg | C | 70 | 131 | 23 | C | 46 | 143 | 23 |
| 1428 | Trichlorofluoromethane | 10 | ug/kg | 0.1 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 5 | ug/kg | 0.69 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 5 | ug/kg | 1.2 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 5 | ug/kg | 1.2 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 10 | ug/kg | 0.5 | ug/kg | | 41 | 138 | 43 | | 29 | 150 | 43 |
| 2940 | m-Xylene & p-Xylene | 5 | ug/kg | 2 | ug/kg | | | | | | | | |
| 2623 | o-Xylene | 2.5 | ug/kg | 0.98 | ug/kg | | | | | | | | |
| 337 | 4-Bromofluorobenzene | | | | | X | 47 | 158 | | X | 47 | 158 | |
| 2735 | 1,2-Dichloroethane-d4 | | | | | X | 61 | 130 | | X | 61 | 130 | |
| 2740 | Toluene-d8 | | | | | X | 60 | 143 | | X | 60 | 143 | |
| 2863 | Dibromofluoromethane | | | | | X | 59 | 138 | | X | 59 | 138 | |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Frozen Encore | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 5 | ug/kg | 0.63 | ug/kg | C | 75 | 129 | 20 | C | 55 | 138 | 20 |
| 318 | Bromobenzene | 5 | ug/kg | 0.75 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 5 | ug/kg | 0.63 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 5 | ug/kg | 0.65 | ug/kg | | 35 | 155 | 21 | | 35 | 155 | 21 |
| 340 | Bromoform | 5 | ug/kg | 0.5 | ug/kg | | 45 | 169 | 22 | | 45 | 169 | 22 |
| 343 | Bromomethane | 10 | ug/kg | 1.2 | ug/kg | | 10 | 242 | 11 | | 10 | 242 | 11 |
| 393 | n-Butylbenzene | 5 | ug/kg | 0.75 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 5 | ug/kg | 0.76 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 5 | ug/kg | 0.81 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 5 | ug/kg | 0.62 | ug/kg | | 66 | 141 | 55 | | 39 | 149 | 55 |
| 521 | Chlorobenzene | 5 | ug/kg | 0.72 | ug/kg | C | 75 | 127 | 22 | C | 49 | 139 | 22 |
| 534 | Chlorodibromomethane | 5 | ug/kg | 0.57 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 10 | ug/kg | 0.92 | ug/kg | | 82 | 114 | 11 | | 82 | 114 | 11 |
| 569 | Chloroform | 5 | ug/kg | 0.71 | ug/kg | | 77 | 126 | 17 | | 52 | 140 | 17 |
| 574 | Chloromethane | 10 | ug/kg | 0.73 | ug/kg | | 10 | 273 | 18 | | 10 | 273 | 18 |
| 614 | 2-Chlorotoluene | 5 | ug/kg | 0.77 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 5 | ug/kg | 0.8 | ug/kg | | | | | | | | |
| 539 | 1,2-Dibromo-3-chloropropane | 10 | ug/kg | 3.1 | ug/kg | | | | | | | | |
| 870 | 1,2-Dibromoethane | 5 | ug/kg | 0.63 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 5 | ug/kg | 0.84 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 5 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 5 | ug/kg | 0.8 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 5 | ug/kg | 0.64 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoro-methane | 10 | ug/kg | 0.88 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 5 | ug/kg | 0.63 | ug/kg | | 59 | 155 | 12 | | 33 | 137 | 14 |
| 936 | 1,2-Dichloroethane | 5 | ug/kg | 0.57 | ug/kg | | 76 | 127 | 41 | | 44 | 145 | 41 |
| 948 | cis-1,2-Dichloroethene | 2.5 | ug/kg | 0.27 | ug/kg | | 50 | 150 | 50 | | 50 | 150 | 50 |
| 950 | trans-1,2-Dichloroethene | 2.5 | ug/kg | 0.8 | ug/kg | | 54 | 156 | 10 | | 54 | 156 | 10 |
| 943 | 1,1-Dichloroethene | 5 | ug/kg | 0.67 | ug/kg | C | 55 | 142 | 27 | C | 43 | 147 | 27 |
| 986 | 1,2-Dichloropropane | 5 | ug/kg | 0.65 | ug/kg | | 10 | 210 | 13 | | 10 | 210 | 13 |
| 989 | 1,3-Dichloropropane | 5 | ug/kg | 0.69 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 5 | ug/kg | 1.1 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 5 | ug/kg | 0.64 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 5 | ug/kg | 0.84 | ug/kg | | 37 | 162 | 14 | | 37 | 162 | 14 |

**TABLE 8.2-4-5**
**MS Volatiles – Method 8260B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Frozen Encore Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1489 | Hexachlorobutadiene | 5 | ug/kg | 0.75 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 5 | ug/kg | 0.67 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 5 | ug/kg | 0.75 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/kg | 1.4 | ug/kg | | 10 | 221 | 22 | | 10 | 221 | 22 |
| 1932 | Naphthalene | 5 | ug/kg | 0.98 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 5 | ug/kg | 0.86 | ug/kg | | | | | | | | |
| 2355 | Styrene | 5 | ug/kg | 0.65 | ug/kg | | 79 | 100 | 10 | | 79 | 110 | 10 |
| 2437 | 1,1,1,2-Tetrachloroethane | 5 | ug/kg | 0.89 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 5 | ug/kg | 0.7 | ug/kg | | 46 | 157 | 24 | | 46 | 157 | 24 |
| 2445 | Tetrachloroethene | 5 | ug/kg | 0.74 | ug/kg | | 68 | 136 | 22 | | 39 | 154 | 22 |
| 2489 | Toluene | 5 | ug/kg | 0.75 | ug/kg | C | 71 | 130 | 24 | C | 46 | 147 | 24 |
| 2514 | 1,2,3-Trichlorobenzene | 5 | ug/kg | 0.81 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 5 | ug/kg | 0.87 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 5 | ug/kg | 0.71 | ug/kg | | 52 | 162 | 12 | | 52 | 162 | 12 |
| 2522 | 1,1,2-Trichloroethane | 5 | ug/kg | 0.54 | ug/kg | | 52 | 150 | 19 | | 52 | 150 | 19 |
| 2525 | Trichloroethene | 5 | ug/kg | 0.7 | ug/kg | C | 70 | 131 | 23 | C | 46 | 143 | 23 |
| 1428 | Trichlorofluoromethane | 10 | ug/kg | 1.8 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 5 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 5 | ug/kg | 0.69 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 5 | ug/kg | 0.76 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 10 | ug/kg | 0.66 | ug/kg | | 41 | 138 | 43 | | 29 | 150 | 43 |
| 2940 | m-Xylene & p-Xylene | 5 | ug/kg | 1.4 | ug/kg | | | | | | | | |
| 2623 | o-Xylene | 2.5 | ug/kg | 0.56 | ug/kg | | | | | | | | |
| 337 | 4-Bromofluorobenzene | | | | | X | 47 | 158 | | X | 47 | 158 | |
| 2735 | 1,2-Dichloroethane-d4 | | | | | X | 61 | 130 | | X | 61 | 130 | |
| 2740 | Toluene-d8 | | | | | X | 60 | 143 | | X | 60 | 143 | |
| 2863 | Dibromofluoromethane | | | | | X | 59 | 138 | | X | 59 | 138 | |

**TABLE 8.2-4-6**
**MS Volatiles – Method 624**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Water Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 196 | Benzene | 5 | ug/L | 0.63 | ug/L | C | 79 | 125 | | C | 83 | 123 | |
| 323 | Bromodichloro-methane | 5 | ug/L | 0.63 | ug/L | C | 65 | 144 | | C | 57 | 153 | |
| 340 | Bromoform | 5 | ug/L | 0.5 | ug/L | C | 46 | 151 | | C | 47 | 165 | |
| 343 | Bromomethane | 10 | ug/L | 1.2 | ug/L | C | 47 | 160 | | C | 76 | 150 | |
| 463 | Carbon tetrachloride | 5 | ug/L | 0.62 | ug/L | C | 63 | 141 | | C | 73 | 135 | |
| 521 | Chlorobenzene | 5 | ug/L | 0.72 | ug/L | C | 81 | 121 | | C | 85 | 120 | |
| 535 | Dibromochloro-methane | 5 | ug/L | 0.57 | ug/L | C | 58 | 140 | | C | 60 | 146 | |
| 550 | Chloroethane | 10 | ug/L | 0.92 | ug/L | C | 38 | 170 | | C | 71 | 154 | |
| 568 | 2-Chloroethyl vinyl ether | -- | ug/L | 1.4 | ug/L | C | 27 | 166 | | C | 10 | 153 | |
| 569 | Chloroform | 5 | ug/L | 0.71 | ug/L | C | 70 | 141 | | C | 10 | 204 | |
| 574 | Chloromethane | 10 | ug/L | 0.73 | ug/L | C | 36 | 158 | | C | 44 | 151 | |
| 904 | 1,2-Dichlorobenzene | 5 | ug/L | 0.68 | ug/L | C | 18 | 190 | | C | 18 | 190 | |
| 907 | 1,3-Dichlorobenzene | 5 | ug/L | 0.8 | ug/L | C | 59 | 156 | | C | 59 | 156 | |
| 910 | 1,4-Dichlorobenzene | 5 | ug/L | 0.64 | ug/L | C | 18 | 190 | | C | 18 | 190 | |
| 933 | 1,1-Dichloroethane | 5 | ug/L | 0.63 | ug/L | C | 64 | 145 | | C | 53 | 148 | |
| 936 | 1,2-Dichloroethane | 5 | ug/L | 0.57 | ug/L | C | 66 | 150 | | C | 52 | 167 | |
| 950 | trans-1,2-Dichloroethene | 2.5 | ug/L | 0.8 | ug/L | C | 58 | 140 | | C | 55 | 139 | |
| 943 | 1,1-Dichloroethene | 5 | ug/L | 0.67 | ug/L | C | 70 | 143 | | C | 55 | 142 | |
| 986 | 1,2-Dichloropropane | 5 | ug/L | 0.65 | ug/L | C | 71 | 142 | | C | 64 | 146 | |
| 998 | cis-1,3-Dichloropropene | 5 | ug/L | 0.61 | ug/L | C | 59 | 140 | | C | 52 | 135 | |
| 1000 | trans-1,3-Dichloropropene | 5 | ug/L | 0.59 | ug/L | C | 53 | 148 | | C | 50 | 144 | |
| 1332 | Ethylbenzene | 5 | ug/L | 0.84 | ug/L | C | 70 | 140 | | C | 72 | 140 | |
| 1811 | Methylene chloride | 10 | ug/L | 1.4 | ug/L | C | 72 | 144 | | C | 62 | 152 | |
| 2439 | 1,1,2,2-Tetrachloroethane | 5 | ug/L | 0.7 | ug/L | C | 52 | 153 | | C | 53 | 149 | |
| 2445 | Tetrachloroethene | 5 | ug/L | 0.74 | ug/L | C | 67 | 136 | | C | 67 | 141 | |
| 2489 | Toluene | 5 | ug/L | 0.75 | ug/L | C | 79 | 122 | | C | 82 | 122 | |
| 2518 | 1,1,1-Trichloroethane | 5 | ug/L | 0.71 | ug/L | C | 67 | 137 | | C | 33 | 171 | |
| 2522 | 1,1,2-Trichloroethane | 5 | ug/L | 0.54 | ug/L | C | 70 | 140 | | C | 73 | 138 | |
| 2525 | Trichloroethene | 5 | ug/L | 0.74 | ug/L | C | 76 | 121 | | C | 77 | 124 | |

**TABLE 8.2-4-6**
**MS Volatiles – Method 624**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1428 | Trichlorofluoro-methane | 10 | ug/L | 1.8 | ug/L | C | 17 | 181 | | C | 17 | 181 | |
| 2613 | Vinyl chloride | 10 | ug/L | 0.66 | ug/L | C | 47 | 156 | | C | 48 | 161 | |
| 2730 | Bromofluorobenzene | | | | | X | 86 | 115 | | X | 86 | 115 | |
| 2735 | 1,2-Dichloro-ethane-d4 | | | | | X | 76 | 114 | | X | 76 | 114 | |
| 2740 | Toluene-d8 | | | | | X | 88 | 110 | | X | 88 | 110 | |

**TABLE 8.2-4-7**
**GC Semivolatiles – Method 8081A**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 60 | Aldrin | 0.05 | ug/L | 0.0064 | ug/L | C | 62 | 120 | 33 | C | 19 | 131 | 33 |
| 226 | alpha-BHC | 0.05 | ug/L | 0.0059 | ug/L | | 48 | 130 | 54 | | 30 | 139 | 54 |
| 228 | beta-BHC | 0.05 | ug/L | 0.0062 | ug/L | | 47 | 127 | 38 | | 19 | 152 | 38 |
| 230 | delta-BHC | 0.05 | ug/L | 0.006 | ug/L | | 34 | 147 | 44 | | 26 | 150 | 44 |
| 232 | gamma-BHC (Lindane) | 0.05 | ug/L | 0.0062 | ug/L | C | 49 | 137 | 22 | C | 30 | 148 | 22 |
| 497 | alpha-Chlordane | 0.05 | ug/L | 0.0067 | ug/L | | 52 | 140 | 41 | | 33 | 142 | 41 |
| 499 | gamma-Chlordane | 0.05 | ug/L | 0.0065 | ug/L | | 47 | 143 | 28 | | 35 | 143 | 28 |
| 770 | 4,4'-DDD | 0.05 | ug/L | 0.0064 | ug/L | | 44 | 158 | 39 | | 42 | 158 | 39 |
| 777 | 4,4'-DDE | 0.05 | ug/L | 0.0074 | ug/L | | 32 | 157 | 39 | | 35 | 134 | 39 |
| 780 | 4,4'-DDT | 0.05 | ug/L | 0.0072 | ug/L | C | 60 | 140 | 50 | C | 24 | 145 | 50 |
| 1052 | Dieldrin | 0.05 | ug/L | 0.0069 | ug/L | C | 68 | 130 | 37 | C | 35 | 141 | 37 |
| 1236 | Endosulfan I | 0.05 | ug/L | 0.0069 | ug/L | | 27 | 120 | 36 | | 25 | 120 | 36 |
| 1239 | Endosulfan II | 0.05 | ug/L | 0.0066 | ug/L | | 33 | 127 | 52 | | 35 | 127 | 52 |
| 1241 | Endosulfan sulfate | 0.05 | ug/L | 0.007 | ug/L | | 44 | 144 | 40 | | 45 | 142 | 40 |
| 1270 | Endrin | 0.05 | ug/L | 0.0087 | ug/L | C | 46 | 137 | 40 | C | 28 | 148 | 40 |
| 1277 | Endrin aldehyde | 0.05 | ug/L | 0.0064 | ug/L | | 42 | 142 | 54 | | 16 | 158 | 54 |
| 1279 | Endrin ketone | 0.05 | ug/L | 0.0066 | ug/L | | 44 | 149 | 44 | | 35 | 156 | 44 |
| 1470 | Heptachlor | 0.05 | ug/L | 0.0071 | ug/L | C | 57 | 124 | 32 | C | 25 | 135 | 32 |
| 1479 | Heptachlor epoxide | 0.05 | ug/L | 0.0068 | ug/L | | 53 | 135 | 31 | | 38 | 138 | 31 |
| 1741 | Methoxychlor | 0.1 | ug/L | 0.0084 | ug/L | | 12 | 154 | 29 | | 13 | 154 | 29 |
| 2499 | Toxaphene | 2 | ug/L | 0.23 | ug/L | | | | | | | | |
| 2732 | Decachloro-biphenyl | | | | | X | 10 | 147 | | X | 10 | 147 | |
| 2739 | Tetrachloro-m-xylene | | | | | X | 39 | 130 | | X | 39 | 130 | |

**TABLE 8.2-4-7**
**GC Semivolatiles – 8081A**
**Reporting Limits (RL), Method Detection Limits (MDL), and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 60 | Aldrin | 1.7 | ug/kg | 0.55 | ug/kg | C | 39 | 122 | 40 | C | 33 | 122 | 40 |
| 226 | alpha-BHC | 1.7 | ug/kg | 0.46 | ug/kg | | 33 | 130 | 40 | | 30 | 130 | 40 |
| 228 | beta-BHC | 1.7 | ug/kg | 0.46 | ug/kg | | 51 | 110 | 43 | | 18 | 116 | 43 |
| 230 | delta-BHC | 1.7 | ug/kg | 0.48 | ug/kg | | 19 | 142 | 34 | | 16 | 142 | 34 |
| 232 | gamma-BHC (Lindane) | 1.7 | ug/kg | 0.57 | ug/kg | C | 47 | 130 | 36 | C | 33 | 130 | 36 |
| 497 | alpha-Chlordane | 1.7 | ug/kg | 0.59 | ug/kg | | 39 | 145 | 65 | | 26 | 145 | 65 |
| 499 | gamma-Chlordane | 1.7 | ug/kg | 0.57 | ug/kg | | 33 | 154 | 36 | | 31 | 154 | 36 |
| 770 | 4,4'-DDD | 1.7 | ug/kg | 0.79 | ug/kg | | 39 | 157 | 35 | | 19 | 157 | 35 |
| 777 | 4,4'-DDE | 1.7 | ug/kg | 0.57 | ug/kg | | 26 | 157 | 39 | | 49 | 157 | 39 |
| 780 | 4,4'-DDT | 1.7 | ug/kg | 1.3 | ug/kg | C | 35 | 144 | 42 | C | 23 | 144 | 42 |
| 1052 | Dieldrin | 1.7 | ug/kg | 1.5 | ug/kg | C | 45 | 128 | 33 | C | 33 | 133 | 33 |
| 1236 | Endosulfan I | 1.7 | ug/kg | 0.67 | ug/kg | | 24 | 113 | 41 | | 17 | 113 | 41 |
| 1239 | Endosulfan II | 1.7 | ug/kg | 0.38 | ug/kg | | 35 | 124 | 27 | | 21 | 129 | 27 |
| 1241 | Endosulfan sulfate | 1.7 | ug/kg | 0.28 | ug/kg | | 36 | 139 | 34 | | 22 | 139 | 34 |
| 1270 | Endrin | 1.7 | ug/kg | 0.61 | ug/kg | C | 47 | 133 | 38 | C | 33 | 138 | 38 |
| 1277 | Endrin aldehyde | 1.7 | ug/kg | 1.5 | ug/kg | | 27 | 130 | 29 | | 18 | 153 | 29 |
| 1279 | Endrin ketone | 1.7 | ug/kg | 0.26 | ug/kg | | 49 | 137 | 32 | | 34 | 137 | 32 |
| 1470 | Heptachlor | 1.7 | ug/kg | 0.61 | ug/kg | C | 39 | 126 | 44 | C | 32 | 128 | 44 |
| 1479 | Heptachlor epoxide | 1.7 | ug/kg | 0.66 | ug/kg | | 46 | 125 | 43 | | 33 | 148 | 43 |
| 1741 | Methoxychlor | 3.3 | ug/kg | 0.82 | ug/kg | | 24 | 161 | 41 | | 25 | 164 | 41 |
| 2499 | Toxaphene | 67 | ug/kg | 6.9 | ug/kg | | | | | | | | |
| 2732 | Decachloro-biphenyl | | | | | X | 18 | 145 | | X | 18 | 145 | |
| 2739 | Tetrachloro-m-xylene | | | | | X | 31 | 131 | | X | 31 | 131 | |

**TABLE 8.2-4-8**
**GC Semivolatiles – Method 8082**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2082 | Aroclor 1016 | 1 | ug/L | 0.018 | ug/L | C | 61 | 118 | 20 | C | 56 | 119 | 20 |
| 2085 | Aroclor 1221 | 1 | ug/L | 0.094 | ug/L | | | | | | | | |
| 2088 | Aroclor 1232 | 1 | ug/L | 0.16 | ug/L | | | | | | | | |
| 2091 | Aroclor 1242 | 1 | ug/L | 0.3 | ug/L | | | | | | | | |
| 2094 | Aroclor 1248 | 1 | ug/L | 0.22 | ug/L | | | | | | | | |
| 2097 | Aroclor 1254 | 1 | ug/L | 0.096 | ug/L | | | | | | | | |
| 2100 | Aroclor 1260 | 1 | ug/L | 0.065 | ug/L | C | 61 | 124 | 27 | C | 31 | 138 | 27 |
| 2732 | Decachlorobi-phenyl | | | | | X | 24 | 128 | | X | 24 | 128 | |
| 2739 | Tetrachloro-m-xylene | | | | | X | 45 | 120 | | X | 45 | 120 | |
| | **Solid** | | | | | **LCS** | | | | **MS** | | | |
| **#** | **Compound** | **RL** | **Units** | **MDL** | **Units** | **T** | **LCL** | **UCL** | **RPD** | **T** | **LCL** | **UCL** | **RPD** |
| 2082 | Aroclor 1016 | 33 | ug/kg | 5.3 | ug/kg | C | 49 | 122 | 39 | C | 26 | 144 | 39 |
| 2085 | Aroclor 1221 | 33 | ug/kg | 19 | ug/kg | | | | | | | | |
| 2088 | Aroclor 1232 | 33 | ug/kg | 11 | ug/kg | | | | | | | | |
| 2091 | Aroclor 1242 | 33 | ug/kg | 18 | ug/kg | | | | | | | | |
| 2094 | Aroclor 1248 | 33 | ug/kg | 4.6 | ug/kg | | | | | | | | |
| 2097 | Aroclor 1254 | 33 | ug/kg | 20 | ug/kg | | | | | | | | |
| 2100 | Aroclor 1260 | 33 | ug/kg | 7.4 | ug/kg | C | 51 | 127 | 33 | C | 37 | 138 | 33 |
| 2732 | Decachloro-biphenyl | | | | | X | 23 | 141 | | X | 23 | 141 | |
| 2739 | Tetrachloro-m-xylene | | | | | X | 31 | 127 | | X | 31 | 127 | |

**TABLE 8.2-4-9**
**GC Semivolatiles – Method 608**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 60 | Aldrin | 0.05 | ug/L | 0.0064 | ug/L | C | 60 | 117 | 29 | C | 54 | 120 | 40 |
| 226 | alpha-BHC | 0.05 | ug/L | 0.0059 | ug/L | | 54 | 130 | 38 | C | 37 | 134 | 24 |
| 228 | beta-BHC | 0.05 | ug/L | 0.0062 | ug/L | | 29 | 147 | 60 | C | 17 | 147 | 32 |
| 230 | delta-BHC | 0.05 | ug/L | 0.006 | ug/L | | 35 | 140 | 55 | C | 19 | 140 | 36 |
| 232 | gamma-BHC (Lindane) | 0.05 | ug/L | 0.0062 | ug/L | C | 63 | 122 | 29 | C | 48 | 135 | 51 |
| 476 | Chlordane (technical) | 0.5 | ug/L | 0.075 | ug/L | | | | | | | | |
| 770 | 4,4'-DDD | 0.05 | ug/L | 0.0064 | ug/L | | 56 | 135 | 38 | C | 31 | 141 | 28 |
| 777 | 4,4'-DDE | 0.05 | ug/L | 0.0074 | ug/L | | 63 | 115 | 26 | C | 30 | 145 | 27 |
| 780 | 4,4'-DDT | 0.05 | ug/L | 0.0072 | ug/L | C | 55 | 128 | 36 | C | 48 | 154 | 47 |
| 1052 | Dieldrin | 0.05 | ug/L | 0.0069 | ug/L | C | 63 | 122 | 25 | C | 54 | 143 | 32 |
| 1236 | Endosulfan I | 0.05 | ug/L | 0.0069 | ug/L | | 60 | 129 | 34 | C | 45 | 153 | 25 |
| 1239 | Endosulfan II | 0.05 | ug/L | 0.0066 | ug/L | | 41 | 147 | 53 | C | 10 | 202 | 61 |
| 1241 | Endosulfan sulfate | 0.05 | ug/L | 0.007 | ug/L | | 59 | 134 | 38 | C | 26 | 144 | 27 |
| 1270 | Endrin | 0.05 | ug/L | 0.0087 | ug/L | C | 48 | 129 | 41 | C | 64 | 142 | 39 |
| 1277 | Endrin aldehyde | 0.05 | ug/L | 0.0064 | ug/L | | | | | | | | |
| 1470 | Heptachlor | 0.05 | ug/L | 0.0071 | ug/L | C | 56 | 125 | 34 | C | 56 | 158 | 36 |
| 1479 | Heptachlor epoxide | 0.05 | ug/L | 0.0068 | ug/L | | 61 | 133 | 36 | C | 37 | 142 | 21 |
| 2080 | PCB-1016 | 1 | ug/L | 0.18 | ug/L | | | | | | | | |
| 2083 | PCB-1221 | 1 | ug/L | 0.094 | ug/L | | | | | | | | |
| 2086 | PCB-1232 | 1 | ug/L | 0.16 | ug/L | | | | | | | | |
| 2089 | PCB-1242 | 1 | ug/L | 0.3 | ug/L | | | | | | | | |
| 2092 | PCB-1248 | 1 | ug/L | 0.22 | ug/L | | | | | | | | |
| 2095 | PCB-1254 | 1 | ug/L | 0.096 | ug/L | | | | | | | | |
| 2098 | PCB-1260 | 1 | ug/L | 0.065 | ug/L | | | | | | | | |
| 2499 | Toxaphene | 2 | ug/L | 0.23 | ug/L | | | | | | | | |
| 2732 | Decachloro-biphenyl | | | | | X | 10 | 116 | 74 | X | 10 | 116 | 74 |
| 2739 | Tetrachloro-m-xylene | | | | | X | 10 | 130 | 60 | X | 10 | 130 | 60 |

**TABLE 8.2-4-10**
**GC Semivolatiles – Method 8310**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Water | | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1 | Acenaphthene | 1 | ug/L | 0.85 | ug/L | | 10 | 101 | 48 | | 10 | 124 | 50 |
| 5 | Acenaphthylene | 1 | ug/L | 0.64 | ug/L | | 10 | 99 | 49 | | 10 | 139 | 50 |
| 122 | Anthracene | 2 | ug/L | 1.2 | ug/L | | 18 | 126 | 59 | | 10 | 126 | 50 |
| 202 | Benzo(a)anthracene | 0.1 | ug/L | 0.096 | ug/L | | 44 | 116 | 36 | | 12 | 135 | 50 |
| 205 | Benzo(b)fluoranthene | 0.1 | ug/L | 0.098 | ug/L | | 39 | 125 | 43 | | 10 | 150 | 50 |
| 208 | Benzo(k)fluoranthene | 0.05 | ug/L | 0.047 | ug/L | | 38 | 124 | 43 | | 10 | 159 | 50 |
| 210 | Benzo(ghi)perylene | 0.1 | ug/L | 0.1 | ug/L | | 23 | 116 | 54 | | 10 | 116 | 50 |
| 211 | Benzo(a)pyrene | 0.1 | ug/L | 0.091 | ug/L | C | 22 | 128 | 64 | C | 10 | 128 | 50 |
| 633 | Chrysene | 0.1 | ug/L | 0.094 | ug/L | C | 38 | 118 | 40 | C | 10 | 199 | 50 |
| 860 | Dibenz(a,h)anthracene | 0.1 | ug/L | 0.096 | ug/L | | 22 | 110 | 54 | | 10 | 110 | 50 |
| 1414 | Fluoranthene | 0.1 | ug/L | 0.098 | ug/L | C | 43 | 102 | 29 | C | 14 | 123 | 50 |
| 1417 | Fluorene | 1 | ug/L | 0.011 | ug/L | | 13 | 100 | 43 | | 10 | 142 | 50 |
| 1535 | Indeno(1,2,3-cd)pyrene | 0.1 | ug/L | 0.093 | ug/L | C | 36 | 116 | 44 | C | 10 | 116 | 50 |
| 1932 | Naphthalene | 2 | ug/L | 0.024 | ug/L | C | 10 | 90 | 46 | C | 10 | 122 | 50 |
| 2154 | Phenanthrene | 1 | ug/L | 0.027 | ug/L | C | 28 | 113 | 43 | C | 10 | 155 | 50 |
| 2252 | Pyrene | 0.1 | ug/L | 0.086 | ug/L | | 38 | 118 | 40 | | 10 | 140 | 50 |
| 213 | Benzo(e)pyrene | | | | | X | 39 | 182 | | X | 39 | 182 | |
| 2738 | Terphenyl-d14 | | | | | X | 33 | 120 | | X | 33 | 120 | |
| **Solid** | | | | | | | **LCS** | | | | **MS** | | |
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1 | Acenaphthene | 100 | ug/kg | 50 | ug/kg | | 15 | 105 | 45 | | 10 | 124 | 50 |
| 5 | Acenaphthylene | 100 | ug/kg | 36 | ug/kg | | 10 | 101 | 47 | | 10 | 130 | 50 |
| 122 | Anthracene | 100 | ug/kg | 26 | ug/kg | | 37 | 130 | 47 | | 10 | 126 | 50 |
| 202 | Benzo(a)anthracene | 5 | ug/kg | 3.5 | ug/kg | | 52 | 105 | 27 | | 12 | 135 | 50 |
| 205 | Benzo(b)fluoranthene | 5 | ug/kg | 2.6 | ug/kg | | 46 | 118 | 36 | | 10 | 150 | 50 |
| 208 | Benzo(k)fluoranthene | 1.7 | ug/kg | 0.96 | ug/kg | | 48 | 114 | 33 | | 10 | 159 | 50 |
| 210 | Benzo(ghi)perylene | 10 | ug/kg | 6.5 | ug/kg | | 37 | 127 | 45 | | 10 | 116 | 50 |
| 211 | Benzo(a)pyrene | 5 | ug/kg | 2.1 | ug/kg | C | 23 | 126 | 52 | C | 10 | 128 | 50 |
| 633 | Chrysene | 5 | ug/kg | 3.1 | ug/kg | C | 51 | 107 | 28 | C | 10 | 199 | 50 |
| 860 | Dibenz(a,h)anthracene | 5 | ug/kg | 1.9 | ug/kg | | 43 | 125 | 41 | | 10 | 110 | 50 |
| 1414 | Fluoranthene | 10 | ug/kg | 5.3 | ug/kg | C | 46 | 103 | 29 | C | 14 | 123 | 50 |
| 1417 | Fluorene | 100 | ug/kg | 1.7 | ug/kg | | 21 | 104 | 42 | | 10 | 142 | 50 |
| 1535 | Indeno(1,2,3-cd)pyrene | 5 | ug/kg | 4.2 | ug/kg | C | 41 | 121 | 40 | C | 10 | 116 | 50 |
| 1932 | Naphthalene | 100 | ug/kg | 14 | ug/kg | C | 10 | 99 | 48 | C | 10 | 122 | 50 |
| 2154 | Phenanthrene | 100 | ug/kg | 2.4 | ug/kg | C | 36 | 113 | 39 | C | 10 | 155 | 50 |
| 2252 | Pyrene | 5 | ug/kg | 4.8 | ug/kg | | 51 | 108 | 29 | | 10 | 140 | 50 |
| 213 | Benzo(e)pyrene | | | | | X | 25 | 176 | | X | 25 | 176 | |
| 2738 | Terphenyl-d14 | | | | | X | 10 | 141 | | X | 10 | 141 | |

**TABLE 8.2-4-11**
**GC Semivolatiles – Method 610**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Water Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Acenaphthene | 1 | ug/L | 0.85 | ug/L | | 10 | 101 | 48 | | 10 | 124 | 50 |
| 5 | Acenaphthylene | 1 | ug/L | 0.64 | ug/L | | 10 | 99 | 49 | | 10 | 139 | 50 |
| 122 | Anthracene | 2 | ug/L | 1.2 | ug/L | | 18 | 126 | 59 | | 10 | 126 | 50 |
| 202 | Benzo(a)anthracene | 0.1 | ug/L | 0.096 | ug/L | | 44 | 116 | 36 | | 12 | 135 | 50 |
| 205 | Benzo(b)fluoranthene | 0.1 | ug/L | 0.098 | ug/L | | 39 | 125 | 43 | | 10 | 150 | 50 |
| 208 | Benzo(k)fluoranthene | 0.05 | ug/L | 0.047 | ug/L | | 38 | 124 | 43 | | 10 | 159 | 50 |
| 210 | Benzo(ghi)perylene | 0.1 | ug/L | 0.1 | ug/L | | 23 | 116 | 54 | | 10 | 116 | 50 |
| 211 | Benzo(a)pyrene | 0.1 | ug/L | 0.091 | ug/L | C | 22 | 128 | 64 | C | 10 | 128 | 50 |
| 633 | Chrysene | 0.1 | ug/L | 0.094 | ug/L | C | 38 | 118 | 40 | C | 10 | 199 | 50 |
| 2669 | Dibenzo(a,h)anthracene | 0.1 | ug/L | 0.096 | ug/L | | | | | | | | |
| 1414 | Fluoranthene | 0.1 | ug/L | 0.098 | ug/L | C | 43 | 102 | 29 | C | 14 | 123 | 50 |
| 1417 | Fluorene | 1 | ug/L | 0.011 | ug/L | | 13 | 100 | 43 | | 10 | 142 | 50 |
| 1535 | Indeno(1,2,3-cd)pyrene | 0.1 | ug/L | 0.093 | ug/L | C | 36 | 116 | 44 | C | 10 | 116 | 50 |
| 1932 | Naphthalene | 2 | ug/L | 0.024 | ug/L | C | 10 | 90 | 46 | C | 10 | 122 | 50 |
| 2154 | Phenanthrene | 1 | ug/L | 0.027 | ug/L | C | 28 | 113 | 43 | C | 10 | 155 | 50 |
| 2252 | Pyrene | 0.1 | ug/L | 0.086 | ug/L | | 38 | 118 | 40 | | 10 | 140 | 50 |
| 213 | Benzo(e)pyrene | | | | | X | 39 | 182 | | X | 39 | 182 | |
| 2738 | Terphenyl-d14 | | | | | X | 33 | 120 | | X | 33 | 120 | |

**TABLE 8.2-4-12**
**GC Semivolatiles – Method 8141A**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1099 | Dimethoate | 1 | ug/L | 0.26 | ug/L | C | 49 | 124 | 99 | C | 55 | 121 | 56 |
| 1225 | Disulfoton | 1 | ug/L | 0.61 | ug/L | C | 45 | 112 | 99 | C | 45 | 116 | 61 |
| 1372 | Famphur | 1 | ug/L | 0.31 | ug/L | C | 37 | 127 | 99 | C | 46 | 123 | 56 |
| 1831 | Methyl parathion | 1 | ug/L | 0.68 | ug/L | C | 45 | 116 | 99 | C | 47 | 119 | 57 |
| 2062 | Parathion | 1 | ug/L | 0.28 | ug/L | C | 47 | 119 | 99 | C | 53 | 115 | 54 |
| 2170 | Phorate | 1 | ug/L | 0.57 | ug/L | C | 40 | 110 | 99 | C | 43 | 112 | 68 |
| 2459 | Tetraethyldithiopyro-phosphate | 1 | ug/L | 0.33 | ug/L | C | 46 | 118 | 99 | C | 50 | 117 | 64 |
| 1086 | Thionazin | 1 | ug/L | 0.32 | ug/L | C | 41 | 117 | 99 | C | 46 | 113 | 70 |
| 2569 | O,O,O-Triethyl phosphorothioate | 1 | ug/L | 0.36 | ug/L | C | 38 | 116 | 99 | C | 48 | 110 | 65 |
| 2600 | Triphenyl phosphate | | | | | X | 42 | 135 | | X | 42 | 135 | |
| | **Solid** | | | | | | **LCS** | | | | **MS** | | |
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1099 | Dimethoate | 33 | ug/kg | 5.1 | ug/kg | C | 51 | 142 | 44 | C | 32 | 196 | 43 |
| 1225 | Disulfoton | 33 | ug/kg | 5.2 | ug/kg | C | 40 | 115 | 71 | C | 37 | 122 | 99 |
| 1372 | Famphur | 33 | ug/kg | 4.5 | ug/kg | C | 42 | 137 | 48 | C | 34 | 165 | 47 |
| 1831 | Methyl parathion | 33 | ug/kg | 6.6 | ug/kg | C | 45 | 130 | 48 | C | 50 | 140 | 50 |
| 2062 | Parathion | 33 | ug/kg | 4 | ug/kg | C | 42 | 137 | 48 | C | 46 | 148 | 52 |
| 2170 | Phorate | 33 | ug/kg | 5.5 | ug/kg | C | 41 | 113 | 47 | C | 37 | 123 | 63 |
| 2459 | Tetraethyldithio-pyrophosphate | 33 | ug/kg | 11 | ug/kg | C | 41 | 126 | 49 | C | 50 | 131 | 68 |
| 1086 | Thionazin | 33 | ug/kg | 4.1 | ug/kg | C | 40 | 128 | 47 | C | 48 | 139 | 53 |
| 2569 | O,O,O-Triethyl phosphorothioate | 33 | ug/kg | 3.5 | ug/kg | C | 40 | 120 | 47 | C | 50 | 121 | 48 |
| 2600 | Triphenyl phosphate | | | | | X | 54 | 143 | | X | 54 | 143 | |

**TABLE 8.2-4-13**
**GC Semivolatiles – Method 8151A**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Water | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 690 | 2,4-D | 4 | ug/L | 0.077 | ug/L | C | 26 | 108 | 20 | C | 52 | 102 | 18 |
| 753 | Dalapon | 2 | ug/L | 0.39 | ug/L | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 766 | 2,4-DB | 4 | ug/L | 0.33 | ug/L | | 28 | 141 | 50 | | 28 | 141 | 50 |
| 897 | Dicamba | 2 | ug/L | 0.059 | ug/L | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 975 | Dichlorprop | 4 | ug/L | 0.089 | ug/L | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 1195 | Dinoseb | 0.6 | ug/L | 0.013 | ug/L | | 74 | 98 | 50 | | 74 | 98 | 50 |
| 1661 | MCPA | 400 | ug/L | 8 | ug/L | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 1680 | MCPP | 400 | ug/L | 25 | ug/L | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 2291 | 2,4,5-TP (Silvex) | 1 | ug/L | 0.036 | ug/L | | | | | | | | |
| 2384 | 2,4,5-T | 1 | ug/L | 0.043 | ug/L | C | 41 | 109 | 20 | C | 67 | 95 | 16 |
| 2924 | 2,4-Dichlorophenylacetic acid | | | | | X | 36 | 109 | | X | 36 | 109 | |

| Solid | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 690 | 2,4-D | 80 | ug/kg | 53 | ug/kg | C | 10 | 110 | 62 | C | 10 | 113 | 62 |
| 753 | Dalapon | 40 | ug/kg | 37 | ug/kg | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 766 | 2,4-DB | 80 | ug/kg | 39 | ug/kg | | 38 | 119 | 30 | | 38 | 119 | |
| 897 | Dicamba | 40 | ug/kg | 15 | ug/kg | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 975 | Dichlorprop | 80 | ug/kg | 10 | ug/kg | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 1195 | Dinoseb | 12 | ug/kg | 12 | ug/kg | | 74 | 98 | 50 | | 74 | 98 | 50 |
| 1661 | MCPA | 8000 | ug/kg | 2300 | ug/kg | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 1680 | MCPP | 8000 | ug/kg | 2700 | ug/kg | | 30 | 130 | 50 | | 30 | 130 | 50 |
| 2291 | 2,4,5-TP (Silvex) | 20 | ug/kg | 3.9 | ug/kg | | | | | | | | |
| 2384 | 2,4,5-T | 20 | ug/kg | 3.1 | ug/kg | C | 17 | 117 | 66 | C | 10 | 122 | 66 |
| 2924 | 2,4-Dichlorophenylacetic acid | | | | | X | 10 | 115 | | X | 10 | 115 | |

**TABLE 8.2-4-14**
**GC Volatiles - Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL), and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Water - 5mL Purge | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/L | 0.29 | ug/L | C | 73 | 134 | 20 | C | 55 | 161 | 25 |
| 318 | Bromobenzene | 1 | ug/L | 0.33 | ug/L | | | | | | | | |
| 321 | Bromochloromethane | 1 | ug/L | 0.4 | ug/L | | | | | | | | |
| 323 | Bromodichloromethane | 1 | ug/L | 0.59 | ug/L | | | | | | | | |
| 340 | Bromoform | 1 | ug/L | 0.33 | ug/L | | | | | | | | |
| 343 | Bromomethane | 1 | ug/L | 0.55 | ug/L | | | | | | | | |
| 393 | n-Butylbenzene | 1 | ug/L | 0.56 | ug/L | | | | | | | | |
| 395 | sec-Butylbenzene | 1 | ug/L | 0.1 | ug/L | | | | | | | | |
| 398 | tert-Butylbenzene | 1 | ug/L | 0.83 | ug/L | | | | | | | | |
| 463 | Carbon tetrachloride | 1 | ug/L | 0.55 | ug/L | | | | | | | | |
| 521 | Chlorobenzene | 1 | ug/L | 0.48 | ug/L | C | 61 | 134 | 20 | C | 42 | 147 | 23 |
| 534 | Chlorodibromomethane | 1 | ug/L | 0.34 | ug/L | | | | | | | | |
| 550 | Chloroethane | 1 | ug/L | 0.7 | ug/L | | | | | | | | |
| 569 | Chloroform | 1 | ug/L | 0.4 | ug/L | | | | | | | | |
| 574 | Chloromethane | 1 | ug/L | 0.52 | ug/L | | | | | | | | |
| 614 | 2-Chlorotoluene | 1 | ug/L | 0.53 | ug/L | | | | | | | | |
| 617 | 4-Chlorotoluene | 1 | ug/L | 0.66 | ug/L | | | | | | | | |
| 3260 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ug/L | 0.6 | ug/L | | | | | | | | |
| 3261 | 1,2-Dibromoethane (EDB) | 1 | ug/L | 0.43 | ug/L | | | | | | | | |
| 888 | Dibromomethane | 1 | ug/L | 0.29 | ug/L | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/L | 0.48 | ug/L | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/L | 0.43 | ug/L | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/L | 0.57 | ug/L | | | | | | | | |
| 924 | Dichlorodifluoromethane | 1 | ug/L | 0.29 | ug/L | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/L | 0.45 | ug/L | | | | | | | | |
| 936 | 1,2-Dichloroethane | 1 | ug/L | 0.32 | ug/L | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 1 | ug/L | 0.39 | ug/L | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 1 | ug/L | 0.43 | ug/L | | | | | | | | |
| 943 | 1,1-Dichloroethene | 1 | ug/L | 0.46 | ug/L | C | 35 | 127 | 20 | C | 14 | 151 | 28 |
| 986 | 1,2-Dichloropropane | 1 | ug/L | 0.36 | ug/L | | | | | | | | |
| 989 | 1,3-Dichloropropane | 1 | ug/L | 0.48 | ug/L | | | | | | | | |
| 990 | 2,2-Dichloropropane | 1 | ug/L | 0.32 | ug/L | | | | | | | | |
| 998 | cis-1,3-Dichloropropene | 1 | ug/L | 0.39 | ug/L | | | | | | | | |
| 1000 | trans-1,3-Dichloropropene | 1 | ug/L | 0.37 | ug/L | | | | | | | | |
| 996 | 1,1-Dichloropropene | 1 | ug/L | 0.62 | ug/L | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/L | 0.68 | ug/L | | | | | | | | |

**TABLE 8.2-4-14**
**GC Volatiles - Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Water - 5mL Purge | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 1 | ug/L | 0.62 | ug/L | | | | | | | | |
| 1578 | Isopropylbenzene | 1 | ug/L | 0.83 | ug/L | | | | | | | | |
| 1590 | p-Isopropyltoluene | 1 | ug/L | 0.7 | ug/L | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/L | 0.48 | ug/L | | | | | | | | |
| 1932 | Naphthalene | 1 | ug/L | 0.3 | ug/L | | | | | | | | |
| 2247 | n-Propylbenzene | 1 | ug/L | 0.76 | ug/L | | | | | | | | |
| 2355 | Styrene | 1 | ug/L | 0.4 | ug/L | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 1 | ug/L | 0.35 | ug/L | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/L | 0.97 | ug/L | | | | | | | | |
| 2445 | Tetrachloroethene | 1 | ug/L | 0.72 | ug/L | | | | | | | | |
| 2489 | Toluene | 1 | ug/L | 0.56 | ug/L | C | 71 | 132 | 20 | C | 55 | 159 | 25 |
| 2514 | 1,2,3-Trichlorobenzene | 1 | ug/L | 0.32 | ug/L | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 1 | ug/L | 0.25 | ug/L | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/L | 0.46 | ug/L | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/L | 0.4 | ug/L | | | | | | | | |
| 2525 | Trichloroethene | 1 | ug/L | 0.61 | ug/L | C | 58 | 131 | 20 | C | 10 | 229 | 41 |
| 1428 | Trichlorofluoromethane | 1 | ug/L | 0.34 | ug/L | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 1 | ug/L | 0.51 | ug/L | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 1 | ug/L | 0.58 | ug/L | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 1 | ug/L | 0.49 | ug/L | | | | | | | | |
| 2613 | Vinyl chloride | 1 | ug/L | 0.71 | ug/L | | | | | | | | |
| 2627 | Xylenes (total) | 1 | ug/L | 0.93 | ug/L | | | | | | | | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 50 | 150 | | X | 50 | 150 | |
| 2741 | Trifluorotoluene | | | | | X | 50 | 150 | | X | 50 | 150 | |

**TABLE 8.2-4-14**
**GC Volatiles - Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid - 5 mL | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/kg | 0.12 | ug/kg | C | 69 | 132 | 20 | C | 62 | 150 | 33 |
| 318 | Bromobenzene | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 1 | ug/kg | 0.37 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 340 | Bromoform | 1 | ug/kg | 0.74 | ug/kg | | | | | | | | |
| 343 | Bromomethane | 1 | ug/kg | 0.22 | ug/kg | | | | | | | | |
| 393 | n-Butylbenzene | 1 | ug/kg | 0.46 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 1 | ug/kg | 0.47 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 1 | ug/kg | 0.57 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 1 | ug/kg | 0.14 | ug/kg | | | | | | | | |
| 521 | Chlorobenzene | 1 | ug/kg | 0.6 | ug/kg | C | 51 | 131 | 20 | C | 10 | 142 | 32 |
| 534 | Chlorodibromomethane | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 1 | ug/kg | 0.18 | ug/kg | | | | | | | | |
| 569 | Chloroform | 1 | ug/kg | 0.13 | ug/kg | | | | | | | | |
| 574 | Chloromethane | 1 | ug/kg | 0.99 | ug/kg | | | | | | | | |
| 614 | 2-Chlorotoluene | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 1 | ug/kg | 0.53 | ug/kg | | | | | | | | |
| 3260 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ug/kg | | | | | | | | | | |
| 3261 | 1,2-Dibromoethane (EDB) | 1 | ug/kg | 0.24 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 1 | ug/kg | 0.12 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/kg | 0.55 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/kg | 0.48 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/kg | 0.62 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoromethane | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 936 | 1,2-Dichloroethane | 1 | ug/kg | 0.12 | ug/kg | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 943 | 1,1-Dichloroethene | 1 | ug/kg | 0.28 | ug/kg | C | 29 | 140 | 20 | C | 10 | 203 | 38 |
| 986 | 1,2-Dichloropropane | 1 | ug/kg | 0.2 | ug/kg | | | | | | | | |
| 989 | 1,3-Dichloropropane | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 1 | ug/kg | 0.22 | ug/kg | | | | | | | | |
| 998 | cis-1,3-Dichloropropene | 1 | ug/kg | 0.29 | ug/kg | | | | | | | | |
| 1000 | trans-1,3-Dichloropropene | 1 | ug/kg | 0.38 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 1 | ug/kg | 0.14 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/kg | 0.38 | ug/kg | | | | | | | | |

**TABLE 8.2-4-14**
**GC Volatiles - Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid - 5 mL | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 1 | ug/kg | 0.5 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 1 | ug/kg | 0.65 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/kg | 0.25 | ug/kg | | | | | | | | |
| 1932 | Naphthalene | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 1 | ug/kg | 0.44 | ug/kg | | | | | | | | |
| 2355 | Styrene | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 1 | ug/kg | 0.55 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/kg | 0.19 | ug/kg | | | | | | | | |
| 2445 | Tetrachloroethene | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 2489 | Toluene | 1 | ug/kg | 0.17 | ug/kg | C | 66 | 129 | 20 | C | 50 | 142 | 40 |
| 2514 | 1,2,3-Trichlorobenzene | 1 | ug/kg | 0.54 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 1 | ug/kg | 0.53 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 2525 | Trichloroethene | 1 | ug/kg | 0.18 | ug/kg | C | 10 | 216 | 20 | C | 10 | 216 | 45 |
| 1428 | Trichlorofluoromethane | 1 | ug/kg | 0.13 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 1 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 1 | ug/kg | 0.33 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 1 | ug/kg | 0.32 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 1 | ug/kg | 0.48 | ug/kg | | | | | | | | |
| 2627 | Xylenes (total) | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 50 | 150 | | X | 50 | 150 | |
| 2741 | Trifluorotoluene | | | | | X | 50 | 150 | | X | 50 | 150 | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid - Encore | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 50 | ug/kg | 4.6 | ug/kg | C | 69 | 132 | 20 | C | 62 | 150 | 33 |
| 318 | Bromobenzene | 50 | ug/kg | 9.7 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 50 | ug/kg | 9.7 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 50 | ug/kg | 5.5 | ug/kg | | | | | | | | |
| 340 | Bromoform | 50 | ug/kg | 8.9 | ug/kg | | | | | | | | |
| 343 | Bromomethane | 50 | ug/kg | 15 | ug/kg | | | | | | | | |
| 393 | n-Butylbenzene | 50 | ug/kg | 5.9 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 50 | ug/kg | 5.5 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 50 | ug/kg | 5.6 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 50 | ug/kg | 16 | ug/kg | | | | | | | | |
| 521 | Chlorobenzene | 50 | ug/kg | 6.7 | ug/kg | C | 51 | 131 | 20 | C | 10 | 142 | 32 |
| 534 | Chlorodibromomethane | 50 | ug/kg | 7.5 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 50 | ug/kg | 24 | ug/kg | | | | | | | | |
| 569 | Chloroform | 50 | ug/kg | 6.9 | ug/kg | | | | | | | | |
| 574 | Chloromethane | 50 | ug/kg | 8.4 | ug/kg | | | | | | | | |
| 614 | 2-Chlorotoluene | 50 | ug/kg | 9 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 50 | ug/kg | 11 | ug/kg | | | | | | | | |
| 3260 | 1,2-Dibromo-3-chloropropane (DBCP) | 50 | ug/kg | | | | | | | | | | |
| 3261 | 1,2-Dibromoethane (EDB) | 50 | ug/kg | 8.9 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 50 | ug/kg | 6.3 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 50 | ug/kg | 6.3 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 50 | ug/kg | 8 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 50 | ug/kg | 9.1 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoromethane | 50 | ug/kg | 7.1 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 50 | ug/kg | 8.7 | ug/kg | | | | | | | | |
| 936 | 1,2-Dichloroethane | 50 | ug/kg | 11 | ug/kg | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 50 | ug/kg | 15 | ug/kg | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 50 | ug/kg | 8.4 | ug/kg | | | | | | | | |
| 943 | 1,1-Dichloroethene | 50 | ug/kg | 6 | ug/kg | C | 29 | 140 | 20 | C | 10 | 203 | 38 |
| 986 | 1,2-Dichloropropane | 50 | ug/kg | 9.5 | ug/kg | | | | | | | | |
| 989 | 1,3-Dichloropropane | 50 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 50 | ug/kg | 15 | ug/kg | | | | | | | | |
| 998 | cis-1,3-Dichloropropene | 50 | ug/kg | 7.3 | ug/kg | | | | | | | | |
| 1000 | trans-1,3-Dichloropropene | 50 | ug/kg | 4.9 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 50 | ug/kg | 5.4 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 50 | ug/kg | 5.5 | ug/kg | | | | | | | | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| Solid - Encore | | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 50 | ug/kg | 7.5 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 50 | ug/kg | 4.7 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 50 | ug/kg | 11 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 250 | ug/kg | 8.8 | ug/kg | | | | | | | | |
| 1932 | Naphthalene | 250 | ug/kg | 5.6 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 50 | ug/kg | 5.1 | ug/kg | | | | | | | | |
| 2355 | Styrene | 50 | ug/kg | 10 | ug/kg | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 50 | ug/kg | 7.2 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 50 | ug/kg | 16 | ug/kg | | | | | | | | |
| 2445 | Tetrachloroethene | 50 | ug/kg | 6.8 | ug/kg | | | | | | | | |
| 2489 | Toluene | 50 | ug/kg | 4.8 | ug/kg | C | 66 | 129 | 20 | C | 50 | 142 | 40 |
| 2514 | 1,2,3-Trichlorobenzene | 50 | ug/kg | 16 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 50 | ug/kg | 7.5 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 50 | ug/kg | 9 | ug/kg | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 50 | ug/kg | 5.1 | ug/kg | | | | | | | | |
| 2525 | Trichloroethene | 50 | ug/kg | 9 | ug/kg | C | 10 | 216 | 20 | C | 10 | 216 | 45 |
| 1428 | Trichlorofluoromethane | 50 | ug/kg | 8.5 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 50 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 50 | ug/kg | 5.9 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 50 | ug/kg | 7.8 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 50 | ug/kg | 1.23 | ug/kg | | | | | | | | |
| 2627 | Xylenes (total) | 50 | ug/kg | 1.23 | ug/kg | | | | | | | | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 50 | 150 | | X | 50 | 150 | |
| 2741 | Trifluorotoluene | | | | | X | 50 | 150 | | X | 50 | 150 | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Low Level Solid Encore | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/kg | 0.27 | ug/kg | C | 69 | 132 | 20 | C | 62 | 150 | 33 |
| 318 | Bromobenzene | 1 | ug/kg | 0.45 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 1 | ug/kg | 0.17 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 1 | ug/kg | 0.23 | ug/kg | | | | | | | | |
| 340 | Bromoform | 1 | ug/kg | 0.35 | ug/kg | | | | | | | | |
| 343 | Bromomethane | 1 | ug/kg | 0.16 | ug/kg | | | | | | | | |
| 393 | n-Butylbenzene | 1 | ug/kg | 0.45 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 1 | ug/kg | 0.47 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 1 | ug/kg | 0.47 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 1 | ug/kg | 0.4 | ug/kg | | | | | | | | |
| 521 | Chlorobenzene | 1 | ug/kg | 0.42 | ug/kg | C | 51 | 131 | 20 | C | 10 | 142 | 32 |
| 534 | Chlorodibromomethane | 1 | ug/kg | 0.32 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 1 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 569 | Chloroform | 1 | ug/kg | 0.26 | ug/kg | | | | | | | | |
| 574 | Chloromethane | 1 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 614 | 2-Chlorotoluene | 1 | ug/kg | 0.41 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 3260 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ug/kg | | | | | | | | | | |
| 3261 | 1,2-Dibromoethane (EDB) | 1 | ug/kg | 0.24 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 1 | ug/kg | 0.24 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/kg | 0.43 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/kg | 0.45 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/kg | 0.96 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoromethane | 1 | ug/kg | 0.18 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/kg | 0.18 | ug/kg | | | | | | | | |
| 936 | 1,2-Dichloroethane | 1 | ug/kg | 0.21 | ug/kg | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 1 | ug/kg | 0.67 | ug/kg | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 1 | ug/kg | 0.21 | ug/kg | | | | | | | | |
| 943 | 1,1-Dichloroethene | 1 | ug/kg | 0.2 | ug/kg | C | 29 | 140 | 20 | C | 10 | 203 | 38 |
| 986 | 1,2-Dichloropropane | 1 | ug/kg | 0.2 | ug/kg | | | | | | | | |
| 989 | 1,3-Dichloropropane | 1 | ug/kg | 0.17 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 1 | ug/kg | 0.45 | ug/kg | | | | | | | | |
| 998 | cis-1,3-Dichloropropene | 1 | ug/kg | 0.55 | ug/kg | | | | | | | | |
| 1000 | trans-1,3-Dichloropropene | 1 | ug/kg | 0.54 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 1 | ug/kg | 0.4 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/kg | 0.65 | ug/kg | | | | | | | | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Low Level Solid Encore | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 1489 | Hexachlorobutadiene | 1 | ug/kg | 0.48 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 1 | ug/kg | 0.56 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 1 | ug/kg | 0.96 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 1932 | Naphthalene | 1 | ug/kg | 0.71 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 1 | ug/kg | 0.43 | ug/kg | | | | | | | | |
| 2355 | Styrene | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 1 | ug/kg | 0.18 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/kg | 0.88 | ug/kg | | | | | | | | |
| 2445 | Tetrachloroethene | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 2489 | Toluene | 1 | ug/kg | 0.42 | ug/kg | C | 66 | 129 | 20 | C | 50 | 142 | 40 |
| 2514 | 1,2,3-Trichlorobenzene | 1 | ug/kg | 0.88 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 1 | ug/kg | 0.44 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/kg | 0.22 | ug/kg | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 2525 | Trichloroethene | 1 | ug/kg | 0.38 | ug/kg | C | 10 | 216 | 20 | C | 10 | 216 | 45 |
| 1428 | Trichlorofluoromethane | 1 | ug/kg | 0.17 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 1 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 1 | ug/kg | 0.82 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 1 | ug/kg | 0.32 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 1 | ug/kg | 0.14 | ug/kg | | | | | | | | |
| 2627 | Xylenes (total) | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 50 | 150 | | X | 50 | 150 | |
| 2741 | Trifluorotoluene | | | | | X | 50 | 150 | | X | 50 | 150 | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Frozen Encore | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/kg | 0.12 | ug/kg | C | 69 | 132 | 20 | C | 62 | 150 | 33 |
| 318 | Bromobenzene | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 321 | Bromochloromethane | 1 | ug/kg | 0.37 | ug/kg | | | | | | | | |
| 323 | Bromodichloromethane | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 340 | Bromoform | 1 | ug/kg | 0.74 | ug/kg | | | | | | | | |
| 343 | Bromomethane | 1 | ug/kg | 0.22 | ug/kg | | | | | | | | |
| 393 | n-Butylbenzene | 1 | ug/kg | 0.46 | ug/kg | | | | | | | | |
| 395 | sec-Butylbenzene | 1 | ug/kg | 0.47 | ug/kg | | | | | | | | |
| 398 | tert-Butylbenzene | 1 | ug/kg | 0.57 | ug/kg | | | | | | | | |
| 463 | Carbon tetrachloride | 1 | ug/kg | 0.14 | ug/kg | | | | | | | | |
| 521 | Chlorobenzene | 1 | ug/kg | 0.6 | ug/kg | C | 51 | 131 | 20 | C | 10 | 142 | 32 |
| 534 | Chlorodibromomethane | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 550 | Chloroethane | 1 | ug/kg | 0.18 | ug/kg | | | | | | | | |
| 569 | Chloroform | 1 | ug/kg | 0.13 | ug/kg | | | | | | | | |
| 574 | Chloromethane | 1 | ug/kg | 0.99 | ug/kg | | | | | | | | |
| 614 | 2-Chlorotoluene | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 617 | 4-Chlorotoluene | 1 | ug/kg | 0.53 | ug/kg | | | | | | | | |
| 3260 | 1,2-Dibromo-3-chloropropane (DBCP) | 1 | ug/kg | | | | | | | | | | |
| 3261 | 1,2-Dibromoethane (EDB) | 1 | ug/kg | 0.24 | ug/kg | | | | | | | | |
| 888 | Dibromomethane | 1 | ug/kg | 0.12 | ug/kg | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/kg | 0.55 | ug/kg | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/kg | 0.48 | ug/kg | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/kg | 0.62 | ug/kg | | | | | | | | |
| 924 | Dichlorodifluoromethane | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 936 | 1,2-Dichloroethane | 1 | ug/kg | 0.12 | ug/kg | | | | | | | | |
| 948 | cis-1,2-Dichloroethene | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 950 | trans-1,2-Dichloroethene | 1 | ug/kg | 0.11 | ug/kg | | | | | | | | |
| 943 | 1,1-Dichloroethene | 1 | ug/kg | 0.28 | ug/kg | C | 29 | 140 | 20 | C | 10 | 203 | 38 |
| 986 | 1,2-Dichloropropane | 1 | ug/kg | 0.2 | ug/kg | | | | | | | | |
| 989 | 1,3-Dichloropropane | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 990 | 2,2-Dichloropropane | 1 | ug/kg | 0.22 | ug/kg | | | | | | | | |
| 998 | cis-1,3-Dichloropropene | 1 | ug/kg | 0.29 | ug/kg | | | | | | | | |
| 1000 | trans-1,3-Dichloropropene | 1 | ug/kg | 0.38 | ug/kg | | | | | | | | |
| 996 | 1,1-Dichloropropene | 1 | ug/kg | 0.14 | ug/kg | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/kg | 0.38 | ug/kg | | | | | | | | |

**TABLE 8.2-4-14**
**GC Volatiles – Method 8021B**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| # | Frozen Encore Compound | RL | Units | MDL | Units | LCS T | LCS LCL | LCS UCL | LCS RPD | MS T | MS LCL | MS UCL | MS RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1489 | Hexachlorobutadiene | 1 | ug/kg | 0.5 | ug/kg | | | | | | | | |
| 1578 | Isopropylbenzene | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 1590 | p-Isopropyltoluene | 1 | ug/kg | 0.65 | ug/kg | | | | | | | | |
| 1811 | Methylene chloride | 5 | ug/kg | 0.25 | ug/kg | | | | | | | | |
| 1932 | Naphthalene | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 2247 | n-Propylbenzene | 1 | ug/kg | 0.44 | ug/kg | | | | | | | | |
| 2355 | Styrene | 1 | ug/kg | 0.31 | ug/kg | | | | | | | | |
| 2437 | 1,1,1,2-Tetrachloroethane | 1 | ug/kg | 0.55 | ug/kg | | | | | | | | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/kg | 0.19 | ug/kg | | | | | | | | |
| 2445 | Tetrachloroethene | 1 | ug/kg | 0.42 | ug/kg | | | | | | | | |
| 2489 | Toluene | 1 | ug/kg | 0.17 | ug/kg | C | 66 | 129 | 20 | C | 50 | 142 | 40 |
| 2514 | 1,2,3-Trichlorobenzene | 1 | ug/kg | 0.54 | ug/kg | | | | | | | | |
| 2515 | 1,2,4-Trichlorobenzene | 1 | ug/kg | 0.53 | ug/kg | | | | | | | | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/kg | 0.15 | ug/kg | | | | | | | | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/kg | 0.52 | ug/kg | | | | | | | | |
| 2525 | Trichloroethene | 1 | ug/kg | 0.18 | ug/kg | C | 10 | 216 | 20 | C | 10 | 216 | 45 |
| 1428 | Trichlorofluoromethane | 1 | ug/kg | 0.13 | ug/kg | | | | | | | | |
| 2563 | 1,2,3-Trichloropropane | 1 | ug/kg | 0.68 | ug/kg | | | | | | | | |
| 2587 | 1,2,4-Trimethylbenzene | 1 | ug/kg | 0.33 | ug/kg | | | | | | | | |
| 2592 | 1,3,5-Trimethylbenzene | 1 | ug/kg | 0.32 | ug/kg | | | | | | | | |
| 2613 | Vinyl chloride | 1 | ug/kg | 0.48 | ug/kg | | | | | | | | |
| 2627 | Xylenes (total) | 1 | ug/kg | 0.39 | ug/kg | | | | | | | | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 50 | 150 | | X | 50 | 150 | |
| 2741 | Trifluorotoluene | | | | | X | 50 | 150 | | X | 50 | 150 | |

**TABLE 8.2-4-15**
**GC Volatiles – Method 601**
**Reporting Limits (RL), Method Detection Limits (MDL), and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 323 | Bromodichloromethane | 1 | ug/L | 0.59 | ug/L | C | 10 | 225 | | C | 10 | 225 | |
| 340 | Bromoform | 1 | ug/L | 0.33 | ug/L | C | 36 | 158 | | C | 36 | 158 | |
| 343 | Bromomethane | 1 | ug/L | 0.55 | ug/L | C | 10 | 196 | | C | 10 | 196 | |
| 463 | Carbon tetrachloride | 1 | ug/L | 0.55 | ug/L | C | 30 | 157 | | C | 30 | 157 | |
| 521 | Chlorobenzene | 1 | ug/L | 0.48 | ug/L | C | 61 | 134 | | C | 42 | 147 | |
| 535 | Dibromochloromethane | 1 | ug/L | 0.34 | ug/L | C | 51 | 157 | | C | 51 | 157 | |
| 550 | Chloroethane | 1 | ug/L | 0.7 | ug/L | C | 10 | 181 | | C | 10 | 181 | |
| 568 | 2-Chloroethyl vinyl ether | 5 | ug/L | 0.35 | ug/L | C | 10 | 226 | | C | 10 | 226 | |
| 569 | Chloroform | 1 | ug/L | 0.4 | ug/L | C | 26 | 177 | | C | 26 | 177 | |
| 574 | Chloromethane | 1 | ug/L | 0.52 | ug/L | C | 10 | 209 | | C | 10 | 209 | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/L | 0.48 | ug/L | C | 31 | 146 | | C | 31 | 146 | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/L | 0.43 | ug/L | C | 27 | 147 | | C | 27 | 147 | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/L | 0.57 | ug/L | C | 34 | 170 | | C | 34 | 170 | |
| 924 | Dichlorodifluoromethane | 1 | ug/L | 0.29 | ug/L | | | | | | | | |
| 933 | 1,1-Dichloroethane | 1 | ug/L | 0.45 | ug/L | C | 21 | 167 | | C | 21 | 167 | |
| 936 | 1,2-Dichloroethane | 1 | ug/L | 0.32 | ug/L | C | 36 | 158 | | C | 36 | 158 | |
| 950 | trans-1,2-Dichloroethene | 1 | ug/L | 0.43 | ug/L | C | 10 | 166 | | C | 10 | 166 | |
| 943 | 1,1-Dichloroethene | 1 | ug/L | 0.46 | ug/L | C | 35 | 127 | | C | 14 | 151 | |
| 986 | 1,2-Dichloropropane | 1 | ug/L | 0.36 | ug/L | C | 43 | 171 | | C | 43 | 171 | |
| 998 | cis-1,3-Dichloropropene | 1 | ug/L | 0.39 | ug/L | C | 30 | 150 | | C | 30 | 150 | |
| 1000 | trans-1,3-Dichloropropene | 1 | ug/L | 0.37 | ug/L | C | 22 | 178 | | C | 22 | 178 | |
| 1811 | Methylene chloride | 5 | ug/L | 0.48 | ug/L | C | 10 | 153 | | C | 10 | 153 | |
| 2439 | 1,1,2,2-Tetrachloroethane | 1 | ug/L | 0.97 | ug/L | C | 28 | 212 | | C | 28 | 212 | |
| 2445 | Tetrachloroethene | 1 | ug/L | 0.72 | ug/L | C | 10 | 212 | | C | 10 | 212 | |
| 2518 | 1,1,1-Trichloroethane | 1 | ug/L | 0.46 | ug/L | C | 32 | 171 | | C | 32 | 171 | |
| 2522 | 1,1,2-Trichloroethane | 1 | ug/L | 0.4 | ug/L | C | 49 | 155 | | C | 49 | 155 | |
| 2525 | Trichloroethene | 1 | ug/L | 0.61 | ug/L | C | 58 | 131 | | C | 10 | 229 | |
| 1428 | Trichlorofluoromethane | 1 | ug/L | 0.34 | ug/L | C | 10 | 157 | | C | 10 | 157 | |
| 2613 | Vinyl chloride | 1 | ug/L | 0.71 | ug/L | C | 10 | 205 | | C | 10 | 205 | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 76 | 145 | | X | 76 | 145 | |
| 2741 | Trifluorotoluene | | | | | X | 76 | 121 | | X | 76 | 121 | |
| 2760 | Fluorobenzene | | | | | X | 92 | 114 | | X | 92 | 114 | |

**TABLE 8.2-4-15**
**GC Volatiles – Method 602**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS MS/MSD, and RPD)[1]**

| 602 | Water | | | | | LCS | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 196 | Benzene | 1 | ug/L | 0.29 | ug/L | C | 73 | 134 | 25 | C | 55 | 161 | 25 |
| 521 | Chlorobenzene | 1 | ug/L | 0.48 | ug/L | | | | | | | | |
| 904 | 1,2-Dichlorobenzene | 1 | ug/L | 0.48 | ug/L | | | | | | | | |
| 907 | 1,3-Dichlorobenzene | 1 | ug/L | 0.43 | ug/L | | | | | | | | |
| 910 | 1,4-Dichlorobenzene | 1 | ug/L | 0.57 | ug/L | | | | | | | | |
| 1332 | Ethylbenzene | 1 | ug/L | 0.68 | ug/L | C | 51 | 142 | 20 | C | 51 | 142 | 10 |
| 2489 | Toluene | 1 | ug/L | 0.56 | ug/L | C | 71 | 132 | 25 | C | 55 | 159 | 25 |
| 321 | Bromochloromethane | | | | | X | 54 | 112 | | X | 54 | 112 | |
| 2734 | 1,4-Dichlorobutane | | | | | X | 76 | 145 | | X | 76 | 145 | |
| 2741 | Trifluorotoluene | | | | | X | 76 | 121 | | X | 76 | 121 | |
| 2760 | Fluorobenzene | | | | | X | 92 | 114 | | X | 84 | 112 | |

**TABLE 8.2-4-16**
**Total Petroleum Hydrocarbons, Diesel & Gasoline Range Organics**
**Reporting Limits (RL), Method Detection Limits (MDL),**
**and Control Limits (LCS, MS/MSD, and RPD)[1]**

| | DRO - Water | | | | | | LCS | | | | MS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3052 | TPH (as Diesel) | 100 | ug/L | 92 | ug/L | C | 66 | 111 | 36 | C | 70 | 130 | 50 |
| 2976 | C9 (nonane) | | | | | X | 10 | 110 | | X | 10 | 110 | |
| | DRO - Solid | | | | | | LCS | | | | MS | | |
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 3052 | TPH (as Diesel) | 10 | mg/kg | 2.5 | mg/kg | C | 64 | 125 | 30 | C | 70 | 130 | 50 |
| 2976 | C9 (nonane) | | | | | X | 10 | 110 | | X | 10 | 110 | |
| | GRO - Water | | | | | | LCS | | | | MS | | |
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2861 | Gasoline Range Organics | 100 | ug/L | 13 | ug/L | | | | | | | | |
| 2909 | TPH (as Gasoline) | 100 | ug/L | 13 | ug/L | C | 70 | 130 | 77 | C | 10 | 116 | 77 |
| 4977 | TPH (Purgeables) | 100 | ug/L | 13 | ug/L | | | | | | | | |
| | GRO - Solid | | | | | | LCS | | | | MS | | |
| # | Compound | RL | Units | MDL | Units | T | LCL | UCL | RPD | T | LCL | UCL | RPD |
| 2861 | Gasoline Range Organics | 100 | ug/kg | 17 | ug/kg | | | | | | | | |
| 2909 | TPH (as Gasoline) | 100 | ug/kg | 17 | ug/kg | C | 38 | 120 | 49 | C | 10 | 114 | 49 |
| 4977 | TPH (Purgeables) | 100 | ug/kg | 17 | ug/kg | | | | | | | | |

*Legend*

*c = Control Analyte/Compound*
*x = Surrogate*
*(1) = The latest MDLs, RLs, and Control Limits will be utilized at the time of sample analysis*

# TABLE 8.4-1
## Field Quality Control Samples

| Type | Applicability | | Accuracy and Precision Application | Introduced By |
|---|---|---|---|---|
| | Inorganic | Organic | | |
| Trip Blank (volatiles) | No | Yes | Accuracy | Supplier of Containers |
| Field Blank | Yes | Yes | Accuracy | Field Sampler |
| Rinsate Blank | Yes | Yes | Accuracy | Field Sampler |
| Collocated Sample | Yes | Yes | Precision | Field Sampler |
| Split Sample | Yes | Yes | Precision | Field Sampler |
| Field Duplicate | Yes | Yes | Precision | Field Sampler |
| Field Matrix Spike | Yes | Yes | Accuracy | Field Sampler |

# TABLE 8.4-2
## Laboratory Quality Control Samples

| Type | Frequency | Applicability | | Accuracy and Precision Application | Introduced By |
|---|---|---|---|---|---|
| | | Inorganic | Organic | | |
| Analytical Spike | As specified in methods, or as needed | Yes | No | Accuracy | Analyst/ Prep |
| Duplicate | 1 out of 20 or at least 1/month/run | Yes | Yes | Precision | Analyst/ Prep |
| Instrument Blank | As specified methods, or as needed | Yes | Yes | Accuracy | Analyst |
| Interference Check Sample | As specified in methods | Yes | No | Accuracy | Analyst |
| Internal Standard | Each sample and standard | Yes | Yes | Both | Analyst/ Prep |
| Laboratory Control Sample | 1 per each group of samples processed up to 20 samples. | Yes | Yes | Accuracy | Analyst/ Prep |
| Matrix Spike | 1 per each group of samples processed up to 20 samples. | Yes | Yes | Accuracy | Analyst/ Prep |
| Matrix Spike Duplicate | 1 per each group of samples processed up to 20 samples. | Yes | Yes | Both | Analyst/ Prep |
| Method Blank | 1 per each group of samples processed up to 20 samples. | Yes | Yes | Accuracy | Analyst/ Prep |
| Surrogate | All standards, method blanks, LCS, and samples. | No | Yes<br>Method Dependent | Accuracy | Analyst/ Prep |
| Yield Monitor | Operation-specific | Yes | No | Accuracy | Prep |

## TABLE 8.4-3
## Laboratory Performance Quality Control Samples

| Sample/Measurement | Purpose |
|---|---|
| Method Blanks | Demonstrates that the laboratory systems (*e.g.*, glassware cleaning procedures) and laboratory reagents used for the preparation and analysis of samples have not contributed to a false positive or negative measurement. |
| Instrument Blank | Demonstrates that the analytical system has not contributed to a false positive or negative measurement. |
| Laboratory Control Sample | Demonstrates the laboratory's ability to perform an analysis within the performance requirements of the method. |

## TABLE 8.4-4
## Matrix Specific Quality Control Samples

| Quality Control Sample | Purpose |
|---|---|
| Duplicate Samples | Estimates the ability of the laboratory to obtain precise measurements on a sample. This measure is dependent on the homogeneity of the sample being duplicated. Solid samples often portray poor sample homogeneity and therefore often have poor duplication with regards to the sample result. |
| Matrix Spike Sample | Estimates the ability of the laboratory to obtain accurate measurements on a sample. The measure is dependent on the bias a sample matrix may cause regarding a given analyte. |
| Matrix Spike Duplicate Sample | In addition to verifying the accuracy of the matrix spike sample, the matrix spike duplicate can be used with the matrix spike sample as a measure of precision by calculating the relative percent difference (RPD). |

## TABLE 8.4-5

# Inorganic Laboratory Quality Control Samples

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Alkalinity | Method Blank | 310.1<br>2320B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 310.1<br>2320B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 310.1<br>2320B | Not Applicable | — | Not Applicable |
| | Matrix Spike Duplicate | 310.1<br>2320B | Not Applicable | — | Not Applicable |
| | Duplicate | 310.1<br>2320B | Frequency: 1 per batch of 10 samples Criteria 310.1: ≤ 20 % RPD[3]<br><br>Criteria 2320B: ≤ 25 % RPD[3]<br><br>Corrective Action: Flag data outside of limit. | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Ammonia | Method Blank | 350.1<br>350.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 350.1<br>350.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 350.1<br>350.2 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 350.1<br>350.2 | Not Applicable | — | Not Applicable |
| | Duplicate | 350.1<br>350.2 | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Ammonia (TKN) | Method Blank | 351.2<br>351.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 351.2<br>351.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 351.2<br>351.3 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 351.2<br>351.3 | Not Applicable | — | Not Applicable |
| | Duplicate | 351.2<br>351.3 | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| BOD | Method Blank | 405.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 405.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 405.1 | Not Applicable | — | Not Applicable |
| | Matrix Spike Duplicate | 405.1 | Not Applicable | — | Not Applicable |
| | Duplicate | 405.1 | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Bromide | Method Blank | 300.0[5] | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Concentration must be less than the reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Concentration must be less than the reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 300.0[5] | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: If not within control limits, rerun all associated samples | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: If not within control limits, rerun all associated samples |
| | Matrix Spike | 300.0[5] | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag data outside of limit | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag data associated with MS outside of limit |
| | Matrix Spike Duplicate | 300.0[5] | Not Applicable | 9056 | Not Applicable |
| | Duplicate | 300.0[5] | Methods 300.0: Not Applicable<br>Frequency: Method D1246: 1 with each batch of samples processed not to exceed 20 samples | 9056 | Frequency: 1 with each batch of samples processed<br>Criteria: RPD[3] must be within laboratory control limits<br>Corrective Action: Flag data associated with duplicates outside of laboratory RPD[3] limits |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chemical Oxygen Demand (COD) | Method Blank | 410.4 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 410.4 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 410.4 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 410.4 | Not Applicable | — | Not Applicable |
| | Duplicate | 410.4 | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chloride | Method Blank | 300.0[5]<br>325.2<br>325.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9056<br>9252 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 300.0[5]<br>325.2<br>325.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within control limits, rerun all associated samples | 9056<br>9252 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |
| | Matrix Spike | 300.0[5]<br>325.2<br>325.3 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9056<br>9252 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Methods 9251Corrective Action: If not within laboratory control limits, rerun all associated samples<br><br>Method 9056/9253 Corrective Action: Flag data associated with MS outside of limits |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chloride (continued) | Matrix Spike Duplicate | 300.0[5]<br>325.2<br>325.3 | Not Applicable | 9056<br>9252 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits/< 20 % RPD[3]<br>Corrective Action: Flag data outside of limit<br>Method 9056: MSD is not applicable |
| | Duplicate | 300.0[5]<br>325.2<br>325.3 | Methods 300.0, 325.1, 325.2, 325.3: Not Applicable<br><br>Method 4500-Cl E: Frequency: 1 with each batch of samples processed not to exceed 20 samples | 9056<br>9252 | Method 9056/9253: Frequency: 1 with each batch of samples processed<br>Criteria: RPD[3] must be within laboratory control limits<br>Corrective Action: Flag data associated with duplicates outside of laboratory RPD[3] limits |
| Chlorine, Residual | Method Blank | 330.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chlorine, Residual (continued) | Laboratory Control Sample | 330.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 330.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 330.5 | Not Applicable | — | Not Applicable |
| | Duplicate | 330.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3]<br><br>Corrective Action: Flag data outside of limit. | — | Water |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chromium ($Cr^{+6}$) | Method Blank | 3500 Cr-D | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 7196A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 3500 Cr-D | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 7196A | Frequency: 1 with each batch of samples processed not to exceed 20 samples prepped<br><br>Criteria: percent recovery for water must be within ± 15 % and for solids must be within ± 20%<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 3500 Cr-D | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag data outside of limit | 3060A<br>7196A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Advisory limits are 75% - 125% recovery<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Matrix Spike Duplicate | 3500 Cr-D | Not Applicable | 7196A | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Chromium ($Cr^{+6}$) (continued) | Duplicate | 3500 Cr-D | Not Applicable | 7196A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3] limit<br><br>Corrective Action: Flag data outside of limit. |
| Conductivity, Specific | Method Blank | 120.1 | Not Applicable | 9050A | Not Applicable |
| Conductivity, Specific (continued) | Laboratory Control Sample | 120.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9050A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |
| | Matrix Spike | 120.1 | Not Applicable | 9050A | Not Applicable |
| | Matrix Spike Duplicate | 120.1 | Not Applicable | 9050A | Not Applicable |
| | Duplicate | 120.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3]<br><br>Corrective Action: Flag data outside of limit. | 9050A | Frequency: 1 with each batch of samples processed not to exceed 10 samples |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Cyanide (Amenable) | Method Blank | 335.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| Cyanide (Amenable) (continued) | Laboratory Control Sample | 335.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 335.1 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Advisory limits are 75% - 125% recovery<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Matrix Spike Duplicate | 335.1 | Not Applicable | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Advisory limits are 75% - 125% recovery<br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| | Duplicate | 335.1 | Not Applicable | 9012A | Not Applicable |
| Cyanide (Total) | Method Blank | 335.2<br>335.3<br>335.4<br>4500-CN E | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 335.2<br>335.3<br>335.4<br>4500-CN E | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 335.2<br>335.3<br>335.4<br>4500-CN E | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Advisory limit is 75% - 125% recovery<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Cyanide (Total) (continued) | Matrix Spike Duplicate | 335.2<br>335.3<br>335.4<br>4500-CN E | Not Applicable | 9012A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Limit is 75% - 125% recovery<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 335.2<br>335.3<br>335.4 | Methods 335.2, 335.3: Not Applicable<br><br>Method 4500-CN E:<br>Frequecny: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3]<br><br>Corrective Action: Flag data outside of limit. | 9012A | Not Applicable |
| Flashpoint | Method Blank | — | Not Applicable | 1010 | Not Applicable |
| | Laboratory Control Sample | — | Not Applicable | 1010 | Not Applicable |
| | Matrix Spike | — | Not Applicable | 1010 | Not Applicable |
| | Matrix Spike Duplicate | — | Not Applicable | 1010 | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Flashpoint (continued) | Duplicate | — | Not Applicable | 1010 | Frequency: 1 per batch of ≤20 samples<br><br>Criteria: RPD[3] must be ≤ 20%<br><br>Corrective Action: Flag data associated with unacceptable Duplicate |
| Fluoride | Method Blank | 300.0[5]<br>340.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable |
| | Laboratory Control Sample | 300.0[5]<br>340.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within control limits, rerun all associated samples |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Fluoride (continued) | Matrix Spike | 300.0[5]<br>340.2 | Frequency: 1 per 10 samples by IC<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag data outside of limit | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag data associated with outside of limit |
| | Matrix Spike Duplicate | 300.0[5]<br>340.2 | Not Applicable | 9056 | Not Applicable |
| | Duplicate | 300.0[5]<br>340.2 | Not Applicable | 9056 | Frequency: 1 with each batch of samples processed<br>Criteria: RPD[3] must be within laboratory control limits<br>Corrective Action: Flag data associated with duplicates outside of laboratory RPD[3] limits |
| Hardness | Method Blank | 130.2<br>2340B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Hardness (continued) | Laboratory Control Sample | 130.2<br>2340B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 130.2<br>2340B | Method 130.2, Not Applicable<br><br>Method 2340B:<br><br>Frequency , Criteria, and Corrective Action: See ICP Metals Method 200.7 Requirements | — | Not Applicable |
| | Matrix Spike Duplicate | 130.2<br>2340B | Method 130.2, Not Applicable<br><br>Method 2340B:<br><br>Frequency, Criteria, and Corrective Action: See ICP Metals Method 200.7 Requirements | — | Not Applicable |
| | Duplicate | 130.2<br>2340B | Frequency: 1 per 20 samples, minimum of one per batch of samples processed<br><br>Criteria: RPD[3] must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846) [2] |
|---|---|---|---|---|---|
| Iron, Ferrous & Ferric | Method Blank | 3500-Fe D | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 3500-Fe D | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 3500-Fe D | Frequency: 1 every 10 samples<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag associated data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 3500-Fe D | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Iron,<br>Ferrous & Ferric (continued) | Duplicate | 3500-Fe D | Frequency: 1 per batch of 20 samples<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag associated data outside of limit | — | Not Applicable |
| Nitrate | Method Blank | 300.0[5]<br>353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit |
| | Laboratory Control Sample | 300.0[5]<br>353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |

# TABLE 8.4-5

## Inorganic Laboratory Quality Control Samples (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Nitrate (continued) | Matrix Spike | 300.0[5] 353.2 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, flag all associated samples |
| | Matrix Spike Duplicate | 300.0[5] 353.2 | Not Applicable | 9056 | Not applicable |
| | Duplicate | 300.0[5] 353.2 | Not Applicable | 9056 | Frequency: 1 per 10 samples<br><br>Criteria: RPD[3] must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, flag all associated samples |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Nitrite | Method Blank | 300.0[5]<br>353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 300.0[5]<br>354.1<br>353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |
| | Matrix Spike | 300.0[5]<br>354.1<br>353.2 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, flag all associated samples |
| | Matrix Spike Duplicate | 300.0[5]<br>354.1<br>353.2 | Not Applicable | 9056 | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Nitrite (continued) | Duplicate | 300.0[5]<br>354.1<br>353.2 | Not Applicable | 9056 | Frequency: 1 per 10 samples<br><br>Criteria: RPD[3] must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, flag all associated samples |
| Nitrate-Nitrite | Method Blank | 353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |
| | Laboratory Control Sample | 353.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Nitrate-Nitrite (continued) | Matrix Spike | 353.2 | Frequency: 1 per 20 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 353.2 | Not Applicable | — | Not Applicable |
| | Duplicate | 353.2 | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| pH | Method Blank | 150.1 | Not Applicable | 9040B<br>9045C | Not Applicable |
| | Laboratory Control Sample | 150.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Sample provided by external source, must be within ± 0.05 pH units<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9040B<br>9045C | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Sample provided by external source, must be within ± 0.05 pH units<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |
| | Matrix Spike | 150.1 | Not Applicable | 9040B<br>9045C | Not Applicable |
| | Matrix Spike Duplicate | 150.1 | Not Applicable | 9040B<br>9045C | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| pH (continued) | Duplicate | 150.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3] limit<br><br>Corrective Action: Flag data outside of limit. | 9040B<br>9045C | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Advisory limits are ≤ 20% RPD[3]<br><br>Corrective Action: Flag data associated with unacceptable Duplicate |
| Phenolics | Method Blank | 420.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9065<br>9066 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Concentration less than reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 420.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9065<br>9066 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: If not within laboratory control limits, rerun all associated samples |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Phenolics (continued) | Matrix Spike | 420.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 9065<br>9066 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated data |
| | Matrix Spike Duplicate | 420.1 | Not Applicable | 9065<br>9066 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated data |
| | Duplicate | 420.1 | Not Applicable | 9065<br>9066 | Not Applicable |
| Phosphate | Method Blank | --- | Not Applicable | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | --- | Not Applicable | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Phosphate (continued) | Matrix Spike | --- | Not Applicable | 9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated data associated with MS outside of limits |
| | Matrix Spike Duplicate | --- | Not Applicable | 9056 | Not Applicable |
| | Duplicate | --- | Not Applicable | 9056 | Frequency: 1 with each batch of samples processed<br>Criteria: RPD[3] must be within laboratory control limits<br>Corrective Action: Flag data associated with duplicates outside of laboratory RPD[3] limits |
| Phosphorus (Total and Ortho-phosphate) | Method Blank | 300.0[4,5]<br>365.2<br>365.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Phosphorus (Total and Ortho-phosphate) (continued) | Laboratory Control Sample | 300.0[4,5]<br>365.2<br>365.3 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 300.0[4,5]<br>365.2<br>365.3 | Frequency: 1 per 10 samples<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag data outside of limit | — | Not Applicable |
| | Matrix Spike Duplicate | 300.0[4,5]<br>365.2<br>365.3 | Not Applicable | — | Not Applicable |
| | Duplicate | 300.0[4,5]<br>365.2<br>365.3 | Not Applicable | — | Not Applicable |
| Reactivity (Cyanide and Sulfide) | Method Blank | --- | Not Applicable | Chapter 7[6] Sections 7.3.3.2 and 7.3.4.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Reactivity (Cyanide and Sulfide) (continued) | Laboratory Control Sample | --- | Not Applicable | Chapter 7[6] Sections 7.3.3.2 and 7.3.4.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | --- | Not Applicable | Chapter 7[6] Sections 7.3.3.2 and 7.3.4.2 | Follow QC sample requirements of determinative method |
| | Matrix Spike Duplicate | --- | Not Applicable | Chapter 7[6] Sections 7.3.3.2 and 7.3.4.2 | Follow QC sample requirements of determinative method |
| | Duplicate | --- | Not Applicable | Chapter 7[6] Sections 7.3.3.2 and 7.3.4.2 | Not Applicable |
| Solids | Method Blank | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: If analyte level in method blank is ≥ RL for the analyte of interest in the sample, all associated samples with reportable levels of analyte are reprepared and reanalyzed. | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Solids | Method Blank | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: If analyte level in method blank is ≥ RL for the analyte of interest in the sample, all associated samples with reportable levels of analyte are reprepared and reanalyzed. | — | Not Applicable |
| Solids (continued) | Laboratory Control Sample | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, reprepare and rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Not Applicable | — | Not Applicable |
| | Matrix Spike Duplicate | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Not Applicable | — | Not Applicable |
| | Duplicate | 160.1<br>160.2<br>160.3<br>160.4<br>160.5 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Sample results should agree within 20% if both the sample and sample duplicate results are > 5 X RL<br>Corrective Action: Flag data | — | Not Applicable |

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| | | | outside of limit. | | |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Sulfate | Method Blank | 300.0[5]<br>375.4 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9038<br>9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 300.0[5]<br>375.4 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9038<br>9056 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Method 9038 Criteria: Percent recovery must be within ± 15 %<br><br>Method 9056 Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS (ICV) |
| | Matrix Spike | 300.0[5]<br>375.4 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9038<br>9056 | Frequency: 1 with each batch of samples processed not to exceed 10 samples ( 9038) or 20 samples (9056)<br><br>Method 9038 Criteria: Limits are 75% - 125% recovery<br><br>Method 9056 Criteria: Percent recovery must be within laboratory 0control limits<br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Matrix Spike Duplicate | 300.0[5]<br>375.4 | Not Applicable | 9038<br>9056 | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Sulfate (continued) | Duplicate | 300.0[5]<br>375.4 | Not Applicable | 9038<br>9056 | Frequency: 1 with each batch of samples processed<br><br>Criteria: RPD[3] must be within laboratory control limits<br><br>Corrective Action: Flag data associated with duplicates outside of laboratory RPD[3] limits |
| Sulfide | Method Blank | 376.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9030A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 376.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9030A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag associated data |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Sulfide (continued) | Matrix Spike | 376.2 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9030A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag associated data |
| | Matrix Spike Duplicate | 376.2 | Not Applicable | 9030A | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated data<br>Method 9034: Not Applicable |
| | Duplicate | 376.2 | Not Applicable | 9030A | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Total Organic Carbon (TOC) | Method Blank | 415.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9060 Walkley-Black | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 415.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | 9060 Walkley-Black | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 415.1 | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag data outside of limit | 9060 Walkley-Black | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Reanalyze if sample remaining. If not, flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Total Organic Carbon (TOC) (continued) | Matrix Spike Duplicate | 415.1 | Not Applicable | 9060 Walkley-Black | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Reanalyze if sample remaining. If not, flag data associated with unacceptable Matrix Spike Duplicate |
| | Duplicate | 415.1 | Not Applicable | 9060 Walkley-Black | Not Applicable |
| Total Organic Halides (TOX) | Method Blank | 450.1 [5] | Frequency: 1 with each set of 8 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 9020B | Frequency: Run in duplicate between each group of 8 analytical determinations<br><br>Criteria: Concentration less than reporting limit or less than 2 X MDL or RL whichever is lower<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 450.1 [5] | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery of analyte must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS (ICV) | 9020B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery of analyte must be within 90-110%<br>Corrective Action: Rerun all samples associated with unacceptable LCS (ICV) |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Total Organic Halides (TOX) (continued) | Matrix Spike | 450.1 [5] | Frequency: 1 per 10 samples, minimum of one per batch of samples processed<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Reanalyze if sample remaining. If not, flag data with unacceptable Matrix Spike | 9020B | Frequency: 1 per batch of 10 samples<br><br>Criteria: Must be within laboratory control limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike<br>SOP NO. CORP-WC-0001 |
| | Matrix Spike Duplicate | 450.1 [5] | Not Applicable | 9020B | Not Applicable |
| | Duplicate | 450.1 [5] | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3] limit<br><br>Corrective Action: Flag data outside of limit. | 9020B | Frequency: All samples will be analyzed in duplicate<br><br>Criteria: ≤ 20 % RPD[3] limit if both the sample and sample duplicate results are > 10 X MDL.<br><br>Corrective Action: Flag data outside of limit.<br>SOP NO. CORP-WC-0001 |
| Turbidity | Method Blank | 180.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration must be less than the reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Turbidity (continued) | Laboratory Control Sample | 180.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples | — | Not Applicable |
| | Matrix Spike | 180.1 | Not applicable | — | Not Applicable |
| | Matrix Spike Duplicate | 180.1 | Not Applicable | — | Not Applicable |
| | Duplicate | 180.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Must be within laboratory QC limits<br><br>Corrective Action: Flag data outside of limit Not Applicable. | — | Not Applicable |
| Water Content | Method Blank | — | Not Applicable | — | Not Applicable |
| | Laboratory Control Sample | — | Not Applicable | — | Not Applicable |
| | Matrix Spike | — | Not Applicable | — | Not Applicable |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Water Content (continued) | Matrix Spike Duplicate | — | Not Applicable | — | Not Applicable |
| | Duplicate | — | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3]<br><br>Corrective Action: Flag data outside of limit. | — | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: ≤ 20 % RPD[3] limit<br><br>Corrective Action: Reanalyze if sample remaining. If not, flag data outside of limit. |
| GFAA Metals and Mercury by CVAA & CVAFS | Method Blank | 200 series 1631B (5) | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank<br>SOP NO. CORP-MT-0003 | 7000A series | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank<br>SOP NO. CORP-MT-0003 |
| | Laboratory Control Sample | 200 series 1631B (5) | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery of analyte must be within ± 20 %<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS<br>SOP NO. CORP-MT-0003 | 7000A series | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery of analyte must be within ± 20 %<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS<br>SOP NO. CORP-MT-0003 |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| GFAA Metals and Mercury by CVAA & CVAFS (continued) | Matrix Spike | 200 series 1631B (5) | Frequency: with each batch of samples processed not to exceed 20 samples<br>Criteria: Recovery must be within 75-125 %<br>Corrective Action: Flag data associated with unacceptable MS. (See SOP NO. CORP-MT-0003 for detailed corrective action procedure and for other QC procedures.) | 7000A series | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Recovery must be within 75-125 %<br>Corrective Action: Flag data associated with unacceptable MS. (See SOP NO. CORP-MT-0003 for detailed corrective action procedure and for other QC procedures.) |
| | Matrix Spike Duplicate | 200 series 1631B (5) | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Recovery must be within 75-125 %, RPD[3] must be within 20 %<br>Corrective Action: Flag data associated with unacceptable MSD<br>SOP NO. CORP-MT-0003 | 7000A series | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Recovery must be within 75-125 %, RPD[3] must be within 20 %<br>Corrective Action: Flag data associated with unacceptable MSD<br>SOP NO. CORP-MT-0003 |
| | Duplicate | 200 series 1631B (5) | Not Applicable | 7000A series | Not Applicable |
| | Post Digestion Spikes | 200 series 1631B (5) | Post Digestion Spike is conducted on all samples | 7000A series | Post Digestion Spike is conducted on all samples |
| ICP Metals | Method Blank | 200.7<br>200.8 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Concentration less than reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank<br>SOP NO. CORP-MT-0001 | 6010B<br>6020 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: Concentration less than reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank<br>SOP NO. CORP-MT-0001 |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| ICP Metals (continued) | Laboratory Control Sample | 200.7<br>200.8 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery of analyte must be ± 85-115%<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS<br>SOP NO. CORP-MT-0001 | 6010B<br>6020 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery of analyte must be ± 20 %<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS<br>SOP NO. CORP-MT-0001 |
| | Matrix Spike | 200.7<br>200.8 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Limits for percent recovery are 75-125%<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike<br>SOP NO. CORP-MT-0001 | 6010B<br>6020 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Limits for percent recovery are 75-125%<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike<br>SOP NO. CORP-MT-0001 |
| | Matrix Spike Duplicate | 200.7<br>200.8 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Limits for percent recovery are 75-125%, RPD[3] must be within 20 %<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike<br>SOP NO. CORP-MT-0001 | 6010B<br>6020 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Limits for percent recovery are 75-125%, RPD[3] must be within 20 %<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike<br>SOP NO. CORP-MT-0001 |

# TABLE 8.4-5
## Inorganic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| ICP Metals (continued) | Duplicate | 200.7<br>200.8 | Not Applicable | 6010B<br>6020 | Not Applicable |
| | Serial Dilution | 200.7<br>200.8 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: 10 % Difference<br>Corrective Action: Flag data associated with unacceptable Serial Dilution<br>SOP NO. CORP-MT-0001 | 6010B<br>6020 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: 10 % Difference<br>Corrective Action: Flag data associated with unacceptable Serial Dilution<br>SOP NO. CORP-MT-0001 |

*Footnotes*

(1) National Pollutant Discharge Elimination System
(2) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December 1996).
(3) RPD-Relative Percent Difference
(4) Orthophosphate only
(5) Method not listed in 40 CFR Part 136.
(6) Current promulgated method is a Guidance Method Only, SW-846, Final Update III, Rev.3, 12/96.

# TABLE 8.4-6[7]
## Organic Laboratory Quality Control Samples

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Aromatic Volatiles by GC | Method Blank | 602 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 602 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 602 | Frequency: 1 per 10 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Aromatic Volatiles by GC (continued) | Matrix Spike Duplicate | 602 | Not Applicable | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 602 | Not Applicable | 8021B | Not Applicable |
| | Surrogates | 602 | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must be within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria:<br>Re-extract samples or flag sample data not meeting surrogate criteria | 8021B | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must be within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria: Reprepare and reanlayze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 602 | Optional: Internal standards are added to the method blank and all samples (QC included). If used, same compounds as used for surrogates may be appropriate. | 8021B | Optional: Internal standards are added to the method blank and all samples (QC included). If used, same compounds as used for surrogates may be appropriate. |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Halogenated Volatiles Volatiles by GC | Method Blank | -- | Not Applicable | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | -- | Not Applicable | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Halogenated Volatiles by GC (continued) | Matrix Spike | -- | Not Applicable | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Matrix Spike Duplicate | -- | Not Applicable | 8021B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | -- | Not Applicable | 8021B | Not Applicable |
| | Surrogates | -- | Not Applicable | 8021B | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must be within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria: Reprepare and reanalyze samples or flag sample data not meeting surrogate criteria. |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Halogenated Volatiles by GC (continued) | Internal Standards | -- | Not Applicable | 8021B | Optional: Internal standards are added to the method blank and all samples (QC included). If used, same compounds as used for surrogates may be appropriate. |
| Herbicides | Method Blank | 615[3] | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Re-extract all samples associated with unacceptable blank | 8151A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Re-extract all samples associated with unacceptable blank |
| | Laboratory Control Sample | 615[3] | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Re-extract all samples associated with unacceptable LCS | 8151A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Re-extract and reanalyze all samples associated with unacceptable LCS |
| | Matrix Spike | 615[3] | Frequency: 1 per 10 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8151A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846) [2] |
|---|---|---|---|---|---|
| Herbicides (continued) | Matrix Spike Duplicate | 615 [3] | Not Applicable | 8151A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory control limits<br><br>Corrective Action: Flag data associated with unacceptable matrix spike sample |
| | Duplicate | 615 [3] | Not Applicable | 8151A | Not Applicable |
| | Surrogates | 615 [3] | Not Applicable | 8151A | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must fall within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 615 [3] | Not Applicable | 8151A | Optional |

**TABLE 8.4-6**
**Organic Laboratory Quality Control Samples**
**(Continued)**

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Organo-phosphorus Pesticides | Method Blank | -- | Not Applicable | 8141A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | -- | Not Applicable | 8141A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | -- | Not Applicable | 8141A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery for each analyte should be within laboratory acceptance limits<br>Corrective Action: Flag data associated with unacceptable MS |
| | Matrix Spike Duplicate | -- | Not Applicable | 8141A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery for each analyte should be within laboratory acceptance limits<br>Corrective Action: Flag data associated with unacceptable MS |

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| | Duplicate | -- | Not Applicable | 8141A | Not Applicable |

## TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Organo-phosphorus Pesticides (continued) | Surrogates | -- | Not Applicable | 8141A | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank and LCS Criteria: Results must fall within laboratory-established control limits<br><br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| PAHs by GC and HPLC | Method Blank | 610 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8310 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 610 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 8310 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| PAHs by GC and HPLC (continued) | Matrix Spike | 610 | Frequency: 1 per 10 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8310 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Matrix Spike Duplicate | 610 | Not Applicable | 8310 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 610 | Not Applicable | 8310 | Not Applicable |
| | Surrogates | 610 | Not specified in method | 8310 | Surrogates spiked into method blank and all samples (QC included)<br>Method Blank Criteria and LCS:<br>Results must fall within laboratory established control limits<br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 610 | Optional | 8310 | Optional |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Pesticides/ PCBs | Method Blank | 608 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8081A 8082 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Reprepare and reanalyze all samples associated with unacceptable blank |
| | Laboratory Control Sample | 608 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 8081A 8082 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 608 | Frequency: 1 per 10 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8081A 8082 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846) [2] |
|---|---|---|---|---|---|
| Pesticides/ PCBs (continued) | Matrix Spike Duplicate | 608 | Not Applicable | 8081A 80882 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 608 | Not Applicable | 8081A 8082 | Not Applicable |
| | Surrogates | 608 | Not specified in method | 8081A 8082 | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>Results must fall within laboratory established control limits<br><br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 608 | Optional | 8081A 8082 | Optional |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Petroleum Hydro-carbons/Oil and Grease | Method Blank | 413.1<br>418.1 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank<br><br>Method 413.1: Not Applicable | 9070<br>9071A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Petroleum Hydro-carbons/Oil and Grease (continued) | Laboratory Control Sample | 413.1<br>418.1 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: If not within laboratory control limits, rerun all associated samples<br><br>Method 413.1: Not Applicable | 9070<br>9071A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within ± 20%<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 413.1<br>418.1 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag associated data<br>Method 413.1: Not Applicable | 9070<br>9071A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br><br>Corrective Action: Flag associated data |
| | Matrix Spike Duplicate | 413.1<br>418.1 | Not Applicable | 9070<br>9071A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated<br>Method 9071: Not Applicable |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Petroleum Hydro-carbons/Oil and Grease (continued) | Duplicate | 413.1<br>418.1 | Not Applicable | 9070<br>9071A | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br>Criteria: Percent recovery must be within laboratory control limits<br>Corrective Action: Flag associated<br>Method 9070: Not Applicable |
| | Surrogates | 413.1<br>418.1 | Not Applicable | 9070<br>9071A | Not Applicable |
| | Internal Standards | 413.1<br>418.1<br>1664A | Not Applicable | 9070<br>9071A<br>9071B | Not Applicable |
| Petroleum Hydro-carbons | Method Blank | 1664A[4] | Frequency: 1 with each preparation batch<br>Criteria: Concentration must be less than the reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank | 9071B | Frequency: 1 with each preparation batch<br>Criteria: Concentration must be less than the reporting limit<br>Corrective Action: Rerun all samples associated with unacceptable blank |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846) [2] |
|---|---|---|---|---|---|
| Petroleum Hydro-carbons (continued) | Laboratory Control Sample | 1664A | Frequency: 1 with each analytical batch<br><br>Criteria: Waters - See limits in SOP, NC-WC-0084<br>Soils - Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 9071B | Frequency: 1 with each analytical batch<br><br>Criteria: Waters - See limits in SOP, NC-WC-0084<br>Soils - Percent recovery must be within laboratory control limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 1664A | Frequency: 1 with every 10 samples per site<br><br>Criteria: See percent recovery limits in SOP, NC-WC-0084<br><br>Corrective Action: See SOP, NC-WC-0084 | 9071B | Frequency: 1 with every 10 samples per site<br><br>Criteria: See percent recovery limits in SOP, NC-WC-0084<br><br>Corrective Action: See SOP, NC-WC-0084 |
| | Matrix Spike Duplicate | 1664A | Frequency: 1 with every 10 samples per site<br><br>Criteria: See percent recovery and RPD limits in SOP, NC-WC-0084<br><br>Corrective Action: See NC-WC-0084 | 9071B | Frequency: 1 with every 10 samples per site<br><br>Criteria: See percent recovery and RPD limits in SOP, NC-WC-0084<br><br>Corrective Action: See NC-WC-0084 |
| | Duplicate | 1664A | Not Applicable | 9071B | Not Applicable |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Purgeable Halocarbons by GC | Method Blank | 601 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8021B | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 601 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 8021B | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 601 | Frequency: 1 per 10 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8021B | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846) [2] |
|---|---|---|---|---|---|
| Purgeable Halocarbons by GC (continued) | Matrix Spike Duplicate | 601 | Not Applicable | 8021B | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 601 | Not Applicable | 8021B | Not Applicable |
| | Surrogates | 601 | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must be within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria:<br>Re-extract samples or flag sample data not meeting surrogate criteria | 8021B | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank Criteria and LCS:<br>All surrogates must be within laboratory established control limits before sample analysis may proceed.<br><br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 601 | Optional: Internal standards are added to the method blank and all samples (QC included). If used, same compounds as used for surrogates may be appropriate. | 8021B | Optional: Internal standards are added to the method blank and all samples (QC included). If used, same compounds as used for surrogates may be appropriate. |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Semivolatiles | Method Blank | 625 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8270C | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Reextract and reanalyze all samples associated with unacceptable blank |
| | Laboratory Control Sample | 625 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery must be within acceptance limits given in method for each analyte<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS | 8270C | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Reextract and reanalyze all samples associated with unacceptable LCS |
| | Matrix Spike | 625 | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8270C | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Semivolatiles (continued) | Matrix Spike Duplicate | 625 | Not Applicable | 8270C | Frequency: 1 with each extraction batch of samples not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 625 | Not Applicable | 8270C | Not Applicable |
| | Surrogates | 625 | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank and LCS Criteria:<br>All surrogates must be in control before sample analysis may proceed<br><br>Sample Criteria: Re-extract samples or flag sample data not meeting surrogate criteria | 8270C | Surrogates spiked into method blank and all samples (QC included)<br><br>Method Blank and LCS Criteria:<br>All surrogates must be in control before sample analysis may proceed<br><br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 625 | Frequency: Internal standards spiked into method blank and all samples (QC included)<br><br>Criteria: All internal standard recoveries must be within laboratory control limits<br><br>Corrective Action: Flag sample data not meeting internal standard recovery requirements | 8270C | Internal Standards are added to all samples (QC samples included). Internal standard area of daily standard must be within 50% to 200% of the response in the mid level of the initial calibration standard.<br>The retention time (RT) for any internal standard (IS) in the continuing calibration must not exceed ± 0.5 minutes from mid level initial calibration standard IS RT. |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Volatiles by GC/MS | Method Blank | 624 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank | 8260B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than reporting limit<br><br>Corrective Action: Rerun all samples associated with unacceptable blank |
| | Laboratory Control Sample | 624 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8260B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte must be within laboratory acceptance limits<br><br>Corrective Action: Rerun all samples associated with unacceptable LCS |
| | Matrix Spike | 624 | Frequency: 1 per ≤ 20 samples from each site or 1 per month, whichever is more frequent<br><br>Criteria: percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike | 8260B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-6
## Organic Laboratory Quality Control Samples
## (Continued)

| Analysis | QC Sample | Method | NPDES[1] | Method | RCRA (SW846)[2] |
|---|---|---|---|---|---|
| Volatiles by GC/MS (continued) | Matrix Spike Duplicate | 624 | Not Applicable | 8260B | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br>Criteria: percent recovery for each analyte should be within laboratory acceptance limits<br>Corrective Action: Flag data associated with unacceptable Matrix Spike |
| | Duplicate | 624 | Not Applicable | 8260B | Not Applicable |
| | Surrogates | 624 | Surrogates spiked into Method Blank and all samples (QC included)<br><br>Method Blank Criteria: All surrogates must be in control before sample analysis may proceed.<br><br>Sample Criteria: Re-extract samples or flag sample data not meeting surrogate criteria | 8260B | Surrogates spiked into Method Blank and all samples (QC included)<br>Method Blank Criteria and LCS:<br>All surrogates must be in control before sample analysis may proceed.<br>Sample Criteria: Re-extract and reanalyze samples or flag sample data not meeting surrogate criteria |
| | Internal Standards | 624 | Frequency: Internal standards spiked into method blank and all samples (QC included)<br><br>Criteria: All internal standard recoveries must be within laboratory control limits<br><br>Corrective Action: Flag sample data not meeting internal standard recovery requirements | 8260B | Internal Standards are added to all samples (QC samples included). Internal standard area of daily standard must be within 50% to 200% of the response in the mid level of the initial calibration standard.<br>The retention time (RT) for any internal standard (IS) in the continuing calibration must not exceed ± 0.5 minutes from mid level initial calibration standard IS RT. |

*Footnotes*

(1) National Pollutant Discharge Elimination System
(2) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December 1996).
(3) Method not listed in 40 CFR Part 136.
(4) footnote deleted
(5) Method 300.0 is a proposed 40CFR method. Specific state and/or region approval is required for NPDES.
(6) EPA issued memo on the recommendation not to utilize reactive cyanide and sulfide methods
(7) STL North Canton does not perform organic drinking water methods (500 series)

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Cyanide, Total | Method Blank | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria ILMO3.0: Concentration less than CRDL or less than 10x sample concentration<br>Criteria ILMO4.0: If method blank is > CRDL, sample results are acceptable if they are ≥ 10-times method blank level.<br>Corrective Action: Reprepare all samples associated with unacceptable blank |
| | Laboratory Control Sample | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed or for each SDG, whichever is more frequent<br><br>Criteria: Water - 80-120%<br>Solid - Meet control limits established for solid reference material<br><br>Corrective Action: Reprepare all samples associated with unacceptable LCS |
| | Matrix Spike | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG, whichever is more frequent<br><br>Criteria: 75-125% unless sample result > 4x spike amount<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike, perform post distillation spike at 2 x CRDL or 2x sample concentration whichever is greater |
| | Matrix Spike Duplicate | ILM03.0<br>ILMO4.0 | Not Applicable |
| | Duplicate | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: RPD ≤ 20% or ± CRDL if sample or duplicate value < 5x CRDL<br><br>Corrective Action: Flag all associated data associated if duplicate results outside control limits |
| | Surrogates | ILM03.0<br>ILMO4.0 | Not Applicable |
| | Internal Standards | ILM03.0<br>ILMO4.0 | Not Applicable |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| ICAP (excludes mercury) | Method Blank | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria ILMO3.0: Concentration less than CRDL or less than 10x sample concentration<br>Criteria ILMO4.0: If method blank is > CRDL, sample results are acceptable if they are ≥ 10-times method blank level.<br><br>Corrective Action: Reprepare all samples associated with unacceptable blank |
| | Laboratory Control Sample | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed or for each SDG, whichever is more frequent<br><br>Criteria: Water - 80-120% except silver and antimony<br>Solid - Meet control limits established for solid reference material<br><br>Corrective Action: Reprepare all samples associated with unacceptable LCS |
| | Matrix Spike | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: 75-125% unless sample result > 4x spike amount<br><br>Corrective Action: Flag data associated with unacceptable Matrix perform post digestion spike at 2xCRDL or 2x sample concentration whichever is greater |
| | Matrix Spike Duplicate | ILM03.0<br>ILMO4.0 | Not Applicable |
| | Duplicate | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: RPD ≤ 20% or ± CRDL if sample or duplicate value < 5x CRDL<br><br>Corrective Action: Flag all data associated with duplicate results outside control limits |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| ICAP (excludes mercury) (continued) | Serial Dilution | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: <10% D when sample concentration > 50x IDL<br><br>Corrective Action: Flag all data associated with results outside control limits |
| | Surrogates | ILM03.0<br>ILMO4.0 | Not Applicable |
| | Internal Standards | ILM03.0<br>ILMO4.0 | Not Applicable. |
| GFAA (excludes mercury) | Method Blank | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria ILMO3.0: Concentration less than CRDL or less than 10x sample concentration<br>Criteria ILMO4.0: If method blank is > CRDL, sample results are acceptable if they are ≥ 10-times method blank level.<br><br>Corrective Action: Reprepare all samples associated with unacceptable blank |
| | Laboratory Control Sample | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed or for each SDG, whichever is more frequent<br><br>Criteria: Water - 80-120% except silver and antimony<br>Solid - Meet control limits established for solid reference material<br><br>Corrective Action: Reprepare all samples associated with unacceptable LCS |
| | Matrix Spike | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: 75-125% unless sample result > 4x spike amount<br><br>Corrective Action: Flag data associated with unacceptable Matrix |
| | Matrix Spike Duplicate | ILM03.0<br>ILMO4.0 | Not Applicable |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| GFAA (excludes mercury) (continued) | Duplicate | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: RPD ≤ 20% or ± CRDL if sample or duplicate value < 5x CRDL<br><br>Corrective Action: Flag all associated data associated if duplicate results outside control limits |
| | Analytical Spike | ILM03.0<br>ILMO4.0 | Frequency: 1 with each sample except matrix spike<br><br>Criteria: Evaluate per method requirements<br><br>Corrective action: Perform per method requirements |
| | Surrogates | ILM03.0<br>ILMO4.0 | Not Applicable |
| | Internal Standards | ILM03.0<br>ILMO4.0 | Not Applicable. |
| Mercury (CVAA) | Method Blank | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria ILMO3.0: Concentration less than CRDL<br>Criteria ILMO4.0: If method blank is > CRDL, sample results are acceptable if they are ≥ 10-times method blank level.<br><br>Corrective Action: Reprepare all samples associated with unacceptable blank |
| | Laboratory Control Sample | ILM03.0<br>ILMO4.0 | Frequency: 1 with each batch of samples processed or for each SDG, whichever is more frequent<br><br>Criteria: Water - 80-120%<br>Solid - Meet control limits established for solid reference material<br><br>Corrective Action: Reprepare all samples associated with unacceptable LCS |
| | Matrix Spike | ILM03.0<br>ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG<br><br>Criteria: 75-125% unless sample result > 4x spike amount<br><br>Corrective Action: Flag data associated with unacceptable Matrix Spike |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Mercury (CVAA) (continued) | Matrix Spike Duplicate | ILM03.0 ILMO4.0 | Not Applicable |
| | Duplicate | ILM03.0 ILMO4.0 | Frequency: 1 with each group of samples of a similar matrix type and concentration or for each SDG whichever is more frequent<br><br>Criteria: RPD ≤ 20% or ± CRDL if sample or duplicate value < 5x CRDL<br><br>Corrective Action: Flag all associated data associated if duplicate results outside control limits |
| | Surrogates | ILM03.0 ILMO4.0 | Not Applicable |
| | Internal Standards | ILM03.0 ILMO4.0 | Not Applicable. |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Pesticides/PCBs | Method Blank | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each extraction procedure within each SDG, whichever is most frequent or whenever samples are extracted<br><br>Criteria: Concentration < CRQL<br><br>Corrective Action: Re-extract and reanalyze all samples associated with unacceptable blank |
| | Laboratory Control Sample | OLM03.1 | Not Applicable. |
| | Matrix Spike | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each extraction procedure or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike recoveries outside of advisory limits |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Pesticides/PCBs (continued) | Matrix Spike Duplicate | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each concentration level (soils) or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br>RPD between MS/MSD should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike recoveries or RPD outside of advisory limits |
| | Duplicate | OLM03.1 | Not Applicable |
| | Surrogates | OLM03.1 | Frequency: Surrogates spiked onto all samples and QC samples<br><br>Criteria: Percent recovery for each surrogate in samples should be within 30-150%<br>Percent recovery for each surrogate in the method blank must be 30-150%<br><br>Corrective Action: Flag unacceptable surrogate recoveries in samples<br>Re-extract all samples associated with unacceptable surrogate recoveries in the method blank |
| | Internal Standards | OLM03.1 | Not Applicable. |
| Semivolatiles by GC/MS | Method Blank | OLM03.1 | Frequency: 1 with each batch of samples processed not to exceed 20 samples<br><br>Criteria: Concentration less than CRQL except phthalates which must be ≤ 5x CRQL<br><br>Corrective Action: Re-extract and re-analyze all samples associated with unacceptable blank |
| | Laboratory Control Sample | OLM03.1 | Not Applicable. |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Semivolatiles by GC/MS (continued) | Matrix Spike | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each concentration level (soils) or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike outside of advisory limits |
| | Matrix Spike Duplicate | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each concentration level (soils) or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br>RPD between MS/MSD should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike recoveries or RPD outside of advisory limits |
| | Duplicate | OLM03.1 | Not Applicable |
| | Surrogates | OLM03.1 | Frequency: Surrogates spiked onto all samples and QC samples<br><br>Criteria: Percent recovery for each surrogate must be within limits given in method (one base/neutral and/or one acid surrogate may be outside of limits but not below 10%)<br><br>Corrective Action: Flag data associated with unacceptable recoveries or reanalyze all samples with unacceptable surrogate recoveries as required in method |
| | Internal Standards | OLM03.1 | Frequency: Internal Standards are spiked onto all samples and QC samples<br><br>Criteria: Internal Standard areas must be within -50% to + 100% from the last daily calibration check standard<br><br>Corrective Action: Reanalyze all samples with unacceptable areas |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Volatiles by GC/MS | Method Blank | OLM03.1 | Frequency: 1 per 12 hours<br><br>Criteria: Concentration less than CRQL except methylene chloride, acetone, 2-butanone must be ≤ 5x CRQL<br><br>Corrective Action: Reanalyze all samples associated with unacceptable blank |
| | Laboratory Control Sample | OLM03.1 | Not Applicable |
| | Matrix Spike | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each concentration level (soils) or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike outside of advisory limits |

# TABLE 8.4-7
## USEPA Contract Laboratory Program Statement of Work Quality Control Samples (Continued)

| Analysis | QC Sample | Method | Requirement |
|---|---|---|---|
| Volatiles by GC/MS (continued) | Matrix Spike Duplicate | OLM03.1 | Frequency: 1 with each case of samples received (up to 20 samples), for each concentration level (soils) or for each SDG, whichever is most frequent<br><br>Criteria: Percent recovery for each analyte should be within advisory limits given in method<br>RPD between MS/MSD should be within advisory limits given in method<br><br>Corrective Action: Flag data associated with Matrix Spike recoveries or RPD outside of advisory limits |
| | Duplicate | OLM03.1 | Not Applicable |
| | Surrogates | OLM03.1 | Frequency: Surrogates spiked onto all samples and QC samples<br><br>Criteria: Percent recovery for each surrogate must be within limits given in method<br><br>Corrective Action: Reanalyze all samples with unacceptable surrogate recoveries |
| | Internal Standards | OLM03.1 | Frequency: Internal Standards are spiked onto all samples and QC samples<br><br>Criteria: Internal Standard areas must be within -50% to + 100% from the last daily calibration check standard<br><br>Corrective Action: Reanalyze all samples with unacceptable Internal Standard areas |
| | Storage Blank | OLM03.1 | Frequency: 1 per SDG<br><br>Criteria: Concentration less than CRQL except methylene chloride, acetone, 2-butanone must be ≤ 5x CRQL<br><br>Corrective Action: Narrate with corrective action plan |

***Notes:***

SDG = Sample Delivery Group

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# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Alkalinity | Water | 100 mL | 310.1<br>2320B | 250 mL plastic or glass, Cool, 4°C, 14 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Ammonia | Water | 400 mL | 350.1 | 500 mL plastic or glass, Cool, 4°C $H_2SO_4$ to pH < 2, 28 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Biochemical Oxygen Demand (BOD) | Water | 200 mL | 405.1 | 1000 mL plastic or glass, Cool, 4°C 48 hours | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Bromide | Water | 100 mL | 300.0[7] | 250 mL plastic or glass, No preservative required, 28 days | 9056 | Cool, 4°C, analyze ASAP after collection |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Chemical Oxygen Demand (COD) | Water | 100 mL | 410.4 | 250 mL glass or plastic, Cool, 4°C, $H_2SO_4$ to pH < 2, 28 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Chloride | Water | 50 mL | 300.0[7]<br>325.2<br>325.3 | 250 mL plastic or glass, No preservative required, 28 days | 9056<br>9252 | Method 9056: Cool, 4°C, analyze ASAP after collection. Method 9251/9253: 250ml plastic or glass, no preservative required, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Chlorine, Residual | Water | 100 mL | 330.5 | 250 mL glass or plastic, Cool, 4°C, analyze immediately | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Chromium ($Cr^{+6}$) | Water | 100 mL | 3500 Cr-D | Method 218.4: 200 mL plastic or glass, Cool, 4°C, 24 hours Method 3500 Cr-D: 200 mL quartz, TFE, or polypropylene $HNO_3$ to pH <2 Cool, 4°C Analyze ASAP after collection | 7196A | 200 mL plastic or glass, Cool, 4°C, 24 hours |
| | Solid | Not Applicable | --- | Not Applicable | 7196A | 250 mL plastic or glass, 30 days to digestion, 96 hours after digestion |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Conductivity | Water | 100 mL | 120.1 | 200 mL glass or plastic, Cool, 4°C, 28 days | 9050A | 200 mL glass or plastic, Cool, 4°C, 24 hours |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Cyanide (Amenable) | Water | IL | 335.1 | 1 liter plastic or glass, NaOH to pH >12 0.6g ascorbic acid[6] Cool, 4°C, 14 days unless sulfide is present. Then maximum holding time is 24 hours | 9012A | 1 liter plastic or glass, NaOH to pH >12 0.6g ascorbic acid[6] Cool, 4°C, 14 days |
| | Solid | 50g | --- | Not Applicable | 9012A | Not Specified |
| | Waste | 50g | --- | Not Applicable | 9012A | Not Specified |
| Cyanide (Total) | Water | IL | 335.2<br>335.3<br>335.4 [7] | 1 liter plastic or glass, NaOH to pH >12 0.6g ascorbic acid[6] Cool, 4°C, 14 days unless sulfide is present. Then maximum holding time is 24 hours | 9012A | 1 liter plastic or glass, NaOH to pH >12 0.6g ascorbic acid[6] Cool, 4°C, 14 days |
| | Solid | 50g | -- | Not Applicable | 9012A | 8 or 16 oz glass Teflon-lined lids, Cool, 4°C, 14 days |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Cyanide (Total) (continued) | Waste | 50g | -- | Not Applicable | 9012A | 8 or 16 oz glass Teflon-lined lids, Cool, 4°C |
| Flashpoint (Ignitability) | Liquid | Not Applicable | --- | Not Applicable | 1010 | No requirements, 250 mL amber glass, Cool, 4°C is recommended |
| | Solid | Not Applicable | -- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | -- | Not Applicable | --- | Not Applicable |
| Fluoride | Water | 300 mL | 300.0[7] 340.2 | 500 mL plastic, No preservation required, 28 days | 9056 | Cool, 4°C, analyze ASAP after collection |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Hardness (Total) | Water | 50 mL | 130.2 2340B | 250 mL glass or plastic, $HNO_3$ to pH < 2, 6 months | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Iron (Ferrous) | Water | 100 mL | 3500-Fe D | 1 liter glass or polyethylene container, 6 months **This test should be performed in the field.** | - | Not Applicable |
| | Solid | Not Applicable | - | Not Applicable | - | Not Applicable |
| | Waste | Not Applicable | - | Not Applicable | - | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Nitrate | Water | 100 mL | 300.0[7] 353.2 | Method 300.0: 250 mL plastic or glass, Cool, 4°C, 48 hours. | 9056 | Method 9056: Cool, 4°C, analyze ASAP after collection |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Specified |
| Nitrite | Water | 50 mL | 300.0[7] 353.2 | 250 mL plastic or glass Cool, 4°C, 48 hours | 9056 | Cool, 4°C, analyze ASAP after collection |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Nitrate-Nitrite | Water | 100 mL | 353.1<br>353.2 | 250 mL plastic or glass, $H_2SO_4$ to pH < 2, 28 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Ortho-phosphate | Water | 50 mL | 300.0[7]<br>365.2<br>365.3 | 100 mL plastic or glass, Filter on site Cool, 4°C, 48 hours | 9056 | Cool, 4°C, analyze ASAP collection |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| pH | Water | 50 mL | 150.1 | 100 mL plastic or glass. Analyze immediately. **This test should be performed in the field.** | 9040B | 100 mL plastic or glass. Analyze immediately. **This test should be performed in the field.**[8] |
| | Solid | Not Applicable | --- | Not Applicable | 9045C | 4 oz glass or plastic, Cool, 4°C, Analyze as soon as possible.[8] |
| | Waste | Not Applicable | --- | Not Applicable | 9045C | 4 oz glass or plastic, Cool, 4°C, Analyze as soon as possible.[8] |
| Phenolics | Water | 100 mL | 420.1 | 500 mL glass, Cool, 4°C, $H_2SO_4$ to pH < 2, 28 days | 9065<br>9066 | 1 liter glass recommended, Cool, 4°C, $H_2SO_4$ to pH < 4, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | 9065 | Not Specified |
| Phosphate | Water | 50 mL | --- | Not Applicable | 9056 | Cool, 4°C, analyze ASAP collection |
| | Solid | Not Applicable | --- | Not Applicable | 9056 | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | 9056 | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Phosphorus (Total) | Water | 50 mL | 365.2<br>365.3 | 100 mL plastic or glass, $H_2SO_4$ to pH < 2, 28 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Reactivity[9] (Cyanide and Sulfide) | Liquid | 10 g | --- | Not Applicable | Chapter 7 Sections 7.3.3.2 and 7.3.4.2 | 10 oz amber glass, Cool, 4°C, no headspace, analyze as soon as possible. |
| | Solid | 10 g | --- | Not Applicable | Chapter 7 Sections 7.3.3.2 and 7.3.4.2 | 10 oz amber glass, Cool, 4°C, no headspace, analyze as soon as possible. |
| | Waste | 10 g | --- | Not Applicable | Chapter 7 Sections 7.3.3.2 and 7.3.4.2 | 10 oz amber glass, Cool, 4°C, no headspace, analyze as soon as possible. |
| Settleable Solids | Water | 1000 mL | 160.5 | 1000 mL plastic or glass, Cool, 4°C, 48 hours | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Specific Conductance | Water | 50 mL | 120.1 | 250 mL plastic or glass, Cool, 4°C, 24 hours | 9050A | 250 mL plastic or glass, Cool, 4°C, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Sulfate ($SO_4$) | Water | 100 mL | 300.0[7] 375.4 | 100 mL plastic or glass, Cool, 4°C, 28 days | 9056 9038 | Method 9056: Cool, 4°C, analyze ASAP collection Method 9038: 200 mL plastic or glass, Cool, 4°C, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | 100 mL | --- | Not Applicable | 9038 | 200 mL plastic or glass, Cool, 4°C, 28 days |
| Sulfide | Water | 100 mL | 376.1 | 500 mL plastic or glass, Cool, 4°C, Add 2 mL zinc acetate plus NaOH to pH > 9, 7 days | 9030A | 500 mL plastic, no headspace, Cool, 4°C, Add 4 drops of 2N zinc acetate per 100 mL of sample, adjust the pH to > 9 with 6 N NaOH solution, 7 days |
| | Solid | 50 g | --- | Not Applicable | 9030A | Cool, 4°C, fill surface of solid with 2N Zinc acetate until moistened, store headspace-free |
| | Waste | 50 g | --- | Not Applicable | 9030A | Cool, 4°C, fill surface of solid with 2N Zinc acetate until moistened, store headspace-free |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3], [7] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Total Dissolved Solids (Filterable) | Water | 100 mL | 160.1 | 250 mL plastic or glass, Cool, 4°C, 7 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Total Kjeldahl Nitrogen (TKN) | Water | 500 mL | 351.2<br>351.3 | 500 mL plastic or glass, Cool, 4°C, $H_2SO_4$ to pH < 2, 28 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Total Organic Carbon (TOC) | Water | 100 mL | 415.1 | 100 mL plastic or glass, Cool, 4°C, $H_2SO_4$ to pH < 2, 28 days | 9060 Walkley-Black | 100 mL glass or 40 mL VOA vials, Cool, 4°C, $H_2SO_4$ or HCl to pH < 2, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | 9060 Walkley-Black | Not Specified |
| | Waste | Not Applicable | --- | Not Applicable | 9060 Walkley-Black | Not Specified |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Total Organic Halides (TOX) | Water | 100 mL | 450.1 [7] | 500 mL amber glass, Teflon®-lined lid, Cool, 4°C, $HNO_3$ to pH <2, no headspace, 28 days | 9020B | 500 mL amber glass, Teflon®-lined lid, Cool, 4°C, $H_2SO_4$ to pH < 2, no headspace, 28 days |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Total Solids | Water | 100 mL | 160.3 | 250 mL plastic or glass, Cool, 4°C, 7 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Total Suspended Solids (Nonfilterable) | Water | 100 mL | 160.2 | 250 mL plastic or glass, Cool, 4°C, 7 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Turbidity | Water | 50 mL | 180.1 | 250 mL plastic or glass, Cool, 4°C, 48 hours | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| Volatile Solids | Water | 100 mL | 160.4 | 250 mL plastic or glass, Cool, 4°C, 7 days | --- | Not Applicable |
| | Solid | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Waste | Not Applicable | --- | Not Applicable | --- | Not Applicable |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method | Requirements |
| Water Content | Water | Not Applicable | --- | Not Applicable | --- | Not Applicable |
| | Solid | 10 g | --- | Refer to specific method used | --- | Refer to specific method used |
| | Waste | 10 g | --- | Refer to specific method used | --- | Refer to specific method used |
| Metals (excludes Hg) | Water | 100 mL | 200 series | 1 liter glass or polyethylene container, $HNO_3$ to pH ≤ 2, 6 months | 6010B, 6020, 7000A series | 1 liter glass or polyethylene container, $HNO_3$ to pH ≤ 2, 6 months |
| | Solid | 200 g | 200 series | 8 or 16 oz glass or polyethylene container storage at 4 °C | 6010B, 6020, 7000A series | 8 or 16 oz glass or polyethylene container, storage at 4°C, 6 months |
| | Waste | 200 g | 200 series | Not Applicable | 6010B, 6020, 7000A series | 8 or 16 oz glass or polyethylene container, storage at 4°C, 6 months |
| Mercury (CVAA) (CVAFS) | Water | 100 mL | 245.1 1631B[7] 245.7 | 1 liter glass or polyethylene container, $HNO_3$ to pH ≤ 2, 28 days | 7470A | 1 liter glass or polyethylene container, $HNO_3$ to pH ≤ 2, 28 days |
| | Solid | 200 g | 245.5 | 8 or 16 oz glass or polyethylene container, Cool, 4°C, 28 days | 7471A | 8 or 16 oz glass or polyethylene container, Cool, 4°C, 28 days (CORP-MT-0007) |
| | Waste | 200 g | -- | Not Applicable | 7471A | 8 or 16 oz glass or polyethylene container, Cool, 4°C, 28 days (CORP-MT-0007) |

# TABLE 8.5-1
## Inorganic Sample Containers, Preservatives, and Holding Times
## (Continued)

***Footnotes***

(1) Minimum sample size indicates sample amount needed for a single analysis. Matrix spikes or duplicates will require an additional sample amount of at least this amount for each additional QC sample aliquot required.
(2) National Pollutant Discharge Elimination System - MCAWW, March 1983.
(3) Holding times are calculated from date of collection.
(4) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA, (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December 1996).
(5) Solid matrix type includes soil, sediment, sludge and other solid materials not classified as waste.
(6) Samples to be analyzed for cyanide should be field-tested for residual chlorine. If residual chlorine is detected, ascorbic acid should be added.
(7) Method not listed in 40 CFR Part 136.
(8) If not done in the field (ASAP) per the method and requested by client, analyze in lab within 48 hours.
(9) EPA issued memo recommending not to use reactive cyanide and sulfide methods.

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Aromatic Volatiles | Water | 40 mL | 602 | 40 mL glass, VOA vial (in triplicate) with Teflon®-lined septa without headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine, 7 days with pH > 2, 14 days with pH < 2 | 8021B | 40 mL glass, VOA vial (in triplicate) with Teflon®-lined septa without headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine, 1:1 HCl to pH < 2, 14 days with pH < 2 |
| | Solid[5] | 5 g or 25 g | -- | Not Applicable | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days.<br><br>Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate).Cool, 4°C[12] |
| | Waste | 5 g or 25 g | -- | Not Applicable | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days.<br><br>Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Aromatic Volatiles (continued) | Waste | 5 g or 25 g | -- | Not Applicable | 8021B | Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |
| Halogenated Volatiles By GC | Water | 40 mL | -- | Not Applicable | 8021B | 40 mL glass, VOA vial (in triplicate) with Teflon®-lined septa without headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine, 1:1 HCl to pH ≤ 2, 14 days |
| | Solid[5] | 5 g or 25 g | -- | | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days.<br><br>Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2],[3] | | RCRA (SW846)[3],[4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Halogenated Volatiles (continued) | Waste | 5 g or 25 g | -- | Not Applicable | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days.<br><br>Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |
| Herbicides | Water | 1L | 615 [10] | 1 liter amber glass with Teflon®-lined lid, Sodium thiosulfate or ascorbic acid if residual chlorine present, Cool, 4°C, Extraction, 7 days Analysis, 40 days after extraction | 8151A | 1 liter amber glass with Teflon®-lined lid. If residual chlorine present, add 3 mL sodium thiosulfate per gallon. Cool, 4°C, Extraction, 7 days Analysis, 40 days of the start of the extraction |
| | Solid | 50 g | -- | Not Applicable | 8151A | 4 or 8 oz glass widemouth with Teflon®-lined lid, Cool 4 °C, Extraction, 14 days Analysis, 40 days of the start of the extraction |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Herbicides (continued) | Waste | 50 g | -- | Not Applicable | 8151A | 4 or 8 oz glass widemouth with Teflon®-lined lid. Cool 4 °C Extraction, 14 days Analysis, 40 days of the start of the extraction |
| Organo-phosphorus Pesticides | Water | 1L | --- | Not Applicable | 8141A | 1 liter amber glass with Teflon®-lined lid. If residual chlorine present, add 3 mL sodium thiosulfate per gallon. Cool, 4°C, Extraction, 7 days Analysis, 40 days of the start of the extraction |
| | Solid | 50 g | --- | Not Applicable | 8141A | 4 or 8 oz glass widemouth with Teflon®-lined lid Cool, 4°C, Extraction, 14 days Analysis, 40 days of the start of the extraction |
| | Waste | 50 g | --- | Not Applicable | 8141A | 4 or 8 oz glass widemouth with Teflon®-lined lid, Cool, 4°C, Extraction, 14 days Analysis, 40 days of the start of the extraction |
| PAHs by GC and HPLC | Water | 1L | 610 | 1 liter amber glass with Teflon®-lined lid, Adjust pH to 5-9 if extraction not to be done within 72 hours of sampling. Add sodium thiosulfate if residual chlorine present. Cool, 4°C, Extraction, 7 days Analysis, 40 days after extraction | 8310 | 1 liter amber glass with Teflon®-lined lid, If residual chlorine present, add 3 mL sodium thiosulfate per gallon, Cool, 4°C, Extraction, 7 days Analysis, 40 days of the start of the extraction |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| PAHs by GC and HPLC (continued) | Solid | 50 g | --- | Not Applicable | 8310 | 4 or 8 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C, Extraction, 14 days Analysis, 40 days of the start of the extraction |
| | Waste | 50 g | --- | Not Applicable | 8310 | 4 or 8 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C Extraction, 14 days Analysis, 40 days of the start of the extraction |
| Pesticides/ PCBs | Water | 1L | 608 | 1 liter amber glass with Teflon®-lined lid, Adjust pH to 5-9 if extraction not to be done within 72 hours of sampling. Add sodium thiosulfate if residual chlorine present and aldrin is being determined. Cool, 4°C, Extraction, 7 days Analysis, 40 days after extraction | 8081A 8082 | 1 liter amber glass with Teflon®-lined lid, If residual chlorine present, add 3 mL 10% sodium thiosulfate per gallon, Cool, 4°C, Extraction, 7 days Analysis, 40 days of the start of the extraction |
| | Solid | 50 g | --- | Not Applicable | 8081A 8082 | 4 or 8 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C, Extraction, 14 days Analysis, 40 days of the start of the extraction |
| | Waste | 50 g | --- | Not Applicable | 8081A 8082 | 4 or 8 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C Extraction, 14 days Analysis, 40 days of the start of the extraction |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Petroleum Hydrocarbons/ Oil and Grease | Water | 1L | 413.1<br>418.1 | 1 liter glass, Cool, 4°C, HCl to pH <2, 28 days | 9070 | 1 liter glass with Cool, 4°C, HCl to pH <2, 28 days |
| | Solid | --- | --- | Not Applicable | 9071A | 8 oz. glass with Teflon®-lined lid, Holding Time not specified |
| | Waste | --- | --- | Not Applicable | 9071A | 8 oz. glass with Teflon®-lined lid, Holding Time not specified |
| | Water | 1 L | 1664A[7] | 1 liter glass, Cool, 4°C HCl or $H_2SO_4$ to pH <2 28 days | 9071B | 1 liter glass, Cool, 0-4°C HCl or $H_2SO_4$ to pH <2 28 days |
| | Solid | 30 g | 1664A[7] | 8 or 16 oz. wide mouth glass jar, Cool, 4°C, 28 days | 9071B | 8 or 16 oz. wide mouth glass jar, Cool, 0-4°C, 28 days |
| | Waste | --- | --- | Not Applicable | 9071B | Not Applicable |
| Purgeable Halocarbons By GC | Water | 40 mL | 601 | 40 mL glass VOA vial (in triplicate) with Teflon®-lined septa with no headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine present, 14 days | 8021B | 40 mL glass VOA vial (in triplicate) with Teflon®-lined septa with no headspace, Cool, 4°C, 1:1 HCl to pH ≤ 2, sodium thiosulfate if residual chlorine present, 14 days |
| | Solid | 5 g or 25 g | --- | Not Applicable | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days. Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Purgeable Halocarbons By GC (continued) | Solid | 5 g or 25 g | --- | Not Applicable | 8021B | Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |
| | Waste | 5 g or 25 g | --- | Not Applicable | 8021B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days.<br><br>Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate).Cool, 4°C[12] |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Semivolatiles | Water | 1L | 625 | 1 liter amber glass with Teflon®-lined lid, Cool, 4°C, Extraction, 7 days Analysis, 40 days | 8270C | 1 liter amber glass with Teflon®-lined lid, If residual chlorine present, add 3 mL sodium thiosulfate per gallon, Cool, 4°C, Extraction, 7 days Analysis, within 40 days of extraction |
| | Solid | 50 g | --- | Not Applicable | 8270C | 8 or 16 oz glass wide mouth with Teflon-lined lid, Cool, 4°C, Extraction, 14 days Analysis, within 40 days of extraction |
| | Waste | 50 g | --- | Not Applicable | 8270C | 8 or 16 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C, Extraction, 14 days Analysis, within 40 days of extraction |
| Volatile Organics | Water | 40 mL | 624 | 40 mL glass, VOA vial (in triplicate) with Teflon®-lined septa without headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine, 7 days with pH > 2, 14 days with pH ≤ 2[8] | 8260B | 40 mL glass, VOA vial (in triplicate) with Teflon®-lined septa without headspace, Cool, 4°C, Add sodium thiosulfate if residual chlorine, 1:1 HCl to pH ≤ 2, 14 days with pH ≤ 2[9] |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times
## (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size[1] | NPDES[2], [3] | | RCRA (SW846)[3], [4] | |
|---|---|---|---|---|---|---|
| | | | Method | Requirements | Method[6] | Requirements |
| Volatile Organics (continued) | Solid[5] | 5 g or 25 g | -- | Not Applicable | 8260B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days. Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |
| | Waste | 5 g or 25 g | -- | Not Applicable | 8260B | 4 or 8 oz glass with Teflon®-lined lid, Cool 4 °C, 14 days. Field preserved with sodium bisulfate solution for low level analysis, or with methanol for medium level analysis. Soil sample can also be taken by using the EnCore™ sampler and preserved in the lab within 48 hours of sampling. Maximum holding time for Encore Sampler is 48 hours (before the sample is added to methanol or sodium bisulfate). Cool, 4°C[12] |

# TABLE 8.5-2
## Organic Sample Containers, Preservatives, and Holding Times
## (Continued)

*Footnotes*

(1) Minimum sample size indicates sample amount needed for a single analysis. Matrix spikes or duplicates will require an additional sample amount of at least this amount for each additional QC sample aliquot required.
(2) National Pollutant Discharge Elimination System - 40 CFR Part 136, Appendix A.
(3) Holding times are calculated from the date of collection.
(4) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December 1996).
(5) Solid matrix type includes soil, sediment, sludge or other solids not classified as waste.
(6) Only one determination method is listed when separate methods are required for preparation and analysis.
(7) **Method 1664 was promulgated by the EPA with an effective date of June 14, 1999.**
(8) **For acrolein and acrylonitrile the pH should be adjusted to 4-5. This pH adjustment is not required if acrolein is not measured. Samples requiring analysis of acrolein that received no pH adjustment must be analyzed within three days of sampling.**
(9) **For acrolein and acrylonitrile the pH should be adjusted to 4-5.**
(10) Method not listed in 40 CFR Part 136.
(11) Should only be used in the presence of residual chlorine.
(12) Depending on regulatory programs, EnCore™ samplers may be preserved for up to 14 days from sampling by freezing at -5 to -12°C until analysis. Alternatively the EnCore™ sample may be transferred to a 40-ml VOA vial and preserved by freezing at -5 to -12°C until analysis. Some regulatory agencies may require 4 or 8 oz glass with Teflon®-lined lid, Cool 4°C, 14 days. This technique is not recommended, but will be supported where required. (Preservation and holding times are subject to client specifications.)

# TABLE 8.5-4
## Sample Containers, Preservatives, and Holding Times for USEPA Contract Laboratory Program Statement of Work

| Analytical Parameters | Matrix | Minimum Sample Size | Requirements[1] |
|---|---|---|---|
| Cyanide, Total and Amenable to Chlorination | Water | 500 mL | 500 mL, glass or polyethylene container, 0.6 g ascorbic acid (only in presence of residual chlorine) NaOH to pH > 12, Cool, 4°C, 12 days |
| | Soil/Sediment | 25 g | 8 or 16 oz glass with Teflon-lined lids, Cool, 4°C, 12 days |
| ICAP and GFAA (excludes mercury) | Water | 100 mL | 1 liter glass or polyethylene container, $HNO_3$ to pH =2, 180 days |
| | Soil/Sediment | 25 g | 4 or 8 oz glass or polyethylene container, Cool, 4°C, 180 days |
| Mercury (CVAA) | Water | 100 mL | 1 liter glass or polyethylene container, $HNO_3$ to pH =2, 26 days |
| | Soil/Sediment | 25 g | 8 or 16 oz glass with Teflon®-lined lids, Cool, 4°C, 26 days |
| Pesticides/PCBs | Water | 1 L | 1 liter amber glass with Teflon®-lined lid, Cool, 4°C, Extraction within 5 days of sample receipt Analysis within 40 days after start of extraction |
| | Soil/Sediment | 50 g | 8 or 16 oz glass wide mouth with Teflon®-lined lid, protect from light, Cool, 4°C, Extraction within 10 days of sample receipt Analysis within 40 days after start of extraction |

# TABLE 8.5-4
## Sample Containers, Preservatives, and Holding Times for USEPA Contract Laboratory Program Statement of Work (Continued)

| Analytical Parameters | Matrix | Minimum Sample Size | Requirements[1] |
|---|---|---|---|
| Semivolatiles | Water | 1L | 1 liter amber glass with Teflon®-lined lid, Cool, 4°C, Extraction within 5 days of sample receipt Analysis within 40 days after start of extraction |
| | Soil/Sediment | 50 g | 8 or 16 oz glass wide mouth with Teflon®-lined lid, Cool, 4°C, Extraction within 10 days of sample receipt Analysis within 40 days after start of extraction |
| Volatiles | Water | 40 mL | 40 mL glass with Teflon®-lined lid, no entrapped air bubbles pH <2[3], Cool, 4°C, 10 days |
| | Soil/Sediment | 25 g | 4 or 8 oz glass with Teflon®-lined lids, Cool, 4°C, 10 days |

***Footnotes***

(1) Holding times are calculated from verified time of sample receipt.

(2) Footnote deleted

(3) The OLM03.0 requirement is to acidify the sample to pH<2. The OLM01.8 requirement is to determine and report the pH of the sample to check that the sample was acidified in the field.

# TABLE 8.5-5
## Sample Containers, Preservatives, and Holding Times for TCLP[1] and SPLP[2]

| Analytical Parameters | Matrix | Minimum Sample Size | TCLP Method 1311 and SPLP Method 1312 Requirements | |
|---|---|---|---|---|
| | | | From Field Collection to TCLP/SPLP Extraction | From TCLP/SPLP Extraction to Analysis |
| Mercury | Liquid<br>Solid<br>Waste | 1L | 1L glass, Cool, 4°C,<br>28 days | Glass or polyethylene<br>28 days |
| Metals (except mercury) | Liquid<br>Solid<br>Waste | 1L | 1L glass, Cool, 4°C,<br>180 days | Glass or polyethylene<br>180 days |
| Semivolatiles | Liquid<br>Solid<br>Waste | 1L | 1L glass, Cool 4°C,<br>14 days | 1L glass<br>Extraction of leachate within 7 days of TCLP extraction,<br>Analyze extract within 40 days |
| Volatiles | Liquid<br>Solid<br>Waste | 6 oz | 4 oz glass, Cool 4°C,<br>14 days | 40 mL glass,<br>14 days |

***Footnotes***

[1] TCLP = Toxicity Characteristic Leaching Procedure

[2] SPLP = Synthetic Precipitation Leaching Procedure

# TABLE 8.5-6
## Periodic Equipment Calibrations

| Type of Equipment | Calibration Requirements |
|---|---|
| Balances | • Must be serviced and calibrated annually by an approved vendor.<br>• Calibration must be checked daily or before use by analyst with weight(s) classified as Class 1 (formerly termed Class S) by NIST or Class 1 traceable. Acceptance criteria vary according to weight used and accuracy of balance. Acceptance criteria must be documented in the log.<br>• All Class 1 weights must be certified by an outside vendor every three years.<br>• All non-Class 1 weights must be checked annually against NIST Class 1 weights annually. |
| Thermometers | • Working glass thermometers must be calibrated against a certified NIST thermometer at least annually as described in operation-specific SOPs.<br>• Working non-glass thermometers must be calibrated against a certified NIST thermometer annually as described in operation-specific SOPs.<br>• The NIST thermometer must be recertified every three years. |
| Refrigerators/Freezers | • Thermometers must be immersed in a liquid such as mineral oil or glycol<br>• Temperature of units used for sample or standard storage must be checked<br>daily as described in operation-specific SOPs.<br>Refrigerator acceptance limits: 4°C ± 2°C<br>Freezer acceptance limits: < - 10°C |
| Ovens | • Temperature of units must be checked daily or before use.<br>• Acceptance limits vary according to use as described in operation-specific SOPs and must be documented in the temperature log. |
| Micropipettors | • Calibrations are checked gravimetrically as required by the operation-specific SOP.<br>• Must be calibrated at the frequency (normally quarterly) required by the manufacturer at a minimum. |
| Syringes, Volumetric Glassware and Graduated Glassware | • All syringes and volumetric glassware are purchased as Class A items.<br>• Class A items are certified by the manufacturer to be within ± 1% of the measured volume, therefore, calibration of these items by STL laboratories is not required.<br>• All analysts are trained in the proper use and maintenance of measuring devices to ensure the measurement of standards, reagents and sample volumes are within method tolerances. |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Alkalinity | Initial | 310.1<br>2320B | 2 point calibration of pH meter (± 0.05 pH units of true value) | -- | Not Applicable |
| | Continuing | 310.1<br>2320B | Not Applicable | -- | Not Applicable |
| | Ending | 310.1<br>2320B | Not Applicable | -- | Not Applicable |
| Ammonia | Initial | 350.1 | 6 levels including blank, "r"[3] ≥ 0.995 | -- | Not Applicable |
| | Continuing | 350.1 | 1 level or LCS every 10 samples<br>± 10% of true value | -- | Not Applicable |
| | Ending | 350.1 | 1 level or LCS every 10 samples<br>± 10% of true value | -- | Not Applicable |
| Biochemical Oxygen Demand (BOD) | Initial | 405.1 | a. Winkler titration: Iodometric with standard thiosulfate<br>b. Membrane electrode: Read in air and in water with zero dissolved oxygen | -- | Not Applicable |
| | Continuing | 405.1 | Not Applicable | -- | Not Applicable |
| | Ending | 405.1 | Not Applicable | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Bromide | Initial | 300.0[4] | 5 levels plus a blank, "r"[3] ≥ 0.995 | 9056 | 5 levels plus a blank, "r"[3] ≥ 0.995 |
| | Continuing | 300.0[4] | level every 10 samples ± 10% of true value | 9056 | Not Applicable |
| | Ending | 300.0[4] | Not Applicable | 9056 | Not Applicable |
| Chemical Oxygen Demand (COD) | Initial | 410.4 | 5 levels plus a blank"r"[3] ≥ 0.995 | -- | Not Applicable |
| | Continuing | 410.4 | 1 level every 10 samples ± 10% of true value | -- | Not Applicable |
| | Ending | 410.4 | 1 level ± 10% of true value | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Chloride | Initial | 300.0[4]<br>325.2 | 5 levels plus blank<br>"r"[3] ≥ 0.995 | 9056<br>9252 | Method 9056:<br>3 levels plus a blank<br>Method 9252:<br>5 levels plus blank<br>"r"[3] ≥ 0.995 |
| | Continuing | 300.0[4]<br>325.2 | 1 level every 10 samples<br>± 10% of true value | 9056<br>9252 | Method 9056:<br>1 per batch of 20 samples,<br>± 10% of true value<br>Method 9252:<br>1 level every 10 samples ± 10% of true value |
| | Ending | 300.0[4]<br>325.2 | 1 level every 10 samples<br>± 10% of true value | 9056<br>9252 | Method 9056 :<br>Not Applicable<br>Method 9252:<br>1 level<br>± 10% of true value |
| Chromium $Cr^{+6}$ | Initial | 3500 Cr-D | 3 levels plus blank | 7196A | 5 levels plus blank<br>"r"[3] ≥ 0.995 |
| | Continuing | 3500 Cr-D | 1 level every 10 samples<br>± 10% of true value | 7196A | 1 level every 10 samples<br>± 15% |
| | Ending | 3500 Cr-D | 1 level<br>± 10% of true value | 7196A | 1 level<br>± 15% |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Chlorine, Residual | Initial | 330.5 | Standardize titrant | -- | Not Applicable |
| | Continuing | 330.5 | Not Applicable | -- | Not Applicable |
| | Ending | 330.5 | Not Applicable | -- | Not Applicable |
| Conductivity | Initial | 120.1 | Standard KCl solution | 9050A | 1 level to determine cell constant |
| | Continuing | 120.1 | Not Applicable | 9050A | Not Applicable |
| | Ending | 120.1 | Not Applicable | 9050A | Not Applicable |
| Cyanide (Amenable) | Initial | 335.1 | 7 levels plus blank<br>"r"[3] ≥ 0.995 | 9012A | 7 levels plus blank<br>"r"[3] ≥ 0.995 |
| | Continuing | 335.1 | 1 level every 10 samples<br>± 10% of true | 9012A | 1 mid-level every 10 samples<br>± 15% of true value |
| | Ending | 335.1 | 1 level<br>± 10 % of true value | 9012A | ± 15% of true value |
| Cyanide (Total) | Initial | 335.1<br>335.2<br>335.3<br>335.4 | 7 levels plus blank<br>"r"[3] ≥ 0.995 | 9012A | 7 levels plus blank<br>"r"[3] ≥ 0.995 |
| | Continuing | 335.1<br>335.2<br>335.3<br>335.4 | 1 mid-level every 10 samples<br>± 10 % of true value | 9012A | 1 mid-level every 10 samples<br>± 15% of true value |
| | Ending | 335.1<br>335.2<br>335.3<br>335.4 | 1 mid-level<br>± 10 % of true value | 9012A | ± 15% of true value |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Flashpoint | Initial | -- | Not Applicable | 1010 | p-Xylene reference standard must have flashpoint of 27.2°C ± 1.1°C |
| | Continuing | -- | Not Applicable | 1010 | Not Applicable |
| | Ending | -- | Not Applicable | 1010 | Not Applicable |
| Fluoride | Initial | 300.0[4]<br>340.2 | Method 300.0: 5 levels plus a blank, "r"[3] ≥ 0.995<br><br>Method 340.2: 6 levels "r"[3] ≥ 0.995 | 9056 | 3 levels plus a blank |
| | Continuing | 300.0[4]<br>340.2 | 1 mid-level every 10 samples<br><br>± 10% of true value | 9056 | 1 per batch of 20 samples ± 10% of true value |
| | Ending | 300.0[4]<br>340.2 | 1 mid-level<br>± 10% of true value | 9056 | Not Applicable |
| Hardness | Initial | 130.2<br>2340B | Method 130.2: Standardize titrant<br>Method 2340B: See ICP Metals 200.7 | -- | Not Applicable |
| | Continuing | 130.2<br>2340B | Method 130.2: Not Applicable<br>Method 2340B: See ICP Metals 200.7 | -- | Not Applicable |
| | Ending | 130.2<br>2340B | Method 130.2: Not Applicable<br>Method 2340B: See ICP Metals 200.7 | -- | Not Applicable |
| Iron (Ferrous) | Initial | 3500-Fe D | 3 levels plus a blank, "r"[3] ≥ 0.995 | - | Not Applicable |
| | Continuing | 3500-Fe D | 1 mid-level every 10 samples<br>± 10% of true value | - | Not Applicable |
| | Ending | 3500-Fe D | 1 mid-level<br>± 10% of true value | - | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Nitrate | Initial | 300.0[4]<br>353.2 | 5 levels plus a blank<br>"r"[3] ≥ 0.995 | 9056 | 3 levels plus a blank |
| | Continuing | 300.0[4]<br>353.2 | 1 mid-level every 10 samples<br>± 10% of true value | 9056 | 1 per batch of 20 samples,<br>± 10% of true value |
| | Ending | 300.0[4]<br>353.2 | 1 mid-level<br>± 10% of true value | 9056 | Not Applicable |
| Nitrite | Initial | 300.0[4]<br>353.2 | 5 levels plus a blank<br>"r"[3] ≥ 0.995 | 9056 | 3 levels plus a blank |
| | Continuing | 300.0[4]<br>353.2 | 1 mid-level every 10 samples<br>± 10% of true value | 9056 | 1 per batch of 20 samples,<br>± 10% of true value |
| | Ending | 300.0[4]<br>353.2 | 1 mid-level<br>± 10% of true value | 9056 | Not Applicable |
| Nitrate-Nitrite | Initial | 300.0[4]<br>353.2 | 5 levels plus blank<br>"r"[3] ≥ 0.995 | -- | Not Applicable |
| | Continuing | 300.0[4]<br>353.2 | 1 level every 10 samples<br>± 10% of true value | -- | Not Applicable |
| | Ending | 300.0[4]<br>353.2 | 1 mid-level<br>± 10% of true value | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Phosphorus (total and Ortho-phosphate) | Initial | 300.0[4]<br>365.2<br>365.3 | Method 300.0/365.3:<br>3 levels plus a blank<br><br>Method 365.2:<br>8 levels plus a blank | -- | Not Applicable |
| | Continuing | 300.0[4]<br>365.2<br>365.3 | Method 300.0/365.3:<br>1 level every 10 samples<br>± 10% of true value<br><br>Method 365.2: Blank and 2 standards with each series of samples, ± 2% of true value or recalibrate | -- | Not Applicable |
| | Ending | 300.0[4]<br>365.2<br>365.3 | Method 300.0/365.3:<br>± 10% of true value<br><br>Method 365.2:<br>Not Applicable | -- | Not Applicable |
| pH | Initial | 150.1 | 2 level calibration that bracket the expected pH of the sample (± 0.05 pH units of true value) | 9040B<br>9045C | 2 point calibration (± 0.05 pH units of true value) |
| | Continuing | 150.1 | 1 buffer check every 10 samples<br>± 5% of true value | 9040B<br>9045C | Not Applicable |
| | Other | 150.1 | Third point check | 9040B<br>9045C | Third point check |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| pH (continued) | Ending | 150.1 | 1 buffer check<br>± 5% of true value | 9040B<br>9045C | Not Applicable |
| Phenolics | Initial | 420.1 | 5 levels plus a blank<br>"r"[3] ≥ 0.995 | 9065<br>9066 | 5 levels plus a blank<br>"r"[3] 0.995 |
| | Continuing | 420.1 | 1 mid-level every 10 samples<br>± 10% true value | 9065<br>9066 | 1 mid-level<br>± 15% true value |
| | Ending | 420.1 | 1 mid-level<br>± 10% true value | 9065<br>9066 | 1 mid-level<br>± 15% true value |
| Phosphate | Initial | --- | Not Applicable | 9056 | 3 levels plus a blank |
| | Continuing | --- | Not Applicable | 9056 | 1 per batch of 20 samples,<br>± 15% of true value |
| | Ending | --- | Not Applicable | 9056 | Not Applicable |
| Reactivity [5] | Initial | -- | Not Applicable | Chap 7 | See Total Cyanide and Sulfide |
| | Continuing | -- | Not Applicable | | |
| | Ending | -- | Not Applicable | | |
| Settleable Solids | Initial | 160.5 | Not Applicable | -- | Not Applicable |
| | Continuing | 160.5 | Not Applicable | -- | Not Applicable |
| | Ending | 160.5 | Not Applicable | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Specific Conductance | Initial | 120.1 | Standardize meter with 0.01 M KCl | 9050A | Not Applicable |
| | Continuing | 120.1 | 1 level every 10 samples<br>± 10% of true value | 9050A | Not Applicable |
| | Ending | 120.1 | 1 level<br>± 10% of true value | 9050A | Not Applicable |
| Sulfate | Initial | 300.0[4]<br>375.4 | Method 300.0:<br>5 levels plus blank<br>"r"[3] ≥ 0.995<br>Method 375.4: 3 levels plus blank<br>"r"[3] ≥ 0.995 | 9038<br>9056 | Method 9038: 3 levels plus a blank for every hour of continuous sample analysis.<br>Method 9056: 3 levels plus a blank |
| | Continuing | 300.0[4]<br>375.4 | Method 300.0:<br>1 mid-level after every 10 samples<br>± 10% of true value<br>Method 375.4: 1 level every 3 or 4 samples<br>± 10% of true value | 9038<br>9056 | Method 9038: Independent-prepared check standard every 15 samples<br>Method 9056: 1 per batch of 20 samples, ± 10% of true value |
| | Ending | 300.0[4]<br>375.4 | ± 10% of true value | 9038<br>9056 | Not Applicable |
| Sulfide | Initial | 376.1<br>376.2 | Method 376.1: This is a titration method. Therefore, calibrations are not applicable.<br>Method 376.2: 5 levels plus a blank "r" [3] ≥ 0.995 | 9030B<br>9034 | This is a colorimetric titration. Therefore, calibration is not applicable. |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Sulfide (continued) | Continuing | 376.1<br>376.2 | Method 376.1: Not Applicable<br><br>Method 376.2:<br>1 level every 10 samples<br><br>± 10% of true value | 9030B<br>9034 | This is a colorimetric titration. Therefore, calibration is not applicable. |
| | Ending | 376.1<br>376.2 | Method 376.1: Not Applicable<br><br>Method 376.2:<br>± 10% of true value | 9030B<br>9034 | This is a colorimetric titration. Therefore, calibration is not applicable. |
| Total Dissolved Solids | Initial | 160.1 | This is a gravimetric determination. Calibrate balance prior to analysis | -- | Not Applicable |
| | Continuing | 160.1 | | -- | Not Applicable |
| | Ending | 160.1 | | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Total Kjeldahl Nitrogen (TKN) | Initial | 351.2<br>351.3 | Method 351.2:<br>5 levels plus blank<br>"r"[3] ≥ 0.995<br><br>Method 351.3:<br>Titrimetric: Standardize titrant<br>Colorimetric: 7 levels plus blank | -- | Not Applicable |
| | Continuing | 351.2<br>351.3 | Method 351.2: 1 mid-level every 10 samples<br>± 10% of true value<br><br>Method 351.3:<br>Not Applicable | -- | Not Applicable |
| | Ending | 351.2<br>351.3 | Method 351.2:<br>± 10% of true value<br><br>Method 351.3:<br>Not Applicable | -- | Not Applicable |
| Total Organic Carbon (TOC) | Initial | 415.1 | 3 levels plus blank | 9060 | 3 levels plus blank<br>"r"[3] ≥ 0.995 |
| | Continuing | 415.1 | 1 mid-level every 10 samples<br><br>± 15% of true value | 9060 | 1 mid-level every 10 samples<br><br>± 15% of true value |
| | Ending | 415.1 | ± 15% of true value | 9060 | ± 15% of true value |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Total Organic Halides (TOX) | Initial | SM 5320B [4]<br>450.1 [4] | Method 5320B: 7 levels plus a blank ± 10% of true value<br>Method 450.1: Daily instrument calibration standard and blank in duplicate ± 10% of true value (calibration std.)<br>Verify with independently-prepared check standard | 9020B | Daily instrument calibration standard and blank in duplicate ± 10% of true value (calibration std.)<br>Verify with independently-prepared check standard – ICV ± 10%<br>SOP NO. CORP-WC-0001 |
| | Continuing | SM 5320B [4]<br>450.1 [4] | ± 10% of true value | 9020B | CCV ± 10% of true value<br>SOP NO. CORP-WC-0001 |
| | Ending | SM 5320B [4]<br>450.1 [4] | ± 10% of true value | 9020B | CCV ± 10% of true value<br>SOP NO. CORP-WC-0001 |
| Total Solids | Initial | 160.3 | This is a gravimetric determination. Calibrate balance before use. | -- | Not Applicable |
| | Continuing | 160.3 | | -- | Not Applicable |
| | Ending | 160.3 | | -- | Not Applicable |
| Total Suspended Solids (Nonfilterable) | Initial | 160.2 | This is a gravimetric determination. Calibrate balance before use. | -- | Not Applicable |
| | Continuing | 160.2 | | -- | Not Applicable |
| | Ending | 160.2 | | -- | Not Applicable |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Turbidity | Initial | 180.1 | Minimum of 1 level in each instrument range<br><br>Follow manufacturer's instructions | -- | Not Applicable |
| | Continuing | 180.1 | Not Applicable | -- | Not Applicable |
| | Ending | 180.1 | Not Applicable | -- | Not Applicable |
| Volatile Solids | Initial | 160.4 | This is a gravimetric determination. Calibrate balance before use. | -- | Not Applicable |
| | Continuing | 160.4 | | -- | Not Applicable |
| | Ending | 160.4 | | -- | Not Applicable |
| Water Content | Initial | -- | Calibrate Balance | -- | Calibrate Balance |
| | Continuing | -- | Not Applicable | -- | Not Applicable |
| | Ending | -- | Not Applicable | -- | Not Applicable |
| GFAA Metals (excludes Hg) | Initial | 200 series | 3 levels plus blank<br>ICV ± 10% of true value<br><br>"r"[3] ≥ 0.995 | 7000A series | 3 levels plus blank<br>ICV ± 10% of true value<br><br>"r"[3] ≥ 0.995 |
| | Continuing | 200 series | Every 10 samples<br>± 10% of true value | 7000A series | Every 10 samples<br>± 20% of true value |
| | Ending | 200 series | ± 10% of true value | 7000A series | ± 20% of true value |
| | Other | 200 series | Annually - Instrument detection limits | 7000A | Annually - Instrument detection limits |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| ICP & ICP/MS Metals (excludes Hg) | Initial | 200.7<br>200.8 | 1 level and blank<br>Rerun high calibration standard: verify quantitation at ± 5% of true value,ICV RSD < 3% from replicate | 6010B<br>6020 | 1 level and blank<br>Rerun high calibration standard: verify quantitation at ± 5% of true value, ICV RSD < 5% from replicate |
| | Continuing | 200.7<br>200.8 | Every 10 samples<br>± 5% of true value<br>CCV RSD < 5% from replicate | 6010B<br>6020 | Mid-level calibration standard<br>Every 10 samples<br>± 10% of true value<br>CCV RSD < 5% from replicate |
| | Ending | 200.7<br>200.8 | ± 5% of true value<br>CCV RSD < 5% from replicate | 6010B<br>6020 | Mid-level calibration standard<br>± 10% of true value<br>CCV RSD < 5% from replicate |
| | Other | 200.7<br>200.8 | ICSA, ICSAB: Analyze at beginning of run. For ICSA, AB criteria see SOP<br>Annually:<br>ICP interelement correction factors<br>Instrument detection limits | 6010B<br>6020 | ICSA, ICSAB: Analyze at beginning of run. For ICSA, AB criteria see SOP<br>Annually:<br>ICP interelement correction factors<br>Instrument detection limits |

# TABLE 8.5-7
## Summary of Inorganic Method Calibrations
## (Continued)

| Analysis | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Mercury by CVAA & CVAFS | Initial | 245.1<br>245.7<br>1631B[4] | 5 levels plus blank<br>ICV ± 10% of true value<br>"r"[3] ≥ 0.995 | 7470A<br>7471A | 5 levels plus blank<br>ICV ± 10% of true value<br>"r"[3] ≥ 0.995 |
| | Continuing | 245.1<br>245.7<br>1631B[4] | Daily or every 10 samples, whichever is more frequent<br>± 20% of true value | 7470A<br>7471A | Every 10 samples<br>± 20% of true value |
| | Ending | 245.1<br>245.7<br>1631B[4] | ± 20% of true value | 7470A<br>7471A | ± 20% of original prepared standard |
| | Other | 245.1<br>245.7<br>1631B[4] | Annually: - Instrument detection limits | 7470A<br>7471A | Annually - Instrument detection limits |

***Footnotes***

(1) National Pollutant Discharge Elimination System

(2) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December, 1996).

(3) "r" = correlation coefficient

(4) Method not listed in 40 CFR Part 136.

(5) EPA memo recommended that reactive cyanide and sulfide are not used.

# TABLE 8.5-8
## Summary of Organic Method Calibrations

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Aromatic Volatiles by GC | Initial | 602 | Minimum of 3 levels<br>If % RSD < 10%, use avg RF. Otherwise, calibration curve employed | 8021B | Minimum of 5 levels<br>If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |
| | Continuing | 602 | Analyze QC check sample and evaluate per method requirements | 8021B | Mid-level calibration standard analyzed every 10 samples.<br>% D ≤ 15%, gases 20% D. Evaluate per SOP |
| | Ending | 602 | Not Applicable | 8021B | Mid-level calibration standard<br>% D ≤ 15%. Evaluate per SOP |
| | Other | 602 | Not Applicable | 8021B | Not Applicable |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Herbicides by GC | Initial | 615[9] | Minimum of 3 levels If % RSD < 10%, use avg RF. Otherwise, calibration curve employed | 8151A | Minimum of 5 levels If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |
| | Continuing | 615[9] | 1 or more calibration standards analyzed daily<br><br>% D ± 15% of predicted response | 8151A | Mid-level calibration standard analyzed every 10 samples. % D < 15% of predicted response for any analyte quantitated and reported. |
| | Ending | 615[9] | Not Applicable | 8151A | Mid-level calibration standard. % D < 15% of predicted response for any analyte quantitated and reported. |
| | Other | 615[9] | Not Applicable | 8151A | Not Applicable |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Polyaromatic Hydrocarbons by GC or HPLC | Initial | 610 | Minimum of 3 levels If % RSD < 10%, use avg RF. Otherwise, calibration curve employed | 8310 | Minimum of 5 levels If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |
| | Continuing | 610 | 1 or more calibration standards analyzed daily % D ± 15% of predicted response | 8310 | Mid-level calibration standard analyzed every 10 samples. % D < 15% of predicted response for any analyte quantitated and reported. |
| | Ending | 610 | Not Applicable | 8310 | Mid-level calibration standard. % D ± 15% of predicted response for any analyte quantitated and reported. |
| | Other | 610 | Not Applicable | 8310 | Not Applicable |
| Pesticides/ PCBs by GC | Initial | 608 | Minimum of 3 levels If % RSD < 10%, use avg RF. Otherwise, calibration curve employed | 8081A 8082 | Minimum of 5 levels. If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. (See SOP No. CORP-GC-0001) |
| | Continuing | 608 | 1 or more calibration standards analyzed daily % D ± 15% of predicted response | 8081A 8082 | Mid-level calibration standard analyzed every 10 samples. % D < 15% of predicted response for any analyte quantitated and reported. |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Pesticides/ PCBs by GC (continued) | Ending | 608 | Not Applicable | 8081A<br>8082 | Mid-level calibration standard. % D < 15% of predicted response for any analyte quantitated and reported. |
| | Other | 608 | Not Applicable | 8081A<br>8082 | Not Applicable |
| Petroleum Hydrocarbons/ Oil and Grease | Initial | 413.1<br>418.1 | Method 413.1: This is a gravimetric determination. Calibrate balance before use.<br>418.1:<br>3 levels plus a blank "r" ≥ 0.995 | 9070<br>9071A<br>9071B | This is a gravimetric determination. Calibrate balance before use |
| | Continuing | 413.1<br>418.1 | Not Applicable | 9070<br>9071A<br>9071B | Not Applicable |
| | Ending | 413.1<br>418.1 | Not Applicable | 9070<br>9071B<br>9071A | Not Applicable |
| | Initial | 1664A | Calibrate analytical balance at 2 mg and 1000 mg<br>Calibration must be ± 10% at 2 mg and ± 0.5% at 1000 mg or recalibrate balance | 9071B | Calibrate analytical balance at 2 mg and 1000 mg<br>Calibration must be ± 10% at 2 mg and ± 0.5% at 1000 mg or recalibrate balance |
| | Continuing | 1664A | Not Applicable | 9071B | Not Applicable |
| | Ending | 1664A | Not Applicable | 9071B | Not Applicable |
| Organophos-phorous Pesticides by GC | Initial | -- | Not Applicable | 8141A | Minimum of 5 levels<br>If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Organophos-phorous Pesticides by GC (continued) | Continuing | -- | Not Applicable | 8141A | Mid-level calibration standard analyzed every 10 samples.<br>% D < 15% of predicted response for any analyte quantitated and reported. |
| | Ending | -- | Not Applicable | 8141A | Mid-level calibration standard<br>% D < 15% of predicted response for any analyte quantitated and reported. |
| | Other | -- | Not Applicable | 8141A | Not Applicable |
| Purgeable Halocarbons by GC | Initial | 601 | Minimum of 3 levels<br>If % RSD < 10%, use avg RF. Otherwise, calibration curve employed | 8021B | Minimum of 5 levels<br>If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |
| | Continuing | 601 | Analyze QC check sample and evaluate per method requirements | 8021B | Mid-level calibration standard analyzed every 10 samples.<br>% D < 15%, gases 20% D<br>Evaluate per SOP |
| | Ending | 601 | Not Applicable | 8021B | Mid-level calibration standard<br>% D <15%<br>Evaluate per SOP |
| | Other | 601 | Not Applicable | 8021B | Not Applicable |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Halogenated Volatiles by GC | Initial | -- | Not Applicable | 8021B | Minimum of 5 levels<br>If % RSD < 20%, use avg RF. Otherwise, calibration curve employed. |
| | Continuing | -- | Not Applicable | 8021B | Mid-level calibration standard analyzed every 10 samples.<br>% D < 15% of predicted response for any analyte quantitated and reported. |
| | Ending | -- | Not Applicable | 8021B | Mid-level calibration standard<br>% D < 15% of predicted response for any analyte quantitated and reported. |
| | Other | -- | Not Applicable | 8021B | Not Applicable |
| Semivolatiles | Initial | 625 | Minimum of 3 levels, lowest near but above MDL<br>If % RSD ≤ 35%, use avg RF Otherwise calibration curve employed. | 8270C | Minimum of 5 levels,<br>% RSD for RF for CCCs[4] < 30%<br>SPCCs[5]: RF > 0.050 |
| | Continuing | 625 | 1 level every 24 hours<br>Acceptance criteria are found in the method and SOP | 8270C | Mid-level standard every 12 hours (after tuning)<br>%D for CCCs[4] < 20 % between RF from standard and avg RF from initial<br>SPCCs[5]: RF > 0.050 |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Semivolatiles (continued) | Ending | 625 | Not Applicable | 8270C | Not Applicable |
| | Other | 625 | DFTPP[7] tuning every 24 hours before standard or sample runs. | 8270C | DFTPP[7] tuning at the beginning of every 12 hour shift. |
| Volatiles | Initial | 624 | Minimum of 3 levels, lowest near but above MDL<br><br>If % RSD ≤ 35%, use avg RF Otherwise calibration curve employed. | 8260B | Minimum of 5 levels,<br><br>%RSD for RF for CCCs[4] < 30.0%<br><br>SPCCs[5]:<br>RF ≥ 0.300 for Chlorobenzene and 1,1,2,2-tetrachloroethane, Chloromethane and 1,1-dichloroethane, and<br>RF > 0.100 for Bromoform |

# TABLE 8.5-8
## Summary of Organic Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | NPDES[1] | | RCRA (SW846)[2] | |
|---|---|---|---|---|---|
| | | Method | Requirement | Method | Requirement |
| Volatiles (continued) | Continuing | 624 | 1 level every 24 hours<br><br>Acceptance criteria are found in the method and SOP | 8260B | Mid-level standard every 12 hours (after tuning)<br><br>%Drift for CCCs[4] < 20.0% between RF from standard and avg RF from initial<br><br>SPCCs[5]: RF ≥ 0.300 for Chlorobenzene and 1,1,2,2-tetrachloroethane, Chloromethane and 1,1-dichloroethane, and RF > 0.100 for Bromoform |
| | Ending | 624 | Not Applicable | 8260B | Not Applicable |
| | Other | 624 | BFB[6] tuning at the beginning of every 24 hour shift. | 8260B | BFB[6] tuning at the beginning of every 12 hour shift. |

***Footnotes***

(1) National Pollutant Discharge Elimination System
(2) Resource Conservation and Recovery Act, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), Third Edition, September 1986. Contains Final Update I (July 1992), Final Update IIA (August 1993), Final Update II (September 1994), Final Update IIB (January 1995), and Final Update III (December 1996).
(3) TCDD - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
(4) CCC - Continuing Calibration Compounds
(5) SPCC - System Performance Check Compound
(6) BFB - Bromofluorobenzene
(7) DFTPP - Decafluorotriphenylphosphine
(8) Footnote deleted
(9) Method not listed in 40 CFR Part 136.

# TABLE 8.5-9
## Summary of USEPA Contract Laboratory Program Statement of Work
## Method Calibrations

| Analytical Parameter | Calibration | Method | Requirement |
|---|---|---|---|
| Cyanide, Total | Initial | ILM03.0<br>ILMO4.0 | Minimum 5 levels plus blank<br>"r" ≥ 0.995 |
| | Continuing | ILM03.0<br>ILMO4.0 | 1 mid-level every 10 samples<br>± 15 % of true value |
| | Ending | ILM03.0<br>ILMO4.0 | ± 15 % of true value |
| | Other | ILM03.0<br>ILMO4.0 | Not Applicable |
| ICAP (excludes mercury) | Initial | ILM03.0<br>ILMO4.0 | 1 level and blank<br>ICV: ± 10% of true |
| | Continuing | ILM03.0<br>ILMO4.0 | Mid-level calibration standard<br>Every 10 samples<br>± 10% of true value |
| | Ending | ILM03.0<br>ILMO4.0 | Mid-level calibration standard<br>± 10% of true value |
| | Other | ILM03.0<br>ILMO4.0 | ILMO3.0: ICSA, ICSAB: Analyze at beginning and end or every 8 hours whichever is more frequent<br>ILMO3.0: CRI: Beginning and end of each run, and every 8 hours for all analytes at 2x CRDL or 2x IDL whichever is greater, except for Al, Ba, Ca, Fe, Mg, Na, K<br>ILMO4.0: ICSA, ICSAB: Analyze at beginning and end of run, but not before ICV. Must be analyzed every 20 analytical samples per ICP run.<br>ILMO4.0: CRI: Beginning and end of each run and every 20 analytical samples per ICP run. CRI must be immediately followed by ICS analysis.<br><u>Quarterly:</u><br>Instrument detection limits<br>Linear Range Verification<br><u>Annually:</u><br>ICP interelement correction factors |

# TABLE 8.5-9
## Summary of USEPA Contract Laboratory Program Statement of Work
## Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | Method | Requirement |
|---|---|---|---|
| GFAA (excludes Hg) | Initial | ILM03.0<br>ILMO4.0 | Minimum 3 levels plus blank<br>ICV: ± 10% |
| | Continuing | ILM03.0<br>ILMO4.0 | Every 10 samples<br>± 10% of true value |
| | Ending | ILM03.0<br>ILMO4.0 | ± 10% of true value |
| | Other | ILM03.0<br>ILMO4.0 | CRA: Beginning of every analytical run (no acceptance criteria)<br>Quarterly - Instrument detection limits |
| Mercury (CVAA) | Initial | ILM03.0<br>ILMO4.0 | Minimum 3 levels plus blank<br>$r^{n(4)} \geq 0.995$<br>ICV: ± 20% |
| | Continuing | ILM03.0<br>ILMO4.0 | Every 10 samples<br>± 20% of true value |
| | Ending | ILM03.0<br>ILMO4.0 | ± 20% of true value |
| | Other | ILM03.0<br>ILMO4.0 | Quarterly - Instrument detection limits<br>ILMO3.0: CRA not required.<br>ILMO4.0: CRA: Beginning of every analytical run (no acceptance criteria) |
| Pesticides/PCBs | Initial | OLM03.1 | 3 levels for single component analytes, 1 level for multicomponent analytes<br>RSD must be ≤ 20% except α-BHC and δ-BHC at 25% (allow up to 2 target analytes to be 20% ≤ 30%) |
| | Continuing | OLM03.1 | Instrument Blank and midpoint calibration or PEM every 12 hours<br>% D: ± 25% of predicted response |

# TABLE 8.5-9
## Summary of USEPA Contract Laboratory Program Statement of Work
## Method Calibrations
## (Continued)

| Analytical Parameter | Calibration | Method | Requirement |
|---|---|---|---|
| Pesticides/PCBs (continued) | Ending | OLM03.1 | Instrument Blank and midpoint calibration or PEM |
| | Other | OLM03.1 | Resolution Check Mixture ≥ 60%<br>PEM: ≥ 90%<br>DDT, Endrin breakdown must each be ≤ 20% (≤ 30% combined) |
| Semivolatiles by GC/MS | Initial | OLM03.1 | 5 levels<br>RRF and RSD must meet method criteria |
| | Continuing | OLM03.1 | Mid-level every 12 hours after tuning check<br>%D and RRF must meet minimum criteria |
| | Ending | OLM03.1 | Not Applicable |
| | Other | OLM03.1 | DFTPP tuning at the beginning of every 12 hour shift |
| Volatiles by GC/MS | Initial | OLM03.1 | 5 levels<br>RRF and RSD must meet method criteria |
| | Continuing | OLM03.1 | Mid-level every 12 hours after tuning check<br>%D and RRF must meet minimum criteria |
| | Ending | OLM03.1 | Not Applicable |
| | Other | OLM03.1 | BFB tuning at the beginning of every 12 hour shift |

# TABLE 8.6-1
## Precision and Accuracy Measurements

| Measurement | Definition |
|---|---|
| Accuracy | The degree of agreement of a measurement with an accepted reference or true value. The only true or known values in the laboratory are spiked samples.<br>Expressed as laboratory control sample (LCS) percent recovery ( % R):<br>$$LCS\ \%Recovery = \frac{X}{t} x\ 100$$<br>where: $X$ = observed concentration<br>$t$ = concentration of spike added<br>Expressed as matrix spike/matrix spike duplicate (MS/MSD) sample percent recovery (% R):<br>$$MS/MSD\ \%Recovery = \frac{X_s - X}{t} x\ 100$$<br>where: $X_s$ = observed concentration in spiked sample<br>$X$ = observed concentration in unspiked sample<br>$t$ = concentration of spike added |
| Precision | The measure of analytical reproducibility of two values. Expressed as the relative percent difference (RPD) of two values.<br>$$RPD = \left[\frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)}\right] x\ 100$$<br>where: $X_1$ = first observed concentration<br>$X_2$ = second observed concentration |

# TABLE 8.6-1
## Precision and Accuracy Measurements
## (Continued)

| Measurement | Definition |
|---|---|
| Arithmetic mean | The average of a set of values.<br>$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$<br>where: $\bar{x}$ = the mean<br>$x_i$ = the $i^{th}$ data value<br>$n$ = number of data values |
| Standard Deviation | A measure of the random (probable) error associated with a single measurement within a data set.<br>$s = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$<br>where: $s$ = sample standard deviation<br>$\bar{x}$ = the mean<br>$x_i$ = the $i^{th}$ data value<br>$n$ = number of data values |
| Quality Control Chart | A graphical representation of analytical accuracy. Displays the arithmetic mean of a data set, the upper and lower warning limits and the upper and lower control limits. |
| **ACCURACY** | |
| Upper Control Limit (UCL) | $UCL = \bar{x} + 3s$ |
| Upper Warning Limit (UWL) | $UWL = \bar{x} + 2s$ |
| Lower Warning Limit (LWL) | $LWL = \bar{x} - 2s$ |
| Lower Control Limit (LCL) | $LCL = \bar{x} - 3s$ |
| **PRECISION** | |
| RPD | Zero to (mean RPD + 3s) |

## TABLE 8.11-1
## Instrument Maintenance Schedule
## Ion Chromatograph[1]

| As Needed | Daily | Weekly | Monthly | Semi-annually |
|---|---|---|---|---|
| Clean micromembrane suppressor when decreases in sensitivity are observed. | Check plumbing/leaks. | Check pump heads for leaks. | Check all air and liquid lines for discoloration and crimping, if indicated. | Lubricate left hand piston. |
| Check fuses when power problems occur. | Check gases. | Check filter (inlet) | Check/change bed supports guard and analytical columns, if indicated. | Clean conductivity cell. |
| Reactivate or change column when peak shape and resolution deteriorate or when retention time shortening indicates that exchange sites have become deactivated. | Check pump pressure. | | | Check conductivity cell for calibration. |
| De-gas pump head when flow is erratic. | Check conductivity meter. | | | |

## TABLE 8.11-2
## Instrument Maintenance Schedule
## Total Organic Halide Analyzer[1]

| Daily | As Needed |
|---|---|
| Check electrodes for damage, polish the electrodes. | Examine and clean or replace pyrolysis tube. |
| Replace dehydrating fluid and electrolyte fluid. | Clean titration cell. |
| Clean quartz boat. | Observe gas flow. |
| Observe check valves during use for backfeed. | Replace reference electrode fluid. |
| At end of each day of use, wash out absorption module, empty electrolyte and fill cell with DI water. Empty dehydrator tube | Change quartz wool. |
| Perform cell performance check. | Replace o-rings and seals. |

## TABLE 8.11-3
## Instrument Maintenance Schedule
## High Pressure Liquid Chromatograph[1]

| Daily | As Needed |
|---|---|
| Check level of solution in reservoirs. If adding, verify that solvent is from the same source. If changing, rinse gas and delivery lines to prevent contamination of the new solvent. | Replace columns when peak shape and resolution indicate that chromatographic performance of column is below method requirements. |
| Check gas supply. | Oil autosampler slides when sample does not advance. |
| Flush with an appropriate solvent to remove all bubbles. | Rinse flow cell with 1N nitric acid if sensitivity low. |
| Pre-filter all samples. | Change pump seals when flow becomes inconsistent. |
| | Repack front end of column<br>Backflush column. |

## TABLE 8.11-4
## Instrument Maintenance Schedule
## Flame Atomic Absorption Spectroscopy[1]

| Daily | Monthly | As Needed |
|---|---|---|
| Verify proper safety precautions are working. | Clean all filters and fans. | Check drain receptacle. |
| Verify gas box operates properly and safely. | Change capillary tubing | Check background corrector for alignment. |
| Verify sensitivity using elements in UV/VIS spectrum. | Clean optical windows | Clean burner head. |
| | | Clean nebulizer. |
| | | Clean spray chamber. |
| | | Check sample introduction O-rings. |

# TABLE 8.11-5
## Instrument Maintenance Schedule
## ICP & ICP/MS[1]

| Daily | Monthly or As Needed | Semi-annually | Annually |
|---|---|---|---|
| Check gases<br>Check that argon tank pressure is 50-60 psi and that a spare tank is available.<br><br>Check aspiration tubing | Clean plasma torch assembly to remove accumulated deposits. | Change vacuum pump oil. | Notify manufacturer service engineer for scheduled preventive maintenance service. |
| Check vacuum pump gage. (<10 millitorr) | Clean nebulizer and drain chamber; keep free flowing to maintain optimum performance. | Replace coolant water filter. (may require more or less frequently depending on the quality of water) | |
| Check that cooling water supply system is full and drain bottle is not full. Also that drain tubing is clear, tight fitting and has few bends. | Clean filters on back of power unit to remove dust. | | |
| Check that nebulizer is not clogged. | Replace when needed:<br>peristaltic pump tubing<br>sample capillary tubing<br>autosampler sipper probe | | |
| Check that capillary tubing is clean and in good condition. | Check yttrium position.<br><br>Check O-rings<br><br>Clean/lubricate pump rollers. | | |
| Check that peristaltic pump windings are secure. | | | |
| Check that high voltage switch is on. | | | |
| Check that exhaust screens are clean. | | | |
| Check that torch, glassware, aerosol injector tube, bonnet are clean | | | |

## TABLE 8.11-6
## Instrument Maintenance Schedule
## Graphite Furnace Atomic Absorption[1]

| Daily | Weekly | Monthly | Semi-annually | Annually |
|---|---|---|---|---|
| Check gas lines and gas supply. | Clean optical windows. | Check coolant level in cooling unit. Add coolant if error message appears. | Change graphite contacts | Notify manufacturer service engineer to clean optics. |
| | | | | Check optics |
| Clean contact cylinders. | | | | |
| Check tubes and platform; replace if corroded, faking, or if low absorbance results.<br><br>Check autosampler tubing and alignment.<br><br>Flush autosampler tubing | | | | |
| PE4100ZL: clean fume extraction tip, replace fume extraction filter and $H_2O$ trap. | | | | |
| As needed, trim sampling capillary. | | | | |
| Check drain lines and waste containers; empty as needed. | | | | |
| Check acid rinse containers; fill as needed. | | | | |

## TABLE 8.11-7
## Instrument Maintenance Schedule
## CVAS & CVAFS

| Daily | As Needed | Annually |
|---|---|---|
| Change drying tube | Change pump tubing | Change Hg lamp. |
| Check pump tubing/drain tubing | Check/change Hg lamp | |
| Check gas pressure | Clean optical cell | |
| Check aperture reading<br>Check tubing | Lubricate pump | |

# TABLE 8.11-8
## Instrument Maintenance Schedule
## Gas Chromatograph[1]

| Daily | As Needed | Quarterly/Semi-annually/Annually |
|---|---|---|
| Check for sufficient supply of carrier and detector gases. Check for correct column flow and/or inlet pressures. | Replace front portion of column packing or break off front portion of capillary columns. Replace column if this fails to restore column performance or when column performance (e.g. peak tailing, poor resolution, high backgrounds, etc.) indicates it is required. | Quarterly ELCD: change-roughing resin, clean cell assembly.<br><br>Quarterly FID: clean detector |
| Check temperatures of injectors and detectors. Verify temperature programs. | Change glass wool plug in injection port and/or replace injection port liner when front portion of column packing is changed or front portion of capillary column is removed. | Semi-annually ECD: perform wipe test. |
| Check inlets, septa. Replace septum<br><br>Clean injector port | | Annually ELCD: change finishing resin, clean solvent filter.<br><br>Annually FID: Replace flame tip<br><br>ECD: detector cleaning and re-foiling, every five years or whenever loss of sensitivity, or erratic response or failing resolution is observed. |
| Check baseline level. | Perform gas purity check (if high baseline indicates that impure carrier gas may be in use). | |
| Check reactor temperature of electrolytic conductivity detector. | Replace or repair flow controller if constant gas flow cannot be maintained. | |
| | Replace fuse. | |
| Inspect chromatogram to verify symmetrical peak shape and adequate resolution between closely eluting peaks. | Reactivate external carrier gas dryers. | |
| Clip column leader | Detectors: clean when baseline indicates contamination or when response is low.<br>FID: clean/replace jet, replace ignitor.<br>NPD: clean/replace collector assembly.<br>PID: clean lamp window monthly or replace as needed, replace seals.<br>ELCD: check solvent flow weekly, change reaction tube, replace solvent, change reaction gas, clean/replace Teflon® transfer line.<br>ECD: follow manufacturers suggested maintenance schedule | |
| | Reactivate flow controller filter dryers when presence of moisture is suspected. | |

# TABLE 8.11-8
## Instrument Maintenance Schedule
## Gas Chromatograph[1]
## (Continued)

| Daily | As Needed | Quarterly/Semi-annually/Annually |
|---|---|---|
| GC (continued) | HP 7673 Autosampler: replace syringe, fill wash bottle, dispose of waste bottle contents. | |
| | Purge & trap devices: periodic leak checks quarterly, replace/condition traps (when poor response or disappearance of reactive or poorly trapped compounds), clean sample lines, valves (if they become contaminated), clean glassware. Clean sparger weekly. Check purge flow monthly. Bake trap as needed to correct for high background. Change trap annually, or as needed whenever loss of sensitivity, or erratic response or failing resolution is observed. | |
| | Purge & trap autosamplers: leak check system, clean sample lines, valves. PTA-30 autosampler also requires cleaning the syringes, frits, valves, and probe needles, adjustment of micro switches, replacement of Teflon® valve, and lubrication of components. | |

# TABLE 8.11-9
## Instrument Maintenance Schedule
## Mass Spectrometer[1]

| Daily | Weekly | As Needed[2] | Quarterly | Semi-Annually | Annually |
|---|---|---|---|---|---|
| Check for sufficient gas supply. Check for correct column flow and/or inlet pressure. | Check mass calibration (PFTBA or FC-43) | Check level of oil in mechanical pumps and diffusion pump if vacuum is insufficient. Add oil if needed between service contract maintenance. | Check ion source and analyzer (clean, replace parts as needed) | | Replace the exhaust filters on the mechanical rough pump every 1-2 years. |
| Check temperatures of injector, detector. Verify temperature programs. | | Replace electron multiplier when the tuning voltage approaches the maximum and/or when sensitivity falls below required levels. | Check vacuum, relays, gas pressures and flows | Clean rods | |
| Check inlets, septa. | | Clean Source, including all ceramics and lenses - the source cleaning is indicated by a variety of symptoms including inability of the analyst to tune the instrument to specifications, poor response, and high background contamination. | Change oil in the mechanical rough pump. Relubricate the turbomolecular pump-bearing wick. | | |
| Check baseline level. | | Repair/replace jet separator. | | | |
| Check values of lens voltages, electron multiplier, and relative abundance and mass assignments of the calibration compounds. | | Replace filaments when both filaments burn out or performance indicates need for replacement. | | | |

## TABLE 8.11-10
## Instrument Maintenance Schedule
## TRAACS Auto Analyzer [1]

| As Needed | Daily | Monthly | Semi-annually | Annually |
|---|---|---|---|---|
| Replaces air filter when progressive loss of air pressure is observed. | Check air pressure gauge (22 ± 2 psi) | Change all pump tubes (or after 200 hours of pumping time) | (or after 1000 hours of pumping time) | Lightly lubricate the Linear Sample Rails (use semi-fluid lubricant) |
| Replace air valve tubing when occlusion in tubing is observed | Use recommended washout procedure (at end of analysis operations) | Clean sample probe shaft | Replace pump platens | Replace colorimeter lamp (or after 2500 hours of use) |

## TABLE 8.11-11
## Instrument Maintenance Schedule
## Sonicator [1]

| Daily | As Needed |
|---|---|
| Daily when used:<br>Inspect probe tips for inconsistencies (etching/pitting). | Replace probe tip. |
| | Disassemble and clean sonicator probe tips. |
| | Tune sonicator assembly. |

## TABLE 8.11-12
## Instrument Maintenance Schedule
## Analytical/Top Loading Balances[1]

| Daily | Annually |
|---|---|
| Check using Class S-verified weights once daily or before use<br>Clean pan and weighing compartment | Manufacturer cleaning and calibration. |

## TABLE 8.11-13
## Instrument Maintenance Schedule
## Refrigerators/Walk-in Coolers[1]

| Daily | As Needed |
|---|---|
| Temperatures checked and logged. | Refrigerant system and electronics serviced. |

## TABLE 8.11-14
## Instrument Maintenance Schedule
## Ovens[1]

| Daily | As Needed |
|---|---|
| Temperatures checked and logged. | Electronics serviced. |

## TABLE 8.11-15
## Instrument Maintenance Schedule
## Specific Digital Ion Analyzer[1]

| Daily | As Needed |
|---|---|
| Daily when used:<br>Calibrate with check standards.<br>Inspect electrode daily, clean as needed.<br>Inspect electrode proper levels of filling solutions daily, fill as needed.<br>Clean probe, each use. | Electronics serviced. |

## TABLE 8.11-16
## Instrument Maintenance Schedule
## Turbidimeter[1]

| Daily | Monthly | As Needed |
|---|---|---|
| Daily when used:<br>Adjust linearity on varying levels of NTU standards. Standardize with NTU standards.<br>Inspect cells. | Clean instrument housing | Electronics serviced. |

## TABLE 8.11-17
## Instrument Maintenance Schedule
## Dissolved Oxygen Meter[1]

| Daily | As Needed |
|---|---|
| Daily when used:<br>Calibrate with check standards.<br>Check probe membrane for deterioration<br>Clean and replace membrane with HCl solution. | Electronics serviced. |

## TABLE 8.11-18
## Instrument Maintenance Schedule
## Conductance Meter[1]

| Daily | As Needed |
|---|---|
| Daily when used:<br><br>Check probe and cables.<br>Standardize with KCl.<br>Inspect conductivity cell | Electronics serviced. |

## TABLE 8.11-19
## Instrument Maintenance Schedule
## Chemical Oxygen Demand (COD) Reactor[1]

| Daily | As Needed |
|---|---|
| Daily when used:<br>Calibrate with check standards. | Electronics serviced. |

## TABLE 8.11-20
## Instrument Maintenance Schedule
## Spectrophotometer[1]

| As Needed | Daily | Monthly | Annually |
|---|---|---|---|
| Dust the lamp and front of the front lens. | Check the zero %A adjustment. | Clean windows | Check instrument manual. |
| | Clean sample compartment | | Perform wavelength calibration. |
| | Clean cuvettes | | Replace lamp annually or when erratic response is observed. |
| | | | Clean and align optics. |

## TABLE 8.11-21
## Instrument Maintenance Schedule
## pH Meter[1]

| As Needed | Daily |
|---|---|
| Clean electrode. | Inspect electrode. Verify electrodes are properly connected and filled. |
| Refill reference electrode. | Inspect electrode proper levels of filling solutions. Make sure electrode is stored in buffer. |

## TABLE 8.11-22
## Instrument Maintenance Schedule
## Fourier Transform Infrared Spectrometry (FTIR)[1]

| |
|---|
| Check desiccant every 3 months. |
| Check KBr window every 3 months. |

# TABLE 8.11-23
## Instrument Maintenance Schedule
## Total Organic Carbon Analyzer

| Daily | As Needed | Weekly | Monthly | Semi-Annually |
|---|---|---|---|---|
| Check:<br>Oxygen supply<br>Persulfate supply<br>Acid supply<br>Carrier gas flow rate (~ 150 cc/min)<br>IR millivolts for stability (after 30 min. warm-up)<br>Reagent reservoirs | Check injection port septum after 50-200 runs.<br>Tube end-fitting connections after 100 hours or use.<br>Indicating drying tube.<br>NDIR zero, after 100 hours of use.<br>Sample pump, after 2000 hours for use.<br>Digestion vessel/condensation chamber, after 2000 hours of use.<br>Permeation tube, after 2000 hours of use.<br>NDIR cell, after 2000 hours of use. | Check liquid-flow-rate-pump-tubing conditions on autosampler<br>Check injection port septum | Clean digestion vessel<br>Clean condenser column<br>Do the leak test | Change pump tubing |

***Footnotes to Preventive Maintenance Tables***

(1) Refer to manufacturer's instructions for each instrument to identify and perform maintenance operations.

## TABLE 8.11-24
## Instrument Maintenance Schedule
## Digestion Block

| Annually |
|---|
| Check temperature with NIST thermometer |

## TABLE 8.11-25
## Instrument Maintenance Schedule
## Flash Point Tester

| Daily | As Needed |
|---|---|
| Check tubing.<br>Clean sample cup each use. | Check thermometer against NIST thermometer, when used. |
| Check gas. | |
| Clean flash assembly | |
| Check stirrer | |

## TABLE 9.4-1
## Proficiency Testing Programs

| PT Sample Program Description | Analysis Performed | Frequency of Participation |
|---|---|---|
| Water Pollution Program<br><br>Samples provided by Environmental Resource Associates, a NIST-approved PT Provider | Trace Metals, Minerals, Nutrients, Demand, PCBs in Water, PCBs in Transformer Oil, Pesticides, Volatile Halocarbons, Volatile Aromatics, Semivolatiles, Polynuclear Aromatic Hydrocarbons (HPLC) and Miscellaneous inorganics (e.g. TSS, Cyanide, Total Phenolics) | Semi-annual |
| Water Supply Program<br><br>Samples provided by Environmental Resource Associates, a NIST-approved PT Provider | Trace Metals, Nitrate/Nitrite/Fluoride, Pesticides, Herbicides, Trihalomethanes, Volatile Organics, and Miscellaneous (TDS, Hardness, pH, Alkalinity, Sodium, Sulfate, Cyanide, Turbidity, and TOC) | Semi-annual |
| Hazardous Waste Program + UST and California<br><br>Samples provided by Environmental Resource Associates, a NIST-approved PT Provider | Semivolatile Organics (BNA), Pesticides, Herbicides, Volatile Organics, Metals, Anions, PAH, TPH Gas and Diesel | Semi-annual |
| Army Corps of Engineers – MRD and US Navy | Anions, Herbicides, Organochlorine Pesticides, Polychlorinated Biphenyls, Semivolatile Organics, Volatile Organics, TAL Metals, Cyanide | 18 months |
| STL Corporate Double Blind – samples provided by ASI | Volatile Organics, Metals, General Chemistry, Base/Neutral Acid Extractables, Project Management | Annually |
| OhioVoluntary Action Program – samples provided by APG | Based on Certification at the time of PT analysis – MSS, MSV, GCS, GCV, Metals, General Chemistry | Semiannually |
| New York DOH/CLP – samples provided by state | Based on Certification at the time of PT analysis – MSS, MSV, GCS, GCV, Metals, General Chemistry, Expanded Deliverable Package (CLP) | Semiannually |
| West Virginia – samples provided by APG (PETs) | Based on Certification at the time of PT analysis – MSS, SMV, GCS, GCV, Metals, and General Chemistry. Standard and "plus" concentration levels required | Annually |

| PT Sample Program Description | Analysis Performed | Frequency of Participation |
|---|---|---|
| Allied Signal | Volatile Organics, Semivolatile Organics, Metals, BOD, COD, TSS, TPH | Annually |
| STL North Canton Internal PEs – Single or Double Blinds | As needed | As a follow-up to unacceptable PTs from other programs or internal/external audits |

Note: Various client and agency single and double blind PTs are introduced in the laboratory throughout the year.

# Acronyms and Initialisms

| | |
|---|---|
| A2LA | American Association for Laboratory Accreditation |
| AA | Atomic Absorption |
| ANSI | American National Standards Institute |
| AR/COC | Analysis Request/Chain-of-Custody |
| ASQC | American Society for Quality Control |
| ASTM | American Society for Testing and Materials |
| BFB | Bromofluorobenzene |
| BLK | Blank |
| BOD | Biochemical Oxygen Demand |
| CCC | Calibration Check Compound |
| CEO | Chief Executive Officer |
| CF | Calibration Factor |
| CFR | Code of Federal Regulations |
| CHP | Chemical Hygiene Plan |
| CLP | Contract Laboratory Program |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act (Superfund) |
| COC | Chain-of-Custody |
| COD | Chemical Oxygen Demand |
| CRDL | Contract Required Detection Limit |
| CRQL | Contract Required Quantitation Limit |
| CSM | Customer Service Manager |
| CSRM | Certified Standard Reference Material |
| CST | Customer Service Team |
| CUR | Condition Upon Receipt |
| CV | Coefficient of Variation |
| CVAA | Cold Vapor Atomic Absorption (Spectroscopy) |
| DFTPP | Decafluorotriphenylphosphine |
| DOC | Dissolved Organic Carbon |
| DOE | Department of Energy |
| DOT | Department of Transportation |
| DQO | Data Quality Objective |

# Acronyms and Initialisms (continued)

| | |
|---|---|
| EH&S | Environmental Health and Safety |
| EPA | (U. S.) Environmental Protection Agency |
| FAS | Field Analytical Services |
| FLAA | Flame Atomic Absorption (Spectroscopy) |
| FTIR | Fourier Transform Infrared (Spectrometry) |
| GC | Gas Chromatograph(y) |
| GC/MS | Gas Chromatography/Mass Spectrometry |
| GFAA | Graphite Furnace Atomic Absorption (Spectroscopy) |
| HDPE | High Density Polyethylene |
| HPLC | High Performance Liquid Chromatography |
| HRGC | High Resolution Gas Chromatography |
| HRMS | High Resolution Mass Spectrometry |
| ICAP | Inductively Coupled Argon Plasma (Spectroscopy) |
| ICAP/MS | Inductively Coupled Argon Plasma/Mass Spectrometry |
| ICS | Interference Check Sample |
| IDL | Instrument Detection Limit |
| IR | Infrared (Spectroscopy) |
| IS | Information Systems |
| IS | Internal Standard |
| ISO | International Organization for Standardization |
| IT | Information Technology |
| KRI | Key Result Indicator |
| LAN | Local Area Network |
| LCL | Lower Control Limit |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| LIMS | Laboratory Information Management System |
| LRGC | Low Resolution Gas Chromatography |
| LRMS | Low Resolution Mass Spectrometry |
| LWL | Lower Warning Limit |
| MBAS | Methylene Blue Active Substance |

# Acronyms and Initialisms (continued)

| | |
|---|---|
| MDC | Minimum Detectable Concentration |
| MDL | Method Detection Limit |
| MS | Matrix Spike |
| MSA | Method of Standard Additions |
| MSD | Matrix Spike Duplicate |
| MSDS | Material Safety Data Sheet |
| NELAC | National Environmental Laboratory Accreditation Conference |
| NELAP | National Environmental Laboratory Accreditation Program |
| NCM | Nonconformance Memo |
| NIOSH | National Institute for Occupational Safety and Health |
| NIST | National Institute of Standards Technology |
| NMOC | Non-Methane Organic Compounds |
| NPDES | National Pollutant Discharge Elimination System |
| NRC | Nuclear Regulatory Commission |
| NRM | National Reference Material |
| PAH | Polynuclear Aromatic Hydrocarbons (or PNA) |
| PC | Personal Computer |
| PCB | Polychlorinated Biphenyls |
| PDS | Post Digestion Spike |
| PE | Performance Evaluation |
| PEM | Performance Evaluation Mixture |
| PM | Project Manager |
| PQL | Practical Quantitation Limit |
| PSRL | Project-Specific Reporting Limit |
| PUF | Polyurethane Foam |
| QA | Quality Assurance |
| QAMP | Quality Assurance Management Plan |
| QAPP | Quality Assurance Project Plan or Quality Assurance Program Plan |
| QAS | Quality Assurance Summary |
| QC | Quality Control |
| QS | Quality System |

# Acronyms and Initialisms (continued)

| | |
|---|---|
| QuantIMS | STL North Canton Laboratory Information Management System |
| QRI | Quality-Related Item |
| RCRA | Resource Conservation and Recovery Act |
| RF | Response Factor |
| RFP | Request for Proposal |
| RFQ | Request for Quote |
| RL | Reporting Limit |
| RPD | Relative Percent Difference |
| RRF | Relative Response Factor |
| RSD | Relative Standard Deviation |
| RSO | Radiation Safety Officer |
| SDG | Sample Delivery Group |
| SOP | Standard Operating Procedure |
| SOW | Statement of Work |
| SPCC | System Performance Check Compounds |
| SPLP | Synthetic Precipitation Leaching Procedure |
| SRL | Standard Reporting Limit |
| SRM | Standard Reference Material |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TIC | Tentatively Identified Compound |
| TKN | Total Kjeldahl Nitrogen |
| TOC | Total Organic Carbon |
| TOX | Total Organic Halides |
| UCL | Upper Control Limit |
| UPS | Uninterruptable Power Supply |
| USEPA | United States Environmental Protection Agency |
| UWL | Upper Warning Limit |
| VOA | Volatile Organic Analysis |
| VOST | Volatile Organic Sampling Train |
| WAN | Wide Area Network |
| WS | Water Supply |
| WP | Water Pollution |

# Glossary

**acceptance limits**
Data quality limits specified for analytical method performance.

**accuracy**
Accuracy is the degree of agreement between a measurement and the true or expected value, or between the average of a number of measurements and the true or expected value. Systematic errors affect accuracy. For chemical properties, accuracy is expressed either as a percent recovery (R) or as a percent bias (R - 100).

**aliquot, aliquant**
A measured portion of a sample taken for analysis.

**analytical spike**
A sample created by spiking target analytes into a prepared portion of a sample just prior to analysis. (Also see matrix spike.)

**anomaly**
See nonconformance.

**areas needing improvement**
Represent isolated instances of noncompliance or issues that are judged to have a less immediate impact on data quality. Laboratory management must correct the situation or otherwise ensure that the condition does not recur. This term replaces the previous term used "Observations."

**arithmetic mean**
The arithmetic mean ($\bar{x}$) is the average of a set of values. It is equal to the sum of the observed values divided by the number of observations. Also called "average".

# Glossary (continued)

where: $\bar{x}$ = the mean
$x_i$ = the $i^{th}$ data value
$n$ = number of data values

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$$

**assessment**
The evaluation process used to measure the performance or effectiveness of a system and its elements. Assessment is used as an all-inclusive term to denote any of the following: performance, systems, data and compliance audits, management systems reviews, peer reviews, inspections, or spot assessments.

**associate**
Employee.

**audit**
A planned and documented investigative evaluation of an item or process to determine its adequacy and effectiveness as well as compliance with established procedures, instructions, drawings, quality management plans, and other applicable documents.

**benchmarking**
A step-by-step method of improving performance by identifying and studying best practices and comparing them to industry practices.

**bias**
A systematic (consistent) error in test results. Bias is expressed as the difference between the population mean and the true or reference value, or as estimated from sample statistics, the difference between the sample average and the reference value.

# Glossary (continued)

**blind performance evaluation sample**
A sample either submitted to the laboratory or prepared in the laboratory whereby the concentrations of parameters of concern are known by the preparer and not by the laboratory.

**calibration**
Establishment of a relationship between various calibration standards and the measurements of them obtained by a measurement system, or portions thereof. The levels of the calibration standard should bracket the range of levels at which actual measurements are to be made. Calibration is also the act of making a scheduled comparison of instrument performance against national standards for instruments which measure physical parameters such as mass, time, and temperature. This type of calibration is independent of use in specific analyses and projects.

**calibration curve**
The graphical relationship between the known values for a series of calibration standards and instrument responses.

**calibration factor (CF)**
The ratio of the instrument response of an analyte to the amount injected. CFs are used in external standard calibrations.

$$CF = \frac{Total\ Area\ of\ Peak}{Mass\ Injected}$$

**calibration standard**
A standard used to quantitate the relationship between the output of a sensor and a property to be measured. Calibration standards should be traceable to standard reference materials (provided by NIST, or other recognized standards agencies) or a primary standard.

# Glossary (continued)

**Certificate of Analysis**
A STL® report format containing analytical results without supporting/backup information.

**certified reference material**
A reference material accompanied by a certificate issued by an organization certifying the contents and concentration(s) of the material. (See also standard reference material.)

**chain-of-custody (COC)**
A system of documentation demonstrating the physical custody and traceability of samples.

**check standard analyses**
A standard (often a midpoint standard) analyzed at a frequency specified in the method or in a SOP to verify the continuing calibration of the standard curve.

**client**
Any individual or organization for whom items or services are furnished or work is performed in response to defined requirements and expectations.

**client sample**
The material or collection media submitted to the laboratory for analysis. Field QC samples are considered client samples but laboratory QC samples are not counted as client samples when counting samples for QC batches.

**coefficient of variation (relative standard deviation)**
A measure of precision (relative dispersion). It is equal to the standard deviation ($s$) divided by the mean ($\bar{x}$) and multiplied by 100 to give a percentage value.

# Glossary (continued)

$$CV\ (RSD) = \left(\frac{s}{\bar{x}}\right) x\ 100$$

**collocated samples**
Independent samples collected in such a manner that they are equally representative of the variable(s) of interest at a given point in space and time. The results will indicate sampling as well as analytical variability.

**comparability**
Comparability is a measure of the confidence with which one data set can be compared to another. To ensure comparability, all laboratory analysts are required to use uniform procedures (i.e., SOPs) and a uniform set of units and calculations for analyzing and reporting environmental data.

**completeness**
Completeness is a measure of the percentage of measurements that are judged to be valid measurements. At a minimum, the objective for completeness of data is 90% for each constituent analyzed. It is usually expressed as a percentage:

$$\%\ Completeness = \frac{V}{n} x\ 100$$

where: $V$ = number of measurements judged valid
$n$ = total number of measurements

**composite**
A sample composed of two or more increments.

**control chart**
A graphical representation of analytical accuracy. Displays the arithmetic mean of a data set, the upper and lower warning limits and the upper and lower control limits.

# Glossary (continued)

**control table**
A tabular presentation of test results with respect to time or sequence of measurement, together with limits within which the results are expected to lie when the analytical process is in a state of control.

**controlled document**
A document for which the distribution is known. Updates of the document are sent to the original recipients, unless the copy distributed is an uncontrolled copy.

**corrective action**
A measure taken to rectify conditions adverse to quality and, where necessary, to preclude their recurrence.

# Glossary (continued)

**correlation coefficient**
The correlation coefficient (r) is a determination of how closely data "fits" a straight line. It is a number between -1 and 1 that indicates the degree of linear relationship between two sets of numbers. A correlation coefficient of +1 (usually calculated to three decimal places or 1.000) means the data falls exactly on a straight line with positive slope. A correlation coefficient of -1 (or -1.000) means the data falls exactly on a straight line with negative slope.

**customer**
See client.

**data quality objective (DQO)**
Data quality objectives (DQOs) are qualitative and quantitative statements used to ensure the generation of the type, quantity, and quality of environmental data that will be appropriate for the intended application (EPA 1994). Typically, DQOs are identified during project scope and development of sampling and analysis plans. In this QA manual, however, we refer to only the analytical DQOs because laboratories generally do not have any authority over sample collection, shipment, or other field-related activities that may affect the data quality of the environmental sample before the sample is received in the laboratory. EPA has established six primary analytical DQOs for environmental studies: precision, accuracy, representativeness, completeness, comparability, and detectability.

The components of analytical variability (uncertainty) can be estimated when QA and QC samples of the right types and quantities are incorporated into measurement procedures at the analytical laboratory. STL® incorporates numerous QA and QC samples to obtain data for comparison with the analytical DQOs and to ensure that the measurement system is functioning properly. The QA and QC samples and their applications, described in Section 8.4 and are selected on the basis of method- or client-specific requirements. Field blanks, field duplicates, and performance evaluation (PE) samples are received from the client as unknown samples. Analytical laboratory QC samples for inorganic, organic, and radionuclide analyses may include calibration or instrument blanks, method blanks, background, duplicates, replicates, laboratory control samples (LCSs), calibration standards, matrix spikes (MSs), matrix spike duplicates (MSDs), surrogate spikes, and yield tracers.

**data validation**

# Glossary (continued)

See validation - data.

**data verification**
See verification - data.

**deficiency**
See nonconformance or finding.

**degrees of freedom**
The number of independent deviations used in calculating an estimate of the standard deviation.

**double blind performance evaluation sample**
A sample that contains select parameters at defined levels. The levels are unknown to the laboratory. The laboratory is also unaware that the sample is a performance evaluation sample.

**duplicate sample analyses**
Different aliquots of the same sample are analyzed to evaluate the precision of an analysis.

**error**
The difference between an observed or measured value and its true value.

**field blank**
A blank that is prepared and handled in the field and analyzed in the same manner as its corresponding client samples.

**field matrix spike**
A sample created by spiking target analytes into a sample in the field at the point of sample acquisition.

**finding**
Noncompliant practices or policies which have significant adverse impact on data quality, technical defensibility, or regulatory acceptance of data. Findings require immediate attention by

# Glossary (continued)

the laboratory management and must be resolved to comply with STL's® quality documents and laboratory-established procedures often called deficiencies by auditors.

**geometric mean**
The $n^{th}$ root of the product of all values in a set of n values or the antilogarithm of the arithmetic mean of the logarithms of all the values of a set of n values. The geometric mean is generally used when the logarithms of a set of values are nearly normally (Gaussian) distributed, such as is the case of much population data.

**initial calibration**
Analysis of a series of analytical standards at different specified concentrations; used to define the linearity and dynamic range of the response of an instrument to the target compounds prior to the analysis of samples.

**inspection**
Examination or measurement of an item or activity to verify conformance to specific requirements.

**instrument detection limit (IDL)**
IDL is a calculated estimate of instrument detectability defined by the USEPA Contract Laboratory Program (CLP).

**internal standard (IS)**
A compound added to every standard, QC sample, client sample, or sample extract at a known concentration prior to analysis for the purpose of quantitation. For example, internal standards are used as the basis for quantitation of the target compounds by GC/MS.

**linear regression**
A statistical method for finding a straight line that best fits a set of two or more data points, thus providing a relationship between two or more variables.

**matrix**

# Glossary (continued)

The component or substrate which contains the analyte(s) of interest. Examples of matrices are water, soil or sediment, and air. Matrix is not synonymous with phase (liquid or solid).

**matrix effect**
An interference in the measurement of analyte(s) in a sample that is caused by materials in the sample. Matrix effects may cause elevated reporting limits or may prevent the acquisition of acceptable results.

**matrix spike (MS)**
An aliquot of a matrix fortified (spiked) with known quantities of specific compounds and subjected to an entire analytical procedure in order to indicate the appropriateness of the method for a particular matrix. The percent recovery for the respective compound(s) is then calculated.

**matrix spike duplicate (MSD)**
A second aliquot of the same matrix as the matrix spike (above) that is spiked in order to determine the precision of the method.

**may**
Denotes permission but not a requirement.

**mean**
See arithmetic mean.

**measurement**
The process or operation of ascertaining the extent, degree, quantity, dimensions, or capability with respect to a standard.

**median**
The middle value of a set of data when the data set is ranked in increasing or decreasing order.

**method**
An assemblage of techniques.

**method blank (MB)**

# Glossary (continued)

An analytical control consisting of all reagents, which may include internal standards and surrogate standards, that is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background contamination. Examples of method blanks are a volume of deionized or distilled laboratory water for water samples, a purified solid matrix for soil/sediment samples, or a generated zero air.

**method detection limit (MDL)**

The minimum concentration of an analyte that, in a given matrix and with a specific method, can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is operationally defined as:

$$MDL = st_{(n-1,\ \alpha=0.99)}$$

where:

$s$ = the standard deviation of a number of measurements of a blind or sample matrix containing the analyte at a concentration near the lowest standard recommended in the method and

$t_{(n-1,\ \alpha=0.99)}$ = the student's value for a one-sided t-statistic appropriate for the number of samples used to determine (s), at the 99% confidence level and n-1 degrees of freedom.

**modified method**

A standard or reference method which has been changed to meet project or matrix requirements.

**must**

Denotes a requirement is mandatory and has to be met.

**notable practices**

Laboratory practices that increase effectiveness and quality and represent improvements with respect to conventional laboratory operations.

**nonconformance**

# Glossary (continued)

An unplanned deviation from an established protocol or plan. The deviation may be the result of STL's® actions, then termed a deficiency. If the deviation is the result of events beyond the control of STL®, it is termed an anomaly.

**operational calibration**
Routinely performed as part of instrument usage, such as the development of a standard calibration curve. Operational calibration is generally performed for instrument systems.

**outlier**
A result excluded from the statistical calculations due to being deemed "suspicious" when applying the "Grubbs Test" (or equivalent).

**parameter**
A constant or coefficient that describes some characteristic of a population (e.g., standard deviation, mean, regression coefficients). Also, a chemical being measured, i.e., an analyte.

**percent difference**
When two independent measurements of the same characteristics are available, it is possible to use the percent difference instead of the coefficient of variation to measure precision.

$$\%D = \left| \frac{X_1 - X_2}{X_1} \right| x\ 100\%$$

where: $\%D$ = percent difference
$X_1$ = first value
$X_2$ = second value

**percent recovery**
A measure of accuracy determined from the comparison of a reported spike value to its true spike concentration.

$$\%R = \frac{observed\ conc. - sample\ conc.}{true\ spike\ conc.} x\ 100\%$$

# Glossary (continued)

**performance audit**
See performance evaluation.

**performance evaluation (PE)**
A type of audit in which a known or characterized value is compared to the result obtained through the routine analysis of the sample in the laboratory to evaluate the proficiency of an analyst or laboratory.

**periodic calibration**
A calibration that is performed at prescribed intervals for equipment such as balances, thermometers, and balance weights. In general, they are performed on equipment that are distinct, singular purpose units, and are relatively stable in performance.

**population**
A generic term denoting any finite or infinite collection of individual things, objects, or events.

**practical quantitation limit (PQL)**
The lowest concentration a method can reliably achieve within limits of precision and accuracy and is derived from empirical, matrix-free method performance studies.

**precision**
Precision is an estimate of variability, that is, it is an estimate of agreement among individual measurements of the same physical or chemical property, under prescribed similar conditions. The precision of a measurement system is affected by random errors. Precision is expressed either as relative standard deviation (RSD) for replicate measurements greater than two or as relative percent difference (RPD) for duplicate measurements. Table 8.6-1 illustrates the formulae used to calculate units of precision (i.e., RSD and RPD).

**preventive maintenance**
An organized program within STL® laboratories of actions (such as equipment cleaning, lubricating, reconditioning, adjustment and/or testing) taken to maintain proper instrument and equipment performance and to prevent instruments and equipment from failing during use.

# Glossary (continued)

**primary standard**
A material having a known, stable property that can be accurately measured or derived from established physical or chemical constants. It is readily reproducible and can be accepted (within stated limits) and used to establish the same value of another substance or item.

**procedure**
Detailed instructions to permit replication of a method. (See standard operating procedure.)

**proficiency testing**
A series of planned tests which will determine the ability of field technicians or laboratory analysts to perform routine analyses. The results from this testing may be used for comparison against established criteria or for relative comparisons among the data from a group of technicians or analysts.

**project-specific reporting limit (PSRL)**
See reporting limit.

**protocol**
Methodology specified in regulatory, authoritative, or contractual situations.

**QC batch**
The QC batch consists of a set of up to 20 field samples that behave similarly (i.e., same matrix) and are processed using the same procedures, reagents, and standards within the same time period.

**QC check sample**
A reference matrix containing known concentrations of parameters of interest. If prepared in the laboratory, it is made using stock standard solutions independent of those used for calibration. If the results of these parameters do not meet acceptance criteria, corrective actions are taken.

**qualification (personnel)**
The characteristics of abilities gained through education, training, or experience, as measured against established requirements, such as standards or tests, that qualify an individual to perform a required function.

# Glossary (continued)

**quality**
The sum of features and properties/characteristics of a process, item, or service that bears on its ability to meet the stated needs of the user. STL® has defined quality as meeting the needs of our clients, both internal and external.

**quality assurance (QA)**
An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the customer.

**Quality Assurance Directive**
QA directives are memos issued by the QA Director (or the QA Managers for their facility) to clarify policies, Procedures, and the QMP; or to give direction for an immediate action to ensure or maintain quality.

**Quality Management Plan (QMP)**
The Quality Management Plan for Environmental Analyses (QMP) is a formal document that describes quality systems in terms of organizational structure, functional responsibilities of management, and staff, and lines of authority. The QMP documents the QMS and describes both the organizational and project-specific principles, goals, controls, and tools of the QMS. The QMP provides the criteria and specifications for the generation of environmental analytical data.

**Quality Assurance Project or Program Plan (QAPP)**
A formal document describing in comprehensive detail the necessary QA, QC, and other technical activities that must be implemented to ensure the results of the work performed will satisfy the stated performance criteria.

**quality control (QC)**
The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that it meets the stated requirements established by the client or by STL®.

**quality improvement**

# Glossary (continued)

The process of improving the quality of operations. This process encourages worker recommendations for improvement of work processes and requires timely management evaluation and feedback or implementation.

**quality management**
That aspect of the overall management system of the organization that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systematic activities (e.g., planning, implementation, and assessment) pertaining to the quality management system.

**quality management system (QMS)**
A structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, and implementation plan of an organization for ensuring quality in its work processes, products, and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC.

**random error**
Variations of repeated measurements that are random in nature and individually not predictable.

**range**
The difference between the largest and smallest numbers in a set of numbers.

**raw data**
All documentation associated with the original recording of analytical results pertinent to a specific sample or set of samples. This may include laboratory worksheets, calculation forms, instrument-generated output, analyst notes, etc., from sample receipt through final reporting.

**reagent water**
Water in which an interferant is not observed at or above the minimum quantitation limit of the parameters of interest. The reagent water's purity and acceptability is verified by analysis with each set of samples.

# Glossary (continued)

**recovery**
See percent recovery.

**reference method**
A method of known and demonstrated accuracy.

**regression coefficients**
The quantities describing the slope and intercept of a regression line.

**relative error**
An error expressed as a percentage of the true value or accepted reference value.

**relative percent different (RPD)**
Statistic for evaluating the precision of a replicate set. For replicate results:

$$RPD = \left[ \frac{|X_1 - X_2|}{\left( \frac{X_1 + X_2}{2} \right)} \right] x\ 100$$

where: $X_1$ = first observed concentration
$X_2$ = second observed concentration

**relative response factor (RRF)**
A measure of the relative mass spectral response of a compound compared to its internal standard. RRFs are determined by analysis of standards and are used in the calculation of concentrations of analytes in samples. Because a RRF is the comparison of two responses, it is a unitless number. RRFs are determined by the following equation:

$$RRF = \frac{A_x}{A_{IS}} x \frac{C_{IS}}{C_x}$$

# Glossary (continued)

where: $A$ = area of the characteristic ion measured
$C$ = concentration
$IS$ = internal standard
$x$ = analyte of interest

**relative standard deviation (RSD)**
See coefficient of variation.

**reporting limit (RL)**
One of two types of reporting limit conventions within STL®. The Reporting Limit (RL) is a uniform, STL® -wide reporting limit based on an evaluation of the PQLs at STL® laboratories and the expected method performance in routine water and soil matrices. Project Specific Reporting Limits (PSRLs) are reporting limits that are defined by project requirements.

**representative sample**
A sample taken to represent a lot or population as accurately and precisely as possible.

**representativeness**
Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, a variation in a physical or chemical property at a sampling point, or an environmental condition. Data representativeness is primarily a function of sampling strategy; therefore, the sampling scheme must be designed to maximize representativeness. Representativeness also relates to ensuring that, through sample homogeneity, the sample analysis result (concentration) is representative of the constituent concentration in the sample matrix. At each STL® laboratory, every effort must be made to analyze an aliquot that is representative of the original sample, and to ensure the homogeneity of the sample before subsampling.

**reproducibility**
The precision, usually expressed as a standard deviation, measuring the variability among results of measurements of the same sample at different laboratories.

**response factor (RF)**

# Glossary (continued)

A factor derived from the calibration of a compound that is used in the quantitation calculation of sample analytes. A response factor may be derived from an external standard calibration (then called a Calibration Factor) or from an internal standard calibration (then called a Relative Response Factor).

**secondary standard**
A material having a property that is calibrated against a primary standard.

**self assessment**
Assessments of work conducted by individuals, groups, or organizations directly responsible for overseeing or performing the work.

**shall**
Denotes a requirement that is mandatory and has to be met.

**should**
Denotes a guideline or recommendation.

**standard addition**
The procedure of adding known increments of the analyte of interest to a sample to cause increases in detection response to subsequently establish, by extrapolation of the plotted responses, the level of the analyte of interest present in the original sample.

**standard deviation**
A measure of the dispersion about the mean of the elements in a population. The square root of the variance of a set of values:

$$s = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$$

where: $s$ = standard deviation
$\Sigma$ = sum of

# Glossary (continued)

$X$ = observed values
$n$ = number of observations

**standardization**
The establishment of the value of a potential standard with respect to an established or known standard.

**standard method**
A method of known and demonstrated precision issued by an organization generally recognized as competent to do so.

**standard operating procedure (SOP)**
A written document that details an operation, analysis, or action, with prescribed techniques and steps, that is officially approved as the method for performing certain routine or repetitive tasks.

**standard reference material (SRM)**
A material produced in quantity, of which certain properties have been certified by the National Institute of Standards and Technology (NIST), formerly NBS, or other agencies to the extent possible to satisfy its intended use.

**standard verification**
Standard is checked by STL® or the vendor versus a known specification. See Section 8.5.4.3.

**statistic**
A constant or coefficient that describes some characteristic of a sample. Statistics are used to estimate parameters of populations.

**stock solution**
A concentrated solution of analyte(s) or reagent(s) prepared and verified by prescribed procedure(s), and used for preparing working standards or standard solutions.

# Glossary (continued)

**subsample**
A portion taken from a sample. A laboratory sample may be a subsample of a gross sample; similarly, a test portion may be a subsample of a laboratory sample.

**supplier**
See vendor.

**surrogate (surrogate standard)**
Compounds, when required by a method, that are used added to every blank, sample, LCS, matrix spike, matrix spike duplicate, and standard. They are used to evaluate analytical efficiency by measuring recovery. Surrogates include brominated, fluorinated, or isotopically-labeled compounds that are not expected to be detected in environmental media.

**systematic error**
The condition of a consistent deviation of the results of a measurement process from the reference or known level.

**systems audit or evaluation**
A systematic on-site qualitative review of facilities, procedures, equipment, training, record keeping, data verification, and reporting aspects of a quality assurance system to arrive at a measure of the capability of the system. Within STL®, system audits or evaluations are performed on a periodic basis under the direction of the STL® Corporate Director of Quality Assurance.

**technique**
Physical or chemical principle for characterizing materials of chemical systems.

**traceability of data**
The entire documented chain of acquired data from the original acquisition effort through to the final tabulation, synthesis, reduction, and storage activities. The documentation will allow complete reconstruction of the data.

**traceability of samples**

# Glossary (continued)

During all environmental monitoring field efforts, acquired samples will be assigned specific and unique identification numbers. These sample numbers shall be accompanied by documentation (chain-of-custody form) which clearly identifies all parameters associated with sample acquisition. All additional sample numbering systems applied to the sample must be clearly cross-referenced to the field sample number to provide for traceability of samples from acquisition to reporting of sample results.

**traceability of standards**
The ability of an analytical standard material used for calibration purposes to be traced to its source. The standards used by STL® must be traceable via written documentation to sources which produce or sell verified or certified standards, i.e., National Institute for Standards and Technology, or vendors preparing standards from those sources which they have certified.

**validation - computer software**
The process of establishing documented evidence which provides a high degree of assurance that a specific process will consistently produce a product meeting predetermined specifications and quality attributes. This process demonstrates and documents that the software performs correctly and meets all specified requirements.

**validation - data**
The process of a second party performing a systematic review of the raw and final data produced by a laboratory using predetermined criteria to ascertain the validity of the data with respect to the criteria (e.g., HAZWRAP data validation).

**vendor**
Any individual or organization furnishing items or services or performing work according to a procurement document. This is an all-inclusive term used in place of any of the following: supplier, seller, contractor, subcontractor, or consultant.

**verification - computer software**
The process of checking the accuracy of manually entered or automatically (electronically) calculated information.

**verification - data**

# Glossary (continued)

The process of reviewing data to ensure that data reduction has been correctly performed and that analytical results to be reported correspond to the data acquired and processed.

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

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February 21, 2001

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: SWMU 6 Sampling Results Report
Radford Army Ammunition Plant
Radford, Virginia, January 2001

Dear Mr. McKenna:

Thank you for the opportunity to review the above referenced document. There is only one minor comment at this time.

- Page ii, first full paragraph, second sentence – I believe that there is a typographical error and that the intent was to state that aluminum detections were above residential RBCs and below industrial RBCs.

As an additional note, I have forwarded the soil background study to our staff statistician for additional review. Please contact me at 804-698-4143 if you have any questions.

Very truly,

Sharon Wilcox

Sharon Skutle Wilcox
Office Of Remediation Programs

cc: Robert Thompson, Region III, U.S.EPA
Durwood Willis, CO
Norm Auldridge, WCRO
Aziz Farahmand, WCRO
c Jerry Reddick, RTE

27l

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

June 12, 2001

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 6
Draft *Site Screening Document* submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's revised draft Site Screening *Sampling Results Report* for soil sampling at SWMU 6, located at the Radford Army Ammunition Plant (RFAAP). Based upon our review, the revised draft *Sampling Results Report* is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the schedule contained within Section 7, Figure 11 of the *Sampling Results Report* is now considered final and is henceforth incorporated into the Permit, via the Installation Action Plan.

copy in 27l

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA
Sharon Wilcox, VDEQ-CERCLA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
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Robert G. Burnley
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October 7, 2003

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Work Plan Addendum No. 18, SWMU 41
Soil Screening Report SWMU 8
Soil Screening Report SWMU 36

Dear Mr. McKenna:

Thank you for providing the staff the opportunity to review and comment on the referenced documents. The staff has the following comments:

Work Plan Addendum No. 18, SWMU 41

Figure 1-16. The symbol for soil boring in the legend (closed black circle) does not correspond to the symbol used in the figure (open circle). Also, Table 1-9 indicates that soil samples SB 6, 7 and 8 will be taken outside Area B, while the figure clearly shows the samples to be within the inferred boundary line.

Figure 1-15. Table 1-9 indicates that soil samples SB 3, 4 and 5 will be taken outside Area A, while Figure 1-15 shows the samples within the inferred boundary line. Please explain.

Soil Screening Reports SWMUs 8 and 36

There are no additional comments on the Soil Screening Reports for SWMUs 8 and 36.

Please do not hesitate to contact Jennifer Jones, 804-698-4328, or myself if you have questions concerning these comments.

Sincerely,

Durwood Willis
Federal Facilities Program Manager

CC: Norman L. Auldridge, VDEQ - WCRO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 3, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
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Attn: SIORF-SE-EQ (Jim McKenna)
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Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMUs 8 and 36
Draft *Soil Screening Report*
Review of the Army's 2/6/04 response to EPA's 12/11/03 comment letter

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the Radford Army Ammunition Plant (RFAAP). Outlined below, please find EPA's comments based upon that review:

***EPA General Comment 2***

2. As concluded in Section 5.0 of the Report, the soil screening at Solid Waste Management Units (SWMUs) 8 and 36 indicated the presence of "selected targeted constituents." However, it is concluded in this section that "point comparisons of the discrete data to Residential RBCs [risk-based concentrations], Industrial RBCs, and

RFAAP background did not indicate a potential to human health." There are potential flaws in this conclusion, among them:

- The screening process was not completed in accordance with the RFAAP *Site Screening Process* (SSP [October 26, 2001]). At this stage, the chemicals of potential concern (COPCs) should have been identified (COPC identification step in Section 6.1.1.1 of the SSP). Based on the data presented in the report, it appears manganese, lead, mercury, zinc, and antimony are the COPCs.

***RFAAP Response***

In order to achieve the project objectives of assessing for the presence or absence of hazardous constituents in soil and characterizing site materials for RCRA characteristics, particular elements enumerated in the RFAAP SSP were used to perform qualitative risk screening for the SWMUs 8 and 36 Soil Screening. There was no intent within the Report to identify COPCs for purposes of conducting an RFI risk assessment, thus the screening process for SWMUs 8 and 36 did not follow every element within the SSP developed at RFAAP for Site Screening Areas.

**EPA review**

Please note that the SSP, as envisioned, is not conducive towards the elimination of process steps within the SSP. It is not a "pick and choose" methodology. Either the SSP process is followed or it isn't. In the future, please follow the SSP process. The central questions that need to be answered BY THIS REPORT are: (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. The Report generally answers these questions, but not in a direct approach. Additionally, in the future, please differentiate between those soil constituents which exceed the residential RBC and background and those soil constituents which exceed the industrial RBC and background values. This is important in determining whether or not the site will need long-term monitoring, i.e. whether waste is left in-place. The conclusions section of the report should address this in future SSP documents.

***EPA General Comment 2 continued***

- No cumulative risk screening was conducted in accordance with the SSP. This evaluation includes uncertainty analysis of the cumulative risk screening. As the vertical and horizontal extent of contamination of all the chemicals detected in soil is not fully characterized, whether the data generated from this soil screening is sufficient to conduct a cumulative risk assessment will also need to be demonstrated.

***RFAAP Response***

The objectives of the Soil Screening did not include full characterization of the site for completion of a cumulative risk assessment. Characterization of the site, if necessary, will take place at some time after treatment activities cease at these locations.

**EPA review**

It is important to note that defining the full nature and extent of contamination is NOT part of the SSP, but is the function of the RFI. The uncertainty section of the SSP basically acknowledges this. The function of the SSP is to determine whether or not there has been a release at the site. To accomplish this, a proposed number of samples contained in an approved Work Plan is sufficient. Thus, the central questions that need to be answered revolve around (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. Defining nature and extent is left to the RFI phase, if needed.

***EPA General Comment 2 continued***

- Some potential exposure pathways were not evaluated. According to the conceptual site models (CSMs) presented in Figures 2-4 and 2-5, the potential impact from soil to groundwater and eventually surface water exists. However, the Report does not evaluate chemical migration of contaminants from soil to groundwater as required by the SSP. The SSP requires use of USEPA's *Soil Screening Guidance* (USEPA, 1996) as a source of information when conducting comparison to soil screening levels (SSLs). The Report did not compare soil concentrations to the USEPA Region 3 SSLs listed on the RBC Table. Based on the data provided in the Report, several metals (e.g., arsenic, chromium, manganese, vanadium, etc.) exceed their respective SSLs at dilution attenuation factor (DAF) 20.

***RFAAP Response***

The report will be revised to include a comparison of soil concentrations to the USEPA Region 3 soil to groundwater SSLs at DAF 20 listed on the most recent RBC Table.

**EPA review**

The Army's response is acceptable. However, in the future, please include the SSL screening in the text of the screening section of the report. Please note that the SSL screening was not discussed in Section 4 of the report.

***EPA comment 2 continued***

- In the Summary (Section 4.4) of the Report, only those metals with concentrations exceeding both the RBCs and the background concentrations are noted. Other metals that exceeded one or more screening criteria are dismissed

because their concentrations did not exceed the site background values. The risk conclusions, thus, consider only those metals noted in Section 4.4. At this stage, it appears inappropriate to eliminate metals from the risk assessment based solely on a comparison to background or ambient levels. In order to provide a more complete characterization of potential risks associated with exposures at the site, metals that exceed risk-based screening concentrations should not be excluded from quantitative consideration in the risk assessment. The contribution to the overall risk due to metals with high background concentrations should be presented in a risk characterization (EPA. 2002. *Role of Background in the CERCLA Cleanup Process.* Office of Solid Waste and Emergency Response. OSWER 9285.6-0P. April 26).

***RFAAP Response***

Per previous agreement with USEPA, investigations performed prior to WPA 016 would be allowed to screen out COPCs based on background comparison. Work at SWMUs 8 and 36 was performed under WPA 015. Also, please refer to the response to specific USEPA comment 18 below regarding the presentation of data for constituents exceeding relevant screening criteria but not their inorganic constituent background point estimates.

**EPA review**

The Army's response is acceptable.

This concludes EPA's review of the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the RFAAP. All Army responses to EPA's December 11, 2003 letter were determined to be acceptable. The above comments reflect a need for refinement in the submittal of SSP documents in the future.

Based upon our review, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is now considered final.

Based upon the above, please submit a draft *SWMU Decision Document* for SWMU 8 and 36, separately, to EPA for review. Please bear in mind the comments outlined above when preparing the text of the draft *SWMU Decision Documents.*

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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W. Tayloe Murphy, Jr.
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Robert G. Burn
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5 August 03

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Draft SWMU 58 RCRA Facility Investigation Report

Dear Mr. McKenna:

This office has reviewed the Draft SWMU 58 RCRA Facility Investigation Report and concurs with the findings. This office has no comments at this time. Please forward a copy of the final document, preferably on CD, when it is available.

If you have any questions, please do not hesitate to call.

Sincerely,

Mark S. Leeper
RPM

cc: Mr. Robert G. Thomson – EPA Region III
Mr. Garwin Eng – VDEQ - CO

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

May 24, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
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Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
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Radford, VA 24141-0099

Carolyn A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 58
Rubble Pile
Document submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army's (Army's) March 2004 response to EPA's September 18, 2003 review comments pertaining to the draft *RCRA Facility Investigation Report* (RFI) for SWMU 58, located at the Radford Army Ammunition Plant (RFAAP). Based upon that review, EPA finds the Army's March 2004 response to be acceptable.

Given the above, the referenced draft *RCRA Facility Investigation Report* (RFI) is conditionally approved by EPA, provided that EPA's comments are satisfactorily addressed in the final RFI Report. Please forward two copies of the final SWMU 58 RFI Report to EPA for review and approval.

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

# EXCAVATION PLAN

## HAZARDOUS WASTE MANAGEMENT UNIT 7

## RADFORD ARMY AMMUNITION PLANT
## RADFORD, VIRGINIA
## EPA ID No. VA1210020730

**Submitted to:**
Mr. Matthew Stepien
Virginia Department of Environmental Quality
Office of Waste Permitting
629 East Main Street
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**Submitted by:**
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February 2007

DAA JN: B03204-102

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## 1.0 PURPOSE

In order for the Radford Army Ammunition Plant (AAP) to achieve clean closure of HWMU-7 with the residual material remaining in-place, the Virginia Department of Environmental Quality (VDEQ) indicated that Radford AAP must demonstrate that the residual material in the Unit does not exceed the clean closure standards. The residual material includes all material above the bottom of the Unit (including any sand and rip-rap) and below any clean material placed on top of the residual material. The bottom six inches of clean material contacting the residual material will be included with the residual material because of possible mixing with the residual material during its placement. Closure procedures addressing the residual material will include all materials from six inches below the residual material up to the first six inches of clean material placed above the residual material.

In accordance with the *Amended Closure Plan* for HWMU-7, the clean closure decontamination standards are as follows:

Option 1: Clean closure with the residual material remaining in-place can be successfully demonstrated in accordance with the clean closure standards.

Option 2: Clean closure cannot be achieved with the residual material remaining in-place. The Unit will remain closed with the residual material in-place in accordance with the VDEQ-approved May 1988 Closure Plan, and the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). Radford AAP will retain the option to attempt to demonstrate clean closure in the future by excavation and removal of the residual material.

Option 3: Clean closure cannot be achieved with the residual material remaining in-place. The residual material will be excavated and transported off-site for disposal. Composite sample(s) of the excavated material will be submitted for waste characterization analyses to determine the proper disposal method (hazardous vs. non-hazardous). Following excavation, confirmation samples will be collected to ensure removal of all contaminated materials.

This Excavation Plan was developed to define the activities that Radford AAP will perform in the event that clean closure with the residual material remaining in-place cannot be successfully demonstrated, and Radford AAP chooses to excavate and remove the residual material from the Unit. Radford AAP prepared this Excavation Plan in accordance with the *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (*Draft Guidance*) dated September 28, 2001.

## 2.0 CONDITIONS TRIGGERING EXCAVATION

The hazardous constituents of concern (HCOC) list for HWMU-7 was developed based on the following:

- The results of the analysis of influent water in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

- The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 2 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

- Any hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation.

In the event that the residual material and underlying soils at HWMU-7 do not meet the clean closure decontamination standards (analytical non-detection, below background, or below risk assessment values), the residual material and soils will be excavated to a depth at which the soils and subsoils demonstrate compliance with the clean closure decontamination standards. In addition, composite samples of the excavated material will be analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) for waste characterization analysis and to demonstrate compliance with the land disposal restriction (LDR) treatment standards specified in 40 CFR 268 Subpart D.

## 3.0 EXTENT OF EXCAVATION

Additional soil samples will be collected in order to evaluate the vertical and horizontal extent of soil that requires excavation.

### 3.1 Vertical Extent

The vertical extent of impact will be established based upon the following:

- The vertical extent of excavation will be based upon the extent of soil impact that will be established by systematic vertical sampling of migration pathways and data evaluation using the clean closure decontamination standards.
- Soil samples will be collected at six-inch depth intervals from the bottom of the Unit to a depth of two feet below the Unit. Soil sampling intervals beneath the Unit are as follows: 0-6, 6-12, 12-18, and 18-24 inches.
- Samples will be collected from a minimum of eight discrete sample locations.
- If sampling and analyses of soils shows HCOCs at levels that exceed decontamination standards, then the soil will be removed to the bottom depth of the first six-inch sample interval that shows compliance with the decontamination standards. That is, soils will be excavated to the bottom of

the first clean sample depth interval to ensure removal of all soil that does not meet the clean closure standards.

- If the initial sampling does not show compliance with decontamination standards at the deepest depths of the initially proposed sampling scheme (that is, two feet), then additional vertical samples will be collected and analyzed until samples show concentrations of HCOCs that are within the decontamination standards.
- If soil contains HCOCs at concentrations above the decontamination standards specified in the ***Amended Closure Plan***, then soil excavation will be conducted down to the maximum depth of one of the following:
    - The bottom of the first soil sampling interval depth where sampling analytical data indicates compliance with the clean closure decontamination standards.
    - The local seasonal high water table, if less than five feet.
    - The local bedrock, if less than five feet.
- If soil contamination exists above the decontamination standard at depths greater than five feet, then the VDEQ will be formally notified for the potential need to revise the approved ***Amended Closure Plan*** as to achieve clean closure or to close the Unit with hazardous waste closed in-place in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR). Any remaining impact would be addressed under the U.S. Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) Corrective Action Program at Radford AAP.
- The sampling protocol will follow the procedures established in the ***Amended Closure Plan.***

### 3.2 Horizontal Extent

The horizontal extent of impact will be established based upon the following:

- The horizontal extent of excavation will be based on the extent of impact that will be established by systematic sampling of migration pathways and data evaluation using the clean closure decontamination standards.
- If soils beneath the Unit are impacted and require removal to comply with decontamination standards and regulations and if the secondary containment is insufficient to prevent runoff from the Unit, then the horizontal extent of impacted soil will be determined by systematic soil sampling.
- Should impacted soil be detected beneath the Unit that exceeds the clean closure decontamination standards, the horizontal extent of potential impact outside the Unit boundary will be evaluated by systematic soil sampling. Soil samples will be collected from an area that is laterally extended beyond the Unit boundary by incremental two feet distances in each direction of the Unit boundary until soil contamination is either not detected or is shown to be in compliance with clean closure standards.

- Eight randomly selected sample locations will be established at the perimeter of each incremental two feet distance outside the original designated Unit boundary. The eight samples will include two samples per side of the Unit.
- The sampling protocol will follow the procedures established in the *Amended Closure Plan*.
- Each set of sampling data from each additional two feet of extended sampling area will be statistically evaluated separately from the original data set and any subsequent data sets created by the incremental sampling protocol.

## 4.0 STORAGE, TREATMENT, AND DISPOSAL

After excavation and prior to disposal, excavated soils, subsoils, construction debris, and residues will be stored in large roll-off containers. Composite samples will be analyzed by TCLP to demonstrate compliance with the LDRs to determine appropriate disposal practices. Excavated material will be properly disposed at a permitted disposal facility as soon as possible after excavation.

## 5.0 BACKFILLING AREAS OF EXCAVATION

Following excavation, Radford AAP will schedule a closure site inspection with VDEQ. Backfilling and reclamation of the Unit will not proceed until VDEQ formally approves clean closure of the Unit. Excavated areas will be backfilled with clean fill or soil to the original grade of the site prior to termination of closure activities. In addition, the site will be seeded, and vegetative cover will be established, as appropriate. The site will be reclaimed to conditions that are similar to the surrounding areas.

## 6.0 TEMPORARY DECONTAMINATION AREAS AND PROCEDURES

### 6.1 Temporary Decontamination Areas

Construction of temporary decontamination areas is necessary to decontaminate all substantial equipment to be used during decontamination of the Unit. Generally, separate decontamination areas are needed for large and small equipment. The nature and size of temporary decontamination areas is dependent on the nature of the equipment that may be used in the decontamination and/or excavation process. The proposed decontamination areas will be designed so as not to be defined as a surface impoundment under the VHWMR and/or RCRA.

All equipment will be washed in containers or in equipment decontamination areas. All equipment decontamination areas will be constructed of sufficient materials and thickness, and will contain a sufficient number of layers in order to create an impervious surface that allows for the collection of all washwater, rinsate, and residues in tanks or containers.

Prior to decontamination of the Unit, sampling, and/or excavation activities, temporary decontamination areas will be constructed as follows:

#### *6.1.1 Small Equipment*

The small equipment decontamination areas will be used for decontaminating sampling equipment, personal protective equipment (PPE), and any other small tool or equipment used for decontamination of the Unit and related areas. The small equipment decontamination area will effectively contain all washwater, rinsewater, and residues generated during the decontamination process.

#### *6.1.2 Large Equipment*

The large equipment decontamination area will be constructed of sufficient size to contain the entire size of the largest piece of equipment used to decontaminate the Unit. The decontamination area will be graded with at least a 2% slope toward one corner of the area. A berm constructed with sandbags or an equivalent material will be constructed around the edges of the decontamination area. The berm will effectively contain all washwater, rinsewater, and residues generated during the decontamination process.

The decontamination area will drain into either a constructed sump or the low corner area where all washwater, rinsate, and residues will be removed by pumping or bailing to appropriate containers for storage, sampling, testing, and disposing in accordance with appropriate regulations. The decontamination area will be lined with an appropriate number of synthetic plastic liners of sufficient gauge thickness to prevent loss of the washwater, rinsewater, and residues from the area. In addition, the constructed liner will have sufficient thickness and number of layers to be able to sustain the stresses caused by moving heavy equipment in and out of the decontamination area.

### 6.2 Decontamination Procedures

All equipment will be decontaminated upon the completion of work at the Unit and whenever the equipment is removed from the HWMU-7 site. Equipment will be decontaminated as follows in accordance with the *Amended Closure Plan*.

All reusable, non-dedicated sampling equipment will be decontaminated prior to initiating field activities, between each sample location, and prior to demobilization from the site using a non-phosphate detergent/distilled water solution wash followed by a distilled water rinse. Decontamination procedures for reusabe sampling equipment were established per the VDEQ *Draft Closure Guidance* and are as follows.

- Between soil samples and sampling locations, material will be physically removed from the sampling equipment with brushes or water.
- Then, the sampling equipment will be washed using a non-phosphorous detergent/distilled water solution followed by a distilled water rinse.

- If constituents to be analyzed include trace metals, the sampling equipment will be rinsed with a 10% nitric acid solution followed by a distilled water rinse.
- If samples will be analyzed for trace organics, the sampling equipment will be rinsed with a pesticide grade solvent followed by a distilled water rinse.
- Following decontamination, the sampling equipment will be allowed to air-dry completely.

Small equipment used for excavation of the Unit will be decontaminated by washing with non-phosphate detergent and brushes and then rinsing with potable water. Decontamination of heavy equipment that comes in contact with material from the Unit will involve scraping, heavy brushing, and high pressure washing with non-phosphate detergent and rinsing with potable water.

Decontamination activities will take place in the constructed decontamination areas. All decontamination washwater, residues, and final rinsates will be properly segregated, containerized, and tested in accordance with the *Amended Closure Plan* and properly disposed in accordance with the *Amended Closure Plan* and RCRA regulations.

Decontamination washwater, rinsate, soil, and residue collected in the decontamination areas will be managed as potentially contaminated with hazardous waste and will be tested for the hazardous waste HCOCs and TCLP constituents as specified in the *Amended Closure Plan.* Proper management procedures of wastes generated during closure activities are discussed in Section 7.0 of this plan.

Any disposable items, such as protective clothing, sampling equipment, filters, cleanup materials, decontamination liner materials, etc., will be containerized and disposed of as hazardous waste.

## 7.0 MANAGEMENT OF CLOSURE-GENERATED WASTES

Closure procedures require that all closure-generated wastes be segregated from one another, stored in separate containers, and representatively sampled and analyzed to assure compliance with VHWMR and RCRA.

### 7.1 Proper Storage of All Closure-Generated Wastes

All waste, washwater, rinsate, wastewater, leachate, waste residue, aggregate, soil and subsoil, and construction debris that are generated from the closure activities of the Unit will be segregated from one another and stored on-site in storage containers in accordance with VHWMR and RCRA. All waste will be containerized. No waste piles will be created during closure activities.

### 7.2 Notification of VDEQ Regarding Temporary Storage

The VDEQ West Central Regional Office will be notified of the temporary (less than 90 day) storage of hazardous waste and other wastes associated with closure of the Unit. VDEQ will be notified at least 15 days prior to establishment of the temporary waste accumulation area. All wastes generated by closure activities will be stored in a designated waste storage area on-site.

### 7.3 Management of All Wastes

All waste generated from closure of the Unit will be managed as residue or media that is potentially contaminated with hazardous waste constituents.

### 7.4 Contained in Policy

Any debris, waste, washwater, rinsate, wastewater, leachate, soil, subsoil, residue, and equipment contaminated with waste from the Unit are required to be managed as hazardous waste in accordance with VHWMR and RCRA. These waste materials are required to be disposed of in a permitted hazardous waste landfill or a RCRA-permitted treatment storage disposal (TSD) facility unless testing demonstrates that the materials are not hazardous in accordance with specified decontamination standards listed in the *Amended Closure Plan* and analytical requirements for generated wastes specified in VHWMR and RCRA.

According to the VDEQ *Draft Closure Guidance*, contaminated residues and/or environmental media contain hazardous waste when the following occurs:

- The residues or media (e.g., aggregate, wastewater, soil, groundwater, etc.) exhibit a characteristic of hazardous waste in accordance with 40 CFR Part 261, Subpart C, Characteristics of hazardous Waste, § 261.20.
- A residue, waste, or wastewater removed from the Unit, which manages a listed waste under 40 CFR Part 261, Subpart D, Lists of Hazardous Wastes, contains a hazardous constituent from Part 261 Appendices VI or VIII.
- Media (i.e., debris, soil, sediments, or groundwater) are contaminated with concentrations of hazardous waste constituents that are above health or risk-based levels.

As the USEPA has not issued definitive guidance regarding when or at what levels environmental media contaminated with hazardous waste no longer contains the hazardous waste, Radford AAP will use a risk assessment approach to address the public health and environmental impacts of the hazardous constituents remaining in the waste material in accordance with the VDEQ *Draft Closure Guidance*.

### 7.5 Demonstration by Testing

The demonstration by testing includes analyses for all HCOCs or underlying hazardous constituents (UHCs) managed at the facility that are identified in Part 261, Appendices VI and VIII, and analyses to demonstrate that the wastes or media do not exhibit a hazardous characteristic in accordance with Part 261, Subpart C, Characteristics of Hazardous Waste. The demonstration also includes analysis of composite samples to determine compliance with the characteristics of ignitability, corrosivity, and reactivity and the toxicity characteristic by TCLP.

### 7.6 Disposal of Hazardous Wastes

All waste (solid and liquid) generated during closure that is demonstrated to be hazardous will be disposed in a permitted hazardous waste landfill or RCRA-permitted TSD facility. Disposal of regulated waste will comply with 40 CFR Part 268, LDRs, Subpart D, Treatment Standards, § 268.40, Applicability of Treatment Standards, and comply with § 268.48, Universal Treatment Standards, for wastewater and non-wastewater. Contaminated soil will be handled in accordance with land disposal treatment standards for contaminated soil that are delineated under § 268.49, Alternative LDR Treatment Standards for Contaminated Soil.

Hazardous wastes will be disposed at permitted TSD facilities. Disposal will be documented on waste manifests. Transportation of hazardous waste generated during closure activities will be by a transporter with a current Hazardous Waste Transporter Permit and in accordance with VHWMR.

### 7.7 Disposal of Non-Hazardous Solid Wastes

All waste materials (with the exception of non-hazardous wastewater) generated in the closure process that are demonstrated as non-hazardous will be disposed as solid waste in accordance with VHWMR. Disposal of non-hazardous wastes will be documented from the solid waste disposal facility regulated under Virginia Solid Waste Management Regulations (VSWMR).

### 7.8 Non-Hazardous Wastewaters

Wastewater generated in the closure process that is demonstrated as non-hazardous will be emptied into the Biological Wastewater Treatment Plant at Radford AAP.

### 7.9 Reusable Equipment

All reusable equipment that is used in the decontamination and closure process, including large equipment, wet-dry vacuum, pressure washers, steam cleaners, sampling equipment, shovels, buckets, brooms, etc., will be thoroughly washed with a detergent solution and rinsed twice with clean potable water. A final rinsate using analyte-free

deionized water will be collected and tested for compliance with decontamination standards, or the items will be disposed as hazardous waste.

### 7.10 Expendable and Disposable Items

Expendable or disposable items used in the decontamination process of the Unit, such as mops, brooms, gloves, coveralls, and boots, will be containerized and properly disposed as hazardous waste. Expendable items that have only been in contact with wash solutions and/or rinsate that subsequent analyses have shown do no display a hazardous characteristic or do not contain any listed hazardous constituents will be disposed as non-hazardous waste.

### 7.11 Management of Personal Protective Equipment

Personal protective equipment (PPE) is required for workers that decontaminated HWMUs under the Occupational Safety and Health Administration (OSHA) regulations. The extent of PPE worn by workers will be in accordance with the Radford AAP's *Master Health and Safety Plan* and *Safety Rules for Contractors and Subcontractors*.

In order to prevent migration of HCOCs via unclean PPE, PPE will be managed as follows:

- PPE will be decontaminated between uses/areas and upon completion of work.
- All decontamination will take place in the temporary decontamination area.
- Wastewater, rinse water, and residue generated from PPE decontamination will be handled, managed, and disposed as hazardous waste unless tests indicate disposal as non-hazardous solid waste is acceptable. PPE will also be handled, managed, and disposed as hazardous waste at the end of closure unless tests indicates disposal to a Subtitle D sanitary landfill is acceptable.

## 8.0 CONCLUSIONS

In order for the Radford Army Ammunition Plant (AAP) to achieve clean closure of HWMU-7 with the residual material remaining in-place, Radford AAP must demonstrate that the residual material in the Unit does not exceed the clean closure standards. If HWMU-7 cannot be clean closed with residual material in-place, the residual material will be excavated and transported off-site for disposal. Excavation and decontamination activities will be performed in accordance with this Excavation Plan.

# CHAIN OF CUSTODY RECORD

**Laboratory:**

| | | | |
|---|---|---|---|
| **Client:**<br>**Attn:**<br>**Address:**<br><br>**Phone:**<br>**Fax:**<br>**Fax:** | **Consultant:**<br>**Attn:**<br>**Address:**<br><br>**Phone:**<br>**Fax:** | **Sample Site:**<br><br>**Location:**<br><br>**Event:**<br>**DAA JN:**<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☐PS ☐B<br>**Sample Collection for Project Complete? (See Note 1)**<br>☐YES ☐NO<br><br>**Carrier:** _____<br>**Tracking Number:** _____<br>_____ |

| | | | | |
|---|---|---|---|---|
| **Box 1: Matrix**<br>SW Surface Water<br>GW Groundwater<br>L Leachate<br>S Soil<br>T Trip Blank<br>E Equipment Blank<br>P Product<br>O Other | **Box 2: Preservative**<br>A HCL<br>B $HNO_3$<br>C $H_2SO_4$<br>D NaHSO4<br>E NaOH<br>F ZnAc<br>G Other (Specify)<br>H None | **Box 3: Filtered/Unfiltered**<br>F Filtered<br>U Unfiltered<br>**Box 5: Sample Container Type**<br>P Plastic<br>AG Amber Glass<br>V VOA<br>CG Clear Glass | **Box 4: Sample Type**<br>G Grab<br>C Composite | **Invoice**<br>**Copy to Consultant:** ☐YES ☐NO<br>**Bill:** ☐Client ☐Consultant<br>**Preserved and shipped on ice:** ☐YES ☐NO |

| | Sample ID | Date: | Time | Box 1: Matrix | Number of Bottles | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | | | | | | | | | | **GENERAL NOTES: See attached target analyte list.** |
| **Box 3 - Filtered/Unfiltered** | | | | | | | | | | | | | | |
| **Required pH of Sample** | | | | | | | | | | | | | | |
| **Box 2 - Preservative** | | | | | | | | | | | | | | |
| **Box 5 - Sample Container Type** | | | | | | | | | | | | | | |
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**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): | Date: | #1 Relinquished by (Signature): | Date: | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# RISK-BASED CLOSURE

## 1. Introduction

This document discusses the protocol for conducting a risk assessment to implement closure of hazardous waste management unit (HWMU) in accordance with Title 9 of the Virginia Administrative Code, Section 20-60-10 et seq. (Formerly the Virginia Hazardous Waste Management Regulations).

**1. Risk-Based Evaluation** In order to estimate the risk for chemicals of concern (COCs) a risk assessment will be conducted according to the Virginia DEQ document titled "Guidance for development of health based cleanup goals using decision tree/REAMS program (herein after "Virginia Risk Guidance") (November 1, 1994) prepared by Old Dominion University and the approved closure plan. The risk assessment report will contain the following sections:

- site evaluation,
- development of a site conceptual model,
- identification of contaminants of concern,
- identification of media and exposure pathways,
- toxicity assessment,
- estimation of contaminant concentration at the point of exposure, and
- summary of health risks.

The submission instructions contained in Appendix IX of the Virginia Risk Guidance will be reviewed prior to submitting the report to confirm that all necessary risk issues have been addressed. The risk goals/performance standards will be a hazard index of 1.0 for non-carcinogens and an individual carcinogenic risk of 1E-06 and cummulative carcinogenic risk of 1E-04.

Compliance with the closure standard will be verified by comparing the calculated individual and cumulative risk/hazard for all the contaminants of concern (COC) that failed background comparison to the risk-based performance standards.

The risk assessment will be conducted assuming a future residential/industrial use of the property. The methodology/equation for estimating the exposure concentration is presented in subsequent sections.

The initial step in the risk assessment will be to develop a site conceptual exposure model (SCEM) which depicts all potential exposure routes and media for the site and the receptors which may be exposed. The procedure for identification of contaminants of concern for health based is presented in section 2.... (from other section in the closure plan)

Once the SCEM is completed, the exposure assumptions outlined in the Virginia Risk Guidance will be employed to estimate the health risks and develop a cleanup criteria. Information will also be taken as needed from U.S. EPA documents and databases (e.g., the Risk Assessment Guidance for Superfund (RAGS), and the Integrated Risk Information System (IRIS)). The chemical intake equations and exposure parameter assumptions used to calculate estimate risks (obtained from Virginia risk assessment guidance/REAMS) are shown in Tables 1 through 4. Additional details on the approach and assumptions used for each potential exposure pathway are provided below.

As a part of the Risk Exposure and Analysis Modeling System (REAMS) evaluation, fate and transport modeling is necessary to demonstrate that the residual soil concentrations of contaminants of concern would not result in contamination of other environmental media of concern including the groundwater underneath the closure unit. For this purpose, representative soil sample(s) will be collected around the unit (subjected to closure) for analysis of the properties listed on page 62 of the REAMS document. [It is often less expensive to obtain this information from an agriculture lab rather than from an environmental lab]. In certain situations, groundwater sampling may be preferable.

## 2. Identification of Contaminants of Concern

Contaminants of concern includes those constituents detected during the closure soil and groundwater sampling which may be related to past waste management practices and whose concentrations statistically exceeded background levels. Please note that if the concentration of contaminants detected in the soil and groundwater did not exceed the background levels, no further risk-based evaluation will be required. Only those constituents of concern having concentrations that are statistically greater than background concentrations will be subject to REAMS evaluation to estimate the risks.

Also, for the purpose of evaluating the impact to groundwater, only those constituents which statistically exceeded the upgradient or background well concentration will be subjected to REAMS evaluation.

## 3. Exposure Assessment

The exposure assessment will identify transport mechanisms for the contaminants of concern that may potentially impact human receptors. The results of this assessment will be used to document the current and future exposure potential posed by the site.

With regard to soil, the following exposure assumptions will apply. Initially, a residential exposure will be assumed for the purpose of attempting to document unrestricted closure of the soil. If the risk for potential residential exposure does not exceed the performance standards, unrestricted closure of soil will be documented/accepted. If the site cannot be clean closed for residential use, then the option to pursue restricted closure (commercial/industrial) will be exercised. Closure to commercial/industrial scenario will requirement the facility to enact a deed restriction that eliminates the possibility of future residential use of the site. The requirements for establishing such a deed restriction are detailed in VDEQ=s Guidelines for Developing Health-Based Cleanup Goals Using Risk Assessment at A Hazardous Waste Site Facility for Restricted Industrial Use, dated June 1995. (A copy of this document is attached.)

Exposure routes will include ingestion, dermal absorption, and inhalation of vapors and dust particles.

With regard to groundwater, REAMS fate and transport modeling[1] will be required to assess residual soil contamination impacts to the groundwater. If the groundwater does not qualify for clean closure, the scope of future groundwater monitoring will be discussed with VDEQ. The groundwater exposure routes to be evaluated include ingestion, dermal absorption, and inhalation of volatiles emitted from the contaminated groundwater.

The exposure assumptions presented in the following sections are based on residential exposure. These constitute a reasonable maximum exposure scenario (RME),

[1] REAMS includes the unsaturated zone fate and transport model SESOIL. The purpose of running the model is two fold: a) determine whether the contaminants will reach the groundwater table in next 30 years. b) calculate the risk associated with the estimated concentration in the groundwater. For constituents with a promulgated MCL, the estimated concentration will be directly compared against the MCL. However, prior to running the SESOIL model the facility should obtain all the information identified on page 62, of the Virginia guidance document. The closure report must include evaluation of model results (concentrations reaching the groundwater) and a copy of SESOIL output file.

an exposure which is unlikely to occur but is reasonably possible. The exposure pathways for residential exposure include ingestion of soil, dermal contact with soil, inhalation of resuspended soil particulates, and inhalation of volatile organic compounds. Exposure to groundwater at the site is discussed in Section xxx.

### 3.1.1 Ingestion of Soil

The equation for potential chemical intake by soil ingestion for residential scenario on site is included in Table 1. This scenario also assumes that weather or other conditions (e.g., frozen ground/ snow /other cover) do not affect exposure and that all soil ingested is from contaminated areas of the site. These assumptions are protective of human health and the environment.

### 3.1.2 Dermal Contact with Soil

The equation for calculating the potential absorbed chemical dose by dermal contact with contaminated soil is provided in table 1. This scenario assumes that weather or other conditions (e.g., frozen ground/ snow or other cover) do not affect exposure, that contaminated soil remains on the skin long enough for the COCs to be absorbed and that all soil adhering to the skin is from contaminated areas of the site.

The skin surface areas (SA) used in the dermal pathway have been identified in REAMS guidance as 4,860 $cm^2$ for adults, which is the 50th percentile value for the arms, hands and lower legs (U.S. EPA, 1989b - See Attachment A).

A skin-soil adherence factor of 1.45 $mg/cm^2$ will be used in the dermal intake calculations. The U.S. EPA guidance for dermal exposure assessment (*Dermal Exposure Assessment: Principles and Applications*, EPA/600/8-91/011B) states that a range of values from 0.1 $mg/cm^2$ to 1.5 $mg/cm^2$ per event appear possible for dermal adherence factors (AF). The
In order to estimate the amount of a particular COC which may potentially be absorbed through the skin, chemical-specific dermal absorption factors ($ABS_{derm}$) are used.

### 3.1.3 Inhalation of Resuspended Soil

The equation for potential chemical intake by inhalation of resuspended contaminated soil is included in Table 1. An inhalation rate of 0.83 $m^3/hr$ will be used as specified in the Virginia Risk Guidance. This scenario assumes that the concentration of COCs in indoor dust will be equal to that in outdoor soil and that weather or other conditions, (e.g., frozen ground/snow or other cover) do not affect resuspension or exposure.

However, an appropriate model or equations in table-1, will be used to estimate the potential amount of respirable particulate matter generated by wind erosion. The estimated generation rate for eroded particulate matter will then be used derive an ambient air particulate concentration. Documentation for these models will be presented to the Department.

### 3.1.4 Inhalation of Volatilized COCs in Soil

Since the COCs have appreciable vapor pressures, they are expected to volatilize from soil. Inhalation of COCs as volatilized vapors is considered for this risk assessment. The equations in Table-1 will be considered for estimating the intake for this condition.

## 4. Toxicity Assessment

The two principle indices of toxicity used in risk assessment are the reference dose (RfD) and the cancer slope factor (SF). An RfD is the intake or dose per unit of body weight (mg/kg-day) that is unlikely to result in toxic (non-carcinogenic) effects to human populations, including sensitive subgroups (e.g., the very young or elderly). The RfD allows for the existence of a threshold dose below which no adverse effects occur.

The SF is used to express the cancer risk attributable to a discrete unit of intake; that is, the cancer risk per milligram ingested per kilogram of bodyweight per day ($[mg/kg\text{-}day]^{-1}$). The SF is an estimate of the upper-bound probability of an individual developing cancer as a result of exposure to a particular carcinogen. Unlike the RfD, the SF assumes that there is no threshold dose below which the probability of developing cancer is zero. Note that SFs are only developed for those chemicals which have been shown to be carcinogens in man or in at least several animal species. A carcinogenic weight of evidence rating is used to describe the strength of the experimental evidence for carcinogenicity. The U.S. EPA has developed SFs for most chemicals with weight of evidence ratings of "A" (known human carcinogen) or "B" (probable human carcinogen).

RfDs and SFs are derived by the U.S. EPA for the most toxic chemicals generally associated with chemical releases to the environment for which adequate toxicological data are available. If both the carcinogenic and non-carcinogenic effects of a particular compound are significant, both values may be established. However, in most cases only one value is available.

### 4.1 Inhalation and oral RfDs and SFs -

SFs pertinent to the oral and inhalation exposure pathways will be obtained from U.S. EPA's IRIS database. The IRIS (Integrated Risk Information System) on-line database

was established by the U.S. EPA to provide risk assessors with peer reviewed toxicological data on chemicals commonly encountered at environmental sites of contamination. If data is not available from IRIS, it will be obtained from the Health Effects Assessment Summary Tables (HEAST), a compilation of toxicity values produced by the USEPA on a quarterly basis. The hierarchy presented in Appendix III of Virginia Risk guidance will be followed for using these sources.

### 4.2 Dermal RfDs and SFs -

Chemical specific oral-route absorption values ($ABS_{oral}$) are used to adjust the oral RfD or SF, which is computed from an administered dose, for use in the dermal exposure pathway. This correction is necessary due to the differences in absorption between the skin and the gastrointestinal tract. By correcting the administered-dose oral RfD or SF for the fraction expected to be absorbed in the gut, a dermal absorption factor can be used to estimate the correct dose received through the skin.

## 5. Evaluation of Risks

Using the toxicity criteria and identified exposure pathways discussed above, and the procedures described in the VDEQ guidance document (REAMS, November 1994), the risks presented by the COC will be estimated. The estimated risks will consider the effects from multiple constituents and all routes of exposure. The risk goals will be a total cumulative hazard index of 1.0 for multiple noncarcinogens and a total cumulative carcinogenic risk of 1E-04 for multiple carcinogens. However, the risk from each individual carcinogen shall not exceed 1E-06 (i.e., one case of cancer per 1,000,000 population).

### 5.1 Estimation of exposure concentration

For the contaminants detected at the site, an exposure point concentration (EPC) for each exposure pathway will be calculated for each contaminant by estimating the 95th upper confidence limit (UCL) on the arithmetic mean of the concentrations. If the calculated 95th UCL is greater than the maximum detected concentration, then the maximum detected concentration will be used as the EPC. The risks for contaminants will be calculated as per the equations and assumptions described in Table 1 through Table 4. If for a contaminant both carcinogenic and noncarcinogenic risk-based cleanup goal exists, the lower of the two will be used as a pathway specific to estimate the risk.

## 5.2. Risk Estimation

Health risk assessments are based on the relationship between risk, dose and toxicity:

$$Risk = Dose * Toxicity$$

Since dose is the product of the contaminant concentration multiplied by exposure (the intake), equation (1) becomes:

$$Risk = Intake\ rate * Contaminant\ conc. * Toxicity$$

(Please note that the term CDI in attached tables 1-4, includes intake rate and contaminant conc)

To estimate the intake, the exposure equations and assumptions discussed in Section 1, are used. The intake estimates for each route of exposure are then combined with the RfDs or SFs to determine the resulting risk.

**For Carcinogens Risk:**

$$Cancer\ Risk = (Intake_{oral} * Cont.conc. * SF_{oral})$$

$$+ (Intake_{inhal} * Cont.conc. * SF_{inhal}) + (Intake_{derm} * Cont.conc. * SF_{derm})$$

**For Noncarcinogens:**

$$Hazard\ Index = (Intake_{oral} * Cont.conc. * \frac{1}{RfD_{oral}}) + (Intake_{inhal} * Cont.conc. * \frac{1}{RfD_{inhal}})$$

$$+ (Intake_{derm} * Cont.conc. * \frac{1}{RfD_{derm}})$$

where, taking into account all COCs and relevant exposure pathways, the excess cancer risk is $10^{-6}$ or the hazard index is 1.0.

Using REAMS software a maximum acceptable contaminant concentrations will be calculated which meets the cumulative risk criteria. This process will be used in this risk assessment to derive the health-based cleanup criteria for the site. If the estimated risks satisfy the risk based performance standards, the soils/groundwater will be considered clean closed.

# Table 1
## Risk Assessment Algorithm for Carcinogenic Exposure

| Exposure Route | Chronic Daily Intake (CDI), mg/L-day | |
|---|---|---|
| | Residential Exposure | Occupational/Industrial Exposure |
| **Ground Water** | | |
| Ingestion | $\frac{CW \times IRW_{adj} \times EF}{AT_c}$ | $\frac{CW \times IRW_a \times EF_o \times ED_o}{BW_a \times AT_c}$ |
| Inhalation | $\frac{CW \times IRA_{adj} \times EF \times K}{AT_c}$ | $\frac{CW \times IRA_a \times EF_o \times ED_o \times K}{BW_a \times AT_c}$ |
| Dermal | $\frac{CW \times SAW_{adj} \times PC \times ET \times EF \times CF}{AT_c}$ | $\frac{CW \times SAW_a \times PC \times ET \times EF_o \times ED_o \times CF}{BW_a \times AT_c}$ |
| **Soil** | | |
| Ingestion | $\frac{CS \times IRS_{adj} \times CF \times FI \times EF}{AT_c}$ | $\frac{CS \times IR \times CF \times FI \times EF_o \times ED_o}{BW_a \times AT_c}$ |
| Dermal | $\frac{CS \times CF \times SAS_{adj} \times AF \times ABS \times EF}{AT_c}$ | $\frac{CS \times CF \times SAS_a \times AF \times ABS \times EF_o \times ED_o}{BW_a \times AT_c}$ |
| Inhalation of vaporizing VOCs from soil | $\frac{CS \times 1/VF \times IRA_{adj} \times ET \times EF}{At_c}$ | $\frac{CS \times 1/VF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_c}$ |
| Inhalation of emitting particles from soil | $\frac{CS \times 1/PEF \times IRA_{adj} \times ET \times EF}{AT_c}$ | $\frac{CS \times 1/PEF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_c}$ |

Table 2
Risk Assessment Algorithm for Non-carcinogenic Exposure

| Exposure Route | Chronic Daily Intake (CDI), mg/L-day | |
|---|---|---|
| | Residential Exposure | Occupational/Industrial Exposure |
| **Ground Water** | | |
| Ingestion | $\frac{CW \times IRW_c \times EF \times ED_c}{BW_c \times AT_n}$ | $\frac{CW \times IRW_a \times EF_o \times ED_o}{BW_a \times AT_n}$ |
| Inhalation | $\frac{CW \times IRA_c \times EF \times ED_c \times K}{BW_c \times AT_n}$ | $\frac{CW \times IRA_a \times EF_o \times ED_o \times K}{BW_a \times AT_n}$ |
| Dermal | $\frac{CW \times SAW_c \times PC \times ET \times EF \times ED_c \times CF}{BW_c \times AT_n}$ | $\frac{CW \times SAW_a \times PC \times ET \times EF_o \times ED_o \times CF}{BW_a \times AT_n}$ |
| **Soil** | | |
| Ingestion | $\frac{CS \times IRS_c \times CF \times FI \times EF \times ED_c}{BW_c \times AT_n}$ | $\frac{CS \times IRS_a \times CF \times FI \times EF_o \times ED_o}{BW_a \times AT_n}$ |
| Dermal | $\frac{CS \times CF \times SA_c \times AF \times ABS \times EF \times ED_c}{BW_c \times AT_n}$ | $\frac{CS \times CF \times SA \times AF \times ABS \times EF_o \times ED_o}{BW_a \times AT_n}$ |
| Inhalation of vaporizing VOCs from soil | $\frac{CS \times 1/VF \times IRA_c \times ET \times EF \times ED_c}{BW_c \times AT_n}$ | $\frac{CS \times 1/VF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_n}$ |
| Inhalation of emitting particles from soil | $\frac{CS \times 1/PEF \times IRA_c \times ET \times EF \times ED_c}{BW_c \times AT_n}$ | $\frac{CS \times 1/PEF \times IRA_a \times ET \times EF_o \times ED_o}{BW_a \times AT_n}$ |

**Note:** Occupational noncarcinogenic risk assessment is based on adult exposure

Table 3
Age Adjusted Factors

$$IRA_{adj} = \frac{ED_c \times IRA_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRA_a}{BW_a}$$

$$IRW_{adj} = \frac{ED_c \times IRW_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRW_a}{BW_a}$$

$$SAW_{adj} = \frac{ED_c \times SAW_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times SAW_a}{BW_a}$$

$$IRS_{adj} = \frac{ED_c \times IRS_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times IRS_a}{BW_a}$$

$$SAS_{adj} = \frac{ED_c \times Sa_c}{Bw_c} + \frac{(ED_{tot} - ED_c) \times SA_a}{BW_a}$$

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Note regarding age adjusted factor:

Because contact rate with tap water, ambient air, and residential soil are different for children and adults, carcinogenic risks during the first 30 years of life were calculated using age adjusted factor. These factors approximate the integrated exposure from birth until age 30 by combining contact rates, body weights, and exposure durations for two age groups - small children and adults.

# Table 4
## Exposure Variables Included in Tables 1, 2, and 3

| Symbol | Term | Unit | Value | Reference |
|---|---|---|---|---|
| ABS | Absorption factor | - | User specified | |
| AF | Adherence factor | - | 1.45 | a, c |
| $AT_c$ | Averaging time carcinogens | days | 25550 | |
| $AT_n$ | Averaging time non-carcinogens | days | ED x 365 | |
| $BW_a$ | Body weight adult | kg | 70 | c |
| $BW_c$ | Body weight child | kg | 15 | c |
| CF | Conversion factor | - | 0.000001 | - |
| CS | Chemical concentration in soil | mg/Kg-day | User specified | |
| CW | Chemical concentration in water | mg/L | User specified | |
| $ED_C$ | Exposure duration child | years | 6 | c |
| $ED_{total}$<br>ED | Exposure duration for carcinogen total or Residential | years | 30 | c |
| $ED_O$ | Exposure duration occupational | years | 25 | c |
| EF | Exposure frequency residential | days | 350 | c |
| ET | Exposure Time<br>General/Occupational<br>Groundwater<br>Surface Water - ingestion<br>Surface water - dermal<br>Air -inhalation | hrs/day | <br>8.0<br>0.2<br><br>2.6<br>2.6<br>24.0 | c, d |
| FI | Fraction ingested<br>Residential<br>Occupational | - | <br>1.0<br>0.5 | b |
| $IRA_a$ | Inhalation rate air adult | $m^3$/day | 20 | b |
| $IRA_{adj}$ | Inhalation rate - air adjusted | - | 11.66 | |
| $IRA_c$ | Inhalation rate child | $m^3$/day | 12 | b |
| $IRA_a$ | Inhalation rate adult | $m^3$/day | 20 | b |
| IR | Ingestion rate food<br>Fruit/veggies | kg/day | 0.28<br>0.122 | c,d |

| | | | | |
|---|---|---|---|---|
| | Fish | | 0.054 | |
| $IRS_a$ | Ingestion rate soil adult | mg/day | 100 | b |
| $IRS_c$ | Ingestion rate soil child | mg/day | 200 | b |
| $IRS_{adj}$ | Ingestion - soil adjusted | - | 114.29 | |
| $IRS_C$ | Ingestion rate soil child | mg/day | 200 | b |
| $IRW_a$ | Ingestion rate water adult | L/day | 2 | b |
| $IRW_{adj}$ | Ingestion -water adjusted | L-y/kg-d | 1.09 | |
| $IRW_c$ | Ingestion rate water child | L/day | 1 | b |
| K | Volatilization factor, water to air | - | 0.5 | |
| PC | Permeability constant | cm/hr | User specified | b |
| PEF | Particulate emission factor | $m^{3/}$ kg | 6.789926E08 | f |
| $SAW_c$ | Surface area child groundwater dermal surface water dermal | $cm^2$ | 7500 | b,e |
| $SAS_a$ $SAS_c$ | Surface area soil occupational - adult child | $cm^2$/event | 4500 1875 | e |
| $SAS_{adj}$ | Surface area soil ajusted | $cm^2$/event | 2290 | |
| $SAW_a$ | Surface area for water contact adult | $cm^2$ | 820 | b |
| $SAW_{adj}$ | Surface area for water contact | $cm^2$/event | 9200 | |
| VF | Volatilazation factor, soil to air | $m^3$/kg | User specified | - |

References:


a. Risk Assessment Guidance for Superfund, Volume I, EPA/540/1-89/002, December 1989.

b. Region III values

c. Exposure Factors handbook, EPA/600/8-89/043, July 1989

d. Human health evaluation manual supplemental guidance, OSWER Directive 9285.6-03. March 25, 1991.

e. Dermal exposure Assessment, Principles and Applications, Interim Report. EPA/600/8-91/011b. January 1992.

f. Technical Background Document for Draft Soil Screening Level Guidance. Office of Solid Waste and Emergency Response. EPA/540/R-94/101. December 1994.

# GUIDELINES FOR DEVELOPING HEALTH-BASED CLEANUP GOALS USING RISK ASSESSMENT AT A HAZARDOUS WASTE SITE FACILITY FOR RESTRICTED INDUSTRIAL USE

THE DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF WASTE RESOURCE MANAGEMENT

June 1, 1995

INTRODUCTION

This guidance document is intended for use by any facility conducting risk assessment pursuant to the risk based performance standards/closure requirements of ' 9.6 and '10.6.B., of VHWMR and evaluating the site for current and foreseeable industrial use. The information is intended solely for guidance. The document provides guidance on a) what approaches the Department considers acceptable for meeting the general requirements set forth in the closure performance section, b) situations where the industrial use may not apply and c) situations for which the Department will not accept the industrial use scenario.

The facilities using the guidance should be aware that there may be other alternatives such as evaluation for residential use (unrestricted use) for demonstrating the clean closure of the site. It is important that this material is used in conjunction with the Department risk assessment guidance titled "Guidance for Development of Health Based Cleanup Goals using Decision Tree/REAMS" November 1, 1994 developed by Old Dominion University, Norfolk, Virginia.

For the purpose of risk characterization it is necessary to determine the current and foreseeable uses of the site, and establish the acceptable cleanup levels. The Department prefers to clean close the site for residential use or unrestricted use. This applies both for the groundwater and soils. However, in the event the facility wishes to use the land (soils) for a restricted industrial use, the facility shall demonstrate so by provide the following additional information along with a residential risk assessment. The Department will use the residential risk assessment as a baseline to evaluate the proposed restricted site use.

A. Industrial Use

1. The Department recognizes a distinction between the current use of the site and foreseeable (hypothetical) which has not yet occurred and requires the facility to conduct the risk assessment for both the scenarios. For the purpose of risk characterization, the facility must identify current uses of the site and evaluate the activities to protect the present receptors. The facility shall also identify the future use of the site and evaluate the activities to protect future exposures for the designated future use. For the purpose of foreseeable industrial use of the site, the Department requires the facility to evaluate the impact to the groundwater (consistency with the current closure

performance standards '9.6.B and 10.6.B. of VHWMR). The residual contamination in-place shall not become a source of contamination to other media, such as leaching of wastes into the groundwater or surface water. For the purpose of risk assessment the facility must consider the groundwater as a potential drinking water source. However, on a site-specific basis the Department may allow use of institutional controls to minimize the leaching of wastes (residual contamination) to the groundwater.

2. In order for the Department to accept the current and foreseeable use of the site for industrial activity, the owner of the facility must present the signed acceptance letter provided in Appendix A which restricts land use for industrial only. The letter becomes part of the approved closure plan. The purpose of signing the letter is to notify the future owners of a property and local officials and the Department as to what uses and activities are consistent with a level of no significant risk at the site. This describes conditions under which site may pose a significant risk and establishes the necessity to evaluate the site conditions for future changes in site usage. The purpose of signing this letter does not permanently restrict changes in site use, however it insures that any proposed changes would require an evaluation of the residual contamination and the possible increase in exposure.

3. General Considerations

The facility must provide the following information which the Department will evaluate in making a determination to allow industrial site use:

a. A description of need and justification for the proposed use of the site. An explaination of the situation which prevents the facility from achieving clean closure for unrestricted use.

b. Duration of the proposed use of the site.

c. Cost and beneficial use of the proposed action in lieu of demonstration of a clean closure for

unrestricted use of the site.

d. Whether or not the site is zoned or has been otherwise officially designated for industrial use;

f. Whether or not the site is currently used for industrial purpose or has a history of use for industrial purposes;

g. Whether or not adjacent properties are currently used or designated for industrial use;

h. Whether or not the site is expected to be used for industrial purposes for the foreseeable future due to a) zoning, b) statutory or regulatory restrictions, c) adjacent land use, and/or d) other factors;

i. Other information beleived by the facility to pertinent;

j. Signed letter provided in the Appendix A.

k. Practical capability of the owner. The information shall include an indication of financial capability of the owner or operator to achieve a clean closure for unrestricted use of the site.

B. Based on the information received, the Director will consider the following factors:

1. Potential overall effect on public health, welfare, and safety of the proposed use of the site. Considerations will be given to the cost benefit analysis, distance to the existing nearest exposure point, potential adverse effects on groundwater quality, the current and future uses of the groundwater, and the potentical adverse effects on hydraulically connected surface water quality.

C. The following are some of the situations where the facility is not required to evaluate the industrial use scenario.

1. The on-site concentrations are below the background

concentrations.

2. The site is evaluated for residential and the concentrations are below the acceptable cleanup level for unrestricted use.

D. Following are some of the situation where the Department will not allow the evaluation of the site for Industrial use.

1. If the current use of site is not industrial and the facility assumes that the future use will be industrial. In such situations, prior to any approval of industrial use scenario, and location of the site with respect to the surrounding land use shall be evaluated.

2. For situation where the Department during an enforcement action has made a determination that the future use of site will not be industrial.

E. Risk Assessment

The facility shall consider the industrial use algorithm provided in the REAMS model. For more details refer to the Department document titled "Guidance for Development of Health Based Cleanup Goals using the Decision Tree/REAMS Program" dated November 1, 1994 by Old Dominion University, Norfolk, Virginia.

If you need any further information, please call Leslie Romanchik at (804) 698-4129 or Sanjay V. Thirunagari at (804) 698-4193.

Guidelines for conducting risk assessment/closure for industrial use

Attachment A

Guidelines for conducting risk assessment/closure for industrial use

NOTICE OF USE LIMITATION
' 9.6.B. & 10.6.B., VHWMR

Hazardous Waste Site Name:

I.D. No:

This Notice of Use Limitation ("Notice") is made as of the __ day of _____, 19__, by [Name and address of current property owner or owners], together with his/her/its/their successors and assigns, (collectively "Owner").

W I T N E S S E T H:

WHEREAS, _____ (name of Owner), of _____ County, Virginia, [is] [are] the owner(s) in fee simple of [that] [those] certain parcel(s) of [vacant] land located in _____ (Town/City), _____County, Virginia, with the buildings and improvements thereon, ("Property");

WHEREAS, said parcel(s) of land, which is more particularly bounded and described in Exhibit A, attached hereto and made a part hereof (" the Property") is subject to this Notice of Use Limitation. The Property is shown on a plan [recorded and/or registered herewith] [recorded and/or registered in _____ County Registry of Deeds/Land Registration Office in Plan Book _____, Plan _____, or as Land Court Plan No. _____.];

[WHEREAS, a portion of the Property is more specifically subject to this Notice of Use Limitation. This portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. This portion is shown on a plan [to be recorded herewith] [recorded in _____ County Registry of Deeds in Plan Book _____, Plan _____.];

WHEREAS, the Property [portion of the Property] comprises [all] [part of] a disposal site as the result of a release of hazardous waste. Exhibit A-1 is a sketch plan showing the relationship of the [Property] [portion of the Property] subject to this Notice of Use Limitation to the boundaries of said disposal site (to the extent such boundaries have been established). Exhibit A-1 is attached hereto and made a part hereof.]

Guidelines for conducting risk assessment/closure for industrial use

WHEREAS, one or more response actions have been selected for [the Disposal Site] [portion of the Disposal Site] in accordance with closure performance standards of '9.6.B., or 10.6.B., of Virginia Hazardous Waste Management Regulations. Said response actions are based upon (a) the restriction of human access to and contact with hazardous material in soil [and/or groundwater] and/or (b) the restriction of certain activities occurring in, on, through, over or under the [Property] [Portion of the Property].

NOW, THEREFORE, notice is hereby given that the use limitations set forth are as follows:

1. Permitted Activities and Uses Set Forth in the UL The use limitation provides that a condition of No Significant Risk to health, safety, public welfare or the environment (such condition being defined in the Closure Plan) exists for any foreseeable period of time so long as any of the following activities and uses occur on the [Property] [portion of the Property]:

1. ;
2. ; and
3. Such other uses which, in the Opinion of an owner or Registered Professional Engineer, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this paragraph.

continued

2. Uses Inconsistent with the notification. Uses which are inconsistent with the notification, and which, if implemented at the [Property] [portion of the Property], may result in a significant risk of harm to health, safety, public welfare or the environment, are as follows:

1. ;
2. ; and
3. .

3. Obligations and Conditions Set Forth in the notification. If applicable, obligations and/or conditions to be undertaken and/or maintained at the [Property] [portion of the Property] to maintain a condition of No Significant Risk as set forth in the notification shall include the following:

1. ;
2. ; and
3. .

4. Proposed Changes in Uses. Any proposed changes in activities and uses at the [Property] [portion of the Property] which may result in higher levels of exposure to hazardous material than currently exist shall be evaluated by a Registered Professional Engineer or Department of Environmental Quality representative who shall render an opinion, in accordance with '9.6 and 10.6., of VHWMR, as to whether the proposed changes will present a significant risk of harm to health, safety, public welfare or the environment. Any and all requirements set forth in the notice to ensure a condition of No Significant Risk in the implementation of the proposed activity or use shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment due to exposure to hazardous material without the prior evaluation of DEQ, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by DEQ in accordance with ''9.6 and 10.6., of the VHWMR the owner or operator of the [Property] [portion of the Property] subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in ''9.6. and 10.6., of VHWMR.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice to become effective when executed and sealed by the undersigned P.E, and recorded and/or registered with the appropriate Registry(ies) of Deeds and/or Land Registration Office(s).

WITNESS the execution hereof under seal this _____ day of _____, 19__.

_____
Owner

continued

COMMONWEALTH OF VIRGINIA

_____, '' _____, 19__

Then personally appeared the above named _____ and acknowledged the foregoing to be _____ free act and deed before me,

_____
Notary Public
My Commission Expires:

The undersigned P.E. hereby certifies that he/she executed the aforesaid Notice of Use Limitation and that in his/her Opinion this Notice of Use Limitation is consistent with the Department of Environmental Quality performance standards for restricted use of site, and '9.6 and '10.6., of VHWMR.

Date: _____ _____
P.E.
[SEAL]

LTR # 05-31
Rec'd 07-01-2003
C: Jake
Kedron
Dioria
McKenna
Env File

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

June 25, 2003

Ms. C. A. Jake
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24141

**Re: Radford Army Ammunition Plant (RFAAP), Radford, VA**
**EPA ID No. VA1210020730**
**Field Investigation Report and Risk Assessment for Units 5 and 7[1]**
(Unit 5/S04; Unit 7/S04)

Dear Ms. Jake:

The Department of Environmental Quality, Office of Waste Permitting (the Department) has reviewed the *Field Investigation Report and Risk Assessment for Units 5 and 7* (*Report*) submitted with your correspondence of March 5, 2003. According to previous discussions and correspondence, RFAAP will attempt to remove the sources of contamination by achieving clean closure at the units. RFAAP had originally planned to revise the closure plans for HWMUs 5 and 7 based upon the results of the initial investigative sampling. Since, RFAAP believes the sampling results may already show that concentrations of contaminants are not a risk to human health or the environment, the *Report* provides a risk assessment instead of revised closure plans.

The May 27, 1988 approved closure plans for HWMUs 5 and 7 provided for closure only by landfilling (i.e., wastes in-place and capping). Therefore, if RFAAP wishes to continue pursuing clean closure of the capped units, revised closure plans that include procedures and standards for clean closure must be submitted. To assist with the revising the closure plans, an electronic copy of

[1] PCCP
Permit Event Code/NA

the Department's *Draft Guidance Manual for Closure Plans and Post-Closure Plans* (*Draft Guidance*), September 28, 2001 has been provided to Mr. J. Redder of your staff.

Concerning the *Field Investigation Report and Risk Assessment for Units 5 and 7*, the Department is providing the following comments:

1) The closure requirements for hazardous waste surface impoundments of 40 CFR 264.228(a)(1) requires the removal or decontamination of "contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate." Therefore, in order to demonstrate clean closure of these units, the soil and liner material immediately beneath the wastes must be sampled as well to determine if they meet clean closure standards.
2) EPA Region III Risk-Based Concentration (RBC) and Soil Screening Levels (SSLs) are not appropriate clean closure standards. Refer to Section 3.13 of the *Draft Guidance* for the requirements of all acceptable clean closure standards (i.e., analytical non-detection, background, and risk-based).
3) If RFAAP intends to demonstrate that clean closure may be achieved with wastes in-place, every sample of waste must not exceed the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 286, Subpart D.

In addition to the above comments, the Department recommends that the revised closure plans include more than one option for meeting clean closure standards (e.g., no removal of wastes or soils, excavation and removal of contaminated materials, etc.) in order to minimize the need for future revisions. Please submit the revised closure plans within ninety (90) calendar days calendar of receipt of this letter.

The Department has also received the Professional Geologist's certification submitted with your correspondence of April 30, 2003. However, as indicated in comment 5 of the Department's October 18, 2002 letter, 40 CFR 264.115 requires that the certification be signed by an independent Professional Engineer registered in the Commonwealth of Virginia. Please provide the P.E. certification within thirty (30) calendar days of receipt of this letter.

If you have questions, please contact me at (804) 698-4131 or by e-mail at gweng@deq.state.va.us.

Sincerely,

Garwin W. Eng
Environmental Engineer Senior
Office of Waste Permitting

c: Robert N. Davie, III
Radford Army Ammunition Plant
SMARF-OP, P. O. Box 2
Radford, Virginia 24141-0099

Robert G. Thomson – EPA Region III (3HS13)
Aziz Farahmand – WCRO, DEQ
Leslie A. Romanchik – DEQ
Mark S. Leeper – DEQ
Howard F. Freeland – DEQ
Central Hazardous Waste File

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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June 7, 2004

Ms. C. A. Jake
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24141

**Re: Radford Army Ammunition Plant (RFAAP), Radford, VA**
**EPA ID No. VA1210020730**
**Closure Plan Amendments for Units 5 and 7 – Notice of Deficiencies**[1]
(Unit 5/S04; Unit 7/S04)

Dear Ms. Jake:

The Department of Environmental Quality, Office of Waste Permitting (the Department) has reviewed your February 20, 2004 request to amend the closure plan for Units 5 and 7. The Groundwater Monitoring portions of the proposed amendments is being reviewed by the Department's hydrogeology staff, and comments will be provided under separate cover.

Please provide responses to the enclosed comments within ninety (90) days of receipt of this letter. If you have questions, please contact me at (804) 698-4131 or by e-mail at gweng@deq.virginia.gov.

Sincerely,

Garwin W. Eng
Environmental Engineer Senior
Office of Waste Permitting

[1] PCCP
Notice of Deficiency – Closure Plan/CL320

# NOTICE OF DEFICIENCIES
## Closure Plan Amendment, Hazardous Waste Management Unit 5
## Radford Army Ammunition Plant (RFAAP)

Comments are referenced by section, paragraph (counting from the beginning of the section), and sentence (counting from the beginning of the paragraph).

1. Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the *Closure Plan Amendment, HWMU 5* (*Plan-HWMU 5*). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the *Plan-HWMU 5*.

2. The *Plan-HWMU 5* indicates that RFAAP will attempt to achieve clean closure without removing any wastes or potentially contaminated equipment and subsoils. Several sections of the *Plan-HWMU 5* state that in order to leave the residual material in-place (i.e., meet clean closure standards), the residual material will need to meet only the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 268. Please be advised that this is incorrect, and the Department apologizes for any confusion that the wording in its June 25, 2003 letter may have caused.

   In order to prevent any further confusion, the following clarification is provided. At closure, all contamination, i.e., wastes, equipment, structures, soils, and groundwater (for certain types of units), must be removed or decontaminated to clean closure standards (see Section 3.13 of the Department's *Draft Guidance Manual for Closure Plans and Post-Closure Plans*; September 28, 2001). In addition, all hazardous wastes must meet the 40 CFR 268 LDRs treatment standards prior to land disposal. Since the residual material is actually the hazardous waste from the surface impoundment, it must meet both the clean closure standards as well as the LDRs treatment standards in order to remain in-place.

3. 1.1, paragraph 3, 1st sentence – Pursuant to the March 12, 2004 telephone conference with Mr. J. J. Redder of your staff, no amendments to the Post-closure Care *Plan-HWMU 5* are being made at this time. Please delete all references to the Post-closure Care Plan throughout this document.

4. 3.1, paragraph 4 – This paragraph should refer to HWMU-5.

5. 4.2.1, paragraph 1, 6th sentence – The previous use of and the process code currently listed in EPA's RCRAInfo database for HWMU-5 is Surface Impoundment Storage (S04). If RFAAP wishes to modify the process code for this unit, a revised Part A Permit Application may be submitted.

6. 4.2.1, paragraph 2, 2nd sentence – This sentence should be revised to read "... similar waste streams were tested..."

7. 4.2.4, paragraph 2, 1st sentence – This sentence should refer to HWMU-5.

8. 4.2.4, paragraph 2, 6th sentence – This states that the residual material does not pose a threat to human health or the environment. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.

9. 5.0 – This section provides procedures for collecting samples and evaluating the results to confirm clean closure. However, no procedures are provided in the event that wastes or potentially contaminated equipment, structures, and soils must be removed in order to achieve clean closure. As such, this *Plan-HWMU 5* appears to indicate that under no circumstances will any materials be removed. If this is the case, please clearly state this in the *Plan-HWMU 5*. If this is not the case, procedures for decontamination by removal should be provided.

10. 5.3.1 – The residual material shall include everything above the bottom liner (including any sand and rip-rap) and below any clean material placed on top of the residual material. The bottom six (6) inches of the clean material contacting the residual material shall be included with the residual material because of possible mixing with the residual material during its placement. Therefore, closure procedures addressing the residual material must include all materials above the bottom liner up to the first six inches of clean material placed above the residual material.

11. 5.3.1 – This section indicates that the samples taken during the 2002 Field Investigation results will be used to demonstrate that clean closure can be achieved with the residual materials remaining in-place. As such, please note that the 2002 Field Investigation must meet all of the requirements (e.g., constituent list, number of samples, sample locations, field and laboratory methodologies, QA/QC, etc.) specified in the final approved closure plan amendment. Therefore, the *Field Investigation Report and Risk Assessment for Units 5 and 7* submitted March 5, 2003 has not been reviewed as to its adequacy for the closure of HWMU-5.

12. 5.3.2, paragraph 1 – As stated Section 3.7.1 of the *Closure Guidance*, the list of hazardous constituents of concern (HCOCs) is developed as part of the closure plan, that is, prior to beginning closure procedures. For the purposes of closure under RCRA, the HCOC list must include the following:
    a. all hazardous waste constituents that were handled at the unit (this list may be found in the approved closure plan);
    b. all groundwater monitoring constituents that have been detected above background levels; and
    c. any other hazardous constituents detected in the course of other investigations at the unit.

    Please provide the HCOC list and an explanation as to why each constituent was included. Also, any other hazardous constituents (in addition to those constituents included above) detected during the course of closure activities shall be included in the list of HCOCs for the unit.

13. 8.2.3 – This section states that the levels of inorganics found during the development of the *Radford Army Ammunition Plant Facility-Wide Background Report* (December 2001) will be used as background. Section 3.11.3 of the *Closure Guidance* indicates that background soil and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit. In addition, background samples must be collected in a manner identical to that of the closure samples and must comply with all Quality Assurance/Quality Control (QA/QC) procedures of the final approved closure plan. Not all of the *Facility-Wide Background* samples appear to meet these requirements. Please provide additional information concerning the *Facility-Wide Background* samples to determine which samples may meet the *Closure Guidance* requirements for background samples. Please note that if a large enough (minimum of eight) subset of the *Facility-Wide Background* samples does not meet the *Closure Guidance* requirements, additional background samples will need to be collected.

14. 6.1, paragraph 1 – Per Section 3.11.1 of the *Closure Guidance*, different sampling approaches are used to address differences in unit types, distributions of contamination, and assumptions concerning the unit. It appears that eight (8) sample locations shall be evenly spaced across the unit. Provide the rationale for this sampling approach. In addition, describe how decontamination by removal (if needed) will be conducted in light of this sampling approach (see Comment 9 above).

15. 6.1, paragraph 2 – Because the sample collection device will pass through the residual material then the bottom liner and subsoils, there is a potential for cross-contamination from the residual material to the subsoils. Therefore, the Department recommends collecting subsoil samples from the undisturbed center of the cores to minimize possible cross-contamination.

16. 6.1, paragraph 2, 2nd sentence – Section 4.2.1 states that the unit is lined with a 60-mil Hypalon liner. This liner must meets clean closure standards if RFAAP is to achieve clean closure without removal of wastes and potentially contaminated equipment, structures, and soils. However, the proposed sample collection method may not collect a sufficient amount of the liner material for analyses (i.e., at most, a 1.5 inch diameter circle if the sampler is able to collect any at all). Please describe how sufficient samples of the liner will be collected.

17. 6.4 – Section 3.11.5 of the *Closure Guidance* recommends additional rinses after sampling for metals and organic constituents. Please revise this section accordingly.

18. 6.7 – This section states that samples will be analyzed for Target Analyte List (TAL) and Target Compound List (TCL) constituents. However, the list of constituents provided in Table 2 does not include all TCL constituents. Please explain why certain TCL constituents were excluded.

19. 6.7, paragraph 2, last sentence – Specify what criteria against which the data will be validated (e.g., CLP Functional Guidelines, SW-846 QA/QC criteria, etc.).

20. 6.8.1 – In addition to indicating the total expected quantity of each type of QA/QC sample that will be collected, state the minimum collection frequency of each type of QA/QC sample (e.g., one trip blank/cooler/day of sampling).

21. 6.8.1, paragraph 3, 3rd and 5th sentences – Both of these appear to refer to constituents for which the equipment blank(s) will be analyzed. Please clarify these confusing sentences.

22. 6.8.1, paragraph 5, 1st sentence – Data shall be qualified appropriately if contamination is found in QA/QC blanks, however, such blank contamination may not be used to "invalidate" data.

23. 6.8.2, paragraph 4 – Matrix spike/matrix spike duplicates (MS/MSD) shall be prepared and analyzed at a frequency of one MS/MSD per sampling batch or 20 samples (whichever is more frequent) per matrix type.

24. 8.1, paragraph 4, 2nd sentence – Per Section 3.11.1 of the *Closure Guidance*, composite samples are not acceptable for demonstrating achievement of clean closure standards.

25. 8.2.1, last sentence – This appears to refer to HWMU 7 by mistake. Please clarify or correct.

26. 8.2.3.2 – This section states that if all inorganic results do not exceed the background concentrations, then "that sampling location will be deemed to be uncontaminated." It further states that if all sampling locations are uncontaminated, then "the soil will have met the clean closure decontamination standard." Please be advised that these statements are not correct. In order to meet the background clean closure standard, sampling results for **all** HCOCs (not just inorganics) must not exceed detection limits or background. Please revise accordingly.

27. 8.2.4 – Only those constituents that did not pass the non-detection and background clean closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation.

28. 10.0, 2nd sentence – This states that the residual material left in-place is not a hazardous waste. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.

29. 10.0 – Please revise the schedule pursuant to Comment 3 above.

30. 10.0 – Please provide additional details concerning closure activities. Enough detail should be provided to allow tracking of the progress of closure. In addition, contingent closure activities (such as those described in paragraph 4 of Section 13.0) must be included in the closure schedule.

31. 13.0, paragraph 3, 2nd and 3rd sentences – These are not correct. Please remove these sentences.

32. 13.0, paragraph 4 – Pursuant to 40 CFR 264.228(c)(1), a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided in the event that clean closure cannot be achieved.

33. Table 2 – This list does not contain a complete list of HCOCs (see Comment 12 above) for HWMU 5.

34. Table 2 – Section 8.2.2 of the *Plan-HWMU 5* states that, initially, RFAAP will attempt to demonstrate clean closure by analytical non-detection and comparison to background (for detected HCOCs). Section 3.9 of *Closure Guidance* recommends using the analytical methods with the lowest quantitation limits for each HCOC when demonstrating clean closure to these standards. Specifically:
    - SW-846 Methods 7000 Series typically achieve lower detection and quantitation limits than Method 6010 for inorganics;
    - SW-846 Method 8021B typically achieves lower detection and quantitation limits than Method 8260 for many chlorinated and aromatic volatiles; and
    - SW-846 Method 8330 typically achieves lower detection and quantitation limits than Method 8270 for 2,4- and 2,6-dinitrotoluene.

    Please review achievable detection and quantitation limits with your laboratory and revise Table 2 accordingly.

**NOTICE OF DEFICIENCIES**
**Closure Plan Amendment, Hazardous Waste Management Unit 7**
**Radford Army Ammunition Plant (RFAAP)**

Comments are referenced by section, paragraph (counting from the beginning of the section), and sentence (counting from the beginning of the paragraph).

1. Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Amended Closure Plan (Plan). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan.

2. Because of the similarity between the *Closure Plan Amendments* for HWMUs 5 and 7, the comments provided for the *Plan-HWMU 5* also apply to the *Plan-HWMU 7* with the exception of Comments 4, 6, 7, 10, 16, 25, 32, and 33. Although some of the paragraph and sentence numbers referenced for *Plan-HWMU 5* do not exactly match those for *Plan-HWMU 7*, the wording is close enough such that referring back to the text of *Plan-HWMU 5* should resolve any discrepancies. Additional comments specific to the *Plan-HWMU 7* are provided below.

3. 5.3.1 – Section 6.0 indicates that the unit is underlain by a clay liner and native soils. Because of possible mixing, the top six inches of clay or native soils directly beneath the residual material shall be included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material shall be included with the residual material. Therefore, closure procedures addressing the residual material must include all materials from six inches beneath to six inches above the residual material.

4. 13.0, paragraph 4 – Since this unit does not meet the 40 CFR 264.221(a) liner requirements, a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided.

5. Table 2 – Please verify that all applicable HCOCs for HWMU 7 (see Comment 12 for the *Plan-HWMU 5*, above) are included in this list.

ATK
ALLIANT TECHSYSTEMS

Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24141
USA

September 17, 2004

Mr. Garwin Eng
Hazardous Waste Permitting
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Subject: Response to Comments HWMUs 5 and 7
Radford Army Ammunition Plant
Radford, Virginia
EPA ID#: VA1210102073O

Dear Mr. Eng:

Enclosed are the responses to your comments concerning the Closure of HWMUs 5 & 7.

If you have any questions or concerns, please contact Jerry Redder at 540/639-7536.

Sincerely,

C. A. Jake, Environmental Manager
Alliant Ammunition and Powder Company LLC

c: Aziz Farahmand, DEQ-WCRO

Coordination: J. McKenna

bc: Administrative File
J. McKenna, ACO Staff
John Tesner, Baltimore CoE
J. J. Redder
Ross Miller, Draper Aden Associates
Env. File

04-815-141
JJRedder

**RESPONSE TO COMMENTS**
**CLOSURE PLAN AMENDMENTS**
**HAZARDOUS WASTE MANAGEMENT UNITS 5 AND 7**
**RADFORD ARMY AMMUNITION PLANT**
**PERMIT NO. VA1210020730**

This document has been prepared to serve as a guide for the response to the Virginia Department of Environmental Quality (VDEQ) letter to the Radford Army Ammunition Plant (Radford AAP) dated June 7, 2004, regarding the Closure Plan Amendments for Units 5 and 7 – Notice of Deficiencies. In that letter (signed by Mr. Garwin Eng), 39 individual comments were presented; these comments are addressed in this Response to Comments. The comments have been reproduced in full within this guide to provide a convenient context for the responses. The following presents Radford AAP's response to each comment.

## Hazardous Waste Management Unit 5 (HWMU-5)

1. *Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Closure Plan Amendment, HWMU 5 (Plan-HWMU 5). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan-HWMU 5.*

**Response to Comment 1**

When a revision is made as the result of a particular comment, corresponding revisions will be made in all applicable sections of the Amended Closure Plan.

2. *The Plan-HWMU 5 indicates that the RFAAP will attempt to achieve clean closure without removing any wastes or potentially contaminated equipment and subsoils. Several sections of the Plan-HWMU 5 state that in order to leave the residual material in-place (i.e., meet clean closure standards), the residual material will need to meet only the land disposal restrictions (LDRs) treatment standards specified in 40 CFR 268. Please be advised that this is incorrect, and the Department apologizes for any confusion that the wording in its June 25, 2003 letter may have caused.*

*In order to prevent any further confusion, the following clarification is provided. At closure, all contamination, i.e., wastes, equipment, structures, soils, and groundwater (for certain types of units), must be removed or decontaminated to clean closure standards (see Section 3.13 of the Department's Draft Guidance Manual for Closure Plans and Post-Closure Plans; September 28, 2001). In addition, all hazardous wastes must meet the 40 CFR 268 LDRs treatment standards prior to land disposal. Since the residual material is actually hazardous waste from the surface impoundment, it must meet both the clean closure standards as well as the LDRs treatment standards in order to remain in-place.*

**Response to Comment 2**

Based on the June 22, 2004 teleconference between Radford AAP and the VDEQ, it is Radford AAP's understanding that the residual material remaining in-place in HWMU-5 must meet the clean closure standards as well as the 40 CFR 268.48 land disposal restrictions (LDRs) universal treatment standards for the Hazardous Constituents of Concern (HCOCs) specified in the Amended Closure Plan. In order to comply with the clean closure standards, individual samples of the residual material will be analyzed for the HCOCs. In order to comply with the LDRs universal treatment standards, a composite sample of the residual material will be analyzed for the HCOCs (please note: the LDRs universal treatment standards for inorganic constituents are based on TCLP results; therefore the inorganic HCOC analyses for the residual material composite sample will be conducted using TCLP). Based on the June 22, 2004 teleconference, it is Radford AAP's understanding that analysis of a composite sample of the residual material for the LDRs universal treatment standards is sufficient, as the LDRs are based on waste disposal criteria, and composite samples are acceptable for waste characterization purposes. In effect, if Radford AAP were to have placed the residual waste material that is present in HWMU-5 into HWMU-5 as a disposal action, they would have demonstrated compliance with the LDRs by conducting a composite sample on the containerized waste. Therefore Radford AAP feels that the composite sample of in-place residual material to demonstrate compliance with the LDRs is more representative and appropriate than discreet samples.

3. *1.1, paragraph 3, 1st sentence - Pursuant to the March 12, 2004 telephone conference with Mr. J. J. Redder of your staff, no amendments to the Post-Closure Care Plan-HWMU 5 are being made at this time. Please delete all references to the Post-Closure Care Plan throughout this document.*

**Response to Comment 3**

All references to amendment of the Post-Closure Care Plan will be removed from the Amended Closure Plan.

4. *3.1, paragraph 4 - This paragraph should refer to HWMU-5.*

**Response to Comment 4**

The reference will be changed to HWMU-5.

5. *4.2.1, paragraph 1, 6th sentence - The previous use of and the process code currently listed in EPA's RCRAInfo database for HWMU-5 is Surface Impoundment Storage (S04). If RFAAP wishes to modify the process code for this unit, a revised Part A Permit Application may be submitted.*

**Response to Comment 5**

In order to maintain consistency with the RCRAInfo database, the process code for HWMU-5 specified in Section 4.2.1, paragraph 1, 6th sentence will be changed to "S04."

6. *4.2.1, paragraph 2, 2nd sentence - This sentence should be revised to read "...similar streams were tested..."*

**Response to Comment 6**

The referenced sentence will be revised accordingly.

7. *4.2.4, paragraph 2, 1st sentence - This sentence should refer to HWMU-5.*

**Response to Comment 7**

The reference will be changed to HWMU-5.

8. *4.2.4, paragraph 2, 6th sentence - This states that the residual material does not pose a threat to human health or the environment. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.*

**Response to Comment 8**

The referenced sentence will be removed.

9. *5.0 - This section provides procedures for collecting samples and evaluating the results to confirm clean closure. However, no procedures are provided in the event that wastes or potentially contaminated equipment, structures, and soils must be removed in order to achieve clean closure. As such, this Plan-HWMU 5 appears to indicate that under no circumstances will any materials be removed. If this is the case, please clearly state this in the Plan-HWMU 5. If this is not the case, procedures for decontamination by removal should be provided.*

**Response to Comment 9**

The Amended Closure Plan will be revised to include the following options for closure:

Option 1: Clean closure with the residual material remaining in-place can be successfully demonstrated, in accordance with the clean closure standards and the LDRs universal treatment standards.

Option 2: Clean closure cannot be achieved with the residual material remaining in-place. The Unit will remain closed with the residual material in-place in accordance with the VDEQ-approved May 1988 Closure Plan, and the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). Radford AAP will retain the option to attempt to demonstrate clean closure in the future by excavation and removal of the residual material.

Option 3: Clean closure cannot be achieved with the residual material remaining in-place. The residual material will be excavated and transported off-site for disposal.

Prior to excavation, soil samples will be collected to determine the volume of material to be excavated. Composite sample(s) of the excavated material will be submitted for waste characterization analyses to determine the proper disposal method (hazardous vs. non-hazardous). Following excavation, confirmation samples will be collected to ensure removal of all contaminated materials. The procedures and criteria that will be used to document clean closure by removal will be fully defined in Section 5.0 of the Amended Closure Plan.

The Amended Closure Plan also will include the statement that the closure plan may be amended in the future at the request of Radford AAP in accordance with 40 CFR 264.112.

**10.** *5.3.1 - The residual material shall include everything above the bottom liner (including any sand and rip-rap) and below any clean material placed on top of the residual material. The bottom six (6) inches of clean material contacting the residual material shall be included with the residual material because of possible mixing with the residual material during its placement. Therefore, closure procedures addressing the residual material must include all materials above the bottom liner up to the first six inches of clean material placed above the residual material.*

**Response to Comment 10**

Radford AAP concurs with this definition of the residual material. This definition of the residual material will be included in Section 5.3.1 of the Amended Closure Plan.

**11.** *5.3.1 - This section indicates that the samples taken during the 2002 Field Investigation results will be used to demonstrate that clean closure can be achieved with the residual materials remaining in-place. As such, please note that the 2002 Field Investigation must meet all of the requirements (e.g., constituent list, number of samples, sample locations, field and laboratory methodologies, QA/QC, etc.) specified in the final approved closure plan amendment. Therefore, the Field Investigation Report and Risk Assessment for Units 5 and 7 submitted March 5, 2003 has not been reviewed as to its adequacy for the closure of HWMU-5.*

**Response to Comment 11**

The 2002 Field Investigation serves as a previous study for the purpose of providing generator knowledge regarding the residual material contained in the Unit. The results of the 2002 Field Investigation will be used to assist with the development of the HCOC list for the Unit. Additionally, the samples collected in the 2002 Field Investigation may be used to support the Clean Closure Demonstration to the extent possible.

**12.** *5.3.2, paragraph 1 - As stated in Section 3.7.1 of the Closure Guidance, the list of hazardous constituents of concern (HCOCs) is developed as part of the closure plan, that is, prior to beginning closure procedures. For the purposes of closure under RCRA, the HCOC list must include the following:*

*a. all hazardous waste constituents that were handled at the unit (this list may be found in approved closure plan);*

*b. all groundwater monitoring constituents that have been detected above background levels; and*

*c. any other hazardous constituents detected in the course of other investigations at the unit.*

*Please provide the HCOC list and an explanation as to why each constituent was included. Also, any other hazardous constituents (in addition to those constituents included above) detected during the course of closure activities shall be included in the list of HCOCs for the unit.*

**Response to Comment 12**

The HCOC list for HWMU-5 will be developed based on the following:

a. The results of the analysis of influent water in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 2 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

c. Any hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation.

In 1981, an analysis of influent water collected during low flow conditions indicated the presence of inorganic constituents at concentrations below levels defined as hazardous by the EP Toxicity test. Specifically, cadmium, chromium, and mercury were detected in the influent water sample at concentrations of 0.029 mg/l, 0.20 mg/l, and 0.020 mg/l, respectively. In addition, the influent water sample was analyzed for arsenic, barium, lead, selenium, and silver; concentrations of these constituents were not detected.

The quarterly groundwater monitoring list for HWMU-5, as presented in Appendix E of Permit Attachment 2 of the Final Permit (October 4, 2002), was developed in accordance with procedures specified by the VDEQ. As directed by the VDEQ during development of the January 2002 Permit Modification for the Draft Final Permit, Radford AAP carefully reviewed the groundwater monitoring data for HWMU-5 from First Quarter 1996 through Fourth Quarter 2001 in order to determine whether any constituents in the Unit's then-current groundwater monitoring list (as presented in the August 1999 GWQAR) were consistently <u>not</u> detected. Any constituents that had never been detected within the groundwater at the Unit were not included in the proposed Compliance Monitoring Constituent List presented in the January 2002 Permit Modification document. The VDEQ directed Radford AAP to follow this procedure in order to avoid the need to remove non-detected constituents later during the duration of the active permit. (Please note: in accordance with the May 19, 1999 agreement between the VDEQ and Radford AAP, pre-1996 groundwater analytical data were not to be used for regulatory decisions. Prior to 1996, the analytical data were generated from several different laboratories. In many cases, the analytical reports did not include detection limits. In several instances, different analytical methods were used during different quarters, resulting in noticeable variations in the reported

detection limits and practical quantitation limits. The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result, and as agreed with the VDEQ, any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 2 of the Final Permit, the quarterly groundwater monitoring list for HWMU-5 consists of the following constituents:

| | | |
|---|---|---|
| Antimony, total | Nickel, total | 1,2-Dichloroethane |
| Arsenic, total | Selenium, total | Methylene chloride |
| Barium, total | Silver, total | Toluene |
| Beryllium, total | Thallium, total | Trichloroethene |
| Cadmium, total | Vanadium, total | Xylenes, total |
| Cobalt, total | Zinc, total | Bis (2-ethylhexyl) phthalate |
| Copper, total | Acetone | Diethyl phthalate |
| Lead, total | 2-Butanone | 2,4-Dinitrotoluene |
| Mercury, total | Chloroform | 2,6-Dinitrotoluene |

In addition, the following additional constituents have been detected in the groundwater at HWMU-5 during annual monitoring for the constituents listed in 40 CFR Part 264 Appendix IX: chromium, 2-nitroaniline, 4-nitroaniline, and nitrobenzene. As a result, these constituents have been added to the quarterly groundwater monitoring list for HWMU-5.

During the 2002 Field Investigation at HWMU-5, samples of the residual material and surrounding soils were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds, and for the USEPA Target Compound List (TCL) organic compounds. The following hazardous constituents (as listed in 40 CFR Part 261 Appendix VIII) were detected in the samples:

| | | | |
|---|---|---|---|
| Arsenic | Beryllium | Lead | Nickel |
| Barium | Chromium | Mercury | 4,4-DDD |

The hazardous constituents detected in the samples of the residual material and surrounding soil, as well as the inorganic constituents detected in the 1981 influent water sample, are included in the quarterly groundwater monitoring list for HWMU-5 (with the exception of 4,4-DDD). Therefore, the HCOC list for HWMU-5 will be the same as the current quarterly groundwater monitoring list for the Unit, plus 4,4-DDD.

Interpretation of the closure guidance indicates that Radford AAP need only analyze for the HCOC list. In an effort to remain consistent with the detection requirements of the facility-wide federal RCRA Corrective Action Permit, Radford AAP proposes to sample for a list of constituents (the TAL/TCL list) that includes the HCOCs for this Unit. In doing so, Radford AAP is demonstrating their pro-active and conservative approach to environmental compliance. Radford AAP realizes that if any constituents detected using this expanded list of constituents are not represented on the proposed HCOC list (which contains all previously detected compounds), Radford AAP will be required to add those detected constituents to the HCOC list for the Unit. This "belt and suspenders" approach provides a level of protection that far exceeds the minimum requirements of the closure process.

**13.** *8.2.3 - This section states that the levels of inorganics found during the development of the Radford Army Ammunition Plant Facility-Wide Background Report (December 2001) will be used as background. Section 3.11.3 of the Closure Guidance indicates that background soils and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit. In addition, background samples must be collected in a manner identical to that of the closure samples and must comply with all Quality Assurance/Quality Control (QA/QC) procedures of the final approved closure plan. Not all of the Facility-Wide Background samples appear to meet these requirements. Please provide additional information concerning the Facility-Wide Background samples to determine which samples may meet the Closure Guidance requirements for background samples. Please note that if a large enough (minimum of eight) subset of the Facility-Wide Background samples does not meet the Closure Guidance requirements, additional background samples will need to be collected.*

**Response to Comment 13**

Radford AAP has established the validity of the December 2001 Facility-Wide Background Report with the VDEQ and USEPA Region III, and has substantial documentation regarding VDEQ and USEPA Region III approval of the study and its use as a screening tool for soils at the facility. Specifically, Radford AAP has utilized the data from the Facility-Wide Background Report to the satisfaction of the VDEQ and USEPA Region III in the Site Screening Document for SWMU-6, in the Soil Screening Reports for SWMUs 8 and 36, and in the draft RCRA Facility Investigation Report for SWMU-58 (copies of the VDEQ and USEPA Region III approval letters for the above-referenced documents are included in Appendix A of this Response to Comments).

With respect to Section 3.11.3 of the Closure Guidance, which indicates that background soils and subsoil samples should be of the same geologic properties, type and texture and be from the same soil horizons, if possible, as the corresponding soil or subsoil samples from the unit, please note that the VDEQ provided the following comment regarding the background soil data presented in the draft Facility-Wide Background Report on September 10, 2001:

*"Given the conditions of mixed surface and subsurface soils at the potentially contaminated sites, it is recommended that the background data for both surface and subsurface soils be combined for each element to determine the 95% UTL to be used in conjunction with the USEPA Region III RBCs for human health risk screening, and with various ecological screening data for ecological screening purposes. This will not only simplify the screening process, but will add power to the statistical comparison and prevent the unnecessary, and costly, carrying forward of naturally occurring elements into the full-fledged risk assessment process."*

Therefore, it is Radford AAP's opinion that the soil samples analyzed in support of the Facility-Wide Background Study should be of sufficient quantity to meet the requirements of the Closure Guidance to provide background inorganic constituent concentrations for HWMU-5.

14. *6.1, paragraph 1 - Per Section 3.11.1 of the Closure Guidance, different sampling approaches are used to address differences in unit types, distributions or contamination, and assumptions concerning the unit. It appears that eight (8) samples locations shall be evenly spaced across the unit. Provide the rationale for this sampling approach. In addition, describe how decontamination by removal (if needed) will be conducted in light of this sampling approach (see Comment 8 above).*

**Response to Comment 14**

A stratified grid-based sampling approach is proposed to accurately characterize the horizontal and vertical extent of the residual material. Eight sample locations shall be evenly spaced across the Unit to provide a representative evaluation of the entire Unit.

15. *6.1, paragraph 2 - Because the sample collection device will pass through the residual material then the bottom liner and subsoils, there is a potential for cross-contamination from the residual material to the subsoils. Therefore, the Department recommends collecting subsoil samples from the undisturbed center of the cores to minimize possible cross-contamination.*

**Response to Comment 15**

This procedure will be specified in Section 6.1, paragraph 2.

16. *6.1, paragraph 2, 2nd sentence - Section 4.2.1 states that the unit is lined with a 60-mil Hypalon liner. This liner must meet clean closure standards if RFAAP is to achieve clean closure without removal of wastes and potentially contaminated equipment, structures, and soils. However, the proposed sample collection method may not collect a sufficient amount of the liner material for analyses (i.e., at most, a 1.5 inch diameter circle if the sample is able to collect any at all). Please describe how sufficient samples of the liner will be collected.*

**Response to Comment 16**

Recent investigations indicate that the 60-mil liner is not present beneath HWMU-5.

17. *6.4 - Section 3.11.5 of the Closure Guidance recommends additional rinses after sampling for metals and organic constituents. Please revise this section accordingly.*

**Response to Comment 17**

The Geoprobe sample collection system uses dedicated, disposable acetate liners for each sample collected. Therefore, decontamination using additional rinses between sample collection will not be required.

18. *6.7 - This section states that samples will be analyzed for Target Analyte List (TAL) and Target Compound List (TCL) constituents. However, the list of constituents provided in Table 2 does not include all TCL constituents. Please explain why certain TCL constituents were excluded.*

**Response to Comment 18**

The laboratory selected for the analyses (Lancaster Laboratories) uses statement of work OLM03.2 for the analysis of TCL organic constituents. This is the list that was presented in the Amended Closure Plan.

***19.*** *6.7, paragraph 2, last sentence - Specify what criteria against which the data will be validated (e.g., CLP Functional Guidelines, SW-846 QA-QC criteria, etc.).*

**Response to Comment 19**

Section 6.7, paragraph 2 will be revised to specify the following: "Data validation will be conducted using summary tables and raw data provided by the analyzing laboratory. Data validation will be conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, July 2002)."

***20.*** *6.8.1 - In addition to indicating the total expected quantity of each type of QA/QC sample that will be collected, state the minimum collection frequency of each type of QA/QC sample (e.g., one trip blank/cooler/day of sampling).*

**Response to Comment 20**

The following minimum collection frequency of each type of QA/QC sample will be specified in Section 6.8.1:

"A minimum of one trip blank per cooler per day of sampling will accompany the samples collected for TCL organic compounds analyses."

"A minimum of one equipment blank per day of sampling will be collected in the event that non-dedicated equipment is used during the sampling process."

"A minimum of one field duplicate sample per day of sampling will be collected at the Unit."

***21.*** *6.8.1, paragraph 3, 3rd and 5th sentences - Both of these appear to refer to constituents for which the equipment blank(s) will be analyzed. Please clarify these confusing sentences.*

**Response to Comment 21**

The 5th sentence of Section 6.8.1, paragraph 3 will be removed. The 3rd sentence of Section 6.8.1, paragraph 3 will be revised to read: "Any equipment blank(s) will be analyzed for the same constituents for which the soil samples and residual material samples are being analyzed."

22. *6.8.1, paragraph 5, 1st sentence - Data shall be qualified appropriately if contamination is found in QA/QC blanks, however, such blank contamination may not be used to "invalidate" data.*

**Response to Comment 22**

Section 6.8.1, paragraph 5 will be revised to read: "The occurrence of constituents in blank samples may serve to qualify the results presented by the laboratory. Additional blanks or duplicate samples may be prepared and analyzed to address specific, unanticipated conditions. Re-sampling and re-analysis may be required in certain cases depending on project objectives.

23. *6.8.2, paragraph 4 - Matrix spike/matrix spike duplicates (MS/MSD) shall be prepared and analyzed at a frequency of one MS/MSD per sampling batch or 20 samples (whichever is more frequent) per matrix type.*

**Response to Comment 23**

This statement will be added to the referenced section.

24. *8.1, paragraph 4, 2nd sentence - Per Section 3.11.1 of the Closure Guidance, composite samples are not acceptable for demonstrating achievement of clean closure standards.*

**Response to Comment 24**

Radford AAP concurs with this statement. Based on the June 22, 2004 teleconference between Radford AAP and the VDEQ, it is Radford AAP's understanding that in order to comply with the clean closure standards, individual samples of the residual material must be analyzed for the HCOCs. However, it is also Radford AAP's understanding that a composite sample is sufficient for demonstrating compliance with the LDRs universal treatment standards.

25. *8.2.1, last sentence - This appears to refer to HWMU 7 by mistake. Please clarify or correct.*

**Response to Comment 25**

The referenced sentence will be clarified.

26. *8.2.3.2 - This section states that if all inorganic results do not exceed the background concentrations, then "that sampling location will be deemed uncontaminated." It further states that if all sampling locations are uncontaminated then "the soil will have met the clean closure decontamination standard." Please be advised that these statements are not correct. In order to meet the background clean closure standard, sampling results of **all** HCOCs (not just inorganics) must not exceed detection limits or background. Please revise accordingly.*

**Response to Comment 26**

The referenced section will be revised to read as follows: "If the concentration of every inorganic HCOC in a soil sample is below the appropriate UTL, that sampling location will be deemed to be uncontaminated for inorganic constituents. Should all soil samples be uncontaminated for inorganic constituents in this manner, the soil will have met the clean closure decontamination standard for inorganic constituents."

27. *8.2.4 - Only those constituents that did not pass the non-detection and background clean closure standards (i.e., detects above background levels) need to be included in the risk-based evaluation.*

**Response to Comment 27**

Radford AAP concurs with this statement. This statement will be included in Section 8.2.4 of the Amended Closure Plan.

28. *10.0, 2nd sentence - This states that the residual material left in-place is not a hazardous waste. Please remove this sentence as this conclusion has not been reviewed and approved by the Department.*

**Response to Comment 28**

The referenced sentence will be revised to read as follows: "Based on generator knowledge and previous studies, Radford AAP has determined that the residual material contained in HWMU-5 is not a hazardous waste as defined in 40 CFR Part 261."

29. *10.0 - Please revise the schedule pursuant to Comment 3 above.*

**Response to Comment 29**

The schedule will be revised by removing references to the Post-Closure Care Plan.

It is Radford AAP's understanding that the VDEQ wants Radford AAP to submit a Closure Report and a Class II Permit Modification at the same time, and that the VDEQ will review both documents together. Assuming that approval for clean closure is obtained, Radford AAP will then submit a request to shorten the Post-Closure Care Period. If the request to shorten the Post-Closure Care Period is approved, the Final Permit will be modified accordingly.

30. *10.0 - Please provide additional details concerning closure activities. Enough detail should be provided to allow tracking of the progress of closure. In addition, contingent closure activities (such as those described in paragraph 4 of Section 13.0) must be included in the closure schedule.*

**Response to Comment 30**

The following closure schedule will be included in Section 10.0:

| CLOSURE ACTIVITY | TIMEFRAME FOR COMPLETION |
|---|---|
| Radford AAP:<br>Submittal of Amended Closure Plan | 30 days from VDEQ approval of Response to Comments |
| VDEQ:<br>Review and Approval of Amended Closure Plan | 90 days from submittal |
| Radford AAP:<br>Soil and Groundwater Sampling;<br>Submittal of Closure Report (with Class II Permit Modification if clean closure is demonstrated) | 90 days from VDEQ approval of Amended Closure Plan |
| VDEQ:<br>Review and Approval of Closure Report;<br>Review and Approval of Class II Permit Modification (if clean closure is certified) | 120 days from submittal |

In the event that clean closure is not achieved, the Unit will remain in post-closure care in accordance with the Final Permit (October 4, 2002). If Radford AAP chooses to demonstrate clean closure by removal, additional closure schedule information will be submitted.

31. *13.0, paragraph 3, 2nd and 3rd sentences - These are not correct. Please remove these sentences.*

**Response to Comment 31**

The referenced sentences will be removed.

32. *13.0, paragraph 4 - Pursuant to 40 CFR 264.225(c)(1), a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided in the event that clean closure cannot be achieved.*

**Response to Comment 32**

Section 13.0, paragraph 4 will be revised to read as follows: "In the unlikely event that HWMU-5 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the VDEQ-approved May 1988 Closure Plan included in the Final Permit (October 4, 2002) will serve as the Contingent Closure Plan for the Unit in accordance with 40 CFR 264.225(c)(1), and the Unit will remain in post-closure care in accordance with the Final Permit."

33. *Table 2 - This list does not contain a complete list of HCOCs (see Comment 12 above) for HWMU 5.*

**Response to Comment 33**

In accordance with **Response to Comment 12**, Table 2 will be revised as follows:

**TABLE 2**

| HAZARDOUS WASTE MANAGEMENT UNIT 5<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Vanadium | 6010B | 5 | 0.066 | mg/kg |
| Zinc | 6010B | 2 | 1.3 | mg/kg |
| Acetone | 8260B | 0.02 | 0.007 | mg/kg |
| 2-Butanone | 8260B | 0.01 | 0.004 | mg/kg |
| Chloroform | 8260B | 0.005 | 0.001 | mg/kg |
| 1,2-Dichloroethane | 8260B | 0.005 | 0.001 | mg/kg |
| Methylene chloride | 8260B | 0.005 | 0.002 | mg/kg |
| Toluene | 8260B | 0.005 | 0.001 | mg/kg |
| Trichloroethene | 8260B | 0.005 | 0.001 | mg/kg |
| Xylenes, total | 8260B | 0.005 | 0.001 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Diethyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 2-Nitroaniline | 8270C | 0.4 | 0.04 | mg/kg |
| 4-Nitroaniline | 8270C | 0.4 | 0.08 | mg/kg |
| Nitrobenzene | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |

Notes:
Actual sample quantitation and detection limits will be adjusted based on dry weight.
Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

**34.** *Table 2 - Section 8.2.2 of the Plan-HWMU 5 states that, initially, RFAAP will attempt to demonstrate clean closure by analytical non-detection and comparison to background (for detected HCOCs). Section 3.9 of Closure Guidance recommends using the analytical methods with the lowest quantitation limits for each HCOC when demonstrating clean closure at these standards. Specifically:*

- *SW-846 Methods 7000 Series typically achieve lower detection and quantitation limits than Method 6010 for inorganics;*
- *SW-846 Method 8021B typically achieves lower detection and quantitation limits that Method 8260 for many chlorinated and aromatic volatiles; and*
- *SW-846 Method 8330 typically achieves lower detection and quantitation limits than Method 8270 for 2,4- and 2,6-dinitrotoluene.*

*Please review the achievable detection and quantitation limits with your laboratory and revise table 2 accordingly.*

**Response to Comment 34**

Radford AAP realizes that the closure guidance document recommends the use of methods that achieve the lowest possible detection limits for clean closure documentation. While in theory the use of those methods may provide marginally lower detections than methods used in standard professional practice of analysis, they are inherently not definitive, by definition, and have significant limitations with respect to reliability, validity and reproducibility. Appendix III to 40 CFR Part 261 – *Chemical Analysis Test Methods* references the use of SW-846 in the selection of test methods. Chapter 2 of SW-846, Section 2.2.5 – *Detection and Monitoring* recommends the use of the *most practical* methods approved for detection. All of the analytical methods proposed by Radford AAP are considered the most practical and robust methods and are specifically approved for detection monitoring.

Additionally, many nationally accredited commercial laboratories do not routinely provide these methods for entire standard parameter lists. For example, Lancaster Laboratories only offers method 8021B for the suite of compounds that includes Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX). Analysis of a full Volatile Organic Compound list for soil using method 8021B would constitute a research level effort, thereby more than tripling the cost. Additionally, many units at Radford AAP have been closed under the federal RCRA Corrective Action Permit for the entire facility using the methods proposed here. Using similar methods provides a consistent approach with respect to decision making at the facility and interpretation of the intent of RCRA. Accordingly, Radford AAP proposes to use the following methods:

- Analysis by SW-846 Method 6010B (ICP-trace) generally provides detection and quantitation limits comparable to SW-846 7000 series methods. In general, ICP-trace analysis is preferred since the method is subject to less interferences and potential false positives. Radford AAP requests the use of Method 6010B.

- Analysis by SW-846 Method 8021B typically achieves lower detection and quantitation limits for select chlorinated and aromatic volatiles. However, use of SW-846 Method 8260B is preferred due to the reliability associated with target analyte identification (less potential for false positives). In many cases, laboratory specific detection limits for

Method 8260B analytes may be comparable to Method 8021B. Radford AAP requests the use of Method 8260B.

- Analysis by SW-846 Method 8330 is subject to interferences and potential false positives. For this project, use of SW-846 Method 8270C is preferred due to the reliability associated with target analyte identification (less potential for false positives). As well, Lancaster Laboratories' specific detection and quantitation limits for Method 8270C analytes 2,4- and 2,6-dinitrotoluene are lower than Method 8330. Radford AAP requests the use of Method 8270C.

The above noted methods are reliable, cost-effective and can generate data to support clean closure demonstration at this facility. Therefore, RFAAP respectfully requests the use of SW-846 Methods 6010B, 8260B and 8270C for this project.

## Hazardous Waste Management Unit 7 (HWMU-7)

1. *Although most of the comments below refer to a particular section, paragraph, or sentence, similar or related concepts are often repeated throughout the Amended Closure Plan (Plan). Therefore, when making revisions as a result of a particular comment, please ensure that corresponding revisions are made in all applicable sections of the Plan.*

**Response to Comment 1**

When a revision is made as the result of a particular comment, corresponding revisions will be made in all applicable sections of the Amended Closure Plan.

2. *Because of the similarity between the Closure Plan Amendments for HWMUs 5 and 7, the comments provided for the Plan-HWMU 5 also apply to the Plan-HWMU 7 with the exception of comments 4, 6, 7, 10, 16, 25, 32, and 33. Although some of the paragraph and sentence numbers referenced for Plan-HWMU 5 do not exactly match those for Plan-HWMU7, the working is close enough such that referring back to the text of Plan-HWMU 5 should resolve any discrepancies.*

**Response to Comment 2**

The sections in the Amended Closure Plan for HWMU-7 that are similar to those in the Amended Closure Plan for HWMU-5 that require revision will be addressed accordingly.

3. *5.3.1 - Section 6.0 indicates that the unit is underlain by a clay liner and native soils. Because of possible mixing, the top six inches of clay or native soils directly beneath the residual material shall be included with the residual material. Similarly, the bottom six inches of clean material placed above the residual material shall be included with the residual material. Therefore, closure procedures addressing the residual material must include all materials from six inches beneath to six inches above the residual material.*

**Response to Comment 3**

Radford AAP concurs with this definition of the residual material. This definition of the residual material will be included in Section 5.3.1 of the Amended Closure Plan.

4. *13.0, paragraph 4 - Since this unit does not meet the 40 CFR 264.221(a) liner requirements, a Contingent Closure Plan for closure with wastes/waste constituents in-place must be provided.*

**Response to Comment 4**

Section 13.0, paragraph 4 will be revised to read as follows: "In the unlikely event that HWMU-5 is unable to attain clean closure for soil, the Unit will remain closed with the residual material in-place. If this occurs, the VDEQ-approved May 1988 Closure Plan included in the Final Permit (October 4, 2002) will serve as the Contingent Closure Plan for the Unit in accordance with 40 CFR 264.225(c)(1), and the Unit will remain in post-closure care in accordance with the Final Permit."

5. *Table 2 - Please verify that all applicable HCOCs for HWMU 7 (see Comment 12 for the Plan-HWMU 5, above) are included in this list.*

**Response to Comment 5**

The HCOC list for HWMU-7 will be developed based on the following:

a. The results of analyses of lagoon water and sediment in 1981 (previously presented in the VDEQ-approved May 1988 Closure Plan);

b. The quarterly groundwater monitoring constituents for the Unit listed in Appendix E of Permit Attachment 3 of the Final Permit (October 4, 2002), as revised by subsequent detections of additional 40 CFR Part 264 Appendix IX constituents; and

c. Any hazardous constituents detected in soil samples collected from within and around the Unit during the 2002 Field Investigation.

In 1981, analyses of lagoon water and sediment collected from HWMU-7 indicated the presence of inorganic constituents at concentrations below levels defined as hazardous by the EP Toxicity test. Specifically, cadmium was detected in the lagoon water sample at a concentration of 0.016 mg/l; no other inorganic constituents were detected in the lagoon water sample. Barium, cadmium, chromium, lead, and silver were detected in the sediment sample at concentrations of 0.33 mg/l, 0.027 mg/l, 0.73 mg/l, 0.58 mg/l, and 0.027 mg/l, respectively. In addition, the sediment sample was analyzed for arsenic, mercury, and selenium; concentrations of these constituents were not detected in the sediment sample.

The quarterly groundwater monitoring list for HWMU-7, as presented in Appendix E of Permit Attachment 3 of the Final Permit (October 4, 2002), was developed in accordance with procedures specified by the VDEQ. As directed by the VDEQ during development of

the January 2002 Permit Modification for the Draft Final Permit, Radford AAP carefully reviewed the groundwater monitoring data for HWMU-7 from First Quarter 1996 through Fourth Quarter 2001 in order to determine whether any constituents in the Unit's then-current groundwater monitoring list (as presented in the September 1999 Post-Closure Care Permit for HWMU-7) were consistently not detected. Any constituents that had never been detected within the groundwater at the Unit were not included in the proposed Compliance Monitoring Constituent List presented in the January 2002 Permit Modification document. The VDEQ directed Radford AAP to follow this procedure in order to avoid the need to remove non-detected constituents later during the duration of the active permit. (Please note: in accordance with the May 19, 1999 agreement between the VDEQ and Radford AAP, pre-1996 groundwater analytical data were not to be used for regulatory decisions. Prior to 1996, the analytical data were generated from several different laboratories. In many cases, the analytical reports did not include detection limits. In several instances, different analytical methods were used during different quarters, resulting in noticeable variations in the reported detection limits and practical quantitation limits. The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result (and as agreed with the VDEQ), any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 3 of the Final Permit, the quarterly groundwater monitoring list for HWMU-7 consists of the following constituents:

| | | |
|---|---|---|
| Antimony, total | Mercury, total | 2,4-Dinitrophenol |
| Arsenic, total | Nickel, total | 2,4-Dinitrotoluene |
| Barium, total | Selenium, total | 2,6-Dinitrotoluene |
| Cadmium, total | Silver, total | 4-Nitrophenol |
| Chromium, total | Thallium, total | Cyanide, total |
| Cobalt, total | Bis (2-ethylhexyl) phthalate | |
| Lead, total | Butyl benzyl phthalate | |

In addition, copper has been detected in the groundwater at HWMU-7 during annual monitoring for the constituents listed in 40 CFR Part 264 Appendix IX. As a result, copper has been added to the quarterly groundwater monitoring list for HWMU-7.

During the 2002 Field Investigation at HWMU-7, samples of the residual material and surrounding soils were analyzed for the USEPA Target Analyte List (TAL) inorganic compounds, and for the USEPA Target Compound List (TCL) organic compounds. The following hazardous constituents (as listed in 40 CFR Part 261 Appendix VIII) were detected in the samples:

| | | | |
|---|---|---|---|
| Arsenic | Chromium | Cyanide | N-Nitrosodiphenylamine |
| Barium | Lead | 4,4-DDD | |
| Beryllium | Nickel | 4,4-DDE | |

As a result, Table 2 will be revised as follows:

## TABLE 2

| HAZARDOUS WASTE MANAGEMENT UNIT 7<br>HAZARDOUS CONSTITUENTS OF CONCERN<br>RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA | | | | |
|---|---|---|---|---|
| Analyte | SW-846 Method | Limit of Quantitation | Limit of Detection | Units |
| Antimony | 6010B | 6 | 0.2 | mg/kg |
| Arsenic | 6010B | 1 | 0.11 | mg/kg |
| Barium | 6010B | 20 | 0.073 | mg/kg |
| Beryllium | 6010B | 0.5 | 0.019 | mg/kg |
| Cadmium | 6010B | 0.5 | 0.022 | mg/kg |
| Chromium | 6010B | 1 | 0.13 | mg/kg |
| Cobalt | 6010B | 5 | 0.077 | mg/kg |
| Copper | 6010B | 2.5 | 0.38 | mg/kg |
| Lead | 6010B | 0.3 | 0.14 | mg/kg |
| Mercury | 7471A | 0.1 | 0.018 | mg/kg |
| Nickel | 6010B | 4 | 0.25 | mg/kg |
| Selenium | 6010B | 0.5 | 0.43 | mg/kg |
| Silver | 6010B | 1 | 0.077 | mg/kg |
| Thallium | 6010B | 1 | 0.42 | mg/kg |
| Bis (2-ethylhexyl) phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| Butyl benzyl phthalate | 8270C | 0.4 | 0.08 | mg/kg |
| 2,4-Dinitrophenol | 8270C | 2.4 | 0.8 | mg/kg |
| 2,4-Dinitrotoluene | 8270C | 0.4 | 0.08 | mg/kg |
| 2,6-Dinitrotoluene | 8270C | 0.4 | 0.04 | mg/kg |
| 4 Nitrophenol | 8270C | 1 | 0.2 | mg/kg |
| N-Nitrosodiphenylamine | 8270C | 0.4 | 0.04 | mg/kg |
| 4,4-DDD | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| 4,4-DDE | 8081A/8082 | 0.002 | 0.0004 | mg/kg |
| Cyanide | 9012A | 0.5 | 0.5 | mg/kg |

Notes:

Actual sample quantitation and detection limits will be adjusted based on dry weight.

Limits provided above may change based on dry weight, matrix variability, instrumentation, and method detection limit studies.

# APPENDIX A

# VDEQ AND USEPA REGION III CORRESPONDENCE

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

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Dennis H. Treacy
Director

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February 21, 2001

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: SWMU 6 Sampling Results Report
Radford Army Ammunition Plant
Radford, Virginia, January 2001

Dear Mr. McKenna:

Thank you for the opportunity to review the above referenced document. There is only one minor comment at this time.

- Page ii, first full paragraph, second sentence – I believe that there is a typographical error and that the intent was to state that aluminum detections were above residential RBCs and below industrial RBCs.

As an additional note, I have forwarded the soil background study to our staff statistician for additional review. Please contact me at 804-698-4143 if you have any questions.

Very truly,

Sharon Wilcox

Sharon Skutle Wilcox
Office Of Remediation Programs

cc: Robert Thompson, Region III, U.S.EPA
Durwood Willis, CO
Norm Auldridge, WCRO
Aziz Farahmand, WCRO
c Jerry Redder, ATK

27 l

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

June 12, 2001

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 6
Draft *Site Screening Document* submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's revised draft Site Screening *Sampling Results Report* for soil sampling at SWMU 6, located at the Radford Army Ammunition Plant (RFAAP). Based upon our review, the revised draft *Sampling Results Report* is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the schedule contained within Section 7, Figure 11 of the *Sampling Results Report* is now considered final and is henceforth incorporated into the Permit, via the Installation Action Plan.

copy in 27l

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA
Sharon Wilcox, VDEQ-CERCLA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

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October 7, 2003

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Work Plan Addendum No. 18, SWMU 41
Soil Screening Report SWMU 8
Soil Screening Report SWMU 36

Dear Mr. McKenna:

Thank you for providing the staff the opportunity to review and comment on the referenced documents. The staff has the following comments:

Work Plan Addendum No. 18, SWMU 41

Figure 1-16. The symbol for soil boring in the legend (closed black circle) does not correspond to the symbol used in the figure (open circle). Also, Table 1-9 indicates that soil samples SB 6, 7 and 8 will be taken outside Area B, while the figure clearly shows the samples to be within the inferred boundary line.

Figure 1-15. Table 1-9 indicates that soil samples SB 3, 4 and 5 will be taken outside Area A, while Figure 1-15 shows the samples within the inferred boundary line. Please explain.

Soil Screening Reports SWMUs 8 and 36

There are no additional comments on the Soil Screening Reports for SWMUs 8 and 36.

Please do not hesitate to contact Jennifer Jones, 804-698-4328, or myself if you have questions concerning these comments.

Sincerely,

Durwood Willis

Durwood Willis
Federal Facilities Program Manager

CC: Norman L. Auldridge, VDEQ - WCRO

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION III**
**1650 Arch Street**
**Philadelphia, Pennsylvania 19103-2029**

May 3, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

C.A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMUs 8 and 36
Draft *Soil Screening Report*
Review of the Army's 2/6/04 response to EPA's 12/11/03 comment letter

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the Radford Army Ammunition Plant (RFAAP). Outlined below, please find EPA's comments based upon that review:

***EPA General Comment 2***

2. As concluded in Section 5.0 of the Report, the soil screening at Solid Waste Management Units (SWMUs) 8 and 36 indicated the presence of "selected targeted constituents." However, it is concluded in this section that "point comparisons of the discrete data to Residential RBCs [risk-based concentrations], Industrial RBCs, and

RFAAP background did not indicate a potential to human health." There are potential flaws in this conclusion, among them:

- The screening process was not completed in accordance with the RFAAP *Site Screening Process* (SSP [October 26, 2001]). At this stage, the chemicals of potential concern (COPCs) should have been identified (COPC identification step in Section 6.1.1.1 of the SSP). Based on the data presented in the report, it appears manganese, lead, mercury, zinc, and antimony are the COPCs.

***RFAAP Response***

In order to achieve the project objectives of assessing for the presence or absence of hazardous constituents in soil and characterizing site materials for RCRA characteristics, particular elements enumerated in the RFAAP SSP were used to perform qualitative risk screening for the SWMUs 8 and 36 Soil Screening. There was no intent within the Report to identify COPCs for purposes of conducting an RFI risk assessment, thus the screening process for SWMUs 8 and 36 did not follow every element within the SSP developed at RFAAP for Site Screening Areas.

**EPA review**

Please note that the SSP, as envisioned, is not conducive towards the elimination of process steps within the SSP. It is not a "pick and choose" methodology. Either the SSP process is followed or it isn't. In the future, please follow the SSP process. The central questions that need to be answered BY THIS REPORT are: (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. The Report generally answers these questions, but not in a direct approach. Additionally, in the future, please differentiate between those soil constituents which exceed the residential RBC and background and those soil constituents which exceed the industrial RBC and background values. This is important in determining whether or not the site will need long-term monitoring, i.e. whether waste is left in-place. The conclusions section of the report should address this in future SSP documents.

***EPA General Comment 2 continued***

- No cumulative risk screening was conducted in accordance with the SSP. This evaluation includes uncertainty analysis of the cumulative risk screening. As the vertical and horizontal extent of contamination of all the chemicals detected in soil is not fully characterized, whether the data generated from this soil screening is sufficient to conduct a cumulative risk assessment will also need to be demonstrated.

***RFAAP Response***

The objectives of the Soil Screening did not include full characterization of the site for completion of a cumulative risk assessment. Characterization of the site, if necessary, will take place at some time after treatment activities cease at these locations.

**EPA review**

It is important to note that defining the full nature and extent of contamination is NOT part of the SSP, but is the function of the RFI. The uncertainty section of the SSP basically acknowledges this. The function of the SSP is to determine whether or not there has been a release at the site. To accomplish this, a proposed number of samples contained in an approved Work Plan is sufficient. Thus, the central questions that need to be answered revolve around (a) which soil constituents failed the residential soil screening criteria and are above background values; (b) which soil constituents failed the industrial soil screening criteria and are above background values; (c) which soil constituents failed the BTAG soil screening criteria and are above background values; and (d) what soil constituents failed the SSL soil screening criteria and are above background values. Defining nature and extent is left to the RFI phase, if needed.

***EPA General Comment 2 continued***

• Some potential exposure pathways were not evaluated. According to the conceptual site models (CSMs) presented in Figures 2-4 and 2-5, the potential impact from soil to groundwater and eventually surface water exists. However, the Report does not evaluate chemical migration of contaminants from soil to groundwater as required by the SSP. The SSP requires use of USEPA's *Soil Screening Guidance* (USEPA, 1996) as a source of information when conducting comparison to soil screening levels (SSLs). The Report did not compare soil concentrations to the USEPA Region 3 SSLs listed on the RBC Table. Based on the data provided in the Report, several metals (e.g., arsenic, chromium, manganese, vanadium, etc.) exceed their respective SSLs at dilution attenuation factor (DAF) 20.

***RFAAP Response***

The report will be revised to include a comparison of soil concentrations to the USEPA Region 3 soil to groundwater SSLs at DAF 20 listed on the most recent RBC Table.

**EPA review**

The Army's response is acceptable. However, in the future, please include the SSL screening in the text of the screening section of the report. Please note that the SSL screening was not discussed in Section 4 of the report.

***EPA comment 2 continued***

• In the Summary (Section 4.4) of the Report, only those metals with concentrations exceeding both the RBCs and the background concentrations are noted. Other metals that exceeded one or more screening criteria are dismissed

because their concentrations did not exceed the site background values. The risk conclusions, thus, consider only those metals noted in Section 4.4. At this stage, it appears inappropriate to eliminate metals from the risk assessment based solely on a comparison to background or ambient levels. In order to provide a more complete characterization of potential risks associated with exposures at the site, metals that exceed risk-based screening concentrations should not be excluded from quantitative consideration in the risk assessment. The contribution to the overall risk due to metals with high background concentrations should be presented in a risk characterization (EPA. 2002. *Role of Background in the CERCLA Cleanup Process.* Office of Solid Waste and Emergency Response. OSWER 9285.6-0P. April 26).

***RFAAP Response***

Per previous agreement with USEPA, investigations performed prior to WPA 016 would be allowed to screen out COPCs based on background comparison. Work at SWMUs 8 and 36 was performed under WPA 015. Also, please refer to the response to specific USEPA comment 18 below regarding the presentation of data for constituents exceeding relevant screening criteria but not their inorganic constituent background point estimates.

**EPA review**

The Army's response is acceptable.

This concludes EPA's review of the Army's February 6, 2004 response to EPA's December 11, 2003 letter concerning the review of the Army's draft *Soil Screening Report* for SWMUs 8 and 36, located at the RFAAP. All Army responses to EPA's December 11, 2003 letter were determined to be acceptable. The above comments reflect a need for refinement in the submittal of SSP documents in the future.

Based upon our review, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is approved. In accordance with Part II.(G)(2) of RFAAP's Corrective Action Permit, the January, 2004 *Soil Screening Report* for SWMUs 8 and 36 is now considered final.

Based upon the above, please submit a draft *SWMU Decision Document* for SWMU 8 and 36, separately, to EPA for review. Please bear in mind the comments outlined above when preparing the text of the draft *SWMU Decision Documents.*

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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www.deq.state.va.us

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Robert G. Burn
Director

(804) 698-40
1-800-592-54

5 August 03

Mr. James McKenna
Radford Army Ammunition Plant
SIORF-SE-EQ
P.O. Box 2
Radford, VA 24141-0099

RE: Draft SWMU 58 RCRA Facility Investigation Report

Dear Mr. McKenna:

This office has reviewed the Draft SWMU 58 RCRA Facility Investigation Report and concurs with the findings. This office has no comments at this time. Please forward a copy of the final document, preferably on CD, when it is available.

If you have any questions, please do not hesitate to call.

Sincerely,

Mark S. Leeper
RPM

cc: Mr. Robert G. Thomson – EPA Region III
Mr. Garwin Eng – VDEQ - CO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 24, 2004

In reply
Refer to 3HS13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commander,
Radford Army Ammunition Plant
Attn: SIORF-SE-EQ (Jim McKenna)
P.O. Box 2
Radford, VA 24141-0099

Carolyn A. Jake
Environmental Manager
Alliant Techsystems, Inc.
Radford Army Ammunition Plant
P.O. Box 1
Radford, VA 24141-0100

Re: Radford Army Ammunition Plant
SWMU 58
Rubble Pile
Document submittal and review

Dear Mr. McKenna and Ms. Jake:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army's (Army's) March 2004 response to EPA's September 18, 2003 review comments pertaining to the draft *RCRA Facility Investigation Report* (RFI) for SWMU 58, located at the Radford Army Ammunition Plant (RFAAP). Based upon that review, EPA finds the Army's March 2004 response to be acceptable.

Given the above, the referenced draft *RCRA Facility Investigation Report* (RFI) is conditionally approved by EPA, provided that EPA's comments are satisfactorily addressed in the final RFI Report. Please forward two copies of the final SWMU 58 RFI Report to EPA for review and approval.

If you have any questions, please call me at 215-814-3357.

Sincerely,

Robert Thomson, PE
Federal Facilities Branch

cc: Russell Fish, EPA
Leslie Romanchik, VDEQ-RCRA

Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100
USA

January 9, 2007

Leslie A. Romanchik, Assistant Division Director
Hazardous Waste Permitting
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Subject: Alternate Source Demonstration
Hazardous Waste Post-Closure Care Permit for HWMU 7
Radford Army Ammunition Plant, Radford, Virginia
EPA ID#: VA1210020730

Dear Ms. Romanchik:

During Third Quarter 2006, Alliant Techsystems Inc. completed the quarterly/Appendix IX groundwater monitoring at Hazardous Waste Management Units (HWMU) 5, 7, 10 and 16 located at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia.

At HWMU 7, chloroform was detected during the Third Quarter 2006 groundwater monitoring event in monitoring wells 7W11B and 7W12B at concentrations of 0.7 µg/l and 1.1 ug/l, respectively. Chloroform was detected in confirmation samples collected on September 26, 2006, from 7W11B at a concentration below the quantitation limit and in 7W12B at a concentration of 1.4 ug/l.

Monitoring well 7W12B is the upgradient background well for the Unit; therefore, chloroform detected in the wells appears to be from a source upgradient of HWMU 7. Drinking water used at Radford AAP has been monitored for Disinfectant By-Products (DBPs), including chloroform, since 2004. Analytical results for chloroform in drinking water are summarized below.

| Drinking Water Sample Date | Chloroform Concentration (ug/l) |
|---|---|
| March 15, 2004 | <5.0 |
| May 18, 2004 | 60.0 |
| August 3, 2004 | 86.0 |
| October 5, 2004 | 120.0 |
| January 18, 2005 | 21.0 |
| April 26, 2005 | 40.2 |
| July 25, 2005 | 64.9 |
| December 13, 2005 | 13.4 |
| February 2, 2006 | 15.9 |
| April 4, 2006 | 25.9 |
| August 15, 2006 | 22.1 |

A number of drinking water supply lines are located upgradient of HWMU 7, and some of these lines have been in service since Radford AAP became operational in 1940. Therefore, it is likely that the chloroform concentrations detected in upgradient well 7W12B are the result of leaks in the facility drinking water supply lines. The supply lines located upgradient of HWMU 7 are highlighted on the attached site plan.

Radford AAP conducted subsurface evaluations to determine the nature and extent of the residual material contained in closed HWMU 7 on November 1, 2002 and on February 17, 2004. Chloroform was not detected in any of the soil samples collected within, under, and around HWMU 7 during those field investigations. Furthermore, historic

information regarding operations at HWMU 7 prior to closure indicates that the wastes processed through the Unit did not contain chloroform. Therefore, the chloroform concentrations detected in groundwater are not derived from the residual material contained in HWMU 7.

In accordance with Section V.J.2.e.(5) of the Post-Closure Care Permit, Radford AAP submits this letter as an alternate source demonstration (ASD) for chloroform at HWMU 7. As the source of chloroform impact in the wells is from the potable water lines upgradient of the Unit, chloroform will not be added to the groundwater monitoring list for HWMU 7.

If you have any questions or concerns, please contact Mr. William Glover at 540/639-7635 (William.Glover@ATK.com).

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

c: Aziz Farahmand, VDEQ-WCRO
Fuxing Zhou, VDEQ-Central

Coordination:

J. McKenna

M. A. Miano

bc: Administrative File
J. McKenna, ACO Staff
William Glover
J. J. Redder
Mike Lawless, Draper Aden Associates
Angie Vance, ATK
Env. File

07-815-10
WDGlover

Concerning the following:

*Alternate Source Demonstration*
*Hazardous Waste Management Unit 7*
*Radford Army Ammunition Plant, Radford, Virginia*
*EPA ID#: VA1210020730*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

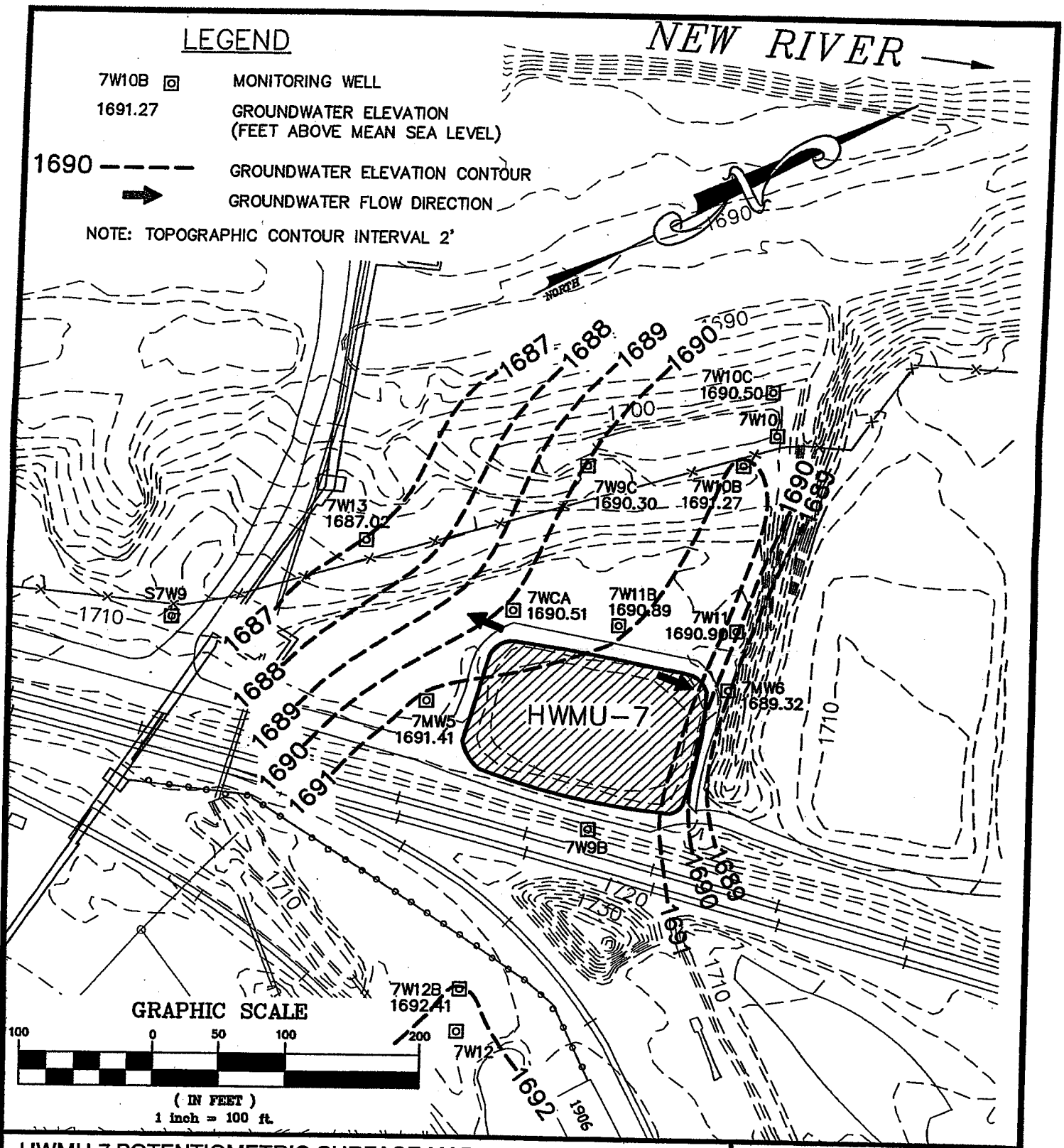
SIGNATURE: CIVILIAN EXECUTIVE

PRINTED NAME: for Ronald F. Fizer
TITLE: LTC, Commanding
Radford AAP

SIGNATURE:

PRINTED NAME: Kent D. Holiday
TITLE: Vice President and General Manager
ATK Energetics Systems Division

07-815-10
WDGlover




HWMU-7 POTENTIOMETRIC SURFACE MAP (4TH QUARTER 2006)

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B03204-04


Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street, Blacksburg, VA 24060, 540-552-0444 Fax: 540-552-0291

Richmond, VA | Charlottesville, VA | Hampton Roads, VA


| | |
|---|---|
| DESIGNED | LCL |
| DRAWN | AVW |
| CHECKED | MDL |
| DATE | 12/06/2006 |

FIGURE 2

P:\B03\200\B03204\B03204-04\CAD\204-04ENV\dwg\B03204-04_HWMU-7.dwg Dec 07, 2006 12:36pm

Draper Aden Associates
Engineering • Surveying • Environmental Services
www.daa.com

# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project Name:** | Radford AAP HWMUs 5 and 7 Closure Plans | **Project Number:** | B03204-102 |
| | | **Date:** | January 18, 2007 |
| **Meeting Location:** | Radford AAP | **Time:** | 11:00 am |
| **Minutes by:** | L. Livingston | | |
| **In Attendance:** | VDEQ – Matt Stepien, Hassan Vakili, Erich Weissbart, Fuxing Zhou, Jim Cutler, Sonal Iyer<br>Army – Jim McKenna<br>ATK – Bill Glover, Jeremy Flint<br>DAA – Mike Lawless, Ross Miller, Lori Livingston | | |
| **cc:** | | | |

Alliant Techsystems Inc. (ATK) called a meeting with the Virginia Department of Environmental Quality (VDEQ) to discuss the Amended Closure Plans submitted for Hazardous Waste Management Units (HWMUs) 5 and 7 at the Radford Army Ammunition Plant (Radford AAP) in November 2006.

- Bill Glover of ATK explained that the amended plans were submitted to pick up where the project was left in 2004. Draft plans were sent to VDEQ to assist in review of the plans and to demonstrate how VDEQ's June 7, 2004 comments would be addressed.
- Matt Stepien has reviewed the plan for HWMU-5 based on Garwin Eng's comments dated June 2004 and ATK's response dated September 2004. Matt Stepien did not review the plan for HWMU-7 as he did not receive it. **Bill Glover forwarded a copy of the Amended Closure Plan for HWMU-7 to Matt Stepien in the afternoon of January 18, 2007.**
- Discussion regarding the HWMU-5 Amended Closure Plan was as follows. VDEQ comments and a summary of discussion are included. Radford AAP action items are included in bold.
  - Comment 2: Individual samples must meet clean closure performance standards. If clean closure performance standards are not met, a composite sample must be compared to Land Disposal Regulations (LDRs). Detailed discussion of LDRs as previously required by VDEQ confuses the process. **The closure plans will be revised to state that LDRs must be met only when clean closure performance standards cannot be achieved and removal is planned. Detailed discussion of LDRs will be removed.**
  - Comments 9 and 14: Additional discussion of decontamination standards for the HWMU-5 and for equipment used during removal should be incorporated to address potential excavation of the Unit. Standards are discussed in Section 3.13 of the VDEQ Closure Guidance. **Discussion of decontamination standards will be added.**
  - Comment 9: Sentence stating "Prior to excavation, soil samples will be collected to determine the volume of material to be excavated" should be removed. **This language will be removed.**
  - Comment 12: The Hazardous Constituents of Concern (HCOC) list should include all constituents that were handled in HWMU-5, that were detected in soil samples collected in 2002, that are included in the quarterly groundwater monitoring list, and that were listed in the 1988 Closure Plan. Constituents that are naturally occurring do not need to be included on the HCOC list. If a constituent is detected underneath the Unit and is not in the residual material, a



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Charlottesville ◆ Hampton Roads ◆ Richmond

demonstration can be prepared to indicate that its presence is due to an alternate source or laboratory contamination. Section 3.7.1 of the VDEQ Closure Guidance may be used as a reference. **The HCOC list will be reviewed, and language discussing the origin of the HCOC list will be included.**

- Comment 17: The report should include a provision to require decontamination of equipment if non-dedicated sampling equipment is used. **Language will be added to indicate that, if equipment is reused, the equipment will be decontaminated in accordance with the Closure Guidance.**
- Comment 26: Sentence stating "Should all soil samples be uncontaminated for inorganic constituents in this manner, the soil will have met the clean closure decontamination standard for inorganic constituents" should be removed. **This language will be removed.**
- Comments 29 and 30: The closure activity schedule needs to be more detailed. Section 3.20 of the VDEQ Closure Guidance can be used as a reference. **The schedule will be revised based on the guidance.** Also, there was discussion about which type of permit modification will be required for the Amended Closure Plans and closure. **VDEQ will review the permit modification requirements, and Matt Stepien will call or e-mail Bill Glover.**
- Groundwater Comments: VDEQ stated that all groundwater data collected from each Unit should be used to demonstrate clean closure rather than only the data from the quarter when soil samples were collected. If a groundwater constituent is detected at a concentration that is greater than the Groundwater Protection Standard (GPS), the concentration should be compared to background. The Units can receive clean closure for groundwater if all constituents are either below GPS or, if any constituents are above GPS, below background. **The groundwater sections will be revised to reflect these changes.** There have been no GPS exceedances at HWMU-7. **A revised Alternate Source Demonstration (ASD) will be prepared for trichloroethene (TCE) at HWMU-5.**

- Based on our discussion regarding comments at HWMU-5, VDEQ suggested that the Closure Plan for HWMU-7 be updated and revised in accordance with our discussion regarding comments for HWMU-5. **The plans will be revised accordingly. Bill Glover brought any significant differences in the plans for both units to Matt Stepien's attention when he forwarded the HWMU-7 plan to the VDEQ.**
- The meeting concluded at approximately noon.

## Lori Livingston

**From:** Glover, William [William.Glover@ATK.COM]
**Sent:** Thursday, January 18, 2007 4:32 PM
**To:** Mike Lawless; Flint, Jeremy; Janet Frazier; Lori Livingston; Ross Miller
**Subject:** FW: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

**Importance:** High

**Attachments:** Glover, William.vcf

Glover, William.vcf
(643 B)

Here is the answer to copies, and additional comment. Please review and give me your opinion on his comment!

William D. Glover, REM, CPG, PhD, CHMM
Compliance Engineer
RFAAP
Route 114, P.O. Box 1
Radford, VA 24143
540-639-7635
540-639-8109

-----Original Message-----
From: Stepien,Matthew [mailto:mmstepien@deq.virginia.gov]
Sent: Thursday, January 18, 2007 3:28 PM
To: Glover, William
Cc: Flint, Jeremy; Vakili,Hassan
Subject: RE: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc
Importance: High

Bill,

3-hard copies would work and 1-electronic.

I was reviewing the comments and I saw one that I overlooked that should not be a problem to address, I hope!

Comment #34, Table 2
The Detection Limit of the SW-846 method that RFAAP chooses to use should be below the Risk and/or Background #. If both methods provide a Detection Limit that is below the risk and/or background # than either one can be used. Example:
Background for constituent x: 5 ug/mg
Detection Limit using 8260B: 3 ug/mg
Detection Limit using 8021B: 1 ug/mg

In this case you can use either one 8260 or 8021.

I will have a definite answer for you early next week on the Class Determination. I am off tomorrow but will be in the office all of next week. Thanks for the conference call and information and let me know if you have any other questions.

Thanks,

Matthew M. Stepien
VDEQ Office of Hazardous Waste Permitting direct dial: (804) 698-4026
fax: (804) 698-4234
mmstepien@deq.virginia.gov

-----Original Message-----
From: Glover, William [mailto:William.Glover@ATK.COM]
Sent: Thursday, January 18, 2007 12:49 PM
To: Stepien,Matthew
Subject: Emailing: RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

<<RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc>> Matt how many copies of the final CP do you require for submittal, hard copy vs CD electronic? Section #13 4th paragraph is comment #4 of 5 which was different from No. 5 comment.s
The message is ready to be sent with the following file or link attachments:

RPT - 06 1030 - REVISED HWMU 7 Closure Plan Amend - LCL.doc

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

## Lori Livingston

**From:** Glover, William [William.Glover@ATK.COM]
**Sent:** Thursday, January 25, 2007 2:51 PM
**To:** Janet Frazier; Lori Livingston; Mike Lawless; Ross Miller
**Subject:** FW: HWMU-7 Review
**Attachments:** Glover, William.vcf

Ok Guys, lets go forward now quickly. Do we need any meeting or conference call now?

William D. Glover, REM, CPG, PhD, CHMM
Compliance Engineer
RFAAP
Route 114, P.O. Box 1
Radford, VA 24143
540-639-7635
540-639-8109

---

**From:** Stepien,Matthew [mailto:mmstepien@deq.virginia.gov]
**Sent:** Thursday, January 25, 2007 2:49 PM
**To:** Glover, William; Flint, Jeremy
**Cc:** Vakili,Hassan
**Subject:** HWMU-7 Review

Good Afternoon Bill,

I completed my review of HWMU-7. All of the comments made on HWMU-5 during our 1-18-07 conference shall be addressed in HWMU-7 as well. In particular:

- References made to the LDRs throughout Closure Plan
- Section 5.0, option 3
- Section 5.3.2, HCOC list, also where did the interpretation of the closure guidance "belt and suspenders" approach disappear too? This paragraph was in the HWMU-5 report but not HWMU-7? That said lets just be sure to have a comprehensive HCOC list in both plans.
- Section 6.7, see my Jan. 18, 2007 email comment

These were the main areas of discussion but as stated above all comments made on HWMU-5 that apply to HWMU-7 shall be addressed.

Please submit the comments discussed during our 1-18-07 conference call and 1-18-07 email, with RFAAP's responses in letter format similar to the ***September 17, 2004 Response to Comments HWMUs 5 and 7 letter*** from RFFAP to the Department.

Any questions feel free to call or email me. Also, when you get a chance please call Erich Weissbart (804-698-4393) to discuss the HWMU-5 ASD for TCE.

Thanks and have a good day,

**Matthew M. Stepien**
VDEQ Office of Hazardous Waste Permitting
direct dial: (804) 698-4026
fax: (804) 698-4234
mmstepien@deq.virginia.gov

received 6-19-07

07-88

c: Holt
Lockard
Flint
McLean
EAV file

# COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
*Street address:* 629 East Main Street, Richmond, Virginia 23219
*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

June 14, 2007

Ms. Paige Holt
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

Re: **Alternate Source Demonstration (ASD) – Technical Review**
**Hazardous Waste Management Unit 7**
**Radford Army Ammunition Plant, Radford, VA**
**EPA ID No. VA1210020730**

Dear Ms. Holt:

The Department of Environmental Quality, Office of Hazardous Waste (the Department) has completed its review of the Alternate Source Demonstration (ASD) for the Radford Army Ammunition Plant (RFAAP) located in Radford, Virginia. The ASD was received via email by the Department on January 31, 2007.

The Department's groundwater staff has reviewed the ASD and concurs that the data and information collected indicates that the chloroform detected in groundwater was derived from other source(s), such as upgradient background, but not derived from the residual material contained in HWMU 7. A summary of this review is provided in Enclosure (1). RFAAP is advised to submit a final Closure Plan Amendment or replacement pages to the Closure Plan Amendment for HWMU 7, incorporating the above-mentioned ASD, as part of the Class 3 Permit Modification due on June 22, 2007.

If you have any questions regarding the information presented in this letter, please contact me at (804) 698-4026 or you may e-mail me at mmstepien@deq.virginia.gov.

Sincerely,

Matthew M. Stepien

Matthew M. Stepien
Environmental Engineer Senior
Office of Hazardous Waste

Enclosure:
Department Groundwater Staff Review

cc: Robert N. Davie, III
Radford Army Ammunition Plant
SMARF-OP, P. O. Box 2
Radford, Virginia 24141-0099

Tom Uybarreta – EPA Region III (3WC21)
Aziz Farahmand – WCRO, DEQ
Leslie A. Romanchik – CO, DEQ
Jutta Schneider – CO, DEQ
Julia King-Collins – CO, DEQ
Central Hazardous Waste File

# ENCLOSURE 1

# DEPARTMENT GROUNDWATER STAFF REVIEW

# ALTERNATE SOURCE DEMOSTRATION of CHLOROFORM
# HAZARDOUS WASTE MANAGEMENT UNIT 7
# RADFORD ARMY AMMUNITION PLANT
# RADFORD, VA

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

Memorandum

**TO:** Matthew Stepien
Environmental Engineer Sr.

**THROUGH:** Jutta Schneider
Hazardous Waste/Groundwater Manager

**FROM:** Fuxing Zhou
Environmental Specialist II

**DATE:** May 31, 2007

**SUBJ:** **ALTERNATE SOURCE DEMONSTRATION OF CHLOROFORM**
HWMU 7
Radford Army Ammunition Plant, Radford, VA EPA ID# VA1210020730

---

I have reviewed the Alternate Source Demonstration (ASD) of chloroform for HWMU 7, dated January 9, 2007.

During the 2006 annual Appendix IX analysis (in 3rd quarter) chloroform (trichloromethane) was detected in the upgradient well 7W12B (1.1 µg/l) and a point of compliance (POC) well 7W11B (an estimated value of 0.7 µg/l). Resampling and confirmation results of chloroform were 1.4 µg/l in 7W12B and non-detected in 7W11B. The Permittee submitted an ASD of chloroform at HWMU-7. In order to justify the ASD from the Permittee I have also reviewed and verified the data and information available historically. The following are my comments.

1. The historical operation at Unit 7 did not involve any chloroform. Chloroform was not detected in any of the soil samples collected within, under, and around Unit 7 during the 2002 and 2004 field investigations.
2. The historical groundwater data available indicate that chloroform was detected in well 7W12B (Background/upgradient) during the 2000 annual Appendix IX analysis and in wells 7W12B and 7W11B during the 2006 annual Appendix IX analysis. No chloroform was detected in any other wells at any other monitoring events in Unit 7.
3. During the 2000 annual Appendix IX analysis the chloroform concentration in well 7W12B was 1.7 µg/l; chloroform was not detected in any downgradient

wells. During the 2006 annual Appendix IX analysis the Reporting Limit (RL) and the Detection Limit (DL) for chloroform were 1.0 and 0.3 μg/l, respectively. The concentration in 7W12B was 1.1 μg/l. The concentration in 7W11B was an estimated value (0.7 μg/l) which was between its RL and DL. The data indicate that the background value for chloroform was higher than its value in the POC well 7W11B.

4. Resampling and confirmation results of chloroform were 1.4 μg/l in 7W12B and non-detected in 7W11B during the 2006 annual Appendix IX analysis. In resampling and confirmation of chloroform the RL and the DL were 0.5 and 0.1 μg/l, respectively. That is, there was no chloroform detected at the downgradient wells. The data indicate that the background value for chloroform was higher than its value in the POC well 7W11B during the 2006 annual Appendix IX confirmation analysis, too.
5. The concentration of chloroform in the drinking water in the facility is very high (about 20 μg/l last year). 7W12B is located very close to some of drinking water pipelines.
6. MCL (EPA Maximum Concentration Level), ACL (VA DEQ Alternate Concentration Level), and RBC (EPA Region III Risk-Based Concentration) for chloroform are 80, 0.13, and 0.15 μg/l, respectively. During the 2000 annual Appendix IX analysis a concentration of 1.7 μg/l in the background well 7W12B was high than the ACL and RBC values for chloroform, but lower than its MCL. In the same way, during the 2006 annual Appendix IX analysis a concentration of 1.1 μg/l in the background well 7W12B, a concentration of 0.7 μg/l (estimated) in the POC well 7W11B, and a concentration of 1.4 μg/l in the background well 7W12B in resampling and confirmation analysis were higher than the ACL and RBC values for chloroform, but lower than its MCL.

7. No other related-chloro organic constituents [such as PCE, TCE, DCE (-ethene); PCA, TCA, DCA (ethane); and other dichloromethane/chloromethane] were detected in any well during any monitoring event.

Therefore, the data and information collected and available indicate that the chloroform detected in groundwater was derived from other source(s), such as upgradient background, but not derived from the residual material contained in HWMU 7. The ASD is acceptable.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

Memorandum

**TO:** Matthew Stepien
Environmental Engineer Sr.

**THROUGH:** Jutta Schneider
Hazardous Waste/Groundwater Manager

**FROM:** Fuxing Zhou
Environmental Specialist II

**DATE:** September 14, 2007

**SUBJ:** Closure Plan Amendment for HWMU 7
Radford Army Ammunition Plant, Radford; EPA ID# VA1210020730

---

I have completed the review of the groundwater portions of the "Closure Plan Amendment for HWMU 7", dated June 2007.

The "Closure Plan Amendment" presents closure plans for both soil and groundwater, including general background, closure procedures and standards, sampling and analysis plan, and closure report requirements. The groundwater portions of the plan, including the references to the ASD for chloroform approved by the Department on June 14, 2007, are appropriate and should be approved.

As Radford AAP indicates in the cover letter of the August 9, 2007, Class 3 Permit Modification, the Department never forwarded any comments regarding the groundwater monitoring portions of the Amended Closure Plans to Radford AAP, even though the Department had indicated that the groundwater comments would be sent to Radford AAP under separate cover. There are a few issues pertaining to groundwater that Radford AAP should address in the closure report. These are outlined below.

**REPORTING REQUIREMENTS -- UPDATING GPSs and BACKGROUND VALUES** (Section 5.4.3)

A summary table for the groundwater monitoring data (concentrations) to date should be included in the closure report. Using the groundwater monitoring data collected to date, the Permittee should statistically recalculate the **background concentration values** and,

where applicable, update their **GPSs** for the constituents in the Compliance Monitoring List (Appendices E, F and G in Permit Attachment 3). An updated background concentration table should be submitted to replace Appendix E in Permit Attachment 3 with the closure report. In its review of the closure report, the Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

**Copper** was added to the constituent list following Third Quarter 2003 and **zinc** was added to the constituent list following Second Quarter 2004. These two metals have no current background values. Using the groundwater monitoring data collected to date, the Permittee should statistically establish the background concentration values for copper and zinc. These values will be added to the background concentrations and GPS table (Appendices F and G in Permit Attachment 3). The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

To facilitate this process, an updated GPS table is attached. Please note that MCLs and ACLs have been updated since the Permit issuance: the current MCL for Arsenic is 10 µg/l and Cobalt and 4-Nitrophenol currently have no ACLs, resulting in the GPSs for Cobalt and 4-Nitrophenol based on background and PQL concentration, respectively. The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the groundwater sample analytical results collected to date to the updated Groundwater Protection Standards (GPSs) for the unit. HWMU-7 can receive clean closure for groundwater if all constituents are below their corresponding GPSs and clean closure for soils has been approved.

**PERMIT DATE** (Sections 2.2; 7.0 and 8.3)

The closure report should reflect the following: the original permit for unit 7 was issued on October 30, 1999,with an effective date of November 30, 1999. One consolidated Permit for HWMUs 5, 7, 10 and 16 was issued on October 4, 2002, and modified on June 14, 2007 (Class 1 modification to change monitoring frequency). The compliance period begins when the owner initiates a compliance monitoring program, which is the effective date of the original Permit. The current compliance period, therefore, continues until November 30, 2017, not October 30, 2017, if Radford AAP is not engaged in a corrective action program.

**CONTINUING GW MONITORING** (Sections 2.2, 5.3, 8.3 and 10.0)

The closure report should reflect the following: currently the groundwater at HWMU-7 is sampled and analyzed semiannually, not quarterly, in accordance with the requirements of the consolidated Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7, 10, and 16 modified June 14, 2007.

## APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | EPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Antimony, total | 6010B, 6020 | 3 | 30 | 6 | | 30 |
| Arsenic, total | 6010B, 6020 | 10 | 2 | 10/~~50~~ | | 10/~~50~~ |
| Barium, total | 6010B, 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6010B, 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6010B, 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6010B, 6020 | 7 | 17 | | ~~313~~ | 17/~~313~~ |
| Copper, total | 6010 | 80 | ?? | 1300 | | ?? |
| Lead, total | 6010B, 6020 | 1 | 12.13 | 15* | | 15* |
| Mercury, total | 7470A, 7471A | 1 | 0.4 | 2 | | 2 |
| Nickel, total | 6010B, 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 7740 | 10 | 58 | 50 | | 50 |
| Silver, total | 6010B, 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6010B, 6020 | 1 | 8 | 2 | | 2 |
| Zinc, total | 6010 | 20 | ?? | | 4695 | ?? |
| Bis (2-ethylhexyl) phthalate | 8270C | 10 | 9 | 6 | | 6 |
| Butyl benzyl phthalate | 8270C | 10 | 5 | | 3,130 | 3,130 |
| 2,4-Dinitrophenol | 8270C | 50 | 11 | | 31.3 | 31.3 |
| 2,4-Dinitrotoluene | 8270C | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270C | 10 | 0.1 | | 15.65 | 15.65 |
| 4-Nitrophenol | 8270C | 50 | 9 | | ~~125.2~~ | 50/~~125.2~~ |
| Cyanide | 9010B, 9012A | 40 | 5 | 200 | | 200 |

Notes:

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 10th, 2007). Current MCL for Arsenic is 10 µg/l.

**Background:** Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998), except copper and zinc. Please calculate the background values for copper and zinc using analytical data for upgradient well 7W12B to-date.

**DEQ ACL:** VA DEQ Alternate Concentration Limit, April 2007. Cobalt and 4-Nitrophenol currently have no ACLs.

**GPS:** Pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7) the GPSs for constituents monitored for HWMU-7 is based on background concentration from the upgradient well 7W12B and USEPA Maximum Contaminant Level (MCL) for drinking water or VDEQ-derived Alternate Concentration Level (ACL), if no MCL promulgated, whichever is higher.

received
11-5-07

07-150

# COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
*Street address:* 629 East Main Street, Richmond, Virginia 23219
*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218
Fax (804) 698-4500 TDD (804) 698-4021
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David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Suspense Date: 12/18/07

October 31, 2007

Ms. Paige Holt
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

Re: **Hazardous Waste Class 3 Permit Modification Request – Review Response**
**Post-Closure Care Permit – Hazardous Waste Management Units (HWMUs) 5, 7, 10, & 16; Open Burning Ground (OBG) Permit – HWMU 13**
**Radford Army Ammunition Plant, Radford, VA**
**EPA ID No. VA1210020730**

Dear Ms. Holt:

The Virginia Department of Environmental Quality, Office of Hazardous Waste (the Department) received the Class 3 permit modification request for the *Post-Closure Care Permit – Hazardous Waste Management Units (HWMUs) 5, 7, 10, & 16; and Open Burning Ground (OBG) Permit – HWMU 13,* associated with Radford Army Ammunition Plant (RFAAP) located in Radford, Virginia. RFAAP's Class 3 permit modification request was received by the Department on August 13, 2007. The Department has completed a review of the *Permit Modification Summary* and corresponding attachments included with the Class 3 permit modification request and has provided the following comments:

Item 1: The Department has reviewed the Closure Plan Amendment (CPA) for HWMU-7, revised June 2007, and concurs that the information presented in the CPA is technically adequate. Final approval of the CPA is contingent upon the Director's decision to grant or deny the Class 3 permit modification request after conclusion of the 45-day public comment period. Should the Director approve the Class 3 permit modification; at that time RFAAP will be advised to prepare and submit a Closure Report for HWMU-7. The Department's groundwater staff has provided comments included in Enclosure 1 to assist in the Closure Report preparation.

Item 2: The Department's groundwater staff has reviewed the Alternate Source Demonstration (ASD) for HWMU-5 and has provided a summary of that review in Enclosure 2. The Department has determined that the ASD does not provide sufficient information to demonstrate that the trichloroethene (TCE) present in the groundwater near HWMU-5 is from an alternate source. Therefore, upon receipt of this letter, RFAAP is advised to submit to the Director a permit modification to establish a corrective action program meeting **40 CFR Part 264.100** requirements within 180 days for HWMU-5.

Item 3: In the Permit Modification Summary, Item 3, RFAAP states, "RFAAP is requesting that DEQ review the data that RFAAP will submit to DEQ and incorporate the recommended reductions in monitoring constituents in the revised permit." RFAAP is advised to submit the referenced data to the Department for review.

Item 4: The Department's groundwater staff has reviewed the Constituent Background Values for the Compliance Groundwater Monitoring Program and Module V – Groundwater Compliance Monitoring Plan. Comments and revisions to Module V, Groundwater Compliance Monitoring, are provided in Enclosure 3.

Item 5: The Department's groundwater staff has reviewed the Source Area Evaluation Sampling and Analysis Plan (SAP) in support of the Open Burning Ground Corrective Action Plan and has provided a summary of that review in Enclosure 4. The Department has provided the following comments in addition to the summary in Enclosure 4.

Section 2.3, Soil Sample Selection Criteria, page 5: The following soil sample selection criteria should be utilized for both VOC and perchlorate analysis. At each boring location a 6" soil sample shall be collected at the interface of the fill material soils and underlying native soil (base of former burn pit), as well as a 6" sample of the native soil just above the water table. If there are no obvious differences between the burn pits fill material and the native soil, and the base of the former burn pit cannot be determined, then the first 6" soil sample will be collected at the first confining layer of soils or clay. If contamination is evident from a single boring, based on PID readings as well as visual and olfactory observations, then additional soil samples will be taken every 6' in the soil boring. If no obvious signs of contamination are observed in a boring, then only the two above-mentioned soil samples shall be taken.

Section 3.6, Disposition of Investigation Derived Waste, page 10: Disposition of Investigation Derived Waste should be in accordance with the Department's Guidance on the Handling of Investigation Derived Waste (IDW). Please include a reference to this guidance in Section 3.6. For your convenience the above-referenced guidance has been included in Enclosure 5.

Item 6: RFAAP has sufficiently established that no constituents were detected at concentrations above the Soil Monitoring Program (SMP) Action Limits (ALs). Based on this information, the Department concurs with RFAAP to decrease the soil sampling frequency from semiannually to annually.

The Department does not concur with RFAAP to cease random sampling at the northern and southern OBG boundaries (NB-1, NB-2, SB-1, and SB-2), at the berm located on the southeast side of the site (Berm-1), and in the center of the sediment pond (Pond-1). Although no ALs were exceeded, some constituents were detected well above their reporting limit (RL) at these locations. In particular, lead exhibited concentrations to warrant continual monitoring in these locations. RFAAP is advised to continue sampling these locations annually.

RFAAP requested eight Constituents of Potential Concern (COPC) to be removed from the monitoring events that were not detected above ALs in any of the 2005 through 2007 soil monitoring events. These eight constituents include antimony, benzoic acid, dibenzofuran, di-n-octyl phthalate, nickel, nitroglycerin, pyrene, and zinc. The Department concurs with removing seven of the eight constituents from the sampling events with the one exception being nitroglycerin. Although nitroglycerin did not exceed its AL, the concentrations exhibited warrant its inclusion on the COPC list.

Should the Director approve the Class 3 permit modification; at that time RFAAP will be advised to implement the above-mentioned changes and to submit a revised SMP to be incorporated into the Open Burning Grounds Permit.

Item 7: At their earliest convenience, the facility is advised to contact the Department in order to schedule a meeting between John Lowe of CH2MHill (representing RFAAP) and Sanjay Thirunagari, the Department's Office of Waste Technical Support Manager.

Please review and address each comment within forty-five (45) days of your receipt of this letter. If you have any questions regarding the information presented in this letter, please contact me at (804) 698-4026 or you may e-mail me at mmstepien@deq.virginia.gov.

Sincerely,

Matthew M. Stepien

Matthew M. Stepien
Environmental Engineer Senior
Office of Hazardous Waste

Attachments:

Enclosure 1 – Comments on HWMU-7 Closure Report Preparation
Enclosure 2 – Summary of Alternate Source Demonstration Review for HWMU-5
Enclosure 3 – Comments and Revisions to Module V, Groundwater Compliance Monitoring
Enclosure 4 – Comments on Alternate Source Demonstration Review for the OBG
Enclosure 5 – Guidance on the Handling of Investigation Derived Waste (IDW)

cc: Robert N. Davie, III
Radford Army Ammunition Plant
SMARF-OP, P. O. Box 2
Radford, Virginia 24141-0099

Tom Uybarreta – EPA Region III (3WC21)
Aziz Farahmand – DEQ, WCRO
Leslie A. Romanchik – DEQ, CO (w/o attachments)
Jutta Schneider – DEQ, CO
Fuxing Zhou – DEQ, CO
Sanjay Thirunagari – DEQ, CO (w/o attachments)
Sonal Iyer – DEQ, CO (w/o attachments)
Julia King-Collins – DEQ, CO (w/o attachments)
Central Hazardous Waste File

# ENCLOSURE 1

## Comments on HWMU-7 Closure Report Preparation

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE DIVISION
OFFICE OF HAZARDOUS WASTE

Memorandum

**TO:** Matthew Stepien
Environmental Engineer Sr.

**THROUGH:** Jutta Schneider
Hazardous Waste/Groundwater Manager

**FROM:** Fuxing Zhou
Environmental Specialist II

**DATE:** September 14, 2007

**SUBJ:** Closure Plan Amendment for HWMU 7
Radford Army Ammunition Plant, Radford; EPA ID# VA1210020730

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I have completed the review of the groundwater portions of the "Closure Plan Amendment for HWMU 7", dated June 2007.

The "Closure Plan Amendment" presents closure plans for both soil and groundwater, including general background, closure procedures and standards, sampling and analysis plan, and closure report requirements. The groundwater portions of the plan, including the references to the ASD for chloroform approved by the Department on June 14, 2007, are appropriate and should be approved.

As Radford AAP indicates in the cover letter of the August 9, 2007, Class 3 Permit Modification, the Department never forwarded any comments regarding the groundwater monitoring portions of the Amended Closure Plans to Radford AAP, even though the Department had indicated that the groundwater comments would be sent to Radford AAP under separate cover. There are a few issues pertaining to groundwater that Radford AAP should address in the closure report. These are outlined below.

**REPORTING REQUIREMENTS -- UPDATING GPSs and BACKGROUND VALUES** (Section 5.4.3)

A summary table for the groundwater monitoring data (concentrations) to date should be included in the closure report. Using the groundwater monitoring data collected to date, the Permittee should statistically recalculate the **background concentration values** and,

where applicable, update their **GPSs** for the constituents in the Compliance Monitoring List (Appendices E, F and G in Permit Attachment 3). An updated background concentration table should be submitted to replace Appendix E in Permit Attachment 3 with the closure report. In its review of the closure report, the Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

**Copper** was added to the constituent list following Third Quarter 2003 and **zinc** was added to the constituent list following Second Quarter 2004. These two metals have no current background values. Using the groundwater monitoring data collected to date, the Permittee should statistically establish the background concentration values for copper and zinc. These values will be added to the background concentrations and GPS table (Appendices F and G in Permit Attachment 3). The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

To facilitate this process, an updated GPS table is attached. Please note that MCLs and ACLs have been updated since the Permit issuance: the current MCL for Arsenic is 10 µg/l and Cobalt and 4-Nitrophenol currently have no ACLs, resulting in the GPSs for Cobalt and 4-Nitrophenol based on background and PQL concentration, respectively. The Department will apply the GPSs for constituents monitored based on current MCLs, ACLs (if no MCL promulgated), and background concentrations pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7).

Clean closure for groundwater at HWMU-7 will be demonstrated by comparing the groundwater sample analytical results collected to date to the updated Groundwater Protection Standards (GPSs) for the unit. HWMU-7 can receive clean closure for groundwater if all constituents are below their corresponding GPSs and clean closure for soils has been approved.

**PERMIT DATE** (Sections 2.2; 7.0 and 8.3)

The closure report should reflect the following: the original permit for unit 7 was issued on October 30, 1999,with an effective date of November 30, 1999. One consolidated Permit for HWMUs 5, 7, 10 and 16 was issued on October 4, 2002, and modified on June 14, 2007 (Class 1 modification to change monitoring frequency). The compliance period begins when the owner initiates a compliance monitoring program, which is the effective date of the original Permit. The current compliance period, therefore, continues until November 30, 2017, not October 30, 2017, if Radford AAP is not engaged in a corrective action program.

**CONTINUING GW MONITORING** (Sections 2.2, 5.3, 8.3 and 10.0)

The closure report should reflect the following: currently the groundwater at HWMU-7 is sampled and analyzed semiannually, not quarterly, in accordance with the requirements of the consolidated Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Management Units 5, 7, 10, and 16 modified June 14, 2007.

## APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | EPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Antimony, total | 6010B, 6020 | 3 | 30 | 6 | | 30 |
| Arsenic, total | 6010B, 6020 | 10 | 2 | 10/~~50~~ | | 10/~~50~~ |
| Barium, total | 6010B, 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6010B, 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6010B, 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6010B, 6020 | 7 | 17 | | ~~313~~ | 17/~~313~~ |
| Copper, total | 6010 | 80 | ?? | 1300 | | ?? |
| Lead, total | 6010B, 6020 | 1 | 12.13 | 15* | | 15* |
| Mercury, total | 7470A, 7471A | 1 | 0.4 | 2 | | 2 |
| Nickel, total | 6010B, 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 7740 | 10 | 58 | 50 | | 50 |
| Silver, total | 6010B, 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6010B, 6020 | 1 | 8 | 2 | | 2 |
| Zinc, total | 6010 | 20 | ?? | | 4695 | ?? |
| Bis (2-ethylhexyl) phthalate | 8270C | 10 | 9 | 6 | | 6 |
| Butyl benzyl phthalate | 8270C | 10 | 5 | | 3,130 | 3,130 |
| 2,4-Dinitrophenol | 8270C | 50 | 11 | | 31.3 | 31.3 |
| 2,4-Dinitrotoluene | 8270C | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270C | 10 | 0.1 | | 15.65 | 15.65 |
| 4-Nitrophenol | 8270C | 50 | 9 | | ~~125.2~~ | 50/~~125.2~~ |
| Cyanide | 9010B, 9012A | 40 | 5 | 200 | | 200 |

Notes:

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 10th , 2007). Current MCL for Arsenic is 10 µg/l.

**Background:** Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998), except copper and zinc. Please calculate the background values for copper and zinc using analytical data for upgradient well 7W12B to-date.

**DEQ ACL:** VA DEQ Alternate Concentration Limit, April 2007. Cobalt and ~~4-~~ Nitrophenol currently have no ACLs.

**GPS:** Pursuant to Permit Condition V.F.2.a ("Groundwater Protection Standard" for Unit 7) the GPSs for constituents monitored for HWMU-7 is based on background concentration from the upgradient well 7W12B and USEPA Maximum Contaminant Level (MCL) for drinking water or VDEQ-derived Alternate Concentration Level (ACL), if no MCL promulgated, whichever is higher.

MEETING SUMMARY
Meeting concerning Radford Army Ammunition Plant (RFAAP)
Class 3 Permit Modification
January 23, 2008 10:00

**Item 1. Clean Closure to Risk-based Standards and elimination of post-closure care for Hazardous Waste Management Unit 7**

DEQ indicated that the closure plan is not approved until the public comment period is complete but that the closure report could be submitted when complete. RFAAP indicated that the closure report will likely be submitted in early March.

**Item 2. Clean Closure to Risk-based Standards and elimination of post-closure care for Hazardous Waste Management Unit 5**

**SUMMARY:** RFAAP December 14 response indicated that a process to further characterize the area via a RCRA Facility Investigation/Corrective Measure Study (RFI/CMS) is under way. Rather than characterize this effort as a corrective action program, RFAAP would prefer to conduct the proposed actions as an investigation to confirm an alternate source. A large amount of discussion occurred attempting to determine how to best fit this into the frame work the regulations allow. The initial conclusion was to amend the existing modification to apply for a corrective action module that would specify the proposed contamination assessment plan (alternate source demonstration), and a proposed corrective action plan if the ASD was not approved by DEQ. It was determined that if the ASD was not approved then change from compliance monitoring with ASD to corrective action could not occur with out a permit application with public comment period. Therefore, it was agreed that the permit modification request for clean closure of HWMU 5 with an ASD for TCE would continue. The permit will include a negotiated compliance schedule with milestone dates. A comment indicating that DEQ may extend these dates upon request of the permittee will be included to allow a small schedule slip without noncompliance or permit modification. If the ASD assessment is completed but does not support an ASD then a permit modification with associated fee to enter corrective action would be required. The modification and corrective action plan would be due in less than 180 days, likely 60 or 90 days since additional time has been allotted to establish an ASD.

**Item 3. Request for Reduced Groundwater Constituent Monitoring for Units 5, 7, 10, and 16, currently in Post Closure Care.**

**SUMMARY:** DEQ indicated that the December 14 submission was reviewed and could be accepted as proposed.

**Item 4. Addition of Module V: Groundwater Compliance Monitoring Program to the Permit for the Treatment of Hazardous Waste by Open Burning**

*1. In reference to the statistical evaluation of background, the memo references arsenic changing from 5 µ/L to 3 µ/L, but it appears that Module V Attachment V.C-2 changed antimony by mistake. Also, since the QL for arsenic by Method 6010B is 5 µ/L, ATK requests the background value be reverted to the QL.*

**SUMMARY: DEQ agreed that setting the background at the QL of 5 µ/L was acceptable.**

*2. Section V.D Groundwater Protection Standards (GPS) references a Permit Attachment V.E that was not included in the enclosure. The memo references a change in the perchlorate GPS from 24.5 µ/L to 26 µ/L based on the EPA Region III Risk-Based Concentration (RBC) as the only change from the original proposal. ATK agrees with this change.*

**SUMMARY: DEQ provided a copy of the GPS Table previously sent by e-mail in December. The table showed the changes to the Arsenic and Barium background values and the perchlorate ACL. DEQ agreed to update the Arsenic background value to 5. It was also noted that the perchlorate value in the ACL column (26) did not match the perchlorate value in the GPS column (24.5); DEQ agreed to update the GPS column to 26.**

*3. The text of Section V.D appears to establish the priority of setting the GPS to include the Region 3 RBC in front of the DEQ ACL. The initially submitted proposed GPS list prioritized the DEQ ACL over the RBC. Therefore, some revisions to the GPS table may be possible.*

**SUMMARY: DEQ indicated that the only reason that Region 3 RBCs were mentioned was because Perchlorate did not have an MCL, or ACL. Rather than set the GPS at the background value, the EPA Region 3 RBC was used as the GPS.**

*4. The text of Section V.D.1 establishes that DEQ may modify the permit based on changes to MCLs or RBCs. However, a Class 3 permit modification is required to update a GPS based on DEQ ACLs to a "less stringent" GPS. ATK requests that this language be clarified to establish that the permitee is not required to submit a permit modification (Class 1 or Class 3) when a DEQ ACL changes, although the DEQ may pursue one. DEQ appears to be updating ACLs two to four times per year. An alternate compliance strategy would be to waive the permit*

*modification fee since the effort required to update the permit GPS is not consistent with the fee schedule for a class 3 permit modification.*

**SUMMARY: RFAAP wanted to be assured that this language did not require the permittee to submit a permit modification when DEQ revises an ACL. DEQ agreed that a permit amendment was not required from the permittee, but indicated that DEQ may review the ACL changes about annually and decide if the changes were significant enough to warrant DEQ pursuing a permit amendment.**

*5. The Module V submitted with the permit modification made it clear that any or all analytical results could be verified by resampling within thirty (30) days of receipt of the laboratory data. The revised Module V clearly allows resampling for the Appendix IX monitoring event newly detected constituents, but is not clear concerning resampling for the standard semiannual monitoring. RFAAP would like to insert language that allows verification sampling for all results. Perhaps V.H.3 would be an appropriate location.*

**SUMMARY: DEQ indicated that regulations clearly allow verification sampling for Appendix IX newly detected compounds but do not specify verification events for other sampling. The procedures in V.I.3 Alternate Source Demonstration allow the permittee to demonstrate a GPS exceedence is "due to error in sampling, analysis, or statistical evaluation or due to natural variation." A resampling event can support such a demonstration.**

*6. Section V.H.4 <u>Determination of Additional Constituents Present</u> requires a comparison to background for newly detected compounds. It may be more appropriate to refer the permitee to section V.H.5 to develop background and section V.H.7 to add the constituent to the monitoring list in Attachment V.B as a class 1 permit modification.*

**SUMMARY: DEQ indicated they would review this comment and make appropriate changes.**

**<u>Item 5. Addition of Module VII: Regulated Corrective Action to the Permit for the Treatment of Hazardous Waste by Open Burning</u>**

**SUMMARY: There was a significant amount of discussion on the pros and cons of the source identification approach versus unit characterization approach. RFAAP indicated that the regulatory driver was the perchlorate detections above the proposed GPS. However, historical carbon tetrachloride (CT) detections above the proposed GPS and trichloroethylene (TCE) detections at about half of the proposed GPS lead to the inclusion of CT and TCE and associated daughter compounds. Since DEQ had increased the scope of the characterization, RFAAP proposed focusing the investigation on the western area near MW3, MW4, and MW5, and delete analysis for TCE. DEQ indicated that there was a lot of space between the existing monitoring wells and that the characterization could be focused on the western area but the eastern end could not be omitted. DEQ was also firm on the fact that all selected sampling locations (soil and groundwater) should be analyzed for perchlorate and CT/daughters. In addition, DEQ declined the suggestion that the borings placed along the southern border be restricted to just a groundwater sample. Therefore, at a minimum all borings will be sampled at the visual interface of fill materials and native soils, and in the six inches just above the water table. If there is no visual interface a sample will be collected at the first confining layer of soils or clay. If contamination is evident (based on PID readings, olfactory observations, visual characterization, etc.) a sample shall be taken at the area of obvious contamination and at least every 6 feet thereafter. If no obvious contamination is evident only the minimum of two (2) samples is required. A groundwater sample will be collected from each boring using a temporary well casing and screen. Each boring will be abandoned soon after collection of the groundwater sample.**

**Once the sampling method and analyses were determined the boring locations were discussed. A color 11" by 17" figure was distributed that showed the original plan's proposed 14 boring locations and the DEQ's proposed ten (10) additional locations and two (2) moved locations. A thorough discussion of each proposed location was conducted and a consensus was reached on the location of 21 borings. A map showing the selected locations is attached. It was agreed not to collect the two background locations DEQ recommended since it was agreed that what is being found is coming from the unit. In addition it was agreed that the two locations DEQ recommended outside the fence would be relocated inside the fence as close to the toe of the berm that the Stormwater drainage structure (subsurface textile wrapped stone) would allow.**

**After the locations were selected the contents of the permit section were discussed. The corrective action plan needs to describe what we plan to do. It should include the source identification process, the evaluation to be conducted to specify removal, and the actions to be conducted for groundwater (likely monitored natural attenuation). DEQ recommended that a contingency plan be included incase source removal of monitored natural attenuation are not successful. RFAAP asked if there were some examples of the Module VII that could be provided to be used as templates. DEQ indicated that they would send some. (received 1-24-08)**

**Item 6. Modification to Module II Attachment IIC: Soil Monitoring Program of the Permit for the Treatment of Hazardous Waste by Open Burning**

RFAAP requested, in December 14 response, a reduction in the parameters to be analyzed at the non-pad soil sampling locations, since elimination was not accepted.

**SUMMARY: DEQ indicated that their review is not complete, but would continue reviewing with an anticipated completion date of about 2-3 weeks.**

**Item 7. Modification to Module III B.3 Risk-based limits of the Permit for the Treatment of Hazardous Waste by Open Burning**

RFAAP and DEQ conducted a teleconference on December 18, 2007. Has DEQ completed the review of the proposal or need additional information?

**SUMMARY: DEQ indicated that the risk assessor needed to finish discussing the issues with a couple more experts.**

**Schedule**

Due to the complexity of Item 2, Item 5, and potentially Item 7, RFAAP would like to broach the possibility of doing two (2) public notices for this single permit action. This would allow the "simple" items to proceed, while to complex items are processed.

**SUMMARY: DEQ indicated that the modification should proceed as one action. Both parties desire that the permit modification be complete prior to September 30. Final documents need to be ready before the end of July, sooner if possible. The critical path time elements are establishing the schedule for the contamination assessment of TCE in the vicinity of HWMU 5 and finalization of the corrective action plan for the open burning ground.**

## Ross Miller

**From:** Flint, Jeremy [Jeremy.Flint@ATK.COM]
**Sent:** Wednesday, March 10, 2010 4:21 PM
**To:** Janet Frazier; Kathy Olsen; Mike Lawless; Ross Miller
**Subject:** FW: RAAP Class 3 Mod
**Attachments:** Attachment 3 Unit 7 Appendix G - GPSs (3-2-10).doc; Attachment 3 Unit 7 Appendix E - GW Comp Mon (3-2-10).doc.pdf

Thank You
Jeremy Flint
Lead Compliance Engineer
Environmental Affairs Department
Alliant Techsystems Inc.
P.O. Box 1
Radford, VA 24143
Phone: 540 - 639 - 7668
Fax: 540 - 639 - 8109
***"Together Everyone Accomplishes More." (TEAM)***

**From:** Stepien, Matthew (DEQ) [mailto:Matthew.Stepien@deq.virginia.gov]
**Sent:** Wednesday, March 10, 2010 1:46 PM
**To:** Flint, Jeremy
**Subject:** RE: RAAP Class 3 Mod

New lists for HWMU-7

<<Attachment 3 Unit 7 Appendix G - GPSs (3-2-10).doc>> <<Attachment 3 Unit 7 Appendix E - GW Comp Mon (3-2-10).doc.pdf>>

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

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**From:** Stepien, Matthew (DEQ)
**Sent:** Wednesday, March 10, 2010 9:33 AM
**To:** 'Flint, Jeremy'
**Subject:** RE: RAAP Class 3 Mod

I modified Module III and will work on the Mod III table today. I need the other stuff below from you all before I can wrap this up.

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

---

**From:** Stepien, Matthew (DEQ)
**Sent:** Tuesday, March 09, 2010 2:59 PM
**To:** 'Flint, Jeremy'
**Cc:** McKenna, Jim
**Subject:** RAAP Class 3 Mod

Hey Jeremy,

I reviewed the CD you provided me and still need the following.

- These are the maps I needed for Module V:

  Figure V.A.1 OBG/HWMU-13 Geological Cross Section Location Map

  Figure V.A.2 OBG/HWMU-13 Geological Cross Section Figures

  Figure V.A.3 OBG/HWMU-13 Groundwater Monitoring (wells) System Map

  Figure V.A.4 OBG/HWMU-13 Groundwater Elevation Contour Maps (4th and 2nd Quarters 2006) I have these

- You haven't provided me with anything for Module III. Am I to assume you want me to make the updates to the Table and text?

- Also I didn't notice the items below addressed in the Closure Plan for HWMU-7. The Closure Plan you provided was never updated appropriately and should also be updated with any new gw and/or soil analytical data collected from over the years.

Let me know if we need to further discuss. Thanks,

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

**From:** Stepien, Matthew (DEQ)
**Sent:** Tuesday, March 02, 2010 4:28 PM
**To:** 'Flint, Jeremy'
**Subject:** RAAP HWMU - 5 Closure Plan

Hey Jeremy,

I did notice some things that need revised in the Closure Plan (not sure if I am looking at most current version June 2007).

**#1) Page 14 – These are being updated with permit mod**

The analytical data collected during 1996 and subsequent sampling events proved to be more reliable. As a result (and as agreed with the VDEQ), any regulatory decisions with respect to historical analytical data would not be made using any data prior to 1996.) Based on this review, and as presented in Appendix E of Permit Attachment 3 of the Final Permit, **the quarterly groundwater monitoring list for HWMU-7** consists of the following constituents:

Antimony, total Mercury, total 2,4-Dinitrophenol

Arsenic, total Nickel, total 2,4-Dinitrotoluene

Barium, total Selenium, total 2,6-Dinitrotoluene

Cadmium, total Silver, total 4-Nitrophenol

Chromium, total Thallium, total Cyanide, total

Cobalt, total Bis (2-ethylhexyl) phthalate

Lead, total Butyl benzyl phthalate

**#2) Page 35 – Schedule for Closure is incorrect. As part of Class 3 mod we are public noticing the Closure Plan. If it is approved then we will review report and approve closure (see January 2008 meeting summary)**

## 10.0 SCHEDULE FOR CLOSURE

HWMU-7 received certification for closure with waste in place in 1990 and is currently in the Compliance Period, which extends until October 30, 2017. The sampling activities outlined in this *Amended Closure Plan* constitute additional closure activities in support of clean closure of HWMU-7. Based on generator knowledge and previous studies, Radford AAP has determined that residual material contained in HWMU-7 is not a hazardous waste as defined in 40 CFR Part 261. Radford AAP completed the additional sampling activities in accordance with the *Amended Closure Plan* and VDEQ correspondence dated June 25, 2003, in February/March 2004.

It is Radford AAP's understanding that the VDEQ wants Radford AAP to submit a Closure Report and Class III Permit Modification at the same time and that the VDEQ will review both documents together. A Closure Report will be submitted within 90 days of approval of the *Amended Closure Plan.* A Class III Permit Modification will be submitted with the Closure Report if clean closure is demonstrated.

In the event that clean closure is not achieved, HWMU-7 will remain in post-closure care in accordance with the Final Permit (October 4, 2002). If Radford AAP chooses to demonstrate clean closure by removal at a future date, additional closure schedule information will be submitted.

Let me know how you are coming along, things are pretty much ready for Hassan's review on our end.

Thanks,

**Matthew M. Stepien**

VDEQ Office of Remediation Programs

direct dial: (804) 698-4026

fax: (804) 698-4234

matthew.stepien@deq.virginia.gov

ATTACHMENT 3, UNIT 7

# APPENDIX E

## GROUNDWATER COMPLIANCE MONITORING (QUARTERLY) CONSTITUENT AND REQUIRED ANALYTICAL METHOD LIST

| Analyte | METHOD | PQL (ug/l) | MDL (ug/l) |
|---|---|---|---|
| Arsenic, total | 6020 | 10 | 2 |
| Barium, total | 6020 | 10 | 1 |
| Cadmium, total | 6020 | 1 | 0.2 |
| Chromium, total | 6020 | 5 | 1 |
| Cobalt, total | 6020 | 5 | 1 |
| Copper | | 5 | 1 |
| Lead, total | 6020 | 1 | 0.2 |
| Nickel, total | 6020 | 10 | 2 |
| Selenium, total | 6020 | 10 | 3 |
| Silver, total | 6020 | 2 | 0.2 |
| Thallium, total | 6020 | 1 | 0.2 |
| Bis(2-ethylhexyl)phthalate | 8270 | 10 | 0.54 |
| 2,4-Dinitrotoluene | 8270 | 10 | 0.5 |
| 2,6-Dinitrotoluene | 8270 | 10 | 0.46 |
| Cyanide, total | 9010 | 20 | 4 |

Notes:

ug/l = micrograms per liter
PQL = Practical Quantitation Limit
MDL = Method Detection Limit

All methods are as described in EPA's SW-846, Test Methods in support of the RCRA program, December 3, 2008. Web site: http://www.epa.gov/epawaste/hazard/testmethods/index.htm. Single samples are required for each parameter and constituent during each sampling event. Alternate SW-846 Methods may be approved by the Department if the request is in writing and submitted at least 30 days prior to the sample collection event. Proposed alternate methods shall achieve the same practical quantitation limit/estimated quantitation limit (or lower) as the specified method.

*ATTACHMENT 3*
*UNIT 7*

# *APPENDIX G*

# *GROUNDWATER PROTECTION STANDARDS (GPS)*

DRAFT

**Attachment 3**

# APPENDIX G

## GROUNDWATER PROTECTION STANDARDS: UNIT 7

Unit: µg/l Unless Otherwise Noted

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | USEPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Arsenic, total | 6020 | 10 | 2 | 50 | | 50 |
| Barium, total | 6020 | 10 | 28.92 | 2,000 | | 2,000 |
| Cadmium, total | 6020 | 1 | 0.4 | 5 | | 5 |
| Chromium, total | 6020 | 5 | 34 | 100 | | 100 |
| Cobalt, total | 6020 | 5 | 17 | | 313 | 313 |
| Copper | 6020 | 5 | | 1300 | | 1300 |
| Lead, total | 6020 | 1 | 12.13 | 15* | | 15* |
| Nickel, total | 6020 | 10 | 63 | | 313 | 313 |
| Selenium, total | 6020 | 10 | 58 | 50 | | 50 |
| Silver, total | 6020 | 2 | 3.1 | | 78.25 | 78.25 |
| Thallium, total | 6020 | 1 | 8 | 2 | | 2 |
| Bis (2-ethylhexyl) phthalate | 8270 | 10 | 9 | 6 | | 6 |
| 2,4-Dinitrotoluene | 8270 | 10 | 0.2 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270 | 10 | 0.1 | | 15.65 | 15.65 |
| Cyanide | 9010 | 20 | 5 | 200 | | 200 |

Notes:

**EPA MCL**: Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (September 11, 2009). * - Action Level. Subject to change without notice as directed by DEQ.

**Background**: Calculated using analytical data for upgradient well 7W12B (GWQAR, December 1998).

**DEQ ACL**: VA DEQ Alternate Concentration Limit, Jan -2009. Subject to change without notice as directed by DEQ.

DRAFT

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

*Street address:* 629 East Main Street, Richmond, Virginia 23219
*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4020
1-800-592-5482


September 27, 2011

Ms. Paige Holt
Environmental Manager
Alliant Ammunition and Powder Company, LLC
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

**Re: Radford Army Ammunition Plant, Radford, VA**
**EPA ID No.VA1210020730, Approval of Class 3 Permit Modifications**
**Hazardous Waste Management Open Burning Ground (OB) Operating Permit and Post Closure-Care Permit (PCCP)**

Dear Ms. Holt:

Enclosed are the Final Class 3 Modifications to the Open Burning Grounds (OBG) treatment and Post Closure-Care Permits, respectively, for hazardous waste management at the Radford Army Ammunition Plant (RAAP), Radford, Virginia, facility. The Final Class 3 Modifications to the Permits have been approved and will become effective on October 27, 2011.

This final permit decision is in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR), 9 VAC 20-60, 9 VAC-20-60-124, which incorporates 40 CFR Part 124 by reference, and in accordance with 40 CFR § 124.13, Obligation to Raise Issues and Provide Information During the Public Comment Period, which specifies:

> *All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Director's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of public comment period (including any public hearing) under §124.10). Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consists of commonwealth or federal statutes and regulations, documents of general applicability or other generally available reference materials. Commenters*

> *shall make all supporting materials not already included in the administrative record available to the commonwealth as directed by the director.*

The public notice of the 60 day comment period for the draft Class 3 modifications to the two permits was published in the Roanoke Times on August 16, 2007, by the facility. The facility held a public meeting to address the modifications on September 17, 2007. The DEQ published a Public Notice of a 45-day comment period addressing the Class 3 Modifications to the Permits in the Roanoke Times on May 29, 2011. The corresponding radio announcement was broadcast on May 29, 2011, on Radio Station 710 am, WFNR in Blacksburg, Virginia. A public meeting to disseminate information and exchange ideas relevant to the Class 3 permit modifications was held on June 28, 2011. A public hearing to accept oral comments regarding the Class 3 modifications was also held on June 28, 2011. The Draft Permits were assembled after finding the Part B Permit Application, submitted August 9, 2007 with subsequent additions dated October 15 and 17, 2010, complete and technically accurate.

The hazardous waste Permit fee of $45,160 was received by the DEQ on March 15, 2007 and was deposited with the DEQ's Department of Finance account on March 16, 2007.

The DEQ received no comments expressing the opinion that the permit should be denied. Therefore, in accordance with 40 CFR § 124.15, the Director of the DEQ has made a final permit decision to issue the permit modification, for the open burning ground treatment permit and the post closure-care permit. The final permit modification documents are enclosed.

This final permit decision is based upon the supporting rationale provided in the enclosed "Comment Response Summary," dated September 27, 2011, for the Radford Army Ammunition Plant, Radford, Virginia facility which is in accordance with 40 CFR § 124.17. The "Comment Response Summary" specifies which provisions of the draft permit modifications, if any, have been changed in the final permit decision, and the reasons for the change. In addition, this document describes and responds to all significant comments on the draft permit modifications or the permit application in support of the Class 3 modifications that were raised during the public comment period.

In addition, please note that this final permit decision shall become effective 30 days after the service of notice of this decision unless a review or an appeal is requested on the permit under the VHWMR, 9 VAC 20-60-124. Appeals under the VHWMR do not incorporate the appeals process under 40 CFR § 124.19. Appeals under the VHWMR will be in accordance with the Administrative Process Act, Chapter 40, § 2.2-4000 et seq., of Title 2.2 of the Code of Virginia. All federal regulatory references to the appeals process or the EPA Environmental Appeals Board, such as in 40 CFR § 124.5, shall be construed to mean the administrative processes and appeals processes as specified by Virginia's Administrative Process Act.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate a legal appeal by filing a notice of appeal with:

David K. Paylor, Director
Department of Environmental Quality
629 East Main Street
PO Box 1105
Richmond VA 23218

In the event that this decision is served to you by mail, the date of service will be calculated as three days after the postmark date. Please refer to Part 2A of the Rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specifications of the Circuit Court to which the appeal is taken, and additional requirements concerning appeals from decisions of administrative agencies.

If you should have any further questions regarding this matter please contact Russell McAvoy, Jr., Environmental Engineer Senior, of my staff by phone at (804) 698-4194 or by e-mail at russell.mcavoy@deq.virginia.gov.

Sincerely,

Leslie A. Romanchik
Hazardous Waste Program Manager
Office of Waste Permitting and Compliance

Attachments:

Enclosure 1 – Final Modified Permit Pages for Radford Army Ammunition Plant, Radford, Virginia Facility
Enclosure 2 – Comment Response Summary

cc: Andrea Barbieri, EPA Region III (3LC50)
Aziz Farahmand, DEQ, BRRO
Beth Lohman, DEQ, BRRO (w/out enclosures)
Jutta Schneider, DEQ, CO (w/out enclosures)
Russell McAvoy, DEQ (w/out enclosures)
Julia King-Collins, DEQ, CO (w/out enclosures)
Cynthia Houchens, DEQ, CO (w/out enclosures)
Hazardous Waste Management File

# COMMONWEALTH *of VIRGINIA*

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482


## HAZARDOUS WASTE MANAGEMENT POST-CLOSURE CARE PERMIT

PERMITTEES: **Radford Army Ammunition Plant**
Alliant Ammunition and Powder Company, L.L.C.
Route 114, P.O. Box 1
Radford Army Ammunition Plant
Radford, VA 24141-0100

US Army Radford Army Ammunition Plant
Route 114, P.O. Box 2
Radford Army Ammunition Plant
Radford, VA 24141

EPA I.D.#: **VA1210020730**

Pursuant to Chapter 14, Section 10.1-1426, Code of Virginia (1950), as amended and regulations promulgated thereunder by the Department of Environmental Quality (hereinafter referred to as the Department), a Post-closure Permit is issued to the United States Army and Alliant Techsystems Inc. (hereinafter referred to as the Permit and the Permittees), for the post-closure care of four closed hazardous waste management units (HWMU) of one hazardous waste disposal facility: Unit 5, Unit 7, Unit 10, and Unit 16. The facility is located in Montgomery and Pulaski Counties at Route 114, PO. Box 1, Radford, Virginia, 24141-0100.

HWMU-5 is a former lined surface impoundment (Neutralization Pond) located at latitude 37°11'12" North and longitude 80°32'15" West. HWMU-7 is a former closed surface impoundment (Unlined Holding and Neutralization Basin) located at 37°11'12" N longitude and 80°33'15" W latitude. HWMU-10 is a Closed Equalization Basin for the Biological Treatment System located at latitude 37°11'31" North and longitude 80°31'51" West. HWMU-16 is a closed hazardous waste landfill located at latitude 37°11'49" North and longitude 80°31'26" West.

These four HWMUs, 5, 7, 10, and 16, at the above facility are currently limited to the following activities: maintenance and monitoring of three closed hazardous waste surface impoundments (5, 7 and 10) and one hazardous waste landfill (16).

The Permittees shall comply with all terms and conditions set forth in this Permit including all attachments. If the Permit and the attachments conflict, the wording of the Permit shall prevail. The Permittees shall also comply with all applicable regulations contained in the Virginia Hazardous Waste Management Regulations (VHWMR) as codified in Title 9 of the Virginia Administrative Code, Agency 20, Chapter 60 (9 VAC 20-60) and in 40 CFR 124, 260, 261, 262, 264, 265, 268, and 270 as adopted by reference in these regulations (for convenience, wherever regulations adopted by reference are cited in this Permit and the attachments, citations will be only those from 40 CFR). The Commonwealth of Virginia has received authorization for these programs under Section 3006(b) of the *Resource Conservation and Recovery Act* (RCRA), 42 U.S.C. § 6926(b), to administer and enforce in lieu of the federal hazardous waste management program under RCRA. Applicable regulations are those which are in effect on the date of final administrative action on this Permit (9 VAC 20-60; *Virginia Hazardous Waste Management Regulations*, Amendment 15A, effective March 13, 2002) as well as any self implementing statutory provisions and related regulations which are automatically applicable to the Permittees' hazardous waste management activities, notwithstanding the conditions of this Permit.

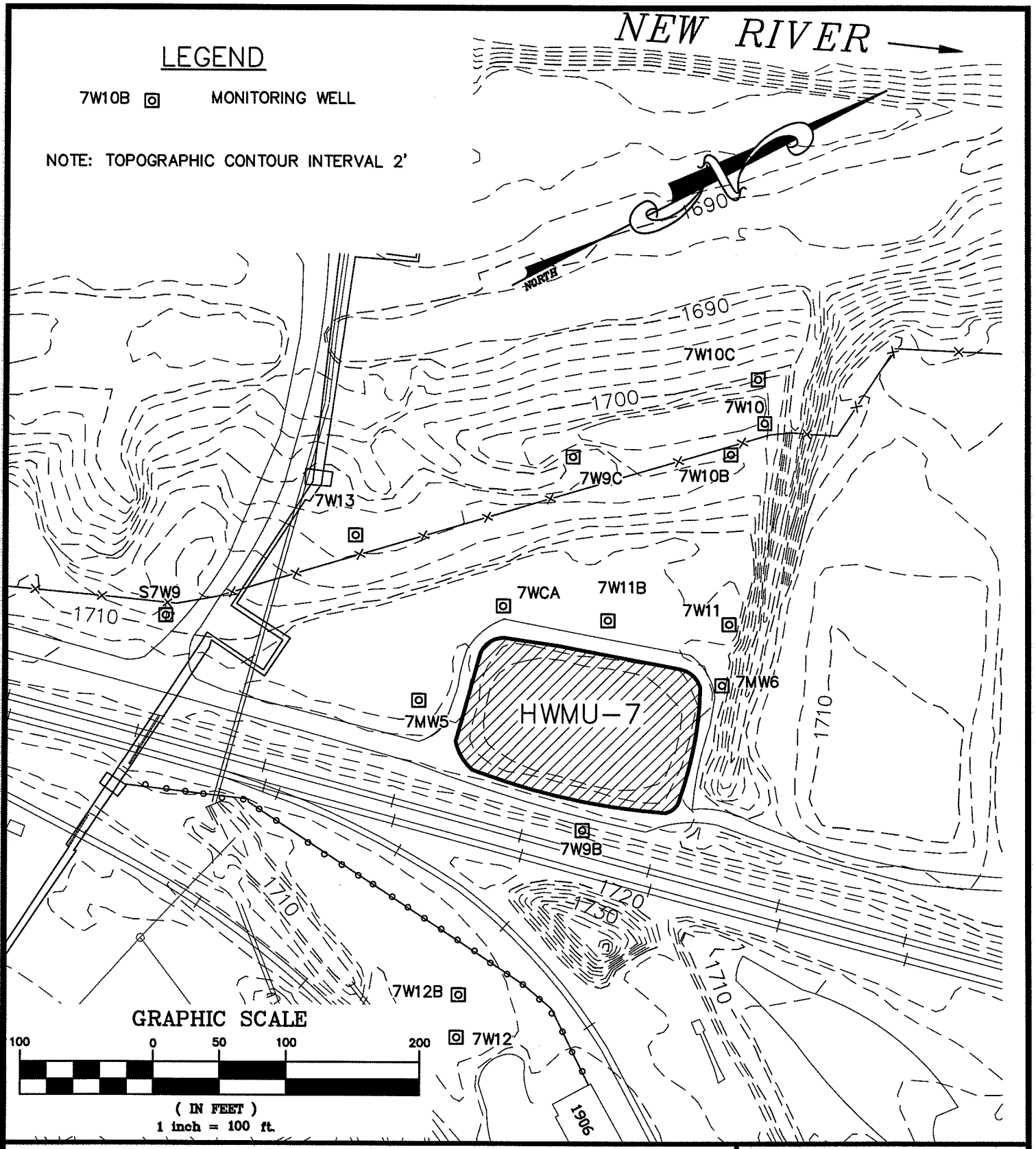
This Permit is based on the administrative record and the assumption that the information submitted by the Permittees and contained in the administrative record is complete and accurate. The Permittees' failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittees' misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this Permit pursuant to 40 CFR 124.5, 270.41, and 270.43 and shall also be grounds for initiation of an enforcement action. The Permittees' shall inform the Department of any deviations from permit conditions or changes from information provided in the application. In particular, the Permittees' shall inform the Department of any proposed changes that might affect the ability of the Permittees to comply with applicable regulations and/or permit conditions, or which alter any of the conditions of the Permit in any way.

This Permit is effective as of **November 4, 2002** and shall remain in effect until **November 4, 2012** unless revoked and reissued in accordance with 40 CFR 124.5 and 270.41, terminated in accordance with 40 CFR 270.43, or continued in accordance with VHWMR 9 VAC 20-60-270.B.5.

September 27, 2011

Date Modified

Leslie A. Romanchik
Hazardous Waste Program Manager
Office of Waste Permitting and Compliance




HWMU-7 SITE PLAN

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B02271-01


**Draper Aden Associates**

Engineering ♦ Surveying ♦ Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | AEK |
| DATE | 01/16/04 |

FIGURE 3

\\Bbg-archive\archive\B02\200\B02271\B02271-01\CAD\271-01\dwg\B03204-01_HWMU-7_SITE.dwg Oct 30, 2006 11:53am

Site
Ground Water Monitoring Well Details
Radford Army Ammunition Plant
Radford, Virginia

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Depth (ft bgl) | Screened Interval (ft bgl) | Screen Length (ft) | Screened Formation |
|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | |
| 7W12B | 1714.81 | 3598101.05 | 10884677.23 | 35.0 | 19.5 - 34.5 | 15 | Alluvium/Carbonate Bedrock |
| 7WCA | 1712.40 | 3598265.91 | 10884430.49 | 40.8 | 31.6 - 38.6 | 7 | Carbonate Bedrock |
| 7W11B | 1712.90 | 3598331.88 | 10884425.88 | 35.0 | 20.0 - 35.0 | 15 | Alluvium/Carbonate Residuum |
| 7MW5 | 1713.20 | 3598175.65 | 10884465.10 | 44.5 | 29.0 - 39.0 | 10 | Carbonate Bedrock |
| 7MW6 | 1712.80 | 3598384.24 | 10884557.91 | 64.5 | 47.5 - 52.5 | 5 | Carbonate Residuum |
| 7W9C | 1703.70 | 3598364.90 | 10884353.60 | 40.0 | 20.0 - 40.0 | 20 | Carbonate Residuum |
| 7W10B | 1704.65 | 3598470.69 | 10884404.73 | 32.0 | 20.0 - 30.0 | 10 | Carbonate Residuum |
| 7W10C | 1707.50 | 3598513.93 | 10884363.94 | 50.0 | 30.0 - 50.0 | 20 | Carbonate Residuum |
| S7W9 | 1710.48 | 3598037.14 | 10884321.43 | 40.0 | 20.0 - 30.0 | 10 | Alluvium/Carbonate Residuum |
| 7W9B | 1711.40 | 3598241.30 | 10884609.00 | 38.0 | 28.0 - 38.0 | 10 | Carbonate Bedrock |
| 7W10 | 1704.98 | 3598503.80 | 10884396.10 | 21.0 | 7.0 - 17.0 | 10 | Alluvium |
| 7W11 | 1712.82 | 3598408.90 | 10884518.80 | 35.0 | 16.0 - 26.0 | 10 | Alluvium/Carbonate Residuum |
| 7W12 | 1715.06 | 3598085.40 | 10884705.60 | 22.0 | 14.5 - 19.5 | 5 | Alluvium |

## Site 7
## Ground Water Monitoring Well Construction Details

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Termination Depth | Top of Well Screen | Total Well Depth | Screen Length | Comments |
|---|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | | |
| 7W12B | 1714.80 | | | 34.9 | 19.9 | 34.9 | 15 | 4,6 |
| 7WCA | 1712.40 | | | 40.8 | 28.6 | 38.6 | 10 | 3,5 |
| 7W11B | 1712.90 | | | 33.9 | 18.9 | 33.9 | 15 | 4,6 |
| 7MW5 | 1713.20 | | | 39.4 | 24.4 | 39.4 | 15 | 4,6 |
| 7MW6 | 1712.80 | | | 58.8 | 43.8 | 58.8 | 15 | 4,6 |
| 7W9C | 1703.70 | | | 40 | 20 | 40 | 20 | 4,6 |
| 7W10B | 1704.65 | | | 30 | 15 | 30 | 15 | 4,6 |
| 7W10C | 1707.50 | | | 50 | 30 | 50 | 20 | 4,6 |

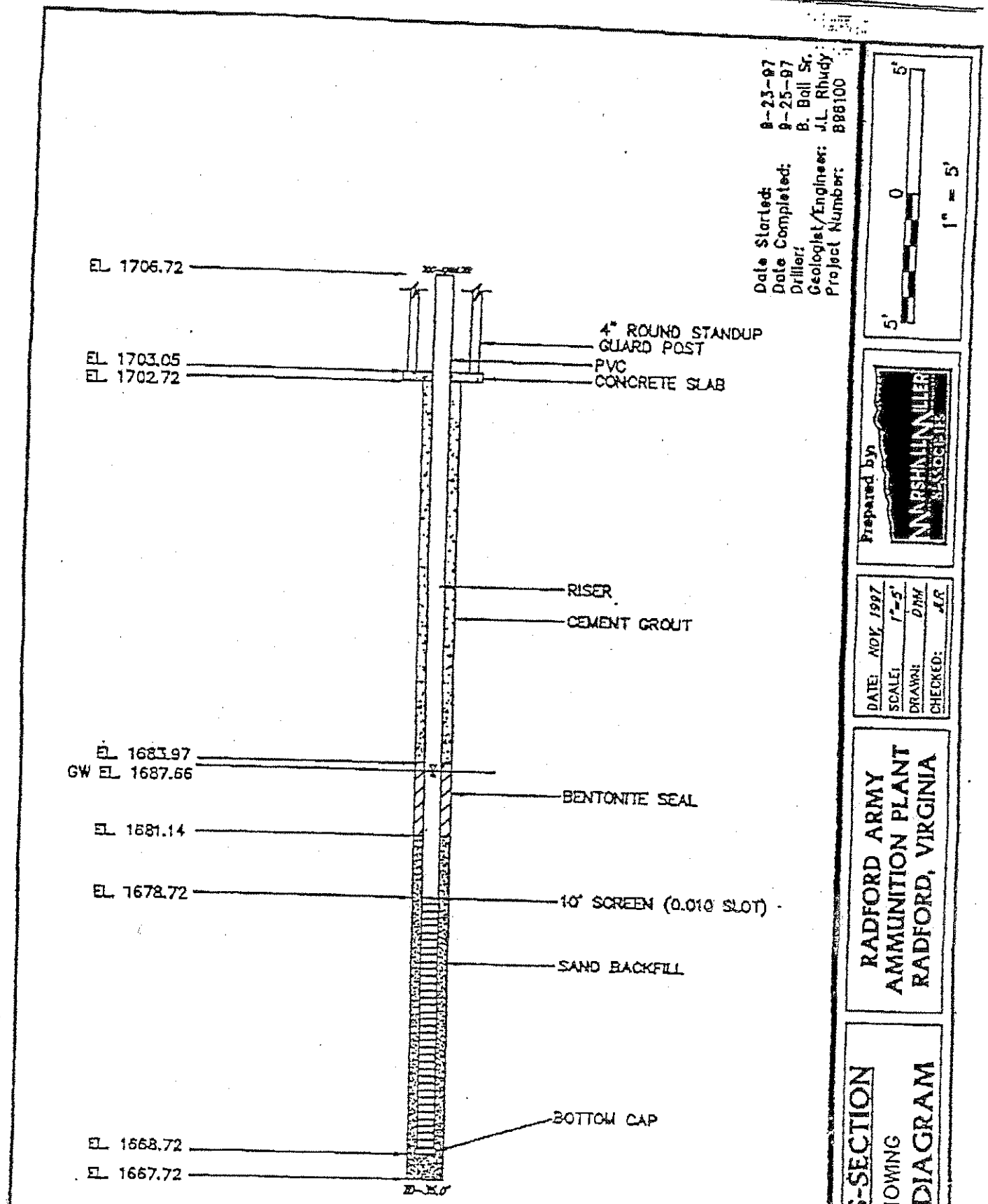
Comments:
1) Well construction details obtained from boring log.
2) Well screen length obtained from boring log.
3) Well screen length obtained from other data on file.
4) Well screen length assumed.
5) Total well depth obtained from boring log.
6) Total well depth obtained from field sampling log.

# Soil Boring Log

**Company** Aliant Techsystems
**Project** Radford Arsenal
**Project No.** B94100
**Facility I.D.**

Date Started 09/22/97 Hole No. 7MW13
Date Completed 09/22/97 Type of Hole Hollow Stem Auger
Logged by J.L. Rhudy Dia. of Hole ±8"
Ground Elev. Top of Casing

| From | To | Thickness | Description |
|---|---|---|---|
| 0.0 | 5.0 | 5.0 | *Augered through topsoil/dark brown, fairly moist and cohesive* |
| 5.0 | 7.0 | 2.0 | *Light tan, silty sand, well sorted, homogeneous through split spoon, some black streaks of mottled mica plates, (Split Spoon Sample, PID = 0.0 ppm), 90% Recovery* |
| 7.0 | 10.0 | 3.0 | *Some hard augering at approximately 8.5-9.0 feet, light tan, silty clay* |
| 10.0 | 12.0 | 2.0 | *Very dry and broken sandstone with some light tan, silty clay, some weathered quartzite, very dry and hard, heterogeneous mixture, (Split Spoon Sample, PID = 0.0 ppm), 75% Recovery* |
| 12.0 | 15.0 | 3.0 | *Auger refusal at 11.0 – 11.5', boring terminated at 11.0', relocated and moved to new location, combined at 15'* |
| 15.0 | 17.0 | 2.0 | *Insufficient to sample, green to light gray shale layer broken, horizontal fractures, less than 5% recovery* |
| 17.0 | 21.0 | 4.0 | *Very weathered, dolomite layer, light green to light gray, very fractured layers with noticeable separation, (Split Spoon Sample, PID = 0.0 ppm), 20% Recovery* |
| 21.0 | 25.0 | 4.0 | *Augered* |
| 25.0 | 25.5 | 0.5 | *Very hard and dry, weathered dolomitic limestone and some noticeable angles of fracture, (Split Spoon Sample, PID = 0.0 ppm), 10% Recovery* |
| 25.5 | 30.0 | 4.5 | *Hard augering* |
| 30.0 | 35.0 | 5.0 | *Augered to set monitoring well* |
| 35.0 | TD | | *Boring terminated* |


EL 1706.72
4" ROUND STANDUP GUARD POST
EL 1703.05
PVC
EL 1702.72
CONCRETE SLAB
RISER
CEMENT GROUT
EL 1683.97
GW EL 1687.66
BENTONITE SEAL
EL 1681.14
EL 1678.72
10' SCREEN (0.010 SLOT)
SAND BACKFILL
BOTTOM CAP
EL 1668.72
EL 1667.72
Date Started: 8-23-97
Date Completed: 9-25-97
Driller: B. Ball Sr.
Geologist/Engineer: J.L. Rhudy
Project Number: BB8100
5'
0
5'
1" = 5'
Prepared by
MARSHALL MILLER & ASSOCIATES
DATE: NOV. 1997
SCALE: 1"=5'
DRAWN: DMM
CHECKED: JLR
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA
CROSS-SECTION
SHOWING
7W-13 DIAGRAM

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-12B

Drilling Log

Well Number W12-B

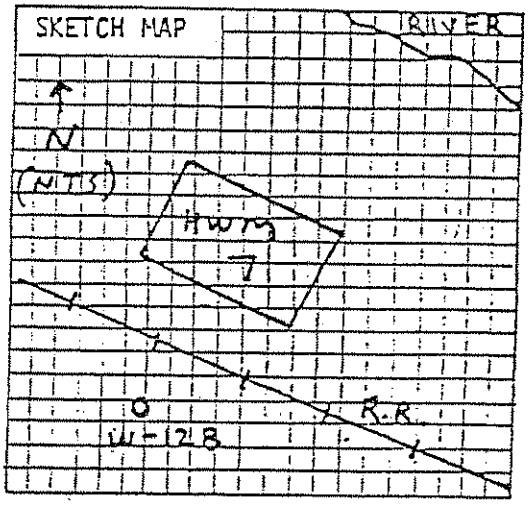
Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location upgradient from HWM-7; near original W-12
Driller/Company Dean/Cunningham
Drilling Method NX - core — Hole Diameter Nom. 4" — Date(s) Drilled 2/7 - 9/83
Sample Type split spoon/core — Sample Interval 5' spoon* — No. Samples Retained 5
Surface Elevation — Casing Top Elevation — Total Well Depth 34.5
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 19.5
Grouting Type sand/cement — Grouted Interval 0 - 18.5 incl
Screening Material and Size 2" ID PVC, 0.010" slots — Screened Interval(s) 19.5 - 34
Packing Material and Size No. 1 sand — Packed Interval 18.5 - 34.5
Depth to Static Water —25.46' ** — Date 2/22/83 — Approx Well Yield 10 gpm
Development Method — Development Time one hour
Logged by: Peter R. Jacobson

Comments

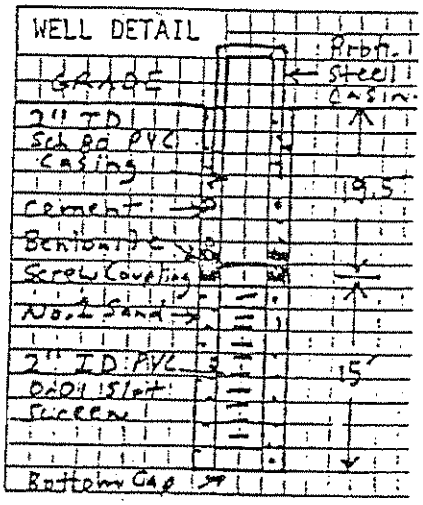
* continuous core sampling

** measured from top of casing

SKETCH MAP




WELL DETAIL




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1-1-6 | dark brown silt, minor clay; organic particles |
| 5 - 6.5 | spoon | 2-3-4 | medium to dark brown silty clay, fine sand |
| 10 - 11.5 | spoon | 3-3-3 | medium brown fine sand and silt, micaceous, some pebbl |
| 15 - 16.5 | spoon | 8-9-11 | brown fine to coarse sand, minor pebble gravel, well sorted |
| 20 - 21.5 | spoon | 3-1-1 | coarse sand and pebble gravel, coarse ss cobbles ("riveriack") |
| 21.5 - 25 | core | | cobbles, sand, gravel; little recovery; very difficult drilling |
| 27 - 35 | core | | top of rock at 27'; rock weathered and broken; dense; grey, massive, micritic dolomite |
| end of hole @ 35' | | | |

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CH
"ONE HUNDRED YEARS OF SERVICE"

Report No. 0-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

Boring No.: 7-WCA | Total Depth: 40.8 ft. | Elevation: -------- | Location: See Location Plan

Type of Boring: Hollow Stem Auger | Started: 5/12/87 | Completed: 5/12/87 | Driller: W. Simmons

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | | Loose brown fine SAND, trace silt and organics (SM) | 2 3 3 | 1.5 / 3.0 | | |
| | | -to- | 3 4 4 | 4.5 / 6.0 | | |
| | | Loose yellow brown to brown fine SAND, trace silt and mica (SM) | 2 3 3 | 8.5 / 10.0 | | |
| | | -to- | | 13.5 | | |
| | | Medium dense to dense brown coarse to fine SAND, some coarse subrounded gravel, trace silt (SW) | 3 6 9 | 15.0 | | |
| | | | 25 20* | 18.5 / 19.9 | | *30/5* |
| | | -ALLUVIUM- | | 23.5 / 23.9 | | *30/5* |
| | | | | | | Subsurface water at 24.0 ft. at 1:30 p.m. May 12, 1987 |
| | 28.9 | | | 28.9 | | |
| | | Auger refusal at 28.9 ft. | | | | |
| | | Hard dark gray dolomite with abundant calcareous infilled fractures, occasional shaley streaks on fractures | | 21.7 | | RQD = 0 |
| | | | | 33.9 | | |
| | | | | 16.7 | | RQD = 0 |
| | | | | 38.9 | | |
| | | | | 70.8 | | RQD = 0 |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1 3/8 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Form No. 500

# BORING LOG

SINCE F&R 1881

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CHEM
"ONE HUNDRED YEARS OF SERVICE"

Report No. O-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

| Boring No.: | Total Depth: | Elevation: | Location: |
|---|---|---|---|
| 7-WCA | 40.8 ft. | -------- | See Location Plan |

| Type of Boring: | Started: | Completed: | Driller: |
|---|---|---|---|
| Hollow Stem Auger | 5/12/87 | 5/12/87 | W. Simmons |

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 40.0 | | | | | |
| | 40.8 | Boring terminated at 40.8 ft. | | 40.8 | | GROUNDWATER DATA |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Project: Radford Army Ammunition Plant

Location: Radford, Virginia

Client: Hercules Inc.

Driller: Simmons

Inspector: Smith

Date Installed: 5/19/87

WELL No. 3xWCA 7-

Screen Description: 0.010" slot, 2.0" I.D. Teflon Screen

Riser Description: 2.0" I.D. Teflon Riser and PVC Riser

Sand Size: D(10)= 0.45-0.55 mm

Bore/ Core Size: 6 inch/ NX

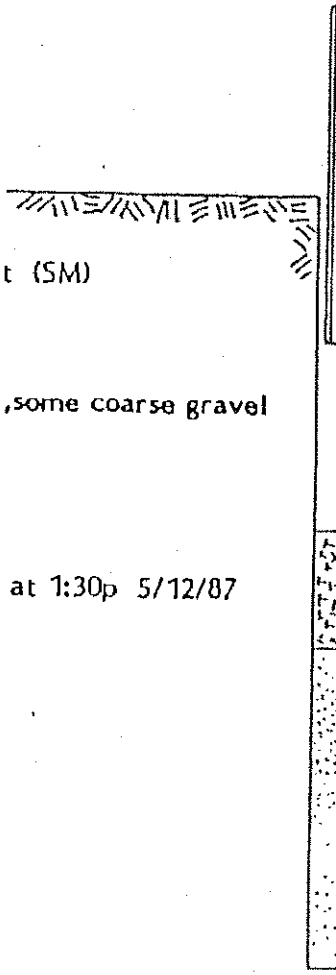
Subsurface Conditions Summary

Brown fine SAND, trace silt (SM)

to

Brown coarse to fine SAND ,some coarse gravel (SW)

Subsurface water at 24.0 ft. at 1:30p 5/12/87



Casing Stickup (ft.)= 3.0 ft.

Elev. =

Riser Stickup (ft.) = 3.0 ft.

Elev. =

Ground Elev.=

Depth to Bentonite (ft.)= 22.5 ft.

Elev. =

Depth to Sand Filter(ft.)= --------

Elev. =

Depth to Well Bottom(ft.)= 38.6 ft.

Elev. =

Depth of Hole (ft.) = 40.8 ft.

Elev. =

Betz-Converse-Murdoch-Inc. BCM

UNIT 7

W-11B

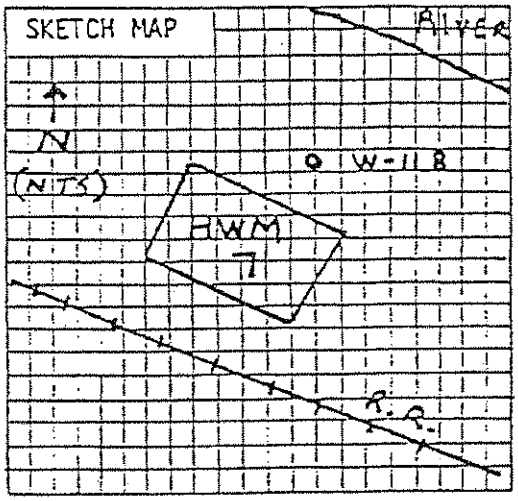
# Drilling Log

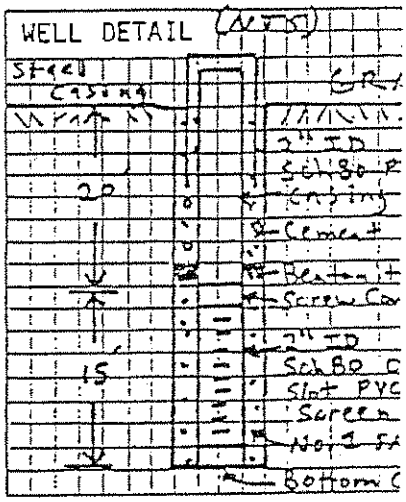
Well Number W11-B

Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location downgradient at Lagoon 7
Driller/Company Dean/Cunningham
Drilling Method NX core — Hole Diameter 4" nominal — Date(s) Drilled 2/10 - 15/83
Sample Type split spoon — Sample Interval 5' — No. Samples Retained 8
Surface Elevation 1787.58' — Casing Top Elevation 1789.55' — Total Well Depth 35
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 20 (+2'
Grouting Type sand/cement — Grouted Interval 0 - 19
Screening Material and Size 2" ID PVC 0.010" slots — Screened Interval(s) 20 - 35
Packing Material and Size No. 1 sand — Packed Interval 19 - 35
Depth to Static Water 24'11"* — Date 2/16/83 — Approx Well Yield very low vi
Development Method air — Development Time 1 hour
Logged by: Peter R. Jacobson

Comments
no core recovery

* measured from top of casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1 - 2 - 4 | dark brown micaceous silt and fine sand, minor clay |
| 5 - 6.5 | spoon | 5 - 8 - 8 | medium to light brown fine sand and silt |
| 10 - 11.5 | spoon | 5 - 6 - 7 | dense brown silt with fine sand |
| 15 - 16.5 | spoon | 5 - 6 - 9 | same as above |
| 17 - 18 | | | cobble gravel layer |
| 20 - 21.5 | spoon | 9-12-20 | silty sand grading to coarse sand and pea gravel; wel |
| | | | sorted |
| 22 - 23.5 | | | gravel |
| 23.5 - 24 | | | sand and silt |
| 24 - 25 | | | gravel |
| 25 - 26.5 | spoon | 33-50/3" | well sorted sand and gravel grading to weathered blue |
| | | | grey clayey dolomite; top of weathered rock at 26' |
| 30 - 31.5 | spoon | 21-37-50/3" | weathered dolomite: blue/green/grey clay sand silt, |
| | | | minor pebbles |
| 35 - 36.5 | spoon | 50/5.5" | sand as above with pea gravel |
| | | | |
| end of hole at 35' | | | |

SCHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO: MW-5

PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA
SHEET NO: 1 OF 1
CLIENT: HERCULES, INCORPORATED
JOB NO: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-10 | 11:10 | 24.0 | - |
| AFTER CASING PULLED | 1-11 | 10:30 | 23.8 | - |
| — HR. READING | MONITORING WELL INSTALLED | | | |

| DRIVE SAMPLER | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

CASING SIZE: 3-1/4"
DATE START: 1-10-89
DATE FINISHED: 1-11-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

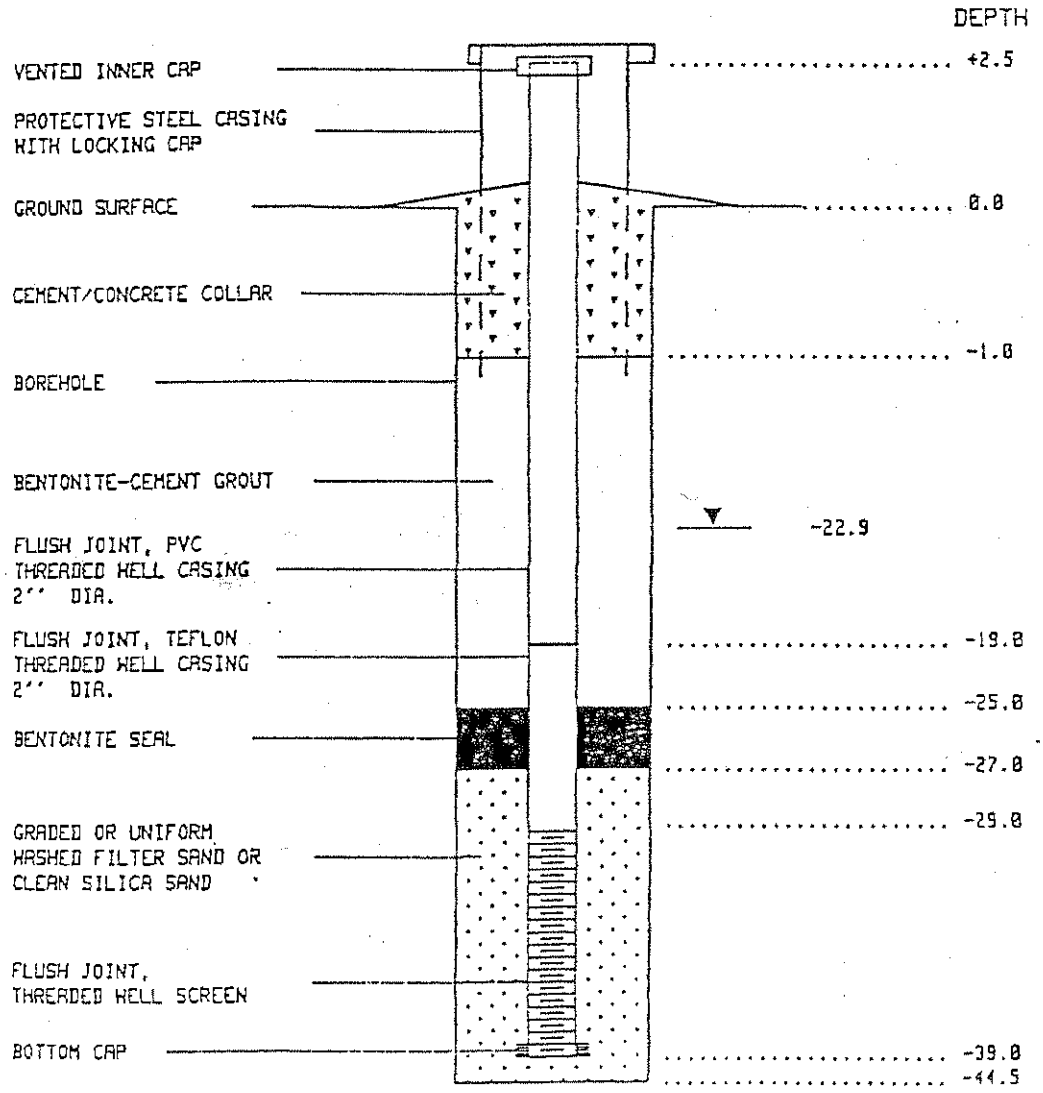
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 2" GRASS ROOT MAT AND 12" TOPSOIL | |
| B | | | 2+2+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS MICA AND ROOT FRAGMENTS, MOIST - BROWN | |
| | | | 6+6+7 | S | do, BROWN | |
| | | | 6+7+24 | S | do, CONTAINS LAYERS OF SANDY SILT | |
| | | | 5+5+5 | S | | ALLUVIAL |
| | 17.5 | | | | | |
| D | | | 51+49/5" | S | DISINTEGRATED ROCK, MOIST - BROWN | LIMESTONE RESIDUUM |
| | | | 100/4" | S | | |
| | 29.5 | | 100/1" | S/NQ | | |
| E | | | REC=97% ROD=75% | NQ | MODERATELY WEATHERED, MODERATELY HARD, GRAY LIMESTONE, MODERATELY TO HIGHLY FRACTURED, THIN BEDDED, CONTAINS FEW CALCITE HEALED FRACTURES HIGHLY WEATHERED TO DISINTEGRATED FROM 33.5 FT TO 34.5 FT | LIMESTONE ROCK ELBROOK FORMATION |
| | 38.4 | | REC=69% ROD=48% | NQ | HIGHLY WEATHERED TO DISINTEGRATED AT 38.9 FT AND 40.5 FT | |
| | 44.5 | | | | CORING TERMINATED AT 44.5 FT | |
| | | | | | WELL LOCATED SOUTHWEST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-5

BORING NUMBER: MW-5
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

JOHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO.: HW-6

PROJECT: MONITORING WELL INSTALLATION, HWH-7, RAAP, RADFORD, VA
SHEET NO.: 1 OF 2
CLIENT: HERCULES, INCORPORATED
JOB NO.: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:
DRIVE SAMPLER
CASING SIZE: 3-1/4"
DATE START: 1-11-89
DATE FINISHED: 1-12-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

WATER LEVEL DATA

| | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-11 | 8:00 | 42.0 | - |
| AFTER CASING PULLED | 1-12 | 12:15 | 49.5 | - |
| __ HR. READING | MONITORING-WELL INSTALLED | | | |

| | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 6" TOPSOIL | |
| | | | 2+4+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS ROOT FRAGMENTS AND MICA, MOIST - BROWN | |
| | | | 5+4+3 | S | | |
| B | | | 4+5+6 | S | | ALLUVIAL |
| | | | | | | COBBLES AT 13 FT |
| | | | 4+3+5 | S | | GRAVEL AT 16 FT |
| | | | 10+21+10 | S | do, WITH GRAVEL | |
| | 23.0 | | | | | |
| | | | 39+61/4" | S | DISINTEGRATED ROCK, MOIST - GRAY AND BROWN | LIMESTONE RESIDUUM |
| | | | 70+30/2" | S | do, GRAY | |
| D | | | 100/5" | S | | |
| | | | 91+19/1" | S | | |
| | | | 100/4" | S | | |

| SCHNABEL ENGINEERING ASSOCIATES<br>CONSULTING ENGINEERS | TEST BORING LOG | BORING NO: MW-6 |
|---|---|---|
| PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA | | SHEET NO: 2 OF 2 |
| CLIENT: HERCULES, INCORPORATED | | JOB NO: V881377 |
| BORING CONTRACTOR: TERROCK CORPORATION | DRILL: CME-55 | ELEVATION: |

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED | DRIVE SAMPLER | | CASING SIZE: 3-1/4" |
|---|---|---|---|---|---|---|---|
| | | | | | TYPE | S.S. | DATE START: 1-11-89 |
| ENCOUNTERED | 1-11 | - | - | - | DIA. | 2" O.D. | DATE FINISHED: 1-12-89 |
| AFTER CASING PULLED | 1-12 | - | - | - | WT. | 140# | DRILLER: R. EDWARDS |
| __ HR. READING | MONITORING WELL INSTALLED | | | | FALL | 30" | INSPECTOR: C. HALL |

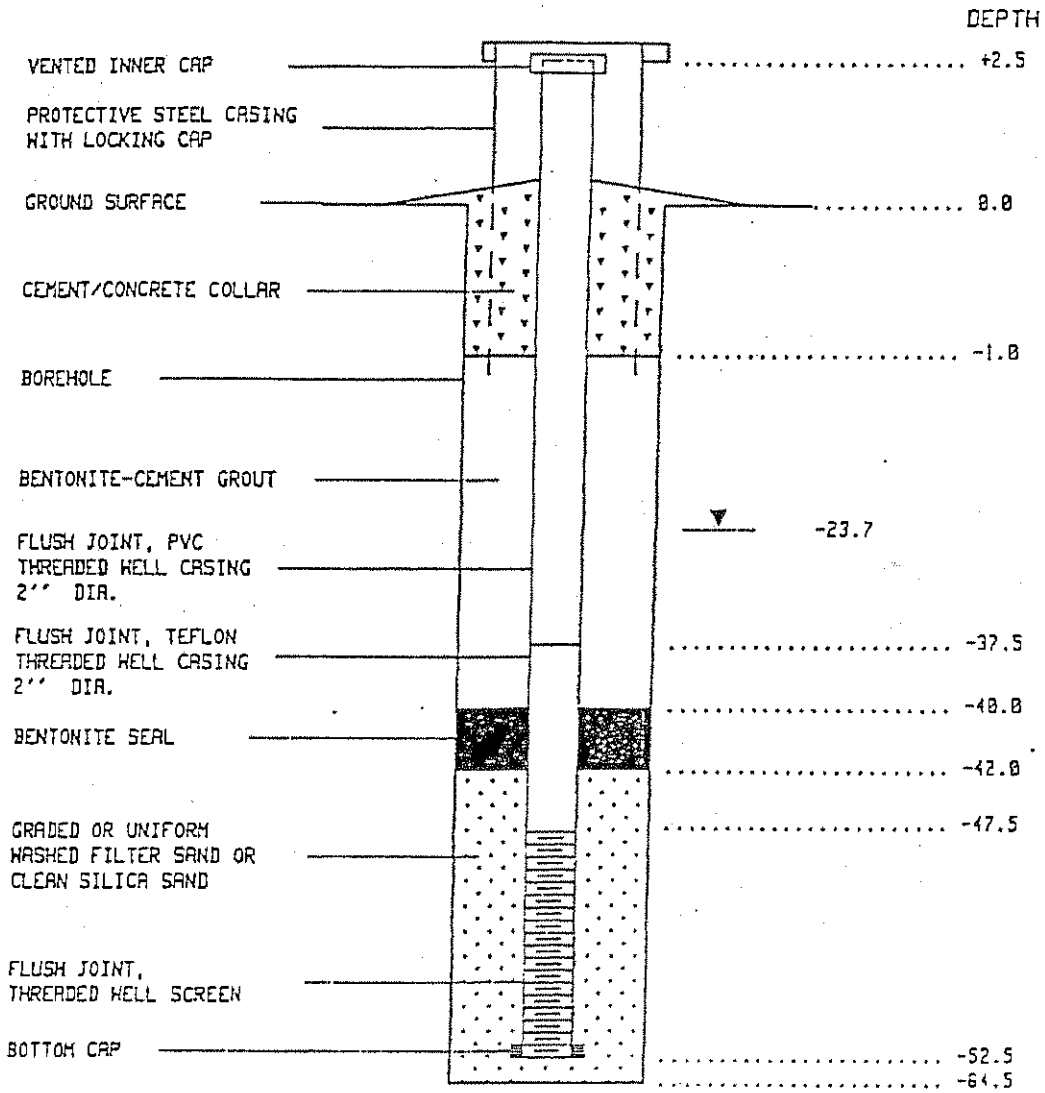
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | DISINTEGRATED ROCK, WET - GRAY | |
| | | | 100/2" | S* | | LIMESTONE RESIDUUM |
| D | | | | | | |
| | | | 100/2" | S | | |
| | 64.5 | | | | | |
| | | | 100/6" | S | | |
| | | | | | BORING TERMINATED AT 64.5 FT | |
| | | | | | WELL LOCATED NORTHEAST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-6

BORING NUMBER: MW-6
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

9C

HWMU-7

MAPPED AS W9C

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.

"ONE HUNDRED YEARS OF SERVICE"

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9C | Total Depth: 40.0' | Elevation: --- | Location: See plan

Type of Boring Hollow stem auger | Started: 10-31-85 | Completed: 11-1-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | 1.5 | Brown fine sandy SILT; roots, organics | | | | |
| | | Loose brown fine sandy SILT (ML) to dense brown silty fine to coarse SAND, occasional gravels and cobbles (SP) | | 4.5 | | |
| | | -ALLUVIUM- | 5 4 4 | 6.0 | | |
| | | | | 9.5 | | |
| | | | 17 19* | 11.0 | | * 50/0.0' |
| | 13.0 | | | 13.5 | | Water level @ 14.0' |
| | | Gray green fine sandy SILT, some clay (ML) -RESIDUAL FAULT BRECCIA- | 27 50* | 15.0 | | * 50/0.0' |
| | | | | | | Development Data: Sloshed for 2 hrs. Bailed down to 21'. Re-gauged 14.0' after 25 hrs. |
| | | • 20' 316 SS SCREEN<br>• 10' 316 SS RISER<br>• 10' PVC-80<br>• ADAPTER<br>• 10' PVC-40 | | | | |
| | 40.0 | Boring terminated @ 40.0' | | | | |

* Driven with 140 lb hammer dropping 30 in to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6 inch increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1" = 5' unless otherwise noted

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-10B

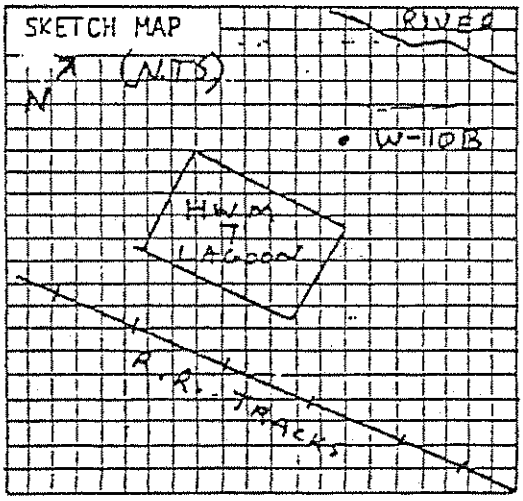
Drilling Log

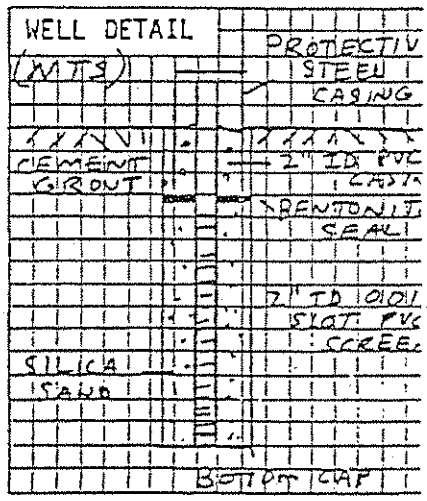
Well Number W-10B

Client Corps of Engineers, RAAP, Radford, VA — Project No. 00-0008-01
Well Location Northwest of HWM 7 Lagoon
Driller/Company M. Dean, Cunningham Core Drilling and Grouting Corp, Salem, VA
Drilling Method Fishtail/Core — Hole Diameter 4.5" — Date(s) Drilled 8/16-17/83
Sample Type Split Spoon — Sample Interval 5' — No. Samples Retained 7
Surface Elevation 1704.65' — Casing Top Elevation 1705.63'* — Total Well Depth 30'
Casing Material and Size 2" ID Sch. 80 PVC — Cased Interval(s) 0-20'
Grouting Type Portland Cement with Sand — Grouted Interval 0-12'
Screening Material and Size 2" ID 0.01 Slotted PVC — Screened Interval(s) 20-30'
Packing Material and Size Fine to Coarse Silica Sand — Packed Interval 13-30'
Depth to Static Water 15-52' (T.O.C.) — Date 8/19/83 — Approx Well Yield < 1 gpm
Development Method Air — Development Time 4 hours
Logged by: D. J. Varner

Comments
1) Drilling Water obtained from RAAP hydrants
2) Replaces well W-10
3) Bentonite pellet seal in the 12-13' annular interval
4) Depth to water table measured from the top of the steel casing
5) Core size: HW

*Top of steel casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 1.5-3 | Spoon | 5-6-9 | Brown silty fine Sand |
| 5-6.5 | Spoon | 3-4-5 | Brown clayey and silty fine sand |
| 10-11.5 | Spoon | 10-14-16 | Quartzite Gravel with a silty |
| 15-15.5 | Spoon | 35 | sand matrix and cobbles (Riverjack). |
| | | | Some clay and silt layers. |
| 20-20'10" | Spoon | 21-50/4" | Blue-gray fine crystalline Dolomite fragments in a |
| | | | blue-gray sandy marl. |
| 25-25'8" | Spoon | 20-50/2" | Blue-gray hard fine crystalline Dolomite |
| 30-30'3" | Spoon | 50/3" | Blue-gray hard fine crystalline Dolomite |
| 32 | | | End of hole. Two feet filled with collapsed cuttings |

10C
HWMU-7
MAPPED AS W10C

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No. ROH-62085 DATE November, 1985

Client: Hercules, Inc.

Project: Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No.: 10-C | Total Depth: 50.0 | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-29-85 | Completed: 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | NO SAMPLING REQUIRED | | | GROUNDWATER DATA |
| | 1.0 | Light brown silty fine sand, trace gravel<br>-ALLUVIUM- | | | | |
| | 15.0 | Gray-brown clayey SILT, little fine sand<br>-RESIDUAL FAULT BRECCIA- | | | | Water level @ 16.9'<br>Development Data:<br>Sloshed for 2 hrs.<br>Bailed to 26.0'.<br>Recovered to 16.9' after 24 hrs. |
| | 40.0 | | | | | |

No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in. O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

Form No. 300

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No ROH-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 10-C cont. Total Depth: 50.0 Elevation: --- Location: See plan

Type of Boring: Hollow stem auger Started: 10-29-85 Completed: 10-31-85 Driller: W. Simmons, Sr.

| Elevation | Depth 40.0 | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | | Gray-brown clayey SILT, little fine sand -RESIDUAL FAULT BRECCIA- | | | | GROUNDWATER DATA |
| | 50.0 | Boring terminated @ 50.0' | | | | |

- 20' 316 SS SCREEN
- 10' 316 SS SCREEN
- 10' PVC-80

*) Blows recorded for a 140 lb. hammer dropping 30 in. to drive 2 in. O.D. 1.375 in. I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-9

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS S7W9

US ARMY ENVIRONMENTAL HYGIENE AGENCY

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northwest of Oleum lagoon, next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II,w/ 4 in continuous flight Auger BORE HOLE MW9 TD 40 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial =22' 4" 24 hr.=23' 5" REMARKS | |
|---|---|---|---|---|
| | | Brown micaceous silty alluvium | | |
| | | Reddish brown micaceous silt,damp nonplastic | 15.75 ft of grout | 20 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | MB 6-10 | | | |
| | | Reddish brown micaceous clayey silt, damp | | |
| | | Drilling easy | | |
| 10 ft | | | | |
| | | same material | | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northwest of Oleum Lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | gravel mixed with silt (¼-1½ in) | PVC casing; 1.25 ft. Bentonite |
| 20 ft | | same material | 17.75 ft of sand pack; 10 ft of slotted 2 in ID schedule 40, PVC screen (0.008-0.010") |
| | | weathered dolomite difficult drilling (5000psi) | |
| 25 ft | | getting easier drilling (softer) 4700 psi | |
| | | same material | |
| 30 ft | | | |

HSE-ES Form 78, 1 Jun 80

Replaces USAEHA Form 85, 12 Aug 74

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, norhtwest of Oleum lagoon next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger )

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | easy drilling<br>weathered Elbrook FM | sand pack | 5 ft of sediment trap |
| 35 ft | | easy drilling- no return | | |
| | | | | FALLBACK |
| 40 ft | | 40 ft TD<br>Refusal Elbrook Dolomite | | |

HSE-ES Form 78, 1 Jun 80

9B
HWMU-7
MAPPED AS W9B

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ENGINEERS & SCIENTISTS
ONE HUNDRED YEARS OF SERVICE

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9B | Total Depth: 38.0' | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-30-85 | Completed 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | RQD % | REMARKS |
|---|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | | | | | GROUNDWATER DATA |
| | 1.0 | Loose to medium-dense brown fine sandy SILT, trace clay | 2 4 7 | 1.5 3.0 | | | |
| | | -ALLUVIUM- | 1 4 6 | 4.5 6.0 | | | |
| | | | 3 2 3 | 8.5 10.0 | | | |
| | | Occasional layers of silty coarse to fine sand with cobble layer | 2 4 8 | 13.5 15.0 | | | |
| | | | 4 3 2 | 18.5 20.0 | ▽ | | Water level @ 19.6' |
| | | | | 23.5 | | | Development Data: Sloshed 2 hrs. Bailed for 30 minutes. Water level unchanged |
| | 24.0 | Hard brown and yellow-brown clayey SILT, occasional SAND -RESIDUUM- | 8 33 50/0.4' | 25.0 | | | *50/0.0' |
| | 28.0 | Gray-green fault breccia, LIMESTONE, DOLOMITE and shale clasts in siltstone matrix, moderately calcareous | | 28.0 | 0% | 0% | |
| | | .10' 316 SS SCREEN | | | | | |
| | | .10' 316 SS RISER | | 33.0 | | | |
| | | .10' PVC-80 | | | 20% | 0% | |
| | | . ADAPTER | | | | | |
| | | .10' PVC-40 | | | | | |
| | 38.0 | Coring terminated @ 38.0' | | 38.0 | | | |

*No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-10

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS W-10

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon, north of lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight BORE HOLE MW 10

TD 21 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS: water level initial-wet 24 hr.-15 ft. | |
|---|---|---|---|---|
| | | Brown silty micaceous alluvium nonplastic, wet | 2.5 ft concrete grout | 7 ft of schedule 40, 2 in ID, PVC casing |
| | MB 0-5 | | 1.5 ft Bentonite | |
| 5 ft | | silty clay | | |
| | | | 16 ft of sand pack | |
| | | Reddish brown micaceous sandy silt | | 10 ft of slotted, 2 in, schedule 40, PVC screen (0.008-0.010") |
| 10 ft | | hard layer (gravelly ¼-1½") damp- very plastic | | |
| | MB 10 ft | | | |
| | | NO return | | |
| 15 ft | ▽ | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon north of lagoon next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 10

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | | screen |
| | | | sand pack |
| | | | 3 ft of sed trap |
| | | Weathered Elbrook Dolomite (saturated) | |
| 20 ft | | | 20 ft bottom of well |
| | | | stand pipe &steel casing =2 ft |
| | | TD 21 feet | |

HSE-ES Form 78, 1 Jun 80

MW-11

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

US ARMY ENVIRONMENTAL HYGIENE AGENCY Mapped as W-11

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northeast corner of Oleum Lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11 TD= 35 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial 22 ft. 24 hr 23 ft REMARKS | |
|---|---|---|---|---|
| | MB 0-5 | Reddish brown sandy micaceous silt damp, low plasticity<br>Easy drilling | 9.5 ft concrete grout | 16 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | same material | | |
| 10 ft | | same material (getting damper) | 3.5 ft of Bentonite | |
| | | | 12'3" of sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

US ARMY ENVIRONMENTAL HYGIENE AGENCY

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northeast corner or Oleum lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | Reddish brown clayey silt | 10ft of slotted 2 in ID PVC screen (0.008-0.010") |
| | MB 18-20 | Reddish brown silt with gravel (¼-1 in.) | sand pack |
| 20 ft | | | |
| | | Near Elbrook Dolomite no cuttings return. Auger turnings are blue-grey saturated. | |
| 25 ft | | same material | bottom of well 26 feet |
| | | TD 35 FEET | Fallback Borehole collapsed due to saturated layer |
| 30 ft | | | |

USAEHA Form 95, 12 Aug 74

MW-12

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS MW-12

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

LOCATION Site 7 southwest of Oleum lagoon(background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight Auger BORE HOLE MW 12

TD=22 ft.

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | Water level initial: dry 24 hr.: Dry REMARKS | |
|---|---|---|---|---|
| | | silty micaceous clay damp- med plastic (alluvium) | 10.5 of concrete grout | 14.5 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | Clayey micaceous silt with some gravel (¼-½") | | |
| 10 ft | | gravel sound | 2.5 ft of Bentonite | |
| | | same material | sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

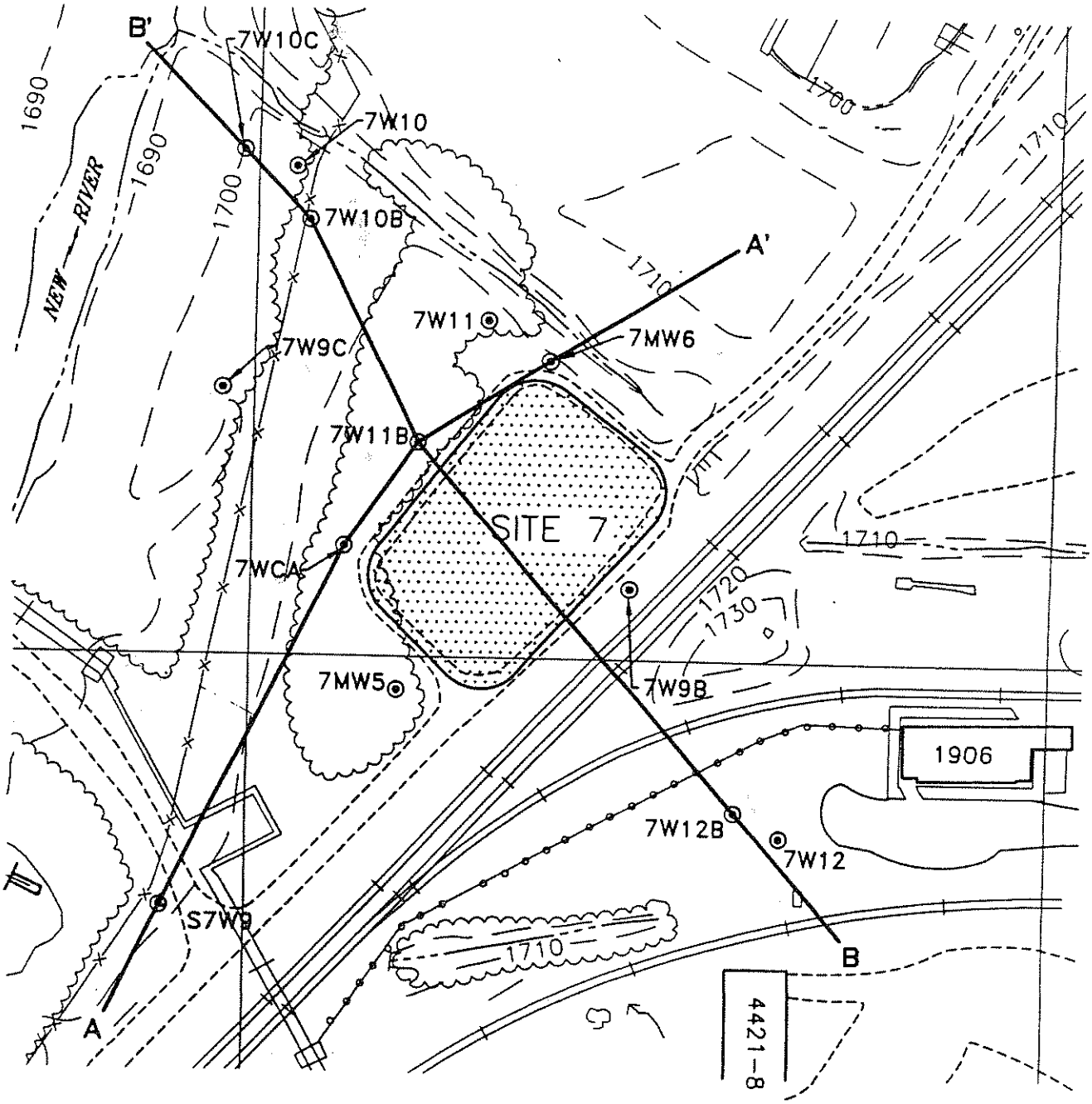
LOCATION Site 7, southwest of Oleum lagoon (background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 12

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | hard gravel layer (GC) clayey gravel (¼-2in) | 6.2 ft of sand pack | 5 ft of slotted 2 in ID schedule 40 PVC screen |
| 20ft | | gravels are getting larger(cobbles 2-5 in) Water should be in the coarse gravels. | | Fallback to 19.5 ft |
| | | drilling very difficult (7422 psi) Refusal- Elbrook FM (gray weathered residuum on top of hard dolomite.) | | |
| 25 ft | | | | |
| 30 ft. | | | | |

HSE-ES Form 78, 1 Jun 80

# Site 7
## Cross Section Location Map
### Radford Army Ammunition Plant
### Radford, Virginia




Legend

7W11B ⊙ Monitoring Well

A —— Cross Section Line

50 0 100

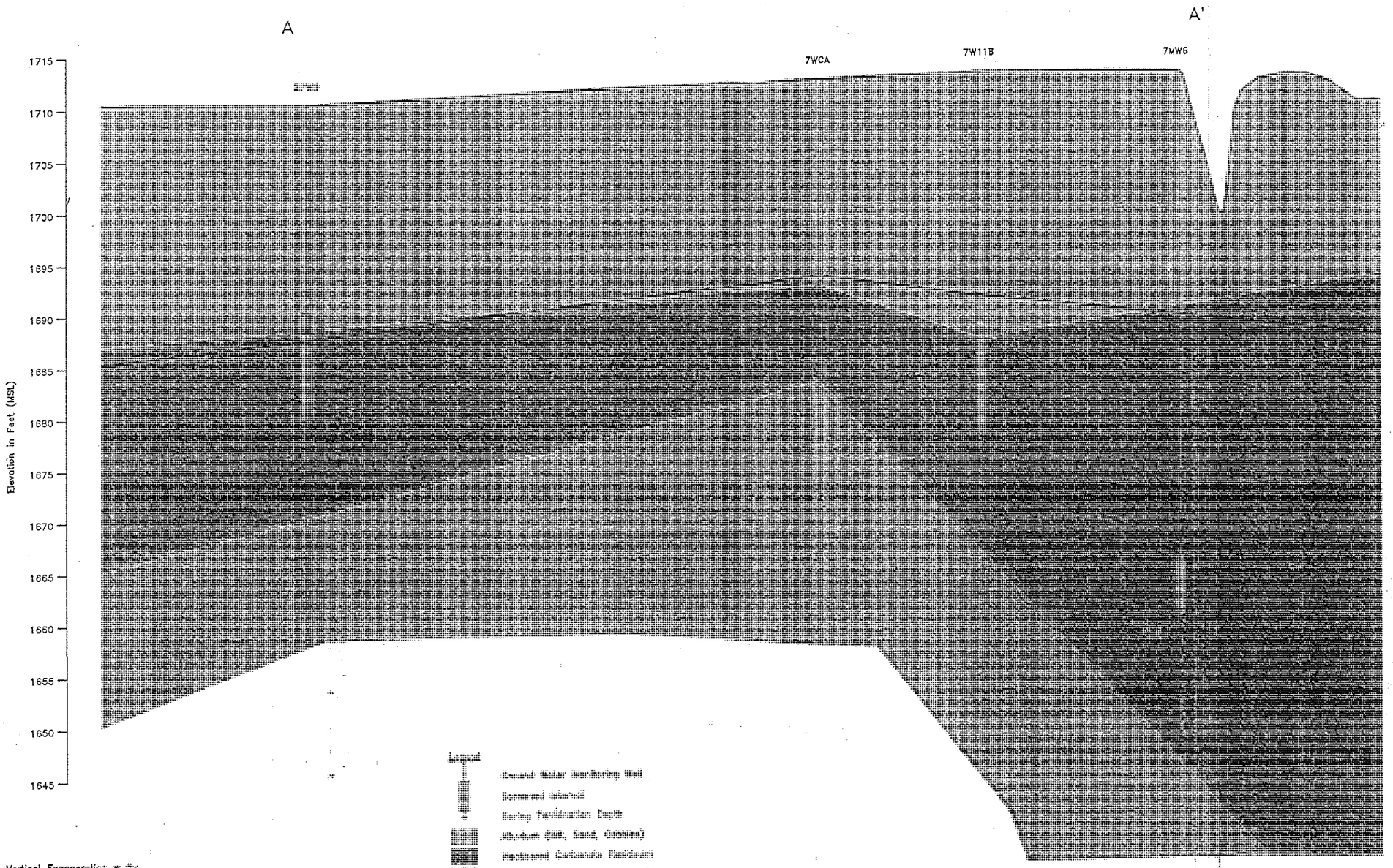
Scale in Feet

N

ERM, INC.

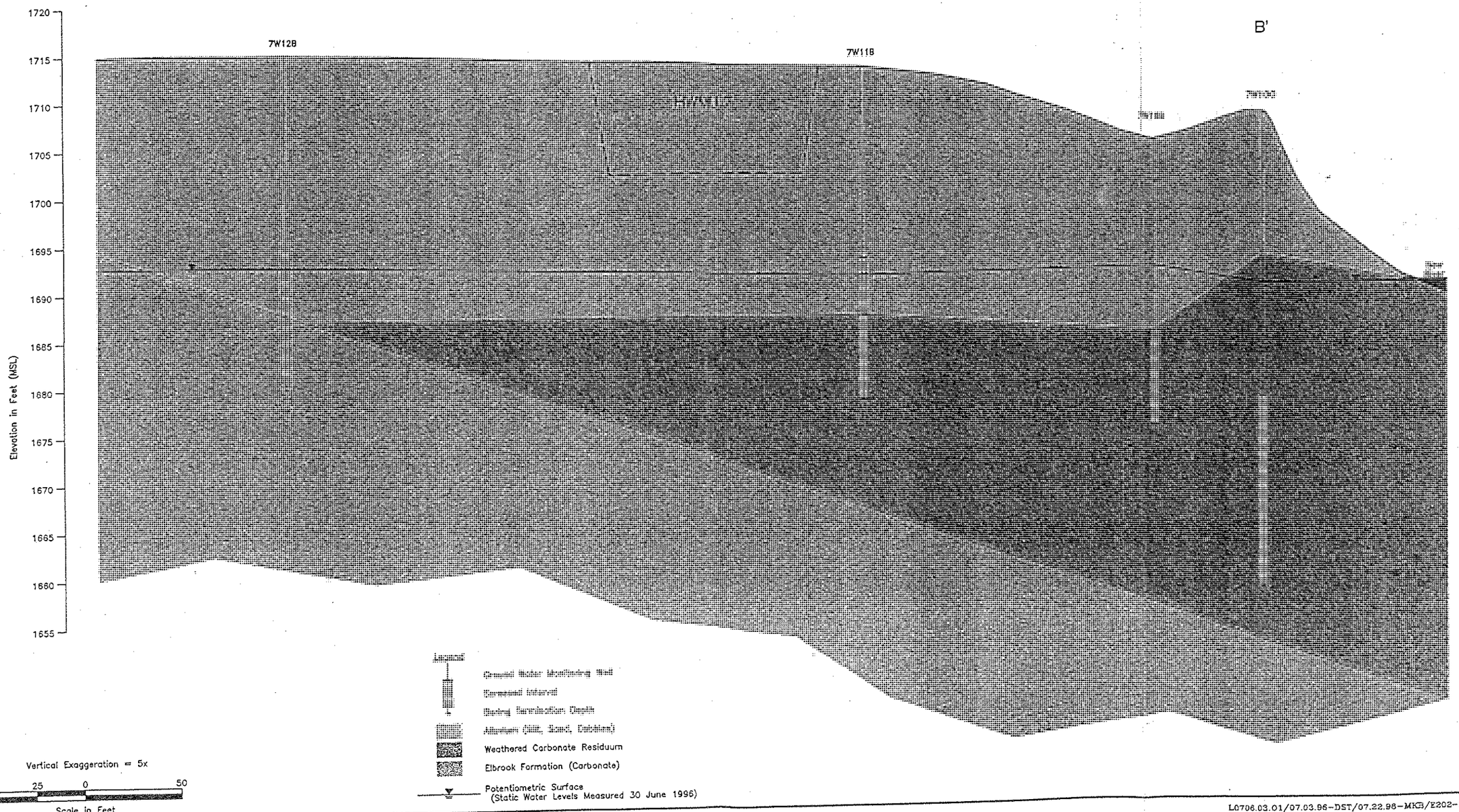
L0706.03.01/08.01.96-DST/1103-4A

# Site 7
## Geologic Cross Section A - A'
## Radford Army Ammunition Plant
## Radford, Virginia



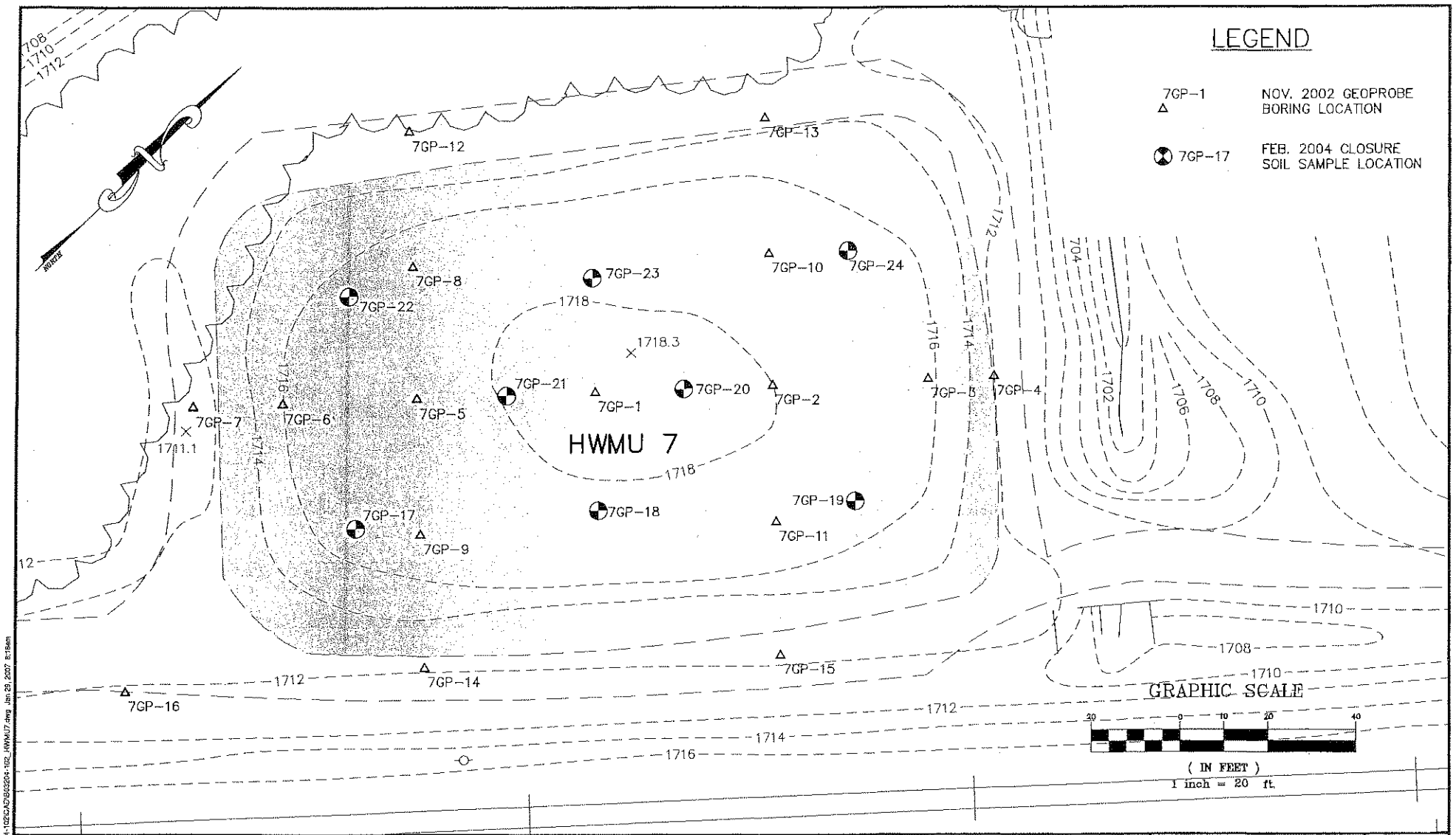

L0708.03.01/07.03.96-DST/07.22.96-MKE/E201-1C

# Site 7
## Geologic Cross Section B - B'
## Radford Army Ammunition Plant
## Radford, Virginia




L0706.03.01/07.03.96-DST/07.22.96-MKB/E202-1C

ERM, INC.





**Draper Aden Associates**
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Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 3

P:\ES\2006\B03204\B03204-102\CAD\B03204-102_HWMU7.dwg Jan 29, 2007 8:18am

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-1** **(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **16.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Soil sample 7-GP-1 (1-3) submitted for analysis. Perched water. |
| | | | | SM. Yellow-brown micaceous fine silty sand, dry. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Yellow-brown micaceous fine sandy clay with little gravel, damp. | | | | | Clay liner. |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-2**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **20.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine micaceous silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | Soil sample 7-GP-2 (8-12) submitted for analysis. |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | | | | | | Soil sample 7-GP-2 (13.5-14.5) submitted for analysis. |
| | | | 15 | SM. Dark gray fine sandy and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| S-5 | | | | | | | | | |
| | | | 20 | Boring terminated at 20 feet. | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-3**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | SM. Yellow-brown, micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 10 | | | | | | Soil sample 7-GP-3 (10-11) submitted for analysis. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-4** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | | | | | | Soil sample 7-GP-4 (3-4) submitted for analysis. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Dark gray fine sand and silt, wet. | | | | | Aquatic odor. |
| | | | | Boring terminated at 8 feet. | | | | | |
| | | | | No residual material encountered. | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-5** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-5 (6-11) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-6** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water.<br>30 mil. PVC. |
| | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | 10 | | | | | | |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-7**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Gravel.<br>SW. Brown fine sand, moist to wet. | | | | | Boring backfilled with bentonite. |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-8**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-8 (5-8) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-9** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-10**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | Perched water. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-11**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SP-GP. Yellow-brown fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-12**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-13**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-14**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-15**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-16**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | Soil sample 7-GP-16 (3-4) submitted for analysis. |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-17**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragements, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner/top of native soil. Sample 7-GP-17 (11) submitted for analysis of TAL/TCL. Aquatic odor. |
| S-4 | | | | | | | | | |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-18**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-18 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-19**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-19 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-20**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay/top of native soil. Sample 7-GP-20 (14.5) submitted for analysis of TAL/TCL. Collected MS/MSD. Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-21** **(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-21 (13.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-22**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Samples 7-GP-22 (13) and 7-GP-22-22 (13) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-23**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual amterial, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| S-4 | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-23 (12.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

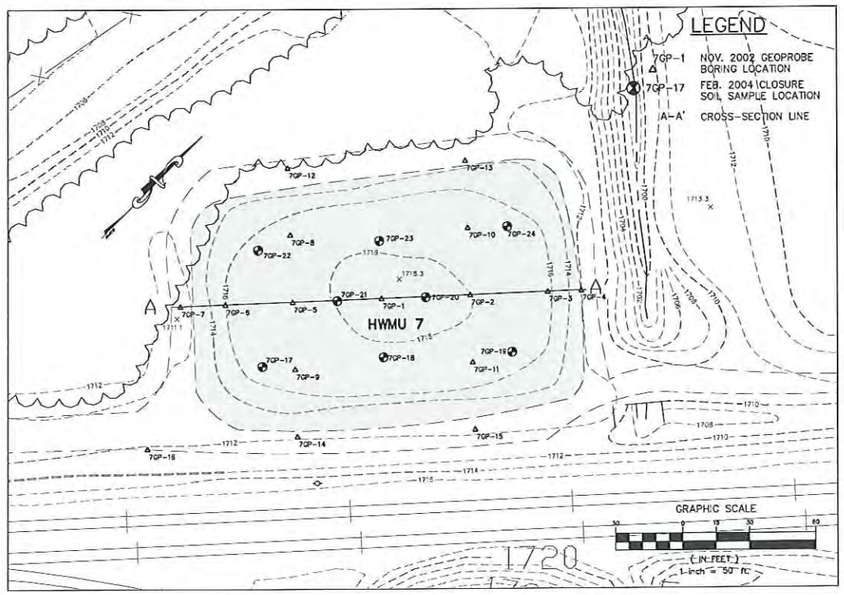
LOG OF: **7-GP-24**
**(1 of 1)**

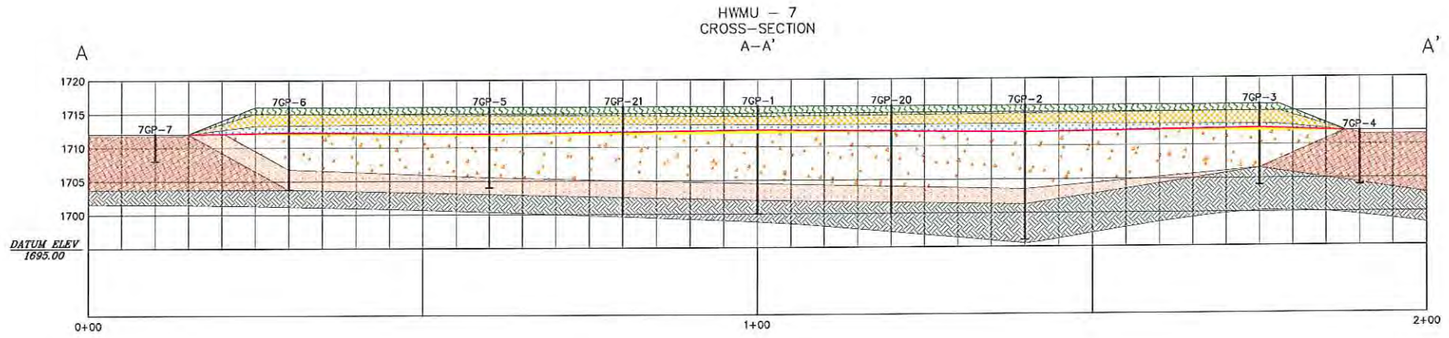
Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | | | | | | Clay liner. Sample 7-GP-24 (14) submitted for analysis by TAL/TCL. |
| | | | 15 | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07




LEGEND

- BROWN FINE SILTY SAND (TOPSOIL)
- YELLOW–BROWN FINE TO COARSE SANDY CLAY
- LIGHT GRAY FINE TO COARSE SAND
- 30 MIL. PVC LINER
- YELLOW–BROWN MICACEOUS FINE SILTY SAND
- RESIDUAL MATERIAL FROM CLEAN–UP ACTIVITIES
- RED–BROWN MICACEOUS FINE SANDY CLAY
- BROWN FINE SOIL (NATIVE)
- DARK GRAY FINE SAND AND SILT (NATIVE)

VERTICAL SCALE: 1"= 10'
HORIZONTAL SCALE: 1"= 10'
NO VERTICAL EXAGGERATION

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Charlottesville, VA
Raleigh-Durham, NC

# CROSS SECTION A - A'
## HAZARDOUS WASTE MANAGEMENT UNITS 5 & 7
## RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS

| | |
|---|---|
| DESIGNED BY: | MAC |
| DRAWN BY: | KKD |
| CHECKED BY: | |
| SCALE: | 1" = 10' |
| DATE: | 02/21/2006 |
| PROJECT NUMBER: | B03204-122 |

FIGURE 3

## SW-846 INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Ammunition and Powder Company, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8') and 7 GP-16 (3-4').

DAA performed a limited review of the analytical results for twenty-two metal target analytes analyzed per SW-846 Method 6010B, one metal target analyte analyzed per SW-846 7471A and one metal target analyte analyzed per SW-846 9012A. Inductively coupled plasma (ICP), cold vapor atomic absorption (CVAA) and colorimetric were the techniques on which the individual analytical methods for each of the inorganics were based.

Soil samples were collected and submitted to the laboratory for analysis of the following metals: ICP Method 6010B (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc), Method 7471A (mercury) and Method 9012A (total cyanide).

Severn Trent Laboratories (STL) of North Canton, Ohio performed the inorganic analyses. On behalf of RAAP, STL submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results.

The evaluation of STL's compliance with inorganic analytical methods and validation of results presented here are based upon a limited review of QA/QC information including chain of custody, case narrative, holding time, preservation procedures, standards, spike analysis on sample matrix (S), blank samples analyses (method, calibration and other blanks), and duplicate analyses (SD) results. Review was limited to summary sheets provided by the laboratory, unless a notable discrepancy in the data package required review of the raw data. Additionally, sample results were recalculated and verified for arsenic and cyanide, sample 7GP-3(10-11'). A summary of data review results and any observed deviations is provided below.

STL received the samples on ice and in good condition. All technical holding time criteria were met.

***Method 6010B***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, calibration standards, pre-digestion spikes and duplicates were analyzed as required. All laboratory control samples, pre-digestion spikes and duplicates were recovered within control limits, except where noted below. Duplicate sample results exhibited acceptable precision, where applicable. All LOQ standards exhibited acceptable recovery. Deviations from specific quality control criteria that were identified and noted during the data review process are summarized below.

The associated blanks were not interference free, however, data qualification was necessary for only antimony. Antimony was reported in all samples less than the LOQ, however, all antimony results were attributed to laboratory contamination.

Antimony, chromium, vanadium, recovered low in the matrix spike sample and all results for these target parameters were qualified as estimated and should be considered biased low.

The laboratory presented all results in mg/kg and on a dry weight basis. Except where noted above, all sample results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Methods 7471A (CVAA/ 9012A(Colorimetric)***

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation for mercury and cyanide, as outlined by the method detection limit study.

All instrument calibration and calibration verification criteria were met. Blank samples, LCS samples, pre-digestion spikes and spike duplicates were analyzed as required. All blank criteria were met, except where noted below. Laboratory duplicate sample results exhibited acceptable precision, where applicable. All laboratory control samples, pre-digestion spikes and duplicates were recovered within control limits. Deviations from specific quality control criteria that were identified and noted during the data review process are summarized below.

The associated blanks were not interference free, however, data qualification was necessary for only cyanide. Cyanide was reported less than the LOQ in 5 GP-1(9-10') and 5-GP-6(10-11') and results were attributed to laboratory contamination. Cyanide reported above the LOQ in 7GP-3(10-11') was not influence by the observed laboratory blank contamination and no data qualification was required.

The laboratory presented all results in mg/kg and on a dry weight basis. Except where noted above, all sample results remain as reported by the laboratory. All results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

## INORGANIC DATA EVALUATION FOR ICP SW-846 METHOD 6010B-SOILS

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.
- Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? _X_ yes ___ no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 6 month holding time

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and at least 1 standard

### D. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:

☑ 10 sample frequency
☑ Use of calibration blank and check standard
☑ %R within 90-110% range

**E. BLANK SAMPLES ANALYSES CRITERIA:**

- ☑ Method/Other Lab Blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

**F. INTERFERENCE CHECK SAMPLES (ICS) CRITERIA:**

- ☑ ICS (80-120%)

**G. DUPLICATE ANALYSES CRITERIA:**

- ☑ One spike/sample duplicate per batch of samples
- ☑ %RPD ± 20% for spike/ sample values greater than 5 X LOQ
- ☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES /LCS CRITERIA:**

- ☑ %R within 75-125% range/ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within ICP linear concentration ranges

**Revisions:** No revisions were required. Prep method 3050B

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

**Janet C. Frazier**
**Senior Environmental Scientist**
**Draper Aden Associates**
**2206 South Main Street**
**Blacksburg, Virginia 24060**
**540-552-0444, jfrazier@daa.com**

## INORGANIC DATA EVALUATION FOR MERCURY- BY COLD VAPOR AA METHOD 7471A

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, LCS, Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? √yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. METHOD INFORMATION DOCUMENTATION

☑ All target parameters analyzed by requested methods?

### C. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS:

☑ 28 Day holding time
☑ Cool 4°C

### D. INSTRUMENT CALIBRATION CRITERIA:

☑ 1 calibration blank and 5 standards
☑ Instrument calibrated for every analytical sequence for every method

**E. INITIAL AND CONTINUING CALIBRATION VERIFICATION CRITERIA:**

- ☑ 10 sample frequency for CCV
- ☑ %R within 90-110% range

**F. BLANK SAMPLES ANALYSES CRITERIA:**

- NA Trip Blank (check only if analyzed)
- NA Equipment Blank (check only if analyzed)
- ☑ Method/other laboratory blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

**G. DUPLICATE ANALYSES CRITERIA:**

- ☑ One spike/sample duplicate per batch of samples
- ☑ %RPD ± 20% for spike/sample values greater than 5 X LOQ
- ☑ {spike/sample ± LOQ} when spike/sample values are less than 5 X LOQ

**H. SPIKED SAMPLES ANALYSES/LCS CRITERIA:**

- ☑ Pre-digestion matrix spikes for all analytes
- ☑ %R within 75-125% range/80-120%

**I. SAMPLE RESULTS CRITERIA:**

- ☑ Samples fall within calibration concentration range

**J. Revisions:** No revisions were required.

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: Date:

JCF 12/4/02

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**2206 South Main Street**
**Blacksburg, Virginia 24060**
**540-552-0444**
**jfrazier@daa.com**

## INORGANIC DATA EVALUATION FOR CYANIDE BY METHOD 9012A

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** Lab blanks, Pre-digestion spikes, Duplicates, ICS, LCS, etc.
- Matrix spike/duplicate-7GP5(6-11')

**Laboratory:** STL, North Canton, OH; SDG A2K040189

Does Laboratory analyte list correspond to analyte list requested by DAA? X yes ___no

"☑" denotes items reviewed. See Data Validation Summary for additional comments.

### A. QC DOCUMENTATION CRITERIA

☑ Specific LODs for all target analytes
☑ Specific LOQs for all target analytes

### B. TECHNICAL HOLDING TIMES AND PRESERVATION REQUIREMENTS CRITERIA:

☑ 14 days holding time
☑ Cool 4° C

### C. INSTRUMENT CALIBRATION CRITERIA:

☑ 6 levels plus blank

### D. INITIAL AND CONTINUING CALIBRATION VALIDATION CRITERIA:

☑ 20 sample frequency
☑ Use of check standard with every batch of samples
☑ %R within 85-115% range (± 15%)

### E. BLANK SAMPLES ANALYSES CRITERIA:

☑ Interference free

☑ Verification Blank analysis every 20 samples

**F. DUPLICATE SAMPLE ANALYSES CRITERIA:**

☑ One duplicate for every 20 samples
☑ %RPD ± 20% for sample values greater than 5 times LOQ
☑ (Sample ± LOQ) when values are less than 5 times LOQ

**G. SPIKED SAMPLE ANALYSES CRITERIA:**

☑ One spike for every 20 samples
☑ Spikes fall within 85-115% range

**H. LCS CRITERIA:**

☑ 80-120%

**I. SAMPLE RESULTS CRITERIA:**

☑ Samples fall within calibration concentration range

DAA conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA, and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994). Validation of this data set is limited to review of items detailed in this data review report.

Validated by: _____ Date: JCF 12-17-02

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**jfrazier@daa.com**

**SW-846 METHODS 8081A**
**VOLATILE DATA REVIEW SUMMARY**

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems. Soils samples were collected from sixteen sample locations (see page 3 for specific sample identifications). All soil samples were analyzed for twenty-eight (28) pesticides and polychlorinated biphenyls (PCBs) per USEPA Methods 8081A.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the analyses. On behalf of RAAP, Lancaster submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of laboratories' compliance with Method 8081A and validation of the results was based on a limited review of the following items: quality control (QC) deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, extraction procedures, instrument calibrations, blank analysis, surrogate spike recoveries, retention time, matrix spike (MS/MSD) analyses, laboratory control samples (LCS), and internal standards requirements, where applicable. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

The laboratory received the samples on ice and in good condition with custody seals intact. All technical holding time criteria were met. All sample extraction and analysis holding time criteria were met. All preservation criteria were met.

***Method 8081A***

The original certificate of analysis for Method 8081A was complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported limit of quantitation (LOQ) for each target parameter, as outlined by the method detection limit study.

All QC history documentation and QC check sample criteria were met. All initial calibration, calibration verification, breakdown check, blank, surrogate, retention time, MS/MSD and LCS criteria were met.

Sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance and quality control criteria that were identified during the review process are summarized below.

Sample analysis by Method 8081A included PCBs. However, since the LCS and MS/MSD samples were not spiked with PCBs, all PCB results were qualified as estimated due to limited availability of quality control data.

All sample results were reported on a dry-weight basis. All samples were florisil cleaned. To obtain a final result within the instrument calibration range, sample dilutions were required, where appropriate.

Target parameters reported above the LOQ remain as reported by the laboratory. All sample results unaffected by the data validation process and/or detected less than their corresponding LOQs were validated and reported as "U" (i.e., not detected above the LOQ). Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

**SW-846 METHOD 8081A (ORGANOCHLORINE PESTICIDES/PCBs)**
**GC DATA VALIDATION FOR SOILS**

**Sample ID:** 5GP-1(1-2'), 5GP-1(9-10'), 5GP-6(10-11'), 5GP-3(9-10'), 5GP-8(7-8'), 5GP-8(11-12'), 5GP-16(3-4'), 5GP-12(3-4'), 7GP-1(1-3'), 7GP-2(8-12'), 7GP-2(13.5-14.5'), 7GP-3(10-11'), 7GP-8(5-8'), 7GP-5(6-11'), 7GP-16(3-4'), 7GP-4(3-4')

**QC Samples:** 7GP-5(6-11') Matrix spike/Matrix spike duplicate, Extraction Blank, LCS

**Laboratory:** Lancaster Laboratories, Lancaster, PA, SDG RAR01-01

***Comments: Method 8081A involves the extraction of samples usingSW-846 Method 3550B-ultrasonic extraction. Target parameters are separated and quantified by GC using electron capture detection (ECD). All samples were florisil cleaned.***

## A. QC DELIVERABLES PACKAGE:

| | | |
|---|---|---|
| 1. | Was case narrative present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 2. | Was the Chain of Custody present and signed by a laboratory representative? | ☑ YES ☐ NO |
| 3. | Were sample results included for all sample locations? | ☑ YES ☐ NO |
| 4. | Did the laboratory parameter list correspond to project specific parameter list? | ☑ YES ☐ NO |
| 5. | Were the LOQs reported on sample summary sheets supported by the MDL study? | ☑ YES ☐ NO |
| 6. | Did the electronic deliverable list the correct LOQs? | ☑ YES ☐ NO |

**Comments:** All QC deliverables requirements were met.

## B. INSTRUMENT QC HISTORY DOCUMENTATION CRITERIA:

| | | |
|---|---|---|
| 1. | Was the specific extraction method specified? | ☑ YES ☐ NO |
| 2. | Was documentation of DDT/Endrin breakdown study provided? | ☑ YES ☐ NO |
| 3. | Were instrument specific LODs for the target parameters provided? | ☑ YES ☐ NO |
| 4. | Were instrument specific LOQs for the target parameters provided? | ☑ YES ☐ NO |
| 5. | Were instrument specific working ranges for target parameters specified? | ☑ YES ☐ NO |
| 6. | Were sample analysis log sheets provided? | ☑ YES ☐ NO |

7. Were chromatograms and integration reports provided? ☑ YES ☐ NO

**Comments:** All instrument QC history criteria were met.

## C. CHECK SAMPLE CRITERIA:
***(Initial Demonstration of Capability)***

1. Was the check sample data obtained from the instrument that was used for analysis? ☑YES ☐ NO
2. Did the check sample contain all required target parameters? ☑ YES ☐ NO
3. Were the check samples analyzed in quadruplicate? ☑ YES ☐ NO
4. Were the average recoveries of the target parameters in the check samples reported? ☑ YES ☐ NO
5. Were the standard deviations for the recoveries of target parameters quadruplicated and reported? ☑ YES ☐ NO

**Comments:** All check sample criteria were met.

## D. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 7-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** All preservation criteria were met. All sample extraction and analysis holding time criteria were met.

## E. INITIAL GC CALIBRATION CRITERIA:

1. Were all target parameters included in the ICAL? ☑ YES ☐ NO
2. Was a minimum five-point calibration analyzed prior to analysis? ☑YES ☐ NO
3. Calibration type used by laboratory: *External.*
4. Was the % Relative Standard Deviation (%RSD) for all target parameter CFs <20% over the established working range? ☑ YES ☐ NO
5. State the Quantitation Method used by the laboratory: *Calibration Factor.*
6. List target parameters with a % RSD >20% over the established working range: *None.*
   Note: Up to 2 target parameters may exceed the 20% criteria, but must be <30%.

7. Was the lowest concentration calibration standard at or below the LOQ, MCL, regulatory compliance or action limit? ☑ YES ☐ NO
8. Were calibration standards dropped to meet calibration criteria? ☑NA ☐YES ☐ NO

**Comments:** All initial calibration criteria were met. The lowest calibration standard for 4,4-DDD was manually calculated to verify the calibration standard concentration was less than the LOQ.

## F. DDT / ENDRIN BREAKDOWN CHECK CRITERIA:

1. Was a 4,4'-DDT and Endrin standard analyzed every 12-hours? ☑ YES ☐ NO
2. For every 12-hours, was 4,4'-DDE, 4,4'-DDD, Endrin Ketone or Endrin Aldehyde present which indicated breakdown? ☑ YES ☐ NO
3. Was the calculated % breakdown less than 15%? ☐ NA ☑ YES ☐ NO
   If no, corrective action must be taken before proceeding with analysis.

**Comments:** All DDT/Endrin breakdown criteria were met.

## G. CALIBRATION VERIFICATION CRITERIA:

1. Was a calibration verification (CV) standard performed once every 12-hours? ☑ YES ☐ NO
2. Did target parameter responses have a % Difference (%D) within ± 15%? (For chlordane and toxaphene, qualify only 3 peaks). ☑ YES ☐ NO
   If no, was a new calibration curve prepared? *No.*
3. Was a mid-concentration standard analyzed after each group of 20 samples (10 recommended) and at the end of the analytical sequence? ☑YES ☐ NO
4. Were all target parameters and surrogates included in the CV? ☑ YES ☐ NO

**Comments:** All calibration verification criteria were met.

## H. BLANK CRITERIA:

1. Was a blank analyzed prior to the batch samples? ☑ YES ☐ NO
2. Was a blank analyzed after 20 batch samples? ☐ NA ☑ YES ☐ NO
3. Was an extraction blank analyzed with the batch samples? ☑ YES ☐ NO

4 Was a trip blank analyzed per analytical batch? ☑ YES ☐ NO

5. List target parameters identified in the blanks: *None.*

**Comments:** All blank criteria were met.

## I. SURROGATE CRITERIA:

1. Were all samples, standards, blanks, and checks spiked with at least 2 surrogate parameters for dual column analysis? ☑ YES ☐ NO
2. List surrogate used and laboratory's surrogate % recovery range criteria:
   tetrachloro-xylene (TCMX): 40%-130%
   decachlorobiphenyl (DCBP): 40%-130%
   4-chloro-3-nitrobenzotrifluoride (CNBT): 40%-130%
3. List samples whose surrogate % recoveries were not within the laboratory range: *None*

**Comments:** All surrogate recovery criteria were met.

## J. RETENTION TIME CRITERIA:

1. Were the daily Retention Time (RT) windows reported? ☑ YES ☐ NO

**Comments:** All retention time criteria were met.

## K. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:

1. Was a MS/MSD analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD contain required target parameters? See comment section
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List laboratory's matrix spike % recovery range criteria: *40%-130%, select analytes*
5. List matrix spike target parameters not within the recovery range criteria: None
6. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
7. Did the LCS for the failed matrix spike

parameter(s) fall within the recovery range criteria and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO

8. Were any parameters flagged as estimated concentrations? ☐ YES ☑ NO
9. List parameters flagged as estimated concentrations:

**Comments:** The QC samples were not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other matrix spike criteria were met.

## L. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters?*select analytes* ☑ YES ☐ NO
3. List the LCS parameters and the laboratory's recovery range criteria. *See certificate of analysis.*
4. List the LCS parameters not within the recovery range criteria. *None.*

**Comments:** The LCS was not spiked with PCBs. All PCB results were qualified as estimated due to insufficient quality control data. All other LCS data were met.

## M. TARGET PARAMETER IDENTIFICATION:

1. Were the reported parameters within the retention time windows? ☑ NA ☐ YES ☐ NO
2. Were retention time shifts observed when compared with the last calibration verification? ☐ YES ☑ NO
3. Were all reported parameters confirmed? ☑ YES ☐ NO
4. Did the initial analysis of any sample have a concentration of a target parameter which exceeded the instrument calibration range? ☑ NA ☐ YES ☐ NO
5. Were sample dilutions required? ☑ YES ☐ NO
6. Were all parameter concentrations that were recorded on the sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** All target parameter identification criteria were met. The 4,4"-DDD sample result for 7GP-2(8-12") was manually verified and no calculation discrepancy was observed. All results above the LOQ were verified against the instrument data, primary

and confirmation data. For results above the LOQ, the disparity between the results from both columns was acceptable (<40RPD).

## N. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was taken.

## LIMITATIONS AND REFERENCES:

Draper Aden Associates conducted a limited data validation for the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data evaluation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: JCF

Date: 12-17-02

**Draper Aden Associates**
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## METHODS 8260B AND 8270C ORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), and 7 GP-16 (3-4'). Soil samples were analyzed for the 33 (thirty-three) volatile parameters by Method 8260B and 64 (sixty-four) semivolatile parameters according to Method 8270C.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the GC/MS analysis. Lancaster Laboratories submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Methods 8260B and 8270C and validation of the results was based on a limited review of the following items: QC deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, instrument performance (tune) check, instrument calibrations, blank analysis, surrogate spike recoveries, matrix spike and matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) data, and internal standard requirements. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were not performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

### *Method 8260B*

The revised certificate of analysis for Method 8260B appeared complete in its presentation and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data and the method detection limit study data. The first calibration level was less than the reported LOQ in all cases.

All sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, blank, and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance/quality control (QA/QC) criteria that were identified during the data review process are discussed below.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice

for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature.

All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameter, where appropriate, were qualified as estimated

All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1 (1-2'). Insufficient sample was available for reanalysis. However, the matrix spike analysis for this sample had compliant surrogate recoveries. As per validation guidelines all results were qualified as estimated for this sample.

A MS, LCS and LCS duplicate were performed. Due to limited sample volume a MSD was not performed. All quality control samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.

All target parameter identification and quantitation requirements were met. No target parameters were reported above the LOQ in any sample.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Method 8270C***

The original certificate of analysis for Method 8270C was complete and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data as well as the method detection limit study data.

QC history documentation were provided. Sample preservation, instrument performance check (tuning), initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. No deviations from specific QA/QC criteria were identified during the data review process.

## METHODS 8260B AND 8270C ORGANIC DATA REVIEW SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for the October 31-November 1, 2002 soil sampling event at hazardous waste management units 5 and 7, Radford Army Ammunition Plant (RAAP)/Alliant Techsystems, Montgomery County, Virginia. Soil samples were collected from locations 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4'), 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), and 7 GP-16 (3-4'). Soil samples were analyzed for the 33 (thirty-three) volatile parameters by Method 8260B and 64 (sixty-four) semivolatile parameters according to Method 8270C.

Lancaster Laboratories (Lancaster) of Lancaster, Pennsylvania performed the GC/MS analysis. Lancaster Laboratories submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the results.

The evaluation of Lancaster's compliance with Methods 8260B and 8270C and validation of the results was based on a limited review of the following items: QC deliverables package, QC history documentation, case narrative, technical holding time and preservation requirements, instrument performance (tune) check, instrument calibrations, blank analysis, surrogate spike recoveries, matrix spike and matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) data, and internal standard requirements. A review of all transcriptions from instrument data to sample summary sheets was performed. Specific representative calculations were not performed. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

### *Method 8260B*

The revised certificate of analysis for Method 8260B appeared complete in its presentation and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data and the method detection limit study data. The first calibration level was less than the reported LOQ in all cases.

All sample holding time criteria, QC history documentation, instrument performance check (tuning) criteria, initial calibration, blank, and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. Deviations from specific quality assurance/quality control (QA/QC) criteria that were identified during the data review process are discussed below.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice

for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature. All other sample preservation criteria were met.

All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameters, where appropriate, were qualified as estimated

All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1(1-2'). Insufficient sample was available for reanalysis. However, the matrix spike analysis for this sample had compliant surrogate recoveries. As per validation guidelines, all results were qualified as estimated for this sample.

A MS, LCS and LCS duplicate were performed. Due to limited sample volume a MSD was not performed. All quality control samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.

All target parameter identification and quantitation requirements were met. No target parameters were reported above the LOQ in any sample.

All results were reported on a dry weight basis. All sample results unaffected by the data validation process and less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

***Method 8270C***

The original certificate of analysis for Method 8270C was complete and the data were of acceptable quality. The data set demonstrated the laboratory's ability to achieve the reported LOQ, as outlined by the initial calibration data as well as the method detection limit study data.

QC history documentation were provided. Sample preservation, instrument performance check (tuning), initial calibration, calibration verification, blank, surrogate, MS/MSD, LCS and internal standard requirements were met. All sample results were reviewed for transcription errors from the instrument data to the laboratory report and no errors were noted. No deviations from specific QA/QC criteria were identified during the data review process.

All target parameter identification and quantitation requirements were met. All results were reported on a dry weight basis. All sample results unaffected by the data validation process and greater than their corresponding LOQs remain as reported by Lancaster Laboratories. All sample results less than their corresponding LOQs were validated and reported as "U." Refer to the attached table titled "Data Validation Report" for a summary of results which required data validation.

## SW-846 METHOD 8260B (GC/MS) VOLATILE ORGANIC DATA VALIDATION

*HWMU-5*

**Sample ID:** 5GP-1 (1-2'), 5GP-1 (9-10'), 5GP-3 (9-10'), 5GP-6 (10-11'), 5GP-8 (7-8'), 5GP-8 (11-12'), 5 GP-12 (3-4'), 5GP-16 (3-4')

*HWMU-7*

**Sample ID:** 7GP-1 (1-3'), 7GP-2 (8-12'), 7GP-2 (13.5-14.5'), 7GP-3 (10-11'), 7GP-4 (3-4'), 7GP-5 (6-11'), 7GP-8 (5-8'), 7 GP-16 (3-4')

**QC Samples:** 5GP-1 (1-2')MS, LCS, LCS DUP, Method Blank
7GP-5 (6-11')MS, 7GP-5 (6-11')MSD, LCS, Method Blank

**Laboratory:** Lancaster Laboratories, Lancaster PA; SDG RAR01-01

***Comment:*** *Method 8260B uses a purge and trap system to remove volatile organic target analytes from a 5 gram soil sample (SW-846 5035). Parameters are separated and quantified using a capillary column GC/MS.*

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present and signed by a laboratory representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory parameter list correspond to the project specific parameter list? ☑ YES ☐ NO
5. Did the laboratory parameter list include methylene chloride and vinyl chloride for confirmational analysis? ☑ NA ☐ YES ☐ NO
6. Were all parameter LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑ NA ☐ YES ☐ NO

**Comments:** All QC deliverables package requirements were met. The MDL study does not list the LOQ. However, all LOQs are supported by an acceptable MDL study. A 1 ppb standard was also analyzed and reported to support limit of detection (LOD) values.

## B. QC HISTORY DOCUMENTATION CRITERIA:

1. Was an instrument specific MDL study provided, which included LOD and LOQ values for all target parameters? ☑ YES ☐ NO
2. Was the instrument specific working range for each target parameter specified? ☑ YES ☐ NO
3. Was initial demonstration of capability data provided for each target parameter? ☑ YES ☐ NO

**Comments:** QC history documentation criteria were met. MDL study is laboratory specific.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to analysis holding time met? ☑ YES ☐ NO
2. Were the samples received at 4°C (± 2°C)? ☐ YES ☑ NO
3. Was the pH of each sample adjusted to < 2 with HCl? ☑ NA ☐ YES ☐ NO

**Comments:** All sample holding time criteria were met.

Samples collected from HWMU 5 on October 31, 2002 were shipped on ice and under chain of custody for overnight delivery to the laboratory. Although samples were packed in ice for shipment, the Lancaster Laboratories Sample Administration Receipt Documentation Log noted that only bagged ice was present the morning of November 1, 2002. As well, the cooler temperature bottle/blank was recorded as 7°C, which is 1 degree higher than method guidelines of 4°C (± 2°C). Sample results for HWMU-5 may be biased slightly low due to elevated sample storage temperature. All other sample preservation criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE (TUNING) CHECK CRITERIA:

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period during which standards or samples were analyzed? ☑ YES ☐ NO
2. Was there documentation of the injection of 5-50 ng bromofluorobenzene (BFB)? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Were calibration, blank, and sample analyses performed within 12 hours of tuning? ☑ YES ☐ NO

**Comments:** All instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:

***SW-846 Criteria:***

1. Was the internal standard (IS) which was selected for target parameter RF calculation the IS which had the closest retention time? ☑ YES ☐ NO
2. Were all target parameters included in the ICAL? ☑ YES ☐ NO
3. Did all ICALs consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
4. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ NA ☐ YES ☐ NO
4. Was the calibration curve developed using the same purge volume used for sample analysis? ☑ YES ☐ NO
6. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)

7. Were 8260B CCC criteria met? (%RSD ≤ 30%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane
   - toluene
   - ethylbenzene
   - vinyl chloride

8. Was each target parameter %RSD ≤ 15%? ☐ YES ☑ NO

9. Was the correlation coefficient >0.99 for target parameters with ≥15 % RSD? ☐ NA ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target parameters and surrogates have % RSDs ≤ 15% and >0.99 correlation coefficient? ☐NA ☑ YES ☐ NO

   (Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or analyzed independently during another 12-hour analysis period. ☑ YES ☐ NO

2. Were 8260B SPCC criteria met? ☑ YES ☐ NO
   - chloromethane (0.100)
   - 1,1-dichloroethane (0.100)
   - bromoform (0.100)
   - 1,1,2,2-tetrachloroethane (0.300)
   - chlorobenzene (0.300)

3. Were 8260B CCC criteria met?
   (%Drift or % Difference (%D) within ± 20%) ☑ YES ☐ NO
   - 1,1-dichloroethene
   - chloroform
   - 1,2-dichloropropane
   - toluene
   - ethylbenzene
   - vinyl chloride

***Method Validation Performance Criteria:***

1. Did all target parameters and system monitoring parameters (surrogates) have the % D within ± 25.0%? ☐ YES ☑ NO
   (Evaluate RRFs < 0.05 for potential problems.)

   If "NO", list parameters that exceed these criteria:

*HWMU-5*

*acetone %D = 26%*
*2- butanone %D = 41%*
*2-hexanone %D = 35%*
*1,1,2,2-tetrachloroethane %D = 28%*

*HWMU-7*

*1,1-dichloroethane %D = 26%*

***DAA Contractual Requirements:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? *not applicable for this project*

2. Three parameters may fail to meet maximum % D as long as the % D is within ± 40.0%
   Did the calibration verification meet this criteria? *not applicable for this project*

**Comments:** All calibration verification criteria were met except acetone, 2-butanone, 2-hexanone and 1,1,2,2-tetrachloroethane (associated with HWMU-5) and 1,1-dichloroethane (associated with HWMU-7) exceeded validation guidelines for percent drift / difference. Results for these parameter, where appropriate, were qualified as estimated.

## G. BLANK CRITERIA:

1. Was a method blank analyzed after the calibration standards, prior to sample analysis, and once for every 12-hour period beginning with the injection of BFB? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☐ YES ☑ NO
3. Were the trip blanks and method blanks interference free? ☑ YES ☐ NO
4. List target parameters detected in the blanks: *none*
5. Was the level of blank contamination less than 5% of the MCL associated with the analyte? ☑ NA ☐ YES ☐ NO
6. Did any samples contain high concentrations of VOCs in excess of the linear range of the calibration curve? ☐ YES ☑ NO
7. Were one or more blanks analyzed following the high concentration sample to prevent cross contamination? ☑ NA ☐ YES ☐ NO

**Comments:** All blank criteria were met.

## H. SURROGATE CRITERIA:

***SW-846 Criteria:***

1. Were the following surrogates used? ☑ YES ☐ NO
   - dibromofluoromethane ( 80%-120%)
   - 4-bromofluorobenzene (74%-121%)
   - toluene-$d_8$ (81%-117%)

- 1,2-dichloroethane-$d_4$ (80%-120%)

2. Were recoveries within the specified ranges? ☐ YES ☑ NO
   If "NO", corrective action is required. Flagging of the data as estimated is not acceptable until corrective action has been attempted.

3. Were samples with surrogates outside the QC window reanalyzed as required? *See comment*

**Comments:** All surrogate criteria were met except for one slightly low surrogate recovery in sample 5GP-1 (1-2'). Insufficient sample was available for reanalysis. However, the matrix spike for this sample had compliant surrogate recoveries. As per validation guidelines, all results were qualified as estimated for this sample. All other surrogate criteria were met.

## I. MATRIX SPIKE, MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| *Parameter* | *% R Water* | *RPD Water* |
|---|---|---|
| 1,1-dichloroethene | 61-145 | 14 |
| trichloroethene | 71-120 | 14 |
| benzene | 76-127 | 11 |
| toluene | 76-125 | 13 |
| chlorobenzene | 75-130 | 13 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? *See comment*
2. Did the MS/MSD contain additional target parameters? *See comment*
3. Was the MS/MSD analyzed on the specific project matrix? *See comment*
4. List matrix spike target parameters not within laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed matrix spike criteria? *See comment*
6. Did the LCS for the failed matrix spike parameter(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference? *NA.*
7. Were any parameters flagged as estimated concentrations? ☐ NA ☐ YES ☑ NO
8. List parameters flagged as estimated concentrations: *none*

**Comments:**
HWMU-5: Due to limited sample volume, a MSD was not performed. A MS, LCS and LCS Duplicate were performed. These QC samples were spiked with all parameters of interest. All recoveries and %RPD results, where applicable, were acceptable for all target parameters.
HWMU-7: All MS/MSD criteria were met. QC was performed on 7 GP-5(6-11').

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters? ☑ YES ☐ NO
3. List the LCS parameters and the laboratory's acceptable recovery range. *See page 37-38 and 137-138 of the volatile certificate of analysis.*
4. List the LCS parameters that exceeded the acceptable recovery range. *None.*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - fluorobenzene
   - chlorobenzene-$d_5$
   - 1,4-dichlorobenzene-$d_4$
2. Were internal standard areas within - 50% to + 100% of the last calibration verification? ☑ YES ☐ NO
3. Were internal standard retention times within ± 30 seconds of the last calibration verification? ☑ YES ☐ NO
4. Were samples failing items 2. and/or 3. above reanalyzed as required by the method? ☑ NA ☐ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET PARAMETER IDENTIFICATION:

1. Were the RRTs of the reported parameters within ± 0.06 RRT units of the standard RRT? ☐ NA ☑ YES ☐ NO
2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:

- Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑ YES ☐ NO
- Were all characteristic ions present in the standard spectra present in the sample spectra for parameters detected above the LOQ? ☑ NA ☐ YES ☐ NO
- Were the relative intensities of the ions between the standard and sample spectra within ± 30 %? ☐ NA ☑ YES ☐ NO

3. Were all reported parameters confirmed? ☐ NA ☑ YES ☐ NO

**Comments:**
HWMU-5: All target parameter identification criteria were met. Acetone was reported below the LOQ in several samples. No target parameters were reported above the LOQ in any sample.
HWMU-7: All target parameter identification criteria were met. 1,1-Dichloroethene was reported below the LOQ in 7GP-16(3-4'). No target parameters were reported above the LOQ in any sample.

## M. TARGET PARAMETER QUANTITATION:

- If the %RSD of a parameter was 15% or less, then the average relative response factor should have been used for quantitation.

- If the %RSD of a parameter was greater than 15%, then the quantitation should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the detected parameters whose %RSD was >15%: *none*
   a. Was the subsequent quantitation based on a linear regression fit? ☑ NA ☐ YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐ YES ☐ NO
2. Did the initial analysis of any sample have a target parameter concentration that exceeded the initial calibration range? ☐ NA ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO

3. Were the parameter concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** All target parameter quantitation criteria were met.

## N. LIBRARY SEARCHES:

**Comments:** Library searches were not requested with this data set.

## O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** DAA requested, and Lancaster Laboratories provided, method detection limit study and initial demonstration of proficiency documentation.

Sample results for HWMU-5 were originally reported on an "as received" basis without dry weight factors. Lancaster Laboratories provided revised sample results including the dry weight factors.

## SW-846 METHOD 8270C (GC/MS) SEMIVOLATILE ORGANIC DATA VALIDATION

| | | | | |
|---|---|---|---|---|
| **Sample ID:** | 5GP-1 (1-2'), | 5GP-1 (9-10'), | 5GP-3 (9-10'), | 5GP-6 (10-11'), |
| | 5GP-8 (7-8'), | 5GP-8 (11-12'), | 5 GP-12 (3-4'), | 5GP-16 (3-4') |
| | 7GP-1 (1-3'), | 7GP-2 (8-12'), | 7GP-2 (13.5-14.5'), | 7GP-3 (10-11'), |
| | 7GP-4 (3-4'), | 7GP-5 (6-11'), | 7GP-8 (5-8'), | 7 GP-16 (3-4') |

**QC Samples:** 7GP-5 (6-11') MS/MSD, LCS, Extraction Blank

**Laboratory:** Lancaster Laboratories, Lancaster PA, SDG RAR01-01

***Comment: Semivolatile (a.k.a, base/neutral and acid extractables) analysis involves sample preparation using SW-846 Method 3550B-ultrasonic extraction. The semivolatile extracts are concentrated through evaporation. Target analytes are separated and quantified using capillary column GC/MS.***

### A. QC DELIVERABLES PACKAGE:

1. Was the case narrative present and signed by a laboratory representative? ☑ YES ☐ NO
2. Was the Chain of Custody present and signed by a laboratory representative? ☑ YES ☐ NO
3. Were the sample results included for all sample locations? ☑ YES ☐ NO
4. Did the laboratory parameter list correspond to the project specific parameter list? ☑ YES ☐ NO
5. Were all parameter LOQs reported on sample summary sheets in agreement with the instrument specific MDL study? ☑NA☐ YES ☐NO

**Comments:** All QC deliverables package criteria were met. All LOQs were supported by an acceptable MDL study. Additionally, Lancaster Laboratories provided a calibration standard at 1 ppm to verify instrument sensitivity at the LOD level.

### B. QC HISTORY DOCUMENTATION CRITERIA:

1. Were the instrument specific LODs for target parameters provided? ☑ YES ☐ NO
2. Were the instrument specific LOQs for target parameters provided? ☑ YES ☐ NO
3. Was the instrument specific calibration range for each target parameter specified? ☑ YES ☐ NO
4. Was initial demonstration of capability data provided for all

target parameters? ☑ YES ☐ NO

**Comments:** All QC history documentation criteria were met.

## C. TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 7-day sample collection to extraction holding time met? ☑ YES ☐ NO
2. Was the 40-day extraction to analysis holding time met? ☑ YES ☐ NO
3. Were the samples received at 4°C (± 2°C)? ☑ YES ☐ NO

**Comments:** The sample collection to extraction and extraction to analysis holding times were met. All preservation criteria were met.

## D. GC/MS INSTRUMENT PERFORMANCE CHECK CRITERIA:
***(Tuning, Injection Port And Column Performance)***

1. Was analysis of the instrument performance check solution performed at the beginning of each 12-hour period of standard and/or sample analysis? ☑ YES ☐ NO
2. Was there documentation of the injection of 50 ng of DFTPP? ☑ YES ☐ NO
3. Were all ion abundance criteria met? ☑ YES ☐ NO
4. Was the injection port inertness verified by analysis of 4,4'-DDT? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was the injection port inertness check acceptable? ☐ NA ☑ YES ☐ NO

5. Was column performance checked through the analysis of peak tailing of pentachlorophenol and benzidine? ☑ YES ☐ NO
   - If no, does associated data require qualification? ☑ NA ☐ YES ☐ NO
   - Was column performance check acceptable? ☐ NA ☑ YES ☐ NO

**Comments:** All GC/MS instrument performance check criteria were met.

## E. INITIAL GC/MS CALIBRATION CRITERIA:

***SW-846 Criteria:***

1. Were the initial calibrations (ICAL) and any directly associated

blanks and samples analyzed within 12-hours of the associated instrument performance (tune) check? ☑ YES ☐ NO

2. Were quantitation ions, used and listed on data, randomly checked against primary quantitation ions as required by Method 8270C and the RFP? ☑ YES ☐ NO
3. Were all target parameters included in the ICAL? ☑ YES ☐ NO
4. Did the ICAL consist of a minimum of 5 calibration levels? ☑ YES ☐ NO
5. Was the lowest concentration calibration standard at or below the associated MCL, regulatory compliance, or action limit? ☑ YES ☐ NO
6. Were calibration levels removed from the curve that would negatively impact the data integrity? ☐ YES ☑ NO
7. Were 8270C SPCC criteria met?
   (Relative Response Factor-average(RRF) ≥ 0.050) ☐ NA ☑ YES ☐ NO
   - N-nitroso-di-n-propylamine
   - Hexachlorocyclopentadiene
   - 2,4-Dinitrophenol
   - 4-nitrophenol
   -
8. Were 8270C B/N Fraction parameter criteria met?
   ( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - acenaphthene
   - 1,4-dichlorobenzene
   - hexachlorobutadiene
   - N-nitrosodiphenylamine
   - Di-n-octyl phthalate
   - fluoranthene
   - benzo(a)pyrene
9. Were 8270C Acid Fraction parameter criteria met?
   ( % Relative Standard Deviation (%RSD) ≤ 30%) ☐ NA ☑ YES ☐ NO
   - 4-chloro-3-methylphenol
   - 2,4-dichlorophenol
   - 2-nitrophenol
   - phenol
   - pentachlorophenol
   - 2,4,6-trichlorophenol
10. Was each target parameter %RSD ≤ 15%?
    (with the exception of SPCC/CCC compounds) ☐ NA ☑ YES ☐ NO
11. Was the correlation coefficient or coefficient of determination >0.99 for target parameters with ≥ 15 % RSD
    (with the exception of SPCC/CCC compounds)? ☑ NA ☐ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did target parameters and surrogates (with the exception of SPCC/ CCC compounds)that have % RSDs ≥ 15% have >0.99 correlation coefficient or coefficient of determination? ☐ NA ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)

**Comments:** All initial calibration criteria were met.
ICAL performed on October 15, 2002 - Instrument ID HP06754.

## F. CALIBRATION VERIFICATION CRITERIA:

***SW-846 Criteria:***

1. Was a calibration verification analyzed at the beginning of each 12-hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The calibration verification may be part of the ICAL or run independently on another 12-hour analysis period. ☑ YES ☐ NO
2. Were 8270C SPCC criteria met?
(Relative Response Factor (RRF) ≥ 0.050) ☑ YES ☐ NO
3. Were all 13 8270C CCC criteria met?
(%D within ± 20%) ☑ YES ☐ NO

***Method Validation Performance Criteria:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? ☑ YES ☐ NO
(Evaluate RRFs < 0.05 for potential problems.)
If "NO", list parameters that exceed this criterion:

***DAA Contractual Requirements:***

1. Did all target parameters and system monitoring parameters (surrogates) have % Ds within ± 25.0%? *not applicable for this project*

2. Five parameters, in each standard mix, may fail to meet maximum % D as long the % D is within ± 40.0%
Did calibration verification meet this criteria? *not applicable for this project*
If "NO", explain.

**Comments**: All calibration verification criteria were met.

## G. BLANK CRITERIA:

1. Was a method/extraction blank analyzed on each GC/MS system used for sample analysis? ☑ YES ☐ NO
2. Was a trip blank analyzed with this sample batch? ☐ YES ☑ NO
3. Were the blank samples interference free? ☑ YES ☐ NO
4. Was the level of blank contamination less than 5% of the MCL? ☑ NA ☐ YES ☐ NO
5. List target parameters detected in the blanks:
   *none*

**Comments:** All blank criteria were met.

## H. SURROGATE CRITERIA:

1. Were the following surrogates used? ☑ YES ☐ NO
   - phenol - $d_6$ (24%-113%)
   - 2-fluorophenol (25%-121%)
   - 2,4,6-tribromophenol (19%-122%)
   - nitrobenzene – $d_8$ (23%-120%)
   - 2-fluorobiphenyl (25%-121%)
   - p-terphenyl - $d_{14}$ (18%-137%)
2. Were recoveries within the specified ranges? ☑ YES ☐ NO
3. Were any two base/neutral or acid surrogates out of specification or did any one base/neutral or acid extractable surrogate have a recovery of less than 10%? ☐YES ☑ NO
   If yes, was a reextraction and reanalysis performed to confirm that the non-compliance was due to sample matrix effects rather than laboratory deficiencies? ☑ NA ☐ YES ☐ NO

**Comments:** All surrogate requirements were met. (Lancaster Laboratories used laboratory derived surrogate limits as suggested by SW-846.)

## I. MATRIX SPIKE/ MATRIX SPIKE DUPLICATE CRITERIA:

(MS/MSD Requirements - CLP Guidelines)

| Parameter | % R Water | % RPD Water |
|---|---|---|
| Phenol | 12-110 | 42 |
| 2-Chlorophenol | 27-123 | 40 |
| N-Nitroso-di-n-propylamine | 41-116 | 38 |
| 4-Chloro-3-methylphenol | 23-97 | 42 |
| Acenaphthene | 46-118 | 31 |
| 4-Nitrophenol | 10-80 | 50 |
| 2,4-Dinitrotoluene | 24-96 | 38 |
| Pyrene | 26-127 | 31 |

1. Was a matrix spike and matrix spike duplicate (MS/MSD) analyzed per sample batch or every 20 samples, whichever may occur first? ☑ YES ☐ NO
2. Did the MS/MSD spike contain additional target parameters? ☐ YES ☑ NO
3. Was the MS/MSD analyzed on the specific project matrix? ☑ YES ☐ NO
4. List MS/MSD target parameters not within acceptable laboratory recovery ranges: *none*
5. Was a LCS analyzed to address failed matrix spike criteria? ☑ NA ☐ YES ☐ NO
6. Did the LCS for the failed matrix spike parameter(s) fall within the acceptable recovery ranges and was the problem identified as matrix interference? ☑ NA ☐ YES ☐ NO
7. Were any parameters flagged as estimated concentrations? ☐ YES ☑ NO
8. List parameters flagged as estimated concentrations: *none*

**Comments:** MS/MSD analyses were performed on sample 7GP-5(6-11') and all method requirements were met.

## J. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

1. Was a LCS included in the sample analysis? ☑ YES ☐ NO
2. Did the LCS contain all required target parameters? ☑ YES ☐ NO
3. List the LCS target parameters and laboratory recovery range. *See page 402-403 of the semivolatile certificate of analysis.*
4. List the LCS parameters which exceeded the acceptable recovery range: *none*

**Comments:** All LCS criteria were met.

## K. INTERNAL STANDARDS CRITERIA:

1. Were the following internal standards used? ☑ YES ☐ NO
   - 1,4-Dichlorobenzene-$d_4$
   - Naphthalene-$d_8$
   - Acenapththene-$d_{10}$
   - Phenanthrene-$d_{10}$
   - Chrysene-$d_{12}$
   - Perylene-$d_{12}$

2. Were internal standard areas within ± 50% of last calibration verification? ☑ YES ☐ NO
3. Were internal standard retention times within ± 30 seconds of last calibration verification? ☑ YES ☐ NO

**Comments:** All internal standard criteria were met.

## L. TARGET PARAMETER IDENTIFICATION:

1. Were the RRTs of the reported parameters within ± 0.06 RRT units of the standard RRT? ☐ NA ☑YES ☐ NO

2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:
   - Did characteristic ions maximize in the same scan or within one scan of each other? ☐ NA ☑YES ☐ NO
   - Were all characteristic ions present in the standard spectra present in the sample spectra for parameters detected above the LOQ? ☐ NA ☑YES ☐ NO
   - Were the relative intensities of the ions between the standard and sample spectra within ± 30 %? ☐ NA ☑YES ☐ NO
3. Were all reported parameters confirmed? ☐NA ☑YES ☐ NO

**Comments:** All target parameter identification requirements were met.

## M. TARGET PARAMETER QUANTITATION:

- If the %RSD of a parameter was 15% or less, then the average relative response factor should have been used for quantitation.
- If the %RSD of a parameter was greater than 15%, then the quantitation

should be based on a calibration curve using the first or higher order regression fit of the five calibration points (6 calibration points for 2nd order).

1. List the parameters detected above the LOQ whose %RSD was >15%: *none*
   a. Was the subsequent quantitation based on a linear regression fit? ☑ NA ☐ YES ☐ NO
   b. Was the curve forced through the origin? ☑ NA ☐ YES ☐ NO

2. Did the initial analysis of any sample have a concentration of a target parameter that exceeded the initial calibration range? ☐ YES ☑ NO
   -If so, was the sample reanalyzed at a higher dilution? ☑ NA ☐ YES ☐ NO
3. Were the parameter concentrations that were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

**Comments:** Target parameter quantitation criteria were met.

## N. LIBRARY SEARCHES:

**Comments:** Library searches were not requested with this data set.

## O. DAA CORRECTIVE ACTION TAKEN AND GENERAL COMMENTS:

**Comments:** No corrective action was required.

**LIMITATIONS AND REFERENCES:**

Draper Aden Associates conducted data validation of the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data validation was conducted in general accordance with SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA and III) and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999). Validation of this data set is limited to the items detailed in this report.

Validated by: Date:

**Draper Aden Associates**
Engineering ♦ Surveying ♦ Environmental Services

JCF for

12-17-02

**Jeanie Flint**
**Environmental Scientist**
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# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **6010B** | | | | | | | |
| 5GP-1(1-2') | Aluminum | 19200 | J | 19200 | | 24.7 | No action taken. |
| 5GP-1(9-10') | Aluminum | 12100 | J | 12100 | | 23.4 | No action taken. |
| 5GP-12(3-4') | Aluminum | 19600 | J | 19600 | | 25 | No action taken. |
| 5GP-16(3-4') | Aluminum | 17000 | J | 17000 | | 24.8 | No action taken. |
| 5GP-3(9-10') | Aluminum | 14800 | J | 14800 | | 24.4 | No action taken. |
| 5GP-6(10-11') | Aluminum | 19400 | J | 19400 | | 24.2 | No action taken. |
| 5GP-8(11-12') | Aluminum | 19600 | J | 19600 | | 24 | No action taken. |
| 5GP-8(7-8') | Aluminum | 14200 | J | 14200 | | 23.7 | No action taken. |
| 7GP-1(1-3') | Aluminum | 11100 | J | 11100 | | 23.5 | No action taken. |
| 7GP-16(3-4') | Aluminum | 6650 | J | 6650 | | 24.1 | No action taken. |
| 7GP-2(13.5-14.5') | Aluminum | 19700 | J | 19700 | | 24.3 | No action taken. |
| 7GP-2(8-12') | Aluminum | 8790 | J | 8790 | | 24.3 | No action taken. |
| 7GP-3(10-11') | Aluminum | 11700 | J | 11700 | | 25.3 | No action taken. |
| 7GP-4(3-4') | Aluminum | 5290 | J | 5290 | | 23.4 | No action taken. |
| 7GP-5(6-11') | Aluminum | 20000 | J | 20000 | | 24.1 | No action taken. |
| 7GP-8(5-8') | Aluminum | 22400 | J | 22400 | | 24.7 | No action taken. |
| 5GP-1(1-2') | Antimony | 1.8 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Antimony | 0.9 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Antimony | 1.6 | B | U | J | 7.5 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Antimony | 1.1 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-3(9-10') | Antimony | 1.4 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Antimony | 1.1 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Antimony | 1.2 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Antimony | 1.1 | B | U | J | 7.1 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Antimony | 0.52 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Antimony | 0.59 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Antimony | 1.3 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-2(8-12') | Antimony | 1.1 | B | U | J | 7.3 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Antimony | 1.1 | B | U | J | 7.6 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Antimony | 0.77 | B | U | J | 7 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Antimony | 1 | B | U | J | 7.2 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Antimony | 0.8 | B | U | J | 7.4 | Result < LOQ. Calibration blank contamination. Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Arsenic | 2.2 | | 2.2 | | 1.2 | No action taken. |
| 5GP-1(9-10') | Arsenic | 3.9 | | 3.9 | | 1.2 | No action taken. |
| 5GP-12(3-4') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 5GP-16(3-4') | Arsenic | 4 | | 4 | | 1.2 | No action taken. |
| 5GP-3(9-10') | Arsenic | 2.6 | | 2.6 | | 1.2 | No action taken. |
| 5GP-6(10-11') | Arsenic | 1.6 | | 1.6 | | 1.2 | No action taken. |
| 5GP-8(11-12') | Arsenic | 3.4 | | 3.4 | | 1.2 | No action taken. |
| 5GP-8(7-8') | Arsenic | 4.1 | | 4.1 | | 1.2 | No action taken. |
| 7GP-1(1-3') | Arsenic | 3.8 | | 3.8 | | 1.2 | No action taken. |
| 7GP-16(3-4') | Arsenic | 1 | B | U | | 1.2 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Arsenic | 3.1 | | 3.1 | | 1.2 | No action taken. |
| 7GP-2(8-12') | Arsenic | 2.7 | | 2.7 | | 1.2 | No action taken. |
| 7GP-3(10-11') | Arsenic | 26.1 | | 26.1 | | 1.3 | No action taken. |
| 7GP-4(3-4') | Arsenic | 0.96 | B | U | | 1.2 | Result < LOQ. |
| 7GP-5(6-11') | Arsenic | 3.5 | | 3.5 | | 1.2 | No action taken. |
| 7GP-8(5-8') | Arsenic | 2.4 | | 2.4 | | 1.2 | No action taken. |
| Unit_5_TCLP | Arsenic | 0.0091 | J | U | | 0.1 | Result < LOQ. |
| Unit_7_TCLP | Arsenic | 0.0056 | J | U | | 0.1 | Result < LOQ. |
| 5GP-1(1-2') | Barium | 85.1 | J | 85.1 | | 24.7 | No action taken. |
| 5GP-1(9-10') | Barium | 47.3 | J | 47.3 | | 23.4 | No action taken. |
| 5GP-12(3-4') | Barium | 56.2 | J | 56.2 | | 25 | No action taken. |
| 5GP-16(3-4') | Barium | 51.2 | J | 51.2 | | 24.8 | No action taken. |
| 5GP-3(9-10') | Barium | 37.2 | J | 37.2 | | 24.4 | No action taken. |
| 5GP-6(10-11') | Barium | 56.9 | J | 56.9 | | 24.2 | No action taken. |
| 5GP-8(11-12') | Barium | 61.4 | J | 61.4 | | 24 | No action taken. |
| 5GP-8(7-8') | Barium | 46.1 | J | 46.1 | | 23.7 | No action taken. |

SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 7GP-1(1-3') | Barium | 66.9 | J | 66.9 | 23.5 | No action taken. |
| 7GP-16(3-4') | Barium | 106 | J | 106 | 24.1 | No action taken. |
| 7GP-2(13.5-14.5') | Barium | 70.9 | J | 70.9 | 24.3 | No action taken. |
| 7GP-2(8-12') | Barium | 40.9 | J | 40.9 | 24.3 | No action taken. |
| 7GP-3(10-11') | Barium | 229 | J | 229 | 25.3 | No action taken. |
| 7GP-4(3-4') | Barium | 69.2 | J | 69.2 | 23.4 | No action taken. |
| 7GP-5(6-11') | Barium | 55.6 | J | 55.6 | 24.1 | No action taken. |
| 7GP-8(5-8') | Barium | 55 | J | 55 | 24.7 | No action taken. |
| Unit_5_TCLP | Barium | 0.714 | | 0.714 | 0.1 | No action taken. |
| Unit_7_TCLP | Barium | 0.521 | | 0.521 | 0.1 | No action taken. |
| 5GP-1(1-2') | Beryllium | 0.59 | B | U | 0.62 | Result < LOQ. |
| 5GP-1(9-10') | Beryllium | 1.1 | | 1.1 | 0.59 | No action taken. |
| 5GP-12(3-4') | Beryllium | 0.55 | B | U | 0.62 | Result < LOQ. |
| 5GP-16(3-4') | Beryllium | 0.4 | B | U | 0.62 | Result < LOQ. |
| 5GP-3(9-10') | Beryllium | 0.31 | B | U | 0.61 | Result < LOQ. |
| 5GP-6(10-11') | Beryllium | 0.41 | B | U | 0.6 | Result < LOQ. |
| 5GP-8(11-12') | Beryllium | 0.81 | | 0.81 | 0.6 | No action taken. |
| 5GP-8(7-8') | Beryllium | 1.3 | | 1.3 | 0.59 | No action taken. |
| 7GP-1(1-3') | Beryllium | 0.7 | | 0.7 | 0.59 | No action taken. |
| 7GP-16(3-4') | Beryllium | 0.55 | B | U | 0.6 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Beryllium | 0.84 | | 0.84 | 0.61 | No action taken. |
| 7GP-2(8-12') | Beryllium | 1.2 | | 1.2 | 0.61 | No action taken. |
| 7GP-3(10-11') | Beryllium | 1.5 | | 1.5 | 0.63 | No action taken. |
| 7GP-4(3-4') | Beryllium | 0.44 | B | U | 0.59 | Result < LOQ. |
| 7GP-5(6-11') | Beryllium | 0.35 | B | U | 0.6 | Result < LOQ. |
| 7GP-8(5-8') | Beryllium | 0.41 | B | U | 0.62 | Result < LOQ. |
| 7GP-1(1-3') | Cadmium | 0.027 | B | U | 0.59 | Result < LOQ. |
| 7GP-16(3-4') | Cadmium | 0.061 | B | U | 0.6 | Result < LOQ. |
| 7GP-3(10-11') | Cadmium | 0.16 | B | U | 0.63 | Result < LOQ. |
| 5GP-1(1-2') | Calcium | 1060 | | 1060 | 618 | No action taken. |
| 5GP-1(9-10') | Calcium | 303 | B | U | 586 | Result < LOQ. |
| 5GP-12(3-4') | Calcium | 3200 | | 3200 | 624 | No action taken. |
| 5GP-16(3-4') | Calcium | 1020 | | 1020 | 620 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-3(9-10') | Calcium | 866 | | 866 | 609 | No action taken. |
| 5GP-6(10-11') | Calcium | 9930 | | 9930 | 604 | No action taken. |
| 5GP-8(11-12') | Calcium | 576 | B | U | 599 | Result < LOQ. |
| 5GP-8(7-8') | Calcium | 159 | B | U | 592 | Result < LOQ. |
| 7GP-1(1-3') | Calcium | 7490 | | 7490 | 587 | No action taken. |
| 7GP-16(3-4') | Calcium | 1230 | | 1230 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Calcium | 480 | B | U | 608 | Result < LOQ. |
| 7GP-2(8-12') | Calcium | 283 | B | U | 607 | Result < LOQ. |
| 7GP-3(10-11') | Calcium | 28100 | | 28100 | 631 | No action taken. |
| 7GP-4(3-4') | Calcium | 749 | | 749 | 586 | No action taken. |
| 7GP-5(6-11') | Calcium | 259 | B | U | 602 | Result < LOQ. |
| 7GP-8(5-8') | Calcium | 1570 | | 1570 | 618 | No action taken. |
| 5GP-1(1-2') | Chromium | 22.4 | | 22.4 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Chromium | 31.7 | | 31.7 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Chromium | 27 | | 27 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Chromium | 24.4 | | 24.4 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-3(9-10') | Chromium | 22.8 | | 22.8 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Chromium | 17.9 | | 17.9 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Chromium | 26.9 | | 26.9 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Chromium | 21.6 | | 21.6 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Chromium | 24.1 | | 24.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Chromium | 11.5 | | 11.5 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Chromium | 22.5 | | 22.5 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-2(8-12') | Chromium | 22 | | 22 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Chromium | 32.8 | | 32.8 J | 1.3 | Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Chromium | 10.1 | | 10.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Chromium | 22.8 | | 22.8 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Chromium | 20.1 | | 20.1 J | 1.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Cobalt | 9 | | 9 | 6.2 | No action taken. |
| 5GP-1(9-10') | Cobalt | 17.6 | | 17.6 | 5.9 | No action taken. |
| 5GP-12(3-4') | Cobalt | 9.1 | | 9.1 | 6.2 | No action taken. |
| 5GP-16(3-4') | Cobalt | 8.2 | | 8.2 | 6.2 | No action taken. |
| 5GP-3(9-10') | Cobalt | 3.2 | B | U | 6.1 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-6(10-11') | Cobalt | 5.5 | B | U | 6 | Result < LOQ. |
| 5GP-8(11-12') | Cobalt | 10 | | 10 | 6 | No action taken. |
| 5GP-8(7-8') | Cobalt | 11.6 | | 11.6 | 5.9 | No action taken. |
| 7GP-1(1-3') | Cobalt | 11.5 | | 11.5 | 5.9 | No action taken. |
| 7GP-16(3-4') | Cobalt | 5.9 | B | U | 6 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Cobalt | 16.2 | | 16.2 | 6.1 | No action taken. |
| 7GP-2(8-12') | Cobalt | 12.5 | | 12.5 | 6.1 | No action taken. |
| 7GP-3(10-11') | Cobalt | 8.1 | | 8.1 | 6.3 | No action taken. |
| 7GP-4(3-4') | Cobalt | 5.4 | B | U | 5.9 | Result < LOQ. |
| 7GP-5(6-11') | Cobalt | 4.5 | B | U | 6 | Result < LOQ. |
| 7GP-8(5-8') | Cobalt | 5.4 | B | U | 6.2 | Result < LOQ. |
| 5GP-1(1-2') | Copper | 13.9 | | 13.9 | 3.1 | No action taken. |
| 5GP-1(9-10') | Copper | 19.8 | | 19.8 | 2.9 | No action taken. |
| 5GP-12(3-4') | Copper | 13.6 | | 13.6 | 3.1 | No action taken. |
| 5GP-16(3-4') | Copper | 10.6 | | 10.6 | 3.1 | No action taken. |
| 5GP-3(9-10') | Copper | 9.5 | | 9.5 | 3 | No action taken. |
| 5GP-6(10-11') | Copper | 11.6 | | 11.6 | 3 | No action taken. |
| 5GP-8(11-12') | Copper | 14.8 | | 14.8 | 3 | No action taken. |
| 5GP-8(7-8') | Copper | 16.8 | | 16.8 | 3 | No action taken. |
| 7GP-1(1-3') | Copper | 22.8 | | 22.8 | 2.9 | No action taken. |
| 7GP-16(3-4') | Copper | 5.1 | | 5.1 | 3 | No action taken. |
| 7GP-2(13.5-14.5') | Copper | 14.2 | | 14.2 | 3 | No action taken. |
| 7GP-2(8-12') | Copper | 22 | | 22 | 3 | No action taken. |
| 7GP-3(10-11') | Copper | 23.2 | | 23.2 | 3.2 | No action taken. |
| 7GP-4(3-4') | Copper | 5.1 | | 5.1 | 2.9 | No action taken. |
| 7GP-5(6-11') | Copper | 10 | | 10 | 3 | No action taken. |
| 7GP-8(5-8') | Copper | 12.7 | | 12.7 | 3.1 | No action taken. |
| 5GP-1(1-2') | Iron | 30700 | | 30700 | 12.4 | No action taken. |
| 5GP-1(9-10') | Iron | 26700 | | 26700 | 11.7 | No action taken. |
| 5GP-12(3-4') | Iron | 33400 | | 33400 | 12.5 | No action taken. |
| 5GP-16(3-4') | Iron | 28200 | | 28200 | 12.4 | No action taken. |
| 5GP-3(9-10') | Iron | 24400 | | 24400 | 12.2 | No action taken. |
| 5GP-6(10-11') | Iron | 22400 | | 22400 | 12.1 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-8(11-12') | Iron | 29000 | 29000 | 12 | No action taken. |
| 5GP-8(7-8') | Iron | 28400 | 28400 | 11.8 | No action taken. |
| 7GP-1(1-3') | Iron | 19400 | 19400 | 11.7 | No action taken. |
| 7GP-16(3-4') | Iron | 10800 | 10800 | 12.1 | No action taken. |
| 7GP-2(13.5-14.5') | Iron | 29300 | 29300 | 12.2 | No action taken. |
| 7GP-2(8-12') | Iron | 23300 | 23300 | 12.1 | No action taken. |
| 7GP-3(10-11') | Iron | 15900 | 15900 | 12.6 | No action taken. |
| 7GP-4(3-4') | Iron | 9860 | 9860 | 11.7 | No action taken. |
| 7GP-5(6-11') | Iron | 23600 | 23600 | I2 | No action taken. |
| 7GP-8(5-8') | Iron | 23200 | 23200 | 12.4 | No action taken. |
| 5GP-1(1-2') | Lead | 12.9 | 12.9 | 0.37 | No action taken. |
| 5GP-1(9-10') | Lead | 9.8 | 9.8 | 0.35 | No action taken. |
| 5GP-12(3-4') | Lead | 12.6 | 12.6 | 0.37 | No action taken. |
| 5GP-16(3-4') | Lead | 11.4 | 11.4 | 0.37 | No action taken. |
| 5GP-3(9-10') | Lead | 9.7 | 9.7 | 0.37 | No action taken. |
| 5GP-6(10-11') | Lead | 11.3 | 11.3 | 0.36 | No action taken. |
| 5GP-8(11-12') | Lead | 9.6 | 9.6 | 0.36 | No action taken. |
| 5GP-8(7-8') | Lead | 9.6 | 9.6 | 0.36 | No action taken. |
| 7GP-1(1-3') | Lead | 8.1 | 8.1 | 0.35 | No action taken. |
| 7GP-16(3-4') | Lead | 5.4 | 5.4 | 0.36 | No action taken. |
| 7GP-2(13.5-14.5') | Lead | 13.6 | 13.6 | 0.36 | No action taken. |
| 7GP-2(8-12') | Lead | 2.8 | 2.8 | 0.36 | No action taken. |
| 7GP-3(10-11') | Lead | 35.1 | 35.1 | 0.38 | No action taken. |
| 7GP-4(3-4') | Lead | 5.8 | 5.8 | 0.35 | No action taken. |
| 7GP-5(6-11') | Lead | 11 | 11 | 0.36 | No action taken. |
| 7GP-8(5-8') | Lead | 10.3 | 10.3 | 0.37 | No action taken. |
| Unit_5_TCLP | Lead | 0.0116 J | U | 0.1 | Result < LOQ. |
| 5GP-1(1-2') | Magnesium | 1530 | 1530 | 618 | No action taken. |
| 5GP-1(9-10') | Magnesium | 1730 | 1730 | 586 | No action taken. |
| 5GP-12(3-4') | Magnesium | 2200 | 2200 | 624 | No action taken. |
| 5GP-16(3-4') | Magnesium | 812 | 812 | 620 | No action taken. |
| 5GP-3(9-10') | Magnesium | 597 B | U | 609 | Result < LOQ. |
| 5GP-6(10-11') | Magnesium | 1220 | 1220 | 604 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-8(11-12') | Magnesium | 1560 | 1560 | 599 | No action taken. |
| 5GP-8(7-8') | Magnesium | 1410 | 1410 | 592 | No action taken. |
| 7GP-1(1-3') | Magnesium | 4290 | 4290 | 587 | No action taken. |
| 7GP-16(3-4') | Magnesium | 1890 | 1890 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Magnesium | 2000 | 2000 | 608 | No action taken. |
| 7GP-2(8-12') | Magnesium | 3140 | 3140 | 607 | No action taken. |
| 7GP-3(10-11') | Magnesium | 2440 | 2440 | 631 | No action taken. |
| 7GP-4(3-4') | Magnesium | 1590 | 1590 | 586 | No action taken. |
| 7GP-5(6-11') | Magnesium | 787 | 787 | 602 | No action taken. |
| 7GP-8(5-8') | Magnesium | 1090 | 1090 | 618 | No action taken. |
| 5GP-1(1-2') | Manganese | 337 | 337 | 1.9 | No action taken. |
| 5GP-1(9-10') | Manganese | 360 | 360 | 1.8 | No action taken. |
| 5GP-12(3-4') | Manganese | 457 | 457 | 1.9 | No action taken. |
| 5GP-16(3-4') | Manganese | 393 | 393 | 1.9 | No action taken. |
| 5GP-3(9-10') | Manganese | 90.8 | 90.8 | 1.8 | No action taken. |
| 5GP-6(10-11') | Manganese | 154 | 154 | 1.8 | No action taken. |
| 5GP-8(11-12') | Manganese | 372 | 372 | 1.8 | No action taken. |
| 5GP-8(7-8') | Manganese | 242 | 242 | 1.8 | No action taken. |
| 7GP-1(1-3') | Manganese | 662 | 662 | 1.8 | No action taken. |
| 7GP-16(3-4') | Manganese | 422 | 422 | 1.8 | No action taken. |
| 7GP-2(13.5-14.5') | Manganese | 407 | 407 | 1.8 | No action taken. |
| 7GP-2(8-12') | Manganese | 274 | 274 | 1.8 | No action taken. |
| 7GP-3(10-11') | Manganese | 145 | 145 | 1.9 | No action taken. |
| 7GP-4(3-4') | Manganese | 292 | 292 | 1.8 | No action taken. |
| 7GP-5(6-11') | Manganese | 187 | 187 | 1.8 | No action taken. |
| 7GP-8(5-8') | Manganese | 280 | 280 | 1.9 | No action taken. |
| 5GP-1(1-2') | Nickel | 9.4 | 9.4 | 4.9 | No action taken. |
| 5GP-1(9-10') | Nickel | 19 | 19 | 4.7 | No action taken. |
| 5GP-12(3-4') | Nickel | 8.2 | 8.2 | 5 | No action taken. |
| 5GP-16(3-4') | Nickel | 6.3 | 6.3 | 5 | No action taken. |
| 5GP-3(9-10') | Nickel | 5.3 | 5.3 | 4.9 | No action taken. |
| 5GP-6(10-11') | Nickel | 7.9 | 7.9 | 4.8 | No action taken. |
| 5GP-8(11-12') | Nickel | 11 | 11 | 4.8 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-8(7-8') | Nickel | 10.7 | | 10.7 | 4.7 | No action taken. |
| 7GP-1(1-3') | Nickel | 13.5 | | 13.5 | 4.7 | No action taken. |
| 7GP-16(3-4') | Nickel | 7.7 | | 7.7 | 4.8 | No action taken. |
| 7GP-2(13.5-14.5') | Nickel | 11.4 | | 11.4 | 4.9 | No action taken. |
| 7GP-2(8-12') | Nickel | 21.6 | | 21.6 | 4.9 | No action taken. |
| 7GP-3(10-11') | Nickel | 15.9 | | 15.9 | 5.1 | No action taken. |
| 7GP-4(3-4') | Nickel | 6.3 | | 6.3 | 4.7 | No action taken. |
| 7GP-5(6-11') | Nickel | 7.2 | | 7.2 | 4.8 | No action taken. |
| 7GP-8(5-8') | Nickel | 8.5 | | 8.5 | 4.9 | No action taken. |
| 5GP-1(1-2') | Potassium | 1580 | J | 1580 | 618 | No action taken. |
| 5GP-1(9-10') | Potassium | 851 | J | 851 | 586 | No action taken. |
| 5GP-12(3-4') | Potassium | 915 | J | 915 | 624 | No action taken. |
| 5GP-16(3-4') | Potassium | 561 | B J | U | 620 | Result < LOQ. |
| 5GP-3(9-10') | Potassium | 500 | B J | U | 609 | Result < LOQ. |
| 5GP-6(10-11') | Potassium | 1120 | J | 1120 | 604 | No action taken. |
| 5GP-8(11-12') | Potassium | 1420 | J | 1420 | 599 | No action taken. |
| 5GP-8(7-8') | Potassium | 1090 | J | 1090 | 592 | No action taken. |
| 7GP-1(1-3') | Potassium | 774 | J | 774 | 587 | No action taken. |
| 7GP-16(3-4') | Potassium | 809 | J | 809 | 603 | No action taken. |
| 7GP-2(13.5-14.5') | Potassium | 1390 | J | 1390 | 608 | No action taken. |
| 7GP-2(8-12') | Potassium | 1070 | J | 1070 | 607 | No action taken. |
| 7GP-3(10-11') | Potassium | 2970 | J | 2970 | 631 | No action taken. |
| 7GP-4(3-4') | Potassium | 729 | J | 729 | 586 | No action taken. |
| 7GP-5(6-11') | Potassium | 732 | J | 732 | 602 | No action taken. |
| 7GP-8(5-8') | Potassium | 1040 | J | 1040 | 618 | No action taken. |
| 7GP-3(10-11') | Selenium | 3.5 | | 3.5 | 0.63 | No action taken. |
| 5GP-6(10-11') | Sodium | 80.8 | B | U | 604 | Result < LOQ. |
| 7GP-3(10-11') | Sodium | 156 | B | U | 631 | Result < LOQ. |
| 7GP-16(3-4') | Thallium | 0.7 | B | U | 1.2 | Result < LOQ. |
| 5GP-1(1-2') | Vanadium | 64.9 | | 64.9 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(9-10') | Vanadium | 32 | | 32 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 5GP-12(3-4') | Vanadium | 61.8 | | 61.8 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-16(3-4') | Vanadium | 55.4 | | 55.4 J | 6.2 | Low matrix spike recovery. Result biased low. |

SEE LAST PAGE FOR DATA QUALIFIER DEFINITIONS.

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 5GP-3(9-10') | Vanadium | 54.3 | 54.3 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 5GP-6(10-11') | Vanadium | 57.5 | 57.5 J | 6 | Low matrix spike recovery. Result biased low. |
| 5GP-8(11-12') | Vanadium | 55.2 | 55.2 J | 6 | Low matrix spike recovery. Result biased low. |
| 5GP-8(7-8') | Vanadium | 26.7 | 26.7 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-1(1-3') | Vanadium | 28 | 28 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-16(3-4') | Vanadium | 15.4 | 15.4 J | 6 | Low matrix spike recovery. Result biased low. |
| 7GP-2(13.5-14.5') | Vanadium | 57.7 | 57.7 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 7GP-2(8-12') | Vanadium | 21.1 | 21.1 J | 6.1 | Low matrix spike recovery. Result biased low. |
| 7GP-3(10-11') | Vanadium | 42.1 | 42.1 J | 6.3 | Low matrix spike recovery. Result biased low. |
| 7GP-4(3-4') | Vanadium | 14 | 14 J | 5.9 | Low matrix spike recovery. Result biased low. |
| 7GP-5(6-11') | Vanadium | 60.6 | 60.6 J | 6 | Low matrix spike recovery. Result biased low. |
| 7GP-8(5-8') | Vanadium | 61.8 | 61.8 J | 6.2 | Low matrix spike recovery. Result biased low. |
| 5GP-1(1-2') | Zinc | 35.3 | 35.3 | 2.5 | No action taken. |
| 5GP-1(9-10') | Zinc | 20.7 | 20.7 | 2.3 | No action taken. |
| 5GP-12(3-4') | Zinc | 32.1 | 32.1 | 2.5 | No action taken. |
| 5GP-16(3-4') | Zinc | 20.2 | 20.2 | 2.5 | No action taken. |
| 5GP-3(9-10') | Zinc | 18.6 | 18.6 | 2.4 | No action taken. |
| 5GP-6(10-11') | Zinc | 26.4 | 26.4 | 2.4 | No action taken. |
| 5GP-8(11-12') | Zinc | 33.8 | 33.8 | 2.4 | No action taken. |
| 5GP-8(7-8') | Zinc | 23.9 | 23.9 | 2.4 | No action taken. |
| 7GP-1(1-3') | Zinc | 17.4 | 17.4 | 2.3 | No action taken. |
| 7GP-16(3-4') | Zinc | 39.7 | 39.7 | 2.4 | No action taken. |
| 7GP-2(13.5-14.5') | Zinc | 32.6 | 32.6 | 2.4 | No action taken. |
| 7GP-2(8-12') | Zinc | 15 | 15 | 2.4 | No action taken. |
| 7GP-3(10-11') | Zinc | 33.8 | 33.8 | 2.5 | No action taken. |
| 7GP-4(3-4') | Zinc | 35 | 35 | 2.3 | No action taken. |
| 7GP-5(6-11') | Zinc | 24.2 | 24.2 | 2.4 | No action taken. |
| 7GP-8(5-8') | Zinc | 28.1 | 28.1 | 2.5 | No action taken. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 7471A | | | | | | |
| 5GP-1(1-2') | Mercury | 0.048 | B | U | 0.12 | Result < LOQ. |
| 5GP-1(9-10') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 5GP-12(3-4') | Mercury | 0.049 | B | U | 0.12 | Result < LOQ. |
| 5GP-16(3-4') | Mercury | 0.07 | B | U | 0.12 | Result < LOQ. |
| 5GP-3(9-10') | Mercury | 0.057 | B | U | 0.12 | Result < LOQ. |
| 5GP-6(10-11') | Mercury | 0.043 | B | U | 0.12 | Result < LOQ. |
| 5GP-8(11-12') | Mercury | 0.057 | B | U | 0.12 | Result < LOQ. |
| 5GP-8(7-8') | Mercury | 0.023 | B | U | 0.12 | Result < LOQ. |
| 7GP-1(1-3') | Mercury | 0.026 | B | U | 0.12 | Result < LOQ. |
| 7GP-16(3-4') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Mercury | 0.05 | B | U | 0.12 | Result < LOQ. |
| 7GP-2(8-12') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-3(10-11') | Mercury | 0.04 | B | U | 0.13 | Result < LOQ. |
| 7GP-4(3-4') | Mercury | 0.12 | U | U | 0.12 | Result < LOQ. |
| 7GP-5(6-11') | Mercury | 0.1 | B | U | 0.12 | Result < LOQ. |
| 7GP-8(5-8') | Mercury | 0.061 | B | U | 0.12 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| **8081A/8082** | | | | | |
| 5GP-1(1-2') | Aroclor-1016 | 0.0055 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1016 | 0.0055 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1016 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1016 | 0.0056 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1016 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1016 | 0.0058 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1221 | 0.011 U | U J | 0.034 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1221 | 0.012 U | U J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1221 | 0.012 U | U J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1221 | 0.012 U | U J | 0.037 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1221 | 0.012 U | U J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1221 | 0.011 U | U J | 0.034 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-8(11-12') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1221 | 0.013 | U | U | J | 0.038 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1221 | 0.012 | U | U | J | 0.035 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1221 | 0.012 | U | U | J | 0.036 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1232 | 0.0049 | U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1232 | 0.0049 | U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1232 | 0.005 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1232 | 0.0052 | U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1232 | 0.0051 | U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-3(10-11') | Aroclor-1232 | 0.0054 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1232 | 0.005 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1232 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1232 | 0.0052 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1242 | 0.0057 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1242 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1242 | 0.006 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1242 | 0.0057 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1242 | 0.0058 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1242 | 0.0058 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1242 | 0.006 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1242 | 0.0063 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1242 | 0.0059 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1242 | 0.006 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1242 | 0.0061 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1248 | 0.0056 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1248 | 0.0057 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|
| 5GP-12(3-4') | Aroclor-1248 | 0.0059 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1248 | 0.006 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1248 | 0.0059 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1248 | 0.0056 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1248 | 0.0059 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1248 | 0.0059 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1248 | 0.0058 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1248 | 0.0062 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1248 | 0.0057 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1248 | 0.0058 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1248 | 0.006 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1254 | 0.0065 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1254 | 0.0068 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1254 | 0.0069 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1254 | 0.0069 U | U | J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1254 | 0.0065 U | U | J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1254 | 0.0067 U | U | J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-1(1-3') | Aroclor-1254 | 0.0066 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1254 | 0.0069 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1254 | 0.0072 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1254 | 0.0067 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-5(6-11') | Aroclor-1254 | 0.0068 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1254 | 0.0069 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(1-2') | Aroclor-1260 | 0.005 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-1(9-10') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-12(3-4') | Aroclor-1260 | 0.0053 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-16(3-4') | Aroclor-1260 | 0.0054 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-3(9-10') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | Aroclor-1260 | 0.005 U | U J | 0.019 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(11-12') | Aroclor-1260 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 5GP-8(7-8') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-1(1-3') | Aroclor-1260 | 0.0051 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-16(3-4') | Aroclor-1260 | 0.0053 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(13.5-14.5') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-2(8-12') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-3(10-11') | Aroclor-1260 | 0.0056 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 7GP-4(3-4') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | Validated Result | LOQ | Validation Notes |
|---|---|---|---|---|---|
| 7GP-5(6-11') | Aroclor-1260 | 0.0052 U | U J | 0.02 | Analyte not detected. Estimated due limited QC information. |
| 7GP-8(5-8') | Aroclor-1260 | 0.0053 U | U J | 0.021 | Analyte not detected. Estimated due limited QC information. |
| 5GP-6(10-11') | delta-BHC | 0.00022 J | U | 0.001 | Result < LOQ. |
| 5GP-1(1-2') | Chlordane-gamma | 0.00048 J | U | 0.0019 | Result < LOQ. |
| 7GP-1(1-3') | Chlordane-gamma | 0.00027 J | U | 0.002 | Result < LOQ. |
| 7GP-16(3-4') | Chlordane-gamma | 0.00026 J | U | 0.002 | Result < LOQ. |
| 7GP-5(6-11') | Chlordane-gamma | 0.00023 J | U | 0.002 | Result < LOQ. |
| 7GP-8(5-8') | Chlordane-gamma | 0.00028 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | 4,4-DDD | 0.019 | 0.019 | 0.004 | No action taken. |
| 5GP-6(10-11') | 4,4-DDD | 0.0067 | 0.0067 | 0.0019 | No action taken. |
| 5GP-8(11-12') | 4,4-DDD | 0.00097 J | U | 0.002 | Result < LOQ. |
| 5GP-8(7-8') | 4,4-DDD | 0.051 | 0.051 | 0.01 | No action taken. |
| 7GP-2(13.5-14.5') | 4,4-DDD | 0.0035 | 0.0035 | 0.0021 | No action taken. |
| 7GP-2(8-12') | 4,4-DDD | 0.00075 J | U | 0.002 | Result < LOQ. |
| 7GP-5(6-11') | 4,4-DDD | 0.0006 J | U | 0.002 | Result < LOQ. |
| 7GP-8(5-8') | 4,4-DDD | 0.00049 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | 4,4-DDE | 0.00049 J | U | 0.002 | Result < LOQ. |
| 5GP-6(10-11') | 4,4-DDE | 0.0017 J | U | 0.0019 | Result < LOQ. |
| 5GP-8(11-12') | 4,4-DDE | 0.0012 J | U | 0.002 | Result < LOQ. |
| 5GP-8(7-8') | 4,4-DDE | 0.0011 J | U | 0.002 | Result < LOQ. |
| 7GP-3(10-11') | 4,4-DDE | 0.0025 | 0.0025 | 0.0021 | No action taken. |
| 7GP-2(13.5-14.5') | 4,4-DDT | 0.00067 J | U | 0.0021 | Result < LOQ. |
| 5GP-1(9-10') | Endrin Aldehyde | 0.0023 J | U | 0.0035 | Result < LOQ. |
| 5GP-12(3-4') | Endrin Aldehyde | 0.0017 J | U | 0.0036 | Result < LOQ. |
| 5GP-16(3-4') | Endrin Aldehyde | 0.0022 J | U | 0.0037 | Result < LOQ. |
| 5GP-8(11-12') | Endrin Aldehyde | 0.0017 J | U | 0.0035 | Result < LOQ. |
| 7GP-2(13.5-14.5') | Endrin Aldehyde | 0.0031 J | U | 0.0036 | Result < LOQ. |
| 7GP-2(8-12') | Endrin Aldehyde | 0.0019 J | U | 0.0036 | Result < LOQ. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| **8260B** | | | | | | | |
| 5GP-1(1-2') | Acetone | 0.007 | U | U | J | 0.01 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | Acetone | 0.007 | U | U | J | 0.017 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | Acetone | 0.011 | J | U | J | 0.016 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-16(3-4') | Acetone | 0.009 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | Acetone | 0.008 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | Acetone | 0.013 | J | U | J | 0.018 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-8(11-12') | Acetone | 0.016 | J | U | J | 0.017 | Result < LOQ. Estimated due to %D> 25%. |
| 5GP-8(7-8') | Acetone | 0.008 | U | U | J | 0.019 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Benzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromodichloromethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromoform | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Bromomethane | 0.002 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.008 | Estimated due to %D> 25%. |
| 5GP-16(3-4') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 2-Butanone (methyl ethyl ketone) | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 2-Butanone (methyl ethyl ketone) | 0.005 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Carbon Disulfide | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Carbon Tetrachloride | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chlorobenzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloroethane | 0.002 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloroform | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Chloromethane | 0.002 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | Dibromochloromethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 7GP-1(1-3') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-16(3-4') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-2(13.5-14.5') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-2(8-12') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-3(10-11') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-4(3-4') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 7GP-5(6-11') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.006 | Estimated due to %D> 25% |
| 7GP-8(5-8') | 1,1-Dichloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25% |
| 5GP-1(1-2') | 1,2-Dichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 7GP-16(3-4') | 1,1-Dichloroethene | 0.001 | J | U | | 0.005 | Result < LOQ. |
| 5GP-1(1-2') | cis-1,2-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | trans-1,2-Dichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,2-Dichloropropane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | cis-1,3-Dichloropropene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | trans-1,3-Dichloropropene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Ethylbenzene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 2-Hexanone | 0.003 | U | U | J | 0.009 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 2-Hexanone | 0.002 | U | U | J | 0.008 | Estimated due to %D> 25%. |
| 5GP-16(3-4') | 2-Hexanone | 0.004 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 2-Hexanone | 0.004 | U | U | J | 0.01 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 2-Hexanone | 0.003 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 2-Hexanone | 0.004 | U | U | J | 0.009 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | 4-Methyl-2-pentanone (methyl isobutyl ketone) | 0.003 | U | U | J | 0.009 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Methylene Chloride | 0.002 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Styrene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.007 | Estimated due to %D> 25% and one slightly low surrogate recovery. |
| 5GP-1(9-10') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |
| 5GP-12(3-4') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |

# Data Validation Report. All soil results in mg/kg/dry weight basis.

## Alliant-Hazardous Waste Management Unit 5 and 7 Event Date: 10/31/02-11/1/02

| Sample ID | Analyte | Laboratory Result | | Validated Result | | LOQ | Validation Notes |
|---|---|---|---|---|---|---|---|
| 5GP-16(3-4') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-3(9-10') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-6(10-11') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-8(11-12') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.004 | Estimated due to %D> 25%. |
| 5GP-8(7-8') | 1,1,2,2-Tetrachloroethane | 0.001 | U | U | J | 0.005 | Estimated due to %D> 25%. |
| 5GP-1(1-2') | Tetrachloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Toluene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,1-Trichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | 1,1,2-Trichloroethane | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Trichloroethene | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| 5GP-1(1-2') | Vinyl Chloride | 0.001 | U | U | J | 0.004 | Estimated due one sligtly low surrogate recovery. |
| 5GP-1(1-2') | Total Xylenes | 0.001 | U | U | J | 0.004 | Estimated due one slightly low surrogate recovery. |
| **8270C** | | | | | | | |
| 5GP-8(7-8') | bis-(2-Ethylhexyl)phthalate | 0.092 | J | U | | 0.39 | Result < LOQ. |
| 7GP-3(10-11') | bis-(2-Ethylhexyl)phthalate | 0.09 | J | U | | 0.42 | Result < LOQ. |
| 5GP-6(10-11') | N-Nitrosodiphenylamine | 0.063 | J | U | | 0.38 | Result < LOQ. |
| 5GP-8(11-12') | N-Nitrosodiphenylamine | 0.082 | J | U | | 0.39 | Result < LOQ. |
| 7GP-3(10-11') | N-Nitrosodiphenylamine | 0.75 | | 0.75 | | 0.42 | No action taken. |
| **9012A** | | | | | | | |
| 5GP-1(9-10') | Cyanide | 0.13 | B | U | | 0.59 | Result < LOQ. Result attributed to blank contamination (<5Xpreparation blank concentration). |
| 5GP-6(10-11') | Cyanide | 0.11 | B | U | | 0.6 | Result < LOQ. Result attributed to blank contamination (<5Xpreparation blank concentration). |
| 7GP-3(10-11') | Cyanide | 0.69 | | 0.69 | | 0.63 | No action taken. |

**Data Validation Qualifier Definitions:**

**U-** Denotes the analyte was analyzed for, but was not detected above the laboratory limit of quantitation (LOQ).

**J-** Denotes an estimated value. See sample specific note presented on data validation report table for further explanation.

**UJ-** The LOQ should be considered estimated. See sample specific note presented on data validation report table for further explanation.

**R-** Denotes sample result was rejected. See sample specific note presented on data validation report table for further explanation.

NOTE: The table summaries all detected results and results which required qualification based on data validation. All Results reported on a dryweight basis.
See laboratory report for definition of laboratory result qualifiers, if needed.

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B
**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO
**Carrier:** FED EX
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Box 4: Sample Type**
G Grab; C Composite

**Invoice**
**Copy to Consultant:** ☑YES ☐NO
**Bill:** ☑Client ☐Consultant
**Preserved and shipped on ice:** ☑YES Bo ☐NO

| Box 4 - Sample Type | G | G | C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Box 3 - Filtered/Unfiltered | U | U | U | | | | | | | |
| Required pH of Sample | - | - | - | | | | | | | |
| Box 2 - Preservative | D | H | H | | | | | | | |
| Box 5 - Sample Container Type | VOA | 1-500ml G | 500ml G | | | | | | | |

| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Volatiles (8260B) | Semivolatiles/Pests/PCB | Full Characterization TCLP Corrosivity Reactivity Ignitability | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1-2') 5GP-1 | 10/31 | 13:10 | S | 1 | X | X | | | | | | 5GP-1 (1-2') |
| (9-10') 5GP-1 | 10/31 | 13:10 | S | 1 | X | X | | | | | | 5GP-1 (9-10) |
| (10-11') 5GP-6 | 10/31 | 13:50 | S | 1 | X | X | | | | | | 5GP-6 (10-11') |
| (9-10') 5GP-3 | | 14:30 | S | 1 | X | X | | | | | | 5GP-3 (9-10') |
| (7-8') 5GP-8 | | 15:50 | S | 1 | X | X | | | | | | 5GP-8 (7-8') |
| (11-12') 5GP-8 | | 16:05 | S | 1 | X | X | | | | | | 5GP-8 (11-12') |
| (3-4') 5GP-12 | | 16:40 | S | 1 | X | X | | | | | | 5GP-12 (3-4') |
| (3-4') 5GP-16 | 10/31 | 17:00 | S | 1 | X | X | | | | | | 5GP-16 (3-4') |
| FULL TCLP | 11/1 | 13:55 | S | 1 | | | X | | | | | FULL CHARACTERIZATION TCLP |
| ↳ HWMU-5 | | | | | | | | | | | | IGNITABILITY, CORROSIVITY, REACTIVITY |

**GENERAL NOTES:** See attached target analyte list. **Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)**

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN FLOWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Flowell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Flowell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B

**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO

**Carrier:** FED EX

**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on ice: ☑YES Bo ☐NO

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | G | C | | | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | U | U | | | | | | |
| **Required pH of Sample** | | | | | - | - | | | | | | | |
| **Box 2 - Preservative** | | | | | D | H | 2 H | | | | | | |
| **Box 5 - Sample Container Type** | | | | | VOA | 1-500ml G | 500mL G | | | | | | |
| **Sample ID** | **Date: 2002** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **Volatiles 8260B/ 5035** | **Semivolatiles/Pests/PCB** | **FULL CHARACTERIZATION TCLP** | | | | | | |
| (1-3') 7GP- 1 ✓ | 11/1 | 10:00 | S | 4 | X | X | | | | | | | |
| (8-12') 7GP- 2 ✓ | | 10:40 | S | | X | X | | | | | | | |
| (3.5-14.5') 7GP- 2 ✓ | | 11:05 | S | | X | X | | | | | | | |
| (10-11') 7GP- 3 ✓ | | 11:25 | S | | X | X | | | | | | | |
| (5-8') 7GP- 8 ✓ | | 12:15 | S | | X | X | | | | | | | |
| (6-11') 7GP- 5 ✓ | | 12:50 | S | 12 | X | X | | | | | | | + MS/MSD |
| (3-4') 7GP- 16 ✓ | | 13:30 | S | | X | X | | | | | | | |
| (3-4') 7GP- 4 ✓ | | 13:45 | S | 4 | X | X | | | | | | | |
| UNIT 7 TCLP | 11/1 | 14:00 | S | 1 | | | X ✓ | | | | | | FULL CHARACTERIZATION TCLP, IGNITABILITY, CORROSIVITY, REACTIVITY |

**GENERAL NOTES: See attached target analyte list. Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)**

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | 30 DYS ORG/6 MTHS INORG |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

# Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
*Where quality is a science.*

For Lancaster Laboratories use only
Acct. #_____ Group#_____ Sample #_____

**COC #** 0004027

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: DRAPER ADEN ASSOC. Acct. #:
Project Name/#: RAAP - UNIT 5 CLOSURE PWSID #:
Project Manager: ROSS MILLER P.O.#:
Sampler: DARREN KIDWELL Quote #:
Name of state where samples were collected: VA.

| (2) Sample Identification | Date Collected | Time Collected | (3) Grab | Composite | (4) Matrix: Soil | Water | Other | Total # of Containers | (5) Analyses Requested: VOLATILES 8260B/5035 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| SGP-1 (1-2') ✓ | 10/31/02 | 13:10 | X | | X | | | 3 | | SEE ATTACHED ANALYTE LIST FOR TCL VOLATILES |
| SGP-1 (9-10') ✓ | | 13:10 | | | | | | | | |
| SGP-6 (10-11') ✓ | | 13:50 | | | | | | | | |
| SGP-3 (9-10') ✓ | | 14:30 | | | | | | | | |
| SGP-8 (7-8') ✓ | | 15:50 | | | | | | | | |
| SGP-8 (11-12') ✓ | | 16:05 | | | | | | | | |
| SGP-12 (3-4') ✓ | | 16:40 | | | | | | | | |
| SGP-16 (3-4') ✓ | 10/31/02 | 17:00 | X | | X | | | 3 | | |

Matrix: ☐ Potable ☐ NPDES (Check if Applicable)

For Lab Use Only
FSC:
SCR #:

(6) Temperature of samples upon receipt (if requested)

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: STD
Rush results requested by (please circle): Phone Fax E-mail
Phone #:_____ Fax #:_____
E-mail address:_____

(8) **Data Package Options** (please circle if required)

| | | |
|---|---|---|
| QC Summary | Type VI (Raw Data) | SDG Complete? Yes No |
| Type I (Tier I) | GLP | State-specific QC required? Yes No |
| Type II (Tier II) | Other | (If yes, indicate QC sample and submit triplicate volume.) |
| Type III (NJ Red. Del.) | | Internal Chain of Custody required? Yes No |
| Type IV (CLP) | | |

(9)

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Darren Kidwell | 10/31/02 | 19:00 | | | |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |
| Relinquished by: | Date | Time | Received by: | Date | Time |

Lancaster Laboratories

REPRINT

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

## SAMPLE GROUP

The sample group for this submittal is 829085. Samples arrived at the laboratory on Friday, November 01, 2002. The PO# for this group is B02271-01.

| Client Description | Lancaster Labs Number |
|---|---|
| 5GP-1 (1-2') Grab Soil Sample | 3931702 |
| 5GP-1 (9-10') Grab Soil Sample | 3931703 |
| 5GP-6 (10-11') Grab Soil Sample | 3931704 |
| 5GP-3 (9-10') Grab Soil Sample | 3931705 |
| 5GP-8 (7-8') Grab Soil Sample | 3931706 |
| 5GP-8 (11-12') Grab Soil Sample | 3931707 |
| 5GP-12 (3-4') Grab Soil Sample | 3931708 |
| 5GP-16 (3-4') Grab Soil Sample | 3931709 |

## METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

| | | |
|---|---|---|
| 1 COPY TO | Draper Aden Associates, Inc. | Attn: Ms. Janet Frazier |
| 1 COPY TO | Data Package Group | |

Lancaster Laboratories

REPRINT

Questions? Contact your Client Services Representative
Michael E McAdams at (717) 656-2300.

Respectfully Submitted,

Robert E. Mellinger
Sr. Chemist/Coordinator

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931702**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:00
Discard: 03/31/2003
5GP-1 (1-2') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP11 SDG#: RAR02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 12.2 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.88 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.88 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.88 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.88 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.88 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.88 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.88 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.88 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.88 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.88 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.88 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.88 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.88 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.88 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.88 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.88 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.88 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.88 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.88 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.88 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.88 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.88 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.88 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.88 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.88 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.88 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.88 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.88 |

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931702**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:00
Discard: 03/31/2003
5GP-1 (1-2') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP11 SDG#: RAR02-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.88 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.88 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.88 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.88 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.88 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.88 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Poor surrogate recovery was observed for 1,2-dichloroethane-d4 in the GC/MS volatile fraction. The percent recovery was 79%. The sample was reanalyzed as a matrix spike, and 1,2-dichloroethane-d4 was 86% recovery which was within the QC limits. Another vial of the sample was not available for further analysis.

Paired with 5GP-1 (1-2') for % MOS result. See SW3933074

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 14:18 | Roy R Mellott Jr | 0.88 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:18 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:05 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:06 | Medina A Long | n.a. |

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931703**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-1 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAR02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.6 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.86 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931703**

Collected:10/31/2002 13:10 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-1 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP19 SDG#: RAR02-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-1 (9-10') for % MOS result. See SW3933075

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 15:24 | Roy R Mellott Jr | 0.86 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:16 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:07 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:08 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931704**

Collected:10/31/2002 13:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-6 (10-11') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP6- SDG#: RAR02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 12.7 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.91 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.91 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.91 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.91 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.91 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.91 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.91 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.91 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.91 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.91 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.91 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.91 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.91 |
| 06293 | Acetone | 67-64-1 | 13. | J | 7. | ug/kg | 0.91 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.91 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931704**

Collected:10/31/2002 13:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-6 (10-11') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP6- SDG#: RAR02-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.91 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.91 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.91 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.91 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.91 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.91 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-6 (10-11') for % MOS result. See SW3933076

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 15:56 | Roy R Mellott Jr | 0.91 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:14 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:09 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:10 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931705**

Collected:10/31/2002 14:30 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-3 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP39 SDG#: RAR02-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 17.2 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931705**

Collected:10/31/2002 14:30 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-3 (9-10') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP39 SDG#: RAR02-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-3 (9-10') for % MOS result. See SW3933077

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 16:29 | Roy R Mellott Jr | 0.97 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:08 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:11 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:12 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931706**

Collected:10/31/2002 15:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (7-8') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP87 SDG#: RAR02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.6 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.94 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.94 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.94 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.94 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.94 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.94 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.94 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.94 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.94 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.94 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.94 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.94 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.94 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.94 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.94 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.94 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.94 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.94 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.94 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.94 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.94 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.94 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.94 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.94 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.94 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.94 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.94 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.94 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931706**

Collected:10/31/2002 15:50 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (7-8') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP87 SDG#: RAR02-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.94 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.94 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.94 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.94 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.94 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.94 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-8 (7-8') for % MOS result. See SW3933078

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 17:02 | Roy R Mellott Jr | 0.94 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:10 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:13 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:14 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931707**

Collected:10/31/2002 16:05 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (11-12') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP8- SDG#: RAR02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 14.5 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | 16. | J | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.86 |

Lancaster Laboratories

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**Lancaster Laboratories Sample No. SW 3931707**

Collected:10/31/2002 16:05 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-8 (11-12') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP8- SDG#: RAR02-06

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-8 (11-12') for % MOS result. See SW3933079

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 17:34 | Roy R Mellott Jr | 0.86 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:12 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:15 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:16 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931708**

Collected:10/31/2002 16:40 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-12 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP12 SDG#: RAR02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 16.3 | | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.81 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.81 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.81 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.81 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.81 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.81 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.81 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.81 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.81 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.81 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.81 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.81 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.81 |
| 06293 | Acetone | 67-64-1 | 11. | J | 7. | ug/kg | 0.81 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.81 |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931708**

Collected:10/31/2002 16:40 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-12 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP12 SDG#: RAR02-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.81 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.81 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.81 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 2. | ug/kg | 0.81 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 2. | ug/kg | 0.81 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.81 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-12 (3-4') for % MOS result. See SW3933080

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 18:07 | Roy R Mellott Jr | 0.81 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:04 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:17 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:18 | Medina A Long | n.a. |

Lancaster Laboratories

REPRINT



**Lancaster Laboratories Sample No. SW 3931709**

Collected:10/31/2002 17:00 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-16 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP16 SDG#: RAR02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | n.a. | 17.9 | 0.060 | % | 1 |
| | The moisture result above was taken from a sample aliquot which was submitted to the laboratory under a separate chain of custody (SDG#RAR-01). The moisture result was used for dry weight calculations. See General Comments for paired sample number reference. | | | | | |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 9. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3931709**

Collected:10/31/2002 17:00 by DK

Account Number: 11200

Submitted: 11/01/2002 09:20
Reported: 02/28/2003 at 12:01
Discard: 03/31/2003
5GP-16 (3-4') Grab Soil Sample
RAAP-Unit 5 Closure

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

5GP16 SDG#: RAR02-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Paired with 5GP-16 (3-4') for % MOS result. See SW3933081

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 07801 | Moisture (Re-Entry) | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/04/2002 18:40 | Roy R Mellott Jr | 0.97 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/01/2002 18:06 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/01/2002 17:19 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/01/2002 17:20 | Medina A Long | n.a. |

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REPRINT



# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: K023081AA | Sample number(s): 3931702-3931709 | | | | | | | |
| Chloromethane | N.D. | 2. | ug/kg | 111 | 106 | 47-133 | 4 | 30 |
| Vinyl Chloride | N.D. | 1. | ug/kg | 105 | 99 | 57-132 | 5 | 30 |
| Bromomethane | N.D. | 2. | ug/kg | 88 | 82 | 54-129 | 7 | 30 |
| Chloroethane | N.D. | 2. | ug/kg | 101 | 94 | 66-130 | 7 | 30 |
| 1,1-Dichloroethene | N.D. | 1. | ug/kg | 98 | 91 | 77-139 | 7 | 30 |
| Methylene Chloride | N.D. | 2. | ug/kg | 92 | 92 | 76-129 | 0 | 30 |
| trans-1,2-Dichloroethene | N.D. | 1. | ug/kg | 95 | 91 | 78-131 | 5 | 30 |
| 1,1-Dichloroethane | N.D. | 1. | ug/kg | 107 | 104 | 82-130 | 2 | 30 |
| cis-1,2-Dichloroethene | N.D. | 1. | ug/kg | 97 | 96 | 85-127 | 2 | 30 |
| Chloroform | N.D. | 1. | ug/kg | 98 | 97 | 79-126 | 2 | 30 |
| 1,1,1-Trichloroethane | N.D. | 1. | ug/kg | 101 | 98 | 69-133 | 3 | 30 |
| Carbon Tetrachloride | N.D. | 1. | ug/kg | 97 | 93 | 68-137 | 4 | 30 |
| Benzene | N.D. | 1. | ug/kg | 100 | 99 | 85-125 | 2 | 30 |
| 1,2-Dichloroethane | N.D. | 1. | ug/kg | 105 | 113 | 75-132 | 7 | 30 |
| Trichloroethene | N.D. | 1. | ug/kg | 99 | 95 | 81-124 | 4 | 30 |
| 1,2-Dichloropropane | N.D. | 1. | ug/kg | 102 | 104 | 81-126 | 2 | 30 |
| Bromodichloromethane | N.D. | 1. | ug/kg | 95 | 97 | 80-123 | 1 | 30 |
| Toluene | N.D. | 1. | ug/kg | 100 | 95 | 81-116 | 6 | 30 |
| 1,1,2-Trichloroethane | N.D. | 1. | ug/kg | 89 | 94 | 77-116 | 6 | 30 |
| Tetrachloroethene | N.D. | 1. | ug/kg | 99 | 94 | 79-128 | 6 | 30 |
| Dibromochloromethane | N.D. | 1. | ug/kg | 86 | 89 | 73-116 | 4 | 30 |
| Chlorobenzene | N.D. | 1. | ug/kg | 95 | 91 | 81-112 | 4 | 30 |
| Ethylbenzene | N.D. | 1. | ug/kg | 98 | 95 | 82-115 | 3 | 30 |
| Styrene | N.D. | 1. | ug/kg | 90 | 88 | 79-116 | 1 | 30 |
| Bromoform | N.D. | 1. | ug/kg | 77 | 86 | 64-121 | 11 | 30 |
| 1,1,2,2-Tetrachloroethane | N.D. | 1. | ug/kg | 71 | 80 | 64-121 | 13 | 30 |
| Acetone | N.D. | 7. | ug/kg | 57 | 70 | 51-178 | 20 | 30 |
| Carbon Disulfide | N.D. | 1. | ug/kg | 105 | 100 | 72-144 | 5 | 30 |
| 2-Butanone | N.D. | 4. | ug/kg | 71 | 77 | 58-155 | 9 | 30 |
| trans-1,3-Dichloropropene | N.D. | 1. | ug/kg | 92 | 96 | 75-113 | 4 | 30 |
| cis-1,3-Dichloropropene | N.D. | 1. | ug/kg | 97 | 97 | 82-122 | 1 | 30 |
| 4-Methyl-2-pentanone | N.D. | 3. | ug/kg | 69 | 86 | 56-144 | 21 | 30 |
| 2-Hexanone | N.D. | 3. | ug/kg | 65 | 80 | 51-142 | 21 | 30 |
| Xylene (Total) | N.D. | 1. | ug/kg | 96 | 94 | 82-117 | 3 | 30 |

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: K023081AA | Sample number(s): 3931702-3931709 | | | | | | | | |
| Chloromethane | 114 | | 14-144 | | | | | | |
| Vinyl Chloride | 111 | | 20-146 | | | | | | |
| Bromomethane | 88 | | 24-140 | | | | | | |
| Chloroethane | 104 | | 33-147 | | | | | | |
| 1,1-Dichloroethene | 91 | | 43-153 | | | | | | |
| Methylene Chloride | 80 | | 49-145 | | | | | | |
| trans-1,2-Dichloroethene | 85 | | 49-143 | | | | | | |
| 1,1-Dichloroethane | 96 | | 51-147 | | | | | | |
| cis-1,2-Dichloroethene | 87 | | 54-139 | | | | | | |
| Chloroform | 88 | | 57-135 | | | | | | |
| 1,1,1-Trichloroethane | 96 | | 47-143 | | | | | | |
| Carbon Tetrachloride | 91 | | 43-144 | | | | | | |
| Benzene | 89 | | 52-141 | | | | | | |
| 1,2-Dichloroethane | 92 | | 57-137 | | | | | | |
| Trichloroethene | 87 | | 47-140 | | | | | | |
| 1,2-Dichloropropane | 93 | | 55-138 | | | | | | |
| Bromodichloromethane | 83 | | 55-131 | | | | | | |
| Toluene | 88 | | 41-147 | | | | | | |
| 1,1,2-Trichloroethane | 75 | | 45-150 | | | | | | |
| Tetrachloroethene | 95 | | 42-157 | | | | | | |
| Dibromochloromethane | 72 | | 46-137 | | | | | | |
| Chlorobenzene | 84 | | 48-132 | | | | | | |
| Ethylbenzene | 89 | | 44-142 | | | | | | |
| Styrene | 80 | | 30-144 | | | | | | |
| Bromoform | 63 | | 32-139 | | | | | | |
| 1,1,2,2-Tetrachloroethane | 60 | | 23-180 | | | | | | |
| Acetone | 141 | | 6-214 | | | | | | |
| Carbon Disulfide | 97 | | 29-162 | | | | | | |
| 2-Butanone | 107 | | 22-181 | | | | | | |
| trans-1,3-Dichloropropene | 80 | | 46-130 | | | | | | |
| cis-1,3-Dichloropropene | 83 | | 50-129 | | | | | | |
| 4-Methyl-2-pentanone | 60 | | 40-154 | | | | | | |
| 2-Hexanone | 86 | | 28-170 | | | | | | |
| Xylene (Total) | 87 | | 47-139 | | | | | | |

## Surrogate Quality Control

Analysis Name: TCL by 8260 (soil)
Batch number: K023081AA

| Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829085
Reported: 02/28/03 at 12:02 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| 3931702 | 92 | 79* | 107 | 100 |
| 3931703 | 95 | 83 | 104 | 104 |
| 3931704 | 95 | 83 | 106 | 103 |
| 3931705 | 96 | 82 | 104 | 102 |
| 3931706 | 98 | 84 | 105 | 104 |
| 3931707 | 94 | 81 | 110 | 99 |
| 3931708 | 97 | 80 | 106 | 102 |
| 3931709 | 95 | 80 | 105 | 102 |
| Blank | 98 | 92 | 102 | 105 |
| LCS | 98 | 91 | 106 | 110 |
| LCSD | 100 | 96 | 105 | 111 |
| MS | 96 | 86 | 109 | 107 |
| Limits: | 80-120 | 80-120 | 81-117 | 74-121 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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PO Box 12425
Lancaster, PA 17605-2425
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ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

## SAMPLE GROUP

The sample group for this submittal is 829270. Samples arrived at the laboratory on Saturday, November 02, 2002. The PO# for this group is B02271-01.

| Client Description | Lancaster Labs Number |
|---|---|
| (1-3')7GP-1 Grab Soil Sample | 3933061 |
| (8-12')7GP-2 Grab Soil Sample | 3933062 |
| (13.5-14.5')7GP-2 Grab Soil Sample | 3933063 |
| (10-11')7GP-3 Grab Soil Sample | 3933064 |
| (5-8')7GP-8 Grab Soil Sample | 3933065 |
| (6-11')7GP-5 Unspiked Grab Soil Sample | 3933066 |
| (6-11')7GP-5 Matrix Spike Grab Soil Sample | 3933067 |
| (6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample | 3933068 |
| (3-4')7GP-16 Grab Soil Sample | 3933069 |
| (3-4')7GP-4 Grab Soil Sample | 3933070 |
| Unit 7 TCLP Composite Soil Sample | 3933071 |
| Unit 7 TCLP Composite Soil Sample | 3933072 |
| Unit 7 TCLP Composite Soil Sample | 3933073 |
| (1-2')5GP-1 Grab Soil Sample | 3933074 |
| (9-10')5GP-1 Grab Soil Sample | 3933075 |
| (10-11')5GP-6 Grab Soil Sample | 3933076 |
| (9-10')5GP-3 Grab Soil Sample | 3933077 |
| (7-8')5GP-8 Grab Soil Sample | 3933078 |
| (11-12')5GP-8 Grab Soil Sample | 3933079 |
| (3-4')5GP-12 Grab Soil Sample | 3933080 |
| (3-4')5GP-16 Grab Soil Sample | 3933081 |
| HWMU-5 Composite Soil Sample | 3933082 |
| HWMU-5 Composite Soil Sample | 3933083 |
| HWMU-5 Composite Soil Sample | 3933084 |

## METHODOLOGY

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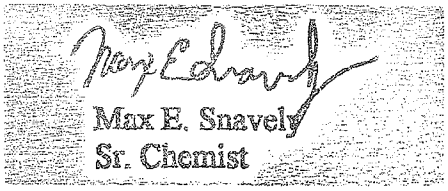
The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

| | | |
|---|---|---|
| 1 COPY TO | Draper Aden Associates, Inc. | Attn: Ms. Janet Frazier |
| 1 COPY TO | Data Package Group | |

Questions? Contact your Client Services Representative
Michael E McAdams at (717) 656-2300.

Respectfully Submitted,

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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REPRINT



**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 13.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.8 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.6 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.1 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.27 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 38. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.88 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.88 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.88 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.88 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.88 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.88 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.88 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.88 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.88 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.88 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.88 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.88 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.88 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.88 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.88 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.88 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.88 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.88 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.88 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.88 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.88 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.88 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.88 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.88 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.88 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.88 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.88 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.88 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.88 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.88 |

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**Lancaster Laboratories Sample No. SW 3933061**

Collected:11/01/2002 10:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(1-3')7GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

137-P SDG#: RAR01-01

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.88 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 3. | ug/kg | 0.88 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 3. | ug/kg | 0.88 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.88 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:06 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 04:33 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 04:33 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 02:11 | Ryan V Nolt | 0.88 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:30 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:42 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:43 | Medina A Long | n.a. |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.9 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.75 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.9 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.98 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.98 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.98 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.98 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.98 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.98 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.98 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.98 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.98 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.98 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.98 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.98 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.98 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.98 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.98 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.98 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.98 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.98 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.98 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.98 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.98 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.98 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.98 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.98 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.98 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.98 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.98 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.98 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.98 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.98 |

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**Lancaster Laboratories Sample No. SW 3933062**

Collected:11/01/2002 10:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(8-12')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

81272 SDG#: RAR01-02

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.98 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.98 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.98 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.98 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:26 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 05:31 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 05:31 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 23:58 | Ryan V Nolt | 0.98 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:29 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:44 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:45 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.2 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 0.67 | J | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 3.5 | | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 3.1 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.95 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.95 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.95 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.95 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.95 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.95 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.95 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.95 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.95 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.95 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.95 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.95 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.95 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.95 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.95 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.95 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.95 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.95 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.95 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.95 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.95 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.95 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.95 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.95 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.95 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.95 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.95 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.95 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.95 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.95 |

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**Lancaster Laboratories Sample No. SW 3933063**

Collected:11/01/2002 11:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(13.5-14.5')7GP-2 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

13572 SDG#: RAR01-03

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.95 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.95 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.95 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.95 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 03:47 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 06:30 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 06:30 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 00:31 | Ryan V Nolt | 0.95 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:28 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:40 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 20:41 | Medina A Long | n.a. |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 20.8 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.45 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.42 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.44 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 5.1 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 2.5 | 0.42 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.42 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 14. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.42 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.42 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.3 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 6.1 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 13. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.4 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.3 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 6.2 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 7.2 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.6 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.42 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 42. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 42. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 42. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 42. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 42. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 85. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 42. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 42. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 42. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 42. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 42. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 42. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 42. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 42. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 42. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 42. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 42. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 42. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 85. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 42. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 42. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 85. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 42. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 42. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 85. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 42. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 42. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 42. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 42. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 42. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 85. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 42. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 850. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 42. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 42. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 42. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 85. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 750. | | 42. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 42. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 42. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 42. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 42. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 85. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 42. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 85. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 42. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 42. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 85. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 90. | J | 85. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 85. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 42. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 42. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 42. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 42. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 42. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 42. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933064**

Collected:11/01/2002 11:25

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:33
Discard: 12/26/2002
(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 85. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 42. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 85. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 42. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 3. | ug/kg | 0.95 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.95 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 3. | ug/kg | 0.95 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 3. | ug/kg | 0.95 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.95 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 3. | ug/kg | 0.95 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.95 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.95 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.95 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.95 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.95 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.95 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.95 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.95 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.95 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.95 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.95 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.95 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.95 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.95 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.95 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.95 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.95 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.95 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.95 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.95 |
| 06293 | Acetone | 67-64-1 | N.D. | 9. | ug/kg | 0.95 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.95 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.95 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.95 |

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**Lancaster Laboratories Sample No. SW 3933064**

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(10-11')7GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10-73 SDG#: RAR01-04

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.95 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.95 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.95 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.95 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:08 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 08:44 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 08:44 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 01:04 | Ryan V Nolt | 0.95 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:26 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:38 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:39 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933065**

Collected:11/01/2002 12:15

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.44 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.43 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.49 | J | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.1 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 6.0 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.28 | J | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(5-8')7GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.81 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.81 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.81 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.81 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.81 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.81 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.81 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.81 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.81 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.81 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.81 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.81 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.81 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.81 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.81 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.81 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.81 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.81 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.81 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.81 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.81 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.81 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.81 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.81 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.81 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.81 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.81 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.81 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.81 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.81 |

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Blacksburg VA 24060

58-78 SDG#: RAR01-05

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.81 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 2. | ug/kg | 0.81 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 2. | ug/kg | 0.81 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.81 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:29 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 09:37 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 09:37 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/06/2002 01:37 | Ryan V Nolt | 0.81 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:25 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:36 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:37 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.0 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.60 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.23 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.97 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.97 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.97 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.97 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.97 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.97 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.97 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.97 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.97 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.97 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.97 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.97 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.97 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.97 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.97 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.97 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.97 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.97 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.97 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.97 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.97 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.97 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.97 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.97 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.97 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.97 |
| 06293 | Acetone | 67-64-1 | N.D. | 8. | ug/kg | 0.97 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.97 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 5. | ug/kg | 0.97 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.97 |

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**Lancaster Laboratories Sample No. SW 3933066**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Unspiked Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06BKG

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.97 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.97 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.97 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.97 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:04 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 01:37 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 01:37 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 20:40 | Ryan V Nolt | 0.97 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 18:24 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:34 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:35 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.0 | 0.50 | % | 1 |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 4.0 | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 4.0 | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 3.9 | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 9.2 | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 8.1 | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 8.3 | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 43. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 3.8 | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 4.0 | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 4.4 | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.0 | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 8.8 | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 8.9 | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 3.9 | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 8.0 | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 7.0 | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 6.2 | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 7.9 | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 4.2 | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 4.2 | 0.20 | ug/kg | 1 |

Heptachlor was detected in the method blank above the method detection limit. No heptachlor was detected in the sample, therefore the data is reported.

Lancaster Laboratories
Where quality is a science.

REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | 3,400. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,500. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,200. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,500. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,400. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,800. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,800. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,700. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,600. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,500. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,300. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,300. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,200. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,300. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,800. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,800. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,500. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,700. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 7,900. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,600. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 3,400. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,800. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,400. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,100. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,300. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 2,800. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,700. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,700. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 3,800. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933067**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | 4,000. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,700. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,100. | | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 3,900. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,600. | J | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 2,500. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,600. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,700. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,800. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,900. | | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,400. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,900. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,900. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,900. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 3,800. | | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,600. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,800. | | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 3,800. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,600. | | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,700. | | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 3,700. | | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 3,800. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,900. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,000. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,800. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,100. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,800. | | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,500. | | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,700. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,200. | | 80. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933067**

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Account Number: 11200

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Reported: 11/25/2002 at 14:34
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | 3,700. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | 22. | 2. | ug/kg | 0.83 |
| 05445 | Vinyl Chloride | 75-01-4 | 21. | 1. | ug/kg | 0.83 |
| 05446 | Bromomethane | 74-83-9 | 16. | 2. | ug/kg | 0.83 |
| 05447 | Chloroethane | 75-00-3 | 19. | 2. | ug/kg | 0.83 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 20. | 1. | ug/kg | 0.83 |
| 05450 | Methylene Chloride | 75-09-2 | 18. | 2. | ug/kg | 0.83 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 19. | 1. | ug/kg | 0.83 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 22. | 1. | ug/kg | 0.83 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 19. | 1. | ug/kg | 0.83 |
| 05455 | Chloroform | 67-66-3 | 20. | 1. | ug/kg | 0.83 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | ug/kg | 0.83 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 20. | 1. | ug/kg | 0.83 |
| 05460 | Benzene | 71-43-2 | 20. | 1. | ug/kg | 0.83 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 22. | 1. | ug/kg | 0.83 |
| 05462 | Trichloroethene | 79-01-6 | 19. | 1. | ug/kg | 0.83 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 21. | 1. | ug/kg | 0.83 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | ug/kg | 0.83 |
| 05466 | Toluene | 108-88-3 | 21. | 1. | ug/kg | 0.83 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 18. | 1. | ug/kg | 0.83 |
| 05468 | Tetrachloroethene | 127-18-4 | 21. | 1. | ug/kg | 0.83 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | ug/kg | 0.83 |
| 05472 | Chlorobenzene | 108-90-7 | 19. | 1. | ug/kg | 0.83 |
| 05474 | Ethylbenzene | 100-41-4 | 20. | 1. | ug/kg | 0.83 |
| 05477 | Styrene | 100-42-5 | 18. | 1. | ug/kg | 0.83 |
| 05478 | Bromoform | 75-25-2 | 15. | 1. | ug/kg | 0.83 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 15. | 1. | ug/kg | 0.83 |
| 06293 | Acetone | 67-64-1 | 110. | 7. | ug/kg | 0.83 |
| 06294 | Carbon Disulfide | 75-15-0 | 21. | 1. | ug/kg | 0.83 |
| 06296 | 2-Butanone | 78-93-3 | 100. | 4. | ug/kg | 0.83 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 20. | 1. | ug/kg | 0.83 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 18. | 1. | ug/kg | 0.83 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 69. | 2. | ug/kg | 0.83 |
| 06300 | 2-Hexanone | 591-78-6 | 67. | 2. | ug/kg | 0.83 |

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**Lancaster Laboratories Sample No. SW 3933067**

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Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MS

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06301 | Xylene (Total) | 1330-20-7 | 59. | 1. | ug/kg | 0.83 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:24 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 02:35 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 02:35 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 21:13 | Ryan V Nolt | 0.83 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:23 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:32 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:33 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | n.a. | 16.0 | 0.50 | % | 1 |
| 00121 | Moisture Duplicate | n.a. | 16.2 | 0.50 | % | 1 |
| | The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | 3.9 | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | 4.0 | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | 3.8 | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | 9.4 | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | 8.1 | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | 8.3 | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | 44. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | 3.6 | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | 4.0 | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 4.3 | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | 4.0 | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 8.8 | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 8.9 | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | 3.8 | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | 8.1 | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | 6.9 | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 7.5 | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.8 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | 7.9 | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | 4.2 | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 4.3 | 0.20 | ug/kg | 1 |

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Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | Heptachlor was detected in the method blank above the method detection limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | 3,400. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | 3,600. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | 3,200. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | 3,400. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | 3,400. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | 3,800. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | 3,700. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | 3,600. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | 3,500. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | 3,400. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | 3,200. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | 3,300. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | 3,300. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | 3,300. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | 3,600. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | 3,500. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | 3,800. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | 3,400. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | 3,700. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | 7,600. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | 3,600. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | 3,300. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | 3,700. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | 3,400. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 4,200. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | 3,300. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | 3,000. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | 3,600. | 39. | ug/kg | 1 |

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(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | 3,600. | | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | 3,900. | | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | 3,900. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | 3,600. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | 4,000. | | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | 2,800. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | 3,900. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | 1,500. | J | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 2,500. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | 3,700. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | 3,600. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | 3,600. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | 3,900. | | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 3,400. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | 3,900. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | 3,700. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | 3,700. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | 3,700. | | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | 3,400. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | 3,900. | | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | 3,800. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | 3,900. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | 2,900. | | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 3,800. | | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | 3,600. | | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | 4,000. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | 3,900. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | 4,000. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 3,900. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | 4,100. | | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | 3,800. | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | 3,500. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | 3,600. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | 3,400. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | 3,600. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | 21. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | 20. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | 15. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | 18. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 21. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | 19. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | 19. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | 22. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | 20. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | 20. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | 21. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | 20. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | 20. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | 23. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | 20. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | 21. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | 19. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | 21. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | 18. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | 22. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | 18. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | 20. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | 21. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | 19. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | 15. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 15. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | 100. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | 21. | 1. | ug/kg | 0.86 |
| 06296 | 2-Butanone | 78-93-3 | 97. | 4. | ug/kg | 0.86 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933068**

Collected:11/01/2002 12:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(6-11')7GP-5 Matrix Spike Dup/Dup Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

61175 SDG#: RAR01-06MSD

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | 19. | 1. | ug/kg | 0.86 |
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | 19. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | 66. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | 67. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | 61. | 1. | ug/kg | 0.86 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00118 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 00121 | Moisture Duplicate | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 02:45 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 03:34 | Linda M Hartenstine | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 03:34 | Linda M Hartenstine | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 21:46 | Ryan V Nolt | 0.86 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:22 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:30 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:31 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.4 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.26 | J | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

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Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

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Discard: 12/26/2002
(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | | 2. | ug/kg | 0.84 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05446 | Bromomethane | 74-83-9 | N.D. | | 2. | ug/kg | 0.84 |
| 05447 | Chloroethane | 75-00-3 | N.D. | | 2. | ug/kg | 0.84 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | 1. | J | 1. | ug/kg | 0.84 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | | 2. | ug/kg | 0.84 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05455 | Chloroform | 67-66-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 1. | ug/kg | 0.84 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05460 | Benzene | 71-43-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | | 1. | ug/kg | 0.84 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05466 | Toluene | 108-88-3 | N.D. | | 1. | ug/kg | 0.84 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | | 1. | ug/kg | 0.84 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | | 1. | ug/kg | 0.84 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | | 1. | ug/kg | 0.84 |
| 05477 | Styrene | 100-42-5 | N.D. | | 1. | ug/kg | 0.84 |
| 05478 | Bromoform | 75-25-2 | N.D. | | 1. | ug/kg | 0.84 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 1. | ug/kg | 0.84 |
| 06293 | Acetone | 67-64-1 | N.D. | | 7. | ug/kg | 0.84 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | | 1. | ug/kg | 0.84 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | | 4. | ug/kg | 0.84 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 1. | ug/kg | 0.84 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933069**

Collected:11/01/2002 13:30

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Reported: 11/25/2002 at 14:35
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(3-4')7GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34716 SDG#: RAR01-07

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.84 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.84 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.84 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.84 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 04:49 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 10:31 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 10:31 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 22:19 | Ryan V Nolt | 0.84 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:21 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:28 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:29 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.7 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 79. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 79. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 79. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 79. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 79. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 790. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 79. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 79. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 79. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 79. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 79. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 79. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 79. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 79. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |
| 06292 | TCL by 8260 (soil) | | | | | |
| 05444 | Chloromethane | 74-87-3 | N.D. | 2. | ug/kg | 0.86 |
| 05445 | Vinyl Chloride | 75-01-4 | N.D. | 1. | ug/kg | 0.86 |
| 05446 | Bromomethane | 74-83-9 | N.D. | 2. | ug/kg | 0.86 |
| 05447 | Chloroethane | 75-00-3 | N.D. | 2. | ug/kg | 0.86 |
| 05449 | 1,1-Dichloroethene | 75-35-4 | N.D. | 1. | ug/kg | 0.86 |
| 05450 | Methylene Chloride | 75-09-2 | N.D. | 2. | ug/kg | 0.86 |
| 05451 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 1. | ug/kg | 0.86 |
| 05452 | 1,1-Dichloroethane | 75-34-3 | N.D. | 1. | ug/kg | 0.86 |
| 05454 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 1. | ug/kg | 0.86 |
| 05455 | Chloroform | 67-66-3 | N.D. | 1. | ug/kg | 0.86 |
| 05457 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 1. | ug/kg | 0.86 |
| 05458 | Carbon Tetrachloride | 56-23-5 | N.D. | 1. | ug/kg | 0.86 |
| 05460 | Benzene | 71-43-2 | N.D. | 1. | ug/kg | 0.86 |
| 05461 | 1,2-Dichloroethane | 107-06-2 | N.D. | 1. | ug/kg | 0.86 |
| 05462 | Trichloroethene | 79-01-6 | N.D. | 1. | ug/kg | 0.86 |
| 05463 | 1,2-Dichloropropane | 78-87-5 | N.D. | 1. | ug/kg | 0.86 |
| 05465 | Bromodichloromethane | 75-27-4 | N.D. | 1. | ug/kg | 0.86 |
| 05466 | Toluene | 108-88-3 | N.D. | 1. | ug/kg | 0.86 |
| 05467 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 1. | ug/kg | 0.86 |
| 05468 | Tetrachloroethene | 127-18-4 | N.D. | 1. | ug/kg | 0.86 |
| 05470 | Dibromochloromethane | 124-48-1 | N.D. | 1. | ug/kg | 0.86 |
| 05472 | Chlorobenzene | 108-90-7 | N.D. | 1. | ug/kg | 0.86 |
| 05474 | Ethylbenzene | 100-41-4 | N.D. | 1. | ug/kg | 0.86 |
| 05477 | Styrene | 100-42-5 | N.D. | 1. | ug/kg | 0.86 |
| 05478 | Bromoform | 75-25-2 | N.D. | 1. | ug/kg | 0.86 |
| 05480 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 1. | ug/kg | 0.86 |
| 06293 | Acetone | 67-64-1 | N.D. | 7. | ug/kg | 0.86 |
| 06294 | Carbon Disulfide | 75-15-0 | N.D. | 1. | ug/kg | 0.86 |
| 06296 | 2-Butanone | 78-93-3 | N.D. | 4. | ug/kg | 0.86 |
| 06297 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 1. | ug/kg | 0.86 |

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**Lancaster Laboratories Sample No. SW 3933070**

Collected:11/01/2002 13:45

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
(3-4')7GP-4 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

3474- SDG#: RAR01-08

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 06298 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 1. | ug/kg | 0.86 |
| 06299 | 4-Methyl-2-pentanone | 108-10-1 | N.D. | 4. | ug/kg | 0.86 |
| 06300 | 2-Hexanone | 591-78-6 | N.D. | 4. | ug/kg | 0.86 |
| 06301 | Xylene (Total) | 1330-20-7 | N.D. | 1. | ug/kg | 0.86 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:10 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 11:25 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 11:25 | Brian K Graham | 1 |
| 06292 | TCL by 8260 (soil) | SW-846 8260B | 1 | 11/05/2002 22:52 | Ryan V Nolt | 0.86 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 1 | 11/05/2002 15:20 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 2 | 11/02/2002 23:26 | Medina A Long | n.a. |
| 08389 | Low/High Encore Prep Tracking | SW-846 5035 | 3 | 11/02/2002 23:27 | Medina A Long | n.a. |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 12.2 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.19 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.19 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.41 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.19 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.19 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.19 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.1 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.5 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 11. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.7 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.6 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.5 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.0 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.19 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | 0.48 | J | 0.19 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 76. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 76. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 190. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 76. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 76. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 190. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 76. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 190. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 760. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 190. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 76. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 76. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 76. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 76. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 76. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 76. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 38. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933074**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(1-2')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

125GP SDG#: RAR01-12

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 76. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 76. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:31 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 12:18 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 12:18 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.6 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 0.49 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 19. | | 0.77 | ug/kg | 2 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 2.3 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933075**

Collected:10/31/2002 13:10

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(9-10')5GP-1 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105- SDG#: RAR01-13

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 05:52 | Douglas D Seitz | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/07/2002 20:21 | Douglas D Seitz | 2 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 13:11 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 13:11 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

Lancaster Laboratories
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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 12.7 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.19 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.19 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.41 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.38 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.6 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.19 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.19 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | 0.22 | J | 0.19 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.19 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.7 | J | 0.38 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 6.7 | | 0.38 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.19 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.38 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.38 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.1 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.5 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 11. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.7 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.6 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.5 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.0 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.38 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.19 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.19 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 38. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 38. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 38. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 38. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 38. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 77. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 38. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 38. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 38. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 38. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 38. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 38. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 38. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 38. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 38. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 38. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 38. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 38. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 77. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 190. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 38. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 38. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 77. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 38. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 38. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 77. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 38. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 38. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 38. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 38. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 38. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 190. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 77. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 190. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 38. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 770. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 190. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 38. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 38. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 38. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 77. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 63. | J | 38. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 38. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 38. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 38. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 38. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 77. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 38. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 77. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 38. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 38. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 77. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 77. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 77. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 38. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 38. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 38. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 38. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 38. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 38. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933076**

Collected:10/31/2002 13:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
(10-11')5GP-6 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

10115 SDG#: RAR01-14

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 77. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 38. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 77. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 38. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:13 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 14:05 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 14:05 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.2 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 81. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 81. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 81. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 81. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 81. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 810. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 81. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 81. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 81. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 81. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 81. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 81. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933077**

Collected:10/31/2002 14:30

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(9-10')5GP-3 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

9105G SDG#: RAR01-15

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 81. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 81. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:34 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 14:58 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 14:58 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.6 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.1 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 51. | | 1.9 | ug/kg | 5 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | N.D. | | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.9 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.2 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |

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**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 92. | J | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 39. | ug/kg | 1 |
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | | 78. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933078**

Collected:10/31/2002 15:50

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(7-8')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Account Number: 11200

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

785GP SDG#: RAR01-16

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 06:55 | Douglas D Seitz | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/07/2002 20:42 | Douglas D Seitz | 5 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 15:52 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 15:52 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 14.5 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.42 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.41 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.7 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | 1.2 | J | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | 0.97 | J | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.7 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.6 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.0 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 5.8 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.7 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.7 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.1 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 78. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 78. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 78. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 78. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | | 78. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | | 780. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | | 78. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | 82. | J | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | | 78. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | | 78. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | | 78. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | | 78. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | | 78. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933079**

Collected:10/31/2002 16:05

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(11-12')5GP-8 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

11125 SDG#: RAR01-17

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 78. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 78. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:15 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 16:45 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 16:45 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 16.3 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.20 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.20 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.43 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.39 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.42 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.8 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.20 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.20 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.20 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.20 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.39 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.39 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 1.7 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.7 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.1 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.0 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 5.9 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.8 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.3 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.39 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.20 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.20 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 39. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 39. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 39. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 39. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 39. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 80. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 39. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 39. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 39. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 39. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 39. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 39. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 39. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 39. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 39. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 39. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 39. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 39. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 80. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 200. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 39. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 39. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 80. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 39. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 39. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 80. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 39. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 39. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 39. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 39. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 39. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 200. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 80. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 200. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 39. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 800. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 200. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 39. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 39. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 39. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 80. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 39. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 39. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 39. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 39. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 39. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 80. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 39. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 80. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 39. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 39. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 80. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 80. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 80. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 39. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 39. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 39. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 39. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 39. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 39. | ug/kg | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933080**

Collected:10/31/2002 16:40

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-12 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34512 SDG#: RAR01-18

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 80. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 39. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 80. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 39. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:36 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 17:39 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 17:39 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 17.9 | | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | | |
| 01225 | TCL Pesticides in Solids | | | | | | |
| 01218 | Gamma BHC - Lindane | 58-89-9 | N.D. | | 0.21 | ug/kg | 1 |
| 01219 | Heptachlor | 76-44-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01220 | Aldrin | 309-00-2 | N.D. | | 0.21 | ug/kg | 1 |
| 01221 | p,p-DDT | 50-29-3 | N.D. | | 0.44 | ug/kg | 1 |
| 01222 | Dieldrin | 60-57-1 | N.D. | | 0.40 | ug/kg | 1 |
| 01223 | Endrin | 72-20-8 | N.D. | | 0.43 | ug/kg | 1 |
| 01859 | Methoxychlor | 72-43-5 | N.D. | | 4.9 | ug/kg | 1 |
| 01981 | Alpha BHC | 319-84-6 | N.D. | | 0.21 | ug/kg | 1 |
| 01982 | Beta BHC | 319-85-7 | N.D. | | 0.21 | ug/kg | 1 |
| 01983 | Delta BHC | 319-86-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01984 | Heptachlor Epoxide | 1024-57-3 | N.D. | | 0.21 | ug/kg | 1 |
| 01985 | p,p-DDE | 72-55-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01986 | p,p-DDD | 72-54-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01988 | Toxaphene | 8001-35-2 | N.D. | | 13. | ug/kg | 1 |
| 01989 | Endosulfan I | 959-98-8 | N.D. | | 0.21 | ug/kg | 1 |
| 01990 | Endosulfan II | 33213-65-9 | N.D. | | 0.40 | ug/kg | 1 |
| 01991 | Endosulfan Sulfate | 1031-07-8 | N.D. | | 0.40 | ug/kg | 1 |
| 01992 | Endrin Aldehyde | 7421-93-4 | 2.2 | J | 1.2 | ug/kg | 1 |
| 01993 | PCB-1016 | 12674-11-2 | N.D. | | 5.8 | ug/kg | 1 |
| 01994 | PCB-1221 | 11104-28-2 | N.D. | | 12. | ug/kg | 1 |
| 01995 | PCB-1232 | 11141-16-5 | N.D. | | 5.2 | ug/kg | 1 |
| 01996 | PCB-1242 | 53469-21-9 | N.D. | | 6.1 | ug/kg | 1 |
| 01997 | PCB-1248 | 12672-29-6 | N.D. | | 6.0 | ug/kg | 1 |
| 01998 | PCB-1254 | 11097-69-1 | N.D. | | 6.9 | ug/kg | 1 |
| 01999 | PCB-1260 | 11096-82-5 | N.D. | | 5.4 | ug/kg | 1 |
| 03017 | Endrin Ketone | 53494-70-5 | N.D. | | 0.40 | ug/kg | 1 |
| 03025 | Alpha Chlordane | 5103-71-9 | N.D. | | 0.21 | ug/kg | 1 |
| 03026 | Gamma Chlordane | 5103-74-2 | N.D. | | 0.21 | ug/kg | 1 |
| | Heptachlor was detected in the method blank above the method detection | | | | | | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| | limit. No heptachlor was detected in the sample, therefore the data is reported. | | | | | |
| 04688 | TCL SW846 Semivolatiles Soil | | | | | |
| 01185 | Phenol | 108-95-2 | N.D. | 40. | ug/kg | 1 |
| 01186 | 2-Chlorophenol | 95-57-8 | N.D. | 40. | ug/kg | 1 |
| 01187 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 40. | ug/kg | 1 |
| 01188 | N-Nitroso-di-n-propylamine | 621-64-7 | N.D. | 40. | ug/kg | 1 |
| 01189 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 40. | ug/kg | 1 |
| 01190 | 4-Chloro-3-methylphenol | 59-50-7 | N.D. | 82. | ug/kg | 1 |
| 03746 | 2-Nitrophenol | 88-75-5 | N.D. | 40. | ug/kg | 1 |
| 03747 | 2,4-Dimethylphenol | 105-67-9 | N.D. | 40. | ug/kg | 1 |
| 03748 | 2,4-Dichlorophenol | 120-83-2 | N.D. | 40. | ug/kg | 1 |
| 03749 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 40. | ug/kg | 1 |
| 03753 | bis(2-Chloroethyl)ether | 111-44-4 | N.D. | 40. | ug/kg | 1 |
| 03754 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 40. | ug/kg | 1 |
| 03755 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 40. | ug/kg | 1 |
| 03757 | Hexachloroethane | 67-72-1 | N.D. | 40. | ug/kg | 1 |
| 03758 | Nitrobenzene | 98-95-3 | N.D. | 40. | ug/kg | 1 |
| 03759 | Isophorone | 78-59-1 | N.D. | 40. | ug/kg | 1 |
| 03760 | bis(2-Chloroethoxy)methane | 111-91-1 | N.D. | 40. | ug/kg | 1 |
| 03761 | Naphthalene | 91-20-3 | N.D. | 40. | ug/kg | 1 |
| 03762 | Hexachlorobutadiene | 87-68-3 | N.D. | 82. | ug/kg | 1 |
| 03763 | Hexachlorocyclopentadiene | 77-47-4 | N.D. | 210. | ug/kg | 1 |
| 03764 | 2-Chloronaphthalene | 91-58-7 | N.D. | 40. | ug/kg | 1 |
| 03765 | Acenaphthylene | 208-96-8 | N.D. | 40. | ug/kg | 1 |
| 03766 | Dimethylphthalate | 131-11-3 | N.D. | 82. | ug/kg | 1 |
| 04690 | 2-Methylphenol | 95-48-7 | N.D. | 40. | ug/kg | 1 |
| 04691 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | N.D. | 40. | ug/kg | 1 |
| 04692 | 4-Methylphenol | 106-44-5 | N.D. | 82. | ug/kg | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 04693 | 4-Chloroaniline | 106-47-8 | N.D. | 40. | ug/kg | 1 |
| 04694 | 2-Methylnaphthalene | 91-57-6 | N.D. | 40. | ug/kg | 1 |
| 04695 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04696 | 2-Nitroaniline | 88-74-4 | N.D. | 40. | ug/kg | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | | | | | |
| 01191 | Acenaphthene | 83-32-9 | N.D. | 40. | ug/kg | 1 |
| 01192 | 4-Nitrophenol | 100-02-7 | N.D. | 210. | ug/kg | 1 |
| 01193 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 82. | ug/kg | 1 |
| 01194 | Pentachlorophenol | 87-86-5 | N.D. | 210. | ug/kg | 1 |
| 01195 | Pyrene | 129-00-0 | N.D. | 40. | ug/kg | 1 |
| 03750 | 2,4-Dinitrophenol | 51-28-5 | N.D. | 820. | ug/kg | 1 |
| 03751 | 4,6-Dinitro-2-methylphenol | 534-52-1 | N.D. | 210. | ug/kg | 1 |
| 03767 | 2,6-Dinitrotoluene | 606-20-2 | N.D. | 40. | ug/kg | 1 |
| 03768 | Fluorene | 86-73-7 | N.D. | 40. | ug/kg | 1 |
| 03769 | 4-Chlorophenyl-phenylether | 7005-72-3 | N.D. | 40. | ug/kg | 1 |
| 03770 | Diethylphthalate | 84-66-2 | N.D. | 82. | ug/kg | 1 |
| 03772 | N-Nitrosodiphenylamine | 86-30-6 | N.D. | 40. | ug/kg | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 03773 | 4-Bromophenyl-phenylether | 101-55-3 | N.D. | 40. | ug/kg | 1 |
| 03774 | Hexachlorobenzene | 118-74-1 | N.D. | 40. | ug/kg | 1 |
| 03775 | Phenanthrene | 85-01-8 | N.D. | 40. | ug/kg | 1 |
| 03776 | Anthracene | 120-12-7 | N.D. | 40. | ug/kg | 1 |
| 03777 | Di-n-butylphthalate | 84-74-2 | N.D. | 82. | ug/kg | 1 |
| 03778 | Fluoranthene | 206-44-0 | N.D. | 40. | ug/kg | 1 |
| 03780 | Butylbenzylphthalate | 85-68-7 | N.D. | 82. | ug/kg | 1 |
| 03781 | Benzo(a)anthracene | 56-55-3 | N.D. | 40. | ug/kg | 1 |
| 03782 | Chrysene | 218-01-9 | N.D. | 40. | ug/kg | 1 |
| 03783 | 3,3'-Dichlorobenzidine | 91-94-1 | N.D. | 82. | ug/kg | 1 |
| 03784 | bis(2-Ethylhexyl)phthalate | 117-81-7 | N.D. | 82. | ug/kg | 1 |
| 03785 | Di-n-octylphthalate | 117-84-0 | N.D. | 82. | ug/kg | 1 |
| 03786 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 40. | ug/kg | 1 |
| 03787 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 40. | ug/kg | 1 |
| 03788 | Benzo(a)pyrene | 50-32-8 | N.D. | 40. | ug/kg | 1 |
| 03789 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 40. | ug/kg | 1 |
| 03790 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 40. | ug/kg | 1 |
| 03791 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 40. | ug/kg | 1 |

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**Lancaster Laboratories Sample No. SW 3933081**

Collected:10/31/2002 17:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:37
Discard: 12/26/2002
(3-4')5GP-16 Grab Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

34516 SDG#: RAR01-19

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 04697 | 3-Nitroaniline | 99-09-2 | N.D. | 82. | ug/kg | 1 |
| 04698 | Dibenzofuran | 132-64-9 | N.D. | 40. | ug/kg | 1 |
| 04700 | 4-Nitroaniline | 100-01-6 | N.D. | 82. | ug/kg | 1 |
| 04702 | Carbazole | 86-74-8 | N.D. | 40. | ug/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/05/2002 08:39 | Helen L Schaeffer | 1 |
| 01225 | TCL Pesticides in Solids | SW-846 8081A/8082 | 1 | 11/06/2002 07:57 | Douglas D Seitz | 1 |
| 04688 | TCL SW846 Semivolatiles Soil | SW-846 8270C | 1 | 11/06/2002 18:33 | Brian K Graham | 1 |
| 04689 | TCL SW846 Semivolatiles/Soil | SW-846 8270C | 1 | 11/06/2002 18:33 | Brian K Graham | 1 |
| 00381 | BNA Soil Extraction | SW-846 3550B | 1 | 11/05/2002 17:40 | Amy M Strocko | 1 |
| 00819 | Solid Sample Pesticide Extract | SW-846 3550B | 1 | 11/05/2002 00:30 | Darin P Wagner | 1 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: 023080021A | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | |
| Gamma BHC - Lindane | N.D. | .17 | ug/kg | 103 | | 58-149 | | |
| Heptachlor | 0.18 J | .17 | ug/kg | 106 | | 57-156 | | |
| Aldrin | N.D. | .17 | ug/kg | 100 | | 54-151 | | |
| p,p-DDT | N.D. | .36 | ug/kg | 115 | | 53-187 | | |
| Dieldrin | N.D. | .33 | ug/kg | 100 | | 58-157 | | |
| Endrin | N.D. | .35 | ug/kg | 103 | | 65-183 | | |
| Methoxychlor | N.D. | 4. | ug/kg | 109 | | 53-197 | | |
| Alpha BHC | N.D. | .17 | ug/kg | 97 | | 47-149 | | |
| Beta BHC | N.D. | .17 | ug/kg | 106 | | 61-148 | | |
| Delta BHC | N.D. | .17 | ug/kg | 109 | | 49-171 | | |
| Heptachlor Epoxide | N.D. | .17 | ug/kg | 103 | | 63-149 | | |
| p,p-DDE | N.D. | .33 | ug/kg | 104 | | 50-177 | | |
| p,p-DDD | N.D. | .33 | ug/kg | 106 | | 49-182 | | |
| Toxaphene | N.D. | 11. | ug/kg | | | | | |
| Endosulfan I | N.D. | .17 | ug/kg | 100 | | 56-150 | | |
| Endosulfan II | N.D. | .33 | ug/kg | 101 | | 58-158 | | |
| Endosulfan Sulfate | N.D. | .33 | ug/kg | 91 | | 57-170 | | |
| Endrin Aldehyde | N.D. | 1. | ug/kg | 104 | | 47-145 | | |
| PCB-1016 | N.D. | 4.8 | ug/kg | | | | | |
| PCB-1221 | N.D. | 10. | ug/kg | | | | | |
| PCB-1232 | N.D. | 4.3 | ug/kg | | | | | |
| PCB-1242 | N.D. | 5. | ug/kg | | | | | |
| PCB-1248 | N.D. | 4.9 | ug/kg | | | | | |
| PCB-1254 | N.D. | 5.7 | ug/kg | | | | | |
| PCB-1260 | N.D. | 4.4 | ug/kg | | | | | |
| Endrin Ketone | N.D. | .33 | ug/kg | 103 | | 70-143 | | |
| Alpha Chlordane | N.D. | .17 | ug/kg | 106 | | 69-138 | | |
| Gamma Chlordane | N.D. | .17 | ug/kg | 103 | | 63-145 | | |
| Batch number: 02308SLA026 | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | |
| Phenol | N.D. | 33. | ug/kg | 87 | | 59-121 | | |
| 2-Chlorophenol | N.D. | 33. | ug/kg | 91 | | 71-114 | | |
| 1,4-Dichlorobenzene | N.D. | 33. | ug/kg | 83 | | 61-110 | | |
| N-Nitroso-di-n-propylamine | N.D. | 33. | ug/kg | 88 | | 62-118 | | |
| 1,2,4-Trichlorobenzene | N.D. | 33. | ug/kg | 90 | | 63-116 | | |
| 4-Chloro-3-methylphenol | N.D. | 67. | ug/kg | 98 | | 72-123 | | |
| Acenaphthene | N.D. | 33. | ug/kg | 102 | | 70-115 | | |
| 4-Nitrophenol | N.D. | 170. | ug/kg | 99 | | 63-138 | | |
| 2,4-Dinitrotoluene | N.D. | 67. | ug/kg | 103 | | 70-130 | | |
| Pentachlorophenol | N.D. | 170. | ug/kg | 72 | | 52-112 | | |
| Pyrene | N.D. | 33. | ug/kg | 98 | | 67-123 | | |
| 2-Nitrophenol | N.D. | 33. | ug/kg | 99 | | 76-114 | | |
| 2,4-Dimethylphenol | N.D. | 33. | ug/kg | 91 | | 60-110 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | N.D. | 33. | ug/kg | 92 | | 71-118 | | |
| 2,4,6-Trichlorophenol | N.D. | 33. | ug/kg | 91 | | 72-118 | | |
| 2,4-Dinitrophenol | N.D. | 670. | ug/kg | 59 | | 32-125 | | |
| 4,6-Dinitro-2-methylphenol | N.D. | 170. | ug/kg | 71 | | 52-125 | | |
| bis(2-Chloroethyl)ether | N.D. | 33. | ug/kg | 82 | | 66-114 | | |
| 1,3-Dichlorobenzene | N.D. | 33. | ug/kg | 87 | | 60-110 | | |
| 1,2-Dichlorobenzene | N.D. | 33. | ug/kg | 83 | | 64-107 | | |
| Hexachloroethane | N.D. | 33. | ug/kg | 87 | | 48-121 | | |
| Nitrobenzene | N.D. | 33. | ug/kg | 99 | | 65-116 | | |
| Isophorone | N.D. | 33. | ug/kg | 92 | | 64-108 | | |
| bis(2-Chloroethoxy)methane | N.D. | 33. | ug/kg | 99 | | 68-122 | | |
| Naphthalene | N.D. | 33. | ug/kg | 87 | | 65-113 | | |
| Hexachlorobutadiene | N.D. | 67. | ug/kg | 98 | | 61-121 | | |
| Hexachlorocyclopentadiene | N.D. | 170. | ug/kg | 109 | | 5-226 | | |
| 2-Chloronaphthalene | N.D. | 33. | ug/kg | 93 | | 69-114 | | |
| Acenaphthylene | N.D. | 33. | ug/kg | 89 | | 72-117 | | |
| Dimethylphthalate | N.D. | 67. | ug/kg | 99 | | 72-119 | | |
| 2,6-Dinitrotoluene | N.D. | 33. | ug/kg | 97 | | 74-115 | | |
| Fluorene | N.D. | 33. | ug/kg | 94 | | 65-119 | | |
| 4-Chlorophenyl-phenylether | N.D. | 33. | ug/kg | 95 | | 64-119 | | |
| Diethylphthalate | N.D. | 67. | ug/kg | 103 | | 71-121 | | |
| N-Nitrosodiphenylamine | N.D. | 33. | ug/kg | 86 | | 60-120 | | |
| 4-Bromophenyl-phenylether | N.D. | 33. | ug/kg | 99 | | 71-115 | | |
| Hexachlorobenzene | N.D. | 33. | ug/kg | 101 | | 62-128 | | |
| Phenanthrene | N.D. | 33. | ug/kg | 99 | | 64-116 | | |
| Anthracene | N.D. | 33. | ug/kg | 98 | | 64-116 | | |
| Di-n-butylphthalate | N.D. | 67. | ug/kg | 95 | | 72-119 | | |
| Fluoranthene | N.D. | 33. | ug/kg | 91 | | 65-115 | | |
| Butylbenzylphthalate | N.D. | 67. | ug/kg | 103 | | 59-150 | | |
| Benzo(a)anthracene | N.D. | 33. | ug/kg | 97 | | 69-115 | | |
| Chrysene | N.D. | 33. | ug/kg | 100 | | 67-119 | | |
| 3,3'-Dichlorobenzidine | N.D. | 67. | ug/kg | 40 | | 21-104 | | |
| bis(2-Ethylhexyl)phthalate | N.D. | 67. | ug/kg | 99 | | 56-138 | | |
| Di-n-octylphthalate | N.D. | 67. | ug/kg | 96 | | 69-131 | | |
| Benzo(b)fluoranthene | N.D. | 33. | ug/kg | 103 | | 66-122 | | |
| Benzo(k)fluoranthene | N.D. | 33. | ug/kg | 105 | | 66-122 | | |
| Benzo(a)pyrene | N.D. | 33. | ug/kg | 98 | | 72-118 | | |
| Indeno(1,2,3-cd)pyrene | N.D. | 33. | ug/kg | 103 | | 73-118 | | |
| Dibenz(a,h)anthracene | N.D. | 33. | ug/kg | 107 | | 78-126 | | |
| Benzo(g,h,i)perylene | N.D. | 33. | ug/kg | 99 | | 73-119 | | |
| 2-Methylphenol | N.D. | 33. | ug/kg | 84 | | 66-111 | | |
| 2,2'-oxybis(1-Chloropropane) | N.D. | 33. | ug/kg | 104 | | 65-139 | | |
| 4-Methylphenol | N.D. | 67. | ug/kg | 85 | | 22-171 | | |
| 4-Chloroaniline | N.D. | 33. | ug/kg | 35 | | 1-103 | | |
| 2-Methylnaphthalene | N.D. | 33. | ug/kg | 94 | | 65-108 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-Trichlorophenol | N.D. | 33. | ug/kg | 98 | | 74-117 | | |
| 2-Nitroaniline | N.D. | 33. | ug/kg | 102 | | 78-122 | | |
| 3-Nitroaniline | N.D. | 67. | ug/kg | 71 | | 17-107 | | |
| Dibenzofuran | N.D. | 33. | ug/kg | 93 | | 66-111 | | |
| 4-Nitroaniline | N.D. | 67. | ug/kg | 76 | | 48-116 | | |
| Carbazole | N.D. | 33. | ug/kg | 94 | | 71-114 | | |
| Batch number: 02309039401A | Sample number(s): 3933071,3933082 | | | | | | | |
| pH | | | | 100 | | 99-101 | | |
| Corrosivity | | | | 100 | | 98-102 | | |
| Batch number: 02309820003A | Sample number(s): 3933061-3933065,3933081 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |
| Batch number: 02309820003B | Sample number(s): 3933066-3933070,3933074-3933080 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |
| Batch number: 023110015A | Sample number(s): 3933072,3933083 | | | | | | | |
| Gamma BHC - Lindane | N.D. | .012 | ug/l | 120 | | 65-144 | | |
| Heptachlor | N.D. | .01 | ug/l | 86 | | 45-130 | | |
| Heptachlor Epoxide | N.D. | .016 | ug/l | 114 | | 73-141 | | |
| Methoxychlor | N.D. | .1 | ug/l | 105 | | 72-160 | | |
| Endrin | N.D. | .024 | ug/l | 120 | | 74-159 | | |
| Chlordane | N.D. | .25 | ug/l | | | | | |
| Toxaphene | N.D. | 1.5 | ug/l | | | | | |
| Batch number: 023110027A | Sample number(s): 3933072,3933083 | | | | | | | |
| 2,4-D | N.D. | 2. | ug/l | 66 | | 53-145 | | |
| 2,4,5-TP | N.D. | .2 | ug/l | 82 | | 55-128 | | |
| Batch number: 023115705005 | Sample number(s): 3933072,3933083 | | | | | | | |
| Arsenic | N.D. | .0049 | mg/l | 95 | | 90-110 | | |
| Selenium | N.D. | .0048 | mg/l | 93 | | 90-110 | | |
| Barium | N.D. | .00044 | mg/l | 101 | | 93-109 | | |
| Cadmium | N.D. | .00094 | mg/l | 101 | | 94-110 | | |
| Chromium | N.D. | .002 | mg/l | 98 | | 95-110 | | |
| Lead | N.D. | .0089 | mg/l | 99 | | 94-110 | | |
| Silver | 0.0020 J | .0014 | mg/l | 101 | | 94-110 | | |
| Batch number: 023115713001 | Sample number(s): 3933072,3933083 | | | | | | | |
| Mercury | N.D. | .000079 | mg/l | 92 | | 84-124 | | |
| Batch number: 02311820003A | Sample number(s): 3933071,3933082 | | | | | | | |
| Moisture | | | | 100 | | 99-101 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Batch number: 02311WAG026 | Sample number(s): 3933072,3933083 | | | | | | | |
| Pyridine | N.D. | .004 | mg/l | 65 | | 35-92 | | |
| 1,4-Dichlorobenzene | N.D. | .002 | mg/l | 66 | | 38-99 | | |
| 2-Methylphenol | N.D. | .002 | mg/l | 79 | | 64-102 | | |
| 4-Methylphenol | N.D. | .004 | mg/l | 75 | | 35-124 | | |
| Hexachloroethane | N.D. | .002 | mg/l | 57 | | 20-97 | | |
| Nitrobenzene | N.D. | .002 | mg/l | 90 | | 74-116 | | |
| Hexachlorobutadiene | N.D. | .002 | mg/l | 62 | | 18-103 | | |
| 2,4,6-Trichlorophenol | N.D. | .002 | mg/l | 92 | | 66-125 | | |
| 2,4,5-Trichlorophenol | N.D. | .002 | mg/l | 91 | | 70-122 | | |
| 2,4-Dinitrotoluene | N.D. | .002 | mg/l | 103 | | 75-129 | | |
| Hexachlorobenzene | N.D. | .002 | mg/l | 87 | | 65-128 | | |
| Pentachlorophenol | N.D. | .006 | mg/l | 76 | | 43-127 | | |
| Batch number: 02319104201A | Sample number(s): 3933071,3933082 | | | | | | | |
| Cyanide (Reactivity) | N.D. | 100. | mg/kg | 96 | | 88-114 | | |
| Batch number: 02319112101A | Sample number(s): 3933071,3933082 | | | | | | | |
| Sulfide (Reactivity) | N.D. | 27. | mg/kg | 95 | | 77-103 | | |
| Batch number: K023091AA | Sample number(s): 3933061-3933070 | | | | | | | |
| Chloromethane | N.D. | 2. | ug/kg | 107 | | 47-133 | | |
| Vinyl Chloride | N.D. | 1. | ug/kg | 99 | | 57-132 | | |
| Bromomethane | N.D. | 2. | ug/kg | 74 | | 54-129 | | |
| Chloroethane | N.D. | 2. | ug/kg | 95 | | 66-130 | | |
| 1,1-Dichloroethene | N.D. | 1. | ug/kg | 93 | | 77-139 | | |
| Methylene Chloride | N.D. | 2. | ug/kg | 90 | | 76-129 | | |
| trans-1,2-Dichloroethene | N.D. | 1. | ug/kg | 94 | | 78-131 | | |
| 1,1-Dichloroethane | N.D. | 1. | ug/kg | 110 | | 82-130 | | |
| cis-1,2-Dichloroethene | N.D. | 1. | ug/kg | 98 | | 85-127 | | |
| Chloroform | N.D. | 1. | ug/kg | 101 | | 79-126 | | |
| 1,1,1-Trichloroethane | N.D. | 1. | ug/kg | 106 | | 69-133 | | |
| Carbon Tetrachloride | N.D. | 1. | ug/kg | 100 | | 68-137 | | |
| Benzene | N.D. | 1. | ug/kg | 102 | | 85-125 | | |
| 1,2-Dichloroethane | N.D. | 1. | ug/kg | 112 | | 75-132 | | |
| Trichloroethene | N.D. | 1. | ug/kg | 100 | | 81-124 | | |
| 1,2-Dichloropropane | N.D. | 1. | ug/kg | 108 | | 81-126 | | |
| Bromodichloromethane | N.D. | 1. | ug/kg | 97 | | 80-123 | | |
| Toluene | N.D. | 1. | ug/kg | 100 | | 81-116 | | |
| 1,1,2-Trichloroethane | N.D. | 1. | ug/kg | 91 | | 77-116 | | |
| Tetrachloroethene | N.D. | 1. | ug/kg | 101 | | 79-128 | | |
| Dibromochloromethane | N.D. | 1. | ug/kg | 88 | | 73-116 | | |
| Chlorobenzene | N.D. | 1. | ug/kg | 97 | | 81-112 | | |
| Ethylbenzene | N.D. | 1. | ug/kg | 100 | | 82-115 | | |
| Styrene | N.D. | 1. | ug/kg | 93 | | 79-116 | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|
| Bromoform | N.D. | 1. | ug/kg | 81 | | 64-121 | | |
| 1,1,2,2-Tetrachloroethane | N.D. | 1. | ug/kg | 82 | | 64-121 | | |
| Acetone | N.D. | 7. | ug/kg | 68 | | 51-178 | | |
| Carbon Disulfide | N.D. | 1. | ug/kg | 105 | | 72-144 | | |
| 2-Butanone | N.D. | 4. | ug/kg | 74 | | 58-155 | | |
| trans-1,3-Dichloropropene | N.D. | 1. | ug/kg | 96 | | 75-113 | | |
| cis-1,3-Dichloropropene | N.D. | 1. | ug/kg | 99 | | 82-122 | | |
| 4-Methyl-2-pentanone | N.D. | 3. | ug/kg | 83 | | 56-144 | | |
| 2-Hexanone | N.D. | 3. | ug/kg | 77 | | 51-142 | | |
| Xylene (Total) | N.D. | 1. | ug/kg | 97 | | 82-117 | | |
| Batch number: N023141AB | Sample number(s): 3933073,3933084 | | | | | | | |
| Vinyl Chloride | N.D. | 20. | ug/l | 79 | | 59-129 | | |
| 1,1-Dichloroethene | N.D. | 16. | ug/l | 104 | | 67-140 | | |
| Chloroform | N.D. | 16. | ug/l | 105 | | 86-124 | | |
| Carbon Tetrachloride | N.D. | 20. | ug/l | 98 | | 77-130 | | |
| Benzene | N.D. | 10. | ug/l | 104 | | 85-117 | | |
| 1,2-Dichloroethane | N.D. | 20. | ug/l | 102 | | 77-132 | | |
| Trichloroethene | N.D. | 20. | ug/l | 96 | | 87-117 | | |
| Tetrachloroethene | N.D. | 16. | ug/l | 104 | | 79-136 | | |
| Chlorobenzene | N.D. | 16. | ug/l | 100 | | 85-115 | | |
| 2-Butanone | N.D. | 60. | ug/l | 84 | | 58-141 | | |

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 023080021A | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | | |
| Gamma BHC - Lindane | 103 | 100 | 43-154 | 3 | 35 | | | | |
| Heptachlor | 103 | 103 | 70-138 | 0 | 35 | | | | |
| Aldrin | 100 | 97 | 65-134 | 3 | 35 | | | | |
| p,p-DDT | 115 | 118 | 62-166 | 3 | 35 | | | | |
| Dieldrin | 101 | 101 | 68-139 | 0 | 35 | | | | |
| Endrin | 104 | 104 | 48-188 | 0 | 35 | | | | |
| Methoxychlor | 109 | 112 | 74-162 | 3 | 35 | | | | |
| Alpha BHC | 97 | 91 | 64-134 | 6 | 35 | | | | |
| Beta BHC | 103 | 103 | 31-176 | 0 | 35 | | | | |
| Delta BHC | 112 | 109 | 29-191 | 3 | 35 | | | | |
| Heptachlor Epoxide | 103 | 103 | 69-133 | 0 | 35 | | | | |
| p,p-DDE | 110 | 110 | 48-175 | 0 | 35 | | | | |
| p,p-DDD | 104 | 104 | 52-181 | 0 | 35 | | | | |

*- Outside of specification
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Endosulfan I | 100 | 97 | 62-133 | 3 | 35 | | | | |
| Endosulfan II | 100 | 101 | 65-144 | 1 | 35 | | | | |
| Endosulfan Sulfate | 88 | 87 | 65-154 | 2 | 35 | | | | |
| Endrin Aldehyde | 78 | 94 | 63-125 | 19 | 35 | | | | |
| Endrin Ketone | 99 | 99 | 33-173 | 0 | 50 | | | | |
| Alpha Chlordane | 106 | 106 | 65-147 | 0 | 50 | | | | |
| Gamma Chlordane | 100 | 103 | 30-157 | 3 | 50 | | | | |
| Batch number: 02308SLA026 | Sample number(s): 3933061-3933070,3933074-3933081 | | | | | | | | |
| Phenol | 85 | 85 | 29-139 | 0 | 30 | | | | |
| 2-Chlorophenol | 88 | 91 | 38-136 | 3 | 30 | | | | |
| 1,4-Dichlorobenzene | 81 | 81 | 22-131 | 0 | 30 | | | | |
| N-Nitroso-di-n-propylamine | 88 | 87 | 36-137 | 2 | 30 | | | | |
| 1,2,4-Trichlorobenzene | 86 | 86 | 50-124 | 0 | 30 | | | | |
| 4-Chloro-3-methylphenol | 97 | 95 | 33-150 | 1 | 30 | | | | |
| Acenaphthene | 100 | 99 | 36-140 | 1 | 30 | | | | |
| 4-Nitrophenol | 93 | 92 | 5-170 | 1 | 30 | | | | |
| 2,4-Dinitrotoluene | 103 | 101 | 34-150 | 2 | 30 | | | | |
| Pentachlorophenol | 71 | 70 | 5-144 | 2 | 30 | | | | |
| Pyrene | 98 | 99 | 19-152 | 1 | 30 | | | | |
| 2-Nitrophenol | 96 | 94 | 29-145 | 3 | 30 | | | | |
| 2,4-Dimethylphenol | 93 | 90 | 21-143 | 3 | 30 | | | | |
| 2,4-Dichlorophenol | 92 | 88 | 29-145 | 4 | 30 | | | | |
| 2,4,6-Trichlorophenol | 89 | 86 | 27-150 | 3 | 30 | | | | |
| 2,4-Dinitrophenol | 41 | 38 | 20-150 | 6 | 30 | | | | |
| 4,6-Dinitro-2-methylphenol | 63 | 63 | 5-160 | 1 | 30 | | | | |
| bis(2-Chloroethyl)ether | 84 | 81 | 34-139 | 3 | 30 | | | | |
| 1,3-Dichlorobenzene | 84 | 83 | 39-122 | 2 | 30 | | | | |
| 1,2-Dichlorobenzene | 82 | 82 | 22-134 | 1 | 30 | | | | |
| Hexachloroethane | 82 | 84 | 11-140 | 2 | 30 | | | | |
| Nitrobenzene | 95 | 91 | 35-138 | 3 | 30 | | | | |
| Isophorone | 88 | 89 | 38-133 | 1 | 30 | | | | |
| bis(2-Chloroethoxy)methane | 95 | 97 | 58-132 | 2 | 30 | | | | |
| Naphthalene | 87 | 87 | 24-144 | 1 | 30 | | | | |
| Hexachlorobutadiene | 93 | 92 | 32-136 | 1 | 30 | | | | |
| Hexachlorocyclopentadiene | 99 | 95 | 5-176 | 4 | 30 | | | | |
| 2-Chloronaphthalene | 92 | 91 | 32-141 | 1 | 30 | | | | |
| Acenaphthylene | 86 | 83 | 37-142 | 3 | 30 | | | | |
| Dimethylphthalate | 95 | 92 | 35-144 | 3 | 30 | | | | |
| 2,6-Dinitrotoluene | 91 | 94 | 39-138 | 3 | 30 | | | | |
| Fluorene | 92 | 90 | 28-151 | 3 | 30 | | | | |
| 4-Chlorophenyl-phenylether | 95 | 92 | 36-140 | 4 | 30 | | | | |
| Diethylphthalate | 98 | 97 | 37-145 | 1 | 30 | | | | |
| N-Nitrosodiphenylamine | 86 | 86 | 48-136 | 0 | 30 | | | | |

*- Outside of specification
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| 4-Bromophenyl-phenylether | 95 | 96 | 36-144 | 1 | 30 | | | | |
| Hexachlorobenzene | 98 | 97 | 32-146 | 1 | 30 | | | | |
| Phenanthrene | 98 | 94 | 20-147 | 4 | 30 | | | | |
| Anthracene | 98 | 93 | 29-141 | 5 | 30 | | | | |
| Di-n-butylphthalate | 96 | 93 | 30-147 | 3 | 30 | | | | |
| Fluoranthene | 92 | 87 | 21-141 | 5 | 30 | | | | |
| Butylbenzylphthalate | 96 | 97 | 28-160 | 1 | 30 | | | | |
| Benzo(a)anthracene | 95 | 96 | 22-151 | 1 | 30 | | | | |
| Chrysene | 95 | 98 | 22-149 | 4 | 30 | | | | |
| 3,3'-Dichlorobenzidine | 65 | 74 | 3-123 | 12 | 30 | | | | |
| bis(2-Ethylhexyl)phthalate | 94 | 95 | 26-160 | 1 | 30 | | | | |
| Di-n-octylphthalate | 93 | 91 | 24-164 | 2 | 30 | | | | |
| Benzo(b)fluoranthene | 96 | 100 | 23-146 | 4 | 30 | | | | |
| Benzo(k)fluoranthene | 99 | 98 | 27-149 | 1 | 30 | | | | |
| Benzo(a)pyrene | 100 | 100 | 25-149 | 0 | 30 | | | | |
| Indeno(1,2,3-cd)pyrene | 96 | 98 | 13-157 | 2 | 30 | | | | |
| Dibenz(a,h)anthracene | 104 | 102 | 14-170 | 2 | 30 | | | | |
| Benzo(g,h,i)perylene | 97 | 97 | 11-158 | 0 | 30 | | | | |
| 2-Methylphenol | 84 | 86 | 26-139 | 1 | 30 | | | | |
| 2,2'-oxybis(1-Chloropropane) | 104 | 105 | 50-145 | 2 | 30 | | | | |
| 4-Methylphenol | 83 | 83 | 9-170 | 1 | 30 | | | | |
| 4-Chloroaniline | 71 | 76 | 1-127 | 7 | 30 | | | | |
| 2-Methylnaphthalene | 94 | 90 | 22-145 | 4 | 30 | | | | |
| 2,4,5-Trichlorophenol | 93 | 91 | 33-147 | 2 | 30 | | | | |
| 2-Nitroaniline | 97 | 98 | 31-156 | 1 | 30 | | | | |
| 3-Nitroaniline | 89 | 88 | 2-135 | 2 | 30 | | | | |
| Dibenzofuran | 93 | 91 | 27-144 | 2 | 30 | | | | |
| 4-Nitroaniline | 81 | 85 | 11-141 | 6 | 30 | | | | |
| Carbazole | 93 | 92 | 32-144 | 2 | 30 | | | | |
| Batch number: 02309039401A | Sample number(s): 3933071,3933082 | | | | | | | | |
| pH | | | | | | 7.33 | 7.33 | 0 | 1 |
| Corrosivity | | | | | | 7.3 | 7.3 | 0 | 2 |
| Batch number: 02309820003A | Sample number(s): 3933061-3933065,3933081 | | | | | | | | |
| Moisture | | | | | | 19.2 | 18.0 | 6 | 15 |
| Batch number: 02309820003B | Sample number(s): 3933066-3933070,3933074-3933080 | | | | | | | | |
| Moisture | | | | | | 16.0 | 16.2 | 1 | 15 |
| Batch number: 023110015A | Sample number(s): 3933072,3933083 | | | | | | | | |
| Gamma BHC - Lindane | 120 | 116 | 67-151 | 3 | 30 | | | | |
| Heptachlor | 98 | 98 | 37-145 | 0 | 30 | | | | |
| Heptachlor Epoxide | 113 | 112 | 62-150 | 1 | 30 | | | | |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Methoxychlor | 100 | 100 | 63-185 | 0 | 30 | | | | |
| Endrin | 120 | 120 | 61-179 | 0 | 30 | | | | |
| Batch number: 023110027A | Sample number(s): 3933072,3933083 | | | | | | | | |
| 2,4-D | 73 | 75 | 38-176 | 3 | 30 | | | | |
| 2,4,5-TP | 78 | 81 | 50-134 | 4 | 30 | | | | |
| Batch number: 023115705005 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Arsenic | 87 | 88 | 86-119 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Selenium | 86 | 88 | 75-125 | 3 | 20 | 0.0074 J | 0.0088 J | 17 (1) | 20 |
| Barium | 81* | 83 | 82-113 | 3 | 20 | 0.690 | 0.669 | 3 | 20 |
| Cadmium | 84 | 84 | 78-121 | 1 | 20 | 0.0077 J | 0.0078 J | 0 (1) | 20 |
| Chromium | 84 | 82 | 80-119 | 1 | 20 | 1.85 | 1.86 | 1 | 20 |
| Lead | (2) | (2) | 75-125 | 1 | 20 | 260. | 257. | 1 | 20 |
| Silver | 48* | 50* | 75-125 | 3 | 20 | 0.0024 J | N.D. | 200* (1) | 20 |
| Batch number: 023115713001 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Mercury | 79* | 79* | 80-120 | 0 | 20 | N.D. | N.D. | 76* (1) | 20 |
| Batch number: 02311820003A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Moisture | | | | | | 20.2 | 19.6 | 3 | 15 |
| Batch number: 02311WAG026 | Sample number(s): 3933072,3933083 | | | | | | | | |
| Pyridine | 65 | 61 | 22-100 | 7 | 30 | | | | |
| 1,4-Dichlorobenzene | 69 | 70 | 44-104 | 1 | 30 | | | | |
| 2-Methylphenol | 80 | 80 | 27-130 | 0 | 30 | | | | |
| 4-Methylphenol | 76 | 76 | 19-132 | 1 | 30 | | | | |
| Hexachloroethane | 58 | 56 | 25-110 | 3 | 30 | | | | |
| Nitrobenzene | 95 | 91 | 30-153 | 5 | 30 | | | | |
| Hexachlorobutadiene | 63 | 64 | 21-124 | 2 | 30 | | | | |
| 2,4,6-Trichlorophenol | 92 | 95 | 40-144 | 3 | 30 | | | | |
| 2,4,5-Trichlorophenol | 91 | 92 | 53-134 | 1 | 30 | | | | |
| 2,4-Dinitrotoluene | 100 | 101 | 47-148 | 1 | 30 | | | | |
| Hexachlorobenzene | 88 | 92 | 46-139 | 4 | 30 | | | | |
| Pentachlorophenol | 86 | 87 | 3-150 | 2 | 30 | | | | |
| Batch number: 02319104201A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Cyanide (Reactivity) | 3 | 2 | 0-5 | 40* | 19 | | | | |
| Batch number: 02319112101A | Sample number(s): 3933071,3933082 | | | | | | | | |
| Sulfide (Reactivity) | 63 | 64 | 26-99 | 3 | 26 | | | | |
| Batch number: K023091AA | Sample number(s): 3933061-3933070 | | | | | | | | |
| Chloromethane | 109 | 102 | 14-144 | 4 | 30 | | | | |

*- Outside of specification
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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 105 | 97 | 20-146 | 6 | 30 | | | | |
| Bromomethane | 79 | 75 | 24-140 | 3 | 30 | | | | |
| Chloroethane | 97 | 90 | 33-147 | 5 | 30 | | | | |
| 1,1-Dichloroethene | 100 | 101 | 43-153 | 4 | 30 | | | | |
| Methylene Chloride | 92 | 91 | 49-145 | 2 | 30 | | | | |
| trans-1,2-Dichloroethene | 96 | 94 | 49-143 | 1 | 30 | | | | |
| 1,1-Dichloroethane | 109 | 108 | 51-147 | 1 | 30 | | | | |
| cis-1,2-Dichloroethene | 96 | 98 | 54-139 | 5 | 30 | | | | |
| Chloroform | 100 | 100 | 57-135 | 2 | 30 | | | | |
| 1,1,1-Trichloroethane | 106 | 105 | 47-143 | 1 | 30 | | | | |
| Carbon Tetrachloride | 102 | 99 | 43-144 | 0 | 30 | | | | |
| Benzene | 101 | 100 | 52-141 | 2 | 30 | | | | |
| 1,2-Dichloroethane | 112 | 111 | 57-137 | 2 | 30 | | | | |
| Trichloroethene | 97 | 99 | 47-140 | 4 | 30 | | | | |
| 1,2-Dichloropropane | 104 | 103 | 55-138 | 1 | 30 | | | | |
| Bromodichloromethane | 95 | 95 | 55-131 | 2 | 30 | | | | |
| Toluene | 104 | 105 | 41-147 | 3 | 30 | | | | |
| 1,1,2-Trichloroethane | 90 | 88 | 45-150 | 0 | 30 | | | | |
| Tetrachloroethene | 105 | 107 | 42-157 | 5 | 30 | | | | |
| Dibromochloromethane | 89 | 87 | 46-137 | 1 | 30 | | | | |
| Chlorobenzene | 97 | 98 | 48-132 | 4 | 30 | | | | |
| Ethylbenzene | 102 | 104 | 44-142 | 4 | 30 | | | | |
| Styrene | 90 | 93 | 30-144 | 6 | 30 | | | | |
| Bromoform | 74 | 74 | 32-139 | 1 | 30 | | | | |
| 1,1,2,2-Tetrachloroethane | 76 | 75 | 23-180 | 1 | 30 | | | | |
| Acetone | 71 | 68 | 6-214 | 2 | 30 | | | | |
| Carbon Disulfide | 106 | 104 | 29-162 | 1 | 30 | | | | |
| 2-Butanone | 68 | 64 | 22-181 | 4 | 30 | | | | |
| trans-1,3-Dichloropropene | 98 | 95 | 46-130 | 1 | 30 | | | | |
| cis-1,3-Dichloropropene | 92 | 96 | 50-129 | 6 | 30 | | | | |
| 4-Methyl-2-pentanone | 69 | 65 | 40-154 | 3 | 30 | | | | |
| 2-Hexanone | 67 | 66 | 28-170 | 1 | 30 | | | | |
| Xylene (Total) | 98 | 100 | 47-139 | 5 | 30 | | | | |
| Batch number: N023141AB | Sample number(s): 3933073,3933084 | | | | | | | | |
| Vinyl Chloride | 83 | 83 | 54-144 | 1 | 30 | | | | |
| 1,1-Dichloroethene | 90 | 91 | 69-151 | 1 | 30 | | | | |
| Chloroform | 98 | 95 | 77-133 | 3 | 30 | | | | |
| Carbon Tetrachloride | 87 | 86 | 73-144 | 1 | 30 | | | | |
| Benzene | 95 | 94 | 78-134 | 1 | 30 | | | | |
| 1,2-Dichloroethane | 99 | 98 | 73-136 | 1 | 30 | | | | |
| Trichloroethene | 88 | 87 | 75-135 | 1 | 30 | | | | |
| Tetrachloroethene | 86 | 86 | 74-149 | 1 | 30 | | | | |
| Chlorobenzene | 91 | 90 | 81-125 | 2 | 30 | | | | |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | 80 | 78 | 47-143 | 3 | 30 | | | | |

## Surrogate Quality Control

Analysis Name: TCL Pesticides in Solids
Batch number: 023080021A

| | Tetrachloro-m-xylene | Decachlorobiphenyl |
|---|---|---|
| 3933061 | 91 | 105 |
| 3933062 | 91 | 105 |
| 3933063 | 97 | 112 |
| 3933064 | 89 | 105 |
| 3933065 | 97 | 113 |
| 3933066 | 98 | 110 |
| 3933067 | 91 | 106 |
| 3933068 | 96 | 109 |
| 3933069 | 99 | 110 |
| 3933070 | 98 | 108 |
| 3933074 | 98 | 108 |
| 3933075 | 95 | 109 |
| 3933076 | 98 | 108 |
| 3933077 | 92 | 105 |
| 3933078 | 96 | 110 |
| 3933079 | 92 | 108 |
| 3933080 | 95 | 112 |
| 3933081 | 94 | 111 |
| Blank | 94 | 105 |
| LCS | 92 | 106 |
| MS | 91 | 106 |
| MSD | 96 | 109 |
| Limits: | 58-149 | 62-159 |

Analysis Name: TCL SW846 Semivolatiles Soil
Batch number: 02308SLA026

| | Phenol-d6 | 2-Fluorophenol | 2,4,6-Tribromophenol | Nitrobenzene-d5 |
|---|---|---|---|---|
| 3933061 | 83 | 80 | 98 | 94 |
| 3933062 | 87 | 84 | 103 | 99 |
| 3933063 | 86 | 82 | 104 | 95 |
| 3933064 | 83 | 77 | 88 | 95 |

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| 3933065 | 88 | 83 | 101 | 95 |
| 3933066 | 86 | 84 | 111 | 100 |
| 3933067 | 88 | 87 | 108 | 101 |
| 3933068 | 88 | 87 | 108 | 96 |
| 3933069 | 88 | 81 | 106 | 97 |
| 3933070 | 88 | 84 | 104 | 92 |
| 3933074 | 86 | 83 | 97 | 98 |
| 3933075 | 88 | 88 | 107 | 98 |
| 3933076 | 88 | 86 | 100 | 99 |
| 3933077 | 83 | 78 | 104 | 96 |
| 3933078 | 87 | 84 | 102 | 93 |
| 3933079 | 87 | 84 | 101 | 93 |
| 3933080 | 84 | 81 | 95 | 90 |
| 3933081 | 85 | 82 | 98 | 95 |
| Blank | 89 | 87 | 105 | 100 |
| LCS | 90 | 89 | 113 | 103 |
| MS | 88 | 87 | 108 | 101 |
| MSD | 88 | 87 | 108 | 96 |
| Limits: | 46-120 | 46-122 | 37-139 | 50-132 |

| | 2-Fluorobiphenyl | Terphenyl-d14 |
|---|---|---|
| 3933061 | 92 | 93 |
| 3933062 | 100 | 104 |
| 3933063 | 97 | 103 |
| 3933064 | 90 | 97 |
| 3933065 | 92 | 100 |
| 3933066 | 98 | 100 |
| 3933067 | 97 | 98 |
| 3933068 | 97 | 99 |
| 3933069 | 97 | 95 |
| 3933070 | 95 | 100 |
| 3933074 | 91 | 94 |
| 3933075 | 103 | 97 |
| 3933076 | 103 | 96 |
| 3933077 | 95 | 88 |
| 3933078 | 99 | 96 |
| 3933079 | 96 | 96 |
| 3933080 | 89 | 89 |
| 3933081 | 92 | 95 |
| Blank | 100 | 92 |
| LCS | 98 | 101 |
| MS | 97 | 98 |
| MSD | 97 | 99 |
| Limits: | 57-123 | 48-141 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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REPRINT



# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

Analysis Name: TCLP Pesticides
Batch number: 023110015A

| | Tetrachloro-m-xylene | Decachlorobiphenyl |
|---|---|---|
| 3933072 | 85 | 116 |
| 3933083 | 78 | 107 |
| Blank | 75 | 103 |
| LCS | 77 | 117 |
| MS | 76 | 96 |
| MSD | 77 | 99 |
| Limits: | 40-135 | 36-156 |

Analysis Name: TCLP Herbicides
Batch number: 023110027A

| | 2,4-Dichlorophenylacetic acid |
|---|---|
| 3933072 | 82 |
| 3933083 | 80 |
| Blank | 85 |
| LCS | 79 |
| MS | 79 |
| MSD | 82 |
| Limits: | 40-154 |

Analysis Name: TCLP Acid Base/Neutrals
Batch number: 02311WAG026

| | Nitrobenzene-d5 | 2-Fluorobiphenyl | Terphenyl-d14 | Phenol-d6 |
|---|---|---|---|---|
| 3933072 | 90 | 89 | 84 | 41 |
| 3933083 | 91 | 87 | 84 | 41 |
| Blank | 95 | 87 | 92 | 41 |
| LCS | 93 | 93 | 93 | 44 |
| MS | 97 | 87 | 72 | 45 |
| MSD | 93 | 87 | 83 | 44 |
| Limits: | 45-139 | 61-119 | 46-136 | 10-87 |

| | 2-Fluorophenol | 2,4,6-Tribromophenol |
|---|---|---|
| 3933072 | 62 | 105 |
| 3933083 | 61 | 106 |
| Blank | 63 | 107 |
| LCS | 65 | 108 |
| MS | 66 | 111 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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# Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 829270
Reported: 11/25/02 at 02:38 PM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| MSD | 64 | 111 | | |
| Limits: | 22-96 | 36-147 | | |

Analysis Name: TCL by 8260 (soil)
Batch number: K023091AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 3933061 | 97 | 80 | 107 | 99 |
| 3933062 | 96 | 81 | 106 | 103 |
| 3933063 | 97 | 81 | 104 | 100 |
| 3933064 | 92 | 83 | 106 | 92 |
| 3933065 | 98 | 82 | 103 | 99 |
| 3933066 | 97 | 81 | 103 | 99 |
| 3933067 | 99 | 85 | 112 | 111 |
| 3933068 | 96 | 86 | 113 | 103 |
| 3933069 | 96 | 83 | 111 | 89 |
| 3933070 | 96 | 82 | 109 | 97 |
| Blank | 94 | 88 | 101 | 102 |
| LCS | 100 | 97 | 105 | 107 |
| MS | 99 | 85 | 112 | 111 |
| MSD | 96 | 86 | 113 | 103 |
| Limits: | 80-120 | 80-120 | 81-117 | 74-121 |

Analysis Name: TCLP by 8260
Batch number: N023141AB

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 3933073 | 98 | 100 | 95 | 90 |
| 3933084 | 98 | 99 | 94 | 89 |
| Blank | 98 | 98 | 96 | 93 |
| LCS | 95 | 99 | 103 | 106 |
| MS | 94 | 98 | 100 | 104 |
| MSD | 95 | 98 | 101 | 105 |
| Limits: | 86-118 | 80-120 | 88-110 | 86-115 |

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

# CHAIN OF CUSTODY RECORD

**Laboratory:** Severn Trent Laboratories, 4101 Shuffel Drive, NW, North Canton, OH 44720 (303) 497-9396

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** Andy Kassoff/ Ross Miller<br>**Address:** 2206 South Main Street, Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291<br>**Fax:** (540) 552-0291 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street, Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RFAAP<br>**Location:** Montgomery County, Virginia<br>**Event:** HWMU-5 and HWMU-7 Investigation<br>**DAA JN:** 802271-01<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:** ☑ PS ☐ B<br>**Sample Collection for Project Complete? (See Note 1)** ☑ YES ☐ NO<br>**Carrier:** FED EX<br>**Tracking Number:** | | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: ☑ YES ☐ NO
Bill: ☑ Client ☐ Consultant
Preserved and shipped on ice: ☑ YES ☐ NO

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | |
| Required pH of Sample | | | | | - | | | | | | | | |
| Box 2 - Preservative | | | | | H | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 4oz. G | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Metals | | | | | | | | |
| (1-3') 7GP-1 | 11/1 | 10:00 | S | 1 | X | | | | | | | | |
| (8-12') 7GP-2 | | 10:40 | S | 1 | X | | | | | | | | |
| (13.5-14.5') 7GP-2 | | 11:05 | S | 1 | X | | | | | | | | |
| (10-11') 7GP-3 | | 11:25 | S | 1 | X | | | | | | | | |
| (5-8') 7GP-8 | | 12:15 | S | 1 | X | | | | | | | | |
| (6-11') 7GP-5 | | 12:50 | S | 1 | X | | | | | | | | |
| (3-4') 7GP-16 | | 13:20 | S | 1 | X | | | | | | | | |
| (3-4') 7GP-4 | 11/1 | 13:45 | S | 1 | X | | | | | | | | |
| (6-11') 76P-5MS | 11/1 | 12:50 | S | 1 | X | | | | | | | | |
| (6-11') 76P SMSD | 11/1 | 12:50 | S | 1 | X | | | | | | | | |

**GENERAL NOTES: See attached target analyte list. Full TAL List for all analytes, using SW846 Test Methods**

76P-1 (1-3')
76P-2 (8-12')
76P-2 (13.5-14.5')
76P-3 (10-11')
76P-8 (5-8')
76P-5 (6-11')
76P-16 (3-4')
76P-4 (3-4')
76P-5 (6-11') MS
76P-5 (6-11') MSD

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: 11-2-02 | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: STL | Time: 1000 | Company Name: | Time: | |

STL North Canton

# CHAIN OF CUSTODY RECORD

Laboratory: Severn Trent Laboratories, 4101 Shuffel Drive, NW, North Canton, OH 44720 (303) 497-9396

| | | | | | |
|---|---|---|---|---|---|
| Client: | Draper Aden Associates | Consultant: | Draper Aden Associates | Sample Site: | RFAAP |
| Attn: | Andy Kassoff/ Ross Miller | Attn: | Janet C. Frazier | Location: | Montgomery County, Virginia |
| Address: | 2206 South Main Street, Blacksburg, Virginia 24060 | Address: | 2206 South Main Street, Blacksburg, Virginia 24060 | Event: | HWMU-5 and HWMU-7 Investigation |
| Phone: | (540) 552-0444 | Phone: | (540) 552-0444 | DAA JN: | B02271-01 |
| Fax: | (540) 552-0291 | Fax: | (540) 552-0291 | Lab JN: | |
| Fax: | (540) 552-0291 | | | | |

Project Specific (PS) or Batch (B) QC: ☑PS ☐B
Sample Collection for Project Complete? (See Note 1) ☑Yes ☐No
Carrier: FED EX
Tracking Number:

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

Invoice
Copy to Consultant: ☑Yes ☐No
Bill: ☑Client ☐Consultant
Preserved and shipped on Ice: ☑Yes ☐No

GENERAL NOTES: See attached target analyte list. Full TAL List for all analytes, using SW846 Test Methods

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | | |
| Required pH of Sample | | | | | - | | | | | | | | | |
| Box 2 - Preservative | | | | | H | | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 4oz. G | | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Metals | | | | | | | | | |
| 1-2' SGP-1 | 10/31 | 13:10 | S | 1 | X | | | | | | | | | SGP-1 (1-2') |
| 9-10' SGP-1 | 10/31 | 13:10 | S | 1 | X | | | | | | | | | SGP-1 (9-10') |
| 10-11' SGP-6 | 10/31 | 13:30 | S | 1 | X | | | | | | | | | SGP-6 (10-11') |
| 9-10' SGP-3 | 10/31 | 14:30 | S | 1 | X | | | | | | | | | SGP-3 (9-10') |
| 7-8' SGP-8 | 10/31 | 15:50 | S | 1 | X | | | | | | | | | SGP-8 (7-8') |
| 11-12' SGP-8 | 10/31 | 16:05 | S | 1 | X | | | | | | | | | SGP-8 (11-12') |
| 3-4' SGP-11 | 10/31 | 17:00 | S | 1 | X | | | | | | | | | SGP-11 (3-4') |
| 3-4' SGP-12 | 10/31 | 16:40 | S | 1 | X | | | | | | | | | SGP-12 (3-4') |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Clients Special Instructions:

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 1730 | Company Name: | Time: | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: 11-2-02 | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: STL | Time: 1000 | Company Name: | Time: | |

STL North Canton

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

Lot-Sample #...: A2K040189-001 Matrix.....: SO
Date Sampled...: 11/01/02 10:00 Date Received..: 11/02/02
% Moisture.....: 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Prep Batch #...: 2311117 | | | | | | |
| Aluminum | 11100 J | 23.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AG |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Arsenic | 3.8 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AC |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Lead | 8.1 | 0.35 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AD |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Antimony | 0.52 B | 7.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AH |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Barium | 66.9 J | 23.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AJ |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Beryllium | 0.70 | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AF |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | 0.027 B | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Calcium | 7490 | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AM |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

Lot-Sample #...: A2K040189-001 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Chromium | 24.1 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AN |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cobalt | 11.5 | 5.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AP |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Copper | 22.8 | 2.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AQ |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Iron | 19400 | 11.7 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Magnesium | 4290 | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AT |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Manganese | 662 | 1.8 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AU |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Nickel | 13.5 | 4.7 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AV |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Potassium | 774 J | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AW |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1AX |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 587 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDAQ1A0 |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

(Continued on next page)

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

TOTAL Metals

**Lot-Sample #...:** A2K040189-001 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **28.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDAQ1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **17.4** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDAQ1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 15:58 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.026 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDAQ1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:10 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:40 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **8790 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **2.8** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **40.9 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.2** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51A5 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51CM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **283 B** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **12.5** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **22.0** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **23300** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **3140** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **274** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **21.6** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1070 J** | **607** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51DM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 607 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA51AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

**TOTAL Metals**

**Lot-Sample #...:** A2K040189-002 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **21.1** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **15.0** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA51AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:03 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDA51AL |
| | | Dilution Factor: 1 | | Analysis Time..: 11:13 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:05 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19700 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **13.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.3 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **70.9 J** | **24.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.84** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **480 B** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **16.2** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **14.2** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **29300** | **12.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2000** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **407** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **11.4** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1390 J** | **608** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 608 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDA71AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

TOTAL Metals

**Lot-Sample #...:** A2K040189-003 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 57.7 | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 32.6 | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDA71AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:08 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.050 B | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDA71AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:14 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:25 **Date Received..:** 11/02/02
**% Moisture.....:** 21

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **11700 J** | **25.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **26.1** | **1.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **35.1** | **0.38** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.6** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **229 J** | **25.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Selenium** | **3.5** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AK** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.5** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.3 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cadmium** | **0.16 B** | **0.63** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **28100** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **32.8** | **1.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **8.1** | **6.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **23.2** | **3.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **15900** | **12.6** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2440** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **145** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **15.9** | **5.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **2970 J** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.3 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Sodium** | **156 B** | **631** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-004 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **42.1** | **6.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCC1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Zinc | 33.8 | 2.5 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCC1AD |
| | | Dilution Factor: 1 | | Analysis Time..: 16:13 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.040 B** | **0.13** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCC1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:18 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-005 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:15 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **22400 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **10.3** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.80 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **55.0 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.41 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1570** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

Lot-Sample #...: A2K040189-005 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Chromium | 20.1 | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AU |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cobalt | 5.4 B | 6.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AV |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Copper | 12.7 | 3.1 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AW |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Iron | 23200 | 12.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AX |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Magnesium | 1090 | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A0 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Manganese | 280 | 1.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A1 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Nickel | 8.5 | 4.9 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Potassium | 1040 J | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A3 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCE1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-005 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **61.8** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **28.1** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCE1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:18 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.061 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCE1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:19 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-006 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **20000 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1A8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.0** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.0 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **55.6 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1A2 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.35 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1A5 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1CM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **259 B** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-006 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.8** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **4.5 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1CX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **10** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **23600** | **12.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C5** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **787** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1C8** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **187** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.2** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DF** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **732 J** | **602** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCG1DJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1DM |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 602 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

TOTAL Metals

Lot-Sample #...: A2K040189-006 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| Vanadium | 60.6 | 6.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Zinc | 24.2 | 2.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCG1AH |
| | | Dilution Factor: 1 | | Analysis Time..: 16:23 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | 0.10 B | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCG1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 11:20 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:30 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **6650 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **1.0 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **5.4** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.59 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **106 J** | **24.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.55 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Thallium** | **0.70 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AL** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cadmium** | **0.061 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AR** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1230** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **11.5** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.9 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **5.1** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **10800** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1890** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **422** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.7** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **809 J** | **603** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 603 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCL1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-007 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **15.4** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **39.7** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCL1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:51 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCL1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:24 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:45 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **5290 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **0.96 B** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **5.8** | **0.35** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.77 B** | **7.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **69.2 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.44 B** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **749** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **10.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.4 B** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **5.1** | **2.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **9860** | **11.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1590** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **292** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **6.3** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **729 J** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 586 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCP1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-008 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **14.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **35.0** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCP1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 16:56 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCP1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:27 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19200 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.2** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **12.9** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.8 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **85.1 J** | **24.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.59 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1060** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **9.0** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **13.9** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **30700** | **12.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1530** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **337** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **9.4** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1580 J** | **618** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 618 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCQ1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

TOTAL Metals

**Lot-Sample #...:** A2K040189-009 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **64.9** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 35.3 | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCQ1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:01 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.048 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCQ1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:26 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **12100 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.8** | **0.35** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **0.90 B** | **7.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **47.3 J** | **23.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.1** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **303 B** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **31.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **17.6** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **19.8** | **2.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **26700** | **11.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1730** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **360** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **19.0** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **851 J** | **586** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 586 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCT1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-010 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **32.0** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **20.7** | **2.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCT1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:06 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Mercury | ND | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDCT1AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:29 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19400 J** | **24.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **1.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.3** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **56.9 J** | **24.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.41 B** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **9930** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **17.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **5.5 B** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **11.6** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **22400** | **12.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1220** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **154** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **7.9** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1120 J** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCW1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Sodium** | **80.8 B** | **604** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AA** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

TOTAL Metals

**Lot-Sample #...:** A2K040189-011 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 57.5 | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 26.4 | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCW1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:11 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.043 B | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCW1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:28 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 14:30 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **14800 J** | **24.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.7** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.4 B** | **7.3** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **37.2 J** | **24.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.31 B** | **0.61** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.61 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **866** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **22.8** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **3.2 B** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **9.5** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **24400** | **12.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **597 B** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **90.8** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **5.3** | **4.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **500 B,J** | **609** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 609 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDCX1AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

TOTAL Metals

**Lot-Sample #...:** A2K040189-012 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **54.3** | **6.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **18.6** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDCX1AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:16 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.057 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDCX1AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:35 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 15:50 **Date Received..:** 11/02/02
**% Moisture.....:** 16

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **14200 J** | **23.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **4.1** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **46.1 J** | **23.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **1.3** | **0.59** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.59 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **159 B** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **21.6** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **11.6** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **16.8** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **28400** | **11.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1410** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **242** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **10.7** | **4.7** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1090 J** | **592** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 592 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC01AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

TOTAL Metals

**Lot-Sample #...:** A2K040189-013 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **26.7** | **5.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **23.9** | **2.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC01AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:21 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.023 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC01AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:33 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:05 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19600 J** | **24.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **3.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **9.6** | **0.36** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.2 B** | **7.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **61.4 J** | **24.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.81** | **0.60** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.60 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **576 B** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

**TOTAL Metals**

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **26.9** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **10.0** | **6.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **14.8** | **3.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **29000** | **12.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **1560** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **372** | **1.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **11.0** | **4.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **1420 J** | **599** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC11A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 599 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

TOTAL Metals

**Lot-Sample #...:** A2K040189-014 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | 55.2 | 6.0 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AC |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | 33.8 | 2.4 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC11AD |
| | | Dilution Factor: 1 | | Analysis Time..: 17:26 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | 0.057 B | 0.12 | mg/kg | SW846 7471A | 11/07-11/08/02 | FCDC11AE |
| | | Dilution Factor: 1 | | Analysis Time..: 11:36 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-015 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 17:00 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **17000 J** | **24.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **4.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **11.4** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.1 B** | **7.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **51.2 J** | **24.8** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.40 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **1020** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-015 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **24.4** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **8.2** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **10.6** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **28200** | **12.4** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **812** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **393** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **6.3** | **5.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **561 B,J** | **620** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 620 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC21AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

TOTAL Metals

Lot-Sample #...: A2K040189-015 Matrix.....: SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **55.4** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **20.2** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC21AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:44 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.070 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC21AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:37 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:40 **Date Received..:** 11/02/02
**% Moisture.....:** 20

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Prep Batch #...:** 2311117 | | | | | | |
| **Aluminum** | **19600 J** | **25.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AM** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Arsenic** | **2.7** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AH** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Lead** | **12.6** | **0.37** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AJ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Antimony** | **1.6 B** | **7.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AN** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Barium** | **56.2 J** | **25.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AP** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Selenium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AK |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Beryllium** | **0.55 B** | **0.62** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AQ** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Thallium | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AL |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Cadmium | ND | 0.62 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AR |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Calcium** | **3200** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AT** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Chromium** | **27.0** | **1.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AU** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Cobalt** | **9.1** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AV** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Copper** | **13.6** | **3.1** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AW** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Iron** | **33400** | **12.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AX** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Magnesium** | **2200** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A0** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Manganese** | **457** | **1.9** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A1** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Nickel** | **8.2** | **5.0** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A2** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Potassium** | **915 J** | **624** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41A3** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Silver | ND | 1.2 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41A4 |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| Sodium | ND | 624 | mg/kg | SW846 6010B | 11/07-11/12/02 | FCDC41AA |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |

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DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

TOTAL Metals

**Lot-Sample #...:** A2K040189-016 **Matrix.....:** SO

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | WORK ORDER # |
|---|---|---|---|---|---|---|
| **Vanadium** | **61.8** | **6.2** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AC** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Zinc** | **32.1** | **2.5** | **mg/kg** | **SW846 6010B** | **11/07-11/12/02** | **FCDC41AD** |
| | | Dilution Factor: 1 | | Analysis Time..: 17:49 | Analyst ID.....: 002260 | |
| | | Instrument ID..: I5 | | | | |
| **Mercury** | **0.049 B** | **0.12** | **mg/kg** | **SW846 7471A** | **11/07-11/08/02** | **FCDC41AE** |
| | | Dilution Factor: 1 | | Analysis Time..: 11:38 | Analyst ID.....: 001644 | |
| | | Instrument ID..: H1 | | | | |

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-1(1-3')

General Chemistry

**Lot-Sample #...:** A2K040189-001 **Work Order #...:** FCDAQ **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:00 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **85.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(8-12')

General Chemistry

**Lot-Sample #...:** A2K040189-002 **Work Order #...:** FCDA5 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 10:40 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-2(13.5-14.5')

General Chemistry

**Lot-Sample #...:** A2K040189-003 **Work Order #...:** FCDA7 **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:05 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.3 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-3(10-11')

General Chemistry

**Lot-Sample #...:** A2K040189-004 **Work Order #...:** FCDCC **Matrix.....:** SO
**Date Sampled...:** 11/01/02 11:25 **Date Received..:** 11/02/02
**% Moisture.....:** 21

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.69 | 0.63 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | | Dilution Factor: 1 | | | | |
| Percent Solids | 79.2 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-8(5-8')

General Chemistry

**Lot-Sample #...:** A2K040189-005 **Work Order #...:** FCDCE **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:15 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.9 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-5(6-11')

General Chemistry

**Lot-Sample #...:** A2K040189-006 **Work Order #...:** FCDCG **Matrix.....:** SO
**Date Sampled...:** 11/01/02 12:50 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **83.0 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-16(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-007 **Work Order #...:** FCDCL **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:30 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/09/02 | 2313125 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **83.0 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 7GP-4(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-008 **Work Order #...:** FCDCP **Matrix.....:** SO
**Date Sampled...:** 11/01/02 13:45 **Date Received..:** 11/02/02
**% Moisture.....:** 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **85.4 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(1-2')

General Chemistry

**Lot-Sample #...:** A2K040189-009 **Work Order #...:** FCDCQ **Matrix.....:** SO
**Date Sampled...:** 10/31/02 13:10 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **80.9 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-1(9-10')

General Chemistry

Lot-Sample #...: A2K040189-010 Work Order #...: FCDCT Matrix.....: SO
Date Sampled...: 10/31/02 13:10 Date Received..: 11/02/02
% Moisture.....: 15

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.13 B | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| Percent Solids | 85.4 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | Dilution Factor: 1 | | | | | |

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-6(10-11')

General Chemistry

Lot-Sample #...: A2K040189-011 Work Order #...: FCDCW Matrix.....: SO
Date Sampled...: 10/31/02 13:50 Date Received..: 11/02/02
% Moisture.....: 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | 0.11 B | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| Percent Solids | 82.8 J | 10.0 | % | MCAWW 160.3 MOD | 11/05-11/06/02 | 2310319 |
| | Dilution Factor: 1 | | | | | |

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-3(9-10')

General Chemistry

**Lot-Sample #...:** A2K040189-012 **Work Order #...:** FCDCX **Matrix.....:** SO
**Date Sampled...:** 10/31/02 14:30 **Date Received..:** 11/02/02
**% Moisture.....:** 18

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.61 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **82.1 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(7-8')

General Chemistry

**Lot-Sample #...:** A2K040189-013 **Work Order #...:** FCDC0 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 15:50 **Date Received..:** 11/02/02
**% Moisture.....:** 16

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.59 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | | Dilution Factor: 1 | | | | |
| **Percent Solids** | **84.5 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | | Dilution Factor: 1 | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-8(11-12')

General Chemistry

**Lot-Sample #...:** A2K040189-014 **Work Order #...:** FCDC1 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:05 **Date Received..:** 11/02/02
**% Moisture.....:** 17

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.60 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **83.5 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-16(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-015 **Work Order #...:** FCDC2 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 17:00 **Date Received..:** 11/02/02
**% Moisture.....:** 19

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.7 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

DRAPER ADEN & ASSOCIATES INC

Client Sample ID: 5GP-12(3-4')

General Chemistry

**Lot-Sample #...:** A2K040189-016 **Work Order #...:** FCDC4 **Matrix.....:** SO
**Date Sampled...:** 10/31/02 16:40 **Date Received..:** 11/02/02
**% Moisture.....:** 20

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Cyanide, Total | ND | 0.62 | mg/kg | SW846 9012A | 11/11-11/12/02 | 2315220 |
| | Dilution Factor: 1 | | | | | |
| **Percent Solids** | **80.1 J** | **10.0** | **%** | **MCAWW 160.3 MOD** | **11/05-11/06/02** | **2310319** |
| | Dilution Factor: 1 | | | | | |

**NOTE(S):**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

# APPENDIX C

## WASTE CHARACTERIZATION LABORATORY ANALYTICAL RESULTS

# CHAIN OF CUSTODY RECORD

Laboratory: Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| Client: | Draper Aden Associates | Consultant: | Draper Aden Associates | Sample Site: | RFAAP |
| Attn: | Andy Kassoff/ Ross Miller | Attn: | Janet C. Frazier | Location: | Montgomery County, Virginia |
| Address: | 2206 South Main Street<br>Blacksburg, Virginia 24060 | Address: | 2206 South Main Street<br>Blacksburg, Virginia 24060 | Event: | HWMU-5 and HWMU-7 Investigation |
| Phone: | (540) 552-0444 | Phone: | (540) 552-0444 | DAA JN: | B02271-01 |
| Fax: | (540) 552-0291 | Fax: | (540) 552-0291 | Lab JN: | |
| Fax: | (540) 552-0291 | | | | |

Project Specific (PS) or Batch (B) QC: ☑PS ☐B
Sample Collection for Project Complete? (See Note 1) ☑YES ☐NO
Carrier: FED EX
Tracking Number: _____

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B $HNO_3$, C $H_2SO_4$, D NaHSO4, E NaOH, F ZnAc, G Other (Specify), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 4: Sample Type
G Grab, C Composite

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Invoice
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on Ice: ☑YES Bo ☐NO

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | G | C | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | U | U | | | | | | | | |
| Required pH of Sample | | | | | - | - | - | | | | | | | | |
| Box 2 - Preservative | | | | | D | H | H | | | | | | | | |
| Box 5 - Sample Container Type | | | | | VOA | 1-500ml G | 500ml G | | | | | | | | |
| Sample ID | Date: 2002 | Time | Box 1: Matrix | Number of Bottles | Dissolved Metals (Dissolved) | Semivolatiles/Pests/PCB | FULL CHARACTERIZATION TCLP CORROSIVITY, REACTIVITY, IGNITABILITY | | | | | | | | |
| 5GP-1 (1-2') | 10/31 | 13:10 | S | 1 | | X | | | | | | | | | 5GP-1 (1-2') |
| 5GP-1 (9-10') | 10/31 | 13:10 | S | 1 | | X | | | | | | | | | 5GP-1 (9-10') |
| 5GP-6 (10-11') | 10/31 | 13:50 | S | 1 | | X | | | | | | | | | 5GP-6 (10-11') |
| 5GP-3 (9-10') | | 14:30 | S | 1 | | X | | | | | | | | | 5GP-3 (9-10') |
| 5GP-8 (7-8') | | 15:50 | S | 1 | | X | | | | | | | | | 5GP-8 (7-8') |
| 5GP-8 (11-12') | | 16:05 | S | 1 | | X | | | | | | | | | 5GP-8 (11-12') |
| 5GP-12 (3-4') | | 16:40 | S | 1 | | X | | | | | | | | | 5GP-12 (3-4') |
| 5GP-16 (3-4') | 10/31 | 17:00 | S | 1 | | X | | | | | | | | | 5GP-16 (3-4') |
| FULL TCLP | 11/1 | 13:55 | S | 1 | | | X | | | | | | | | FULL CHARACTERIZATION TCLP |
| ↳ HWMU-5 | | | | | | | | | | | | | | | IGNITABILITY, CORROSIVITY, REACTIVITY |

GENERAL NOTES: See attached target analyte list. Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)

Clients Special Instructions:

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): | DARREN FIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): | Darren Fidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: |
| Sampler Signature: | Darren Fidwell | Time: 16:30 | Company Name: | DAA | Time: 17:30 | Company Name: | Time: |
| Sampler Name (Print): | | Date: | #1 Received by (Signature): | | Date: | #2 Received by (Signature): | Date: |
| Sampler Signature: | | Time: | Company Name: | | Time: | Company Name: | Time: |

Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG

# CHAIN OF CUSTODY RECORD

**Laboratory:** Lancaster Laboratories, Inc. 2425 New Holland Pike, Lancaster, PA 17605-2425 (717) 656-2300

| | | | | | |
|---|---|---|---|---|---|
| **Client:** | Draper Aden Associates | **Consultant:** | Draper Aden Associates | **Sample Site:** | RFAAP |
| **Attn:** | Andy Kassoff/ Ross Miller | **Attn:** | Janet C. Frazier | | |
| **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Address:** | 2206 South Main Street<br>Blacksburg, Virginia 24060 | **Location:** | Montgomery County, Virginia |
| **Phone:** | (540) 552-0444 | **Phone:** | (540) 552-0444 | **Event:** | HWMU-5 and HWMU-7 Investigation |
| **Fax:** | (540) 552-0291 | **Fax:** | (540) 552-0291 | **DAA JN:** | B02271-01 |
| **Fax:** | (540) 552-0291 | | | **Lab JN:** | |

**Project Specific (PS) or Batch (B) QC:** ☑PS ☐B
**Sample Collection for Project Complete? (See Note 1)** ☑YES ☐NO
**Carrier:** FED EX
**Tracking Number:** _____

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D NaHSO4; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Box 4: Sample Type**
G Grab; C Composite

**Invoice**
Copy to Consultant: ☑YES ☐NO
Bill: ☑Client ☐Consultant
Preserved and shipped on ice: ☑YES ☐NO

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | G | C | | | | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | U | U | | | | | | | |
| **Required pH of Sample** | | | | | - | - | | | | | | | | |
| **Box 2 - Preservative** | | | | | D | H | 2 H | | | | | | | |
| **Box 5 - Sample Container Type** | | | | | VOA | 1-500ml G | 500mL G | | | | | | | |
| **Sample ID** | **Date: 2002** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **Volatiles 8260B/ 5035** | **Semivolatiles/Pests/PCB** | **Full Characterization TCLP** | | | | | | | |
| (1-3') 7GP-1 ✓ | 11/1 | 10:00 | S | 4 | X | X | | | | | | | | GENERAL NOTES: See attached target analyte list. **Full TCL List for all analytes, using SW846 Test Methods (8270C, 8081A, 8082)** |
| (8-12') 7GP-2 ✓ | | 10:40 | S | | X | X | | | | | | | | |
| (13.5-14.5') 7GP-2 ✓ | | 11:05 | S | | X | X | | | | | | | | |
| (10-11') 7GP-3 ✓ | | 11:25 | S | | X | X | | | | | | | | |
| (5-8') 7GP-8 ✓ | | 12:15 | S | | X | X | | | | | | | | |
| (10-11') 7GP-5 ✓ | | 12:50 | S | 12 | X | X | | | | | | | | + MS/MSD |
| (3-4') 7GP-16 ✓ | | 13:30 | S | | X | X | | | | | | | | |
| (3-4') 7GP-4 ✓ | | 13:45 | S | 4 | X | X | | | | | | | | |
| UNIT 7 TCLP | 11/1 | 14:00 | S | 1 | | | X ✓ | | | | | | | FULL CHARACTERIZATION TCLP, IGNITABILITY, CORROSIVITY, REACTIVITY |

**Clients Special Instructions:**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

| | | | | | | |
|---|---|---|---|---|---|---|
| Sampler Name (Print): DARREN KIDWELL | Date: 11/1/02 | #1 Relinquished by (Signature): Darren Kidwell | Date: 11/1/02 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Darren Kidwell | Time: 16:30 | Company Name: DAA | Time: 17:30 | Company Name: | Time: | 30 DYS ORG/6 MTHS INORG |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): | Date: | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: | Time: | |

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REPRINT



**Lancaster Laboratories Sample No. SW 3933082**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

MWMU5 SDG#: RAR01-20

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.3 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 00394 | pH | n.a. | 7.38 | 0.010 | | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | See Below | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 7.38 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | |
| 00542 | Ignitability | n.a. | See Below | | See Below | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | |
| 01121 | Reactivity | n.a. | See Below | | See Below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 98. | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

REPRINT



**Lancaster Laboratories Sample No. SW 3933082**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

MWMU5 SDG#: RAR01-20

| | | | | | | |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/07/2002 09:55 | Nadine Fegley | 1 |
| 00394 | pH | SW-846 9045C (modified) | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 11/15/2002 18:50 | Justin M Bowers | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 11/15/2002 21:03 | Venia B McFadden | 1 |

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Where quality is a science.

REPRINT



**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000079 | mg/l | 1 |
| | The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards): | | | | | |
| | Arsenic 5.0 Cadmium 1.0 Lead 5.0 Selenium 1.0<br>Barium 100.0 Chromium 5.0 Mercury 0.2 Silver 5.0 | | | | | |
| 01335 | Arsenic | 7440-38-2 | 0.0091 J | 0.0049 | mg/l | 1 |
| 01336 | Selenium | 7782-49-2 | N.D. | 0.0048 | mg/l | 1 |
| 01746 | Barium | 7440-39-3 | 0.714 | 0.00044 | mg/l | 1 |
| 01749 | Cadmium | 7440-43-9 | N.D. | 0.00094 | mg/l | 1 |
| 01751 | Chromium | 7440-47-3 | N.D. | 0.0020 | mg/l | 1 |
| 01755 | Lead | 7439-92-1 | 0.0116 J | 0.0089 | mg/l | 1 |
| 01766 | Silver | 7440-22-4 | N.D. | 0.0014 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000012 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000016 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000024 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | mg/l | 1 |
| 00952 | TCLP Herbicides | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | mg/l | 1 |
| 00949 | TCLP Acid Base/Neutrals | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.0040 | mg/l | 1 |

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**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.0020 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.0020 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.0040 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.0020 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.0020 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.0020 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.0020 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.0020 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.0020 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.0020 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.0060 | mg/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 11/08/2002 06:52 | Deborah A Krady | 1 |
| 01335 | Arsenic | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 01336 | Selenium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01746 | Barium | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 01749 | Cadmium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01751 | Chromium | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01755 | Lead | SW-846 6010B | 1 | 11/12/2002 06:42 | Donna R Sackett | 1 |
| 01766 | Silver | SW-846 6010B | 1 | 11/11/2002 03:40 | Donna R Sackett | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 11/08/2002 13:04 | Douglas D Seitz | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 11/09/2002 02:40 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 11/08/2002 15:54 | Chad A Moline | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 11/08/2002 08:25 | Amanda W Herr | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 11/07/2002 23:00 | Sharon L Jones | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 11/06/2002 13:40 | Carlene A Landis | n.a. |

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**Lancaster Laboratories Sample No. TL 3933083**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5NVE SDG#: RAR01-21

| | | | | | | |
|---|---|---|---|---|---|---|
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 11/07/2002 17:25 | JoElla L Rice | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 11/07/2002 22:10 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 11/07/2002 20:21 | Nelli S Markaryan | 1 |

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**Lancaster Laboratories Sample No. TL 3933084**

Collected:11/01/2002 13:55

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:38
Discard: 12/26/2002
HWMU-5 Composite Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

M5ZHE SDG#: RAR01-22*

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | mg/l | 20 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 11/10/2002 19:54 | Susan McMahon-Luu | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 11/04/2002 12:45 | David G Splain Jr | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 11/10/2002 19:54 | Susan McMahon-Luu | n.a. |

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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**Lancaster Laboratories Sample No. SW 3933071**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAR01-09

| CAT No. | Analysis Name | CAS Number | Dry Result | Dry Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00111 | Moisture | n.a. | 15.5 | 0.50 | % | 1 |
| | "Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis. | | | | | |
| 00394 | pH | n.a. | 7.15 | 0.010 | | 1 |
| | The pH was performed on a 1:1 slurry (25 gms. of sample and 25 ml. of deionized water) after being tumbled for 30 min. | | | | | |
| 00496 | Corrosivity | n.a. | See Below | | See Below | 1 |
| | Corrosivity:<br>The pH of a 1:1 slurry (with deionized water) was 7.15 indicating that the waste is not corrosive.<br>A waste is corrosive if it exhibits a pH equal to or less than 2 or equal to or greater than 12.5. | | | | | |
| 00542 | Ignitability | n.a. | See Below | | See Below | 1 |
| | The sample did not spontaneously ignite when exposed to air or water.<br>The sample did not ignite by friction.<br>The sample vapors did not ignite when exposed to a flame using a closed cup apparatus. | | | | | |
| 01121 | Reactivity | n.a. | See Below | | See Below | 1 |
| | Reactivity:<br>The sample was extracted by the interim method described in SW 846, Chapter 7.3. This solution was analyzed for cyanide and sulfide. This waste is not considered reactive and hazardous because it does not generate a quantity of hydrogen cyanide exceeding 250 mg/kg or hydrogen sulfide exceeding 500 mg/kg. These interim threshold limits were established by the Solid Waste Branch of EPA, July, 1992. These results do not reflect total cyanide or total sulfide. | | | | | |
| 01122 | Sulfide (Reactivity) | n.a. | N.D. | 27. | mg/kg | 1 |
| 01123 | Cyanide (Reactivity) | n.a. | N.D. | 100. | mg/kg | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|

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**Lancaster Laboratories Sample No. SW 3933071**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:35
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

UNIT7 SDG#: RAR01-09

| | | | | | | |
|---|---|---|---|---|---|---|
| 00111 | Moisture | EPA 160.3 modified | 1 | 11/07/2002 09:55 | Nadine Fegley | 1 |
| 00394 | pH | SW-846 9045C (modified) | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00496 | Corrosivity | SW-846 Chapter 7 | 1 | 11/05/2002 16:35 | Luz M Groff | 1 |
| 00542 | Ignitability | 40 CFR 261.21 | 1 | 11/15/2002 18:50 | Justin M Bowers | 1 |
| 01121 | Reactivity | SW-846 Chapter 7.3 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01122 | Sulfide (Reactivity) | SW-846 9034 | 1 | 11/15/2002 07:40 | Susan E Hibner | 1 |
| 01123 | Cyanide (Reactivity) | SW-846 9012A (modified) | 1 | 11/15/2002 21:01 | Venia B McFadden | 1 |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000079 | mg/l | 1 |
| | The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in SW-846, Chapter 7.4 (Revision 3, December, 1994). A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards): | | | | | |
| | Arsenic 5.0 Cadmium 1.0 Lead 5.0 Selenium 1.0 Barium 100.0 Chromium 5.0 Mercury 0.2 Silver 5.0 | | | | | |
| 01335 | Arsenic | 7440-38-2 | 0.0056 J | 0.0049 | mg/l | 1 |
| 01336 | Selenium | 7782-49-2 | N.D. | 0.0048 | mg/l | 1 |
| 01746 | Barium | 7440-39-3 | 0.521 | 0.00044 | mg/l | 1 |
| 01749 | Cadmium | 7440-43-9 | N.D. | 0.00094 | mg/l | 1 |
| 01751 | Chromium | 7440-47-3 | N.D. | 0.0020 | mg/l | 1 |
| 01755 | Lead | 7439-92-1 | N.D. | 0.0089 | mg/l | 1 |
| 01766 | Silver | 7440-22-4 | N.D. | 0.0014 | mg/l | 1 |
| 00950 | TCLP Pesticides | | | | | |
| 01972 | Gamma BHC - Lindane | 58-89-9 | N.D. | 0.000012 | mg/l | 1 |
| 01973 | Heptachlor | 76-44-8 | N.D. | 0.000010 | mg/l | 1 |
| 01974 | Heptachlor Epoxide | 1024-57-3 | N.D. | 0.000016 | mg/l | 1 |
| 01975 | Methoxychlor | 72-43-5 | N.D. | 0.00010 | mg/l | 1 |
| 01976 | Endrin | 72-20-8 | N.D. | 0.000024 | mg/l | 1 |
| 01977 | Chlordane | 57-74-9 | N.D. | 0.00025 | mg/l | 1 |
| 01978 | Toxaphene | 8001-35-2 | N.D. | 0.0015 | mg/l | 1 |
| 00952 | TCLP Herbicides | | | | | |
| 01979 | 2,4-D | 94-75-7 | N.D. | 0.0020 | mg/l | 1 |
| 01980 | 2,4,5-TP | 93-72-1 | N.D. | 0.00020 | mg/l | 1 |
| 00949 | TCLP Acid Base/Neutrals | | | | | |
| 03324 | Pyridine | 110-86-1 | N.D. | 0.0040 | mg/l | 1 |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03325 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.0020 | mg/l | 1 |
| 03326 | 2-Methylphenol | 95-48-7 | N.D. | 0.0020 | mg/l | 1 |
| 03327 | 4-Methylphenol | 106-44-5 | N.D. | 0.0040 | mg/l | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 03328 | Hexachloroethane | 67-72-1 | N.D. | 0.0020 | mg/l | 1 |
| 03329 | Nitrobenzene | 98-95-3 | N.D. | 0.0020 | mg/l | 1 |
| 03330 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.0020 | mg/l | 1 |
| 03331 | 2,4,6-Trichlorophenol | 88-06-2 | N.D. | 0.0020 | mg/l | 1 |
| 03332 | 2,4,5-Trichlorophenol | 95-95-4 | N.D. | 0.0020 | mg/l | 1 |
| 03333 | 2,4-Dinitrotoluene | 121-14-2 | N.D. | 0.0020 | mg/l | 1 |
| 03334 | Hexachlorobenzene | 118-74-1 | N.D. | 0.0020 | mg/l | 1 |
| 03335 | Pentachlorophenol | 87-86-5 | N.D. | 0.0060 | mg/l | 1 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 00259 | Mercury | SW-846 7470A | 1 | 11/08/2002 06:46 | Deborah A Krady | 1 |
| 01335 | Arsenic | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 01336 | Selenium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01746 | Barium | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 01749 | Cadmium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01751 | Chromium | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01755 | Lead | SW-846 6010B | 1 | 11/12/2002 06:29 | Donna R Sackett | 1 |
| 01766 | Silver | SW-846 6010B | 1 | 11/11/2002 03:23 | Donna R Sackett | 1 |
| 00950 | TCLP Pesticides | SW-846 8081A | 1 | 11/08/2002 12:23 | Douglas D Seitz | 1 |
| 00952 | TCLP Herbicides | SW-846 8151A | 1 | 11/08/2002 23:24 | Michele D Hamilton | 1 |
| 00949 | TCLP Acid Base/Neutrals | SW-846 8270C | 1 | 11/08/2002 13:59 | Chad A Moline | 1 |
| 00816 | Water Sample Herbicide Extract | SW-846 8151A | 1 | 11/08/2002 08:25 | Amanda W Herr | 1 |
| 00817 | Water Sample Pest. Extraction | SW-846 3510C | 1 | 11/07/2002 23:00 | Sharon L Jones | 1 |
| 00947 | TCLP Non-volatile Extraction | SW-846 1311 | 1 | 11/06/2002 13:40 | Carlene A Landis | n.a. |

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**Lancaster Laboratories Sample No. TL 3933072**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP NON-VOLATILE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7NVE SDG#: RAR01-10

| | | | | | | |
|---|---|---|---|---|---|---|
| 04731 | TCLP Leachate Extraction | SW-846 3510C | 1 | 11/07/2002 17:25 | JoElla L Rice | 1 |
| 05705 | WW/TL SW 846 ICP Digest (tot) | SW-846 3010A | 1 | 11/07/2002 22:10 | Annamaria Stipkovits | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 11/07/2002 20:21 | Nelli S Markaryan | 1 |

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**Lancaster Laboratories Sample No. TL 3933073**

Collected:11/01/2002 14:00

Account Number: 11200

Submitted: 11/02/2002 10:20
Reported: 11/25/2002 at 14:36
Discard: 12/26/2002
Unit 7 TCLP Composite Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
HWMU-5 & HWMU-7 Investigation

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

U7ZHE SDG#: RAR01-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | | | | | |
| 05386 | Vinyl Chloride | 75-01-4 | N.D. | 0.020 | mg/l | 20 |
| 05390 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.016 | mg/l | 20 |
| 05396 | Chloroform | 67-66-3 | N.D. | 0.016 | mg/l | 20 |
| 05399 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.020 | mg/l | 20 |
| 05401 | Benzene | 71-43-2 | N.D. | 0.010 | mg/l | 20 |
| 05402 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.020 | mg/l | 20 |
| 05403 | Trichloroethene | 79-01-6 | N.D. | 0.020 | mg/l | 20 |
| 05409 | Tetrachloroethene | 127-18-4 | N.D. | 0.016 | mg/l | 20 |
| 05413 | Chlorobenzene | 108-90-7 | N.D. | 0.016 | mg/l | 20 |
| 06305 | 2-Butanone | 78-93-3 | N.D. | 0.060 | mg/l | 20 |

## Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|
| 03636 | TCLP by 8260 | SW-846 8260B | 1 | 11/10/2002 19:28 | Susan McMahon-Luu | 20 |
| 00946 | TCLP Zero Headspace Extraction | SW-846 1311 | 1 | 11/04/2002 12:45 | David G Splain Jr | n.a. |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | 11/10/2002 19:28 | Susan McMahon-Luu | n.a. |

TABLE A
VALUES USED FOR DAILY INTAKE CALCULATIONS - DERMAL ABSORPTION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Dermal |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
DAD=CS x ABS x IF
Intake Factor Equation:
IF=SA x CF x AF x EF x ED x 1/BW x 1/AT

| | |
|---|---|
| DAD [n-Nitrosodiphenylamine (carcinogen)] = | 1.01E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 2.34E-07 |
| DAD [4,4-DDD (carcinogen)] = | 8.20E-10 |
| DAD [4,4-DDE (carcinogen)] = | 5.86E-10 |
| DAD [Aroclor-1254 (carcinogen)] = | 1.74E-07 |
| DAD [Aroclor-1254 (non-carcinogen)] = | 4.06E-07 |
| DAD [Toluene (non-carcinogen)] = | 9.84E-10 |
| DAD [Barium (non-carcinogen)] = | 1.52E-05 |
| DAD [Beryllium (non-carcinogen)] = | 8.20E-08 |
| DAD [Cyanide (non-carcinogen)] = | 3.77E-08 |
| DAD [Selenium (non-carcinogen)] = | 2.24E-07 |
| DAD [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 5.47E-07 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| DAD | Dermally Absorbed Dose | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| AF | Soil to Skin Adherence Factor | mg/cm^2 | 0.07 | EPA, 2001 | | |
| ABS | Absorption Factor | unitless | Chemical | EPA, 1995 | | |
| | | | Specific | and EPA, 2001 | | |
| ABS (n-Nitrosodiphenyl.) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (bis(2-Ethylhexyl)phthalate) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (4,4-DDD) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (4,4-DDE) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (Aroclor 1254) | Absorption Factor | unitless | | | 1.40E-01 | EPA, 2001 |
| ABS (Toluene) | Absorption Factor | unitless | | | 3.00E-02 | EPA, 1995 |
| ABS (Barium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Beryllium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Cyanide) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Selenium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| SA | Skin Surface Area Available | cm2/day | 5,700 | EPA, 2001 | | |
| | for Contact | | (3) | | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 2.34E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 5.47E-06 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1995= Assessing Dermal Exposure from Soil. Region III. Office of Superfund Programs. EPA/903-K-95-003.
EPA, 2001= RAGS E, Chapter 3


(1) Based on soil-to-skin adherence data presented in U. S. EPA (2001) for a "utility worker".
(2) Represents face, hands, forearms, lower legs and feet
(3) Represents the face, hands, and forearms for workers; face hands, forearms and lower legs for resident adults.
**Note the following AFs from RAGS E for site specific scenarios:**

| | |
|---|---|
| groundskeeper | AF=0.1 |
| construction worker | AF=0.3 |
| utility worker | AF=0.9 |

TABLE B
VALUES USED FOR DAILY INTAKE CALCULATIONS - DERMAL ABSORPTION - RESIDENTIAL CHILD
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Dermal |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:
DAD=CS x ABS x IF
Intake Factor Equation:
IF=SA x CF x AF x EF x ED x 1/BW x 1/AT

| | |
|---|---|
| DAD [n-Nitrosodiphenylamine (carcinogen)] = | 1.32E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 3.07E-07 |
| DAD [4,4-DDD (carcinogen)] = | 1.07E-09 |
| DAD [4,4-DDE (carcinogen)] = | 7.67E-10 |
| DAD [Aroclor-1254 (carcinogen)] = | 2.28E-07 |
| DAD [Aroclor-1254 (non-carcinogen)] = | 2.66E-06 |
| DAD [Toluene (non-carcinogen)] = | 6.44E-09 |
| DAD [Barium (non-carcinogen)] = | 9.99E-05 |
| DAD [Beryllium (non-carcinogen)] = | 5.37E-07 |
| DAD [Cyanide (non-carcinogen)] = | 2.47E-07 |
| DAD [Selenium (non-carcinogen)] = | 1.47E-06 |
| DAD [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 3.58E-06 |
| DAD [Aroclor-1254 - avg (carcinogen)] = | 1.63E-07 |
| DAD [Aroclor-1254 - avg (non-carcinogen)] = | 1.90E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| DAD | Dermally Absorbed Dose | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| AF | Soil to Skin Adherence Factor | mg/cm^2 | 0.2 | EPA, 2001 | | |
| ABS | Absorption Factor | unitless | Chemical Specific | EPA, 1995 and EPA, 2001 | | |
| ABS (n-Nitrosodiphenyl.) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (bis(2-Ethylhexyl)phthalate) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 2001 |
| ABS (4,4-DDD) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (4,4-DDE) | Absorption Factor | unitless | | | 1.00E-01 | EPA, 1995 |
| ABS (Aroclor 1254) | Absorption Factor | unitless | | | 1.40E-01 | EPA, 2001 |
| ABS (Toluene) | Absorption Factor | unitless | | | 3.00E-02 | EPA, 1995 |
| ABS (Barium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Beryllium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Cyanide) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| ABS (Selenium) | Absorption Factor | unitless | | | 1.00E-02 | EPA, 1995 |
| SA | Skin Surface Area Available for Contact | cm2/day | 2,800 (2) | EPA, 2001 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 3.07E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 3.58E-05 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1995= Assessing Dermal Exposure from Soil. Region III. Office of Superfund Programs. EPA/903-K-95-003.
EPA, 2001= RAGS E, Chapter 3


(1) Based on soil-to-skin adherence data presented in U. S. EPA (2001) for a "utility worker".
(2) Represents face, hands, forearms, lower legs and feet
(3) Represents the face, hands, and forearms for workers; face hands, forearms and lower legs for resident adults.

**Note the following AFs from RAGS E for site specific scenarios:**

| | |
|---|---|
| groundskeeper | AF=0.1 |
| construction worker | AF=0.3 |
| utility worker | AF=0.9 |

TABLE C
VALUES USED FOR DAILY INTAKE CALCULATIONS - INGESTION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Ingestion |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CS x IF
Intake Factor Equation:
IF= IR-S x FI x EF x ED x CF x 1/BW x 1/AT

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 2.52E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 5.87E-07 |
| CDI [4,4-DDD (carcinogen)] = | 2.05E-09 |
| CDI [4,4-DDE (carcinogen)] = | 1.47E-09 |
| CDI [Aroclor-1254 (carcinogen)] = | 3.11E-07 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 7.26E-07 |
| CDI [Toluene (non-carcinogen)] = | 8.22E-09 |
| CDI [Barium (non-carcinogen)] = | 3.82E-04 |
| CDI [Beryllium (non-carcinogen)] = | 2.05E-06 |
| CDI [Cyanide (non-carcinogen)] = | 9.45E-07 |
| CDI [Selenium (non-carcinogen)] = | 5.62E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 1.37E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| IR-S | Ingestion Rate - Soil | mg/day | 100 | EPA,1991 | | |
| FI | Fraction Ingested from source | unitless | 1 | EPA, 1991 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 5.87E-07 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 1.37E-06 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

TABLE D

VALUES USED FOR DAILY INTAKE CALCULATIONS - INGESTION - RESIDENTIAL CHILD

HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Soil |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Ingestion |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:

CDI = CS x IF

Intake Factor Equation:

IF= IR-S x FI x EF x ED x CF x 1/BW x 1/AT

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 4.71E-06 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 1.10E-06 |
| CDI [4,4-DDD (carcinogen)] = | 3.84E-09 |
| CDI [4,4-DDE (carcinogen)] = | 2.74E-09 |
| CDI [Aroclor-1254 (carcinogen)] = | 5.81E-07 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 6.78E-06 |
| CDI [Toluene (non-carcinogen)] = | 7.67E-08 |
| CDI [Barium (non-carcinogen)] = | 3.57E-03 |
| CDI [Beryllium (non-carcinogen)] = | 1.92E-05 |
| CDI [Cyanide (non-carcinogen)] = | 8.82E-06 |
| CDI [Selenium (non-carcinogen)] = | 5.24E-05 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 1.28E-05 |
| CDI [Aroclor-1254 - avg (carcinogen)] = | 4.16E-07 |
| CDI [Aroclor-1254 - avg (non-carcinogen)] = | 4.86E-06 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| CF | Conversion Factor | kg/mg | 1E-06 | | | |
| IR-S | Ingestion Rate - Soil | mg/day | 200 | EPA,1991 | | |
| FI | Fraction Ingested from source | unitless | 1 | EPA, 1991 | | |
| EF | Exposure Frequency | days/years | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | days^-1 | 1.10E-06 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | days^-1 | 1.28E-05 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

TABLE E
VALUES USED FOR DAILY INTAKE CALCULATIONS - INHALATION - RESIDENTIAL ADULT
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Air |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Inhalation |
| Receptor Age: | **A** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CA x IF
Intake Factor Equation:
IF = IR-A x EF x ED x ET x 1/BW x 1/AT
CA Estimation:
CA = CS / PEF

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 3.70E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 8.60E-11 |
| CDI [4,4-DDD (carcinogen)] = | 3.01E-13 |
| CDI [4,4-DDE (carcinogen)] = | 2.15E-13 |
| CDI [Aroclor-1254 (carcinogen)] = | 4.56E-11 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 1.06E-10 |
| CDI [Toluene (non-carcinogen)] = | 3.12E-07 |
| CDI [Barium (non-carcinogen)] = | 5.60E-08 |
| CDI [Beryllium (carcinogen)] = | 1.29E-10 |
| CDI [Beryllium (non-carcinogen)] = | 3.01E-10 |
| CDI [Cyanide (non-carcinogen)] = | 1.38E-10 |
| CDI [Selenium (non-carcinogen)] = | 8.23E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 2.01E-10 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CA | Chemical Concentration in Air | mg/m^3 | (1, 2) | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| PEF | Particulate Emission Factor | m^3/kg | 1.36E+09 | EPA (1) | | |
| VF | Volatilization Factor, Soil to Air | m^3/kg | | | 5.25E+03 | calculated |
| IR-A | Inhalation Rate | m^3/hour | 0.83 | EPA, 1991 | | |
| EF | Exposure Frequency | days/year | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 30 | EPA, 1991 | | |
| ET | Exposure Time | hours/day | 24 | EPA, 1991 | | |
| BW | Body Weight | kg | 70 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 10,950 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | m3/kg-day | 1.17E-01 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | m3/kg-day | 2.73E-01 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03

EPA, 1999= EPA Region III Risk-Based Concentration Table: Technical Background Information


(1) Air concentrations may be estimated by applying the particulate emission factor (PEF) or volatilization factor (VF) to soil concentrations as described in Soil Screening Guidance: Technical Background Document. U. S. EPA, Office of Solid Waste and Emergency Response. May 1996. (EPA/540/R-95/128) and Soil Screening Guidance: User's Guide. U.S.EPA, Office of Solid Waste and Emergency Response. April 1996. (EPA/540/R-96/018).

(2) Indoor air concentrations for volatiles may be estimated with the Johnson and Etinger Model.

TABLE F
VALUES USED FOR DAILY INTAKE CALCULATIONS - INHALATION - RESIDENTIAL CHILD
HAZARDOUS WASTE MANAGEMENT UNIT 7, RADFORD army AMMUNITION PLANT, RADFORD, VIRGINIA

| | |
|---|---|
| Medium: | Soil |
| Exposure Medium: | Air |
| Receptor Population: | **R** |
| | R = Current or Future Resident |
| | C = Construction/Utility Worker |
| | I = Commercial/Industrial Worker |
| Exposure Route: | Inhalation |
| Receptor Age: | **C** |
| | A = Adult |
| | C = Child |

Intake Equation:
CDI = CA x IF
Intake Factor Equation:
IF = IR-A x EF x ED x ET x 1/BW x 1/AT
CA Estimation:
CA = CS / PEF

| | |
|---|---|
| CDI [n-Nitrosodiphenylamine (carcinogen)] = | 2.08E-10 |
| CDI [bis(2-Ethylhexyl)phthalate (carcinogen)] = | 4.83E-11 |
| CDI [4,4-DDD (carcinogen)] = | 1.69E-13 |
| CDI [4,4-DDE (carcinogen)] = | 1.21E-13 |
| CDI [Aroclor-1254 (carcinogen)] = | 2.56E-11 |
| CDI [Aroclor-1254 (non-carcinogen)] = | 2.99E-10 |
| CDI [Toluene (non-carcinogen)] = | 8.77E-07 |
| CDI [Barium (non-carcinogen)] = | 1.11E-05 |
| CDI [Beryllium (carcinogen)] = | 7.25E-11 |
| CDI [Beryllium (non-carcinogen)] = | 8.46E-10 |
| CDI [Cyanide (non-carcinogen)] = | 3.89E-10 |
| CDI [Selenium (non-carcinogen)] = | 2.31E-09 |
| CDI [bis(2-Ethylhexyl)phthalate (non-carcinogen)] = | 5.64E-10 |
| CDI [Aroclor-1254 - avg (carcinogen)] = | 1.84E-11 |
| CDI [Aroclor-1254 - avg (non-carcinogen)] = | 2.14E-10 |

| Parameter Code | Parameter Definition | Units | Default Value | Rationale/ Reference | User Defined Value | Rationale/ Reference |
|---|---|---|---|---|---|---|
| CDI | Chronic Daily Intake | mg/kg-day | | | | |
| CA | Chemical Concentration in Air | mg/m^3 | (1, 2) | | | |
| CS (n-Nitrosodiphenylamine) | Chemical Concentration in Soil | mg/kg | | | 4.3 | Sample Result |
| CS (bis(2-Ethylhexyl)phthalate) | Chemical Concentration in Soil | mg/kg | | | 1 | Sample Result |
| CS (4,4-DDD) | Chemical Concentration in Soil | mg/kg | | | 0.0035 | Sample Result |
| CS (4,4-DDE) | Chemical Concentration in Soil | mg/kg | | | 0.0025 | Sample Result |
| CS (Aroclor 1254) | Chemical Concentration in Soil | mg/kg | | | 0.53 | Sample Result |
| CS (Toluene) | Chemical Concentration in Soil | mg/kg | | | 0.006 | Sample Result |
| CS (Barium) | Chemical Concentration in Soil | mg/kg | | | 279 | Sample Result |
| CS (Beryllium) | Chemical Concentration in Soil | mg/kg | | | 1.5 | Sample Result |
| CS (Cyanide) | Chemical Concentration in Soil | mg/kg | | | 0.69 | Sample Result |
| CS (Selenium) | Chemical Concentration in Soil | mg/kg | | | 4.1 | Sample Result |
| CS (Aroclor 1254 - average) | Chemical Concentration in Soil | mg/kg | | | 0.38 | Avg. Samp. Result |
| PEF | Particulate Emission Factor | m^3/kg | 1.36E+09 | EPA (1) | | |
| VF | Volatilization Factor, Soil to Air | m^3/kg | | | 5.25E+03 | calculated |
| IR-A | Inhalation Rate | m^3/hour | 0.5 | EPA, 1999 | | |
| EF | Exposure Frequency | days/year | 350 | EPA, 1991 | | |
| ED | Exposure Duration | years | 6 | EPA, 1991 | | |
| ET | Exposure Time | hours/day | 24 | EPA, 1991 | | |
| BW | Body Weight | kg | 15 | EPA, 1991 | | |
| AT-C | Averaging Time (Cancer) | days | 25,550 | EPA, 1989 | | |
| AT-N | Averaging Time (Non-Cancer) | days | 2,190 | EPA, 1989 | | |
| IF-C | Intake Factor (Cancer) | m3/kg-day | 6.58E-02 | calculated | | |
| IF-N | Intake Factor (Non-cancer) | m3/kg-day | 7.67E-01 | calculated | | |


EPA, 1989= Risk Assessment Guidance for Superfund: Volume I -- Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.
EPA, 1991= Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response. OSWER Directive 9285.6-03
EPA, 1999= EPA Region III Risk-Based Concentration Table: Technical Background Information


(1) Air concentrations may be estimated by applying the particulate emission factor (PEF) or volatilization factor (VF) to soil concentrations as described in Soil Screening Guidance: Technical Background Document. U. S. EPA, Office of Solid Waste and Emergency Response. May 1996. (EPA/540/R-95/128) and Soil Screening Guidance: User's Guide. U.S.EPA, Office of Solid Waste and Emergency Response. April 1996. (EPA/540/R-96/018).
(2) Indoor air concentrations for volatiles may be estimated with the Johnson and Etinger Model.

# *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
# *Radford Army Ammunition Plant, Radford, Virginia*
## *Upgradient well = 7W12B*
## *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Antimony** | | | | | | *CAS #* | | 7440-36-0 |
| Second Quarter 2011 | U | U | U | U | 1 | - | 1 | 6020A |
| **Arsenic** | | | | | | *CAS #* | | 7440-38-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 10 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 10 | 10 | 10 | 6020A |
| **Barium** | | | | | | *CAS #* | | 7440-39-3 |
| Second Quarter 2011 | 31.1 | 17.3 | 27.1 | 26.7 | 10 | 2000 | 41 | 6020A |
| Fourth Quarter 2011 | 32.2 | 14.8 | 24.6 | 52.8 | 10 | 2000 | 41 | 6020A |
| **Beryllium** | | | | | | *CAS #* | | 7440-41-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 6020A |
| **Cadmium** | | | | | | *CAS #* | | 7440-43-9 |
| Second Quarter 2011 | U | U | U | U | 1 | 5 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 5 | 1 | 6020A |
| **Chromium** | | | | | | *CAS #* | | 7440-47-3 |
| Second Quarter 2011 | 5.3 | U | U | U | 5 | 100 | 9.9 | 6020A |
| Fourth Quarter 2011 | 5.62 | U | U | U | 5 | 100 | 9.9 | 6020A |
| **Cobalt** | | | | | | *CAS #* | | 7440-48-4 |
| Second Quarter 2011 | U | U | 3.73 J | 1.49 J | 5 | 5 | 5 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 5 | 5 | 5 | 6020A |
| **Copper** | | | | | | *CAS #* | | 7440-50-8 |
| Second Quarter 2011 | 3.15J | 3.46 J | 1.9 J | U | 5 | 1300 | 5 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 5 | 1300 | 5 | 6020A |
| **Lead** | | | | | | *CAS #* | | 7439-92-1 |
| Second Quarter 2011 | U | U | U | U | 1 | 15 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 15 | 1 | 6020A |
| **Mercury** | | | | | | *CAS #* | | 7439-97-6 |
| Second Quarter 2011 | U | U | U | U | 2 | - | 2 | 7470A |
| **Nickel** | | | | | | *CAS #* | | 7440-02-0 |
| Second Quarter 2011 | U | 2.05 J | 10.7 | U | 10 | 313 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | 10.3 | U | 10 | 313 | 10 | 6020A |
| **Selenium** | | | | | | *CAS #* | | 7782-49-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 50 | 10 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 10 | 50 | 10 | 6020A |
| **Silver** | | | | | | *CAS #* | | 7440-22-4 |
| Second Quarter 2011 | U | U | U | U | 2 | 78.25 | 2 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 2 | 78.25 | 2 | 6020A |
| **Thallium** | | | | | | *CAS #* | | 7440-28-0 |
| Second Quarter 2011 | U | U | U | U | 1 | 2 | 1 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 1 | 2 | 1 | 6020A |
| **Tin** | | | | | | *CAS #* | | 7440-31-5 |
| Second Quarter 2011 | U N | U N | U N | U | 20 | - | | 6010C |
| **Vanadium** | | | | | | *CAS #* | | 7440-62-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 6020A |
| **Zinc** | | | | | | *CAS #* | | 7440-66-6 |
| Second Quarter 2011 | 7.78J | 6.7 J | 6.07 J | 3.3 J | 10 | 4695 | 10.9 | 6020A |
| Fourth Quarter 2011 | 12.1J | 13.3 J | 72.3 J | 22.3 J | 10 | 4695 | 10.9 | 6020A |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Cyanide** | | | | | | | *CAS #* | 57-12-5 |
| Second Quarter 2011 | U | U | U | U | 20 | 200 | 20 | 9012A |
| Fourth Quarter 2011 | U | U | U | U | 20 | 200 | 20 | 9012A |
| **Sulfide** | | | | | | | *CAS #* | Q1314 |
| Second Quarter 2011 | U J | U J | U J | U J | 3000 | - | | 9034 |
| **Total Recoverable Phenolics** | | | | | | | *CAS #* | C-020 |
| Second Quarter 2011 | U | U N | U | U N | 50 | - | | 9066 |
| **Acenaphthene** | | | | | | | *CAS #* | 83-32-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acenaphthylene** | | | | | | | *CAS #* | 208-96-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acetone** | | | | | | | *CAS #* | 67-64-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Acetonitrile** | | | | | | | *CAS #* | 75-05-8 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Acetophenone** | | | | | | | *CAS #* | 98-86-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Acetylaminofluorene** | | | | | | | *CAS #* | 53-96-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Acrolein** | | | | | | | *CAS #* | 107-02-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 25 | - | | 8260B |
| **Acrylonitrile** | | | | | | | *CAS #* | 107-13-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Aldrin** | | | | | | | *CAS #* | 309-00-2 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Allyl chloride** | | | | | | | *CAS #* | 107-05-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **4-Aminobiphenyl** | | | | | | | *CAS #* | 92-67-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Aniline** | | | | | | | *CAS #* | 62-53-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Anthracene** | | | | | | | *CAS #* | 120-12-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Aramite** | | | | | | | *CAS #* | 140-57-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzene** | | | | | | | *CAS #* | 71-43-2 |
| Second Quarter 2011 | 0.1 J | U | U | U | 1 | - | | 8260B |
| **Benzo[a]anthracene** | | | | | | | *CAS #* | 56-55-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[b]fluoranthene** | | | | | | | *CAS #* | 205-99-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[k]fluoranthene** | | | | | | | *CAS #* | 207-08-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo[ghi]perylene** | | | | | | | *CAS #* | 191-24-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Benzo(a)pyrene** | | | | | | | *CAS #* | 50-32-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **1,4-Benzenediamine** | | | | | | | *CAS #* | 106-50-3 |
| Second Quarter 2011 | U J | U J | U J | U J | 7.5 | - | | 8270D |
| **Benzyl alcohol** | | | | | | | *CAS #* | 100-51-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **alpha-BHC** | | | | | | | *CAS #* | 319-84-6 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **beta-BHC** | | | | | | | *CAS #* | 319-85-7 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **delta-BHC** | | | | | | | *CAS #* | 319-86-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **gamma-BHC** | | | | | | | *CAS #* | 58-89-9 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **bis(2-Chloroethoxy)methane** | | | | | | | *CAS #* | 111-91-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Chloroethyl)ether** | | | | | | | *CAS #* | 111-44-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Chloro-1-methylethyl)ether** | | | | | | | *CAS #* | 108-60-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **bis(2-Ethylhexyl)phthalate** | | | | | | | *CAS #* | 117-81-7 |
| Second Quarter 2011 | U | U | U | U | 5 | 6 | 6 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 6 | 6 | 6 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 6 | 6 | 6 | 8270D |
| **Bromobenzene** | | | | | | | *CAS #* | 108-86-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromochloromethane** | | | | | | | *CAS #* | 74-97-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromodichloromethane** | | | | | | | *CAS #* | 75-27-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Bromoform** | | | | | | | *CAS #* | 75-25-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **4-Bromophenyl phenyl ether** | | | | | | | *CAS #* | 101-55-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **n-Butyl alcohol** | | | | | | | *CAS #* | 71-36-3 |
| Second Quarter 2011 | U | U | U | U | 50 | - | | 8260B |
| **tert-Butyl alcohol** | | | | | | | *CAS #* | 75-65-0 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **n-Butylbenzene** | | | | | | | *CAS #* | 104-51-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **sec-Butylbenzene** | | | | | | | *CAS #* | 135-98-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **tert-Butylbenzene** | | | | | | | *CAS #* | 98-06-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Butyl benzyl phthalate** | | | | | | | *CAS #* | 85-68-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Carbon disulfide** | | | | | | | *CAS #* | 75-15-0 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Carbon tetrachloride** | | | | | | | *CAS #* | 56-23-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chlordane** | | | | | | | *CAS #* | 57-74-9 |
| Second Quarter 2011 | U | U | U | U | 0.8 | - | | 8081B |
| **p-Chloroaniline** | | | | | | | *CAS #* | 106-47-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Chlorobenzene** | | | | | | | *CAS #* | 108-90-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chlorobenzilate** | | | | | | | *CAS #* | 510-15-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **p-Chloro-m-cresol** | | | | | | | *CAS #* | 59-50-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Chloroethane** | | | | | | | *CAS #* | 75-00-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chloroform** | | | | | | | *CAS #* | 67-66-3 |
| Second Quarter 2011 | 3 | U | 0.8 J | 0.6 J | 1 | - | | 8260B |
| **2-Chloroethyl vinyl ether** | | | | | | | *CAS #* | 110-75-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 20 | - | | 8260B |
| **2-Chloronaphthalene** | | | | | | | *CAS #* | 91-58-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Chlorophenol** | | | | | | | *CAS #* | 95-57-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **4-Chlorophenyl phenyl ether** | | | | | | | *CAS #* | 7005-72-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Chloroprene** | | | | | | | *CAS #* | 126-99-8 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **2-Chlorotoluene** | | | | | | | *CAS #* | 95-49-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **4-Chlorotoluene** | | | | | | | *CAS #* | 106-43-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chrysene** | | | | | | | *CAS #* | 218-01-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Cyclohexane** | | | | | | | *CAS #* | 110-82-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4-Dichlorophenoxyacetic acid** | | | | | | | *CAS #* | 94-75-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8151A |
| **4,4'-DDD** | | | | | | | *CAS #* | 72-54-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **4,4'-DDE** | | | | | | | *CAS #* | 72-55-9 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **4,4'-DDT** | | | | | | | *CAS #* | 50-29-3 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Diallate** | | | | | | | *CAS #* | 2303-16-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Dibenz(a,h)anthracene** | | | | | | | *CAS #* | 53-70-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Dibenzofuran** | | | | | | | *CAS #* | 132-64-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dibromochloromethane** | | | | | | | *CAS #* | 124-48-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dibromo-3-chloropropane** | | | | | | | *CAS #* | 96-12-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dibromoethane** | | | | | | | *CAS #* | 106-93-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Di-n-butyl phthalate** | | | | | | | *CAS #* | 84-74-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,2-Dichlorobenzene** | | | | | | | *CAS #* | 95-50-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,3-Dichlorobenzene** | | | | | | | *CAS #* | 541-73-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,4-Dichlorobenzene** | | | | | | | *CAS #* | 106-46-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **3,3'-Dichlorobenzidine** | | | | | | | *CAS #* | 91-94-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **trans-1,4-Dichloro-2-butene** | | | | | | | *CAS #* | 110-57-6 |
| Second Quarter 2011 | U J | U J | U J | U J | 10 | - | | 8260B |
| **Dichlorodifluoromethane** | | | | | | | *CAS #* | 75-71-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloroethane** | | | | | | | *CAS #* | 75-34-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2-Dichloroethane** | | | | | | | *CAS #* | 107-06-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloroethene** | | | | | | | *CAS #* | 75-35-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **trans-1,2-Dichloroethene** | | | | | | | *CAS #* | 156-60-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4-Dichlorophenol** | | | | | | | *CAS #* | 120-83-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,6-Dichlorophenol** | | | | | | | *CAS #* | 87-65-0 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **1,2-Dichloropropane** | | | | | | | *CAS #* | 78-87-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,3-Dichloropropane** | | | | | | | *CAS #* | 142-28-9 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,2-Dichloropropane** | | | | | | | *CAS #* | 594-20-7 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1-Dichloropropene** | | | | | | | *CAS #* | 563-58-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **cis-1,3-Dichloropropene** | | | | | | | *CAS #* | 10061-01-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **trans-1,3-Dichloropropene** | | | | | | | *CAS #* | 10061-02-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Dieldrin** | | | | | | | *CAS #* | 60-57-1 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Diethyl ether** | | | | | | | *CAS #* | 60-29-7 |
| Second Quarter 2011 | U | U | U | U | 12.5 | - | | 8260B |
| **Diethyl phthalate** | | | | | | | *CAS #* | 84-66-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **O,O-Diethyl O-2-pyrazinyl** | | | | | | | *CAS #* | 297-97-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dimethoate** | | | | | | | *CAS #* | 60-51-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Dimethyl ether** | | | | | | | *CAS #* | 115-10-6 |
| Second Quarter 2011 | U | U | U | U | 12.5 | - | | 8260B |
| **p-(Dimethylamino)azobenzene** | | | | | | | *CAS #* | 60-11-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **7,12-Dimethylbenz[a]anthracene** | | | | | | | *CAS #* | 57-97-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **3,3'-Dimethylbenzidine** | | | | | | | *CAS #* | 119-93-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **a,a-Dimethylphenethylamine** | | | | | | | *CAS #* | 122-09-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 15 | - | | 8270D |
| **2,4-Dimethylphenol** | | | | | | | *CAS #* | 105-67-9 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Dimethyl phthalate** | | | | | | | *CAS #* | 131-11-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **m-Dinitrobenzene** | | | | | | | *CAS #* | 99-65-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **4,6-Dinitro-o-cresol** | | | | | | | *CAS #* | 534-52-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,4-Dinitrophenol** | | | | | | | *CAS #* | 51-28-5 |
| Second Quarter 2011 | U J | U J | U J | U J | 10 | - | | 8270D |
| **2,4-Dinitrotoluene** | | | | | | | *CAS #* | 121-14-2 |
| Second Quarter 2011 | U | U | 0.974 J | U | 10 | 31.3 | 10 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 10 | 31.3 | 10 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 10 | 31.3 | 10 | 8270D |
| **2,6-Dinitrotoluene** | | | | | | | *CAS #* | 606-20-2 |
| Second Quarter 2011 | U | U | U | U | 10 | 15.65 | 10 | 8270D |
| Fourth Quarter 2011 | - | U | - | - | 10 | 15.65 | 10 | 8270D |
| Fourth Quarter 2011 | U | - | U | U | 10 | 15.65 | 10 | 8270D |
| **Dinoseb** | | | | | | | *CAS #* | 88-85-7 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **Di-n-octyl phthalate** | | | | | | | *CAS #* | 117-84-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,4-Dioxane** | | | | | | | *CAS #* | 123-91-1 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **Diphenylamine** | | | | | | | *CAS #* | 86-30-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Disulfoton** | | | | | | | *CAS #* | 298-04-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Endosulfan I** | | | | | | | *CAS #* | 959-98-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Endosulfan II** | | | | | | | *CAS #* | 33213-65-9 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Endosulfan sulfate** | | | | | | | *CAS #* | 1031-07-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Endrin** | | | | | | | *CAS #* | 72-20-8 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Ethyl acetate** | | | | | | | *CAS #* | 141-78-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Endrin aldehyde** | | | | | | | *CAS #* | 7421-93-4 |
| Second Quarter 2011 | U | U | U | U | 0.05 | - | | 8081B |
| **Ethanol** | | | | | | | *CAS #* | 64-17-5 |
| Second Quarter 2011 | U | U | U | U | 250 | - | | 8260B |
| **Ethylbenzene** | | | | | | | *CAS #* | 100-41-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Ethyl methacrylate** | | | | | | | *CAS #* | 97-63-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Ethyl methanesulfonate** | | | | | | | *CAS #* | 62-50-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Ethylene oxide** | | | | | | | *CAS #* | 75-21-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 100 | - | | 8260B |
| **Famphur** | | | | | | | *CAS #* | 52-85-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Fluoranthene** | | | | | | | *CAS #* | 206-44-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Fluorene** | | | | | | | *CAS #* | 86-73-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Heptachlor** | | | | | | | *CAS #* | 76-44-8 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Heptachlor epoxide** | | | | | | | *CAS #* | 1024-57-3 |
| Second Quarter 2011 | U | U | U | U | 0.025 | - | | 8081B |
| **Hexachlorobenzene** | | | | | | | *CAS #* | 118-74-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Hexachlorobutadiene** | | | | | | | *CAS #* | 87-68-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Hexachlorocyclopentadiene** | | | | | | | *CAS #* | 77-47-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Hexachloroethane** | | | | | | | *CAS #* | 67-72-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Hexachlorophene** | | | | | | | *CAS #* | 70-30-4 |
| Second Quarter 2011 | U | U | U | U | 40 | - | | 8270D |
| **Hexachloropropene** | | | | | | | *CAS #* | 1888-71-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **2-Hexanone** | | | | | | | *CAS #* | 591-78-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Indeno[1,2,3-cd]pyrene** | | | | | | | *CAS #* | 193-39-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isobutyl alcohol** | | | | | | | *CAS #* | 78-83-1 |
| Second Quarter 2011 | U | U | U | U | 200 | - | | 8260B |
| **Isodrin** | | | | | | | *CAS #* | 465-73-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isophorone** | | | | | | | *CAS #* | 78-59-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Isopropylbenzene** | | | | | | | *CAS #* | 98-82-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Isopropylether** | | | | | | | *CAS #* | 108-20-3 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **4-Isopropyltoluene** | | | | | | | *CAS #* | 99-87-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Isosafrole** | | | | | | | *CAS #* | 120-58-1 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **Kepone** | | | | | | | *CAS #* | 143-50-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methacrylonitrile** | | | | | | | *CAS #* | 126-98-7 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Methapyrilene** | | | | | | | *CAS #* | 91-80-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methoxychlor** | | | | | | | *CAS #* | 72-43-5 |
| Second Quarter 2011 | U | U | U | U | 0.25 | - | | 8081B |
| **Bromomethane** | | | | | | | *CAS #* | 74-83-9 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Chloromethane** | | | | | | | *CAS #* | 74-87-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **3-Methylcholanthrene** | | | | | | | *CAS #* | 56-49-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Butanone** | | | | | | | *CAS #* | 78-93-3 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Iodomethane** | | | | | | | *CAS #* | 74-88-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Methyl methacrylate** | | | | | | | *CAS #* | 80-62-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Methyl methane sulfonate** | | | | | | | *CAS #* | 66-27-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Methylnaphthalene** | | | | | | | *CAS #* | 91-57-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Methyl parathion** | | | | | | | *CAS #* | 298-00-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **4-Methyl-2-pentanone** | | | | | | | *CAS #* | 108-10-1 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **2-Methylphenol** | | | | | | | *CAS #* | 95-48-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **3 & 4-Methylphenol** | | | | | | | *CAS #* | 106-44-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Methyl tert-butyl ether** | | | | | | | *CAS #* | 1634-04-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Dibromomethane** | | | | | | | *CAS #* | 74-95-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Methylene chloride** | | | | | | | *CAS #* | 75-09-2 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Naphthalene** | | | | | | | *CAS #* | 91-20-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,4-Naphthoquinone** | | | | | | | *CAS #* | 130-15-4 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **1-Naphthylamine** | | | | | | | *CAS #* | 134-32-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Naphthylamine** | | | | | | | *CAS #* | 91-59-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **o-Nitroaniline** | | | | | | | *CAS #* | 88-74-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **m-Nitroaniline** | | | | | | | *CAS #* | 99-09-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **p-Nitroaniline** | | | | | | | *CAS #* | 100-01-6 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Nitrobenzene** | | | | | | | *CAS #* | 98-95-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **o-Nitrophenol** | | | | | | | *CAS #* | 88-75-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **p-Nitrophenol** | | | | | | | *CAS #* | 100-02-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | 20 | 8270D |
| **4-Nitroquinoline-1-oxide** | | | | | | | *CAS #* | 56-57-5 |
| Second Quarter 2011 | U J | U J | U J | U J | 5 | - | | 8270D |
| **N-Nitrosodi-n-butylamine** | | | | | | | *CAS #* | 924-16-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodiethylamine** | | | | | | | *CAS #* | 55-18-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodimethylamine** | | | | | | | *CAS #* | 62-75-9 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodiphenylamine** | | | | | | | *CAS #* | 86-30-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosodipropylamine** | | | | | | | *CAS #* | 621-64-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosomethylethylamine** | | | | | | | *CAS #* | 10595-95-6 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosomorpholine** | | | | | | | *CAS #* | 59-89-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **N-Nitrosopiperidine** | | | | | | | *CAS #* | 100-75-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **N-Nitrosopyrrolidine** | | | | | | | *CAS #* | 930-55-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **5-Nitroso-o-toluidine** | | | | | | | *CAS #* | 99-55-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Parathion** | | | | | | | *CAS #* | 56-38-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachlorobenzene** | | | | | | | *CAS #* | 608-93-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachloroethane** | | | | | | | *CAS #* | 76-01-7 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Pentachloronitrobenzene** | | | | | | | *CAS #* | 82-68-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pentachlorophenol** | | | | | | | *CAS #* | 87-86-5 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Phenacetin** | | | | | | | *CAS #* | 62-44-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Phenanthrene** | | | | | | | *CAS #* | 85-01-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Phenol** | | | | | | | *CAS #* | 108-95-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Phorate** | | | | | | | *CAS #* | 298-02-2 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2-Picoline** | | | | | | | *CAS #* | 109-06-8 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pronamide** | | | | | | | *CAS #* | 23950-58-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1-Propanol** | | | | | | | *CAS #* | 71-23-8 |
| Second Quarter 2011 | U J | U J | U J | U J | 100 | - | | 8260B |
| **2-Propanol** | | | | | | | *CAS #* | 67-63-0 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **Propionitrile** | | | | | | | *CAS #* | 107-12-0 |
| Second Quarter 2011 | U | U | U | U | 100 | - | | 8260B |
| **n-Propylbenzene** | | | | | | | *CAS #* | 103-65-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Pyrene** | | | | | | | *CAS #* | 129-00-0 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Pyridine** | | | | | | | *CAS #* | 110-86-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Safrole** | | | | | | | *CAS #* | 94-59-7 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Silvex** | | | | | | | *CAS #* | 93-72-1 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **Styrene** | | | | | | | *CAS #* | 100-42-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Sulfotep** | | | | | | | *CAS #* | 3689-24-5 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **2,4,5-Trichlorophenoxyacetic acid** | | | | | | | *CAS #* | 93-76-5 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8151A |
| **1,2,4,5-Tetrachlorobenzene** | | | | | | | *CAS #* | 95-94-3 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,1,1,2-Tetrachloroethane** | | | | | | | *CAS #* | 630-20-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2,2-Tetrachloroethane** | | | | | | | *CAS #* | 79-34-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Tetrachloroethene** | | | | | | | *CAS #* | 127-18-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Tetrahydrofuran** | | | | | | | *CAS #* | 109-99-9 |
| Second Quarter 2011 | U | U | U | U | 25 | - | | 8260B |
| **2,3,4,6-Tetrachlorophenol** | | | | | | | *CAS #* | 58-90-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **Toluene** | | | | | | | *CAS #* | 108-88-3 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **o-Toluidine** | | | | | | | *CAS #* | 95-53-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Toxaphene** | | | | | | | *CAS #* | 8001-35-2 |
| Second Quarter 2011 | U | U | U | U | 2.5 | - | | 8081B |
| **1,2,3-Trichlorobenzene** | | | | | | | *CAS #* | 87-61-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,2,4-Trichlorobenzene** | | | | | | | *CAS #* | 120-82-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,1-Trichloroethane** | | | | | | | *CAS #* | 71-55-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2-Trichloroethane** | | | | | | | *CAS #* | 79-00-5 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Trichloroethene** | | | | | | | *CAS #* | 79-01-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Trichlorofluoromethane** | | | | | | | *CAS #* | 75-69-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **2,4,5-Trichlorophenol** | | | | | | | *CAS #* | 95-95-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **2,4,6-Trichlorophenol** | | | | | | | *CAS #* | 88-06-2 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8270D |
| **1,2,3-Trichloropropane** | | | | | | | *CAS #* | 96-18-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **1,1,2-Trichloro-1,2,2-Trifluoroethane** | | | | | | | *CAS #* | 76-13-1 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **O,O,O-Triethyl phosphorothioate** | | | | | | | *CAS #* | 126-68-1 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **1,2,4-Trimethylbenzene** | | | | | | | *CAS #* | 95-63-6 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **1,3,5-Trimethylbenzene** | | | | | | | *CAS #* | 108-67-8 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **sym-Trinitrobenzene** | | | | | | | *CAS #* | 99-35-4 |
| Second Quarter 2011 | U | U | U | U | 5 | - | | 8270D |
| **Vinyl acetate** | | | | | | | *CAS #* | 108-05-4 |
| Second Quarter 2011 | U | U | U | U | 10 | - | | 8260B |
| **Vinyl chloride** | | | | | | | *CAS #* | 75-01-4 |
| Second Quarter 2011 | U | U | U | U | 1 | - | | 8260B |
| **Xylenes (Total)** | | | | | | | *CAS #* | 1330-20-7 |
| Second Quarter 2011 | U | U | U | U | 3 | - | | 8260B |

## *Target Analyte Monitoring Results - HWMU-7 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
### *Upgradient well = 7W12B*
### *All Results in ug/L.*

| *Analtye/Quarter* | *7W12B Q* | *7MW6 Q* | *7WCA Q* | *7W11B Q* | *QL* | *GPS* | *Background* | *Method* |
|---|---|---|---|---|---|---|---|---|

**Definitions:**

***The following definitions apply to results reported for Appendix IX monitoring events.***
***All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit.
**UA** denotes not detected at or above the adjusted detection limit.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes groundwater protection standard.

***The following definitions apply to results reported for non-Appendix IX monitoring events.***
***All non-Appendix IX monitoring results for compliance wells are reported to at or above the quantitation limit.***

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes groundwater protection standard.

Notes:
-**Appendix IX Groundwater Monitoring Events**:
***Third Quarter 2003, Second Quarter 2004, Second Quarter 2005, Third Quarter 2006, Second Quarter 2007, Second Quarter 2008, Second Quarter 2009, Second Quarter 2010, Second Quarter 2011***
All Appendix IX results evaluated and reported to detection limit.
-9/29/2003: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA (copper and zinc). Verification results reported in this table for copper and zinc.
-6/21-22/2004: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA. Verification results reported in this table for chloroform (7W12B).
-3/23/2005: Verification sampling event for 7MW6. Verification results reported in this table for bis(2-ethylhexyl)phthalate).
-7/26/2005: Verification sampling event for 7MW6, 7W11B, 7W12B, 7WCA (ethyl acetate), 7W11B (beta-BHC), and 7MW6 (alpha-BHC). All Verification results reported as not detected. Verification results reported.
-Sept 2006: Verification sampling event for 7W12B and 7W11B 3Q2006 for chloroform. Initial results reported in this table for chloroform (7W11B,
-July 17, 2008: Verification sampling event for 7W13 arsenic and cobalt. 7W9C cobalt
-June 11, 2009, Verification sampling event for 7MW6 Diethyl ether. Analyte not detected. Verification results reported.

## *Target Analyte Monitoring Results At or Above Permit Quantitation Limit*
## *HWMU 7 Plume Monitoring Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

*All Results in ug/L.* *Upgradient well = 7W12B*

| *Analyte/Quarter* | *7W12B Q* | *7W9C Q* | *7W10B Q* | *7W10C Q* | *7W13 Q* | *QL* | *Background* | *GPS* | *Method* | *CAS #* |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arsenic** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 10 | 6020A | 7440-38-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 10 | 6020A | 7440-38-2 |
| **Barium** | | | | | | | | | | |
| Second Quarter 2011 | 31.1 | 21.2 | 57.5 | 42.7 | 14.5 | 10 | 41 | 2000 | 6020A | 7440-39-3 |
| Fourth Quarter 2011 | 32.2 | 18.3 | 59.7 | 45 | 14.7 | 10 | 41 | 2000 | 6020A | 7440-39-3 |
| **Cadmium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 5 | 6020A | 7440-43-9 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 5 | 6020A | 7440-43-9 |
| **Chromium** | | | | | | | | | | |
| Second Quarter 2011 | 5.3 | U | U | U | U | 5 | 9.9 | 100 | 6020A | 7440-47-3 |
| Fourth Quarter 2011 | 5.62 | U | U | U | U | 5 | 9.9 | 100 | 6020A | 7440-47-3 |
| **Cobalt** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | 9.41 | 5 | 5 | 5 | 6020A | 7440-48-4 |
| Fourth Quarter 2011 | U | U | U | U | 11.7 | 5 | 5 | 5 | 6020A | 7440-48-4 |
| **Copper** | | | | | | | | | | |
| Second Quarter 2011 | 3.15 J | U | U | U | U | 5 | 5 | 1300 | 6020A | 7440-50-8 |
| Fourth Quarter 2011 | U | U | U | U | U | 5 | 5 | 1300 | 6020A | 7440-50-8 |
| **Lead** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 15 | 6020A | 7439-92-1 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 15 | 6020A | 7439-92-1 |
| **Nickel** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 313 | 6020A | 7440-02-0 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 313 | 6020A | 7440-02-0 |
| **Selenium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 50 | 6020A | 7782-49-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 50 | 6020A | 7782-49-2 |
| **Silver** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 2 | 2 | 78.25 | 6020A | 7440-22-4 |
| Fourth Quarter 2011 | U | U | U | U | U | 2 | 2 | 78.25 | 6020A | 7440-22-4 |
| **Thallium** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 1 | 1 | 2 | 6020A | 7440-28-0 |
| Fourth Quarter 2011 | U | U | U | U | U | 1 | 1 | 2 | 6020A | 7440-28-0 |
| **Zinc** | | | | | | | | | | |
| Second Quarter 2011 | 7.78 J | U | U | U | U | 10 | 10.9 | 4695 | 6020A | 7440-66-6 |
| Fourth Quarter 2011 | 12.1 J | U J | 17.4 J | 10.2 J | 10.6 J | 10 | 10.9 | 4695 | 6020A | 7440-66-6 |
| **Cyanide** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 20 | 20 | 200 | 9012A | 57-12-5 |
| Fourth Quarter 2011 | U | U | U | U | U | 20 | 20 | 200 | 9012A | 57-12-5 |
| **bis(2-Ethylhexyl)phthalate** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 5 | 6 | 6 | 8270D | 117-81-7 |
| Fourth Quarter 2011 | U | U | U | U | U | 6 | 6 | 6 | 8270D | 117-81-7 |
| **2,4-Dinitrotoluene** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 31.3 | 8270D | 121-14-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 31.3 | 8270D | 121-14-2 |
| **2,6-Dinitrotoluene** | | | | | | | | | | |
| Second Quarter 2011 | U | U | U | U | U | 10 | 10 | 15.65 | 8270D | 606-20-2 |
| Fourth Quarter 2011 | U | U | U | U | U | 10 | 10 | 15.65 | 8270D | 606-20-2 |



*See last page of this report for definitions.*

## *Target Analyte Monitoring Results At or Above Permit Quantitation Limit*
## *HWMU 7 Plume Monitoring Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

***All Results in ug/L.*** ***Upgradient well = 7W12B***

| *Analyte/Quarter* | *7W12B Q* | *7W9C Q* | *7W10B Q* | *7W10C Q* | *7W13 Q* | *QL* | *Background* | *GPS* | *Method* | *CAS #* |
|---|---|---|---|---|---|---|---|---|---|---|

**Definitions:**

***All plume monitoring well results reported to at or above the permit quantitation limit except for the upgradient well during the Appendix IX monitoring Event. During the Appendix IX monitoring event, results for the upgradient well are reported to the detection limit.***

**Q** Denotes data validation qualifier.
**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**UN** Denotes analyte concentration is less than the quantiation limit and five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Background** Denotes background concentrations listed in the pending Class 3 Permit Modification for the Post-Closure Care Permit for HWMUs 5, 7, 10 and 16.
**CAS#** Denotes Chemical Abstract Services registration number. **GPS** Denotes groundwater protection standard.

Notes:
-January 2005: Verification sampling event for 7MW13 4Q2004 arsenic. Verification results reported in this table for arsenic (7W13).
-March 2006: Verification sampling event for 7MW13 1Q2006 arsenic. Verification results reported in this table for arsenic (7W13).
-July 2006: Verification sampling event for 7MW13 2Q2006 arsenic. Verification results reported in this table for arsenic (7W13).
-Sept 2006: Verification sampling event for 7W12B 3Q2006 chloroform. Initial results reported in this table for chloroform (7W12B).
-July 17, 2007: Verification sampling event for 7W13 arsenic-verification event result reported, highest of four quadruplicate results, 7W13 cobalt-original result reported.. 7W9C cobalt- Verification result reported.

-Dec 17, 2008: Verification sampling event for 7W13 . cobalt- Original result reported.
-June 28, 2010 - Verification sampling event for 7W13 . cobalt- Original result reported.
Also, verification sampling event for 7W13 . cobalt- verification result reported.
-Dec 16, 2010 - Verification sampling event for 7W13 . arsenic- Verification result reported.
- June 27, 2011 - Verification sampling event for 7MW6 benzene and diethyl ether and 7W11B - Benzene - Verification result reported.



*See last page of this report for definitions.*

# CONSTITUENT BACKGROUND VALUES
# FOR THE
# COMPLIANCE GROUNDWATER MONITORING PROGRAM

## HWMU-7
## RADFORD ARMY AMMUNITION PLANT
## RADFORD, VIRGINIA

**Prepared for:**

Alliant Techsystems Inc.
Radford Army Ammunition Plant
Route 114
Radford, Virginia 24141-0100

**Prepared by:**

Draper Aden Associates
2206 South Main Street
Blacksburg, Virginia 24060
(540) 552-0444

February 2008
DAA Job No. B03204-122

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## RADFORD ARMY AMMUNITION PLANT – HWMU-7
### CALCULATION OF CONSTITUENT BACKGROUND VALUES

Draper Aden Associates recalculated background values for the plume monitoring well constituents of the groundwater monitoring program for Hazardous Waste Management Unit No. 7 (HWMU-7) located at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia. Background values were calculated for all plume monitoring well constituents.

The background values for HWMU-7 plume monitoring well constituents were calculated using the analytical data for upgradient well 7W12B using data from Second Quarter 2003 through Second Quarter 2007 (available most recent data with one exception-cyanide includes 4th Quarter 2007 data). Inter-well upper prediction limits (UPL) were calculated on the background data for the target parameters in accordance with the facility permit and VHWMR (40 CFR 264.97(h)). Where applicable, the background value calculations were based on site-wide 95% confidence, 95% coverage upper prediction intervals. The calculated background values for all target constituents are listed on **Table 1**.

### Background Data and Background Value Calculations

The constituents listed below were 100% non-detected (<LOQ) in the background well. The background values for these constituents were established as equal to their quantitation limits (QL).

| Background Value = Quantitation Limit (QL) | | | | |
|---|---|---|---|---|
| **Constituent** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **Background Value (µg/l)** |
| Antimony | 17 | 100 | 1 | 1 |
| Arsenic | 17 | 100 | 10 | 10 |
| Cadmium | 17 | 100 | 1 | 1 |
| Cobalt | 17 | 100 | 5 | 5 |
| Copper | 16 | 100 | 5 | 5 |
| Lead | 17 | 100 | 1 | 1 |
| Mercury | 17 | 100 | 2 | 2 |
| Nickel | 17 | 100 | 10 | 10 |
| Selenium | 17 | 100 | 10 | 10 |
| Silver | 17 | 100 | 2 | 2 |
| Thallium | 17 | 100 | 1 | 1 |
| Cyanide | 18 | 100 | 20 | 20 |
| Bis(2-ethylhexyl)phthalate | 17 | 100 | 6 | 6 |
| Butyl benzyl phthalate | 17 | 100 | 10 | 10 |
| 2,4-Dinitrophenol | 17 | 100 | 10 | 10 |
| 2,4-Dinitrotoluene | 17 | 100 | 10 | 10 |
| 2,6-Dinitrotoluene | 17 | 100 | 10 | 10 |
| p-Nitrophenol | 17 | 100 | 10 | 10 |

Non-parametric prediction intervals were computed for the constituents for which the data from upgradient well 7W-12B satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

Only one result for zinc was reported above its LOQ. The reported result (10.9 µg/l) is the NUPL for zinc. The non-parametric prediction limit computation for chromium is presented in **Appendix A**.

| **Background Value = UPL of Non-parametric Prediction Interval (NUPL)** | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **NUPL (µg/l)** | **Background Value (µg/l)** |
| Chromium | 17 | 12 | 5 | 9.9 | 9.9 |
| Zinc | 14 | 93 | 10 | 10.9 | 10.9 |

The following constituent (barium) exhibited normally distributed background data with less than 0% non-detects. One sided parametric prediction interval was computed on the background data for barium. The background value for barium was set as equal to its UPL. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. The background and relevant statistical data for barium is summarized below. The prediction interval computation is presented in **Appendix A**.

| **Background Value = UPL of one-sided Prediction Interval** | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **QL (µg/l)** | **UPL (µg/l)** | **Background Value (µg/l)** |
| Barium | 17 | 0 | 10 | 41.0 | 41.0 |

# TABLE 1

## HWMU-7
## CALCULATED BACKGROUND VALUES

| Constituent | Background Value (µg/l unless otherwise noted) |
|---|---|
| Antimony | 1 |
| Arsenic | 10 |
| Barium | 41.0 |
| Cadmium | 1 |
| Chromium | 9.9 |
| Cobalt | 5 |
| Copper | 5 |
| Lead | 1 |
| Mercury | 2 |
| Nickel | 10 |
| Selenium | 10 |
| Silver | 2 |
| Thallium | 1 |
| Zinc | 10.9 |
| Cyanide | 20 |
| Bis(2-ethylhexyl)phthalate | 6 |
| Butyl benzyl phthalate | 10 |
| 2,4-Dinitrophenol | 10 |
| 2,4-Dinitrotoluene | 10 |
| 2,6-Dinitrotoluene | 10 |
| p-Nitrophenol | 10 |

# APPENDIX A

## HWMU-7
## BACKGROUND VALUE CALCULATIONS
## STATISTICAL COMPUTATIONS FOR BARIUM AND CHROMIUM

**RAAP-HWMU-7 - Background Calculation - December 2007**

17-Dec-07

Y2K Correction dates are as shown in table below.

| Actual Event | | | Date Used in Stat Software |
|---|---|---|---|
| 2003-Qtr2 | | | 8/1/1999 |
| 2003-Qtr3 | | | 8/2/1999 |
| 2003-Qtr4 | | | 8/3/1999 |
| 2004-Qtr1 | | | 8/4/1999 |
| 2004-Qtr2 | | | 8/5/1999 |
| 2004-Qtr3 | | | 8/6/1999 |
| 2004-Qtr4 | | | 8/7/1999 |
| 2005-Qtr1 | | | 8/8/1999 |
| 2005-Qtr2 | | | 8/9/1999 |
| 2005-Qtr3 | | | 8/10/1999 |
| 2005-Qtr4 | | | 8/11/1999 |
| 2006-Qtr1 | | | 8/12/1999 |
| 2006-Qtr2 | | | 8/13/1999 |
| 2006-Qtr3 | | | 8/14/1999 |
| 2006-Qtr4 | | | 8/15/1999 |
| 2007-Qtr1 | | | 8/16/1999 |
| 2007-Qtr2 | | | 8/17/1999 |

**Notes:**

1) Background data was computed for all target constituents using the 2Q 2003 - 2Q 2007 data for background well 7W12B. Background data was 100% <LOQ for all target parameters except barium, chromium and zinc. Zinc had only one reported result > LOQ.

Statistical computations using GRITS/STAT V5.0 performed only for barium and chromium, as applicable.

Normality Tests

Report Printed: 12-17-2007 16:02

Facility:RAAPHWMU7 Haz. Waste Unit 7 - RAAP

Address:

City:Radford ST:VA Zip:24141
County:MONTGOMERY

Contact:
Phone:( ) -

Permit Type:Detection

Constituent:Ba Barium, total

CAS Number: 7440-39-3
MCL: 0.000 ppb
ACL: 0.000 ppb
Detect Limit: 2.000 ppb

Start Date:Aug 01 1999
End Date:Aug 17 1999

Normality Test on Observations for wells listed below:

Well:7W12B Position:Upgradient Observations:17

| Scale | Minimum | Maximum | Mean | Std Dev |
|---|---|---|---|---|
| Original: | 32.800 | 39.800 | 36.253 | 1.875 |
| Log: | 3.490 | 3.684 | 3.589 | 0.052 |

Pooled Statistics
Observations: 17

| Statistic | Original Scale | Log Scale |
|---|---|---|
| Mean: | 36.253 | 3.589 |
| Std Dev: | 1.875 | 0.052 |
| Skewness: | -0.019 | -0.150 |
| Kurtosis: | -0.236 | -0.251 |
| Minimum: | 32.800 | 3.490 |
| Maximum: | 39.800 | 3.684 |
| CV: | 0.052 | 0.014 |

Shapiro-Wilk Statistics

| Scale | Test Statistic | 5% Critical Value | 1% Critical Value |
|---|---|---|---|
| Original: | 0.9602 | 0.8920 | 0.8510 |

| | | | |
|---|---|---|---|
| Log: | 0.9592 | 0.8920 | 0.8510 |

* Indicates statistically significant evidence of non-normality.
GRIT/STAT Version 5.0

**Parametric Prediction Interval**
Report Printed December 17,2007



Facility:Haz. Waste Unit 7 - RAAP
Parameter:Barium, total(CAS Number:7440-39-3)

**ONE-TAILED UPPER PARAMETRIC PREDICTION INTERVAL**

| | |
|---|---|
| Observations (n): | 17 |
| Shapiro-Wilk (W): | 0.9602 |
| Critical W,$\alpha$=0.01: | 0.8510 |
| Mean: | 36.253 ppb |
| Std Dev: | 1.875 ppb |
| DF: | 16 |
| Conf. Level (1-$\alpha$): | 0.9500 |
| Future Samples (k): | 4 |
| $t_{\left[1-\frac{\alpha}{k}\right]}$: | 2.4729 |
| Kappa: | 2.5446 |
| UL: | 41.024 ppb |
| LL: | -$\infty$ |

Normality Tests

Report Printed: 12-17-2007 16:05

Facility:RAAPHWMU7 Haz. Waste Unit 7 - RAAP

Address:

City:Radford ST:VA Zip:24141
County:MONTGOMERY

Contact:
Phone:( ) -

Permit Type:Detection

Constituent:Cr Chromium, total

CAS Number: 7440-47-3
MCL: 0.000 ppb
ACL: 0.000 ppb
Detect Limit: 1.000 ppb

Start Date:Aug 01 1999
End Date:Aug 17 1999

Normality Test on Observations for wells listed below:

Well:7W12B Position:Upgradient Observations:17

| Scale | Minimum | Maximum | Mean | Std Dev |
|---|---|---|---|---|
| Original: | 0.500 | 9.900 | 6.612 | 2.648 |
| Log: | -0.693 | 2.293 | 1.672 | 0.909 |

Pooled Statistics
Observations: 17

| Statistic | Original Scale | Log Scale |
|---|---|---|
| Mean: | 6.612 | 1.672 |
| Std Dev: | 2.648 | 0.909 |
| Skewness: | -1.317* | -2.191* |
| Kurtosis: | 1.110 | 3.139 |
| Minimum: | 0.500 | -0.693 |
| Maximum: | 9.900 | 2.293 |
| CV: | 0.401 | 0.543 |

Shapiro-Wilk Statistics

| Scale | Test Statistic | 5% Critical Value | 1% Critical Value |
|---|---|---|---|
| Original: | 0.8293* | 0.8920 | 0.8510 |

| | | | |
|---|---|---|---|
| Log: | 0.5707* | 0.8920 | 0.8510 |

* Indicates statistically significant evidence of non-normality.
GRIT/STAT Version 5.0

**Nonparametric Prediction Interval**
Report Printed December 17,2007



Facility:Haz. Waste Unit 7 - RAAP
Parameter:Chromium, total(CAS Number:7440-47-3)

**ONE-TAILED UPPER PARAMETRIC PREDICTION INTERVAL**

Observations (n): 17
Conf. Level (1-α): ~~94.440%~~ N/A

UL: 9.900 ppb
LL: 0.000

*Report Produced by GRITS/STAT 5.01*

**GROUNDWATER PROTECTION STANDARDS**
**HAZARDOUS WASTE MANAGEMENT UNIT 7**
**RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA**

| Constituents | SW-846 Method | PQL (µg/l) | Back-ground (µg/l) | USEPA MCL (µg/l) | VDEQ ACL (µg/l) | GPS (µg/l) |
|---|---|---|---|---|---|---|
| Arsenic, total | 6020 | 10 | 10 | 10 | | 10 |
| Barium, total | 6020 | 10 | 41 | 2,000 | | 2,000 |
| Cadmium, total | 6020 | 1 | 1 | 5 | | 5 |
| Chromium, total | 6020 | 5 | 9.9 | 100 | | 100 |
| Cobalt, total | 6020 | 5 | 5 | | 4.695 | 5 |
| Copper, total | 6020 | 5 | 5 | 1300 | | 1300 |
| Lead, total | 6020 | 1 | 1 | 15* | | 15* |
| Nickel, total | 6020 | 10 | 10 | | 313 | 313 |
| Selenium, total | 6020 | 10 | 10 | 50 | | 50 |
| Silver, total | 6020 | 2 | 2 | | 78.25 | 78.25 |
| Thallium, total | 6020 | 1 | 1 | 2 | | 2 |
| Bis (2-ethylhexyl) phthalate | 8270 | 10 | 6 | 6 | | 6 |
| 2,4-Dinitrotoluene | 8270 | 10 | 10 | | 31.3 | 31.3 |
| 2,6-Dinitrotoluene | 8270 | 10 | 10 | | 15.65 | 15.65 |
| Cyanide | 9010 | 20 | 20 | 200 | | 200 |
| Zinc | 6020 | 10 | 10.9 | | 4695 | 4695 |

**NOTES:**

**PQL:** Practical Quantitation Limits.

**Background:** Recalculated Background in December 2007.

**EPA MCL:** Maximum Contaminant Level of USEPA National Primary Drinking Water Regulations (web: http://water.epa.gov/drink/contaminants/index.cfm#Primary; June 2, 2010). * - Action Level. Subject to change without notice as directed by VDEQ.

**VDEQ ACL:** VDEQ Alternate Concentration Limit, Jan -2009. Subject to change without notice as directed by VDEQ.

**Please Note:** The VDEQ-approved Class 3 Permit Modification dated September 27, 2011 for the Final Permit removed the following constituents from the Compliance Groundwater Monitoring List and GPS List for HWMU-7: antimony, mercury, zinc, butyl benzyl phthalate, 2,4-dinitrophenol, and 4-nitrophenol.

# ALTERNATE SOURCE DEMONSTRATION
# TOTAL COBALT IN GROUNDWATER

**HAZARDOUS WASTE MANAGEMENT UNIT 7**

**RADFORD ARMY AMMUNITION PLANT**
**RADFORD, VIRGINIA**

**Submitted to:**

Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219
(800) 592-5482

**Prepared for:**

Alliant Techsystems Inc.
Radford Army Ammunition Plant
Route 114
Radford, Virginia 24141-0100

DECEMBER 2011

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## EXECUTIVE SUMMARY

In correspondence dated September 27, 2011, the Virginia Department of Environmental Quality (VDEQ) approved the Class 3 permit modification for the Post Closure Care Permit (Permit) for Hazardous Waste Management Units (HWMUs) 5, 7, 10, and 16 located at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia. The Class 3 permit modification request included a closure plan amendment for HWMU-7 to allow Radford AAP to pursue clean closure for soil and groundwater at the Unit. The approved Class 3 permit modification reduced the GPS for total cobalt at HWMU-7 from the previous VDEQ-calculated ACL of 156.65 µg/L to the site-specific background concentration of 5 µg/L due to the reduction of the VDEQ-calculated ACL to 4.695 µg/l. Total cobalt has been detected consistently at concentrations greater than the recently revised GPS of 5 µg/l in plume monitoring well 7W13 and sporadically at concentrations greater than the revised GPS in point of compliance well 7WCA.

During teleconferences on November 9, 2011 and November 17, 2011, the VDEQ recommended Radford AAP submit an alternate source demonstration (ASD) for total cobalt concentrations detected in groundwater at HWMU-7. The results of this ASD support the conclusion that the total cobalt concentrations observed in wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable sources based on the following:

- Statistical trend analysis results show there are no increasing trends of total cobalt concentrations in groundwater in point of compliance well 7WCA and in plume well 7W13 and that the total cobalt concentrations in both wells are stable.
- Cobalt is widely observed at significant concentrations in non-waste derived materials used for construction, operation and closure of the Unit.
- Based on the results of the 2001 Facility-Wide Background Study, cobalt occurs naturally within the native soils at Radford AAP at concentrations that are more than three orders of magnitude greater than the highest concentration (on a relative weight percent basis) detected in groundwater at HWMU-7.
- Cobalt is typically found as a trace element within the type of bedrock (dolomite) within which monitoring wells 7WCA and 7W13 are screened.
- Groundwater analytical data from upgradient wells serving multiple additional waste management units at Radford AAP confirm that cobalt occurs naturally within the alluvium and carbonate bedrock aquifers at naturally variable concentrations throughout the Facility.

Based on the information presented above, it is reasonable to conclude that the total cobalt concentrations observed in groundwater monitoring wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable trace elements in the aquifer solid matrix, and not from a temporally-varying source such as a release from the closed HWMU-7. Further, it is noted that detections of total cobalt concentrations greater than the Unit's revised GPS of 5 µg/l are not the result of changes in groundwater quality, but due instead to the reduction of the risk-based ACL for cobalt from 156.65 µg/l to 4.695 µg/l. No other constituents have been detected in groundwater at HWMU-7 at concentrations greater than their respective GPS. Therefore, it is our professional opinion that HWMU-7 meets the requirements for clean closure for groundwater.

## 1.0 INTRODUCTION

This report presents the results of an alternate source demonstration (ASD) for total cobalt concentrations detected in groundwater at Hazardous Waste Management Unit 7 (HWMU-7) located at the Radford Army Ammunition Plant (Radford AAP) in Radford, Virginia. Draper Radford AAP prepared this ASD as recommended by the Virginia Department of Environmental Quality (VDEQ) during teleconferences on November 9, 2011 and on November 17, 2011.

In August 2007, Radford AAP submitted a request for a Class 3 permit modification for the Post Closure Care Permit (Permit) for Hazardous Waste Management Units 5, 7, 10, and 16. The Class 3 permit modification request included a closure plan amendment for HWMU-7 to allow Radford AAP to pursue clean closure for soil and groundwater at the Unit. The VDEQ approved the Class 3 permit modification in correspondence dated September 27, 2011. The approved Class 3 permit modification reduced the GPS for total cobalt at HWMU-7 from the previous VDEQ-calculated Alternate Concentration Limit (ACL) of 156.65 µg/L to the site-specific background concentration of 5 µg/L; this revision occurred due to the reduction of the VDEQ-calculated ACL for total cobalt from 156.65 µg/l to 4.695 µg/l. Total cobalt was never detected at concentrations greater than the previous GPS of 156.65 µg/l in any of the monitoring wells at HWMU-7. However, total cobalt has been detected consistently at concentrations greater than the revised GPS of 5 µg/l in plume monitoring well 7W13 and sporadically at concentrations greater than the revised GPS in point of compliance well 7WCA, thus complicating the pending demonstration for clean closure for groundwater at the Unit.

In correspondence dated October 4, 2011, Radford AAP provided the VDEQ with a summary of groundwater, soil, and sediment data collected at the Facility supporting the conclusion that the total cobalt concentrations observed in wells 7W13 and 7WCA at HMWU-7 are the result of natural variation within the carbonate bedrock aquifer and are not indicative of a release from the Unit. On November 9, 2011, Radford AAP held a teleconference with VDEQ to discuss the October 4, 2011 submittal as well as additional data that may be needed to support clean closure of the Unit. During the November 9, 2011 teleconference and a subsequent teleconference on November 17, 2011, the VDEQ indicated that an ASD would be the most appropriate mechanism by which to evaluate the total cobalt concentrations detected in groundwater at HWMU-7. As indicated by the VDEQ during the November 2011 teleconferences, Radford AAP will be able to pursue clean closure for groundwater at HWMU-7 should the ASD adequately demonstrate that the detected total cobalt concentrations are the result of natural variation within the aquifer.

# 2.0 FACILITY DESCRIPTION

## 2.1 Facility Location

Radford AAP is located in the mountains of southwestern Virginia within Pulaski and Montgomery Counties. The installation consists of two noncontiguous areas - the Radford Unit (or Main Section) and the New River Ammunition Storage Area Unit. The Main Section is located approximately 4 miles northeast of the city of Radford, approximately 10 miles west of Blacksburg, and 47 miles southwest of Roanoke, Virginia. The New River Unit is located approximately 6 miles west of the Main Section, near the town of Dublin, Virginia. All uses of the terms "Radford AAP" or "the Facility" in this document refer to the Main Section only.

Radford AAP is situated in one of a series of narrow valleys typical of the Valley and Ridge physiographic province of the Appalachian Highland Region of North America. Radford AAP is divided by the New River into two areas (**Figure 1**). The southern area, which comprises approximately two-thirds of Radford AAP, is called the "Main Plant Area." The remaining northern one-third section is called the "Horseshoe Area," and is located within the meander of the New River. As shown in **Figure 1**, forty three (43) Solid Waste Management Units (SWMUs) and eight (8) HWMUs are located in both the Main Plant Area and the Horseshoe Area; HWMU-7 is located in the Main Plant Area.

## 2.2 Hydrogeologic Framework

### 2.2.1 Geologic Setting

The general geology at Radford AAP consists of limestone/dolomite bedrock covered by weathered residual deposits and/or alluvial deposits. The alluvial deposits consist of typical fluvial deposits of interbedded clay, silt, and sand/gravel deposits with cobble lenses. The thickness of the alluvial deposits ranges from a few feet to approximately 50 feet, with an average thickness of 20 feet. The residual deposits consist of clay, silt, and clasts resulting from the physical and chemical weathering of the parent bedrock. The residual deposits typically underlie the alluvium, except in locations where the residuum has been eroded to bedrock and replaced by alluvium. The thickness of the residual deposits ranges from a few feet to approximately 40 feet. Underlying the alluvium and residuum throughout most of Radford AAP is a series of dolomite, limestone, and shale strata known as the Cambrian-aged Elbrook Formation. The Elbrook formation is the major outcropping formation as well as the predominant karstic formation below the Facility. Sinkholes, solution channels, pinnacled surfaces, and springs are common to the Elbrook Formation.

*Fracture Trace Analysis*

A total of 66 fracture traces were identified within and around Radford AAP in a photogeologic study conducted by the USEPA's Environmental Photographic interpretation center (EPIC) in 1992. Fracture traces are linear features identified in aerial photographs that represent the surface expression of primary joint sets, major fractures, and/or zones of fracturing in the subsurface. These features may be expressed as soil-tonal variations and vegetational and topographical alignments, and are significant in consideration of groundwater flow at Radford

AAP. The fractures and joint sets can act as discrete conduits for groundwater flow, increasing flow rates, and in some cases, redirecting flow away from the expected flow direction. In karst terrains, such features are environmentally significant because solutionization and resulting conduits develop along bedding plans as well as fractures and joints.

The primary traces identified at Radford AAP in the 1992 USEPA EPIC study are illustrated on the **Figure 2**. The bedding plane structures, seen as ledges in the New River channel, are also illustrated on **Figure 2**.

*Sinkhole Delineation*

The locations of sinkholes at Radford AAP were also mapped during the 1992 USEPA EPIC study (**Figure 2**). In the vicinity of Radford AAP, the strike of bedding in the Elbrook Formation is roughly west/northeast, with dips to the south/southeast. As shown on the Fracture Trace Map, the orientation of bedding can be seen in the nearly east-west alignment of sinkholes at Radford AAP and surrounding areas. Most of the sinkholes in the area are oval shaped and elongated with respect to the strike of bedding planes. In some instances, the sinkholes appear to align with respect to the fracture traces. The sinkholes most likely represent bedrock units with a greater carbonate content and lower shale content within the underlying Elbrook formation (USEPA, 1992).

*Dye Trace Study*

In September 1993 through December 1993, Engineering-Science, Inc. of Fairfax, Virginia (ESI) conducted a dye-trace test to identify hydrologic connections between areas of groundwater recharge (upland sinkholes) in the south-central portion of Main Plant and their respective discharge areas around the Facility. The south-central portion of the Main Plant area is characterized by sinkholes and a deep water table. The karst development within the underlying folded limestone and dolomite of the Elbrook Formation likely has a significant influence on groundwater flow through the bedrock in this area. The flow route as determined by the dye trace study and suggested by the fractures traces and regional groundwater flow is illustrated in **Figure 2**.

### 2.2.2 Occurrence of Groundwater

The general hydrogeological setting at Radford AAP is characterized by porous alluvial sediments overlying weathered and unweathered dolomite and limestone. In areas where the porous alluvial sediments are the uppermost water-bearing zone, groundwater flow is generally from topographically high areas to topographically low areas. In some areas of Radford AAP, the uppermost water-bearing zone is within the limestone and dolomite bedrock. The karst features within the bedrock aquifer can provide conduits for rapid transport of groundwater to the New River, which is the discharge area for regional groundwater flow.

Seasonal variations in precipitation can affect the direction of groundwater flow within the bedrock aquifer at Radford AAP. During wet seasons (high flow conditions), groundwater flow may occur in higher elevation conduits that are not normally saturated during dry seasons (low

flow conditions). As a result, flow may short-circuit the predominant flow paths and be redirected, discharging in unexpected areas.

In addition to seasonal variations, groundwater levels within the bedrock aquifer may fluctuate dramatically during heavy precipitation events. Groundwater levels in the karst bedrock aquifer generally respond to heavy precipitation within approximately 14 hours, and may rise several feet in a short time (Engineering-Science, 1994). This condition exists throughout Radford AAP, especially in areas where surface water infiltrates through these conduits, stormwater infiltrating in the uplands of the Facility may discharge to the New River in a matter of a few days following a storm event. The turbulent flow created by these conditions aerates the infiltrating water. The increased $O_2$ content can significantly affect the chemistry of the groundwater, increasing the concentration of many commonly occurring inorganic analytes. It is this direct connection between surface water and groundwater and the rapid movement of groundwater through the aquifer that is vital to interpreting the migration of both naturally occurring and released constituents in the groundwater at Radford AAP.

## 3.0 HAZARDOUS WASTE MANAGEMENT UNIT 7

### 3.1 Unit Description and History

HWMU-7 is a former unlined holding and neutralization basin located on the floodplain of the New River. A Site Plan for HWMU-7 is illustrated in **Figure 3**. Intermittent drainages are located to the north and south of the Unit, and the New River is located approximately 225 feet to the west of the Unit.

HWMU-7 was put into operation in 1972. When HWMU-7 was in operation, the impoundment measured approximately 90 feet wide by 160 feet long by 12 feet deep (side slope at 2:1). The resulting maximum capacity of the Unit was 566,131 gallons (75,685 cubic feet or 2,803 cubic yards). During operation, influent into HWMU-7 included spills, runoff, and wash down waters from the Acid Tank Farms in the Oleum Plant Area; waste sulfuric acid and caustics from oleum production; and waste caustic mixed with acidic water for neutralization. The wastes were characteristically hazardous as corrosive (EPA I.D. No. S04). The acidic waste waters were both nitric ($NO_3$) and sulfuric ($SO_4$) in origin with a pH ranging from 1.5 to 1.6 and a dominant constituent of mixed acids. The waste caustics were also corrosive in characteristic (pH >12.5), resulting in a similar EPA designation of D002. The dominant constituent of the caustic wastes was sodium hydroxide. The relative abundance of both waste streams was less than 1 percent.

Radford AAP ceased operation of HWMU-7 in 1986 and closed the Unit in 1989 in accordance with the VDEQ-approved Closure Plan dated May 1988. At the time of closure, HWMU-7 was drained of all waters, the residual material was treated in-place with flyash and cement kiln dust to achieve a target pH range of 6.3 and 10.5, and the basin was filled with the residual material and stone and capped. No waste has been processed through HWMU-7 since it was closed.

The closed HWMU-7 consists of a mound measuring approximately 90 feet wide by 160 feet long by 7 feet high, with a bottom elevation of approximately 1,711.1 feet above msl and a top elevation of approximately 1,718.3 feet above msl. The closed HWMU-7 is capped with a composite liner, which is underlain by the neutralized residual material. The residual material in turn is underlain by a clay liner ranging in thickness from 1.75 feet to 3 feet throughout most of the Unit. At the northern end of the Unit, the neutralized residual material is underlain by native soils.

Certifications of closure for HWMU-7 were submitted to the VDEQ in letters dated October 26, 1989 and January 4, 1990. Following closure, Radford AAP monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the May 1988 Closure Plan. HWMU-7 was classified as an interim status Unit until the VDEQ issued the ***Post-Closure Permit for Hazardous Waste Management Unit 7*** (effective date October 30, 1999); the VDEQ subsequently revised the October 1999 ***Post-Closure Permit***, and issued the ***Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16*** (October 4, 2002). Since 1999, Radford AAP has monitored HWMU-7 in accordance with the post-closure care and groundwater monitoring procedures specified in the ***Post-Closure Permits***, as appropriate.

## 3.2 Unit Hydrogeology

The compliance groundwater monitoring well network is illustrated in **Figure 3**. The compliance groundwater monitoring network consists of one upgradient well (7W12B), three point of compliance (POC) wells (7WCA, 7MW6, and 7W11B), four plume monitoring wells (7W9C, 7W10B, 7W10C, and 7W13), and three observation wells used only for the measurement of static water levels (7MW5, 7W9B, and 7W11). The monitoring wells are screened entirely within alluvium, weathered carbonate bedrock residuum, or carbonate bedrock or across the interfaces between two of the listed strata. Copies of the monitoring well boring logs and construction diagrams are included in **Appendix A**.

Groundwater elevation (potentiometric surface) and flow direction at HWMU-7 during the Second Quarter 2011 semiannual groundwater monitoring event are illustrated in **Figure 3**. Groundwater at the Unit is encountered at an average depth of 22 feet below ground level (bgl) with the water table generally located within the weathered bedrock residuum. Groundwater fluctuation in this zone typically does not exceed 1 to 2 feet annually over most of the site. Groundwater movement beneath the Unit is generally to the west towards the New River and to the northeast and southwest toward the unnamed intermittent drainages that flow into the New River north and south of the site.

Geologic cross sections for HWMU-7 are presented in **Appendix A**. Like most of Radford AAP, HWMU-7 is underlain by carbonate bedrock of the Elbrook Formation. Bedrock is generally encountered at a depth ranging from 29 to over 65 feet below the unit, with alluvial sediments and weathered bedrock residuum overlying the bedrock. The bedrock surface is characterized by depressions and pinnacles resulting from differential physical and chemical weathering influenced primarily by the depositional and mineralogical variations within the carbonate unit (shaley vs. crystalline carbonate). The shaley units of the Elbrook Formation tend to be more resistant, resulting in pinnacles or bedrock highs. As shown on the Geologic Cross Sections (**Appendix A**), the bedrock beneath the Unit appears to slope downward to the southwest, northwest, and northwest toward the intermittent drainages and the New River. HWMU-7 rests upon lower level terrace and flood plain deposits consisting of mixed silts, sands, gravels, and cobbles. The area around HWMU-7 is characterized by the development of sinkholes without any apparent alignment or preferred orientation. Bedrock bedding plane ledges identified during the fracture trace analysis that are located immediately upstream of HWMU-7 exhibit a west-northwest to east-southeast trend. It is probable that there are well developed karst conduits along these bedrock bedding planes which convey aerated surface water to the subsurface fairly rapidly during precipitation events.

## 3.3 Total Cobalt Concentrations in Groundwater

### 3.3.1 Groundwater Analytical Data – 2002-2011

Total cobalt concentrations detected in groundwater samples collected from the compliance groundwater monitoring network at HWMU-7 from Fourth Quarter 2002 through Fourth Quarter 2011 are summarized in **Table 1** (the initial GPS for total cobalt at HWMU-7 was established in the *Final Hazardous Waste Post-Closure Permit for HWMUs 5, 7, 10, and 16* dated October 4, 2002 [Fourth Quarter 2002]). As shown in **Table 1**, total cobalt has been detected sporadically

in POC well 7WCA at concentrations greater than revised GPS of 5 µg/l, but it has not been detected in upgradient well 7W12B or in POC wells 7MW6 and 7W11B at a concentration greater than 5 µg/l. With respect to the plume wells total cobalt has been detected consistently in well 7W13 at concentrations ranging from 5.3 µg/l to 16.4 µg/l, but it has not been detected in the other plume wells (**Table 1**).

### 3.3.2 Compliance Monitoring Well Network Sediment Sampling

In a meeting between Radford AAP and VDEQ on May 4, 2011, the VDEQ directed Radford AAP to collect sediment samples from each well in the monitoring network, to redevelop well 7W13 to reduce turbidity in order to evaluate the influence of sediment on total cobalt concentrations in groundwater, and to collect two (2) independent samples from well 7W13 to evaluate total cobalt concentrations following well redevelopment. As directed by VDEQ during the May 4, 2011 meeting, Radford AAP collected sediment samples from each well in the monitoring network on June 23, 2011. Copies of the field notes describing each sediment sample are included in **Appendix B**. The laboratory analytical results for the June 2011 sediment samples are summarized in **Table 2**. As shown in **Table 2**, the sediment sample collected from plume monitoring well 7W13 exhibited a total cobalt concentration of 10,700 µg/kg, which is approximately 1,137 times greater than the Second Quarter 2011 total cobalt concentration of 9.41 µg/l detected in well 7W13. The sediment sample collected from point of compliance well 7WCA exhibited the highest concentration of total cobalt (226,000 µg/kg). Copies of the field notes describing each sediment sample along with the laboratory certificates of analysis and data validation report,are included in **Appendix B**.

### 3.3.3 Plume Monitoring Well 7W13 Redevelopment and Sampling

On June 29-30, 2011, Radford AAP re-developed plume monitoring well 7W13 in an effort to reduce turbidity and collected a groundwater samples for laboratory analysis in order to evaluate the influence of sediment on total cobalt concentrations in groundwater in the well. Following redevelopment, the June 30, 2011 groundwater sample collected from well 7W13 exhibited a turbidity reading of 11.6 NTU and a total cobalt concentration of 12.4 µg/l, which was comparable with the Second Quarter 2011 concentration of 9.41 µg/l. On July 27, 2011, Radford AAP collected an additional groundwater sample from well 7W13 to evaluate the effectiveness of redevelopment of the well; the July 27, 2011 groundwater sample was analyzed for total and dissolved cobalt. The July 27, 2011 groundwater sample from well 7W13 exhibited a turbidity reading of 8.8 NTU, a total cobalt concentration of 14.5 µg/l, and a dissolved cobalt concentration of 13.7 µg/l (again, comparable to the Second Quarter 2011 total cobalt concentration of 9.41 µg/l). Based on these results, it appears that the redevelopment efforts did not significantly affect the total cobalt concentration in well 7W13. Copies of the field notes for the June 2011 and July 2011 well redevelopment and sampling events along with the laboratory certificates of analysis and data validation reports are included in **Appendix B**.

## 4.0 ALTERNATE SOURCE DEMONSTRATION FOR TOTAL COBALT

As indicated by the VDEQ during the November 2011 teleconferences, Radford AAP will pursue clean closure for groundwater at HWMU-7 should the ASD adequately demonstrate that the total cobalt concentrations detected in POC well 7WCA and in plume monitoring well 7W13 are the result of natural variation within the carbonate bedrock aquifer. The information provided in the following sections supports the reasonable conclusion that the total cobalt concentrations observed in wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable sources including the aquifer media, and not a temporally-varying source such as a release from the closed Unit.

### 4.1 Trend Analysis of Total Cobalt Concentrations in Groundwater

As shown in **Table 1**, total cobalt has been detected sporadically in POC well 7WCA and consistently in plume well 7W13 at concentrations greater than revised GPS of 5 µg/l. A concentration versus time graph of the total cobalt concentrations detected from Fourth Quarter 2002 through Fourth Quarter 2011 is included as **Figure 4**. Visual observation of **Figure 4** indicates that the total cobalt concentrations detected in POC well 7WCA appear to be stable, and that the total cobalt concentrations detected in plume monitoring well 7W13 appear to have no notable, systematic trend.

Statistical trend analyses were also completed on the total cobalt concentrations in wells 7WCA and 7W13 using the data from the last 5 years (consistent with VDEQ's general statistical trend analysis guidelines for such circumstances). Since total cobalt has not been detected above its quantitation limit over the last five years in the other monitoring wells, no trend analyses were required in those cases. The trend analysis results show there are no increasing trends and that the total cobalt concentrations in both POC well 7WCA and plume well 7W13 are stable (**Appendix C**).

### 4.2 Review of HWMU-7 Monitoring Well Boring Logs

A review of the boring logs for the groundwater monitoring well network at HWMU-7 (**Table 3**) indicates that upgradient well 7W12B and POC well 7W11B are screened within alluvium (silt, sand, and gravel) and dolomite, while POC well 7WCA and plume monitoring well 7W13 are screened entirely within dolomite. Diagenesis of parent carbonate-rich sediments to form dolomites incorporates trace-element rich fluids in the rock-forming process. Therefore, dolomite bedrock is typically enriched in a variety of trace elements including arsenic, barium, cadmium, chromium, cobalt, copper, lead, nickel, uranium, vanadium, and zinc. Copies of the monitoring well boring logs and construction diagrams are included in **Appendix A**.

### 4.3 HWMU-7 Residual Material and Soil Concentrations

In November 2002, Radford AAP conducted a subsurface investigation at HWMU-7 to evaluate the nature and extent of the residual material contained in the closed Unit. In February 2004, Radford AAP conducted an additional subsurface investigation at HWMU-7 as directed by the VDEQ to evaluate the soil and liner material beneath the residual material. The Soil Sample Location Plan for HWMU-7 is included as **Figure 5**. The analytical results from both

investigations are summarized in **Table 4**. Cobalt was detected in only one sample of the residual material, at a concentration of 12.5 mg/kg. Cobalt was also detected in the soil cap for the Unit at a concentration of 11.5 mg/kg, within the bottom clay liner at concentrations ranging from 8.2 mg/kg to 23.6 mg/kg, and within the native soil underlying the Unit at concentrations ranging from 6.6 mg/kg to 10.4 mg/kg. These results indicate that cobalt is widely observed at significant concentrations in non-waste native materials underlying the closed Unit, or in materials used for construction, operation and closure of the Unit that were not affected by waste, further demonstrating a naturally-occurring source of cobalt to the local groundwater.

## 4.4 Facility-Wide Background Soil Concentrations

In August and September 2001, the IT Corporation conducted a Facility-Wide Background Study at the Main Manufacturing Area and the New River Unit of Radford AAP in accordance with a USEPA Region III-approved Work Plan; the primary objective of the study was to collect soil samples representative of background conditions to establish a baseline for inorganic constituents of concern at Radford AAP. Radford AAP has established the validity of the Facility-Wide Background Report with the VDEQ and USEPA Region III, and has substantial documentation regarding VDEQ and USEPA Region III approval of the study and its use as a screening tool for soils at the Facility.

The Facility-wide background values for the inorganic constituents of concern as calculated from background soil samples collected from the Main Manufacturing Area at Radford AAP (in which HWMU-7 is located) are summarized in **Table 5**. As shown in **Table 5**, the calculated Facility-wide background concentration for cobalt in soil within the Main Manufacturing Area is 72.3 mg/kg (72,300 µg/kg), or 4,400 times greater than the highest total cobalt concentration detected in groundwater at HWMU-7 (16.4 µg/l in well 7W13, **Table 1**). The calculated Facility-wide background concentration for cobalt in soil within the Main Manufacturing Area is also three times greater than the highest concentration detected in soil samples collected from the clay liner beneath HWMU-7 (**Table 4**). These results further support the conclusion that cobalt observed in the local groundwater is derived from naturally-occurring sources.

## 4.5 Total Cobalt in Groundwater at Additional Radford AAP Units

During the November 9, 2011 teleconference, the VDEQ recommended Radford AAP evaluate existing groundwater data from other Units at the Facility for the presence and concentration of total cobalt. Radford AAP evaluated groundwater data for the following solid waste management units (SWMUs), HWMUs, and areas of concern, which are listed in order of proximity to HWMU-7 (**Figure 1**):

- SWMU-37;
- SWMU-38 and AOC-Q;
- Oleum Plant;
- SWMUs 17, 40, 76, and Former Lead Furnace Area (FLFA);
- HWMU-5;
- HWMU-10; and
- HWMU-16.

Of the Units listed above, SWMUs 37, 38, and AOC-Q are located immediately northeast of HWMU-7 (**Figure 1**). The Oleum Plant is located approximately 750 feet east (topographically upgradient) from HWMU-7. SWMUs 17, 40, 76, and the FLFA are located approximately 3700 feet southeast (topographically upgradient) from HWMU-7. HWMU-5 is located approximately 3900 feet east-southeast from HWMU-7, HWMU-10 is located approximately 5000 feet northeast from HWMU-7, and HWMU-16 is located approximately 7500 feet northeast and across the New River from HWMU-7.

Total cobalt results for groundwater samples collected from only the upgradient (background) wells serving the Units listed above were evaluated in an effort to assess naturally-occurring total cobalt concentrations in the aquifer unaffected by the presence of the Units. The total cobalt concentrations observed in the upgradient wells at these Units are summarized in **Table 6**. Additionally, the lithologies in which the upgradient wells are screened (based on a review of the boring logs/construction diagrams) are also summarized in **Table 6**.

As shown in **Table 6**, a review of groundwater data for HWMU-7 from 1996 to 2011 indicates that total cobalt has been detected in upgradient well 7W12 at concentrations from less than the QL of 5 µg/L up to 17 ug/L. At SWMU-37, total cobalt was detected at a concentration of 12 µg/l in upgradient well 37MW2 during RCRA Facility Investigation activities conducted at the Unit in 2008 (**Table 6**). According to the monitoring well installation details for SWMU-37, upgradient well 37MW2 is screened in unconsolidated alluvial sediments and carbonate bedrock similar to HWMU-7 upgradient well 7W12B. Additionally, total cobalt was detected at a concentration of 26.9 µg/L in upgradient well 17MW02 during investigation activities conducted at SWMUs 17, 40, 76, and the FLFA in 2007 (**Table 6**). According to the monitoring well installation details for SWMU-17, upgradient well 17MW02 is screened in carbonate bedrock. A dye trace study conducted by ESI in 1993 indicates that groundwater in the vicinity of SWMUs 17, 40, 76, and the FLFA flows northeast via karst conduits to discharge into the New River. Low level total cobalt concentrations also have been detected in the upgradient wells serving SWMU-38, AOC-Q, the Oleum Plant, HWMU-5, HWMU-10, and HWMU-16 during previous investigations (**Table 6**). The groundwater data from the upgadient wells serving these multiple waste management units indicate that cobalt occurs naturally within the alluvium and carbonate bedrock aquifers at naturally variable concentrations throughout the Facility.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

The recently approved Class 3 permit modification reduced the GPS for total cobalt at HWMU-7 from the previous VDEQ-calculated ACL of 156.65 µg/L to the site-specific background concentration of 5 µg/L due to the reduction of the VDEQ-calculated ACL to 4.695 µg/l. Total cobalt has been detected consistently at concentrations greater than the recently revised GPS of 5 µg/l in plume monitoring well 7W13 and sporadically at concentrations greater than the revised GPS in point of compliance well 7WCA.

Statistical trend analysis results show there are no increasing trends of total cobalt concentrations in groundwater in POC well 7WCA and in plume well 7W13 and that the total cobalt concentrations in both wells are stable. Cobalt is widely observed at significant concentrations in non-waste derived materials used for construction, operation and closure of the Unit. Furthermore, based on the results of the 2001 Facility-Wide Background Study, cobalt occurs naturally within the native soils at Radford AAP at concentrations that are more than three orders of magnitude greater than the highest concentration (on a relative weight percent basis) detected in groundwater at HWMU-7. Additionally, cobalt is typically found as a trace element within the type of bedrock (dolomite) within which monitoring wells 7WCA and 7W13 are screened. Groundwater analytical data from upgradient wells serving multiple additional waste management units at Radford AAP confirm that cobalt occurs naturally within the alluvium and carbonate bedrock aquifers at naturally variable concentrations throughout the Facility.

Based on the information presented above, it is reasonable to conclude that the total cobalt concentrations observed in groundwater monitoring wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable trace elements in the aquifer solid matrix, and not from a temporally-varying source such as a release from the closed HWMU-7. Further, it is noted that detections of total cobalt concentrations greater than the Unit's revised GPS of 5 µg/l are not the result of changes in groundwater quality, but due instead to the reduction of the risk-based ACL for cobalt from 156.65 µg/l to 4.695 µg/l. No other constituents have been detected in groundwater at HWMU-7 at concentrations greater than their respective GPS. Therefore, it is our professional opinion that HWMU-7 meets the requirements for clean closure for groundwater.

## REFERENCES


Draper Aden Associates. 1999. *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 16* dated July 1999. Radford Army Ammunition Plant, Radford, Virginia.

Draper Aden Associates. 1999. *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 5* dated August 1999. Radford Army Ammunition Plant, Radford, Virginia.

Ecology and Environment, Inc. (E&E). 2007. *Environmental Baseline Study for the Oleum Plant Site - Final* dated October 2007. Radford Army Ammunition Plant, Radford, Virginia.

Engineering-Science, Inc. (ESI). 1994. *Dye-Tracing Study Report, Radford Army Ammunition Plant, Contract No. DAA15-90-D-0008* dated March 1994.

Environmental Resources Management, Inc. (ERM). *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 7* dated August 1998. Radford Army Ammunition Plant, Radford, Virginia.

Radford Army Ammunition Plant Installation Restoration Program. Website address: http://www.radfordaapirp.org/inforepo/online-index.htm.

Shaw Environmental, Inc. (Shaw). 2008. *Former Lead Furnace Area RCRA Facility Investigation/Corrective Measures Study Report - Final Document* dated November 2008. Radford Army Ammunition Plant, Radford, Virginia.

URS. 2010. *Solid Waste Management Units 35, 37, 38, and Area of Concern Q (RAAP-10) RCRA Facility Investigation Report - Final* dated September 2010. Radford Army Ammunition Plant, Radford, Virginia.

## SIGNATURE/CERTIFICATION

*Prepared by:*

Name: Ross G. Miller, Senior Project Geologist

Signature:

Company: Draper Aden Associates

Address: 2206 South Main Street

City/State/Zip: Blacksburg, Virginia 24060-6600

*Virginia Professional Certification:*

I certify that I have prepared or supervised preparation of the attached report, that it has been prepared in accordance with industry standards and practices, and that the information contained herein is truthful and accurate to the best of my knowledge.

Name: Michael D. Lawless, Environmental Program Manager

Signature:

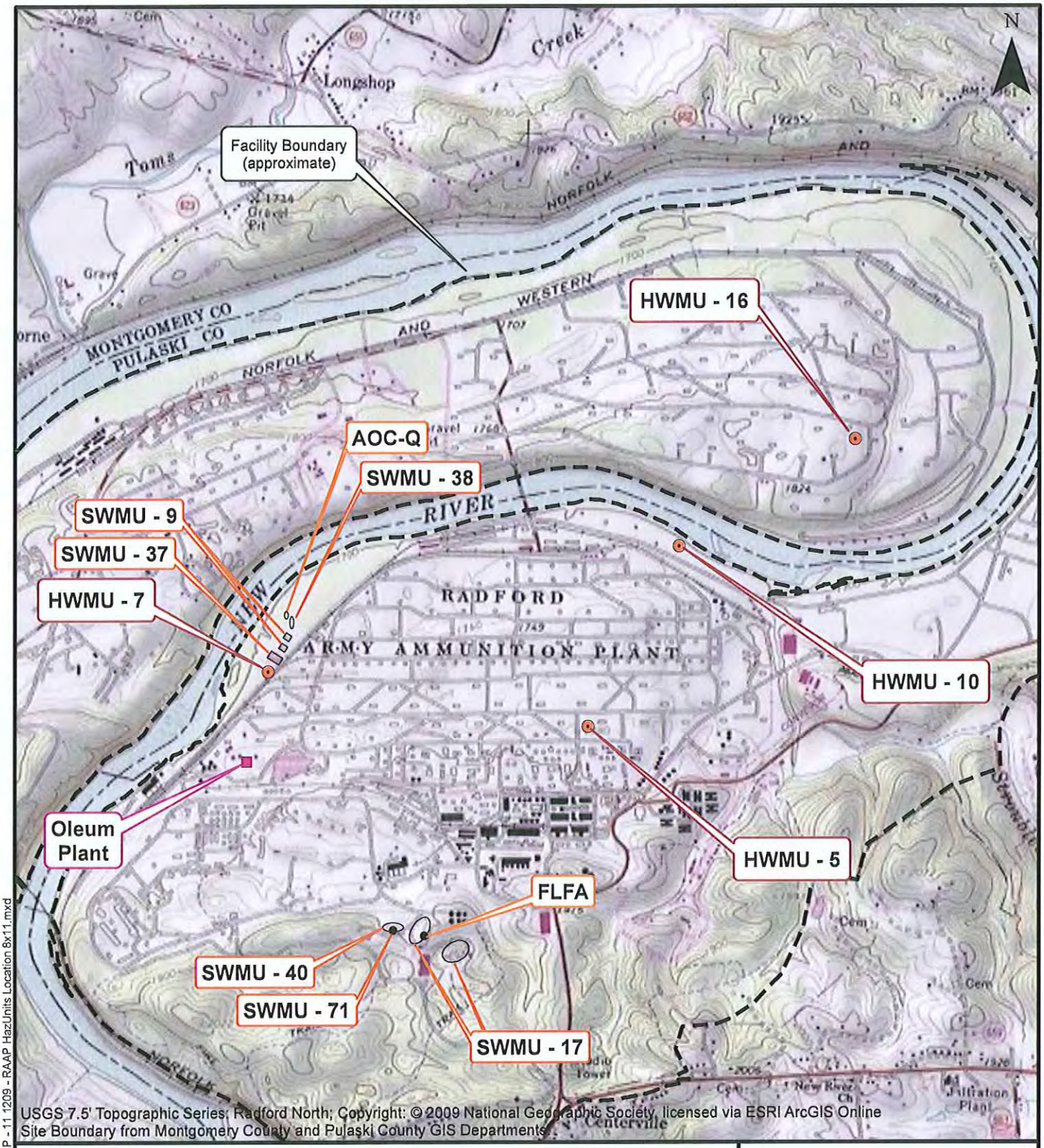
Virginia Professional Certification Type and Number: PG 832

Company: Draper Aden Associates

Address: 2206 South Main Street

City/State/Zip: Blacksburg, Virginia 24060-6600

**FIGURES**




Path: P:\B03\200\B03204\B03204-103\GIS\MAP - 11 1209 - RAAP HazUnits Location 8x11.mxd

## RAAP Solid Waste Management Unit Location Map

Radford Army Ammunition Plant - Montgomery and Pulaski Counties, Virginia

SCALE 1" = 2000'

PLAN NO. B03204-304B


Draper Aden Associates

Engineering ◆ Surveying ◆ Environmental Services

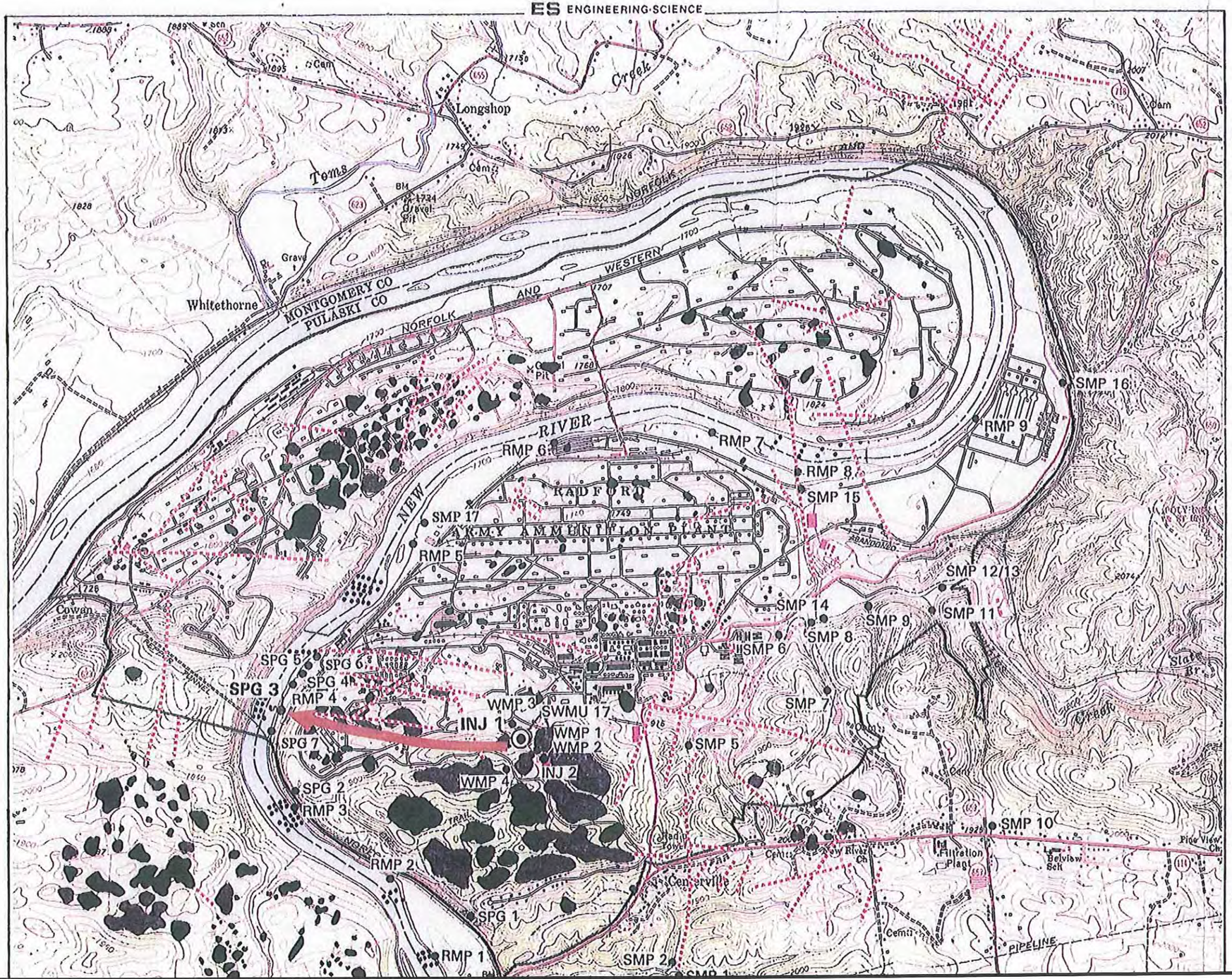
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA


DESIGNED RGM
DRAWN SMF
CHECKED MDL
DATE 09-22-11

FIGURE 1

# FIGURE 4.1
# DYE TRACE TEST RESULTS




**LEGEND**

- PROPERTY LINE
- FRACTURE TRACE
- BEDDING PLANE LEDGE
- SINKHOLE
- FLOW ROUTE AS DETERMINED BY D TRACE AND SUGGESTED BY FRACTU TRACES AND REGIONAL POTENTIOMETF CONTOURS
- DYE MONITORING POINT
- SPRING LOCATION
- DYE INJECTION LOCATION

NOTE: SMP STREAM MONITORING POI
SPG SPRING MONITORING POIN
WMP WELL MONITORING POINT
RMP RIVER MONITORING POINT

N

SOURCE: USEPA, 1992
USGS, RADFORD (NORTH) VIRGINIA QUADRANGLE

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Richmond, VA
Charlottesville, VA
Hampton Roads, VA

DESIGNED RGM
DRAWN JFF
CHECKED RGM
DATE 12-08-11

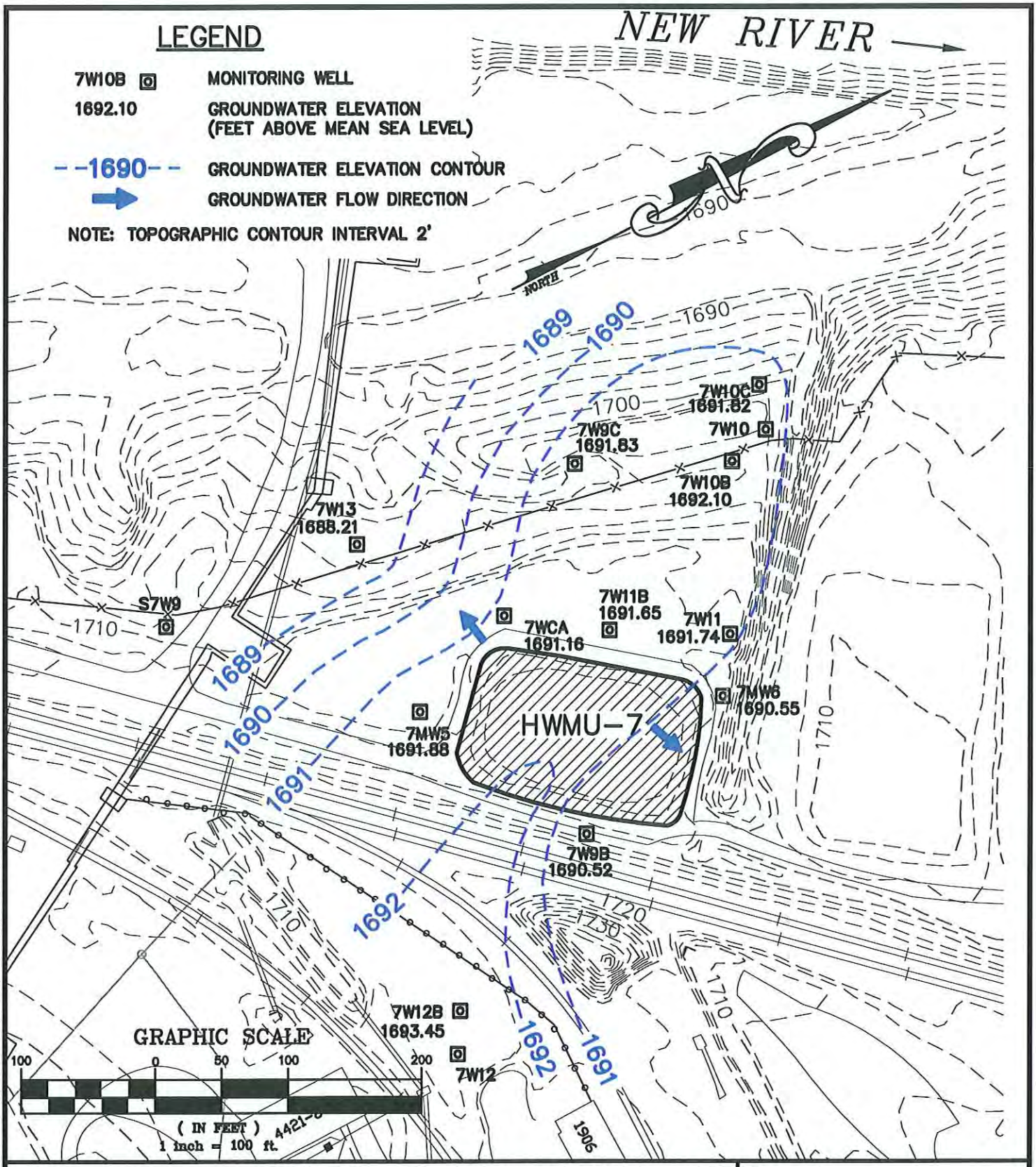
HWMU-7 DYE TRACE RESULTS - ESI 1994
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

SCALE: NONE

PROJECT: B03204-304B

FIGURE 2

P:\B03200\B03204\B03204-304B\CAD\B03204-304B ENV\dwg\B03204-304B_FIG2.dwg December 8, 2011 3:04:06 PM




HWMU-7 SITE PLAN/POTENTIOMETRIC SURFACE MAP (2ND QUARTER 2011)

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B03204-304


Draper Aden Associates

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Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

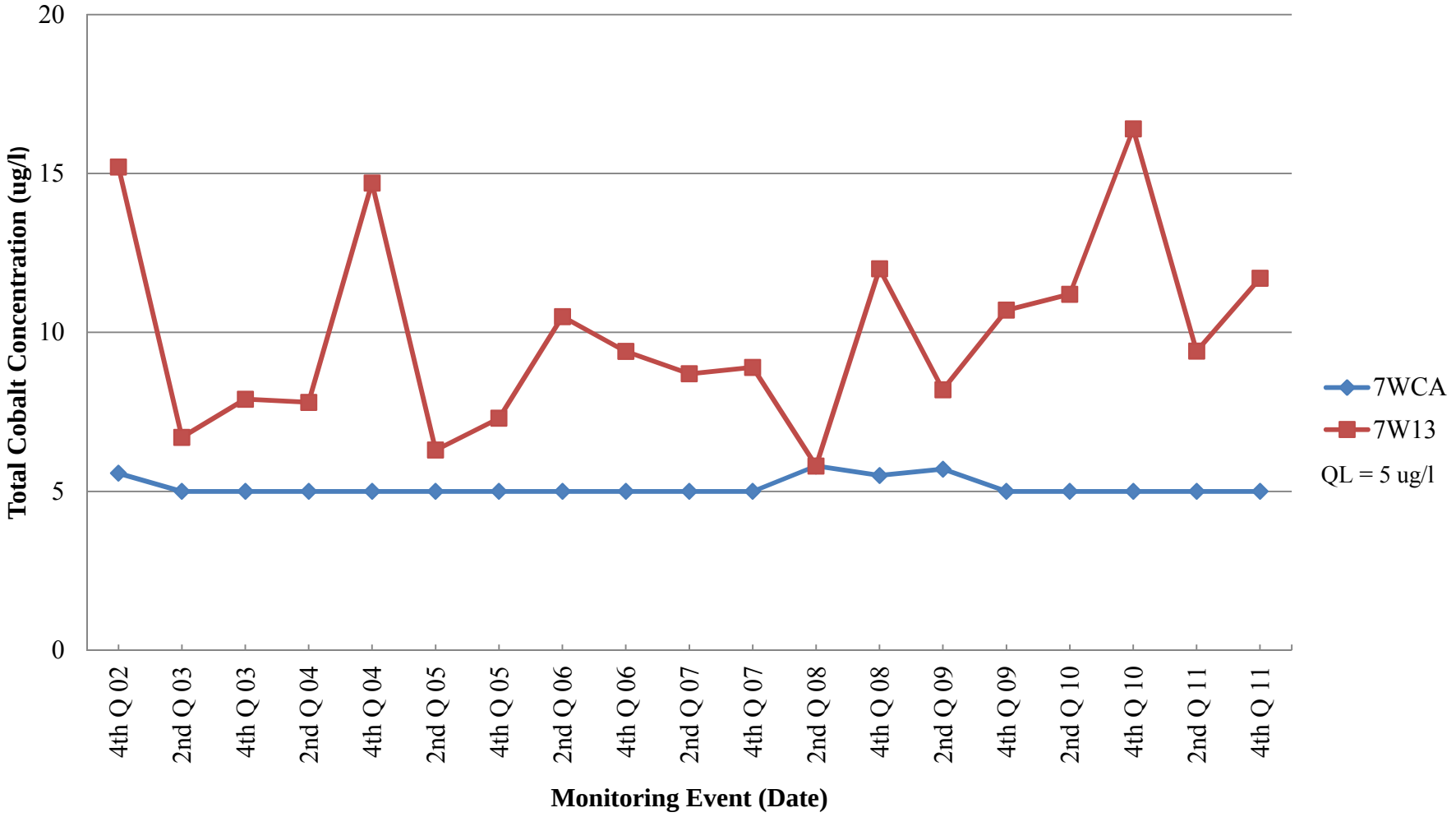
Richmond, VA
Charlottesville, VA
Hampton Roads, VA

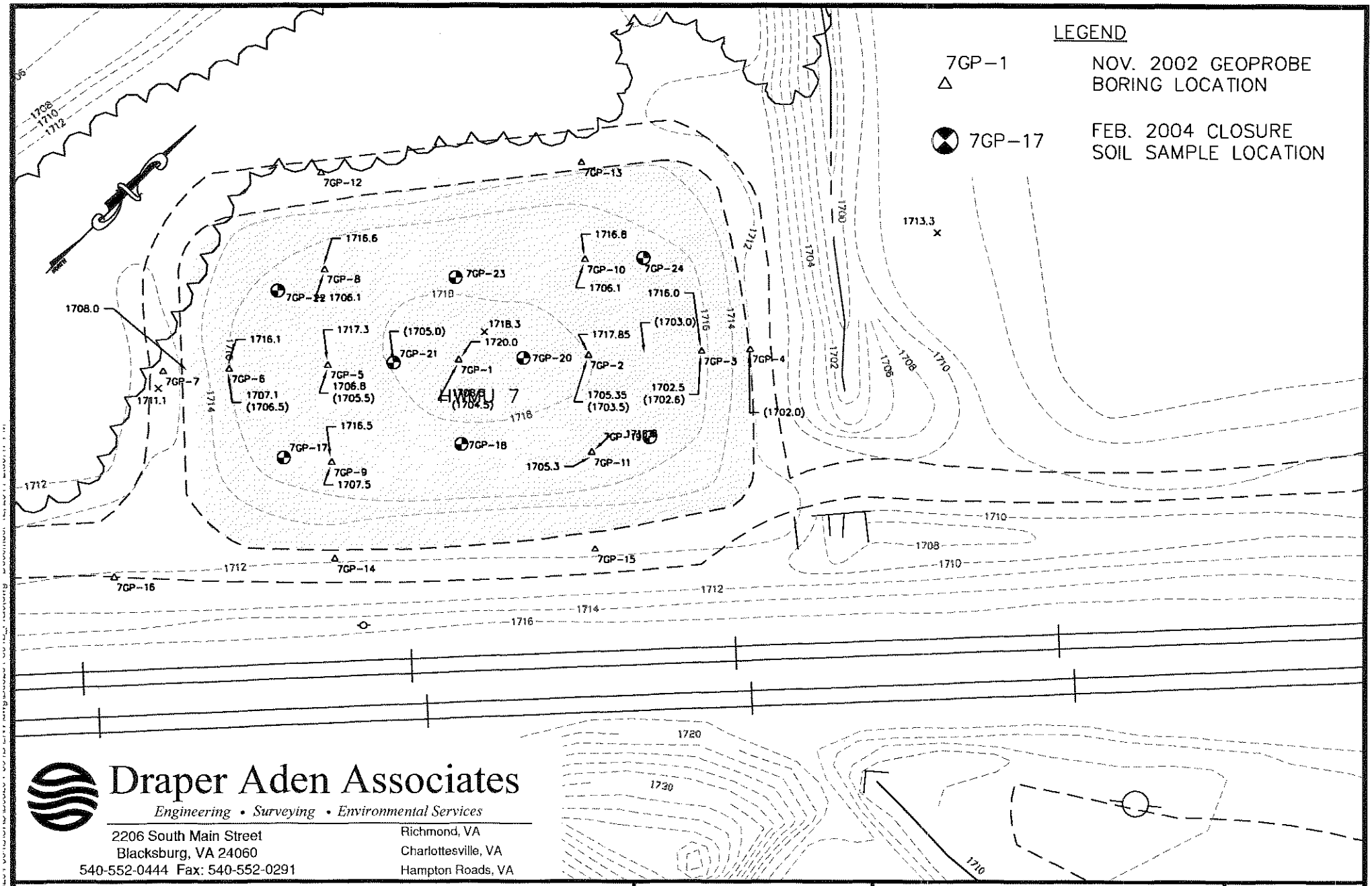

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | JFF |
| CHECKED | SN |
| DATE | 12-08-11 |

FIGURE 3

P:\B03200\B03204\B03204-304B\CAD\B03204-304B ENV\dwg\B03204-304B_HWMU-7-C3D.dwg Dec 08, 2011 3:04pm

# FIGURE 4
## Radford AAP Hazardous Waste Management Unit 7
## Total Cobalt in Groundwater
### Fourth Quarter 2002 - Fourth Quarter 2011
### Point of Compliance Well 7WCA
### Plume Monitoring Well 7W13







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Hampton Roads, VA


# HWNU-7 CLOSURE SOIL SAMPLE LOCATION PLAN

RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | JFF |
| CHECKED | RGM |
| DATE | 12-08-11 |

PROJECT: B03204-304B

SCALE: 1" = 40'

FIGURE 5

# TABLES

**TABLE 1**
**Radford AAP Hazardous Waste Management Unit 7**
**Total Cobalt in Groundwater**
**Fourth Quarter 2002 - Fourth Quarter 2011**

| Monitoring Event | Total Cobalt Concentrations in ug/l | | | | | | | | QL (ug/l) | GPS (ug/l) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 7W12B | 7MW6 | 7WCA | 7W11B | 7W9C | 7W10B | 7W10C | 7W13 | | |
| Fourth Quarter 2002 | U | U | **5.57** | U | U | U | U | **15.2** | 5 | 313 |
| First Quarter 2003 | U | U | **5.61** | U | U | U | U | **8.16** | 5 | 313 |
| Second Quarter 2003 | U | U | U | U | U | U | U | **6.7** | 5 | 313 |
| Third Quarter 2003 | U | U | U | U | U | U | U | **7.8** | 5 | 313 |
| Fourth Quarter 2003 | U | U | U | U | U | U | U | **7.9** | 5 | 313 |
| First Quarter 2004 | U | U | U | U | U | U | U | **7.6** | 5 | 313 |
| Second Quarter 2004 | U | U | U | U | U | U | U | **7.8** | 5 | 313 |
| Third Quarter 2004 | U | U | U | U | U | U | U | **8.2** | 5 | 313 |
| Fourth Quarter 2004 | U | U | U | U | U | U | U | **14.7** | 5 | 313 |
| First Quarter 2005 | U | U | U | U | U | U | U | **7.7** | 5 | 313 |
| Second Quarter 2005 | U | U | U | U | U | U | U | **6.3** | 5 | 313 |
| Third Quarter 2005 | U | U | U | U | U | U | U | **5.3** | 5 | 313 |
| Fourth Quarter 2005 | U | U | U | U | U | U | U | **7.3** | 5 | 313 |
| First Quarter 2006 | U | U | U | U | U | U | U | **7** | 5 | 313 |
| Second Quarter 2006 | U | U | U | U | U | U | U | **10.5** | 5 | 313 |
| Third Quarter 2006 | U | U | U | U | U | U | U | **7.5** | 5 | 313 |
| Fourth Quarter 2006 | U | U | U | U | U | U | U | **9.4** | 5 | 313 |
| First Quarter 2007 | U | U | **5** | U | U | U | U | **7** | 5 | 313 |
| Second Quarter 2007 | U | U | U | U | U | U | U | **8.7** | 5 | 313 |
| Fourth Quarter 2007 | U | U | U | U | U | U | U | **8.9** | 5 | 313 |
| Second Quarter 2008 | U | U | **5.8** | U | U | U | U | **5.8** | 5 | 156.65 |
| Fourth Quarter 2008 | U | U | **5.5** | U | U | U | U | **12** | 5 | 156.65 |
| Second Quarter 2009 | U | U | **5.7** | U | U | U | U | **8.2** | 5 | 156.65 |
| Fourth Quarter 2009 | U | U | U | U | U | U | U | **10.7** | 5 | 156.65 |
| Second Quarter 2010 | U | U | U | U | U | U | U | **11.2** | 5 | 156.65 |
| Fourth Quarter 2010 | U | U | U | U | U | U | U | **16.4** | 5 | 156.65 |
| Second Quarter 2011 | U | U | U | U | U | U | U | **9.41** | 5 | 156.65 |
| Fourth Quarter 2011 | U | U | U | U | U | U | U | **11.7** | 5 | 5 |

**NOTES:**
QL: Permit-specified Quantitation Limit.
GPS: Permit-specified Groundwater Protection Standard. The initial GPS for total cobalt at HWMU-7 was established in the Final Hazardous Waste Post-Closure Care Permit dated October 4, 2002 (Fourth Quarter 2002).
U: Not detected above the QL.
**BOLD** and yellow highlight denotes detected at or above QL.

**TABLE 2**
**HWMU-7, Radford AAP**
**Comparison of Total Cobalt Concentrations**
**Groundwater vs. Sediment Samples**

| Well ID | Total Cobalt Concentrations | |
|---|---|---|
| | Groundwater 2nd Qtr 2011 (ug/l) | Sediment June 23, 2011 (ug/kg) |
| 7W12B | U | 4,420 |
| 7MW6 | U | 9,010 |
| 7WCA | U | 226,000 |
| 7W11B | U | 11,000 |
| 7W9C | U | 4,410 |
| 7W10B | U | 48,400 |
| 7W10C | U | 5,860 |
| 7W13 | 9.41 | 10,700 |

**NOTES:**
U: Not detected above the QL of 5 ug/l.

**TABLE 3**

**Radford AAP - HWMU-7**

**Summary of Monitoring Well Network Boring Log Information**

| Well | Date Installed | Company Observing Install | Total Depth (ft) | Screen Length (ft) | Borehole Diameter (in) | Lithology Well Screened In* | Log Description | Notes |
|---|---|---|---|---|---|---|---|---|
| 7WCA | May-87 | Froehling &Robertson (F&R) | 40.8 | 7 | 4 | Elbrook (limestone/dolomite) | dolomite | log notes micaceous silt in alluvium |
| 7W6 | Jan-89 | Schnabel Engineering | 64.5 | 5 | 4 | Weathered Carbonate | limestone | log notes micaceous silt in alluvium |
| 7W9C | Nov-85 | F&R | 40 | 20 | 4 | not included in x-section | fault breccia | |
| 7W10B | Aug-83 | Betz-Converse-Murdoch (BCM) | 30 | 10 | 4 | not included in x-section | dolomite | |
| 7W10C | Nov-85 | F&R | 50 | 20 | 4 | Elbrook (limestone/dolomite) | fault breccia | |
| 7W11B | Feb-83 | BCM | 35 | 15 | 4 | Alluvium/weathered carbonate | sand,silt,gravel/weathered dolomite | log notes micaceous silt in alluvium |
| 7W12B | Feb-83 | BCM | 35 | 15 | 4 | Alluvium/Elbrook | coarse sand+gravel/dolomite | log notes micaceous silt in alluvium |
| 7W13 | Sep-97 | Marshall Miller | 35 | 10 | 8 | not included in x-section | dolomite | log notes micaceous silt in alluvium/8-inch |

*Based on x-section completed in 1996

**TABLE 4**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HAZARDOUS TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Nickel | Selenium | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | 64.5 | 176 | 1.3 | 82.8 | 72.3 | 41.4 | 256 | 93.2 | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | |
| **UNIT BACKGROUND SAMPLE LOCATION** | | | | | | | | | | | | | | | | | | | | |
| 7GP-16 (3-4') | 11/01/02 | ~ | 106 | ~ | 11.5 | ~ | 5.1 | 5.4 | 7.7 | ~ | ~ | 15.4 | 39.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **CAP MATERIAL SAMPLE** | | | | | | | | | | | | | | | | | | | | |
| 7GP-1 (1-3') | 11/01/02 | 3.8 | 66.9 | 0.7 | 24.1 | 11.5 | 22.8 | 8.1 | 13.5 | ~ | ~ | 28 | 17.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **RESIDUAL MATERIAL SAMPLES** | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (8-12') | 11/01/02 | 2.7 | 40.9 | 1.2 | 22 | 12.5 | 22 | 2.8 | 21.6 | ~ | ~ | 21.1 | 15 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-5 (6-11') | 11/01/02 | 3.5 | 55.6 | ~ | 22.8 | ~ | 10 | 11 | 7.2 | ~ | ~ | 60.6 | 24.2 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| 7GP-8 (5-8') | 11/01/02 | 2.4 | 55 | ~ | 20.1 | ~ | 12.7 | 10.3 | 8.5 | ~ | ~ | 61.8 | 28.1 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER** | | | | | | | | | | | | | | | | | | | | |
| 7GP-2 (13.5-14.5') | 11/01/02 | 3.1 | 70.9 | 0.84 | 22.5 | 16.2 | 14.2 | 13.6 | 11.4 | ~ | ~ | 57.7 | 32.6 | ~ | ~ | ~ | 0.0035 | ~ | ~ | ~ |
| 7GP-18 (14') | 02/17/04 | 2.7 | 59.3 | ~ | 23.2 | 8.2 | 10.6 | 8.9 | 8.3 | ~ | ~ | 50 | 26.6 | ~ | ~ | 2.1 | ~ | ~ | 0.18 | ~ |
| 7GP-21 (13.5') | 02/17/04 | 2.8 | 79.6 | ~ | 23.3 | 23.6 | 12.8 | 12.4 | 9.4 | ~ | 1.4 | 55.9 | 32.5 | ~ | 1 | 2.8 | ~ | ~ | 0.5 | ~ |
| 7GP-24 (14') | 02/17/04 | 2.1 | 101 | ~ | 20.1 | 11.7 | 11.5 | 9.2 | 12.6 | ~ | 1.7 | 39.2 | 62.7 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |
| **BOTTOM CLAY LINER/NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | |
| 7GP-17 (11') | 02/17/04 | 26.4 | 244 | ~ | 45.6 | 10.4 | 36.3 | 120 | 28.1 | 3.1 | 2.1 | 46 | 165 | ~ | 0.56 | 3.5 | ~ | ~ | 0.34 | ~ |
| 7GP-20 (14.5') | 02/17/04 | 8.3 | 114 | ~ | 75.3 | 6.6 | 15.7 | 66.5 | 15.5 | ~ | 1.3 | 43.2 | 46.1 | ~ | ~ | 3 | ~ | ~ | 0.35 | 0.006 |

**TABLE 4**

HAZARDOUS WASTE MANAGEMENT UNIT 7
SUMMARY OF HAZARDOUS TAL INORGANIC CONSTITUENTS AND TCL ORGANIC CONSTITUENTS DETECTED IN RESIDUAL MATERIAL AND SOIL SAMPLES
RADFORD ARMY AMMUNITION PLANT, RADFORD, VIRGINIA

Concentrations in mg/kg and based on dry weight

| Analyte | | Arsenic | Barium | Beryllium | Chromium | Cobalt | Copper | Lead | Nickel | Selenium | Thallium | Vanadium | Zinc | Cyanide | bis(2-Ethylhexyl)phthalate | N-Nitrosodiphenylamine | 4,4'-DDD | 4,4'-DDE | Aroclor-1254* | Toluene* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility-Wide Background | | 64.5 | 176 | 1.3 | 82.8 | 72.3 | 41.4 | 256 | 93.2 | -- | 2.61 | 108 | 674 | -- | -- | -- | -- | -- | -- | -- |
| Sample Location | Date | | | | | | | | | | | | | | | | | | | |
| **NATIVE SOIL UNDERLYING UNIT** | | | | | | | | | | | | | | | | | | | | |
| 7GP-3 (10-11') | 11/01/02 | 26.1 | 229 | 1.5 | 32.8 | 8.1 | 23.2 | 35.1 | 15.9 | 3.5 | ~ | 42.1 | 33.8 | 0.69 | ~ | 0.75 | ~ | 0.0025 | ~ | ~ |
| 7GP-19 (14') | 02/17/04 | 30.5 | 273 | ~ | 38.4 | 8.7 | 28 | 95.3 | 18.9 | 3.7 | 2.1 | 50.6 | 39.4 | ~ | 0.47 | 0.9 | ~ | ~ | 0.53 | ~ |
| 7GP-22 (13') | 02/17/04 | 21 | 211 | ~ | 38.4 | 8.1 | 23.7 | 109 | 19 | 2.5 | 1.8 | 42.7 | 39.9 | ~ | 0.88 | 3.3 | ~ | ~ | 0.38 | ~ |
| 7GP-22-22 (13') (Field Duplicate) | 02/17/04 | 29.8 | 279 | ~ | 41.6 | 9.1 | 29.9 | 104 | 19.8 | 4.1 | 2.1 | 49.2 | 39 | ~ | 0.52 | 4.3 | ~ | ~ | 0.33 | ~ |
| 7GP-23 (12.5') | 02/17/04 | 21.4 | 221 | ~ | 61.4 | 8.3 | 26 | 236 | 25.6 | 2.7 | 2.3 | 42.7 | 43.3 | ~ | 0.6 | 3.4 | ~ | ~ | 0.4 | ~ |
| **SOIL ADJACENT TO UNIT** | | | | | | | | | | | | | | | | | | | | |
| 7GP-4 (3-4') | 11/01/02 | ~ | 69.2 | ~ | 10.1 | ~ | 5.1 | 5.8 | 6.3 | ~ | ~ | 14 | 35 | ~ | ~ | ~ | ~ | ~ | ~ | ~ |

NOTES:
*: Additional TCL organic constituent detected during the February 2004 Field Investigation.
~: Not detected above the Limit of Quantitation (LOQ).
Facility-Wide Background concentrations from Table 3 of the *Amended Closure Plan* (Appendix A of the *Closure Report*).

**Table 5-1**
**Facility-Wide Point Estimates for Radford AAP Soil**

[Units in mg/kg]

| Chemical Name | Range of data (mg/kg) | Background Concentration 95 % UTL (mg/kg) |
|---|---|---|
| Aluminum | 3,620 - 47,900 | 40,041 |
| Arsenic | 1.2 - 35.9 | 15.8 |
| Barium | 23.4 - 174 | 209 |
| Beryllium | 0.61 - 5.4 | 1.02 |
| Cadmium | 0.62 - 2.5 | 0.69 |
| Chromium | 6.3 - 75.8 | 65.3 |
| Cobalt | 5.9 - 130 | 72.3 |
| Copper | 1.6 - 38.7 | 53.5 |
| Iron | 7,250 - 67,700 | 50,962 |
| Lead | 2.1 - 256 | 26.8 |
| Manganese | 16.7 - 2,040 | 2,543 |
| Mercury | 0.038 - 1.2 | 0.13 |
| Nickel | 4.6 - 94.2 | 62.8 |
| Thallium | 1.3 - 5.0 | 2.11 |
| Vanadium | 12.2 - 114 | 108 |
| Zinc | 4.7 - 598 | 202 |

**TABLE 6**
**RADFORD AAP Hazardous Waste Management Unit 7**
**Summary of Groundwater Cobalt Concentrations in Upgradient Wells at Select SWMUs, HWMUs, and Areas of Concern**

| SWMU/HWMU/Area of Concern | Upgradient Well(s) | Cobalt in Groundwater (concentrations in ug/L) | Lithology in Which Upgradient Well(s) Screened | Notes |
|---|---|---|---|---|
| HWMU-7 | 7W12B | 0.18 J - **17** | alluvium/carbonate bedrock | Data from 1996-2011. Current QL = 5 ug/L. |
| SWMU-37 | 37MW2 | **12** | alluvium/carbonate bedrock | Data from 2008. QL = 1 ug/L. |
| SWMU-38 & AOC-Q | 38MW2 | 1.2 | alluvium/carbonate bedrock | Data from 2008. QL = 1 ug/L. |
| Oleum Plant | MW01 and MW06 | < QL (MW01), 2.5 J (MW06) | carbonate bedrock | Data from 2007. QL = 50 ug/L. |
| SWMUs 17, 40, 71, FLFA | LFMW01 and 17MW02 | 4.6 J (LFMW01), **26.9** J (17MW02) | carbonate bedrock | Data from 2007. QL = 50 ug/L. |
| HWMU-5 | 5W8B | 1.1 J - **7** | weathered carbonate residuum | Data from 1996-2011. Current QL = 5 ug/L. |
| HWMU-10 | 10D4 | 0.54 J - 1.9 J | carbonate bedrock | Data from 2003-2011. Current QL = 5 ug/L. |
| HWMU-16 | 16C1 | 0.17 J - **5** | carbonate bedrock | Data from 1996-2011. Current QL = 5 ug/L. |

**FLFA:** Former Lead Furnace Area

**SOURCES:**


Draper Aden Associates. 1999. *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 16* dated July 1999. Radford Army Ammunition Plant, Radford, Virginia.

Draper Aden Associates. 1999. *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 5* dated August 1999. Radford Army Ammunition Plant, Radford, Virginia.

Environmental Resources Management, Inc. (ERM). *Groundwater Quality Assessment Report, Hazardous Waste Management Unit 7* dated August 1998. Radford Army Ammunition Plant, Radford, Virginia.

Ecology and Environment, Inc. (E&E). 2007. *Environmental Baseline Study for the Oleum Plant Site - Final* dated October 2007. Radford Army Ammunition Plant, Radford, Virginia.

Shaw Environmental, Inc. (Shaw). 2008. *Former Lead Furnace Area RCRA Facility Investigation/Corrective Measures Study Report - Final Document* dated November 2008. Radford Army Ammunition Plant, Radford, Virginia.

URS. 2010. *Solid Waste Management Units 35, 37, 38, and Area of Concern Q (RAAP-10) RCRA Facility Investigation Report - Final* dated September 2010. Radford Army Ammuntion Plant, Radford, Virginia.

## APPENDIX A
## (CD-ROM)

**HWMU-7 MONITORING WELL BORING LOGS/WELL CONSTRUCTION DIAGRAMS**
**HWMU-7 GEOLOGIC CROSS SECTION LOCATION MAP (ERM, 1998)**
**HWMU-7 GEOLOGIC CROSS SECTION A-A' (ERM, 1998)**
**HWMU-7 GEOLOGIC CROSS SECTION B-B' (ERM, 1998)**
**HWMU-7 CLOSURE SOIL SAMPLE BORING LOGS (2002 AND 2004)**
**HWMU-7 GEOLOGIC CROSS SECTION A-A' (DRAPER ADEN ASSOCIATES, 2008)**

## APPENDIX B
## (CD-ROM)

**JUNE 23, 2011 COMPLIANCE MONITORING WELL NETWORK SEDIMENT SAMPLING**
**JUNE 29-30, 2011 WELL 7W13 REDEVELOPMENT AND GROUNDWATER SAMPLING**
**JULY 27, 2011 WELL 7W13 REDEVELOPMENT AND GROUNDWATER SAMPLING**

## APPENDIX C

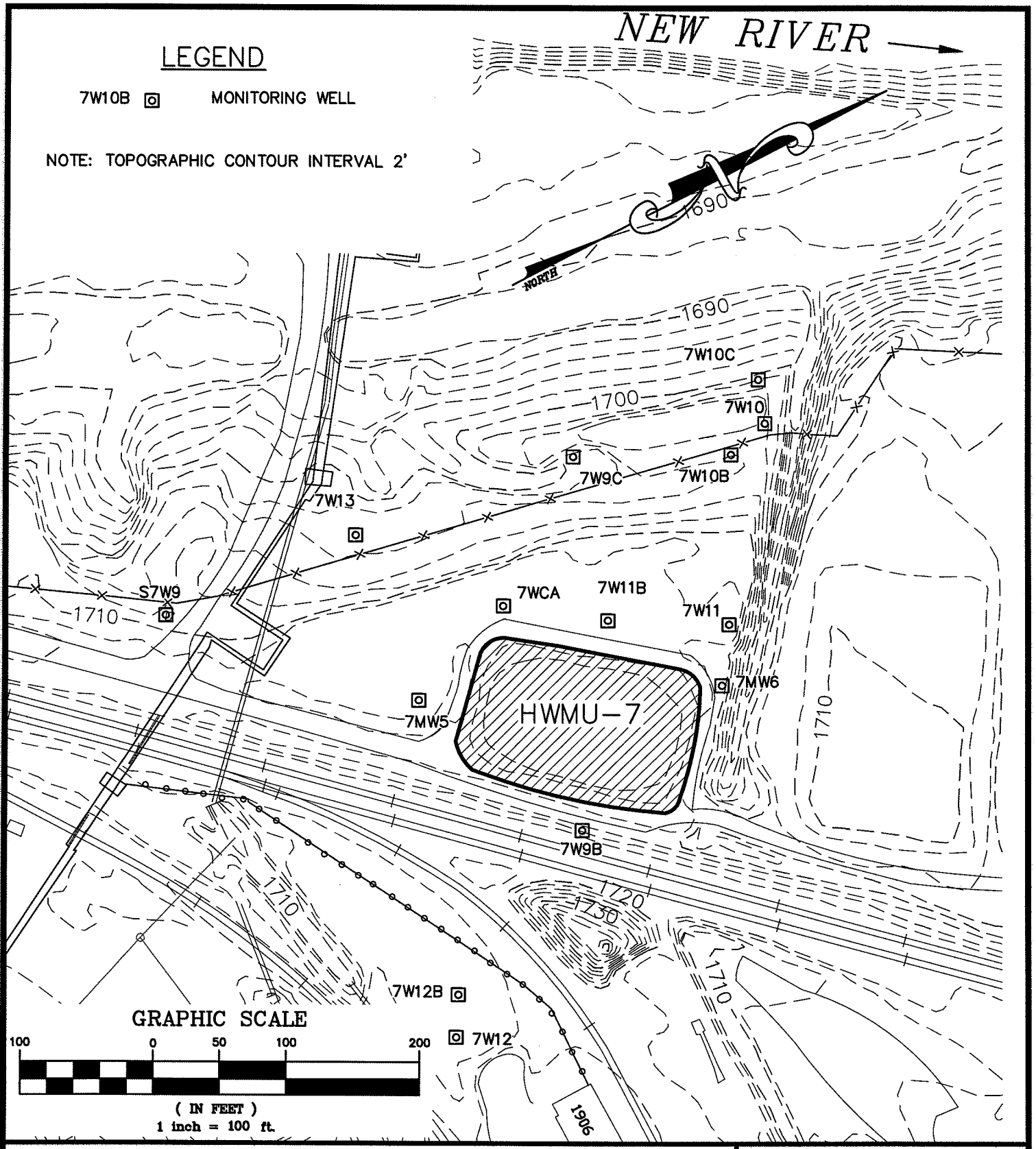
**MANN-KENDALL TREND TESTS – WELLS 7WCA AND 7W13**

## APPENDIX D
## (CD-ROM)

**UPGRADIENT WELL COBALT DATA FOR ADDITIONAL RADFORD AAP UNITS**

# APPENDIX A

**HWMU-7 MONITORING WELL BORING LOGS/WELL CONSTRUCTION DIAGRAMS**
**HWMU-7 GEOLOGIC CROSS SECTION LOCATION MAP (ERM, 1998)**
**HWMU-7 GEOLOGIC CROSS SECTION A-A' (ERM, 1998)**
**HWMU-7 GEOLOGIC CROSS SECTION B-B' (ERM, 1998)**
**HWMU-7 CLOSURE SOIL SAMPLE BORING LOGS (2002 AND 2004)**
**HWMU-7 GEOLOGIC CROSS SECTION A-A' (DRAPER ADEN ASSOCIATES, 2008)**




HWMU-7 SITE PLAN

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B02271-01


**Draper Aden Associates**

Engineering ♦ Surveying ♦ Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | AEK |
| DATE | 01/16/04 |

FIGURE 3

\\Bbg-archive\archive\B02\200\B02271\B02271-01\CAD\271-01\dwg\B03204-01_HWMU-7_SITE.dwg Oct 30, 2006 11:53am

Site
Ground Water Monitoring Well Details
Radford Army Ammunition Plant
Radford, Virginia

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Depth (ft bgl) | Screened Interval (ft bgl) | Screen Length (ft) | Screened Formation |
|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | |
| 7W12B | 1714.81 | 3598101.05 | 10884677.23 | 35.0 | 19.5 - 34.5 | 15 | Alluvium/Carbonate Bedrock |
| 7WCA | 1712.40 | 3598265.91 | 10884430.49 | 40.8 | 31.6 - 38.6 | 7 | Carbonate Bedrock |
| 7W11B | 1712.90 | 3598331.88 | 10884425.88 | 35.0 | 20.0 - 35.0 | 15 | Alluvium/Carbonate Residuum |
| 7MW5 | 1713.20 | 3598175.65 | 10884465.10 | 44.5 | 29.0 - 39.0 | 10 | Carbonate Bedrock |
| 7MW6 | 1712.80 | 3598384.24 | 10884557.91 | 64.5 | 47.5 - 52.5 | 5 | Carbonate Residuum |
| 7W9C | 1703.70 | 3598364.90 | 10884353.60 | 40.0 | 20.0 - 40.0 | 20 | Carbonate Residuum |
| 7W10B | 1704.65 | 3598470.69 | 10884404.73 | 32.0 | 20.0 - 30.0 | 10 | Carbonate Residuum |
| 7W10C | 1707.50 | 3598513.93 | 10884363.94 | 50.0 | 30.0 - 50.0 | 20 | Carbonate Residuum |
| S7W9 | 1710.48 | 3598037.14 | 10884321.43 | 40.0 | 20.0 - 30.0 | 10 | Alluvium/Carbonate Residuum |
| 7W9B | 1711.40 | 3598241.30 | 10884609.00 | 38.0 | 28.0 - 38.0 | 10 | Carbonate Bedrock |
| 7W10 | 1704.98 | 3598503.80 | 10884396.10 | 21.0 | 7.0 - 17.0 | 10 | Alluvium |
| 7W11 | 1712.82 | 3598408.90 | 10884518.80 | 35.0 | 16.0 - 26.0 | 10 | Alluvium/Carbonate Residuum |
| 7W12 | 1715.06 | 3598085.40 | 10884705.60 | 22.0 | 14.5 - 19.5 | 5 | Alluvium |

## Site 7
## Ground Water Monitoring Well Construction Details

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Termination Depth | Top of Well Screen | Total Well Depth | Screen Length | Comments |
|---|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | | |
| 7W12B | 1714.80 | | | 34.9 | 19.9 | 34.9 | 15 | 4,6 |
| 7WCA | 1712.40 | | | 40.8 | 28.6 | 38.6 | 10 | 3,5 |
| 7W11B | 1712.90 | | | 33.9 | 18.9 | 33.9 | 15 | 4,6 |
| 7MW5 | 1713.20 | | | 39.4 | 24.4 | 39.4 | 15 | 4,6 |
| 7MW6 | 1712.80 | | | 58.8 | 43.8 | 58.8 | 15 | 4,6 |
| 7W9C | 1703.70 | | | 40 | 20 | 40 | 20 | 4,6 |
| 7W10B | 1704.65 | | | 30 | 15 | 30 | 15 | 4,6 |
| 7W10C | 1707.50 | | | 50 | 30 | 50 | 20 | 4,6 |

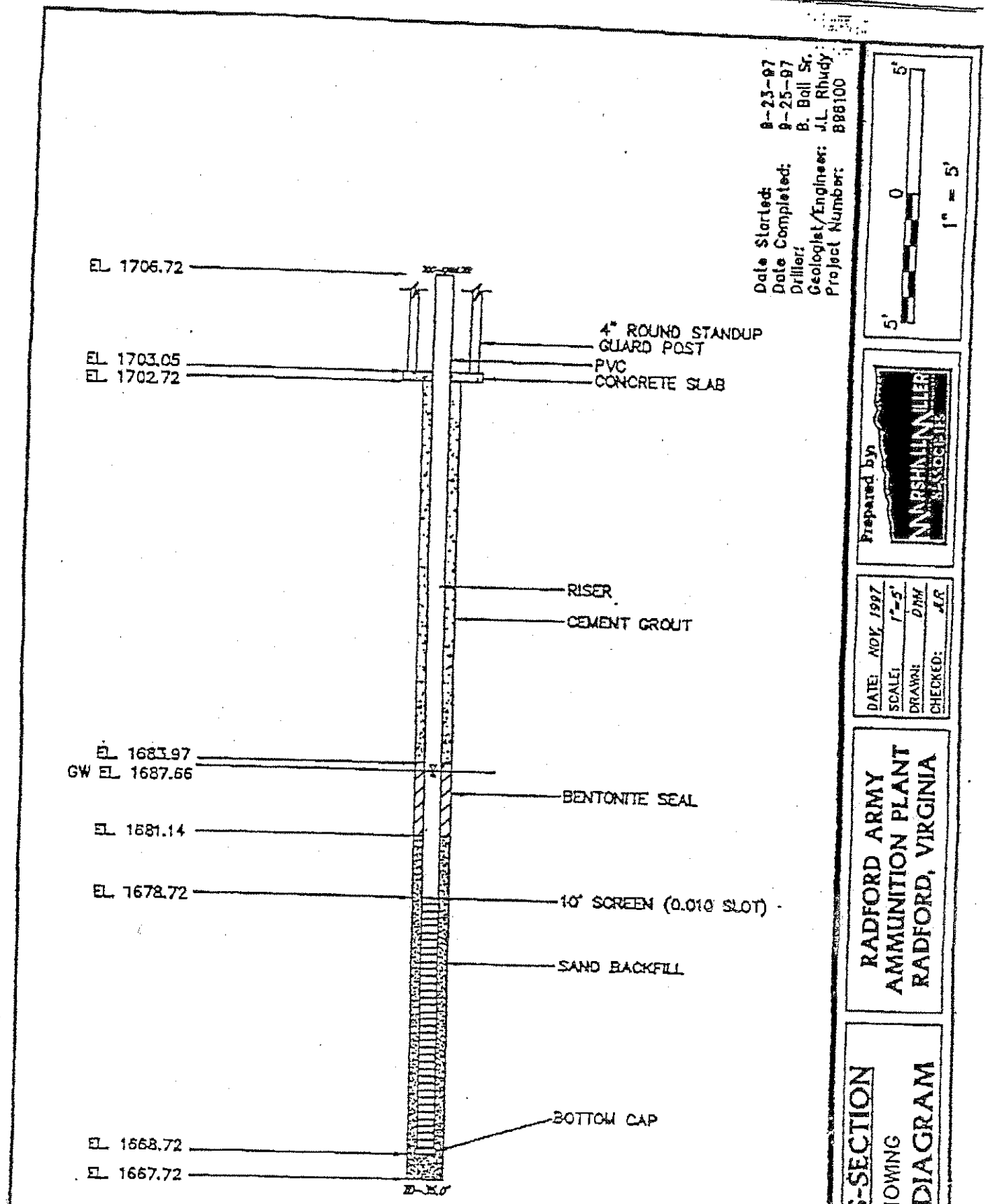
Comments:
1) Well construction details obtained from boring log.
2) Well screen length obtained from boring log.
3) Well screen length obtained from other data on file.
4) Well screen length assumed.
5) Total well depth obtained from boring log.
6) Total well depth obtained from field sampling log.

# Soil Boring Log

**Company** Aliant Techsystems
**Project** Radford Arsenal
**Project No.** B94100
**Facility I.D.**

Date Started 09/22/97 Hole No. 7MW13
Date Completed 09/22/97 Type of Hole Hollow Stem Auger
Logged by J.L. Rhudy Dia. of Hole ±8"
Ground Elev. Top of Casing

| From | To | Thickness | Description |
|---|---|---|---|
| 0.0 | 5.0 | 5.0 | *Augered through topsoil/dark brown, fairly moist and cohesive* |
| 5.0 | 7.0 | 2.0 | *Light tan, silty sand, well sorted, homogeneous through split spoon, some black streaks of mottled mica plates, (Split Spoon Sample, PID = 0.0 ppm), 90% Recovery* |
| 7.0 | 10.0 | 3.0 | *Some hard augering at approximately 8.5-9.0 feet, light tan, silty clay* |
| 10.0 | 12.0 | 2.0 | *Very dry and broken sandstone with some light tan, silty clay, some weathered quartzite, very dry and hard, heterogeneous mixture, (Split Spoon Sample, PID = 0.0 ppm), 75% Recovery* |
| 12.0 | 15.0 | 3.0 | *Auger refusal at 11.0 – 11.5', boring terminated at 11.0', relocated and moved to new location, combined at 15'* |
| 15.0 | 17.0 | 2.0 | *Insufficient to sample, green to light gray shale layer broken, horizontal fractures, less than 5% recovery* |
| 17.0 | 21.0 | 4.0 | *Very weathered, dolomite layer, light green to light gray, very fractured layers with noticeable separation, (Split Spoon Sample, PID = 0.0 ppm), 20% Recovery* |
| 21.0 | 25.0 | 4.0 | *Augered* |
| 25.0 | 25.5 | 0.5 | *Very hard and dry, weathered dolomitic limestone and some noticeable angles of fracture, (Split Spoon Sample, PID = 0.0 ppm), 10% Recovery* |
| 25.5 | 30.0 | 4.5 | *Hard augering* |
| 30.0 | 35.0 | 5.0 | *Augered to set monitoring well* |
| 35.0 | TD | | *Boring terminated* |


EL 1706.72
4" ROUND STANDUP GUARD POST
EL 1703.05
PVC
EL 1702.72
CONCRETE SLAB
RISER
CEMENT GROUT
EL 1683.97
GW EL 1687.66
BENTONITE SEAL
EL 1681.14
EL 1678.72
10' SCREEN (0.010 SLOT)
SAND BACKFILL
BOTTOM CAP
EL 1668.72
EL 1667.72
Date Started: 8-23-97
Date Completed: 9-25-97
Driller: B. Ball Sr.
Geologist/Engineer: J.L. Rhudy
Project Number: BB8100
5'
0
5'
1" = 5'
Prepared by
MARSHALL MILLER & ASSOCIATES
DATE: NOV. 1997
SCALE: 1"=5'
DRAWN: DMM
CHECKED: JLR
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA
CROSS-SECTION
SHOWING
7W-13 DIAGRAM

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-12B

Drilling Log

Well Number W12-B

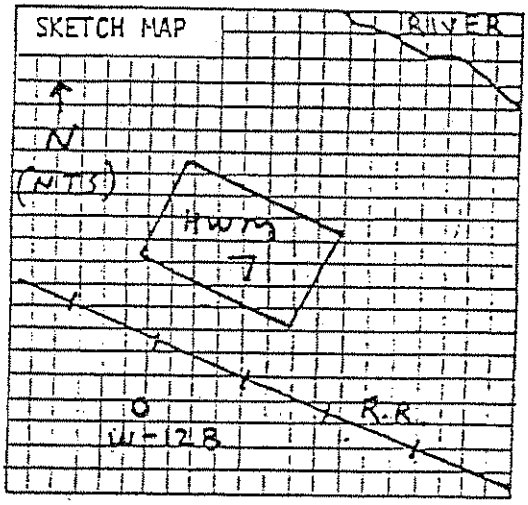
Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location upgradient from HWM-7; near original W-12
Driller/Company Dean/Cunningham
Drilling Method NX - core — Hole Diameter Nom. 4" — Date(s) Drilled 2/7 - 9/83
Sample Type split spoon/core — Sample Interval 5' spoon* — No. Samples Retained 5
Surface Elevation — Casing Top Elevation — Total Well Depth 34.5
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 19.5
Grouting Type sand/cement — Grouted Interval 0 - 18.5 incl
Screening Material and Size 2" ID PVC, 0.010" slots — Screened Interval(s) 19.5 - 34
Packing Material and Size No. 1 sand — Packed Interval 18.5 - 34.5
Depth to Static Water —25.46' ** — Date 2/22/83 — Approx Well Yield 10 gpm
Development Method — Development Time one hour
Logged by: Peter R. Jacobson

Comments

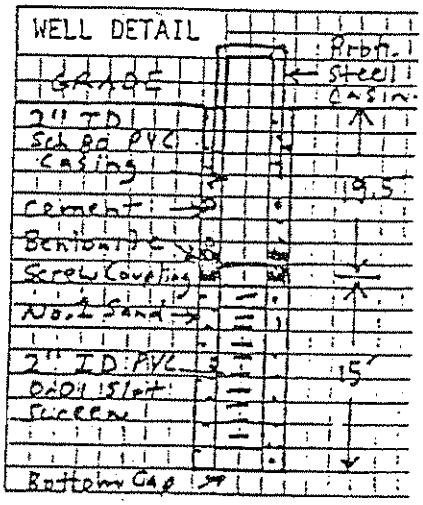
* continuous core sampling

** measured from top of casing

SKETCH MAP




WELL DETAIL




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1-1-6 | dark brown silt, minor clay; organic particles |
| 5 - 6.5 | spoon | 2-3-4 | medium to dark brown silty clay, fine sand |
| 10 - 11.5 | spoon | 3-3-3 | medium brown fine sand and silt, micaceous, some pebbl |
| 15 - 16.5 | spoon | 8-9-11 | brown fine to coarse sand, minor pebble gravel, well sorted |
| 20 - 21.5 | spoon | 3-1-1 | coarse sand and pebble gravel, coarse ss cobbles ("riveriack") |
| 21.5 - 25 | core | | cobbles, sand, gravel; little recovery; very difficult drilling |
| 27 - 35 | core | | top of rock at 27'; rock weathered and broken; dense; grey, massive, micritic dolomite |
| end of hole @ 35' | | | |

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CH
"ONE HUNDRED YEARS OF SERVICE"

Report No. 0-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

Boring No.: 7-WCA | Total Depth: 40.8 ft. | Elevation: -------- | Location: See Location Plan

Type of Boring: Hollow Stem Auger | Started: 5/12/87 | Completed: 5/12/87 | Driller: W. Simmons

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | | Loose brown fine SAND, trace silt and organics (SM) | 2 3 3 | 1.5 / 3.0 | | |
| | | -to- | 3 4 4 | 4.5 / 6.0 | | |
| | | Loose yellow brown to brown fine SAND, trace silt and mica (SM) | 2 3 3 | 8.5 / 10.0 | | |
| | | -to- | | 13.5 | | |
| | | Medium dense to dense brown coarse to fine SAND, some coarse subrounded gravel, trace silt (SW) | 3 6 9 | 15.0 | | |
| | | | 25 20* | 18.5 / 19.9 | | *30/5* |
| | | -ALLUVIUM- | | 23.5 / 23.9 | | *30/5* |
| | | | | | | Subsurface water at 24.0 ft. at 1:30 p.m. May 12, 1987 |
| | 28.9 | | | 28.9 | | |
| | | Auger refusal at 28.9 ft. | | | | |
| | | Hard dark gray dolomite with abundant calcareous infilled fractures, occasional shaley streaks on fractures | | 21.7 | | RQD = 0 |
| | | | | 33.9 | | |
| | | | | 16.7 | | RQD = 0 |
| | | | | 38.9 | | |
| | | | | 70.8 | | RQD = 0 |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1 3/8 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Form No. 500

# BORING LOG

SINCE F&R 1881

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CHEM
"ONE HUNDRED YEARS OF SERVICE"

Report No. O-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

| Boring No.: | Total Depth: | Elevation: | Location: |
|---|---|---|---|
| 7-WCA | 40.8 ft. | -------- | See Location Plan |

| Type of Boring: | Started: | Completed: | Driller: |
|---|---|---|---|
| Hollow Stem Auger | 5/12/87 | 5/12/87 | W. Simmons |

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 40.0 | | | | | |
| | 40.8 | Boring terminated at 40.8 ft. | | 40.8 | | GROUNDWATER DATA |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Project: Radford Army Ammunition Plant

Location: Radford, Virginia

Client: Hercules Inc.

Driller: Simmons

Inspector: Smith

Date Installed: 5/19/87

WELL No. 3xWCA 7-

Screen Description: 0.010" slot, 2.0" I.D. Teflon Screen

Riser Description: 2.0" I.D. Teflon Riser and PVC Riser

Sand Size: D(10)= 0.45-0.55 mm

Bore/ Core Size: 6 inch/ NX

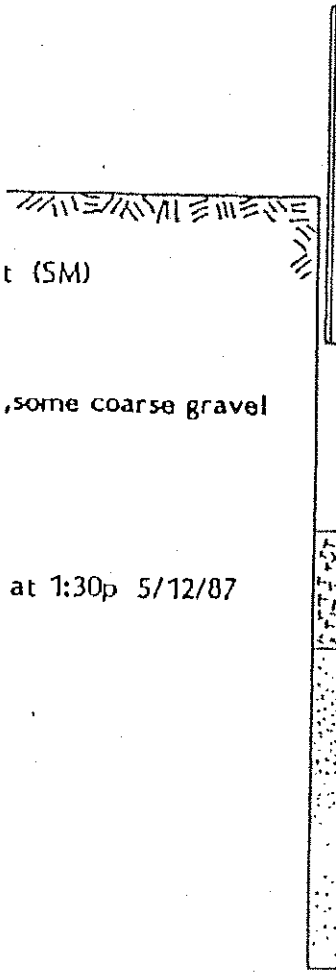
Subsurface Conditions Summary

Brown fine SAND, trace silt (SM)

to

Brown coarse to fine SAND ,some coarse gravel (SW)

Subsurface water at 24.0 ft. at 1:30p 5/12/87



Casing Stickup (ft.)= 3.0 ft.

Elev. =

Riser Stickup (ft.) = 3.0 ft.

Elev. =

Ground Elev.=

Depth to Bentonite (ft.)= 22.5 ft.

Elev. =

Depth to Sand Filter(ft.)= --------

Elev. =

Depth to Well Bottom(ft.)= 38.6 ft.

Elev. =

Depth of Hole (ft.) = 40.8 ft.

Elev. =

Betz-Converse-Murdoch-Inc. BCM

UNIT 7

W-11B

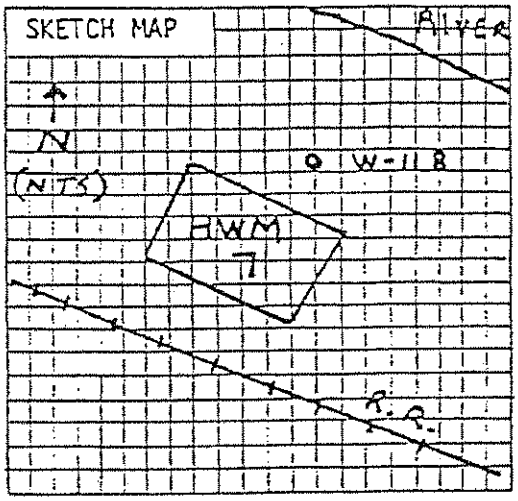
# Drilling Log

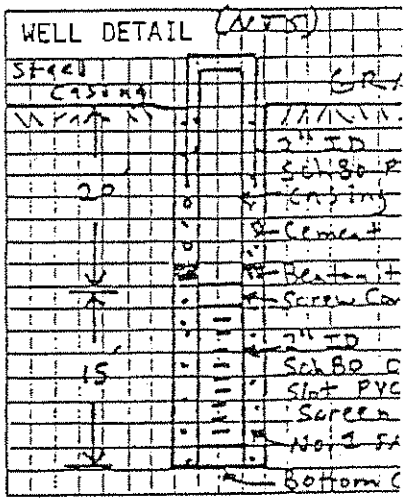
Well Number W11-B

Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location downgradient at Lagoon 7
Driller/Company Dean/Cunningham
Drilling Method NX core — Hole Diameter 4" nominal — Date(s) Drilled 2/10 - 15/83
Sample Type split spoon — Sample Interval 5' — No. Samples Retained 8
Surface Elevation 1787.58' — Casing Top Elevation 1789.55' — Total Well Depth 35
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 20 (+2'
Grouting Type sand/cement — Grouted Interval 0 - 19
Screening Material and Size 2" ID PVC 0.010" slots — Screened Interval(s) 20 - 35
Packing Material and Size No. 1 sand — Packed Interval 19 - 35
Depth to Static Water 24'11"* — Date 2/16/83 — Approx Well Yield very low vi
Development Method air — Development Time 1 hour
Logged by: Peter R. Jacobson

Comments
no core recovery

* measured from top of casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1 - 2 - 4 | dark brown micaceous silt and fine sand, minor clay |
| 5 - 6.5 | spoon | 5 - 8 - 8 | medium to light brown fine sand and silt |
| 10 - 11.5 | spoon | 5 - 6 - 7 | dense brown silt with fine sand |
| 15 - 16.5 | spoon | 5 - 6 - 9 | same as above |
| 17 - 18 | | | cobble gravel layer |
| 20 - 21.5 | spoon | 9-12-20 | silty sand grading to coarse sand and pea gravel; wel |
| | | | sorted |
| 22 - 23.5 | | | gravel |
| 23.5 - 24 | | | sand and silt |
| 24 - 25 | | | gravel |
| 25 - 26.5 | spoon | 33-50/3" | well sorted sand and gravel grading to weathered blue |
| | | | grey clayey dolomite; top of weathered rock at 26' |
| 30 - 31.5 | spoon | 21-37-50/3" | weathered dolomite: blue/green/grey clay sand silt, |
| | | | minor pebbles |
| 35 - 36.5 | spoon | 50/5.5" | sand as above with pea gravel |
| | | | |
| end of hole at 35' | | | |

SCHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO: MW-5

PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA
SHEET NO: 1 OF 1
CLIENT: HERCULES, INCORPORATED
JOB NO: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-10 | 11:10 | 24.0 | - |
| AFTER CASING PULLED | 1-11 | 10:30 | 23.8 | - |
| — HR. READING | MONITORING WELL INSTALLED | | | |

| DRIVE SAMPLER | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

CASING SIZE: 3-1/4"
DATE START: 1-10-89
DATE FINISHED: 1-11-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

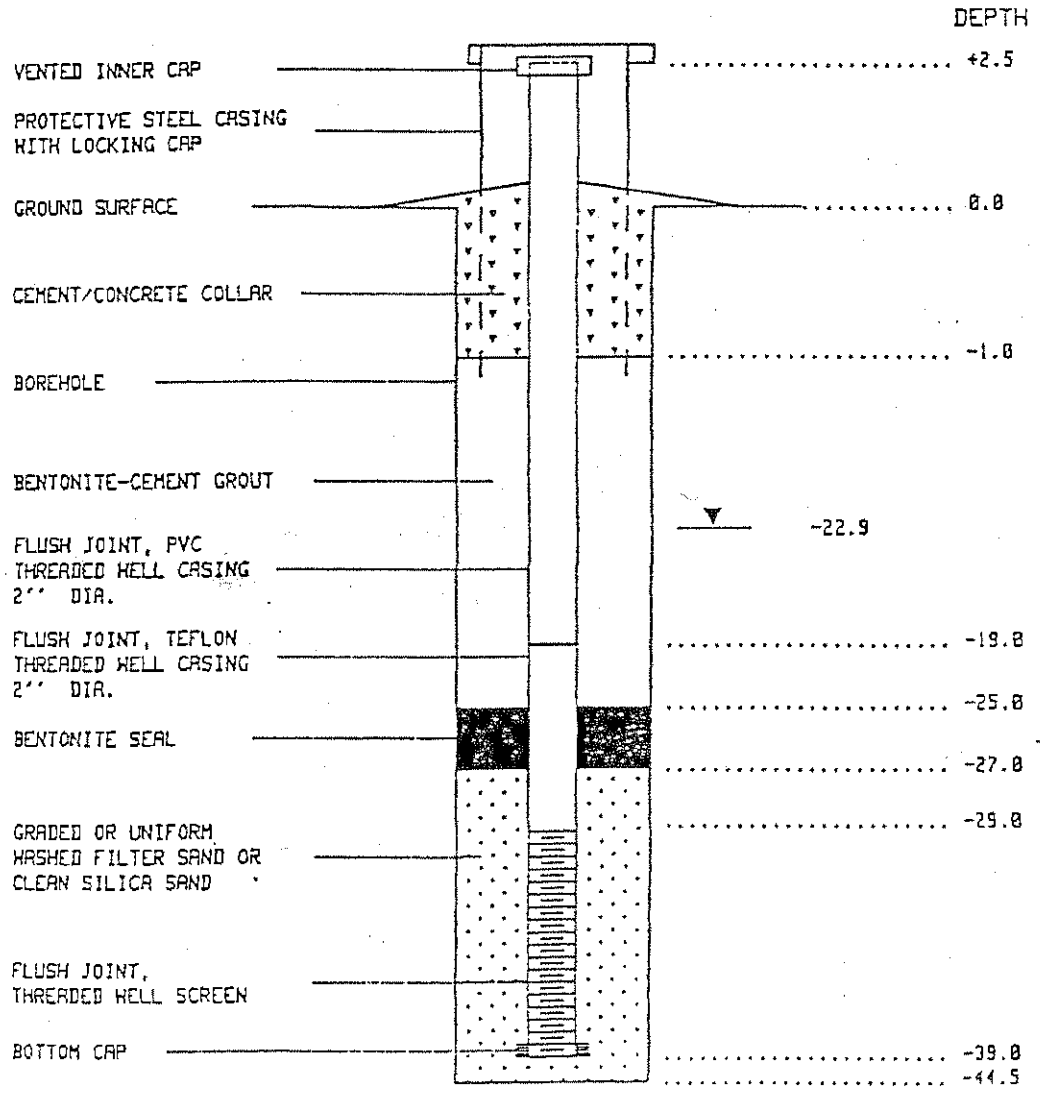
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 2" GRASS ROOT MAT AND 12" TOPSOIL | |
| B | | | 2+2+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS MICA AND ROOT FRAGMENTS, MOIST - BROWN | |
| | | | 6+6+7 | S | do, BROWN | |
| | | | 6+7+24 | S | do, CONTAINS LAYERS OF SANDY SILT | |
| | | | 5+5+5 | S | | ALLUVIAL |
| | 17.5 | | | | | |
| D | | | 51+49/5" | S | DISINTEGRATED ROCK, MOIST - BROWN | LIMESTONE RESIDUUM |
| | | | 100/4" | S | | |
| | 29.5 | | 100/1" | S/NQ | | |
| E | | | REC=97% ROD=75% | NQ | MODERATELY WEATHERED, MODERATELY HARD, GRAY LIMESTONE, MODERATELY TO HIGHLY FRACTURED, THIN BEDDED, CONTAINS FEW CALCITE HEALED FRACTURES HIGHLY WEATHERED TO DISINTEGRATED FROM 33.5 FT TO 34.5 FT | LIMESTONE ROCK ELBROOK FORMATION |
| | 38.4 | | REC=69% ROD=48% | NQ | HIGHLY WEATHERED TO DISINTEGRATED AT 38.9 FT AND 40.5 FT | |
| | 44.5 | | | | CORING TERMINATED AT 44.5 FT | |
| | | | | | WELL LOCATED SOUTHWEST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-5

BORING NUMBER: MW-5
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

JOHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO.: HW-6

PROJECT: MONITORING WELL INSTALLATION, HWH-7, RAAP, RADFORD, VA
SHEET NO.: 1 OF 2
CLIENT: HERCULES, INCORPORATED
JOB NO.: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:
DRIVE SAMPLER
CASING SIZE: 3-1/4"
DATE START: 1-11-89
DATE FINISHED: 1-12-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

WATER LEVEL DATA

| | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-11 | 8:00 | 42.0 | - |
| AFTER CASING PULLED | 1-12 | 12:15 | 49.5 | - |
| __ HR. READING | MONITORING-WELL INSTALLED | | | |

| | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 6" TOPSOIL | |
| | | | 2+4+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS ROOT FRAGMENTS AND MICA, MOIST - BROWN | |
| | | | 5+4+3 | S | | |
| B | | | 4+5+6 | S | | ALLUVIAL |
| | | | | | | COBBLES AT 13 FT |
| | | | 4+3+5 | S | | GRAVEL AT 16 FT |
| | | | 10+21+10 | S | do, WITH GRAVEL | |
| | 23.0 | | | | | |
| | | | 39+61/4" | S | DISINTEGRATED ROCK, MOIST - GRAY AND BROWN | LIMESTONE RESIDUUM |
| | | | 70+30/2" | S | do, GRAY | |
| D | | | 100/5" | S | | |
| | | | 91+19/1" | S | | |
| | | | 100/4" | S | | |

| SCHNABEL ENGINEERING ASSOCIATES<br>CONSULTING ENGINEERS | TEST BORING LOG | BORING NO: MW-6 |
|---|---|---|
| PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA | | SHEET NO: 2 OF 2 |
| CLIENT: HERCULES, INCORPORATED | | JOB NO: V881377 |
| BORING CONTRACTOR: TERROCK CORPORATION | DRILL: CME-55 | ELEVATION: |

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED | DRIVE SAMPLER | | CASING SIZE: 3-1/4" |
|---|---|---|---|---|---|---|---|
| | | | | | TYPE | S.S. | DATE START: 1-11-89 |
| ENCOUNTERED | 1-11 | - | - | - | DIA. | 2" O.D. | DATE FINISHED: 1-12-89 |
| AFTER CASING PULLED | 1-12 | - | - | - | WT. | 140# | DRILLER: R. EDWARDS |
| __ HR. READING | MONITORING WELL INSTALLED | | | | FALL | 30" | INSPECTOR: C. HALL |

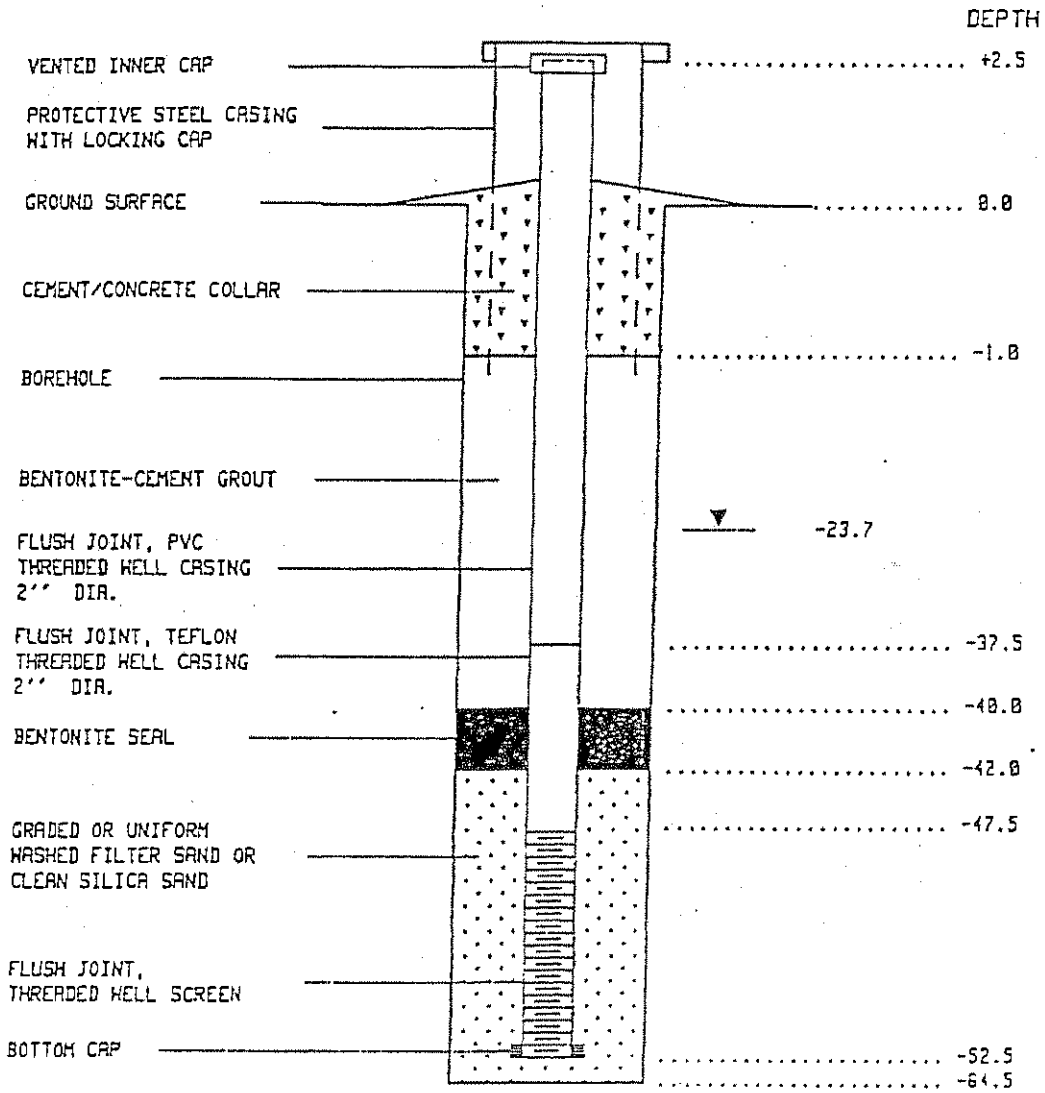
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | DISINTEGRATED ROCK, WET - GRAY | |
| | | | 100/2" | S* | | LIMESTONE RESIDUUM |
| D | | | | | | |
| | | | 100/2" | S | | |
| | 64.5 | | | | | |
| | | | 100/6" | S | | |
| | | | | | BORING TERMINATED AT 64.5 FT | |
| | | | | | WELL LOCATED NORTHEAST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-6

BORING NUMBER: MW-6
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

9C

HWMU-7

MAPPED AS W9C

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.

"ONE HUNDRED YEARS OF SERVICE"

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9C | Total Depth: 40.0' | Elevation: --- | Location: See plan

Type of Boring Hollow stem auger | Started: 10-31-85 | Completed: 11-1-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | 1.5 | Brown fine sandy SILT; roots, organics | | | | |
| | | Loose brown fine sandy SILT (ML) to dense brown silty fine to coarse SAND, occasional gravels and cobbles (SP) | | 4.5 | | |
| | | -ALLUVIUM- | 5 4 4 | 6.0 | | |
| | | | | 9.5 | | |
| | | | 17 19* | 11.0 | | * 50/0.0' |
| | 13.0 | | | 13.5 | | Water level @ 14.0' |
| | | Gray green fine sandy SILT, some clay (ML) -RESIDUAL FAULT BRECCIA- | 27 50* | 15.0 | | * 50/0.0' |
| | | | | | | Development Data: Sloshed for 2 hrs. Bailed down to 21'. Re-gauged 14.0' after 25 hrs. |
| | | • 20' 316 SS SCREEN<br>• 10' 316 SS RISER<br>• 10' PVC-80<br>• ADAPTER<br>• 10' PVC-40 | | | | |
| | 40.0 | Boring terminated @ 40.0' | | | | |

* Driven with 140 lb hammer dropping 30 in to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6 inch increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1" = 5' unless otherwise noted

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-10B

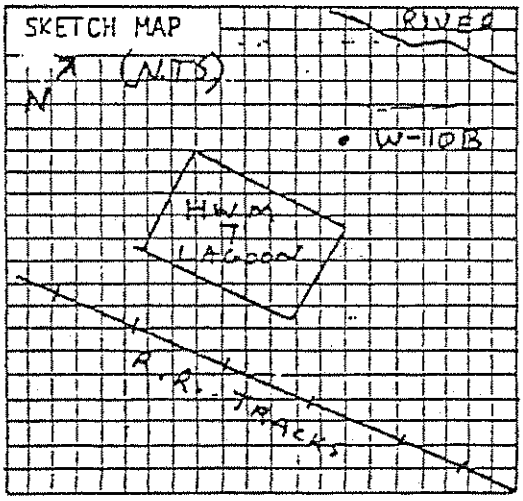
Drilling Log

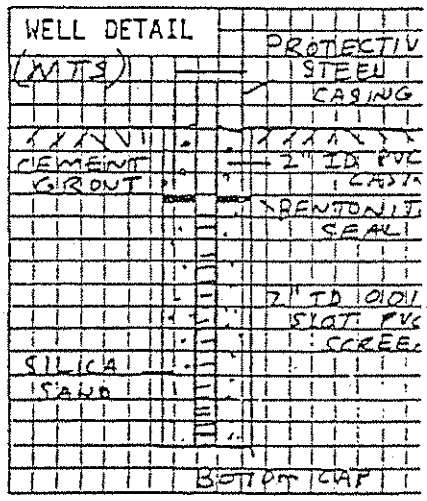
Well Number W-10B

Client Corps of Engineers, RAAP, Radford, VA — Project No. 00-0008-01
Well Location Northwest of HWM 7 Lagoon
Driller/Company M. Dean, Cunningham Core Drilling and Grouting Corp, Salem, VA
Drilling Method Fishtail/Core — Hole Diameter 4.5" — Date(s) Drilled 8/16-17/83
Sample Type Split Spoon — Sample Interval 5' — No. Samples Retained 7
Surface Elevation 1704.65' — Casing Top Elevation 1705.63'* — Total Well Depth 30'
Casing Material and Size 2" ID Sch. 80 PVC — Cased Interval(s) 0-20'
Grouting Type Portland Cement with Sand — Grouted Interval 0-12'
Screening Material and Size 2" ID 0.01 Slotted PVC — Screened Interval(s) 20-30'
Packing Material and Size Fine to Coarse Silica Sand — Packed Interval 13-30'
Depth to Static Water 15-52' (T.O.C.) — Date 8/19/83 — Approx Well Yield < 1 gpm
Development Method Air — Development Time 4 hours
Logged by: D. J. Varner

Comments
1) Drilling Water obtained from RAAP hydrants
2) Replaces well W-10
3) Bentonite pellet seal in the 12-13' annular interval
4) Depth to water table measured from the top of the steel casing
5) Core size: HW

*Top of steel casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 1.5-3 | Spoon | 5-6-9 | Brown silty fine Sand |
| 5-6.5 | Spoon | 3-4-5 | Brown clayey and silty fine sand |
| 10-11.5 | Spoon | 10-14-16 | Quartzite Gravel with a silty |
| 15-15.5 | Spoon | 35 | sand matrix and cobbles (Riverjack). |
| | | | Some clay and silt layers. |
| 20-20'10" | Spoon | 21-50/4" | Blue-gray fine crystalline Dolomite fragments in a |
| | | | blue-gray sandy marl. |
| 25-25'8" | Spoon | 20-50/2" | Blue-gray hard fine crystalline Dolomite |
| 30-30'3" | Spoon | 50/3" | Blue-gray hard fine crystalline Dolomite |
| 32 | | | End of hole. Two feet filled with collapsed cuttings |

10C
HWMU-7
MAPPED AS W10C

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No. ROH-62085 DATE November, 1985

Client: Hercules, Inc.

Project: Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No.: 10-C | Total Depth: 50.0 | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-29-85 | Completed: 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | NO SAMPLING REQUIRED | | | GROUNDWATER DATA |
| | 1.0 | Light brown silty fine sand, trace gravel<br>-ALLUVIUM- | | | | |
| | 15.0 | Gray-brown clayey SILT, little fine sand<br>-RESIDUAL FAULT BRECCIA- | | | | Water level @ 16.9'<br>Development Data:<br>Sloshed for 2 hrs.<br>Bailed to 26.0'.<br>Recovered to 16.9' after 24 hrs. |
| | 40.0 | | | | | |

No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in. O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

Form No 300

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No ROH-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 10-C cont. Total Depth: 50.0 Elevation: --- Location: See plan

Type of Boring: Hollow stem auger Started: 10-29-85 Completed: 10-31-85 Driller: W. Simmons, Sr.

| Elevation | Depth 40.0 | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | | Gray-brown clayey SILT, little fine sand -RESIDUAL FAULT BRECCIA- | | | | GROUNDWATER DATA |
| | 50.0 | Boring terminated @ 50.0' | | | | |

- 20' 316 SS SCREEN
- 10' 316 SS SCREEN
- 10' PVC-80

*) Blows recorded for a 140 lb hammer dropping 30 in to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-9

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS S7W9

US ARMY ENVIRONMENTAL HYGIENE AGENCY

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northwest of Oleum lagoon, next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II,w/ 4 in continuous flight Auger BORE HOLE MW9 TD 40 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial =22' 4" 24 hr.=23' 5" REMARKS | |
|---|---|---|---|---|
| | | Brown micaceous silty alluvium | | |
| | | Reddish brown micaceous silt,damp nonplastic | 15.75 ft of grout | 20 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | MB 6-10 | | | |
| | | Reddish brown micaceous clayey silt, damp | | |
| | | Drilling easy | | |
| 10 ft | | | | |
| | | same material | | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northwest of Oleum Lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | gravel mixed with silt (¼-1½ in) | PVC casing; 1.25 ft. Bentonite |
| 20 ft | | same material | 17.75 ft of sand pack; 10 ft of slotted 2 in ID schedule 40, PVC screen (0.008-0.010") |
| | | weathered dolomite difficult drilling (5000psi) | |
| 25 ft | | getting easier drilling (softer) 4700 psi | |
| | | same material | |
| 30 ft | | | |

HSE-ES Form 78, 1 Jun 80

Replaces USAEHA Form 85, 12 Aug 74

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, norhtwest of Oleum lagoon next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger )

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | easy drilling<br>weathered Elbrook FM | sand pack | 5 ft of sediment trap |
| 35 ft | | easy drilling- no return | | |
| | | | | FALLBACK |
| 40 ft | | 40 ft TD<br>Refusal Elbrook Dolomite | | |

HSE-ES Form 78, 1 Jun 80

9B
HWMU-7
MAPPED AS W9B

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ENGINEERS & SCIENTISTS
ONE HUNDRED YEARS OF SERVICE

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9B | Total Depth: 38.0' | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-30-85 | Completed 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | RQD % | REMARKS |
|---|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | | | | | GROUNDWATER DATA |
| | 1.0 | Loose to medium-dense brown fine sandy SILT, trace clay | 2 4 7 | 1.5 3.0 | | | |
| | | -ALLUVIUM- | 1 4 6 | 4.5 6.0 | | | |
| | | | 3 2 3 | 8.5 10.0 | | | |
| | | Occasional layers of silty coarse to fine sand with cobble layer | 2 4 8 | 13.5 15.0 | | | |
| | | | 4 3 2 | 18.5 20.0 | ▽ | | Water level @ 19.6' |
| | | | | 23.5 | | | Development Data: Sloshed 2 hrs. Bailed for 30 minutes. Water level unchanged |
| | 24.0 | Hard brown and yellow-brown clayey SILT, occasional SAND -RESIDUUM- | 8 33 50/0.4' | 25.0 | | | *50/0.0' |
| | 28.0 | Gray-green fault breccia, LIMESTONE, DOLOMITE and shale clasts in siltstone matrix, moderately calcareous | | 28.0 | 0% | 0% | |
| | | .10' 316 SS SCREEN | | | | | |
| | | .10' 316 SS RISER | | 33.0 | | | |
| | | .10' PVC-80 | | | 20% | 0% | |
| | | . ADAPTER | | | | | |
| | | .10' PVC-40 | | | | | |
| | 38.0 | Coring terminated @ 38.0' | | 38.0 | | | |

*No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-10

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS W-10

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon, north of lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight BORE HOLE MW 10

TD 21 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS: water level initial-wet 24 hr.-15 ft. | |
|---|---|---|---|---|
| | | Brown silty micaceous alluvium nonplastic, wet | 2.5 ft concrete grout | 7 ft of schedule 40, 2 in ID, PVC casing |
| | MB 0-5 | | 1.5 ft Bentonite | |
| 5 ft | | silty clay | | |
| | | | 16 ft of sand pack | |
| | | Reddish brown micaceous sandy silt | | 10 ft of slotted, 2 in, schedule 40, PVC screen (0.008-0.010") |
| 10 ft | | hard layer (gravelly ¼-1½") damp- very plastic | | |
| | MB 10 ft | | | |
| | | NO return | | |
| 15 ft | ▽ | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon north of lagoon next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 10

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | | screen |
| | | | sand pack |
| | | | 3 ft of sed trap |
| | | Weathered Elbrook Dolomite (saturated) | |
| 20 ft | | | 20 ft bottom of well |
| | | | stand pipe &steel casing =2 ft |
| | | TD 21 feet | |

HSE-ES Form 78, 1 Jun 80

MW-11

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

US ARMY ENVIRONMENTAL HYGIENE AGENCY Mapped as W-11

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northeast corner of Oleum Lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11 TD= 35 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial 22 ft. 24 hr 23 ft REMARKS | |
|---|---|---|---|---|
| | MB 0-5 | Reddish brown sandy micaceous silt damp, low plasticity<br>Easy drilling | 9.5 ft concrete grout | 16 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | same material | | |
| 10 ft | | same material (getting damper) | 3.5 ft of Bentonite | |
| | | | 12'3" of sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

US ARMY ENVIRONMENTAL HYGIENE AGENCY

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northeast corner or Oleum lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | Reddish brown clayey silt | 10ft of slotted 2 in ID PVC screen (0.008-0.010") |
| | MB 18-20 | Reddish brown silt with gravel (¼-1 in.) | sand pack |
| 20 ft | | | |
| | | Near Elbrook Dolomite no cuttings return. Auger turnings are blue-grey saturated. | |
| 25 ft | | same material | bottom of well 26 feet |
| | | TD 35 FEET | Fallback Borehole collapsed due to saturated layer |
| 30 ft | | | |

USAEHA Form 95, 12 Aug 74

MW-12

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS MW-12

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

LOCATION Site 7 southwest of Oleum lagoon(background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight Auger BORE HOLE MW 12

TD=22 ft.

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | Water level initial: dry 24 hr.: Dry REMARKS | |
|---|---|---|---|---|
| | | silty micaceous clay damp- med plastic (alluvium) | 10.5 of concrete grout | 14.5 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | Clayey micaceous silt with some gravel (¼-½") | | |
| 10 ft | | gravel sound | 2.5 ft of Bentonite | |
| | | same material | sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

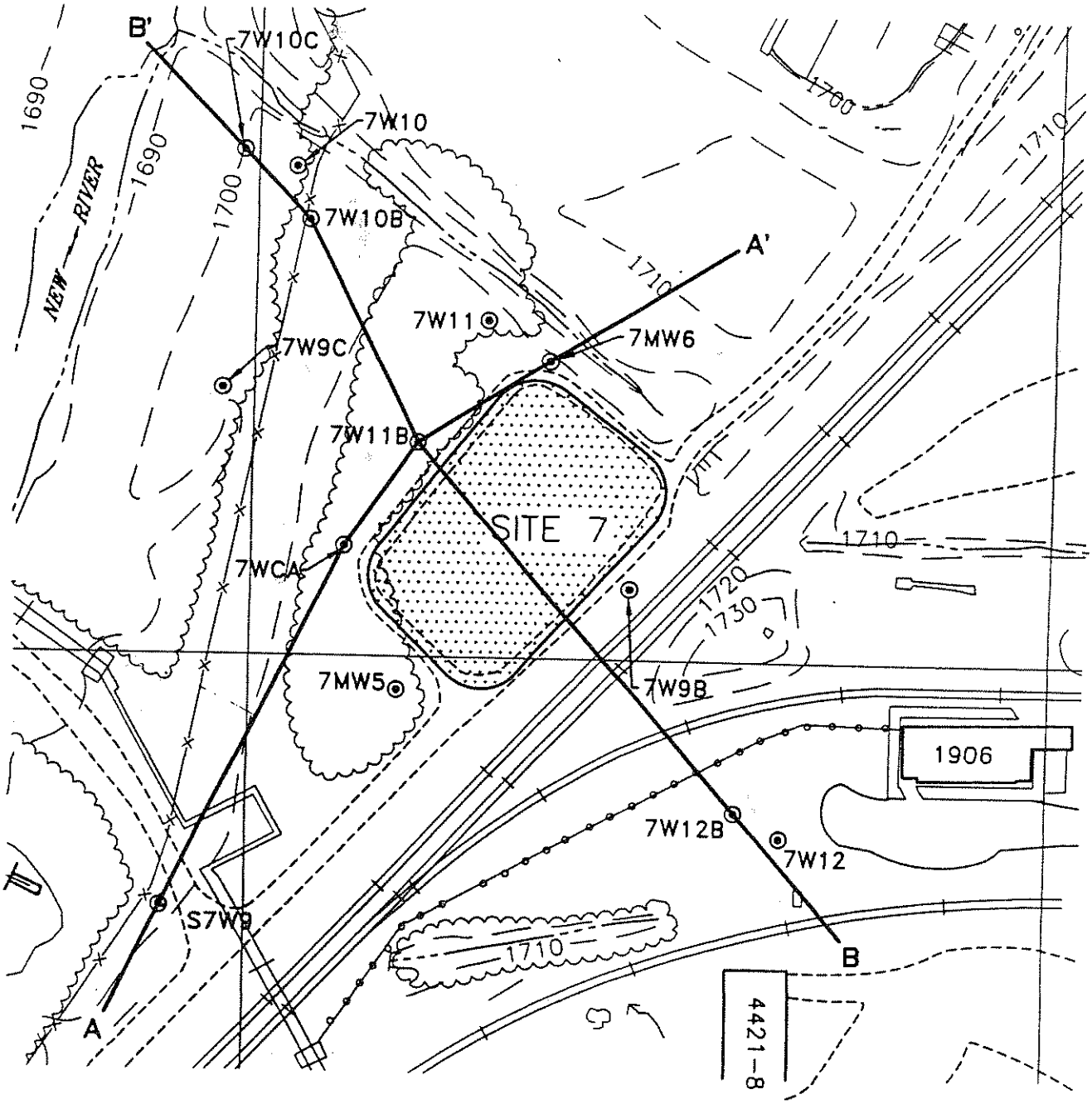
LOCATION Site 7, southwest of Oleum lagoon (background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 12

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | hard gravel layer (GC) clayey gravel (¼-2in) | 6.2 ft of sand pack | 5 ft of slotted 2 in ID schedule 40 PVC screen |
| 20ft | | gravels are getting larger(cobbles 2-5 in) Water should be in the coarse gravels. | | Fallback to 19.5 ft |
| | | drilling very difficult (7422 psi) Refusal- Elbrook FM (gray weathered residuum on top of hard dolomite.) | | |
| 25 ft | | | | |
| 30 ft. | | | | |

HSE-ES Form 78, 1 Jun 80

# Site 7
## Cross Section Location Map
### Radford Army Ammunition Plant
### Radford, Virginia




Legend

7W11B ⊙ Monitoring Well

A —— Cross Section Line

50 0 100

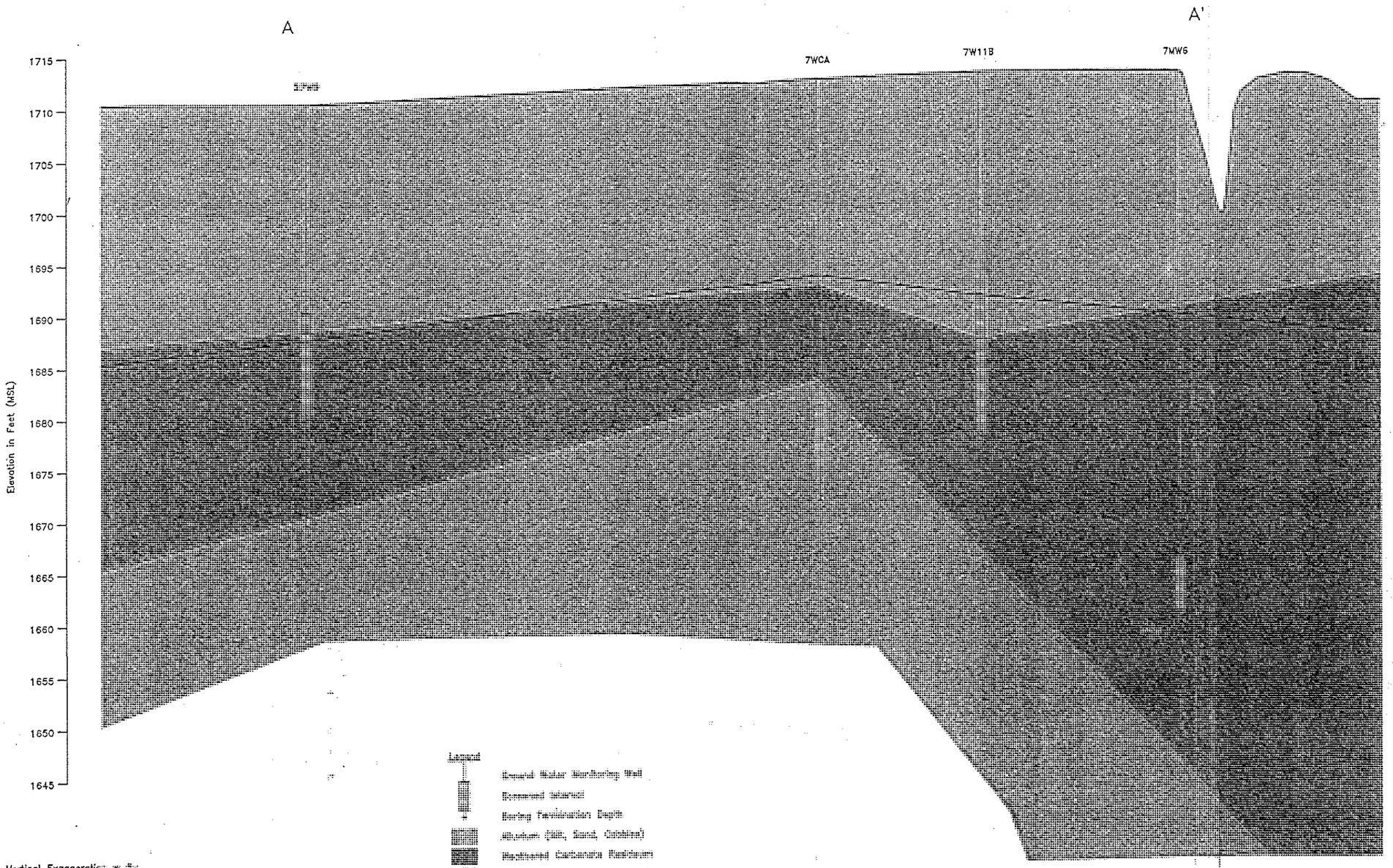
Scale in Feet

N

ERM, INC.

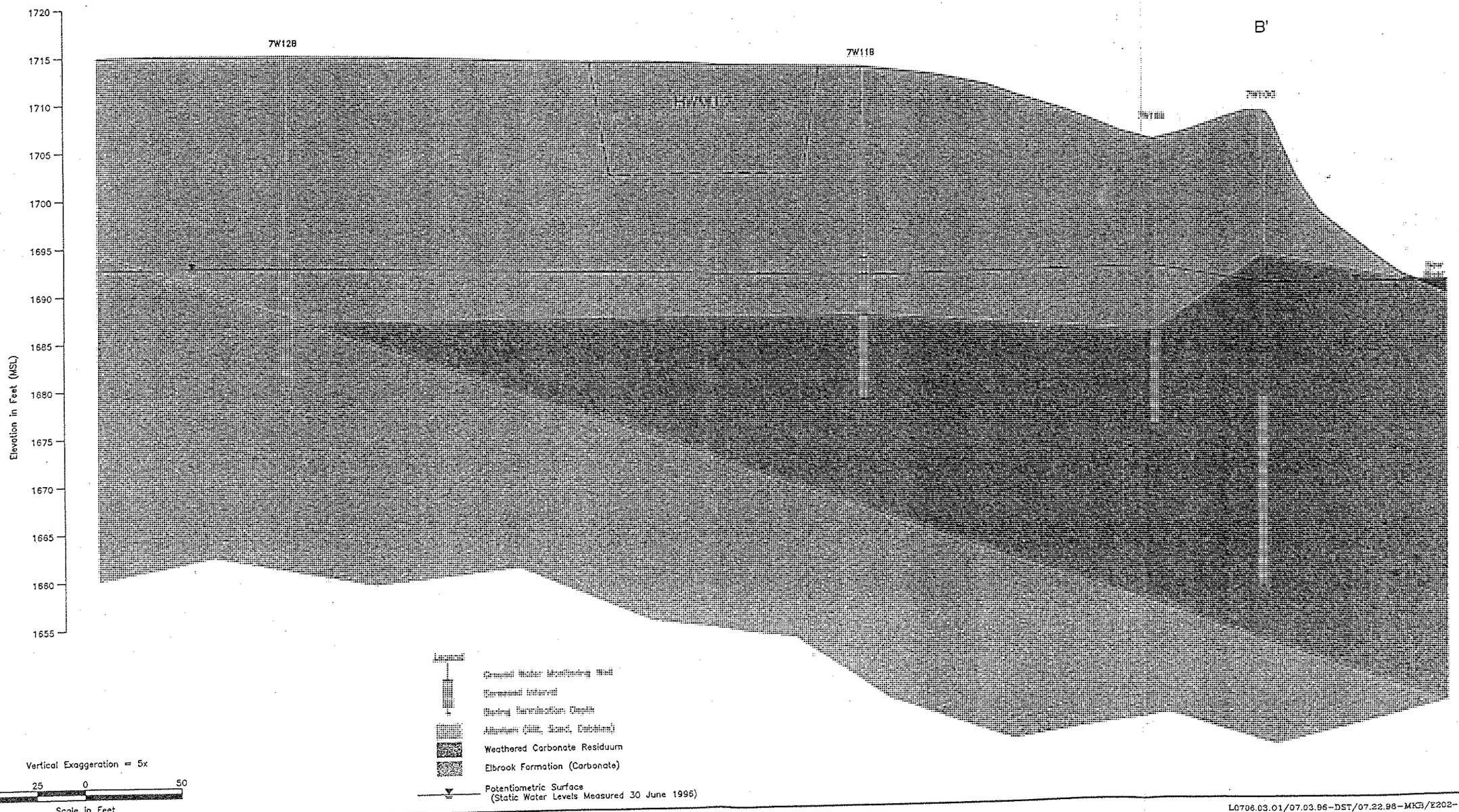
L0706.03.01/08.01.96-DST/1103-4A

# Site 7
## Geologic Cross Section A - A'
## Radford Army Ammunition Plant
## Radford, Virginia



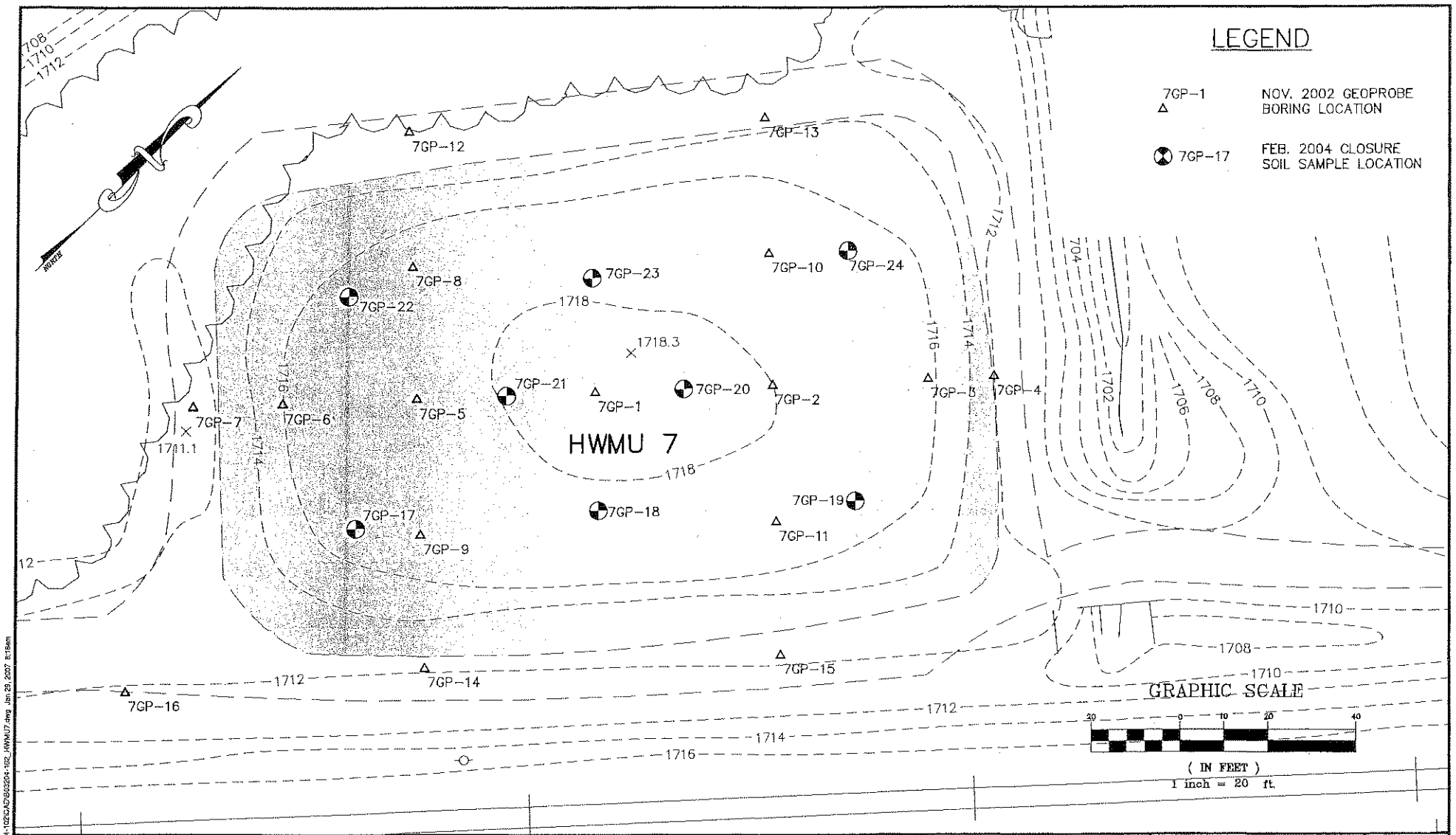

L0708.03.01/07.03.96-DST/07.22.96-MKE/E201-1C

# Site 7
## Geologic Cross Section B - B'
## Radford Army Ammunition Plant
## Radford, Virginia




L0706.03.01/07.03.96-DST/07.22.96-MKB/E202-1C

ERM, INC.





**Draper Aden Associates**
Engineering • Surveying • Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 3

P:\ES\2006\B03204\B03204-102\CAD\B03204-102_HWMU7.dwg Jan 29, 2007 8:18am

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-1** **(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **16.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Soil sample 7-GP-1 (1-3) submitted for analysis. Perched water. |
| | | | | SM. Yellow-brown micaceous fine silty sand, dry. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Yellow-brown micaceous fine sandy clay with little gravel, damp. | | | | | Clay liner. |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-2**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **20.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine micaceous silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | Soil sample 7-GP-2 (8-12) submitted for analysis. |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | | | | | | Soil sample 7-GP-2 (13.5-14.5) submitted for analysis. |
| | | | 15 | SM. Dark gray fine sandy and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| S-5 | | | | | | | | | |
| | | | 20 | Boring terminated at 20 feet. | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-3**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | SM. Yellow-brown, micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 10 | | | | | | Soil sample 7-GP-3 (10-11) submitted for analysis. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-4** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | | | | | | Soil sample 7-GP-4 (3-4) submitted for analysis. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Dark gray fine sand and silt, wet. | | | | | Aquatic odor. |
| | | | | Boring terminated at 8 feet. | | | | | |
| | | | | No residual material encountered. | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-5** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-5 (6-11) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-6** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water.<br>30 mil. PVC. |
| | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | 10 | | | | | | |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-7**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Gravel.<br>SW. Brown fine sand, moist to wet. | | | | | Boring backfilled with bentonite. |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-8**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-8 (5-8) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-9** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-10**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | Perched water. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-11**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SP-GP. Yellow-brown fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-12**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-13**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-14**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-15**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-16**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | Soil sample 7-GP-16 (3-4) submitted for analysis. |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-17**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragements, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner/top of native soil. Sample 7-GP-17 (11) submitted for analysis of TAL/TCL. Aquatic odor. |
| S-4 | | | | | | | | | |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-18**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-18 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-19**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-19 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-20**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay/top of native soil. Sample 7-GP-20 (14.5) submitted for analysis of TAL/TCL. Collected MS/MSD. Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-21** **(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-21 (13.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-22**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Samples 7-GP-22 (13) and 7-GP-22-22 (13) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-23**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual amterial, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| S-4 | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-23 (12.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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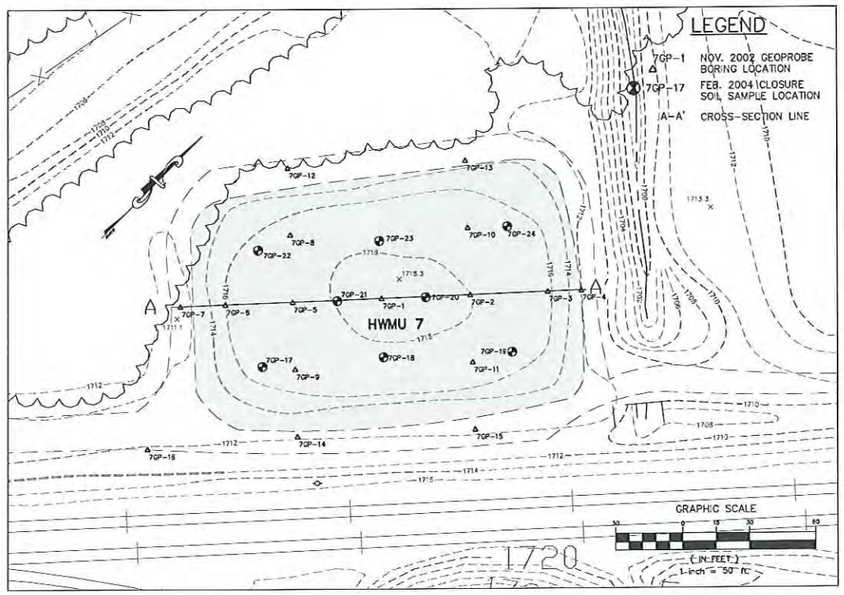
LOG OF: **7-GP-24**
**(1 of 1)**

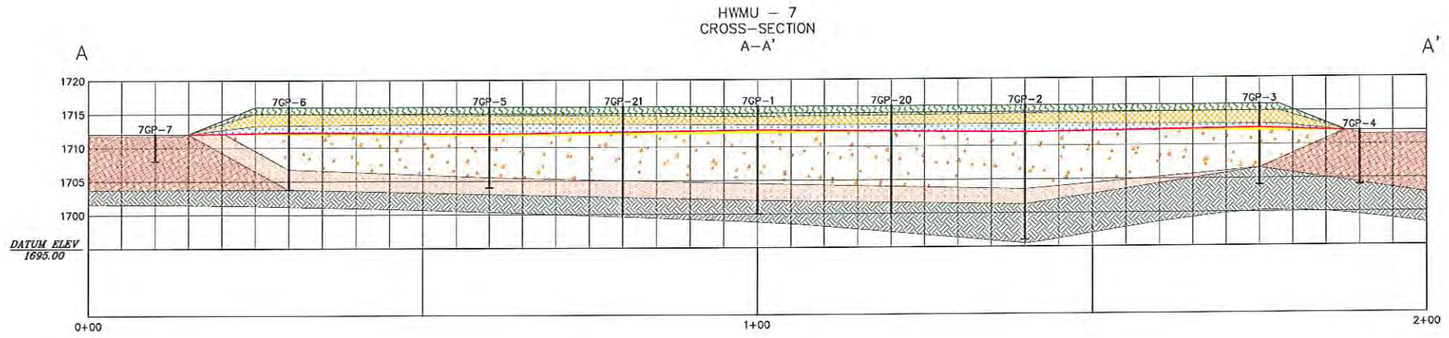
Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | | | | | | Clay liner. Sample 7-GP-24 (14) submitted for analysis by TAL/TCL. |
| | | | 15 | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07




LEGEND

- BROWN FINE SILTY SAND (TOPSOIL)
- YELLOW–BROWN FINE TO COARSE SANDY CLAY
- LIGHT GRAY FINE TO COARSE SAND
- 30 MIL. PVC LINER
- YELLOW–BROWN MICACEOUS FINE SILTY SAND
- RESIDUAL MATERIAL FROM CLEAN–UP ACTIVITIES
- RED–BROWN MICACEOUS FINE SANDY CLAY
- BROWN FINE SOIL (NATIVE)
- DARK GRAY FINE SAND AND SILT (NATIVE)

VERTICAL SCALE: 1"= 10'
HORIZONTAL SCALE: 1"= 10'
NO VERTICAL EXAGGERATION

Draper Aden Associates
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Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC

# CROSS SECTION A - A'
## HAZARDOUS WASTE MANAGEMENT UNITS 5 & 7
## RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS

| | |
|---|---|
| DESIGNED BY: | MAC |
| DRAWN BY: | KKD |
| CHECKED BY: | |
| SCALE: | 1" = 10' |
| DATE: | 02/21/2006 |
| PROJECT NUMBER: | B03204-122 |

FIGURE 3

**APPENDIX B**
**(CD-ROM)**

**JUNE 23, 2011 COMPLIANCE MONITORING WELL NETWORK SEDIMENT SAMPLING**
**JUNE 29-30, 2011 WELL 7W13 REDEVELOPMENT AND GROUNDWATER SAMPLING**
**JULY 27, 2011 WELL 7W13 REDEVELOPMENT AND GROUNDWATER SAMPLING**

# APPENDIX C

## MANN-KENDALL TREND TESTS – WELLS 7WCA AND 7W13

**Mann-Kendall Trend Test**
**Radford AAP HWMU-7**
**Dec-11**

Analyte: Cobalt
Well: 7WCA
Time Period: Semiannual data for the last 5 years (Second Qtr 2007 through Fourth Qtr 2011)
Time Period 1 corresponds to Second Qtr 2007 data and Time Period 10 corresponds to Fourth Qtr 2011 data

**Mann-Kendall Triangular Table**

| **Time** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | **Number of +signs (shown as 1)** | **Number of -signs (shown as -1)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Data** | 5 | 5 | 5.8 | 5.5 | 5.7 | 5 | 5 | 5 | 5 | 5 | | |
| 5 | | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 5 | | | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 5.8 | | | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 0 | 7 |
| 5.5 | | | | | 1 | -1 | -1 | -1 | -1 | -1 | 1 | 5 |
| 5.7 | | | | | | -1 | -1 | -1 | -1 | -1 | 0 | 5 |
| 5 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | | | 0 | 0 | 0 |
| | | | | | | | | | **Total Number of Signs** | | 7 | 17 |

From the Table Above, S = -10
From Table A-12a of Appendix A (Reference Document), critical value for sample size of 10 for $\alpha = 0.05$ is 21
The calculated S value is not greater than the critical value.
From Table A-12b of Appendix A for n=10, S=-10, p=0.216
Since S<0, but p=0.216 ≥ 0.05, the null hypothesis is not rejected.
Therefore there is not enough evidence to conclude that there is a decreasing trend in the data. Also, there is no evidence of an increasing trend.
**Trend Analysis shows evidence that the data are stable.**
The QL of 5 was substituted for data reported less than QL

Reference Document: USEPA Guidance for Data Quality Assessment - Statistical Methods for Practitioners, EPA QA/G-9S
EPA/240/B-06/003, February 2006

**Mann-Kendall Trend Test**
**Radford AAP HWMU-7**
**Dec-11**

Analyte: Cobalt
Well: 7W13
Time Period: Semiannual data for the last 5 years (Second Qtr 2007 through Fourth Qtr 2011)
Time Period 1 corresponds to Second Qtr 2007 data and Time Period 10 corresponds to Fourth Qtr 2011 data

**Mann-Kendall Triangular Table**

| **Time** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | **Number of +signs (shown as 1)** | **Number of -signs (shown as -1)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Data** | 8.7 | 8.9 | 5.8 | 12 | 8.2 | 10.7 | 11.2 | 16.4 | 9.41 | 11.7 | | |
| 8.7 | | 1 | -1 | 1 | -1 | 1 | 1 | 1 | 1 | 1 | 7 | 2 |
| 8.9 | | | -1 | 1 | -1 | 1 | 1 | 1 | 1 | 1 | 6 | 2 |
| 5.8 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 0 |
| 12 | | | | | -1 | -1 | -1 | 1 | -1 | -1 | 1 | 5 |
| 8.2 | | | | | | 1 | 1 | 1 | 1 | 1 | 5 | 0 |
| 10.7 | | | | | | | 1 | 1 | -1 | 1 | 3 | 1 |
| 11.2 | | | | | | | | 1 | -1 | 1 | 2 | 1 |
| 16.4 | | | | | | | | | -1 | -1 | 0 | 2 |
| 9.41 | | | | | | | | | | 1 | 1 | 0 |
| | | | | | | | | | **Total Number of Signs** | | 32 | 13 |

From the Table Above, S = 19
From Table A-12a of Appendix A (Reference Document), critical value for sample size of 10 for $\alpha = 0.05$ is 21
The calculated S value is not greater than the critical value.
From Table A-12b of Appendix A for n=10, S=19, p=0.054
Since S>0, but p=0.054 ≥ 0.05, the null hypothesis is not rejected.
Therefore there is not enough evidence to conclude that there is a decreasing trend in the data. Also, there is no evidence of an increasing trend.
**Trend Analysis shows evidence that the data are stable.**

Reference Document: USEPA Guidance for Data Quality Assessment - Statistical Methods for Practitioners, EPA QA/G-9S
EPA/240/B-06/003, February 2006

# APPENDIX D

## UPGRADIENT WELL COBALT DATA FOR ADDITIONAL RADFORD AAP UNITS

# RADFORD ARMY AMMUNITION PLANT
# RADFORD, VIRGINIA

## Solid Waste Management Units 35, 37, 38, and Area of Concern Q (RAAP-10) RCRA Facility Investigation Report

**FINAL**
**SEPTEMBER 2010**

**PREPARED BY:**

URS

5540 Falmouth Street, Suite 201
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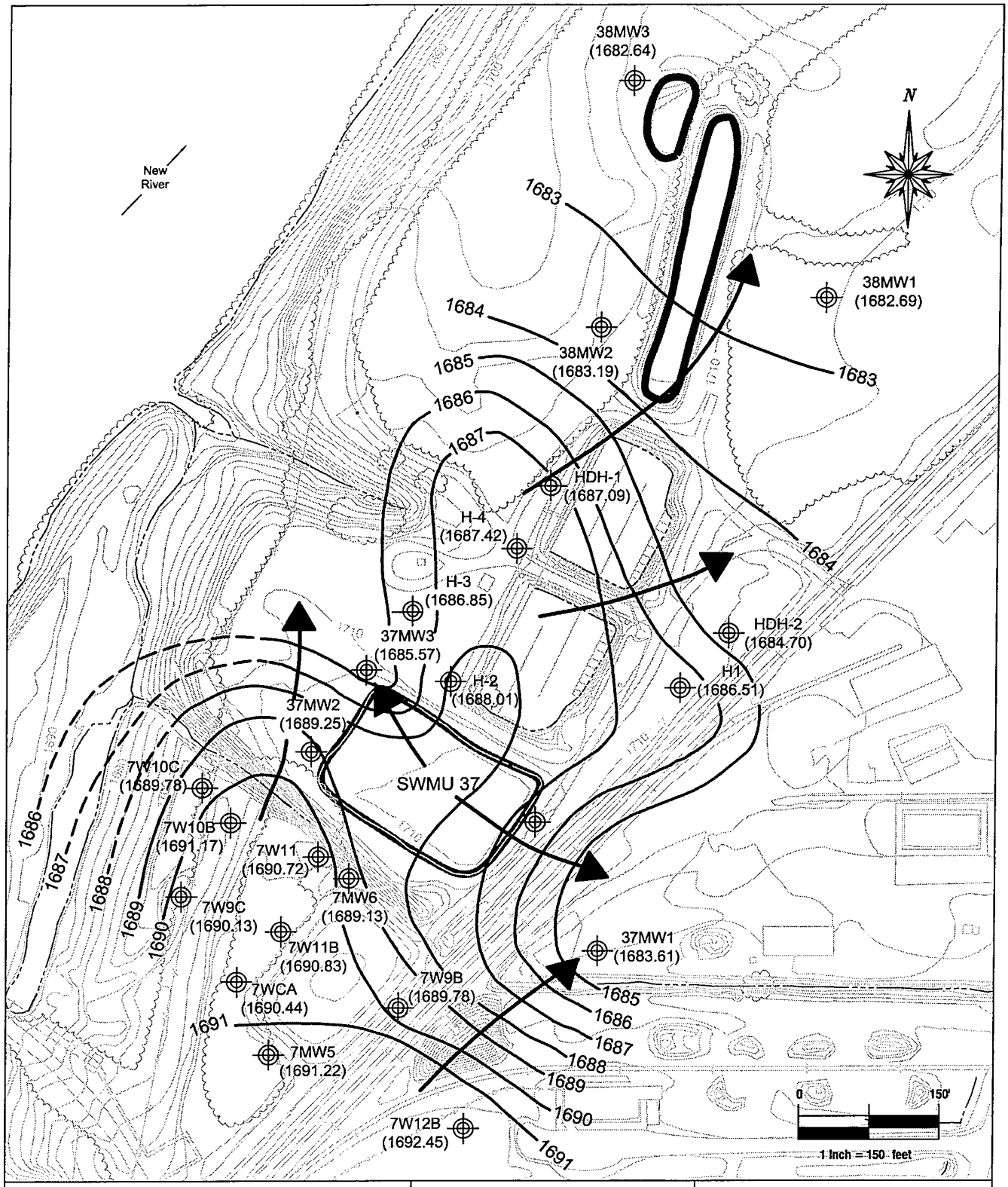
ARCHITECT-ENGINEER SERVICES
CONTRACT NO. DACA31-00-0011
DELIVERY ORDER NO. 0054




Legend

- Topographic Contour
- SWMU Boundary
- Perimeter Fence
- Groundwater Flow Direction
- Monitoring Well
- Proposed Monitoring Well
- Potentiometric Contour
- (1688.96) Groundwater Elevation (feet, mean sea level)

# FIGURE 2-15

Potentiometric Contour Map for November 2009

| | |
|---|---|
| Date: February 2009 | URS Project #: 21354887 |
| Prepared by: DBC | Approved by: JOS |
| Scale: 1 inch = 150 feet | File Name: Fig.2-15 PotMap |

**SWMUs 35, 37, 38, and AOC Q**
RFI Report
Radford Army Ammunition Plant
Radford, Virginia

URS
URS Group, Inc.
5540 Falmouth Street
Suite 201
Richmond, Virginia 23230

Table 2-3
Monitoring Well and Groundwater Elevation Data
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Well Identification | Date Installed | Screened Zone | Boring Depth (ft bgs) | Depth to Bedrock (ft bgs) | Bedrock Elevation (ft msl) | Screened Interval (ft bgs) | Elevation Ground Surface (ft msl) | Elevation TOC (inner) (ft msl) | RFI | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | DTW (ft BTOC) 02/07/08 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 08/12/08 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 11/10/09 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 06/16/10 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) |
| 35MW1 | 12/14/2007 | unconsolidated/bedrock | 31.0 | 22.0 | 1681.72 | 11.0-31.0 | 1703.72 | 1706.42 | 19.82 | 1686.60 | 4.88 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 35MW2 | 12/17/2007 | unconsolidated/bedrock | 31.0 | 26.0 | 1677.91 | 11.0-31.0 | 1703.91 | 1706.88 | 21.32 | 1685.56 | 7.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D-2 | 8/7/1980 | unconsolidated/bedrock | 35.0 | 23.5 | 1688.91 | 20.0-35.0 | 1712.41 | 1715.10 | 23.51 | 1691.59 | 2.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D-4 | 8/7/1980 | unconsolidated/bedrock | 35.0 | 23.0 | 1689.45 | 20.0-35.0 | 1712.45 | 1714.78 | 22.90 | 1691.88 | 2.43 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 37MW1 | 12/13/2007 | unconsolidated/bedrock | 40.0 | 32.0 | 1681.35 | 15.0-40.0 | 1713.35 | 1716.02 | 32.61 | 1683.41 | 2.06 | 33.07 | 1682.95 | 1.60 | 32.41 | 1683.61 | 2.26 | 32.29 | 1683.73 | 2.38 |
| 37MW2 | 12/11/2007 | unconsolidated/bedrock | 41.0 | 27.0 | 1687.38 | 21.0-41.0 | 1714.38 | 1716.82 | 27.86 | 1688.96 | 1.58 | 27.95 | 1688.87 | 1.49 | 27.57 | 1689.25 | 1.87 | 27.60 | 1689.22 | 1.84 |
| 37MW3 | 12/12/2007 | unconsolidated/bedrock | 41.0 | 27.0 | 1685.00 | 21.0-41.0 | 1712.00 | 1714.55 | 29.51 | 1685.04 | 0.04 | 29.96 | 1684.59 | -0.41 | 28.98 | 1685.57 | 0.57 | 29.51 | 1685.04 | 0.04 |
| 37MW4 | 5/25/2010 | unconsolidated/bedrock | 45.5 | 26.0 | 1687.38 | 20.0-45.0 | 1713.38 | 1716.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 30.31 | 1685.70 | -1.68 |
| 38MW1 | 12/20/2007 | unconsolidated/bedrock | 40.0 | 34.0 | 1675.40 | 20.0-40.0 | 1709.40 | 1712.00 | 29.25 | 1682.75 | 7.35 | 30.50 | 1681.50 | 6.10 | 29.31 | 1682.69 | 7.29 | 29.07 | 1682.93 | 7.53 |
| 38MW2 | 12/21/2007 | unconsolidated/bedrock | 36.0 | 26.5 | 1681.08 | 16.0-36.0 | 1707.58 | 1710.30 | 27.13 | 1683.17 | 2.09 | 28.37 | 1681.93 | 0.85 | 27.11 | 1683.19 | 2.11 | 27.13 | 1683.17 | 2.09 |
| 38MW3 | 12/18/2007 | unconsolidated/bedrock | 41.0 | 28.0 | 1677.03 | 16.0-41.0 | 1705.03 | 1707.69 | 24.95 | 1682.74 | 5.71 | 26.48 | 1681.21 | 4.18 | 25.05 | 1682.64 | 5.61 | 24.74 | 1682.95 | 5.92 |
| H-1 | 7/23/1980 | unconsolidated/bedrock | 40.0 | 26.0 | 1686.48 | 25.0-40.0 | 1712.48 | 1715.53 | -- | -- | -- | -- | -- | -- | 29.02 | 1686.51 | 0.03 | 30.03 | 1685.50 | -0.98 |
| H-2 | 7/24/1980 | unconsolidated | 40.0 | -- | -- | 25.0-40.0 | 1709.90 | 1712.70 | -- | -- | -- | -- | -- | -- | 24.69 | 1688.01 | -- | 26.04 | 1686.66 | -- |
| H-3 | 7/25/1980 | unconsolidated/bedrock | 40.0 | 23.0 | 1686.66 | 25.0-40.0 | 1709.66 | 1712.98 | -- | -- | -- | -- | -- | -- | 26.13 | 1686.85 | 0.19 | 27.19 | 1685.79 | -0.87 |
| H-4 | 7/25/1980 | unconsolidated/bedrock | 40.0 | 32.0 | 1678.90 | 25.0-40.0 | 1710.90 | 1713.90 | -- | -- | -- | -- | -- | -- | 26.48 | 1687.42 | 8.52 | 28.56 | 1685.34 | 6.44 |
| HDH-1 | 7/14/1980 | unconsolidated/bedrock | 40.0 | 24.0 | 1686.60 | 20.0-40.0 | 1710.60 | 1713.60 | -- | -- | -- | -- | -- | -- | 26.51 | 1687.09 | 0.49 | 28.00 | 1685.60 | -1.00 |
| HDH-2 | 7/11/1980 | unconsolidated/bedrock | 45.0 | 35.0 | 1678.00 | 25.0-40.0 | 1713.00 | 1716.00 | -- | -- | -- | -- | -- | -- | 31.30 | 1684.70 | 6.70 | 31.67 | 1684.33 | 6.33 |
| 7W12B | NA | NA | 35.0 | NA | -- | 19.5-34.5 | 1714.81 | 1717.31 | -- | -- | -- | -- | -- | -- | 24.86 | 1692.45 | -- | 24.70 | 1692.61 | -- |
| 7WCA | 5/12/1987 | unconsolidated/bedrock | 40.8 | 28.9 | 1683.50 | 31.6-38.6 | 1712.40 | 1715.40 | -- | -- | -- | -- | -- | -- | 24.96 | 1690.44 | 6.94 | 24.92 | 1690.48 | 6.98 |
| 7MW6 | 1/11/1989 | unconsolidated | 64.5 | -- | -- | 47.5-52.5 | 1712.80 | 1715.30 | -- | -- | -- | -- | -- | -- | 26.17 | 1689.13 | -- | 26.18 | 1689.12 | -- |
| 7W11B | 2/10/1983 | unconsolidated/bedrock | 35.0 | 30.0 | 1682.90 | 20.0-35.0 | 1712.90 | 1715.90 | -- | -- | -- | -- | -- | -- | 25.07 | 1690.83 | 7.93 | 25.04 | 1690.86 | 7.96 |
| 7W9C | NA | NA | 40.0 | NA | -- | 20.0-40.0 | 1703.70 | 1704.45 | -- | -- | -- | -- | -- | -- | 14.32 | 1690.13 | -- | 14.32 | 1690.13 | -- |
| 7W10B | NA | NA | 32.0 | NA | -- | 20.0-30.0 | 1704.65 | 1706.65 | -- | -- | -- | -- | -- | -- | 15.48 | 1691.17 | -- | 15.46 | 1691.19 | -- |
| 7W10C | NA | NA | 50.0 | NA | -- | 30.0-50.0 | 1701.50 | 1709.30 | -- | -- | -- | -- | -- | -- | 19.52 | 1689.78 | -- | 20.20 | 1689.10 | -- |
| 7MW5 | 1/10/1989 | unconsolidated/bedrock | 44.5 | 29.5 | 1683.70 | 29.0-39.0 | 1713.20 | 1716.20 | -- | -- | -- | -- | -- | -- | 24.98 | 1691.22 | 7.52 | 24.96 | 1691.24 | 7.54 |
| 7W11 | NA | NA | 35.0 | NA | -- | 16.0-26.0 | 1712.82 | 1714.82 | -- | -- | -- | -- | -- | -- | 24.10 | 1690.72 | -- | 24.13 | 1690.69 | -- |
| 7W9B | NA | NA | 38.0 | NA | -- | 28.0-38.0 | 1711.40 | 1712.49 | -- | -- | -- | -- | -- | -- | 22.71 | 1689.78 | -- | 22.71 | 1689.78 | -- |

**Notes:**
ft = feet
msl = mean sea level
bgs = below ground surface
TOC = Top of Casing
DTW = Depth to Water
BTOC = Below Top of Casing
RFI = RCRA Facility Investigation
NA = Not Available

Table 4-7
Summary of Detected Chemicals in Groundwater Analytical Samples at SWMU 37
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Sample ID / Sample Date | CAS | C/N | Adjusted Tap Water RBC | MCL | Units | 37MW1 2/11/2008 | | MDL | RL | 37MW2 2/11/2008 | | MDL | RL | 37MW2* 6/24/2008 | | MDL | RL | 37MW2-DUP (DUP-2)* 6/24/2008 | | MDL | RL | 37MW3 2/12/2008 | | MDL | RL | 37MW4 6/16/2010 | | MDL | RL | 37MW4-DUP (DUP-1) 6/16/2010 | | MDL | RL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | |
| **Perchlorate** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | 14797-73-0 | N | 2.555 | -- | ug/L | 0.97 | | 0.08 | 0.2 | 2.2 | | 0.08 | 0.2 | NT | | | | NT | | | | 2 | | 0.08 | 0.2 | NT | | | | NT | | | |
| **TAL Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total | 7429-90-5 | N | 3,650 | -- | ug/L | 82 | J | 44 | 200 | 17,000 | | 44 | 200 | NT | | | | NT | | | | 180 | J | 44 | 200 | NT | | | | NT | | | |
| Antimony, Dissolved | 7440-36-0 | N | 1.46 | 6 | ug/L | <3 | U | 0.44 | 3 | 0.54 | J,B,p | 0.44 | 3 | NT | | | | NT | | | | <3 | U | 0.44 | 3 | NT | | | | NT | | | |
| Arsenic, Total | 7440-38-2 | C | 0.0446 | 10 | ug/L | <3 | U | 0.74 | 3 | 3.9 | | 0.74 | 3 | NT | | | | NT | | | | <3 | U | 0.74 | 3 | NT | | | | NT | | | |
| Barium, Dissolved | 7440-39-3 | N | 730 | 2,000 | ug/L | 35 | | 0.52 | 2 | 28 | | 0.52 | 2 | NT | | | | NT | | | | 12 | | 0.52 | 2 | NT | | | | NT | | | |
| Barium, Total | 7440-39-3 | N | 730 | 2,000 | ug/L | 42 | | 0.52 | 2 | 1,300 | | 2.6 | 10 | NT | | | | NT | | | | 16 | | 0.52 | 2 | NT | | | | NT | | | |
| Beryllium, Total | 7440-41-7 | N | 7.3 | 4 | ug/L | <2 | U | 0.31 | 2 | 0.73 | J | 0.31 | 2 | NT | | | | NT | | | | <2 | U | 0.31 | 2 | NT | | | | NT | | | |
| Cadmium, Total | 7440-43-9 | N | 1.825 | 5 | ug/L | <0.2 | U | 0.062 | 0.2 | 0.097 | J | 0.062 | 0.2 | NT | | | | NT | | | | <0.2 | U | 0.062 | 0.2 | NT | | | | NT | | | |
| Calcium, Dissolved | 7440-70-2 | -- | -- | -- | ug/L | 92,000 | | 40 | 500 | 160,000 | | 40 | 500 | NT | | | | NT | | | | 260,000 | | 40 | 500 | NT | | | | NT | | | |
| Calcium, Total | 7440-70-2 | -- | -- | -- | ug/L | 91,000 | | 40 | 500 | 240,000 | | 40 | 500 | NT | | | | NT | | | | 260,000 | | 40 | 500 | NT | | | | NT | | | |
| Chromium, Dissolved[1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 5.9 | | 0.31 | 2 | 2.4 | ,B,p | 0.31 | 2 | NT | | | | NT | | | | 1.5 | J,B,p | 0.31 | 2 | NT | | | | NT | | | |
| Chromium, Total[1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 8.1 | | 0.31 | 2 | 80 | | 0.31 | 2 | NT | | | | NT | | | | 2.7 | ,B,x | 0.31 | 2 | NT | | | | NT | | | |
| Cobalt, Dissolved | 7440-48-4 | -- | -- | -- | ug/L | 0.97 | J | 0.096 | 1 | 8.9 | | 0.096 | 1 | NT | | | | NT | | | | 1.4 | | 0.096 | 1 | NT | | | | NT | | | |
| Cobalt, Total | 7440-48-4 | -- | -- | -- | ug/L | 2.2 | | 0.096 | 1 | 12 | | 0.096 | 1 | NT | | | | NT | | | | 1.6 | | 0.096 | 1 | NT | | | | NT | | | |
| Copper, Dissolved | 7440-50-8 | N | 146 | 1,300 | ug/L | 1 | | 0.33 | 1 | 1.3 | | 0.33 | 1 | NT | | | | NT | | | | 1.6 | | 0.33 | 1 | NT | | | | NT | | | |
| Copper, Total | 7440-50-8 | N | 146 | 1,300 | ug/L | 1.3 | | 0.33 | 1 | 8.4 | | 0.33 | 1 | NT | | | | NT | | | | 2.3 | | 0.33 | 1 | NT | | | | NT | | | |
| Iron, Dissolved | 7439-89-6 | N | 2,555 | -- | ug/L | 11 | J | 5.7 | 20 | 31 | | 5.7 | 20 | NT | | | | NT | | | | <20 | U | 5.7 | 20 | NT | | | | NT | | | |
| Iron, Total | 7439-89-6 | N | 2,555 | -- | ug/L | 380 | | 5.7 | 20 | 24,000 | | 5.7 | 20 | NT | | | | NT | | | | 320 | | 5.7 | 20 | NT | | | | NT | | | |
| Lead, Total[2] | 7439-92-1 | -- | 15 | -- | ug/L | <1 | U | 0.33 | 1 | 5.4 | | 0.33 | 1 | NT | | | | NT | | | | <1 | U | 0.33 | 1 | NT | | | | NT | | | |
| Magnesium, Dissolved | 7439-95-4 | -- | -- | -- | ug/L | 28,000 | | 38 | 500 | 89,000 | | 38 | 500 | NT | | | | NT | | | | 47,000 | | 38 | 500 | NT | | | | NT | | | |
| Magnesium, Total | 7439-95-4 | -- | -- | -- | ug/L | 29,000 | | 38 | 500 | 130,000 | | 38 | 500 | NT | | | | NT | | | | 48,000 | | 38 | 500 | NT | | | | NT | | | |
| Manganese, Dissolved | 7439-96-5 | N | 73 | -- | ug/L | 2.3 | J | 0.43 | 3 | 260 | | 0.43 | 3 | NT | | | | NT | | | | 3.7 | | 0.43 | 3 | NT | | | | NT | | | |
| Manganese, Total | 7439-96-5 | N | 73 | -- | ug/L | 52 | | 0.43 | 3 | 710 | | 0.86 | 6 | NT | | | | NT | | | | 22 | | 0.43 | 3 | NT | | | | NT | | | |
| Nickel, Dissolved | 7440-02-0 | N | 73 | -- | ug/L | 1.3 | J,B,p | 0.28 | 2 | 28 | | 0.28 | 2 | NT | | | | NT | | | | 3.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Nickel, Total | 7440-02-0 | N | 73 | -- | ug/L | 2.4 | | 0.28 | 2 | 62 | | 0.28 | 2 | NT | | | | NT | | | | 3.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Potassium, Dissolved | 7440-09-7 | -- | -- | -- | ug/L | 570 | | 54 | 200 | 5,100 | | 54 | 200 | NT | | | | NT | | | | 1,100 | | 54 | 200 | NT | | | | NT | | | |
| Potassium, Total | 7440-09-7 | -- | -- | -- | ug/L | 730 | | 54 | 200 | 9,700 | | 54 | 200 | NT | | | | NT | | | | 1,100 | | 54 | 200 | NT | | | | NT | | | |
| Sodium, Dissolved | 7440-23-5 | -- | -- | -- | ug/L | 65,000 | | 84 | 500 | 54,000 | | 84 | 500 | NT | | | | NT | | | | 110,000 | | 84 | 500 | NT | | | | NT | | | |
| Sodium, Total | 7440-23-5 | -- | -- | -- | ug/L | 65,000 | | 84 | 500 | 56,000 | | 84 | 500 | NT | | | | NT | | | | 110,000 | | 84 | 500 | NT | | | | NT | | | |
| Selenium, Dissolved | 7782-49-2 | N | 18.25 | 50 | ug/L | 1.2 | J | 0.92 | 3 | <3 | U | 0.92 | 3 | NT | | | | NT | | | | <3 | U | 0.92 | 3 | NT | | | | NT | | | |
| Selenium, Total | 7782-49-2 | N | 18.25 | 50 | ug/L | 1.6 | J | 0.92 | 3 | <3 | U | 0.92 | 3 | NT | | | | NT | | | | <3 | U | 0.92 | 3 | NT | | | | NT | | | |
| Silver, Total | 7440-22-4 | N | 18.25 | -- | ug/L | <0.5 | U | 0.12 | 0.5 | 0.32 | J | 0.12 | 0.5 | NT | | | | NT | | | | <0.5 | U | 0.12 | 0.5 | NT | | | | NT | | | |
| Vanadium, Dissolved | 7440-62-2 | N | 3.65 | -- | ug/L | <5 | U | 0.83 | 5 | 1.7 | J | 0.83 | 5 | NT | | | | NT | | | | <5 | U | 0.83 | 5 | NT | | | | NT | | | |
| Vanadium, Total | 7440-62-2 | N | 3.65 | -- | ug/L | 0.85 | J | 0.83 | 5 | 24 | | 0.83 | 5 | NT | | | | NT | | | | 0.98 | J | 0.83 | 5 | NT | | | | NT | | | |
| Zinc, Dissolved | 7440-66-6 | N | 1,095 | -- | ug/L | 15 | ,B,p | 0.84 | 10 | 20 | ,B,p | 0.84 | 10 | NT | | | | NT | | | | 7.4 | J,B,p | 0.84 | 10 | NT | | | | NT | | | |
| Zinc, Total | 7440-66-6 | N | 1,095 | -- | ug/L | 9.1 | J,B,p | 0.84 | 10 | 36 | | 0.84 | 10 | NT | | | | NT | | | | 7.9 | J,B,p | 0.84 | 10 | NT | | | | NT | | | |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| alpha-BHC | 319-84-6 | C | 0.0106 | -- | ug/L | <0.05 | U | 0.0019 | 0.05 | 0.49 | | 0.0038 | 0.1 | 0.062 | | 0.0019 | 0.05 | 0.05 | | 0.0019 | 0.05 | <0.05 | U | 0.0019 | 0.05 | NT | | | | NT | | | |
| alpha-Chlordane[3] | 5103-71-9 | C | 0.191 | 2 | ug/L | 0.29 | ,J,g | 0.0042 | 0.1 | 0.046 | J,J,g | 0.0021 | 0.05 | 0.13 | ,J,m | 0.0021 | 0.05 | 0.15 | ,J,g | 0.0021 | 0.05 | 0.1 | ,J,g | 0.0021 | 0.05 | NT | | | | NT | | | |
| beta-BHC | 319-85-7 | C | 0.0372 | -- | ug/L | <0.05 | U | 0.0032 | 0.05 | 0.052 | ,J,g | 0.0032 | 0.05 | 0.017 | J,J,m | 0.0032 | 0.05 | <0.050 | U | 0.0032 | 0.05 | <0.05 | U | 0.0032 | 0.05 | NT | | | | NT | | | |
| delta-BHC[4] | 319-86-8 | C | 0.0106 | -- | ug/L | <0.1 | U | 0.0023 | 0.1 | 0.016 | J | 0.0023 | 0.1 | 0.0055 | J | 0.0023 | 0.1 | 0.0038 | J | 0.0023 | 0.05 | <0.1 | U | 0.0023 | 0.1 | NT | | | | NT | | | |
| Endosulfan II[5] | 33213-65-9 | N | 21.9 | -- | ug/L | <0.1 | U | 0.0018 | 0.1 | <0.1 | U | 0.0018 | 0.1 | 0.02 | J,J,g | 0.0018 | 0.1 | 0.016 | J,J,g | 0.0018 | 0.1 | 0.013 | J,J,g | 0.0018 | 0.1 | NT | | | | NT | | | |
| gamma-BHC (Lindane) | 58-89-9 | C | 0.0515 | 0.2 | ug/L | <0.05 | U | 0.0018 | 0.05 | 0.013 | J | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | NT | | | | NT | | | |
| gamma-Chlordane[3] | 5103-74-2 | C | 0.191 | 2 | ug/L | 0.13 | | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | 0.058 | ,J,g | 0.0021 | 0.05 | NT | | | | NT | | | |
| Heptachlor Epoxide | 1024-57-3 | C | 0.0074 | 0.2 | ug/L | 0.15 | ,J,g | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | 0.059 | ,J,m | 0.0021 | 0.05 | 0.058 | ,J,g | 0.0021 | 0.5 | <0.05 | U | 0.0021 | 0.05 | NT | | | | NT | | | |
| **TCL VOCs** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | N | 1.825 | -- | ug/L | <1 | U | 0.12 | 1 | 0.21 | J | 0.12 | 1 | NT | | | | NT | | | | <1 | U | 0.12 | 1 | <1 | U | 0.13 | 1 | <1 | U | 0.13 | 1 |
| Acetone | 67-64-1 | N | 547.5 | -- | ug/L | <20 | U | 1.2 | 20 | 16 | J,B,z | 1.2 | 20 | NT | | | | NT | | | | <20 | U | 1.2 | 20 | <20 | U,UJ,c | 2.1 | 20 | <20 | U,UJ,c | 2.1 | 20 |
| Chloroform | 67-66-3 | C | 0.155 | 80 | ug/L | <1 | U | 0.061 | 1 | <1 | U | 0.061 | 1 | NT | | | | NT | | | | 0.28 | J | 0.061 | 1 | <1 | U | 0.17 | 1 | <1 | U | 0.17 | 1 |
| Toluene | 108-88-3 | N | 227.1 | 1,000 | ug/L | 0.17 | J,B,z | 0.072 | 1 | 0.25 | J,B,z | 0.072 | 1 | NT | | | | NT | | | | 0.13 | J,B,z | 0.072 | 1 | 0.22 | J | 0.16 | 1 | 0.22 | J | 0.16 | 1 |
| **Explosives** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,3-Dinitrobenzene | 99-65-0 | N | 0.365 | -- | ug/L | <5 | U | 0.071 | 5 | <5 | U | 0.071 | 5 | NT | | | | NT | | | | 0.18 | J | 0.071 | 5 | NT | | | | NT | | | |
| 2,6-Dinitrotoluene | 606-20-2 | N | 3.65 | -- | ug/L | <5 | U | 0.16 | 5 | <5 | U | 0.16 | 5 | NT | | | | NT | | | | 0.59 | J,J,g | 0.16 | 5 | NT | | | | NT | | | |
| 2-Amino-4,6-dinitrotoluene | 35572-78-2 | N | 7.3 | -- | ug/L | <5 | U | 0.24 | 5 | <5 | U | 0.24 | 5 | NT | | | | NT | | | | 0.39 | J | 0.24 | 5 | NT | | | | NT | | | |
| 4-Amino-2,6-dinitrotoluene | 1946-51-0 | N | 7.3 | -- | ug/L | <5 | U | 0.22 | 5 | <5 | U | 0.22 | 5 | NT | | | | NT | | | | 0.49 | J | 0.22 | 5 | NT | | | | NT | | | |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | -- | -- | -- | -- | mg/L | 6.34 | | | | 3.98 | | | | NT | | | | NT | | | | 0.88 | | | | NT | | | | NT | | | |
| Oxidation Reduction Potential | -- | -- | -- | -- | mV | 203 | | | | 73 | | | | NT | | | | NT | | | | 117 | | | | NT | | | | NT | | | |
| pH | -- | -- | -- | -- | SU | 6.66 | | | | 6.52 | | | | NT | | | | NT | | | | 6.31 | | | | NT | | | | NT | | | |
| Conductivity | -- | -- | -- | -- | mS | 0.97 | | | | 1.73 | | | | NT | | | | NT | | | | 1.8 | | | | NT | | | | NT | | | |
| Temperature | -- | -- | -- | -- | °C | 18.05 | | | | 19.58 | | | | NT | | | | NT | | | | 16.71 | | | | NT | | | | NT | | | |
| Turbidity | -- | -- | -- | -- | ntu | 9.74 | | | | 62.5 | | | | NT | | | | NT | | | | 18.28 | | | | NT | | | | NT | | | |

**Notes:**

CAS = Chemical Abstracts Service
µg/L = Microgram Per Liter
TAL = Target Analyte List
TCL = Target Compound List
VOC = Volatile Organic Compound
MDL = Method Detection Limit
RL = Reporting Limit
LQ = Laboratory Qualifier
VQ = Validation Qualifier
r = Reason Code
NT = Not Tested

mg/L = Milligram Per Liter
mV = millivolt
SU = Standard Units
mS = milliSiemen
°C = degrees Celcius
ntu = Nephelometric Turbidity
RBC = USEPA Region III Risk-Based Concentration (RBC) values from the October 11, 2007, RBC Table and October 11, 2007, Alternate RBC Table
C = Carcinogenic per EPA RBC Table (October 2007)
N = Noncarcinogenic per EPA RBC Table (October 2007)
MCL = Maximum Contaminant Level

* Re-sampled 6/24/08 for Pesticides only

[1] = Chromium VI RBC used for screening
[2] = USEPA Action Level used for screening
[3] = Chlordane RBC used for screening
[4] = alpha-BHC RBC used for screening
[5] = Endosulfan RBC used for screening

=Exceeds MCL

=Exceeds Adjusted T-RBC

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
J = Analyte present. Reported value may not be accurate or precise.
,J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
c = Calibration failure; poor or unstable response
m = MS/MSD recovery failure.
p = Preparation blank contamination
x = Trip blank contamination
z = Method blank and/or storage blank contamination

Table 4-11
Summary of Detected Chemicals in Groundwater Analytical Samples at SWMU 38 and AOC Q
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Sample ID / Sample Date | CAS | C/N | Adjusted Tap Water RBC | MCL | Units | 38MW1 2/12/2008 | | MDL | RL | 38MW2 2/12/2008 | | MDL | RL | 38MW2-DUP(DUP-1P) 2/12/2008 | | MDL | RL | 38MW3 2/13/2008 | | MDL | RL | 38MW3* 6/24/2008 | | MDL | RL | 38MW3-DUP (DUP-1)* 6/24/2008 | | MDL | RL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | |
| **Perchlorate** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | 14797-73-0 | N | 2.555 | -- | ug/L | 1.2 | | 0.08 | 0.2 | 0.32 | | 0.08 | 0.2 | 0.31 | | 0.08 | 0.2 | 0.44 | | 0.08 | 0.2 | NT | | | | NT | | | |
| **TAL Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total | 7429-90-5 | N | 3,650 | -- | ug/L | 120 | J | 44 | 200 | 93 | J | 44 | 200 | NT | | | | 1,900 | | 44 | 200 | NT | | | | NT | | | |
| Arsenic, Total | 7440-38-2 | C | 0.0446 | 10 | ug/L | <3 | U | 0.74 | 3 | <3 | U | 0.74 | 3 | NT | | | | 0.99 | J | 0.74 | 3 | NT | | | | NT | | | |
| Barium, Dissolved | 7440-39-3 | N | 730 | 2,000 | ug/L | 47 | | 0.52 | 2 | 35 | | 0.52 | 2 | NT | | | | 77 | | 0.52 | 2 | NT | | | | NT | | | |
| Barium, Total | 7440-39-3 | N | 730 | 2,000 | ug/L | 51 | | 0.52 | 2 | 37 | | 0.52 | 2 | NT | | | | 100 | | 0.52 | 2 | NT | | | | NT | | | |
| Cadmium, Total | 7440-43-9 | N | 1.825 | 5 | ug/L | <0.2 | U | 0.062 | 0.2 | <0.2 | U | 0.062 | 0.2 | NT | | | | 0.12 | J | 0.062 | 0.2 | NT | | | | NT | | | |
| Calcium, Dissolved | 7440-70-2 | -- | -- | -- | ug/L | 150,000 | | 40 | 500 | 89,000 | | 40 | 500 | NT | | | | 120,000 | | 40 | 500 | NT | | | | NT | | | |
| Calcium, Total | 7440-70-2 | -- | -- | -- | ug/L | 150,000 | | 40 | 500 | 91,000 | | 40 | 500 | NT | | | | 120,000 | | 40 | 500 | NT | | | | NT | | | |
| Chromium, Dissolved [1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 1.6 | J,B,p | 0.31 | 2 | 1.4 | J,B,p | 0.31 | 2 | NT | | | | 1.4 | J,B,p | 0.31 | 2 | NT | | | | NT | | | |
| Chromium, Total [1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 3.3 | | 0.31 | 2 | 1.9 | J,B,x | 0.31 | 2 | NT | | | | 9.2 | | 0.31 | 2 | NT | | | | NT | | | |
| Cobalt, Dissolved | 7440-48-4 | -- | -- | -- | ug/L | 2.2 | | 0.096 | 1 | 0.9 | J | 0.096 | 1 | NT | | | | 2.2 | | 0.096 | 1 | NT | | | | NT | | | |
| Cobalt, Total | 7440-48-4 | -- | -- | -- | ug/L | 1.8 | | 0.096 | 1 | 1.2 | | 0.096 | 1 | NT | | | | 4.6 | | 0.096 | 1 | NT | | | | NT | | | |
| Copper, Dissolved | 7440-50-8 | N | 146 | 1,300 | ug/L | 1.1 | | 0.33 | 1 | 0.99 | J | 0.33 | 1 | NT | | | | 1 | | 0.33 | 1 | NT | | | | NT | | | |
| Copper, Total | 7440-50-8 | N | 146 | 1,300 | ug/L | 1 | | 0.33 | 1 | 1.2 | | 0.33 | 1 | NT | | | | 4.4 | | 0.33 | 1 | NT | | | | NT | | | |
| Iron, Dissolved | 7439-89-6 | N | 2,555 | -- | ug/L | 11 | J | 5.7 | 20 | 9.7 | J | 5.7 | 20 | NT | | | | <20 | U | 5.7 | 20 | NT | | | | NT | | | |
| Iron, Total | 7439-89-6 | N | 2,555 | -- | ug/L | 340 | | 5.7 | 20 | 540 | | 5.7 | 20 | NT | | | | 5,500 | | 5.7 | 20 | NT | | | | NT | | | |
| Lead, Total [2] | 7439-92-1 | -- | 15 | -- | ug/L | <1 | U | 0.33 | 1 | <1 | U | 0.33 | 1 | NT | | | | 1.9 | | 0.33 | 1 | NT | | | | NT | | | |
| Magnesium, Dissolved | 7439-95-4 | -- | -- | -- | ug/L | 51,000 | | 38 | 500 | 22,000 | | 38 | 500 | NT | | | | 30,000 | | 38 | 500 | NT | | | | NT | | | |
| Magnesium, Total | 7439-95-4 | -- | -- | -- | ug/L | 48,000 | | 38 | 500 | 23,000 | | 38 | 500 | NT | | | | 33,000 | | 38 | 500 | NT | | | | NT | | | |
| Manganese, Dissolved | 7439-96-5 | N | 73 | -- | ug/L | 36 | | 0.43 | 3 | 4.7 | | 0.43 | 3 | NT | | | | 2,400 | | 4.3 | 30 | 1,000 | | 1.2 | 12 | 1,100 | | 1.2 | 12 |
| Manganese, Total | 7439-96-5 | N | 73 | -- | ug/L | 50 | | 0.43 | 3 | 26 | | 0.43 | 3 | NT | | | | 2,600 | | 4.3 | 30 | 980 | | 1.2 | 12 | 1,000 | | 1.2 | 12 |
| Nickel, Dissolved | 7440-02-0 | N | 73 | -- | ug/L | 3 | | 0.28 | 2 | 1 | J,B,p | 0.28 | 2 | NT | | | | 4.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Nickel, Total | 7440-02-0 | N | 73 | -- | ug/L | 2.6 | | 0.28 | 2 | 1.2 | J,B,x | 0.28 | 2 | NT | | | | 11 | | 0.28 | 2 | NT | | | | NT | | | |
| Potassium, Dissolved | 7440-09-7 | -- | -- | -- | ug/L | 770 | | 54 | 200 | 630 | | 54 | 200 | NT | | | | 1,200 | | 54 | 200 | NT | | | | NT | | | |
| Potassium, Total | 7440-09-7 | -- | -- | -- | ug/L | 750 | | 54 | 200 | 740 | | 54 | 200 | NT | | | | 1,900 | | 54 | 200 | NT | | | | NT | | | |
| Sodium, Dissolved | 7440-23-5 | -- | -- | -- | ug/L | 16,000 | | 84 | 500 | 13,000 | | 84 | 500 | NT | | | | 8,800 | | 84 | 500 | NT | | | | NT | | | |
| Sodium, Total | 7440-23-5 | -- | -- | -- | ug/L | 16,000 | | 84 | 500 | 13,000 | | 84 | 500 | NT | | | | 8,900 | | 84 | 500 | NT | | | | NT | | | |
| Vanadium, Total | 7440-62-2 | N | 3.65 | -- | ug/L | 0.86 | J | 0.83 | 5 | 0.86 | J | 0.83 | 5 | NT | | | | 5.8 | | 0.83 | 5 | NT | | | | NT | | | |
| Zinc, Dissolved | 7440-66-6 | N | 1,095 | -- | ug/L | 12 | ,B,p | 0.84 | 10 | 6.9 | J,B,p | 0.84 | 10 | NT | | | | 15 | ,B,p | 0.84 | 10 | NT | | | | NT | | | |
| Zinc, Total | 7440-66-6 | N | 1,095 | -- | ug/L | 6.8 | J,B,p | 0.84 | 10 | 6.6 | J,B,p | 0.84 | 10 | NT | | | | 18 | | 0.84 | 10 | NT | | | | NT | | | |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| beta-BHC | 319-85-7 | C | 0.0372 | -- | ug/L | <0.05 | U | 0.0032 | 0.05 | <0.05 | U | 0.0032 | 0.05 | NT | | | | 0.016 | J,J,g | 0.0032 | 0.05 | NT | | | | NT | | | |
| Endosulfan II [3] | 33213-65-9 | N | 21.9 | -- | ug/L | <0.1 | U | 0.0018 | 0.1 | 0.0047 | J | 0.0018 | 0.1 | NT | | | | <0.1 | U | 0.0018 | 0.1 | NT | | | | NT | | | |
| **TCL VOCs** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | 67-66-3 | C | 0.155 | 80 | ug/L | 1.7 | | 0.061 | 1 | <1 | U | 0.061 | 1 | NT | | | | <1 | U | 0.061 | 1 | NT | | | | NT | | | |
| Chloromethane | 74-87-3 | N | 18.98 | -- | ug/L | <1 | U | 0.06 | 1 | <1 | U | 0.06 | 1 | NT | | | | 0.34 | J | 0.06 | 1 | NT | | | | NT | | | |
| Toluene | 108-88-3 | N | 227.1 | 1,000 | ug/L | 0.18 | J,B,z | 0.072 | 1 | 0.16 | J,B,z | 0.072 | 1 | NT | | | | 0.23 | J,B,z | 0.072 | 1 | NT | | | | NT | | | |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | -- | -- | -- | -- | mg/L | 5.02 | | | | 3.94 | | | | 3.94 | | | | 3.9 | | | | NT | | | | NT | | | |
| Oxidation Reduction Potential | -- | -- | -- | -- | mV | 104 | | | | 220 | | | | 220 | | | | 182 | | | | NT | | | | NT | | | |
| pH | -- | -- | -- | -- | SU | 6.51 | | | | 6.67 | | | | 6.67 | | | | 6.45 | | | | NT | | | | NT | | | |
| Conductivity | -- | -- | -- | -- | mS | 1.1 | | | | 0.708 | | | | 0.708 | | | | 0.86 | | | | NT | | | | NT | | | |
| Temperature | -- | -- | -- | -- | °C | 16.67 | | | | 16.02 | | | | 16.02 | | | | 14.39 | | | | NT | | | | NT | | | |
| Turbidity | -- | -- | -- | -- | ntu | 8.97 | | | | 12.11 | | | | 12.11 | | | | 25.5 | | | | NT | | | | NT | | | |

**Notes:**

CAS = Chemical Abstracts Service
mg/L = Milligram Per Liter
µg/L = Microgram Per Liter
TAL = Target Analyte List
TCL = Target Compound List
SVOC = Semi-volatile Organic Compound
MDL = Method Detection Limit
RL = Reporting Limit
LQ = Laboratory Qualifier
VQ = Validation Qualifier
r = Reason Code
NT = Not Tested

mV = millivolt
SU = Standard Units
mS = milliSiemen
°C = degrees Celcius
NTU = Nephelometric Turbidity
RBC = USEPA Region III Risk-Based Concentration (RBC) values from the October 11, 2007, RBC Table and October 11, 2007, Alternate RBC Table
C = Carcinogenic per EPA RBC Table (October 2007)
N = Noncarcinogenic per EPA RBC Table (October 2007)
MCL = Maximum Contaminant Level

[1] = Chromium VI RBC used for screening
[2] = USEPA Action Level used for screening
[3] = Endosulfan RBC used for screening

* Re-sampled on 6/24/08 for Manganese only

=Exceeds MCL

=Exceeds Adjusted T-RBC

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
J = Analyte present. Reported value may not be accurate or precise.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
f = Field duplicate imprecision
m = MS/MSD recovery failure.
p = Preparation blank contamination
x = Field and/or equipment blank contamination
y = Trip blank contamination
z = Method blank and/or storage blank contamination

**Project: RAAP 10 Well Installation - SWMU 37**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 37MW2

Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled and Installed | **December 11, 2007** | Logged By | **Jim Carter** | Reviewed By | **Tina DeVine** |
| Drilling Method | **Mixed - Direct Push, Hollow-Stem Auger, Air Rotary** | Drilling Contractor | **Parratt Wolff** | Total Depth of Borehole | **41.0 feet** |
| Sampling Method | **4' Macrocore with disposable acetate liner** | Hammer Data | **Continuous hydraulic pressure** | Top of Casing Elevation | **1716.82 Mean Sea Level** |
| Size and Type of Well Casing | **2-inch, Schedule 40 PVC** | Screen Perforation | **0.010-inch** | Surface Elevation | **1714.38 Mean Sea Level** |
| Seal or Backfill | **Bentonite pellets/Bentonite-cement grout** | Groundwater Level(s) | **27.86 bgs Static TOC** | Coordinates | **N 3,598,329.5 E 10,884,637.1** |

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| 1714.38 | 0 | | | | | | | Topsoil, dark brown, organic material. | |
| | | | | | | | GW | 7.5YR 2.5/1 black sandy GRAVEL, loose, moist. | |
| | | | 1 | 36 | 32.1 | | | 7.5YR 4/4 brown sandy SILT, micaceous, soft, moist. | |
| 1710 | 5 | | | | | | ML | | |
| | | | 2 | 48 | 2.5 | | | | |
| | | | | | | | SW | 7.5YR 3/1 dark gray gravelly medium to coarse SAND, loose, moist. | Grout: 10% Bentonite/Cement Slurry |
| 1705 | | | | | | | | 7.5YR 4/4 brown silty fine SAND, loose, moist. | |
| | 10 | | 3 | 48 | 35.7 | | SM | | |
| | | | | | | | | 7.5YR 4/4 brown gravelly fine to medium SAND, loose, moist. | |
| 1700 | | | 4 | 48 | 28.8 | | | | |
| | 15 | | | | | | SW | | |
| | | | 5 | 48 | 41.0 | | | | 3/8-inch Hydrated Bentonite Pellets |
| 1695 | | | | | | | | Same as above but grain size increases to medium to coarse. | |
| | 20 | | | | | | | 7.5YR 5/1 gray LIMESTONE. | No. 1 Silica Quartz Sandpack |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU37.GPJ; 7/29/2010 37MW2

URS

**Project: RAAP 10 Well Installation - SWMU 37**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 37MW2

Sheet 2 of 2

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | 36 | 16.4 | | GC | 7.5YR 4/4 clayey sandy GRAVEL, medium dense, moist. | | |
| 1690 | 25 | | 7 | 24 | 38.8 | | | Same as above except wet (water at 25 ft bgs). | ▽ | |
| | | | | | | | LS | 7.5YR 7/1 light gray LIMESTONE, weathered, friable. Direct-push refusal at 26 ft bgs. | | |
| | | | | | | | | Gray LIMESTONE, competent bedrock. Hollow-stem auger refusal at 27 ft bgs. | ▽ | |
| 1685 | 30 | | | | | | | | | Screen: 0.01-inch Factory Slotted, Sch 40, 2-inch PVC |
| 1680 | 35 | | | | | | LS | | | |
| 1675 | 40 | | | | | | | | | |
| | | | | | | | | Boring was terminated at 41 ft bgs. | | |
| 1670 | 45 | | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU37.GPJ; 7/29/2010 37MW2

URS

**Project: RAAP 10 Well Installation - SWMU 38**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 38MW2

Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled and Installed | **December 21, 2007** | Logged By | **Jim Carter** | Reviewed By | **Tina DeVine** |
| Drilling Method | **Mixed - Direct Push, Hollow-Stem Auger, Air Rotary** | Drilling Contractor | **Parratt Wolff** | Total Depth of Borehole | **36.0 feet** |
| Sampling Method | **4' Macrocore with disposable acetate liner** | Hammer Data | **Continuous hydraulic pressure** | Top of Casing Elevation | **1710.30 Mean Sea Level** |
| Size and Type of Well Casing | **2-inch, Schedule 40 PVC** | Screen Perforation | **0.010-inch** | Surface Elevation | **1707.58 Mean Sea Level** |
| Seal or Backfill | **Bentonite pellets/Bentonite-cement grout** | Groundwater Level(s) | **27.13 bgs Static TOC** | Coordinates | **N 3,598,794.8 E 10,884,946.0** |

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| 1707.58 | 0 | | | | | | | Topsoil, dark brown, organic material. | |
| | | | | | | | | 7.5YR 4/4 brown silty fine SAND, medium dense, dry. | |
| | 2 | | 1 | 48 | 1.0 | | | | |
| 1705 | | | | | | | | Same as above except color changes to 7.5YR 6/4 light brown. | |
| | 4 | | | | | | | | |
| | 6 | | 2 | 48 | 0 | | SM | | Grout: 10% Bentonite/Cement Slurry |
| 1700 | | | | | | | | | |
| | 8 | | | | | | | | |
| | 10 | | 3 | 48 | 0 | | | | |
| | 12 | | | | | | | 7.5YR 6/4 light brown gravelly silty fine to medium SAND, medium stiff, moist. | |
| 1695 | | | | | | | | | 3/8-inch Hydrated Bentonite Pellets |
| | 14 | | 4 | 36 | 0 | | SM | | No. 1 Silica Quartz Sandpack |
| | 16 | | | | | | | 7.5YR 6/4 light brown sandy GRAVEL, medium dense, moist. | |
| 1690 | | | | | | | | | |
| | 18 | | 5 | 32 | 0.2 | | GW | | |
| | 20 | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU38.GPJ; 7/29/2010 38MW2

URS

**Project: RAAP 10 Well Installation - SWMU 38**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 38MW2

Sheet 2 of 2

| Elevation feet | Depth, feet | SAMPLES Type | SAMPLES Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| | 20 | | | | | | | | |
| | 22 | | 6 | 48 | 0.4 | | GW | Same as above except wet (water at ~22 ft). | |
| 1685 | | | | | | | | | |
| | 24 | | | | | | | 7.5YR 4/1 dark gray LIMESTONE, weathered. Direct-push refusal at 24 ft bgs. | |
| | | | | | | | LS | | |
| | 26 | | | | | | | | Screen: 0.01-inch Factory Slotted, Sch 40, 2-inch PVC |
| | | | | | | | | Gray LIMESTONE, competent bedrock. Hollow-stem auger refusal at 26.5 ft bgs. | |
| 1680 | | | | | | | | | |
| | 28 | | | | | | | | |
| | 30 | | | | | | | | |
| | | | | | | | LS | | |
| | 32 | | | | | | | | |
| 1675 | | | | | | | | | |
| | | | | | | | | Sand filled void encountered at 33 feet. | |
| | 34 | | | | | | | | |
| | 36 | | | | | | | | |
| 1670 | | | | | | | | | |
| | 38 | | | | | | | | |
| | 40 | | | | | | | | |
| | 42 | | | | | | | | |
| 1665 | | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU38.GPJ; 7/29/2010 38MW2

URS

# Radford Army Ammunition Plant
# Radford, Virginia

## Environmental Baseline Study for the Oleum Plant Site

**Final**
**October 2007**

**Prepared for:**
Alliant Techsystems Inc.

**Prepared by:**
Ecology and Environment, Inc.

Purchase Order Number AR1733
E & E Project 002447.AT15

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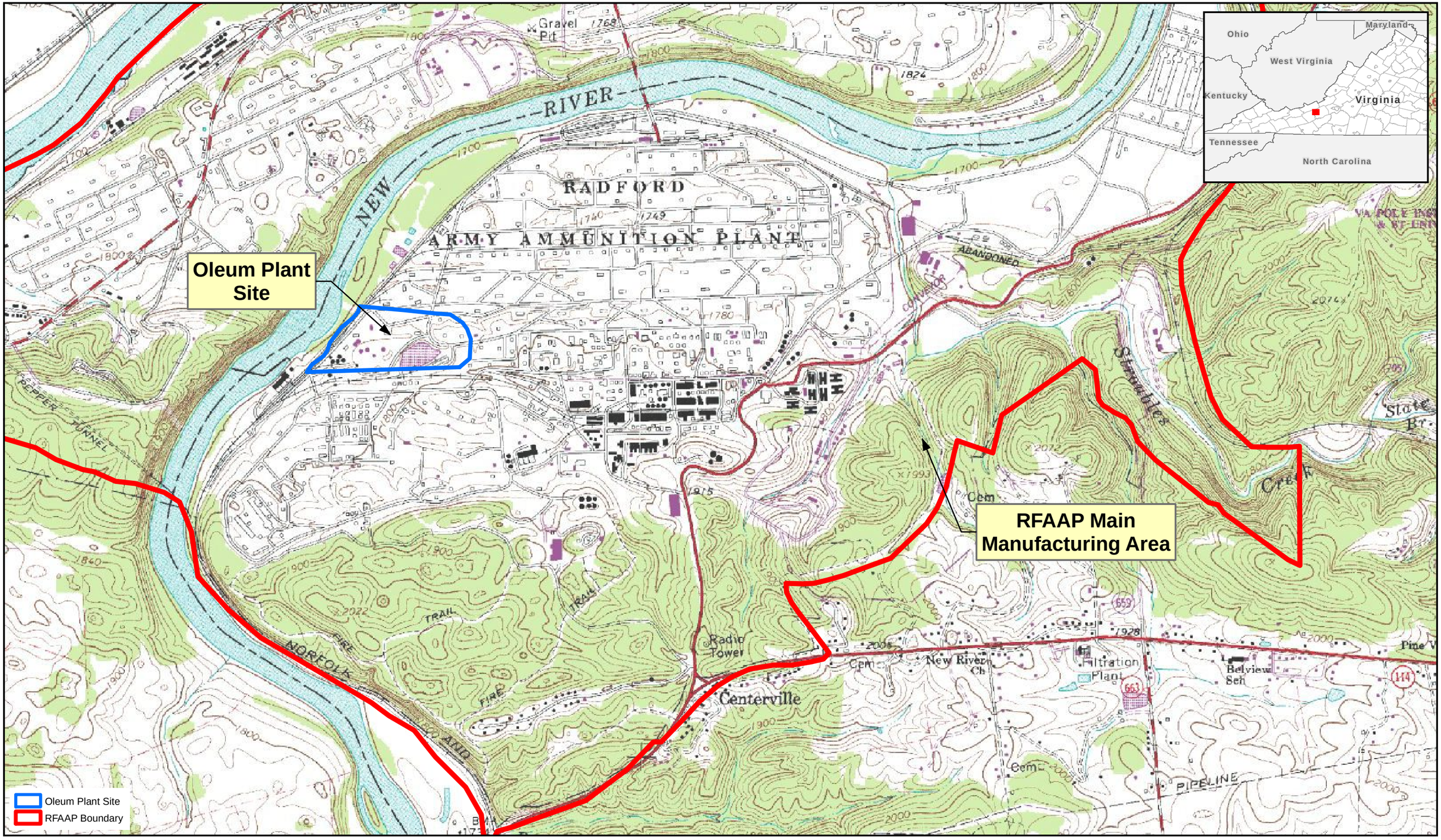
\\BUFSDL4\GIS\Washington\Radford\Maps\MXD\Figure_3_Topo.mxd 5/18/2007




*Source: USGS 7.5 Topographic Map; Radford North Quad 1984.*

0 0.125 0.25 0.5 Miles

**Figure 1 - 2**
**Oleum Plant Site**
**Radford Army Ammunition Plant (RFAAP)**
**Radford, Virginia**

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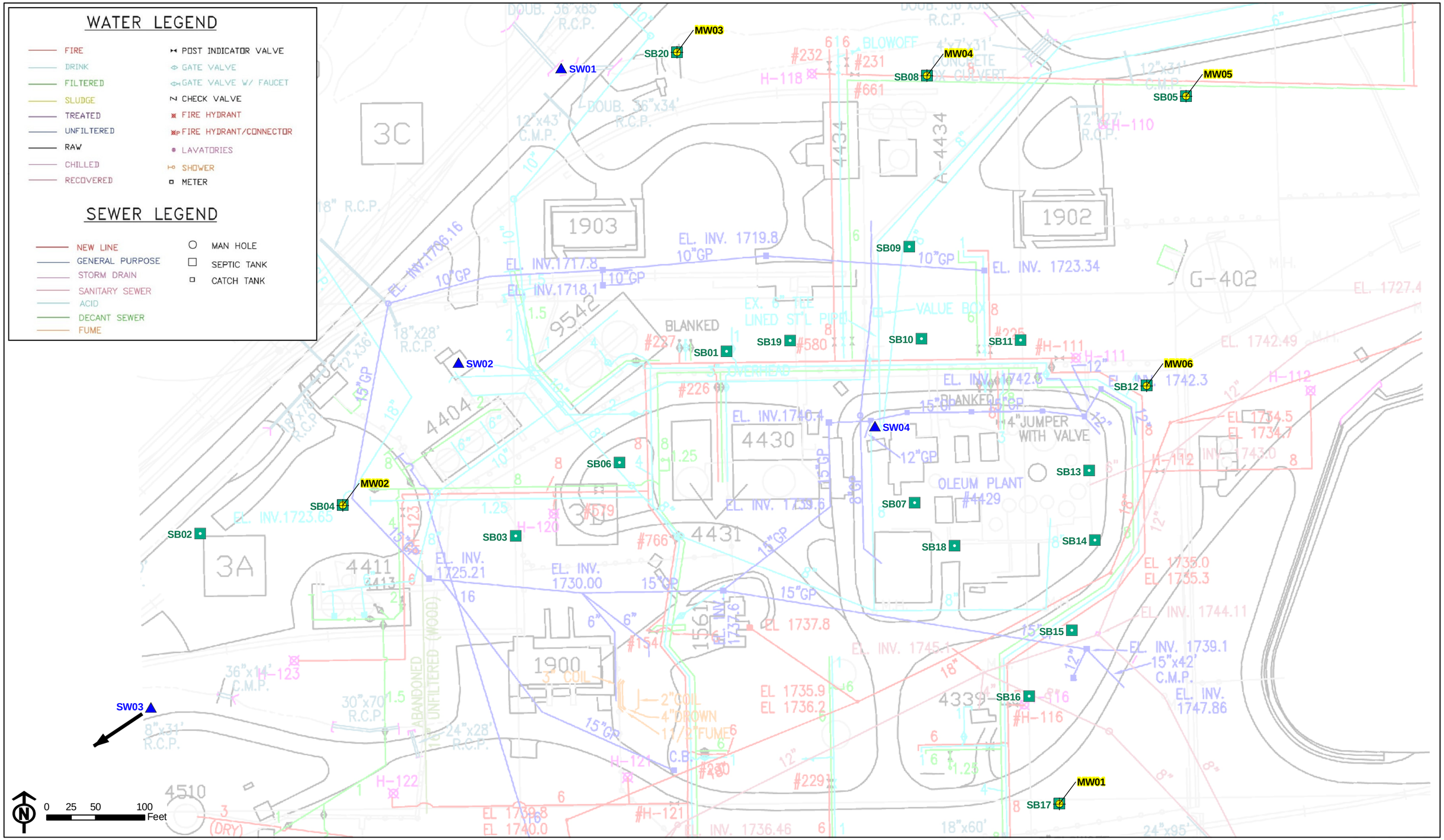
\\BUFSDL4\GIS\Washington\Radford\Maps\MXD\Report_Figures\Figure1_final.mxd 5/31/2007




Monitoring Well and Soil Bore Location
Soil Bore Location
Surface Water Sampling Location

Figure 4 - 5
Water and Soil Sample Location Map
Oleum Plant Site, RFAAP
Radford, Virginia

**Table 4-D Summary of Positive Results for Groundwater Samples - Oleum Plant Site, RFAAP, Radford, Virginia 2007**

| Analyte | RBCWaterTap | | Samole ID: | ATK-GW-MW01 | | ATK-GW-MW02 | | ATK-GW-MW03 | | ATK-GW-MW04 | | ATK-GW-MW05 | | ATK-GW-MW06 | | ATK-GW-MW99 | | TRIP BLANK | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: | 5/8/2007 | | 5/7/2007 | | 5/7/2007 | | 5/8/2007 | | 5/8/2007 | | 5/8/2007 | | 5/7/2007 | | 1/0/1900 | |
| **Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ug/L)** | | | | | | | | | | | | | | | | | | | |
| Aluminum | 36500 | | | 227 | J | 1250 | | 970 | | 660 | | 220 | J | 731 | | 1210 | | | |
| Barium | 7300 | | | 39.5 | | 45.2 | | 33.6 | | 34.3 | | 62.5 | | 46.2 | | 43.8 | | | |
| Calcium | NA | | | 49100 | | 109000 | | 98800 | | 124000 | | 78500 | | 178000 | | 107000 | | | |
| Chromium | 109.5 | | | < 15 | | < 15 | | 4.1 | J | < 15 | | < 15 | | < 15 | | < 15 | | | |
| Cobalt | NA | | | < 50 | | < 50 | | < 50 | | < 50 | | < 50 | | 2.5 | J | < 50 | | | |
| Iron | 25550 | | | 162 | J | 845 | | 852 | | 512 | | 185 | J | 558 | | 803 | | | |
| Magnesium | NA | | | 22100 | | 38300 | | 43000 | | 57300 | | 39900 | | 117000 | | 37500 | | | |
| Manganese | 730 | | | 20.5 | | 25.2 | | 29.2 | | 20.3 | | 4.2 | J | 68.3 | | 22.6 | | | |
| Nickel | 730 | | | < 40 | | < 40 | | 2.4 | J | < 40 | | < 40 | | 3.2 | J | < 40 | | | |
| Potassium | NA | | | 1880 | J | 2330 | J | 1510 | J | 2040 | J | 1980 | J | 2720 | J | 2250 | J | | |
| Sodium | NA | | | 20500 | | 18200 | | 25400 | | 13600 | | 21100 | | 4900 | J | 17800 | | | |
| Zinc | 10950 | | | 3.3 | J | 11.4 | J | 5.1 | J | 3.9 | J | 2.6 | J | 5.2 | J | 15.2 | J | | |
| **Organochlorine Pesticides by GC using ECD (ug/L)** | | | | | | | | | | | | | | | | | | | |
| alpha-Chlordane | 25.550 | | | 0.005 | J | < 0.05 | J | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | | |
| beta-BHC | 0.037 | | | < **0.05** | | < **0.05** | J | 0.0096 | J | < **0.05** | | < **0.05** | | 0.011 | J | < **0.05** | | | |
| Endosulfan sulfate | NA | | | < 0.05 | | < 0.05 | J | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | 0.0099 | J | | |
| Heptachlor epoxide | 0.007 | | | < **0.05** | | < **0.05** | J | < **0.05** | | < **0.05** | | < **0.05** | | 0.0054 | J | < **0.05** | | | |
| **Volatile Organic Compounds by GC/MS (ug/L)** | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | 353 | | | 0.15 | J | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | |
| 4-Methyl-2-pentanone (MIBK) | NA | | | < 5 | | < 5 | | < 5 | | 0.89 | J | < 5 | | < 5 | | < 5 | | < 5 | |
| Carbon tetrachloride | 0.162 | | | < **1** | | < **1** | | < **1** | | 0.11 | J | **0.22** | J | < **1** | | < **1** | | < **1** | |
| Chloroform | 0.155 | | | **8.1** | | **8.9** | | **18** | | **0.53** | J | **1.8** | | < **1** | | **9** | | < 1 | |
| Methylene chloride | 4.102 | | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | 0.25 | J |
| Tetrachloroethene | 0.104 | | | < **1** | | **0.12** | J | **0.39** | J | **0.7** | J | < **1** | | < **1** | | **0.13** | J | < 1 | |
| Toluene | 2271 | | | < 1 | | 0.92 | J | < 1 | | < 1 | | < 1 | | < 1 | | 1.1 | | < 1 | |
| Trichloroethene | 0.026 | | | < **1** | | **0.42** | J | < **1** | | < **1** | | < **1** | | **0.63** | J | **0.42** | J | < 1 | |



Source: Ecology and Environment, Inc., 2007

**Table 4-D Summary of Positive Results for Groundwater Samples - Oleum Plant Site, RFAAP, Radford, Virginia 2007**

| Analyte | RBCWaterTap | Samole ID: | ATK-GW-MW01 | ATK-GW-MW02 | ATK-GW-MW03 | ATK-GW-MW04 | ATK-GW-MW05 | ATK-GW-MW06 | ATK-GW-MW99 | TRIP BLANK |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date: | 5/8/2007 | 5/7/2007 | 5/7/2007 | 5/8/2007 | 5/8/2007 | 5/8/2007 | 5/7/2007 | 1/0/1900 |
| **Semi-Volatile Organic Compounds by GC/MS (ug/L)** | | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate | 4.78 | | < **10** J | < **10** J | < **10** J | < **10** J | < **10** J | **19** | < **10** J | |
| Di-n-octyl phthalate | NA | | < 10 | < 10 | < 10 | < 10 | < 10 | 4 J | < 10 | |
| Naphthalene | 6.511 | | < **10** | < **10** | < **10** | < **10** | < **10** | 0.7 J | < **10** | |
| **Nitroaromatics and Nitramines (Explosives) by HPLC (ug/L)** | | | | | | | | | | |
| 2,4-Dinitrotoluene | 73 | | < 0.2 J | 0.11 J | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| 2,6-Dinitrotoluene | 37 | | < 0.2 J | 0.098 J | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| Hexahydro-1,3,5-Trinitro-1,3,5-T | 0.609 | | < 0.5 J | < 0.5 | < 0.5 | 0.47 J | 0.47 J | < 0.5 | < 0.5 | |
| Nitrobenzene | 3.532 | | 0.42 J- | 1.7 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| Octahydro-1,3,5,7-tetranitro-1,3,5 | 1825 | | 0.12 J | 0.83 | 0.49 J | 2.7 | 3.2 | < 0.5 | 0.82 | |
| **Determination of Inorganic Anions by Ion Chromatography (mg/L)** | | | | | | | | | | |
| Nitrate/Nitrite as N | 3.65 | | **4.6** | **6.8** | **3.8** | 2.3 | **1630** | 0.07 J | **7.1** | |
| **Determination of Perchlorate by Method 6850 Mod (ug/L)** | | | | | | | | | | |
| Perchlorate | 25.55 | | 0.587 | 2.1 | 1.91 | 3.59 | 2.47 | 0.0707 J | 2.02 | |
| | | | | | | | | | | |

Key:
< = Not detected (lab reporting limit shown).
/D = Field duplicate sample.
J = Estimated value
ug/L = micrograms per liter
mg/L = milligrams per liter
For blank cells the samples were not analyzed
Shaded/bolded cells indicate concentration or reporting limit greater than residential RBC.

Note:
Perchlorate –O(18) is a perchlorate isotope using oxygen with a molecular weight of 18 instead of 16. It is a marker added to the sample during analysis. The laboratory is required to report it since it determines matrix effects and data quality issues. Perchlorate –O(18) is shown in the laboratory reports in Appendix E; however, it is not reported in the final data table.


Source: Ecology and Environment, Inc., 2007

# DRILLING LOG FOR MW-01

Project Name RADFORD ARMY AMMUNITION PLANT

Site Location RADFORD, VA.

Date Started/Finished 05/03/07 - 05/03/07

Drilling Company BEDFORD WELL DRILLING CO

Driller's Name STEPHEN RIPLEY

Geologist's Name HUSSEIN ALDIS

Geologist's Signature Hussein Aldis

Rig Type (s) INGERSOLL RAND T3W TRUCK MOUNTED

Drilling Method (s) MR ROTARY

Bit Size (s) 6INCH Auger Size (s) N/A

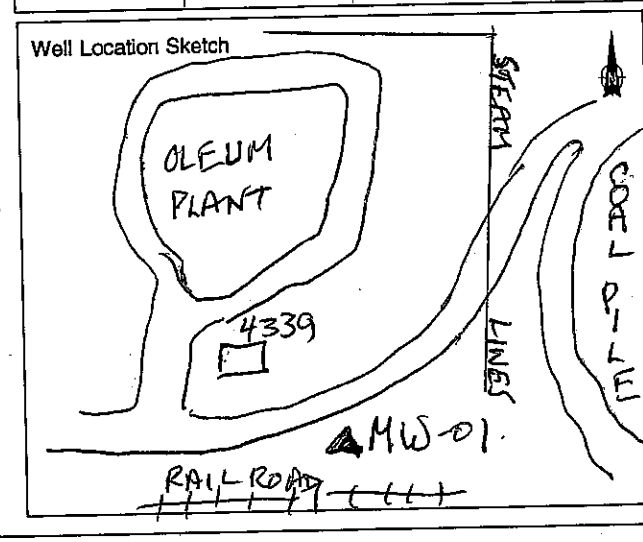
Auger/Split Spoon Refusal N/A

Total Depth of Borehole Is 50ft

Total Depth of Corehole Is 20ft (SB-17)

| Water Level (TOIC) | | |
|---|---|---|
| Date | Time | Level( Feet) |
| 05/08/07 | 1550 | 47.35 |
| | | |
| | | |
| | | |
| | | |
| | | |

Well Location Sketch




| Depth(Feet) | Sample Number | Blows on Sampler | Soil Components Rock Profile CL SL S GR | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ATK-SS-SB17 | | CL, SL | | | 100% | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | 100% | | | | |
| 5 | | | | | | | | | | |
| 6 | | | S, SL, CL | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | 100% | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | 100% | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |

RFAAP MW-01

**SCREENED WELL**

Stick-up 3.0 ft

Top of Grout _____ ft

Top of Seal at 3 ft

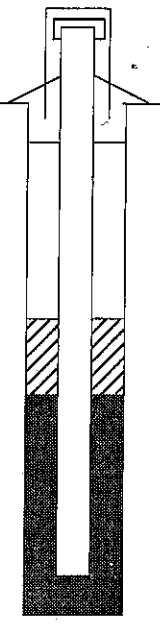
Top of Sand Pack 36 ft

Top of Screen at 40 ft

Bottom of Screen at 50 ft

Bottom of Hole at 50 ft

Bottom of Sandpack at 50 ft



Lock Number _____

Inner Casing Material PVC

Inner Casing Inside Diameter 4 inches

GROUND SURFACE

Quantity of Material Used:

Bentonite Pellets 8 x 50 lbs

Cement ≈150 lbs at surface

Borehole 8 inches Diameter

Cement/ Bentonite _____

Grout _____

Screen Slot Size 0.01"

Screen Type _____

☑ PVC

☐ Stainless Steel

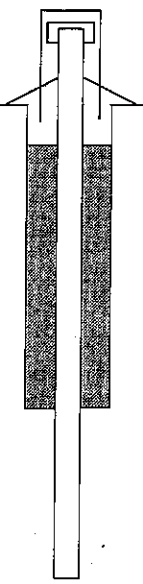
Pack Type/Size:

☑ Sand

☐ Gravel

☐ Natural

**OPEN-HOLE WELL**



Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

| Depth-ft. | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | Lithology to 20 ft based on SB17 | | | |
| 1 | Topsoil w grass roots 4 inches | ○ | ○ | ○ |
| 2 | 0.4" to 4.0 ft. clay, silty, 10YR 4/3 and 10YR 6/6 | ○ | ○ | ○ |
| 3 | light brown to mid brown. | ○ | ○ | ○ |
| 4 | | ○ | ○ | ○ |
| 5 | 4.0 - 6.0 Clay, silty, trace sand | ○ | ○ | ○ |
| 6 | | ○ | ○ | ○ |
| 7 | 6.0 - 16.0 Sand, silty, clayey, fine grained (loam) | ○ | ○ | ○ |
| 8 | light brown 10YR 6/6 | ○ | ○ | ○ |
| 9 | | ○ | ○ | ○ |
| 10 | | ○ | ○ | ○ |
| 11 | | ○ | ○ | ○ |
| 12 | | ○ | ○ | ○ |
| 13 | | ○ | ○ | ○ |
| 14 | | ○ | ○ | ○ |
| 15 | | ○ | ○ | ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | | | | | | | | | | | MW-01 |
| 17 | ATK- | | S, SL | | | | 100% | | | | RFAAP |
| 18 | SUB- | | | | | | | | | | |
| 19 | SB17 | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | S | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | GR | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | S | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | ROCK | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |
| 40 | | | | | | | | | | | |
| 41 | | | | | | | | | | | |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | | | | | | | | | | | |

| Depth(feet). | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | RFAAFMW-01 | | | |
| 16 | | | | |
| 17 | 16.0 - 20.0 Sand, silty, uniform 10YR 6/6 | | | |
| 18 | light brown | | | |
| 19 | | | | |
| 20 | Corehole (SB-17) total depth 20.0 ft. | | | |
| 21 | Cuttings from air rotary from 20.0 - 50.0 ft. | | | |
| 22 | 20.0 to 26.0 Becoming sandier. | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | Driller notes cobbles 26.0" to 28.0" approx. | | | |
| 28 | | | | |
| 29 | Sand below cobbles | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | Driller notes water in overburden | | | |
| 35 | Bedrock 34 - 35.0" below ground approx. | | | |
| 36 | Since no water in hole: drilled to 50 ft. | | | |
| 37 | Hard, dark grey ? dolostone Cambrian | | | |
| 38 | Elbrook Formation shown on geologic map. | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | Driller notes fracture at approx 45 ft bgs, water in hole | | | |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | | | ROCK | | | | | | | | RFAAP MW-01 |
| 47 | | | | | | | | | | | |
| 48 | | | | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | | | | | | | | | T.D. 50ft bgs |
| 51 | | | | | | | | | | | |
| 52 | | | | | | | | | | | |
| 53 | | | | | | | | | | | |
| 54 | | | | | | | | | | | |
| 55 | | | | | | | | | | | |
| 56 | | | | | | | | | | | |
| 57 | | | | | | | | | | | |
| 58 | | | | | | | | | | | |
| 59 | | | | | | | | | | | |
| 60 | | | | | | | | | | | |
| 61 | | | | | | | | | | | |
| 62 | | | | | | | | | | | |
| 63 | | | | | | | | | | | |
| 64 | | | | | | | | | | | |
| 65 | | | | | | | | | | | |
| 66 | | | | | | | | | | | |
| 67 | | | | | | | | | | | |
| 68 | | | | | | | | | | | |
| 69 | | | | | | | | | | | |
| 70 | | | | | | | | | | | |
| 71 | | | | | | | | | | | |
| 72 | | | | | | | | | | | |
| 73 | | | | | | | | | | | |
| 74 | | | | | | | | | | | |
| 75 | | | | | | | | | | | |

| Depth(feet) | NARRATIVE LITHOLOGIC DESCRIPTION RFAAP MW-01 | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| 46 | | ○ | ○ | ○ |
| 47 | Hard, dark grey ? dolostone to 50.0". | ○ | ○ | ○ |
| 48 | | ○ | ○ | ○ |
| 49 | | ○ | ○ | ○ |
| 50 | Total depth of borehole 50'0" | ○ | ○ | ○ |
| 51 | | ○ | ○ | ○ |
| 52 | | ○ | ○ | ○ |
| 53 | | ○ | ○ | ○ |
| 54 | | ○ | ○ | ○ |
| 55 | | ○ | ○ | ○ |
| 56 | | ○ | ○ | ○ |
| 57 | | ○ | ○ | ○ |
| 58 | | ○ | ○ | ○ |
| 59 | | ○ | ○ | ○ |
| 60 | | ○ | ○ | ○ |
| 61 | | ○ | ○ | ○ |
| 62 | | ○ | ○ | ○ |
| 63 | | ○ | ○ | ○ |
| 64 | | ○ | ○ | ○ |
| 65 | | ○ | ○ | ○ |
| 66 | | ○ | ○ | ○ |
| 67 | | ○ | ○ | ○ |
| 68 | | ○ | ○ | ○ |
| 69 | | ○ | ○ | ○ |
| 70 | | ○ | ○ | ○ |
| 71 | | ○ | ○ | ○ |
| 72 | | ○ | ○ | ○ |
| 73 | | ○ | ○ | ○ |
| 74 | | ○ | ○ | ○ |
| 75 | | ○ | ○ | ○ |

DRILLING LOG FOR MW-06

Project Name RADFORD ARMY AMMUNITION PLANT

Site Location RADFORD, VA

Date Started/Finished 05/03/07 - 05/03/07

Drilling Company Bedford Well Drilling Co.

Driller's Name Stephen Ripley

Geologist's Name Hussein Aldis

Geologist's Signature Hussein Aldis.

Rig Type (s) Ingersoll Rand T3W Truck Mounted

Drilling Method (s) AIR ROTARY

Bit Size (s) 6 inch Auger Size (s) N/A.

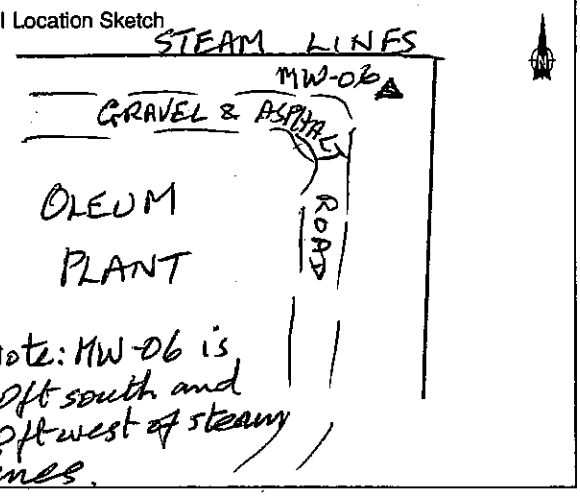
Auger/Split Spoon Refusal N/A.

Total Depth of Borehole Is 80ft bgs.

Total Depth of Corehole Is 20ft (SB-12)

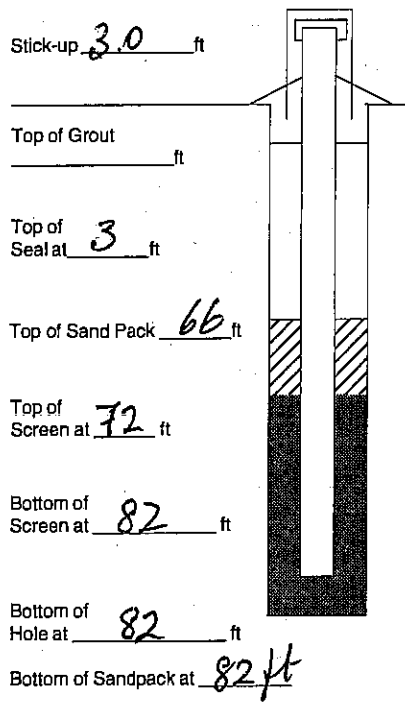
| Water Level (TOIC) | | |
|---|---|---|
| Date | Time | Level( Feet) |
| 05/08/07 | 1400 | 410.14ft |
| | | |
| | | |
| | | |
| | | |
| | | |

Well Location Sketch




| Depth(Feet) | Sample Number | Blows on Sampler | Soil Components Rock Profile CL SL S GR | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GR | | | | | | | Approx 4 inches gravel fill at surface |
| 1 | ATK-SS-SB-12 | | CL, SL | | | 100% | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | 100% | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | 100% | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | S, SL, CL | | | | | | | |
| 13 | | | | | | 100% | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |

RFAAP MW-06




Lock Number

Inner Casing Material PVC

Inner Casing Inside Diameter 4 inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets 17x50 lbs
Cement 2/50 lbs at surface
Borehole 6 inches Diameter

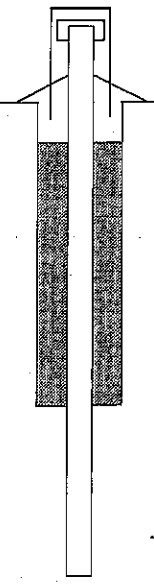
Cement/ Bentonite

Grout

Screen Slot Size 0.01"

Screen Type
☑ PVC
☐ Stainless Steel

Pack Type/Size:
☑ Sand
☐ Gravel
☐ Natural




Stick-up ft

Inner Casing Material

Inner Casing Inside Diameter inches

Outer Casing Diameter inches

Borehole Diameter ft

Bedrock ft

Bottom of Rock Socket/ Outer Casing ft

Bottom of Inner Casing ft

Corehole Diameter

Bottom of Corehole ft

NOTE: See pages 136 and 137 for well construction diagrams

| Depth-ft. | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | Lithology for 20ft is based on SB-12 | | | |
| 1 | 4 inches of gravel fill at surface | ○ | ○ | ○ |
| 2 | 0.4" - 12 ft, Clay, silty, light brown 10YR 6/6 | ○ | ○ | ○ |
| 3 | | ○ | ○ | ○ |
| 4 | | ○ | ○ | ○ |
| 5 | | ○ | ○ | ○ |
| 6 | | ○ | ○ | ○ |
| 7 | | ○ | ○ | ○ |
| 8 | | ○ | ○ | ○ |
| 9 | | ○ | ○ | ○ |
| 10 | | ○ | ○ | ○ |
| 11 | | ○ | ○ | ○ |
| 12 | | ○ | ○ | ○ |
| 13 | 12.0 - 16.0 Sand, silty, clayey, uniform, light brown 10YR 6/6. | ○ | ○ | ○ |
| 14 | | ○ | ○ | ○ |
| 15 | | ○ | ○ | ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | | | | | | | 100% | | | | REAAP |
| 17 | ATK- | | SSL, CL | | | | 100% | | | | MW-06 |
| 18 | SUB- | | | | | | | | | | |
| 19 | SB12 | | | | | | | | | | |
| 20 | | | | | | | | | | | TD. FOR SB-12 |
| 21 | | | S | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | GR | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | ROCK | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |
| 40 | | | | | | | | | | | |
| 41 | | | | | | | | | | | |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | | | | | | | | | | | |

| Depth(feet). | NARRATIVE LITHOLOGIC DESCRIPTION<br>RFAAP MW-06 | Moisture Content<br>Dry Moist Wet |
|---|---|---|
| 16 | | ○ ○ ○ |
| 17 | Sand, silty, very fine, clayey, very uniform | ○ ○ ○ |
| 18 | 10YR 6/6 | ○ ○ ○ |
| 19 | | ○ ○ ○ |
| 20 | Bottom of SB-12 at 20 ft. 2 HA | ○ ○ ○ |
| 21 | Drilling with air rotary to 80 feet. Cuttings only | ○ ○ ○ |
| 22 | Becoming sandier to approx. 28 ft bgs | ○ ○ ○ |
| 23 | | ○ ○ ○ |
| 24 | | ○ ○ ○ |
| 25 | | ○ ○ ○ |
| 26 | | ○ ○ ○ |
| 27 | | ○ ○ ○ |
| 28 | | ○ ○ ○ |
| 29 | Driller estimates gravel from 28.0 ft to 30.0 ft bgs | ○ ○ ○ |
| 30 | | ○ ○ ○ |
| 31 | Bedrock at 30' Hard dark grey, ?dolostone | ○ ○ ○ |
| 32 | Cambrian Elbrook Formation from geologic map. | ○ ○ ○ |
| 33 | Drilled dry to 75' | ○ ○ ○ |
| 34 | | ○ ○ ○ |
| 35 | | ○ ○ ○ |
| 36 | | ○ ○ ○ |
| 37 | | ○ ○ ○ |
| 38 | | ○ ○ ○ |
| 39 | | ○ ○ ○ |
| 40 | | ○ ○ ○ |
| 41 | | ○ ○ ○ |
| 42 | | ○ ○ ○ |
| 43 | | ○ ○ ○ |
| 44 | .75 ft, HA | ○ ○ ○ |
| 45 | Note: Driller says soft spot at ~~75~~ ft bgs is fracture | ○ ○ ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | | | ROCK | | | | | | | | RFAAP MW-06 |
| 47 | | | | | | | | | | | |
| 48 | | | | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | | | | | | | | | |
| 51 | | | | | | | | | | | |
| 52 | | | | | | | | | | | |
| 53 | | | | | | | | | | | |
| 54 | | | | | | | | | | | |
| 55 | | | | | | | | | | | |
| 56 | | | | | | | | | | | |
| 57 | | | | | | | | | | | |
| 58 | | | | | | | | | | | |
| 59 | | | | | | | | | | | |
| 60 | | | | | | | | | | | |
| 61 | | | | | | | | | | | |
| 62 | | | | | | | | | | | |
| 63 | | | | | | | | | | | |
| 64 | | | | | | | | | | | |
| 65 | | | | | | | | | | | |
| 66 | | | | | | | | | | | |
| 67 | | | | | | | | | | | |
| 68 | | | | | | | | | | | |
| 69 | | | | | | | | | | | |
| 70 | | | | | | | | | | | |
| 71 | | | | | | | | | | | |
| 72 | | | | | | | | | | | |
| 73 | | | | | | | | | | | |
| 74 | | | | | | | | | | | |
| 75 | | | | | | | | | | | |

| Depth(feet) | NARRATIVE LITHOLOGIC DESCRIPTION RFAAP MW-06 | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| 46 | Bedrock, hard dark grey ? dolostone | ○ | ○ | ○ |
| 47 | to 82 feet bgs. Very few fractures | ○ | ○ | ○ |
| 48 | | ○ | ○ | ○ |
| 49 | | ○ | ○ | ○ |
| 50 | | ○ | ○ | ○ |
| 51 | | ○ | ○ | ○ |
| 52 | | ○ | ○ | ○ |
| 53 | | ○ | ○ | ○ |
| 54 | | ○ | ○ | ○ |
| 55 | | ○ | ○ | ○ |
| 56 | | ○ | ○ | ○ |
| 57 | | ○ | ○ | ○ |
| 58 | | ○ | ○ | ○ |
| 59 | | ○ | ○ | ○ |
| 60 | | ○ | ○ | ○ |
| 61 | | ○ | ○ | ○ |
| 62 | | ○ | ○ | ○ |
| 63 | | ○ | ○ | ○ |
| 64 | | ○ | ○ | ○ |
| 65 | | ○ | ○ | ○ |
| 66 | | ○ | ○ | ○ |
| 67 | | ○ | ○ | ○ |
| 68 | | ○ | ○ | ○ |
| 69 | | ○ | ○ | ○ |
| 70 | | ○ | ○ | ○ |
| 71 | | ○ | ○ | ○ |
| 72 | | ○ | ○ | ○ |
| 73 | | ○ | ○ | ○ |
| 74 | Suspected fracture at 75ft bgs cuts dust. | ○ | ○ | ○ |
| 75 | | | | |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 77 | | | ROCK | | | | | | | | RFAAP MW-06 |
| 78 | | | | | | | | | | | |
| 79 | | | | | | | | | | | |
| 80 | | | | | | | | | | | |
| 81 | | | | | | | | | | | |
| 82 | | | | | | | | | | | T.D. 82ft |
| 83 | | | | | | | | | | | |
| 84 | | | | | | | | | | | |
| 85 | | | | | | | | | | | |
| 86 | | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | | | | | | | | | | | |
| 89 | | | | | | | | | | | |
| 90 | | | | | | | | | | | |
| 91 | | | | | | | | | | | |
| 92 | | | | | | | | | | | |
| 93 | | | | | | | | | | | |
| 94 | | | | | | | | | | | |
| 95 | | | | | | | | | | | |
| 96 | | | | | | | | | | | |
| 97 | | | | | | | | | | | |
| 98 | | | | | | | | | | | |
| 99 | | | | | | | | | | | |
| 100 | | | | | | | | | | | |
| 101 | | | | | | | | | | | |
| 102 | | | | | | | | | | | |
| 103 | | | | | | | | | | | |
| 104 | | | | | | | | | | | |
| 105 | | | | | | | | | | | |

| Depth (feet) | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content | | |
|---|---|---|---|---|
| | RFAAP MW-06 | Dry | Moist | Wet |
| 77 | | ○ | ○ | ○ |
| 78 | Hard, dark grey ? dolostone, very few | ○ | ○ | ○ |
| 79 | fractures. | ○ | ○ | ○ |
| 80 | | ○ | ○ | ○ |
| 81 | | ○ | ○ | ○ |
| 82 | Bottom of hole at 82 feet bgs | ○ | ○ | ○ |
| 83 | | ○ | ○ | ○ |
| 84 | | ○ | ○ | ○ |
| 85 | | ○ | ○ | ○ |
| 86 | | ○ | ○ | ○ |
| 87 | | ○ | ○ | ○ |
| 88 | | ○ | ○ | ○ |
| 89 | | ○ | ○ | ○ |
| 90 | | ○ | ○ | ○ |
| 91 | | ○ | ○ | ○ |
| 92 | | ○ | ○ | ○ |
| 93 | | ○ | ○ | ○ |
| 94 | | ○ | ○ | ○ |
| 95 | | ○ | ○ | ○ |
| 96 | | ○ | ○ | ○ |
| 97 | | ○ | ○ | ○ |
| 98 | | ○ | ○ | ○ |
| 99 | | ○ | ○ | ○ |
| 100 | | ○ | ○ | ○ |
| 101 | | ○ | ○ | ○ |
| 102 | | ○ | ○ | ○ |
| 103 | | ○ | ○ | ○ |
| 104 | | ○ | ○ | ○ |
| 105 | | ○ | ○ | ○ |

# RADFORD ARMY AMMUNITION PLANT, VIRGINIA

# Former Lead Furnace Area
# RCRA Facility Investigation/
# Corrective Measures Study Report

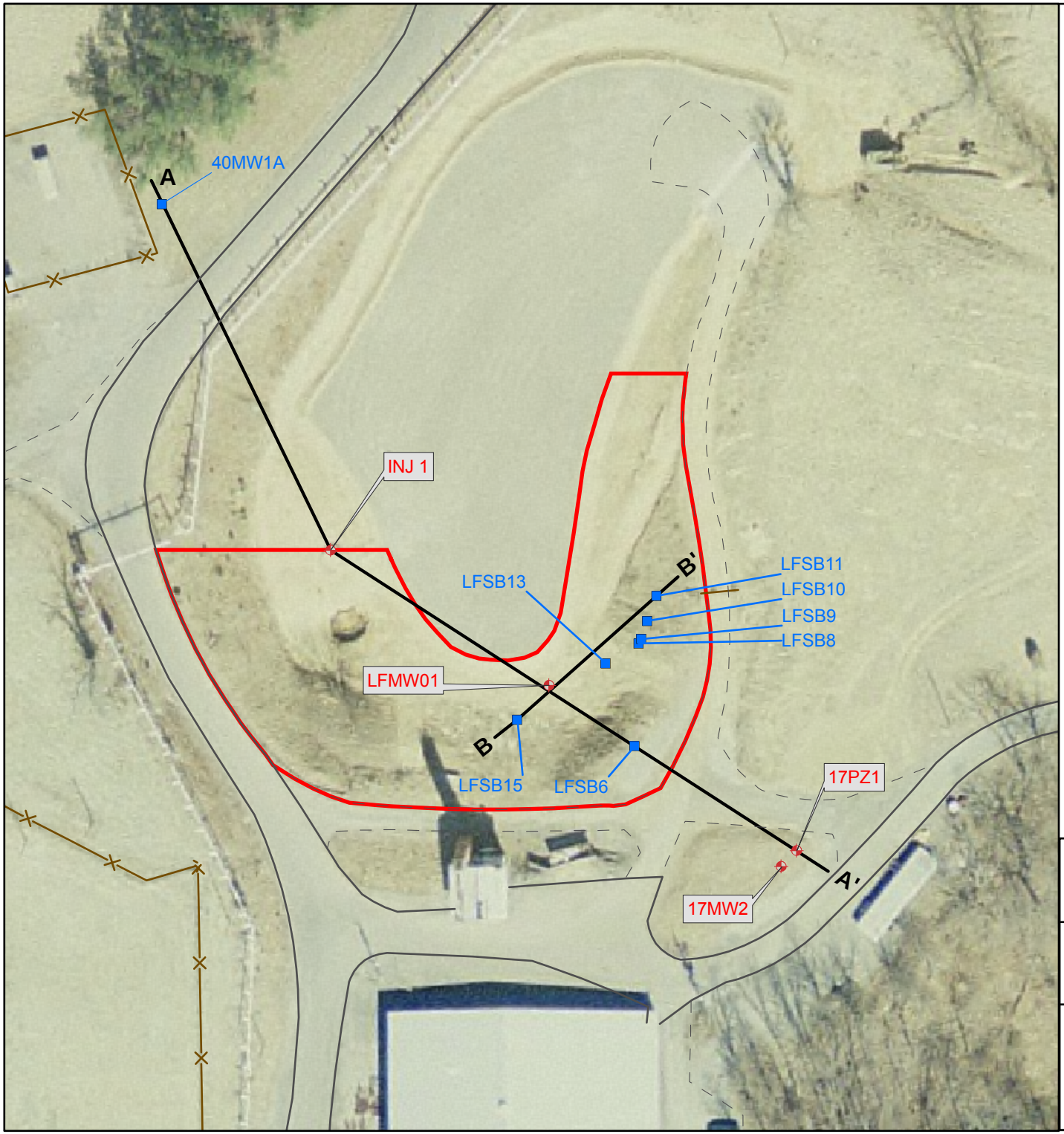
**Prepared for:**

USACE Baltimore District
10 S. Howard St.
Baltimore, MD 21201

**Prepared by:**

Shaw Environmental, Inc.
2113 Emmorton Park Rd.
Edgewood, MD 21040

**Final Document** **November 2008**




## LEGEND

- Soil Sample Location
- Monitoring Well
- Dirt Road
- Paved Road
- Fence Line
- Geologic Cross Section Line
- Former Lead Furnace Area Boundary

Notes:
1) Aerial photo, dated 2005, was obtained from Montgomery County, VA Planning & GIS Services.

N

Scale:

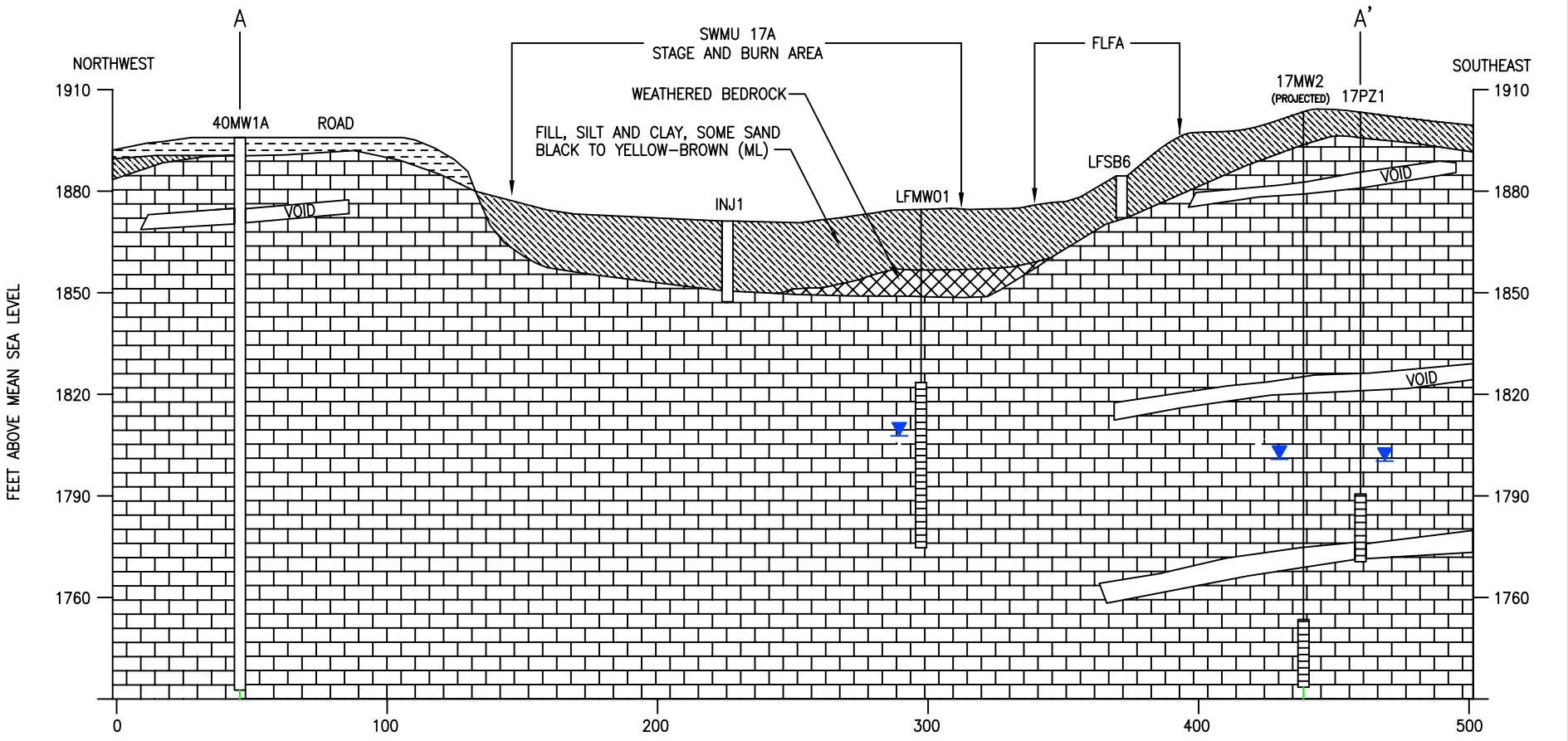
0 37.5 75 150 Feet

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-3
Former Lead Furnace Area
Geologic Cross Section Lines A-A' and B-B'
Radford Army Ammunition Plant,
Radford, VA

GIS File: RFAAP_Fig2-3_FLFA_XSect.mxdjoy.pasquarelli (1/29/2008 11:28:55 AM)




HORIZ. SCALE: 0 50 100

VERT. SCALE: 0 15 30 45 60 75

LEGEND

- CLAY AND SILT, LITTLE SAND, RED-BROWN (CL)
- SILT AND CLAY (ML/CL)
- WEATHERED BEDROCK
- LIMESTONE, GRAY-BROWN, ARGILLACEOUS (LMSN)
- STATIC GROUNDWATER LEVEL

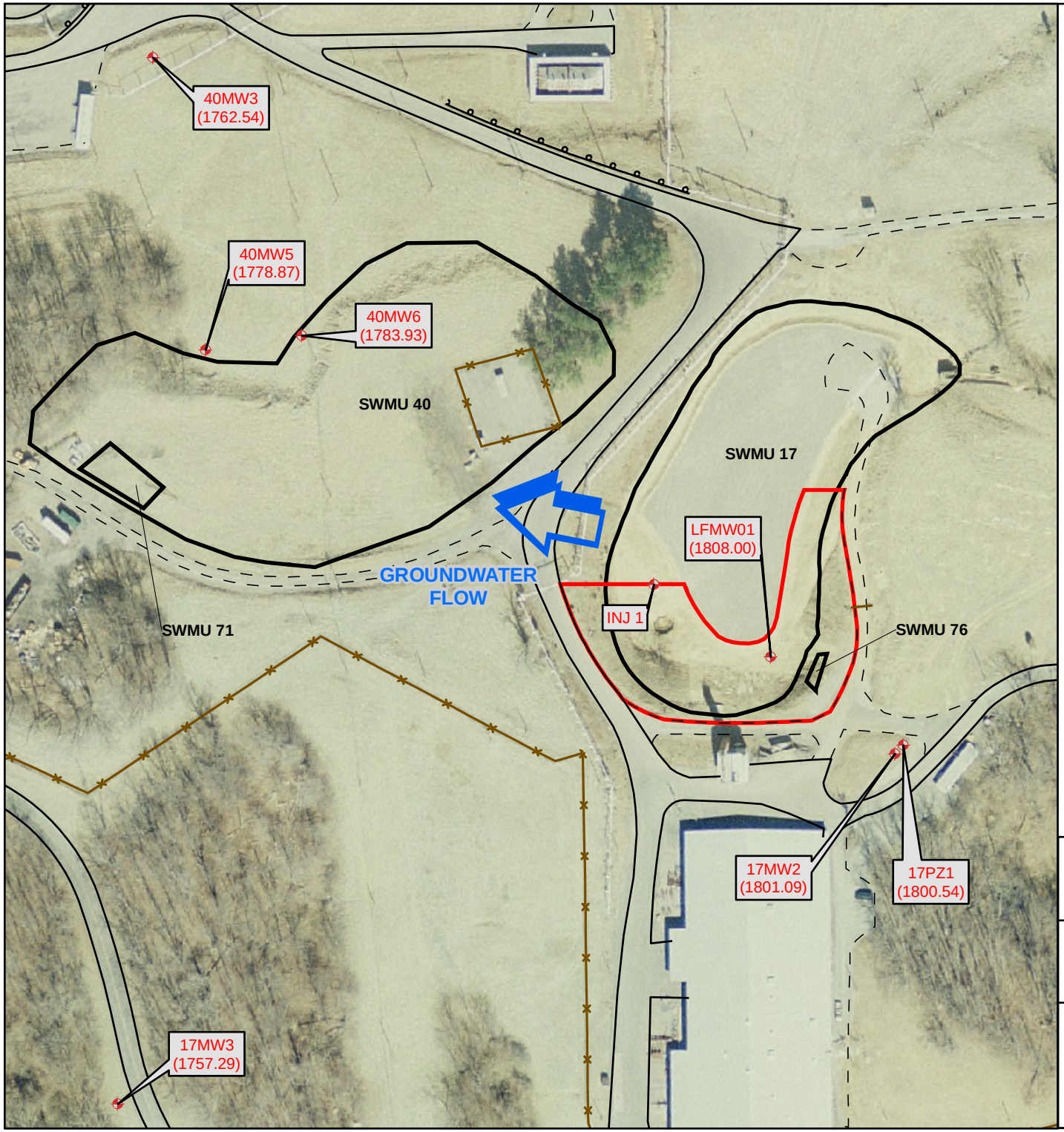
NOTES

1) WATER LEVELS MEASURED DECEMBER 2007 (17MW2 AND 17PZ1) AND AUGUST 2007 (LFMW01)
2) SOME DATA POINTS ARE PROJECTED ONTO PROFILE.
3) 40MW1A AND 17PZ1 LITHOLOGY FROM DAMES AND MOORE.
4) 40MW1A IS A BORING.
5) INJECTION WELL IS AN OPEN HOLE AT THE BEDROCK INTERFACE.

SOURCE: PARSONS ENGINEERING SCIENCE INC

| RADFORD AAP | | FIGURE 2-4 |
|---|---|---|
| PREPARED BY: SHAW | TASK NO: 12346161030000 | FORMER LEAD FURNACE AREA GEOLOGIC CROSS-SECTION A-A' |
| CHECKED BY: MT | SHAW DWG NO: FIG 2-4 (A-A').dwg | |
| DATE: REVISED DECEMBER 2007 | | |

FILE: FIG2-3.dwg PLOT: 8-19-05




## LEGEND

- Monitoring Well Location
- Dirt Road
- Paved Road
- Fence Line
- Former Lead Furnace Area Boundary
- Other Site Boundary

Notes:
1) Aerial photo, dated 2005, was obtained from Montgomery County, VA Planning & GIS Services.
2) All water levels measured in December 2007, except LFMW01, which was measured in August 2007.
3) Water levels are expressed in feet above mean sea level.
4) Groundwater flow direction is based on the 1994 dye trace study results (Engineering Science, 1994).

N

Scale:

0 70 140 280 Feet

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-7
Former Lead Furnace Area
Groundwater Flow Map
Radford Army Ammunition Plant,
Radford, VA

GIS File: RFAAP_Fig2-7_FLFA_GW_Flow.mxd (5/15/2008 11:08:29 AM)

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
**Page 1 of 3**

| Analyte | Sample ID | LFMW01 | | | | | 17PZ01 | | | | | 17MW02 | | | | | 17MW03 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | 8/21/07 | | | | | 8/21/07 | | | | | 8/21/07 | | | | | 8/21/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | 1 | U | | *0.21* | *1* | 2.7 | | | *0.21* | *1* | 5.9 | | | *0.21* | *1* | 1 | U | | *0.21* | *1* |
| Tetrachloroethene | 5 | 0.1 | 1 | U | | *0.25* | *1* | 1 | U | | *0.25* | *1* | 2.6 | | | *0.25* | *1* | 1 | U | | *0.25* | *1* |
| Toluene | 1000 | 75 | 1 | U | | *0.27* | *1* | 1 | U | | *0.27* | *1* | 1 | U | | *0.27* | *1* | 0.38 | J | J | *0.27* | *1* |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | NT | | | | | NT | | | | | NT | | | | | NT | | | | |
| Butylbenzylphthalate | na | 730 | 4.9 | U | | *2* | *4.9* | 4.8 | U | | *1.9* | *4.8* | 5 | U | | *2* | *5* | 4.9 | U | | *1.9* | *4.9* |
| Diethylphthalate | na | 2900 | 4.9 | U | | *2* | *4.9* | 4.8 | U | | *1.9* | *4.8* | 5 | U | | *2* | *5* | 4.9 | U | | *1.9* | *4.9* |
| Naphthalene | na | 0.65 | NT | | | | | NT | | | | | NT | | | | | NT | | | | |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | 0.049 | U | | *0.009* | *0.049* | 0.048 | U | | *0.009* | *0.048* | 0.05 | U | | *0.009* | *0.05* | 0.049 | U | | *0.009* | *0.049* |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 9320 | | | *79* | *200* | 296 | | | *79* | *200* | 222 | | | *79* | *200* | 79 | U | | *79* | *200* |
| Barium | 2000 | 730 | 93 | J | J | *5* | *200* | 69.7 | J | J | *5* | *200* | 54.4 | J | J | *5* | *200* | 176 | J | J | *5* | *200* |
| Beryllium | 4 | 7.3 | 1.9 | J | B | *1* | *4* | 1.2 | J | B | *1* | *4* | 1.3 | J | B | *1* | *4* | 1 | U | | *1* | *4* |
| Calcium | na | na | 120000 | | | *100* | *1000* | 76700 | | | *100* | *1000* | 76100 | | | *100* | *1000* | 110000 | | | *100* | *1000* |
| Chromium | 100 | 11 | 43 | | | *0.92* | *10* | 11 | | | *0.92* | *10* | 29.5 | | | *0.92* | *10* | 32.4 | | | *0.92* | *10* |
| Cobalt | na | na | 4.6 | J | J | *1* | *50* | 1 | U | | *1* | *50* | 26.9 | J | J | *1* | *50* | 2.5 | J | J | *1* | *50* |
| Copper | 1300 | 150 | 6.9 | J | J | *1.2* | *25* | 1.2 | U | | *1.2* | *25* | 7.9 | J | J | *1.2* | *25* | 1.9 | J | J | *1.2* | *25* |
| Iron | 300 | 2600 | 10100 | | | *15* | *300* | 15 | U | | *15* | *300* | 644 | | | *15* | *300* | 15 | U | | *15* | *300* |
| Lead | 15 | na | 3.6 | J | J | *2.1* | *5* | 2.1 | U | | *2.1* | *5* | 2.1 | U | | *2.1* | *5* | 2.1 | U | | *2.1* | *5* |
| Magnesium | na | na | 56700 | | | *100* | *5000* | 29800 | | | *100* | *5000* | 28400 | | | *100* | *5000* | 39900 | | | *100* | *5000* |
| Manganese | 50 | 73 | 78.3 | | | *1* | *15* | 5.3 | J | J | *1* | *15* | 12.8 | J | J | *1* | *15* | 42.4 | | | *1* | *15* |
| Mercury | 2 | 1.1 | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* |
| Nickel | na | 73 | 30.5 | J | J | *1* | *40* | 6.4 | J | J | *1* | *40* | 18.1 | J | J | *1* | *40* | 27.6 | J | J | *1* | *40* |
| Potassium | na | na | 6120 | J | B | *100* | *10000* | 2810 | J | B | *100* | *10000* | 3610 | J | B | *100* | *10000* | 4520 | J | B | *100* | *10000* |
| Selenium | 50 | 18 | 4 | U | | *4* | *10* | 4 | U | | *4* | *10* | 4 | U | | *4* | *10* | 16 | U | | *16* | *20* |
| Silver | 100 | 18 | 0.77 | U | | *0.77* | *10* | 0.77 | U | | *0.77* | *10* | 6.2 | J | B | *0.77* | *10* | 0.77 | U | | *0.77* | *10* |
| Sodium | na | na | 12100 | | | *500* | *10000* | 5690 | J | B | *500* | *10000* | 14600 | | | *500* | *10000* | 19500 | | | *500* | *10000* |
| Vanadium | na | 3.7 | 20 | J | J | *1.1* | *50* | 1.1 | U | | *1.1* | *50* | 1.5 | J | J | *1.1* | *50* | 1.1 | U | | *1.1* | *50* |
| Zinc | 5000 | 1100 | 60.4 | | | *5* | *20* | 10 | J | J | *5* | *20* | 11.9 | J | J | *5* | *20* | 13.2 | J | J | *5* | *20* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | 5.33 | | | *0.112* | *0.2* | 1.09 | | | *0.112* | *0.2* | 5.4 | | | *0.112* | *0.2* | 4.02 | | | *0.112* | *0.2* |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | 0.00268 | A | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| OCDD | na | na | 0.0686 | A | J | | | 0.0102 | A | J | | | 0.0142 | A, EMPC | J | *0.00164* | *0.00164* | 0.00965 | U | | *0.00965* | *0.00965* |
| 1,2,3,7,8-PECDF | na | na | 0.00127 | A, EMPC | J | *0.00489* | *0.00489* | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| 2,3,4,7,8-PECDF | na | na | 0.00154 | A | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| TOTAL HXCDD | na | 0.011 | 0.00268 | | | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| TOTAL PECDF | na | na | 0.00282 | EMPC | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |

**Refer to legend immediately following this table for a list of definitions and table notes

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
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| Analyte | Sample ID | | 40MW3 | | | | | 40MW3-Diss | | | | | 40MW5 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | | 8/14/07 | | | | | 8/14/07 | | | | | 8/15/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | 19 | | | *0.061* | *1* | NT | | | | | 23 | | | *0.061* | *1* |
| Tetrachloroethene | 5 | 0.1 | 0.15 | U | | *0.15* | *1* | NT | | | | | 0.15 | U | | *0.15* | *1* |
| Toluene | 1000 | 75 | 0.072 | U | | *0.072* | *1* | NT | | | | | 0.09 | J | B | *0.072* | *1* |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | 0.015 | U | | *0.015* | *5* | NT | | | | | 0.094 | J | | *0.015* | *5* |
| Butylbenzylphthalate | na | 730 | 0.057 | J | B | *0.029* | *5* | NT | | | | | 0.029 | U | | *0.029* | *5* |
| Diethylphthalate | na | 2900 | 0.038 | J | B | *0.034* | *5* | NT | | | | | 0.034 | U | | *0.034* | *5* |
| Naphthalene | na | 0.65 | 0.023 | U | | *0.023* | *5* | NT | | | | | 0.094 | J | | *0.023* | *5* |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | 0.0018 | U | | *0.0018* | *0.05* | NT | | | | | 0.0018 | U | | *0.0018* | *0.05* |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* |
| Barium | 2000 | 730 | 29 | | | *0.52* | *2* | 29 | | | *0.52* | *2* | 45 | | | *0.52* | *2* |
| Beryllium | 4 | 7.3 | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* |
| Calcium | na | na | 52000 | | | *40* | *500* | 53000 | | | *40* | *500* | 69000 | | | *40* | *500* |
| Chromium | 100 | 11 | 1.7 | J | B | *0.31* | *2* | 1.2 | J | B | *0.31* | *2* | 1.9 | J | B | *0.31* | *2* |
| Cobalt | na | na | 0.16 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* | 0.13 | J | | *0.096* | *1* |
| Copper | 1300 | 150 | 1.3 | | | *0.33* | *1* | 0.86 | J | | *0.33* | *1* | 0.79 | J | | *0.33* | *1* |
| Iron | 300 | 2600 | 21 | | B | *5.7* | *20* | 17 | J | | *5.7* | *20* | 14 | J | B | *5.7* | *20* |
| Lead | 15 | na | 0.51 | J | B | *0.33* | *1* | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* |
| Magnesium | na | na | 18000 | | | *38* | *500* | 18000 | | | *38* | *500* | 22000 | | | *38* | *500* |
| Manganese | 50 | 73 | 0.48 | J | B | *0.43* | *3* | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* |
| Mercury | 2 | 1.1 | 0.04 | J | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* |
| Nickel | na | 73 | 1.8 | J | | *0.28* | *2* | 1.3 | J | | *0.28* | *2* | 1 | J | | *0.28* | *2* |
| Potassium | na | na | 1200 | | | *54* | *200* | 1200 | | | *54* | *200* | 1000 | | | *54* | *200* |
| Selenium | 50 | 18 | 0.92 | U | | *0.92* | *3* | 1.3 | J | B | *0.92* | *3* | 1.4 | J | B | *0.92* | *3* |
| Silver | 100 | 18 | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* |
| Sodium | na | na | 7600 | | | *84* | *500* | 7800 | | | *84* | *500* | 7000 | | | *84* | *500* |
| Vanadium | na | 3.7 | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* |
| Zinc | 5000 | 1100 | 15 | | B | *0.84* | *10* | 4.5 | JB | B | *0.84* | *10* | 11 | | B | *0.84* | *10* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | 0.52 | | | *0.08* | *0.2* | NT | | | | | 0.64 | | | *0.08* | *0.2* |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| OCDD | na | na | NT | | | | | NT | | | | | NT | | | | |
| 1,2,3,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| 2,3,4,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| TOTAL HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| TOTAL PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |

**Refer to legend immediately following this table for a list of definitions and table notes

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
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| Analyte | Sample ID | | 40MW5-Diss | | | | | 40MW6 | | | | | 40MW6-Diss | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | | 8/15/07 | | | | | 8/14/07 | | | | | 8/14/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | NT | | | | | 24 | | | *0.061* | *1* | NT | | | | |
| Tetrachloroethene | 5 | 0.1 | NT | | | | | 0.15 | U | | *0.15* | *1* | NT | | | | |
| Toluene | 1000 | 75 | NT | | | | | 0.072 | U | | *0.072* | *1* | NT | | | | |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | NT | | | | | 0.015 | U | | *0.015* | *5* | NT | | | | |
| Butylbenzylphthalate | na | 730 | NT | | | | | 0.038 | J | B | *0.029* | *5* | NT | | | | |
| Diethylphthalate | na | 2900 | NT | | | | | 0.034 | U | | *0.034* | *5* | NT | | | | |
| Naphthalene | na | 0.65 | NT | | | | | 0.023 | U | | *0.023* | *5* | NT | | | | |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | NT | | | | | 0.0098 | J | J | *0.0018* | *0.05* | NT | | | | |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* |
| Barium | 2000 | 730 | 46 | | | *0.52* | *2* | 39 | | | *0.52* | *2* | 39 | | | *0.52* | *2* |
| Beryllium | 4 | 7.3 | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* |
| Calcium | na | na | 69000 | | | *200* | *2500* | 71000 | | | *40* | *500* | 68000 | | | *40* | *500* |
| Chromium | 100 | 11 | 1.4 | J | B | *0.31* | *2* | 5 | | B | *0.31* | *2* | 1.3 | J | B | *0.31* | *2* |
| Cobalt | na | na | 0.31 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* |
| Copper | 1300 | 150 | 0.98 | J | | *0.33* | *1* | 1 | | | *0.33* | *1* | 0.91 | J | | *0.33* | *1* |
| Iron | 300 | 2600 | 10 | J | | *5.7* | *20* | 28 | | B | *5.7* | *20* | 15 | J | | *5.7* | *20* |
| Lead | 15 | na | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* |
| Magnesium | na | na | 22000 | | | *38* | *500* | 22000 | | | *38* | *500* | 21000 | | | *38* | *500* |
| Manganese | 50 | 73 | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* |
| Mercury | 2 | 1.1 | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* |
| Nickel | na | 73 | 0.49 | J | | *0.28* | *2* | 2.1 | | | *0.28* | *2* | 1.8 | J | | *0.28* | *2* |
| Potassium | na | na | 1000 | | | *54* | *200* | 1200 | | | *54* | *200* | 1100 | | | *54* | *200* |
| Selenium | 50 | 18 | 0.92 | U | | *0.92* | *3* | 0.92 | U | | *0.92* | *3* | 1.1 | J | B | *0.92* | *3* |
| Silver | 100 | 18 | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* |
| Sodium | na | na | 7000 | | | *84* | *500* | 7300 | | | *84* | *500* | 7000 | | | *84* | *500* |
| Vanadium | na | 3.7 | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* |
| Zinc | 5000 | 1100 | 3.3 | JB | B | *0.84* | *10* | 15 | | B | *0.84* | *10* | 4.7 | JB | B | *0.84* | *10* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | NT | | | | | 0.52 | | | *0.08* | *0.2* | NT | | | | |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| OCDD | na | na | NT | | | | | NT | | | | | NT | | | | |
| 1,2,3,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| 2,3,4,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| TOTAL HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| TOTAL PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |

**Refer to legend immediately following this table for a list of definitions and table notes

# Table 4-7
# Legend

| | | |
|---|---|---|
| 12 | J | Shading and black font indicate an MCL exceedance. |
| 12 | J | Bold outline indicates a tw-RBC exceedance. |
| *12* | *12* | Shading in the MDL/MRL columns indicates the MDL exceeds a criterion. |

tw-RBCs for non-Carcinogenic compounds have been recalculated to an HI of 0.1.
The pyrene tw-RBCs were used for acenaphthylene, benzo(g,h,i)perylene and phenanthrene.
Secondary MCLs were used for aluminum, iron, manganese, silver, and zinc.
MCL Action Levels were used for copper and lead.
MCL = Maximum Contaminant Level (USEPA, 2006).
tw-RBC = Tap Water Risk-Based Concentration (USEPA, October 2007).
tw-RBC value in table is for the more conservative chromium VI.
tw-RBC value for chromium III is 5,500, which was not exceeded.
ng/L = nanograms per liter (parts per trillion).
µg/L = micrograms per liter (parts per billion).
NA = not applicable.
NT = analyte not tested.

**LQ = Lab Data Qualifiers**

B = (organics) Blank contamination. Value detected in sample and associated blank.
A (Dioxins) = B = (metals) Value <MRL and >MDL and is considered estimated.
E (metals) = Reported value is estimated because of the presence of interferences.
EMPC (Dioxins) = The ion-abundance ratio between the two characteristic PCDD/PCDF ions was outside accepted ranges. The detected PCDD/PCDF was reported as an estimated maximum possible concentration (EMPC).
J = (organics) Value <MRL and >MDL and is considered estimated.
U = Analyte not-detected at the method reporting limit.
X = (dioxins) Ion abundance ratio outside acceptable range. Value reported is EMPC.

**VQ = Validation Data Qualifiers:**

B = blank contamination. Value detected in sample and associated blank.
J = estimated concentration
K = estimated concentration bias high
L = estimated concentration bias low
N = presumptive evidence for tentatively identified compounds using a library search
U = analyte not detected
UJ = estimated concentration non-detect
UL = estimated concentration non-detect bias low

flow line vectors over the Potentiometric Surface Map, measuring their lengths, calculating the head differential over the distances measured, and dividing the head differential by the length of the flow line vectors. The three calculated gradients were then averaged to a single value. Using this method, the average groundwater hydraulic gradient across the site based on First Quarter 1999 groundwater elevations was calculated to be 0.017 ft/ft. Historical slug test data for the site yielded an average hydraulic conductivity of $5.25 \times 10^{-5}$ ft/second. This value is consistent with literature values for karst carbonate rock and for clayey, silty sand and gravel alluvium and residuum (Domenico and Schwartz, 1990).

The estimated groundwater velocity across the site was calculated to be approximately 0.193 ft/day or 70.4 ft/year, based on the following:

- an average hydraulic conductivity of $5.25 \times 10^{-5}$ ft/second;
- an average hydraulic gradient of 0.017 ft/ft; and
- an assumed effective porosity of 0.40, based on a representative range of porosities for karst carbonate rock, weathered residuum, and clayey, silty sand and gravel alluvium (Domenico and Schwartz, 1990).

The actual groundwater flow velocities in the carbonate bedrock may vary as much as one to two orders of magnitude from the velocity presented above, depending on water level conditions and the distribution of karst conduits.

## 3.3 HWMU-5 GROUNDWATER MONITORING ANALYTE LIST

The groundwater monitoring analyte list for HWMU-5 is presented in **Table 1 (Appendix B)**. The list represents the subset of the constituents listed in Appendix VIII of 40 CFR Part 261 that previously have been detected in the groundwater and/or that are reasonably expected to be in or derived from waste contained in HWMU-5. As discussed in Section 3.5.2 below, 11 inorganic constituents, three volatile organic constituents, and two explosive/ propellant constituents have been detected in the groundwater monitoring network for HWMU-5 at statistically significant concentrations above the Unit's calculated background concentrations.

The concentration limits established for the hazardous constituents also are listed in **Table 1**. The concentration limits represent either background concentrations calculated for the constituents in this GWQAR, Maximum Concentrations of Constituents for Ground-water Protection listed in Table 1 of 40 CFR 264.94, USEPA Drinking Water Standard Maximum Contaminant Levels (MCLs), or alternate concentration limits (ACLs) established by the VDEQ (July 1998).

As Alliant discussed with the VDEQ in the past, the reliability of previous laboratory analytical data - particularly dissolved metals data - appeared to be questionable in some cases. In an April 9, 1996 letter to C. Jake (Alliant), the VDEQ agreed that only total metals concentrations in groundwater would be measured, as described in a USEPA Region III guidance on groundwater sampling in karst terrain. Therefore, all references to metals concentrations in this GWQAR refer to <u>total</u> metals concentrations.

## 3.4 HWMU-5 GROUNDWATER BACKGROUND CONCENTRATIONS

Background concentrations were calculated for each constituent in the groundwater monitoring program using the analytical data from First Quarter 1996 through First Quarter 1999 for upgradient well 5W8B. The background concentration calculations were based on site wide 95% confidence, 95% coverage upper prediction intervals. The calculated background

concentrations are listed in **Table 2 (Appendix B)**. The background concentrations were used to construct the outermost closing contours on the Isoconcentration Maps **(Appendix A)**.

## 3.5 HWMU-5 STATISTICAL ANALYSIS

Statistical evaluations for HWMU-5 are performed annually and submitted to the VDEQ in accordance with the annual reporting requirements specified in 40 CFR 265.94. As part of this GWQAR, statistical evaluations were performed on First Quarter 1999 analytical data in accordance with the procedures and guidance provided in the following documents:

- Title 40 of the Code of Federal Regulations, 40 CFR 264.97 and 264.98;
- VDEQ Guidance for statistical analysis titled "Data Analysis Plan," undated;
- Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, April 1989;
- Addendum to Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, July 1992; and
- Statistical Methods for Groundwater Monitoring, Gibbons, R.D., 1994.

Statistical threshold values were computed for the 40 constituents for which HWMU-5 is currently monitored based on the concentrations of those constituents in upgradient (background) well 5W8B. All data starting with First Quarter 1996 to First Quarter 1999 were used for this purpose. The 1996 through 1999 monitoring data have been submitted previously to the VDEQ by Alliant in quarterly monitoring reports; therefore, the data are not listed in this GWQAR. Statistical comparisons were performed for the First Quarter 1999 data set. Comparison statistical analyses were performed for all constituents which were detected in any downgradient well during that event.

### 3.5.1 Background Data and Statistical Comparisons

Statistical analyses were performed using the analytical results from upgradient well 5W8B as background data. Based on the percentage of non-detects and the distribution of the background data, methods of statistical comparisons varied. Background average, standard deviation and other descriptive statistical data were computed for all constituents and are presented in **Appendix C**.

The constituents listed below were 100% non-detected in the background data. The background threshold levels (BTLs) for these constituents were established as equal to their detection limits (DL). Detections of these constituents in the downgradient wells during First Quarter 1999 were compared to these BTLs.

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Antimony | 13 | 100 | 3 | 3 |
| Arsenic | 13 | 100 | 1 | 1 |
| Selenium | 13 | 100 | 1 | 1 |
| Benzene | 13 | 100 | 0.1 | 0.1 |
| Chloromethane | 13 | 100 | 0.3 | 0.3 |
| 1,2-Dichloroethane | 13 | 100 | 0.1 | 0.1 |
| Tetrachloroethene | 13 | 100 | 0.1 | 0.1 |
| Toluene | 13 | 100 | 0.1 | 0.1 |
| trans-1,2-Dichloroethene | 13 | 100 | 0.1 | 0.1 |

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| 1,1,2-Trichloroethane | 13 | 100 | 0.5 | 0.5 |
| Trichlorofluoromethene | 13 | 100 | 0.5 | 0.5 |
| Vinyl chloride | 13 | 100 | 0.1 | 0.1 |
| Xylenes (total) | 13 | 100 | 0.1 | 0.1 |
| Bis (2-ethylhexyl) phthalate | 13 | 100 | 10 | 10 |
| Di-n-butyl phthalate | 9 | 100 | 5 | 5 |
| Diethyl phthalate | 13 | 100 | 5 | 5 |
| Diphenylamine | 13 | 100 | 10 | 10 |
| 2,6-Dinitrotoluene | 13 | 100 | 0.08 | 0.08 |

Non-parametric prediction intervals were computed for all of the constituents for which the data from background well 5W8B satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

The background threshold levels for these constituents were set as equal to their upper prediction limits (UPLs). The background and relevant statistical data for these constituents are summarized below. The confidence level and false positive rate were calculated based on the number of background data points available and number of future comparisons. For all constituents, the confidence level was determined to be equal to 0.920, and the false positive rate was equal to 0.080. Since the upper control limit of a non-parametric interval cannot be adjusted for multiple comparisons and inadequate number of background data, the number of resampling events required was adjusted to account for the high error rates inherent in those situations. The number of confirmation resamples required for all constituents is 2. The background and relevant statistical data for these constituents are summarized below. Associated statistical computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Beryllium | 13 | 54 | 0.2 | 0.7 |
| Cobalt | 13 | 46 | 1 | 7 |
| Copper | 13 | 54 | 1 | 18 |
| Lead | 13 | 69 | 1 | 10 |
| Mercury | 13 | 85 | 0.2 | 0.9 |
| Nickel | 13 | 69 | 15 | 106 |
| Silver | 13 | 85 | 0.2 | 2.3 |
| Thallium | 13 | 85 | 1 | 2 |
| Vanadium | 13 | 62 | 4 | 17 |
| Zinc | 13 | 38 | 5 | 75 |
| Acetone | 13 | 92 | 10.0 | 89 |
| Chloroform | 13 | 77 | 0.3 | 0.5 |
| Methylene chloride | 13 | 92 | 0.7 | 0.7 |
| Methylethyl ketone | 13 | 92 | 1.1 | 21.3 |
| Trichloroethene | 13 | 85 | 0.1 | 0.8 |
| 2,4-Dinitrotoluene | 13 | 92 | 0.08 | 0.18 |
| Total Organic Carbon | 13 | 69 | 1,000 | 253,000 |
| Total Organic Halides | 13 | 46 | 5 | 13.4 |

The following constituents exhibited normally distributed background data with less than 25% non-detects. One sided parametric prediction intervals were computed on the background data for all of these constituents. The UPLs for these constituents were set as their respective BTLs, with one exception. For pH, a two-sided parametric prediction interval was computed; therefore, the BTL for pH consisted of a range between the lower prediction limit (LPL) and the upper prediction limit. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. When adjusted for multiple comparisons of the background data, the minimum required false positive rate was below 1% (0.01). A 99% confidence level (0.01 false positive rate) was used for all individual comparisons, which with the most conservative assumptions provided a site-wide false positive rate of >0.05 for all constituents. The background and relevant statistical data for these constituents are summarized below. The prediction interval computations for these constituents are presented in **Appendix C**.

| **BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05 (individual comparisons false positive rate=0.01) BTL for pH = LPL – UPL of two-sided Prediction Interval** | | | | |
|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **DL (µg/l)** | **BTL (µg/l)** |
| Barium | 13 | 0 | 2 | 172.87 |
| Cadmium | 13 | 23 | 0.1 | 1.45 |
| Specific Conductivity | 8 | 0 | 1 µS/cm | 450 µS/cm |
| pH | 8 | 0 | 0.1 pH units | 2.79 - 7.47 pH units |

### 3.5.2 Results of Statistical Comparisons

The following table lists the constituents which were detected during the First Quarter 1999 event at concentrations exceeding their respective background threshold levels (BTLs), and the downgradient wells in which they were detected.

| Parameter | Monitoring Well(s) |
|---|---|
| Arsenic | S5W5 |
| Beryllium | 5W7B, 5WC21, S5W5 |
| Cadmium | 5WC21 |
| Cobalt | 5W5B, 5W7B, 5WC21, 5WC22, S5W7, 5W11A |
| Copper | 5W7B, 5WC21 |
| Lead | 5W7B, S5W5 |
| Nickel | 5WC21 |
| Selenium | 5W5B |
| Silver | 5W5B |
| Vanadium | 5W5B, 5W7B, S5W5 |
| Zinc | 5W7B, 5WC21, 5W11A |
| Chloroform | 5WC21 |
| Trichloroethene | 5W5B, 5WC21, 5WC22, 5WC23, 5W10A |
| Xylenes (total) | 5W5B |
| 2,4-Dinitrotoluene | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23 |
| 2,6-Dinitrotoluene | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23, 5W9A |
| Specific Conductivity | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23, S5W7, 5W9A, 5W11A |
| pH | 5WC23, 5W10A, 5W11A |

**TABLE 2**
**HWMU-5**
**CALCULATED BACKGROUND VALUES**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Antimony | 3 |
| Arsenic | 1 |
| Barium | 172.87 |
| Beryllium | 0.7 |
| Cadmium | 1.45 |
| Cobalt | 7 |
| Copper | 18 |
| Lead | 10 |
| Mercury | 0.9 |
| Nickel | 106 |
| Selenium | 1 |
| Silver | 2.3 |
| Thallium | 2 |
| Vanadium | 17 |
| Zinc | 75 |
| Acetone | 89 |
| Benzene | 0.1 |
| Chloroform | 0.5 |
| Chloromethane | 0.3 |
| 1,2-Dichloroethane | 0.1 |
| Methylene chloride | 0.7 |
| Methylethylketone | 21.3 |
| Tetrachloroethene | 0.1 |
| Toluene | 0.1 |
| trans-1,2-Dichloroethene | 0.1 |
| 1,1,2-Trichloroethane | 0.5 |
| Trichloroethene | 0.8 |
| Trichlorofluoromethane | 0.5 |
| Vinyl chloride | 0.1 |
| Xylenes (total) | 0.1 |
| Bis (2-ethylhexyl) phthalate | 10 |
| Di-n-butylphthalate | 5 |
| Diethyl phthalate | 5 |
| Diphenylamine | 10 |
| 2,4-Dinitrotoluene | 0.18 |
| 2,6-Dinitrotoluene | 0.08 |
| Total Organic Carbon | 253,000 |
| Total Organic Halides | 13.4 |
| Specific Conductivity | 450 µS/cm |
| pH | 2.79 to 7.47 pH units |

## *Total Cobalt Concentrations in Groundwater (Second Quarter 2003 - Fourth Quarter 2011)*

## *Hazardous Waste Management Unit 5*

## *Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 5W8B*

| *Analyte/Quarter* | *5W8B* | *Q* | *5W5B* | *Q* | *5W7B* | *Q* | *5WC21* | *Q* | *5WC22* | *Q* | *5WC23* | *Q* | *QL* | *Permit QL* | *GPS* | *UNIT* | *Method* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cobalt** | | | | | | | | | | | *CAS # 7440-48-4* | | | | | | |
| First Quarter 2003 | U | | U | | 65.7 | | 134 | | 10.5 | | - | | 5 | 5 | 313 | µg/L | 6020 |
| First Quarter 2003 | - | | - | | - | | 134 | | 10 | | U | | 5 | 5 | 313 | µg/L | 6020 |
| Second Quarter 2003 | U | | U | | 5 | | 129 | | 13.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2003 | U | | U | | U | | 142 | | 10.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2003 | 1.1 | J | U | | 5.1 | | 153 | | 8.6 | | 4.9 | J | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2004 | U | | U | | U | | 149 | | 7.9 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2004 | 1.1 | J | U | | 3.3 | J | 146 | | 6.7 | | 4.4 | J | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2004 | U | | U | | U | | 145 | | 21 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2004 | U | | U | | U | | 159 | | 8.1 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2005 | U | | U | | U | | 143 | | 5.8 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2005 | 1.2 | J | U | | 13.1 | | 121 | | 9.2 | | 3.8 | J | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2005 | U | | U | | 21.3 | | 115 | | 9.1 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2005 | U | | U | | 22.2 | J | 108 | | 5.2 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2006 | U | | U | | 19.7 | | 98 | | 5 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2006 | U | | U | | 22.3 | | 91.8 | | 5.3 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2006 | 1.3 | J | 0.74 | J | 20 | J | 81.2 | J | 5 | J | 2.9 | J | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2006 | U | J | U | J | 27.5 | J | 91.2 | J | 5.6 | J | U | J | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2007 | U | | U | | 22.7 | | 92.7 | | U | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2007 | 1.3 | J | U | | 8.6 | J | 82.8 | J | 10.4 | J | 2.2 | J | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2007 | U | | U | | 10.2 | J | 82.2 | | 13.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2008 | 1.3 | J | U | J | 11 | J | 62.7 | J | 16.9 | J | 3 | J | 5 | 5 | 313 | ug/l | 6020 |
| Fourth Quarter 2008 | U | | U | | 12.4 | | 71.2 | | U | | U | | 5 | 5 | 313 | UG/L | 6020 |
| Second Quarter 2009 | U | | U | | 6.8 | | 50.7 | | 3.7 | J | 1.9 | J | 5 | 5 | 313 | UG/L | 6020 |
| Fourth Quarter 2009 | U | | U | | U | | 77.9 | | 6 | | U | | 5 | 5 | 313 | UG/L | 6020 |
| Second Quarter 2010 | - | | U | | 2.8 | J | 70.4 | | 4.6 | J | 3.5 | J | 5 | 5 | 7 | ug/l | 6020 |
| Second Quarter 2011 | - | | U | | 5.7 | | 61.9 | | 24.5 | | 2.57 | J | 5 | 5 | | ug/l | 6020A |
| Fourth Quarter 2011 | U | | U | | 3.68 | J | 55.4 | | 4.2 | J | 1.77 | J | 5 | 5 | | UG/L | 6020A |

*See last page of this report for definitions.*

*Total Cobalt Concentrations in Groundwater (Second Quarter 2003 - Fourth Quarter 2011)*

*Hazardous Waste Management Unit 5*

*Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 5W8B*

| *Analyte/Quarter* | *5W8B Q* | *5W5B Q* | *5W7B Q* | *5WC21 Q* | *5WC22 Q* | *5WC23 Q* | *QL* | *Permit QL* | *GPS* | *UNIT* | *Method* |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Definitions:**

**QL:** Denotes laboratory quantitation limit.
**Permit QL:** Denotes permit quantitation limit.
**U:** Denotes not detected at or above the permit detection limit or QL.
**UA:** Denotes not detected at or above the adjusted detection limit or adjusted QL.
**J:** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit or QL and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN:** Denotes analyte concentration is less than the QL and/or five times the blank concentration. Not reliably detected due to blank contamination.
**Q:** Denotes data validation qualifier.

**CAS#:** Denotes Chemical Abstract Services registration number.
**GPS:** Denotes Groundwater Protection Standards listed in Appendix K of Module VI-Groundwater Corrective Action & Monitoring Program for Unit 5 (approved by the VDEQ in the Final Class 3 Hazardous Waste Permit Modification dated November 5, 2009) which was incorporated into the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).

## *Target Analyte Monitoring Results - HWMU-10 Point of Compliance Wells*

## *Radford Army Ammunition Plant, Radford, Virginia*

***Upgradient well = 10D4*** ***All Results in ug/L.***

| *Analyte/Quarter* | *10D4 Q* | *10D3 Q* | *10D3D Q* | *10DDH2R Q* | *10MW1 Q* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Cobalt** | | | | *CAS #* ***7440-48-4*** | | | | |
| First Quarter 2003 | 1.04 J | U | U | U | U | 1 | - | 6020 |
| Second Quarter 2004 | 1.9 J | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2004 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2004 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2006 | 0.54 J | U | 0.053 J | 0.15 J | U | 1 | - | 6020 |
| Fourth Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2007 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2007 | U | U | U | U | U | 1 | - | 6020 |
| Fourth Quarter 2007 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2008 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2008 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2009 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2009 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2010 | 1.2 J | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2010 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2011 | U | U | U | U | U | 5 | - | 6020A |
| Fourth Quarter 2011 | U | U | U | U | U | 5 | - | 6020A |

*See last page of this report for definitions.*

## *Target Analyte Monitoring Results - HWMU-10 Point of Compliance Wells*

## *Radford Army Ammunition Plant, Radford, Virginia*

***Upgradient well = 10D4*** ***All Results in ug/L.***

| *Analyte/Quarter* | *10D4 Q* | *10D3 Q* | *10D3D Q* | *10DDH2R Q* | *10MW1 Q* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|

**Definitions:**

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes associated result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**UN** Denotes analyte concentration is less than the quantiation limit and five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when results are reported to at or above the detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 4 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002). For cobalt, vanadium, acetone and 2-propanol, these analytes are not listed in Appendix VIII to 40 CFR Part 261; therefore, GPSs will not be established for these constituents.
**NS** denotes not sampled.
**NA** denotes not analyzed.
**"–"** denotes not detected (pre-2nd Quarter 2003) or not available / not sampled (beginning 2nd Quarter 2003).

**Appendix IX Monitoring Events:**
***First Quarter 2003,***
***Second Quarter: 2004, 2005, 2007, 2008, 2009, 2010, 2011***
***Third Quarter 2006***

For Appendix IX monitoring, compliance well results reported/evaluated to detection limit. See data validation Qualifier definitions noted below.

***The following definitions apply to results reported for Appendix IX monitoring events.***
***All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit or QL.
**UA** denotes not detected at or above the adjusted detection limit or adjusted QL.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit or QL and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit or adjusted QL and adjusted detection limit and adjusted QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.

Verification events: 12/12/03, 06/17/04, 7/25/2005.
6/17/04. Verification event. Acetone: 10D3D was not detected during verification event. Verification event result reported.
7/25/05. Verification event. All wells: ethyl acetate. 10D3D: alpha-BHC, acetone and 2-propanol. All verification results: Not detected except for acetone and 2-propanol. Verification results presented in table.
7/17/2008. Verification event. 10MW1. Technical chlordane, diethyl phthalate. Verification results reported-all not detected.
6/11/2009 – Verification event, 10DDH2R, Diethyl ether, Verification results reported in table-all not detected.

- It was not understood why the majority of fluorescein detections were considered false positive detections. The basis of this observation is unclear considering a lack of background and laboratory confirmation results.

- It was not apparent why certain samples were selected for laboratory confirmation and others were not. There was no apparent consistency in the selection of samples for laboratory confirmation.

- Samples were submitted for confirmation laboratory analyses three months or more following the collection of the samples in the field. No information was provided regarding the custody and/or storage of the samples. The samples were submitted to the analytical laboratory with incomplete chain-of-custody (COC), and the COC documentation was not completed by the laboratory.

In summary, the data from the study do not provide the basis for meaningful interpretation. Any attempt to formulate conclusions from the data as presented regarding the presence of preferred or predominant groundwater flow patterns is not warranted or recommended.

## 3.3 HWMU-16 GROUNDWATER MONITORING ANALYTE LIST

The groundwater monitoring analyte list for HWMU-16 is presented in **Table 1 (Appendix B)**. The list represents the subset of the constituents listed in Appendix III of 40 CFR Part 261 that previously have been detected in the groundwater and/or that are reasonably expected to be in or derived from waste contained in HWMU-16. As discussed in Section 3.5.2 below, 12 inorganic constituents and two explosive/propellant constituents have been detected in the groundwater monitoring network for HWMU-16 at statistically significant concentrations above the Unit's calculated background concentrations. The inorganic constituents may be derived from the aquifer formation materials; however, the two explosive/propellant constituents (2,4-Dinitrotoluene and 2,6-Dinitrotoluene) are byproducts of wastes derived from explosives. Therefore, the two explosive/propellant constituents detected could only be from HWMU-16.

The concentration limits established for the hazardous constituents also are listed in **Table 1**. The concentration limits represent either background concentrations calculated for the constituents in this GWQAR, Maximum Concentrations of Constituents for Ground-water Protection listed in Table 1 of 40 CFR 264.94, USEPA Drinking Water Standard Maximum Contaminant Levels (MCLs), or alternate concentration limits (ACLs) established by the VDEQ (July 1998). Certain organic constituents on the list do not have USEPA MCLs or VDEQ ACLs; they also do not have calculated background concentrations because they have not been detected in the Unit's upgradient well. Therefore, the concentration limits for these constituents are equal to their respective method detection limits.

As Alliant discussed with the VDEQ in the past, the reliability of previous laboratory analytical data - particularly dissolved metals data - appeared to be questionable in some cases. In an April 9, 1996 letter to C. Jake (Alliant), the VDEQ agreed that only total metals concentrations in groundwater would be measured, as described in a USEPA Region III guidance on groundwater sampling in karst terrain. Therefore, all references to metals concentrations in this GWQAR refer to <u>total</u> metals concentrations.

## 3.4 HWMU-16 GROUNDWATER BACKGROUND CONCENTRATIONS

Background concentrations were calculated for each constituent in the groundwater monitoring program using the analytical data from 1996 through 1998 for upgradient well 16C1.

The background concentration calculations were based on site wide 95% confidence, 95% coverage upper prediction intervals. The calculated background concentrations are listed in **Table 2 (Appendix B)**. The background concentrations were used to construct the outermost closing contours on the Isoconcentration Maps **(Appendix A)**.

## 3.5 HWMU-16 STATISTICAL ANALYSIS

Statistical evaluations for HWMU-16 are performed annually and submitted to the VDEQ in accordance with the annual reporting requirements specified in 40 CFR 265.94. As part of this GWQAR, statistical evaluations were performed on Fourth Quarter 1998 analytical data in accordance with the procedures and guidance provided in the following documents:

- Title 40 of the Code of Federal Regulations, 40 CFR 264.97 and 264.98;
- VDEQ Guidance for statistical analysis titled "Data Analysis Plan," undated;
- Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, April 1989;
- Addendum to Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, July 1992; and
- Statistical Methods for Groundwater Monitoring, Gibbons, R.D., 1994.

Statistical threshold values were computed for the 54 constituents for which HWMU-16 is currently monitored based on the concentrations of those constituents in upgradient (background) well 16C1. All data starting with First Quarter 1996 to Fourth Quarter 1998 were used for this purpose. The 1996 through 1998 monitoring data have been submitted previously to the VDEQ by Alliant in quarterly monitoring reports; therefore, the data are not listed in this GWQAR. Statistical comparisons were performed for the Fourth Quarter 1998 data set. Comparison statistical analyses were performed for all constituents which were detected in any downgradient well during that event.

### 3.5.1 Background Data and Statistical Comparisons

Statistical analyses were performed using the analytical results from upgradient well 16C1 data as background data. Based on the percentage of non-detects and the distribution of the background data, methods of statistical comparisons varied. Background average, standard deviation and other descriptive statistical data were computed for all constituents and are presented in **Appendix C**.

The constituents listed below were 100% non-detected in the background data. The background threshold levels (BTLs) for these constituents were established as equal to their detection limits (DL). Detections of these constituents in the downgradient wells during Fourth Quarter 1998 were compared to these BTLs.

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Antimony | 12 | 100 | 3 | 3 |
| Arsenic | 12 | 100 | 1 | 1 |
| Bromoform | 12 | 100 | 0.3 | 0.3 |
| Carbon tetrachloride | 12 | 100 | 0.2 | 0.2 |
| Chlorobenzene | 12 | 100 | 0.1 | 0.1 |
| Chloromethane | 12 | 100 | 0.3 | 0.3 |
| Cyanide | 12 | 100 | 10 | 10 |

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Di-n-butyl phthalate | 12 | 100 | 5 | 5 |
| 1,2-Dichloroethane | 12 | 100 | 0.1 | 0.1 |
| trans-1,2-Dichloroethene | 12 | 100 | 0.1 | 0.1 |
| 1,4-Dichlorobenzene | 12 | 100 | 0.1 | 0.1 |
| Ethylbenzene | 12 | 100 | 0.1 | 0.1 |
| Mercury | 12 | 100 | 0.2 | 0.2 |
| Methyl ethyl ketone | 12 | 100 | 1.1 | 1.1 |
| Selenium | 12 | 100 | 1 | 1 |
| 1,1,2,2-Tetrachloroethane | 12 | 100 | 0.3 | 0.3 |
| 1,1,2-Trichloroethane | 12 | 100 | 0.5 | 0.5 |
| Trichloroethene | 12 | 100 | 0.1 | 0.1 |
| Toluene | 12 | 100 | 0.1 | 0.1 |
| 2378-TCDF | 12 | 100 | 0.0485 ppt | 0.0485 ppt |
| 12378-PECDF | 12 | 100 | 0.0439 ppt | 0.0439 ppt |
| 23478-PECDF | 12 | 100 | 0.0417 ppt | 0.0417 ppt |
| 123478-HXCDF | 12 | 100 | 0.0390 ppt | 0.0390 ppt |
| 123678-HXCDF | 12 | 100 | 0.0377 ppt | 0.0377 ppt |
| 234678-HXCDF | 12 | 100 | 0.0428 ppt | 0.0428 ppt |
| 123789-HXCDF | 12 | 100 | 0.0415 ppt | 0.0415 ppt |
| 1234678-HPCDF | 12 | 100 | 0.0615 ppt | 0.0615 ppt |
| 1234789-HPCDF | 12 | 100 | 0.0709 ppt | 0.0709 ppt |
| OCDF | 12 | 100 | 0.1307 ppt | 0.1307 ppt |

Non-parametric prediction intervals were computed for all of the constituents for which the data from background well 16C1 satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

The background threshold levels for these constituents were set as equal to their upper prediction limits (UPLs). The background and relevant statistical data for these constituents are summarized below. The confidence level and false positive rate were calculated based on the number of background data points available and number of future comparisons. For all constituents, the confidence level was determined to be equal to 0.933, and the false positive rate was equal to 0.067. Since the upper control limit of a non-parametric interval cannot be adjusted for multiple comparisons and inadequate number of background data, the number of resampling events required was adjusted to account for the high error rates inherent in those situations. The number of confirmation resamples required for all constituents is 2. The background and relevant statistical data for these constituents are summarized below. Associated statistical computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Beryllium | 12 | 75 | 0.2 | 0.7 |
| Cadmium | 12 | 75 | 0.1 | 0.2 |
| Cobalt | 12 | 75 | 1 | 5 |
| Copper | 12 | 50 | 1 | 13 |
| 1,1-Dichloroethane | 12 | 0 | 0.2 | 9.5 |
| 2,4-Dinitrotoluene | 12 | 92 | 0.08 | 0.10 |

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| 2,6-Dinitrotoluene | 12 | 75 | 0.08 | 0.11 |
| Lead | 12 | 42 | 1 | 10 |
| Nickel | 12 | 92 | 15 | 16 |
| Silver | 12 | 75 | 0.2 | 0.5 |
| Thallium | 12 | 67 | 1 | 6 |
| TOC | 12 | 75 | 1000 | 7000 |
| 1,1,1-Trichloroethane | 12 | 17 | 0.3 | 9.2 |
| Vanadium | 12 | 83 | 4 | 151 |
| Vinyl Chloride | 12 | 92 | 0.1 | 0.1 |
| Xylene (total) | 12 | 92 | 0.1 | 0.2 |
| Zinc | 12 | 50 | 5 | 51 |

Chromium exhibited normally distributed data (excluding non-detects) with between 25% and 50% non-detects in the background well. The mean and standard deviation of the background data for chromium were adjusted using Cohen's Maximum Likelihood Estimator Method (1959, 1961). A one-sided parametric prediction interval was then computed for chromium based on the adjusted mean and standard deviation. The Upper Prediction Limit was set as the BTL for chromium. The background and relevant statistical data for chromium are summarized below. Cohen's adjustment computations and prediction interval computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Prediction Interval w/false positive rate=0.05<br>Original Mean = 3.54, Original SD = 1.933<br>Adjusted Mean = 3.642. Adjusted SD = 1.95 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Chromium | 12 | 25 | 1 | 6.2 |

The following constituents exhibited normally distributed background data with less than 25% non-detects. One sided parametric prediction intervals were computed on the background data for all of these constituents. The UPLs for these constituents were set as their respective BTLs, with one exception. For pH, a two-sided parametric prediction interval was computed; therefore, the BTL for pH consisted of a range between the lower prediction limit (LPL) and the upper prediction limit. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. When adjusted for multiple comparisons of the background data, the minimum required false positive rate was below 1% (0.01). A 99% confidence level (0.01 false positive rate) was used for all individual comparisons, which with the most conservative assumptions provided a site-wide false positive rate of >0.05 for all constituents. The background and relevant statistical data for these constituents are summarized below. The prediction interval computations for these constituents are presented in **Appendix C**.

| BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05<br>(individual comparisons false positive rate=0.01)<br>BTL for pH = LPL – UPL of two-sided Prediction Interval | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Barium | 12 | 0 | 2 | 175.4 |
| Dichlorodifluoromethane | 12 | 8 | 0.3 | 46.5 |
| Tetrachloroethene | 12 | 17 | 0.1 | 0.7 |
| TOX | 12 | 17 | 5 | 42.2 |

| BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05 (individual comparisons false positive rate=0.01) BTL for pH = LPL – UPL of two-sided Prediction Interval | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Trichlorofluoromethane | 12 | 0 | 0.5 | 11.3 |
| Specific Conductivity | 8 | 0 | 1 µS/cm | 672 µS/cm |
| pH | 8 | 0 | 0.1 pH units | 5.7 to 7.9 pH units |

### 3.5.2 Results of Statistical Comparisons

The following table lists the constituents which were detected during the Fourth Quarter 1998 event at concentrations exceeding their respective background threshold levels (BTLs), and the downgradient wells in which they were detected.

| Parameter | Monitoring Well(s) |
|---|---|
| Arsenic | 16-5, 16WC2B |
| Barium | 16-2, 16-3, 16-5, 16WC1A, 16WC1B, 16WC2B, 16SPRING |
| Beryllium | 16WC1B, 16WC2B |
| Cadmium | 16WC1B |
| Chromium | 16-3, 16-5, 16WC1B, 16WC2B |
| Cobalt | 16-5, 16WC1B, 16WC2B |
| Copper | 16-5, 16WC1B, 16WC2B |
| Lead | 16WC1B |
| Mercury | 16WC1B |
| Nickel | 16-5, 16WC1A, 16WC2B |
| Selenium | 16-5, 16WC1B, 16WC2B |
| Zinc | 16WC1B |
| 2,4-Dinitrotoluene | 16-3, 16-5, 16WC1B, 16WC2B, 16SPRING |
| 2,6-Dinitrotoluene | 16WC1A, 16WC1B |

Any HWMU-16 target constituents not listed above were not detected in the downgradient monitoring wells at concentrations exceeding their respective BTLs.

## 3.6 HWMU-16 PLUME DELINEATIONS

In accordance with VDEQ instructions presented during the May 19, 1999 meeting between Alliant and the VDEQ, Isoconcentration Maps were produced to depict constituent plumes in the groundwater beneath the site (**Appendix A**). In order to evaluate the shape and position of constituent plumes over time, historical Isoconcentration Maps were developed using the historical maximum concentrations for the constituents monitored at the site for the time periods of 1992 through 1995 and 1996 through 1998. The historical maximum concentrations for these time periods are listed in **Tables 3** and **4**, respectively (**Appendix B**).

Groundwater analytical data collected prior to 1992 were not included in the evaluation of historical maximum concentrations. The data collected prior to 1992 are considered unreliable due to "order-of-magnitude" variations in parameter concentrations from quarter to quarter, as well as a general lack of laboratory QA/QC. Additionally, the groundwater monitoring analyte lists prior to 1992 did not include many of the parameters on the current groundwater monitoring analyte list for HWMU-16.

**TABLE 2**
**HWMU-16**
**Calculated Background Values**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Antimony | 3 |
| Arsenic | 1 |
| Barium | 175.4 |
| Beryllium | 0.7 |
| Cadmium | 0.2 |
| Chromium | 6.2 |
| Cobalt | 5 |
| Copper | 13 |
| Lead | 10 |
| Mercury | 0.2 |
| Nickel | 16 |
| Selenium | 1 |
| Silver | 0.5 |
| Thallium | 6 |
| Vanadium | 151 |
| Zinc | 51 |
| Bromoform | 0.3 |
| Carbon Tetrachloride | 0.2 |
| Chlorobenzene | 0.1 |
| Chloromethane | 0.3 |
| 1,4-Dichlorobenzene | 0.1 |
| Dichlorodifluoromethane | 46.5 |
| 1,1-Dichloroethane | 9.5 |
| 1,2-Dichloroethane | 0.1 |
| trans-1,2-Dichloroethene | 0.1 |
| Ethylbenzene | 0.1 |
| Methyl Ethyl Ketone | 1.1 |
| 1,1,2,2-Tetrachloroethane | 0.3 |
| Tetrachloroethene | 0.7 |
| Toluene | 0.1 |
| 1,1,1-Trichloroethane | 9.2 |
| 1,1,2-Trichloroethane | 0.5 |
| Trichloroethene | 0.1 |
| Trichlorofluoromethane | 11.3 |
| Vinyl Chloride | 0.1 |
| Xylenes (total) | 0.2 |

**TABLE 2**
**HWMU-16**
**Calculated Background Values**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Di-n-butylphthalate | 5 |
| 2,4-Dinitrotoluene | 0.10 |
| 2,6-Dinitrotoluene | 0.11 |
| 2378-TCDF | 0.0485 ppt |
| 12378-PECDF | 0.0439 ppt |
| 23478-PECDF | 0.0417 ppt |
| 123478-HXCDF | 0.0390 ppt |
| 123678-HXCDF | 0.0377 ppt |
| 234678-HXCDF | 0.0428 ppt |
| 123789-HXCDF | 0.0415 ppt |
| 1234678-HPCDF | 0.0615 ppt |
| 1234789-HPCDF | 0.0709 ppt |
| OCDF | 0.1307 ppt |
| Cyanide | 10 |
| Total Organic Carbon (x4) | 7000 |
| Total Organic Halides (x4) | 42.2 |
| Specific Conductivity | 672 µS/cm |
| pH | 5.7 to 7.9 pH units |

## *Target Analyte Monitoring Results - HWMU-16 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 16C1* — *All Results in ug/L.*

| *Analyte/Quarter* | *16C1* | *16MW8* | *16MW9* | *16WC1A* | *16WC1B* | *OL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|
| Cobalt | | | | | *CAS # 7440-48-4* | | | |
| First Quarter 1996 | U | 1 | U | 4 | 1 | 5 | 313 | |
| Second Quarter 1996 | U | 3 | U | 2 | U | 5 | 313 | |
| Third Quarter 1996 | 4 | 10 | dry | 12 | 5 | 5 | 313 | |
| Fourth Quarter 1996 | 5 | 2 | 5 | 9 | 3 | 5 | 313 | |
| First Quarter 1997 | U | 2 | U | 9 | U | 5 | 313 | |
| Second Quarter 1997 | U | 6 | dry | 9 | 3 | 5 | 313 | |
| Third Quarter 1997 | 2 | dry | dry | 9 | 2 | 5 | 313 | |
| Fourth Quarter 1997 | U | dry | dry | U | 8 | 5 | 313 | |
| First Quarter 1998 | U | U | dry | 6 | U | 5 | 313 | |
| Second Quarter 1998 | U | 2 | dry | U | 7 | 5 | 313 | |
| Third Quarter 1998 | U | 4 | dry | 4 | 2 | 5 | 313 | |
| Fourth Quarter 1998 | U | dry | dry | 5 | 31 | 5 | 313 | |
| First Quarter 1999 | 1 | 8 | U | 20 | 10 | 5 | 313 | |
| Second Quarter 1999 | U | 10 | 1 | 12 | U | 5 | 313 | |
| Third Quarter 1999 | U | U | U | 17 | dry | 5 | 313 | |
| Fourth Quarter 1999 | 1 | dry | 3 | 15 | dry | 5 | 313 | |
| First Quarter 2000 | dry | dry | U | dry | dry | 5 | 313 | |
| Second Quarter 2000 | dry | dry | 4 | dry | dry | 5 | 313 | |
| Third Quarter 2000 | dry | dry | 17 | dry | dry | 5 | 313 | |
| Fourth Quarter 2000 | U | dry | 8 | 9 | dry | 5 | 313 | |
| First Quarter 2001 | U | dry | 7.94 | 10.4 | dry | 5 | 313 | |
| Second Quarter 2001 | U | dry | 15.8 | 7.49 | dry | 5 | 313 | |
| Third Quarter 2001 | U | dry | 10.9 | 5.71 | U | 5 | 313 | |
| Fourth Quarter 2001 | U | dry | 13.5 | 7.35 | dry | 5 | 313 | |
| First Quarter 2002 | U | dry | 12.8 | U | dry | 5 | 313 | |
| Second Quarter 2002 | U | dry | 12.5 | 7.36 | dry | 5 | 313 | |
| Third Quarter 2002 | U | dry | 18.1 | 6.3 | dry | 5 | 313 | |
| Fourth Quarter 2002 | U | dry | 15.8 | 9.43 | - | 5 | 313 | |
| First Quarter 2003 | U | U | U | U | U | 5 | 313 | 6020 |
| Second Quarter 2003 | U | U | U | 7.9 | U | 5 | 313 | 6020 |
| Third Quarter 2003 | U | 1.1 J | 1.2 J | 5.2 | 2.4 J | 5 | 313 | 6020 |
| Fourth Quarter 2003 | U | U | U | 7.8 | U | 5 | 313 | 6020 |
| First Quarter 2004 | U | U | U | 8.1 | 7.6 | 5 | 313 | 6020 |
| Second Quarter 2004 | U | U | 2.8 J | 8.5 | 2.6 J | 5 | 313 | 6020 |
| Third Quarter 2004 | U | U | U | 7.7 | U | 5 | 313 | 6020 |
| Fourth Quarter 2004 | U | U | U | 8.8 | 7.1 J | 5 | 313 | 6020 |
| First Quarter 2005 | U | U | U | 8.8 | U | 5 | 313 | 6020 |
| Second Quarter 2005 | U | U | 2.8 J | 7.7 | U | 5 | 313 | 6020 |
| Third Quarter 2005 | U | U | U | 5.2 | U | 5 | 313 | 6020 |
| Fourth Quarter 2005 | U | U | U | 6.6 | U | 5 | 313 | 6020 |
| First Quarter 2006 | U | U | U | 9.5 | U | 5 | 313 | 6020 |
| Second Quarter 2006 | U | U | 6 | 8.7 | U | 5 | 313 | 6020 |
| Third Quarter 2006 | 0.17 J | 0.2 J | 2.1 J | 9 | 1.1 J | 5 | 313 | 6020 |
| Fourth Quarter 2006 | U | U | U | 7.6 | U | 5 | 313 | 6020 |
| First Quarter 2007 | U | U | U | 5.9 | U | 5 | 313 | 6020 |
| Second Quarter 2007 | U | U | 2 J | 7.1 | 1.5 J | 5 | 313 | 6020 |
| Fourth Quarter 2007 | U J | U J | U J | 5.7 J | U J | 5 | 313 | 6020 |
| Second Quarter 2008 | U J | U J | 1.8 J | 28.8 J | U J | 5 | 313 | 6020 |
| Fourth Quarter 2008 | U | U | U | 28.1 J | U | 5 | 313 | 6020 |
| Second Quarter 2009 | U | 1.7 J | 2.3 J | 9.6 | U | 5 | 313 | 6020 |
| Fourth Quarter 2009 | U | U J | U J | 8.8 | U J | 5 | 313 | 6020 |
| Second Quarter 2010 | U | 10.1 | 3.1 J | 9 | 4.1 J | 5 | 313 | 6020 |
| Fourth Quarter 2010 | U | U | U | 5.6 | U | 5 | 313 | 6020 |

*See last page of this report for definitions.*

## *Target Analyte Monitoring Results - HWMU-16 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 16C1* *All Results in ug/L.*

| *Analtye/Quarter* | *16C1* | *16MW8* | *16MW9* | *16WC1A* | *16WC1B* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|
| Second Quarter 2011 | U | U | 2.77 J | 9.24 | U | 5 | 313 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 6.09 | 5 | 313 | 6020A |

**Definitions:**

***The following definitions apply to results reported for Appendix IX monitoring events. All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

*Appendix IX Monitoring Events: 3Q2003, 2Q-2004, 2Q-2005, 3Q2006, 2Q2007, 2Q2008, 2Q2009, 2Q 2010, 2Q 2011*

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit.
**UA** denotes not detected at or above the adjusted detection limit.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier. **X** Denotes mass spectral confirmation not obtained-result suspect.
Background Denotes background concentrations listed in Appendix F to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002), where applicable.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).
**NS** denotes not sampled. **NA** denotes not analyzed.
"–" denotes not detected (pre-2nd Quarter 2003) or not available / not sampled (beginning 2nd Quarter 2003).

***The following definitions apply to results reported for non-Appendix IX monitoring events. All non-Appendix IX monitoring results for compliance wells are reported at or above the quantitation limit.***

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in Appendix F to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002), where applicable.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).

**NOTE:**

Fourth Quarter 2008:
Due to laboratory error all HWMU 16 samples were analyzed using Method 8260B 5 ml purge instead of a 25 ml purge which resulted in a higher QL. For these samples, all results were evaluated to the detection limit, which is comparable to the permit QL. Results below the laboratory QL but at or above the permit QL are reported and qualified as estimated.
Second Quarter 2009:
Verification event 6/11/2009 - 16MW8 for acetone. Verification result reported as not detected.
4/ 2010 event -Per DEQ, tin analyzed by Method 6010B instead of Method 6020. Verification event: 16MW9 1,1-dichloroethene and benzene. 16WC1B 4,4-DDD. Verification result reported as not detected.

*See last page of this report for definitions.*

April 1995 letter from the DEQ to J. Redder, Hercules, Inc. (now Alliant TechSystems, Inc.). The lists incorporate requirements outlined in the Virginia Hazardous Waste Management Regulations (VR 672-10-1) Sections 9.5.C and 9.5.D. These include the Indicator Parameters, Ground Water Quality Parameters, EPA Interim Primary Drinking Water Standards, Known Hazardous Waste Constituents, and Detected VHWMR Appendix 10.6 Constituents. A demonstration was made to the DEQ that several hazardous waste constituents had not been detected for six consecutive quarters. As a result, these constituents have not been analyzed for on a regular basis. These are highlighted in the **Table 3-1.**

Additional parameters have not been detected in any of the wells. During the meeting between Alliant and DEQ on 21 May 1996, DEQ suggested that the recommendations to temporarily cease sampling additional constituents that had not been detected in six or more consecutive sampling events made in the GWQAP addendum submitted 3 November 1995 would better be addressed in the post closure permitting process. Therefore, those additional constituents will not be addressed in this report.

## 3.4 *UNIT 7 GROUND WATER BACKGROUND VALUES*

As requested in the DEQ's 23 July letter, background values were calculated for each parameter .

As discussed with DEQ, Alliant believes the analytical data to be questionable in some cases. DEQ has agreed in a 9 April 1996 letter to C. Jake (Alliant) that only total metals will be measured, as described in an EPA Region III guidance on ground water sampling in karst terrain. Another case of questionable data involves an increase in Total Organic Carbon (TOC) concentrations by a factor of 10. As such, the TOC concentrations from 1995 through 1997 were used to calculate the background values. **Table 3-2** presents the *Historical Maximum Values,* which were used to develop the isocontour maps.

As requested in the DEQ's 23 July 1998 letter, using the data from well 7W12B, background values were calculated for each parameter in the ground water monitoring program. However, as a result of the 21 May 1996 meeting and subsequent telephone conversations, these background values are being submitted in accordance with the regulations and shown on the isocontour maps but were not utilized for purposes of this report.

Additionally, calculations of background values based on the 95% confidence, 95% coverage upper tolerance limit require that data distributions be normal or lognormal. Some of the data do not fulfill this requirement

## 3.5 *UNIT 7 STATISTICAL ANALYSIS*

Statistical evaluations for Unit 7 are performed annually and submitted as part of the Annual Reporting requirements found in the VHWMR Section 9.5. As a result of the 21 May 1996 meeting between Alliant and DEQ, Alliant has established background ground water concentrations for the upgradient well, 7W12B utilizing the Virginia DEQ "*Guidance on Statistical Methods for Ground Water Data Analysis at a Solid Waste or Hazardous Waste Site, Version 2.0, 1995*". In response to Mr. Glenn von Gonten's letter dated 23 July, 1998, Alliant has revised the background concentrations to include sample data collected in 1997. These values can be found in **Table 3-3.** Methods used for background concentration computation and statsistical analysis are described below.

The following parameters were 100% Non-Detected in 20 or more sampling events. The downgradient well data points were compared to the laboratory PQLs in a nonparametric statistical manner or to the applicable MCL or VGWPS (if one exists). Background values were then estimated by using the laboratory PQL for that constituent.

| *Parameter* | *PQL (ppb)* | *Sample Size* | *% Non-Detect* | *MCL or VGWPS (ppb)* |
|---|---|---|---|---|
| **2,4-DNT** | 0.2 | 22 | 100 | None |
| **2,6-DNT** | 0.1 | 22 | 100 | None |
| **2,4 Dinitrophenol** | 11 | 11 | 100 | None |
| **Benzyl Alcohol** | 8 | 8 | 100 | None |
| **Cyanide** | 20 | 20 | 100 | 5 |
| **Bis(2- ethyl hexyl) phthalate** | 9 | 9 | 100 | None |
| **2 – Nitrophenol** | 9 | 9 | 100 | None |
| **4 – Nitrophenol** | 9 | 9 | 100 | None |
| **Acetone** | 100 | 14 | 100 | None |
| **Antimony** | 30 | 14 | 100 | None |
| **Vanadium** | 40 | 20 | 100 | None |

The following parameter has log-normally distributed data with between 15 and 50 percent Non-Detect values. As such, Cohen's Method was used as an adjustment for the mean and standard deviation, as recommended in the DEQ guidance. Results of the background analysis are summarized in **Table 3-4**

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Lead** | 23 | 34 |

The following parameters have data with greater than 50% Non-Detects, a minimum sample size of twenty (20). The data were non-normally distributed as indicated using a data distribution statistical method. According to Mr. Glenn von Gonten, DEQ in a 30 July 1996 telephone conversation, the maximum value detected will be used for plume delineation purposes for those constituents with greater than 50% non-detected values. An isocontour map for Total Organic Halides could not

be created because only one sampling point maximum concentration exceeded the background value.

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Arsenic** | 23 | 91.3 |
| **Cadmium** | 23 | 60.9 |
| **Chromium** | 23 | 56.5 |
| **Cobalt** | 20 | 65.5 |
| **Mercury** | 23 | 82.6 |
| **Nickel** | 20 | 85 |
| **Selenium** | 23 | 82.6 |
| **Thallium** | 20 | 70 |
| **Total Organic Halides** | 48 | 62.5 |

The following parameters do not have greater than four (4) sampling events and therefore could not be included in this (plume) evaluation:

- 2,4-D
- Gross Beta
- Radium
- Sulfate

The following parameters have between 15 and 50 percent Non-Detect values, and do not have normal or log-normal data distributions. Thus, Cohen's Method could not be used. Per the DEQ's 23 July letter, background concentrations were computed by calculating an upper tolerance limit based on 95% coverage, at a 95% confidence level. It should be noted that upper tolerance limits are not typically used unless the data are normally or log-normally distributed. Background concentration analysis data is summarized in **Table 3-4.**

| *Parameter* | *Sample Size* | *% Non-Detects* |
|---|---|---|
| **Total Organic Carbon** | 36 | 27.2% |
| **Silver** | 23 | 47.8% |

The remaining parameters have less than 15% Non-Detect values and no data manipulation was required. Computation data for barium, copper, specific conductivity, and zinc are summarized in Table 3-4

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Copper** | 20 | 0 |
| **PH** | 92 | 0 |
| **Barium** | 23 | 13 |
| **Specific Conductivity** | 92 | 0 |
| **Zinc** | 20 | 0 |

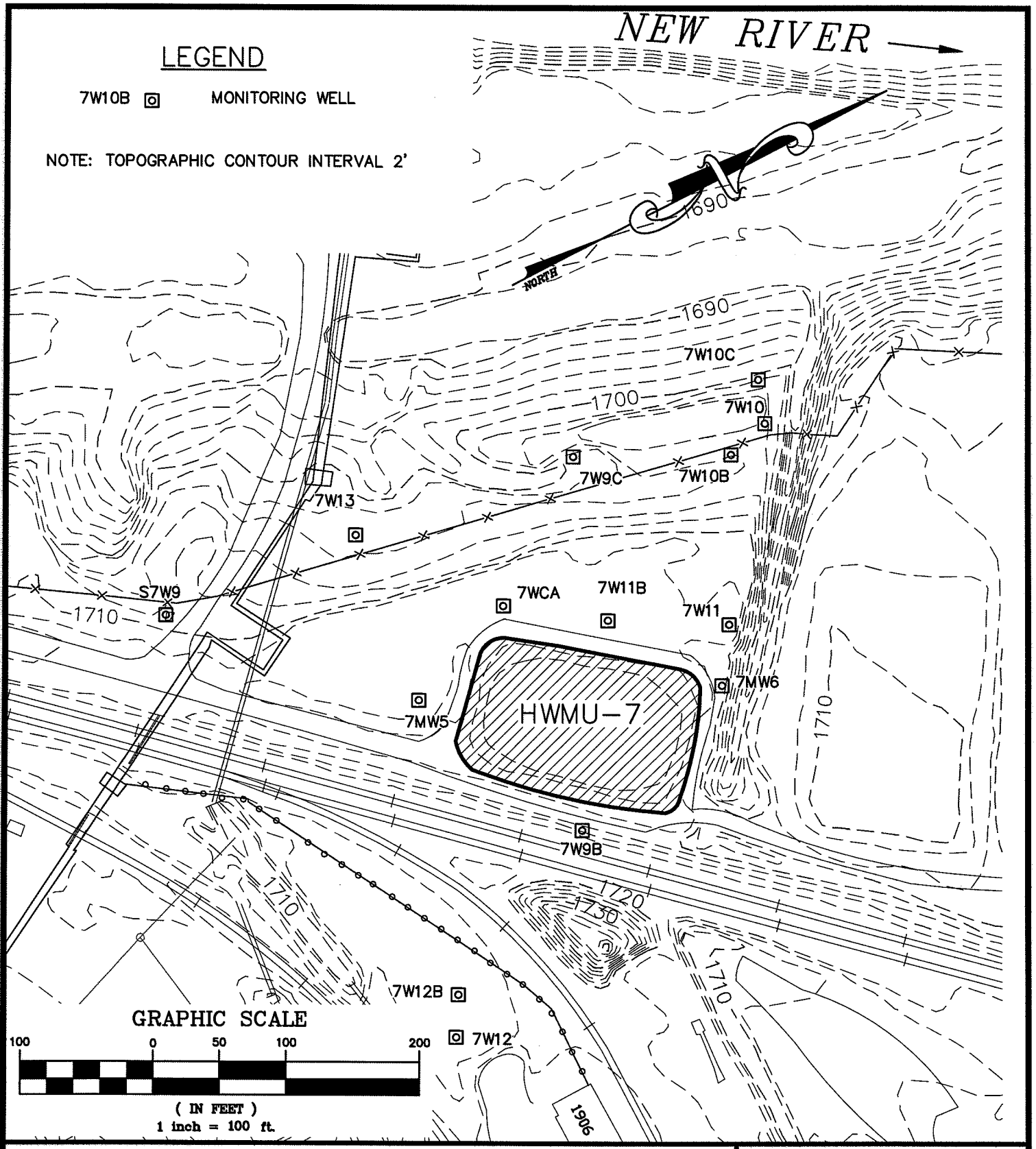
*Table 3-3*
*Unit 7*
*Background Values*

| *Parameter* | *Units* | *Background Value* |
|---|---|---|
| 2,4-DNT | Ppb | 0.2 |
| 2,6-DNT | Ppb | 0.1 |
| Acetone | Ppb | 100 |
| Antimony | Ppb | 30 |
| Arsenic | Ppb | 2.0 |
| Barium | Ppb | 64 |
| Cadmium | Ppb | 0.4 |
| Chromium | Ppb | 34 |
| Cobalt | Ppb | 17 |
| Copper | Ppb | 49 |
| Cyanide | Ppb | 5 |
| Lead | Ppb | 14 |
| Mercury | Ppb | 0.350 |
| Nickel | Ppb | 63 |
| PH | SU | 7 |
| Selenium | Ppb | 20 |
| Silver | Ppb | 2.13 |
| Specific Conductivity | Umhos/sec | 1,025 |
| Thallium | Ppb | 4 |
| Total Organic Halides | ppb | 21 |
| Total Organic Carbon | Ppb | 3930 |
| Vanadium | Ppb | 40 |
| Zinc | Ppb | 217 |

# STATISTICAL SUMMARY OF BACKGROUND WATER QUALITY DATA

| Date | Barium | Copper | Silver | Zinc | Lead | TOC | SpCon |
|---|---|---|---|---|---|---|---|
| 3/31/92 | 1.00 | | 0.10 | | 0.50 | | 730.00 |
| 6/30/92 | 1.00 | | 0.10 | | 0.50 | | 706.00 |
| 9/30/92 | 1.00 | | 0.10 | | 0.50 | | 370.00 |
| 12/31/92 | 35.00 | 50.00 | 0.30 | 253.00 | 19.00 | | 798.00 |
| 3/31/93 | 27.00 | 16.00 | 0.40 | 17.00 | 0.50 | | 722.00 |
| 6/30/93 | 31.00 | 10.00 | 0.10 | 126.00 | 0.50 | | 715.00 |
| 9/30/93 | 38.00 | 6.00 | 0.30 | 81.00 | 4.00 | | 895.00 |
| 12/31/93 | 40.00 | 7.00 | 0.10 | 144.00 | 0.50 | | 918.00 |
| 3/31/94 | 27.00 | 10.00 | 0.30 | 29.00 | 2.00 | | 723.00 |
| 6/30/94 | 35.00 | 3.00 | 0.70 | 26.00 | 5.00 | | 750.00 |
| 9/30/94 | 59.00 | 2.00 | 0.50 | 26.00 | 12.00 | | 891.00 |
| 12/31/94 | 44.00 | 2.00 | 3.10 | 55.00 | 3.00 | | 880.00 |
| 3/30/95 | 40.00 | 10.00 | 0.10 | 10.20 | 1.00 | | 822.00 |
| 6/29/95 | 36.00 | 9.30 | 0.10 | 20.00 | 1.40 | | 740.00 |
| 9/30/95 | 30.00 | 2.00 | 0.10 | 11.00 | 0.50 | 1250.00 | 610.00 |
| 12/31/95 | 37.00 | 10.00 | 1.90 | 49.00 | 6.00 | 875.00 | 840.00 |
| 3/31/96 | 31.00 | 8.00 | 0.10 | 55.00 | 2.00 | 500.00 | 652.00 |
| 6/30/96 | 26.00 | 3.00 | 0.10 | 1.00 | 0.50 | 2000.00 | 608.00 |
| 9/30/96 | 35.00 | 14.00 | 0.10 | 24.00 | 4.00 | 500.00 | 758.00 |
| 12/31/96 | 32.00 | 3.00 | 0.30 | 113.00 | 6.00 | 2000.00 | 768.00 |
| 3/31/97 | 40.00 | 16.00 | 0.40 | 105.00 | 6.00 | 1000.00 | 750.00 |
| 6/30/97 | 32.00 | 55.00 | 0.30 | 135.00 | 3.00 | 3000.00 | 720.00 |
| 9/30/97 | 43.00 | 29.00 | 1.20 | 45.00 | 3.00 | 500.00 | 850.00 |
| Number of Samples | 23.00 | 20.00 | 23.00 | 20.00 | 23.00 | 9.00 | 23.00 |
| Mean | 31.35 | 13.27 | 0.47 | 66.26 | 3.54 | 1291.67 | 748.52 |
| Standard Deviation | 13.91 | 14.92 | 0.71 | 63.06 | 4.38 | 870.52 | 119.05 |
| Shapiro-Wilk W | 0.84 | 0.70 | 0.57 | 0.84 | 0.70 | 0.87 | 0.89 |
| Normal Distribution | No | No | No | No | No | Yes | Yes |
| K | 2.33 | 2.40 | 2.33 | 2.40 | 2.33 | 3.03 | 2.33 |
| UTL | 63.74 | 49.01 | 2.13 | 217.35 | 13.74 | 3930.23 | 1025.79 |

Notes: K = Tolerance factor for one-sided normal tolerance interval with probability level of 95% and 95% coverage.
ULT = Upper Tolerance Limit




HWMU-7 SITE PLAN

# RADFORD ARMY AMMUNITION PLANT

RADFORD, VIRGINIA

SCALE: 1"=100'

PLAN NO. B02271-01


**Draper Aden Associates**

Engineering ♦ Surveying ♦ Environmental Services

2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW |
| CHECKED | AEK |
| DATE | 01/16/04 |

FIGURE 3

\\Bbg-archive\archive\B02\200\B02271\B02271-01\CAD\271-01\dwg\B03204-01_HWMU-7_SITE.dwg Oct 30, 2006 11:53am

Site
Ground Water Monitoring Well Details
Radford Army Ammunition Plant
Radford, Virginia

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Depth (ft bgl) | Screened Interval (ft bgl) | Screen Length (ft) | Screened Formation |
|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | |
| 7W12B | 1714.81 | 3598101.05 | 10884677.23 | 35.0 | 19.5 - 34.5 | 15 | Alluvium/Carbonate Bedrock |
| 7WCA | 1712.40 | 3598265.91 | 10884430.49 | 40.8 | 31.6 - 38.6 | 7 | Carbonate Bedrock |
| 7W11B | 1712.90 | 3598331.88 | 10884425.88 | 35.0 | 20.0 - 35.0 | 15 | Alluvium/Carbonate Residuum |
| 7MW5 | 1713.20 | 3598175.65 | 10884465.10 | 44.5 | 29.0 - 39.0 | 10 | Carbonate Bedrock |
| 7MW6 | 1712.80 | 3598384.24 | 10884557.91 | 64.5 | 47.5 - 52.5 | 5 | Carbonate Residuum |
| 7W9C | 1703.70 | 3598364.90 | 10884353.60 | 40.0 | 20.0 - 40.0 | 20 | Carbonate Residuum |
| 7W10B | 1704.65 | 3598470.69 | 10884404.73 | 32.0 | 20.0 - 30.0 | 10 | Carbonate Residuum |
| 7W10C | 1707.50 | 3598513.93 | 10884363.94 | 50.0 | 30.0 - 50.0 | 20 | Carbonate Residuum |
| S7W9 | 1710.48 | 3598037.14 | 10884321.43 | 40.0 | 20.0 - 30.0 | 10 | Alluvium/Carbonate Residuum |
| 7W9B | 1711.40 | 3598241.30 | 10884609.00 | 38.0 | 28.0 - 38.0 | 10 | Carbonate Bedrock |
| 7W10 | 1704.98 | 3598503.80 | 10884396.10 | 21.0 | 7.0 - 17.0 | 10 | Alluvium |
| 7W11 | 1712.82 | 3598408.90 | 10884518.80 | 35.0 | 16.0 - 26.0 | 10 | Alluvium/Carbonate Residuum |
| 7W12 | 1715.06 | 3598085.40 | 10884705.60 | 22.0 | 14.5 - 19.5 | 5 | Alluvium |

## Site 7
## Ground Water Monitoring Well Construction Details

| Well I.D. | Ground Elevation | UTM Coordinates | | Boring Termination Depth | Top of Well Screen | Total Well Depth | Screen Length | Comments |
|---|---|---|---|---|---|---|---|---|
| | | Northing | Easting | | | | | |
| 7W12B | 1714.80 | | | 34.9 | 19.9 | 34.9 | 15 | 4,6 |
| 7WCA | 1712.40 | | | 40.8 | 28.6 | 38.6 | 10 | 3,5 |
| 7W11B | 1712.90 | | | 33.9 | 18.9 | 33.9 | 15 | 4,6 |
| 7MW5 | 1713.20 | | | 39.4 | 24.4 | 39.4 | 15 | 4,6 |
| 7MW6 | 1712.80 | | | 58.8 | 43.8 | 58.8 | 15 | 4,6 |
| 7W9C | 1703.70 | | | 40 | 20 | 40 | 20 | 4,6 |
| 7W10B | 1704.65 | | | 30 | 15 | 30 | 15 | 4,6 |
| 7W10C | 1707.50 | | | 50 | 30 | 50 | 20 | 4,6 |

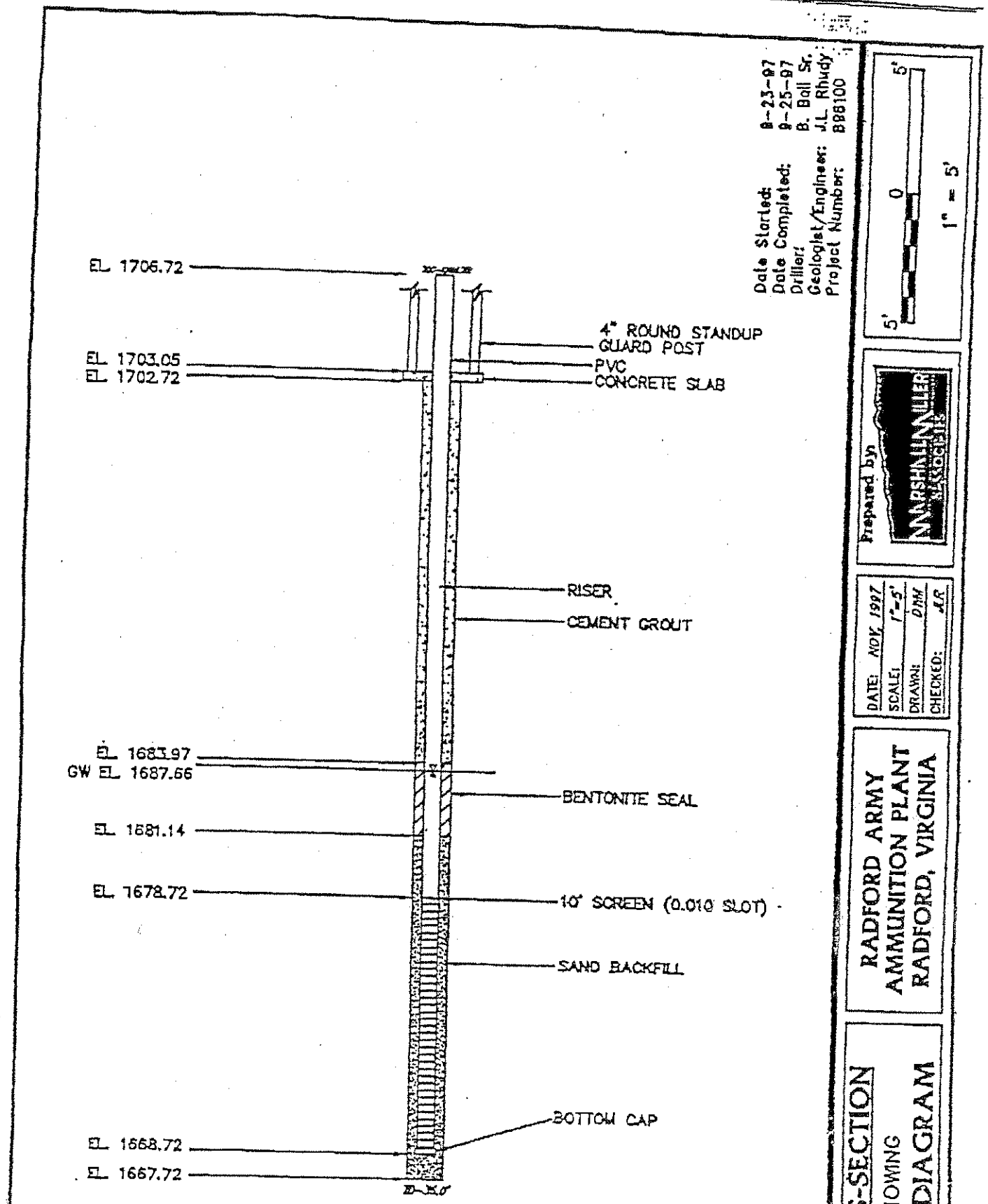
Comments:
1) Well construction details obtained from boring log.
2) Well screen length obtained from boring log.
3) Well screen length obtained from other data on file.
4) Well screen length assumed.
5) Total well depth obtained from boring log.
6) Total well depth obtained from field sampling log.

# Soil Boring Log

**Company** Aliant Techsystems
**Project** Radford Arsenal
**Project No.** B94100
**Facility I.D.**

Date Started 09/22/97 Hole No. 7MW13
Date Completed 09/22/97 Type of Hole Hollow Stem Auger
Logged by J.L. Rhudy Dia. of Hole ±8"
Ground Elev. Top of Casing

| From | To | Thickness | Description |
|---|---|---|---|
| 0.0 | 5.0 | 5.0 | *Augered through topsoil/dark brown, fairly moist and cohesive* |
| 5.0 | 7.0 | 2.0 | *Light tan, silty sand, well sorted, homogeneous through split spoon, some black streaks of mottled mica plates, (Split Spoon Sample, PID = 0.0 ppm), 90% Recovery* |
| 7.0 | 10.0 | 3.0 | *Some hard augering at approximately 8.5-9.0 feet, light tan, silty clay* |
| 10.0 | 12.0 | 2.0 | *Very dry and broken sandstone with some light tan, silty clay, some weathered quartzite, very dry and hard, heterogeneous mixture, (Split Spoon Sample, PID = 0.0 ppm), 75% Recovery* |
| 12.0 | 15.0 | 3.0 | *Auger refusal at 11.0 – 11.5', boring terminated at 11.0', relocated and moved to new location, combined at 15'* |
| 15.0 | 17.0 | 2.0 | *Insufficient to sample, green to light gray shale layer broken, horizontal fractures, less than 5% recovery* |
| 17.0 | 21.0 | 4.0 | *Very weathered, dolomite layer, light green to light gray, very fractured layers with noticeable separation, (Split Spoon Sample, PID = 0.0 ppm), 20% Recovery* |
| 21.0 | 25.0 | 4.0 | *Augered* |
| 25.0 | 25.5 | 0.5 | *Very hard and dry, weathered dolomitic limestone and some noticeable angles of fracture, (Split Spoon Sample, PID = 0.0 ppm), 10% Recovery* |
| 25.5 | 30.0 | 4.5 | *Hard augering* |
| 30.0 | 35.0 | 5.0 | *Augered to set monitoring well* |
| 35.0 | TD | | *Boring terminated* |


EL 1706.72
4" ROUND STANDUP GUARD POST
EL 1703.05
PVC
EL 1702.72
CONCRETE SLAB
RISER
CEMENT GROUT
EL 1683.97
GW EL 1687.66
BENTONITE SEAL
EL 1681.14
EL 1678.72
10' SCREEN (0.010 SLOT)
SAND BACKFILL
BOTTOM CAP
EL 1668.72
EL 1667.72
Date Started: 8-23-97
Date Completed: 9-25-97
Driller: B. Ball Sr.
Geologist/Engineer: J.L. Rhudy
Project Number: BB8100
5'
0
5'
1" = 5'
Prepared by
MARSHALL MILLER & ASSOCIATES
DATE: NOV. 1997
SCALE: 1"=5'
DRAWN: DMM
CHECKED: JLR
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA
CROSS-SECTION
SHOWING
7W-13 DIAGRAM

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-12B

Drilling Log

Well Number W12-B

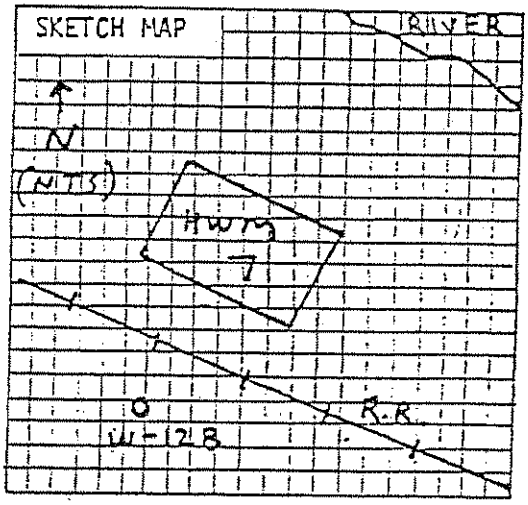
Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location upgradient from HWM-7; near original W-12
Driller/Company Dean/Cunningham
Drilling Method NX - core — Hole Diameter Nom. 4" — Date(s) Drilled 2/7 - 9/83
Sample Type split spoon/core — Sample Interval 5' spoon* — No. Samples Retained 5
Surface Elevation — Casing Top Elevation — Total Well Depth 34.5
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 19.5
Grouting Type sand/cement — Grouted Interval 0 - 18.5 incl
Screening Material and Size 2" ID PVC, 0.010" slots — Screened Interval(s) 19.5 - 34
Packing Material and Size No. 1 sand — Packed Interval 18.5 - 34.5
Depth to Static Water —25.46' ** — Date 2/22/83 — Approx Well Yield 10 gpm
Development Method — Development Time one hour
Logged by: Peter R. Jacobson

Comments

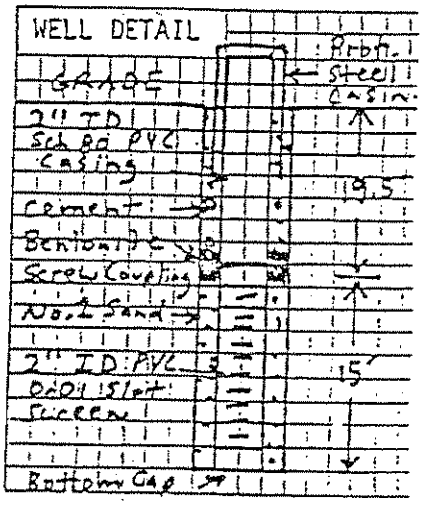
* continuous core sampling

** measured from top of casing

SKETCH MAP




WELL DETAIL




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1-1-6 | dark brown silt, minor clay; organic particles |
| 5 - 6.5 | spoon | 2-3-4 | medium to dark brown silty clay, fine sand |
| 10 - 11.5 | spoon | 3-3-3 | medium brown fine sand and silt, micaceous, some pebbl |
| 15 - 16.5 | spoon | 8-9-11 | brown fine to coarse sand, minor pebble gravel, well sorted |
| 20 - 21.5 | spoon | 3-1-1 | coarse sand and pebble gravel, coarse ss cobbles ("riveriack") |
| 21.5 - 25 | core | | cobbles, sand, gravel; little recovery; very difficult drilling |
| 27 - 35 | core | | top of rock at 27'; rock weathered and broken; dense; grey, massive, micritic dolomite |
| end of hole @ 35' | | | |

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CH
"ONE HUNDRED YEARS OF SERVICE"

Report No. 0-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

Boring No.: 7-WCA | Total Depth: 40.8 ft. | Elevation: -------- | Location: See Location Plan

Type of Boring: Hollow Stem Auger | Started: 5/12/87 | Completed: 5/12/87 | Driller: W. Simmons

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | | Loose brown fine SAND, trace silt and organics (SM) | 2 3 3 | 1.5 / 3.0 | | |
| | | -to- | 3 4 4 | 4.5 / 6.0 | | |
| | | Loose yellow brown to brown fine SAND, trace silt and mica (SM) | 2 3 3 | 8.5 / 10.0 | | |
| | | -to- | | 13.5 | | |
| | | Medium dense to dense brown coarse to fine SAND, some coarse subrounded gravel, trace silt (SW) | 3 6 9 | 15.0 | | |
| | | | 25 20* | 18.5 / 19.9 | | *30/5* |
| | | -ALLUVIUM- | | 23.5 / 23.9 | | *30/5* |
| | | | | | | Subsurface water at 24.0 ft. at 1:30 p.m. May 12, 1987 |
| | 28.9 | | | 28.9 | | |
| | | Auger refusal at 28.9 ft. | | | | |
| | | Hard dark gray dolomite with abundant calcareous infilled fractures, occasional shaley streaks on fractures | | 21.7 | | RQD = 0 |
| | | | | 33.9 | | |
| | | | | 16.7 | | RQD = 0 |
| | | | | 38.9 | | |
| | | | | 70.8 | | RQD = 0 |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1 3/8 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Form No. 500

# BORING LOG

SINCE F&R 1881

FROEHLING & ROBERTSON, INC.
FULL SERVICE LABORATORIES • ENGINEERING/CHEM
"ONE HUNDRED YEARS OF SERVICE"

Report No. O-62084 DATE May 1987

Client: Hercules Inc.

Project: Radford Army Ammunition Plant Radford, Virginia

| Boring No.: | Total Depth: | Elevation: | Location: |
|---|---|---|---|
| 7-WCA | 40.8 ft. | -------- | See Location Plan |

| Type of Boring: | Started: | Completed: | Driller: |
|---|---|---|---|
| Hollow Stem Auger | 5/12/87 | 5/12/87 | W. Simmons |

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 40.0 | | | | | |
| | 40.8 | Boring terminated at 40.8 ft. | | 40.8 | | GROUNDWATER DATA |

*No. of blows req'd. for a 140 lb. hammer dropping 30 in. to drive 2 in O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6 in. increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1"=5' unless otherwise noted

Project: Radford Army Ammunition Plant

Location: Radford, Virginia

Client: Hercules Inc.

Driller: Simmons

Inspector: Smith

Date Installed: 5/19/87

WELL No. 3xWCA 7-

Screen Description: 0.010" slot, 2.0" I.D. Teflon Screen

Riser Description: 2.0" I.D. Teflon Riser and PVC Riser

Sand Size: D(10)= 0.45-0.55 mm

Bore/ Core Size: 6 inch/ NX

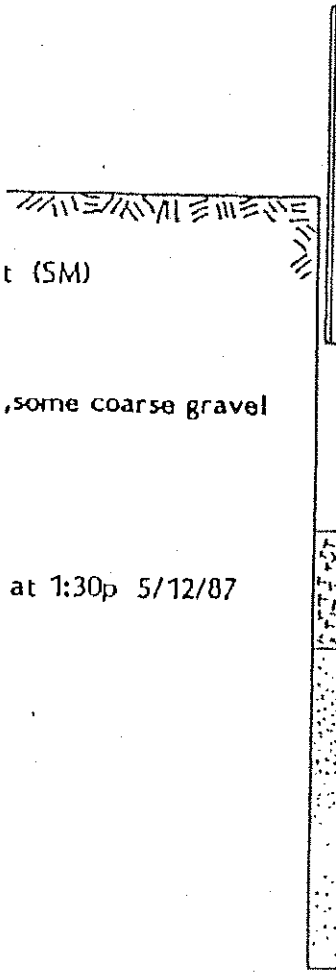
Subsurface Conditions Summary

Brown fine SAND, trace silt (SM)

to

Brown coarse to fine SAND ,some coarse gravel (SW)

Subsurface water at 24.0 ft. at 1:30p 5/12/87



Casing Stickup (ft.)= 3.0 ft.

Elev. =

Riser Stickup (ft.) = 3.0 ft.

Elev. =

Ground Elev.=

Depth to Bentonite (ft.)= 22.5 ft.

Elev. =

Depth to Sand Filter(ft.)= --------

Elev. =

Depth to Well Bottom(ft.)= 38.6 ft.

Elev. =

Depth of Hole (ft.) = 40.8 ft.

Elev. =

Betz-Converse-Murdoch-Inc. BCM

UNIT 7

W-11B

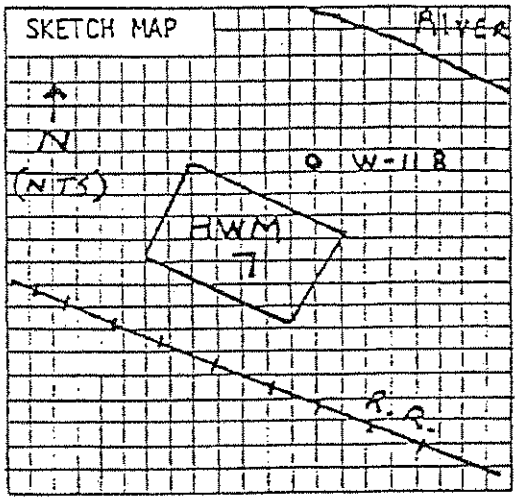
# Drilling Log

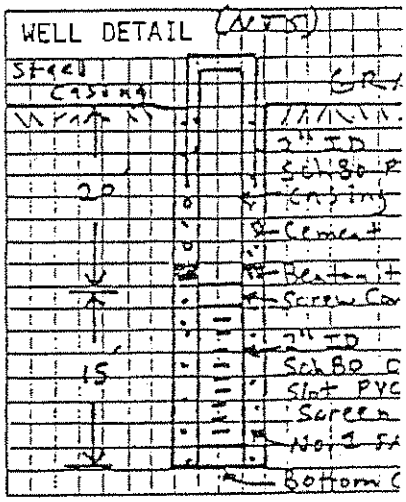
Well Number W11-B

Client Corps of Engineers/Radford AAP — Project No. 00-0008-01
Well Location downgradient at Lagoon 7
Driller/Company Dean/Cunningham
Drilling Method NX core — Hole Diameter 4" nominal — Date(s) Drilled 2/10 - 15/83
Sample Type split spoon — Sample Interval 5' — No. Samples Retained 8
Surface Elevation 1787.58' — Casing Top Elevation 1789.55' — Total Well Depth 35
Casing Material and Size 2" ID PVC threaded couples — Cased Interval(s) 0 - 20 (+2'
Grouting Type sand/cement — Grouted Interval 0 - 19
Screening Material and Size 2" ID PVC 0.010" slots — Screened Interval(s) 20 - 35
Packing Material and Size No. 1 sand — Packed Interval 19 - 35
Depth to Static Water 24'11"* — Date 2/16/83 — Approx Well Yield very low vi
Development Method air — Development Time 1 hour
Logged by: Peter R. Jacobson

Comments
no core recovery

* measured from top of casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 0 - 1.5 | spoon | 1 - 2 - 4 | dark brown micaceous silt and fine sand, minor clay |
| 5 - 6.5 | spoon | 5 - 8 - 8 | medium to light brown fine sand and silt |
| 10 - 11.5 | spoon | 5 - 6 - 7 | dense brown silt with fine sand |
| 15 - 16.5 | spoon | 5 - 6 - 9 | same as above |
| 17 - 18 | | | cobble gravel layer |
| 20 - 21.5 | spoon | 9-12-20 | silty sand grading to coarse sand and pea gravel; wel |
| | | | sorted |
| 22 - 23.5 | | | gravel |
| 23.5 - 24 | | | sand and silt |
| 24 - 25 | | | gravel |
| 25 - 26.5 | spoon | 33-50/3" | well sorted sand and gravel grading to weathered blue |
| | | | grey clayey dolomite; top of weathered rock at 26' |
| 30 - 31.5 | spoon | 21-37-50/3" | weathered dolomite: blue/green/grey clay sand silt, |
| | | | minor pebbles |
| 35 - 36.5 | spoon | 50/5.5" | sand as above with pea gravel |
| | | | |
| end of hole at 35' | | | |

SCHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO: MW-5

PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA
SHEET NO: 1 OF 1
CLIENT: HERCULES, INCORPORATED
JOB NO: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-10 | 11:10 | 24.0 | - |
| AFTER CASING PULLED | 1-11 | 10:30 | 23.8 | - |
| — HR. READING | MONITORING WELL INSTALLED | | | |

| DRIVE SAMPLER | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

CASING SIZE: 3-1/4"
DATE START: 1-10-89
DATE FINISHED: 1-11-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

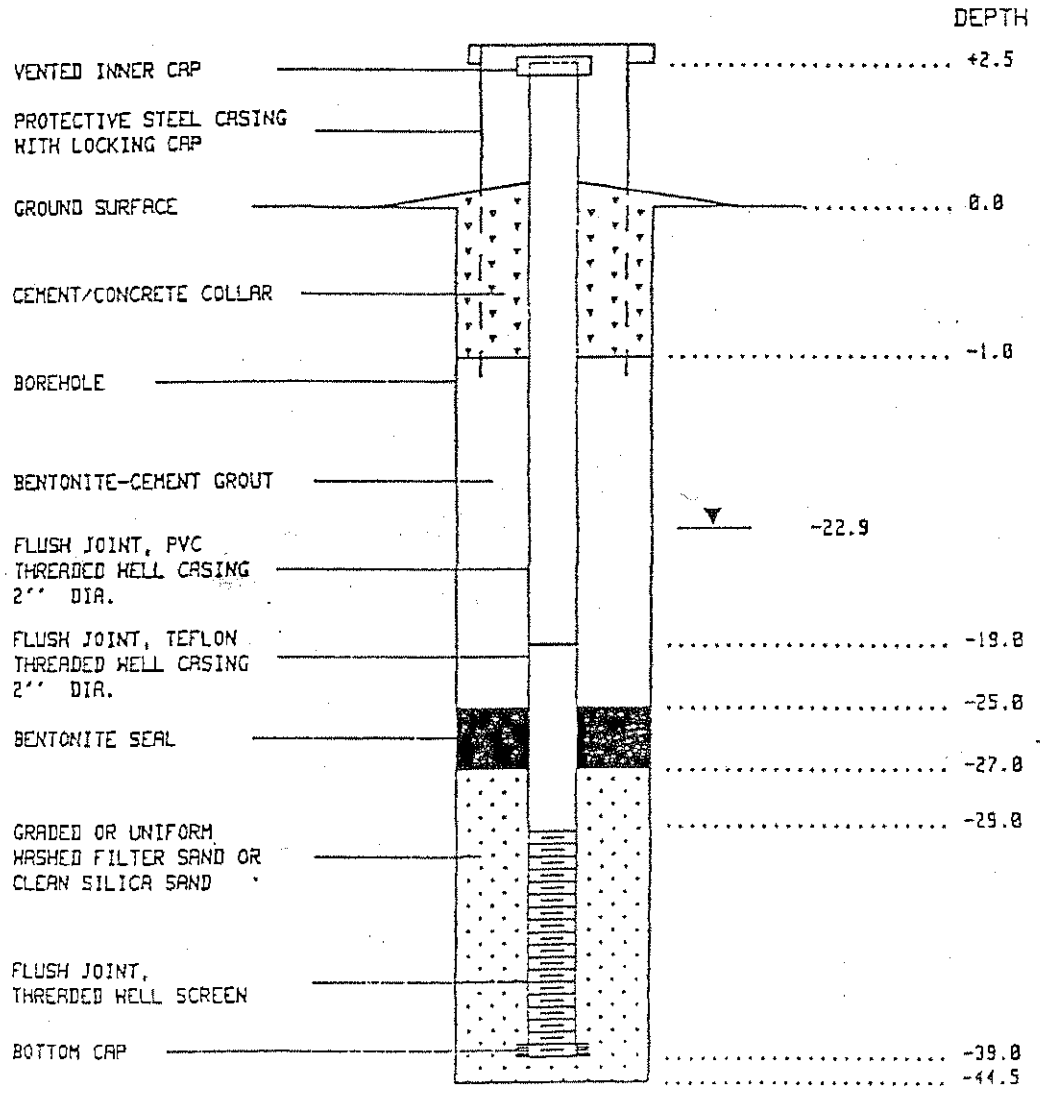
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 2" GRASS ROOT MAT AND 12" TOPSOIL | |
| B | | | 2+2+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS MICA AND ROOT FRAGMENTS, MOIST - BROWN | |
| | | | 6+6+7 | S | do, BROWN | |
| | | | 6+7+24 | S | do, CONTAINS LAYERS OF SANDY SILT | |
| | | | 5+5+5 | S | | ALLUVIAL |
| | 17.5 | | | | | |
| D | | | 51+49/5" | S | DISINTEGRATED ROCK, MOIST - BROWN | LIMESTONE RESIDUUM |
| | | | 100/4" | S | | |
| | 29.5 | | 100/1" | S/NQ | | |
| E | | | REC=97% ROD=75% | NQ | MODERATELY WEATHERED, MODERATELY HARD, GRAY LIMESTONE, MODERATELY TO HIGHLY FRACTURED, THIN BEDDED, CONTAINS FEW CALCITE HEALED FRACTURES HIGHLY WEATHERED TO DISINTEGRATED FROM 33.5 FT TO 34.5 FT | LIMESTONE ROCK ELBROOK FORMATION |
| | 38.4 | | REC=69% ROD=48% | NQ | HIGHLY WEATHERED TO DISINTEGRATED AT 38.9 FT AND 40.5 FT | |
| | 44.5 | | | | CORING TERMINATED AT 44.5 FT | |
| | | | | | WELL LOCATED SOUTHWEST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-5

BORING NUMBER: MW-5
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

JOHNABEL ENGINEERING ASSOCIATES
CONSULTING ENGINEERS

# TEST BORING LOG

BORING NO.: HW-6

PROJECT: MONITORING WELL INSTALLATION, HWH-7, RAAP, RADFORD, VA
SHEET NO.: 1 OF 2
CLIENT: HERCULES, INCORPORATED
JOB NO.: V881377
BORING CONTRACTOR: TERROCK CORPORATION
DRILL: CME-55
ELEVATION:
DRIVE SAMPLER
CASING SIZE: 3-1/4"
DATE START: 1-11-89
DATE FINISHED: 1-12-89
DRILLER: R. EDWARDS
INSPECTOR: C. HALL

WATER LEVEL DATA

| | DATE | TIME | DEPTH | CAVED |
|---|---|---|---|---|
| ENCOUNTERED | 1-11 | 8:00 | 42.0 | - |
| AFTER CASING PULLED | 1-12 | 12:15 | 49.5 | - |
| __ HR. READING | MONITORING-WELL INSTALLED | | | |

| | |
|---|---|
| TYPE | S.S. |
| DIA. | 2" O.D. |
| WT. | 140# |
| FALL | 30" |

| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | 6" TOPSOIL | |
| | | | 2+4+4 | S | FINE TO MEDIUM SILTY SAND (SM), CONTAINS ROOT FRAGMENTS AND MICA, MOIST - BROWN | |
| | | | 5+4+3 | S | | |
| B | | | 4+5+6 | S | | ALLUVIAL |
| | | | | | | COBBLES AT 13 FT |
| | | | 4+3+5 | S | | GRAVEL AT 16 FT |
| | | | 10+21+10 | S | do, WITH GRAVEL | |
| | 23.0 | | | | | |
| | | | 39+61/4" | S | DISINTEGRATED ROCK, MOIST - GRAY AND BROWN | LIMESTONE RESIDUUM |
| | | | 70+30/2" | S | do, GRAY | |
| D | | | 100/5" | S | | |
| | | | 91+19/1" | S | | |
| | | | 100/4" | S | | |

| SCHNABEL ENGINEERING ASSOCIATES<br>CONSULTING ENGINEERS | TEST BORING LOG | BORING NO: MW-6 |
|---|---|---|
| PROJECT: MONITORING WELL INSTALLATION, HWM-7, RAAP, RADFORD, VA | | SHEET NO: 2 OF 2 |
| CLIENT: HERCULES, INCORPORATED | | JOB NO: V881377 |
| BORING CONTRACTOR: TERROCK CORPORATION | DRILL: CME-55 | ELEVATION: |

| WATER LEVEL DATA | DATE | TIME | DEPTH | CAVED | DRIVE SAMPLER | | CASING SIZE: 3-1/4" |
|---|---|---|---|---|---|---|---|
| | | | | | TYPE | S.S. | DATE START: 1-11-89 |
| ENCOUNTERED | 1-11 | - | - | - | DIA. | 2" O.D. | DATE FINISHED: 1-12-89 |
| AFTER CASING PULLED | 1-12 | - | - | - | WT. | 140# | DRILLER: R. EDWARDS |
| __ HR. READING | MONITORING WELL INSTALLED | | | | FALL | 30" | INSPECTOR: C. HALL |

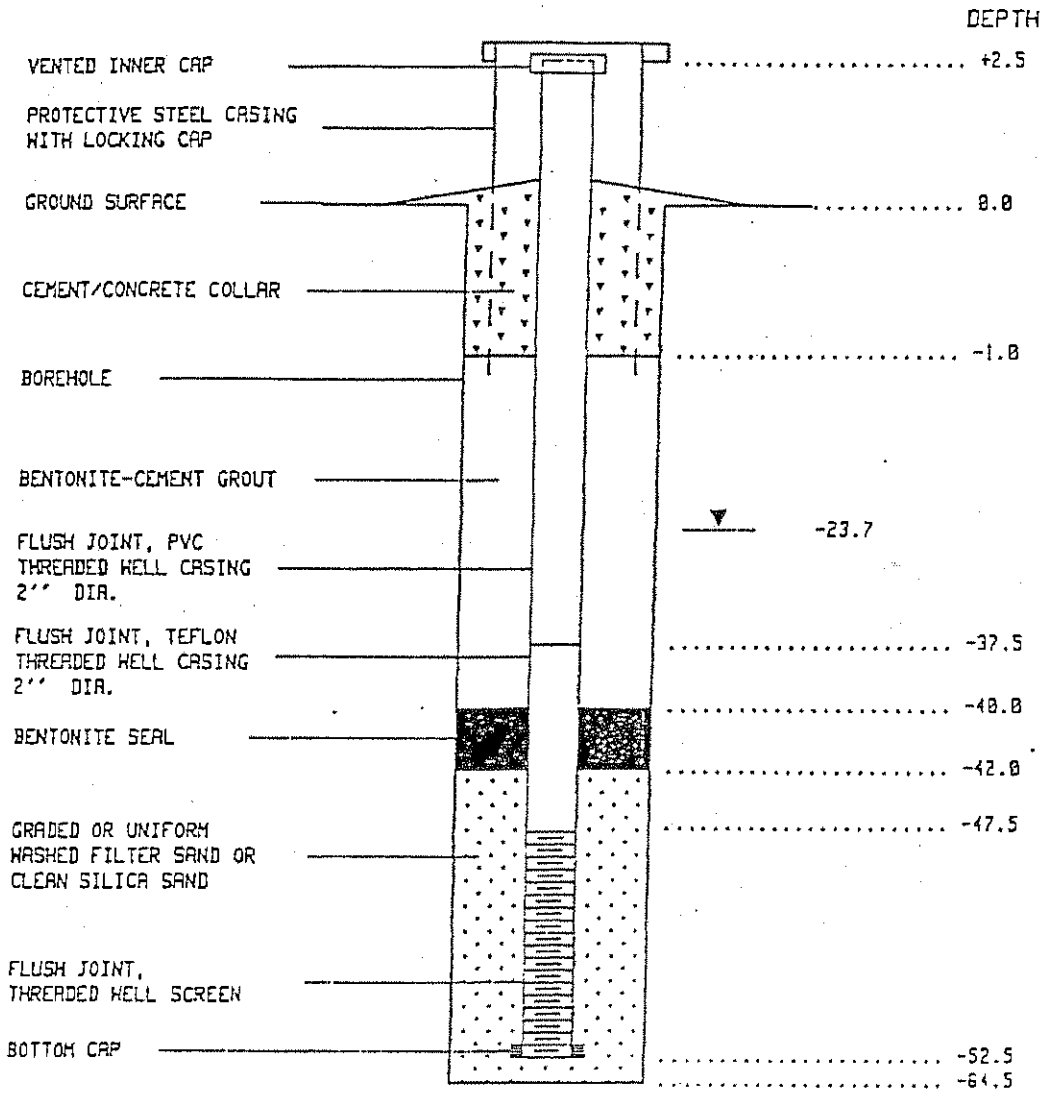
| STRATUM | DEPTH FT. | ELEV. | BLOWS ON SAMPLE SPOON, PER 6" | SYMBOL | IDENTIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | DISINTEGRATED ROCK, WET - GRAY | |
| | | | 100/2" | S* | | LIMESTONE RESIDUUM |
| D | | | | | | |
| | | | 100/2" | S | | |
| | 64.5 | | | | | |
| | | | 100/6" | S | | |
| | | | | | BORING TERMINATED AT 64.5 FT | |
| | | | | | WELL LOCATED NORTHEAST OF LAGOON AT HWM-7 | |

RAAP / SITE 7

# WELL CONSTRUCTION DETAILS FOR MW-6

BORING NUMBER: MW-6
WELL TYPE: 2 in, Sch.40 PVC, Flush Joint
SCREEN TYPE: 2 in, No.10 Slot Teflon
CASING TYPE: 4 in, Sch.80 Steel
DEVELOPMENT: Air Pressure/Surge

Contract No. V881377
Date Water Level Obtained: 1-24-89




NOT TO SCALE

SCHNABEL ENGINEERING

9C

HWMU-7

MAPPED AS W9C

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.

"ONE HUNDRED YEARS OF SERVICE"

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9C | Total Depth: 40.0' | Elevation: --- | Location: See plan

Type of Boring Hollow stem auger | Started: 10-31-85 | Completed: 11-1-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | | | | | GROUNDWATER DATA |
| | 1.5 | Brown fine sandy SILT; roots, organics | | | | |
| | | Loose brown fine sandy SILT (ML) to dense brown silty fine to coarse SAND, occasional gravels and cobbles (SP) | | 4.5 | | |
| | | -ALLUVIUM- | 5 4 4 | 6.0 | | |
| | | | | 9.5 | | |
| | | | 17 19* | 11.0 | | * 50/0.0' |
| | 13.0 | | | 13.5 | | Water level @ 14.0' |
| | | Gray green fine sandy SILT, some clay (ML) -RESIDUAL FAULT BRECCIA- | 27 50* | 15.0 | | * 50/0.0' |
| | | | | | | Development Data: Sloshed for 2 hrs. Bailed down to 21'. Re-gauged 14.0' after 25 hrs. |
| | | • 20' 316 SS SCREEN<br>• 10' 316 SS RISER<br>• 10' PVC-80<br>• ADAPTER<br>• 10' PVC-40 | | | | |
| | 40.0 | Boring terminated @ 40.0' | | | | |

* Driven with 140 lb hammer dropping 30 in to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6 inch increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

Scale 1" = 5' unless otherwise noted

Betz-Converse-Murdoch-Inc. BCM

UNIT 7
W-10B

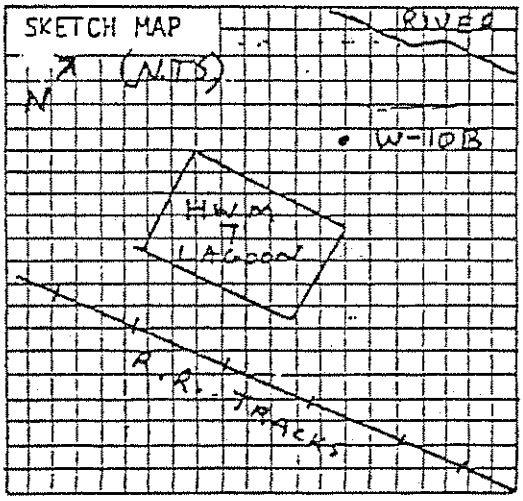
Drilling Log

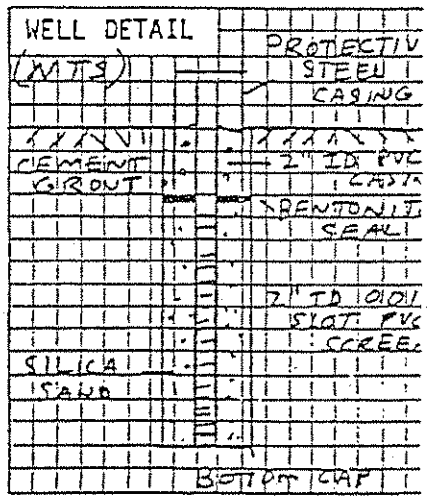
Well Number W-10B

Client Corps of Engineers, RAAP, Radford, VA — Project No. 00-0008-01
Well Location Northwest of HWM 7 Lagoon
Driller/Company M. Dean, Cunningham Core Drilling and Grouting Corp, Salem, VA
Drilling Method Fishtail/Core — Hole Diameter 4.5" — Date(s) Drilled 8/16-17/83
Sample Type Split Spoon — Sample Interval 5' — No. Samples Retained 7
Surface Elevation 1704.65' — Casing Top Elevation 1705.63'* — Total Well Depth 30'
Casing Material and Size 2" ID Sch. 80 PVC — Cased Interval(s) 0-20'
Grouting Type Portland Cement with Sand — Grouted Interval 0-12'
Screening Material and Size 2" ID 0.01 Slotted PVC — Screened Interval(s) 20-30'
Packing Material and Size Fine to Coarse Silica Sand — Packed Interval 13-30'
Depth to Static Water 15-52' (T.O.C.) — Date 8/19/83 — Approx Well Yield < 1 gpm
Development Method Air — Development Time 4 hours
Logged by: D. J. Varner

Comments
1) Drilling Water obtained from RAAP hydrants
2) Replaces well W-10
3) Bentonite pellet seal in the 12-13' annular interval
4) Depth to water table measured from the top of the steel casing
5) Core size: HW

*Top of steel casing




| Depth Scale | Sample | Spoon Blows | Description of Materials |
|---|---|---|---|
| 1.5-3 | Spoon | 5-6-9 | Brown silty fine Sand |
| 5-6.5 | Spoon | 3-4-5 | Brown clayey and silty fine sand |
| 10-11.5 | Spoon | 10-14-16 | Quartzite Gravel with a silty |
| 15-15.5 | Spoon | 35 | sand matrix and cobbles (Riverjack). |
| | | | Some clay and silt layers. |
| 20-20'10" | Spoon | 21-50/4" | Blue-gray fine crystalline Dolomite fragments in a |
| | | | blue-gray sandy marl. |
| 25-25'8" | Spoon | 20-50/2" | Blue-gray hard fine crystalline Dolomite |
| 30-30'3" | Spoon | 50/3" | Blue-gray hard fine crystalline Dolomite |
| 32 | | | End of hole. Two feet filled with collapsed cuttings |

10C
HWMU-7
MAPPED AS W10C

Form No. 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No. ROH-62085 DATE November, 1985

Client: Hercules, Inc.

Project: Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No.: 10-C | Total Depth: 50.0 | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-29-85 | Completed: 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | NO SAMPLING REQUIRED | | | GROUNDWATER DATA |
| | 1.0 | Light brown silty fine sand, trace gravel<br>-ALLUVIUM- | | | | |
| | 15.0 | Gray-brown clayey SILT, little fine sand<br>-RESIDUAL FAULT BRECCIA- | | | | Water level @ 16.9'<br>Development Data:<br>Sloshed for 2 hrs.<br>Bailed to 26.0'.<br>Recovered to 16.9' after 24 hrs. |
| | 40.0 | | | | | |

No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in. O.D., 1.375 in. I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

Form No 300

# BORING LOG

FROEHLING & ROBERTSON, INC.
ONE HUNDRED YEARS OF SERVICE

Report No ROH-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 10-C cont. Total Depth: 50.0 Elevation: --- Location: See plan

Type of Boring: Hollow stem auger Started: 10-29-85 Completed: 10-31-85 Driller: W. Simmons, Sr.

| Elevation | Depth 40.0 | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | REMARKS |
|---|---|---|---|---|---|---|
| | | Gray-brown clayey SILT, little fine sand -RESIDUAL FAULT BRECCIA- | | | | GROUNDWATER DATA |
| | 50.0 | Boring terminated @ 50.0' | | | | |

- 20' 316 SS SCREEN
- 10' 316 SS SCREEN
- 10' PVC-80

*) Blows recorded for a 140 lb hammer dropping 30 in to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-9

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS S7W9

US ARMY ENVIRONMENTAL HYGIENE AGENCY

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northwest of Oleum lagoon, next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II,w/ 4 in continuous flight Auger BORE HOLE MW9 TD 40 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial =22' 4" 24 hr.=23' 5" REMARKS | |
|---|---|---|---|---|
| | | Brown micaceous silty alluvium | | |
| | | Reddish brown micaceous silt,damp nonplastic | 15.75 ft of grout | 20 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | MB 6-10 | | | |
| | | Reddish brown micaceous clayey silt, damp | | |
| | | Drilling easy | | |
| 10 ft | | | | |
| | | same material | | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northwest of Oleum Lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | gravel mixed with silt (¼-1½ in) | PVC casing; 1.25 ft. Bentonite |
| 20 ft | | same material | 17.75 ft of sand pack; 10 ft of slotted 2 in ID schedule 40, PVC screen (0.008-0.010") |
| | | weathered dolomite difficult drilling (5000psi) | |
| 25 ft | | getting easier drilling (softer) 4700 psi | |
| | | same material | |
| 30 ft | | | |

HSE-ES Form 78, 1 Jun 80

Replaces USAEHA Form 85, 12 Aug 74

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, norhtwest of Oleum lagoon next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger )

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW9

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | easy drilling<br>weathered Elbrook FM | sand pack | 5 ft of sediment trap |
| 35 ft | | easy drilling- no return | | |
| | | | | FALLBACK |
| 40 ft | | 40 ft TD<br>Refusal Elbrook Dolomite | | |

HSE-ES Form 78, 1 Jun 80

9B
HWMU-7
MAPPED AS W9B

Form No 500

# BORING LOG

FROEHLING & ROBERTSON, INC.
ENGINEERS & SCIENTISTS
ONE HUNDRED YEARS OF SERVICE

Report No ROM-62085 DATE November, 1985

Client Hercules, Inc.

Project Monitoring Wells Radford Army Ammunition Plant Radford, Virginia

Boring No 9B | Total Depth: 38.0' | Elevation: --- | Location: See plan

Type of Boring: Hollow stem auger | Started: 10-30-85 | Completed 10-31-85 | Driller: W. Simmons, Sr.

| Elevation | Depth | DESCRIPTION OF MATERIALS (Classification) | Sample Blows | Sample Depth (Feet) | % Core Recovery | RQD % | REMARKS |
|---|---|---|---|---|---|---|---|
| | 0.0 | Brown fine sandy SILT; roots, organics | | | | | GROUNDWATER DATA |
| | 1.0 | Loose to medium-dense brown fine sandy SILT, trace clay | 2 4 7 | 1.5 3.0 | | | |
| | | -ALLUVIUM- | 1 4 6 | 4.5 6.0 | | | |
| | | | 3 2 3 | 8.5 10.0 | | | |
| | | Occasional layers of silty coarse to fine sand with cobble layer | 2 4 8 | 13.5 15.0 | | | |
| | | | 4 3 2 | 18.5 20.0 | ▽ | | Water level @ 19.6' |
| | | | | 23.5 | | | Development Data: Sloshed 2 hrs. Bailed for 30 minutes. Water level unchanged |
| | 24.0 | Hard brown and yellow-brown clayey SILT, occasional SAND -RESIDUUM- | 8 33 50/0.4' | 25.0 | | | *50/0.0' |
| | 28.0 | Gray-green fault breccia, LIMESTONE, DOLOMITE and shale clasts in siltstone matrix, moderately calcareous | | 28.0 | 0% | 0% | |
| | | .10' 316 SS SCREEN | | | | | |
| | | .10' 316 SS RISER | | 33.0 | | | |
| | | .10' PVC-80 | | | 20% | 0% | |
| | | . ADAPTER | | | | | |
| | | .10' PVC-40 | | | | | |
| | 38.0 | Coring terminated @ 38.0' | | 38.0 | | | |

*No. of blows required for a 140 lb. hammer dropping 30 in. to drive 2 in O.D. 1.375 in I.D. sampler a total of 18 inches in three 6

Scale 1" = 5' unless otherwise noted

MW-10

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS W-10

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon, north of lagoon, next to fence (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight BORE HOLE MW 10

TD 21 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS: water level initial-wet 24 hr.-15 ft. | |
|---|---|---|---|---|
| | | Brown silty micaceous alluvium nonplastic, wet | 2.5 ft concrete grout | 7 ft of schedule 40, 2 in ID, PVC casing |
| | MB 0-5 | | 1.5 ft Bentonite | |
| 5 ft | | silty clay | | |
| | | | 16 ft of sand pack | |
| | | Reddish brown micaceous sandy silt | | 10 ft of slotted, 2 in, schedule 40, PVC screen (0.008-0.010") |
| 10 ft | | hard layer (gravelly ¼-1½") damp- very plastic | | |
| | MB 10 ft | | | |
| | | NO return | | |
| 15 ft | ▽ | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 Oleum Lagoon north of lagoon next to fence DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 10

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | | screen |
| | | | sand pack |
| | | | 3 ft of sed trap |
| | | Weathered Elbrook Dolomite (saturated) | |
| 20 ft | | | 20 ft bottom of well |
| | | | stand pipe &steel casing =2 ft |
| | | TD 21 feet | |

HSE-ES Form 78, 1 Jun 80

MW-11

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

US ARMY ENVIRONMENTAL HYGIENE AGENCY Mapped as W-11

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7 northeast corner of Oleum Lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11 TD= 35 ft

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | water level initial 22 ft. 24 hr 23 ft REMARKS | |
|---|---|---|---|---|
| | MB 0-5 | Reddish brown sandy micaceous silt damp, low plasticity<br>Easy drilling | 9.5 ft concrete grout | 16 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | same material | | |
| 10 ft | | same material (getting damper) | 3.5 ft of Bentonite | |
| | | | 12'3" of sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

US ARMY ENVIRONMENTAL HYGIENE AGENCY

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 3 April 81

LOCATION Site 7, northeast corner or Oleum lagoon (see map) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight auger BORE HOLE MW 11

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS |
|---|---|---|---|
| | | Reddish brown clayey silt | 10ft of slotted 2 in ID PVC screen (0.008-0.010") |
| | MB 18-20 | Reddish brown silt with gravel (¼-1 in.) | sand pack |
| 20 ft | | | |
| | | Near Elbrook Dolomite no cuttings return. Auger turnings are blue-grey saturated. | |
| 25 ft | | same material | bottom of well 26 feet |
| | | TD 35 FEET | Fallback Borehole collapsed due to saturated layer |
| 30 ft | | | |

USAEHA Form 95, 12 Aug 74

MW-12

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

MAPPED AS MW-12

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

LOCATION Site 7 southwest of Oleum lagoon(background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II, w/ 4 in continuous flight Auger BORE HOLE MW 12

TD=22 ft.

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN. | DESCRIPTION | Water level initial: dry 24 hr.: Dry REMARKS | |
|---|---|---|---|---|
| | | silty micaceous clay damp- med plastic (alluvium) | 10.5 of concrete grout | 14.5 ft of schedule 40, 2 in ID PVC casing |
| 5 ft | | Clayey micaceous silt with some gravel (¼-½") | | |
| 10 ft | | gravel sound | 2.5 ft of Bentonite | |
| | | same material | sand pack | |
| 15 ft | | | | |

HSE-ES Form 78, 1 Jun 80

Army Pollution Abatement Program Study, Installation of Monitoring Wells, Radford Army Ammunition Plant, Radford, VA, 3-9 April 1981, (USAEHA Control No. 81-26-8251-81)

# US ARMY ENVIRONMENTAL HYGIENE AGENCY

## DRILLING LOG

PROJECT RAAP 81-26-8251-81 DATE 6 April 81

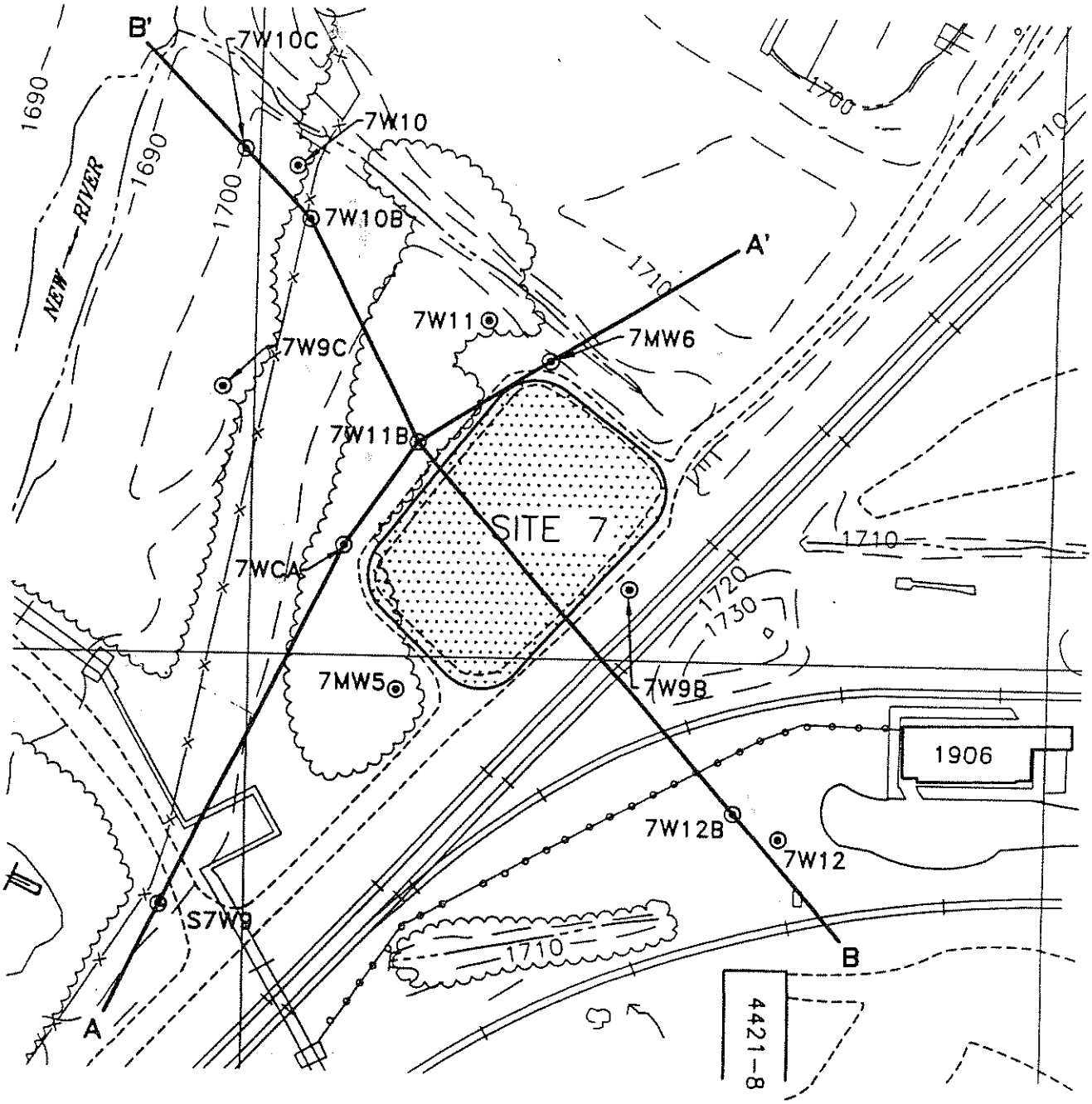
LOCATION Site 7, southwest of Oleum lagoon (background well) DRILLERS Smithson, Hoddinott Craig, Gates (logger)

DRILL RIG Acker II w/ 4 in continuous flight auger BORE HOLE MW 12

| DEPTH | SAMPLE TYPE / BLOWS PER 6 IN | DESCRIPTION | REMARKS | |
|---|---|---|---|---|
| | | hard gravel layer (GC) clayey gravel (¼-2in) | 6.2 ft of sand pack | 5 ft of slotted 2 in ID schedule 40 PVC screen |
| 20ft | | gravels are getting larger(cobbles 2-5 in) Water should be in the coarse gravels. | | Fallback to 19.5 ft |
| | | drilling very difficult (7422 psi) Refusal- Elbrook FM (gray weathered residuum on top of hard dolomite.) | | |
| 25 ft | | | | |
| 30 ft. | | | | |

HSE-ES Form 78, 1 Jun 80

# Site 7
## Cross Section Location Map
### Radford Army Ammunition Plant
### Radford, Virginia




Legend

7W11B ⊙ Monitoring Well

A —— Cross Section Line

50 0 100

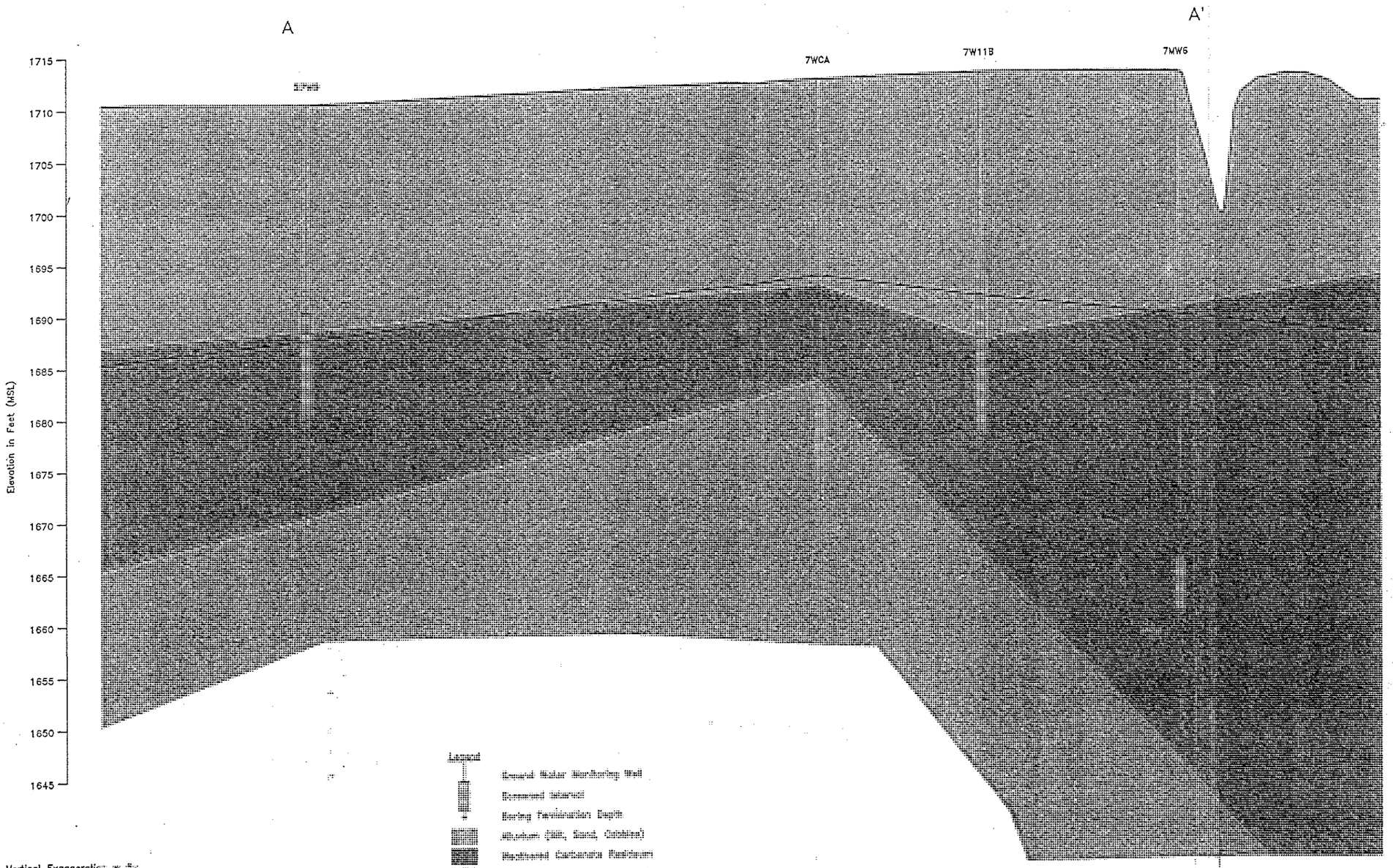
Scale in Feet

N

ERM, INC.

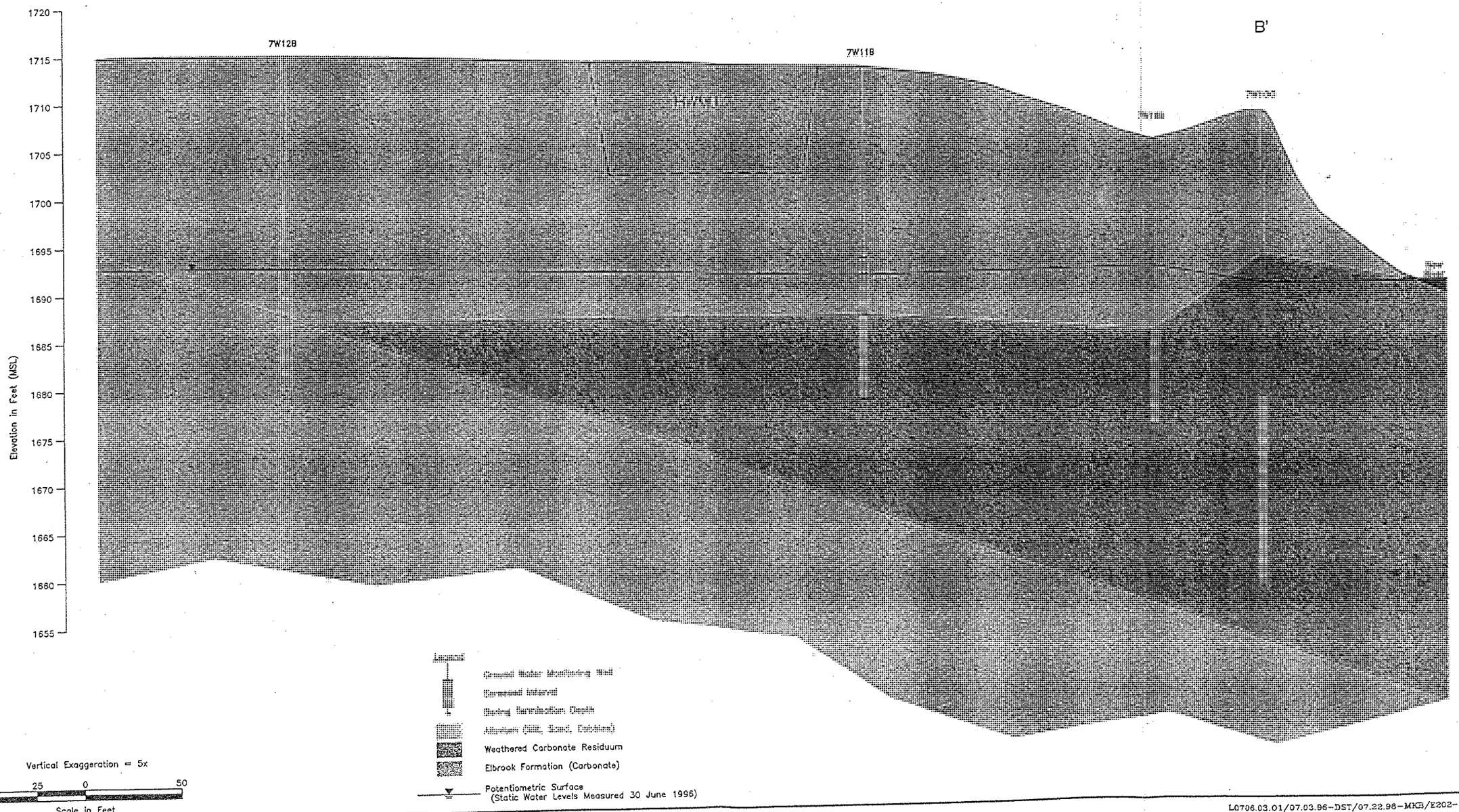
L0706.03.01/08.01.96-DST/1103-4A

# Site 7
## Geologic Cross Section A - A'
## Radford Army Ammunition Plant
## Radford, Virginia




L0708.03.01/07.03.96-DST/07.22.96-MKE/E201-1C

# Site 7
## Geologic Cross Section B - B'
## Radford Army Ammunition Plant
## Radford, Virginia

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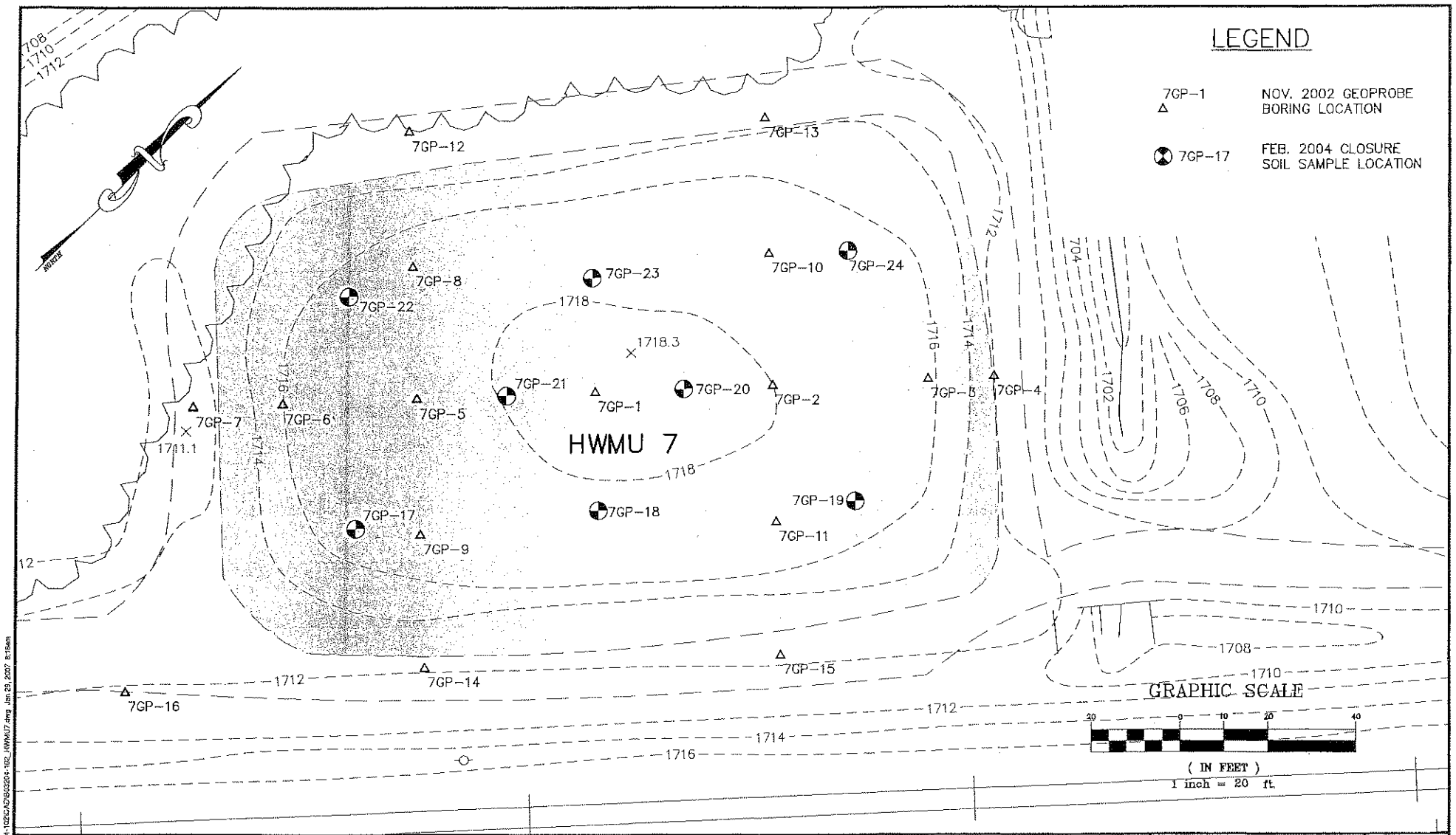
ERM, INC.





**Draper Aden Associates**
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2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
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Charlottesville, VA
Raleigh-Durham, NC


| | |
|---|---|
| DESIGNED | RGM |
| DRAWN | DRW/KJO |
| CHECKED | MDL |
| DATE | 01/29/07 |

HWMU-7 CLOSURE SOIL SAMPLE LOCATION PLAN
RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

SCALE: 1"=20'

PLAN NO. B03204-102

FIGURE 3

P:\ES\2006\B03204\B03204-102\CAD\B03204-102_HWMU7.dwg Jan 29, 2007 8:18am

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-1** **(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **16.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Soil sample 7-GP-1 (1-3) submitted for analysis. Perched water. |
| | | | | SM. Yellow-brown micaceous fine silty sand, dry. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Yellow-brown micaceous fine sandy clay with little gravel, damp. | | | | | Clay liner. |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-2**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **20.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown fine micaceous silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | Some gravel. | | | | | Soil sample 7-GP-2 (8-12) submitted for analysis. |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | | | | | | Soil sample 7-GP-2 (13.5-14.5) submitted for analysis. |
| | | | 15 | SM. Dark gray fine sandy and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| S-5 | | | | | | | | | |
| | | | 20 | Boring terminated at 20 feet. | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-3**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| | | | | SM. Yellow-brown, micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | 10 | | | | | | Soil sample 7-GP-3 (10-11) submitted for analysis. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-4** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | | | | | | Soil sample 7-GP-4 (3-4) submitted for analysis. |
| S-2 | | | 5 | | | | | | |
| | | | | SM. Dark gray fine sand and silt, wet. | | | | | Aquatic odor. |
| | | | | Boring terminated at 8 feet. | | | | | |
| | | | | No residual material encountered. | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-5** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | 30 mil. PVC. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-5 (6-11) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-6** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water.<br>30 mil. PVC. |
| | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | 10 | | | | | | |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-7**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: | East: Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Gravel.<br>SW. Brown fine sand, moist to wet. | | | | | Boring backfilled with bentonite. |
| | | | | Boring terminated at 4 feet.<br>No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-8**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | Soil sample 7-GP-8 (5-8) submitted for analysis. |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-9** (1 of 1)

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Aquatic odor. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-10**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | |
| S-2 | | | | SM. Yellow-brown micaceous fine silty sand, moist. | | | | | Perched water. |
| | | | | SM. Yellow-brown fine silty sand with trace gravel and green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-11**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **12.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SP-GP. Yellow-brown fine silty sand with trace to little gravel, green compacted residual material fragments, dry. | | | | | 30 mil. PVC. Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | Clay liner. |
| | | | | Boring terminated at 12 feet. | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-12**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: **Alliant Ammunition and Powder Co.** | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Danny Horsting** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **4.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-13**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-14**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-15**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-16**
**(1 of 1)**

Project Number: **B02271-01**

| | | | |
|---|---|---|---|
| Client: | **Alliant Ammunition and Powder Co.** | Drilling Company: | **Vironex** |
| Project: | **HWMUs 5 & 7 Subsurface Investigation** | Driller: | **Danny Horsting** |
| Location: | **Radford, Virginia** | Boring Method: | **Geoprobe** |
| North: | East: | Logged by: | **R. Miller** |
| Total Depth: **4.0'** | Elev GS: Reference: **Ground Surface** | Completion Date: | **November 1, 2002** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Asphalt and gravel. | | | | | Boring backfilled with bentonite. |
| | | | | SW. Brown fine sand, moist to wet. | | | | | Soil sample 7-GP-16 (3-4) submitted for analysis. |
| | | | | Boring terminated at 4 feet. No residual material encountered. | | | | | |
| | | | 5 | | | | | | |
| | | | 10 | | | | | | |
| | | | 15 | | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 3/3/03

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LOG OF: **7-GP-17**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragements, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| | | | 10 | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner/top of native soil. Sample 7-GP-17 (11) submitted for analysis of TAL/TCL. Aquatic odor. |
| S-4 | | | | | | | | | |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-18**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, moist. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-18 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-19**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-19 (14) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-20**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material fragments, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay/top of native soil. Sample 7-GP-20 (14.5) submitted for analysis of TAL/TCL. Collected MS/MSD. Aquatic odor. |
| | | | 15 | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

LOG OF: **7-GP-21** **(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Base of clay liner. Sample 7-GP-21 (13.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-22**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, damp. | | | | | |
| S-4 | | | | | | | | | |
| | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Samples 7-GP-22 (13) and 7-GP-22-22 (13) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
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LOG OF: **7-GP-23**
**(1 of 1)**

Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual amterial, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | | | | | | |
| | | | 10 | | | | | | |
| | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| S-4 | | | | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | Top of native soil. Sample 7-GP-23 (12.5) submitted for analysis of TAL/TCL. Aquatic odor. |
| | | | 15 | | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07

**DRAPER ADEN ASSOCIATES**
Engineers • Geologists • Hydrologists

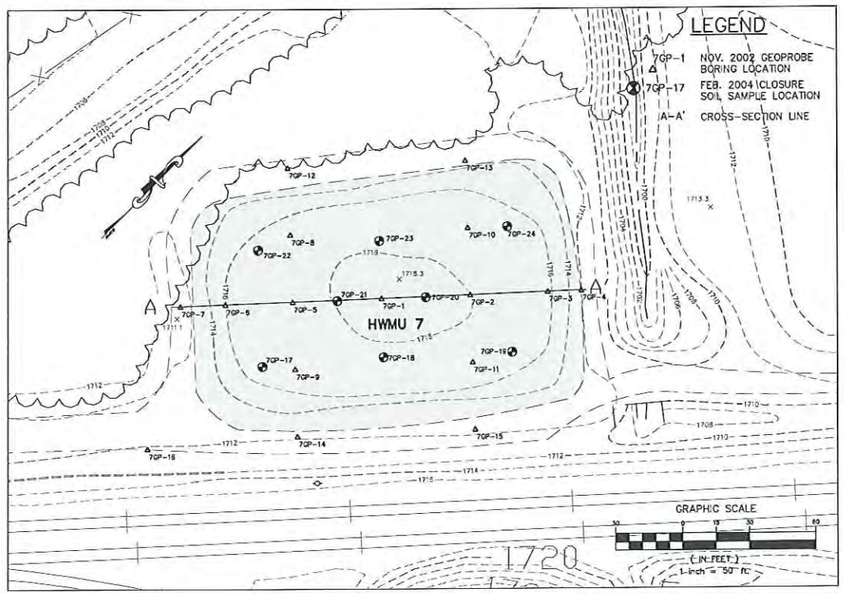
LOG OF: **7-GP-24**
**(1 of 1)**

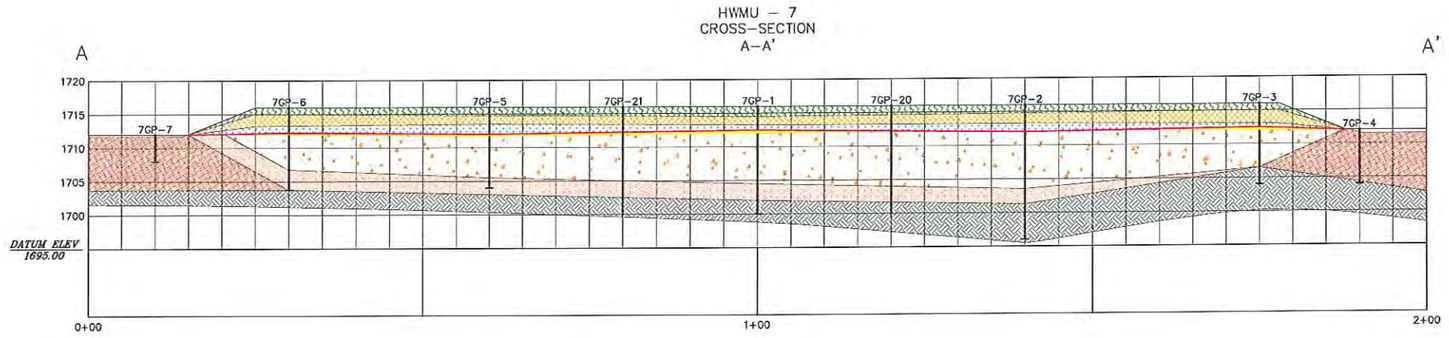
Project Number: **B02271-01**

| | |
|---|---|
| Client: | Drilling Company: **Vironex** |
| Project: **HWMUs 5 & 7 Subsurface Investigation** | Driller: **Corey Gamwell** |
| Location: **Radford, Virginia** | Boring Method: **Geoprobe** |
| North: East: | Logged by: **R. Miller** |
| Total Depth **16.0'** Elev GS: | Reference: **Ground Surface** Completion Date: **February 18, 2004** |

| Samp ID | Blow Counts | N Value | Depth Scale | DESCRIPTION (USC) | Stratum Elev | PID (ppm) | WELL LOG | H2O | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| S-1 | | | | Fill. Brown fine silty sand, moist. | | | | | Boring backfilled with bentonite. |
| | | | | CL. Yellow-brown fine to coarse sandy clay, damp. | | | | | |
| | | | | SP. Light gray fine to coarse sand, wet. | | | | | Perched water. |
| S-2 | | | | SM. Yellow-brown fine silty sand with trace gravel, green compacted residual material, dry. | | | | | Residual material. |
| | | | 5 | | | | | | |
| S-3 | | | | CL. Red-brown micaceous fine sandy clay, dry. | | | | | |
| | | | 10 | | | | | | |
| S-4 | | | | | | | | | Clay liner. Sample 7-GP-24 (14) submitted for analysis by TAL/TCL. |
| | | | 15 | SM. Dark gray fine sand and silt with trace round gravel, dry. | | | | | |
| | | | | Boring terminated at 16 feet. | | | | | |
| | | | 20 | | | | | | |

WELL_LOG ALLIANT-RAAP.GPJ DRAPER.GDT 8/21/07




LEGEND

- BROWN FINE SILTY SAND (TOPSOIL)
- YELLOW–BROWN FINE TO COARSE SANDY CLAY
- LIGHT GRAY FINE TO COARSE SAND
- 30 MIL. PVC LINER
- YELLOW–BROWN MICACEOUS FINE SILTY SAND
- RESIDUAL MATERIAL FROM CLEAN–UP ACTIVITIES
- RED–BROWN MICACEOUS FINE SANDY CLAY
- BROWN FINE SOIL (NATIVE)
- DARK GRAY FINE SAND AND SILT (NATIVE)

VERTICAL SCALE: 1"= 10'
HORIZONTAL SCALE: 1"= 10'
NO VERTICAL EXAGGERATION

Draper Aden Associates
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Blacksburg, VA
2206 South Main Street
Blacksburg, VA 24060
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Richmond, VA
Charlottesville, VA
Raleigh-Durham, NC

# CROSS SECTION A - A'
## HAZARDOUS WASTE MANAGEMENT UNITS 5 & 7
## RADFORD ARMY AMMUNITION PLANT
MONTGOMERY COUNTY, VIRGINIA

REVISIONS

| | |
|---|---|
| DESIGNED BY: | MAC |
| DRAWN BY: | KKD |
| CHECKED BY: | |
| SCALE: | 1" = 10' |
| DATE: | 02/21/2006 |
| PROJECT NUMBER: | B03204-122 |

FIGURE 3

CompuChem

A Division Of

Liberty Analytical Corp.

8/9/2011

RECEIVED

AUG 09 2011

By_____

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Rerun & Report Analytes & ATW ABNE QL.
DATA for As, Co (Dissolved)
TW13
TOUP
7/27/11-Event

Subject:

Report of Data - Project: RAAP UNIT 7/2011 POST DEV. 2nd EVEN WorkOrder: 1107163

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

JVR 17/29/12

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES ____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

## CompuChem, a division of Liberty Analytical

**Client:** DRAPER **Work:** 1107163

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-30 **Sdg:** 1107163

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107163-01 | 7DUP | Water | 07/27/2011 13:45 | 07/28/2011 10:30 |
| 1107163-02 | 7W13 | Water | 07/27/2011 13:35 | 07/28/2011 10:30 |

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Laboratory:** COMPUCHEM

**SDG:** 1107163

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7DUP | 1107163-01 |
| 7W13 | 1107163-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Stephen Dow for Susan Bass  Name: SUSAN BASS

Date: 8/9/11  Title: SENIOR CHEMIST

CompuChem
A Division Of
Liberty Analytical Corp.

AMENDED DATA

**CompuChem**
**a Division of Liberty Analytical Corp.**
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107163
## Client: DRAPER
## Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

The indicated Sample Delivery Group (SDG) consisting of two (2) dissolved water samples was received into the laboratory information management system (LIMS) on July 28, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was not found with the samples and the samples temperature was 26.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested dissolved metals arsenic and cobalt. All non-detects are reported to the reporting limit (RL) with a "U" flag qualifier.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7DUP

$$\frac{13.92093\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 13.921\ \mu g/L \text{ reported as } 13.9\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

AMENDED DATA

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

A five-fold serial dilution of sample, CCN = SDI1107163-01 (7DUPL) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were inside control limits.

The ICP/MS sample post digestion spike, CCN =1072905-PS2 (7DUPA) was performed and passed criteria except arsenic.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Amy Dou for Susan Bass

Susan W. Bass
Senior Chemist
August 8, 2011 (amended August 9, 2011)

AMENDED DATA

# ANALYSIS DATA SHEET

7DUP

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107163-01 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic (dissolved) | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1H03006 | 8/1/11 17:03 |
| 7440-48-4 | Cobalt (dissolved) | 13.9 | 4.00 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:03 |

Environmental Testing Laboratories

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AMENDED DATA

# ANALYSIS DATA SHEET

7W13

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107163-02 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic (dissolved) | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1H03006 | 8/1/11 17:10 |
| 7440-48-4 | Cobalt (dissolved) | 13.7 | 4.00 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:10 |

Environmental Testing Laboratories
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Liberty Analytical Corp.

AMENDED DATA

# SERIAL DILUTION

*EPA 6020A*

7DUPL

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1H03006-SRD2 Matrix: Water Lab Source ID: 1107163-01 Source Sample: 7DUP

Sequence: 1H03006 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic (dissolved) | 10.00 U | 50.00 U | | | EPA 6020A | 10 |
| Cobalt (dissolved) | 13.92 | 20.00 U | | | EPA 6020A | 10 |

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AMENDED DATA

# POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

**7DUPA**

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107163

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B032

Laboratory ID: 1072905-PS2

Lab Source ID: 1107163-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| **Arsenic (dissolved)** | 17.4 | **U** | **10.00** | **174** | **75 - 125** |
| Cobalt (dissolved) | 24.9 | 13.9 | 10.00 | 110 | 75 - 125 |

Environmental Testing Laboratory

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AMENDED DATA

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107163

**Client:** DRAPER **Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic (dissolved) | 10 | 10.00 | ug/L | EPA 6020A |
| Cobalt (dissolved) | 4 | 4.00 | ug/L | EPA 6020A |

Environmental Testing Laboratories

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AMENDED DATA

6/23/11 RAAP F.B.#10
B03204-304B
CJB/KFC

General Notes:
- Weather - 70's, rainy then clearing - 80's
- PPE: Nitrile Gloves, Eye Protection,
- All equipment decon'ed between wells
- Purge water disposed of at on-site bio plant location
- Samples stored in coolers

| Soil Sediment Sampling well | COLLECTION TIME |
|---|---|
| 7W13 | 0900 |
| 7W12B | 1000 |
| 7W9C | 1100 |
| 7W10B | 1200 |
| 7W10C | 1300 |
| 7MW6 | 1400 |
| 7W11B | 1500 |
| 7WCA | 1600 |

7W13 - Container ~2/3 RDS full. Sediment looks like cement mix. Color is a light/dark grey - Darker than 7W9C & 7W10C; however lighter than 7WCA. Consistency is a thick sediment.

7W12B - Filled container ~2/3 RDS full. Color is a light brown and the consistency of sand

7W9C - Filled container ~2/3 RDS full. Sample is a light grey in color and is consistency of sediment. There are also black specks amoungst the sample.

6/23/11 RAAP FB# 10
B03204-304R
CJB/KFC

7W10B - Filled container ~ 1/8th full. Sample is a light brown color with black specks

7W10C - Filled container ~ 1/2 full. Sample is a light grey/brownish in color. Very fine grained.

7MW6 - Filled container ~ 1/8th full. Sample is a light grey in color. Looks similar to sample from 7W10B.

7W11B - Filled container ~ 1/3rd full. Sample is reddish-brown in color and the consistency is sediment. Plant matter is amoungst the sample.

7WCA - Collected sample in two jars and each is ~ 1/4th full. Very fine, dark grey sediment.

Used bailers to collect each sample. Poured contents of bailer into one or more plastic bags then decanted water as the sample settled. Poured/scraped resulting sediment into 4 oz CG jar.
Needed to use surge block on final well; 7WCA - to agitate screen and flush in sediment

6/29/11 RMAP 803204-324B KFC/JF FB#10

General Notes: Well development
- Weather: 70's sunny & clear
- PPE: Nitrile Gloves, eye protection, hard hats, steel toed boots
- Equip: Development Pump, Myron L Ultrameter, Hach Turbidity Meter
- Calibrations:
  pH: 4.00 = 4.00 7.00 = 7.00 10.00 = 10.00
  Conductivity: Reads 1413 µs in a 1413 µs standard.
- All equipment decon'ed between wells
- Purge & decon water disposed of at the Plant Bio-station
- See entry on 6/28/11 for general development notes.

MW13
TD: 38.00 Begin Purge (0930)
DTW: 19.68 Initial Purge (Cloudy)

Returned development pump to well and filled up water before beginning pump.

| (1000) Time | Temp (C°) | Cnd (µs) | pH | NTU Turb. | Purge Vol (gal) | Desc |
|---|---|---|---|---|---|---|
| (1000) | — | — 1 liter/1 gal/1 min. | — | >1000 | — | very cloudy |

Purge rate ~ 1 gal/1 min. (6/30/11)

| | | | | | | |
|---|---|---|---|---|---|---|
| (1120) | 16.9 | 1353 | 6.71 | >1000 | ~25 gal. | cloudy |

Well appeared to have cleaned up during this development. Less milky towards end of cycle. Surged pump by hand throughout. Will allow well to settle and collect samples tomorrow.

6/30/2011 RAAP F.B. #10
R03204-3048
ICFC

General Notes - Well development sampling. TKE 6-29-11

- Weather -
- PPE - Nitrile Gloves, Hard Hat, ~~Nitrile Gloves~~ Eye Protection
- Equip - Bailers, Turbidity Meter

7W13

Sample Time (0645)
Samples Collected: (1) TM

- Turbidity Reading: 11.6

SWC2-2

Sample Time (0720)
Sample Collected: (1) TM

- Turbidity Reading: 14.0

7DUP

Sample Time (0700)
Sample Collected: (1)

- Turbidity Reading: 11.6

7/27/2011 RMAP F.B.#10
RO3204-304B
TAE/KFC

## SMW13

DTW: 19.14 Begin Purge (1252)
Post purge DTW: 23.08 Initial Purge - Clear

| Time | Temp(C°) | Cond(us) | pH | ORP(mv) | Turb. | Purge Rate L/min | Desc. |
|---|---|---|---|---|---|---|---|
| (1255) | 15.8 | 1336 | 7.18 | 223 | 11.7 | 0.3/min | Clear |
| (1300) | 16.2 | 1338 | 7.28 | 206 | 14.6 | " | " |
| (1305) | 14.7 | 1293 | 7.29 | 208 | 21.6 | " | " |
| (1310) | 14.6 | 1275 | 7.29 | 205 | 19.0 | " | " |
| (1315) | 14.4 | 1271 | 7.30 | 200 | 10.7 | " | " |
| (1320) | 14.5 | 1277 | 7.30 | 199 | 10.4 | " | " |
| (1325) | 14.7 | 1284 | 7.33 | 199 | 9.4 | " | " |
| (1330) | 14.1 | 1277 | 7.32 | 202 | 9.3 | " | " |
| (1330) | Readings Stable | | | | | | |
| (1340) | 14.5 | 1290 | 7.39 | 203 | 8.8 | " | " |

Sample Time (1335)
Samples collected: (1) TM, (1) DM

## D-DUP

Sample Time (1345)
Samples Collected: (1) TM, (1) DM

CompuChem

A Division Of

Liberty Analytical Corp.

8/8/2011

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP UNIT 7/2011 POST DEV. 2nd EVEN WorkOrder: 1107162

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Joan Purdie

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

**501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050**

## CompuChem, a division of Liberty Analytical

**Client:** DRAPER **Work:** 1107162

**Project** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-30 **Sdg:** 1107162

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107162-01 | 7DUP | Water | 07/27/2011 13:45 | 07/28/2011 10:30 |
| 1107162-02 | 7W13 | Water | 07/27/2011 13:35 | 07/28/2011 10:30 |

CompuChem, a Division of Liberty Analytical Corporation

# Analysis Data Package

## EPA SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field and analytical samples, reanalyses, blanks, spikes, duplicates, and laboratory control samples. The sample data package consists of the following:

## A. Cover Documentation

## B. Sample Data

Client: **DRAPER** SDG#: **1107162**

Project: **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B**

CompuChem
A Division Of
Liberty Analytical Corp.

# A. Cover Documentation

1. Cover Page

2. SDG Narrative

3. Chain-Of-Custody Records

# 1. Cover Page

## Inorganic Analyses Data Package

The Cover Page includes laboratory information, SDG numbers, project name and the Client Identification in alphanumeric order showing the Client Identification cross-referenced with Lab ID numbers.

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Laboratory:** COMPUCHEM

**SDG:** 1107162

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7DUP | 1107162-01 |
| 7W13 | 1107162-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ for

Name: Susan Bess

Date: 08-08-11

Title: Senior Chemist

# 2. SDG Narrative

The SDG Narrative contains laboratory information, SDG number, and detailed documentation of any QC, sample, shipment, and/or analytical problems encountered in processing the samples. This will include any technical and administrative problems encountered and the resolution or corrective actions taken. The SDG Narrative will also document the alternative means of determining the cooler temperature when a cooler's temperature indicator bottle is absent. The SDG Narrative also provides equations or curves and utilizes raw data from the SDG being reported to demonstrate how sample results are obtained from raw instrument output. Finally, the SDG Narrative will identify and explain any differences between results being provided in the data package and those provided previously as Preliminary Results.

**CompuChem**
**a Division of Liberty Analytical Corp.**
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107162
## Client: DRAPER
## Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

The indicated Sample Delivery Group (SDG) consisting of two (2) water samples was received into the laboratory information management system (LIMS) on July 28, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was not found with the samples and the samples temperature was 26.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested metals arsenic and cobalt.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7DUP

$$\frac{14.08144\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 14.08\ \mu g/L \text{ reported as } 14.1\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

A five-fold serial dilution of sample, CCN = SDI1107162-01 (7DUPL) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were outside control limits.

The ICP/MS sample post digestion spike, CCN =1072905-PS1 (7DUPA) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

for

Susan W. Bass
Senior Chemist
August 8, 2011

# INORGANIC DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, CCV, and interference check standards for ICP-AES/ICP-MS) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

**The extensions: D, S, SD, L, and A are added to the end of the Client ID and represent the following:**

**D – Matrix Duplicate**
**S – Matrix Spike**
**SD – Matrix Spike Duplicate**
**L – Serial Dilution**
**A – Post Digestion Spike**

Revision 0 (11-09-2010)

# 3. Chain-Of-Custody Records

# CHAIN OF CUSTODY RECORD

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

| | | | | |
|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>Attn: 0<br>Address: 0<br>0<br>Phone: 0<br>Fax: 0<br>Fax: 0 | **Consultant:** Draper Aden Associates<br>Attn: Janet C. Frazier<br>Address: 2206 South Main Street<br>Blacksburg, Virginia 24060<br>Phone: (540) 552-0444<br>Fax: (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>Location: HWMU 7<br>Event: 2011 Post-Development 2nd Monitoring Event<br>DAA JN: 803204-304B<br>Lab JN: | Project Specific (PS) & Batch (B) QC<br>Sample Collection for Project Complete? YES<br>Carrier: UPS: 1Z-237-301-01-5797-7211<br>Tracking Number: | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | F | | | | | | | | | |
| Required pH of Sample | | | | | <2 | <2 | | | | | | | | | |
| Box 2 - Preservative | | | | | B | B | | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 1-500 ml P | 1-500ml P | | | | | | | | | |
| Sample ID | Date: 2011 | Time | Box 1: Matrix | Number of Bottles | ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY) | DISSOLVED METALS 6020A (Cobalt & Arsenic ONLY) | VOC 8260B | 1107162-01 1107163-01 | metals pH | | | | | | |
| 7 DUP | 7/27 | 1345 | GW | 2/2 | X | X | | | <2 | | | | | | |

**GENERAL NOTES:**

1. Results by :
2. Level 4 deliverable w/ ~~estimated results~~ 7/28/2011
3. Report results at or above permit QL – 10 µg/L (arsenic) – 4 µg/L cobalt
4. 7-day turn around

7/28/11

**Clients Special Instructions:**

Received by lab in Good Condition ✓ Yes ___ No; Custody Seal Intact ✓ Yes ___ No; Temperature upon arrival 26.7° C; Received on ice X Yes ___ No

Describe problems, if any: ~~Ice appeared to have melted & evaporated upon receipt.~~ 7/28/11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): KEN CODDINGTON | Date: 7/27/11 | #1 Relinquished by (Signature): Ken Coddington | Date: 7/27/11 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Ken Coddington | Time: 0730 | Company Name: DAA | Time: 1700 | Company Name: | Time: | |
| Sampler Name (Print): Tyler Emery | Date: 7/27/11 | #1 Received by (Signature): | Date: | #2 Received by (Signature): K. Manning | Date: 7.28.11 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Tyler Emery | Time: 0730 | Company Name: | Time: | Company Name: CompuChem | Time: 1030 | |

8N0010

7/27/2011 7-20-11

1/1

# CHAIN OF CUSTODY RECORD

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

7-20-11

| | | | | |
|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>Attn: 0<br>Address: 0<br>0<br>Phone: 0<br>Fax: 0<br>Fax: 0 | **Consultant:** Draper Aden Associates<br>Attn: Janet C. Frazier<br>Address: 2206 South Main Street<br>Blacksburg, Virginia 24060<br>Phone: (540) 552-0444<br>Fax: (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>Location: HWMU 7<br>Event: 2011 Post-Development 2nd Monitoring Event<br>DAA JN: B03204-304B<br>Lab JN: | **Project Specific (PS) or Batch (B) QC:**<br>Sample Collection for Project Complete? YES<br>UPS: 12-237-301-01-5797-7211<br>Carrier:<br>Tracking Number: | |

| | | | | |
|---|---|---|---|---|
| **Box 1: Matrix**<br>SW Surface Water<br>GW Groundwater<br>L Leachate<br>S Soil<br>T Trip Blank<br>E Equipment Blank<br>P Product<br>O Other | **Box 2: Preservative**<br>A HCL<br>B $HNO_3$<br>C $H_2SO_4$<br>D $Na_2S_2O_3$<br>E NaOH<br>F ZnAc<br>G Other (Specify)<br>H None | **Box 3: Filtered/Unfiltered**<br>F Filtered<br>U Unfiltered<br>**Box 5: Sample Container Type**<br>P Plastic V VOA<br>AG Amber Glass CG Clear Glass | **Box 4: Sample Type**<br>G Grab<br>C Composite | **Invoice**<br>Copy to Consultant: YES<br>Bill: CLIENT OTHER<br>Preserved and shipped on ice: YES |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | G | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | U | F | | | | | | | | | |
| Required pH of Sample | | | | <2 | <2 | | | | | | | | | |
| Box 2 - Preservative | | | | B | B | | | | | | | | | |
| Box 5 - Sample Container Type | | | | 1-500 ml P | 1-500ml P | | | | | | | | | |
| Sample ID | Date: 2011 | Time | Box 1: Matrix | Number of Bottles | ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY) | Dissolved Metals 6020A-Cobalt & Arsenic ONLY | 7-20-11 | | | metals pH | | | | |
| 7W13 | 7/27 | 1335 | GW | 2 | X | X | | 1107162-02<br>1107163-02 | | 4.2 | | | | |

**GENERAL NOTES:**

1. Results by :
2. Level 4 deliverable ~~w/ estimated results.~~ JCF 7/25/2011
3. Report result to at or above Permit QL, 10 ug/L (arsenic) QL 4 ug/L (cobalt)
4. 7-day turnaround

7-26-11

**Clients Special Instructions:**

7/28/11

Received by lab in Good Condition ✓ Yes ___ No Custody Seal Intact ✓ Yes ___ No Temperature upon arrival 26.7°C Received on Ice ✓ Yes ___ No ~~Ice appeared to have melted/evaporated upon receipt.~~

Describe problems, if any: KM 7/29/11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): KEN CODDINGTON | Date: 7/27/11 | #1 Relinquished by (Signature): Ken Coddington | Date: 7/27/11 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Ken Coddington | Time: 0730 | Company Name: DAA | Time: 1700 | Company Name: | Time: | |
| Sampler Name (Print): Tyler Emery | Date: 7/28/11 | #1 Received by (Signature): | Date: | #2 Received by (Signature): K. Manning | Date: 7.28.11 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Tyler Emery | Time: 0730 | Company Name: | Time: | Company Name: CompuChem | Time: 1030 | |

SN0010

JCF 7/25/11 7/27/2011 7/28/2011

1/1

11

WORK ORDER

Printed: 8/8/2011 1:55:32PM

**1107162**

# COMPUCHEM

| | | | |
|---|---|---|---|
| **Client:** | **DRAPER** | **Project Manager:** | **Cathy Dover** |
| **Project:** | **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03** | **Project Number:** | **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B** |
| **SDG:** | **1107162** **CASE:** | **Status:** | **Received** |

**Report To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone: (540)552-0444
Fax: -

**Invoice To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone :(540)552-0444
Fax: -

Date Due: 08/03/2011 00:00 (6 day TAT)

Received By: Cathy Dover — Date Received: 07/28/2011 10:30

Logged In By: Cathy Dover — Date Logged In: 07/28/2011 12:02

| J & B Flags?: **NO** | TICS?:**NO** | Deliverable: **Style 9** | EDD : **DRAPER ACCESS + ERIS** |
|---|---|---|---|
| Metals ND to? **RL/CRQL** | Spike Level: **FULL Spike** | | |

LCS/LCSD*TOTAL 6020A MTL=As & Co ONLY*SPECIAL RLs IN PROJECT AND NO J FLAGS

| Analysis | Due | TAT | Expires | Received | Comments |
|---|---|---|---|---|---|
| **1107162-01 7DUP [Water] Sampled 07/27/2011 13:45 Eastern** | | | | | |
| 6020 ICP MS Invoice | 08/03/2011 16:00 | 6 | 01/23/2012 13:45 | 07/28/2011 10:30 | |
| 6020A ICP MS (UPDATE IV) | 08/02/2011 16:00 | 5 | 01/23/2012 13:45 | 07/28/2011 10:30 | |
| 6020A ICP MS DOD | 01/01/1980 00:00 | | 07/27/2011 13:45 | 07/28/2011 10:30 | Added for SequenceQC in: 1H03006 |
| **1107162-02 7W13 [Water] Sampled 07/27/2011 13:35 Eastern** | | | | | |
| 6020 ICP MS Invoice | 08/03/2011 16:00 | 6 | 01/23/2012 13:35 | 07/28/2011 10:30 | |
| 6020A ICP MS (UPDATE IV) | 08/02/2011 16:00 | 5 | 01/23/2012 13:35 | 07/28/2011 10:30 | |

## INTERNAL DIGESTION COC

1072905

**COMPUCHEM**

**Printed: 7/29/2011 10:12:03AM**

**Matrix: Water** **Prepared using: METALS - EPA 3005A**

| Lab Number | Client ID | Sample Type | |
|---|---|---|---|
| 1072905-BLK1 | PBW | Blank | |
| 1072905-BS1 | LCSW | LCS | |
| 1072905-BSD1 | LCSWD | LCS Dup | |
| 1107162-01 | 7DUP | Sample | |
| 1107162-02 | 7W13 | Sample | |
| 1107163-01 | 7DUP | Sample | |
| 1107163-02 | 7W13 | Sample | |
| 1107164-01 | 5WC21 | Sample | |
| 1107164-02 | 5WC22 | Sample | |
| 1107165-01 | 5WC21 | Sample | |
| 1107165-02 | 5WC22 | Sample | |

| | | | |
|---|---|---|---|
| Relinquished By | Date: 8-01-11 1600 | Received By: IC SK. | Date: 8-1-11 1600 |
| Relinquished By | Date: 080111 1605 | Received By | Date: 080111 1605 |
| Relinquished By | Date: 080111 1735 | Received By | Date: 080111 1735 |
| Relinquished By | Date | Received By | Date |
| Relinquished By JM 08-02-11 | Date | Received By | Date |

# Metals Internal Chain of Custody Sheet

**Batch**: 1072905 **Status:** Batched

**Analysis**: 6020A ICP MS (UPDATE IV)

| Lab Id | Client_Id | Received | Container | Extraction | Preservative | Matrix | Due Date | Cust Date |
|---|---|---|---|---|---|---|---|---|
| 1107162-01 A | 7DUP | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107162-02 A | 7W13 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107163-01 A | 7DUP | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107163-02 A | 7W13 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107164-01 A | 5WC21 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107164-02 A | 5WC22 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107165-01 A | 5WC21 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107165-02 A | 5WC22 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |

| | | | |
|---|---|---|---|
| Ambient | 8/01/11 0950 | K. Manning | 8/01/11 0950 |
| Relinquished By | Date/Time | Received By | Date/Time |
| K. Manning | 8/01/11 0950 | | 8-1-11 0850 |
| Relinquished By | Date/Time | Received By | Date/Time |
| | 8-1-11 1200 | Ambient | 8-1-11 1200 |
| Relinquished By | Date/Time | Received By | Date/Time |
| | | | |
| Relinquished By | Date/Time | Received By | Date/Time |

# B. Sample Data

1. Results
2. Quality Control Data
3. Raw Data
4. Digestion and Distillation Logs

# 1. Results

a. **Analysis Data Sheet**

# ANALYSIS DATA SHEET

**7DUP**

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107162-01 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 7.44 | 0.100 | 10.0 | 1 | | EPA 6020A | 1H03006 | 8/1/11 16:57 |
| 7440-48-4 | Cobalt | 14.1 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 16:57 |

# ANALYSIS DATA SHEET

**7W13**

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107162-02 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 7.58 | 0.100 | 10.0 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:01 |
| 7440-48-4 | Cobalt | 14.5 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:01 |

# 2. Quality Control (QC) Data

**a. Low Level Initial and Continuing Calibration Check**

**b. Initial and Continuing Calibration Check**

**c. Low Range Standard**

**d. High Range Standard**

**e. Blank**

**f. ICP Interference Check Sample**

**g. Duplicates**

**h. Matrix Spike / Matrix Spike Duplicate Recovery**

**i. Serial Dilution**

**j. Post Digestion Spike Sample Recovery**

**k. LCS / LCS Duplicate Recovery**

**l. Method Detection and Reporting Limits**

**m. ICP-AES and ICP-MS Linear Ranges**

**n. ICP-AES Interelement Correction Factors**

**o. Preparation Batch Summary**

**p. Analysis Sequence Summary**

# LOW LEVEL INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | QC Limts |
|---|---|---|---|---|---|---|---|---|
| LLICV | 1H03006-CRL1 | Arsenic | 1.000 | 1.16 | 116 | ug/L | | 70 - 130 |
| LLICV | 1H03006-CRL1 | Cobalt | 1.000 | 1.06 | 106 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL2 | Arsenic | 1.000 | 1.03 | 103 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL2 | Cobalt | 1.000 | 1.06 | 106 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL3 | Arsenic | 1.000 | 1.10 | 110 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL3 | Cobalt | 1.000 | 0.996 | 100 | ug/L | J | 70 - 130 |

# INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | Control Limit |
|---|---|---|---|---|---|---|---|---|
| ICV | 1H03006-ICV1 | Arsenic | 199.8 | 199 | 100 | ug/L | | +/-10 % |
| ICV | 1H03006-ICV1 | Cobalt | 99.80 | 106 | 106 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV1 | Arsenic | 300.0 | 306 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV1 | Cobalt | 300.0 | 305 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV2 | Arsenic | 300.0 | 304 | 101 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV2 | Cobalt | 300.0 | 306 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV3 | Arsenic | 300.0 | 299 | 100 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV3 | Cobalt | 300.0 | 305 | 102 | ug/L | | +/-10 % |

# BLANKS

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | Found | MDL | RL | Units | Q | Method |
|---|---|---|---|---|---|---|---|---|
| ICB | 1H03006-ICB1 | Arsenic | 0.0519 | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| ICB | 1H03006-ICB1 | Cobalt | 0.00610 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB1 | Arsenic | 0.129 | 0.100 | 10.0 | ug/L | *J* | EPA 6020A |
| CCB | 1H03006-CCB1 | Cobalt | 0.0201 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| PBW | 1072905-BLK1 | Arsenic | | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| PBW | 1072905-BLK1 | Cobalt | | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB2 | Arsenic | 0.0511 | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB2 | Cobalt | 0.0159 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB3 | Arsenic | 0.140 | 0.100 | 10.0 | ug/L | *J* | EPA 6020A |
| CCB | 1H03006-CCB3 | Cobalt | 0.0341 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |

# ICP INTERFERENCE CHECK SAMPLE

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units |
|---|---|---|---|---|---|---|
| ICSA | 1H03006-IFA1 | Arsenic | 0.1000 | 0.09 | 92 | ug/L |
| ICSA | 1H03006-IFA1 | Cobalt | 1.000 | 1.08 | 108 | ug/L |
| ICSAB | 1H03006-IFB1 | Arsenic | 19.00 | 19.61 | 103 | ug/L |
| ICSAB | 1H03006-IFB1 | Cobalt | 20.00 | 21.75 | 109 | ug/L |

* The absence of an entry in the "True" column denotes the lack of a true value for that analyte. The entry in the "%R" column represents a Control Limit, established as +/- 2 times analyte Limit Reporting Limit.

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

# SERIAL DILUTION

*EPA 6020A*

**7DUPL**

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1H03006-SRD1 Matrix: Water Lab Source ID: 1107162-01 Source Sample: 7DUP

Sequence: 1H03006 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic | 7.44 J | 5.64 J | 24.3 | * | EPA 6020A | 10 |
| Cobalt | 14.08 | 10.65 J | 24.4 | * | EPA 6020A | 10 |

# POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

**7DUPA**

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107162

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B032

Laboratory ID: 1072905-PS1

Lab Source ID: 1107162-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| Arsenic | 19.1 | 7.44 J | 10.00 | 116 | 75 - 125 |
| Cobalt | 25.8 | 14.1 | 10.00 | 117 | 75 - 125 |

# LCS / LCS DUPLICATE RECOVERY

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1072905-BS1 Matrix: Water Client ID: LCSW Batch: 1072905

| ANALYTE | SPIKE ADDED (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC. | Q | QC LIMITS REC. |
|---|---|---|---|---|---|
| Arsenic | 199.8 | 200 | 100 | | 80 - 120 |
| Cobalt | 99.80 | 105 | 105 | | 80 - 120 |

| ANALYTE | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC. # | % RPD # | QC LIMITS | | |
|---|---|---|---|---|---|---|---|
| | | | | | RPD | Q | REC. |
| Arsenic | 199.8 | 200 | 100 | 0.0154 | 20 | | 80 - 120 |
| Cobalt | 99.80 | 105 | 105 | 0.0220 | 20 | | 80 - 120 |

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107162

**Client:** DRAPER **Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic | 0.1 | 10.00 | ug/L | EPA 6020A |
| Cobalt | 0.04 | 4.00 | ug/L | EPA 6020A |

# ICP-AES AND ICP-MS LINEAR RANGES (QUARTERLY)

Client: DRAPER

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

SDG: 1107162 Instrument: PEMS

| Analyte | Concentration ug/L | LR Date |
|---|---|---|
| Arsenic | 5000 | 04/21/2011 |
| Cobalt | 4000 | 04/21/2011 |

# PREPARATION BATCH SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Batch: 1072905 Matrix: Water Preparation: EPA 3005A

| SAMPLE NAME | LAB SAMPLE ID | DATE PREPARED | INITIAL VOL/WT (mL) | FINAL VOL/WT (mL) |
|---|---|---|---|---|
| PBW | 1072905-BLK1 | 08/01/11 10:00 | 100 | 100 |
| LCSW | 1072905-BS1 | 08/01/11 10:00 | 100 | 100 |
| LCSWD | 1072905-BSD1 | 08/01/11 10:00 | 100 | 100 |
| 7DUPA | 1072905-PS1 | 08/01/11 10:00 | 100 | 100 |
| 7DUP | 1107162-01 | 08/01/11 10:00 | 100 | 100 |
| 7W13 | 1107162-02 | 08/01/11 10:00 | 100 | 100 |

# ANALYSIS SEQUENCE SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument: PEMS

| Sample Name | Lab Sample ID | Lab File ID | Analysis Date/Time |
|---|---|---|---|
| TUN1 | 1H03006-TUN1 | PEMSJCF080111_P-001 | 08/01/11 15:23:27 |
| S0 | 1H03006-CAL1 | PEMSJCF080111_P-002 | 08/01/11 16:15:01 |
| S 6020-MS1 | 1H03006-CAL2 | PEMSJCF080111_P-003 | 08/01/11 16:16:28 |
| S 6020-MS2 | 1H03006-CAL3 | PEMSJCF080111_P-004 | 08/01/11 16:17:53 |
| S 6020-MS3 | 1H03006-CAL4 | PEMSJCF080111_P-005 | 08/01/11 16:19:19 |
| S 6020-MS4 | 1H03006-CAL5 | PEMSJCF080111_P-006 | 08/01/11 16:20:44 |
| S 6020-MS5 | 1H03006-CAL6 | PEMSJCF080111_P-007 | 08/01/11 16:22:10 |
| LLICV | 1H03006-CRL1 | PEMSJCF080111_P-008 | 08/01/11 16:25:27 |
| ICV | 1H03006-ICV1 | PEMSJCF080111_P-009 | 08/01/11 16:26:55 |
| ICB | 1H03006-ICB1 | PEMSJCF080111_P-010 | 08/01/11 16:28:21 |
| ICSA | 1H03006-IFA1 | PEMSJCF080111_P-011 | 08/01/11 16:29:48 |
| ICSAB | 1H03006-IFB1 | PEMSJCF080111_P-012 | 08/01/11 16:31:13 |
| LLCCV | 1H03006-CRL2 | PEMSJCF080111_P-013 | 08/01/11 16:32:40 |
| CCV | 1H03006-CCV1 | PEMSJCF080111_P-014 | 08/01/11 16:34:07 |
| CCB | 1H03006-CCB1 | PEMSJCF080111_P-015 | 08/01/11 16:35:32 |
| PBW | 1072905-BLK1 | PEMSJCF080111_P-016 | 08/01/11 16:53:11 |
| LCSW | 1072905-BS1 | PEMSJCF080111_P-017 | 08/01/11 16:54:37 |
| LCSWD | 1072905-BSD1 | PEMSJCF080111_P-018 | 08/01/11 16:56:03 |
| 7DUP | 1107162-01 | PEMSJCF080111_P-019 | 08/01/11 16:57:28 |
| 7DUPL | 1H03006-SRD1 | PEMSJCF080111_P-020 | 08/01/11 16:58:54 |
| 7DUPA | 1072905-PS1 | PEMSJCF080111_P-021 | 08/01/11 17:00:20 |
| 7W13 | 1107162-02 | PEMSJCF080111_P-022 | 08/01/11 17:01:45 |
| CCV | 1H03006-CCV2 | PEMSJCF080111_P-026 | 08/01/11 17:07:29 |
| CCB | 1H03006-CCB2 | PEMSJCF080111_P-027 | 08/01/11 17:08:55 |
| LLCCV | 1H03006-CRL3 | PEMSJCF080111_P-037 | 08/01/11 17:23:15 |
| CCV | 1H03006-CCV3 | PEMSJCF080111_P-038 | 08/01/11 17:24:42 |
| CCB | 1H03006-CCB3 | PEMSJCF080111_P-039 | 08/01/11 17:26:07 |

# ICP-MS Tune

*EPA 6020A*

Client: DRAPER SDG: 1107162

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Date: 08/01/11 ICP-MS Instrument ID: PEMS

| Element - Mass | Avg. Measured Mass (amu) | Average Peak Width (amu) | %Height | %RSD |
|---|---|---|---|---|
| Be - 9 | 8.975 | 0.717 | 10 | 1.264 |
| Mg - 24 | 24.075 | 0.677 | 10 | 1.594 |
| Mg - 25 | 24.975 | 0.680 | 10 | 1.272 |
| Mg - 26 | 26.025 | 0.709 | 10 | 1.432 |
| Co - 59 | 58.925 | 0.706 | 10 | 1.376 |
| In - 113 | 112.975 | 0.670 | 10 | 1.594 |
| In - 115 | 114.975 | 0.691 | 10 | 1.374 |
| Pb - 206 | 206.025 | 0.703 | 10 | 1.869 |
| Pb - 207 | 206.975 | 0.701 | 10 | 1.766 |
| Pb - 208 | 207.975 | 0.706 | 10 | 2.234 |

Comments:

# ICPMS Internal Standards Relative Intensity Summary

*EPA 6020A*

Client: DRAPER

Work Order: 1107162

Sequence: 1H03006

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Instrument: PEMS

| Sample No. | Time | Internal Standards %RI For: Lithium6 | Scandium45 | Indium115 | Terbium159 | Bismuth209 |
|---|---|---|---|---|---|---|
| S0 | 8/1/11 16:15 | 100 | 100 | 100 | 100 | 100 |
| S 6020-MS1 | 8/1/11 16:16 | 101 | 101 | 100 | 101 | 102 |
| S 6020-MS2 | 8/1/11 16:17 | 100 | 101 | 99 | 101 | 100 |
| S 6020-MS3 | 8/1/11 16:19 | 100 | 100 | 100 | 98 | 102 |
| S 6020-MS4 | 8/1/11 16:20 | 99 | 101 | 97 | 99 | 101 |
| S 6020-MS5 | 8/1/11 16:22 | 99 | 100 | 99 | 99 | 100 |
| LLICV | 8/1/11 16:25 | 99 | 99 | 99 | 100 | 100 |
| ICV | 8/1/11 16:26 | 97 | 97 | 97 | 99 | 100 |
| ICB | 8/1/11 16:28 | 98 | 100 | 99 | 100 | 102 |
| ICSA | 8/1/11 16:29 | 98 | 99 | 97 | 100 | 95 |
| ICSAB | 8/1/11 16:31 | 100 | 101 | 97 | 97 | 95 |
| LLCCV | 8/1/11 16:32 | 109 | 106 | 104 | 100 | 101 |
| CCV | 8/1/11 16:34 | 107 | 106 | 100 | 100 | 99 |
| CCB | 8/1/11 16:35 | 107 | 105 | 102 | 100 | 101 |
| PBW | 8/1/11 16:53 | 107 | 104 | 102 | 99 | 101 |
| LCSW | 8/1/11 16:54 | 104 | 103 | 100 | 99 | 100 |
| LCSWD | 8/1/11 16:56 | 103 | 103 | 100 | 99 | 101 |
| 7DUP | 8/1/11 16:57 | 100 | 99 | 95 | 95 | 94 |
| 7DUPL | 8/1/11 16:58 | 112 | 108 | 102 | 102 | 101 |
| 7DUPA | 8/1/11 17:00 | 98 | 96 | 91 | 92 | 90 |
| 7W13 | 8/1/11 17:01 | 101 | 97 | 93 | 93 | 92 |
| CCV | 8/1/11 17:07 | 113 | 106 | 100 | 100 | 102 |
| CCB | 8/1/11 17:08 | 111 | 103 | 100 | 100 | 102 |
| LLCCV | 8/1/11 17:23 | 108 | 109 | 101 | 102 | 103 |
| CCV | 8/1/11 17:24 | 114 | 106 | 100 | 99 | 101 |
| CCB | 8/1/11 17:26 | 115 | 104 | 99 | 100 | 101 |

# 3. Raw Data

For each reported value, the laboratory shall include in the data package all raw data used to obtain that value. This applies to all required QA/QC measurements, instrument standardization, as well as all sample analysis results. This does not apply to the quarterly verification of method and instrument parameters submitted as a part of each data package.

The order of the raw data in the data package shall be: ICP-AES, ICP-MS, mercury, and cyanide (if a target analyte).

Raw data shall be labeled with Client Identification numbers and appropriate codes in order to identify:

- calibration standards, including source and preparation date
- initial and continuing calibration blanks and preparation blanks
- initial and continuing calibration verification standards, interference check samples, serial dilution samples, LRS check standard, Laboratory Control Sample, and post digestion spike
- diluted and undiluted sample and all weights, dilutions, and volumes used to obtain the reported values
- duplicates
- spikes (indicating standard solutions used, final spike concentrations, and volumes involved).
- instrument used, any instrument adjustments, data corrections or other apparent anomalies on the measurement record, including all data voided or data not used and a brief written explanation
- time and date of each analysis (instrument run logs can be submitted if they contain this information)

**Daily Instrument Profile**

Detector Cross Cal: 061310
Analog Voltage: -1600
Pulse Voltage: 1000
Nebulizer Pressure: 0.89

**Maintenance:** NONE

Printed: 8/1/2011 8:05:58 PM

**Method(s)** (circle one): **ILM05.4** **SW-846** **6020** **Other** 6020A

**Operator(s):** JCF

**Date/Time** 080111/1656 to 080111/1950

**Tune Date/Time** 080111/1523

| | |
|---|---|
| ↑ | Specified element(s) fail(s) high |
| ↓ | Specified element(s) fail(s) low |
| RR | Re-run sample(s) neat |
| RR #X | Re-run at a #-fold dilution |
| #X | Sample run at a #-fold dilution (aliquot of sample diluted with acidified water) |
| L | Matrix = leachate |
| W | Matrix = water |
| S | Matrix = solid |
| B | Matrix = biological tissue |

| SDG | Matrix | Comments |
|---|---|---|
| | | |

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 1 | TUN1 | Tune | CALIB STD | | 08/01/11 | 15:23:27 | | |
| 2 | CAL1 | S0 | CALIB STD | 1 | 08/01/11 | 16:15:01 | | |
| 3 | CAL2 | S 6020-MS1 | CALIB STD | 1 | 08/01/11 | 16:16:28 | | |
| 4 | CAL3 | S 6020-MS2 | CALIB STD | 1 | 08/01/11 | 16:17:53 | | |
| 5 | CAL4 | S 6020-MS3 | CALIB STD | 1 | 08/01/11 | 16:19:19 | | |
| 6 | CAL5 | S 6020-MS4 | CALIB STD | 1 | 08/01/11 | 16:20:44 | | |
| 7 | CAL6 | S 6020-MS5 | CALIB STD | 1 | 08/01/11 | 16:22:10 | | |
| 8 | CRL1 | LLICV | ICV | 1 | 08/01/11 | 16:25:27 | | |
| 9 | ICV1 | ICV | ICV | 1 | 08/01/11 | 16:26:55 | | |
| 10 | ICB1 | ICB | ICB | 1 | 08/01/11 | 16:28:21 | | |
| 11 | IFA1 | ICSA | ICS | 1 | 08/01/11 | 16:29:48 | | |
| 12 | IFB1 | ICSAB | ICS | 1 | 08/01/11 | 16:31:13 | | |
| 13 | CRL2 | LLCCV | CCV | 1 | 08/01/11 | 16:32:40 | | |
| 14 | CCV1 | CCV | CCV | 1 | 08/01/11 | 16:34:07 | | |
| 15 | CCB1 | CCB | CCB | 1 | 08/01/11 | 16:35:32 | | |
| 16 | 1072905-BLK1 | 1072905-BLK1 | SAMPLE | 1 | 08/01/11 | 16:53:11 | | |
| 17 | 1072905-BS1 | 1072905-BS1 | SAMPLE | 1 | 08/01/11 | 16:54:37 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 18 | 1072905-BSD1 | 1072905-BSD1 | SAMPLE | 1 | 08/01/11 | 16:56:03 | | |
| 19 | 1107162-01 | 1107162-01 | SAMPLE | 1 | 08/01/11 | 16:57:28 | | |
| 20 | SRD1 | 7DUPL | CALIB STD | 5 | 08/01/11 | 16:58:54 | | |
| 21 | 1072905-PS1 | 1072905-PS1 | SAMPLE | 1 | 08/01/11 | 17:00:20 | | |
| 22 | 1107162-02 | 1107162-02 | SAMPLE | 1 | 08/01/11 | 17:01:45 | | |
| 23 | 1107163-01 | 1107163-01 | SAMPLE | 1 | 08/01/11 | 17:03:11 | | |
| 24 | SRD2 | 7DUPL | CALIB STD | 5 | 08/01/11 | 17:04:36 | | |
| 25 | 1072905-PS2 | 1072905-PS2 | SAMPLE | 1 | 08/01/11 | 17:06:02 | | |
| 26 | CCV2 | CCV | CCV | 1 | 08/01/11 | 17:07:29 | | |
| 27 | CCB2 | CCB | CCB | 1 | 08/01/11 | 17:08:55 | | |
| 28 | 1107163-02 | 1107163-02 | SAMPLE | 1 | 08/01/11 | 17:10:23 | | |
| 29 | 1107164-01 | 1107164-01 | SAMPLE | 1 | 08/01/11 | 17:11:48 | | |
| 30 | SRD3 | 5WC21L | CALIB STD | 5 | 08/01/11 | 17:13:14 | | |
| 31 | 1072905-PS3 | 1072905-PS3 | SAMPLE | 1 | 08/01/11 | 17:14:40 | | |
| 32 | 1107164-02 | 1107164-02 | SAMPLE | 1 | 08/01/11 | 17:16:05 | | |
| 33 | 1107165-01 | 1107165-01 | SAMPLE | 1 | 08/01/11 | 17:17:31 | | |
| 34 | SRD4 | 5WC21L | CALIB STD | 5 | 08/01/11 | 17:18:56 | | |
| 35 | 1072905-PS4 | 1072905-PS4 | SAMPLE | 1 | 08/01/11 | 17:20:22 | | |
| 36 | 1107165-02 | 1107165-02 | SAMPLE | 1 | 08/01/11 | 17:21:48 | | |
| 37 | CRL3 | LLCCV | CCV | 1 | 08/01/11 | 17:23:15 | | |
| 38 | CCV3 | CCV | CCV | 1 | 08/01/11 | 17:24:42 | | |
| 39 | CCB3 | CCB | CCB | 1 | 08/01/11 | 17:26:07 | | |
| 40 | 1071512-BLK1 | 1071512-BLK1 | SAMPLE | 1 | 08/01/11 | 17:34:50 | | |
| 41 | 1071512-BS1 | 1071512-BS1 | SAMPLE | 1 | 08/01/11 | 17:36:16 | | |
| 42 | 1107053-01 | 1107053-01 | SAMPLE | 1 | 08/01/11 | 17:37:41 | | |
| 43 | 1071512-DUP1 | 1071512-DUP1 | SAMPLE | 1 | 08/01/11 | 17:39:07 | | |
| 44 | 1071512-MS1 | 1071512-MS1 | SAMPLE | 1 | 08/01/11 | 17:40:33 | | |
| 45 | 1071512-MSD1 | 1071512-MSD1 | SAMPLE | 1 | 08/01/11 | 17:41:58 | | |
| 46 | SRD5 | 80SB04-00L | CALIB STD | 5 | 08/01/11 | 17:43:24 | | |
| 47 | 1071512-PS1 | 1071512-PS1 | SAMPLE | 1 | 08/01/11 | 17:44:50 | | |
| 48 | 1107053-02 | 1107053-02 | SAMPLE | 1 | 08/01/11 | 17:46:15 | | |
| 49 | 1107053-03 | 1107053-03 | SAMPLE | 1 | 08/01/11 | 17:47:41 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 50 | CCV4 | CCV | CCV | 1 | 08/01/11 | 17:49:08 | | |
| 51 | CCB4 | CCB | CCB | 1 | 08/01/11 | 17:50:34 | | |
| 52 | 1107053-04 | 1107053-04 | SAMPLE | 1 | 08/01/11 | 17:52:03 | | |
| 53 | 1107053-05 | 1107053-05 | SAMPLE | 1 | 08/01/11 | 17:53:29 | | |
| 54 | 1107053-06 | 1107053-06 | SAMPLE | 1 | 08/01/11 | 17:54:56 | | |
| 55 | 1107053-07 | 1107053-07 | SAMPLE | 1 | 08/01/11 | 17:56:22 | | |
| 56 | 1107053-08 | 1107053-08 | SAMPLE | 1 | 08/01/11 | 17:57:48 | | |
| 57 | 1107053-09 | 1107053-09 | SAMPLE | 1 | 08/01/11 | 17:59:14 | | |
| 58 | 1107053-10 | 1107053-10 | SAMPLE | 1 | 08/01/11 | 18:00:39 | | |
| 59 | 1107053-11 | 1107053-11 | SAMPLE | 1 | 08/01/11 | 18:02:05 | | |
| 60 | 1107053-12 | 1107053-12 | SAMPLE | 1 | 08/01/11 | 18:03:31 | | |
| 61 | CRL4 | LLCCV | CCV | 1 | 08/01/11 | 18:04:58 | | |
| 62 | CCV5 | CCV | CCV | 1 | 08/01/11 | 18:06:25 | | |
| 63 | CCB5 | CCB | CCB | 1 | 08/01/11 | 18:07:48 | | |
| 64 | 1107053-13 | 1107053-13 | SAMPLE | 1 | 08/01/11 | 18:14:51 | | |
| 65 | 1107053-14 | 1107053-14 | SAMPLE | 1 | 08/01/11 | 18:16:15 | | |
| 66 | 1107053-15 | 1107053-15 | SAMPLE | 1 | 08/01/11 | 18:17:41 | | |
| 67 | 1107053-16 | 1107053-16 | SAMPLE | 1 | 08/01/11 | 18:19:06 | | |
| 68 | 1107053-17 | 1107053-17 | SAMPLE | 1 | 08/01/11 | 18:20:31 | | |
| 69 | 1107053-18 | 1107053-18 | SAMPLE | 1 | 08/01/11 | 18:21:56 | | |
| 70 | 1107053-19 | 1107053-19 | SAMPLE | 1 | 08/01/11 | 18:23:22 | | |
| 71 | 1107053-20 | 1107053-20 | SAMPLE | 1 | 08/01/11 | 18:24:51 | | |
| 72 | CRL5 | LLCCV | CCV | 1 | 08/01/11 | 18:26:21 | | |
| 73 | CCV6 | CCV | CCV | 1 | 08/01/11 | 18:27:52 | | |
| 74 | CCB6 | CCB | CCB | 1 | 08/01/11 | 18:29:21 | | |
| 75 | 1072007-BLK1 | 1072007-BLK1 | SAMPLE | 1 | 08/01/11 | 18:50:18 | | |
| 76 | 1072007-BS1 | 1072007-BS1 | SAMPLE | 1 | 08/01/11 | 18:51:44 | | |
| 77 | 1107072-02 | 1107072-02 | SAMPLE | 1 | 08/01/11 | 18:53:10 | | |
| 78 | 1072007-DUP1 | 1072007-DUP1 | SAMPLE | 1 | 08/01/11 | 18:54:36 | | |
| 79 | 1072007-MS1 | 1072007-MS1 | SAMPLE | 1 | 08/01/11 | 18:56:01 | | |
| 80 | 1072007-MSD1 | 1072007-MSD1 | SAMPLE | 1 | 08/01/11 | 18:57:27 | | |
| 81 | SRD6 | 80SB07-01L | CALIB STD | 5 | 08/01/11 | 18:58:53 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 82 | 1072007-PS1 | 1072007-PS1 | SAMPLE | 1 | 08/01/11 | 19:00:19 | | |
| 83 | 1107072-01 | 1107072-01 | SAMPLE | 1 | 08/01/11 | 19:01:44 | | |
| 84 | 1107072-03 | 1107072-03 | SAMPLE | 1 | 08/01/11 | 19:03:10 | | |
| 85 | CCV7 | CCV | CCV | 1 | 08/01/11 | 19:04:38 | | |
| 86 | CCB7 | CCB | CCB | 1 | 08/01/11 | 19:06:03 | | |
| 87 | 1107072-04 | 1107072-04 | SAMPLE | 1 | 08/01/11 | 19:07:31 | | |
| 88 | 1107072-05 | 1107072-05 | SAMPLE | 1 | 08/01/11 | 19:08:57 | | |
| 89 | 1107072-06 | 1107072-06 | SAMPLE | 1 | 08/01/11 | 19:10:23 | | |
| 90 | 1107072-07 | 1107072-07 | SAMPLE | 1 | 08/01/11 | 19:11:49 | | |
| 91 | 1107072-08 | 1107072-08 | SAMPLE | 1 | 08/01/11 | 19:13:14 | | |
| 92 | 1107072-09 | 1107072-09 | SAMPLE | 1 | 08/01/11 | 19:14:40 | | |
| 93 | 1107072-10 | 1107072-10 | SAMPLE | 1 | 08/01/11 | 19:16:06 | | |
| 94 | 1107072-11 | 1107072-11 | SAMPLE | 1 | 08/01/11 | 19:17:32 | | |
| 95 | 1107072-12 | 1107072-12 | SAMPLE | 1 | 08/01/11 | 19:18:58 | | |
| 96 | CRL6 | LLCCV | CCV | 1 | 08/01/11 | 19:20:25 | | |
| 97 | CCV8 | CCV | CCV | 1 | 08/01/11 | 19:21:52 | | |
| 98 | CCB8 | CCB | CCB | 1 | 08/01/11 | 19:23:18 | | |
| 99 | 1107072-13 | 1107072-13 | SAMPLE | 1 | 08/01/11 | 19:27:25 | | |
| 100 | 1072029-BLK1 | 1072029-BLK1 | SAMPLE | 1 | 08/01/11 | 19:28:52 | | |
| 101 | 1072029-BS1 | 1072029-BS1 | SAMPLE | 1 | 08/01/11 | 19:30:18 | | |
| 102 | 1107060-04 | 1107060-04 | SAMPLE | 1 | 08/01/11 | 19:31:44 | | |
| 103 | 1072029-DUP1 | 1072029-DUP1 | SAMPLE | 1 | 08/01/11 | 19:33:10 | | |
| 104 | 1072029-MS1 | 1072029-MS1 | SAMPLE | 1 | 08/01/11 | 19:34:36 | | |
| 105 | 1072029-MSD1 | 1072029-MSD1 | SAMPLE | 1 | 08/01/11 | 19:36:03 | | |
| 106 | SRD7 | 80SD02L | CALIB STD | 5 | 08/01/11 | 19:37:29 | | |
| 107 | 1072029-PS1 | 1072029-PS1 | SAMPLE | 1 | 08/01/11 | 19:38:55 | | |
| 108 | 1107060-01 | 1107060-01 | SAMPLE | 1 | 08/01/11 | 19:40:21 | | |
| 109 | CCV9 | CCV | CCV | 1 | 08/01/11 | 19:41:49 | | |
| 110 | CCB9 | CCB | CCB | 1 | 08/01/11 | 19:43:15 | | |
| 111 | 1107060-02 | 1107060-02 | SAMPLE | 1 | 08/01/11 | 19:44:43 | | |
| 112 | 1107060-03 | 1107060-03 | SAMPLE | 1 | 08/01/11 | 19:46:09 | | |
| 113 | CRL7 | LLCCV | CCV | 1 | 08/01/11 | 19:47:37 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 114 | CCVA | CCV | CCV | 1 | 08/01/11 | 19:49:04 | | |
| 115 | CCBA | CCB | CCB | 1 | 08/01/11 | 19:50:29 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

## Standards/QC Preparation for ICP-MS (PEMS) 1 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

STANDARDS and REAGENTS TRACEABILITY Seq. File Name: PEMS1460801l1

| STANDARD / REAGENT | Reference # * | Manufacturer | Lot # | Expiration Date |
|---|---|---|---|---|
| Nitric Acid (HNO3) | HNO3-052111-JRR | JT Baker | J45042 | 11/11 |
| Hydrochloric Acid (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| ICP-MS-TS-3 ( Pre Tune Soln) | 0I15015 | High Purity | 1006907 | 09/13/11 |
| Q-6042-M (CAL Standard) | 0B18009 | NSI | 020310 | 02/28/12 |
| ICV-1 (0307) multi-element solution | 0C27004 | EPA | 0307 | 03/27/13 |
| SM-770-032 (CP-MS-CRQL-Rev multi-element solution) | 0J19006 | High Purity | 1028534 | 10/13/11 |
| ICSA (0803) multi-element solution | 0E20022 | EPA | 0803 | 05/20/15 |
| ICSAB (0803) multi-element solution | 0E20021 | EPA | 0803 | 05/20/15 |
| LITHIUM$^{6}$ ($Li^{6}$) 1000 mg/L single element standard | 0B16007 | High Purity | 0912001 | 07/20/11 |
| SCANDIUM (Sc) 1,000 mg/L single element standard | 0F14006 | High Purity | 0922308 | 12/09/11 |
| INDIUM (In) 1,000 mg/L single element standard | 0F14004 | High Purity | 1008216 | 12/09/11 |
| TERBIUM (Tb) 1,000 mg/L single element standard | 0F14005 | High Purity | 1011601 | 12/09/11 |
| BISMUTH (Bi) 1,000 mg/L single element standard | 0B16008 | High Purity | 1000418 | 07/20/11 |
| Water Spike Sample D ICP-MS Matrix Spike multi-element solution | 0I16003 | High Purity | 1034815 | 12/14/11 |

*Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

## Multi-Element Stock Standard Concentrations:

| Stock Standard | Analyte Concentrations (µg/mL) |
|---|---|
| Pre Tune Solution | Be: 10 Mg: 10 Co: 10 In: 10 Pb: 10 |
| CAL standard | Al: 1000 Sb: 100 As: 100 Ba: 100 Be: 100 B: 100 Cd: 100 Ca: 1000 Cr: 100 Co: 100 Cu: 100 Fe: 1000 Pb: 100 Mg: 1000 Mn: 100 Mo: 100 Ni: 100 K: 1000 Se: 100 Si: 100 Ag: 100 Na: 1000 Tl: 100 Ti: 100 V: 100 Zn: 100 Sn: 100 Sr: 100 |
| CP-MS-CRQL-Rev multi-element solution | Be: 1 V: 5 Cr: 2 Mn: 1 Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Ag: 1 Cd: 1 Sb: 2 Ba: 10 Tl: 1 Pb: 1 Al: 30 Sn: 1 Mo: 1 |

Entered By: _____

Reviewed By: _____ Date: 8-1-11

# Standards/QC Preparation for ICP-MS (PEMS) 2 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| Instrument Tune Solution– 06 23 11- JCF | Place in a 500-mLvolumetric flask:<br>0.5 mL of PRE-Tuning solution and 5 mL distilled nitric acid. Dilute to volume with deionized water | $Li^7$: 10 Be: 10 Mg: 10 Co: 10 In: 10<br>Ce: 10 Pb: 10 U: 10 |
| Internal Standard– 05 26 11 – JCF | Place in a 100-mLvolumetric flask:<br>50 mL of deionized water , 1.0 mL of distilled nitric acid.<br>Pipet: 2.0 mL of $Lithium^6$, 1.0 mL of Scandium, 1.0 mL of Indium, 1.0 mL of Terbium, and 1.0 mL of Bismuth.<br>Dilute to volume with deionized water | $Li^6$: 20000 Sc: 10000 In: 10000 Tb: 10000 Bi: 10000 |
| S0/ICB/CCB– 08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1mL Internal Standard. Dilute to volume with deionized water. Prepare Daily. | $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| S 6020-MS1/LLICV/LLCCV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 1 Al: 30 Sc: 100 V: 5 Cr: 2 Mn: 1 Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Mo: 1 Ag: 1 Cd: 1 In: 100 Sn: 1 Sb: 2 Ba: 10 Tb: 100 Tl: 1 Pb: 1 Bi: 100 |
| S 6020-MS2 –08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>Pipet 1.0 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water. | $Li^6$: 200 Be: 2 Al: 60 Sc: 100 V: 10 Cr: 4 Mn: 2 Co: 2 Ni: 2 Cu: 4 Zn: 4 As: 2 Se: 10 Mo: 2 Ag: 2 Cd: 2 In: 100 Sn: 2 Sb: 4 Ba: 20 Tb: 100 Tl: 2 Pb: 2 Bi: 100 |
| S 6020-MS3–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.125 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 125 Al: 1250 Sc: 100 V: 125 Cr: 125 Mn: 125 Co: 125 Ni: 125 Cu: 125 Zn: 125 As: 125 Se: 125 Mo: 125 Ag: 125 Cd: 125 In: 100 Sn: 125 Sb: 125 Ba: 125 Tb: 100 Tl: 125 Pb: 125<br>Bi: 100 Al: 1250 Ca: 1250 Na: 1250 Mg: 1250 Fe: 1250 K: 1250 |
| S 6020-MS4–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.250 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 250 Al: 2500 Sc: 100 V: 250 Cr: 250 Mn: 250 Co: 250 Ni: 250 Cu: 250 Zn: 250 As: 250 Se: 250 Mo: 250 Ag: 250 Cd: 250 In: 100 Sn: 250 Sb: 250 Ba: 250 Tb: 100 Tl: 250 Pb: 250<br>Bi: 100 Al: 2500 Ca: 2500 Na: 2500 Mg: 2500 Fe: 2500 K: 2500 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: JCF

Entered By: JCF Date: 080111

Reviewed By: JCF Date: 8-1-11

032910:jad

# Standards/QC Preparation for ICP-MS (PEMS) 3 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| S 6020-MS5–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.50 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 500 Al: 5000 Sc: 100 V: 500 Cr: 500 Mn: 500 Co: 500 Ni: 500 Cu: 500 Zn: 500 As: 500 Se: 500 Mo: 500 Ag: 500 Cd: 500 In: 100 Sn: 500 Sb: 500 Ba: 500 Tb: 100 Tl: 500 Pb: 500 Bi: 100 Al: 5000 Ca: 5000 Na: 5000 Mg: 5000 Fe: 5000 K: 5000 |
| ICV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 4.0 ml of ICV (0307) multi-element solution, 2.2 mL of 10 µg/mL Molybdenum and 2.2 mL of 10 µg/mL Tin into flask.<br>Dilute to volume with deionized water. (Note: Tin must be from a source different than that used for the calibration standards) | Al: 504 Sb: 199 As: 200 Ba: 99 Be: 99 Ca: 2005 Cr: 98 Co: 100 Cu: 98 Fe: 1016 Pb: 200 Mg: 1215 Mn: 100 Ni: 101 K: 2004 Se: 206 Ag: 100 Na: 2019 Tl: 206 V: 100 Zn: 205 Cd: 99 $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 Mo: 110 Sn: 110 |
| ICSA– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) into flask.<br>Dilute to volume with deionized water. | Al: 100000 Sb: 1.5 As 0.1 Ba: 1.2 Be: 0 Cd: 0.7 Ca: 100000 C: 200000 Cl: 1000000 Cr: 21 Co: 1 Cu: 8 Fe: 10000 Pb: 4 Mg: 100000 Mn: 7 Mo: 2000 Ni: 6 P: 100000 K: 10000 Se: 0.3 Ag: 0 Na: 100000 S: 100000 Tl: 0 Ti: 2000 V: 0.5 Zn: 11, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| ICSAB– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) and 20.0 mL of ICS Part B (0803) and 0.400 mL of 10 µg/mL Tin into flask. Dilute to volume with deionized water. | Al: 100000 Sb: 22 As 19 Ba: 22 Be: 19 Cd: 20 Ca: 100000 C: 200000 Cl: 1000000 Cr: 40 Co: 20 Cu: 25 Fe: 10000 Pb: 25 Mg: 100000 Mn: 27 Mo: 2000 Ni: 24 P: 100000 K: 10000 Se: 19 Ag: 18 Na: 100000 S: 100000 Tl: 21 Ti: 2000 V: 19 Zn: 29, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| CCV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 0.600 mL of CAL Standard.<br>Dilute to volume with deionized water. | $Li^6$: 200 Be: 300 Sc: 100 V: 300 Cr: 300 Mn: 300 Co: 300 Ni: 300 Cu: 300 Zn: 300 As: 300 Se: 300 Mo: 300 Ag: 300 Cd: 300 In: 100 Sn: 300 Sb: 300 Ba: 300 Tb: 100 Tl: 300 Pb: 300 Bi: 100 Al: 3000 Na: 3000 Ca: 3000 K:3000 Mg: 3000 Fe: 3000 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: _____

Entered By: _____ Date: 080111

Reviewed By: _____ Date: 8-1-11

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

# QUANTITATIVE ANALYSIS REPORT

Calibration File: PEMSJCF 080111
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS5.1440
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Sample Date/Time: Monday, August 01, 2011 16:22:10

## Calibration Report

| Analyte | Mass | Curve Type | Slope | Intercept | Corr Coeff |
|---|---|---|---|---|---|
| Li | 6 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Be | 9 | Linear Thru Zero | 0.0005078 | 0.0000000 | 0.9999768 |
| Sc | 45 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| V | 51 | Linear Thru Zero | 0.0031773 | 0.0000000 | 0.9999808 |
| Cr | 52 | Linear Thru Zero | 0.0026032 | 0.0000000 | 0.9999686 |
| Mn | 55 | Linear Thru Zero | 0.0040009 | 0.0000000 | 0.9999068 |
| Co | 59 | Linear Thru Zero | 0.0031583 | 0.0000000 | 0.9999599 |
| Ni | 60 | Linear Thru Zero | 0.0008093 | 0.0000000 | 0.9998784 |
| Cu | 63 | Linear Thru Zero | 0.0017967 | 0.0000000 | 0.9999463 |
| Cu | 65 | Linear Thru Zero | 0.0008658 | 0.0000000 | 0.9999766 |
| Zn | 66 | Linear Thru Zero | 0.0004987 | 0.0000000 | 0.9999706 |
| As | 75 | Linear Thru Zero | 0.0007008 | 0.0000000 | 0.9999835 |
| Se | 82 | Linear Thru Zero | 0.0000551 | 0.0000000 | 0.9999661 |
| Ag | 107 | Linear Thru Zero | 0.0013112 | 0.0000000 | 0.9999938 |
| Ag | 109 | Linear Thru Zero | 0.0012742 | 0.0000000 | 0.9999786 |
| Cd | 111 | Linear Thru Zero | 0.0003304 | 0.0000000 | 0.9999603 |
| In | 113 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| In | 115 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Sb | 121 | Linear Thru Zero | 0.0009770 | 0.0000000 | 0.9999849 |
| Ba | 135 | Linear Thru Zero | 0.0001933 | 0.0000000 | 0.9999800 |
| Ba | 137 | Linear Thru Zero | 0.0003364 | 0.0000000 | 0.9999871 |
| Tb | 159 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Tl | 205 | Linear Thru Zero | 0.0033204 | 0.0000000 | 0.9999781 |
| Pb | 206 | Linear Thru Zero | 0.0010927 | 0.0000000 | 0.9999699 |
| Pb | 207 | Linear Thru Zero | 0.0020134 | 0.0000000 | 0.9999527 |
| Pb | 208 | Linear Thru Zero | 0.0031972 | 0.0000000 | 0.9999689 |
| Bi | 209 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |

# 6020A TUNING REPORT SUMMARY

## Sample ID: TUNE

Sample Date/Time: Monday, August 01, 2011 15:23:27
Sample Description: 100 PPB TUNING SOLN @ 10% PEAK HEIGHT
Number of Replicates: 5
Sample File: C:\Elandata1\Sample\021311.sam
Method File: C:\Elandata1\Method\6020\6020ATUNE.mth
Dataset File: C:\Elandata\Dataset\Default\TUNE.3433

## Tuning File

| Analyte | Exact Mass | Measured Mass | Measured Peak Width |
|---|---|---|---|
| Be | 9.012 | 8.975 | 0.717 |
| Mg | 23.985 | 24.075 | 0.677 |
| Mg | 24.986 | 24.975 | 0.680 |
| Mg | 25.983 | 26.025 | 0.709 |
| Co | 58.933 | 58.925 | 0.706 |
| In | 112.904 | 112.975 | 0.670 |
| In | 114.904 | 114.975 | 0.691 |
| Pb | 205.975 | 206.025 | 0.703 |
| Pb | 206.976 | 206.975 | 0.701 |
| Pb | 207.977 | 207.975 | 0.706 |

*Concentration Results*

| Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|---|
| Be | 9 | 7484.760 | 1.264 |
| Mg | 24 | 68188.259 | 1.594 |
| Mg | 25 | 10528.060 | 1.272 |
| Mg | 26 | 12959.393 | 1.432 |
| Co | 59 | 172579.951 | 1.376 |
| In | 113 | 15498.345 | 1.594 |
| In | 115 | 367504.540 | 1.374 |
| Pb | 206 | 106868.890 | 1.869 |
| Pb | 207 | 89477.547 | 1.766 |
| Pb | 208 | 218828.099 | 2.234 |

## RAW DATA

Replicate 1

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7587.277 |
| Mg | 24 | 69934.288 |
| Mg | 25 | 10760.787 |
| Mg | 26 | 13251.174 |
| Co | 59 | 176483.906 |
| In | 113 | 15909.448 |
| In | 115 | 375958.313 |
| Pb | 206 | 110368.922 |

| | | |
|---|---|---|
| Pb | 207 | 92223.911 |
| Pb | 208 | 227507.679 |

Replicate 2

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7349.500 |
| Mg | 24 | 67006.142 |
| Mg | 25 | 10432.239 |
| Mg | 26 | 12778.960 |
| Co | 59 | 170641.408 |
| In | 113 | 15260.237 |
| In | 115 | 364485.734 |
| Pb | 206 | 105489.078 |
| Pb | 207 | 88450.250 |
| Pb | 208 | 216123.501 |

Replicate 3

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7442.769 |
| Mg | 24 | 67665.157 |
| Mg | 25 | 10518.929 |
| Mg | 26 | 12889.502 |
| Co | 59 | 170721.151 |
| In | 113 | 15367.792 |
| In | 115 | 363043.934 |
| Pb | 206 | 105740.917 |
| Pb | 207 | 88395.570 |
| Pb | 208 | 216059.541 |

Replicate 4

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7557.054 |
| Mg | 24 | 68112.579 |
| Mg | 25 | 10472.881 |
| Mg | 26 | 13023.075 |
| Co | 59 | 172745.677 |
| In | 113 | 15493.521 |
| In | 115 | 366287.591 |
| Pb | 206 | 106242.794 |
| Pb | 207 | 89248.092 |
| Pb | 208 | 217514.987 |

Replicate 5

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7487.202 |
| Mg | 24 | 68223.129 |
| Mg | 25 | 10455.463 |
| Mg | 26 | 12854.256 |
| Co | 59 | 172307.615 |
| In | 113 | 15460.726 |
| In | 115 | 367747.127 |
| Pb | 206 | 106502.738 |
| Pb | 207 | 89069.914 |
| Pb | 208 | 216934.786 |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S0

Sample Date/Time: Monday, August 01, 2011 16:15:01
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S0.1435

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196257.027 | 2.133 | | | | ppb |
| ⌊ | Be | 9 | 4.000 | 50.000 | | | | ppb |
| ⌈> | Sc | 45 | 705866.466 | 0.132 | | | | ppb |
| \| | V | 51 | 894.616 | 14.304 | | | | ppb |
| \| | Cr | 52 | 1814.831 | 2.456 | | | | ppb |
| \| | Mn | 55 | 271.670 | 13.058 | | | | ppb |
| \| | Co | 59 | 29.333 | 3.936 | | | | ppb |
| \| | Ni | 60 | 66.667 | 30.414 | | | | ppb |
| \| | Cu | 63 | 117.778 | 11.438 | | | | ppb |
| \| | Cu | 65 | 104.445 | 18.148 | | | | ppb |
| \| | Zn | 66 | 111.112 | 11.358 | | | | ppb |
| \| | As | 75 | 11.567 | 67.529 | | | | ppb |
| ⌊ | Se | 82 | 41.333 | 17.742 | | | | ppb |
| ⌈ | Ag | 107 | 8.889 | 43.301 | | | | ppb |
| \| | Ag | 109 | 16.667 | 34.641 | | | | ppb |
| \| | Cd | 111 | 4.213 | 246.361 | | | | ppb |
| \| | In | 113 | 61325.854 | 2.055 | | | | ppb |
| ⌊> | In | 115 | 1396658.620 | 0.917 | | | | ppb |
| ⌈ | Sb | 121 | 56.667 | 10.189 | | | | ppb |
| \| | Ba | 135 | 10.000 | 52.915 | | | | ppb |
| \| | Ba | 137 | 18.667 | 22.304 | | | | ppb |
| ⌊> | Tb | 159 | 1860316.330 | 1.365 | | | | ppb |
| ⌈ | Tl | 205 | 25.000 | 72.111 | | | | ppb |
| \| | Pb | 206 | 30.000 | 66.667 | | | | ppb |
| \| | Pb | 207 | 48.333 | 36.330 | | | | ppb |
| \| | Pb | 208 | 73.334 | 25.813 | | | | ppb |
| ⌊> | Bi | 209 | 1170287.070 | 1.208 | | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199524.847 | | ppb |
| ⌊ | Be | 9 | 4.000 | | ppb |
| ⌈> | Sc | 45 | 705401.988 | | ppb |
| \| | V | 51 | 790.317 | | ppb |
| \| | Cr | 52 | 1866.174 | | ppb |
| \| | Mn | 55 | 265.004 | | ppb |
| \| | Co | 59 | 28.000 | | ppb |
| \| | Ni | 60 | 56.667 | | ppb |
| \| | Cu | 63 | 130.001 | | ppb |
| \| | Cu | 65 | 110.001 | | ppb |
| \| | Zn | 66 | 96.667 | | ppb |
| \| | As | 75 | 6.173 | | ppb |
| ⌊ | Se | 82 | 41.333 | | ppb |
| ⌈ | Ag | 107 | 6.667 | | ppb |
| \| | Ag | 109 | 13.333 | | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -3.090 | | ppb |
| | In | 113 | 62766.365 | | ppb |
| > | In | 115 | 1411138.136 | | ppb |
| | Sb | 121 | 60.000 | | ppb |
| | Ba | 135 | 14.000 | | ppb |
| | Ba | 137 | 22.000 | | ppb |
| > | Tb | 159 | 1889633.562 | | ppb |
| | Tl | 205 | 10.000 | | ppb |
| | Pb | 206 | 30.000 | | ppb |
| | Pb | 207 | 50.000 | | ppb |
| | Pb | 208 | 95.000 | | ppb |
| > | Bi | 209 | 1169739.234 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197707.277 | | ppb |
| | Be | 9 | 6.000 | | ppb |
| > | Sc | 45 | 706940.112 | | ppb |
| | V | 51 | 856.119 | | ppb |
| | Cr | 52 | 1786.160 | | ppb |
| | Mn | 55 | 310.005 | | ppb |
| | Co | 59 | 30.000 | | ppb |
| | Ni | 60 | 53.333 | | ppb |
| | Cu | 63 | 103.334 | | ppb |
| | Cu | 65 | 120.001 | | ppb |
| | Zn | 66 | 116.667 | | ppb |
| | As | 75 | 8.003 | | ppb |
| | Se | 82 | 34.000 | | ppb |
| | Ag | 107 | 6.667 | | ppb |
| | Ag | 109 | 23.333 | | ppb |
| | Cd | 111 | -0.365 | | ppb |
| | In | 113 | 60784.176 | | ppb |
| > | In | 115 | 1386805.352 | | ppb |
| | Sb | 121 | 50.000 | | ppb |
| | Ba | 135 | 4.000 | | ppb |
| | Ba | 137 | 20.000 | | ppb |
| > | Tb | 159 | 1846266.186 | | ppb |
| | Tl | 205 | 20.000 | | ppb |
| | Pb | 206 | 10.000 | | ppb |
| | Pb | 207 | 30.000 | | ppb |
| | Pb | 208 | 65.000 | | ppb |
| > | Bi | 209 | 1184695.858 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191538.958 | | ppb |
| | Be | 9 | 2.000 | | ppb |
| > | Sc | 45 | 705257.298 | | ppb |
| | V | 51 | 1037.412 | | ppb |
| | Cr | 52 | 1792.161 | | ppb |
| | Mn | 55 | 240.003 | | ppb |
| | Co | 59 | 30.000 | | ppb |
| | Ni | 60 | 90.000 | | ppb |
| | Cu | 63 | 120.001 | | ppb |
| | Cu | 65 | 83.334 | | ppb |
| | Zn | 66 | 120.001 | | ppb |
| | As | 75 | 20.524 | | ppb |
| | Se | 82 | 48.667 | | ppb |
| | Ag | 107 | 13.333 | | ppb |
| | Ag | 109 | 13.333 | | ppb |
| | Cd | 111 | 16.095 | | ppb |
| | In | 113 | 60427.021 | | ppb |
| > | In | 115 | 1392032.372 | | ppb |
| | Sb | 121 | 60.000 | | ppb |

| | | | | |
|---|---|---|---|---|
| \| | Ba | 135 | 12.000 | ppb |
| \| | Ba | 137 | 14.000 | ppb |
| _> | Tb | 159 | 1845049.243 | ppb |
| ⌈ | Tl | 205 | 45.000 | ppb |
| \| | Pb | 206 | 50.000 | ppb |
| \| | Pb | 207 | 65.000 | ppb |
| \| | Pb | 208 | 60.000 | ppb |
| _> | Bi | 209 | 1156426.119 | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS1

Sample Date/Time: Monday, August 01, 2011 16:16:28
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS1.1436

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198525.012 | 1.853 | 198525.012 | | | ppb |
| ⌊ | Be | 9 | 102.667 | 18.719 | 0.000 | 1.00000 | 19.71 | ppb |
| ⌈> | Sc | 45 | 713414.351 | 1.362 | 713414.351 | | | ppb |
| \| | V | 51 | 11918.411 | 4.277 | 0.015 | 5.00000 | 4.18 | ppb |
| \| | Cr | 52 | 5570.218 | 1.224 | 0.005 | 2.00000 | 3.36 | ppb |
| \| | Mn | 55 | 2947.101 | 1.443 | 0.004 | 1.00000 | 1.50 | ppb |
| \| | Co | 59 | 2416.959 | 2.851 | 0.003 | 1.00000 | 3.19 | ppb |
| \| | Ni | 60 | 568.905 | 2.368 | 0.001 | 1.00000 | 2.21 | ppb |
| \| | Cu | 63 | 2775.941 | 4.717 | 0.004 | 2.00000 | 5.78 | ppb |
| \| | Cu | 65 | 1333.422 | 2.704 | 0.002 | 2.00000 | 4.36 | ppb |
| \| | Zn | 66 | 896.707 | 2.904 | 0.001 | 2.00000 | 4.63 | ppb |
| \| | As | 75 | 533.492 | 9.180 | 0.001 | 1.00000 | 9.14 | ppb |
| ⌊ | Se | 82 | 238.003 | 3.030 | 0.000 | 5.00000 | 4.54 | ppb |
| ⌈ | Ag | 107 | 1913.516 | 1.597 | 0.001 | 1.00000 | 0.61 | ppb |
| \| | Ag | 109 | 1827.945 | 4.484 | 0.001 | 1.00000 | 4.47 | ppb |
| \| | Cd | 111 | 459.768 | 6.785 | 0.000 | 1.00000 | 6.19 | ppb |
| \| | In | 113 | 61516.992 | 1.310 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1396367.322 | 0.996 | 1396367.322 | | | ppb |
| ⌈ | Sb | 121 | 3767.377 | 4.476 | 0.002 | 2.00000 | 5.15 | ppb |
| \| | Ba | 135 | 3599.314 | 1.644 | 0.002 | 10.00000 | 2.03 | ppb |
| \| | Ba | 137 | 6245.950 | 1.083 | 0.003 | 10.00000 | 1.08 | ppb |
| ⌊> | Tb | 159 | 1875080.570 | 0.585 | 1875080.570 | | | ppb |
| ⌈ | Tl | 205 | 3884.088 | 2.898 | 0.003 | 1.00000 | 2.89 | ppb |
| \| | Pb | 206 | 1261.746 | 4.009 | 0.001 | 1.00000 | 4.28 | ppb |
| \| | Pb | 207 | 2358.473 | 5.850 | 0.002 | 1.00000 | 6.15 | ppb |
| \| | Pb | 208 | 3795.425 | 2.440 | 0.003 | 1.00000 | 2.68 | ppb |
| ⌊> | Bi | 209 | 1193452.930 | 0.185 | 1193452.930 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 200726.539 | | ppb |
| ⌊ | Be | 9 | 82.000 | 0.780810 | ppb |
| ⌈> | Sc | 45 | 722752.624 | | ppb |
| \| | V | 51 | 11848.398 | 4.899011 | ppb |
| \| | Cr | 52 | 5575.554 | 1.963765 | ppb |
| \| | Mn | 55 | 2945.434 | 0.985078 | ppb |
| \| | Co | 59 | 2372.281 | 0.968325 | ppb |
| \| | Ni | 60 | 583.350 | 1.013771 | ppb |
| \| | Cu | 63 | 2637.014 | 1.869080 | ppb |
| \| | Cu | 65 | 1293.417 | 1.906876 | ppb |
| \| | Zn | 66 | 866.704 | 1.894230 | ppb |
| \| | As | 75 | 574.782 | 1.064964 | ppb |
| ⌊ | Se | 82 | 240.003 | 4.970628 | ppb |
| ⌈ | Ag | 107 | 1886.845 | 0.994260 | ppb |
| \| | Ag | 109 | 1880.177 | 1.037442 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 460.740 | 1.010774 | ppb |
| | In | 113 | 62439.327 | | ppb |
| > | In | 115 | 1384870.298 | | ppb |
| | Sb | 121 | 3630.659 | 1.916375 | ppb |
| | Ba | 135 | 3612.652 | 9.987509 | ppb |
| | Ba | 137 | 6209.928 | 9.893417 | ppb |
| > | Tb | 159 | 1884268.330 | | ppb |
| | Tl | 205 | 3795.720 | 0.978870 | ppb |
| | Pb | 206 | 1320.087 | 1.049266 | ppb |
| | Pb | 207 | 2515.159 | 1.069735 | ppb |
| | Pb | 208 | 3885.433 | 1.026035 | ppb |
| > | Bi | 209 | 1191311.986 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200569.434 | | ppb |
| | Be | 9 | 120.001 | 1.162593 | ppb |
| > | Sc | 45 | 714129.988 | | ppb |
| | V | 51 | 12459.568 | 5.240303 | ppb |
| | Cr | 52 | 5499.512 | 1.958673 | ppb |
| | Mn | 55 | 2990.447 | 1.015037 | ppb |
| | Co | 59 | 2496.312 | 1.032062 | ppb |
| | Ni | 60 | 556.682 | 0.974513 | ppb |
| | Cu | 63 | 2897.086 | 2.088232 | ppb |
| | Cu | 65 | 1343.424 | 2.013316 | ppb |
| | Zn | 66 | 913.375 | 2.039390 | ppb |
| | As | 75 | 479.386 | 0.895446 | ppb |
| | Se | 82 | 230.003 | 4.789005 | ppb |
| | Ag | 107 | 1906.848 | 0.999388 | ppb |
| | Ag | 109 | 1733.484 | 0.950560 | ppb |
| | Cd | 111 | 428.099 | 0.933382 | ppb |
| | In | 113 | 60950.182 | | ppb |
| > | In | 115 | 1392405.114 | | ppb |
| | Sb | 121 | 3955.782 | 2.115029 | ppb |
| | Ba | 135 | 3650.666 | 10.208763 | ppb |
| | Ba | 137 | 6203.924 | 9.997319 | ppb |
| > | Tb | 159 | 1862941.221 | | ppb |
| | Tl | 205 | 4010.804 | 1.032949 | ppb |
| | Pb | 206 | 1235.076 | 0.978393 | ppb |
| | Pb | 207 | 2305.134 | 0.976933 | ppb |
| | Pb | 208 | 3800.430 | 1.001415 | ppb |
| > | Bi | 209 | 1193333.001 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194279.062 | | ppb |
| | Be | 9 | 106.001 | 1.056597 | ppb |
| > | Sc | 45 | 703360.440 | | ppb |
| | V | 51 | 11447.266 | 4.860686 | ppb |
| | Cr | 52 | 5635.588 | 2.077562 | ppb |
| | Mn | 55 | 2905.422 | 0.999885 | ppb |
| | Co | 59 | 2382.284 | 0.999614 | ppb |
| | Ni | 60 | 566.683 | 1.011716 | ppb |
| | Cu | 63 | 2793.724 | 2.042688 | ppb |
| | Cu | 65 | 1363.426 | 2.079809 | ppb |
| | Zn | 66 | 910.041 | 2.066380 | ppb |
| | As | 75 | 546.307 | 1.039590 | ppb |
| | Se | 82 | 244.003 | 5.240367 | ppb |
| | Ag | 107 | 1946.856 | 1.006352 | ppb |
| | Ag | 109 | 1870.175 | 1.011997 | ppb |
| | Cd | 111 | 490.463 | 1.055844 | ppb |
| | In | 113 | 61161.466 | | ppb |
| > | In | 115 | 1411826.555 | | ppb |
| | Sb | 121 | 3715.690 | 1.968595 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 3534.625 | 9.803727 | ppb |
| | Ba | 137 | 6323.999 | 10.109264 | ppb |
| > | Tb | 159 | 1878032.159 | | ppb |
| | Tl | 205 | 3845.739 | 0.988181 | ppb |
| | Pb | 206 | 1230.076 | 0.972341 | ppb |
| | Pb | 207 | 2255.128 | 0.953332 | ppb |
| | Pb | 208 | 3700.410 | 0.972550 | ppb |
| > | Bi | 209 | 1195713.803 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS2

Sample Date/Time: Monday, August 01, 2011 16:17:53
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS2.1437

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 195521.814 | 1.314 | 195521.814 | | | ppb |
| ⌊ | Be | 9 | 192.669 | 5.903 | 0.001 | 1.98804 | 6.20 | ppb |
| ⌈> | Sc | 45 | 715013.703 | 0.550 | 715013.703 | | | ppb |
| \| | V | 51 | 23161.809 | 0.399 | 0.031 | 10.01614 | 0.39 | ppb |
| \| | Cr | 52 | 9383.067 | 1.049 | 0.011 | 4.00577 | 1.77 | ppb |
| \| | Mn | 55 | 5679.947 | 2.928 | 0.008 | 2.00351 | 2.89 | ppb |
| \| | Co | 59 | 4676.427 | 1.563 | 0.006 | 1.98807 | 1.05 | ppb |
| \| | Ni | 60 | 1123.397 | 6.344 | 0.001 | 2.01935 | 6.76 | ppb |
| \| | Cu | 63 | 5239.150 | 2.453 | 0.007 | 3.96775 | 2.15 | ppb |
| \| | Cu | 65 | 2602.561 | 3.383 | 0.003 | 4.01102 | 2.96 | ppb |
| \| | Zn | 66 | 1574.568 | 2.763 | 0.002 | 3.94015 | 2.42 | ppb |
| \| | As | 75 | 1086.120 | 11.403 | 0.002 | 2.01059 | 11.20 | ppb |
| ⌊ | Se | 82 | 431.343 | 5.681 | 0.001 | 9.97931 | 5.76 | ppb |
| ⌈ | Ag | 107 | 3742.923 | 4.293 | 0.003 | 1.99495 | 4.12 | ppb |
| \| | Ag | 109 | 3545.073 | 2.114 | 0.003 | 1.99246 | 3.24 | ppb |
| \| | Cd | 111 | 921.839 | 9.428 | 0.001 | 2.00616 | 10.46 | ppb |
| \| | In | 113 | 62103.920 | 0.635 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1386185.506 | 1.150 | 1386185.506 | | | ppb |
| ⌈ | Sb | 121 | 7404.407 | 1.541 | 0.004 | 3.98962 | 2.74 | ppb |
| \| | Ba | 135 | 7007.123 | 3.677 | 0.004 | 19.88631 | 5.17 | ppb |
| \| | Ba | 137 | 12263.516 | 1.600 | 0.007 | 19.92085 | 3.24 | ppb |
| ⌊> | Tb | 159 | 1880801.256 | 1.682 | 1880801.256 | | | ppb |
| ⌈ | Tl | 205 | 7742.997 | 2.174 | 0.007 | 2.00666 | 4.21 | ppb |
| \| | Pb | 206 | 2545.326 | 10.850 | 0.002 | 2.01538 | 12.93 | ppb |
| \| | Pb | 207 | 4572.199 | 7.055 | 0.004 | 1.99857 | 9.08 | ppb |
| \| | Pb | 208 | 7274.917 | 2.768 | 0.006 | 1.99339 | 3.59 | ppb |
| ⌊> | Bi | 209 | 1174462.480 | 2.161 | 1174462.480 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197529.822 | | ppb |
| ⌊ | Be | 9 | 202.002 | 2.064458 | ppb |
| ⌈> | Sc | 45 | 718303.585 | | ppb |
| \| | V | 51 | 23167.188 | 9.970705 | ppb |
| \| | Cr | 52 | 9272.297 | 3.924213 | ppb |
| \| | Mn | 55 | 5856.715 | 2.059136 | ppb |
| \| | Co | 59 | 4751.128 | 2.010794 | ppb |
| \| | Ni | 60 | 1066.724 | 1.901578 | ppb |
| \| | Cu | 63 | 5244.708 | 3.953618 | ppb |
| \| | Cu | 65 | 2680.359 | 4.116731 | ppb |
| \| | Zn | 66 | 1620.131 | 4.043274 | ppb |
| \| | As | 75 | 1225.449 | 2.261304 | ppb |
| ⌊ | Se | 82 | 458.677 | 10.627785 | ppb |
| ⌈ | Ag | 107 | 3864.080 | 2.034895 | ppb |
| \| | Ag | 109 | 3480.606 | 1.931978 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 821.494 | 1.763900 | ppb |
| | In | 113 | 61689.696 | | ppb |
| > | In | 115 | 1403037.892 | | ppb |
| | Sb | 121 | 7302.665 | 3.864182 | ppb |
| | Ba | 135 | 6858.351 | 19.113502 | ppb |
| | Ba | 137 | 12039.243 | 19.207429 | ppb |
| > | Tb | 159 | 1914187.875 | | ppb |
| | Tl | 205 | 7933.145 | 2.094674 | ppb |
| | Pb | 206 | 2860.409 | 2.308258 | ppb |
| | Pb | 207 | 4940.625 | 2.200869 | ppb |
| | Pb | 208 | 7426.645 | 2.074402 | ppb |
| > | Bi | 209 | 1152225.161 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196408.049 | | ppb |
| | Be | 9 | 180.002 | 1.845762 | ppb |
| > | Sc | 45 | 716077.100 | | ppb |
| | V | 51 | 23251.416 | 10.040825 | ppb |
| | Cr | 52 | 9460.473 | 4.039205 | ppb |
| | Mn | 55 | 5526.527 | 1.943637 | ppb |
| | Co | 59 | 4673.092 | 1.983747 | ppb |
| | Ni | 60 | 1203.406 | 2.168903 | ppb |
| | Cu | 63 | 5364.772 | 4.059110 | ppb |
| | Cu | 65 | 2620.343 | 4.033777 | ppb |
| | Zn | 66 | 1570.123 | 3.922206 | ppb |
| | As | 75 | 988.517 | 1.825582 | ppb |
| | Se | 82 | 424.009 | 9.777037 | ppb |
| | Ag | 107 | 3560.634 | 1.900336 | ppb |
| | Ag | 109 | 3527.289 | 1.984824 | ppb |
| | Cd | 111 | 973.418 | 2.120426 | ppb |
| | In | 113 | 62147.517 | | ppb |
| > | In | 115 | 1384176.063 | | ppb |
| | Sb | 121 | 7382.724 | 4.040731 | ppb |
| | Ba | 135 | 7304.667 | 21.052156 | ppb |
| | Ba | 137 | 12403.688 | 20.463457 | ppb |
| > | Tb | 159 | 1851266.622 | | ppb |
| | Tl | 205 | 7612.897 | 1.926165 | ppb |
| | Pb | 206 | 2345.275 | 1.808856 | ppb |
| | Pb | 207 | 4340.474 | 1.849894 | ppb |
| | Pb | 208 | 7351.633 | 1.967181 | ppb |
| > | Bi | 209 | 1202117.668 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 192627.571 | | ppb |
| | Be | 9 | 196.002 | 2.053905 | ppb |
| > | Sc | 45 | 710660.424 | | ppb |
| | V | 51 | 23066.824 | 10.036881 | ppb |
| | Cr | 52 | 9416.431 | 4.053906 | ppb |
| | Mn | 55 | 5656.599 | 2.007742 | ppb |
| | Co | 59 | 4605.060 | 1.969678 | ppb |
| | Ni | 60 | 1100.061 | 1.987564 | ppb |
| | Cu | 63 | 5107.971 | 3.890512 | ppb |
| | Cu | 65 | 2506.981 | 3.882567 | ppb |
| | Zn | 66 | 1533.451 | 3.854967 | ppb |
| | As | 75 | 1044.395 | 1.944895 | ppb |
| | Se | 82 | 411.342 | 9.533123 | ppb |
| | Ag | 107 | 3804.057 | 2.049621 | ppb |
| | Ag | 109 | 3627.324 | 2.060571 | ppb |
| | Cd | 111 | 970.605 | 2.134144 | ppb |
| | In | 113 | 62474.546 | | ppb |
| > | In | 115 | 1371342.564 | | ppb |
| | Sb | 121 | 7527.832 | 4.063953 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 6858.351 | 19.493283 | ppb |
| | Ba | 137 | 12347.618 | 20.091658 | ppb |
| > | Tb | 159 | 1876949.270 | | ppb |
| | Tl | 205 | 7682.950 | 1.999129 | ppb |
| | Pb | 206 | 2430.295 | 1.929038 | ppb |
| | Pb | 207 | 4435.496 | 1.944960 | ppb |
| | Pb | 208 | 7046.471 | 1.938575 | ppb |
| > | Bi | 209 | 1169044.612 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS3

Sample Date/Time: Monday, August 01, 2011 16:19:19
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS3.1438

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 195336.079 | 0.671 | 195336.079 | | | ppb |
| ⌊ | Be | 9 | 12280.872 | 2.090 | 0.063 | 125.00138 | 1.49 | ppb |
| ⌈> | Sc | 45 | 702833.853 | 1.133 | 702833.853 | | | ppb |
| \| | V | 51 | 283580.002 | 1.322 | 0.402 | 125.03394 | 0.26 | ppb |
| \| | Cr | 52 | 233549.389 | 1.238 | 0.330 | 125.00021 | 0.15 | ppb |
| \| | Mn | 55 | 353821.790 | 1.674 | 0.503 | 125.00250 | 0.62 | ppb |
| \| | Co | 59 | 280376.764 | 1.476 | 0.399 | 124.99903 | 0.53 | ppb |
| \| | Ni | 60 | 72150.468 | 0.679 | 0.103 | 125.00435 | 1.35 | ppb |
| \| | Cu | 63 | 159363.144 | 0.474 | 0.227 | 125.00072 | 1.09 | ppb |
| \| | Cu | 65 | 77242.745 | 0.878 | 0.110 | 125.00138 | 0.45 | ppb |
| \| | Zn | 66 | 44350.376 | 1.896 | 0.063 | 124.99512 | 0.90 | ppb |
| \| | As | 75 | 61619.606 | 0.679 | 0.088 | 124.99738 | 0.45 | ppb |
| ⌊ | Se | 82 | 4860.514 | 0.678 | 0.007 | 125.00524 | 1.82 | ppb |
| ⌈ | Ag | 107 | 227703.466 | 1.109 | 0.163 | 124.99860 | 1.15 | ppb |
| \| | Ag | 109 | 217585.234 | 1.171 | 0.156 | 124.99900 | 0.80 | ppb |
| \| | Cd | 111 | 55714.391 | 2.201 | 0.040 | 124.99862 | 1.92 | ppb |
| \| | In | 113 | 116157.432 | 0.866 | 0.039 | | | ppb |
| ⌊> | In | 115 | 1396214.254 | 0.550 | 1396214.254 | | | ppb |
| ⌈ | Sb | 121 | 223161.567 | 2.023 | 0.122 | 124.99964 | 4.13 | ppb |
| \| | Ba | 135 | 44301.926 | 1.258 | 0.024 | 125.13496 | 1.31 | ppb |
| \| | Ba | 137 | 77196.193 | 1.479 | 0.042 | 125.12621 | 2.09 | ppb |
| ⌊> | Tb | 159 | 1827543.922 | 2.163 | 1827543.922 | | | ppb |
| ⌈ | Tl | 205 | 484243.989 | 1.457 | 0.407 | 124.99974 | 0.37 | ppb |
| \| | Pb | 206 | 160128.651 | 1.141 | 0.135 | 125.00045 | 2.07 | ppb |
| \| | Pb | 207 | 292909.493 | 0.682 | 0.246 | 125.00081 | 1.84 | ppb |
| \| | Pb | 208 | 465297.660 | 0.767 | 0.391 | 125.00065 | 0.60 | ppb |
| ⌊> | Bi | 209 | 1189832.478 | 1.167 | 1189832.478 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 195892.075 | | ppb |
| ⌊ | Be | 9 | 12479.782 | 126.673316 | ppb |
| ⌈> | Sc | 45 | 710794.466 | | ppb |
| \| | V | 51 | 286980.053 | 125.117873 | ppb |
| \| | Cr | 52 | 236282.886 | 125.048224 | ppb |
| \| | Mn | 55 | 360357.976 | 125.891241 | ppb |
| \| | Co | 59 | 283576.571 | 125.012256 | ppb |
| \| | Ni | 60 | 72417.939 | 124.050828 | ppb |
| \| | Cu | 63 | 160016.773 | 124.097806 | ppb |
| \| | Cu | 65 | 78016.479 | 124.836297 | ppb |
| \| | Zn | 66 | 45302.383 | 126.257710 | ppb |
| \| | As | 75 | 62042.817 | 124.441973 | ppb |
| ⌊ | Se | 82 | 4824.497 | 122.652714 | ppb |
| ⌈ | Ag | 107 | 225033.839 | 123.344401 | ppb |
| \| | Ag | 109 | 216413.335 | 124.139231 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 54817.061 | 122.802533 | ppb |
| | In | 113 | 116535.088 | | ppb |
| > | In | 115 | 1398330.967 | | ppb |
| | Sb | 121 | 222237.333 | 124.826409 | ppb |
| | Ba | 135 | 43884.080 | 124.350789 | ppb |
| | Ba | 137 | 78341.674 | 127.380582 | ppb |
| > | Tb | 159 | 1821429.244 | | ppb |
| | Tl | 205 | 482312.371 | 124.605597 | ppb |
| | Pb | 206 | 158516.494 | 123.825188 | ppb |
| | Pb | 207 | 293288.591 | 125.247135 | ppb |
| | Pb | 208 | 466964.540 | 125.546525 | ppb |
| > | Bi | 209 | 1188859.216 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196277.523 | | ppb |
| | Be | 9 | 12371.648 | 125.328688 | ppb |
| > | Sc | 45 | 702840.740 | | ppb |
| | V | 51 | 284199.889 | 125.308557 | ppb |
| | Cr | 52 | 233844.565 | 125.159157 | ppb |
| | Mn | 55 | 352298.283 | 124.467292 | ppb |
| | Co | 59 | 281850.796 | 125.657627 | ppb |
| | Ni | 60 | 71585.309 | 124.012197 | ppb |
| | Cu | 63 | 158536.813 | 124.341602 | ppb |
| | Cu | 65 | 76958.327 | 124.536269 | ppb |
| | Zn | 66 | 44040.097 | 124.123436 | ppb |
| | As | 75 | 61610.340 | 124.973070 | ppb |
| | Se | 82 | 4867.851 | 125.177164 | ppb |
| | Ag | 107 | 230056.199 | 125.712011 | ppb |
| | Ag | 109 | 220508.010 | 126.101665 | ppb |
| | Cd | 111 | 57111.999 | 127.553116 | ppb |
| | In | 113 | 116919.536 | | ppb |
| > | In | 115 | 1402616.936 | | ppb |
| | Sb | 121 | 219180.977 | 119.925078 | ppb |
| | Ba | 135 | 44934.730 | 124.035374 | ppb |
| | Ba | 137 | 77188.760 | 122.259419 | ppb |
| > | Tb | 159 | 1869778.590 | | ppb |
| | Tl | 205 | 492065.728 | 125.508003 | ppb |
| | Pb | 206 | 159755.986 | 123.205543 | ppb |
| | Pb | 207 | 290748.354 | 122.582169 | ppb |
| | Pb | 208 | 467728.037 | 124.151624 | ppb |
| > | Bi | 209 | 1204180.086 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193838.638 | | ppb |
| | Be | 9 | 11991.185 | 123.002122 | ppb |
| > | Sc | 45 | 694866.354 | | ppb |
| | V | 51 | 279560.063 | 124.675376 | ppb |
| | Cr | 52 | 230520.714 | 124.793254 | ppb |
| | Mn | 55 | 348809.111 | 124.648961 | ppb |
| | Co | 59 | 275702.926 | 124.327193 | ppb |
| | Ni | 60 | 72448.156 | 126.950027 | ppb |
| | Cu | 63 | 159535.847 | 126.562749 | ppb |
| | Cu | 65 | 76753.428 | 125.631566 | ppb |
| | Zn | 66 | 43708.647 | 124.604218 | ppb |
| | As | 75 | 61205.660 | 125.577102 | ppb |
| | Se | 82 | 4889.195 | 127.185852 | ppb |
| | Ag | 107 | 228020.360 | 125.939391 | ppb |
| | Ag | 109 | 215834.355 | 124.756094 | ppb |
| | Cd | 111 | 55214.112 | 124.640205 | ppb |
| | In | 113 | 115017.671 | | ppb |
| > | In | 115 | 1387694.859 | | ppb |
| | Sb | 121 | 228066.392 | 130.247441 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 44086.969 | 127.018729 | ppb |
| | Ba | 137 | 76058.146 | 125.738632 | ppb |
| > | Tb | 159 | 1791423.931 | | ppb |
| | Tl | 205 | 478353.868 | 124.885623 | ppb |
| | Pb | 206 | 162113.473 | 127.970630 | ppb |
| | Pb | 207 | 294691.533 | 127.173124 | ppb |
| | Pb | 208 | 461200.404 | 125.303814 | ppb |
| > | Bi | 209 | 1176458.131 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | | | | |
| Be | 9 | | | | | |
| Sc | 45 | | | | | |
| V | 51 | | | | | |
| Cr | 52 | | | | | |
| Mn | 55 | | | | | |
| Co | 59 | | | | | |
| Ni | 60 | | | | | |
| Cu | 63 | | | | | |
| Cu | 65 | | | | | |
| Zn | 66 | | | | | |
| As | 75 | | | | | |
| Se | 82 | | | | | |
| Ag | 107 | | | | | |
| Ag | 109 | | | | | |
| Cd | 111 | | | | | |
| In | 113 | | | | | |
| In | 115 | | | | | |
| Sb | 121 | | | | | |
| Ba | 135 | | | | | |
| Ba | 137 | | | | | |
| Tb | 159 | | | | | |
| Tl | 205 | | | | | |
| Pb | 206 | | | | | |
| Pb | 207 | | | | | |
| Pb | 208 | | | | | |
| Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS4

Sample Date/Time: Monday, August 01, 2011 16:20:44
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS4.1439

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194635.795 | 2.143 | 194635.795 | | | ppb |
| ⌊ | Be | 9 | 24399.737 | 1.742 | 0.125 | 249.86318 | 0.59 | ppb |
| ⌈> | Sc | 45 | 711490.250 | 0.568 | 711490.250 | | | ppb |
| \| | V | 51 | 559313.244 | 0.395 | 0.785 | 248.76734 | 0.95 | ppb |
| \| | Cr | 52 | 457560.195 | 1.193 | 0.641 | 248.53333 | 1.64 | ppb |
| \| | Mn | 55 | 691903.808 | 0.832 | 0.972 | 248.26601 | 0.31 | ppb |
| \| | Co | 59 | 551529.366 | 0.562 | 0.775 | 248.55087 | 1.04 | ppb |
| \| | Ni | 60 | 139399.500 | 1.637 | 0.196 | 247.65065 | 2.19 | ppb |
| \| | Cu | 63 | 312891.961 | 0.479 | 0.440 | 248.46446 | 0.83 | ppb |
| \| | Cu | 65 | 152075.718 | 2.044 | 0.214 | 248.62437 | 2.38 | ppb |
| \| | Zn | 66 | 87428.366 | 1.621 | 0.123 | 248.71940 | 2.10 | ppb |
| \| | As | 75 | 123191.764 | 0.670 | 0.173 | 249.36785 | 0.19 | ppb |
| ⌊ | Se | 82 | 9686.690 | 1.479 | 0.014 | 249.40856 | 0.97 | ppb |
| ⌈ | Ag | 107 | 448795.154 | 1.185 | 0.330 | 250.60121 | 1.03 | ppb |
| \| | Ag | 109 | 429601.650 | 1.413 | 0.316 | 250.69053 | 1.34 | ppb |
| \| | Cd | 111 | 111396.565 | 1.523 | 0.082 | 251.31099 | 0.89 | ppb |
| \| | In | 113 | 166987.760 | 0.807 | 0.079 | | | ppb |
| ⌊> | In | 115 | 1359441.598 | 0.691 | 1359441.598 | | | ppb |
| ⌈ | Sb | 121 | 443276.008 | 1.292 | 0.241 | 249.41843 | 1.52 | ppb |
| \| | Ba | 135 | 87564.438 | 1.612 | 0.048 | 249.22369 | 1.43 | ppb |
| \| | Ba | 137 | 152797.909 | 0.936 | 0.083 | 249.29052 | 0.66 | ppb |
| ⌊> | Tb | 159 | 1835392.863 | 0.276 | 1835392.863 | | | ppb |
| ⌈ | Tl | 205 | 967267.823 | 0.453 | 0.822 | 250.52024 | 0.99 | ppb |
| \| | Pb | 206 | 316901.692 | 1.042 | 0.269 | 250.05614 | 1.83 | ppb |
| \| | Pb | 207 | 582439.373 | 0.722 | 0.495 | 250.29254 | 1.65 | ppb |
| \| | Pb | 208 | 929083.850 | 0.238 | 0.790 | 250.50334 | 1.21 | ppb |
| ⌊> | Bi | 209 | 1176141.561 | 1.238 | 1176141.561 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199355.519 | | ppb |
| ⌊ | Be | 9 | 24846.830 | 248.401949 | ppb |
| ⌈> | Sc | 45 | 709309.378 | | ppb |
| \| | V | 51 | 559700.173 | 249.697465 | ppb |
| \| | Cr | 52 | 463634.331 | 252.610016 | ppb |
| \| | Mn | 55 | 690231.288 | 248.429696 | ppb |
| \| | Co | 59 | 554931.770 | 250.844045 | ppb |
| \| | Ni | 60 | 141037.616 | 251.312352 | ppb |
| \| | Cu | 63 | 311610.574 | 248.201202 | ppb |
| \| | Cu | 65 | 150145.450 | 246.207022 | ppb |
| \| | Zn | 66 | 87178.354 | 248.753195 | ppb |
| \| | As | 75 | 122543.845 | 248.819690 | ppb |
| ⌊ | Se | 82 | 9562.570 | 246.966889 | ppb |
| ⌈ | Ag | 107 | 451999.413 | 250.392048 | ppb |
| \| | Ag | 109 | 432150.193 | 250.179752 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 113253.308 | 253.486709 | ppb |
| | In | 113 | 166713.176 | | ppb |
| > | In | 115 | 1370285.917 | | ppb |
| | Sb | 121 | 447462.035 | 251.811685 | ppb |
| | Ba | 135 | 88631.040 | 252.307693 | ppb |
| | Ba | 137 | 152709.169 | 249.192021 | ppb |
| > | Tb | 159 | 1835074.226 | | ppb |
| | Tl | 205 | 971032.189 | 251.466904 | ppb |
| | Pb | 206 | 320530.975 | 252.878792 | ppb |
| | Pb | 207 | 586922.560 | 252.178845 | ppb |
| | Pb | 208 | 931588.783 | 251.145121 | ppb |
| > | Bi | 209 | 1176183.464 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193104.640 | | ppb |
| | Be | 9 | 24351.614 | 251.332207 | ppb |
| > | Sc | 45 | 709009.170 | | ppb |
| | V | 51 | 561302.384 | 250.519605 | ppb |
| | Cr | 52 | 455973.886 | 248.525367 | ppb |
| | Mn | 55 | 687170.929 | 247.432534 | ppb |
| | Co | 59 | 550785.718 | 249.075243 | ppb |
| | Ni | 60 | 140368.297 | 250.225094 | ppb |
| | Cu | 63 | 314540.183 | 250.641676 | ppb |
| | Cu | 65 | 155662.179 | 255.367782 | ppb |
| | Zn | 66 | 88953.888 | 253.933579 | ppb |
| | As | 75 | 122910.635 | 249.670191 | ppb |
| | Se | 82 | 9653.991 | 249.444299 | ppb |
| | Ag | 107 | 451731.017 | 253.271708 | ppb |
| | Ag | 109 | 433980.279 | 254.279716 | ppb |
| | Cd | 111 | 109927.650 | 249.020424 | ppb |
| | In | 113 | 165798.151 | | ppb |
| > | In | 115 | 1353901.855 | | ppb |
| | Sb | 121 | 445617.341 | 251.402064 | ppb |
| | Ba | 135 | 85963.908 | 245.327697 | ppb |
| | Ba | 137 | 151413.692 | 247.697151 | ppb |
| > | Tb | 159 | 1830486.274 | | ppb |
| | Tl | 205 | 968311.377 | 247.708482 | ppb |
| | Pb | 206 | 314070.770 | 244.763905 | ppb |
| | Pb | 207 | 578578.321 | 245.565778 | ppb |
| | Pb | 208 | 928242.206 | 247.195216 | ppb |
| > | Bi | 209 | 1190683.304 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191447.226 | | ppb |
| | Be | 9 | 24000.767 | 249.855398 | ppb |
| > | Sc | 45 | 716152.203 | | ppb |
| | V | 51 | 556937.175 | 246.084936 | ppb |
| | Cr | 52 | 453072.368 | 244.464617 | ppb |
| | Mn | 55 | 698309.207 | 248.935798 | ppb |
| | Co | 59 | 548870.608 | 245.733333 | ppb |
| | Ni | 60 | 136792.588 | 241.414502 | ppb |
| | Cu | 63 | 312525.126 | 246.550507 | ppb |
| | Cu | 65 | 150419.523 | 244.298311 | ppb |
| | Zn | 66 | 86152.857 | 243.471422 | ppb |
| | As | 75 | 124120.813 | 249.613662 | ppb |
| | Se | 82 | 9843.509 | 251.814500 | ppb |
| | Ag | 107 | 442655.031 | 248.139882 | ppb |
| | Ag | 109 | 422674.479 | 247.612112 | ppb |
| | Cd | 111 | 111008.738 | 251.425843 | ppb |
| | In | 113 | 168451.953 | | ppb |
| > | In | 115 | 1354137.023 | | ppb |
| | Sb | 121 | 436748.646 | 245.041534 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 88098.364 | 250.035688 | ppb |
| | Ba | 137 | 154270.866 | 250.982396 | ppb |
| > | Tb | 159 | 1840618.089 | | ppb |
| | Tl | 205 | 962459.903 | 252.385323 | ppb |
| | Pb | 206 | 316103.331 | 252.525721 | ppb |
| | Pb | 207 | 581817.239 | 253.133002 | ppb |
| | Pb | 208 | 927420.560 | 253.169678 | ppb |
| > | Bi | 209 | 1161557.914 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS5

Sample Date/Time: Monday, August 01, 2011 16:22:10
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS5.1440

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194459.950 | 0.854 | 194459.950 | | | ppb |
| ⌊ | Be | 9 | 49565.201 | 0.573 | 0.255 | 501.89873 | 1.30 | ppb |
| ⌈> | Sc | 45 | 703076.795 | 0.447 | 703076.795 | | | ppb |
| \| | V | 51 | 1120246.830 | 0.928 | 1.592 | 501.09449 | 1.16 | ppb |
| \| | Cr | 52 | 919757.494 | 0.568 | 1.306 | 501.55079 | 0.79 | ppb |
| \| | Mn | 55 | 1416137.330 | 1.153 | 2.014 | 503.33595 | 0.84 | ppb |
| \| | Co | 59 | 1114644.190 | 1.068 | 1.585 | 501.95818 | 0.94 | ppb |
| \| | Ni | 60 | 286585.468 | 0.981 | 0.408 | 503.56674 | 1.30 | ppb |
| \| | Cu | 63 | 634727.347 | 0.817 | 0.903 | 502.38111 | 0.87 | ppb |
| \| | Cu | 65 | 305200.779 | 0.497 | 0.434 | 501.20311 | 0.75 | ppb |
| \| | Zn | 66 | 175987.503 | 1.441 | 0.250 | 501.63741 | 1.51 | ppb |
| \| | As | 75 | 247077.124 | 0.081 | 0.351 | 501.45222 | 0.38 | ppb |
| ⌊ | Se | 82 | 19507.454 | 0.739 | 0.028 | 502.21372 | 0.84 | ppb |
| ⌈ | Ag | 107 | 903889.043 | 0.307 | 0.655 | 499.27011 | 2.42 | ppb |
| \| | Ag | 109 | 882498.215 | 0.799 | 0.639 | 501.67136 | 3.02 | ppb |
| \| | Cd | 111 | 229047.128 | 1.234 | 0.166 | 502.05070 | 1.73 | ppb |
| \| | In | 113 | 288224.748 | 0.555 | 0.165 | | | ppb |
| ⌊> | In | 115 | 1381212.665 | 2.288 | 1381212.665 | | | ppb |
| ⌈ | Sb | 121 | 903763.717 | 1.666 | 0.490 | 501.39978 | 1.80 | ppb |
| \| | Ba | 135 | 178830.945 | 0.933 | 0.097 | 501.51788 | 1.08 | ppb |
| \| | Ba | 137 | 310999.584 | 0.924 | 0.169 | 501.14647 | 1.07 | ppb |
| ⌊> | Tb | 159 | 1844892.410 | 0.154 | 1844892.410 | | | ppb |
| ⌈ | Tl | 205 | 1946710.952 | 1.074 | 1.666 | 501.76202 | 1.88 | ppb |
| \| | Pb | 206 | 641191.208 | 1.198 | 0.549 | 502.16932 | 2.00 | ppb |
| \| | Pb | 207 | 1182652.530 | 1.295 | 1.012 | 502.70068 | 2.17 | ppb |
| \| | Pb | 208 | 1876023.871 | 0.709 | 1.605 | 502.13635 | 1.07 | ppb |
| ⌊> | Bi | 209 | 1168564.631 | 0.917 | 1168564.631 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196340.746 | | ppb |
| ⌊ | Be | 9 | 49305.251 | 494.448786 | ppb |
| ⌈> | Sc | 45 | 706152.264 | | ppb |
| \| | V | 51 | 1123018.340 | 500.134531 | ppb |
| \| | Cr | 52 | 921920.231 | 500.530323 | ppb |
| \| | Mn | 55 | 1434894.723 | 507.789554 | ppb |
| \| | Co | 59 | 1126612.528 | 505.139259 | ppb |
| \| | Ni | 60 | 286341.713 | 500.931158 | ppb |
| \| | Cu | 63 | 638613.746 | 503.251005 | ppb |
| \| | Cu | 65 | 305733.273 | 499.881945 | ppb |
| \| | Zn | 66 | 177552.372 | 503.888503 | ppb |
| \| | As | 75 | 247163.002 | 499.436033 | ppb |
| ⌊ | Se | 82 | 19606.535 | 502.561059 | ppb |
| ⌈ | Ag | 107 | 900898.390 | 497.463852 | ppb |
| \| | Ag | 109 | 885928.889 | 503.418842 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 231503.439 | 507.349892 | ppb |
| | In | 113 | 289773.472 | | ppb |
| > | In | 115 | 1381135.056 | | ppb |
| | Sb | 121 | 920141.023 | 511.027926 | ppb |
| | Ba | 135 | 180317.188 | 506.225203 | ppb |
| | Ba | 137 | 313572.493 | 505.831388 | ppb |
| > | Tb | 159 | 1842907.990 | | ppb |
| | Tl | 205 | 1970386.665 | 512.545686 | ppb |
| | Pb | 206 | 649898.777 | 513.677867 | ppb |
| | Pb | 207 | 1200300.177 | 514.894071 | ppb |
| | Pb | 208 | 1866732.828 | 504.283496 | ppb |
| > | Bi | 209 | 1157768.987 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193192.309 | | ppb |
| | Be | 9 | 49522.320 | 504.719914 | ppb |
| > | Sc | 45 | 699873.058 | | ppb |
| | V | 51 | 1128970.919 | 507.302167 | ppb |
| | Cr | 52 | 923548.701 | 505.923727 | ppb |
| | Mn | 55 | 1408348.185 | 502.865727 | ppb |
| | Co | 59 | 1114505.972 | 504.194385 | ppb |
| | Ni | 60 | 289511.033 | 511.022030 | ppb |
| | Cu | 63 | 636725.529 | 506.265356 | ppb |
| | Cu | 65 | 306379.266 | 505.434436 | ppb |
| | Zn | 66 | 177348.807 | 507.828924 | ppb |
| | As | 75 | 246849.024 | 503.276974 | ppb |
| | Se | 82 | 19573.805 | 506.231246 | ppb |
| | Ag | 107 | 906385.908 | 512.168313 | ppb |
| | Ag | 109 | 887175.831 | 515.886570 | ppb |
| | Cd | 111 | 225958.963 | 506.749597 | ppb |
| | In | 113 | 286578.349 | | ppb |
| > | In | 115 | 1349653.941 | | ppb |
| | Sb | 121 | 900618.084 | 499.990432 | ppb |
| | Ba | 135 | 179150.498 | 502.754385 | ppb |
| | Ba | 137 | 311528.062 | 502.338177 | ppb |
| > | Tb | 159 | 1843623.682 | | ppb |
| | Tl | 205 | 1938923.682 | 495.199696 | ppb |
| | Pb | 206 | 638285.413 | 495.333888 | ppb |
| | Pb | 207 | 1172751.359 | 493.937448 | ppb |
| | Pb | 208 | 1870069.388 | 496.008081 | ppb |
| > | Bi | 209 | 1179188.376 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193846.794 | | ppb |
| | Be | 9 | 49868.032 | 506.527490 | ppb |
| > | Sc | 45 | 703205.063 | | ppb |
| | V | 51 | 1108751.233 | 495.846761 | ppb |
| | Cr | 52 | 913803.550 | 498.198312 | ppb |
| | Mn | 55 | 1405169.081 | 499.352566 | ppb |
| | Co | 59 | 1102814.071 | 496.540887 | ppb |
| | Ni | 60 | 283903.658 | 498.747047 | ppb |
| | Cu | 63 | 628842.767 | 497.626981 | ppb |
| | Cu | 65 | 303489.798 | 498.292941 | ppb |
| | Zn | 66 | 173061.331 | 493.194791 | ppb |
| | As | 75 | 247219.347 | 501.643654 | ppb |
| | Se | 82 | 19342.021 | 497.848869 | ppb |
| | Ag | 107 | 904382.830 | 488.178161 | ppb |
| | Ag | 109 | 874389.924 | 485.708668 | ppb |
| | Cd | 111 | 229678.982 | 492.052609 | ppb |
| | In | 113 | 288322.422 | | ppb |
| > | In | 115 | 1412848.997 | | ppb |
| | Sb | 121 | 890532.045 | 493.180974 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 177025.148 | 495.574065 | ppb |
| | Ba | 137 | 307898.199 | 495.269858 | ppb |
| > | Tb | 159 | 1848145.557 | | ppb |
| | Tl | 205 | 1930822.510 | 497.540692 | ppb |
| | Pb | 206 | 635389.435 | 497.496205 | ppb |
| | Pb | 207 | 1174906.053 | 499.270510 | ppb |
| | Pb | 208 | 1891269.397 | 506.117484 | ppb |
| > | Bi | 209 | 1168736.528 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLICV

Sample Date/Time: Monday, August 01, 2011 16:25:27
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLICV.1441

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194999.802 | 1.418 | 194999.802 | | | ppb |
| ⌊ | Be | 9 | 111.334 | 6.801 | 0.001 | 1.08382 | 6.16 | ppb |
| ⌈> | Sc | 45 | 699502.509 | 1.280 | 699502.509 | | | ppb |
| \| | V | 51 | 11628.922 | 0.785 | 0.015 | 4.83369 | 0.73 | ppb |
| \| | Cr | 52 | 5759.661 | 5.309 | 0.006 | 2.17488 | 6.90 | ppb |
| \| | Mn | 55 | 2997.117 | 5.150 | 0.004 | 0.97441 | 4.45 | ppb |
| \| | Co | 59 | 2370.281 | 3.292 | 0.003 | 1.05983 | 3.50 | ppb |
| \| | Ni | 60 | 567.794 | 10.910 | 0.001 | 0.88617 | 12.12 | ppb |
| \| | Cu | 63 | 2679.249 | 5.997 | 0.004 | 2.04021 | 7.52 | ppb |
| \| | Cu | 65 | 1320.087 | 6.809 | 0.002 | 2.00883 | 7.35 | ppb |
| \| | Zn | 66 | 814.478 | 7.951 | 0.001 | 2.01796 | 7.80 | ppb |
| \| | As | 75 | 580.389 | 8.049 | 0.001 | 1.16118 | 9.06 | ppb |
| ⌊ | Se | 82 | 231.780 | 3.863 | 0.000 | 4.94688 | 3.25 | ppb |
| ⌈ | Ag | 107 | 1863.507 | 2.701 | 0.001 | 1.02037 | 2.18 | ppb |
| \| | Ag | 109 | 1920.184 | 0.459 | 0.001 | 1.07790 | 1.19 | ppb |
| \| | Cd | 111 | 446.505 | 3.322 | 0.000 | 0.96605 | 3.96 | ppb |
| \| | In | 113 | 61359.351 | 0.961 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1386148.288 | 0.862 | 1386148.288 | | | ppb |
| ⌈ | Sb | 121 | 3897.426 | 0.901 | 0.002 | 2.11397 | 1.78 | ppb |
| \| | Ba | 135 | 3581.975 | 1.388 | 0.002 | 9.93683 | 0.68 | ppb |
| \| | Ba | 137 | 6246.617 | 0.731 | 0.003 | 9.95550 | 0.37 | ppb |
| ⌊> | Tb | 159 | 1859876.296 | 0.855 | 1859876.296 | | | ppb |
| ⌈ | Tl | 205 | 4129.186 | 1.581 | 0.003 | 1.05125 | 1.50 | ppb |
| \| | Pb | 206 | 1373.428 | 1.642 | 0.001 | 1.04556 | 1.80 | ppb |
| \| | Pb | 207 | 2623.506 | 1.431 | 0.002 | 1.08771 | 1.31 | ppb |
| \| | Pb | 208 | 4028.798 | 1.003 | 0.003 | 1.05214 | 0.87 | ppb |
| ⌊> | Bi | 209 | 1175750.088 | 0.150 | 1175750.088 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197356.449 | | ppb |
| ⌊ | Be | 9 | 120.001 | 1.157176 | ppb |
| ⌈> | Sc | 45 | 699139.304 | | ppb |
| \| | V | 51 | 11673.338 | 4.856144 | ppb |
| \| | Cr | 52 | 6045.827 | 2.334222 | ppb |
| \| | Mn | 55 | 3065.470 | 0.999719 | ppb |
| \| | Co | 59 | 2280.260 | 1.019525 | ppb |
| \| | Ni | 60 | 636.687 | 1.008563 | ppb |
| \| | Cu | 63 | 2740.375 | 2.088712 | ppb |
| \| | Cu | 65 | 1216.741 | 1.839148 | ppb |
| \| | Zn | 66 | 830.034 | 2.065076 | ppb |
| \| | As | 75 | 536.502 | 1.071639 | ppb |
| ⌊ | Se | 82 | 228.003 | 4.853194 | ppb |
| ⌈ | Ag | 107 | 1856.839 | 1.010599 | ppb |
| \| | Ag | 109 | 1923.518 | 1.073141 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 429.387 | 0.922840 | ppb |
| | In | 113 | 61714.850 | | ppb |
| > | In | 115 | 1394570.863 | | ppb |
| | Sb | 121 | 3900.761 | 2.113373 | ppb |
| | Ba | 135 | 3608.651 | 10.000918 | ppb |
| | Ba | 137 | 6273.968 | 9.988751 | ppb |
| > | Tb | 159 | 1861800.084 | | ppb |
| | Tl | 205 | 4135.855 | 1.054261 | ppb |
| | Pb | 206 | 1375.095 | 1.048149 | ppb |
| | Pb | 207 | 2585.168 | 1.072871 | ppb |
| | Pb | 208 | 4005.464 | 1.047245 | ppb |
| > | Bi | 209 | 1174311.431 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195688.140 | | ppb |
| | Be | 9 | 106.001 | 1.026505 | ppb |
| > | Sc | 45 | 708633.921 | | ppb |
| | V | 51 | 11689.455 | 4.792892 | ppb |
| | Cr | 52 | 5795.679 | 2.154112 | ppb |
| | Mn | 55 | 3105.482 | 0.999149 | ppb |
| | Co | 59 | 2418.292 | 1.067363 | ppb |
| | Ni | 60 | 550.015 | 0.842357 | ppb |
| | Cu | 63 | 2496.978 | 1.868313 | ppb |
| | Cu | 65 | 1380.095 | 2.078461 | ppb |
| | Zn | 66 | 870.038 | 2.146379 | ppb |
| | As | 75 | 575.167 | 1.134827 | ppb |
| | Se | 82 | 242.003 | 5.132297 | ppb |
| | Ag | 107 | 1816.832 | 1.004716 | ppb |
| | Ag | 109 | 1926.852 | 1.092476 | ppb |
| | Cd | 111 | 455.568 | 0.995585 | ppb |
| | In | 113 | 60678.537 | | ppb |
| > | In | 115 | 1372474.329 | | ppb |
| | Sb | 121 | 3930.772 | 2.151793 | ppb |
| | Ba | 135 | 3524.621 | 9.866748 | ppb |
| | Ba | 137 | 6193.918 | 9.961249 | ppb |
| > | Tb | 159 | 1843104.801 | | ppb |
| | Tl | 205 | 4060.824 | 1.034214 | ppb |
| | Pb | 206 | 1395.097 | 1.062897 | ppb |
| | Pb | 207 | 2625.173 | 1.088933 | ppb |
| | Pb | 208 | 4005.461 | 1.046420 | ppb |
| > | Bi | 209 | 1175219.382 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191954.818 | | ppb |
| | Be | 9 | 108.001 | 1.067767 | ppb |
| > | Sc | 45 | 690734.301 | | ppb |
| | V | 51 | 11523.974 | 4.852030 | ppb |
| | Cr | 52 | 5437.478 | 2.036319 | ppb |
| | Mn | 55 | 2820.398 | 0.924374 | ppb |
| | Co | 59 | 2412.291 | 1.092612 | ppb |
| | Ni | 60 | 516.680 | 0.807577 | ppb |
| | Cu | 63 | 2800.392 | 2.163618 | ppb |
| | Cu | 65 | 1363.426 | 2.108878 | ppb |
| | Zn | 66 | 743.361 | 1.842420 | ppb |
| | As | 75 | 629.498 | 1.277082 | ppb |
| | Se | 82 | 225.336 | 4.855145 | ppb |
| | Ag | 107 | 1916.850 | 1.045807 | ppb |
| | Ag | 109 | 1910.182 | 1.068086 | ppb |
| | Cd | 111 | 454.560 | 0.979725 | ppb |
| | In | 113 | 61684.665 | | ppb |
| > | In | 115 | 1391399.672 | | ppb |
| | Sb | 121 | 3860.745 | 2.076741 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 3612.652 | 9.942826 | ppb |
| | Ba | 137 | 6271.966 | 9.916512 | ppb |
| > | Tb | 159 | 1874724.003 | | ppb |
| | Tl | 205 | 4190.878 | 1.065262 | ppb |
| | Pb | 206 | 1350.091 | 1.025619 | ppb |
| | Pb | 207 | 2660.177 | 1.101340 | ppb |
| | Pb | 208 | 4075.468 | 1.062749 | ppb |
| > | Bi | 209 | 1177719.451 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.359 | | | |
| | Be | 9 | 108.382 | | | | |
| > | Sc | 45 | | 99.098 | | | |
| | V | 51 | 96.674 | | | | |
| | Cr | 52 | 108.744 | | | | |
| | Mn | 55 | 97.441 | | | | |
| | Co | 59 | 105.983 | | | | |
| | Ni | 60 | 88.617 | | | | |
| | Cu | 63 | 102.011 | | | | |
| | Cu | 65 | 100.441 | | | | |
| | Zn | 66 | 100.898 | | | | |
| | As | 75 | 116.118 | | | | |
| | Se | 82 | 98.938 | | | | |
| | Ag | 107 | 102.037 | | | | |
| | Ag | 109 | 107.790 | | | | |
| | Cd | 111 | 96.605 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.247 | | | |
| | Sb | 121 | 105.698 | | | | |
| | Ba | 135 | 99.368 | | | | |
| | Ba | 137 | 99.555 | | | | |
| > | Tb | 159 | | 99.976 | | | |
| | Tl | 205 | 105.125 | | | | |
| | Pb | 206 | 104.556 | | | | |
| | Pb | 207 | 108.771 | | | | |
| | Pb | 208 | 105.214 | | | | |
| > | Bi | 209 | | 100.467 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICV

Sample Date/Time: Monday, August 01, 2011 16:26:55
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICV.1442

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 189852.657 | 0.767 | 189852.657 | | | ppb |
| ⌊ | Be | 9 | 9855.521 | 0.264 | 0.052 | 102.18327 | 0.65 | ppb |
| ⌈> | Sc | 45 | 684362.540 | 1.831 | 684362.540 | | | ppb |
| \| | V | 51 | 218467.027 | 0.916 | 0.318 | 100.08427 | 0.94 | ppb |
| \| | Cr | 52 | 185686.124 | 0.375 | 0.269 | 103.26860 | 2.24 | ppb |
| \| | Mn | 55 | 260749.584 | 1.491 | 0.381 | 95.16778 | 3.02 | ppb |
| \| | Co | 59 | 228072.332 | 0.917 | 0.333 | 105.53388 | 2.32 | ppb |
| \| | Ni | 60 | 51655.303 | 1.119 | 0.075 | 93.17402 | 2.46 | ppb |
| \| | Cu | 63 | 126348.813 | 1.132 | 0.185 | 102.69305 | 2.56 | ppb |
| \| | Cu | 65 | 60865.793 | 0.971 | 0.089 | 102.58522 | 2.82 | ppb |
| \| | Zn | 66 | 71109.715 | 0.429 | 0.104 | 208.10423 | 2.24 | ppb |
| \| | As | 75 | 95594.492 | 1.155 | 0.140 | 199.37407 | 2.98 | ppb |
| ⌊ | Se | 82 | 7640.474 | 1.525 | 0.011 | 201.48292 | 2.19 | ppb |
| ⌈ | Ag | 107 | 185453.074 | 1.752 | 0.137 | 104.45657 | 1.94 | ppb |
| \| | Ag | 109 | 176878.398 | 0.590 | 0.131 | 102.52207 | 1.34 | ppb |
| \| | Cd | 111 | 43937.981 | 0.606 | 0.032 | 98.22642 | 1.92 | ppb |
| \| | In | 113 | 103267.187 | 1.237 | 0.032 | | | ppb |
| ⌊> | In | 115 | 1354070.843 | 1.387 | 1354070.843 | | | ppb |
| ⌈ | Sb | 121 | 360793.425 | 2.109 | 0.196 | 201.03662 | 1.71 | ppb |
| \| | Ba | 135 | 35838.112 | 1.437 | 0.020 | 100.92962 | 0.49 | ppb |
| \| | Ba | 137 | 62449.774 | 1.954 | 0.034 | 101.05232 | 1.06 | ppb |
| ⌊> | Tb | 159 | 1836657.410 | 0.972 | 1836657.410 | | | ppb |
| ⌈ | Tl | 205 | 786501.606 | 0.728 | 0.673 | 202.66390 | 0.71 | ppb |
| \| | Pb | 206 | 252588.803 | 0.989 | 0.216 | 197.75280 | 0.58 | ppb |
| \| | Pb | 207 | 465603.787 | 0.454 | 0.398 | 197.84215 | 0.20 | ppb |
| \| | Pb | 208 | 740857.987 | 0.665 | 0.634 | 198.25073 | 1.03 | ppb |
| ⌊> | Bi | 209 | 1168750.929 | 0.556 | 1168750.929 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 191414.611 | | ppb |
| ⌊ | Be | 9 | 9880.879 | 101.606811 | ppb |
| ⌈> | Sc | 45 | 695830.023 | | ppb |
| \| | V | 51 | 220445.429 | 99.311980 | ppb |
| \| | Cr | 52 | 185064.748 | 101.179677 | ppb |
| \| | Mn | 55 | 260709.748 | 93.551791 | ppb |
| \| | Co | 59 | 228857.153 | 104.124436 | ppb |
| \| | Ni | 60 | 51874.199 | 92.000594 | ppb |
| \| | Cu | 63 | 126697.561 | 101.249249 | ppb |
| \| | Cu | 65 | 60318.033 | 99.947884 | ppb |
| \| | Zn | 66 | 70766.176 | 203.623617 | ppb |
| \| | As | 75 | 94462.910 | 193.696079 | ppb |
| ⌊ | Se | 82 | 7575.535 | 196.413428 | ppb |
| ⌈ | Ag | 107 | 181773.874 | 103.107274 | ppb |
| \| | Ag | 109 | 175693.300 | 102.551626 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 44196.897 | 99.494300 | ppb |
| | In | 113 | 102649.152 | | ppb |
| > | In | 115 | 1344459.792 | | ppb |
| | Sb | 121 | 353799.927 | 199.292248 | ppb |
| | Ba | 135 | 35290.160 | 100.472634 | ppb |
| | Ba | 137 | 61265.097 | 100.221564 | ppb |
| > | Tb | 159 | 1816852.974 | | ppb |
| | Tl | 205 | 792760.377 | 204.145213 | ppb |
| | Pb | 206 | 254272.132 | 198.946775 | ppb |
| | Pb | 207 | 465019.703 | 197.467643 | ppb |
| | Pb | 208 | 735451.360 | 196.672902 | ppb |
| > | Bi | 209 | 1169492.750 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 188530.593 | | ppb |
| | Be | 9 | 9856.855 | 102.910821 | ppb |
| > | Sc | 45 | 670990.693 | | ppb |
| | V | 51 | 216443.278 | 101.125918 | ppb |
| | Cr | 52 | 186437.903 | 105.747929 | ppb |
| | Mn | 55 | 264656.413 | 98.488673 | ppb |
| | Co | 59 | 229657.183 | 108.357011 | ppb |
| | Ni | 60 | 52091.993 | 95.811747 | ppb |
| | Cu | 63 | 127571.905 | 105.726076 | ppb |
| | Cu | 65 | 61491.816 | 105.674596 | ppb |
| | Zn | 66 | 71350.305 | 212.918925 | ppb |
| | As | 75 | 96668.915 | 205.558787 | ppb |
| | Se | 82 | 7570.865 | 203.597507 | ppb |
| | Ag | 107 | 187926.039 | 106.788896 | ppb |
| | Ag | 109 | 177657.549 | 103.884826 | ppb |
| | Cd | 111 | 43951.973 | 99.120900 | ppb |
| | In | 113 | 104735.620 | | ppb |
| > | In | 115 | 1342045.460 | | ppb |
| | Sb | 121 | 359684.364 | 198.815515 | ppb |
| | Ba | 135 | 36311.808 | 101.447044 | ppb |
| | Ba | 137 | 63702.255 | 102.259022 | ppb |
| > | Tb | 159 | 1851499.395 | | ppb |
| | Tl | 205 | 785229.600 | 201.283902 | ppb |
| | Pb | 206 | 253774.734 | 197.652127 | ppb |
| | Pb | 207 | 467948.963 | 197.805547 | ppb |
| | Pb | 208 | 742016.912 | 197.523999 | ppb |
| > | Bi | 209 | 1174849.467 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 189612.767 | | ppb |
| | Be | 9 | 9828.828 | 102.032185 | ppb |
| > | Sc | 45 | 686266.905 | | ppb |
| | V | 51 | 218512.374 | 99.814914 | ppb |
| | Cr | 52 | 185555.721 | 102.878202 | ppb |
| | Mn | 55 | 256882.592 | 93.462887 | ppb |
| | Co | 59 | 225702.661 | 104.120192 | ppb |
| | Ni | 60 | 50999.718 | 91.709720 | ppb |
| | Cu | 63 | 124776.971 | 101.103812 | ppb |
| | Cu | 65 | 60787.530 | 102.133191 | ppb |
| | Zn | 66 | 71212.663 | 207.770155 | ppb |
| | As | 75 | 95651.650 | 198.867333 | ppb |
| | Se | 82 | 7775.021 | 204.437830 | ppb |
| | Ag | 107 | 186659.310 | 103.473551 | ppb |
| | Ag | 109 | 177284.346 | 101.129758 | ppb |
| | Cd | 111 | 43665.073 | 96.064067 | ppb |
| | In | 113 | 102416.788 | | ppb |
| > | In | 115 | 1375707.278 | | ppb |
| | Sb | 121 | 368895.983 | 205.002085 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 35912.369 | 100.869179 | ppb |
| | Ba | 137 | 62381.970 | 100.676362 | ppb |
| > | Tb | 159 | 1841619.862 | | ppb |
| | Tl | 205 | 781514.843 | 202.562580 | ppb |
| | Pb | 206 | 249719.541 | 196.659487 | ppb |
| | Pb | 207 | 463842.694 | 198.253252 | ppb |
| | Pb | 208 | 745105.689 | 200.555288 | ppb |
| > | Bi | 209 | 1161910.571 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | 96.737 | | | |
| Be | 9 | 103.215 | | | | |
| Sc | 45 | | 96.954 | | | |
| V | 51 | 100.084 | | | | |
| Cr | 52 | 105.376 | | | | |
| Mn | 55 | 95.168 | | | | |
| Co | 59 | 105.534 | | | | |
| Ni | 60 | 92.252 | | | | |
| Cu | 63 | 104.789 | | | | |
| Cu | 65 | 104.679 | | | | |
| Zn | 66 | 101.514 | | | | |
| As | 75 | 99.687 | | | | |
| Se | 82 | 97.807 | | | | |
| Ag | 107 | 104.457 | | | | |
| Ag | 109 | 102.522 | | | | |
| Cd | 111 | 99.219 | | | | |
| In | 113 | | | | | |
| In | 115 | | 96.951 | | | |
| Sb | 121 | 101.023 | | | | |
| Ba | 135 | 101.949 | | | | |
| Ba | 137 | 102.073 | | | | |
| Tb | 159 | | 98.728 | | | |
| Tl | 205 | 98.381 | | | | |
| Pb | 206 | 98.876 | | | | |
| Pb | 207 | 98.921 | | | | |
| Pb | 208 | 99.125 | | | | |
| Bi | 209 | | 99.869 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICB

Sample Date/Time: Monday, August 01, 2011 16:28:21
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICB.1443

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 193290.880 | 0.466 | 193290.880 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.02095 | 96.23 | ppb |
| ⌈> | Sc | 45 | 703342.351 | 1.794 | 703342.351 | | | ppb |
| ⌈ | V | 51 | 658.553 | 22.913 | -0.000 | -0.10388 | 66.47 | ppb |
| ⌈ | Cr | 52 | 1834.835 | 2.590 | 0.000 | 0.01444 | 115.80 | ppb |
| ⌈ | Mn | 55 | 260.003 | 12.010 | -0.000 | -0.00369 | 335.27 | ppb |
| ⌈ | Co | 59 | 42.667 | 18.944 | 0.000 | 0.00610 | 65.11 | ppb |
| ⌈ | Ni | 60 | 51.111 | 29.408 | -0.000 | -0.02701 | 96.51 | ppb |
| ⌈ | Cu | 63 | 116.667 | 10.302 | -0.000 | -0.00057 | 1599.55 | ppb |
| ⌈ | Cu | 65 | 103.334 | 19.622 | -0.000 | -0.00083 | 4370.88 | ppb |
| ⌈ | Zn | 66 | 108.889 | 7.704 | -0.000 | -0.00529 | 409.86 | ppb |
| ⌈ | As | 75 | 37.152 | 18.026 | 0.000 | 0.05187 | 24.20 | ppb |
| ⌊ | Se | 82 | 39.111 | 4.290 | -0.000 | -0.05311 | 98.91 | ppb |
| ⌈ | Ag | 107 | 37.778 | 39.788 | 0.000 | 0.01594 | 51.42 | ppb |
| ⌈ | Ag | 109 | 26.667 | 21.651 | 0.000 | 0.00576 | 57.35 | ppb |
| ⌈ | Cd | 111 | 1.910 | 228.823 | -0.000 | -0.00493 | 193.70 | ppb |
| ⌈ | In | 113 | 61131.283 | 0.286 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1384313.760 | 0.388 | 1384313.760 | | | ppb |
| ⌈ | Sb | 121 | 795.035 | 40.150 | 0.000 | 0.40380 | 42.55 | ppb |
| ⌈ | Ba | 135 | 20.667 | 20.145 | 0.000 | 0.02948 | 39.86 | ppb |
| ⌈ | Ba | 137 | 25.333 | 43.481 | 0.000 | 0.01044 | 165.37 | ppb |
| ⌊> | Tb | 159 | 1867538.134 | 0.704 | 1867538.134 | | | ppb |
| ⌈ | Tl | 205 | 68.334 | 22.354 | 0.000 | 0.01086 | 37.45 | ppb |
| ⌈ | Pb | 206 | 66.667 | 56.292 | 0.000 | 0.02770 | 103.79 | ppb |
| ⌈ | Pb | 207 | 105.000 | 66.155 | 0.000 | 0.02323 | 124.38 | ppb |
| ⌈ | Pb | 208 | 176.668 | 38.633 | 0.000 | 0.02676 | 66.88 | ppb |
| ⌊> | Bi | 209 | 1192199.170 | 1.143 | 1192199.170 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192450.204 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.021258 | ppb |
| ⌈> | Sc | 45 | 691360.426 | | ppb |
| ⌈ | V | 51 | 611.513 | -0.120510 | ppb |
| ⌈ | Cr | 52 | 1780.158 | 0.001457 | ppb |
| ⌈ | Mn | 55 | 295.004 | 0.010454 | ppb |
| ⌈ | Co | 59 | 50.000 | 0.009741 | ppb |
| ⌈ | Ni | 60 | 36.667 | -0.051170 | ppb |
| ⌈ | Cu | 63 | 120.001 | 0.003738 | ppb |
| ⌈ | Cu | 65 | 126.667 | 0.040710 | ppb |
| ⌈ | Zn | 66 | 100.001 | -0.025605 | ppb |
| ⌈ | As | 75 | 29.437 | 0.037376 | ppb |
| ⌊ | Se | 82 | 40.667 | 0.004795 | ppb |
| ⌈ | Ag | 107 | 23.333 | 0.008034 | ppb |
| ⌈ | Ag | 109 | 23.333 | 0.003897 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 3.820 | -0.000757 | ppb |
| | In | 113 | 61332.509 | | ppb |
| > | In | 115 | 1380735.150 | | ppb |
| | Sb | 121 | 1145.066 | 0.592332 | ppb |
| | Ba | 135 | 16.000 | 0.016227 | ppb |
| | Ba | 137 | 38.000 | 0.030268 | ppb |
| > | Tb | 159 | 1879779.364 | | ppb |
| | Tl | 205 | 65.000 | 0.009971 | ppb |
| | Pb | 206 | 110.001 | 0.060900 | ppb |
| | Pb | 207 | 185.001 | 0.056488 | ppb |
| | Pb | 208 | 255.002 | 0.047239 | ppb |
| > | Bi | 209 | 1193293.700 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194242.359 | | ppb |
| | Be | 9 | 8.000 | 0.040966 | ppb |
| > | Sc | 45 | 716516.994 | | ppb |
| | V | 51 | 536.780 | -0.163111 | ppb |
| | Cr | 52 | 1858.173 | 0.008555 | ppb |
| | Mn | 55 | 250.003 | -0.008988 | ppb |
| | Co | 59 | 34.000 | 0.001867 | ppb |
| | Ni | 60 | 50.000 | -0.030477 | ppb |
| | Cu | 63 | 126.667 | 0.005524 | ppb |
| | Cu | 65 | 90.000 | -0.025824 | ppb |
| | Zn | 66 | 110.001 | -0.007802 | ppb |
| | As | 75 | 41.468 | 0.059202 | ppb |
| | Se | 82 | 39.333 | -0.066418 | ppb |
| | Ag | 107 | 53.333 | 0.024398 | ppb |
| | Ag | 109 | 23.333 | 0.003804 | ppb |
| | Cd | 111 | -3.090 | -0.015858 | ppb |
| | In | 113 | 61045.762 | | ppb |
| > | In | 115 | 1390494.019 | | ppb |
| | Sb | 121 | 720.026 | 0.363110 | ppb |
| | Ba | 135 | 24.000 | 0.038621 | ppb |
| | Ba | 137 | 18.000 | -0.001202 | ppb |
| > | Tb | 159 | 1869192.704 | | ppb |
| | Tl | 205 | 55.000 | 0.007310 | ppb |
| | Pb | 206 | 45.000 | 0.010709 | ppb |
| | Pb | 207 | 60.000 | 0.004213 | ppb |
| | Pb | 208 | 130.001 | 0.014137 | ppb |
| > | Bi | 209 | 1205247.981 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193180.077 | | ppb |
| | Be | 9 | 4.000 | 0.000639 | ppb |
| > | Sc | 45 | 702149.634 | | ppb |
| | V | 51 | 827.366 | -0.028033 | ppb |
| | Cr | 52 | 1866.174 | 0.033317 | ppb |
| | Mn | 55 | 235.003 | -0.012543 | ppb |
| | Co | 59 | 44.000 | 0.006683 | ppb |
| | Ni | 60 | 66.667 | 0.000618 | ppb |
| | Cu | 63 | 103.334 | -0.010958 | ppb |
| | Cu | 65 | 93.334 | -0.017372 | ppb |
| | Zn | 66 | 116.667 | 0.017537 | ppb |
| | As | 75 | 40.551 | 0.059029 | ppb |
| | Se | 82 | 37.333 | -0.097710 | ppb |
| | Ag | 107 | 36.667 | 0.015385 | ppb |
| | Ag | 109 | 33.333 | 0.009568 | ppb |
| | Cd | 111 | 5.000 | 0.001823 | ppb |
| | In | 113 | 61015.579 | | ppb |
| > | In | 115 | 1381712.113 | | ppb |
| | Sb | 121 | 520.014 | 0.255971 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 22.000 | 0.033596 | ppb |
| | Ba | 137 | 20.000 | 0.002246 | ppb |
| > | Tb | 159 | 1853642.333 | | ppb |
| | Tl | 205 | 85.000 | 0.015297 | ppb |
| | Pb | 206 | 45.000 | 0.011498 | ppb |
| | Pb | 207 | 70.000 | 0.008999 | ppb |
| | Pb | 208 | 145.001 | 0.018898 | ppb |
| > | Bi | 209 | 1178055.828 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 98.489 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 99.642 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.116 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 100.388 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 101.872 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSA

Sample Date/Time: Monday, August 01, 2011 16:29:48
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICSA.1444

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192556.413 | 1.267 | 192556.413 | | | ppb |
| ⌊ | Be | 9 | 26.000 | 20.352 | 0.000 | 0.22536 | 22.47 | ppb |
| ⌈> | Sc | 45 | 697067.137 | 0.418 | 697067.137 | | | ppb |
| \| | V | 51 | 79.443 | 619.971 | -0.001 | -0.36332 | 61.34 | ppb |
| \| | Cr | 52 | 38230.282 | 1.428 | 0.052 | 20.07988 | 1.12 | ppb |
| \| | Mn | 55 | 21463.016 | 2.237 | 0.030 | 7.60010 | 2.54 | ppb |
| \| | Co | 59 | 2416.959 | 2.149 | 0.003 | 1.08475 | 2.52 | ppb |
| \| | Ni | 60 | 2724.816 | 1.097 | 0.004 | 4.71334 | 0.88 | ppb |
| \| | Cu | 63 | 9504.515 | 1.573 | 0.013 | 7.49594 | 1.37 | ppb |
| \| | Cu | 65 | 4952.338 | 2.991 | 0.007 | 8.03433 | 2.82 | ppb |
| \| | Zn | 66 | 4279.805 | 3.101 | 0.006 | 11.99741 | 3.57 | ppb |
| \| | As | 75 | 56.231 | 35.833 | 0.000 | 0.09164 | 44.69 | ppb |
| ⌊ | Se | 82 | 43.111 | 12.499 | 0.000 | 0.05931 | 229.05 | ppb |
| ⌈ | Ag | 107 | 46.667 | 24.744 | 0.000 | 0.02143 | 30.72 | ppb |
| \| | Ag | 109 | 30.000 | 19.245 | 0.000 | 0.00802 | 42.37 | ppb |
| \| | Cd | 111 | 156.398 | 46.072 | 0.000 | 0.34139 | 47.93 | ppb |
| \| | In | 113 | 60049.769 | 0.920 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1354540.948 | 0.948 | 1354540.948 | | | ppb |
| ⌈ | Sb | 121 | 2133.561 | 6.190 | 0.001 | 1.14881 | 6.89 | ppb |
| \| | Ba | 135 | 450.010 | 6.726 | 0.000 | 1.23033 | 7.46 | ppb |
| \| | Ba | 137 | 844.036 | 5.512 | 0.000 | 1.32543 | 5.02 | ppb |
| ⌊> | Tb | 159 | 1851192.466 | 0.720 | 1851192.466 | | | ppb |
| ⌈ | Tl | 205 | 46.667 | 37.627 | 0.000 | 0.00623 | 79.01 | ppb |
| \| | Pb | 206 | 5438.146 | 3.388 | 0.005 | 4.44588 | 2.18 | ppb |
| \| | Pb | 207 | 9547.325 | 3.615 | 0.009 | 4.23801 | 2.59 | ppb |
| \| | Pb | 208 | 14593.011 | 2.455 | 0.013 | 4.08136 | 3.64 | ppb |
| ⌊> | Bi | 209 | 1113314.568 | 1.269 | 1113314.568 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 191642.921 | | ppb |
| ⌊ | Be | 9 | 22.000 | 0.185916 | ppb |
| ⌈> | Sc | 45 | 700264.058 | | ppb |
| \| | V | 51 | 184.550 | -0.315949 | ppb |
| \| | Cr | 52 | 38694.720 | 20.238991 | ppb |
| \| | Mn | 55 | 21007.042 | 7.401836 | ppb |
| \| | Co | 59 | 2360.279 | 1.054047 | ppb |
| \| | Ni | 60 | 2740.375 | 4.718795 | ppb |
| \| | Cu | 63 | 9564.572 | 7.509144 | ppb |
| \| | Cu | 65 | 5007.920 | 8.088856 | ppb |
| \| | Zn | 66 | 4170.870 | 11.628158 | ppb |
| \| | As | 75 | 68.528 | 0.116261 | ppb |
| ⌊ | Se | 82 | 48.000 | 0.181182 | ppb |
| ⌈ | Ag | 107 | 40.000 | 0.017838 | ppb |
| \| | Ag | 109 | 26.667 | 0.006202 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 211.362 | 0.466759 | ppb |
| | In | 113 | 60130.240 | | ppb |
| > | In | 115 | 1344359.411 | | ppb |
| | Sb | 121 | 2160.233 | 1.157282 | ppb |
| | Ba | 135 | 416.009 | 1.129099 | ppb |
| | Ba | 137 | 894.040 | 1.398792 | ppb |
| > | Tb | 159 | 1860527.648 | | ppb |
| | Tl | 205 | 30.000 | 0.001597 | ppb |
| | Pb | 206 | 5561.546 | 4.500499 | ppb |
| | Pb | 207 | 9672.391 | 4.249579 | ppb |
| | Pb | 208 | 14195.928 | 3.927075 | ppb |
| > | Bi | 209 | 1125029.278 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 190705.249 | | ppb |
| | Be | 9 | 24.000 | 0.207679 | ppb |
| > | Sc | 45 | 694561.211 | | ppb |
| | V | 51 | -457.151 | -0.606049 | ppb |
| | Cr | 52 | 37628.663 | 19.823672 | ppb |
| | Mn | 55 | 21417.912 | 7.611257 | ppb |
| | Co | 59 | 2428.295 | 1.093815 | ppb |
| | Ni | 60 | 2690.362 | 4.669522 | ppb |
| | Cu | 63 | 9334.354 | 7.387081 | ppb |
| | Cu | 65 | 4784.478 | 7.785116 | ppb |
| | Zn | 66 | 4427.647 | 12.467577 | ppb |
| | As | 75 | 32.978 | 0.044369 | ppb |
| | Se | 82 | 37.333 | -0.087173 | ppb |
| | Ag | 107 | 60.000 | 0.029034 | ppb |
| | Ag | 109 | 36.667 | 0.011946 | ppb |
| | Cd | 111 | 183.012 | 0.401115 | ppb |
| | In | 113 | 60557.809 | | ppb |
| > | In | 115 | 1350295.995 | | ppb |
| | Sb | 121 | 2250.253 | 1.223396 | ppb |
| | Ba | 135 | 474.011 | 1.308067 | ppb |
| | Ba | 137 | 802.032 | 1.268942 | ppb |
| > | Tb | 159 | 1835926.486 | | ppb |
| | Tl | 205 | 65.000 | 0.011401 | ppb |
| | Pb | 206 | 5226.365 | 4.333993 | ppb |
| | Pb | 207 | 9157.138 | 4.123041 | ppb |
| | Pb | 208 | 14891.776 | 4.223897 | ppb |
| > | Bi | 209 | 1097625.040 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195321.067 | | ppb |
| | Be | 9 | 32.000 | 0.282475 | ppb |
| > | Sc | 45 | 696376.142 | | ppb |
| | V | 51 | 510.931 | -0.167974 | ppb |
| | Cr | 52 | 38367.462 | 20.176976 | ppb |
| | Mn | 55 | 21964.095 | 7.787206 | ppb |
| | Co | 59 | 2462.303 | 1.106393 | ppb |
| | Ni | 60 | 2743.710 | 4.751708 | ppb |
| | Cu | 63 | 9614.620 | 7.591587 | ppb |
| | Cu | 65 | 5064.616 | 8.229003 | ppb |
| | Zn | 66 | 4240.899 | 11.896499 | ppb |
| | As | 75 | 67.186 | 0.114290 | ppb |
| | Se | 82 | 44.000 | 0.083934 | ppb |
| | Ag | 107 | 40.000 | 0.017430 | ppb |
| | Ag | 109 | 26.667 | 0.005922 | ppb |
| | Cd | 111 | 74.821 | 0.156304 | ppb |
| | In | 113 | 59461.258 | | ppb |
| > | In | 115 | 1368967.439 | | ppb |
| | Sb | 121 | 1990.198 | 1.065743 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 460.011 | 1.253813 | ppb |
| \| | Ba | 137 | 836.035 | 1.308552 | ppb |
| \> | Tb | 159 | 1857123.264 | | ppb |
| ⌈ | Tl | 205 | 45.000 | 0.005696 | ppb |
| \| | Pb | 206 | 5526.527 | 4.503155 | ppb |
| \| | Pb | 207 | 9812.445 | 4.341418 | ppb |
| \| | Pb | 208 | 14691.329 | 4.093098 | ppb |
| \> | Bi | 209 | 1117289.385 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 98.114 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 98.753 | | | |
| | V | 51 | -72.665 | | | | |
| | Cr | 52 | 95.618 | | | | |
| | Mn | 55 | 108.573 | | | | |
| | Co | 59 | 108.475 | | | | |
| | Ni | 60 | 78.556 | | | | |
| | Cu | 63 | 93.699 | | | | |
| | Cu | 65 | 100.429 | | | | |
| | Zn | 66 | 109.067 | | | | |
| | As | 75 | 91.640 | | | | |
| | Se | 82 | 19.771 | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | 48.770 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.984 | | | |
| | Sb | 121 | 76.587 | | | | |
| | Ba | 135 | 102.527 | | | | |
| | Ba | 137 | 110.452 | | | | |
| > | Tb | 159 | | 99.510 | | | |
| | Tl | 205 | 62315.788 | | | | |
| | Pb | 206 | 111.147 | | | | |
| | Pb | 207 | 105.950 | | | | |
| | Pb | 208 | 102.034 | | | | |
| > | Bi | 209 | | 95.132 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSAB

Sample Date/Time: Monday, August 01, 2011 16:31:13
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICSAB.1445

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196806.038 | 1.490 | 196806.038 | | | ppb |
| ⌊ | Be | 9 | 1913.516 | 0.160 | 0.010 | 19.10796 | 1.35 | ppb |
| ⌈> | Sc | 45 | 712270.839 | 0.075 | 712270.839 | | | ppb |
| \| | V | 51 | 45565.583 | 1.914 | 0.063 | 19.73559 | 2.03 | ppb |
| \| | Cr | 52 | 77471.606 | 0.477 | 0.106 | 40.79423 | 0.41 | ppb |
| \| | Mn | 55 | 78671.712 | 2.522 | 0.110 | 27.51057 | 2.50 | ppb |
| \| | Co | 59 | 48953.537 | 0.921 | 0.069 | 21.74823 | 0.98 | ppb |
| \| | Ni | 60 | 12983.983 | 2.446 | 0.018 | 22.40807 | 2.52 | ppb |
| \| | Cu | 63 | 34254.146 | 2.441 | 0.048 | 26.67385 | 2.48 | ppb |
| \| | Cu | 65 | 16968.836 | 2.650 | 0.024 | 27.34432 | 2.59 | ppb |
| \| | Zn | 66 | 11433.200 | 1.712 | 0.016 | 31.87308 | 1.79 | ppb |
| \| | As | 75 | 9801.001 | 2.374 | 0.014 | 19.61186 | 2.31 | ppb |
| ⌊ | Se | 82 | 815.144 | 3.665 | 0.001 | 19.69614 | 3.85 | ppb |
| ⌈ | Ag | 107 | 35287.709 | 0.710 | 0.026 | 19.89752 | 0.99 | ppb |
| \| | Ag | 109 | 33740.161 | 0.955 | 0.025 | 19.57273 | 0.36 | ppb |
| \| | Cd | 111 | 8780.206 | 1.126 | 0.006 | 19.64621 | 1.90 | ppb |
| \| | In | 113 | 68606.255 | 1.828 | 0.007 | | | ppb |
| ⌊> | In | 115 | 1352309.434 | 1.301 | 1352309.434 | | | ppb |
| ⌈ | Sb | 121 | 38288.168 | 1.363 | 0.021 | 21.60588 | 1.88 | ppb |
| \| | Ba | 135 | 7776.356 | 0.850 | 0.004 | 22.18435 | 0.38 | ppb |
| \| | Ba | 137 | 13394.300 | 1.845 | 0.007 | 21.95423 | 1.89 | ppb |
| ⌊> | Tb | 159 | 1811405.639 | 0.565 | 1811405.639 | | | ppb |
| ⌈ | Tl | 205 | 76555.292 | 1.447 | 0.069 | 20.83020 | 2.54 | ppb |
| \| | Pb | 206 | 30824.116 | 2.279 | 0.028 | 25.46256 | 1.15 | ppb |
| \| | Pb | 207 | 55482.818 | 1.817 | 0.050 | 24.87753 | 0.70 | ppb |
| \| | Pb | 208 | 85115.966 | 1.944 | 0.077 | 24.03395 | 0.89 | ppb |
| ⌊> | Bi | 209 | 1106721.512 | 1.125 | 1106721.512 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198878.154 | | ppb |
| ⌊ | Be | 9 | 1916.184 | 18.932335 | ppb |
| ⌈> | Sc | 45 | 712204.693 | | ppb |
| \| | V | 51 | 45359.886 | 19.646366 | ppb |
| \| | Cr | 52 | 77440.697 | 40.781524 | ppb |
| \| | Mn | 55 | 76511.586 | 26.755189 | ppb |
| \| | Co | 59 | 48617.898 | 21.600962 | ppb |
| \| | Ni | 60 | 13212.055 | 22.805614 | ppb |
| \| | Cu | 63 | 33419.082 | 26.023607 | ppb |
| \| | Cu | 65 | 16780.735 | 27.042181 | ppb |
| \| | Zn | 66 | 11596.720 | 32.336258 | ppb |
| \| | As | 75 | 9628.123 | 19.267490 | ppb |
| ⌊ | Se | 82 | 780.697 | 18.820817 | ppb |
| ⌈ | Ag | 107 | 35332.309 | 20.115499 | ppb |
| \| | Ag | 109 | 33532.795 | 19.641517 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 8881.430 | 20.063969 | ppb |
| | In | 113 | 69102.939 | | ppb |
| > | In | 115 | 1339252.701 | | ppb |
| | Sb | 121 | 38232.948 | 21.625566 | ppb |
| | Ba | 135 | 7775.021 | 22.234523 | ppb |
| | Ba | 137 | 13120.602 | 21.556847 | ppb |
| > | Tb | 159 | 1807028.514 | | ppb |
| | Tl | 205 | 75282.309 | 20.218558 | ppb |
| | Pb | 206 | 31634.960 | 25.801587 | ppb |
| | Pb | 207 | 56646.199 | 25.076669 | ppb |
| | Pb | 208 | 86917.266 | 24.231106 | ppb |
| > | Bi | 209 | 1121019.216 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198088.715 | | ppb |
| | Be | 9 | 1914.183 | 18.988061 | ppb |
| > | Sc | 45 | 712837.480 | | ppb |
| | V | 51 | 44814.732 | 19.387873 | ppb |
| | Cr | 52 | 77855.902 | 40.968196 | ppb |
| | Mn | 55 | 80412.010 | 28.098974 | ppb |
| | Co | 59 | 48776.669 | 21.652298 | ppb |
| | Ni | 60 | 12621.293 | 21.761230 | ppb |
| | Cu | 63 | 34251.893 | 26.650674 | ppb |
| | Cu | 65 | 17481.934 | 28.154140 | ppb |
| | Zn | 66 | 11216.287 | 31.237068 | ppb |
| | As | 75 | 10065.491 | 20.125897 | ppb |
| | Se | 82 | 834.035 | 20.160375 | ppb |
| | Ag | 107 | 35512.947 | 19.731099 | ppb |
| | Ag | 109 | 34111.414 | 19.498953 | ppb |
| | Cd | 111 | 8775.324 | 19.346285 | ppb |
| | In | 113 | 69535.925 | | ppb |
| > | In | 115 | 1372317.878 | | ppb |
| | Sb | 121 | 38835.263 | 22.002615 | ppb |
| | Ba | 135 | 7710.972 | 22.087135 | ppb |
| | Ba | 137 | 13601.243 | 22.384116 | ppb |
| > | Tb | 159 | 1804086.467 | | ppb |
| | Tl | 205 | 77297.596 | 21.139329 | ppb |
| | Pb | 206 | 30436.248 | 25.276911 | ppb |
| | Pb | 207 | 54931.211 | 24.761427 | ppb |
| | Pb | 208 | 84766.048 | 24.062935 | ppb |
| > | Bi | 209 | 1100908.236 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193451.244 | | ppb |
| | Be | 9 | 1910.182 | 19.403487 | ppb |
| > | Sc | 45 | 711770.344 | | ppb |
| | V | 51 | 46522.131 | 20.172526 | ppb |
| | Cr | 52 | 77118.219 | 40.632972 | ppb |
| | Mn | 55 | 79091.542 | 27.677551 | ppb |
| | Co | 59 | 49466.043 | 21.991443 | ppb |
| | Ni | 60 | 13118.599 | 22.657361 | ppb |
| | Cu | 63 | 35091.463 | 27.347280 | ppb |
| | Cu | 65 | 16643.839 | 26.836651 | ppb |
| | Zn | 66 | 11486.593 | 32.045918 | ppb |
| | As | 75 | 9709.390 | 19.442188 | ppb |
| | Se | 82 | 830.701 | 20.107240 | ppb |
| | Ag | 107 | 35017.872 | 19.845949 | ppb |
| | Ag | 109 | 33576.274 | 19.577708 | ppb |
| | Cd | 111 | 8683.865 | 19.528387 | ppb |
| | In | 113 | 67179.902 | | ppb |
| > | In | 115 | 1345357.723 | | ppb |
| | Sb | 121 | 37796.293 | 21.189469 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 7843.074 | 22.231386 | ppb |
| | Ba | 137 | 13461.054 | 21.921718 | ppb |
| > | Tb | 159 | 1823101.936 | | ppb |
| | Tl | 205 | 77085.972 | 21.132727 | ppb |
| | Pb | 206 | 30401.141 | 25.309193 | ppb |
| | Pb | 207 | 54871.044 | 24.794491 | ppb |
| | Pb | 208 | 83664.586 | 23.807816 | ppb |
| > | Bi | 209 | 1098237.084 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 100.280 | | | |
| ⌊ | Be | 9 | 100.568 | | | | |
| ⌈> | Sc | 45 | | 100.907 | | | |
| \| | V | 51 | 103.872 | | | | |
| \| | Cr | 52 | 101.986 | | | | |
| \| | Mn | 55 | 101.891 | | | | |
| \| | Co | 59 | 108.741 | | | | |
| \| | Ni | 60 | 93.367 | | | | |
| \| | Cu | 63 | 106.695 | | | | |
| \| | Cu | 65 | 109.377 | | | | |
| \| | Zn | 66 | 109.907 | | | | |
| \| | As | 75 | 103.220 | | | | |
| ⌊ | Se | 82 | 103.664 | | | | |
| ⌈ | Ag | 107 | 110.542 | | | | |
| \| | Ag | 109 | 108.737 | | | | |
| \| | Cd | 111 | 98.231 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.825 | | | |
| ⌈ | Sb | 121 | 98.209 | | | | |
| \| | Ba | 135 | 100.838 | | | | |
| \| | Ba | 137 | 99.792 | | | | |
| ⌊> | Tb | 159 | | 97.371 | | | |
| ⌈ | Tl | 205 | 99.191 | | | | |
| \| | Pb | 206 | 101.850 | | | | |
| \| | Pb | 207 | 99.510 | | | | |
| \| | Pb | 208 | 96.136 | | | | |
| ⌊> | Bi | 209 | | 94.568 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Monday, August 01, 2011 16:32:40
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLCCV.1446

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214823.627 | 0.385 | 214823.627 | | | ppb |
| ⌊ | Be | 9 | 100.667 | 17.129 | 0.000 | 0.88225 | 17.56 | ppb |
| ⌈> | Sc | 45 | 747012.047 | 1.088 | 747012.047 | | | ppb |
| \| | V | 51 | 12503.846 | 3.086 | 0.015 | 4.86869 | 2.39 | ppb |
| \| | Cr | 52 | 5805.685 | 2.240 | 0.005 | 1.99762 | 1.86 | ppb |
| \| | Mn | 55 | 3202.180 | 2.643 | 0.004 | 0.97530 | 3.08 | ppb |
| \| | Co | 59 | 2522.318 | 2.349 | 0.003 | 1.05599 | 2.43 | ppb |
| \| | Ni | 60 | 663.355 | 7.248 | 0.001 | 0.98116 | 9.21 | ppb |
| \| | Cu | 63 | 2799.281 | 1.307 | 0.004 | 1.99313 | 2.41 | ppb |
| \| | Cu | 65 | 1362.315 | 7.607 | 0.002 | 1.93465 | 7.41 | ppb |
| \| | Zn | 66 | 981.159 | 3.487 | 0.001 | 2.31780 | 2.93 | ppb |
| \| | As | 75 | 552.897 | 8.998 | 0.001 | 1.03354 | 10.23 | ppb |
| ⌊ | Se | 82 | 241.781 | 2.870 | 0.000 | 4.80912 | 3.77 | ppb |
| ⌈ | Ag | 107 | 1955.747 | 3.601 | 0.001 | 1.02151 | 2.99 | ppb |
| \| | Ag | 109 | 1890.179 | 3.101 | 0.001 | 1.01153 | 2.88 | ppb |
| \| | Cd | 111 | 445.496 | 11.795 | 0.000 | 0.91837 | 11.20 | ppb |
| \| | In | 113 | 64450.379 | 1.228 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1453133.090 | 1.408 | 1453133.090 | | | ppb |
| ⌈ | Sb | 121 | 3949.114 | 4.436 | 0.002 | 2.14156 | 3.85 | ppb |
| \| | Ba | 135 | 3652.000 | 0.518 | 0.002 | 10.13060 | 0.40 | ppb |
| \| | Ba | 137 | 6188.581 | 1.489 | 0.003 | 9.86205 | 2.04 | ppb |
| ⌊> | Tb | 159 | 1860155.817 | 0.896 | 1860155.817 | | | ppb |
| ⌈ | Tl | 205 | 4077.498 | 3.162 | 0.003 | 1.02761 | 1.97 | ppb |
| \| | Pb | 206 | 1311.753 | 1.719 | 0.001 | 0.98762 | 2.15 | ppb |
| \| | Pb | 207 | 2365.142 | 2.207 | 0.002 | 0.96880 | 1.94 | ppb |
| \| | Pb | 208 | 3885.457 | 2.910 | 0.003 | 1.00380 | 2.19 | ppb |
| ⌊> | Bi | 209 | 1187439.470 | 1.592 | 1187439.470 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214565.484 | | ppb |
| ⌊ | Be | 9 | 104.001 | 0.914308 | ppb |
| ⌈> | Sc | 45 | 744746.782 | | ppb |
| \| | V | 51 | 12191.447 | 4.753287 | ppb |
| \| | Cr | 52 | 5725.639 | 1.965640 | ppb |
| \| | Mn | 55 | 3295.543 | 1.009822 | ppb |
| \| | Co | 59 | 2584.334 | 1.085560 | ppb |
| \| | Ni | 60 | 650.021 | 0.961777 | ppb |
| \| | Cu | 63 | 2787.055 | 1.990000 | ppb |
| \| | Cu | 65 | 1410.099 | 2.015920 | ppb |
| \| | Zn | 66 | 990.049 | 2.350135 | ppb |
| \| | As | 75 | 577.974 | 1.084044 | ppb |
| ⌊ | Se | 82 | 234.003 | 4.637081 | ppb |
| ⌈ | Ag | 107 | 1946.856 | 1.004909 | ppb |
| \| | Ag | 109 | 1866.841 | 0.987053 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 436.834 | 0.890097 | ppb |
| | In | 113 | 64280.940 | | ppb |
| > | In | 115 | 1470416.602 | | ppb |
| | Sb | 121 | 3860.745 | 2.113722 | ppb |
| | Ba | 135 | 3630.659 | 10.168319 | ppb |
| | Ba | 137 | 6193.918 | 9.965065 | ppb |
| > | Tb | 159 | 1842401.070 | | ppb |
| | Tl | 205 | 4215.888 | 1.050929 | ppb |
| | Pb | 206 | 1335.089 | 0.994015 | ppb |
| | Pb | 207 | 2425.149 | 0.982559 | ppb |
| | Pb | 208 | 4015.487 | 1.026314 | ppb |
| > | Bi | 209 | 1200808.493 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 215748.533 | | ppb |
| | Be | 9 | 116.001 | 1.018599 | ppb |
| > | Sc | 45 | 756033.325 | | ppb |
| | V | 51 | 12935.267 | 4.986022 | ppb |
| | Cr | 52 | 5955.773 | 2.038483 | ppb |
| | Mn | 55 | 3180.506 | 0.955279 | ppb |
| | Co | 59 | 2516.317 | 1.040672 | ppb |
| | Ni | 60 | 623.353 | 0.902090 | ppb |
| | Cu | 63 | 2770.384 | 1.946632 | ppb |
| | Cu | 65 | 1433.436 | 2.018925 | ppb |
| | Zn | 66 | 1010.051 | 2.363392 | ppb |
| | As | 75 | 495.599 | 0.912033 | ppb |
| | Se | 82 | 244.003 | 4.791923 | ppb |
| | Ag | 107 | 1890.179 | 1.002832 | ppb |
| | Ag | 109 | 1846.837 | 1.003845 | ppb |
| | Cd | 111 | 397.819 | 0.832606 | ppb |
| | In | 113 | 63757.606 | | ppb |
| > | In | 115 | 1430552.076 | | ppb |
| | Sb | 121 | 4150.861 | 2.234230 | ppb |
| | Ba | 135 | 3666.672 | 10.087849 | ppb |
| | Ba | 137 | 6093.856 | 9.630174 | ppb |
| > | Tb | 159 | 1875477.672 | | ppb |
| | Tl | 205 | 3960.784 | 1.016762 | ppb |
| | Pb | 206 | 1310.086 | 1.004925 | ppb |
| | Pb | 207 | 2340.139 | 0.976448 | ppb |
| | Pb | 208 | 3810.440 | 1.002694 | ppb |
| > | Bi | 209 | 1165818.579 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 214156.863 | | ppb |
| | Be | 9 | 82.000 | 0.713842 | ppb |
| > | Sc | 45 | 740256.033 | | ppb |
| | V | 51 | 12384.824 | 4.866761 | ppb |
| | Cr | 52 | 5735.644 | 1.988748 | ppb |
| | Mn | 55 | 3130.490 | 0.960802 | ppb |
| | Co | 59 | 2466.304 | 1.041741 | ppb |
| | Ni | 60 | 716.692 | 1.079607 | ppb |
| | Cu | 63 | 2840.403 | 2.042746 | ppb |
| | Cu | 65 | 1243.411 | 1.769113 | ppb |
| | Zn | 66 | 943.378 | 2.239879 | ppb |
| | As | 75 | 585.117 | 1.104530 | ppb |
| | Se | 82 | 247.336 | 4.998371 | ppb |
| | Ag | 107 | 2030.206 | 1.056794 | ppb |
| | Ag | 109 | 1956.858 | 1.043683 | ppb |
| | Cd | 111 | 501.837 | 1.032397 | ppb |
| | In | 113 | 65312.592 | | ppb |
| > | In | 115 | 1458430.593 | | ppb |
| | Sb | 121 | 3835.736 | 2.076731 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 3658.669 | 10.135618 | ppb |
| \| | Ba | 137 | 6277.970 | 9.990898 | ppb |
| \> | Tb | 159 | 1862588.711 | | ppb |
| ⌈ | Tl | 205 | 4055.822 | 1.015137 | ppb |
| \| | Pb | 206 | 1290.083 | 0.963923 | ppb |
| \| | Pb | 207 | 2330.137 | 0.947385 | ppb |
| \| | Pb | 208 | 3830.443 | 0.982386 | ppb |
| \> | Bi | 209 | 1195691.340 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 109.460 | | | |
| ⌊ | Be | 9 | 88.225 | | | | |
| ⌈> | Sc | 45 | | 105.829 | | | |
| ⌈ | V | 51 | 97.374 | | | | |
| ⌈ | Cr | 52 | 99.881 | | | | |
| ⌈ | Mn | 55 | 97.530 | | | | |
| ⌈ | Co | 59 | 105.599 | | | | |
| ⌈ | Ni | 60 | 98.116 | | | | |
| ⌈ | Cu | 63 | 99.656 | | | | |
| ⌈ | Cu | 65 | 96.733 | | | | |
| ⌈ | Zn | 66 | 115.890 | | | | |
| ⌈ | As | 75 | 103.354 | | | | |
| ⌊ | Se | 82 | 96.182 | | | | |
| ⌈ | Ag | 107 | 102.151 | | | | |
| ⌈ | Ag | 109 | 101.153 | | | | |
| ⌈ | Cd | 111 | 91.837 | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 104.044 | | | |
| ⌈ | Sb | 121 | 107.078 | | | | |
| ⌈ | Ba | 135 | 101.306 | | | | |
| ⌈ | Ba | 137 | 98.620 | | | | |
| ⌊> | Tb | 159 | | 99.991 | | | |
| ⌈ | Tl | 205 | 102.761 | | | | |
| ⌈ | Pb | 206 | 98.762 | | | | |
| ⌈ | Pb | 207 | 96.880 | | | | |
| ⌈ | Pb | 208 | 100.380 | | | | |
| ⌊> | Bi | 209 | | 101.466 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 16:34:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1447

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210574.710 | 0.635 | 210574.710 | | | ppb |
| ⌊ | Be | 9 | 30343.971 | 1.015 | 0.144 | 283.73231 | 1.64 | ppb |
| ⌈> | Sc | 45 | 745878.995 | 0.628 | 745878.995 | | | ppb |
| \| | V | 51 | 738592.588 | 0.988 | 0.989 | 311.28198 | 1.61 | ppb |
| \| | Cr | 52 | 601012.108 | 0.904 | 0.803 | 308.56011 | 1.38 | ppb |
| \| | Mn | 55 | 917097.291 | 0.657 | 1.229 | 307.24065 | 1.28 | ppb |
| \| | Co | 59 | 719316.286 | 0.453 | 0.964 | 305.33941 | 0.28 | ppb |
| \| | Ni | 60 | 185045.337 | 0.703 | 0.248 | 306.44694 | 1.16 | ppb |
| \| | Cu | 63 | 412349.128 | 0.855 | 0.553 | 307.61707 | 1.31 | ppb |
| \| | Cu | 65 | 197985.331 | 1.220 | 0.265 | 306.42395 | 1.75 | ppb |
| \| | Zn | 66 | 117249.050 | 1.723 | 0.157 | 314.93922 | 2.34 | ppb |
| \| | As | 75 | 159971.965 | 0.434 | 0.214 | 306.03839 | 1.03 | ppb |
| ⌊ | Se | 82 | 12601.713 | 0.681 | 0.017 | 305.40733 | 1.28 | ppb |
| ⌈ | Ag | 107 | 573217.685 | 0.973 | 0.411 | 313.69669 | 1.10 | ppb |
| \| | Ag | 109 | 552628.829 | 0.796 | 0.397 | 311.21888 | 0.94 | ppb |
| \| | Cd | 111 | 142781.889 | 1.332 | 0.102 | 310.10099 | 0.72 | ppb |
| \| | In | 113 | 203940.313 | 0.644 | 0.102 | | | ppb |
| ⌊> | In | 115 | 1393601.158 | 0.618 | 1393601.158 | | | ppb |
| ⌈ | Sb | 121 | 574729.623 | 1.381 | 0.308 | 314.85464 | 3.37 | ppb |
| \| | Ba | 135 | 111265.612 | 0.920 | 0.060 | 308.10347 | 2.91 | ppb |
| \| | Ba | 137 | 194290.770 | 1.109 | 0.104 | 309.09612 | 2.24 | ppb |
| ⌊> | Tb | 159 | 1869114.212 | 2.147 | 1869114.212 | | | ppb |
| ⌈ | Tl | 205 | 1197779.385 | 0.384 | 1.031 | 310.47779 | 0.44 | ppb |
| \| | Pb | 206 | 399403.565 | 0.689 | 0.344 | 314.56880 | 0.42 | ppb |
| \| | Pb | 207 | 731592.632 | 0.378 | 0.630 | 312.72367 | 0.29 | ppb |
| \| | Pb | 208 | 1149418.544 | 0.496 | 0.989 | 309.41325 | 0.69 | ppb |
| ⌊> | Bi | 209 | 1161843.767 | 0.295 | 1161843.767 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209973.541 | | ppb |
| ⌊ | Be | 9 | 30470.351 | 285.710180 | ppb |
| ⌈> | Sc | 45 | 743229.928 | | ppb |
| \| | V | 51 | 741427.232 | 313.572394 | ppb |
| \| | Cr | 52 | 607224.852 | 312.859261 | ppb |
| \| | Mn | 55 | 920316.085 | 309.402032 | ppb |
| \| | Co | 59 | 718943.185 | 306.266107 | ppb |
| \| | Ni | 60 | 184302.870 | 306.292536 | ppb |
| \| | Cu | 63 | 416406.216 | 311.737850 | ppb |
| \| | Cu | 65 | 197542.060 | 306.807588 | ppb |
| \| | Zn | 66 | 118467.596 | 319.319608 | ppb |
| \| | As | 75 | 160030.971 | 307.229488 | ppb |
| ⌊ | Se | 82 | 12613.951 | 306.782192 | ppb |
| ⌈ | Ag | 107 | 579198.101 | 315.933427 | ppb |
| \| | Ag | 109 | 557424.854 | 312.893959 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 143658.117 | 311.000098 | ppb |
| | In | 113 | 203739.561 | | ppb |
| > | In | 115 | 1398141.037 | | ppb |
| | Sb | 121 | 565801.181 | 302.685751 | ppb |
| | Ba | 135 | 110636.657 | 299.188773 | ppb |
| | Ba | 137 | 193861.066 | 301.229251 | ppb |
| > | Tb | 159 | 1913143.421 | | ppb |
| | Tl | 205 | 1195062.398 | 310.760244 | ppb |
| | Pb | 206 | 396227.310 | 313.064713 | ppb |
| | Pb | 207 | 728781.483 | 312.515409 | ppb |
| | Pb | 208 | 1150328.389 | 310.642731 | ppb |
| > | Bi | 209 | 1158149.498 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 212105.839 | | ppb |
| | Be | 9 | 29992.911 | 278.405123 | ppb |
| > | Sc | 45 | 743122.358 | | ppb |
| | V | 51 | 744045.381 | 314.726707 | ppb |
| | Cr | 52 | 598669.429 | 308.482142 | ppb |
| | Mn | 55 | 920824.877 | 309.617962 | ppb |
| | Co | 59 | 716260.566 | 305.167446 | ppb |
| | Ni | 60 | 186547.248 | 310.068778 | ppb |
| | Cu | 63 | 410586.155 | 307.423936 | ppb |
| | Cu | 65 | 200591.877 | 311.592097 | ppb |
| | Zn | 66 | 118363.036 | 319.083723 | ppb |
| | As | 75 | 160635.300 | 308.434419 | ppb |
| | Se | 82 | 12680.702 | 308.456052 | ppb |
| | Ag | 107 | 568161.172 | 309.722445 | ppb |
| | Ag | 109 | 548782.639 | 307.853299 | ppb |
| | Cd | 111 | 144087.422 | 311.737659 | ppb |
| | In | 113 | 202739.542 | | ppb |
| > | In | 115 | 1399001.468 | | ppb |
| | Sb | 121 | 580980.498 | 319.759775 | ppb |
| | Ba | 135 | 110713.500 | 308.020589 | ppb |
| | Ba | 137 | 196628.314 | 314.330231 | ppb |
| > | Tb | 159 | 1859583.870 | | ppb |
| | Tl | 205 | 1195185.937 | 308.986797 | ppb |
| | Pb | 206 | 401090.540 | 315.066310 | ppb |
| | Pb | 207 | 731686.359 | 311.938256 | ppb |
| | Pb | 208 | 1143311.555 | 306.953966 | ppb |
| > | Bi | 209 | 1164917.034 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 209644.750 | | ppb |
| | Be | 9 | 30568.651 | 287.081624 | ppb |
| > | Sc | 45 | 751284.699 | | ppb |
| | V | 51 | 730305.151 | 305.546846 | ppb |
| | Cr | 52 | 597142.044 | 304.338932 | ppb |
| | Mn | 55 | 910150.911 | 302.701948 | ppb |
| | Co | 59 | 722745.109 | 304.584691 | ppb |
| | Ni | 60 | 184285.894 | 302.979502 | ppb |
| | Cu | 63 | 410055.014 | 303.689429 | ppb |
| | Cu | 65 | 195822.057 | 300.872158 | ppb |
| | Zn | 66 | 114916.518 | 306.414316 | ppb |
| | As | 75 | 159249.624 | 302.451259 | ppb |
| | Se | 82 | 12510.487 | 300.983737 | ppb |
| | Ag | 107 | 572293.783 | 315.434186 | ppb |
| | Ag | 109 | 551678.995 | 312.909386 | ppb |
| | Cd | 111 | 140600.128 | 307.565219 | ppb |
| | In | 113 | 205341.838 | | ppb |
| > | In | 115 | 1383660.970 | | ppb |
| | Sb | 121 | 577407.190 | 322.118391 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 112446.678 | 317.101042 | ppb |
| \| | Ba | 137 | 192382.928 | 311.728875 | ppb |
| \> | Tb | 159 | 1834615.344 | | ppb |
| ⌈ | Tl | 205 | 1203089.820 | 311.686343 | ppb |
| \| | Pb | 206 | 400892.845 | 315.575370 | ppb |
| \| | Pb | 207 | 734310.054 | 313.717332 | ppb |
| \| | Pb | 208 | 1154615.687 | 310.643045 | ppb |
| \> | Bi | 209 | 1162464.771 | | ppb |

# QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 107.295 | | | |
| ⌊ | Be | 9 | 94.577 | | | | |
| ⌈> | Sc | 45 | | 105.669 | | | |
| \| | V | 51 | 103.761 | | | | |
| \| | Cr | 52 | 102.853 | | | | |
| \| | Mn | 55 | 102.414 | | | | |
| \| | Co | 59 | 101.780 | | | | |
| \| | Ni | 60 | 102.149 | | | | |
| \| | Cu | 63 | 102.539 | | | | |
| \| | Cu | 65 | 102.141 | | | | |
| \| | Zn | 66 | 104.980 | | | | |
| \| | As | 75 | 102.013 | | | | |
| ⌊ | Se | 82 | 101.802 | | | | |
| ⌈ | Ag | 107 | 104.566 | | | | |
| \| | Ag | 109 | 103.740 | | | | |
| \| | Cd | 111 | 103.367 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.781 | | | |
| ⌈ | Sb | 121 | 104.952 | | | | |
| \| | Ba | 135 | 102.701 | | | | |
| \| | Ba | 137 | 103.032 | | | | |
| ⌊> | Tb | 159 | | 100.473 | | | |
| ⌈ | Tl | 205 | 103.493 | | | | |
| \| | Pb | 206 | 104.856 | | | | |
| \| | Pb | 207 | 104.241 | | | | |
| \| | Pb | 208 | 103.138 | | | | |
| ⌊> | Bi | 209 | | 99.279 | | | |

# QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 16:35:32
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1448

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210396.365 | 0.726 | 210396.365 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 91.652 | -0.000 | -0.00907 | 313.71 | ppb |
| ⌈> | Sc | 45 | 742547.628 | 0.650 | 742547.628 | | | ppb |
| \| | V | 51 | 1081.345 | 51.194 | 0.000 | 0.06001 | 394.00 | ppb |
| \| | Cr | 52 | 1971.529 | 8.939 | 0.000 | 0.03198 | 268.24 | ppb |
| \| | Mn | 55 | 290.004 | 7.901 | 0.000 | 0.00145 | 570.04 | ppb |
| \| | Co | 59 | 78.000 | 14.276 | 0.000 | 0.02010 | 23.53 | ppb |
| \| | Ni | 60 | 77.778 | 28.536 | 0.000 | 0.01287 | 292.60 | ppb |
| \| | Cu | 63 | 130.001 | 24.727 | 0.000 | 0.00450 | 524.34 | ppb |
| \| | Cu | 65 | 113.334 | 11.765 | 0.000 | 0.00530 | 371.05 | ppb |
| \| | Zn | 66 | 111.112 | 6.245 | -0.000 | -0.01555 | 126.39 | ppb |
| \| | As | 75 | 79.141 | 56.629 | 0.000 | 0.12871 | 66.72 | ppb |
| ⌊ | Se | 82 | 41.556 | 11.268 | -0.000 | -0.04667 | 255.72 | ppb |
| ⌈ | Ag | 107 | 61.111 | 13.727 | 0.000 | 0.02783 | 16.92 | ppb |
| \| | Ag | 109 | 65.556 | 28.005 | 0.000 | 0.02679 | 39.60 | ppb |
| \| | Cd | 111 | 25.730 | 12.258 | 0.000 | 0.04543 | 14.05 | ppb |
| \| | In | 113 | 63127.018 | 2.138 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1426997.678 | 1.471 | 1426997.678 | | | ppb |
| ⌈ | Sb | 121 | 283.338 | 31.634 | 0.000 | 0.12469 | 39.93 | ppb |
| \| | Ba | 135 | 34.667 | 26.647 | 0.000 | 0.06858 | 37.97 | ppb |
| \| | Ba | 137 | 51.333 | 37.438 | 0.000 | 0.05225 | 59.87 | ppb |
| ⌊> | Tb | 159 | 1862342.388 | 0.660 | 1862342.388 | | | ppb |
| ⌈ | Tl | 205 | 158.335 | 21.026 | 0.000 | 0.03402 | 25.76 | ppb |
| \| | Pb | 206 | 90.000 | 25.459 | 0.000 | 0.04621 | 37.05 | ppb |
| \| | Pb | 207 | 141.667 | 24.024 | 0.000 | 0.03902 | 35.11 | ppb |
| \| | Pb | 208 | 241.669 | 43.416 | 0.000 | 0.04435 | 61.46 | ppb |
| ⌊> | Bi | 209 | 1180090.567 | 1.255 | 1180090.567 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211450.171 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.015741 | ppb |
| ⌈> | Sc | 45 | 746226.197 | | ppb |
| \| | V | 51 | 1259.179 | 0.132187 | ppb |
| \| | Cr | 52 | 2170.235 | 0.129537 | ppb |
| \| | Mn | 55 | 265.004 | -0.007436 | ppb |
| \| | Co | 59 | 88.000 | 0.024181 | ppb |
| \| | Ni | 60 | 53.333 | -0.028390 | ppb |
| \| | Cu | 63 | 166.668 | 0.031442 | ppb |
| \| | Cu | 65 | 126.667 | 0.025152 | ppb |
| \| | Zn | 66 | 103.334 | -0.037973 | ppb |
| \| | As | 75 | 117.685 | 0.201660 | ppb |
| ⌊ | Se | 82 | 42.000 | -0.041241 | ppb |
| ⌈ | Ag | 107 | 53.333 | 0.023214 | ppb |
| \| | Ag | 109 | 46.667 | 0.015908 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 28.455 | 0.050302 | ppb |
| | In | 113 | 63938.757 | | ppb |
| > | In | 115 | 1449185.515 | | ppb |
| | Sb | 121 | 330.005 | 0.151553 | ppb |
| | Ba | 135 | 40.000 | 0.084148 | ppb |
| | Ba | 137 | 72.000 | 0.085967 | ppb |
| > | Tb | 159 | 1848533.404 | | ppb |
| | Tl | 205 | 120.001 | 0.023906 | ppb |
| | Pb | 206 | 95.000 | 0.049525 | ppb |
| | Pb | 207 | 180.001 | 0.054539 | ppb |
| | Pb | 208 | 360.004 | 0.074928 | ppb |
| > | Bi | 209 | 1191194.105 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211094.779 | | ppb |
| | Be | 9 | 4.000 | -0.002821 | ppb |
| > | Sc | 45 | 744337.963 | | ppb |
| | V | 51 | 460.702 | -0.204093 | ppb |
| | Cr | 52 | 1910.182 | -0.001838 | ppb |
| | Mn | 55 | 295.004 | 0.002863 | ppb |
| | Co | 59 | 66.000 | 0.014917 | ppb |
| | Ni | 60 | 83.334 | 0.021636 | ppb |
| | Cu | 63 | 116.667 | -0.005631 | ppb |
| | Cu | 65 | 113.334 | 0.004960 | ppb |
| | Zn | 66 | 116.667 | -0.001348 | ppb |
| | As | 75 | 29.964 | 0.034062 | ppb |
| | Se | 82 | 36.667 | -0.168619 | ppb |
| | Ag | 107 | 70.000 | 0.032627 | ppb |
| | Ag | 109 | 66.667 | 0.027369 | ppb |
| | Cd | 111 | 22.275 | 0.038206 | ppb |
| | In | 113 | 63873.341 | | ppb |
| > | In | 115 | 1424336.879 | | ppb |
| | Sb | 121 | 340.006 | 0.155288 | ppb |
| | Ba | 135 | 40.000 | 0.083077 | ppb |
| | Ba | 137 | 48.000 | 0.046629 | ppb |
| > | Tb | 159 | 1866395.232 | | ppb |
| | Tl | 205 | 175.002 | 0.038874 | ppb |
| | Pb | 206 | 65.000 | 0.027676 | ppb |
| | Pb | 207 | 115.000 | 0.028588 | ppb |
| | Pb | 208 | 205.001 | 0.035520 | ppb |
| > | Bi | 209 | 1163276.530 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208644.146 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 737078.726 | | ppb |
| | V | 51 | 1524.154 | 0.251923 | ppb |
| | Cr | 52 | 1834.168 | -0.031745 | ppb |
| | Mn | 55 | 310.005 | 0.008926 | ppb |
| | Co | 59 | 80.000 | 0.021208 | ppb |
| | Ni | 60 | 96.667 | 0.045351 | ppb |
| | Cu | 63 | 106.667 | -0.012323 | ppb |
| | Cu | 65 | 100.001 | -0.014201 | ppb |
| | Zn | 66 | 113.334 | -0.007321 | ppb |
| | As | 75 | 89.772 | 0.150415 | ppb |
| | Se | 82 | 46.000 | 0.069864 | ppb |
| | Ag | 107 | 60.000 | 0.027658 | ppb |
| | Ag | 109 | 83.334 | 0.037103 | ppb |
| | Cd | 111 | 26.460 | 0.047773 | ppb |
| | In | 113 | 61568.955 | | ppb |
| > | In | 115 | 1407470.639 | | ppb |
| | Sb | 121 | 180.002 | 0.067238 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 24.000 | 0.038518 | ppb |
| \| | Ba | 137 | 34.000 | 0.024163 | ppb |
| \> | Tb | 159 | 1872098.529 | | ppb |
| ⌈ | Tl | 205 | 180.002 | 0.039283 | ppb |
| \| | Pb | 206 | 110.001 | 0.061433 | ppb |
| \| | Pb | 207 | 130.001 | 0.033938 | ppb |
| \| | Pb | 208 | 160.001 | 0.022604 | ppb |
| \> | Bi | 209 | 1185801.064 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 107.205 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 105.197 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 102.172 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 100.109 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.838 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BLK1

Sample Date/Time: Monday, August 01, 2011 16:53:11
Sample Type: Sample
Sample Description: PBW
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BLK1.1449

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209892.558 | 2.203 | 209892.558 | | | ppb |
| ⌊ | Be | 9 | 2.000 | 0.000 | -0.000 | -0.02136 | 1.95 | ppb |
| ⌈> | Sc | 45 | 736995.119 | 1.172 | 736995.119 | | | ppb |
| \| | V | 51 | 705.729 | 12.490 | -0.000 | -0.09759 | 37.37 | ppb |
| \| | Cr | 52 | 1870.175 | 3.335 | -0.000 | -0.01255 | 341.20 | ppb |
| \| | Mn | 55 | 273.337 | 6.926 | -0.000 | -0.00354 | 151.90 | ppb |
| \| | Co | 59 | 18.000 | 58.795 | -0.000 | -0.00542 | 84.21 | ppb |
| \| | Ni | 60 | 65.556 | 25.593 | -0.000 | -0.00657 | 448.24 | ppb |
| \| | Cu | 63 | 110.001 | 13.887 | -0.000 | -0.00970 | 128.90 | ppb |
| \| | Cu | 65 | 70.000 | 29.738 | -0.000 | -0.06099 | 54.75 | ppb |
| \| | Zn | 66 | 113.334 | 38.235 | -0.000 | -0.00735 | 1600.99 | ppb |
| \| | As | 75 | 32.587 | 52.460 | 0.000 | 0.03953 | 82.97 | ppb |
| ⌊ | Se | 82 | 38.222 | 5.035 | -0.000 | -0.12165 | 32.02 | ppb |
| ⌈ | Ag | 107 | 13.333 | 50.000 | 0.000 | 0.00235 | 157.82 | ppb |
| \| | Ag | 109 | 13.333 | 25.000 | -0.000 | -0.00197 | 99.91 | ppb |
| \| | Cd | 111 | 9.092 | 48.883 | 0.000 | 0.01017 | 90.37 | ppb |
| \| | In | 113 | 61941.255 | 0.950 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1419240.781 | 1.686 | 1419240.781 | | | ppb |
| ⌈ | Sb | 121 | 45.000 | 50.918 | -0.000 | -0.00608 | 212.24 | ppb |
| \| | Ba | 135 | 12.000 | 33.333 | 0.000 | 0.00600 | 191.20 | ppb |
| \| | Ba | 137 | 14.667 | 20.830 | -0.000 | -0.00611 | 82.21 | ppb |
| ⌊> | Tb | 159 | 1839245.599 | 0.682 | 1839245.599 | | | ppb |
| ⌈ | Tl | 205 | 11.667 | 65.465 | -0.000 | -0.00345 | 56.49 | ppb |
| \| | Pb | 206 | 11.667 | 49.487 | -0.000 | -0.01438 | 31.27 | ppb |
| \| | Pb | 207 | 25.000 | 34.641 | -0.000 | -0.00996 | 36.82 | ppb |
| \| | Pb | 208 | 60.000 | 54.645 | -0.000 | -0.00367 | 236.94 | ppb |
| ⌊> | Bi | 209 | 1177153.512 | 0.250 | 1177153.512 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211343.960 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.021499 | ppb |
| ⌈> | Sc | 45 | 728707.342 | | ppb |
| \| | V | 51 | 728.865 | -0.084092 | ppb |
| \| | Cr | 52 | 1906.182 | 0.017198 | ppb |
| \| | Mn | 55 | 260.003 | -0.007017 | ppb |
| \| | Co | 59 | 14.000 | -0.007075 | ppb |
| \| | Ni | 60 | 83.334 | 0.024603 | ppb |
| \| | Cu | 63 | 126.667 | 0.003878 | ppb |
| \| | Cu | 65 | 76.667 | -0.049384 | ppb |
| \| | Zn | 66 | 136.668 | 0.060432 | ppb |
| \| | As | 75 | 13.216 | 0.002497 | ppb |
| ⌊ | Se | 82 | 36.000 | -0.166047 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002270 | ppb |
| \| | Ag | 109 | 13.333 | -0.002035 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 8.455 | 0.008798 | ppb |
| | In | 113 | 61468.339 | | ppb |
| > | In | 115 | 1427453.510 | | ppb |
| | Sb | 121 | 70.000 | 0.007994 | ppb |
| | Ba | 135 | 16.000 | 0.017447 | ppb |
| | Ba | 137 | 14.000 | -0.007076 | ppb |
| > | Tb | 159 | 1829098.352 | | ppb |
| | Tl | 205 | 5.000 | -0.005156 | ppb |
| | Pb | 206 | 15.000 | -0.011811 | ppb |
| | Pb | 207 | 30.000 | -0.007868 | ppb |
| | Pb | 208 | 95.000 | 0.005616 | ppb |
| > | Bi | 209 | 1178414.642 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 213617.510 | | ppb |
| | Be | 9 | 2.000 | -0.021698 | ppb |
| > | Sc | 45 | 745941.057 | | ppb |
| | V | 51 | 779.998 | -0.069791 | ppb |
| | Cr | 52 | 1798.162 | -0.061645 | ppb |
| | Mn | 55 | 295.004 | 0.002651 | ppb |
| | Co | 59 | 10.000 | -0.008913 | ppb |
| | Ni | 60 | 50.000 | -0.033878 | ppb |
| | Cu | 63 | 96.667 | -0.020741 | ppb |
| | Cu | 65 | 46.667 | -0.098642 | ppb |
| | Zn | 66 | 140.001 | 0.060704 | ppb |
| | As | 75 | 38.981 | 0.051188 | ppb |
| | Se | 82 | 39.333 | -0.105695 | ppb |
| | Ag | 107 | 20.000 | 0.006102 | ppb |
| | Ag | 109 | 16.667 | 0.000029 | ppb |
| | Cd | 111 | 5.000 | 0.001739 | ppb |
| | In | 113 | 61755.098 | | ppb |
| > | In | 115 | 1392289.926 | | ppb |
| | Sb | 121 | 25.000 | -0.017371 | ppb |
| | Ba | 135 | 8.000 | -0.005478 | ppb |
| | Ba | 137 | 12.000 | -0.010581 | ppb |
| > | Tb | 159 | 1853260.274 | | ppb |
| | Tl | 205 | 10.000 | -0.003868 | ppb |
| | Pb | 206 | 15.000 | -0.011765 | ppb |
| | Pb | 207 | 30.000 | -0.007819 | ppb |
| | Pb | 208 | 30.000 | -0.011605 | ppb |
| > | Bi | 209 | 1173795.840 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204716.205 | | ppb |
| | Be | 9 | 2.000 | -0.020896 | ppb |
| > | Sc | 45 | 736336.957 | | ppb |
| | V | 51 | 608.323 | -0.138878 | ppb |
| | Cr | 52 | 1906.182 | 0.006786 | ppb |
| | Mn | 55 | 265.004 | -0.006244 | ppb |
| | Co | 59 | 30.000 | -0.000258 | ppb |
| | Ni | 60 | 63.334 | -0.010423 | ppb |
| | Cu | 63 | 106.667 | -0.012242 | ppb |
| | Cu | 65 | 86.667 | -0.034957 | ppb |
| | Zn | 66 | 63.334 | -0.143179 | ppb |
| | As | 75 | 45.563 | 0.064916 | ppb |
| | Se | 82 | 39.333 | -0.093220 | ppb |
| | Ag | 107 | 6.667 | -0.001318 | ppb |
| | Ag | 109 | 10.000 | -0.003908 | ppb |
| | Cd | 111 | 13.820 | 0.019959 | ppb |
| | In | 113 | 62600.329 | | ppb |
| > | In | 115 | 1437978.906 | | ppb |
| | Sb | 121 | 40.000 | -0.008871 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 12.000 | 0.006016 | ppb |
| \| | Ba | 137 | 18.000 | -0.000675 | ppb |
| \> | Tb | 159 | 1835378.171 | | ppb |
| ⌈ | Tl | 205 | 20.000 | -0.001326 | ppb |
| \| | Pb | 206 | 5.000 | -0.019579 | ppb |
| \| | Pb | 207 | 15.000 | -0.014195 | ppb |
| \| | Pb | 208 | 55.000 | -0.005012 | ppb |
| \> | Bi | 209 | 1179250.053 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 106.948 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 104.410 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 101.617 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.867 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 100.587 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BS1

Sample Date/Time: Monday, August 01, 2011 16:54:37
Sample Type: Sample
Sample Description: LCSW
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BS1.1450

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203249.137 | 1.744 | 203249.137 | | | ppb |
| ⌊ | Be | 9 | 9708.713 | 2.887 | 0.048 | 94.01177 | 1.58 | ppb |
| ⌈> | Sc | 45 | 725553.891 | 1.882 | 725553.891 | | | ppb |
| \| | V | 51 | 229481.636 | 0.498 | 0.315 | 99.17370 | 2.19 | ppb |
| \| | Cr | 52 | 197892.550 | 1.609 | 0.270 | 103.83211 | 3.55 | ppb |
| \| | Mn | 55 | 281658.151 | 0.120 | 0.388 | 96.95575 | 1.97 | ppb |
| \| | Co | 59 | 240261.400 | 0.523 | 0.331 | 104.85298 | 1.37 | ppb |
| \| | Ni | 60 | 54397.566 | 1.145 | 0.075 | 92.55021 | 2.48 | ppb |
| \| | Cu | 63 | 131956.121 | 1.297 | 0.182 | 101.17129 | 3.17 | ppb |
| \| | Cu | 65 | 63931.561 | 2.318 | 0.088 | 101.65136 | 4.19 | ppb |
| \| | Zn | 66 | 77283.059 | 0.983 | 0.106 | 213.32902 | 2.07 | ppb |
| \| | As | 75 | 101659.430 | 0.692 | 0.140 | 199.94434 | 1.24 | ppb |
| ⌊ | Se | 82 | 8287.211 | 1.319 | 0.011 | 206.13383 | 0.95 | ppb |
| ⌈ | Ag | 107 | 192577.913 | 1.203 | 0.138 | 105.52384 | 2.56 | ppb |
| \| | Ag | 109 | 185246.574 | 2.922 | 0.133 | 104.41433 | 1.54 | ppb |
| \| | Cd | 111 | 45657.667 | 1.481 | 0.033 | 99.26633 | 0.29 | ppb |
| \| | In | 113 | 105995.502 | 1.104 | 0.032 | | | ppb |
| ⌊> | In | 115 | 1392078.876 | 1.402 | 1392078.876 | | | ppb |
| ⌈ | Sb | 121 | 368447.082 | 2.267 | 0.200 | 204.92960 | 2.04 | ppb |
| \| | Ba | 135 | 35928.442 | 1.878 | 0.020 | 101.00289 | 1.72 | ppb |
| \| | Ba | 137 | 62382.668 | 1.429 | 0.034 | 100.77245 | 1.86 | ppb |
| ⌊> | Tb | 159 | 1840006.075 | 0.768 | 1840006.075 | | | ppb |
| ⌈ | Tl | 205 | 793154.711 | 1.609 | 0.679 | 204.52907 | 2.75 | ppb |
| \| | Pb | 206 | 255576.609 | 0.930 | 0.219 | 200.23957 | 2.27 | ppb |
| \| | Pb | 207 | 466600.300 | 0.955 | 0.399 | 198.39185 | 1.64 | ppb |
| \| | Pb | 208 | 733975.401 | 1.247 | 0.628 | 196.52509 | 1.67 | ppb |
| ⌊> | Bi | 209 | 1168170.701 | 1.608 | 1168170.701 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207086.261 | | ppb |
| ⌊ | Be | 9 | 10029.027 | 95.323176 | ppb |
| ⌈> | Sc | 45 | 736121.962 | | ppb |
| \| | V | 51 | 228190.763 | 97.165842 | ppb |
| \| | Cr | 52 | 195510.720 | 101.038687 | ppb |
| \| | Mn | 55 | 281270.804 | 95.407289 | ppb |
| \| | Co | 59 | 241212.505 | 103.738790 | ppb |
| \| | Ni | 60 | 53744.034 | 90.097193 | ppb |
| \| | Cu | 63 | 131184.866 | 99.095065 | ppb |
| \| | Cu | 65 | 62474.546 | 97.851401 | ppb |
| \| | Zn | 66 | 77982.886 | 212.120202 | ppb |
| \| | As | 75 | 102340.640 | 198.363729 | ppb |
| ⌊ | Se | 82 | 8317.458 | 203.886030 | ppb |
| ⌈ | Ag | 107 | 192345.553 | 104.512854 | ppb |
| \| | Ag | 109 | 188659.660 | 105.486515 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 46177.751 | 99.579208 | ppb |
| | In | 113 | 104816.461 | | ppb |
| > | In | 115 | 1403519.265 | | ppb |
| | Sb | 121 | 375276.945 | 206.987785 | ppb |
| | Ba | 135 | 36454.325 | 101.625390 | ppb |
| | Ba | 137 | 62329.646 | 99.838914 | ppb |
| > | Tb | 159 | 1855505.060 | | ppb |
| | Tl | 205 | 788875.457 | 199.727013 | ppb |
| | Pb | 206 | 254431.100 | 195.721659 | ppb |
| | Pb | 207 | 468835.177 | 195.738285 | ppb |
| | Pb | 208 | 739334.298 | 194.384805 | ppb |
| > | Bi | 209 | 1189504.626 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202563.018 | | ppb |
| | Be | 9 | 9508.518 | 92.392753 | ppb |
| > | Sc | 45 | 710134.996 | | ppb |
| | V | 51 | 229884.787 | 101.486963 | ppb |
| | Cr | 52 | 201508.022 | 108.016472 | ppb |
| | Mn | 55 | 281810.689 | 99.092204 | ppb |
| | Co | 59 | 238836.485 | 106.476142 | ppb |
| | Ni | 60 | 54464.583 | 94.652280 | ppb |
| | Cu | 63 | 133917.396 | 104.866440 | ppb |
| | Cu | 65 | 65436.733 | 106.256206 | ppb |
| | Zn | 66 | 77391.652 | 218.224628 | ppb |
| | As | 75 | 100936.409 | 202.801873 | ppb |
| | Se | 82 | 8165.999 | 207.517377 | ppb |
| | Ag | 107 | 190385.238 | 103.472968 | ppb |
| | Ag | 109 | 188075.476 | 105.185588 | ppb |
| | Cd | 111 | 45901.727 | 99.008155 | ppb |
| | In | 113 | 107156.061 | | ppb |
| > | In | 115 | 1403175.828 | | ppb |
| | Sb | 121 | 370929.156 | 207.687536 | ppb |
| | Ba | 135 | 36163.271 | 102.340636 | ppb |
| | Ba | 137 | 63299.711 | 102.928873 | ppb |
| > | Tb | 159 | 1827829.719 | | ppb |
| | Tl | 205 | 807508.181 | 210.712702 | ppb |
| | Pb | 206 | 258308.629 | 204.797479 | ppb |
| | Pb | 207 | 469495.318 | 202.024000 | ppb |
| | Pb | 208 | 739187.396 | 200.305097 | ppb |
| > | Bi | 209 | 1154121.259 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200098.132 | | ppb |
| | Be | 9 | 9588.595 | 94.319394 | ppb |
| > | Sc | 45 | 730404.715 | | ppb |
| | V | 51 | 230369.360 | 98.868298 | ppb |
| | Cr | 52 | 196658.907 | 102.441165 | ppb |
| | Mn | 55 | 281892.960 | 96.367745 | ppb |
| | Co | 59 | 240735.208 | 104.344004 | ppb |
| | Ni | 60 | 54984.081 | 92.901160 | ppb |
| | Cu | 63 | 130766.101 | 99.552356 | ppb |
| | Cu | 65 | 63883.405 | 100.846467 | ppb |
| | Zn | 66 | 76474.638 | 209.642215 | ppb |
| | As | 75 | 101701.240 | 198.667427 | ppb |
| | Se | 82 | 8378.175 | 206.998093 | ppb |
| | Ag | 107 | 195002.948 | 108.585706 | ppb |
| | Ag | 109 | 179004.587 | 102.570891 | ppb |
| | Cd | 111 | 44893.525 | 99.211639 | ppb |
| | In | 113 | 106013.985 | | ppb |
| > | In | 115 | 1369541.535 | | ppb |
| | Sb | 121 | 359135.144 | 200.113471 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 35167.730 | 99.042646 | ppb |
| | Ba | 137 | 61518.647 | 99.549577 | ppb |
| > | Tb | 159 | 1836683.445 | | ppb |
| | Tl | 205 | 783080.494 | 203.147501 | ppb |
| | Pb | 206 | 253990.099 | 200.199563 | ppb |
| | Pb | 207 | 461470.403 | 197.413254 | ppb |
| | Pb | 208 | 723404.508 | 194.885381 | ppb |
| > | Bi | 209 | 1160886.218 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.563 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 102.789 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.672 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.908 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 99.819 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BSD1

Sample Date/Time: Monday, August 01, 2011 16:56:03
Sample Type: Sample
Sample Description: LCSWD
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BSD1.1451

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202912.681 | 0.312 | 202912.681 | | | ppb |
| ⌊ | Be | 9 | 9758.092 | 1.008 | 0.048 | 94.65785 | 1.30 | ppb |
| ⌈> | Sc | 45 | 723976.605 | 1.462 | 723976.605 | | | ppb |
| ⌈ | V | 51 | 229314.659 | 1.967 | 0.315 | 99.28845 | 0.97 | ppb |
| ⌈ | Cr | 52 | 197196.759 | 0.805 | 0.270 | 103.65247 | 0.84 | ppb |
| ⌈ | Mn | 55 | 280225.612 | 0.918 | 0.387 | 96.66291 | 1.78 | ppb |
| ⌈ | Co | 59 | 239694.664 | 0.209 | 0.331 | 104.82987 | 1.42 | ppb |
| ⌈ | Ni | 60 | 54189.765 | 0.471 | 0.075 | 92.38261 | 1.32 | ppb |
| ⌈ | Cu | 63 | 132163.215 | 0.810 | 0.182 | 101.53238 | 2.18 | ppb |
| ⌈ | Cu | 65 | 64003.062 | 0.707 | 0.088 | 101.95551 | 2.14 | ppb |
| ⌈ | Zn | 66 | 76587.803 | 2.053 | 0.106 | 211.84959 | 2.52 | ppb |
| ⌈ | As | 75 | 101422.679 | 0.296 | 0.140 | 199.91336 | 1.60 | ppb |
| ⌊ | Se | 82 | 8276.312 | 0.422 | 0.011 | 206.31668 | 1.20 | ppb |
| ⌈ | Ag | 107 | 193960.857 | 0.931 | 0.139 | 106.30636 | 1.79 | ppb |
| ⌈ | Ag | 109 | 187509.531 | 0.891 | 0.135 | 105.74688 | 0.99 | ppb |
| ⌈ | Cd | 111 | 46331.054 | 0.091 | 0.033 | 100.77259 | 0.86 | ppb |
| ⌈ | In | 113 | 108060.784 | 1.300 | 0.034 | | | ppb |
| ⌊> | In | 115 | 1391578.488 | 0.935 | 1391578.488 | | | ppb |
| ⌈ | Sb | 121 | 369202.106 | 0.551 | 0.200 | 204.24573 | 0.87 | ppb |
| ⌈ | Ba | 135 | 35753.814 | 1.654 | 0.019 | 99.97217 | 1.95 | ppb |
| ⌈ | Ba | 137 | 62104.928 | 0.775 | 0.034 | 99.77444 | 0.67 | ppb |
| ⌊> | Tb | 159 | 1850006.403 | 0.316 | 1850006.403 | | | ppb |
| ⌈ | Tl | 205 | 800165.185 | 0.981 | 0.679 | 204.60095 | 0.52 | ppb |
| ⌈ | Pb | 206 | 255246.779 | 1.164 | 0.217 | 198.31454 | 1.56 | ppb |
| ⌈ | Pb | 207 | 468622.758 | 0.802 | 0.398 | 197.60747 | 1.29 | ppb |
| ⌈ | Pb | 208 | 739819.922 | 0.772 | 0.628 | 196.45371 | 0.89 | ppb |
| ⌊> | Bi | 209 | 1177769.054 | 0.482 | 1177769.054 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203573.224 | | ppb |
| ⌊ | Be | 9 | 9644.649 | 93.250831 | ppb |
| ⌈> | Sc | 45 | 736170.335 | | ppb |
| ⌈ | V | 51 | 233741.544 | 99.532555 | ppb |
| ⌈ | Cr | 52 | 198878.154 | 102.789147 | ppb |
| ⌈ | Mn | 55 | 279790.124 | 94.898292 | ppb |
| ⌈ | Co | 59 | 239778.633 | 103.115266 | ppb |
| ⌈ | Ni | 60 | 54337.227 | 91.086923 | ppb |
| ⌈ | Cu | 63 | 131056.533 | 98.991522 | ppb |
| ⌈ | Cu | 65 | 63487.562 | 99.434274 | ppb |
| ⌈ | Zn | 66 | 76464.561 | 207.970396 | ppb |
| ⌈ | As | 75 | 101245.685 | 196.228264 | ppb |
| ⌊ | Se | 82 | 8302.779 | 203.510889 | ppb |
| ⌈ | Ag | 107 | 192060.145 | 104.651046 | ppb |
| ⌈ | Ag | 109 | 189420.508 | 106.209629 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 46337.111 | 100.203716 | ppb |
| | In | 113 | 107241.975 | | ppb |
| > | In | 115 | 1399586.173 | | ppb |
| | Sb | 121 | 371287.078 | 206.067429 | ppb |
| | Ba | 135 | 36436.259 | 102.210287 | ppb |
| | Ba | 137 | 62059.976 | 100.028561 | ppb |
| > | Tb | 159 | 1843975.582 | | ppb |
| | Tl | 205 | 800864.484 | 204.472258 | ppb |
| | Pb | 206 | 252349.336 | 195.757107 | ppb |
| | Pb | 207 | 467509.392 | 196.830707 | ppb |
| | Pb | 208 | 746232.166 | 197.853102 | ppb |
| > | Bi | 209 | 1179558.443 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202309.973 | | ppb |
| | Be | 9 | 9818.818 | 95.528581 | ppb |
| > | Sc | 45 | 718646.989 | | ppb |
| | V | 51 | 229477.682 | 100.101886 | ppb |
| | Cr | 52 | 195722.808 | 103.632978 | ppb |
| | Mn | 55 | 282988.252 | 98.326926 | ppb |
| | Co | 59 | 240149.372 | 105.793272 | ppb |
| | Ni | 60 | 53894.842 | 92.550178 | ppb |
| | Cu | 63 | 133194.504 | 103.063388 | ppb |
| | Cu | 65 | 64336.294 | 103.227065 | ppb |
| | Zn | 66 | 78218.045 | 217.942079 | ppb |
| | As | 75 | 101769.331 | 202.053394 | ppb |
| | Se | 82 | 8289.434 | 208.162346 | ppb |
| | Ag | 107 | 194170.313 | 105.876260 | ppb |
| | Ag | 109 | 186319.731 | 104.545258 | ppb |
| | Cd | 111 | 46369.956 | 100.346175 | ppb |
| | In | 113 | 109683.240 | | ppb |
| > | In | 115 | 1398590.055 | | ppb |
| | Sb | 121 | 367220.995 | 202.526176 | ppb |
| | Ba | 135 | 35396.535 | 98.667159 | ppb |
| | Ba | 137 | 62607.373 | 100.275192 | ppb |
| > | Tb | 159 | 1855666.273 | | ppb |
| | Tl | 205 | 807638.068 | 205.716589 | ppb |
| | Pb | 206 | 255102.893 | 197.427794 | ppb |
| | Pb | 207 | 465549.218 | 195.544187 | ppb |
| | Pb | 208 | 735281.761 | 194.490790 | ppb |
| > | Bi | 209 | 1182339.965 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202854.845 | | ppb |
| | Be | 9 | 9810.810 | 95.194149 | ppb |
| > | Sc | 45 | 717112.490 | | ppb |
| | V | 51 | 224724.750 | 98.230918 | ppb |
| | Cr | 52 | 196989.316 | 104.535289 | ppb |
| | Mn | 55 | 277898.459 | 96.763520 | ppb |
| | Co | 59 | 239155.987 | 105.581071 | ppb |
| | Ni | 60 | 54337.227 | 93.510733 | ppb |
| | Cu | 63 | 132238.609 | 102.542221 | ppb |
| | Cu | 65 | 64185.329 | 103.205176 | ppb |
| | Zn | 66 | 75080.802 | 209.636296 | ppb |
| | As | 75 | 101253.022 | 201.458410 | ppb |
| | Se | 82 | 8236.724 | 207.276804 | ppb |
| | Ag | 107 | 195652.112 | 108.391766 | ppb |
| | Ag | 109 | 186788.353 | 106.485757 | ppb |
| | Cd | 111 | 46286.094 | 101.767887 | ppb |
| | In | 113 | 107257.136 | | ppb |
| > | In | 115 | 1376559.237 | | ppb |
| | Sb | 121 | 369098.245 | 204.143586 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 35428.648 | 99.039054 | ppb |
| | Ba | 137 | 61647.436 | 99.019556 | ppb |
| > | Tb | 159 | 1850377.356 | | ppb |
| | Tl | 205 | 791993.003 | 203.614004 | ppb |
| | Pb | 206 | 258288.109 | 201.758728 | ppb |
| | Pb | 207 | 472809.665 | 200.447514 | ppb |
| | Pb | 208 | 737945.838 | 197.017227 | ppb |
| > | Bi | 209 | 1171408.753 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 103.391 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 102.566 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.636 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.446 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.639 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107162-01

Sample Date/Time: Monday, August 01, 2011 16:57:28
Sample Type: Sample
Sample Description: 7DUP
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107162-01.1452

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196696.378 | 0.789 | 196696.378 | | | ppb |
| ⌊ | Be | 9 | 1.333 | 86.603 | -0.000 | -0.02678 | 43.20 | ppb |
| ⌈> | Sc | 45 | 699723.772 | 1.251 | 699723.772 | | | ppb |
| \| | V | 51 | 2805.323 | 5.169 | 0.003 | 0.86293 | 7.32 | ppb |
| \| | Cr | 52 | 3917.434 | 1.554 | 0.003 | 1.16294 | 1.11 | ppb |
| \| | Mn | 55 | 17077.904 | 0.601 | 0.024 | 6.00492 | 1.68 | ppb |
| \| | Co | 59 | 31148.442 | 1.394 | 0.044 | 14.08144 | 0.41 | ppb |
| \| | Ni | 60 | 4436.540 | 3.605 | 0.006 | 7.71995 | 4.53 | ppb |
| \| | Cu | 63 | 1970.194 | 0.508 | 0.003 | 1.47450 | 1.87 | ppb |
| \| | Cu | 65 | 1511.225 | 3.304 | 0.002 | 2.32426 | 4.57 | ppb |
| \| | Zn | 66 | 1930.187 | 5.355 | 0.003 | 5.21883 | 6.95 | ppb |
| \| | As | 75 | 3661.661 | 0.495 | 0.005 | 7.44445 | 0.77 | ppb |
| ⌊ | Se | 82 | 44.445 | 23.447 | 0.000 | 0.08788 | 291.81 | ppb |
| ⌈ | Ag | 107 | 35.556 | 42.274 | 0.000 | 0.01556 | 55.56 | ppb |
| \| | Ag | 109 | 22.222 | 22.913 | 0.000 | 0.00377 | 83.15 | ppb |
| \| | Cd | 111 | 15.515 | 31.236 | 0.000 | 0.02613 | 40.92 | ppb |
| \| | In | 113 | 58468.818 | 2.170 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1329744.698 | 1.103 | 1329744.698 | | | ppb |
| ⌈ | Sb | 121 | 5164.672 | 7.459 | 0.003 | 2.94686 | 7.38 | ppb |
| \| | Ba | 135 | 6338.677 | 3.473 | 0.004 | 18.44786 | 3.17 | ppb |
| \| | Ba | 137 | 11164.897 | 1.630 | 0.006 | 18.66988 | 1.27 | ppb |
| ⌊> | Tb | 159 | 1775023.121 | 0.378 | 1775023.121 | | | ppb |
| ⌈ | Tl | 205 | 68.334 | 47.042 | 0.000 | 0.01233 | 72.39 | ppb |
| \| | Pb | 206 | 351.673 | 12.901 | 0.000 | 0.26939 | 13.53 | ppb |
| \| | Pb | 207 | 656.678 | 11.095 | 0.001 | 0.27630 | 11.48 | ppb |
| \| | Pb | 208 | 1046.699 | 6.451 | 0.001 | 0.27840 | 6.76 | ppb |
| ⌊> | Bi | 209 | 1098532.928 | 0.496 | 1098532.928 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198145.830 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.020258 | ppb |
| ⌈> | Sc | 45 | 708767.937 | | ppb |
| \| | V | 51 | 2916.043 | 0.895999 | ppb |
| \| | Cr | 52 | 3964.786 | 1.161200 | ppb |
| \| | Mn | 55 | 16974.394 | 5.889773 | ppb |
| \| | Co | 59 | 31515.583 | 14.065703 | ppb |
| \| | Ni | 60 | 4410.973 | 7.573243 | ppb |
| \| | Cu | 63 | 1960.192 | 1.446418 | ppb |
| \| | Cu | 65 | 1496.779 | 2.268177 | ppb |
| \| | Zn | 66 | 1850.171 | 4.918975 | ppb |
| \| | As | 75 | 3678.177 | 7.381934 | ppb |
| ⌊ | Se | 82 | 54.000 | 0.319815 | ppb |
| ⌈ | Ag | 107 | 50.000 | 0.023737 | ppb |
| \| | Ag | 109 | 23.333 | 0.004365 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 13.090 | 0.020575 | ppb |
| | In | 113 | 57007.028 | | ppb |
| > | In | 115 | 1333737.831 | | ppb |
| | Sb | 121 | 5546.538 | 3.155850 | ppb |
| | Ba | 135 | 6442.074 | 18.683467 | ppb |
| | Ba | 137 | 11364.454 | 18.936759 | ppb |
| > | Tb | 159 | 1781379.208 | | ppb |
| | Tl | 205 | 55.000 | 0.008584 | ppb |
| | Pb | 206 | 400.008 | 0.308421 | ppb |
| | Pb | 207 | 740.014 | 0.312709 | ppb |
| | Pb | 208 | 1115.036 | 0.296589 | ppb |
| > | Bi | 209 | 1102995.544 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196883.257 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 699112.526 | | ppb |
| | V | 51 | 2641.165 | 0.790136 | ppb |
| | Cr | 52 | 3938.776 | 1.176586 | ppb |
| | Mn | 55 | 17179.745 | 6.045861 | ppb |
| | Co | 59 | 31260.786 | 14.144748 | ppb |
| | Ni | 60 | 4290.920 | 7.467262 | ppb |
| | Cu | 63 | 1970.194 | 1.475640 | ppb |
| | Cu | 65 | 1470.108 | 2.257801 | ppb |
| | Zn | 66 | 1893.513 | 5.115588 | ppb |
| | As | 75 | 3664.537 | 7.456369 | ppb |
| | Se | 82 | 46.000 | 0.131339 | ppb |
| | Ag | 107 | 36.667 | 0.016436 | ppb |
| | Ag | 109 | 26.667 | 0.006568 | ppb |
| | Cd | 111 | 12.360 | 0.019352 | ppb |
| | In | 113 | 59114.210 | | ppb |
| > | In | 115 | 1313487.833 | | ppb |
| | Sb | 121 | 5171.337 | 2.962712 | ppb |
| | Ba | 135 | 6085.851 | 17.782363 | ppb |
| | Ba | 137 | 11008.056 | 18.480765 | ppb |
| > | Tb | 159 | 1768020.384 | | ppb |
| | Tl | 205 | 105.001 | 0.022513 | ppb |
| | Pb | 206 | 310.005 | 0.236227 | ppb |
| | Pb | 207 | 605.009 | 0.254544 | ppb |
| | Pb | 208 | 1045.032 | 0.279596 | ppb |
| > | Bi | 209 | 1092463.030 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195060.046 | | ppb |
| | Be | 9 | 2.000 | -0.019944 | ppb |
| > | Sc | 45 | 691290.855 | | ppb |
| | V | 51 | 2858.760 | 0.902657 | ppb |
| | Cr | 52 | 3848.740 | 1.151042 | ppb |
| | Mn | 55 | 17079.573 | 6.079138 | ppb |
| | Co | 59 | 30668.957 | 14.033869 | ppb |
| | Ni | 60 | 4607.728 | 8.119347 | ppb |
| | Cu | 63 | 1980.196 | 1.501440 | ppb |
| | Cu | 65 | 1566.789 | 2.446811 | ppb |
| | Zn | 66 | 2046.876 | 5.621917 | ppb |
| | As | 75 | 3642.269 | 7.495032 | ppb |
| | Se | 82 | 33.333 | -0.187516 | ppb |
| | Ag | 107 | 20.000 | 0.006512 | ppb |
| | Ag | 109 | 16.667 | 0.000381 | ppb |
| | Cd | 111 | 21.095 | 0.038448 | ppb |
| | In | 113 | 59285.217 | | ppb |
| > | In | 115 | 1342008.428 | | ppb |
| | Sb | 121 | 4776.140 | 2.722005 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 6488.104 | 18.877756 | ppb |
| | Ba | 137 | 11122.182 | 18.592106 | ppb |
| > | Tb | 159 | 1775669.772 | | ppb |
| | Tl | 205 | 45.000 | 0.005885 | ppb |
| | Pb | 206 | 345.006 | 0.263530 | ppb |
| | Pb | 207 | 625.010 | 0.261654 | ppb |
| | Pb | 208 | 980.028 | 0.259027 | ppb |
| > | Bi | 209 | 1100140.210 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 100.224 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 99.130 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 95.209 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.415 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 93.869 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107162-01

Sample Date/Time: Monday, August 01, 2011 16:58:54
Sample Type: Sample
Sample Description: 7DUPL 5X
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107162-01.1453

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 220102.982 | 1.633 | 220102.982 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 91.652 | -0.000 | -0.01016 | 268.74 | ppb |
| ⌈> | Sc | 45 | 758973.717 | 2.573 | 758973.717 | | - | ppb |
| \| | V | 51 | 1209.093 | 15.127 | 0.000 | 0.10381 | 84.92 | ppb |
| \| | Cr | 52 | 2844.404 | 0.492 | 0.001 | 0.45263 | 8.38 | ppb |
| \| | Mn | 55 | 2937.099 | 5.155 | 0.003 | 0.87062 | 2.89 | ppb |
| \| | Co | 59 | 5136.654 | 3.951 | 0.007 | 2.12926 | 1.51 | ppb |
| \| | Ni | 60 | 788.920 | 10.473 | 0.001 | 1.16948 | 13.05 | ppb |
| \| | Cu | 63 | 444.454 | 8.090 | 0.000 | 0.23320 | 11.81 | ppb |
| \| | Cu | 65 | 394.452 | 11.158 | 0.000 | 0.42878 | 13.41 | ppb |
| \| | Zn | 66 | 457.789 | 18.712 | 0.000 | 0.89803 | 28.81 | ppb |
| \| | As | 75 | 612.160 | 11.582 | 0.001 | 1.12716 | 10.91 | ppb |
| ⌊ | Se | 82 | 34.000 | 17.971 | -0.000 | -0.25062 | 53.21 | ppb |
| ⌈ | Ag | 107 | 8.889 | 43.301 | -0.000 | -0.00010 | 2014.20 | ppb |
| \| | Ag | 109 | 15.556 | 24.744 | -0.000 | -0.00081 | 263.22 | ppb |
| \| | Cd | 111 | 11.760 | 64.105 | 0.000 | 0.01578 | 100.89 | ppb |
| \| | In | 113 | 62924.021 | 0.522 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1427692.773 | 0.294 | 1427692.773 | | | ppb |
| ⌈ | Sb | 121 | 928.377 | 10.009 | 0.000 | 0.46887 | 9.83 | ppb |
| \| | Ba | 135 | 983.382 | 8.167 | 0.001 | 2.65073 | 7.98 | ppb |
| \| | Ba | 137 | 1845.504 | 5.954 | 0.001 | 2.85859 | 5.69 | ppb |
| ⌊> | Tb | 159 | 1899370.487 | 0.839 | 1899370.487 | | | ppb |
| ⌈ | Tl | 205 | 16.667 | 45.826 | -0.000 | -0.00219 | 87.40 | ppb |
| \| | Pb | 206 | 80.000 | 27.243 | 0.000 | 0.03865 | 43.83 | ppb |
| \| | Pb | 207 | 146.667 | 32.222 | 0.000 | 0.04130 | 48.34 | ppb |
| \| | Pb | 208 | 193.334 | 29.751 | 0.000 | 0.03174 | 48.57 | ppb |
| ⌊> | Bi | 209 | 1178890.879 | 0.882 | 1178890.879 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 223187.138 | | ppb |
| ⌊ | Be | 9 | 0.000 | -0.040134 | ppb |
| ⌈> | Sc | 45 | 738331.254 | | ppb |
| \| | V | 51 | 1416.943 | 0.205117 | ppb |
| \| | Cr | 52 | 2838.403 | 0.489120 | ppb |
| \| | Mn | 55 | 2775.385 | 0.843345 | ppb |
| \| | Co | 59 | 4945.222 | 2.107550 | ppb |
| \| | Ni | 60 | 803.366 | 1.227779 | ppb |
| \| | Cu | 63 | 460.011 | 0.253901 | ppb |
| \| | Cu | 65 | 346.673 | 0.371403 | ppb |
| \| | Zn | 66 | 556.682 | 1.196282 | ppb |
| \| | As | 75 | 611.601 | 1.158656 | ppb |
| ⌊ | Se | 82 | 32.667 | -0.259618 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.001304 | ppb |
| \| | Ag | 109 | 13.333 | -0.002060 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 18.820 | 0.030639 | ppb |
| \| | In | 113 | 63098.445 | | ppb |
| \|> | In | 115 | 1432389.587 | | ppb |
| ⌈ | Sb | 121 | 825.034 | 0.417741 | ppb |
| \| | Ba | 135 | 940.044 | 2.557773 | ppb |
| \| | Ba | 137 | 1776.158 | 2.777251 | ppb |
| \|> | Tb | 159 | 1881149.800 | | ppb |
| ⌈ | Tl | 205 | 10.000 | -0.003856 | ppb |
| \| | Pb | 206 | 70.000 | 0.031373 | ppb |
| \| | Pb | 207 | 130.000 | 0.034754 | ppb |
| \| | Pb | 208 | 195.001 | 0.032607 | ppb |
| \|> | Bi | 209 | 1168282.821 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 216157.218 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.003695 | ppb |
| ⌈> | Sc | 45 | 761441.436 | | ppb |
| \| | V | 51 | 1072.738 | 0.044511 | ppb |
| \| | Cr | 52 | 2860.409 | 0.455401 | ppb |
| \| | Mn | 55 | 2960.438 | 0.875573 | ppb |
| \| | Co | 59 | 5115.308 | 2.113911 | ppb |
| \| | Ni | 60 | 863.371 | 1.284348 | ppb |
| \| | Cu | 63 | 403.341 | 0.201954 | ppb |
| \| | Cu | 65 | 433.343 | 0.486407 | ppb |
| \| | Zn | 66 | 410.008 | 0.764121 | ppb |
| \| | As | 75 | 541.543 | 0.991489 | ppb |
| ⌊ | Se | 82 | 28.667 | -0.379260 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.001289 | ppb |
| \| | Ag | 109 | 13.333 | -0.002029 | ppb |
| \| | Cd | 111 | 3.820 | -0.001025 | ppb |
| \| | In | 113 | 62544.984 | | ppb |
| \|> | In | 115 | 1426362.628 | | ppb |
| ⌈ | Sb | 121 | 1005.051 | 0.507237 | ppb |
| \| | Ba | 135 | 934.044 | 2.501551 | ppb |
| \| | Ba | 137 | 1788.160 | 2.752529 | ppb |
| \|> | Tb | 159 | 1910688.746 | | ppb |
| ⌈ | Tl | 205 | 15.000 | -0.002603 | ppb |
| \| | Pb | 206 | 105.001 | 0.058020 | ppb |
| \| | Pb | 207 | 200.001 | 0.063718 | ppb |
| \| | Pb | 208 | 250.002 | 0.046705 | ppb |
| \|> | Bi | 209 | 1179317.338 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 220964.591 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.013335 | ppb |
| ⌈> | Sc | 45 | 777148.461 | | ppb |
| \| | V | 51 | 1137.597 | 0.061816 | ppb |
| \| | Cr | 52 | 2834.402 | 0.413380 | ppb |
| \| | Mn | 55 | 3075.473 | 0.892930 | ppb |
| \| | Co | 59 | 5349.430 | 2.166306 | ppb |
| \| | Ni | 60 | 700.025 | 0.996315 | ppb |
| \| | Cu | 63 | 470.011 | 0.243743 | ppb |
| \| | Cu | 65 | 403.341 | 0.428535 | ppb |
| \| | Zn | 66 | 406.675 | 0.733696 | ppb |
| \| | As | 75 | 683.335 | 1.231331 | ppb |
| ⌊ | Se | 82 | 40.667 | -0.112982 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002285 | ppb |
| \| | Ag | 109 | 20.000 | 0.001655 | ppb |
| \| | Cd | 111 | 12.640 | 0.017730 | ppb |
| \| | In | 113 | 63128.634 | | ppb |
| \|> | In | 115 | 1424326.104 | | ppb |
| ⌈ | Sb | 121 | 955.046 | 0.481634 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 1076.058 | 2.892872 | ppb |
| | Ba | 137 | 1972.194 | 3.045994 | ppb |
| > | Tb | 159 | 1906272.916 | | ppb |
| | Tl | 205 | 25.000 | -0.000102 | ppb |
| | Pb | 206 | 65.000 | 0.026566 | ppb |
| | Pb | 207 | 110.000 | 0.025434 | ppb |
| | Pb | 208 | 135.001 | 0.015911 | ppb |
| > | Bi | 209 | 1189072.477 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 112.150 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 107.524 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 102.222 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 102.099 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 100.735 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS1

Sample Date/Time: Monday, August 01, 2011 17:00:20
Sample Type: Sample
Sample Description: 7DUPA
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS1.1454

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192644.618 | 0.688 | 192644.618 | | | ppb |
| ⌊ | Be | 9 | 905.374 | 3.679 | 0.005 | 9.21335 | 3.24 | ppb |
| ⌈> | Sc | 45 | 674599.409 | 1.388 | 674599.409 | | | ppb |
| \| | V | 51 | 118222.616 | 1.856 | 0.174 | 54.75838 | 1.32 | ppb |
| \| | Cr | 52 | 42470.007 | 1.501 | 0.060 | 23.20017 | 2.35 | ppb |
| \| | Mn | 55 | 45556.889 | 1.723 | 0.067 | 16.78400 | 1.66 | ppb |
| \| | Co | 59 | 54983.412 | 0.384 | 0.081 | 25.79686 | 1.46 | ppb |
| \| | Ni | 60 | 9385.513 | 0.250 | 0.014 | 17.07693 | 1.58 | ppb |
| \| | Cu | 63 | 26868.272 | 1.036 | 0.040 | 22.07957 | 2.40 | ppb |
| \| | Cu | 65 | 14032.064 | 2.394 | 0.021 | 23.85469 | 2.38 | ppb |
| \| | Zn | 66 | 8945.110 | 0.704 | 0.013 | 26.27786 | 1.61 | ppb |
| \| | As | 75 | 9033.451 | 0.161 | 0.013 | 19.08715 | 1.25 | ppb |
| ⌊ | Se | 82 | 2124.670 | 1.364 | 0.003 | 56.07240 | 1.87 | ppb |
| ⌈ | Ag | 107 | 18327.894 | 1.680 | 0.014 | 10.93400 | 1.99 | ppb |
| \| | Ag | 109 | 17716.800 | 2.843 | 0.014 | 10.87206 | 2.95 | ppb |
| \| | Cd | 111 | 4473.313 | 0.971 | 0.003 | 10.58685 | 1.01 | ppb |
| \| | In | 113 | 61109.503 | 1.276 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1277879.269 | 0.663 | 1277879.269 | | | ppb |
| ⌈ | Sb | 121 | 40575.496 | 1.431 | 0.024 | 24.29193 | 1.09 | ppb |
| \| | Ba | 135 | 40815.838 | 2.831 | 0.024 | 123.64773 | 2.48 | ppb |
| \| | Ba | 137 | 71725.658 | 0.962 | 0.042 | 124.85489 | 0.51 | ppb |
| ⌊> | Tb | 159 | 1707486.281 | 0.555 | 1707486.281 | | | ppb |
| ⌈ | Tl | 205 | 37046.851 | 2.176 | 0.035 | 10.60134 | 0.89 | ppb |
| \| | Pb | 206 | 12738.109 | 1.406 | 0.012 | 11.06052 | 0.89 | ppb |
| \| | Pb | 207 | 23340.399 | 2.469 | 0.022 | 11.00067 | 1.15 | ppb |
| \| | Pb | 208 | 36993.749 | 2.756 | 0.035 | 10.98068 | 1.51 | ppb |
| ⌊> | Bi | 209 | 1051733.176 | 1.357 | 1051733.176 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 193963.015 | | ppb |
| ⌊ | Be | 9 | 916.042 | 9.259595 | ppb |
| ⌈> | Sc | 45 | 682266.611 | | ppb |
| \| | V | 51 | 120755.871 | 55.306688 | ppb |
| \| | Cr | 52 | 42871.703 | 23.150726 | ppb |
| \| | Mn | 55 | 46417.480 | 16.908612 | ppb |
| \| | Co | 59 | 55153.678 | 25.582516 | ppb |
| \| | Ni | 60 | 9387.738 | 16.885288 | ppb |
| \| | Cu | 63 | 26745.719 | 21.725639 | ppb |
| \| | Cu | 65 | 14376.994 | 24.167138 | ppb |
| \| | Zn | 66 | 8890.617 | 25.815346 | ppb |
| \| | As | 75 | 9048.588 | 18.901875 | ppb |
| ⌊ | Se | 82 | 2150.898 | 56.121120 | ppb |
| ⌈ | Ag | 107 | 18623.993 | 11.088566 | ppb |
| \| | Ag | 109 | 18270.008 | 11.189656 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 4430.413 | 10.464684 | ppb |
| | In | 113 | 61795.345 | | ppb |
| > | In | 115 | 1280364.041 | | ppb |
| | Sb | 121 | 41244.882 | 24.572440 | ppb |
| | Ba | 135 | 42138.596 | 127.036255 | ppb |
| | Ba | 137 | 72495.833 | 125.578564 | ppb |
| > | Tb | 159 | 1715897.965 | | ppb |
| | Tl | 205 | 37976.976 | 10.705506 | ppb |
| | Pb | 206 | 12928.352 | 11.057294 | ppb |
| | Pb | 207 | 24004.482 | 11.145519 | ppb |
| | Pb | 208 | 38012.360 | 11.115535 | ppb |
| > | Bi | 209 | 1067728.269 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191312.688 | | ppb |
| | Be | 9 | 868.038 | 8.894333 | ppb |
| > | Sc | 45 | 664161.654 | | ppb |
| | V | 51 | 116971.547 | 55.031890 | ppb |
| | Cr | 52 | 42803.411 | 23.769236 | ppb |
| | Mn | 55 | 45372.701 | 16.978978 | ppb |
| | Co | 59 | 55049.104 | 26.230398 | ppb |
| | Ni | 60 | 9407.757 | 17.386004 | ppb |
| | Cu | 63 | 27186.906 | 22.690130 | ppb |
| | Cu | 65 | 14013.145 | 24.197858 | ppb |
| | Zn | 66 | 8930.653 | 26.648553 | ppb |
| | As | 75 | 9019.649 | 19.355598 | ppb |
| | Se | 82 | 2129.560 | 57.097180 | ppb |
| | Ag | 107 | 18350.154 | 11.028140 | ppb |
| | Ag | 109 | 17595.466 | 10.877507 | ppb |
| | Cd | 111 | 4472.253 | 10.662923 | ppb |
| | In | 113 | 61272.140 | | ppb |
| > | In | 115 | 1268447.403 | | ppb |
| | Sb | 121 | 40270.924 | 24.255963 | ppb |
| | Ba | 135 | 40307.070 | 122.851788 | ppb |
| | Ba | 137 | 71164.320 | 124.629215 | ppb |
| > | Tb | 159 | 1697210.010 | | ppb |
| | Tl | 205 | 36611.899 | 10.523036 | ppb |
| | Pb | 206 | 12572.899 | 10.964020 | ppb |
| | Pb | 207 | 23043.378 | 10.908706 | ppb |
| | Pb | 208 | 36995.611 | 11.030275 | ppb |
| > | Bi | 209 | 1047187.004 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 192658.151 | | ppb |
| | Be | 9 | 932.043 | 9.486130 | ppb |
| > | Sc | 45 | 677369.963 | | ppb |
| | V | 51 | 116940.429 | 53.936564 | ppb |
| | Cr | 52 | 41734.909 | 22.680535 | ppb |
| | Mn | 55 | 44880.487 | 16.464399 | ppb |
| | Co | 59 | 54747.455 | 25.577663 | ppb |
| | Ni | 60 | 9361.046 | 16.959504 | ppb |
| | Cu | 63 | 26672.190 | 21.822946 | ppb |
| | Cu | 65 | 13706.053 | 23.199065 | ppb |
| | Zn | 66 | 9014.061 | 26.369690 | ppb |
| | As | 75 | 9032.117 | 19.003985 | ppb |
| | Se | 82 | 2093.552 | 54.998898 | ppb |
| | Ag | 107 | 18009.536 | 10.685306 | ppb |
| | Ag | 109 | 17284.926 | 10.549029 | ppb |
| | Cd | 111 | 4517.274 | 10.632937 | ppb |
| | In | 113 | 60261.024 | | ppb |
| > | In | 115 | 1284826.364 | | ppb |
| | Sb | 121 | 40210.683 | 24.047387 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 40001.848 | 121.055135 | ppb |
| | Ba | 137 | 71516.822 | 124.356903 | ppb |
| > | Tb | 159 | 1709350.869 | | ppb |
| | Tl | 205 | 36551.679 | 10.575470 | ppb |
| | Pb | 206 | 12713.076 | 11.160240 | ppb |
| | Pb | 207 | 22973.337 | 10.947787 | ppb |
| | Pb | 208 | 35973.276 | 10.796218 | ppb |
| > | Bi | 209 | 1040284.254 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 98.159 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 95.570 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.495 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.785 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| ⌊ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 89.870 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107162-02

Sample Date/Time: Monday, August 01, 2011 17:01:45
Sample Type: Sample
Sample Description: 7W13
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107162-02.1455

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198032.524 | 1.370 | 198032.524 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.01968 | 103.83 | ppb |
| ⌈> | Sc | 45 | 686736.204 | 0.485 | 686736.204 | | | ppb |
| \| | V | 51 | 2482.793 | 11.022 | 0.002 | 0.73880 | 16.59 | ppb |
| \| | Cr | 52 | 3901.428 | 2.831 | 0.003 | 1.19454 | 4.32 | ppb |
| \| | Mn | 55 | 17660.587 | 2.306 | 0.025 | 6.33125 | 1.94 | ppb |
| \| | Co | 59 | 31440.686 | 1.104 | 0.046 | 14.48308 | 1.21 | ppb |
| \| | Ni | 60 | 4656.641 | 4.520 | 0.007 | 8.26089 | 4.11 | ppb |
| \| | Cu | 63 | 1665.694 | 0.809 | 0.002 | 1.25716 | 1.24 | ppb |
| \| | Cu | 65 | 1499.002 | 6.455 | 0.002 | 2.35026 | 6.98 | ppb |
| \| | Zn | 66 | 2373.615 | 2.903 | 0.003 | 6.61506 | 2.73 | ppb |
| \| | As | 75 | 3658.513 | 1.257 | 0.005 | 7.57869 | 1.23 | ppb |
| ⌊ | Se | 82 | 48.889 | 17.321 | 0.000 | 0.22885 | 96.42 | ppb |
| ⌈ | Ag | 107 | 32.222 | 5.973 | 0.000 | 0.01408 | 9.10 | ppb |
| \| | Ag | 109 | 16.667 | 34.641 | 0.000 | 0.00069 | 489.89 | ppb |
| \| | Cd | 111 | 10.150 | 157.375 | 0.000 | 0.01466 | 253.92 | ppb |
| \| | In | 113 | 57054.000 | 1.882 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1298121.685 | 0.893 | 1298121.685 | | | ppb |
| ⌈ | Sb | 121 | 4254.239 | 3.003 | 0.002 | 2.48310 | 3.98 | ppb |
| \| | Ba | 135 | 6243.950 | 2.911 | 0.004 | 18.61903 | 1.98 | ppb |
| \| | Ba | 137 | 11079.471 | 2.838 | 0.006 | 18.98199 | 1.78 | ppb |
| ⌊> | Tb | 159 | 1732361.105 | 1.054 | 1732361.105 | | | ppb |
| ⌈ | Tl | 205 | 33.333 | 22.913 | 0.000 | 0.00289 | 73.34 | ppb |
| \| | Pb | 206 | 270.004 | 6.415 | 0.000 | 0.20615 | 6.93 | ppb |
| \| | Pb | 207 | 523.340 | 10.126 | 0.000 | 0.22102 | 10.89 | ppb |
| \| | Pb | 208 | 845.021 | 8.534 | 0.001 | 0.22601 | 9.16 | ppb |
| ⌊> | Bi | 209 | 1076050.160 | 0.189 | 1076050.160 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201130.536 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.000972 | ppb |
| ⌈> | Sc | 45 | 688872.206 | | ppb |
| \| | V | 51 | 2797.872 | 0.879408 | ppb |
| \| | Cr | 52 | 3992.797 | 1.238883 | ppb |
| \| | Mn | 55 | 18086.341 | 6.466107 | ppb |
| \| | Co | 59 | 31770.388 | 14.589438 | ppb |
| \| | Ni | 60 | 4814.492 | 8.519141 | ppb |
| \| | Cu | 63 | 1650.136 | 1.240364 | ppb |
| \| | Cu | 65 | 1400.098 | 2.176525 | ppb |
| \| | Zn | 66 | 2353.610 | 6.535662 | ppb |
| \| | As | 75 | 3623.431 | 7.482408 | ppb |
| ⌊ | Se | 82 | 44.000 | 0.096418 | ppb |
| ⌈ | Ag | 107 | 33.333 | 0.014750 | ppb |
| \| | Ag | 109 | 13.333 | -0.001296 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.545 | 0.052828 | ppb |
| | In | 113 | 57977.584 | | ppb |
| > | In | 115 | 1296785.385 | | ppb |
| | Sb | 121 | 4130.853 | 2.380251 | ppb |
| | Ba | 135 | 6434.069 | 18.958229 | ppb |
| | Ba | 137 | 11442.543 | 19.371618 | ppb |
| > | Tb | 159 | 1753417.938 | | ppb |
| | Tl | 205 | 40.000 | 0.004738 | ppb |
| | Pb | 206 | 290.004 | 0.222656 | ppb |
| | Pb | 207 | 580.008 | 0.246634 | ppb |
| | Pb | 208 | 905.023 | 0.242907 | ppb |
| > | Bi | 209 | 1078330.501 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196085.817 | | ppb |
| | Be | 9 | 6.000 | 0.020119 | ppb |
| > | Sc | 45 | 688438.835 | | ppb |
| | V | 51 | 2304.575 | 0.654691 | ppb |
| | Cr | 52 | 3932.773 | 1.206792 | ppb |
| | Mn | 55 | 17620.510 | 6.301114 | ppb |
| | Co | 59 | 31078.218 | 14.280289 | ppb |
| | Ni | 60 | 4737.789 | 8.386906 | ppb |
| | Cu | 63 | 1673.473 | 1.260071 | ppb |
| | Cu | 65 | 1593.460 | 2.502400 | ppb |
| | Zn | 66 | 2450.300 | 6.821615 | ppb |
| | As | 75 | 3710.586 | 7.667783 | ppb |
| | Se | 82 | 58.667 | 0.483578 | ppb |
| | Ag | 107 | 30.000 | 0.012607 | ppb |
| | Ag | 109 | 23.333 | 0.004610 | ppb |
| | Cd | 111 | -5.365 | -0.021525 | ppb |
| | In | 113 | 57308.745 | | ppb |
| > | In | 115 | 1310326.043 | | ppb |
| | Sb | 121 | 4245.901 | 2.491630 | ppb |
| | Ba | 135 | 6225.938 | 18.671819 | ppb |
| | Ba | 137 | 10899.937 | 18.781313 | ppb |
| > | Tb | 159 | 1722684.946 | | ppb |
| | Tl | 205 | 35.000 | 0.003368 | ppb |
| | Pb | 206 | 260.003 | 0.197796 | ppb |
| | Pb | 207 | 475.006 | 0.198866 | ppb |
| | Pb | 208 | 765.017 | 0.202901 | ppb |
| > | Bi | 209 | 1075404.108 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196881.218 | | ppb |
| | Be | 9 | 8.000 | 0.039879 | ppb |
| > | Sc | 45 | 682897.571 | | ppb |
| | V | 51 | 2345.933 | 0.682301 | ppb |
| | Cr | 52 | 3778.714 | 1.137937 | ppb |
| | Mn | 55 | 17274.908 | 6.226531 | ppb |
| | Co | 59 | 31473.451 | 14.579521 | ppb |
| | Ni | 60 | 4417.642 | 7.876631 | ppb |
| | Cu | 63 | 1673.473 | 1.271049 | ppb |
| | Cu | 65 | 1503.446 | 2.371854 | ppb |
| | Zn | 66 | 2316.935 | 6.487909 | ppb |
| | As | 75 | 3641.522 | 7.585878 | ppb |
| | Se | 82 | 44.000 | 0.106555 | ppb |
| | Ag | 107 | 33.333 | 0.014895 | ppb |
| | Ag | 109 | 13.333 | -0.001236 | ppb |
| | Cd | 111 | 9.270 | 0.012667 | ppb |
| | In | 113 | 55875.670 | | ppb |
| > | In | 115 | 1287253.627 | | ppb |
| | Sb | 121 | 4385.962 | 2.577432 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 6071.843 | 18.227057 | ppb |
| | Ba | 137 | 10895.933 | 18.793026 | ppb |
| > | Tb | 159 | 1720980.431 | | ppb |
| | Tl | 205 | 25.000 | 0.000574 | ppb |
| | Pb | 206 | 260.003 | 0.198000 | ppb |
| | Pb | 207 | 515.007 | 0.217559 | ppb |
| | Pb | 208 | 865.022 | 0.232218 | ppb |
| > | Bi | 209 | 1074415.870 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 100.905 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 97.290 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 92.945 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 93.122 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 91.948 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107163-01

Sample Date/Time: Monday, August 01, 2011 17:03:11
Sample Type: Sample
Sample Description: 7DUP
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107163-01.1456

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204297.378 | 1.429 | 204297.378 | | | ppb |
| ⌊ | Be | 9 | 2.667 | 114.564 | -0.000 | -0.01415 | 211.65 | ppb |
| ⌈> | Sc | 45 | 704999.745 | 2.064 | 704999.745 | | | ppb |
| \| | V | 51 | 2086.804 | 15.884 | 0.002 | 0.53296 | 28.15 | ppb |
| \| | Cr | 52 | 3655.335 | 2.270 | 0.003 | 1.00431 | 4.23 | ppb |
| \| | Mn | 55 | 8638.733 | 3.662 | 0.012 | 2.96585 | 1.67 | ppb |
| \| | Co | 59 | 31020.709 | 0.940 | 0.044 | 13.92093 | 1.21 | ppb |
| \| | Ni | 60 | 4435.428 | 2.159 | 0.006 | 7.66058 | 3.70 | ppb |
| \| | Cu | 63 | 2004.645 | 0.254 | 0.003 | 1.49014 | 1.96 | ppb |
| \| | Cu | 65 | 1635.690 | 6.316 | 0.002 | 2.50800 | 5.62 | ppb |
| \| | Zn | 66 | 2958.215 | 2.033 | 0.004 | 8.10326 | 4.18 | ppb |
| \| | As | 75 | 3187.299 | 1.968 | 0.005 | 6.43002 | 3.08 | ppb |
| ⌊ | Se | 82 | 45.111 | 2.257 | 0.000 | 0.09912 | 47.73 | ppb |
| ⌈ | Ag | 107 | 6.667 | 50.000 | -0.000 | -0.00098 | 202.88 | ppb |
| \| | Ag | 109 | 6.667 | 86.603 | -0.000 | -0.00540 | 63.84 | ppb |
| \| | Cd | 111 | -2.490 | 1038.428 | -0.000 | -0.01426 | 418.50 | ppb |
| \| | In | 113 | 58334.665 | 1.072 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1321944.534 | 1.934 | 1321944.534 | | | ppb |
| ⌈ | Sb | 121 | 4125.851 | 1.667 | 0.002 | 2.38381 | 2.80 | ppb |
| \| | Ba | 135 | 5857.715 | 1.748 | 0.003 | 17.29979 | 0.78 | ppb |
| \| | Ba | 137 | 10135.801 | 1.206 | 0.006 | 17.20097 | 2.03 | ppb |
| ⌊> | Tb | 159 | 1749064.963 | 1.108 | 1749064.963 | | | ppb |
| ⌈ | Tl | 205 | 15.000 | 66.667 | -0.000 | -0.00228 | 120.85 | ppb |
| \| | Pb | 206 | 151.668 | 10.598 | 0.000 | 0.10417 | 14.07 | ppb |
| \| | Pb | 207 | 266.668 | 6.585 | 0.000 | 0.10125 | 8.87 | ppb |
| \| | Pb | 208 | 341.670 | 12.446 | 0.000 | 0.07858 | 15.09 | ppb |
| ⌊> | Bi | 209 | 1088175.316 | 0.860 | 1088175.316 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204748.864 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.020899 | ppb |
| ⌈> | Sc | 45 | 721163.846 | | ppb |
| \| | V | 51 | 1983.833 | 0.466901 | ppb |
| \| | Cr | 52 | 3680.677 | 0.972928 | ppb |
| \| | Mn | 55 | 8979.029 | 3.015804 | ppb |
| \| | Co | 59 | 31357.086 | 13.754117 | ppb |
| \| | Ni | 60 | 4354.281 | 7.343927 | ppb |
| \| | Cu | 63 | 2010.202 | 1.458556 | ppb |
| \| | Cu | 65 | 1686.809 | 2.530593 | ppb |
| \| | Zn | 66 | 2900.421 | 7.749361 | ppb |
| \| | As | 75 | 3196.860 | 6.302262 | ppb |
| ⌊ | Se | 82 | 44.000 | 0.044542 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.000993 | ppb |
| \| | Ag | 109 | 13.333 | -0.001419 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -18.005 | -0.050516 | ppb |
| | In | 113 | 57650.703 | | ppb |
| > | In | 115 | 1316892.625 | | ppb |
| | Sb | 121 | 4065.826 | 2.331845 | ppb |
| | Ba | 135 | 5887.733 | 17.269597 | ppb |
| | Ba | 137 | 10197.196 | 17.183966 | ppb |
| > | Tb | 159 | 1761169.532 | | ppb |
| | Tl | 205 | 5.000 | -0.005057 | ppb |
| | Pb | 206 | 145.001 | 0.097815 | ppb |
| | Pb | 207 | 265.002 | 0.099777 | ppb |
| | Pb | 208 | 390.004 | 0.091884 | ppb |
| > | Bi | 209 | 1094181.566 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201179.506 | | ppb |
| | Be | 9 | 6.000 | 0.018594 | ppb |
| > | Sc | 45 | 692955.342 | | ppb |
| | V | 51 | 1819.035 | 0.427296 | ppb |
| | Cr | 52 | 3562.635 | 0.987302 | ppb |
| | Mn | 55 | 8353.488 | 2.916857 | ppb |
| | Co | 59 | 30865.561 | 14.089960 | ppb |
| | Ni | 60 | 4410.973 | 7.748720 | ppb |
| | Cu | 63 | 2003.534 | 1.516355 | ppb |
| | Cu | 65 | 1516.782 | 2.357174 | ppb |
| | Zn | 66 | 3020.456 | 8.425030 | ppb |
| | As | 75 | 3244.693 | 6.658263 | ppb |
| | Se | 82 | 45.333 | 0.124493 | ppb |
| | Ag | 107 | 3.333 | -0.002970 | ppb |
| | Ag | 109 | 3.333 | -0.007427 | ppb |
| | Cd | 111 | -16.825 | -0.046864 | ppb |
| | In | 113 | 58475.471 | | ppb |
| > | In | 115 | 1349653.827 | | ppb |
| | Sb | 121 | 4200.882 | 2.459065 | ppb |
| | Ba | 135 | 5743.649 | 17.183065 | ppb |
| | Ba | 137 | 10215.215 | 17.558538 | ppb |
| > | Tb | 159 | 1726708.425 | | ppb |
| | Tl | 205 | 15.000 | -0.002241 | ppb |
| | Pb | 206 | 170.001 | 0.120939 | ppb |
| | Pb | 207 | 285.002 | 0.110870 | ppb |
| | Pb | 208 | 325.003 | 0.074751 | ppb |
| > | Bi | 209 | 1077397.521 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206963.764 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 700880.046 | | ppb |
| | V | 51 | 2457.544 | 0.704681 | ppb |
| | Cr | 52 | 3722.693 | 1.052697 | ppb |
| | Mn | 55 | 8583.682 | 2.964880 | ppb |
| | Co | 59 | 30839.480 | 13.918717 | ppb |
| | Ni | 60 | 4541.031 | 7.889078 | ppb |
| | Cu | 63 | 2000.200 | 1.495512 | ppb |
| | Cu | 65 | 1703.478 | 2.636245 | ppb |
| | Zn | 66 | 2953.770 | 8.135403 | ppb |
| | As | 75 | 3120.345 | 6.329546 | ppb |
| | Se | 82 | 46.000 | 0.128329 | ppb |
| | Ag | 107 | 10.000 | 0.001016 | ppb |
| | Ag | 109 | 3.333 | -0.007352 | ppb |
| | Cd | 111 | 27.360 | 0.054608 | ppb |
| | In | 113 | 58877.821 | | ppb |
| > | In | 115 | 1299287.151 | | ppb |
| | Sb | 121 | 4110.845 | 2.360525 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5941.765 | 17.446718 | ppb |
| | Ba | 137 | 9994.992 | 16.860395 | ppb |
| > | Tb | 159 | 1759316.932 | | ppb |
| | Tl | 205 | 25.000 | 0.000455 | ppb |
| | Pb | 206 | 140.001 | 0.093765 | ppb |
| | Pb | 207 | 250.002 | 0.093096 | ppb |
| | Pb | 208 | 310.003 | 0.069116 | ppb |
| > | Bi | 209 | 1092946.861 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 104.097 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 99.877 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.651 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 94.020 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 92.984 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107163-01

Sample Date/Time: Monday, August 01, 2011 17:04:36
Sample Type: Sample
Sample Description: 7DUPL 5X
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107163-01.1457

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224248.544 | 0.574 | 224248.544 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 34.641 | -0.000 | -0.01090 | 91.87 | ppb |
| ⌈> | Sc | 45 | 749385.169 | 0.464 | 749385.169 | | | ppb |
| \| | V | 51 | 1274.490 | 10.644 | 0.000 | 0.13626 | 40.48 | ppb |
| \| | Cr | 52 | 2848.406 | 5.105 | 0.001 | 0.47268 | 17.03 | ppb |
| \| | Mn | 55 | 1901.848 | 6.726 | 0.002 | 0.53806 | 7.64 | ppb |
| \| | Co | 59 | 6237.278 | 0.715 | 0.008 | 2.62218 | 0.56 | ppb |
| \| | Ni | 60 | 935.599 | 2.528 | 0.001 | 1.42593 | 2.46 | ppb |
| \| | Cu | 63 | 452.233 | 9.334 | 0.000 | 0.24306 | 13.21 | ppb |
| \| | Cu | 65 | 508.902 | 4.002 | 0.001 | 0.61353 | 5.62 | ppb |
| \| | Zn | 66 | 756.695 | 7.090 | 0.001 | 1.70879 | 7.85 | ppb |
| \| | As | 75 | 694.649 | 2.135 | 0.001 | 1.29945 | 2.56 | ppb |
| ⌊ | Se | 82 | 42.222 | 6.381 | -0.000 | -0.04028 | 154.59 | ppb |
| ⌈ | Ag | 107 | 7.778 | 65.465 | -0.000 | -0.00063 | 425.45 | ppb |
| \| | Ag | 109 | 12.222 | 56.773 | -0.000 | -0.00253 | 147.29 | ppb |
| \| | Cd | 111 | 6.545 | 191.956 | 0.000 | 0.00500 | 551.48 | ppb |
| \| | In | 113 | 62316.903 | 0.466 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1392292.078 | 2.185 | 1392292.078 | | | ppb |
| ⌈ | Sb | 121 | 863.371 | 11.251 | 0.000 | 0.44814 | 13.44 | ppb |
| \| | Ba | 135 | 1165.401 | 0.552 | 0.001 | 3.23955 | 0.85 | ppb |
| \| | Ba | 137 | 2036.208 | 4.667 | 0.001 | 3.24925 | 3.43 | ppb |
| ⌊> | Tb | 159 | 1845636.022 | 1.389 | 1845636.022 | | | ppb |
| ⌈ | Tl | 205 | 21.667 | 13.323 | -0.000 | -0.00093 | 80.28 | ppb |
| \| | Pb | 206 | 31.667 | 63.813 | 0.000 | 0.00102 | 1541.22 | ppb |
| \| | Pb | 207 | 78.334 | 31.487 | 0.000 | 0.01235 | 84.41 | ppb |
| \| | Pb | 208 | 141.667 | 10.783 | 0.000 | 0.01780 | 22.58 | ppb |
| ⌊> | Bi | 209 | 1184797.245 | 0.304 | 1184797.245 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 225397.902 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005189 | ppb |
| ⌈> | Sc | 45 | 748179.347 | | ppb |
| \| | V | 51 | 1135.877 | 0.078931 | ppb |
| \| | Cr | 52 | 2812.395 | 0.456328 | ppb |
| \| | Mn | 55 | 1990.198 | 0.568670 | ppb |
| \| | Co | 59 | 6265.962 | 2.638566 | ppb |
| \| | Ni | 60 | 910.041 | 1.386261 | ppb |
| \| | Cu | 63 | 500.013 | 0.279095 | ppb |
| \| | Cu | 65 | 526.681 | 0.642144 | ppb |
| \| | Zn | 66 | 750.028 | 1.694593 | ppb |
| \| | As | 75 | 688.341 | 1.289461 | ppb |
| ⌊ | Se | 82 | 39.333 | -0.108556 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002270 | ppb |
| \| | Ag | 109 | 20.000 | 0.001631 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 9.635 | 0.011301 | ppb |
| \| | In | 113 | 61981.492 | | ppb |
| \> | In | 115 | 1427373.301 | | ppb |
| ⌈ | Sb | 121 | 840.035 | 0.429870 | ppb |
| \| | Ba | 135 | 1170.068 | 3.218380 | ppb |
| \| | Ba | 137 | 2132.227 | 3.369233 | ppb |
| \> | Tb | 159 | 1864966.884 | | ppb |
| ⌈ | Tl | 205 | 20.000 | -0.001368 | ppb |
| \| | Pb | 206 | 20.000 | -0.008065 | ppb |
| \| | Pb | 207 | 50.000 | 0.000374 | ppb |
| \| | Pb | 208 | 145.001 | 0.018545 | ppb |
| \> | Bi | 209 | 1188960.234 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224489.814 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005047 | ppb |
| ⌈> | Sc | 45 | 746672.752 | | ppb |
| \| | V | 51 | 1280.610 | 0.140903 | ppb |
| \| | Cr | 52 | 3008.452 | 0.560108 | ppb |
| \| | Mn | 55 | 1755.154 | 0.491331 | ppb |
| \| | Co | 59 | 6185.913 | 2.609971 | ppb |
| \| | Ni | 60 | 940.044 | 1.438944 | ppb |
| \| | Cu | 63 | 436.676 | 0.232634 | ppb |
| \| | Cu | 65 | 513.347 | 0.623159 | ppb |
| \| | Zn | 66 | 706.692 | 1.582263 | ppb |
| \| | As | 75 | 711.589 | 1.336538 | ppb |
| ⌊ | Se | 82 | 42.667 | -0.025657 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.001151 | ppb |
| \| | Ag | 109 | 6.667 | -0.005555 | ppb |
| \| | Cd | 111 | -7.275 | -0.025168 | ppb |
| \| | In | 113 | 62479.577 | | ppb |
| \> | In | 115 | 1373120.836 | | ppb |
| ⌈ | Sb | 121 | 780.030 | 0.399144 | ppb |
| \| | Ba | 135 | 1168.068 | 3.229544 | ppb |
| \| | Ba | 137 | 2034.207 | 3.229700 | ppb |
| \> | Tb | 159 | 1855397.587 | | ppb |
| ⌈ | Tl | 205 | 20.000 | -0.001341 | ppb |
| \| | Pb | 206 | 55.000 | 0.019098 | ppb |
| \| | Pb | 207 | 95.000 | 0.019382 | ppb |
| \| | Pb | 208 | 155.001 | 0.021392 | ppb |
| \> | Bi | 209 | 1182710.142 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 222857.917 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.022462 | ppb |
| ⌈> | Sc | 45 | 753303.407 | | ppb |
| \| | V | 51 | 1406.984 | 0.188951 | ppb |
| \| | Cr | 52 | 2724.371 | 0.401619 | ppb |
| \| | Mn | 55 | 1960.192 | 0.554191 | ppb |
| \| | Co | 59 | 6259.959 | 2.618005 | ppb |
| \| | Ni | 60 | 956.712 | 1.452592 | ppb |
| \| | Cu | 63 | 420.009 | 0.217454 | ppb |
| \| | Cu | 65 | 486.679 | 0.575282 | ppb |
| \| | Zn | 66 | 813.366 | 1.849526 | ppb |
| \| | As | 75 | 684.017 | 1.272339 | ppb |
| ⌊ | Se | 82 | 44.667 | 0.013378 | ppb |
| ⌈ | Ag | 107 | 3.333 | -0.003007 | ppb |
| \| | Ag | 109 | 10.000 | -0.003663 | ppb |
| \| | Cd | 111 | 17.275 | 0.028859 | ppb |
| \| | In | 113 | 62489.640 | | ppb |
| \> | In | 115 | 1376382.098 | | ppb |
| ⌈ | Sb | 121 | 970.047 | 0.515418 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 1158.067 | 3.270729 | ppb |
| \| | Ba | 137 | 1942.189 | 3.148818 | ppb |
| \> | Tb | 159 | 1816543.594 | | ppb |
| ⌈ | Tl | 205 | 25.000 | -0.000068 | ppb |
| \| | Pb | 206 | 20.000 | -0.007984 | ppb |
| \| | Pb | 207 | 90.000 | 0.017282 | ppb |
| \| | Pb | 208 | 125.000 | 0.013457 | ppb |
| \> | Bi | 209 | 1182721.360 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 114.263 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 106.165 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.687 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 99.211 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 101.240 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS2

Sample Date/Time: Monday, August 01, 2011 17:06:02
Sample Type: Sample
Sample Description: 7DUPA
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS2.1458

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194941.098 | 0.196 | 194941.098 | | | ppb |
| ⌊ | Be | 9 | 970.047 | 3.977 | 0.005 | 9.75797 | 3.80 | ppb |
| ⌈> | Sc | 45 | 665339.603 | 1.590 | 665339.603 | | | ppb |
| \| | V | 51 | 115378.339 | 2.255 | 0.172 | 54.17634 | 0.73 | ppb |
| \| | Cr | 52 | 41675.328 | 0.329 | 0.060 | 23.07897 | 2.00 | ppb |
| \| | Mn | 55 | 35417.619 | 1.494 | 0.053 | 13.20982 | 1.27 | ppb |
| \| | Co | 59 | 52337.311 | 2.162 | 0.079 | 24.89239 | 0.95 | ppb |
| \| | Ni | 60 | 9245.383 | 1.327 | 0.014 | 17.05401 | 0.42 | ppb |
| \| | Cu | 63 | 26296.774 | 3.041 | 0.039 | 21.90430 | 2.35 | ppb |
| \| | Cu | 65 | 13381.173 | 2.424 | 0.020 | 23.06555 | 3.70 | ppb |
| \| | Zn | 66 | 9869.313 | 1.759 | 0.015 | 29.43917 | 3.19 | ppb |
| \| | As | 75 | 8138.362 | 1.408 | 0.012 | 17.43168 | 0.57 | ppb |
| ⌊ | Se | 82 | 2053.100 | 3.963 | 0.003 | 54.89796 | 2.68 | ppb |
| ⌈ | Ag | 107 | 17769.112 | 2.328 | 0.014 | 10.71142 | 2.88 | ppb |
| \| | Ag | 109 | 17263.779 | 0.882 | 0.014 | 10.70389 | 0.85 | ppb |
| \| | Cd | 111 | 4246.938 | 8.867 | 0.003 | 10.16376 | 10.26 | ppb |
| \| | In | 113 | 59583.687 | 1.779 | 0.003 | | | ppb |
| ⌊> | In | 115 | 1264804.927 | 1.554 | 1264804.927 | | | ppb |
| ⌈ | Sb | 121 | 40083.513 | 1.017 | 0.024 | 24.69201 | 1.35 | ppb |
| \| | Ba | 135 | 39360.645 | 0.418 | 0.024 | 122.70138 | 1.81 | ppb |
| \| | Ba | 137 | 68871.759 | 2.174 | 0.041 | 123.35121 | 2.23 | ppb |
| ⌊> | Tb | 159 | 1659805.762 | 2.105 | 1659805.762 | | | ppb |
| ⌈ | Tl | 205 | 36556.716 | 2.050 | 0.035 | 10.65619 | 3.13 | ppb |
| \| | Pb | 206 | 12511.159 | 2.878 | 0.012 | 11.06112 | 1.79 | ppb |
| \| | Pb | 207 | 22981.638 | 1.636 | 0.022 | 11.03103 | 0.56 | ppb |
| \| | Pb | 208 | 35911.135 | 0.950 | 0.035 | 10.85716 | 1.73 | ppb |
| ⌊> | Bi | 209 | 1032783.849 | 1.123 | 1032783.849 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194521.711 | | ppb |
| ⌊ | Be | 9 | 926.043 | 9.334123 | ppb |
| ⌈> | Sc | 45 | 670435.232 | | ppb |
| \| | V | 51 | 117010.710 | 54.531583 | ppb |
| \| | Cr | 52 | 41560.183 | 22.825237 | ppb |
| \| | Mn | 55 | 35171.744 | 13.016179 | ppb |
| \| | Co | 59 | 53315.751 | 25.166215 | ppb |
| \| | Ni | 60 | 9274.299 | 16.976254 | ppb |
| \| | Cu | 63 | 27186.906 | 22.476938 | ppb |
| \| | Cu | 65 | 13535.821 | 23.147534 | ppb |
| \| | Zn | 66 | 9924.923 | 29.370133 | ppb |
| \| | As | 75 | 8232.694 | 17.499286 | ppb |
| ⌊ | Se | 82 | 2050.877 | 54.424190 | ppb |
| ⌈ | Ag | 107 | 18019.554 | 10.701459 | ppb |
| \| | Ag | 109 | 17351.708 | 10.599937 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 4094.818 | 9.646896 | ppb |
| | In | 113 | 60210.722 | | ppb |
| > | In | 115 | 1283601.458 | | ppb |
| | Sb | 121 | 40301.045 | 24.309401 | ppb |
| | Ba | 135 | 39548.048 | 120.712814 | ppb |
| | Ba | 137 | 70338.508 | 123.361445 | ppb |
| > | Tb | 159 | 1694750.521 | | ppb |
| | Tl | 205 | 37414.863 | 11.027381 | ppb |
| | Pb | 206 | 12122.343 | 10.839458 | ppb |
| | Pb | 207 | 22647.880 | 10.994064 | ppb |
| | Pb | 208 | 36223.513 | 11.074575 | ppb |
| > | Bi | 209 | 1021238.020 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195033.536 | | ppb |
| | Be | 9 | 986.049 | 9.915361 | ppb |
| > | Sc | 45 | 653177.388 | | ppb |
| | V | 51 | 112377.530 | 53.750415 | ppb |
| | Cr | 52 | 41827.294 | 23.611497 | ppb |
| | Mn | 55 | 35056.340 | 13.318466 | ppb |
| | Co | 59 | 51098.219 | 24.756547 | ppb |
| | Ni | 60 | 9110.815 | 17.118605 | ppb |
| | Cu | 63 | 25639.494 | 21.754704 | ppb |
| | Cu | 65 | 13599.241 | 23.875779 | ppb |
| | Zn | 66 | 10008.339 | 30.410566 | ppb |
| | As | 75 | 8010.852 | 17.477608 | ppb |
| | Se | 82 | 1972.861 | 53.723738 | ppb |
| | Ag | 107 | 17996.179 | 11.024547 | ppb |
| | Ag | 109 | 17087.921 | 10.767924 | ppb |
| | Cd | 111 | 4675.782 | 11.364362 | ppb |
| | In | 113 | 58359.798 | | ppb |
| > | In | 115 | 1244384.222 | | ppb |
| | Sb | 121 | 39613.306 | 24.923047 | ppb |
| | Ba | 135 | 39293.046 | 125.093838 | ppb |
| | Ba | 137 | 68930.756 | 126.092720 | ppb |
| > | Tb | 159 | 1624865.351 | | ppb |
| | Tl | 205 | 36225.496 | 10.558225 | ppb |
| | Pb | 206 | 12577.905 | 11.122767 | ppb |
| | Pb | 207 | 22908.238 | 10.997204 | ppb |
| | Pb | 208 | 35547.087 | 10.746740 | ppb |
| > | Bi | 209 | 1032683.739 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195268.047 | | ppb |
| | Be | 9 | 998.050 | 10.024428 | ppb |
| > | Sc | 45 | 672406.188 | | ppb |
| | V | 51 | 116746.777 | 54.247031 | ppb |
| | Cr | 52 | 41638.508 | 22.800183 | ppb |
| | Mn | 55 | 36024.773 | 13.294830 | ppb |
| | Co | 59 | 52597.964 | 24.754415 | ppb |
| | Ni | 60 | 9351.037 | 17.067169 | ppb |
| | Cu | 63 | 26063.922 | 21.481245 | ppb |
| | Cu | 65 | 13008.455 | 22.173342 | ppb |
| | Zn | 66 | 9674.678 | 28.536820 | ppb |
| | As | 75 | 8171.541 | 17.318144 | ppb |
| | Se | 82 | 2135.561 | 56.545963 | ppb |
| | Ag | 107 | 17291.604 | 10.408257 | ppb |
| | Ag | 109 | 17351.708 | 10.743796 | ppb |
| | Cd | 111 | 3970.216 | 9.480019 | ppb |
| | In | 113 | 60180.542 | | ppb |
| > | In | 115 | 1266429.103 | | ppb |
| | Sb | 121 | 40336.187 | 24.843592 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 39240.841 | 122.297499 | ppb |
| | Ba | 137 | 67346.013 | 120.599478 | ppb |
| > | Tb | 159 | 1659801.412 | | ppb |
| | Tl | 205 | 36029.791 | 10.382978 | ppb |
| | Pb | 206 | 12833.229 | 11.221130 | ppb |
| | Pb | 207 | 23388.797 | 11.101820 | ppb |
| | Pb | 208 | 35962.803 | 10.750152 | ppb |
| > | Bi | 209 | 1044429.789 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 99.329 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 94.259 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 90.559 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 89.222 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 88.250 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 17:07:29
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1459

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| > | Li | 6 | 222709.805 | 1.709 | 222709.805 | | | ppb |
| | Be | 9 | 32205.112 | 1.013 | 0.145 | 284.73170 | 0.85 | ppb |
| > | Sc | 45 | 746656.792 | 0.318 | 746656.792 | | | ppb |
| | V | 51 | 737556.867 | 1.492 | 0.987 | 310.49224 | 1.18 | ppb |
| | Cr | 52 | 601220.566 | 0.799 | 0.803 | 308.32902 | 0.69 | ppb |
| | Mn | 55 | 937662.040 | 0.307 | 1.255 | 313.78866 | 0.21 | ppb |
| | Co | 59 | 721445.625 | 0.330 | 0.966 | 305.92578 | 0.65 | ppb |
| | Ni | 60 | 182122.385 | 0.558 | 0.244 | 301.27705 | 0.38 | ppb |
| | Cu | 63 | 405702.939 | 0.541 | 0.543 | 302.32686 | 0.25 | ppb |
| | Cu | 65 | 197776.659 | 0.483 | 0.265 | 305.76543 | 0.71 | ppb |
| | Zn | 66 | 120000.167 | 0.566 | 0.161 | 321.97088 | 0.66 | ppb |
| | As | 75 | 158856.067 | 0.769 | 0.213 | 303.57827 | 0.96 | ppb |
| | Se | 82 | 12555.433 | 0.620 | 0.017 | 303.95359 | 0.93 | ppb |
| | Ag | 107 | 574349.568 | 0.758 | 0.411 | 313.52259 | 1.50 | ppb |
| | Ag | 109 | 547005.414 | 0.892 | 0.391 | 307.25000 | 0.27 | ppb |
| | Cd | 111 | 143143.726 | 1.703 | 0.102 | 310.08739 | 1.28 | ppb |
| | In | 113 | 199536.118 | 0.623 | 0.099 | | | ppb |
| > | In | 115 | 1397206.134 | 0.815 | 1397206.134 | | | ppb |
| | Sb | 121 | 567547.931 | 0.394 | 0.306 | 313.28372 | 1.02 | ppb |
| | Ba | 135 | 108926.717 | 0.555 | 0.059 | 303.95545 | 1.67 | ppb |
| | Ba | 137 | 189008.275 | 1.037 | 0.102 | 303.01853 | 0.54 | ppb |
| > | Tb | 159 | 1854268.200 | 1.111 | 1854268.200 | | | ppb |
| | Tl | 205 | 1201655.104 | 0.654 | 1.007 | 303.35231 | 0.67 | ppb |
| | Pb | 206 | 400460.021 | 1.159 | 0.336 | 307.16844 | 1.03 | ppb |
| | Pb | 207 | 738136.136 | 0.615 | 0.619 | 307.29026 | 0.90 | ppb |
| | Pb | 208 | 1170815.322 | 1.294 | 0.981 | 306.95305 | 1.59 | ppb |
| > | Bi | 209 | 1192981.656 | 0.330 | 1192981.656 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 226964.749 | | ppb |
| | Be | 9 | 32578.983 | 282.612437 | ppb |
| > | Sc | 45 | 744138.938 | | ppb |
| | V | 51 | 725417.967 | 306.417717 | ppb |
| | Cr | 52 | 596662.661 | 307.023430 | ppb |
| | Mn | 55 | 936072.749 | 314.316385 | ppb |
| | Co | 59 | 723994.832 | 308.041408 | ppb |
| | Ni | 60 | 181000.026 | 300.433867 | ppb |
| | Cu | 63 | 403194.324 | 301.475135 | ppb |
| | Cu | 65 | 198007.803 | 307.155472 | ppb |
| | Zn | 66 | 120322.884 | 323.928758 | ppb |
| | As | 75 | 159953.811 | 306.706197 | ppb |
| | Se | 82 | 12623.296 | 306.633932 | ppb |
| | Ag | 107 | 571158.208 | 308.943249 | ppb |
| | Ag | 109 | 552636.415 | 307.612595 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 144547.661 | 310.309725 | ppb |
| | In | 113 | 199372.860 | | ppb |
| > | In | 115 | 1409928.190 | | ppb |
| | Sb | 121 | 565542.126 | 315.746795 | ppb |
| | Ba | 135 | 109548.778 | 309.171252 | ppb |
| | Ba | 137 | 187750.114 | 304.460687 | ppb |
| > | Tb | 159 | 1833173.269 | | ppb |
| | Tl | 205 | 1200179.248 | 304.138093 | ppb |
| | Pb | 206 | 397855.064 | 306.340148 | ppb |
| | Pb | 207 | 742400.106 | 310.242971 | ppb |
| | Pb | 208 | 1185335.471 | 311.939794 | ppb |
| > | Bi | 209 | 1188432.705 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 221532.960 | | ppb |
| | Be | 9 | 31979.051 | 284.210244 | ppb |
| > | Sc | 45 | 748846.623 | | ppb |
| | V | 51 | 746889.022 | 313.513014 | ppb |
| | Cr | 52 | 600759.344 | 307.188601 | ppb |
| | Mn | 55 | 940983.074 | 313.978740 | ppb |
| | Co | 59 | 719282.317 | 304.112262 | ppb |
| | Ni | 60 | 182388.243 | 300.835074 | ppb |
| | Cu | 63 | 407281.726 | 302.617244 | ppb |
| | Cu | 65 | 196726.212 | 303.246796 | ppb |
| | Zn | 66 | 120457.828 | 322.251727 | ppb |
| | As | 75 | 159075.402 | 303.104058 | ppb |
| | Se | 82 | 12470.437 | 300.997039 | ppb |
| | Ag | 107 | 572579.460 | 313.312635 | ppb |
| | Ag | 109 | 543963.054 | 306.304745 | ppb |
| | Cd | 111 | 144554.422 | 313.932017 | ppb |
| | In | 113 | 200852.021 | | ppb |
| > | In | 115 | 1393725.453 | | ppb |
| | Sb | 121 | 569957.526 | 314.419437 | ppb |
| | Ba | 135 | 108889.637 | 303.648046 | ppb |
| | Ba | 137 | 188008.908 | 301.246542 | ppb |
| > | Tb | 159 | 1855284.143 | | ppb |
| | Tl | 205 | 1210144.812 | 304.882024 | ppb |
| | Pb | 206 | 405820.760 | 310.658685 | ppb |
| | Pb | 207 | 738648.823 | 306.881968 | ppb |
| | Pb | 208 | 1155099.564 | 302.216235 | ppb |
| > | Bi | 209 | 1195376.864 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 219631.705 | | ppb |
| | Be | 9 | 32057.301 | 287.372430 | ppb |
| > | Sc | 45 | 746984.815 | | ppb |
| | V | 51 | 740363.612 | 311.546001 | ppb |
| | Cr | 52 | 606239.693 | 310.775014 | ppb |
| | Mn | 55 | 935930.296 | 313.070865 | ppb |
| | Co | 59 | 721059.725 | 305.623667 | ppb |
| | Ni | 60 | 182978.887 | 302.562203 | ppb |
| | Cu | 63 | 406632.768 | 302.888191 | ppb |
| | Cu | 65 | 198595.962 | 306.894013 | ppb |
| | Zn | 66 | 119219.790 | 319.732168 | ppb |
| | As | 75 | 157538.989 | 300.924561 | ppb |
| | Se | 82 | 12572.565 | 304.229807 | ppb |
| | Ag | 107 | 579311.036 | 318.311877 | ppb |
| | Ag | 109 | 544416.772 | 307.832646 | ppb |
| | Cd | 111 | 140329.095 | 306.020427 | ppb |
| | In | 113 | 198383.473 | | ppb |
| > | In | 115 | 1387964.761 | | ppb |
| | Sb | 121 | 567144.141 | 309.684935 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 108341.734 | 299.047038 | ppb |
| \| | Ba | 137 | 191265.804 | 303.348369 | ppb |
| \> | Tb | 159 | 1874347.187 | | ppb |
| ⌈ | Tl | 205 | 1194641.253 | 301.036810 | ppb |
| \| | Pb | 206 | 397704.238 | 304.506475 | ppb |
| \| | Pb | 207 | 733359.480 | 304.745852 | ppb |
| \| | Pb | 208 | 1172010.932 | 306.703111 | ppb |
| \> | Bi | 209 | 1195135.398 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | 113.479 | | | |
| Be | 9 | 94.911 | | | | |
| Sc | 45 | | 105.779 | | | |
| V | 51 | 103.497 | | | | |
| Cr | 52 | 102.776 | | | | |
| Mn | 55 | 104.596 | | | | |
| Co | 59 | 101.975 | | | | |
| Ni | 60 | 100.426 | | | | |
| Cu | 63 | 100.776 | | | | |
| Cu | 65 | 101.922 | | | | |
| Zn | 66 | 107.324 | | | | |
| As | 75 | 101.193 | | | | |
| Se | 82 | 101.318 | | | | |
| Ag | 107 | 104.508 | | | | |
| Ag | 109 | 102.417 | | | | |
| Cd | 111 | 103.362 | | | | |
| In | 113 | | | | | |
| In | 115 | | 100.039 | | | |
| Sb | 121 | 104.428 | | | | |
| Ba | 135 | 101.318 | | | | |
| Ba | 137 | 101.006 | | | | |
| Tb | 159 | | 99.675 | | | |
| Tl | 205 | 101.117 | | | | |
| Pb | 206 | 102.389 | | | | |
| Pb | 207 | 102.430 | | | | |
| Pb | 208 | 102.318 | | | | |
| Bi | 209 | | 101.939 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 17:08:55
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1460

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 218332.096 | 1.590 | 218332.096 | | | ppb |
| ⌊ | Be | 9 | 4.000 | 132.288 | -0.000 | -0.00455 | 1028.53 | ppb |
| ⌈> | Sc | 45 | 723534.716 | 1.070 | 723534.716 | | | ppb |
| ⌈ | V | 51 | 825.792 | 33.260 | -0.000 | -0.03906 | 311.95 | ppb |
| ⌈ | Cr | 52 | 2256.255 | 0.788 | 0.001 | 0.21027 | 2.61 | ppb |
| ⌈ | Mn | 55 | 340.006 | 12.565 | 0.000 | 0.02134 | 73.17 | ppb |
| ⌈ | Co | 59 | 66.667 | 51.730 | 0.000 | 0.01591 | 92.56 | ppb |
| ⌈ | Ni | 60 | 56.667 | 17.647 | -0.000 | -0.02001 | 81.13 | ppb |
| ⌈ | Cu | 63 | 125.556 | 19.206 | 0.000 | 0.00381 | 506.93 | ppb |
| ⌈ | Cu | 65 | 131.112 | 21.623 | 0.000 | 0.03811 | 112.95 | ppb |
| ⌈ | Zn | 66 | 123.334 | 11.781 | 0.000 | 0.02640 | 163.17 | ppb |
| ⌈ | As | 75 | 37.668 | 29.927 | 0.000 | 0.05107 | 44.85 | ppb |
| ⌊ | Se | 82 | 34.000 | 16.981 | -0.000 | -0.20906 | 72.35 | ppb |
| ⌈ | Ag | 107 | 33.333 | 26.458 | 0.000 | 0.01341 | 37.89 | ppb |
| ⌈ | Ag | 109 | 51.111 | 27.152 | 0.000 | 0.01945 | 42.21 | ppb |
| ⌈ | Cd | 111 | 11.517 | 120.414 | 0.000 | 0.01610 | 189.95 | ppb |
| ⌈ | In | 113 | 62222.988 | 0.496 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1395418.439 | 1.253 | 1395418.439 | | | ppb |
| ⌈ | Sb | 121 | 410.009 | 23.804 | 0.000 | 0.19502 | 27.26 | ppb |
| ⌈ | Ba | 135 | 34.000 | 42.418 | 0.000 | 0.06699 | 59.73 | ppb |
| ⌈ | Ba | 137 | 44.000 | 73.152 | 0.000 | 0.04063 | 126.66 | ppb |
| ⌊> | Tb | 159 | 1854264.144 | 0.528 | 1854264.144 | | | ppb |
| ⌈ | Tl | 205 | 66.667 | 4.330 | 0.000 | 0.01043 | 5.76 | ppb |
| ⌈ | Pb | 206 | 101.667 | 57.001 | 0.000 | 0.05434 | 80.52 | ppb |
| ⌈ | Pb | 207 | 171.668 | 59.857 | 0.000 | 0.05077 | 82.99 | ppb |
| ⌈ | Pb | 208 | 223.335 | 50.378 | 0.000 | 0.03885 | 74.45 | ppb |
| ⌊> | Bi | 209 | 1190426.439 | 1.248 | 1190426.439 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 222336.501 | | ppb |
| ⌊ | Be | 9 | 10.000 | 0.048432 | ppb |
| ⌈> | Sc | 45 | 732349.514 | | ppb |
| ⌈ | V | 51 | 568.251 | -0.154683 | ppb |
| ⌈ | Cr | 52 | 2276.259 | 0.206319 | ppb |
| ⌈ | Mn | 55 | 300.005 | 0.006192 | ppb |
| ⌈ | Co | 59 | 104.001 | 0.031806 | ppb |
| ⌈ | Ni | 60 | 66.667 | -0.004220 | ppb |
| ⌈ | Cu | 63 | 110.001 | -0.009269 | ppb |
| ⌈ | Cu | 65 | 160.001 | 0.081437 | ppb |
| ⌈ | Zn | 66 | 113.334 | -0.005330 | ppb |
| ⌈ | As | 75 | 24.799 | 0.024938 | ppb |
| ⌊ | Se | 82 | 30.667 | -0.302598 | ppb |
| ⌈ | Ag | 107 | 43.333 | 0.019177 | ppb |
| ⌈ | Ag | 109 | 66.667 | 0.028680 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.910 | 0.050097 | ppb |
| | In | 113 | 62353.796 | | ppb |
| > | In | 115 | 1375232.883 | | ppb |
| | Sb | 121 | 510.013 | 0.249889 | ppb |
| | Ba | 135 | 50.000 | 0.111476 | ppb |
| | Ba | 137 | 80.000 | 0.098224 | ppb |
| > | Tb | 159 | 1857332.274 | | ppb |
| | Tl | 205 | 70.000 | 0.011102 | ppb |
| | Pb | 206 | 155.001 | 0.094529 | ppb |
| | Pb | 207 | 270.002 | 0.091033 | ppb |
| | Pb | 208 | 335.003 | 0.067557 | ppb |
| > | Bi | 209 | 1202213.193 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 216476.003 | | ppb |
| | Be | 9 | 2.000 | -0.021941 | ppb |
| > | Sc | 45 | 720412.481 | | ppb |
| | V | 51 | 1114.849 | 0.088162 | ppb |
| | Cr | 52 | 2242.251 | 0.207969 | ppb |
| | Mn | 55 | 385.007 | 0.037380 | ppb |
| | Co | 59 | 60.000 | 0.013213 | ppb |
| | Ni | 60 | 46.667 | -0.036660 | ppb |
| | Cu | 63 | 113.334 | -0.005309 | ppb |
| | Cu | 65 | 130.001 | 0.037521 | ppb |
| | Zn | 66 | 116.667 | 0.009091 | ppb |
| | As | 75 | 42.408 | 0.060617 | ppb |
| | Se | 82 | 30.667 | -0.290013 | ppb |
| | Ag | 107 | 26.667 | 0.009617 | ppb |
| | Ag | 109 | 46.667 | 0.016695 | ppb |
| | Cd | 111 | 0.000 | -0.009131 | ppb |
| | In | 113 | 61870.810 | | ppb |
| > | In | 115 | 1405413.956 | | ppb |
| | Sb | 121 | 405.008 | 0.191443 | ppb |
| | Ba | 135 | 30.000 | 0.055544 | ppb |
| | Ba | 137 | 34.000 | 0.024451 | ppb |
| > | Tb | 159 | 1862158.544 | | ppb |
| | Tl | 205 | 65.000 | 0.009943 | ppb |
| | Pb | 206 | 110.001 | 0.060757 | ppb |
| | Pb | 207 | 180.001 | 0.054279 | ppb |
| | Pb | 208 | 225.001 | 0.039276 | ppb |
| > | Bi | 209 | 1195326.325 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 216183.783 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 717842.154 | | ppb |
| | V | 51 | 794.276 | -0.050648 | ppb |
| | Cr | 52 | 2250.253 | 0.216532 | ppb |
| | Mn | 55 | 335.006 | 0.020448 | ppb |
| | Co | 59 | 36.000 | 0.002721 | ppb |
| | Ni | 60 | 56.667 | -0.019160 | ppb |
| | Cu | 63 | 153.335 | 0.026019 | ppb |
| | Cu | 65 | 103.334 | -0.004639 | ppb |
| | Zn | 66 | 140.001 | 0.075436 | ppb |
| | As | 75 | 45.797 | 0.067656 | ppb |
| | Se | 82 | 40.667 | -0.034565 | ppb |
| | Ag | 107 | 30.000 | 0.011424 | ppb |
| | Ag | 109 | 40.000 | 0.012969 | ppb |
| | Cd | 111 | 7.640 | 0.007321 | ppb |
| | In | 113 | 62444.358 | | ppb |
| > | In | 115 | 1405608.479 | | ppb |
| | Sb | 121 | 315.005 | 0.143742 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 22.000 | 0.033940 | ppb |
| | Ba | 137 | 18.000 | -0.000800 | ppb |
| > | Tb | 159 | 1843301.615 | | ppb |
| | Tl | 205 | 65.000 | 0.010245 | ppb |
| | Pb | 206 | 40.000 | 0.007728 | ppb |
| | Pb | 207 | 65.000 | 0.006992 | ppb |
| | Pb | 208 | 110.000 | 0.009713 | ppb |
| > | Bi | 209 | 1173739.799 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 111.248 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 102.503 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.911 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 99.675 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 101.721 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107163-02

Sample Date/Time: Monday, August 01, 2011 17:10:23
Sample Type: Sample
Sample Description: 7W13
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107163-02.1461

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194969.768 | 1.002 | 194969.768 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.02035 | 96.36 | ppb |
| ⌈> | Sc | 45 | 674332.731 | 1.017 | 674332.731 | | | ppb |
| \| | V | 51 | 1946.536 | 3.241 | 0.002 | 0.50970 | 6.18 | ppb |
| \| | Cr | 52 | 3507.282 | 1.421 | 0.003 | 1.01060 | 4.56 | ppb |
| \| | Mn | 55 | 7871.430 | 0.868 | 0.011 | 2.82176 | 1.94 | ppb |
| \| | Co | 59 | 29173.160 | 0.766 | 0.043 | 13.68602 | 1.51 | ppb |
| \| | Ni | 60 | 3969.677 | 1.860 | 0.006 | 7.15789 | 2.23 | ppb |
| \| | Cu | 63 | 1973.528 | 2.791 | 0.003 | 1.53586 | 1.99 | ppb |
| \| | Cu | 65 | 1653.470 | 5.816 | 0.002 | 2.66072 | 5.74 | ppb |
| \| | Zn | 66 | 3053.800 | 1.042 | 0.004 | 8.76679 | 2.09 | ppb |
| \| | As | 75 | 3083.055 | 1.279 | 0.005 | 6.50087 | 1.11 | ppb |
| ⌊ | Se | 82 | 44.445 | 3.775 | 0.000 | 0.13367 | 40.88 | ppb |
| ⌈ | Ag | 107 | 8.889 | 57.282 | 0.000 | 0.00044 | 685.19 | ppb |
| \| | Ag | 109 | 14.444 | 35.251 | -0.000 | -0.00050 | 634.01 | ppb |
| \| | Cd | 111 | 25.150 | 19.749 | 0.000 | 0.05034 | 23.01 | ppb |
| \| | In | 113 | 56467.360 | 2.119 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1279479.323 | 0.517 | 1279479.323 | | | ppb |
| ⌈ | Sb | 121 | 4147.527 | 3.578 | 0.002 | 2.45582 | 2.81 | ppb |
| \| | Ba | 135 | 5572.219 | 2.255 | 0.003 | 16.86868 | 3.42 | ppb |
| \| | Ba | 137 | 9773.441 | 1.802 | 0.006 | 16.99450 | 1.55 | ppb |
| ⌊> | Tb | 159 | 1706812.905 | 1.277 | 1706812.905 | | | ppb |
| ⌈ | Tl | 205 | 11.667 | 65.465 | -0.000 | -0.00312 | 70.08 | ppb |
| \| | Pb | 206 | 175.002 | 20.000 | 0.000 | 0.12718 | 23.14 | ppb |
| \| | Pb | 207 | 303.336 | 16.675 | 0.000 | 0.12122 | 18.96 | ppb |
| \| | Pb | 208 | 440.006 | 13.105 | 0.000 | 0.10990 | 15.04 | ppb |
| ⌊> | Bi | 209 | 1062397.043 | 0.532 | 1062397.043 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197213.673 | | ppb |
| ⌊ | Be | 9 | 8.000 | 0.039744 | ppb |
| ⌈> | Sc | 45 | 681903.025 | | ppb |
| \| | V | 51 | 1920.151 | 0.487357 | ppb |
| \| | Cr | 52 | 3474.604 | 0.969721 | ppb |
| \| | Mn | 55 | 7798.039 | 2.762098 | ppb |
| \| | Co | 59 | 29140.396 | 13.517504 | ppb |
| \| | Ni | 60 | 3937.442 | 7.018141 | ppb |
| \| | Cu | 63 | 2036.874 | 1.569650 | ppb |
| \| | Cu | 65 | 1680.141 | 2.674839 | ppb |
| \| | Zn | 66 | 3017.122 | 8.556894 | ppb |
| \| | As | 75 | 3118.540 | 6.502568 | ppb |
| ⌊ | Se | 82 | 42.667 | 0.072792 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.003052 | ppb |
| \| | Ag | 109 | 13.333 | -0.001230 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.545 | 0.053334 | ppb |
| | In | 113 | 57846.830 | | ppb |
| > | In | 115 | 1286279.615 | | ppb |
| | Sb | 121 | 4090.837 | 2.454749 | ppb |
| | Ba | 135 | 5653.598 | 17.338799 | ppb |
| | Ba | 137 | 9752.753 | 17.184112 | ppb |
| > | Tb | 159 | 1684395.015 | | ppb |
| | Tl | 205 | 5.000 | -0.005019 | ppb |
| | Pb | 206 | 190.002 | 0.139894 | ppb |
| | Pb | 207 | 335.003 | 0.135802 | ppb |
| | Pb | 208 | 500.007 | 0.127324 | ppb |
| > | Bi | 209 | 1064427.658 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194052.730 | | ppb |
| | Be | 9 | 6.000 | 0.020751 | ppb |
| > | Sc | 45 | 668544.748 | | ppb |
| | V | 51 | 1900.918 | 0.496011 | ppb |
| | Cr | 52 | 3564.635 | 1.060563 | ppb |
| | Mn | 55 | 7933.145 | 2.869721 | ppb |
| | Co | 59 | 29411.187 | 13.916110 | ppb |
| | Ni | 60 | 3917.434 | 7.123724 | ppb |
| | Cu | 63 | 1946.856 | 1.527927 | ppb |
| | Cu | 65 | 1546.786 | 2.501317 | ppb |
| | Zn | 66 | 3070.471 | 8.894199 | ppb |
| | As | 75 | 3090.036 | 6.572123 | ppb |
| | Se | 82 | 44.667 | 0.149733 | ppb |
| | Ag | 107 | 10.000 | 0.001137 | ppb |
| | Ag | 109 | 20.000 | 0.002964 | ppb |
| | Cd | 111 | 19.635 | 0.037553 | ppb |
| | In | 113 | 55714.776 | | ppb |
| > | In | 115 | 1273074.605 | | ppb |
| | Sb | 121 | 4315.931 | 2.525465 | ppb |
| | Ba | 135 | 5427.472 | 16.224199 | ppb |
| | Ba | 137 | 9958.957 | 17.105254 | ppb |
| > | Tb | 159 | 1727924.022 | | ppb |
| | Tl | 205 | 10.000 | -0.003610 | ppb |
| | Pb | 206 | 200.002 | 0.148117 | ppb |
| | Pb | 207 | 330.003 | 0.133133 | ppb |
| | Pb | 208 | 435.005 | 0.107945 | ppb |
| > | Bi | 209 | 1066751.847 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193642.900 | | ppb |
| | Be | 9 | 4.000 | 0.000542 | ppb |
| > | Sc | 45 | 672550.419 | | ppb |
| | V | 51 | 2018.539 | 0.545724 | ppb |
| | Cr | 52 | 3482.606 | 1.001511 | ppb |
| | Mn | 55 | 7883.106 | 2.833460 | ppb |
| | Co | 59 | 28967.896 | 13.624454 | ppb |
| | Ni | 60 | 4054.155 | 7.331791 | ppb |
| | Cu | 63 | 1936.854 | 1.509997 | ppb |
| | Cu | 65 | 1733.484 | 2.806017 | ppb |
| | Zn | 66 | 3073.806 | 8.849288 | ppb |
| | As | 75 | 3040.588 | 6.427925 | ppb |
| | Se | 82 | 46.000 | 0.178475 | ppb |
| | Ag | 107 | 3.333 | -0.002866 | ppb |
| | Ag | 109 | 10.000 | -0.003230 | ppb |
| | Cd | 111 | 29.270 | 0.060135 | ppb |
| | In | 113 | 55840.474 | | ppb |
| > | In | 115 | 1279083.750 | | ppb |
| | Sb | 121 | 4035.814 | 2.387250 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5635.588 | 17.043033 | ppb |
| | Ba | 137 | 9608.614 | 16.694144 | ppb |
| > | Tb | 159 | 1708119.678 | | ppb |
| | Tl | 205 | 20.000 | -0.000730 | ppb |
| | Pb | 206 | 135.001 | 0.093532 | ppb |
| | Pb | 207 | 245.002 | 0.094718 | ppb |
| | Pb | 208 | 385.004 | 0.094433 | ppb |
| > | Bi | 209 | 1056011.623 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.344 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 95.533 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 91.610 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 91.749 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 90.781 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107164-01

Sample Date/Time: Monday, August 01, 2011 17:11:48
Sample Type: Sample
Sample Description: 5WC21
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107164-01.1462

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205504.872 | 0.712 | 205504.872 | | | ppb |
| ⌊ | Be | 9 | 150.668 | 14.622 | 0.001 | 1.40431 | 15.61 | ppb |
| ⌈> | Sc | 45 | 716125.684 | 1.126 | 716125.684 | | | ppb |
| ⌈ | V | 51 | 1772.739 | 30.721 | 0.001 | 0.37986 | 62.24 | ppb |
| ⌈ | Cr | 52 | 11881.722 | 1.070 | 0.014 | 5.38593 | 0.12 | ppb |
| ⌈ | Mn | 55 | 16155074.113 | 0.910 | 22.561 | 5639.12130 | 1.84 | ppb |
| ⌈ | Co | 59 | 173913.530 | 1.661 | 0.243 | 76.88892 | 2.20 | ppb |
| ⌈ | Ni | 60 | 16670.552 | 1.115 | 0.023 | 28.64999 | 1.58 | ppb |
| ⌈ | Cu | 63 | 6210.818 | 2.100 | 0.009 | 4.73386 | 1.00 | ppb |
| ⌈ | Cu | 65 | 3513.951 | 2.702 | 0.005 | 5.49580 | 1.69 | ppb |
| ⌈ | Zn | 66 | 14388.122 | 0.792 | 0.020 | 39.97939 | 1.86 | ppb |
| ⌈ | As | 75 | 110.514 | 23.758 | 0.000 | 0.19724 | 27.86 | ppb |
| ⌊ | Se | 82 | 80.223 | 1.730 | 0.000 | 0.96993 | 4.04 | ppb |
| ⌈ | Ag | 107 | 24.444 | 20.830 | 0.000 | 0.00943 | 29.69 | ppb |
| ⌈ | Ag | 109 | 15.556 | 12.372 | 0.000 | 0.00001 | 10865.67 | ppb |
| ⌈ | Cd | 111 | 237.150 | 18.080 | 0.000 | 0.54200 | 18.32 | ppb |
| ⌈ | In | 113 | 58408.425 | 0.994 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1302627.289 | 1.409 | 1302627.289 | | | ppb |
| ⌈ | Sb | 121 | 110.001 | 25.308 | 0.000 | 0.03427 | 48.86 | ppb |
| ⌈ | Ba | 135 | 5245.376 | 2.289 | 0.003 | 15.73298 | 0.96 | ppb |
| ⌈ | Ba | 137 | 9019.401 | 2.470 | 0.005 | 15.54802 | 3.65 | ppb |
| ⌊> | Tb | 159 | 1721863.677 | 1.416 | 1721863.677 | | | ppb |
| ⌈ | Tl | 205 | 631.687 | 5.726 | 0.001 | 0.16823 | 5.41 | ppb |
| ⌈ | Pb | 206 | 195.002 | 15.597 | 0.000 | 0.14035 | 17.72 | ppb |
| ⌈ | Pb | 207 | 341.670 | 17.581 | 0.000 | 0.13531 | 20.10 | ppb |
| ⌈ | Pb | 208 | 540.009 | 8.072 | 0.000 | 0.13547 | 8.77 | ppb |
| ⌊> | Bi | 209 | 1088989.045 | 0.556 | 1088989.045 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207090.345 | | ppb |
| ⌊ | Be | 9 | 140.001 | 1.291072 | ppb |
| ⌈> | Sc | 45 | 723702.787 | | ppb |
| ⌈ | V | 51 | 2249.887 | 0.579569 | ppb |
| ⌈ | Cr | 52 | 12007.204 | 5.385774 | ppb |
| ⌈ | Mn | 55 | 16150762.409 | 5577.886072 | ppb |
| ⌈ | Co | 59 | 175280.822 | 76.673599 | ppb |
| ⌈ | Ni | 60 | 16547.012 | 28.135499 | ppb |
| ⌈ | Cu | 63 | 6335.340 | 4.779437 | ppb |
| ⌈ | Cu | 65 | 3617.321 | 5.602059 | ppb |
| ⌈ | Zn | 66 | 14256.822 | 39.188317 | ppb |
| ⌈ | As | 75 | 87.066 | 0.148291 | ppb |
| ⌊ | Se | 82 | 81.334 | 0.976372 | ppb |
| ⌈ | Ag | 107 | 20.000 | 0.007044 | ppb |
| ⌈ | Ag | 109 | 16.667 | 0.000838 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 226.034 | 0.524546 | ppb |
| | In | 113 | 58882.851 | | ppb |
| > | In | 115 | 1282005.548 | | ppb |
| | Sb | 121 | 115.001 | 0.038302 | ppb |
| | Ba | 135 | 5117.309 | 15.600759 | ppb |
| | Ba | 137 | 9232.260 | 16.171421 | ppb |
| > | Tb | 159 | 1694168.092 | | ppb |
| | Tl | 205 | 655.021 | 0.174342 | ppb |
| | Pb | 206 | 180.002 | 0.127493 | ppb |
| | Pb | 207 | 280.002 | 0.106927 | ppb |
| | Pb | 208 | 520.009 | 0.129446 | ppb |
| > | Bi | 209 | 1091250.769 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204205.930 | | ppb |
| | Be | 9 | 176.002 | 1.657023 | ppb |
| > | Sc | 45 | 707652.979 | | ppb |
| | V | 51 | 1888.897 | 0.441208 | ppb |
| | Cr | 52 | 11752.902 | 5.392281 | ppb |
| | Mn | 55 | 16304221.982 | 5758.598922 | ppb |
| | Co | 59 | 175864.944 | 78.674235 | ppb |
| | Ni | 60 | 16580.401 | 28.834568 | ppb |
| | Cu | 63 | 6075.178 | 4.685323 | ppb |
| | Cu | 65 | 3430.588 | 5.428223 | ppb |
| | Zn | 66 | 14460.448 | 40.661299 | ppb |
| | As | 75 | 138.882 | 0.256670 | ppb |
| | Se | 82 | 80.667 | 1.005518 | ppb |
| | Ag | 107 | 30.000 | 0.012517 | ppb |
| | Ag | 109 | 16.667 | 0.000565 | ppb |
| | Cd | 111 | 200.925 | 0.452605 | ppb |
| | In | 113 | 58581.086 | | ppb |
| > | In | 115 | 1317148.374 | | ppb |
| | Sb | 121 | 80.000 | 0.015881 | ppb |
| | Ba | 135 | 5355.434 | 15.896769 | ppb |
| | Ba | 137 | 9038.083 | 15.412491 | ppb |
| > | Tb | 159 | 1740046.116 | | ppb |
| | Tl | 205 | 590.017 | 0.157775 | ppb |
| | Pb | 206 | 175.002 | 0.124537 | ppb |
| | Pb | 207 | 345.003 | 0.137835 | ppb |
| | Pb | 208 | 510.007 | 0.127812 | ppb |
| > | Bi | 209 | 1082124.361 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205218.341 | | ppb |
| | Be | 9 | 136.001 | 1.264833 | ppb |
| > | Sc | 45 | 717021.286 | | ppb |
| | V | 51 | 1179.433 | 0.118814 | ppb |
| | Cr | 52 | 11885.059 | 5.379725 | ppb |
| | Mn | 55 | 16010237.947 | 5580.878892 | ppb |
| | Co | 59 | 170594.823 | 75.318931 | ppb |
| | Ni | 60 | 16884.242 | 28.979912 | ppb |
| | Cu | 63 | 6221.935 | 4.736811 | ppb |
| | Cu | 65 | 3493.944 | 5.457119 | ppb |
| | Zn | 66 | 14447.095 | 40.088568 | ppb |
| | As | 75 | 105.594 | 0.186763 | ppb |
| | Se | 82 | 78.667 | 0.927908 | ppb |
| | Ag | 107 | 23.333 | 0.008744 | ppb |
| | Ag | 109 | 13.333 | -0.001370 | ppb |
| | Cd | 111 | 284.490 | 0.648848 | ppb |
| | In | 113 | 57761.338 | | ppb |
| > | In | 115 | 1308727.944 | | ppb |
| | Sb | 121 | 135.001 | 0.048632 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5263.385 | 15.701425 | ppb |
| | Ba | 137 | 8787.860 | 15.060146 | ppb |
| > | Tb | 159 | 1731376.821 | | ppb |
| | Tl | 205 | 650.021 | 0.172578 | ppb |
| | Pb | 206 | 230.003 | 0.169011 | ppb |
| | Pb | 207 | 400.004 | 0.161154 | ppb |
| | Pb | 208 | 590.010 | 0.149147 | ppb |
| > | Bi | 209 | 1093592.004 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 104.712 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 101.453 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 93.267 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 92.558 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 93.053 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107164-01

Sample Date/Time: Monday, August 01, 2011 17:13:14
Sample Type: Sample
Sample Description: 5WC21L 5X
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107164-01.1463

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224272.379 | 0.424 | 224272.379 | | | ppb |
| ⌊ | Be | 9 | 26.667 | 8.660 | 0.000 | 0.19405 | 10.84 | ppb |
| ⌈> | Sc | 45 | 762265.021 | 1.222 | 762265.021 | | | ppb |
| \| | V | 51 | 772.837 | 35.742 | -0.000 | -0.07911 | 146.76 | ppb |
| \| | Cr | 52 | 3507.282 | 1.827 | 0.002 | 0.77975 | 1.48 | ppb |
| \| | Mn | 55 | 2521666.875 | 4.547 | 3.307 | 826.53471 | 3.36 | ppb |
| \| | Co | 59 | 27488.438 | 4.122 | 0.036 | 11.40221 | 2.93 | ppb |
| \| | Ni | 60 | 2556.994 | 5.642 | 0.003 | 4.02674 | 4.58 | ppb |
| \| | Cu | 63 | 1113.395 | 6.567 | 0.001 | 0.72030 | 7.95 | ppb |
| \| | Cu | 65 | 705.581 | 8.522 | 0.001 | 0.89755 | 8.71 | ppb |
| \| | Zn | 66 | 2481.420 | 5.741 | 0.003 | 6.21005 | 4.91 | ppb |
| \| | As | 75 | 52.760 | 60.080 | 0.000 | 0.07564 | 79.64 | ppb |
| ⌊ | Se | 82 | 44.667 | 7.898 | 0.000 | 0.00080 | 10474.65 | ppb |
| ⌈ | Ag | 107 | 8.889 | 57.282 | -0.000 | -0.00001 | 18690.81 | ppb |
| \| | Ag | 109 | 15.556 | 32.733 | -0.000 | -0.00066 | 428.55 | ppb |
| \| | Cd | 111 | 43.033 | 23.382 | 0.000 | 0.08380 | 25.52 | ppb |
| \| | In | 113 | 62506.412 | 0.300 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1400720.697 | 0.434 | 1400720.697 | | | ppb |
| ⌈ | Sb | 121 | 55.000 | 18.182 | -0.000 | -0.00065 | 894.10 | ppb |
| \| | Ba | 135 | 849.369 | 3.028 | 0.000 | 2.35256 | 3.12 | ppb |
| \| | Ba | 137 | 1440.771 | 4.373 | 0.001 | 2.29094 | 5.37 | ppb |
| ⌊> | Tb | 159 | 1846305.842 | 0.972 | 1846305.842 | | | ppb |
| ⌈ | Tl | 205 | 101.667 | 24.754 | 0.000 | 0.01968 | 33.18 | ppb |
| \| | Pb | 206 | 36.667 | 34.317 | 0.000 | 0.00518 | 193.78 | ppb |
| \| | Pb | 207 | 65.000 | 30.769 | 0.000 | 0.00703 | 123.00 | ppb |
| \| | Pb | 208 | 118.334 | 23.272 | 0.000 | 0.01198 | 63.57 | ppb |
| ⌊> | Bi | 209 | 1173449.582 | 0.840 | 1173449.582 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 223254.619 | | ppb |
| ⌊ | Be | 9 | 28.000 | 0.206829 | ppb |
| ⌈> | Sc | 45 | 752334.378 | | ppb |
| \| | V | 51 | 894.294 | -0.024773 | ppb |
| \| | Cr | 52 | 3444.593 | 0.771153 | ppb |
| \| | Mn | 55 | 2412236.136 | 801.311035 | ppb |
| \| | Co | 59 | 26384.762 | 11.091073 | ppb |
| \| | Ni | 60 | 2396.954 | 3.820083 | ppb |
| \| | Cu | 63 | 1166.735 | 0.770281 | ppb |
| \| | Cu | 65 | 643.354 | 0.816769 | ppb |
| \| | Zn | 66 | 2316.935 | 5.859973 | ppb |
| \| | As | 75 | 82.056 | 0.132255 | ppb |
| ⌊ | Se | 82 | 46.000 | 0.046909 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002379 | ppb |
| \| | Ag | 109 | 20.000 | 0.001800 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 50.280 | 0.099127 | ppb |
| | In | 113 | 62308.515 | | ppb |
| > | In | 115 | 1405815.861 | | ppb |
| | Sb | 121 | 55.000 | -0.000594 | ppb |
| | Ba | 135 | 820.034 | 2.277285 | ppb |
| | Ba | 137 | 1440.104 | 2.296194 | ppb |
| > | Tb | 159 | 1840671.754 | | ppb |
| | Tl | 205 | 105.001 | 0.020762 | ppb |
| | Pb | 206 | 50.000 | 0.015892 | ppb |
| | Pb | 207 | 85.000 | 0.015794 | ppb |
| | Pb | 208 | 150.001 | 0.020749 | ppb |
| > | Bi | 209 | 1162778.271 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 225140.193 | | ppb |
| | Be | 9 | 24.000 | 0.169776 | ppb |
| > | Sc | 45 | 763656.127 | | ppb |
| | V | 51 | 967.521 | -0.000139 | ppb |
| | Cr | 52 | 3504.614 | 0.775270 | ppb |
| | Mn | 55 | 2511822.590 | 822.024283 | ppb |
| | Co | 59 | 27431.573 | 11.360472 | ppb |
| | Ni | 60 | 2597.004 | 4.085410 | ppb |
| | Cu | 63 | 1030.053 | 0.657866 | ppb |
| | Cu | 65 | 710.025 | 0.902962 | ppb |
| | Zn | 66 | 2563.662 | 6.416298 | ppb |
| | As | 75 | 19.109 | 0.012325 | ppb |
| | Se | 82 | 40.667 | -0.096212 | ppb |
| | Ag | 107 | 3.333 | -0.003041 | ppb |
| | Ag | 109 | 16.667 | -0.000038 | ppb |
| | Cd | 111 | 47.275 | 0.092909 | ppb |
| | In | 113 | 62529.890 | | ppb |
| > | In | 115 | 1402351.287 | | ppb |
| | Sb | 121 | 45.000 | -0.006500 | ppb |
| | Ba | 135 | 860.037 | 2.356414 | ppb |
| | Ba | 137 | 1378.095 | 2.165361 | ppb |
| > | Tb | 159 | 1866395.232 | | ppb |
| | Tl | 205 | 75.000 | 0.012673 | ppb |
| | Pb | 206 | 35.000 | 0.003634 | ppb |
| | Pb | 207 | 65.000 | 0.006795 | ppb |
| | Pb | 208 | 105.000 | 0.008180 | ppb |
| > | Bi | 209 | 1182216.576 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224422.325 | | ppb |
| | Be | 9 | 28.000 | 0.205544 | ppb |
| > | Sc | 45 | 770804.557 | | ppb |
| | V | 51 | 456.695 | -0.212417 | ppb |
| | Cr | 52 | 3572.638 | 0.792822 | ppb |
| | Mn | 55 | 2640941.899 | 856.268823 | ppb |
| | Co | 59 | 28648.980 | 11.755071 | ppb |
| | Ni | 60 | 2677.025 | 4.174718 | ppb |
| | Cu | 63 | 1143.399 | 0.732748 | ppb |
| | Cu | 65 | 763.362 | 0.972923 | ppb |
| | Zn | 66 | 2563.662 | 6.353866 | ppb |
| | As | 75 | 57.116 | 0.082354 | ppb |
| | Se | 82 | 47.333 | 0.051710 | ppb |
| | Ag | 107 | 10.000 | 0.000617 | ppb |
| | Ag | 109 | 10.000 | -0.003735 | ppb |
| | Cd | 111 | 31.545 | 0.059365 | ppb |
| | In | 113 | 62680.831 | | ppb |
| > | In | 115 | 1393994.944 | | ppb |
| | Sb | 121 | 65.000 | 0.005141 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 868.038 | 2.423974 | ppb |
| | Ba | 137 | 1504.113 | 2.411279 | ppb |
| > | Tb | 159 | 1831850.541 | | ppb |
| | Tl | 205 | 125.001 | 0.025596 | ppb |
| | Pb | 206 | 25.000 | -0.003994 | ppb |
| | Pb | 207 | 45.000 | -0.001497 | ppb |
| | Pb | 208 | 100.000 | 0.007012 | ppb |
| > | Bi | 209 | 1175353.900 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 114.275 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 107.990 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 100.291 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 99.247 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 100.270 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS3

Sample Date/Time: Monday, August 01, 2011 17:14:40
Sample Type: Sample
Sample Description: 5WC21A
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS3.1464

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208977.800 | 0.951 | 208977.800 | | | ppb |
| ⌊ | Be | 9 | 1158.067 | 4.149 | 0.006 | 10.86980 | 3.23 | ppb |
| ⌈> | Sc | 45 | 719015.507 | 1.479 | 719015.507 | | | ppb |
| \| | V | 51 | 119142.144 | 1.124 | 0.164 | 51.76093 | 1.88 | ppb |
| \| | Cr | 52 | 51030.565 | 1.662 | 0.068 | 26.28414 | 3.20 | ppb |
| \| | Mn | 55 | 16251894.277 | 2.081 | 22.604 | 5649.82607 | 2.10 | ppb |
| \| | Co | 59 | 197461.563 | 1.787 | 0.275 | 86.94174 | 1.13 | ppb |
| \| | Ni | 60 | 21655.650 | 1.829 | 0.030 | 37.10334 | 2.17 | ppb |
| \| | Cu | 63 | 32543.988 | 1.488 | 0.045 | 25.10003 | 1.21 | ppb |
| \| | Cu | 65 | 15892.619 | 0.660 | 0.022 | 25.36038 | 1.14 | ppb |
| \| | Zn | 66 | 21819.349 | 3.054 | 0.030 | 60.55301 | 3.86 | ppb |
| \| | As | 75 | 5335.449 | 3.308 | 0.007 | 10.56552 | 3.02 | ppb |
| ⌊ | Se | 82 | 2115.335 | 0.927 | 0.003 | 52.31274 | 2.29 | ppb |
| ⌈ | Ag | 107 | 18559.440 | 3.180 | 0.014 | 10.79116 | 4.06 | ppb |
| \| | Ag | 109 | 18188.751 | 1.357 | 0.014 | 10.87990 | 3.38 | ppb |
| \| | Cd | 111 | 4909.967 | 4.563 | 0.004 | 11.32991 | 5.99 | ppb |
| \| | In | 113 | 62541.649 | 1.218 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1311629.749 | 2.525 | 1311629.749 | | | ppb |
| ⌈ | Sb | 121 | 37117.092 | 0.641 | 0.021 | 21.89718 | 2.14 | ppb |
| \| | Ba | 135 | 39995.840 | 1.776 | 0.023 | 119.39763 | 1.71 | ppb |
| \| | Ba | 137 | 69038.178 | 1.047 | 0.040 | 118.41750 | 0.47 | ppb |
| ⌊> | Tb | 159 | 1732932.926 | 1.516 | 1732932.926 | | | ppb |
| ⌈ | Tl | 205 | 38729.870 | 1.706 | 0.035 | 10.66000 | 1.56 | ppb |
| \| | Pb | 206 | 12916.671 | 1.338 | 0.012 | 10.78651 | 1.68 | ppb |
| \| | Pb | 207 | 23805.930 | 0.278 | 0.022 | 10.79218 | 0.88 | ppb |
| \| | Pb | 208 | 37327.502 | 1.196 | 0.034 | 10.65656 | 0.50 | ppb |
| ⌊> | Bi | 209 | 1093541.960 | 0.703 | 1093541.960 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211053.931 | | ppb |
| ⌊ | Be | 9 | 1212.073 | 11.268479 | ppb |
| ⌈> | Sc | 45 | 718024.578 | | ppb |
| \| | V | 51 | 120686.594 | 52.502158 | ppb |
| \| | Cr | 52 | 51423.882 | 26.524022 | ppb |
| \| | Mn | 55 | 16607385.774 | 5780.948269 | ppb |
| \| | Co | 59 | 199765.582 | 88.077036 | ppb |
| \| | Ni | 60 | 22101.063 | 37.916841 | ppb |
| \| | Cu | 63 | 32101.443 | 24.790554 | ppb |
| \| | Cu | 65 | 15799.137 | 25.242669 | ppb |
| \| | Zn | 66 | 22552.068 | 62.667635 | ppb |
| \| | As | 75 | 5513.070 | 10.933053 | ppb |
| ⌊ | Se | 82 | 2131.560 | 52.784868 | ppb |
| ⌈ | Ag | 107 | 19218.450 | 11.257929 | ppb |
| \| | Ag | 109 | 18463.696 | 11.125750 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5165.754 | 12.006017 | ppb |
| | In | 113 | 63375.186 | | ppb |
| > | In | 115 | 1301363.839 | | ppb |
| | Sb | 121 | 36847.763 | 21.395156 | ppb |
| | Ba | 135 | 40025.944 | 117.622234 | ppb |
| | Ba | 137 | 69764.508 | 117.798029 | ppb |
| > | Tb | 159 | 1760287.584 | | ppb |
| | Tl | 205 | 38509.005 | 10.534120 | ppb |
| | Pb | 206 | 12748.121 | 10.579466 | ppb |
| | Pb | 207 | 23734.152 | 10.693042 | ppb |
| | Pb | 208 | 37741.777 | 10.709083 | ppb |
| > | Bi | 209 | 1100290.472 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207094.428 | | ppb |
| | Be | 9 | 1120.063 | 10.609821 | ppb |
| > | Sc | 45 | 708912.676 | | ppb |
| | V | 51 | 118305.123 | 52.124816 | ppb |
| | Cr | 52 | 51610.841 | 26.978948 | ppb |
| | Mn | 55 | 15934342.684 | 5617.955833 | ppb |
| | Co | 59 | 193400.272 | 86.366316 | ppb |
| | Ni | 60 | 21342.751 | 37.083954 | ppb |
| | Cu | 63 | 32469.294 | 25.399195 | ppb |
| | Cu | 65 | 15872.587 | 25.688983 | ppb |
| | Zn | 66 | 21656.759 | 60.944628 | ppb |
| | As | 75 | 5160.052 | 10.363289 | ppb |
| | Se | 82 | 2120.892 | 53.204001 | ppb |
| | Ag | 107 | 18380.209 | 10.388932 | ppb |
| | Ag | 109 | 17986.161 | 10.457352 | ppb |
| | Cd | 111 | 4748.466 | 10.648107 | ppb |
| | In | 113 | 62368.889 | | ppb |
| > | In | 115 | 1348660.945 | | ppb |
| | Sb | 121 | 37204.079 | 21.973190 | ppb |
| | Ba | 135 | 40690.618 | 121.626191 | ppb |
| | Ba | 137 | 69031.447 | 118.558519 | ppb |
| > | Tb | 159 | 1730621.243 | | ppb |
| | Tl | 205 | 39472.751 | 10.848578 | ppb |
| | Pb | 206 | 13093.566 | 10.917849 | ppb |
| | Pb | 207 | 23864.364 | 10.802334 | ppb |
| | Pb | 208 | 37386.169 | 10.657832 | ppb |
| > | Bi | 209 | 1095154.970 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208785.042 | | ppb |
| | Be | 9 | 1142.065 | 10.731097 | ppb |
| > | Sc | 45 | 730109.266 | | ppb |
| | V | 51 | 118434.715 | 50.655807 | ppb |
| | Cr | 52 | 50056.972 | 25.349462 | ppb |
| | Mn | 55 | 16213954.372 | 5550.574113 | ppb |
| | Co | 59 | 199218.836 | 86.381870 | ppb |
| | Ni | 60 | 21523.137 | 36.309229 | ppb |
| | Cu | 63 | 33061.229 | 25.110350 | ppb |
| | Cu | 65 | 16006.133 | 25.149476 | ppb |
| | Zn | 66 | 21249.219 | 58.046780 | ppb |
| | As | 75 | 5333.225 | 10.400204 | ppb |
| | Se | 82 | 2093.552 | 50.949340 | ppb |
| | Ag | 107 | 18079.662 | 10.726613 | ppb |
| | Ag | 109 | 18116.395 | 11.056600 | ppb |
| | Cd | 111 | 4815.682 | 11.335610 | ppb |
| | In | 113 | 61880.872 | | ppb |
| > | In | 115 | 1284864.464 | | ppb |
| | Sb | 121 | 37299.433 | 22.323206 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 39270.959 | 118.944465 | ppb |
| | Ba | 137 | 68318.577 | 118.895949 | ppb |
| > | Tb | 159 | 1707889.950 | | ppb |
| | Tl | 205 | 38207.853 | 10.597309 | ppb |
| | Pb | 206 | 12908.326 | 10.862203 | ppb |
| | Pb | 207 | 23819.275 | 10.881177 | ppb |
| | Pb | 208 | 36854.559 | 10.602752 | ppb |
| > | Bi | 209 | 1085180.439 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 106.482 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 101.863 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 93.912 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 93.153 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 93.442 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107164-02

Sample Date/Time: Monday, August 01, 2011 17:16:05
Sample Type: Sample
Sample Description: 5WC22
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107164-02.1465

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207017.721 | 1.172 | 207017.721 | | | ppb |
| ⌊ | Be | 9 | 5.333 | 21.651 | 0.000 | 0.01054 | 101.05 | ppb |
| ⌈> | Sc | 45 | 700463.715 | 1.436 | 700463.715 | | | ppb |
| \| | V | 51 | 1803.861 | 20.361 | 0.001 | 0.41307 | 42.11 | ppb |
| \| | Cr | 52 | 3063.803 | 2.281 | 0.002 | 0.69255 | 4.12 | ppb |
| \| | Mn | 55 | 7827241.865 | 0.444 | 11.176 | 2793.35843 | 1.80 | ppb |
| \| | Co | 59 | 10634.319 | 1.415 | 0.015 | 4.79394 | 0.89 | ppb |
| \| | Ni | 60 | 3111.595 | 2.168 | 0.004 | 5.37197 | 1.07 | ppb |
| \| | Cu | 63 | 805.588 | 2.692 | 0.001 | 0.54716 | 1.47 | ppb |
| \| | Cu | 65 | 848.925 | 7.577 | 0.001 | 1.23002 | 10.15 | ppb |
| \| | Zn | 66 | 1057.834 | 4.824 | 0.001 | 2.71194 | 4.07 | ppb |
| \| | As | 75 | 71.152 | 44.315 | 0.000 | 0.12100 | 51.80 | ppb |
| ⌊ | Se | 82 | 60.222 | 15.824 | 0.000 | 0.49988 | 54.00 | ppb |
| ⌈ | Ag | 107 | 7.778 | 49.487 | -0.000 | -0.00031 | 733.35 | ppb |
| \| | Ag | 109 | 7.778 | 65.465 | -0.000 | -0.00473 | 63.10 | ppb |
| \| | Cd | 111 | 122.283 | 3.678 | 0.000 | 0.27374 | 2.91 | ppb |
| \| | In | 113 | 58234.076 | 0.840 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1308413.419 | 1.780 | 1308413.419 | | | ppb |
| ⌈ | Sb | 121 | 173.335 | 6.662 | 0.000 | 0.07009 | 10.42 | ppb |
| \| | Ba | 135 | 10805.168 | 0.617 | 0.006 | 31.87705 | 1.81 | ppb |
| \| | Ba | 137 | 19072.845 | 2.344 | 0.011 | 32.32325 | 1.52 | ppb |
| ⌊> | Tb | 159 | 1752591.728 | 1.443 | 1752591.728 | | | ppb |
| ⌈ | Tl | 205 | 220.002 | 17.159 | 0.000 | 0.05374 | 19.05 | ppb |
| \| | Pb | 206 | 70.000 | 18.898 | 0.000 | 0.03474 | 31.74 | ppb |
| \| | Pb | 207 | 135.000 | 7.407 | 0.000 | 0.04039 | 10.97 | ppb |
| \| | Pb | 208 | 246.669 | 12.218 | 0.000 | 0.05048 | 16.77 | ppb |
| ⌊> | Bi | 209 | 1100812.116 | 0.302 | 1100812.116 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209769.322 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.016189 | ppb |
| ⌈> | Sc | 45 | 710210.056 | | ppb |
| \| | V | 51 | 1379.887 | 0.212612 | ppb |
| \| | Cr | 52 | 3076.473 | 0.676362 | ppb |
| \| | Mn | 55 | 7787262.014 | 2740.482744 | ppb |
| \| | Co | 59 | 10807.837 | 4.805190 | ppb |
| \| | Ni | 60 | 3153.831 | 5.370418 | ppb |
| \| | Cu | 63 | 826.701 | 0.554999 | ppb |
| \| | Cu | 65 | 776.697 | 1.092198 | ppb |
| \| | Zn | 66 | 1116.729 | 2.837454 | ppb |
| \| | As | 75 | 93.390 | 0.164258 | ppb |
| ⌊ | Se | 82 | 52.000 | 0.265929 | ppb |
| ⌈ | Ag | 107 | 3.333 | -0.002926 | ppb |
| \| | Ag | 109 | 6.667 | -0.005397 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 119.915 | 0.266183 | ppb |
| | In | 113 | 57917.236 | | ppb |
| > | In | 115 | 1318380.851 | | ppb |
| | Sb | 121 | 180.002 | 0.072756 | ppb |
| | Ba | 135 | 10731.755 | 31.295632 | ppb |
| | Ba | 137 | 19112.246 | 32.023518 | ppb |
| > | Tb | 159 | 1772700.626 | | ppb |
| | Tl | 205 | 180.002 | 0.042961 | ppb |
| | Pb | 206 | 65.000 | 0.030741 | ppb |
| | Pb | 207 | 125.000 | 0.036056 | ppb |
| | Pb | 208 | 250.002 | 0.051649 | ppb |
| > | Bi | 209 | 1097491.508 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206100.201 | | ppb |
| | Be | 9 | 6.000 | 0.017192 | ppb |
| > | Sc | 45 | 690118.916 | | ppb |
| | V | 51 | 2024.697 | 0.524485 | ppb |
| | Cr | 52 | 2988.446 | 0.675808 | ppb |
| | Mn | 55 | 7843824.153 | 2840.753542 | ppb |
| | Co | 59 | 10555.568 | 4.829724 | ppb |
| | Ni | 60 | 3033.793 | 5.315238 | ppb |
| | Cu | 63 | 783.364 | 0.538910 | ppb |
| | Cu | 65 | 900.041 | 1.335396 | ppb |
| | Zn | 66 | 1026.719 | 2.667706 | ppb |
| | As | 75 | 35.067 | 0.049125 | ppb |
| | Se | 82 | 70.667 | 0.795217 | ppb |
| | Ag | 107 | 10.000 | 0.000902 | ppb |
| | Ag | 109 | 13.333 | -0.001468 | ppb |
| | Cd | 111 | 127.469 | 0.282052 | ppb |
| | In | 113 | 57987.642 | | ppb |
| > | In | 115 | 1325057.810 | | ppb |
| | Sb | 121 | 180.002 | 0.075680 | ppb |
| | Ba | 135 | 10821.852 | 32.447313 | ppb |
| | Ba | 137 | 18607.295 | 32.054680 | ppb |
| > | Tb | 159 | 1724189.151 | | ppb |
| | Tl | 205 | 255.003 | 0.063333 | ppb |
| | Pb | 206 | 85.000 | 0.047205 | ppb |
| | Pb | 207 | 145.001 | 0.044910 | ppb |
| | Pb | 208 | 215.001 | 0.041490 | ppb |
| > | Bi | 209 | 1100796.924 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205183.640 | | ppb |
| | Be | 9 | 4.000 | -0.001746 | ppb |
| > | Sc | 45 | 701062.172 | | ppb |
| | V | 51 | 2006.999 | 0.502126 | ppb |
| | Cr | 52 | 3126.489 | 0.725481 | ppb |
| | Mn | 55 | 7850639.427 | 2798.838999 | ppb |
| | Co | 59 | 10539.551 | 4.746895 | ppb |
| | Ni | 60 | 3147.162 | 5.430263 | ppb |
| | Cu | 63 | 806.699 | 0.547574 | ppb |
| | Cu | 65 | 870.038 | 1.262455 | ppb |
| | Zn | 66 | 1030.053 | 2.630673 | ppb |
| | As | 75 | 84.998 | 0.149626 | ppb |
| | Se | 82 | 58.000 | 0.438497 | ppb |
| | Ag | 107 | 10.000 | 0.001096 | ppb |
| | Ag | 109 | 3.333 | -0.007325 | ppb |
| | Cd | 111 | 119.465 | 0.272975 | ppb |
| | In | 113 | 58797.350 | | ppb |
| > | In | 115 | 1281801.594 | | ppb |
| | Sb | 121 | 160.001 | 0.061827 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 10861.896 | 31.888204 | ppb |
| | Ba | 137 | 19498.992 | 32.891557 | ppb |
| > | Tb | 159 | 1760885.407 | | ppb |
| | Tl | 205 | 225.003 | 0.054938 | ppb |
| | Pb | 206 | 60.000 | 0.026270 | ppb |
| | Pb | 207 | 135.000 | 0.040213 | ppb |
| | Pb | 208 | 275.002 | 0.058301 | ppb |
| > | Bi | 209 | 1104147.915 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 105.483 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 99.235 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 93.682 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 94.209 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 94.063 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107165-01

Sample Date/Time: Monday, August 01, 2011 17:17:31
Sample Type: Sample
Sample Description: 5WC21
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107165-01.1466

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227945.369 | 0.378 | 227945.369 | | | ppb |
| ⌊ | Be | 9 | 136.668 | 11.367 | 0.001 | 1.14016 | 11.37 | ppb |
| ⌈> | Sc | 45 | 777574.598 | 1.330 | 777574.598 | | | ppb |
| \| | V | 51 | 465.510 | 22.899 | -0.001 | -0.21047 | 20.65 | ppb |
| \| | Cr | 52 | 11059.448 | 2.598 | 0.012 | 4.47579 | 2.41 | ppb |
| \| | Mn | 55 | 15977876.986 | 1.836 | 20.547 | 5135.63184 | 0.50 | ppb |
| \| | Co | 59 | 172281.532 | 1.287 | 0.222 | 70.14100 | 0.79 | ppb |
| \| | Ni | 60 | 16149.698 | 1.357 | 0.021 | 25.54673 | 0.20 | ppb |
| \| | Cu | 63 | 6156.339 | 0.438 | 0.008 | 4.31411 | 0.95 | ppb |
| \| | Cu | 65 | 3470.603 | 4.938 | 0.004 | 4.98569 | 5.82 | ppb |
| \| | Zn | 66 | 18811.014 | 1.983 | 0.024 | 48.19605 | 1.45 | ppb |
| \| | As | 75 | 79.425 | 48.158 | 0.000 | 0.12216 | 57.23 | ppb |
| ⌊ | Se | 82 | 73.556 | 10.964 | 0.000 | 0.65229 | 25.26 | ppb |
| ⌈ | Ag | 107 | 12.222 | 15.746 | 0.000 | 0.00174 | 58.29 | ppb |
| \| | Ag | 109 | 18.889 | 20.377 | 0.000 | 0.00113 | 193.79 | ppb |
| \| | Cd | 111 | 218.909 | 19.401 | 0.000 | 0.45971 | 19.87 | ppb |
| \| | In | 113 | 63182.355 | 1.944 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1413499.679 | 0.434 | 1413499.679 | | | ppb |
| ⌈ | Sb | 121 | 201.669 | 16.508 | 0.000 | 0.07908 | 23.84 | ppb |
| \| | Ba | 135 | 4967.901 | 2.604 | 0.003 | 13.69165 | 1.23 | ppb |
| \| | Ba | 137 | 8536.978 | 2.961 | 0.005 | 13.51887 | 2.88 | ppb |
| ⌊> | Tb | 159 | 1873384.380 | 1.499 | 1873384.380 | | | ppb |
| ⌈ | Tl | 205 | 520.014 | 9.273 | 0.000 | 0.12410 | 10.71 | ppb |
| \| | Pb | 206 | 130.001 | 7.692 | 0.000 | 0.07559 | 8.66 | ppb |
| \| | Pb | 207 | 215.001 | 14.523 | 0.000 | 0.06845 | 18.94 | ppb |
| \| | Pb | 208 | 400.005 | 9.014 | 0.000 | 0.08466 | 11.97 | ppb |
| ⌊> | Bi | 209 | 1200524.240 | 1.153 | 1200524.240 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 228855.106 | | ppb |
| ⌊ | Be | 9 | 154.001 | 1.284932 | ppb |
| ⌈> | Sc | 45 | 771635.086 | | ppb |
| \| | V | 51 | 356.510 | -0.253482 | ppb |
| \| | Cr | 52 | 10735.760 | 4.356910 | ppb |
| \| | Mn | 55 | 15804667.026 | 5119.288076 | ppb |
| \| | Co | 59 | 169964.221 | 69.728418 | ppb |
| \| | Ni | 60 | 16056.213 | 25.594601 | ppb |
| \| | Cu | 63 | 6151.892 | 4.344460 | ppb |
| \| | Cu | 65 | 3353.896 | 4.849165 | ppb |
| \| | Zn | 66 | 18393.567 | 47.484828 | ppb |
| \| | As | 75 | 35.725 | 0.042683 | ppb |
| ⌊ | Se | 82 | 67.334 | 0.520648 | ppb |
| ⌈ | Ag | 107 | 10.000 | 0.000568 | ppb |
| \| | Ag | 109 | 23.333 | 0.003654 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 241.120 | 0.509735 | ppb |
| | In | 113 | 61810.438 | | ppb |
| > | In | 115 | 1406605.391 | | ppb |
| | Sb | 121 | 180.002 | 0.068198 | ppb |
| | Ba | 135 | 4915.208 | 13.689409 | ppb |
| | Ba | 137 | 8259.409 | 13.214688 | ppb |
| > | Tb | 159 | 1854000.525 | | ppb |
| | Tl | 205 | 555.015 | 0.134630 | ppb |
| | Pb | 206 | 120.001 | 0.069217 | ppb |
| | Pb | 207 | 225.001 | 0.073796 | ppb |
| | Pb | 208 | 430.006 | 0.093903 | ppb |
| > | Bi | 209 | 1184948.306 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227142.722 | | ppb |
| | Be | 9 | 124.001 | 1.034844 | ppb |
| > | Sc | 45 | 789518.341 | | ppb |
| | V | 51 | 470.484 | -0.211341 | ppb |
| | Cr | 52 | 11284.363 | 4.502775 | ppb |
| | Mn | 55 | 16316647.108 | 5165.411865 | ppb |
| | Co | 59 | 174383.335 | 69.920939 | ppb |
| | Ni | 60 | 16400.104 | 25.550428 | ppb |
| | Cu | 63 | 6185.246 | 4.267464 | ppb |
| | Cu | 65 | 3390.575 | 4.789113 | ppb |
| | Zn | 66 | 19111.579 | 48.225781 | ppb |
| | As | 75 | 95.724 | 0.149628 | ppb |
| | Se | 82 | 82.667 | 0.837070 | ppb |
| | Ag | 107 | 13.333 | 0.002315 | ppb |
| | Ag | 109 | 16.667 | -0.000143 | ppb |
| | Cd | 111 | 245.670 | 0.515139 | ppb |
| | In | 113 | 64180.297 | | ppb |
| > | In | 115 | 1418371.791 | | ppb |
| | Sb | 121 | 240.003 | 0.100857 | ppb |
| | Ba | 135 | 4873.187 | 13.524210 | ppb |
| | Ba | 137 | 8753.830 | 13.958054 | ppb |
| > | Tb | 159 | 1860557.515 | | ppb |
| | Tl | 205 | 540.015 | 0.128511 | ppb |
| | Pb | 206 | 130.001 | 0.075254 | ppb |
| | Pb | 207 | 180.001 | 0.053667 | ppb |
| | Pb | 208 | 360.005 | 0.073830 | ppb |
| > | Bi | 209 | 1205197.394 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227838.279 | | ppb |
| | Be | 9 | 132.001 | 1.100704 | ppb |
| > | Sc | 45 | 771570.367 | | ppb |
| | V | 51 | 569.535 | -0.166574 | ppb |
| | Cr | 52 | 11158.222 | 4.567689 | ppb |
| | Mn | 55 | 15812316.823 | 5122.195587 | ppb |
| | Co | 59 | 172497.039 | 70.773649 | ppb |
| | Ni | 60 | 15992.778 | 25.495169 | ppb |
| | Cu | 63 | 6131.879 | 4.330396 | ppb |
| | Cu | 65 | 3667.339 | 5.318783 | ppb |
| | Zn | 66 | 18927.896 | 48.877547 | ppb |
| | As | 75 | 106.825 | 0.174183 | ppb |
| | Se | 82 | 70.667 | 0.599143 | ppb |
| | Ag | 107 | 13.333 | 0.002330 | ppb |
| | Ag | 109 | 16.667 | -0.000125 | ppb |
| | Cd | 111 | 169.939 | 0.354256 | ppb |
| | In | 113 | 63556.331 | | ppb |
| > | In | 115 | 1415521.856 | | ppb |
| | Sb | 121 | 185.002 | 0.068193 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5115.308 | 13.861326 | ppb |
| | Ba | 137 | 8597.694 | 13.383864 | ppb |
| > | Tb | 159 | 1905595.100 | | ppb |
| | Tl | 205 | 465.011 | 0.109171 | ppb |
| | Pb | 206 | 140.001 | 0.082300 | ppb |
| | Pb | 207 | 240.001 | 0.077885 | ppb |
| | Pb | 208 | 410.005 | 0.086259 | ppb |
| > | Bi | 209 | 1211427.020 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 116.146 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 110.159 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 101.206 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 100.702 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 102.584 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107165-01

Sample Date/Time: Monday, August 01, 2011 17:18:56
Sample Type: Sample
Sample Description: 5WC21L 5X
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107165-01.1467

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 226439.244 | 1.123 | 226439.244 | | | ppb |
| ⌊ | Be | 9 | 21.333 | 5.413 | 0.000 | 0.14544 | 7.71 | ppb |
| ⌈> | Sc | 45 | 760933.501 | 1.066 | 760933.501 | | | ppb |
| \| | V | 51 | 753.296 | 17.031 | -0.000 | -0.08754 | 58.56 | ppb |
| \| | Cr | 52 | 3413.916 | 2.216 | 0.002 | 0.73565 | 2.69 | ppb |
| \| | Mn | 55 | 2811231.027 | 3.750 | 3.693 | 923.15028 | 2.77 | ppb |
| \| | Co | 59 | 30481.766 | 3.886 | 0.040 | 12.66839 | 3.07 | ppb |
| \| | Ni | 60 | 2923.762 | 7.071 | 0.004 | 4.62906 | 6.14 | ppb |
| \| | Cu | 63 | 1171.180 | 4.610 | 0.001 | 0.76387 | 5.43 | ppb |
| \| | Cu | 65 | 721.137 | 6.543 | 0.001 | 0.92365 | 7.61 | ppb |
| \| | Zn | 66 | 3540.627 | 2.158 | 0.004 | 9.01638 | 2.92 | ppb |
| \| | As | 75 | 54.068 | 44.817 | 0.000 | 0.07791 | 57.82 | ppb |
| ⌊ | Se | 82 | 45.778 | 8.021 | 0.000 | 0.02856 | 266.97 | ppb |
| ⌈ | Ag | 107 | 12.222 | 110.221 | 0.000 | 0.00191 | 396.08 | ppb |
| \| | Ag | 109 | 10.000 | 88.192 | -0.000 | -0.00379 | 127.58 | ppb |
| \| | Cd | 111 | 49.915 | 29.061 | 0.000 | 0.09953 | 33.70 | ppb |
| \| | In | 113 | 62281.747 | 2.250 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1395054.399 | 1.990 | 1395054.399 | | | ppb |
| ⌈ | Sb | 121 | 106.667 | 18.944 | 0.000 | 0.02802 | 36.64 | ppb |
| \| | Ba | 135 | 860.704 | 8.266 | 0.000 | 2.39263 | 9.36 | ppb |
| \| | Ba | 137 | 1502.113 | 6.276 | 0.001 | 2.39614 | 6.52 | ppb |
| ⌊> | Tb | 159 | 1841210.822 | 2.245 | 1841210.822 | | | ppb |
| ⌈ | Tl | 205 | 135.001 | 14.815 | 0.000 | 0.02792 | 17.73 | ppb |
| \| | Pb | 206 | 61.667 | 16.878 | 0.000 | 0.02425 | 33.22 | ppb |
| \| | Pb | 207 | 93.334 | 11.152 | 0.000 | 0.01871 | 26.19 | ppb |
| \| | Pb | 208 | 105.000 | 8.248 | 0.000 | 0.00816 | 27.10 | ppb |
| ⌊> | Bi | 209 | 1183143.289 | 1.408 | 1183143.289 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227909.883 | | ppb |
| ⌊ | Be | 9 | 22.000 | 0.149945 | ppb |
| ⌈> | Sc | 45 | 753744.884 | | ppb |
| \| | V | 51 | 607.134 | -0.145380 | ppb |
| \| | Cr | 52 | 3344.559 | 0.716880 | ppb |
| \| | Mn | 55 | 2697504.038 | 894.407361 | ppb |
| \| | Co | 59 | 29122.344 | 12.220270 | ppb |
| \| | Ni | 60 | 2763.715 | 4.413961 | ppb |
| \| | Cu | 63 | 1136.731 | 0.746511 | ppb |
| \| | Cu | 65 | 746.695 | 0.973271 | ppb |
| \| | Zn | 66 | 3523.954 | 9.059621 | ppb |
| \| | As | 75 | 63.534 | 0.096898 | ppb |
| ⌊ | Se | 82 | 42.000 | -0.051425 | ppb |
| ⌈ | Ag | 107 | 10.000 | 0.000521 | ppb |
| \| | Ag | 109 | 20.000 | 0.001697 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 47.275 | 0.091715 | ppb |
| | In | 113 | 60693.629 | | ppb |
| > | In | 115 | 1418951.534 | | ppb |
| | Sb | 121 | 110.001 | 0.030861 | ppb |
| | Ba | 135 | 810.033 | 2.281558 | ppb |
| | Ba | 137 | 1404.099 | 2.270294 | ppb |
| > | Tb | 159 | 1814860.010 | | ppb |
| | Tl | 205 | 115.001 | 0.022717 | ppb |
| | Pb | 206 | 50.000 | 0.015053 | ppb |
| | Pb | 207 | 85.000 | 0.015020 | ppb |
| | Pb | 208 | 115.000 | 0.010675 | ppb |
| > | Bi | 209 | 1188118.445 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227905.792 | | ppb |
| | Be | 9 | 20.000 | 0.132668 | ppb |
| > | Sc | 45 | 759324.180 | | ppb |
| | V | 51 | 847.267 | -0.047709 | ppb |
| | Cr | 52 | 3402.579 | 0.733708 | ppb |
| | Mn | 55 | 2830517.789 | 931.618625 | ppb |
| | Co | 59 | 31030.069 | 12.925872 | ppb |
| | Ni | 60 | 2850.406 | 4.521743 | ppb |
| | Cu | 63 | 1233.409 | 0.811207 | ppb |
| | Cu | 65 | 666.689 | 0.843171 | ppb |
| | Zn | 66 | 3623.990 | 9.254918 | ppb |
| | As | 75 | 26.532 | 0.026478 | ppb |
| | Se | 82 | 46.000 | 0.036700 | ppb |
| | Ag | 107 | 0.000 | -0.004854 | ppb |
| | Ag | 109 | 6.667 | -0.005633 | ppb |
| | Cd | 111 | 36.910 | 0.070579 | ppb |
| | In | 113 | 63344.996 | | ppb |
| > | In | 115 | 1401601.099 | | ppb |
| | Sb | 121 | 85.000 | 0.016628 | ppb |
| | Ba | 135 | 942.044 | 2.650454 | ppb |
| | Ba | 137 | 1592.127 | 2.571065 | ppb |
| > | Tb | 159 | 1819917.493 | | ppb |
| | Tl | 205 | 155.001 | 0.032573 | ppb |
| | Pb | 206 | 70.000 | 0.030069 | ppb |
| | Pb | 207 | 90.000 | 0.016839 | ppb |
| | Pb | 208 | 100.000 | 0.006536 | ppb |
| > | Bi | 209 | 1196747.147 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 223502.055 | | ppb |
| | Be | 9 | 22.000 | 0.153694 | ppb |
| > | Sc | 45 | 769731.440 | | ppb |
| | V | 51 | 805.488 | -0.069540 | ppb |
| | Cr | 52 | 3494.611 | 0.756363 | ppb |
| | Mn | 55 | 2905671.254 | 943.424861 | ppb |
| | Co | 59 | 31292.886 | 12.859037 | ppb |
| | Ni | 60 | 3157.165 | 4.951465 | ppb |
| | Cu | 63 | 1143.399 | 0.733899 | ppb |
| | Cu | 65 | 750.028 | 0.954510 | ppb |
| | Zn | 66 | 3473.937 | 8.734601 | ppb |
| | As | 75 | 72.139 | 0.110352 | ppb |
| | Se | 82 | 49.333 | 0.100393 | ppb |
| | Ag | 107 | 26.667 | 0.010050 | ppb |
| | Ag | 109 | 3.333 | -0.007448 | ppb |
| | Cd | 111 | 65.559 | 0.136287 | ppb |
| | In | 113 | 62806.616 | | ppb |
| > | In | 115 | 1364610.564 | | ppb |
| | Sb | 121 | 125.001 | 0.036559 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 830.034 | 2.245879 | ppb |
| | Ba | 137 | 1510.114 | 2.347054 | ppb |
| > | Tb | 159 | 1888854.961 | | ppb |
| | Tl | 205 | 135.001 | 0.028479 | ppb |
| | Pb | 206 | 65.000 | 0.027619 | ppb |
| | Pb | 207 | 105.000 | 0.024268 | ppb |
| | Pb | 208 | 100.000 | 0.007258 | ppb |
| > | Bi | 209 | 1164564.276 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 115.379 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 107.801 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.885 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 98.973 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 101.099 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS4

Sample Date/Time: Monday, August 01, 2011 17:20:22
Sample Type: Sample
Sample Description: 5WC21A
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS4.1468

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202782.924 | 1.170 | 202782.924 | | | ppb |
| ⌊ | Be | 9 | 1153.400 | 5.490 | 0.006 | 11.15636 | 4.37 | ppb |
| ⌈> | Sc | 45 | 698640.461 | 0.801 | 698640.461 | | | ppb |
| \| | V | 51 | 115942.530 | 1.824 | 0.165 | 51.83020 | 1.11 | ppb |
| \| | Cr | 52 | 49584.635 | 0.957 | 0.068 | 26.27616 | 0.65 | ppb |
| \| | Mn | 55 | 16220136.026 | 0.389 | 23.217 | 5803.03562 | 0.84 | ppb |
| \| | Co | 59 | 194970.326 | 0.188 | 0.279 | 88.35249 | 0.97 | ppb |
| \| | Ni | 60 | 21396.203 | 1.597 | 0.031 | 37.72972 | 2.31 | ppb |
| \| | Cu | 63 | 31735.841 | 1.435 | 0.045 | 25.19270 | 2.24 | ppb |
| \| | Cu | 65 | 15478.640 | 1.901 | 0.022 | 25.42019 | 2.39 | ppb |
| \| | Zn | 66 | 26576.396 | 2.673 | 0.038 | 75.96233 | 2.26 | ppb |
| \| | As | 75 | 5122.232 | 2.948 | 0.007 | 10.44021 | 3.51 | ppb |
| ⌊ | Se | 82 | 2075.993 | 1.177 | 0.003 | 52.83625 | 0.89 | ppb |
| ⌈ | Ag | 107 | 18051.838 | 1.868 | 0.014 | 10.95222 | 1.86 | ppb |
| \| | Ag | 109 | 17573.209 | 1.945 | 0.014 | 10.96872 | 2.72 | ppb |
| \| | Cd | 111 | 4530.368 | 2.818 | 0.004 | 10.90447 | 2.74 | ppb |
| \| | In | 113 | 60205.695 | 0.461 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1256528.951 | 1.188 | 1256528.951 | | | ppb |
| ⌈ | Sb | 121 | 36024.785 | 1.707 | 0.021 | 21.92556 | 1.07 | ppb |
| \| | Ba | 135 | 38467.848 | 0.581 | 0.023 | 118.51050 | 2.04 | ppb |
| \| | Ba | 137 | 67418.545 | 1.749 | 0.040 | 119.32661 | 1.69 | ppb |
| ⌊> | Tb | 159 | 1679677.764 | 2.591 | 1679677.764 | | | ppb |
| ⌈ | Tl | 205 | 38321.624 | 0.817 | 0.036 | 10.69895 | 1.22 | ppb |
| \| | Pb | 206 | 12693.055 | 2.801 | 0.012 | 10.75404 | 4.06 | ppb |
| \| | Pb | 207 | 23255.301 | 2.474 | 0.022 | 10.69345 | 2.78 | ppb |
| \| | Pb | 208 | 37366.457 | 1.683 | 0.035 | 10.82027 | 0.99 | ppb |
| ⌊> | Bi | 209 | 1078240.434 | 1.923 | 1078240.434 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205475.542 | | ppb |
| ⌊ | Be | 9 | 1220.074 | 11.652168 | ppb |
| ⌈> | Sc | 45 | 697827.246 | | ppb |
| \| | V | 51 | 114829.960 | 51.391817 | ppb |
| \| | Cr | 52 | 49886.122 | 26.473787 | ppb |
| \| | Mn | 55 | 16147238.865 | 5783.456461 | ppb |
| \| | Co | 59 | 194837.775 | 88.390748 | ppb |
| \| | Ni | 60 | 21212.475 | 37.444230 | ppb |
| \| | Cu | 63 | 31857.330 | 25.316059 | ppb |
| \| | Cu | 65 | 15194.869 | 24.978094 | ppb |
| \| | Zn | 66 | 27133.428 | 77.655691 | ppb |
| \| | As | 75 | 4998.115 | 10.197147 | ppb |
| ⌊ | Se | 82 | 2052.877 | 52.298165 | ppb |
| ⌈ | Ag | 107 | 18390.228 | 11.185158 | ppb |
| \| | Ag | 109 | 17946.089 | 11.227934 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 4661.970 | 11.249379 | ppb |
| | In | 113 | 60321.386 | | ppb |
| > | In | 115 | 1253379.755 | | ppb |
| | Sb | 121 | 36325.859 | 21.676817 | ppb |
| | Ba | 135 | 38638.503 | 116.690202 | ppb |
| | Ba | 137 | 67432.594 | 117.014503 | ppb |
| > | Tb | 159 | 1712839.019 | | ppb |
| | Tl | 205 | 38534.101 | 10.553220 | ppb |
| | Pb | 206 | 12342.612 | 10.254098 | ppb |
| | Pb | 207 | 23053.345 | 10.397794 | ppb |
| | Pb | 208 | 37717.151 | 10.714515 | ppb |
| > | Bi | 209 | 1099016.100 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200999.949 | | ppb |
| | Be | 9 | 1094.060 | 10.677995 | ppb |
| > | Sc | 45 | 704598.181 | | ppb |
| | V | 51 | 118381.563 | 52.480581 | ppb |
| | Cr | 52 | 49829.842 | 26.179209 | ppb |
| | Mn | 55 | 16257395.949 | 5766.955065 | ppb |
| | Co | 59 | 194688.918 | 87.474326 | ppb |
| | Ni | 60 | 21185.751 | 37.036418 | ppb |
| | Cu | 63 | 31232.029 | 24.577950 | ppb |
| | Cu | 65 | 15458.606 | 25.168737 | ppb |
| | Zn | 66 | 26819.249 | 76.012257 | ppb |
| | As | 75 | 5078.214 | 10.261151 | ppb |
| | Se | 82 | 2101.554 | 53.038486 | ppb |
| | Ag | 107 | 18049.608 | 10.810502 | ppb |
| | Ag | 109 | 17274.908 | 10.642790 | ppb |
| | Cd | 111 | 4522.089 | 10.745120 | ppb |
| | In | 113 | 60406.900 | | ppb |
| > | In | 115 | 1272779.179 | | ppb |
| | Sb | 121 | 36431.241 | 21.958723 | ppb |
| | Ba | 135 | 38550.163 | 117.594391 | ppb |
| | Ba | 137 | 68590.428 | 120.221403 | ppb |
| > | Tb | 159 | 1695786.027 | | ppb |
| | Tl | 205 | 38468.851 | 10.739222 | ppb |
| | Pb | 206 | 13053.514 | 11.056280 | ppb |
| | Pb | 207 | 23904.398 | 10.991337 | ppb |
| | Pb | 208 | 37741.992 | 10.929324 | ppb |
| > | Bi | 209 | 1078163.892 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201873.279 | | ppb |
| | Be | 9 | 1146.066 | 11.138906 | ppb |
| > | Sc | 45 | 693495.957 | | ppb |
| | V | 51 | 114616.066 | 51.618207 | ppb |
| | Cr | 52 | 49037.942 | 26.175475 | ppb |
| | Mn | 55 | 16255773.265 | 5858.695345 | ppb |
| | Co | 59 | 195384.284 | 89.192399 | ppb |
| | Ni | 60 | 21790.382 | 38.708511 | ppb |
| | Cu | 63 | 32118.163 | 25.684088 | ppb |
| | Cu | 65 | 15782.444 | 26.113733 | ppb |
| | Zn | 66 | 25776.512 | 74.219045 | ppb |
| | As | 75 | 5290.365 | 10.862329 | ppb |
| | Se | 82 | 2073.548 | 53.172086 | ppb |
| | Ag | 107 | 17715.678 | 10.860985 | ppb |
| | Ag | 109 | 17498.630 | 11.035445 | ppb |
| | Cd | 111 | 4407.044 | 10.718920 | ppb |
| | In | 113 | 59888.798 | | ppb |
| > | In | 115 | 1243427.919 | | ppb |
| | Sb | 121 | 35317.255 | 22.141133 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 38214.880 | 121.246908 | ppb |
| \| | Ba | 137 | 66232.614 | 120.743936 | ppb |
| \|> | Tb | 159 | 1630408.244 | | ppb |
| ⌈ | Tl | 205 | 37961.919 | 10.804403 | ppb |
| \| | Pb | 206 | 12683.038 | 10.951750 | ppb |
| \| | Pb | 207 | 22808.161 | 10.691231 | ppb |
| \| | Pb | 208 | 36640.229 | 10.816980 | ppb |
| \|> | Bi | 209 | 1057541.311 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.325 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 98.976 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 89.967 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 90.290 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 92.135 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107165-02

Sample Date/Time: Monday, August 01, 2011 17:21:48
Sample Type: Sample
Sample Description: 5WC22
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107165-02.1469

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202183.471 | 0.379 | 202183.471 | | | ppb |
| ⌊ | Be | 9 | 8.000 | 25.000 | 0.000 | 0.03781 | 51.87 | ppb |
| ⌈> | Sc | 45 | 683165.040 | 1.903 | 683165.040 | | | ppb |
| \| | V | 51 | 1325.827 | 15.662 | 0.001 | 0.21314 | 50.27 | ppb |
| \| | Cr | 52 | 2619.010 | 1.517 | 0.001 | 0.48554 | 9.34 | ppb |
| \| | Mn | 55 | 7697458.028 | 1.564 | 11.271 | 2817.03072 | 2.93 | ppb |
| \| | Co | 59 | 9950.282 | 1.530 | 0.015 | 4.59885 | 1.02 | ppb |
| \| | Ni | 60 | 3120.487 | 4.656 | 0.004 | 5.53198 | 6.68 | ppb |
| \| | Cu | 63 | 857.815 | 4.636 | 0.001 | 0.60576 | 3.21 | ppb |
| \| | Cu | 65 | 784.475 | 6.393 | 0.001 | 1.15576 | 7.83 | ppb |
| \| | Zn | 66 | 2782.611 | 6.922 | 0.004 | 7.85543 | 7.82 | ppb |
| \| | As | 75 | 47.369 | 48.958 | 0.000 | 0.07533 | 62.66 | ppb |
| ⌊ | Se | 82 | 61.334 | 14.624 | 0.000 | 0.56915 | 46.82 | ppb |
| ⌈ | Ag | 107 | 14.444 | 58.076 | 0.000 | 0.00385 | 134.28 | ppb |
| \| | Ag | 109 | 18.889 | 36.735 | 0.000 | 0.00230 | 192.61 | ppb |
| \| | Cd | 111 | 121.890 | 36.667 | 0.000 | 0.27878 | 35.43 | ppb |
| \| | In | 113 | 56586.356 | 1.948 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1275245.181 | 2.313 | 1275245.181 | | | ppb |
| ⌈ | Sb | 121 | 228.336 | 25.191 | 0.000 | 0.10631 | 32.35 | ppb |
| \| | Ba | 135 | 10385.390 | 0.492 | 0.006 | 31.60034 | 1.32 | ppb |
| \| | Ba | 137 | 18265.335 | 1.419 | 0.011 | 31.93115 | 1.43 | ppb |
| ⌊> | Tb | 159 | 1699083.660 | 0.830 | 1699083.660 | | | ppb |
| ⌈ | Tl | 205 | 218.336 | 9.534 | 0.000 | 0.05503 | 9.47 | ppb |
| \| | Pb | 206 | 46.667 | 6.186 | 0.000 | 0.01649 | 14.62 | ppb |
| \| | Pb | 207 | 81.667 | 7.070 | 0.000 | 0.01745 | 17.16 | ppb |
| \| | Pb | 208 | 166.668 | 22.517 | 0.000 | 0.02914 | 36.87 | ppb |
| ⌊> | Bi | 209 | 1069082.776 | 1.100 | 1069082.776 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202112.030 | | ppb |
| ⌊ | Be | 9 | 10.000 | 0.057294 | ppb |
| ⌈> | Sc | 45 | 669254.974 | | ppb |
| \| | V | 51 | 1563.874 | 0.336557 | ppb |
| \| | Cr | 52 | 2632.346 | 0.523270 | ppb |
| \| | Mn | 55 | 7796395.409 | 2911.603595 | ppb |
| \| | Co | 59 | 9846.846 | 4.645403 | ppb |
| \| | Ni | 60 | 3260.531 | 5.903204 | ppb |
| \| | Cu | 63 | 813.366 | 0.583556 | ppb |
| \| | Cu | 65 | 810.033 | 1.227023 | ppb |
| \| | Zn | 66 | 2900.421 | 8.374901 | ppb |
| \| | As | 75 | 46.205 | 0.075134 | ppb |
| ⌊ | Se | 82 | 71.334 | 0.871188 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.003211 | ppb |
| \| | Ag | 109 | 26.667 | 0.007234 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 84.464 | 0.193646 | ppb |
| | In | 113 | 57716.078 | | ppb |
| > | In | 115 | 1260807.483 | | ppb |
| | Sb | 121 | 285.004 | 0.140780 | ppb |
| | Ba | 135 | 10387.392 | 31.652893 | ppb |
| | Ba | 137 | 18535.162 | 32.452533 | ppb |
| > | Tb | 159 | 1696468.574 | | ppb |
| | Tl | 205 | 235.003 | 0.059149 | ppb |
| | Pb | 206 | 45.000 | 0.014701 | ppb |
| | Pb | 207 | 75.000 | 0.014005 | ppb |
| | Pb | 208 | 205.002 | 0.039816 | ppb |
| > | Bi | 209 | 1079169.143 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201454.969 | | ppb |
| | Be | 9 | 8.000 | 0.038063 | ppb |
| > | Sc | 45 | 695010.899 | | ppb |
| | V | 51 | 1231.667 | 0.158863 | ppb |
| | Cr | 52 | 2574.331 | 0.435212 | ppb |
| | Mn | 55 | 7732508.009 | 2780.725285 | ppb |
| | Co | 59 | 10125.123 | 4.599539 | ppb |
| | Ni | 60 | 2970.441 | 5.164372 | ppb |
| | Cu | 63 | 890.040 | 0.619890 | ppb |
| | Cu | 65 | 816.700 | 1.186298 | ppb |
| | Zn | 66 | 2887.083 | 8.014362 | ppb |
| | As | 75 | 71.120 | 0.122639 | ppb |
| | Se | 82 | 58.667 | 0.468962 | ppb |
| | Ag | 107 | 23.333 | 0.009317 | ppb |
| | Ag | 109 | 16.667 | 0.001051 | ppb |
| | Cd | 111 | 109.830 | 0.255604 | ppb |
| | In | 113 | 55513.662 | | ppb |
| > | In | 115 | 1255746.043 | | ppb |
| | Sb | 121 | 230.003 | 0.106151 | ppb |
| | Ba | 135 | 10333.336 | 31.160094 | ppb |
| | Ba | 137 | 18242.625 | 31.607215 | ppb |
| > | Tb | 159 | 1714306.498 | | ppb |
| | Tl | 205 | 225.003 | 0.056783 | ppb |
| | Pb | 206 | 50.000 | 0.019228 | ppb |
| | Pb | 207 | 85.000 | 0.018872 | ppb |
| | Pb | 208 | 130.001 | 0.018333 | ppb |
| > | Bi | 209 | 1071917.929 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202983.415 | | ppb |
| | Be | 9 | 6.000 | 0.018072 | ppb |
| > | Sc | 45 | 685229.247 | | ppb |
| | V | 51 | 1181.939 | 0.143985 | ppb |
| | Cr | 52 | 2650.351 | 0.498141 | ppb |
| | Mn | 55 | 7563470.666 | 2758.763291 | ppb |
| | Co | 59 | 9878.877 | 4.551602 | ppb |
| | Ni | 60 | 3130.490 | 5.528368 | ppb |
| | Cu | 63 | 870.038 | 0.613819 | ppb |
| | Cu | 65 | 726.693 | 1.053963 | ppb |
| | Zn | 66 | 2560.328 | 7.177036 | ppb |
| | As | 75 | 24.782 | 0.028226 | ppb |
| | Se | 82 | 54.000 | 0.367287 | ppb |
| | Ag | 107 | 6.667 | -0.000970 | ppb |
| | Ag | 109 | 13.333 | -0.001372 | ppb |
| | Cd | 111 | 171.375 | 0.387095 | ppb |
| | In | 113 | 56529.328 | | ppb |
| > | In | 115 | 1309182.016 | | ppb |
| | Sb | 121 | 170.001 | 0.072000 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 10435.442 | 31.988024 | ppb |
| \| | Ba | 137 | 18018.218 | 31.733700 | ppb |
| \> | Tb | 159 | 1686475.907 | | ppb |
| ⌜ | Tl | 205 | 195.002 | 0.049172 | ppb |
| \| | Pb | 206 | 45.000 | 0.015532 | ppb |
| \| | Pb | 207 | 85.000 | 0.019459 | ppb |
| \| | Pb | 208 | 165.001 | 0.029264 | ppb |
| \> | Bi | 209 | 1056161.257 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.020 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 96.784 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.307 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.333 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 91.352 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Monday, August 01, 2011 17:23:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLCCV.1470

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212650.565 | 1.271 | 212650.565 | | | ppb |
| ⌊ | Be | 9 | 96.000 | 14.583 | 0.000 | 0.84866 | 15.13 | ppb |
| ⌈> | Sc | 45 | 768673.170 | 1.066 | 768673.170 | | | ppb |
| \| | V | 51 | 12642.328 | 1.325 | 0.015 | 4.77834 | 2.49 | ppb |
| \| | Cr | 52 | 6143.220 | 1.981 | 0.005 | 2.08254 | 3.01 | ppb |
| \| | Mn | 55 | 4080.835 | 6.610 | 0.005 | 1.23085 | 7.23 | ppb |
| \| | Co | 59 | 2450.300 | 1.219 | 0.003 | 0.99630 | 2.20 | ppb |
| \| | Ni | 60 | 611.130 | 10.666 | 0.001 | 0.86602 | 12.64 | ppb |
| \| | Cu | 63 | 2767.049 | 1.104 | 0.003 | 1.91074 | 1.05 | ppb |
| \| | Cu | 65 | 1368.983 | 2.028 | 0.002 | 1.88642 | 3.11 | ppb |
| \| | Zn | 66 | 1028.298 | 1.330 | 0.001 | 2.36708 | 1.67 | ppb |
| \| | As | 75 | 607.372 | 9.368 | 0.001 | 1.10364 | 8.67 | ppb |
| ⌊ | Se | 82 | 251.336 | 1.739 | 0.000 | 4.86866 | 1.55 | ppb |
| ⌈ | Ag | 107 | 1944.634 | 3.918 | 0.001 | 1.04508 | 3.64 | ppb |
| \| | Ag | 109 | 1901.292 | 3.985 | 0.001 | 1.04777 | 5.91 | ppb |
| \| | Cd | 111 | 455.497 | 3.031 | 0.000 | 0.96719 | 3.89 | ppb |
| \| | In | 113 | 63680.527 | 2.393 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1412616.840 | 2.013 | 1412616.840 | | | ppb |
| ⌈ | Sb | 121 | 3827.399 | 2.641 | 0.002 | 2.02916 | 1.09 | ppb |
| \| | Ba | 135 | 3521.954 | 1.798 | 0.002 | 9.55983 | 3.14 | ppb |
| \| | Ba | 137 | 6127.210 | 0.568 | 0.003 | 9.55319 | 1.83 | ppb |
| ⌊> | Tb | 159 | 1901243.445 | 1.599 | 1901243.445 | | | ppb |
| ⌈ | Tl | 205 | 3892.424 | 2.121 | 0.003 | 0.96908 | 3.44 | ppb |
| \| | Pb | 206 | 1288.417 | 5.722 | 0.001 | 0.95810 | 7.30 | ppb |
| \| | Pb | 207 | 2341.805 | 4.164 | 0.002 | 0.94778 | 6.24 | ppb |
| \| | Pb | 208 | 3700.406 | 1.726 | 0.003 | 0.94347 | 2.94 | ppb |
| ⌊> | Bi | 209 | 1202203.546 | 2.301 | 1202203.546 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215688.322 | | ppb |
| ⌊ | Be | 9 | 96.000 | 0.836303 | ppb |
| ⌈> | Sc | 45 | 760994.244 | | ppb |
| \| | V | 51 | 12719.073 | 4.861504 | ppb |
| \| | Cr | 52 | 6197.920 | 2.140989 | ppb |
| \| | Mn | 55 | 3900.761 | 1.184989 | ppb |
| \| | Co | 59 | 2462.303 | 1.011329 | ppb |
| \| | Ni | 60 | 673.356 | 0.976640 | ppb |
| \| | Cu | 63 | 2733.707 | 1.906512 | ppb |
| \| | Cu | 65 | 1400.098 | 1.954052 | ppb |
| \| | Zn | 66 | 1033.743 | 2.408358 | ppb |
| \| | As | 75 | 587.687 | 1.078613 | ppb |
| ⌊ | Se | 82 | 250.670 | 4.912666 | ppb |
| ⌈ | Ag | 107 | 1983.530 | 1.041713 | ppb |
| \| | Ag | 109 | 1820.166 | 0.978932 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 453.015 | 0.939524 | ppb |
| | In | 113 | 65317.625 | | ppb |
| > | In | 115 | 1445433.206 | | ppb |
| | Sb | 121 | 3885.755 | 2.038457 | ppb |
| | Ba | 135 | 3536.625 | 9.494036 | ppb |
| | Ba | 137 | 6153.893 | 9.490347 | ppb |
| > | Tb | 159 | 1921772.156 | | ppb |
| | Tl | 205 | 3810.726 | 0.931274 | ppb |
| | Pb | 206 | 1205.073 | 0.877595 | ppb |
| | Pb | 207 | 2230.125 | 0.884485 | ppb |
| | Pb | 208 | 3755.425 | 0.940114 | ppb |
| > | Bi | 209 | 1223908.521 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211753.522 | | ppb |
| | Be | 9 | 110.001 | 0.982778 | ppb |
| > | Sc | 45 | 777304.950 | | ppb |
| | V | 51 | 12450.250 | 4.642273 | ppb |
| | Cr | 52 | 6227.939 | 2.090174 | ppb |
| | Mn | 55 | 3950.780 | 1.174189 | ppb |
| | Co | 59 | 2416.292 | 0.971089 | ppb |
| | Ni | 60 | 616.686 | 0.863612 | ppb |
| | Cu | 63 | 2773.718 | 1.893207 | ppb |
| | Cu | 65 | 1360.092 | 1.850020 | ppb |
| | Zn | 66 | 1038.410 | 2.363239 | ppb |
| | As | 75 | 671.503 | 1.209357 | ppb |
| | Se | 82 | 256.003 | 4.911751 | ppb |
| | Ag | 107 | 1993.532 | 1.084699 | ppb |
| | Ag | 109 | 1970.194 | 1.098744 | ppb |
| | Cd | 111 | 443.100 | 0.952027 | ppb |
| | In | 113 | 62303.483 | | ppb |
| > | In | 115 | 1395407.440 | | ppb |
| | Sb | 121 | 3885.755 | 2.045087 | ppb |
| | Ba | 135 | 3452.596 | 9.297582 | ppb |
| | Ba | 137 | 6087.853 | 9.418356 | ppb |
| > | Tb | 159 | 1915634.669 | | ppb |
| | Tl | 205 | 3890.757 | 0.994172 | ppb |
| | Pb | 206 | 1315.086 | 1.004229 | ppb |
| | Pb | 207 | 2410.146 | 1.001676 | ppb |
| | Pb | 208 | 3715.403 | 0.972734 | ppb |
| > | Bi | 209 | 1171061.382 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210509.852 | | ppb |
| | Be | 9 | 82.000 | 0.726905 | ppb |
| > | Sc | 45 | 767720.317 | | ppb |
| | V | 51 | 12757.660 | 4.831236 | ppb |
| | Cr | 52 | 6003.802 | 2.016448 | ppb |
| | Mn | 55 | 4390.964 | 1.333358 | ppb |
| | Co | 59 | 2472.306 | 1.006479 | ppb |
| | Ni | 60 | 543.348 | 0.757814 | ppb |
| | Cu | 63 | 2793.724 | 1.932506 | ppb |
| | Cu | 65 | 1346.757 | 1.855188 | ppb |
| | Zn | 66 | 1012.740 | 2.329632 | ppb |
| | As | 75 | 562.927 | 1.022937 | ppb |
| | Se | 82 | 247.336 | 4.781563 | ppb |
| | Ag | 107 | 1856.839 | 1.008826 | ppb |
| | Ag | 109 | 1913.516 | 1.065632 | ppb |
| | Cd | 111 | 470.376 | 1.010023 | ppb |
| | In | 113 | 63420.472 | | ppb |
| > | In | 115 | 1397009.875 | | ppb |
| | Sb | 121 | 3710.688 | 2.003931 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 3576.640 | 9.887864 | ppb |
| \| | Ba | 137 | 6139.884 | 9.750877 | ppb |
| \> | Tb | 159 | 1866323.511 | | ppb |
| ⌈ | Tl | 205 | 3975.790 | 0.981796 | ppb |
| \| | Pb | 206 | 1345.090 | 0.992472 | ppb |
| \| | Pb | 207 | 2385.145 | 0.957193 | ppb |
| \| | Pb | 208 | 3630.390 | 0.917554 | ppb |
| \> | Bi | 209 | 1211640.736 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 108.353 | | | |
| | Be | 9 | 84.866 | | | | |
| > | Sc | 45 | | 108.898 | | | |
| | V | 51 | 95.567 | | | | |
| | Cr | 52 | 104.127 | | | | |
| | Mn | 55 | 123.085 | | | | |
| | Co | 59 | 99.630 | | | | |
| | Ni | 60 | 86.602 | | | | |
| | Cu | 63 | 95.537 | | | | |
| | Cu | 65 | 94.321 | | | | |
| | Zn | 66 | 118.354 | | | | |
| | As | 75 | 110.364 | | | | |
| | Se | 82 | 97.373 | | | | |
| | Ag | 107 | 104.508 | | | | |
| | Ag | 109 | 104.777 | | | | |
| | Cd | 111 | 96.719 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 101.143 | | | |
| | Sb | 121 | 101.458 | | | | |
| | Ba | 135 | 95.598 | | | | |
| | Ba | 137 | 95.532 | | | | |
| > | Tb | 159 | | 102.200 | | | |
| | Tl | 205 | 96.908 | | | | |
| | Pb | 206 | 95.810 | | | | |
| | Pb | 207 | 94.778 | | | | |
| | Pb | 208 | 94.347 | | | | |
| > | Bi | 209 | | 102.727 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 17:24:42
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1471

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224356.022 | 2.674 | 224356.022 | | | ppb |
| ⌊ | Be | 9 | 31924.899 | 2.439 | 0.142 | 280.17707 | 0.88 | ppb |
| ⌈> | Sc | 45 | 750074.090 | 0.486 | 750074.090 | | | ppb |
| \| | V | 51 | 732793.295 | 2.064 | 0.976 | 307.06899 | 1.59 | ppb |
| \| | Cr | 52 | 600599.977 | 1.494 | 0.798 | 306.59592 | 1.16 | ppb |
| \| | Mn | 55 | 924651.692 | 0.142 | 1.232 | 308.02616 | 0.35 | ppb |
| \| | Co | 59 | 721997.993 | 0.684 | 0.963 | 304.77168 | 1.14 | ppb |
| \| | Ni | 60 | 184152.418 | 0.742 | 0.245 | 303.24769 | 0.45 | ppb |
| \| | Cu | 63 | 406633.046 | 0.717 | 0.542 | 301.63830 | 0.24 | ppb |
| \| | Cu | 65 | 193652.647 | 0.214 | 0.258 | 298.02385 | 0.67 | ppb |
| \| | Zn | 66 | 118172.005 | 1.461 | 0.157 | 315.60476 | 1.07 | ppb |
| \| | As | 75 | 157273.579 | 1.239 | 0.210 | 299.17691 | 0.99 | ppb |
| ⌊ | Se | 82 | 12487.127 | 2.181 | 0.017 | 300.89039 | 1.72 | ppb |
| ⌈ | Ag | 107 | 578233.551 | 2.766 | 0.413 | 314.90337 | 2.34 | ppb |
| \| | Ag | 109 | 550568.759 | 1.782 | 0.393 | 308.55983 | 1.34 | ppb |
| \| | Cd | 111 | 142949.827 | 2.667 | 0.102 | 308.97060 | 2.19 | ppb |
| \| | In | 113 | 204459.654 | 2.138 | 0.102 | | | ppb |
| ⌊> | In | 115 | 1400288.093 | 0.499 | 1400288.093 | | | ppb |
| ⌈ | Sb | 121 | 559732.539 | 0.826 | 0.305 | 312.22376 | 1.08 | ppb |
| \| | Ba | 135 | 109464.548 | 0.689 | 0.060 | 308.67648 | 1.67 | ppb |
| \| | Ba | 137 | 187982.451 | 0.537 | 0.102 | 304.60048 | 2.05 | ppb |
| ⌊> | Tb | 159 | 1835052.107 | 1.858 | 1835052.107 | | | ppb |
| ⌈ | Tl | 205 | 1189351.159 | 0.909 | 1.010 | 304.04221 | 0.33 | ppb |
| \| | Pb | 206 | 402771.169 | 0.350 | 0.342 | 312.86515 | 0.89 | ppb |
| \| | Pb | 207 | 739719.812 | 0.931 | 0.628 | 311.84121 | 0.60 | ppb |
| \| | Pb | 208 | 1169216.537 | 1.526 | 0.992 | 310.39909 | 1.19 | ppb |
| ⌊> | Bi | 209 | 1178112.847 | 1.225 | 1178112.847 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 230455.231 | | ppb |
| ⌊ | Be | 9 | 32811.742 | 280.320186 | ppb |
| ⌈> | Sc | 45 | 753222.651 | | ppb |
| \| | V | 51 | 744793.516 | 310.813659 | ppb |
| \| | Cr | 52 | 602268.166 | 306.167673 | ppb |
| \| | Mn | 55 | 925755.420 | 307.100992 | ppb |
| \| | Co | 59 | 720104.438 | 302.690960 | ppb |
| \| | Ni | 60 | 185722.100 | 304.555732 | ppb |
| \| | Cu | 63 | 408916.452 | 302.066520 | ppb |
| \| | Cu | 65 | 193585.810 | 296.668608 | ppb |
| \| | Zn | 66 | 118808.269 | 315.986095 | ppb |
| \| | As | 75 | 157257.270 | 297.898538 | ppb |
| ⌊ | Se | 82 | 12662.011 | 303.855500 | ppb |
| ⌈ | Ag | 107 | 595505.306 | 323.112396 | ppb |
| \| | Ag | 109 | 553910.767 | 309.278615 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 146528.102 | 315.537407 | ppb |
| \| | In | 113 | 203678.332 | | ppb |
| \> | In | 115 | 1405567.141 | | ppb |
| ⌈ | Sb | 121 | 564971.170 | 309.089043 | ppb |
| \| | Ba | 135 | 109473.965 | 302.751179 | ppb |
| \| | Ba | 137 | 187226.432 | 297.509910 | ppb |
| \> | Tb | 159 | 1870765.102 | | ppb |
| ⌈ | Tl | 205 | 1191766.681 | 304.240765 | ppb |
| \| | Pb | 206 | 403270.644 | 312.807950 | ppb |
| \| | Pb | 207 | 744210.218 | 313.300647 | ppb |
| \| | Pb | 208 | 1186188.355 | 314.474064 | ppb |
| \> | Bi | 209 | 1179704.231 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224150.325 | | ppb |
| \| | Be | 9 | 31609.880 | 277.647988 | ppb |
| ⌈> | Sc | 45 | 750924.065 | | ppb |
| \| | V | 51 | 737784.563 | 308.828622 | ppb |
| \| | Cr | 52 | 608624.194 | 310.359360 | ppb |
| \| | Mn | 55 | 924994.618 | 307.788093 | ppb |
| \| | Co | 59 | 718286.415 | 302.850975 | ppb |
| \| | Ni | 60 | 183505.064 | 301.840212 | ppb |
| \| | Cu | 63 | 407635.721 | 302.042170 | ppb |
| \| | Cu | 65 | 193276.581 | 297.101621 | ppb |
| \| | Zn | 66 | 119489.649 | 318.773880 | ppb |
| \| | As | 75 | 159230.174 | 302.559562 | ppb |
| \| | Se | 82 | 12625.966 | 303.918176 | ppb |
| ⌈ | Ag | 107 | 575260.273 | 312.712229 | ppb |
| \| | Ag | 109 | 558270.104 | 312.296630 | ppb |
| \| | Cd | 111 | 143382.008 | 309.340689 | ppb |
| \| | In | 113 | 209169.961 | | ppb |
| \> | In | 115 | 1402939.297 | | ppb |
| ⌈ | Sb | 121 | 558005.956 | 311.814561 | ppb |
| \| | Ba | 135 | 110214.028 | 311.324156 | ppb |
| \| | Ba | 137 | 189129.749 | 306.969562 | ppb |
| \> | Tb | 159 | 1831552.652 | | ppb |
| ⌈ | Tl | 205 | 1198752.347 | 302.946637 | ppb |
| \| | Pb | 206 | 403863.880 | 310.117619 | ppb |
| \| | Pb | 207 | 743158.915 | 309.711666 | ppb |
| \| | Pb | 208 | 1170838.158 | 307.282586 | ppb |
| \> | Bi | 209 | 1191688.090 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 218462.509 | | ppb |
| \| | Be | 9 | 31353.074 | 282.563038 | ppb |
| ⌈> | Sc | 45 | 746075.556 | | ppb |
| \| | V | 51 | 715801.807 | 301.564689 | ppb |
| \| | Cr | 52 | 590907.570 | 303.260714 | ppb |
| \| | Mn | 55 | 923205.037 | 309.189403 | ppb |
| \| | Co | 59 | 727603.125 | 308.773096 | ppb |
| \| | Ni | 60 | 183230.091 | 303.347126 | ppb |
| \| | Cu | 63 | 403346.965 | 300.806214 | ppb |
| \| | Cu | 65 | 194095.549 | 300.301316 | ppb |
| \| | Zn | 66 | 116218.097 | 312.054295 | ppb |
| \| | As | 75 | 155333.295 | 297.072643 | ppb |
| \| | Se | 82 | 12173.405 | 294.897499 | ppb |
| ⌈ | Ag | 107 | 563935.073 | 308.885499 | ppb |
| \| | Ag | 109 | 539525.407 | 304.104252 | ppb |
| \| | Cd | 111 | 138939.370 | 302.033714 | ppb |
| \| | In | 113 | 200530.668 | | ppb |
| \> | In | 115 | 1392357.841 | | ppb |
| ⌈ | Sb | 121 | 556220.492 | 315.767664 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 108705.652 | 311.954113 | ppb |
| | Ba | 137 | 187591.172 | 309.321962 | ppb |
| \> | Tb | 159 | 1802838.566 | | ppb |
| ⌈ | Tl | 205 | 1177534.448 | 304.939240 | ppb |
| | Pb | 206 | 401178.984 | 315.669882 | ppb |
| ¦ | Pb | 207 | 731790.303 | 312.511316 | ppb |
| | Pb | 208 | 1150623.098 | 309.440626 | ppb |
| \> | Bi | 209 | 1162946.221 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 114.317 | | | |
| ⌊ | Be | 9 | 93.392 | | | | |
| ⌈> | Sc | 45 | | 106.263 | | | |
| \| | V | 51 | 102.356 | | | | |
| \| | Cr | 52 | 102.199 | | | | |
| \| | Mn | 55 | 102.675 | | | | |
| \| | Co | 59 | 101.591 | | | | |
| \| | Ni | 60 | 101.083 | | | | |
| \| | Cu | 63 | 100.546 | | | | |
| \| | Cu | 65 | 99.341 | | | | |
| \| | Zn | 66 | 105.202 | | | | |
| \| | As | 75 | 99.726 | | | | |
| ⌊ | Se | 82 | 100.297 | | | | |
| ⌈ | Ag | 107 | 104.968 | | | | |
| \| | Ag | 109 | 102.853 | | | | |
| \| | Cd | 111 | 102.990 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 100.260 | | | |
| ⌈ | Sb | 121 | 104.075 | | | | |
| \| | Ba | 135 | 102.892 | | | | |
| \| | Ba | 137 | 101.533 | | | | |
| ⌊> | Tb | 159 | | 98.642 | | | |
| ⌈ | Tl | 205 | 101.347 | | | | |
| \| | Pb | 206 | 104.288 | | | | |
| \| | Pb | 207 | 103.947 | | | | |
| \| | Pb | 208 | 103.466 | | | | |
| ⌊> | Bi | 209 | | 100.669 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 17:26:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1472

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 225689.209 | 1.046 | 225689.209 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 57.735 | 0.000 | 0.01216 | 247.80 | ppb |
| ⌈> | Sc | 45 | 730887.986 | 2.012 | 730887.986 | | | ppb |
| \| | V | 51 | 748.945 | 29.775 | -0.000 | -0.07758 | 114.53 | ppb |
| \| | Cr | 52 | 2129.560 | 2.752 | 0.000 | 0.13207 | 33.79 | ppb |
| \| | Mn | 55 | 400.008 | 8.750 | 0.000 | 0.04048 | 23.04 | ppb |
| \| | Co | 59 | 109.334 | 16.598 | 0.000 | 0.03412 | 20.08 | ppb |
| \| | Ni | 60 | 73.334 | 20.830 | 0.000 | 0.00765 | 367.60 | ppb |
| \| | Cu | 63 | 121.112 | 19.527 | -0.000 | -0.00081 | 2025.78 | ppb |
| \| | Cu | 65 | 153.335 | 16.979 | 0.000 | 0.07110 | 54.11 | ppb |
| \| | Zn | 66 | 126.667 | 21.541 | 0.000 | 0.03249 | 241.28 | ppb |
| \| | As | 75 | 83.491 | 30.856 | 0.000 | 0.14031 | 37.71 | ppb |
| ⌊ | Se | 82 | 43.111 | 10.526 | 0.000 | 0.00723 | 1437.07 | ppb |
| ⌈ | Ag | 107 | 68.889 | 22.867 | 0.000 | 0.03297 | 26.46 | ppb |
| \| | Ag | 109 | 68.889 | 36.317 | 0.000 | 0.02955 | 47.80 | ppb |
| \| | Cd | 111 | 23.305 | 55.254 | 0.000 | 0.04166 | 67.48 | ppb |
| \| | In | 113 | 61075.962 | 1.157 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1389320.114 | 0.189 | 1389320.114 | | | ppb |
| ⌈ | Sb | 121 | 335.006 | 15.796 | 0.000 | 0.15391 | 20.48 | ppb |
| \| | Ba | 135 | 36.667 | 12.597 | 0.000 | 0.07462 | 19.54 | ppb |
| \| | Ba | 137 | 52.000 | 56.658 | 0.000 | 0.05369 | 90.09 | ppb |
| ⌊> | Tb | 159 | 1855269.744 | 2.782 | 1855269.744 | | | ppb |
| ⌈ | Tl | 205 | 135.001 | 13.354 | 0.000 | 0.02808 | 15.72 | ppb |
| \| | Pb | 206 | 133.334 | 43.786 | 0.000 | 0.08014 | 56.78 | ppb |
| \| | Pb | 207 | 205.001 | 51.394 | 0.000 | 0.06600 | 67.87 | ppb |
| \| | Pb | 208 | 301.670 | 45.007 | 0.000 | 0.06057 | 60.06 | ppb |
| ⌊> | Bi | 209 | 1177534.133 | 0.886 | 1177534.133 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 228347.703 | | ppb |
| ⌊ | Be | 9 | 8.000 | 0.028853 | ppb |
| ⌈> | Sc | 45 | 747264.603 | | ppb |
| \| | V | 51 | 997.445 | 0.021211 | ppb |
| \| | Cr | 52 | 2086.218 | 0.084794 | ppb |
| \| | Mn | 55 | 435.009 | 0.049304 | ppb |
| \| | Co | 59 | 130.001 | 0.041925 | ppb |
| \| | Ni | 60 | 56.667 | -0.023001 | ppb |
| \| | Cu | 63 | 146.668 | 0.016372 | ppb |
| \| | Cu | 65 | 166.668 | 0.086704 | ppb |
| \| | Zn | 66 | 103.334 | -0.038359 | ppb |
| \| | As | 75 | 53.748 | 0.079254 | ppb |
| ⌊ | Se | 82 | 44.667 | 0.022069 | ppb |
| ⌈ | Ag | 107 | 86.667 | 0.042825 | ppb |
| \| | Ag | 109 | 70.000 | 0.030264 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 33.455 | 0.063915 | ppb |
| | In | 113 | 61855.717 | | ppb |
| > | In | 115 | 1386300.338 | | ppb |
| | Sb | 121 | 395.008 | 0.190280 | ppb |
| | Ba | 135 | 34.000 | 0.068543 | ppb |
| | Ba | 137 | 84.000 | 0.106955 | ppb |
| > | Tb | 159 | 1825715.658 | | ppb |
| | Tl | 205 | 140.001 | 0.029580 | ppb |
| | Pb | 206 | 185.002 | 0.121148 | ppb |
| | Pb | 207 | 315.003 | 0.113119 | ppb |
| | Pb | 208 | 445.006 | 0.099285 | ppb |
| > | Bi | 209 | 1170770.047 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 223841.523 | | ppb |
| | Be | 9 | 8.000 | 0.030242 | ppb |
| > | Sc | 45 | 726596.758 | | ppb |
| | V | 51 | 683.117 | -0.102994 | ppb |
| | Cr | 52 | 2196.241 | 0.173468 | ppb |
| | Mn | 55 | 400.008 | 0.041403 | ppb |
| | Co | 59 | 102.001 | 0.031290 | ppb |
| | Ni | 60 | 76.667 | 0.013676 | ppb |
| | Cu | 63 | 100.001 | -0.016268 | ppb |
| | Cu | 65 | 170.001 | 0.099330 | ppb |
| | Zn | 66 | 156.668 | 0.116722 | ppb |
| | As | 75 | 97.935 | 0.168953 | ppb |
| | Se | 82 | 46.667 | 0.102837 | ppb |
| | Ag | 107 | 63.334 | 0.029869 | ppb |
| | Ag | 109 | 43.333 | 0.015083 | ppb |
| | Cd | 111 | 27.640 | 0.051012 | ppb |
| | In | 113 | 60477.324 | | ppb |
| > | In | 115 | 1391065.065 | | ppb |
| | Sb | 121 | 315.005 | 0.137205 | ppb |
| | Ba | 135 | 34.000 | 0.064058 | ppb |
| | Ba | 137 | 46.000 | 0.041588 | ppb |
| > | Tb | 159 | 1914860.220 | | ppb |
| | Tl | 205 | 150.001 | 0.031544 | ppb |
| | Pb | 206 | 145.001 | 0.088093 | ppb |
| | Pb | 207 | 195.001 | 0.060906 | ppb |
| | Pb | 208 | 285.003 | 0.055338 | ppb |
| > | Bi | 209 | 1189543.914 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224878.400 | | ppb |
| | Be | 9 | 2.000 | -0.022621 | ppb |
| > | Sc | 45 | 718802.598 | | ppb |
| | V | 51 | 566.272 | -0.150947 | ppb |
| | Cr | 52 | 2106.222 | 0.137950 | ppb |
| | Mn | 55 | 365.007 | 0.030724 | ppb |
| | Co | 59 | 96.000 | 0.029129 | ppb |
| | Ni | 60 | 86.667 | 0.032281 | ppb |
| | Cu | 63 | 116.667 | -0.002532 | ppb |
| | Cu | 65 | 123.334 | 0.027275 | ppb |
| | Zn | 66 | 120.001 | 0.019117 | ppb |
| | As | 75 | 98.790 | 0.172736 | ppb |
| | Se | 82 | 38.000 | -0.103230 | ppb |
| | Ag | 107 | 56.667 | 0.026224 | ppb |
| | Ag | 109 | 93.334 | 0.043310 | ppb |
| | Cd | 111 | 8.820 | 0.010067 | ppb |
| | In | 113 | 60894.846 | | ppb |
| > | In | 115 | 1390594.939 | | ppb |
| | Sb | 121 | 295.004 | 0.134257 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 42.000 | 0.091247 | ppb |
| | Ba | 137 | 26.000 | 0.012518 | ppb |
| > | Tb | 159 | 1825233.353 | | ppb |
| | Tl | 205 | 115.001 | 0.023111 | ppb |
| | Pb | 206 | 70.000 | 0.031186 | ppb |
| | Pb | 207 | 105.000 | 0.023973 | ppb |
| | Pb | 208 | 175.001 | 0.027092 | ppb |
| > | Bi | 209 | 1172288.439 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 114.997 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 103.545 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.475 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.729 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.619 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# 4. Digestion and Distillation Logs

The following logs shall be submitted, as appropriate, for each preparation procedure: digestion logs for ICP-AES, ICP-MS, mercury preparations, and cyanide. The logs shall include: (1) date; (2) sample weights and volumes, with initial sample weight/volume and final volume clearly indicated; (3) sufficient information to unequivocally identify which QC samples (i.e., LCS, PB) correspond to each batch digested; (4) comments describing any significant sample changes or reactions which occur during preparation shall be entered in the log and noted in the SDG Narrative; (5) indication of pH less than 2 or greater than 12, as applicable; (6) identification of the sample preparer(s) [signature (s)].

# METALS/MERCURY PREPARATION LOG

Metals Method: 3005A / 6020A
Mercury Method: 7470A
Prepared By: JM

CompuChem
A Division Of
Liberty Analytical Corp.

Preparation Date: 8-1-11
Preparation Time: 1000
Batch Number: 1072905
Purple Water

| COMPUCHEM SAMPLE ID | CLIENT SAMPLE ID | SAMPLE TYPE | ICP Initial (mL) | ICP Final (mL) | HG Initial (mL) | HG Final (mL) | *Description Before | *Description After ICP | pH |
|---|---|---|---|---|---|---|---|---|---|
| 1072905-BLK1 | PBW | MB | 100 | 100 | | | CS / CL | CS / CL | N/A |
| 1072905-BS1 | LCSW | LCSW | 100 | | | | CL / CL | CL / CL | N/A |
| 1072905-BSD1 | LCSWD | LCSWD | 100 | | | | CS / CL | CL / CL | N/A |
| 1107162-01 | 7DUP | SAMPLE | 100 | | | | CL / CL | CS / CL | C2 |
| 1107162-02 | 7W13 | SAMPLE | 100 | | | | CL / CL | CS / CL | C2 |
| 1107163-01 | 7DUP | SAMPLE | 100 | | | | CL / CL | CS / CL | C2 |
| 1107163-02 | 7W13 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107164-01 | 5WC21 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107164-02 | 5WC22 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107165-01 | 5WC21 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107165-02 | 5WC22 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |

**Mercury Standards and QC** S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached. Standard/QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

| Record of Tempature/Time | | |
|---|---|---|
| Hot Block Temp In: | 95 | C |
| Hot Block Temp Out: | 95 | C |
| Hot Block Identifier | MS #1 | |
| Time Hg in water bath: | | |
| Time Hg out water bath: | | |
| Water Bath Temp In: | | C |
| Water Bath Temp Out: | | C |
| Water Bath Identifier | | |

**MS Reference**
ICAP: 1.0mL Water Spike D
0.5 ml for 50 ml prep
Ref#:
HG: 1.0mL 100ppb Hg
Ref#

**LCS Reference**
ICAP: 2.0 mL of ICV 0307
1.0 ml for 50 ml prep
Ref #: 6H10010
HG: 3.0mL 100ppb Hg

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

***Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.***

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

**Sample Verification Signature:** JM
This signature corroborates that the sample identification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

*Reviewed By:* JC
*Date:* 080111

# Standards/QC Preparation Log for ICP/MS Metals

COMPUCHEM a division of Liberty Analytical Corp. WORKSHEET 1 YYY Case/SDG: 110762

| REAGENTS | REF #[1] | MANUFACTURER | LOT # | EXPIRATION |
|---|---|---|---|---|
| Hydrochloric Acid - Distilled (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| Nitric Acid – Distilled ($HNO_3$) | NHO3-D-072111-JRR | JT Baker | J45042 | 12/11 |
| **STANDARDS** | | | | |
| ICV-1 (0307) | 0H10010 | EPA | 0307 | 08/10/15 |
| EPA LCS (0405) | OE20016 | EPA | 0405 | 05/17/15 |
| ERA PPT (540) | 1E02001 | ERA | 540 | 04/26/12 |
| Water Spike Sample D | 1F22003 | HIGH PURITY | 1116621 | 06/20/12 |
| | | | | |
| | | | | |

| STANDARD LOT NUMBER[2] | PREPARATION INSTRUCTIONS |
|---|---|
| $HNO_3$– 07 21 11 – JRR<br>Nitric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated $HNO_3$, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |
| HCl– 12 08 10 – DDD<br>Hydrochloric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated HCl, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |

Standard Solutions Prepared By: _____ Date: 8-1-11

Entered By: _____ Date: 8-1-11

Reviewed By: _____ Date: 8.1.11

[1]Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

[2]Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

[3]Raw Material sub-boiled from specified lot # in accordance with SOP SPP.9.10

The presence of the Chemist's/Analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

CompuChem

A Division Of

Liberty Analytical Corp.

8/8/2011

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP UNIT 7/2011 POST DEV. 2nd EVEN WorkOrder: 1107163

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Joan Purdie

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

**501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050**

## CompuChem, a division of Liberty Analytical

**Client:** DRAPER **Work:** 1107163

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-30 **Sdg:** 1107163

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107163-01 | 7DUP | Water | 07/27/2011 13:45 | 07/28/2011 10:30 |
| 1107163-02 | 7W13 | Water | 07/27/2011 13:35 | 07/28/2011 10:30 |

CompuChem, a Division of Liberty Analytical Corporation

# Analysis Data Package

## EPA SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field and analytical samples, reanalyses, blanks, spikes, duplicates, and laboratory control samples. The sample data package consists of the following:

## A. Cover Documentation

## B. Sample Data

Client: **DRAPER** SDG#: **1107163**

Project: **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B**

CompuChem
A Division Of
Liberty Analytical Corp.

# A. Cover Documentation

1. Cover Page

2. SDG Narrative

3. Chain-Of-Custody Records

# 1. Cover Page

## Inorganic Analyses Data Package

The Cover Page includes laboratory information, SDG numbers, project name and the Client Identification in alphanumeric order showing the Client Identification cross-referenced with Lab ID numbers.

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Laboratory:** COMPUCHEM

**SDG:** 1107163

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7DUP | 1107163-01 |
| 7W13 | 1107163-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ for

Name: Susan Bex

Date: 08-08-11

Title: Senior Chemist

# 2. SDG Narrative

The SDG Narrative contains laboratory information, SDG number, and detailed documentation of any QC, sample, shipment, and/or analytical problems encountered in processing the samples. This will include any technical and administrative problems encountered and the resolution or corrective actions taken. The SDG Narrative will also document the alternative means of determining the cooler temperature when a cooler's temperature indicator bottle is absent. The SDG Narrative also provides equations or curves and utilizes raw data from the SDG being reported to demonstrate how sample results are obtained from raw instrument output. Finally, the SDG Narrative will identify and explain any differences between results being provided in the data package and those provided previously as Preliminary Results.

**CompuChem**
**a Division of Liberty Analytical Corp.**
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107163
## Client: DRAPER
## Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

The indicated Sample Delivery Group (SDG) consisting of two (2) dissolved water samples was received into the laboratory information management system (LIMS) on July 28, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was not found with the samples and the samples temperature was 26.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested dissolved metals arsenic and cobalt.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7DUP

$$\frac{13.92093\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 13.921\ \mu g/L \text{ reported as } 13.9\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

A five-fold serial dilution of sample, CCN = SDI1107163-01 (7DUPL) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were inside control limits.

The ICP/MS sample post digestion spike, CCN =1072905-PS2 (7DUPA) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W. Bass
Senior Chemist
August 8, 2011

# INORGANIC DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, CCV, and interference check standards for ICP-AES/ICP-MS) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

**The extensions: D, S, SD, L, and A are added to the end of the Client ID and represent the following:**

**D – Matrix Duplicate**
**S – Matrix Spike**
**SD – Matrix Spike Duplicate**
**L – Serial Dilution**
**A – Post Digestion Spike**

Revision 0 (11-09-2010)

# 3. Chain-Of-Custody Records

# CHAIN OF CUSTODY RECORD

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

| | | | |
|---|---|---|---|
| **Client:** Draper Aden Associates<br>Attn: 0<br>Address: 0<br>0<br>Phone: 0<br>Fax: 0<br>Fax: 0 | **Consultant:** Draper Aden Associates<br>Attn: Janet C. Frazier<br>Address: 2206 South Main Street<br>Blacksburg, Virginia 24060<br>Phone: (540) 552-0444<br>Fax: (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU 7<br>**Event:** 2011 Post-Development 2nd Monitoring Event<br>**DAA JN:** B03204-304B<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:**<br>**Sample Collection for Project Complete?** YES<br>**Carrier:** UPS: 1Z-237-301-01-5797-7210<br>**Tracking Number:** |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; AG Amber Glass; V VOA; CG Clear Glass

**Invoice**
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | G | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | U | F | | | | | | | | | |
| Required pH of Sample | | | | <2 | <2 | | | | | | | | | |
| Box 2 - Preservative | | | | B | B | | | | | | | | | |
| Box 5 - Sample Container Type | | | | 1-500 ml P | 1-100ml P | | | | | | | | | |
| Sample ID | Date: 2011 | Time | Box 1: Matrix | Number of Bottles | ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY) | DISSOLVED METALS 6020A (Cobalt & Arsenic ONLY) | | 1107162-01 1107163-01 | | Metals pH | | | | |
| 7 DUP | 7/27 | 1345 | GW | 1/2 | X | X | | | | <2 | | | | |

**GENERAL NOTES:**

1. Results by :
2. Level 4 deliverable w/ ~~estimated results~~ as requested
3. Report results at or above permit QL – 10 ug/L (arsenic) – 4 ug/L cobalt
4. 7-day turn around

DAA 7/27/11

**Clients Special Instructions:**

Received by lab in Good Condition ✓ Yes ___ No  Custody Seal Intact ✓ Yes ___ No  Temperature upon arrival 26.7°C  Received on ice X Yes ✓ No

Describe problems, if any: ~~4 ice appeared to have melted & evaporated upon receipt.~~ 7/28/11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): KEN CODDINGTON | Date: 7/27/11 | #1 Relinquished by (Signature): Ken Coddington | Date: 7/27/11 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Ken Coddington | Time: 0730 | Company Name: DAA | Time: 1700 | Company Name: | Time: | |
| Sampler Name (Print): Tyler Emery | Date: 7/27/11 | #1 Received by (Signature): | Date: | #2 Received by (Signature): K. Manning | Date: 7.28.11 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Tyler Emery | Time: 0730 | Company Name: | Time: | Company Name: CompuChem | Time: 1030 | |

SNOOIO

DAA 7/27/2011  7-28-11

1/1

# CHAIN OF CUSTODY RECORD

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

7-20-11

| | | | |
|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:**<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU 7<br>**Event:** 2011 Post-Development 2nd Monitoring Event<br>**DAA JN:** B03204-304B<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:**<br>**Sample Collection for Project Complete?** YES<br>**Carrier:** UPS: 12-237-301-01-5797-7211<br>**Tracking Number:** |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; V VOA; AG Amber Glass; CG Clear Glass

**Invoice**
**Copy to Consultant:** YES
**Bill:** CLIENT **OTHER**
**Preserved and shipped on ice:** YES

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | G | G | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | U | F | | | | | | | | |
| Required pH of Sample | | | | <2 | <2 | | | | | | | | |
| Box 2 - Preservative | | | | B | B | | | | | | | | |
| Box 5 - Sample Container Type | | | | 1-500 ml P | 1-500 ml P | | | | | | | | |
| Sample ID | Date: 2011 | Time | Box 1: Matrix | Number of Bottles | ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY) | Dissolved metals 6020A- Cobalt & Arsenic ONLY | | | | | | | |
| 7W13 | 7/27 | 1335 | GW | 2 | X | X | | 1107163-01<br>1107163-02 | 22 | metals pH | | | |

**GENERAL NOTES:**

1. Results by :
2. Level 4 deliverable ~~w/ Estimated results.~~ JCF 7/28/2011
3. Report result to at or above permit QL, 10 ug/L (arsenic) QL 4ug/L (cobalt)
4. 7-day turnaround

7-26-11

**Clients Special Instructions:**

26.7°C * 7/28/11

Received by lab in Good Condition ✓ Yes ___ No Custody Seal Intact ✓ Yes ___ No Temperature upon arrival ___ Received on Ice ✓ Yes ___ No ~~* Ice appeared to have melted/evaporated upon receipt.~~ KM 7/28/11

Describe problems, if any:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): KEN CODDINGTON | Date: 7/27/11 | #1 Relinquished by (Signature): Ken Coddington | Date: 7/27/11 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: |
| Sampler Signature: Ken Coddington | Time: 0730 | Company Name: DAA | Time: 1700 | Company Name: | Time: | |
| Sampler Name (Print): Tyler Emery | Date: 7/27/11 | #1 Received by (Signature): | Date: | #2 Received by (Signature): K. Manning | Date: 7.28.11 | 30 DYS ORG/6 MTHS INORG |
| Sampler Signature: Tyler Emery | Time: 0730 | Company Name: | Time: | Company Name: CompuChem | Time: 1030 | |

SN0010

JCF 7/28/11 7/27/2011 1/1

# 1107163

## COMPUCHEM

| | | | |
|---|---|---|---|
| **Client:** | **DRAPER** | **Project Manager:** | **Cathy Dover** |
| **Project:** | **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03** | **Project Number:** | **RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B** |
| **SDG:** | **1107163** **CASE:** | **Status:** | **Reported** |

**Report To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone: (540)552-0444
Fax: -

**Invoice To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone :(540)552-0444
Fax: -

Date Due: 08/03/2011 00:00 (6 day TAT)

Received By: Cathy Dover — Date Received: 07/28/2011 10:30

Logged In By: Cathy Dover — Date Logged In: 07/28/2011 12:08

| | | | |
|---|---|---|---|
| J & B Flags?: **NO** | TICS?:**NO** | Deliverable: **Style 9** | EDD : **DRAPER ACCESS + ERIS** |
| Metals ND to? **RL/CRQL** | Spike Level: **FULL Spike** | | |

LCS/LCSD*DISS. 6020A MTL=As & Co ONLY*SPECIAL RLs IN PROJECT AND NO J FLAGS

| Analysis | Due | TAT | Expires | Received | Comments |
|---|---|---|---|---|---|
| **1107163-01 7DUP [Water] Sampled 07/27/2011 13:45 Eastern** | | | | | |
| 6020A ICP MS (UPDATE IV) | 08/02/2011 16:00 | 5 | 01/23/2012 13:45 | 07/28/2011 10:30 | |
| 6020A ICP MS DOD | 01/01/1980 00:00 | | 07/27/2011 13:45 | 07/28/2011 10:30 | Added for SequenceQC in: 1H03006 |
| DISS. 6020A ICP MS Invoice | 08/03/2011 16:00 | 6 | 01/23/2012 13:45 | 07/28/2011 10:30 | |
| **1107163-02 7W13 [Water] Sampled 07/27/2011 13:35 Eastern** | | | | | |
| 6020A ICP MS (UPDATE IV) | 08/02/2011 16:00 | 5 | 01/23/2012 13:35 | 07/28/2011 10:30 | |
| DISS. 6020A ICP MS Invoice | 08/03/2011 16:00 | 6 | 01/23/2012 13:35 | 07/28/2011 10:30 | |

INTERNAL DIGESTION COC

1072905

COMPUCHEM

Printed: 7/29/2011 10:12:03AM

**Matrix: Water** **Prepared using: METALS - EPA 3005A**

| Lab Number | Client ID | Sample Type | |
|---|---|---|---|
| 1072905-BLK1 | PBW | Blank | |
| 1072905-BS1 | LCSW | LCS | |
| 1072905-BSD1 | LCSWD | LCS Dup | |
| 1107162-01 | 7DUP | Sample | |
| 1107162-02 | 7W13 | Sample | |
| 1107163-01 | 7DUP | Sample | |
| 1107163-02 | 7W13 | Sample | |
| 1107164-01 | 5WC21 | Sample | |
| 1107164-02 | 5WC22 | Sample | |
| 1107165-01 | 5WC21 | Sample | |
| 1107165-02 | 5WC22 | Sample | |

| | | | |
|---|---|---|---|
| Relinquished By | Date: 8-01-11 1600 | Received By: IC SB. | Date: 8-1-11 1600 |
| Relinquished By: JCP SB | Date: 080111 1605 | Received By: JC C | Date: 080111 1605 |
| Relinquished By | Date: 080411 1735 | Received By: JCP SB | Date: 080111 1835 |
| Relinquished By | Date | Received By | Date |
| Relinquished By: JM 8-8-11 | Date | Received By | Date |

7/28/2011

# Metals Internal Chain of Custody Sheet

**Batch**: 1072905 **Status:** Batched

**Analysis**: 6020A ICP MS (UPDATE IV)

| Lab Id | Client_Id | Received | Container | Extraction | Preservative | Matrix | Due Date | Cust Date |
|---|---|---|---|---|---|---|---|---|
| 1107162-01 A | 7DUP | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107162-02 A | 7W13 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107163-01 A | 7DUP | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | 7/28/2011 |
| 1107163-02 A | 7W13 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107164-01 A | 5WC21 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107164-02 A | 5WC22 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107165-01 A | 5WC21 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |
| 1107165-02 A | 5WC22 | 07/28/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 8/2/2011 4 | |

| | | | |
|---|---|---|---|
| Ambient | 8/01/11 0950 | K. Manning | 8/01/11 0950 |
| Relinquished By | Date/Time | Received By | Date/Time |
| K. Manning | 8/01/11 0950 | | 8-1-11 0850 |
| Relinquished By | Date/Time | Received By | Date/Time |
| | 8-1-11 1200 | Ambient | 8-1-11 1200 |
| Relinquished By | Date/Time | Received By | Date/Time |
| | | | |
| Relinquished By | Date/Time | Received By | Date/Time |

8-2-11

# B. Sample Data

1. Results
2. Quality Control Data
3. Raw Data
4. Digestion and Distillation Logs

# 1. Results

## a. Analysis Data Sheet

# ANALYSIS DATA SHEET

**7DUP**

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107163-01 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic (dissolved) | 6.43 | 0.100 | 10.0 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:03 |
| 7440-48-4 | Cobalt (dissolved) | 13.9 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:03 |

# ANALYSIS DATA SHEET

**7W13**

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107163-02 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic (dissolved) | 6.50 | 0.100 | 10.0 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:10 |
| 7440-48-4 | Cobalt (dissolved) | 13.7 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:10 |

# 2. Quality Control (QC) Data

**a. Low Level Initial and Continuing Calibration Check**

**b. Initial and Continuing Calibration Check**

**c. Low Range Standard**

**d. High Range Standard**

**e. Blank**

**f. ICP Interference Check Sample**

**g. Duplicates**

**h. Matrix Spike / Matrix Spike Duplicate Recovery**

**i. Serial Dilution**

**j. Post Digestion Spike Sample Recovery**

**k. LCS / LCS Duplicate Recovery**

**l. Method Detection and Reporting Limits**

**m. ICP-AES and ICP-MS Linear Ranges**

**n. ICP-AES Interelement Correction Factors**

**o. Preparation Batch Summary**

**p. Analysis Sequence Summary**

# LOW LEVEL INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | QC Limts |
|---|---|---|---|---|---|---|---|---|
| LLICV | 1H03006-CRL1 | Arsenic | 1.000 | 1.16 | 116 | ug/L | | 70 - 130 |
| LLICV | 1H03006-CRL1 | Cobalt | 1.000 | 1.06 | 106 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL2 | Arsenic | 1.000 | 1.03 | 103 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL2 | Cobalt | 1.000 | 1.06 | 106 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL3 | Arsenic | 1.000 | 1.10 | 110 | ug/L | | 70 - 130 |
| LLCCV | 1H03006-CRL3 | Cobalt | 1.000 | 0.996 | 100 | ug/L | J | 70 - 130 |

# INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | Control Limit |
|---|---|---|---|---|---|---|---|---|
| ICV | 1H03006-ICV1 | Arsenic | 199.8 | 199 | 100 | ug/L | | +/-10 % |
| ICV | 1H03006-ICV1 | Cobalt | 99.80 | 106 | 106 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV1 | Arsenic | 300.0 | 306 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV1 | Cobalt | 300.0 | 305 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV2 | Arsenic | 300.0 | 304 | 101 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV2 | Cobalt | 300.0 | 306 | 102 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV3 | Arsenic | 300.0 | 299 | 100 | ug/L | | +/-10 % |
| CCV | 1H03006-CCV3 | Cobalt | 300.0 | 305 | 102 | ug/L | | +/-10 % |

# BLANKS

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | Found | MDL | RL | Units | Q | Method |
|---|---|---|---|---|---|---|---|---|
| ICB | 1H03006-ICB1 | Arsenic | 0.0519 | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| ICB | 1H03006-ICB1 | Cobalt | 0.00610 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB1 | Arsenic | 0.129 | 0.100 | 10.0 | ug/L | *J* | EPA 6020A |
| CCB | 1H03006-CCB1 | Cobalt | 0.0201 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| PBW | 1072905-BLK1 | Arsenic | | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| PBW | 1072905-BLK1 | Cobalt | | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB2 | Arsenic | 0.0511 | 0.100 | 10.0 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB2 | Cobalt | 0.0159 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |
| CCB | 1H03006-CCB3 | Arsenic | 0.140 | 0.100 | 10.0 | ug/L | *J* | EPA 6020A |
| CCB | 1H03006-CCB3 | Cobalt | 0.0341 | 0.0400 | 4.00 | ug/L | *U* | EPA 6020A |

# ICP INTERFERENCE CHECK SAMPLE

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units |
|---|---|---|---|---|---|---|
| ICSA | 1H03006-IFA1 | Arsenic | 0.1000 | 0.09 | 92 | ug/L |
| ICSA | 1H03006-IFA1 | Cobalt | 1.000 | 1.08 | 108 | ug/L |
| ICSAB | 1H03006-IFB1 | Arsenic | 19.00 | 19.61 | 103 | ug/L |
| ICSAB | 1H03006-IFB1 | Cobalt | 20.00 | 21.75 | 109 | ug/L |

* The absence of an entry in the "True" column denotes the lack of a true value for that analyte. The entry in the "%R" column represents a Control Limit, established as +/- 2 times analyte Limit Reporting Limit.

# SERIAL DILUTION

*EPA 6020A*

**7DUPL**

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1H03006-SRD2 Matrix: Water Lab Source ID: 1107163-01 Source Sample: 7DUP

Sequence: 1H03006 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic (dissolved) | 6.43 J | 6.50 J | 1.05 | | EPA 6020A | 10 |
| Cobalt (dissolved) | 13.92 | 13.11 J | 5.82 | | EPA 6020A | 10 |

# POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

**7DUPA**

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107163

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B032

Laboratory ID: 1072905-PS2

Lab Source ID: 1107163-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| Arsenic (dissolved) | 17.4 | 6.43 J | 10.00 | 110 | 75 - 125 |
| Cobalt (dissolved) | 24.9 | 13.9 | 10.00 | 110 | 75 - 125 |

# LCS / LCS DUPLICATE RECOVERY

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1072905-BS1 Matrix: Water Client ID: LCSW Batch: 1072905

| ANALYTE | SPIKE ADDED (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC. | Q | QC LIMITS REC. |
|---|---|---|---|---|---|
| Arsenic (dissolved) | 199.8 | 200 | 100 | | 80 - 120 |
| Cobalt (dissolved) | 99.80 | 105 | 105 | | 80 - 120 |

| ANALYTE | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC. # | % RPD # | QC LIMITS | | |
|---|---|---|---|---|---|---|---|
| | | | | | RPD | Q | REC. |
| Arsenic (dissolved) | 199.8 | 200 | 100 | 0.0154 | 20 | | 80 - 120 |
| Cobalt (dissolved) | 99.80 | 105 | 105 | 0.0220 | 20 | | 80 - 120 |

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107163

**Client:** DRAPER **Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic (dissolved) | 0.1 | 10.00 | ug/L | EPA 6020A |
| Cobalt (dissolved) | 0.04 | 4.00 | ug/L | EPA 6020A |

# ICP-AES AND ICP-MS LINEAR RANGES (QUARTERLY)

Client: DRAPER

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

SDG: 1107163 Instrument: PEMS

| Analyte | Concentration ug/L | LR Date |
|---|---|---|
| Arsenic | 5000 | 04/21/2011 |
| Cobalt | 4000 | 04/21/2011 |

# PREPARATION BATCH SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Batch: 1072905 Matrix: Water Preparation: EPA 3005A

| SAMPLE NAME | LAB SAMPLE ID | DATE PREPARED | INITIAL VOL/WT (mL) | FINAL VOL/WT (mL) |
|---|---|---|---|---|
| PBW | 1072905-BLK1 | 08/01/11 10:00 | 100 | 100 |
| LCSW | 1072905-BS1 | 08/01/11 10:00 | 100 | 100 |
| LCSWD | 1072905-BSD1 | 08/01/11 10:00 | 100 | 100 |
| 7DUPA | 1072905-PS2 | 08/01/11 10:00 | 100 | 100 |
| 7DUP | 1107163-01 | 08/01/11 10:00 | 100 | 100 |
| 7W13 | 1107163-02 | 08/01/11 10:00 | 100 | 100 |

# ANALYSIS SEQUENCE SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107163 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Instrument: PEMS

| Sample Name | Lab Sample ID | Lab File ID | Analysis Date/Time |
|---|---|---|---|
| TUN1 | 1H03006-TUN1 | PEMSJCF080111_P-001 | 08/01/11 15:23:27 |
| S0 | 1H03006-CAL1 | PEMSJCF080111_P-002 | 08/01/11 16:15:01 |
| S 6020-MS1 | 1H03006-CAL2 | PEMSJCF080111_P-003 | 08/01/11 16:16:28 |
| S 6020-MS2 | 1H03006-CAL3 | PEMSJCF080111_P-004 | 08/01/11 16:17:53 |
| S 6020-MS3 | 1H03006-CAL4 | PEMSJCF080111_P-005 | 08/01/11 16:19:19 |
| S 6020-MS4 | 1H03006-CAL5 | PEMSJCF080111_P-006 | 08/01/11 16:20:44 |
| S 6020-MS5 | 1H03006-CAL6 | PEMSJCF080111_P-007 | 08/01/11 16:22:10 |
| LLICV | 1H03006-CRL1 | PEMSJCF080111_P-008 | 08/01/11 16:25:27 |
| ICV | 1H03006-ICV1 | PEMSJCF080111_P-009 | 08/01/11 16:26:55 |
| ICB | 1H03006-ICB1 | PEMSJCF080111_P-010 | 08/01/11 16:28:21 |
| ICSA | 1H03006-IFA1 | PEMSJCF080111_P-011 | 08/01/11 16:29:48 |
| ICSAB | 1H03006-IFB1 | PEMSJCF080111_P-012 | 08/01/11 16:31:13 |
| LLCCV | 1H03006-CRL2 | PEMSJCF080111_P-013 | 08/01/11 16:32:40 |
| CCV | 1H03006-CCV1 | PEMSJCF080111_P-014 | 08/01/11 16:34:07 |
| CCB | 1H03006-CCB1 | PEMSJCF080111_P-015 | 08/01/11 16:35:32 |
| PBW | 1072905-BLK1 | PEMSJCF080111_P-016 | 08/01/11 16:53:11 |
| LCSW | 1072905-BS1 | PEMSJCF080111_P-017 | 08/01/11 16:54:37 |
| LCSWD | 1072905-BSD1 | PEMSJCF080111_P-018 | 08/01/11 16:56:03 |
| 7DUP | 1107163-01 | PEMSJCF080111_P-023 | 08/01/11 17:03:11 |
| 7DUPL | 1H03006-SRD2 | PEMSJCF080111_P-024 | 08/01/11 17:04:36 |
| 7DUPA | 1072905-PS2 | PEMSJCF080111_P-025 | 08/01/11 17:06:02 |
| CCV | 1H03006-CCV2 | PEMSJCF080111_P-026 | 08/01/11 17:07:29 |
| CCB | 1H03006-CCB2 | PEMSJCF080111_P-027 | 08/01/11 17:08:55 |
| 7W13 | 1107163-02 | PEMSJCF080111_P-028 | 08/01/11 17:10:23 |
| LLCCV | 1H03006-CRL3 | PEMSJCF080111_P-037 | 08/01/11 17:23:15 |
| CCV | 1H03006-CCV3 | PEMSJCF080111_P-038 | 08/01/11 17:24:42 |
| CCB | 1H03006-CCB3 | PEMSJCF080111_P-039 | 08/01/11 17:26:07 |

# ICP-MS Tune

*EPA 6020A*

Client: DRAPER SDG: 1107163

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Sequence: 1H03006 Date: 08/01/11 ICP-MS Instrument ID: PEMS

| Element - Mass | Avg. Measured Mass (amu) | Average Peak Width (amu) | %Height | %RSD |
|---|---|---|---|---|
| Be - 9 | 8.975 | 0.717 | 10 | 1.264 |
| Mg - 24 | 24.075 | 0.677 | 10 | 1.594 |
| Mg - 25 | 24.975 | 0.680 | 10 | 1.272 |
| Mg - 26 | 26.025 | 0.709 | 10 | 1.432 |
| Co - 59 | 58.925 | 0.706 | 10 | 1.376 |
| In - 113 | 112.975 | 0.670 | 10 | 1.594 |
| In - 115 | 114.975 | 0.691 | 10 | 1.374 |
| Pb - 206 | 206.025 | 0.703 | 10 | 1.869 |
| Pb - 207 | 206.975 | 0.701 | 10 | 1.766 |
| Pb - 208 | 207.975 | 0.706 | 10 | 2.234 |

Comments:

# ICPMS Internal Standards Relative Intensity Summary

*EPA 6020A*

Client: DRAPER

Work Order: 1107163

Sequence: 1H03006

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Instrument: PEMS

| Sample No. | Time | Internal Standards %RI For: Lithium6 | Scandium45 | Indium115 | Terbium159 | Bismuth209 |
|---|---|---|---|---|---|---|
| S0 | 8/1/11 16:15 | 100 | 100 | 100 | 100 | 100 |
| S 6020-MS1 | 8/1/11 16:16 | 101 | 101 | 100 | 101 | 102 |
| S 6020-MS2 | 8/1/11 16:17 | 100 | 101 | 99 | 101 | 100 |
| S 6020-MS3 | 8/1/11 16:19 | 100 | 100 | 100 | 98 | 102 |
| S 6020-MS4 | 8/1/11 16:20 | 99 | 101 | 97 | 99 | 101 |
| S 6020-MS5 | 8/1/11 16:22 | 99 | 100 | 99 | 99 | 100 |
| LLICV | 8/1/11 16:25 | 99 | 99 | 99 | 100 | 100 |
| ICV | 8/1/11 16:26 | 97 | 97 | 97 | 99 | 100 |
| ICB | 8/1/11 16:28 | 98 | 100 | 99 | 100 | 102 |
| ICSA | 8/1/11 16:29 | 98 | 99 | 97 | 100 | 95 |
| ICSAB | 8/1/11 16:31 | 100 | 101 | 97 | 97 | 95 |
| LLCCV | 8/1/11 16:32 | 109 | 106 | 104 | 100 | 101 |
| CCV | 8/1/11 16:34 | 107 | 106 | 100 | 100 | 99 |
| CCB | 8/1/11 16:35 | 107 | 105 | 102 | 100 | 101 |
| PBW | 8/1/11 16:53 | 107 | 104 | 102 | 99 | 101 |
| LCSW | 8/1/11 16:54 | 104 | 103 | 100 | 99 | 100 |
| LCSWD | 8/1/11 16:56 | 103 | 103 | 100 | 99 | 101 |
| 7DUP | 8/1/11 17:03 | 104 | 100 | 95 | 94 | 93 |
| 7DUPL | 8/1/11 17:04 | 114 | 106 | 100 | 99 | 101 |
| 7DUPA | 8/1/11 17:06 | 99 | 94 | 91 | 89 | 88 |
| CCV | 8/1/11 17:07 | 113 | 106 | 100 | 100 | 102 |
| CCB | 8/1/11 17:08 | 111 | 103 | 100 | 100 | 102 |
| 7W13 | 8/1/11 17:10 | 99 | 96 | 92 | 92 | 91 |
| LLCCV | 8/1/11 17:23 | 108 | 109 | 101 | 102 | 103 |
| CCV | 8/1/11 17:24 | 114 | 106 | 100 | 99 | 101 |
| CCB | 8/1/11 17:26 | 115 | 104 | 99 | 100 | 101 |

# 3. Raw Data

For each reported value, the laboratory shall include in the data package all raw data used to obtain that value. This applies to all required QA/QC measurements, instrument standardization, as well as all sample analysis results. This does not apply to the quarterly verification of method and instrument parameters submitted as a part of each data package.

The order of the raw data in the data package shall be: ICP-AES, ICP-MS, mercury, and cyanide (if a target analyte).

Raw data shall be labeled with Client Identification numbers and appropriate codes in order to identify:

- calibration standards, including source and preparation date
- initial and continuing calibration blanks and preparation blanks
- initial and continuing calibration verification standards, interference check samples, serial dilution samples, LRS check standard, Laboratory Control Sample, and post digestion spike
- diluted and undiluted sample and all weights, dilutions, and volumes used to obtain the reported values
- duplicates
- spikes (indicating standard solutions used, final spike concentrations, and volumes involved).
- instrument used, any instrument adjustments, data corrections or other apparent anomalies on the measurement record, including all data voided or data not used and a brief written explanation
- time and date of each analysis (instrument run logs can be submitted if they contain this information)

**Daily Instrument Profile**

Detector Cross Cal: 061310
Analog Voltage: -1600
Pulse Voltage: 1000
Nebulizer Pressure: 0.97

**Maintenance:** NONE

Printed: 8/1/2011 8:05:58 PM

**Method(s)** (circle one): **ILM05.4** **SW-846** **6020** **Other** 6020A

**Operator(s):** JCF **Date/Time** 080111/1656 to 080111/1950

**Tune Date/Time** 080111/1523

| | |
|---|---|
| ↑ | Specified element(s) fail(s) high |
| ↓ | Specified element(s) fail(s) low |
| RR | Re-run sample(s) neat |
| RR #X | Re-run at a #-fold dilution |
| #X | Sample run at a #-fold dilution (aliquot of sample diluted with acidified water) |
| L | Matrix = leachate |
| W | Matrix = water |
| S | Matrix = solid |
| B | Matrix = biological tissue |

| SDG | Matrix | Comments |
|---|---|---|
| | | |

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 1 | TUN1 | Tune | CALIB STD | | 08/01/11 | 15:23:27 | | |
| 2 | CAL1 | S0 | CALIB STD | 1 | 08/01/11 | 16:15:01 | | |
| 3 | CAL2 | S 6020-MS1 | CALIB STD | 1 | 08/01/11 | 16:16:28 | | |
| 4 | CAL3 | S 6020-MS2 | CALIB STD | 1 | 08/01/11 | 16:17:53 | | |
| 5 | CAL4 | S 6020-MS3 | CALIB STD | 1 | 08/01/11 | 16:19:19 | | |
| 6 | CAL5 | S 6020-MS4 | CALIB STD | 1 | 08/01/11 | 16:20:44 | | |
| 7 | CAL6 | S 6020-MS5 | CALIB STD | 1 | 08/01/11 | 16:22:10 | | |
| 8 | CRL1 | LLICV | ICV | 1 | 08/01/11 | 16:25:27 | | |
| 9 | ICV1 | ICV | ICV | 1 | 08/01/11 | 16:26:55 | | |
| 10 | ICB1 | ICB | ICB | 1 | 08/01/11 | 16:28:21 | | |
| 11 | IFA1 | ICSA | ICS | 1 | 08/01/11 | 16:29:48 | | |
| 12 | IFB1 | ICSAB | ICS | 1 | 08/01/11 | 16:31:13 | | |
| 13 | CRL2 | LLCCV | CCV | 1 | 08/01/11 | 16:32:40 | | |
| 14 | CCV1 | CCV | CCV | 1 | 08/01/11 | 16:34:07 | | |
| 15 | CCB1 | CCB | CCB | 1 | 08/01/11 | 16:35:32 | | |
| 16 | 1072905-BLK1 | 1072905-BLK1 | SAMPLE | 1 | 08/01/11 | 16:53:11 | | |
| 17 | 1072905-BS1 | 1072905-BS1 | SAMPLE | 1 | 08/01/11 | 16:54:37 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 18 | 1072905-BSD1 | 1072905-BSD1 | SAMPLE | 1 | 08/01/11 | 16:56:03 | | |
| 19 | 1107162-01 | 1107162-01 | SAMPLE | 1 | 08/01/11 | 16:57:28 | | |
| 20 | SRD1 | 7DUPL | CALIB STD | 5 | 08/01/11 | 16:58:54 | | |
| 21 | 1072905-PS1 | 1072905-PS1 | SAMPLE | 1 | 08/01/11 | 17:00:20 | | |
| 22 | 1107162-02 | 1107162-02 | SAMPLE | 1 | 08/01/11 | 17:01:45 | | |
| 23 | 1107163-01 | 1107163-01 | SAMPLE | 1 | 08/01/11 | 17:03:11 | | |
| 24 | SRD2 | 7DUPL | CALIB STD | 5 | 08/01/11 | 17:04:36 | | |
| 25 | 1072905-PS2 | 1072905-PS2 | SAMPLE | 1 | 08/01/11 | 17:06:02 | | |
| 26 | CCV2 | CCV | CCV | 1 | 08/01/11 | 17:07:29 | | |
| 27 | CCB2 | CCB | CCB | 1 | 08/01/11 | 17:08:55 | | |
| 28 | 1107163-02 | 1107163-02 | SAMPLE | 1 | 08/01/11 | 17:10:23 | | |
| 29 | 1107164-01 | 1107164-01 | SAMPLE | 1 | 08/01/11 | 17:11:48 | | |
| 30 | SRD3 | 5WC21L | CALIB STD | 5 | 08/01/11 | 17:13:14 | | |
| 31 | 1072905-PS3 | 1072905-PS3 | SAMPLE | 1 | 08/01/11 | 17:14:40 | | |
| 32 | 1107164-02 | 1107164-02 | SAMPLE | 1 | 08/01/11 | 17:16:05 | | |
| 33 | 1107165-01 | 1107165-01 | SAMPLE | 1 | 08/01/11 | 17:17:31 | | |
| 34 | SRD4 | 5WC21L | CALIB STD | 5 | 08/01/11 | 17:18:56 | | |
| 35 | 1072905-PS4 | 1072905-PS4 | SAMPLE | 1 | 08/01/11 | 17:20:22 | | |
| 36 | 1107165-02 | 1107165-02 | SAMPLE | 1 | 08/01/11 | 17:21:48 | | |
| 37 | CRL3 | LLCCV | CCV | 1 | 08/01/11 | 17:23:15 | | |
| 38 | CCV3 | CCV | CCV | 1 | 08/01/11 | 17:24:42 | | |
| 39 | CCB3 | CCB | CCB | 1 | 08/01/11 | 17:26:07 | | |
| 40 | 1071512-BLK1 | 1071512-BLK1 | SAMPLE | 1 | 08/01/11 | 17:34:50 | | |
| 41 | 1071512-BS1 | 1071512-BS1 | SAMPLE | 1 | 08/01/11 | 17:36:16 | | |
| 42 | 1107053-01 | 1107053-01 | SAMPLE | 1 | 08/01/11 | 17:37:41 | | |
| 43 | 1071512-DUP1 | 1071512-DUP1 | SAMPLE | 1 | 08/01/11 | 17:39:07 | | |
| 44 | 1071512-MS1 | 1071512-MS1 | SAMPLE | 1 | 08/01/11 | 17:40:33 | | |
| 45 | 1071512-MSD1 | 1071512-MSD1 | SAMPLE | 1 | 08/01/11 | 17:41:58 | | |
| 46 | SRD5 | 80SB04-00L | CALIB STD | 5 | 08/01/11 | 17:43:24 | | |
| 47 | 1071512-PS1 | 1071512-PS1 | SAMPLE | 1 | 08/01/11 | 17:44:50 | | |
| 48 | 1107053-02 | 1107053-02 | SAMPLE | 1 | 08/01/11 | 17:46:15 | | |
| 49 | 1107053-03 | 1107053-03 | SAMPLE | 1 | 08/01/11 | 17:47:41 | | |

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Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 50 | CCV4 | CCV | CCV | 1 | 08/01/11 | 17:49:08 | | |
| 51 | CCB4 | CCB | CCB | 1 | 08/01/11 | 17:50:34 | | |
| 52 | 1107053-04 | 1107053-04 | SAMPLE | 1 | 08/01/11 | 17:52:03 | | |
| 53 | 1107053-05 | 1107053-05 | SAMPLE | 1 | 08/01/11 | 17:53:29 | | |
| 54 | 1107053-06 | 1107053-06 | SAMPLE | 1 | 08/01/11 | 17:54:56 | | |
| 55 | 1107053-07 | 1107053-07 | SAMPLE | 1 | 08/01/11 | 17:56:22 | | |
| 56 | 1107053-08 | 1107053-08 | SAMPLE | 1 | 08/01/11 | 17:57:48 | | |
| 57 | 1107053-09 | 1107053-09 | SAMPLE | 1 | 08/01/11 | 17:59:14 | | |
| 58 | 1107053-10 | 1107053-10 | SAMPLE | 1 | 08/01/11 | 18:00:39 | | |
| 59 | 1107053-11 | 1107053-11 | SAMPLE | 1 | 08/01/11 | 18:02:05 | | |
| 60 | 1107053-12 | 1107053-12 | SAMPLE | 1 | 08/01/11 | 18:03:31 | | |
| 61 | CRL4 | LLCCV | CCV | 1 | 08/01/11 | 18:04:58 | | |
| 62 | CCV5 | CCV | CCV | 1 | 08/01/11 | 18:06:25 | | |
| 63 | CCB5 | CCB | CCB | 1 | 08/01/11 | 18:07:48 | | |
| 64 | 1107053-13 | 1107053-13 | SAMPLE | 1 | 08/01/11 | 18:14:51 | | |
| 65 | 1107053-14 | 1107053-14 | SAMPLE | 1 | 08/01/11 | 18:16:15 | | |
| 66 | 1107053-15 | 1107053-15 | SAMPLE | 1 | 08/01/11 | 18:17:41 | | |
| 67 | 1107053-16 | 1107053-16 | SAMPLE | 1 | 08/01/11 | 18:19:06 | | |
| 68 | 1107053-17 | 1107053-17 | SAMPLE | 1 | 08/01/11 | 18:20:31 | | |
| 69 | 1107053-18 | 1107053-18 | SAMPLE | 1 | 08/01/11 | 18:21:56 | | |
| 70 | 1107053-19 | 1107053-19 | SAMPLE | 1 | 08/01/11 | 18:23:22 | | |
| 71 | 1107053-20 | 1107053-20 | SAMPLE | 1 | 08/01/11 | 18:24:51 | | |
| 72 | CRL5 | LLCCV | CCV | 1 | 08/01/11 | 18:26:21 | | |
| 73 | CCV6 | CCV | CCV | 1 | 08/01/11 | 18:27:52 | | |
| 74 | CCB6 | CCB | CCB | 1 | 08/01/11 | 18:29:21 | | |
| 75 | 1072007-BLK1 | 1072007-BLK1 | SAMPLE | 1 | 08/01/11 | 18:50:18 | | |
| 76 | 1072007-BS1 | 1072007-BS1 | SAMPLE | 1 | 08/01/11 | 18:51:44 | | |
| 77 | 1107072-02 | 1107072-02 | SAMPLE | 1 | 08/01/11 | 18:53:10 | | |
| 78 | 1072007-DUP1 | 1072007-DUP1 | SAMPLE | 1 | 08/01/11 | 18:54:36 | | |
| 79 | 1072007-MS1 | 1072007-MS1 | SAMPLE | 1 | 08/01/11 | 18:56:01 | | |
| 80 | 1072007-MSD1 | 1072007-MSD1 | SAMPLE | 1 | 08/01/11 | 18:57:27 | | |
| 81 | SRD6 | 80SB07-01L | CALIB STD | 5 | 08/01/11 | 18:58:53 | | |

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Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 82 | 1072007-PS1 | 1072007-PS1 | SAMPLE | 1 | 08/01/11 | 19:00:19 | | |
| 83 | 1107072-01 | 1107072-01 | SAMPLE | 1 | 08/01/11 | 19:01:44 | | |
| 84 | 1107072-03 | 1107072-03 | SAMPLE | 1 | 08/01/11 | 19:03:10 | | |
| 85 | CCV7 | CCV | CCV | 1 | 08/01/11 | 19:04:38 | | |
| 86 | CCB7 | CCB | CCB | 1 | 08/01/11 | 19:06:03 | | |
| 87 | 1107072-04 | 1107072-04 | SAMPLE | 1 | 08/01/11 | 19:07:31 | | |
| 88 | 1107072-05 | 1107072-05 | SAMPLE | 1 | 08/01/11 | 19:08:57 | | |
| 89 | 1107072-06 | 1107072-06 | SAMPLE | 1 | 08/01/11 | 19:10:23 | | |
| 90 | 1107072-07 | 1107072-07 | SAMPLE | 1 | 08/01/11 | 19:11:49 | | |
| 91 | 1107072-08 | 1107072-08 | SAMPLE | 1 | 08/01/11 | 19:13:14 | | |
| 92 | 1107072-09 | 1107072-09 | SAMPLE | 1 | 08/01/11 | 19:14:40 | | |
| 93 | 1107072-10 | 1107072-10 | SAMPLE | 1 | 08/01/11 | 19:16:06 | | |
| 94 | 1107072-11 | 1107072-11 | SAMPLE | 1 | 08/01/11 | 19:17:32 | | |
| 95 | 1107072-12 | 1107072-12 | SAMPLE | 1 | 08/01/11 | 19:18:58 | | |
| 96 | CRL6 | LLCCV | CCV | 1 | 08/01/11 | 19:20:25 | | |
| 97 | CCV8 | CCV | CCV | 1 | 08/01/11 | 19:21:52 | | |
| 98 | CCB8 | CCB | CCB | 1 | 08/01/11 | 19:23:18 | | |
| 99 | 1107072-13 | 1107072-13 | SAMPLE | 1 | 08/01/11 | 19:27:25 | | |
| 100 | 1072029-BLK1 | 1072029-BLK1 | SAMPLE | 1 | 08/01/11 | 19:28:52 | | |
| 101 | 1072029-BS1 | 1072029-BS1 | SAMPLE | 1 | 08/01/11 | 19:30:18 | | |
| 102 | 1107060-04 | 1107060-04 | SAMPLE | 1 | 08/01/11 | 19:31:44 | | |
| 103 | 1072029-DUP1 | 1072029-DUP1 | SAMPLE | 1 | 08/01/11 | 19:33:10 | | |
| 104 | 1072029-MS1 | 1072029-MS1 | SAMPLE | 1 | 08/01/11 | 19:34:36 | | |
| 105 | 1072029-MSD1 | 1072029-MSD1 | SAMPLE | 1 | 08/01/11 | 19:36:03 | | |
| 106 | SRD7 | 80SD02L | CALIB STD | 5 | 08/01/11 | 19:37:29 | | |
| 107 | 1072029-PS1 | 1072029-PS1 | SAMPLE | 1 | 08/01/11 | 19:38:55 | | |
| 108 | 1107060-01 | 1107060-01 | SAMPLE | 1 | 08/01/11 | 19:40:21 | | |
| 109 | CCV9 | CCV | CCV | 1 | 08/01/11 | 19:41:49 | | |
| 110 | CCB9 | CCB | CCB | 1 | 08/01/11 | 19:43:15 | | |
| 111 | 1107060-02 | 1107060-02 | SAMPLE | 1 | 08/01/11 | 19:44:43 | | |
| 112 | 1107060-03 | 1107060-03 | SAMPLE | 1 | 08/01/11 | 19:46:09 | | |
| 113 | CRL7 | LLCCV | CCV | 1 | 08/01/11 | 19:47:37 | | |

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Reviewed By: Timothy Do Date: 8/1/11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF080111**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 114 | CCVA | CCV | CCV | 1 | 08/01/11 | 19:49:04 | | |
| 115 | CCBA | CCB | CCB | 1 | 08/01/11 | 19:50:29 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: Timothy Do Date: 8/1/11

## Standards/QC Preparation for ICP-MS (PEMS) 1 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

STANDARDS and REAGENTS TRACEABILITY Seq. File Name: PEMS1540801l1

| STANDARD / REAGENT | Reference # * | Manufacturer | Lot # | Expiration Date |
|---|---|---|---|---|
| Nitric Acid (HNO3) | HNO3-052111-JRR | JT Baker | J45042 | 11/11 |
| Hydrochloric Acid (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| ICP-MS-TS-3 ( Pre Tune Soln) | 0I15015 | High Purity | 1006907 | 09/13/11 |
| Q-6042-M (CAL Standard) | 0B18009 | NSI | 020310 | 02/28/12 |
| ICV-1 (0307) multi-element solution | 0C27004 | EPA | 0307 | 03/27/13 |
| SM-770-032 (CP-MS-CRQL-Rev multi-element solution) | 0J19006 | High Purity | 1028534 | 10/13/11 |
| ICSA (0803) multi-element solution | 0E20022 | EPA | 0803 | 05/20/15 |
| ICSAB (0803) multi-element solution | 0E20021 | EPA | 0803 | 05/20/15 |
| LITHIUM$^{6}$ ($Li^{6}$) 1000 mg/L single element standard | 0B16007 | High Purity | 0912001 | 07/20/11 |
| SCANDIUM (Sc) 1,000 mg/L single element standard | 0F14006 | High Purity | 0922308 | 12/09/11 |
| INDIUM (In) 1,000 mg/L single element standard | 0F14004 | High Purity | 1008216 | 12/09/11 |
| TERBIUM (Tb) 1,000 mg/L single element standard | 0F14005 | High Purity | 1011601 | 12/09/11 |
| BISMUTH (Bi) 1,000 mg/L single element standard | 0B16008 | High Purity | 1000418 | 07/20/11 |
| Water Spike Sample D ICP-MS Matrix Spike multi-element solution | 0I16003 | High Purity | 1034815 | 12/14/11 |

*Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

## Multi-Element Stock Standard Concentrations:

| Stock Standard | Analyte Concentrations (µg/mL) |
|---|---|
| Pre Tune Solution | Be: 10 Mg: 10 Co: 10 In: 10 Pb: 10 |
| CAL standard | Al: 1000 Sb: 100 As: 100 Ba: 100 Be: 100 B: 100 Cd: 100 Ca: 1000 Cr: 100 Co: 100 Cu: 100 Fe: 1000 Pb: 100 Mg: 1000 Mn: 100 Mo: 100 Ni: 100 K: 1000 Se: 100 Si: 100 Ag: 100 Na: 1000 Tl: 100 Ti: 100 V: 100 Zn: 100 Sn: 100 Sr: 100 |
| CP-MS-CRQL-Rev multi-element solution | Be: 1 V: 5 Cr: 2 Mn: 1 Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Ag: 1 Cd: 1 Sb: 2 Ba: 10 Tl: 1 Pb: 1 Al: 30 Sn: 1 Mo: 1 |

Entered By: JC Fell

Reviewed By: JJ Rc Date: 8-1-11

## Standards/QC Preparation for ICP-MS (PEMS) 2 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| Instrument Tune Solution– 06 23 11- JCF | Place in a 500-mLvolumetric flask:<br>0.5 mL of PRE-Tuning solution and 5 mL distilled nitric acid. Dilute to volume with deionized water | $Li^7$: 10 Be: 10 Mg: 10 Co: 10 In: 10<br>Ce: 10 Pb: 10 U: 10 |
| Internal Standard– 05 26 11 – JCF | Place in a 100-mLvolumetric flask:<br>50 mL of deionized water , 1.0 mL of distilled nitric acid.<br>Pipet: 2.0 mL of $Lithium^6$, 1.0 mL of Scandium, 1.0 mL of Indium, 1.0 mL of Terbium, and 1.0 mL of Bismuth.<br>Dilute to volume with deionized water | $Li^6$: 20000 Sc: 10000 In: 10000 Tb: 10000 Bi: 10000 |
| S0/ICB/CCB– 08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1mL Internal Standard. Dilute to volume with deionized water. Prepare Daily. | $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| S 6020-MS1/LLICV/LLCCV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 1 Al: 30 Sc: 100 V: 5 Cr: 2 Mn: 1<br>Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Mo: 1 Ag: 1<br>Cd: 1 In: 100 Sn: 1 Sb: 2 Ba: 10 Tb: 100 Tl: 1<br>Pb: 1 Bi: 100 |
| S 6020-MS2 –08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>Pipet 1.0 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water. | $Li^6$: 200 Be: 2 Al: 60 Sc: 100 V: 10 Cr: 4 Mn: 2<br>Co: 2 Ni: 2 Cu: 4 Zn: 4 As: 2 Se: 10 Mo: 2 Ag: 2<br>Cd: 2 In: 100 Sn: 2 Sb: 4 Ba: 20 Tb: 100 Tl: 2<br>Pb: 2 Bi: 100 |
| S 6020-MS3–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.125 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 125 Al: 1250 Sc: 100 V: 125 Cr:<br>125 Mn: 125 Co: 125 Ni: 125 Cu: 125 Zn: 125<br>As: 125 Se: 125 Mo: 125 Ag: 125 Cd: 125 In:<br>100 Sn: 125 Sb: 125 Ba: 125 Tb: 100 Tl: 125<br>Pb: 125<br>Bi: 100 Al: 1250 Ca: 1250 Na: 1250 Mg: 1250<br>Fe: 1250 K: 1250 |
| S 6020-MS4–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.250 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 250 Al: 2500 Sc: 100 V: 250 Cr:<br>250 Mn: 250 Co: 250 Ni: 250 Cu: 250 Zn: 250<br>As: 250 Se: 250 Mo: 250 Ag: 250 Cd: 250 In:<br>100 Sn: 250 Sb: 250 Ba: 250 Tb: 100 Tl: 250<br>Pb: 250<br>Bi: 100 Al: 2500 Ca: 2500 Na: 2500 Mg: 2500<br>Fe: 2500 K: 2500 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: JCF

Entered By: JCF Date: 080111

Reviewed By: JCF Date: 8-1-11

032910:jad

# Standards/QC Preparation for ICP-MS (PEMS) 3 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| S 6020-MS5–08 01 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.50 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 500 Al: 5000 Sc: 100 V: 500 Cr: 500 Mn: 500 Co: 500 Ni: 500 Cu: 500 Zn: 500 As: 500 Se: 500 Mo: 500 Ag: 500 Cd: 500 In: 100 Sn: 500 Sb: 500 Ba: 500 Tb: 100 Tl: 500 Pb: 500 Bi: 100 Al: 5000 Ca: 5000 Na: 5000 Mg: 5000 Fe: 5000 K: 5000 |
| ICV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 4.0 ml of ICV (0307) multi-element solution, 2.2 mL of 10 µg/mL Molybdenum and 2.2 mL of 10 µg/mL Tin into flask.<br>Dilute to volume with deionized water. (Note: Tin must be from a source different than that used for the calibration standards) | Al: 504 Sb: 199 As: 200 Ba: 99 Be: 99 Ca: 2005 Cr: 98 Co: 100 Cu: 98 Fe: 1016 Pb: 200 Mg: 1215 Mn: 100 Ni: 101 K: 2004 Se: 206 Ag: 100 Na: 2019 Tl: 206 V: 100 Zn: 205 Cd: 99 $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 Mo: 110 Sn: 110 |
| ICSA– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) into flask.<br>Dilute to volume with deionized water. | Al: 100000 Sb: 1.5 As 0.1 Ba: 1.2 Be: 0 Cd: 0.7 Ca: 100000 C: 200000 Cl: 1000000 Cr: 21 Co: 1 Cu: 8 Fe: 10000 Pb: 4 Mg: 100000 Mn: 7 Mo: 2000 Ni: 6 P: 100000 K: 10000 Se: 0.3 Ag: 0 Na: 100000 S: 100000 Tl: 0 Ti: 2000 V: 0.5 Zn: 11, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| ICSAB– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) and 20.0 mL of ICS Part B (0803) and 0.400 mL of 10 µg/mL Tin into flask. Dilute to volume with deionized water. | Al: 100000 Sb: 22 As 19 Ba: 22 Be: 19 Cd: 20 Ca: 100000 C: 200000 Cl: 1000000 Cr: 40 Co: 20 Cu: 25 Fe: 10000 Pb: 25 Mg: 100000 Mn: 27 Mo: 2000 Ni: 24 P: 100000 K: 10000 Se: 19 Ag: 18 Na: 100000 S: 100000 Tl: 21 Ti: 2000 V: 19 Zn: 29, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| CCV– 08 01 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 0.600 mL of CAL Standard.<br>Dilute to volume with deionized water. | $Li^6$: 200 Be: 300 Sc: 100 V: 300 Cr: 300 Mn: 300 Co: 300 Ni: 300 Cu: 300 Zn: 300 As: 300 Se: 300 Mo: 300 Ag: 300 Cd: 300 In: 100 Sn: 300 Sb: 300 Ba: 300 Tb: 100 Tl: 300 Pb: 300 Bi: 100 Al: 3000 Na: 3000 Ca: 3000 K:3000 Mg: 3000 Fe: 3000 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: _____

Entered By: _____ Date: 080111

Reviewed By: _____ Date: 8-1-11

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

# QUANTITATIVE ANALYSIS REPORT

Calibration File: PEMSJCF 080111
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS5.1440
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Sample Date/Time: Monday, August 01, 2011 16:22:10

## Calibration Report

| Analyte | Mass | Curve Type | Slope | Intercept | Corr Coeff |
|---|---|---|---|---|---|
| Li | 6 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Be | 9 | Linear Thru Zero | 0.0005078 | 0.0000000 | 0.9999768 |
| Sc | 45 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| V | 51 | Linear Thru Zero | 0.0031773 | 0.0000000 | 0.9999808 |
| Cr | 52 | Linear Thru Zero | 0.0026032 | 0.0000000 | 0.9999686 |
| Mn | 55 | Linear Thru Zero | 0.0040009 | 0.0000000 | 0.9999068 |
| Co | 59 | Linear Thru Zero | 0.0031583 | 0.0000000 | 0.9999599 |
| Ni | 60 | Linear Thru Zero | 0.0008093 | 0.0000000 | 0.9998784 |
| Cu | 63 | Linear Thru Zero | 0.0017967 | 0.0000000 | 0.9999463 |
| Cu | 65 | Linear Thru Zero | 0.0008658 | 0.0000000 | 0.9999766 |
| Zn | 66 | Linear Thru Zero | 0.0004987 | 0.0000000 | 0.9999706 |
| As | 75 | Linear Thru Zero | 0.0007008 | 0.0000000 | 0.9999835 |
| Se | 82 | Linear Thru Zero | 0.0000551 | 0.0000000 | 0.9999661 |
| Ag | 107 | Linear Thru Zero | 0.0013112 | 0.0000000 | 0.9999938 |
| Ag | 109 | Linear Thru Zero | 0.0012742 | 0.0000000 | 0.9999786 |
| Cd | 111 | Linear Thru Zero | 0.0003304 | 0.0000000 | 0.9999603 |
| In | 113 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| In | 115 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Sb | 121 | Linear Thru Zero | 0.0009770 | 0.0000000 | 0.9999849 |
| Ba | 135 | Linear Thru Zero | 0.0001933 | 0.0000000 | 0.9999800 |
| Ba | 137 | Linear Thru Zero | 0.0003364 | 0.0000000 | 0.9999871 |
| Tb | 159 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |
| Tl | 205 | Linear Thru Zero | 0.0033204 | 0.0000000 | 0.9999781 |
| Pb | 206 | Linear Thru Zero | 0.0010927 | 0.0000000 | 0.9999699 |
| Pb | 207 | Linear Thru Zero | 0.0020134 | 0.0000000 | 0.9999527 |
| Pb | 208 | Linear Thru Zero | 0.0031972 | 0.0000000 | 0.9999689 |
| Bi | 209 | Linear Thru Zero | 0.0000000 | 0.0000000 | 0.0000000 |

# 6020A TUNING REPORT SUMMARY

## Sample ID: TUNE

Sample Date/Time: Monday, August 01, 2011 15:23:27
Sample Description: 100 PPB TUNING SOLN @ 10% PEAK HEIGHT
Number of Replicates: 5
Sample File: C:\Elandata1\Sample\021311.sam
Method File: C:\Elandata1\Method\6020\6020ATUNE.mth
Dataset File: C:\Elandata\Dataset\Default\TUNE.3433

## Tuning File

| Analyte | Exact Mass | Measured Mass | Measured Peak Width |
|---|---|---|---|
| Be | 9.012 | 8.975 | 0.717 |
| Mg | 23.985 | 24.075 | 0.677 |
| Mg | 24.986 | 24.975 | 0.680 |
| Mg | 25.983 | 26.025 | 0.709 |
| Co | 58.933 | 58.925 | 0.706 |
| In | 112.904 | 112.975 | 0.670 |
| In | 114.904 | 114.975 | 0.691 |
| Pb | 205.975 | 206.025 | 0.703 |
| Pb | 206.976 | 206.975 | 0.701 |
| Pb | 207.977 | 207.975 | 0.706 |

*Concentration Results*

| Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|---|
| Be | 9 | 7484.760 | 1.264 |
| Mg | 24 | 68188.259 | 1.594 |
| Mg | 25 | 10528.060 | 1.272 |
| Mg | 26 | 12959.393 | 1.432 |
| Co | 59 | 172579.951 | 1.376 |
| In | 113 | 15498.345 | 1.594 |
| In | 115 | 367504.540 | 1.374 |
| Pb | 206 | 106868.890 | 1.869 |
| Pb | 207 | 89477.547 | 1.766 |
| Pb | 208 | 218828.099 | 2.234 |

## RAW DATA

Replicate 1

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7587.277 |
| Mg | 24 | 69934.288 |
| Mg | 25 | 10760.787 |
| Mg | 26 | 13251.174 |
| Co | 59 | 176483.906 |
| In | 113 | 15909.448 |
| In | 115 | 375958.313 |
| Pb | 206 | 110368.922 |

| | | |
|---|---|---|
| Pb | 207 | 92223.911 |
| Pb | 208 | 227507.679 |

Replicate 2

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7349.500 |
| Mg | 24 | 67006.142 |
| Mg | 25 | 10432.239 |
| Mg | 26 | 12778.960 |
| Co | 59 | 170641.408 |
| In | 113 | 15260.237 |
| In | 115 | 364485.734 |
| Pb | 206 | 105489.078 |
| Pb | 207 | 88450.250 |
| Pb | 208 | 216123.501 |

Replicate 3

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7442.769 |
| Mg | 24 | 67665.157 |
| Mg | 25 | 10518.929 |
| Mg | 26 | 12889.502 |
| Co | 59 | 170721.151 |
| In | 113 | 15367.792 |
| In | 115 | 363043.934 |
| Pb | 206 | 105740.917 |
| Pb | 207 | 88395.570 |
| Pb | 208 | 216059.541 |

Replicate 4

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7557.054 |
| Mg | 24 | 68112.579 |
| Mg | 25 | 10472.881 |
| Mg | 26 | 13023.075 |
| Co | 59 | 172745.677 |
| In | 113 | 15493.521 |
| In | 115 | 366287.591 |
| Pb | 206 | 106242.794 |
| Pb | 207 | 89248.092 |
| Pb | 208 | 217514.987 |

Replicate 5

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 7487.202 |
| Mg | 24 | 68223.129 |
| Mg | 25 | 10455.463 |
| Mg | 26 | 12854.256 |
| Co | 59 | 172307.615 |
| In | 113 | 15460.726 |
| In | 115 | 367747.127 |
| Pb | 206 | 106502.738 |
| Pb | 207 | 89069.914 |
| Pb | 208 | 216934.786 |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S0

Sample Date/Time: Monday, August 01, 2011 16:15:01
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S0.1435

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196257.027 | 2.133 | | | | ppb |
| ⌊ | Be | 9 | 4.000 | 50.000 | | | | ppb |
| ⌈> | Sc | 45 | 705866.466 | 0.132 | | | | ppb |
| \| | V | 51 | 894.616 | 14.304 | | | | ppb |
| \| | Cr | 52 | 1814.831 | 2.456 | | | | ppb |
| \| | Mn | 55 | 271.670 | 13.058 | | | | ppb |
| \| | Co | 59 | 29.333 | 3.936 | | | | ppb |
| \| | Ni | 60 | 66.667 | 30.414 | | | | ppb |
| \| | Cu | 63 | 117.778 | 11.438 | | | | ppb |
| \| | Cu | 65 | 104.445 | 18.148 | | | | ppb |
| \| | Zn | 66 | 111.112 | 11.358 | | | | ppb |
| \| | As | 75 | 11.567 | 67.529 | | | | ppb |
| ⌊ | Se | 82 | 41.333 | 17.742 | | | | ppb |
| ⌈ | Ag | 107 | 8.889 | 43.301 | | | | ppb |
| \| | Ag | 109 | 16.667 | 34.641 | | | | ppb |
| \| | Cd | 111 | 4.213 | 246.361 | | | | ppb |
| \| | In | 113 | 61325.854 | 2.055 | | | | ppb |
| ⌊> | In | 115 | 1396658.620 | 0.917 | | | | ppb |
| ⌈ | Sb | 121 | 56.667 | 10.189 | | | | ppb |
| \| | Ba | 135 | 10.000 | 52.915 | | | | ppb |
| \| | Ba | 137 | 18.667 | 22.304 | | | | ppb |
| ⌊> | Tb | 159 | 1860316.330 | 1.365 | | | | ppb |
| ⌈ | Tl | 205 | 25.000 | 72.111 | | | | ppb |
| \| | Pb | 206 | 30.000 | 66.667 | | | | ppb |
| \| | Pb | 207 | 48.333 | 36.330 | | | | ppb |
| \| | Pb | 208 | 73.334 | 25.813 | | | | ppb |
| ⌊> | Bi | 209 | 1170287.070 | 1.208 | | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199524.847 | | ppb |
| ⌊ | Be | 9 | 4.000 | | ppb |
| ⌈> | Sc | 45 | 705401.988 | | ppb |
| \| | V | 51 | 790.317 | | ppb |
| \| | Cr | 52 | 1866.174 | | ppb |
| \| | Mn | 55 | 265.004 | | ppb |
| \| | Co | 59 | 28.000 | | ppb |
| \| | Ni | 60 | 56.667 | | ppb |
| \| | Cu | 63 | 130.001 | | ppb |
| \| | Cu | 65 | 110.001 | | ppb |
| \| | Zn | 66 | 96.667 | | ppb |
| \| | As | 75 | 6.173 | | ppb |
| ⌊ | Se | 82 | 41.333 | | ppb |
| ⌈ | Ag | 107 | 6.667 | | ppb |
| \| | Ag | 109 | 13.333 | | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -3.090 | | ppb |
| | In | 113 | 62766.365 | | ppb |
| > | In | 115 | 1411138.136 | | ppb |
| | Sb | 121 | 60.000 | | ppb |
| | Ba | 135 | 14.000 | | ppb |
| | Ba | 137 | 22.000 | | ppb |
| > | Tb | 159 | 1889633.562 | | ppb |
| | Tl | 205 | 10.000 | | ppb |
| | Pb | 206 | 30.000 | | ppb |
| | Pb | 207 | 50.000 | | ppb |
| | Pb | 208 | 95.000 | | ppb |
| > | Bi | 209 | 1169739.234 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197707.277 | | ppb |
| | Be | 9 | 6.000 | | ppb |
| > | Sc | 45 | 706940.112 | | ppb |
| | V | 51 | 856.119 | | ppb |
| | Cr | 52 | 1786.160 | | ppb |
| | Mn | 55 | 310.005 | | ppb |
| | Co | 59 | 30.000 | | ppb |
| | Ni | 60 | 53.333 | | ppb |
| | Cu | 63 | 103.334 | | ppb |
| | Cu | 65 | 120.001 | | ppb |
| | Zn | 66 | 116.667 | | ppb |
| | As | 75 | 8.003 | | ppb |
| | Se | 82 | 34.000 | | ppb |
| | Ag | 107 | 6.667 | | ppb |
| | Ag | 109 | 23.333 | | ppb |
| | Cd | 111 | -0.365 | | ppb |
| | In | 113 | 60784.176 | | ppb |
| > | In | 115 | 1386805.352 | | ppb |
| | Sb | 121 | 50.000 | | ppb |
| | Ba | 135 | 4.000 | | ppb |
| | Ba | 137 | 20.000 | | ppb |
| > | Tb | 159 | 1846266.186 | | ppb |
| | Tl | 205 | 20.000 | | ppb |
| | Pb | 206 | 10.000 | | ppb |
| | Pb | 207 | 30.000 | | ppb |
| | Pb | 208 | 65.000 | | ppb |
| > | Bi | 209 | 1184695.858 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191538.958 | | ppb |
| | Be | 9 | 2.000 | | ppb |
| > | Sc | 45 | 705257.298 | | ppb |
| | V | 51 | 1037.412 | | ppb |
| | Cr | 52 | 1792.161 | | ppb |
| | Mn | 55 | 240.003 | | ppb |
| | Co | 59 | 30.000 | | ppb |
| | Ni | 60 | 90.000 | | ppb |
| | Cu | 63 | 120.001 | | ppb |
| | Cu | 65 | 83.334 | | ppb |
| | Zn | 66 | 120.001 | | ppb |
| | As | 75 | 20.524 | | ppb |
| | Se | 82 | 48.667 | | ppb |
| | Ag | 107 | 13.333 | | ppb |
| | Ag | 109 | 13.333 | | ppb |
| | Cd | 111 | 16.095 | | ppb |
| | In | 113 | 60427.021 | | ppb |
| > | In | 115 | 1392032.372 | | ppb |
| | Sb | 121 | 60.000 | | ppb |

| | | | | |
|---|---|---|---|---|
| \| | Ba | 135 | 12.000 | ppb |
| \| | Ba | 137 | 14.000 | ppb |
| _> | Tb | 159 | 1845049.243 | ppb |
| ⌈ | Tl | 205 | 45.000 | ppb |
| \| | Pb | 206 | 50.000 | ppb |
| \| | Pb | 207 | 65.000 | ppb |
| \| | Pb | 208 | 60.000 | ppb |
| _> | Bi | 209 | 1156426.119 | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS1

Sample Date/Time: Monday, August 01, 2011 16:16:28
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS1.1436

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198525.012 | 1.853 | 198525.012 | | | ppb |
| ⌊ | Be | 9 | 102.667 | 18.719 | 0.000 | 1.00000 | 19.71 | ppb |
| ⌈> | Sc | 45 | 713414.351 | 1.362 | 713414.351 | | | ppb |
| \| | V | 51 | 11918.411 | 4.277 | 0.015 | 5.00000 | 4.18 | ppb |
| \| | Cr | 52 | 5570.218 | 1.224 | 0.005 | 2.00000 | 3.36 | ppb |
| \| | Mn | 55 | 2947.101 | 1.443 | 0.004 | 1.00000 | 1.50 | ppb |
| \| | Co | 59 | 2416.959 | 2.851 | 0.003 | 1.00000 | 3.19 | ppb |
| \| | Ni | 60 | 568.905 | 2.368 | 0.001 | 1.00000 | 2.21 | ppb |
| \| | Cu | 63 | 2775.941 | 4.717 | 0.004 | 2.00000 | 5.78 | ppb |
| \| | Cu | 65 | 1333.422 | 2.704 | 0.002 | 2.00000 | 4.36 | ppb |
| \| | Zn | 66 | 896.707 | 2.904 | 0.001 | 2.00000 | 4.63 | ppb |
| \| | As | 75 | 533.492 | 9.180 | 0.001 | 1.00000 | 9.14 | ppb |
| ⌊ | Se | 82 | 238.003 | 3.030 | 0.000 | 5.00000 | 4.54 | ppb |
| ⌈ | Ag | 107 | 1913.516 | 1.597 | 0.001 | 1.00000 | 0.61 | ppb |
| \| | Ag | 109 | 1827.945 | 4.484 | 0.001 | 1.00000 | 4.47 | ppb |
| \| | Cd | 111 | 459.768 | 6.785 | 0.000 | 1.00000 | 6.19 | ppb |
| \| | In | 113 | 61516.992 | 1.310 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1396367.322 | 0.996 | 1396367.322 | | | ppb |
| ⌈ | Sb | 121 | 3767.377 | 4.476 | 0.002 | 2.00000 | 5.15 | ppb |
| \| | Ba | 135 | 3599.314 | 1.644 | 0.002 | 10.00000 | 2.03 | ppb |
| \| | Ba | 137 | 6245.950 | 1.083 | 0.003 | 10.00000 | 1.08 | ppb |
| ⌊> | Tb | 159 | 1875080.570 | 0.585 | 1875080.570 | | | ppb |
| ⌈ | Tl | 205 | 3884.088 | 2.898 | 0.003 | 1.00000 | 2.89 | ppb |
| \| | Pb | 206 | 1261.746 | 4.009 | 0.001 | 1.00000 | 4.28 | ppb |
| \| | Pb | 207 | 2358.473 | 5.850 | 0.002 | 1.00000 | 6.15 | ppb |
| \| | Pb | 208 | 3795.425 | 2.440 | 0.003 | 1.00000 | 2.68 | ppb |
| ⌊> | Bi | 209 | 1193452.930 | 0.185 | 1193452.930 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 200726.539 | | ppb |
| ⌊ | Be | 9 | 82.000 | 0.780810 | ppb |
| ⌈> | Sc | 45 | 722752.624 | | ppb |
| \| | V | 51 | 11848.398 | 4.899011 | ppb |
| \| | Cr | 52 | 5575.554 | 1.963765 | ppb |
| \| | Mn | 55 | 2945.434 | 0.985078 | ppb |
| \| | Co | 59 | 2372.281 | 0.968325 | ppb |
| \| | Ni | 60 | 583.350 | 1.013771 | ppb |
| \| | Cu | 63 | 2637.014 | 1.869080 | ppb |
| \| | Cu | 65 | 1293.417 | 1.906876 | ppb |
| \| | Zn | 66 | 866.704 | 1.894230 | ppb |
| \| | As | 75 | 574.782 | 1.064964 | ppb |
| ⌊ | Se | 82 | 240.003 | 4.970628 | ppb |
| ⌈ | Ag | 107 | 1886.845 | 0.994260 | ppb |
| \| | Ag | 109 | 1880.177 | 1.037442 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 460.740 | 1.010774 | ppb |
| | In | 113 | 62439.327 | | ppb |
| > | In | 115 | 1384870.298 | | ppb |
| | Sb | 121 | 3630.659 | 1.916375 | ppb |
| | Ba | 135 | 3612.652 | 9.987509 | ppb |
| | Ba | 137 | 6209.928 | 9.893417 | ppb |
| > | Tb | 159 | 1884268.330 | | ppb |
| | Tl | 205 | 3795.720 | 0.978870 | ppb |
| | Pb | 206 | 1320.087 | 1.049266 | ppb |
| | Pb | 207 | 2515.159 | 1.069735 | ppb |
| | Pb | 208 | 3885.433 | 1.026035 | ppb |
| > | Bi | 209 | 1191311.986 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200569.434 | | ppb |
| | Be | 9 | 120.001 | 1.162593 | ppb |
| > | Sc | 45 | 714129.988 | | ppb |
| | V | 51 | 12459.568 | 5.240303 | ppb |
| | Cr | 52 | 5499.512 | 1.958673 | ppb |
| | Mn | 55 | 2990.447 | 1.015037 | ppb |
| | Co | 59 | 2496.312 | 1.032062 | ppb |
| | Ni | 60 | 556.682 | 0.974513 | ppb |
| | Cu | 63 | 2897.086 | 2.088232 | ppb |
| | Cu | 65 | 1343.424 | 2.013316 | ppb |
| | Zn | 66 | 913.375 | 2.039390 | ppb |
| | As | 75 | 479.386 | 0.895446 | ppb |
| | Se | 82 | 230.003 | 4.789005 | ppb |
| | Ag | 107 | 1906.848 | 0.999388 | ppb |
| | Ag | 109 | 1733.484 | 0.950560 | ppb |
| | Cd | 111 | 428.099 | 0.933382 | ppb |
| | In | 113 | 60950.182 | | ppb |
| > | In | 115 | 1392405.114 | | ppb |
| | Sb | 121 | 3955.782 | 2.115029 | ppb |
| | Ba | 135 | 3650.666 | 10.208763 | ppb |
| | Ba | 137 | 6203.924 | 9.997319 | ppb |
| > | Tb | 159 | 1862941.221 | | ppb |
| | Tl | 205 | 4010.804 | 1.032949 | ppb |
| | Pb | 206 | 1235.076 | 0.978393 | ppb |
| | Pb | 207 | 2305.134 | 0.976933 | ppb |
| | Pb | 208 | 3800.430 | 1.001415 | ppb |
| > | Bi | 209 | 1193333.001 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194279.062 | | ppb |
| | Be | 9 | 106.001 | 1.056597 | ppb |
| > | Sc | 45 | 703360.440 | | ppb |
| | V | 51 | 11447.266 | 4.860686 | ppb |
| | Cr | 52 | 5635.588 | 2.077562 | ppb |
| | Mn | 55 | 2905.422 | 0.999885 | ppb |
| | Co | 59 | 2382.284 | 0.999614 | ppb |
| | Ni | 60 | 566.683 | 1.011716 | ppb |
| | Cu | 63 | 2793.724 | 2.042688 | ppb |
| | Cu | 65 | 1363.426 | 2.079809 | ppb |
| | Zn | 66 | 910.041 | 2.066380 | ppb |
| | As | 75 | 546.307 | 1.039590 | ppb |
| | Se | 82 | 244.003 | 5.240367 | ppb |
| | Ag | 107 | 1946.856 | 1.006352 | ppb |
| | Ag | 109 | 1870.175 | 1.011997 | ppb |
| | Cd | 111 | 490.463 | 1.055844 | ppb |
| | In | 113 | 61161.466 | | ppb |
| > | In | 115 | 1411826.555 | | ppb |
| | Sb | 121 | 3715.690 | 1.968595 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 3534.625 | 9.803727 | ppb |
| \| | Ba | 137 | 6323.999 | 10.109264 | ppb |
| \|> | Tb | 159 | 1878032.159 | | ppb |
| ⌈ | Tl | 205 | 3845.739 | 0.988181 | ppb |
| \| | Pb | 206 | 1230.076 | 0.972341 | ppb |
| \| | Pb | 207 | 2255.128 | 0.953332 | ppb |
| \| | Pb | 208 | 3700.410 | 0.972550 | ppb |
| \|> | Bi | 209 | 1195713.803 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS2

Sample Date/Time: Monday, August 01, 2011 16:17:53
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS2.1437

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| > | Li | 6 | 195521.814 | 1.314 | 195521.814 | | | ppb |
| | Be | 9 | 192.669 | 5.903 | 0.001 | 1.98804 | 6.20 | ppb |
| > | Sc | 45 | 715013.703 | 0.550 | 715013.703 | | | ppb |
| | V | 51 | 23161.809 | 0.399 | 0.031 | 10.01614 | 0.39 | ppb |
| | Cr | 52 | 9383.067 | 1.049 | 0.011 | 4.00577 | 1.77 | ppb |
| | Mn | 55 | 5679.947 | 2.928 | 0.008 | 2.00351 | 2.89 | ppb |
| | Co | 59 | 4676.427 | 1.563 | 0.006 | 1.98807 | 1.05 | ppb |
| | Ni | 60 | 1123.397 | 6.344 | 0.001 | 2.01935 | 6.76 | ppb |
| | Cu | 63 | 5239.150 | 2.453 | 0.007 | 3.96775 | 2.15 | ppb |
| | Cu | 65 | 2602.561 | 3.383 | 0.003 | 4.01102 | 2.96 | ppb |
| | Zn | 66 | 1574.568 | 2.763 | 0.002 | 3.94015 | 2.42 | ppb |
| | As | 75 | 1086.120 | 11.403 | 0.002 | 2.01059 | 11.20 | ppb |
| | Se | 82 | 431.343 | 5.681 | 0.001 | 9.97931 | 5.76 | ppb |
| | Ag | 107 | 3742.923 | 4.293 | 0.003 | 1.99495 | 4.12 | ppb |
| | Ag | 109 | 3545.073 | 2.114 | 0.003 | 1.99246 | 3.24 | ppb |
| | Cd | 111 | 921.839 | 9.428 | 0.001 | 2.00616 | 10.46 | ppb |
| | In | 113 | 62103.920 | 0.635 | 0.001 | | | ppb |
| > | In | 115 | 1386185.506 | 1.150 | 1386185.506 | | | ppb |
| | Sb | 121 | 7404.407 | 1.541 | 0.004 | 3.98962 | 2.74 | ppb |
| | Ba | 135 | 7007.123 | 3.677 | 0.004 | 19.88631 | 5.17 | ppb |
| | Ba | 137 | 12263.516 | 1.600 | 0.007 | 19.92085 | 3.24 | ppb |
| > | Tb | 159 | 1880801.256 | 1.682 | 1880801.256 | | | ppb |
| | Tl | 205 | 7742.997 | 2.174 | 0.007 | 2.00666 | 4.21 | ppb |
| | Pb | 206 | 2545.326 | 10.850 | 0.002 | 2.01538 | 12.93 | ppb |
| | Pb | 207 | 4572.199 | 7.055 | 0.004 | 1.99857 | 9.08 | ppb |
| | Pb | 208 | 7274.917 | 2.768 | 0.006 | 1.99339 | 3.59 | ppb |
| > | Bi | 209 | 1174462.480 | 2.161 | 1174462.480 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197529.822 | | ppb |
| | Be | 9 | 202.002 | 2.064458 | ppb |
| > | Sc | 45 | 718303.585 | | ppb |
| | V | 51 | 23167.188 | 9.970705 | ppb |
| | Cr | 52 | 9272.297 | 3.924213 | ppb |
| | Mn | 55 | 5856.715 | 2.059136 | ppb |
| | Co | 59 | 4751.128 | 2.010794 | ppb |
| | Ni | 60 | 1066.724 | 1.901578 | ppb |
| | Cu | 63 | 5244.708 | 3.953618 | ppb |
| | Cu | 65 | 2680.359 | 4.116731 | ppb |
| | Zn | 66 | 1620.131 | 4.043274 | ppb |
| | As | 75 | 1225.449 | 2.261304 | ppb |
| | Se | 82 | 458.677 | 10.627785 | ppb |
| | Ag | 107 | 3864.080 | 2.034895 | ppb |
| | Ag | 109 | 3480.606 | 1.931978 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 821.494 | 1.763900 | ppb |
| | In | 113 | 61689.696 | | ppb |
| > | In | 115 | 1403037.892 | | ppb |
| | Sb | 121 | 7302.665 | 3.864182 | ppb |
| | Ba | 135 | 6858.351 | 19.113502 | ppb |
| | Ba | 137 | 12039.243 | 19.207429 | ppb |
| > | Tb | 159 | 1914187.875 | | ppb |
| | Tl | 205 | 7933.145 | 2.094674 | ppb |
| | Pb | 206 | 2860.409 | 2.308258 | ppb |
| | Pb | 207 | 4940.625 | 2.200869 | ppb |
| | Pb | 208 | 7426.645 | 2.074402 | ppb |
| > | Bi | 209 | 1152225.161 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196408.049 | | ppb |
| | Be | 9 | 180.002 | 1.845762 | ppb |
| > | Sc | 45 | 716077.100 | | ppb |
| | V | 51 | 23251.416 | 10.040825 | ppb |
| | Cr | 52 | 9460.473 | 4.039205 | ppb |
| | Mn | 55 | 5526.527 | 1.943637 | ppb |
| | Co | 59 | 4673.092 | 1.983747 | ppb |
| | Ni | 60 | 1203.406 | 2.168903 | ppb |
| | Cu | 63 | 5364.772 | 4.059110 | ppb |
| | Cu | 65 | 2620.343 | 4.033777 | ppb |
| | Zn | 66 | 1570.123 | 3.922206 | ppb |
| | As | 75 | 988.517 | 1.825582 | ppb |
| | Se | 82 | 424.009 | 9.777037 | ppb |
| | Ag | 107 | 3560.634 | 1.900336 | ppb |
| | Ag | 109 | 3527.289 | 1.984824 | ppb |
| | Cd | 111 | 973.418 | 2.120426 | ppb |
| | In | 113 | 62147.517 | | ppb |
| > | In | 115 | 1384176.063 | | ppb |
| | Sb | 121 | 7382.724 | 4.040731 | ppb |
| | Ba | 135 | 7304.667 | 21.052156 | ppb |
| | Ba | 137 | 12403.688 | 20.463457 | ppb |
| > | Tb | 159 | 1851266.622 | | ppb |
| | Tl | 205 | 7612.897 | 1.926165 | ppb |
| | Pb | 206 | 2345.275 | 1.808856 | ppb |
| | Pb | 207 | 4340.474 | 1.849894 | ppb |
| | Pb | 208 | 7351.633 | 1.967181 | ppb |
| > | Bi | 209 | 1202117.668 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 192627.571 | | ppb |
| | Be | 9 | 196.002 | 2.053905 | ppb |
| > | Sc | 45 | 710660.424 | | ppb |
| | V | 51 | 23066.824 | 10.036881 | ppb |
| | Cr | 52 | 9416.431 | 4.053906 | ppb |
| | Mn | 55 | 5656.599 | 2.007742 | ppb |
| | Co | 59 | 4605.060 | 1.969678 | ppb |
| | Ni | 60 | 1100.061 | 1.987564 | ppb |
| | Cu | 63 | 5107.971 | 3.890512 | ppb |
| | Cu | 65 | 2506.981 | 3.882567 | ppb |
| | Zn | 66 | 1533.451 | 3.854967 | ppb |
| | As | 75 | 1044.395 | 1.944895 | ppb |
| | Se | 82 | 411.342 | 9.533123 | ppb |
| | Ag | 107 | 3804.057 | 2.049621 | ppb |
| | Ag | 109 | 3627.324 | 2.060571 | ppb |
| | Cd | 111 | 970.605 | 2.134144 | ppb |
| | In | 113 | 62474.546 | | ppb |
| > | In | 115 | 1371342.564 | | ppb |
| | Sb | 121 | 7527.832 | 4.063953 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 6858.351 | 19.493283 | ppb |
| | Ba | 137 | 12347.618 | 20.091658 | ppb |
| > | Tb | 159 | 1876949.270 | | ppb |
| | Tl | 205 | 7682.950 | 1.999129 | ppb |
| | Pb | 206 | 2430.295 | 1.929038 | ppb |
| | Pb | 207 | 4435.496 | 1.944960 | ppb |
| | Pb | 208 | 7046.471 | 1.938575 | ppb |
| > | Bi | 209 | 1169044.612 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS3

Sample Date/Time: Monday, August 01, 2011 16:19:19
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS3.1438

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 195336.079 | 0.671 | 195336.079 | | | ppb |
| ⌊ | Be | 9 | 12280.872 | 2.090 | 0.063 | 125.00138 | 1.49 | ppb |
| ⌈> | Sc | 45 | 702833.853 | 1.133 | 702833.853 | | | ppb |
| ⌈ | V | 51 | 283580.002 | 1.322 | 0.402 | 125.03394 | 0.26 | ppb |
| ⌈ | Cr | 52 | 233549.389 | 1.238 | 0.330 | 125.00021 | 0.15 | ppb |
| ⌈ | Mn | 55 | 353821.790 | 1.674 | 0.503 | 125.00250 | 0.62 | ppb |
| ⌈ | Co | 59 | 280376.764 | 1.476 | 0.399 | 124.99903 | 0.53 | ppb |
| ⌈ | Ni | 60 | 72150.468 | 0.679 | 0.103 | 125.00435 | 1.35 | ppb |
| ⌈ | Cu | 63 | 159363.144 | 0.474 | 0.227 | 125.00072 | 1.09 | ppb |
| ⌈ | Cu | 65 | 77242.745 | 0.878 | 0.110 | 125.00138 | 0.45 | ppb |
| ⌈ | Zn | 66 | 44350.376 | 1.896 | 0.063 | 124.99512 | 0.90 | ppb |
| ⌈ | As | 75 | 61619.606 | 0.679 | 0.088 | 124.99738 | 0.45 | ppb |
| ⌊ | Se | 82 | 4860.514 | 0.678 | 0.007 | 125.00524 | 1.82 | ppb |
| ⌈ | Ag | 107 | 227703.466 | 1.109 | 0.163 | 124.99860 | 1.15 | ppb |
| ⌈ | Ag | 109 | 217585.234 | 1.171 | 0.156 | 124.99900 | 0.80 | ppb |
| ⌈ | Cd | 111 | 55714.391 | 2.201 | 0.040 | 124.99862 | 1.92 | ppb |
| ⌈ | In | 113 | 116157.432 | 0.866 | 0.039 | | | ppb |
| ⌊> | In | 115 | 1396214.254 | 0.550 | 1396214.254 | | | ppb |
| ⌈ | Sb | 121 | 223161.567 | 2.023 | 0.122 | 124.99964 | 4.13 | ppb |
| ⌈ | Ba | 135 | 44301.926 | 1.258 | 0.024 | 125.13496 | 1.31 | ppb |
| ⌈ | Ba | 137 | 77196.193 | 1.479 | 0.042 | 125.12621 | 2.09 | ppb |
| ⌊> | Tb | 159 | 1827543.922 | 2.163 | 1827543.922 | | | ppb |
| ⌈ | Tl | 205 | 484243.989 | 1.457 | 0.407 | 124.99974 | 0.37 | ppb |
| ⌈ | Pb | 206 | 160128.651 | 1.141 | 0.135 | 125.00045 | 2.07 | ppb |
| ⌈ | Pb | 207 | 292909.493 | 0.682 | 0.246 | 125.00081 | 1.84 | ppb |
| ⌈ | Pb | 208 | 465297.660 | 0.767 | 0.391 | 125.00065 | 0.60 | ppb |
| ⌊> | Bi | 209 | 1189832.478 | 1.167 | 1189832.478 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 195892.075 | | ppb |
| ⌊ | Be | 9 | 12479.782 | 126.673316 | ppb |
| ⌈> | Sc | 45 | 710794.466 | | ppb |
| ⌈ | V | 51 | 286980.053 | 125.117873 | ppb |
| ⌈ | Cr | 52 | 236282.886 | 125.048224 | ppb |
| ⌈ | Mn | 55 | 360357.976 | 125.891241 | ppb |
| ⌈ | Co | 59 | 283576.571 | 125.012256 | ppb |
| ⌈ | Ni | 60 | 72417.939 | 124.050828 | ppb |
| ⌈ | Cu | 63 | 160016.773 | 124.097806 | ppb |
| ⌈ | Cu | 65 | 78016.479 | 124.836297 | ppb |
| ⌈ | Zn | 66 | 45302.383 | 126.257710 | ppb |
| ⌈ | As | 75 | 62042.817 | 124.441973 | ppb |
| ⌊ | Se | 82 | 4824.497 | 122.652714 | ppb |
| ⌈ | Ag | 107 | 225033.839 | 123.344401 | ppb |
| ⌈ | Ag | 109 | 216413.335 | 124.139231 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 54817.061 | 122.802533 | ppb |
| | In | 113 | 116535.088 | | ppb |
| > | In | 115 | 1398330.967 | | ppb |
| | Sb | 121 | 222237.333 | 124.826409 | ppb |
| | Ba | 135 | 43884.080 | 124.350789 | ppb |
| | Ba | 137 | 78341.674 | 127.380582 | ppb |
| > | Tb | 159 | 1821429.244 | | ppb |
| | Tl | 205 | 482312.371 | 124.605597 | ppb |
| | Pb | 206 | 158516.494 | 123.825188 | ppb |
| | Pb | 207 | 293288.591 | 125.247135 | ppb |
| | Pb | 208 | 466964.540 | 125.546525 | ppb |
| > | Bi | 209 | 1188859.216 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196277.523 | | ppb |
| | Be | 9 | 12371.648 | 125.328688 | ppb |
| > | Sc | 45 | 702840.740 | | ppb |
| | V | 51 | 284199.889 | 125.308557 | ppb |
| | Cr | 52 | 233844.565 | 125.159157 | ppb |
| | Mn | 55 | 352298.283 | 124.467292 | ppb |
| | Co | 59 | 281850.796 | 125.657627 | ppb |
| | Ni | 60 | 71585.309 | 124.012197 | ppb |
| | Cu | 63 | 158536.813 | 124.341602 | ppb |
| | Cu | 65 | 76958.327 | 124.536269 | ppb |
| | Zn | 66 | 44040.097 | 124.123436 | ppb |
| | As | 75 | 61610.340 | 124.973070 | ppb |
| | Se | 82 | 4867.851 | 125.177164 | ppb |
| | Ag | 107 | 230056.199 | 125.712011 | ppb |
| | Ag | 109 | 220508.010 | 126.101665 | ppb |
| | Cd | 111 | 57111.999 | 127.553116 | ppb |
| | In | 113 | 116919.536 | | ppb |
| > | In | 115 | 1402616.936 | | ppb |
| | Sb | 121 | 219180.977 | 119.925078 | ppb |
| | Ba | 135 | 44934.730 | 124.035374 | ppb |
| | Ba | 137 | 77188.760 | 122.259419 | ppb |
| > | Tb | 159 | 1869778.590 | | ppb |
| | Tl | 205 | 492065.728 | 125.508003 | ppb |
| | Pb | 206 | 159755.986 | 123.205543 | ppb |
| | Pb | 207 | 290748.354 | 122.582169 | ppb |
| | Pb | 208 | 467728.037 | 124.151624 | ppb |
| > | Bi | 209 | 1204180.086 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193838.638 | | ppb |
| | Be | 9 | 11991.185 | 123.002122 | ppb |
| > | Sc | 45 | 694866.354 | | ppb |
| | V | 51 | 279560.063 | 124.675376 | ppb |
| | Cr | 52 | 230520.714 | 124.793254 | ppb |
| | Mn | 55 | 348809.111 | 124.648961 | ppb |
| | Co | 59 | 275702.926 | 124.327193 | ppb |
| | Ni | 60 | 72448.156 | 126.950027 | ppb |
| | Cu | 63 | 159535.847 | 126.562749 | ppb |
| | Cu | 65 | 76753.428 | 125.631566 | ppb |
| | Zn | 66 | 43708.647 | 124.604218 | ppb |
| | As | 75 | 61205.660 | 125.577102 | ppb |
| | Se | 82 | 4889.195 | 127.185852 | ppb |
| | Ag | 107 | 228020.360 | 125.939391 | ppb |
| | Ag | 109 | 215834.355 | 124.756094 | ppb |
| | Cd | 111 | 55214.112 | 124.640205 | ppb |
| | In | 113 | 115017.671 | | ppb |
| > | In | 115 | 1387694.859 | | ppb |
| | Sb | 121 | 228066.392 | 130.247441 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 44086.969 | 127.018729 | ppb |
| | Ba | 137 | 76058.146 | 125.738632 | ppb |
| > | Tb | 159 | 1791423.931 | | ppb |
| | Tl | 205 | 478353.868 | 124.885623 | ppb |
| | Pb | 206 | 162113.473 | 127.970630 | ppb |
| | Pb | 207 | 294691.533 | 127.173124 | ppb |
| | Pb | 208 | 461200.404 | 125.303814 | ppb |
| > | Bi | 209 | 1176458.131 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS4

Sample Date/Time: Monday, August 01, 2011 16:20:44
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS4.1439

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194635.795 | 2.143 | 194635.795 | | | ppb |
| ⌊ | Be | 9 | 24399.737 | 1.742 | 0.125 | 249.86318 | 0.59 | ppb |
| ⌈> | Sc | 45 | 711490.250 | 0.568 | 711490.250 | | | ppb |
| ⌈ | V | 51 | 559313.244 | 0.395 | 0.785 | 248.76734 | 0.95 | ppb |
| ⌈ | Cr | 52 | 457560.195 | 1.193 | 0.641 | 248.53333 | 1.64 | ppb |
| ⌈ | Mn | 55 | 691903.808 | 0.832 | 0.972 | 248.26601 | 0.31 | ppb |
| ⌈ | Co | 59 | 551529.366 | 0.562 | 0.775 | 248.55087 | 1.04 | ppb |
| ⌈ | Ni | 60 | 139399.500 | 1.637 | 0.196 | 247.65065 | 2.19 | ppb |
| ⌈ | Cu | 63 | 312891.961 | 0.479 | 0.440 | 248.46446 | 0.83 | ppb |
| ⌈ | Cu | 65 | 152075.718 | 2.044 | 0.214 | 248.62437 | 2.38 | ppb |
| ⌈ | Zn | 66 | 87428.366 | 1.621 | 0.123 | 248.71940 | 2.10 | ppb |
| ⌈ | As | 75 | 123191.764 | 0.670 | 0.173 | 249.36785 | 0.19 | ppb |
| ⌊ | Se | 82 | 9686.690 | 1.479 | 0.014 | 249.40856 | 0.97 | ppb |
| ⌈ | Ag | 107 | 448795.154 | 1.185 | 0.330 | 250.60121 | 1.03 | ppb |
| ⌈ | Ag | 109 | 429601.650 | 1.413 | 0.316 | 250.69053 | 1.34 | ppb |
| ⌈ | Cd | 111 | 111396.565 | 1.523 | 0.082 | 251.31099 | 0.89 | ppb |
| ⌈ | In | 113 | 166987.760 | 0.807 | 0.079 | | | ppb |
| ⌊> | In | 115 | 1359441.598 | 0.691 | 1359441.598 | | | ppb |
| ⌈ | Sb | 121 | 443276.008 | 1.292 | 0.241 | 249.41843 | 1.52 | ppb |
| ⌈ | Ba | 135 | 87564.438 | 1.612 | 0.048 | 249.22369 | 1.43 | ppb |
| ⌈ | Ba | 137 | 152797.909 | 0.936 | 0.083 | 249.29052 | 0.66 | ppb |
| ⌊> | Tb | 159 | 1835392.863 | 0.276 | 1835392.863 | | | ppb |
| ⌈ | Tl | 205 | 967267.823 | 0.453 | 0.822 | 250.52024 | 0.99 | ppb |
| ⌈ | Pb | 206 | 316901.692 | 1.042 | 0.269 | 250.05614 | 1.83 | ppb |
| ⌈ | Pb | 207 | 582439.373 | 0.722 | 0.495 | 250.29254 | 1.65 | ppb |
| ⌈ | Pb | 208 | 929083.850 | 0.238 | 0.790 | 250.50334 | 1.21 | ppb |
| ⌊> | Bi | 209 | 1176141.561 | 1.238 | 1176141.561 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199355.519 | | ppb |
| ⌊ | Be | 9 | 24846.830 | 248.401949 | ppb |
| ⌈> | Sc | 45 | 709309.378 | | ppb |
| ⌈ | V | 51 | 559700.173 | 249.697465 | ppb |
| ⌈ | Cr | 52 | 463634.331 | 252.610016 | ppb |
| ⌈ | Mn | 55 | 690231.288 | 248.429696 | ppb |
| ⌈ | Co | 59 | 554931.770 | 250.844045 | ppb |
| ⌈ | Ni | 60 | 141037.616 | 251.312352 | ppb |
| ⌈ | Cu | 63 | 311610.574 | 248.201202 | ppb |
| ⌈ | Cu | 65 | 150145.450 | 246.207022 | ppb |
| ⌈ | Zn | 66 | 87178.354 | 248.753195 | ppb |
| ⌈ | As | 75 | 122543.845 | 248.819690 | ppb |
| ⌊ | Se | 82 | 9562.570 | 246.966889 | ppb |
| ⌈ | Ag | 107 | 451999.413 | 250.392048 | ppb |
| ⌈ | Ag | 109 | 432150.193 | 250.179752 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 113253.308 | 253.486709 | ppb |
| | In | 113 | 166713.176 | | ppb |
| > | In | 115 | 1370285.917 | | ppb |
| | Sb | 121 | 447462.035 | 251.811685 | ppb |
| | Ba | 135 | 88631.040 | 252.307693 | ppb |
| | Ba | 137 | 152709.169 | 249.192021 | ppb |
| > | Tb | 159 | 1835074.226 | | ppb |
| | Tl | 205 | 971032.189 | 251.466904 | ppb |
| | Pb | 206 | 320530.975 | 252.878792 | ppb |
| | Pb | 207 | 586922.560 | 252.178845 | ppb |
| | Pb | 208 | 931588.783 | 251.145121 | ppb |
| > | Bi | 209 | 1176183.464 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193104.640 | | ppb |
| | Be | 9 | 24351.614 | 251.332207 | ppb |
| > | Sc | 45 | 709009.170 | | ppb |
| | V | 51 | 561302.384 | 250.519605 | ppb |
| | Cr | 52 | 455973.886 | 248.525367 | ppb |
| | Mn | 55 | 687170.929 | 247.432534 | ppb |
| | Co | 59 | 550785.718 | 249.075243 | ppb |
| | Ni | 60 | 140368.297 | 250.225094 | ppb |
| | Cu | 63 | 314540.183 | 250.641676 | ppb |
| | Cu | 65 | 155662.179 | 255.367782 | ppb |
| | Zn | 66 | 88953.888 | 253.933579 | ppb |
| | As | 75 | 122910.635 | 249.670191 | ppb |
| | Se | 82 | 9653.991 | 249.444299 | ppb |
| | Ag | 107 | 451731.017 | 253.271708 | ppb |
| | Ag | 109 | 433980.279 | 254.279716 | ppb |
| | Cd | 111 | 109927.650 | 249.020424 | ppb |
| | In | 113 | 165798.151 | | ppb |
| > | In | 115 | 1353901.855 | | ppb |
| | Sb | 121 | 445617.341 | 251.402064 | ppb |
| | Ba | 135 | 85963.908 | 245.327697 | ppb |
| | Ba | 137 | 151413.692 | 247.697151 | ppb |
| > | Tb | 159 | 1830486.274 | | ppb |
| | Tl | 205 | 968311.377 | 247.708482 | ppb |
| | Pb | 206 | 314070.770 | 244.763905 | ppb |
| | Pb | 207 | 578578.321 | 245.565778 | ppb |
| | Pb | 208 | 928242.206 | 247.195216 | ppb |
| > | Bi | 209 | 1190683.304 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191447.226 | | ppb |
| | Be | 9 | 24000.767 | 249.855398 | ppb |
| > | Sc | 45 | 716152.203 | | ppb |
| | V | 51 | 556937.175 | 246.084936 | ppb |
| | Cr | 52 | 453072.368 | 244.464617 | ppb |
| | Mn | 55 | 698309.207 | 248.935798 | ppb |
| | Co | 59 | 548870.608 | 245.733333 | ppb |
| | Ni | 60 | 136792.588 | 241.414502 | ppb |
| | Cu | 63 | 312525.126 | 246.550507 | ppb |
| | Cu | 65 | 150419.523 | 244.298311 | ppb |
| | Zn | 66 | 86152.857 | 243.471422 | ppb |
| | As | 75 | 124120.813 | 249.613662 | ppb |
| | Se | 82 | 9843.509 | 251.814500 | ppb |
| | Ag | 107 | 442655.031 | 248.139882 | ppb |
| | Ag | 109 | 422674.479 | 247.612112 | ppb |
| | Cd | 111 | 111008.738 | 251.425843 | ppb |
| | In | 113 | 168451.953 | | ppb |
| > | In | 115 | 1354137.023 | | ppb |
| | Sb | 121 | 436748.646 | 245.041534 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 88098.364 | 250.035688 | ppb |
| | Ba | 137 | 154270.866 | 250.982396 | ppb |
| > | Tb | 159 | 1840618.089 | | ppb |
| | Tl | 205 | 962459.903 | 252.385323 | ppb |
| | Pb | 206 | 316103.331 | 252.525721 | ppb |
| | Pb | 207 | 581817.239 | 253.133002 | ppb |
| | Pb | 208 | 927420.560 | 253.169678 | ppb |
| > | Bi | 209 | 1161557.914 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS5

Sample Date/Time: Monday, August 01, 2011 16:22:10
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\S 6020-MS5.1440

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194459.950 | 0.854 | 194459.950 | | | ppb |
| ⌊ | Be | 9 | 49565.201 | 0.573 | 0.255 | 501.89873 | 1.30 | ppb |
| ⌈> | Sc | 45 | 703076.795 | 0.447 | 703076.795 | | | ppb |
| \| | V | 51 | 1120246.830 | 0.928 | 1.592 | 501.09449 | 1.16 | ppb |
| \| | Cr | 52 | 919757.494 | 0.568 | 1.306 | 501.55079 | 0.79 | ppb |
| \| | Mn | 55 | 1416137.330 | 1.153 | 2.014 | 503.33595 | 0.84 | ppb |
| \| | Co | 59 | 1114644.190 | 1.068 | 1.585 | 501.95818 | 0.94 | ppb |
| \| | Ni | 60 | 286585.468 | 0.981 | 0.408 | 503.56674 | 1.30 | ppb |
| \| | Cu | 63 | 634727.347 | 0.817 | 0.903 | 502.38111 | 0.87 | ppb |
| \| | Cu | 65 | 305200.779 | 0.497 | 0.434 | 501.20311 | 0.75 | ppb |
| \| | Zn | 66 | 175987.503 | 1.441 | 0.250 | 501.63741 | 1.51 | ppb |
| \| | As | 75 | 247077.124 | 0.081 | 0.351 | 501.45222 | 0.38 | ppb |
| ⌊ | Se | 82 | 19507.454 | 0.739 | 0.028 | 502.21372 | 0.84 | ppb |
| ⌈ | Ag | 107 | 903889.043 | 0.307 | 0.655 | 499.27011 | 2.42 | ppb |
| \| | Ag | 109 | 882498.215 | 0.799 | 0.639 | 501.67136 | 3.02 | ppb |
| \| | Cd | 111 | 229047.128 | 1.234 | 0.166 | 502.05070 | 1.73 | ppb |
| \| | In | 113 | 288224.748 | 0.555 | 0.165 | | | ppb |
| ⌊> | In | 115 | 1381212.665 | 2.288 | 1381212.665 | | | ppb |
| ⌈ | Sb | 121 | 903763.717 | 1.666 | 0.490 | 501.39978 | 1.80 | ppb |
| \| | Ba | 135 | 178830.945 | 0.933 | 0.097 | 501.51788 | 1.08 | ppb |
| \| | Ba | 137 | 310999.584 | 0.924 | 0.169 | 501.14647 | 1.07 | ppb |
| ⌊> | Tb | 159 | 1844892.410 | 0.154 | 1844892.410 | | | ppb |
| ⌈ | Tl | 205 | 1946710.952 | 1.074 | 1.666 | 501.76202 | 1.88 | ppb |
| \| | Pb | 206 | 641191.208 | 1.198 | 0.549 | 502.16932 | 2.00 | ppb |
| \| | Pb | 207 | 1182652.530 | 1.295 | 1.012 | 502.70068 | 2.17 | ppb |
| \| | Pb | 208 | 1876023.871 | 0.709 | 1.605 | 502.13635 | 1.07 | ppb |
| ⌊> | Bi | 209 | 1168564.631 | 0.917 | 1168564.631 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196340.746 | | ppb |
| ⌊ | Be | 9 | 49305.251 | 494.448786 | ppb |
| ⌈> | Sc | 45 | 706152.264 | | ppb |
| \| | V | 51 | 1123018.340 | 500.134531 | ppb |
| \| | Cr | 52 | 921920.231 | 500.530323 | ppb |
| \| | Mn | 55 | 1434894.723 | 507.789554 | ppb |
| \| | Co | 59 | 1126612.528 | 505.139259 | ppb |
| \| | Ni | 60 | 286341.713 | 500.931158 | ppb |
| \| | Cu | 63 | 638613.746 | 503.251005 | ppb |
| \| | Cu | 65 | 305733.273 | 499.881945 | ppb |
| \| | Zn | 66 | 177552.372 | 503.888503 | ppb |
| \| | As | 75 | 247163.002 | 499.436033 | ppb |
| ⌊ | Se | 82 | 19606.535 | 502.561059 | ppb |
| ⌈ | Ag | 107 | 900898.390 | 497.463852 | ppb |
| \| | Ag | 109 | 885928.889 | 503.418842 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 231503.439 | 507.349892 | ppb |
| | In | 113 | 289773.472 | | ppb |
| > | In | 115 | 1381135.056 | | ppb |
| | Sb | 121 | 920141.023 | 511.027926 | ppb |
| | Ba | 135 | 180317.188 | 506.225203 | ppb |
| | Ba | 137 | 313572.493 | 505.831388 | ppb |
| > | Tb | 159 | 1842907.990 | | ppb |
| | Tl | 205 | 1970386.665 | 512.545686 | ppb |
| | Pb | 206 | 649898.777 | 513.677867 | ppb |
| | Pb | 207 | 1200300.177 | 514.894071 | ppb |
| | Pb | 208 | 1866732.828 | 504.283496 | ppb |
| > | Bi | 209 | 1157768.987 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193192.309 | | ppb |
| | Be | 9 | 49522.320 | 504.719914 | ppb |
| > | Sc | 45 | 699873.058 | | ppb |
| | V | 51 | 1128970.919 | 507.302167 | ppb |
| | Cr | 52 | 923548.701 | 505.923727 | ppb |
| | Mn | 55 | 1408348.185 | 502.865727 | ppb |
| | Co | 59 | 1114505.972 | 504.194385 | ppb |
| | Ni | 60 | 289511.033 | 511.022030 | ppb |
| | Cu | 63 | 636725.529 | 506.265356 | ppb |
| | Cu | 65 | 306379.266 | 505.434436 | ppb |
| | Zn | 66 | 177348.807 | 507.828924 | ppb |
| | As | 75 | 246849.024 | 503.276974 | ppb |
| | Se | 82 | 19573.805 | 506.231246 | ppb |
| | Ag | 107 | 906385.908 | 512.168313 | ppb |
| | Ag | 109 | 887175.831 | 515.886570 | ppb |
| | Cd | 111 | 225958.963 | 506.749597 | ppb |
| | In | 113 | 286578.349 | | ppb |
| > | In | 115 | 1349653.941 | | ppb |
| | Sb | 121 | 900618.084 | 499.990432 | ppb |
| | Ba | 135 | 179150.498 | 502.754385 | ppb |
| | Ba | 137 | 311528.062 | 502.338177 | ppb |
| > | Tb | 159 | 1843623.682 | | ppb |
| | Tl | 205 | 1938923.682 | 495.199696 | ppb |
| | Pb | 206 | 638285.413 | 495.333888 | ppb |
| | Pb | 207 | 1172751.359 | 493.937448 | ppb |
| | Pb | 208 | 1870069.388 | 496.008081 | ppb |
| > | Bi | 209 | 1179188.376 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193846.794 | | ppb |
| | Be | 9 | 49868.032 | 506.527490 | ppb |
| > | Sc | 45 | 703205.063 | | ppb |
| | V | 51 | 1108751.233 | 495.846761 | ppb |
| | Cr | 52 | 913803.550 | 498.198312 | ppb |
| | Mn | 55 | 1405169.081 | 499.352566 | ppb |
| | Co | 59 | 1102814.071 | 496.540887 | ppb |
| | Ni | 60 | 283903.658 | 498.747047 | ppb |
| | Cu | 63 | 628842.767 | 497.626981 | ppb |
| | Cu | 65 | 303489.798 | 498.292941 | ppb |
| | Zn | 66 | 173061.331 | 493.194791 | ppb |
| | As | 75 | 247219.347 | 501.643654 | ppb |
| | Se | 82 | 19342.021 | 497.848869 | ppb |
| | Ag | 107 | 904382.830 | 488.178161 | ppb |
| | Ag | 109 | 874389.924 | 485.708668 | ppb |
| | Cd | 111 | 229678.982 | 492.052609 | ppb |
| | In | 113 | 288322.422 | | ppb |
| > | In | 115 | 1412848.997 | | ppb |
| | Sb | 121 | 890532.045 | 493.180974 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 177025.148 | 495.574065 | ppb |
| | Ba | 137 | 307898.199 | 495.269858 | ppb |
| > | Tb | 159 | 1848145.557 | | ppb |
| | Tl | 205 | 1930822.510 | 497.540692 | ppb |
| | Pb | 206 | 635389.435 | 497.496205 | ppb |
| | Pb | 207 | 1174906.053 | 499.270510 | ppb |
| | Pb | 208 | 1891269.397 | 506.117484 | ppb |
| > | Bi | 209 | 1168736.528 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| ¦ | V | 51 | | | | | |
| ¦ | Cr | 52 | | | | | |
| ¦ | Mn | 55 | | | | | |
| ¦ | Co | 59 | | | | | |
| ¦ | Ni | 60 | | | | | |
| ¦ | Cu | 63 | | | | | |
| ¦ | Cu | 65 | | | | | |
| ¦ | Zn | 66 | | | | | |
| ¦ | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| ¦ | Ag | 109 | | | | | |
| ¦ | Cd | 111 | | | | | |
| ¦ | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| ¦ | Ba | 135 | | | | | |
| ¦ | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| ¦ | Pb | 206 | | | | | |
| ¦ | Pb | 207 | | | | | |
| ¦ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLICV

Sample Date/Time: Monday, August 01, 2011 16:25:27
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLICV.1441

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194999.802 | 1.418 | 194999.802 | | | ppb |
| ⌊ | Be | 9 | 111.334 | 6.801 | 0.001 | 1.08382 | 6.16 | ppb |
| ⌈> | Sc | 45 | 699502.509 | 1.280 | 699502.509 | | | ppb |
| \| | V | 51 | 11628.922 | 0.785 | 0.015 | 4.83369 | 0.73 | ppb |
| \| | Cr | 52 | 5759.661 | 5.309 | 0.006 | 2.17488 | 6.90 | ppb |
| \| | Mn | 55 | 2997.117 | 5.150 | 0.004 | 0.97441 | 4.45 | ppb |
| \| | Co | 59 | 2370.281 | 3.292 | 0.003 | 1.05983 | 3.50 | ppb |
| \| | Ni | 60 | 567.794 | 10.910 | 0.001 | 0.88617 | 12.12 | ppb |
| \| | Cu | 63 | 2679.249 | 5.997 | 0.004 | 2.04021 | 7.52 | ppb |
| \| | Cu | 65 | 1320.087 | 6.809 | 0.002 | 2.00883 | 7.35 | ppb |
| \| | Zn | 66 | 814.478 | 7.951 | 0.001 | 2.01796 | 7.80 | ppb |
| \| | As | 75 | 580.389 | 8.049 | 0.001 | 1.16118 | 9.06 | ppb |
| ⌊ | Se | 82 | 231.780 | 3.863 | 0.000 | 4.94688 | 3.25 | ppb |
| ⌈ | Ag | 107 | 1863.507 | 2.701 | 0.001 | 1.02037 | 2.18 | ppb |
| \| | Ag | 109 | 1920.184 | 0.459 | 0.001 | 1.07790 | 1.19 | ppb |
| \| | Cd | 111 | 446.505 | 3.322 | 0.000 | 0.96605 | 3.96 | ppb |
| \| | In | 113 | 61359.351 | 0.961 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1386148.288 | 0.862 | 1386148.288 | | | ppb |
| ⌈ | Sb | 121 | 3897.426 | 0.901 | 0.002 | 2.11397 | 1.78 | ppb |
| \| | Ba | 135 | 3581.975 | 1.388 | 0.002 | 9.93683 | 0.68 | ppb |
| \| | Ba | 137 | 6246.617 | 0.731 | 0.003 | 9.95550 | 0.37 | ppb |
| ⌊> | Tb | 159 | 1859876.296 | 0.855 | 1859876.296 | | | ppb |
| ⌈ | Tl | 205 | 4129.186 | 1.581 | 0.003 | 1.05125 | 1.50 | ppb |
| \| | Pb | 206 | 1373.428 | 1.642 | 0.001 | 1.04556 | 1.80 | ppb |
| \| | Pb | 207 | 2623.506 | 1.431 | 0.002 | 1.08771 | 1.31 | ppb |
| \| | Pb | 208 | 4028.798 | 1.003 | 0.003 | 1.05214 | 0.87 | ppb |
| ⌊> | Bi | 209 | 1175750.088 | 0.150 | 1175750.088 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197356.449 | | ppb |
| ⌊ | Be | 9 | 120.001 | 1.157176 | ppb |
| ⌈> | Sc | 45 | 699139.304 | | ppb |
| \| | V | 51 | 11673.338 | 4.856144 | ppb |
| \| | Cr | 52 | 6045.827 | 2.334222 | ppb |
| \| | Mn | 55 | 3065.470 | 0.999719 | ppb |
| \| | Co | 59 | 2280.260 | 1.019525 | ppb |
| \| | Ni | 60 | 636.687 | 1.008563 | ppb |
| \| | Cu | 63 | 2740.375 | 2.088712 | ppb |
| \| | Cu | 65 | 1216.741 | 1.839148 | ppb |
| \| | Zn | 66 | 830.034 | 2.065076 | ppb |
| \| | As | 75 | 536.502 | 1.071639 | ppb |
| ⌊ | Se | 82 | 228.003 | 4.853194 | ppb |
| ⌈ | Ag | 107 | 1856.839 | 1.010599 | ppb |
| \| | Ag | 109 | 1923.518 | 1.073141 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 429.387 | 0.922840 | ppb |
| | In | 113 | 61714.850 | | ppb |
| > | In | 115 | 1394570.863 | | ppb |
| | Sb | 121 | 3900.761 | 2.113373 | ppb |
| | Ba | 135 | 3608.651 | 10.000918 | ppb |
| | Ba | 137 | 6273.968 | 9.988751 | ppb |
| > | Tb | 159 | 1861800.084 | | ppb |
| | Tl | 205 | 4135.855 | 1.054261 | ppb |
| | Pb | 206 | 1375.095 | 1.048149 | ppb |
| | Pb | 207 | 2585.168 | 1.072871 | ppb |
| | Pb | 208 | 4005.464 | 1.047245 | ppb |
| > | Bi | 209 | 1174311.431 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195688.140 | | ppb |
| | Be | 9 | 106.001 | 1.026505 | ppb |
| > | Sc | 45 | 708633.921 | | ppb |
| | V | 51 | 11689.455 | 4.792892 | ppb |
| | Cr | 52 | 5795.679 | 2.154112 | ppb |
| | Mn | 55 | 3105.482 | 0.999149 | ppb |
| | Co | 59 | 2418.292 | 1.067363 | ppb |
| | Ni | 60 | 550.015 | 0.842357 | ppb |
| | Cu | 63 | 2496.978 | 1.868313 | ppb |
| | Cu | 65 | 1380.095 | 2.078461 | ppb |
| | Zn | 66 | 870.038 | 2.146379 | ppb |
| | As | 75 | 575.167 | 1.134827 | ppb |
| | Se | 82 | 242.003 | 5.132297 | ppb |
| | Ag | 107 | 1816.832 | 1.004716 | ppb |
| | Ag | 109 | 1926.852 | 1.092476 | ppb |
| | Cd | 111 | 455.568 | 0.995585 | ppb |
| | In | 113 | 60678.537 | | ppb |
| > | In | 115 | 1372474.329 | | ppb |
| | Sb | 121 | 3930.772 | 2.151793 | ppb |
| | Ba | 135 | 3524.621 | 9.866748 | ppb |
| | Ba | 137 | 6193.918 | 9.961249 | ppb |
| > | Tb | 159 | 1843104.801 | | ppb |
| | Tl | 205 | 4060.824 | 1.034214 | ppb |
| | Pb | 206 | 1395.097 | 1.062897 | ppb |
| | Pb | 207 | 2625.173 | 1.088933 | ppb |
| | Pb | 208 | 4005.461 | 1.046420 | ppb |
| > | Bi | 209 | 1175219.382 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 191954.818 | | ppb |
| | Be | 9 | 108.001 | 1.067767 | ppb |
| > | Sc | 45 | 690734.301 | | ppb |
| | V | 51 | 11523.974 | 4.852030 | ppb |
| | Cr | 52 | 5437.478 | 2.036319 | ppb |
| | Mn | 55 | 2820.398 | 0.924374 | ppb |
| | Co | 59 | 2412.291 | 1.092612 | ppb |
| | Ni | 60 | 516.680 | 0.807577 | ppb |
| | Cu | 63 | 2800.392 | 2.163618 | ppb |
| | Cu | 65 | 1363.426 | 2.108878 | ppb |
| | Zn | 66 | 743.361 | 1.842420 | ppb |
| | As | 75 | 629.498 | 1.277082 | ppb |
| | Se | 82 | 225.336 | 4.855145 | ppb |
| | Ag | 107 | 1916.850 | 1.045807 | ppb |
| | Ag | 109 | 1910.182 | 1.068086 | ppb |
| | Cd | 111 | 454.560 | 0.979725 | ppb |
| | In | 113 | 61684.665 | | ppb |
| > | In | 115 | 1391399.672 | | ppb |
| | Sb | 121 | 3860.745 | 2.076741 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 3612.652 | 9.942826 | ppb |
| | Ba | 137 | 6271.966 | 9.916512 | ppb |
| > | Tb | 159 | 1874724.003 | | ppb |
| | Tl | 205 | 4190.878 | 1.065262 | ppb |
| | Pb | 206 | 1350.091 | 1.025619 | ppb |
| | Pb | 207 | 2660.177 | 1.101340 | ppb |
| | Pb | 208 | 4075.468 | 1.062749 | ppb |
| > | Bi | 209 | 1177719.451 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 99.359 | | | |
| ⌊ | Be | 9 | 108.382 | | | | |
| ⌈> | Sc | 45 | | 99.098 | | | |
| \| | V | 51 | 96.674 | | | | |
| \| | Cr | 52 | 108.744 | | | | |
| \| | Mn | 55 | 97.441 | | | | |
| \| | Co | 59 | 105.983 | | | | |
| \| | Ni | 60 | 88.617 | | | | |
| \| | Cu | 63 | 102.011 | | | | |
| \| | Cu | 65 | 100.441 | | | | |
| \| | Zn | 66 | 100.898 | | | | |
| \| | As | 75 | 116.118 | | | | |
| ⌊ | Se | 82 | 98.938 | | | | |
| ⌈ | Ag | 107 | 102.037 | | | | |
| \| | Ag | 109 | 107.790 | | | | |
| \| | Cd | 111 | 96.605 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.247 | | | |
| ⌈ | Sb | 121 | 105.698 | | | | |
| \| | Ba | 135 | 99.368 | | | | |
| \| | Ba | 137 | 99.555 | | | | |
| ⌊> | Tb | 159 | | 99.976 | | | |
| ⌈ | Tl | 205 | 105.125 | | | | |
| \| | Pb | 206 | 104.556 | | | | |
| \| | Pb | 207 | 108.771 | | | | |
| \| | Pb | 208 | 105.214 | | | | |
| ⌊> | Bi | 209 | | 100.467 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICV

Sample Date/Time: Monday, August 01, 2011 16:26:55
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICV.1442

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 189852.657 | 0.767 | 189852.657 | | | ppb |
| ⌊ | Be | 9 | 9855.521 | 0.264 | 0.052 | 102.18327 | 0.65 | ppb |
| ⌈> | Sc | 45 | 684362.540 | 1.831 | 684362.540 | | | ppb |
| \| | V | 51 | 218467.027 | 0.916 | 0.318 | 100.08427 | 0.94 | ppb |
| \| | Cr | 52 | 185686.124 | 0.375 | 0.269 | 103.26860 | 2.24 | ppb |
| \| | Mn | 55 | 260749.584 | 1.491 | 0.381 | 95.16778 | 3.02 | ppb |
| \| | Co | 59 | 228072.332 | 0.917 | 0.333 | 105.53388 | 2.32 | ppb |
| \| | Ni | 60 | 51655.303 | 1.119 | 0.075 | 93.17402 | 2.46 | ppb |
| \| | Cu | 63 | 126348.813 | 1.132 | 0.185 | 102.69305 | 2.56 | ppb |
| \| | Cu | 65 | 60865.793 | 0.971 | 0.089 | 102.58522 | 2.82 | ppb |
| \| | Zn | 66 | 71109.715 | 0.429 | 0.104 | 208.10423 | 2.24 | ppb |
| \| | As | 75 | 95594.492 | 1.155 | 0.140 | 199.37407 | 2.98 | ppb |
| ⌊ | Se | 82 | 7640.474 | 1.525 | 0.011 | 201.48292 | 2.19 | ppb |
| ⌈ | Ag | 107 | 185453.074 | 1.752 | 0.137 | 104.45657 | 1.94 | ppb |
| \| | Ag | 109 | 176878.398 | 0.590 | 0.131 | 102.52207 | 1.34 | ppb |
| \| | Cd | 111 | 43937.981 | 0.606 | 0.032 | 98.22642 | 1.92 | ppb |
| \| | In | 113 | 103267.187 | 1.237 | 0.032 | | | ppb |
| ⌊> | In | 115 | 1354070.843 | 1.387 | 1354070.843 | | | ppb |
| ⌈ | Sb | 121 | 360793.425 | 2.109 | 0.196 | 201.03662 | 1.71 | ppb |
| \| | Ba | 135 | 35838.112 | 1.437 | 0.020 | 100.92962 | 0.49 | ppb |
| \| | Ba | 137 | 62449.774 | 1.954 | 0.034 | 101.05232 | 1.06 | ppb |
| ⌊> | Tb | 159 | 1836657.410 | 0.972 | 1836657.410 | | | ppb |
| ⌈ | Tl | 205 | 786501.606 | 0.728 | 0.673 | 202.66390 | 0.71 | ppb |
| \| | Pb | 206 | 252588.803 | 0.989 | 0.216 | 197.75280 | 0.58 | ppb |
| \| | Pb | 207 | 465603.787 | 0.454 | 0.398 | 197.84215 | 0.20 | ppb |
| \| | Pb | 208 | 740857.987 | 0.665 | 0.634 | 198.25073 | 1.03 | ppb |
| ⌊> | Bi | 209 | 1168750.929 | 0.556 | 1168750.929 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 191414.611 | | ppb |
| ⌊ | Be | 9 | 9880.879 | 101.606811 | ppb |
| ⌈> | Sc | 45 | 695830.023 | | ppb |
| \| | V | 51 | 220445.429 | 99.311980 | ppb |
| \| | Cr | 52 | 185064.748 | 101.179677 | ppb |
| \| | Mn | 55 | 260709.748 | 93.551791 | ppb |
| \| | Co | 59 | 228857.153 | 104.124436 | ppb |
| \| | Ni | 60 | 51874.199 | 92.000594 | ppb |
| \| | Cu | 63 | 126697.561 | 101.249249 | ppb |
| \| | Cu | 65 | 60318.033 | 99.947884 | ppb |
| \| | Zn | 66 | 70766.176 | 203.623617 | ppb |
| \| | As | 75 | 94462.910 | 193.696079 | ppb |
| ⌊ | Se | 82 | 7575.535 | 196.413428 | ppb |
| ⌈ | Ag | 107 | 181773.874 | 103.107274 | ppb |
| \| | Ag | 109 | 175693.300 | 102.551626 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 44196.897 | 99.494300 | ppb |
| | In | 113 | 102649.152 | | ppb |
| > | In | 115 | 1344459.792 | | ppb |
| | Sb | 121 | 353799.927 | 199.292248 | ppb |
| | Ba | 135 | 35290.160 | 100.472634 | ppb |
| | Ba | 137 | 61265.097 | 100.221564 | ppb |
| > | Tb | 159 | 1816852.974 | | ppb |
| | Tl | 205 | 792760.377 | 204.145213 | ppb |
| | Pb | 206 | 254272.132 | 198.946775 | ppb |
| | Pb | 207 | 465019.703 | 197.467643 | ppb |
| | Pb | 208 | 735451.360 | 196.672902 | ppb |
| > | Bi | 209 | 1169492.750 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 188530.593 | | ppb |
| | Be | 9 | 9856.855 | 102.910821 | ppb |
| > | Sc | 45 | 670990.693 | | ppb |
| | V | 51 | 216443.278 | 101.125918 | ppb |
| | Cr | 52 | 186437.903 | 105.747929 | ppb |
| | Mn | 55 | 264656.413 | 98.488673 | ppb |
| | Co | 59 | 229657.183 | 108.357011 | ppb |
| | Ni | 60 | 52091.993 | 95.811747 | ppb |
| | Cu | 63 | 127571.905 | 105.726076 | ppb |
| | Cu | 65 | 61491.816 | 105.674596 | ppb |
| | Zn | 66 | 71350.305 | 212.918925 | ppb |
| | As | 75 | 96668.915 | 205.558787 | ppb |
| | Se | 82 | 7570.865 | 203.597507 | ppb |
| | Ag | 107 | 187926.039 | 106.788896 | ppb |
| | Ag | 109 | 177657.549 | 103.884826 | ppb |
| | Cd | 111 | 43951.973 | 99.120900 | ppb |
| | In | 113 | 104735.620 | | ppb |
| > | In | 115 | 1342045.460 | | ppb |
| | Sb | 121 | 359684.364 | 198.815515 | ppb |
| | Ba | 135 | 36311.808 | 101.447044 | ppb |
| | Ba | 137 | 63702.255 | 102.259022 | ppb |
| > | Tb | 159 | 1851499.395 | | ppb |
| | Tl | 205 | 785229.600 | 201.283902 | ppb |
| | Pb | 206 | 253774.734 | 197.652127 | ppb |
| | Pb | 207 | 467948.963 | 197.805547 | ppb |
| | Pb | 208 | 742016.912 | 197.523999 | ppb |
| > | Bi | 209 | 1174849.467 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 189612.767 | | ppb |
| | Be | 9 | 9828.828 | 102.032185 | ppb |
| > | Sc | 45 | 686266.905 | | ppb |
| | V | 51 | 218512.374 | 99.814914 | ppb |
| | Cr | 52 | 185555.721 | 102.878202 | ppb |
| | Mn | 55 | 256882.592 | 93.462887 | ppb |
| | Co | 59 | 225702.661 | 104.120192 | ppb |
| | Ni | 60 | 50999.718 | 91.709720 | ppb |
| | Cu | 63 | 124776.971 | 101.103812 | ppb |
| | Cu | 65 | 60787.530 | 102.133191 | ppb |
| | Zn | 66 | 71212.663 | 207.770155 | ppb |
| | As | 75 | 95651.650 | 198.867333 | ppb |
| | Se | 82 | 7775.021 | 204.437830 | ppb |
| | Ag | 107 | 186659.310 | 103.473551 | ppb |
| | Ag | 109 | 177284.346 | 101.129758 | ppb |
| | Cd | 111 | 43665.073 | 96.064067 | ppb |
| | In | 113 | 102416.788 | | ppb |
| > | In | 115 | 1375707.278 | | ppb |
| | Sb | 121 | 368895.983 | 205.002085 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 35912.369 | 100.869179 | ppb |
| \| | Ba | 137 | 62381.970 | 100.676362 | ppb |
| \> | Tb | 159 | 1841619.862 | | ppb |
| ⌈ | Tl | 205 | 781514.843 | 202.562580 | ppb |
| \| | Pb | 206 | 249719.541 | 196.659487 | ppb |
| \| | Pb | 207 | 463842.694 | 198.253252 | ppb |
| \| | Pb | 208 | 745105.689 | 200.555288 | ppb |
| \> | Bi | 209 | 1161910.571 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 96.737 | | | |
| ⌊ | Be | 9 | 103.215 | | | | |
| ⌈> | Sc | 45 | | 96.954 | | | |
| \| | V | 51 | 100.084 | | | | |
| \| | Cr | 52 | 105.376 | | | | |
| \| | Mn | 55 | 95.168 | | | | |
| \| | Co | 59 | 105.534 | | | | |
| \| | Ni | 60 | 92.252 | | | | |
| \| | Cu | 63 | 104.789 | | | | |
| \| | Cu | 65 | 104.679 | | | | |
| \| | Zn | 66 | 101.514 | | | | |
| \| | As | 75 | 99.687 | | | | |
| ⌊ | Se | 82 | 97.807 | | | | |
| ⌈ | Ag | 107 | 104.457 | | | | |
| \| | Ag | 109 | 102.522 | | | | |
| \| | Cd | 111 | 99.219 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.951 | | | |
| ⌈ | Sb | 121 | 101.023 | | | | |
| \| | Ba | 135 | 101.949 | | | | |
| \| | Ba | 137 | 102.073 | | | | |
| ⌊> | Tb | 159 | | 98.728 | | | |
| ⌈ | Tl | 205 | 98.381 | | | | |
| \| | Pb | 206 | 98.876 | | | | |
| \| | Pb | 207 | 98.921 | | | | |
| \| | Pb | 208 | 99.125 | | | | |
| ⌊> | Bi | 209 | | 99.869 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICB

Sample Date/Time: Monday, August 01, 2011 16:28:21
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICB.1443

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 193290.880 | 0.466 | 193290.880 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.02095 | 96.23 | ppb |
| ⌈> | Sc | 45 | 703342.351 | 1.794 | 703342.351 | | | ppb |
| \| | V | 51 | 658.553 | 22.913 | -0.000 | -0.10388 | 66.47 | ppb |
| \| | Cr | 52 | 1834.835 | 2.590 | 0.000 | 0.01444 | 115.80 | ppb |
| \| | Mn | 55 | 260.003 | 12.010 | -0.000 | -0.00369 | 335.27 | ppb |
| \| | Co | 59 | 42.667 | 18.944 | 0.000 | 0.00610 | 65.11 | ppb |
| \| | Ni | 60 | 51.111 | 29.408 | -0.000 | -0.02701 | 96.51 | ppb |
| \| | Cu | 63 | 116.667 | 10.302 | -0.000 | -0.00057 | 1599.55 | ppb |
| \| | Cu | 65 | 103.334 | 19.622 | -0.000 | -0.00083 | 4370.88 | ppb |
| \| | Zn | 66 | 108.889 | 7.704 | -0.000 | -0.00529 | 409.86 | ppb |
| \| | As | 75 | 37.152 | 18.026 | 0.000 | 0.05187 | 24.20 | ppb |
| ⌊ | Se | 82 | 39.111 | 4.290 | -0.000 | -0.05311 | 98.91 | ppb |
| ⌈ | Ag | 107 | 37.778 | 39.788 | 0.000 | 0.01594 | 51.42 | ppb |
| \| | Ag | 109 | 26.667 | 21.651 | 0.000 | 0.00576 | 57.35 | ppb |
| \| | Cd | 111 | 1.910 | 228.823 | -0.000 | -0.00493 | 193.70 | ppb |
| \| | In | 113 | 61131.283 | 0.286 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1384313.760 | 0.388 | 1384313.760 | | | ppb |
| ⌈ | Sb | 121 | 795.035 | 40.150 | 0.000 | 0.40380 | 42.55 | ppb |
| \| | Ba | 135 | 20.667 | 20.145 | 0.000 | 0.02948 | 39.86 | ppb |
| \| | Ba | 137 | 25.333 | 43.481 | 0.000 | 0.01044 | 165.37 | ppb |
| ⌊> | Tb | 159 | 1867538.134 | 0.704 | 1867538.134 | | | ppb |
| ⌈ | Tl | 205 | 68.334 | 22.354 | 0.000 | 0.01086 | 37.45 | ppb |
| \| | Pb | 206 | 66.667 | 56.292 | 0.000 | 0.02770 | 103.79 | ppb |
| \| | Pb | 207 | 105.000 | 66.155 | 0.000 | 0.02323 | 124.38 | ppb |
| \| | Pb | 208 | 176.668 | 38.633 | 0.000 | 0.02676 | 66.88 | ppb |
| ⌊> | Bi | 209 | 1192199.170 | 1.143 | 1192199.170 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192450.204 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.021258 | ppb |
| ⌈> | Sc | 45 | 691360.426 | | ppb |
| \| | V | 51 | 611.513 | -0.120510 | ppb |
| \| | Cr | 52 | 1780.158 | 0.001457 | ppb |
| \| | Mn | 55 | 295.004 | 0.010454 | ppb |
| \| | Co | 59 | 50.000 | 0.009741 | ppb |
| \| | Ni | 60 | 36.667 | -0.051170 | ppb |
| \| | Cu | 63 | 120.001 | 0.003738 | ppb |
| \| | Cu | 65 | 126.667 | 0.040710 | ppb |
| \| | Zn | 66 | 100.001 | -0.025605 | ppb |
| \| | As | 75 | 29.437 | 0.037376 | ppb |
| ⌊ | Se | 82 | 40.667 | 0.004795 | ppb |
| ⌈ | Ag | 107 | 23.333 | 0.008034 | ppb |
| \| | Ag | 109 | 23.333 | 0.003897 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 3.820 | -0.000757 | ppb |
| | In | 113 | 61332.509 | | ppb |
| > | In | 115 | 1380735.150 | | ppb |
| | Sb | 121 | 1145.066 | 0.592332 | ppb |
| | Ba | 135 | 16.000 | 0.016227 | ppb |
| | Ba | 137 | 38.000 | 0.030268 | ppb |
| > | Tb | 159 | 1879779.364 | | ppb |
| | Tl | 205 | 65.000 | 0.009971 | ppb |
| | Pb | 206 | 110.001 | 0.060900 | ppb |
| | Pb | 207 | 185.001 | 0.056488 | ppb |
| | Pb | 208 | 255.002 | 0.047239 | ppb |
| > | Bi | 209 | 1193293.700 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194242.359 | | ppb |
| | Be | 9 | 8.000 | 0.040966 | ppb |
| > | Sc | 45 | 716516.994 | | ppb |
| | V | 51 | 536.780 | -0.163111 | ppb |
| | Cr | 52 | 1858.173 | 0.008555 | ppb |
| | Mn | 55 | 250.003 | -0.008988 | ppb |
| | Co | 59 | 34.000 | 0.001867 | ppb |
| | Ni | 60 | 50.000 | -0.030477 | ppb |
| | Cu | 63 | 126.667 | 0.005524 | ppb |
| | Cu | 65 | 90.000 | -0.025824 | ppb |
| | Zn | 66 | 110.001 | -0.007802 | ppb |
| | As | 75 | 41.468 | 0.059202 | ppb |
| | Se | 82 | 39.333 | -0.066418 | ppb |
| | Ag | 107 | 53.333 | 0.024398 | ppb |
| | Ag | 109 | 23.333 | 0.003804 | ppb |
| | Cd | 111 | -3.090 | -0.015858 | ppb |
| | In | 113 | 61045.762 | | ppb |
| > | In | 115 | 1390494.019 | | ppb |
| | Sb | 121 | 720.026 | 0.363110 | ppb |
| | Ba | 135 | 24.000 | 0.038621 | ppb |
| | Ba | 137 | 18.000 | -0.001202 | ppb |
| > | Tb | 159 | 1869192.704 | | ppb |
| | Tl | 205 | 55.000 | 0.007310 | ppb |
| | Pb | 206 | 45.000 | 0.010709 | ppb |
| | Pb | 207 | 60.000 | 0.004213 | ppb |
| | Pb | 208 | 130.001 | 0.014137 | ppb |
| > | Bi | 209 | 1205247.981 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193180.077 | | ppb |
| | Be | 9 | 4.000 | 0.000639 | ppb |
| > | Sc | 45 | 702149.634 | | ppb |
| | V | 51 | 827.366 | -0.028033 | ppb |
| | Cr | 52 | 1866.174 | 0.033317 | ppb |
| | Mn | 55 | 235.003 | -0.012543 | ppb |
| | Co | 59 | 44.000 | 0.006683 | ppb |
| | Ni | 60 | 66.667 | 0.000618 | ppb |
| | Cu | 63 | 103.334 | -0.010958 | ppb |
| | Cu | 65 | 93.334 | -0.017372 | ppb |
| | Zn | 66 | 116.667 | 0.017537 | ppb |
| | As | 75 | 40.551 | 0.059029 | ppb |
| | Se | 82 | 37.333 | -0.097710 | ppb |
| | Ag | 107 | 36.667 | 0.015385 | ppb |
| | Ag | 109 | 33.333 | 0.009568 | ppb |
| | Cd | 111 | 5.000 | 0.001823 | ppb |
| | In | 113 | 61015.579 | | ppb |
| > | In | 115 | 1381712.113 | | ppb |
| | Sb | 121 | 520.014 | 0.255971 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 22.000 | 0.033596 | ppb |
| | Ba | 137 | 20.000 | 0.002246 | ppb |
| > | Tb | 159 | 1853642.333 | | ppb |
| | Tl | 205 | 85.000 | 0.015297 | ppb |
| | Pb | 206 | 45.000 | 0.011498 | ppb |
| | Pb | 207 | 70.000 | 0.008999 | ppb |
| | Pb | 208 | 145.001 | 0.018898 | ppb |
| > | Bi | 209 | 1178055.828 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 98.489 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 99.642 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.116 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 100.388 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 101.872 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSA

Sample Date/Time: Monday, August 01, 2011 16:29:48
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICSA.1444

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192556.413 | 1.267 | 192556.413 | | | ppb |
| ⌊ | Be | 9 | 26.000 | 20.352 | 0.000 | 0.22536 | 22.47 | ppb |
| ⌈> | Sc | 45 | 697067.137 | 0.418 | 697067.137 | | | ppb |
| \| | V | 51 | 79.443 | 619.971 | -0.001 | -0.36332 | 61.34 | ppb |
| \| | Cr | 52 | 38230.282 | 1.428 | 0.052 | 20.07988 | 1.12 | ppb |
| \| | Mn | 55 | 21463.016 | 2.237 | 0.030 | 7.60010 | 2.54 | ppb |
| \| | Co | 59 | 2416.959 | 2.149 | 0.003 | 1.08475 | 2.52 | ppb |
| \| | Ni | 60 | 2724.816 | 1.097 | 0.004 | 4.71334 | 0.88 | ppb |
| \| | Cu | 63 | 9504.515 | 1.573 | 0.013 | 7.49594 | 1.37 | ppb |
| \| | Cu | 65 | 4952.338 | 2.991 | 0.007 | 8:03433 | 2.82 | ppb |
| \| | Zn | 66 | 4279.805 | 3.101 | 0.006 | 11.99741 | 3.57 | ppb |
| \| | As | 75 | 56.231 | 35.833 | 0.000 | 0.09164 | 44.69 | ppb |
| ⌊ | Se | 82 | 43.111 | 12.499 | 0.000 | 0.05931 | 229.05 | ppb |
| ⌈ | Ag | 107 | 46.667 | 24.744 | 0.000 | 0.02143 | 30.72 | ppb |
| \| | Ag | 109 | 30.000 | 19.245 | 0.000 | 0.00802 | 42.37 | ppb |
| \| | Cd | 111 | 156.398 | 46.072 | 0.000 | 0.34139 | 47.93 | ppb |
| \| | In | 113 | 60049.769 | 0.920 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1354540.948 | 0.948 | 1354540.948 | | | ppb |
| ⌈ | Sb | 121 | 2133.561 | 6.190 | 0.001 | 1.14881 | 6.89 | ppb |
| \| | Ba | 135 | 450.010 | 6.726 | 0.000 | 1.23033 | 7.46 | ppb |
| \| | Ba | 137 | 844.036 | 5.512 | 0.000 | 1.32543 | 5.02 | ppb |
| ⌊> | Tb | 159 | 1851192.466 | 0.720 | 1851192.466 | | | ppb |
| ⌈ | Tl | 205 | 46.667 | 37.627 | 0.000 | 0.00623 | 79.01 | ppb |
| \| | Pb | 206 | 5438.146 | 3.388 | 0.005 | 4.44588 | 2.18 | ppb |
| \| | Pb | 207 | 9547.325 | 3.615 | 0.009 | 4.23801 | 2.59 | ppb |
| \| | Pb | 208 | 14593.011 | 2.455 | 0.013 | 4.08136 | 3.64 | ppb |
| ⌊> | Bi | 209 | 1113314.568 | 1.269 | 1113314.568 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 191642.921 | | ppb |
| ⌊ | Be | 9 | 22.000 | 0.185916 | ppb |
| ⌈> | Sc | 45 | 700264.058 | | ppb |
| \| | V | 51 | 184.550 | -0.315949 | ppb |
| \| | Cr | 52 | 38694.720 | 20.238991 | ppb |
| \| | Mn | 55 | 21007.042 | 7.401836 | ppb |
| \| | Co | 59 | 2360.279 | 1.054047 | ppb |
| \| | Ni | 60 | 2740.375 | 4.718795 | ppb |
| \| | Cu | 63 | 9564.572 | 7.509144 | ppb |
| \| | Cu | 65 | 5007.920 | 8.088856 | ppb |
| \| | Zn | 66 | 4170.870 | 11.628158 | ppb |
| \| | As | 75 | 68.528 | 0.116261 | ppb |
| ⌊ | Se | 82 | 48.000 | 0.181182 | ppb |
| ⌈ | Ag | 107 | 40.000 | 0.017838 | ppb |
| \| | Ag | 109 | 26.667 | 0.006202 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 211.362 | 0.466759 | ppb |
| | In | 113 | 60130.240 | | ppb |
| > | In | 115 | 1344359.411 | | ppb |
| | Sb | 121 | 2160.233 | 1.157282 | ppb |
| | Ba | 135 | 416.009 | 1.129099 | ppb |
| | Ba | 137 | 894.040 | 1.398792 | ppb |
| > | Tb | 159 | 1860527.648 | | ppb |
| | Tl | 205 | 30.000 | 0.001597 | ppb |
| | Pb | 206 | 5561.546 | 4.500499 | ppb |
| | Pb | 207 | 9672.391 | 4.249579 | ppb |
| | Pb | 208 | 14195.928 | 3.927075 | ppb |
| > | Bi | 209 | 1125029.278 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 190705.249 | | ppb |
| | Be | 9 | 24.000 | 0.207679 | ppb |
| > | Sc | 45 | 694561.211 | | ppb |
| | V | 51 | -457.151 | -0.606049 | ppb |
| | Cr | 52 | 37628.663 | 19.823672 | ppb |
| | Mn | 55 | 21417.912 | 7.611257 | ppb |
| | Co | 59 | 2428.295 | 1.093815 | ppb |
| | Ni | 60 | 2690.362 | 4.669522 | ppb |
| | Cu | 63 | 9334.354 | 7.387081 | ppb |
| | Cu | 65 | 4784.478 | 7.785116 | ppb |
| | Zn | 66 | 4427.647 | 12.467577 | ppb |
| | As | 75 | 32.978 | 0.044369 | ppb |
| | Se | 82 | 37.333 | -0.087173 | ppb |
| | Ag | 107 | 60.000 | 0.029034 | ppb |
| | Ag | 109 | 36.667 | 0.011946 | ppb |
| | Cd | 111 | 183.012 | 0.401115 | ppb |
| | In | 113 | 60557.809 | | ppb |
| > | In | 115 | 1350295.995 | | ppb |
| | Sb | 121 | 2250.253 | 1.223396 | ppb |
| | Ba | 135 | 474.011 | 1.308067 | ppb |
| | Ba | 137 | 802.032 | 1.268942 | ppb |
| > | Tb | 159 | 1835926.486 | | ppb |
| | Tl | 205 | 65.000 | 0.011401 | ppb |
| | Pb | 206 | 5226.365 | 4.333993 | ppb |
| | Pb | 207 | 9157.138 | 4.123041 | ppb |
| | Pb | 208 | 14891.776 | 4.223897 | ppb |
| > | Bi | 209 | 1097625.040 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195321.067 | | ppb |
| | Be | 9 | 32.000 | 0.282475 | ppb |
| > | Sc | 45 | 696376.142 | | ppb |
| | V | 51 | 510.931 | -0.167974 | ppb |
| | Cr | 52 | 38367.462 | 20.176976 | ppb |
| | Mn | 55 | 21964.095 | 7.787206 | ppb |
| | Co | 59 | 2462.303 | 1.106393 | ppb |
| | Ni | 60 | 2743.710 | 4.751708 | ppb |
| | Cu | 63 | 9614.620 | 7.591587 | ppb |
| | Cu | 65 | 5064.616 | 8.229003 | ppb |
| | Zn | 66 | 4240.899 | 11.896499 | ppb |
| | As | 75 | 67.186 | 0.114290 | ppb |
| | Se | 82 | 44.000 | 0.083934 | ppb |
| | Ag | 107 | 40.000 | 0.017430 | ppb |
| | Ag | 109 | 26.667 | 0.005922 | ppb |
| | Cd | 111 | 74.821 | 0.156304 | ppb |
| | In | 113 | 59461.258 | | ppb |
| > | In | 115 | 1368967.439 | | ppb |
| | Sb | 121 | 1990.198 | 1.065743 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 460.011 | 1.253813 | ppb |
| \| | Ba | 137 | 836.035 | 1.308552 | ppb |
| \> | Tb | 159 | 1857123.264 | | ppb |
| ⌈ | Tl | 205 | 45.000 | 0.005696 | ppb |
| \| | Pb | 206 | 5526.527 | 4.503155 | ppb |
| \| | Pb | 207 | 9812.445 | 4.341418 | ppb |
| \| | Pb | 208 | 14691.329 | 4.093098 | ppb |
| \> | Bi | 209 | 1117289.385 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 98.114 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 98.753 | | | |
| \| | V | 51 | -72.665 | | | | |
| \| | Cr | 52 | 95.618 | | | | |
| \| | Mn | 55 | 108.573 | | | | |
| \| | Co | 59 | 108.475 | | | | |
| \| | Ni | 60 | 78.556 | | | | |
| \| | Cu | 63 | 93.699 | | | | |
| \| | Cu | 65 | 100.429 | | | | |
| \| | Zn | 66 | 109.067 | | | | |
| \| | As | 75 | 91.640 | | | | |
| ⌊ | Se | 82 | 19.771 | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | 48.770 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.984 | | | |
| ⌈ | Sb | 121 | 76.587 | | | | |
| \| | Ba | 135 | 102.527 | | | | |
| \| | Ba | 137 | 110.452 | | | | |
| ⌊> | Tb | 159 | | 99.510 | | | |
| ⌈ | Tl | 205 | 62315.788 | | | | |
| \| | Pb | 206 | 111.147 | | | | |
| \| | Pb | 207 | 105.950 | | | | |
| \| | Pb | 208 | 102.034 | | | | |
| ⌊> | Bi | 209 | | 95.132 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSAB

Sample Date/Time: Monday, August 01, 2011 16:31:13
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\ICSAB.1445

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196806.038 | 1.490 | 196806.038 | | | ppb |
| ⌊ | Be | 9 | 1913.516 | 0.160 | 0.010 | 19.10796 | 1.35 | ppb |
| ⌈> | Sc | 45 | 712270.839 | 0.075 | 712270.839 | | | ppb |
| ⌈ | V | 51 | 45565.583 | 1.914 | 0.063 | 19.73559 | 2.03 | ppb |
| ⌈ | Cr | 52 | 77471.606 | 0.477 | 0.106 | 40.79423 | 0.41 | ppb |
| ⌈ | Mn | 55 | 78671.712 | 2.522 | 0.110 | 27.51057 | 2.50 | ppb |
| ⌈ | Co | 59 | 48953.537 | 0.921 | 0.069 | 21.74823 | 0.98 | ppb |
| ⌈ | Ni | 60 | 12983.983 | 2.446 | 0.018 | 22.40807 | 2.52 | ppb |
| ⌈ | Cu | 63 | 34254.146 | 2.441 | 0.048 | 26.67385 | 2.48 | ppb |
| ⌈ | Cu | 65 | 16968.836 | 2.650 | 0.024 | 27.34432 | 2.59 | ppb |
| ⌈ | Zn | 66 | 11433.200 | 1.712 | 0.016 | 31.87308 | 1.79 | ppb |
| ⌈ | As | 75 | 9801.001 | 2.374 | 0.014 | 19.61186 | 2.31 | ppb |
| ⌊ | Se | 82 | 815.144 | 3.665 | 0.001 | 19.69614 | 3.85 | ppb |
| ⌈ | Ag | 107 | 35287.709 | 0.710 | 0.026 | 19.89752 | 0.99 | ppb |
| ⌈ | Ag | 109 | 33740.161 | 0.955 | 0.025 | 19.57273 | 0.36 | ppb |
| ⌈ | Cd | 111 | 8780.206 | 1.126 | 0.006 | 19.64621 | 1.90 | ppb |
| ⌈ | In | 113 | 68606.255 | 1.828 | 0.007 | | | ppb |
| ⌊> | In | 115 | 1352309.434 | 1.301 | 1352309.434 | | | ppb |
| ⌈ | Sb | 121 | 38288.168 | 1.363 | 0.021 | 21.60588 | 1.88 | ppb |
| ⌈ | Ba | 135 | 7776.356 | 0.850 | 0.004 | 22.18435 | 0.38 | ppb |
| ⌈ | Ba | 137 | 13394.300 | 1.845 | 0.007 | 21.95423 | 1.89 | ppb |
| ⌊> | Tb | 159 | 1811405.639 | 0.565 | 1811405.639 | | | ppb |
| ⌈ | Tl | 205 | 76555.292 | 1.447 | 0.069 | 20.83020 | 2.54 | ppb |
| ⌈ | Pb | 206 | 30824.116 | 2.279 | 0.028 | 25.46256 | 1.15 | ppb |
| ⌈ | Pb | 207 | 55482.818 | 1.817 | 0.050 | 24.87753 | 0.70 | ppb |
| ⌈ | Pb | 208 | 85115.966 | 1.944 | 0.077 | 24.03395 | 0.89 | ppb |
| ⌊> | Bi | 209 | 1106721.512 | 1.125 | 1106721.512 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198878.154 | | ppb |
| ⌊ | Be | 9 | 1916.184 | 18.932335 | ppb |
| ⌈> | Sc | 45 | 712204.693 | | ppb |
| ⌈ | V | 51 | 45359.886 | 19.646366 | ppb |
| ⌈ | Cr | 52 | 77440.697 | 40.781524 | ppb |
| ⌈ | Mn | 55 | 76511.586 | 26.755189 | ppb |
| ⌈ | Co | 59 | 48617.898 | 21.600962 | ppb |
| ⌈ | Ni | 60 | 13212.055 | 22.805614 | ppb |
| ⌈ | Cu | 63 | 33419.082 | 26.023607 | ppb |
| ⌈ | Cu | 65 | 16780.735 | 27.042181 | ppb |
| ⌈ | Zn | 66 | 11596.720 | 32.336258 | ppb |
| ⌈ | As | 75 | 9628.123 | 19.267490 | ppb |
| ⌊ | Se | 82 | 780.697 | 18.820817 | ppb |
| ⌈ | Ag | 107 | 35332.309 | 20.115499 | ppb |
| ⌈ | Ag | 109 | 33532.795 | 19.641517 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 8881.430 | 20.063969 | ppb |
| | In | 113 | 69102.939 | | ppb |
| > | In | 115 | 1339252.701 | | ppb |
| | Sb | 121 | 38232.948 | 21.625566 | ppb |
| | Ba | 135 | 7775.021 | 22.234523 | ppb |
| | Ba | 137 | 13120.602 | 21.556847 | ppb |
| > | Tb | 159 | 1807028.514 | | ppb |
| | Tl | 205 | 75282.309 | 20.218558 | ppb |
| | Pb | 206 | 31634.960 | 25.801587 | ppb |
| | Pb | 207 | 56646.199 | 25.076669 | ppb |
| | Pb | 208 | 86917.266 | 24.231106 | ppb |
| > | Bi | 209 | 1121019.216 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198088.715 | | ppb |
| | Be | 9 | 1914.183 | 18.988061 | ppb |
| > | Sc | 45 | 712837.480 | | ppb |
| | V | 51 | 44814.732 | 19.387873 | ppb |
| | Cr | 52 | 77855.902 | 40.968196 | ppb |
| | Mn | 55 | 80412.010 | 28.098974 | ppb |
| | Co | 59 | 48776.669 | 21.652298 | ppb |
| | Ni | 60 | 12621.293 | 21.761230 | ppb |
| | Cu | 63 | 34251.893 | 26.650674 | ppb |
| | Cu | 65 | 17481.934 | 28.154140 | ppb |
| | Zn | 66 | 11216.287 | 31.237068 | ppb |
| | As | 75 | 10065.491 | 20.125897 | ppb |
| | Se | 82 | 834.035 | 20.160375 | ppb |
| | Ag | 107 | 35512.947 | 19.731099 | ppb |
| | Ag | 109 | 34111.414 | 19.498953 | ppb |
| | Cd | 111 | 8775.324 | 19.346285 | ppb |
| | In | 113 | 69535.925 | | ppb |
| > | In | 115 | 1372317.878 | | ppb |
| | Sb | 121 | 38835.263 | 22.002615 | ppb |
| | Ba | 135 | 7710.972 | 22.087135 | ppb |
| | Ba | 137 | 13601.243 | 22.384116 | ppb |
| > | Tb | 159 | 1804086.467 | | ppb |
| | Tl | 205 | 77297.596 | 21.139329 | ppb |
| | Pb | 206 | 30436.248 | 25.276911 | ppb |
| | Pb | 207 | 54931.211 | 24.761427 | ppb |
| | Pb | 208 | 84766.048 | 24.062935 | ppb |
| > | Bi | 209 | 1100908.236 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193451.244 | | ppb |
| | Be | 9 | 1910.182 | 19.403487 | ppb |
| > | Sc | 45 | 711770.344 | | ppb |
| | V | 51 | 46522.131 | 20.172526 | ppb |
| | Cr | 52 | 77118.219 | 40.632972 | ppb |
| | Mn | 55 | 79091.542 | 27.677551 | ppb |
| | Co | 59 | 49466.043 | 21.991443 | ppb |
| | Ni | 60 | 13118.599 | 22.657361 | ppb |
| | Cu | 63 | 35091.463 | 27.347280 | ppb |
| | Cu | 65 | 16643.839 | 26.836651 | ppb |
| | Zn | 66 | 11486.593 | 32.045918 | ppb |
| | As | 75 | 9709.390 | 19.442188 | ppb |
| | Se | 82 | 830.701 | 20.107240 | ppb |
| | Ag | 107 | 35017.872 | 19.845949 | ppb |
| | Ag | 109 | 33576.274 | 19.577708 | ppb |
| | Cd | 111 | 8683.865 | 19.528387 | ppb |
| | In | 113 | 67179.902 | | ppb |
| > | In | 115 | 1345357.723 | | ppb |
| | Sb | 121 | 37796.293 | 21.189469 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 7843.074 | 22.231386 | ppb |
| \| | Ba | 137 | 13461.054 | 21.921718 | ppb |
| \> | Tb | 159 | 1823101.936 | | ppb |
| ⌈ | Tl | 205 | 77085.972 | 21.132727 | ppb |
| \| | Pb | 206 | 30401.141 | 25.309193 | ppb |
| \| | Pb | 207 | 54871.044 | 24.794491 | ppb |
| \| | Pb | 208 | 83664.586 | 23.807816 | ppb |
| \> | Bi | 209 | 1098237.084 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 100.280 | | | |
| | Be | 9 | 100.568 | | | | |
| > | Sc | 45 | | 100.907 | | | |
| | V | 51 | 103.872 | | | | |
| | Cr | 52 | 101.986 | | | | |
| | Mn | 55 | 101.891 | | | | |
| | Co | 59 | 108.741 | | | | |
| | Ni | 60 | 93.367 | | | | |
| | Cu | 63 | 106.695 | | | | |
| | Cu | 65 | 109.377 | | | | |
| | Zn | 66 | 109.907 | | | | |
| | As | 75 | 103.220 | | | | |
| | Se | 82 | 103.664 | | | | |
| | Ag | 107 | 110.542 | | | | |
| | Ag | 109 | 108.737 | | | | |
| | Cd | 111 | 98.231 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.825 | | | |
| | Sb | 121 | 98.209 | | | | |
| | Ba | 135 | 100.838 | | | | |
| | Ba | 137 | 99.792 | | | | |
| > | Tb | 159 | | 97.371 | | | |
| | Tl | 205 | 99.191 | | | | |
| | Pb | 206 | 101.850 | | | | |
| | Pb | 207 | 99.510 | | | | |
| | Pb | 208 | 96.136 | | | | |
| > | Bi | 209 | | 94.568 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Monday, August 01, 2011 16:32:40
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLCCV.1446

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214823.627 | 0.385 | 214823.627 | | | ppb |
| ⌊ | Be | 9 | 100.667 | 17.129 | 0.000 | 0.88225 | 17.56 | ppb |
| ⌈> | Sc | 45 | 747012.047 | 1.088 | 747012.047 | | | ppb |
| \| | V | 51 | 12503.846 | 3.086 | 0.015 | 4.86869 | 2.39 | ppb |
| \| | Cr | 52 | 5805.685 | 2.240 | 0.005 | 1.99762 | 1.86 | ppb |
| \| | Mn | 55 | 3202.180 | 2.643 | 0.004 | 0.97530 | 3.08 | ppb |
| \| | Co | 59 | 2522.318 | 2.349 | 0.003 | 1.05599 | 2.43 | ppb |
| \| | Ni | 60 | 663.355 | 7.248 | 0.001 | 0.98116 | 9.21 | ppb |
| \| | Cu | 63 | 2799.281 | 1.307 | 0.004 | 1.99313 | 2.41 | ppb |
| \| | Cu | 65 | 1362.315 | 7.607 | 0.002 | 1.93465 | 7.41 | ppb |
| \| | Zn | 66 | 981.159 | 3.487 | 0.001 | 2.31780 | 2.93 | ppb |
| \| | As | 75 | 552.897 | 8.998 | 0.001 | 1.03354 | 10.23 | ppb |
| ⌊ | Se | 82 | 241.781 | 2.870 | 0.000 | 4.80912 | 3.77 | ppb |
| ⌈ | Ag | 107 | 1955.747 | 3.601 | 0.001 | 1.02151 | 2.99 | ppb |
| \| | Ag | 109 | 1890.179 | 3.101 | 0.001 | 1.01153 | 2.88 | ppb |
| \| | Cd | 111 | 445.496 | 11.795 | 0.000 | 0.91837 | 11.20 | ppb |
| \| | In | 113 | 64450.379 | 1.228 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1453133.090 | 1.408 | 1453133.090 | | | ppb |
| ⌈ | Sb | 121 | 3949.114 | 4.436 | 0.002 | 2.14156 | 3.85 | ppb |
| \| | Ba | 135 | 3652.000 | 0.518 | 0.002 | 10.13060 | 0.40 | ppb |
| \| | Ba | 137 | 6188.581 | 1.489 | 0.003 | 9.86205 | 2.04 | ppb |
| ⌊> | Tb | 159 | 1860155.817 | 0.896 | 1860155.817 | | | ppb |
| ⌈ | Tl | 205 | 4077.498 | 3.162 | 0.003 | 1.02761 | 1.97 | ppb |
| \| | Pb | 206 | 1311.753 | 1.719 | 0.001 | 0.98762 | 2.15 | ppb |
| \| | Pb | 207 | 2365.142 | 2.207 | 0.002 | 0.96880 | 1.94 | ppb |
| \| | Pb | 208 | 3885.457 | 2.910 | 0.003 | 1.00380 | 2.19 | ppb |
| ⌊> | Bi | 209 | 1187439.470 | 1.592 | 1187439.470 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214565.484 | | ppb |
| ⌊ | Be | 9 | 104.001 | 0.914308 | ppb |
| ⌈> | Sc | 45 | 744746.782 | | ppb |
| \| | V | 51 | 12191.447 | 4.753287 | ppb |
| \| | Cr | 52 | 5725.639 | 1.965640 | ppb |
| \| | Mn | 55 | 3295.543 | 1.009822 | ppb |
| \| | Co | 59 | 2584.334 | 1.085560 | ppb |
| \| | Ni | 60 | 650.021 | 0.961777 | ppb |
| \| | Cu | 63 | 2787.055 | 1.990000 | ppb |
| \| | Cu | 65 | 1410.099 | 2.015920 | ppb |
| \| | Zn | 66 | 990.049 | 2.350135 | ppb |
| \| | As | 75 | 577.974 | 1.084044 | ppb |
| ⌊ | Se | 82 | 234.003 | 4.637081 | ppb |
| ⌈ | Ag | 107 | 1946.856 | 1.004909 | ppb |
| \| | Ag | 109 | 1866.841 | 0.987053 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 436.834 | 0.890097 | ppb |
| | In | 113 | 64280.940 | | ppb |
| > | In | 115 | 1470416.602 | | ppb |
| | Sb | 121 | 3860.745 | 2.113722 | ppb |
| | Ba | 135 | 3630.659 | 10.168319 | ppb |
| | Ba | 137 | 6193.918 | 9.965065 | ppb |
| > | Tb | 159 | 1842401.070 | | ppb |
| | Tl | 205 | 4215.888 | 1.050929 | ppb |
| | Pb | 206 | 1335.089 | 0.994015 | ppb |
| | Pb | 207 | 2425.149 | 0.982559 | ppb |
| | Pb | 208 | 4015.487 | 1.026314 | ppb |
| > | Bi | 209 | 1200808.493 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 215748.533 | | ppb |
| | Be | 9 | 116.001 | 1.018599 | ppb |
| > | Sc | 45 | 756033.325 | | ppb |
| | V | 51 | 12935.267 | 4.986022 | ppb |
| | Cr | 52 | 5955.773 | 2.038483 | ppb |
| | Mn | 55 | 3180.506 | 0.955279 | ppb |
| | Co | 59 | 2516.317 | 1.040672 | ppb |
| | Ni | 60 | 623.353 | 0.902090 | ppb |
| | Cu | 63 | 2770.384 | 1.946632 | ppb |
| | Cu | 65 | 1433.436 | 2.018925 | ppb |
| | Zn | 66 | 1010.051 | 2.363392 | ppb |
| | As | 75 | 495.599 | 0.912033 | ppb |
| | Se | 82 | 244.003 | 4.791923 | ppb |
| | Ag | 107 | 1890.179 | 1.002832 | ppb |
| | Ag | 109 | 1846.837 | 1.003845 | ppb |
| | Cd | 111 | 397.819 | 0.832606 | ppb |
| | In | 113 | 63757.606 | | ppb |
| > | In | 115 | 1430552.076 | | ppb |
| | Sb | 121 | 4150.861 | 2.234230 | ppb |
| | Ba | 135 | 3666.672 | 10.087849 | ppb |
| | Ba | 137 | 6093.856 | 9.630174 | ppb |
| > | Tb | 159 | 1875477.672 | | ppb |
| | Tl | 205 | 3960.784 | 1.016762 | ppb |
| | Pb | 206 | 1310.086 | 1.004925 | ppb |
| | Pb | 207 | 2340.139 | 0.976448 | ppb |
| | Pb | 208 | 3810.440 | 1.002694 | ppb |
| > | Bi | 209 | 1165818.579 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 214156.863 | | ppb |
| | Be | 9 | 82.000 | 0.713842 | ppb |
| > | Sc | 45 | 740256.033 | | ppb |
| | V | 51 | 12384.824 | 4.866761 | ppb |
| | Cr | 52 | 5735.644 | 1.988748 | ppb |
| | Mn | 55 | 3130.490 | 0.960802 | ppb |
| | Co | 59 | 2466.304 | 1.041741 | ppb |
| | Ni | 60 | 716.692 | 1.079607 | ppb |
| | Cu | 63 | 2840.403 | 2.042746 | ppb |
| | Cu | 65 | 1243.411 | 1.769113 | ppb |
| | Zn | 66 | 943.378 | 2.239879 | ppb |
| | As | 75 | 585.117 | 1.104530 | ppb |
| | Se | 82 | 247.336 | 4.998371 | ppb |
| | Ag | 107 | 2030.206 | 1.056794 | ppb |
| | Ag | 109 | 1956.858 | 1.043683 | ppb |
| | Cd | 111 | 501.837 | 1.032397 | ppb |
| | In | 113 | 65312.592 | | ppb |
| > | In | 115 | 1458430.593 | | ppb |
| | Sb | 121 | 3835.736 | 2.076731 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 3658.669 | 10.135618 | ppb |
| \| | Ba | 137 | 6277.970 | 9.990898 | ppb |
| \> | Tb | 159 | 1862588.711 | | ppb |
| ⌈ | Tl | 205 | 4055.822 | 1.015137 | ppb |
| \| | Pb | 206 | 1290.083 | 0.963923 | ppb |
| \| | Pb | 207 | 2330.137 | 0.947385 | ppb |
| \| | Pb | 208 | 3830.443 | 0.982386 | ppb |
| \> | Bi | 209 | 1195691.340 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 109.460 | | | |
| ⌊ | Be | 9 | 88.225 | | | | |
| ⌈> | Sc | 45 | | 105.829 | | | |
| ⌈ | V | 51 | 97.374 | | | | |
| ⌈ | Cr | 52 | 99.881 | | | | |
| ⌈ | Mn | 55 | 97.530 | | | | |
| ⌈ | Co | 59 | 105.599 | | | | |
| ⌈ | Ni | 60 | 98.116 | | | | |
| ⌈ | Cu | 63 | 99.656 | | | | |
| ⌈ | Cu | 65 | 96.733 | | | | |
| ⌈ | Zn | 66 | 115.890 | | | | |
| ⌈ | As | 75 | 103.354 | | | | |
| ⌊ | Se | 82 | 96.182 | | | | |
| ⌈ | Ag | 107 | 102.151 | | | | |
| ⌈ | Ag | 109 | 101.153 | | | | |
| ⌈ | Cd | 111 | 91.837 | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 104.044 | | | |
| ⌈ | Sb | 121 | 107.078 | | | | |
| ⌈ | Ba | 135 | 101.306 | | | | |
| ⌈ | Ba | 137 | 98.620 | | | | |
| ⌊> | Tb | 159 | | 99.991 | | | |
| ⌈ | Tl | 205 | 102.761 | | | | |
| ⌈ | Pb | 206 | 98.762 | | | | |
| ⌈ | Pb | 207 | 96.880 | | | | |
| ⌈ | Pb | 208 | 100.380 | | | | |
| ⌊> | Bi | 209 | | 101.466 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 16:34:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1447

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210574.710 | 0.635 | 210574.710 | | | ppb |
| ⌊ | Be | 9 | 30343.971 | 1.015 | 0.144 | 283.73231 | 1.64 | ppb |
| ⌈> | Sc | 45 | 745878.995 | 0.628 | 745878.995 | | | ppb |
| \| | V | 51 | 738592.588 | 0.988 | 0.989 | 311.28198 | 1.61 | ppb |
| \| | Cr | 52 | 601012.108 | 0.904 | 0.803 | 308.56011 | 1.38 | ppb |
| \| | Mn | 55 | 917097.291 | 0.657 | 1.229 | 307.24065 | 1.28 | ppb |
| \| | Co | 59 | 719316.286 | 0.453 | 0.964 | 305.33941 | 0.28 | ppb |
| \| | Ni | 60 | 185045.337 | 0.703 | 0.248 | 306.44694 | 1.16 | ppb |
| \| | Cu | 63 | 412349.128 | 0.855 | 0.553 | 307.61707 | 1.31 | ppb |
| \| | Cu | 65 | 197985.331 | 1.220 | 0.265 | 306.42395 | 1.75 | ppb |
| \| | Zn | 66 | 117249.050 | 1.723 | 0.157 | 314.93922 | 2.34 | ppb |
| \| | As | 75 | 159971.965 | 0.434 | 0.214 | 306.03839 | 1.03 | ppb |
| ⌊ | Se | 82 | 12601.713 | 0.681 | 0.017 | 305.40733 | 1.28 | ppb |
| ⌈ | Ag | 107 | 573217.685 | 0.973 | 0.411 | 313.69669 | 1.10 | ppb |
| \| | Ag | 109 | 552628.829 | 0.796 | 0.397 | 311.21888 | 0.94 | ppb |
| \| | Cd | 111 | 142781.889 | 1.332 | 0.102 | 310.10099 | 0.72 | ppb |
| \| | In | 113 | 203940.313 | 0.644 | 0.102 | | | ppb |
| ⌊> | In | 115 | 1393601.158 | 0.618 | 1393601.158 | | | ppb |
| ⌈ | Sb | 121 | 574729.623 | 1.381 | 0.308 | 314.85464 | 3.37 | ppb |
| \| | Ba | 135 | 111265.612 | 0.920 | 0.060 | 308.10347 | 2.91 | ppb |
| \| | Ba | 137 | 194290.770 | 1.109 | 0.104 | 309.09612 | 2.24 | ppb |
| ⌊> | Tb | 159 | 1869114.212 | 2.147 | 1869114.212 | | | ppb |
| ⌈ | Tl | 205 | 1197779.385 | 0.384 | 1.031 | 310.47779 | 0.44 | ppb |
| \| | Pb | 206 | 399403.565 | 0.689 | 0.344 | 314.56880 | 0.42 | ppb |
| \| | Pb | 207 | 731592.632 | 0.378 | 0.630 | 312.72367 | 0.29 | ppb |
| \| | Pb | 208 | 1149418.544 | 0.496 | 0.989 | 309.41325 | 0.69 | ppb |
| ⌊> | Bi | 209 | 1161843.767 | 0.295 | 1161843.767 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209973.541 | | ppb |
| ⌊ | Be | 9 | 30470.351 | 285.710180 | ppb |
| ⌈> | Sc | 45 | 743229.928 | | ppb |
| \| | V | 51 | 741427.232 | 313.572394 | ppb |
| \| | Cr | 52 | 607224.852 | 312.859261 | ppb |
| \| | Mn | 55 | 920316.085 | 309.402032 | ppb |
| \| | Co | 59 | 718943.185 | 306.266107 | ppb |
| \| | Ni | 60 | 184302.870 | 306.292536 | ppb |
| \| | Cu | 63 | 416406.216 | 311.737850 | ppb |
| \| | Cu | 65 | 197542.060 | 306.807588 | ppb |
| \| | Zn | 66 | 118467.596 | 319.319608 | ppb |
| \| | As | 75 | 160030.971 | 307.229488 | ppb |
| ⌊ | Se | 82 | 12613.951 | 306.782192 | ppb |
| ⌈ | Ag | 107 | 579198.101 | 315.933427 | ppb |
| \| | Ag | 109 | 557424.854 | 312.893959 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 143658.117 | 311.000098 | ppb |
| | In | 113 | 203739.561 | | ppb |
| > | In | 115 | 1398141.037 | | ppb |
| | Sb | 121 | 565801.181 | 302.685751 | ppb |
| | Ba | 135 | 110636.657 | 299.188773 | ppb |
| | Ba | 137 | 193861.066 | 301.229251 | ppb |
| > | Tb | 159 | 1913143.421 | | ppb |
| | Tl | 205 | 1195062.398 | 310.760244 | ppb |
| | Pb | 206 | 396227.310 | 313.064713 | ppb |
| | Pb | 207 | 728781.483 | 312.515409 | ppb |
| | Pb | 208 | 1150328.389 | 310.642731 | ppb |
| > | Bi | 209 | 1158149.498 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 212105.839 | | ppb |
| | Be | 9 | 29992.911 | 278.405123 | ppb |
| > | Sc | 45 | 743122.358 | | ppb |
| | V | 51 | 744045.381 | 314.726707 | ppb |
| | Cr | 52 | 598669.429 | 308.482142 | ppb |
| | Mn | 55 | 920824.877 | 309.617962 | ppb |
| | Co | 59 | 716260.566 | 305.167446 | ppb |
| | Ni | 60 | 186547.248 | 310.068778 | ppb |
| | Cu | 63 | 410586.155 | 307.423936 | ppb |
| | Cu | 65 | 200591.877 | 311.592097 | ppb |
| | Zn | 66 | 118363.036 | 319.083723 | ppb |
| | As | 75 | 160635.300 | 308.434419 | ppb |
| | Se | 82 | 12680.702 | 308.456052 | ppb |
| | Ag | 107 | 568161.172 | 309.722445 | ppb |
| | Ag | 109 | 548782.639 | 307.853299 | ppb |
| | Cd | 111 | 144087.422 | 311.737659 | ppb |
| | In | 113 | 202739.542 | | ppb |
| > | In | 115 | 1399001.468 | | ppb |
| | Sb | 121 | 580980.498 | 319.759775 | ppb |
| | Ba | 135 | 110713.500 | 308.020589 | ppb |
| | Ba | 137 | 196628.314 | 314.330231 | ppb |
| > | Tb | 159 | 1859583.870 | | ppb |
| | Tl | 205 | 1195185.937 | 308.986797 | ppb |
| | Pb | 206 | 401090.540 | 315.066310 | ppb |
| | Pb | 207 | 731686.359 | 311.938256 | ppb |
| | Pb | 208 | 1143311.555 | 306.953966 | ppb |
| > | Bi | 209 | 1164917.034 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 209644.750 | | ppb |
| | Be | 9 | 30568.651 | 287.081624 | ppb |
| > | Sc | 45 | 751284.699 | | ppb |
| | V | 51 | 730305.151 | 305.546846 | ppb |
| | Cr | 52 | 597142.044 | 304.338932 | ppb |
| | Mn | 55 | 910150.911 | 302.701948 | ppb |
| | Co | 59 | 722745.109 | 304.584691 | ppb |
| | Ni | 60 | 184285.894 | 302.979502 | ppb |
| | Cu | 63 | 410055.014 | 303.689429 | ppb |
| | Cu | 65 | 195822.057 | 300.872158 | ppb |
| | Zn | 66 | 114916.518 | 306.414316 | ppb |
| | As | 75 | 159249.624 | 302.451259 | ppb |
| | Se | 82 | 12510.487 | 300.983737 | ppb |
| | Ag | 107 | 572293.783 | 315.434186 | ppb |
| | Ag | 109 | 551678.995 | 312.909386 | ppb |
| | Cd | 111 | 140600.128 | 307.565219 | ppb |
| | In | 113 | 205341.838 | | ppb |
| > | In | 115 | 1383660.970 | | ppb |
| | Sb | 121 | 577407.190 | 322.118391 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 112446.678 | 317.101042 | ppb |
| | Ba | 137 | 192382.928 | 311.728875 | ppb |
| > | Tb | 159 | 1834615.344 | | ppb |
| | Tl | 205 | 1203089.820 | 311.686343 | ppb |
| | Pb | 206 | 400892.845 | 315.575370 | ppb |
| | Pb | 207 | 734310.054 | 313.717332 | ppb |
| | Pb | 208 | 1154615.687 | 310.643045 | ppb |
| > | Bi | 209 | 1162464.771 | | ppb |

# QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 107.295 | | | |
| ⌊ | Be | 9 | 94.577 | | | | |
| ⌈> | Sc | 45 | | 105.669 | | | |
| ⌈ | V | 51 | 103.761 | | | | |
| ⌈ | Cr | 52 | 102.853 | | | | |
| ⌈ | Mn | 55 | 102.414 | | | | |
| ⌈ | Co | 59 | 101.780 | | | | |
| ⌈ | Ni | 60 | 102.149 | | | | |
| ⌈ | Cu | 63 | 102.539 | | | | |
| ⌈ | Cu | 65 | 102.141 | | | | |
| ⌈ | Zn | 66 | 104.980 | | | | |
| ⌈ | As | 75 | 102.013 | | | | |
| ⌊ | Se | 82 | 101.802 | | | | |
| ⌈ | Ag | 107 | 104.566 | | | | |
| ⌈ | Ag | 109 | 103.740 | | | | |
| ⌈ | Cd | 111 | 103.367 | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.781 | | | |
| ⌈ | Sb | 121 | 104.952 | | | | |
| ⌈ | Ba | 135 | 102.701 | | | | |
| ⌈ | Ba | 137 | 103.032 | | | | |
| ⌊> | Tb | 159 | | 100.473 | | | |
| ⌈ | Tl | 205 | 103.493 | | | | |
| ⌈ | Pb | 206 | 104.856 | | | | |
| ⌈ | Pb | 207 | 104.241 | | | | |
| ⌈ | Pb | 208 | 103.138 | | | | |
| ⌊> | Bi | 209 | | 99.279 | | | |

# QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 16:35:32
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1448

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210396.365 | 0.726 | 210396.365 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 91.652 | -0.000 | -0.00907 | 313.71 | ppb |
| ⌈> | Sc | 45 | 742547.628 | 0.650 | 742547.628 | | | ppb |
| \| | V | 51 | 1081.345 | 51.194 | 0.000 | 0.06001 | 394.00 | ppb |
| \| | Cr | 52 | 1971.529 | 8.939 | 0.000 | 0.03198 | 268.24 | ppb |
| \| | Mn | 55 | 290.004 | 7.901 | 0.000 | 0.00145 | 570.04 | ppb |
| \| | Co | 59 | 78.000 | 14.276 | 0.000 | 0.02010 | 23.53 | ppb |
| \| | Ni | 60 | 77.778 | 28.536 | 0.000 | 0.01287 | 292.60 | ppb |
| \| | Cu | 63 | 130.001 | 24.727 | 0.000 | 0.00450 | 524.34 | ppb |
| \| | Cu | 65 | 113.334 | 11.765 | 0.000 | 0.00530 | 371.05 | ppb |
| \| | Zn | 66 | 111.112 | 6.245 | -0.000 | -0.01555 | 126.39 | ppb |
| \| | As | 75 | 79.141 | 56.629 | 0.000 | 0.12871 | 66.72 | ppb |
| ⌊ | Se | 82 | 41.556 | 11.268 | -0.000 | -0.04667 | 255.72 | ppb |
| ⌈ | Ag | 107 | 61.111 | 13.727 | 0.000 | 0.02783 | 16.92 | ppb |
| \| | Ag | 109 | 65.556 | 28.005 | 0.000 | 0.02679 | 39.60 | ppb |
| \| | Cd | 111 | 25.730 | 12.258 | 0.000 | 0.04543 | 14.05 | ppb |
| \| | In | 113 | 63127.018 | 2.138 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1426997.678 | 1.471 | 1426997.678 | | | ppb |
| ⌈ | Sb | 121 | 283.338 | 31.634 | 0.000 | 0.12469 | 39.93 | ppb |
| \| | Ba | 135 | 34.667 | 26.647 | 0.000 | 0.06858 | 37.97 | ppb |
| \| | Ba | 137 | 51.333 | 37.438 | 0.000 | 0.05225 | 59.87 | ppb |
| ⌊> | Tb | 159 | 1862342.388 | 0.660 | 1862342.388 | | | ppb |
| ⌈ | Tl | 205 | 158.335 | 21.026 | 0.000 | 0.03402 | 25.76 | ppb |
| \| | Pb | 206 | 90.000 | 25.459 | 0.000 | 0.04621 | 37.05 | ppb |
| \| | Pb | 207 | 141.667 | 24.024 | 0.000 | 0.03902 | 35.11 | ppb |
| \| | Pb | 208 | 241.669 | 43.416 | 0.000 | 0.04435 | 61.46 | ppb |
| ⌊> | Bi | 209 | 1180090.567 | 1.255 | 1180090.567 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211450.171 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.015741 | ppb |
| ⌈> | Sc | 45 | 746226.197 | | ppb |
| \| | V | 51 | 1259.179 | 0.132187 | ppb |
| \| | Cr | 52 | 2170.235 | 0.129537 | ppb |
| \| | Mn | 55 | 265.004 | -0.007436 | ppb |
| \| | Co | 59 | 88.000 | 0.024181 | ppb |
| \| | Ni | 60 | 53.333 | -0.028390 | ppb |
| \| | Cu | 63 | 166.668 | 0.031442 | ppb |
| \| | Cu | 65 | 126.667 | 0.025152 | ppb |
| \| | Zn | 66 | 103.334 | -0.037973 | ppb |
| \| | As | 75 | 117.685 | 0.201660 | ppb |
| ⌊ | Se | 82 | 42.000 | -0.041241 | ppb |
| ⌈ | Ag | 107 | 53.333 | 0.023214 | ppb |
| \| | Ag | 109 | 46.667 | 0.015908 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 28.455 | 0.050302 | ppb |
| | In | 113 | 63938.757 | | ppb |
| > | In | 115 | 1449185.515 | | ppb |
| | Sb | 121 | 330.005 | 0.151553 | ppb |
| | Ba | 135 | 40.000 | 0.084148 | ppb |
| | Ba | 137 | 72.000 | 0.085967 | ppb |
| > | Tb | 159 | 1848533.404 | | ppb |
| | Tl | 205 | 120.001 | 0.023906 | ppb |
| | Pb | 206 | 95.000 | 0.049525 | ppb |
| | Pb | 207 | 180.001 | 0.054539 | ppb |
| | Pb | 208 | 360.004 | 0.074928 | ppb |
| > | Bi | 209 | 1191194.105 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211094.779 | | ppb |
| | Be | 9 | 4.000 | -0.002821 | ppb |
| > | Sc | 45 | 744337.963 | | ppb |
| | V | 51 | 460.702 | -0.204093 | ppb |
| | Cr | 52 | 1910.182 | -0.001838 | ppb |
| | Mn | 55 | 295.004 | 0.002863 | ppb |
| | Co | 59 | 66.000 | 0.014917 | ppb |
| | Ni | 60 | 83.334 | 0.021636 | ppb |
| | Cu | 63 | 116.667 | -0.005631 | ppb |
| | Cu | 65 | 113.334 | 0.004960 | ppb |
| | Zn | 66 | 116.667 | -0.001348 | ppb |
| | As | 75 | 29.964 | 0.034062 | ppb |
| | Se | 82 | 36.667 | -0.168619 | ppb |
| | Ag | 107 | 70.000 | 0.032627 | ppb |
| | Ag | 109 | 66.667 | 0.027369 | ppb |
| | Cd | 111 | 22.275 | 0.038206 | ppb |
| | In | 113 | 63873.341 | | ppb |
| > | In | 115 | 1424336.879 | | ppb |
| | Sb | 121 | 340.006 | 0.155288 | ppb |
| | Ba | 135 | 40.000 | 0.083077 | ppb |
| | Ba | 137 | 48.000 | 0.046629 | ppb |
| > | Tb | 159 | 1866395.232 | | ppb |
| | Tl | 205 | 175.002 | 0.038874 | ppb |
| | Pb | 206 | 65.000 | 0.027676 | ppb |
| | Pb | 207 | 115.000 | 0.028588 | ppb |
| | Pb | 208 | 205.001 | 0.035520 | ppb |
| > | Bi | 209 | 1163276.530 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208644.146 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 737078.726 | | ppb |
| | V | 51 | 1524.154 | 0.251923 | ppb |
| | Cr | 52 | 1834.168 | -0.031745 | ppb |
| | Mn | 55 | 310.005 | 0.008926 | ppb |
| | Co | 59 | 80.000 | 0.021208 | ppb |
| | Ni | 60 | 96.667 | 0.045351 | ppb |
| | Cu | 63 | 106.667 | -0.012323 | ppb |
| | Cu | 65 | 100.001 | -0.014201 | ppb |
| | Zn | 66 | 113.334 | -0.007321 | ppb |
| | As | 75 | 89.772 | 0.150415 | ppb |
| | Se | 82 | 46.000 | 0.069864 | ppb |
| | Ag | 107 | 60.000 | 0.027658 | ppb |
| | Ag | 109 | 83.334 | 0.037103 | ppb |
| | Cd | 111 | 26.460 | 0.047773 | ppb |
| | In | 113 | 61568.955 | | ppb |
| > | In | 115 | 1407470.639 | | ppb |
| | Sb | 121 | 180.002 | 0.067238 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 24.000 | 0.038518 | ppb |
| | Ba | 137 | 34.000 | 0.024163 | ppb |
| > | Tb | 159 | 1872098.529 | | ppb |
| | Tl | 205 | 180.002 | 0.039283 | ppb |
| | Pb | 206 | 110.001 | 0.061433 | ppb |
| | Pb | 207 | 130.001 | 0.033938 | ppb |
| | Pb | 208 | 160.001 | 0.022604 | ppb |
| > | Bi | 209 | 1185801.064 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 107.205 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 105.197 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 102.172 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 100.109 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.838 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BLK1

Sample Date/Time: Monday, August 01, 2011 16:53:11
Sample Type: Sample
Sample Description: PBW
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BLK1.1449

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209892.558 | 2.203 | 209892.558 | | | ppb |
| ⌊ | Be | 9 | 2.000 | 0.000 | -0.000 | -0.02136 | 1.95 | ppb |
| ⌈> | Sc | 45 | 736995.119 | 1.172 | 736995.119 | | | ppb |
| \| | V | 51 | 705.729 | 12.490 | -0.000 | -0.09759 | 37.37 | ppb |
| \| | Cr | 52 | 1870.175 | 3.335 | -0.000 | -0.01255 | 341.20 | ppb |
| \| | Mn | 55 | 273.337 | 6.926 | -0.000 | -0.00354 | 151.90 | ppb |
| \| | Co | 59 | 18.000 | 58.795 | -0.000 | -0.00542 | 84.21 | ppb |
| \| | Ni | 60 | 65.556 | 25.593 | -0.000 | -0.00657 | 448.24 | ppb |
| \| | Cu | 63 | 110.001 | 13.887 | -0.000 | -0.00970 | 128.90 | ppb |
| \| | Cu | 65 | 70.000 | 29.738 | -0.000 | -0.06099 | 54.75 | ppb |
| \| | Zn | 66 | 113.334 | 38.235 | -0.000 | -0.00735 | 1600.99 | ppb |
| \| | As | 75 | 32.587 | 52.460 | 0.000 | 0.03953 | 82.97 | ppb |
| ⌊ | Se | 82 | 38.222 | 5.035 | -0.000 | -0.12165 | 32.02 | ppb |
| ⌈ | Ag | 107 | 13.333 | 50.000 | 0.000 | 0.00235 | 157.82 | ppb |
| \| | Ag | 109 | 13.333 | 25.000 | -0.000 | -0.00197 | 99.91 | ppb |
| \| | Cd | 111 | 9.092 | 48.883 | 0.000 | 0.01017 | 90.37 | ppb |
| \| | In | 113 | 61941.255 | 0.950 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1419240.781 | 1.686 | 1419240.781 | | | ppb |
| ⌈ | Sb | 121 | 45.000 | 50.918 | -0.000 | -0.00608 | 212.24 | ppb |
| \| | Ba | 135 | 12.000 | 33.333 | 0.000 | 0.00600 | 191.20 | ppb |
| \| | Ba | 137 | 14.667 | 20.830 | -0.000 | -0.00611 | 82.21 | ppb |
| ⌊> | Tb | 159 | 1839245.599 | 0.682 | 1839245.599 | | | ppb |
| ⌈ | Tl | 205 | 11.667 | 65.465 | -0.000 | -0.00345 | 56.49 | ppb |
| \| | Pb | 206 | 11.667 | 49.487 | -0.000 | -0.01438 | 31.27 | ppb |
| \| | Pb | 207 | 25.000 | 34.641 | -0.000 | -0.00996 | 36.82 | ppb |
| \| | Pb | 208 | 60.000 | 54.645 | -0.000 | -0.00367 | 236.94 | ppb |
| ⌊> | Bi | 209 | 1177153.512 | 0.250 | 1177153.512 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211343.960 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.021499 | ppb |
| ⌈> | Sc | 45 | 728707.342 | | ppb |
| \| | V | 51 | 728.865 | -0.084092 | ppb |
| \| | Cr | 52 | 1906.182 | 0.017198 | ppb |
| \| | Mn | 55 | 260.003 | -0.007017 | ppb |
| \| | Co | 59 | 14.000 | -0.007075 | ppb |
| \| | Ni | 60 | 83.334 | 0.024603 | ppb |
| \| | Cu | 63 | 126.667 | 0.003878 | ppb |
| \| | Cu | 65 | 76.667 | -0.049384 | ppb |
| \| | Zn | 66 | 136.668 | 0.060432 | ppb |
| \| | As | 75 | 13.216 | 0.002497 | ppb |
| ⌊ | Se | 82 | 36.000 | -0.166047 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002270 | ppb |
| \| | Ag | 109 | 13.333 | -0.002035 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 8.455 | 0.008798 | ppb |
| | In | 113 | 61468.339 | | ppb |
| > | In | 115 | 1427453.510 | | ppb |
| | Sb | 121 | 70.000 | 0.007994 | ppb |
| | Ba | 135 | 16.000 | 0.017447 | ppb |
| | Ba | 137 | 14.000 | -0.007076 | ppb |
| > | Tb | 159 | 1829098.352 | | ppb |
| | Tl | 205 | 5.000 | -0.005156 | ppb |
| | Pb | 206 | 15.000 | -0.011811 | ppb |
| | Pb | 207 | 30.000 | -0.007868 | ppb |
| | Pb | 208 | 95.000 | 0.005616 | ppb |
| > | Bi | 209 | 1178414.642 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 213617.510 | | ppb |
| | Be | 9 | 2.000 | -0.021698 | ppb |
| > | Sc | 45 | 745941.057 | | ppb |
| | V | 51 | 779.998 | -0.069791 | ppb |
| | Cr | 52 | 1798.162 | -0.061645 | ppb |
| | Mn | 55 | 295.004 | 0.002651 | ppb |
| | Co | 59 | 10.000 | -0.008913 | ppb |
| | Ni | 60 | 50.000 | -0.033878 | ppb |
| | Cu | 63 | 96.667 | -0.020741 | ppb |
| | Cu | 65 | 46.667 | -0.098642 | ppb |
| | Zn | 66 | 140.001 | 0.060704 | ppb |
| | As | 75 | 38.981 | 0.051188 | ppb |
| | Se | 82 | 39.333 | -0.105695 | ppb |
| | Ag | 107 | 20.000 | 0.006102 | ppb |
| | Ag | 109 | 16.667 | 0.000029 | ppb |
| | Cd | 111 | 5.000 | 0.001739 | ppb |
| | In | 113 | 61755.098 | | ppb |
| > | In | 115 | 1392289.926 | | ppb |
| | Sb | 121 | 25.000 | -0.017371 | ppb |
| | Ba | 135 | 8.000 | -0.005478 | ppb |
| | Ba | 137 | 12.000 | -0.010581 | ppb |
| > | Tb | 159 | 1853260.274 | | ppb |
| | Tl | 205 | 10.000 | -0.003868 | ppb |
| | Pb | 206 | 15.000 | -0.011765 | ppb |
| | Pb | 207 | 30.000 | -0.007819 | ppb |
| | Pb | 208 | 30.000 | -0.011605 | ppb |
| > | Bi | 209 | 1173795.840 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204716.205 | | ppb |
| | Be | 9 | 2.000 | -0.020896 | ppb |
| > | Sc | 45 | 736336.957 | | ppb |
| | V | 51 | 608.323 | -0.138878 | ppb |
| | Cr | 52 | 1906.182 | 0.006786 | ppb |
| | Mn | 55 | 265.004 | -0.006244 | ppb |
| | Co | 59 | 30.000 | -0.000258 | ppb |
| | Ni | 60 | 63.334 | -0.010423 | ppb |
| | Cu | 63 | 106.667 | -0.012242 | ppb |
| | Cu | 65 | 86.667 | -0.034957 | ppb |
| | Zn | 66 | 63.334 | -0.143179 | ppb |
| | As | 75 | 45.563 | 0.064916 | ppb |
| | Se | 82 | 39.333 | -0.093220 | ppb |
| | Ag | 107 | 6.667 | -0.001318 | ppb |
| | Ag | 109 | 10.000 | -0.003908 | ppb |
| | Cd | 111 | 13.820 | 0.019959 | ppb |
| | In | 113 | 62600.329 | | ppb |
| > | In | 115 | 1437978.906 | | ppb |
| | Sb | 121 | 40.000 | -0.008871 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 12.000 | 0.006016 | ppb |
| | Ba | 137 | 18.000 | -0.000675 | ppb |
| > | Tb | 159 | 1835378.171 | | ppb |
| | Tl | 205 | 20.000 | -0.001326 | ppb |
| | Pb | 206 | 5.000 | -0.019579 | ppb |
| | Pb | 207 | 15.000 | -0.014195 | ppb |
| | Pb | 208 | 55.000 | -0.005012 | ppb |
| > | Bi | 209 | 1179250.053 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 106.948 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 104.410 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 101.617 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.867 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 100.587 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BS1

Sample Date/Time: Monday, August 01, 2011 16:54:37
Sample Type: Sample
Sample Description: LCSW
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BS1.1450

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203249.137 | 1.744 | 203249.137 | | | ppb |
| ⌊ | Be | 9 | 9708.713 | 2.887 | 0.048 | 94.01177 | 1.58 | ppb |
| ⌈> | Sc | 45 | 725553.891 | 1.882 | 725553.891 | | | ppb |
| ⌈ | V | 51 | 229481.636 | 0.498 | 0.315 | 99.17370 | 2.19 | ppb |
| ⌈ | Cr | 52 | 197892.550 | 1.609 | 0.270 | 103.83211 | 3.55 | ppb |
| ⌈ | Mn | 55 | 281658.151 | 0.120 | 0.388 | 96.95575 | 1.97 | ppb |
| ⌈ | Co | 59 | 240261.400 | 0.523 | 0.331 | 104.85298 | 1.37 | ppb |
| ⌈ | Ni | 60 | 54397.566 | 1.145 | 0.075 | 92.55021 | 2.48 | ppb |
| ⌈ | Cu | 63 | 131956.121 | 1.297 | 0.182 | 101.17129 | 3.17 | ppb |
| ⌈ | Cu | 65 | 63931.561 | 2.318 | 0.088 | 101.65136 | 4.19 | ppb |
| ⌈ | Zn | 66 | 77283.059 | 0.983 | 0.106 | 213.32902 | 2.07 | ppb |
| ⌈ | As | 75 | 101659.430 | 0.692 | 0.140 | 199.94434 | 1.24 | ppb |
| ⌊ | Se | 82 | 8287.211 | 1.319 | 0.011 | 206.13383 | 0.95 | ppb |
| ⌈ | Ag | 107 | 192577.913 | 1.203 | 0.138 | 105.52384 | 2.56 | ppb |
| ⌈ | Ag | 109 | 185246.574 | 2.922 | 0.133 | 104.41433 | 1.54 | ppb |
| ⌈ | Cd | 111 | 45657.667 | 1.481 | 0.033 | 99.26633 | 0.29 | ppb |
| ⌈ | In | 113 | 105995.502 | 1.104 | 0.032 | | | ppb |
| ⌊> | In | 115 | 1392078.876 | 1.402 | 1392078.876 | | | ppb |
| ⌈ | Sb | 121 | 368447.082 | 2.267 | 0.200 | 204.92960 | 2.04 | ppb |
| ⌈ | Ba | 135 | 35928.442 | 1.878 | 0.020 | 101.00289 | 1.72 | ppb |
| ⌈ | Ba | 137 | 62382.668 | 1.429 | 0.034 | 100.77245 | 1.86 | ppb |
| ⌊> | Tb | 159 | 1840006.075 | 0.768 | 1840006.075 | | | ppb |
| ⌈ | Tl | 205 | 793154.711 | 1.609 | 0.679 | 204.52907 | 2.75 | ppb |
| ⌈ | Pb | 206 | 255576.609 | 0.930 | 0.219 | 200.23957 | 2.27 | ppb |
| ⌈ | Pb | 207 | 466600.300 | 0.955 | 0.399 | 198.39185 | 1.64 | ppb |
| ⌈ | Pb | 208 | 733975.401 | 1.247 | 0.628 | 196.52509 | 1.67 | ppb |
| ⌊> | Bi | 209 | 1168170.701 | 1.608 | 1168170.701 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207086.261 | | ppb |
| ⌊ | Be | 9 | 10029.027 | 95.323176 | ppb |
| ⌈> | Sc | 45 | 736121.962 | | ppb |
| ⌈ | V | 51 | 228190.763 | 97.165842 | ppb |
| ⌈ | Cr | 52 | 195510.720 | 101.038687 | ppb |
| ⌈ | Mn | 55 | 281270.804 | 95.407289 | ppb |
| ⌈ | Co | 59 | 241212.505 | 103.738790 | ppb |
| ⌈ | Ni | 60 | 53744.034 | 90.097193 | ppb |
| ⌈ | Cu | 63 | 131184.866 | 99.095065 | ppb |
| ⌈ | Cu | 65 | 62474.546 | 97.851401 | ppb |
| ⌈ | Zn | 66 | 77982.886 | 212.120202 | ppb |
| ⌈ | As | 75 | 102340.640 | 198.363729 | ppb |
| ⌊ | Se | 82 | 8317.458 | 203.886030 | ppb |
| ⌈ | Ag | 107 | 192345.553 | 104.512854 | ppb |
| ⌈ | Ag | 109 | 188659.660 | 105.486515 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 46177.751 | 99.579208 | ppb |
| | In | 113 | 104816.461 | | ppb |
| > | In | 115 | 1403519.265 | | ppb |
| | Sb | 121 | 375276.945 | 206.987785 | ppb |
| | Ba | 135 | 36454.325 | 101.625390 | ppb |
| | Ba | 137 | 62329.646 | 99.838914 | ppb |
| > | Tb | 159 | 1855505.060 | | ppb |
| | Tl | 205 | 788875.457 | 199.727013 | ppb |
| | Pb | 206 | 254431.100 | 195.721659 | ppb |
| | Pb | 207 | 468835.177 | 195.738285 | ppb |
| | Pb | 208 | 739334.298 | 194.384805 | ppb |
| > | Bi | 209 | 1189504.626 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202563.018 | | ppb |
| | Be | 9 | 9508.518 | 92.392753 | ppb |
| > | Sc | 45 | 710134.996 | | ppb |
| | V | 51 | 229884.787 | 101.486963 | ppb |
| | Cr | 52 | 201508.022 | 108.016472 | ppb |
| | Mn | 55 | 281810.689 | 99.092204 | ppb |
| | Co | 59 | 238836.485 | 106.476142 | ppb |
| | Ni | 60 | 54464.583 | 94.652280 | ppb |
| | Cu | 63 | 133917.396 | 104.866440 | ppb |
| | Cu | 65 | 65436.733 | 106.256206 | ppb |
| | Zn | 66 | 77391.652 | 218.224628 | ppb |
| | As | 75 | 100936.409 | 202.801873 | ppb |
| | Se | 82 | 8165.999 | 207.517377 | ppb |
| | Ag | 107 | 190385.238 | 103.472968 | ppb |
| | Ag | 109 | 188075.476 | 105.185588 | ppb |
| | Cd | 111 | 45901.727 | 99.008155 | ppb |
| | In | 113 | 107156.061 | | ppb |
| > | In | 115 | 1403175.828 | | ppb |
| | Sb | 121 | 370929.156 | 207.687536 | ppb |
| | Ba | 135 | 36163.271 | 102.340636 | ppb |
| | Ba | 137 | 63299.711 | 102.928873 | ppb |
| > | Tb | 159 | 1827829.719 | | ppb |
| | Tl | 205 | 807508.181 | 210.712702 | ppb |
| | Pb | 206 | 258308.629 | 204.797479 | ppb |
| | Pb | 207 | 469495.318 | 202.024000 | ppb |
| | Pb | 208 | 739187.396 | 200.305097 | ppb |
| > | Bi | 209 | 1154121.259 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200098.132 | | ppb |
| | Be | 9 | 9588.595 | 94.319394 | ppb |
| > | Sc | 45 | 730404.715 | | ppb |
| | V | 51 | 230369.360 | 98.868298 | ppb |
| | Cr | 52 | 196658.907 | 102.441165 | ppb |
| | Mn | 55 | 281892.960 | 96.367745 | ppb |
| | Co | 59 | 240735.208 | 104.344004 | ppb |
| | Ni | 60 | 54984.081 | 92.901160 | ppb |
| | Cu | 63 | 130766.101 | 99.552356 | ppb |
| | Cu | 65 | 63883.405 | 100.846467 | ppb |
| | Zn | 66 | 76474.638 | 209.642215 | ppb |
| | As | 75 | 101701.240 | 198.667427 | ppb |
| | Se | 82 | 8378.175 | 206.998093 | ppb |
| | Ag | 107 | 195002.948 | 108.585706 | ppb |
| | Ag | 109 | 179004.587 | 102.570891 | ppb |
| | Cd | 111 | 44893.525 | 99.211639 | ppb |
| | In | 113 | 106013.985 | | ppb |
| > | In | 115 | 1369541.535 | | ppb |
| | Sb | 121 | 359135.144 | 200.113471 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 35167.730 | 99.042646 | ppb |
| | Ba | 137 | 61518.647 | 99.549577 | ppb |
| > | Tb | 159 | 1836683.445 | | ppb |
| | Tl | 205 | 783080.494 | 203.147501 | ppb |
| | Pb | 206 | 253990.099 | 200.199563 | ppb |
| | Pb | 207 | 461470.403 | 197.413254 | ppb |
| | Pb | 208 | 723404.508 | 194.885381 | ppb |
| > | Bi | 209 | 1160886.218 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.563 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 102.789 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.672 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.908 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 99.819 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-BSD1

Sample Date/Time: Monday, August 01, 2011 16:56:03
Sample Type: Sample
Sample Description: LCSWD
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-BSD1.1451

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202912.681 | 0.312 | 202912.681 | | | ppb |
| ⌊ | Be | 9 | 9758.092 | 1.008 | 0.048 | 94.65785 | 1.30 | ppb |
| ⌈> | Sc | 45 | 723976.605 | 1.462 | 723976.605 | | | ppb |
| \| | V | 51 | 229314.659 | 1.967 | 0.315 | 99.28845 | 0.97 | ppb |
| \| | Cr | 52 | 197196.759 | 0.805 | 0.270 | 103.65247 | 0.84 | ppb |
| \| | Mn | 55 | 280225.612 | 0.918 | 0.387 | 96.66291 | 1.78 | ppb |
| \| | Co | 59 | 239694.664 | 0.209 | 0.331 | 104.82987 | 1.42 | ppb |
| \| | Ni | 60 | 54189.765 | 0.471 | 0.075 | 92.38261 | 1.32 | ppb |
| \| | Cu | 63 | 132163.215 | 0.810 | 0.182 | 101.53238 | 2.18 | ppb |
| \| | Cu | 65 | 64003.062 | 0.707 | 0.088 | 101.95551 | 2.14 | ppb |
| \| | Zn | 66 | 76587.803 | 2.053 | 0.106 | 211.84959 | 2.52 | ppb |
| \| | As | 75 | 101422.679 | 0.296 | 0.140 | 199.91336 | 1.60 | ppb |
| ⌊ | Se | 82 | 8276.312 | 0.422 | 0.011 | 206.31668 | 1.20 | ppb |
| ⌈ | Ag | 107 | 193960.857 | 0.931 | 0.139 | 106.30636 | 1.79 | ppb |
| \| | Ag | 109 | 187509.531 | 0.891 | 0.135 | 105.74688 | 0.99 | ppb |
| \| | Cd | 111 | 46331.054 | 0.091 | 0.033 | 100.77259 | 0.86 | ppb |
| \| | In | 113 | 108060.784 | 1.300 | 0.034 | | | ppb |
| ⌊> | In | 115 | 1391578.488 | 0.935 | 1391578.488 | | | ppb |
| ⌈ | Sb | 121 | 369202.106 | 0.551 | 0.200 | 204.24573 | 0.87 | ppb |
| \| | Ba | 135 | 35753.814 | 1.654 | 0.019 | 99.97217 | 1.95 | ppb |
| \| | Ba | 137 | 62104.928 | 0.775 | 0.034 | 99.77444 | 0.67 | ppb |
| ⌊> | Tb | 159 | 1850006.403 | 0.316 | 1850006.403 | | | ppb |
| ⌈ | Tl | 205 | 800165.185 | 0.981 | 0.679 | 204.60095 | 0.52 | ppb |
| \| | Pb | 206 | 255246.779 | 1.164 | 0.217 | 198.31454 | 1.56 | ppb |
| \| | Pb | 207 | 468622.758 | 0.802 | 0.398 | 197.60747 | 1.29 | ppb |
| \| | Pb | 208 | 739819.922 | 0.772 | 0.628 | 196.45371 | 0.89 | ppb |
| ⌊> | Bi | 209 | 1177769.054 | 0.482 | 1177769.054 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203573.224 | | ppb |
| ⌊ | Be | 9 | 9644.649 | 93.250831 | ppb |
| ⌈> | Sc | 45 | 736170.335 | | ppb |
| \| | V | 51 | 233741.544 | 99.532555 | ppb |
| \| | Cr | 52 | 198878.154 | 102.789147 | ppb |
| \| | Mn | 55 | 279790.124 | 94.898292 | ppb |
| \| | Co | 59 | 239778.633 | 103.115266 | ppb |
| \| | Ni | 60 | 54337.227 | 91.086923 | ppb |
| \| | Cu | 63 | 131056.533 | 98.991522 | ppb |
| \| | Cu | 65 | 63487.562 | 99.434274 | ppb |
| \| | Zn | 66 | 76464.561 | 207.970396 | ppb |
| \| | As | 75 | 101245.685 | 196.228264 | ppb |
| ⌊ | Se | 82 | 8302.779 | 203.510889 | ppb |
| ⌈ | Ag | 107 | 192060.145 | 104.651046 | ppb |
| \| | Ag | 109 | 189420.508 | 106.209629 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 46337.111 | 100.203716 | ppb |
| | In | 113 | 107241.975 | | ppb |
| > | In | 115 | 1399586.173 | | ppb |
| | Sb | 121 | 371287.078 | 206.067429 | ppb |
| | Ba | 135 | 36436.259 | 102.210287 | ppb |
| | Ba | 137 | 62059.976 | 100.028561 | ppb |
| > | Tb | 159 | 1843975.582 | | ppb |
| | Tl | 205 | 800864.484 | 204.472258 | ppb |
| | Pb | 206 | 252349.336 | 195.757107 | ppb |
| | Pb | 207 | 467509.392 | 196.830707 | ppb |
| | Pb | 208 | 746232.166 | 197.853102 | ppb |
| > | Bi | 209 | 1179558.443 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202309.973 | | ppb |
| | Be | 9 | 9818.818 | 95.528581 | ppb |
| > | Sc | 45 | 718646.989 | | ppb |
| | V | 51 | 229477.682 | 100.101886 | ppb |
| | Cr | 52 | 195722.808 | 103.632978 | ppb |
| | Mn | 55 | 282988.252 | 98.326926 | ppb |
| | Co | 59 | 240149.372 | 105.793272 | ppb |
| | Ni | 60 | 53894.842 | 92.550178 | ppb |
| | Cu | 63 | 133194.504 | 103.063388 | ppb |
| | Cu | 65 | 64336.294 | 103.227065 | ppb |
| | Zn | 66 | 78218.045 | 217.942079 | ppb |
| | As | 75 | 101769.331 | 202.053394 | ppb |
| | Se | 82 | 8289.434 | 208.162346 | ppb |
| | Ag | 107 | 194170.313 | 105.876260 | ppb |
| | Ag | 109 | 186319.731 | 104.545258 | ppb |
| | Cd | 111 | 46369.956 | 100.346175 | ppb |
| | In | 113 | 109683.240 | | ppb |
| > | In | 115 | 1398590.055 | | ppb |
| | Sb | 121 | 367220.995 | 202.526176 | ppb |
| | Ba | 135 | 35396.535 | 98.667159 | ppb |
| | Ba | 137 | 62607.373 | 100.275192 | ppb |
| > | Tb | 159 | 1855666.273 | | ppb |
| | Tl | 205 | 807638.068 | 205.716589 | ppb |
| | Pb | 206 | 255102.893 | 197.427794 | ppb |
| | Pb | 207 | 465549.218 | 195.544187 | ppb |
| | Pb | 208 | 735281.761 | 194.490790 | ppb |
| > | Bi | 209 | 1182339.965 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202854.845 | | ppb |
| | Be | 9 | 9810.810 | 95.194149 | ppb |
| > | Sc | 45 | 717112.490 | | ppb |
| | V | 51 | 224724.750 | 98.230918 | ppb |
| | Cr | 52 | 196989.316 | 104.535289 | ppb |
| | Mn | 55 | 277898.459 | 96.763520 | ppb |
| | Co | 59 | 239155.987 | 105.581071 | ppb |
| | Ni | 60 | 54337.227 | 93.510733 | ppb |
| | Cu | 63 | 132238.609 | 102.542221 | ppb |
| | Cu | 65 | 64185.329 | 103.205176 | ppb |
| | Zn | 66 | 75080.802 | 209.636296 | ppb |
| | As | 75 | 101253.022 | 201.458410 | ppb |
| | Se | 82 | 8236.724 | 207.276804 | ppb |
| | Ag | 107 | 195652.112 | 108.391766 | ppb |
| | Ag | 109 | 186788.353 | 106.485757 | ppb |
| | Cd | 111 | 46286.094 | 101.767887 | ppb |
| | In | 113 | 107257.136 | | ppb |
| > | In | 115 | 1376559.237 | | ppb |
| | Sb | 121 | 369098.245 | 204.143586 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 35428.648 | 99.039054 | ppb |
| | Ba | 137 | 61647.436 | 99.019556 | ppb |
| > | Tb | 159 | 1850377.356 | | ppb |
| | Tl | 205 | 791993.003 | 203.614004 | ppb |
| | Pb | 206 | 258288.109 | 201.758728 | ppb |
| | Pb | 207 | 472809.665 | 200.447514 | ppb |
| | Pb | 208 | 737945.838 | 197.017227 | ppb |
| > | Bi | 209 | 1171408.753 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 103.391 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 102.566 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.636 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.446 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.639 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107162-01

Sample Date/Time: Monday, August 01, 2011 16:57:28
Sample Type: Sample
Sample Description: 7DUP
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107162-01.1452

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 196696.378 | 0.789 | 196696.378 | | | ppb |
| ⌊ | Be | 9 | 1.333 | 86.603 | -0.000 | -0.02678 | 43.20 | ppb |
| ⌈> | Sc | 45 | 699723.772 | 1.251 | 699723.772 | | | ppb |
| \| | V | 51 | 2805.323 | 5.169 | 0.003 | 0.86293 | 7.32 | ppb |
| \| | Cr | 52 | 3917.434 | 1.554 | 0.003 | 1.16294 | 1.11 | ppb |
| \| | Mn | 55 | 17077.904 | 0.601 | 0.024 | 6.00492 | 1.68 | ppb |
| \| | Co | 59 | 31148.442 | 1.394 | 0.044 | 14.08144 | 0.41 | ppb |
| \| | Ni | 60 | 4436.540 | 3.605 | 0.006 | 7.71995 | 4.53 | ppb |
| \| | Cu | 63 | 1970.194 | 0.508 | 0.003 | 1.47450 | 1.87 | ppb |
| \| | Cu | 65 | 1511.225 | 3.304 | 0.002 | 2.32426 | 4.57 | ppb |
| \| | Zn | 66 | 1930.187 | 5.355 | 0.003 | 5.21883 | 6.95 | ppb |
| \| | As | 75 | 3661.661 | 0.495 | 0.005 | 7.44445 | 0.77 | ppb |
| ⌊ | Se | 82 | 44.445 | 23.447 | 0.000 | 0.08788 | 291.81 | ppb |
| ⌈ | Ag | 107 | 35.556 | 42.274 | 0.000 | 0.01556 | 55.56 | ppb |
| \| | Ag | 109 | 22.222 | 22.913 | 0.000 | 0.00377 | 83.15 | ppb |
| \| | Cd | 111 | 15.515 | 31.236 | 0.000 | 0.02613 | 40.92 | ppb |
| \| | In | 113 | 58468.818 | 2.170 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1329744.698 | 1.103 | 1329744.698 | | | ppb |
| ⌈ | Sb | 121 | 5164.672 | 7.459 | 0.003 | 2.94686 | 7.38 | ppb |
| \| | Ba | 135 | 6338.677 | 3.473 | 0.004 | 18.44786 | 3.17 | ppb |
| \| | Ba | 137 | 11164.897 | 1.630 | 0.006 | 18.66988 | 1.27 | ppb |
| ⌊> | Tb | 159 | 1775023.121 | 0.378 | 1775023.121 | | | ppb |
| ⌈ | Tl | 205 | 68.334 | 47.042 | 0.000 | 0.01233 | 72.39 | ppb |
| \| | Pb | 206 | 351.673 | 12.901 | 0.000 | 0.26939 | 13.53 | ppb |
| \| | Pb | 207 | 656.678 | 11.095 | 0.001 | 0.27630 | 11.48 | ppb |
| \| | Pb | 208 | 1046.699 | 6.451 | 0.001 | 0.27840 | 6.76 | ppb |
| ⌊> | Bi | 209 | 1098532.928 | 0.496 | 1098532.928 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198145.830 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.020258 | ppb |
| ⌈> | Sc | 45 | 708767.937 | | ppb |
| \| | V | 51 | 2916.043 | 0.895999 | ppb |
| \| | Cr | 52 | 3964.786 | 1.161200 | ppb |
| \| | Mn | 55 | 16974.394 | 5.889773 | ppb |
| \| | Co | 59 | 31515.583 | 14.065703 | ppb |
| \| | Ni | 60 | 4410.973 | 7.573243 | ppb |
| \| | Cu | 63 | 1960.192 | 1.446418 | ppb |
| \| | Cu | 65 | 1496.779 | 2.268177 | ppb |
| \| | Zn | 66 | 1850.171 | 4.918975 | ppb |
| \| | As | 75 | 3678.177 | 7.381934 | ppb |
| ⌊ | Se | 82 | 54.000 | 0.319815 | ppb |
| ⌈ | Ag | 107 | 50.000 | 0.023737 | ppb |
| \| | Ag | 109 | 23.333 | 0.004365 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 13.090 | 0.020575 | ppb |
| | In | 113 | 57007.028 | | ppb |
| > | In | 115 | 1333737.831 | | ppb |
| | Sb | 121 | 5546.538 | 3.155850 | ppb |
| | Ba | 135 | 6442.074 | 18.683467 | ppb |
| | Ba | 137 | 11364.454 | 18.936759 | ppb |
| > | Tb | 159 | 1781379.208 | | ppb |
| | Tl | 205 | 55.000 | 0.008584 | ppb |
| | Pb | 206 | 400.008 | 0.308421 | ppb |
| | Pb | 207 | 740.014 | 0.312709 | ppb |
| | Pb | 208 | 1115.036 | 0.296589 | ppb |
| > | Bi | 209 | 1102995.544 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196883.257 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 699112.526 | | ppb |
| | V | 51 | 2641.165 | 0.790136 | ppb |
| | Cr | 52 | 3938.776 | 1.176586 | ppb |
| | Mn | 55 | 17179.745 | 6.045861 | ppb |
| | Co | 59 | 31260.786 | 14.144748 | ppb |
| | Ni | 60 | 4290.920 | 7.467262 | ppb |
| | Cu | 63 | 1970.194 | 1.475640 | ppb |
| | Cu | 65 | 1470.108 | 2.257801 | ppb |
| | Zn | 66 | 1893.513 | 5.115588 | ppb |
| | As | 75 | 3664.537 | 7.456369 | ppb |
| | Se | 82 | 46.000 | 0.131339 | ppb |
| | Ag | 107 | 36.667 | 0.016436 | ppb |
| | Ag | 109 | 26.667 | 0.006568 | ppb |
| | Cd | 111 | 12.360 | 0.019352 | ppb |
| | In | 113 | 59114.210 | | ppb |
| > | In | 115 | 1313487.833 | | ppb |
| | Sb | 121 | 5171.337 | 2.962712 | ppb |
| | Ba | 135 | 6085.851 | 17.782363 | ppb |
| | Ba | 137 | 11008.056 | 18.480765 | ppb |
| > | Tb | 159 | 1768020.384 | | ppb |
| | Tl | 205 | 105.001 | 0.022513 | ppb |
| | Pb | 206 | 310.005 | 0.236227 | ppb |
| | Pb | 207 | 605.009 | 0.254544 | ppb |
| | Pb | 208 | 1045.032 | 0.279596 | ppb |
| > | Bi | 209 | 1092463.030 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195060.046 | | ppb |
| | Be | 9 | 2.000 | -0.019944 | ppb |
| > | Sc | 45 | 691290.855 | | ppb |
| | V | 51 | 2858.760 | 0.902657 | ppb |
| | Cr | 52 | 3848.740 | 1.151042 | ppb |
| | Mn | 55 | 17079.573 | 6.079138 | ppb |
| | Co | 59 | 30668.957 | 14.033869 | ppb |
| | Ni | 60 | 4607.728 | 8.119347 | ppb |
| | Cu | 63 | 1980.196 | 1.501440 | ppb |
| | Cu | 65 | 1566.789 | 2.446811 | ppb |
| | Zn | 66 | 2046.876 | 5.621917 | ppb |
| | As | 75 | 3642.269 | 7.495032 | ppb |
| | Se | 82 | 33.333 | -0.187516 | ppb |
| | Ag | 107 | 20.000 | 0.006512 | ppb |
| | Ag | 109 | 16.667 | 0.000381 | ppb |
| | Cd | 111 | 21.095 | 0.038448 | ppb |
| | In | 113 | 59285.217 | | ppb |
| > | In | 115 | 1342008.428 | | ppb |
| | Sb | 121 | 4776.140 | 2.722005 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 6488.104 | 18.877756 | ppb |
| \| | Ba | 137 | 11122.182 | 18.592106 | ppb |
| \|> | Tb | 159 | 1775669.772 | | ppb |
| ⌈ | Tl | 205 | 45.000 | 0.005885 | ppb |
| \| | Pb | 206 | 345.006 | 0.263530 | ppb |
| \| | Pb | 207 | 625.010 | 0.261654 | ppb |
| \| | Pb | 208 | 980.028 | 0.259027 | ppb |
| \|> | Bi | 209 | 1100140.210 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 100.224 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 99.130 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 95.209 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 95.415 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 93.869 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107162-01

Sample Date/Time: Monday, August 01, 2011 16:58:54
Sample Type: Sample
Sample Description: 7DUPL 5X
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107162-01.1453

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 220102.982 | 1.633 | 220102.982 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 91.652 | -0.000 | -0.01016 | 268.74 | ppb |
| ⌈> | Sc | 45 | 758973.717 | 2.573 | 758973.717 | | - | ppb |
| \| | V | 51 | 1209.093 | 15.127 | 0.000 | 0.10381 | 84.92 | ppb |
| \| | Cr | 52 | 2844.404 | 0.492 | 0.001 | 0.45263 | 8.38 | ppb |
| \| | Mn | 55 | 2937.099 | 5.155 | 0.003 | 0.87062 | 2.89 | ppb |
| \| | Co | 59 | 5136.654 | 3.951 | 0.007 | 2.12926 | 1.51 | ppb |
| \| | Ni | 60 | 788.920 | 10.473 | 0.001 | 1.16948 | 13.05 | ppb |
| \| | Cu | 63 | 444.454 | 8.090 | 0.000 | 0.23320 | 11.81 | ppb |
| \| | Cu | 65 | 394.452 | 11.158 | 0.000 | 0.42878 | 13.41 | ppb |
| \| | Zn | 66 | 457.789 | 18.712 | 0.000 | 0.89803 | 28.81 | ppb |
| \| | As | 75 | 612.160 | 11.582 | 0.001 | 1.12716 | 10.91 | ppb |
| ⌊ | Se | 82 | 34.000 | 17.971 | -0.000 | -0.25062 | 53.21 | ppb |
| ⌈ | Ag | 107 | 8.889 | 43.301 | -0.000 | -0.00010 | 2014.20 | ppb |
| \| | Ag | 109 | 15.556 | 24.744 | -0.000 | -0.00081 | 263.22 | ppb |
| \| | Cd | 111 | 11.760 | 64.105 | 0.000 | 0.01578 | 100.89 | ppb |
| \| | In | 113 | 62924.021 | 0.522 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1427692.773 | 0.294 | 1427692.773 | | | ppb |
| ⌈ | Sb | 121 | 928.377 | 10.009 | 0.000 | 0.46887 | 9.83 | ppb |
| \| | Ba | 135 | 983.382 | 8.167 | 0.001 | 2.65073 | 7.98 | ppb |
| \| | Ba | 137 | 1845.504 | 5.954 | 0.001 | 2.85859 | 5.69 | ppb |
| ⌊> | Tb | 159 | 1899370.487 | 0.839 | 1899370.487 | | | ppb |
| ⌈ | Tl | 205 | 16.667 | 45.826 | -0.000 | -0.00219 | 87.40 | ppb |
| \| | Pb | 206 | 80.000 | 27.243 | 0.000 | 0.03865 | 43.83 | ppb |
| \| | Pb | 207 | 146.667 | 32.222 | 0.000 | 0.04130 | 48.34 | ppb |
| \| | Pb | 208 | 193.334 | 29.751 | 0.000 | 0.03174 | 48.57 | ppb |
| ⌊> | Bi | 209 | 1178890.879 | 0.882 | 1178890.879 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 223187.138 | | ppb |
| ⌊ | Be | 9 | 0.000 | -0.040134 | ppb |
| ⌈> | Sc | 45 | 738331.254 | | ppb |
| \| | V | 51 | 1416.943 | 0.205117 | ppb |
| \| | Cr | 52 | 2838.403 | 0.489120 | ppb |
| \| | Mn | 55 | 2775.385 | 0.843345 | ppb |
| \| | Co | 59 | 4945.222 | 2.107550 | ppb |
| \| | Ni | 60 | 803.366 | 1.227779 | ppb |
| \| | Cu | 63 | 460.011 | 0.253901 | ppb |
| \| | Cu | 65 | 346.673 | 0.371403 | ppb |
| \| | Zn | 66 | 556.682 | 1.196282 | ppb |
| \| | As | 75 | 611.601 | 1.158656 | ppb |
| ⌊ | Se | 82 | 32.667 | -0.259618 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.001304 | ppb |
| \| | Ag | 109 | 13.333 | -0.002060 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 18.820 | 0.030639 | ppb |
| | In | 113 | 63098.445 | | ppb |
| > | In | 115 | 1432389.587 | | ppb |
| | Sb | 121 | 825.034 | 0.417741 | ppb |
| | Ba | 135 | 940.044 | 2.557773 | ppb |
| | Ba | 137 | 1776.158 | 2.777251 | ppb |
| > | Tb | 159 | 1881149.800 | | ppb |
| | Tl | 205 | 10.000 | -0.003856 | ppb |
| | Pb | 206 | 70.000 | 0.031373 | ppb |
| | Pb | 207 | 130.000 | 0.034754 | ppb |
| | Pb | 208 | 195.001 | 0.032607 | ppb |
| > | Bi | 209 | 1168282.821 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 216157.218 | | ppb |
| | Be | 9 | 4.000 | -0.003695 | ppb |
| > | Sc | 45 | 761441.436 | | ppb |
| | V | 51 | 1072.738 | 0.044511 | ppb |
| | Cr | 52 | 2860.409 | 0.455401 | ppb |
| | Mn | 55 | 2960.438 | 0.875573 | ppb |
| | Co | 59 | 5115.308 | 2.113911 | ppb |
| | Ni | 60 | 863.371 | 1.284348 | ppb |
| | Cu | 63 | 403.341 | 0.201954 | ppb |
| | Cu | 65 | 433.343 | 0.486407 | ppb |
| | Zn | 66 | 410.008 | 0.764121 | ppb |
| | As | 75 | 541.543 | 0.991489 | ppb |
| | Se | 82 | 28.667 | -0.379260 | ppb |
| | Ag | 107 | 6.667 | -0.001289 | ppb |
| | Ag | 109 | 13.333 | -0.002029 | ppb |
| | Cd | 111 | 3.820 | -0.001025 | ppb |
| | In | 113 | 62544.984 | | ppb |
| > | In | 115 | 1426362.628 | | ppb |
| | Sb | 121 | 1005.051 | 0.507237 | ppb |
| | Ba | 135 | 934.044 | 2.501551 | ppb |
| | Ba | 137 | 1788.160 | 2.752529 | ppb |
| > | Tb | 159 | 1910688.746 | | ppb |
| | Tl | 205 | 15.000 | -0.002603 | ppb |
| | Pb | 206 | 105.001 | 0.058020 | ppb |
| | Pb | 207 | 200.001 | 0.063718 | ppb |
| | Pb | 208 | 250.002 | 0.046705 | ppb |
| > | Bi | 209 | 1179317.338 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 220964.591 | | ppb |
| | Be | 9 | 6.000 | 0.013335 | ppb |
| > | Sc | 45 | 777148.461 | | ppb |
| | V | 51 | 1137.597 | 0.061816 | ppb |
| | Cr | 52 | 2834.402 | 0.413380 | ppb |
| | Mn | 55 | 3075.473 | 0.892930 | ppb |
| | Co | 59 | 5349.430 | 2.166306 | ppb |
| | Ni | 60 | 700.025 | 0.996315 | ppb |
| | Cu | 63 | 470.011 | 0.243743 | ppb |
| | Cu | 65 | 403.341 | 0.428535 | ppb |
| | Zn | 66 | 406.675 | 0.733696 | ppb |
| | As | 75 | 683.335 | 1.231331 | ppb |
| | Se | 82 | 40.667 | -0.112982 | ppb |
| | Ag | 107 | 13.333 | 0.002285 | ppb |
| | Ag | 109 | 20.000 | 0.001655 | ppb |
| | Cd | 111 | 12.640 | 0.017730 | ppb |
| | In | 113 | 63128.634 | | ppb |
| > | In | 115 | 1424326.104 | | ppb |
| | Sb | 121 | 955.046 | 0.481634 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 1076.058 | 2.892872 | ppb |
| | Ba | 137 | 1972.194 | 3.045994 | ppb |
| > | Tb | 159 | 1906272.916 | | ppb |
| | Tl | 205 | 25.000 | -0.000102 | ppb |
| | Pb | 206 | 65.000 | 0.026566 | ppb |
| | Pb | 207 | 110.000 | 0.025434 | ppb |
| | Pb | 208 | 135.001 | 0.015911 | ppb |
| > | Bi | 209 | 1189072.477 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 112.150 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 107.524 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 102.222 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 102.099 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.735 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS1

Sample Date/Time: Monday, August 01, 2011 17:00:20
Sample Type: Sample
Sample Description: 7DUPA
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS1.1454

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 192644.618 | 0.688 | 192644.618 | | | ppb |
| ⌊ | Be | 9 | 905.374 | 3.679 | 0.005 | 9.21335 | 3.24 | ppb |
| ⌈> | Sc | 45 | 674599.409 | 1.388 | 674599.409 | | | ppb |
| \| | V | 51 | 118222.616 | 1.856 | 0.174 | 54.75838 | 1.32 | ppb |
| \| | Cr | 52 | 42470.007 | 1.501 | 0.060 | 23.20017 | 2.35 | ppb |
| \| | Mn | 55 | 45556.889 | 1.723 | 0.067 | 16.78400 | 1.66 | ppb |
| \| | Co | 59 | 54983.412 | 0.384 | 0.081 | 25.79686 | 1.46 | ppb |
| \| | Ni | 60 | 9385.513 | 0.250 | 0.014 | 17.07693 | 1.58 | ppb |
| \| | Cu | 63 | 26868.272 | 1.036 | 0.040 | 22.07957 | 2.40 | ppb |
| \| | Cu | 65 | 14032.064 | 2.394 | 0.021 | 23.85469 | 2.38 | ppb |
| \| | Zn | 66 | 8945.110 | 0.704 | 0.013 | 26.27786 | 1.61 | ppb |
| \| | As | 75 | 9033.451 | 0.161 | 0.013 | 19.08715 | 1.25 | ppb |
| ⌊ | Se | 82 | 2124.670 | 1.364 | 0.003 | 56.07240 | 1.87 | ppb |
| ⌈ | Ag | 107 | 18327.894 | 1.680 | 0.014 | 10.93400 | 1.99 | ppb |
| \| | Ag | 109 | 17716.800 | 2.843 | 0.014 | 10.87206 | 2.95 | ppb |
| \| | Cd | 111 | 4473.313 | 0.971 | 0.003 | 10.58685 | 1.01 | ppb |
| \| | In | 113 | 61109.503 | 1.276 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1277879.269 | 0.663 | 1277879.269 | | | ppb |
| ⌈ | Sb | 121 | 40575.496 | 1.431 | 0.024 | 24.29193 | 1.09 | ppb |
| \| | Ba | 135 | 40815.838 | 2.831 | 0.024 | 123.64773 | 2.48 | ppb |
| \| | Ba | 137 | 71725.658 | 0.962 | 0.042 | 124.85489 | 0.51 | ppb |
| ⌊> | Tb | 159 | 1707486.281 | 0.555 | 1707486.281 | | | ppb |
| ⌈ | Tl | 205 | 37046.851 | 2.176 | 0.035 | 10.60134 | 0.89 | ppb |
| \| | Pb | 206 | 12738.109 | 1.406 | 0.012 | 11.06052 | 0.89 | ppb |
| \| | Pb | 207 | 23340.399 | 2.469 | 0.022 | 11.00067 | 1.15 | ppb |
| \| | Pb | 208 | 36993.749 | 2.756 | 0.035 | 10.98068 | 1.51 | ppb |
| ⌊> | Bi | 209 | 1051733.176 | 1.357 | 1051733.176 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 193963.015 | | ppb |
| ⌊ | Be | 9 | 916.042 | 9.259595 | ppb |
| ⌈> | Sc | 45 | 682266.611 | | ppb |
| \| | V | 51 | 120755.871 | 55.306688 | ppb |
| \| | Cr | 52 | 42871.703 | 23.150726 | ppb |
| \| | Mn | 55 | 46417.480 | 16.908612 | ppb |
| \| | Co | 59 | 55153.678 | 25.582516 | ppb |
| \| | Ni | 60 | 9387.738 | 16.885288 | ppb |
| \| | Cu | 63 | 26745.719 | 21.725639 | ppb |
| \| | Cu | 65 | 14376.994 | 24.167138 | ppb |
| \| | Zn | 66 | 8890.617 | 25.815346 | ppb |
| \| | As | 75 | 9048.588 | 18.901875 | ppb |
| ⌊ | Se | 82 | 2150.898 | 56.121120 | ppb |
| ⌈ | Ag | 107 | 18623.993 | 11.088566 | ppb |
| \| | Ag | 109 | 18270.008 | 11.189656 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| ┆ | Cd | 111 | 4430.413 | 10.464684 | ppb |
| ┆ | In | 113 | 61795.345 | | ppb |
| ┗> | In | 115 | 1280364.041 | | ppb |
| ┌ | Sb | 121 | 41244.882 | 24.572440 | ppb |
| ┆ | Ba | 135 | 42138.596 | 127.036255 | ppb |
| ┆ | Ba | 137 | 72495.833 | 125.578564 | ppb |
| ┗> | Tb | 159 | 1715897.965 | | ppb |
| ┌ | Tl | 205 | 37976.976 | 10.705506 | ppb |
| ┆ | Pb | 206 | 12928.352 | 11.057294 | ppb |
| ┆ | Pb | 207 | 24004.482 | 11.145519 | ppb |
| ┆ | Pb | 208 | 38012.360 | 11.115535 | ppb |
| ┗> | Bi | 209 | 1067728.269 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ┌> | Li | 6 | 191312.688 | | ppb |
| ┗ | Be | 9 | 868.038 | 8.894333 | ppb |
| ┌> | Sc | 45 | 664161.654 | | ppb |
| ┆ | V | 51 | 116971.547 | 55.031890 | ppb |
| ┆ | Cr | 52 | 42803.411 | 23.769236 | ppb |
| ┆ | Mn | 55 | 45372.701 | 16.978978 | ppb |
| ┆ | Co | 59 | 55049.104 | 26.230398 | ppb |
| ┆ | Ni | 60 | 9407.757 | 17.386004 | ppb |
| ┆ | Cu | 63 | 27186.906 | 22.690130 | ppb |
| ┆ | Cu | 65 | 14013.145 | 24.197858 | ppb |
| ┆ | Zn | 66 | 8930.653 | 26.648553 | ppb |
| ┆ | As | 75 | 9019.649 | 19.355598 | ppb |
| ┗ | Se | 82 | 2129.560 | 57.097180 | ppb |
| ┌ | Ag | 107 | 18350.154 | 11.028140 | ppb |
| ┆ | Ag | 109 | 17595.466 | 10.877507 | ppb |
| ┆ | Cd | 111 | 4472.253 | 10.662923 | ppb |
| ┆ | In | 113 | 61272.140 | | ppb |
| ┗> | In | 115 | 1268447.403 | | ppb |
| ┌ | Sb | 121 | 40270.924 | 24.255963 | ppb |
| ┆ | Ba | 135 | 40307.070 | 122.851788 | ppb |
| ┆ | Ba | 137 | 71164.320 | 124.629215 | ppb |
| ┗> | Tb | 159 | 1697210.010 | | ppb |
| ┌ | Tl | 205 | 36611.899 | 10.523036 | ppb |
| ┆ | Pb | 206 | 12572.899 | 10.964020 | ppb |
| ┆ | Pb | 207 | 23043.378 | 10.908706 | ppb |
| ┆ | Pb | 208 | 36995.611 | 11.030275 | ppb |
| ┗> | Bi | 209 | 1047187.004 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ┌> | Li | 6 | 192658.151 | | ppb |
| ┗ | Be | 9 | 932.043 | 9.486130 | ppb |
| ┌> | Sc | 45 | 677369.963 | | ppb |
| ┆ | V | 51 | 116940.429 | 53.936564 | ppb |
| ┆ | Cr | 52 | 41734.909 | 22.680535 | ppb |
| ┆ | Mn | 55 | 44880.487 | 16.464399 | ppb |
| ┆ | Co | 59 | 54747.455 | 25.577663 | ppb |
| ┆ | Ni | 60 | 9361.046 | 16.959504 | ppb |
| ┆ | Cu | 63 | 26672.190 | 21.822946 | ppb |
| ┆ | Cu | 65 | 13706.053 | 23.199065 | ppb |
| ┆ | Zn | 66 | 9014.061 | 26.369690 | ppb |
| ┆ | As | 75 | 9032.117 | 19.003985 | ppb |
| ┗ | Se | 82 | 2093.552 | 54.998898 | ppb |
| ┌ | Ag | 107 | 18009.536 | 10.685306 | ppb |
| ┆ | Ag | 109 | 17284.926 | 10.549029 | ppb |
| ┆ | Cd | 111 | 4517.274 | 10.632937 | ppb |
| ┆ | In | 113 | 60261.024 | | ppb |
| ┗> | In | 115 | 1284826.364 | | ppb |
| ┌ | Sb | 121 | 40210.683 | 24.047387 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 40001.848 | 121.055135 | ppb |
| | Ba | 137 | 71516.822 | 124.356903 | ppb |
| > | Tb | 159 | 1709350.869 | | ppb |
| | Tl | 205 | 36551.679 | 10.575470 | ppb |
| | Pb | 206 | 12713.076 | 11.160240 | ppb |
| | Pb | 207 | 22973.337 | 10.947787 | ppb |
| | Pb | 208 | 35973.276 | 10.796218 | ppb |
| > | Bi | 209 | 1040284.254 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 98.159 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 95.570 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.495 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.785 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 89.870 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107162-02

Sample Date/Time: Monday, August 01, 2011 17:01:45
Sample Type: Sample
Sample Description: 7W13
Number of Replicates: 3
Batch ID: 1107162
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107162-02.1455

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198032.524 | 1.370 | 198032.524 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.01968 | 103.83 | ppb |
| ⌈> | Sc | 45 | 686736.204 | 0.485 | 686736.204 | | | ppb |
| \| | V | 51 | 2482.793 | 11.022 | 0.002 | 0.73880 | 16.59 | ppb |
| \| | Cr | 52 | 3901.428 | 2.831 | 0.003 | 1.19454 | 4.32 | ppb |
| \| | Mn | 55 | 17660.587 | 2.306 | 0.025 | 6.33125 | 1.94 | ppb |
| \| | Co | 59 | 31440.686 | 1.104 | 0.046 | 14.48308 | 1.21 | ppb |
| \| | Ni | 60 | 4656.641 | 4.520 | 0.007 | 8.26089 | 4.11 | ppb |
| \| | Cu | 63 | 1665.694 | 0.809 | 0.002 | 1.25716 | 1.24 | ppb |
| \| | Cu | 65 | 1499.002 | 6.455 | 0.002 | 2.35026 | 6.98 | ppb |
| \| | Zn | 66 | 2373.615 | 2.903 | 0.003 | 6.61506 | 2.73 | ppb |
| \| | As | 75 | 3658.513 | 1.257 | 0.005 | 7.57869 | 1.23 | ppb |
| ⌊ | Se | 82 | 48.889 | 17.321 | 0.000 | 0.22885 | 96.42 | ppb |
| ⌈ | Ag | 107 | 32.222 | 5.973 | 0.000 | 0.01408 | 9.10 | ppb |
| \| | Ag | 109 | 16.667 | 34.641 | 0.000 | 0.00069 | 489.89 | ppb |
| \| | Cd | 111 | 10.150 | 157.375 | 0.000 | 0.01466 | 253.92 | ppb |
| \| | In | 113 | 57054.000 | 1.882 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1298121.685 | 0.893 | 1298121.685 | | | ppb |
| ⌈ | Sb | 121 | 4254.239 | 3.003 | 0.002 | 2.48310 | 3.98 | ppb |
| \| | Ba | 135 | 6243.950 | 2.911 | 0.004 | 18.61903 | 1.98 | ppb |
| \| | Ba | 137 | 11079.471 | 2.838 | 0.006 | 18.98199 | 1.78 | ppb |
| ⌊> | Tb | 159 | 1732361.105 | 1.054 | 1732361.105 | | | ppb |
| ⌈ | Tl | 205 | 33.333 | 22.913 | 0.000 | 0.00289 | 73.34 | ppb |
| \| | Pb | 206 | 270.004 | 6.415 | 0.000 | 0.20615 | 6.93 | ppb |
| \| | Pb | 207 | 523.340 | 10.126 | 0.000 | 0.22102 | 10.89 | ppb |
| \| | Pb | 208 | 845.021 | 8.534 | 0.001 | 0.22601 | 9.16 | ppb |
| ⌊> | Bi | 209 | 1076050.160 | 0.189 | 1076050.160 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201130.536 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.000972 | ppb |
| ⌈> | Sc | 45 | 688872.206 | | ppb |
| \| | V | 51 | 2797.872 | 0.879408 | ppb |
| \| | Cr | 52 | 3992.797 | 1.238883 | ppb |
| \| | Mn | 55 | 18086.341 | 6.466107 | ppb |
| \| | Co | 59 | 31770.388 | 14.589438 | ppb |
| \| | Ni | 60 | 4814.492 | 8.519141 | ppb |
| \| | Cu | 63 | 1650.136 | 1.240364 | ppb |
| \| | Cu | 65 | 1400.098 | 2.176525 | ppb |
| \| | Zn | 66 | 2353.610 | 6.535662 | ppb |
| \| | As | 75 | 3623.431 | 7.482408 | ppb |
| ⌊ | Se | 82 | 44.000 | 0.096418 | ppb |
| ⌈ | Ag | 107 | 33.333 | 0.014750 | ppb |
| \| | Ag | 109 | 13.333 | -0.001296 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.545 | 0.052828 | ppb |
| | In | 113 | 57977.584 | | ppb |
| > | In | 115 | 1296785.385 | | ppb |
| | Sb | 121 | 4130.853 | 2.380251 | ppb |
| | Ba | 135 | 6434.069 | 18.958229 | ppb |
| | Ba | 137 | 11442.543 | 19.371618 | ppb |
| > | Tb | 159 | 1753417.938 | | ppb |
| | Tl | 205 | 40.000 | 0.004738 | ppb |
| | Pb | 206 | 290.004 | 0.222656 | ppb |
| | Pb | 207 | 580.008 | 0.246634 | ppb |
| | Pb | 208 | 905.023 | 0.242907 | ppb |
| > | Bi | 209 | 1078330.501 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196085.817 | | ppb |
| | Be | 9 | 6.000 | 0.020119 | ppb |
| > | Sc | 45 | 688438.835 | | ppb |
| | V | 51 | 2304.575 | 0.654691 | ppb |
| | Cr | 52 | 3932.773 | 1.206792 | ppb |
| | Mn | 55 | 17620.510 | 6.301114 | ppb |
| | Co | 59 | 31078.218 | 14.280289 | ppb |
| | Ni | 60 | 4737.789 | 8.386906 | ppb |
| | Cu | 63 | 1673.473 | 1.260071 | ppb |
| | Cu | 65 | 1593.460 | 2.502400 | ppb |
| | Zn | 66 | 2450.300 | 6.821615 | ppb |
| | As | 75 | 3710.586 | 7.667783 | ppb |
| | Se | 82 | 58.667 | 0.483578 | ppb |
| | Ag | 107 | 30.000 | 0.012607 | ppb |
| | Ag | 109 | 23.333 | 0.004610 | ppb |
| | Cd | 111 | -5.365 | -0.021525 | ppb |
| | In | 113 | 57308.745 | | ppb |
| > | In | 115 | 1310326.043 | | ppb |
| | Sb | 121 | 4245.901 | 2.491630 | ppb |
| | Ba | 135 | 6225.938 | 18.671819 | ppb |
| | Ba | 137 | 10899.937 | 18.781313 | ppb |
| > | Tb | 159 | 1722684.946 | | ppb |
| | Tl | 205 | 35.000 | 0.003368 | ppb |
| | Pb | 206 | 260.003 | 0.197796 | ppb |
| | Pb | 207 | 475.006 | 0.198866 | ppb |
| | Pb | 208 | 765.017 | 0.202901 | ppb |
| > | Bi | 209 | 1075404.108 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 196881.218 | | ppb |
| | Be | 9 | 8.000 | 0.039879 | ppb |
| > | Sc | 45 | 682897.571 | | ppb |
| | V | 51 | 2345.933 | 0.682301 | ppb |
| | Cr | 52 | 3778.714 | 1.137937 | ppb |
| | Mn | 55 | 17274.908 | 6.226531 | ppb |
| | Co | 59 | 31473.451 | 14.579521 | ppb |
| | Ni | 60 | 4417.642 | 7.876631 | ppb |
| | Cu | 63 | 1673.473 | 1.271049 | ppb |
| | Cu | 65 | 1503.446 | 2.371854 | ppb |
| | Zn | 66 | 2316.935 | 6.487909 | ppb |
| | As | 75 | 3641.522 | 7.585878 | ppb |
| | Se | 82 | 44.000 | 0.106555 | ppb |
| | Ag | 107 | 33.333 | 0.014895 | ppb |
| | Ag | 109 | 13.333 | -0.001236 | ppb |
| | Cd | 111 | 9.270 | 0.012667 | ppb |
| | In | 113 | 55875.670 | | ppb |
| > | In | 115 | 1287253.627 | | ppb |
| | Sb | 121 | 4385.962 | 2.577432 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 6071.843 | 18.227057 | ppb |
| \| | Ba | 137 | 10895.933 | 18.793026 | ppb |
| \> | Tb | 159 | 1720980.431 | | ppb |
| ⌈ | Tl | 205 | 25.000 | 0.000574 | ppb |
| \| | Pb | 206 | 260.003 | 0.198000 | ppb |
| \| | Pb | 207 | 515.007 | 0.217559 | ppb |
| \| | Pb | 208 | 865.022 | 0.232218 | ppb |
| \> | Bi | 209 | 1074415.870 | | ppb |

# QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 100.905 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 97.290 | | | |
| ⌈ | V | 51 | | | | | |
| ⌈ | Cr | 52 | | | | | |
| ⌈ | Mn | 55 | | | | | |
| ⌈ | Co | 59 | | | | | |
| ⌈ | Ni | 60 | | | | | |
| ⌈ | Cu | 63 | | | | | |
| ⌈ | Cu | 65 | | | | | |
| ⌈ | Zn | 66 | | | | | |
| ⌈ | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| ⌈ | Ag | 109 | | | | | |
| ⌈ | Cd | 111 | | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 92.945 | | | |
| ⌈ | Sb | 121 | | | | | |
| ⌈ | Ba | 135 | | | | | |
| ⌈ | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 93.122 | | | |
| ⌈ | Tl | 205 | | | | | |
| ⌈ | Pb | 206 | | | | | |
| ⌈ | Pb | 207 | | | | | |
| ⌈ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 91.948 | | | |

# QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107163-01

Sample Date/Time: Monday, August 01, 2011 17:03:11
Sample Type: Sample
Sample Description: 7DUP
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107163-01.1456

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204297.378 | 1.429 | 204297.378 | | | ppb |
| ⌊ | Be | 9 | 2.667 | 114.564 | -0.000 | -0.01415 | 211.65 | ppb |
| ⌈> | Sc | 45 | 704999.745 | 2.064 | 704999.745 | | | ppb |
| \| | V | 51 | 2086.804 | 15.884 | 0.002 | 0.53296 | 28.15 | ppb |
| \| | Cr | 52 | 3655.335 | 2.270 | 0.003 | 1.00431 | 4.23 | ppb |
| \| | Mn | 55 | 8638.733 | 3.662 | 0.012 | 2.96585 | 1.67 | ppb |
| \| | Co | 59 | 31020.709 | 0.940 | 0.044 | 13.92093 | 1.21 | ppb |
| \| | Ni | 60 | 4435.428 | 2.159 | 0.006 | 7.66058 | 3.70 | ppb |
| \| | Cu | 63 | 2004.645 | 0.254 | 0.003 | 1.49014 | 1.96 | ppb |
| \| | Cu | 65 | 1635.690 | 6.316 | 0.002 | 2.50800 | 5.62 | ppb |
| \| | Zn | 66 | 2958.215 | 2.033 | 0.004 | 8.10326 | 4.18 | ppb |
| \| | As | 75 | 3187.299 | 1.968 | 0.005 | 6.43002 | 3.08 | ppb |
| ⌊ | Se | 82 | 45.111 | 2.257 | 0.000 | 0.09912 | 47.73 | ppb |
| ⌈ | Ag | 107 | 6.667 | 50.000 | -0.000 | -0.00098 | 202.88 | ppb |
| \| | Ag | 109 | 6.667 | 86.603 | -0.000 | -0.00540 | 63.84 | ppb |
| \| | Cd | 111 | -2.490 | 1038.428 | -0.000 | -0.01426 | 418.50 | ppb |
| \| | In | 113 | 58334.665 | 1.072 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1321944.534 | 1.934 | 1321944.534 | | | ppb |
| ⌈ | Sb | 121 | 4125.851 | 1.667 | 0.002 | 2.38381 | 2.80 | ppb |
| \| | Ba | 135 | 5857.715 | 1.748 | 0.003 | 17.29979 | 0.78 | ppb |
| \| | Ba | 137 | 10135.801 | 1.206 | 0.006 | 17.20097 | 2.03 | ppb |
| ⌊> | Tb | 159 | 1749064.963 | 1.108 | 1749064.963 | | | ppb |
| ⌈ | Tl | 205 | 15.000 | 66.667 | -0.000 | -0.00228 | 120.85 | ppb |
| \| | Pb | 206 | 151.668 | 10.598 | 0.000 | 0.10417 | 14.07 | ppb |
| \| | Pb | 207 | 266.668 | 6.585 | 0.000 | 0.10125 | 8.87 | ppb |
| \| | Pb | 208 | 341.670 | 12.446 | 0.000 | 0.07858 | 15.09 | ppb |
| ⌊> | Bi | 209 | 1088175.316 | 0.860 | 1088175.316 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204748.864 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.020899 | ppb |
| ⌈> | Sc | 45 | 721163.846 | | ppb |
| \| | V | 51 | 1983.833 | 0.466901 | ppb |
| \| | Cr | 52 | 3680.677 | 0.972928 | ppb |
| \| | Mn | 55 | 8979.029 | 3.015804 | ppb |
| \| | Co | 59 | 31357.086 | 13.754117 | ppb |
| \| | Ni | 60 | 4354.281 | 7.343927 | ppb |
| \| | Cu | 63 | 2010.202 | 1.458556 | ppb |
| \| | Cu | 65 | 1686.809 | 2.530593 | ppb |
| \| | Zn | 66 | 2900.421 | 7.749361 | ppb |
| \| | As | 75 | 3196.860 | 6.302262 | ppb |
| ⌊ | Se | 82 | 44.000 | 0.044542 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.000993 | ppb |
| \| | Ag | 109 | 13.333 | -0.001419 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -18.005 | -0.050516 | ppb |
| | In | 113 | 57650.703 | | ppb |
| > | In | 115 | 1316892.625 | | ppb |
| | Sb | 121 | 4065.826 | 2.331845 | ppb |
| | Ba | 135 | 5887.733 | 17.269597 | ppb |
| | Ba | 137 | 10197.196 | 17.183966 | ppb |
| > | Tb | 159 | 1761169.532 | | ppb |
| | Tl | 205 | 5.000 | -0.005057 | ppb |
| | Pb | 206 | 145.001 | 0.097815 | ppb |
| | Pb | 207 | 265.002 | 0.099777 | ppb |
| | Pb | 208 | 390.004 | 0.091884 | ppb |
| > | Bi | 209 | 1094181.566 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201179.506 | | ppb |
| | Be | 9 | 6.000 | 0.018594 | ppb |
| > | Sc | 45 | 692955.342 | | ppb |
| | V | 51 | 1819.035 | 0.427296 | ppb |
| | Cr | 52 | 3562.635 | 0.987302 | ppb |
| | Mn | 55 | 8353.488 | 2.916857 | ppb |
| | Co | 59 | 30865.561 | 14.089960 | ppb |
| | Ni | 60 | 4410.973 | 7.748720 | ppb |
| | Cu | 63 | 2003.534 | 1.516355 | ppb |
| | Cu | 65 | 1516.782 | 2.357174 | ppb |
| | Zn | 66 | 3020.456 | 8.425030 | ppb |
| | As | 75 | 3244.693 | 6.658263 | ppb |
| | Se | 82 | 45.333 | 0.124493 | ppb |
| | Ag | 107 | 3.333 | -0.002970 | ppb |
| | Ag | 109 | 3.333 | -0.007427 | ppb |
| | Cd | 111 | -16.825 | -0.046864 | ppb |
| | In | 113 | 58475.471 | | ppb |
| > | In | 115 | 1349653.827 | | ppb |
| | Sb | 121 | 4200.882 | 2.459065 | ppb |
| | Ba | 135 | 5743.649 | 17.183065 | ppb |
| | Ba | 137 | 10215.215 | 17.558538 | ppb |
| > | Tb | 159 | 1726708.425 | | ppb |
| | Tl | 205 | 15.000 | -0.002241 | ppb |
| | Pb | 206 | 170.001 | 0.120939 | ppb |
| | Pb | 207 | 285.002 | 0.110870 | ppb |
| | Pb | 208 | 325.003 | 0.074751 | ppb |
| > | Bi | 209 | 1077397.521 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206963.764 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 700880.046 | | ppb |
| | V | 51 | 2457.544 | 0.704681 | ppb |
| | Cr | 52 | 3722.693 | 1.052697 | ppb |
| | Mn | 55 | 8583.682 | 2.964880 | ppb |
| | Co | 59 | 30839.480 | 13.918717 | ppb |
| | Ni | 60 | 4541.031 | 7.889078 | ppb |
| | Cu | 63 | 2000.200 | 1.495512 | ppb |
| | Cu | 65 | 1703.478 | 2.636245 | ppb |
| | Zn | 66 | 2953.770 | 8.135403 | ppb |
| | As | 75 | 3120.345 | 6.329546 | ppb |
| | Se | 82 | 46.000 | 0.128329 | ppb |
| | Ag | 107 | 10.000 | 0.001016 | ppb |
| | Ag | 109 | 3.333 | -0.007352 | ppb |
| | Cd | 111 | 27.360 | 0.054608 | ppb |
| | In | 113 | 58877.821 | | ppb |
| > | In | 115 | 1299287.151 | | ppb |
| | Sb | 121 | 4110.845 | 2.360525 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5941.765 | 17.446718 | ppb |
| | Ba | 137 | 9994.992 | 16.860395 | ppb |
| > | Tb | 159 | 1759316.932 | | ppb |
| | Tl | 205 | 25.000 | 0.000455 | ppb |
| | Pb | 206 | 140.001 | 0.093765 | ppb |
| | Pb | 207 | 250.002 | 0.093096 | ppb |
| | Pb | 208 | 310.003 | 0.069116 | ppb |
| > | Bi | 209 | 1092946.861 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 104.097 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 99.877 | | | |
| ⌈ | V | 51 | | | | | |
| ⌈ | Cr | 52 | | | | | |
| ⌈ | Mn | 55 | | | | | |
| ⌈ | Co | 59 | | | | | |
| ⌈ | Ni | 60 | | | | | |
| ⌈ | Cu | 63 | | | | | |
| ⌈ | Cu | 65 | | | | | |
| ⌈ | Zn | 66 | | | | | |
| ⌈ | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| ⌈ | Ag | 109 | | | | | |
| ⌈ | Cd | 111 | | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 94.651 | | | |
| ⌈ | Sb | 121 | | | | | |
| ⌈ | Ba | 135 | | | | | |
| ⌈ | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 94.020 | | | |
| ⌈ | Tl | 205 | | | | | |
| ⌈ | Pb | 206 | | | | | |
| ⌈ | Pb | 207 | | | | | |
| ⌈ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 92.984 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107163-01

Sample Date/Time: Monday, August 01, 2011 17:04:36
Sample Type: Sample
Sample Description: 7DUPL 5X
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107163-01.1457

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224248.544 | 0.574 | 224248.544 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 34.641 | -0.000 | -0.01090 | 91.87 | ppb |
| ⌈> | Sc | 45 | 749385.169 | 0.464 | 749385.169 | | | ppb |
| \| | V | 51 | 1274.490 | 10.644 | 0.000 | 0.13626 | 40.48 | ppb |
| \| | Cr | 52 | 2848.406 | 5.105 | 0.001 | 0.47268 | 17.03 | ppb |
| \| | Mn | 55 | 1901.848 | 6.726 | 0.002 | 0.53806 | 7.64 | ppb |
| \| | Co | 59 | 6237.278 | 0.715 | 0.008 | 2.62218 | 0.56 | ppb |
| \| | Ni | 60 | 935.599 | 2.528 | 0.001 | 1.42593 | 2.46 | ppb |
| \| | Cu | 63 | 452.233 | 9.334 | 0.000 | 0.24306 | 13.21 | ppb |
| \| | Cu | 65 | 508.902 | 4.002 | 0.001 | 0.61353 | 5.62 | ppb |
| \| | Zn | 66 | 756.695 | 7.090 | 0.001 | 1.70879 | 7.85 | ppb |
| \| | As | 75 | 694.649 | 2.135 | 0.001 | 1.29945 | 2.56 | ppb |
| ⌊ | Se | 82 | 42.222 | 6.381 | -0.000 | -0.04028 | 154.59 | ppb |
| ⌈ | Ag | 107 | 7.778 | 65.465 | -0.000 | -0.00063 | 425.45 | ppb |
| \| | Ag | 109 | 12.222 | 56.773 | -0.000 | -0.00253 | 147.29 | ppb |
| \| | Cd | 111 | 6.545 | 191.956 | 0.000 | 0.00500 | 551.48 | ppb |
| \| | In | 113 | 62316.903 | 0.466 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1392292.078 | 2.185 | 1392292.078 | | | ppb |
| ⌈ | Sb | 121 | 863.371 | 11.251 | 0.000 | 0.44814 | 13.44 | ppb |
| \| | Ba | 135 | 1165.401 | 0.552 | 0.001 | 3.23955 | 0.85 | ppb |
| \| | Ba | 137 | 2036.208 | 4.667 | 0.001 | 3.24925 | 3.43 | ppb |
| ⌊> | Tb | 159 | 1845636.022 | 1.389 | 1845636.022 | | | ppb |
| ⌈ | Tl | 205 | 21.667 | 13.323 | -0.000 | -0.00093 | 80.28 | ppb |
| \| | Pb | 206 | 31.667 | 63.813 | 0.000 | 0.00102 | 1541.22 | ppb |
| \| | Pb | 207 | 78.334 | 31.487 | 0.000 | 0.01235 | 84.41 | ppb |
| \| | Pb | 208 | 141.667 | 10.783 | 0.000 | 0.01780 | 22.58 | ppb |
| ⌊> | Bi | 209 | 1184797.245 | 0.304 | 1184797.245 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 225397.902 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005189 | ppb |
| ⌈> | Sc | 45 | 748179.347 | | ppb |
| \| | V | 51 | 1135.877 | 0.078931 | ppb |
| \| | Cr | 52 | 2812.395 | 0.456328 | ppb |
| \| | Mn | 55 | 1990.198 | 0.568670 | ppb |
| \| | Co | 59 | 6265.962 | 2.638566 | ppb |
| \| | Ni | 60 | 910.041 | 1.386261 | ppb |
| \| | Cu | 63 | 500.013 | 0.279095 | ppb |
| \| | Cu | 65 | 526.681 | 0.642144 | ppb |
| \| | Zn | 66 | 750.028 | 1.694593 | ppb |
| \| | As | 75 | 688.341 | 1.289461 | ppb |
| ⌊ | Se | 82 | 39.333 | -0.108556 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002270 | ppb |
| \| | Ag | 109 | 20.000 | 0.001631 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 9.635 | 0.011301 | ppb |
| | In | 113 | 61981.492 | | ppb |
| > | In | 115 | 1427373.301 | | ppb |
| | Sb | 121 | 840.035 | 0.429870 | ppb |
| | Ba | 135 | 1170.068 | 3.218380 | ppb |
| | Ba | 137 | 2132.227 | 3.369233 | ppb |
| > | Tb | 159 | 1864966.884 | | ppb |
| | Tl | 205 | 20.000 | -0.001368 | ppb |
| | Pb | 206 | 20.000 | -0.008065 | ppb |
| | Pb | 207 | 50.000 | 0.000374 | ppb |
| | Pb | 208 | 145.001 | 0.018545 | ppb |
| > | Bi | 209 | 1188960.234 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224489.814 | | ppb |
| | Be | 9 | 4.000 | -0.005047 | ppb |
| > | Sc | 45 | 746672.752 | | ppb |
| | V | 51 | 1280.610 | 0.140903 | ppb |
| | Cr | 52 | 3008.452 | 0.560108 | ppb |
| | Mn | 55 | 1755.154 | 0.491331 | ppb |
| | Co | 59 | 6185.913 | 2.609971 | ppb |
| | Ni | 60 | 940.044 | 1.438944 | ppb |
| | Cu | 63 | 436.676 | 0.232634 | ppb |
| | Cu | 65 | 513.347 | 0.623159 | ppb |
| | Zn | 66 | 706.692 | 1.582263 | ppb |
| | As | 75 | 711.589 | 1.336538 | ppb |
| | Se | 82 | 42.667 | -0.025657 | ppb |
| | Ag | 107 | 6.667 | -0.001151 | ppb |
| | Ag | 109 | 6.667 | -0.005555 | ppb |
| | Cd | 111 | -7.275 | -0.025168 | ppb |
| | In | 113 | 62479.577 | | ppb |
| > | In | 115 | 1373120.836 | | ppb |
| | Sb | 121 | 780.030 | 0.399144 | ppb |
| | Ba | 135 | 1168.068 | 3.229544 | ppb |
| | Ba | 137 | 2034.207 | 3.229700 | ppb |
| > | Tb | 159 | 1855397.587 | | ppb |
| | Tl | 205 | 20.000 | -0.001341 | ppb |
| | Pb | 206 | 55.000 | 0.019098 | ppb |
| | Pb | 207 | 95.000 | 0.019382 | ppb |
| | Pb | 208 | 155.001 | 0.021392 | ppb |
| > | Bi | 209 | 1182710.142 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 222857.917 | | ppb |
| | Be | 9 | 2.000 | -0.022462 | ppb |
| > | Sc | 45 | 753303.407 | | ppb |
| | V | 51 | 1406.984 | 0.188951 | ppb |
| | Cr | 52 | 2724.371 | 0.401619 | ppb |
| | Mn | 55 | 1960.192 | 0.554191 | ppb |
| | Co | 59 | 6259.959 | 2.618005 | ppb |
| | Ni | 60 | 956.712 | 1.452592 | ppb |
| | Cu | 63 | 420.009 | 0.217454 | ppb |
| | Cu | 65 | 486.679 | 0.575282 | ppb |
| | Zn | 66 | 813.366 | 1.849526 | ppb |
| | As | 75 | 684.017 | 1.272339 | ppb |
| | Se | 82 | 44.667 | 0.013378 | ppb |
| | Ag | 107 | 3.333 | -0.003007 | ppb |
| | Ag | 109 | 10.000 | -0.003663 | ppb |
| | Cd | 111 | 17.275 | 0.028859 | ppb |
| | In | 113 | 62489.640 | | ppb |
| > | In | 115 | 1376382.098 | | ppb |
| | Sb | 121 | 970.047 | 0.515418 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 1158.067 | 3.270729 | ppb |
| \| | Ba | 137 | 1942.189 | 3.148818 | ppb |
| \> | Tb | 159 | 1816543.594 | | ppb |
| ⌈ | Tl | 205 | 25.000 | -0.000068 | ppb |
| \| | Pb | 206 | 20.000 | -0.007984 | ppb |
| \| | Pb | 207 | 90.000 | 0.017282 | ppb |
| \| | Pb | 208 | 125.000 | 0.013457 | ppb |
| \> | Bi | 209 | 1182721.360 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 114.263 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 106.165 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.687 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 99.211 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 101.240 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS2

Sample Date/Time: Monday, August 01, 2011 17:06:02
Sample Type: Sample
Sample Description: 7DUPA
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS2.1458

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194941.098 | 0.196 | 194941.098 | | | ppb |
| ⌊ | Be | 9 | 970.047 | 3.977 | 0.005 | 9.75797 | 3.80 | ppb |
| ⌈> | Sc | 45 | 665339.603 | 1.590 | 665339.603 | | | ppb |
| \| | V | 51 | 115378.339 | 2.255 | 0.172 | 54.17634 | 0.73 | ppb |
| \| | Cr | 52 | 41675.328 | 0.329 | 0.060 | 23.07897 | 2.00 | ppb |
| \| | Mn | 55 | 35417.619 | 1.494 | 0.053 | 13.20982 | 1.27 | ppb |
| \| | Co | 59 | 52337.311 | 2.162 | 0.079 | 24.89239 | 0.95 | ppb |
| \| | Ni | 60 | 9245.383 | 1.327 | 0.014 | 17.05401 | 0.42 | ppb |
| \| | Cu | 63 | 26296.774 | 3.041 | 0.039 | 21.90430 | 2.35 | ppb |
| \| | Cu | 65 | 13381.173 | 2.424 | 0.020 | 23.06555 | 3.70 | ppb |
| \| | Zn | 66 | 9869.313 | 1.759 | 0.015 | 29.43917 | 3.19 | ppb |
| \| | As | 75 | 8138.362 | 1.408 | 0.012 | 17.43168 | 0.57 | ppb |
| ⌊ | Se | 82 | 2053.100 | 3.963 | 0.003 | 54.89796 | 2.68 | ppb |
| ⌈ | Ag | 107 | 17769.112 | 2.328 | 0.014 | 10.71142 | 2.88 | ppb |
| \| | Ag | 109 | 17263.779 | 0.882 | 0.014 | 10.70389 | 0.85 | ppb |
| \| | Cd | 111 | 4246.938 | 8.867 | 0.003 | 10.16376 | 10.26 | ppb |
| \| | In | 113 | 59583.687 | 1.779 | 0.003 | | | ppb |
| ⌊> | In | 115 | 1264804.927 | 1.554 | 1264804.927 | | | ppb |
| ⌈ | Sb | 121 | 40083.513 | 1.017 | 0.024 | 24.69201 | 1.35 | ppb |
| \| | Ba | 135 | 39360.645 | 0.418 | 0.024 | 122.70138 | 1.81 | ppb |
| \| | Ba | 137 | 68871.759 | 2.174 | 0.041 | 123.35121 | 2.23 | ppb |
| ⌊> | Tb | 159 | 1659805.762 | 2.105 | 1659805.762 | | | ppb |
| ⌈ | Tl | 205 | 36556.716 | 2.050 | 0.035 | 10.65619 | 3.13 | ppb |
| \| | Pb | 206 | 12511.159 | 2.878 | 0.012 | 11.06112 | 1.79 | ppb |
| \| | Pb | 207 | 22981.638 | 1.636 | 0.022 | 11.03103 | 0.56 | ppb |
| \| | Pb | 208 | 35911.135 | 0.950 | 0.035 | 10.85716 | 1.73 | ppb |
| ⌊> | Bi | 209 | 1032783.849 | 1.123 | 1032783.849 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194521.711 | | ppb |
| ⌊ | Be | 9 | 926.043 | 9.334123 | ppb |
| ⌈> | Sc | 45 | 670435.232 | | ppb |
| \| | V | 51 | 117010.710 | 54.531583 | ppb |
| \| | Cr | 52 | 41560.183 | 22.825237 | ppb |
| \| | Mn | 55 | 35171.744 | 13.016179 | ppb |
| \| | Co | 59 | 53315.751 | 25.166215 | ppb |
| \| | Ni | 60 | 9274.299 | 16.976254 | ppb |
| \| | Cu | 63 | 27186.906 | 22.476938 | ppb |
| \| | Cu | 65 | 13535.821 | 23.147534 | ppb |
| \| | Zn | 66 | 9924.923 | 29.370133 | ppb |
| \| | As | 75 | 8232.694 | 17.499286 | ppb |
| ⌊ | Se | 82 | 2050.877 | 54.424190 | ppb |
| ⌈ | Ag | 107 | 18019.554 | 10.701459 | ppb |
| \| | Ag | 109 | 17351.708 | 10.599937 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 4094.818 | 9.646896 | ppb |
| | In | 113 | 60210.722 | | ppb |
| > | In | 115 | 1283601.458 | | ppb |
| | Sb | 121 | 40301.045 | 24.309401 | ppb |
| | Ba | 135 | 39548.048 | 120.712814 | ppb |
| | Ba | 137 | 70338.508 | 123.361445 | ppb |
| > | Tb | 159 | 1694750.521 | | ppb |
| | Tl | 205 | 37414.863 | 11.027381 | ppb |
| | Pb | 206 | 12122.343 | 10.839458 | ppb |
| | Pb | 207 | 22647.880 | 10.994064 | ppb |
| | Pb | 208 | 36223.513 | 11.074575 | ppb |
| > | Bi | 209 | 1021238.020 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195033.536 | | ppb |
| | Be | 9 | 986.049 | 9.915361 | ppb |
| > | Sc | 45 | 653177.388 | | ppb |
| | V | 51 | 112377.530 | 53.750415 | ppb |
| | Cr | 52 | 41827.294 | 23.611497 | ppb |
| | Mn | 55 | 35056.340 | 13.318466 | ppb |
| | Co | 59 | 51098.219 | 24.756547 | ppb |
| | Ni | 60 | 9110.815 | 17.118605 | ppb |
| | Cu | 63 | 25639.494 | 21.754704 | ppb |
| | Cu | 65 | 13599.241 | 23.875779 | ppb |
| | Zn | 66 | 10008.339 | 30.410566 | ppb |
| | As | 75 | 8010.852 | 17.477608 | ppb |
| | Se | 82 | 1972.861 | 53.723738 | ppb |
| | Ag | 107 | 17996.179 | 11.024547 | ppb |
| | Ag | 109 | 17087.921 | 10.767924 | ppb |
| | Cd | 111 | 4675.782 | 11.364362 | ppb |
| | In | 113 | 58359.798 | | ppb |
| > | In | 115 | 1244384.222 | | ppb |
| | Sb | 121 | 39613.306 | 24.923047 | ppb |
| | Ba | 135 | 39293.046 | 125.093838 | ppb |
| | Ba | 137 | 68930.756 | 126.092720 | ppb |
| > | Tb | 159 | 1624865.351 | | ppb |
| | Tl | 205 | 36225.496 | 10.558225 | ppb |
| | Pb | 206 | 12577.905 | 11.122767 | ppb |
| | Pb | 207 | 22908.238 | 10.997204 | ppb |
| | Pb | 208 | 35547.087 | 10.746740 | ppb |
| > | Bi | 209 | 1032683.739 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195268.047 | | ppb |
| | Be | 9 | 998.050 | 10.024428 | ppb |
| > | Sc | 45 | 672406.188 | | ppb |
| | V | 51 | 116746.777 | 54.247031 | ppb |
| | Cr | 52 | 41638.508 | 22.800183 | ppb |
| | Mn | 55 | 36024.773 | 13.294830 | ppb |
| | Co | 59 | 52597.964 | 24.754415 | ppb |
| | Ni | 60 | 9351.037 | 17.067169 | ppb |
| | Cu | 63 | 26063.922 | 21.481245 | ppb |
| | Cu | 65 | 13008.455 | 22.173342 | ppb |
| | Zn | 66 | 9674.678 | 28.536820 | ppb |
| | As | 75 | 8171.541 | 17.318144 | ppb |
| | Se | 82 | 2135.561 | 56.545963 | ppb |
| | Ag | 107 | 17291.604 | 10.408257 | ppb |
| | Ag | 109 | 17351.708 | 10.743796 | ppb |
| | Cd | 111 | 3970.216 | 9.480019 | ppb |
| | In | 113 | 60180.542 | | ppb |
| > | In | 115 | 1266429.103 | | ppb |
| | Sb | 121 | 40336.187 | 24.843592 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 39240.841 | 122.297499 | ppb |
| | Ba | 137 | 67346.013 | 120.599478 | ppb |
| > | Tb | 159 | 1659801.412 | | ppb |
| | Tl | 205 | 36029.791 | 10.382978 | ppb |
| | Pb | 206 | 12833.229 | 11.221130 | ppb |
| | Pb | 207 | 23388.797 | 11.101820 | ppb |
| | Pb | 208 | 35962.803 | 10.750152 | ppb |
| > | Bi | 209 | 1044429.789 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.329 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.259 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 90.559 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 89.222 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 88.250 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 17:07:29
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1459

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 222709.805 | 1.709 | 222709.805 | | | ppb |
| ⌊ | Be | 9 | 32205.112 | 1.013 | 0.145 | 284.73170 | 0.85 | ppb |
| ⌈> | Sc | 45 | 746656.792 | 0.318 | 746656.792 | | | ppb |
| ⌈ | V | 51 | 737556.867 | 1.492 | 0.987 | 310.49224 | 1.18 | ppb |
| ⌈ | Cr | 52 | 601220.566 | 0.799 | 0.803 | 308.32902 | 0.69 | ppb |
| ⌈ | Mn | 55 | 937662.040 | 0.307 | 1.255 | 313.78866 | 0.21 | ppb |
| ⌈ | Co | 59 | 721445.625 | 0.330 | 0.966 | 305.92578 | 0.65 | ppb |
| ⌈ | Ni | 60 | 182122.385 | 0.558 | 0.244 | 301.27705 | 0.38 | ppb |
| ⌈ | Cu | 63 | 405702.939 | 0.541 | 0.543 | 302.32686 | 0.25 | ppb |
| ⌈ | Cu | 65 | 197776.659 | 0.483 | 0.265 | 305.76543 | 0.71 | ppb |
| ⌈ | Zn | 66 | 120000.167 | 0.566 | 0.161 | 321.97088 | 0.66 | ppb |
| ⌈ | As | 75 | 158856.067 | 0.769 | 0.213 | 303.57827 | 0.96 | ppb |
| ⌊ | Se | 82 | 12555.433 | 0.620 | 0.017 | 303.95359 | 0.93 | ppb |
| ⌈ | Ag | 107 | 574349.568 | 0.758 | 0.411 | 313.52259 | 1.50 | ppb |
| ⌈ | Ag | 109 | 547005.414 | 0.892 | 0.391 | 307.25000 | 0.27 | ppb |
| ⌈ | Cd | 111 | 143143.726 | 1.703 | 0.102 | 310.08739 | 1.28 | ppb |
| ⌈ | In | 113 | 199536.118 | 0.623 | 0.099 | | | ppb |
| ⌊> | In | 115 | 1397206.134 | 0.815 | 1397206.134 | | | ppb |
| ⌈ | Sb | 121 | 567547.931 | 0.394 | 0.306 | 313.28372 | 1.02 | ppb |
| ⌈ | Ba | 135 | 108926.717 | 0.555 | 0.059 | 303.95545 | 1.67 | ppb |
| ⌈ | Ba | 137 | 189008.275 | 1.037 | 0.102 | 303.01853 | 0.54 | ppb |
| ⌊> | Tb | 159 | 1854268.200 | 1.111 | 1854268.200 | | | ppb |
| ⌈ | Tl | 205 | 1201655.104 | 0.654 | 1.007 | 303.35231 | 0.67 | ppb |
| ⌈ | Pb | 206 | 400460.021 | 1.159 | 0.336 | 307.16844 | 1.03 | ppb |
| ⌈ | Pb | 207 | 738136.136 | 0.615 | 0.619 | 307.29026 | 0.90 | ppb |
| ⌈ | Pb | 208 | 1170815.322 | 1.294 | 0.981 | 306.95305 | 1.59 | ppb |
| ⌊> | Bi | 209 | 1192981.656 | 0.330 | 1192981.656 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 226964.749 | | ppb |
| ⌊ | Be | 9 | 32578.983 | 282.612437 | ppb |
| ⌈> | Sc | 45 | 744138.938 | | ppb |
| ⌈ | V | 51 | 725417.967 | 306.417717 | ppb |
| ⌈ | Cr | 52 | 596662.661 | 307.023430 | ppb |
| ⌈ | Mn | 55 | 936072.749 | 314.316385 | ppb |
| ⌈ | Co | 59 | 723994.832 | 308.041408 | ppb |
| ⌈ | Ni | 60 | 181000.026 | 300.433867 | ppb |
| ⌈ | Cu | 63 | 403194.324 | 301.475135 | ppb |
| ⌈ | Cu | 65 | 198007.803 | 307.155472 | ppb |
| ⌈ | Zn | 66 | 120322.884 | 323.928758 | ppb |
| ⌈ | As | 75 | 159953.811 | 306.706197 | ppb |
| ⌊ | Se | 82 | 12623.296 | 306.633932 | ppb |
| ⌈ | Ag | 107 | 571158.208 | 308.943249 | ppb |
| ⌈ | Ag | 109 | 552636.415 | 307.612595 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 144547.661 | 310.309725 | ppb |
| | In | 113 | 199372.860 | | ppb |
| > | In | 115 | 1409928.190 | | ppb |
| | Sb | 121 | 565542.126 | 315.746795 | ppb |
| | Ba | 135 | 109548.778 | 309.171252 | ppb |
| | Ba | 137 | 187750.114 | 304.460687 | ppb |
| > | Tb | 159 | 1833173.269 | | ppb |
| | Tl | 205 | 1200179.248 | 304.138093 | ppb |
| | Pb | 206 | 397855.064 | 306.340148 | ppb |
| | Pb | 207 | 742400.106 | 310.242971 | ppb |
| | Pb | 208 | 1185335.471 | 311.939794 | ppb |
| > | Bi | 209 | 1188432.705 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 221532.960 | | ppb |
| | Be | 9 | 31979.051 | 284.210244 | ppb |
| > | Sc | 45 | 748846.623 | | ppb |
| | V | 51 | 746889.022 | 313.513014 | ppb |
| | Cr | 52 | 600759.344 | 307.188601 | ppb |
| | Mn | 55 | 940983.074 | 313.978740 | ppb |
| | Co | 59 | 719282.317 | 304.112262 | ppb |
| | Ni | 60 | 182388.243 | 300.835074 | ppb |
| | Cu | 63 | 407281.726 | 302.617244 | ppb |
| | Cu | 65 | 196726.212 | 303.246796 | ppb |
| | Zn | 66 | 120457.828 | 322.251727 | ppb |
| | As | 75 | 159075.402 | 303.104058 | ppb |
| | Se | 82 | 12470.437 | 300.997039 | ppb |
| | Ag | 107 | 572579.460 | 313.312635 | ppb |
| | Ag | 109 | 543963.054 | 306.304745 | ppb |
| | Cd | 111 | 144554.422 | 313.932017 | ppb |
| | In | 113 | 200852.021 | | ppb |
| > | In | 115 | 1393725.453 | | ppb |
| | Sb | 121 | 569957.526 | 314.419437 | ppb |
| | Ba | 135 | 108889.637 | 303.648046 | ppb |
| | Ba | 137 | 188008.908 | 301.246542 | ppb |
| > | Tb | 159 | 1855284.143 | | ppb |
| | Tl | 205 | 1210144.812 | 304.882024 | ppb |
| | Pb | 206 | 405820.760 | 310.658685 | ppb |
| | Pb | 207 | 738648.823 | 306.881968 | ppb |
| | Pb | 208 | 1155099.564 | 302.216235 | ppb |
| > | Bi | 209 | 1195376.864 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 219631.705 | | ppb |
| | Be | 9 | 32057.301 | 287.372430 | ppb |
| > | Sc | 45 | 746984.815 | | ppb |
| | V | 51 | 740363.612 | 311.546001 | ppb |
| | Cr | 52 | 606239.693 | 310.775014 | ppb |
| | Mn | 55 | 935930.296 | 313.070865 | ppb |
| | Co | 59 | 721059.725 | 305.623667 | ppb |
| | Ni | 60 | 182978.887 | 302.562203 | ppb |
| | Cu | 63 | 406632.768 | 302.888191 | ppb |
| | Cu | 65 | 198595.962 | 306.894013 | ppb |
| | Zn | 66 | 119219.790 | 319.732168 | ppb |
| | As | 75 | 157538.989 | 300.924561 | ppb |
| | Se | 82 | 12572.565 | 304.229807 | ppb |
| | Ag | 107 | 579311.036 | 318.311877 | ppb |
| | Ag | 109 | 544416.772 | 307.832646 | ppb |
| | Cd | 111 | 140329.095 | 306.020427 | ppb |
| | In | 113 | 198383.473 | | ppb |
| > | In | 115 | 1387964.761 | | ppb |
| | Sb | 121 | 567144.141 | 309.684935 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 108341.734 | 299.047038 | ppb |
| \| | Ba | 137 | 191265.804 | 303.348369 | ppb |
| \> | Tb | 159 | 1874347.187 | | ppb |
| ⌈ | Tl | 205 | 1194641.253 | 301.036810 | ppb |
| \| | Pb | 206 | 397704.238 | 304.506475 | ppb |
| \| | Pb | 207 | 733359.480 | 304.745852 | ppb |
| \| | Pb | 208 | 1172010.932 | 306.703111 | ppb |
| \> | Bi | 209 | 1195135.398 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 113.479 | | | |
| | Be | 9 | 94.911 | | | | |
| > | Sc | 45 | | 105.779 | | | |
| | V | 51 | 103.497 | | | | |
| | Cr | 52 | 102.776 | | | | |
| | Mn | 55 | 104.596 | | | | |
| | Co | 59 | 101.975 | | | | |
| | Ni | 60 | 100.426 | | | | |
| | Cu | 63 | 100.776 | | | | |
| | Cu | 65 | 101.922 | | | | |
| | Zn | 66 | 107.324 | | | | |
| | As | 75 | 101.193 | | | | |
| | Se | 82 | 101.318 | | | | |
| | Ag | 107 | 104.508 | | | | |
| | Ag | 109 | 102.417 | | | | |
| | Cd | 111 | 103.362 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 100.039 | | | |
| | Sb | 121 | 104.428 | | | | |
| | Ba | 135 | 101.318 | | | | |
| | Ba | 137 | 101.006 | | | | |
| > | Tb | 159 | | 99.675 | | | |
| | Tl | 205 | 101.117 | | | | |
| | Pb | 206 | 102.389 | | | | |
| | Pb | 207 | 102.430 | | | | |
| | Pb | 208 | 102.318 | | | | |
| > | Bi | 209 | | 101.939 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 17:08:55
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1460

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 218332.096 | 1.590 | 218332.096 | | | ppb |
| ⌊ | Be | 9 | 4.000 | 132.288 | -0.000 | -0.00455 | 1028.53 | ppb |
| ⌈> | Sc | 45 | 723534.716 | 1.070 | 723534.716 | | | ppb |
| ⌈ | V | 51 | 825.792 | 33.260 | -0.000 | -0.03906 | 311.95 | ppb |
| ⌈ | Cr | 52 | 2256.255 | 0.788 | 0.001 | 0.21027 | 2.61 | ppb |
| ⌈ | Mn | 55 | 340.006 | 12.565 | 0.000 | 0.02134 | 73.17 | ppb |
| ⌈ | Co | 59 | 66.667 | 51.730 | 0.000 | 0.01591 | 92.56 | ppb |
| ⌈ | Ni | 60 | 56.667 | 17.647 | -0.000 | -0.02001 | 81.13 | ppb |
| ⌈ | Cu | 63 | 125.556 | 19.206 | 0.000 | 0.00381 | 506.93 | ppb |
| ⌈ | Cu | 65 | 131.112 | 21.623 | 0.000 | 0.03811 | 112.95 | ppb |
| ⌈ | Zn | 66 | 123.334 | 11.781 | 0.000 | 0.02640 | 163.17 | ppb |
| ⌈ | As | 75 | 37.668 | 29.927 | 0.000 | 0.05107 | 44.85 | ppb |
| ⌊ | Se | 82 | 34.000 | 16.981 | -0.000 | -0.20906 | 72.35 | ppb |
| ⌈ | Ag | 107 | 33.333 | 26.458 | 0.000 | 0.01341 | 37.89 | ppb |
| ⌈ | Ag | 109 | 51.111 | 27.152 | 0.000 | 0.01945 | 42.21 | ppb |
| ⌈ | Cd | 111 | 11.517 | 120.414 | 0.000 | 0.01610 | 189.95 | ppb |
| ⌈ | In | 113 | 62222.988 | 0.496 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1395418.439 | 1.253 | 1395418.439 | | | ppb |
| ⌈ | Sb | 121 | 410.009 | 23.804 | 0.000 | 0.19502 | 27.26 | ppb |
| ⌈ | Ba | 135 | 34.000 | 42.418 | 0.000 | 0.06699 | 59.73 | ppb |
| ⌈ | Ba | 137 | 44.000 | 73.152 | 0.000 | 0.04063 | 126.66 | ppb |
| ⌊> | Tb | 159 | 1854264.144 | 0.528 | 1854264.144 | | | ppb |
| ⌈ | Tl | 205 | 66.667 | 4.330 | 0.000 | 0.01043 | 5.76 | ppb |
| ⌈ | Pb | 206 | 101.667 | 57.001 | 0.000 | 0.05434 | 80.52 | ppb |
| ⌈ | Pb | 207 | 171.668 | 59.857 | 0.000 | 0.05077 | 82.99 | ppb |
| ⌈ | Pb | 208 | 223.335 | 50.378 | 0.000 | 0.03885 | 74.45 | ppb |
| ⌊> | Bi | 209 | 1190426.439 | 1.248 | 1190426.439 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 222336.501 | | ppb |
| ⌊ | Be | 9 | 10.000 | 0.048432 | ppb |
| ⌈> | Sc | 45 | 732349.514 | | ppb |
| ⌈ | V | 51 | 568.251 | -0.154683 | ppb |
| ⌈ | Cr | 52 | 2276.259 | 0.206319 | ppb |
| ⌈ | Mn | 55 | 300.005 | 0.006192 | ppb |
| ⌈ | Co | 59 | 104.001 | 0.031806 | ppb |
| ⌈ | Ni | 60 | 66.667 | -0.004220 | ppb |
| ⌈ | Cu | 63 | 110.001 | -0.009269 | ppb |
| ⌈ | Cu | 65 | 160.001 | 0.081437 | ppb |
| ⌈ | Zn | 66 | 113.334 | -0.005330 | ppb |
| ⌈ | As | 75 | 24.799 | 0.024938 | ppb |
| ⌊ | Se | 82 | 30.667 | -0.302598 | ppb |
| ⌈ | Ag | 107 | 43.333 | 0.019177 | ppb |
| ⌈ | Ag | 109 | 66.667 | 0.028680 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.910 | 0.050097 | ppb |
| | In | 113 | 62353.796 | | ppb |
| > | In | 115 | 1375232.883 | | ppb |
| | Sb | 121 | 510.013 | 0.249889 | ppb |
| | Ba | 135 | 50.000 | 0.111476 | ppb |
| | Ba | 137 | 80.000 | 0.098224 | ppb |
| > | Tb | 159 | 1857332.274 | | ppb |
| | Tl | 205 | 70.000 | 0.011102 | ppb |
| | Pb | 206 | 155.001 | 0.094529 | ppb |
| | Pb | 207 | 270.002 | 0.091033 | ppb |
| | Pb | 208 | 335.003 | 0.067557 | ppb |
| > | Bi | 209 | 1202213.193 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 216476.003 | | ppb |
| | Be | 9 | 2.000 | -0.021941 | ppb |
| > | Sc | 45 | 720412.481 | | ppb |
| | V | 51 | 1114.849 | 0.088162 | ppb |
| | Cr | 52 | 2242.251 | 0.207969 | ppb |
| | Mn | 55 | 385.007 | 0.037380 | ppb |
| | Co | 59 | 60.000 | 0.013213 | ppb |
| | Ni | 60 | 46.667 | -0.036660 | ppb |
| | Cu | 63 | 113.334 | -0.005309 | ppb |
| | Cu | 65 | 130.001 | 0.037521 | ppb |
| | Zn | 66 | 116.667 | 0.009091 | ppb |
| | As | 75 | 42.408 | 0.060617 | ppb |
| | Se | 82 | 30.667 | -0.290013 | ppb |
| | Ag | 107 | 26.667 | 0.009617 | ppb |
| | Ag | 109 | 46.667 | 0.016695 | ppb |
| | Cd | 111 | 0.000 | -0.009131 | ppb |
| | In | 113 | 61870.810 | | ppb |
| > | In | 115 | 1405413.956 | | ppb |
| | Sb | 121 | 405.008 | 0.191443 | ppb |
| | Ba | 135 | 30.000 | 0.055544 | ppb |
| | Ba | 137 | 34.000 | 0.024451 | ppb |
| > | Tb | 159 | 1862158.544 | | ppb |
| | Tl | 205 | 65.000 | 0.009943 | ppb |
| | Pb | 206 | 110.001 | 0.060757 | ppb |
| | Pb | 207 | 180.001 | 0.054279 | ppb |
| | Pb | 208 | 225.001 | 0.039276 | ppb |
| > | Bi | 209 | 1195326.325 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 216183.783 | | ppb |
| | Be | 9 | 0.000 | -0.040134 | ppb |
| > | Sc | 45 | 717842.154 | | ppb |
| | V | 51 | 794.276 | -0.050648 | ppb |
| | Cr | 52 | 2250.253 | 0.216532 | ppb |
| | Mn | 55 | 335.006 | 0.020448 | ppb |
| | Co | 59 | 36.000 | 0.002721 | ppb |
| | Ni | 60 | 56.667 | -0.019160 | ppb |
| | Cu | 63 | 153.335 | 0.026019 | ppb |
| | Cu | 65 | 103.334 | -0.004639 | ppb |
| | Zn | 66 | 140.001 | 0.075436 | ppb |
| | As | 75 | 45.797 | 0.067656 | ppb |
| | Se | 82 | 40.667 | -0.034565 | ppb |
| | Ag | 107 | 30.000 | 0.011424 | ppb |
| | Ag | 109 | 40.000 | 0.012969 | ppb |
| | Cd | 111 | 7.640 | 0.007321 | ppb |
| | In | 113 | 62444.358 | | ppb |
| > | In | 115 | 1405608.479 | | ppb |
| | Sb | 121 | 315.005 | 0.143742 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 22.000 | 0.033940 | ppb |
| | Ba | 137 | 18.000 | -0.000800 | ppb |
| > | Tb | 159 | 1843301.615 | | ppb |
| | Tl | 205 | 65.000 | 0.010245 | ppb |
| | Pb | 206 | 40.000 | 0.007728 | ppb |
| | Pb | 207 | 65.000 | 0.006992 | ppb |
| | Pb | 208 | 110.000 | 0.009713 | ppb |
| > | Bi | 209 | 1173739.799 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 111.248 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 102.503 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.911 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.675 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 101.721 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107163-02

Sample Date/Time: Monday, August 01, 2011 17:10:23
Sample Type: Sample
Sample Description: 7W13
Number of Replicates: 3
Batch ID: 1107163
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107163-02.1461

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 194969.768 | 1.002 | 194969.768 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.02035 | 96.36 | ppb |
| ⌈> | Sc | 45 | 674332.731 | 1.017 | 674332.731 | | | ppb |
| \| | V | 51 | 1946.536 | 3.241 | 0.002 | 0.50970 | 6.18 | ppb |
| \| | Cr | 52 | 3507.282 | 1.421 | 0.003 | 1.01060 | 4.56 | ppb |
| \| | Mn | 55 | 7871.430 | 0.868 | 0.011 | 2.82176 | 1.94 | ppb |
| \| | Co | 59 | 29173.160 | 0.766 | 0.043 | 13.68602 | 1.51 | ppb |
| \| | Ni | 60 | 3969.677 | 1.860 | 0.006 | 7.15789 | 2.23 | ppb |
| \| | Cu | 63 | 1973.528 | 2.791 | 0.003 | 1.53586 | 1.99 | ppb |
| \| | Cu | 65 | 1653.470 | 5.816 | 0.002 | 2.66072 | 5.74 | ppb |
| \| | Zn | 66 | 3053.800 | 1.042 | 0.004 | 8.76679 | 2.09 | ppb |
| \| | As | 75 | 3083.055 | 1.279 | 0.005 | 6.50087 | 1.11 | ppb |
| ⌊ | Se | 82 | 44.445 | 3.775 | 0.000 | 0.13367 | 40.88 | ppb |
| ⌈ | Ag | 107 | 8.889 | 57.282 | 0.000 | 0.00044 | 685.19 | ppb |
| \| | Ag | 109 | 14.444 | 35.251 | -0.000 | -0.00050 | 634.01 | ppb |
| \| | Cd | 111 | 25.150 | 19.749 | 0.000 | 0.05034 | 23.01 | ppb |
| \| | In | 113 | 56467.360 | 2.119 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1279479.323 | 0.517 | 1279479.323 | | | ppb |
| ⌈ | Sb | 121 | 4147.527 | 3.578 | 0.002 | 2.45582 | 2.81 | ppb |
| \| | Ba | 135 | 5572.219 | 2.255 | 0.003 | 16.86868 | 3.42 | ppb |
| \| | Ba | 137 | 9773.441 | 1.802 | 0.006 | 16.99450 | 1.55 | ppb |
| ⌊> | Tb | 159 | 1706812.905 | 1.277 | 1706812.905 | | | ppb |
| ⌈ | Tl | 205 | 11.667 | 65.465 | -0.000 | -0.00312 | 70.08 | ppb |
| \| | Pb | 206 | 175.002 | 20.000 | 0.000 | 0.12718 | 23.14 | ppb |
| \| | Pb | 207 | 303.336 | 16.675 | 0.000 | 0.12122 | 18.96 | ppb |
| \| | Pb | 208 | 440.006 | 13.105 | 0.000 | 0.10990 | 15.04 | ppb |
| ⌊> | Bi | 209 | 1062397.043 | 0.532 | 1062397.043 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197213.673 | | ppb |
| ⌊ | Be | 9 | 8.000 | 0.039744 | ppb |
| ⌈> | Sc | 45 | 681903.025 | | ppb |
| \| | V | 51 | 1920.151 | 0.487357 | ppb |
| \| | Cr | 52 | 3474.604 | 0.969721 | ppb |
| \| | Mn | 55 | 7798.039 | 2.762098 | ppb |
| \| | Co | 59 | 29140.396 | 13.517504 | ppb |
| \| | Ni | 60 | 3937.442 | 7.018141 | ppb |
| \| | Cu | 63 | 2036.874 | 1.569650 | ppb |
| \| | Cu | 65 | 1680.141 | 2.674839 | ppb |
| \| | Zn | 66 | 3017.122 | 8.556894 | ppb |
| \| | As | 75 | 3118.540 | 6.502568 | ppb |
| ⌊ | Se | 82 | 42.667 | 0.072792 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.003052 | ppb |
| \| | Ag | 109 | 13.333 | -0.001230 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 26.545 | 0.053334 | ppb |
| | In | 113 | 57846.830 | | ppb |
| > | In | 115 | 1286279.615 | | ppb |
| | Sb | 121 | 4090.837 | 2.454749 | ppb |
| | Ba | 135 | 5653.598 | 17.338799 | ppb |
| | Ba | 137 | 9752.753 | 17.184112 | ppb |
| > | Tb | 159 | 1684395.015 | | ppb |
| | Tl | 205 | 5.000 | -0.005019 | ppb |
| | Pb | 206 | 190.002 | 0.139894 | ppb |
| | Pb | 207 | 335.003 | 0.135802 | ppb |
| | Pb | 208 | 500.007 | 0.127324 | ppb |
| > | Bi | 209 | 1064427.658 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194052.730 | | ppb |
| | Be | 9 | 6.000 | 0.020751 | ppb |
| > | Sc | 45 | 668544.748 | | ppb |
| | V | 51 | 1900.918 | 0.496011 | ppb |
| | Cr | 52 | 3564.635 | 1.060563 | ppb |
| | Mn | 55 | 7933.145 | 2.869721 | ppb |
| | Co | 59 | 29411.187 | 13.916110 | ppb |
| | Ni | 60 | 3917.434 | 7.123724 | ppb |
| | Cu | 63 | 1946.856 | 1.527927 | ppb |
| | Cu | 65 | 1546.786 | 2.501317 | ppb |
| | Zn | 66 | 3070.471 | 8.894199 | ppb |
| | As | 75 | 3090.036 | 6.572123 | ppb |
| | Se | 82 | 44.667 | 0.149733 | ppb |
| | Ag | 107 | 10.000 | 0.001137 | ppb |
| | Ag | 109 | 20.000 | 0.002964 | ppb |
| | Cd | 111 | 19.635 | 0.037553 | ppb |
| | In | 113 | 55714.776 | | ppb |
| > | In | 115 | 1273074.605 | | ppb |
| | Sb | 121 | 4315.931 | 2.525465 | ppb |
| | Ba | 135 | 5427.472 | 16.224199 | ppb |
| | Ba | 137 | 9958.957 | 17.105254 | ppb |
| > | Tb | 159 | 1727924.022 | | ppb |
| | Tl | 205 | 10.000 | -0.003610 | ppb |
| | Pb | 206 | 200.002 | 0.148117 | ppb |
| | Pb | 207 | 330.003 | 0.133133 | ppb |
| | Pb | 208 | 435.005 | 0.107945 | ppb |
| > | Bi | 209 | 1066751.847 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 193642.900 | | ppb |
| | Be | 9 | 4.000 | 0.000542 | ppb |
| > | Sc | 45 | 672550.419 | | ppb |
| | V | 51 | 2018.539 | 0.545724 | ppb |
| | Cr | 52 | 3482.606 | 1.001511 | ppb |
| | Mn | 55 | 7883.106 | 2.833460 | ppb |
| | Co | 59 | 28967.896 | 13.624454 | ppb |
| | Ni | 60 | 4054.155 | 7.331791 | ppb |
| | Cu | 63 | 1936.854 | 1.509997 | ppb |
| | Cu | 65 | 1733.484 | 2.806017 | ppb |
| | Zn | 66 | 3073.806 | 8.849288 | ppb |
| | As | 75 | 3040.588 | 6.427925 | ppb |
| | Se | 82 | 46.000 | 0.178475 | ppb |
| | Ag | 107 | 3.333 | -0.002866 | ppb |
| | Ag | 109 | 10.000 | -0.003230 | ppb |
| | Cd | 111 | 29.270 | 0.060135 | ppb |
| | In | 113 | 55840.474 | | ppb |
| > | In | 115 | 1279083.750 | | ppb |
| | Sb | 121 | 4035.814 | 2.387250 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 5635.588 | 17.043033 | ppb |
| \| | Ba | 137 | 9608.614 | 16.694144 | ppb |
| \> | Tb | 159 | 1708119.678 | | ppb |
| ⌈ | Tl | 205 | 20.000 | -0.000730 | ppb |
| \| | Pb | 206 | 135.001 | 0.093532 | ppb |
| \| | Pb | 207 | 245.002 | 0.094718 | ppb |
| \| | Pb | 208 | 385.004 | 0.094433 | ppb |
| \> | Bi | 209 | 1056011.623 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 99.344 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 95.533 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.610 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.749 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 90.781 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107164-01

Sample Date/Time: Monday, August 01, 2011 17:11:48
Sample Type: Sample
Sample Description: 5WC21
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107164-01.1462

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205504.872 | 0.712 | 205504.872 | | | ppb |
| ⌊ | Be | 9 | 150.668 | 14.622 | 0.001 | 1.40431 | 15.61 | ppb |
| ⌈> | Sc | 45 | 716125.684 | 1.126 | 716125.684 | | | ppb |
| \| | V | 51 | 1772.739 | 30.721 | 0.001 | 0.37986 | 62.24 | ppb |
| \| | Cr | 52 | 11881.722 | 1.070 | 0.014 | 5.38593 | 0.12 | ppb |
| \| | Mn | 55 | 16155074.113 | 0.910 | 22.561 | 5639.12130 | 1.84 | ppb |
| \| | Co | 59 | 173913.530 | 1.661 | 0.243 | 76.88892 | 2.20 | ppb |
| \| | Ni | 60 | 16670.552 | 1.115 | 0.023 | 28.64999 | 1.58 | ppb |
| \| | Cu | 63 | 6210.818 | 2.100 | 0.009 | 4.73386 | 1.00 | ppb |
| \| | Cu | 65 | 3513.951 | 2.702 | 0.005 | 5.49580 | 1.69 | ppb |
| \| | Zn | 66 | 14388.122 | 0.792 | 0.020 | 39.97939 | 1.86 | ppb |
| \| | As | 75 | 110.514 | 23.758 | 0.000 | 0.19724 | 27.86 | ppb |
| ⌊ | Se | 82 | 80.223 | 1.730 | 0.000 | 0.96993 | 4.04 | ppb |
| ⌈ | Ag | 107 | 24.444 | 20.830 | 0.000 | 0.00943 | 29.69 | ppb |
| \| | Ag | 109 | 15.556 | 12.372 | 0.000 | 0.00001 | 10865.67 | ppb |
| \| | Cd | 111 | 237.150 | 18.080 | 0.000 | 0.54200 | 18.32 | ppb |
| \| | In | 113 | 58408.425 | 0.994 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1302627.289 | 1.409 | 1302627.289 | | | ppb |
| ⌈ | Sb | 121 | 110.001 | 25.308 | 0.000 | 0.03427 | 48.86 | ppb |
| \| | Ba | 135 | 5245.376 | 2.289 | 0.003 | 15.73298 | 0.96 | ppb |
| \| | Ba | 137 | 9019.401 | 2.470 | 0.005 | 15.54802 | 3.65 | ppb |
| ⌊> | Tb | 159 | 1721863.677 | 1.416 | 1721863.677 | | | ppb |
| ⌈ | Tl | 205 | 631.687 | 5.726 | 0.001 | 0.16823 | 5.41 | ppb |
| \| | Pb | 206 | 195.002 | 15.597 | 0.000 | 0.14035 | 17.72 | ppb |
| \| | Pb | 207 | 341.670 | 17.581 | 0.000 | 0.13531 | 20.10 | ppb |
| \| | Pb | 208 | 540.009 | 8.072 | 0.000 | 0.13547 | 8.77 | ppb |
| ⌊> | Bi | 209 | 1088989.045 | 0.556 | 1088989.045 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207090.345 | | ppb |
| ⌊ | Be | 9 | 140.001 | 1.291072 | ppb |
| ⌈> | Sc | 45 | 723702.787 | | ppb |
| \| | V | 51 | 2249.887 | 0.579569 | ppb |
| \| | Cr | 52 | 12007.204 | 5.385774 | ppb |
| \| | Mn | 55 | 16150762.409 | 5577.886072 | ppb |
| \| | Co | 59 | 175280.822 | 76.673599 | ppb |
| \| | Ni | 60 | 16547.012 | 28.135499 | ppb |
| \| | Cu | 63 | 6335.340 | 4.779437 | ppb |
| \| | Cu | 65 | 3617.321 | 5.602059 | ppb |
| \| | Zn | 66 | 14256.822 | 39.188317 | ppb |
| \| | As | 75 | 87.066 | 0.148291 | ppb |
| ⌊ | Se | 82 | 81.334 | 0.976372 | ppb |
| ⌈ | Ag | 107 | 20.000 | 0.007044 | ppb |
| \| | Ag | 109 | 16.667 | 0.000838 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 226.034 | 0.524546 | ppb |
| | In | 113 | 58882.851 | | ppb |
| > | In | 115 | 1282005.548 | | ppb |
| | Sb | 121 | 115.001 | 0.038302 | ppb |
| | Ba | 135 | 5117.309 | 15.600759 | ppb |
| | Ba | 137 | 9232.260 | 16.171421 | ppb |
| > | Tb | 159 | 1694168.092 | | ppb |
| | Tl | 205 | 655.021 | 0.174342 | ppb |
| | Pb | 206 | 180.002 | 0.127493 | ppb |
| | Pb | 207 | 280.002 | 0.106927 | ppb |
| | Pb | 208 | 520.009 | 0.129446 | ppb |
| > | Bi | 209 | 1091250.769 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204205.930 | | ppb |
| | Be | 9 | 176.002 | 1.657023 | ppb |
| > | Sc | 45 | 707652.979 | | ppb |
| | V | 51 | 1888.897 | 0.441208 | ppb |
| | Cr | 52 | 11752.902 | 5.392281 | ppb |
| | Mn | 55 | 16304221.982 | 5758.598922 | ppb |
| | Co | 59 | 175864.944 | 78.674235 | ppb |
| | Ni | 60 | 16580.401 | 28.834568 | ppb |
| | Cu | 63 | 6075.178 | 4.685323 | ppb |
| | Cu | 65 | 3430.588 | 5.428223 | ppb |
| | Zn | 66 | 14460.448 | 40.661299 | ppb |
| | As | 75 | 138.882 | 0.256670 | ppb |
| | Se | 82 | 80.667 | 1.005518 | ppb |
| | Ag | 107 | 30.000 | 0.012517 | ppb |
| | Ag | 109 | 16.667 | 0.000565 | ppb |
| | Cd | 111 | 200.925 | 0.452605 | ppb |
| | In | 113 | 58581.086 | | ppb |
| > | In | 115 | 1317148.374 | | ppb |
| | Sb | 121 | 80.000 | 0.015881 | ppb |
| | Ba | 135 | 5355.434 | 15.896769 | ppb |
| | Ba | 137 | 9038.083 | 15.412491 | ppb |
| > | Tb | 159 | 1740046.116 | | ppb |
| | Tl | 205 | 590.017 | 0.157775 | ppb |
| | Pb | 206 | 175.002 | 0.124537 | ppb |
| | Pb | 207 | 345.003 | 0.137835 | ppb |
| | Pb | 208 | 510.007 | 0.127812 | ppb |
| > | Bi | 209 | 1082124.361 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205218.341 | | ppb |
| | Be | 9 | 136.001 | 1.264833 | ppb |
| > | Sc | 45 | 717021.286 | | ppb |
| | V | 51 | 1179.433 | 0.118814 | ppb |
| | Cr | 52 | 11885.059 | 5.379725 | ppb |
| | Mn | 55 | 16010237.947 | 5580.878892 | ppb |
| | Co | 59 | 170594.823 | 75.318931 | ppb |
| | Ni | 60 | 16884.242 | 28.979912 | ppb |
| | Cu | 63 | 6221.935 | 4.736811 | ppb |
| | Cu | 65 | 3493.944 | 5.457119 | ppb |
| | Zn | 66 | 14447.095 | 40.088568 | ppb |
| | As | 75 | 105.594 | 0.186763 | ppb |
| | Se | 82 | 78.667 | 0.927908 | ppb |
| | Ag | 107 | 23.333 | 0.008744 | ppb |
| | Ag | 109 | 13.333 | -0.001370 | ppb |
| | Cd | 111 | 284.490 | 0.648848 | ppb |
| | In | 113 | 57761.338 | | ppb |
| > | In | 115 | 1308727.944 | | ppb |
| | Sb | 121 | 135.001 | 0.048632 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5263.385 | 15.701425 | ppb |
| | Ba | 137 | 8787.860 | 15.060146 | ppb |
| > | Tb | 159 | 1731376.821 | | ppb |
| | Tl | 205 | 650.021 | 0.172578 | ppb |
| | Pb | 206 | 230.003 | 0.169011 | ppb |
| | Pb | 207 | 400.004 | 0.161154 | ppb |
| | Pb | 208 | 590.010 | 0.149147 | ppb |
| > | Bi | 209 | 1093592.004 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 104.712 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 101.453 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 93.267 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 92.558 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 93.053 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107164-01

Sample Date/Time: Monday, August 01, 2011 17:13:14
Sample Type: Sample
Sample Description: 5WC21L 5X
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107164-01.1463

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224272.379 | 0.424 | 224272.379 | | | ppb |
| ⌊ | Be | 9 | 26.667 | 8.660 | 0.000 | 0.19405 | 10.84 | ppb |
| ⌈> | Sc | 45 | 762265.021 | 1.222 | 762265.021 | | | ppb |
| \| | V | 51 | 772.837 | 35.742 | -0.000 | -0.07911 | 146.76 | ppb |
| \| | Cr | 52 | 3507.282 | 1.827 | 0.002 | 0.77975 | 1.48 | ppb |
| \| | Mn | 55 | 2521666.875 | 4.547 | 3.307 | 826.53471 | 3.36 | ppb |
| \| | Co | 59 | 27488.438 | 4.122 | 0.036 | 11.40221 | 2.93 | ppb |
| \| | Ni | 60 | 2556.994 | 5.642 | 0.003 | 4.02674 | 4.58 | ppb |
| \| | Cu | 63 | 1113.395 | 6.567 | 0.001 | 0.72030 | 7.95 | ppb |
| \| | Cu | 65 | 705.581 | 8.522 | 0.001 | 0.89755 | 8.71 | ppb |
| \| | Zn | 66 | 2481.420 | 5.741 | 0.003 | 6.21005 | 4.91 | ppb |
| \| | As | 75 | 52.760 | 60.080 | 0.000 | 0.07564 | 79.64 | ppb |
| ⌊ | Se | 82 | 44.667 | 7.898 | 0.000 | 0.00080 | 10474.65 | ppb |
| ⌈ | Ag | 107 | 8.889 | 57.282 | -0.000 | -0.00001 | 18690.81 | ppb |
| \| | Ag | 109 | 15.556 | 32.733 | -0.000 | -0.00066 | 428.55 | ppb |
| \| | Cd | 111 | 43.033 | 23.382 | 0.000 | 0.08380 | 25.52 | ppb |
| \| | In | 113 | 62506.412 | 0.300 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1400720.697 | 0.434 | 1400720.697 | | | ppb |
| ⌈ | Sb | 121 | 55.000 | 18.182 | -0.000 | -0.00065 | 894.10 | ppb |
| \| | Ba | 135 | 849.369 | 3.028 | 0.000 | 2.35256 | 3.12 | ppb |
| \| | Ba | 137 | 1440.771 | 4.373 | 0.001 | 2.29094 | 5.37 | ppb |
| ⌊> | Tb | 159 | 1846305.842 | 0.972 | 1846305.842 | | | ppb |
| ⌈ | Tl | 205 | 101.667 | 24.754 | 0.000 | 0.01968 | 33.18 | ppb |
| \| | Pb | 206 | 36.667 | 34.317 | 0.000 | 0.00518 | 193.78 | ppb |
| \| | Pb | 207 | 65.000 | 30.769 | 0.000 | 0.00703 | 123.00 | ppb |
| \| | Pb | 208 | 118.334 | 23.272 | 0.000 | 0.01198 | 63.57 | ppb |
| ⌊> | Bi | 209 | 1173449.582 | 0.840 | 1173449.582 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 223254.619 | | ppb |
| ⌊ | Be | 9 | 28.000 | 0.206829 | ppb |
| ⌈> | Sc | 45 | 752334.378 | | ppb |
| \| | V | 51 | 894.294 | -0.024773 | ppb |
| \| | Cr | 52 | 3444.593 | 0.771153 | ppb |
| \| | Mn | 55 | 2412236.136 | 801.311035 | ppb |
| \| | Co | 59 | 26384.762 | 11.091073 | ppb |
| \| | Ni | 60 | 2396.954 | 3.820083 | ppb |
| \| | Cu | 63 | 1166.735 | 0.770281 | ppb |
| \| | Cu | 65 | 643.354 | 0.816769 | ppb |
| \| | Zn | 66 | 2316.935 | 5.859973 | ppb |
| \| | As | 75 | 82.056 | 0.132255 | ppb |
| ⌊ | Se | 82 | 46.000 | 0.046909 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.002379 | ppb |
| \| | Ag | 109 | 20.000 | 0.001800 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 50.280 | 0.099127 | ppb |
| | In | 113 | 62308.515 | | ppb |
| > | In | 115 | 1405815.861 | | ppb |
| | Sb | 121 | 55.000 | -0.000594 | ppb |
| | Ba | 135 | 820.034 | 2.277285 | ppb |
| | Ba | 137 | 1440.104 | 2.296194 | ppb |
| > | Tb | 159 | 1840671.754 | | ppb |
| | Tl | 205 | 105.001 | 0.020762 | ppb |
| | Pb | 206 | 50.000 | 0.015892 | ppb |
| | Pb | 207 | 85.000 | 0.015794 | ppb |
| | Pb | 208 | 150.001 | 0.020749 | ppb |
| > | Bi | 209 | 1162778.271 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 225140.193 | | ppb |
| | Be | 9 | 24.000 | 0.169776 | ppb |
| > | Sc | 45 | 763656.127 | | ppb |
| | V | 51 | 967.521 | -0.000139 | ppb |
| | Cr | 52 | 3504.614 | 0.775270 | ppb |
| | Mn | 55 | 2511822.590 | 822.024283 | ppb |
| | Co | 59 | 27431.573 | 11.360472 | ppb |
| | Ni | 60 | 2597.004 | 4.085410 | ppb |
| | Cu | 63 | 1030.053 | 0.657866 | ppb |
| | Cu | 65 | 710.025 | 0.902962 | ppb |
| | Zn | 66 | 2563.662 | 6.416298 | ppb |
| | As | 75 | 19.109 | 0.012325 | ppb |
| | Se | 82 | 40.667 | -0.096212 | ppb |
| | Ag | 107 | 3.333 | -0.003041 | ppb |
| | Ag | 109 | 16.667 | -0.000038 | ppb |
| | Cd | 111 | 47.275 | 0.092909 | ppb |
| | In | 113 | 62529.890 | | ppb |
| > | In | 115 | 1402351.287 | | ppb |
| | Sb | 121 | 45.000 | -0.006500 | ppb |
| | Ba | 135 | 860.037 | 2.356414 | ppb |
| | Ba | 137 | 1378.095 | 2.165361 | ppb |
| > | Tb | 159 | 1866395.232 | | ppb |
| | Tl | 205 | 75.000 | 0.012673 | ppb |
| | Pb | 206 | 35.000 | 0.003634 | ppb |
| | Pb | 207 | 65.000 | 0.006795 | ppb |
| | Pb | 208 | 105.000 | 0.008180 | ppb |
| > | Bi | 209 | 1182216.576 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224422.325 | | ppb |
| | Be | 9 | 28.000 | 0.205544 | ppb |
| > | Sc | 45 | 770804.557 | | ppb |
| | V | 51 | 456.695 | -0.212417 | ppb |
| | Cr | 52 | 3572.638 | 0.792822 | ppb |
| | Mn | 55 | 2640941.899 | 856.268823 | ppb |
| | Co | 59 | 28648.980 | 11.755071 | ppb |
| | Ni | 60 | 2677.025 | 4.174718 | ppb |
| | Cu | 63 | 1143.399 | 0.732748 | ppb |
| | Cu | 65 | 763.362 | 0.972923 | ppb |
| | Zn | 66 | 2563.662 | 6.353866 | ppb |
| | As | 75 | 57.116 | 0.082354 | ppb |
| | Se | 82 | 47.333 | 0.051710 | ppb |
| | Ag | 107 | 10.000 | 0.000617 | ppb |
| | Ag | 109 | 10.000 | -0.003735 | ppb |
| | Cd | 111 | 31.545 | 0.059365 | ppb |
| | In | 113 | 62680.831 | | ppb |
| > | In | 115 | 1393994.944 | | ppb |
| | Sb | 121 | 65.000 | 0.005141 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 868.038 | 2.423974 | ppb |
| \| | Ba | 137 | 1504.113 | 2.411279 | ppb |
| \> | Tb | 159 | 1831850.541 | | ppb |
| ⌈ | Tl | 205 | 125.001 | 0.025596 | ppb |
| \| | Pb | 206 | 25.000 | -0.003994 | ppb |
| \| | Pb | 207 | 45.000 | -0.001497 | ppb |
| \| | Pb | 208 | 100.000 | 0.007012 | ppb |
| \> | Bi | 209 | 1175353.900 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 114.275 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 107.990 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 100.291 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.247 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.270 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS3

Sample Date/Time: Monday, August 01, 2011 17:14:40
Sample Type: Sample
Sample Description: 5WC21A
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS3.1464

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208977.800 | 0.951 | 208977.800 | | | ppb |
| ⌊ | Be | 9 | 1158.067 | 4.149 | 0.006 | 10.86980 | 3.23 | ppb |
| ⌈> | Sc | 45 | 719015.507 | 1.479 | 719015.507 | | | ppb |
| \| | V | 51 | 119142.144 | 1.124 | 0.164 | 51.76093 | 1.88 | ppb |
| \| | Cr | 52 | 51030.565 | 1.662 | 0.068 | 26.28414 | 3.20 | ppb |
| \| | Mn | 55 | 16251894.277 | 2.081 | 22.604 | 5649.82607 | 2.10 | ppb |
| \| | Co | 59 | 197461.563 | 1.787 | 0.275 | 86.94174 | 1.13 | ppb |
| \| | Ni | 60 | 21655.650 | 1.829 | 0.030 | 37.10334 | 2.17 | ppb |
| \| | Cu | 63 | 32543.988 | 1.488 | 0.045 | 25.10003 | 1.21 | ppb |
| \| | Cu | 65 | 15892.619 | 0.660 | 0.022 | 25.36038 | 1.14 | ppb |
| \| | Zn | 66 | 21819.349 | 3.054 | 0.030 | 60.55301 | 3.86 | ppb |
| \| | As | 75 | 5335.449 | 3.308 | 0.007 | 10.56552 | 3.02 | ppb |
| ⌊ | Se | 82 | 2115.335 | 0.927 | 0.003 | 52.31274 | 2.29 | ppb |
| ⌈ | Ag | 107 | 18559.440 | 3.180 | 0.014 | 10.79116 | 4.06 | ppb |
| \| | Ag | 109 | 18188.751 | 1.357 | 0.014 | 10.87990 | 3.38 | ppb |
| \| | Cd | 111 | 4909.967 | 4.563 | 0.004 | 11.32991 | 5.99 | ppb |
| \| | In | 113 | 62541.649 | 1.218 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1311629.749 | 2.525 | 1311629.749 | | | ppb |
| ⌈ | Sb | 121 | 37117.092 | 0.641 | 0.021 | 21.89718 | 2.14 | ppb |
| \| | Ba | 135 | 39995.840 | 1.776 | 0.023 | 119.39763 | 1.71 | ppb |
| \| | Ba | 137 | 69038.178 | 1.047 | 0.040 | 118.41750 | 0.47 | ppb |
| ⌊> | Tb | 159 | 1732932.926 | 1.516 | 1732932.926 | | | ppb |
| ⌈ | Tl | 205 | 38729.870 | 1.706 | 0.035 | 10.66000 | 1.56 | ppb |
| \| | Pb | 206 | 12916.671 | 1.338 | 0.012 | 10.78651 | 1.68 | ppb |
| \| | Pb | 207 | 23805.930 | 0.278 | 0.022 | 10.79218 | 0.88 | ppb |
| \| | Pb | 208 | 37327.502 | 1.196 | 0.034 | 10.65656 | 0.50 | ppb |
| ⌊> | Bi | 209 | 1093541.960 | 0.703 | 1093541.960 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211053.931 | | ppb |
| ⌊ | Be | 9 | 1212.073 | 11.268479 | ppb |
| ⌈> | Sc | 45 | 718024.578 | | ppb |
| \| | V | 51 | 120686.594 | 52.502158 | ppb |
| \| | Cr | 52 | 51423.882 | 26.524022 | ppb |
| \| | Mn | 55 | 16607385.774 | 5780.948269 | ppb |
| \| | Co | 59 | 199765.582 | 88.077036 | ppb |
| \| | Ni | 60 | 22101.063 | 37.916841 | ppb |
| \| | Cu | 63 | 32101.443 | 24.790554 | ppb |
| \| | Cu | 65 | 15799.137 | 25.242669 | ppb |
| \| | Zn | 66 | 22552.068 | 62.667635 | ppb |
| \| | As | 75 | 5513.070 | 10.933053 | ppb |
| ⌊ | Se | 82 | 2131.560 | 52.784868 | ppb |
| ⌈ | Ag | 107 | 19218.450 | 11.257929 | ppb |
| \| | Ag | 109 | 18463.696 | 11.125750 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5165.754 | 12.006017 | ppb |
| | In | 113 | 63375.186 | | ppb |
| > | In | 115 | 1301363.839 | | ppb |
| | Sb | 121 | 36847.763 | 21.395156 | ppb |
| | Ba | 135 | 40025.944 | 117.622234 | ppb |
| | Ba | 137 | 69764.508 | 117.798029 | ppb |
| > | Tb | 159 | 1760287.584 | | ppb |
| | Tl | 205 | 38509.005 | 10.534120 | ppb |
| | Pb | 206 | 12748.121 | 10.579466 | ppb |
| | Pb | 207 | 23734.152 | 10.693042 | ppb |
| | Pb | 208 | 37741.777 | 10.709083 | ppb |
| > | Bi | 209 | 1100290.472 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207094.428 | | ppb |
| | Be | 9 | 1120.063 | 10.609821 | ppb |
| > | Sc | 45 | 708912.676 | | ppb |
| | V | 51 | 118305.123 | 52.124816 | ppb |
| | Cr | 52 | 51610.841 | 26.978948 | ppb |
| | Mn | 55 | 15934342.684 | 5617.955833 | ppb |
| | Co | 59 | 193400.272 | 86.366316 | ppb |
| | Ni | 60 | 21342.751 | 37.083954 | ppb |
| | Cu | 63 | 32469.294 | 25.399195 | ppb |
| | Cu | 65 | 15872.587 | 25.688983 | ppb |
| | Zn | 66 | 21656.759 | 60.944628 | ppb |
| | As | 75 | 5160.052 | 10.363289 | ppb |
| | Se | 82 | 2120.892 | 53.204001 | ppb |
| | Ag | 107 | 18380.209 | 10.388932 | ppb |
| | Ag | 109 | 17986.161 | 10.457352 | ppb |
| | Cd | 111 | 4748.466 | 10.648107 | ppb |
| | In | 113 | 62368.889 | | ppb |
| > | In | 115 | 1348660.945 | | ppb |
| | Sb | 121 | 37204.079 | 21.973190 | ppb |
| | Ba | 135 | 40690.618 | 121.626191 | ppb |
| | Ba | 137 | 69031.447 | 118.558519 | ppb |
| > | Tb | 159 | 1730621.243 | | ppb |
| | Tl | 205 | 39472.751 | 10.848578 | ppb |
| | Pb | 206 | 13093.566 | 10.917849 | ppb |
| | Pb | 207 | 23864.364 | 10.802334 | ppb |
| | Pb | 208 | 37386.169 | 10.657832 | ppb |
| > | Bi | 209 | 1095154.970 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208785.042 | | ppb |
| | Be | 9 | 1142.065 | 10.731097 | ppb |
| > | Sc | 45 | 730109.266 | | ppb |
| | V | 51 | 118434.715 | 50.655807 | ppb |
| | Cr | 52 | 50056.972 | 25.349462 | ppb |
| | Mn | 55 | 16213954.372 | 5550.574113 | ppb |
| | Co | 59 | 199218.836 | 86.381870 | ppb |
| | Ni | 60 | 21523.137 | 36.309229 | ppb |
| | Cu | 63 | 33061.229 | 25.110350 | ppb |
| | Cu | 65 | 16006.133 | 25.149476 | ppb |
| | Zn | 66 | 21249.219 | 58.046780 | ppb |
| | As | 75 | 5333.225 | 10.400204 | ppb |
| | Se | 82 | 2093.552 | 50.949340 | ppb |
| | Ag | 107 | 18079.662 | 10.726613 | ppb |
| | Ag | 109 | 18116.395 | 11.056600 | ppb |
| | Cd | 111 | 4815.682 | 11.335610 | ppb |
| | In | 113 | 61880.872 | | ppb |
| > | In | 115 | 1284864.464 | | ppb |
| | Sb | 121 | 37299.433 | 22.323206 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 39270.959 | 118.944465 | ppb |
| \| | Ba | 137 | 68318.577 | 118.895949 | ppb |
| _> | Tb | 159 | 1707889.950 | | ppb |
| ⌈ | Tl | 205 | 38207.853 | 10.597309 | ppb |
| \| | Pb | 206 | 12908.326 | 10.862203 | ppb |
| \| | Pb | 207 | 23819.275 | 10.881177 | ppb |
| \| | Pb | 208 | 36854.559 | 10.602752 | ppb |
| _> | Bi | 209 | 1085180.439 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 106.482 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 101.863 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 93.912 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 93.153 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 93.442 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107164-02

Sample Date/Time: Monday, August 01, 2011 17:16:05
Sample Type: Sample
Sample Description: 5WC22
Number of Replicates: 3
Batch ID: 1107164
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107164-02.1465

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207017.721 | 1.172 | 207017.721 | | | ppb |
| ⌊ | Be | 9 | 5.333 | 21.651 | 0.000 | 0.01054 | 101.05 | ppb |
| ⌈> | Sc | 45 | 700463.715 | 1.436 | 700463.715 | | | ppb |
| \| | V | 51 | 1803.861 | 20.361 | 0.001 | 0.41307 | 42.11 | ppb |
| \| | Cr | 52 | 3063.803 | 2.281 | 0.002 | 0.69255 | 4.12 | ppb |
| \| | Mn | 55 | 7827241.865 | 0.444 | 11.176 | 2793.35843 | 1.80 | ppb |
| \| | Co | 59 | 10634.319 | 1.415 | 0.015 | 4.79394 | 0.89 | ppb |
| \| | Ni | 60 | 3111.595 | 2.168 | 0.004 | 5.37197 | 1.07 | ppb |
| \| | Cu | 63 | 805.588 | 2.692 | 0.001 | 0.54716 | 1.47 | ppb |
| \| | Cu | 65 | 848.925 | 7.577 | 0.001 | 1.23002 | 10.15 | ppb |
| \| | Zn | 66 | 1057.834 | 4.824 | 0.001 | 2.71194 | 4.07 | ppb |
| \| | As | 75 | 71.152 | 44.315 | 0.000 | 0.12100 | 51.80 | ppb |
| ⌊ | Se | 82 | 60.222 | 15.824 | 0.000 | 0.49988 | 54.00 | ppb |
| ⌈ | Ag | 107 | 7.778 | 49.487 | -0.000 | -0.00031 | 733.35 | ppb |
| \| | Ag | 109 | 7.778 | 65.465 | -0.000 | -0.00473 | 63.10 | ppb |
| \| | Cd | 111 | 122.283 | 3.678 | 0.000 | 0.27374 | 2.91 | ppb |
| \| | In | 113 | 58234.076 | 0.840 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1308413.419 | 1.780 | 1308413.419 | | | ppb |
| ⌈ | Sb | 121 | 173.335 | 6.662 | 0.000 | 0.07009 | 10.42 | ppb |
| \| | Ba | 135 | 10805.168 | 0.617 | 0.006 | 31.87705 | 1.81 | ppb |
| \| | Ba | 137 | 19072.845 | 2.344 | 0.011 | 32.32325 | 1.52 | ppb |
| ⌊> | Tb | 159 | 1752591.728 | 1.443 | 1752591.728 | | | ppb |
| ⌈ | Tl | 205 | 220.002 | 17.159 | 0.000 | 0.05374 | 19.05 | ppb |
| \| | Pb | 206 | 70.000 | 18.898 | 0.000 | 0.03474 | 31.74 | ppb |
| \| | Pb | 207 | 135.000 | 7.407 | 0.000 | 0.04039 | 10.97 | ppb |
| \| | Pb | 208 | 246.669 | 12.218 | 0.000 | 0.05048 | 16.77 | ppb |
| ⌊> | Bi | 209 | 1100812.116 | 0.302 | 1100812.116 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209769.322 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.016189 | ppb |
| ⌈> | Sc | 45 | 710210.056 | | ppb |
| \| | V | 51 | 1379.887 | 0.212612 | ppb |
| \| | Cr | 52 | 3076.473 | 0.676362 | ppb |
| \| | Mn | 55 | 7787262.014 | 2740.482744 | ppb |
| \| | Co | 59 | 10807.837 | 4.805190 | ppb |
| \| | Ni | 60 | 3153.831 | 5.370418 | ppb |
| \| | Cu | 63 | 826.701 | 0.554999 | ppb |
| \| | Cu | 65 | 776.697 | 1.092198 | ppb |
| \| | Zn | 66 | 1116.729 | 2.837454 | ppb |
| \| | As | 75 | 93.390 | 0.164258 | ppb |
| ⌊ | Se | 82 | 52.000 | 0.265929 | ppb |
| ⌈ | Ag | 107 | 3.333 | -0.002926 | ppb |
| \| | Ag | 109 | 6.667 | -0.005397 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 119.915 | 0.266183 | ppb |
| | In | 113 | 57917.236 | | ppb |
| > | In | 115 | 1318380.851 | | ppb |
| | Sb | 121 | 180.002 | 0.072756 | ppb |
| | Ba | 135 | 10731.755 | 31.295632 | ppb |
| | Ba | 137 | 19112.246 | 32.023518 | ppb |
| > | Tb | 159 | 1772700.626 | | ppb |
| | Tl | 205 | 180.002 | 0.042961 | ppb |
| | Pb | 206 | 65.000 | 0.030741 | ppb |
| | Pb | 207 | 125.000 | 0.036056 | ppb |
| | Pb | 208 | 250.002 | 0.051649 | ppb |
| > | Bi | 209 | 1097491.508 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206100.201 | | ppb |
| | Be | 9 | 6.000 | 0.017192 | ppb |
| > | Sc | 45 | 690118.916 | | ppb |
| | V | 51 | 2024.697 | 0.524485 | ppb |
| | Cr | 52 | 2988.446 | 0.675808 | ppb |
| | Mn | 55 | 7843824.153 | 2840.753542 | ppb |
| | Co | 59 | 10555.568 | 4.829724 | ppb |
| | Ni | 60 | 3033.793 | 5.315238 | ppb |
| | Cu | 63 | 783.364 | 0.538910 | ppb |
| | Cu | 65 | 900.041 | 1.335396 | ppb |
| | Zn | 66 | 1026.719 | 2.667706 | ppb |
| | As | 75 | 35.067 | 0.049125 | ppb |
| | Se | 82 | 70.667 | 0.795217 | ppb |
| | Ag | 107 | 10.000 | 0.000902 | ppb |
| | Ag | 109 | 13.333 | -0.001468 | ppb |
| | Cd | 111 | 127.469 | 0.282052 | ppb |
| | In | 113 | 57987.642 | | ppb |
| > | In | 115 | 1325057.810 | | ppb |
| | Sb | 121 | 180.002 | 0.075680 | ppb |
| | Ba | 135 | 10821.852 | 32.447313 | ppb |
| | Ba | 137 | 18607.295 | 32.054680 | ppb |
| > | Tb | 159 | 1724189.151 | | ppb |
| | Tl | 205 | 255.003 | 0.063333 | ppb |
| | Pb | 206 | 85.000 | 0.047205 | ppb |
| | Pb | 207 | 145.001 | 0.044910 | ppb |
| | Pb | 208 | 215.001 | 0.041490 | ppb |
| > | Bi | 209 | 1100796.924 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205183.640 | | ppb |
| | Be | 9 | 4.000 | -0.001746 | ppb |
| > | Sc | 45 | 701062.172 | | ppb |
| | V | 51 | 2006.999 | 0.502126 | ppb |
| | Cr | 52 | 3126.489 | 0.725481 | ppb |
| | Mn | 55 | 7850639.427 | 2798.838999 | ppb |
| | Co | 59 | 10539.551 | 4.746895 | ppb |
| | Ni | 60 | 3147.162 | 5.430263 | ppb |
| | Cu | 63 | 806.699 | 0.547574 | ppb |
| | Cu | 65 | 870.038 | 1.262455 | ppb |
| | Zn | 66 | 1030.053 | 2.630673 | ppb |
| | As | 75 | 84.998 | 0.149626 | ppb |
| | Se | 82 | 58.000 | 0.438497 | ppb |
| | Ag | 107 | 10.000 | 0.001096 | ppb |
| | Ag | 109 | 3.333 | -0.007325 | ppb |
| | Cd | 111 | 119.465 | 0.272975 | ppb |
| | In | 113 | 58797.350 | | ppb |
| > | In | 115 | 1281801.594 | | ppb |
| | Sb | 121 | 160.001 | 0.061827 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 10861.896 | 31.888204 | ppb |
| | Ba | 137 | 19498.992 | 32.891557 | ppb |
| > | Tb | 159 | 1760885.407 | | ppb |
| | Tl | 205 | 225.003 | 0.054938 | ppb |
| | Pb | 206 | 60.000 | 0.026270 | ppb |
| | Pb | 207 | 135.000 | 0.040213 | ppb |
| | Pb | 208 | 275.002 | 0.058301 | ppb |
| > | Bi | 209 | 1104147.915 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 105.483 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 99.235 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 93.682 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 94.209 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.063 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107165-01

Sample Date/Time: Monday, August 01, 2011 17:17:31
Sample Type: Sample
Sample Description: 5WC21
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107165-01.1466

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227945.369 | 0.378 | 227945.369 | | | ppb |
| ⌊ | Be | 9 | 136.668 | 11.367 | 0.001 | 1.14016 | 11.37 | ppb |
| ⌈> | Sc | 45 | 777574.598 | 1.330 | 777574.598 | | | ppb |
| \| | V | 51 | 465.510 | 22.899 | -0.001 | -0.21047 | 20.65 | ppb |
| \| | Cr | 52 | 11059.448 | 2.598 | 0.012 | 4.47579 | 2.41 | ppb |
| \| | Mn | 55 | 15977876.986 | 1.836 | 20.547 | 5135.63184 | 0.50 | ppb |
| \| | Co | 59 | 172281.532 | 1.287 | 0.222 | 70.14100 | 0.79 | ppb |
| \| | Ni | 60 | 16149.698 | 1.357 | 0.021 | 25.54673 | 0.20 | ppb |
| \| | Cu | 63 | 6156.339 | 0.438 | 0.008 | 4.31411 | 0.95 | ppb |
| \| | Cu | 65 | 3470.603 | 4.938 | 0.004 | 4.98569 | 5.82 | ppb |
| \| | Zn | 66 | 18811.014 | 1.983 | 0.024 | 48.19605 | 1.45 | ppb |
| \| | As | 75 | 79.425 | 48.158 | 0.000 | 0.12216 | 57.23 | ppb |
| ⌊ | Se | 82 | 73.556 | 10.964 | 0.000 | 0.65229 | 25.26 | ppb |
| ⌈ | Ag | 107 | 12.222 | 15.746 | 0.000 | 0.00174 | 58.29 | ppb |
| \| | Ag | 109 | 18.889 | 20.377 | 0.000 | 0.00113 | 193.79 | ppb |
| \| | Cd | 111 | 218.909 | 19.401 | 0.000 | 0.45971 | 19.87 | ppb |
| \| | In | 113 | 63182.355 | 1.944 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1413499.679 | 0.434 | 1413499.679 | | | ppb |
| ⌈ | Sb | 121 | 201.669 | 16.508 | 0.000 | 0.07908 | 23.84 | ppb |
| \| | Ba | 135 | 4967.901 | 2.604 | 0.003 | 13.69165 | 1.23 | ppb |
| \| | Ba | 137 | 8536.978 | 2.961 | 0.005 | 13.51887 | 2.88 | ppb |
| ⌊> | Tb | 159 | 1873384.380 | 1.499 | 1873384.380 | | | ppb |
| ⌈ | Tl | 205 | 520.014 | 9.273 | 0.000 | 0.12410 | 10.71 | ppb |
| \| | Pb | 206 | 130.001 | 7.692 | 0.000 | 0.07559 | 8.66 | ppb |
| \| | Pb | 207 | 215.001 | 14.523 | 0.000 | 0.06845 | 18.94 | ppb |
| \| | Pb | 208 | 400.005 | 9.014 | 0.000 | 0.08466 | 11.97 | ppb |
| ⌊> | Bi | 209 | 1200524.240 | 1.153 | 1200524.240 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 228855.106 | | ppb |
| ⌊ | Be | 9 | 154.001 | 1.284932 | ppb |
| ⌈> | Sc | 45 | 771635.086 | | ppb |
| \| | V | 51 | 356.510 | -0.253482 | ppb |
| \| | Cr | 52 | 10735.760 | 4.356910 | ppb |
| \| | Mn | 55 | 15804667.026 | 5119.288076 | ppb |
| \| | Co | 59 | 169964.221 | 69.728418 | ppb |
| \| | Ni | 60 | 16056.213 | 25.594601 | ppb |
| \| | Cu | 63 | 6151.892 | 4.344460 | ppb |
| \| | Cu | 65 | 3353.896 | 4.849165 | ppb |
| \| | Zn | 66 | 18393.567 | 47.484828 | ppb |
| \| | As | 75 | 35.725 | 0.042683 | ppb |
| ⌊ | Se | 82 | 67.334 | 0.520648 | ppb |
| ⌈ | Ag | 107 | 10.000 | 0.000568 | ppb |
| \| | Ag | 109 | 23.333 | 0.003654 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 241.120 | 0.509735 | ppb |
| | In | 113 | 61810.438 | | ppb |
| > | In | 115 | 1406605.391 | | ppb |
| | Sb | 121 | 180.002 | 0.068198 | ppb |
| | Ba | 135 | 4915.208 | 13.689409 | ppb |
| | Ba | 137 | 8259.409 | 13.214688 | ppb |
| > | Tb | 159 | 1854000.525 | | ppb |
| | Tl | 205 | 555.015 | 0.134630 | ppb |
| | Pb | 206 | 120.001 | 0.069217 | ppb |
| | Pb | 207 | 225.001 | 0.073796 | ppb |
| | Pb | 208 | 430.006 | 0.093903 | ppb |
| > | Bi | 209 | 1184948.306 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227142.722 | | ppb |
| | Be | 9 | 124.001 | 1.034844 | ppb |
| > | Sc | 45 | 789518.341 | | ppb |
| | V | 51 | 470.484 | -0.211341 | ppb |
| | Cr | 52 | 11284.363 | 4.502775 | ppb |
| | Mn | 55 | 16316647.108 | 5165.411865 | ppb |
| | Co | 59 | 174383.335 | 69.920939 | ppb |
| | Ni | 60 | 16400.104 | 25.550428 | ppb |
| | Cu | 63 | 6185.246 | 4.267464 | ppb |
| | Cu | 65 | 3390.575 | 4.789113 | ppb |
| | Zn | 66 | 19111.579 | 48.225781 | ppb |
| | As | 75 | 95.724 | 0.149628 | ppb |
| | Se | 82 | 82.667 | 0.837070 | ppb |
| | Ag | 107 | 13.333 | 0.002315 | ppb |
| | Ag | 109 | 16.667 | -0.000143 | ppb |
| | Cd | 111 | 245.670 | 0.515139 | ppb |
| | In | 113 | 64180.297 | | ppb |
| > | In | 115 | 1418371.791 | | ppb |
| | Sb | 121 | 240.003 | 0.100857 | ppb |
| | Ba | 135 | 4873.187 | 13.524210 | ppb |
| | Ba | 137 | 8753.830 | 13.958054 | ppb |
| > | Tb | 159 | 1860557.515 | | ppb |
| | Tl | 205 | 540.015 | 0.128511 | ppb |
| | Pb | 206 | 130.001 | 0.075254 | ppb |
| | Pb | 207 | 180.001 | 0.053667 | ppb |
| | Pb | 208 | 360.005 | 0.073830 | ppb |
| > | Bi | 209 | 1205197.394 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227838.279 | | ppb |
| | Be | 9 | 132.001 | 1.100704 | ppb |
| > | Sc | 45 | 771570.367 | | ppb |
| | V | 51 | 569.535 | -0.166574 | ppb |
| | Cr | 52 | 11158.222 | 4.567689 | ppb |
| | Mn | 55 | 15812316.823 | 5122.195587 | ppb |
| | Co | 59 | 172497.039 | 70.773649 | ppb |
| | Ni | 60 | 15992.778 | 25.495169 | ppb |
| | Cu | 63 | 6131.879 | 4.330396 | ppb |
| | Cu | 65 | 3667.339 | 5.318783 | ppb |
| | Zn | 66 | 18927.896 | 48.877547 | ppb |
| | As | 75 | 106.825 | 0.174183 | ppb |
| | Se | 82 | 70.667 | 0.599143 | ppb |
| | Ag | 107 | 13.333 | 0.002330 | ppb |
| | Ag | 109 | 16.667 | -0.000125 | ppb |
| | Cd | 111 | 169.939 | 0.354256 | ppb |
| | In | 113 | 63556.331 | | ppb |
| > | In | 115 | 1415521.856 | | ppb |
| | Sb | 121 | 185.002 | 0.068193 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 5115.308 | 13.861326 | ppb |
| | Ba | 137 | 8597.694 | 13.383864 | ppb |
| > | Tb | 159 | 1905595.100 | | ppb |
| | Tl | 205 | 465.011 | 0.109171 | ppb |
| | Pb | 206 | 140.001 | 0.082300 | ppb |
| | Pb | 207 | 240.001 | 0.077885 | ppb |
| | Pb | 208 | 410.005 | 0.086259 | ppb |
| > | Bi | 209 | 1211427.020 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 116.146 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 110.159 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 101.206 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 100.702 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 102.584 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107165-01

Sample Date/Time: Monday, August 01, 2011 17:18:56
Sample Type: Sample
Sample Description: 5WC21L 5X
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\SDI1107165-01.1467

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 226439.244 | 1.123 | 226439.244 | | | ppb |
| ⌊ | Be | 9 | 21.333 | 5.413 | 0.000 | 0.14544 | 7.71 | ppb |
| ⌈> | Sc | 45 | 760933.501 | 1.066 | 760933.501 | | | ppb |
| \| | V | 51 | 753.296 | 17.031 | -0.000 | -0.08754 | 58.56 | ppb |
| \| | Cr | 52 | 3413.916 | 2.216 | 0.002 | 0.73565 | 2.69 | ppb |
| \| | Mn | 55 | 2811231.027 | 3.750 | 3.693 | 923.15028 | 2.77 | ppb |
| \| | Co | 59 | 30481.766 | 3.886 | 0.040 | 12.66839 | 3.07 | ppb |
| \| | Ni | 60 | 2923.762 | 7.071 | 0.004 | 4.62906 | 6.14 | ppb |
| \| | Cu | 63 | 1171.180 | 4.610 | 0.001 | 0.76387 | 5.43 | ppb |
| \| | Cu | 65 | 721.137 | 6.543 | 0.001 | 0.92365 | 7.61 | ppb |
| \| | Zn | 66 | 3540.627 | 2.158 | 0.004 | 9.01638 | 2.92 | ppb |
| \| | As | 75 | 54.068 | 44.817 | 0.000 | 0.07791 | 57.82 | ppb |
| ⌊ | Se | 82 | 45.778 | 8.021 | 0.000 | 0.02856 | 266.97 | ppb |
| ⌈ | Ag | 107 | 12.222 | 110.221 | 0.000 | 0.00191 | 396.08 | ppb |
| \| | Ag | 109 | 10.000 | 88.192 | -0.000 | -0.00379 | 127.58 | ppb |
| \| | Cd | 111 | 49.915 | 29.061 | 0.000 | 0.09953 | 33.70 | ppb |
| \| | In | 113 | 62281.747 | 2.250 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1395054.399 | 1.990 | 1395054.399 | | | ppb |
| ⌈ | Sb | 121 | 106.667 | 18.944 | 0.000 | 0.02802 | 36.64 | ppb |
| \| | Ba | 135 | 860.704 | 8.266 | 0.000 | 2.39263 | 9.36 | ppb |
| \| | Ba | 137 | 1502.113 | 6.276 | 0.001 | 2.39614 | 6.52 | ppb |
| ⌊> | Tb | 159 | 1841210.822 | 2.245 | 1841210.822 | | | ppb |
| ⌈ | Tl | 205 | 135.001 | 14.815 | 0.000 | 0.02792 | 17.73 | ppb |
| \| | Pb | 206 | 61.667 | 16.878 | 0.000 | 0.02425 | 33.22 | ppb |
| \| | Pb | 207 | 93.334 | 11.152 | 0.000 | 0.01871 | 26.19 | ppb |
| \| | Pb | 208 | 105.000 | 8.248 | 0.000 | 0.00816 | 27.10 | ppb |
| ⌊> | Bi | 209 | 1183143.289 | 1.408 | 1183143.289 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227909.883 | | ppb |
| ⌊ | Be | 9 | 22.000 | 0.149945 | ppb |
| ⌈> | Sc | 45 | 753744.884 | | ppb |
| \| | V | 51 | 607.134 | -0.145380 | ppb |
| \| | Cr | 52 | 3344.559 | 0.716880 | ppb |
| \| | Mn | 55 | 2697504.038 | 894.407361 | ppb |
| \| | Co | 59 | 29122.344 | 12.220270 | ppb |
| \| | Ni | 60 | 2763.715 | 4.413961 | ppb |
| \| | Cu | 63 | 1136.731 | 0.746511 | ppb |
| \| | Cu | 65 | 746.695 | 0.973271 | ppb |
| \| | Zn | 66 | 3523.954 | 9.059621 | ppb |
| \| | As | 75 | 63.534 | 0.096898 | ppb |
| ⌊ | Se | 82 | 42.000 | -0.051425 | ppb |
| ⌈ | Ag | 107 | 10.000 | 0.000521 | ppb |
| \| | Ag | 109 | 20.000 | 0.001697 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 47.275 | 0.091715 | ppb |
| | In | 113 | 60693.629 | | ppb |
| > | In | 115 | 1418951.534 | | ppb |
| | Sb | 121 | 110.001 | 0.030861 | ppb |
| | Ba | 135 | 810.033 | 2.281558 | ppb |
| | Ba | 137 | 1404.099 | 2.270294 | ppb |
| > | Tb | 159 | 1814860.010 | | ppb |
| | Tl | 205 | 115.001 | 0.022717 | ppb |
| | Pb | 206 | 50.000 | 0.015053 | ppb |
| | Pb | 207 | 85.000 | 0.015020 | ppb |
| | Pb | 208 | 115.000 | 0.010675 | ppb |
| > | Bi | 209 | 1188118.445 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227905.792 | | ppb |
| | Be | 9 | 20.000 | 0.132668 | ppb |
| > | Sc | 45 | 759324.180 | | ppb |
| | V | 51 | 847.267 | -0.047709 | ppb |
| | Cr | 52 | 3402.579 | 0.733708 | ppb |
| | Mn | 55 | 2830517.789 | 931.618625 | ppb |
| | Co | 59 | 31030.069 | 12.925872 | ppb |
| | Ni | 60 | 2850.406 | 4.521743 | ppb |
| | Cu | 63 | 1233.409 | 0.811207 | ppb |
| | Cu | 65 | 666.689 | 0.843171 | ppb |
| | Zn | 66 | 3623.990 | 9.254918 | ppb |
| | As | 75 | 26.532 | 0.026478 | ppb |
| | Se | 82 | 46.000 | 0.036700 | ppb |
| | Ag | 107 | 0.000 | -0.004854 | ppb |
| | Ag | 109 | 6.667 | -0.005633 | ppb |
| | Cd | 111 | 36.910 | 0.070579 | ppb |
| | In | 113 | 63344.996 | | ppb |
| > | In | 115 | 1401601.099 | | ppb |
| | Sb | 121 | 85.000 | 0.016628 | ppb |
| | Ba | 135 | 942.044 | 2.650454 | ppb |
| | Ba | 137 | 1592.127 | 2.571065 | ppb |
| > | Tb | 159 | 1819917.493 | | ppb |
| | Tl | 205 | 155.001 | 0.032573 | ppb |
| | Pb | 206 | 70.000 | 0.030069 | ppb |
| | Pb | 207 | 90.000 | 0.016839 | ppb |
| | Pb | 208 | 100.000 | 0.006536 | ppb |
| > | Bi | 209 | 1196747.147 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 223502.055 | | ppb |
| | Be | 9 | 22.000 | 0.153694 | ppb |
| > | Sc | 45 | 769731.440 | | ppb |
| | V | 51 | 805.488 | -0.069540 | ppb |
| | Cr | 52 | 3494.611 | 0.756363 | ppb |
| | Mn | 55 | 2905671.254 | 943.424861 | ppb |
| | Co | 59 | 31292.886 | 12.859037 | ppb |
| | Ni | 60 | 3157.165 | 4.951465 | ppb |
| | Cu | 63 | 1143.399 | 0.733899 | ppb |
| | Cu | 65 | 750.028 | 0.954510 | ppb |
| | Zn | 66 | 3473.937 | 8.734601 | ppb |
| | As | 75 | 72.139 | 0.110352 | ppb |
| | Se | 82 | 49.333 | 0.100393 | ppb |
| | Ag | 107 | 26.667 | 0.010050 | ppb |
| | Ag | 109 | 3.333 | -0.007448 | ppb |
| | Cd | 111 | 65.559 | 0.136287 | ppb |
| | In | 113 | 62806.616 | | ppb |
| > | In | 115 | 1364610.564 | | ppb |
| | Sb | 121 | 125.001 | 0.036559 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 830.034 | 2.245879 | ppb |
| | Ba | 137 | 1510.114 | 2.347054 | ppb |
| > | Tb | 159 | 1888854.961 | | ppb |
| [ | Tl | 205 | 135.001 | 0.028479 | ppb |
| | Pb | 206 | 65.000 | 0.027619 | ppb |
| | Pb | 207 | 105.000 | 0.024268 | ppb |
| | Pb | 208 | 100.000 | 0.007258 | ppb |
| > | Bi | 209 | 1164564.276 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 115.379 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 107.801 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 99.885 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.973 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 101.099 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1072905-PS4

Sample Date/Time: Monday, August 01, 2011 17:20:22
Sample Type: Sample
Sample Description: 5WC21A
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1072905-PS4.1468

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202782.924 | 1.170 | 202782.924 | | | ppb |
| ⌊ | Be | 9 | 1153.400 | 5.490 | 0.006 | 11.15636 | 4.37 | ppb |
| ⌈> | Sc | 45 | 698640.461 | 0.801 | 698640.461 | | | ppb |
| ⌈ | V | 51 | 115942.530 | 1.824 | 0.165 | 51.83020 | 1.11 | ppb |
| ⌈ | Cr | 52 | 49584.635 | 0.957 | 0.068 | 26.27616 | 0.65 | ppb |
| ⌈ | Mn | 55 | 16220136.026 | 0.389 | 23.217 | 5803.03562 | 0.84 | ppb |
| ⌈ | Co | 59 | 194970.326 | 0.188 | 0.279 | 88.35249 | 0.97 | ppb |
| ⌈ | Ni | 60 | 21396.203 | 1.597 | 0.031 | 37.72972 | 2.31 | ppb |
| ⌈ | Cu | 63 | 31735.841 | 1.435 | 0.045 | 25.19270 | 2.24 | ppb |
| ⌈ | Cu | 65 | 15478.640 | 1.901 | 0.022 | 25.42019 | 2.39 | ppb |
| ⌈ | Zn | 66 | 26576.396 | 2.673 | 0.038 | 75.96233 | 2.26 | ppb |
| ⌈ | As | 75 | 5122.232 | 2.948 | 0.007 | 10.44021 | 3.51 | ppb |
| ⌊ | Se | 82 | 2075.993 | 1.177 | 0.003 | 52.83625 | 0.89 | ppb |
| ⌈ | Ag | 107 | 18051.838 | 1.868 | 0.014 | 10.95222 | 1.86 | ppb |
| ⌈ | Ag | 109 | 17573.209 | 1.945 | 0.014 | 10.96872 | 2.72 | ppb |
| ⌈ | Cd | 111 | 4530.368 | 2.818 | 0.004 | 10.90447 | 2.74 | ppb |
| ⌈ | In | 113 | 60205.695 | 0.461 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1256528.951 | 1.188 | 1256528.951 | | | ppb |
| ⌈ | Sb | 121 | 36024.785 | 1.707 | 0.021 | 21.92556 | 1.07 | ppb |
| ⌈ | Ba | 135 | 38467.848 | 0.581 | 0.023 | 118.51050 | 2.04 | ppb |
| ⌈ | Ba | 137 | 67418.545 | 1.749 | 0.040 | 119.32661 | 1.69 | ppb |
| ⌊> | Tb | 159 | 1679677.764 | 2.591 | 1679677.764 | | | ppb |
| ⌈ | Tl | 205 | 38321.624 | 0.817 | 0.036 | 10.69895 | 1.22 | ppb |
| ⌈ | Pb | 206 | 12693.055 | 2.801 | 0.012 | 10.75404 | 4.06 | ppb |
| ⌈ | Pb | 207 | 23255.301 | 2.474 | 0.022 | 10.69345 | 2.78 | ppb |
| ⌈ | Pb | 208 | 37366.457 | 1.683 | 0.035 | 10.82027 | 0.99 | ppb |
| ⌊> | Bi | 209 | 1078240.434 | 1.923 | 1078240.434 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205475.542 | | ppb |
| ⌊ | Be | 9 | 1220.074 | 11.652168 | ppb |
| ⌈> | Sc | 45 | 697827.246 | | ppb |
| ⌈ | V | 51 | 114829.960 | 51.391817 | ppb |
| ⌈ | Cr | 52 | 49886.122 | 26.473787 | ppb |
| ⌈ | Mn | 55 | 16147238.865 | 5783.456461 | ppb |
| ⌈ | Co | 59 | 194837.775 | 88.390748 | ppb |
| ⌈ | Ni | 60 | 21212.475 | 37.444230 | ppb |
| ⌈ | Cu | 63 | 31857.330 | 25.316059 | ppb |
| ⌈ | Cu | 65 | 15194.869 | 24.978094 | ppb |
| ⌈ | Zn | 66 | 27133.428 | 77.655691 | ppb |
| ⌈ | As | 75 | 4998.115 | 10.197147 | ppb |
| ⌊ | Se | 82 | 2052.877 | 52.298165 | ppb |
| ⌈ | Ag | 107 | 18390.228 | 11.185158 | ppb |
| ⌈ | Ag | 109 | 17946.089 | 11.227934 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 4661.970 | 11.249379 | ppb |
| | In | 113 | 60321.386 | | ppb |
| > | In | 115 | 1253379.755 | | ppb |
| | Sb | 121 | 36325.859 | 21.676817 | ppb |
| | Ba | 135 | 38638.503 | 116.690202 | ppb |
| | Ba | 137 | 67432.594 | 117.014503 | ppb |
| > | Tb | 159 | 1712839.019 | | ppb |
| | Tl | 205 | 38534.101 | 10.553220 | ppb |
| | Pb | 206 | 12342.612 | 10.254098 | ppb |
| | Pb | 207 | 23053.345 | 10.397794 | ppb |
| | Pb | 208 | 37717.151 | 10.714515 | ppb |
| > | Bi | 209 | 1099016.100 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200999.949 | | ppb |
| | Be | 9 | 1094.060 | 10.677995 | ppb |
| > | Sc | 45 | 704598.181 | | ppb |
| | V | 51 | 118381.563 | 52.480581 | ppb |
| | Cr | 52 | 49829.842 | 26.179209 | ppb |
| | Mn | 55 | 16257395.949 | 5766.955065 | ppb |
| | Co | 59 | 194688.918 | 87.474326 | ppb |
| | Ni | 60 | 21185.751 | 37.036418 | ppb |
| | Cu | 63 | 31232.029 | 24.577950 | ppb |
| | Cu | 65 | 15458.606 | 25.168737 | ppb |
| | Zn | 66 | 26819.249 | 76.012257 | ppb |
| | As | 75 | 5078.214 | 10.261151 | ppb |
| | Se | 82 | 2101.554 | 53.038486 | ppb |
| | Ag | 107 | 18049.608 | 10.810502 | ppb |
| | Ag | 109 | 17274.908 | 10.642790 | ppb |
| | Cd | 111 | 4522.089 | 10.745120 | ppb |
| | In | 113 | 60406.900 | | ppb |
| > | In | 115 | 1272779.179 | | ppb |
| | Sb | 121 | 36431.241 | 21.958723 | ppb |
| | Ba | 135 | 38550.163 | 117.594391 | ppb |
| | Ba | 137 | 68590.428 | 120.221403 | ppb |
| > | Tb | 159 | 1695786.027 | | ppb |
| | Tl | 205 | 38468.851 | 10.739222 | ppb |
| | Pb | 206 | 13053.514 | 11.056280 | ppb |
| | Pb | 207 | 23904.398 | 10.991337 | ppb |
| | Pb | 208 | 37741.992 | 10.929324 | ppb |
| > | Bi | 209 | 1078163.892 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201873.279 | | ppb |
| | Be | 9 | 1146.066 | 11.138906 | ppb |
| > | Sc | 45 | 693495.957 | | ppb |
| | V | 51 | 114616.066 | 51.618207 | ppb |
| | Cr | 52 | 49037.942 | 26.175475 | ppb |
| | Mn | 55 | 16255773.265 | 5858.695345 | ppb |
| | Co | 59 | 195384.284 | 89.192399 | ppb |
| | Ni | 60 | 21790.382 | 38.708511 | ppb |
| | Cu | 63 | 32118.163 | 25.684088 | ppb |
| | Cu | 65 | 15782.444 | 26.113733 | ppb |
| | Zn | 66 | 25776.512 | 74.219045 | ppb |
| | As | 75 | 5290.365 | 10.862329 | ppb |
| | Se | 82 | 2073.548 | 53.172086 | ppb |
| | Ag | 107 | 17715.678 | 10.860985 | ppb |
| | Ag | 109 | 17498.630 | 11.035445 | ppb |
| | Cd | 111 | 4407.044 | 10.718920 | ppb |
| | In | 113 | 59888.798 | | ppb |
| > | In | 115 | 1243427.919 | | ppb |
| | Sb | 121 | 35317.255 | 22.141133 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 38214.880 | 121.246908 | ppb |
| \| | Ba | 137 | 66232.614 | 120.743936 | ppb |
| \|> | Tb | 159 | 1630408.244 | | ppb |
| ⌈ | Tl | 205 | 37961.919 | 10.804403 | ppb |
| \| | Pb | 206 | 12683.038 | 10.951750 | ppb |
| \| | Pb | 207 | 22808.161 | 10.691231 | ppb |
| \| | Pb | 208 | 36640.229 | 10.816980 | ppb |
| \|> | Bi | 209 | 1057541.311 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.325 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 98.976 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 89.967 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 90.290 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 92.135 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107165-02

Sample Date/Time: Monday, August 01, 2011 17:21:48
Sample Type: Sample
Sample Description: 5WC22
Number of Replicates: 3
Batch ID: 1107165
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\1107165-02.1469

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202183.471 | 0.379 | 202183.471 | | | ppb |
| ⌊ | Be | 9 | 8.000 | 25.000 | 0.000 | 0.03781 | 51.87 | ppb |
| ⌈> | Sc | 45 | 683165.040 | 1.903 | 683165.040 | | | ppb |
| \| | V | 51 | 1325.827 | 15.662 | 0.001 | 0.21314 | 50.27 | ppb |
| \| | Cr | 52 | 2619.010 | 1.517 | 0.001 | 0.48554 | 9.34 | ppb |
| \| | Mn | 55 | 7697458.028 | 1.564 | 11.271 | 2817.03072 | 2.93 | ppb |
| \| | Co | 59 | 9950.282 | 1.530 | 0.015 | 4.59885 | 1.02 | ppb |
| \| | Ni | 60 | 3120.487 | 4.656 | 0.004 | 5.53198 | 6.68 | ppb |
| \| | Cu | 63 | 857.815 | 4.636 | 0.001 | 0.60576 | 3.21 | ppb |
| \| | Cu | 65 | 784.475 | 6.393 | 0.001 | 1.15576 | 7.83 | ppb |
| \| | Zn | 66 | 2782.611 | 6.922 | 0.004 | 7.85543 | 7.82 | ppb |
| \| | As | 75 | 47.369 | 48.958 | 0.000 | 0.07533 | 62.66 | ppb |
| ⌊ | Se | 82 | 61.334 | 14.624 | 0.000 | 0.56915 | 46.82 | ppb |
| ⌈ | Ag | 107 | 14.444 | 58.076 | 0.000 | 0.00385 | 134.28 | ppb |
| \| | Ag | 109 | 18.889 | 36.735 | 0.000 | 0.00230 | 192.61 | ppb |
| \| | Cd | 111 | 121.890 | 36.667 | 0.000 | 0.27878 | 35.43 | ppb |
| \| | In | 113 | 56586.356 | 1.948 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1275245.181 | 2.313 | 1275245.181 | | | ppb |
| ⌈ | Sb | 121 | 228.336 | 25.191 | 0.000 | 0.10631 | 32.35 | ppb |
| \| | Ba | 135 | 10385.390 | 0.492 | 0.006 | 31.60034 | 1.32 | ppb |
| \| | Ba | 137 | 18265.335 | 1.419 | 0.011 | 31.93115 | 1.43 | ppb |
| ⌊> | Tb | 159 | 1699083.660 | 0.830 | 1699083.660 | | | ppb |
| ⌈ | Tl | 205 | 218.336 | 9.534 | 0.000 | 0.05503 | 9.47 | ppb |
| \| | Pb | 206 | 46.667 | 6.186 | 0.000 | 0.01649 | 14.62 | ppb |
| \| | Pb | 207 | 81.667 | 7.070 | 0.000 | 0.01745 | 17.16 | ppb |
| \| | Pb | 208 | 166.668 | 22.517 | 0.000 | 0.02914 | 36.87 | ppb |
| ⌊> | Bi | 209 | 1069082.776 | 1.100 | 1069082.776 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202112.030 | | ppb |
| ⌊ | Be | 9 | 10.000 | 0.057294 | ppb |
| ⌈> | Sc | 45 | 669254.974 | | ppb |
| \| | V | 51 | 1563.874 | 0.336557 | ppb |
| \| | Cr | 52 | 2632.346 | 0.523270 | ppb |
| \| | Mn | 55 | 7796395.409 | 2911.603595 | ppb |
| \| | Co | 59 | 9846.846 | 4.645403 | ppb |
| \| | Ni | 60 | 3260.531 | 5.903204 | ppb |
| \| | Cu | 63 | 813.366 | 0.583556 | ppb |
| \| | Cu | 65 | 810.033 | 1.227023 | ppb |
| \| | Zn | 66 | 2900.421 | 8.374901 | ppb |
| \| | As | 75 | 46.205 | 0.075134 | ppb |
| ⌊ | Se | 82 | 71.334 | 0.871188 | ppb |
| ⌈ | Ag | 107 | 13.333 | 0.003211 | ppb |
| \| | Ag | 109 | 26.667 | 0.007234 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 84.464 | 0.193646 | ppb |
| | In | 113 | 57716.078 | | ppb |
| > | In | 115 | 1260807.483 | | ppb |
| | Sb | 121 | 285.004 | 0.140780 | ppb |
| | Ba | 135 | 10387.392 | 31.652893 | ppb |
| | Ba | 137 | 18535.162 | 32.452533 | ppb |
| > | Tb | 159 | 1696468.574 | | ppb |
| | Tl | 205 | 235.003 | 0.059149 | ppb |
| | Pb | 206 | 45.000 | 0.014701 | ppb |
| | Pb | 207 | 75.000 | 0.014005 | ppb |
| | Pb | 208 | 205.002 | 0.039816 | ppb |
| > | Bi | 209 | 1079169.143 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201454.969 | | ppb |
| | Be | 9 | 8.000 | 0.038063 | ppb |
| > | Sc | 45 | 695010.899 | | ppb |
| | V | 51 | 1231.667 | 0.158863 | ppb |
| | Cr | 52 | 2574.331 | 0.435212 | ppb |
| | Mn | 55 | 7732508.009 | 2780.725285 | ppb |
| | Co | 59 | 10125.123 | 4.599539 | ppb |
| | Ni | 60 | 2970.441 | 5.164372 | ppb |
| | Cu | 63 | 890.040 | 0.619890 | ppb |
| | Cu | 65 | 816.700 | 1.186298 | ppb |
| | Zn | 66 | 2887.083 | 8.014362 | ppb |
| | As | 75 | 71.120 | 0.122639 | ppb |
| | Se | 82 | 58.667 | 0.468962 | ppb |
| | Ag | 107 | 23.333 | 0.009317 | ppb |
| | Ag | 109 | 16.667 | 0.001051 | ppb |
| | Cd | 111 | 109.830 | 0.255604 | ppb |
| | In | 113 | 55513.662 | | ppb |
| > | In | 115 | 1255746.043 | | ppb |
| | Sb | 121 | 230.003 | 0.106151 | ppb |
| | Ba | 135 | 10333.336 | 31.160094 | ppb |
| | Ba | 137 | 18242.625 | 31.607215 | ppb |
| > | Tb | 159 | 1714306.498 | | ppb |
| | Tl | 205 | 225.003 | 0.056783 | ppb |
| | Pb | 206 | 50.000 | 0.019228 | ppb |
| | Pb | 207 | 85.000 | 0.018872 | ppb |
| | Pb | 208 | 130.001 | 0.018333 | ppb |
| > | Bi | 209 | 1071917.929 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202983.415 | | ppb |
| | Be | 9 | 6.000 | 0.018072 | ppb |
| > | Sc | 45 | 685229.247 | | ppb |
| | V | 51 | 1181.939 | 0.143985 | ppb |
| | Cr | 52 | 2650.351 | 0.498141 | ppb |
| | Mn | 55 | 7563470.666 | 2758.763291 | ppb |
| | Co | 59 | 9878.877 | 4.551602 | ppb |
| | Ni | 60 | 3130.490 | 5.528368 | ppb |
| | Cu | 63 | 870.038 | 0.613819 | ppb |
| | Cu | 65 | 726.693 | 1.053963 | ppb |
| | Zn | 66 | 2560.328 | 7.177036 | ppb |
| | As | 75 | 24.782 | 0.028226 | ppb |
| | Se | 82 | 54.000 | 0.367287 | ppb |
| | Ag | 107 | 6.667 | -0.000970 | ppb |
| | Ag | 109 | 13.333 | -0.001372 | ppb |
| | Cd | 111 | 171.375 | 0.387095 | ppb |
| | In | 113 | 56529.328 | | ppb |
| > | In | 115 | 1309182.016 | | ppb |
| | Sb | 121 | 170.001 | 0.072000 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 10435.442 | 31.988024 | ppb |
| \| | Ba | 137 | 18018.218 | 31.733700 | ppb |
| \> | Tb | 159 | 1686475.907 | | ppb |
| ⌈ | Tl | 205 | 195.002 | 0.049172 | ppb |
| \| | Pb | 206 | 45.000 | 0.015532 | ppb |
| \| | Pb | 207 | 85.000 | 0.019459 | ppb |
| \| | Pb | 208 | 165.001 | 0.029264 | ppb |
| \> | Bi | 209 | 1056161.257 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 103.020 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 96.784 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.307 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.333 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 91.352 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Monday, August 01, 2011 17:23:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\LLCCV.1470

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212650.565 | 1.271 | 212650.565 | | | ppb |
| ⌊ | Be | 9 | 96.000 | 14.583 | 0.000 | 0.84866 | 15.13 | ppb |
| ⌈> | Sc | 45 | 768673.170 | 1.066 | 768673.170 | | | ppb |
| \| | V | 51 | 12642.328 | 1.325 | 0.015 | 4.77834 | 2.49 | ppb |
| \| | Cr | 52 | 6143.220 | 1.981 | 0.005 | 2.08254 | 3.01 | ppb |
| \| | Mn | 55 | 4080.835 | 6.610 | 0.005 | 1.23085 | 7.23 | ppb |
| \| | Co | 59 | 2450.300 | 1.219 | 0.003 | 0.99630 | 2.20 | ppb |
| \| | Ni | 60 | 611.130 | 10.666 | 0.001 | 0.86602 | 12.64 | ppb |
| \| | Cu | 63 | 2767.049 | 1.104 | 0.003 | 1.91074 | 1.05 | ppb |
| \| | Cu | 65 | 1368.983 | 2.028 | 0.002 | 1.88642 | 3.11 | ppb |
| \| | Zn | 66 | 1028.298 | 1.330 | 0.001 | 2.36708 | 1.67 | ppb |
| \| | As | 75 | 607.372 | 9.368 | 0.001 | 1.10364 | 8.67 | ppb |
| ⌊ | Se | 82 | 251.336 | 1.739 | 0.000 | 4.86866 | 1.55 | ppb |
| ⌈ | Ag | 107 | 1944.634 | 3.918 | 0.001 | 1.04508 | 3.64 | ppb |
| \| | Ag | 109 | 1901.292 | 3.985 | 0.001 | 1.04777 | 5.91 | ppb |
| \| | Cd | 111 | 455.497 | 3.031 | 0.000 | 0.96719 | 3.89 | ppb |
| \| | In | 113 | 63680.527 | 2.393 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1412616.840 | 2.013 | 1412616.840 | | | ppb |
| ⌈ | Sb | 121 | 3827.399 | 2.641 | 0.002 | 2.02916 | 1.09 | ppb |
| \| | Ba | 135 | 3521.954 | 1.798 | 0.002 | 9.55983 | 3.14 | ppb |
| \| | Ba | 137 | 6127.210 | 0.568 | 0.003 | 9.55319 | 1.83 | ppb |
| ⌊> | Tb | 159 | 1901243.445 | 1.599 | 1901243.445 | | | ppb |
| ⌈ | Tl | 205 | 3892.424 | 2.121 | 0.003 | 0.96908 | 3.44 | ppb |
| \| | Pb | 206 | 1288.417 | 5.722 | 0.001 | 0.95810 | 7.30 | ppb |
| \| | Pb | 207 | 2341.805 | 4.164 | 0.002 | 0.94778 | 6.24 | ppb |
| \| | Pb | 208 | 3700.406 | 1.726 | 0.003 | 0.94347 | 2.94 | ppb |
| ⌊> | Bi | 209 | 1202203.546 | 2.301 | 1202203.546 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215688.322 | | ppb |
| ⌊ | Be | 9 | 96.000 | 0.836303 | ppb |
| ⌈> | Sc | 45 | 760994.244 | | ppb |
| \| | V | 51 | 12719.073 | 4.861504 | ppb |
| \| | Cr | 52 | 6197.920 | 2.140989 | ppb |
| \| | Mn | 55 | 3900.761 | 1.184989 | ppb |
| \| | Co | 59 | 2462.303 | 1.011329 | ppb |
| \| | Ni | 60 | 673.356 | 0.976640 | ppb |
| \| | Cu | 63 | 2733.707 | 1.906512 | ppb |
| \| | Cu | 65 | 1400.098 | 1.954052 | ppb |
| \| | Zn | 66 | 1033.743 | 2.408358 | ppb |
| \| | As | 75 | 587.687 | 1.078613 | ppb |
| ⌊ | Se | 82 | 250.670 | 4.912666 | ppb |
| ⌈ | Ag | 107 | 1983.530 | 1.041713 | ppb |
| \| | Ag | 109 | 1820.166 | 0.978932 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 453.015 | 0.939524 | ppb |
| | In | 113 | 65317.625 | | ppb |
| > | In | 115 | 1445433.206 | | ppb |
| | Sb | 121 | 3885.755 | 2.038457 | ppb |
| | Ba | 135 | 3536.625 | 9.494036 | ppb |
| | Ba | 137 | 6153.893 | 9.490347 | ppb |
| > | Tb | 159 | 1921772.156 | | ppb |
| | Tl | 205 | 3810.726 | 0.931274 | ppb |
| | Pb | 206 | 1205.073 | 0.877595 | ppb |
| | Pb | 207 | 2230.125 | 0.884485 | ppb |
| | Pb | 208 | 3755.425 | 0.940114 | ppb |
| > | Bi | 209 | 1223908.521 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211753.522 | | ppb |
| | Be | 9 | 110.001 | 0.982778 | ppb |
| > | Sc | 45 | 777304.950 | | ppb |
| | V | 51 | 12450.250 | 4.642273 | ppb |
| | Cr | 52 | 6227.939 | 2.090174 | ppb |
| | Mn | 55 | 3950.780 | 1.174189 | ppb |
| | Co | 59 | 2416.292 | 0.971089 | ppb |
| | Ni | 60 | 616.686 | 0.863612 | ppb |
| | Cu | 63 | 2773.718 | 1.893207 | ppb |
| | Cu | 65 | 1360.092 | 1.850020 | ppb |
| | Zn | 66 | 1038.410 | 2.363239 | ppb |
| | As | 75 | 671.503 | 1.209357 | ppb |
| | Se | 82 | 256.003 | 4.911751 | ppb |
| | Ag | 107 | 1993.532 | 1.084699 | ppb |
| | Ag | 109 | 1970.194 | 1.098744 | ppb |
| | Cd | 111 | 443.100 | 0.952027 | ppb |
| | In | 113 | 62303.483 | | ppb |
| > | In | 115 | 1395407.440 | | ppb |
| | Sb | 121 | 3885.755 | 2.045087 | ppb |
| | Ba | 135 | 3452.596 | 9.297582 | ppb |
| | Ba | 137 | 6087.853 | 9.418356 | ppb |
| > | Tb | 159 | 1915634.669 | | ppb |
| | Tl | 205 | 3890.757 | 0.994172 | ppb |
| | Pb | 206 | 1315.086 | 1.004229 | ppb |
| | Pb | 207 | 2410.146 | 1.001676 | ppb |
| | Pb | 208 | 3715.403 | 0.972734 | ppb |
| > | Bi | 209 | 1171061.382 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210509.852 | | ppb |
| | Be | 9 | 82.000 | 0.726905 | ppb |
| > | Sc | 45 | 767720.317 | | ppb |
| | V | 51 | 12757.660 | 4.831236 | ppb |
| | Cr | 52 | 6003.802 | 2.016448 | ppb |
| | Mn | 55 | 4390.964 | 1.333358 | ppb |
| | Co | 59 | 2472.306 | 1.006479 | ppb |
| | Ni | 60 | 543.348 | 0.757814 | ppb |
| | Cu | 63 | 2793.724 | 1.932506 | ppb |
| | Cu | 65 | 1346.757 | 1.855188 | ppb |
| | Zn | 66 | 1012.740 | 2.329632 | ppb |
| | As | 75 | 562.927 | 1.022937 | ppb |
| | Se | 82 | 247.336 | 4.781563 | ppb |
| | Ag | 107 | 1856.839 | 1.008826 | ppb |
| | Ag | 109 | 1913.516 | 1.065632 | ppb |
| | Cd | 111 | 470.376 | 1.010023 | ppb |
| | In | 113 | 63420.472 | | ppb |
| > | In | 115 | 1397009.875 | | ppb |
| | Sb | 121 | 3710.688 | 2.003931 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 3576.640 | 9.887864 | ppb |
| | Ba | 137 | 6139.884 | 9.750877 | ppb |
| > | Tb | 159 | 1866323.511 | | ppb |
| | Tl | 205 | 3975.790 | 0.981796 | ppb |
| | Pb | 206 | 1345.090 | 0.992472 | ppb |
| | Pb | 207 | 2385.145 | 0.957193 | ppb |
| | Pb | 208 | 3630.390 | 0.917554 | ppb |
| > | Bi | 209 | 1211640.736 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 108.353 | | | |
| | Be | 9 | 84.866 | | | | |
| > | Sc | 45 | | 108.898 | | | |
| | V | 51 | 95.567 | | | | |
| | Cr | 52 | 104.127 | | | | |
| | Mn | 55 | 123.085 | | | | |
| | Co | 59 | 99.630 | | | | |
| | Ni | 60 | 86.602 | | | | |
| | Cu | 63 | 95.537 | | | | |
| | Cu | 65 | 94.321 | | | | |
| | Zn | 66 | 118.354 | | | | |
| | As | 75 | 110.364 | | | | |
| | Se | 82 | 97.373 | | | | |
| | Ag | 107 | 104.508 | | | | |
| | Ag | 109 | 104.777 | | | | |
| | Cd | 111 | 96.719 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 101.143 | | | |
| | Sb | 121 | 101.458 | | | | |
| | Ba | 135 | 95.598 | | | | |
| | Ba | 137 | 95.532 | | | | |
| > | Tb | 159 | | 102.200 | | | |
| | Tl | 205 | 96.908 | | | | |
| | Pb | 206 | 95.810 | | | | |
| | Pb | 207 | 94.778 | | | | |
| | Pb | 208 | 94.347 | | | | |
| > | Bi | 209 | | 102.727 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Monday, August 01, 2011 17:24:42
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCV.1471

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224356.022 | 2.674 | 224356.022 | | | ppb |
| ⌊ | Be | 9 | 31924.899 | 2.439 | 0.142 | 280.17707 | 0.88 | ppb |
| ⌈> | Sc | 45 | 750074.090 | 0.486 | 750074.090 | | | ppb |
| \| | V | 51 | 732793.295 | 2.064 | 0.976 | 307.06899 | 1.59 | ppb |
| \| | Cr | 52 | 600599.977 | 1.494 | 0.798 | 306.59592 | 1.16 | ppb |
| \| | Mn | 55 | 924651.692 | 0.142 | 1.232 | 308.02616 | 0.35 | ppb |
| \| | Co | 59 | 721997.993 | 0.684 | 0.963 | 304.77168 | 1.14 | ppb |
| \| | Ni | 60 | 184152.418 | 0.742 | 0.245 | 303.24769 | 0.45 | ppb |
| \| | Cu | 63 | 406633.046 | 0.717 | 0.542 | 301.63830 | 0.24 | ppb |
| \| | Cu | 65 | 193652.647 | 0.214 | 0.258 | 298.02385 | 0.67 | ppb |
| \| | Zn | 66 | 118172.005 | 1.461 | 0.157 | 315.60476 | 1.07 | ppb |
| \| | As | 75 | 157273.579 | 1.239 | 0.210 | 299.17691 | 0.99 | ppb |
| ⌊ | Se | 82 | 12487.127 | 2.181 | 0.017 | 300.89039 | 1.72 | ppb |
| ⌈ | Ag | 107 | 578233.551 | 2.766 | 0.413 | 314.90337 | 2.34 | ppb |
| \| | Ag | 109 | 550568.759 | 1.782 | 0.393 | 308.55983 | 1.34 | ppb |
| \| | Cd | 111 | 142949.827 | 2.667 | 0.102 | 308.97060 | 2.19 | ppb |
| \| | In | 113 | 204459.654 | 2.138 | 0.102 | | | ppb |
| ⌊> | In | 115 | 1400288.093 | 0.499 | 1400288.093 | | | ppb |
| ⌈ | Sb | 121 | 559732.539 | 0.826 | 0.305 | 312.22376 | 1.08 | ppb |
| \| | Ba | 135 | 109464.548 | 0.689 | 0.060 | 308.67648 | 1.67 | ppb |
| \| | Ba | 137 | 187982.451 | 0.537 | 0.102 | 304.60048 | 2.05 | ppb |
| ⌊> | Tb | 159 | 1835052.107 | 1.858 | 1835052.107 | | | ppb |
| ⌈ | Tl | 205 | 1189351.159 | 0.909 | 1.010 | 304.04221 | 0.33 | ppb |
| \| | Pb | 206 | 402771.169 | 0.350 | 0.342 | 312.86515 | 0.89 | ppb |
| \| | Pb | 207 | 739719.812 | 0.931 | 0.628 | 311.84121 | 0.60 | ppb |
| \| | Pb | 208 | 1169216.537 | 1.526 | 0.992 | 310.39909 | 1.19 | ppb |
| ⌊> | Bi | 209 | 1178112.847 | 1.225 | 1178112.847 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 230455.231 | | ppb |
| ⌊ | Be | 9 | 32811.742 | 280.320186 | ppb |
| ⌈> | Sc | 45 | 753222.651 | | ppb |
| \| | V | 51 | 744793.516 | 310.813659 | ppb |
| \| | Cr | 52 | 602268.166 | 306.167673 | ppb |
| \| | Mn | 55 | 925755.420 | 307.100992 | ppb |
| \| | Co | 59 | 720104.438 | 302.690960 | ppb |
| \| | Ni | 60 | 185722.100 | 304.555732 | ppb |
| \| | Cu | 63 | 408916.452 | 302.066520 | ppb |
| \| | Cu | 65 | 193585.810 | 296.668608 | ppb |
| \| | Zn | 66 | 118808.269 | 315.986095 | ppb |
| \| | As | 75 | 157257.270 | 297.898538 | ppb |
| ⌊ | Se | 82 | 12662.011 | 303.855500 | ppb |
| ⌈ | Ag | 107 | 595505.306 | 323.112396 | ppb |
| \| | Ag | 109 | 553910.767 | 309.278615 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 146528.102 | 315.537407 | ppb |
| | In | 113 | 203678.332 | | ppb |
| > | In | 115 | 1405567.141 | | ppb |
| | Sb | 121 | 564971.170 | 309.089043 | ppb |
| | Ba | 135 | 109473.965 | 302.751179 | ppb |
| | Ba | 137 | 187226.432 | 297.509910 | ppb |
| > | Tb | 159 | 1870765.102 | | ppb |
| | Tl | 205 | 1191766.681 | 304.240765 | ppb |
| | Pb | 206 | 403270.644 | 312.807950 | ppb |
| | Pb | 207 | 744210.218 | 313.300647 | ppb |
| | Pb | 208 | 1186188.355 | 314.474064 | ppb |
| > | Bi | 209 | 1179704.231 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224150.325 | | ppb |
| | Be | 9 | 31609.880 | 277.647988 | ppb |
| > | Sc | 45 | 750924.065 | | ppb |
| | V | 51 | 737784.563 | 308.828622 | ppb |
| | Cr | 52 | 608624.194 | 310.359360 | ppb |
| | Mn | 55 | 924994.618 | 307.788093 | ppb |
| | Co | 59 | 718286.415 | 302.850975 | ppb |
| | Ni | 60 | 183505.064 | 301.840212 | ppb |
| | Cu | 63 | 407635.721 | 302.042170 | ppb |
| | Cu | 65 | 193276.581 | 297.101621 | ppb |
| | Zn | 66 | 119489.649 | 318.773880 | ppb |
| | As | 75 | 159230.174 | 302.559562 | ppb |
| | Se | 82 | 12625.966 | 303.918176 | ppb |
| | Ag | 107 | 575260.273 | 312.712229 | ppb |
| | Ag | 109 | 558270.104 | 312.296630 | ppb |
| | Cd | 111 | 143382.008 | 309.340689 | ppb |
| | In | 113 | 209169.961 | | ppb |
| > | In | 115 | 1402939.297 | | ppb |
| | Sb | 121 | 558005.956 | 311.814561 | ppb |
| | Ba | 135 | 110214.028 | 311.324156 | ppb |
| | Ba | 137 | 189129.749 | 306.969562 | ppb |
| > | Tb | 159 | 1831552.652 | | ppb |
| | Tl | 205 | 1198752.347 | 302.946637 | ppb |
| | Pb | 206 | 403863.880 | 310.117619 | ppb |
| | Pb | 207 | 743158.915 | 309.711666 | ppb |
| | Pb | 208 | 1170838.158 | 307.282586 | ppb |
| > | Bi | 209 | 1191688.090 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 218462.509 | | ppb |
| | Be | 9 | 31353.074 | 282.563038 | ppb |
| > | Sc | 45 | 746075.556 | | ppb |
| | V | 51 | 715801.807 | 301.564689 | ppb |
| | Cr | 52 | 590907.570 | 303.260714 | ppb |
| | Mn | 55 | 923205.037 | 309.189403 | ppb |
| | Co | 59 | 727603.125 | 308.773096 | ppb |
| | Ni | 60 | 183230.091 | 303.347126 | ppb |
| | Cu | 63 | 403346.965 | 300.806214 | ppb |
| | Cu | 65 | 194095.549 | 300.301316 | ppb |
| | Zn | 66 | 116218.097 | 312.054295 | ppb |
| | As | 75 | 155333.295 | 297.072643 | ppb |
| | Se | 82 | 12173.405 | 294.897499 | ppb |
| | Ag | 107 | 563935.073 | 308.885499 | ppb |
| | Ag | 109 | 539525.407 | 304.104252 | ppb |
| | Cd | 111 | 138939.370 | 302.033714 | ppb |
| | In | 113 | 200530.668 | | ppb |
| > | In | 115 | 1392357.841 | | ppb |
| | Sb | 121 | 556220.492 | 315.767664 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 108705.652 | 311.954113 | ppb |
| \| | Ba | 137 | 187591.172 | 309.321962 | ppb |
| \|> | Tb | 159 | 1802838.566 | | ppb |
| ⌈ | Tl | 205 | 1177534.448 | 304.939240 | ppb |
| \| | Pb | 206 | 401178.984 | 315.669882 | ppb |
| \| | Pb | 207 | 731790.303 | 312.511316 | ppb |
| \| | Pb | 208 | 1150623.098 | 309.440626 | ppb |
| \|> | Bi | 209 | 1162946.221 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 114.317 | | | |
| | Be | 9 | 93.392 | | | | |
| > | Sc | 45 | | 106.263 | | | |
| | V | 51 | 102.356 | | | | |
| | Cr | 52 | 102.199 | | | | |
| | Mn | 55 | 102.675 | | | | |
| | Co | 59 | 101.591 | | | | |
| | Ni | 60 | 101.083 | | | | |
| | Cu | 63 | 100.546 | | | | |
| | Cu | 65 | 99.341 | | | | |
| | Zn | 66 | 105.202 | | | | |
| | As | 75 | 99.726 | | | | |
| | Se | 82 | 100.297 | | | | |
| | Ag | 107 | 104.968 | | | | |
| | Ag | 109 | 102.853 | | | | |
| | Cd | 111 | 102.990 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 100.260 | | | |
| | Sb | 121 | 104.075 | | | | |
| | Ba | 135 | 102.892 | | | | |
| | Ba | 137 | 101.533 | | | | |
| > | Tb | 159 | | 98.642 | | | |
| | Tl | 205 | 101.347 | | | | |
| | Pb | 206 | 104.288 | | | | |
| | Pb | 207 | 103.947 | | | | |
| | Pb | 208 | 103.466 | | | | |
| > | Bi | 209 | | 100.669 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Monday, August 01, 2011 17:26:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata1\Dataset\default\CCB.1472

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 225689.209 | 1.046 | 225689.209 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 57.735 | 0.000 | 0.01216 | 247.80 | ppb |
| ⌈> | Sc | 45 | 730887.986 | 2.012 | 730887.986 | | | ppb |
| \| | V | 51 | 748.945 | 29.775 | -0.000 | -0.07758 | 114.53 | ppb |
| \| | Cr | 52 | 2129.560 | 2.752 | 0.000 | 0.13207 | 33.79 | ppb |
| \| | Mn | 55 | 400.008 | 8.750 | 0.000 | 0.04048 | 23.04 | ppb |
| \| | Co | 59 | 109.334 | 16.598 | 0.000 | 0.03412 | 20.08 | ppb |
| \| | Ni | 60 | 73.334 | 20.830 | 0.000 | 0.00765 | 367.60 | ppb |
| \| | Cu | 63 | 121.112 | 19.527 | -0.000 | -0.00081 | 2025.78 | ppb |
| \| | Cu | 65 | 153.335 | 16.979 | 0.000 | 0.07110 | 54.11 | ppb |
| \| | Zn | 66 | 126.667 | 21.541 | 0.000 | 0.03249 | 241.28 | ppb |
| \| | As | 75 | 83.491 | 30.856 | 0.000 | 0.14031 | 37.71 | ppb |
| ⌊ | Se | 82 | 43.111 | 10.526 | 0.000 | 0.00723 | 1437.07 | ppb |
| ⌈ | Ag | 107 | 68.889 | 22.867 | 0.000 | 0.03297 | 26.46 | ppb |
| \| | Ag | 109 | 68.889 | 36.317 | 0.000 | 0.02955 | 47.80 | ppb |
| \| | Cd | 111 | 23.305 | 55.254 | 0.000 | 0.04166 | 67.48 | ppb |
| \| | In | 113 | 61075.962 | 1.157 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1389320.114 | 0.189 | 1389320.114 | | | ppb |
| ⌈ | Sb | 121 | 335.006 | 15.796 | 0.000 | 0.15391 | 20.48 | ppb |
| \| | Ba | 135 | 36.667 | 12.597 | 0.000 | 0.07462 | 19.54 | ppb |
| \| | Ba | 137 | 52.000 | 56.658 | 0.000 | 0.05369 | 90.09 | ppb |
| ⌊> | Tb | 159 | 1855269.744 | 2.782 | 1855269.744 | | | ppb |
| ⌈ | Tl | 205 | 135.001 | 13.354 | 0.000 | 0.02808 | 15.72 | ppb |
| \| | Pb | 206 | 133.334 | 43.786 | 0.000 | 0.08014 | 56.78 | ppb |
| \| | Pb | 207 | 205.001 | 51.394 | 0.000 | 0.06600 | 67.87 | ppb |
| \| | Pb | 208 | 301.670 | 45.007 | 0.000 | 0.06057 | 60.06 | ppb |
| ⌊> | Bi | 209 | 1177534.133 | 0.886 | 1177534.133 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 228347.703 | | ppb |
| ⌊ | Be | 9 | 8.000 | 0.028853 | ppb |
| ⌈> | Sc | 45 | 747264.603 | | ppb |
| \| | V | 51 | 997.445 | 0.021211 | ppb |
| \| | Cr | 52 | 2086.218 | 0.084794 | ppb |
| \| | Mn | 55 | 435.009 | 0.049304 | ppb |
| \| | Co | 59 | 130.001 | 0.041925 | ppb |
| \| | Ni | 60 | 56.667 | -0.023001 | ppb |
| \| | Cu | 63 | 146.668 | 0.016372 | ppb |
| \| | Cu | 65 | 166.668 | 0.086704 | ppb |
| \| | Zn | 66 | 103.334 | -0.038359 | ppb |
| \| | As | 75 | 53.748 | 0.079254 | ppb |
| ⌊ | Se | 82 | 44.667 | 0.022069 | ppb |
| ⌈ | Ag | 107 | 86.667 | 0.042825 | ppb |
| \| | Ag | 109 | 70.000 | 0.030264 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 33.455 | 0.063915 | ppb |
| | In | 113 | 61855.717 | | ppb |
| > | In | 115 | 1386300.338 | | ppb |
| | Sb | 121 | 395.008 | 0.190280 | ppb |
| | Ba | 135 | 34.000 | 0.068543 | ppb |
| | Ba | 137 | 84.000 | 0.106955 | ppb |
| > | Tb | 159 | 1825715.658 | | ppb |
| | Tl | 205 | 140.001 | 0.029580 | ppb |
| | Pb | 206 | 185.002 | 0.121148 | ppb |
| | Pb | 207 | 315.003 | 0.113119 | ppb |
| | Pb | 208 | 445.006 | 0.099285 | ppb |
| > | Bi | 209 | 1170770.047 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 223841.523 | | ppb |
| | Be | 9 | 8.000 | 0.030242 | ppb |
| > | Sc | 45 | 726596.758 | | ppb |
| | V | 51 | 683.117 | -0.102994 | ppb |
| | Cr | 52 | 2196.241 | 0.173468 | ppb |
| | Mn | 55 | 400.008 | 0.041403 | ppb |
| | Co | 59 | 102.001 | 0.031290 | ppb |
| | Ni | 60 | 76.667 | 0.013676 | ppb |
| | Cu | 63 | 100.001 | -0.016268 | ppb |
| | Cu | 65 | 170.001 | 0.099330 | ppb |
| | Zn | 66 | 156.668 | 0.116722 | ppb |
| | As | 75 | 97.935 | 0.168953 | ppb |
| | Se | 82 | 46.667 | 0.102837 | ppb |
| | Ag | 107 | 63.334 | 0.029869 | ppb |
| | Ag | 109 | 43.333 | 0.015083 | ppb |
| | Cd | 111 | 27.640 | 0.051012 | ppb |
| | In | 113 | 60477.324 | | ppb |
| > | In | 115 | 1391065.065 | | ppb |
| | Sb | 121 | 315.005 | 0.137205 | ppb |
| | Ba | 135 | 34.000 | 0.064058 | ppb |
| | Ba | 137 | 46.000 | 0.041588 | ppb |
| > | Tb | 159 | 1914860.220 | | ppb |
| | Tl | 205 | 150.001 | 0.031544 | ppb |
| | Pb | 206 | 145.001 | 0.088093 | ppb |
| | Pb | 207 | 195.001 | 0.060906 | ppb |
| | Pb | 208 | 285.003 | 0.055338 | ppb |
| > | Bi | 209 | 1189543.914 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 224878.400 | | ppb |
| | Be | 9 | 2.000 | -0.022621 | ppb |
| > | Sc | 45 | 718802.598 | | ppb |
| | V | 51 | 566.272 | -0.150947 | ppb |
| | Cr | 52 | 2106.222 | 0.137950 | ppb |
| | Mn | 55 | 365.007 | 0.030724 | ppb |
| | Co | 59 | 96.000 | 0.029129 | ppb |
| | Ni | 60 | 86.667 | 0.032281 | ppb |
| | Cu | 63 | 116.667 | -0.002532 | ppb |
| | Cu | 65 | 123.334 | 0.027275 | ppb |
| | Zn | 66 | 120.001 | 0.019117 | ppb |
| | As | 75 | 98.790 | 0.172736 | ppb |
| | Se | 82 | 38.000 | -0.103230 | ppb |
| | Ag | 107 | 56.667 | 0.026224 | ppb |
| | Ag | 109 | 93.334 | 0.043310 | ppb |
| | Cd | 111 | 8.820 | 0.010067 | ppb |
| | In | 113 | 60894.846 | | ppb |
| > | In | 115 | 1390594.939 | | ppb |
| | Sb | 121 | 295.004 | 0.134257 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 42.000 | 0.091247 | ppb |
| | Ba | 137 | 26.000 | 0.012518 | ppb |
| > | Tb | 159 | 1825233.353 | | ppb |
| | Tl | 205 | 115.001 | 0.023111 | ppb |
| | Pb | 206 | 70.000 | 0.031186 | ppb |
| | Pb | 207 | 105.000 | 0.023973 | ppb |
| | Pb | 208 | 175.001 | 0.027092 | ppb |
| > | Bi | 209 | 1172288.439 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 114.997 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 103.545 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 99.475 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.729 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 100.619 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# 4. Digestion and Distillation Logs

The following logs shall be submitted, as appropriate, for each preparation procedure: digestion logs for ICP-AES, ICP-MS, mercury preparations, and cyanide. The logs shall include: (1) date; (2) sample weights and volumes, with initial sample weight/volume and final volume clearly indicated; (3) sufficient information to unequivocally identify which QC samples (i.e., LCS, PB) correspond to each batch digested; (4) comments describing any significant sample changes or reactions which occur during preparation shall be entered in the log and noted in the SDG Narrative; (5) indication of pH less than 2 or greater than 12, as applicable; (6) identification of the sample preparer(s) [signature (s)].

# METALS/MERCURY PREPARATION LOG

Metals Method: 3005A / 6020A
Mercury Method: 7470A
Prepared By: JM

CompuChem
A Division Of
Liberty Analytical Corp.

Preparation Date: 8-1-11
Preparation Time: 1000
Batch Number: 1072905
Purple Water

| COMPUCHEM SAMPLE ID | CLIENT SAMPLE ID | SAMPLE TYPE | ICP Initial (mL) | ICP Final (mL) | HG Initial (mL) | HG Final (mL) | *Description Before | *Description After ICP | pH |
|---|---|---|---|---|---|---|---|---|---|
| 1072905-BLK1 | PBW | MB | 100 | 100 | | | CL / CL | CL / CL | N/A |
| 1072905-BS1 | LCSW | LCSW | 100 | | | | CL / CL | CL / CL | N/A |
| 1072905-BSD1 | LCSWD | LCSWD | 100 | | | | CL / CL | CL / CL | N/A |
| 1107162-01 | 7DUP | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107162-02 | 7W13 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107163-01 | 7DUP | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107163-02 | 7W13 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107164-01 | 5WC21 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107164-02 | 5WC22 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107165-01 | 5WC21 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |
| 1107165-02 | 5WC22 | SAMPLE | 100 | | | | CL / CL | CL / CL | C2 |

Mercury Standards and QC S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached. Standard/QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

| Record of Tempature/Time | | |
|---|---|---|
| Hot Block Temp In: | 95 | C |
| Hot Block Temp Out: | 95 | C |
| Hot Block Identifier | MS #1 | |
| Time Hg in water bath: | | |
| Time Hg out water bath: | | |
| Water Bath Temp In: | | C |
| Water Bath Temp Out: | | C |
| Water Bath Identifier: | | |

**MS Reference**
ICAP: 1.0mL Water Spike ID:
1.0 ml for 50 ml prep
Ref #:
HG: 1.0mL 100ppb Hg
Ref #:

**LCS Reference**
ICAP: 2.0 mL of ICV 0307
1.0 ml for 50 ml prep
Ref #: 6H10010
HG: 1.0mL 100ppb Hg

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

*Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.*

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

**Sample Verification Signature:** JM
This signature corroborates that the sample idenification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

*Reviewed By:* JCF
*Date:* 080111

# Standards/QC Preparation Log for ICP/MS Metals

COMPUCHEM a division of Liberty Analytical Corp. WORKSHEET 1 YYY

Case/SDG: 110762

| REAGENTS | REF #[1] | MANUFACTURER | LOT # | EXPIRATION |
|---|---|---|---|---|
| Hydrochloric Acid - Distilled (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| Nitric Acid – Distilled ($HNO_3$) | NHO3-D-072111-JRR | JT Baker | J45042 | 12/11 |
| **STANDARDS** | | | | |
| ICV-1 (0307) | 0H10010 | EPA | 0307 | 08/10/15 |
| EPA LCS (0405) | OE20016 | EPA | 0405 | 05/17/15 |
| ERA PPT (540) | 1E02001 | ERA | 540 | 04/26/12 |
| Water Spike Sample D | 1F22003 | HIGH PURITY | 1116621 | 06/20/12 |
| | | | | |
| | | | | |

| STANDARD LOT NUMBER[2] | PREPARATION INSTRUCTIONS |
|---|---|
| $HNO_3$– 07 21 11 – JRR<br>Nitric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated $HNO_3$, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |
| HCl– 12 08 10 – DDD<br>Hydrochloric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated HCl, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |

Standard Solutions Prepared By: _____ Date: 8-1-11

Entered By: _____ Date: 8-1-11

Reviewed By: _____ Date: 8.1.11

[1]Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

[2]Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

[3]Raw Material sub-boiled from specified lot # in accordance with SOP SPP.9.10

The presence of the Chemist's/Analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

# Data Validation Report

## INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates performed a manual comprehensive review of the inorganic analytical results for the July 27, 2011 groundwater monitoring event at RFAAP HWMU7. Draper Aden Associates, of Blacksburg, Virginia, collected a groundwater sample and blind field duplicate from monitoring well 7W13. Monitoring well re-development was performed prior to June 30, 2011 sample collection. This event represents the second of two monitoring events to be conducted subsequent to the well re-development. These samples were analyzed for total and dissolved arsenic and cobalt by SW-846 Method 6020A - inductively coupled plasma-mass spectrometry (ICP-MS). The following information and attached table summarize the inorganic data validation results.

Draper Aden Associates sent the samples to CompuChem (CompuChem), a Division of Liberty Analytical, of Cary, North Carolina, for the inorganic analyses. On behalf of RFAAP, CompuChem submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results.

The evaluation of CompuChem's compliance with the method and validation of results presented here are based upon a limited review of QA/QC information including holding times, preservation procedures, instrument tuning, calibration and calibration verification data, QL standards, blank samples (method, calibration, and other blanks), interference check sample, pre-digestion matrix spike and matrix spike duplicate (MS/MSD), laboratory control sample (LCS), internal standard, and serial dilution results, where applicable. A review of transcriptions from instrument data to sample summary sheets was performed. Calculation checks were performed on a minimum ten percent of the data set. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

CompuChem received the samples in good condition, with custody seals intact. Each sample aliquot requiring dissolved analysis was field filtered using a 0.45 micron filter and the filtrate was preserved in the field. Applicable holding time and preservation criteria were met. The chain of custody was appropriately signed and data by field and laboratory personnel.

### *Method 6020A (ICP-MS)*

The revised certificate of analysis for Method 6020A was complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported QL for arsenic and cobalt, as outlined by the precision and accuracy data. QLs were equal to or less than the permit QL.

QC documentation criteria were met. Instrument tuning, calibration and calibration verification criteria were met. QL standards, blank samples, interference check sample (ICSAB),

pre-digestion MS/MSD, LCS, internal standard and serial dilution results recovered within control limits, except where noted below. No deviations from specific control limits and QA/QC controls were identified during the data review process.

The laboratory report was revised to correctly report results to at or above the permit QL for arsenic (10 µg/l) and cobalt (4 µg/l).

Arsenic and cobalt detections reported at or above the permit QL and/or results that required a data validation qualifier due to quality control deviations noted above are summarized below.

No results were rejected based on the data validation criteria.

***Summary of Detections:***

| ANALYTE | METHOD | SAMPLE ID | LAB RESULT | VALIDATED RESULT | QL | UNITS | DATA VALIDATION NOTES |
|---|---|---|---|---|---|---|---|
| Arsenic, Total | 6020A | 7W13 | U | U | 10 | µg/l | Result < Permit QL. |
| Cobalt, Total | 6020A | 7W13 | 14.5 | 14.5 | 4 | µg/l | No action taken. |
| Arsenic, Dissolved | 6020A | 7W13 | U | U | 10 | µg/l | Result < Permit QL. |
| Cobalt, Dissolved | 6020A | 7W13 | 13.7 | 13.7 | 4 | µg/l | No action taken. |
| Arsenic, Total | 6020A | 7DUP | U | U | 10 | µg/l | Result < Permit QL. |
| Cobalt, Total | 6020A | 7DUP | 14.1 | 14.1 | 4 | µg/l | No action taken. RPD <10. |
| Arsenic, Dissolved | 6020A | 7DUP | U | U | 10 | µg/l | Result < Permit QL. |
| Cobalt, Dissolved | 6020A | 7DUP | 13.9 | 13.9 | 4 | µg/l | No action taken. RPD <10. |

**Data Validation Qualifiers:**
**QL** Denotes permit quantitation limit.
**U** Denotes analyte not detected at or above QL.
**J** Denotes analyte reported above QL and associated result is estimated.
**UJ** Denotes analyte not detected at or above the QL and associated QL is estimated.
**UA** Denotes analyte detected above QL, but attributed to laboratory contamination. Sample QL adjusted to sample concentration. Final result not detected at or above adjusted sample QL.

## INORGANIC DATA EVALUATION FOR ICP-MS SW-846 METHOD 6020A

**Sample ID:** 7W13
**QC Samples:** Lab blanks, LCS/LCSD, serial dilution (7W13-T&D), Field duplicate of 7W13: (7DUP)
**Laboratory:** CompuChem, Cary, NC; SDG: 1107162 (T), 1107163 (D)

Does Laboratory analyte list correspond to analyte list requested? _X_ yes ___ no
Corresponds to As and Co, total and dissolved, Preparation method: 3005A

"☑" denotes items reviewed. NR Denotes not reviewed.
See Data Validation Summary for additional comments.

### A. DOCUMENTION COMPLETENESS CRITERIA:

*Data Quality Objective: Representativeness*

- ☑ Chain of custody – Custody transfers must be signed and dated
- ☑ Chain of custody properly and completely filled out including sampler signatures, date and time of sampling, sample ID, analysis requested

### B. DETECTION LIMIT AND QUANTITATION LIMIT CRITERIA:

*Data Quality Objective: Analytical Sensitivity*

- ☑ Specific detection limit reported
- ☑ Specific quantitation limit reported
- ☑ Standard analyzed at the QL (LLQC), digested, 70-130% recovery, analyzed after MDL determination and as needed
- ☑ Method detection limit (MDL) less than QL
- ☑ Performance evaluation sample analyzed within 12 months

### C. INITIAL DEMONSTRATION OF CAPABILITY (IDOC) CRITERIA:

*Data Quality Objective: Laboratory Method Sensitivity*

- ☑ Analyst IDOC for J. Feldhaus submitted previously

### D. SAMPLE AND STANDARD PREPARATION CRITERIA:

*Data Quality Objective: Accuracy and Representativeness*

- ☑ Digestion prior to analysis
- ☑ Digestion method: 3005A
- ☑ Samples and standards matrix matched

### E. TECHNICAL HOLDING TIME / PRESERVATION REQUIREMENTS:

*Data Quality Objective: Representativeness*

- ☑ 6 month holding time, pH<2 with Nitric Acid ($HNO_3$)

### F. INSTRUMENT TUNE CRITERIA:

*Data Quality Objective: Verify Operating Conditions*

- ☑ Prior to calibration
- ☑ Relative Standard Deviation (RSD) </=5%

☑ Resolution < 0.9 amu full width at 10% peak height (or lower)
☑ Mass calibration </=0.1 amu difference from true value

## G. INITIAL CALIBRATION CRITERIA:

*Data Quality Objective: Laboratory Accuracy*

☑ 1 calibration blank and 3 standards,
☑ Linear curve fit with correlation coefficient $r \geq 0.998$
☑ Daily calibration following tuning and prior to sample analysis

## H. INITIAL CALIBRATION VERIFICATION (ICV) CRITERIA:

*Data Quality Objective: Laboratory Accuracy*

☑ Daily following initial calibration, independent/second source used for ICV
☑ ICV concentration near mid-point of calibration curve, 90-110% recovery
☑ Low level ICV (LLICV) – prior to analysis, at QL concentration, 70-130% recovery

## I. INITIAL CALIBRATION BLANK CRITERIA:

*Data Quality Objective: Laboratory Analytical Sensitivity/Instrument Drift/Contamination Evaluation*

☑ Daily following ICV
☑ Interference free

## J. CONTINUING CALIBRATION VERIFICATION (CCV) CRITERIA:

*Data Quality Objective: Laboratory Analytical Accuracy*

☑ CCV, prior to analysis, after every 10 samples, at end of analysis
☑ CCV recovery within 90-110%, mid-point of curve concentration
☑ Low level CCV (LLCCV), concentration at QL, prior to analysis, after every 10 samples, end of analysis (70-130% R)

## K. CONTINUING CALIBRATION BLANK CRITERIA:

*Data Quality Objective: Laboratory Analytical Sensitivity/Instrument Drift/Contamination Evaluation*

☑ Immediately after the CCV, 10 sample frequency
☑ Interference free

## L. BLANK CRITERIA:

*Data Quality Objective: Sensitivity/Instrument Drift/Contamination Evaluation*

N/A Trip Blank (check only if analyzed)
☑ Method/Other Lab Blanks (check only if analyzed), one per digestion batch
☑ Interference free

## M. INTERFERENCE CHECK SAMPLE (ICS) CRITERIA:

*Data Quality Objective: Analytical Accuracy/Verification of Isobaric Interference Corrections*

☑ At beginning of analytical run
☑ Recovery: 80-120% (ICSAB)

## N. MATRIX SPIKE DUPLICATE (MSD) CRITERIA:

*Data Quality Objective: Method Precision in Sample Matrix*

☑ All analytes, one MSD or sample duplicate per batch of 20 samples
☑ Spiked prior to sample preparation
☑ RPD ≤ 20 between MS and MSD results or sample and duplicate results
☑ MSD analyte recovery 75-125%

## O. MATRIX SPIKE (MS) CRITERIA:

*Data Quality Objective: Method Accuracy in Sample Matrix*

- ☑ All analytes, one MS per digestion batch of 20 samples
- ☑ Spiked prior to sample preparation
- ☑ Recovery: 75-125%
- ☑ Post digestion spike if MS/MSD recoveries fail
- ☑ Recovery of post digestion spike analytes within 80-120%

## P. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

*Data Quality Objective: Laboratory Method Accuracy, Laboratory Performance*

- ☑ LCS for all target analytes, one LCS per 20 sample batch
- ☑ LCS concentration at approximately mid-point of analytical curve
- ☑ Recovery within 80-120% for all analytes

## Q. INTERNAL STANDARDS (IS) CRITERIA:

*Data Quality Objective: Analytical Accuracy in Sample Matrix*

- ☑ IS (Li6, **Sc45**, In115, Tb159, Bi209) intensities, IS added to each sample and QC sample
- ☑ % Relative intensity (RI) within 70-125%

## R. SERIAL DILUTION (DILUTION TEST) TEST CRITERIA:

*Data Quality Objective: Accuracy in Sample Matrix*

- ☑ <10% Difference (applicable when sample concentration >10X QL)

## S. SAMPLE QUANTITATION AND GENERAL REPORTING CRITERIA:

*Data Quality Objective: n/a*

- ☑ Sample results reported within instrument linear dynamic range
- ☑ Sample results reported to the detection limit
- ☑ Sample/blind field duplicate results <10 RPD

---

Draper Aden Associates conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004 USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010). Validation of this data set is limited to review of items detailed in this data review report.

**LIMITATIONS:**

Draper Aden Associates prepared this document (which may include drawings, specifications, reports, studies and attachments) in accordance with the agreement between Draper Aden Associates and the client.

The standard of care for all professional engineering, environmental and surveying and related services performed or furnished by Draper Aden Associates under this Agreement are the care and skill ordinarily used by members of these professions practicing under similar circumstances at the same time and in the same locality. Draper Aden Associates makes no warranties, express or implied, under this Agreement in connection with Draper Aden Associates' services.

Conclusions presented are based upon a review of available information, the results of our field studies, and/or professional judgment. To the best of our knowledge, information provided by others is true and accurate, unless otherwise noted. Draper Aden Associates' liability, hereunder, shall be limited to amounts due Draper Aden Associates for services actually rendered, or reimbursable expenses actually incurred. Any reuse or modification of any of the aforementioned documents (whether hard copies or electronic transmittals) prepared by Draper Aden Associates without written verification or adaptation by Draper Aden Associates will be at the sole risk of the individual or entity utilizing said documents and such use is without the authorization of Draper Aden Associates. Draper Aden Associates shall have no legal liability resulting from any and all claims, damages, losses, and expenses, including attorney's fees arising out of the unauthorized reuse or modification of these documents. Client shall indemnify Draper Aden Associates from any claims arising out of unauthorized use or modification of the documents whether hard copy or electronic.

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Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

**This Report has been prepared by:**

Cheryl Daniel, Environmental Scientist — Date: 11/29/2011
2206 South Main Street, Blacksburg, Virginia 24060
540-552-0444, cdaniel@daa.com, www.daa.com

**This Report has been subjected to technical and quality review by:**

Janet C. Frazier, Project Manager — Date: 11/29/11
2206 South Main Street, Blacksburg, Virginia 24060
540-552-0444, jfrazier@daa.com, www.daa.com

CompuChem
A Division Of
Liberty Analytical Corp.
8/9/2011

RECEIVED
AUG 09 2011
By

JANET FRAZIER
DRAPER
2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Reviewed & Report Analytes
@ AT or ABOVE QL.
DATA for As, G - (TOTAL)
TW3
TOP
7/27/11 - End

Subject:

Report of Data - Project: RAAP UNIT 7/2011 POST DEV. 2nd EVEN WorkOrder: 1107162

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

JLR 11/22/11

Sincerely,

Compuchem
a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES ____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

## CompuChem, a division of Liberty Analytical

ER **Work:** 1107162

P UNIT 7/2011 POST DEV. 2nd EVENT/B03204-30 **Sdg:** 1107162

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107162-01 | 7DUP | Water | 07/27/2011 13:45 | 07/28/2011 10:30 |
| 1107162-02 | 7W13 | Water | 07/27/2011 13:35 | 07/28/2011 10:30 |

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Laboratory:** COMPUCHEM

**SDG:** 1107162

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7DUP | 1107162-01 |
| 7W13 | 1107162-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Carla Dove for Susan Bass  Name: SUSAN BASS

Date: 8/9/11  Title: SENIOR CHEMIST

AMENDED DATA

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Liberty Analytical Corp.

**CompuChem**
**a Division of Liberty Analytical Corp.**
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107162
## Client: DRAPER
## Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

The indicated Sample Delivery Group (SDG) consisting of two (2) water samples was received into the laboratory information management system (LIMS) on July 28, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was not found with the samples and the samples temperature was 26.7 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested total metals arsenic and cobalt. All non-detects are reported to the reporting limit (RL) with a "U" flag qualifier.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7DUP

$$\frac{14.08144\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 14.08\ \mu g/L \text{ reported as } 14.1\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

AMENDED DATA

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

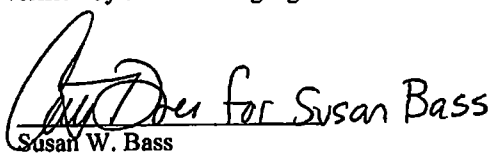
A five-fold serial dilution of sample, CCN = SDI1107162-01 (7DUPL) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were inside control limits.

The ICP/MS sample post digestion spike, CCN =1072905-PSI (7DUPA) was performed and passed criteria except arsenic.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Susan W. Bass
Senior Chemist
August 8, 2011 (revised August 9, 2011)

AMENDED
DATA

# ANALYSIS DATA SHEET

7DUP

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107162-01 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1H03006 | 8/1/11 16:57 |
| 7440-48-4 | Cobalt | 14.1 | 4.00 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 16:57 |

Environmental Testing Laboratories
CompuChem
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AMENDED DATA

# ANALYSIS DATA SHEET

7W13

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1107162-02 % Solid: Matrix: Water Sampled: 07/27/11 Received: 07/28/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1H03006 | 8/1/11 17:01 |
| 7440-48-4 | Cobalt | 14.5 | 4.00 | 4.00 | 1 | | EPA 6020A | 1H03006 | 8/1/11 17:01 |

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AMENDED DATA

# SERIAL DILUTION

*EPA 6020A*

7DUPL

Client: DRAPER SDG: 1107162 Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

Lab ID: 1H03006-SRD1 Matrix: Water Lab Source ID: 1107162-01 Source Sample: 7DUP

Sequence: 1H03006 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic | 10.00 U | 50.00 U | | | EPA 6020A | 10 |
| Cobalt | 14.08 | 20.00 U | | | EPA 6020A | 10 |

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AMENDED DATA

24
8/9/11

## POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

7DUPA

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107162

Project: RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B032

Laboratory ID: 1072905-PS1

Lab Source ID: 1107162-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| **Arsenic** | 19.1 | U | **10.00** | **191** | **75 - 125** |
| Cobalt | 25.8 | 14.1 | 10.00 | 117 | 75 - 125 |

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AMENDED DATA

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107162

**Client:** DRAPER **Project:** RAAP UNIT 7/2011 POST DEV. 2nd EVENT/B03204-304B

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic | 10 | 10.00 | ug/L | EPA 6020A |
| Cobalt | 4 | 4.00 | ug/L | EPA 6020A |

CompuChem
A Division Of
Liberty Analytical Corp.
7/13/2011

JANET FRAZIER
DRAPER
2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOI WorkOrder: 1107004

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem
a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES _____

**501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050**

## CompuChem, a division of Liberty Analytical

**Client:** DRAPER **Work:** 1107004

**Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVEN **Sdg:** 1107004

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107004-01 | 7W13 | Water | 06/30/2011 06:45 | 07/01/2011 09:43 |
| 1107004-02 | 7DUP | Water | 06/30/2011 07:00 | 07/01/2011 09:43 |

CompuChem, a Division of Liberty Analytical Corporation

# Analysis Data Package

## EPA SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field and analytical samples, reanalyses, blanks, spikes, duplicates, and laboratory control samples. The sample data package consists of the following:

## A. Cover Documentation

## B. Sample Data

Client: **DRAPER** SDG#: **1107004**

Project: **RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT**

Environmental Testing Laboratories

CompuChem

A Division Of

Liberty Analytical Corp.

# A. Cover Documentation

1. Cover Page

2. SDG Narrative

3. Chain-Of-Custody Records

# 1. Cover Page

## Inorganic Analyses Data Package

The Cover Page includes laboratory information, SDG numbers, project name and the Client Identification in alphanumeric order showing the Client Identification cross-referenced with Lab ID numbers.

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

**Laboratory:** COMPUCHEM

**SDG:** 1107004

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7W13 | 1107004-01 |
| 7DUP | 1107004-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ for

Name: Susan Boss

Date: 07-13-11

Title: Senior Chemist

# 2. SDG Narrative

The SDG Narrative contains laboratory information, SDG number, and detailed documentation of any QC, sample, shipment, and/or analytical problems encountered in processing the samples. This will include any technical and administrative problems encountered and the resolution or corrective actions taken. The SDG Narrative will also document the alternative means of determining the cooler temperature when a cooler's temperature indicator bottle is absent. The SDG Narrative also provides equations or curves and utilizes raw data from the SDG being reported to demonstrate how sample results are obtained from raw instrument output. Finally, the SDG Narrative will identify and explain any differences between results being provided in the data package and those provided previously as Preliminary Results.

**CompuChem**
**a Division of Liberty Analytical Corp.**
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107004
## Client: DRAPER
## Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

The indicated Sample Delivery Group (SDG) consisting of two (2) water samples was received into the laboratory information management system (LIMS) on July 1, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was found with the samples and the samples temperature was 1.6 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested metals arsenic and cobalt.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7W13

$$\frac{12.40392\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 12.404\ \mu g/L \text{ reported as } 12.4\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

A five-fold serial dilution of sample, CCN = SDI1107005-01 (7W13L) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were outside control limits.

The ICP/MS sample post digestion spike, CCN =1070509-PS1 (7W13A) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

for

Susan W. Bass
Senior Chemist
July 13, 2011

# INORGANIC DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, CCV, and interference check standards for ICP-AES/ICP-MS) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

**The extensions: D, S, SD, L, and A are added to the end of the Client ID and represent the following:**

**D – Matrix Duplicate**
**S – Matrix Spike**
**SD – Matrix Spike Duplicate**
**L – Serial Dilution**
**A – Post Digestion Spike**

Revision 0 (11-09-2010)

# 3. Chain-Of-Custody Records

# CHAIN OF CUSTODY RECORD

JLR 6-29-11

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

| | | | | | |
|---|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>**Attn:** 0<br>**Address:** 0<br>0<br>**Phone:** 0<br>**Fax:** 0<br>**Fax:** 0 | **Consultant:** Draper Aden Associates<br>**Attn:** Janet C. Frazier<br>**Address:** 2206 South Main Street<br>Blacksburg, Virginia 24060<br>**Phone:** (540) 552-0444<br>**Fax:** (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU 7<br>**Event:** 2nd Quarterly 2011 Re-Development Monitoring Event<br>**DAA JN:** B03204-304B<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:**<br>**Sample Collection for Project Complete?** YES<br>**Carrier:** UPS: 12-237-301-01-5848-8275<br>**Tracking Number:** | | |

| Box 1: Matrix | Box 2: Preservative | Box 3: Filtered/Unfiltered | Box 4: Sample Type | Invoice |
|---|---|---|---|---|
| SW Surface Water<br>GW Groundwater<br>L Leachate<br>S Soil<br>T Trip Blank<br>E Equipment Blank<br>P Product<br>O Other | A HCL<br>B $HNO_3$<br>C $H_2SO_4$<br>D $Na_2S_2O_3$<br>E NaOH<br>F ZnAc<br>G Other (Specify)<br>H None | F Filtered<br>U Unfiltered<br>**Box 5: Sample Container Type**<br>P Plastic V VOA<br>AG Amber Glass CG Clear Glass | G Grab<br>C Composite | Copy to Consultant: YES<br>Bill: CLIENT OTHER<br>Preserved and shipped on ice: YES |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Box 4 - Sample Type** | | | | | G | | | | | | | | | | |
| **Box 3 - Filtered/Unfiltered** | | | | | U | | | | | | | | | | |
| **Required pH of Sample** | | | | | <2 | | | | | | | | | | |
| **Box 2 - Preservative** | | | | | B | | | | | | | | | | |
| **Box 5 - Sample Container Type** | | | | | 1-500 ml P | | | | | | | | | | |
| **Sample ID** | **Date: 2011** | **Time** | **Box 1: Matrix** | **Number of Bottles** | **ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY)** | | metals pH | | | | | | | | |
| 7W13 | 6/30 | 0645 | GW | 1 | X | | 12 | | | | | | | | |

**GENERAL NOTES:**

* Report result to at or above permit QL, 10 mg/L (arsenic)

4 mg/L - (Cobalt) JLR 6-29-11

1107004-01

**Clients Special Instructions:**

Received by lab in Good Condition X Yes ____ No Custody Seal Intact X Yes ____ No Temperature upon arrival 1.6°C Received on Ice ✓ Yes ____ No

Describe problems, if any: IR GUN: SN0015

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sampler Name (Print):** KEN CODDINGTON | **Date:** 6/28/11 | **#1 Relinquished by (Signature):** | **Date:** 6/30/11 | **#2 Relinquished by (Signature):** | **Date:** | **Sample Storage Time Requested:** |
| **Sampler Signature:** | **Time:** 0700 | **Company Name:** DAA | **Time:** 1700 | **Company Name:** | **Time:** | |
| **Sampler Name (Print):** | **Date:** | **#1 Received by (Signature):** | **Date:** | **#2 Received by (Signature):** | **Date:** 7/1/11 | 30 DYS ORG/6 MTHS INORG |
| **Sampler Signature:** | **Time:** | **Company Name:** | **Time:** | **Company Name:** Compuchem | **Time:** 0945 | |

7/1/2011 JLR

JLR 6-29-11

JLR 6/29/2011

1/1

10

# CHAIN OF CUSTODY RECORD

MK 6-29-11

11

**Laboratory:** CompuChem Environmental, 501 Madison Avenue, Cary, NC 27513/Cathy Dover, Manager/1-800-833-5097

| | | | | |
|---|---|---|---|---|
| **Client:** Draper Aden Associates<br>Attn: 0<br>Address: 0<br>0<br>Phone: 0<br>Fax: 0<br>Fax: 0 | **Consultant:** Draper Aden Associates<br>Attn: Janet C. Frazier<br>Address: 2206 South Main Street<br>Blacksburg, Virginia 24060<br>Phone: (540) 552-0444<br>Fax: (540) 552-0291 | **Sample Site:** RAAP, Radford, Virginia<br>**Location:** HWMU 7<br>**Event:** 2nd Quarterly 2011 Re-Development Monitoring Event<br>**DAA JN:** B03204-304B<br>**Lab JN:** | **Project Specific (PS) or Batch (B) QC:**<br>**Sample Collection for Project Complete?** YES<br>**Carrier:** UPS: 1Z 237 301 01 5818 8275<br>**Tracking Number:** | |

**Box 1: Matrix**
SW Surface Water; GW Groundwater; L Leachate; S Soil; T Trip Blank; E Equipment Blank; P Product; O Other

**Box 2: Preservative**
A HCL; B $HNO_3$; C $H_2SO_4$; D $Na_2S_2O_3$; E NaOH; F ZnAc; G Other (Specify); H None

**Box 3: Filtered/Unfiltered**
F Filtered; U Unfiltered

**Box 4: Sample Type**
G Grab; C Composite

**Box 5: Sample Container Type**
P Plastic; AG Amber Glass; V VOA; CG Clear Glass

**Invoice**
Copy to Consultant: YES
Bill: CLIENT OTHER _____
Preserved and shipped on ice: YES

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Box 4 - Sample Type | | | | | G | | | | | | | | | |
| Box 3 - Filtered/Unfiltered | | | | | U | | | | | | | | | |
| Required pH of Sample | | | | | <2 | | | | | | | | | |
| Box 2 - Preservative | | | | | B | | | | | | | | | |
| Box 5 - Sample Container Type | | | | | 1-500 ml P | | | | | | | | | |
| Sample ID | Date: 2011 | Time | Box 1: Matrix | Number of Bottles | ICP/MS 6020A Metals-Total (Cobalt & Arsenic ONLY) | | MTL's pH | | | | | | | |
| 7 DUP | 6/30 | 0700 | GW | 1 | X | | 12 | | | - | | | | 1161004-02 |

**GENERAL NOTES:**

**Clients Special Instructions:**

Received by lab in Good Condition X Yes ____ No Custody Seal Intact X Yes ____ No Temperature upon arrival 1.6°C Received on Ice X Yes ____ No
Describe problems, if any: (R. Ellis) SW9075

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sampler Name (Print): KEN CODDINGTON | Date: 6/28/11 | #1 Relinquished by (Signature): | Date: 6/30/11 | #2 Relinquished by (Signature): | Date: | Sample Storage Time Requested: | |
| Sampler Signature: | Time: 0700 | Company Name: DAA | Time: 1700 | Company Name: | Time: | | |
| Sampler Name (Print): | Date: | #1 Received by (Signature): | Date: | #2 Received by (Signature): Matthew R. Arnold | Date: 7/1/11 | 30 DYS ORG/6 MTHS INORG | |
| Sampler Signature: | Time: | Company Name: | Time: | Company Name: CompuChem | Time: 0945 | | |

JLF 6/29/2011 MK 6-29-11 1/1

WORK ORDER

Printed: 7/13/2011 11:36:28AM

**1107004**

# COMPUCHEM

| | | | |
|---|---|---|---|
| **Client:** | **DRAPER** | **Project Manager:** | **Cathy Dover** |
| **Project:** | **RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMEI** | **Project Number:** | **RAAP 2nd QTR.2011 RE-DEVELOPMENT EV** |
| **SDG:** | **1107004** **CASE:** | **Status:** | **Reported** |

**Report To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone: (540)552-0444
Fax: -

**Invoice To:**
DRAPER
JANET FRAZIER
2206 SOUTH MAIN STREET
BLACKSBURG, VA 24060
Phone :(540)552-0444
Fax: -

Date Due: 07/14/2011 00:00 (13 day TAT)

Received By: Cathy Dover — Date Received: 07/01/2011 09:43

Logged In By: Cathy Dover — Date Logged In: 07/01/2011 22:20

| J & B Flags?: **NO** | TICS?:**NO** | Deliverable: **Style 9** | EDD : **DRAPER ACCESS + ERIS** |
|---|---|---|---|
| Metals ND to? **MDL** | Spike Level: **FULL Spike** | | |

LCS/LCSD*6020 MTL=As (RPT.@10ug/L) & Co (RPT.@4ug/L) ONLY*NO J FLAGS

| Analysis | Due | TAT | Expires | Received | Comments |
|---|---|---|---|---|---|
| **1107004-01 7W13 [Water] Sampled 06/30/2011 06:45 Eastern** | | | | | |
| 6020A ICP MS (UPDATE IV) | 07/14/2011 16:00 | 13 | 12/27/2011 06:45 | 07/01/2011 09:43 | |
| **1107004-02 7DUP [Water] Sampled 06/30/2011 07:00 Eastern** | | | | | |
| 6020A ICP MS (UPDATE IV) | 07/14/2011 16:00 | 13 | 12/27/2011 07:00 | 07/01/2011 09:43 | |

## INTERNAL DIGESTION COC

1070509

**COMPUCHEM**

**Printed: 7/5/2011 9:49:50AM**

**Matrix: Water** **Prepared using: METALS - EPA 3005A**

| Lab Number | Client ID | Sample Type | |
|---|---|---|---|
| 1070509-BLK1 | PBW | Blank | |
| 1070509-BS1 | LCSW | LCS | |
| 1070509-BSD1 | LCSWD | LCS Dup | |
| 1107004-01 | 7W13 | Sample | |
| 1107004-02 | 7DUP | Sample | |
| 1107005-01 | 5WC21 | Sample | |
| 1107005-02 | 5WC22 | Sample | |

| | | | |
|---|---|---|---|
| [signature] | 07-05-11 1745 | ICP Sts. | 7-5-11 1745 |
| Relinquished By | Date | Received By | Date |
| ICP Sts. | 7-6-11 1230 | [signature] | 7-6-11 1230 |
| Relinquished By | Date | Received By | Date |
| [signature] | 7-13-11 1250 | ICP Sts | 7-13-11 1250 |
| Relinquished By | Date | Received By | Date |
| | | | |
| Relinquished By | Date | Received By | Date |

JM
071311

# Metals Internal Chain of Custody Sheet

**Batch**: 1070509 **Status**: Batched

**Analysis**: 6020A ICP MS (UPDATE IV)

| Lab Id | Client_Id | Received | Container | Extraction | Preservative | Matrix | Due Date | Cust Date |
|---|---|---|---|---|---|---|---|---|
| 1107004-01 A | 7W13 | 07/01/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 7/14/2011 | |
| 1107004-02 A | 7DUP | 07/01/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 7/14/2011 | |
| 1107005-01 A | 5WC21 | 07/01/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 7/14/2011 | |
| 1107005-02 A | 5WC22 | 07/01/11 | 3n_500mL Plastic, HNO3 | EPA 3005A | Add HNO3 to pH<2 | Water | 7/14/2011 | |

| Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|
| Ambient Sts. | 7-5-11 0800 | | 7-5-11 0900 |
| | 7-5-11 1200 | Ambient Sts. | 7-5-11 1200 |
| | | | |
| | | | |

JM 071311

# B. Sample Data

1. Results
2. Quality Control Data
3. Raw Data
4. Digestion and Distillation Logs

# 1. Results

a. **Analysis Data Sheet**

# ANALYSIS DATA SHEET

**7W13**

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1107004-01 % Solid: Matrix: Water Sampled: 06/30/11 Received: 07/01/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 7.90 | 0.100 | 10.0 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:39 |
| 7440-48-4 | Cobalt | 12.4 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:39 |

# ANALYSIS DATA SHEET

**7DUP**

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1107004-02 % Solid: Matrix: Water Sampled: 06/30/11 Received: 07/01/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 8.11 | 0.100 | 10.0 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:43 |
| 7440-48-4 | Cobalt | 12.9 | 0.0400 | 4.00 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:43 |

# 2. Quality Control (QC) Data

**a. Low Level Initial and Continuing Calibration Check**

**b. Initial and Continuing Calibration Check**

**c. Low Range Standard**

**d. High Range Standard**

**e. Blank**

**f. ICP Interference Check Sample**

**g. Duplicates**

**h. Matrix Spike / Matrix Spike Duplicate Recovery**

**i. Serial Dilution**

**j. Post Digestion Spike Sample Recovery**

**k. LCS / LCS Duplicate Recovery**

**l. Method Detection and Reporting Limits**

**m. ICP-AES and ICP-MS Linear Ranges**

**n. ICP-AES Interelement Correction Factors**

**o. Preparation Batch Summary**

**p. Analysis Sequence Summary**

# LOW LEVEL INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVE

Sequence: 1G07001 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | QC Limts |
|---|---|---|---|---|---|---|---|---|
| LLICV | 1G07001-CRL1 | Arsenic | 1.000 | 1.08 | 108 | ug/L | | 70 - 130 |
| LLICV | 1G07001-CRL1 | Cobalt | 1.000 | 1.05 | 105 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL2 | Arsenic | 1.000 | 1.04 | 104 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL2 | Cobalt | 1.000 | 1.00 | 100 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL3 | Arsenic | 1.000 | 1.00 | 100 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL3 | Cobalt | 1.000 | 1.01 | 101 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL4 | Arsenic | 1.000 | 1.05 | 105 | ug/L | | 70 - 130 |
| LLCCV | 1G07001-CRL4 | Cobalt | 1.000 | 1.04 | 104 | ug/L | | 70 - 130 |

# INITIAL AND CONTINUING CALIBRATION CHECK

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVEN

Sequence: 1G07001 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units | Q | Control Limit |
|---|---|---|---|---|---|---|---|---|
| ICV | 1G07001-ICV1 | Arsenic | 199.8 | 193 | 97 | ug/L | | +/-10 % |
| ICV | 1G07001-ICV1 | Cobalt | 99.80 | 102 | 102 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV1 | Arsenic | 300.0 | 303 | 101 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV1 | Cobalt | 300.0 | 307 | 102 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV2 | Arsenic | 300.0 | 308 | 103 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV2 | Cobalt | 300.0 | 305 | 102 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV3 | Arsenic | 300.0 | 304 | 101 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV3 | Cobalt | 300.0 | 301 | 100 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV4 | Arsenic | 300.0 | 305 | 102 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV4 | Cobalt | 300.0 | 308 | 103 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV5 | Arsenic | 300.0 | 303 | 101 | ug/L | | +/-10 % |
| CCV | 1G07001-CCV5 | Cobalt | 300.0 | 310 | 103 | ug/L | | +/-10 % |

# BLANKS

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVEN

Sequence: 1G07001 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | Found | MDL | RL | Units | Q | Method |
|---|---|---|---|---|---|---|---|---|
| ICB | 1G07001-ICB1 | Arsenic | 0.0810 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| ICB | 1G07001-ICB1 | Cobalt | 0.0197 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB1 | Arsenic | -0.0174 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB1 | Cobalt | 0.0105 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB2 | Arsenic | 0.0868 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB2 | Cobalt | 0.0191 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB3 | Arsenic | 0.0289 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB3 | Cobalt | 0.0183 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| PBW | 1070509-BLK1 | Arsenic | | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| PBW | 1070509-BLK1 | Cobalt | | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB4 | Arsenic | 0.0710 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB4 | Cobalt | 0.0192 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB5 | Arsenic | 0.0816 | 0.100 | 10.0 | ug/L | U | EPA 6020A |
| CCB | 1G07001-CCB5 | Cobalt | 0.0216 | 0.0400 | 4.00 | ug/L | U | EPA 6020A |

# ICP INTERFERENCE CHECK SAMPLE

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Sequence: 1G07001 Instrument ID: PEMS

| Client ID | Lab Sample ID | Analyte | True | Found | %R | Units |
|---|---|---|---|---|---|---|
| ICSA | 1G07001-IFA1 | Arsenic | 0.1000 | 0.24 | 244 | ug/L |
| ICSA | 1G07001-IFA1 | Cobalt | 1.000 | 1.11 | 111 | ug/L |
| ICSAB | 1G07001-IFB1 | Arsenic | 19.00 | 19.28 | 101 | ug/L |
| ICSAB | 1G07001-IFB1 | Cobalt | 20.00 | 20.90 | 105 | ug/L |

* The absence of an entry in the "True" column denotes the lack of a true value for that analyte. The entry in the "%R" column represents a Control Limit, established as +/- 2 times analyte Limit Reporting Limit.

# SERIAL DILUTION

*EPA 6020A*

**7W13L**

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVEN

Lab ID: 1G07001-SRD3 Matrix: Water Lab Source ID: 1107004-01 Source Sample: 7W13

Sequence: 1G07001 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic | 7.90 J | 6.64 J | 16.0 | * | EPA 6020A | 10 |
| Cobalt | 12.40 | 10.82 J | 12.8 | * | EPA 6020A | 10 |

# POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

**7W13A**

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107004

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPM

Laboratory ID: 1070509-PS1

Lab Source ID: 1107004-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| Arsenic | 18.3 | 7.90 J | 10.00 | 104 | 75 - 125 |
| Cobalt | 22.7 | 12.4 | 10.00 | 103 | 75 - 125 |

# LCS / LCS DUPLICATE RECOVERY

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1070509-BS1 Matrix: Water Client ID: LCSW Batch: 1070509

| ANALYTE | SPIKE ADDED (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC. | Q | QC LIMITS REC. |
|---|---|---|---|---|---|
| Arsenic | 199.8 | 202 | 101 | | 80 - 120 |
| Cobalt | 99.80 | 106 | 106 | | 80 - 120 |

| ANALYTE | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC. # | % RPD # | QC LIMITS RPD | Q | REC. |
|---|---|---|---|---|---|---|---|
| Arsenic | 199.8 | 200 | 100 | 0.880 | 20 | | 80 - 120 |
| Cobalt | 99.80 | 105 | 105 | 0.903 | 20 | | 80 - 120 |

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107004

**Client:** DRAPER **Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT E

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic | 0.1 | 10.00 | ug/L | EPA 6020A |
| Cobalt | 0.04 | 4.00 | ug/L | EPA 6020A |

# ICP-AES AND ICP-MS LINEAR RANGES (QUARTERLY)

Client: DRAPER

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

SDG: 1107004 Instrument: PEMS

| Analyte | Concentration ug/L | LR Date |
|---|---|---|
| Arsenic | 5000 | 03/10/2011 |
| Cobalt | 5000 | 03/10/2011 |

# PREPARATION BATCH SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Batch: 1070509 Matrix: Water Preparation: EPA 3005A

| SAMPLE NAME | LAB SAMPLE ID | DATE PREPARED | INITIAL VOL/WT (mL) | FINAL VOL/WT (mL) |
|---|---|---|---|---|
| PBW | 1070509-BLK1 | 07/05/11 10:30 | 100 | 100 |
| LCSW | 1070509-BS1 | 07/05/11 10:30 | 100 | 100 |
| LCSWD | 1070509-BSD1 | 07/05/11 10:30 | 100 | 100 |
| 7W13A | 1070509-PS1 | 07/05/11 10:30 | 100 | 100 |
| 7W13 | 1107004-01 | 07/05/11 10:30 | 100 | 100 |
| 7DUP | 1107004-02 | 07/05/11 10:30 | 100 | 100 |

# ANALYSIS SEQUENCE SUMMARY

*EPA 6020A*

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Sequence: 1G07001 Instrument: PEMS

| Sample Name | Lab Sample ID | Lab File ID | Analysis Date/Time |
|---|---|---|---|
| TUNE | 1G07001-TUN1 | PEMSJCF070611_P-001 | 07/06/11 12:55:21 |
| S0 | 1G07001-CAL1 | PEMSJCF070611_P-002 | 07/06/11 13:54:38 |
| S 6020-MS1 | 1G07001-CAL2 | PEMSJCF070611_P-003 | 07/06/11 13:56:04 |
| S 6020-MS2 | 1G07001-CAL3 | PEMSJCF070611_P-004 | 07/06/11 13:57:30 |
| S 6020-MS3 | 1G07001-CAL4 | PEMSJCF070611_P-005 | 07/06/11 13:58:56 |
| S 6020-MS4 | 1G07001-CAL5 | PEMSJCF070611_P-006 | 07/06/11 14:00:21 |
| S 6020-MS5 | 1G07001-CAL6 | PEMSJCF070611_P-007 | 07/06/11 14:01:47 |
| LLICV | 1G07001-CRL1 | PEMSJCF070611_P-008 | 07/06/11 14:05:05 |
| ICV | 1G07001-ICV1 | PEMSJCF070611_P-009 | 07/06/11 14:06:32 |
| ICB | 1G07001-ICB1 | PEMSJCF070611_P-010 | 07/06/11 14:07:58 |
| ICSA | 1G07001-IFA1 | PEMSJCF070611_P-011 | 07/06/11 14:09:24 |
| ICSAB | 1G07001-IFB1 | PEMSJCF070611_P-012 | 07/06/11 14:10:50 |
| LLCCV | 1G07001-CRL2 | PEMSJCF070611_P-013 | 07/06/11 14:12:17 |
| CCV | 1G07001-CCV1 | PEMSJCF070611_P-014 | 07/06/11 14:13:44 |
| CCB | 1G07001-CCB1 | PEMSJCF070611_P-015 | 07/06/11 14:15:09 |
| CCV | 1G07001-CCV2 | PEMSJCF070611_P-026 | 07/06/11 14:45:58 |
| CCB | 1G07001-CCB2 | PEMSJCF070611_P-027 | 07/06/11 14:47:24 |
| LLCCV | 1G07001-CRL3 | PEMSJCF070611_P-032 | 07/06/11 14:54:34 |
| CCV | 1G07001-CCV3 | PEMSJCF070611_P-033 | 07/06/11 14:56:01 |
| CCB | 1G07001-CCB3 | PEMSJCF070611_P-034 | 07/06/11 14:57:26 |
| PBW | 1070509-BLK1 | PEMSJCF070611_P-035 | 07/06/11 15:34:43 |
| LCSW | 1070509-BS1 | PEMSJCF070611_P-036 | 07/06/11 15:36:09 |
| LCSWD | 1070509-BSD1 | PEMSJCF070611_P-037 | 07/06/11 15:37:35 |
| 7W13 | 1107004-01 | PEMSJCF070611_P-038 | 07/06/11 15:39:01 |
| 7W13L | 1G07001-SRD3 | PEMSJCF070611_P-039 | 07/06/11 15:40:27 |
| 7W13A | 1070509-PS1 | PEMSJCF070611_P-040 | 07/06/11 15:41:53 |
| 7DUP | 1107004-02 | PEMSJCF070611_P-041 | 07/06/11 15:43:19 |
| CCV | 1G07001-CCV4 | PEMSJCF070611_P-045 | 07/06/11 15:49:05 |
| CCB | 1G07001-CCB4 | PEMSJCF070611_P-046 | 07/06/11 15:50:31 |
| LLCCV | 1G07001-CRL4 | PEMSJCF070611_P-048 | 07/06/11 15:53:26 |
| CCV | 1G07001-CCV5 | PEMSJCF070611_P-049 | 07/06/11 15:54:54 |
| CCB | 1G07001-CCB5 | PEMSJCF070611_P-050 | 07/06/11 15:56:20 |

# ICP-MS Tune

*EPA 6020A*

Client: DRAPER SDG: 1107004

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Sequence: 1G07001 Date: 07/06/11 ICP-MS Instrument ID: PEMS

| Element - Mass | Avg. Measured Mass (amu) | Average Peak Width (amu) | %Height | %RSD |
|---|---|---|---|---|
| Be - 9 | 8.925 | 0.700 | 10 | 0.938 |
| Mg - 24 | 23.975 | 0.675 | 10 | 0.512 |
| Mg - 25 | 24.925 | 0.694 | 10 | 0.691 |
| Mg - 26 | 25.925 | 0.680 | 10 | 0.495 |
| Co - 59 | 58.925 | 0.689 | 10 | 0.555 |
| In - 113 | 112.925 | 0.733 | 10 | 0.517 |
| In - 115 | 114.925 | 0.691 | 10 | 0.658 |
| Pb - 206 | 206.025 | 0.698 | 10 | 0.556 |
| Pb - 207 | 206.975 | 0.663 | 10 | 0.685 |
| Pb - 208 | 207.975 | 0.670 | 10 | 0.274 |

Comments:

# ICPMS Internal Standards Relative Intensity Summary

*EPA 6020A*

Client: DRAPER

Work Order: 1107004

Sequence: 1G07001

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT E

Instrument: PEMS

| Sample No. | Time | Internal Standards %RI For: Lithium6 | Scandium45 | Indium115 | Terbium159 | Bismuth209 |
|---|---|---|---|---|---|---|
| S0 | 7/6/11 13:54 | 100 | 100 | 100 | 100 | 100 |
| S 6020-MS1 | 7/6/11 13:56 | 99 | 98 | 98 | 98 | 99 |
| S 6020-MS2 | 7/6/11 13:57 | 100 | 99 | 97 | 99 | 100 |
| S 6020-MS3 | 7/6/11 13:58 | 100 | 97 | 98 | 99 | 99 |
| S 6020-MS4 | 7/6/11 14:00 | 99 | 98 | 98 | 99 | 99 |
| S 6020-MS5 | 7/6/11 14:01 | 97 | 98 | 97 | 98 | 97 |
| LLICV | 7/6/11 14:05 | 99 | 97 | 97 | 98 | 98 |
| ICV | 7/6/11 14:06 | 96 | 97 | 96 | 98 | 97 |
| ICB | 7/6/11 14:07 | 99 | 98 | 98 | 98 | 99 |
| ICSA | 7/6/11 14:09 | 106 | 109 | 108 | 113 | 106 |
| ICSAB | 7/6/11 14:10 | 107 | 109 | 107 | 112 | 107 |
| LLCCV | 7/6/11 14:12 | 101 | 101 | 99 | 101 | 102 |
| CCV | 7/6/11 14:13 | 99 | 100 | 99 | 98 | 99 |
| CCB | 7/6/11 14:15 | 100 | 99 | 97 | 98 | 99 |
| CCV | 7/6/11 14:45 | 96 | 96 | 96 | 97 | 96 |
| CCB | 7/6/11 14:47 | 97 | 97 | 97 | 99 | 97 |
| LLCCV | 7/6/11 14:54 | 98 | 97 | 96 | 98 | 97 |
| CCV | 7/6/11 14:56 | 96 | 97 | 97 | 98 | 96 |
| CCB | 7/6/11 14:57 | 96 | 96 | 98 | 101 | 96 |
| PBW | 7/6/11 15:34 | 97 | 97 | 97 | 96 | 97 |
| LCSW | 7/6/11 15:36 | 95 | 94 | 95 | 95 | 95 |
| LCSWD | 7/6/11 15:37 | 95 | 95 | 96 | 95 | 94 |
| 7W13 | 7/6/11 15:39 | 98 | 99 | 98 | 100 | 98 |
| 7W13L | 7/6/11 15:40 | 97 | 94 | 93 | 93 | 96 |
| 7W13A | 7/6/11 15:41 | 96 | 94 | 95 | 95 | 95 |
| 7DUP | 7/6/11 15:43 | 94 | 94 | 92 | 93 | 92 |
| CCV | 7/6/11 15:49 | 100 | 96 | 97 | 98 | 98 |
| CCB | 7/6/11 15:50 | 100 | 97 | 96 | 95 | 98 |
| LLCCV | 7/6/11 15:53 | 101 | 95 | 96 | 95 | 98 |
| CCV | 7/6/11 15:54 | 98 | 95 | 96 | 96 | 95 |
| CCB | 7/6/11 15:56 | 98 | 95 | 95 | 95 | 96 |

# 3. Raw Data

For each reported value, the laboratory shall include in the data package all raw data used to obtain that value. This applies to all required QA/QC measurements, instrument standardization, as well as all sample analysis results. This does not apply to the quarterly verification of method and instrument parameters submitted as a part of each data package.

The order of the raw data in the data package shall be: ICP-AES, ICP-MS, mercury, and cyanide (if a target analyte).

Raw data shall be labeled with Client Identification numbers and appropriate codes in order to identify:

- calibration standards, including source and preparation date
- initial and continuing calibration blanks and preparation blanks
- initial and continuing calibration verification standards, interference check samples, serial dilution samples, LRS check standard, Laboratory Control Sample, and post digestion spike
- diluted and undiluted sample and all weights, dilutions, and volumes used to obtain the reported values
- duplicates
- spikes (indicating standard solutions used, final spike concentrations, and volumes involved).
- instrument used, any instrument adjustments, data corrections or other apparent anomalies on the measurement record, including all data voided or data not used and a brief written explanation
- time and date of each analysis (instrument run logs can be submitted if they contain this information)

**Daily Instrument Profile**

Detector Cross Cal: 0913/0
Analog Voltage: -1606
Pulse Voltage: +1000
Nebulizer Pressure: 0.85

**Maintenance:** NONE

Printed: 7/8/2011 9:09:54 AM

**Method(s)** (circle one): **ILM05.4** **SW-846** **6020** **Other** 602024

**Operator(s):** JF

**Date/Time** 070611/1354 **to** 070611/1556

**Tune Date/Time** 670611/1255

| | |
|---|---|
| ↑ | Specified element(s) fail(s) high |
| ↓ | Specified element(s) fail(s) low |
| RR | Re-run sample(s) neat |
| RR #X | Re-run at a #-fold dilution |
| #X | Sample run at a #-fold dilution (aliquot of sample diluted with acidified water) |
| L | Matrix = leachate |
| W | Matrix = water |
| S | Matrix = solid |
| B | Matrix = biological tissue |

| SDG | Matrix | Comments |
|---|---|---|
| | | |

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF070611**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 1 | 1G07001-TUN1 | Tune | CALIB STD | | 07/06/11 | 12:55:21 | | |
| 2 | 1G07001-CAL1 | S0 | CALIB STD | 1 | 07/06/11 | 13:54:38 | | |
| 3 | 1G07001-CAL2 | S 6020-MS1 | CALIB STD | 1 | 07/06/11 | 13:56:04 | | |
| 4 | 1G07001-CAL3 | S 6020-MS2 | CALIB STD | 1 | 07/06/11 | 13:57:30 | | |
| 5 | 1G07001-CAL4 | S 6020-MS3 | CALIB STD | 1 | 07/06/11 | 13:58:56 | | |
| 6 | 1G07001-CAL5 | S 6020-MS4 | CALIB STD | 1 | 07/06/11 | 14:00:21 | | |
| 7 | 1G07001-CAL6 | S 6020-MS5 | CALIB STD | 1 | 07/06/11 | 14:01:47 | | |
| 8 | 1G07001-CRL1 | LLICV | ICV | 1 | 07/06/11 | 14:05:05 | | |
| 9 | 1G07001-ICV1 | ICV | ICV | 1 | 07/06/11 | 14:06:32 | | |
| 10 | 1G07001-ICB1 | ICB | ICB | 1 | 07/06/11 | 14:07:58 | | |
| 11 | 1G07001-IFA1 | ICSA | ICS | 1 | 07/06/11 | 14:09:24 | | |
| 12 | 1G07001-IFB1 | ICSAB | ICS | 1 | 07/06/11 | 14:10:50 | | |
| 13 | 1G07001-CRL2 | LLCCV | CCV | 1 | 07/06/11 | 14:12:17 | | |
| 14 | 1G07001-CCV1 | CCV | CCV | 1 | 07/06/11 | 14:13:44 | | |
| 15 | 1G07001-CCB1 | CCB | CCB | 1 | 07/06/11 | 14:15:09 | | |
| 16 | 1062835-BLK1 | 1062835-BLK1 | SAMPLE | 1 | 07/06/11 | 14:31:40 | | |
| 17 | 1062835-BS1 | 1062835-BS1 | SAMPLE | 1 | 07/06/11 | 14:33:06 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: JF Date: 7.8.11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF070611**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 18 | 1062835-BSD1 | 1062835-BSD1 | SAMPLE | 1 | 07/06/11 | 14:34:31 | | |
| 19 | 1106103-01 | 1106103-01 | SAMPLE | 1 | 07/06/11 | 14:35:57 | | |
| 20 | 1G07001-SRD1 | SEEP1L | CALIB STD | 5 | 07/06/11 | 14:37:22 | | |
| 21 | 1062835-PS1 | 1062835-PS1 | SAMPLE | 1 | 07/06/11 | 14:38:48 | | |
| 22 | 1106103-02 | 1106103-02 | SAMPLE | 1 | 07/06/11 | 14:40:14 | | |
| 23 | 1062837-BLK1 | 1062837-BLK1 | SAMPLE | 1 | 07/06/11 | 14:41:39 | | |
| 24 | 1062837-BS1 | 1062837-BS1 | SAMPLE | 1 | 07/06/11 | 14:43:05 | | |
| 25 | 1062837-BSD1 | 1062837-BSD1 | SAMPLE | 1 | 07/06/11 | 14:44:31 | | |
| 26 | 1G07001-CCV2 | CCV | CCV | 1 | 07/06/11 | 14:45:58 | | |
| 27 | 1G07001-CCB2 | CCB | CCB | 1 | 07/06/11 | 14:47:24 | | |
| 28 | 1106104-01 | 1106104-01 | SAMPLE | 1 | 07/06/11 | 14:48:51 | | |
| 29 | 1G07001-SRD2 | SEEP1L | CALIB STD | 5 | 07/06/11 | 14:50:17 | | |
| 30 | 1062837-PS1 | 1062837-PS1 | SAMPLE | 1 | 07/06/11 | 14:51:42 | | |
| 31 | 1106104-02 | 1106104-02 | SAMPLE | 1 | 07/06/11 | 14:53:08 | | |
| 32 | 1G07001-CRL3 | LLCCV | CCV | 1 | 07/06/11 | 14:54:34 | | |
| 33 | 1G07001-CCV3 | CCV | CCV | 1 | 07/06/11 | 14:56:01 | | |
| 34 | 1G07001-CCB3 | CCB | CCB | 1 | 07/06/11 | 14:57:26 | | |
| 35 | 1070509-BLK1 | 1070509-BLK1 | SAMPLE | 1 | 07/06/11 | 15:34:43 | | |
| 36 | 1070509-BS1 | 1070509-BS1 | SAMPLE | 1 | 07/06/11 | 15:36:09 | | |
| 37 | 1070509-BSD1 | 1070509-BSD1 | SAMPLE | 1 | 07/06/11 | 15:37:35 | | |
| 38 | 1107004-01 | 1107004-01 | SAMPLE | 1 | 07/06/11 | 15:39:01 | | |
| 39 | 1G07001-SRD3 | 7W13L | CALIB STD | 5 | 07/06/11 | 15:40:27 | | |
| 40 | 1070509-PS1 | 1070509-PS1 | SAMPLE | 1 | 07/06/11 | 15:41:53 | | |
| 41 | 1107004-02 | 1107004-02 | SAMPLE | 1 | 07/06/11 | 15:43:19 | | |
| 42 | 1107005-01 | 1107005-01 | SAMPLE | 1 | 07/06/11 | 15:44:45 | | |
| 43 | 1G07001-SRD4 | 5WC21L | CALIB STD | 5 | 07/06/11 | 15:46:11 | | |
| 44 | 1070509-PS2 | 1070509-PS2 | SAMPLE | 1 | 07/06/11 | 15:47:37 | | |
| 45 | 1G07001-CCV4 | CCV | CCV | 1 | 07/06/11 | 15:49:05 | | |
| 46 | 1G07001-CCB4 | CCB | CCB | 1 | 07/06/11 | 15:50:31 | | |
| 47 | 1107005-02 | 1107005-02 | SAMPLE | 1 | 07/06/11 | 15:51:59 | | |
| 48 | 1G07001-CRL4 | LLCCV | CCV | 1 | 07/06/11 | 15:53:26 | | |
| 49 | 1G07001-CCV5 | CCV | CCV | 1 | 07/06/11 | 15:54:54 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: _____ Date: 7.8.11

**ICP-MS Run Log: PEM**

**File Name: PEMSJCF070611**

| Seq | Sample ID | Client ID | Sample Type | DF | Date | Time | SDG | Action Needed |
|---|---|---|---|---|---|---|---|---|
| 50 | 1G07001-CCB5 | CCB | CCB | 1 | 07/06/11 | 15:56:20 | | |

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Reviewed By: _____ Date: 7.8.11

## Standards/QC Preparation for ICP-MS (PEMS) 1 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

STANDARDS and REAGENTS TRACEABILITY Seq. File Name: PEMSJ4 070611

| STANDARD / REAGENT | Reference # * | Manufacturer | Lot # | Expiration Date |
|---|---|---|---|---|
| Nitric Acid (HNO3) | HNO3-052111-JRR | JT Baker | J45042 | 11/11 |
| Hydrochloric Acid (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| ICP-MS-TS-3 ( Pre Tune Soln) | 0I15015 | High Purity | 1006907 | 09/13/11 |
| Q-6042-M (CAL Standard) | 0B18009 | NSI | 020310 | 02/28/12 |
| ICV-1 (0307) multi-element solution | 0C27004 | EPA | 0307 | 03/27/13 |
| SM-770-032 (CP-MS-CRQL-Rev multi-element solution) | 0J19006 | High Purity | 1028534 | 10/13/11 |
| ICSA (0803) multi-element solution | 0E20022 | EPA | 0803 | 05/20/15 |
| ICSAB (0803) multi-element solution | 0E20021 | EPA | 0803 | 05/20/15 |
| LITHIUM$^{6}$ ($Li^{6}$) 1000 mg/L single element standard | 0B16007 | High Purity | 0912001 | 07/20/11 |
| SCANDIUM (Sc) 1,000 mg/L single element standard | 0F14006 | High Purity | 0922308 | 12/09/11 |
| INDIUM (In) 1,000 mg/L single element standard | 0F14004 | High Purity | 1008216 | 12/09/11 |
| TERBIUM (Tb) 1,000 mg/L single element standard | 0F14005 | High Purity | 1011601 | 12/09/11 |
| BISMUTH (Bi) 1,000 mg/L single element standard | 0B16008 | High Purity | 1000418 | 07/20/11 |
| Water Spike Sample D ICP-MS Matrix Spike multi-element solution | 0I16003 | High Purity | 1034815 | 12/14/11 |

*Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

## Multi-Element Stock Standard Concentrations:

| Stock Standard | Analyte Concentrations (ug/mL) |
|---|---|
| Pre Tune Solution | Be: 10 Mg: 10 Co: 10 In: 10 Pb: 10 |
| CAL standard | Al: 1000 Sb: 100 As: 100 Ba: 100 Be: 100 B: 100 Cd: 100 Ca: 1000 Cr: 100 Co: 100 Cu: 100 Fe: 1000 Pb: 100 Mg: 1000 Mn: 100 Mo: 100 Ni: 100 K: 1000 Se: 100 Si: 100 Ag: 100 Na: 1000 Tl: 100 Ti: 100 V: 100 Zn: 100 Sn: 100 Sr: 100 |
| CP-MS-CRQL-Rev multi-element solution | Be: 1 V: 5 Cr: 2 Mn: 1 Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Ag: 1 Cd: 1 Sb: 2 Ba: 10 Tl: 1 Pb: 1 Al: 30 Sn: 1 Mo: 1 |

Entered By: _____

Reviewed By: _____ Date: 7/8/11

# Standards/QC Preparation for ICP-MS (PEMS) 2 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| Instrument Tune Solution– 06 23 11- JCF | Place in a 500-mLvolumetric flask:<br>0.5 mL of PRE-Tuning solution and 5 mL distilled nitric acid. Dilute to volume with deionized water | $Li^7$: 10 Be: 10 Mg: 10 Co: 10 In: 10 Ce: 10 Pb: 10 U: 10 |
| Internal Standard– 05 26 11 – JCF | Place in a 100-mLvolumetric flask:<br>50 mL of deionized water , 1.0 mL of distilled nitric acid.<br>Pipet: 2.0 mL of $Lithium^6$, 1.0 mL of Scandium, 1.0 mL of Indium, 1.0 mL of Terbium, and 1.0 mL of Bismuth.<br>Dilute to volume with deionized water | $Li^6$: 20000 Sc: 10000 In: 10000 Tb: 10000 Bi: 10000 |
| S0/ICB/CCB– 07 06 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1mL Internal Standard. Dilute to volume with deionized water. Prepare Daily. | $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| S 6020-MS1/LLICV/LLCCV– 07 06 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 1 Al: 30 Sc: 100 V: 5 Cr: 2 Mn: 1 Co: 1 Ni: 1 Cu: 2 Zn: 2 As: 1 Se: 5 Mo: 1 Ag: 1 Cd: 1 In: 100 Sn: 1 Sb: 2 Ba: 10 Tb: 100 Tl: 1 Pb: 1 Bi: 100 |
| S 6020-MS2 –07 06 11 – JCF | Place in a 100-mL volumetric flask:<br>Pipet 1.0 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.200 mL of CP-MS-CRQL, into flask. Dilute to volume with deionized water. | $Li^6$: 200 Be: 2 Al: 60 Sc: 100 V: 10 Cr: 4 Mn: 2 Co: 2 Ni: 2 Cu: 4 Zn: 4 As: 2 Se: 10 Mo: 2 Ag: 2 Cd: 2 In: 100 Sn: 2 Sb: 4 Ba: 20 Tb: 100 Tl: 2 Pb: 2 Bi: 100 |
| S 6020-MS3–07 06 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.125 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 125 Al: 1250 Sc: 100 V: 125 Cr: 125 Mn: 125 Co: 125 Ni: 125 Cu: 125 Zn: 125 As: 125 Se: 125 Mo: 125 Ag: 125 Cd: 125 In: 100 Sn: 125 Sb: 125 Ba: 125 Tb: 100 Tl: 125 Pb: 125<br>Bi: 100 Al: 1250 Ca: 1250 Na: 1250 Mg: 1250 Fe: 1250 K: 1250 |
| S 6020-MS4–07 06 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.250 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 250 Al: 2500 Sc: 100 V: 250 Cr: 250 Mn: 250 Co: 250 Ni: 250 Cu: 250 Zn: 250 As: 250 Se: 250 Mo: 250 Ag: 250 Cd: 250 In: 100 Sn: 250 Sb: 250 Ba: 250 Tb: 100 Tl: 250 Pb: 250<br>Bi: 100 Al: 2500 Ca: 2500 Na: 2500 Mg: 2500 Fe: 2500 K: 2500 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: JC2

Entered By: JC2 Date: 07061

Reviewed By: [illegible] Date: 7/8/11

# Standards/QC Preparation for ICP-MS (PEMS) 3 of 3 CompuChem a division of Liberty Analytical Corp. WORKSHEET 1 AA(1)

| Standard Lot Number * | Preparation Instructions | Resultant Analyte Conc. (µg/L) |
|---|---|---|
| S 6020-MS5–07 06 11 – JCF | Place in a 100-mL volumetric flask:<br>1 mL distilled nitric acid and 1 mL Internal Standard. Pipet 0.50 mL of CAL Standard into flask. Dilute to volume with deionized water | $Li^6$: 200 Be: 500 Al: 5000 Sc: 100 V: 500 Cr: 500 Mn: 500 Co: 500 Ni: 500 Cu: 500 Zn: 500 As: 500 Se: 500 Mo: 500 Ag: 500 Cd: 500 In: 100 Sn: 500 Sb: 500 Ba: 500 Tb: 100 Tl: 500 Pb: 500 Bi: 100 Al: 5000 Ca: 5000 Na: 5000 Mg: 5000 Fe: 5000 K: 5000 |
| ICV– 07 06 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 4.0 ml of ICV (0307) multi-element solution, 2.2 mL of 10 µg/mL Molybdenum and 2.2 mL of 10 µg/mL Tin into flask.<br>Dilute to volume with deionized water. (Note: Tin must be from a source different than that used for the calibration standards) | Al: 504 Sb: 199 As: 200 Ba: 99 Be: 99 Ca: 2005 Cr: 98 Co: 100 Cu: 98 Fe: 1016 Pb: 200 Mg: 1215 Mn: 100 Ni: 101 K: 2004 Se: 206 Ag: 100 Na: 2019 Tl: 206 V: 100 Zn: 205 Cd: 99 $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 Mo: 110 Sn: 110 |
| ICSA– 07 06 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) into flask.<br>Dilute to volume with deionized water. | Al: 100000 Sb: 1.5 As 0.1 Ba: 1.2 Be: 0 Cd: 0.7 Ca: 100000 C: 200000 Cl: 1000000 Cr: 21 Co: 1 Cu: 8 Fe: 10000 Pb: 4 Mg: 100000 Mn: 7 Mo: 2000 Ni: 6 P: 100000 K: 10000 Se: 0.3 Ag: 0 Na: 100000 S: 100000 Tl: 0 Ti: 2000 V: 0.5 Zn: 11, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| ICSAB– 07 06 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid and 2 mL Internal Standard. Pipet 20.0 mL of ICS Part A (0803) and 20.0 mL of ICS Part B (0803) and 0.400 mL of 10 µg/mL Tin into flask. Dilute to volume with deionized water. | Al: 100000 Sb: 22 As 19 Ba: 22 Be: 19 Cd: 20 Ca: 100000 C: 200000 Cl: 1000000 Cr: 40 Co: 20 Cu: 25 Fe: 10000 Pb: 25 Mg: 100000 Mn: 27 Mo: 2000 Ni: 24 P: 100000 K: 10000 Se: 19 Ag: 18 Na: 100000 S: 100000 Tl: 21 Ti: 2000 V: 19 Zn: 29, $Li^6$: 200 Sc: 100 In: 100 Tb: 100 Bi: 100 |
| CCV– 07 06 11 – JCF | Place in a 200-mL volumetric flask:<br>2 mL distilled nitric acid, and 2 mL Internal Standard. Pipet 0.600 mL of CAL Standard.<br>Dilute to volume with deionized water. | $Li^6$: 200 Be: 300 Sc: 100 V: 300 Cr: 300 Mn: 300 Co: 300 Ni: 300 Cu: 300 Zn: 300 As: 300 Se: 300 Mo: 300 Ag: 300 Cd: 300 In: 100 Sn: 300 Sb: 300 Ba: 300 Tb: 100 Tl: 300 Pb: 300 Bi: 100 Al: 3000 Na: 3000 Ca: 3000 K:3000 Mg: 3000 Fe: 3000 |

*Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

Standard Solutions Prepared By: JCF

Entered By: JCF Date: 070611

Reviewed By: CL Date: 7/8/11

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

# 6020A TUNING REPORT SUMMARY

## Sample ID: TUNE

Sample Date/Time: Wednesday, July 06, 2011 12:55:21
Sample Description: 100 PPB TUNING SOLN @ 10% PEAK HEIGHT
Number of Replicates: 5
Sample File: C:\Elandata1\Sample\021311.sam
Method File: C:\Elandata1\Method\6020\6020ATUNE.mth
Dataset File: C:\Elandata\Dataset\Default\TUNE.3289

## Tuning File

| Analyte | Exact Mass | Measured Mass | Measured Peak Width |
|---|---|---|---|
| Be | 9.012 | 8.925 | 0.700 |
| Mg | 23.985 | 23.975 | 0.675 |
| Mg | 24.986 | 24.925 | 0.694 |
| Mg | 25.983 | 25.925 | 0.680 |
| Co | 58.933 | 58.925 | 0.689 |
| In | 112.904 | 112.925 | 0.733 |
| In | 114.904 | 114.925 | 0.691 |
| Pb | 205.975 | 206.025 | 0.698 |
| Pb | 206.976 | 206.975 | 0.663 |
| Pb | 207.977 | 207.975 | 0.670 |

*Concentration Results*

| Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|---|
| Be | 9 | 10245.766 | 0.938 |
| Mg | 24 | 95775.269 | 0.512 |
| Mg | 25 | 14206.484 | 0.691 |
| Mg | 26 | 16808.074 | 0.495 |
| Co | 59 | 268373.950 | 0.555 |
| In | 113 | 25060.168 | 0.517 |
| In | 115 | 575471.617 | 0.658 |
| Pb | 206 | 133473.069 | 0.556 |
| Pb | 207 | 110292.428 | 0.685 |
| Pb | 208 | 270350.387 | 0.274 |

## RAW DATA

Replicate 1

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 10408.814 |
| Mg | 24 | 96374.778 |
| Mg | 25 | 14269.373 |
| Mg | 26 | 16918.299 |
| Co | 59 | 269929.379 |
| In | 113 | 25242.839 |
| In | 115 | 579472.476 |
| Pb | 206 | 133793.690 |

| | | |
|---|---|---|
| Pb | 207 | 110354.565 |
| Pb | 208 | 270370.253 |

Replicate 2

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 10249.650 |
| Mg | 24 | 95442.298 |
| Mg | 25 | 14304.824 |
| Mg | 26 | 16823.740 |
| Co | 59 | 266470.239 |
| In | 113 | 25006.924 |
| In | 115 | 572954.578 |
| Pb | 206 | 134196.433 |
| Pb | 207 | 111442.733 |
| Pb | 208 | 270848.126 |

Replicate 3

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 10192.792 |
| Mg | 24 | 96025.441 |
| Mg | 25 | 14238.930 |
| Mg | 26 | 16820.134 |
| Co | 59 | 268878.223 |
| In | 113 | 25129.583 |
| In | 115 | 576249.870 |
| Pb | 206 | 134024.551 |
| Pb | 207 | 110397.030 |
| Pb | 208 | 270507.901 |

Replicate 4

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 10165.765 |
| Mg | 24 | 95900.854 |
| Mg | 25 | 14160.218 |
| Mg | 26 | 16792.287 |
| Co | 59 | 269428.130 |
| In | 113 | 24903.972 |
| In | 115 | 578333.697 |
| Pb | 206 | 132711.816 |
| Pb | 207 | 109835.295 |
| Pb | 208 | 270931.952 |

Replicate 5

| Analyte | Mass | Meas. Intensity |
|---|---|---|
| Be | 9 | 10211.811 |
| Mg | 24 | 95132.972 |
| Mg | 25 | 14059.076 |
| Mg | 26 | 16685.909 |
| Co | 59 | 267163.780 |
| In | 113 | 25017.522 |
| In | 115 | 570347.462 |
| Pb | 206 | 132638.858 |
| Pb | 207 | 109432.515 |
| Pb | 208 | 269093.704 |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S0

Sample Date/Time: Wednesday, July 06, 2011 13:54:38
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S0.392

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212646.155 | 1.560 | | | | ppb |
| ⌊ | Be | 9 | 4.667 | 89.214 | | | | ppb |
| ⌈> | Sc | 45 | 838812.075 | 0.765 | | | | ppb |
| \| | V | 51 | 863.476 | 21.035 | | | | ppb |
| \| | Cr | 52 | 2519.651 | 1.501 | | | | ppb |
| \| | Mn | 55 | 343.339 | 18.782 | | | | ppb |
| \| | Co | 59 | 60.000 | 11.547 | | | | ppb |
| \| | Ni | 60 | 30.000 | 61.864 | | | | ppb |
| \| | Cu | 63 | 207.780 | 18.455 | | | | ppb |
| \| | Cu | 65 | 82.223 | 9.362 | | | | ppb |
| \| | Zn | 66 | 74.445 | 15.725 | | | | ppb |
| \| | As | 75 | -9.301 | 427.309 | | | | ppb |
| ⌊ | Se | 82 | 32.889 | 9.999 | | | | ppb |
| ⌈ | Ag | 107 | 18.889 | 36.735 | | | | ppb |
| \| | Ag | 109 | 11.111 | 121.244 | | | | ppb |
| \| | Cd | 111 | 2.575 | 500.495 | | | | ppb |
| \| | In | 113 | 73633.471 | 1.444 | | | | ppb |
| ⌊> | In | 115 | 1690028.507 | 1.696 | | | | ppb |
| ⌈ | Sb | 121 | 100.001 | 13.229 | | | | ppb |
| \| | Ba | 135 | 8.667 | 26.647 | | | | ppb |
| \| | Ba | 137 | 26.000 | 15.385 | | | | ppb |
| ⌊> | Tb | 159 | 2074282.690 | 0.630 | | | | ppb |
| ⌈ | Tl | 205 | 58.334 | 38.651 | | | | ppb |
| \| | Pb | 206 | 30.000 | 72.648 | | | | ppb |
| \| | Pb | 207 | 51.667 | 55.873 | | | | ppb |
| \| | Pb | 208 | 66.667 | 35.444 | | | | ppb |
| ⌊> | Bi | 209 | 1275622.736 | 1.236 | | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 216451.481 | | ppb |
| ⌊ | Be | 9 | 6.000 | | ppb |
| ⌈> | Sc | 45 | 841273.641 | | ppb |
| \| | V | 51 | 1062.554 | | ppb |
| \| | Cr | 52 | 2562.328 | | ppb |
| \| | Mn | 55 | 415.009 | | ppb |
| \| | Co | 59 | 52.000 | | ppb |
| \| | Ni | 60 | 26.667 | | ppb |
| \| | Cu | 63 | 170.001 | | ppb |
| \| | Cu | 65 | 73.334 | | ppb |
| \| | Zn | 66 | 86.667 | | ppb |
| \| | As | 75 | 29.117 | | ppb |
| ⌊ | Se | 82 | 36.667 | | ppb |
| ⌈ | Ag | 107 | 13.333 | | ppb |
| \| | Ag | 109 | 3.333 | | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 15.000 | | ppb |
| | In | 113 | 73841.626 | | ppb |
| > | In | 115 | 1714288.116 | | ppb |
| | Sb | 121 | 85.000 | | ppb |
| | Ba | 135 | 10.000 | | ppb |
| | Ba | 137 | 30.000 | | ppb |
| > | Tb | 159 | 2065862.030 | | ppb |
| | Tl | 205 | 80.000 | | ppb |
| | Pb | 206 | 20.000 | | ppb |
| | Pb | 207 | 35.000 | | ppb |
| | Pb | 208 | 40.000 | | ppb |
| > | Bi | 209 | 1261435.662 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211123.374 | | ppb |
| | Be | 9 | 0.000 | | ppb |
| > | Sc | 45 | 831526.849 | | ppb |
| | V | 51 | 706.799 | | ppb |
| | Cr | 52 | 2490.310 | | ppb |
| | Mn | 55 | 325.005 | | ppb |
| | Co | 59 | 64.000 | | ppb |
| | Ni | 60 | 50.000 | | ppb |
| | Cu | 63 | 246.670 | | ppb |
| | Cu | 65 | 86.667 | | ppb |
| | Zn | 66 | 73.334 | | ppb |
| | As | 75 | -50.254 | | ppb |
| | Se | 82 | 31.333 | | ppb |
| | Ag | 107 | 16.667 | | ppb |
| | Ag | 109 | 3.333 | | ppb |
| | Cd | 111 | 3.455 | | ppb |
| | In | 113 | 74577.054 | | ppb |
| > | In | 115 | 1697397.899 | | ppb |
| | Sb | 121 | 105.001 | | ppb |
| | Ba | 135 | 10.000 | | ppb |
| | Ba | 137 | 22.000 | | ppb |
| > | Tb | 159 | 2067658.180 | | ppb |
| | Tl | 205 | 60.000 | | ppb |
| | Pb | 206 | 15.000 | | ppb |
| | Pb | 207 | 35.000 | | ppb |
| | Pb | 208 | 85.000 | | ppb |
| > | Bi | 209 | 1272844.708 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210363.612 | | ppb |
| | Be | 9 | 8.000 | | ppb |
| > | Sc | 45 | 843635.735 | | ppb |
| | V | 51 | 821.074 | | ppb |
| | Cr | 52 | 2506.314 | | ppb |
| | Mn | 55 | 290.004 | | ppb |
| | Co | 59 | 64.000 | | ppb |
| | Ni | 60 | 13.333 | | ppb |
| | Cu | 63 | 206.669 | | ppb |
| | Cu | 65 | 86.667 | | ppb |
| | Zn | 66 | 63.334 | | ppb |
| | As | 75 | -6.767 | | ppb |
| | Se | 82 | 30.667 | | ppb |
| | Ag | 107 | 26.667 | | ppb |
| | Ag | 109 | 26.667 | | ppb |
| | Cd | 111 | -10.730 | | ppb |
| | In | 113 | 72481.732 | | ppb |
| > | In | 115 | 1658399.506 | | ppb |
| | Sb | 121 | 110.001 | | ppb |

| | | | | |
|---|---|---|---|---|
| ⎢ | Ba | 135 | 6.000 | ppb |
| ⎢ | Ba | 137 | 26.000 | ppb |
| ⎣> | Tb | 159 | 2089327.859 | ppb |
| ⎡ | Tl | 205 | 35.000 | ppb |
| ⎢ | Pb | 206 | 55.000 | ppb |
| ⎢ | Pb | 207 | 85.000 | ppb |
| ⎢ | Pb | 208 | 75.000 | ppb |
| ⎣> | Bi | 209 | 1292587.837 | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⎡> | Li | 6 | | | | | |
| ⎣ | Be | 9 | | | | | |
| ⎡> | Sc | 45 | | | | | |
| ⎢ | V | 51 | | | | | |
| ⎢ | Cr | 52 | | | | | |
| ⎢ | Mn | 55 | | | | | |
| ⎢ | Co | 59 | | | | | |
| ⎢ | Ni | 60 | | | | | |
| ⎢ | Cu | 63 | | | | | |
| ⎢ | Cu | 65 | | | | | |
| ⎢ | Zn | 66 | | | | | |
| ⎢ | As | 75 | | | | | |
| ⎣ | Se | 82 | | | | | |
| ⎡ | Ag | 107 | | | | | |
| ⎢ | Ag | 109 | | | | | |
| ⎢ | Cd | 111 | | | | | |
| ⎢ | In | 113 | | | | | |
| ⎣> | In | 115 | | | | | |
| ⎡ | Sb | 121 | | | | | |
| ⎢ | Ba | 135 | | | | | |
| ⎢ | Ba | 137 | | | | | |
| ⎣> | Tb | 159 | | | | | |
| ⎡ | Tl | 205 | | | | | |
| ⎢ | Pb | 206 | | | | | |
| ⎢ | Pb | 207 | | | | | |
| ⎢ | Pb | 208 | | | | | |
| ⎣> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS1

Sample Date/Time: Wednesday, July 06, 2011 13:56:04
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S 6020-MS1.393

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209766.069 | 1.020 | 209766.069 | | | ppb |
| ⌊ | Be | 9 | 133.334 | 25.115 | 0.001 | 1.00000 | 27.16 | ppb |
| ⌈> | Sc | 45 | 821240.555 | 1.040 | 821240.555 | | | ppb |
| \| | V | 51 | 15319.557 | 2.488 | 0.018 | 5.00000 | 2.70 | ppb |
| \| | Cr | 52 | 7326.017 | 2.186 | 0.006 | 2.00000 | 4.72 | ppb |
| \| | Mn | 55 | 3950.781 | 2.635 | 0.004 | 1.00000 | 3.33 | ppb |
| \| | Co | 59 | 3125.822 | 0.037 | 0.004 | 1.00000 | 1.05 | ppb |
| \| | Ni | 60 | 726.693 | 11.997 | 0.001 | 1.00000 | 12.75 | ppb |
| \| | Cu | 63 | 3489.498 | 1.481 | 0.004 | 2.00000 | 2.12 | ppb |
| \| | Cu | 65 | 1721.259 | 2.311 | 0.002 | 2.00000 | 1.34 | ppb |
| \| | Zn | 66 | 998.939 | 2.718 | 0.001 | 2.00000 | 1.81 | ppb |
| \| | As | 75 | 584.770 | 7.711 | 0.001 | 1.00000 | 8.54 | ppb |
| ⌊ | Se | 82 | 270.004 | 5.593 | 0.000 | 5.00000 | 7.49 | ppb |
| ⌈ | Ag | 107 | 2426.961 | 0.991 | 0.001 | 1.00000 | 0.60 | ppb |
| \| | Ag | 109 | 2354.722 | 0.910 | 0.001 | 1.00000 | 1.30 | ppb |
| \| | Cd | 111 | 601.084 | 12.258 | 0.000 | 1.00000 | 12.66 | ppb |
| \| | In | 113 | 72234.971 | 0.940 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1664459.959 | 0.409 | 1664459.959 | | | ppb |
| ⌈ | Sb | 121 | 4531.026 | 1.409 | 0.002 | 2.00000 | 2.75 | ppb |
| \| | Ba | 135 | 4466.331 | 2.205 | 0.002 | 10.00000 | 3.72 | ppb |
| \| | Ba | 137 | 7608.894 | 0.775 | 0.004 | 10.00000 | 1.24 | ppb |
| ⌊> | Tb | 159 | 2030429.675 | 1.493 | 2030429.675 | | | ppb |
| ⌈ | Tl | 205 | 4647.748 | 4.265 | 0.004 | 1.00000 | 3.96 | ppb |
| \| | Pb | 206 | 1480.110 | 5.582 | 0.001 | 1.00000 | 5.48 | ppb |
| \| | Pb | 207 | 2745.190 | 3.720 | 0.002 | 1.00000 | 4.01 | ppb |
| \| | Pb | 208 | 4450.589 | 2.082 | 0.003 | 1.00000 | 1.79 | ppb |
| ⌊> | Bi | 209 | 1261265.402 | 0.478 | 1261265.402 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211384.810 | | ppb |
| ⌊ | Be | 9 | 114.001 | 0.841501 | ppb |
| ⌈> | Sc | 45 | 814426.896 | | ppb |
| \| | V | 51 | 15584.334 | 5.136262 | ppb |
| \| | Cr | 52 | 7502.814 | 2.097960 | ppb |
| \| | Mn | 55 | 3885.755 | 0.990881 | ppb |
| \| | Co | 59 | 3126.489 | 1.008673 | ppb |
| \| | Ni | 60 | 666.689 | 0.921748 | ppb |
| \| | Cu | 63 | 3540.627 | 2.048941 | ppb |
| \| | Cu | 65 | 1693.477 | 1.983585 | ppb |
| \| | Zn | 66 | 980.048 | 1.977154 | ppb |
| \| | As | 75 | 611.322 | 1.052709 | ppb |
| ⌊ | Se | 82 | 284.004 | 5.341581 | ppb |
| ⌈ | Ag | 107 | 2400.288 | 0.993093 | ppb |
| \| | Ag | 109 | 2370.281 | 1.010818 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 651.759 | 1.088857 | ppb |
| | In | 113 | 72038.546 | | ppb |
| > | In | 115 | 1657552.542 | | ppb |
| | Sb | 121 | 4546.033 | 1.986357 | ppb |
| | Ba | 135 | 4422.978 | 9.802833 | ppb |
| | Ba | 137 | 7676.946 | 9.990402 | ppb |
| > | Tb | 159 | 2050334.025 | | ppb |
| | Tl | 205 | 4440.986 | 0.957228 | ppb |
| | Pb | 206 | 1385.096 | 0.936722 | ppb |
| | Pb | 207 | 2665.178 | 0.972478 | ppb |
| | Pb | 208 | 4485.596 | 1.010332 | ppb |
| > | Bi | 209 | 1258418.666 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207339.427 | | ppb |
| | Be | 9 | 172.001 | 1.313620 | ppb |
| > | Sc | 45 | 830827.124 | | ppb |
| | V | 51 | 15491.629 | 4.997456 | ppb |
| | Cr | 52 | 7190.584 | 1.909520 | ppb |
| | Mn | 55 | 3895.759 | 0.972221 | ppb |
| | Co | 59 | 3126.489 | 0.988384 | ppb |
| | Ni | 60 | 686.690 | 0.931068 | ppb |
| | Cu | 63 | 3490.609 | 1.975964 | ppb |
| | Cu | 65 | 1766.823 | 2.030874 | ppb |
| | Zn | 66 | 1030.053 | 2.041781 | ppb |
| | As | 75 | 532.706 | 0.901457 | ppb |
| | Se | 82 | 254.003 | 4.599592 | ppb |
| | Ag | 107 | 2433.629 | 1.002666 | ppb |
| | Ag | 109 | 2363.613 | 1.003641 | ppb |
| | Cd | 111 | 634.934 | 1.056096 | ppb |
| | In | 113 | 72990.411 | | ppb |
| > | In | 115 | 1664655.192 | | ppb |
| | Sb | 121 | 4586.051 | 2.060470 | ppb |
| | Ba | 135 | 4579.048 | 10.428586 | ppb |
| | Ba | 137 | 7574.868 | 10.128667 | ppb |
| > | Tb | 159 | 1995545.902 | | ppb |
| | Tl | 205 | 4666.088 | 1.007383 | ppb |
| | Pb | 206 | 1520.116 | 1.031057 | ppb |
| | Pb | 207 | 2860.205 | 1.046070 | ppb |
| | Pb | 208 | 4345.541 | 0.979290 | ppb |
| > | Bi | 209 | 1257187.254 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210573.970 | | ppb |
| | Be | 9 | 114.001 | 0.844879 | ppb |
| > | Sc | 45 | 818467.646 | | ppb |
| | V | 51 | 14882.708 | 4.866282 | ppb |
| | Cr | 52 | 7284.652 | 1.992520 | ppb |
| | Mn | 55 | 4070.828 | 1.036898 | ppb |
| | Co | 59 | 3124.488 | 1.002944 | ppb |
| | Ni | 60 | 826.701 | 1.147184 | ppb |
| | Cu | 63 | 3437.257 | 1.975094 | ppb |
| | Cu | 65 | 1703.478 | 1.985541 | ppb |
| | Zn | 66 | 986.715 | 1.981065 | ppb |
| | As | 75 | 610.283 | 1.045834 | ppb |
| | Se | 82 | 272.004 | 5.058828 | ppb |
| | Ag | 107 | 2446.966 | 1.004241 | ppb |
| | Ag | 109 | 2330.271 | 0.985541 | ppb |
| | Cd | 111 | 516.559 | 0.855047 | ppb |
| | In | 113 | 71675.955 | | ppb |
| > | In | 115 | 1671172.145 | | ppb |
| | Sb | 121 | 4460.995 | 1.953172 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 4396.966 | 9.768581 | ppb |
| | Ba | 137 | 7574.868 | 9.880931 | ppb |
| \> | Tb | 159 | 2045409.098 | | ppb |
| ⌈ | Tl | 205 | 4836.169 | 1.035389 | ppb |
| | Pb | 206 | 1535.118 | 1.032221 | ppb |
| | Pb | 207 | 2710.187 | 0.981453 | ppb |
| | Pb | 208 | 4520.629 | 1.010378 | ppb |
| \> | Bi | 209 | 1268190.284 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS2

Sample Date/Time: Wednesday, July 06, 2011 13:57:30
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S 6020-MS2.394

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 213590.841 | 1.948 | 213590.841 | | | ppb |
| ⌊ | Be | 9 | 214.669 | 4.403 | 0.001 | 1.90459 | 4.83 | ppb |
| ⌈> | Sc | 45 | 827944.081 | 0.989 | 827944.081 | | | ppb |
| \| | V | 51 | 28712.542 | 0.503 | 0.034 | 9.90593 | 1.53 | ppb |
| \| | Cr | 52 | 11979.842 | 2.755 | 0.011 | 3.97436 | 4.08 | ppb |
| \| | Mn | 55 | 7531.168 | 0.384 | 0.009 | 1.99464 | 0.68 | ppb |
| \| | Co | 59 | 6179.243 | 3.519 | 0.007 | 1.99580 | 3.57 | ppb |
| \| | Ni | 60 | 1403.432 | 6.840 | 0.002 | 1.99047 | 6.27 | ppb |
| \| | Cu | 63 | 6902.381 | 0.918 | 0.008 | 4.00851 | 1.10 | ppb |
| \| | Cu | 65 | 3202.736 | 5.454 | 0.004 | 3.95254 | 4.59 | ppb |
| \| | Zn | 66 | 1859.062 | 5.831 | 0.002 | 3.96376 | 5.69 | ppb |
| \| | As | 75 | 1296.695 | 4.580 | 0.002 | 2.03368 | 5.42 | ppb |
| ⌊ | Se | 82 | 510.457 | 1.308 | 0.001 | 9.99304 | 2.45 | ppb |
| ⌈ | Ag | 107 | 4915.653 | 1.673 | 0.003 | 2.01308 | 1.90 | ppb |
| \| | Ag | 109 | 4595.501 | 4.251 | 0.003 | 1.99767 | 4.32 | ppb |
| \| | Cd | 111 | 1162.659 | 14.553 | 0.001 | 1.99430 | 15.66 | ppb |
| \| | In | 113 | 74096.868 | 1.306 | 0.002 | | | ppb |
| ⌊> | In | 115 | 1637493.608 | 1.320 | 1637493.608 | | | ppb |
| ⌈ | Sb | 121 | 8935.657 | 0.197 | 0.004 | 3.98696 | 0.45 | ppb |
| \| | Ba | 135 | 8831.899 | 1.604 | 0.004 | 19.90566 | 1.36 | ppb |
| \| | Ba | 137 | 15068.011 | 0.982 | 0.007 | 19.91553 | 0.71 | ppb |
| ⌊> | Tb | 159 | 2056205.311 | 0.278 | 2056205.311 | | | ppb |
| ⌈ | Tl | 205 | 8807.210 | 1.222 | 0.007 | 1.97494 | 1.15 | ppb |
| \| | Pb | 206 | 3010.453 | 1.727 | 0.002 | 2.00541 | 0.95 | ppb |
| \| | Pb | 207 | 5572.448 | 1.371 | 0.004 | 2.00428 | 1.12 | ppb |
| \| | Pb | 208 | 8747.245 | 3.879 | 0.007 | 1.99037 | 2.57 | ppb |
| ⌊> | Bi | 209 | 1278447.360 | 1.432 | 1278447.360 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 218268.338 | | ppb |
| ⌊ | Be | 9 | 218.002 | 1.892045 | ppb |
| ⌈> | Sc | 45 | 829140.384 | | ppb |
| \| | V | 51 | 28724.557 | 9.894469 | ppb |
| \| | Cr | 52 | 11606.732 | 3.810532 | ppb |
| \| | Mn | 55 | 7547.847 | 1.996160 | ppb |
| \| | Co | 59 | 5935.761 | 1.913529 | ppb |
| \| | Ni | 60 | 1336.756 | 1.891569 | ppb |
| \| | Cu | 63 | 6839.004 | 3.964503 | ppb |
| \| | Cu | 65 | 3227.187 | 3.978805 | ppb |
| \| | Zn | 66 | 1976.862 | 4.219418 | ppb |
| \| | As | 75 | 1320.720 | 2.067441 | ppb |
| ⌊ | Se | 82 | 508.013 | 9.925017 | ppb |
| ⌈ | Ag | 107 | 4821.162 | 1.984015 | ppb |
| \| | Ag | 109 | 4374.290 | 1.910713 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 1099.353 | 1.892824 | ppb |
| | In | 113 | 74849.075 | | ppb |
| > | In | 115 | 1629324.007 | | ppb |
| | Sb | 121 | 8918.976 | 3.966553 | ppb |
| | Ba | 135 | 8984.034 | 20.184615 | ppb |
| | Ba | 137 | 15237.600 | 20.075905 | ppb |
| > | Tb | 159 | 2062791.193 | | ppb |
| | Tl | 205 | 8833.900 | 1.951884 | ppb |
| | Pb | 206 | 3040.462 | 1.995894 | ppb |
| | Pb | 207 | 5655.804 | 2.004630 | ppb |
| | Pb | 208 | 9032.400 | 2.026123 | ppb |
| > | Bi | 209 | 1297286.965 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210306.428 | | ppb |
| | Be | 9 | 222.002 | 2.002126 | ppb |
| > | Sc | 45 | 819220.721 | | ppb |
| | V | 51 | 28850.725 | 10.063280 | ppb |
| | Cr | 52 | 12233.478 | 4.134430 | ppb |
| | Mn | 55 | 7497.810 | 2.007445 | ppb |
| | Co | 59 | 6247.951 | 2.039821 | ppb |
| | Ni | 60 | 1360.092 | 1.949174 | ppb |
| | Cu | 63 | 6902.381 | 4.052329 | ppb |
| | Cu | 65 | 3017.122 | 3.759330 | ppb |
| | Zn | 66 | 1763.489 | 3.793725 | ppb |
| | As | 75 | 1340.308 | 2.123122 | ppb |
| | Se | 82 | 518.013 | 10.264677 | ppb |
| | Ag | 107 | 4954.560 | 1.998881 | ppb |
| | Ag | 109 | 4667.756 | 1.999031 | ppb |
| | Cd | 111 | 1034.241 | 1.745374 | ppb |
| | In | 113 | 73005.521 | | ppb |
| > | In | 115 | 1661999.728 | | ppb |
| | Sb | 121 | 8933.989 | 3.993154 | ppb |
| | Ba | 135 | 8807.877 | 19.886306 | ppb |
| | Ba | 137 | 15001.243 | 19.861767 | ppb |
| > | Tb | 159 | 2052651.638 | | ppb |
| | Tl | 205 | 8898.958 | 1.997274 | ppb |
| | Pb | 206 | 3040.462 | 2.027382 | ppb |
| | Pb | 207 | 5505.766 | 1.981717 | ppb |
| | Pb | 208 | 8837.333 | 2.013231 | ppb |
| > | Bi | 209 | 1277337.056 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 212197.758 | | ppb |
| | Be | 9 | 204.002 | 1.819597 | ppb |
| > | Sc | 45 | 835471.139 | | ppb |
| | V | 51 | 28562.346 | 9.760048 | ppb |
| | Cr | 52 | 12099.315 | 3.978108 | ppb |
| | Mn | 55 | 7547.847 | 1.980322 | ppb |
| | Co | 59 | 6354.018 | 2.034046 | ppb |
| | Ni | 60 | 1513.448 | 2.130673 | ppb |
| | Cu | 63 | 6965.759 | 4.008711 | ppb |
| | Cu | 65 | 3363.899 | 4.119474 | ppb |
| | Zn | 66 | 1836.835 | 3.878133 | ppb |
| | As | 75 | 1229.058 | 1.910469 | ppb |
| | Se | 82 | 505.346 | 9.789428 | ppb |
| | Ag | 107 | 4971.235 | 2.056352 | ppb |
| | Ag | 109 | 4744.459 | 2.083268 | ppb |
| | Cd | 111 | 1354.383 | 2.344694 | ppb |
| | In | 113 | 74436.009 | | ppb |
| > | In | 115 | 1621157.089 | | ppb |
| | Sb | 121 | 8954.007 | 4.001173 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 8703.786 | 19.646065 | ppb |
| | Ba | 137 | 14965.189 | 19.808908 | ppb |
| > | Tb | 159 | 2053173.101 | | ppb |
| | Tl | 205 | 8688.773 | 1.975665 | ppb |
| | Pb | 206 | 2950.435 | 1.992946 | ppb |
| | Pb | 207 | 5555.775 | 2.026498 | ppb |
| | Pb | 208 | 8372.002 | 1.931749 | ppb |
| > | Bi | 209 | 1260718.059 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS3

Sample Date/Time: Wednesday, July 06, 2011 13:58:56
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S 6020-MS3.395

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212270.201 | 1.343 | 212270.201 | | | ppb |
| ⌊ | Be | 9 | 14028.500 | 0.794 | 0.066 | 125.00093 | 1.40 | ppb |
| ⌈> | Sc | 45 | 816022.261 | 0.775 | 816022.261 | | | ppb |
| \| | V | 51 | 362011.584 | 1.748 | 0.443 | 125.04017 | 0.99 | ppb |
| \| | Cr | 52 | 299538.727 | 0.547 | 0.364 | 125.00150 | 1.26 | ppb |
| \| | Mn | 55 | 473364.344 | 2.085 | 0.580 | 125.00244 | 2.82 | ppb |
| \| | Co | 59 | 368690.953 | 1.241 | 0.452 | 124.99901 | 1.98 | ppb |
| \| | Ni | 60 | 93907.785 | 0.901 | 0.115 | 125.00378 | 1.65 | ppb |
| \| | Cu | 63 | 206734.103 | 0.960 | 0.253 | 125.00054 | 1.74 | ppb |
| \| | Cu | 65 | 99709.199 | 1.948 | 0.122 | 125.00381 | 2.70 | ppb |
| \| | Zn | 66 | 55974.000 | 0.676 | 0.069 | 125.00118 | 1.43 | ppb |
| \| | As | 75 | 74620.237 | 0.620 | 0.091 | 124.99759 | 1.37 | ppb |
| ⌊ | Se | 82 | 5808.354 | 2.182 | 0.007 | 124.97996 | 2.97 | ppb |
| ⌈ | Ag | 107 | 298838.550 | 0.782 | 0.180 | 124.99871 | 0.61 | ppb |
| \| | Ag | 109 | 286145.410 | 1.085 | 0.172 | 124.99932 | 1.52 | ppb |
| \| | Cd | 111 | 71985.382 | 0.227 | 0.043 | 124.99897 | 0.78 | ppb |
| \| | In | 113 | 140549.159 | 0.476 | 0.041 | | | ppb |
| ⌊> | In | 115 | 1661051.320 | 0.564 | 1661051.320 | | | ppb |
| ⌈ | Sb | 121 | 277036.049 | 2.048 | 0.135 | 125.00062 | 2.97 | ppb |
| \| | Ba | 135 | 55695.339 | 0.698 | 0.027 | 125.03546 | 1.23 | ppb |
| \| | Ba | 137 | 97497.044 | 1.459 | 0.048 | 125.13752 | 2.22 | ppb |
| ⌊> | Tb | 159 | 2047861.905 | 0.946 | 2047861.905 | | | ppb |
| ⌈ | Tl | 205 | 587073.248 | 1.844 | 0.466 | 125.00282 | 2.46 | ppb |
| \| | Pb | 206 | 191212.540 | 0.789 | 0.152 | 125.00170 | 1.40 | ppb |
| \| | Pb | 207 | 353881.633 | 0.725 | 0.281 | 125.00165 | 1.30 | ppb |
| \| | Pb | 208 | 562101.423 | 1.302 | 0.446 | 125.00178 | 1.73 | ppb |
| ⌊> | Bi | 209 | 1259778.567 | 0.660 | 1259778.567 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215356.211 | | ppb |
| ⌊ | Be | 9 | 14009.807 | 123.031989 | ppb |
| ⌈> | Sc | 45 | 818494.734 | | ppb |
| \| | V | 51 | 363591.316 | 125.213081 | ppb |
| \| | Cr | 52 | 297891.861 | 123.922242 | ppb |
| \| | Mn | 55 | 465450.865 | 122.522652 | ppb |
| \| | Co | 59 | 364966.677 | 123.350159 | ppb |
| \| | Ni | 60 | 93259.515 | 123.755121 | ppb |
| \| | Cu | 63 | 206115.852 | 124.238359 | ppb |
| \| | Cu | 65 | 99677.651 | 124.569532 | ppb |
| \| | Zn | 66 | 55684.608 | 123.968916 | ppb |
| \| | As | 75 | 74259.685 | 124.009319 | ppb |
| ⌊ | Se | 82 | 5787.007 | 124.121030 | ppb |
| ⌈ | Ag | 107 | 300013.906 | 124.701287 | ppb |
| \| | Ag | 109 | 284507.116 | 123.496539 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 71830.142 | 123.941810 | ppb |
| | In | 113 | 140277.030 | | ppb |
| > | In | 115 | 1671557.328 | | ppb |
| | Sb | 121 | 270489.411 | 120.708650 | ppb |
| | Ba | 135 | 55606.174 | 123.483120 | ppb |
| | Ba | 137 | 96479.177 | 122.482192 | ppb |
| > | Tb | 159 | 2070149.614 | | ppb |
| | Tl | 205 | 591792.678 | 125.961327 | ppb |
| | Pb | 206 | 190227.274 | 124.317174 | ppb |
| | Pb | 207 | 351858.027 | 124.247086 | ppb |
| | Pb | 208 | 554603.335 | 123.294259 | ppb |
| > | Bi | 209 | 1260113.502 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 209736.647 | | ppb |
| | Be | 9 | 13927.692 | 125.588862 | ppb |
| > | Sc | 45 | 808839.595 | | ppb |
| | V | 51 | 355042.779 | 123.725229 | ppb |
| | Cr | 52 | 301169.885 | 126.805227 | ppb |
| | Mn | 55 | 484425.947 | 129.044420 | ppb |
| | Co | 59 | 373800.149 | 127.844458 | ppb |
| | Ni | 60 | 94864.506 | 127.388772 | ppb |
| | Cu | 63 | 208953.846 | 127.455608 | ppb |
| | Cu | 65 | 101667.534 | 128.576236 | ppb |
| | Zn | 66 | 56401.945 | 127.068827 | ppb |
| | As | 75 | 75141.782 | 126.979891 | ppb |
| | Se | 82 | 5944.433 | 129.046788 | ppb |
| | Ag | 107 | 300353.886 | 125.862075 | ppb |
| | Ag | 109 | 284201.954 | 124.371440 | ppb |
| | Cd | 111 | 71969.602 | 125.196503 | ppb |
| | In | 113 | 140059.005 | | ppb |
| > | In | 115 | 1658018.770 | | ppb |
| | Sb | 121 | 280124.287 | 127.171166 | ppb |
| | Ba | 135 | 55358.807 | 125.058662 | ppb |
| | Ba | 137 | 99122.844 | 128.014683 | ppb |
| > | Tb | 159 | 2034979.841 | | ppb |
| | Tl | 205 | 594740.052 | 127.480677 | ppb |
| | Pb | 206 | 192948.673 | 126.984466 | ppb |
| | Pb | 207 | 356769.636 | 126.869424 | ppb |
| | Pb | 208 | 569230.540 | 127.438097 | ppb |
| > | Bi | 209 | 1251297.657 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211717.743 | | ppb |
| | Be | 9 | 14148.001 | 126.381940 | ppb |
| > | Sc | 45 | 820732.453 | | ppb |
| | V | 51 | 367400.658 | 126.182214 | ppb |
| | Cr | 52 | 299554.435 | 124.277038 | ppb |
| | Mn | 55 | 470216.219 | 123.440241 | ppb |
| | Co | 59 | 367306.034 | 123.802411 | ppb |
| | Ni | 60 | 93599.335 | 123.867449 | ppb |
| | Cu | 63 | 205132.609 | 123.307665 | ppb |
| | Cu | 65 | 97782.411 | 121.865649 | ppb |
| | Zn | 66 | 55835.446 | 123.965801 | ppb |
| | As | 75 | 74459.245 | 124.003554 | ppb |
| | Se | 82 | 5693.620 | 121.772067 | ppb |
| | Ag | 107 | 296147.859 | 124.432755 | ppb |
| | Ag | 109 | 289727.159 | 127.129976 | ppb |
| | Cd | 111 | 72156.402 | 125.858584 | ppb |
| | In | 113 | 141311.441 | | ppb |
| > | In | 115 | 1653577.860 | | ppb |
| | Sb | 121 | 280494.449 | 127.122029 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 56121.038 | 126.564602 | ppb |
| | Ba | 137 | 96889.112 | 124.915677 | ppb |
| > | Tb | 159 | 2038456.260 | | ppb |
| | Tl | 205 | 574687.014 | 121.566455 | ppb |
| | Pb | 206 | 190461.673 | 123.703464 | ppb |
| | Pb | 207 | 353017.236 | 123.888425 | ppb |
| | Pb | 208 | 562470.394 | 124.272979 | ppb |
| > | Bi | 209 | 1267924.540 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS4

Sample Date/Time: Wednesday, July 06, 2011 14:00:21
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S 6020-MS4.396

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209737.473 | 1.002 | 209737.473 | | | ppb |
| ⌊ | Be | 9 | 28846.214 | 0.766 | 0.138 | 251.96924 | 0.73 | ppb |
| ⌈> | Sc | 45 | 824608.031 | 2.614 | 824608.031 | | | ppb |
| \| | V | 51 | 739046.805 | 1.005 | 0.896 | 250.61054 | 3.32 | ppb |
| \| | Cr | 52 | 611081.064 | 1.194 | 0.739 | 250.70456 | 3.81 | ppb |
| \| | Mn | 55 | 954324.576 | 0.800 | 1.158 | 249.91631 | 3.31 | ppb |
| \| | Co | 59 | 758203.625 | 0.556 | 0.920 | 250.88326 | 2.34 | ppb |
| \| | Ni | 60 | 188876.174 | 1.505 | 0.229 | 249.78952 | 3.36 | ppb |
| \| | Cu | 63 | 413564.246 | 0.570 | 0.501 | 249.52577 | 2.25 | ppb |
| \| | Cu | 65 | 199460.698 | 0.077 | 0.242 | 249.52363 | 2.71 | ppb |
| \| | Zn | 66 | 113284.771 | 1.053 | 0.137 | 250.11509 | 1.89 | ppb |
| \| | As | 75 | 150778.536 | 0.953 | 0.183 | 250.00075 | 2.32 | ppb |
| ⌊ | Se | 82 | 11811.638 | 0.637 | 0.014 | 250.46262 | 3.30 | ppb |
| ⌈ | Ag | 107 | 609641.286 | 1.026 | 0.366 | 250.89368 | 0.95 | ppb |
| \| | Ag | 109 | 582009.146 | 0.474 | 0.350 | 250.74518 | 1.06 | ppb |
| \| | Cd | 111 | 145530.560 | 1.388 | 0.087 | 250.44260 | 1.22 | ppb |
| \| | In | 113 | 217152.533 | 0.798 | 0.087 | | | ppb |
| ⌊> | In | 115 | 1664185.137 | 0.712 | 1664185.137 | | | ppb |
| ⌈ | Sb | 121 | 563068.592 | 0.606 | 0.273 | 250.43946 | 0.46 | ppb |
| \| | Ba | 135 | 114243.541 | 0.193 | 0.055 | 250.93286 | 0.32 | ppb |
| \| | Ba | 137 | 198591.888 | 0.209 | 0.096 | 250.61842 | 0.53 | ppb |
| ⌊> | Tb | 159 | 2062868.447 | 0.403 | 2062868.447 | | | ppb |
| ⌈ | Tl | 205 | 1184273.628 | 0.291 | 0.939 | 250.34945 | 0.87 | ppb |
| \| | Pb | 206 | 390318.474 | 0.641 | 0.309 | 250.93879 | 0.38 | ppb |
| \| | Pb | 207 | 723601.335 | 0.409 | 0.573 | 251.02349 | 0.56 | ppb |
| \| | Pb | 208 | 1144877.208 | 0.595 | 0.907 | 250.83016 | 0.99 | ppb |
| ⌊> | Bi | 209 | 1261807.721 | 0.977 | 1261807.721 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212158.948 | | ppb |
| ⌊ | Be | 9 | 29010.018 | 250.499793 | ppb |
| ⌈> | Sc | 45 | 838412.696 | | ppb |
| \| | V | 51 | 730469.128 | 243.478660 | ppb |
| \| | Cr | 52 | 604051.024 | 243.550960 | ppb |
| \| | Mn | 55 | 955420.486 | 245.942064 | ppb |
| \| | Co | 59 | 756669.870 | 246.154006 | ppb |
| \| | Ni | 60 | 185766.242 | 241.501994 | ppb |
| \| | Cu | 63 | 413172.825 | 245.087879 | ppb |
| \| | Cu | 65 | 199503.766 | 245.350721 | ppb |
| \| | Zn | 66 | 113220.671 | 245.778184 | ppb |
| \| | As | 75 | 150038.639 | 244.585650 | ppb |
| ⌊ | Se | 82 | 11748.898 | 244.874710 | ppb |
| ⌈ | Ag | 107 | 602747.102 | 249.477663 | ppb |
| \| | Ag | 109 | 585164.169 | 253.540048 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 146213.347 | 253.061791 | ppb |
| | In | 113 | 216886.761 | | ppb |
| > | In | 115 | 1654684.855 | | ppb |
| | Sb | 121 | 559781.162 | 250.096425 | ppb |
| | Ba | 135 | 114038.553 | 251.606741 | ppb |
| | Ba | 137 | 198670.079 | 251.840992 | ppb |
| > | Tb | 159 | 2053636.623 | | ppb |
| | Tl | 205 | 1180298.616 | 250.924330 | ppb |
| | Pb | 206 | 388315.864 | 251.075163 | ppb |
| | Pb | 207 | 721924.294 | 251.866649 | ppb |
| | Pb | 208 | 1150288.419 | 253.445702 | ppb |
| > | Bi | 209 | 1254623.213 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208388.906 | | ppb |
| | Be | 9 | 28594.825 | 251.381789 | ppb |
| > | Sc | 45 | 799772.034 | | ppb |
| | V | 51 | 743336.506 | 259.757616 | ppb |
| | Cr | 52 | 618618.344 | 261.550330 | ppb |
| | Mn | 55 | 961355.906 | 259.431201 | ppb |
| | Co | 59 | 754966.041 | 257.466677 | ppb |
| | Ni | 60 | 189522.412 | 258.291841 | ppb |
| | Cu | 63 | 411426.316 | 255.848553 | ppb |
| | Cu | 65 | 199588.770 | 257.319262 | ppb |
| | Zn | 66 | 112125.097 | 255.165862 | ppb |
| | As | 75 | 149862.603 | 256.101163 | ppb |
| | Se | 82 | 11895.070 | 259.941667 | ppb |
| | Ag | 107 | 614943.773 | 253.646937 | ppb |
| | Ag | 109 | 580055.731 | 250.458586 | ppb |
| | Cd | 111 | 143257.051 | 247.088676 | ppb |
| | In | 113 | 215568.717 | | ppb |
| > | In | 115 | 1660419.534 | | ppb |
| | Sb | 121 | 562835.656 | 249.504042 | ppb |
| | Ba | 135 | 114214.544 | 250.033813 | ppb |
| | Ba | 137 | 198143.791 | 249.218796 | ppb |
| > | Tb | 159 | 2069744.032 | | ppb |
| | Tl | 205 | 1186395.792 | 252.193371 | ppb |
| | Pb | 206 | 389516.220 | 251.824137 | ppb |
| | Pb | 207 | 721858.522 | 251.816496 | ppb |
| | Pb | 208 | 1137220.629 | 250.539216 | ppb |
| > | Bi | 209 | 1254758.741 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208664.566 | | ppb |
| | Be | 9 | 28933.798 | 254.026150 | ppb |
| > | Sc | 45 | 835639.361 | | ppb |
| | V | 51 | 743334.780 | 248.595355 | ppb |
| | Cr | 52 | 610573.822 | 247.012387 | ppb |
| | Mn | 55 | 946197.336 | 244.375657 | ppb |
| | Co | 59 | 762974.965 | 249.029106 | ppb |
| | Ni | 60 | 191339.867 | 249.574734 | ppb |
| | Cu | 63 | 416093.598 | 247.640873 | ppb |
| | Cu | 65 | 199289.557 | 245.900913 | ppb |
| | Zn | 66 | 114508.545 | 249.401238 | ppb |
| | As | 75 | 152434.365 | 249.315449 | ppb |
| | Se | 82 | 11790.947 | 246.571471 | ppb |
| | Ag | 107 | 611232.985 | 249.556432 | ppb |
| | Ag | 109 | 580807.539 | 248.236912 | ppb |
| | Cd | 111 | 147121.281 | 251.177332 | ppb |
| | In | 113 | 219002.121 | | ppb |
| > | In | 115 | 1677451.022 | | ppb |
| | Sb | 121 | 566588.959 | 251.717900 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 114477.526 | 251.158016 | ppb |
| | Ba | 137 | 198961.794 | 250.795479 | ppb |
| > | Tb | 159 | 2065224.687 | | ppb |
| | Tl | 205 | 1186126.477 | 247.930661 | ppb |
| | Pb | 206 | 393123.337 | 249.917064 | ppb |
| | Pb | 207 | 727021.190 | 249.387333 | ppb |
| | Pb | 208 | 1147122.576 | 248.505575 | ppb |
| > | Bi | 209 | 1276041.210 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: S 6020-MS5

Sample Date/Time: Wednesday, July 06, 2011 14:01:47
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\S 6020-MS5.397

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206113.346 | 1.240 | 206113.346 | | | ppb |
| ⌊ | Be | 9 | 56622.520 | 0.093 | 0.275 | 500.79644 | 1.16 | ppb |
| ⌈> | Sc | 45 | 818255.393 | 1.708 | 818255.393 | | | ppb |
| \| | V | 51 | 1470863.698 | 0.743 | 1.797 | 500.64207 | 0.97 | ppb |
| \| | Cr | 52 | 1205030.492 | 1.094 | 1.470 | 499.76276 | 2.20 | ppb |
| \| | Mn | 55 | 1868111.160 | 2.173 | 2.283 | 498.29444 | 2.77 | ppb |
| \| | Co | 59 | 1481786.552 | 1.845 | 1.812 | 498.59047 | 3.51 | ppb |
| \| | Ni | 60 | 374875.190 | 0.527 | 0.458 | 499.88424 | 2.09 | ppb |
| \| | Cu | 63 | 817055.110 | 0.597 | 0.998 | 499.23802 | 1.61 | ppb |
| \| | Cu | 65 | 395090.628 | 0.814 | 0.483 | 499.53849 | 2.09 | ppb |
| \| | Zn | 66 | 222627.819 | 1.315 | 0.272 | 498.89861 | 1.58 | ppb |
| \| | As | 75 | 296963.524 | 0.576 | 0.363 | 499.06695 | 1.85 | ppb |
| ⌊ | Se | 82 | 23072.810 | 0.784 | 0.028 | 498.43145 | 0.92 | ppb |
| ⌈ | Ag | 107 | 1169391.247 | 0.753 | 0.717 | 497.81072 | 1.53 | ppb |
| \| | Ag | 109 | 1125259.964 | 1.056 | 0.690 | 498.68084 | 1.43 | ppb |
| \| | Cd | 111 | 286576.251 | 1.099 | 0.176 | 500.73004 | 1.63 | ppb |
| \| | In | 113 | 348906.570 | 1.452 | 0.170 | | | ppb |
| ⌊> | In | 115 | 1631518.743 | 0.817 | 1631518.743 | | | ppb |
| ⌈ | Sb | 121 | 1097675.642 | 0.372 | 0.540 | 498.95277 | 2.56 | ppb |
| \| | Ba | 135 | 226811.511 | 1.044 | 0.112 | 501.37387 | 3.46 | ppb |
| \| | Ba | 137 | 390397.517 | 1.377 | 0.192 | 500.03192 | 2.87 | ppb |
| ⌊> | Tb | 159 | 2033127.094 | 2.703 | 2033127.094 | | | ppb |
| ⌈ | Tl | 205 | 2324593.459 | 0.591 | 1.875 | 500.04595 | 0.76 | ppb |
| \| | Pb | 206 | 774362.190 | 1.280 | 0.625 | 501.59508 | 1.38 | ppb |
| \| | Pb | 207 | 1430425.775 | 1.083 | 1.154 | 501.20848 | 1.22 | ppb |
| \| | Pb | 208 | 2231312.529 | 0.206 | 1.800 | 499.42566 | 0.33 | ppb |
| ⌊> | Bi | 209 | 1239618.692 | 0.213 | 1239618.692 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207935.616 | | ppb |
| ⌊ | Be | 9 | 56672.133 | 496.794675 | ppb |
| ⌈> | Sc | 45 | 813901.605 | | ppb |
| \| | V | 51 | 1468955.019 | 502.612981 | ppb |
| \| | Cr | 52 | 1191359.139 | 496.621957 | ppb |
| \| | Mn | 55 | 1822822.144 | 488.719573 | ppb |
| \| | Co | 59 | 1482230.973 | 501.209872 | ppb |
| \| | Ni | 60 | 376866.754 | 505.109893 | ppb |
| \| | Cu | 63 | 811437.966 | 498.372440 | ppb |
| \| | Cu | 65 | 391953.743 | 498.113224 | ppb |
| \| | Zn | 66 | 219342.801 | 494.104931 | ppb |
| \| | As | 75 | 298914.692 | 504.931856 | ppb |
| ⌊ | Se | 82 | 23023.808 | 499.983306 | ppb |
| ⌈ | Ag | 107 | 1170925.051 | 500.852192 | ppb |
| \| | Ag | 109 | 1114645.664 | 496.358495 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 284609.177 | 499.681550 | ppb |
| | In | 113 | 354664.768 | | ppb |
| > | In | 115 | 1623605.016 | | ppb |
| | Sb | 121 | 1094609.853 | 492.795162 | ppb |
| | Ba | 135 | 224197.362 | 490.779170 | ppb |
| | Ba | 137 | 384833.032 | 488.186073 | ppb |
| > | Tb | 159 | 2051840.473 | | ppb |
| | Tl | 205 | 2318754.292 | 499.205402 | ppb |
| | Pb | 206 | 766270.178 | 496.766085 | ppb |
| | Pb | 207 | 1420721.974 | 498.221473 | ppb |
| | Pb | 208 | 2236583.949 | 501.025468 | ppb |
| > | Bi | 209 | 1238575.306 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207212.843 | | ppb |
| | Be | 9 | 56627.883 | 498.138387 | ppb |
| > | Sc | 45 | 833892.159 | | ppb |
| | V | 51 | 1482619.066 | 495.122944 | ppb |
| | Cr | 52 | 1206063.025 | 490.686890 | ppb |
| | Mn | 55 | 1880276.053 | 492.039084 | ppb |
| | Co | 59 | 1454220.716 | 479.949251 | ppb |
| | Ni | 60 | 372916.042 | 487.831612 | ppb |
| | Cu | 63 | 820176.139 | 491.661686 | ppb |
| | Cu | 65 | 394934.306 | 489.867518 | ppb |
| | Zn | 66 | 224962.255 | 494.615387 | ppb |
| | As | 75 | 296253.613 | 488.440450 | ppb |
| | Se | 82 | 23273.050 | 493.270890 | ppb |
| | Ag | 107 | 1177328.893 | 503.456538 | ppb |
| | Ag | 109 | 1138088.793 | 506.662225 | ppb |
| | Cd | 111 | 290208.521 | 509.375807 | ppb |
| | In | 113 | 346914.899 | | ppb |
| > | In | 115 | 1624039.985 | | ppb |
| | Sb | 121 | 1102310.861 | 490.417873 | ppb |
| | Ba | 135 | 227420.939 | 491.973174 | ppb |
| | Ba | 137 | 395565.882 | 495.892603 | ppb |
| > | Tb | 159 | 2076291.288 | | ppb |
| | Tl | 205 | 2340275.795 | 504.213025 | ppb |
| | Pb | 206 | 785413.213 | 509.554921 | ppb |
| | Pb | 207 | 1448283.249 | 508.264203 | ppb |
| | Pb | 208 | 2228089.866 | 499.493260 | ppb |
| > | Bi | 209 | 1237656.276 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203191.579 | | ppb |
| | Be | 9 | 56567.543 | 507.456248 | ppb |
| > | Sc | 45 | 806972.416 | | ppb |
| | V | 51 | 1461017.010 | 504.190276 | ppb |
| | Cr | 52 | 1217669.311 | 511.979446 | ppb |
| | Mn | 55 | 1901235.284 | 514.124665 | ppb |
| | Co | 59 | 1508907.968 | 514.612278 | ppb |
| | Ni | 60 | 374842.774 | 506.711209 | ppb |
| | Cu | 63 | 819551.224 | 507.679925 | ppb |
| | Cu | 65 | 398383.836 | 510.634728 | ppb |
| | Zn | 66 | 223578.400 | 507.975502 | ppb |
| | As | 75 | 295722.267 | 503.828557 | ppb |
| | Se | 82 | 22921.573 | 502.040159 | ppb |
| | Ag | 107 | 1159919.797 | 489.123439 | ppb |
| | Ag | 109 | 1123045.436 | 493.021798 | ppb |
| | Cd | 111 | 284911.056 | 493.132767 | ppb |
| | In | 113 | 345140.042 | | ppb |
| > | In | 115 | 1646911.228 | | ppb |
| | Sb | 121 | 1096106.213 | 513.645285 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 228816.232 | 521.369256 | ppb |
| | Ba | 137 | 390793.638 | 516.017090 | ppb |
| > | Tb | 159 | 1971249.521 | | ppb |
| | Tl | 205 | 2314750.291 | 496.719428 | ppb |
| | Pb | 206 | 771403.178 | 498.464233 | ppb |
| | Pb | 207 | 1422272.102 | 497.139772 | ppb |
| | Pb | 208 | 2229263.772 | 497.758267 | ppb |
| > | Bi | 209 | 1242624.494 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | | | | |
| Be | 9 | | | | | |
| Sc | 45 | | | | | |
| V | 51 | | | | | |
| Cr | 52 | | | | | |
| Mn | 55 | | | | | |
| Co | 59 | | | | | |
| Ni | 60 | | | | | |
| Cu | 63 | | | | | |
| Cu | 65 | | | | | |
| Zn | 66 | | | | | |
| As | 75 | | | | | |
| Se | 82 | | | | | |
| Ag | 107 | | | | | |
| Ag | 109 | | | | | |
| Cd | 111 | | | | | |
| In | 113 | | | | | |
| In | 115 | | | | | |
| Sb | 121 | | | | | |
| Ba | 135 | | | | | |
| Ba | 137 | | | | | |
| Tb | 159 | | | | | |
| Tl | 205 | | | | | |
| Pb | 206 | | | | | |
| Pb | 207 | | | | | |
| Pb | 208 | | | | | |
| Bi | 209 | | | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLICV

Sample Date/Time: Wednesday, July 06, 2011 14:05:05
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LLICV.398

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210120.168 | 1.355 | 210120.168 | | | ppb |
| ⌊ | Be | 9 | 137.334 | 6.567 | 0.001 | 1.15107 | 5.79 | ppb |
| ⌈> | Sc | 45 | 809724.158 | 1.040 | 809724.158 | | | ppb |
| \| | V | 51 | 14685.224 | 2.369 | 0.017 | 4.76728 | 3.07 | ppb |
| \| | Cr | 52 | 7466.122 | 3.866 | 0.006 | 2.11303 | 4.47 | ppb |
| \| | Mn | 55 | 3804.057 | 2.386 | 0.004 | 0.93609 | 2.81 | ppb |
| \| | Co | 59 | 3131.825 | 5.654 | 0.004 | 1.04523 | 6.64 | ppb |
| \| | Ni | 60 | 750.028 | 4.000 | 0.001 | 0.97185 | 5.24 | ppb |
| \| | Cu | 63 | 3522.843 | 2.077 | 0.004 | 2.05165 | 2.36 | ppb |
| \| | Cu | 65 | 1655.693 | 1.145 | 0.002 | 2.01410 | 1.28 | ppb |
| \| | Zn | 66 | 987.827 | 4.287 | 0.001 | 2.07546 | 5.70 | ppb |
| \| | As | 75 | 625.744 | 9.045 | 0.001 | 1.07826 | 9.75 | ppb |
| ⌊ | Se | 82 | 268.448 | 4.994 | 0.000 | 5.17586 | 6.66 | ppb |
| ⌈ | Ag | 107 | 2531.432 | 3.162 | 0.002 | 1.05999 | 2.70 | ppb |
| \| | Ag | 109 | 2365.835 | 0.453 | 0.001 | 1.03426 | 1.09 | ppb |
| \| | Cd | 111 | 611.114 | 13.422 | 0.000 | 1.05323 | 12.91 | ppb |
| \| | In | 113 | 72832.655 | 1.762 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1646453.815 | 1.411 | 1646453.815 | | | ppb |
| ⌈ | Sb | 121 | 4571.045 | 0.954 | 0.002 | 2.04343 | 2.94 | ppb |
| \| | Ba | 135 | 4359.617 | 2.098 | 0.002 | 9.66139 | 2.18 | ppb |
| \| | Ba | 137 | 7484.134 | 2.677 | 0.004 | 9.59625 | 1.66 | ppb |
| ⌊> | Tb | 159 | 2023265.901 | 2.115 | 2023265.901 | | | ppb |
| ⌈ | Tl | 205 | 4704.440 | 2.101 | 0.004 | 0.98950 | 3.14 | ppb |
| \| | Pb | 206 | 1510.115 | 9.111 | 0.001 | 0.94865 | 8.30 | ppb |
| \| | Pb | 207 | 2836.870 | 2.232 | 0.002 | 0.96604 | 1.18 | ppb |
| \| | Pb | 208 | 4332.207 | 4.852 | 0.003 | 0.94531 | 5.41 | ppb |
| ⌊> | Bi | 209 | 1252630.136 | 1.082 | 1252630.136 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 213386.659 | | ppb |
| ⌊ | Be | 9 | 146.001 | 1.207263 | ppb |
| ⌈> | Sc | 45 | 810896.585 | | ppb |
| \| | V | 51 | 15039.845 | 4.881169 | ppb |
| \| | Cr | 52 | 7660.933 | 2.190682 | ppb |
| \| | Mn | 55 | 3700.685 | 0.906719 | ppb |
| \| | Co | 59 | 2980.444 | 0.991912 | ppb |
| \| | Ni | 60 | 750.028 | 0.970039 | ppb |
| \| | Cu | 63 | 3440.592 | 1.997659 | ppb |
| \| | Cu | 65 | 1676.807 | 2.037888 | ppb |
| \| | Zn | 66 | 963.380 | 2.016155 | ppb |
| \| | As | 75 | 576.089 | 0.991961 | ppb |
| ⌊ | Se | 82 | 257.337 | 4.922832 | ppb |
| ⌈ | Ag | 107 | 2440.298 | 1.033182 | ppb |
| \| | Ag | 109 | 2353.610 | 1.040435 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 642.574 | 1.120700 | ppb |
| | In | 113 | 71454.378 | | ppb |
| > | In | 115 | 1628107.191 | | ppb |
| | Sb | 121 | 4601.058 | 2.108557 | ppb |
| | Ba | 135 | 4300.925 | 9.766958 | ppb |
| | Ba | 137 | 7288.655 | 9.577926 | ppb |
| > | Tb | 159 | 1974170.461 | | ppb |
| | Tl | 205 | 4811.157 | 1.024788 | ppb |
| | Pb | 206 | 1375.095 | 0.873610 | ppb |
| | Pb | 207 | 2765.191 | 0.953231 | ppb |
| | Pb | 208 | 4385.545 | 0.969051 | ppb |
| > | Bi | 209 | 1237188.334 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208813.629 | | ppb |
| | Be | 9 | 128.001 | 1.077437 | ppb |
| > | Sc | 45 | 817497.940 | | ppb |
| | V | 51 | 14344.420 | 4.602404 | ppb |
| | Cr | 52 | 7602.889 | 2.140607 | ppb |
| | Mn | 55 | 3870.749 | 0.944080 | ppb |
| | Co | 59 | 3088.477 | 1.020114 | ppb |
| | Ni | 60 | 720.026 | 0.921853 | ppb |
| | Cu | 63 | 3580.641 | 2.066187 | ppb |
| | Cu | 65 | 1650.136 | 1.986860 | ppb |
| | Zn | 66 | 963.380 | 1.998560 | ppb |
| | As | 75 | 613.775 | 1.047451 | ppb |
| | Se | 82 | 264.670 | 5.036250 | ppb |
| | Ag | 107 | 2590.335 | 1.090057 | ppb |
| | Ag | 109 | 2370.281 | 1.041050 | ppb |
| | Cd | 111 | 518.018 | 0.896773 | ppb |
| | In | 113 | 73050.850 | | ppb |
| > | In | 115 | 1638675.407 | | ppb |
| | Sb | 121 | 4591.054 | 2.031519 | ppb |
| | Ba | 135 | 4464.997 | 9.798119 | ppb |
| | Ba | 137 | 7688.955 | 9.764297 | ppb |
| > | Tb | 159 | 2042975.605 | | ppb |
| | Tl | 205 | 4686.098 | 0.977514 | ppb |
| | Pb | 206 | 1650.136 | 1.030578 | ppb |
| | Pb | 207 | 2885.212 | 0.974991 | ppb |
| | Pb | 208 | 4100.487 | 0.886620 | ppb |
| > | Bi | 209 | 1262588.449 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208160.217 | | ppb |
| | Be | 9 | 138.001 | 1.168519 | ppb |
| > | Sc | 45 | 800777.949 | | ppb |
| | V | 51 | 14671.408 | 4.818270 | ppb |
| | Cr | 52 | 7134.544 | 2.007786 | ppb |
| | Mn | 55 | 3840.737 | 0.957477 | ppb |
| | Co | 59 | 3326.553 | 1.123652 | ppb |
| | Ni | 60 | 780.030 | 1.023663 | ppb |
| | Cu | 63 | 3547.296 | 2.091093 | ppb |
| | Cu | 65 | 1640.134 | 2.017541 | ppb |
| | Zn | 66 | 1036.720 | 2.211663 | ppb |
| | As | 75 | 687.370 | 1.195355 | ppb |
| | Se | 82 | 283.337 | 5.568486 | ppb |
| | Ag | 107 | 2563.662 | 1.056728 | ppb |
| | Ag | 109 | 2373.615 | 1.021293 | ppb |
| | Cd | 111 | 672.749 | 1.142212 | ppb |
| | In | 113 | 73992.737 | | ppb |
| > | In | 115 | 1672578.848 | | ppb |
| | Sb | 121 | 4521.022 | 1.990214 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 4312.930 | 9.419081 | ppb |
| | Ba | 137 | 7474.793 | 9.446525 | ppb |
| > | Tb | 159 | 2052651.638 | | ppb |
| | Tl | 205 | 4616.065 | 0.966190 | ppb |
| | Pb | 206 | 1505.113 | 0.941750 | ppb |
| | Pb | 207 | 2860.205 | 0.969887 | ppb |
| | Pb | 208 | 4510.590 | 0.980270 | ppb |
| > | Bi | 209 | 1258113.624 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⎡> | Li | 6 | | 98.812 | | | |
| ⎣ | Be | 9 | 115.107 | | | | |
| ⎡> | Sc | 45 | | 96.532 | | | |
| ⎢ | V | 51 | 95.346 | | | | |
| ⎢ | Cr | 52 | 105.651 | | | | |
| ⎢ | Mn | 55 | 93.609 | | | | |
| ⎢ | Co | 59 | 104.523 | | | | |
| ⎢ | Ni | 60 | 97.185 | | | | |
| ⎢ | Cu | 63 | 102.582 | | | | |
| ⎢ | Cu | 65 | 100.705 | | | | |
| ⎢ | Zn | 66 | 103.773 | | | | |
| ⎢ | As | 75 | 107.826 | | | | |
| ⎣ | Se | 82 | 103.517 | | | | |
| ⎡ | Ag | 107 | 105.999 | | | | |
| ⎢ | Ag | 109 | 103.426 | | | | |
| ⎢ | Cd | 111 | 105.323 | | | | |
| ⎢ | In | 113 | | | | | |
| ⎣> | In | 115 | | 97.422 | | | |
| ⎡ | Sb | 121 | 102.171 | | | | |
| ⎢ | Ba | 135 | 96.614 | | | | |
| ⎢ | Ba | 137 | 95.962 | | | | |
| ⎣> | Tb | 159 | | 97.541 | | | |
| ⎡ | Tl | 205 | 98.950 | | | | |
| ⎢ | Pb | 206 | 94.865 | | | | |
| ⎢ | Pb | 207 | 96.604 | | | | |
| ⎢ | Pb | 208 | 94.531 | | | | |
| ⎣> | Bi | 209 | | 98.198 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICV

Sample Date/Time: Wednesday, July 06, 2011 14:06:32
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\ICV.399

### *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203819.560 | 0.668 | 203819.560 | | | ppb |
| ⌊ | Be | 9 | 11006.054 | 1.011 | 0.054 | 98.40023 | 1.29 | ppb |
| ⌈> | Sc | 45 | 810154.400 | 0.776 | 810154.400 | | | ppb |
| \| | V | 51 | 282104.329 | 0.986 | 0.347 | 96.73783 | 0.21 | ppb |
| \| | Cr | 52 | 239433.858 | 0.183 | 0.293 | 99.45947 | 0.81 | ppb |
| ¦ | Mn | 55 | 347951.856 | 0.687 | 0.429 | 93.65131 | 0.75 | ppb |
| \| | Co | 59 | 299148.254 | 1.150 | 0.369 | 101.60909 | 1.05 | ppb |
| \| | Ni | 60 | 73102.459 | 1.170 | 0.090 | 98.40571 | 1.58 | ppb |
| \| | Cu | 63 | 161621.638 | 2.363 | 0.199 | 99.62978 | 2.52 | ppb |
| ¦ | Cu | 65 | 78293.122 | 1.558 | 0.097 | 99.88267 | 1.83 | ppb |
| ¦ | Zn | 66 | 89514.416 | 0.400 | 0.110 | 202.48940 | 0.79 | ppb |
| \| | As | 75 | 113808.289 | 0.738 | 0.140 | 193.14592 | 0.05 | ppb |
| ⌊ | Se | 82 | 9239.600 | 0.722 | 0.011 | 201.16141 | 0.28 | ppb |
| ⌈ | Ag | 107 | 240981.325 | 0.619 | 0.149 | 103.67903 | 1.28 | ppb |
| \| | Ag | 109 | 233592.552 | 1.117 | 0.145 | 104.62129 | 0.29 | ppb |
| \| | Cd | 111 | 56426.818 | 2.010 | 0.035 | 99.63691 | 1.42 | ppb |
| \| | In | 113 | 126042.753 | 1.036 | 0.035 | | | ppb |
| ⌊> | In | 115 | 1614221.502 | 1.105 | 1614221.502 | | | ppb |
| ⌈ | Sb | 121 | 433001.807 | 1.264 | 0.213 | 197.10350 | 2.22 | ppb |
| \| | Ba | 135 | 44220.234 | 1.352 | 0.022 | 97.86492 | 1.55 | ppb |
| ¦ | Ba | 137 | 76414.206 | 1.185 | 0.038 | 98.00499 | 2.48 | ppb |
| ⌊> | Tb | 159 | 2029396.119 | 1.470 | 2029396.119 | | | ppb |
| ⌈ | Tl | 205 | 930529.608 | 0.216 | 0.755 | 201.42969 | 1.98 | ppb |
| ¦ | Pb | 206 | 297718.780 | 1.020 | 0.242 | 194.03172 | 0.79 | ppb |
| \| | Pb | 207 | 545259.420 | 1.537 | 0.443 | 192.21698 | 0.62 | ppb |
| \| | Pb | 208 | 867048.123 | 1.749 | 0.704 | 195.24999 | 0.78 | ppb |
| ⌊> | Bi | 209 | 1232083.877 | 1.789 | 1232083.877 | | | ppb |

### *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205363.271 | | ppb |
| ⌊ | Be | 9 | 10964.007 | 97.283505 | ppb |
| ⌈> | Sc | 45 | 807134.767 | | ppb |
| \| | V | 51 | 280901.003 | 96.686454 | ppb |
| \| | Cr | 52 | 238988.043 | 99.643513 | ppb |
| ¦ | Mn | 55 | 345202.131 | 93.256325 | ppb |
| ¦ | Co | 59 | 295181.234 | 100.635320 | ppb |
| \| | Ni | 60 | 72356.865 | 97.760606 | ppb |
| \| | Cu | 63 | 157649.618 | 97.538092 | ppb |
| \| | Cu | 65 | 77089.331 | 98.708793 | ppb |
| \| | Zn | 66 | 89841.772 | 203.984232 | ppb |
| \| | As | 75 | 113438.385 | 193.238006 | ppb |
| ⌊ | Se | 82 | 9184.216 | 200.701017 | ppb |
| ⌈ | Ag | 107 | 242395.944 | 105.067208 | ppb |
| ¦ | Ag | 109 | 232494.972 | 104.916403 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 55142.188 | 98.106927 | ppb |
| | In | 113 | 127548.273 | | ppb |
| > | In | 115 | 1602114.935 | | ppb |
| | Sb | 121 | 426985.273 | 192.419704 | ppb |
| | Ba | 135 | 43861.983 | 96.109546 | ppb |
| | Ba | 137 | 76563.984 | 97.210164 | ppb |
| > | Tb | 159 | 2049522.861 | | ppb |
| | Tl | 205 | 930502.099 | 202.756965 | ppb |
| | Pb | 206 | 296074.054 | 194.264770 | ppb |
| | Pb | 207 | 539224.658 | 191.384998 | ppb |
| | Pb | 208 | 854806.650 | 193.808114 | ppb |
| > | Bi | 209 | 1223694.557 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202791.581 | | ppb |
| | Be | 9 | 10921.961 | 98.139748 | ppb |
| > | Sc | 45 | 805949.669 | | ppb |
| | V | 51 | 280125.700 | 96.561001 | ppb |
| | Cr | 52 | 239864.660 | 100.161319 | ppb |
| | Mn | 55 | 349135.200 | 94.458684 | ppb |
| | Co | 59 | 300928.788 | 102.746090 | ppb |
| | Ni | 60 | 74036.318 | 100.177749 | ppb |
| | Cu | 63 | 165267.813 | 102.408013 | ppb |
| | Cu | 65 | 79528.318 | 101.984886 | ppb |
| | Zn | 66 | 89132.131 | 202.669531 | ppb |
| | As | 75 | 113217.028 | 193.144530 | ppb |
| | Se | 82 | 9220.916 | 201.803120 | ppb |
| | Ag | 107 | 239422.245 | 103.536500 | ppb |
| | Ag | 109 | 231710.407 | 104.318868 | ppb |
| | Cd | 111 | 56849.803 | 100.909672 | ppb |
| | In | 113 | 125355.810 | | ppb |
| > | In | 115 | 1605853.997 | | ppb |
| | Sb | 121 | 434331.721 | 201.070489 | ppb |
| | Ba | 135 | 43888.097 | 98.790033 | ppb |
| | Ba | 137 | 77235.116 | 100.737895 | ppb |
| > | Tb | 159 | 1995110.487 | | ppb |
| | Tl | 205 | 932550.351 | 204.578127 | ppb |
| | Pb | 206 | 295857.793 | 195.436292 | ppb |
| | Pb | 207 | 541723.587 | 193.572918 | ppb |
| | Pb | 208 | 862328.968 | 196.836571 | ppb |
| > | Bi | 209 | 1215471.489 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203303.826 | | ppb |
| | Be | 9 | 11132.193 | 99.777428 | ppb |
| > | Sc | 45 | 817378.764 | | ppb |
| | V | 51 | 285286.283 | 96.966036 | ppb |
| | Cr | 52 | 239448.872 | 98.573582 | ppb |
| | Mn | 55 | 349518.238 | 93.238934 | ppb |
| | Co | 59 | 301334.742 | 101.445848 | ppb |
| | Ni | 60 | 72914.193 | 97.278769 | ppb |
| | Cu | 63 | 161947.483 | 98.943225 | ppb |
| | Cu | 65 | 78261.718 | 98.954318 | ppb |
| | Zn | 66 | 89569.345 | 200.814433 | ppb |
| | As | 75 | 114769.453 | 193.055224 | ppb |
| | Se | 82 | 9313.669 | 200.980104 | ppb |
| | Ag | 107 | 241125.784 | 102.433368 | ppb |
| | Ag | 109 | 236572.275 | 104.628597 | ppb |
| | Cd | 111 | 57288.462 | 99.894130 | ppb |
| | In | 113 | 125224.176 | | ppb |
| > | In | 115 | 1634695.575 | | ppb |
| | Sb | 121 | 437688.426 | 197.820314 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 44910.622 | 98.695190 | ppb |
| | Ba | 137 | 75443.517 | 96.066899 | ppb |
| > | Tb | 159 | 2043555.008 | | ppb |
| | Tl | 205 | 928536.373 | 196.953978 | ppb |
| | Pb | 206 | 301224.494 | 192.394101 | ppb |
| | Pb | 207 | 554830.015 | 191.693038 | ppb |
| | Pb | 208 | 884008.753 | 195.105282 | ppb |
| > | Bi | 209 | 1257085.584 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⎡> | Li | 6 | | 95.849 | | | |
| ⎣ | Be | 9 | 99.394 | | | | |
| ⎡> | Sc | 45 | | 96.584 | | | |
| ⎢ | V | 51 | 96.738 | | | | |
| ⎢ | Cr | 52 | 101.489 | | | | |
| ⎢ | Mn | 55 | 93.651 | | | | |
| ⎢ | Co | 59 | 101.609 | | | | |
| ⎢ | Ni | 60 | 97.431 | | | | |
| ⎢ | Cu | 63 | 101.663 | | | | |
| ⎢ | Cu | 65 | 101.921 | | | | |
| ⎢ | Zn | 66 | 98.775 | | | | |
| ⎢ | As | 75 | 96.573 | | | | |
| ⎣ | Se | 82 | 97.651 | | | | |
| ⎡ | Ag | 107 | 103.679 | | | | |
| ⎢ | Ag | 109 | 104.621 | | | | |
| ⎢ | Cd | 111 | 100.643 | | | | |
| ⎢ | In | 113 | | | | | |
| ⎣> | In | 115 | | 95.514 | | | |
| ⎡ | Sb | 121 | 99.047 | | | | |
| ⎢ | Ba | 135 | 98.853 | | | | |
| ⎢ | Ba | 137 | 98.995 | | | | |
| ⎣> | Tb | 159 | | 97.836 | | | |
| ⎡ | Tl | 205 | 97.781 | | | | |
| ⎢ | Pb | 206 | 97.016 | | | | |
| ⎢ | Pb | 207 | 96.108 | | | | |
| ⎢ | Pb | 208 | 97.625 | | | | |
| ⎣> | Bi | 209 | | 96.587 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICB

Sample Date/Time: Wednesday, July 06, 2011 14:07:58
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\ICB.400

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209954.844 | 1.582 | 209954.844 | | | ppb |
| ⌊ | Be | 9 | 7.333 | 41.660 | 0.000 | 0.02395 | 114.17 | ppb |
| ⌈> | Sc | 45 | 825134.465 | 0.687 | 825134.465 | | | ppb |
| \| | V | 51 | 1052.537 | 36.004 | 0.000 | 0.06888 | 188.19 | ppb |
| \| | Cr | 52 | 2558.995 | 5.265 | 0.000 | 0.03292 | 146.40 | ppb |
| \| | Mn | 55 | 363.340 | 3.178 | 0.000 | 0.00677 | 44.28 | ppb |
| \| | Co | 59 | 118.001 | 18.874 | 0.000 | 0.01966 | 37.00 | ppb |
| \| | Ni | 60 | 47.778 | 38.425 | 0.000 | 0.02426 | 101.44 | ppb |
| \| | Cu | 63 | 207.780 | 7.234 | 0.000 | 0.00203 | 418.75 | ppb |
| \| | Cu | 65 | 77.778 | 13.777 | -0.000 | -0.00384 | 365.65 | ppb |
| \| | Zn | 66 | 86.667 | 13.868 | 0.000 | 0.02976 | 85.89 | ppb |
| \| | As | 75 | 39.507 | 83.049 | 0.000 | 0.08099 | 67.57 | ppb |
| ⌊ | Se | 82 | 43.333 | 14.836 | 0.000 | 0.23495 | 55.84 | ppb |
| ⌈ | Ag | 107 | 31.111 | 24.744 | 0.000 | 0.00530 | 60.99 | ppb |
| \| | Ag | 109 | 22.222 | 31.225 | 0.000 | 0.00499 | 64.18 | ppb |
| \| | Cd | 111 | 12.275 | 113.813 | 0.000 | 0.01707 | 143.46 | ppb |
| \| | In | 113 | 71481.249 | 0.892 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1654379.309 | 1.652 | 1654379.309 | | | ppb |
| ⌈ | Sb | 121 | 593.352 | 25.032 | 0.000 | 0.22625 | 31.36 | ppb |
| \| | Ba | 135 | 18.000 | 33.333 | 0.000 | 0.02093 | 59.05 | ppb |
| \| | Ba | 137 | 28.667 | 4.028 | 0.000 | 0.00416 | 12.85 | ppb |
| ⌊> | Tb | 159 | 2027875.867 | 2.559 | 2027875.867 | | | ppb |
| ⌈ | Tl | 205 | 95.000 | 13.925 | 0.000 | 0.00797 | 36.42 | ppb |
| \| | Pb | 206 | 35.000 | 28.571 | 0.000 | 0.00345 | 181.37 | ppb |
| \| | Pb | 207 | 53.333 | 28.641 | 0.000 | 0.00082 | 630.37 | ppb |
| \| | Pb | 208 | 116.667 | 8.922 | 0.000 | 0.01127 | 21.59 | ppb |
| ⌊> | Bi | 209 | 1256704.291 | 0.750 | 1256704.291 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 213756.432 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005893 | ppb |
| ⌈> | Sc | 45 | 831347.845 | | ppb |
| \| | V | 51 | 981.924 | 0.042275 | ppb |
| \| | Cr | 52 | 2704.366 | 0.084707 | ppb |
| \| | Mn | 55 | 370.007 | 0.007803 | ppb |
| \| | Co | 59 | 138.001 | 0.026000 | ppb |
| \| | Ni | 60 | 26.667 | -0.004024 | ppb |
| \| | Cu | 63 | 223.336 | 0.010468 | ppb |
| \| | Cu | 65 | 70.000 | -0.014299 | ppb |
| \| | Zn | 66 | 96.667 | 0.050487 | ppb |
| \| | As | 75 | 39.907 | 0.081239 | ppb |
| ⌊ | Se | 82 | 50.667 | 0.384716 | ppb |
| ⌈ | Ag | 107 | 26.667 | 0.003622 | ppb |
| \| | Ag | 109 | 30.000 | 0.008579 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 27.275 | 0.043447 | ppb |
| | In | 113 | 72063.727 | | ppb |
| > | In | 115 | 1626875.878 | | ppb |
| | Sb | 121 | 760.029 | 0.307208 | ppb |
| | Ba | 135 | 18.000 | 0.021737 | ppb |
| | Ba | 137 | 28.000 | 0.003885 | ppb |
| > | Tb | 159 | 1996144.626 | | ppb |
| | Tl | 205 | 80.000 | 0.004713 | ppb |
| | Pb | 206 | 45.000 | 0.009753 | ppb |
| | Pb | 207 | 70.000 | 0.006504 | ppb |
| | Pb | 208 | 105.000 | 0.008588 | ppb |
| > | Bi | 209 | 1261797.308 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207613.016 | | ppb |
| | Be | 9 | 10.000 | 0.047799 | ppb |
| > | Sc | 45 | 820250.192 | | ppb |
| | V | 51 | 1461.832 | 0.209754 | ppb |
| | Cr | 52 | 2438.297 | -0.010609 | ppb |
| | Mn | 55 | 370.007 | 0.009117 | ppb |
| | Co | 59 | 122.001 | 0.021249 | ppb |
| | Ni | 60 | 60.000 | 0.040784 | ppb |
| | Cu | 63 | 206.669 | 0.002125 | ppb |
| | Cu | 65 | 90.000 | 0.012105 | ppb |
| | Zn | 66 | 73.334 | 0.001199 | ppb |
| | As | 75 | 6.499 | 0.026138 | ppb |
| | Se | 82 | 38.667 | 0.140376 | ppb |
| | Ag | 107 | 26.667 | 0.003252 | ppb |
| | Ag | 109 | 16.667 | 0.002413 | ppb |
| | Cd | 111 | -0.365 | -0.004962 | ppb |
| | In | 113 | 70799.746 | | ppb |
| > | In | 115 | 1681521.079 | | ppb |
| | Sb | 121 | 545.015 | 0.196629 | ppb |
| | Ba | 135 | 24.000 | 0.032868 | ppb |
| | Ba | 137 | 30.000 | 0.004777 | ppb |
| > | Tb | 159 | 2087763.470 | | ppb |
| | Tl | 205 | 105.001 | 0.010280 | ppb |
| | Pb | 206 | 25.000 | -0.002771 | ppb |
| | Pb | 207 | 40.000 | -0.003647 | ppb |
| | Pb | 208 | 125.001 | 0.013339 | ppb |
| > | Bi | 209 | 1245834.489 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208495.085 | | ppb |
| | Be | 9 | 8.000 | 0.029941 | ppb |
| > | Sc | 45 | 823805.358 | | ppb |
| | V | 51 | 713.854 | -0.045382 | ppb |
| | Cr | 52 | 2534.321 | 0.024657 | ppb |
| | Mn | 55 | 350.006 | 0.003394 | ppb |
| | Co | 59 | 94.000 | 0.011718 | ppb |
| | Ni | 60 | 56.667 | 0.036025 | ppb |
| | Cu | 63 | 193.335 | -0.006511 | ppb |
| | Cu | 65 | 73.334 | -0.009316 | ppb |
| | Zn | 66 | 90.000 | 0.037597 | ppb |
| | As | 75 | 72.115 | 0.135595 | ppb |
| | Se | 82 | 40.667 | 0.179745 | ppb |
| | Ag | 107 | 40.000 | 0.009026 | ppb |
| | Ag | 109 | 20.000 | 0.003985 | ppb |
| | Cd | 111 | 9.915 | 0.012736 | ppb |
| | In | 113 | 71580.273 | | ppb |
| > | In | 115 | 1654740.971 | | ppb |
| | Sb | 121 | 475.011 | 0.174907 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 12.000 | 0.008187 | ppb |
| | Ba | 137 | 28.000 | 0.003820 | ppb |
| > | Tb | 159 | 1999719.504 | | ppb |
| | Tl | 205 | 100.001 | 0.008928 | ppb |
| | Pb | 206 | 35.000 | 0.003377 | ppb |
| | Pb | 207 | 50.000 | -0.000390 | ppb |
| | Pb | 208 | 120.001 | 0.011873 | ppb |
| > | Bi | 209 | 1262481.076 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 98.734 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 98.369 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.891 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 97.763 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 98.517 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSA

Sample Date/Time: Wednesday, July 06, 2011 14:09:24
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\ICSA.401

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 225165.329 | 1.883 | 225165.329 | | | ppb |
| ⌊ | Be | 9 | 28.667 | 8.056 | 0.000 | 0.19194 | 8.10 | ppb |
| ⌈> | Sc | 45 | 910588.923 | 1.745 | 910588.923 | | | ppb |
| \| | V | 51 | -54.263 | 98.449 | -0.001 | -0.30337 | 5.35 | ppb |
| \| | Cr | 52 | 53798.999 | 0.628 | 0.056 | 19.06799 | 1.39 | ppb |
| \| | Mn | 55 | 30737.169 | 0.977 | 0.033 | 7.27977 | 2.33 | ppb |
| \| | Co | 59 | 3741.367 | 2.559 | 0.004 | 1.11119 | 2.16 | ppb |
| \| | Ni | 60 | 4481.004 | 1.646 | 0.005 | 5.33073 | 2.55 | ppb |
| \| | Cu | 63 | 13536.934 | 0.517 | 0.015 | 7.31084 | 1.81 | ppb |
| \| | Cu | 65 | 7466.122 | 3.888 | 0.008 | 8.38654 | 5.66 | ppb |
| \| | Zn | 66 | 5879.506 | 2.206 | 0.006 | 11.68055 | 2.22 | ppb |
| \| | As | 75 | 151.741 | 65.626 | 0.000 | 0.24429 | 60.96 | ppb |
| ⌊ | Se | 82 | 42.222 | 12.264 | 0.000 | 0.12793 | 89.64 | ppb |
| ⌈ | Ag | 107 | 40.000 | 22.048 | 0.000 | 0.00747 | 43.56 | ppb |
| \| | Ag | 109 | 38.889 | 13.093 | 0.000 | 0.01067 | 18.06 | ppb |
| \| | Cd | 111 | 239.747 | 11.882 | 0.000 | 0.37067 | 12.09 | ppb |
| \| | In | 113 | 81090.876 | 1.963 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1822445.586 | 0.693 | 1822445.586 | | | ppb |
| ⌈ | Sb | 121 | 2748.711 | 3.095 | 0.001 | 1.03642 | 3.94 | ppb |
| \| | Ba | 135 | 650.688 | 3.258 | 0.000 | 1.22535 | 3.83 | ppb |
| \| | Ba | 137 | 1092.726 | 3.377 | 0.000 | 1.17840 | 4.66 | ppb |
| ⌊> | Tb | 159 | 2349615.080 | 1.175 | 2349615.080 | | | ppb |
| ⌈ | Tl | 205 | 71.667 | 10.657 | 0.000 | 0.00200 | 95.02 | ppb |
| \| | Pb | 206 | 6592.174 | 3.686 | 0.005 | 3.90269 | 3.57 | ppb |
| \| | Pb | 207 | 11451.688 | 2.607 | 0.008 | 3.66766 | 2.71 | ppb |
| \| | Pb | 208 | 17585.952 | 3.658 | 0.013 | 3.59919 | 1.33 | ppb |
| ⌊> | Bi | 209 | 1350203.791 | 3.139 | 1350203.791 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 224628.886 | | ppb |
| ⌊ | Be | 9 | 30.000 | 0.203454 | ppb |
| ⌈> | Sc | 45 | 915995.089 | | ppb |
| \| | V | 51 | -115.847 | -0.322074 | ppb |
| \| | Cr | 52 | 53659.582 | 18.894739 | ppb |
| \| | Mn | 55 | 30391.111 | 7.152024 | ppb |
| \| | Co | 59 | 3672.674 | 1.083837 | ppb |
| \| | Ni | 60 | 4397.633 | 5.198547 | ppb |
| \| | Cu | 63 | 13615.930 | 7.308606 | ppb |
| \| | Cu | 65 | 7472.791 | 8.338606 | ppb |
| \| | Zn | 66 | 6028.483 | 11.907739 | ppb |
| \| | As | 75 | 44.192 | 0.081573 | ppb |
| ⌊ | Se | 82 | 38.000 | 0.040284 | ppb |
| ⌈ | Ag | 107 | 36.667 | 0.006289 | ppb |
| \| | Ag | 109 | 33.333 | 0.008545 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 216.983 | 0.336952 | ppb |
| | In | 113 | 80109.597 | | ppb |
| > | In | 115 | 1812274.282 | | ppb |
| | Sb | 121 | 2835.402 | 1.082585 | ppb |
| | Ba | 135 | 670.022 | 1.276238 | ppb |
| | Ba | 137 | 1124.063 | 1.226422 | ppb |
| > | Tb | 159 | 2323986.146 | | ppb |
| | Tl | 205 | 80.000 | 0.003978 | ppb |
| | Pb | 206 | 6316.995 | 3.826590 | ppb |
| | Pb | 207 | 11108.142 | 3.640233 | ppb |
| | Pb | 208 | 17344.021 | 3.633793 | ppb |
| > | Bi | 209 | 1319075.136 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 221218.104 | | ppb |
| | Be | 9 | 26.000 | 0.174246 | ppb |
| > | Sc | 45 | 892697.976 | | ppb |
| | V | 51 | -20.402 | -0.293202 | ppb |
| | Cr | 52 | 53553.013 | 19.373909 | ppb |
| | Mn | 55 | 30927.752 | 7.472209 | ppb |
| | Co | 59 | 3700.685 | 1.121272 | ppb |
| | Ni | 60 | 4507.682 | 5.469722 | ppb |
| | Cu | 63 | 13512.456 | 7.444617 | ppb |
| | Cu | 65 | 7753.004 | 8.883610 | ppb |
| | Zn | 66 | 5791.677 | 11.736229 | ppb |
| | As | 75 | 170.281 | 0.277489 | ppb |
| | Se | 82 | 48.000 | 0.257713 | ppb |
| | Ag | 107 | 33.333 | 0.004968 | ppb |
| | Ag | 109 | 40.000 | 0.011150 | ppb |
| | Cd | 111 | 271.692 | 0.421544 | ppb |
| | In | 113 | 80235.601 | | ppb |
| > | In | 115 | 1818490.731 | | ppb |
| | Sb | 121 | 2665.355 | 1.005045 | ppb |
| | Ba | 135 | 628.020 | 1.183665 | ppb |
| | Ba | 137 | 1102.061 | 1.190192 | ppb |
| > | Tb | 159 | 2346003.467 | | ppb |
| | Tl | 205 | 70.000 | 0.001808 | ppb |
| | Pb | 206 | 6777.296 | 4.063498 | ppb |
| | Pb | 207 | 11648.482 | 3.777905 | ppb |
| | Pb | 208 | 17098.657 | 3.544433 | ppb |
| > | Bi | 209 | 1333065.959 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 229648.998 | | ppb |
| | Be | 9 | 30.000 | 0.198132 | ppb |
| > | Sc | 45 | 923073.704 | | ppb |
| | V | 51 | -26.540 | -0.294845 | ppb |
| | Cr | 52 | 54184.401 | 18.935308 | ppb |
| | Mn | 55 | 30892.644 | 7.215079 | ppb |
| | Co | 59 | 3850.741 | 1.128468 | ppb |
| | Ni | 60 | 4537.696 | 5.323917 | ppb |
| | Cu | 63 | 13482.416 | 7.179288 | ppb |
| | Cu | 65 | 7172.571 | 7.937406 | ppb |
| | Zn | 66 | 5818.359 | 11.397682 | ppb |
| | As | 75 | 240.749 | 0.373814 | ppb |
| | Se | 82 | 40.667 | 0.085785 | ppb |
| | Ag | 107 | 50.000 | 0.011145 | ppb |
| | Ag | 109 | 43.333 | 0.012306 | ppb |
| | Cd | 111 | 230.566 | 0.353520 | ppb |
| | In | 113 | 82927.428 | | ppb |
| > | In | 115 | 1836571.746 | | ppb |
| | Sb | 121 | 2745.377 | 1.021626 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 654.021 | 1.216155 | ppb |
| \| | Ba | 137 | 1052.055 | 1.118586 | ppb |
| \-> | Tb | 159 | 2378855.627 | | ppb |
| ⌈ | Tl | 205 | 65.000 | 0.000200 | ppb |
| \| | Pb | 206 | 6682.232 | 3.817987 | ppb |
| \| | Pb | 207 | 11598.440 | 3.584853 | ppb |
| \| | Pb | 208 | 18315.179 | 3.619353 | ppb |
| \-> | Bi | 209 | 1398470.277 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 105.887 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 108.557 | | | |
| | V | 51 | -60.675 | | | | |
| | Cr | 52 | 90.800 | | | | |
| | Mn | 55 | 103.997 | | | | |
| | Co | 59 | 111.119 | | | | |
| | Ni | 60 | 88.845 | | | | |
| | Cu | 63 | 91.385 | | | | |
| | Cu | 65 | 104.832 | | | | |
| | Zn | 66 | 106.187 | | | | |
| | As | 75 | 244.292 | | | | |
| | Se | 82 | 42.643 | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | 52.953 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 107.835 | | | |
| | Sb | 121 | 69.095 | | | | |
| | Ba | 135 | 102.113 | | | | |
| | Ba | 137 | 98.200 | | | | |
| > | Tb | 159 | | 113.274 | | | |
| | Tl | 205 | 19955.650 | | | | |
| | Pb | 206 | 97.567 | | | | |
| | Pb | 207 | 91.692 | | | | |
| | Pb | 208 | 89.980 | | | | |
| > | Bi | 209 | | 105.847 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: ICSAB

Sample Date/Time: Wednesday, July 06, 2011 14:10:50
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\ICSAB.402

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227804.188 | 0.186 | 227804.188 | | | ppb |
| ⌊ | Be | 9 | 2458.302 | 4.299 | 0.011 | 19.63092 | 4.14 | ppb |
| ⌈> | Sc | 45 | 912986.787 | 0.985 | 912986.787 | | | ppb |
| \| | V | 51 | 62102.271 | 1.771 | 0.067 | 18.66972 | 2.71 | ppb |
| \| | Cr | 52 | 105542.708 | 0.236 | 0.113 | 38.28275 | 0.94 | ppb |
| \| | Mn | 55 | 108348.813 | 0.245 | 0.118 | 25.81358 | 0.80 | ppb |
| \| | Co | 59 | 69409.403 | 1.101 | 0.076 | 20.90424 | 0.12 | ppb |
| \| | Ni | 60 | 18684.107 | 1.087 | 0.020 | 22.28686 | 0.11 | ppb |
| \| | Cu | 63 | 48480.589 | 1.649 | 0.053 | 26.42776 | 1.55 | ppb |
| \| | Cu | 65 | 24023.266 | 0.189 | 0.026 | 27.12269 | 1.15 | ppb |
| \| | Zn | 66 | 14967.870 | 3.630 | 0.016 | 29.90373 | 3.26 | ppb |
| \| | As | 75 | 12796.921 | 2.199 | 0.014 | 19.28388 | 1.21 | ppb |
| ⌊ | Se | 82 | 1085.392 | 3.307 | 0.001 | 20.34630 | 3.00 | ppb |
| ⌈ | Ag | 107 | 50144.316 | 1.502 | 0.028 | 19.18923 | 1.80 | ppb |
| \| | Ag | 109 | 47691.243 | 1.300 | 0.026 | 19.00142 | 0.73 | ppb |
| \| | Cd | 111 | 11895.021 | 3.849 | 0.007 | 18.68899 | 4.38 | ppb |
| \| | In | 113 | 93664.972 | 0.971 | 0.008 | | | ppb |
| ⌊> | In | 115 | 1814180.484 | 0.836 | 1814180.484 | | | ppb |
| ⌈ | Sb | 121 | 51395.069 | 0.423 | 0.022 | 20.33304 | 1.32 | ppb |
| \| | Ba | 135 | 10624.975 | 1.260 | 0.005 | 20.46381 | 1.77 | ppb |
| \| | Ba | 137 | 18609.968 | 0.758 | 0.008 | 20.75870 | 1.68 | ppb |
| ⌊> | Tb | 159 | 2330205.073 | 0.928 | 2330205.073 | | | ppb |
| ⌈ | Tl | 205 | 101546.329 | 0.709 | 0.074 | 19.80310 | 1.31 | ppb |
| \| | Pb | 206 | 39807.413 | 1.048 | 0.029 | 23.37086 | 0.73 | ppb |
| \| | Pb | 207 | 71477.492 | 1.181 | 0.052 | 22.70008 | 0.44 | ppb |
| \| | Pb | 208 | 110499.604 | 0.793 | 0.081 | 22.42165 | 1.35 | ppb |
| ⌊> | Bi | 209 | 1366627.966 | 0.877 | 1366627.966 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 227838.279 | | ppb |
| ⌊ | Be | 9 | 2518.317 | 20.109062 | ppb |
| ⌈> | Sc | 45 | 912348.245 | | ppb |
| \| | V | 51 | 61515.417 | 18.500632 | ppb |
| \| | Cr | 52 | 105802.766 | 38.404856 | ppb |
| \| | Mn | 55 | 108161.802 | 25.785643 | ppb |
| \| | Co | 59 | 69389.916 | 20.913166 | ppb |
| \| | Ni | 60 | 18660.728 | 22.274675 | ppb |
| \| | Cu | 63 | 47616.430 | 25.972190 | ppb |
| \| | Cu | 65 | 23995.421 | 27.108137 | ppb |
| \| | Zn | 66 | 14407.037 | 28.798977 | ppb |
| \| | As | 75 | 12758.982 | 19.241721 | ppb |
| ⌊ | Se | 82 | 1118.729 | 21.008895 | ppb |
| ⌈ | Ag | 107 | 50255.967 | 19.418476 | ppb |
| \| | Ag | 109 | 47087.267 | 18.943977 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 12201.845 | 19.354863 | ppb |
| | In | 113 | 93929.071 | | ppb |
| > | In | 115 | 1796662.607 | | ppb |
| | Sb | 121 | 51145.459 | 20.047246 | ppb |
| | Ba | 135 | 10509.520 | 20.054597 | ppb |
| | Ba | 137 | 18461.025 | 20.401821 | ppb |
| > | Tb | 159 | 2351681.618 | | ppb |
| | Tl | 205 | 102270.300 | 19.916611 | ppb |
| | Pb | 206 | 40180.562 | 23.558689 | ppb |
| | Pb | 207 | 71900.791 | 22.804681 | ppb |
| | Pb | 208 | 109501.554 | 22.188109 | ppb |
| > | Bi | 209 | 1368440.256 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 227363.658 | | ppb |
| | Be | 9 | 2336.273 | 18.691546 | ppb |
| > | Sc | 45 | 904331.848 | | ppb |
| | V | 51 | 63370.835 | 19.238861 | ppb |
| | Cr | 52 | 105305.559 | 38.567426 | ppb |
| | Mn | 55 | 108232.562 | 26.032087 | ppb |
| | Co | 59 | 68654.868 | 20.875016 | ppb |
| | Ni | 60 | 18493.752 | 22.271040 | ppb |
| | Cu | 63 | 48631.297 | 26.764642 | ppb |
| | Cu | 65 | 24075.614 | 27.441074 | ppb |
| | Zn | 66 | 15004.582 | 30.267569 | ppb |
| | As | 75 | 12536.473 | 19.073882 | ppb |
| | Se | 82 | 1047.388 | 19.805025 | ppb |
| | Ag | 107 | 49341.429 | 18.792835 | ppb |
| | Ag | 109 | 47659.970 | 18.900795 | ppb |
| | Cd | 111 | 11368.752 | 17.775737 | ppb |
| | In | 113 | 92652.243 | | ppb |
| > | In | 115 | 1822668.421 | | ppb |
| | Sb | 121 | 51542.490 | 20.582332 | ppb |
| | Ba | 135 | 10593.608 | 20.594068 | ppb |
| | Ba | 137 | 18741.546 | 21.100757 | ppb |
| > | Tb | 159 | 2308458.141 | | ppb |
| | Tl | 205 | 101537.893 | 19.987290 | ppb |
| | Pb | 206 | 39357.298 | 23.324686 | ppb |
| | Pb | 207 | 70505.734 | 22.603240 | ppb |
| | Pb | 208 | 111142.111 | 22.763798 | ppb |
| > | Bi | 209 | 1353838.713 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 228210.627 | | ppb |
| | Be | 9 | 2520.318 | 20.092166 | ppb |
| > | Sc | 45 | 922280.267 | | ppb |
| | V | 51 | 61420.562 | 18.269653 | ppb |
| | Cr | 52 | 105519.800 | 37.875968 | ppb |
| | Mn | 55 | 108652.074 | 25.623017 | ppb |
| | Co | 59 | 70183.424 | 20.924540 | ppb |
| | Ni | 60 | 18897.840 | 22.314853 | ppb |
| | Cu | 63 | 49194.039 | 26.546455 | ppb |
| | Cu | 65 | 23998.763 | 26.818866 | ppb |
| | Zn | 66 | 15491.991 | 30.644629 | ppb |
| | As | 75 | 13095.308 | 19.536023 | ppb |
| | Se | 82 | 1090.059 | 20.224985 | ppb |
| | Ag | 107 | 50835.552 | 19.356384 | ppb |
| | Ag | 109 | 48326.491 | 19.159488 | ppb |
| | Cd | 111 | 12114.465 | 18.936357 | ppb |
| | In | 113 | 94413.602 | | ppb |
| > | In | 115 | 1823210.425 | | ppb |
| | Sb | 121 | 51497.258 | 20.369528 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 10771.798 | 20.742770 | ppb |
| \| | Ba | 137 | 18627.333 | 20.773525 | ppb |
| \> | Tb | 159 | 2330475.462 | | ppb |
| ⌈ | Tl | 205 | 100830.792 | 19.505390 | ppb |
| ¦ | Pb | 206 | 39884.380 | 23.229196 | ppb |
| \| | Pb | 207 | 72025.951 | 22.692317 | ppb |
| \| | Pb | 208 | 110855.148 | 22.313033 | ppb |
| \> | Bi | 209 | 1377604.928 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 107.128 | | | |
| ⌊ | Be | 9 | 103.321 | | | | |
| ⌈> | Sc | 45 | | 108.843 | | | |
| \| | V | 51 | 98.262 | | | | |
| \| | Cr | 52 | 95.707 | | | | |
| \| | Mn | 55 | 95.606 | | | | |
| \| | Co | 59 | 104.521 | | | | |
| \| | Ni | 60 | 92.862 | | | | |
| \| | Cu | 63 | 105.711 | | | | |
| \| | Cu | 65 | 108.491 | | | | |
| \| | Zn | 66 | 103.116 | | | | |
| \| | As | 75 | 101.494 | | | | |
| ⌊ | Se | 82 | 107.086 | | | | |
| ⌈ | Ag | 107 | 106.607 | | | | |
| \| | Ag | 109 | 105.563 | | | | |
| \| | Cd | 111 | 93.445 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 107.346 | | | |
| ⌈ | Sb | 121 | 92.423 | | | | |
| \| | Ba | 135 | 93.017 | | | | |
| \| | Ba | 137 | 94.358 | | | | |
| ⌊> | Tb | 159 | | 112.338 | | | |
| ⌈ | Tl | 205 | 94.300 | | | | |
| \| | Pb | 206 | 93.483 | | | | |
| \| | Pb | 207 | 90.800 | | | | |
| \| | Pb | 208 | 89.687 | | | | |
| ⌊> | Bi | 209 | | 107.134 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Wednesday, July 06, 2011 14:12:17
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LLCCV.403

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215391.644 | 0.322 | 215391.644 | | | ppb |
| ⌊ | Be | 9 | 114.667 | 2.664 | 0.001 | 0.93052 | 3.06 | ppb |
| ⌈> | Sc | 45 | 845393.664 | 1.547 | 845393.664 | | | ppb |
| \| | V | 51 | 15102.887 | 4.694 | 0.017 | 4.69075 | 4.44 | ppb |
| \| | Cr | 52 | 7346.698 | 0.590 | 0.006 | 1.93364 | 2.12 | ppb |
| \| | Mn | 55 | 4020.809 | 2.497 | 0.004 | 0.94914 | 4.38 | ppb |
| \| | Co | 59 | 3137.159 | 2.394 | 0.004 | 1.00184 | 3.03 | ppb |
| \| | Ni | 60 | 681.134 | 7.836 | 0.001 | 0.83969 | 7.44 | ppb |
| \| | Cu | 63 | 3476.160 | 1.152 | 0.004 | 1.93233 | 1.47 | ppb |
| \| | Cu | 65 | 1762.378 | 6.258 | 0.002 | 2.05468 | 5.49 | ppb |
| \| | Zn | 66 | 961.157 | 2.119 | 0.001 | 1.92231 | 0.77 | ppb |
| \| | As | 75 | 630.367 | 9.517 | 0.001 | 1.04137 | 10.59 | ppb |
| ⌊ | Se | 82 | 276.893 | 3.922 | 0.000 | 5.10188 | 2.95 | ppb |
| ⌈ | Ag | 107 | 2489.199 | 3.674 | 0.001 | 1.02868 | 3.75 | ppb |
| \| | Ag | 109 | 2383.617 | 1.938 | 0.001 | 1.02835 | 0.65 | ppb |
| \| | Cd | 111 | 552.083 | 5.417 | 0.000 | 0.93950 | 6.39 | ppb |
| \| | In | 113 | 73344.779 | 2.631 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1668082.896 | 1.422 | 1668082.896 | | | ppb |
| ⌈ | Sb | 121 | 4494.343 | 1.606 | 0.002 | 1.94638 | 1.50 | ppb |
| \| | Ba | 135 | 4304.926 | 0.883 | 0.002 | 9.25327 | 0.35 | ppb |
| \| | Ba | 137 | 7530.836 | 2.690 | 0.004 | 9.36819 | 3.12 | ppb |
| ⌊> | Tb | 159 | 2085523.111 | 1.121 | 2085523.111 | | | ppb |
| ⌈ | Tl | 205 | 4844.507 | 2.152 | 0.004 | 0.98471 | 2.28 | ppb |
| \| | Pb | 206 | 1563.456 | 5.298 | 0.001 | 0.94999 | 5.64 | ppb |
| \| | Pb | 207 | 2820.201 | 2.930 | 0.002 | 0.92774 | 3.15 | ppb |
| \| | Pb | 208 | 4465.594 | 2.146 | 0.003 | 0.94157 | 1.39 | ppb |
| ⌊> | Bi | 209 | 1295893.771 | 0.798 | 1295893.771 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 216189.913 | | ppb |
| ⌊ | Be | 9 | 112.001 | 0.904395 | ppb |
| ⌈> | Sc | 45 | 831971.660 | | ppb |
| \| | V | 51 | 15093.250 | 4.768143 | ppb |
| \| | Cr | 52 | 7306.668 | 1.964554 | ppb |
| \| | Mn | 55 | 4135.855 | 0.995649 | ppb |
| \| | Co | 59 | 3182.506 | 1.033131 | ppb |
| \| | Ni | 60 | 626.686 | 0.782743 | ppb |
| \| | Cu | 63 | 3437.257 | 1.941914 | ppb |
| \| | Cu | 65 | 1723.482 | 2.041736 | ppb |
| \| | Zn | 66 | 943.378 | 1.916867 | ppb |
| \| | As | 75 | 663.366 | 1.111443 | ppb |
| ⌊ | Se | 82 | 269.337 | 5.035842 | ppb |
| ⌈ | Ag | 107 | 2423.627 | 0.990008 | ppb |
| \| | Ag | 109 | 2410.290 | 1.028268 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 559.393 | 0.940898 | ppb |
| | In | 113 | 71116.985 | | ppb |
| > | In | 115 | 1686953.144 | | ppb |
| | Sb | 121 | 4536.029 | 1.978523 | ppb |
| | Ba | 135 | 4272.913 | 9.247033 | ppb |
| | Ba | 137 | 7749.001 | 9.705477 | ppb |
| > | Tb | 159 | 2071366.360 | | ppb |
| | Tl | 205 | 4731.119 | 0.964950 | ppb |
| | Pb | 206 | 1485.110 | 0.904760 | ppb |
| | Pb | 207 | 2735.188 | 0.902593 | ppb |
| | Pb | 208 | 4400.574 | 0.931205 | ppb |
| > | Bi | 209 | 1291108.806 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 215057.893 | | ppb |
| | Be | 9 | 114.001 | 0.926319 | ppb |
| > | Sc | 45 | 846107.003 | | ppb |
| | V | 51 | 14398.879 | 4.455021 | ppb |
| | Cr | 52 | 7392.732 | 1.949253 | ppb |
| | Mn | 55 | 3975.790 | 0.936233 | ppb |
| | Co | 59 | 3050.465 | 0.972591 | ppb |
| | Ni | 60 | 733.360 | 0.906556 | ppb |
| | Cu | 63 | 3517.285 | 1.954695 | ppb |
| | Cu | 65 | 1676.807 | 1.948862 | ppb |
| | Zn | 66 | 956.712 | 1.911028 | ppb |
| | As | 75 | 666.613 | 1.098406 | ppb |
| | Se | 82 | 272.004 | 4.995902 | ppb |
| | Ag | 107 | 2450.300 | 1.028949 | ppb |
| | Ag | 109 | 2330.271 | 1.021656 | ppb |
| | Cd | 111 | 577.656 | 0.998815 | ppb |
| | In | 113 | 74466.232 | | ppb |
| > | In | 115 | 1641454.779 | | ppb |
| | Sb | 121 | 4536.029 | 1.939127 | ppb |
| | Ba | 135 | 4346.945 | 9.224008 | ppb |
| | Ba | 137 | 7494.808 | 9.202621 | ppb |
| > | Tb | 159 | 2112503.986 | | ppb |
| | Tl | 205 | 4936.218 | 1.009125 | ppb |
| | Pb | 206 | 1650.136 | 1.009223 | ppb |
| | Pb | 207 | 2900.214 | 0.959849 | ppb |
| | Pb | 208 | 4420.581 | 0.937196 | ppb |
| > | Bi | 209 | 1288814.165 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 214927.127 | | ppb |
| | Be | 9 | 118.001 | 0.960834 | ppb |
| > | Sc | 45 | 858102.330 | | ppb |
| | V | 51 | 15816.532 | 4.849072 | ppb |
| | Cr | 52 | 7340.693 | 1.887112 | ppb |
| | Mn | 55 | 3950.780 | 0.915536 | ppb |
| | Co | 59 | 3178.505 | 0.999788 | ppb |
| | Ni | 60 | 683.357 | 0.829766 | ppb |
| | Cu | 63 | 3473.937 | 1.900381 | ppb |
| | Cu | 65 | 1886.845 | 2.173429 | ppb |
| | Zn | 66 | 983.382 | 1.939039 | ppb |
| | As | 75 | 561.120 | 0.914248 | ppb |
| | Se | 82 | 289.338 | 5.273890 | ppb |
| | Ag | 107 | 2593.670 | 1.067092 | ppb |
| | Ag | 109 | 2410.290 | 1.035118 | ppb |
| | Cd | 111 | 519.198 | 0.878796 | ppb |
| | In | 113 | 74451.121 | | ppb |
| > | In | 115 | 1675840.765 | | ppb |
| | Sb | 121 | 4410.973 | 1.921483 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 4294.922 | 9.288772 | ppb |
| \| | Ba | 137 | 7348.699 | 9.196483 | ppb |
| _> | Tb | 159 | 2072698.988 | | ppb |
| ⌜ | Tl | 205 | 4866.184 | 0.980050 | ppb |
| \| | Pb | 206 | 1555.121 | 0.935988 | ppb |
| \| | Pb | 207 | 2825.202 | 0.920775 | ppb |
| \| | Pb | 208 | 4575.627 | 0.956306 | ppb |
| _> | Bi | 209 | 1307758.341 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 101.291 | | | |
| ⌊ | Be | 9 | 93.052 | | | | |
| ⌈> | Sc | 45 | | 100.785 | | | |
| ¦ | V | 51 | 93.815 | | | | |
| ¦ | Cr | 52 | 96.682 | | | | |
| ¦ | Mn | 55 | 94.914 | | | | |
| ¦ | Co | 59 | 100.184 | | | | |
| ¦ | Ni | 60 | 83.969 | | | | |
| ¦ | Cu | 63 | 96.617 | | | | |
| ¦ | Cu | 65 | 102.734 | | | | |
| ¦ | Zn | 66 | 96.116 | | | | |
| ¦ | As | 75 | 104.137 | | | | |
| ⌊ | Se | 82 | 102.038 | | | | |
| ⌈ | Ag | 107 | 102.868 | | | | |
| ¦ | Ag | 109 | 102.835 | | | | |
| ¦ | Cd | 111 | 93.950 | | | | |
| ¦ | In | 113 | | | | | |
| ⌊> | In | 115 | | 98.701 | | | |
| ⌈ | Sb | 121 | 97.319 | | | | |
| ¦ | Ba | 135 | 92.533 | | | | |
| ¦ | Ba | 137 | 93.682 | | | | |
| ⌊> | Tb | 159 | | 100.542 | | | |
| ⌈ | Tl | 205 | 98.471 | | | | |
| ¦ | Pb | 206 | 94.999 | | | | |
| ¦ | Pb | 207 | 92.774 | | | | |
| ¦ | Pb | 208 | 94.157 | | | | |
| ⌊> | Bi | 209 | | 101.589 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Wednesday, July 06, 2011 14:13:44
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCV.404

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210703.801 | 1.814 | 210703.801 | | | ppb |
| ⌊ | Be | 9 | 35203.190 | 0.816 | 0.167 | 304.60246 | 2.23 | ppb |
| ⌈> | Sc | 45 | 838047.255 | 0.129 | 838047.255 | | | ppb |
| \| | V | 51 | 914928.255 | 1.054 | 1.091 | 303.91470 | 0.98 | ppb |
| \| | Cr | 52 | 754241.979 | 0.420 | 0.897 | 304.95574 | 0.33 | ppb |
| \| | Mn | 55 | 1170586.104 | 1.041 | 1.396 | 304.77354 | 1.13 | ppb |
| \| | Co | 59 | 934296.190 | 0.493 | 1.115 | 306.81929 | 0.59 | ppb |
| \| | Ni | 60 | 235358.726 | 0.896 | 0.281 | 306.34362 | 0.84 | ppb |
| \| | Cu | 63 | 515514.282 | 0.722 | 0.615 | 307.45287 | 0.83 | ppb |
| \| | Cu | 65 | 247203.034 | 1.476 | 0.295 | 305.07012 | 1.59 | ppb |
| \| | Zn | 66 | 138525.254 | 1.642 | 0.165 | 303.00114 | 1.77 | ppb |
| \| | As | 75 | 184435.372 | 0.192 | 0.220 | 302.58198 | 0.32 | ppb |
| ⌊ | Se | 82 | 14397.023 | 0.896 | 0.017 | 303.36260 | 0.79 | ppb |
| ⌈ | Ag | 107 | 740473.205 | 0.921 | 0.443 | 307.70252 | 0.73 | ppb |
| \| | Ag | 109 | 707294.810 | 0.469 | 0.423 | 305.99178 | 0.66 | ppb |
| \| | Cd | 111 | 177737.761 | 1.635 | 0.106 | 303.17598 | 2.07 | ppb |
| \| | In | 113 | 246022.960 | 0.436 | 0.104 | | | ppb |
| ⌊> | In | 115 | 1671224.876 | 0.562 | 1671224.876 | | | ppb |
| ⌈ | Sb | 121 | 675662.327 | 0.668 | 0.334 | 308.70639 | 2.99 | ppb |
| \| | Ba | 135 | 137081.201 | 0.745 | 0.068 | 304.54686 | 2.99 | ppb |
| \| | Ba | 137 | 238372.366 | 0.714 | 0.118 | 306.89981 | 3.14 | ppb |
| ⌊> | Tb | 159 | 2023099.372 | 3.565 | 2023099.372 | | | ppb |
| ⌈ | Tl | 205 | 1449245.074 | 2.425 | 1.144 | 304.95236 | 1.44 | ppb |
| \| | Pb | 206 | 472453.635 | 1.797 | 0.373 | 299.38654 | 1.51 | ppb |
| \| | Pb | 207 | 869484.083 | 2.217 | 0.686 | 298.02030 | 1.31 | ppb |
| \| | Pb | 208 | 1372009.765 | 1.244 | 1.083 | 300.43092 | 1.07 | ppb |
| ⌊> | Bi | 209 | 1267209.771 | 1.909 | 1267209.771 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214722.807 | | ppb |
| ⌊ | Be | 9 | 35231.955 | 299.069215 | ppb |
| ⌈> | Sc | 45 | 836996.087 | | ppb |
| \| | V | 51 | 913591.898 | 303.853274 | ppb |
| \| | Cr | 52 | 750614.037 | 303.866904 | ppb |
| \| | Mn | 55 | 1172322.059 | 305.606998 | ppb |
| \| | Co | 59 | 939470.273 | 308.904784 | ppb |
| \| | Ni | 60 | 235504.170 | 306.918781 | ppb |
| \| | Cu | 63 | 519811.279 | 310.404160 | ppb |
| \| | Cu | 65 | 249015.645 | 307.690198 | ppb |
| \| | Zn | 66 | 140179.003 | 307.001212 | ppb |
| \| | As | 75 | 184828.602 | 303.607057 | ppb |
| ⌊ | Se | 82 | 14325.587 | 302.235582 | ppb |
| ⌈ | Ag | 107 | 747899.535 | 309.099772 | ppb |
| \| | Ag | 109 | 709929.479 | 305.457192 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 177091.659 | 300.413285 | ppb |
| | In | 113 | 246326.937 | | ppb |
| > | In | 115 | 1680355.874 | | ppb |
| | Sb | 121 | 675328.596 | 316.370503 | ppb |
| | Ba | 135 | 137131.854 | 312.377781 | ppb |
| | Ba | 137 | 236407.787 | 312.071486 | ppb |
| > | Tb | 159 | 1971732.268 | | ppb |
| | Tl | 205 | 1417455.387 | 304.983374 | ppb |
| | Pb | 206 | 466131.494 | 302.006848 | ppb |
| | Pb | 207 | 851958.758 | 298.586823 | ppb |
| | Pb | 208 | 1355441.244 | 303.456251 | ppb |
| > | Bi | 209 | 1239291.415 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207116.886 | | ppb |
| | Be | 9 | 35474.812 | 312.190851 | ppb |
| > | Sc | 45 | 839156.358 | | ppb |
| | V | 51 | 925165.874 | 306.913440 | ppb |
| | Cr | 52 | 755644.523 | 305.120067 | ppb |
| | Mn | 55 | 1157629.097 | 300.998539 | ppb |
| | Co | 59 | 932757.389 | 305.907804 | ppb |
| | Ni | 60 | 237391.346 | 308.581995 | ppb |
| | Cu | 63 | 513360.523 | 305.761084 | ppb |
| | Cu | 65 | 243003.765 | 299.486085 | ppb |
| | Zn | 66 | 135930.958 | 296.926002 | ppb |
| | As | 75 | 184141.609 | 301.699987 | ppb |
| | Se | 82 | 14545.905 | 306.102594 | ppb |
| | Ag | 107 | 739017.610 | 308.878394 | ppb |
| | Ag | 109 | 708389.124 | 308.236752 | ppb |
| | Cd | 111 | 180911.745 | 310.359698 | ppb |
| | In | 113 | 244830.862 | | ppb |
| > | In | 115 | 1661590.267 | | ppb |
| | Sb | 121 | 671327.190 | 311.293097 | ppb |
| | Ba | 135 | 136035.025 | 306.723784 | ppb |
| | Ba | 137 | 239420.197 | 312.830156 | ppb |
| > | Tb | 159 | 1992014.699 | | ppb |
| | Tl | 205 | 1443306.043 | 300.537922 | ppb |
| | Pb | 206 | 469126.800 | 294.152269 | ppb |
| | Pb | 207 | 866362.974 | 293.850124 | ppb |
| | Pb | 208 | 1371055.866 | 297.060177 | ppb |
| > | Bi | 209 | 1280557.551 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210271.709 | | ppb |
| | Be | 9 | 34902.804 | 302.547301 | ppb |
| > | Sc | 45 | 837989.322 | | ppb |
| | V | 51 | 906026.991 | 300.977372 | ppb |
| | Cr | 52 | 756467.378 | 305.880253 | ppb |
| | Mn | 55 | 1181807.158 | 307.715085 | ppb |
| | Co | 59 | 930660.907 | 305.645292 | ppb |
| | Ni | 60 | 233180.663 | 303.530070 | ppb |
| | Cu | 63 | 513371.043 | 306.193356 | ppb |
| | Cu | 65 | 249589.693 | 308.034087 | ppb |
| | Zn | 66 | 139465.801 | 305.076208 | ppb |
| | As | 75 | 184335.906 | 302.438898 | ppb |
| | Se | 82 | 14319.579 | 301.749624 | ppb |
| | Ag | 107 | 734502.471 | 305.129408 | ppb |
| | Ag | 109 | 703565.827 | 304.281383 | ppb |
| | Cd | 111 | 175209.877 | 298.754945 | ppb |
| | In | 113 | 246911.081 | | ppb |
| > | In | 115 | 1671728.487 | | ppb |
| | Sb | 121 | 680331.196 | 298.455584 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 138076.723 | 294.539013 | ppb |
| \| | Ba | 137 | 239289.115 | 295.797777 | ppb |
| \|> | Tb | 159 | 2105551.148 | | ppb |
| ⌈ | Tl | 205 | 1486973.791 | 309.335780 | ppb |
| \| | Pb | 206 | 482102.611 | 302.000498 | ppb |
| \| | Pb | 207 | 890130.517 | 301.623967 | ppb |
| \| | Pb | 208 | 1389532.185 | 300.776325 | ppb |
| \|> | Bi | 209 | 1281780.349 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.087 | | | |
| | Be | 9 | 101.534 | | | | |
| > | Sc | 45 | | 99.909 | | | |
| | V | 51 | 101.305 | | | | |
| | Cr | 52 | 101.652 | | | | |
| | Mn | 55 | 101.591 | | | | |
| | Co | 59 | 102.273 | | | | |
| | Ni | 60 | 102.115 | | | | |
| | Cu | 63 | 102.484 | | | | |
| | Cu | 65 | 101.690 | | | | |
| | Zn | 66 | 101.000 | | | | |
| | As | 75 | 100.861 | | | | |
| | Se | 82 | 101.121 | | | | |
| | Ag | 107 | 102.568 | | | | |
| | Ag | 109 | 101.997 | | | | |
| | Cd | 111 | 101.059 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 98.887 | | | |
| | Sb | 121 | 102.902 | | | | |
| | Ba | 135 | 101.516 | | | | |
| | Ba | 137 | 102.300 | | | | |
| > | Tb | 159 | | 97.532 | | | |
| | Tl | 205 | 101.651 | | | | |
| | Pb | 206 | 99.796 | | | | |
| | Pb | 207 | 99.340 | | | | |
| | Pb | 208 | 100.144 | | | | |
| > | Bi | 209 | | 99.340 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Wednesday, July 06, 2011 14:15:09
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCB.405

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211651.311 | 1.404 | 211651.311 | | | ppb |
| ⌊ | Be | 9 | 3.333 | 34.641 | -0.000 | -0.01120 | 91.51 | ppb |
| ⌈> | Sc | 45 | 826348.581 | 1.413 | 826348.581 | | | ppb |
| \| | V | 51 | 979.451 | 30.926 | 0.000 | 0.04415 | 239.93 | ppb |
| \| | Cr | 52 | 2612.341 | 1.361 | 0.000 | 0.05357 | 17.08 | ppb |
| \| | Mn | 55 | 400.008 | 9.763 | 0.000 | 0.01626 | 57.65 | ppb |
| \| | Co | 59 | 90.667 | 9.184 | 0.000 | 0.01049 | 22.66 | ppb |
| \| | Ni | 60 | 33.333 | 55.678 | 0.000 | 0.00477 | 498.66 | ppb |
| \| | Cu | 63 | 207.780 | 7.234 | 0.000 | 0.00187 | 485.11 | ppb |
| \| | Cu | 65 | 72.222 | 5.329 | -0.000 | -0.01096 | 48.89 | ppb |
| \| | Zn | 66 | 80.000 | 15.023 | 0.000 | 0.01492 | 188.03 | ppb |
| \| | As | 75 | -19.806 | 119.009 | -0.000 | -0.01740 | 221.57 | ppb |
| ⌊ | Se | 82 | 37.333 | 14.174 | 0.000 | 0.10563 | 107.08 | ppb |
| ⌈ | Ag | 107 | 35.556 | 21.651 | 0.000 | 0.00729 | 41.87 | ppb |
| \| | Ag | 109 | 18.889 | 36.735 | 0.000 | 0.00356 | 82.18 | ppb |
| \| | Cd | 111 | 5.515 | 93.510 | 0.000 | 0.00517 | 172.58 | ppb |
| \| | In | 113 | 71902.585 | 0.825 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1636689.098 | 1.719 | 1636689.098 | | | ppb |
| ⌈ | Sb | 121 | 218.336 | 7.362 | 0.000 | 0.05459 | 16.85 | ppb |
| \| | Ba | 135 | 28.667 | 47.490 | 0.000 | 0.04419 | 66.15 | ppb |
| \| | Ba | 137 | 37.333 | 3.093 | 0.000 | 0.01506 | 2.70 | ppb |
| ⌊> | Tb | 159 | 2037466.014 | 2.387 | 2037466.014 | | | ppb |
| ⌈ | Tl | 205 | 83.334 | 19.287 | 0.000 | 0.00546 | 62.44 | ppb |
| \| | Pb | 206 | 26.667 | 60.273 | -0.000 | -0.00192 | 529.11 | ppb |
| \| | Pb | 207 | 60.000 | 30.046 | 0.000 | 0.00312 | 201.75 | ppb |
| \| | Pb | 208 | 111.667 | 44.851 | 0.000 | 0.01010 | 108.52 | ppb |
| ⌊> | Bi | 209 | 1258995.340 | 0.687 | 1258995.340 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214923.040 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.023042 | ppb |
| ⌈> | Sc | 45 | 839568.923 | | ppb |
| \| | V | 51 | 790.327 | -0.024535 | ppb |
| \| | Cr | 52 | 2640.349 | 0.047955 | ppb |
| \| | Mn | 55 | 425.009 | 0.021151 | ppb |
| \| | Co | 59 | 100.001 | 0.013095 | ppb |
| \| | Ni | 60 | 53.333 | 0.030285 | ppb |
| \| | Cu | 63 | 206.669 | -0.000773 | ppb |
| \| | Cu | 65 | 70.000 | -0.015152 | ppb |
| \| | Zn | 66 | 76.667 | 0.004708 | ppb |
| \| | As | 75 | -45.316 | -0.058961 | ppb |
| ⌊ | Se | 82 | 39.333 | 0.135232 | ppb |
| ⌈ | Ag | 107 | 26.667 | 0.003769 | ppb |
| \| | Ag | 109 | 13.333 | 0.001249 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| ¦ | Cd | 111 | -0.365 | -0.004991 | ppb |
| ¦ | In | 113 | 71217.698 | | ppb |
| ¦> | In | 115 | 1606110.677 | | ppb |
| ⌈ | Sb | 121 | 225.003 | 0.056520 | ppb |
| ¦ | Ba | 135 | 44.000 | 0.077319 | ppb |
| ¦ | Ba | 137 | 38.000 | 0.015463 | ppb |
| ¦> | Tb | 159 | 2056881.281 | | ppb |
| ⌈ | Tl | 205 | 95.000 | 0.007810 | ppb |
| ¦ | Pb | 206 | 45.000 | 0.009649 | ppb |
| ¦ | Pb | 207 | 65.000 | 0.004702 | ppb |
| ¦ | Pb | 208 | 160.001 | 0.020556 | ppb |
| ¦> | Bi | 209 | 1266375.441 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210910.961 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005433 | ppb |
| ⌈> | Sc | 45 | 822049.301 | | ppb |
| ¦ | V | 51 | 819.208 | -0.009156 | ppb |
| ¦ | Cr | 52 | 2624.344 | 0.064122 | ppb |
| ¦ | Mn | 55 | 420.009 | 0.022178 | ppb |
| ¦ | Co | 59 | 84.000 | 0.008437 | ppb |
| ¦ | Ni | 60 | 30.000 | 0.000796 | ppb |
| ¦ | Cu | 63 | 223.336 | 0.011987 | ppb |
| ¦ | Cu | 65 | 76.667 | -0.004924 | ppb |
| ¦ | Zn | 66 | 70.000 | -0.006597 | ppb |
| ¦ | As | 75 | 1.165 | 0.017193 | ppb |
| ⌊ | Se | 82 | 31.333 | -0.019341 | ppb |
| ⌈ | Ag | 107 | 40.000 | 0.009151 | ppb |
| ¦ | Ag | 109 | 16.667 | 0.002583 | ppb |
| ¦ | Cd | 111 | 9.270 | 0.011745 | ppb |
| ¦ | In | 113 | 72229.919 | | ppb |
| ¦> | In | 115 | 1642461.468 | | ppb |
| ⌈ | Sb | 121 | 200.002 | 0.044576 | ppb |
| ¦ | Ba | 135 | 24.000 | 0.033226 | ppb |
| ¦ | Ba | 137 | 38.000 | 0.015080 | ppb |
| ¦> | Tb | 159 | 2073394.272 | | ppb |
| ⌈ | Tl | 205 | 90.000 | 0.007013 | ppb |
| ¦ | Pb | 206 | 15.000 | -0.009245 | ppb |
| ¦ | Pb | 207 | 75.000 | 0.008479 | ppb |
| ¦ | Pb | 208 | 115.000 | 0.011036 | ppb |
| ¦> | Bi | 209 | 1249485.696 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209119.931 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005137 | ppb |
| ⌈> | Sc | 45 | 817427.518 | | ppb |
| ¦ | V | 51 | 1328.818 | 0.166128 | ppb |
| ¦ | Cr | 52 | 2572.331 | 0.048626 | ppb |
| ¦ | Mn | 55 | 355.006 | 0.005452 | ppb |
| ¦ | Co | 59 | 88.000 | 0.009943 | ppb |
| ¦ | Ni | 60 | 16.667 | -0.016774 | ppb |
| ¦ | Cu | 63 | 193.335 | -0.005596 | ppb |
| ¦ | Cu | 65 | 70.000 | -0.012816 | ppb |
| ¦ | Zn | 66 | 93.334 | 0.046639 | ppb |
| ¦ | As | 75 | -15.266 | -0.010431 | ppb |
| ⌊ | Se | 82 | 41.333 | 0.200997 | ppb |
| ⌈ | Ag | 107 | 40.000 | 0.008958 | ppb |
| ¦ | Ag | 109 | 26.667 | 0.006851 | ppb |
| ¦ | Cd | 111 | 7.640 | 0.008764 | ppb |
| ¦ | In | 113 | 72260.136 | | ppb |
| ¦> | In | 115 | 1661495.148 | | ppb |
| ⌈ | Sb | 121 | 230.003 | 0.062662 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 18.000 | 0.022023 | ppb |
| | Ba | 137 | 36.000 | 0.014650 | ppb |
| > | Tb | 159 | 1982122.489 | | ppb |
| | Tl | 205 | 65.000 | 0.001550 | ppb |
| | Pb | 206 | 20.000 | -0.006150 | ppb |
| | Pb | 207 | 40.000 | -0.003816 | ppb |
| | Pb | 208 | 60.000 | -0.001300 | ppb |
| > | Bi | 209 | 1261124.884 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.532 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 98.514 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.844 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 98.225 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 98.697 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062835-BLK1

Sample Date/Time: Wednesday, July 06, 2011 14:31:40
Sample Type: Sample
Sample Description: PBW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062835-BLK1.406

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207049.693 | 1.130 | 207049.693 | | | ppb |
| ⌊ | Be | 9 | 4.667 | 65.465 | 0.000 | 0.00110 | 2430.85 | ppb |
| ⌈> | Sc | 45 | 807040.645 | 1.562 | 807040.645 | | | ppb |
| \| | V | 51 | 814.834 | 10.372 | -0.000 | -0.00565 | 468.46 | ppb |
| \| | Cr | 52 | 2515.650 | 0.801 | 0.000 | 0.03875 | 59.69 | ppb |
| \| | Mn | 55 | 308.338 | 7.999 | -0.000 | -0.00587 | 132.43 | ppb |
| \| | Co | 59 | 52.667 | 5.801 | -0.000 | -0.00172 | 69.07 | ppb |
| \| | Ni | 60 | 32.222 | 48.888 | 0.000 | 0.00469 | 467.53 | ppb |
| \| | Cu | 63 | 252.225 | 11.919 | 0.000 | 0.03263 | 64.42 | ppb |
| \| | Cu | 65 | 51.111 | 35.919 | -0.000 | -0.03577 | 67.66 | ppb |
| \| | Zn | 66 | 75.556 | 9.184 | 0.000 | 0.00883 | 153.78 | ppb |
| \| | As | 75 | -6.717 | 92.886 | 0.000 | 0.00374 | 289.91 | ppb |
| ⌊ | Se | 82 | 32.000 | 9.547 | 0.000 | 0.00808 | 873.02 | ppb |
| ⌈ | Ag | 107 | 7.778 | 137.766 | -0.000 | -0.00446 | 102.33 | ppb |
| \| | Ag | 109 | 4.444 | 43.301 | -0.000 | -0.00281 | 31.13 | ppb |
| \| | Cd | 111 | 5.758 | 22.808 | 0.000 | 0.00553 | 39.42 | ppb |
| \| | In | 113 | 71545.040 | 1.015 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1660316.268 | 1.491 | 1660316.268 | | | ppb |
| ⌈ | Sb | 121 | 41.667 | 42.143 | -0.000 | -0.02538 | 32.01 | ppb |
| \| | Ba | 135 | 13.333 | 37.749 | 0.000 | 0.01111 | 103.31 | ppb |
| \| | Ba | 137 | 14.667 | 62.984 | -0.000 | -0.01354 | 89.28 | ppb |
| ⌊> | Tb | 159 | 2009439.573 | 1.041 | 2009439.573 | | | ppb |
| ⌈ | Tl | 205 | 20.000 | 75.000 | -0.000 | -0.00783 | 41.88 | ppb |
| \| | Pb | 206 | 23.333 | 68.883 | -0.000 | -0.00358 | 294.38 | ppb |
| \| | Pb | 207 | 43.333 | 24.019 | -0.000 | -0.00221 | 161.82 | ppb |
| \| | Pb | 208 | 50.000 | 43.589 | -0.000 | -0.00316 | 156.62 | ppb |
| ⌊> | Bi | 209 | 1222220.026 | 0.723 | 1222220.026 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208999.451 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.022561 | ppb |
| ⌈> | Sc | 45 | 805062.288 | | ppb |
| \| | V | 51 | 731.725 | -0.033576 | ppb |
| \| | Cr | 52 | 2534.321 | 0.049007 | ppb |
| \| | Mn | 55 | 325.005 | -0.001225 | ppb |
| \| | Co | 59 | 56.000 | -0.000542 | ppb |
| \| | Ni | 60 | 20.000 | -0.011915 | ppb |
| \| | Cu | 63 | 250.003 | 0.031416 | ppb |
| \| | Cu | 65 | 33.333 | -0.058574 | ppb |
| \| | Zn | 66 | 70.000 | -0.003301 | ppb |
| \| | As | 75 | -1.483 | 0.012712 | ppb |
| ⌊ | Se | 82 | 28.667 | -0.063733 | ppb |
| ⌈ | Ag | 107 | 3.333 | -0.006381 | ppb |
| \| | Ag | 109 | 3.333 | -0.003315 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5.000 | 0.004161 | ppb |
| | In | 113 | 71066.629 | | ppb |
| > | In | 115 | 1675892.602 | | ppb |
| | Sb | 121 | 25.000 | -0.032965 | ppb |
| | Ba | 135 | 14.000 | 0.012741 | ppb |
| | Ba | 137 | 20.000 | -0.006543 | ppb |
| > | Tb | 159 | 1995842.236 | | ppb |
| | Tl | 205 | 5.000 | -0.011097 | ppb |
| | Pb | 206 | 5.000 | -0.015582 | ppb |
| | Pb | 207 | 35.000 | -0.005087 | ppb |
| | Pb | 208 | 65.000 | 0.000335 | ppb |
| > | Bi | 209 | 1215651.529 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207694.686 | | ppb |
| | Be | 9 | 8.000 | 0.030210 | ppb |
| > | Sc | 45 | 820521.122 | | ppb |
| | V | 51 | 900.690 | 0.019032 | ppb |
| | Cr | 52 | 2494.311 | 0.012266 | ppb |
| | Mn | 55 | 280.004 | -0.014856 | ppb |
| | Co | 59 | 50.000 | -0.002915 | ppb |
| | Ni | 60 | 26.667 | -0.003562 | ppb |
| | Cu | 63 | 223.336 | 0.012240 | ppb |
| | Cu | 65 | 50.000 | -0.038367 | ppb |
| | Zn | 66 | 83.334 | 0.023497 | ppb |
| | As | 75 | -5.046 | 0.006790 | ppb |
| | Se | 82 | 32.667 | 0.010676 | ppb |
| | Ag | 107 | 0.000 | -0.007762 | ppb |
| | Ag | 109 | 3.333 | -0.003313 | ppb |
| | Cd | 111 | 7.275 | 0.008050 | ppb |
| | In | 113 | 72381.006 | | ppb |
| > | In | 115 | 1673279.898 | | ppb |
| | Sb | 121 | 60.000 | -0.016808 | ppb |
| | Ba | 135 | 18.000 | 0.021680 | ppb |
| | Ba | 137 | 20.000 | -0.006584 | ppb |
| > | Tb | 159 | 1998945.151 | | ppb |
| | Tl | 205 | 20.000 | -0.007866 | ppb |
| | Pb | 206 | 30.000 | 0.000664 | ppb |
| | Pb | 207 | 55.000 | 0.001794 | ppb |
| | Pb | 208 | 60.000 | -0.000991 | ppb |
| > | Bi | 209 | 1232262.104 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204454.941 | | ppb |
| | Be | 9 | 4.000 | -0.004341 | ppb |
| > | Sc | 45 | 795538.525 | | ppb |
| | V | 51 | 812.086 | -0.002397 | ppb |
| | Cr | 52 | 2518.317 | 0.054980 | ppb |
| | Mn | 55 | 320.005 | -0.001542 | ppb |
| | Co | 59 | 52.000 | -0.001697 | ppb |
| | Ni | 60 | 50.000 | 0.029549 | ppb |
| | Cu | 63 | 283.337 | 0.054226 | ppb |
| | Cu | 65 | 70.000 | -0.010378 | ppb |
| | Zn | 66 | 73.334 | 0.006292 | ppb |
| | As | 75 | -13.621 | -0.008294 | ppb |
| | Se | 82 | 34.667 | 0.077301 | ppb |
| | Ag | 107 | 20.000 | 0.000750 | ppb |
| | Ag | 109 | 6.667 | -0.001800 | ppb |
| | Cd | 111 | 5.000 | 0.004391 | ppb |
| | In | 113 | 71187.484 | | ppb |
| > | In | 115 | 1631776.304 | | ppb |
| | Sb | 121 | 40.000 | -0.026365 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 8.000 | -0.001096 | ppb |
| | Ba | 137 | 4.000 | -0.027508 | ppb |
| > | Tb | 159 | 2033531.333 | | ppb |
| | Tl | 205 | 35.000 | -0.004536 | ppb |
| | Pb | 206 | 35.000 | 0.004176 | ppb |
| | Pb | 207 | 40.000 | -0.003337 | ppb |
| | Pb | 208 | 25.000 | -0.008809 | ppb |
| > | Bi | 209 | 1218746.444 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | 97.368 | | | |
| Be | 9 | | | | | |
| Sc | 45 | | 96.212 | | | |
| V | 51 | | | | | |
| Cr | 52 | | | | | |
| Mn | 55 | | | | | |
| Co | 59 | | | | | |
| Ni | 60 | | | | | |
| Cu | 63 | | | | | |
| Cu | 65 | | | | | |
| Zn | 66 | | | | | |
| As | 75 | | | | | |
| Se | 82 | | | | | |
| Ag | 107 | | | | | |
| Ag | 109 | | | | | |
| Cd | 111 | | | | | |
| In | 113 | | | | | |
| In | 115 | | 98.242 | | | |
| Sb | 121 | | | | | |
| Ba | 135 | | | | | |
| Ba | 137 | | | | | |
| Tb | 159 | | 96.874 | | | |
| Tl | 205 | | | | | |
| Pb | 206 | | | | | |
| Pb | 207 | | | | | |
| Pb | 208 | | | | | |
| Bi | 209 | | 95.814 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062835-BS1

Sample Date/Time: Wednesday, July 06, 2011 14:33:06
Sample Type: Sample
Sample Description: LCSW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062835-BS1.407

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201837.142 | 2.101 | 201837.142 | | | ppb |
| ⌊ | Be | 9 | 11023.406 | 0.605 | 0.055 | 99.54705 | 2.01 | ppb |
| ⌈> | Sc | 45 | 791477.109 | 1.193 | 791477.109 | | | ppb |
| \| | V | 51 | 274705.289 | 1.024 | 0.346 | 96.42757 | 0.92 | ppb |
| \| | Cr | 52 | 238879.264 | 1.551 | 0.299 | 101.58902 | 1.12 | ppb |
| \| | Mn | 55 | 348716.024 | 0.444 | 0.440 | 96.07858 | 0.92 | ppb |
| \| | Co | 59 | 302811.349 | 1.058 | 0.383 | 105.28147 | 0.40 | ppb |
| \| | Ni | 60 | 66471.320 | 1.140 | 0.084 | 91.58362 | 0.32 | ppb |
| \| | Cu | 63 | 164348.589 | 1.451 | 0.207 | 103.71091 | 1.79 | ppb |
| \| | Cu | 65 | 79255.060 | 0.659 | 0.100 | 103.50206 | 1.10 | ppb |
| \| | Zn | 66 | 89451.723 | 1.854 | 0.113 | 207.10823 | 0.68 | ppb |
| \| | As | 75 | 113175.422 | 0.377 | 0.143 | 196.62598 | 1.45 | ppb |
| ⌊ | Se | 82 | 9144.624 | 0.829 | 0.012 | 203.81069 | 0.93 | ppb |
| ⌈ | Ag | 107 | 241071.351 | 1.006 | 0.148 | 102.84193 | 1.65 | ppb |
| \| | Ag | 109 | 233024.900 | 0.399 | 0.143 | 103.48845 | 0.51 | ppb |
| \| | Cd | 111 | 56591.070 | 1.678 | 0.035 | 99.09966 | 2.50 | ppb |
| \| | In | 113 | 124636.950 | 0.911 | 0.033 | | | ppb |
| ⌊> | In | 115 | 1627965.017 | 0.826 | 1627965.017 | | | ppb |
| ⌈ | Sb | 121 | 432717.306 | 0.225 | 0.220 | 203.49421 | 0.29 | ppb |
| \| | Ba | 135 | 43983.855 | 0.888 | 0.022 | 100.57104 | 0.52 | ppb |
| \| | Ba | 137 | 75640.335 | 0.588 | 0.038 | 100.21803 | 0.22 | ppb |
| ⌊> | Tb | 159 | 1964036.597 | 0.370 | 1964036.597 | | | ppb |
| ⌈ | Tl | 205 | 901410.116 | 0.891 | 0.749 | 199.81341 | 2.16 | ppb |
| \| | Pb | 206 | 292534.916 | 2.006 | 0.243 | 195.30182 | 3.76 | ppb |
| \| | Pb | 207 | 535930.264 | 1.843 | 0.446 | 193.53848 | 3.54 | ppb |
| \| | Pb | 208 | 845668.832 | 0.106 | 0.703 | 195.04865 | 1.86 | ppb |
| ⌊> | Bi | 209 | 1203183.425 | 1.811 | 1203183.425 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205912.391 | | ppb |
| ⌊ | Be | 9 | 11084.140 | 98.087493 | ppb |
| ⌈> | Sc | 45 | 792679.313 | | ppb |
| \| | V | 51 | 277357.810 | 97.209382 | ppb |
| \| | Cr | 52 | 242236.824 | 102.872637 | ppb |
| \| | Mn | 55 | 347675.647 | 95.639652 | ppb |
| \| | Co | 59 | 304403.619 | 105.673011 | ppb |
| \| | Ni | 60 | 66332.607 | 91.253049 | ppb |
| \| | Cu | 63 | 167101.240 | 105.281011 | ppb |
| \| | Cu | 65 | 79830.714 | 104.088595 | ppb |
| \| | Zn | 66 | 89865.316 | 207.761569 | ppb |
| \| | As | 75 | 113532.362 | 196.924646 | ppb |
| ⌊ | Se | 82 | 9218.247 | 205.133555 | ppb |
| ⌈ | Ag | 107 | 243457.947 | 103.986355 | ppb |
| \| | Ag | 109 | 233416.060 | 103.793758 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 56701.394 | 99.407821 | ppb |
| | In | 113 | 124576.158 | | ppb |
| > | In | 115 | 1625858.631 | | ppb |
| | Sb | 121 | 433736.712 | 203.770566 | ppb |
| | Ba | 135 | 44078.934 | 100.689973 | ppb |
| | Ba | 137 | 75703.470 | 100.202905 | ppb |
| > | Tb | 159 | 1965982.930 | | ppb |
| | Tl | 205 | 908325.617 | 204.654401 | ppb |
| | Pb | 206 | 298957.978 | 202.827336 | ppb |
| | Pb | 207 | 547180.944 | 200.813010 | ppb |
| | Pb | 208 | 846611.296 | 198.476799 | ppb |
| > | Bi | 209 | 1183456.144 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202150.802 | | ppb |
| | Be | 9 | 10951.994 | 98.721786 | ppb |
| > | Sc | 45 | 800264.163 | | ppb |
| | V | 51 | 275003.285 | 95.465506 | ppb |
| | Cr | 52 | 239495.980 | 100.723549 | ppb |
| | Mn | 55 | 350496.603 | 95.501699 | ppb |
| | Co | 59 | 304906.599 | 104.844248 | ppb |
| | Ni | 60 | 67288.964 | 91.691527 | ppb |
| | Cu | 63 | 162916.364 | 101.667255 | ppb |
| | Cu | 65 | 79121.779 | 102.184602 | ppb |
| | Zn | 66 | 90864.282 | 208.080311 | ppb |
| | As | 75 | 112703.158 | 193.633819 | ppb |
| | Se | 82 | 9148.850 | 201.647906 | ppb |
| | Ag | 107 | 241146.270 | 103.647098 | ppb |
| | Ag | 109 | 231962.826 | 103.796617 | ppb |
| | Cd | 111 | 57480.419 | 101.407815 | ppb |
| | In | 113 | 125801.353 | | ppb |
| > | In | 115 | 1615691.632 | | ppb |
| | Sb | 121 | 432614.642 | 202.814428 | ppb |
| | Ba | 135 | 44317.987 | 101.022531 | ppb |
| | Ba | 137 | 76050.085 | 100.449410 | ppb |
| > | Tb | 159 | 1970139.285 | | ppb |
| | Tl | 205 | 903304.969 | 196.367632 | ppb |
| | Pb | 206 | 287452.920 | 188.164193 | ppb |
| | Pb | 207 | 528682.838 | 187.201963 | ppb |
| | Pb | 208 | 845570.686 | 191.263227 | ppb |
| > | Bi | 209 | 1226577.798 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197448.234 | | ppb |
| | Be | 9 | 11034.084 | 101.831862 | ppb |
| > | Sc | 45 | 781487.851 | | ppb |
| | V | 51 | 271754.773 | 96.607824 | ppb |
| | Cr | 52 | 234904.989 | 101.170860 | ppb |
| | Mn | 55 | 347975.822 | 97.094393 | ppb |
| | Co | 59 | 299123.829 | 105.327144 | ppb |
| | Ni | 60 | 65792.389 | 91.806279 | ppb |
| | Cu | 63 | 163028.164 | 104.184458 | ppb |
| | Cu | 65 | 78812.686 | 104.232977 | ppb |
| | Zn | 66 | 87625.571 | 205.482809 | ppb |
| | As | 75 | 113290.746 | 199.319472 | ppb |
| | Se | 82 | 9066.775 | 204.650616 | ppb |
| | Ag | 107 | 238609.837 | 100.892339 | ppb |
| | Ag | 109 | 233695.814 | 102.874965 | ppb |
| | Cd | 111 | 55591.398 | 96.483329 | ppb |
| | In | 113 | 123533.340 | | ppb |
| > | In | 115 | 1642344.790 | | ppb |
| | Sb | 121 | 431800.565 | 203.897633 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 43554.644 | 100.000623 | ppb |
| | Ba | 137 | 75167.449 | 100.001775 | ppb |
| > | Tb | 159 | 1955987.576 | | ppb |
| | Tl | 205 | 892599.763 | 198.418190 | ppb |
| | Pb | 206 | 291193.850 | 194.913939 | ppb |
| | Pb | 207 | 531927.010 | 192.600453 | ppb |
| | Pb | 208 | 844824.514 | 195.405912 | ppb |
| > | Bi | 209 | 1199516.333 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 94.917 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 94.357 | | | |
| ¦ | V | 51 | | | | | |
| ¦ | Cr | 52 | | | | | |
| ¦ | Mn | 55 | | | | | |
| ¦ | Co | 59 | | | | | |
| ¦ | Ni | 60 | | | | | |
| ¦ | Cu | 63 | | | | | |
| ¦ | Cu | 65 | | | | | |
| ¦ | Zn | 66 | | | | | |
| ¦ | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| ¦ | Ag | 109 | | | | | |
| ¦ | Cd | 111 | | | | | |
| ¦ | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.328 | | | |
| ⌈ | Sb | 121 | | | | | |
| ¦ | Ba | 135 | | | | | |
| ¦ | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 94.685 | | | |
| ⌈ | Tl | 205 | | | | | |
| ¦ | Pb | 206 | | | | | |
| ¦ | Pb | 207 | | | | | |
| ¦ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 94.321 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062835-BSD1

Sample Date/Time: Wednesday, July 06, 2011 14:34:31
Sample Type: Sample
Sample Description: LCSWD
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062835-BSD1.408

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203107.125 | 2.065 | 203107.125 | | | ppb |
| ⌊ | Be | 9 | 11195.599 | 2.046 | 0.055 | 100.44644 | 0.94 | ppb |
| ⌈> | Sc | 45 | 796735.766 | 1.112 | 796735.766 | | | ppb |
| \| | V | 51 | 274868.948 | 1.675 | 0.344 | 95.83868 | 0.60 | ppb |
| \| | Cr | 52 | 235235.060 | 1.585 | 0.292 | 99.35275 | 0.56 | ppb |
| \| | Mn | 55 | 350269.243 | 1.017 | 0.439 | 95.86488 | 0.69 | ppb |
| \| | Co | 59 | 301664.836 | 1.118 | 0.379 | 104.19191 | 0.96 | ppb |
| \| | Ni | 60 | 67148.042 | 1.171 | 0.084 | 91.90740 | 0.99 | ppb |
| \| | Cu | 63 | 161724.010 | 1.085 | 0.203 | 101.36997 | 0.06 | ppb |
| \| | Cu | 65 | 77690.644 | 1.010 | 0.097 | 100.78450 | 1.16 | ppb |
| \| | Zn | 66 | 89092.960 | 1.572 | 0.112 | 204.96374 | 2.63 | ppb |
| \| | As | 75 | 114370.384 | 0.578 | 0.144 | 197.38251 | 1.13 | ppb |
| ⌊ | Se | 82 | 9381.955 | 1.471 | 0.012 | 207.71844 | 0.62 | ppb |
| ⌈ | Ag | 107 | 240538.865 | 1.264 | 0.150 | 104.34298 | 1.54 | ppb |
| \| | Ag | 109 | 229864.142 | 0.605 | 0.144 | 103.80672 | 0.58 | ppb |
| \| | Cd | 111 | 56037.891 | 1.169 | 0.035 | 99.77770 | 1.45 | ppb |
| \| | In | 113 | 124915.358 | 0.396 | 0.034 | | | ppb |
| ⌊> | In | 115 | 1600931.143 | 0.523 | 1600931.143 | | | ppb |
| ⌈ | Sb | 121 | 433997.782 | 0.414 | 0.219 | 202.12195 | 0.57 | ppb |
| \| | Ba | 135 | 43892.123 | 1.095 | 0.022 | 99.39297 | 1.27 | ppb |
| \| | Ba | 137 | 77143.092 | 0.902 | 0.039 | 101.22125 | 0.89 | ppb |
| ⌊> | Tb | 159 | 1983222.603 | 0.250 | 1983222.603 | | | ppb |
| ⌈ | Tl | 205 | 918285.273 | 1.699 | 0.754 | 200.95719 | 1.46 | ppb |
| \| | Pb | 206 | 290226.510 | 0.818 | 0.238 | 191.25009 | 0.44 | ppb |
| \| | Pb | 207 | 534169.426 | 0.599 | 0.438 | 190.41252 | 0.61 | ppb |
| \| | Pb | 208 | 846399.596 | 0.856 | 0.695 | 192.72977 | 0.34 | ppb |
| ⌊> | Bi | 209 | 1218450.566 | 0.957 | 1218450.566 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204610.066 | | ppb |
| ⌊ | Be | 9 | 11382.474 | 101.370025 | ppb |
| ⌈> | Sc | 45 | 805484.326 | | ppb |
| \| | V | 51 | 278953.018 | 96.211287 | ppb |
| \| | Cr | 52 | 239321.886 | 99.990683 | ppb |
| \| | Mn | 55 | 351770.172 | 95.227285 | ppb |
| \| | Co | 59 | 302189.977 | 103.236399 | ppb |
| \| | Ni | 60 | 67258.762 | 91.056137 | ppb |
| \| | Cu | 63 | 163505.869 | 101.373509 | ppb |
| \| | Cu | 65 | 77573.050 | 99.532539 | ppb |
| \| | Zn | 66 | 88187.142 | 200.635017 | ppb |
| \| | As | 75 | 114909.296 | 196.144497 | ppb |
| ⌊ | Se | 82 | 9476.488 | 207.535872 | ppb |
| ⌈ | Ag | 107 | 243389.648 | 105.434251 | ppb |
| \| | Ag | 109 | 231413.653 | 104.365357 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 56654.956 | 100.737635 | ppb |
| | In | 113 | 125477.320 | | ppb |
| > | In | 115 | 1603083.000 | | ppb |
| | Sb | 121 | 432875.577 | 201.018898 | ppb |
| | Ba | 135 | 43590.801 | 98.425576 | ppb |
| | Ba | 137 | 77384.262 | 101.246138 | ppb |
| > | Tb | 159 | 1988931.871 | | ppb |
| | Tl | 205 | 912446.644 | 198.248530 | ppb |
| | Pb | 206 | 290854.176 | 190.288607 | ppb |
| | Pb | 207 | 534363.348 | 189.111961 | ppb |
| | Pb | 208 | 849235.091 | 191.989004 | ppb |
| > | Bi | 209 | 1227236.774 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206343.135 | | ppb |
| | Be | 9 | 11264.341 | 99.474636 | ppb |
| > | Sc | 45 | 796954.910 | | ppb |
| | V | 51 | 275775.379 | 96.133054 | ppb |
| | Cr | 52 | 234364.527 | 98.956990 | ppb |
| | Mn | 55 | 352836.778 | 96.539516 | ppb |
| | Co | 59 | 304743.747 | 105.223441 | ppb |
| | Ni | 60 | 67872.891 | 92.871760 | ppb |
| | Cu | 63 | 161669.709 | 101.307778 | ppb |
| | Cu | 65 | 78527.120 | 101.837383 | ppb |
| | Zn | 66 | 88385.548 | 203.240654 | ppb |
| | As | 75 | 113632.079 | 196.040263 | ppb |
| | Se | 82 | 9445.792 | 209.082749 | ppb |
| | Ag | 107 | 237340.152 | 102.497424 | ppb |
| | Ag | 109 | 229452.566 | 103.162796 | ppb |
| | Cd | 111 | 55350.509 | 98.115584 | ppb |
| | In | 113 | 124545.783 | | ppb |
| > | In | 115 | 1608025.665 | | ppb |
| | Sb | 121 | 433047.799 | 202.015239 | ppb |
| | Ba | 135 | 44446.556 | 100.815477 | ppb |
| | Ba | 137 | 77686.593 | 102.105018 | ppb |
| > | Tb | 159 | 1979912.009 | | ppb |
| | Tl | 205 | 935963.169 | 204.080352 | ppb |
| | Pb | 206 | 292223.234 | 191.863231 | ppb |
| | Pb | 207 | 537269.271 | 190.815598 | ppb |
| | Pb | 208 | 851801.653 | 193.253021 | ppb |
| > | Bi | 209 | 1222895.047 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198368.174 | | ppb |
| | Be | 9 | 10939.981 | 100.494651 | ppb |
| > | Sc | 45 | 787768.062 | | ppb |
| | V | 51 | 269878.447 | 95.171691 | ppb |
| | Cr | 52 | 232018.768 | 99.110569 | ppb |
| | Mn | 55 | 346200.779 | 95.827842 | ppb |
| | Co | 59 | 298060.784 | 104.115899 | ppb |
| | Ni | 60 | 66312.474 | 91.794318 | ppb |
| | Cu | 63 | 159996.452 | 101.428616 | ppb |
| | Cu | 65 | 76971.764 | 100.983572 | ppb |
| | Zn | 66 | 90706.190 | 211.015538 | ppb |
| | As | 75 | 114569.778 | 199.962757 | ppb |
| | Se | 82 | 9223.585 | 206.536701 | ppb |
| | Ag | 107 | 240886.794 | 105.097275 | ppb |
| | Ag | 109 | 228726.207 | 103.892015 | ppb |
| | Cd | 111 | 56108.208 | 100.479888 | ppb |
| | In | 113 | 124722.971 | | ppb |
| > | In | 115 | 1591684.762 | | ppb |
| | Sb | 121 | 436069.970 | 203.331710 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 43639.011 | 98.937851 | ppb |
| | Ba | 137 | 76358.422 | 100.312601 | ppb |
| > | Tb | 159 | 1980823.929 | | ppb |
| | Tl | 205 | 906446.006 | 200.542682 | ppb |
| | Pb | 206 | 287602.120 | 191.598425 | ppb |
| | Pb | 207 | 530875.659 | 191.310007 | ppb |
| | Pb | 208 | 838162.043 | 192.947276 | ppb |
| > | Bi | 209 | 1205219.877 | | ppb |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|
| Li | 6 | | 95.514 | | | |
| Be | 9 | | | | | |
| Sc | 45 | | 94.984 | | | |
| V | 51 | | | | | |
| Cr | 52 | | | | | |
| Mn | 55 | | | | | |
| Co | 59 | | | | | |
| Ni | 60 | | | | | |
| Cu | 63 | | | | | |
| Cu | 65 | | | | | |
| Zn | 66 | | | | | |
| As | 75 | | | | | |
| Se | 82 | | | | | |
| Ag | 107 | | | | | |
| Ag | 109 | | | | | |
| Cd | 111 | | | | | |
| In | 113 | | | | | |
| In | 115 | | 94.728 | | | |
| Sb | 121 | | | | | |
| Ba | 135 | | | | | |
| Ba | 137 | | | | | |
| Tb | 159 | | 95.610 | | | |
| Tl | 205 | | | | | |
| Pb | 206 | | | | | |
| Pb | 207 | | | | | |
| Pb | 208 | | | | | |
| Bi | 209 | | 95.518 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1106103-01

Sample Date/Time: Wednesday, July 06, 2011 14:35:57
Sample Type: Sample
Sample Description: SEEP1
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1106103-01.409

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197070.645 | 1.822 | 197070.645 | | | ppb |
| ⌊ | Be | 9 | 50.667 | 28.556 | 0.000 | 0.43034 | 32.70 | ppb |
| ⌈> | Sc | 45 | 788578.065 | 1.292 | 788578.065 | | | ppb |
| \| | V | 51 | 34438.273 | 1.750 | 0.043 | 11.88436 | 2.86 | ppb |
| \| | Cr | 52 | 45350.619 | 1.595 | 0.055 | 18.53284 | 2.23 | ppb |
| \| | Mn | 55 | 11310109.656 | 0.353 | 14.343 | 3130.53919 | 1.19 | ppb |
| \| | Co | 59 | 117460.524 | 0.893 | 0.149 | 40.97762 | 0.44 | ppb |
| \| | Ni | 60 | 14091.043 | 4.128 | 0.018 | 19.45073 | 2.98 | ppb |
| \| | Cu | 63 | 12909.440 | 1.637 | 0.016 | 8.06321 | 2.70 | ppb |
| \| | Cu | 65 | 6050.719 | 2.217 | 0.008 | 7.83774 | 2.75 | ppb |
| \| | Zn | 66 | 11809.191 | 0.953 | 0.015 | 27.30509 | 1.39 | ppb |
| \| | As | 75 | 5806.260 | 1.519 | 0.007 | 10.14037 | 2.79 | ppb |
| ⌊ | Se | 82 | 58.667 | 9.907 | 0.000 | 0.62391 | 23.20 | ppb |
| ⌈ | Ag | 107 | 57.778 | 20.261 | 0.000 | 0.01839 | 30.03 | ppb |
| \| | Ag | 109 | 58.889 | 16.340 | 0.000 | 0.02299 | 20.90 | ppb |
| \| | Cd | 111 | 68.771 | 7.575 | 0.000 | 0.12320 | 6.99 | ppb |
| \| | In | 113 | 67401.442 | 1.956 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1536367.410 | 0.910 | 1536367.410 | | | ppb |
| ⌈ | Sb | 121 | 885.041 | 24.057 | 0.000 | 0.38172 | 28.59 | ppb |
| \| | Ba | 135 | 95925.236 | 0.727 | 0.050 | 224.12027 | 1.96 | ppb |
| \| | Ba | 137 | 165687.445 | 1.090 | 0.086 | 224.29514 | 0.51 | ppb |
| ⌊> | Tb | 159 | 1922695.914 | 1.481 | 1922695.914 | | | ppb |
| ⌈ | Tl | 205 | 340.006 | 15.283 | 0.000 | 0.06477 | 17.24 | ppb |
| \| | Pb | 206 | 6668.891 | 3.090 | 0.006 | 4.53148 | 4.01 | ppb |
| \| | Pb | 207 | 11913.602 | 2.889 | 0.010 | 4.37967 | 3.92 | ppb |
| \| | Pb | 208 | 18541.879 | 2.068 | 0.016 | 4.35672 | 2.81 | ppb |
| ⌊> | Bi | 209 | 1177137.470 | 1.047 | 1177137.470 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201161.143 | | ppb |
| ⌊ | Be | 9 | 34.000 | 0.268105 | ppb |
| ⌈> | Sc | 45 | 799571.945 | | ppb |
| \| | V | 51 | 34191.310 | 11.628414 | ppb |
| \| | Cr | 52 | 45611.785 | 18.372745 | ppb |
| \| | Mn | 55 | 11343119.691 | 3096.201082 | ppb |
| \| | Co | 59 | 118647.713 | 40.821139 | ppb |
| \| | Ni | 60 | 14590.637 | 19.868641 | ppb |
| \| | Cu | 63 | 12831.561 | 7.900320 | ppb |
| \| | Cu | 65 | 6088.520 | 7.776441 | ppb |
| \| | Zn | 66 | 11887.061 | 27.103621 | ppb |
| \| | As | 75 | 5706.804 | 9.827747 | ppb |
| ⌊ | Se | 82 | 52.000 | 0.457099 | ppb |
| ⌈ | Ag | 107 | 46.667 | 0.013237 | ppb |
| \| | Ag | 109 | 53.333 | 0.020231 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 69.379 | 0.123794 | ppb |
| | In | 113 | 68841.142 | | ppb |
| > | In | 115 | 1543403.698 | | ppb |
| | Sb | 121 | 1130.064 | 0.507472 | ppb |
| | Ba | 135 | 96507.448 | 229.189497 | ppb |
| | Ba | 137 | 163603.446 | 225.148363 | ppb |
| > | Tb | 159 | 1891238.853 | | ppb |
| | Tl | 205 | 370.007 | 0.070726 | ppb |
| | Pb | 206 | 6432.068 | 4.321759 | ppb |
| | Pb | 207 | 11623.415 | 4.225469 | ppb |
| | Pb | 208 | 18485.178 | 4.296000 | ppb |
| > | Bi | 209 | 1189886.279 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 195606.567 | | ppb |
| | Be | 9 | 60.000 | 0.519160 | ppb |
| > | Sc | 45 | 786703.993 | | ppb |
| | V | 51 | 33998.476 | 11.755010 | ppb |
| | Cr | 52 | 44532.939 | 18.223743 | ppb |
| | Mn | 55 | 11265740.830 | 3125.379142 | ppb |
| | Co | 59 | 117075.343 | 40.939071 | ppb |
| | Ni | 60 | 14230.118 | 19.694324 | ppb |
| | Cu | 63 | 12748.121 | 7.978537 | ppb |
| | Cu | 65 | 5901.741 | 7.659674 | ppb |
| | Zn | 66 | 11680.151 | 27.067241 | ppb |
| | As | 75 | 5837.133 | 10.216005 | ppb |
| | Se | 82 | 62.667 | 0.715905 | ppb |
| | Ag | 107 | 56.667 | 0.017703 | ppb |
| | Ag | 109 | 53.333 | 0.020198 | ppb |
| | Cd | 111 | 73.649 | 0.131502 | ppb |
| | In | 113 | 66253.753 | | ppb |
| > | In | 115 | 1545440.490 | | ppb |
| | Sb | 121 | 780.030 | 0.325633 | ppb |
| | Ba | 135 | 96115.702 | 221.754840 | ppb |
| | Ba | 137 | 166789.432 | 222.992545 | ppb |
| > | Tb | 159 | 1946705.717 | | ppb |
| | Tl | 205 | 370.007 | 0.071688 | ppb |
| | Pb | 206 | 6807.316 | 4.628247 | ppb |
| | Pb | 207 | 11823.574 | 4.348570 | ppb |
| | Pb | 208 | 18189.929 | 4.276323 | ppb |
| > | Bi | 209 | 1176250.729 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 194444.226 | | ppb |
| | Be | 9 | 58.000 | 0.503752 | ppb |
| > | Sc | 45 | 779458.259 | | ppb |
| | V | 51 | 35125.033 | 12.269671 | ppb |
| | Cr | 52 | 45907.132 | 19.002021 | ppb |
| | Mn | 55 | 11321468.446 | 3170.037356 | ppb |
| | Co | 59 | 116658.514 | 41.172635 | ppb |
| | Ni | 60 | 13452.376 | 18.789218 | ppb |
| | Cu | 63 | 13148.639 | 8.310782 | ppb |
| | Cu | 65 | 6161.898 | 8.077119 | ppb |
| | Zn | 66 | 11860.363 | 27.744402 | ppb |
| | As | 75 | 5874.844 | 10.377345 | ppb |
| | Se | 82 | 61.334 | 0.698735 | ppb |
| | Ag | 107 | 70.000 | 0.024216 | ppb |
| | Ag | 109 | 70.000 | 0.028537 | ppb |
| | Cd | 111 | 63.284 | 0.114317 | ppb |
| | In | 113 | 67109.431 | | ppb |
| > | In | 115 | 1520258.041 | | ppb |
| | Sb | 121 | 745.028 | 0.312056 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 95152.557 | 221.416484 | ppb |
| | Ba | 137 | 166669.456 | 224.744519 | ppb |
| > | Tb | 159 | 1930143.174 | | ppb |
| | Tl | 205 | 280.004 | 0.051881 | ppb |
| | Pb | 206 | 6767.289 | 4.644434 | ppb |
| | Pb | 207 | 12293.816 | 4.564978 | ppb |
| | Pb | 208 | 18950.531 | 4.497845 | ppb |
| > | Bi | 209 | 1165275.403 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 92.675 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 94.011 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 90.908 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 92.692 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 92.279 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1106103-01

Sample Date/Time: Wednesday, July 06, 2011 14:37:22
Sample Type: Sample
Sample Description: SEEP1L 5X
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\SDI1106103-01.410

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204230.774 | 1.598 | 204230.774 | | | ppb |
| ⌊ | Be | 9 | 13.333 | 8.660 | 0.000 | 0.07894 | 11.42 | ppb |
| ⌈> | Sc | 45 | 797080.190 | 1.159 | 797080.190 | | | ppb |
| \| | V | 51 | 7264.247 | 2.859 | 0.008 | 2.25321 | 4.24 | ppb |
| \| | Cr | 52 | 10521.533 | 1.156 | 0.010 | 3.46715 | 2.74 | ppb |
| \| | Mn | 55 | 2157412.882 | 1.734 | 2.706 | 590.62852 | 0.64 | ppb |
| \| | Co | 59 | 22427.121 | 0.235 | 0.028 | 7.72512 | 1.39 | ppb |
| \| | Ni | 60 | 2721.482 | 4.907 | 0.003 | 3.68737 | 5.97 | ppb |
| \| | Cu | 63 | 2734.819 | 3.468 | 0.003 | 1.59210 | 4.55 | ppb |
| \| | Cu | 65 | 1181.181 | 7.097 | 0.001 | 1.43136 | 7.00 | ppb |
| \| | Zn | 66 | 2333.606 | 6.114 | 0.003 | 5.20665 | 6.17 | ppb |
| \| | As | 75 | 1126.884 | 2.997 | 0.001 | 1.95887 | 2.65 | ppb |
| ⌊ | Se | 82 | 41.111 | 14.625 | 0.000 | 0.21801 | 56.47 | ppb |
| ⌈ | Ag | 107 | 20.000 | 44.096 | 0.000 | 0.00076 | 473.24 | ppb |
| \| | Ag | 109 | 27.778 | 18.330 | 0.000 | 0.00765 | 31.69 | ppb |
| \| | Cd | 111 | 18.005 | 72.401 | 0.000 | 0.02702 | 81.85 | ppb |
| \| | In | 113 | 70217.352 | 1.216 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1622174.205 | 1.904 | 1622174.205 | | | ppb |
| ⌈ | Sb | 121 | 280.004 | 14.174 | 0.000 | 0.08278 | 18.91 | ppb |
| \| | Ba | 135 | 18173.171 | 2.359 | 0.009 | 40.21907 | 1.25 | ppb |
| \| | Ba | 137 | 31581.794 | 0.892 | 0.016 | 40.49884 | 1.58 | ppb |
| ⌊> | Tb | 159 | 2028730.594 | 2.187 | 2028730.594 | | | ppb |
| ⌈ | Tl | 205 | 103.334 | 36.317 | 0.000 | 0.01037 | 78.87 | ppb |
| \| | Pb | 206 | 1321.754 | 6.128 | 0.001 | 0.84998 | 5.92 | ppb |
| \| | Pb | 207 | 2385.144 | 3.849 | 0.002 | 0.83058 | 3.66 | ppb |
| \| | Pb | 208 | 3595.377 | 2.006 | 0.003 | 0.80236 | 2.73 | ppb |
| ⌊> | Bi | 209 | 1221403.447 | 0.679 | 1221403.447 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207778.398 | | ppb |
| ⌊ | Be | 9 | 14.000 | 0.082823 | ppb |
| ⌈> | Sc | 45 | 790377.382 | | ppb |
| \| | V | 51 | 7244.208 | 2.267051 | ppb |
| \| | Cr | 52 | 10661.681 | 3.564818 | ppb |
| \| | Mn | 55 | 2137863.400 | 590.264202 | ppb |
| \| | Co | 59 | 22465.206 | 7.803228 | ppb |
| \| | Ni | 60 | 2747.044 | 3.752688 | ppb |
| \| | Cu | 63 | 2843.738 | 1.675154 | ppb |
| \| | Cu | 65 | 1210.073 | 1.482501 | ppb |
| \| | Zn | 66 | 2433.629 | 5.484396 | ppb |
| \| | As | 75 | 1088.573 | 1.908754 | ppb |
| ⌊ | Se | 82 | 35.333 | 0.097266 | ppb |
| ⌈ | Ag | 107 | 16.667 | -0.000531 | ppb |
| \| | Ag | 109 | 26.667 | 0.007291 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 7.640 | 0.009261 | ppb |
| | In | 113 | 69304.325 | | ppb |
| > | In | 115 | 1600790.753 | | ppb |
| | Sb | 121 | 250.003 | 0.072118 | ppb |
| | Ba | 135 | 17849.917 | 40.478032 | ppb |
| | Ba | 137 | 31276.836 | 41.089649 | ppb |
| > | Tb | 159 | 1979845.581 | | ppb |
| | Tl | 205 | 140.001 | 0.018267 | ppb |
| | Pb | 206 | 1270.081 | 0.813247 | ppb |
| | Pb | 207 | 2320.136 | 0.804681 | ppb |
| | Pb | 208 | 3575.374 | 0.794936 | ppb |
| > | Bi | 209 | 1225597.859 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203558.938 | | ppb |
| | Be | 9 | 14.000 | 0.085369 | ppb |
| > | Sc | 45 | 807616.420 | | ppb |
| | V | 51 | 7067.292 | 2.151498 | ppb |
| | Cr | 52 | 10443.450 | 3.375059 | ppb |
| | Mn | 55 | 2200545.377 | 594.602409 | ppb |
| | Co | 59 | 22366.986 | 7.602771 | ppb |
| | Ni | 60 | 2576.999 | 3.442051 | ppb |
| | Cu | 63 | 2690.362 | 1.541795 | ppb |
| | Cu | 65 | 1246.744 | 1.495667 | ppb |
| | Zn | 66 | 2396.954 | 5.280566 | ppb |
| | As | 75 | 1139.740 | 1.955438 | ppb |
| | Se | 82 | 47.333 | 0.343361 | ppb |
| | Ag | 107 | 13.333 | -0.002004 | ppb |
| | Ag | 109 | 33.333 | 0.010233 | ppb |
| | Cd | 111 | 13.734 | 0.020002 | ppb |
| | In | 113 | 70996.131 | | ppb |
| > | In | 115 | 1608153.505 | | ppb |
| | Sb | 121 | 265.004 | 0.075477 | ppb |
| | Ba | 135 | 18010.204 | 39.638662 | ppb |
| | Ba | 137 | 31832.585 | 40.588098 | ppb |
| > | Tb | 159 | 2039904.768 | | ppb |
| | Tl | 205 | 105.001 | 0.010910 | ppb |
| | Pb | 206 | 1280.082 | 0.829311 | ppb |
| | Pb | 207 | 2345.139 | 0.822968 | ppb |
| | Pb | 208 | 3675.397 | 0.827017 | ppb |
| > | Bi | 209 | 1211854.457 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201354.986 | | ppb |
| | Be | 9 | 12.000 | 0.068635 | ppb |
| > | Sc | 45 | 793246.769 | | ppb |
| | V | 51 | 7481.242 | 2.341075 | ppb |
| | Cr | 52 | 10459.467 | 3.461563 | ppb |
| | Mn | 55 | 2133829.870 | 587.018937 | ppb |
| | Co | 59 | 22449.170 | 7.769366 | ppb |
| | Ni | 60 | 2840.403 | 3.867369 | ppb |
| | Cu | 63 | 2670.356 | 1.559358 | ppb |
| | Cu | 65 | 1086.726 | 1.315901 | ppb |
| | Zn | 66 | 2170.235 | 4.854981 | ppb |
| | As | 75 | 1152.340 | 2.012422 | ppb |
| | Se | 82 | 40.667 | 0.213403 | ppb |
| | Ag | 107 | 30.000 | 0.004807 | ppb |
| | Ag | 109 | 23.333 | 0.005424 | ppb |
| | Cd | 111 | 32.640 | 0.051788 | ppb |
| | In | 113 | 70351.600 | | ppb |
| > | In | 115 | 1657578.356 | | ppb |
| | Sb | 121 | 325.005 | 0.100760 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 18659.392 | 40.540511 | ppb |
| | Ba | 137 | 31635.963 | 39.818775 | ppb |
| > | Tb | 159 | 2066441.433 | | ppb |
| | Tl | 205 | 65.000 | 0.001935 | ppb |
| | Pb | 206 | 1415.100 | 0.907385 | ppb |
| | Pb | 207 | 2490.158 | 0.864103 | ppb |
| | Pb | 208 | 3535.360 | 0.785120 | ppb |
| > | Bi | 209 | 1226758.027 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 96.043 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 95.025 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 95.985 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 97.804 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 95.750 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062835-PS1

Sample Date/Time: Wednesday, July 06, 2011 14:38:48
Sample Type: Sample
Sample Description: SEEP1A
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062835-PS1.411

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199441.391 | 1.198 | 199441.391 | | | ppb |
| ⌊ | Be | 9 | 1123.397 | 5.589 | 0.006 | 10.23208 | 6.46 | ppb |
| ⌈> | Sc | 45 | 802410.734 | 0.737 | 802410.734 | | | ppb |
| \| | V | 51 | 170158.451 | 1.443 | 0.211 | 58.80135 | 1.22 | ppb |
| \| | Cr | 52 | 90452.578 | 0.335 | 0.110 | 37.30408 | 0.76 | ppb |
| \| | Mn | 55 | 11136575.159 | 1.438 | 13.879 | 3029.18261 | 1.64 | ppb |
| \| | Co | 59 | 145395.386 | 0.581 | 0.181 | 49.85337 | 1.07 | ppb |
| \| | Ni | 60 | 20179.232 | 1.727 | 0.025 | 27.39957 | 2.43 | ppb |
| \| | Cu | 63 | 43640.577 | 0.801 | 0.054 | 27.07064 | 0.85 | ppb |
| \| | Cu | 65 | 21086.659 | 2.009 | 0.026 | 27.08938 | 2.73 | ppb |
| \| | Zn | 66 | 20617.901 | 0.786 | 0.026 | 46.96539 | 1.27 | ppb |
| \| | As | 75 | 11690.423 | 1.746 | 0.015 | 20.04728 | 2.39 | ppb |
| ⌊ | Se | 82 | 2312.490 | 1.515 | 0.003 | 50.31644 | 1.86 | ppb |
| ⌈ | Ag | 107 | 23265.932 | 2.265 | 0.014 | 10.05699 | 2.03 | ppb |
| \| | Ag | 109 | 22523.129 | 2.987 | 0.014 | 10.13718 | 1.80 | ppb |
| \| | Cd | 111 | 5523.330 | 1.868 | 0.003 | 9.80340 | 2.04 | ppb |
| \| | In | 113 | 74405.883 | 2.314 | 0.003 | | | ppb |
| ⌊> | In | 115 | 1605459.514 | 1.418 | 1605459.514 | | | ppb |
| ⌈ | Sb | 121 | 43534.573 | 1.581 | 0.022 | 20.22250 | 1.80 | ppb |
| \| | Ba | 135 | 139039.949 | 0.525 | 0.070 | 314.69578 | 0.82 | ppb |
| \| | Ba | 137 | 240230.637 | 0.276 | 0.121 | 315.08673 | 0.66 | ppb |
| ⌊> | Tb | 159 | 1984480.527 | 0.421 | 1984480.527 | | | ppb |
| ⌈ | Tl | 205 | 44788.413 | 0.755 | 0.037 | 9.92249 | 0.29 | ppb |
| \| | Pb | 206 | 21098.913 | 2.763 | 0.018 | 14.07483 | 2.98 | ppb |
| \| | Pb | 207 | 38203.532 | 0.746 | 0.032 | 13.78643 | 1.21 | ppb |
| \| | Pb | 208 | 60143.714 | 0.957 | 0.050 | 13.86766 | 1.51 | ppb |
| ⌊> | Bi | 209 | 1202173.581 | 0.592 | 1202173.581 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202199.777 | | ppb |
| ⌊ | Be | 9 | 1074.058 | 9.643178 | ppb |
| ⌈> | Sc | 45 | 798371.488 | | ppb |
| \| | V | 51 | 171159.653 | 59.449871 | ppb |
| \| | Cr | 52 | 90685.335 | 37.595841 | ppb |
| \| | Mn | 55 | 11288829.310 | 3086.015033 | ppb |
| \| | Co | 59 | 146318.683 | 50.421751 | ppb |
| \| | Ni | 60 | 20511.014 | 27.988562 | ppb |
| \| | Cu | 63 | 43246.645 | 26.960962 | ppb |
| \| | Cu | 65 | 21463.008 | 27.711034 | ppb |
| \| | Zn | 66 | 20521.034 | 46.978899 | ppb |
| \| | As | 75 | 11709.406 | 20.179127 | ppb |
| ⌊ | Se | 82 | 2286.261 | 49.990338 | ppb |
| ⌈ | Ag | 107 | 23808.308 | 10.289080 | ppb |
| \| | Ag | 109 | 22194.603 | 9.988306 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5408.715 | 9.596968 | ppb |
| | In | 113 | 76385.628 | | ppb |
| > | In | 115 | 1605802.363 | | ppb |
| | Sb | 121 | 44237.632 | 20.627790 | ppb |
| | Ba | 135 | 139818.677 | 317.660283 | ppb |
| | Ba | 137 | 240440.238 | 316.559691 | ppb |
| > | Tb | 159 | 1976935.207 | | ppb |
| | Tl | 205 | 45001.027 | 9.914924 | ppb |
| | Pb | 206 | 20561.116 | 13.639484 | ppb |
| | Pb | 207 | 37886.111 | 13.596049 | ppb |
| | Pb | 208 | 59875.329 | 13.729105 | ppb |
| > | Bi | 209 | 1208806.533 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198017.322 | | ppb |
| | Be | 9 | 1102.061 | 10.105497 | ppb |
| > | Sc | 45 | 809202.245 | | ppb |
| | V | 51 | 171955.747 | 58.924453 | ppb |
| | Cr | 52 | 90562.227 | 37.027249 | ppb |
| | Mn | 55 | 11151272.043 | 3007.607459 | ppb |
| | Co | 59 | 145204.620 | 49.367700 | ppb |
| | Ni | 60 | 19816.281 | 26.676807 | ppb |
| | Cu | 63 | 43762.214 | 26.917018 | ppb |
| | Cu | 65 | 20627.920 | 26.271129 | ppb |
| | Zn | 66 | 20527.714 | 46.363073 | ppb |
| | As | 75 | 11477.448 | 19.515153 | ppb |
| | Se | 82 | 2298.931 | 49.589068 | ppb |
| | Ag | 107 | 22755.862 | 9.978621 | ppb |
| | Ag | 109 | 22077.678 | 10.081826 | ppb |
| | Cd | 111 | 5552.516 | 9.997170 | ppb |
| | In | 113 | 73257.353 | | ppb |
| > | In | 115 | 1582532.596 | | ppb |
| | Sb | 121 | 43504.426 | 20.116580 | ppb |
| | Ba | 135 | 138930.425 | 313.024532 | ppb |
| | Ba | 137 | 239487.787 | 312.690683 | ppb |
| > | Tb | 159 | 1993465.741 | | ppb |
| | Tl | 205 | 44965.870 | 9.954488 | ppb |
| | Pb | 206 | 21718.559 | 14.477177 | ppb |
| | Pb | 207 | 38437.524 | 13.860077 | ppb |
| | Pb | 208 | 59751.355 | 13.766076 | ppb |
| > | Bi | 209 | 1203067.342 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198107.074 | | ppb |
| | Be | 9 | 1194.071 | 10.947561 | ppb |
| > | Sc | 45 | 799658.470 | | ppb |
| | V | 51 | 167359.953 | 58.029725 | ppb |
| | Cr | 52 | 90110.171 | 37.289158 | ppb |
| | Mn | 55 | 10969624.125 | 2993.925353 | ppb |
| | Co | 59 | 144662.853 | 49.770663 | ppb |
| | Ni | 60 | 20210.402 | 27.533341 | ppb |
| | Cu | 63 | 43912.872 | 27.333949 | ppb |
| | Cu | 65 | 21169.049 | 27.285964 | ppb |
| | Zn | 66 | 20804.953 | 47.554208 | ppb |
| | As | 75 | 11884.415 | 20.447560 | ppb |
| | Se | 82 | 2352.277 | 51.369909 | ppb |
| | Ag | 107 | 23233.625 | 9.903262 | ppb |
| | Ag | 109 | 23297.106 | 10.341405 | ppb |
| | Cd | 111 | 5608.759 | 9.816061 | ppb |
| | In | 113 | 73574.670 | | ppb |
| > | In | 115 | 1628043.582 | | ppb |
| | Sb | 121 | 42861.660 | 19.923128 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 138370.745 | 313.402520 | ppb |
| | Ba | 137 | 240763.886 | 316.009802 | ppb |
| > | Tb | 159 | 1983040.634 | | ppb |
| | Tl | 205 | 44398.342 | 9.898060 | ppb |
| | Pb | 206 | 21017.063 | 14.107838 | ppb |
| | Pb | 207 | 38286.962 | 13.903151 | ppb |
| | Pb | 208 | 60804.457 | 14.107800 | ppb |
| > | Bi | 209 | 1194646.868 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 93.790 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 95.660 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.996 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.671 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.242 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1106103-02

Sample Date/Time: Wednesday, July 06, 2011 14:40:14
Sample Type: Sample
Sample Description: SEEP2
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1106103-02.412

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 188955.364 | 1.313 | 188955.364 | | | ppb |
| ⌊ | Be | 9 | 424.009 | 5.719 | 0.002 | 4.05090 | 5.85 | ppb |
| ⌈> | Sc | 45 | 801015.191 | 1.182 | 801015.191 | | | ppb |
| \| | V | 51 | 161434.800 | 0.905 | 0.201 | 55.87258 | 0.94 | ppb |
| \| | Cr | 52 | 110356.319 | 1.303 | 0.135 | 45.81698 | 0.25 | ppb |
| \| | Mn | 55 | 13173337.600 | 0.809 | 16.448 | 3589.84889 | 1.94 | ppb |
| \| | Co | 59 | 271677.497 | 2.243 | 0.339 | 93.35122 | 3.31 | ppb |
| \| | Ni | 60 | 51615.089 | 0.655 | 0.064 | 70.26754 | 1.72 | ppb |
| \| | Cu | 63 | 178917.790 | 1.674 | 0.223 | 111.58315 | 2.76 | ppb |
| \| | Cu | 65 | 86280.653 | 1.182 | 0.108 | 111.35542 | 2.36 | ppb |
| \| | Zn | 66 | 70480.844 | 0.554 | 0.088 | 161.23623 | 1.75 | ppb |
| \| | As | 75 | 4742.297 | 1.659 | 0.006 | 8.15524 | 1.88 | ppb |
| ⌊ | Se | 82 | 140.890 | 8.007 | 0.000 | 2.42137 | 11.86 | ppb |
| ⌈ | Ag | 107 | 146.668 | 9.091 | 0.000 | 0.05935 | 10.87 | ppb |
| \| | Ag | 109 | 87.778 | 9.557 | 0.000 | 0.03703 | 10.15 | ppb |
| \| | Cd | 111 | 496.589 | 13.570 | 0.000 | 0.92855 | 14.31 | ppb |
| \| | In | 113 | 66695.029 | 1.267 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1518279.940 | 0.641 | 1518279.940 | | | ppb |
| ⌈ | Sb | 121 | 393.341 | 9.709 | 0.000 | 0.14281 | 13.88 | ppb |
| \| | Ba | 135 | 307975.873 | 0.103 | 0.159 | 712.78854 | 0.93 | ppb |
| \| | Ba | 137 | 534266.187 | 0.439 | 0.275 | 716.55772 | 0.46 | ppb |
| ⌊> | Tb | 159 | 1940813.871 | 0.881 | 1940813.871 | | | ppb |
| ⌈ | Tl | 205 | 1315.087 | 10.909 | 0.001 | 0.29276 | 10.96 | ppb |
| \| | Pb | 206 | 145277.693 | 0.580 | 0.126 | 101.46778 | 1.61 | ppb |
| \| | Pb | 207 | 260190.842 | 0.410 | 0.226 | 98.30354 | 1.61 | ppb |
| \| | Pb | 208 | 403424.292 | 0.281 | 0.351 | 97.36599 | 1.51 | ppb |
| ⌊> | Bi | 209 | 1149649.551 | 1.532 | 1149649.551 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 191753.002 | | ppb |
| ⌊ | Be | 9 | 420.009 | 3.952886 | ppb |
| ⌈> | Sc | 45 | 807816.664 | | ppb |
| \| | V | 51 | 163122.522 | 55.979161 | ppb |
| \| | Cr | 52 | 111597.242 | 45.945241 | ppb |
| \| | Mn | 55 | 13060151.505 | 3528.508216 | ppb |
| \| | Co | 59 | 265038.330 | 90.280484 | ppb |
| \| | Ni | 60 | 51666.461 | 69.735911 | ppb |
| \| | Cu | 63 | 175642.418 | 108.592557 | ppb |
| \| | Cu | 65 | 85366.154 | 109.225350 | ppb |
| \| | Zn | 66 | 70229.077 | 159.283696 | ppb |
| \| | As | 75 | 4821.359 | 8.220667 | ppb |
| ⌊ | Se | 82 | 131.334 | 2.183550 | ppb |
| ⌈ | Ag | 107 | 160.001 | 0.065963 | ppb |
| \| | Ag | 109 | 80.000 | 0.033622 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 574.385 | 1.081971 | ppb |
| | In | 113 | 66057.461 | | ppb |
| > | In | 115 | 1507217.986 | | ppb |
| | Sb | 121 | 385.007 | 0.138774 | ppb |
| | Ba | 135 | 307642.507 | 712.166421 | ppb |
| | Ba | 137 | 533678.518 | 715.939564 | ppb |
| > | Tb | 159 | 1940301.537 | | ppb |
| | Tl | 205 | 1410.099 | 0.318092 | ppb |
| | Pb | 206 | 144450.821 | 101.866397 | ppb |
| | Pb | 207 | 259240.899 | 98.891703 | ppb |
| | Pb | 208 | 404419.465 | 98.550818 | ppb |
| > | Bi | 209 | 1138459.286 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 187020.634 | | ppb |
| | Be | 9 | 402.008 | 3.878464 | ppb |
| > | Sc | 45 | 805029.824 | | ppb |
| | V | 51 | 160599.078 | 55.300515 | ppb |
| | Cr | 52 | 110691.256 | 45.725219 | ppb |
| | Mn | 55 | 13188111.754 | 3575.415502 | ppb |
| | Co | 59 | 272979.727 | 93.308133 | ppb |
| | Ni | 60 | 51254.348 | 69.418977 | ppb |
| | Cu | 63 | 179591.639 | 111.421800 | ppb |
| | Cu | 65 | 86095.702 | 110.541367 | ppb |
| | Zn | 66 | 70282.785 | 159.958027 | ppb |
| | As | 75 | 4664.000 | 7.980338 | ppb |
| | Se | 82 | 138.001 | 2.340085 | ppb |
| | Ag | 107 | 146.668 | 0.059010 | ppb |
| | Ag | 109 | 96.667 | 0.041062 | ppb |
| | Cd | 111 | 458.968 | 0.853293 | ppb |
| | In | 113 | 67653.075 | | ppb |
| > | In | 115 | 1525486.937 | | ppb |
| | Sb | 121 | 435.009 | 0.164339 | ppb |
| | Ba | 135 | 308275.561 | 719.687114 | ppb |
| | Ba | 137 | 532270.364 | 720.109269 | ppb |
| > | Tb | 159 | 1923976.966 | | ppb |
| | Tl | 205 | 1150.066 | 0.256692 | ppb |
| | Pb | 206 | 146135.027 | 102.866019 | ppb |
| | Pb | 207 | 261344.891 | 99.512292 | ppb |
| | Pb | 208 | 402189.478 | 97.828256 | ppb |
| > | Bi | 209 | 1140542.857 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 188092.457 | | ppb |
| | Be | 9 | 450.010 | 4.321356 | ppb |
| > | Sc | 45 | 790199.084 | | ppb |
| | V | 51 | 160582.799 | 56.338058 | ppb |
| | Cr | 52 | 108780.459 | 45.780472 | ppb |
| | Mn | 55 | 13271749.540 | 3665.622962 | ppb |
| | Co | 59 | 277014.433 | 96.465040 | ppb |
| | Ni | 60 | 51924.458 | 71.647742 | ppb |
| | Cu | 63 | 181519.312 | 114.735091 | ppb |
| | Cu | 65 | 87380.103 | 114.299532 | ppb |
| | Zn | 66 | 70930.669 | 164.466966 | ppb |
| | As | 75 | 4741.531 | 8.264722 | ppb |
| | Se | 82 | 153.335 | 2.740475 | ppb |
| | Ag | 107 | 133.334 | 0.053073 | ppb |
| | Ag | 109 | 86.667 | 0.036413 | ppb |
| | Cd | 111 | 456.413 | 0.850396 | ppb |
| | In | 113 | 66374.550 | | ppb |
| > | In | 115 | 1522134.898 | | ppb |
| | Sb | 121 | 360.006 | 0.125307 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 308009.550 | 706.512099 | ppb |
| | Ba | 137 | 536849.680 | 713.624313 | ppb |
| > | Tb | 159 | 1958163.112 | | ppb |
| | Tl | 205 | 1385.096 | 0.303503 | ppb |
| | Pb | 206 | 145247.233 | 99.670933 | ppb |
| | Pb | 207 | 259986.735 | 96.506623 | ppb |
| | Pb | 208 | 403663.931 | 95.718908 | ppb |
| > | Bi | 209 | 1169946.509 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 88.859 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 95.494 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 89.838 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 93.566 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 90.125 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062837-BLK1

Sample Date/Time: Wednesday, July 06, 2011 14:41:39
Sample Type: Sample
Sample Description: PBW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062837-BLK1.413

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205700.248 | 1.068 | 205700.248 | | | ppb |
| ⌊ | Be | 9 | 4.000 | 86.603 | -0.000 | -0.00477 | 632.78 | ppb |
| ⌈> | Sc | 45 | 808134.278 | 1.332 | 808134.278 | | | ppb |
| ⌈ | V | 51 | 806.200 | 50.497 | -0.000 | -0.00933 | 1499.00 | ppb |
| ⌈ | Cr | 52 | 2440.965 | 6.882 | 0.000 | 0.00578 | 1251.88 | ppb |
| ⌈ | Mn | 55 | 2253.594 | 20.274 | 0.002 | 0.51918 | 23.69 | ppb |
| ⌈ | Co | 59 | 80.667 | 12.479 | 0.000 | 0.00776 | 40.16 | ppb |
| ⌈ | Ni | 60 | 38.889 | 4.949 | 0.000 | 0.01347 | 16.87 | ppb |
| ⌈ | Cu | 63 | 172.224 | 6.222 | -0.000 | -0.01723 | 46.13 | ppb |
| ⌈ | Cu | 65 | 65.556 | 31.068 | -0.000 | -0.01725 | 156.59 | ppb |
| ⌈ | Zn | 66 | 103.334 | 17.069 | 0.000 | 0.07151 | 53.02 | ppb |
| ⌈ | As | 75 | 16.424 | 35.834 | 0.000 | 0.04311 | 22.27 | ppb |
| ⌊ | Se | 82 | 35.778 | 3.879 | 0.000 | 0.08991 | 43.29 | ppb |
| ⌈ | Ag | 107 | 8.889 | 78.063 | -0.000 | -0.00396 | 75.46 | ppb |
| ⌈ | Ag | 109 | 5.556 | 34.641 | -0.000 | -0.00230 | 36.16 | ppb |
| ⌈ | Cd | 111 | -0.637 | 126.840 | -0.000 | -0.00546 | 26.00 | ppb |
| ⌈ | In | 113 | 71499.887 | 3.324 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1633913.171 | 1.815 | 1633913.171 | | | ppb |
| ⌈ | Sb | 121 | 113.334 | 25.851 | 0.000 | 0.00730 | 198.59 | ppb |
| ⌈ | Ba | 135 | 85.334 | 39.242 | 0.000 | 0.17079 | 45.20 | ppb |
| ⌈ | Ba | 137 | 136.001 | 38.573 | 0.000 | 0.14200 | 48.57 | ppb |
| ⌊> | Tb | 159 | 2029839.087 | 2.714 | 2029839.087 | | | ppb |
| ⌈ | Tl | 205 | 6.667 | 43.301 | -0.000 | -0.01075 | 5.67 | ppb |
| ⌈ | Pb | 206 | 26.667 | 78.063 | -0.000 | -0.00147 | 922.60 | ppb |
| ⌈ | Pb | 207 | 48.333 | 46.647 | -0.000 | -0.00050 | 1587.21 | ppb |
| ⌈ | Pb | 208 | 96.667 | 11.945 | 0.000 | 0.00732 | 38.90 | ppb |
| ⌊> | Bi | 209 | 1230521.300 | 1.117 | 1230521.300 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205010.135 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.022222 | ppb |
| ⌈> | Sc | 45 | 803114.642 | | ppb |
| ⌈ | V | 51 | 1122.386 | 0.102578 | ppb |
| ⌈ | Cr | 52 | 2618.343 | 0.087171 | ppb |
| ⌈ | Mn | 55 | 1740.151 | 0.383572 | ppb |
| ⌈ | Co | 59 | 82.000 | 0.008415 | ppb |
| ⌈ | Ni | 60 | 40.000 | 0.015318 | ppb |
| ⌈ | Cu | 63 | 180.002 | -0.011789 | ppb |
| ⌈ | Cu | 65 | 70.000 | -0.011237 | ppb |
| ⌈ | Zn | 66 | 110.001 | 0.088433 | ppb |
| ⌈ | As | 75 | 11.602 | 0.035106 | ppb |
| ⌊ | Se | 82 | 35.333 | 0.084717 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.004893 | ppb |
| ⌈ | Ag | 109 | 3.333 | -0.003260 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -0.365 | -0.004988 | ppb |
| | In | 113 | 68936.798 | | ppb |
| > | In | 115 | 1613711.681 | | ppb |
| | Sb | 121 | 135.001 | 0.017852 | ppb |
| | Ba | 135 | 124.001 | 0.259858 | ppb |
| | Ba | 137 | 192.002 | 0.217390 | ppb |
| > | Tb | 159 | 1999029.843 | | ppb |
| | Tl | 205 | 5.000 | -0.011098 | ppb |
| | Pb | 206 | 20.000 | -0.005677 | ppb |
| | Pb | 207 | 50.000 | 0.000268 | ppb |
| | Pb | 208 | 110.000 | 0.010600 | ppb |
| > | Bi | 209 | 1215932.847 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208160.217 | | ppb |
| | Be | 9 | 8.000 | 0.030053 | ppb |
| > | Sc | 45 | 800799.583 | | ppb |
| | V | 51 | 346.847 | -0.166147 | ppb |
| | Cr | 52 | 2284.261 | -0.051458 | ppb |
| | Mn | 55 | 2615.342 | 0.623470 | ppb |
| | Co | 59 | 70.000 | 0.004371 | ppb |
| | Ni | 60 | 36.667 | 0.010934 | ppb |
| | Cu | 63 | 176.668 | -0.013547 | ppb |
| | Cu | 65 | 83.334 | 0.006249 | ppb |
| | Zn | 66 | 83.334 | 0.028085 | ppb |
| | As | 75 | 14.688 | 0.040462 | ppb |
| | Se | 82 | 37.333 | 0.131172 | ppb |
| | Ag | 107 | 3.333 | -0.006374 | ppb |
| | Ag | 109 | 6.667 | -0.001864 | ppb |
| | Cd | 111 | 0.000 | -0.004343 | ppb |
| | In | 113 | 73630.075 | | ppb |
| > | In | 115 | 1667961.289 | | ppb |
| | Sb | 121 | 80.000 | -0.009234 | ppb |
| | Ba | 135 | 66.000 | 0.122845 | ppb |
| | Ba | 137 | 128.001 | 0.126533 | ppb |
| > | Tb | 159 | 2093441.622 | | ppb |
| | Tl | 205 | 10.000 | -0.010049 | ppb |
| | Pb | 206 | 10.000 | -0.012426 | ppb |
| | Pb | 207 | 25.000 | -0.008859 | ppb |
| | Pb | 208 | 90.000 | 0.005585 | ppb |
| > | Bi | 209 | 1243239.339 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203930.392 | | ppb |
| | Be | 9 | 2.000 | -0.022128 | ppb |
| > | Sc | 45 | 820488.610 | | ppb |
| | V | 51 | 949.367 | 0.035575 | ppb |
| | Cr | 52 | 2420.293 | -0.018363 | ppb |
| | Mn | 55 | 2405.289 | 0.550490 | ppb |
| | Co | 59 | 90.000 | 0.010503 | ppb |
| | Ni | 60 | 40.000 | 0.014168 | ppb |
| | Cu | 63 | 160.001 | -0.026351 | ppb |
| | Cu | 65 | 43.333 | -0.046771 | ppb |
| | Zn | 66 | 116.667 | 0.098016 | ppb |
| | As | 75 | 22.982 | 0.053755 | ppb |
| | Se | 82 | 34.667 | 0.053847 | ppb |
| | Ag | 107 | 16.667 | -0.000617 | ppb |
| | Ag | 109 | 6.667 | -0.001778 | ppb |
| | Cd | 111 | -1.545 | -0.007062 | ppb |
| | In | 113 | 71932.789 | | ppb |
| > | In | 115 | 1620066.544 | | ppb |
| | Sb | 121 | 125.001 | 0.013288 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 66.000 | 0.129680 | ppb |
| \| | Ba | 137 | 88.000 | 0.082077 | ppb |
| \> | Tb | 159 | 1997045.797 | | ppb |
| ⌈ | Tl | 205 | 5.000 | -0.011112 | ppb |
| \| | Pb | 206 | 50.000 | 0.013694 | ppb |
| \| | Pb | 207 | 70.000 | 0.007079 | ppb |
| \| | Pb | 208 | 90.000 | 0.005762 | ppb |
| \> | Bi | 209 | 1232391.712 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 96.734 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 96.343 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.680 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 97.857 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 96.464 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062837-BS1

Sample Date/Time: Wednesday, July 06, 2011 14:43:05
Sample Type: Sample
Sample Description: LCSW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062837-BS1.414

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 200401.053 | 1.463 | 200401.053 | | | ppb |
| ⌊ | Be | 9 | 11049.438 | 2.796 | 0.055 | 100.45787 | 1.39 | ppb |
| ⌈> | Sc | 45 | 787185.783 | 1.535 | 787185.783 | | | ppb |
| \| | V | 51 | 276792.788 | 1.198 | 0.351 | 97.69890 | 1.37 | ppb |
| \| | Cr | 52 | 239666.530 | 1.703 | 0.301 | 102.49363 | 1.52 | ppb |
| \| | Mn | 55 | 353972.732 | 0.677 | 0.449 | 98.06234 | 0.87 | ppb |
| \| | Co | 59 | 305657.226 | 0.871 | 0.388 | 106.85979 | 1.20 | ppb |
| \| | Ni | 60 | 67583.166 | 0.573 | 0.086 | 93.64084 | 1.89 | ppb |
| \| | Cu | 63 | 162823.852 | 1.008 | 0.207 | 103.30588 | 0.68 | ppb |
| \| | Cu | 65 | 79860.963 | 0.652 | 0.101 | 104.87906 | 2.20 | ppb |
| \| | Zn | 66 | 90400.132 | 1.020 | 0.115 | 210.51404 | 2.57 | ppb |
| \| | As | 75 | 115101.388 | 0.461 | 0.146 | 201.07267 | 1.69 | ppb |
| ⌊ | Se | 82 | 9212.241 | 0.460 | 0.012 | 206.47705 | 2.00 | ppb |
| ⌈ | Ag | 107 | 244407.459 | 0.723 | 0.153 | 106.28115 | 0.62 | ppb |
| \| | Ag | 109 | 234998.047 | 0.348 | 0.147 | 106.39213 | 1.03 | ppb |
| \| | Cd | 111 | 56634.678 | 0.866 | 0.035 | 101.08604 | 0.36 | ppb |
| \| | In | 113 | 126167.720 | 1.567 | 0.035 | | | ppb |
| ⌊> | In | 115 | 1596990.886 | 0.844 | 1596990.886 | | | ppb |
| ⌈ | Sb | 121 | 431681.628 | 1.334 | 0.216 | 199.69901 | 1.44 | ppb |
| \| | Ba | 135 | 44358.852 | 1.646 | 0.022 | 99.81039 | 3.57 | ppb |
| \| | Ba | 137 | 77850.533 | 0.562 | 0.039 | 101.47949 | 2.03 | ppb |
| ⌊> | Tb | 159 | 1996983.652 | 2.497 | 1996983.652 | | | ppb |
| ⌈ | Tl | 205 | 923547.368 | 1.770 | 0.770 | 205.34691 | 2.40 | ppb |
| \| | Pb | 206 | 293832.352 | 2.186 | 0.245 | 196.74713 | 3.22 | ppb |
| \| | Pb | 207 | 541035.672 | 1.508 | 0.451 | 195.95382 | 2.47 | ppb |
| \| | Pb | 208 | 851933.341 | 0.769 | 0.710 | 197.10717 | 2.15 | ppb |
| ⌊> | Bi | 209 | 1199413.048 | 1.416 | 1199413.048 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203460.974 | | ppb |
| ⌊ | Be | 9 | 11338.424 | 101.548090 | ppb |
| ⌈> | Sc | 45 | 797117.104 | | ppb |
| \| | V | 51 | 280519.271 | 97.771714 | ppb |
| \| | Cr | 52 | 244304.214 | 103.175983 | ppb |
| \| | Mn | 55 | 355793.831 | 97.329516 | ppb |
| \| | Co | 59 | 308714.805 | 106.573151 | ppb |
| \| | Ni | 60 | 67151.378 | 91.865381 | ppb |
| \| | Cu | 63 | 163644.780 | 102.526048 | ppb |
| \| | Cu | 65 | 79484.640 | 103.059379 | ppb |
| \| | Zn | 66 | 89693.786 | 206.209328 | ppb |
| \| | As | 75 | 114594.789 | 197.660796 | ppb |
| ⌊ | Se | 82 | 9168.868 | 202.891249 | ppb |
| ⌈ | Ag | 107 | 245951.189 | 105.922639 | ppb |
| \| | Ag | 109 | 234698.900 | 105.229790 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 57128.915 | 100.988045 | ppb |
| \| | In | 113 | 127928.079 | | ppb |
| \> | In | 115 | 1612485.825 | | ppb |
| ⌈ | Sb | 121 | 426020.401 | 199.983230 | ppb |
| \| | Ba | 135 | 43940.326 | 100.292349 | ppb |
| \| | Ba | 137 | 77886.136 | 103.009729 | ppb |
| \> | Tb | 159 | 1967569.277 | | ppb |
| ⌈ | Tl | 205 | 921744.047 | 201.618336 | ppb |
| \| | Pb | 206 | 289562.491 | 190.720169 | ppb |
| \| | Pb | 207 | 537083.372 | 191.355635 | ppb |
| \| | Pb | 208 | 844556.864 | 192.218020 | ppb |
| \> | Bi | 209 | 1219022.217 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 197617.529 | | ppb |
| ⌊ | Be | 9 | 10723.747 | 98.881864 | ppb |
| ⌈> | Sc | 45 | 773733.276 | | ppb |
| \| | V | 51 | 275689.579 | 98.995953 | ppb |
| \| | Cr | 52 | 238078.734 | 103.589589 | ppb |
| \| | Mn | 55 | 351257.619 | 98.994132 | ppb |
| \| | Co | 59 | 304413.926 | 108.264723 | ppb |
| \| | Ni | 60 | 67698.380 | 95.414185 | ppb |
| \| | Cu | 63 | 160934.661 | 103.876980 | ppb |
| \| | Cu | 65 | 80455.692 | 107.475502 | ppb |
| \| | Zn | 66 | 91442.854 | 216.592290 | ppb |
| \| | As | 75 | 115055.798 | 204.453204 | ppb |
| ⌊ | Se | 82 | 9253.613 | 210.982552 | ppb |
| ⌈ | Ag | 107 | 244789.877 | 107.047163 | ppb |
| \| | Ag | 109 | 235923.891 | 107.409199 | ppb |
| \| | Cd | 111 | 56148.633 | 100.784709 | ppb |
| \| | In | 113 | 126545.656 | | ppb |
| \> | In | 115 | 1588014.264 | | ppb |
| ⌈ | Sb | 121 | 431492.694 | 202.424117 | ppb |
| \| | Ba | 135 | 45201.930 | 103.107009 | ppb |
| \| | Ba | 137 | 77396.355 | 102.296812 | ppb |
| \> | Tb | 159 | 1968818.009 | | ppb |
| ⌈ | Tl | 205 | 908172.613 | 203.501616 | ppb |
| \| | Pb | 206 | 290715.222 | 196.156551 | ppb |
| \| | Pb | 207 | 535607.563 | 195.490937 | ppb |
| \| | Pb | 208 | 857058.207 | 199.827982 | ppb |
| \> | Bi | 209 | 1189959.244 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 200124.655 | | ppb |
| ⌊ | Be | 9 | 11086.142 | 100.943643 | ppb |
| ⌈> | Sc | 45 | 790706.970 | | ppb |
| \| | V | 51 | 274169.513 | 96.329038 | ppb |
| \| | Cr | 52 | 236616.640 | 100.715316 | ppb |
| \| | Mn | 55 | 354866.747 | 97.863375 | ppb |
| \| | Co | 59 | 303842.949 | 105.741494 | ppb |
| \| | Ni | 60 | 67899.739 | 93.642957 | ppb |
| \| | Cu | 63 | 163892.115 | 103.514618 | ppb |
| \| | Cu | 65 | 79642.556 | 104.102302 | ppb |
| \| | Zn | 66 | 90063.756 | 208.740499 | ppb |
| \| | As | 75 | 115653.576 | 201.104007 | ppb |
| ⌊ | Se | 82 | 9214.243 | 205.557354 | ppb |
| ⌈ | Ag | 107 | 242481.310 | 105.873640 | ppb |
| \| | Ag | 109 | 234371.351 | 106.537410 | ppb |
| \| | Cd | 111 | 56626.485 | 101.485364 | ppb |
| \| | In | 113 | 124029.424 | | ppb |
| \> | In | 115 | 1590472.568 | | ppb |
| ⌈ | Sb | 121 | 437531.790 | 196.689694 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 43934.300 | 96.031798 | ppb |
| | Ba | 137 | 78269.109 | 99.131922 | ppb |
| > | Tb | 159 | 2054563.668 | | ppb |
| | Tl | 205 | 940725.444 | 210.920790 | ppb |
| | Pb | 206 | 301219.342 | 203.364669 | ppb |
| | Pb | 207 | 550416.082 | 201.014894 | ppb |
| | Pb | 208 | 854184.950 | 199.275512 | ppb |
| > | Bi | 209 | 1189257.682 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 94.242 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 93.845 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.495 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 96.273 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.026 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062837-BSD1

Sample Date/Time: Wednesday, July 06, 2011 14:44:31
Sample Type: Sample
Sample Description: LCSWD
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062837-BSD1.415

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202118.286 | 2.458 | 202118.286 | | | ppb |
| ⌊ | Be | 9 | 11084.140 | 0.959 | 0.055 | 99.96311 | 2.24 | ppb |
| ⌈> | Sc | 45 | 793778.086 | 1.615 | 793778.086 | | | ppb |
| \| | V | 51 | 278710.703 | 0.912 | 0.350 | 97.55681 | 0.72 | ppb |
| \| | Cr | 52 | 238734.142 | 0.557 | 0.298 | 101.24034 | 1.08 | ppb |
| \| | Mn | 55 | 353080.539 | 0.981 | 0.444 | 96.99994 | 0.65 | ppb |
| \| | Co | 59 | 305951.820 | 0.212 | 0.385 | 106.07968 | 1.42 | ppb |
| \| | Ni | 60 | 68078.751 | 1.236 | 0.086 | 93.54534 | 2.24 | ppb |
| \| | Cu | 63 | 166820.118 | 1.412 | 0.210 | 104.96473 | 1.14 | ppb |
| \| | Cu | 65 | 80160.004 | 0.493 | 0.101 | 104.38618 | 1.12 | ppb |
| \| | Zn | 66 | 90744.321 | 0.589 | 0.114 | 209.55238 | 2.13 | ppb |
| \| | As | 75 | 115886.227 | 0.854 | 0.146 | 200.76054 | 1.68 | ppb |
| ⌊ | Se | 82 | 9382.623 | 1.681 | 0.012 | 208.54642 | 2.21 | ppb |
| ⌈ | Ag | 107 | 243791.525 | 0.470 | 0.152 | 105.46952 | 1.68 | ppb |
| \| | Ag | 109 | 232779.404 | 0.929 | 0.145 | 104.85940 | 2.85 | ppb |
| \| | Cd | 111 | 56478.439 | 1.369 | 0.035 | 100.27946 | 0.90 | ppb |
| \| | In | 113 | 125587.073 | 1.037 | 0.035 | | | ppb |
| ⌊> | In | 115 | 1605529.995 | 1.914 | 1605529.995 | | | ppb |
| ⌈ | Sb | 121 | 435082.251 | 1.011 | 0.218 | 201.59004 | 2.20 | ppb |
| \| | Ba | 135 | 44547.004 | 0.657 | 0.022 | 100.36907 | 2.68 | ppb |
| \| | Ba | 137 | 77685.932 | 0.737 | 0.039 | 101.42286 | 2.72 | ppb |
| ⌊> | Tb | 159 | 1994348.560 | 3.223 | 1994348.560 | | | ppb |
| ⌈ | Tl | 205 | 920800.860 | 1.382 | 0.763 | 203.48726 | 1.09 | ppb |
| \| | Pb | 206 | 292080.900 | 0.500 | 0.242 | 194.36463 | 0.21 | ppb |
| \| | Pb | 207 | 537321.889 | 0.778 | 0.445 | 193.41550 | 0.50 | ppb |
| \| | Pb | 208 | 850652.930 | 1.143 | 0.705 | 195.60591 | 1.20 | ppb |
| ⌊> | Bi | 209 | 1206565.596 | 0.295 | 1206565.596 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207731.438 | | ppb |
| ⌊ | Be | 9 | 11156.220 | 97.860753 | ppb |
| ⌈> | Sc | 45 | 806220.228 | | ppb |
| \| | V | 51 | 280942.540 | 96.810811 | ppb |
| \| | Cr | 52 | 240116.599 | 100.233604 | ppb |
| \| | Mn | 55 | 356208.198 | 96.341724 | ppb |
| \| | Co | 59 | 306415.690 | 104.584726 | ppb |
| \| | Ni | 60 | 68436.714 | 92.566946 | ppb |
| \| | Cu | 63 | 167436.783 | 103.718778 | ppb |
| \| | Cu | 65 | 80546.418 | 103.257070 | ppb |
| \| | Zn | 66 | 90127.661 | 204.866167 | ppb |
| \| | As | 75 | 115441.458 | 196.872949 | ppb |
| ⌊ | Se | 82 | 9298.321 | 203.434455 | ppb |
| ⌈ | Ag | 107 | 244998.220 | 105.487382 | ppb |
| \| | Ag | 109 | 231805.916 | 103.908187 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 56273.785 | 99.452953 | ppb |
| | In | 113 | 126996.315 | | ppb |
| > | In | 115 | 1612865.140 | | ppb |
| | Sb | 121 | 440064.366 | 196.801481 | ppb |
| | Ba | 135 | 44749.904 | 97.307135 | ppb |
| | Ba | 137 | 78279.187 | 98.629954 | ppb |
| > | Tb | 159 | 2065282.627 | | ppb |
| | Tl | 205 | 932550.351 | 205.611480 | ppb |
| | Pb | 206 | 293124.030 | 194.608353 | ppb |
| | Pb | 207 | 541382.870 | 194.428338 | ppb |
| | Pb | 208 | 858385.574 | 196.926096 | ppb |
| > | Bi | 209 | 1209363.192 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200332.760 | | ppb |
| | Be | 9 | 10962.005 | 99.709155 | ppb |
| > | Sc | 45 | 794495.281 | | ppb |
| | V | 51 | 279247.479 | 97.649270 | ppb |
| | Cr | 52 | 238619.394 | 101.087221 | ppb |
| | Mn | 55 | 353675.645 | 97.069109 | ppb |
| | Co | 59 | 306228.072 | 106.063455 | ppb |
| | Ni | 60 | 67117.820 | 92.122585 | ppb |
| | Cu | 63 | 168806.185 | 106.113083 | ppb |
| | Cu | 65 | 80176.799 | 104.301105 | ppb |
| | Zn | 66 | 91049.287 | 210.019451 | ppb |
| | As | 75 | 117020.490 | 202.510520 | ppb |
| | Se | 82 | 9564.572 | 212.378262 | ppb |
| | Ag | 107 | 242720.338 | 107.237352 | ppb |
| | Ag | 109 | 235258.488 | 108.211433 | ppb |
| | Cd | 111 | 55828.149 | 101.243448 | ppb |
| | In | 113 | 124429.347 | | ppb |
| > | In | 115 | 1571796.252 | | ppb |
| | Sb | 121 | 433439.221 | 202.417079 | ppb |
| | Ba | 135 | 44679.591 | 101.454017 | ppb |
| | Ba | 137 | 77136.358 | 101.491521 | ppb |
| > | Tb | 159 | 1977768.388 | | ppb |
| | Tl | 205 | 907281.954 | 201.170439 | ppb |
| | Pb | 206 | 290411.588 | 193.897063 | ppb |
| | Pb | 207 | 533029.485 | 192.509996 | ppb |
| | Pb | 208 | 853833.180 | 196.988688 | ppb |
| > | Bi | 209 | 1202567.207 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198290.659 | | ppb |
| | Be | 9 | 11134.195 | 102.319410 | ppb |
| > | Sc | 45 | 780618.748 | | ppb |
| | V | 51 | 275942.090 | 98.210360 | ppb |
| | Cr | 52 | 237466.431 | 102.400196 | ppb |
| | Mn | 55 | 349357.774 | 97.588978 | ppb |
| | Co | 59 | 305211.698 | 107.590873 | ppb |
| | Ni | 60 | 68681.718 | 95.946492 | ppb |
| | Cu | 63 | 164217.386 | 105.062322 | ppb |
| | Cu | 65 | 79756.794 | 105.600365 | ppb |
| | Zn | 66 | 91056.014 | 213.771524 | ppb |
| | As | 75 | 115196.732 | 202.898163 | ppb |
| | Se | 82 | 9284.975 | 209.826540 | ppb |
| | Ag | 107 | 243656.018 | 103.683840 | ppb |
| | Ag | 109 | 231273.807 | 102.458577 | ppb |
| | Cd | 111 | 57333.383 | 100.141976 | ppb |
| | In | 113 | 125335.559 | | ppb |
| > | In | 115 | 1631928.593 | | ppb |
| | Sb | 121 | 431743.165 | 205.551556 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 44211.517 | 102.346048 | ppb |
| | Ba | 137 | 77642.250 | 104.147105 | ppb |
| > | Tb | 159 | 1939994.663 | | ppb |
| | Tl | 205 | 922570.275 | 203.679860 | ppb |
| | Pb | 206 | 292707.080 | 194.588461 | ppb |
| | Pb | 207 | 537553.312 | 193.308155 | ppb |
| | Pb | 208 | 839740.037 | 192.902946 | ppb |
| > | Bi | 209 | 1207766.390 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 95.049 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.631 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 95.000 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 96.146 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.586 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Wednesday, July 06, 2011 14:45:58
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCV.416

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204123.316 | 1.682 | 204123.316 | | | ppb |
| ⌊ | Be | 9 | 33957.561 | 0.912 | 0.166 | 303.24877 | 0.93 | ppb |
| ⌈> | Sc | 45 | 805537.104 | 1.046 | 805537.104 | | | ppb |
| ⌈ | V | 51 | 881605.089 | 1.212 | 1.093 | 304.68765 | 1.56 | ppb |
| ⌈ | Cr | 52 | 724068.959 | 1.042 | 0.896 | 304.60564 | 1.86 | ppb |
| ⌈ | Mn | 55 | 1145772.340 | 1.964 | 1.422 | 310.37239 | 2.16 | ppb |
| ⌈ | Co | 59 | 894084.866 | 1.279 | 1.110 | 305.48279 | 1.58 | ppb |
| ⌈ | Ni | 60 | 225844.322 | 1.337 | 0.280 | 305.87123 | 2.31 | ppb |
| ⌈ | Cu | 63 | 495079.009 | 1.144 | 0.614 | 307.20352 | 1.59 | ppb |
| ⌈ | Cu | 65 | 242149.040 | 0.658 | 0.301 | 310.90044 | 0.42 | ppb |
| ⌈ | Zn | 66 | 134607.684 | 0.145 | 0.167 | 306.33189 | 0.92 | ppb |
| ⌈ | As | 75 | 180538.163 | 0.628 | 0.224 | 308.15962 | 1.06 | ppb |
| ⌊ | Se | 82 | 13928.364 | 2.405 | 0.017 | 305.33337 | 2.05 | ppb |
| ⌈ | Ag | 107 | 728095.435 | 0.957 | 0.447 | 310.10147 | 1.01 | ppb |
| ⌈ | Ag | 109 | 693606.574 | 1.383 | 0.425 | 307.54560 | 1.45 | ppb |
| ⌈ | Cd | 111 | 173336.287 | 1.482 | 0.106 | 303.01649 | 1.41 | ppb |
| ⌈ | In | 113 | 242127.938 | 0.446 | 0.105 | | | ppb |
| ⌊> | In | 115 | 1630583.736 | 0.155 | 1630583.736 | | | ppb |
| ⌈ | Sb | 121 | 675694.022 | 1.186 | 0.335 | 309.67304 | 2.02 | ppb |
| ⌈ | Ba | 135 | 137279.259 | 1.065 | 0.068 | 305.94359 | 2.30 | ppb |
| ⌈ | Ba | 137 | 238439.327 | 0.912 | 0.118 | 307.91516 | 1.63 | ppb |
| ⌊> | Tb | 159 | 2015984.642 | 2.274 | 2015984.642 | | | ppb |
| ⌈ | Tl | 205 | 1388188.290 | 1.158 | 1.136 | 302.94145 | 0.70 | ppb |
| ⌈ | Pb | 206 | 457804.514 | 1.484 | 0.375 | 300.83711 | 1.15 | ppb |
| ⌈ | Pb | 207 | 845609.520 | 0.622 | 0.692 | 300.59900 | 1.02 | ppb |
| ⌈ | Pb | 208 | 1347565.115 | 1.749 | 1.103 | 305.98694 | 1.35 | ppb |
| ⌊> | Bi | 209 | 1221941.173 | 1.512 | 1221941.173 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208047.916 | | ppb |
| ⌊ | Be | 9 | 34300.726 | 300.506149 | ppb |
| ⌈> | Sc | 45 | 809494.540 | | ppb |
| ⌈ | V | 51 | 893102.690 | 307.133335 | ppb |
| ⌈ | Cr | 52 | 728602.071 | 304.980404 | ppb |
| ⌈ | Mn | 55 | 1170047.347 | 315.379333 | ppb |
| ⌈ | Co | 59 | 906519.217 | 308.196744 | ppb |
| ⌈ | Ni | 60 | 226250.842 | 304.876676 | ppb |
| ⌈ | Cu | 63 | 500898.452 | 309.271850 | ppb |
| ⌈ | Cu | 65 | 243201.827 | 310.716817 | ppb |
| ⌈ | Zn | 66 | 134775.475 | 305.194103 | ppb |
| ⌈ | As | 75 | 181835.250 | 308.837404 | ppb |
| ⌊ | Se | 82 | 14311.567 | 312.220687 | ppb |
| ⌈ | Ag | 107 | 730748.520 | 311.786245 | ppb |
| ⌈ | Ag | 109 | 698205.673 | 310.135950 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 171788.646 | 300.849286 | ppb |
| \| | In | 113 | 242500.090 | | ppb |
| \> | In | 115 | 1627675.313 | | ppb |
| ⌈ | Sb | 121 | 679475.879 | 303.365351 | ppb |
| \| | Ba | 135 | 137527.228 | 298.567808 | ppb |
| \| | Ba | 137 | 240360.351 | 302.389980 | ppb |
| \> | Tb | 159 | 2068874.927 | | ppb |
| ⌈ | Tl | 205 | 1405942.290 | 301.601544 | ppb |
| \| | Pb | 206 | 464178.734 | 299.842288 | ppb |
| \| | Pb | 207 | 850307.299 | 297.116891 | ppb |
| \| | Pb | 208 | 1362466.993 | 304.117157 | ppb |
| \> | Bi | 209 | 1243008.063 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201673.305 | | ppb |
| ⌊ | Be | 9 | 33873.273 | 306.142221 | ppb |
| ⌈> | Sc | 45 | 795857.465 | | ppb |
| \| | V | 51 | 879737.515 | 307.721666 | ppb |
| \| | Cr | 52 | 728243.299 | 310.070503 | ppb |
| \| | Mn | 55 | 1141665.810 | 313.001548 | ppb |
| \| | Co | 59 | 891706.066 | 308.355285 | ppb |
| \| | Ni | 60 | 228640.957 | 313.377755 | ppb |
| \| | Cu | 63 | 494757.100 | 310.714968 | ppb |
| \| | Cu | 65 | 240316.653 | 312.292200 | ppb |
| \| | Zn | 66 | 134393.722 | 309.546668 | ppb |
| \| | As | 75 | 180040.975 | 311.029549 | ppb |
| ⌊ | Se | 82 | 13690.699 | 303.774944 | ppb |
| ⌈ | Ag | 107 | 720192.449 | 306.485589 | ppb |
| \| | Ag | 109 | 682576.739 | 302.407617 | ppb |
| \| | Cd | 111 | 176301.166 | 307.951647 | ppb |
| \| | In | 113 | 242971.324 | | ppb |
| \> | In | 115 | 1631905.864 | | ppb |
| ⌈ | Sb | 121 | 681117.080 | 315.894665 | ppb |
| \| | Ba | 135 | 138601.914 | 312.572523 | ppb |
| \| | Ba | 137 | 238879.495 | 312.184235 | ppb |
| \> | Tb | 159 | 1991627.787 | | ppb |
| ⌈ | Tl | 205 | 1384022.019 | 305.370757 | ppb |
| \| | Pb | 206 | 458573.817 | 304.674070 | ppb |
| \| | Pb | 207 | 839929.361 | 301.865003 | ppb |
| \| | Pb | 208 | 1320398.326 | 303.136332 | ppb |
| \> | Bi | 209 | 1208525.403 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202648.729 | | ppb |
| ⌊ | Be | 9 | 33698.685 | 303.097934 | ppb |
| ⌈> | Sc | 45 | 811259.308 | | ppb |
| \| | V | 51 | 871975.061 | 299.207945 | ppb |
| \| | Cr | 52 | 715361.507 | 298.766010 | ppb |
| \| | Mn | 55 | 1125603.862 | 302.736276 | ppb |
| \| | Co | 59 | 884029.314 | 299.896337 | ppb |
| \| | Ni | 60 | 222641.168 | 299.359246 | ppb |
| \| | Cu | 63 | 489581.475 | 301.623727 | ppb |
| \| | Cu | 65 | 242928.639 | 309.692299 | ppb |
| \| | Zn | 66 | 134653.853 | 304.254891 | ppb |
| \| | As | 75 | 179738.266 | 304.611919 | ppb |
| ⌊ | Se | 82 | 13782.825 | 300.004482 | ppb |
| ⌈ | Ag | 107 | 733345.336 | 312.032570 | ppb |
| \| | Ag | 109 | 700037.312 | 310.093243 | ppb |
| \| | Cd | 111 | 171919.048 | 300.248531 | ppb |
| \| | In | 113 | 240912.400 | | ppb |
| \> | In | 115 | 1632170.031 | | ppb |
| ⌈ | Sb | 121 | 666489.107 | 309.759093 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 135708.635 | 306.690452 | ppb |
| \| | Ba | 137 | 236078.135 | 309.171262 | ppb |
| \|> | Tb | 159 | 1987451.212 | | ppb |
| ⌈ | Tl | 205 | 1374600.562 | 301.852034 | ppb |
| \| | Pb | 206 | 450660.991 | 297.994981 | ppb |
| \| | Pb | 207 | 846591.901 | 302.815107 | ppb |
| \| | Pb | 208 | 1359830.027 | 310.707336 | ppb |
| \|> | Bi | 209 | 1214290.052 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 95.992 | | | |
| | Be | 9 | 101.083 | | | | |
| > | Sc | 45 | | 96.033 | | | |
| | V | 51 | 101.563 | | | | |
| | Cr | 52 | 101.535 | | | | |
| | Mn | 55 | 103.457 | | | | |
| | Co | 59 | 101.828 | | | | |
| | Ni | 60 | 101.957 | | | | |
| | Cu | 63 | 102.401 | | | | |
| | Cu | 65 | 103.633 | | | | |
| | Zn | 66 | 102.111 | | | | |
| | As | 75 | 102.720 | | | | |
| | Se | 82 | 101.778 | | | | |
| | Ag | 107 | 103.367 | | | | |
| | Ag | 109 | 102.515 | | | | |
| | Cd | 111 | 101.005 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.483 | | | |
| | Sb | 121 | 103.224 | | | | |
| | Ba | 135 | 101.981 | | | | |
| | Ba | 137 | 102.638 | | | | |
| > | Tb | 159 | | 97.189 | | | |
| | Tl | 205 | 100.980 | | | | |
| | Pb | 206 | 100.279 | | | | |
| | Pb | 207 | 100.200 | | | | |
| | Pb | 208 | 101.996 | | | | |
| > | Bi | 209 | | 95.792 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Wednesday, July 06, 2011 14:47:24
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCB.417

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206288.742 | 0.575 | 206288.742 | | | ppb |
| ⌊ | Be | 9 | 7.333 | 31.492 | 0.000 | 0.02477 | 81.72 | ppb |
| ⌈> | Sc | 45 | 810348.060 | 1.611 | 810348.060 | | | ppb |
| \| | V | 51 | 917.834 | 9.817 | 0.000 | 0.02873 | 105.04 | ppb |
| \| | Cr | 52 | 2418.293 | 2.697 | -0.000 | -0.00664 | 350.69 | ppb |
| \| | Mn | 55 | 550.015 | 5.677 | 0.000 | 0.05874 | 10.62 | ppb |
| \| | Co | 59 | 114.001 | 14.360 | 0.000 | 0.01908 | 31.24 | ppb |
| \| | Ni | 60 | 31.111 | 22.304 | 0.000 | 0.00285 | 321.47 | ppb |
| \| | Cu | 63 | 185.557 | 2.074 | -0.000 | -0.00932 | 43.70 | ppb |
| \| | Cu | 65 | 75.556 | 22.639 | -0.000 | -0.00470 | 494.96 | ppb |
| \| | Zn | 66 | 61.111 | 26.907 | -0.000 | -0.02408 | 163.95 | ppb |
| \| | As | 75 | 42.278 | 25.700 | 0.000 | 0.08680 | 19.85 | ppb |
| ⌊ | Se | 82 | 42.000 | 8.248 | 0.000 | 0.22282 | 27.99 | ppb |
| ⌈ | Ag | 107 | 44.445 | 18.875 | 0.000 | 0.01116 | 31.90 | ppb |
| \| | Ag | 109 | 58.889 | 23.566 | 0.000 | 0.02134 | 28.64 | ppb |
| \| | Cd | 111 | 9.063 | 55.364 | 0.000 | 0.01151 | 76.45 | ppb |
| \| | In | 113 | 70833.324 | 0.708 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1631065.848 | 0.173 | 1631065.848 | | | ppb |
| ⌈ | Sb | 121 | 763.363 | 19.720 | 0.000 | 0.29866 | 20.61 | ppb |
| \| | Ba | 135 | 23.333 | 19.795 | 0.000 | 0.03241 | 32.14 | ppb |
| \| | Ba | 137 | 56.667 | 29.599 | 0.000 | 0.03929 | 53.37 | ppb |
| ⌊> | Tb | 159 | 2049863.837 | 2.741 | 2049863.837 | | | ppb |
| ⌈ | Tl | 205 | 90.000 | 19.245 | 0.000 | 0.00727 | 51.51 | ppb |
| \| | Pb | 206 | 46.667 | 37.627 | 0.000 | 0.01151 | 99.39 | ppb |
| \| | Pb | 207 | 93.334 | 16.366 | 0.000 | 0.01529 | 35.21 | ppb |
| \| | Pb | 208 | 161.667 | 15.567 | 0.000 | 0.02188 | 25.89 | ppb |
| ⌊> | Bi | 209 | 1232972.152 | 0.012 | 1232972.152 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206814.728 | | ppb |
| ⌊ | Be | 9 | 10.000 | 0.048138 | ppb |
| ⌈> | Sc | 45 | 809678.582 | | ppb |
| \| | V | 51 | 1017.148 | 0.063205 | ppb |
| \| | Cr | 52 | 2480.308 | 0.020226 | ppb |
| \| | Mn | 55 | 560.016 | 0.061622 | ppb |
| \| | Co | 59 | 128.001 | 0.023823 | ppb |
| \| | Ni | 60 | 23.333 | -0.007579 | ppb |
| \| | Cu | 63 | 183.335 | -0.010639 | ppb |
| \| | Cu | 65 | 80.000 | 0.000809 | ppb |
| \| | Zn | 66 | 53.333 | -0.041963 | ppb |
| \| | As | 75 | 37.654 | 0.079181 | ppb |
| ⌊ | Se | 82 | 40.000 | 0.180416 | ppb |
| ⌈ | Ag | 107 | 36.667 | 0.007838 | ppb |
| \| | Ag | 109 | 63.334 | 0.023298 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 9.550 | 0.012333 | ppb |
| | In | 113 | 70633.577 | | ppb |
| > | In | 115 | 1632353.777 | | ppb |
| | Sb | 121 | 885.039 | 0.352756 | ppb |
| | Ba | 135 | 18.000 | 0.020520 | ppb |
| | Ba | 137 | 76.000 | 0.063502 | ppb |
| > | Tb | 159 | 2057982.147 | | ppb |
| | Tl | 205 | 70.000 | 0.002946 | ppb |
| | Pb | 206 | 65.000 | 0.023451 | ppb |
| | Pb | 207 | 110.000 | 0.021162 | ppb |
| | Pb | 208 | 185.001 | 0.027135 | ppb |
| > | Bi | 209 | 1232865.078 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204930.528 | | ppb |
| | Be | 9 | 6.000 | 0.013367 | ppb |
| > | Sc | 45 | 797641.547 | | ppb |
| | V | 51 | 841.329 | 0.007068 | ppb |
| | Cr | 52 | 2350.276 | -0.019481 | ppb |
| | Mn | 55 | 515.013 | 0.051586 | ppb |
| | Co | 59 | 118.001 | 0.021029 | ppb |
| | Ni | 60 | 33.333 | 0.006573 | ppb |
| | Cu | 63 | 190.002 | -0.004752 | ppb |
| | Cu | 65 | 90.000 | 0.015322 | ppb |
| | Zn | 66 | 80.000 | 0.021176 | ppb |
| | As | 75 | 34.490 | 0.074692 | ppb |
| | Se | 82 | 40.000 | 0.193611 | ppb |
| | Ag | 107 | 43.333 | 0.010726 | ppb |
| | Ag | 109 | 43.333 | 0.014493 | ppb |
| | Cd | 111 | 13.820 | 0.019857 | ppb |
| | In | 113 | 70462.376 | | ppb |
| > | In | 115 | 1627822.356 | | ppb |
| | Sb | 121 | 810.033 | 0.311546 | ppb |
| | Ba | 135 | 26.000 | 0.036804 | ppb |
| | Ba | 137 | 48.000 | 0.026827 | ppb |
| > | Tb | 159 | 2101553.266 | | ppb |
| | Tl | 205 | 100.001 | 0.009430 | ppb |
| | Pb | 206 | 45.000 | 0.010418 | ppb |
| | Pb | 207 | 90.000 | 0.014109 | ppb |
| | Pb | 208 | 165.001 | 0.022626 | ppb |
| > | Bi | 209 | 1233135.582 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207120.969 | | ppb |
| | Be | 9 | 6.000 | 0.012802 | ppb |
| > | Sc | 45 | 823724.052 | | ppb |
| | V | 51 | 895.025 | 0.015926 | ppb |
| | Cr | 52 | 2424.294 | -0.020651 | ppb |
| | Mn | 55 | 575.017 | 0.063022 | ppb |
| | Co | 59 | 96.000 | 0.012389 | ppb |
| | Ni | 60 | 36.667 | 0.009544 | ppb |
| | Cu | 63 | 183.335 | -0.012570 | ppb |
| | Cu | 65 | 56.667 | -0.030239 | ppb |
| | Zn | 66 | 50.000 | -0.051445 | ppb |
| | As | 75 | 54.691 | 0.106526 | ppb |
| | Se | 82 | 46.000 | 0.294428 | ppb |
| | Ag | 107 | 53.333 | 0.014920 | ppb |
| | Ag | 109 | 70.000 | 0.026239 | ppb |
| | Cd | 111 | 3.820 | 0.002325 | ppb |
| | In | 113 | 71404.020 | | ppb |
| > | In | 115 | 1633021.409 | | ppb |
| | Sb | 121 | 595.018 | 0.231682 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 26.000 | 0.039917 | ppb |
| | Ba | 137 | 46.000 | 0.027542 | ppb |
| > | Tb | 159 | 1990056.097 | | ppb |
| | Tl | 205 | 100.001 | 0.009434 | ppb |
| | Pb | 206 | 30.000 | 0.000654 | ppb |
| | Pb | 207 | 80.000 | 0.010591 | ppb |
| | Pb | 208 | 135.000 | 0.015881 | ppb |
| > | Bi | 209 | 1232915.797 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 97.010 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 96.607 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.511 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 98.823 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 96.656 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1106104-01

Sample Date/Time: Wednesday, July 06, 2011 14:48:51
Sample Type: Sample
Sample Description: SEEP1
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1106104-01.418

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205852.028 | 1.189 | 205852.028 | | | ppb |
| ⌊ | Be | 9 | 6.000 | 33.333 | 0.000 | 0.01321 | 136.01 | ppb |
| ⌈> | Sc | 45 | 820123.467 | 0.838 | 820123.467 | | | ppb |
| \| | V | 51 | 788.467 | 15.785 | -0.000 | -0.01876 | 233.64 | ppb |
| \| | Cr | 52 | 3156.498 | 0.984 | 0.001 | 0.28740 | 8.17 | ppb |
| \| | Mn | 55 | 9648542.737 | 0.922 | 11.764 | 2567.63292 | 0.26 | ppb |
| \| | Co | 59 | 89509.520 | 1.245 | 0.109 | 30.01899 | 0.84 | ppb |
| \| | Ni | 60 | 10275.277 | 0.744 | 0.012 | 13.63003 | 1.12 | ppb |
| \| | Cu | 63 | 822.256 | 10.775 | 0.001 | 0.37744 | 14.16 | ppb |
| \| | Cu | 65 | 385.563 | 5.283 | 0.000 | 0.38504 | 7.11 | ppb |
| \| | Zn | 66 | 4794.482 | 1.003 | 0.006 | 10.55964 | 1.29 | ppb |
| \| | As | 75 | 1689.915 | 3.445 | 0.002 | 2.84838 | 3.69 | ppb |
| ⌊ | Se | 82 | 47.778 | 4.900 | 0.000 | 0.33715 | 14.86 | ppb |
| ⌈ | Ag | 107 | 28.889 | 33.309 | 0.000 | 0.00430 | 96.05 | ppb |
| \| | Ag | 109 | 20.000 | 50.000 | 0.000 | 0.00395 | 111.83 | ppb |
| \| | Cd | 111 | 26.610 | 19.717 | 0.000 | 0.04123 | 22.81 | ppb |
| \| | In | 113 | 72228.329 | 2.260 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1666209.734 | 0.843 | 1666209.734 | | | ppb |
| ⌈ | Sb | 121 | 416.675 | 3.464 | 0.000 | 0.14448 | 6.13 | ppb |
| \| | Ba | 135 | 52436.455 | 0.518 | 0.026 | 115.61383 | 2.22 | ppb |
| \| | Ba | 137 | 90573.013 | 0.908 | 0.044 | 115.70171 | 1.33 | ppb |
| ⌊> | Tb | 159 | 2037413.755 | 1.723 | 2037413.755 | | | ppb |
| ⌈ | Tl | 205 | 55.000 | 31.492 | -0.000 | -0.00020 | 1929.67 | ppb |
| \| | Pb | 206 | 41.667 | 60.399 | 0.000 | 0.00850 | 194.49 | ppb |
| \| | Pb | 207 | 83.334 | 24.980 | 0.000 | 0.01202 | 61.99 | ppb |
| \| | Pb | 208 | 113.334 | 6.739 | 0.000 | 0.01122 | 16.25 | ppb |
| ⌊> | Bi | 209 | 1222883.319 | 0.548 | 1222883.319 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208395.032 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.005016 | ppb |
| ⌈> | Sc | 45 | 822683.398 | | ppb |
| \| | V | 51 | 848.942 | 0.000701 | ppb |
| \| | Cr | 52 | 3158.499 | 0.284026 | ppb |
| \| | Mn | 55 | 9653580.785 | 2560.986410 | ppb |
| \| | Co | 59 | 88994.245 | 29.753264 | ppb |
| \| | Ni | 60 | 10358.696 | 13.697474 | ppb |
| \| | Cu | 63 | 730.027 | 0.319839 | ppb |
| \| | Cu | 65 | 403.341 | 0.405807 | ppb |
| \| | Zn | 66 | 4847.841 | 10.644757 | ppb |
| \| | As | 75 | 1623.181 | 2.727800 | ppb |
| ⌊ | Se | 82 | 45.333 | 0.281335 | ppb |
| ⌈ | Ag | 107 | 40.000 | 0.009074 | ppb |
| \| | Ag | 109 | 30.000 | 0.008392 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 32.640 | 0.052044 | ppb |
| \| | In | 113 | 70467.411 | | ppb |
| \|> | In | 115 | 1650049.978 | | ppb |
| ⌈ | Sb | 121 | 425.009 | 0.152066 | ppb |
| \| | Ba | 135 | 52704.523 | 118.521658 | ppb |
| \| | Ba | 137 | 90029.449 | 117.314650 | ppb |
| \|> | Tb | 159 | 1997088.135 | | ppb |
| ⌈ | Tl | 205 | 65.000 | 0.002068 | ppb |
| \| | Pb | 206 | 45.000 | 0.010847 | ppb |
| \| | Pb | 207 | 90.000 | 0.014573 | ppb |
| \| | Pb | 208 | 120.000 | 0.012895 | ppb |
| \|> | Bi | 209 | 1215342.087 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203514.038 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.013738 | ppb |
| ⌈> | Sc | 45 | 812336.721 | | ppb |
| \| | V | 51 | 871.131 | 0.011974 | ppb |
| \| | Cr | 52 | 3186.508 | 0.312373 | ppb |
| \| | Mn | 55 | 9557146.975 | 2567.697102 | ppb |
| \| | Co | 59 | 88746.053 | 30.048390 | ppb |
| \| | Ni | 60 | 10258.593 | 13.737999 | ppb |
| \| | Cu | 63 | 830.034 | 0.387047 | ppb |
| \| | Cu | 65 | 390.008 | 0.395286 | ppb |
| \| | Zn | 66 | 4781.143 | 10.631823 | ppb |
| \| | As | 75 | 1716.200 | 2.919777 | ppb |
| ⌊ | Se | 82 | 48.000 | 0.351859 | ppb |
| ⌈ | Ag | 107 | 23.333 | 0.001923 | ppb |
| \| | Ag | 109 | 10.000 | -0.000432 | ppb |
| \| | Cd | 111 | 24.099 | 0.036716 | ppb |
| \| | In | 113 | 73690.518 | | ppb |
| \|> | In | 115 | 1673106.612 | | ppb |
| ⌈ | Sb | 121 | 400.008 | 0.134743 | ppb |
| \| | Ba | 135 | 52161.688 | 113.650139 | ppb |
| \| | Ba | 137 | 91518.878 | 115.544145 | ppb |
| \|> | Tb | 159 | 2061226.805 | | ppb |
| ⌈ | Tl | 205 | 65.000 | 0.001919 | ppb |
| \| | Pb | 206 | 15.000 | -0.009077 | ppb |
| \| | Pb | 207 | 60.000 | 0.003628 | ppb |
| \| | Pb | 208 | 115.000 | 0.011480 | ppb |
| \|> | Bi | 209 | 1228132.370 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205647.014 | | ppb |
| ⌊ | Be | 9 | 8.000 | 0.030910 | ppb |
| ⌈> | Sc | 45 | 825350.282 | | ppb |
| \| | V | 51 | 645.328 | -0.068969 | ppb |
| \| | Cr | 52 | 3124.488 | 0.265799 | ppb |
| \| | Mn | 55 | 9734900.450 | 2574.215259 | ppb |
| \| | Co | 59 | 90788.263 | 30.255309 | ppb |
| \| | Ni | 60 | 10208.541 | 13.454615 | ppb |
| \| | Cu | 63 | 906.708 | 0.425441 | ppb |
| \| | Cu | 65 | 363.340 | 0.354027 | ppb |
| \| | Zn | 66 | 4754.463 | 10.402336 | ppb |
| \| | As | 75 | 1730.364 | 2.897573 | ppb |
| ⌊ | Se | 82 | 50.000 | 0.378258 | ppb |
| ⌈ | Ag | 107 | 23.333 | 0.001910 | ppb |
| \| | Ag | 109 | 20.000 | 0.003877 | ppb |
| \| | Cd | 111 | 23.090 | 0.034941 | ppb |
| \| | In | 113 | 72527.058 | | ppb |
| \|> | In | 115 | 1675472.613 | | ppb |
| ⌈ | Sb | 121 | 425.009 | 0.146625 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 52443.155 | 114.669705 | ppb |
| \| | Ba | 137 | 90170.713 | 114.246338 | ppb |
| \> | Tb | 159 | 2053926.325 | | ppb |
| ⌈ | Tl | 205 | 35.000 | -0.004576 | ppb |
| \| | Pb | 206 | 65.000 | 0.023717 | ppb |
| \| | Pb | 207 | 100.000 | 0.017860 | ppb |
| \| | Pb | 208 | 105.000 | 0.009278 | ppb |
| \> | Bi | 209 | 1225175.499 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 96.805 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 97.772 | | | |
| ⌈ | V | 51 | | | | | |
| ⌈ | Cr | 52 | | | | | |
| ⌈ | Mn | 55 | | | | | |
| ⌈ | Co | 59 | | | | | |
| ⌈ | Ni | 60 | | | | | |
| ⌈ | Cu | 63 | | | | | |
| ⌈ | Cu | 65 | | | | | |
| ⌈ | Zn | 66 | | | | | |
| ⌈ | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| ⌈ | Ag | 109 | | | | | |
| ⌈ | Cd | 111 | | | | | |
| ⌈ | In | 113 | | | | | |
| ⌊> | In | 115 | | 98.591 | | | |
| ⌈ | Sb | 121 | | | | | |
| ⌈ | Ba | 135 | | | | | |
| ⌈ | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 98.223 | | | |
| ⌈ | Tl | 205 | | | | | |
| ⌈ | Pb | 206 | | | | | |
| ⌈ | Pb | 207 | | | | | |
| ⌈ | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 95.866 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1106104-01

Sample Date/Time: Wednesday, July 06, 2011 14:50:17
Sample Type: Sample
Sample Description: SEEP1L 5X
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\SDI1106104-01.419

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198232.186 | 0.148 | 198232.186 | | | ppb |
| ⌊ | Be | 9 | 7.333 | 78.730 | 0.000 | 0.02741 | 193.47 | ppb |
| ⌈> | Sc | 45 | 789073.478 | 1.332 | 789073.478 | | | ppb |
| \| | V | 51 | 929.489 | 6.175 | 0.000 | 0.04161 | 58.76 | ppb |
| \| | Cr | 52 | 2551.659 | 2.030 | 0.000 | 0.07834 | 37.96 | ppb |
| \| | Mn | 55 | 2047408.678 | 2.344 | 2.595 | 566.40154 | 3.64 | ppb |
| \| | Co | 59 | 19552.432 | 1.444 | 0.025 | 6.80183 | 2.75 | ppb |
| \| | Ni | 60 | 2243.585 | 1.943 | 0.003 | 3.06343 | 2.73 | ppb |
| \| | Cu | 63 | 344.450 | 7.882 | 0.000 | 0.09459 | 21.06 | ppb |
| \| | Cu | 65 | 151.112 | 5.551 | 0.000 | 0.09665 | 9.00 | ppb |
| \| | Zn | 66 | 1130.064 | 3.122 | 0.001 | 2.46459 | 4.33 | ppb |
| \| | As | 75 | 386.699 | 1.051 | 0.001 | 0.68902 | 0.39 | ppb |
| ⌊ | Se | 82 | 41.333 | 16.839 | 0.000 | 0.23391 | 69.70 | ppb |
| ⌈ | Ag | 107 | 10.000 | 33.333 | -0.000 | -0.00339 | 42.98 | ppb |
| \| | Ag | 109 | 7.778 | 24.744 | -0.000 | -0.00121 | 71.24 | ppb |
| \| | Cd | 111 | -1.667 | 752.116 | -0.000 | -0.00738 | 304.69 | ppb |
| \| | In | 113 | 70487.558 | 0.574 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1588572.001 | 0.405 | 1588572.001 | | | ppb |
| ⌈ | Sb | 121 | 258.337 | 17.455 | 0.000 | 0.07781 | 26.92 | ppb |
| \| | Ba | 135 | 11315.735 | 2.792 | 0.006 | 26.05226 | 3.21 | ppb |
| \| | Ba | 137 | 19783.551 | 0.615 | 0.010 | 26.38080 | 1.04 | ppb |
| ⌊> | Tb | 159 | 1949788.226 | 0.907 | 1949788.226 | | | ppb |
| ⌈ | Tl | 205 | 16.667 | 17.321 | -0.000 | -0.00844 | 8.52 | ppb |
| \| | Pb | 206 | 26.667 | 65.848 | -0.000 | -0.00097 | 1190.32 | ppb |
| \| | Pb | 207 | 35.000 | 51.508 | -0.000 | -0.00485 | 131.71 | ppb |
| \| | Pb | 208 | 70.000 | 7.143 | 0.000 | 0.00185 | 53.14 | ppb |
| ⌊> | Bi | 209 | 1187194.972 | 1.753 | 1187194.972 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 198394.692 | | ppb |
| ⌊ | Be | 9 | 14.000 | 0.088632 | ppb |
| ⌈> | Sc | 45 | 782384.020 | | ppb |
| \| | V | 51 | 963.169 | 0.056193 | ppb |
| \| | Cr | 52 | 2512.316 | 0.070467 | ppb |
| \| | Mn | 55 | 2086030.227 | 581.836109 | ppb |
| \| | Co | 59 | 19669.325 | 6.899613 | ppb |
| \| | Ni | 60 | 2213.578 | 3.047569 | ppb |
| \| | Cu | 63 | 356.673 | 0.104088 | ppb |
| \| | Cu | 65 | 150.001 | 0.096938 | ppb |
| \| | Zn | 66 | 1116.729 | 2.455041 | ppb |
| \| | As | 75 | 385.111 | 0.691967 | ppb |
| ⌊ | Se | 82 | 49.333 | 0.422060 | ppb |
| ⌈ | Ag | 107 | 10.000 | -0.003370 | ppb |
| \| | Ag | 109 | 6.667 | -0.001705 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | -10.730 | -0.023686 | ppb |
| | In | 113 | 70935.705 | | ppb |
| > | In | 115 | 1581252.243 | | ppb |
| | Sb | 121 | 305.005 | 0.099936 | ppb |
| | Ba | 135 | 10966.009 | 25.236666 | ppb |
| | Ba | 137 | 19923.828 | 26.559239 | ppb |
| > | Tb | 159 | 1950336.814 | | ppb |
| | Tl | 205 | 20.000 | -0.007612 | ppb |
| | Pb | 206 | 10.000 | -0.011985 | ppb |
| | Pb | 207 | 20.000 | -0.010129 | ppb |
| | Pb | 208 | 65.000 | 0.000996 | ppb |
| > | Bi | 209 | 1163825.203 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198408.971 | | ppb |
| | Be | 9 | 4.000 | -0.003255 | ppb |
| > | Sc | 45 | 783652.826 | | ppb |
| | V | 51 | 962.079 | 0.055250 | ppb |
| | Cr | 52 | 2610.341 | 0.111226 | ppb |
| | Mn | 55 | 2062524.486 | 574.347301 | ppb |
| | Co | 59 | 19757.499 | 6.919378 | ppb |
| | Ni | 60 | 2293.596 | 3.153967 | ppb |
| | Cu | 63 | 363.340 | 0.107973 | ppb |
| | Cu | 65 | 143.334 | 0.087816 | ppb |
| | Zn | 66 | 1170.068 | 2.575637 | ppb |
| | As | 75 | 383.667 | 0.688338 | ppb |
| | Se | 82 | 36.667 | 0.134170 | ppb |
| | Ag | 107 | 6.667 | -0.004856 | ppb |
| | Ag | 109 | 10.000 | -0.000216 | ppb |
| | Cd | 111 | 12.640 | 0.018270 | ppb |
| | In | 113 | 70150.192 | | ppb |
| > | In | 115 | 1593304.092 | | ppb |
| | Sb | 121 | 255.003 | 0.075216 | ppb |
| | Ba | 135 | 11400.495 | 26.012305 | ppb |
| | Ba | 137 | 19721.428 | 26.063528 | ppb |
| > | Tb | 159 | 1967195.289 | | ppb |
| | Tl | 205 | 15.000 | -0.008871 | ppb |
| | Pb | 206 | 45.000 | 0.011134 | ppb |
| | Pb | 207 | 55.000 | 0.002253 | ppb |
| | Pb | 208 | 70.000 | 0.001634 | ppb |
| > | Bi | 209 | 1203747.338 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197892.895 | | ppb |
| | Be | 9 | 4.000 | -0.003159 | ppb |
| > | Sc | 45 | 801183.587 | | ppb |
| | V | 51 | 863.220 | 0.013383 | ppb |
| | Cr | 52 | 2532.321 | 0.053339 | ppb |
| | Mn | 55 | 1993671.321 | 543.021214 | ppb |
| | Co | 59 | 19230.473 | 6.586496 | ppb |
| | Ni | 60 | 2223.581 | 2.988762 | ppb |
| | Cu | 63 | 313.338 | 0.071695 | ppb |
| | Cu | 65 | 160.001 | 0.105197 | ppb |
| | Zn | 66 | 1103.394 | 2.363089 | ppb |
| | As | 75 | 391.319 | 0.686741 | ppb |
| | Se | 82 | 38.000 | 0.145504 | ppb |
| | Ag | 107 | 13.333 | -0.001943 | ppb |
| | Ag | 109 | 6.667 | -0.001724 | ppb |
| | Cd | 111 | -6.910 | -0.016723 | ppb |
| | In | 113 | 70376.776 | | ppb |
| > | In | 115 | 1591159.669 | | ppb |
| | Sb | 121 | 215.002 | 0.058279 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 11580.702 | 26.907814 | ppb |
| | Ba | 137 | 19705.396 | 26.519623 | ppb |
| > | Tb | 159 | 1931832.575 | | ppb |
| | Tl | 205 | 15.000 | -0.008844 | ppb |
| | Pb | 206 | 25.000 | -0.002072 | ppb |
| | Pb | 207 | 30.000 | -0.006680 | ppb |
| | Pb | 208 | 75.000 | 0.002928 | ppb |
| > | Bi | 209 | 1194012.374 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 93.222 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.070 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 93.997 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 93.998 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 93.068 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1062837-PS1

Sample Date/Time: Wednesday, July 06, 2011 14:51:42
Sample Type: Sample
Sample Description: SEEP1A
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1062837-PS1.420

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210054.180 | 1.463 | 210054.180 | | | ppb |
| ⌊ | Be | 9 | 1179.403 | 1.250 | 0.006 | 10.19638 | 1.58 | ppb |
| ⌈> | Sc | 45 | 823108.793 | 0.621 | 823108.793 | | | ppb |
| \| | V | 51 | 150246.245 | 0.769 | 0.182 | 50.57592 | 0.90 | ppb |
| \| | Cr | 52 | 53872.059 | 0.779 | 0.062 | 21.23037 | 0.91 | ppb |
| \| | Mn | 55 | 9679960.996 | 1.286 | 11.761 | 2566.85005 | 1.87 | ppb |
| \| | Co | 59 | 121519.224 | 0.279 | 0.148 | 40.61404 | 0.35 | ppb |
| \| | Ni | 60 | 17090.150 | 1.851 | 0.021 | 22.61132 | 1.35 | ppb |
| \| | Cu | 63 | 35491.765 | 1.064 | 0.043 | 21.43735 | 1.56 | ppb |
| \| | Cu | 65 | 17092.373 | 0.637 | 0.021 | 21.38266 | 1.12 | ppb |
| \| | Zn | 66 | 13992.004 | 0.589 | 0.017 | 31.01538 | 1.07 | ppb |
| \| | As | 75 | 7982.678 | 1.352 | 0.010 | 13.34946 | 1.90 | ppb |
| ⌊ | Se | 82 | 2475.195 | 2.519 | 0.003 | 52.53396 | 2.93 | ppb |
| ⌈ | Ag | 107 | 25254.090 | 3.047 | 0.015 | 10.36885 | 3.43 | ppb |
| \| | Ag | 109 | 24050.006 | 2.194 | 0.014 | 10.28242 | 2.45 | ppb |
| \| | Cd | 111 | 5949.911 | 6.043 | 0.004 | 10.02744 | 5.53 | ppb |
| \| | In | 113 | 79837.455 | 1.011 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1690385.222 | 0.699 | 1690385.222 | | | ppb |
| ⌈ | Sb | 121 | 47278.167 | 0.614 | 0.022 | 20.57037 | 0.23 | ppb |
| \| | Ba | 135 | 98850.180 | 0.692 | 0.047 | 209.54829 | 0.28 | ppb |
| \| | Ba | 137 | 171752.414 | 0.541 | 0.081 | 210.98616 | 0.30 | ppb |
| ⌊> | Tb | 159 | 2118722.914 | 0.819 | 2118722.914 | | | ppb |
| ⌈ | Tl | 205 | 47470.757 | 1.491 | 0.038 | 10.06686 | 2.48 | ppb |
| \| | Pb | 206 | 15645.566 | 1.905 | 0.012 | 9.98198 | 0.83 | ppb |
| \| | Pb | 207 | 28583.932 | 1.465 | 0.023 | 9.86628 | 0.61 | ppb |
| \| | Pb | 208 | 44745.544 | 1.356 | 0.036 | 9.87013 | 1.82 | ppb |
| ⌊> | Bi | 209 | 1256136.824 | 1.079 | 1256136.824 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212890.245 | | ppb |
| ⌊ | Be | 9 | 1174.069 | 10.013304 | ppb |
| ⌈> | Sc | 45 | 821350.213 | | ppb |
| \| | V | 51 | 151428.538 | 51.084902 | ppb |
| \| | Cr | 52 | 54282.933 | 21.447691 | ppb |
| \| | Mn | 55 | 9770321.331 | 2596.164761 | ppb |
| \| | Co | 59 | 121479.408 | 40.687115 | ppb |
| \| | Ni | 60 | 16820.802 | 22.302970 | ppb |
| \| | Cu | 63 | 35275.442 | 21.350621 | ppb |
| \| | Cu | 65 | 17211.466 | 21.577780 | ppb |
| \| | Zn | 66 | 14083.243 | 31.284651 | ppb |
| \| | As | 75 | 8076.454 | 13.533999 | ppb |
| ⌊ | Se | 82 | 2544.990 | 54.147673 | ppb |
| ⌈ | Ag | 107 | 26043.870 | 10.762485 | ppb |
| \| | Ag | 109 | 24503.317 | 10.544473 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5870.231 | 9.959716 | ppb |
| | In | 113 | 79454.401 | | ppb |
| > | In | 115 | 1679374.137 | | ppb |
| | Sb | 121 | 47361.892 | 20.530306 | ppb |
| | Ba | 135 | 99377.351 | 209.885276 | ppb |
| | Ba | 137 | 172010.770 | 210.519126 | ppb |
| > | Tb | 159 | 2126583.483 | | ppb |
| | Tl | 205 | 47015.263 | 9.966812 | ppb |
| | Pb | 206 | 15637.217 | 9.975573 | ppb |
| | Pb | 207 | 28765.829 | 9.927729 | ppb |
| | Pb | 208 | 45440.732 | 10.021155 | ppb |
| > | Bi | 209 | 1256345.683 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206790.229 | | ppb |
| | Be | 9 | 1168.068 | 10.256964 | ppb |
| > | Sc | 45 | 819112.362 | | ppb |
| | V | 51 | 149118.879 | 50.439565 | ppb |
| | Cr | 52 | 53444.435 | 21.161056 | ppb |
| | Mn | 55 | 9731608.719 | 2592.942687 | ppb |
| | Co | 59 | 121202.073 | 40.705141 | ppb |
| | Ni | 60 | 17011.123 | 22.617492 | ppb |
| | Cu | 63 | 35927.758 | 21.807483 | ppb |
| | Cu | 65 | 17067.887 | 21.455665 | ppb |
| | Zn | 66 | 13969.751 | 31.116449 | ppb |
| | As | 75 | 8006.863 | 13.454129 | ppb |
| | Se | 82 | 2455.635 | 52.366729 | ppb |
| | Ag | 107 | 25211.742 | 10.274593 | ppb |
| | Ag | 109 | 24175.855 | 10.259968 | ppb |
| | Cd | 111 | 6342.648 | 10.613134 | ppb |
| | In | 113 | 80764.836 | | ppb |
| > | In | 115 | 1702855.631 | | ppb |
| | Sb | 121 | 46954.980 | 20.623265 | ppb |
| | Ba | 135 | 98076.604 | 209.877137 | ppb |
| | Ba | 137 | 170720.948 | 211.703612 | ppb |
| > | Tb | 159 | 2098830.071 | | ppb |
| | Tl | 205 | 48286.298 | 10.350934 | ppb |
| | Pb | 206 | 15351.775 | 9.902606 | ppb |
| | Pb | 207 | 28104.902 | 9.807633 | ppb |
| | Pb | 208 | 44473.356 | 9.917091 | ppb |
| > | Bi | 209 | 1242483.480 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 210482.065 | | ppb |
| | Be | 9 | 1196.072 | 10.318886 | ppb |
| > | Sc | 45 | 828863.806 | | ppb |
| | V | 51 | 150191.318 | 50.203302 | ppb |
| | Cr | 52 | 53888.810 | 21.082355 | ppb |
| | Mn | 55 | 9537952.937 | 2511.442691 | ppb |
| | Co | 59 | 121876.192 | 40.449865 | ppb |
| | Ni | 60 | 17438.525 | 22.913487 | ppb |
| | Cu | 63 | 35272.097 | 21.153939 | ppb |
| | Cu | 65 | 16997.767 | 21.114530 | ppb |
| | Zn | 66 | 13923.019 | 30.645050 | ppb |
| | As | 75 | 7864.716 | 13.060248 | ppb |
| | Se | 82 | 2424.961 | 51.087478 | ppb |
| | Ag | 107 | 24506.659 | 10.069466 | ppb |
| | Ag | 109 | 23470.845 | 10.042823 | ppb |
| | Cd | 111 | 5636.854 | 9.509473 | ppb |
| | In | 113 | 79293.129 | | ppb |
| > | In | 115 | 1688925.897 | | ppb |
| | Sb | 121 | 47517.629 | 20.557545 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 99096.586 | 208.882445 | ppb |
| | Ba | 137 | 172525.525 | 210.735755 | ppb |
| > | Tb | 159 | 2130755.186 | | ppb |
| | Tl | 205 | 47110.710 | 9.882826 | ppb |
| | Pb | 206 | 15947.706 | 10.067758 | ppb |
| | Pb | 207 | 28881.065 | 9.863472 | ppb |
| | Pb | 208 | 44322.545 | 9.672152 | ppb |
| > | Bi | 209 | 1269581.308 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 98.781 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 98.128 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 100.021 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 102.142 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 98.472 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1106104-02

Sample Date/Time: Wednesday, July 06, 2011 14:53:08
Sample Type: Sample
Sample Description: SEEP2
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\1106104-02.421

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202889.086 | 1.296 | 202889.086 | | | ppb |
| ⌊ | Be | 9 | 4.667 | 49.487 | 0.000 | 0.00179 | 1141.39 | ppb |
| ⌈> | Sc | 45 | 809064.348 | 0.701 | 809064.348 | | | ppb |
| \| | V | 51 | 815.573 | 44.121 | -0.000 | -0.00554 | 2252.10 | ppb |
| \| | Cr | 52 | 3132.491 | 1.183 | 0.001 | 0.29504 | 2.18 | ppb |
| \| | Mn | 55 | 9248095.157 | 0.522 | 11.431 | 2494.85075 | 1.20 | ppb |
| \| | Co | 59 | 86018.429 | 1.502 | 0.106 | 29.24511 | 2.20 | ppb |
| \| | Ni | 60 | 8852.809 | 3.284 | 0.011 | 11.90029 | 3.98 | ppb |
| \| | Cu | 63 | 973.381 | 9.801 | 0.001 | 0.47775 | 12.44 | ppb |
| \| | Cu | 65 | 462.233 | 8.296 | 0.000 | 0.48981 | 10.57 | ppb |
| \| | Zn | 66 | 3979.682 | 4.243 | 0.005 | 8.86065 | 4.99 | ppb |
| \| | As | 75 | 1793.129 | 2.569 | 0.002 | 3.06269 | 3.22 | ppb |
| ⌊ | Se | 82 | 59.556 | 3.420 | 0.000 | 0.60902 | 8.12 | ppb |
| ⌈ | Ag | 107 | 8.889 | 173.205 | -0.000 | -0.00397 | 165.77 | ppb |
| \| | Ag | 109 | 11.111 | 45.826 | 0.000 | 0.00024 | 986.51 | ppb |
| \| | Cd | 111 | 8.577 | 157.504 | 0.000 | 0.01108 | 219.33 | ppb |
| \| | In | 113 | 71827.053 | 1.070 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1618222.359 | 1.959 | 1618222.359 | | | ppb |
| ⌈ | Sb | 121 | 400.008 | 13.920 | 0.000 | 0.14237 | 18.11 | ppb |
| \| | Ba | 135 | 53996.732 | 0.963 | 0.027 | 122.66810 | 0.52 | ppb |
| \| | Ba | 137 | 93974.165 | 0.451 | 0.048 | 123.71057 | 0.64 | ppb |
| ⌊> | Tb | 159 | 1976885.611 | 0.632 | 1976885.611 | | | ppb |
| ⌈ | Tl | 205 | 65.000 | 23.077 | 0.000 | 0.00204 | 153.15 | ppb |
| \| | Pb | 206 | 40.000 | 21.651 | 0.000 | 0.00751 | 73.92 | ppb |
| \| | Pb | 207 | 68.333 | 15.232 | 0.000 | 0.00684 | 57.29 | ppb |
| \| | Pb | 208 | 118.334 | 23.272 | 0.000 | 0.01254 | 51.91 | ppb |
| ⌊> | Bi | 209 | 1215719.739 | 1.329 | 1215719.739 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205757.247 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.013152 | ppb |
| ⌈> | Sc | 45 | 809916.758 | | ppb |
| \| | V | 51 | 1075.875 | 0.083306 | ppb |
| \| | Cr | 52 | 3134.491 | 0.294523 | ppb |
| \| | Mn | 55 | 9260473.920 | 2495.422014 | ppb |
| \| | Co | 59 | 86032.494 | 29.216102 | ppb |
| \| | Ni | 60 | 8707.122 | 11.689355 | ppb |
| \| | Cu | 63 | 863.371 | 0.409154 | ppb |
| \| | Cu | 65 | 423.342 | 0.439351 | ppb |
| \| | Zn | 66 | 4020.808 | 8.942307 | ppb |
| \| | As | 75 | 1804.894 | 3.079012 | ppb |
| ⌊ | Se | 82 | 57.333 | 0.558947 | ppb |
| ⌈ | Ag | 107 | 0.000 | -0.007762 | ppb |
| \| | Ag | 109 | 16.667 | 0.002857 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 23.820 | 0.038543 | ppb |
| | In | 113 | 71101.878 | | ppb |
| > | In | 115 | 1583270.945 | | ppb |
| | Sb | 121 | 460.011 | 0.170574 | ppb |
| | Ba | 135 | 53651.539 | 121.965570 | ppb |
| | Ba | 137 | 93501.089 | 123.166714 | ppb |
| > | Tb | 159 | 1975576.893 | | ppb |
| | Tl | 205 | 65.000 | 0.002193 | ppb |
| | Pb | 206 | 30.000 | 0.001110 | ppb |
| | Pb | 207 | 65.000 | 0.005841 | ppb |
| | Pb | 208 | 150.001 | 0.020045 | ppb |
| > | Bi | 209 | 1204787.087 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200593.918 | | ppb |
| | Be | 9 | 2.000 | -0.021830 | ppb |
| > | Sc | 45 | 814259.016 | | ppb |
| | V | 51 | 404.950 | -0.148259 | ppb |
| | Cr | 52 | 3168.502 | 0.301707 | ppb |
| | Mn | 55 | 9194824.749 | 2464.517231 | ppb |
| | Co | 59 | 84719.355 | 28.616340 | ppb |
| | Ni | 60 | 8663.751 | 11.568702 | ppb |
| | Cu | 63 | 1033.387 | 0.510713 | ppb |
| | Cu | 65 | 463.344 | 0.487291 | ppb |
| | Zn | 66 | 3794.053 | 8.383005 | ppb |
| | As | 75 | 1742.321 | 2.957023 | ppb |
| | Se | 82 | 60.000 | 0.610230 | ppb |
| | Ag | 107 | 26.667 | 0.003626 | ppb |
| | Ag | 109 | 10.000 | -0.000308 | ppb |
| | Cd | 111 | 3.820 | 0.002352 | ppb |
| | In | 113 | 71746.458 | | ppb |
| > | In | 115 | 1626277.309 | | ppb |
| | Sb | 121 | 350.006 | 0.120007 | ppb |
| | Ba | 135 | 53744.034 | 122.827953 | ppb |
| | Ba | 137 | 94100.673 | 124.618402 | ppb |
| > | Tb | 159 | 1965090.333 | | ppb |
| | Tl | 205 | 50.000 | -0.001158 | ppb |
| | Pb | 206 | 45.000 | 0.011026 | ppb |
| | Pb | 207 | 80.000 | 0.011170 | ppb |
| | Pb | 208 | 100.000 | 0.008466 | ppb |
| > | Bi | 209 | 1208098.100 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202316.095 | | ppb |
| | Be | 9 | 6.000 | 0.014056 | ppb |
| > | Sc | 45 | 803017.270 | | ppb |
| | V | 51 | 965.895 | 0.048325 | ppb |
| | Cr | 52 | 3094.479 | 0.288888 | ppb |
| | Mn | 55 | 9288986.801 | 2524.613000 | ppb |
| | Co | 59 | 87303.438 | 29.902901 | ppb |
| | Ni | 60 | 9187.552 | 12.442817 | ppb |
| | Cu | 63 | 1023.386 | 0.513369 | ppb |
| | Cu | 65 | 500.013 | 0.542774 | ppb |
| | Zn | 66 | 4124.184 | 9.256641 | ppb |
| | As | 75 | 1832.172 | 3.152037 | ppb |
| | Se | 82 | 61.334 | 0.657876 | ppb |
| | Ag | 107 | 0.000 | -0.007762 | ppb |
| | Ag | 109 | 6.667 | -0.001824 | ppb |
| | Cd | 111 | -1.910 | -0.007653 | ppb |
| | In | 113 | 72632.822 | | ppb |
| > | In | 115 | 1645118.823 | | ppb |
| | Sb | 121 | 390.008 | 0.136518 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 54594.623 | 123.210789 | ppb |
| | Ba | 137 | 94320.732 | 123.346590 | ppb |
| > | Tb | 159 | 1989989.607 | | ppb |
| | Tl | 205 | 80.000 | 0.005090 | ppb |
| | Pb | 206 | 45.000 | 0.010391 | ppb |
| | Pb | 207 | 60.000 | 0.003522 | ppb |
| | Pb | 208 | 105.000 | 0.009103 | ppb |
| > | Bi | 209 | 1234274.029 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 95.412 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 96.454 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 95.751 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.305 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 95.304 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Wednesday, July 06, 2011 14:54:34
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LLCCV.422

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207870.429 | 1.028 | 207870.429 | | | ppb |
| ⌊ | Be | 9 | 116.667 | 6.928 | 0.001 | 0.98341 | 7.79 | ppb |
| ⌈> | Sc | 45 | 815750.630 | 0.466 | 815750.630 | | | ppb |
| \| | V | 51 | 14456.509 | 3.160 | 0.017 | 4.65125 | 3.39 | ppb |
| \| | Cr | 52 | 7266.642 | 3.817 | 0.006 | 2.00693 | 5.07 | ppb |
| \| | Mn | 55 | 4651.085 | 6.667 | 0.005 | 1.15500 | 7.00 | ppb |
| \| | Co | 59 | 3052.466 | 3.468 | 0.004 | 1.01016 | 3.35 | ppb |
| \| | Ni | 60 | 702.247 | 4.147 | 0.001 | 0.90019 | 4.51 | ppb |
| \| | Cu | 63 | 3506.170 | 2.727 | 0.004 | 2.02513 | 2.56 | ppb |
| \| | Cu | 65 | 1624.576 | 2.448 | 0.002 | 1.95887 | 2.36 | ppb |
| \| | Zn | 66 | 985.604 | 2.175 | 0.001 | 2.05334 | 2.86 | ppb |
| \| | As | 75 | 586.613 | 19.744 | 0.001 | 1.00339 | 19.10 | ppb |
| ⌊ | Se | 82 | 257.337 | 7.405 | 0.000 | 4.88821 | 7.95 | ppb |
| ⌈ | Ag | 107 | 2509.204 | 2.990 | 0.002 | 1.06308 | 2.01 | ppb |
| \| | Ag | 109 | 2326.938 | 4.327 | 0.001 | 1.02900 | 3.35 | ppb |
| \| | Cd | 111 | 518.626 | 14.614 | 0.000 | 0.90375 | 14.21 | ppb |
| \| | In | 113 | 72894.732 | 0.921 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1627171.902 | 1.445 | 1627171.902 | | | ppb |
| ⌈ | Sb | 121 | 4544.366 | 2.942 | 0.002 | 2.02032 | 0.83 | ppb |
| \| | Ba | 135 | 4371.623 | 4.123 | 0.002 | 9.63809 | 2.36 | ppb |
| \| | Ba | 137 | 7603.556 | 0.359 | 0.004 | 9.70639 | 2.22 | ppb |
| ⌊> | Tb | 159 | 2032949.662 | 2.205 | 2032949.662 | | | ppb |
| ⌈ | Tl | 205 | 4517.687 | 1.844 | 0.004 | 0.96161 | 3.39 | ppb |
| \| | Pb | 206 | 1425.102 | 2.456 | 0.001 | 0.90588 | 2.42 | ppb |
| \| | Pb | 207 | 2746.856 | 0.210 | 0.002 | 0.94681 | 2.56 | ppb |
| \| | Pb | 208 | 4370.553 | 2.833 | 0.003 | 0.96559 | 3.31 | ppb |
| ⌊> | Bi | 209 | 1237682.326 | 2.490 | 1237682.326 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209887.768 | | ppb |
| ⌊ | Be | 9 | 118.001 | 0.984864 | ppb |
| ⌈> | Sc | 45 | 818370.130 | | ppb |
| \| | V | 51 | 14872.425 | 4.776970 | ppb |
| \| | Cr | 52 | 7430.760 | 2.065729 | ppb |
| \| | Mn | 55 | 4996.248 | 1.243145 | ppb |
| \| | Co | 59 | 3172.503 | 1.047265 | ppb |
| \| | Ni | 60 | 670.022 | 0.854171 | ppb |
| \| | Cu | 63 | 3493.944 | 2.010882 | ppb |
| \| | Cu | 65 | 1606.796 | 1.929845 | ppb |
| \| | Zn | 66 | 970.047 | 2.011199 | ppb |
| \| | As | 75 | 597.265 | 1.018617 | ppb |
| ⌊ | Se | 82 | 268.670 | 5.116655 | ppb |
| ⌈ | Ag | 107 | 2540.323 | 1.080702 | ppb |
| \| | Ag | 109 | 2233.583 | 0.991576 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 585.296 | 1.025005 | ppb |
| | In | 113 | 72406.187 | | ppb |
| > | In | 115 | 1620847.544 | | ppb |
| | Sb | 121 | 4636.074 | 2.036532 | ppb |
| | Ba | 135 | 4380.959 | 9.542847 | ppb |
| | Ba | 137 | 7632.912 | 9.621701 | ppb |
| > | Tb | 159 | 2058040.087 | | ppb |
| | Tl | 205 | 4491.008 | 0.980557 | ppb |
| | Pb | 206 | 1390.097 | 0.906437 | ppb |
| | Pb | 207 | 2750.189 | 0.972675 | ppb |
| | Pb | 208 | 4275.517 | 0.968915 | ppb |
| > | Bi | 209 | 1206315.983 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205630.683 | | ppb |
| | Be | 9 | 124.001 | 1.059273 | ppb |
| > | Sc | 45 | 817487.106 | | ppb |
| | V | 51 | 13967.594 | 4.474028 | ppb |
| | Cr | 52 | 7422.754 | 2.065734 | ppb |
| | Mn | 55 | 4395.966 | 1.084318 | ppb |
| | Co | 59 | 2972.442 | 0.981062 | ppb |
| | Ni | 60 | 726.693 | 0.930763 | ppb |
| | Cu | 63 | 3607.317 | 2.082532 | ppb |
| | Cu | 65 | 1670.139 | 2.012203 | ppb |
| | Zn | 66 | 976.714 | 2.028506 | ppb |
| | As | 75 | 696.737 | 1.186989 | ppb |
| | Se | 82 | 268.004 | 5.108497 | ppb |
| | Ag | 107 | 2423.627 | 1.039342 | ppb |
| | Ag | 109 | 2313.601 | 1.035857 | ppb |
| | Cd | 111 | 436.190 | 0.769157 | ppb |
| | In | 113 | 72617.713 | | ppb |
| > | In | 115 | 1607472.450 | | ppb |
| | Sb | 121 | 4390.964 | 2.002947 | ppb |
| | Ba | 135 | 4186.876 | 9.473647 | ppb |
| | Ba | 137 | 7598.886 | 9.951412 | ppb |
| > | Tb | 159 | 1981204.422 | | ppb |
| | Tl | 205 | 4611.063 | 0.980353 | ppb |
| | Pb | 206 | 1460.107 | 0.927540 | ppb |
| | Pb | 207 | 2740.189 | 0.943187 | ppb |
| | Pb | 208 | 4510.604 | 0.995768 | ppb |
| > | Bi | 209 | 1238817.762 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208092.836 | | ppb |
| | Be | 9 | 108.001 | 0.906101 | ppb |
| > | Sc | 45 | 811394.655 | | ppb |
| | V | 51 | 14529.508 | 4.702742 | ppb |
| | Cr | 52 | 6946.412 | 1.889325 | ppb |
| | Mn | 55 | 4561.040 | 1.137534 | ppb |
| | Co | 59 | 3012.454 | 1.002148 | ppb |
| | Ni | 60 | 710.025 | 0.915634 | ppb |
| | Cu | 63 | 3417.250 | 1.981973 | ppb |
| | Cu | 65 | 1596.794 | 1.934555 | ppb |
| | Zn | 66 | 1010.051 | 2.120312 | ppb |
| | As | 75 | 465.837 | 0.804553 | ppb |
| | Se | 82 | 235.336 | 4.439481 | ppb |
| | Ag | 107 | 2563.662 | 1.069209 | ppb |
| | Ag | 109 | 2433.629 | 1.059569 | ppb |
| | Cd | 111 | 534.392 | 0.917091 | ppb |
| | In | 113 | 73660.296 | | ppb |
| > | In | 115 | 1653195.711 | | ppb |
| | Sb | 121 | 4606.061 | 2.021488 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 4547.034 | 9.897772 | ppb |
| | Ba | 137 | 7578.871 | 9.546067 | ppb |
| > | Tb | 159 | 2059604.476 | | ppb |
| | Tl | 205 | 4450.990 | 0.923911 | ppb |
| | Pb | 206 | 1425.102 | 0.883653 | ppb |
| | Pb | 207 | 2750.189 | 0.924566 | ppb |
| | Pb | 208 | 4325.538 | 0.932085 | ppb |
| > | Bi | 209 | 1267913.232 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 97.754 | | | |
| | Be | 9 | 98.341 | | | | |
| > | Sc | 45 | | 97.251 | | | |
| | V | 51 | 93.025 | | | | |
| | Cr | 52 | 100.346 | | | | |
| | Mn | 55 | 115.500 | | | | |
| | Co | 59 | 101.016 | | | | |
| | Ni | 60 | 90.019 | | | | |
| | Cu | 63 | 101.256 | | | | |
| | Cu | 65 | 97.943 | | | | |
| | Zn | 66 | 102.667 | | | | |
| | As | 75 | 100.339 | | | | |
| | Se | 82 | 97.764 | | | | |
| | Ag | 107 | 106.308 | | | | |
| | Ag | 109 | 102.900 | | | | |
| | Cd | 111 | 90.375 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.281 | | | |
| | Sb | 121 | 101.016 | | | | |
| | Ba | 135 | 96.381 | | | | |
| | Ba | 137 | 97.064 | | | | |
| > | Tb | 159 | | 98.007 | | | |
| | Tl | 205 | 96.161 | | | | |
| | Pb | 206 | 90.588 | | | | |
| | Pb | 207 | 94.681 | | | | |
| | Pb | 208 | 96.559 | | | | |
| > | Bi | 209 | | 97.026 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Wednesday, July 06, 2011 14:56:01
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCV.423

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204835.423 | 1.040 | 204835.423 | | | ppb |
| ⌊ | Be | 9 | 34134.827 | 0.316 | 0.167 | 303.75989 | 0.81 | ppb |
| ⌈> | Sc | 45 | 813858.129 | 0.882 | 813858.129 | | | ppb |
| \| | V | 51 | 883544.162 | 1.286 | 1.085 | 302.21163 | 0.89 | ppb |
| \| | Cr | 52 | 727452.552 | 1.409 | 0.891 | 302.85509 | 0.88 | ppb |
| \| | Mn | 55 | 1124890.085 | 0.999 | 1.382 | 301.57905 | 0.58 | ppb |
| \| | Co | 59 | 891492.001 | 1.389 | 1.095 | 301.45869 | 0.88 | ppb |
| \| | Ni | 60 | 227507.365 | 2.070 | 0.279 | 304.91813 | 1.66 | ppb |
| \| | Cu | 63 | 492407.249 | 1.074 | 0.605 | 302.39786 | 0.73 | ppb |
| \| | Cu | 65 | 239587.368 | 0.827 | 0.294 | 304.47990 | 1.52 | ppb |
| \| | Zn | 66 | 134937.671 | 0.707 | 0.166 | 303.95072 | 1.58 | ppb |
| \| | As | 75 | 179758.123 | 0.431 | 0.221 | 303.68154 | 0.52 | ppb |
| ⌊ | Se | 82 | 14012.924 | 1.365 | 0.017 | 304.05114 | 1.17 | ppb |
| ⌈ | Ag | 107 | 721568.996 | 0.920 | 0.440 | 305.41864 | 0.64 | ppb |
| \| | Ag | 109 | 689991.319 | 1.693 | 0.421 | 304.03861 | 1.24 | ppb |
| \| | Cd | 111 | 174263.947 | 2.123 | 0.106 | 302.76167 | 2.17 | ppb |
| \| | In | 113 | 241339.494 | 1.291 | 0.104 | | | ppb |
| ⌊> | In | 115 | 1640823.854 | 1.421 | 1640823.854 | | | ppb |
| ⌈ | Sb | 121 | 669672.706 | 0.905 | 0.329 | 304.08117 | 1.37 | ppb |
| \| | Ba | 135 | 137546.155 | 0.190 | 0.068 | 303.74355 | 2.43 | ppb |
| \| | Ba | 137 | 236756.610 | 0.515 | 0.116 | 302.94651 | 1.74 | ppb |
| ⌊> | Tb | 159 | 2034636.261 | 2.224 | 2034636.261 | | | ppb |
| ⌈ | Tl | 205 | 1419413.583 | 1.507 | 1.157 | 308.44282 | 2.85 | ppb |
| \| | Pb | 206 | 463983.530 | 0.567 | 0.378 | 303.59953 | 2.38 | ppb |
| \| | Pb | 207 | 853273.170 | 0.767 | 0.695 | 301.98438 | 1.65 | ppb |
| \| | Pb | 208 | 1337723.518 | 0.903 | 1.090 | 302.43149 | 1.74 | ppb |
| ⌊> | Bi | 209 | 1227543.335 | 2.295 | 1227543.335 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206492.164 | | ppb |
| ⌊ | Be | 9 | 34256.575 | 302.380752 | ppb |
| ⌈> | Sc | 45 | 807979.028 | | ppb |
| \| | V | 51 | 883128.869 | 304.270371 | ppb |
| \| | Cr | 52 | 725626.999 | 304.302538 | ppb |
| \| | Mn | 55 | 1122608.558 | 303.156595 | ppb |
| \| | Co | 59 | 889737.801 | 303.058479 | ppb |
| \| | Ni | 60 | 222092.501 | 299.833941 | ppb |
| \| | Cu | 63 | 492100.722 | 304.407791 | ppb |
| \| | Cu | 65 | 241835.962 | 309.550928 | ppb |
| \| | Zn | 66 | 135748.505 | 307.975554 | ppb |
| \| | As | 75 | 178919.330 | 304.455079 | ppb |
| ⌊ | Se | 82 | 14061.212 | 307.323477 | ppb |
| ⌈ | Ag | 107 | 723953.315 | 303.323562 | ppb |
| \| | Ag | 109 | 703419.377 | 306.824386 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 171832.743 | 295.506622 | ppb |
| | In | 113 | 243037.913 | | ppb |
| > | In | 115 | 1657528.089 | | ppb |
| | Sb | 121 | 674388.206 | 302.270376 | ppb |
| | Ba | 135 | 137515.063 | 299.708170 | ppb |
| | Ba | 137 | 237314.897 | 299.725069 | ppb |
| > | Tb | 159 | 2060821.223 | | ppb |
| | Tl | 205 | 1441576.127 | 310.132538 | ppb |
| | Pb | 206 | 461190.110 | 298.765697 | ppb |
| | Pb | 207 | 858743.525 | 300.925118 | ppb |
| | Pb | 208 | 1350158.361 | 302.233580 | ppb |
| > | Bi | 209 | 1239454.942 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205581.691 | | ppb |
| | Be | 9 | 34096.028 | 302.296497 | ppb |
| > | Sc | 45 | 821859.621 | | ppb |
| | V | 51 | 895110.694 | 303.188911 | ppb |
| | Cr | 52 | 738491.459 | 304.467436 | ppb |
| | Mn | 55 | 1137090.944 | 301.880998 | ppb |
| | Co | 59 | 904657.411 | 302.936062 | ppb |
| | Ni | 60 | 229776.545 | 304.969207 | ppb |
| | Cu | 63 | 497841.321 | 302.756993 | ppb |
| | Cu | 65 | 238824.880 | 300.530789 | ppb |
| | Zn | 66 | 133886.993 | 298.617210 | ppb |
| | As | 75 | 180444.671 | 301.864925 | ppb |
| | Se | 82 | 14175.373 | 304.579807 | ppb |
| | Ag | 107 | 726688.046 | 305.717353 | ppb |
| | Ag | 109 | 684352.132 | 299.730828 | ppb |
| | Cd | 111 | 178520.956 | 308.267091 | ppb |
| | In | 113 | 243237.683 | | ppb |
| > | In | 115 | 1650762.125 | | ppb |
| | Sb | 121 | 671797.234 | 301.125829 | ppb |
| | Ba | 135 | 137302.167 | 299.260973 | ppb |
| | Ba | 137 | 237597.490 | 300.098894 | ppb |
| > | Tb | 159 | 2060705.342 | | ppb |
| | Tl | 205 | 1398876.666 | 298.933735 | ppb |
| | Pb | 206 | 466414.231 | 300.129755 | ppb |
| | Pb | 207 | 855052.254 | 297.627960 | ppb |
| | Pb | 208 | 1336968.965 | 297.279782 | ppb |
| > | Bi | 209 | 1247798.197 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202432.413 | | ppb |
| | Be | 9 | 34051.878 | 306.602423 | ppb |
| > | Sc | 45 | 811735.738 | | ppb |
| | V | 51 | 872392.923 | 299.175601 | ppb |
| | Cr | 52 | 718239.198 | 299.795305 | ppb |
| | Mn | 55 | 1114970.752 | 299.699551 | ppb |
| | Co | 59 | 880080.789 | 298.381516 | ppb |
| | Ni | 60 | 230653.047 | 309.951228 | ppb |
| | Cu | 63 | 487279.704 | 300.028788 | ppb |
| | Cu | 65 | 238101.261 | 303.357993 | ppb |
| | Zn | 66 | 135177.514 | 305.259387 | ppb |
| | As | 75 | 179910.369 | 304.724628 | ppb |
| | Se | 82 | 13802.185 | 300.250121 | ppb |
| | Ag | 107 | 714065.627 | 307.215008 | ppb |
| | Ag | 109 | 682202.448 | 305.560607 | ppb |
| | Cd | 111 | 172438.143 | 304.511286 | ppb |
| | In | 113 | 237742.885 | | ppb |
| > | In | 115 | 1614181.347 | | ppb |
| | Sb | 121 | 662832.678 | 308.847306 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 137821.235 | 312.261516 | ppb |
| \| | Ba | 137 | 235357.442 | 309.015561 | ppb |
| \|> | Tb | 159 | 1982382.220 | | ppb |
| ⌈ | Tl | 205 | 1417787.955 | 316.262182 | ppb |
| \| | Pb | 206 | 464346.249 | 311.903136 | ppb |
| \| | Pb | 207 | 846023.732 | 307.400055 | ppb |
| \| | Pb | 208 | 1326043.226 | 307.781109 | ppb |
| \|> | Bi | 209 | 1195376.864 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 96.327 | | | |
| | Be | 9 | 101.253 | | | | |
| > | Sc | 45 | | 97.025 | | | |
| | V | 51 | 100.737 | | | | |
| | Cr | 52 | 100.952 | | | | |
| | Mn | 55 | 100.526 | | | | |
| | Co | 59 | 100.486 | | | | |
| | Ni | 60 | 101.639 | | | | |
| | Cu | 63 | 100.799 | | | | |
| | Cu | 65 | 101.493 | | | | |
| | Zn | 66 | 101.317 | | | | |
| | As | 75 | 101.227 | | | | |
| | Se | 82 | 101.350 | | | | |
| | Ag | 107 | 101.806 | | | | |
| | Ag | 109 | 101.346 | | | | |
| | Cd | 111 | 100.921 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.089 | | | |
| | Sb | 121 | 101.360 | | | | |
| | Ba | 135 | 101.248 | | | | |
| | Ba | 137 | 100.982 | | | | |
| > | Tb | 159 | | 98.089 | | | |
| | Tl | 205 | 102.814 | | | | |
| | Pb | 206 | 101.200 | | | | |
| | Pb | 207 | 100.661 | | | | |
| | Pb | 208 | 100.810 | | | | |
| > | Bi | 209 | | 96.231 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Wednesday, July 06, 2011 14:57:26
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCB.424

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 204597.887 | 0.700 | 204597.887 | | | ppb |
| ⌊ | Be | 9 | 4.000 | 50.000 | -0.000 | -0.00441 | 401.80 | ppb |
| ⌈> | Sc | 45 | 806967.047 | 0.940 | 806967.047 | | | ppb |
| \| | V | 51 | 867.216 | 7.647 | 0.000 | 0.01270 | 192.78 | ppb |
| \| | Cr | 52 | 2504.314 | 2.145 | 0.000 | 0.03384 | 60.51 | ppb |
| \| | Mn | 55 | 631.687 | 7.968 | 0.000 | 0.08154 | 17.02 | ppb |
| \| | Co | 59 | 111.334 | 18.173 | 0.000 | 0.01832 | 38.87 | ppb |
| \| | Ni | 60 | 40.000 | 50.690 | 0.000 | 0.01523 | 184.16 | ppb |
| \| | Cu | 63 | 206.669 | 10.577 | 0.000 | 0.00413 | 301.16 | ppb |
| \| | Cu | 65 | 94.445 | 15.915 | 0.000 | 0.01980 | 103.22 | ppb |
| \| | Zn | 66 | 71.111 | 39.031 | -0.000 | -0.00154 | 4014.21 | ppb |
| \| | As | 75 | 7.985 | 416.946 | 0.000 | 0.02890 | 195.44 | ppb |
| ⌊ | Se | 82 | 36.000 | 8.072 | 0.000 | 0.09598 | 72.50 | ppb |
| ⌈ | Ag | 107 | 34.445 | 40.290 | 0.000 | 0.00671 | 87.79 | ppb |
| \| | Ag | 109 | 42.222 | 12.059 | 0.000 | 0.01370 | 16.57 | ppb |
| \| | Cd | 111 | 14.485 | 55.826 | 0.000 | 0.02061 | 67.59 | ppb |
| \| | In | 113 | 72315.562 | 1.262 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1655017.106 | 0.412 | 1655017.106 | | | ppb |
| ⌈ | Sb | 121 | 375.007 | 17.023 | 0.000 | 0.12165 | 23.43 | ppb |
| \| | Ba | 135 | 24.667 | 53.987 | 0.000 | 0.03439 | 83.60 | ppb |
| \| | Ba | 137 | 46.667 | 6.547 | 0.000 | 0.02563 | 14.51 | ppb |
| ⌊> | Tb | 159 | 2084982.335 | 0.171 | 2084982.335 | | | ppb |
| ⌈ | Tl | 205 | 85.000 | 10.189 | 0.000 | 0.00630 | 31.30 | ppb |
| \| | Pb | 206 | 38.333 | 65.651 | 0.000 | 0.00626 | 265.40 | ppb |
| \| | Pb | 207 | 70.000 | 46.839 | 0.000 | 0.00723 | 162.18 | ppb |
| \| | Pb | 208 | 148.334 | 46.748 | 0.000 | 0.01911 | 83.01 | ppb |
| ⌊> | Bi | 209 | 1226025.151 | 0.496 | 1226025.151 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205945.054 | | ppb |
| ⌊ | Be | 9 | 4.000 | -0.004599 | ppb |
| ⌈> | Sc | 45 | 798522.889 | | ppb |
| \| | V | 51 | 921.676 | 0.034781 | ppb |
| \| | Cr | 52 | 2494.311 | 0.040737 | ppb |
| \| | Mn | 55 | 625.020 | 0.081498 | ppb |
| \| | Co | 59 | 122.001 | 0.022363 | ppb |
| \| | Ni | 60 | 63.334 | 0.047509 | ppb |
| \| | Cu | 63 | 186.668 | -0.006970 | ppb |
| \| | Cu | 65 | 110.001 | 0.041105 | ppb |
| \| | Zn | 66 | 40.000 | -0.070900 | ppb |
| \| | As | 75 | 2.885 | 0.020212 | ppb |
| ⌊ | Se | 82 | 38.000 | 0.148301 | ppb |
| ⌈ | Ag | 107 | 50.000 | 0.013306 | ppb |
| \| | Ag | 109 | 43.333 | 0.014255 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 10.000 | 0.012952 | ppb |
| | In | 113 | 71660.847 | | ppb |
| > | In | 115 | 1648206.001 | | ppb |
| | Sb | 121 | 445.010 | 0.152843 | ppb |
| | Ba | 135 | 40.000 | 0.067495 | ppb |
| | Ba | 137 | 46.000 | 0.024861 | ppb |
| > | Tb | 159 | 2082838.543 | | ppb |
| | Tl | 205 | 95.000 | 0.008575 | ppb |
| | Pb | 206 | 65.000 | 0.023908 | ppb |
| | Pb | 207 | 105.000 | 0.019800 | ppb |
| | Pb | 208 | 225.002 | 0.036684 | ppb |
| > | Bi | 209 | 1219703.237 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203093.619 | | ppb |
| | Be | 9 | 2.000 | -0.022054 | ppb |
| > | Sc | 45 | 809158.943 | | ppb |
| | V | 51 | 793.369 | -0.013630 | ppb |
| | Cr | 52 | 2456.302 | 0.010808 | ppb |
| | Mn | 55 | 685.023 | 0.095437 | ppb |
| | Co | 59 | 124.001 | 0.022491 | ppb |
| | Ni | 60 | 30.000 | 0.001430 | ppb |
| | Cu | 63 | 203.335 | 0.001792 | ppb |
| | Cu | 65 | 93.334 | 0.017923 | ppb |
| | Zn | 66 | 80.000 | 0.018557 | ppb |
| | As | 75 | 43.535 | 0.089215 | ppb |
| | Se | 82 | 37.333 | 0.122648 | ppb |
| | Ag | 107 | 30.000 | 0.004827 | ppb |
| | Ag | 109 | 46.667 | 0.015633 | ppb |
| | Cd | 111 | 23.820 | 0.036684 | ppb |
| | In | 113 | 71927.753 | | ppb |
| > | In | 115 | 1655010.118 | | ppb |
| | Sb | 121 | 360.006 | 0.115127 | ppb |
| | Ba | 135 | 16.000 | 0.015735 | ppb |
| | Ba | 137 | 44.000 | 0.022357 | ppb |
| > | Tb | 159 | 2083012.364 | | ppb |
| | Tl | 205 | 80.000 | 0.005124 | ppb |
| | Pb | 206 | 35.000 | 0.003931 | ppb |
| | Pb | 207 | 65.000 | 0.005327 | ppb |
| | Pb | 208 | 130.001 | 0.014781 | ppb |
| > | Bi | 209 | 1231828.209 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 204754.987 | | ppb |
| | Be | 9 | 6.000 | 0.013412 | ppb |
| > | Sc | 45 | 813219.308 | | ppb |
| | V | 51 | 886.603 | 0.016951 | ppb |
| | Cr | 52 | 2562.328 | 0.049981 | ppb |
| | Mn | 55 | 585.017 | 0.067674 | ppb |
| | Co | 59 | 88.000 | 0.010096 | ppb |
| | Ni | 60 | 26.667 | -0.003244 | ppb |
| | Cu | 63 | 230.003 | 0.017562 | ppb |
| | Cu | 65 | 80.000 | 0.000364 | ppb |
| | Zn | 66 | 93.334 | 0.047723 | ppb |
| | As | 75 | -22.464 | -0.022732 | ppb |
| | Se | 82 | 32.667 | 0.017003 | ppb |
| | Ag | 107 | 23.333 | 0.001989 | ppb |
| | Ag | 109 | 36.667 | 0.011199 | ppb |
| | Cd | 111 | 9.635 | 0.012184 | ppb |
| | In | 113 | 73358.087 | | ppb |
| > | In | 115 | 1661835.198 | | ppb |
| | Sb | 121 | 320.005 | 0.096973 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 18.000 | 0.019934 | ppb |
| \| | Ba | 137 | 50.000 | 0.029673 | ppb |
| \> | Tb | 159 | 2089096.098 | | ppb |
| ⌈ | Tl | 205 | 80.000 | 0.005198 | ppb |
| \| | Pb | 206 | 15.000 | -0.009065 | ppb |
| \| | Pb | 207 | 40.000 | -0.003428 | ppb |
| \| | Pb | 208 | 90.000 | 0.005859 | ppb |
| \> | Bi | 209 | 1226544.006 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 96.215 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 96.204 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.928 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 100.516 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 96.112 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1070509-BLK1

Sample Date/Time: Wednesday, July 06, 2011 15:34:43
Sample Type: Sample
Sample Description: PBW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\PBW.425

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206611.265 | 0.297 | 206611.265 | | | ppb |
| ⌊ | Be | 9 | 2.000 | 100.000 | -0.000 | -0.02236 | 79.03 | ppb |
| ⌈> | Sc | 45 | 811106.510 | 0.531 | 811106.510 | | | ppb |
| \| | V | 51 | 905.939 | 22.811 | 0.000 | 0.02463 | 295.54 | ppb |
| \| | Cr | 52 | 2458.302 | 4.236 | 0.000 | 0.00925 | 496.78 | ppb |
| \| | Mn | 55 | 533.348 | 2.864 | 0.000 | 0.05420 | 9.00 | ppb |
| \| | Co | 59 | 42.000 | 17.169 | -0.000 | -0.00543 | 45.00 | ppb |
| \| | Ni | 60 | 18.889 | 50.943 | -0.000 | -0.01357 | 96.67 | ppb |
| \| | Cu | 63 | 221.114 | 8.833 | 0.000 | 0.01243 | 93.65 | ppb |
| \| | Cu | 65 | 81.111 | 24.080 | 0.000 | 0.00200 | 1226.68 | ppb |
| \| | Zn | 66 | 125.556 | 14.622 | 0.000 | 0.12105 | 33.48 | ppb |
| \| | As | 75 | 0.055 | 7245.025 | 0.000 | 0.01532 | 43.85 | ppb |
| ⌊ | Se | 82 | 30.667 | 11.296 | -0.000 | -0.02469 | 310.76 | ppb |
| ⌈ | Ag | 107 | 10.000 | 33.333 | -0.000 | -0.00352 | 40.80 | ppb |
| \| | Ag | 109 | 5.556 | 34.641 | -0.000 | -0.00231 | 35.48 | ppb |
| \| | Cd | 111 | 5.758 | 126.573 | 0.000 | 0.00577 | 223.91 | ppb |
| \| | In | 113 | 71195.970 | 2.346 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1639977.986 | 1.675 | 1639977.986 | | | ppb |
| ⌈ | Sb | 121 | 38.333 | 27.152 | -0.000 | -0.02677 | 18.98 | ppb |
| \| | Ba | 135 | 19.333 | 36.330 | 0.000 | 0.02484 | 66.11 | ppb |
| \| | Ba | 137 | 38.667 | 25.515 | 0.000 | 0.01761 | 68.29 | ppb |
| ⌊> | Tb | 159 | 1999189.565 | 1.595 | 1999189.565 | | | ppb |
| ⌈ | Tl | 205 | 16.667 | 45.826 | -0.000 | -0.00860 | 18.69 | ppb |
| \| | Pb | 206 | 18.333 | 62.984 | -0.000 | -0.00697 | 107.27 | ppb |
| \| | Pb | 207 | 35.000 | 28.571 | -0.000 | -0.00528 | 64.18 | ppb |
| \| | Pb | 208 | 66.667 | 45.208 | 0.000 | 0.00052 | 1323.22 | ppb |
| ⌊> | Bi | 209 | 1231958.609 | 1.162 | 1231958.609 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206214.522 | | ppb |
| ⌊ | Be | 9 | 0.000 | -0.040006 | ppb |
| ⌈> | Sc | 45 | 812667.005 | | ppb |
| \| | V | 51 | 768.374 | -0.023380 | ppb |
| \| | Cr | 52 | 2548.325 | 0.044850 | ppb |
| \| | Mn | 55 | 530.014 | 0.053009 | ppb |
| \| | Co | 59 | 34.000 | -0.008172 | ppb |
| \| | Ni | 60 | 13.333 | -0.021119 | ppb |
| \| | Cu | 63 | 206.669 | 0.003301 | ppb |
| \| | Cu | 65 | 66.667 | -0.016540 | ppb |
| \| | Zn | 66 | 113.334 | 0.093003 | ppb |
| \| | As | 75 | 0.118 | 0.015445 | ppb |
| ⌊ | Se | 82 | 26.667 | -0.113189 | ppb |
| ⌈ | Ag | 107 | 10.000 | -0.003455 | ppb |
| \| | Ag | 109 | 3.333 | -0.003259 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 13.820 | 0.020088 | ppb |
| | In | 113 | 69450.333 | | ppb |
| > | In | 115 | 1612479.637 | | ppb |
| | Sb | 121 | 50.000 | -0.021100 | ppb |
| | Ba | 135 | 26.000 | 0.040489 | ppb |
| | Ba | 137 | 34.000 | 0.012279 | ppb |
| > | Tb | 159 | 1970851.272 | | ppb |
| | Tl | 205 | 15.000 | -0.008921 | ppb |
| | Pb | 206 | 5.000 | -0.015599 | ppb |
| | Pb | 207 | 25.000 | -0.008707 | ppb |
| | Pb | 208 | 95.000 | 0.007070 | ppb |
| > | Bi | 209 | 1221994.263 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207316.968 | | ppb |
| | Be | 9 | 2.000 | -0.022420 | ppb |
| > | Sc | 45 | 814416.065 | | ppb |
| | V | 51 | 805.866 | -0.011118 | ppb |
| | Cr | 52 | 2344.275 | -0.042619 | ppb |
| | Mn | 55 | 520.014 | 0.050023 | ppb |
| | Co | 59 | 48.000 | -0.003466 | ppb |
| | Ni | 60 | 13.333 | -0.021157 | ppb |
| | Cu | 63 | 243.336 | 0.025540 | ppb |
| | Cu | 65 | 103.334 | 0.029856 | ppb |
| | Zn | 66 | 146.668 | 0.167521 | ppb |
| | As | 75 | 3.981 | 0.021965 | ppb |
| | Se | 82 | 32.667 | 0.015958 | ppb |
| | Ag | 107 | 6.667 | -0.004985 | ppb |
| | Ag | 109 | 6.667 | -0.001863 | ppb |
| | Cd | 111 | 3.820 | 0.002187 | ppb |
| | In | 113 | 72778.878 | | ppb |
| > | In | 115 | 1667433.184 | | ppb |
| | Sb | 121 | 30.000 | -0.030910 | ppb |
| | Ba | 135 | 12.000 | 0.007737 | ppb |
| | Ba | 137 | 50.000 | 0.031370 | ppb |
| > | Tb | 159 | 2033705.154 | | ppb |
| | Tl | 205 | 25.000 | -0.006854 | ppb |
| | Pb | 206 | 25.000 | -0.002804 | ppb |
| | Pb | 207 | 45.000 | -0.001935 | ppb |
| | Pb | 208 | 70.000 | 0.001058 | ppb |
| > | Bi | 209 | 1248362.548 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 206302.305 | | ppb |
| | Be | 9 | 4.000 | -0.004661 | ppb |
| > | Sc | 45 | 806236.461 | | ppb |
| | V | 51 | 1143.576 | 0.108394 | ppb |
| | Cr | 52 | 2482.308 | 0.025516 | ppb |
| | Mn | 55 | 550.015 | 0.059559 | ppb |
| | Co | 59 | 44.000 | -0.004667 | ppb |
| | Ni | 60 | 30.000 | 0.001576 | ppb |
| | Cu | 63 | 213.336 | 0.008450 | ppb |
| | Cu | 65 | 73.334 | -0.007309 | ppb |
| | Zn | 66 | 116.667 | 0.102626 | ppb |
| | As | 75 | -3.935 | 0.008535 | ppb |
| | Se | 82 | 32.667 | 0.023161 | ppb |
| | Ag | 107 | 13.333 | -0.002116 | ppb |
| | Ag | 109 | 6.667 | -0.001814 | ppb |
| | Cd | 111 | -0.365 | -0.004978 | ppb |
| | In | 113 | 71358.698 | | ppb |
| > | In | 115 | 1640021.139 | | ppb |
| | Sb | 121 | 35.000 | -0.028314 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| ⎢ | Ba | 135 | 20.000 | 0.026308 | ppb |
| ⎢ | Ba | 137 | 32.000 | 0.009167 | ppb |
| ⎣> | Tb | 159 | 1993012.270 | | ppb |
| ⎡ | Tl | 205 | 10.000 | -0.010018 | ppb |
| ⎢ | Pb | 206 | 25.000 | -0.002504 | ppb |
| ⎢ | Pb | 207 | 35.000 | -0.005188 | ppb |
| ⎢ | Pb | 208 | 35.000 | -0.006577 | ppb |
| ⎣> | Bi | 209 | 1225519.017 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 97.162 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 96.697 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.038 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 96.380 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 96.577 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1070509-BS1

Sample Date/Time: Wednesday, July 06, 2011 15:36:09
Sample Type: Sample
Sample Description: LCSW
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LCSW.426

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203028.433 | 0.940 | 203028.433 | | | ppb |
| ⌊ | Be | 9 | 11375.134 | 1.739 | 0.056 | 102.10191 | 2.10 | ppb |
| ⌈> | Sc | 45 | 788772.902 | 0.208 | 788772.902 | | | ppb |
| \| | V | 51 | 281511.606 | 0.381 | 0.356 | 99.16019 | 0.53 | ppb |
| \| | Cr | 52 | 243119.902 | 0.407 | 0.305 | 103.76791 | 0.40 | ppb |
| \| | Mn | 55 | 353010.813 | 1.874 | 0.447 | 97.58857 | 1.74 | ppb |
| \| | Co | 59 | 303217.806 | 0.508 | 0.384 | 105.78258 | 0.43 | ppb |
| \| | Ni | 60 | 68399.806 | 0.818 | 0.087 | 94.56538 | 0.98 | ppb |
| \| | Cu | 63 | 165586.777 | 2.167 | 0.210 | 104.84344 | 2.19 | ppb |
| \| | Cu | 65 | 78954.922 | 0.683 | 0.100 | 103.45561 | 0.58 | ppb |
| \| | Zn | 66 | 90040.262 | 1.359 | 0.114 | 209.19730 | 1.30 | ppb |
| \| | As | 75 | 115675.387 | 0.328 | 0.147 | 201.63513 | 0.26 | ppb |
| ⌊ | Se | 82 | 9358.155 | 0.472 | 0.012 | 209.29420 | 0.67 | ppb |
| ⌈ | Ag | 107 | 244637.448 | 0.799 | 0.153 | 106.01146 | 0.78 | ppb |
| \| | Ag | 109 | 233607.271 | 0.942 | 0.146 | 105.38900 | 0.50 | ppb |
| \| | Cd | 111 | 56508.695 | 1.034 | 0.035 | 100.50991 | 0.57 | ppb |
| \| | In | 113 | 127261.349 | 0.747 | 0.036 | | | ppb |
| ⌊> | In | 115 | 1602538.833 | 0.467 | 1602538.833 | | | ppb |
| ⌈ | Sb | 121 | 437801.744 | 0.551 | 0.222 | 204.70586 | 0.30 | ppb |
| \| | Ba | 135 | 45523.387 | 0.661 | 0.023 | 103.49733 | 0.48 | ppb |
| \| | Ba | 137 | 78051.420 | 0.362 | 0.040 | 102.82404 | 0.72 | ppb |
| ⌊> | Tb | 159 | 1975351.479 | 0.579 | 1975351.479 | | | ppb |
| ⌈ | Tl | 205 | 913765.971 | 1.164 | 0.751 | 200.25687 | 1.17 | ppb |
| \| | Pb | 206 | 298256.017 | 0.852 | 0.245 | 196.82171 | 0.63 | ppb |
| \| | Pb | 207 | 545278.324 | 0.768 | 0.448 | 194.64607 | 0.44 | ppb |
| \| | Pb | 208 | 859981.545 | 0.554 | 0.707 | 196.10296 | 0.22 | ppb |
| ⌊> | Bi | 209 | 1216691.072 | 0.329 | 1216691.072 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 205150.980 | | ppb |
| ⌊ | Be | 9 | 11278.356 | 100.177468 | ppb |
| ⌈> | Sc | 45 | 788075.960 | | ppb |
| \| | V | 51 | 280839.293 | 99.009834 | ppb |
| \| | Cr | 52 | 243994.796 | 104.237895 | ppb |
| \| | Mn | 55 | 356316.972 | 98.592030 | ppb |
| \| | Co | 59 | 304236.652 | 106.232077 | ppb |
| \| | Ni | 60 | 68977.074 | 95.447089 | ppb |
| \| | Cu | 63 | 161805.207 | 102.536539 | ppb |
| \| | Cu | 65 | 78355.783 | 102.760965 | ppb |
| \| | Zn | 66 | 88627.677 | 206.095817 | ppb |
| \| | As | 75 | 115908.054 | 202.219288 | ppb |
| ⌊ | Se | 82 | 9361.713 | 209.557918 | ppb |
| ⌈ | Ag | 107 | 242453.993 | 105.116858 | ppb |
| \| | Ag | 109 | 233972.165 | 105.607635 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 56435.473 | 100.431387 | ppb |
| \| | In | 113 | 128024.299 | | ppb |
| \> | In | 115 | 1601741.761 | | ppb |
| ⌈ | Sb | 121 | 436696.439 | 205.291746 | ppb |
| \| | Ba | 135 | 45471.147 | 103.936824 | ppb |
| \| | Ba | 137 | 77888.152 | 103.161071 | ppb |
| \> | Tb | 159 | 1964734.520 | | ppb |
| ⌈ | Tl | 205 | 923456.764 | 202.767066 | ppb |
| \| | Pb | 206 | 298710.753 | 197.500258 | ppb |
| \| | Pb | 207 | 543311.075 | 194.316523 | ppb |
| \| | Pb | 208 | 857329.146 | 195.872929 | ppb |
| \> | Bi | 209 | 1214368.810 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201457.010 | | ppb |
| \| | Be | 9 | 11244.318 | 101.707079 | ppb |
| ⌈> | Sc | 45 | 790647.535 | | ppb |
| \| | V | 51 | 280947.915 | 98.725153 | ppb |
| \| | Cr | 52 | 243320.666 | 103.605667 | ppb |
| \| | Mn | 55 | 357321.893 | 98.548475 | ppb |
| \| | Co | 59 | 303970.746 | 105.793931 | ppb |
| \| | Ni | 60 | 67859.467 | 93.594431 | ppb |
| \| | Cu | 63 | 166009.955 | 104.861742 | ppb |
| \| | Cu | 65 | 79400.643 | 103.793595 | ppb |
| \| | Zn | 66 | 90733.099 | 210.308864 | ppb |
| \| | As | 75 | 115880.839 | 201.514298 | ppb |
| \| | Se | 82 | 9312.334 | 207.768685 | ppb |
| ⌈ | Ag | 107 | 245233.892 | 106.738777 | ppb |
| \| | Ag | 109 | 231246.520 | 104.786272 | ppb |
| \| | Cd | 111 | 55964.648 | 99.983700 | ppb |
| \| | In | 113 | 127563.465 | | ppb |
| \> | In | 115 | 1595490.727 | | ppb |
| ⌈ | Sb | 121 | 440570.956 | 204.743238 | ppb |
| \| | Ba | 135 | 45846.856 | 103.596470 | ppb |
| \| | Ba | 137 | 77888.152 | 101.980320 | ppb |
| \> | Tb | 159 | 1987475.384 | | ppb |
| ⌈ | Tl | 205 | 915459.191 | 199.868822 | ppb |
| \| | Pb | 206 | 300539.335 | 197.580346 | ppb |
| \| | Pb | 207 | 550084.606 | 195.621471 | ppb |
| \| | Pb | 208 | 865477.160 | 196.611155 | ppb |
| \> | Bi | 209 | 1221307.466 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202477.309 | | ppb |
| \| | Be | 9 | 11602.727 | 104.421181 | ppb |
| ⌈> | Sc | 45 | 787595.210 | | ppb |
| \| | V | 51 | 282747.609 | 99.745582 | ppb |
| \| | Cr | 52 | 242044.244 | 103.460166 | ppb |
| \| | Mn | 55 | 345393.574 | 95.625202 | ppb |
| \| | Co | 59 | 301446.021 | 105.321737 | ppb |
| \| | Ni | 60 | 68362.878 | 94.654613 | ppb |
| \| | Cu | 63 | 168945.169 | 107.132053 | ppb |
| \| | Cu | 65 | 79108.340 | 103.812282 | ppb |
| \| | Zn | 66 | 90760.008 | 211.187210 | ppb |
| \| | As | 75 | 115237.267 | 201.171799 | ppb |
| \| | Se | 82 | 9400.416 | 210.556004 | ppb |
| ⌈ | Ag | 107 | 246224.459 | 106.178746 | ppb |
| \| | Ag | 109 | 235603.127 | 105.773106 | ppb |
| \| | Cd | 111 | 57125.963 | 101.114632 | ppb |
| \| | In | 113 | 126196.282 | | ppb |
| \> | In | 115 | 1610384.012 | | ppb |
| ⌈ | Sb | 121 | 436137.836 | 204.082599 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 45252.157 | 102.958690 | ppb |
| | Ba | 137 | 78377.956 | 103.330740 | ppb |
| > | Tb | 159 | 1973844.533 | | ppb |
| | Tl | 205 | 902381.957 | 198.134719 | ppb |
| | Pb | 206 | 295517.963 | 195.384536 | ppb |
| | Pb | 207 | 542439.292 | 194.000206 | ppb |
| | Pb | 208 | 857138.329 | 195.824794 | ppb |
| > | Bi | 209 | 1214396.938 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 95.477 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.035 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.823 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.231 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 95.380 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1070509-BSD1

Sample Date/Time: Wednesday, July 06, 2011 15:37:35
Sample Type: Sample
Sample Description: LCSWD
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LCSWD.427

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201148.994 | 0.839 | 201148.994 | | | ppb |
| ⌊ | Be | 9 | 11058.778 | 0.145 | 0.055 | 100.18651 | 0.92 | ppb |
| ⌈> | Sc | 45 | 796063.274 | 1.037 | 796063.274 | | | ppb |
| \| | V | 51 | 279243.870 | 0.389 | 0.350 | 97.46052 | 0.86 | ppb |
| \| | Cr | 52 | 240583.741 | 0.780 | 0.299 | 101.72697 | 0.32 | ppb |
| \| | Mn | 55 | 349033.626 | 0.746 | 0.438 | 95.60833 | 0.71 | ppb |
| \| | Co | 59 | 303262.393 | 1.517 | 0.381 | 104.83167 | 1.39 | ppb |
| \| | Ni | 60 | 67831.529 | 1.379 | 0.085 | 92.91725 | 0.47 | ppb |
| \| | Cu | 63 | 165670.117 | 1.391 | 0.208 | 103.93178 | 0.45 | ppb |
| \| | Cu | 65 | 80137.612 | 0.804 | 0.101 | 104.04829 | 0.81 | ppb |
| \| | Zn | 66 | 89252.096 | 0.697 | 0.112 | 205.48933 | 1.73 | ppb |
| \| | As | 75 | 115710.510 | 0.471 | 0.145 | 199.86959 | 1.48 | ppb |
| ⌊ | Se | 82 | 9392.854 | 0.467 | 0.012 | 208.14898 | 0.58 | ppb |
| ⌈ | Ag | 107 | 243740.306 | 0.506 | 0.150 | 104.04112 | 0.11 | ppb |
| \| | Ag | 109 | 232189.143 | 0.504 | 0.143 | 103.18376 | 0.52 | ppb |
| \| | Cd | 111 | 56796.234 | 0.326 | 0.035 | 99.51212 | 0.40 | ppb |
| \| | In | 113 | 127438.696 | 1.623 | 0.035 | | | ppb |
| ⌊> | In | 115 | 1626894.662 | 0.612 | 1626894.662 | | | ppb |
| ⌈ | Sb | 121 | 441321.540 | 0.597 | 0.224 | 206.64855 | 0.28 | ppb |
| \| | Ba | 135 | 45051.257 | 0.767 | 0.023 | 102.57074 | 0.51 | ppb |
| \| | Ba | 137 | 77736.337 | 1.152 | 0.039 | 102.55871 | 1.56 | ppb |
| ⌊> | Tb | 159 | 1972505.189 | 0.460 | 1972505.189 | | | ppb |
| ⌈ | Tl | 205 | 917662.682 | 1.371 | 0.764 | 203.85450 | 2.69 | ppb |
| \| | Pb | 206 | 292954.301 | 0.710 | 0.244 | 195.93335 | 1.17 | ppb |
| \| | Pb | 207 | 540965.582 | 0.320 | 0.451 | 195.72385 | 1.55 | ppb |
| \| | Pb | 208 | 857099.396 | 1.070 | 0.714 | 198.10019 | 2.10 | ppb |
| ⌊> | Bi | 209 | 1200595.500 | 1.328 | 1200595.500 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 202740.562 | | ppb |
| ⌊ | Be | 9 | 11042.093 | 99.244616 | ppb |
| ⌈> | Sc | 45 | 786979.452 | | ppb |
| \| | V | 51 | 278211.023 | 98.217610 | ppb |
| \| | Cr | 52 | 238697.219 | 102.096000 | ppb |
| \| | Mn | 55 | 346330.145 | 95.959836 | ppb |
| \| | Co | 59 | 299529.711 | 104.733974 | ppb |
| \| | Ni | 60 | 66752.051 | 92.495703 | ppb |
| \| | Cu | 63 | 163390.676 | 103.686909 | ppb |
| \| | Cu | 65 | 79850.874 | 104.869714 | ppb |
| \| | Zn | 66 | 89969.580 | 209.510492 | ppb |
| \| | As | 75 | 116333.662 | 203.244540 | ppb |
| ⌊ | Se | 82 | 9345.031 | 209.475680 | ppb |
| ⌈ | Ag | 107 | 242426.676 | 104.174506 | ppb |
| \| | Ag | 109 | 231816.149 | 103.708120 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 56678.152 | 99.970346 | ppb |
| | In | 113 | 125254.553 | | ppb |
| > | In | 115 | 1616047.766 | | ppb |
| | Sb | 121 | 438790.167 | 205.994762 | ppb |
| | Ba | 135 | 44677.582 | 101.983244 | ppb |
| | Ba | 137 | 77690.624 | 102.758948 | ppb |
| > | Tb | 159 | 1967418.474 | | ppb |
| | Tl | 205 | 931504.269 | 210.102138 | ppb |
| | Pb | 206 | 291826.909 | 198.201143 | ppb |
| | Pb | 207 | 542171.797 | 199.187885 | ppb |
| | Pb | 208 | 862340.813 | 202.381433 | ppb |
| > | Bi | 209 | 1182188.533 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 199377.960 | | ppb |
| | Be | 9 | 11060.113 | 101.083855 | ppb |
| > | Sc | 45 | 798090.319 | | ppb |
| | V | 51 | 280376.055 | 97.602137 | ppb |
| | Cr | 52 | 240606.158 | 101.473602 | ppb |
| | Mn | 55 | 351526.835 | 96.043812 | ppb |
| | Co | 59 | 308401.352 | 106.335072 | ppb |
| | Ni | 60 | 68336.029 | 93.372665 | ppb |
| | Cu | 63 | 165620.239 | 103.638513 | ppb |
| | Cu | 65 | 79686.235 | 103.194906 | ppb |
| | Zn | 66 | 88920.257 | 204.180066 | ppb |
| | As | 75 | 115321.214 | 198.671144 | ppb |
| | Se | 82 | 9402.418 | 207.822404 | ppb |
| | Ag | 107 | 244871.847 | 103.967164 | ppb |
| | Ag | 109 | 233501.350 | 103.213079 | ppb |
| | Cd | 111 | 57009.697 | 99.352886 | ppb |
| | In | 113 | 129366.406 | | ppb |
| > | In | 115 | 1635602.759 | | ppb |
| | Sb | 121 | 444049.874 | 206.828844 | ppb |
| | Ba | 135 | 45358.638 | 102.725775 | ppb |
| | Ba | 137 | 76864.275 | 100.867829 | ppb |
| > | Tb | 159 | 1982974.186 | | ppb |
| | Tl | 205 | 914551.508 | 201.618431 | ppb |
| | Pb | 206 | 291682.794 | 193.627997 | ppb |
| | Pb | 207 | 538983.323 | 193.543105 | ppb |
| | Pb | 208 | 862451.479 | 197.835024 | ppb |
| > | Bi | 209 | 1209509.390 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 201328.460 | | ppb |
| | Be | 9 | 11074.128 | 100.231056 | ppb |
| > | Sc | 45 | 803120.052 | | ppb |
| | V | 51 | 279144.532 | 96.561809 | ppb |
| | Cr | 52 | 242447.846 | 101.611323 | ppb |
| | Mn | 55 | 349243.898 | 94.821343 | ppb |
| | Co | 59 | 301856.117 | 103.425957 | ppb |
| | Ni | 60 | 68406.508 | 92.883390 | ppb |
| | Cu | 63 | 167999.435 | 104.469926 | ppb |
| | Cu | 65 | 80875.727 | 104.080256 | ppb |
| | Zn | 66 | 88866.449 | 202.777440 | ppb |
| | As | 75 | 115476.652 | 197.693098 | ppb |
| | Se | 82 | 9431.112 | 207.148871 | ppb |
| | Ag | 107 | 243922.395 | 103.981684 | ppb |
| | Ag | 109 | 231249.930 | 102.630079 | ppb |
| | Cd | 111 | 56700.855 | 99.213133 | ppb |
| | In | 113 | 127695.130 | | ppb |
| > | In | 115 | 1629033.460 | | ppb |
| | Sb | 121 | 441124.579 | 207.122037 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 45117.551 | 103.003201 | ppb |
| | Ba | 137 | 78654.112 | 104.049364 | ppb |
| > | Tb | 159 | 1967122.906 | | ppb |
| | Tl | 205 | 906932.268 | 199.842919 | ppb |
| | Pb | 206 | 295353.201 | 195.970912 | ppb |
| | Pb | 207 | 541741.625 | 194.440553 | ppb |
| | Pb | 208 | 846505.896 | 194.084103 | ppb |
| > | Bi | 209 | 1210088.579 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 94.593 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.904 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 96.264 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.093 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.118 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107004-01

Sample Date/Time: Wednesday, July 06, 2011 15:39:01
Sample Type: Sample
Sample Description: 7W13
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\7W13.428

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209324.184 | 0.564 | 209324.184 | | | ppb |
| ⌊ | Be | 9 | 2.000 | 100.000 | -0.000 | -0.02253 | 77.63 | ppb |
| ⌈> | Sc | 45 | 832625.773 | 1.745 | 832625.773 | | | ppb |
| \| | V | 51 | 3249.505 | 5.443 | 0.003 | 0.80136 | 9.23 | ppb |
| \| | Cr | 52 | 4194.880 | 0.860 | 0.002 | 0.69179 | 2.18 | ppb |
| \| | Mn | 55 | 15582.142 | 3.696 | 0.018 | 3.99435 | 2.13 | ppb |
| \| | Co | 59 | 37573.125 | 0.846 | 0.045 | 12.40392 | 2.54 | ppb |
| \| | Ni | 60 | 5841.707 | 3.074 | 0.007 | 7.61928 | 4.78 | ppb |
| \| | Cu | 63 | 3636.217 | 4.135 | 0.004 | 2.06099 | 5.84 | ppb |
| \| | Cu | 65 | 2725.928 | 4.561 | 0.003 | 3.28487 | 3.48 | ppb |
| \| | Zn | 66 | 1829.056 | 5.029 | 0.002 | 3.86795 | 6.20 | ppb |
| \| | As | 75 | 4773.721 | 0.736 | 0.006 | 7.89873 | 1.45 | ppb |
| ⌊ | Se | 82 | 50.889 | 9.833 | 0.000 | 0.38711 | 23.99 | ppb |
| ⌈ | Ag | 107 | 33.333 | 30.000 | 0.000 | 0.00626 | 67.67 | ppb |
| \| | Ag | 109 | 26.667 | 45.069 | 0.000 | 0.00690 | 74.82 | ppb |
| \| | Cd | 111 | 37.668 | 79.381 | 0.000 | 0.06078 | 85.55 | ppb |
| \| | In | 113 | 73195.234 | 0.180 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1651447.827 | 0.741 | 1651447.827 | | | ppb |
| ⌈ | Sb | 121 | 4609.402 | 9.283 | 0.002 | 2.01102 | 9.75 | ppb |
| \| | Ba | 135 | 6444.743 | 1.468 | 0.003 | 13.95324 | 1.70 | ppb |
| \| | Ba | 137 | 11098.823 | 0.644 | 0.005 | 13.91133 | 0.44 | ppb |
| ⌊> | Tb | 159 | 2071926.450 | 0.253 | 2071926.450 | | | ppb |
| ⌈ | Tl | 205 | 70.000 | 37.797 | 0.000 | 0.00276 | 208.10 | ppb |
| \| | Pb | 206 | 215.002 | 18.459 | 0.000 | 0.11914 | 20.94 | ppb |
| \| | Pb | 207 | 373.337 | 12.659 | 0.000 | 0.11218 | 15.52 | ppb |
| \| | Pb | 208 | 593.344 | 13.386 | 0.000 | 0.11729 | 16.33 | ppb |
| ⌊> | Bi | 209 | 1250458.463 | 1.075 | 1250458.463 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 210676.088 | | ppb |
| ⌊ | Be | 9 | 0.000 | -0.040006 | ppb |
| ⌈> | Sc | 45 | 820775.803 | | ppb |
| \| | V | 51 | 3266.254 | 0.822010 | ppb |
| \| | Cr | 52 | 4164.867 | 0.703910 | ppb |
| \| | Mn | 55 | 15001.243 | 3.899714 | ppb |
| \| | Co | 59 | 37735.063 | 12.633887 | ppb |
| \| | Ni | 60 | 5958.441 | 7.880735 | ppb |
| \| | Cu | 63 | 3647.332 | 2.098068 | ppb |
| \| | Cu | 65 | 2583.667 | 3.155199 | ppb |
| \| | Zn | 66 | 1793.494 | 3.844845 | ppb |
| \| | As | 75 | 4733.891 | 7.944603 | ppb |
| ⌊ | Se | 82 | 50.667 | 0.398610 | ppb |
| ⌈ | Ag | 107 | 43.333 | 0.010552 | ppb |
| \| | Ag | 109 | 16.667 | 0.002580 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 71.460 | 0.119621 | ppb |
| | In | 113 | 73091.143 | | ppb |
| > | In | 115 | 1643219.209 | | ppb |
| | Sb | 121 | 5076.288 | 2.225192 | ppb |
| | Ba | 135 | 6524.128 | 14.164492 | ppb |
| | Ba | 137 | 11018.067 | 13.848630 | ppb |
| > | Tb | 159 | 2066151.732 | | ppb |
| | Tl | 205 | 90.000 | 0.007240 | ppb |
| | Pb | 206 | 200.002 | 0.111162 | ppb |
| | Pb | 207 | 410.004 | 0.126616 | ppb |
| | Pb | 208 | 685.013 | 0.139408 | ppb |
| > | Bi | 209 | 1234939.119 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208805.462 | | ppb |
| | Be | 9 | 2.000 | -0.022545 | ppb |
| > | Sc | 45 | 848834.224 | | ppb |
| | V | 51 | 3064.858 | 0.719246 | ppb |
| | Cr | 52 | 4234.897 | 0.674933 | ppb |
| | Mn | 55 | 16153.035 | 4.064009 | ppb |
| | Co | 59 | 37207.090 | 12.044429 | ppb |
| | Ni | 60 | 5634.921 | 7.203147 | ppb |
| | Cu | 63 | 3480.606 | 1.926411 | ppb |
| | Cu | 65 | 2813.729 | 3.327949 | ppb |
| | Zn | 66 | 1760.155 | 3.640337 | ppb |
| | As | 75 | 4787.071 | 7.768629 | ppb |
| | Se | 82 | 56.000 | 0.473701 | ppb |
| | Ag | 107 | 23.333 | 0.002085 | ppb |
| | Ag | 109 | 23.333 | 0.005498 | ppb |
| | Cd | 111 | 14.635 | 0.021007 | ppb |
| | In | 113 | 73151.583 | | ppb |
| > | In | 115 | 1645614.248 | | ppb |
| | Sb | 121 | 4516.019 | 1.967798 | ppb |
| | Ba | 135 | 6470.092 | 13.999064 | ppb |
| | Ba | 137 | 11154.217 | 13.972248 | ppb |
| > | Tb | 159 | 2073220.451 | | ppb |
| | Tl | 205 | 80.000 | 0.004766 | ppb |
| | Pb | 206 | 260.003 | 0.147098 | ppb |
| | Pb | 207 | 390.004 | 0.117084 | ppb |
| | Pb | 208 | 545.009 | 0.105722 | ppb |
| > | Bi | 209 | 1257842.483 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 208491.002 | | ppb |
| | Be | 9 | 4.000 | -0.005032 | ppb |
| > | Sc | 45 | 828267.291 | | ppb |
| | V | 51 | 3417.402 | 0.862829 | ppb |
| | Cr | 52 | 4184.875 | 0.696519 | ppb |
| | Mn | 55 | 15592.146 | 4.019342 | ppb |
| | Co | 59 | 37777.221 | 12.533448 | ppb |
| | Ni | 60 | 5931.759 | 7.773958 | ppb |
| | Cu | 63 | 3780.715 | 2.158492 | ppb |
| | Cu | 65 | 2780.386 | 3.371458 | ppb |
| | Zn | 66 | 1933.520 | 4.118659 | ppb |
| | As | 75 | 4800.201 | 7.982949 | ppb |
| | Se | 82 | 46.000 | 0.289006 | ppb |
| | Ag | 107 | 33.333 | 0.006137 | ppb |
| | Ag | 109 | 40.000 | 0.012611 | ppb |
| | Cd | 111 | 26.910 | 0.041713 | ppb |
| | In | 113 | 73342.977 | | ppb |
| > | In | 115 | 1665510.023 | | ppb |
| | Sb | 121 | 4235.897 | 1.840078 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 6340.009 | 13.696150 | ppb |
| \| | Ba | 137 | 11124.184 | 13.913104 | ppb |
| \|> | Tb | 159 | 2076407.168 | | ppb |
| ⌈ | Tl | 205 | 40.000 | -0.003719 | ppb |
| \| | Pb | 206 | 185.002 | 0.099147 | ppb |
| \| | Pb | 207 | 320.003 | 0.092845 | ppb |
| \| | Pb | 208 | 550.010 | 0.106753 | ppb |
| \|> | Bi | 209 | 1258593.787 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 98.438 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 99.262 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.717 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 99.886 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 98.027 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107004-01

Sample Date/Time: Wednesday, July 06, 2011 15:40:27
Sample Type: Sample
Sample Description: 7W13L 5X
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\7W13L 5X.429

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 206453.653 | 1.404 | 206453.653 | | | ppb |
| ⌊ | Be | 9 | 4.667 | 24.744 | 0.000 | 0.00113 | 856.12 | ppb |
| ⌈> | Sc | 45 | 786927.400 | 1.925 | 786927.400 | | | ppb |
| \| | V | 51 | 1346.118 | 9.705 | 0.001 | 0.18935 | 19.53 | ppb |
| \| | Cr | 52 | 3256.530 | 1.689 | 0.001 | 0.38625 | 12.16 | ppb |
| \| | Mn | 55 | 2975.443 | 1.771 | 0.003 | 0.73621 | 3.59 | ppb |
| \| | Co | 59 | 6239.283 | 5.219 | 0.008 | 2.16448 | 7.18 | ppb |
| \| | Ni | 60 | 970.047 | 11.024 | 0.001 | 1.30782 | 13.02 | ppb |
| \| | Cu | 63 | 761.140 | 1.338 | 0.001 | 0.35995 | 4.06 | ppb |
| \| | Cu | 65 | 575.572 | 10.902 | 0.001 | 0.65544 | 12.79 | ppb |
| \| | Zn | 66 | 453.344 | 11.834 | 0.000 | 0.89463 | 14.84 | ppb |
| \| | As | 75 | 750.543 | 5.689 | 0.001 | 1.32740 | 6.88 | ppb |
| ⌊ | Se | 82 | 39.333 | 11.114 | 0.000 | 0.19056 | 50.22 | ppb |
| ⌈ | Ag | 107 | 14.444 | 48.038 | -0.000 | -0.00139 | 224.08 | ppb |
| \| | Ag | 109 | 15.556 | 75.255 | 0.000 | 0.00240 | 224.78 | ppb |
| \| | Cd | 111 | 11.395 | 136.793 | 0.000 | 0.01641 | 171.62 | ppb |
| \| | In | 113 | 69141.595 | 1.909 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1579181.402 | 1.115 | 1579181.402 | | | ppb |
| ⌈ | Sb | 121 | 1066.724 | 8.337 | 0.001 | 0.46752 | 7.70 | ppb |
| \| | Ba | 135 | 1034.720 | 7.326 | 0.001 | 2.39933 | 8.56 | ppb |
| \| | Ba | 137 | 1808.164 | 7.632 | 0.001 | 2.41340 | 6.49 | ppb |
| ⌊> | Tb | 159 | 1923300.100 | 1.401 | 1923300.100 | | | ppb |
| ⌈ | Tl | 205 | 33.333 | 31.225 | -0.000 | -0.00491 | 47.74 | ppb |
| \| | Pb | 206 | 56.667 | 13.478 | 0.000 | 0.01830 | 23.86 | ppb |
| \| | Pb | 207 | 96.667 | 16.627 | 0.000 | 0.01682 | 36.71 | ppb |
| \| | Pb | 208 | 173.334 | 14.519 | 0.000 | 0.02491 | 25.29 | ppb |
| ⌊> | Bi | 209 | 1222188.191 | 1.714 | 1222188.191 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208966.779 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.012336 | ppb |
| ⌈> | Sc | 45 | 802990.222 | | ppb |
| \| | V | 51 | 1492.982 | 0.231237 | ppb |
| \| | Cr | 52 | 3196.511 | 0.332131 | ppb |
| \| | Mn | 55 | 2925.428 | 0.705808 | ppb |
| \| | Co | 59 | 5923.754 | 2.010703 | ppb |
| \| | Ni | 60 | 846.703 | 1.111317 | ppb |
| \| | Cu | 63 | 750.028 | 0.343175 | ppb |
| \| | Cu | 65 | 606.685 | 0.680230 | ppb |
| \| | Zn | 66 | 410.008 | 0.773697 | ppb |
| \| | As | 75 | 707.273 | 1.226181 | ppb |
| ⌊ | Se | 82 | 38.667 | 0.158310 | ppb |
| ⌈ | Ag | 107 | 20.000 | 0.001110 | ppb |
| \| | Ag | 109 | 16.667 | 0.002943 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| ┆ | Cd | 111 | 16.460 | 0.025626 | ppb |
| ┆ | In | 113 | 67768.855 | | ppb |
| ┗> | In | 115 | 1565590.832 | | ppb |
| ┌ | Sb | 121 | 1105.061 | 0.484746 | ppb |
| ┆ | Ba | 135 | 966.047 | 2.230941 | ppb |
| ┆ | Ba | 137 | 1758.155 | 2.340138 | ppb |
| ┗> | Tb | 159 | 1928802.660 | | ppb |
| ┌ | Tl | 205 | 45.000 | -0.002304 | ppb |
| ┆ | Pb | 206 | 55.000 | 0.017517 | ppb |
| ┆ | Pb | 207 | 90.000 | 0.014628 | ppb |
| ┆ | Pb | 208 | 170.001 | 0.024378 | ppb |
| ┗> | Bi | 209 | 1213249.371 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ┌> | Li | 6 | 207110.761 | | ppb |
| └ | Be | 9 | 4.000 | -0.004799 | ppb |
| ┌> | Sc | 45 | 784900.186 | | ppb |
| ┆ | V | 51 | 1302.494 | 0.175554 | ppb |
| ┆ | Cr | 52 | 3304.546 | 0.410117 | ppb |
| ┆ | Mn | 55 | 3030.459 | 0.753340 | ppb |
| ┆ | Co | 59 | 6219.934 | 2.161355 | ppb |
| ┆ | Ni | 60 | 1036.720 | 1.401938 | ppb |
| ┆ | Cu | 63 | 770.030 | 0.366681 | ppb |
| ┆ | Cu | 65 | 503.346 | 0.562036 | ppb |
| ┆ | Zn | 66 | 513.347 | 1.036746 | ppb |
| ┆ | As | 75 | 792.645 | 1.403627 | ppb |
| └ | Se | 82 | 44.000 | 0.298218 | ppb |
| ┌ | Ag | 107 | 6.667 | -0.004867 | ppb |
| ┆ | Ag | 109 | 3.333 | -0.003246 | ppb |
| ┆ | Cd | 111 | -6.095 | -0.015208 | ppb |
| ┆ | In | 113 | 70401.952 | | ppb |
| ┗> | In | 115 | 1599063.792 | | ppb |
| ┌ | Sb | 121 | 1130.064 | 0.491646 | ppb |
| ┆ | Ba | 135 | 1022.052 | 2.339046 | ppb |
| ┆ | Ba | 137 | 1964.193 | 2.593345 | ppb |
| ┗> | Tb | 159 | 1947060.946 | | ppb |
| ┌ | Tl | 205 | 25.000 | -0.006844 | ppb |
| ┆ | Pb | 206 | 65.000 | 0.023001 | ppb |
| ┆ | Pb | 207 | 85.000 | 0.012036 | ppb |
| ┆ | Pb | 208 | 150.001 | 0.018899 | ppb |
| ┗> | Bi | 209 | 1246122.251 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ┌> | Li | 6 | 203283.417 | | ppb |
| └ | Be | 9 | 4.000 | -0.004136 | ppb |
| ┌> | Sc | 45 | 772891.792 | | ppb |
| ┆ | V | 51 | 1242.876 | 0.161245 | ppb |
| ┆ | Cr | 52 | 3268.534 | 0.416516 | ppb |
| ┆ | Mn | 55 | 2970.441 | 0.749485 | ppb |
| ┆ | Co | 59 | 6574.160 | 2.321382 | ppb |
| ┆ | Ni | 60 | 1026.719 | 1.410210 | ppb |
| ┆ | Cu | 63 | 763.362 | 0.369989 | ppb |
| ┆ | Cu | 65 | 616.686 | 0.724055 | ppb |
| ┆ | Zn | 66 | 436.676 | 0.873447 | ppb |
| ┆ | As | 75 | 751.712 | 1.352385 | ppb |
| └ | Se | 82 | 35.333 | 0.115166 | ppb |
| ┌ | Ag | 107 | 16.667 | -0.000403 | ppb |
| ┆ | Ag | 109 | 26.667 | 0.007504 | ppb |
| ┆ | Cd | 111 | 23.820 | 0.038826 | ppb |
| ┆ | In | 113 | 69253.978 | | ppb |
| ┗> | In | 115 | 1572889.582 | | ppb |
| ┌ | Sb | 121 | 965.047 | 0.426169 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 1116.062 | 2.628001 | ppb |
| \| | Ba | 137 | 1702.145 | 2.306714 | ppb |
| \> | Tb | 159 | 1894036.694 | | ppb |
| ⌈ | Tl | 205 | 30.000 | -0.005567 | ppb |
| \| | Pb | 206 | 50.000 | 0.014374 | ppb |
| \| | Pb | 207 | 115.000 | 0.023785 | ppb |
| \| | Pb | 208 | 200.001 | 0.031468 | ppb |
| \> | Bi | 209 | 1207192.950 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 97.088 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 93.815 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 93.441 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 92.721 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 95.811 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1070509-PS1

Sample Date/Time: Wednesday, July 06, 2011 15:41:53
Sample Type: Sample
Sample Description: 7W13A
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\7W13A.430

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203268.908 | 1.830 | 203268.908 | | | ppb |
| ⌊ | Be | 9 | 1085.392 | 3.783 | 0.005 | 9.69382 | 3.33 | ppb |
| ⌈> | Sc | 45 | 792217.623 | 1.554 | 792217.623 | | | ppb |
| ⌈ | V | 51 | 141763.947 | 0.368 | 0.178 | 49.58156 | 1.35 | ppb |
| ⌈ | Cr | 52 | 50779.943 | 0.853 | 0.061 | 20.77405 | 1.81 | ppb |
| ⌈ | Mn | 55 | 49771.899 | 1.146 | 0.062 | 13.62627 | 2.54 | ppb |
| ⌈ | Co | 59 | 65452.865 | 1.366 | 0.083 | 22.72426 | 2.38 | ppb |
| ⌈ | Ni | 60 | 12238.598 | 2.253 | 0.015 | 16.81330 | 0.74 | ppb |
| ⌈ | Cu | 63 | 34007.743 | 1.951 | 0.043 | 21.34758 | 3.43 | ppb |
| ⌈ | Cu | 65 | 17385.099 | 0.674 | 0.022 | 22.60575 | 1.82 | ppb |
| ⌈ | Zn | 66 | 10065.065 | 2.321 | 0.013 | 23.13683 | 0.78 | ppb |
| ⌈ | As | 75 | 10540.076 | 1.036 | 0.013 | 18.30864 | 1.47 | ppb |
| ⌊ | Se | 82 | 2411.846 | 1.410 | 0.003 | 53.20634 | 3.00 | ppb |
| ⌈ | Ag | 107 | 23071.033 | 1.762 | 0.014 | 9.99002 | 1.32 | ppb |
| ⌈ | Ag | 109 | 21741.388 | 0.810 | 0.014 | 9.80393 | 0.27 | ppb |
| ⌈ | Cd | 111 | 5497.309 | 3.084 | 0.003 | 9.77460 | 3.35 | ppb |
| ⌈ | In | 113 | 75218.534 | 1.381 | 0.003 | | | ppb |
| ⌊> | In | 115 | 1602563.978 | 0.544 | 1602563.978 | | | ppb |
| ⌈ | Sb | 121 | 46991.837 | 1.543 | 0.024 | 21.98992 | 2.01 | ppb |
| ⌈ | Ba | 135 | 49837.215 | 0.553 | 0.025 | 113.59868 | 0.99 | ppb |
| ⌈ | Ba | 137 | 86624.918 | 0.602 | 0.044 | 114.41471 | 1.07 | ppb |
| ⌊> | Tb | 159 | 1970322.912 | 0.471 | 1970322.912 | | | ppb |
| ⌈ | Tl | 205 | 43583.121 | 1.783 | 0.036 | 9.61434 | 2.67 | ppb |
| ⌈ | Pb | 206 | 14498.838 | 1.341 | 0.012 | 9.62431 | 2.17 | ppb |
| ⌈ | Pb | 207 | 26516.056 | 1.444 | 0.022 | 9.52140 | 1.60 | ppb |
| ⌈ | Pb | 208 | 42189.346 | 1.944 | 0.035 | 9.67933 | 0.38 | ppb |
| ⌊> | Bi | 209 | 1207597.405 | 2.005 | 1207597.405 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207384.344 | | ppb |
| ⌊ | Be | 9 | 1096.060 | 9.594504 | ppb |
| ⌈> | Sc | 45 | 804147.931 | | ppb |
| ⌈ | V | 51 | 142344.118 | 49.036050 | ppb |
| ⌈ | Cr | 52 | 51084.147 | 20.575972 | ppb |
| ⌈ | Mn | 55 | 49120.345 | 13.242568 | ppb |
| ⌈ | Co | 59 | 65729.309 | 22.476858 | ppb |
| ⌈ | Ni | 60 | 12484.455 | 16.898008 | ppb |
| ⌈ | Cu | 63 | 33248.515 | 20.549682 | ppb |
| ⌈ | Cu | 65 | 17288.265 | 22.140344 | ppb |
| ⌈ | Zn | 66 | 10298.634 | 23.325681 | ppb |
| ⌈ | As | 75 | 10646.895 | 18.217757 | ppb |
| ⌊ | Se | 82 | 2377.616 | 51.636957 | ppb |
| ⌈ | Ag | 107 | 22983.047 | 9.993062 | ppb |
| ⌈ | Ag | 109 | 21596.629 | 9.778644 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5685.135 | 10.149488 | ppb |
| | In | 113 | 76365.475 | | ppb |
| > | In | 115 | 1596024.067 | | ppb |
| | Sb | 121 | 46161.298 | 21.482208 | ppb |
| | Ba | 135 | 49576.588 | 112.390700 | ppb |
| | Ba | 137 | 86022.408 | 113.001005 | ppb |
| > | Tb | 159 | 1981023.233 | | ppb |
| | Tl | 205 | 43183.038 | 9.328711 | ppb |
| | Pb | 206 | 14440.419 | 9.387158 | ppb |
| | Pb | 207 | 26602.810 | 9.355800 | ppb |
| | Pb | 208 | 42949.712 | 9.652417 | ppb |
| > | Bi | 209 | 1232769.276 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 200147.097 | | ppb |
| | Be | 9 | 1040.054 | 9.432783 | ppb |
| > | Sc | 45 | 792949.527 | | ppb |
| | V | 51 | 141333.456 | 49.377466 | ppb |
| | Cr | 52 | 50284.108 | 20.537963 | ppb |
| | Mn | 55 | 50180.589 | 13.722676 | ppb |
| | Co | 59 | 64453.043 | 22.351580 | ppb |
| | Ni | 60 | 12290.882 | 16.870881 | ppb |
| | Cu | 63 | 34298.719 | 21.503871 | ppb |
| | Cu | 65 | 17515.326 | 22.750697 | ppb |
| | Zn | 66 | 10065.063 | 23.117159 | ppb |
| | As | 75 | 10428.679 | 18.096478 | ppb |
| | Se | 82 | 2412.291 | 53.149967 | ppb |
| | Ag | 107 | 23514.280 | 10.119938 | ppb |
| | Ag | 109 | 21937.369 | 9.831716 | ppb |
| | Cd | 111 | 5451.097 | 9.632261 | ppb |
| | In | 113 | 74949.825 | | ppb |
| > | In | 115 | 1612458.202 | | ppb |
| | Sb | 121 | 47497.534 | 22.293504 | ppb |
| | Ba | 135 | 50125.313 | 114.600343 | ppb |
| | Ba | 137 | 86922.138 | 115.153498 | ppb |
| > | Tb | 159 | 1964336.507 | | ppb |
| | Tl | 205 | 43087.628 | 9.687977 | ppb |
| | Pb | 206 | 14340.275 | 9.702668 | ppb |
| | Pb | 207 | 26097.182 | 9.552451 | ppb |
| | Pb | 208 | 41320.543 | 9.664819 | ppb |
| > | Bi | 209 | 1184488.294 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202275.281 | | ppb |
| | Be | 9 | 1120.063 | 10.054168 | ppb |
| > | Sc | 45 | 779555.411 | | ppb |
| | V | 51 | 141614.265 | 50.331156 | ppb |
| | Cr | 52 | 50971.575 | 21.208201 | ppb |
| | Mn | 55 | 50014.762 | 13.913563 | ppb |
| | Co | 59 | 66176.243 | 23.344346 | ppb |
| | Ni | 60 | 11940.458 | 16.671022 | ppb |
| | Cu | 63 | 34475.994 | 21.989177 | ppb |
| | Cu | 65 | 17351.708 | 22.926197 | ppb |
| | Zn | 66 | 9831.497 | 22.967643 | ppb |
| | As | 75 | 10544.655 | 18.611680 | ppb |
| | Se | 82 | 2445.632 | 54.832089 | ppb |
| | Ag | 107 | 22715.771 | 9.857069 | ppb |
| | Ag | 109 | 21690.164 | 9.801443 | ppb |
| | Cd | 111 | 5355.694 | 9.542042 | ppb |
| | In | 113 | 74340.301 | | ppb |
| > | In | 115 | 1599209.666 | | ppb |
| | Sb | 121 | 47316.679 | 22.194042 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 49809.742 | 113.805008 | ppb |
| | Ba | 137 | 86930.208 | 115.089616 | ppb |
| > | Tb | 159 | 1965608.995 | | ppb |
| | Tl | 205 | 44478.698 | 9.826330 | ppb |
| | Pb | 206 | 14715.820 | 9.783093 | ppb |
| | Pb | 207 | 26848.175 | 9.655963 | ppb |
| | Pb | 208 | 42297.784 | 9.720758 | ppb |
| > | Bi | 209 | 1205534.645 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 95.590 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 94.445 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.825 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 94.988 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 94.667 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107004-02

Sample Date/Time: Wednesday, July 06, 2011 15:43:19
Sample Type: Sample
Sample Description: 7DUP
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\7DUP.431

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 200922.754 | 1.597 | 200922.754 | | | ppb |
| ⌊ | Be | 9 | 4.000 | 50.000 | -0.000 | -0.00369 | 490.02 | ppb |
| ⌈> | Sc | 45 | 784479.419 | 1.064 | 784479.419 | | | ppb |
| \| | V | 51 | 3532.451 | 0.794 | 0.003 | 0.96803 | 2.41 | ppb |
| \| | Cr | 52 | 5374.779 | 4.193 | 0.004 | 1.30853 | 8.41 | ppb |
| \| | Mn | 55 | 19388.781 | 1.455 | 0.024 | 5.30555 | 2.09 | ppb |
| \| | Co | 59 | 36695.208 | 0.957 | 0.047 | 12.85591 | 1.74 | ppb |
| \| | Ni | 60 | 5908.412 | 1.713 | 0.007 | 8.17784 | 1.64 | ppb |
| \| | Cu | 63 | 4629.961 | 1.670 | 0.006 | 2.82706 | 0.70 | ppb |
| \| | Cu | 65 | 3272.758 | 1.736 | 0.004 | 4.21545 | 2.82 | ppb |
| \| | Zn | 66 | 2308.044 | 1.454 | 0.003 | 5.23412 | 2.50 | ppb |
| \| | As | 75 | 4615.800 | 1.592 | 0.006 | 8.10545 | 2.19 | ppb |
| ⌊ | Se | 82 | 45.333 | 9.643 | 0.000 | 0.32913 | 30.99 | ppb |
| ⌈ | Ag | 107 | 17.778 | 39.031 | 0.000 | 0.00015 | 2080.26 | ppb |
| \| | Ag | 109 | 8.889 | 57.282 | -0.000 | -0.00064 | 369.77 | ppb |
| \| | Cd | 111 | 44.757 | 63.794 | 0.000 | 0.07767 | 67.70 | ppb |
| \| | In | 113 | 69077.785 | 1.097 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1559351.331 | 0.569 | 1559351.331 | | | ppb |
| ⌈ | Sb | 121 | 3630.659 | 2.514 | 0.002 | 1.69787 | 2.03 | ppb |
| \| | Ba | 135 | 6203.924 | 0.782 | 0.003 | 14.45871 | 0.89 | ppb |
| \| | Ba | 137 | 10861.897 | 1.628 | 0.006 | 14.65729 | 2.02 | ppb |
| ⌊> | Tb | 159 | 1924881.510 | 0.907 | 1924881.510 | | | ppb |
| ⌈ | Tl | 205 | 30.000 | 16.667 | -0.000 | -0.00536 | 22.80 | ppb |
| \| | Pb | 206 | 230.003 | 7.838 | 0.000 | 0.13880 | 10.15 | ppb |
| \| | Pb | 207 | 385.004 | 6.872 | 0.000 | 0.12505 | 7.19 | ppb |
| \| | Pb | 208 | 641.680 | 16.971 | 0.000 | 0.13722 | 17.60 | ppb |
| ⌊> | Bi | 209 | 1172116.699 | 1.323 | 1172116.699 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 203148.721 | | ppb |
| ⌊ | Be | 9 | 2.000 | -0.022059 | ppb |
| ⌈> | Sc | 45 | 790788.018 | | ppb |
| \| | V | 51 | 3506.918 | 0.948859 | ppb |
| \| | Cr | 52 | 5487.505 | 1.337957 | ppb |
| \| | Mn | 55 | 19559.109 | 5.308948 | ppb |
| \| | Co | 59 | 36299.764 | 12.614183 | ppb |
| \| | Ni | 60 | 5855.047 | 8.038423 | ppb |
| \| | Cu | 63 | 4701.105 | 2.848620 | ppb |
| \| | Cu | 65 | 3213.850 | 4.103136 | ppb |
| \| | Zn | 66 | 2303.599 | 5.179887 | ppb |
| \| | As | 75 | 4657.798 | 8.113005 | ppb |
| ⌊ | Se | 82 | 40.667 | 0.216224 | ppb |
| ⌈ | Ag | 107 | 20.000 | 0.001094 | ppb |
| \| | Ag | 109 | 13.333 | 0.001393 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 13.540 | 0.020266 | ppb |
| | In | 113 | 68569.284 | | ppb |
| > | In | 115 | 1568358.597 | | ppb |
| | Sb | 121 | 3735.698 | 1.734253 | ppb |
| | Ba | 135 | 6255.956 | 14.464703 | ppb |
| | Ba | 137 | 10964.007 | 14.677555 | ppb |
| > | Tb | 159 | 1940157.124 | | ppb |
| | Tl | 205 | 30.000 | -0.005340 | ppb |
| | Pb | 206 | 245.003 | 0.149678 | ppb |
| | Pb | 207 | 405.004 | 0.133134 | ppb |
| | Pb | 208 | 675.015 | 0.145973 | ppb |
| > | Bi | 209 | 1167129.036 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 197244.268 | | ppb |
| | Be | 9 | 4.000 | -0.003038 | ppb |
| > | Sc | 45 | 787638.423 | | ppb |
| | V | 51 | 3527.988 | 0.961254 | ppb |
| | Cr | 52 | 5115.308 | 1.186736 | ppb |
| | Mn | 55 | 19063.153 | 5.193104 | ppb |
| | Co | 59 | 36970.214 | 12.898982 | ppb |
| | Ni | 60 | 6025.148 | 8.306328 | ppb |
| | Cu | 63 | 4641.077 | 2.822399 | ppb |
| | Cu | 65 | 3277.204 | 4.203163 | ppb |
| | Zn | 66 | 2276.926 | 5.139143 | ppb |
| | As | 75 | 4530.975 | 7.924017 | ppb |
| | Se | 82 | 49.333 | 0.414615 | ppb |
| | Ag | 107 | 23.333 | 0.002632 | ppb |
| | Ag | 109 | 3.333 | -0.003208 | ppb |
| | Cd | 111 | 51.180 | 0.089232 | ppb |
| | In | 113 | 68715.281 | | ppb |
| > | In | 115 | 1559086.511 | | ppb |
| | Sb | 121 | 3585.643 | 1.693545 | ppb |
| | Ba | 135 | 6195.919 | 14.583990 | ppb |
| | Ba | 137 | 10964.007 | 14.942423 | ppb |
| > | Tb | 159 | 1905841.028 | | ppb |
| | Tl | 205 | 35.000 | -0.004146 | ppb |
| | Pb | 206 | 235.003 | 0.143831 | ppb |
| | Pb | 207 | 355.003 | 0.115370 | ppb |
| | Pb | 208 | 520.009 | 0.109912 | ppb |
| > | Bi | 209 | 1159722.046 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 202375.274 | | ppb |
| | Be | 9 | 6.000 | 0.014041 | ppb |
| > | Sc | 45 | 775011.816 | | ppb |
| | V | 51 | 3562.445 | 0.993976 | ppb |
| | Cr | 52 | 5521.524 | 1.400904 | ppb |
| | Mn | 55 | 19544.080 | 5.414603 | ppb |
| | Co | 59 | 36815.645 | 13.054563 | ppb |
| | Ni | 60 | 5845.041 | 8.188764 | ppb |
| | Cu | 63 | 4547.701 | 2.810157 | ppb |
| | Cu | 65 | 3327.220 | 4.340061 | ppb |
| | Zn | 66 | 2343.608 | 5.383324 | ppb |
| | As | 75 | 4658.628 | 8.279316 | ppb |
| | Se | 82 | 46.000 | 0.356552 | ppb |
| | Ag | 107 | 10.000 | -0.003283 | ppb |
| | Ag | 109 | 10.000 | -0.000091 | ppb |
| | Cd | 111 | 69.550 | 0.123513 | ppb |
| | In | 113 | 69948.789 | | ppb |
| > | In | 115 | 1550608.886 | | ppb |
| | Sb | 121 | 3570.637 | 1.665805 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 6159.897 | 14.327425 | ppb |
| | Ba | 137 | 10657.676 | 14.351899 | ppb |
| > | Tb | 159 | 1928646.378 | | ppb |
| | Tl | 205 | 25.000 | -0.006590 | ppb |
| | Pb | 206 | 210.002 | 0.122880 | ppb |
| | Pb | 207 | 395.004 | 0.126648 | ppb |
| | Pb | 208 | 730.017 | 0.155785 | ppb |
| > | Bi | 209 | 1189499.014 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 94.487 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 93.523 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 92.268 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 92.797 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 91.886 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107005-01

Sample Date/Time: Wednesday, July 06, 2011 15:44:45
Sample Type: Sample
Sample Description: 5WC21
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\5WC21.432

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215195.189 | 1.612 | 215195.189 | | | ppb |
| ⌊ | Be | 9 | 124.001 | 6.452 | 0.001 | 1.01119 | 8.08 | ppb |
| ⌈> | Sc | 45 | 843423.033 | 2.274 | 843423.033 | | | ppb |
| \| | V | 51 | 3295.260 | 5.113 | 0.003 | 0.80298 | 9.87 | ppb |
| \| | Cr | 52 | 14664.745 | 0.198 | 0.014 | 4.89193 | 2.63 | ppb |
| \| | Mn | 55 | 17637991.216 | 1.300 | 20.922 | 4566.29776 | 3.23 | ppb |
| \| | Co | 59 | 192773.817 | 1.058 | 0.229 | 62.90428 | 2.06 | ppb |
| \| | Ni | 60 | 20944.134 | 1.170 | 0.025 | 27.06413 | 3.15 | ppb |
| \| | Cu | 63 | 8700.453 | 3.744 | 0.010 | 5.03292 | 1.55 | ppb |
| \| | Cu | 65 | 4961.231 | 2.271 | 0.006 | 5.98724 | 3.96 | ppb |
| \| | Zn | 66 | 19327.550 | 1.209 | 0.023 | 41.88386 | 3.09 | ppb |
| \| | As | 75 | 121.200 | 25.967 | 0.000 | 0.21343 | 25.88 | ppb |
| ⌊ | Se | 82 | 90.000 | 8.543 | 0.000 | 1.19672 | 15.94 | ppb |
| ⌈ | Ag | 107 | 22.222 | 17.321 | 0.000 | 0.00164 | 101.55 | ppb |
| \| | Ag | 109 | 21.111 | 50.756 | 0.000 | 0.00452 | 102.54 | ppb |
| \| | Cd | 111 | 356.402 | 15.508 | 0.000 | 0.61432 | 15.96 | ppb |
| \| | In | 113 | 72856.269 | 3.059 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1642684.032 | 0.731 | 1642684.032 | | | ppb |
| ⌈ | Sb | 121 | 386.674 | 1.975 | 0.000 | 0.12804 | 4.26 | ppb |
| \| | Ba | 135 | 7109.194 | 2.140 | 0.003 | 15.40784 | 3.20 | ppb |
| \| | Ba | 137 | 12403.021 | 1.219 | 0.006 | 15.56292 | 1.96 | ppb |
| ⌊> | Tb | 159 | 2070458.629 | 1.188 | 2070458.629 | | | ppb |
| ⌈ | Tl | 205 | 646.688 | 14.032 | 0.000 | 0.12377 | 15.13 | ppb |
| \| | Pb | 206 | 443.343 | 10.171 | 0.000 | 0.26180 | 10.61 | ppb |
| \| | Pb | 207 | 800.016 | 4.507 | 0.001 | 0.25642 | 4.59 | ppb |
| \| | Pb | 208 | 1238.379 | 1.821 | 0.001 | 0.25648 | 2.35 | ppb |
| ⌊> | Bi | 209 | 1268081.883 | 0.425 | 1268081.883 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 219186.087 | | ppb |
| ⌊ | Be | 9 | 116.001 | 0.924753 | ppb |
| ⌈> | Sc | 45 | 860957.805 | | ppb |
| \| | V | 51 | 3108.947 | 0.719348 | ppb |
| \| | Cr | 52 | 14662.742 | 4.768798 | ppb |
| \| | Mn | 55 | 17381823.453 | 4406.272818 | ppb |
| \| | Co | 59 | 192236.146 | 61.433708 | ppb |
| \| | Ni | 60 | 20668.003 | 26.150057 | ppb |
| \| | Cu | 63 | 8974.025 | 5.087898 | ppb |
| \| | Cu | 65 | 4841.172 | 5.715900 | ppb |
| \| | Zn | 66 | 19372.079 | 41.104439 | ppb |
| \| | As | 75 | 116.970 | 0.202028 | ppb |
| ⌊ | Se | 82 | 90.667 | 1.169925 | ppb |
| ⌈ | Ag | 107 | 20.000 | 0.000733 | ppb |
| \| | Ag | 109 | 13.333 | 0.001142 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 419.237 | 0.726523 | ppb |
| | In | 113 | 71489.628 | | ppb |
| > | In | 115 | 1635123.429 | | ppb |
| | Sb | 121 | 385.007 | 0.126301 | ppb |
| | Ba | 135 | 6956.419 | 14.989384 | ppb |
| | Ba | 137 | 12229.473 | 15.257780 | ppb |
| > | Tb | 159 | 2081969.439 | | ppb |
| | Tl | 205 | 580.017 | 0.109602 | ppb |
| | Pb | 206 | 490.012 | 0.290966 | ppb |
| | Pb | 207 | 840.018 | 0.269734 | ppb |
| | Pb | 208 | 1240.046 | 0.256446 | ppb |
| > | Bi | 209 | 1269881.024 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 212894.331 | | ppb |
| | Be | 9 | 124.001 | 1.021767 | ppb |
| > | Sc | 45 | 822943.552 | | ppb |
| | V | 51 | 3436.960 | 0.876888 | ppb |
| | Cr | 52 | 14636.704 | 5.025500 | ppb |
| | Mn | 55 | 17708214.811 | 4696.379622 | ppb |
| | Co | 59 | 191057.885 | 63.878365 | ppb |
| | Ni | 60 | 21028.754 | 27.838044 | ppb |
| | Cu | 63 | 8340.143 | 4.943506 | ppb |
| | Cu | 65 | 4977.905 | 6.156512 | ppb |
| | Zn | 66 | 19535.730 | 43.375417 | ppb |
| | As | 75 | 154.574 | 0.273477 | ppb |
| | Se | 82 | 97.334 | 1.399406 | ppb |
| | Ag | 107 | 26.667 | 0.003555 | ppb |
| | Ag | 109 | 16.667 | 0.002610 | ppb |
| | Cd | 111 | 315.306 | 0.544907 | ppb |
| | In | 113 | 71650.775 | | ppb |
| > | In | 115 | 1636404.730 | | ppb |
| | Sb | 121 | 395.008 | 0.134150 | ppb |
| | Ba | 135 | 7260.635 | 15.950588 | ppb |
| | Ba | 137 | 12473.775 | 15.866764 | ppb |
| > | Tb | 159 | 2042222.381 | | ppb |
| | Tl | 205 | 610.019 | 0.116701 | ppb |
| | Pb | 206 | 400.008 | 0.235630 | ppb |
| | Pb | 207 | 770.015 | 0.247431 | ppb |
| | Pb | 208 | 1260.046 | 0.262532 | ppb |
| > | Bi | 209 | 1262017.691 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 213505.148 | | ppb |
| | Be | 9 | 132.001 | 1.087035 | ppb |
| > | Sc | 45 | 846367.742 | | ppb |
| | V | 51 | 3339.873 | 0.812718 | ppb |
| | Cr | 52 | 14694.789 | 4.881482 | ppb |
| | Mn | 55 | 17823935.384 | 4596.240834 | ppb |
| | Co | 59 | 195027.419 | 63.400755 | ppb |
| | Ni | 60 | 21135.646 | 27.204295 | ppb |
| | Cu | 63 | 8787.192 | 5.067365 | ppb |
| | Cu | 65 | 5064.616 | 6.089307 | ppb |
| | Zn | 66 | 19074.842 | 41.171719 | ppb |
| | As | 75 | 92.057 | 0.164780 | ppb |
| | Se | 82 | 82.000 | 1.020817 | ppb |
| | Ag | 107 | 20.000 | 0.000623 | ppb |
| | Ag | 109 | 33.333 | 0.009795 | ppb |
| | Cd | 111 | 334.663 | 0.571545 | ppb |
| | In | 113 | 75428.403 | | ppb |
| > | In | 115 | 1656523.936 | | ppb |
| | Sb | 121 | 380.007 | 0.123661 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 7110.527 | 15.283538 | ppb |
| \| | Ba | 137 | 12505.815 | 15.564222 | ppb |
| \|> | Tb | 159 | 2087184.067 | | ppb |
| ⌈ | Tl | 205 | 750.028 | 0.144997 | ppb |
| \| | Pb | 206 | 440.010 | 0.258809 | ppb |
| \| | Pb | 207 | 790.016 | 0.252107 | ppb |
| \| | Pb | 208 | 1215.044 | 0.250469 | ppb |
| \|> | Bi | 209 | 1272346.933 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 101.199 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 100.550 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 97.199 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 99.816 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 99.409 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: SDI1107005-01

Sample Date/Time: Wednesday, July 06, 2011 15:46:11
Sample Type: Sample
Sample Description: 5WC21L 5X
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\5WC21L 5X.433

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212886.288 | 0.925 | 212886.288 | | | ppb |
| ⌊ | Be | 9 | 26.000 | 15.385 | 0.000 | 0.18271 | 19.22 | ppb |
| ⌈> | Sc | 45 | 807122.909 | 0.607 | 807122.909 | | | ppb |
| \| | V | 51 | 1204.546 | 8.119 | 0.000 | 0.12913 | 27.75 | ppb |
| \| | Cr | 52 | 4673.092 | 0.836 | 0.003 | 0.94723 | 2.39 | ppb |
| \| | Mn | 55 | 3212667.672 | 1.086 | 3.980 | 868.65643 | 0.89 | ppb |
| \| | Co | 59 | 34864.004 | 0.539 | 0.043 | 11.86926 | 0.92 | ppb |
| \| | Ni | 60 | 3774.046 | 2.089 | 0.005 | 5.06189 | 1.55 | ppb |
| \| | Cu | 63 | 1665.694 | 4.499 | 0.002 | 0.90817 | 5.55 | ppb |
| \| | Cu | 65 | 958.935 | 1.915 | 0.001 | 1.12785 | 2.72 | ppb |
| \| | Zn | 66 | 3801.834 | 2.999 | 0.005 | 8.47545 | 2.48 | ppb |
| \| | As | 75 | 44.983 | 47.364 | 0.000 | 0.09175 | 39.26 | ppb |
| ⌊ | Se | 82 | 45.111 | 8.659 | 0.000 | 0.29494 | 27.09 | ppb |
| ⌈ | Ag | 107 | 10.000 | 120.185 | -0.000 | -0.00343 | 152.15 | ppb |
| \| | Ag | 109 | 7.778 | 49.487 | -0.000 | -0.00126 | 137.48 | ppb |
| \| | Cd | 111 | 60.880 | 42.888 | 0.000 | 0.10341 | 44.40 | ppb |
| \| | In | 113 | 70707.521 | 2.346 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1609679.094 | 0.530 | 1609679.094 | | | ppb |
| ⌈ | Sb | 121 | 170.001 | 5.094 | 0.000 | 0.03522 | 11.17 | ppb |
| \| | Ba | 135 | 1280.749 | 3.022 | 0.001 | 2.90269 | 2.91 | ppb |
| \| | Ba | 137 | 2270.258 | 4.632 | 0.001 | 2.96831 | 4.41 | ppb |
| ⌊> | Tb | 159 | 1969110.772 | 0.315 | 1969110.772 | | | ppb |
| ⌈ | Tl | 205 | 105.001 | 9.524 | 0.000 | 0.01052 | 18.17 | ppb |
| \| | Pb | 206 | 98.334 | 7.767 | 0.000 | 0.04522 | 11.37 | ppb |
| \| | Pb | 207 | 190.001 | 16.434 | 0.000 | 0.04949 | 23.68 | ppb |
| \| | Pb | 208 | 311.670 | 8.836 | 0.000 | 0.05567 | 10.10 | ppb |
| ⌊> | Bi | 209 | 1231888.845 | 1.138 | 1231888.845 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215055.850 | | ppb |
| ⌊ | Be | 9 | 26.000 | 0.180385 | ppb |
| ⌈> | Sc | 45 | 808834.182 | | ppb |
| \| | V | 51 | 1238.246 | 0.139738 | ppb |
| \| | Cr | 52 | 4711.109 | 0.958980 | ppb |
| \| | Mn | 55 | 3251210.288 | 877.219059 | ppb |
| \| | Co | 59 | 35045.301 | 11.905440 | ppb |
| \| | Ni | 60 | 3830.734 | 5.127834 | ppb |
| \| | Cu | 63 | 1583.459 | 0.855016 | ppb |
| \| | Cu | 65 | 960.046 | 1.126556 | ppb |
| \| | Zn | 66 | 3877.418 | 8.629354 | ppb |
| \| | As | 75 | 64.898 | 0.125556 | ppb |
| ⌊ | Se | 82 | 46.667 | 0.327211 | ppb |
| ⌈ | Ag | 107 | 23.333 | 0.002362 | ppb |
| \| | Ag | 109 | 10.000 | -0.000236 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 61.910 | 0.105918 | ppb |
| \| | In | 113 | 69873.264 | | ppb |
| \|> | In | 115 | 1600545.444 | | ppb |
| ⌈ | Sb | 121 | 175.002 | 0.037701 | ppb |
| \| | Ba | 135 | 1236.076 | 2.805471 | ppb |
| \| | Ba | 137 | 2168.235 | 2.838366 | ppb |
| \|> | Tb | 159 | 1965892.460 | | ppb |
| ⌈ | Tl | 205 | 95.000 | 0.008570 | ppb |
| \| | Pb | 206 | 105.001 | 0.050223 | ppb |
| \| | Pb | 207 | 215.001 | 0.058952 | ppb |
| \| | Pb | 208 | 280.002 | 0.049178 | ppb |
| \|> | Bi | 209 | 1220040.949 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212393.856 | | ppb |
| ⌊ | Be | 9 | 22.000 | 0.148816 | ppb |
| ⌈> | Sc | 45 | 810939.895 | | ppb |
| \| | V | 51 | 1094.357 | 0.089190 | ppb |
| \| | Cr | 52 | 4633.073 | 0.921123 | ppb |
| \| | Mn | 55 | 3203503.369 | 862.101178 | ppb |
| \| | Co | 59 | 34669.996 | 11.747098 | ppb |
| \| | Ni | 60 | 3807.391 | 5.083015 | ppb |
| \| | Cu | 63 | 1683.475 | 0.914142 | ppb |
| \| | Cu | 65 | 940.044 | 1.097850 | ppb |
| \| | Zn | 66 | 3857.411 | 8.561274 | ppb |
| \| | As | 75 | 47.534 | 0.095831 | ppb |
| ⌊ | Se | 82 | 48.000 | 0.353660 | ppb |
| ⌈ | Ag | 107 | 6.667 | -0.004888 | ppb |
| \| | Ag | 109 | 3.333 | -0.003257 | ppb |
| \| | Cd | 111 | 34.270 | 0.056294 | ppb |
| \| | In | 113 | 69631.587 | | ppb |
| \|> | In | 115 | 1611031.726 | | ppb |
| ⌈ | Sb | 121 | 160.001 | 0.030679 | ppb |
| \| | Ba | 135 | 1302.085 | 2.957386 | ppb |
| \| | Ba | 137 | 2264.256 | 2.966613 | ppb |
| \|> | Tb | 159 | 1965168.734 | | ppb |
| ⌈ | Tl | 205 | 115.001 | 0.012391 | ppb |
| \| | Pb | 206 | 100.001 | 0.045491 | ppb |
| \| | Pb | 207 | 155.001 | 0.036382 | ppb |
| \| | Pb | 208 | 330.004 | 0.058906 | ppb |
| \|> | Bi | 209 | 1247358.024 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211209.157 | | ppb |
| ⌊ | Be | 9 | 30.000 | 0.218923 | ppb |
| ⌈> | Sc | 45 | 801594.650 | | ppb |
| \| | V | 51 | 1281.034 | 0.158464 | ppb |
| \| | Cr | 52 | 4675.093 | 0.961589 | ppb |
| \| | Mn | 55 | 3183289.359 | 866.649046 | ppb |
| \| | Co | 59 | 34876.713 | 11.955255 | ppb |
| \| | Ni | 60 | 3684.012 | 4.974813 | ppb |
| \| | Cu | 63 | 1730.150 | 0.955357 | ppb |
| \| | Cu | 65 | 976.714 | 1.159158 | ppb |
| \| | Zn | 66 | 3670.674 | 8.235728 | ppb |
| \| | As | 75 | 22.517 | 0.053864 | ppb |
| ⌊ | Se | 82 | 40.667 | 0.203954 | ppb |
| ⌈ | Ag | 107 | 0.000 | -0.007762 | ppb |
| \| | Ag | 109 | 10.000 | -0.000283 | ppb |
| \| | Cd | 111 | 86.460 | 0.148030 | ppb |
| \| | In | 113 | 72617.713 | | ppb |
| \|> | In | 115 | 1617460.111 | | ppb |
| ⌈ | Sb | 121 | 175.002 | 0.037269 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 1304.085 | 2.945212 | ppb |
| | Ba | 137 | 2378.283 | 3.099955 | ppb |
| > | Tb | 159 | 1976271.121 | | ppb |
| | Tl | 205 | 105.001 | 0.010602 | ppb |
| | Pb | 206 | 90.000 | 0.039954 | ppb |
| | Pb | 207 | 200.001 | 0.053135 | ppb |
| | Pb | 208 | 325.003 | 0.058917 | ppb |
| > | Bi | 209 | 1228267.561 | | ppb |

# QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 100.113 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 96.222 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 95.246 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 94.930 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 96.572 | | | |

# QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1070509-PS2

Sample Date/Time: Wednesday, July 06, 2011 15:47:37
Sample Type: Sample
Sample Description: 5WC21A
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\5WC21A.434

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 207209.132 | 1.621 | 207209.132 | | | ppb |
| ⌊ | Be | 9 | 1208.073 | 7.600 | 0.006 | 10.58405 | 6.58 | ppb |
| ⌈> | Sc | 45 | 812977.550 | 1.860 | 812977.550 | | | ppb |
| \| | V | 51 | 137381.664 | 0.775 | 0.168 | 46.80756 | 1.52 | ppb |
| \| | Cr | 52 | 59898.916 | 2.196 | 0.071 | 24.03089 | 2.42 | ppb |
| \| | Mn | 55 | 17693147.028 | 1.376 | 21.772 | 4751.76868 | 3.18 | ppb |
| \| | Co | 59 | 221238.591 | 0.512 | 0.272 | 74.89222 | 1.43 | ppb |
| \| | Ni | 60 | 26442.712 | 2.878 | 0.033 | 35.46504 | 4.66 | ppb |
| \| | Cu | 63 | 39259.142 | 1.140 | 0.048 | 24.02524 | 1.43 | ppb |
| \| | Cu | 65 | 19631.476 | 1.587 | 0.024 | 24.88426 | 1.87 | ppb |
| \| | Zn | 66 | 27277.152 | 0.511 | 0.033 | 61.39003 | 2.21 | ppb |
| \| | As | 75 | 5758.837 | 2.881 | 0.007 | 9.75938 | 4.61 | ppb |
| ⌊ | Se | 82 | 2346.720 | 1.478 | 0.003 | 50.41413 | 3.10 | ppb |
| ⌈ | Ag | 107 | 22669.006 | 2.134 | 0.014 | 9.89427 | 3.50 | ppb |
| \| | Ag | 109 | 21677.916 | 0.612 | 0.014 | 9.85170 | 1.88 | ppb |
| \| | Cd | 111 | 5623.878 | 5.853 | 0.004 | 10.07625 | 5.85 | ppb |
| \| | In | 113 | 75841.562 | 1.651 | 0.004 | | | ppb |
| ⌊> | In | 115 | 1590426.548 | 1.392 | 1590426.548 | | | ppb |
| ⌈ | Sb | 121 | 42752.863 | 0.412 | 0.022 | 19.93432 | 0.62 | ppb |
| \| | Ba | 135 | 49294.541 | 1.072 | 0.025 | 111.98396 | 1.12 | ppb |
| \| | Ba | 137 | 85308.353 | 0.979 | 0.043 | 112.29571 | 0.97 | ppb |
| ⌊> | Tb | 159 | 1976962.210 | 0.866 | 1976962.210 | | | ppb |
| ⌈ | Tl | 205 | 45052.948 | 1.752 | 0.037 | 9.80965 | 1.56 | ppb |
| \| | Pb | 206 | 14896.089 | 1.900 | 0.012 | 9.76019 | 1.81 | ppb |
| \| | Pb | 207 | 27237.038 | 0.798 | 0.022 | 9.65505 | 1.24 | ppb |
| \| | Pb | 208 | 43153.349 | 1.567 | 0.035 | 9.77499 | 1.86 | ppb |
| ⌊> | Bi | 209 | 1223154.933 | 0.437 | 1223154.933 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208325.608 | | ppb |
| ⌊ | Be | 9 | 1154.067 | 10.058554 | ppb |
| ⌈> | Sc | 45 | 830360.667 | | ppb |
| \| | V | 51 | 138221.542 | 46.095633 | ppb |
| \| | Cr | 52 | 60586.985 | 23.784948 | ppb |
| \| | Mn | 55 | 17429298.559 | 4581.117093 | ppb |
| \| | Co | 59 | 222418.290 | 73.702197 | ppb |
| \| | Ni | 60 | 25622.784 | 33.624776 | ppb |
| \| | Cu | 63 | 39628.365 | 23.738752 | ppb |
| \| | Cu | 65 | 19816.281 | 24.587901 | ppb |
| \| | Zn | 66 | 27186.906 | 59.885951 | ppb |
| \| | As | 75 | 5573.998 | 9.244026 | ppb |
| ⌊ | Se | 82 | 2321.603 | 48.791058 | ppb |
| ⌈ | Ag | 107 | 23170.145 | 10.274192 | ppb |
| \| | Ag | 109 | 21793.722 | 10.063495 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 5631.137 | 10.252270 | ppb |
| | In | 113 | 74592.166 | | ppb |
| > | In | 115 | 1565022.829 | | ppb |
| | Sb | 121 | 42570.420 | 19.924535 | ppb |
| | Ba | 135 | 49743.413 | 113.433046 | ppb |
| | Ba | 137 | 85935.667 | 113.551893 | ppb |
| > | Tb | 159 | 1969427.345 | | ppb |
| | Tl | 205 | 44845.330 | 9.811370 | ppb |
| | Pb | 206 | 14901.094 | 9.810388 | ppb |
| | Pb | 207 | 27478.999 | 9.787378 | ppb |
| | Pb | 208 | 43400.333 | 9.877791 | ppb |
| > | Bi | 209 | 1217322.671 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 203434.442 | | ppb |
| | Be | 9 | 1156.067 | 10.319277 | ppb |
| > | Sc | 45 | 805733.228 | | ppb |
| | V | 51 | 136183.314 | 46.808460 | ppb |
| | Cr | 52 | 58381.926 | 23.612742 | ppb |
| | Mn | 55 | 17740853.947 | 4805.536657 | ppb |
| | Co | 59 | 220161.159 | 75.184518 | ppb |
| | Ni | 60 | 26578.608 | 35.947883 | ppb |
| | Cu | 63 | 38761.645 | 23.930262 | ppb |
| | Cu | 65 | 19271.886 | 24.643536 | ppb |
| | Zn | 66 | 27206.961 | 61.767004 | ppb |
| | As | 75 | 5894.772 | 10.073440 | ppb |
| | Se | 82 | 2332.272 | 50.537945 | ppb |
| | Ag | 107 | 22632.249 | 9.811884 | ppb |
| | Ag | 109 | 21533.159 | 9.721632 | ppb |
| | Cd | 111 | 5291.120 | 9.418386 | ppb |
| | In | 113 | 75836.472 | | ppb |
| > | In | 115 | 1600661.364 | | ppb |
| | Sb | 121 | 42766.252 | 20.062647 | ppb |
| | Ba | 135 | 48712.356 | 111.337610 | ppb |
| | Ba | 137 | 84360.339 | 111.726784 | ppb |
| > | Tb | 159 | 1964897.348 | | ppb |
| | Tl | 205 | 45925.215 | 9.961984 | ppb |
| | Pb | 206 | 15176.508 | 9.906541 | ppb |
| | Pb | 207 | 27058.563 | 9.554881 | ppb |
| | Pb | 208 | 42388.516 | 9.564631 | ppb |
| > | Bi | 209 | 1227811.299 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 209867.346 | | ppb |
| | Be | 9 | 1314.086 | 11.374320 | ppb |
| > | Sc | 45 | 802838.755 | | ppb |
| | V | 51 | 137740.137 | 47.518578 | ppb |
| | Cr | 52 | 60727.835 | 24.694968 | ppb |
| | Mn | 55 | 17909288.579 | 4868.652277 | ppb |
| | Co | 59 | 221136.325 | 75.789956 | ppb |
| | Ni | 60 | 27126.743 | 36.822467 | ppb |
| | Cu | 63 | 39387.416 | 24.406716 | ppb |
| | Cu | 65 | 19806.262 | 25.421357 | ppb |
| | Zn | 66 | 27437.589 | 62.517140 | ppb |
| | As | 75 | 5807.740 | 9.960665 | ppb |
| | Se | 82 | 2386.285 | 51.913401 | ppb |
| | Ag | 107 | 22204.625 | 9.596741 | ppb |
| | Ag | 109 | 21706.867 | 9.769964 | ppb |
| | Cd | 111 | 5949.377 | 10.558089 | ppb |
| | In | 113 | 77096.049 | | ppb |
| > | In | 115 | 1605595.451 | | ppb |
| | Sb | 121 | 42921.917 | 19.815783 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 49427.854 | 111.181235 | ppb |
| | Ba | 137 | 85629.054 | 111.608449 | ppb |
| > | Tb | 159 | 1996561.937 | | ppb |
| | Tl | 205 | 44388.298 | 9.655597 | ppb |
| | Pb | 206 | 14610.666 | 9.563645 | ppb |
| | Pb | 207 | 27173.552 | 9.622888 | ppb |
| | Pb | 208 | 43671.198 | 9.882552 | ppb |
| > | Bi | 209 | 1224330.830 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 97.443 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 96.920 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 94.106 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.308 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 95.887 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|
| Mn 55 Upper, S, EEE | Mn | 55 | LDR exceeded |

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Wednesday, July 06, 2011 15:49:05
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCV.435

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212804.082 | 1.452 | 212804.082 | | | ppb |
| ⌊ | Be | 9 | 34775.036 | 1.509 | 0.163 | 297.86858 | 1.35 | ppb |
| ⌈> | Sc | 45 | 805709.266 | 1.219 | 805709.266 | | | ppb |
| \| | V | 51 | 870148.742 | 1.240 | 1.079 | 300.63898 | 0.11 | ppb |
| \| | Cr | 52 | 718802.271 | 0.670 | 0.889 | 302.31437 | 1.45 | ppb |
| \| | Mn | 55 | 1140221.498 | 0.440 | 1.415 | 308.80531 | 0.98 | ppb |
| \| | Co | 59 | 900655.236 | 1.065 | 1.118 | 307.68541 | 1.98 | ppb |
| \| | Ni | 60 | 227261.603 | 1.641 | 0.282 | 307.66942 | 0.63 | ppb |
| \| | Cu | 63 | 495312.410 | 2.069 | 0.614 | 307.23876 | 0.92 | ppb |
| \| | Cu | 65 | 240960.970 | 1.032 | 0.299 | 309.31099 | 0.81 | ppb |
| \| | Zn | 66 | 135111.088 | 0.551 | 0.168 | 307.42355 | 1.35 | ppb |
| \| | As | 75 | 178852.488 | 0.585 | 0.222 | 305.21771 | 0.85 | ppb |
| ⌊ | Se | 82 | 13991.559 | 0.398 | 0.017 | 306.68781 | 1.13 | ppb |
| ⌈ | Ag | 107 | 723002.808 | 0.934 | 0.441 | 306.06880 | 1.11 | ppb |
| \| | Ag | 109 | 686069.831 | 0.401 | 0.418 | 302.36557 | 0.93 | ppb |
| \| | Cd | 111 | 173248.391 | 0.787 | 0.106 | 301.02693 | 0.61 | ppb |
| \| | In | 113 | 243983.897 | 0.389 | 0.105 | | | ppb |
| ⌊> | In | 115 | 1640541.139 | 0.561 | 1640541.139 | | | ppb |
| ⌈ | Sb | 121 | 662885.090 | 0.761 | 0.327 | 302.17124 | 2.08 | ppb |
| \| | Ba | 135 | 134976.159 | 0.265 | 0.067 | 299.16534 | 1.48 | ppb |
| \| | Ba | 137 | 235372.536 | 0.660 | 0.116 | 302.32970 | 2.00 | ppb |
| ⌊> | Tb | 159 | 2026767.873 | 1.635 | 2026767.873 | | | ppb |
| ⌈ | Tl | 205 | 1407086.283 | 1.589 | 1.131 | 301.67328 | 1.96 | ppb |
| \| | Pb | 206 | 469137.417 | 2.739 | 0.377 | 302.85164 | 2.62 | ppb |
| \| | Pb | 207 | 866796.923 | 1.624 | 0.697 | 302.67544 | 1.00 | ppb |
| \| | Pb | 208 | 1366564.140 | 1.165 | 1.099 | 304.82955 | 0.13 | ppb |
| ⌊> | Bi | 209 | 1243830.386 | 1.135 | 1243830.386 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215243.830 | | ppb |
| ⌊ | Be | 9 | 35376.464 | 299.569054 | ppb |
| ⌈> | Sc | 45 | 812899.835 | | ppb |
| \| | V | 51 | 877161.792 | 300.381405 | ppb |
| \| | Cr | 52 | 722848.173 | 301.292116 | ppb |
| \| | Mn | 55 | 1146002.309 | 307.601937 | ppb |
| \| | Co | 59 | 889748.711 | 301.227519 | ppb |
| \| | Ni | 60 | 228746.667 | 306.948868 | ppb |
| \| | Cu | 63 | 504643.191 | 310.279136 | ppb |
| \| | Cu | 65 | 243792.621 | 310.166664 | ppb |
| \| | Zn | 66 | 135768.777 | 306.156008 | ppb |
| \| | As | 75 | 180032.848 | 304.495419 | ppb |
| ⌊ | Se | 82 | 13961.740 | 303.293121 | ppb |
| ⌈ | Ag | 107 | 728471.021 | 309.852575 | ppb |
| \| | Ag | 109 | 689148.645 | 305.165495 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 173327.324 | 302.604572 | ppb |
| \| | In | 113 | 244021.434 | | ppb |
| \|> | In | 115 | 1632728.175 | | ppb |
| ⌈ | Sb | 121 | 664113.615 | 308.348237 | ppb |
| \| | Ba | 135 | 134644.394 | 303.982914 | ppb |
| ¦ | Ba | 137 | 235705.498 | 308.376526 | ppb |
| \|> | Tb | 159 | 1989427.483 | | ppb |
| ⌈ | Tl | 205 | 1381518.724 | 296.728264 | ppb |
| \| | Pb | 206 | 454535.576 | 293.975637 | ppb |
| \| | Pb | 207 | 855163.099 | 299.183011 | ppb |
| ¦ | Pb | 208 | 1361906.539 | 304.367737 | ppb |
| \|> | Bi | 209 | 1241473.872 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 209330.264 | | ppb |
| \| | Be | 9 | 34539.546 | 300.744760 | ppb |
| ⌈> | Sc | 45 | 794516.902 | | ppb |
| \| | V | 51 | 857724.181 | 300.521176 | ppb |
| \| | Cr | 52 | 720082.972 | 307.103580 | ppb |
| \| | Mn | 55 | 1137051.852 | 312.262347 | ppb |
| \| | Co | 59 | 904454.206 | 313.291670 | ppb |
| \| | Ni | 60 | 223019.459 | 306.187725 | ppb |
| \| | Cu | 63 | 484345.522 | 304.687164 | ppb |
| ¦ | Cu | 65 | 239135.506 | 311.281298 | ppb |
| \| | Zn | 66 | 135261.978 | 312.073497 | ppb |
| \| | As | 75 | 178042.459 | 308.096125 | ppb |
| \| | Se | 82 | 13957.067 | 310.222443 | ppb |
| ⌈ | Ag | 107 | 725084.347 | 305.058587 | ppb |
| ¦ | Ag | 109 | 683852.995 | 299.527851 | ppb |
| \| | Cd | 111 | 174570.023 | 301.460326 | ppb |
| \| | In | 113 | 244912.833 | | ppb |
| \|> | In | 115 | 1650675.942 | | ppb |
| ⌈ | Sb | 121 | 657337.125 | 295.799509 | ppb |
| \| | Ba | 135 | 134928.181 | 295.240296 | ppb |
| \| | Ba | 137 | 233678.756 | 296.306939 | ppb |
| \|> | Tb | 159 | 2052651.638 | | ppb |
| ⌈ | Tl | 205 | 1422995.711 | 308.227969 | ppb |
| \| | Pb | 206 | 474155.857 | 309.265592 | ppb |
| \| | Pb | 207 | 862788.684 | 304.409710 | ppb |
| ¦ | Pb | 208 | 1353493.363 | 305.051479 | ppb |
| \|> | Bi | 209 | 1231039.355 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 213838.151 | | ppb |
| \| | Be | 9 | 34409.098 | 293.291913 | ppb |
| ⌈> | Sc | 45 | 809711.060 | | ppb |
| \| | V | 51 | 875560.253 | 301.014358 | ppb |
| \| | Cr | 52 | 713475.669 | 298.547421 | ppb |
| \| | Mn | 55 | 1137610.335 | 306.551633 | ppb |
| ¦ | Co | 59 | 907762.791 | 308.537028 | ppb |
| \| | Ni | 60 | 230018.684 | 309.871661 | ppb |
| \| | Cu | 63 | 496948.517 | 306.749967 | ppb |
| \| | Cu | 65 | 239954.784 | 306.485008 | ppb |
| \| | Zn | 66 | 134302.509 | 304.041150 | ppb |
| \| | As | 75 | 178482.155 | 303.061577 | ppb |
| \| | Se | 82 | 14055.871 | 306.547861 | ppb |
| ⌈ | Ag | 107 | 715453.055 | 303.295234 | ppb |
| \| | Ag | 109 | 685207.853 | 302.403378 | ppb |
| \| | Cd | 111 | 171847.826 | 299.015892 | ppb |
| \| | In | 113 | 243017.424 | | ppb |
| \|> | In | 115 | 1638219.302 | | ppb |
| ⌈ | Sb | 121 | 667204.531 | 302.365981 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 135355.903 | 298.272820 | ppb |
| \| | Ba | 137 | 236733.354 | 302.305622 | ppb |
| _> | Tb | 159 | 2038224.499 | | ppb |
| ⌈ | Tl | 205 | 1416744.414 | 300.063599 | ppb |
| \| | Pb | 206 | 478720.817 | 305.313688 | ppb |
| \| | Pb | 207 | 882438.987 | 304.433590 | ppb |
| \| | Pb | 208 | 1384292.518 | 305.069434 | ppb |
| _> | Bi | 209 | 1258977.932 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 100.074 | | | |
| | Be | 9 | 99.290 | | | | |
| > | Sc | 45 | | 96.054 | | | |
| | V | 51 | 100.213 | | | | |
| | Cr | 52 | 100.771 | | | | |
| | Mn | 55 | 102.935 | | | | |
| | Co | 59 | 102.562 | | | | |
| | Ni | 60 | 102.556 | | | | |
| | Cu | 63 | 102.413 | | | | |
| | Cu | 65 | 103.104 | | | | |
| | Zn | 66 | 102.475 | | | | |
| | As | 75 | 101.739 | | | | |
| | Se | 82 | 102.229 | | | | |
| | Ag | 107 | 102.023 | | | | |
| | Ag | 109 | 100.789 | | | | |
| | Cd | 111 | 100.342 | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 97.072 | | | |
| | Sb | 121 | 100.724 | | | | |
| | Ba | 135 | 99.722 | | | | |
| | Ba | 137 | 100.777 | | | | |
| > | Tb | 159 | | 97.709 | | | |
| | Tl | 205 | 100.558 | | | | |
| | Pb | 206 | 100.951 | | | | |
| | Pb | 207 | 100.892 | | | | |
| | Pb | 208 | 101.610 | | | | |
| > | Bi | 209 | | 97.508 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Wednesday, July 06, 2011 15:50:31
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCB.436

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212119.775 | 1.465 | 212119.775 | | | ppb |
| ⌊ | Be | 9 | 10.667 | 57.282 | 0.000 | 0.05139 | 100.44 | ppb |
| ⌈> | Sc | 45 | 815651.016 | 0.261 | 815651.016 | | | ppb |
| \| | V | 51 | 767.130 | 8.291 | -0.000 | -0.02476 | 88.43 | ppb |
| \| | Cr | 52 | 2539.656 | 2.522 | 0.000 | 0.03735 | 72.31 | ppb |
| \| | Mn | 55 | 1140.065 | 9.489 | 0.001 | 0.21572 | 13.30 | ppb |
| \| | Co | 59 | 115.334 | 11.546 | 0.000 | 0.01923 | 23.25 | ppb |
| \| | Ni | 60 | 30.000 | 22.222 | 0.000 | 0.00111 | 803.47 | ppb |
| \| | Cu | 63 | 195.557 | 9.388 | -0.000 | -0.00397 | 282.96 | ppb |
| \| | Cu | 65 | 110.001 | 21.212 | 0.000 | 0.03816 | 78.46 | ppb |
| \| | Zn | 66 | 77.778 | 15.051 | 0.000 | 0.01211 | 216.57 | ppb |
| \| | As | 75 | 33.002 | 83.902 | 0.000 | 0.07095 | 66.08 | ppb |
| ⌊ | Se | 82 | 42.445 | 11.789 | 0.000 | 0.22706 | 47.76 | ppb |
| ⌈ | Ag | 107 | 52.222 | 29.482 | 0.000 | 0.01464 | 46.07 | ppb |
| \| | Ag | 109 | 53.333 | 22.535 | 0.000 | 0.01902 | 27.69 | ppb |
| \| | Cd | 111 | 13.970 | 34.730 | 0.000 | 0.02025 | 42.73 | ppb |
| \| | In | 113 | 70744.381 | 1.214 | 0.000 | | | ppb |
| ⌊> | In | 115 | 1620897.745 | 0.559 | 1620897.745 | | | ppb |
| ⌈ | Sb | 121 | 471.678 | 7.216 | 0.000 | 0.17599 | 8.92 | ppb |
| \| | Ba | 135 | 31.333 | 20.518 | 0.000 | 0.05245 | 27.73 | ppb |
| \| | Ba | 137 | 53.333 | 14.197 | 0.000 | 0.03763 | 26.37 | ppb |
| ⌊> | Tb | 159 | 1975836.615 | 0.111 | 1975836.615 | | | ppb |
| ⌈ | Tl | 205 | 111.667 | 11.268 | 0.000 | 0.01149 | 21.01 | ppb |
| \| | Pb | 206 | 58.334 | 40.507 | 0.000 | 0.01829 | 79.77 | ppb |
| \| | Pb | 207 | 101.667 | 32.746 | 0.000 | 0.01747 | 63.12 | ppb |
| \| | Pb | 208 | 178.334 | 35.502 | 0.000 | 0.02478 | 54.26 | ppb |
| ⌊> | Bi | 209 | 1256369.410 | 1.171 | 1256369.410 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 215595.281 | | ppb |
| ⌊ | Be | 9 | 16.000 | 0.095280 | ppb |
| ⌈> | Sc | 45 | 816799.157 | | ppb |
| \| | V | 51 | 695.452 | -0.049589 | ppb |
| \| | Cr | 52 | 2602.339 | 0.061939 | ppb |
| \| | Mn | 55 | 1050.055 | 0.191249 | ppb |
| \| | Co | 59 | 130.001 | 0.024118 | ppb |
| \| | Ni | 60 | 36.667 | 0.009956 | ppb |
| \| | Cu | 63 | 176.668 | -0.015707 | ppb |
| \| | Cu | 65 | 110.001 | 0.037917 | ppb |
| \| | Zn | 66 | 66.667 | -0.013078 | ppb |
| \| | As | 75 | 17.535 | 0.044760 | ppb |
| ⌊ | Se | 82 | 37.333 | 0.115009 | ppb |
| ⌈ | Ag | 107 | 43.333 | 0.010746 | ppb |
| \| | Ag | 109 | 66.667 | 0.024890 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 14.635 | 0.021314 | ppb |
| | In | 113 | 69782.634 | | ppb |
| > | In | 115 | 1625991.689 | | ppb |
| | Sb | 121 | 510.013 | 0.193713 | ppb |
| | Ba | 135 | 36.000 | 0.063001 | ppb |
| | Ba | 137 | 62.000 | 0.048982 | ppb |
| > | Tb | 159 | 1977593.294 | | ppb |
| | Tl | 205 | 125.001 | 0.013983 | ppb |
| | Pb | 206 | 85.000 | 0.034718 | ppb |
| | Pb | 207 | 140.001 | 0.030164 | ppb |
| | Pb | 208 | 250.002 | 0.039976 | ppb |
| > | Bi | 209 | 1273336.851 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 211154.010 | | ppb |
| | Be | 9 | 4.000 | -0.005473 | ppb |
| > | Sc | 45 | 816956.244 | | ppb |
| | V | 51 | 816.834 | -0.008235 | ppb |
| | Cr | 52 | 2474.306 | 0.008451 | ppb |
| | Mn | 55 | 1260.079 | 0.247304 | ppb |
| | Co | 59 | 104.001 | 0.015350 | ppb |
| | Ni | 60 | 23.333 | -0.007859 | ppb |
| | Cu | 63 | 213.336 | 0.006714 | ppb |
| | Cu | 65 | 86.667 | 0.008341 | ppb |
| | Zn | 66 | 90.000 | 0.039277 | ppb |
| | As | 75 | 16.501 | 0.043014 | ppb |
| | Se | 82 | 47.333 | 0.331502 | ppb |
| | Ag | 107 | 70.000 | 0.022425 | ppb |
| | Ag | 109 | 43.333 | 0.014701 | ppb |
| | Cd | 111 | 18.455 | 0.028323 | ppb |
| | In | 113 | 71434.234 | | ppb |
| > | In | 115 | 1610429.523 | | ppb |
| | Sb | 121 | 445.010 | 0.163792 | ppb |
| | Ba | 135 | 24.000 | 0.035861 | ppb |
| | Ba | 137 | 50.000 | 0.033327 | ppb |
| > | Tb | 159 | 1973373.764 | | ppb |
| | Tl | 205 | 100.001 | 0.009164 | ppb |
| | Pb | 206 | 50.000 | 0.013273 | ppb |
| | Pb | 207 | 85.000 | 0.011978 | ppb |
| | Pb | 208 | 155.001 | 0.019945 | ppb |
| > | Bi | 209 | 1248537.503 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 209610.033 | | ppb |
| | Be | 9 | 12.000 | 0.064356 | ppb |
| > | Sc | 45 | 813197.649 | | ppb |
| | V | 51 | 789.104 | -0.016448 | ppb |
| | Cr | 52 | 2542.323 | 0.041646 | ppb |
| | Mn | 55 | 1110.062 | 0.208597 | ppb |
| | Co | 59 | 112.001 | 0.018220 | ppb |
| | Ni | 60 | 30.000 | 0.001229 | ppb |
| | Cu | 63 | 196.669 | -0.002931 | ppb |
| | Cu | 65 | 133.334 | 0.068219 | ppb |
| | Zn | 66 | 76.667 | 0.010139 | ppb |
| | As | 75 | 64.969 | 0.125083 | ppb |
| | Se | 82 | 42.667 | 0.234672 | ppb |
| | Ag | 107 | 43.333 | 0.010743 | ppb |
| | Ag | 109 | 50.000 | 0.017476 | ppb |
| | Cd | 111 | 8.820 | 0.011116 | ppb |
| | In | 113 | 71016.273 | | ppb |
| > | In | 115 | 1626272.023 | | ppb |
| | Sb | 121 | 460.011 | 0.170469 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 34.000 | 0.058499 | ppb |
| \| | Ba | 137 | 48.000 | 0.030587 | ppb |
| \> | Tb | 159 | 1976542.788 | | ppb |
| ⌈ | Tl | 205 | 110.001 | 0.011324 | ppb |
| ¦ | Pb | 206 | 40.000 | 0.006868 | ppb |
| \| | Pb | 207 | 80.000 | 0.010268 | ppb |
| \| | Pb | 208 | 130.000 | 0.014420 | ppb |
| \> | Bi | 209 | 1247233.876 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| > | Li | 6 | | 99.752 | | | |
| | Be | 9 | | | | | |
| > | Sc | 45 | | 97.239 | | | |
| | V | 51 | | | | | |
| | Cr | 52 | | | | | |
| | Mn | 55 | | | | | |
| | Co | 59 | | | | | |
| | Ni | 60 | | | | | |
| | Cu | 63 | | | | | |
| | Cu | 65 | | | | | |
| | Zn | 66 | | | | | |
| | As | 75 | | | | | |
| | Se | 82 | | | | | |
| | Ag | 107 | | | | | |
| | Ag | 109 | | | | | |
| | Cd | 111 | | | | | |
| | In | 113 | | | | | |
| > | In | 115 | | 95.909 | | | |
| | Sb | 121 | | | | | |
| | Ba | 135 | | | | | |
| | Ba | 137 | | | | | |
| > | Tb | 159 | | 95.254 | | | |
| | Tl | 205 | | | | | |
| | Pb | 206 | | | | | |
| | Pb | 207 | | | | | |
| | Pb | 208 | | | | | |
| > | Bi | 209 | | 98.491 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: 1107005-02

Sample Date/Time: Wednesday, July 06, 2011 15:51:59
Sample Type: Sample
Sample Description: 5WC22
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\5WC22.437

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 199165.901 | 0.902 | 199165.901 | | | ppb |
| ⌊ | Be | 9 | 8.000 | 25.000 | 0.000 | 0.03331 | 56.45 | ppb |
| ⌈> | Sc | 45 | 781311.579 | 0.194 | 781311.579 | | | ppb |
| ⌈ | V | 51 | 3229.251 | 12.077 | 0.003 | 0.86500 | 16.33 | ppb |
| ⌈ | Cr | 52 | 5837.037 | 2.720 | 0.004 | 1.51861 | 4.32 | ppb |
| ⌈ | Mn | 55 | 5924018.616 | 0.953 | 7.582 | 1654.74620 | 0.77 | ppb |
| ⌈ | Co | 59 | 6037.156 | 2.088 | 0.008 | 2.10701 | 2.19 | ppb |
| ⌈ | Ni | 60 | 3822.953 | 1.880 | 0.005 | 5.29889 | 1.74 | ppb |
| ⌈ | Cu | 63 | 4797.818 | 1.806 | 0.006 | 2.94663 | 2.05 | ppb |
| ⌈ | Cu | 65 | 3003.785 | 3.998 | 0.004 | 3.87619 | 4.30 | ppb |
| ⌈ | Zn | 66 | 3302.768 | 2.741 | 0.004 | 7.59018 | 2.83 | ppb |
| ⌈ | As | 75 | 103.036 | 10.831 | 0.000 | 0.19657 | 10.15 | ppb |
| ⌊ | Se | 82 | 62.222 | 4.056 | 0.000 | 0.71563 | 8.30 | ppb |
| ⌈ | Ag | 107 | 37.778 | 22.205 | 0.000 | 0.00920 | 38.54 | ppb |
| ⌈ | Ag | 109 | 35.556 | 28.641 | 0.000 | 0.01194 | 41.99 | ppb |
| ⌈ | Cd | 111 | 105.337 | 30.628 | 0.000 | 0.19060 | 32.20 | ppb |
| ⌈ | In | 113 | 68143.065 | 0.922 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1543914.275 | 1.360 | 1543914.275 | | | ppb |
| ⌈ | Sb | 121 | 308.338 | 20.015 | 0.000 | 0.10476 | 27.50 | ppb |
| ⌈ | Ba | 135 | 10367.373 | 2.100 | 0.005 | 24.41961 | 2.83 | ppb |
| ⌈ | Ba | 137 | 17620.845 | 0.939 | 0.009 | 24.03922 | 2.26 | ppb |
| ⌊> | Tb | 159 | 1905862.636 | 1.398 | 1905862.636 | | | ppb |
| ⌈ | Tl | 205 | 283.337 | 12.766 | 0.000 | 0.05172 | 16.40 | ppb |
| ⌈ | Pb | 206 | 226.669 | 8.915 | 0.000 | 0.13495 | 9.15 | ppb |
| ⌈ | Pb | 207 | 405.004 | 3.704 | 0.000 | 0.13118 | 4.75 | ppb |
| ⌈ | Pb | 208 | 705.015 | 3.250 | 0.001 | 0.15096 | 4.91 | ppb |
| ⌊> | Bi | 209 | 1182692.501 | 1.393 | 1182692.501 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 201236.639 | | ppb |
| ⌊ | Be | 9 | 6.000 | 0.014346 | ppb |
| ⌈> | Sc | 45 | 781185.546 | | ppb |
| ⌈ | V | 51 | 3262.705 | 0.876940 | ppb |
| ⌈ | Cr | 52 | 5697.623 | 1.458401 | ppb |
| ⌈ | Mn | 55 | 5938190.059 | 1658.987944 | ppb |
| ⌈ | Co | 59 | 6175.907 | 2.156214 | ppb |
| ⌈ | Ni | 60 | 3767.376 | 5.222224 | ppb |
| ⌈ | Cu | 63 | 4747.793 | 2.915042 | ppb |
| ⌈ | Cu | 65 | 3027.125 | 3.907531 | ppb |
| ⌈ | Zn | 66 | 3407.247 | 7.836679 | ppb |
| ⌈ | As | 75 | 107.761 | 0.204894 | ppb |
| ⌊ | Se | 82 | 64.000 | 0.756074 | ppb |
| ⌈ | Ag | 107 | 30.000 | 0.005930 | ppb |
| ⌈ | Ag | 109 | 46.667 | 0.017421 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 124.550 | 0.228985 | ppb |
| | In | 113 | 68438.392 | | ppb |
| > | In | 115 | 1521615.677 | | ppb |
| | Sb | 121 | 325.005 | 0.110788 | ppb |
| | Ba | 135 | 10423.430 | 24.202009 | ppb |
| | Ba | 137 | 17527.347 | 23.570167 | ppb |
| > | Tb | 159 | 1933029.140 | | ppb |
| | Tl | 205 | 260.003 | 0.047027 | ppb |
| | Pb | 206 | 230.003 | 0.138871 | ppb |
| | Pb | 207 | 420.004 | 0.138236 | ppb |
| | Pb | 208 | 730.016 | 0.158515 | ppb |
| > | Bi | 209 | 1170730.830 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198243.743 | | ppb |
| | Be | 9 | 10.000 | 0.051949 | ppb |
| > | Sc | 45 | 779863.066 | | ppb |
| | V | 51 | 3601.452 | 0.999946 | ppb |
| | Cr | 52 | 5803.684 | 1.508842 | ppb |
| | Mn | 55 | 5861831.172 | 1640.431213 | ppb |
| | Co | 59 | 6005.803 | 2.099872 | ppb |
| | Ni | 60 | 3797.388 | 5.273129 | ppb |
| | Cu | 63 | 4897.866 | 3.016414 | ppb |
| | Cu | 65 | 3110.484 | 4.024912 | ppb |
| | Zn | 66 | 3253.863 | 7.489521 | ppb |
| | As | 75 | 111.057 | 0.211026 | ppb |
| | Se | 82 | 63.334 | 0.743403 | ppb |
| | Ag | 107 | 36.667 | 0.008701 | ppb |
| | Ag | 109 | 33.333 | 0.010827 | ppb |
| | Cd | 111 | 123.370 | 0.223008 | ppb |
| | In | 113 | 67421.519 | | ppb |
| > | In | 115 | 1546819.771 | | ppb |
| | Sb | 121 | 240.003 | 0.073414 | ppb |
| | Ba | 135 | 10551.564 | 25.194466 | ppb |
| | Ba | 137 | 17811.849 | 24.632908 | ppb |
| > | Tb | 159 | 1879767.396 | | ppb |
| | Tl | 205 | 325.005 | 0.061509 | ppb |
| | Pb | 206 | 205.002 | 0.121109 | ppb |
| | Pb | 207 | 390.004 | 0.126473 | ppb |
| | Pb | 208 | 700.015 | 0.150679 | ppb |
| > | Bi | 209 | 1175869.567 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 198017.322 | | ppb |
| | Be | 9 | 8.000 | 0.033642 | ppb |
| > | Sc | 45 | 782886.125 | | ppb |
| | V | 51 | 2823.597 | 0.718127 | ppb |
| | Cr | 52 | 6009.805 | 1.588583 | ppb |
| | Mn | 55 | 5972034.618 | 1664.819438 | ppb |
| | Co | 59 | 5929.758 | 2.064953 | ppb |
| | Ni | 60 | 3904.095 | 5.401313 | ppb |
| | Cu | 63 | 4747.793 | 2.908441 | ppb |
| | Cu | 65 | 2873.746 | 3.696139 | ppb |
| | Zn | 66 | 3247.194 | 7.444350 | ppb |
| | As | 75 | 90.291 | 0.173803 | ppb |
| | Se | 82 | 59.334 | 0.647421 | ppb |
| | Ag | 107 | 46.667 | 0.012969 | ppb |
| | Ag | 109 | 26.667 | 0.007580 | ppb |
| | Cd | 111 | 68.090 | 0.119813 | ppb |
| | In | 113 | 68569.284 | | ppb |
| > | In | 115 | 1563307.377 | | ppb |
| | Sb | 121 | 360.006 | 0.130066 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 10127.125 | 23.862347 | ppb |
| \| | Ba | 137 | 17523.340 | 23.914593 | ppb |
| \> | Tb | 159 | 1904791.372 | | ppb |
| ⌈ | Tl | 205 | 265.004 | 0.046622 | ppb |
| \| | Pb | 206 | 245.003 | 0.144859 | ppb |
| \| | Pb | 207 | 405.004 | 0.128825 | ppb |
| \| | Pb | 208 | 685.015 | 0.143695 | ppb |
| \> | Bi | 209 | 1201477.107 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 93.661 | | | |
| ⌊ | Be | 9 | | | | | |
| ⌈> | Sc | 45 | | 93.145 | | | |
| \| | V | 51 | | | | | |
| \| | Cr | 52 | | | | | |
| \| | Mn | 55 | | | | | |
| \| | Co | 59 | | | | | |
| \| | Ni | 60 | | | | | |
| \| | Cu | 63 | | | | | |
| \| | Cu | 65 | | | | | |
| \| | Zn | 66 | | | | | |
| \| | As | 75 | | | | | |
| ⌊ | Se | 82 | | | | | |
| ⌈ | Ag | 107 | | | | | |
| \| | Ag | 109 | | | | | |
| \| | Cd | 111 | | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 91.354 | | | |
| ⌈ | Sb | 121 | | | | | |
| \| | Ba | 135 | | | | | |
| \| | Ba | 137 | | | | | |
| ⌊> | Tb | 159 | | 91.881 | | | |
| ⌈ | Tl | 205 | | | | | |
| \| | Pb | 206 | | | | | |
| \| | Pb | 207 | | | | | |
| \| | Pb | 208 | | | | | |
| ⌊> | Bi | 209 | | 92.715 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: LLCCV

Sample Date/Time: Wednesday, July 06, 2011 15:53:26
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\LLCCV.438

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214368.869 | 1.167 | 214368.869 | | | ppb |
| ⌊ | Be | 9 | 124.667 | 10.189 | 0.001 | 1.02040 | 10.89 | ppb |
| ⌈> | Sc | 45 | 798663.929 | 1.050 | 798663.929 | | | ppb |
| ⎢ | V | 51 | 14876.417 | 1.579 | 0.018 | 4.90420 | 2.71 | ppb |
| ⎢ | Cr | 52 | 7540.177 | 3.559 | 0.006 | 2.18791 | 3.68 | ppb |
| ⎢ | Mn | 55 | 4624.403 | 3.896 | 0.005 | 1.17439 | 4.00 | ppb |
| ⎢ | Co | 59 | 3079.808 | 4.322 | 0.004 | 1.04198 | 5.31 | ppb |
| ⎢ | Ni | 60 | 702.247 | 6.786 | 0.001 | 0.92067 | 7.95 | ppb |
| ⎢ | Cu | 63 | 3395.021 | 4.524 | 0.004 | 2.00194 | 5.21 | ppb |
| ⎢ | Cu | 65 | 1709.035 | 7.158 | 0.002 | 2.11340 | 8.38 | ppb |
| ⎢ | Zn | 66 | 1020.052 | 1.425 | 0.001 | 2.18003 | 2.53 | ppb |
| ⎢ | As | 75 | 601.258 | 7.299 | 0.001 | 1.04986 | 6.33 | ppb |
| ⌊ | Se | 82 | 259.337 | 3.159 | 0.000 | 5.05409 | 4.19 | ppb |
| ⌈ | Ag | 107 | 2373.615 | 4.064 | 0.001 | 1.00904 | 3.58 | ppb |
| ⎢ | Ag | 109 | 2282.483 | 1.855 | 0.001 | 1.01330 | 1.95 | ppb |
| ⎢ | Cd | 111 | 548.384 | 10.491 | 0.000 | 0.95946 | 9.72 | ppb |
| ⎢ | In | 113 | 71558.458 | 0.649 | 0.001 | | | ppb |
| ⌊> | In | 115 | 1621042.717 | 0.859 | 1621042.717 | | | ppb |
| ⌈ | Sb | 121 | 4364.286 | 1.867 | 0.002 | 1.99292 | 2.40 | ppb |
| ⎢ | Ba | 135 | 4110.178 | 1.590 | 0.002 | 9.31074 | 2.08 | ppb |
| ⎢ | Ba | 137 | 7408.077 | 1.297 | 0.004 | 9.71170 | 1.43 | ppb |
| ⌊> | Tb | 159 | 1979009.355 | 0.515 | 1979009.355 | | | ppb |
| ⌈ | Tl | 205 | 4439.319 | 3.430 | 0.004 | 0.93673 | 3.77 | ppb |
| ⎢ | Pb | 206 | 1485.110 | 2.694 | 0.001 | 0.93724 | 4.01 | ppb |
| ⎢ | Pb | 207 | 2703.518 | 2.207 | 0.002 | 0.92380 | 3.13 | ppb |
| ⎢ | Pb | 208 | 4410.584 | 1.525 | 0.003 | 0.96647 | 2.03 | ppb |
| ⌊> | Bi | 209 | 1247665.138 | 1.282 | 1247665.138 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 216545.484 | | ppb |
| ⌊ | Be | 9 | 132.001 | 1.071211 | ppb |
| ⌈> | Sc | 45 | 807951.967 | | ppb |
| ⎢ | V | 51 | 14679.950 | 4.775886 | ppb |
| ⎢ | Cr | 52 | 7829.064 | 2.273135 | ppb |
| ⎢ | Mn | 55 | 4631.072 | 1.161680 | ppb |
| ⎢ | Co | 59 | 2988.446 | 0.998324 | ppb |
| ⎢ | Ni | 60 | 650.021 | 0.838681 | ppb |
| ⎢ | Cu | 63 | 3403.913 | 1.982692 | ppb |
| ⎢ | Cu | 65 | 1633.467 | 1.990189 | ppb |
| ⎢ | Zn | 66 | 1010.051 | 2.130040 | ppb |
| ⎢ | As | 75 | 636.551 | 1.098403 | ppb |
| ⌊ | Se | 82 | 253.337 | 4.855676 | ppb |
| ⌈ | Ag | 107 | 2443.632 | 1.040596 | ppb |
| ⎢ | Ag | 109 | 2233.583 | 0.992835 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Cd | 111 | 556.561 | 0.975705 | ppb |
| \| | In | 113 | 72073.799 | | ppb |
| \|> | In | 115 | 1618801.719 | | ppb |
| ⌈ | Sb | 121 | 4400.968 | 2.018581 | ppb |
| \| | Ba | 135 | 4144.859 | 9.428618 | ppb |
| \| | Ba | 137 | 7334.689 | 9.655802 | ppb |
| \|> | Tb | 159 | 1970670.254 | | ppb |
| ⌈ | Tl | 205 | 4385.962 | 0.911965 | ppb |
| \| | Pb | 206 | 1445.104 | 0.898038 | ppb |
| \| | Pb | 207 | 2685.181 | 0.904021 | ppb |
| \| | Pb | 208 | 4430.586 | 0.956893 | ppb |
| \|> | Bi | 209 | 1265538.796 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 214925.083 | | ppb |
| \| | Be | 9 | 110.001 | 0.892989 | ppb |
| ⌈> | Sc | 45 | 791652.567 | | ppb |
| \| | V | 51 | 15136.701 | 5.040887 | ppb |
| \| | Cr | 52 | 7298.663 | 2.113182 | ppb |
| \| | Mn | 55 | 4440.986 | 1.135031 | ppb |
| \| | Co | 59 | 3232.522 | 1.104140 | ppb |
| \| | Ni | 60 | 713.359 | 0.944035 | ppb |
| \| | Cu | 63 | 3543.961 | 2.114519 | ppb |
| \| | Cu | 65 | 1850.171 | 2.316449 | ppb |
| \| | Zn | 66 | 1036.720 | 2.239033 | ppb |
| \| | As | 75 | 552.117 | 0.974073 | ppb |
| \| | Se | 82 | 256.003 | 5.029559 | ppb |
| ⌈ | Ag | 107 | 2263.589 | 0.969652 | ppb |
| \| | Ag | 109 | 2306.933 | 1.032277 | ppb |
| \| | Cd | 111 | 487.201 | 0.859132 | ppb |
| \| | In | 113 | 71429.199 | | ppb |
| \|> | In | 115 | 1608372.079 | | ppb |
| ⌈ | Sb | 121 | 4420.977 | 2.022391 | ppb |
| \| | Ba | 135 | 4150.861 | 9.416869 | ppb |
| \| | Ba | 137 | 7516.824 | 9.869698 | ppb |
| \|> | Tb | 159 | 1975981.351 | | ppb |
| ⌈ | Tl | 205 | 4320.933 | 0.921002 | ppb |
| \| | Pb | 206 | 1525.116 | 0.972974 | ppb |
| \| | Pb | 207 | 2770.194 | 0.956945 | ppb |
| \| | Pb | 208 | 4465.596 | 0.989021 | ppb |
| \|> | Bi | 209 | 1234702.388 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 211636.041 | | ppb |
| \| | Be | 9 | 132.001 | 1.096989 | ppb |
| ⌈> | Sc | 45 | 796387.252 | | ppb |
| \| | V | 51 | 14812.599 | 4.895816 | ppb |
| \| | Cr | 52 | 7492.806 | 2.177427 | ppb |
| \| | Mn | 55 | 4801.152 | 1.226458 | ppb |
| \| | Co | 59 | 3018.455 | 1.023478 | ppb |
| \| | Ni | 60 | 743.361 | 0.979290 | ppb |
| \| | Cu | 63 | 3237.191 | 1.908606 | ppb |
| \| | Cu | 65 | 1643.468 | 2.033555 | ppb |
| \| | Zn | 66 | 1013.385 | 2.171013 | ppb |
| \| | As | 75 | 615.107 | 1.077114 | ppb |
| \| | Se | 82 | 268.670 | 5.277047 | ppb |
| ⌈ | Ag | 107 | 2413.625 | 1.016866 | ppb |
| \| | Ag | 109 | 2306.933 | 1.014793 | ppb |
| \| | Cd | 111 | 601.391 | 1.043544 | ppb |
| \| | In | 113 | 71172.377 | | ppb |
| \|> | In | 115 | 1635954.353 | | ppb |
| ⌈ | Sb | 121 | 4270.912 | 1.937790 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 4034.814 | 9.086739 | ppb |
| | Ba | 137 | 7372.717 | 9.609613 | ppb |
| > | Tb | 159 | 1990376.462 | | ppb |
| | Tl | 205 | 4611.063 | 0.977209 | ppb |
| | Pb | 206 | 1485.110 | 0.940698 | ppb |
| | Pb | 207 | 2655.179 | 0.910432 | ppb |
| | Pb | 208 | 4335.569 | 0.953488 | ppb |
| > | Bi | 209 | 1242754.229 | | ppb |

# QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⎡> | Li | 6 | | 100.810 | | | |
| ⎣ | Be | 9 | 102.040 | | | | |
| ⎡> | Sc | 45 | | 95.214 | | | |
| ⎢ | V | 51 | 98.084 | | | | |
| ⎢ | Cr | 52 | 109.396 | | | | |
| ⎢ | Mn | 55 | 117.439 | | | | |
| ⎢ | Co | 59 | 104.198 | | | | |
| ⎢ | Ni | 60 | 92.067 | | | | |
| ⎢ | Cu | 63 | 100.097 | | | | |
| ⎢ | Cu | 65 | 105.670 | | | | |
| ⎢ | Zn | 66 | 109.001 | | | | |
| ⎢ | As | 75 | 104.986 | | | | |
| ⎣ | Se | 82 | 101.082 | | | | |
| ⎡ | Ag | 107 | 100.904 | | | | |
| ⎢ | Ag | 109 | 101.330 | | | | |
| ⎢ | Cd | 111 | 95.946 | | | | |
| ⎢ | In | 113 | | | | | |
| ⎣> | In | 115 | | 95.918 | | | |
| ⎡ | Sb | 121 | 99.646 | | | | |
| ⎢ | Ba | 135 | 93.107 | | | | |
| ⎢ | Ba | 137 | 97.117 | | | | |
| ⎣> | Tb | 159 | | 95.407 | | | |
| ⎡ | Tl | 205 | 93.673 | | | | |
| ⎢ | Pb | 206 | 93.724 | | | | |
| ⎢ | Pb | 207 | 92.380 | | | | |
| ⎢ | Pb | 208 | 96.647 | | | | |
| ⎣> | Bi | 209 | | 97.808 | | | |

# QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCV

Sample Date/Time: Wednesday, July 06, 2011 15:54:54
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCV.439

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208214.424 | 1.752 | 208214.424 | | | ppb |
| ⌊ | Be | 9 | 34429.855 | 2.228 | 0.165 | 301.40242 | 1.58 | ppb |
| ⌈> | Sc | 45 | 793760.910 | 1.739 | 793760.910 | | | ppb |
| \| | V | 51 | 871156.956 | 1.807 | 1.096 | 305.52304 | 0.50 | ppb |
| \| | Cr | 52 | 719333.030 | 1.589 | 0.903 | 307.09044 | 0.98 | ppb |
| \| | Mn | 55 | 1131110.094 | 0.366 | 1.425 | 310.99297 | 1.89 | ppb |
| \| | Co | 59 | 895197.956 | 0.991 | 1.128 | 310.46419 | 2.45 | ppb |
| \| | Ni | 60 | 223551.561 | 1.609 | 0.282 | 307.32229 | 3.23 | ppb |
| \| | Cu | 63 | 491500.688 | 0.927 | 0.619 | 309.51920 | 1.09 | ppb |
| \| | Cu | 65 | 235993.494 | 1.085 | 0.297 | 307.56920 | 2.56 | ppb |
| \| | Zn | 66 | 132209.531 | 1.828 | 0.167 | 305.43779 | 3.46 | ppb |
| \| | As | 75 | 174800.795 | 0.692 | 0.220 | 302.83383 | 1.82 | ppb |
| ⌊ | Se | 82 | 13749.001 | 0.491 | 0.017 | 305.93350 | 1.60 | ppb |
| ⌈ | Ag | 107 | 711953.711 | 1.172 | 0.439 | 304.71331 | 2.21 | ppb |
| \| | Ag | 109 | 681632.894 | 1.143 | 0.420 | 303.67063 | 0.41 | ppb |
| \| | Cd | 111 | 168889.329 | 1.318 | 0.104 | 296.68279 | 2.04 | ppb |
| \| | In | 113 | 240431.180 | 0.917 | 0.105 | | | ppb |
| ⌊> | In | 115 | 1622882.918 | 1.165 | 1622882.918 | | | ppb |
| ⌈ | Sb | 121 | 652546.790 | 0.488 | 0.328 | 303.34021 | 0.89 | ppb |
| \| | Ba | 135 | 134734.424 | 1.658 | 0.068 | 304.55124 | 1.83 | ppb |
| \| | Ba | 137 | 233620.045 | 1.904 | 0.118 | 306.01564 | 2.08 | ppb |
| ⌊> | Tb | 159 | 1987121.926 | 0.770 | 1987121.926 | | | ppb |
| ⌈ | Tl | 205 | 1386112.441 | 0.118 | 1.139 | 303.64115 | 1.08 | ppb |
| \| | Pb | 206 | 455626.282 | 1.273 | 0.374 | 300.53749 | 1.35 | ppb |
| \| | Pb | 207 | 840035.778 | 0.753 | 0.690 | 299.74459 | 1.46 | ppb |
| \| | Pb | 208 | 1330819.030 | 1.161 | 1.093 | 303.32271 | 0.88 | ppb |
| ⌊> | Bi | 209 | 1217347.860 | 1.175 | 1217347.860 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212252.910 | | ppb |
| ⌊ | Be | 9 | 35211.885 | 302.377446 | ppb |
| ⌈> | Sc | 45 | 809413.346 | | ppb |
| \| | V | 51 | 887387.013 | 305.196549 | ppb |
| \| | Cr | 52 | 728735.271 | 305.067047 | ppb |
| \| | Mn | 55 | 1128555.375 | 304.222773 | ppb |
| \| | Co | 59 | 887499.406 | 301.760279 | ppb |
| \| | Ni | 60 | 220334.242 | 296.932729 | ppb |
| \| | Cu | 63 | 495215.648 | 305.792371 | ppb |
| \| | Cu | 65 | 233668.521 | 298.562962 | ppb |
| \| | Zn | 66 | 129486.275 | 293.239945 | ppb |
| \| | As | 75 | 175161.928 | 297.533527 | ppb |
| ⌊ | Se | 82 | 13793.506 | 300.923826 | ppb |
| ⌈ | Ag | 107 | 708163.987 | 304.079712 | ppb |
| \| | Ag | 109 | 682516.138 | 305.102965 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 171442.700 | 302.161014 | ppb |
| | In | 113 | 242930.346 | | ppb |
| > | In | 115 | 1617345.862 | | ppb |
| | Sb | 121 | 649941.419 | 300.329191 | ppb |
| | Ba | 135 | 136655.398 | 307.053378 | ppb |
| | Ba | 137 | 237329.231 | 309.021608 | ppb |
| > | Tb | 159 | 1998951.200 | | ppb |
| | Tl | 205 | 1387949.601 | 301.067797 | ppb |
| | Pb | 206 | 461807.652 | 301.643176 | ppb |
| | Pb | 207 | 844580.846 | 298.412732 | ppb |
| | Pb | 208 | 1348666.664 | 304.399649 | ppb |
| > | Bi | 209 | 1229275.915 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205161.186 | | ppb |
| | Be | 9 | 34399.063 | 305.608758 | ppb |
| > | Sc | 45 | 788535.123 | | ppb |
| | V | 51 | 870126.729 | 307.185717 | ppb |
| | Cr | 52 | 722657.076 | 310.550815 | ppb |
| | Mn | 55 | 1135884.716 | 314.308780 | ppb |
| | Co | 59 | 904897.767 | 315.823250 | ppb |
| | Ni | 60 | 222886.544 | 308.326854 | ppb |
| | Cu | 63 | 492870.616 | 312.405201 | ppb |
| | Cu | 65 | 238739.545 | 313.123929 | ppb |
| | Zn | 66 | 134096.438 | 311.731180 | ppb |
| | As | 75 | 173451.411 | 302.428690 | ppb |
| | Se | 82 | 13671.339 | 306.167702 | ppb |
| | Ag | 107 | 721523.446 | 311.740806 | ppb |
| | Ag | 109 | 673437.217 | 302.914382 | ppb |
| | Cd | 111 | 167874.904 | 297.710697 | ppb |
| | In | 113 | 238766.852 | | ppb |
| > | In | 115 | 1607361.556 | | ppb |
| | Sb | 121 | 656094.361 | 304.141872 | ppb |
| | Ba | 135 | 132283.193 | 298.178783 | ppb |
| | Ba | 137 | 228687.333 | 298.719735 | ppb |
| > | Tb | 159 | 1992583.001 | | ppb |
| | Tl | 205 | 1384833.716 | 307.339519 | ppb |
| | Pb | 206 | 454765.692 | 303.913566 | ppb |
| | Pb | 207 | 842712.644 | 304.639325 | ppb |
| | Pb | 208 | 1321987.193 | 305.278797 | ppb |
| > | Bi | 209 | 1201488.344 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207229.177 | | ppb |
| | Be | 9 | 33678.617 | 296.221059 | ppb |
| > | Sc | 45 | 783334.260 | | ppb |
| | V | 51 | 855957.125 | 304.186858 | ppb |
| | Cr | 52 | 706606.743 | 305.653452 | ppb |
| | Mn | 55 | 1128890.192 | 314.447345 | ppb |
| | Co | 59 | 893196.695 | 313.809030 | ppb |
| | Ni | 60 | 227433.895 | 316.707294 | ppb |
| | Cu | 63 | 486415.799 | 310.360032 | ppb |
| | Cu | 65 | 235572.416 | 311.020706 | ppb |
| | Zn | 66 | 133045.878 | 311.342253 | ppb |
| | As | 75 | 175789.047 | 308.539273 | ppb |
| | Se | 82 | 13782.158 | 310.708984 | ppb |
| | Ag | 107 | 706173.701 | 298.319416 | ppb |
| | Ag | 109 | 688945.328 | 302.994540 | ppb |
| | Cd | 111 | 167350.383 | 290.176655 | ppb |
| | In | 113 | 239596.341 | | ppb |
| > | In | 115 | 1643941.335 | | ppb |
| | Sb | 121 | 651604.591 | 305.549561 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Ba | 135 | 135264.681 | 308.421550 | ppb |
| | Ba | 137 | 234843.571 | 310.305575 | ppb |
| > | Tb | 159 | 1969831.577 | | ppb |
| | Tl | 205 | 1385554.005 | 302.516119 | ppb |
| | Pb | 206 | 450305.502 | 296.055743 | ppb |
| | Pb | 207 | 832813.845 | 296.181708 | ppb |
| | Pb | 208 | 1321803.233 | 300.289689 | ppb |
| > | Bi | 209 | 1221279.320 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | | 97.916 | | | |
| ⌊ | Be | 9 | 100.467 | | | | |
| ⌈> | Sc | 45 | | 94.629 | | | |
| \| | V | 51 | 101.841 | | | | |
| \| | Cr | 52 | 102.363 | | | | |
| \| | Mn | 55 | 103.664 | | | | |
| \| | Co | 59 | 103.488 | | | | |
| \| | Ni | 60 | 102.441 | | | | |
| \| | Cu | 63 | 103.173 | | | | |
| \| | Cu | 65 | 102.523 | | | | |
| \| | Zn | 66 | 101.813 | | | | |
| \| | As | 75 | 100.945 | | | | |
| ⌊ | Se | 82 | 101.978 | | | | |
| ⌈ | Ag | 107 | 101.571 | | | | |
| \| | Ag | 109 | 101.224 | | | | |
| \| | Cd | 111 | 98.894 | | | | |
| \| | In | 113 | | | | | |
| ⌊> | In | 115 | | 96.027 | | | |
| ⌈ | Sb | 121 | 101.113 | | | | |
| \| | Ba | 135 | 101.517 | | | | |
| \| | Ba | 137 | 102.005 | | | | |
| ⌊> | Tb | 159 | | 95.798 | | | |
| ⌈ | Tl | 205 | 101.214 | | | | |
| \| | Pb | 206 | 100.179 | | | | |
| \| | Pb | 207 | 99.915 | | | | |
| \| | Pb | 208 | 101.108 | | | | |
| ⌊> | Bi | 209 | | 95.432 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# EPA 6020 & EPA 6020A - Summary Report

## Sample ID: CCB

Sample Date/Time: Wednesday, July 06, 2011 15:56:20
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata1\Method\6020\6020AAAMETHOD.mth
Dataset File: C:\Elandata\DataSet\PEMSJCF062311\CCB.440

## *Concentration Results*

| | Analyte | Mass | Meas. Intens. Mean | Meas. Intens. RSD | Net Intens. Mean | Conc. Mean | Conc. RSD | Sample Unit |
|---|---|---|---|---|---|---|---|---|
| ⌈> | Li | 6 | 208627.590 | 1.789 | 208627.590 | | | ppb |
| ⌊ | Be | 9 | 6.667 | 69.282 | 0.000 | 0.01780 | 218.96 | ppb |
| ⌈> | Sc | 45 | 800483.871 | 1.844 | 800483.871 | | | ppb |
| \| | V | 51 | 1024.691 | 13.669 | 0.000 | 0.06971 | 67.55 | ppb |
| \| | Cr | 52 | 2731.040 | 4.008 | 0.000 | 0.13841 | 19.74 | ppb |
| \| | Mn | 55 | 718.359 | 10.656 | 0.000 | 0.10633 | 16.29 | ppb |
| \| | Co | 59 | 120.001 | 7.638 | 0.000 | 0.02157 | 13.74 | ppb |
| \| | Ni | 60 | 44.445 | 21.651 | 0.000 | 0.02156 | 61.02 | ppb |
| \| | Cu | 63 | 210.002 | 13.562 | 0.000 | 0.00722 | 231.31 | ppb |
| \| | Cu | 65 | 123.334 | 21.109 | 0.000 | 0.05836 | 62.42 | ppb |
| \| | Zn | 66 | 66.667 | 15.000 | -0.000 | -0.01014 | 211.15 | ppb |
| \| | As | 75 | 38.282 | 95.146 | 0.000 | 0.08158 | 77.00 | ppb |
| ⌊ | Se | 82 | 40.000 | 5.774 | 0.000 | 0.19120 | 34.52 | ppb |
| ⌈ | Ag | 107 | 64.445 | 28.488 | 0.000 | 0.02007 | 39.67 | ppb |
| \| | Ag | 109 | 67.778 | 12.377 | 0.000 | 0.02572 | 15.63 | ppb |
| \| | Cd | 111 | 17.668 | 52.784 | 0.000 | 0.02704 | 61.71 | ppb |
| \| | In | 113 | 69970.623 | 0.988 | -0.000 | | | ppb |
| ⌊> | In | 115 | 1608980.969 | 0.943 | 1608980.969 | | | ppb |
| ⌈ | Sb | 121 | 420.009 | 18.710 | 0.000 | 0.15309 | 24.28 | ppb |
| \| | Ba | 135 | 29.333 | 34.317 | 0.000 | 0.04835 | 47.79 | ppb |
| \| | Ba | 137 | 62.000 | 25.807 | 0.000 | 0.04958 | 42.96 | ppb |
| ⌊> | Tb | 159 | 1963580.864 | 0.110 | 1963580.864 | | | ppb |
| ⌈ | Tl | 205 | 125.001 | 12.000 | 0.000 | 0.01516 | 23.73 | ppb |
| \| | Pb | 206 | 65.000 | 7.692 | 0.000 | 0.02391 | 14.09 | ppb |
| \| | Pb | 207 | 113.334 | 6.739 | 0.000 | 0.02280 | 14.20 | ppb |
| \| | Pb | 208 | 163.334 | 4.676 | 0.000 | 0.02267 | 9.79 | ppb |
| ⌊> | Bi | 209 | 1219729.261 | 1.399 | 1219729.261 | | | ppb |

## *Raw Data*

Replicate 1

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| ⌈> | Li | 6 | 212788.106 | | ppb |
| ⌊ | Be | 9 | 12.000 | 0.062797 | ppb |
| ⌈> | Sc | 45 | 815493.805 | | ppb |
| \| | V | 51 | 1003.721 | 0.056121 | ppb |
| \| | Cr | 52 | 2856.408 | 0.169593 | ppb |
| \| | Mn | 55 | 805.032 | 0.126121 | ppb |
| \| | Co | 59 | 128.001 | 0.023513 | ppb |
| \| | Ni | 60 | 50.000 | 0.027871 | ppb |
| \| | Cu | 63 | 213.336 | 0.006948 | ppb |
| \| | Cu | 65 | 110.001 | 0.038140 | ppb |
| \| | Zn | 66 | 76.667 | 0.009652 | ppb |
| \| | As | 75 | -2.750 | 0.010609 | ppb |
| ⌊ | Se | 82 | 38.667 | 0.145242 | ppb |
| ⌈ | Ag | 107 | 73.334 | 0.024228 | ppb |
| \| | Ag | 109 | 76.667 | 0.030064 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| | Cd | 111 | 23.455 | 0.037653 | ppb |
| | In | 113 | 70749.392 | | ppb |
| > | In | 115 | 1592032.878 | | ppb |
| | Sb | 121 | 505.013 | 0.193354 | ppb |
| | Ba | 135 | 40.000 | 0.072847 | ppb |
| | Ba | 137 | 78.000 | 0.070903 | ppb |
| > | Tb | 159 | 1961158.945 | | ppb |
| | Tl | 205 | 140.001 | 0.018660 | ppb |
| | Pb | 206 | 70.000 | 0.027571 | ppb |
| | Pb | 207 | 120.000 | 0.025486 | ppb |
| | Pb | 208 | 165.001 | 0.023337 | ppb |
| > | Bi | 209 | 1209953.619 | | ppb |

Replicate 2

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 205575.567 | | ppb |
| | Be | 9 | 4.000 | -0.004536 | ppb |
| > | Sc | 45 | 785980.272 | | ppb |
| | V | 51 | 896.292 | 0.030914 | ppb |
| | Cr | 52 | 2654.352 | 0.126910 | ppb |
| | Mn | 55 | 660.022 | 0.093943 | ppb |
| | Co | 59 | 122.001 | 0.023034 | ppb |
| | Ni | 60 | 50.000 | 0.030383 | ppb |
| | Cu | 63 | 180.002 | -0.009346 | ppb |
| | Cu | 65 | 153.335 | 0.100418 | ppb |
| | Zn | 66 | 66.667 | -0.007208 | ppb |
| | As | 75 | 50.799 | 0.104102 | ppb |
| | Se | 82 | 42.667 | 0.266829 | ppb |
| | Ag | 107 | 43.333 | 0.010888 | ppb |
| | Ag | 109 | 60.000 | 0.022130 | ppb |
| | Cd | 111 | 22.640 | 0.035651 | ppb |
| | In | 113 | 69430.194 | | ppb |
| > | In | 115 | 1613634.509 | | ppb |
| | Sb | 121 | 405.008 | 0.145845 | ppb |
| | Ba | 135 | 20.000 | 0.026944 | ppb |
| | Ba | 137 | 46.000 | 0.028300 | ppb |
| > | Tb | 159 | 1965289.352 | | ppb |
| | Tl | 205 | 125.001 | 0.015358 | ppb |
| | Pb | 206 | 60.000 | 0.020939 | ppb |
| | Pb | 207 | 115.000 | 0.023696 | ppb |
| | Pb | 208 | 170.001 | 0.024488 | ppb |
| > | Bi | 209 | 1209807.415 | | ppb |

Replicate 3

| Internal Standard Symbol | Analyte | Mass | Meas. Intensity | Concentration | Report Unit |
|---|---|---|---|---|---|
| > | Li | 6 | 207519.097 | | ppb |
| | Be | 9 | 4.000 | -0.004868 | ppb |
| > | Sc | 45 | 799977.536 | | ppb |
| | V | 51 | 1174.060 | 0.122104 | ppb |
| | Cr | 52 | 2682.360 | 0.118723 | ppb |
| | Mn | 55 | 690.024 | 0.098922 | ppb |
| | Co | 59 | 110.001 | 0.018158 | ppb |
| | Ni | 60 | 33.333 | 0.006440 | ppb |
| | Cu | 63 | 236.669 | 0.024069 | ppb |
| | Cu | 65 | 106.667 | 0.036535 | ppb |
| | Zn | 66 | 56.667 | -0.032856 | ppb |
| | As | 75 | 66.796 | 0.130038 | ppb |
| | Se | 82 | 38.667 | 0.161520 | ppb |
| | Ag | 107 | 76.667 | 0.025079 | ppb |
| | Ag | 109 | 66.667 | 0.024977 | ppb |
| | Cd | 111 | 6.910 | 0.007806 | ppb |
| | In | 113 | 69732.285 | | ppb |
| > | In | 115 | 1621275.520 | | ppb |
| | Sb | 121 | 350.006 | 0.120074 | ppb |

| | | | | | |
|---|---|---|---|---|---|
| \| | Ba | 135 | 28.000 | 0.045260 | ppb |
| \| | Ba | 137 | 62.000 | 0.049534 | ppb |
| \> | Tb | 159 | 1964294.294 | | ppb |
| ⌈ | Tl | 205 | 110.001 | 0.011472 | ppb |
| \| | Pb | 206 | 65.000 | 0.023227 | ppb |
| \| | Pb | 207 | 105.000 | 0.019205 | ppb |
| \| | Pb | 208 | 155.001 | 0.020198 | ppb |
| \> | Bi | 209 | 1239426.748 | | ppb |

## QC Calculated Values

| | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---|---|---|---|---|---|---|
| ⎡> | Li | 6 | | 98.110 | | | |
| ⎣ | Be | 9 | | | | | |
| ⎡> | Sc | 45 | | 95.431 | | | |
| ⎢ | V | 51 | | | | | |
| ⎢ | Cr | 52 | | | | | |
| ⎢ | Mn | 55 | | | | | |
| ⎢ | Co | 59 | | | | | |
| ⎢ | Ni | 60 | | | | | |
| ⎢ | Cu | 63 | | | | | |
| ⎢ | Cu | 65 | | | | | |
| ⎢ | Zn | 66 | | | | | |
| ⎢ | As | 75 | | | | | |
| ⎣ | Se | 82 | | | | | |
| ⎡ | Ag | 107 | | | | | |
| ⎢ | Ag | 109 | | | | | |
| ⎢ | Cd | 111 | | | | | |
| ⎢ | In | 113 | | | | | |
| ⎣> | In | 115 | | 95.204 | | | |
| ⎡ | Sb | 121 | | | | | |
| ⎢ | Ba | 135 | | | | | |
| ⎢ | Ba | 137 | | | | | |
| ⎣> | Tb | 159 | | 94.663 | | | |
| ⎡ | Tl | 205 | | | | | |
| ⎢ | Pb | 206 | | | | | |
| ⎢ | Pb | 207 | | | | | |
| ⎢ | Pb | 208 | | | | | |
| ⎣> | Bi | 209 | | 95.618 | | | |

## QC Out of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|---|---|---|---|

# 4. Digestion and Distillation Logs

The following logs shall be submitted, as appropriate, for each preparation procedure: digestion logs for ICP-AES, ICP-MS, mercury preparations, and cyanide. The logs shall include: (1) date; (2) sample weights and volumes, with initial sample weight/volume and final volume clearly indicated; (3) sufficient information to unequivocally identify which QC samples (i.e., LCS, PB) correspond to each batch digested; (4) comments describing any significant sample changes or reactions which occur during preparation shall be entered in the log and noted in the SDG Narrative; (5) indication of pH less than 2 or greater than 12, as applicable; (6) identification of the sample preparer(s) [signature (s)].

# METALS/MERCURY PREPARATION LOG

Metals Method: 3005A / 6020A
Mercury Method: 7470A
Prepared By: JM

CompuChem
A Division Of
Liberty Analytical Corp.

Preparation Date: 07-05-11
Preparation Time: 1030
Batch Number: 1070509
Purple Water

| COMPUCHEM SAMPLE ID | CLIENT SAMPLE ID | SAMPLE TYPE | ICP Initial (mL) | ICP Final (mL) | HG Initial (mL) | HG Final (mL) | *Description Before | *Description After ICP | pH |
|---|---|---|---|---|---|---|---|---|---|
| 1070509-BLK1 | PBW | MB | 100 | 100 | | | CS / CL | CS / CL | N/A |
| 1070509-BS1 | LCSW | LCSW | 100 | | | | CS / CL | CS / CL | N/A |
| 1070509-BSD1 | LCSWD | LCSWD | 100 | | | | CS / CL | CS / CL | N/A |
| 1107004-01 | 7W13 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107004-02 | 7DUP | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107005-01 | 5WC21 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
| 1107005-02 | 5WC22 | SAMPLE | 100 | | | | CS / CL | CS / CL | C2 |
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Mercury Standards and QC S0 S0.2 S0.5S1 S5 S10 ICV ICB CRI CCV CCB

NOTE: All standards and QC for mercury were prepared at the same day as the associated samples. Refer to the attached. Standard/QC Preparation Log, with date matching the above preparation date, for preparation method and instruction.

| Record of Tempature/Time | | |
|---|---|---|
| Hot Block Temp In: | 95 | C |
| Hot Block Temp Out: | 85 | C |
| Hot Block Identifier | 1 | |
| Time Hg in water bath: | | |
| Time Hg out water bath: | | |
| Water Bath Temp In: | | C |
| Water Bath Temp Out: | | C |
| Water Bath Identifier: | | |

**MS Reference**
ICAP: 1.0mL Water Spike D
0.5 ml for 50 ml prep
Ref #:
HG: 1.0mL 100ppb Hg
Ref#:

**LCS Reference**
ICAP: 2.0 mL of ICV 0307
1.0 ml for 50 ml prep
Ref #: 0416010
HG: 3.0mL 100ppb Hg

* R=red, BL=blue, Y=yellow, G=green, O=orange, V=violet, W=white, CS=colorless, BR=brown, BK=black
GY= grey, F=fine, M=medium, C=coarse, CL=clear, CY=cloudy, OP=opaque

***Shading has been applied to unused portions of this worksheet as a substitute for 'Z-out'.***

"The presence of the Chemist's/analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations requires documentation by the chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation."

**Sample Verification Signature:** _____
This signature corroborates that the sample identification numbers appearing on the digestion cups are the same as those appearing on the field sample containers.

***Reviewed By:*** _____
***Date:*** 7-13-11

# Standards/QC Preparation Log for ICP/MS Metals

240

COMPUCHEM a division of Liberty Analytical Corp. WORKSHEET 1 YYY

Case/SDG: 110700Y

| REAGENTS | REF #[1] | MANUFACTURER | LOT # | EXPIRATION |
|---|---|---|---|---|
| Hydrochloric Acid - Distilled (HCl) | HCL-D-030911-DDD | Caledon | 74606 | 09/11 |
| Nitric Acid – Distilled ($HNO_3$) | NHO3-D-062411-JRR | JT Baker | J45042 | 12/11 |
| **STANDARDS** | | | | |
| ICV-1 (0307) | 0K16010 | EPA | 0307 | 11/16/15 |
| EPA LCS (0405) | OE20016 | EPA | 0405 | 05/17/15 |
| ERA PPT (540) | 1A07001 | ERA | 540 | 04/01/14 |
| Water Spike Sample D | 1F22003 | HIGH PURITY | 1116621 | 06/20/12 |
| | | | | |
| | | | | |

| STANDARD LOT NUMBER[2] | PREPARATION INSTRUCTIONS |
|---|---|
| $HNO_3$– 06 24 11 – JRR<br>Nitric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated $HNO_3$, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |
| HCl– 12 08 10 – DDD<br>Hydrochloric Acid | Place in a 100 mL volumetric flask:<br>25 mL of Deionized water<br>50 mL of **Distilled** concentrated HCl, Baker Instra-analyzed or equivalent<br>Dilute to 100 mL with DI water. Prepare as needed. |

Standard Solutions Prepared By: _____ Date: 2-5-11

Entered By: _____ Date: 2-5-11

Reviewed By: PM Date: 2-5-11

[1]Ref# = Logbook ID, Page number, and item number from Materials Receipt Log

[2]Standard Lot Number consists of standard ID, date prepared, and initials of preparer.

[3]Raw Material sub-boiled from specified lot # in accordance with SOP SPP.9.10

The presence of the Chemist's/Analyst's employee ID number, or signature, on this log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

9/13/05:jad

# Data Validation Report

## INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates performed a manual comprehensive review of the inorganic analytical results for the June 30, 2011 groundwater monitoring event at RFAAP HWMU7. Draper Aden Associates, of Blacksburg, Virginia, collected a groundwater sample and blind field duplicate from monitoring well 7W13. Monitoring well re-development was performed prior to sample collection. This event represents the first of two monitoring events to be conducted subsequent to the well re-development. These samples were analyzed for total arsenic and cobalt by SW-846 Method 6020A - inductively coupled plasma-mass spectrometry (ICP-MS). The following information and attached table summarize the inorganic data validation results.

Draper Aden Associates sent samples to CompuChem (CompuChem), a Division of Liberty Analytical, of Cary, North Carolina, for the inorganic analyses. On behalf of RFAAP, CompuChem submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results.

The evaluation of CompuChem's compliance with the method and validation of results presented here are based upon a limited review of QA/QC information including holding times, preservation procedures, instrument tuning, calibration and calibration verification data, QL standards, blank samples (method, calibration, and other blanks), interference check sample, pre-digestion matrix spike and matrix spike duplicate (MS/MSD), laboratory control sample (LCS), internal standard, and serial dilution results, where applicable. A review of transcriptions from instrument data to sample summary sheets was performed. Calculation checks were performed on a minimum ten percent of the data set. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

CompuChem received the samples on ice and in good condition, with custody seals intact. Applicable holding time and preservation criteria were met. The chain of custody was appropriately signed and data by field and laboratory personnel.

### *Method 6020A (ICP-MS)*

The revised certificate of analysis for Method 6020A was complete in its presentation and the data were of acceptable quality. The data set exhibited the laboratory's ability to achieve the reported QL for arsenic and cobalt, as outlined by the precision and accuracy data. QLs were equal to or less than the permit QL.

QC documentation criteria were met. Instrument tuning, calibration and calibration verification criteria were met. QL standards, blank samples, interference check sample (ICSAB), pre-digestion MS/MSD, LCS, internal standard and serial dilution results recovered within

control limits, except where noted below. No deviations from specific control limits and QA/QC controls were identified during the data review process.

The laboratory report was revised to correctly report results to at or above the permit QL for arsenic (10 µg/l) and cobalt (4 µg/l).

Arsenic and cobalt detections reported at or above the permit QL and/or results that required a data validation qualifier due to quality control deviations noted above are summarized on the attached table.

No results were rejected based on the data validation criteria.

*Summary of Detections:*

| ANALYTE | METHOD | SAMPLE ID | LAB RESULT | VALIDATED RESULT | QL | UNITS | DATA VALIDATION NOTES |
|---|---|---|---|---|---|---|---|
| Arsenic, Total | 6020A | 7W13 | U | U | 10 | µg/l | Result < Permit QL.. |
| Cobalt, Total | 6020A | 7W13 | 12.4 | 12.4 | 4 | µg/l | No action taken. |
| Arsenic, Total | 6020A | 7DUP | U | U | 10 | µg/l | Result < Permit QL. |
| Cobalt, Total | 6020A | 7DUP | 12.9 | 12.9 | 4 | µg/l | No action taken. RPD <10. |

**Data Validation Qualifiers:**
**QL** Denotes project quantitation limit.
**U** Denotes analyte not detected at or above QL.
**J** Denotes analyte reported above QL and associated result is estimated.
**UJ** Denotes analyte not detected at or above the QL and associated QL is estimated.
**UA** Denotes analyte detected above QL, but attributed to laboratory contamination. Sample QL adjusted to sample concentration. Final result not detected at or above adjusted sample QL.

## INORGANIC DATA EVALUATION FOR ICP-MS SW-846 METHOD 6020A

**Sample ID:** 7W13
**QC Samples:** Lab blanks, LCS/LCSD, serial dilution (7W13), Field duplicate (7DUP)
**Laboratory:** CompuChem, Cary, NC; SDG: 1107004

Does Laboratory analyte list correspond to analyte list requested? _X_ yes ___ no
Corresponds to As and Co, total, Preparation method: 3005A

"☑" denotes items reviewed. NR Denotes not reviewed.
See Data Validation Summary for additional comments.

### A. DOCUMENTION COMPLETENESS CRITERIA:

*Data Quality Objective: Representativeness*

- ☑ Chain of custody – Custody transfers must be signed and dated
- ☑ Chain of custody properly and completely filled out including sampler signatures, date and time of sampling, sample ID, analysis requested

### B. DETECTION LIMIT AND QUANTITATION LIMIT CRITERIA:

*Data Quality Objective: Analytical Sensitivity*

- ☑ Specific detection limit reported
- ☑ Specific quantitation limit reported
- ☑ Standard analyzed at the QL (LLQC), digested, 70-130% recovery, analyzed after MDL determination and as needed
- ☑ Method detection limit (MDL) less than QL
- ☑ Performance evaluation sample analyzed within 12 months

### C. INITIAL DEMONSTRATION OF CAPABILITY (IDOC) CRITERIA:

*Data Quality Objective: Laboratory Method Sensitivity*

- ☑ Analyst IDOC for J. Feldhaus submitted previously

### D. SAMPLE AND STANDARD PREPARATION CRITERIA:

*Data Quality Objective: Accuracy and Representativeness*

- ☑ Digestion prior to analysis
- ☑ Digestion method: 3005A
- ☑ Samples and standards matrix matched

### E. TECHNICAL HOLDING TIME / PRESERVATION REQUIREMENTS:

*Data Quality Objective: Representativeness*

- ☑ 6 month holding time, pH<2 with Nitric Acid ($HNO_3$)

### F. INSTRUMENT TUNE CRITERIA:

*Data Quality Objective: Verify Operating Conditions*

- ☑ Prior to calibration
- ☑ Relative Standard Deviation (RSD) </=5%
- ☑ Resolution < 0.9 amu full width at 10% peak height (or lower)

☑ Mass calibration </=0.1 amu difference from true value

## G. INITIAL CALIBRATION CRITERIA:

*Data Quality Objective: Laboratory Accuracy*

☑ 1 calibration blank and 3 standards,
☑ Linear curve fit with correlation coefficient $r \geq 0.998$
☑ Daily calibration following tuning and prior to sample analysis

## H. INITIAL CALIBRATION VERIFICATION (ICV) CRITERIA:

*Data Quality Objective: Laboratory Accuracy*

☑ Daily following initial calibration, independent/second source used for ICV
☑ ICV concentration near mid-point of calibration curve, 90-110% recovery
☑ Low level ICV (LLICV) – prior to analysis, at QL concentration, 70-130% recovery

## I. INITIAL CALIBRATION BLANK CRITERIA:

*Data Quality Objective: Laboratory Analytical Sensitivity/Instrument Drift/Contamination Evaluation*

☑ Daily following ICV
☑ Interference free

## J. CONTINUING CALIBRATION VERIFICATION (CCV) CRITERIA:

*Data Quality Objective: Laboratory Analytical Accuracy*

☑ CCV, prior to analysis, after every 10 samples, at end of analysis
☑ CCV recovery within 90-110%, mid-point of curve concentration
☑ Low level CCV (LLCCV), concentration at QL, prior to analysis, after every 10 samples, end of analysis (70-130% R)

## K. CONTINUING CALIBRATION BLANK CRITERIA:

*Data Quality Objective: Laboratory Analytical Sensitivity/Instrument Drift/Contamination Evaluation*

☑ Immediately after the CCV, 10 sample frequency
☑ Interference free

## L. BLANK CRITERIA:

*Data Quality Objective: Sensitivity/Instrument Drift/Contamination Evaluation*

N/A Trip Blank (check only if analyzed)
☑ Method/Other Lab Blanks (check only if analyzed), one per digestion batch
☑ Interference free

## M. INTERFERENCE CHECK SAMPLE (ICS) CRITERIA:

*Data Quality Objective: Analytical Accuracy/Verification of Isobaric Interference Corrections*

☑ At beginning of analytical run
☑ Recovery: 80-120% (ICSAB)

## N. MATRIX SPIKE DUPLICATE (MSD) CRITERIA:

*Data Quality Objective: Method Precision in Sample Matrix*

☑ All analytes, one MSD or sample duplicate per batch of 20 samples
☑ Spiked prior to sample preparation
☑ RPD $\leq 20$ between MS and MSD results or sample and duplicate results
☑ MSD analyte recovery 75-125%

## O. MATRIX SPIKE (MS) CRITERIA:

*Data Quality Objective: Method Accuracy in Sample Matrix*

- ☑ All analytes, one MS per digestion batch of 20 samples
- ☑ Spiked prior to sample preparation
- ☑ Recovery: 75-125%
- ☑ Post digestion spike if MS/MSD recoveries fail
- ☑ Recovery of post digestion spike analytes within 80-120%

## P. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

*Data Quality Objective: Laboratory Method Accuracy, Laboratory Performance*

- ☑ LCS for all target analytes, one LCS per 20 sample batch
- ☑ LCS concentration at approximately mid-point of analytical curve
- ☑ Recovery within 80-120% for all analytes

## Q. INTERNAL STANDARDS (IS) CRITERIA:

*Data Quality Objective: Analytical Accuracy in Sample Matrix*

- ☑ IS (Li6, Sc45, In115, Tb159, Bi209) intensities, IS added to each sample and QC sample
- ☑ % Relative intensity (RI) within 70-125%

## R. SERIAL DILUTION (DILUTION TEST) TEST CRITERIA:

*Data Quality Objective: Accuracy in Sample Matrix*

- ☑ <10% Difference (applicable when sample concentration >10X QL)

## S. SAMPLE QUANTITATION AND GENERAL REPORTING CRITERIA:

*Data Quality Objective: n/a*

- ☑ Sample results reported within instrument linear dynamic range
- ☑ Sample results reported to the detection limit
- ☑ Sample results/blind field duplicate RPD<10.

---

Draper Aden Associates conducted a limited data validation of the above noted data set using the data package provided by the analyzing laboratory. Data evaluation was conducted using SW-846 (Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, USEPA, SW-846, 3rd Edition-Final Update I, II/IIA and III) method requirements and CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004 USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010). Validation of this data set is limited to review of items detailed in this data review report.

**LIMITATIONS:**

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Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

**This Report has been prepared by:**

JCD 11.29.2011

Cheryl Daniel, Environmental Scientist Date:
2206 South Main Street, Blacksburg, Virginia 24060
540-552-0444, cdaniel@daa.com, www.daa.com

**This Report has been subjected to technical and quality review by:**

11.29.11

Janet C. Frazier, Project Manager Date:
2206 South Main Street, Blacksburg, Virginia 24060
540-552-0444, jfrazier@daa.com, www.daa.com

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Liberty Analytical Corp.

8/9/2011

RECEIVED
AUG 09 2011
By

Revised to Report Analyte & ATV Base GC.

Data to AS.G (Tutor)
7W13
7QIP
6/30/11 ent

JANET FRAZIER

DRAPER

2206 SOUTH MAIN STREET

BLACKSBURG, VA 24060

Subject:

Report of Data - Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOI WorkOrder: 1107004 MTL-REV · PAGES/FORMS

Attn.: JANET FRAZIER

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES ____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

## CompuChem, a division of Liberty Analytical

**Client:** DRAPER **Work:** 1107004

**Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVEN **Sdg:** 1107004

| Lab ID | Client ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| 1107004-01 | 7W13 | Water | 06/30/2011 06:45 | 07/01/2011 09:43 |
| 1107004-02 | 7DUP | Water | 06/30/2011 07:00 | 07/01/2011 09:43 |

# ANALYSES DATA PACKAGE COVER PAGE

**Client:** DRAPER

**Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

**Laboratory:** COMPUCHEM

**SDG:** 1107004

| Client Sample Id: | Lab Sample Id: |
|---|---|
| 7W13 | 1107004-01 |
| 7DUP | 1107004-02 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: for Susan Bass  Name: SUSAN BASS

Date: 8/9/11  Title: SENIOR CHEMIST

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AMENDED DATA

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

# SDG NARRATIVE
# SDG # 1107004
## Client: DRAPER
## Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

The indicated Sample Delivery Group (SDG) consisting of two (2) water samples was received into the laboratory information management system (LIMS) on July 1, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was found with the samples and the samples temperature was 1.6 degrees Celsius. Temperature was recorded by IR temperature gun.

The samples were prepared and analyzed in accordance with SW846 and 6020A methodology for the requested total metals arsenic and cobalt. All non-detects are reported to the reporting limit (RL) with a "U" flag qualifier.

### EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in µg/L as presented on Analysis Data Sheet data sheets from ICP/MS instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (µg/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Cobalt for sample 7W13

$$\frac{12.40392\ \mu g/L\ (C) \times 0.10\ L\ (F)}{0.10\ L\ (I)} = 12.404\ \mu g/L \text{ reported as } 12.4\ \mu g/L$$

### INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (LLICV, LLCCV, ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 methodology.

AMENDED DATA

## SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field samples were prepared and analyzed within the contract specified holding times.

## MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this sample.

A five-fold serial dilution of sample, CCN = SDI1107005-01 (7W13L) was performed in accordance with SW-846 requirements for ICP/MS analysis.

The adjusted sample concentrations were outside control limits.

The ICP/MS sample post digestion spike, CCN =1070509-PS1 (7W13A) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W. Bass
Senior Chemist
July 13, 2011
Revised August 9, 2011

AMENDED DATA

# ANALYSIS DATA SHEET

7W13

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1107004-01 % Solid: Matrix: Water Sampled: 06/30/11 Received: 07/01/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1G07001 | 7/6/11 15:39 |
| 7440-48-4 | Cobalt | 12.4 | 4.00 | 4.00 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:39 |

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# ANALYSIS DATA SHEET

7DUP

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR,2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1107004-02 % Solid: Matrix: Water Sampled: 06/30/11 Received: 07/01/11

| CAS NO. | Analyte | Conc. (ug/L) | MDL | RL | D.F. | Q | Method | Sequence | Analyzed |
|---|---|---|---|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | | 10.0 | 10.0 | 1 | U | EPA 6020A | 1G07001 | 7/6/11 15:43 |
| 7440-48-4 | Cobalt | 12.9 | 4.00 | 4.00 | 1 | | EPA 6020A | 1G07001 | 7/6/11 15:43 |

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AMENDED DATA

# SERIAL DILUTION

*EPA 6020A*

**7W13L**

Client: DRAPER SDG: 1107004 Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

Lab ID: 1G07001-SRD3 Matrix: Water Lab Source ID: 1107004-01 Source Sample: 7W13

Sequence: 1G07001 Dilution: 5

| Analyte | Initial Sample Result (I) | Serial Dilution Result (S) | % Difference | Q | Method | QC Limits % Difference |
|---|---|---|---|---|---|---|
| Arsenic | 10.00 U | 50.00 U | | | EPA 6020A | 10 |
| Cobalt | 12.40 | 20.00 U | | | EPA 6020A | 10 |

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# POST DIGEST SPIKE SAMPLE RECOVERY

*EPA 6020A*

7W13A

Laboratory: COMPUCHEM

Client: DRAPER

Matrix: Water

SDG: 1107004

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT

Laboratory ID: 1070509-PS1

Lab Source ID: 1107004-01

| Analyte | Spike Sample Result (SSR) (ug/L) | Sample Result (SR) (ug/L) | Spike Added (SA) (ug/L) | %R | Control Limit %R |
|---|---|---|---|---|---|
| **Arsenic** | 18.3 | U | **10.00** | **183** | **75 - 125** |
| Cobalt | 22.7 | 12.4 | 10.00 | 103 | 75 - 125 |

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AMENDED DATA

# METHOD DETECTION AND REPORTING LIMITS

*EPA 6020A*

**Laboratory:** COMPUCHEM **SDG:** 1107004

**Client:** DRAPER **Project:** RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

**Matrix:** Water **Instrument:** PEMS

| Analyte | MDL | RL | Units | Method |
|---|---|---|---|---|
| Arsenic | 10 | 10.00 | ug/L | EPA 6020A |
| Cobalt | 4 | 4.00 | ug/L | EPA 6020A |

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AMENDED DATA

# ICP-AES AND ICP-MS LINEAR RANGES (QUARTERLY)

Client: DRAPER

Project: RAAP 2nd QTR.2011 UNIT 7/RE-DEVELOPMENT EVENT

SDG: 1107004 Instrument: PEMS

| Analyte | Concentration ug/L | LR Date |
|---|---|---|
| Arsenic | 5000 | 04/21/2011 |
| Cobalt | 4000 | 04/21/2011 |

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AMENDED DATA

**Mann-Kendall Trend Test**
**Radford AAP HWMU-7**
**Dec-11**

Analyte: Cobalt
Well: 7WCA
Time Period: Semiannual data for the last 5 years (Second Qtr 2007 through Fourth Qtr 2011)
Time Period 1 corresponds to Second Qtr 2007 data and Time Period 10 corresponds to Fourth Qtr 2011 data

**Mann-Kendall Triangular Table**

| **Time** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | **Number of +signs (shown as 1)** | **Number of -signs (shown as -1)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Data** | 5 | 5 | 5.8 | 5.5 | 5.7 | 5 | 5 | 5 | 5 | 5 | | |
| 5 | | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 5 | | | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 5.8 | | | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 0 | 7 |
| 5.5 | | | | | 1 | -1 | -1 | -1 | -1 | -1 | 1 | 5 |
| 5.7 | | | | | | -1 | -1 | -1 | -1 | -1 | 0 | 5 |
| 5 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | | 0 | 0 | 0 | 0 |
| 5 | | | | | | | | | | 0 | 0 | 0 |
| | | | | | | | | | **Total Number of Signs** | | 7 | 17 |

From the Table Above, S = -10
From Table A-12a of Appendix A (Reference Document), critical value for sample size of 10 for $\alpha = 0.05$ is 21
The calculated S value is not greater than the critical value.
From Table A-12b of Appendix A for n=10, S=-10, p=0.216
Since S<0, but p=0.216 ≥ 0.05, the null hypothesis is not rejected.
Therefore there is not enough evidence to conclude that there is a decreasing trend in the data. Also, there is no evidence of an increasing trend.
**Trend Analysis shows evidence that the data are stable.**
The QL of 5 was substituted for data reported less than QL

Reference Document: USEPA Guidance for Data Quality Assessment - Statistical Methods for Practitioners, EPA QA/G-9S
EPA/240/B-06/003, February 2006

**Mann-Kendall Trend Test**
**Radford AAP HWMU-7**
**Dec-11**

Analyte: Cobalt
Well: 7W13
Time Period: Semiannual data for the last 5 years (Second Qtr 2007 through Fourth Qtr 2011)
Time Period 1 corresponds to Second Qtr 2007 data and Time Period 10 corresponds to Fourth Qtr 2011 data

**Mann-Kendall Triangular Table**

| **Time** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | **Number of +signs (shown as 1)** | **Number of -signs (shown as -1)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Data** | 8.7 | 8.9 | 5.8 | 12 | 8.2 | 10.7 | 11.2 | 16.4 | 9.41 | 11.7 | | |
| 8.7 | | 1 | -1 | 1 | -1 | 1 | 1 | 1 | 1 | 1 | 7 | 2 |
| 8.9 | | | -1 | 1 | -1 | 1 | 1 | 1 | 1 | 1 | 6 | 2 |
| 5.8 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 0 |
| 12 | | | | | -1 | -1 | -1 | 1 | -1 | -1 | 1 | 5 |
| 8.2 | | | | | | 1 | 1 | 1 | 1 | 1 | 5 | 0 |
| 10.7 | | | | | | | 1 | 1 | -1 | 1 | 3 | 1 |
| 11.2 | | | | | | | | 1 | -1 | 1 | 2 | 1 |
| 16.4 | | | | | | | | | -1 | -1 | 0 | 2 |
| 9.41 | | | | | | | | | | 1 | 1 | 0 |
| | | | | | | | | | **Total Number of Signs** | | 32 | 13 |

From the Table Above, S = 19
From Table A-12a of Appendix A (Reference Document), critical value for sample size of 10 for $\alpha = 0.05$ is 21
The calculated S value is not greater than the critical value.
From Table A-12b of Appendix A for n=10, S=19, p=0.054
Since S>0, but p=0.054 ≥ 0.05, the null hypothesis is not rejected.
Therefore there is not enough evidence to conclude that there is a decreasing trend in the data. Also, there is no evidence of an increasing trend.
**Trend Analysis shows evidence that the data are stable.**

Reference Document: USEPA Guidance for Data Quality Assessment - Statistical Methods for Practitioners, EPA QA/G-9S
EPA/240/B-06/003, February 2006

flow line vectors over the Potentiometric Surface Map, measuring their lengths, calculating the head differential over the distances measured, and dividing the head differential by the length of the flow line vectors. The three calculated gradients were then averaged to a single value. Using this method, the average groundwater hydraulic gradient across the site based on First Quarter 1999 groundwater elevations was calculated to be 0.017 ft/ft. Historical slug test data for the site yielded an average hydraulic conductivity of $5.25 \times 10^{-5}$ ft/second. This value is consistent with literature values for karst carbonate rock and for clayey, silty sand and gravel alluvium and residuum (Domenico and Schwartz, 1990).

The estimated groundwater velocity across the site was calculated to be approximately 0.193 ft/day or 70.4 ft/year, based on the following:

- an average hydraulic conductivity of $5.25 \times 10^{-5}$ ft/second;
- an average hydraulic gradient of 0.017 ft/ft; and
- an assumed effective porosity of 0.40, based on a representative range of porosities for karst carbonate rock, weathered residuum, and clayey, silty sand and gravel alluvium (Domenico and Schwartz, 1990).

The actual groundwater flow velocities in the carbonate bedrock may vary as much as one to two orders of magnitude from the velocity presented above, depending on water level conditions and the distribution of karst conduits.

## 3.3 HWMU-5 GROUNDWATER MONITORING ANALYTE LIST

The groundwater monitoring analyte list for HWMU-5 is presented in **Table 1 (Appendix B)**. The list represents the subset of the constituents listed in Appendix VIII of 40 CFR Part 261 that previously have been detected in the groundwater and/or that are reasonably expected to be in or derived from waste contained in HWMU-5. As discussed in Section 3.5.2 below, 11 inorganic constituents, three volatile organic constituents, and two explosive/ propellant constituents have been detected in the groundwater monitoring network for HWMU-5 at statistically significant concentrations above the Unit's calculated background concentrations.

The concentration limits established for the hazardous constituents also are listed in **Table 1**. The concentration limits represent either background concentrations calculated for the constituents in this GWQAR, Maximum Concentrations of Constituents for Ground-water Protection listed in Table 1 of 40 CFR 264.94, USEPA Drinking Water Standard Maximum Contaminant Levels (MCLs), or alternate concentration limits (ACLs) established by the VDEQ (July 1998).

As Alliant discussed with the VDEQ in the past, the reliability of previous laboratory analytical data - particularly dissolved metals data - appeared to be questionable in some cases. In an April 9, 1996 letter to C. Jake (Alliant), the VDEQ agreed that only total metals concentrations in groundwater would be measured, as described in a USEPA Region III guidance on groundwater sampling in karst terrain. Therefore, all references to metals concentrations in this GWQAR refer to <u>total</u> metals concentrations.

## 3.4 HWMU-5 GROUNDWATER BACKGROUND CONCENTRATIONS

Background concentrations were calculated for each constituent in the groundwater monitoring program using the analytical data from First Quarter 1996 through First Quarter 1999 for upgradient well 5W8B. The background concentration calculations were based on site wide 95% confidence, 95% coverage upper prediction intervals. The calculated background

concentrations are listed in **Table 2 (Appendix B)**. The background concentrations were used to construct the outermost closing contours on the Isoconcentration Maps **(Appendix A)**.

## 3.5 HWMU-5 STATISTICAL ANALYSIS

Statistical evaluations for HWMU-5 are performed annually and submitted to the VDEQ in accordance with the annual reporting requirements specified in 40 CFR 265.94. As part of this GWQAR, statistical evaluations were performed on First Quarter 1999 analytical data in accordance with the procedures and guidance provided in the following documents:

- Title 40 of the Code of Federal Regulations, 40 CFR 264.97 and 264.98;
- VDEQ Guidance for statistical analysis titled "Data Analysis Plan," undated;
- Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, April 1989;
- Addendum to Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, July 1992; and
- Statistical Methods for Groundwater Monitoring, Gibbons, R.D., 1994.

Statistical threshold values were computed for the 40 constituents for which HWMU-5 is currently monitored based on the concentrations of those constituents in upgradient (background) well 5W8B. All data starting with First Quarter 1996 to First Quarter 1999 were used for this purpose. The 1996 through 1999 monitoring data have been submitted previously to the VDEQ by Alliant in quarterly monitoring reports; therefore, the data are not listed in this GWQAR. Statistical comparisons were performed for the First Quarter 1999 data set. Comparison statistical analyses were performed for all constituents which were detected in any downgradient well during that event.

### 3.5.1 Background Data and Statistical Comparisons

Statistical analyses were performed using the analytical results from upgradient well 5W8B as background data. Based on the percentage of non-detects and the distribution of the background data, methods of statistical comparisons varied. Background average, standard deviation and other descriptive statistical data were computed for all constituents and are presented in **Appendix C**.

The constituents listed below were 100% non-detected in the background data. The background threshold levels (BTLs) for these constituents were established as equal to their detection limits (DL). Detections of these constituents in the downgradient wells during First Quarter 1999 were compared to these BTLs.

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Antimony | 13 | 100 | 3 | 3 |
| Arsenic | 13 | 100 | 1 | 1 |
| Selenium | 13 | 100 | 1 | 1 |
| Benzene | 13 | 100 | 0.1 | 0.1 |
| Chloromethane | 13 | 100 | 0.3 | 0.3 |
| 1,2-Dichloroethane | 13 | 100 | 0.1 | 0.1 |
| Tetrachloroethene | 13 | 100 | 0.1 | 0.1 |
| Toluene | 13 | 100 | 0.1 | 0.1 |
| trans-1,2-Dichloroethene | 13 | 100 | 0.1 | 0.1 |

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| 1,1,2-Trichloroethane | 13 | 100 | 0.5 | 0.5 |
| Trichlorofluoromethene | 13 | 100 | 0.5 | 0.5 |
| Vinyl chloride | 13 | 100 | 0.1 | 0.1 |
| Xylenes (total) | 13 | 100 | 0.1 | 0.1 |
| Bis (2-ethylhexyl) phthalate | 13 | 100 | 10 | 10 |
| Di-n-butyl phthalate | 9 | 100 | 5 | 5 |
| Diethyl phthalate | 13 | 100 | 5 | 5 |
| Diphenylamine | 13 | 100 | 10 | 10 |
| 2,6-Dinitrotoluene | 13 | 100 | 0.08 | 0.08 |

Non-parametric prediction intervals were computed for all of the constituents for which the data from background well 5W8B satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

The background threshold levels for these constituents were set as equal to their upper prediction limits (UPLs). The background and relevant statistical data for these constituents are summarized below. The confidence level and false positive rate were calculated based on the number of background data points available and number of future comparisons. For all constituents, the confidence level was determined to be equal to 0.920, and the false positive rate was equal to 0.080. Since the upper control limit of a non-parametric interval cannot be adjusted for multiple comparisons and inadequate number of background data, the number of resampling events required was adjusted to account for the high error rates inherent in those situations. The number of confirmation resamples required for all constituents is 2. The background and relevant statistical data for these constituents are summarized below. Associated statistical computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Beryllium | 13 | 54 | 0.2 | 0.7 |
| Cobalt | 13 | 46 | 1 | 7 |
| Copper | 13 | 54 | 1 | 18 |
| Lead | 13 | 69 | 1 | 10 |
| Mercury | 13 | 85 | 0.2 | 0.9 |
| Nickel | 13 | 69 | 15 | 106 |
| Silver | 13 | 85 | 0.2 | 2.3 |
| Thallium | 13 | 85 | 1 | 2 |
| Vanadium | 13 | 62 | 4 | 17 |
| Zinc | 13 | 38 | 5 | 75 |
| Acetone | 13 | 92 | 10.0 | 89 |
| Chloroform | 13 | 77 | 0.3 | 0.5 |
| Methylene chloride | 13 | 92 | 0.7 | 0.7 |
| Methylethyl ketone | 13 | 92 | 1.1 | 21.3 |
| Trichloroethene | 13 | 85 | 0.1 | 0.8 |
| 2,4-Dinitrotoluene | 13 | 92 | 0.08 | 0.18 |
| Total Organic Carbon | 13 | 69 | 1,000 | 253,000 |
| Total Organic Halides | 13 | 46 | 5 | 13.4 |

The following constituents exhibited normally distributed background data with less than 25% non-detects. One sided parametric prediction intervals were computed on the background data for all of these constituents. The UPLs for these constituents were set as their respective BTLs, with one exception. For pH, a two-sided parametric prediction interval was computed; therefore, the BTL for pH consisted of a range between the lower prediction limit (LPL) and the upper prediction limit. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. When adjusted for multiple comparisons of the background data, the minimum required false positive rate was below 1% (0.01). A 99% confidence level (0.01 false positive rate) was used for all individual comparisons, which with the most conservative assumptions provided a site-wide false positive rate of >0.05 for all constituents. The background and relevant statistical data for these constituents are summarized below. The prediction interval computations for these constituents are presented in **Appendix C**.

| **BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05 (individual comparisons false positive rate=0.01) BTL for pH = LPL – UPL of two-sided Prediction Interval** | | | | |
|---|---|---|---|---|
| **Parameter** | **Sample Size** | **% Non-Detects** | **DL (µg/l)** | **BTL (µg/l)** |
| Barium | 13 | 0 | 2 | 172.87 |
| Cadmium | 13 | 23 | 0.1 | 1.45 |
| Specific Conductivity | 8 | 0 | 1 µS/cm | 450 µS/cm |
| pH | 8 | 0 | 0.1 pH units | 2.79 - 7.47 pH units |

### 3.5.2 Results of Statistical Comparisons

The following table lists the constituents which were detected during the First Quarter 1999 event at concentrations exceeding their respective background threshold levels (BTLs), and the downgradient wells in which they were detected.

| Parameter | Monitoring Well(s) |
|---|---|
| Arsenic | S5W5 |
| Beryllium | 5W7B, 5WC21, S5W5 |
| Cadmium | 5WC21 |
| Cobalt | 5W5B, 5W7B, 5WC21, 5WC22, S5W7, 5W11A |
| Copper | 5W7B, 5WC21 |
| Lead | 5W7B, S5W5 |
| Nickel | 5WC21 |
| Selenium | 5W5B |
| Silver | 5W5B |
| Vanadium | 5W5B, 5W7B, S5W5 |
| Zinc | 5W7B, 5WC21, 5W11A |
| Chloroform | 5WC21 |
| Trichloroethene | 5W5B, 5WC21, 5WC22, 5WC23, 5W10A |
| Xylenes (total) | 5W5B |
| 2,4-Dinitrotoluene | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23 |
| 2,6-Dinitrotoluene | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23, 5W9A |
| Specific Conductivity | 5W5B, 5W7B, 5WC21, 5WC22, 5WC23, S5W7, 5W9A, 5W11A |
| pH | 5WC23, 5W10A, 5W11A |

**TABLE 2**
**HWMU-5**
**CALCULATED BACKGROUND VALUES**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Antimony | 3 |
| Arsenic | 1 |
| Barium | 172.87 |
| Beryllium | 0.7 |
| Cadmium | 1.45 |
| Cobalt | 7 |
| Copper | 18 |
| Lead | 10 |
| Mercury | 0.9 |
| Nickel | 106 |
| Selenium | 1 |
| Silver | 2.3 |
| Thallium | 2 |
| Vanadium | 17 |
| Zinc | 75 |
| Acetone | 89 |
| Benzene | 0.1 |
| Chloroform | 0.5 |
| Chloromethane | 0.3 |
| 1,2-Dichloroethane | 0.1 |
| Methylene chloride | 0.7 |
| Methylethylketone | 21.3 |
| Tetrachloroethene | 0.1 |
| Toluene | 0.1 |
| trans-1,2-Dichloroethene | 0.1 |
| 1,1,2-Trichloroethane | 0.5 |
| Trichloroethene | 0.8 |
| Trichlorofluoromethane | 0.5 |
| Vinyl chloride | 0.1 |
| Xylenes (total) | 0.1 |
| Bis (2-ethylhexyl) phthalate | 10 |
| Di-n-butylphthalate | 5 |
| Diethyl phthalate | 5 |
| Diphenylamine | 10 |
| 2,4-Dinitrotoluene | 0.18 |
| 2,6-Dinitrotoluene | 0.08 |
| Total Organic Carbon | 253,000 |
| Total Organic Halides | 13.4 |
| Specific Conductivity | 450 µS/cm |
| pH | 2.79 to 7.47 pH units |

April 1995 letter from the DEQ to J. Redder, Hercules, Inc. (now Alliant TechSystems, Inc.). The lists incorporate requirements outlined in the Virginia Hazardous Waste Management Regulations (VR 672-10-1) Sections 9.5.C and 9.5.D. These include the Indicator Parameters, Ground Water Quality Parameters, EPA Interim Primary Drinking Water Standards, Known Hazardous Waste Constituents, and Detected VHWMR Appendix 10.6 Constituents. A demonstration was made to the DEQ that several hazardous waste constituents had not been detected for six consecutive quarters. As a result, these constituents have not been analyzed for on a regular basis. These are highlighted in the **Table 3-1.**

Additional parameters have not been detected in any of the wells. During the meeting between Alliant and DEQ on 21 May 1996, DEQ suggested that the recommendations to temporarily cease sampling additional constituents that had not been detected in six or more consecutive sampling events made in the GWQAP addendum submitted 3 November 1995 would better be addressed in the post closure permitting process. Therefore, those additional constituents will not be addressed in this report.

## 3.4 *UNIT 7 GROUND WATER BACKGROUND VALUES*

As requested in the DEQ's 23 July letter, background values were calculated for each parameter .

As discussed with DEQ, Alliant believes the analytical data to be questionable in some cases. DEQ has agreed in a 9 April 1996 letter to C. Jake (Alliant) that only total metals will be measured, as described in an EPA Region III guidance on ground water sampling in karst terrain. Another case of questionable data involves an increase in Total Organic Carbon (TOC) concentrations by a factor of 10. As such, the TOC concentrations from 1995 through 1997 were used to calculate the background values. **Table 3-2** presents the *Historical Maximum Values,* which were used to develop the isocontour maps.

As requested in the DEQ's 23 July 1998 letter, using the data from well 7W12B, background values were calculated for each parameter in the ground water monitoring program. However, as a result of the 21 May 1996 meeting and subsequent telephone conversations, these background values are being submitted in accordance with the regulations and shown on the isocontour maps but were not utilized for purposes of this report.

Additionally, calculations of background values based on the 95% confidence, 95% coverage upper tolerance limit require that data distributions be normal or lognormal. Some of the data do not fulfill this requirement

## 3.5 *UNIT 7 STATISTICAL ANALYSIS*

Statistical evaluations for Unit 7 are performed annually and submitted as part of the Annual Reporting requirements found in the VHWMR Section 9.5. As a result of the 21 May 1996 meeting between Alliant and DEQ, Alliant has established background ground water concentrations for the upgradient well, 7W12B utilizing the Virginia DEQ "*Guidance on Statistical Methods for Ground Water Data Analysis at a Solid Waste or Hazardous Waste Site, Version 2.0, 1995*". In response to Mr. Glenn von Gonten's letter dated 23 July, 1998, Alliant has revised the background concentrations to include sample data collected in 1997. These values can be found in **Table 3-3.** Methods used for background concentration computation and statsistical analysis are described below.

The following parameters were 100% Non-Detected in 20 or more sampling events. The downgradient well data points were compared to the laboratory PQLs in a nonparametric statistical manner or to the applicable MCL or VGWPS (if one exists). Background values were then estimated by using the laboratory PQL for that constituent.

| *Parameter* | *PQL (ppb)* | *Sample Size* | *% Non-Detect* | *MCL or VGWPS (ppb)* |
|---|---|---|---|---|
| **2,4-DNT** | 0.2 | 22 | 100 | None |
| **2,6-DNT** | 0.1 | 22 | 100 | None |
| **2,4 Dinitrophenol** | 11 | 11 | 100 | None |
| **Benzyl Alcohol** | 8 | 8 | 100 | None |
| **Cyanide** | 20 | 20 | 100 | 5 |
| **Bis(2- ethyl hexyl) phthalate** | 9 | 9 | 100 | None |
| **2 – Nitrophenol** | 9 | 9 | 100 | None |
| **4 – Nitrophenol** | 9 | 9 | 100 | None |
| **Acetone** | 100 | 14 | 100 | None |
| **Antimony** | 30 | 14 | 100 | None |
| **Vanadium** | 40 | 20 | 100 | None |

The following parameter has log-normally distributed data with between 15 and 50 percent Non-Detect values. As such, Cohen's Method was used as an adjustment for the mean and standard deviation, as recommended in the DEQ guidance. Results of the background analysis are summarized in **Table 3-4**

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Lead** | 23 | 34 |

The following parameters have data with greater than 50% Non-Detects, a minimum sample size of twenty (20). The data were non-normally distributed as indicated using a data distribution statistical method. According to Mr. Glenn von Gonten, DEQ in a 30 July 1996 telephone conversation, the maximum value detected will be used for plume delineation purposes for those constituents with greater than 50% non-detected values. An isocontour map for Total Organic Halides could not

be created because only one sampling point maximum concentration exceeded the background value.

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Arsenic** | 23 | 91.3 |
| **Cadmium** | 23 | 60.9 |
| **Chromium** | 23 | 56.5 |
| **Cobalt** | 20 | 65.5 |
| **Mercury** | 23 | 82.6 |
| **Nickel** | 20 | 85 |
| **Selenium** | 23 | 82.6 |
| **Thallium** | 20 | 70 |
| **Total Organic Halides** | 48 | 62.5 |

The following parameters do not have greater than four (4) sampling events and therefore could not be included in this (plume) evaluation:

- 2,4-D
- Gross Beta
- Radium
- Sulfate

The following parameters have between 15 and 50 percent Non-Detect values, and do not have normal or log-normal data distributions. Thus, Cohen's Method could not be used. Per the DEQ's 23 July letter, background concentrations were computed by calculating an upper tolerance limit based on 95% coverage, at a 95% confidence level. It should be noted that upper tolerance limits are not typically used unless the data are normally or log-normally distributed. Background concentration analysis data is summarized in **Table 3-4.**

| *Parameter* | *Sample Size* | *% Non-Detects* |
|---|---|---|
| **Total Organic Carbon** | 36 | 27.2% |
| **Silver** | 23 | 47.8% |

The remaining parameters have less than 15% Non-Detect values and no data manipulation was required. Computation data for barium, copper, specific conductivity, and zinc are summarized in Table 3-4

| *Parameter* | *Sample Size* | *% Non-Detect* |
|---|---|---|
| **Copper** | 20 | 0 |
| **PH** | 92 | 0 |
| **Barium** | 23 | 13 |
| **Specific Conductivity** | 92 | 0 |
| **Zinc** | 20 | 0 |

*Table 3-3*
*Unit 7*
*Background Values*

| *Parameter* | *Units* | *Background Value* |
|---|---|---|
| 2,4-DNT | Ppb | 0.2 |
| 2,6-DNT | Ppb | 0.1 |
| Acetone | Ppb | 100 |
| Antimony | Ppb | 30 |
| Arsenic | Ppb | 2.0 |
| Barium | Ppb | 64 |
| Cadmium | Ppb | 0.4 |
| Chromium | Ppb | 34 |
| Cobalt | Ppb | 17 |
| Copper | Ppb | 49 |
| Cyanide | Ppb | 5 |
| Lead | Ppb | 14 |
| Mercury | Ppb | 0.350 |
| Nickel | Ppb | 63 |
| PH | SU | 7 |
| Selenium | Ppb | 20 |
| Silver | Ppb | 2.13 |
| Specific Conductivity | Umhos/sec | 1,025 |
| Thallium | Ppb | 4 |
| Total Organic Halides | ppb | 21 |
| Total Organic Carbon | Ppb | 3930 |
| Vanadium | Ppb | 40 |
| Zinc | Ppb | 217 |

# STATISTICAL SUMMARY OF BACKGROUND WATER QUALITY DATA

| Date | Barium | Copper | Silver | Zinc | Lead | TOC | SpCon |
|---|---|---|---|---|---|---|---|
| 3/31/92 | 1.00 | | 0.10 | | 0.50 | | 730.00 |
| 6/30/92 | 1.00 | | 0.10 | | 0.50 | | 706.00 |
| 9/30/92 | 1.00 | | 0.10 | | 0.50 | | 370.00 |
| 12/31/92 | 35.00 | 50.00 | 0.30 | 253.00 | 19.00 | | 798.00 |
| 3/31/93 | 27.00 | 16.00 | 0.40 | 17.00 | 0.50 | | 722.00 |
| 6/30/93 | 31.00 | 10.00 | 0.10 | 126.00 | 0.50 | | 715.00 |
| 9/30/93 | 38.00 | 6.00 | 0.30 | 81.00 | 4.00 | | 895.00 |
| 12/31/93 | 40.00 | 7.00 | 0.10 | 144.00 | 0.50 | | 918.00 |
| 3/31/94 | 27.00 | 10.00 | 0.30 | 29.00 | 2.00 | | 723.00 |
| 6/30/94 | 35.00 | 3.00 | 0.70 | 26.00 | 5.00 | | 750.00 |
| 9/30/94 | 59.00 | 2.00 | 0.50 | 26.00 | 12.00 | | 891.00 |
| 12/31/94 | 44.00 | 2.00 | 3.10 | 55.00 | 3.00 | | 880.00 |
| 3/30/95 | 40.00 | 10.00 | 0.10 | 10.20 | 1.00 | | 822.00 |
| 6/29/95 | 36.00 | 9.30 | 0.10 | 20.00 | 1.40 | | 740.00 |
| 9/30/95 | 30.00 | 2.00 | 0.10 | 11.00 | 0.50 | 1250.00 | 610.00 |
| 12/31/95 | 37.00 | 10.00 | 1.90 | 49.00 | 6.00 | 875.00 | 840.00 |
| 3/31/96 | 31.00 | 8.00 | 0.10 | 55.00 | 2.00 | 500.00 | 652.00 |
| 6/30/96 | 26.00 | 3.00 | 0.10 | 1.00 | 0.50 | 2000.00 | 608.00 |
| 9/30/96 | 35.00 | 14.00 | 0.10 | 24.00 | 4.00 | 500.00 | 758.00 |
| 12/31/96 | 32.00 | 3.00 | 0.30 | 113.00 | 6.00 | 2000.00 | 768.00 |
| 3/31/97 | 40.00 | 16.00 | 0.40 | 105.00 | 6.00 | 1000.00 | 750.00 |
| 6/30/97 | 32.00 | 55.00 | 0.30 | 135.00 | 3.00 | 3000.00 | 720.00 |
| 9/30/97 | 43.00 | 29.00 | 1.20 | 45.00 | 3.00 | 500.00 | 850.00 |
| Number of Samples | 23.00 | 20.00 | 23.00 | 20.00 | 23.00 | 9.00 | 23.00 |
| Mean | 31.35 | 13.27 | 0.47 | 66.26 | 3.54 | 1291.67 | 748.52 |
| Standard Deviation | 13.91 | 14.92 | 0.71 | 63.06 | 4.38 | 870.52 | 119.05 |
| Shapiro-Wilk W | 0.84 | 0.70 | 0.57 | 0.84 | 0.70 | 0.87 | 0.89 |
| Normal Distribution | No | No | No | No | No | Yes | Yes |
| K | 2.33 | 2.40 | 2.33 | 2.40 | 2.33 | 3.03 | 2.33 |
| UTL | 63.74 | 49.01 | 2.13 | 217.35 | 13.74 | 3930.23 | 1025.79 |

Notes: K = Tolerance factor for one-sided normal tolerance interval with probability level of 95% and 95% coverage.
ULT = Upper Tolerance Limit

# RADFORD ARMY AMMUNITION PLANT, VIRGINIA

# Former Lead Furnace Area
# RCRA Facility Investigation/
# Corrective Measures Study Report

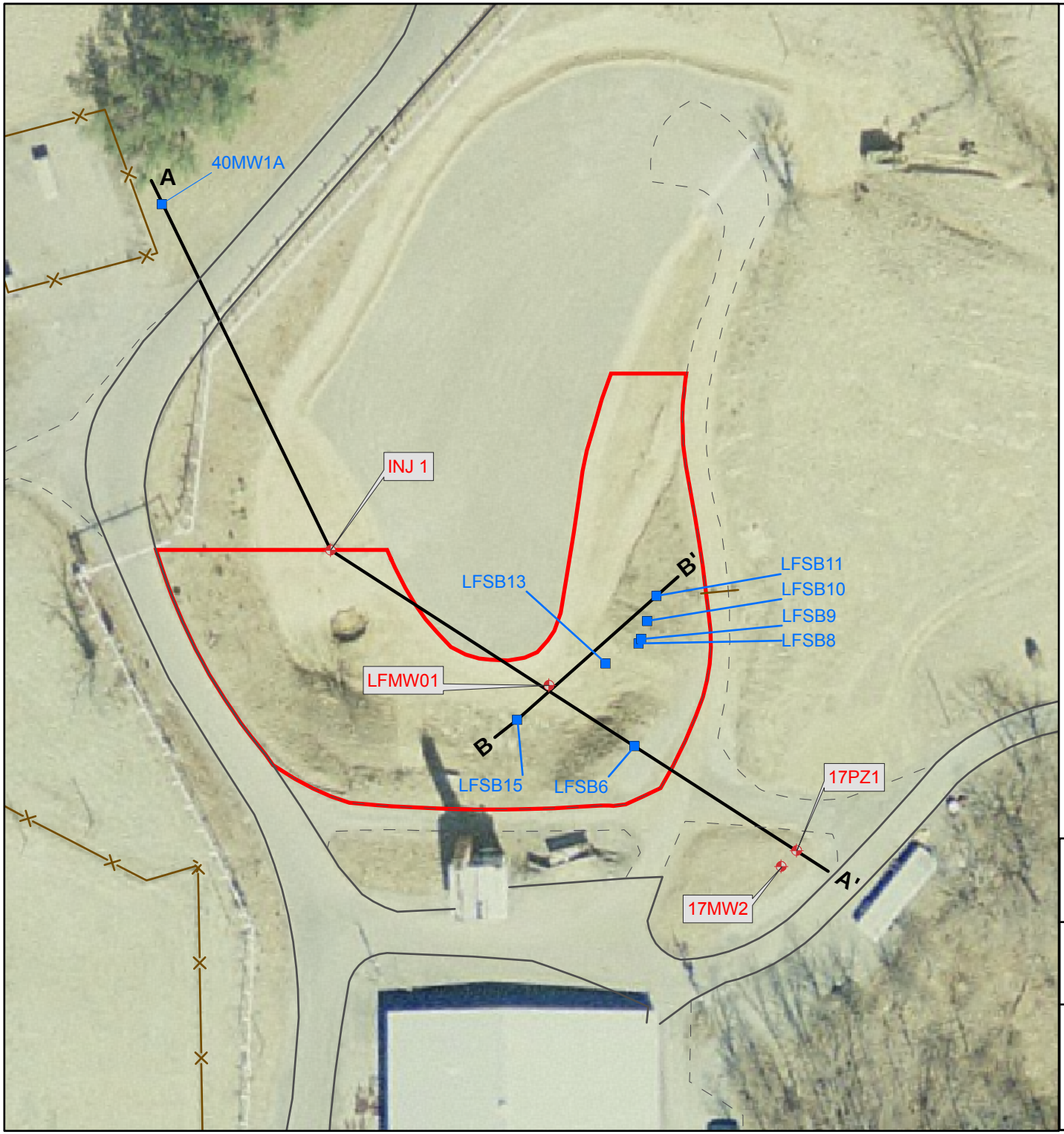
**Prepared for:**

USACE Baltimore District
10 S. Howard St.
Baltimore, MD 21201

**Prepared by:**

Shaw Environmental, Inc.
2113 Emmorton Park Rd.
Edgewood, MD 21040

**Final Document** **November 2008**




## LEGEND

- Soil Sample Location
- Monitoring Well
- Dirt Road
- Paved Road
- Fence Line
- Geologic Cross Section Line
- Former Lead Furnace Area Boundary

Notes:
1) Aerial photo, dated 2005, was obtained from Montgomery County, VA Planning & GIS Services.

N

Scale:

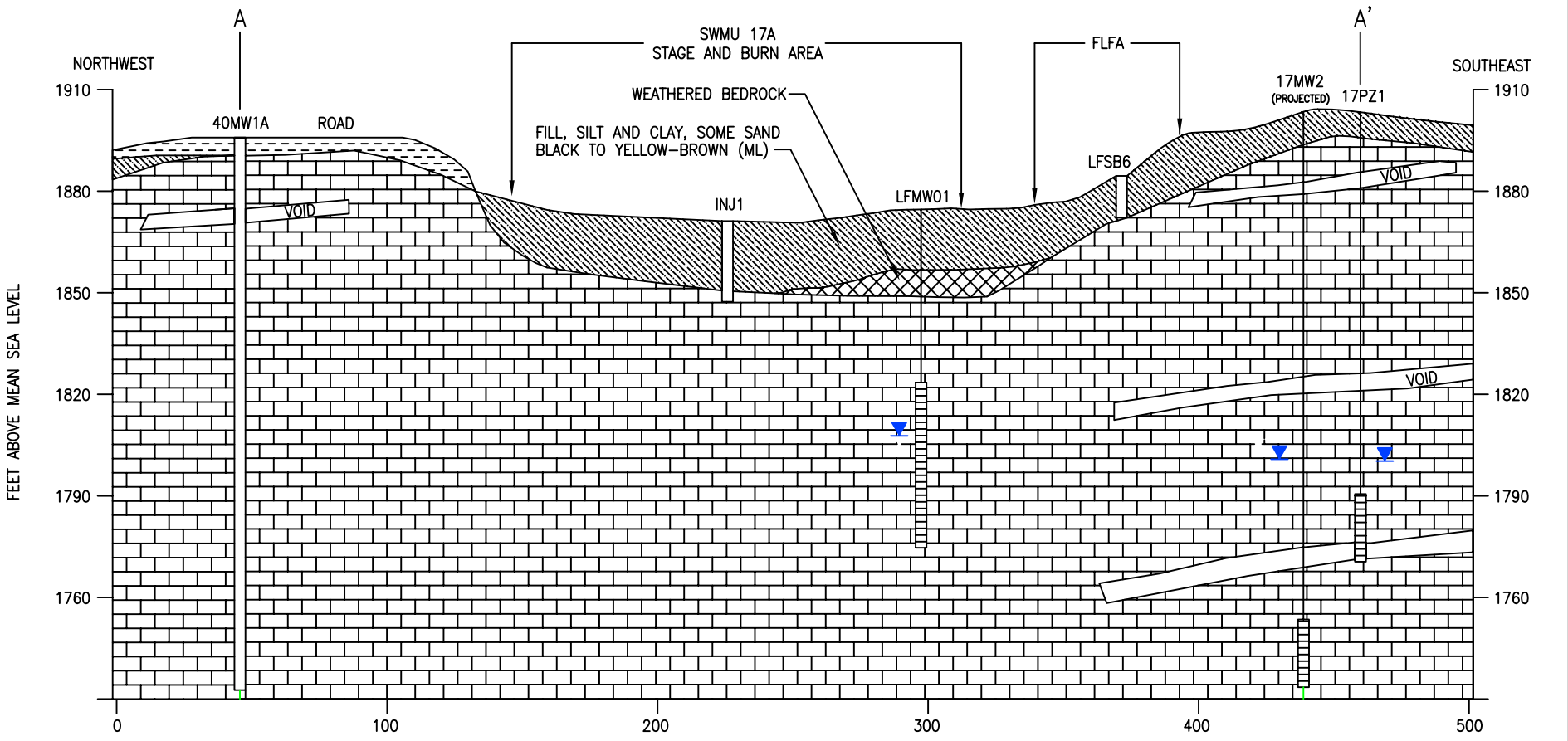
0 37.5 75 150 Feet

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-3
Former Lead Furnace Area
Geologic Cross Section Lines A-A' and B-B'
Radford Army Ammunition Plant,
Radford, VA

GIS File: RFAAP_Fig2-3_FLFA_XSect.mxdjoy.pasquarelli (1/29/2008 11:28:55 AM)




HORIZ. SCALE: 0 50 100

VERT. SCALE: 0 15 30 45 60 75

LEGEND

- CLAY AND SILT, LITTLE SAND, RED-BROWN (CL)
- SILT AND CLAY (ML/CL)
- WEATHERED BEDROCK
- LIMESTONE, GRAY-BROWN, ARGILLACEOUS (LMSN)
- STATIC GROUNDWATER LEVEL

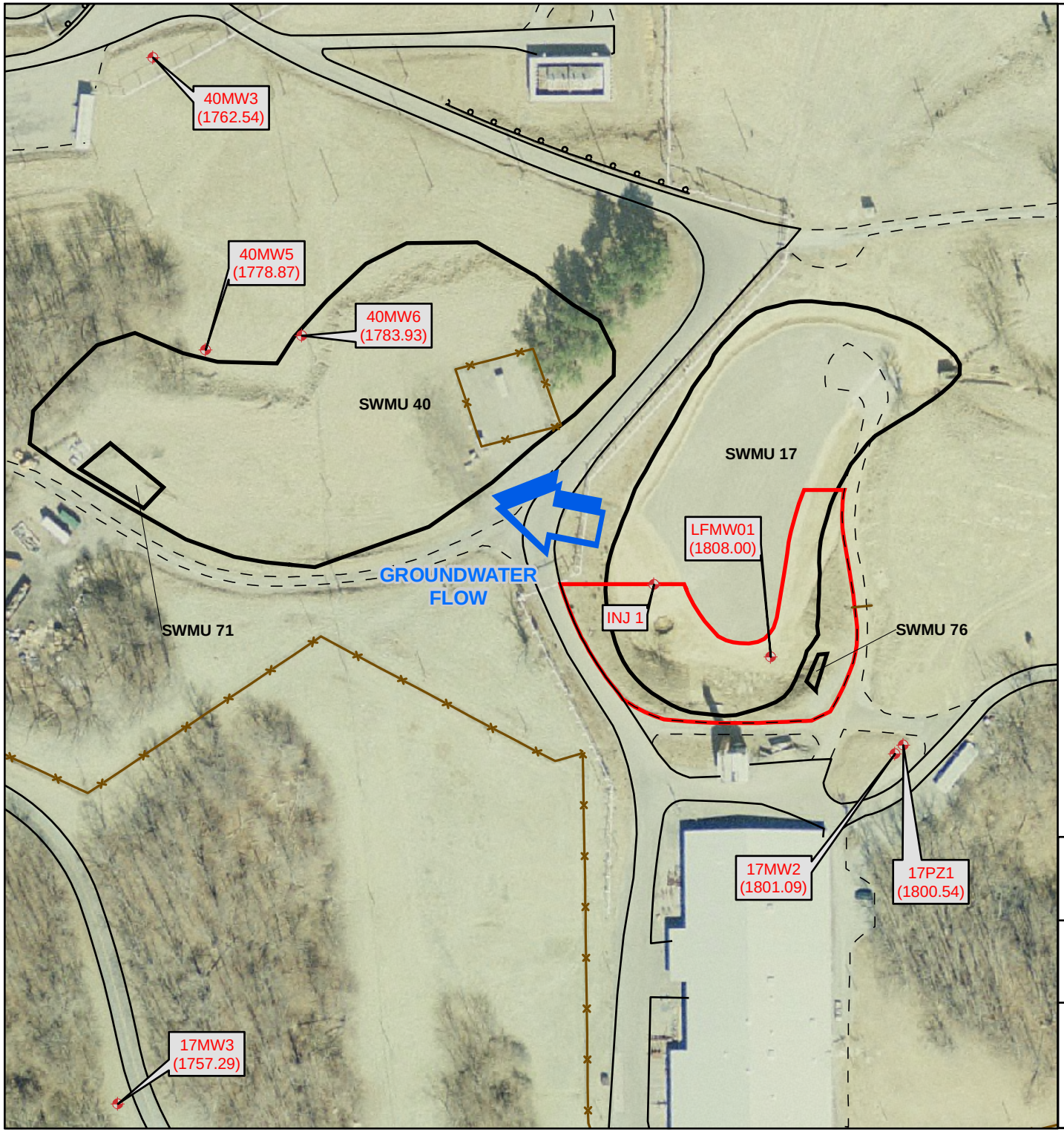
NOTES

1) WATER LEVELS MEASURED DECEMBER 2007 (17MW2 AND 17PZ1) AND AUGUST 2007 (LFMW01)
2) SOME DATA POINTS ARE PROJECTED ONTO PROFILE.
3) 40MW1A AND 17PZ1 LITHOLOGY FROM DAMES AND MOORE.
4) 40MW1A IS A BORING.
5) INJECTION WELL IS AN OPEN HOLE AT THE BEDROCK INTERFACE.

SOURCE: PARSONS ENGINEERING SCIENCE INC

| RADFORD AAP | | FIGURE 2-4 |
|---|---|---|
| PREPARED BY: SHAW | TASK NO: 12346161030000 | FORMER LEAD FURNACE AREA GEOLOGIC CROSS-SECTION A-A' |
| CHECKED BY: MT | SHAW DWG NO: FIG 2-4 (A-A').dwg | |
| DATE: REVISED DECEMBER 2007 | | |

FILE: FIG2-3.dwg PLOT: 8-19-05




## LEGEND

- Monitoring Well Location
- Dirt Road
- Paved Road
- Fence Line
- Former Lead Furnace Area Boundary
- Other Site Boundary

Notes:
1) Aerial photo, dated 2005, was obtained from Montgomery County, VA Planning & GIS Services.
2) All water levels measured in December 2007, except LFMW01, which was measured in August 2007.
3) Water levels are expressed in feet above mean sea level.
4) Groundwater flow direction is based on the 1994 dye trace study results (Engineering Science, 1994).

N

Scale:

0 70 140 280 Feet

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-7
Former Lead Furnace Area
Groundwater Flow Map
Radford Army Ammunition Plant,
Radford, VA

GIS File: RFAAP_Fig2-7_FLFA_GW_Flow.mxd (5/15/2008 11:08:29 AM)

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
**Page 1 of 3**

| Analyte | Sample ID | LFMW01 | | | | | 17PZ01 | | | | | 17MW02 | | | | | 17MW03 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | 8/21/07 | | | | | 8/21/07 | | | | | 8/21/07 | | | | | 8/21/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | 1 | U | | *0.21* | *1* | 2.7 | | | *0.21* | *1* | 5.9 | | | *0.21* | *1* | 1 | U | | *0.21* | *1* |
| Tetrachloroethene | 5 | 0.1 | 1 | U | | *0.25* | *1* | 1 | U | | *0.25* | *1* | 2.6 | | | *0.25* | *1* | 1 | U | | *0.25* | *1* |
| Toluene | 1000 | 75 | 1 | U | | *0.27* | *1* | 1 | U | | *0.27* | *1* | 1 | U | | *0.27* | *1* | 0.38 | J | J | *0.27* | *1* |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | NT | | | | | NT | | | | | NT | | | | | NT | | | | |
| Butylbenzylphthalate | na | 730 | 4.9 | U | | *2* | *4.9* | 4.8 | U | | *1.9* | *4.8* | 5 | U | | *2* | *5* | 4.9 | U | | *1.9* | *4.9* |
| Diethylphthalate | na | 2900 | 4.9 | U | | *2* | *4.9* | 4.8 | U | | *1.9* | *4.8* | 5 | U | | *2* | *5* | 4.9 | U | | *1.9* | *4.9* |
| Naphthalene | na | 0.65 | NT | | | | | NT | | | | | NT | | | | | NT | | | | |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | 0.049 | U | | *0.009* | *0.049* | 0.048 | U | | *0.009* | *0.048* | 0.05 | U | | *0.009* | *0.05* | 0.049 | U | | *0.009* | *0.049* |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 9320 | | | *79* | *200* | 296 | | | *79* | *200* | 222 | | | *79* | *200* | 79 | U | | *79* | *200* |
| Barium | 2000 | 730 | 93 | J | J | *5* | *200* | 69.7 | J | J | *5* | *200* | 54.4 | J | J | *5* | *200* | 176 | J | J | *5* | *200* |
| Beryllium | 4 | 7.3 | 1.9 | J | B | *1* | *4* | 1.2 | J | B | *1* | *4* | 1.3 | J | B | *1* | *4* | 1 | U | | *1* | *4* |
| Calcium | na | na | 120000 | | | *100* | *1000* | 76700 | | | *100* | *1000* | 76100 | | | *100* | *1000* | 110000 | | | *100* | *1000* |
| Chromium | 100 | 11 | 43 | | | *0.92* | *10* | 11 | | | *0.92* | *10* | 29.5 | | | *0.92* | *10* | 32.4 | | | *0.92* | *10* |
| Cobalt | na | na | 4.6 | J | J | *1* | *50* | 1 | U | | *1* | *50* | 26.9 | J | J | *1* | *50* | 2.5 | J | J | *1* | *50* |
| Copper | 1300 | 150 | 6.9 | J | J | *1.2* | *25* | 1.2 | U | | *1.2* | *25* | 7.9 | J | J | *1.2* | *25* | 1.9 | J | J | *1.2* | *25* |
| Iron | 300 | 2600 | 10100 | | | *15* | *300* | 15 | U | | *15* | *300* | 644 | | | *15* | *300* | 15 | U | | *15* | *300* |
| Lead | 15 | na | 3.6 | J | J | *2.1* | *5* | 2.1 | U | | *2.1* | *5* | 2.1 | U | | *2.1* | *5* | 2.1 | U | | *2.1* | *5* |
| Magnesium | na | na | 56700 | | | *100* | *5000* | 29800 | | | *100* | *5000* | 28400 | | | *100* | *5000* | 39900 | | | *100* | *5000* |
| Manganese | 50 | 73 | 78.3 | | | *1* | *15* | 5.3 | J | J | *1* | *15* | 12.8 | J | J | *1* | *15* | 42.4 | | | *1* | *15* |
| Mercury | 2 | 1.1 | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* | 0.11 | U | | *0.11* | *1* |
| Nickel | na | 73 | 30.5 | J | J | *1* | *40* | 6.4 | J | J | *1* | *40* | 18.1 | J | J | *1* | *40* | 27.6 | J | J | *1* | *40* |
| Potassium | na | na | 6120 | J | B | *100* | *10000* | 2810 | J | B | *100* | *10000* | 3610 | J | B | *100* | *10000* | 4520 | J | B | *100* | *10000* |
| Selenium | 50 | 18 | 4 | U | | *4* | *10* | 4 | U | | *4* | *10* | 4 | U | | *4* | *10* | 16 | U | | *16* | *20* |
| Silver | 100 | 18 | 0.77 | U | | *0.77* | *10* | 0.77 | U | | *0.77* | *10* | 6.2 | J | B | *0.77* | *10* | 0.77 | U | | *0.77* | *10* |
| Sodium | na | na | 12100 | | | *500* | *10000* | 5690 | J | B | *500* | *10000* | 14600 | | | *500* | *10000* | 19500 | | | *500* | *10000* |
| Vanadium | na | 3.7 | 20 | J | J | *1.1* | *50* | 1.1 | U | | *1.1* | *50* | 1.5 | J | J | *1.1* | *50* | 1.1 | U | | *1.1* | *50* |
| Zinc | 5000 | 1100 | 60.4 | | | *5* | *20* | 10 | J | J | *5* | *20* | 11.9 | J | J | *5* | *20* | 13.2 | J | J | *5* | *20* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | 5.33 | | | *0.112* | *0.2* | 1.09 | | | *0.112* | *0.2* | 5.4 | | | *0.112* | *0.2* | 4.02 | | | *0.112* | *0.2* |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | 0.00268 | A | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| OCDD | na | na | 0.0686 | A | J | | | 0.0102 | A | J | | | 0.0142 | A, EMPC | J | *0.00164* | *0.00164* | 0.00965 | U | | *0.00965* | *0.00965* |
| 1,2,3,7,8-PECDF | na | na | 0.00127 | A, EMPC | J | *0.00489* | *0.00489* | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| 2,3,4,7,8-PECDF | na | na | 0.00154 | A | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| TOTAL HXCDD | na | 0.011 | 0.00268 | | | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |
| TOTAL PECDF | na | na | 0.00282 | EMPC | J | | | 0.00534 | U | | *0.00534* | *0.00534* | 0.00527 | U | | *0.00527* | *0.00527* | 0.00483 | U | | *0.00483* | *0.00483* |

**Refer to legend immediately following this table for a list of definitions and table notes

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
**Page 2 of 3**

| Analyte | Sample ID | | 40MW3 | | | | | 40MW3-Diss | | | | | 40MW5 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | | 8/14/07 | | | | | 8/14/07 | | | | | 8/15/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | 19 | | | *0.061* | *1* | NT | | | | | 23 | | | *0.061* | *1* |
| Tetrachloroethene | 5 | 0.1 | 0.15 | U | | *0.15* | *1* | NT | | | | | 0.15 | U | | *0.15* | *1* |
| Toluene | 1000 | 75 | 0.072 | U | | *0.072* | *1* | NT | | | | | 0.09 | J | B | *0.072* | *1* |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | 0.015 | U | | *0.015* | *5* | NT | | | | | 0.094 | J | | *0.015* | *5* |
| Butylbenzylphthalate | na | 730 | 0.057 | J | B | *0.029* | *5* | NT | | | | | 0.029 | U | | *0.029* | *5* |
| Diethylphthalate | na | 2900 | 0.038 | J | B | *0.034* | *5* | NT | | | | | 0.034 | U | | *0.034* | *5* |
| Naphthalene | na | 0.65 | 0.023 | U | | *0.023* | *5* | NT | | | | | 0.094 | J | | *0.023* | *5* |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | 0.0018 | U | | *0.0018* | *0.05* | NT | | | | | 0.0018 | U | | *0.0018* | *0.05* |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* |
| Barium | 2000 | 730 | 29 | | | *0.52* | *2* | 29 | | | *0.52* | *2* | 45 | | | *0.52* | *2* |
| Beryllium | 4 | 7.3 | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* |
| Calcium | na | na | 52000 | | | *40* | *500* | 53000 | | | *40* | *500* | 69000 | | | *40* | *500* |
| Chromium | 100 | 11 | 1.7 | J | B | *0.31* | *2* | 1.2 | J | B | *0.31* | *2* | 1.9 | J | B | *0.31* | *2* |
| Cobalt | na | na | 0.16 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* | 0.13 | J | | *0.096* | *1* |
| Copper | 1300 | 150 | 1.3 | | | *0.33* | *1* | 0.86 | J | | *0.33* | *1* | 0.79 | J | | *0.33* | *1* |
| Iron | 300 | 2600 | 21 | | B | *5.7* | *20* | 17 | J | | *5.7* | *20* | 14 | J | B | *5.7* | *20* |
| Lead | 15 | na | 0.51 | J | B | *0.33* | *1* | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* |
| Magnesium | na | na | 18000 | | | *38* | *500* | 18000 | | | *38* | *500* | 22000 | | | *38* | *500* |
| Manganese | 50 | 73 | 0.48 | J | B | *0.43* | *3* | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* |
| Mercury | 2 | 1.1 | 0.04 | J | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* |
| Nickel | na | 73 | 1.8 | J | | *0.28* | *2* | 1.3 | J | | *0.28* | *2* | 1 | J | | *0.28* | *2* |
| Potassium | na | na | 1200 | | | *54* | *200* | 1200 | | | *54* | *200* | 1000 | | | *54* | *200* |
| Selenium | 50 | 18 | 0.92 | U | | *0.92* | *3* | 1.3 | J | B | *0.92* | *3* | 1.4 | J | B | *0.92* | *3* |
| Silver | 100 | 18 | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* |
| Sodium | na | na | 7600 | | | *84* | *500* | 7800 | | | *84* | *500* | 7000 | | | *84* | *500* |
| Vanadium | na | 3.7 | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* |
| Zinc | 5000 | 1100 | 15 | | B | *0.84* | *10* | 4.5 | JB | B | *0.84* | *10* | 11 | | B | *0.84* | *10* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | 0.52 | | | *0.08* | *0.2* | NT | | | | | 0.64 | | | *0.08* | *0.2* |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| OCDD | na | na | NT | | | | | NT | | | | | NT | | | | |
| 1,2,3,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| 2,3,4,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| TOTAL HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| TOTAL PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |

**Refer to legend immediately following this table for a list of definitions and table notes

**Table 4-7**
**Analytes Detected in FLFA Groundwater - 2007**
**Page 3 of 3**

| Analyte | Sample ID | | 40MW5-Diss | | | | | 40MW6 | | | | | 40MW6-Diss | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Date | | 8/15/07 | | | | | 8/14/07 | | | | | 8/14/07 | | | | |
| | MCL | tw-RBC | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL | Result | Lab Q | Val Q | MDL | MRL |
| **VOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| Chloroform | 80 | 0.15 | NT | | | | | 24 | | | *0.061* | *1* | NT | | | | |
| Tetrachloroethene | 5 | 0.1 | NT | | | | | 0.15 | U | | *0.15* | *1* | NT | | | | |
| Toluene | 1000 | 75 | NT | | | | | 0.072 | U | | *0.072* | *1* | NT | | | | |
| **PAHs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **SVOCs (ug/L)** | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | na | 2.4 | NT | | | | | 0.015 | U | | *0.015* | *5* | NT | | | | |
| Butylbenzylphthalate | na | 730 | NT | | | | | 0.038 | J | B | *0.029* | *5* | NT | | | | |
| Diethylphthalate | na | 2900 | NT | | | | | 0.034 | U | | *0.034* | *5* | NT | | | | |
| Naphthalene | na | 0.65 | NT | | | | | 0.023 | U | | *0.023* | *5* | NT | | | | |
| **Pesticides (ug/L)** | | | | | | | | | | | | | | | | | |
| Lindane | na | 0.052 | NT | | | | | 0.0098 | J | J | *0.0018* | *0.05* | NT | | | | |
| **PCBs (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Explosives (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Herbicides (ug/L)** | None detected | | | | | | | | | | | | | | | | |
| **Metals (ug/L)** | | | | | | | | | | | | | | | | | |
| Aluminum | 50 | 3700 | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* | 44 | U | | *44* | *150* |
| Barium | 2000 | 730 | 46 | | | *0.52* | *2* | 39 | | | *0.52* | *2* | 39 | | | *0.52* | *2* |
| Beryllium | 4 | 7.3 | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* | 0.31 | U | | *0.31* | *2* |
| Calcium | na | na | 69000 | | | *200* | *2500* | 71000 | | | *40* | *500* | 68000 | | | *40* | *500* |
| Chromium | 100 | 11 | 1.4 | J | B | *0.31* | *2* | 5 | | B | *0.31* | *2* | 1.3 | J | B | *0.31* | *2* |
| Cobalt | na | na | 0.31 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* | 0.3 | J | | *0.096* | *1* |
| Copper | 1300 | 150 | 0.98 | J | | *0.33* | *1* | 1 | | | *0.33* | *1* | 0.91 | J | | *0.33* | *1* |
| Iron | 300 | 2600 | 10 | J | | *5.7* | *20* | 28 | | B | *5.7* | *20* | 15 | J | | *5.7* | *20* |
| Lead | 15 | na | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* | 0.33 | U | | *0.33* | *1* |
| Magnesium | na | na | 22000 | | | *38* | *500* | 22000 | | | *38* | *500* | 21000 | | | *38* | *500* |
| Manganese | 50 | 73 | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* | 0.43 | U | | *0.43* | *3* |
| Mercury | 2 | 1.1 | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* | 0.039 | U | | *0.039* | *0.2* |
| Nickel | na | 73 | 0.49 | J | | *0.28* | *2* | 2.1 | | | *0.28* | *2* | 1.8 | J | | *0.28* | *2* |
| Potassium | na | na | 1000 | | | *54* | *200* | 1200 | | | *54* | *200* | 1100 | | | *54* | *200* |
| Selenium | 50 | 18 | 0.92 | U | | *0.92* | *3* | 0.92 | U | | *0.92* | *3* | 1.1 | J | B | *0.92* | *3* |
| Silver | 100 | 18 | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* | 0.12 | U | | *0.12* | *0.4* |
| Sodium | na | na | 7000 | | | *84* | *500* | 7300 | | | *84* | *500* | 7000 | | | *84* | *500* |
| Vanadium | na | 3.7 | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* | 0.83 | U | | *0.83* | *3* |
| Zinc | 5000 | 1100 | 3.3 | JB | B | *0.84* | *10* | 15 | | B | *0.84* | *10* | 4.7 | JB | B | *0.84* | *10* |
| **Misc. (ug/L)** | | | | | | | | | | | | | | | | | |
| Perchlorate | na | 2.6 | NT | | | | | 0.52 | | | *0.08* | *0.2* | NT | | | | |
| **Dioxins/Furans (ng/L)** | | | | | | | | | | | | | | | | | |
| 1,2,3,7,8,9-HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| OCDD | na | na | NT | | | | | NT | | | | | NT | | | | |
| 1,2,3,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| 2,3,4,7,8-PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |
| TOTAL HXCDD | na | 0.011 | NT | | | | | NT | | | | | NT | | | | |
| TOTAL PECDF | na | na | NT | | | | | NT | | | | | NT | | | | |

**Refer to legend immediately following this table for a list of definitions and table notes

# Table 4-7
# Legend

| | | |
|---|---|---|
| 12 | J | Shading and black font indicate an MCL exceedance. |
| 12 | J | Bold outline indicates a tw-RBC exceedance. |
| *12* | *12* | Shading in the MDL/MRL columns indicates the MDL exceeds a criterion. |

tw-RBCs for non-Carcinogenic compounds have been recalculated to an HI of 0.1.
The pyrene tw-RBCs were used for acenaphthylene, benzo(g,h,i)perylene and phenanthrene.
Secondary MCLs were used for aluminum, iron, manganese, silver, and zinc.
MCL Action Levels were used for copper and lead.
MCL = Maximum Contaminant Level (USEPA, 2006).
tw-RBC = Tap Water Risk-Based Concentration (USEPA, October 2007).
tw-RBC value in table is for the more conservative chromium VI.
tw-RBC value for chromium III is 5,500, which was not exceeded.
ng/L = nanograms per liter (parts per trillion).
µg/L = micrograms per liter (parts per billion).
NA = not applicable.
NT = analyte not tested.

**LQ = Lab Data Qualifiers**

B = (organics) Blank contamination. Value detected in sample and associated blank.
A (Dioxins) = B = (metals) Value <MRL and >MDL and is considered estimated.
E (metals) = Reported value is estimated because of the presence of interferences.
EMPC (Dioxins) = The ion-abundance ratio between the two characteristic PCDD/PCDF ions was outside accepted ranges. The detected PCDD/PCDF was reported as an estimated maximum possible concentration (EMPC).
J = (organics) Value <MRL and >MDL and is considered estimated.
U = Analyte not-detected at the method reporting limit.
X = (dioxins) Ion abundance ratio outside acceptable range. Value reported is EMPC.

**VQ = Validation Data Qualifiers:**

B = blank contamination. Value detected in sample and associated blank.
J = estimated concentration
K = estimated concentration bias high
L = estimated concentration bias low
N = presumptive evidence for tentatively identified compounds using a library search
U = analyte not detected
UJ = estimated concentration non-detect
UL = estimated concentration non-detect bias low

# Radford Army Ammunition Plant
# Radford, Virginia

## Environmental Baseline Study for the Oleum Plant Site

**Final**
**October 2007**

**Prepared for:**
Alliant Techsystems Inc.

**Prepared by:**
Ecology and Environment, Inc.

Purchase Order Number AR1733
E & E Project 002447.AT15

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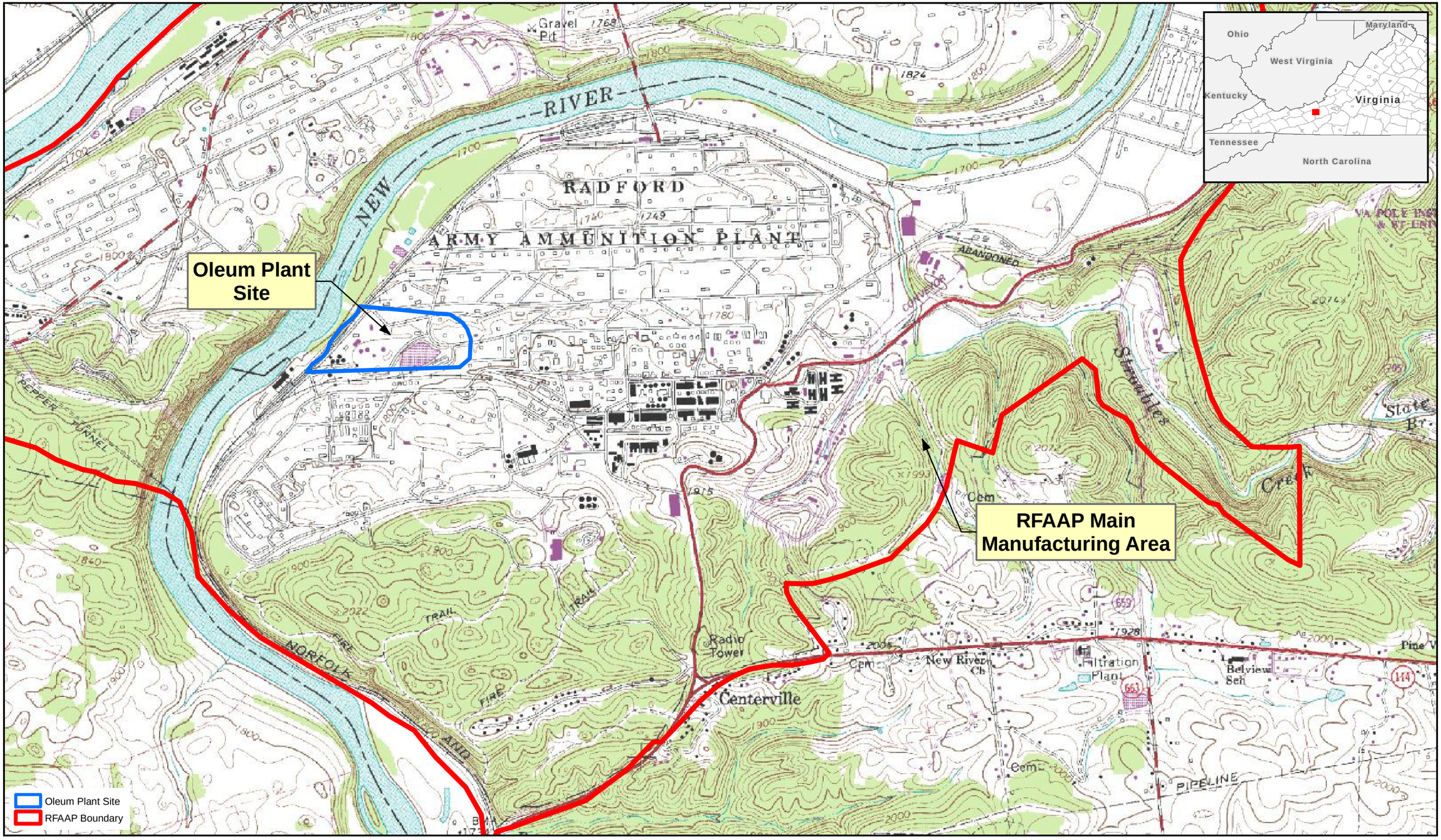
\\BUFSDL4\GIS\Washington\Radford\Maps\MXD\Figure_3_Topo.mxd 5/18/2007




*Source: USGS 7.5 Topographic Map; Radford North Quad 1984.*

0 0.125 0.25 0.5 Miles

**Figure 1 - 2**
**Oleum Plant Site**
**Radford Army Ammunition Plant (RFAAP)**
**Radford, Virginia**

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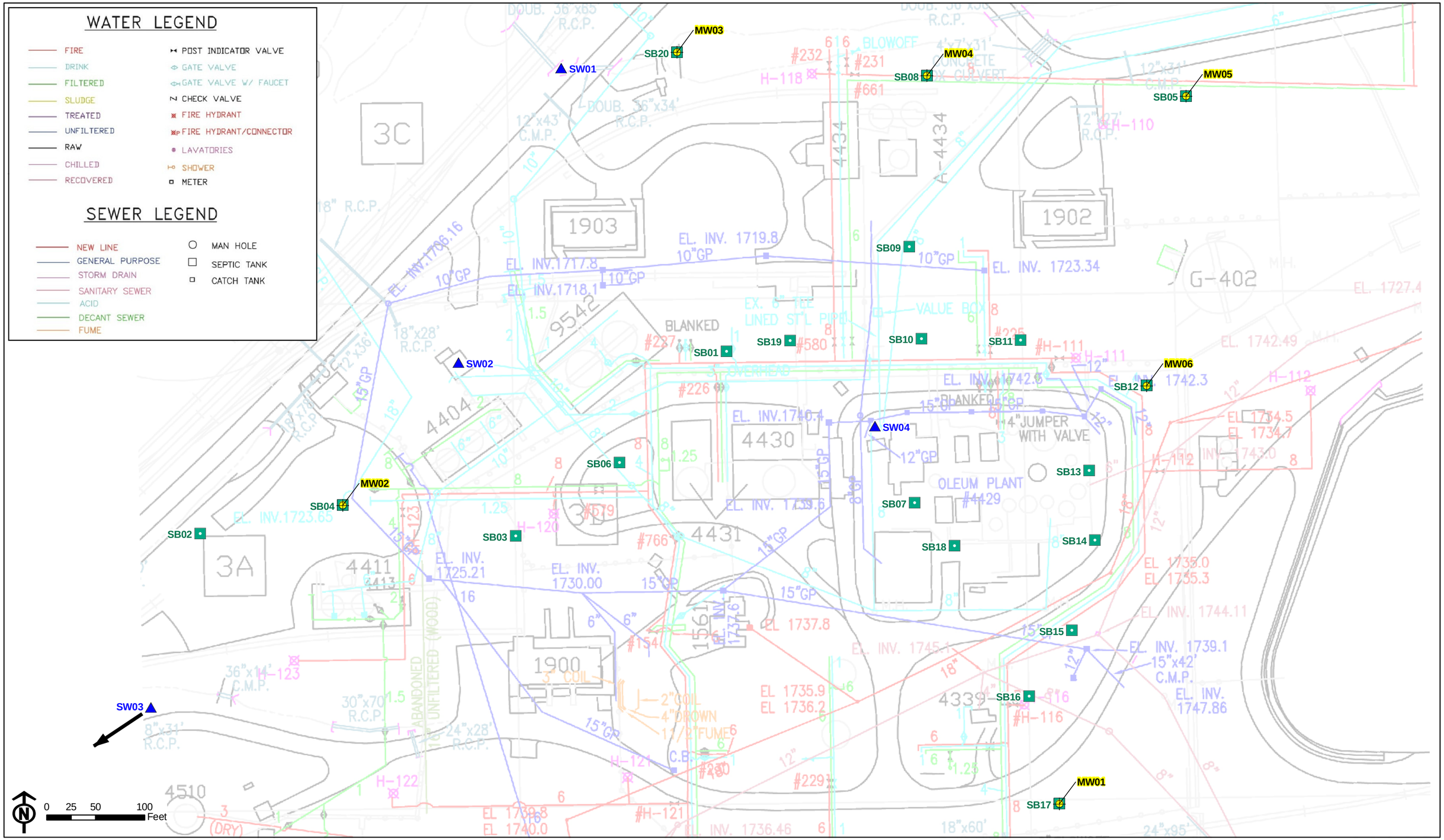



Monitoring Well and Soil Bore Location
Soil Bore Location
Surface Water Sampling Location

Figure 4 - 5
Water and Soil Sample Location Map
Oleum Plant Site, RFAAP
Radford, Virginia

**Table 4-D Summary of Positive Results for Groundwater Samples - Oleum Plant Site, RFAAP, Radford, Virginia 2007**

| Analyte | RBCWaterTap | | Samole ID: | ATK-GW-MW01 | | ATK-GW-MW02 | | ATK-GW-MW03 | | ATK-GW-MW04 | | ATK-GW-MW05 | | ATK-GW-MW06 | | ATK-GW-MW99 | | TRIP BLANK | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: | 5/8/2007 | | 5/7/2007 | | 5/7/2007 | | 5/8/2007 | | 5/8/2007 | | 5/8/2007 | | 5/7/2007 | | 1/0/1900 | |
| **Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ug/L)** | | | | | | | | | | | | | | | | | | | |
| Aluminum | 36500 | | | 227 | J | 1250 | | 970 | | 660 | | 220 | J | 731 | | 1210 | | | |
| Barium | 7300 | | | 39.5 | | 45.2 | | 33.6 | | 34.3 | | 62.5 | | 46.2 | | 43.8 | | | |
| Calcium | NA | | | 49100 | | 109000 | | 98800 | | 124000 | | 78500 | | 178000 | | 107000 | | | |
| Chromium | 109.5 | | | < 15 | | < 15 | | 4.1 | J | < 15 | | < 15 | | < 15 | | < 15 | | | |
| Cobalt | NA | | | < 50 | | < 50 | | < 50 | | < 50 | | < 50 | | 2.5 | J | < 50 | | | |
| Iron | 25550 | | | 162 | J | 845 | | 852 | | 512 | | 185 | J | 558 | | 803 | | | |
| Magnesium | NA | | | 22100 | | 38300 | | 43000 | | 57300 | | 39900 | | 117000 | | 37500 | | | |
| Manganese | 730 | | | 20.5 | | 25.2 | | 29.2 | | 20.3 | | 4.2 | J | 68.3 | | 22.6 | | | |
| Nickel | 730 | | | < 40 | | < 40 | | 2.4 | J | < 40 | | < 40 | | 3.2 | J | < 40 | | | |
| Potassium | NA | | | 1880 | J | 2330 | J | 1510 | J | 2040 | J | 1980 | J | 2720 | J | 2250 | J | | |
| Sodium | NA | | | 20500 | | 18200 | | 25400 | | 13600 | | 21100 | | 4900 | J | 17800 | | | |
| Zinc | 10950 | | | 3.3 | J | 11.4 | J | 5.1 | J | 3.9 | J | 2.6 | J | 5.2 | J | 15.2 | J | | |
| **Organochlorine Pesticides by GC using ECD (ug/L)** | | | | | | | | | | | | | | | | | | | |
| alpha-Chlordane | 25.550 | | | 0.005 | J | < 0.05 | J | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | | |
| beta-BHC | 0.037 | | | < **0.05** | | < **0.05** | J | 0.0096 | J | < **0.05** | | < **0.05** | | 0.011 | J | < **0.05** | | | |
| Endosulfan sulfate | NA | | | < 0.05 | | < 0.05 | J | < 0.05 | | < 0.05 | | < 0.05 | | < 0.05 | | 0.0099 | J | | |
| Heptachlor epoxide | 0.007 | | | < **0.05** | | < **0.05** | J | < **0.05** | | < **0.05** | | < **0.05** | | 0.0054 | J | < **0.05** | | | |
| **Volatile Organic Compounds by GC/MS (ug/L)** | | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | 353 | | | 0.15 | J | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | | < 1 | |
| 4-Methyl-2-pentanone (MIBK) | NA | | | < 5 | | < 5 | | < 5 | | 0.89 | J | < 5 | | < 5 | | < 5 | | < 5 | |
| Carbon tetrachloride | 0.162 | | | < **1** | | < **1** | | < **1** | | 0.11 | J | **0.22** | J | < **1** | | < **1** | | < **1** | |
| Chloroform | 0.155 | | | **8.1** | | **8.9** | | **18** | | **0.53** | J | **1.8** | | < **1** | | **9** | | < 1 | |
| Methylene chloride | 4.102 | | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | < 2 | | 0.25 | J |
| Tetrachloroethene | 0.104 | | | < **1** | | **0.12** | J | **0.39** | J | **0.7** | J | < **1** | | < **1** | | **0.13** | J | < 1 | |
| Toluene | 2271 | | | < 1 | | 0.92 | J | < 1 | | < 1 | | < 1 | | < 1 | | 1.1 | | < 1 | |
| Trichloroethene | 0.026 | | | < **1** | | **0.42** | J | < **1** | | < **1** | | < **1** | | **0.63** | J | **0.42** | J | < 1 | |



Source: Ecology and Environment, Inc., 2007

**Table 4-D Summary of Positive Results for Groundwater Samples - Oleum Plant Site, RFAAP, Radford, Virginia 2007**

| Analyte | RBCWaterTap | Samole ID: | ATK-GW-MW01 | ATK-GW-MW02 | ATK-GW-MW03 | ATK-GW-MW04 | ATK-GW-MW05 | ATK-GW-MW06 | ATK-GW-MW99 | TRIP BLANK |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date: | 5/8/2007 | 5/7/2007 | 5/7/2007 | 5/8/2007 | 5/8/2007 | 5/8/2007 | 5/7/2007 | 1/0/1900 |
| **Semi-Volatile Organic Compounds by GC/MS (ug/L)** | | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate | 4.78 | | < **10** J | < **10** J | < **10** J | < **10** J | < **10** J | **19** | < **10** J | |
| Di-n-octyl phthalate | NA | | < 10 | < 10 | < 10 | < 10 | < 10 | 4 J | < 10 | |
| Naphthalene | 6.511 | | < **10** | < **10** | < **10** | < **10** | < **10** | 0.7 J | < **10** | |
| **Nitroaromatics and Nitramines (Explosives) by HPLC (ug/L)** | | | | | | | | | | |
| 2,4-Dinitrotoluene | 73 | | < 0.2 J | 0.11 J | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| 2,6-Dinitrotoluene | 37 | | < 0.2 J | 0.098 J | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| Hexahydro-1,3,5-Trinitro-1,3,5-T | 0.609 | | < 0.5 J | < 0.5 | < 0.5 | 0.47 J | 0.47 J | < 0.5 | < 0.5 | |
| Nitrobenzene | 3.532 | | 0.42 J- | 1.7 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| Octahydro-1,3,5,7-tetranitro-1,3,5 | 1825 | | 0.12 J | 0.83 | 0.49 J | 2.7 | 3.2 | < 0.5 | 0.82 | |
| **Determination of Inorganic Anions by Ion Chromatography (mg/L)** | | | | | | | | | | |
| Nitrate/Nitrite as N | 3.65 | | **4.6** | **6.8** | **3.8** | 2.3 | **1630** | 0.07 J | **7.1** | |
| **Determination of Perchlorate by Method 6850 Mod (ug/L)** | | | | | | | | | | |
| Perchlorate | 25.55 | | 0.587 | 2.1 | 1.91 | 3.59 | 2.47 | 0.0707 J | 2.02 | |
| | | | | | | | | | | |

Key:
< = Not detected (lab reporting limit shown).
/D = Field duplicate sample.
J = Estimated value
ug/L = micrograms per liter
mg/L = milligrams per liter
For blank cells the samples were not analyzed
Shaded/bolded cells indicate concentration or reporting limit greater than residential RBC.

Note:
Perchlorate –O(18) is a perchlorate isotope using oxygen with a molecular weight of 18 instead of 16. It is a marker added to the sample during analysis. The laboratory is required to report it since it determines matrix effects and data quality issues. Perchlorate –O(18) is shown in the laboratory reports in Appendix E; however, it is not reported in the final data table.


Source: Ecology and Environment, Inc., 2007

# DRILLING LOG FOR MW-01

Project Name RADFORD ARMY AMMUNITION PLANT

Site Location RADFORD, VA.

Date Started/Finished 05/03/07 - 05/03/07

Drilling Company BEDFORD WELL DRILLING CO

Driller's Name STEPHEN RIPLEY

Geologist's Name HUSSEIN ALDIS

Geologist's Signature Hussein Aldis

Rig Type (s) INGERSOLL RAND T3W TRUCK MOUNTED

Drilling Method (s) MR ROTARY

Bit Size (s) 6INCH Auger Size (s) N/A

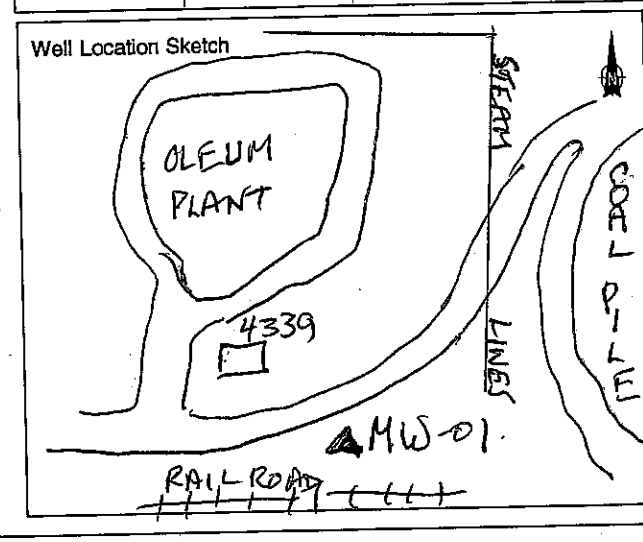
Auger/Split Spoon Refusal N/A

Total Depth of Borehole Is 50ft

Total Depth of Corehole Is 20ft (SB-17)

| Water Level (TOIC) | | |
|---|---|---|
| Date | Time | Level( Feet) |
| 05/08/07 | 1550 | 47.35 |
| | | |
| | | |
| | | |
| | | |
| | | |

Well Location Sketch




| Depth(Feet) | Sample Number | Blows on Sampler | Soil Components Rock Profile CL SL S GR | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ATK-SS-SB17 | | CL, SL | | | 100% | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | 100% | | | | |
| 5 | | | | | | | | | | |
| 6 | | | S, SL, CL | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | 100% | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | 100% | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |

RFAAP MW-01

**SCREENED WELL**

Stick-up 3.0 ft

Top of Grout _____ ft

Top of Seal at 3 ft

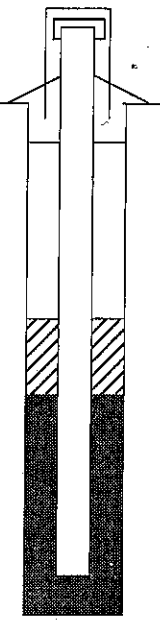
Top of Sand Pack 36 ft

Top of Screen at 40 ft

Bottom of Screen at 50 ft

Bottom of Hole at 50 ft

Bottom of Sandpack at 50 ft



Lock Number _____

Inner Casing Material PVC

Inner Casing Inside Diameter 4 inches

GROUND SURFACE

Quantity of Material Used:

Bentonite Pellets 8 x 50 lbs

Cement ≈150 lbs at surface

Borehole 8 inches Diameter

Cement/ Bentonite _____

Grout _____

Screen Slot Size 0.01"

Screen Type _____

☑ PVC

☐ Stainless Steel

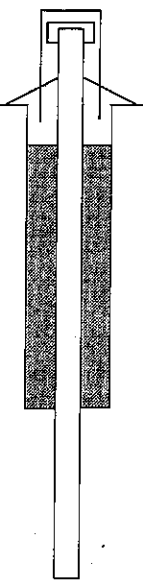
Pack Type/Size:

☑ Sand

☐ Gravel

☐ Natural

**OPEN-HOLE WELL**



Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

| Depth-ft. | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | Lithology to 20 ft based on SB17 | | | |
| 1 | Topsoil w grass roots 4 inches | ○ | ○ | ○ |
| 2 | 0.4" to 4.0 ft. clay, silty, 10YR 4/3 and 10YR 6/6 | ○ | ○ | ○ |
| 3 | light brown to mid brown. | ○ | ○ | ○ |
| 4 | | ○ | ○ | ○ |
| 5 | 4.0 - 6.0 Clay, silty, trace sand | ○ | ○ | ○ |
| 6 | | ○ | ○ | ○ |
| 7 | 6.0 - 16.0 Sand, silty, clayey, fine grained (loam) | ○ | ○ | ○ |
| 8 | light brown 10YR 6/6 | ○ | ○ | ○ |
| 9 | | ○ | ○ | ○ |
| 10 | | ○ | ○ | ○ |
| 11 | | ○ | ○ | ○ |
| 12 | | ○ | ○ | ○ |
| 13 | | ○ | ○ | ○ |
| 14 | | ○ | ○ | ○ |
| 15 | | ○ | ○ | ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | | | | | | | | | | | MW-01 |
| 17 | ATK- | | S, SL | | | | 100% | | | | RFAAP |
| 18 | SUB- | | | | | | | | | | |
| 19 | SB17 | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | S | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | GR | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | S | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | ROCK | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |
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| 41 | | | | | | | | | | | |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | | | | | | | | | | | |

| Depth(feet). | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | RFAAFMW-01 | | | |
| 16 | | | | |
| 17 | 16.0 - 20.0 Sand, silty, uniform 10YR 6/6 | | | |
| 18 | light brown | | | |
| 19 | | | | |
| 20 | Corehole (SB-17) total depth 20.0 ft. | | | |
| 21 | Cuttings from air rotary from 20.0 - 50.0 ft. | | | |
| 22 | 20.0 to 26.0 Becoming sandier. | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | Driller notes cobbles 26.0" to 28.0" approx. | | | |
| 28 | | | | |
| 29 | Sand below cobbles | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | Driller notes water in overburden | | | |
| 35 | Bedrock 34 - 35.0" below ground approx. | | | |
| 36 | Since no water in hole: drilled to 50 ft. | | | |
| 37 | Hard, dark grey ? dolostone Cambrian | | | |
| 38 | Elbrook Formation shown on geologic map. | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | Driller notes fracture at approx 45 ft bgs, water in hole | | | |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | | | ROCK | | | | | | | | RFAAP MW-01 |
| 47 | | | | | | | | | | | |
| 48 | | | | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | | | | | | | | | T.D. 50ft bgs |
| 51 | | | | | | | | | | | |
| 52 | | | | | | | | | | | |
| 53 | | | | | | | | | | | |
| 54 | | | | | | | | | | | |
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| 68 | | | | | | | | | | | |
| 69 | | | | | | | | | | | |
| 70 | | | | | | | | | | | |
| 71 | | | | | | | | | | | |
| 72 | | | | | | | | | | | |
| 73 | | | | | | | | | | | |
| 74 | | | | | | | | | | | |
| 75 | | | | | | | | | | | |

| Depth(feet) | NARRATIVE LITHOLOGIC DESCRIPTION RFAAP MW-01 | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| 46 | | ○ | ○ | ○ |
| 47 | Hard, dark grey ? dolostone to 50.0". | ○ | ○ | ○ |
| 48 | | ○ | ○ | ○ |
| 49 | | ○ | ○ | ○ |
| 50 | Total depth of borehole 50'0" | ○ | ○ | ○ |
| 51 | | ○ | ○ | ○ |
| 52 | | ○ | ○ | ○ |
| 53 | | ○ | ○ | ○ |
| 54 | | ○ | ○ | ○ |
| 55 | | ○ | ○ | ○ |
| 56 | | ○ | ○ | ○ |
| 57 | | ○ | ○ | ○ |
| 58 | | ○ | ○ | ○ |
| 59 | | ○ | ○ | ○ |
| 60 | | ○ | ○ | ○ |
| 61 | | ○ | ○ | ○ |
| 62 | | ○ | ○ | ○ |
| 63 | | ○ | ○ | ○ |
| 64 | | ○ | ○ | ○ |
| 65 | | ○ | ○ | ○ |
| 66 | | ○ | ○ | ○ |
| 67 | | ○ | ○ | ○ |
| 68 | | ○ | ○ | ○ |
| 69 | | ○ | ○ | ○ |
| 70 | | ○ | ○ | ○ |
| 71 | | ○ | ○ | ○ |
| 72 | | ○ | ○ | ○ |
| 73 | | ○ | ○ | ○ |
| 74 | | ○ | ○ | ○ |
| 75 | | ○ | ○ | ○ |

DRILLING LOG FOR MW-06

Project Name RADFORD ARMY AMMUNITION PLANT

Site Location RADFORD, VA

Date Started/Finished 05/03/07 - 05/03/07

Drilling Company Bedford Well Drilling Co.

Driller's Name Stephen Ripley

Geologist's Name Hussein Aldis

Geologist's Signature Hussein Aldis.

Rig Type (s) Ingersoll Rand T3W Truck Mounted

Drilling Method (s) AIR ROTARY

Bit Size (s) 6 inch Auger Size (s) N/A.

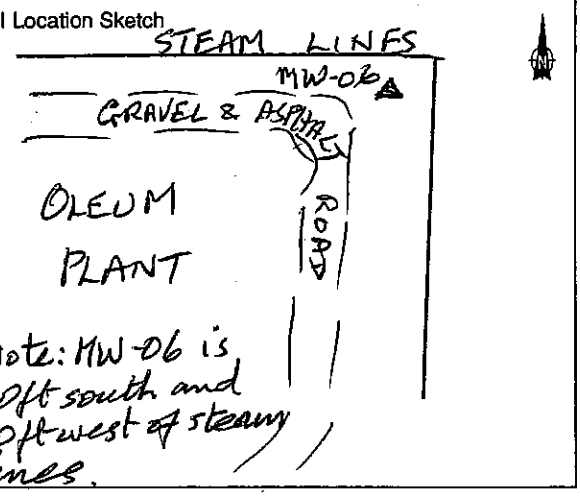
Auger/Split Spoon Refusal N/A.

Total Depth of Borehole Is 80ft bgs.

Total Depth of Corehole Is 20ft (SB-12)

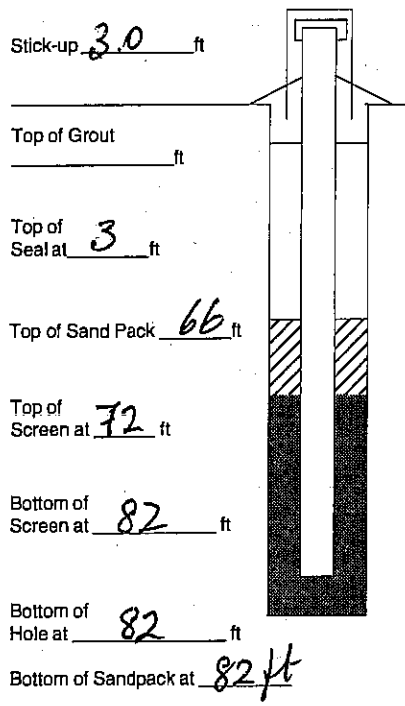
| Water Level (TOIC) | | |
|---|---|---|
| Date | Time | Level( Feet) |
| 05/08/07 | 1400 | 410.14ft |
| | | |
| | | |
| | | |
| | | |
| | | |

Well Location Sketch




| Depth(Feet) | Sample Number | Blows on Sampler | Soil Components Rock Profile CL SL S GR | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GR | | | | | | | Approx 4 inches gravel fill at surface |
| 1 | ATK-SS-SB-12 | | CL, SL | | | 100% | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | 100% | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | 100% | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | S, SL, CL | | | | | | | |
| 13 | | | | | | 100% | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |

RFAAP MW-06




Lock Number

Inner Casing Material PVC

Inner Casing Inside Diameter 4 inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets 17x50 lbs
Cement 2/50 lbs at surface
Borehole 6 inches Diameter

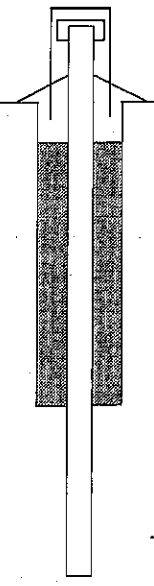
Cement/ Bentonite

Grout

Screen Slot Size 0.01"

Screen Type
☑ PVC
☐ Stainless Steel

Pack Type/Size:
☑ Sand
☐ Gravel
☐ Natural




Stick-up ft

Inner Casing Material

Inner Casing Inside Diameter inches

Outer Casing Diameter inches

Borehole Diameter ft

Bedrock ft

Bottom of Rock Socket/ Outer Casing ft

Bottom of Inner Casing ft

Corehole Diameter

Bottom of Corehole ft

NOTE: See pages 136 and 137 for well construction diagrams

| Depth-ft. | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| | Lithology for 20ft is based on SB-12 | | | |
| 1 | 4 inches of gravel fill at surface | ○ | ○ | ○ |
| 2 | 0.4" - 12 ft, Clay, silty, light brown 10YR 6/6 | ○ | ○ | ○ |
| 3 | | ○ | ○ | ○ |
| 4 | | ○ | ○ | ○ |
| 5 | | ○ | ○ | ○ |
| 6 | | ○ | ○ | ○ |
| 7 | | ○ | ○ | ○ |
| 8 | | ○ | ○ | ○ |
| 9 | | ○ | ○ | ○ |
| 10 | | ○ | ○ | ○ |
| 11 | | ○ | ○ | ○ |
| 12 | | ○ | ○ | ○ |
| 13 | 12.0 - 16.0 Sand, silty, clayey, uniform, light brown 10YR 6/6. | ○ | ○ | ○ |
| 14 | | ○ | ○ | ○ |
| 15 | | ○ | ○ | ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | | | | | | | 100% | | | | REAAP |
| 17 | ATK- | | SSL, CL | | | | 100% | | | | MW-06 |
| 18 | SUB- | | | | | | | | | | |
| 19 | SB12 | | | | | | | | | | |
| 20 | | | | | | | | | | | TD. FOR SB-12 |
| 21 | | | S | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | GR | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | ROCK | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
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| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | | | | | | | | | | | |

| Depth(feet). | NARRATIVE LITHOLOGIC DESCRIPTION<br>RFAAP MW-06 | Moisture Content<br>Dry Moist Wet |
|---|---|---|
| 16 | | ○ ○ ○ |
| 17 | Sand, silty, very fine, clayey, very uniform | ○ ○ ○ |
| 18 | 10YR 6/6 | ○ ○ ○ |
| 19 | | ○ ○ ○ |
| 20 | Bottom of SB-12 at 20 ft. 2 HA | ○ ○ ○ |
| 21 | Drilling with air rotary to 80 feet. Cuttings only | ○ ○ ○ |
| 22 | Becoming sandier to approx. 28 ft bgs | ○ ○ ○ |
| 23 | | ○ ○ ○ |
| 24 | | ○ ○ ○ |
| 25 | | ○ ○ ○ |
| 26 | | ○ ○ ○ |
| 27 | | ○ ○ ○ |
| 28 | | ○ ○ ○ |
| 29 | Driller estimates gravel from 28.0 ft to 30.0 ft bgs | ○ ○ ○ |
| 30 | | ○ ○ ○ |
| 31 | Bedrock at 30' Hard dark grey, ?dolostone | ○ ○ ○ |
| 32 | Cambrian Elbrook Formation from geologic map. | ○ ○ ○ |
| 33 | Drilled dry to 75' | ○ ○ ○ |
| 34 | | ○ ○ ○ |
| 35 | | ○ ○ ○ |
| 36 | | ○ ○ ○ |
| 37 | | ○ ○ ○ |
| 38 | | ○ ○ ○ |
| 39 | | ○ ○ ○ |
| 40 | | ○ ○ ○ |
| 41 | | ○ ○ ○ |
| 42 | | ○ ○ ○ |
| 43 | | ○ ○ ○ |
| 44 | .75 ft, HA | ○ ○ ○ |
| 45 | Note: Driller says soft spot at ~~75~~ ft bgs is fracture | ○ ○ ○ |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | | | ROCK | | | | | | | | RFAAP MW-06 |
| 47 | | | | | | | | | | | |
| 48 | | | | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | | | | | | | | | |
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| 69 | | | | | | | | | | | |
| 70 | | | | | | | | | | | |
| 71 | | | | | | | | | | | |
| 72 | | | | | | | | | | | |
| 73 | | | | | | | | | | | |
| 74 | | | | | | | | | | | |
| 75 | | | | | | | | | | | |

| Depth(feet) | NARRATIVE LITHOLOGIC DESCRIPTION RFAAP MW-06 | Moisture Content: Dry | Moist | Wet |
|---|---|---|---|---|
| 46 | Bedrock, hard dark grey ? dolostone | ○ | ○ | ○ |
| 47 | to 82 feet bgs. Very few fractures | ○ | ○ | ○ |
| 48 | | ○ | ○ | ○ |
| 49 | | ○ | ○ | ○ |
| 50 | | ○ | ○ | ○ |
| 51 | | ○ | ○ | ○ |
| 52 | | ○ | ○ | ○ |
| 53 | | ○ | ○ | ○ |
| 54 | | ○ | ○ | ○ |
| 55 | | ○ | ○ | ○ |
| 56 | | ○ | ○ | ○ |
| 57 | | ○ | ○ | ○ |
| 58 | | ○ | ○ | ○ |
| 59 | | ○ | ○ | ○ |
| 60 | | ○ | ○ | ○ |
| 61 | | ○ | ○ | ○ |
| 62 | | ○ | ○ | ○ |
| 63 | | ○ | ○ | ○ |
| 64 | | ○ | ○ | ○ |
| 65 | | ○ | ○ | ○ |
| 66 | | ○ | ○ | ○ |
| 67 | | ○ | ○ | ○ |
| 68 | | ○ | ○ | ○ |
| 69 | | ○ | ○ | ○ |
| 70 | | ○ | ○ | ○ |
| 71 | | ○ | ○ | ○ |
| 72 | | ○ | ○ | ○ |
| 73 | | ○ | ○ | ○ |
| 74 | Suspected fracture at 75ft bgs cuts dust. | ○ | ○ | ○ |
| 75 | | | | |

| Depth(feet) | Sample Number | Blows on Sampler | Soil Components CL SL S GR | Rock Profile | Penetration Times | Run Number | Core Recovery | RQD | Fracture Sketch | HNu/OVA (ppm) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 77 | | | ROCK | | | | | | | | RFAAP MW-06 |
| 78 | | | | | | | | | | | |
| 79 | | | | | | | | | | | |
| 80 | | | | | | | | | | | |
| 81 | | | | | | | | | | | |
| 82 | | | | | | | | | | | T.D. 82ft |
| 83 | | | | | | | | | | | |
| 84 | | | | | | | | | | | |
| 85 | | | | | | | | | | | |
| 86 | | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | | | | | | | | | | | |
| 89 | | | | | | | | | | | |
| 90 | | | | | | | | | | | |
| 91 | | | | | | | | | | | |
| 92 | | | | | | | | | | | |
| 93 | | | | | | | | | | | |
| 94 | | | | | | | | | | | |
| 95 | | | | | | | | | | | |
| 96 | | | | | | | | | | | |
| 97 | | | | | | | | | | | |
| 98 | | | | | | | | | | | |
| 99 | | | | | | | | | | | |
| 100 | | | | | | | | | | | |
| 101 | | | | | | | | | | | |
| 102 | | | | | | | | | | | |
| 103 | | | | | | | | | | | |
| 104 | | | | | | | | | | | |
| 105 | | | | | | | | | | | |

| Depth (feet) | NARRATIVE LITHOLOGIC DESCRIPTION | Moisture Content | | |
|---|---|---|---|---|
| | RFAAP MW-06 | Dry | Moist | Wet |
| 77 | | ○ | ○ | ○ |
| 78 | Hard, dark grey ? dolostone, very few | ○ | ○ | ○ |
| 79 | fractures. | ○ | ○ | ○ |
| 80 | | ○ | ○ | ○ |
| 81 | | ○ | ○ | ○ |
| 82 | Bottom of hole at 82 feet bgs | ○ | ○ | ○ |
| 83 | | ○ | ○ | ○ |
| 84 | | ○ | ○ | ○ |
| 85 | | ○ | ○ | ○ |
| 86 | | ○ | ○ | ○ |
| 87 | | ○ | ○ | ○ |
| 88 | | ○ | ○ | ○ |
| 89 | | ○ | ○ | ○ |
| 90 | | ○ | ○ | ○ |
| 91 | | ○ | ○ | ○ |
| 92 | | ○ | ○ | ○ |
| 93 | | ○ | ○ | ○ |
| 94 | | ○ | ○ | ○ |
| 95 | | ○ | ○ | ○ |
| 96 | | ○ | ○ | ○ |
| 97 | | ○ | ○ | ○ |
| 98 | | ○ | ○ | ○ |
| 99 | | ○ | ○ | ○ |
| 100 | | ○ | ○ | ○ |
| 101 | | ○ | ○ | ○ |
| 102 | | ○ | ○ | ○ |
| 103 | | ○ | ○ | ○ |
| 104 | | ○ | ○ | ○ |
| 105 | | ○ | ○ | ○ |

# RADFORD ARMY AMMUNITION PLANT
# RADFORD, VIRGINIA

## Solid Waste Management Units 35, 37, 38, and Area of Concern Q (RAAP-10) RCRA Facility Investigation Report

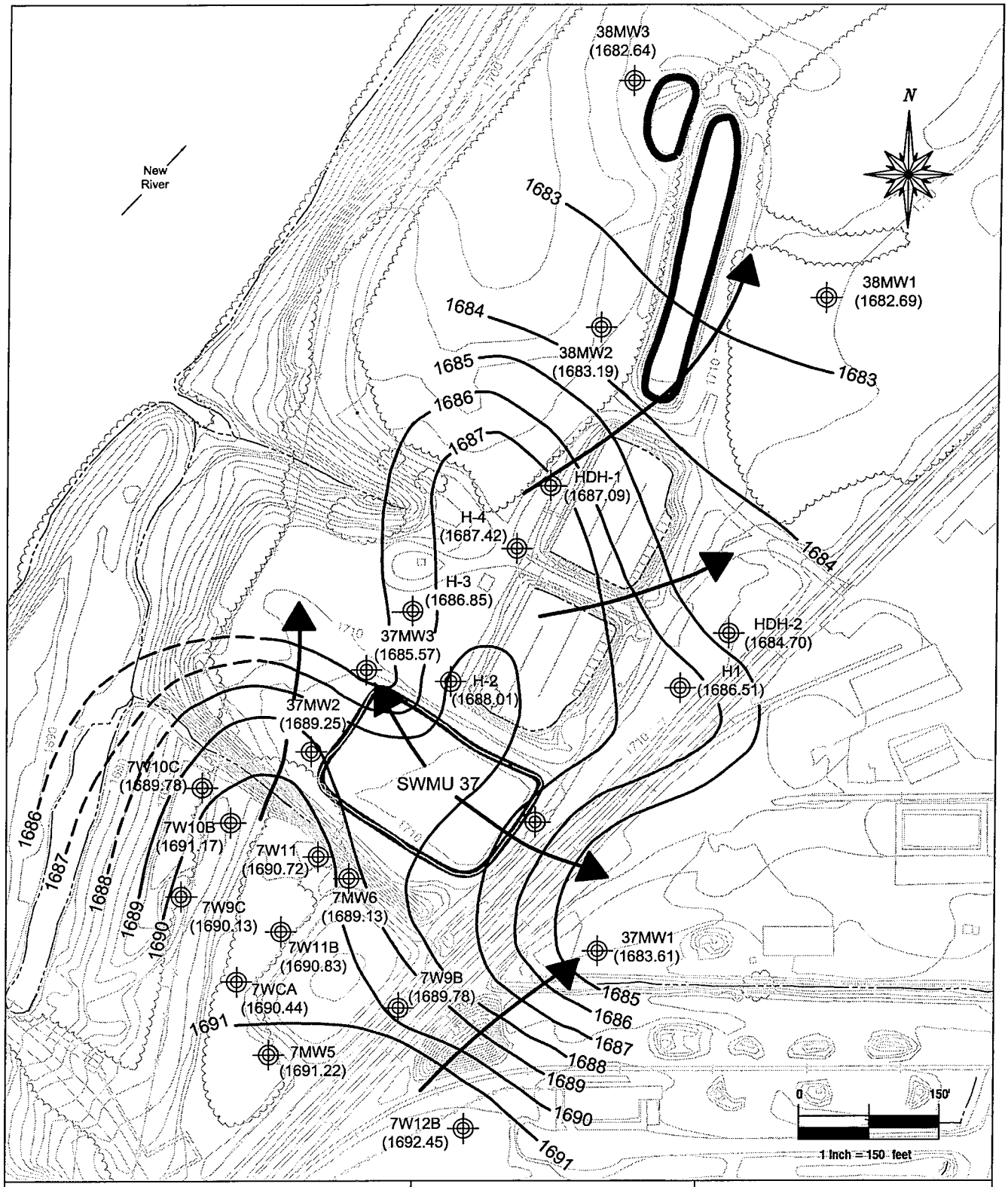
**FINAL**
**SEPTEMBER 2010**

**PREPARED BY:**

URS

5540 Falmouth Street, Suite 201
Richmond, Virginia 23230
(804) 965-9000 main
(804) 965-9764 fax

ARCHITECT-ENGINEER SERVICES
CONTRACT NO. DACA31-00-0011
DELIVERY ORDER NO. 0054




Legend

- Topographic Contour
- SWMU Boundary
- Perimeter Fence
- Groundwater Flow Direction
- Monitoring Well
- Proposed Monitoring Well
- Potentiometric Contour
- (1688.96) Groundwater Elevation (feet, mean sea level)

# FIGURE 2-15

Potentiometric Contour Map for November 2009

| | |
|---|---|
| Date: February 2009 | URS Project #: 21354887 |
| Prepared by: DBC | Approved by: JOS |
| Scale: 1 inch = 150 feet | File Name: Fig.2-15 PotMap |

**SWMUs 35, 37, 38, and AOC Q**
RFI Report
Radford Army Ammunition Plant
Radford, Virginia

URS
URS Group, Inc.
5540 Falmouth Street
Suite 201
Richmond, Virginia 23230

Table 2-3
Monitoring Well and Groundwater Elevation Data
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Well Identification | Date Installed | Screened Zone | Boring Depth (ft bgs) | Depth to Bedrock (ft bgs) | Bedrock Elevation (ft msl) | Screened Interval (ft bgs) | Elevation Ground Surface (ft msl) | Elevation TOC (inner) (ft msl) | RFI | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | DTW (ft BTOC) 02/07/08 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 08/12/08 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 11/10/09 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) | DTW (ft BTOC) 06/16/10 | Groundwater Elevation (ft msl) | Thickness of Saturated Interval Above Bedrock (ft) |
| 35MW1 | 12/14/2007 | unconsolidated/bedrock | 31.0 | 22.0 | 1681.72 | 11.0-31.0 | 1703.72 | 1706.42 | 19.82 | 1686.60 | 4.88 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 35MW2 | 12/17/2007 | unconsolidated/bedrock | 31.0 | 26.0 | 1677.91 | 11.0-31.0 | 1703.91 | 1706.88 | 21.32 | 1685.56 | 7.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D-2 | 8/7/1980 | unconsolidated/bedrock | 35.0 | 23.5 | 1688.91 | 20.0-35.0 | 1712.41 | 1715.10 | 23.51 | 1691.59 | 2.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D-4 | 8/7/1980 | unconsolidated/bedrock | 35.0 | 23.0 | 1689.45 | 20.0-35.0 | 1712.45 | 1714.78 | 22.90 | 1691.88 | 2.43 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 37MW1 | 12/13/2007 | unconsolidated/bedrock | 40.0 | 32.0 | 1681.35 | 15.0-40.0 | 1713.35 | 1716.02 | 32.61 | 1683.41 | 2.06 | 33.07 | 1682.95 | 1.60 | 32.41 | 1683.61 | 2.26 | 32.29 | 1683.73 | 2.38 |
| 37MW2 | 12/11/2007 | unconsolidated/bedrock | 41.0 | 27.0 | 1687.38 | 21.0-41.0 | 1714.38 | 1716.82 | 27.86 | 1688.96 | 1.58 | 27.95 | 1688.87 | 1.49 | 27.57 | 1689.25 | 1.87 | 27.60 | 1689.22 | 1.84 |
| 37MW3 | 12/12/2007 | unconsolidated/bedrock | 41.0 | 27.0 | 1685.00 | 21.0-41.0 | 1712.00 | 1714.55 | 29.51 | 1685.04 | 0.04 | 29.96 | 1684.59 | -0.41 | 28.98 | 1685.57 | 0.57 | 29.51 | 1685.04 | 0.04 |
| 37MW4 | 5/25/2010 | unconsolidated/bedrock | 45.5 | 26.0 | 1687.38 | 20.0-45.0 | 1713.38 | 1716.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 30.31 | 1685.70 | -1.68 |
| 38MW1 | 12/20/2007 | unconsolidated/bedrock | 40.0 | 34.0 | 1675.40 | 20.0-40.0 | 1709.40 | 1712.00 | 29.25 | 1682.75 | 7.35 | 30.50 | 1681.50 | 6.10 | 29.31 | 1682.69 | 7.29 | 29.07 | 1682.93 | 7.53 |
| 38MW2 | 12/21/2007 | unconsolidated/bedrock | 36.0 | 26.5 | 1681.08 | 16.0-36.0 | 1707.58 | 1710.30 | 27.13 | 1683.17 | 2.09 | 28.37 | 1681.93 | 0.85 | 27.11 | 1683.19 | 2.11 | 27.13 | 1683.17 | 2.09 |
| 38MW3 | 12/18/2007 | unconsolidated/bedrock | 41.0 | 28.0 | 1677.03 | 16.0-41.0 | 1705.03 | 1707.69 | 24.95 | 1682.74 | 5.71 | 26.48 | 1681.21 | 4.18 | 25.05 | 1682.64 | 5.61 | 24.74 | 1682.95 | 5.92 |
| H-1 | 7/23/1980 | unconsolidated/bedrock | 40.0 | 26.0 | 1686.48 | 25.0-40.0 | 1712.48 | 1715.53 | -- | -- | -- | -- | -- | -- | 29.02 | 1686.51 | 0.03 | 30.03 | 1685.50 | -0.98 |
| H-2 | 7/24/1980 | unconsolidated | 40.0 | -- | -- | 25.0-40.0 | 1709.90 | 1712.70 | -- | -- | -- | -- | -- | -- | 24.69 | 1688.01 | -- | 26.04 | 1686.66 | -- |
| H-3 | 7/25/1980 | unconsolidated/bedrock | 40.0 | 23.0 | 1686.66 | 25.0-40.0 | 1709.66 | 1712.98 | -- | -- | -- | -- | -- | -- | 26.13 | 1686.85 | 0.19 | 27.19 | 1685.79 | -0.87 |
| H-4 | 7/25/1980 | unconsolidated/bedrock | 40.0 | 32.0 | 1678.90 | 25.0-40.0 | 1710.90 | 1713.90 | -- | -- | -- | -- | -- | -- | 26.48 | 1687.42 | 8.52 | 28.56 | 1685.34 | 6.44 |
| HDH-1 | 7/14/1980 | unconsolidated/bedrock | 40.0 | 24.0 | 1686.60 | 20.0-40.0 | 1710.60 | 1713.60 | -- | -- | -- | -- | -- | -- | 26.51 | 1687.09 | 0.49 | 28.00 | 1685.60 | -1.00 |
| HDH-2 | 7/11/1980 | unconsolidated/bedrock | 45.0 | 35.0 | 1678.00 | 25.0-40.0 | 1713.00 | 1716.00 | -- | -- | -- | -- | -- | -- | 31.30 | 1684.70 | 6.70 | 31.67 | 1684.33 | 6.33 |
| 7W12B | NA | NA | 35.0 | NA | -- | 19.5-34.5 | 1714.81 | 1717.31 | -- | -- | -- | -- | -- | -- | 24.86 | 1692.45 | -- | 24.70 | 1692.61 | -- |
| 7WCA | 5/12/1987 | unconsolidated/bedrock | 40.8 | 28.9 | 1683.50 | 31.6-38.6 | 1712.40 | 1715.40 | -- | -- | -- | -- | -- | -- | 24.96 | 1690.44 | 6.94 | 24.92 | 1690.48 | 6.98 |
| 7MW6 | 1/11/1989 | unconsolidated | 64.5 | -- | -- | 47.5-52.5 | 1712.80 | 1715.30 | -- | -- | -- | -- | -- | -- | 26.17 | 1689.13 | -- | 26.18 | 1689.12 | -- |
| 7W11B | 2/10/1983 | unconsolidated/bedrock | 35.0 | 30.0 | 1682.90 | 20.0-35.0 | 1712.90 | 1715.90 | -- | -- | -- | -- | -- | -- | 25.07 | 1690.83 | 7.93 | 25.04 | 1690.86 | 7.96 |
| 7W9C | NA | NA | 40.0 | NA | -- | 20.0-40.0 | 1703.70 | 1704.45 | -- | -- | -- | -- | -- | -- | 14.32 | 1690.13 | -- | 14.32 | 1690.13 | -- |
| 7W10B | NA | NA | 32.0 | NA | -- | 20.0-30.0 | 1704.65 | 1706.65 | -- | -- | -- | -- | -- | -- | 15.48 | 1691.17 | -- | 15.46 | 1691.19 | -- |
| 7W10C | NA | NA | 50.0 | NA | -- | 30.0-50.0 | 1701.50 | 1709.30 | -- | -- | -- | -- | -- | -- | 19.52 | 1689.78 | -- | 20.20 | 1689.10 | -- |
| 7MW5 | 1/10/1989 | unconsolidated/bedrock | 44.5 | 29.5 | 1683.70 | 29.0-39.0 | 1713.20 | 1716.20 | -- | -- | -- | -- | -- | -- | 24.98 | 1691.22 | 7.52 | 24.96 | 1691.24 | 7.54 |
| 7W11 | NA | NA | 35.0 | NA | -- | 16.0-26.0 | 1712.82 | 1714.82 | -- | -- | -- | -- | -- | -- | 24.10 | 1690.72 | -- | 24.13 | 1690.69 | -- |
| 7W9B | NA | NA | 38.0 | NA | -- | 28.0-38.0 | 1711.40 | 1712.49 | -- | -- | -- | -- | -- | -- | 22.71 | 1689.78 | -- | 22.71 | 1689.78 | -- |

**Notes:**
ft = feet
msl = mean sea level
bgs = below ground surface
TOC = Top of Casing
DTW = Depth to Water
BTOC = Below Top of Casing
RFI = RCRA Facility Investigation
NA = Not Available

Table 4-7
Summary of Detected Chemicals in Groundwater Analytical Samples at SWMU 37
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Sample ID / Sample Date | CAS | C/N | Adjusted Tap Water RBC | MCL | Units | 37MW1 2/11/2008 | | MDL | RL | 37MW2 2/11/2008 | | MDL | RL | 37MW2* 6/24/2008 | | MDL | RL | 37MW2-DUP (DUP-2)* 6/24/2008 | | MDL | RL | 37MW3 2/12/2008 | | MDL | RL | 37MW4 6/16/2010 | | MDL | RL | 37MW4-DUP (DUP-1) 6/16/2010 | | MDL | RL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | |
| **Perchlorate** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | 14797-73-0 | N | 2.555 | -- | ug/L | 0.97 | | 0.08 | 0.2 | 2.2 | | 0.08 | 0.2 | NT | | | | NT | | | | 2 | | 0.08 | 0.2 | NT | | | | NT | | | |
| **TAL Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total | 7429-90-5 | N | 3,650 | -- | ug/L | 82 | J | 44 | 200 | 17,000 | | 44 | 200 | NT | | | | NT | | | | 180 | J | 44 | 200 | NT | | | | NT | | | |
| Antimony, Dissolved | 7440-36-0 | N | 1.46 | 6 | ug/L | <3 | U | 0.44 | 3 | 0.54 | J,B,p | 0.44 | 3 | NT | | | | NT | | | | <3 | U | 0.44 | 3 | NT | | | | NT | | | |
| Arsenic, Total | 7440-38-2 | C | 0.0446 | 10 | ug/L | <3 | U | 0.74 | 3 | 3.9 | | 0.74 | 3 | NT | | | | NT | | | | <3 | U | 0.74 | 3 | NT | | | | NT | | | |
| Barium, Dissolved | 7440-39-3 | N | 730 | 2,000 | ug/L | 35 | | 0.52 | 2 | 28 | | 0.52 | 2 | NT | | | | NT | | | | 12 | | 0.52 | 2 | NT | | | | NT | | | |
| Barium, Total | 7440-39-3 | N | 730 | 2,000 | ug/L | 42 | | 0.52 | 2 | 1,300 | | 2.6 | 10 | NT | | | | NT | | | | 16 | | 0.52 | 2 | NT | | | | NT | | | |
| Beryllium, Total | 7440-41-7 | N | 7.3 | 4 | ug/L | <2 | U | 0.31 | 2 | 0.73 | J | 0.31 | 2 | NT | | | | NT | | | | <2 | U | 0.31 | 2 | NT | | | | NT | | | |
| Cadmium, Total | 7440-43-9 | N | 1.825 | 5 | ug/L | <0.2 | U | 0.062 | 0.2 | 0.097 | J | 0.062 | 0.2 | NT | | | | NT | | | | <0.2 | U | 0.062 | 0.2 | NT | | | | NT | | | |
| Calcium, Dissolved | 7440-70-2 | -- | -- | -- | ug/L | 92,000 | | 40 | 500 | 160,000 | | 40 | 500 | NT | | | | NT | | | | 260,000 | | 40 | 500 | NT | | | | NT | | | |
| Calcium, Total | 7440-70-2 | -- | -- | -- | ug/L | 91,000 | | 40 | 500 | 240,000 | | 40 | 500 | NT | | | | NT | | | | 260,000 | | 40 | 500 | NT | | | | NT | | | |
| Chromium, Dissolved[1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 5.9 | | 0.31 | 2 | 2.4 | ,B,p | 0.31 | 2 | NT | | | | NT | | | | 1.5 | J,B,p | 0.31 | 2 | NT | | | | NT | | | |
| Chromium, Total[1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 8.1 | | 0.31 | 2 | 80 | | 0.31 | 2 | NT | | | | NT | | | | 2.7 | ,B,x | 0.31 | 2 | NT | | | | NT | | | |
| Cobalt, Dissolved | 7440-48-4 | -- | -- | -- | ug/L | 0.97 | J | 0.096 | 1 | 8.9 | | 0.096 | 1 | NT | | | | NT | | | | 1.4 | | 0.096 | 1 | NT | | | | NT | | | |
| Cobalt, Total | 7440-48-4 | -- | -- | -- | ug/L | 2.2 | | 0.096 | 1 | 12 | | 0.096 | 1 | NT | | | | NT | | | | 1.6 | | 0.096 | 1 | NT | | | | NT | | | |
| Copper, Dissolved | 7440-50-8 | N | 146 | 1,300 | ug/L | 1 | | 0.33 | 1 | 1.3 | | 0.33 | 1 | NT | | | | NT | | | | 1.6 | | 0.33 | 1 | NT | | | | NT | | | |
| Copper, Total | 7440-50-8 | N | 146 | 1,300 | ug/L | 1.3 | | 0.33 | 1 | 8.4 | | 0.33 | 1 | NT | | | | NT | | | | 2.3 | | 0.33 | 1 | NT | | | | NT | | | |
| Iron, Dissolved | 7439-89-6 | N | 2,555 | -- | ug/L | 11 | J | 5.7 | 20 | 31 | | 5.7 | 20 | NT | | | | NT | | | | <20 | U | 5.7 | 20 | NT | | | | NT | | | |
| Iron, Total | 7439-89-6 | N | 2,555 | -- | ug/L | 380 | | 5.7 | 20 | 24,000 | | 5.7 | 20 | NT | | | | NT | | | | 320 | | 5.7 | 20 | NT | | | | NT | | | |
| Lead, Total[2] | 7439-92-1 | -- | 15 | -- | ug/L | <1 | U | 0.33 | 1 | 5.4 | | 0.33 | 1 | NT | | | | NT | | | | <1 | U | 0.33 | 1 | NT | | | | NT | | | |
| Magnesium, Dissolved | 7439-95-4 | -- | -- | -- | ug/L | 28,000 | | 38 | 500 | 89,000 | | 38 | 500 | NT | | | | NT | | | | 47,000 | | 38 | 500 | NT | | | | NT | | | |
| Magnesium, Total | 7439-95-4 | -- | -- | -- | ug/L | 29,000 | | 38 | 500 | 130,000 | | 38 | 500 | NT | | | | NT | | | | 48,000 | | 38 | 500 | NT | | | | NT | | | |
| Manganese, Dissolved | 7439-96-5 | N | 73 | -- | ug/L | 2.3 | J | 0.43 | 3 | 260 | | 0.43 | 3 | NT | | | | NT | | | | 3.7 | | 0.43 | 3 | NT | | | | NT | | | |
| Manganese, Total | 7439-96-5 | N | 73 | -- | ug/L | 52 | | 0.43 | 3 | 710 | | 0.86 | 6 | NT | | | | NT | | | | 22 | | 0.43 | 3 | NT | | | | NT | | | |
| Nickel, Dissolved | 7440-02-0 | N | 73 | -- | ug/L | 1.3 | J,B,p | 0.28 | 2 | 28 | | 0.28 | 2 | NT | | | | NT | | | | 3.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Nickel, Total | 7440-02-0 | N | 73 | -- | ug/L | 2.4 | | 0.28 | 2 | 62 | | 0.28 | 2 | NT | | | | NT | | | | 3.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Potassium, Dissolved | 7440-09-7 | -- | -- | -- | ug/L | 570 | | 54 | 200 | 5,100 | | 54 | 200 | NT | | | | NT | | | | 1,100 | | 54 | 200 | NT | | | | NT | | | |
| Potassium, Total | 7440-09-7 | -- | -- | -- | ug/L | 730 | | 54 | 200 | 9,700 | | 54 | 200 | NT | | | | NT | | | | 1,100 | | 54 | 200 | NT | | | | NT | | | |
| Sodium, Dissolved | 7440-23-5 | -- | -- | -- | ug/L | 65,000 | | 84 | 500 | 54,000 | | 84 | 500 | NT | | | | NT | | | | 110,000 | | 84 | 500 | NT | | | | NT | | | |
| Sodium, Total | 7440-23-5 | -- | -- | -- | ug/L | 65,000 | | 84 | 500 | 56,000 | | 84 | 500 | NT | | | | NT | | | | 110,000 | | 84 | 500 | NT | | | | NT | | | |
| Selenium, Dissolved | 7782-49-2 | N | 18.25 | 50 | ug/L | 1.2 | J | 0.92 | 3 | <3 | U | 0.92 | 3 | NT | | | | NT | | | | <3 | U | 0.92 | 3 | NT | | | | NT | | | |
| Selenium, Total | 7782-49-2 | N | 18.25 | 50 | ug/L | 1.6 | J | 0.92 | 3 | <3 | U | 0.92 | 3 | NT | | | | NT | | | | <3 | U | 0.92 | 3 | NT | | | | NT | | | |
| Silver, Total | 7440-22-4 | N | 18.25 | -- | ug/L | <0.5 | U | 0.12 | 0.5 | 0.32 | J | 0.12 | 0.5 | NT | | | | NT | | | | <0.5 | U | 0.12 | 0.5 | NT | | | | NT | | | |
| Vanadium, Dissolved | 7440-62-2 | N | 3.65 | -- | ug/L | <5 | U | 0.83 | 5 | 1.7 | J | 0.83 | 5 | NT | | | | NT | | | | <5 | U | 0.83 | 5 | NT | | | | NT | | | |
| Vanadium, Total | 7440-62-2 | N | 3.65 | -- | ug/L | 0.85 | J | 0.83 | 5 | 24 | | 0.83 | 5 | NT | | | | NT | | | | 0.98 | J | 0.83 | 5 | NT | | | | NT | | | |
| Zinc, Dissolved | 7440-66-6 | N | 1,095 | -- | ug/L | 15 | ,B,p | 0.84 | 10 | 20 | ,B,p | 0.84 | 10 | NT | | | | NT | | | | 7.4 | J,B,p | 0.84 | 10 | NT | | | | NT | | | |
| Zinc, Total | 7440-66-6 | N | 1,095 | -- | ug/L | 9.1 | J,B,p | 0.84 | 10 | 36 | | 0.84 | 10 | NT | | | | NT | | | | 7.9 | J,B,p | 0.84 | 10 | NT | | | | NT | | | |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| alpha-BHC | 319-84-6 | C | 0.0106 | -- | ug/L | <0.05 | U | 0.0019 | 0.05 | 0.49 | | 0.0038 | 0.1 | 0.062 | | 0.0019 | 0.05 | 0.05 | | 0.0019 | 0.05 | <0.05 | U | 0.0019 | 0.05 | NT | | | | NT | | | |
| alpha-Chlordane[3] | 5103-71-9 | C | 0.191 | 2 | ug/L | 0.29 | ,J,g | 0.0042 | 0.1 | 0.046 | J,J,g | 0.0021 | 0.05 | 0.13 | ,J,m | 0.0021 | 0.05 | 0.15 | ,J,g | 0.0021 | 0.05 | 0.1 | ,J,g | 0.0021 | 0.05 | NT | | | | NT | | | |
| beta-BHC | 319-85-7 | C | 0.0372 | -- | ug/L | <0.05 | U | 0.0032 | 0.05 | 0.052 | ,J,g | 0.0032 | 0.05 | 0.017 | J,J,m | 0.0032 | 0.05 | <0.050 | U | 0.0032 | 0.05 | <0.05 | U | 0.0032 | 0.05 | NT | | | | NT | | | |
| delta-BHC[4] | 319-86-8 | C | 0.0106 | -- | ug/L | <0.1 | U | 0.0023 | 0.1 | 0.016 | J | 0.0023 | 0.1 | 0.0055 | J | 0.0023 | 0.1 | 0.0038 | J | 0.0023 | 0.05 | <0.1 | U | 0.0023 | 0.1 | NT | | | | NT | | | |
| Endosulfan II[5] | 33213-65-9 | N | 21.9 | -- | ug/L | <0.1 | U | 0.0018 | 0.1 | <0.1 | U | 0.0018 | 0.1 | 0.02 | J,J,g | 0.0018 | 0.1 | 0.016 | J,J,g | 0.0018 | 0.1 | 0.013 | J,J,g | 0.0018 | 0.1 | NT | | | | NT | | | |
| gamma-BHC (Lindane) | 58-89-9 | C | 0.0515 | 0.2 | ug/L | <0.05 | U | 0.0018 | 0.05 | 0.013 | J | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | <0.05 | U | 0.0018 | 0.05 | NT | | | | NT | | | |
| gamma-Chlordane[3] | 5103-74-2 | C | 0.191 | 2 | ug/L | 0.13 | | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | 0.058 | ,J,g | 0.0021 | 0.05 | NT | | | | NT | | | |
| Heptachlor Epoxide | 1024-57-3 | C | 0.0074 | 0.2 | ug/L | 0.15 | ,J,g | 0.0021 | 0.05 | <0.05 | U | 0.0021 | 0.05 | 0.059 | ,J,m | 0.0021 | 0.05 | 0.058 | ,J,g | 0.0021 | 0.5 | <0.05 | U | 0.0021 | 0.05 | NT | | | | NT | | | |
| **TCL VOCs** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | N | 1.825 | -- | ug/L | <1 | U | 0.12 | 1 | 0.21 | J | 0.12 | 1 | NT | | | | NT | | | | <1 | U | 0.12 | 1 | <1 | U | 0.13 | 1 | <1 | U | 0.13 | 1 |
| Acetone | 67-64-1 | N | 547.5 | -- | ug/L | <20 | U | 1.2 | 20 | 16 | J,B,z | 1.2 | 20 | NT | | | | NT | | | | <20 | U | 1.2 | 20 | <20 | U,UJ,c | 2.1 | 20 | <20 | U,UJ,c | 2.1 | 20 |
| Chloroform | 67-66-3 | C | 0.155 | 80 | ug/L | <1 | U | 0.061 | 1 | <1 | U | 0.061 | 1 | NT | | | | NT | | | | 0.28 | J | 0.061 | 1 | <1 | U | 0.17 | 1 | <1 | U | 0.17 | 1 |
| Toluene | 108-88-3 | N | 227.1 | 1,000 | ug/L | 0.17 | J,B,z | 0.072 | 1 | 0.25 | J,B,z | 0.072 | 1 | NT | | | | NT | | | | 0.13 | J,B,z | 0.072 | 1 | 0.22 | J | 0.16 | 1 | 0.22 | J | 0.16 | 1 |
| **Explosives** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,3-Dinitrobenzene | 99-65-0 | N | 0.365 | -- | ug/L | <5 | U | 0.071 | 5 | <5 | U | 0.071 | 5 | NT | | | | NT | | | | 0.18 | J | 0.071 | 5 | NT | | | | NT | | | |
| 2,6-Dinitrotoluene | 606-20-2 | N | 3.65 | -- | ug/L | <5 | U | 0.16 | 5 | <5 | U | 0.16 | 5 | NT | | | | NT | | | | 0.59 | J,J,g | 0.16 | 5 | NT | | | | NT | | | |
| 2-Amino-4,6-dinitrotoluene | 35572-78-2 | N | 7.3 | -- | ug/L | <5 | U | 0.24 | 5 | <5 | U | 0.24 | 5 | NT | | | | NT | | | | 0.39 | J | 0.24 | 5 | NT | | | | NT | | | |
| 4-Amino-2,6-dinitrotoluene | 1946-51-0 | N | 7.3 | -- | ug/L | <5 | U | 0.22 | 5 | <5 | U | 0.22 | 5 | NT | | | | NT | | | | 0.49 | J | 0.22 | 5 | NT | | | | NT | | | |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | -- | -- | -- | -- | mg/L | 6.34 | | | | 3.98 | | | | NT | | | | NT | | | | 0.88 | | | | NT | | | | NT | | | |
| Oxidation Reduction Potential | -- | -- | -- | -- | mV | 203 | | | | 73 | | | | NT | | | | NT | | | | 117 | | | | NT | | | | NT | | | |
| pH | -- | -- | -- | -- | SU | 6.66 | | | | 6.52 | | | | NT | | | | NT | | | | 6.31 | | | | NT | | | | NT | | | |
| Conductivity | -- | -- | -- | -- | mS | 0.97 | | | | 1.73 | | | | NT | | | | NT | | | | 1.8 | | | | NT | | | | NT | | | |
| Temperature | -- | -- | -- | -- | °C | 18.05 | | | | 19.58 | | | | NT | | | | NT | | | | 16.71 | | | | NT | | | | NT | | | |
| Turbidity | -- | -- | -- | -- | ntu | 9.74 | | | | 62.5 | | | | NT | | | | NT | | | | 18.28 | | | | NT | | | | NT | | | |

**Notes:**

CAS = Chemical Abstracts Service
µg/L = Microgram Per Liter
TAL = Target Analyte List
TCL = Target Compound List
VOC = Volatile Organic Compound
MDL = Method Detection Limit
RL = Reporting Limit
LQ = Laboratory Qualifier
VQ = Validation Qualifier
r = Reason Code
NT = Not Tested

mg/L = Milligram Per Liter
mV = millivolt
SU = Standard Units
mS = milliSiemen
°C = degrees Celcius
ntu = Nephelometric Turbidity
RBC = USEPA Region III Risk-Based Concentration (RBC) values from the October 11, 2007, RBC Table and October 11, 2007, Alternate RBC Table
C = Carcinogenic per EPA RBC Table (October 2007)
N = Noncarcinogenic per EPA RBC Table (October 2007)
MCL = Maximum Contaminant Level

* Re-sampled 6/24/08 for Pesticides only

[1] = Chromium VI RBC used for screening
[2] = USEPA Action Level used for screening
[3] = Chlordane RBC used for screening
[4] = alpha-BHC RBC used for screening
[5] = Endosulfan RBC used for screening

=Exceeds MCL

=Exceeds Adjusted T-RBC

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
J = Analyte present. Reported value may not be accurate or precise.
,J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
c = Calibration failure; poor or unstable response
m = MS/MSD recovery failure.
p = Preparation blank contamination
x = Trip blank contamination
z = Method blank and/or storage blank contamination

Table 4-11
Summary of Detected Chemicals in Groundwater Analytical Samples at SWMU 38 and AOC Q
SWMUs 35, 37, 38, and AOC Q RFI Report
Radford Army Ammunition Plant, Radford, Virginia

| Sample ID / Sample Date | CAS | C/N | Adjusted Tap Water RBC | MCL | Units | 38MW1 2/12/2008 | | MDL | RL | 38MW2 2/12/2008 | | MDL | RL | 38MW2-DUP(DUP-1P) 2/12/2008 | | MDL | RL | 38MW3 2/13/2008 | | MDL | RL | 38MW3* 6/24/2008 | | MDL | RL | 38MW3-DUP (DUP-1)* 6/24/2008 | | MDL | RL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | | Result | LQ, VQ, r | | |
| **Perchlorate** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate | 14797-73-0 | N | 2.555 | -- | ug/L | 1.2 | | 0.08 | 0.2 | 0.32 | | 0.08 | 0.2 | 0.31 | | 0.08 | 0.2 | 0.44 | | 0.08 | 0.2 | NT | | | | NT | | | |
| **TAL Metals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total | 7429-90-5 | N | 3,650 | -- | ug/L | 120 | J | 44 | 200 | 93 | J | 44 | 200 | NT | | | | 1,900 | | 44 | 200 | NT | | | | NT | | | |
| Arsenic, Total | 7440-38-2 | C | 0.0446 | 10 | ug/L | <3 | U | 0.74 | 3 | <3 | U | 0.74 | 3 | NT | | | | 0.99 | J | 0.74 | 3 | NT | | | | NT | | | |
| Barium, Dissolved | 7440-39-3 | N | 730 | 2,000 | ug/L | 47 | | 0.52 | 2 | 35 | | 0.52 | 2 | NT | | | | 77 | | 0.52 | 2 | NT | | | | NT | | | |
| Barium, Total | 7440-39-3 | N | 730 | 2,000 | ug/L | 51 | | 0.52 | 2 | 37 | | 0.52 | 2 | NT | | | | 100 | | 0.52 | 2 | NT | | | | NT | | | |
| Cadmium, Total | 7440-43-9 | N | 1.825 | 5 | ug/L | <0.2 | U | 0.062 | 0.2 | <0.2 | U | 0.062 | 0.2 | NT | | | | 0.12 | J | 0.062 | 0.2 | NT | | | | NT | | | |
| Calcium, Dissolved | 7440-70-2 | -- | -- | -- | ug/L | 150,000 | | 40 | 500 | 89,000 | | 40 | 500 | NT | | | | 120,000 | | 40 | 500 | NT | | | | NT | | | |
| Calcium, Total | 7440-70-2 | -- | -- | -- | ug/L | 150,000 | | 40 | 500 | 91,000 | | 40 | 500 | NT | | | | 120,000 | | 40 | 500 | NT | | | | NT | | | |
| Chromium, Dissolved [1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 1.6 | J,B,p | 0.31 | 2 | 1.4 | J,B,p | 0.31 | 2 | NT | | | | 1.4 | J,B,p | 0.31 | 2 | NT | | | | NT | | | |
| Chromium, Total [1] | 7440-47-3 | C | 10.95 | 100 | ug/L | 3.3 | | 0.31 | 2 | 1.9 | J,B,x | 0.31 | 2 | NT | | | | 9.2 | | 0.31 | 2 | NT | | | | NT | | | |
| Cobalt, Dissolved | 7440-48-4 | -- | -- | -- | ug/L | 2.2 | | 0.096 | 1 | 0.9 | J | 0.096 | 1 | NT | | | | 2.2 | | 0.096 | 1 | NT | | | | NT | | | |
| Cobalt, Total | 7440-48-4 | -- | -- | -- | ug/L | 1.8 | | 0.096 | 1 | 1.2 | | 0.096 | 1 | NT | | | | 4.6 | | 0.096 | 1 | NT | | | | NT | | | |
| Copper, Dissolved | 7440-50-8 | N | 146 | 1,300 | ug/L | 1.1 | | 0.33 | 1 | 0.99 | J | 0.33 | 1 | NT | | | | 1 | | 0.33 | 1 | NT | | | | NT | | | |
| Copper, Total | 7440-50-8 | N | 146 | 1,300 | ug/L | 1 | | 0.33 | 1 | 1.2 | | 0.33 | 1 | NT | | | | 4.4 | | 0.33 | 1 | NT | | | | NT | | | |
| Iron, Dissolved | 7439-89-6 | N | 2,555 | -- | ug/L | 11 | J | 5.7 | 20 | 9.7 | J | 5.7 | 20 | NT | | | | <20 | U | 5.7 | 20 | NT | | | | NT | | | |
| Iron, Total | 7439-89-6 | N | 2,555 | -- | ug/L | 340 | | 5.7 | 20 | 540 | | 5.7 | 20 | NT | | | | 5,500 | | 5.7 | 20 | NT | | | | NT | | | |
| Lead, Total [2] | 7439-92-1 | -- | 15 | -- | ug/L | <1 | U | 0.33 | 1 | <1 | U | 0.33 | 1 | NT | | | | 1.9 | | 0.33 | 1 | NT | | | | NT | | | |
| Magnesium, Dissolved | 7439-95-4 | -- | -- | -- | ug/L | 51,000 | | 38 | 500 | 22,000 | | 38 | 500 | NT | | | | 30,000 | | 38 | 500 | NT | | | | NT | | | |
| Magnesium, Total | 7439-95-4 | -- | -- | -- | ug/L | 48,000 | | 38 | 500 | 23,000 | | 38 | 500 | NT | | | | 33,000 | | 38 | 500 | NT | | | | NT | | | |
| Manganese, Dissolved | 7439-96-5 | N | 73 | -- | ug/L | 36 | | 0.43 | 3 | 4.7 | | 0.43 | 3 | NT | | | | 2,400 | | 4.3 | 30 | 1,000 | | 1.2 | 12 | 1,100 | | 1.2 | 12 |
| Manganese, Total | 7439-96-5 | N | 73 | -- | ug/L | 50 | | 0.43 | 3 | 26 | | 0.43 | 3 | NT | | | | 2,600 | | 4.3 | 30 | 980 | | 1.2 | 12 | 1,000 | | 1.2 | 12 |
| Nickel, Dissolved | 7440-02-0 | N | 73 | -- | ug/L | 3 | | 0.28 | 2 | 1 | J,B,p | 0.28 | 2 | NT | | | | 4.7 | | 0.28 | 2 | NT | | | | NT | | | |
| Nickel, Total | 7440-02-0 | N | 73 | -- | ug/L | 2.6 | | 0.28 | 2 | 1.2 | J,B,x | 0.28 | 2 | NT | | | | 11 | | 0.28 | 2 | NT | | | | NT | | | |
| Potassium, Dissolved | 7440-09-7 | -- | -- | -- | ug/L | 770 | | 54 | 200 | 630 | | 54 | 200 | NT | | | | 1,200 | | 54 | 200 | NT | | | | NT | | | |
| Potassium, Total | 7440-09-7 | -- | -- | -- | ug/L | 750 | | 54 | 200 | 740 | | 54 | 200 | NT | | | | 1,900 | | 54 | 200 | NT | | | | NT | | | |
| Sodium, Dissolved | 7440-23-5 | -- | -- | -- | ug/L | 16,000 | | 84 | 500 | 13,000 | | 84 | 500 | NT | | | | 8,800 | | 84 | 500 | NT | | | | NT | | | |
| Sodium, Total | 7440-23-5 | -- | -- | -- | ug/L | 16,000 | | 84 | 500 | 13,000 | | 84 | 500 | NT | | | | 8,900 | | 84 | 500 | NT | | | | NT | | | |
| Vanadium, Total | 7440-62-2 | N | 3.65 | -- | ug/L | 0.86 | J | 0.83 | 5 | 0.86 | J | 0.83 | 5 | NT | | | | 5.8 | | 0.83 | 5 | NT | | | | NT | | | |
| Zinc, Dissolved | 7440-66-6 | N | 1,095 | -- | ug/L | 12 | ,B,p | 0.84 | 10 | 6.9 | J,B,p | 0.84 | 10 | NT | | | | 15 | ,B,p | 0.84 | 10 | NT | | | | NT | | | |
| Zinc, Total | 7440-66-6 | N | 1,095 | -- | ug/L | 6.8 | J,B,p | 0.84 | 10 | 6.6 | J,B,p | 0.84 | 10 | NT | | | | 18 | | 0.84 | 10 | NT | | | | NT | | | |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| beta-BHC | 319-85-7 | C | 0.0372 | -- | ug/L | <0.05 | U | 0.0032 | 0.05 | <0.05 | U | 0.0032 | 0.05 | NT | | | | 0.016 | J,J,g | 0.0032 | 0.05 | NT | | | | NT | | | |
| Endosulfan II [3] | 33213-65-9 | N | 21.9 | -- | ug/L | <0.1 | U | 0.0018 | 0.1 | 0.0047 | J | 0.0018 | 0.1 | NT | | | | <0.1 | U | 0.0018 | 0.1 | NT | | | | NT | | | |
| **TCL VOCs** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroform | 67-66-3 | C | 0.155 | 80 | ug/L | 1.7 | | 0.061 | 1 | <1 | U | 0.061 | 1 | NT | | | | <1 | U | 0.061 | 1 | NT | | | | NT | | | |
| Chloromethane | 74-87-3 | N | 18.98 | -- | ug/L | <1 | U | 0.06 | 1 | <1 | U | 0.06 | 1 | NT | | | | 0.34 | J | 0.06 | 1 | NT | | | | NT | | | |
| Toluene | 108-88-3 | N | 227.1 | 1,000 | ug/L | 0.18 | J,B,z | 0.072 | 1 | 0.16 | J,B,z | 0.072 | 1 | NT | | | | 0.23 | J,B,z | 0.072 | 1 | NT | | | | NT | | | |
| **Field Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | -- | -- | -- | -- | mg/L | 5.02 | | | | 3.94 | | | | 3.94 | | | | 3.9 | | | | NT | | | | NT | | | |
| Oxidation Reduction Potential | -- | -- | -- | -- | mV | 104 | | | | 220 | | | | 220 | | | | 182 | | | | NT | | | | NT | | | |
| pH | -- | -- | -- | -- | SU | 6.51 | | | | 6.67 | | | | 6.67 | | | | 6.45 | | | | NT | | | | NT | | | |
| Conductivity | -- | -- | -- | -- | mS | 1.1 | | | | 0.708 | | | | 0.708 | | | | 0.86 | | | | NT | | | | NT | | | |
| Temperature | -- | -- | -- | -- | °C | 16.67 | | | | 16.02 | | | | 16.02 | | | | 14.39 | | | | NT | | | | NT | | | |
| Turbidity | -- | -- | -- | -- | ntu | 8.97 | | | | 12.11 | | | | 12.11 | | | | 25.5 | | | | NT | | | | NT | | | |

**Notes:**

CAS = Chemical Abstracts Service
mg/L = Milligram Per Liter
µg/L = Microgram Per Liter
TAL = Target Analyte List
TCL = Target Compound List
SVOC = Semi-volatile Organic Compound
MDL = Method Detection Limit
RL = Reporting Limit
LQ = Laboratory Qualifier
VQ = Validation Qualifier
r = Reason Code
NT = Not Tested

mV = millivolt
SU = Standard Units
mS = milliSiemen
°C = degrees Celcius
NTU = Nephelometric Turbidity
RBC = USEPA Region III Risk-Based Concentration (RBC) values from the October 11, 2007, RBC Table and October 11, 2007, Alternate RBC Table
C = Carcinogenic per EPA RBC Table (October 2007)
N = Noncarcinogenic per EPA RBC Table (October 2007)
MCL = Maximum Contaminant Level

[1] = Chromium VI RBC used for screening
[2] = USEPA Action Level used for screening
[3] = Endosulfan RBC used for screening

* Re-sampled on 6/24/08 for Manganese only

=Exceeds MCL

=Exceeds Adjusted T-RBC

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
J = Analyte present. Reported value may not be accurate or precise.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
f = Field duplicate imprecision
m = MS/MSD recovery failure.
p = Preparation blank contamination
x = Field and/or equipment blank contamination
y = Trip blank contamination
z = Method blank and/or storage blank contamination

**Project: RAAP 10 Well Installation - SWMU 37**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 37MW2

Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled and Installed | **December 11, 2007** | Logged By | **Jim Carter** | Reviewed By | **Tina DeVine** |
| Drilling Method | **Mixed - Direct Push, Hollow-Stem Auger, Air Rotary** | Drilling Contractor | **Parratt Wolff** | Total Depth of Borehole | **41.0 feet** |
| Sampling Method | **4' Macrocore with disposable acetate liner** | Hammer Data | **Continuous hydraulic pressure** | Top of Casing Elevation | **1716.82 Mean Sea Level** |
| Size and Type of Well Casing | **2-inch, Schedule 40 PVC** | Screen Perforation | **0.010-inch** | Surface Elevation | **1714.38 Mean Sea Level** |
| Seal or Backfill | **Bentonite pellets/Bentonite-cement grout** | Groundwater Level(s) | **27.86 bgs Static TOC** | Coordinates | **N 3,598,329.5 E 10,884,637.1** |

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| 1714.38 | 0 | | | | | | | Topsoil, dark brown, organic material. | |
| | | | | | | | GW | 7.5YR 2.5/1 black sandy GRAVEL, loose, moist. | |
| | | | 1 | 36 | 32.1 | | | 7.5YR 4/4 brown sandy SILT, micaceous, soft, moist. | |
| 1710 | 5 | | | | | | ML | | |
| | | | 2 | 48 | 2.5 | | | | |
| | | | | | | | SW | 7.5YR 3/1 dark gray gravelly medium to coarse SAND, loose, moist. | Grout: 10% Bentonite/Cement Slurry |
| 1705 | | | | | | | | 7.5YR 4/4 brown silty fine SAND, loose, moist. | |
| | 10 | | 3 | 48 | 35.7 | | SM | | |
| | | | | | | | | 7.5YR 4/4 brown gravelly fine to medium SAND, loose, moist. | |
| 1700 | | | 4 | 48 | 28.8 | | | | |
| | 15 | | | | | | SW | | |
| | | | 5 | 48 | 41.0 | | | | 3/8-inch Hydrated Bentonite Pellets |
| 1695 | | | | | | | | Same as above but grain size increases to medium to coarse. | |
| | 20 | | | | | | | 7.5YR 5/1 gray LIMESTONE. | No. 1 Silica Quartz Sandpack |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU37.GPJ; 7/29/2010 37MW2

URS

**Project: RAAP 10 Well Installation - SWMU 37**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 37MW2

Sheet 2 of 2

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | 36 | 16.4 | | GC | 7.5YR 4/4 clayey sandy GRAVEL, medium dense, moist. | | |
| 1690 | 25 | | 7 | 24 | 38.8 | | | Same as above except wet (water at 25 ft bgs). | ▽ | |
| | | | | | | | LS | 7.5YR 7/1 light gray LIMESTONE, weathered, friable. Direct-push refusal at 26 ft bgs. | | |
| | | | | | | | | Gray LIMESTONE, competent bedrock. Hollow-stem auger refusal at 27 ft bgs. | ▽ | |
| 1685 | 30 | | | | | | | | | Screen: 0.01-inch Factory Slotted, Sch 40, 2-inch PVC |
| 1680 | 35 | | | | | | LS | | | |
| 1675 | 40 | | | | | | | | | |
| | | | | | | | | Boring was terminated at 41 ft bgs. | | |
| 1670 | 45 | | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU37.GPJ; 7/29/2010 37MW2

URS

**Project: RAAP 10 Well Installation - SWMU 38**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 38MW2

Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled and Installed | **December 21, 2007** | Logged By | **Jim Carter** | Reviewed By | **Tina DeVine** |
| Drilling Method | **Mixed - Direct Push, Hollow-Stem Auger, Air Rotary** | Drilling Contractor | **Parratt Wolff** | Total Depth of Borehole | **36.0 feet** |
| Sampling Method | **4' Macrocore with disposable acetate liner** | Hammer Data | **Continuous hydraulic pressure** | Top of Casing Elevation | **1710.30 Mean Sea Level** |
| Size and Type of Well Casing | **2-inch, Schedule 40 PVC** | Screen Perforation | **0.010-inch** | Surface Elevation | **1707.58 Mean Sea Level** |
| Seal or Backfill | **Bentonite pellets/Bentonite-cement grout** | Groundwater Level(s) | **27.13 bgs Static TOC** | Coordinates | **N 3,598,794.8 E 10,884,946.0** |

| Elevation feet | Depth, feet | SAMPLES Type | Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| 1707.58 | 0 | | | | | | | Topsoil, dark brown, organic material. | |
| | | | | | | | | 7.5YR 4/4 brown silty fine SAND, medium dense, dry. | |
| | 2 | | 1 | 48 | 1.0 | | | | |
| 1705 | | | | | | | | Same as above except color changes to 7.5YR 6/4 light brown. | |
| | 4 | | | | | | | | |
| | 6 | | 2 | 48 | 0 | | SM | | Grout: 10% Bentonite/Cement Slurry |
| 1700 | | | | | | | | | |
| | 8 | | | | | | | | |
| | 10 | | 3 | 48 | 0 | | | | |
| | 12 | | | | | | | 7.5YR 6/4 light brown gravelly silty fine to medium SAND, medium stiff, moist. | |
| 1695 | | | | | | | | | 3/8-inch Hydrated Bentonite Pellets |
| | 14 | | 4 | 36 | 0 | | SM | | No. 1 Silica Quartz Sandpack |
| | 16 | | | | | | | 7.5YR 6/4 light brown sandy GRAVEL, medium dense, moist. | |
| 1690 | | | | | | | | | |
| | 18 | | 5 | 32 | 0.2 | | GW | | |
| | 20 | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU38.GPJ; 7/29/2010 38MW2

URS

**Project: RAAP 10 Well Installation - SWMU 38**
**Project Location: Radford Army Ammunition Plant**
**Project Number: 21354887**

# Log of Boring 38MW2

Sheet 2 of 2

| Elevation feet | Depth, feet | SAMPLES Type | SAMPLES Number | Recovery (in.) | PID (ppm) | Graphic Log | Lithologic Log (USCS Code) | MATERIAL DESCRIPTION | FIELD NOTES AND WELL DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| | 20 | | | | | | | | |
| | 22 | | 6 | 48 | 0.4 | | GW | Same as above except wet (water at ~22 ft). | |
| 1685 | | | | | | | | | |
| | 24 | | | | | | | 7.5YR 4/1 dark gray LIMESTONE, weathered. Direct-push refusal at 24 ft bgs. | |
| | | | | | | | LS | | |
| | 26 | | | | | | | | Screen: 0.01-inch Factory Slotted, Sch 40, 2-inch PVC |
| | | | | | | | | Gray LIMESTONE, competent bedrock. Hollow-stem auger refusal at 26.5 ft bgs. | |
| 1680 | | | | | | | | | |
| | 28 | | | | | | | | |
| | 30 | | | | | | | | |
| | | | | | | | LS | | |
| | 32 | | | | | | | | |
| 1675 | | | | | | | | | |
| | | | | | | | | Sand filled void encountered at 33 feet. | |
| | 34 | | | | | | | | |
| | 36 | | | | | | | | |
| 1670 | | | | | | | | | |
| | 38 | | | | | | | | |
| | 40 | | | | | | | | |
| | 42 | | | | | | | | |
| 1665 | | | | | | | | | |

Report: ENV_12AW_CLEVELAND+/-USCS; File: RAAP10 WELL INSTALL SWMU38.GPJ; 7/29/2010 38MW2

URS

- It was not understood why the majority of fluorescein detections were considered false positive detections. The basis of this observation is unclear considering a lack of background and laboratory confirmation results.

- It was not apparent why certain samples were selected for laboratory confirmation and others were not. There was no apparent consistency in the selection of samples for laboratory confirmation.

- Samples were submitted for confirmation laboratory analyses three months or more following the collection of the samples in the field. No information was provided regarding the custody and/or storage of the samples. The samples were submitted to the analytical laboratory with incomplete chain-of-custody (COC), and the COC documentation was not completed by the laboratory.

In summary, the data from the study do not provide the basis for meaningful interpretation. Any attempt to formulate conclusions from the data as presented regarding the presence of preferred or predominant groundwater flow patterns is not warranted or recommended.

## 3.3 HWMU-16 GROUNDWATER MONITORING ANALYTE LIST

The groundwater monitoring analyte list for HWMU-16 is presented in **Table 1 (Appendix B)**. The list represents the subset of the constituents listed in Appendix III of 40 CFR Part 261 that previously have been detected in the groundwater and/or that are reasonably expected to be in or derived from waste contained in HWMU-16. As discussed in Section 3.5.2 below, 12 inorganic constituents and two explosive/propellant constituents have been detected in the groundwater monitoring network for HWMU-16 at statistically significant concentrations above the Unit's calculated background concentrations. The inorganic constituents may be derived from the aquifer formation materials; however, the two explosive/propellant constituents (2,4-Dinitrotoluene and 2,6-Dinitrotoluene) are byproducts of wastes derived from explosives. Therefore, the two explosive/propellant constituents detected could only be from HWMU-16.

The concentration limits established for the hazardous constituents also are listed in **Table 1**. The concentration limits represent either background concentrations calculated for the constituents in this GWQAR, Maximum Concentrations of Constituents for Ground-water Protection listed in Table 1 of 40 CFR 264.94, USEPA Drinking Water Standard Maximum Contaminant Levels (MCLs), or alternate concentration limits (ACLs) established by the VDEQ (July 1998). Certain organic constituents on the list do not have USEPA MCLs or VDEQ ACLs; they also do not have calculated background concentrations because they have not been detected in the Unit's upgradient well. Therefore, the concentration limits for these constituents are equal to their respective method detection limits.

As Alliant discussed with the VDEQ in the past, the reliability of previous laboratory analytical data - particularly dissolved metals data - appeared to be questionable in some cases. In an April 9, 1996 letter to C. Jake (Alliant), the VDEQ agreed that only total metals concentrations in groundwater would be measured, as described in a USEPA Region III guidance on groundwater sampling in karst terrain. Therefore, all references to metals concentrations in this GWQAR refer to <u>total</u> metals concentrations.

## 3.4 HWMU-16 GROUNDWATER BACKGROUND CONCENTRATIONS

Background concentrations were calculated for each constituent in the groundwater monitoring program using the analytical data from 1996 through 1998 for upgradient well 16C1.

The background concentration calculations were based on site wide 95% confidence, 95% coverage upper prediction intervals. The calculated background concentrations are listed in **Table 2 (Appendix B)**. The background concentrations were used to construct the outermost closing contours on the Isoconcentration Maps **(Appendix A)**.

## 3.5 HWMU-16 STATISTICAL ANALYSIS

Statistical evaluations for HWMU-16 are performed annually and submitted to the VDEQ in accordance with the annual reporting requirements specified in 40 CFR 265.94. As part of this GWQAR, statistical evaluations were performed on Fourth Quarter 1998 analytical data in accordance with the procedures and guidance provided in the following documents:

- Title 40 of the Code of Federal Regulations, 40 CFR 264.97 and 264.98;
- VDEQ Guidance for statistical analysis titled "Data Analysis Plan," undated;
- Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, April 1989;
- Addendum to Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, July 1992; and
- Statistical Methods for Groundwater Monitoring, Gibbons, R.D., 1994.

Statistical threshold values were computed for the 54 constituents for which HWMU-16 is currently monitored based on the concentrations of those constituents in upgradient (background) well 16C1. All data starting with First Quarter 1996 to Fourth Quarter 1998 were used for this purpose. The 1996 through 1998 monitoring data have been submitted previously to the VDEQ by Alliant in quarterly monitoring reports; therefore, the data are not listed in this GWQAR. Statistical comparisons were performed for the Fourth Quarter 1998 data set. Comparison statistical analyses were performed for all constituents which were detected in any downgradient well during that event.

### 3.5.1 Background Data and Statistical Comparisons

Statistical analyses were performed using the analytical results from upgradient well 16C1 data as background data. Based on the percentage of non-detects and the distribution of the background data, methods of statistical comparisons varied. Background average, standard deviation and other descriptive statistical data were computed for all constituents and are presented in **Appendix C**.

The constituents listed below were 100% non-detected in the background data. The background threshold levels (BTLs) for these constituents were established as equal to their detection limits (DL). Detections of these constituents in the downgradient wells during Fourth Quarter 1998 were compared to these BTLs.

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Antimony | 12 | 100 | 3 | 3 |
| Arsenic | 12 | 100 | 1 | 1 |
| Bromoform | 12 | 100 | 0.3 | 0.3 |
| Carbon tetrachloride | 12 | 100 | 0.2 | 0.2 |
| Chlorobenzene | 12 | 100 | 0.1 | 0.1 |
| Chloromethane | 12 | 100 | 0.3 | 0.3 |
| Cyanide | 12 | 100 | 10 | 10 |

| Background Threshold Level (BTL) = Detection Limit (DL) | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Di-n-butyl phthalate | 12 | 100 | 5 | 5 |
| 1,2-Dichloroethane | 12 | 100 | 0.1 | 0.1 |
| trans-1,2-Dichloroethene | 12 | 100 | 0.1 | 0.1 |
| 1,4-Dichlorobenzene | 12 | 100 | 0.1 | 0.1 |
| Ethylbenzene | 12 | 100 | 0.1 | 0.1 |
| Mercury | 12 | 100 | 0.2 | 0.2 |
| Methyl ethyl ketone | 12 | 100 | 1.1 | 1.1 |
| Selenium | 12 | 100 | 1 | 1 |
| 1,1,2,2-Tetrachloroethane | 12 | 100 | 0.3 | 0.3 |
| 1,1,2-Trichloroethane | 12 | 100 | 0.5 | 0.5 |
| Trichloroethene | 12 | 100 | 0.1 | 0.1 |
| Toluene | 12 | 100 | 0.1 | 0.1 |
| 2378-TCDF | 12 | 100 | 0.0485 ppt | 0.0485 ppt |
| 12378-PECDF | 12 | 100 | 0.0439 ppt | 0.0439 ppt |
| 23478-PECDF | 12 | 100 | 0.0417 ppt | 0.0417 ppt |
| 123478-HXCDF | 12 | 100 | 0.0390 ppt | 0.0390 ppt |
| 123678-HXCDF | 12 | 100 | 0.0377 ppt | 0.0377 ppt |
| 234678-HXCDF | 12 | 100 | 0.0428 ppt | 0.0428 ppt |
| 123789-HXCDF | 12 | 100 | 0.0415 ppt | 0.0415 ppt |
| 1234678-HPCDF | 12 | 100 | 0.0615 ppt | 0.0615 ppt |
| 1234789-HPCDF | 12 | 100 | 0.0709 ppt | 0.0709 ppt |
| OCDF | 12 | 100 | 0.1307 ppt | 0.1307 ppt |

Non-parametric prediction intervals were computed for all of the constituents for which the data from background well 16C1 satisfied one of the following two criteria, per VDEQ regulations and guidance as well as USEPA guidance:

- Percentage of non-detects was greater than or equal to 50 and less than 100; or
- Percentage of non-detects was less than 50, but data was not normally distributed in original or log-transformed mode.

The background threshold levels for these constituents were set as equal to their upper prediction limits (UPLs). The background and relevant statistical data for these constituents are summarized below. The confidence level and false positive rate were calculated based on the number of background data points available and number of future comparisons. For all constituents, the confidence level was determined to be equal to 0.933, and the false positive rate was equal to 0.067. Since the upper control limit of a non-parametric interval cannot be adjusted for multiple comparisons and inadequate number of background data, the number of resampling events required was adjusted to account for the high error rates inherent in those situations. The number of confirmation resamples required for all constituents is 2. The background and relevant statistical data for these constituents are summarized below. Associated statistical computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Beryllium | 12 | 75 | 0.2 | 0.7 |
| Cadmium | 12 | 75 | 0.1 | 0.2 |
| Cobalt | 12 | 75 | 1 | 5 |
| Copper | 12 | 50 | 1 | 13 |
| 1,1-Dichloroethane | 12 | 0 | 0.2 | 9.5 |
| 2,4-Dinitrotoluene | 12 | 92 | 0.08 | 0.10 |

| BTL = Upper Prediction Limit of Non-parametric Prediction Interval w/false positive rate=0.067 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| 2,6-Dinitrotoluene | 12 | 75 | 0.08 | 0.11 |
| Lead | 12 | 42 | 1 | 10 |
| Nickel | 12 | 92 | 15 | 16 |
| Silver | 12 | 75 | 0.2 | 0.5 |
| Thallium | 12 | 67 | 1 | 6 |
| TOC | 12 | 75 | 1000 | 7000 |
| 1,1,1-Trichloroethane | 12 | 17 | 0.3 | 9.2 |
| Vanadium | 12 | 83 | 4 | 151 |
| Vinyl Chloride | 12 | 92 | 0.1 | 0.1 |
| Xylene (total) | 12 | 92 | 0.1 | 0.2 |
| Zinc | 12 | 50 | 5 | 51 |

Chromium exhibited normally distributed data (excluding non-detects) with between 25% and 50% non-detects in the background well. The mean and standard deviation of the background data for chromium were adjusted using Cohen's Maximum Likelihood Estimator Method (1959, 1961). A one-sided parametric prediction interval was then computed for chromium based on the adjusted mean and standard deviation. The Upper Prediction Limit was set as the BTL for chromium. The background and relevant statistical data for chromium are summarized below. Cohen's adjustment computations and prediction interval computations are presented in **Appendix C**.

| BTL = Upper Prediction Limit of Prediction Interval w/false positive rate=0.05<br>Original Mean = 3.54, Original SD = 1.933<br>Adjusted Mean = 3.642. Adjusted SD = 1.95 | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Chromium | 12 | 25 | 1 | 6.2 |

The following constituents exhibited normally distributed background data with less than 25% non-detects. One sided parametric prediction intervals were computed on the background data for all of these constituents. The UPLs for these constituents were set as their respective BTLs, with one exception. For pH, a two-sided parametric prediction interval was computed; therefore, the BTL for pH consisted of a range between the lower prediction limit (LPL) and the upper prediction limit. The background concentration calculations were based on a site wide 95% confidence, 95% coverage upper prediction intervals. When adjusted for multiple comparisons of the background data, the minimum required false positive rate was below 1% (0.01). A 99% confidence level (0.01 false positive rate) was used for all individual comparisons, which with the most conservative assumptions provided a site-wide false positive rate of >0.05 for all constituents. The background and relevant statistical data for these constituents are summarized below. The prediction interval computations for these constituents are presented in **Appendix C**.

| BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05<br>(individual comparisons false positive rate=0.01)<br>BTL for pH = LPL – UPL of two-sided Prediction Interval | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Barium | 12 | 0 | 2 | 175.4 |
| Dichlorodifluoromethane | 12 | 8 | 0.3 | 46.5 |
| Tetrachloroethene | 12 | 17 | 0.1 | 0.7 |
| TOX | 12 | 17 | 5 | 42.2 |

| BTL = UPL of one-sided Prediction Interval (exception pH) w/site-wide false positive rate>0.05 (individual comparisons false positive rate=0.01) BTL for pH = LPL – UPL of two-sided Prediction Interval | | | | |
|---|---|---|---|---|
| Parameter | Sample Size | % Non-Detects | DL (µg/l) | BTL (µg/l) |
| Trichlorofluoromethane | 12 | 0 | 0.5 | 11.3 |
| Specific Conductivity | 8 | 0 | 1 µS/cm | 672 µS/cm |
| pH | 8 | 0 | 0.1 pH units | 5.7 to 7.9 pH units |

### 3.5.2 Results of Statistical Comparisons

The following table lists the constituents which were detected during the Fourth Quarter 1998 event at concentrations exceeding their respective background threshold levels (BTLs), and the downgradient wells in which they were detected.

| Parameter | Monitoring Well(s) |
|---|---|
| Arsenic | 16-5, 16WC2B |
| Barium | 16-2, 16-3, 16-5, 16WC1A, 16WC1B, 16WC2B, 16SPRING |
| Beryllium | 16WC1B, 16WC2B |
| Cadmium | 16WC1B |
| Chromium | 16-3, 16-5, 16WC1B, 16WC2B |
| Cobalt | 16-5, 16WC1B, 16WC2B |
| Copper | 16-5, 16WC1B, 16WC2B |
| Lead | 16WC1B |
| Mercury | 16WC1B |
| Nickel | 16-5, 16WC1A, 16WC2B |
| Selenium | 16-5, 16WC1B, 16WC2B |
| Zinc | 16WC1B |
| 2,4-Dinitrotoluene | 16-3, 16-5, 16WC1B, 16WC2B, 16SPRING |
| 2,6-Dinitrotoluene | 16WC1A, 16WC1B |

Any HWMU-16 target constituents not listed above were not detected in the downgradient monitoring wells at concentrations exceeding their respective BTLs.

## 3.6 HWMU-16 PLUME DELINEATIONS

In accordance with VDEQ instructions presented during the May 19, 1999 meeting between Alliant and the VDEQ, Isoconcentration Maps were produced to depict constituent plumes in the groundwater beneath the site (**Appendix A**). In order to evaluate the shape and position of constituent plumes over time, historical Isoconcentration Maps were developed using the historical maximum concentrations for the constituents monitored at the site for the time periods of 1992 through 1995 and 1996 through 1998. The historical maximum concentrations for these time periods are listed in **Tables 3** and **4**, respectively (**Appendix B**).

Groundwater analytical data collected prior to 1992 were not included in the evaluation of historical maximum concentrations. The data collected prior to 1992 are considered unreliable due to "order-of-magnitude" variations in parameter concentrations from quarter to quarter, as well as a general lack of laboratory QA/QC. Additionally, the groundwater monitoring analyte lists prior to 1992 did not include many of the parameters on the current groundwater monitoring analyte list for HWMU-16.

**TABLE 2**
**HWMU-16**
**Calculated Background Values**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Antimony | 3 |
| Arsenic | 1 |
| Barium | 175.4 |
| Beryllium | 0.7 |
| Cadmium | 0.2 |
| Chromium | 6.2 |
| Cobalt | 5 |
| Copper | 13 |
| Lead | 10 |
| Mercury | 0.2 |
| Nickel | 16 |
| Selenium | 1 |
| Silver | 0.5 |
| Thallium | 6 |
| Vanadium | 151 |
| Zinc | 51 |
| Bromoform | 0.3 |
| Carbon Tetrachloride | 0.2 |
| Chlorobenzene | 0.1 |
| Chloromethane | 0.3 |
| 1,4-Dichlorobenzene | 0.1 |
| Dichlorodifluoromethane | 46.5 |
| 1,1-Dichloroethane | 9.5 |
| 1,2-Dichloroethane | 0.1 |
| trans-1,2-Dichloroethene | 0.1 |
| Ethylbenzene | 0.1 |
| Methyl Ethyl Ketone | 1.1 |
| 1,1,2,2-Tetrachloroethane | 0.3 |
| Tetrachloroethene | 0.7 |
| Toluene | 0.1 |
| 1,1,1-Trichloroethane | 9.2 |
| 1,1,2-Trichloroethane | 0.5 |
| Trichloroethene | 0.1 |
| Trichlorofluoromethane | 11.3 |
| Vinyl Chloride | 0.1 |
| Xylenes (total) | 0.2 |

**TABLE 2**
**HWMU-16**
**Calculated Background Values**

| Constituent | Background Concentration (µg/l unless otherwise noted) |
|---|---|
| Di-n-butylphthalate | 5 |
| 2,4-Dinitrotoluene | 0.10 |
| 2,6-Dinitrotoluene | 0.11 |
| 2378-TCDF | 0.0485 ppt |
| 12378-PECDF | 0.0439 ppt |
| 23478-PECDF | 0.0417 ppt |
| 123478-HXCDF | 0.0390 ppt |
| 123678-HXCDF | 0.0377 ppt |
| 234678-HXCDF | 0.0428 ppt |
| 123789-HXCDF | 0.0415 ppt |
| 1234678-HPCDF | 0.0615 ppt |
| 1234789-HPCDF | 0.0709 ppt |
| OCDF | 0.1307 ppt |
| Cyanide | 10 |
| Total Organic Carbon (x4) | 7000 |
| Total Organic Halides (x4) | 42.2 |
| Specific Conductivity | 672 µS/cm |
| pH | 5.7 to 7.9 pH units |

## *Target Analyte Monitoring Results - HWMU-16 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*
*Upgradient well = 16C1* **All Results in ug/L.**

| Analyte/Quarter | 16C1 | 16MW8 | 16MW9 | 16WC1A | 16WC1B | QL | GPS | Method |
|---|---|---|---|---|---|---|---|---|
| Cobalt | | | | | CAS # 7440-48-4 | | | |
| First Quarter 1996 | U | 1 | U | 4 | 1 | 5 | 313 | |
| Second Quarter 1996 | U | 3 | U | 2 | U | 5 | 313 | |
| Third Quarter 1996 | 4 | 10 | dry | 12 | 5 | 5 | 313 | |
| Fourth Quarter 1996 | 5 | 2 | 5 | 9 | 3 | 5 | 313 | |
| First Quarter 1997 | U | 2 | U | 9 | U | 5 | 313 | |
| Second Quarter 1997 | U | 6 | dry | 9 | 3 | 5 | 313 | |
| Third Quarter 1997 | 2 | dry | dry | 9 | 2 | 5 | 313 | |
| Fourth Quarter 1997 | U | dry | dry | U | 6 | 5 | 313 | |
| First Quarter 1998 | U | U | dry | 6 | U | 5 | 313 | |
| Second Quarter 1998 | U | 2 | dry | U | 7 | 5 | 313 | |
| Third Quarter 1998 | U | 4 | dry | 4 | 2 | 5 | 313 | |
| Fourth Quarter 1998 | U | dry | dry | 5 | 31 | 5 | 313 | |
| First Quarter 1999 | 1 | 6 | U | 20 | 10 | 5 | 313 | |
| Second Quarter 1999 | U | 10 | 1 | 12 | U | 5 | 313 | |
| Third Quarter 1999 | U | U | U | 17 | dry | 5 | 313 | |
| Fourth Quarter 1999 | 1 | dry | 3 | 15 | dry | 5 | 313 | |
| First Quarter 2000 | dry | dry | U | dry | dry | 5 | 313 | |
| Second Quarter 2000 | dry | dry | 4 | dry | dry | 5 | 313 | |
| Third Quarter 2000 | dry | dry | 17 | dry | dry | 5 | 313 | |
| Fourth Quarter 2000 | U | dry | 8 | 9 | dry | 5 | 313 | |
| First Quarter 2001 | U | dry | 7.94 | 10.4 | dry | 5 | 313 | |
| Second Quarter 2001 | U | dry | 15.8 | 7.49 | dry | 5 | 313 | |
| Third Quarter 2001 | U | dry | 10.9 | 5.71 | U | 5 | 313 | |
| Fourth Quarter 2001 | U | dry | 13.5 | 7.35 | dry | 5 | 313 | |
| First Quarter 2002 | U | dry | 12.8 | U | dry | 5 | 313 | |
| Second Quarter 2002 | U | dry | 12.5 | 7.36 | dry | 5 | 313 | |
| Third Quarter 2002 | U | dry | 18.1 | 6.3 | dry | 5 | 313 | |
| Fourth Quarter 2002 | U | dry | 15.8 | 9.43 | - | 5 | 313 | |
| First Quarter 2003 | U | U | U | U | U | 5 | 313 | 6020 |
| Second Quarter 2003 | U | U | U | 7.9 | U | 5 | 313 | 6020 |
| Third Quarter 2003 | U | 1.1 J | 1.2 J | 5.2 | 2.4 J | 5 | 313 | 6020 |
| Fourth Quarter 2003 | U | U | U | 7.8 | U | 5 | 313 | 6020 |
| First Quarter 2004 | U | U | U | 8.1 | 7.6 | 5 | 313 | 6020 |
| Second Quarter 2004 | U | U | 2.8 J | 8.5 | 2.6 J | 5 | 313 | 6020 |
| Third Quarter 2004 | U | U | U | 7.7 | U | 5 | 313 | 6020 |
| Fourth Quarter 2004 | U | U | U | 8.8 | 7.1 J | 5 | 313 | 6020 |
| First Quarter 2005 | U | U | U | 8.8 | U | 5 | 313 | 6020 |
| Second Quarter 2005 | U | U | 2.8 J | 7.7 | U | 5 | 313 | 6020 |
| Third Quarter 2005 | U | U | U | 5.2 | U | 5 | 313 | 6020 |
| Fourth Quarter 2005 | U | U | U | 6.6 | U | 5 | 313 | 6020 |
| First Quarter 2006 | U | U | U | 9.5 | U | 5 | 313 | 6020 |
| Second Quarter 2006 | U | U | 6 | 8.7 | U | 5 | 313 | 6020 |
| Third Quarter 2006 | 0.17 J | 0.2 J | 2.1 J | 9 | 1.1 J | 5 | 313 | 6020 |
| Fourth Quarter 2006 | U | U | U | 7.6 | U | 5 | 313 | 6020 |
| First Quarter 2007 | U | U | U | 5.9 | U | 5 | 313 | 6020 |
| Second Quarter 2007 | U | U | 2 J | 7.1 | 1.5 J | 5 | 313 | 6020 |
| Fourth Quarter 2007 | U J | U J | U J | 5.7 J | U J | 5 | 313 | 6020 |
| Second Quarter 2008 | U J | U J | 1.8 J | 28.8 J | U J | 5 | 313 | 6020 |
| Fourth Quarter 2008 | U | U | U | 28.1 J | U | 5 | 313 | 6020 |
| Second Quarter 2009 | U | 1.7 J | 2.3 J | 9.6 | U | 5 | 313 | 6020 |
| Fourth Quarter 2009 | U | U J | U J | 8.8 | U J | 5 | 313 | 6020 |
| Second Quarter 2010 | U | 10.1 | 3.1 J | 9 | 4.1 J | 5 | 313 | 6020 |
| Fourth Quarter 2010 | U | U | U | 5.6 | U | 5 | 313 | 6020 |

*See last page of this report for definitions.*

## *Target Analyte Monitoring Results - HWMU-16 Point of Compliance Wells*
## *Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 16C1* *All Results in ug/L.*

| *Analtye/Quarter* | *16C1* | *16MW8* | *16MW9* | *16WC1A* | *16WC1B* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|
| Second Quarter 2011 | U | U | 2.77 J | 9.24 | U | 5 | 313 | 6020A |
| Fourth Quarter 2011 | U | U | U | U | 6.09 | 5 | 313 | 6020A |

**Definitions:**

***The following definitions apply to results reported for Appendix IX monitoring events. All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

*Appendix IX Monitoring Events: 3Q2003, 2Q-2004, 2Q-2005, 3Q2006, 2Q2007, 2Q2008, 2Q2009, 2Q 2010, 2Q 2011*

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit.
**UA** denotes not detected at or above the adjusted detection limit.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier. **X** Denotes mass spectral confirmation not obtained-result suspect.
Background Denotes background concentrations listed in Appendix F to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002), where applicable.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).
**NS** denotes not sampled. **NA** denotes not analyzed.
"–" denotes not detected (pre-2nd Quarter 2003) or not available / not sampled (beginning 2nd Quarter 2003).

***The following definitions apply to results reported for non-Appendix IX monitoring events. All non-Appendix IX monitoring results for compliance wells are reported at or above the quantitation limit.***

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**Background** Denotes background concentrations listed in Appendix F to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002), where applicable.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 5 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).

**NOTE:**

Fourth Quarter 2008:
Due to laboratory error all HWMU 16 samples were analyzed using Method 8260B 5 ml purge instead of a 25 ml purge which resulted in a higher QL. For these samples, all results were evaluated to the detection limit, which is comparable to the permit QL. Results below the laboratory QL but at or above the permit QL are reported and qualified as estimated.
Second Quarter 2009:
Verification event 6/11/2009 - 16MW8 for acetone. Verification result reported as not detected.
4/ 2010 event -Per DEQ, tin analyzed by Method 6010B instead of Method 6020. Verification event: 16MW9 1,1-dichloroethene and benzene. 16WC1B 4,4-DDD. Verification result reported as not detected.

*See last page of this report for definitions.*

## *Total Cobalt Concentrations in Groundwater (Second Quarter 2003 - Fourth Quarter 2011)*

## *Hazardous Waste Management Unit 5*

## *Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 5W8B*

| *Analyte/Quarter* | *5W8B* | *Q* | *5W5B* | *Q* | *5W7B* | *Q* | *5WC21* | *Q* | *5WC22* | *Q* | *5WC23* | *Q* | *QL* | *Permit QL* | *GPS* | *UNIT* | *Method* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cobalt** | | | | | | | | | | | *CAS # 7440-48-4* | | | | | | |
| First Quarter 2003 | U | | U | | 65.7 | | 134 | | 10.5 | | - | | 5 | 5 | 313 | µg/L | 6020 |
| First Quarter 2003 | - | | - | | - | | 134 | | 10 | | U | | 5 | 5 | 313 | µg/L | 6020 |
| Second Quarter 2003 | U | | U | | 5 | | 129 | | 13.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2003 | U | | U | | U | | 142 | | 10.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2003 | 1.1 | J | U | | 5.1 | | 153 | | 8.6 | | 4.9 | J | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2004 | U | | U | | U | | 149 | | 7.9 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2004 | 1.1 | J | U | | 3.3 | J | 146 | | 6.7 | | 4.4 | J | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2004 | U | | U | | U | | 145 | | 21 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2004 | U | | U | | U | | 159 | | 8.1 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2005 | U | | U | | U | | 143 | | 5.8 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2005 | 1.2 | J | U | | 13.1 | | 121 | | 9.2 | | 3.8 | J | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2005 | U | | U | | 21.3 | | 115 | | 9.1 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2005 | U | | U | | 22.2 | J | 108 | | 5.2 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2006 | U | | U | | 19.7 | | 98 | | 5 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2006 | U | | U | | 22.3 | | 91.8 | | 5.3 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Third Quarter 2006 | 1.3 | J | 0.74 | J | 20 | J | 81.2 | J | 5 | J | 2.9 | J | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2006 | U | J | U | J | 27.5 | J | 91.2 | J | 5.6 | J | U | J | 5 | 5 | 313 | ug/L | 6020 |
| First Quarter 2007 | U | | U | | 22.7 | | 92.7 | | U | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2007 | 1.3 | J | U | | 8.6 | J | 82.8 | J | 10.4 | J | 2.2 | J | 5 | 5 | 313 | ug/L | 6020 |
| Fourth Quarter 2007 | U | | U | | 10.2 | J | 82.2 | | 13.7 | | U | | 5 | 5 | 313 | ug/L | 6020 |
| Second Quarter 2008 | 1.3 | J | U | J | 11 | J | 62.7 | J | 16.9 | J | 3 | J | 5 | 5 | 313 | ug/l | 6020 |
| Fourth Quarter 2008 | U | | U | | 12.4 | | 71.2 | | U | | U | | 5 | 5 | 313 | UG/L | 6020 |
| Second Quarter 2009 | U | | U | | 6.8 | | 50.7 | | 3.7 | J | 1.9 | J | 5 | 5 | 313 | UG/L | 6020 |
| Fourth Quarter 2009 | U | | U | | U | | 77.9 | | 6 | | U | | 5 | 5 | 313 | UG/L | 6020 |
| Second Quarter 2010 | - | | U | | 2.8 | J | 70.4 | | 4.6 | J | 3.5 | J | 5 | 5 | 7 | ug/l | 6020 |
| Second Quarter 2011 | - | | U | | 5.7 | | 61.9 | | 24.5 | | 2.57 | J | 5 | 5 | | ug/l | 6020A |
| Fourth Quarter 2011 | U | | U | | 3.68 | J | 55.4 | | 4.2 | J | 1.77 | J | 5 | 5 | | UG/L | 6020A |

*See last page of this report for definitions.*

*Total Cobalt Concentrations in Groundwater (Second Quarter 2003 - Fourth Quarter 2011)*

*Hazardous Waste Management Unit 5*

*Radford Army Ammunition Plant, Radford, Virginia*

*Upgradient well = 5W8B*

| *Analyte/Quarter* | *5W8B Q* | *5W5B Q* | *5W7B Q* | *5WC21 Q* | *5WC22 Q* | *5WC23 Q* | *QL* | *Permit QL* | *GPS* | *UNIT* | *Method* |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Definitions:**

**QL:** Denotes laboratory quantitation limit.
**Permit QL:** Denotes permit quantitation limit.
**U:** Denotes not detected at or above the permit detection limit or QL.
**UA:** Denotes not detected at or above the adjusted detection limit or adjusted QL.
**J:** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit or QL and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit and adjusted detection limit and QL are estimated.
**UN:** Denotes analyte concentration is less than the QL and/or five times the blank concentration. Not reliably detected due to blank contamination.
**Q:** Denotes data validation qualifier.

**CAS#:** Denotes Chemical Abstract Services registration number.
**GPS:** Denotes Groundwater Protection Standards listed in Appendix K of Module VI-Groundwater Corrective Action & Monitoring Program for Unit 5 (approved by the VDEQ in the Final Class 3 Hazardous Waste Permit Modification dated November 5, 2009) which was incorporated into the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002).

## *Target Analyte Monitoring Results - HWMU-10 Point of Compliance Wells*

## *Radford Army Ammunition Plant, Radford, Virginia*

***Upgradient well = 10D4*** ***All Results in ug/L.***

| *Analyte/Quarter* | *10D4 Q* | *10D3 Q* | *10D3D Q* | *10DDH2R Q* | *10MW1 Q* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|
| **Cobalt** | | | | *CAS #* ***7440-48-4*** | | | | |
| First Quarter 2003 | 1.04 J | U | U | U | U | 1 | - | 6020 |
| Second Quarter 2004 | 1.9 J | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2004 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2004 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2005 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| Third Quarter 2006 | 0.54 J | U | 0.053 J | 0.15 J | U | 1 | - | 6020 |
| Fourth Quarter 2006 | U | U | U | U | U | 5 | - | 6020 |
| First Quarter 2007 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2007 | U | U | U | U | U | 1 | - | 6020 |
| Fourth Quarter 2007 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2008 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2008 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2009 | U | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2009 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2010 | 1.2 J | U | U | U | U | 5 | - | 6020 |
| Fourth Quarter 2010 | U | U | U | U | U | 5 | - | 6020 |
| Second Quarter 2011 | U | U | U | U | U | 5 | - | 6020A |
| Fourth Quarter 2011 | U | U | U | U | U | 5 | - | 6020A |

*See last page of this report for definitions.*

## *Target Analyte Monitoring Results - HWMU-10 Point of Compliance Wells*

## *Radford Army Ammunition Plant, Radford, Virginia*

***Upgradient well = 10D4*** ***All Results in ug/L.***

| *Analyte/Quarter* | *10D4 Q* | *10D3 Q* | *10D3D Q* | *10DDH2R Q* | *10MW1 Q* | *QL* | *GPS* | *Method* |
|---|---|---|---|---|---|---|---|---|

**Definitions:**

**QL** Denotes permit required quantitation limit.
**U** Denotes analyte not detected at or above QL.
**UA** Denotes analyte not detected at or above adjusted sample QL.
**J** Denotes associated result is estimated. When used with "U" (i.e., "**UJ**"), denotes analyte not detected at or above QL and QL is estimated. When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and adjusted QL is estimated.
**UN** Denotes analyte concentration is less than the quantiation limit and five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when results are reported to at or above the detection limit.
**R** Denotes result rejected.
**Q** Denotes data validation qualifier.
**CAS#** Denotes Chemical Abstract Services registration number.
**GPS** Denotes Groundwater Protection Standards listed in Appendix G to Attachment 4 in the Final Hazardous Waste Post-Closure Care Permit for Hazardous Waste Units 5, 7, 10, and 16 (October 4, 2002). For cobalt, vanadium, acetone and 2-propanol, these analytes are not listed in Appendix VIII to 40 CFR Part 261; therefore, GPSs will not be established for these constituents.
**NS** denotes not sampled.
**NA** denotes not analyzed.
**"–"** denotes not detected (pre-2nd Quarter 2003) or not available / not sampled (beginning 2nd Quarter 2003).

**Appendix IX Monitoring Events:**
***First Quarter 2003,***
***Second Quarter: 2004, 2005, 2007, 2008, 2009, 2010, 2011***
***Third Quarter 2006***

For Appendix IX monitoring, compliance well results reported/evaluated to detection limit. See data validation Qualifier definitions noted below.

***The following definitions apply to results reported for Appendix IX monitoring events.***
***All Appendix IX monitoring results for compliance wells are reported to the detection limit.***

**QL** Denotes permit required quantitation limit.
**U** denotes not detected at or above the detection limit or QL.
**UA** denotes not detected at or above the adjusted detection limit or adjusted QL.
**J** Denotes result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above the detection limit or QL and detection limit and QL are estimated. When used with "UA" (i.e., "UAJ"), denotes analyte not detected at or above adjusted detection limit or adjusted QL and adjusted detection limit and adjusted QL are estimated.
**UN** Denotes analyte concentration is less than the quantitation limit and/or five times the blank concentration. Not reliably detected due to blank contamination. This qualifier used only for Appendix IX monitoring event when compliance well results are reported to at or above the project detection limit.

Verification events: 12/12/03, 06/17/04, 7/25/2005.
6/17/04. Verification event. Acetone: 10D3D was not detected during verification event. Verification event result reported.
7/25/05. Verification event. All wells: ethyl acetate. 10D3D: alpha-BHC, acetone and 2-propanol. All verification results: Not detected except for acetone and 2-propanol. Verification results presented in table.
7/17/2008. Verification event. 10MW1. Technical chlordane, diethyl phthalate. Verification results reported-all not detected.
6/11/2009 – Verification event, 10DDH2R, Diethyl ether, Verification results reported in table-all not detected.

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
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January 5, 2012

Ms. Paige Holt, Ph.D., PE
Environmental Manager
Alliant Techsytems Inc.
Radford Army Ammunition Plant
State Route 114; P.O. Box 1
Radford, VA 24143-0100

**VIA ELECTRONIC MAIL**

**RE:** Alternate Source Demonstration for Cobalt in monitoring wells 7WCA and 7W13
HWMU #7, Radford Army Ammunition Plant, Radford, Virginia
Radford Army Ammunition Plant, Radford, VA
EPA ID# VA1210020730

Dear Ms. Holt:

The above-noted Alternate Source Demonstration (ASD) investigation, submitted on behalf of Radford Army Ammunition Plant, by Alliant Techsystems Inc., dated December 2011, has been reviewed for technical content and consistency with the requirements of 40 CFR 264.99.(i). The need to submit an ASD was triggered by an exceedance of the Cobalt Groundwater Protection standard reported to the Department for monitoring wells 7WCA and 7W13.

As defined under 40 CFR 264.99.(i), the Alternate Source Demonstration (ASD) report must show one of the following in order to obtain approval:

1) The contamination was caused by natural variation in groundwater.
2) The contamination was a result of an error in field sampling.
3) The contamination was the result of an error in lab analysis.
4) The SSI contamination was result of an error in statistical analysis.

The ASD report focused on proving the applicability of item #1 by presenting a statistical trend analysis that shows no increasing trends of total cobalt concentrations in groundwater, presenting data showing that cobalt is widely observed at significant concentrations in non-waste derived materials and native soils at the site, and providing data that shows cobalt present at similar levels in other upgradient wells serving other waste management units at the site. The report concluded that the total cobalt

concentrations observed in groundwater monitoring wells 7WCA and 7W13 are derived from ambient, naturally-occurring and naturally variable trace elements in the aquifer matrix, and not from a temporally-varying source such as a release from the closed hazardous waste management unit (HWMU-7).

Based on the above discussion and the body of evidence presented to the Department, the content of the ASD is determined to be sufficient to meet the Regulatory criteria for approval and as a result, the facility does not have to remediate the cobalt GPS exceedances observed in wells 7WCA and 7W13. Please note that future exceedances of the GPS for Cobalt noted in 7WCA and 7W13 will not require the submittal of a separate ASD unless the monitoring results reveal a change in site conditions that may indicate a release from HWMU-7. Please make sure that this approval is reflected in future correspondence to the Department where appropriate.

If you have any additional technical questions, you may contact me at 276-676-4867 or by email at Vincent.Maiden@deq.virginia.gov.

Sincerely,

Vincent A. Maiden
Office of Remediation Programs

cc: Jutta Schneider, File – DEQ CO
Aziz Farahmand, DEQ-BRRO
Andrea Barbieri, EPA Region II (3LC50)
Jeremy Flint, ATK
Jim McKenna, US Army
Loretta Powers, ATK